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Trustee of the Multistate Environmental Response Trust
Greenfield Environmental Trust Group, Inc., Member
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October 26, 2018

By US Postal Service and E-mail—charlene.fitch@dnr.mo.gov

Ms. Charlene Fitch
Chief, Permits Section—Hazardous Waste Program
Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102-0176

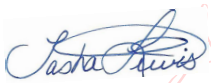
Subject: **Final Additional Outdoor Air and Indoor Air Confirmatory Sampling: December 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406 Technical Memorandum; 2800 West High Street, Springfield, Missouri**

Dear Ms. Fitch:

Greenfield Environmental Multistate Trust LLC, Trustee of the Multistate Environmental Response Trust (the Multistate Trust), respectfully submits the Final Additional Outdoor Air and Indoor Air Confirmatory Sampling: December 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406 (Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum). The Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum supports the Environmental Actions performed by the Multistate Trust and in accordance with the Indoor Air Work Plan[1], as approved by and under the oversight of the Missouri Department of Natural Resources (MoDNR) as Lead Agency for the Site. This Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum also incorporates the comments received from MoDNR[2] on the draft submittal dated April 23, 2108. The Multistate Trust hereby submits two hardcopies and one searchable electronic copy to MoDNR, and one hardcopy and one searchable electronic copy to the U.S. Environmental Protection Agency. If you have any questions or concerns, please do not hesitate to contact Lauri Gorton at (414) 732-4514 or lg@g-etg.com or me at (602) 312-6993 or tl@g-etg.com or

Sincerely,

Greenfield Environmental Multistate Trust LLC
Trustee of the Multistate Environmental Response Trust
By: Greenfield Environmental Trust Group, Inc., Member



Tasha Lewis
Portfolio Manager

[1] Environmental Works Inc. (EWI). 2017. *Indoor Air Work Plan, Former Tronox Facility, 2800 West High Street, Springfield, Missouri*. Resource Conservation and Recovery Act Permit Number MOD007129406. June 27.

[2] *"Additional Outdoor Air and Indoor Air Confirmatory Sampling – December 2017 Event Technical Memorandum; Former Kerr-McGee/Tronox Facility at 2800 West High Street in Springfield, Missouri; EPA ID#MOD007129406."* Letter from Mark A. Hogan/MoDNR to Lauri J. Gorton/Multistate Trust. July 19, 2018.

Enclosures: Table 1: Response to Comments on the Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum

Final Additional Outdoor Air Sampling and Indoor Air Confirmatory Sampling: December 2017, Former Tronox/Kerr-McGee Wood Treatment Facility, Springfield, Missouri; RCRA Permit No. MOD007129406

cc: Bob Aston—Missouri State Coordinator, EPA Region 7
Steve Brauner—Integral Consulting, Inc
Don Dicks—MoDNR
Michelle Hartman—Missouri Department of Health and Senior Services
Jalal El-Jayyousi—MoDNR
Bob Lanning—Environmental Works Inc.
Tasha Lewis—Multistate Trust
Loren Lund—Jacobs
Richard Nussbaum—MoDNR
Marc Weinreich—Multistate Trust

Table 1: Response to Comments on the Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum
Former Tronox/Kerr-McGee Facility, Springfield, Missouri; EPA ID# MOD007129406. Dated April 23, 2018

Comment Number	Reviewer	Comment	Response
1	MoDNR	Page 3, Section 3.0 Objective and Scope of the Additional Outdoor Air Sampling Event. The fourth data quality objective was identified as “Confirm previous warm-season indoor air, crawlspace air, and outdoor air results at previously sampled residential properties.” Given the length of time between the referenced sampling event (warm-season) and this sampling event in December 2017, the Department disagrees with the objective and terminology that this event confirmed sampling results from August 2017. It is recommended to remove terminology throughout this OA-IA Dec. 2017 Tech Memo that indicates the Indoor Air (IA) sampling was “confirmatory” or confirmed sampling results from August 2017; the IA sampling presented in this Tech Memo should be recognized as a heating-season sampling event that may or may not be generally consistent with the results of the warm season event. Further evaluation of the heating season results should focus on whether these results appear to represent a worst case Vapor Intrusion (VI) scenario as suggested by the currently available science on VI.	Reference to "confirmatory sampling" has been removed from the document (except for the title) and replaced with "heating-season" where appropriate.
2	MoDNR	Page 4, Section 4.2 HAPSITE Portable GC/MS Measurements. “One sample (HP25-MISC), located near outdoor air sample HP24-OA, also was collected in a culvert (Outfall 3) of the Woodland Springs water retention basin.” The Department notes that while HP25-MISC detected naphthalene at 2.36 µg/m3, no other compounds were detected in the sample. HP24-OA was located near the Woodlawn Spring/Outfall 003 stormwater detention basin, but only detected benzene at 0.39 µg/m3. It is recommended to sample the Woodlawn Spring culvert and nearby ambient air with HAPSITE and/or 24-hour canisters during future Outdoor Air (OA) sampling events, as Outfall 003 may be a point source of elevated naphthalene levels detected in OA.	The Woodlawn Spring culvert and nearby ambient air was sampled both with the HAPSITE and a 24-hour canister during the August 2018 sampling event. Results are currently pending and will be discussed in the 2018 Warm Season Outdoor Air Sampling Event Technical Memorandum.
3	MoDNR	Page 9, Section 8.0 Conclusions and Recommendations. “Identifying a source may require another means of assessing the source, for example, using a real-time investigation approach.” The Department agrees with this as an alternative approach. If additional OA sampling events do not identify a source(s) with a reasonable degree of certainty, then it is recommended to further evaluate a real-time investigation approach using the HAPSITE and/or nasal ranger olfactometer and submit a new Work Plan. It should be noted that, according to data gathered thus far, the most common source of elevated benzene, toluene, ethylbenzene, xylenes, and naphthalene (BTEXN) compounds found above actionable levels in IA has been the ambient air surrounding the residences, not the subsurface. Therefore, the successful identification of one or more sources of elevated BTEXN compounds in OA, if facility-related, may provide an opportunity for the Multistate Trust to potentially reduce BTEXN compounds in IA.	Concur - Results of the August 2018 outdoor air sampling event are pending - the need for additional sampling will be assessed in the 2018 Warm Season Outdoor Air Sampling Event Technical Memorandum.
4	MoDNR	Table 2. HAPSITE Quantitative - Mode Sampling Results. Naphthalene is shaded in the garage air sample (HP30-IA) indicating exceedance of its IA Action Level (AL). However, the results for benzene and ethylbenzene exceeded their respective ALs. Please revise the table to reflect these exceedances.	Benzene and Ethylbenzene have been shaded to reflect the exceedance of the Indoor Air Action Levels.

Table 1: Response to Comments on the Outdoor Air and Indoor Air Confirmatory Sampling Technical Memorandum
Former Tronox/Kerr-McGee Facility, Springfield, Missouri; EPA ID# MOD007129406. Dated April 23, 2018

<table>
<tr><th>Comment Number</th><th>Reviewer</th><th>Comment</th><th>Response</th></tr>
<tr><td>5</td><td>MoDNR</td><td>Table 5. Background Outdoor Air Concentrations - United States and New York. This table contains background OA levels from two referenced sources. MDHSS was not able to reproduce the values provided on the table for EPA's air data, and thus requests the dataset and methodology used to derive the values on the table be provided to the State of Missouri to ensure the values being reported are accurate. Additionally, not all of the values provided in the table appear to be accurate. Specifically, the values reported as the 50th percentile values from New York do not match the values provided in the original reference.</td><td>Table 5, Background Outdoor Air Concentrations, was updated to correct the 50th percentile values from the New York dataset. The EPA values are based on the mean of the arithmetic mean outdoor air concentrations and the maximum 90th percentile concentration from more than 200 sampling locations for the BTEX compounds (40,000+ total samples) and 17 sampling locations (424 total samples total) for naphthalene collected across the United States in 2017. One data reduction step was completed: sampling points with values equal to 0 (zero) were excluded from the derivation of the values shown in Table 5. EPA values were rounded to two significant figures. The calculated values are shown below, both in ppbv and ug/m3 units. The original outdoor air data table and the pivot table are attached.
<table>
<tr><td>State Name</td><td>(All)</td><td>All states in United States</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Local Site Name</td><td>(All)</td><td>All locations in United States</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Arithmetic Mean</td><td>(Multiple Items)</td><td>Arimetic Mean > 0 ppbv</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td colspan="3">These are PPBV units.</td><td colspan="3">These are ug/m3 units.</td></tr>
<tr><td>Parameter Name</td><td>Units of Measure</td><td>Average of Arithmetic Mean</td><td>Max of Arithmetic Mean</td><td>Max of 90th Percentile</td><td>Average of Arithmetic Mean</td><td>Max Arithmetic Mean</td><td>Maximum 90th Percentile</td></tr>
<tr><td>Benzene</td><td>Parts per billion Carbon</td><td>1.18</td><td>3.76</td><td>6.1</td><td>3.8</td><td>6.5</td><td>19</td></tr>
<tr><td>Ethylbenzene</td><td>Parts per billion Carbon</td><td>0.53</td><td>2.80</td><td>4.2</td><td>2.3</td><td>4.1</td><td>21</td></tr>
<tr><td>m/p Xylene</td><td>Parts per billion Carbon</td><td>1.22</td><td>8.85</td><td>13</td><td>5.3</td><td>11</td><td>56</td></tr>
<tr><td>Naphthalene</td><td>Parts per billion Carbon</td><td>0.32</td><td>2.24</td><td>5.8</td><td>1.7</td><td>3.4</td><td>30</td></tr>
<tr><td>o-Xylene</td><td>Parts per billion Carbon</td><td>0.54</td><td>3.41</td><td>5.1</td><td>2.3</td><td>4.5</td><td>23</td></tr>
<tr><td>Toluene</td><td>Parts per billion Carbon</td><td>2.65</td><td>16.06</td><td>35.63</td><td>10</td><td>19</td><td>134</td></tr>
</table></td></tr>
<tr><td>6</td><td>MoDNR</td><td>Pages 73-76, Attachment 2, Data Quality Evaluation. "The results of the data quality review … indicate the analytical systems were in control and all data results, without qualification, can be used in the decision making process." This could be interpreted such that if a data result does not have a J or U qualifier beside it, only then can the result be used for decision making. However, the Conclusion paragraph states "All data, as qualified, are considered usable for the decision-making process." These two statements seem contradictory with one another and thus should be rectified to maintain the same conclusion(s), or a more clarifying statement should be made. If the determination of the laboratory is that some data results are not considered usable for the decision-making process, then the Department and MDHSS will take that into account.</td><td>"without qualification" was removed from the first paragraph of Attachment 2.</td></tr>
</table>

TECHNICAL MEMORANDUM

Final Additional Outdoor Air and Indoor Air Confirmatory Sampling: December 2017, Former Tronox/Kerr-McGee Facility, Springfield, Missouri; RCRA Permit No. MOD007129406

PREPARED FOR:	Charlene Fitch/Missouri Department of Natural Resources (MoDNR) Don Dicks/ MoDNR Jalal El-Jayyousi/MoDNR Richard Nussbaum/MoDNR
COPY TO:	Tasha Lewis/Multistate Trust Lauri Gorton/Multistate Trust Marc Weinreich/Multistate Trust
PREPARED BY:	Jacobs Engineering Group, Inc.
DATE:	October 26, 2018

1.0 Introduction

This technical memorandum was prepared on behalf of the Greenfield Environmental Multistate Trust, LLC, not individually but solely in its representative capacity as Trustee for the Multistate Environmental Response Trust (Multistate Trust), for the Former Tronox Facility located at 2800 West High Street in Springfield, Missouri (Facility or Site), Resource Conservation and Recovery Act Post-Closure Care Permit Number MOD007129406 (Figure 1). This technical memorandum supports the Environmental Actions performed by the Multistate Trust as approved by and under the oversight of the Missouri Department of Natural Resources (MoDNR) as Lead Agency for the Site.

This technical memorandum presents the results of the December 2017 additional outdoor air sampling performed on and around the Facility and the heating-season indoor air sampling event performed in the residential neighborhood northeast of the Facility (Figure 2). This additional investigation was designed to further assess the potential sources of benzene, toluene, ethylbenzene, xylene, and naphthalene (BTEXN) detected in indoor and outdoor air samples collected northeast of the Facility in August 2017 (CH2M HILL Engineers, Inc. [CH2M], 2018). An additional objective of this sampling event was to assess the ambient concentrations of semi-volatile organic compounds (SVOCs), including polyaromatic hydrocarbons (PAHs), that are identified as Facility-related chemicals of concern but were not identified as potential vapor intrusion (VI)-related analytes.

2.0 Background

The Facility is located on about 68 acres in northwest Springfield, Greene County, Missouri. In 1907, American Creosoting Corporation opened the Facility for wood treatment operations. In 1965, Kerr-McGee Chemical Corporation (KMCC) – Forest Products Division (FPD) purchased the property and continued wood treatment operations until decommissioning the Facility in 2004. In 2005, as part of a spinoff, Kerr-McGee transferred the Facility to Tronox, LLC. Tronox filed for bankruptcy in 2009, and in 2011, the court-appointed Multistate Trust took title to the property to investigate and remediate the Facility. During operations, wood was pressure-treated in large vessels with creosote solutions and

subsequently used to produce railroad ties and utility poles. Facility-related chemicals of concern (COCs) were identified in the *Final Report, RCRA Facility Investigation for the Springfield, Missouri Facility, July 1992* (Environmental Works, Inc. [EWI], 2017).

Hydrogeological investigations identified impacted groundwater flowing off the Facility property to the northeast. Corrective measures initiated in the mid-1980s included installing extraction wells, an onsite groundwater treatment system, and a low-permeability cap (EWI, 2016a). The groundwater treatment system is permitted to discharge water to the sanitary sewer system (Wastewater Contribution Permit No. 720). The treatment system effluent discharges onsite to Manhole A before flowing offsite to the public sanitary sewer system.

Groundwater in the area is first encountered from approximately 1 to 26 feet below ground surface and locally flows to the northeast. Additional groundwater monitoring wells were installed in the neighborhood near the Clifton Drainage in 2015, and groundwater samples were collected shortly after installation. In 2016, the Missouri Department of Natural Resources (MoDNR) approved the *Remedial Action Optimization Work Plan* and addendums (RAO Work Plan; EWI, 2016a, 2016b) for the Facility in response to the need to refine the conceptual site model (CSM) depicting the nature and extent of contamination resulting from releases associated with Facility operations. In December 2016 and January 2017, temporary soil vapor probes were installed on the eastern end of the Facility and throughout the neighborhood near the Clifton Drainage, and shallow and deep soil vapor samples were collected.

The CSM was refined to include vapor intrusion (VI) and was developed using groundwater and soil vapor data, residential structure proximity to groundwater at high and low water tables, and potential preferential pathways. The results indicated further evaluation of the VI pathway was warranted in the neighborhood near the Clifton Drainage northeast of the Facility (EWI, 2017). Of the Facility-related COCs identified in the RAO Work Plan (EWI 2016a, 2016b), six were identified as having toxicity data and being sufficiently volatile when groundwater is the vapor source: benzene, toluene, ethylbenzene, m & p xylene, o xylene, and naphthalene (BTEXN) (EWI, 2017).

In August 2017, indoor and outdoor air samples along with one crawlspace air, one subslab soil vapor sample, a sump water sample, and a sump headspace sample were collected from four residential properties. Sewer gas headspace samples were collected from six nearby sanitary sewer manholes (CH2M, 2018). This sampling event is referred to as the warm-season indoor air sampling event. The data quality objectives of the warm-season indoor air sampling event were to directly measure the concentrations of Facility-related COCs in residential indoor air to support an assessment of the completeness of the VI pathway and collect sufficient data to ascertain whether indoor air COCs detected above action levels (ALs) (if any) are due to VI from Facility-related COCs or background sources. Per the Indoor Air Work Plan (EWI, 2017a), confirmatory sampling would be performed following the warm-season sampling event if 1) indoor air concentrations of Facility-related COCs were detected above indoor air ALs and 2) evaluation of the multiple lines of evidence supported Facility-related VI at a given structure.

The six Facility-related COCs were detected in indoor and outdoor air samples collected in August 2017. The Facility-related COC concentrations in indoor air in the four residences sampled were below indoor air ALs, except naphthalene detections, which were slightly above the indoor air ALs. However, the naphthalene concentrations were similar to or lower than outdoor air concentrations, indicating a non-VI source. In addition, the subslab vapor, crawlspace, and sump headspace concentrations did not represent a potential ongoing and significant VI source of Facility-related COCs at the residences sampled. The likely source of Facility-related COCs is outdoor air impacted by an unknown source or sources.

Based on the conclusion that VI into the residential structures sampled was not occurring or was insignificant during the warm-season sampling event, confirmatory sampling, as described in the Indoor Air Work Plan (EWI, 2017a), was not required within 2 weeks following receipt of validated results showing exceedance. After consultation with MoDNR, the Multistate Trust planned a heating-season indoor air sampling event in conjunction with an outdoor air sampling event in one or more residences due to the concentration of naphthalene frequently detected in indoor air.

3.0 Purpose and Scope of the Additional Outdoor Air Sampling Event

A multiple-lines-of-evidence evaluation of sampling data collected in 2016 and 2017 (EWI, 2017a, 2017b; CH2M, 2017, 2018) indicated that 1) significant VI was not occurring in the residential area northeast of the Facility, and 2) outdoor air volatile organic compound (VOC) sources were the likely cause of BTEXN concentrations detected in the indoor air of residential structures located northeast of the Facility. In addition, the Multistate Trust and MoDNR determined it would be appropriate to assess naphthalene indoor air concentrations during the heating-season based on naphthalene concentrations detected above the indoor air ALs during the August 2017 indoor air sampling event. Based on these conclusions, additional outdoor air and indoor air sampling were proposed in the *Additional Outdoor Air Sampling and Indoor Air Confirmatory Sampling Work Plan* (Outdoor Air Work Plan; CH2M, 2017), which MoDNR approved in December 2017.

The following data quality objectives were identified for the additional outdoor air sampling event:

- Assess outdoor air BTEXN and SVOC concentrations in the area surrounding the Facility
- Further assess outdoor air BTEXN concentrations at the Facility
- Assess potential sources of BTEXN and SVOCs in outdoor air at and around the Facility
- Assess heating-season indoor air, crawlspace air, and outdoor air results at previously sampled residential properties

4.0 Field Activities

The additional outdoor air sampling activities were conducted from December 5 to December 16, 2017, in accordance with the approved Outdoor Air Work Plan (CH2M, 2017) and included establishing weather station locations for meteorological data collection, collecting real-time air sample data with an Inficon HAPSITE portable gas chromatograph/mass spectrometer (GC/MS), and collecting 24-hour outdoor air and indoor air samples.

4.1 Meteorological Data

Meteorological data (wind direction and speed) were collected from five weather stations positioned on and around the Facility. One weather station was placed on the Facility property preceding the August 2017 warm-season air sampling event; a RainWise WindLog Wind Data Logger was set up in the northeastern corner of the Facility on July 27, 2017. Four additional weather stations (Davis Vantage Pro 2) were placed in the area surrounding the Facility, approximately 1 mile north, south, east, and west of the Facility. Information regarding the weather station locations is summarized in Table 1 with the locations depicted on Figure 2.

The five weather stations were operated continuously for 1 week before and simultaneously during the outdoor air sample collection activities. The predominant wind direction from the initial week's meteorological data, as well as the predominant wind direction the day of HAPSITE sample collection, were reviewed to refine the initial HAPSITE real-time outdoor air sample locations. Per the Indoor Air Work Plan (EWI, 2017a), outdoor air samples were collected upwind of the neighborhood sampled in the August 2017 warm-season sampling event. Samples also were collected upwind and downwind of the Facility. The wind direction and wind speed data were used in conjunction with the HAPSITE data to

refine the final outdoor air sample locations and provide an additional line of evidence when assessing potential outdoor air sources.

4.2 HAPSITE Portable GC/MS Measurements

A total of 28 real-time outdoor air samples were analyzed for BTEXN using a HAPSITE portable GC/MS instrument in the quantitation mode. The initial 15 proposed outdoor air HAPSITE sample locations were identified in the Outdoor Air Work Plan (CH2M, 2017) to correspond with the locations of the proposed 24-hour canister and polyurethane foam (PUF) samples. Sixteen additional outdoor air sample locations were analyzed with the HAPSITE based on the field team leader's consultation with the project team while taking into account the sample spatial distribution (that is, placing samples between existing samples), predominant wind direction, and the potential for BTEXN sources being present (for example, automobile-related businesses).

Two additional HAPSITE samples were collected at residential Property 040 because of the potential sources of petroleum VOCs in the garage, including elevated readings from a photoionization detector (ppbRAE). Specifically, one residential indoor (garage) air sample and one residential crawlspace air sample were analyzed with the HAPSITE from residential Property 040. One sample (HP25-MISC), located near outdoor air sample HP24-OA, also was collected in a culvert (Outfall 3) of the Woodland Springs water retention basin.

The HAPSITE air sample collection locations are depicted on Figure 2 and summarized in Table 1. The HAPSITE analytical results are summarized in Table 2 and depicted on Figure 3.

4.3 Outdoor Air 24-Hour Sampling

The 24-hour outdoor air samples were collected from 13 of 15 proposed locations in the area surrounding the Facility. Two proposed outdoor air sample locations were not sampled, because they were to be collected on residential property, and the homeowners of those properties did not allow access during the December 2017 sampling event. The locations of the thirteen 24-hour outdoor air samples collected were identified in the Outdoor Air Work Plan (CH2M, 2017) based on proximity to the Facility and other potential sources of outdoor air COCs. The final locations were based on property access, availability of sufficient space to set up the sample collection equipment, and mitigation of safety concerns.

Each 24-hour outdoor air sample was composed of two components collected simultaneously at the same location: 1) whole air, collected in evacuated stainless-steel canisters, was tested for COCs (specifically BTEXN) and 2) vapors and suspended airborne particles collected on PUF filters and tested for SVOCs. For the OA-040 sample in proximity to residential Property 040, the associated PUF sample location is OA05. The 13 outdoor air sample locations are summarized in Table 1 and shown on Figure 2. The outdoor air sample results are summarized in Table 3 and depicted on Figure 4.

Additional measures were taken to protect and secure weather stations and sampling equipment located in public settings against tampering, theft, and potential weather hazards. Two sampling teams rotated through the outdoor air sampling locations throughout the 24-hour sample collection period to check that sample equipment was performing as expected and to discourage tampering. Heat packs were activated, and sample pumps were kept warm throughout the sampling duration to optimize pump battery capacity.

4.4 Heating-Season Indoor Air Sampling

Based on the August 2017 (warm-season) indoor air sampling event, heating-season indoor air samples were to be collected from four residential properties (004, 007, 012, and 040). However, access to three of the residential properties during the December 2017 sampling event could not be obtained; therefore, heating season indoor air sample collection was only performed at residential Property 040.

On December 13, 2017, a pre-sampling building survey was conducted at residential Property 040. The building survey was performed to update existing information regarding the building, initially recorded in August 2017, that could affect air sampling results and interpretation during data evaluation. The field team obtained information about recent history and activities that could generate petroleum VOCs. The condition of the foundation and slab also was documented. The heating, ventilation, and air conditioning (HVAC) system types and typical operating conditions were documented on the building survey form. The existing HVAC systems were in use during sampling activities between December 13 and December 14, 2017. The pre-sampling building survey for residential Property 040 is included as Attachment 1.

The Property 040 homeowner requested that no household products or other chemical-containing items, which could bias the indoor air results, be removed or placed outside the residence prior to this sampling event. There were numerous household products and items, including an antique car leaking gasoline fumes (according to the owner), that represented a background source of BTEXN. The door between the kitchen and the garage was carefully taped over with plastic sheeting and Gorilla Tape approximately 16 hours before the sampling occurred. The sheeting remained in place during the sampling period.

During the heating-season indoor air sampling at Property 040, the sample technicians also used a photoionization detector (ppbRAE) during the building survey to test for significant vapor sources from household drains, which are potential pathways for VI from the sewer (CH2M, 2018). No Facility-related COCs were detected in the drains or sink cabinets using the ppbRAE.

Three 24-hour indoor air samples were collected from Property 040 using passivated stainless-steel canisters: one on the main floor (plus a field duplicate), one in the crawlspace, and one in the garage.

5.0 Laboratory Analytical Methods

The additional outdoor air and heating season indoor air samples were collected in passivated stainless-steel canisters and analyzed for BTEXN using U.S. Environmental Protection Agency (EPA) Method TO-15 using SIM mode. The additional outdoor air samples collected with the PUF samplers for SVOC analysis were analyzed by EPA Method TO-13A. All samples were analyzed by Eurofins Air Toxics, the same laboratory that was used for the warm-season sampling event. Analytical results from the outdoor air TO-15 and TO-13A analyses are summarized in Table 3, and the indoor air TO-15 analyses are summarized in Table 4.

6.0 Indoor Air Action Levels

Indoor air ALs were used to evaluate the heating-season indoor air sampling results to assess the need for mitigation to reduce human exposure. The indoor air ALs are risk-based screening levels and were calculated using methods consistent with EPA guidance (EPA, 2015a, 2015b, 2017a, 2017b) and MoDNR Technical Guidance (2006). The indoor air ALs are based on EPA (2017a) regional screening levels for residential air using the MoDNR (2006) target cancer risk level of 1×10^{-5} or the target noncancer hazard quotient of 1, whichever results in a lower indoor air AL. The indoor air ALs are included in Table 4 for comparison.

7.0 Sampling Results and Data Evaluation

This section summarizes and evaluates the sampling results from the additional outdoor air and heating-season indoor air sampling activities. Table 1 summarizes the samples collected for the additional outdoor air and heating-season indoor air sampling event, and Tables 2 through 4 summarize the analytical results. A data quality evaluation (DQE) report, which includes a Level 4 data validation, is included in Attachment 2. As noted in the DQE report, the analytical systems were in control with the

exception related to the method blank collected for the PUF samples resulting in qualification (19 data points changed from J-flagged [estimated] to U-flagged [nondetect]). All data, as qualified, are considered usable for assessment and decision making. Based on a Level 4 data evaluation, the laboratory's analytical processes were under control at the time of analysis. The chain-of-custody forms and the laboratory reports from Eurofins Air Toxics are in Attachment 2.

7.1 Outdoor Air HAPSITE Sample Results

Twenty-eight quantitative-mode HAPSITE samples were collected at the facility (6 samples) and in the area surrounding the Facility (22 samples), including locations in the neighborhood sampled in August 2017 (Figure 3). Benzene, toluene, and xylenes were detected in sample HP01-0A, and toluene was detected in sample HP02-OA slightly above the reporting limit. Only toluene was detected at levels similar to sample HP02-OA in the two on-Facility outdoor air passivated canister samples (OA1 and OA2) (Table 3). The COCs were not detected in the other four samples collected within the Facility boundary (HP06-OA, HP20-OA, HP21-OA, and HP22-OA).

Benzene, toluene, and xylenes were detected throughout the study area (off-Facility) at levels similar to or higher than the levels detected on-Facility (that is, within a factor of 10). Naphthalene, detected at levels ranging from 1.9 to 4.4 micrograms per cubic meter ($\mu g/m^3$) during the August 2017 sampling event, was generally nondetect in the HAPSITE samples, including those collected at the Facility. Naphthalene was not detected in the six HAPSITE samples collected within the Facility boundary at a reporting limit of 0.53 $\mu g/m^3$, nor was it detected in any of the HAPSITE samples collected within 0.5 mile of the Facility. The naphthalene concentrations in HAPSITE samples collected during August 2017 ranged from nondetect (reporting limit = 0.53 $\mu g/m^3$) to 0.871 $\mu g/m^3$ in samples collected throughout the rest of the study area. These HAPSITE sample results indicate the Facility was not contributing to outdoor air BTEXN concentrations in the residential neighborhood during the sampling event.

HAPSITE results generally agreed with canister sample results based on the magnitude of detections, although in several cases, the toluene results were higher in the HAPSITE samples. The HAPSITE samples had higher reporting limits than canister samples analyzed using Method TO-15 SIM, leading to several instances that BTEXN compounds were reported as detected but at levels less than the HAPSITE reporting limit.

The outdoor air BTEXN concentrations detected at and around the Facility were similar to expected ambient (outdoor air) concentrations in the United States. The outdoor air concentrations for BTEXN compounds were within the 2017 annual results for the United States from EPA's Air Quality System (EPA, 2017c) and values reported in the New York State Department of Health (NYSDOH) study (NYSDOH, 2005) [Table 5].

7.2 Outdoor Air 24-Hour Canister Sample Results

At least one BETXN compound was detected in each of the 24-hour outdoor air samples collected on December 14, 2017, in the passivated stainless-steel canisters and analyzed by Method TO-15 SIM. The outdoor air sample locations and analytical data are depicted on Figure 4 and summarized in Table 3. As discussed below, these sample results indicate the Facility was not contributing to outdoor air concentrations in the residential neighborhood during the sampling event.

The naphthalene concentrations recorded during the August 2017 air sampling event (CH2M, 2018) were not observed during the December 2017 event in outdoor air. The naphthalene concentrations in samples collected during August 2017 ranged from 1.9 to 4.4 $\mu g/m^3$ in indoor air compared to concentration levels in the December 2017 samples, which ranged from nondetect (reporting limit = 0.067 $\mu g/m^3$) to 0.16 $\mu g/m^3$ in canister samples.

The BTEXN compounds were detected in one or both samples collected within the Facility boundary (OA1 and OA2). The BTEXN compounds were detected throughout the study area (off-Facility) at levels similar to or higher than the levels detected on-Facility (that is, within a factor of 10).

There is no clear point source of BTEXN based on the results of the additional outdoor air sampling event conducted during the winter. The canister samples are generally within a factor of 2 to 3 with no significant outliers. These results suggest the Facility was not likely a point source of BTEXN concentrations, based on the concentrations measured at the Facility or downwind of the Facility, which were no higher than the concentrations in samples collected through the December 2017 sampling event. Higher concentrations would be expected in outdoor air concentrations on the Facility if it were a source area. The BTEXN compounds noted in the December 2017 outdoor air samples in the residential neighborhood, which was upwind of the Facility (based on the predominant wind direction during the 24-hour canister sampling), were within a factor of 2 or 3 of the BTEXN concentrations from the samples collected at the Facility.

The outdoor air BTEXN concentrations from the 24-hour canister samples that were detected at and around the Facility, whether upwind or downwind, were similar to background outdoor air concentrations in populated areas throughout the United States (Table 5; EPA, 2017c; NYSDOH, 2005).

The results of the additional outdoor air sampling event conducted during the winter also suggest the Facility is not likely the primary source contributing to BTEXN concentrations found in indoor air at residential Property 040. The Method TO-15 SIM (24-hour canister) BTEXN concentrations in outdoor air sample OA-040 (northeastern residential area) were slightly greater than the Facility outdoor air results; however, during the sampling event, the residence was upwind of the Facility (based on the predominant wind direction during the 24-hour sampling event). If the Facility were acting as the source, one would expect higher outdoor air results from the samples collected at the Facility.

7.3 Outdoor Air 24-Hour PUF Sample Results

None of the 21 tested SVOCs, including naphthalene, were detected in thirteen 24-hour outdoor air samples collected with the PUF samplers, both at the Facility and in the surrounding area. The outdoor air PUF sample locations are shown on Figure 4. The associated data for the PUF sample analytes are summarized in Table 3. Based on the lack of detections, the objective related to characterizing the extent of SVOCs in outdoor air has been addressed. The Facility was not acting as a source of these SVOCs, either as a volatile or particulate, during the outdoor air sampling event.

The Method TO-13A (PUF) analytical results for naphthalene were in general agreement with the Method TO-15 SIM (canister) results, with no detections reported using the PUF/TO-13A methods, while naphthalene was either nondetect or estimated J-flagged results (that is, less than the reporting limit) using the canister/TO-15 SIM methods.

7.4 Heating-Season Indoor Air Sample Results

One indoor air sample (IAU-040) was collected from the main floor of residential Property 040 and analyzed using Method TO-15 (Figure 5). A field duplicate of IAU-040 also was collected. The indoor air sample and its duplicate sample had naphthalene concentrations greater than the indoor air AL (Table 4). The indoor air concentrations at residential Property 040 were similar to levels detected during the warm-season (August 2017) sampling event. BTEXN compounds also were detected in the two indoor air samples at levels greater than the residential outdoor air sample (OA-040). Although the indoor air sampling results show elevated levels of Facility-related COCs, the elevated COC concentrations in the garage and the lower concentrations detected in the crawlspace indicate the presence of naphthalene and the other COCs in indoor air at residential Property 040 are not related to VI from the subsurface.

Sampling the air inside the garage was not included in the sampling plan but was added on the day of the sampling event because of the observed potential sources of petroleum VOCs in the garage. The homeowners did not authorize removing the household products, fuel-powered vehicles, and other devices that potentially contained products with COCs that were stored in the home and garage. A strong petroleum odor was in the garage, and the garage air was measured using the ppbRAE and HAPSITE. Based on the field instrument results, a 24-hour canister sample also was collected.

Readings of the garage air from the ppbRAE instrument (5,000 to 8,000 parts per billion) demonstrated the presence of VOCs in garage air. BTEXN concentrations measured in the garage air using the HAPSITE were more than 10 times the levels noted when residential Property 040 indoor air was sampled in August 2017 (CH2M, 2018). Therefore, because of the presence of petroleum COCs in the garage, a 24-hour indoor air sample was collected. The 24-hour canister sample (IAG-040) had the highest detections of all the canister samples collected at residential Property 040. Benzene, ethylbenzene, and xylene concentrations were an order of magnitude or greater in the 24-hour indoor air sample collected from the garage than the samples collected from the main floor of the residential building and in the crawlspace.

The 24-hour garage air sample exceeded the indoor air AL for benzene, ethylbenzene, naphthalene, and m- and p-xylene but are not associated with a VI source based on the crawlspace air results. The BTEXN compounds were all detected in the crawlspace air sample (CS-040) at levels approximately 3 to 5 times less than the indoor air samples. None of the BTEXN compounds were detected in crawlspace air at levels greater than in the indoor air AL. The lack of a decreasing concentration gradient from the crawlspace to the indoor air samples (that is, higher concentrations in crawlspace decreasing because of attenuation processes while migrating and mixing in the building interior) points to another source for the BTEXN compounds detected in indoor air besides the subsurface. As similarly noted after the warm-season sampling event, the crawlspace concentrations do not represent a potential ongoing and significant VI source of Facility-related COCs at the residence sampled (CH2M, 2018).

As noted above, based on the garage air, crawlspace air, and outdoor air concentrations, the elevated indoor air concentrations on the main floor for residential Property 040 are likely the result of an indoor source (for example, petroleum products in the home or garage).

8.0 Conclusions and Recommendations

The outdoor air investigation results indicate Facility-related COCs are present in outdoor air samples in the area surrounding the Facility (within a 1-mile radius). However, no clear point source of BTEXN compounds was identified during the December 2017 event as the concentrations on-Facility and downwind of the Facility were generally within a factor of 2 to 3 of the concentrations noted in the residential neighborhood and elsewhere throughout the study area. Furthermore, these BTEXN compounds are commonly found at similar levels in populated areas (EPA, 2017c; NYSDOH, 2005). The BTEXN compounds noted in the December 2017 outdoor air samples in the residential neighborhood, which was upwind of the Facility (based on the predominant wind direction during the 24-hour canister sampling), appear to have originated from area-wide (nonpoint) sources and not the Facility.

The levels of naphthalene measured in the August 2017 outdoor air samples were not observed in the samples collected in December 2017. This suggests the higher levels seen in August 2017 are ephemeral and thus making it difficult to track down a clear point source. Identifying a source may require another means of assessing the source, for example, using a real-time investigation approach.

Heating-Season indoor air sampling results indicate Facility-related COC concentrations were present in residential Property 040 at concentrations exceeding indoor air ALs. However, the homeowners at Property 040 did not authorize the sample collection team to remove BTEXN-containing products from the home during this sampling event, and the results indicate that the high detections of BTEXN in the

garage air and indoor air were likely coming from the COC-containing products present in the garage. Confirmatory sampling and mitigation is not recommended since the data do not indicate VI is occurring under current conditions.

Per the Indoor Air Work Plan (EWI, 2017a), a heating-season indoor air sampling event was conducted in February 2018, and an additional high-water-table sampling event will be conducted in late spring (EWI, 2017a) for select residences in the area northeast of the Facility. Outdoor air samples will be collected in conjunction with this sampling effort.

9.0 References

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Tables

Table 1. Sample List

Additional Outdoor Air Sampling and Indoor Air Confirmatory Sampling Event, December 2017

Former Tronox/Ker-McGee Facility, Springfield, Missouri

Medium	Analytical Method	Location	Location ID	Description	Note
Weather Measurements	RainWise WindLog Wind Data Logger	WS-A	--	Weather Station on-Facility; northeast quadrant	WindPro, Permanent mount
	Davis Vantage Pro 2	WS-B	--	Weather Station West of Facility; N. Eldon Rd.	Davis, rental
	Davis Vantage Pro 2	WS-C	--	Weather Station North of Facility; Humane Society	Davis, rental
	Davis Vantage Pro 2	WS-D	--	Weather Station East of Facility; Tom Watkins Park	Davis, rental
	Davis Vantage Pro 2	WS-E	--	Weather Station South of Facility; N. Oak Park Dr.	Davis, rental
Outdoor Air	HAPSITE Quantitative Mode	HP01	HP01-OA	Western portion of Facility	
Outdoor Air		HP02	HP02-OA	Central portion of Facility	
Outdoor Air		HP03	HP03-OA	~1 mile S of Facility	
Outdoor Air		HP04	HP04-OA	~0.25 mile S of Facility	
Outdoor Air		HP05	HP05-OA	~1 mile W of Facility	
Outdoor Air		HP06	HP06-OA	On Facility, downwind of treatment plant	
Outdoor Air		HP07	HP07-OA	~1 mile SE of Facility	
Outdoor Air		HP08	HP08-OA	~1 mile E of Facility	
Outdoor Air		HP09	HP09-OA	~0.7 mile E of Facility	
Outdoor Air		HP10	HP10-OA	~0.15 mile E of Facility	
Outdoor Air		HP11	HP11-OA	~0.5 mile N of Facility	
Outdoor Air		HP12	HP12-OA	~1 mile N of Facility	
Outdoor Air		HP13	HP13-OA	~0.5 mile W of Facility	
Outdoor Air		HP14	HP14-OA	Street in front of Residence 012	
Outdoor Air		HP15	HP15-OA	Street in front of Residence 004	
Outdoor Air		HP16	HP16-OA	Street in front of Residence 040	
Outdoor Air		HP17	HP17-OA	North of detention basin	
Outdoor Air		HP18	HP18-OA	Between Greene County maintenance facility and apartments	
Outdoor Air		HP19	HP19-OA	South of HP18	
Outdoor Air		HP20	HP20-OA	Near Weather Station A	
Outdoor Air		HP21	HP21-OA	Southeast of treatment plant near RR tracks	
Outdoor Air		HP22	HP22-OA	Southeast corner of Facility	
Outdoor Air		HP23	HP23-OA	South of maintenance area; in fence	
Outdoor Air		HP24	HP24-OA	Near Woodland Springs water retention basin Outfall #3	
Air in Culvert		HP25	HP25-Misc	From Woodland Springs water retention basin culvert (Outfall #3)	
Outdoor Air		HP26	HP26-OA	Near Pick n Pull Auto Parts	Also near other trucking facilities and auto parts/salvage businesses
Outdoor Air		HP27	HP27-OA	Just east of the junk yard	
Outdoor Air		HP28	HP28-OA	West of Louie's	Odor noticed day before sampling
Outdoor Air		HP29	HP29-OA	Residence 040 back yard	
Garage Air		HP30	HP30-GA	Residence 040 garage air	
Crawlspace Air		HP31	HP31-CS	Residence 040 crawlspace air	
Outdoor Air	TO-15 SIM Canister and TO-13 PUF	OA1	OA1_1217	Western portion of Facility	
Outdoor Air		OA2	OA2_1217	On Facility, downwind of treatment plant	
Outdoor Air		OA2-1	OA2-1_1217 (Duplicate of OA2_1217)		
Outdoor Air		OA-3	Not Sampled	Not Sampled	Indoor air sample not collected at Residence 012
Outdoor Air		OA-4	Not Sampled	Not Sampled	Indoor air sample not collected at Residence 004
Outdoor Air		OA5	OA5_1217	Near Residence 040	PUF Sample only; Paired with the 040 TO-15 SIM canister sample
Outdoor Air		OA5-1	OA5-1_1217 (Duplicate of OA5_1217)		
Outdoor Air		OA6	OA6_1217	~1 mile W of Facility	
Outdoor Air		OA7	OA7_1217	~0.5 mile W of Facility	
Outdoor Air		OA8	OA8_1217	~1 mile N of Facility	
Outdoor Air		OA9	OA9_1217	~0.5 mile N of Facility	
Outdoor Air		OA10	OA10_1217	~0.15 mile E of Facility	
Outdoor Air		OA11	OA11_1217	~0.7 mile E of Facility	
Outdoor Air		OA12	OA12_1217	~0.25 mile S of Facility	
Outdoor Air		OA13	OA13_1217	~1 mile S of Facility	
Outdoor Air		OA13-1	OA13-1_1217 (Duplicate of OA13_1217)		
Outdoor Air		OA14	OA14_1217	~1 mile SE of Facility	
Outdoor Air		OA15	OA15_1217	~1 mile E of Facility	
Trip Blank	Trip Blank (PUF)	TRIPBLANK	TRIPBLANK-1_1217	PUF trip blank	
Indoor Air	TO-15 SIM Canister	IAU-040	IAU-040_1217	Indoor Air Upstairs (main), Residence 040	
Indoor Air		IAU-140	IAU-140_1217 (Duplicate of IAU-040_1217)	Indoor Air Upstairs (main), Residence 040	
Indoor Air		IAG-040	IAG-040_1217	Indoor Air Garage, Residence 040	
Crawlspace Air		CS-040	CS-040_1217	Crawlspace Air, Residence 040	
Outdoor Air		OA-040	OA-040_1217	Adjacent to Residence 040	

Table 2. HAPSITE Quantitative-Mode Sampling Results

Additional Outdoor Air Sampling and Indoor Air

Confirmatory Sampling Event, December 2017

Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			Former Tronox Facilty				*South of Facility*				*West of Facility*		*Former Tronox Facilty*	
		Location ID :	**HP01-OA**		**HP02-OA**		**HP03-OA**		**HP04-OA**		**HP05-OA**		**HP06-OA**	
		Sample ID :	**AO-007-1513038820**		**AO-008-1513039722**		**AO-009-1513041784**		**AO-010-1513042653**		**AO-011-1513044026**		**AO-012-1513050054**	
		Date Collected :	**12/11/17 12:33**		**12/11/17 12:48**		**12/11/17 13:23**		**12/11/17 13:37**		**12/11/17 14:00**		**12/11/17 15:40**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	**0.387**		0.32	U	0.32	U	**0.375**		0.32	U	0.32	U
HAPSITE	Ethylbenzene	µg/m^3	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
HAPSITE	Toluene	µg/m^3	**0.849**		**0.496**		**0.582**		**1.06**		0.38	U	0.38	U
HAPSITE	m,p-Xylenes	µg/m^3	**0.556**		0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	o-Xylene	µg/m^3	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U

Notes:

[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)

[b] : Garage air sample

Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace

HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer

HP : HAPSITE Sample

OA : outdoor air

RL : reporting limit listed if not **bold**

µg/m^3 : micrograms per cubic meter

Table 2. HAPSITE Quantitative-Mode Sampling Results
Additional Outdoor Air Sampling and Indoor Air
Confirmatory Sampling Event, December 2017
Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			Southeast of Facility				*East of Facility*						*North of Facility*	
		Location ID :	**HP07-OA**		**HP08-OA**		**HP09-OA**		**HP10-OA**		**HP10-OA**		**HP11-OA**	
		Sample ID :	**AO-013-1513051187**		**AO-014-1513052067**		**AO-015-1513052901**		**AO-016-1513053926**		**AO-012-1513124761**		**AO-018-1513055271**	
		Date Collected :	**12/11/17 15:59**		**12/11/17 16:14**		**12/11/17 16:28**		**12/11/17 16:45**		**12/12/17 12:26**		**12/11/17 17:07**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	0.32	U	**0.516**		**0.442**		**1.87**		0.32	U	0.32	U
HAPSITE	Ethylbenzene	µg/m^3	0.44	U	0.44	U	0.44	U	**0.622**		0.44	U	0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	0.53	U	0.53	U	**0.795**		0.53	U	0.53	U
HAPSITE	Toluene	µg/m^3	0.38	U	**1.61**		**1.91**		**4.10**		0.38	U	0.38	U
HAPSITE	m,p-Xylenes	µg/m^3	0.44	U	**0.644**		**0.919**		**2.11**		0.44	U	0.44	U
HAPSITE	o-Xylene	µg/m^3	0.44	U	0.44	U	0.44	U	**0.877**		0.44	U	0.44	U

Notes:
[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)
[b] : Garage air sample
Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace
HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer
HP : HAPSITE Sample
OA : outdoor air
RL : reporting limit listed if not **bold**
µg/m^3 : micrograms per cubic meter

Table 2. HAPSITE Quantitative-Mode Sampling Results
Additional Outdoor Air Sampling and Indoor Air
Confirmatory Sampling Event, December 2017
Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			North of Facility		*West of Facility*		*North of Facility*							
		Location ID :	**HP12-OA**		**HP13-OA**		**HP14-OA**		**HP15-OA**		**HP16-OA**		**HP17-OA**	
		Sample ID :	**AO-019-1513056580**		**AO-020-1513057671**		**AO-006-1513119401**		**AO-007-1513120234**		**AO-008-1513121082**		**AO-009-1513121961**	
		Date Collected :	**12/11/17 17:29**		**12/11/17 17:47**		**12/12/17 10:56**		**12/12/17 11:10**		**12/12/17 11:24**		**12/12/17 11:39**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	0.32	U	**0.339**		0.32	U	**0.340**		**0.537**		**0.687**	
HAPSITE	Ethylbenzene	µg/m^3	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
HAPSITE	Toluene	µg/m^3	0.38	U	**0.585**		0.38	U	0.38	U	**0.867**		**0.897**	
HAPSITE	m,p-Xylenes	µg/m^3	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	o-Xylene	µg/m^3	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U	0.44	U

Notes:
[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)
[b] : Garage air sample
Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace
HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer
HP : HAPSITE Sample
OA : outdoor air
RL : reporting limit listed if not **bold**
µg/m^3 : micrograms per cubic meter

Table 2. HAPSITE Quantitative-Mode Sampling Results

Additional Outdoor Air Sampling and Indoor Air

Confirmatory Sampling Event, December 2017

Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			Northeast of Facility		*East of Facility*		*Former Tronox Facilty*						*East of Facility*	
		Location ID :	**HP18-OA**		**HP19-OA**		**HP20-OA**		**HP21-OA**		**HP22-OA**		**HP23-OA**	
		Sample ID :	**AO-010-1513123672**		**AO-013-1513125659**		**AO-014-1513127404**		**AO-015-1513128386**		**AO-016-1513129212**		**AO-017-1513130052**	
		Date Collected :	**12/12/17 12:07**		**12/12/17 12:40**		**12/12/17 13:10**		**12/12/17 13:26**		**12/12/17 13:40**		**12/12/17 13:54**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	**1.06**		**0.390**		0.32	U	0.32	U	0.32	U	0.32	U
HAPSITE	Ethylbenzene	µg/m^3	**0.508**		0.44	U	0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U	0.53	U
HAPSITE	Toluene	µg/m^3	**2.91**		**1**		0.38	U	0.38	U	0.38	U	0.38	U
HAPSITE	m,p-Xylenes	µg/m^3	**1.36**		**0.474**		0.44	U	0.44	U	0.44	U	0.44	U
HAPSITE	o-Xylene	µg/m^3	**0.560**		0.44	U	0.44	U	0.44	U	0.44	U	0.44	U

Notes:

[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)

[b] : Garage air sample

Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace

HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer

HP : HAPSITE Sample

OA : outdoor air

RL : reporting limit listed if not **bold**

µg/m^3 : micrograms per cubic meter

Table 2. HAPSITE Quantitative-Mode Sampling Results

Additional Outdoor Air Sampling and Indoor Air
Confirmatory Sampling Event, December 2017
Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			North of Facility				*Southwest of Facility*		*Southeast of Facility*			
		Location ID :	**HP24-OA**		**HP25-Misc[a]**		**HP26-OA**		**HP27-OA**		**HP28-OA**	
		Sample ID :	**AO-019-1513135684**		**AX-020-1513136739**		**AO-021-1513139009**		**AO-022-1513140360**		**AO-023-1513141276**	
		Date Collected :	**12/12/17 15:28**		**12/12/17 15:45**		**12/12/17 16:23**		**12/12/17 16:46**		**12/12/17 17:01**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	**0.390**		0.32	U	**0.541**		0.32	U	0.32	U
HAPSITE	Ethylbenzene	µg/m^3	0.44	U	0.44	U	**0.470**		0.44	U	0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	**2.36**		0.53	U	**0.871**		0.53	U
HAPSITE	Toluene	µg/m^3	0.38	U	0.38	U	**2.93**		**1.08**		**0.631**	
HAPSITE	m,p-Xylenes	µg/m^3	0.44	U	0.44	U	**1.45**		0.44	U	0.44	U
HAPSITE	o-Xylene	µg/m^3	0.44	U	0.44	U	**0.626**		0.44	U	0.44	U

Notes:

[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)

[b] : Garage air sample

Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace

HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer

HP : HAPSITE Sample

OA : outdoor air

RL : reporting limit listed if not **bold**

µg/m^3 : micrograms per cubic meter

Table 2. HAPSITE Quantitative-Mode Sampling Results
Additional Outdoor Air Sampling and Indoor Air
Confirmatory Sampling Event, December 2017
Former Tronox/Kerr-McGee Facility, Springfield, Missouri

			North of Facility					
		Location ID :	**HP29-OA**		**HP30-IA[b]**		**HP31-CS**	
		Sample ID :	**AO-024-1513147512**		**AI-025-1513148465**		**CS-003-1513202649**	
		Date Collected :	**12/12/17 18:45**		**12/12/17 19:01**		**12/13/17 10:04**	
Method	**Chemical**	**Unit**	**Result**	**Qual**	**Result**	**Qual**	**Result**	**Qual**
HAPSITE	Benzene	µg/m^3	**0.632**		**35.8**		**0.612**	
HAPSITE	Ethylbenzene	µg/m^3	0.44	U	**26.1**		0.44	U
HAPSITE	Naphthalene	µg/m^3	0.53	U	**19.3**		**1.32**	
HAPSITE	Toluene	µg/m^3	**1.67**		**187**		**1.67**	
HAPSITE	m,p-Xylenes	µg/m^3	**0.929**		**79.8**		**0.730**	
HAPSITE	o-Xylene	µg/m^3	0.44	U	**31.8**		0.44	U

Notes:
[a] : Sample of Woodland Springs water retention basin outfall #3 (culvert)
[b] : Garage air sample
Detects are bolded

Indoor air, garage air, and crawlspace concentrations greater than the indoor air action level (see Table 4) are shaded.

CS : crawlspace
HAPSITE : HAPSITE portable gas chromatograph/mass spectrometer
HP : HAPSITE Sample
OA : outdoor air
RL : reporting limit listed if not **bold**
µg/m^3 : micrograms per cubic meter

Table 3. Outdoor Air Sample Results
Additional Outdoor Air Sampling and Indoor Air
Confirmatory Sampling Event, December 2017
Former Tronox/Kerr-McGee Facility, Springfield,

Missouri			*On Facility*									*Residence 040 Neighborhood*						~1 mile W of Facility			~0.5 mile W of Facility			~1 mile N of Facility			~0.5 mile N of Facility			~0.15 mile E of Facility			~0.7 mile E of Facility			~0.25 mile S of Facility			~1 mile S of Facility						~1 mile SE of Facility			~1 mile E of Facility		
		Location ID :	**OA1**			**OA2**			**OA2-1 (DUP of OA2)**			**OA5**			**OA5-1 (DUP of OA5)**			**OA6**			**OA7**			**OA8**			**OA9**			**OA10**			**OA11**			**OA12**			**OA13**			**OA13-1 (DUP of OA13)**			**OA14**			**OA15**		
		Sample ID :	**OA1_1217**			**OA2_2117**			**OA2-1_1217**			**OA5_1217**			**OA5-1_1217**			**OA6_1217**			**OA7_1217**			**OA8_1217**			**OA9_1217**			**OA10_1217**			**OA11_1217**			**OA12_1217**			**OA13_1217**			**OA13-1_1217**			**OA14_1217**			**OA15_1217**		
		Data Collected:	**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**			**12/14/2017**		
Method	**Chemical**	**Unit**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
TO-15 SIM (Canister Sample[a])	Benzene	µg/m3	**0.33**	0.23		**0.29**	0.25		**0.3**	0.27		--	--	--	--	--	--	**0.29**	0.23		**0.42**	0.25		**0.33**	0.26		**0.3**	0.28		**0.51**	0.27		**0.46**	0.27		**0.42**	0.25		**0.42**	0.27		**0.45**	0.24		**0.52**	0.24		**0.42**	0.22	
	Ethylbenzene	µg/m3	**0.1**	0.12	J	**0.052**	0.14	J	**0.056**	0.15	J	--	--	--	--	--	--	**0.036**	0.12	J	**0.1**	0.14	J	**0.041**	0.14	J	**0.045**	0.15	J	**0.17**	0.14		**0.1**	0.15	J	**0.14**	0.14		**0.1**	0.14	J	**0.1**	0.13	J	**0.2**	0.13		**0.15**	0.12	
	Naphthalene	µg/m3	0.076	0.4	U	**0.079**	0.41	J	0.089	0.44	U	--	--	--	--	--	--	**0.067**	0.37	J	0.083	0.41	U	0.084	0.42	U	0.092	0.46	U	0.088	0.44	U	**0.077**	0.45	J	0.082	0.41	U	**0.13**	0.44	J	**0.084**	0.39	J	**0.16**	0.4	J	**0.063**	0.36	J
	Toluene	µg/m3	**0.41**	0.11		**0.29**	0.12		**0.32**	0.13		--	--	--	--	--	--	**0.28**	0.11		**0.59**	0.12		**0.25**	0.12		**0.27**	0.13		**0.92**	0.13		**0.67**	0.13		**1.3**	0.12		**0.61**	0.13		**0.59**	0.11		**1.4**	0.12		**0.88**	0.1	
	Xylene, o	µg/m3	**0.18**	0.1		**0.11**	0.14	J	**0.12**	0.15	J	--	--	--	--	--	--	**0.04**	0.12	J	**0.13**	0.14	J	**0.052**	0.14	J	**0.059**	0.15	J	**0.22**	0.14		**0.13**	0.15	J	**0.18**	0.14		**0.18**	0.14		**0.12**	0.13	J	**0.26**	0.13		**0.19**	0.12	
	Xylenes, m & p	µg/m3	**0.39**	0.25		**0.19**	0.27	J	**0.2**	0.30	J	--	--	--	--	--	--	**0.093**	0.25	J	**0.34**	0.27		**0.12**	0.28	J	**0.14**	0.3	J	**0.6**	0.29		**0.35**	0.3		**0.48**	0.27		**0.35**	0.29		**0.33**	0.26		**0.7**	0.26		**0.53**	0.24	
	Xylenes, Total	µg/m3	**0.56**	0.38		0.41	0.41	U	0.44	0.44	U	--	--	--	--	--	--	0.37	0.37	U	**0.47**	0.41		0.42	0.42	U	0.46	0.46	U	**0.83**	0.44		**0.49**	0.45		**0.66**	0.41		**0.52**	0.44		**0.45**	0.38		**0.95**	0.4		**0.71**	0.36	
TO-13A (PUF Sample[b])	2,4-Dimethylphenol	µg/m3	0.68	0.68	U	0.71	0.7	U	0.70	0.70	U	0.67	0.67	U	0.66	0.66	U	0.72	0.72	U	0.69	0.69	U	0.69	0.69	U	0.67	0.67	U	0.69	0.69	U	0.70	0.70	U	0.70	0.70	U	0.68	0.68	U	--	--	--	0.65	0.65	U	0.71	0.71	U
	2,4-Dinitrophenol	µg/m3	5.6	5.6	U	5.6	5.6	U	5.6	5.6	U	5.4	5.4	U	5.3	5.3	U	5.8	5.8	U	5.6	5.6	U	5.5	5.5	U	5.4	5.4	U	5.6	5.6	U	5.6	5.6	U	5.6	5.6	U	5.4	5.4	U	--	--	--	5.2	5.2	U	5.7	5.7	U
	2-Chlorophenol	µg/m3	0.71	0.7	U	0.71	0.7	U	0.71	0.71	U	0.67	0.67	U	0.66	0.66	U	0.72	0.72	U	0.69	0.69	U	0.69	0.69	U	0.67	0.67	U	0.69	0.69	U	0.70	0.70	U	0.70	0.70	U	0.68	0.68	U	--	--	--	0.65	0.65	U	0.71	0.71	U
	2-Methylnaphthalene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Acenaphthene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Acenaphthylene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Anthracene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Benzo(a)anthracene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Benzo(a)pyrene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Benzo(b)fluoranthene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Benzo(k)fluoranthene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Chrysene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Dibenzo(a,h)anthracene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Dibenzofuran	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Fluoranthene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Fluorene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Indeno(1,2,3-Cd)Pyrene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Naphthalene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Phenanthrene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U
	Phenol	µg/m3	0.71	0.7	U	0.71	0.7	U	0.71	0.71	U	0.67	0.67	U	0.66	0.66	U	0.72	0.72	U	0.69	0.69	U	0.69	0.69	U	0.67	0.67	U	0.69	0.69	U	0.70	0.70	U	0.70	0.70	U	0.68	0.68	U	--	--	--	0.65	0.65	U	0.71	0.71	U
	Pyrene	µg/m3	0.14	0.1	U	0.14	0.1	U	0.14	0.14	U	0.13	0.13	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.13	0.13	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	0.14	0.14	U	--	--	--	0.13	0.13	U	0.14	0.14	U

Notes:
[a] : Sample collected from a passivated stainless steel canister for 24 hours
[b] : Sample collected from a polyurethane foam (PUF) sampler locations for 24 hours
Detects are bolded
Dup : duplicate
-- : Not collected for this analytical method
J : estimated value
Qual : laboratory qualifier
PUF : polyurethane foam
RL : reporting limit
U : nondetect
µg/m^3 : micrograms per cubic meter

Table 4. Confirmatory Indoor, Garage, Crawlspace, and Outdoor Air Sample Results

Additional Outdoor Air Sampling and Indoor Air Confirmatory Sampling Event, December 2017

Former Tronox/Kerr-McGee Facility, Springfield, Missouri

				Garage Air			*Indoor Air*						*Crawlspace Air*			*Outdoor Air*		
			Location ID :	**IAG-040**			**IAU-040**			**IAU-140 (Dup of IAU-040)**			**CS-040**			**OA-040**		
		Indoor Air Action	**Sample ID :**	**IAG-040_1217[c]**			**IAU-040_1217**			**IAU-140_1217**			**CS-040_1217**			**OA-040_1217**		
			Date Collected :	**12/14/2017 10:25**			**12/14/2017 10:20**			**12/14/2017 10:20**			**12/14/2017 10:15**			**12/14/2017 10:05**		
Method	**Chemical**	**Level[a,b]**	**Unit**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**	**Result**	**RL**	**Qual**
TO-15 SIM	Benzene	3.6	µg/m3	**43**	0.67		**2.3**	0.28		**2.3**	2.3		**0.65**	0.25		**0.36**	0.26	
TO-15 SIM	Ethylbenzene	11	µg/m3	**33**	0.37		**1.6**	0.15		**1.6**	1.6		**0.32**	0.13		**0.099**	0.14	**J**
TO-15 SIM	Naphthalene	0.83	µg/m3	**4.8**	1.1		**3.8**	0.46		**2.9**	0.51		**0.79**	0.41		0.084	0.42	U
TO-15 SIM	Toluene	5,200	µg/m3	**190**	0.32		**10**	0.13		**11**	0.15		**2.3**	0.12		**0.63**	0.12	
TO-15 SIM	Xylene, o	100	µg/m3	**39**	0.37		**2**	0.15		**2**	0.17		**0.44**	0.13		**0.13**	0.14	**J**
TO-15 SIM	Xylenes, m & p	100	µg/m3	**110**	0.73		**5.5**	0.30		**5.6**	0.34		**1.1**	0.27		**0.34**	0.28	
TO-15 SIM	Xylenes, Total	100	µg/m3	**150**	1.1		**7.6**	0.46		**7.6**	0.51		**1.5**	0.40		**0.46**	0.42	

Notes:

Detects are bolded

Indoor air, garage air, or crawlspace air concentrations greater than the Indoor Air Action Level are shaded.

CS : crawlspace

Dup : duplicate

IAU : indoor air collected from upstairs

IAG : air sample collected from garage

J : estimated value

OA : outdoor air

Qual : laboratory qualifier

RL : reporting limit

U : nondetect

µg/m^3 : micrograms per cubic meter

[a] : Only indoor air, crawlspace air, and garage air data are compared against Indoor Air Action Levels.

[b] : The indoor air action level is a risk-based screening level based on the U.S. Environmental Protection Agency (EPA) 2017 residential indoor air regional screening levels (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017). The RSLs used are based on target cancer risk = 1 x 10^{-5} or target noncancer hazard quotient = 1, per Missouri Regulations 10 CSR 25-18.

[c] : Background (indoor) sources identified in garage.

Table 5. Background Outdoor Air Concentrations - United States and New York

Additional Outdoor Air Sampling and Indoor Air Confirmatory Sampling Event, December 2017

Former Tronox/Kerr-McGee Facility, Springfield, Missouri

	United States[a]		New York State[b]	
Chemical	Approximate Mean	Maximum 90th percentile	50th percentile	90th percentile
Benzene	3.8	19	1.3	4.3
Ethylbezene	2.3	21	<0.25	1.1
Toluene	10	130	1.3	5.9
m,p-Xylene	5.3	56	<0.25	1.4
o-Xylene	2.3	23	<0.25	1.7
Naphthalene	1.7	30	Not analyzed	

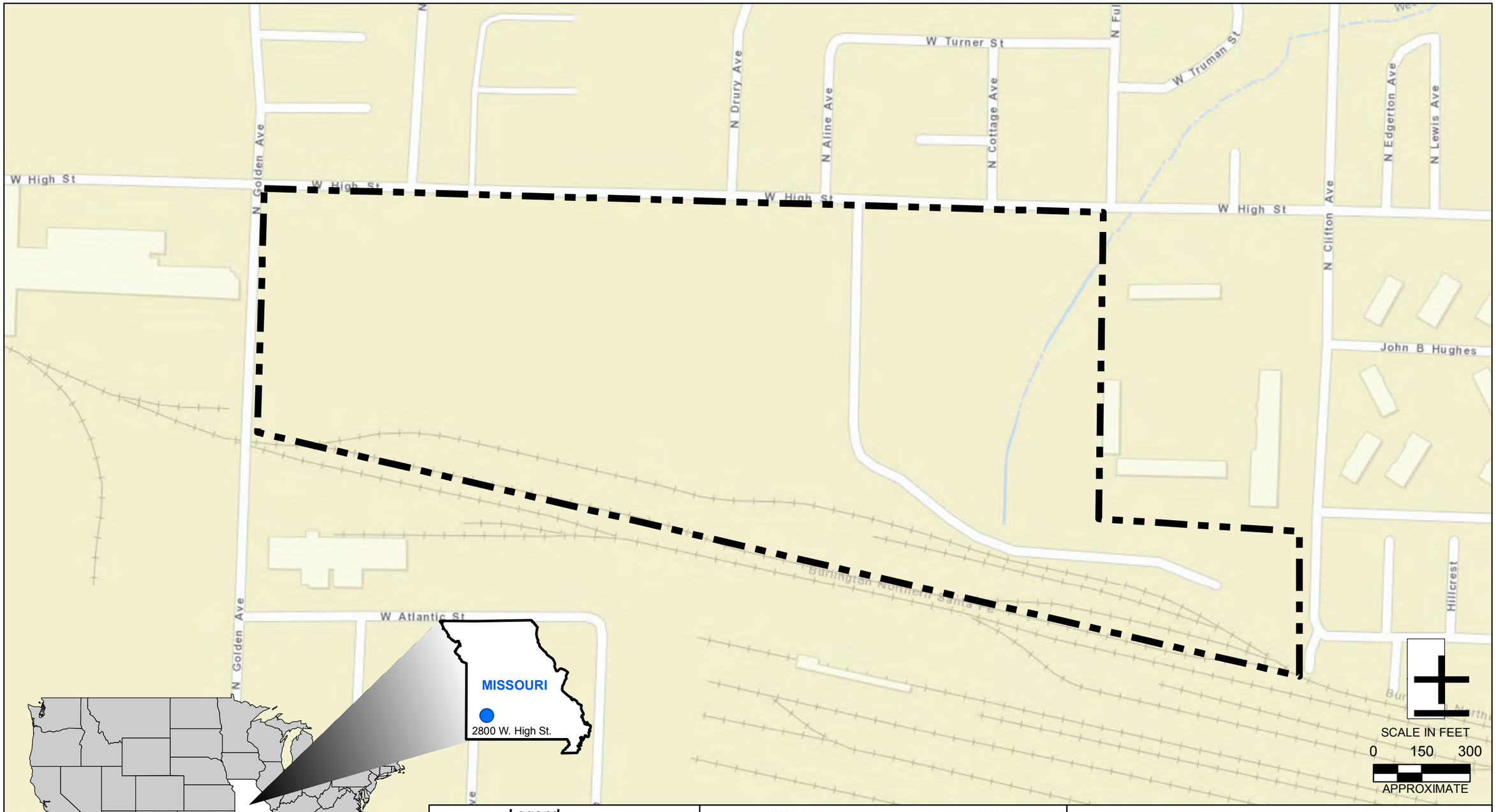
Notes:

[a] Mean of average outdoor air concentrations and the maximum 90th percentile concentration from 40,000+ samples (424 for naphthalene) collected across the United States in 2017. Source: EPA, 2017. AirData : Outdoor Air Quality Data. Air Quality System Data Mart. https://aqs.epa.gov/aqsweb/airdata/download_files.html#Annual

[b] Outdoor air concentrations from NYSDOH, 2005. Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes. November 14. https://www.health.ny.gov/environmental/indoors/air/docs/fuel_oil.pdf

Figures

R:\ENBG\00_Proj\G\GreenfieldTrust\MapFiles\TechMemo201802\Figure_1_Facility_Location_Map.mxd



Legend

FORMER TRONOX FACILITY BOUNDARY

Former Tronox Facility Location

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

Date: 9/7/2018 (Revised)

CREATED BY: Jacobs

CHECKED BY: Shirley Steinmacher

FIGURE 1
Facility Location Map
Outdoor Air and Heating Season Indoor Air Sampling Technical Memorandum: December 2017 Event
Former Tronox/Kerr-McGee Facility 2800 West High St Springfield, MO

JACOBS

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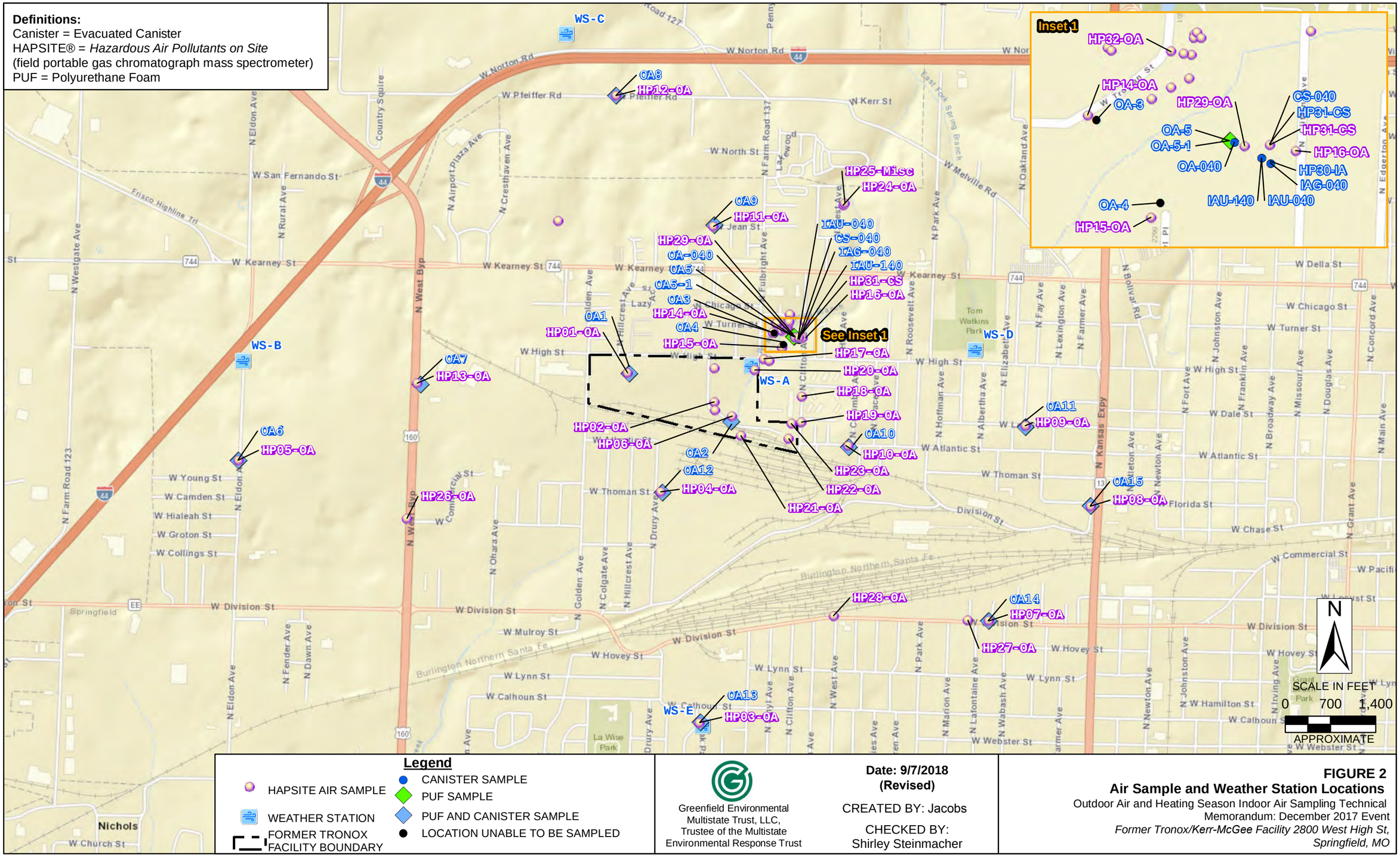
Definitions:
Canister = Evacuated Canister
HAPSITE® = *Hazardous Air Pollutants on Site*
(field portable gas chromatograph mass spectrometer)
PUF = Polyurethane Foam



Legend

- HAPSITE AIR SAMPLE
- WEATHER STATION
- FORMER TRONOX FACILITY BOUNDARY
- CANISTER SAMPLE
- PUF SAMPLE
- PUF AND CANISTER SAMPLE
- LOCATION UNABLE TO BE SAMPLED

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

Date: 9/7/2018 (Revised)

CREATED BY: Jacobs

CHECKED BY: Shirley Steinmacher

FIGURE 2
Air Sample and Weather Station Locations
Outdoor Air and Heating Season Indoor Air Sampling Technical Memorandum: December 2017 Event
Former Tronox/Kerr-McGee Facility 2800 West High St, Springfield, MO

JACOBS

R:\ENBG\00_Proj\G\GreenfieldTrust\MapFiles\TechMemo201802\Figure_3_HAPSITE_spider_with_BTEXN_result_and_wind_direction.mxd

Definitions:
BZ = Benzene
EBZ = Ethylbenzene
NAPH = Naphthalene
TOL = Toluene
XYLO = Xylene, o
XYLMP = Xylenes, m and p
DUP = Field duplicate
HAPSITE® = *Hazardous Air Pollutants on Site*(field portable gas chromatograph mass spectrometer)
Misc = Miscellaneous
OA = Outdoor air
Qual = Data Qualifier or flag
RL = Reporting Limit
J = Detection estimated
U = Non detected
µg/m^3 = micrograms per cubic meter

Notes:
All results reported in µg/m^3
Bolded results are detects

HP11-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP12-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP25-Misc	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	**2.35**		**0.53**
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP24-OA	Result	Qual	RL
BZ	**0.39**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP29-OA	Result	Qual	RL
BZ	**0.63**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**1.67**		**0.38**
XYLMP	**0.92**		**0.44**
XYLO	0.44	U	0.44

HP14-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP16-OA	Result	Qual	RL
BZ	**0.53**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.86**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP15-OA	Result	Qual	RL
BZ	**0.34**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP10-OA (12-11)	Result	Qual	RL
BZ	**1.87**		**0.32**
EBZ	**0.62**		**0.44**
NAPH	**0.79**		**0.53**
TOL	**4.10**		**0.38**
XYLMP	**2.10**		**0.44**
XYLO	**0.87**		**0.44**
HP10-OA (12-12)	**Result**	**Qual**	**RL**
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP10-OA (12-11) Wind from NE
HP10-OA (12-12) Wind from NW

HP17-OA	Result	Qual	RL
BZ	**0.68**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.89**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP18-OA	Result	Qual	RL
BZ	**1.06**		**0.32**
EBZ	**0.50**		**0.44**
NAPH	0.53	U	0.53
TOL	**2.91**		**0.38**
XYLMP	**1.36**		**0.44**
XYLO	**0.55**		**0.44**

HP20-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP09-OA	Result	Qual	RL
BZ	**0.44**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**1.91**		**0.38**
XYLMP	**0.91**		**0.44**
XYLO	0.44	U	0.44

HP01-OA	Result	Qual	RL
BZ	**0.38**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.84**		**0.38**
XYLMP	**0.55**		**0.44**
XYLO	0.44	U	0.44

HP08-OA	Result	Qual	RL
BZ	**0.51**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**1.61**		**0.38**
XYLMP	**0.64**		**0.44**
XYLO	0.44	U	0.44

HP02-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.49**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP27-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	**0.87**		**0.53**
TOL	**1.07**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP13-OA	Result	Qual	RL
BZ	**0.33**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.58**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP19-OA	Result	Qual	RL
BZ	**0.38**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**1.00**		**0.38**
XYLMP	**0.47**		**0.44**
XYLO	0.44	U	0.44

HP07-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP05-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP23-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP26-OA	Result	Qual	RL
BZ	**0.54**		**0.32**
EBZ	**0.47**		**0.44**
NAPH	0.53	U	0.53
TOL	**2.92**		**0.38**
XYLMP	**1.44**		**0.44**
XYLO	**0.62**		**0.44**

HP03-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.58**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP06-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP04-OA	Result	Qual	RL
BZ	**0.37**		**0.32**
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**1.05**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP22-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP28-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	**0.63**		**0.38**
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

HP21-OA	Result	Qual	RL
BZ	0.32	U	0.32
EBZ	0.44	U	0.44
NAPH	0.53	U	0.53
TOL	0.38	U	0.38
XYLMP	0.44	U	0.44
XYLO	0.44	U	0.44

WS-A
WS-B
WS-C
WS-D
WS-E

SCALE IN FEET
0 1,000 2,000
APPROXIMATE

Legend

! HAPSITE SAMPLE AND WIND DIRECTION (Predominant wind direction recorded for 15-minute HAPSITE sample duration)

WEATHER STATION

FORMER TRONOX FACILITY BOUNDARY

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

Date: 9/7/2018 (Revised)

CREATED BY: Jacobs

CHECKED BY: Shirley Steinmacher

FIGURE 3
HAPSITE Outdoor Air Sample Results
Outdoor Air and Heating Season Indoor Air Sampling Technical Memorandum: December 2017 Event
Former Tronox/Kerr-McGee Facility 2800 West High St Springfield, MO

JACOBS

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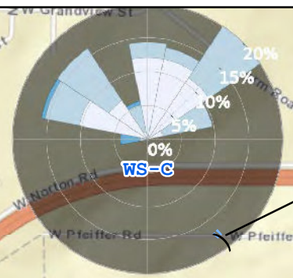
Definitions:
BZ = Benzene
EBZ = Ethylbenzene
NAPH = Naphthalene
TOL = Toluene
XYLO = Xylene, o
XYLMP = Xylenes, m and p
Canister = Evacuated Canister
OA = Outdoor Air Sample
PUF = Polyurethane Foam
RL = Reporting Limit
J = Detection estimated
U = Non detected
µg/m^3 = micrograms per cubic meter

Notes:
All results reported in µg/m^3
PUF sample results (TO-13A) are presented in Table 3.
Bolded results are detects



OA8	Result	Qual	RL
BZ	**0.33**		**0.064**
EBZ	**0.041**	**J**	**0.035**
NAPH	0.084	U	0.084
NAPH-PUF	0.14	U	0.14
TOL	**0.25**		**0.031**
XYLMP	**0.12**	**J**	**0.035**
XYLO	**0.052**	**J**	**0.035**

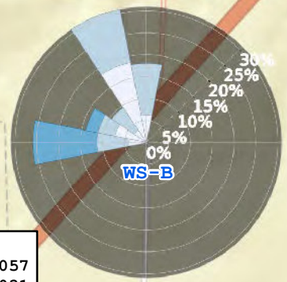
OA9	Result	Qual	RL
BZ	**0.3**		**0.07**
EBZ	**0.045**	**J**	**0.038**
NAPH	0.092	U	0.092
NAPH-PUF	0.13	U	0.13
TOL	**0.27**		**0.033**
XYLMP	**0.14**	**J**	**0.038**
XYLO	**0.059**	**J**	**0.038**

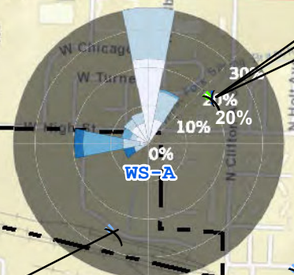
OA5-1	Result	Qual	RL
NAPH-PUF	0.13	U	0.13

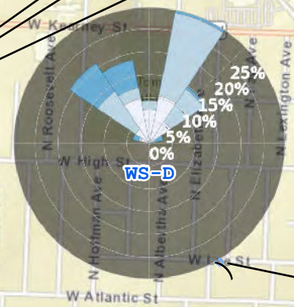
OA5	Result	Qual	RL
NAPH-PUF	0.13	U	0.13

OA-040	Result	Qual	RL
BZ	**0.36**		**0.064**
EBZ	**0.099**	**J**	**0.035**
NAPH	0.084	U	0.084
TOL	**0.63**		**0.03**
XYLMP	**0.34**		**0.035**
XYLO	**0.13**	**J**	**0.035**

OA1	Result	Qual	RL
BZ	**0.33**		**0.058**
EBZ	**0.1**	**J**	**0.031**
NAPH	0.076	U	0.076
NAPH-PUF	0.14	U	0.14
TOL	**0.41**		**0.028**
XYLMP	**0.39**		**0.031**
XYLO	**0.18**		**0.031**







OA6	Result	Qual	RL
BZ	**0.29**		**0.057**
EBZ	**0.036**	**J**	**0.031**
NAPH	**0.067**	**J**	**0.075**
NAPH-PUF	0.14	U	0.14
TOL	**0.28**		**0.027**
XYLMP	**0.093**	**J**	**0.031**
XYLO	**0.04**	**J**	**0.031**

OA2	Result	Qual	RL
BZ	**0.29**		**0.063**
EBZ	**0.052**	**J**	**0.034**
NAPH	**0.079**	**J**	**0.082**
NAPH-PUF	0.14	U	0.14
TOL	**0.29**		**0.03**
XYLMP	**0.19**	**J**	**0.034**
XYLO	**0.11**	**J**	**0.034**

OA11	Result	Qual	RL
BZ	**0.46**		**0.069**
EBZ	**0.1**	**J**	**0.037**
NAPH	**0.077**	**J**	**0.09**
NAPH-PUF	0.14	U	0.14
TOL	**0.67**		**0.033**
XYLMP	**0.35**		**0.037**
XYLO	**0.13**	**J**	**0.037**

OA10	Result	Qual	RL
BZ	**0.51**		**0.067**
EBZ	**0.17**		**0.036**
NAPH	0.088	U	0.088
NAPH-PUF	0.14	U	0.14
TOL	**0.92**		**0.032**
XYLMP	**0.6**		**0.036**
XYLO	**0.22**		**0.036**

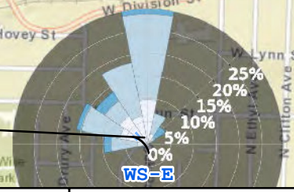
OA7	Result	Qual	RL
BZ	**0.42**		**0.063**
EBZ	**0.1**	**J**	**0.034**
NAPH	0.083	U	0.083
NAPH-PUF	0.14	U	0.14
TOL	**0.59**		**0.03**
XYLMP	**0.34**		**0.034**
XYLO	**0.13**	**J**	**0.034**

OA12	Result	Qual	RL
BZ	**0.42**		**0.062**
EBZ	**0.14**		**0.034**
NAPH	0.082	U	0.082
NAPH-PUF	0.14	U	0.14
TOL	**1.3**		**0.03**
XYLMP	**0.48**		**0.034**
XYLO	**0.18**		**0.034**

OA15	Result	Qual	RL
BZ	**0.42**		**0.056**
EBZ	**0.15**		**0.03**
NAPH	**0.063**	**J**	**0.073**
NAPH-PUF	0.14	U	0.14
TOL	**0.88**		**0.026**
XYLMP	**0.53**		**0.03**
XYLO	**0.19**		**0.03**

OA13	Result	Qual	RL
BZ	**0.42**		**0.067**
EBZ	**0.1**	**J**	**0.036**
NAPH	**0.13**	**J**	**0.088**
NAPH-PUF	0.14	U	0.14
TOL	**0.61**		**0.032**
XYLMP	**0.35**		**0.036**
XYLO	**0.18**		**0.036**

OA14	Result	Qual	RL
BZ	**0.52**		**0.061**
EBZ	**0.2**		**0.033**
NAPH	**0.16**	**J**	**0.08**
NAPH-PUF	0.13	U	0.13
TOL	**1.4**		**0.029**
XYLMP	**0.7**		**0.033**
XYLO	**0.26**		**0.033**



SCALE IN FEET
0 750 1,500
APPROXIMATE

Legend

FORMER TRONOX FACILITY BOUNDARY
0-4 4-8 8-12 12-16 WIND (MPH)
(Weather stations are located at the center of each wind rose)
CANISTER SAMPLE
PUF SAMPLE
PUF AND CANISTER SAMPLE

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

Date: 9/7/2018 (Revised)

CREATED BY: Jacobs

CHECKED BY: Shirley Steinmacher

FIGURE 4
Canister and PUF Outdoor Air Sample Results
Outdoor Air and Heating Season Indoor Air Sampling Technical Memorandum: December 2017 Event
Former Tronox/Kerr-McGee Facility 2800 West High St Springfield, MO

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Definitions:
BZ = Benzene
EBZ = Ethylbenzene
NAPH = Naphthalene
TOL = Toluene
XYLO = Xylene, o
XYLMP = Xylenes, m and p
Canister = Evacuated Canister
CS = Crawlspace Air Sample
HAPSITE® = *Hazardous Air Pollutants on Site* (field portable gas chromatograph mass spectrometer)
HP = HAPSITE Sample
IA = Indoor Air Sample
OA = Outdoor Air Sample
Qual = Data Qualifier or flag
RL = Reporting Limit
J = Detection estimated
U = Non detected
µg/m^3 = micrograms per cubic meter

Notes:
All results reported in µg/m^3
HP30-IA is a garage air sample.
IAU-140 is a duplicate of IAU-040
Bolded results are detects

OA-040	Result	Qual	RL
BZ	**0.36**		**0.064**
EBZ	**0.099**	**J**	**0.035**
NAPH	0.084	U	0.084
TOL	**0.63**		**0.03**
XYLMP	**0.34**		**0.035**
XYLO	**0.13**	**J**	**0.035**

IAU-040	Result	Qual	RL
BZ	**2.3**		**0.07**
EBZ	**1.6**		**0.038**
NAPH	**3.8**		**0.092**
TOL	**10**		**0.034**
XYLMP	**5.5**		**0.038**
XYLO	**2**		**0.038**

IAU-140	Result	Qual	RL
BZ	**2.3**		**0.078**
EBZ	**1.6**		**0.042**
NAPH	**2.9**		**0.1**
TOL	**11**		**0.037**
XYLMP	**5.6**		**0.042**
XYLO	**2**		**0.042**

CS-040	Result	Qual	RL
BZ	**0.65**		**0.062**
EBZ	**0.32**		**0.034**
NAPH	**0.79**		**0.081**
TOL	**2.3**		**0.03**
XYLMP	**1.1**		**0.034**
XYLO	**0.44**		**0.034**

HP31-CS	Result	Qual	RL
BZ	**0.61**		**0.32**
EBZ	0.44	U	0.44
NAPH	**1.31**		**0.53**
TOL	**1.66**		**0.38**
XYLMP	**0.73**		**0.44**
XYLO	0.44	U	0.44

IAG-040	Result	Qual	RL
BZ	**43**		**0.17**
EBZ	**33**		**0.092**
NAPH	**4.8**		**0.22**
TOL	**190**		**0.081**
XYLMP	**110**		**0.092**
XYLO	**39**		**0.092**

HP30-IA	Result	Qual	RL
BZ	**35.77**		**0.32**
EBZ	**26.12**		**0.44**
NAPH	**19.31**		**0.53**
TOL	**186.96**		**0.38**
XYLMP	**79.80**		**0.44**
XYLO	**31.82**		**0.44**

W Margaret Street
W Truman Street
N Clifton Ave
N Holt Ave
N Fulbright Ave
N Ethyl Pl
N Edgerton Ave
N Lewis Ave
W High Street
West Fork Spring Branch

N

SCALE IN FEET
0 50 100
APPROXIMATE

Legend

CANISTER AIR SAMPLE
- CRAWLSPACE AIR SAMPLE
- INDOOR AIR SAMPLE
- GARAGE AIR SAMPLE
- OUTDOOR AIR SAMPLE

FORMER TRONOX FACILITY BOUNDARY

Greenfield Environmental Multistate Trust, LLC, Trustee of the Multistate Environmental Response Trust

Date: 2/9/2018
CREATED BY: CH2M
CHECKED BY: Shirley Steinmacher

FIGURE 5
Residential Canister and HAPSITE Outdoor, Indoor, Garage, and Crawlspace Air Sample Results
Outdoor Air and Heating Season Indoor Air Sampling Technical Memorandum: December 2017 Event
Former Tronox Facility 2800 West High St, Springfield, MO

JACOBS

Attachment 1
Pre-Sampling Building Survey

Property 040

Inspection Info

Select an Installation ID	5
Installation Name	Former Tronox Facility, Springfield MO
Date	12/12/2017
Time	08:50 (-7 GMT)
Preparer(s)	Shirley Steinmacher
Other Preparer name	
Select a Building for Inspection	040
Building Address	Personally Identifiable Information (PII)
Building/Facility Name (if different than listed above)	N/A

Contact Info

Primary Building POC Contact Name	PII
Primary Building POC Phone Number	PII
Primary Building POC email address	Unknown
Building POC Notes	PII

Building Characteristics

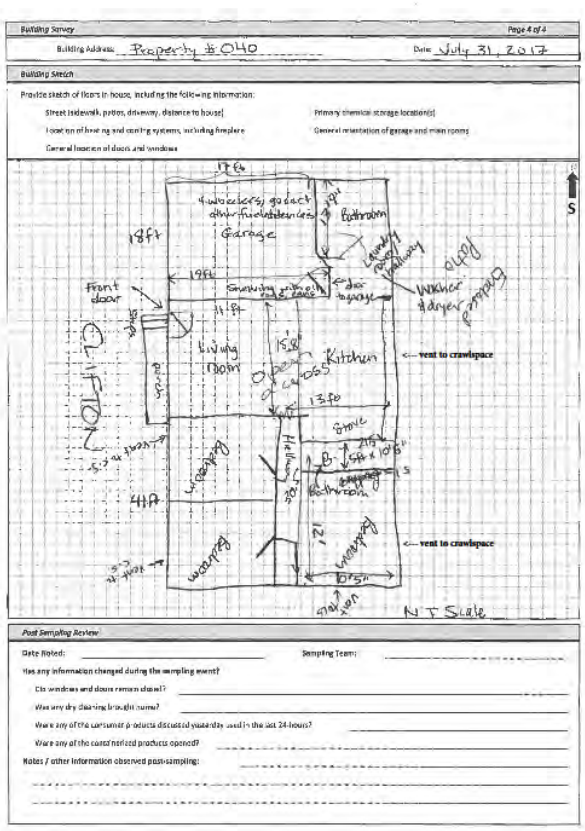
Number of Floors Above ground	1
Number of Floors Below Ground	0
Building Length (Feet)	59
Building Width (Feet)	28
Building Height (Feet)	15
Area (Square Feet)	1652
Volume (Cubic Feet)	24,780

General Building Description

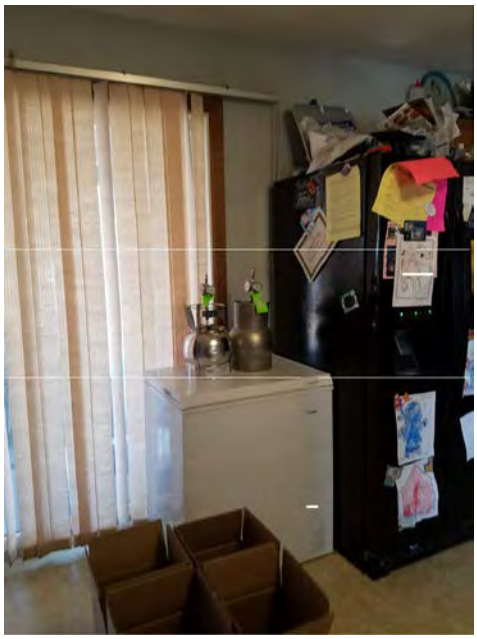
Estimated number of building occupants	4

General observations about age range and % of male to female ratio	50/50
Are there any sensitive receptors in the building? (elderly, children, immuno-compromised, women of child bearing age, etc.)	Yes
Describe the sensitive receptors	Infant and child
How long have the current occupants occupied the building?	Since 2011 (just over 6 years)
Current Activities within Building	Working on vehicles, storage of multiple fuel-consuming machines and a mid-century restored Chevy that smells like gasoline
Other current activities within building	Residential
Historical Activities within Building (if known)	Unknown; residential
Number of Floors	1
Building Height Notes	See elsewhere
Are any pipes or utilities observed passing through exterior walls?	No
Describe the pipes/utilities observed	N/A

Attach Floorplan Sketch (if available)



Building Photo(s)



Kitchen, location of indoor air sample: IAU-040_December 2017 and

Duplicate IAU-141_December 2017. Garage entrance to left in hallway.

Outdoor sample location: OA5, duplicate PUF OA5-1, and canister in tote OA-040_December 2017

	Garage sample IAG-040_December 2017 No crawlspace sample photograph this event. Crawlspace sample location: CS-040_December 2017
Notes	Garage stores gas powered machinery (car, four wheelers, generator etc.) fuel cleaners, grease, oil, oily rags HAPSITE samples collected in yard ppbRAE in home reading between 5,000 and 8,000 ppb in indoor air, and readings dropped significantly when sink drains measured specifically.

Building Construction Details

Year Constructed	1968
What is the Aboveground Construction Type for the building envelope/exterior?	Wood frame/vinyl siding
Other Type of Aboveground Construction	Patio in rear
What is the type of building foundation?	Crawl Space
Other Type of Foundation Construction	Wood floor above crawl space, to interior of home
What is the grade of the slab?	Above Grade
How many feet above/below the grade is the slab?	2.5 ft above
What type of materials is the foundation?	Unlined dirt crawl space
Other Type of Foundation Materials	N/A
Foundation Wall Materials	Cinder Blocks
Other Type of Foundation Wall Materials	N/A
General Description of Building Construction and Materials	Vinyl siding
Does the building have a basement and/or crawl space?	Yes- Crawl space
Describe the basement/crawl space	Crawl space is approximately 2 - 4 ft in height and sits below entire house. Garage is on poured concrete slab to south.
How many feet below grade?	N/A

Approximate size in square feet	1346
Maximum ceiling height of basement/crawl space	4
Minimum ceiling height of basement/crawl space	2
Is the basement separated in to multiple rooms?	N/A
Describe the multiple rooms	N/A
Construction materials of walls	Cinder block
Are significant cracks present in the walls?	No
Describe cracks in the wall	None observed
Basement Photos	N/A

Potential Conduits from Soil

Floor/foundation type	Dirt in Crawlspace
Other Type of Floor/foundation	Poured concrete slab in garage
Is the floor raised above the foundation?	Yes
Are expansion joints or cracks visible?	Minor cracks in garage floor, slab on grade.
Are expansion joints sealed?	Not observed
Are sumps or floor drains present?	No
Are basements or subsurface vaults present?	No
Are there subsurface drainage problems?	No
Notes on potential conduits	A floor vent is located in the furnace closet that connects to the crawl space. The vent had been sealed using tape prior to collecting the air samples to prevent air exchange between the crawl space and indoor air (see photo below).

Photos of Potential Conduits	 Photo of floor vent from furnace closet to crawl space (from August 2017 appointment).

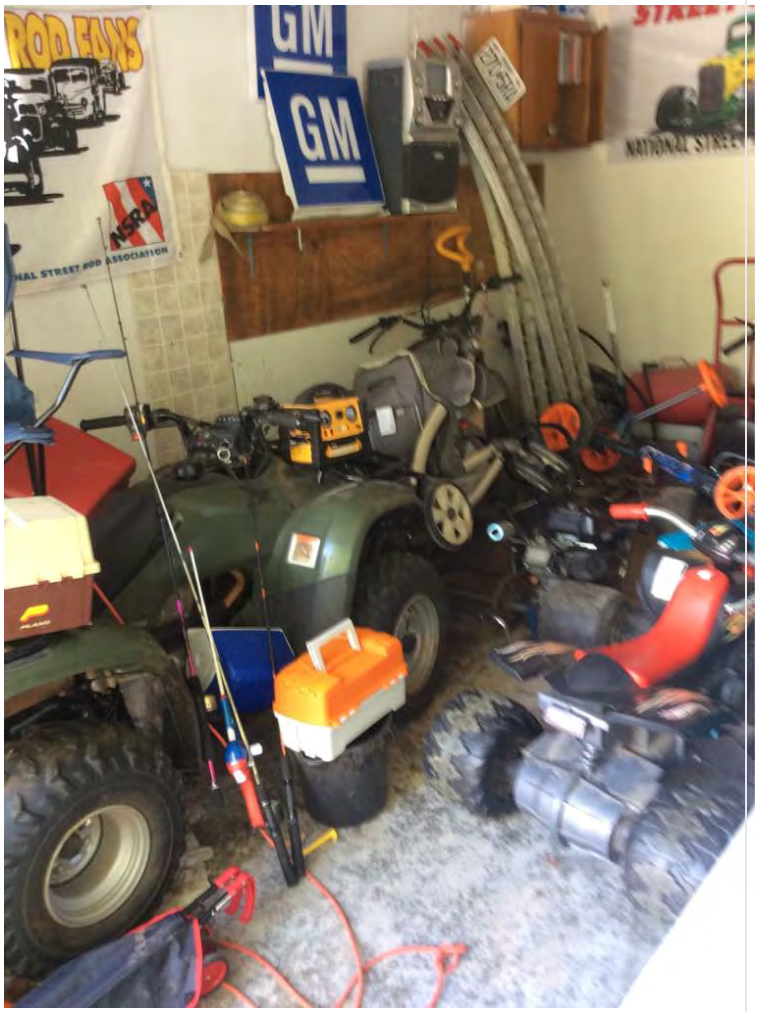
Building Condition

Is there standing water in the building (historic or current)?	No
Is there water damage in the building (historic or current)?	No
Is there fire damage in the building (historic or current)?	No
Is there a septic system?	No
Building Condition Notes	Good condition; oil staining on garage floor and driveway

Building Condition Photos

Resident typically stores his car in the garage (from August 2017 appointment).

Garage shelves store fuel cleaners, oil/oily rags, and other petroleum based products (from August 2017 appointment).



Garage stores gas powered vehicles and equipment (from August 2017 appointment).

Evaluation of Potential Existing Chemical Sources

Are SSDs available for chemicals used with in the building?	No
List items, approximate quantities, and frequency	Numerous.
Do any of the products stored in the building contain VOCs?	Yes, in garage (BTEX)
Are any of the target analytes used in the building?	Yes

Is the usage confined to a specific room or area?	Yes
Describe the room or area	Garage contains (diesel, gasoline, engine oils and fluids, machinery, and a car). Products, machinery, and the car were removed from house 48 hrs prior to sampling for August 2017 sampling event but NOT for December 2017 sampling event (at insistence of homeowners).
Are pesticides used for pest control?	No
Names of pesticide products used?	N/A
Has there been a pesticide application within the past 6 months?	No
Is smoking permitted in the building?	No, but homeowner admits to smoking in bathroom, near garage, during winter event.
Notes regarding chemical use	e-Cigarettes were used outside on porch but not in the house (August 2017 sampling event) but replaced with real cigarettes by December 2017 sampling event.
Has there been any remodeling or construction within the past 6 months?	No
Describe past remodel	None by these homeowners.
Is there a planned remodel in the near future?	No
Describe remodel plans	N/A
Does the building have an attached garage or do vehicles regularly enter the space?	Yes
Describe the garage/vehicle use	Car is typically parked in garage. Resident removed all gas-powered equipment, car, and extra fuels 48 hrs prior to collecting air samples for August 2017 sampling event, but NOT for December 2017 sampling event.
Are gas-powered equipment or cans of gasoline/fuels stored in the building or attached garage?	Yes, gas-powered equipment (ATVs, gas-powered chainsaw, tools/items used to rebuild car engines and cans of gas/fuel and paint). Vehicles and gasolines/fuels, and all other materials containing or linked to volatile compounds, were removed from the garage and stored away from the residence during air sampling during August 2017 sampling event but NOT for December 2017 event.
Describe gas/fuels stored	Diesel, motor oil, and fuel cleaner. See photos of products.
Do building occupants dry clean their	No

clothes?	
How often do they dry clean their clothes?	N/A
Has there ever been a known chemical spill immediately outside or inside the building?	No, other than automotive/machine oil.
Describe known chemical spill	Stains on floor and outside on driveway.
Was the building screened with a ppbRAE to identify indoor VOC sources?	Yes
Describe the results of the ppbRAE screening	No products were sought out or removed in December 2017 sampling event, as insistence of homeowners. Living room ambient 700-800 ppb Bathroom 850-90 0ppb Under kitchen sink 780 ppb Garage 7,800ppb (see notes below) Deploying Air canisters: Living room 450 ppb Bathroom 500 ppb
Are there stationary sources nearby (i.e. gas stations, emission stacks, hazardous waste storage, etc.)?	None confirmed. Potential sources in proximity to site.
Describe the nearby stationary sources	N/A
Is there heavy vehicular traffic nearby or other mobile sources?	No

Photo of potential indoor chemical sources	 Staining located in the east corner of garage (from August 2017 appointment).

Paint stored in the garage (from August 2017 appointment).

Fuel pump (from August 2017 appointment).

Assortment of products removed from garage and house (from August 2017 appointment).

From August 2017 appointment.

From August 2017 appointment.

Description of Vapor Mitigation Systems

Has a radon or vapor mitigation system been installed in this building/room?	No
Date of installation?	N/A
Type of system?	N/A
Location of mitigation system	N/A
Notes	None

Air Handling information

Are there any areas of the building that are positively or negatively pressurized?	No
Describe the building's pressure characteristics	Equalized based on lack of air movement and crawl space vents to exterior are closed this winter.
Number of HVAC Zones	One
Describe thermostat location(s)	Did not observe
How many HVAC Zones?	One
Type of ventilation system(s)	Central Air Conditioning in summer. Not running now.
Describe other type of ventilation system(s)	None, at present.
Type of heating system(s)	Forced Hot Air, running currently.
Describe other type of heating system(s)	None observed
Type of fuel utilized	Natural Gas
Describe other type of fuel(s)	None observed (no fireplace or wood stove)
Are there other sources of outdoor air?	Windows (closed during sampling event).
Describe other sources of outdoor air	Typically, outside air can enter from crawl space vents and then into furnace closet via single vent. However, the crawl space vents are closed up all winter. Only entry is via doors and through garage.
Are windows/doors left open routinely?	No
Are there seasonal differences?	Yes.
Are any components of the building's heating, cooling or ventilation / circulation systems visible from the exterior?	Not other than crawl space vents and hot water heater exhaust on roof.
Detail Air Handling components observed	In crawl space.
Air Handling Photos	None except crawl space photo from August 2017.

Attachment 2
Data Quality Evaluations and Laboratory Analytical Reports

Data Quality Evaluation

Data Quality Evaluation – Former Tronox/Kerr-McGee Facility, Springfield, Missouri

PREPARED FOR: Former Tronox/Kerr-McGee Facility, Springfield, Missouri

PREPARED BY: Tiffany Davis/CH2M/GNV
Mark Stinnett/CH2M/GNV

DATE: January 8, 2016

The results of the data quality review for the December 2017 outdoor air and indoor air confirmatory sampling (considered heating season) event indicate that the analytical systems were in control and all data results can be used in the decision-making process. The following sections provide a full description of the data quality review and associated findings.

Introduction

The purpose of this memorandum is to present the results of the data validation process for the samples collected for the Former Tronox/Kerr-McGee Facility located in Springfield, Missouri. The samples were collected in December 2017.

The quality control (QC) areas that were reviewed and the resulting findings are documented within each subsection that follows. These data were validated for compliance with the analytical method requirements. This process also included a review of these data to assess the precision, accuracy, representativeness, completeness, and comparability (PARCC) based upon procedures described in the U.S. Environmental Protection Agency (USEPA) guidance document, *National Functional Guidelines for Organic Superfund Data Review (EPA 2017) and National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 2017)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Field samples along with their associated QC were submitted to Eurofins Lancaster Laboratories in Lancaster, Pennsylvania and Air Toxics Eurofins in Folsom, California, for project-selected analytical fractions.

Data Qualification

The analytical systems were in control and limited data were qualified during the validation process. Attachments 1 and 2 contain for the primary and secondary codes, respectively, used during the validation process.

Analytical Method and Sample Reference

A complete description of each sample (sample identification, analytical fractions, sample type, and other information) is in Table 1.

Table 1. Sample Reference

SDG	Native-ID	Method	Matrix	QA/QC Type
1712296	OA6_1217	TO-13	Air	N
1712296	OA7_1217	TO-13	Air	N
1712296	OA12_1217	TO-13	Air	N
1712296	OA13_1217	TO-13	Air	N

Table 1. Sample Reference

SDG	Native-ID	Method	Matrix	QA/QC Type
1712296	OA14_1217	TO-13	Air	N
1712296	OA1_1217	TO-13	Air	N
1712296	OA2_1217	TO-13	Air	N
1712296	OA2-1_1217	TO-13	Air	FD
1712296	OA8_1217	TO-13	Air	N
1712296	OA9_1217	TO-13	Air	N
1712296	OA10_1217	TO-13	Air	N
1712296	OA11_1217	TO-13	Air	N
1712296	OA5_1217	TO-13	Air	N
1712296	OA5-1_1217	TO-13	Air	FD
1712296	OA15_1217	TO-13	Air	N
1712296	TRIPBLANK-1_1217	TO-13	Air	N
1712342	OA1_1217	TO-15SIM	Air	N
1712342	OA2_1217	TO-15SIM	Air	N
1712342	OA2-1_1217	TO-15SIM	Air	FD
1712342	OA6_1217	TO-15SIM	Air	N
1712342	OA7_1217	TO-15SIM	Air	N
1712342	OA8_1217	TO-15SIM	Air	N
1712342	OA9_1217	TO-15SIM	Air	N
1712342	OA10_1217	TO-15SIM	Air	N
1712342	OA11_1217	TO-15SIM	Air	N
1712342	OA12_1217	TO-15SIM	Air	N
1712342	OA13_1217	TO-15SIM	Air	N
1712342	OA14_1217	TO-15SIM	Air	N
1712342	OA15_1217	TO-15SIM	Air	N
1712342	IAU-040_1217	TO-15SIM	Air	N
1712342	IAG-040_1217	TO-15SIM	Air	N
1712342	CS-040_1217	TO-15SIM	Air	N
1712342	OA-040_1217	TO-15SIM	Air	N
1712342	IAU-140_1217	TO-15SIM	Air	FD
1712342	OA13-1_1217	TO-15SIM	Air	FD

Quality Control Review

The quality control review includes an evaluation of the analytical data relative to quality assurance/quality control measures, as well as the PARCC of the analytical data.

Quality Assurance/Quality Control Measures

The following list represents the QA/QC measures that were reviewed during the data quality evaluation.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within the method required holding times.

- **Blank samples** – Method blanks are prepared and analyzed by the laboratory. Field blank, equipment blank, and trip blank samples were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)** – These samples are a "controlled matrix," laboratory reagent water, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation. Precision information is also determined by calculating the reproducibility, as relative percent difference (RPD), between the recoveries of each spiked parameter.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recoveries are used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility, as relative percent difference (RPD), between the recoveries of each spiked parameter.
- **Field Duplicate (FD) Samples** – These samples are collected to determine precision between a native and field duplicate. The precision may only be determined when the target compound is detected and the acceptance criteria is based on the determined concentrations. If the results for the native and field duplicate are less than five times the laboratory reporting limit concentration the difference between the concentrations of the native and field duplicate sample must be less than the value of the reporting limit. Otherwise, the two results must agree to within 20 percent RPD to meet acceptance criteria.
- **Gas Chromatography/Mass Spectrometry (GC/MS) Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance based on the established criteria in the analytical method to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

The evaluation of the analytical data reports for each SDG found that the QA/QC measures were within acceptable control limits for all the sample results with the exceptions described below:

Blanks

Naphthalene and 2-methylnaphthalene were detected in the method blank for SDG 1712296. Affected data and the assigned primary/secondary qualifiers are summarized in Attachment 3.

Precision, Accuracy, Representativeness, Completeness, and Comparability

In addition to the review of the QA/QC measures described above, the data quality evaluation also addressed the PARCC of the analytical data, as defined below.

- **Precision**—Measure of agreement between duplicate results, as estimated by comparing LCSD and MSD recoveries and FD sample results. If the agreement between the native and FD, the MS and MSD sample, and LCS and LCSD results for the analyses are within acceptable criteria, this is a

satisfactory indication that the sample matrix did not interfere with the overall analytical process. All analyses are within precision criteria.

- **Accuracy**--Measure of the agreement between an experimental determination and the true value of the parameter. Each of the samples was spiked with a surrogate compound with a known concentration before preparation. The surrogate and MS/MSD data provide a measure of the matrix effects that may affect accuracy and precision of the analytical method. The LCS results demonstrate accuracy of the method. All analyses are within precision criteria.
- **Representativeness**--Qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter used to evaluate the efficacy of the sampling plan design. Representativeness can be demonstrated by providing full descriptions in the project scoping documents of the sampling techniques and the rationale used for selecting sampling locations. Representativeness was deemed acceptable.
- **Completeness**--Percentage of measurements that are judged to be valid compared to the total number of measurements made. All data was deemed to be valid.
- **Comparability**--Qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are sample collection and handling techniques, sample matrix type, and analytical method. Comparability is limited by the other PARCC parameters because data sets can be compared with confidence only when precision and accuracy are known. However, comparability can also be established if the current data set is comparable with other previously collected data at the site due to the laboratory's use of USEPA or appropriate methods to analyze the samples, as supported by the results of the laboratory's analytical reports. Comparability of the data set was deemed acceptable.

The evaluation of the analytical data reports for PARCC measures indicated that the overall data set was acceptable.

Conclusion

An overall evaluation of the data for the December 2017 outdoor air sampling event indicated that the analytical systems were generally in control. The exceptions in the method blank resulted in the qualification of a total of 19 data points as described in the above sections. All data, as qualified, are considered usable for the decision-making process.

Attachment 1
Primary Data Qualifier Codes

Attachment 1-1. Primary Data Qualifiers.

Primary Data Qualifier Code	Meaning	Description
=	Detected	The analyte was analyzed for and detected at the concentration shown.
J	Estimated	The analyte was present but the reported value may not be accurate or precise.
U	Undetected	The analyte was analyzed for but not detected above the method detection limit.
UJ	Detection Limit Estimated	The analyte was analyzed for but qualified as not detected; the detection limit is estimated.
R	Rejected	The data are not useable.
X	Excluded	Data not used due to another value being more appropriate.

Attachment 2
Secondary Data Qualifier Code

Attachment 2-1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
2SH	Second source calibration verification standard greater than the upper control limit
2SL	Second source calibration verification standard less than the lower control limit
ABH	Ambient blank concentration greater than the RL
ABL	Ambient blank concentration less than the RL
BKD	The result is qualified because the DDT and/or Endrin breakdown was greater than 20%
CBKD	The result is qualified because the combined DDT/Endrin breakdown is greater than 30%
CCBH	Continuing calibration blank concentration greater than the RL
CCBL	Continuing calibration blank concentration less than RL
CCC	CCC failure
CCRRF	Continuing calibration relative response factor below the LCL
CCVF	Continuing calibration not analyzed at the required frequency
CCVH	Continuing calibration recovery greater than upper control limit
CCVL	Continuing calibration recovery less than lower control limit
CF	Confirmation result
CFP	Confirmation precision exceeded
CO	Compounds were reported combined on one column
DL	Secondary dilution
EBH	Equipment blank concentration greater than the RL
EBL	Equipment blank concentration less than the RL
EMPC	Estimated maximum possible concentration reported
FBH	Field blank concentration greater than the RL
FBL	Field blank concentration less than the RL
FD	Field duplicate exceeds RPD criteria
GPC	The results are qualified due to GPC calibration deficiencies
HTA	Analytical holding time exceeded
HTP	Preparation holding time exceeded
IB	Result between the MDL and RL
ICBH	Initial calibration blank concentration greater than the RL
ICBL	Initial calibration blank concentration less than RL
ICR2	Initial calibration exceeded the R2 for first order regression
ICRR	Exceeds RSD criteria and initial calibration exceeded the R2 for first order regression

Attachment 2-1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
ICRRF	Initial calibration relative response factor below the LCL
ICRSD	Initial calibration RSD exceeded
ICSH	Interference present and %recovery is greater than upper control limit
ICSL	Interference present and %recovery is less than lower control limit
ICSP	Single point initial calibrations used for quantitation
ICVH	Initial calibration recovery exceeds the upper control limit
ICVL	Initial calibration recovery exceeds the lower control limit
ICVSH	Initial calibration verification recovery greater than upper control limit
ICVSL	Initial calibration verification recovery less than lower control limit
ISH	Internal standard response exceeded the UCL criteria
ISL	Internal standard response exceeded the LCL criteria
LBH	Laboratory blank contamination greater than the RL
LBL	Laboratory blank contamination less than the RL
LCSDH	LCSD recovery greater than criteria
LCSDL	LCSD recovery less than the criteria
LCSH	LCS recovery greater than criteria
LCSL	LCS recovery less than the criteria
LCSP	LCS/LCSD RPD criteria exceeded
LDP	Laboratory duplicate precision out
LR	Linear range exceeded; concentration above linear range
MSA	Quantitated by the method of standard additions
MSALL	Global matrix spike flagging
MSAR2	method of standard additions R2 out
MSDH	Matrix spike duplicate recovery criteria greater than the upper limit
MSDL	Matrix spike duplicate recovery criteria less than the lower limit
MSDP	Matrix spike duplicate RPD criteria exceedance
MSH	Matrix spike recovery criteria greater than the upper limit
MSL	Matrix spike recovery criteria less than the lower limit
NMS	Not site-specific matrix spike
PH	Sample pH out; not properly preserved
PRM	Result differs from preliminary result

Attachment 2-1. Secondary Data Qualifier, or Validation Reason, Codes

Secondary Data Qualifier	Description
PSH	Post-spike recovery criteria greater than the upper limit
PSL	Post-spike recovery criteria less than the lower limit
RA	Sample was reanalyzed
RE	Sample was re-extracted and reanalyzed
RT	Result is outside the laboratory determined retention time window
SCRN	Screening method and/or data
SDIL	Serial dilution %D exceeds the upper control limit
SPCC	SPCC failure
SSH	Surrogate recovery greater than upper limit
SSL	Surrogate recovery less than lower limit
SSR	Surrogate spike recovery <10%
TBH	Trip blank concentration greater than the RL
TBL	Trip blank concentration less than the RL
TD	Total concentration < dissolved concentration
TEMP	Cooler temperature out upon arrival
TIC	Tentatively identified compound
TN	GC/MS tune does not meet criteria
XCC	No continuing calibration analyzed in the analytical batch
X-DL	Data not used due to dilution; another value is more appropriate or data was not requested
XIC	No initial calibration analyzed in the analytical batch
XICVS	Initial calibration verification standard was not analyzed
XLCS	No LCS in the analytical batch
XLD	Laboratory duplicate not reported
XMS	Matrix spike not reported
XMSD	Matrix spike duplicate not reported
X-RE	Data not used due to reanalysis, another value is more appropriate, or data were not requested
XICS	No interference check standard in analytical batch
XSDIL	No serial dilution in the analytical batch

Attachment 3
Assigned Qualifier

Table 3-1. Assigned Qualifiers

Parameter Class	SDG	Lab Sample ID	Sample ID	Sample Type	Analytical Method	Parameter	Lab Result	Lab Qual	Final Result	Primary Qualifier	Units	Secondary Qualifier
VOC	1712296	1712296-02A	OA7_1217	N	TO-13	2-Methylnaphthalene	0.016	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-04A	OA13_1217	N	TO-13	2-Methylnaphthalene	0.028	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-05A	OA14_1217	N	TO-13	2-Methylnaphthalene	0.032	J	0.13	U	µg/m^3	LBL
VOC	1712296	1712296-11A	OA10_1217	N	TO-13	2-Methylnaphthalene	0.017	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-15A	OA15_1217	N	TO-13	2-Methylnaphthalene	0.016	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-02A	OA7_1217	N	TO-13	Naphthalene	0.037	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-03A	OA12_1217	N	TO-13	Naphthalene	0.026	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-04A	OA13_1217	N	TO-13	Naphthalene	0.15		0.14	U	µg/m^3	LBL
VOC	1712296	1712296-05A	OA14_1217	N	TO-13	Naphthalene	0.12	J	0.13	U	µg/m^3	LBL
VOC	1712296	1712296-06A	OA1_1217	N	TO-13	Naphthalene	0.036	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-07A	OA2_1217	N	TO-13	Naphthalene	0.046	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-08A	OA2-1_1217	FD	TO-13	Naphthalene	0.04	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-09A	OA8_1217	N	TO-13	Naphthalene	0.018	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-10A	OA9_1217	N	TO-13	Naphthalene	0.017	J	0.13	U	µg/m^3	LBL
VOC	1712296	1712296-11A	OA10_1217	N	TO-13	Naphthalene	0.043	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-12A	OA11_1217	N	TO-13	Naphthalene	0.036	J	0.14	U	µg/m^3	LBL
VOC	1712296	1712296-13A	OA5_1217	N	TO-13	Naphthalene	0.029	J	0.13	U	µg/m^3	LBL
VOC	1712296	1712296-14A	OA5-1_1217	FD	TO-13	Naphthalene	0.024	J	0.13	U	µg/m^3	LBL
VOC	1712296	1712296-15A	OA15_1217	N	TO-13	Naphthalene	0.057	J	0.14	U	µg/m^3	LBL

Level 4 Data Evaluation
(Re-quantitation Process)

Attachment 2

Level 4 Data Evaluation (Re-quantitation Process)

December 2017 Additional Outdoor Air and Indoor Air Confirmatory Sampling Event

Former Tronox/Kerr-McGee Facility, Springfield, Missouri

Level 4 Data Evaluation (Re-quantitation Process)

December 2017 Additional Outdoor Air and Indoor Air Confirmatory Sampling Event

CH2M chemists performed a Level 4 data evaluation of laboratory results on randomly selected elements of laboratory raw instrument data as a determination of the level of accuracy of the contract laboratory's analytical processes. The Level 4 evaluation was conducted on an approximate 10% basis per individual sample delivery groups (SDGs). Additionally, the Level 4 evaluation was a review process to determine if the laboratory data reporting process follows good scientific practices as these relate to the analytical data and promulgated method. The re-quantitation of raw instrument data performed during the Level 4 evaluation focuses on the following areas:

- Reported native sample target compound concentrations
- Initial calibration curves of the associated laboratory instrument(s)
- Continuing calibration of the associated laboratory instrument(s)
- Surrogate spike recoveries
- Laboratory control sample and laboratory control sample duplicate spike recoveries

In all cases, the CH2M chemists were able to reproduce the reported laboratory values found in the laboratory's SDGs using CH2M-developed Excel-based worksheets. No inconsistencies or miscalculations were discovered during the Level 4 evaluation. Based on a Level 4 perspective, it is concluded that the laboratory's analytical processes were under control at the time of analysis.

Level 4 data evaluation worksheets are provided for the following SDGs:

- SDG1712296
- SDG1712342

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1712296**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of}_X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument:		**Date**:		
msd9		12/12/2017		
	referenced			
Naphthalene	to:	Naphthalene-d8		
			0.913	**Level 1**
			0.859	**Level 2**
143861		40	0.826	**Level 3**
614041		10		
	Calc RRF	**0.937**		
			0.937	**Level 4** ok
			0.906	**Level 5**
			0.945	**Level 6**
			0.8682	**Level 7**
			0.9153	**Level 8**
			0.9310	**Level 9**
			0.8747	**Level 10**
			0.9182	**Level 11**
Standard Deviation =	0.0374208			
Average RRF =	0.8995	**Laboratory AVG RRF =**	0.89947	
		OK?	**Yes**	
% RSD =	4.160	**Laboratory %RSD =**	4.16	
		OK?	**Yes**	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1712296**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename:		**Date/Time**:		
9121803a.d		12/18/2017 15:39		
Naphthalene	referenced to:	Naphthalene-d8		
893219		40	**CCAL RRF=**	0.7941
899817		50		
			Laboratory CCAL RRF =	0.79413

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF - CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D =	11.71	
Laboratory %D =	-11.71	
OK?	**Yes**	

Sample Compound Concentrations - VOC

SDG Number: **1712296**

Formula for Calculation of Concentrations

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

Sample ID: OA7_1217 — **Air**

Naphthalene

$Area_x$ =	5199
$Area_{IS}$ =	863355
$Conc_{IS}$	40
RRF_X =	0.8995
DF =	1

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Naphthalene		0.037	0.268 Calc Conc (ug/m3) 0.037

Concentrations agree within 2% ? **Yes**

Sample ID: OA7_1217 — **Air**

2-methylnaphthalene

$Area_x$ =	1483
$Area_{IS}$ =	863355
$Conc_{IS}$	40
RRF_X =	0.60859
DF =	1

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
2-methylnaphthalene		0.016	0.113 Calc Conc (ug/m3) 0.016

Concentrations agree within 2% ? **Yes**

Sample Compound Concentrations - VOC

SDG Number: **1712296**

Formula for Calculation of Concentrations

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

Sample ID: OA13_1217 — **Air**

Naphthalene

$Area_x$ =	17997
$Area_{IS}$ =	733658
$Conc_{IS}$	40
RRF_X =	0.8995
DF =	1

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Naphthalene		0.15	1.091 Calc Conc (ug/m3) 0.15

Concentrations agree within 2% ? **Yes**

Sample ID: OA13_1217 — **Air**

2-methylnaphthalene

$Area_x$ =	2291
$Area_{IS}$ =	733658
$Conc_{IS}$	40
RRF_X =	0.60859
DF =	1

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
2-methylnaphthalene		0.028	0.205 Calc Conc (ug/m3) 0.028

Concentrations agree within 2% ? **Yes**

Surrogate Recoveries - VOC

SDG Number: **1712296**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
OA7_1217

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	Fluorene-d10	32.34	50	64.7	65.0	**Yes**
2	Pyrene-d10	37.24	50	74.5	74.0	**Yes**
3	Benzo(a)pyrene-d12	32.98	50	66.0	66.0	**Yes**
4	Fluoranthene-d10	35.72	50	71.4	71.0	**Yes**

LCS/LCSD Recoveries - VOC

SDG Number: **1712296**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: LCS

LCS Sample ID: LCSD

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	Naphthalene	35.20	50	70.40	70.00	**Yes**
LCSD #1	Naphthalene	38.16	50	76.32	76.00	**Yes**
LCS #2	2-methylnaphthalene	34.05	50	68.10	68.00	**Yes**
LCSD #2	2-methylnaphthalene	36.58	50	73.16	73.00	**Yes**
LCS #3						
LCSD #3						

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{\text{| LCSR - LCSDR |}}{\text{(1/2) (LCSR + LCSDR)}} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	Naphthalene	8	8.2	**Yes**
2	2-methylnaphthalene	7	7.1	**Yes**
3				

MS/MSD Accuracy and Precision Recoveries - VOC

SDG Number: **1712296**

Formula for Calculation of Matrix Spike Recovery

$$\text{Matrix Spike Recovery} = \frac{SSR - SR}{SA} \times 100$$

where:

SSR = Spike sample result
SR = Sample result
SA = Spike added

Sample ID:	**Compound**
Not Applicable	0

Matrix Spike	**Matrix Spike Duplicate**
SSR =	
SR =	
SA =	
MS Concentration	MSD Concentration
MS % Recovery =	MSD % Recovery =
Lab MS % Recovery	Lab MSD % Recovery
OK?	**OK?**

Formula for Calculation of Relative Percent Difference

$$\text{Relative Percent Difference} = \frac{|MSR - MSDR|}{(1/2)(MSR + MSDR)} \times 100$$

where:

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

Compound(s)	**RPD (Rec)**	**RPD (Conc)**	**Lab RPD**	**OK?**

Comment: Laboratory used % Recoveries to determine RPD versus concentrations.

Initial Calibration Input

SDG	1712296
Instrument	msd9
Date of calibration curve	12/12/2017
	917y1212.m
Compound	Naphthalene
IS Reference	Naphthalene-d8
RRFPoint 1 Name	Level 1
RRFPoint 1 RRF	0.9133
RRFPoint 2 Name	Level 2
RRFPoint 2 RRF	0.85864
RRFPoint 3 Name	Level 3
RRFPoint 3 RRF	0.826
RRFPoint 4 Name	Level 4
RRFPoint 4 RRF	0.937
Compound Area	143861
IS Reference Area	614041
IS Reference Concentration	40.000
Compound Concentration	10.000
RRFPoint 5 Name	Level 5
RRFPoint 5 RRF	0.90635
RRFPoint 6 Name	Level 6
RRFPoint 6 RRF	0.94528
RRFPoint 7Name	Level 7
RRFPoint 7 RRF	0.8682
RRFPoint 8 Name	Level 8
RRFPoint 8 RRF	0.91533
RRFPoint 9 Name	Level 9
RRFPoint 9 RRF	0.93102
RRFPoint 10 Name	Level 10
RRFPoint 10 RRF	0.87465
RRFPoint 11 Name	Level 11
RRFPoint 11 RRF	0.91822
Laboratory AVG RRF	0.8995
Laboratory RSD	4.16

Continuing Calibration Input

CCAL Filename	9121803a.d
CCAL Date, Time	12/18/2017 15:39
CCAL Compound Area	893219
CCAL IS Area	899817
CCAL IS Concentration	40
CCAL Compound Concentration	50
CCAL Compound Reported Conc	50
Laboratory CCAL RRF	0.79413
Laboratory %D	-11.71113

Sample Concentration Input

SDG	1712296
Sample ID	OA7_1217
	1712296-02a
Compound	
Area Compound	
Area Referenced IS	
Concentration of IS (ng/mL)	
RRF of Compound	
Water purged (mL)	
Dilution Factor	
Wt Sample (g)	
Dry Weight/% solids	
Lab Concentration	
Sample Volume (L)	7202
Sample #1	**Air**
Compound	Naphthalene
Area Compound	5199
Area Referenced IS	863355
Conc of IS	40
RRF of Compound	0.8995
Dilution Factor	1
Lab Concentration (ug/m3)	0.037
12/18/2017 18:09	9121808.d
Compound	2-methylnaphthalene
Area Compound	1483
Area Referenced IS	863355
Conc of IS	40
RRF of Compound	0.60859
Dilution Factor	1
Lab Concentration (ug/m3)	0.016
12/18/2017 18:09	9121808.d
Sample Volume (L)	
Sample #2	7375
Sample ID	OA13_1217
	1712296-04a
	Air
Compound	Naphthalene
Area Compound	17997
Area Referenced IS	733658
Conc of IS	40
RRF of Compound	0.8995
Dilution Factor	1
Lab Concentration	0.15
12/18/2017 19:09	9121810.d
Compound	2-methylnaphthalene
Area Compound	2291
Area Referenced IS	733658
Conc of IS	40
RRF of Compound	0.60859
Dilution Factor	1
Lab Concentration	0.028
12/18/2017 19:09	9121810.d

Surrogate Recovery Input

SDG	1712296
Sample ID	OA7_1217
Surrogate #1	Fluorene-d10
Amount/Concentration Found	32.34
Amount/Concentration spiked	50.00
Lab % Recovery	65
Surrogate #2	Pyrene-d10
Amount/Concentration Found	37.24
Amount/Concentration spiked	50.00
Lab % Recovery	74
Surrogate #3	Benzo(a)pyrene-d12
Amount/Concentration Found	32.98
Amount/Concentration Spiked	50.00
Lab % Recovery	66
Surrogate #4	Fluoranthene-d10
Amount/Concentration Found	35.72
Amount/Concentration Spiked	50.00
Lab % Recovery	71

LCS/LCSD Recovery Input

SDG	1712296	9121805.d
LCS Sample ID	LCS	9121804.d
LCSD Sample ID	LCSD	
LCS Compound #1	Naphthalene	
Amount/Concentration Found	35.2	
Amount/Concentration Spiked	50	
Lab % Recovery	70	
Lab RPD	8.2	
LCSD Compound #1	Naphthalene	
Amount/Concentration Found	38.16	
Amount/Concentration Spiked	50	
Lab % Recovery	76	
LCS Compound #2	2-methylnaphthalene	
Amount/Concentration Found	34.05	
Amount/Concentration Spiked	50	
Lab % Recovery	68	
Lab RPD	7.1	
LCSD Compound #2	2-methylnaphthalene	
Amount/Concentration Found	36.58	
Amount/Concentration Spiked	50	
Lab % Recovery	73	
LCS Compound #3		
Amount/Concentration Found		
Amount/Concentration Spiked		
Lab % Recovery		
LCSD Compound #3		
Amount/Concentration Found		
Amount/Concentration Spiked		
Lab % Recovery		

MS/MSD Recovery Input

SDG	1712296
Sample ID	Not Applicable
MS Compound #1	
MS Result	
Sample Result	
MS Spike Amount	
Lab MS % Recovery	
MSD Result	
Sample Result	
MSD Spike Amount	
Lab MS % Recovery	
Lab RPD	

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1712342**

Initial Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

Formula for Calculation of Relative Standard Deviation (%RSD)

$$\frac{\text{Standard Deviation of RRFs of } X}{\text{Average RRF}_X} \text{ multiplied by } 100 = \textbf{\%RSD}$$

Instrument:		**Date**:			
msd21		12/12/2017			
Benzene	referenced to:	1,4-difluorobenzene			
			1.944	**Level 3**	
			1.678	**Level 4**	
18296		5	1.489	**Level 5**	
581450		0.1			
	Calc RRF	**1.573**			
			1.573	**Level 6**	ok
			1.356	**Level 7**	
			1.304	**Level 8**	
			1.1799	**Level 12**	
			1.0963	**Level 13**	
			0.9673	**Level 15**	
Standard Deviation =	0.3063917				
Average RRF =	1.3989	**Laboratory AVG RRF =**	1.39885		
		OK?	**Yes**		
% RSD =	21.903	**Laboratory %RSD =**	21.903		
		OK?	**Yes**		

Initial and Continuing Calibration Worksheets - VOC

SDG Number: **1712342**

Continuing Calibration Curve Calculations

Formula for Calculation of Relative Response Factors (RRF)

$$\frac{\text{Area}_X}{\text{Area}_{IS}} \text{ multiplied by } \frac{\text{Amount}_{IS}}{\text{Amount}_X} = \textbf{RRF}$$

where:

Area_X = Area of the characteristic ion for the compound to be measured
Area_{IS} = Area of the characteristic ion for the referenced Internal Standard
Amount_{IS} = Amount of Internal Standard added
Amount_X = Amount of compound added

CCAL Filename: 21122002sim.d

Date/Time: 12/20/2017 8:39

Benzene	referenced to:	1,4-difluorobenzene		
1220451		5	**CCAL RRF=**	1.0780
566094		10		
			Laboratory CCAL RRF =	1.07796

Formula for Calculation of percent Difference (%D)

$$\frac{\text{ICAL AVG RRF} - \text{CCAL RRF}}{\text{ICAL AVG RRF}} \text{ multiplied by } 100 = \textbf{\%D}$$

Where:
ICAL AVG RRF = The average relative response factor from the curve
CCAL RRF = The Relative Response Factor from the continuing calibration verification run daily

%D =		22.94
Laboratory %D =		22.94
OK?		**Yes**

Sample Compound Concentrations - VOC

SDG Number: **1712342**

Formula for Calculation of Concentrations

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

	0.66		
	1.56	0.423076923	

Sample ID: IAU-040_1217

Air

Benzene

$Area_x$ =	57675
$Area_{IS}$ =	511447
$Conc_{IS}$	5
RRF_X =	1.39885
DF =	1.76

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Benzene		2.3	0.709
			Calc Conc (ug/m3)
			2.27

Concentrations agree within 2% ? **Yes**

Benzene		Ethyl Benzene	
MW	78.11	MW	106.17
Gas Constant	24.45		

Sample ID: IAU-040_1217

Air

Ethyl Benzene

$Area_x$ =	9327
$Area_{IS}$ =	396989
$Conc_{IS}$	5
RRF_X =	0.55541
DF =	1.76

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Ethyl Benzene		1.6	0.372
			Calc Conc (ug/m3)
			1.62

Concentrations agree within 2% ? **Yes**

Ethyl Benzene	
MW	106.17
Gas Constant	24.45

Sample Compound Concentrations - VOC

SDG Number: **1712342**

Formula for Calculation of Concentrations

$$\frac{(Area_X)\,(Conc_{IS})\,(Df)}{(Area_{IS})\,(RRF_X)} = \text{Concentration in ppbv}$$

where:

$Area_X$ = Area of the characteristic ion for the compound to be measured
$Area_{IS}$ = Area of the characteristic ion for the referenced Internal Standard
$Conc_{IS}$ = Concentration of Internal Standard added (ng/mL)
RRF_X = AveragevRRF of compound from initial calibration curve
DF = Dilution Factor

				0.66	
				1.56	0.423076923

Sample ID: IAG-040_1217

Air

	Benzene
$Area_x$ =	470067
$Area_{IS}$ =	522193
$Conc_{IS}$	5
RRF_X =	1.39885
DF =	4.22

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Benzene		43	13.578

Calc Conc (ug/m3) 43.38

Concentrations agree within 2% ? **Yes**

Benzene		Ethyl Benzene	
MW	78.11	MW	106.17
Gas Constant	24.45		

Sample ID: IAG-040_1217

Air

	Ethyl Benzene
$Area_x$ =	80931
$Area_{IS}$ =	401305
$Conc_{IS}$	5
RRF_X =	0.55541
DF =	4.22

Compound(s)	Lab Conc	Lab Conc (ug/m3)	Calc Concentration in ppbv
Ethyl Benzene		33	7.661

Calc Conc (ug/m3) 33.27

Concentrations agree within 2% ? **Yes**

Ethyl Benzene	
MW	106.17
Gas Constant	24.45

Surrogate Recoveries - VOC

SDG Number: **1712342**

Formula for Calculation of Surrogate Recovery

$$\text{\% Recovery} = \frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$$

Sample ID:
IAU-040_1217

	Surrogate	Amt/Conc found	Amount/Conc spiked	% Rec	Lab %REC	OK?
1	1,2-dichloroethane-d4	5.68	5	113.6	114.0	**Yes**
2	4-Bromofluorobenzene	4.48	5	89.6	90.0	**Yes**
3	Toluene-d8	4.97	5	99.4	99.0	**Yes**

LCS/LCSD Recoveries - VOC

SDG Number: **1712342**

Formula for Calculation of LCS and LCSD Recovery

% Recovery = $\frac{\text{Concentration or amount found}}{\text{Concentration or amount spiked}} \times 100$

LCS Sample ID: LCS

LCS Sample ID: LCSD

	Compound	Conc found	Conc spiked	% Rec	Lab %REC	OK?
LCS #1	Benzene	8.36	10	83.63	84.00	**Yes**
LCSD #1	Benzene	8.20	10	81.96	82.00	
LCS #2	Ethylbenzene	9.41	10	94.11	94.00	**Yes**
LCSD #2	Ethylbenzene	9.47	10	94.72	95.00	
LCS #3						
LCSD #3						

Formula for Calculation of Relative Percent Difference

Relative Percent Difference = $\frac{\text{| LCSR - LCSDR |}}{\text{(1/2) (LCSR + LCSDR)}} \times 100$

where:

LCSR = Laboratory Control Spike Recovery
LCSDR = Laboratory Control Spike Duplicate Recovery

	Compound(s)	RPD	Lab RPD	OK?
1	Benzene	2		**Yes**
2	Ethylbenzene	1		**Yes**
3				

MS/MSD Accuracy and Precision Recoveries - VOC

SDG Number: **1712342**

Formula for Calculation of Matrix Spike Recovery

$$\text{Matrix Spike Recovery} = \frac{SSR - SR}{SA} \times 100$$

where:

SSR = Spike sample result
SR = Sample result
SA = Spike added

Sample ID:	**Compound**
Not Applicable	0

Matrix Spike	**Matrix Spike Duplicate**
SSR =	
SR =	
SA =	
MS Concentration	MSD Concentration
MS % Recovery =	MSD % Recovery =
Lab MS % Recovery	Lab MSD % Recovery
OK? **Yes**	**OK?** **Yes**

Formula for Calculation of Relative Percent Difference

$$\text{Relative Percent Difference} = \frac{|MSR - MSDR|}{(1/2)(MSR + MSDR)} \times 100$$

where:

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

Compound(s)	**RPD (Rec)**	**RPD (Conc)**	**Lab RPD**	**OK?**

Comment: Laboratory used % Recoveries to determine RPD versus concentrations.

Initial Calibration Input

SDG	1712342
Instrument	msd21
Date of calibration curve	12/12/2017
	2117s1212a.m
Compound	Benzene
IS Reference	1,4-difluorobenzene
RRFPoint 1 Name	Level 3
RRFPoint 1 RRF	1.94446
RRFPoint 2 Name	Level 4
RRFPoint 2 RRF	1.67848
RRFPoint 3 Name	Level 5
RRFPoint 3 RRF	1.489
RRFPoint 4 Name	Level 6
RRFPoint 4 RRF	1.573
Compound Area	18296
IS Reference Area	581450
IS Reference Concentration	5.000
Compound Concentration	0.100
RRFPoint 5 Name	Level 7
RRFPoint 5 RRF	1.35602
RRFPoint 6 Name	Level 8
RRFPoint 6 RRF	1.30445
RRFPoint 7Name	Level 12
RRFPoint 7 RRF	1.17986
RRFPoint 8 Name	Level 13
RRFPoint 8 RRF	1.09629
RRFPoint 9 Name	Level 15
RRFPoint 9 RRF	0.96731
Laboratory AVG RRF	1.3989
Laboratory RSD	21.903

Continuing Calibration Input

CCAL Filename	21122002sim.d
CCAL Date, Time	12/20/2017 8:39
CCAL Compound Area	1220451
CCAL IS Area	566094
CCAL IS Concentration	5
CCAL Compound Concentration	10
CCAL Compound Reported Conc	7.706
Laboratory CCAL RRF	1.07796
Laboratory %D	22.9398

Sample Concentration Input

SDG	1712342
Sample ID	IAU-040_1217
	1712342-01A
Compound	
Area Compound	
Area Referenced IS	
Concentration of IS (ng/mL)	
RRF of Compound	
Water purged (mL)	
Dilution Factor	
Wt Sample (g)	
Dry Weight/% solids	
Lab Concentration	
	7.3 in Hg
Sample #1	**Air**
Compound	Benzene
Area Compound	57675
Area Referenced IS	511447
Conc of IS	5
RRF of Compound	1.3989
Dilution Factor	1.76
Lab Concentration (ug/m3)	2.3
12/19/17 03:49pm	21121909sim
Compound	Ethyl Benzene
Area Compound	9327
Area Referenced IS	396989
Conc of IS	5
RRF of Compound	0.55541
Dilution Factor	1.76
Lab Concentration (ug/m3)	1.6
12/19/17 03:49pm	21121909sim
Sample #2	
Sample ID	IAG-040_1217
	1712342-02A
6.5 in Hg	**Air**
Compound	Benzene
Area Compound	470067
Area Referenced IS	522193
Conc of IS	5
RRF of Compound	1.3989
Dilution Factor	4.22
Lab Concentration	43
12/19/2017 17:39	21121912sim
Compound	Ethyl Benzene
Area Compound	80931
Area Referenced IS	401305
Conc of IS	5
RRF of Compound	0.55541
Dilution Factor	4.22
Lab Concentration	33
12/19/2017 17:39	21121912sim

Surrogate Recovery Input

SDG	1712342
Sample ID	IAU-040_1217
Surrogate #1	1,2-dichloroethane-d4
Amount/Concentration Found	5.68
Amount/Concentration spiked	5.00
Lab % Recovery	114
Surrogate #2	4-Bromofluorobenzene
Amount/Concentration Found	4.48
Amount/Concentration spiked	5.00
Lab % Recovery	90
Surrogate #3	Toluene-d8
Amount/Concentration Found	4.97
Amount/Concentration Spiked	5.00
Lab % Recovery	99

LCS/LCSD Recovery Input

SDG	1712342	21121903sim
LCS Sample ID	LCS	21121904sim
LCSD Sample ID	LCSD	
LCS Compound #1	Benzene	
Amount/Concentration Found	8.363	
Amount/Concentration Spiked	10	
Lab % Recovery	84	
Lab RPD		
LCSD Compound #1	Benzene	
Amount/Concentration Found	8.196	
Amount/Concentration Spiked	10	
Lab % Recovery	82	
LCS Compound #2	Ethylbenzene	
Amount/Concentration Found	9.411	
Amount/Concentration Spiked	10	
Lab % Recovery	94	
Lab RPD		
LCSD Compound #2	Ethylbenzene	
Amount/Concentration Found	9.472	
Amount/Concentration Spiked	10	
Lab % Recovery	95	
LCS Compound #3		
Amount/Concentration Found		
Amount/Concentration Spiked		
Lab % Recovery		
Lab RPD		
LCSD Compound #3		
Amount/Concentration Found		
Amount/Concentration Spiked		
Lab % Recovery		

MS/MSD Recovery Input

SDG	1712342
Sample ID	Not Applicable
MS Compound #1	
MS Result	
Sample Result	
MS Spike Amount	
Lab MS % Recovery	
MSD Result	
Sample Result	
MSD Spike Amount	
Lab MS % Recovery	
Lab RPD	

1,4-difluorobenzene
Benzene
chlorobenzene-d5
ethyl benzene

Analytical Reports

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-13A

INVENTORY SHEET

Work Order #: 1712296

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Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	12/28/17
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1712296

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable Greenfield Environmental, Inc. PO Box 1189 Helena, MT 59624
PHONE:	352-335-7991	**P.O. #**	Springfield, MO
FAX:	352-3352959	**PROJECT #**	690813.FI.01 Former Tronox Facility
DATE RECEIVED:	12/15/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	12/21/2017		

FRACTION #	NAME	TEST
01A	OA6_1217	Modified TO-13A
02A	OA7_1217	Modified TO-13A
03A	OA12_1217	Modified TO-13A
04A	OA13_1217	Modified TO-13A
05A	OA14_1217	Modified TO-13A
06A	OA1_1217	Modified TO-13A
07A	OA2_1217	Modified TO-13A
08A	OA2-1_1217	Modified TO-13A
09A	OA8_1217	Modified TO-13A
10A	OA9_1217	Modified TO-13A
11A	OA10_1217	Modified TO-13A
12A	OA11_1217	Modified TO-13A
13A	OA5_1217	Modified TO-13A
14A	OA5-1_1217	Modified TO-13A
15A	OA15_1217	Modified TO-13A
16A	TRIPBLANK-1_1217	Modified TO-13A
17A	Lab Blank	Modified TO-13A
18A	CCV	Modified TO-13A
19A	LCS	Modified TO-13A
19AA	LCSD	Modified TO-13A

CERTIFIED BY: Heidi Mayo DATE: 12/21/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-13A
CH2M Hill
Workorder# 1712296

Sixteen PUF Cartridge-Low Volume samples were received on December 15, 2017. The laboratory performed the analysis for polycyclic aromatic hydrocarbons in air by modified EPA Method TO-13A. The PUF/XAD samples were extracted using Pressurized Fluid Extraction (PFE) by EPA Method 3545A. The sample extract was then concentrated to 1.0 mL and analyzed by GC/MS in the full scan mode.

To meet the quality control objectives outlined in Method TO-13A, a field blank is required for each sampling episode. If field blanks are not provided to the laboratory, any attendant risk to data quality is the responsibility of the data user.

The frequency of matrix spikes are determined by the different monitoring programs. Matrix spikes are not included in the routine calibration specifications for TO-13A.

Requirement	***TO-13A***	***ATL Modifications***
Initial Calibration	Calibration range: 0.1-2.5 ug/mL in Hexane	Calibration range: 1.0-500 ug/mL in Methylene chloride
Method Blank	<MDL	<Reporting limit
Surrogate Recoveries	60-120%	50-150% for Field Surrogates Fluoranthene-d10 and Benzo(a)pyrene-d12

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Sampling volumes were supplied by the client. A sample volume of 7,720 L was used for the Lab Blank.

The sample cartridges were pre-spiked with Fluoranthene-d10 and Benzo(a)Pyrene-d12 on 12/6/17.

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the sorbent media was certified may be false positives.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
E - Exceeds instrument calibration range.
Q - Exceeds quality control limits.
S - Saturated peak.
J - Estimated value.
B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Sample Extract Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
OA6 1217	1712296-01A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA7 1217	1712296-02A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA12 1217	1712296-03A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA13 1217	1712296-04A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA14 1217	1712296-05A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA1 1217	1712296-06A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA2 1217	1712296-07A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA2-1 1217	1712296-08A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA8 1217	1712296-09A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA9 1217	1712296-10A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA10 1217	1712296-11A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA11 1217	1712296-12A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA5 1217	1712296-13A	12/14/2017	12/15/2017	12/18/2017	4	12/18/2017	0	Good
OA5-1 1217	1712296-14A	12/14/2017	12/15/2017	12/18/2017	4	12/19/2017	1	Good
OA15 1217	1712296-15A	12/14/2017	12/15/2017	12/18/2017	4	12/19/2017	1	Good
TRIPBLANK-1 1217	1712296-16A	12/14/2017	12/15/2017	12/18/2017	4	12/19/2017	1	Good
Lab Blank	1712296-17A	NA	NA	12/18/2017	NA	12/18/2017	0	Good
CCV	1712296-18A	NA	NA	NA	NA	12/18/2017	NA	Good
LCS	1712296-19A	NA	NA	12/18/2017	NA	12/18/2017	0	Good
LCSD	1712296-19AA	NA	NA	12/18/2017	NA	12/18/2017	0	Good

Sample Results and Raw Data

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA6_1217

Lab ID#: 1712296-01A

No Detections Were Found.

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Client Sample ID: OA6_1217

Lab ID#: 1712296-01A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121807**	**Date of Collection: 12/14/17 2:20:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 05:39 PM**
		Date of Extraction: 12/18/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	Not Detected	Not Detected
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.72	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.8	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.72	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.72	Not Detected	Not Detected

Air Sample Volume(L): 6950

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	68	60-120
Pyrene-d10	80	60-120
Benzo(a)pyrene-d12	70	50-150
Fluoranthene-d10	76	50-150

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Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121807.d
Lab Smp Id: 1712296-01A
Inj Date : 18-DEC-2017 17:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-01A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	224150	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	933990	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	492357	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	780121	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	675292	40.0000	
* 115 Perylene-d12	264	18.449	18.460	(1.000)	674355	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	450646	33.9950	34.00
$ 83 Pyrene-d10	212	12.190	12.190	(0.860)	706240	39.8148	39.81
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	618701	37.8536	37.85
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	476080	34.8179	34.82
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
28	Naphthalene	128	Compound Not Detected.					
34	2-Methylnaphthalene	142	Compound Not Detected.					
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

Report Date: 21-Dec-2017 13:32

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121807.d
Lab Smp Id: 1712296-01A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	224150	5.04
27 Naphthalene-d8	899817	449908	1799634	933990	3.80
48 Acenaphthene-d10	468863	234432	937726	492357	5.01
71 Phenanthrene-d10	743971	371986	1487942	780121	4.86
97 Chrysene-d12	659280	329640	1318560	675292	2.43
115 Perylene-d12	643165	321582	1286330	674355	4.85

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-01A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	34.00	67.99	60-120
$ 83 Pyrene-d10	50.00	39.81	79.63	60-120
$ 78 Fluoranthene-d10	50.00	37.85	75.71	50-150
$ 111 Benzo(a)pyrene-d12	50.00	34.82	69.64	50-150

Data File: /chem/msd9.i/18dec17.b/9121807.d

Date : 18-DEC-2017 17:39

Client ID:

Instrument: msd9.i

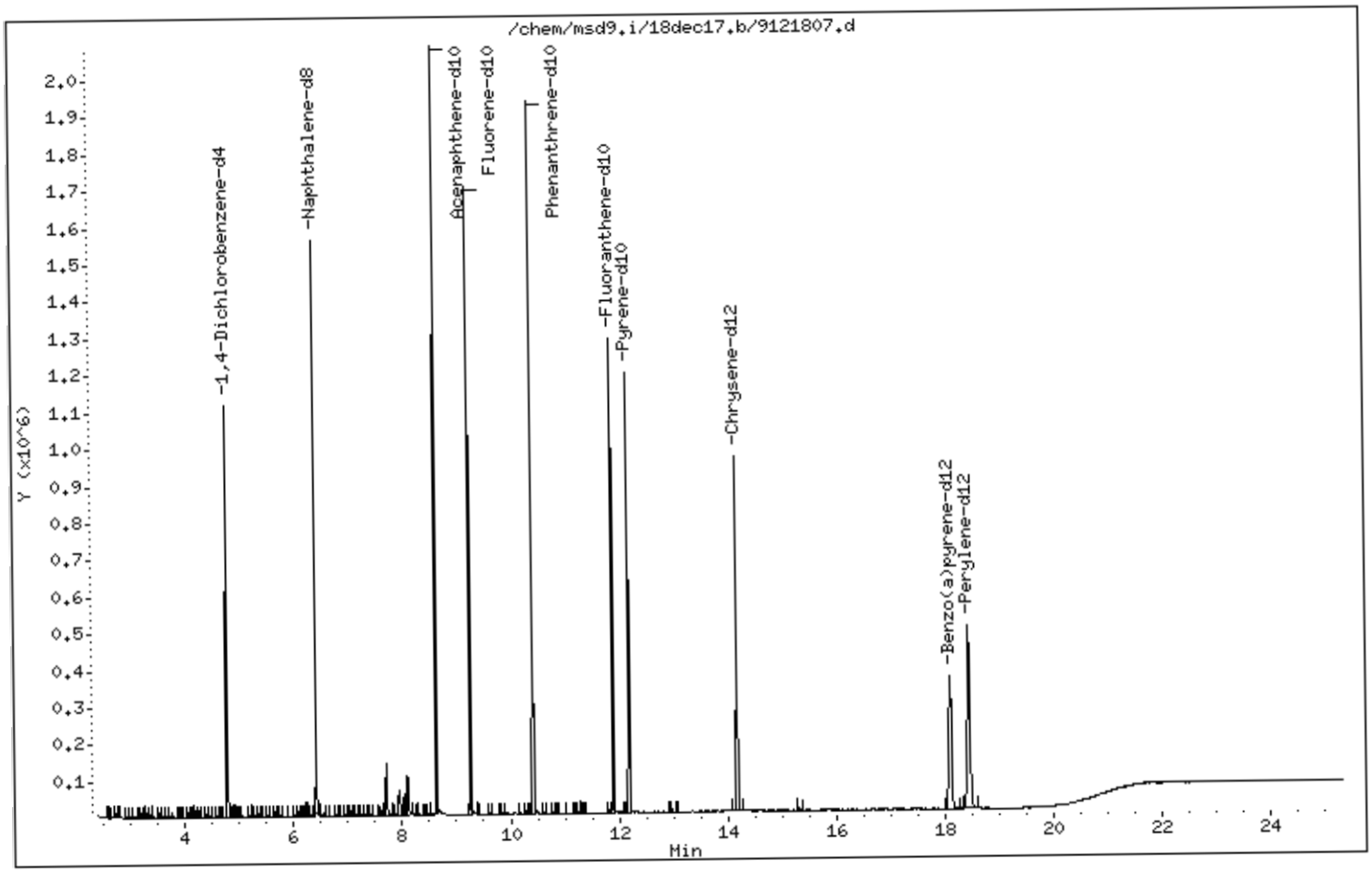
Sample Info: ;1712296-01A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA7_1217

Lab ID#: 1712296-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.27 J	0.037 J
2-Methylnaphthalene	1.0	0.14	0.11 J	0.016 J

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Client Sample ID: OA7_1217

Lab ID#: 1712296-02A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121808**	**Date of Collection: 12/14/17 2:31:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 06:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.27 J	0.037 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.69	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.69	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	0.11 J	0.016 J
2-Chlorophenol	5.0	0.69	Not Detected	Not Detected

Air Sample Volume(L): 7200

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	65	60-120
Pyrene-d10	74	60-120
Benzo(a)pyrene-d12	66	50-150
Fluoranthene-d10	71	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121808.d
Lab Smp Id: 1712296-02A
Inj Date : 18-DEC-2017 18:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-02A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	214566	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	863355	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	445283	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	739232	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	654467	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	649866	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	387695	32.3381	32.34
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	640135	37.2364	37.24
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	553254	35.7217	35.72
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	434559	32.9789	32.98
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28	Naphthalene	128	6.449	6.449	(1.005)	5199	0.26779	0.2678(a)
34	2-Methylnaphthalene	142	7.330	7.330	(1.142)	1483	0.11290	0.1129(a)
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:32

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121808.d
Lab Smp Id: 1712296-02A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	214566	0.55
27 Naphthalene-d8	899817	449908	1799634	863355	-4.05
48 Acenaphthene-d10	468863	234432	937726	445283	-5.03
71 Phenanthrene-d10	743971	371986	1487942	739232	-0.64
97 Chrysene-d12	659280	329640	1318560	654467	-0.73
115 Perylene-d12	643165	321582	1286330	649866	1.04

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:32

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-02A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	32.34	64.68	60-120
$ 83 Pyrene-d10	50.00	37.24	74.47	60-120
$ 78 Fluoranthene-d10	50.00	35.72	71.44	50-150
$ 111 Benzo(a)pyrene-d12	50.00	32.98	65.96	50-150

Data File: /chem/msd9.i/18dec17.b/9121808.d

Date : 18-DEC-2017 18:09

Client ID:

Instrument: msd9.i

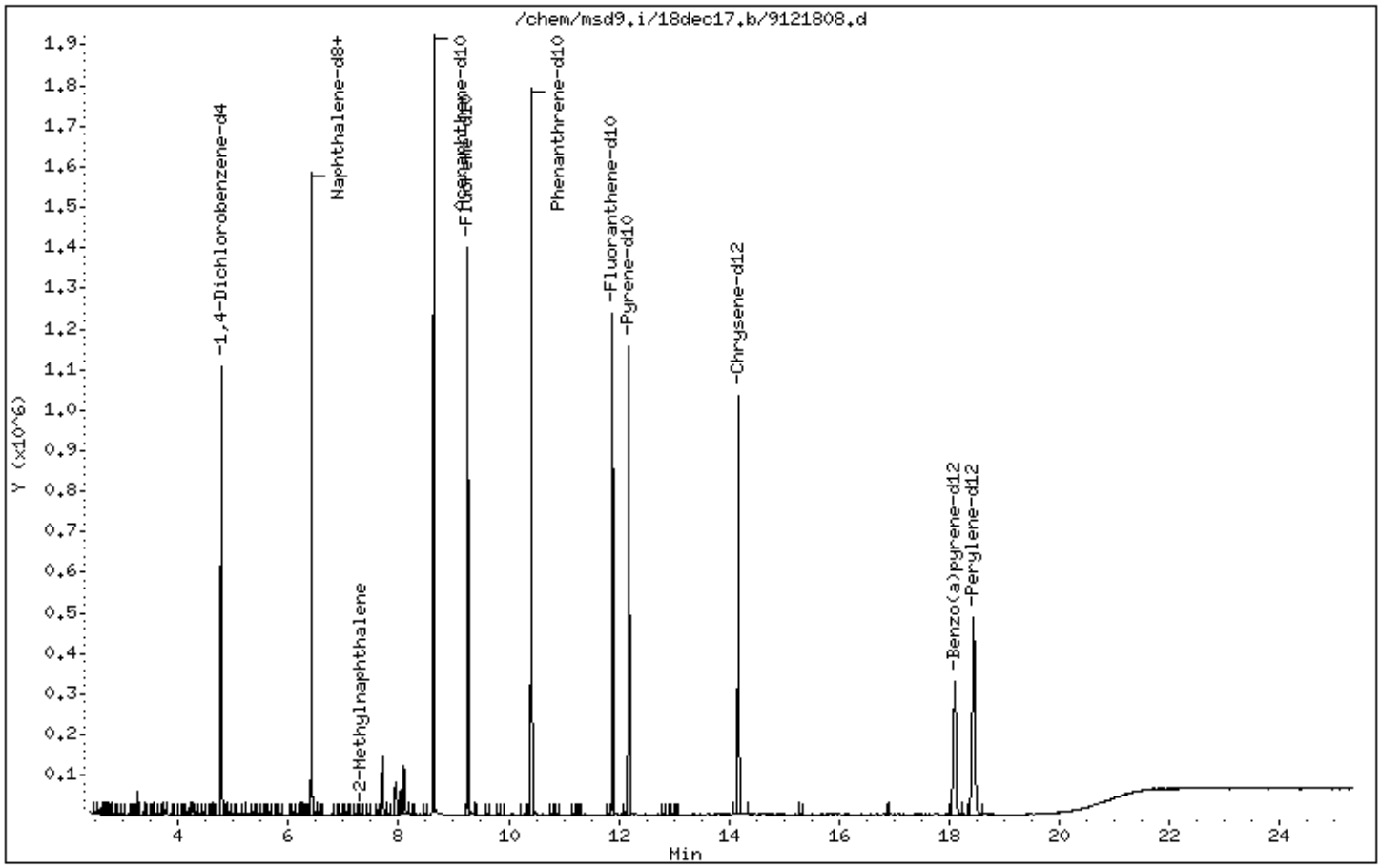
Sample Info: ;1712296-02A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121808.d

Date : 18-DEC-2017 18:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-02A;

Volume Injected (uL): 1.0

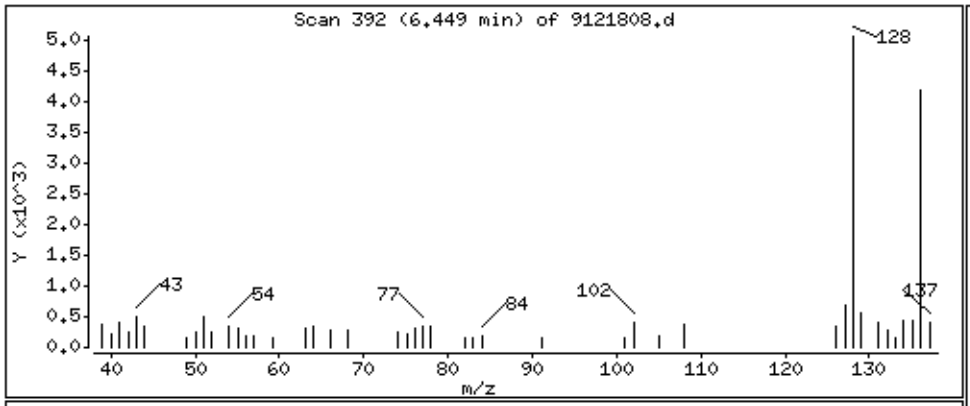
Operator: KV

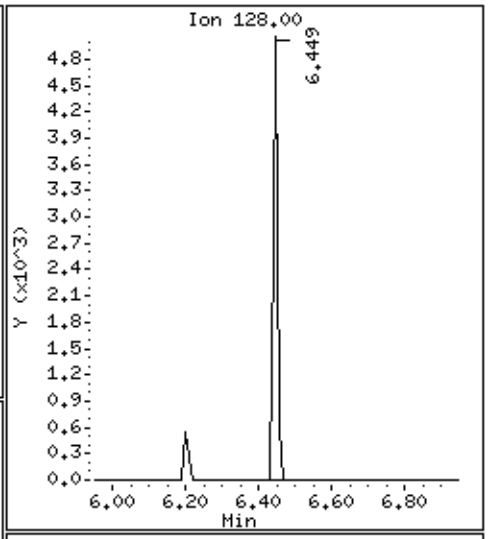
Column phase: DB-5.625

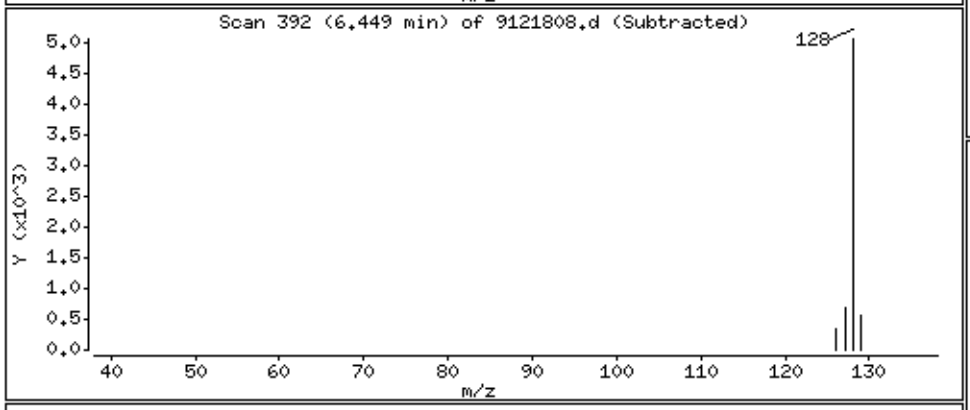
Column diameter: 0.25

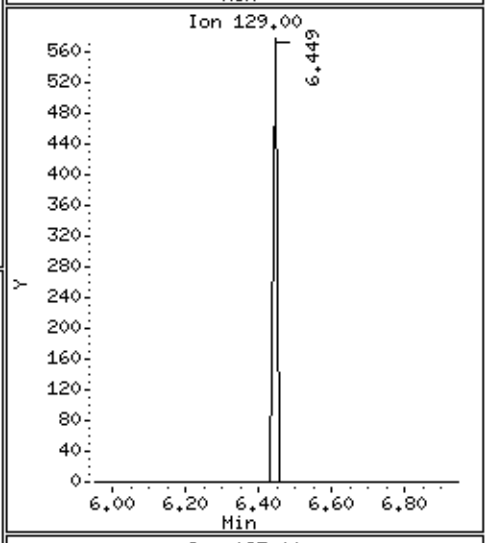
28 Naphthalene

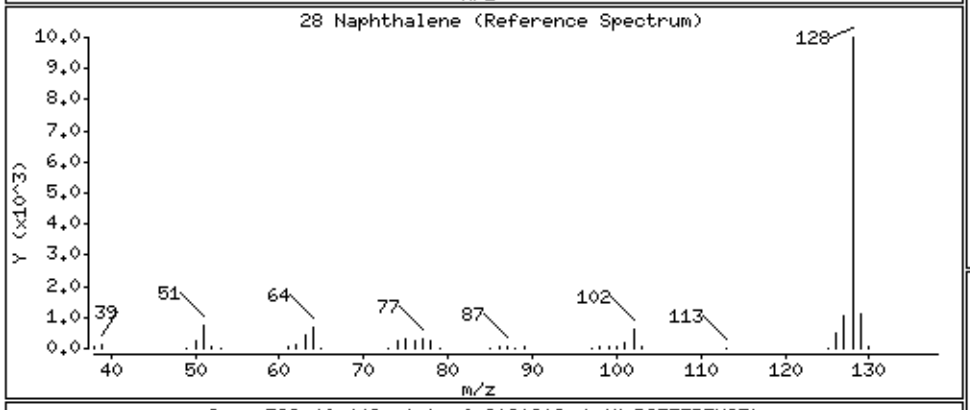
Concentration: 0.2678 ug

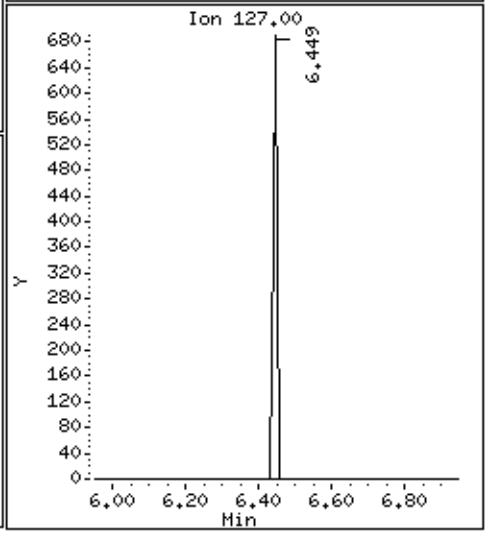


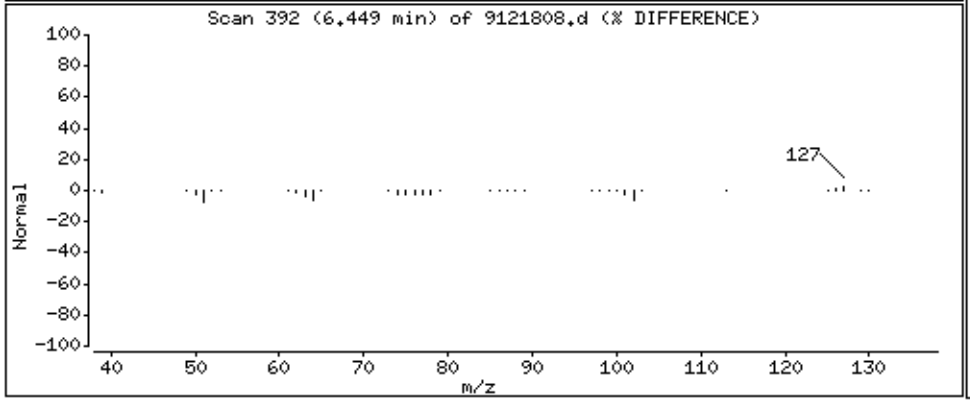












Data File: /chem/msd9.i/18dec17.b/9121808.d

Date : 18-DEC-2017 18:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-02A;

Volume Injected (uL): 1.0

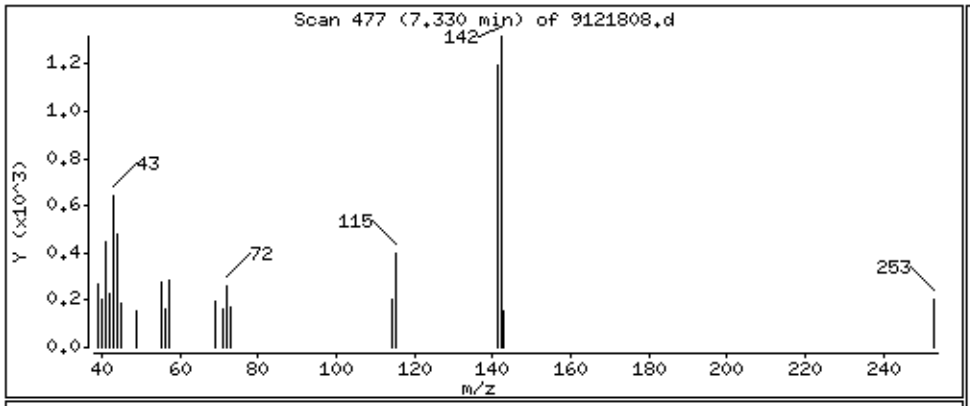
Operator: KV

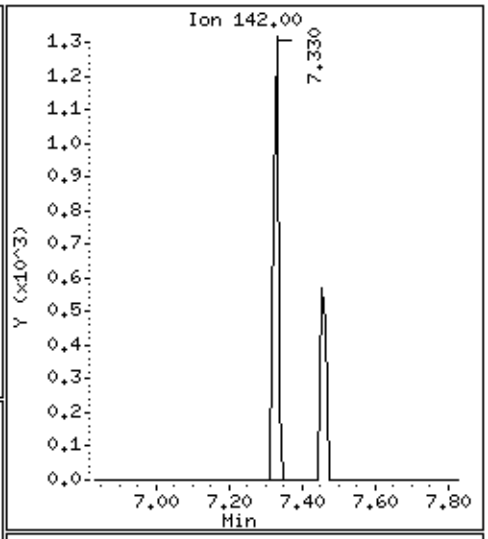
Column phase: DB-5.625

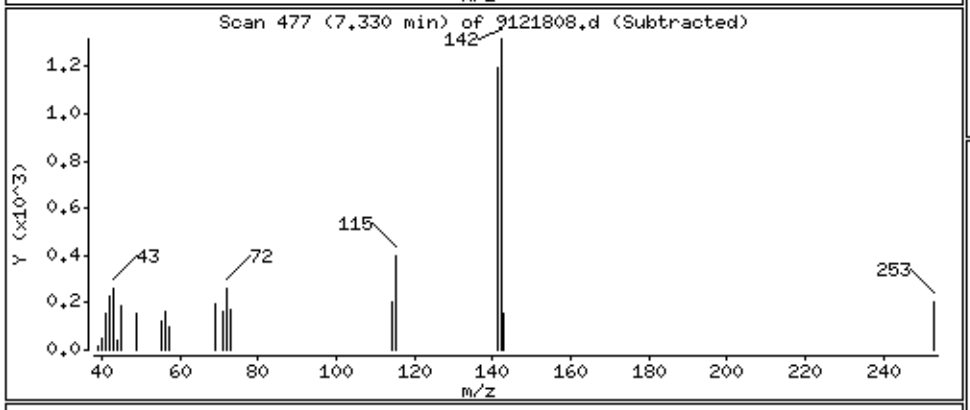
Column diameter: 0.25

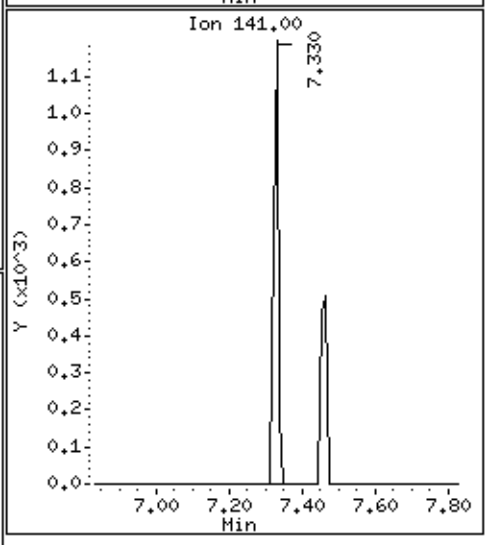
34 2-Methylnaphthalene

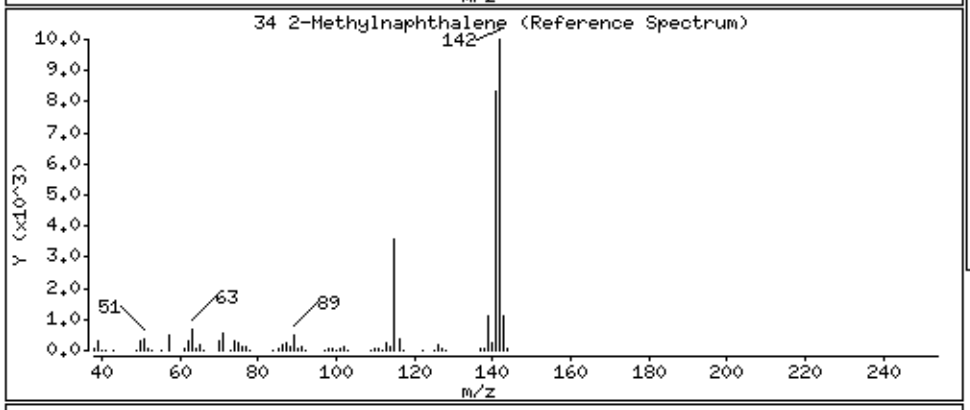
Concentration: 0.1129 ug

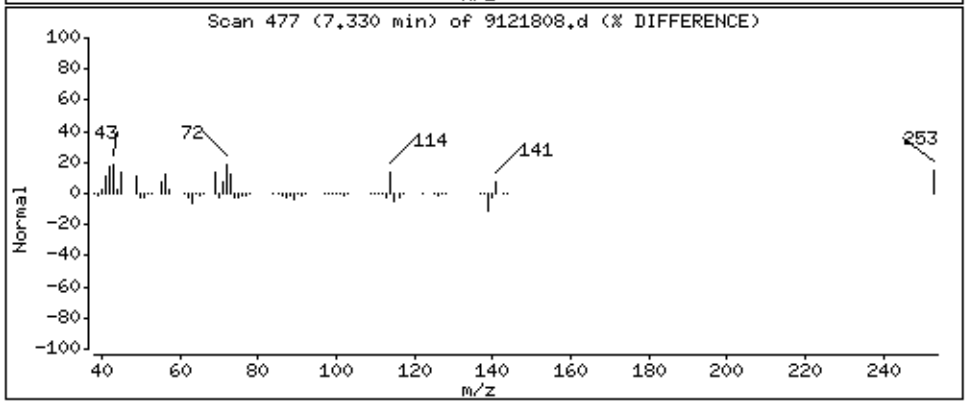












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA12_1217

Lab ID#: 1712296-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.18 J	0.026 J

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Client Sample ID: OA12_1217

Lab ID#: 1712296-03A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121809**	**Date of Collection: 12/14/17 2:46:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 06:39 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.18 J	0.026 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.70	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.70	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.70	Not Detected	Not Detected

Air Sample Volume(L): 7120

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	64	60-120
Pyrene-d10	74	60-120
Benzo(a)pyrene-d12	65	50-150
Fluoranthene-d10	73	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121809.d
Lab Smp Id: 1712296-03A
Inj Date : 18-DEC-2017 18:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-03A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	227703	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	902456	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	461196	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	746196	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	673342	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	671478	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	400135	32.2241	32.22
$ 83 Pyrene-d10	212	12.180	12.190	(0.859)	650999	36.8068	36.81
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	568506	36.3639	36.36
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	444882	32.6757	32.68
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	3734	0.18400	0.1840(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:32

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121809.d
Lab Smp Id: 1712296-03A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39

Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	227703	6.71
27 Naphthalene-d8	899817	449908	1799634	902456	0.29
48 Acenaphthene-d10	468863	234432	937726	461196	-1.64
71 Phenanthrene-d10	743971	371986	1487942	746196	0.30
97 Chrysene-d12	659280	329640	1318560	673342	2.13
115 Perylene-d12	643165	321582	1286330	671478	4.40

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-03A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	32.22	64.45	60-120
$ 83 Pyrene-d10	50.00	36.81	73.61	60-120
$ 78 Fluoranthene-d10	50.00	36.36	72.73	50-150
$ 111 Benzo(a)pyrene-d12	50.00	32.68	65.35	50-150

Data File: /chem/msd9.i/18dec17.b/9121809.d

Date : 18-DEC-2017 18:39

Client ID:

Instrument: msd9.i

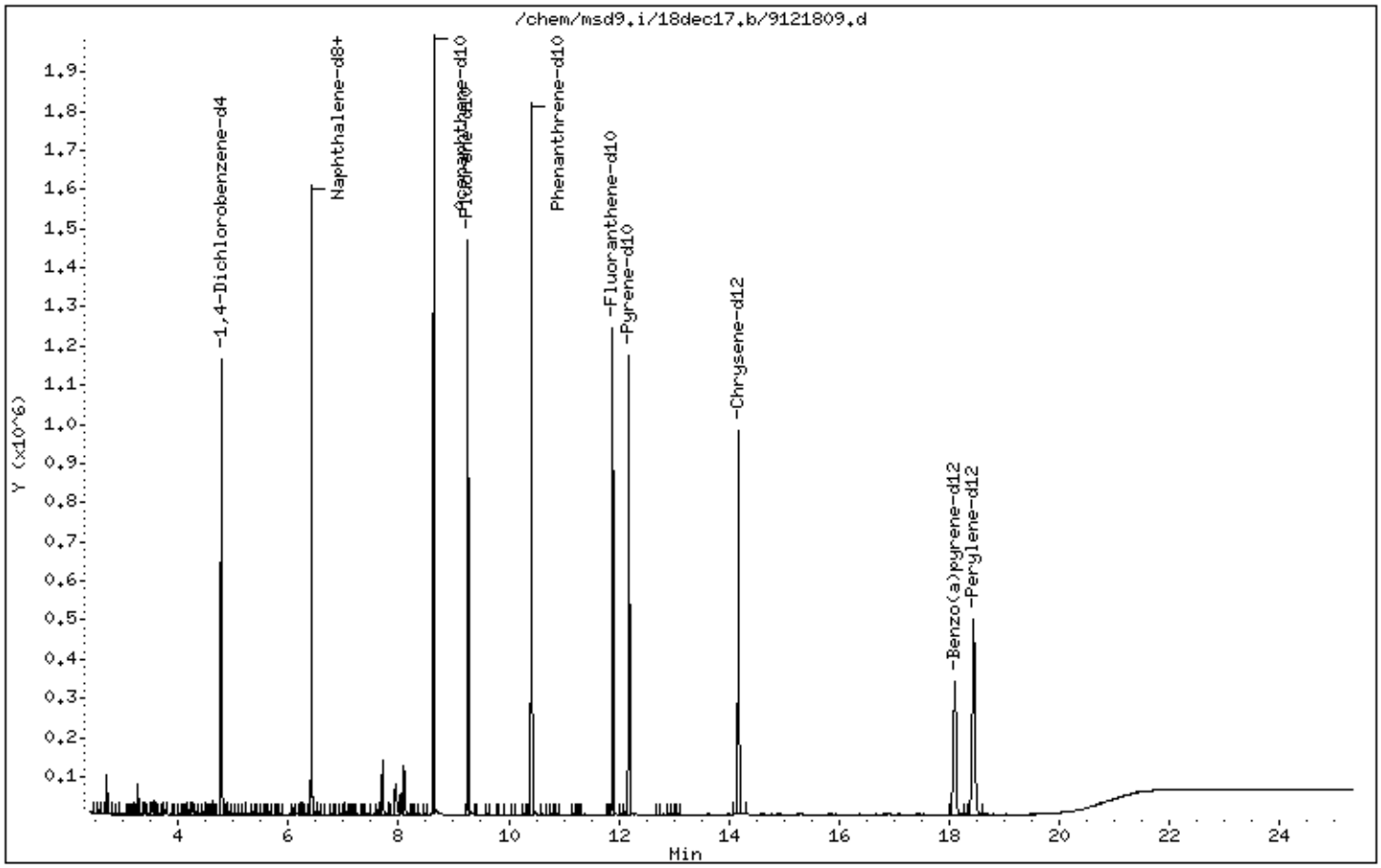
Sample Info: ;1712296-03A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121809.d

Date : 18-DEC-2017 18:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-03A;

Volume Injected (uL): 1.0

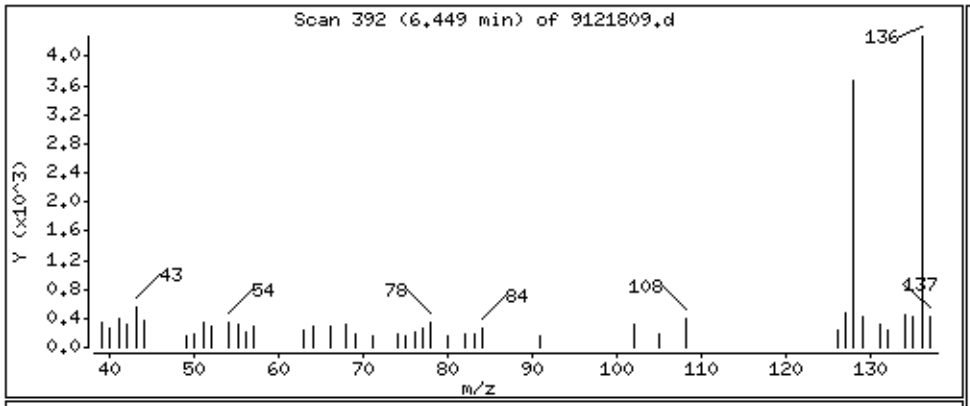
Operator: KV

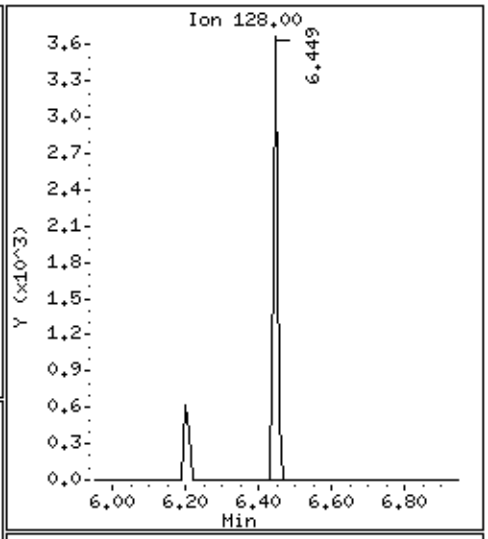
Column phase: DB-5.625

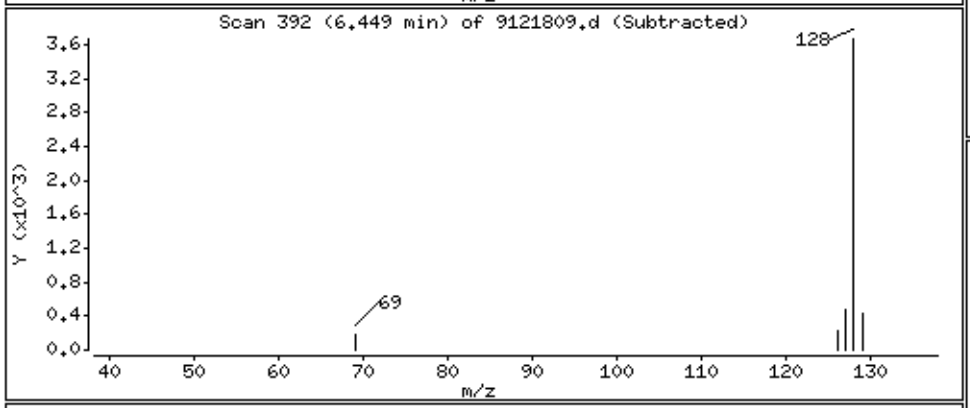
Column diameter: 0.25

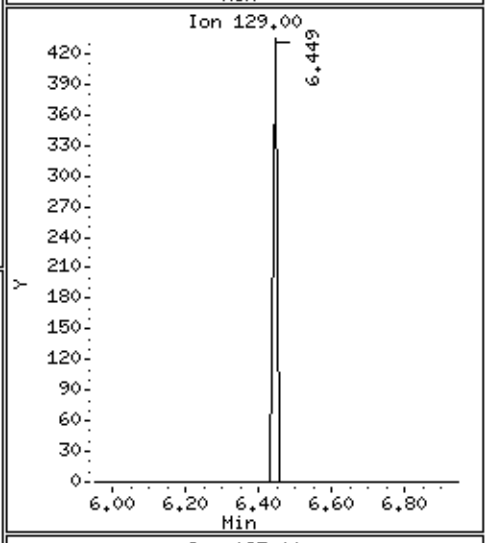
28 Naphthalene

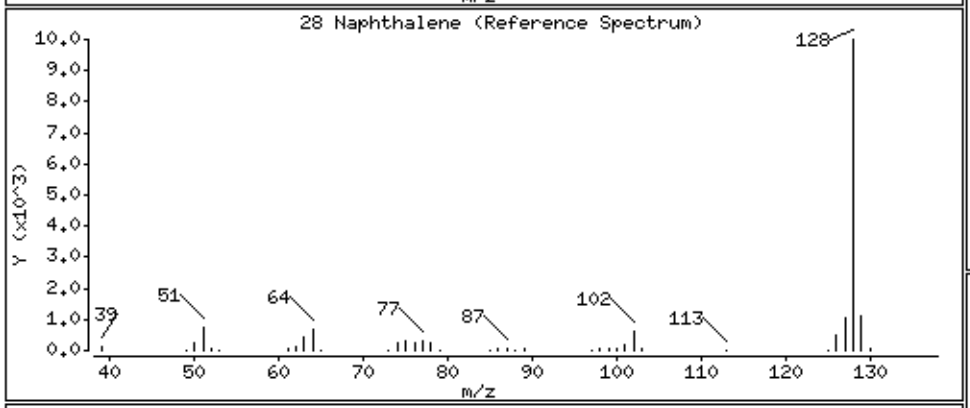
Concentration: 0.1840 ug

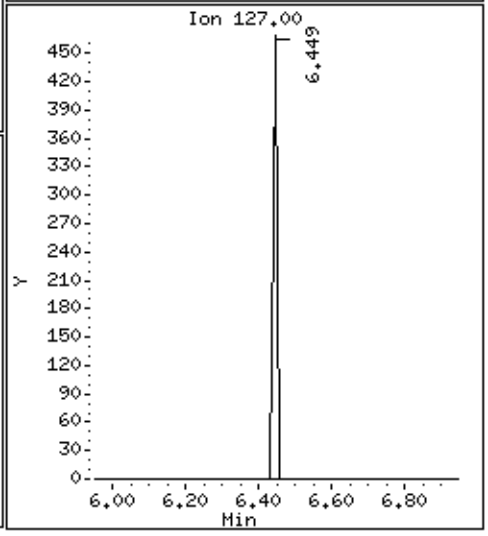


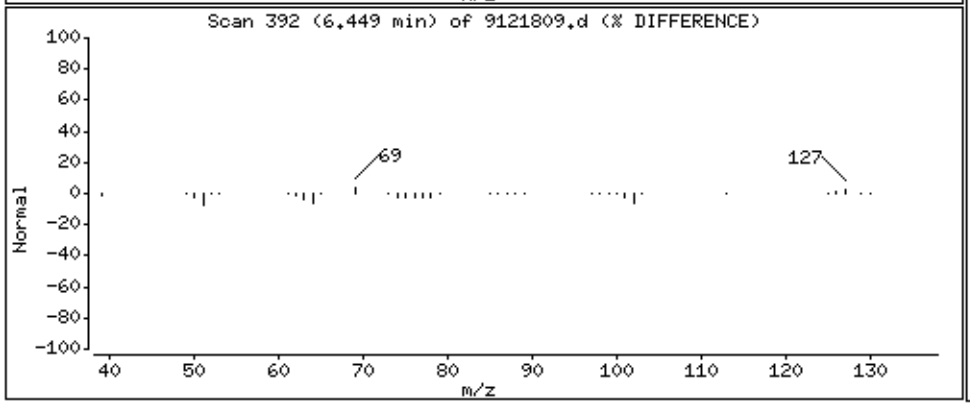












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA13_1217

Lab ID#: 1712296-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	1.1	0.15
2-Methylnaphthalene	1.0	0.14	0.20 J	0.028 J

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Client Sample ID: OA13_1217

Lab ID#: 1712296-04A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121810**	**Date of Collection: 12/14/17 3:00:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 07:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	1.1	0.15
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.68	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.4	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.68	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	0.20 J	0.028 J
2-Chlorophenol	5.0	0.68	Not Detected	Not Detected

Air Sample Volume(L): 7380

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	64	60-120
Pyrene-d10	72	60-120
Benzo(a)pyrene-d12	64	50-150
Fluoranthene-d10	77	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121810.d
Lab Smp Id: 1712296-04A
Inj Date : 18-DEC-2017 19:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-04A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	188315	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	733658	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	401414	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	719316	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	693429	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	697599	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	347882	32.1884	32.19
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	657991	36.1245	36.12
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	580118	38.4933	38.49
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	450087	31.8202	31.82
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	17997	1.09088	1.091
34 2-Methylnaphthalene	142	7.330	7.330	(1.142)	2291	0.20524	0.2052(a)
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121810.d
Lab Smp Id: 1712296-04A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	188315	-11.75
27 Naphthalene-d8	899817	449908	1799634	733658	-18.47
48 Acenaphthene-d10	468863	234432	937726	401414	-14.39
71 Phenanthrene-d10	743971	371986	1487942	719316	-3.31
97 Chrysene-d12	659280	329640	1318560	693429	5.18
115 Perylene-d12	643165	321582	1286330	697599	8.46

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:32

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-04A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	32.19	64.38	60-120
$ 83 Pyrene-d10	50.00	36.12	72.25	60-120
$ 78 Fluoranthene-d10	50.00	38.49	76.99	50-150
$ 111 Benzo(a)pyrene-d12	50.00	31.82	63.64	50-150

Data File: /chem/msd9.i/18dec17.b/9121810.d

Date : 18-DEC-2017 19:09

Client ID:

Instrument: msd9.i

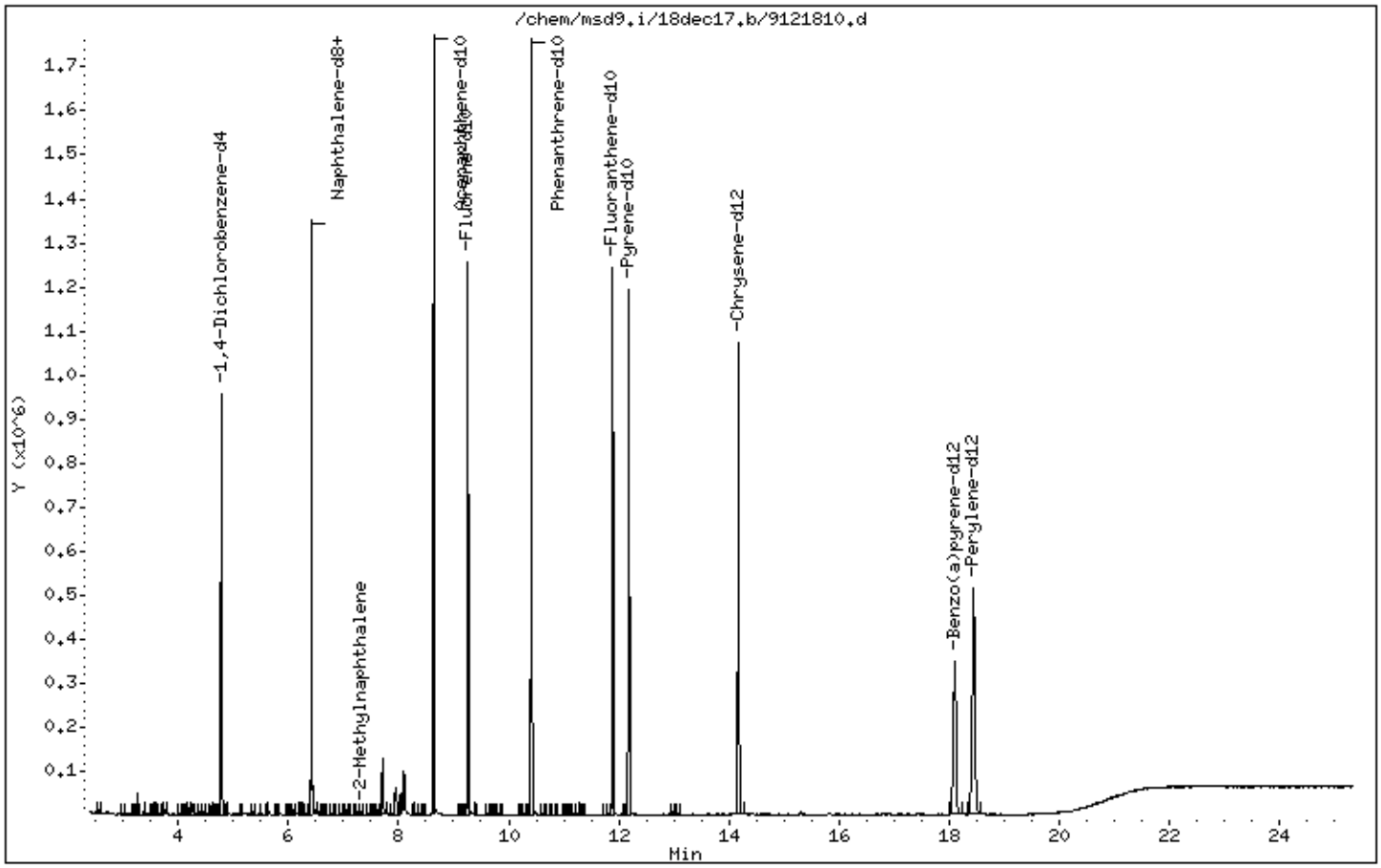
Sample Info: ;1712296-04A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121810.d

Date : 18-DEC-2017 19:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-04A;

Volume Injected (uL): 1.0

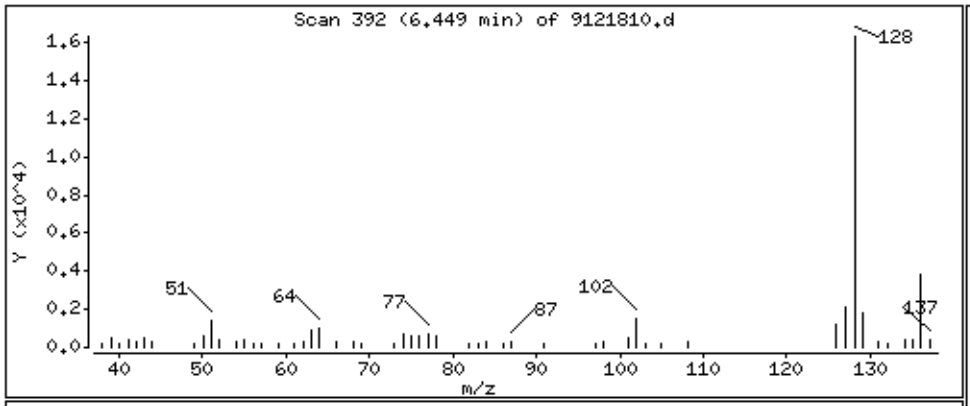
Operator: KV

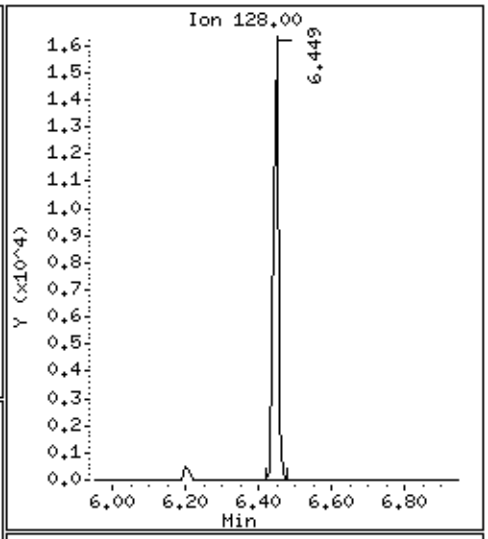
Column phase: DB-5.625

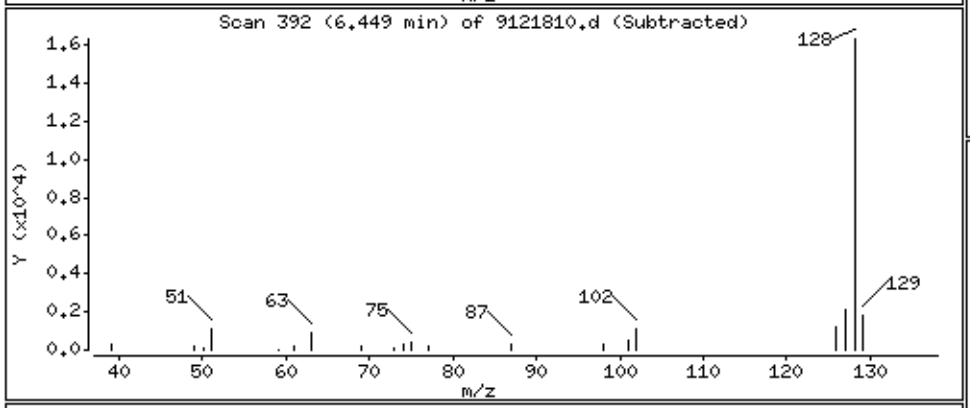
Column diameter: 0.25

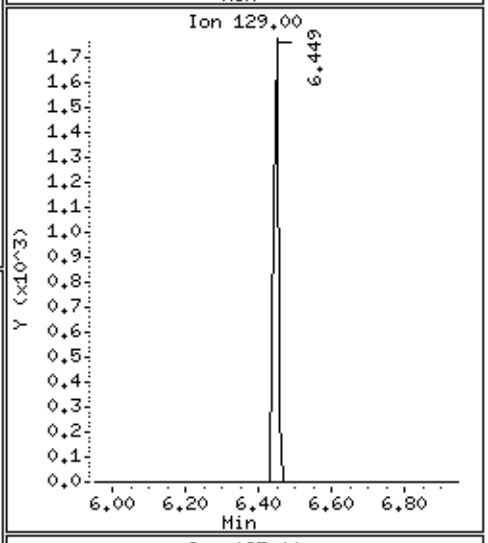
28 Naphthalene

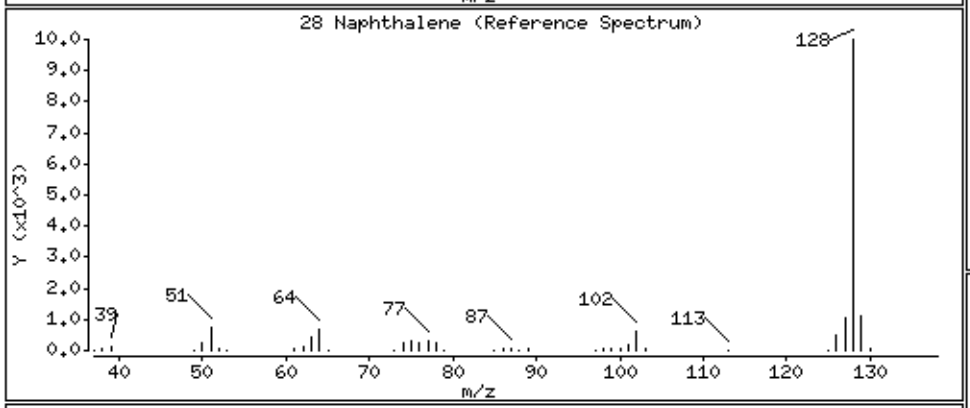
Concentration: 1.091 ug

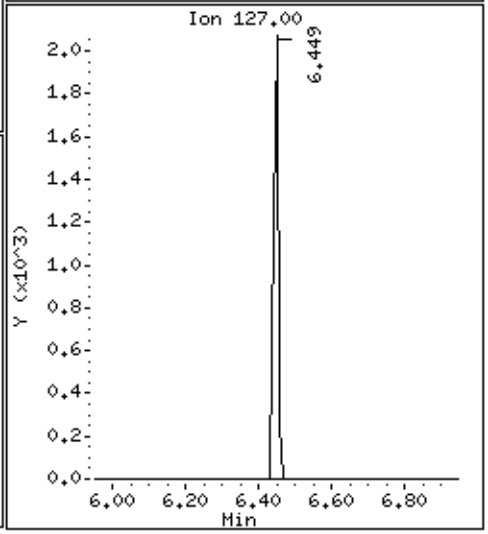


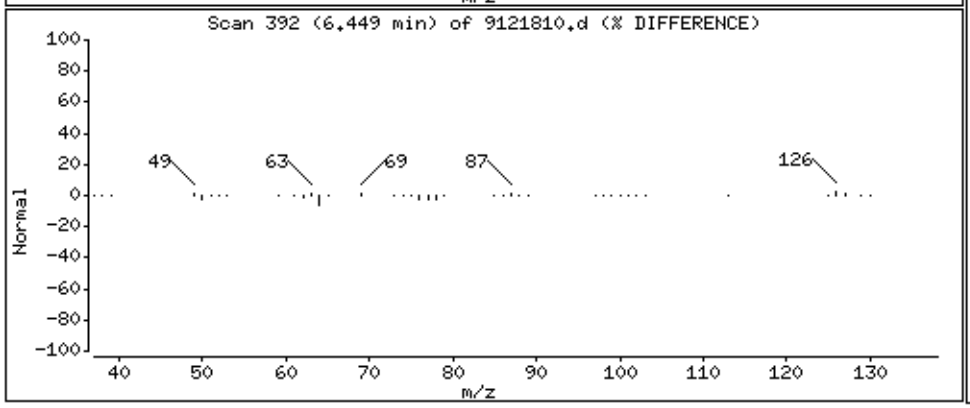












Data File: /chem/msd9.i/18dec17.b/9121810.d

Date : 18-DEC-2017 19:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-04A;

Volume Injected (uL): 1.0

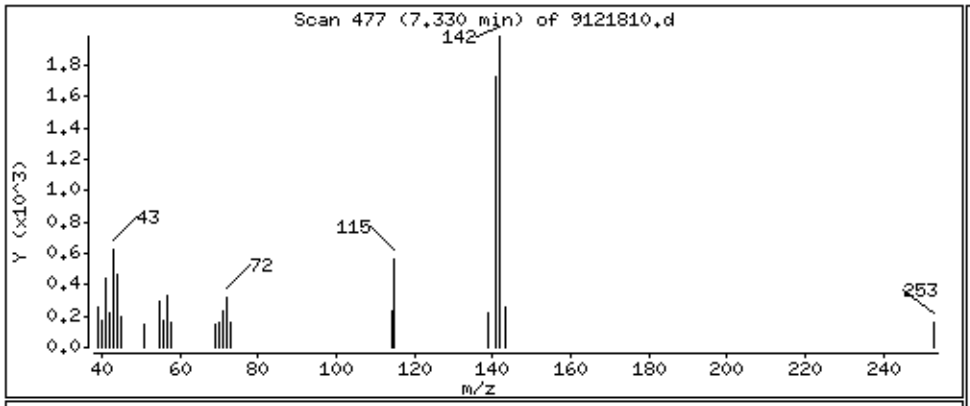
Operator: KV

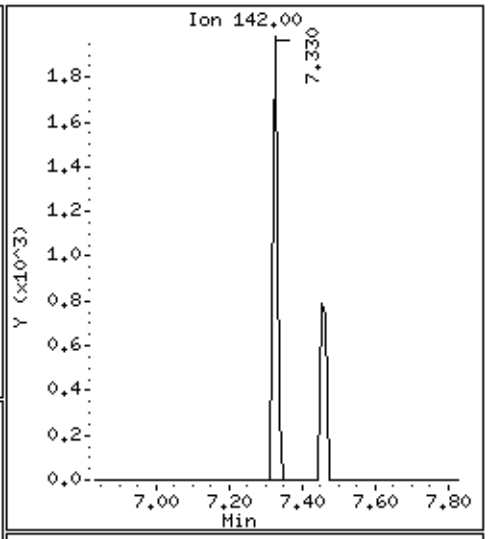
Column phase: DB-5.625

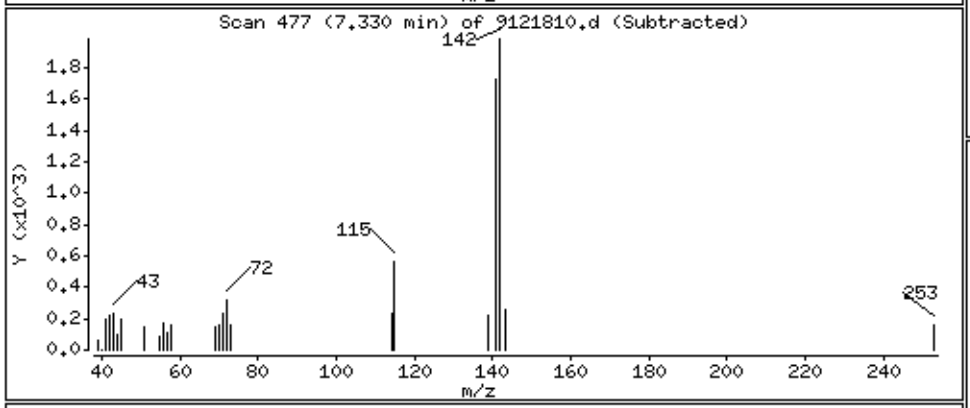
Column diameter: 0.25

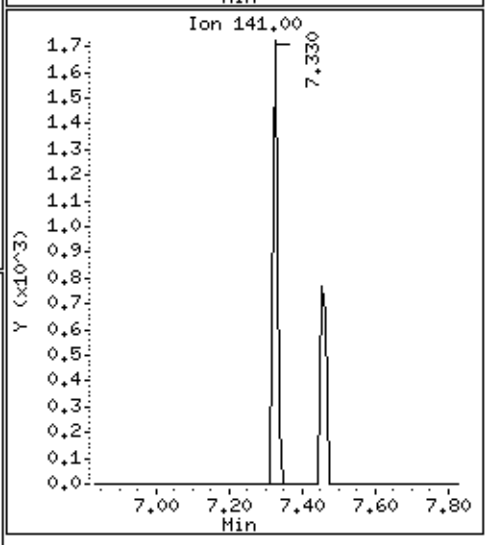
34 2-Methylnaphthalene

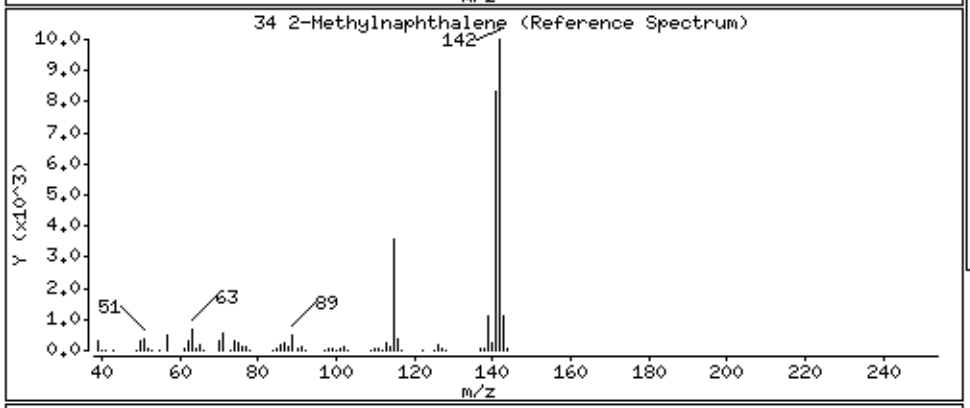
Concentration: 0.2052 ug

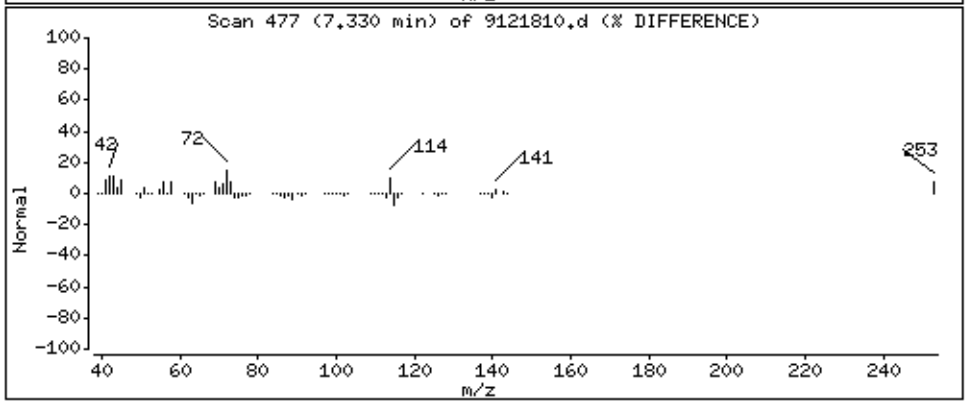












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA14_1217

Lab ID#: 1712296-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.95 J	0.12 J
2-Methylnaphthalene	1.0	0.13	0.25 J	0.032 J

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Client Sample ID: OA14_1217

Lab ID#: 1712296-05A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121811**	**Date of Collection: 12/14/17 3:19:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 07:39 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.95 J	0.12 J
Acenaphthylene	1.0	0.13	Not Detected	Not Detected
Acenaphthene	1.0	0.13	Not Detected	Not Detected
Fluorene	1.0	0.13	Not Detected	Not Detected
Phenanthrene	1.0	0.13	Not Detected	Not Detected
Anthracene	1.0	0.13	Not Detected	Not Detected
Fluoranthene	1.0	0.13	Not Detected	Not Detected
Pyrene	1.0	0.13	Not Detected	Not Detected
Chrysene	1.0	0.13	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.13	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.13	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.13	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.13	Not Detected	Not Detected
Phenol	5.0	0.65	Not Detected	Not Detected
Dibenzofuran	1.0	0.13	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.2	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.65	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.13	0.25 J	0.032 J
2-Chlorophenol	5.0	0.65	Not Detected	Not Detected

Air Sample Volume(L): 7720

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	66	60-120
Pyrene-d10	72	60-120
Benzo(a)pyrene-d12	68	50-150
Fluoranthene-d10	82	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121811.d
Lab Smp Id: 1712296-05A
Inj Date : 18-DEC-2017 19:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-05A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	184019	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	723421	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	397740	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	719807	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	714903	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	704461	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	354291	33.0842	33.08
$ 83 Pyrene-d10	212	12.180	12.190	(0.859)	674525	35.9198	35.92
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	617816	40.9668	40.97
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	489158	34.2455	34.24
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28	Naphthalene	128	6.449	6.449	(1.005)	15400	0.94668	0.9467(a)
34	2-Methylnaphthalene	142	7.330	7.330	(1.142)	2710	0.24621	0.2462(a)
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121811.d
Lab Smp Id: 1712296-05A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	184019	-13.76
27 Naphthalene-d8	899817	449908	1799634	723421	-19.60
48 Acenaphthene-d10	468863	234432	937726	397740	-15.17
71 Phenanthrene-d10	743971	371986	1487942	719807	-3.25
97 Chrysene-d12	659280	329640	1318560	714903	8.44
115 Perylene-d12	643165	321582	1286330	704461	9.53

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-05A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	33.08	66.17	60-120
$ 83 Pyrene-d10	50.00	35.92	71.84	60-120
$ 78 Fluoranthene-d10	50.00	40.97	81.93	50-150
$ 111 Benzo(a)pyrene-d12	50.00	34.24	68.49	50-150

Data File: /chem/msd9.i/18dec17.b/9121811.d

Date : 18-DEC-2017 19:39

Client ID:

Instrument: msd9.i

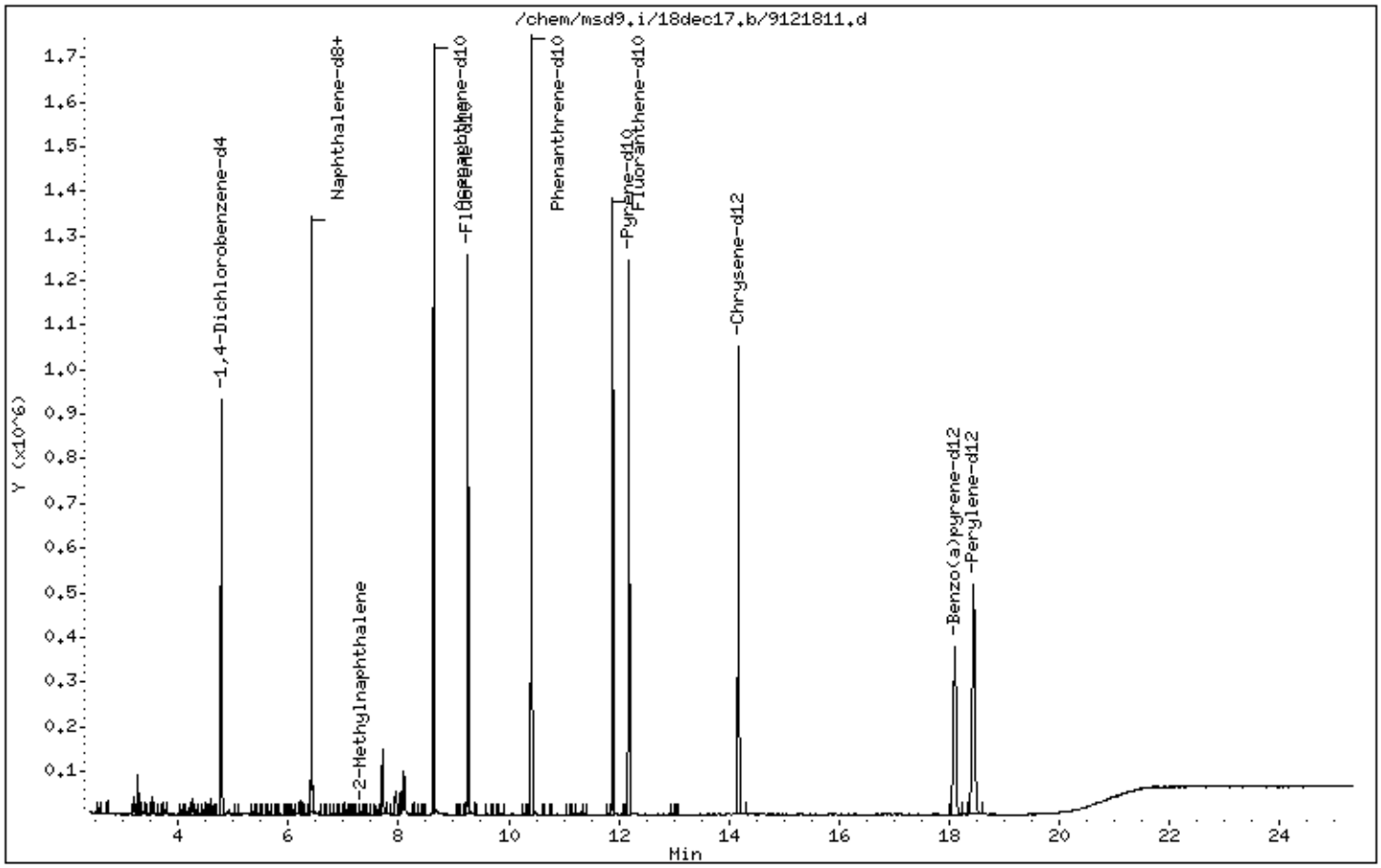
Sample Info: ;1712296-05A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121811.d

Date : 18-DEC-2017 19:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-05A;

Volume Injected (uL): 1.0

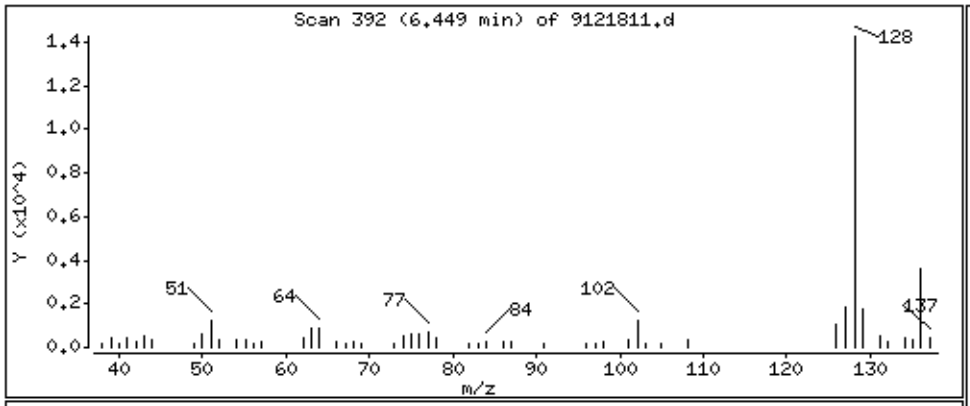
Operator: KV

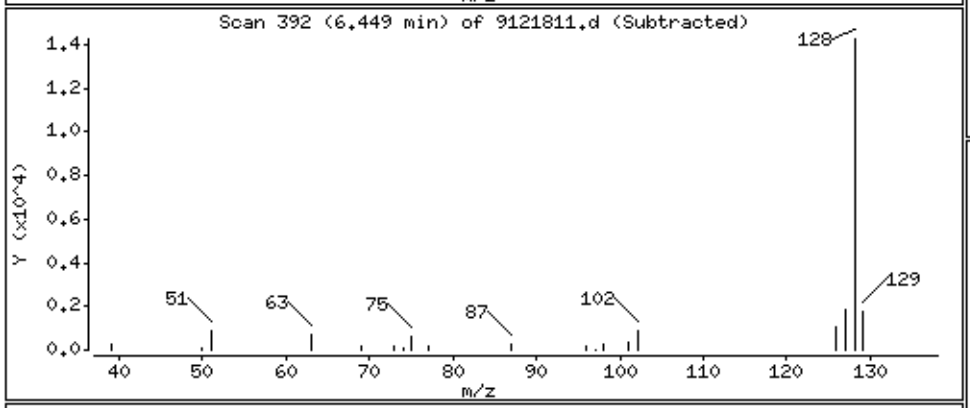
Column phase: DB-5.625

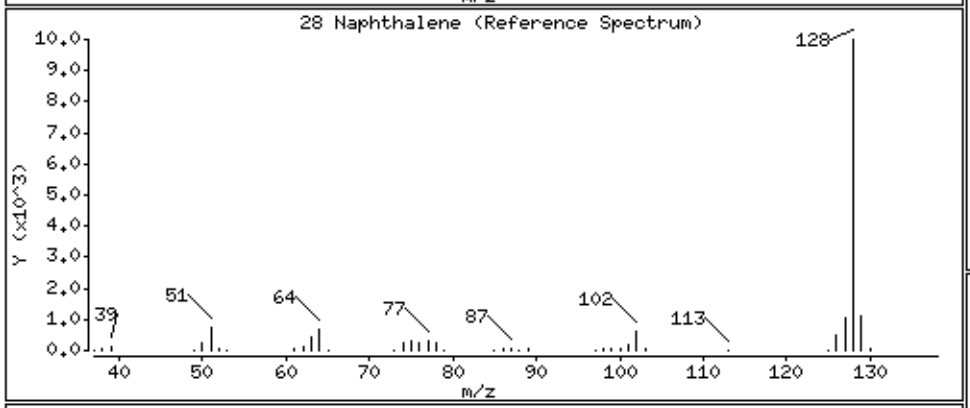
Column diameter: 0.25

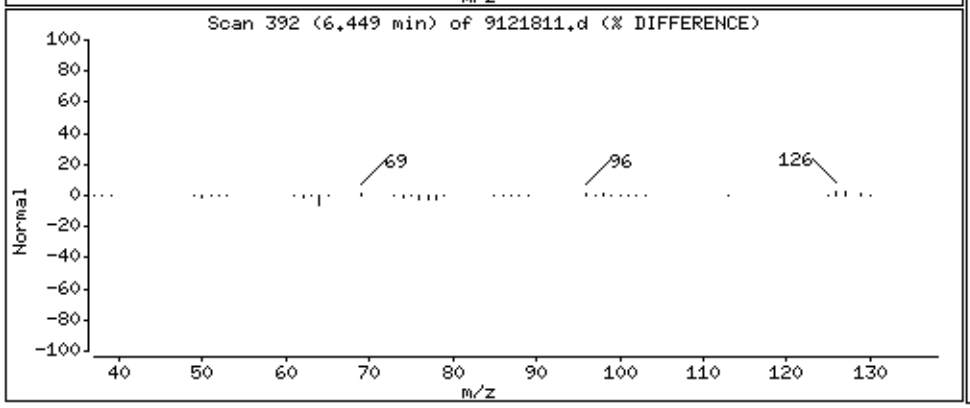
28 Naphthalene

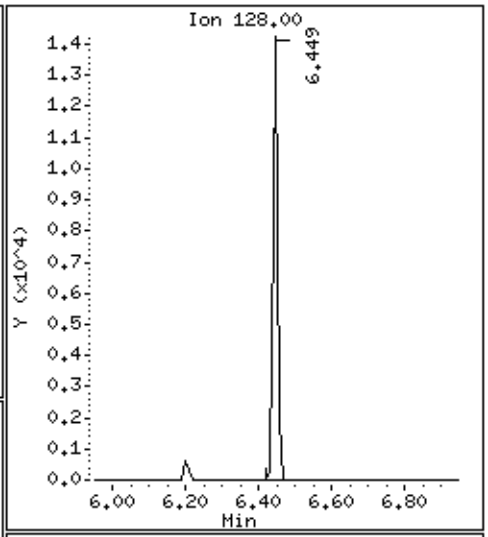
Concentration: 0.9467 ug

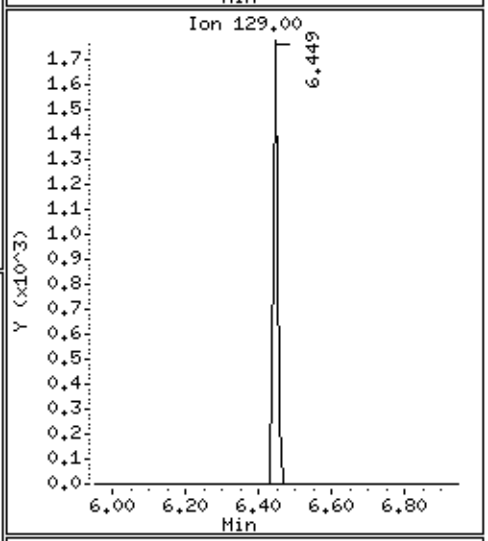


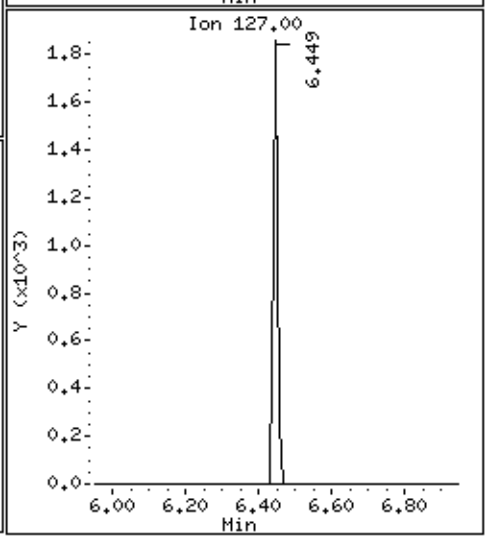












Data File: /chem/msd9.i/18dec17.b/9121811.d

Date : 18-DEC-2017 19:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-05A;

Volume Injected (uL): 1.0

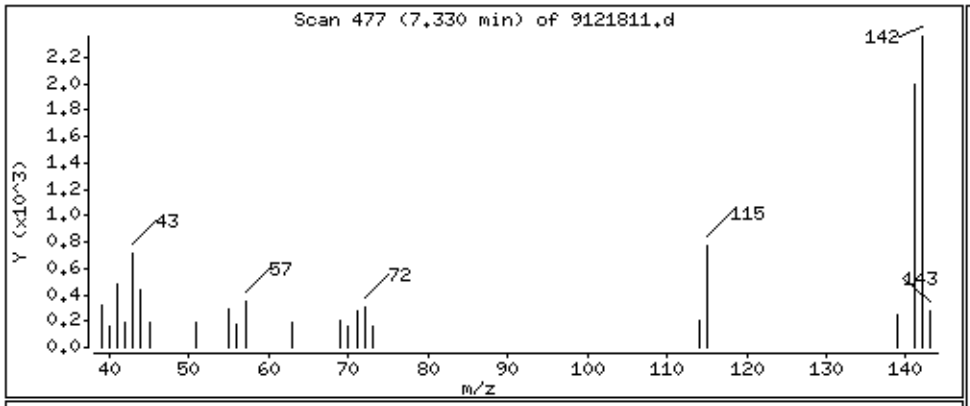
Operator: KV

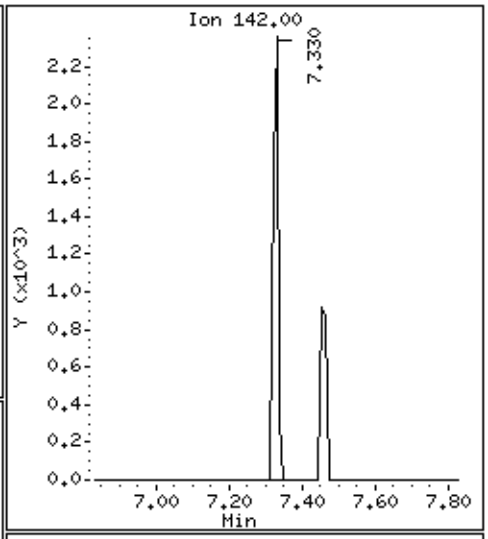
Column phase: DB-5.625

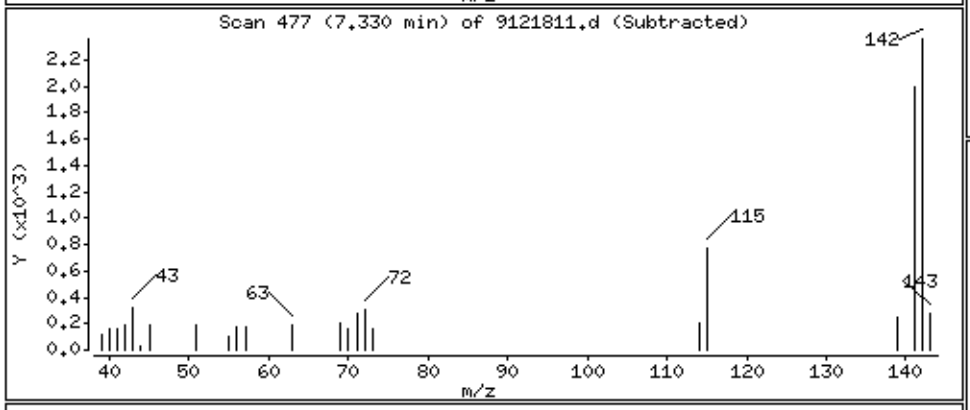
Column diameter: 0.25

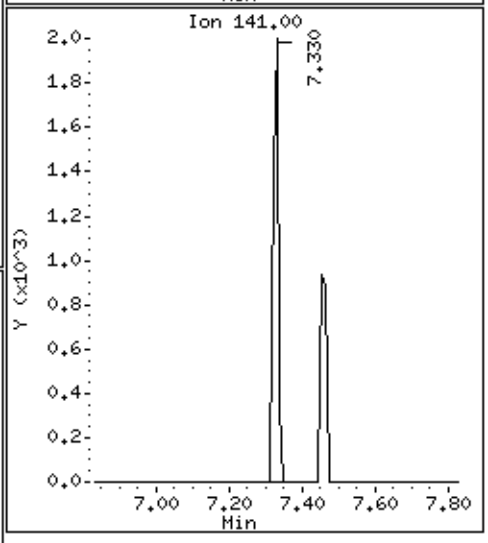
34 2-Methylnaphthalene

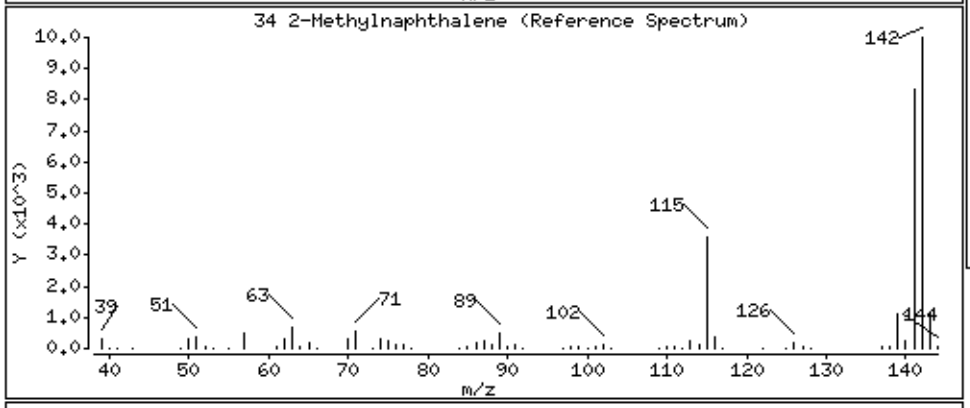
Concentration: 0.2462 ug

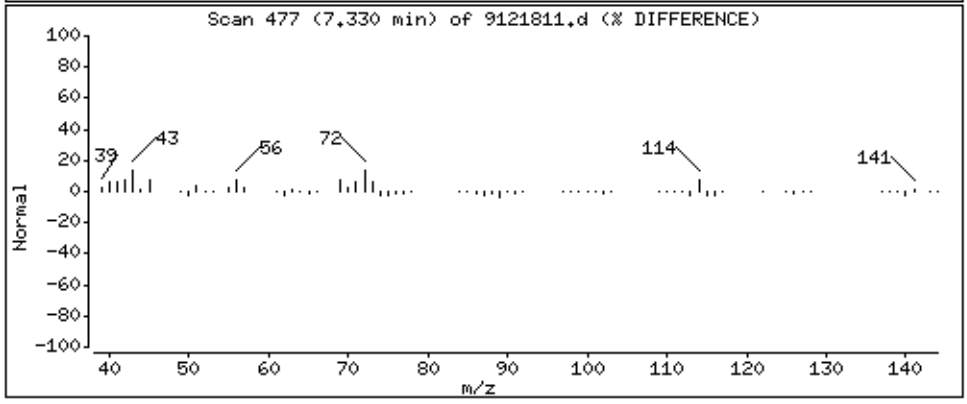












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA1_1217

Lab ID#: 1712296-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.27 J	0.036 J

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Client Sample ID: OA1_1217

Lab ID#: 1712296-06A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121812**	**Date of Collection: 12/14/17 2:25:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 08:09 PM**
		Date of Extraction: 12/18/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.27 J	0.036 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.68	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.5	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.68	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.68	Not Detected	Not Detected

Air Sample Volume(L): 7320

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	62	60-120
Pyrene-d10	74	60-120
Benzo(a)pyrene-d12	65	50-150
Fluoranthene-d10	75	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121812.d
Lab Smp Id: 1712296-06A
Inj Date : 18-DEC-2017 20:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-06A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	226157	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	904543	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	472907	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	785318	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	715856	40.0000	
* 115 Perylene-d12	264	18.449	18.460	(1.000)	707996	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	395354	31.0506	31.05
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	692792	36.8435	36.84
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	618045	37.5633	37.56
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	466592	32.5026	32.50
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	5423	0.26661	0.2666(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121812.d
Lab Smp Id: 1712296-06A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	226157	5.99
27 Naphthalene-d8	899817	449908	1799634	904543	0.53
48 Acenaphthene-d10	468863	234432	937726	472907	0.86
71 Phenanthrene-d10	743971	371986	1487942	785318	5.56
97 Chrysene-d12	659280	329640	1318560	715856	8.58
115 Perylene-d12	643165	321582	1286330	707996	10.08

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-06A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.05	62.10	60-120
$ 83 Pyrene-d10	50.00	36.84	73.69	60-120
$ 78 Fluoranthene-d10	50.00	37.56	75.13	50-150
$ 111 Benzo(a)pyrene-d12	50.00	32.50	65.01	50-150

Data File: /chem/msd9.i/18dec17.b/9121812.d

Date : 18-DEC-2017 20:09

Client ID:

Instrument: msd9.i

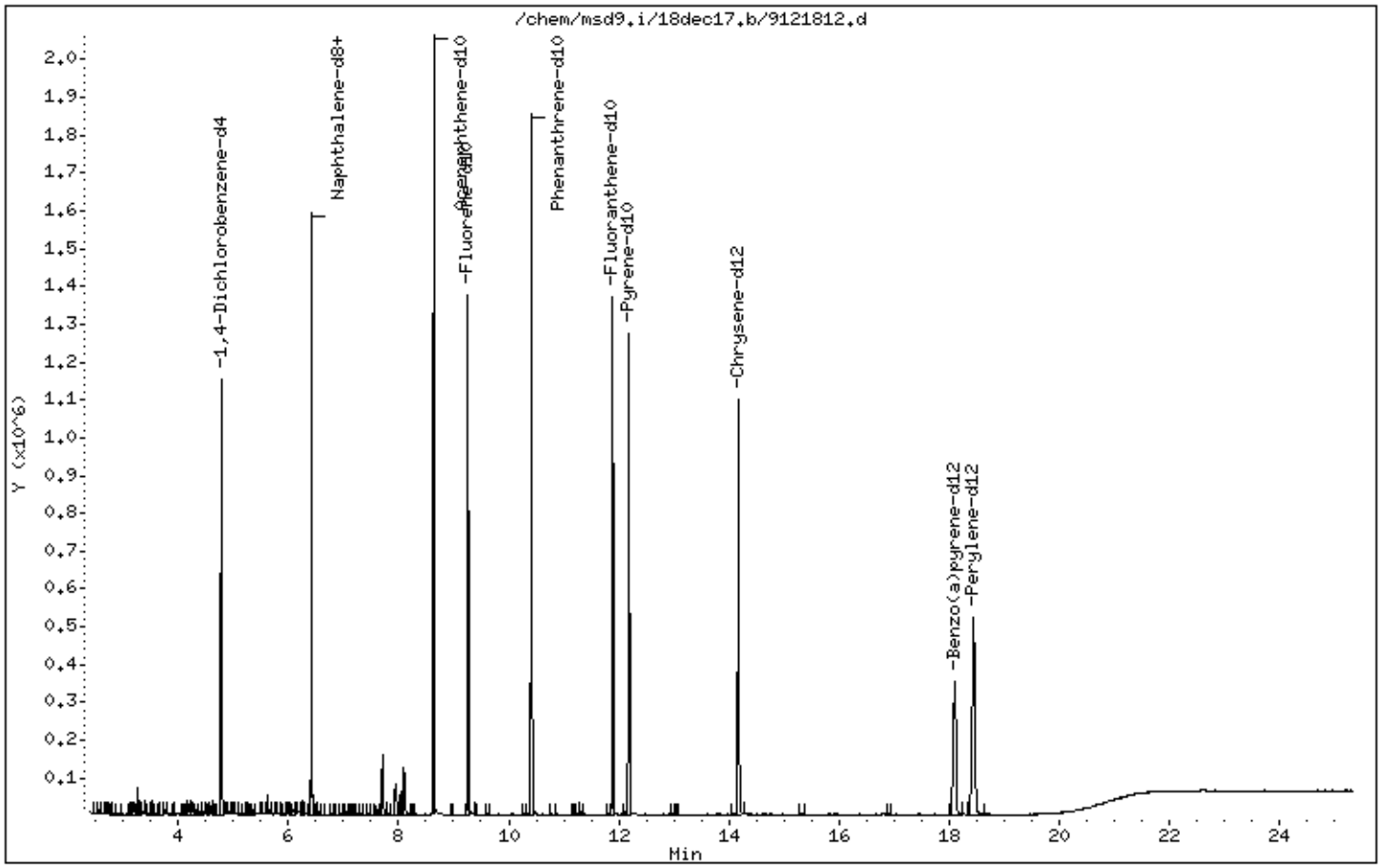
Sample Info: ;1712296-06A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121812.d

Date : 18-DEC-2017 20:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-06A;

Volume Injected (uL): 1.0

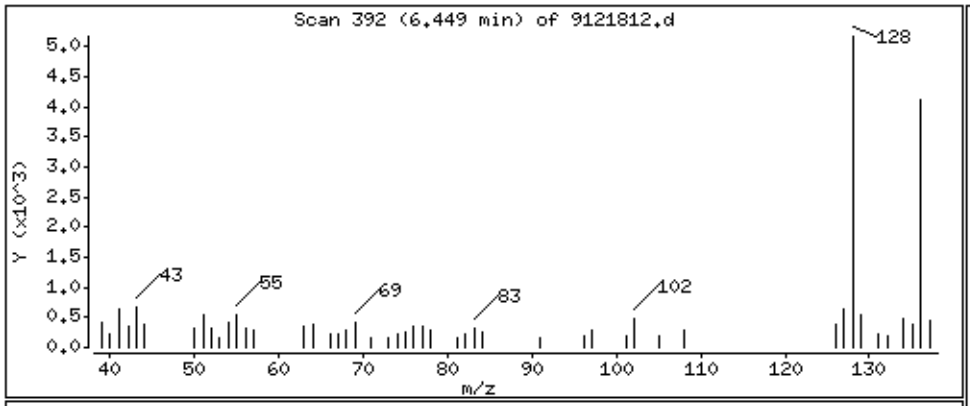
Operator: KV

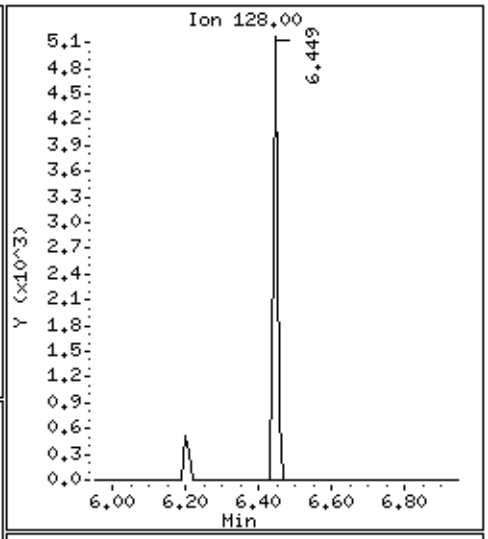
Column phase: DB-5.625

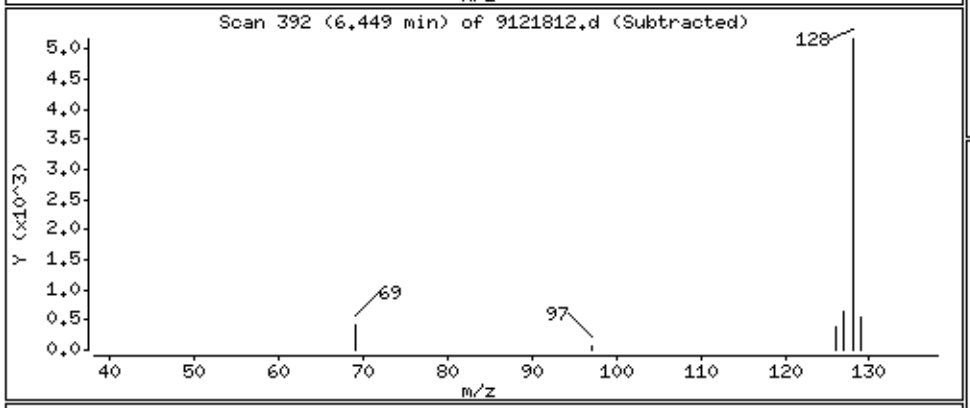
Column diameter: 0.25

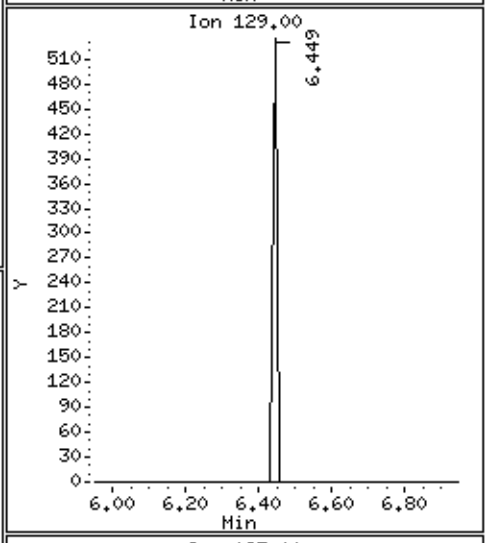
28 Naphthalene

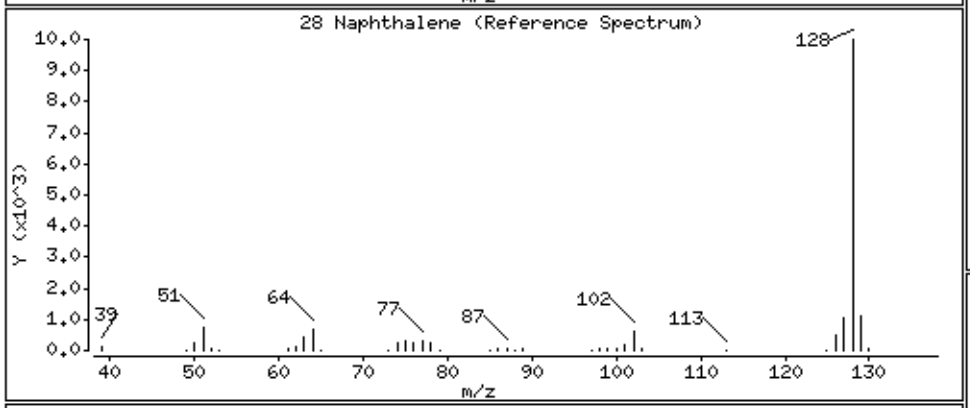
Concentration: 0.2666 ug

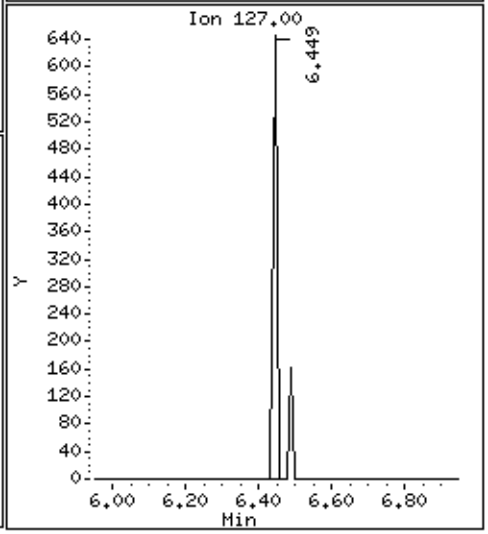


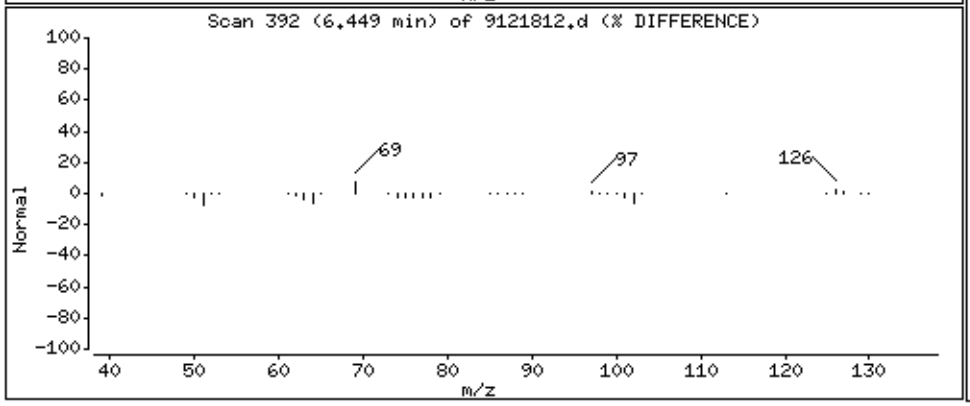












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA2_1217

Lab ID#: 1712296-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.33 J	0.046 J

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Client Sample ID: OA2_1217

Lab ID#: 1712296-07A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121813**	**Date of Collection: 12/14/17 2:10:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 08:39 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.33 J	0.046 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.71	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.71	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.71	Not Detected	Not Detected

Air Sample Volume(L): 7070

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	64	60-120
Pyrene-d10	75	60-120
Benzo(a)pyrene-d12	68	50-150
Fluoranthene-d10	75	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121813.d
Lab Smp Id: 1712296-07A
Inj Date : 18-DEC-2017 20:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-07A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	220500	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	889856	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	464547	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	760342	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	676165	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	675960	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	403063	32.2258	32.22
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	669810	37.7122	37.71
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	599436	37.6290	37.63
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	464611	33.8985	33.90
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	6569	0.32829	0.3283(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121813.d
Lab Smp Id: 1712296-07A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	220500	3.33
27 Naphthalene-d8	899817	449908	1799634	889856	-1.11
48 Acenaphthene-d10	468863	234432	937726	464547	-0.92
71 Phenanthrene-d10	743971	371986	1487942	760342	2.20
97 Chrysene-d12	659280	329640	1318560	676165	2.56
115 Perylene-d12	643165	321582	1286330	675960	5.10

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-07A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	32.22	64.45	60-120
$ 83 Pyrene-d10	50.00	37.71	75.42	60-120
$ 78 Fluoranthene-d10	50.00	37.63	75.26	50-150
$ 111 Benzo(a)pyrene-d12	50.00	33.90	67.80	50-150

Data File: /chem/msd9.i/18dec17.b/9121813.d

Date : 18-DEC-2017 20:39

Client ID:

Instrument: msd9.i

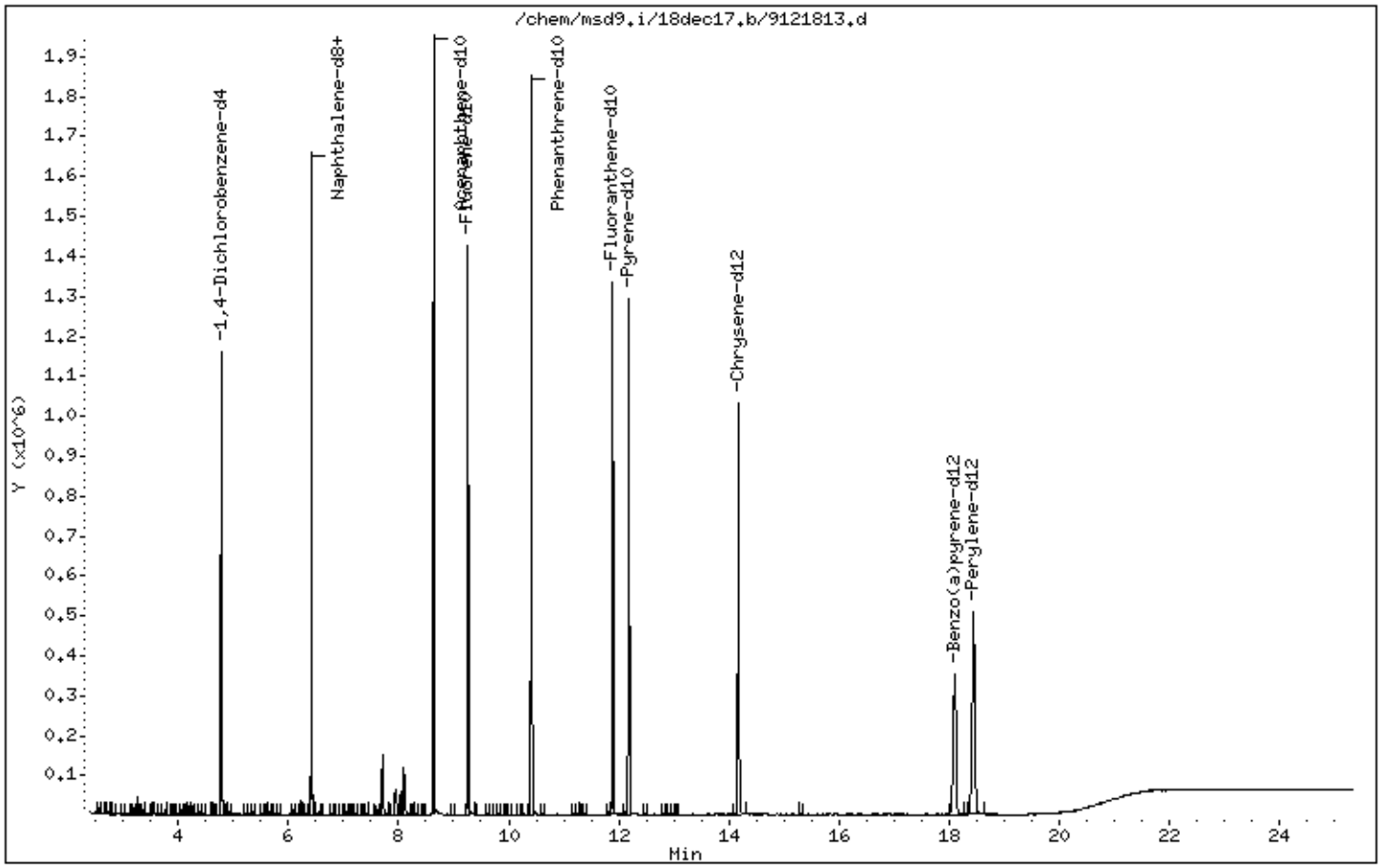
Sample Info: ;1712296-07A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121813.d

Date : 18-DEC-2017 20:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-07A;

Volume Injected (uL): 1.0

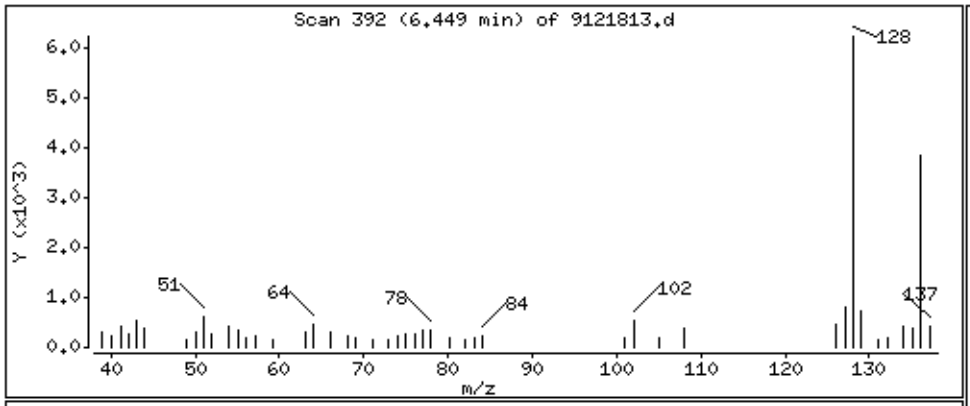
Operator: KV

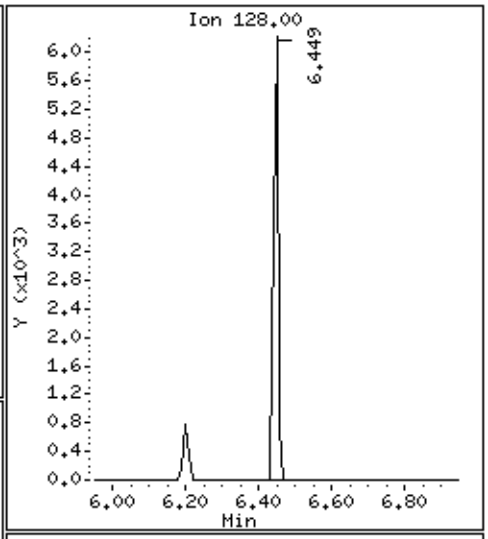
Column phase: DB-5.625

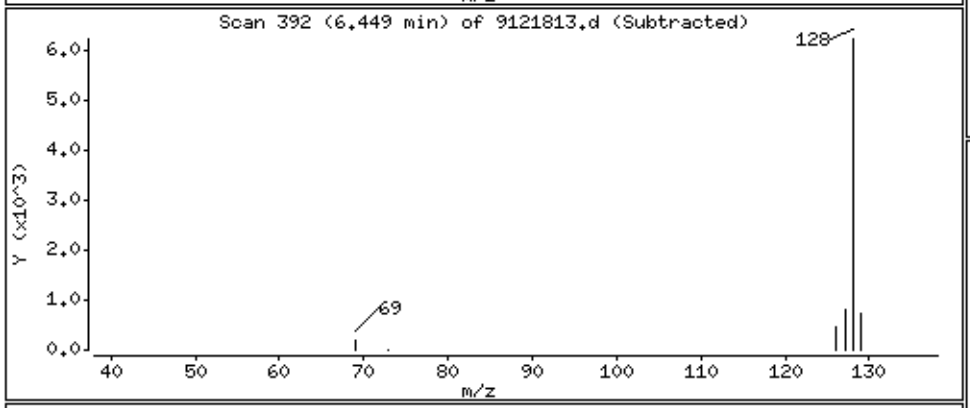
Column diameter: 0.25

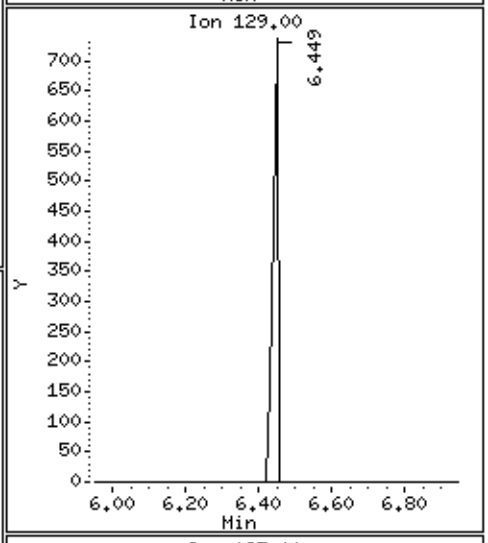
28 Naphthalene

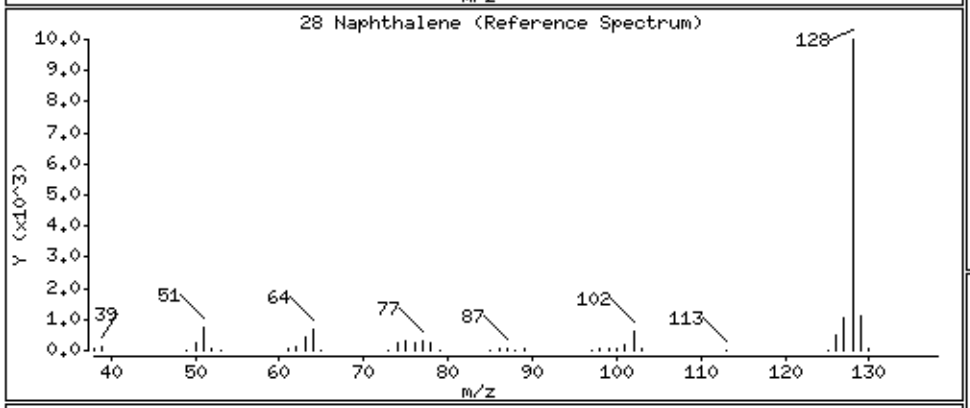
Concentration: 0.3283 ug

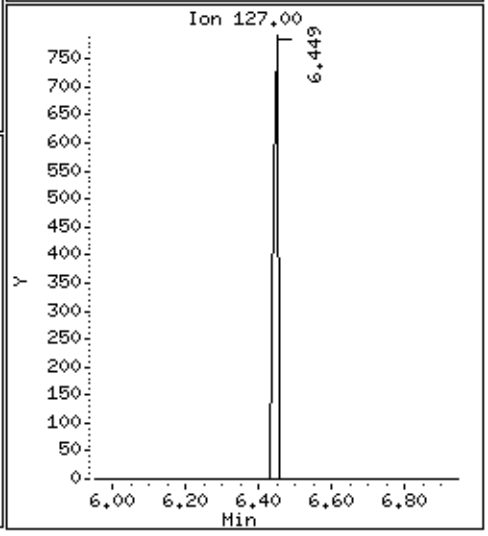


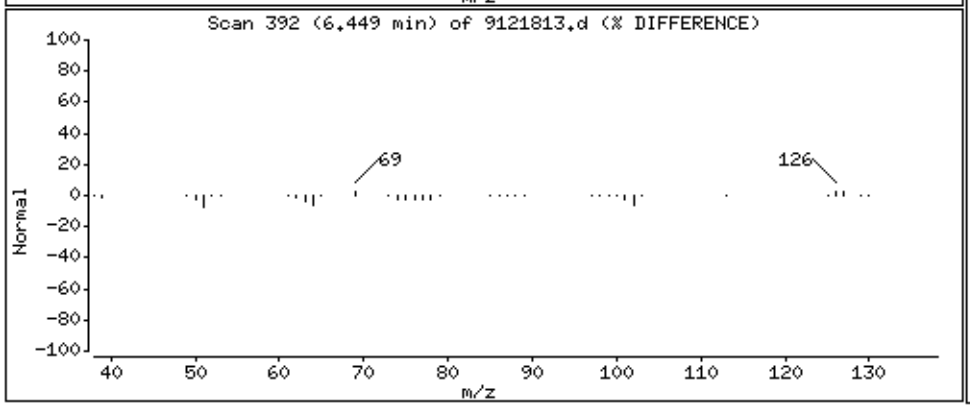












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA2-1_1217

Lab ID#: 1712296-08A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.28 J	0.040 J

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Client Sample ID: OA2-1_1217

Lab ID#: 1712296-08A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121814**	**Date of Collection: 12/14/17 2:10:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 09:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.28 J	0.040 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.70	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.70	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.70	Not Detected	Not Detected

Air Sample Volume(L): 7150

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	60	60-120
Pyrene-d10	71	60-120
Benzo(a)pyrene-d12	64	50-150
Fluoranthene-d10	69	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121814.d
Lab Smp Id: 1712296-08A
Inj Date : 18-DEC-2017 21:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-08A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	224115	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	939921	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	504631	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	784934	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	664242	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	658967	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	405358	29.8349	29.83(R)
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	617761	35.4061	35.41
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	565125	34.3637	34.36
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	425396	31.8377	31.84
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	6030	0.28530	0.2853(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121814.d
Lab Smp Id: 1712296-08A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	224115	5.03
27 Naphthalene-d8	899817	449908	1799634	939921	4.46
48 Acenaphthene-d10	468863	234432	937726	504631	7.63
71 Phenanthrene-d10	743971	371986	1487942	784934	5.51
97 Chrysene-d12	659280	329640	1318560	664242	0.75
115 Perylene-d12	643165	321582	1286330	658967	2.46

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-08A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	29.83	59.67*	60-120
$ 83 Pyrene-d10	50.00	35.41	70.81	60-120
$ 78 Fluoranthene-d10	50.00	34.36	68.73	50-150
$ 111 Benzo(a)pyrene-d12	50.00	31.84	63.68	50-150

Data File: /chem/msd9.i/18dec17.b/9121814.d

Date : 18-DEC-2017 21:09

Client ID:

Instrument: msd9.i

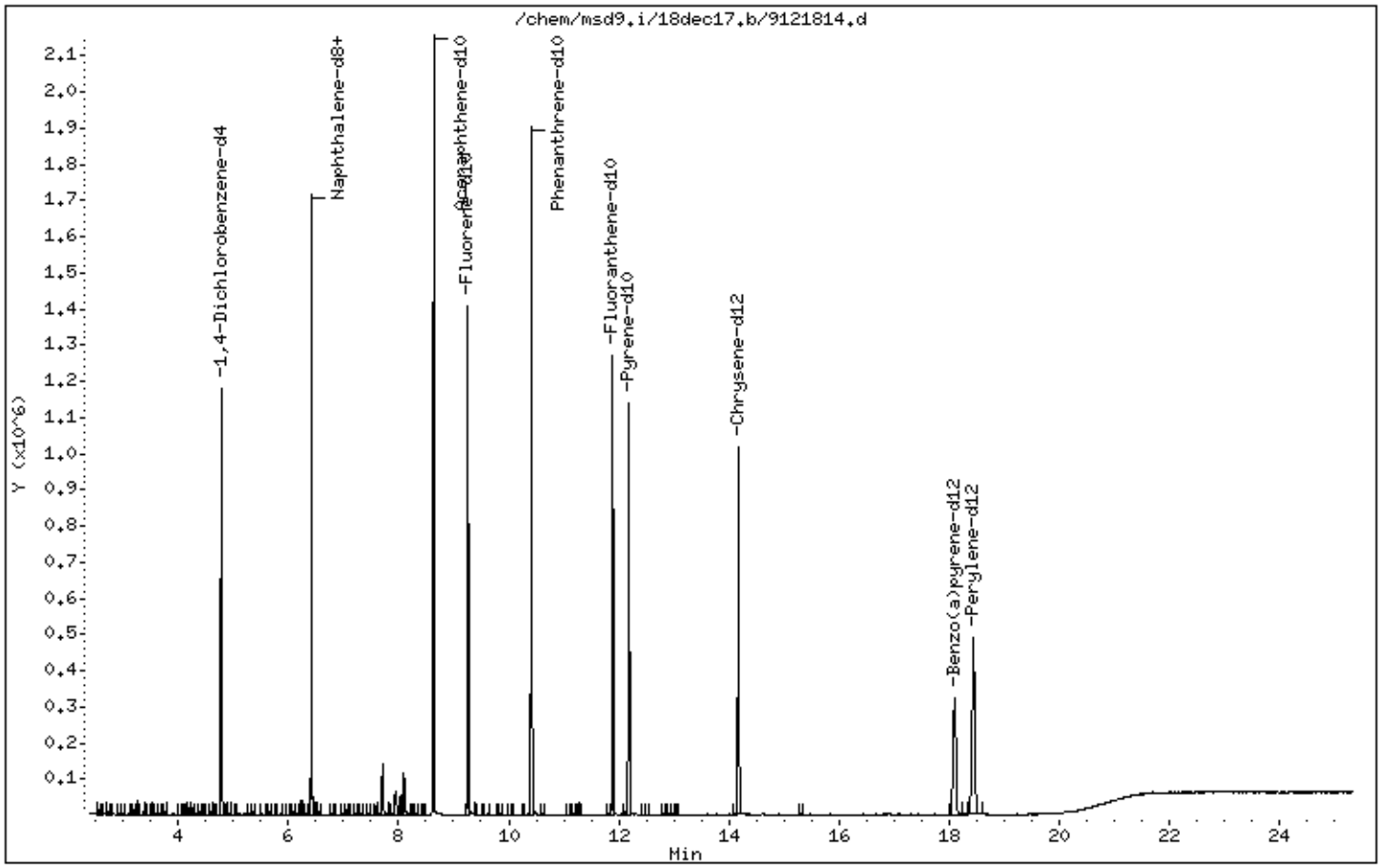
Sample Info: ;1712296-08A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121814.d

Date : 18-DEC-2017 21:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-08A;

Volume Injected (uL): 1.0

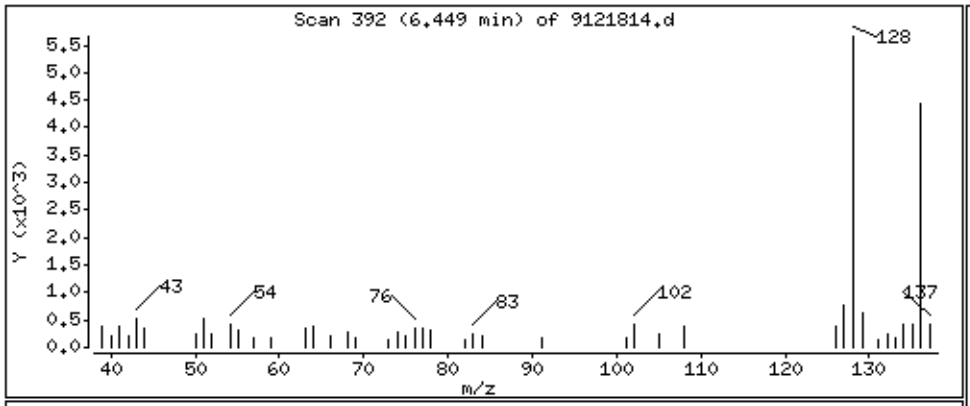
Operator: KV

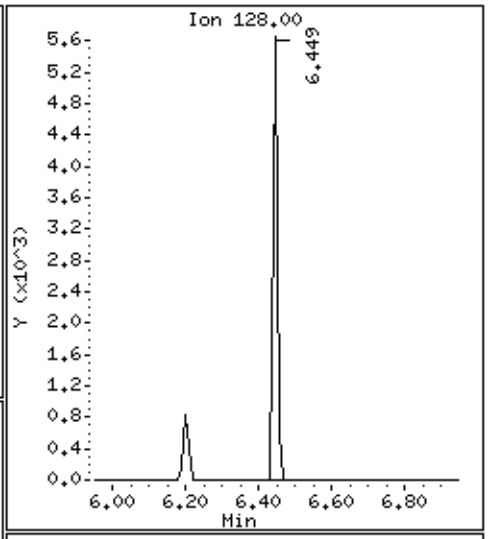
Column phase: DB-5.625

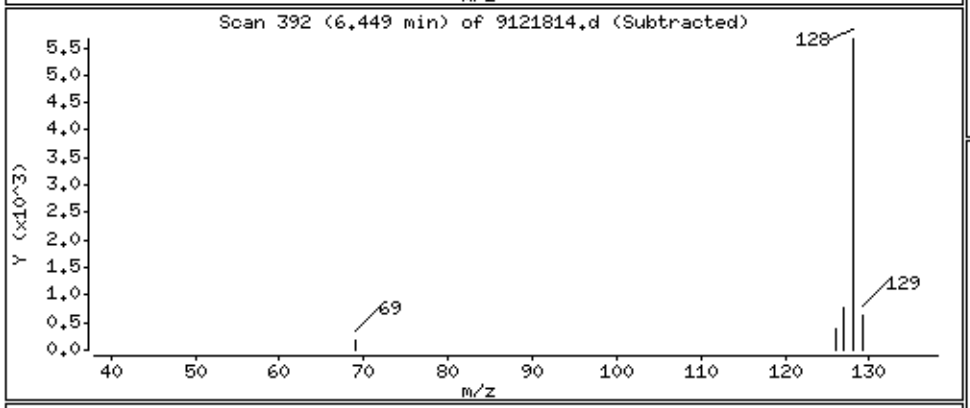
Column diameter: 0.25

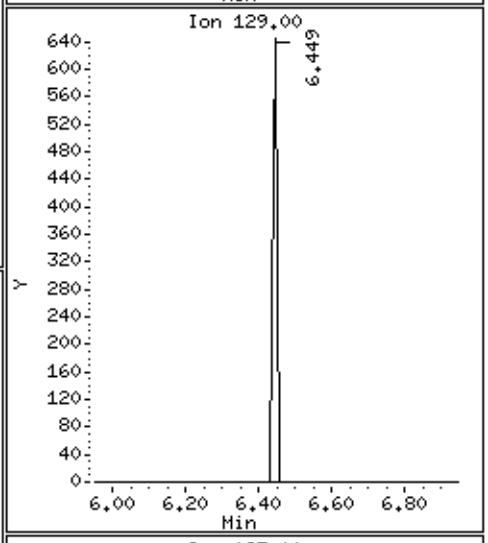
28 Naphthalene

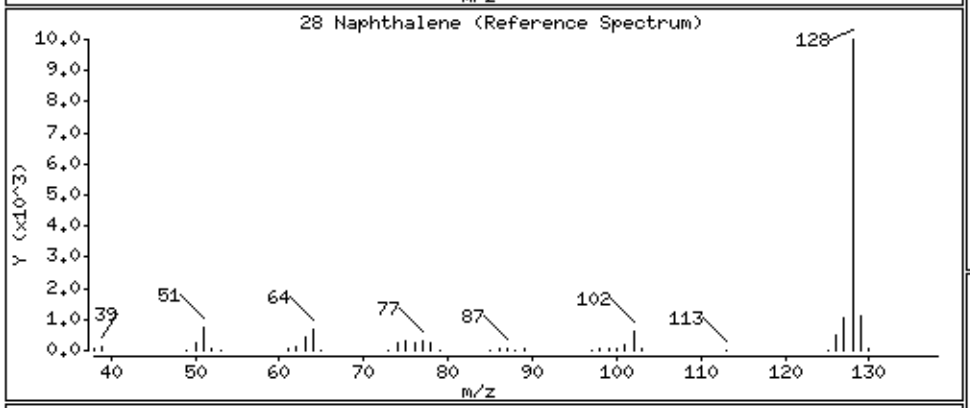
Concentration: 0.2853 ug

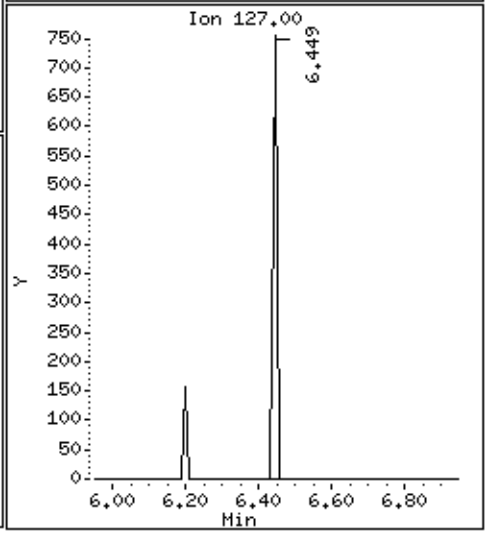


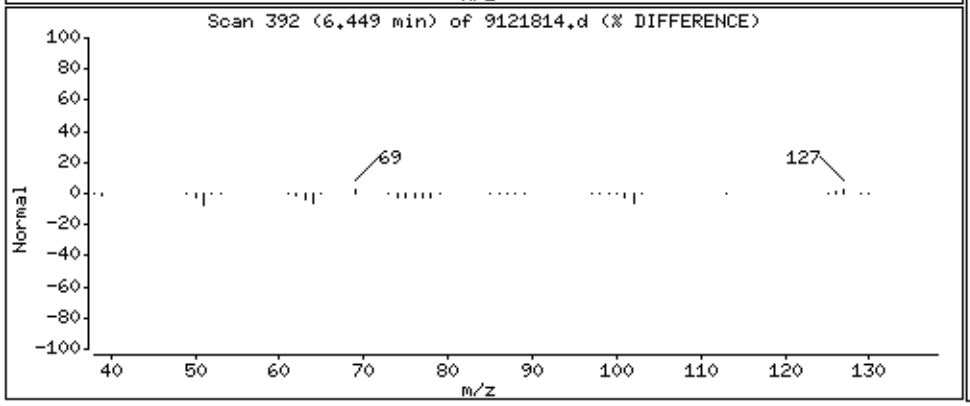












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA8_1217

Lab ID#: 1712296-09A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.13 J	0.018 J

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Client Sample ID: OA8_1217

Lab ID#: 1712296-09A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121815**	**Date of Collection: 12/14/17 2:40:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 09:39 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.13 J	0.018 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.69	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.5	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.69	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.69	Not Detected	Not Detected

Air Sample Volume(L): 7240

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	61	60-120
Pyrene-d10	70	60-120
Benzo(a)pyrene-d12	63	50-150
Fluoranthene-d10	69	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121815.d
Lab Smp Id: 1712296-09A
Inj Date : 18-DEC-2017 21:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-09A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	261306	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	1091548	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	577977	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	910163	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	772819	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	782813	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	472292	30.3501	30.35
$ 83 Pyrene-d10	212	12.180	12.190	(0.859)	708682	34.9106	34.91
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	657543	34.4821	34.48
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	500858	31.5550	31.56
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

		QUANT SIG					CONCENTRATIONS ON-COLUMN	FINAL
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ng)	(ug)
28	Naphthalene	128	6.449	6.449	(1.005)	3285	0.13383	0.1338(a)
34	2-Methylnaphthalene	142	Compound Not Detected.					
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121815.d
Lab Smp Id: 1712296-09A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	261306	22.46
27 Naphthalene-d8	899817	449908	1799634	1091548	21.31
48 Acenaphthene-d10	468863	234432	937726	577977	23.27
71 Phenanthrene-d10	743971	371986	1487942	910163	22.34
97 Chrysene-d12	659280	329640	1318560	772819	17.22
115 Perylene-d12	643165	321582	1286330	782813	21.71

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-09A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	30.35	60.70	60-120
$ 83 Pyrene-d10	50.00	34.91	69.82	60-120
$ 78 Fluoranthene-d10	50.00	34.48	68.96	50-150
$ 111 Benzo(a)pyrene-d12	50.00	31.56	63.11	50-150

Data File: /chem/msd9.i/18dec17.b/9121815.d

Date : 18-DEC-2017 21:39

Client ID:

Instrument: msd9.i

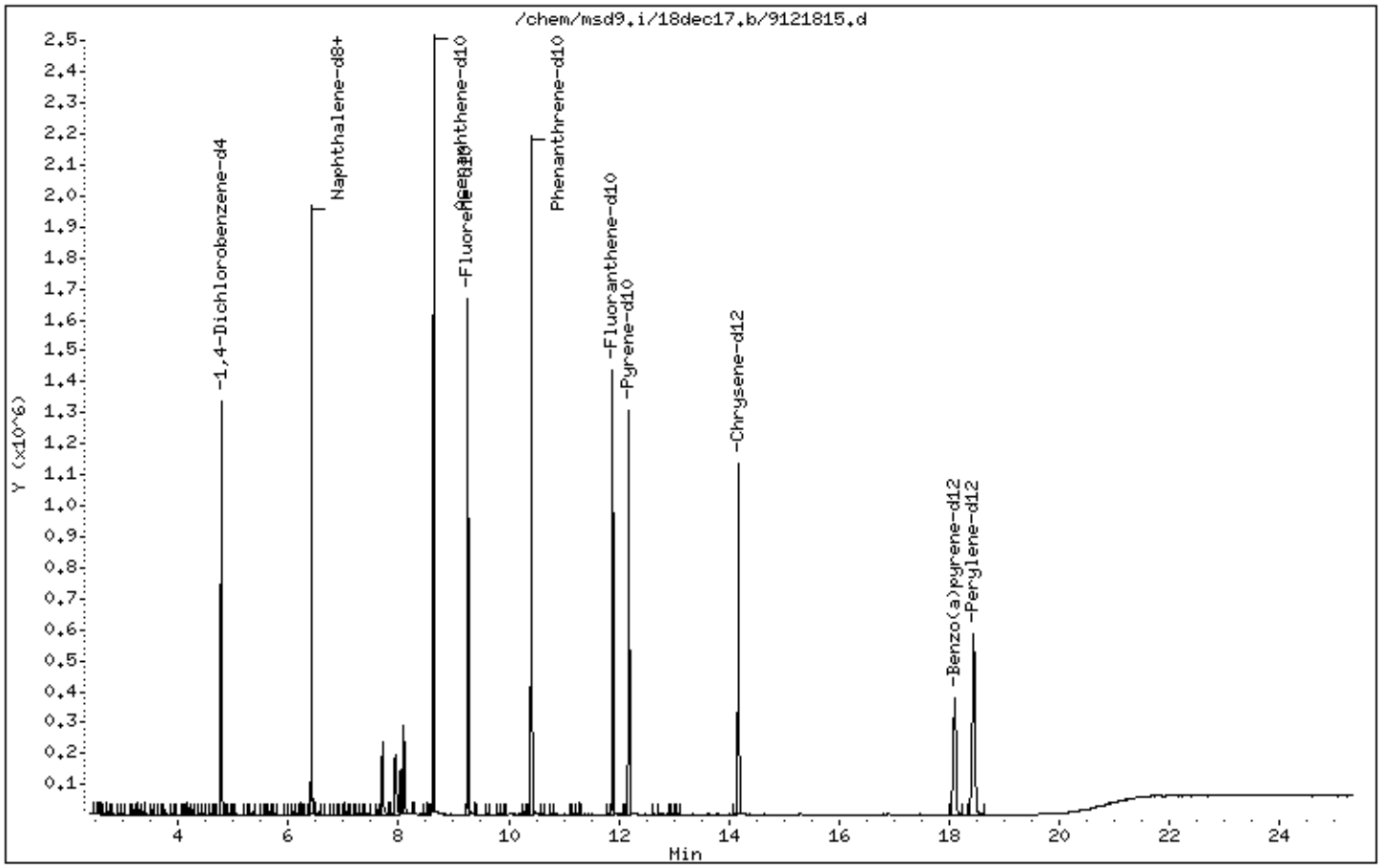
Sample Info: ;1712296-09A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121815.d

Date : 18-DEC-2017 21:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-09A;

Volume Injected (uL): 1.0

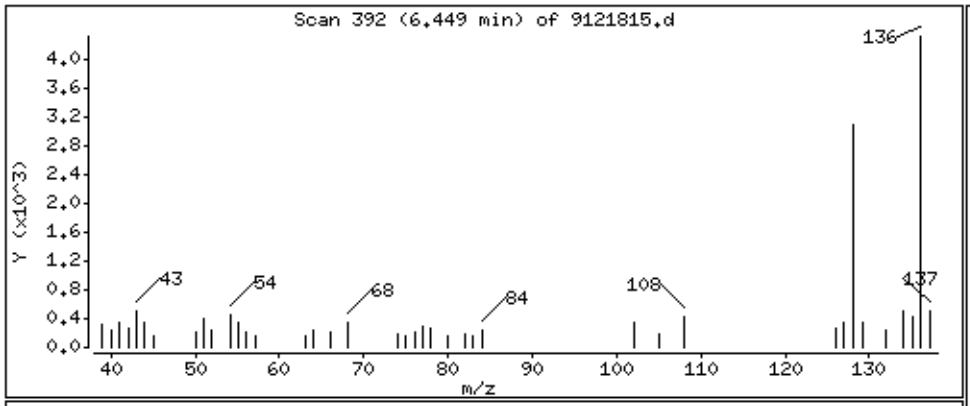
Operator: KV

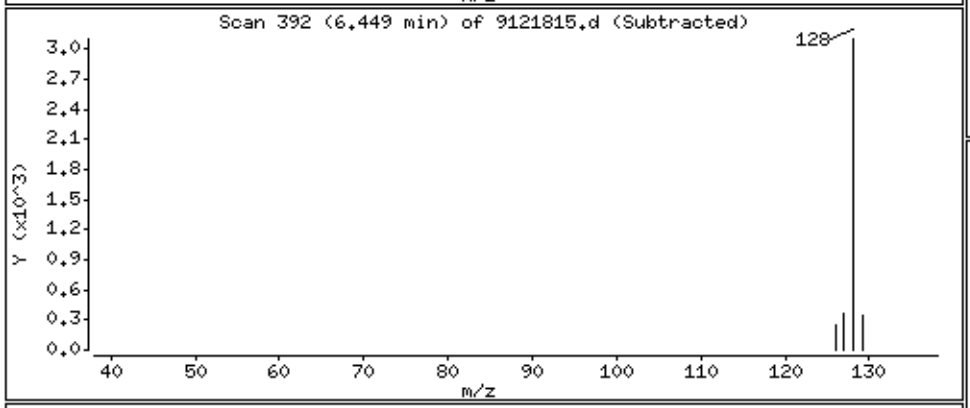
Column phase: DB-5.625

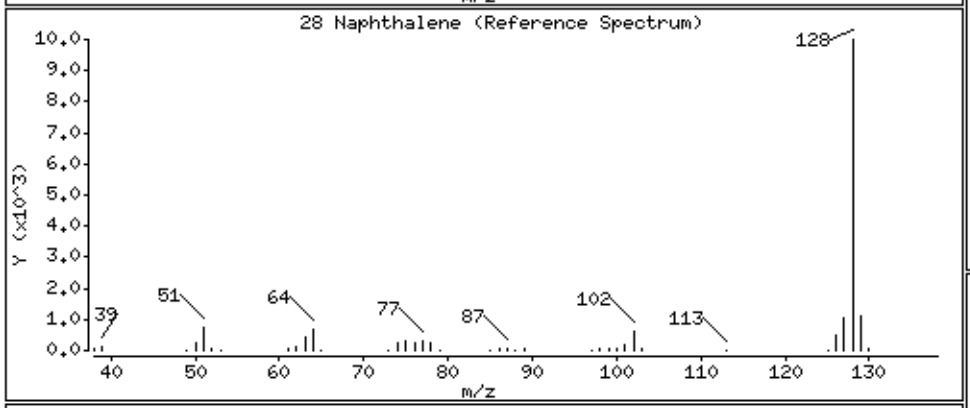
Column diameter: 0.25

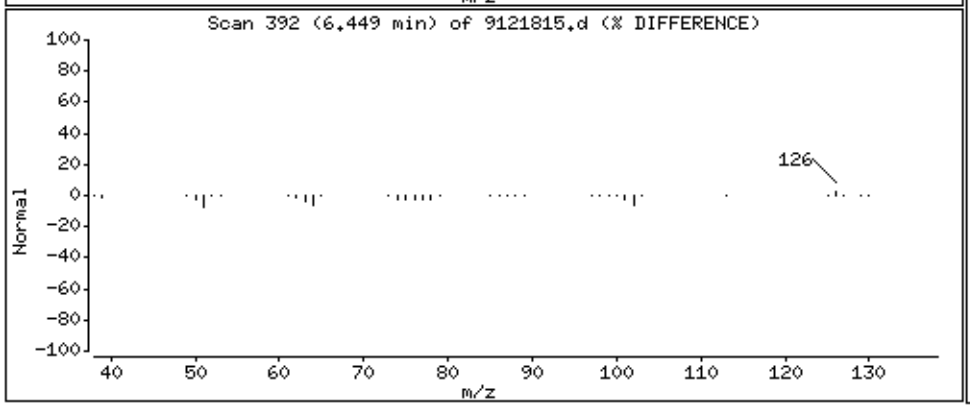
28 Naphthalene

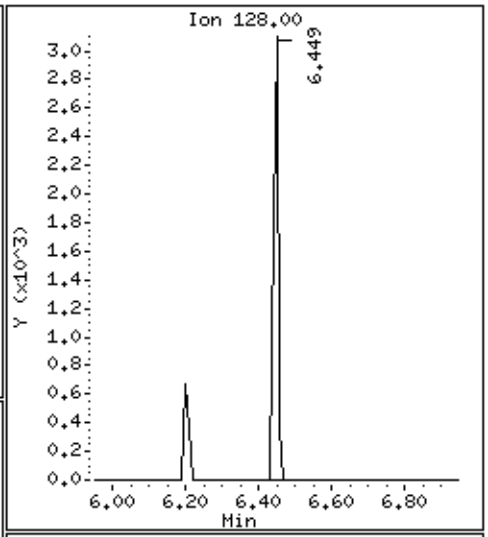
Concentration: 0.1338 ug

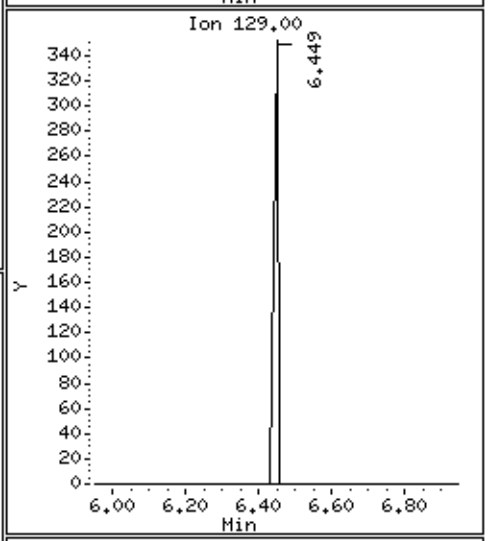


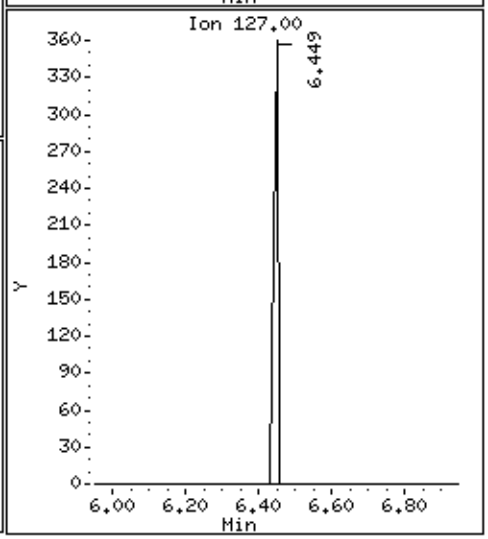












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA9_1217

Lab ID#: 1712296-10A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.13 J	0.017 J

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Client Sample ID: OA9_1217

Lab ID#: 1712296-10A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121816**	**Date of Collection: 12/14/17 2:51:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 10:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.13 J	0.017 J
Acenaphthylene	1.0	0.13	Not Detected	Not Detected
Acenaphthene	1.0	0.13	Not Detected	Not Detected
Fluorene	1.0	0.13	Not Detected	Not Detected
Phenanthrene	1.0	0.13	Not Detected	Not Detected
Anthracene	1.0	0.13	Not Detected	Not Detected
Fluoranthene	1.0	0.13	Not Detected	Not Detected
Pyrene	1.0	0.13	Not Detected	Not Detected
Chrysene	1.0	0.13	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.13	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.13	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.13	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.13	Not Detected	Not Detected
Phenol	5.0	0.67	Not Detected	Not Detected
Dibenzofuran	1.0	0.13	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.4	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.67	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.13	Not Detected	Not Detected
2-Chlorophenol	5.0	0.67	Not Detected	Not Detected

Air Sample Volume(L): 7460

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	64	60-120
Pyrene-d10	80	60-120
Benzo(a)pyrene-d12	74	50-150
Fluoranthene-d10	76	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121816.d
Lab Smp Id: 1712296-10A
Inj Date : 18-DEC-2017 22:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-10A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	233564	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	1002346	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	566180	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	873837	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	693580	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	676905	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	487236	31.9628	31.96
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	724230	39.7524	39.75
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	695118	37.9679	37.97
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	508785	37.0696	37.07
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	2881	0.12782	0.1278(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121816.d
Lab Smp Id: 1712296-10A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	233564	9.46
27 Naphthalene-d8	899817	449908	1799634	1002346	11.39
48 Acenaphthene-d10	468863	234432	937726	566180	20.76
71 Phenanthrene-d10	743971	371986	1487942	873837	17.46
97 Chrysene-d12	659280	329640	1318560	693580	5.20
115 Perylene-d12	643165	321582	1286330	676905	5.25

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-10A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.96	63.93	60-120
$ 83 Pyrene-d10	50.00	39.75	79.50	60-120
$ 78 Fluoranthene-d10	50.00	37.97	75.94	50-150
$ 111 Benzo(a)pyrene-d12	50.00	37.07	74.14	50-150

Data File: /chem/msd9.i/18dec17.b/9121816.d

Date : 18-DEC-2017 22:09

Client ID:

Instrument: msd9.i

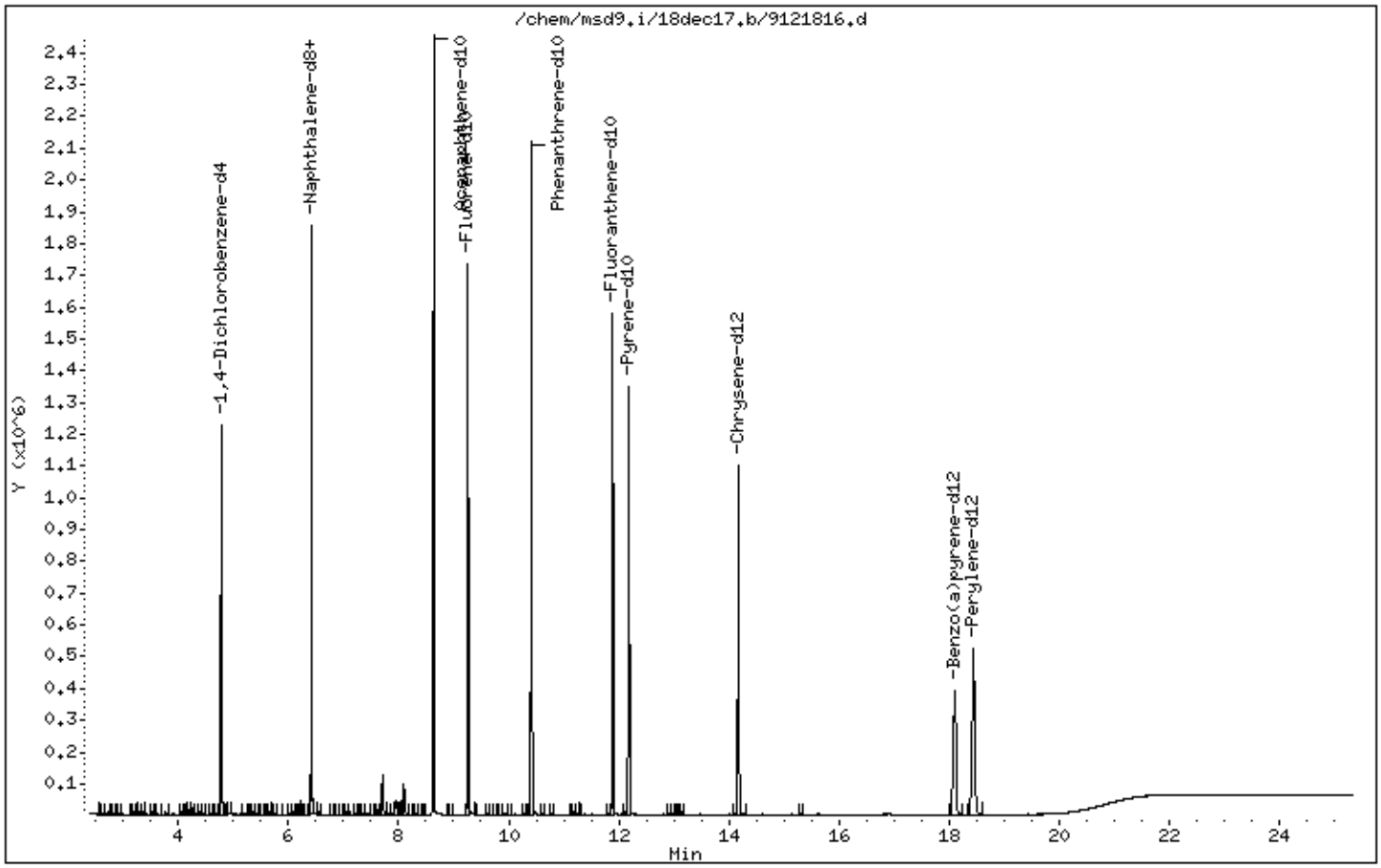
Sample Info: ;1712296-10A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121816.d

Date : 18-DEC-2017 22:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-10A;

Volume Injected (uL): 1.0

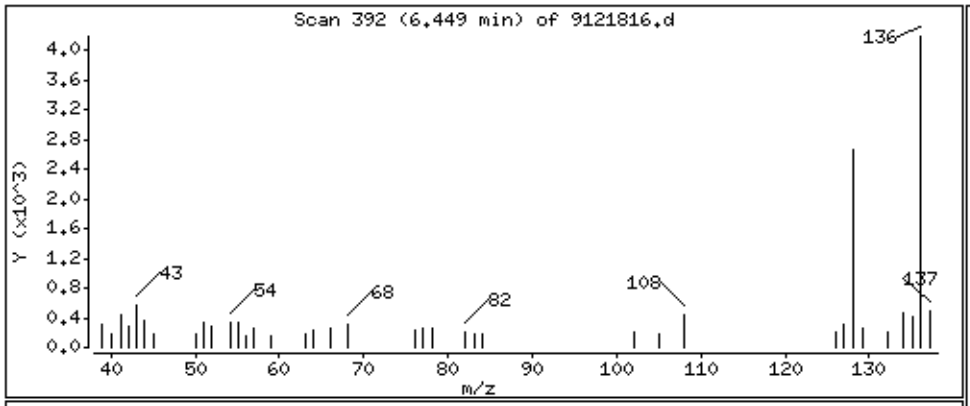
Operator: KV

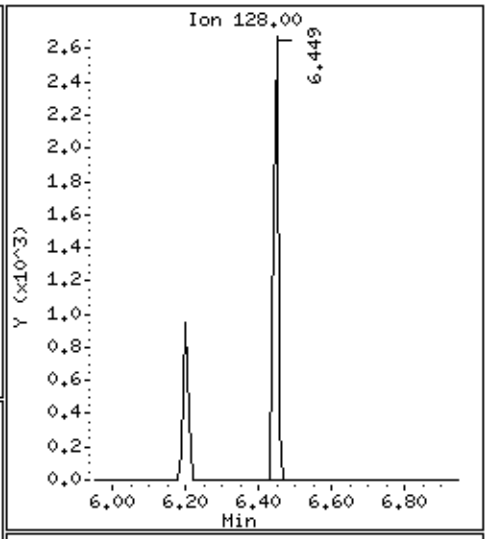
Column phase: DB-5.625

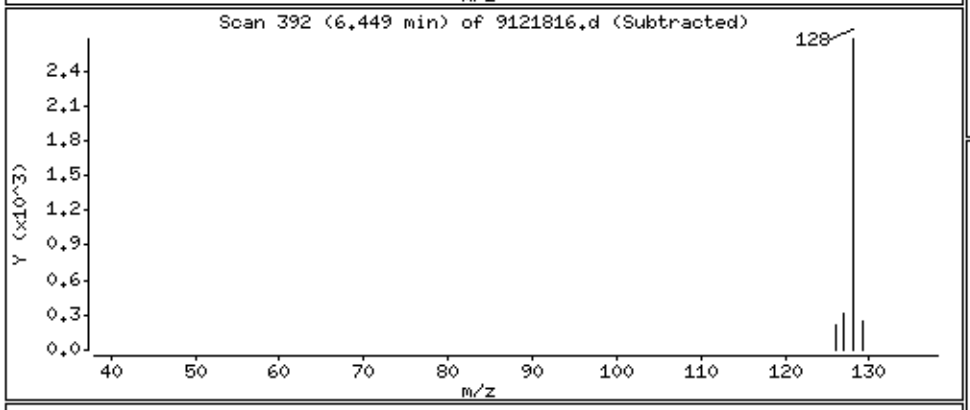
Column diameter: 0.25

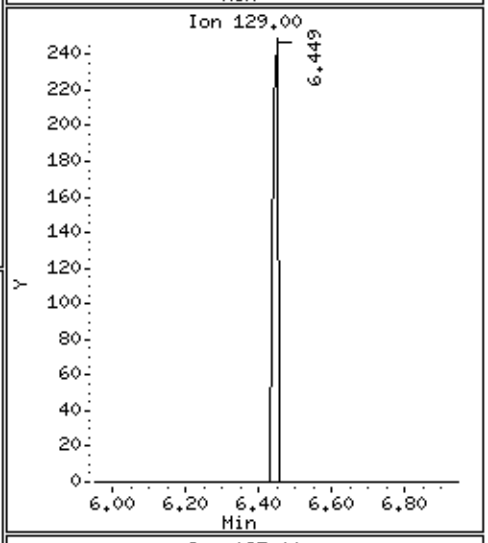
28 Naphthalene

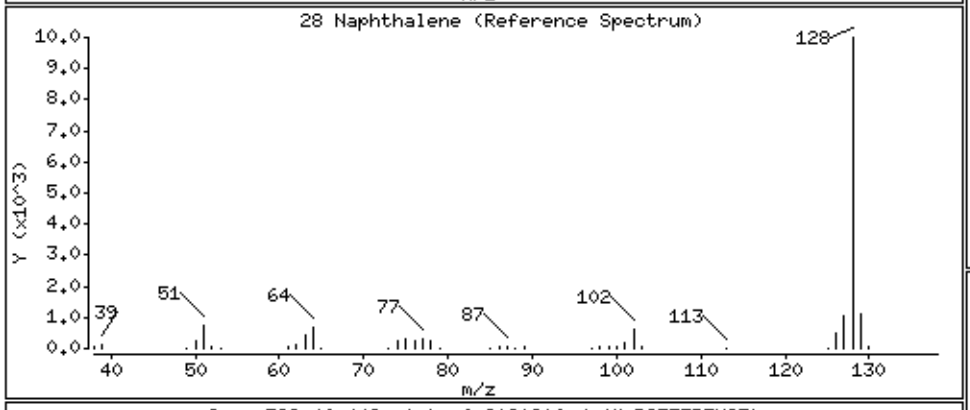
Concentration: 0.1278 ug

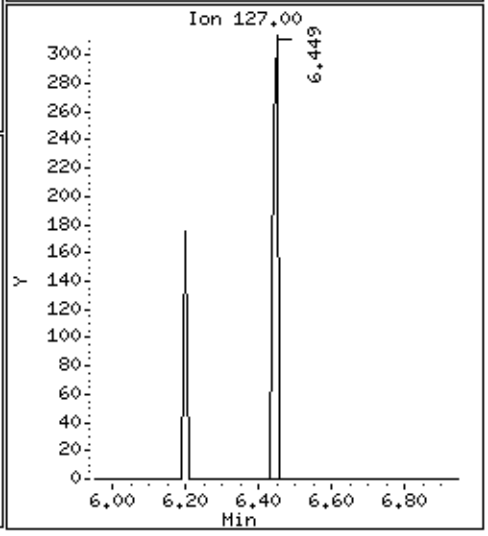


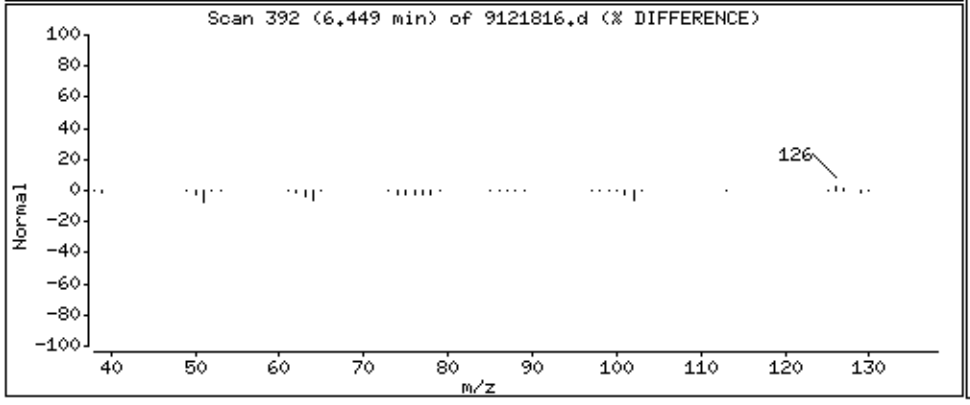












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA10_1217

Lab ID#: 1712296-11A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.31 J	0.043 J
2-Methylnaphthalene	1.0	0.14	0.12 J	0.017 J

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Client Sample ID: OA10_1217

Lab ID#: 1712296-11A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121817**	**Date of Collection: 12/14/17 3:12:00 PM**
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 10:39 PM**
		Date of Extraction: 12/18/17

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.31 J	0.043 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.69	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.69	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	0.12 J	0.017 J
2-Chlorophenol	5.0	0.69	Not Detected	Not Detected

Air Sample Volume(L): 7200

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	62	60-120
Pyrene-d10	73	60-120
Benzo(a)pyrene-d12	66	50-150
Fluoranthene-d10	68	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121817.d
Lab Smp Id: 1712296-11A
Inj Date : 18-DEC-2017 22:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-11A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	255955	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	1102514	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	631908	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	985509	40.0000	
* 97 Chrysene-d12	240	14.169	14.180	(1.000)	781261	40.0000	
* 115 Perylene-d12	264	18.449	18.460	(1.000)	766680	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	531199	31.2222	31.22
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	745307	36.3180	36.32
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	705872	34.1864	34.19
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	516044	33.1959	33.20
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	7654	0.30873	0.3087(a)
34 2-Methylnaphthalene	142	7.330	7.330	(1.142)	2054	0.12245	0.1224(a)
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121817.d
Lab Smp Id: 1712296-11A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	255955	19.95
27 Naphthalene-d8	899817	449908	1799634	1102514	22.53
48 Acenaphthene-d10	468863	234432	937726	631908	34.77
71 Phenanthrene-d10	743971	371986	1487942	985509	32.47
97 Chrysene-d12	659280	329640	1318560	781261	18.50
115 Perylene-d12	643165	321582	1286330	766680	19.20

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-11A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.22	62.44	60-120
$ 83 Pyrene-d10	50.00	36.32	72.64	60-120
$ 78 Fluoranthene-d10	50.00	34.19	68.37	50-150
$ 111 Benzo(a)pyrene-d12	50.00	33.20	66.39	50-150

Data File: /chem/msd9.i/18dec17.b/9121817.d

Date : 18-DEC-2017 22:39

Client ID:

Instrument: msd9.i

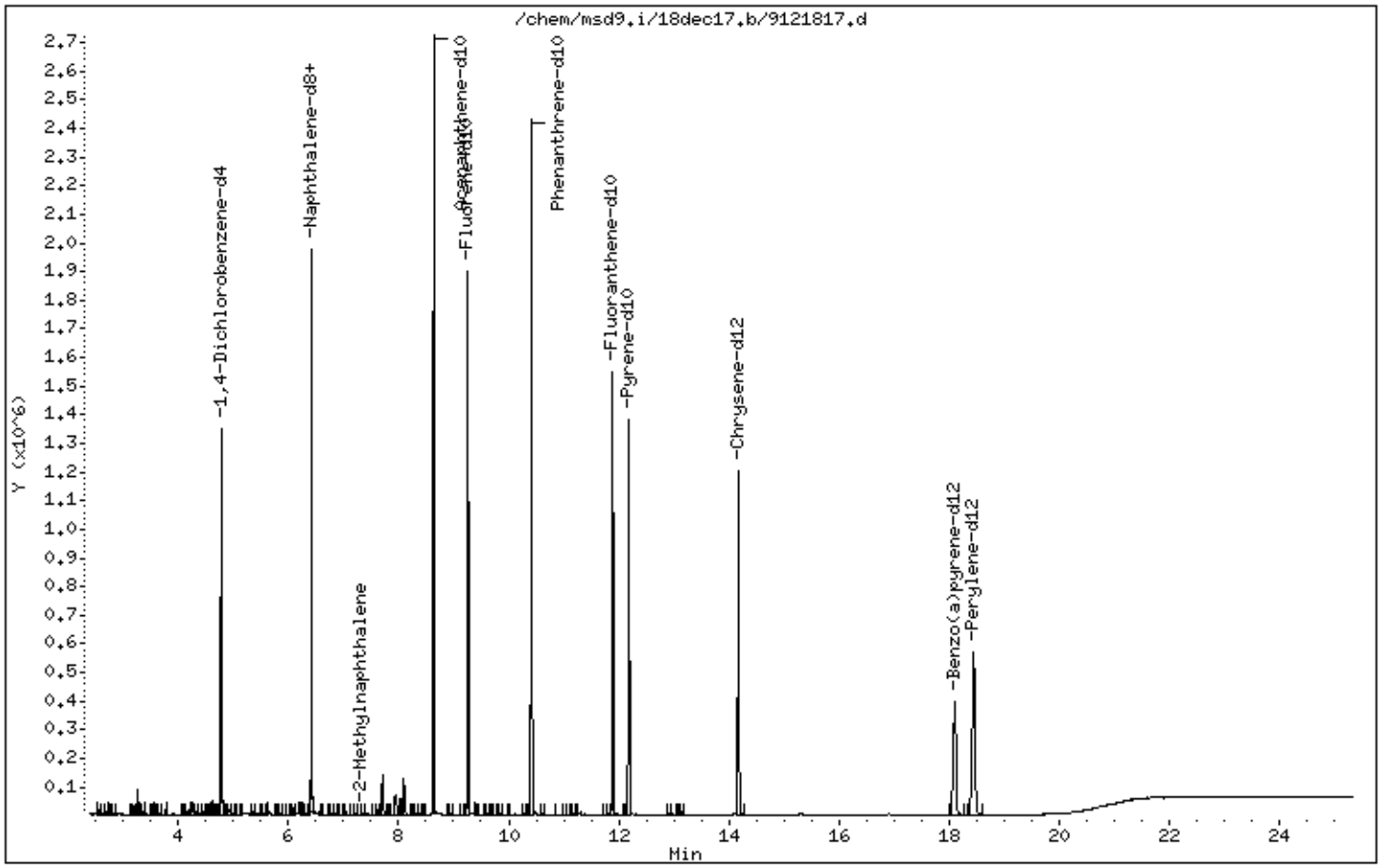
Sample Info: ;1712296-11A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121817.d

Date : 18-DEC-2017 22:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-11A;

Volume Injected (uL): 1.0

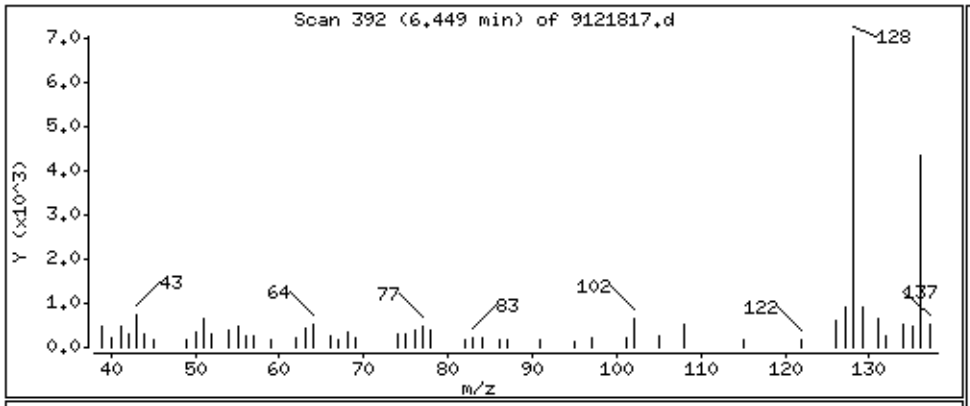
Operator: KV

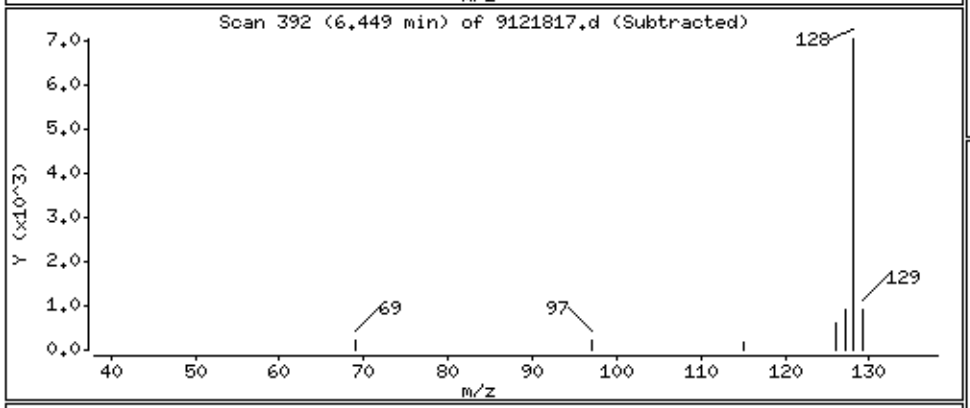
Column phase: DB-5.625

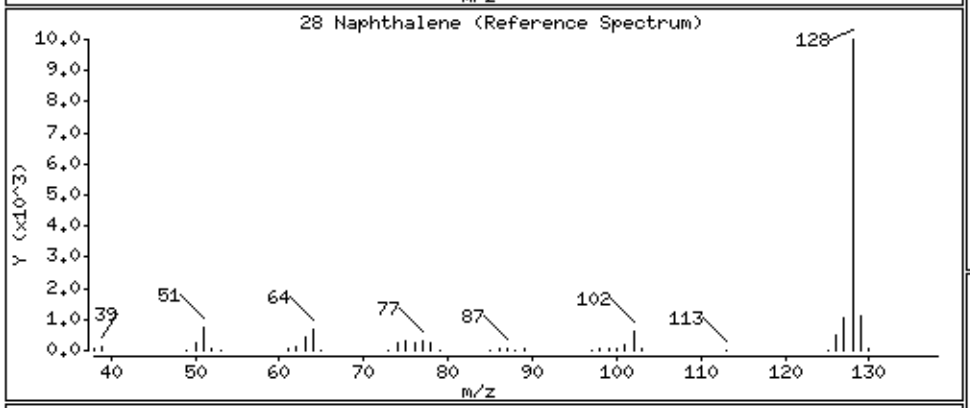
Column diameter: 0.25

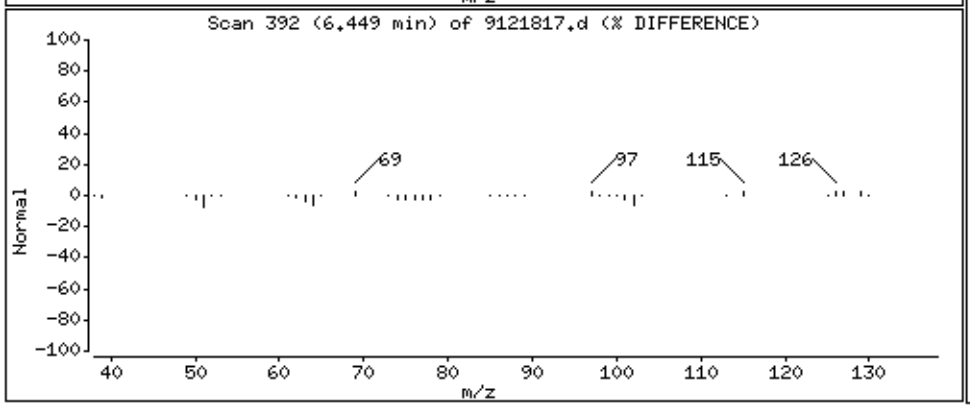
28 Naphthalene

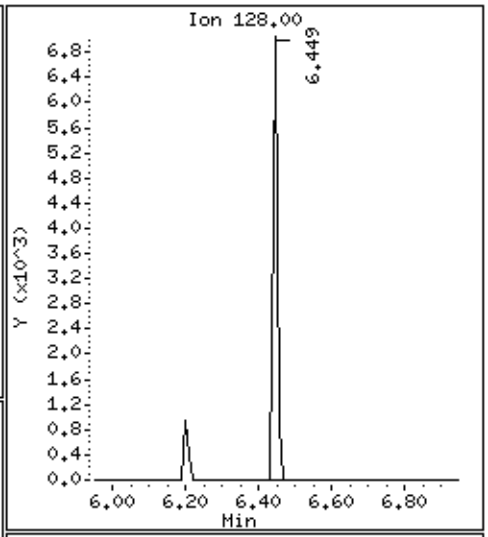
Concentration: 0.3087 ug

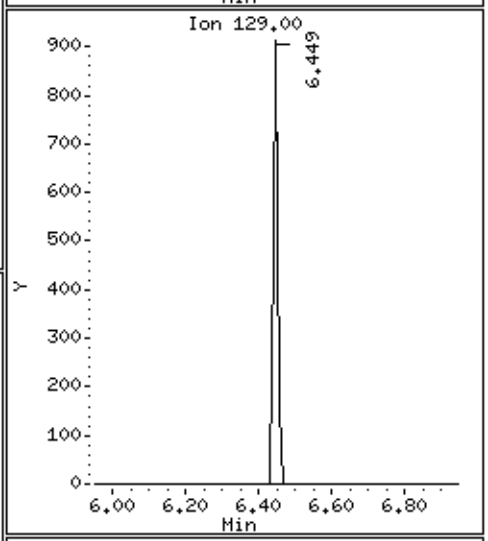


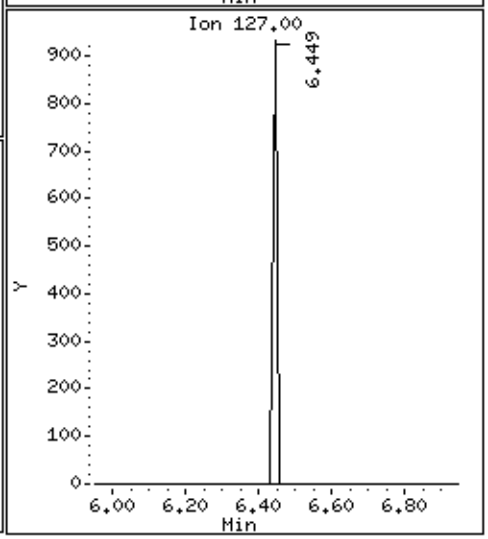












Data File: /chem/msd9.i/18dec17.b/9121817.d

Date : 18-DEC-2017 22:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-11A;

Volume Injected (uL): 1.0

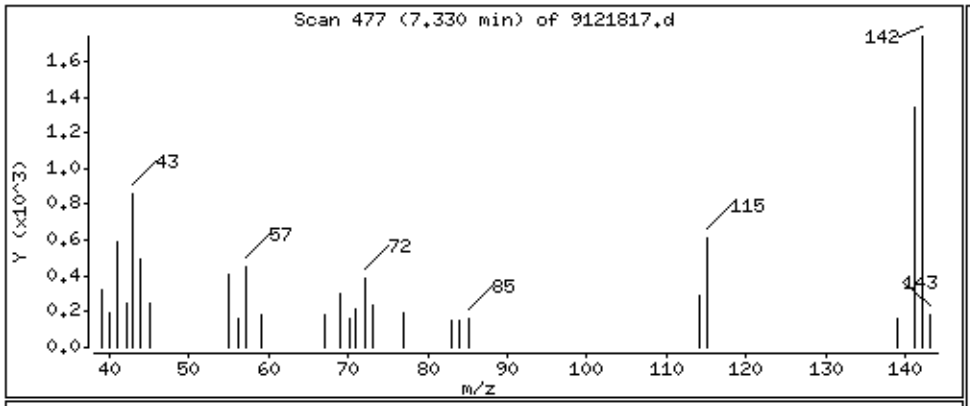
Operator: KV

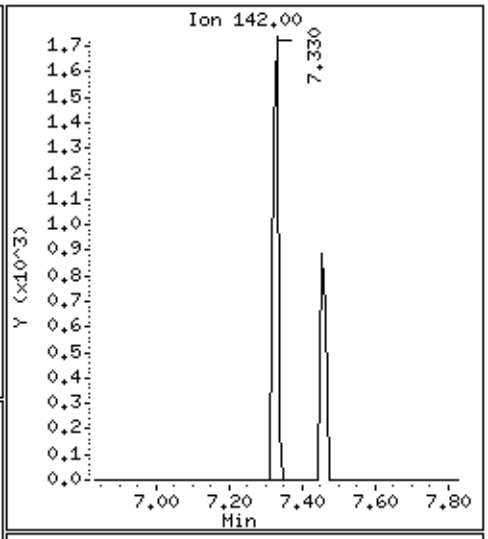
Column phase: DB-5.625

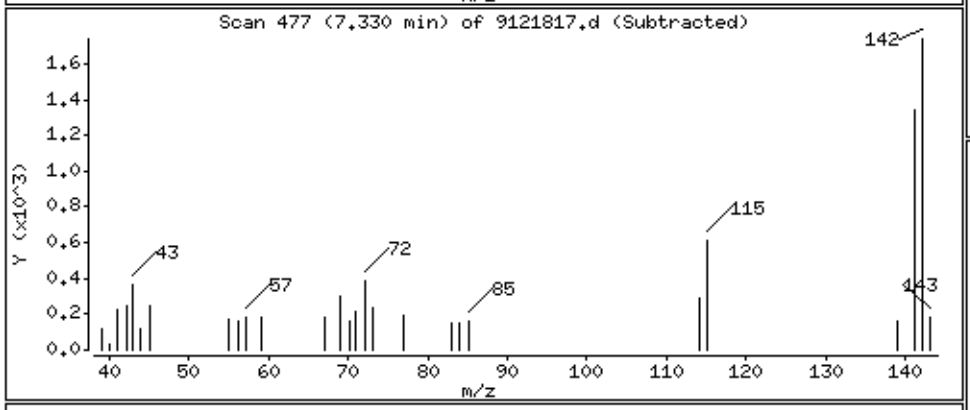
Column diameter: 0.25

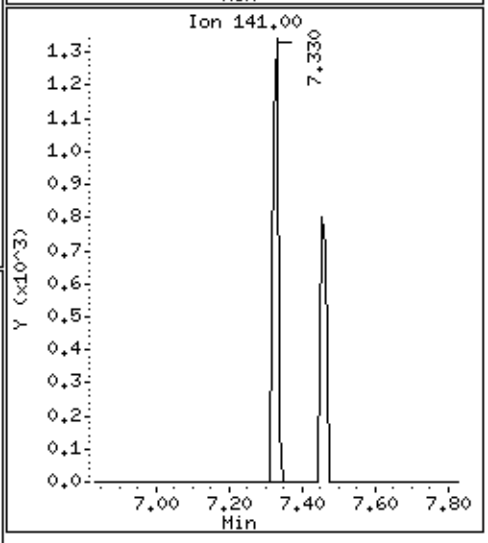
34 2-Methylnaphthalene

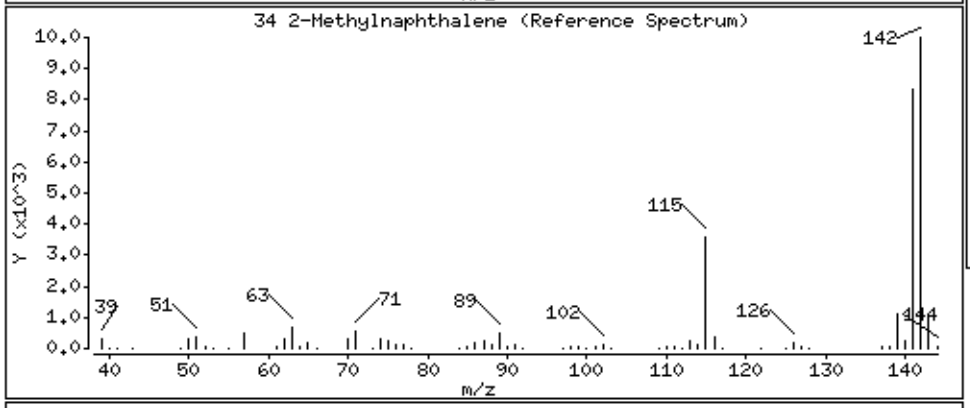
Concentration: 0.1224 ug

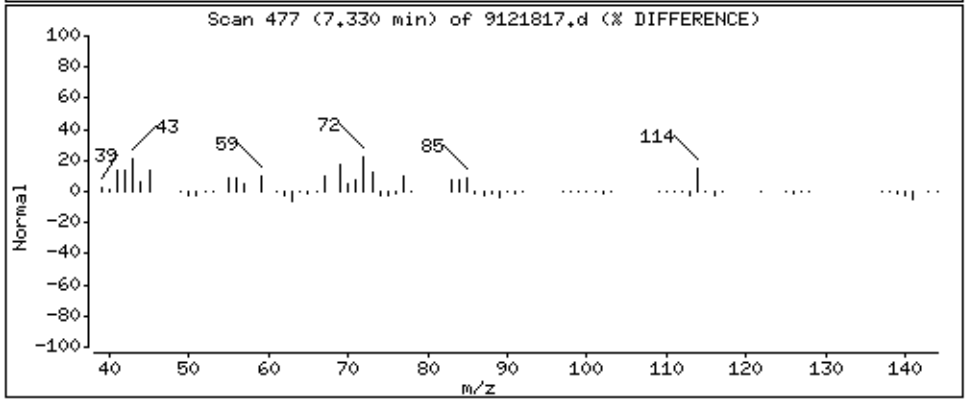












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA11_1217

Lab ID#: 1712296-12A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.26 J	0.036 J

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Client Sample ID: OA11_1217

Lab ID#: 1712296-12A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121818**	**Date of Collection: 12/14/17 3:26:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 11:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.26 J	0.036 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.70	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.70	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.70	Not Detected	Not Detected

Air Sample Volume(L): 7190

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	63	60-120
Pyrene-d10	73	60-120
Benzo(a)pyrene-d12	70	50-150
Fluoranthene-d10	73	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121818.d
Lab Smp Id: 1712296-12A
Inj Date : 18-DEC-2017 23:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-12A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	225855	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	924147	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	490515	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	790924	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	663115	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	662254	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	416813	31.5609	31.56
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	633238	36.3548	36.35
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	601799	36.3166	36.32
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	469940	34.9969	35.00
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	5342	0.25706	0.2571(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121818.d
Lab Smp Id: 1712296-12A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	225855	5.84
27 Naphthalene-d8	899817	449908	1799634	924147	2.70
48 Acenaphthene-d10	468863	234432	937726	490515	4.62
71 Phenanthrene-d10	743971	371986	1487942	790924	6.31
97 Chrysene-d12	659280	329640	1318560	663115	0.58
115 Perylene-d12	643165	321582	1286330	662254	2.97

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-12A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.56	63.12	60-120
$ 83 Pyrene-d10	50.00	36.35	72.71	60-120
$ 78 Fluoranthene-d10	50.00	36.32	72.63	50-150
$ 111 Benzo(a)pyrene-d12	50.00	35.00	69.99	50-150

Data File: /chem/msd9.i/18dec17.b/9121818.d

Date : 18-DEC-2017 23:09

Client ID:

Instrument: msd9.i

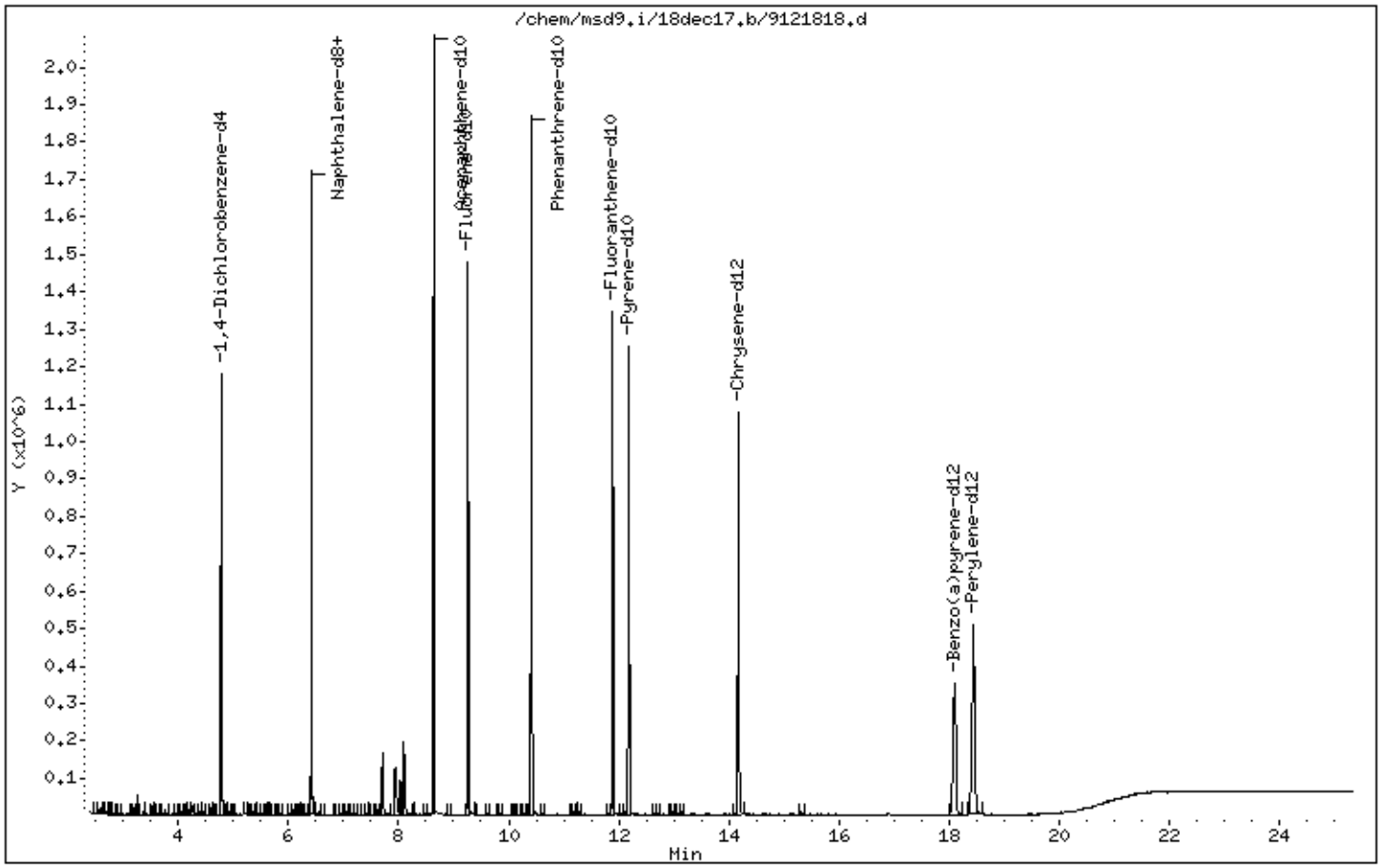
Sample Info: ;1712296-12A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121818.d

Date : 18-DEC-2017 23:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-12A;

Volume Injected (uL): 1.0

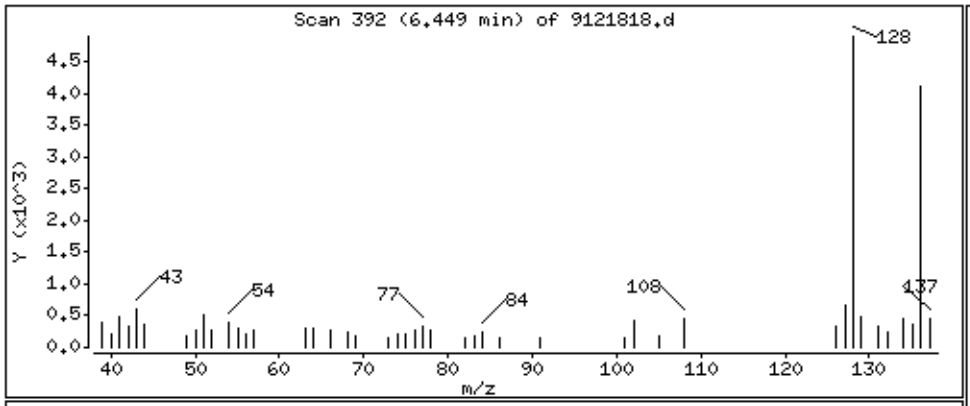
Operator: KV

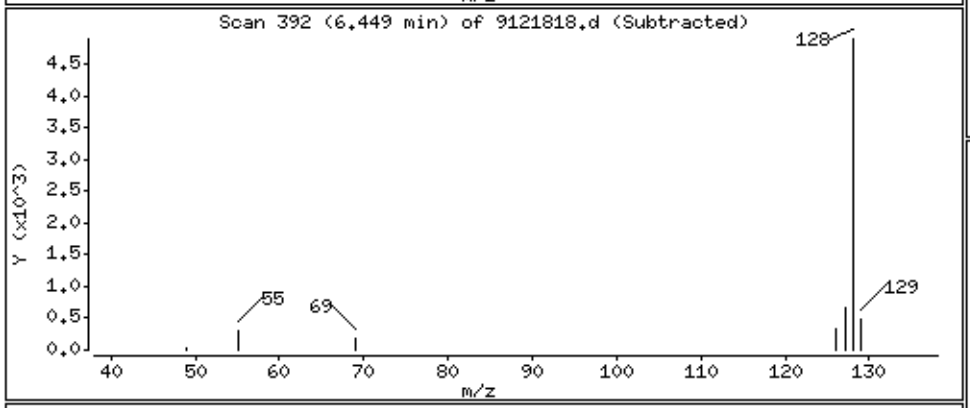
Column phase: DB-5.625

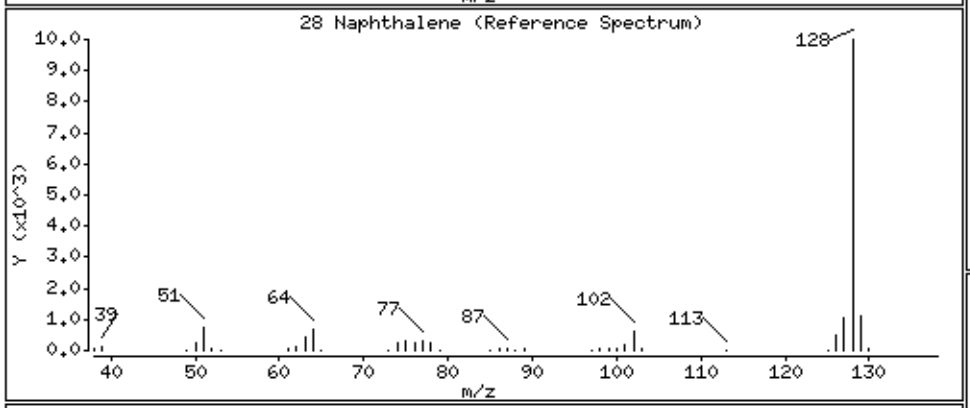
Column diameter: 0.25

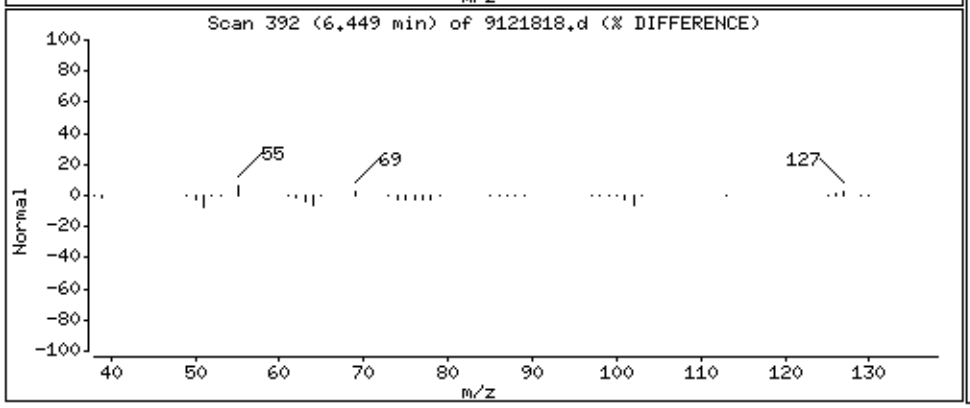
28 Naphthalene

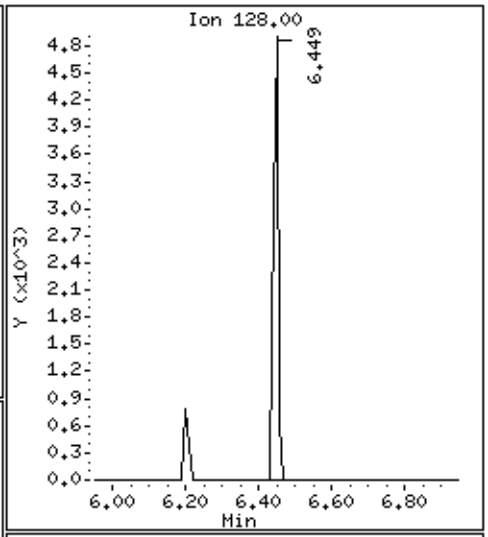
Concentration: 0.2571 ug

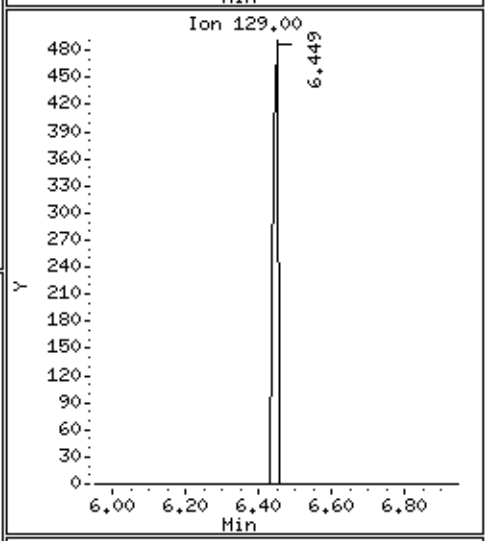


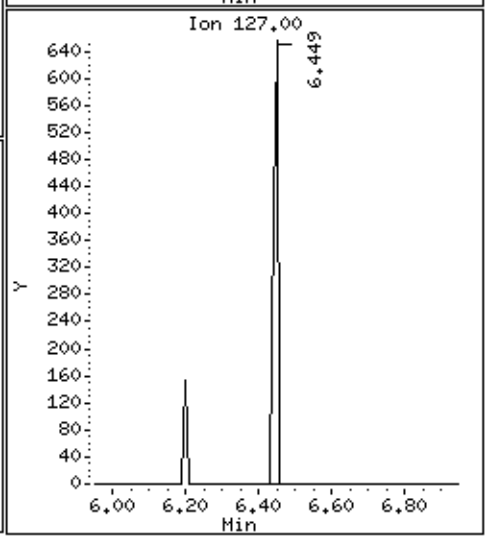












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA5_1217

Lab ID#: 1712296-13A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.22 J	0.029 J

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Client Sample ID: OA5_1217

Lab ID#: 1712296-13A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121819**	**Date of Collection: 12/14/17 10:05:00 A**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 11:39 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.22 J	0.029 J
Acenaphthylene	1.0	0.13	Not Detected	Not Detected
Acenaphthene	1.0	0.13	Not Detected	Not Detected
Fluorene	1.0	0.13	Not Detected	Not Detected
Phenanthrene	1.0	0.13	Not Detected	Not Detected
Anthracene	1.0	0.13	Not Detected	Not Detected
Fluoranthene	1.0	0.13	Not Detected	Not Detected
Pyrene	1.0	0.13	Not Detected	Not Detected
Chrysene	1.0	0.13	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.13	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.13	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.13	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.13	Not Detected	Not Detected
Phenol	5.0	0.67	Not Detected	Not Detected
Dibenzofuran	1.0	0.13	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.4	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.67	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.13	Not Detected	Not Detected
2-Chlorophenol	5.0	0.67	Not Detected	Not Detected

Air Sample Volume(L): 7430

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	61	60-120
Pyrene-d10	69	60-120
Benzo(a)pyrene-d12	63	50-150
Fluoranthene-d10	70	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121819.d
Lab Smp Id: 1712296-13A
Inj Date : 18-DEC-2017 23:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-13A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	234013	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	954063	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	518253	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	851399	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	748101	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	741910	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	426753	30.5840	30.58
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	677586	34.4816	34.48
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	629137	35.2696	35.27
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	475897	31.6354	31.64
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	4664	0.21740	0.2174(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121819.d
Lab Smp Id: 1712296-13A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	234013	9.67
27 Naphthalene-d8	899817	449908	1799634	954063	6.03
48 Acenaphthene-d10	468863	234432	937726	518253	10.53
71 Phenanthrene-d10	743971	371986	1487942	851399	14.44
97 Chrysene-d12	659280	329640	1318560	748101	13.47
115 Perylene-d12	643165	321582	1286330	741910	15.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-13A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	30.58	61.17	60-120
$ 83 Pyrene-d10	50.00	34.48	68.96	60-120
$ 78 Fluoranthene-d10	50.00	35.27	70.54	50-150
$ 111 Benzo(a)pyrene-d12	50.00	31.64	63.27	50-150

Data File: /chem/msd9.i/18dec17.b/9121819.d

Date : 18-DEC-2017 23:39

Client ID:

Instrument: msd9.i

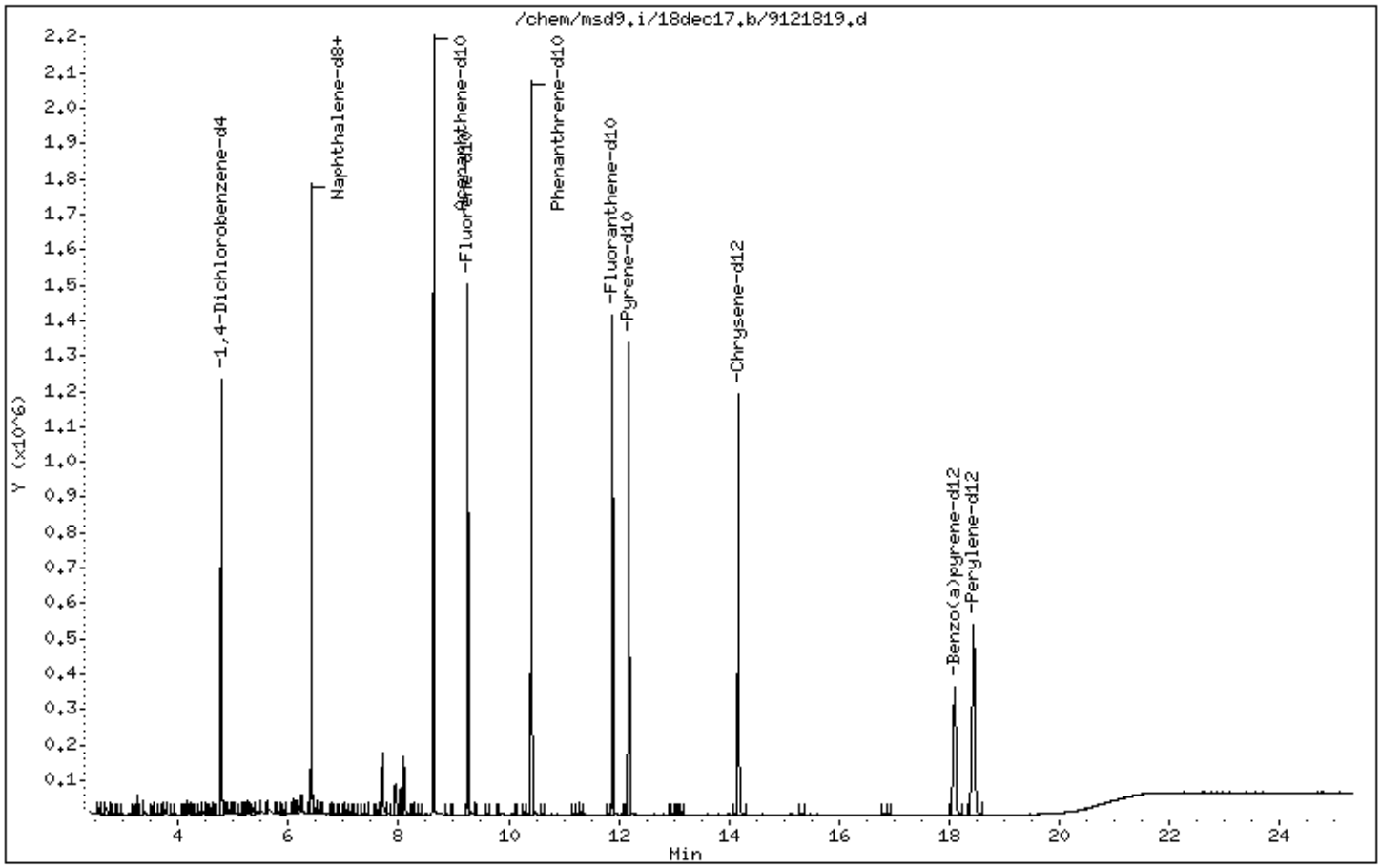
Sample Info: ;1712296-13A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121819.d

Date : 18-DEC-2017 23:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-13A;

Volume Injected (uL): 1.0

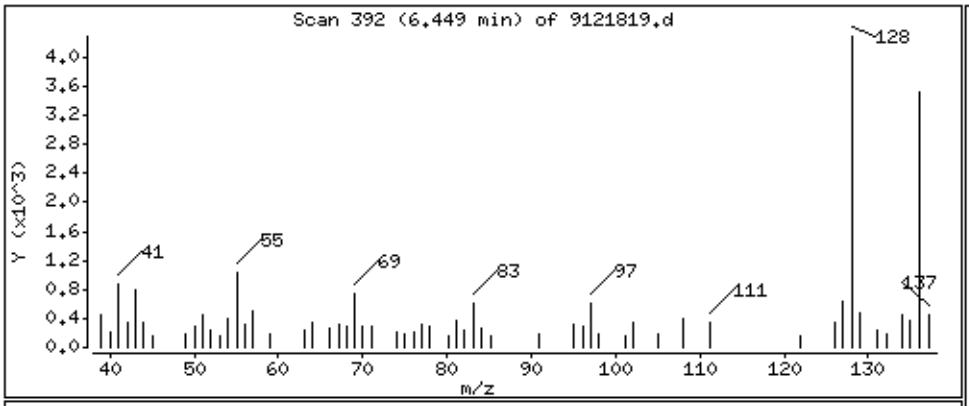
Operator: KV

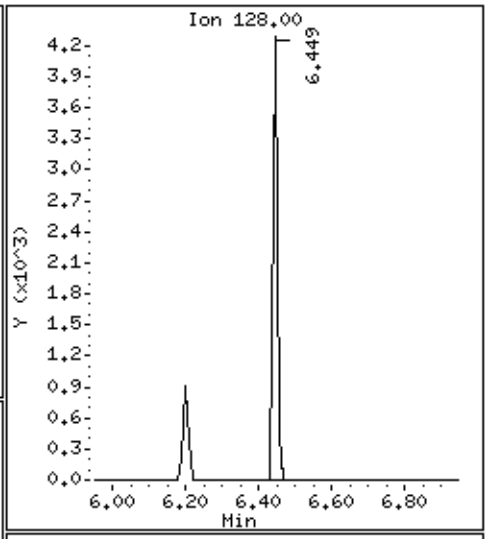
Column phase: DB-5.625

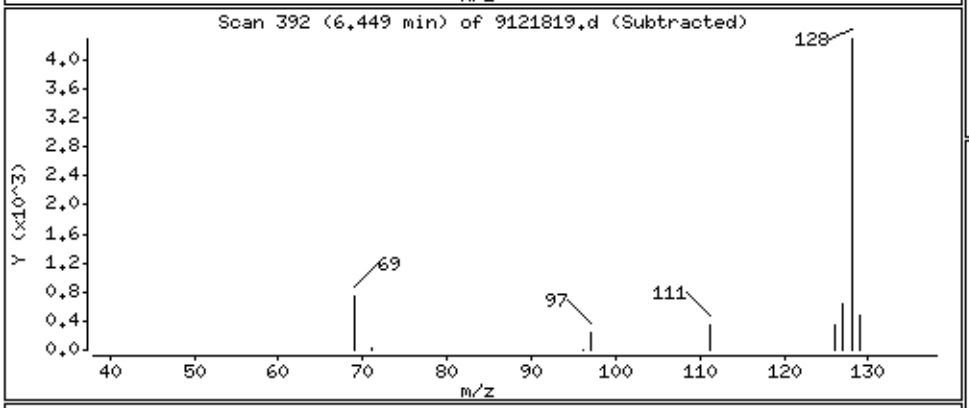
Column diameter: 0.25

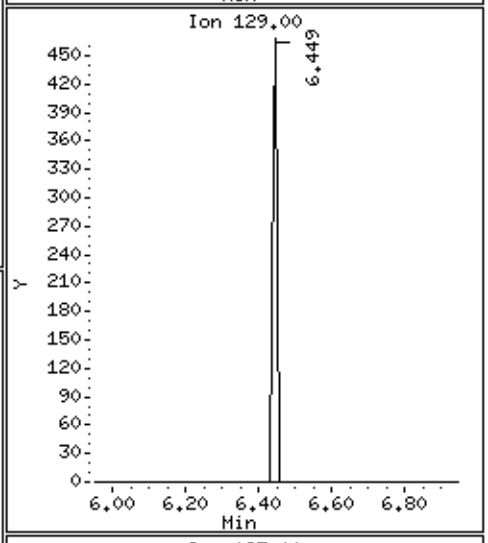
28 Naphthalene

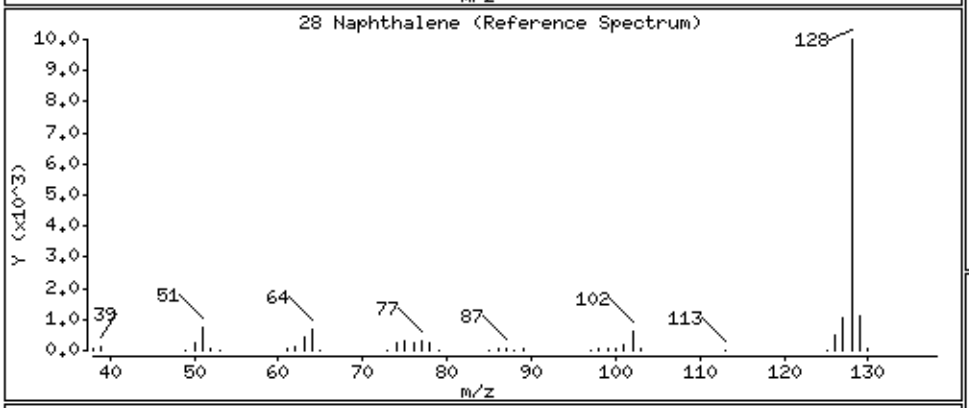
Concentration: 0.2174 ug

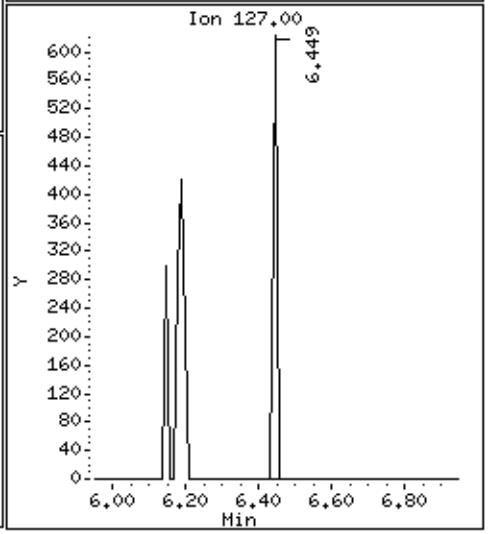


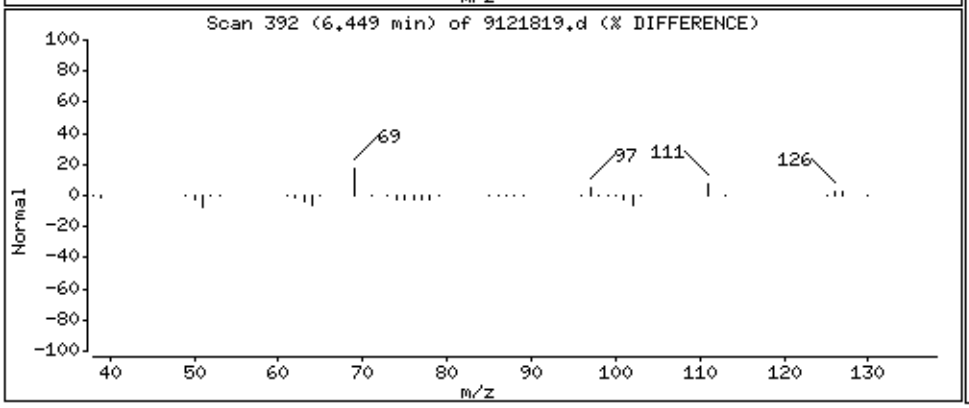












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA5-1_1217

Lab ID#: 1712296-14A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.18 J	0.024 J

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Client Sample ID: OA5-1_1217

Lab ID#: 1712296-14A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121820**	**Date of Collection: 12/14/17 10:05:00 A**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/17 12:09 AM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.18 J	0.024 J
Acenaphthylene	1.0	0.13	Not Detected	Not Detected
Acenaphthene	1.0	0.13	Not Detected	Not Detected
Fluorene	1.0	0.13	Not Detected	Not Detected
Phenanthrene	1.0	0.13	Not Detected	Not Detected
Anthracene	1.0	0.13	Not Detected	Not Detected
Fluoranthene	1.0	0.13	Not Detected	Not Detected
Pyrene	1.0	0.13	Not Detected	Not Detected
Chrysene	1.0	0.13	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.13	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.13	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.13	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.13	Not Detected	Not Detected
Phenol	5.0	0.66	Not Detected	Not Detected
Dibenzofuran	1.0	0.13	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.3	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.66	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.13	Not Detected	Not Detected
2-Chlorophenol	5.0	0.66	Not Detected	Not Detected

Air Sample Volume(L): 7510

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	61	60-120
Pyrene-d10	71	60-120
Benzo(a)pyrene-d12	66	50-150
Fluoranthene-d10	70	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121820.d
Lab Smp Id: 1712296-14A
Inj Date : 19-DEC-2017 00:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-14A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	238443	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	987402	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	534228	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	825831	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	719035	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	724905	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	437197	30.3956	30.40
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	671672	35.5624	35.56
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	601386	34.7577	34.76
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	483430	32.8900	32.89
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28 Naphthalene	128	6.449	6.449	(1.005)	3950	0.17790	0.1779(a)
34 2-Methylnaphthalene	142	Compound Not Detected.					
44 Acenaphthylene	152	Compound Not Detected.					
49 Acenaphthene*	154	Compound Not Detected.					
50 2,4-Dinitrophenol**	184	Compound Not Detected.					
52 Dibenzofuran	168	Compound Not Detected.					
56 Fluorene	166	Compound Not Detected.					
72 Phenanthrene	178	Compound Not Detected.					
73 Anthracene	178	Compound Not Detected.					
79 Fluoranthene*	202	Compound Not Detected.					
84 Pyrene	202	Compound Not Detected.					
96 Benzo(a)Anthracene	228	Compound Not Detected.					
99 Chrysene	228	Compound Not Detected.					
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:33

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121820.d
Lab Smp Id: 1712296-14A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	238443	11.74
27 Naphthalene-d8	899817	449908	1799634	987402	9.73
48 Acenaphthene-d10	468863	234432	937726	534228	13.94
71 Phenanthrene-d10	743971	371986	1487942	825831	11.00
97 Chrysene-d12	659280	329640	1318560	719035	9.06
115 Perylene-d12	643165	321582	1286330	724905	12.71

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-14A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	30.40	60.79	60-120
$ 83 Pyrene-d10	50.00	35.56	71.12	60-120
$ 78 Fluoranthene-d10	50.00	34.76	69.52	50-150
$ 111 Benzo(a)pyrene-d12	50.00	32.89	65.78	50-150

Data File: /chem/msd9.i/18dec17.b/9121820.d

Date : 19-DEC-2017 00:09

Client ID:

Instrument: msd9.i

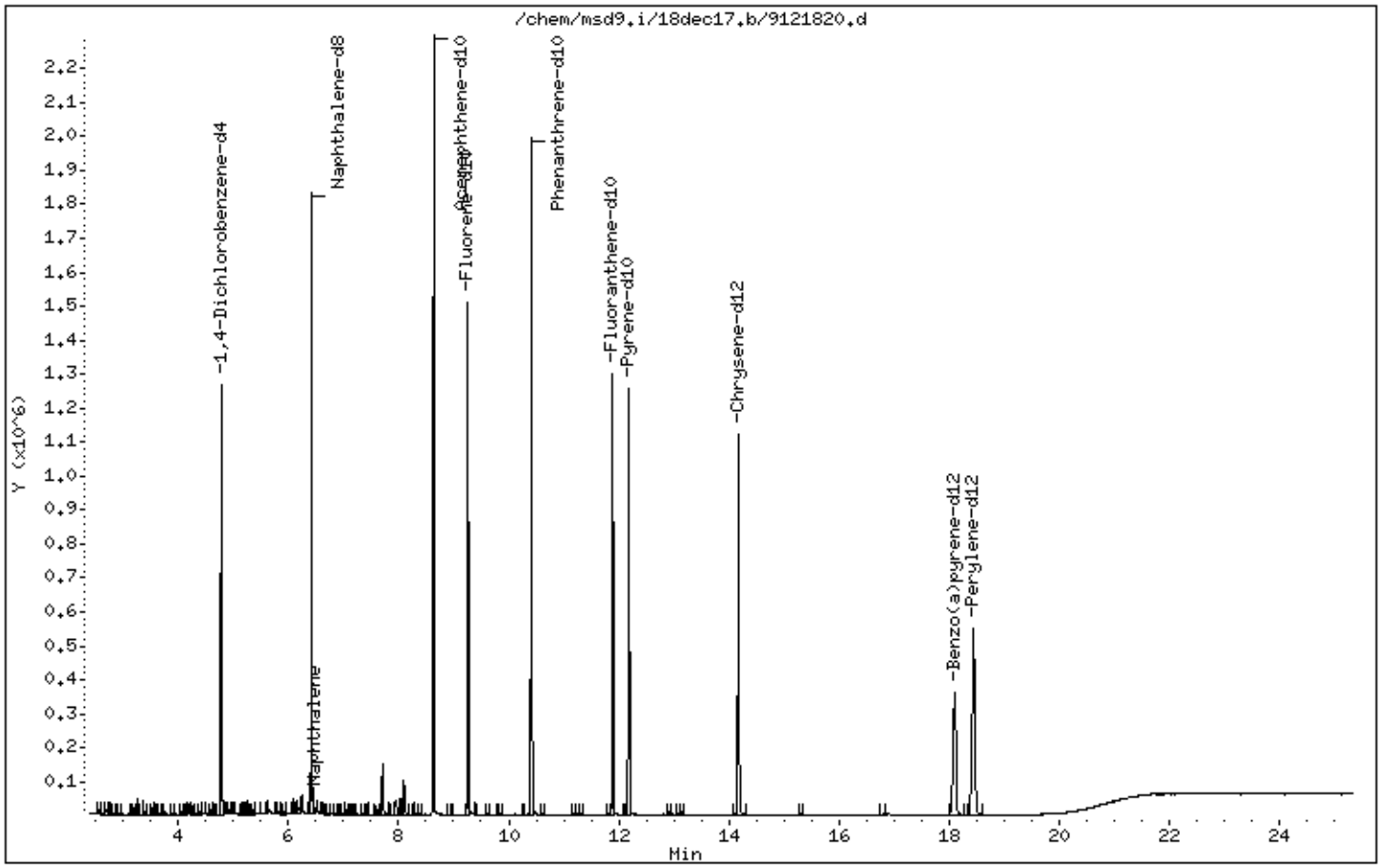
Sample Info: ;1712296-14A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121820.d

Date : 19-DEC-2017 00:09

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-14A;

Volume Injected (uL): 1.0

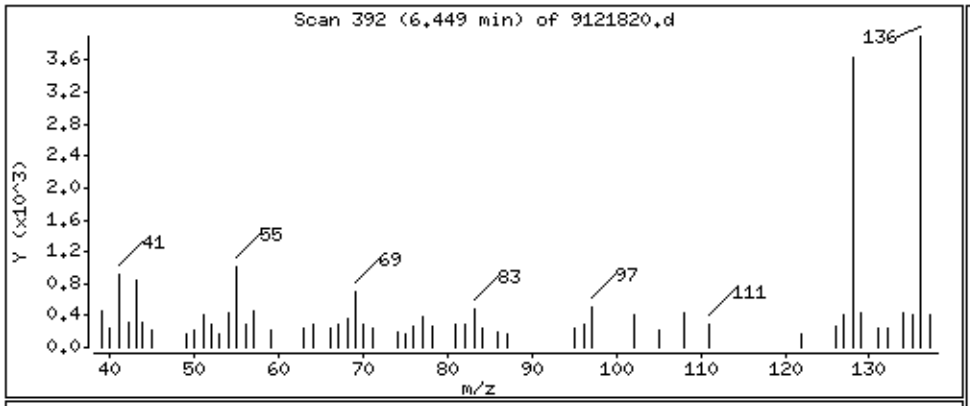
Operator: KV

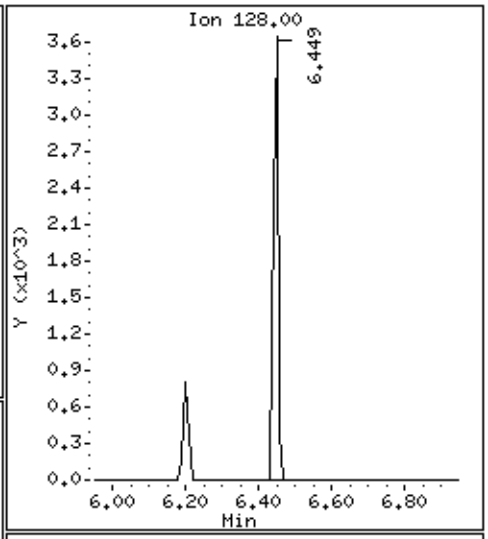
Column phase: DB-5.625

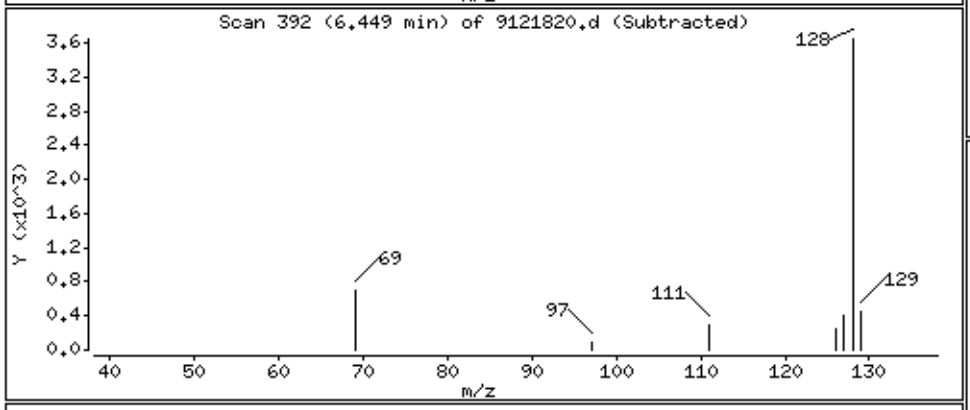
Column diameter: 0.25

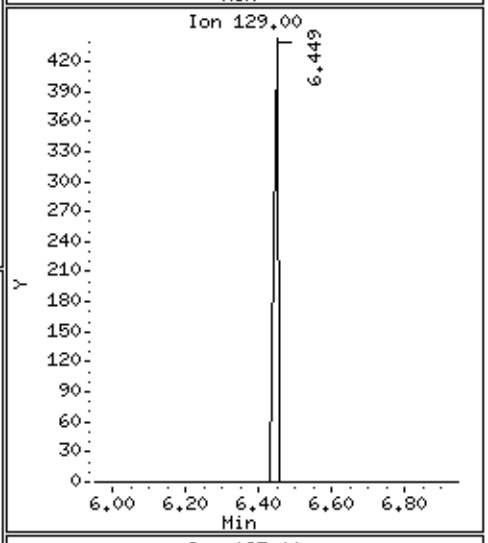
28 Naphthalene

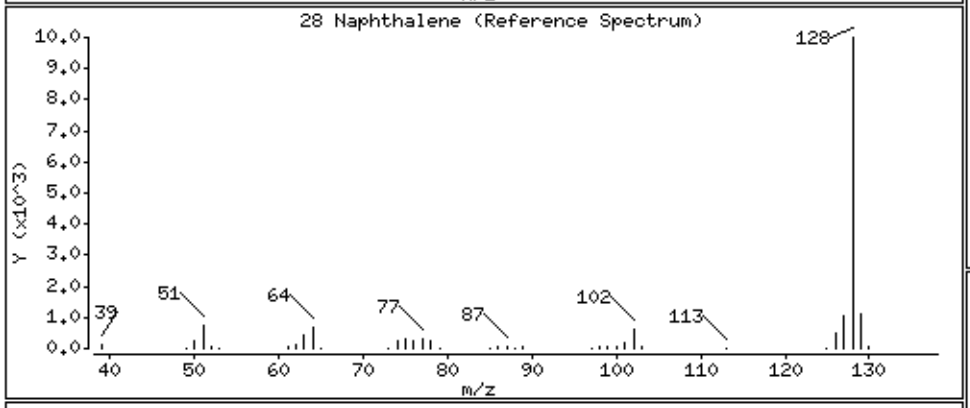
Concentration: 0.1779 ug

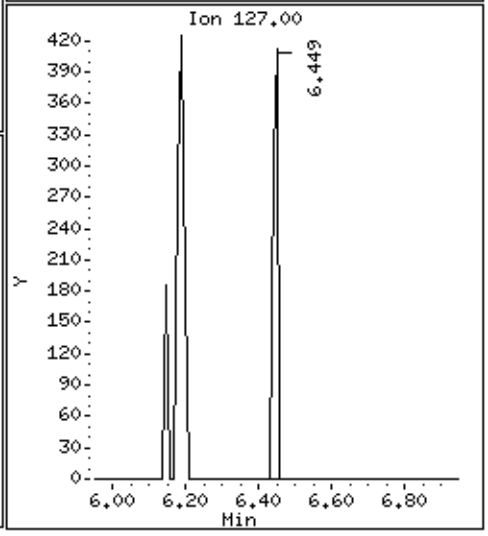


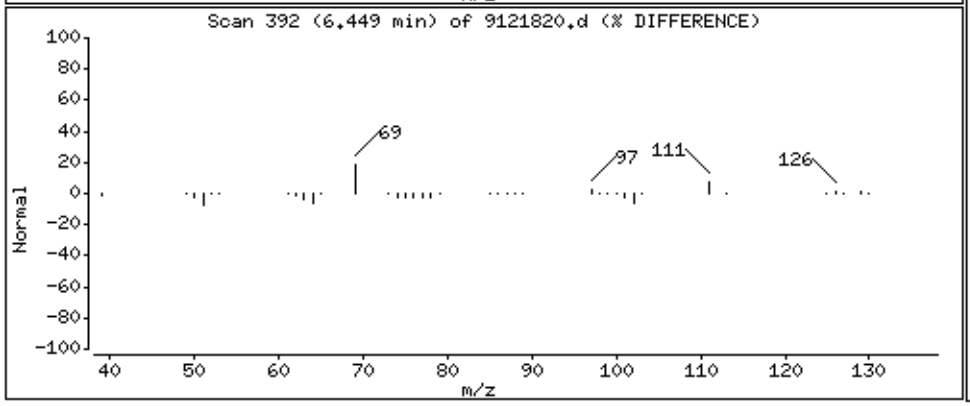












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: OA15_1217

Lab ID#: 1712296-15A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.40 J	0.057 J
2-Methylnaphthalene	1.0	0.14	0.11 J	0.016 J

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Client Sample ID: OA15_1217

Lab ID#: 1712296-15A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121821**	**Date of Collection: 12/14/17 1:27:00 PM**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/17 12:39 AM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	0.40 J	0.057 J
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.71	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.7	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.71	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	0.11 J	0.016 J
2-Chlorophenol	5.0	0.71	Not Detected	Not Detected

Air Sample Volume(L): 7000

J = Estimated value.

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	63	60-120
Pyrene-d10	73	60-120
Benzo(a)pyrene-d12	64	50-150
Fluoranthene-d10	72	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121821.d
Lab Smp Id: 1712296-15A
Inj Date : 19-DEC-2017 00:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-15A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	231872	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	952545	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	508837	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	791989	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	684207	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	682793	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	433978	31.6773	31.68
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	654737	36.4303	36.43
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	600538	36.1918	36.19
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	442406	31.9554	31.96
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28	Naphthalene	128	6.449	6.449	(1.005)	8585	0.40080	0.4008(a)
34	2-Methylnaphthalene	142	7.330	7.330	(1.142)	1641	0.11323	0.1132(a)
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:34

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121821.d
Lab Smp Id: 1712296-15A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	231872	8.66
27 Naphthalene-d8	899817	449908	1799634	952545	5.86
48 Acenaphthene-d10	468863	234432	937726	508837	8.53
71 Phenanthrene-d10	743971	371986	1487942	791989	6.45
97 Chrysene-d12	659280	329640	1318560	684207	3.78
115 Perylene-d12	643165	321582	1286330	682793	6.16

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:34

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-15A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.68	63.35	60-120
$ 83 Pyrene-d10	50.00	36.43	72.86	60-120
$ 78 Fluoranthene-d10	50.00	36.19	72.38	50-150
$ 111 Benzo(a)pyrene-d12	50.00	31.96	63.91	50-150

Data File: /chem/msd9.i/18dec17.b/9121821.d

Date : 19-DEC-2017 00:39

Client ID:

Instrument: msd9.i

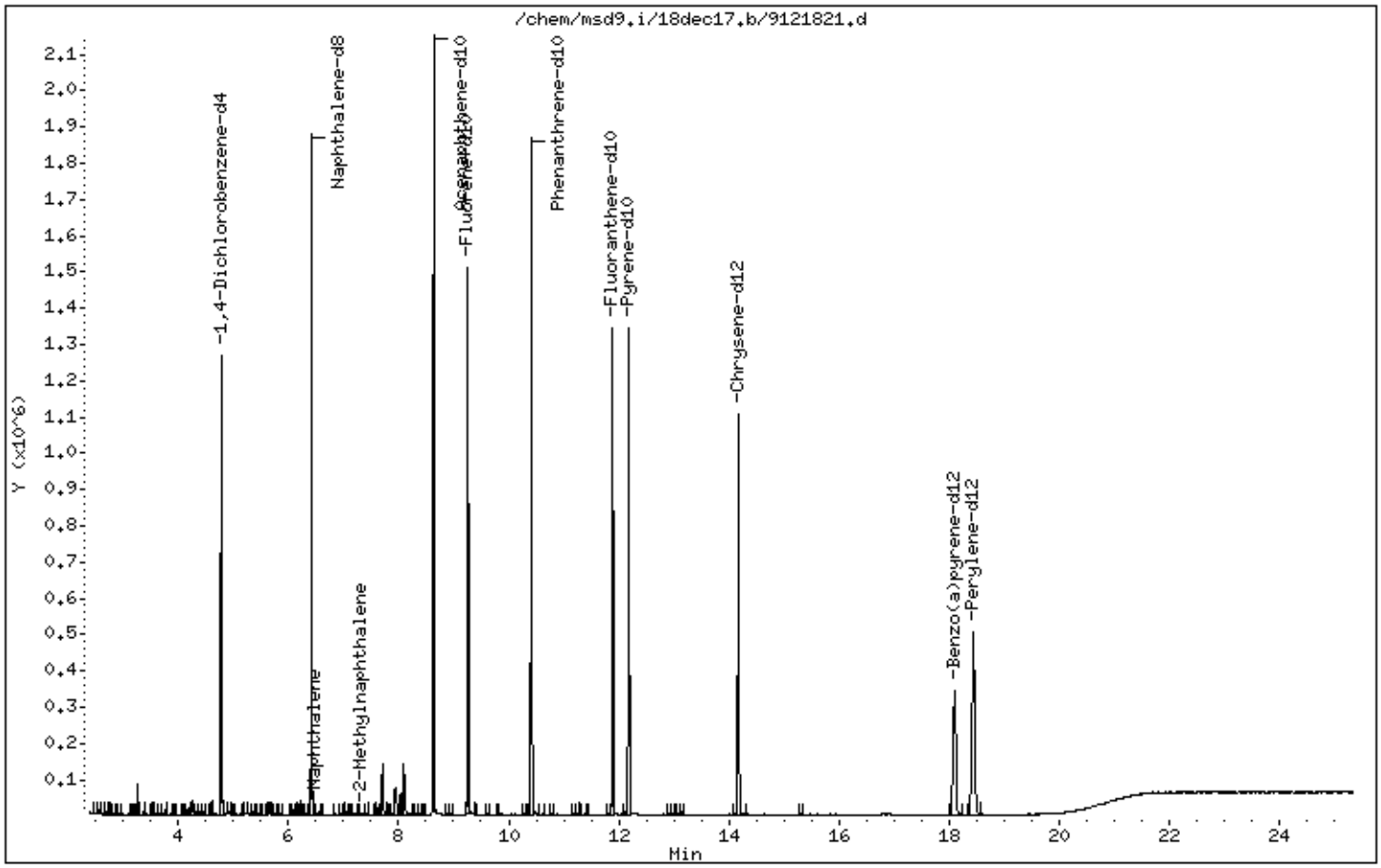
Sample Info: ;1712296-15A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121821.d

Date : 19-DEC-2017 00:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-15A;

Volume Injected (uL): 1.0

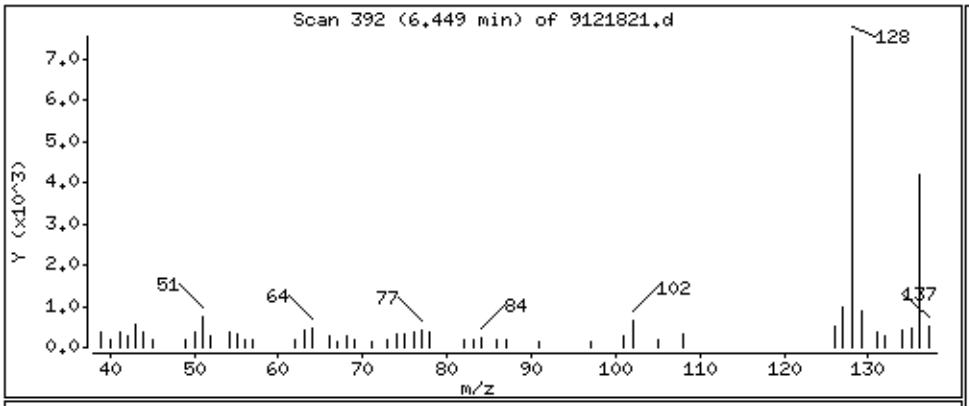
Operator: KV

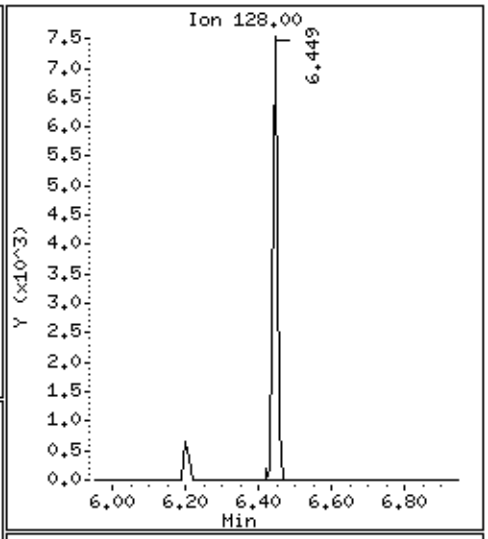
Column phase: DB-5.625

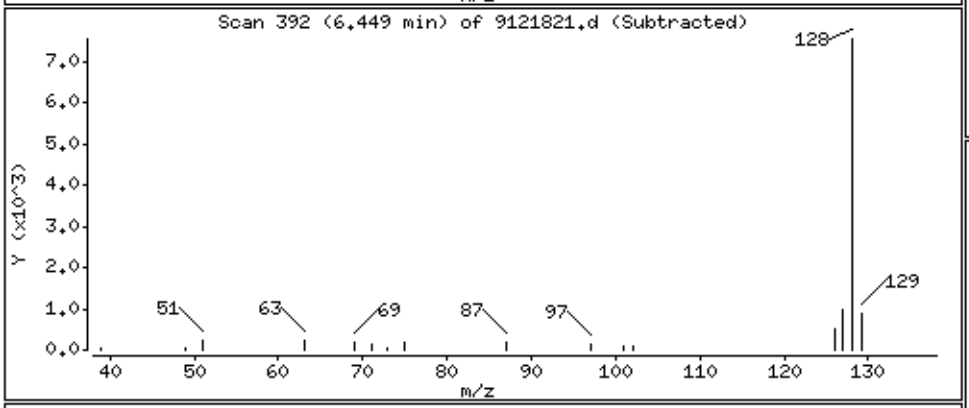
Column diameter: 0.25

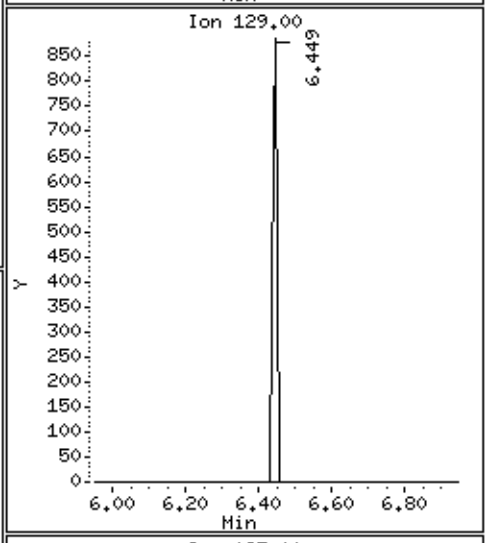
28 Naphthalene

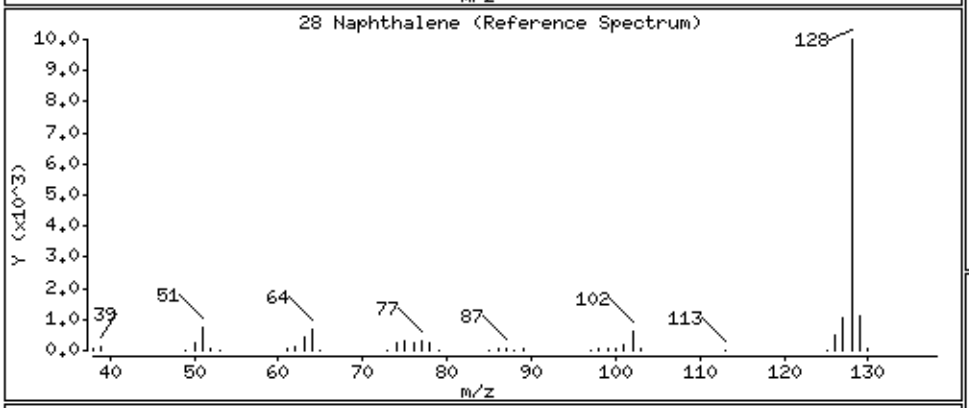
Concentration: 0.4008 ug

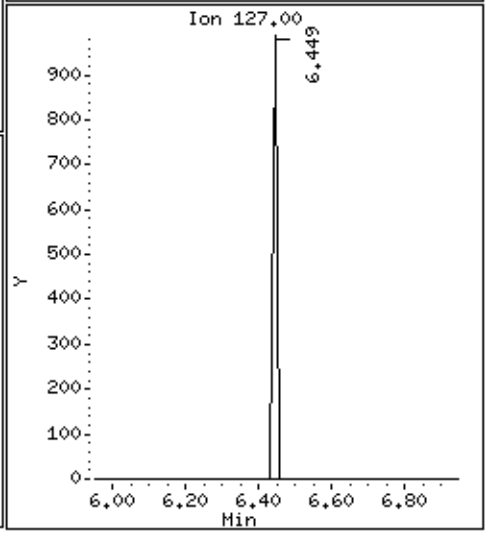


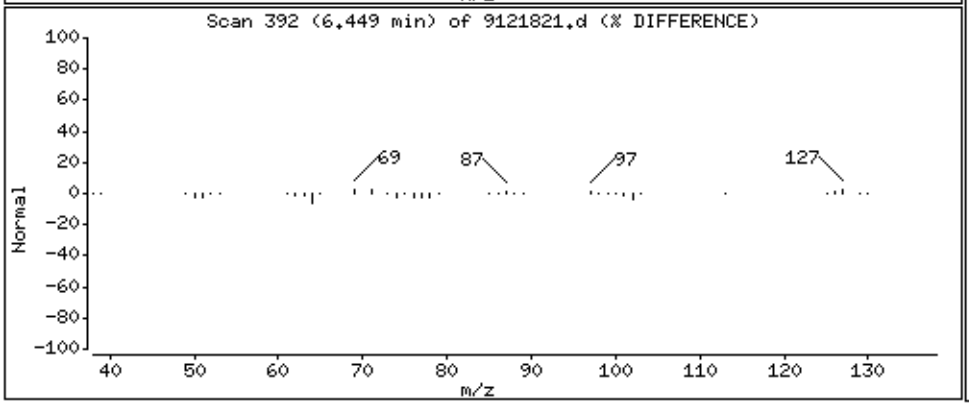












Data File: /chem/msd9.i/18dec17.b/9121821.d

Date : 19-DEC-2017 00:39

Client ID:

Instrument: msd9.i

Sample Info: ;1712296-15A;

Volume Injected (uL): 1.0

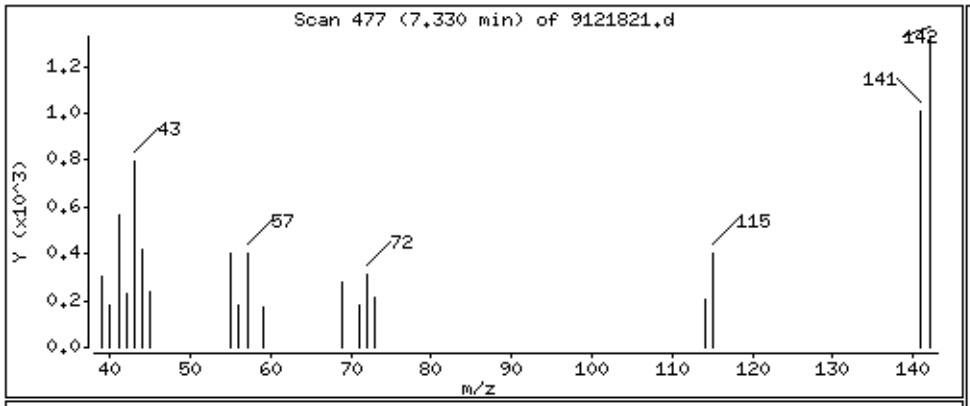
Operator: KV

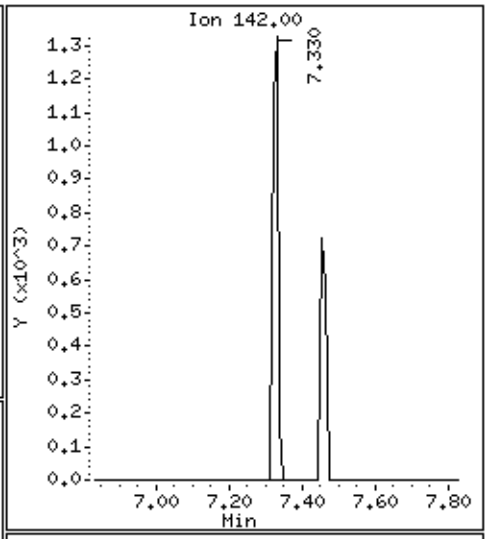
Column phase: DB-5.625

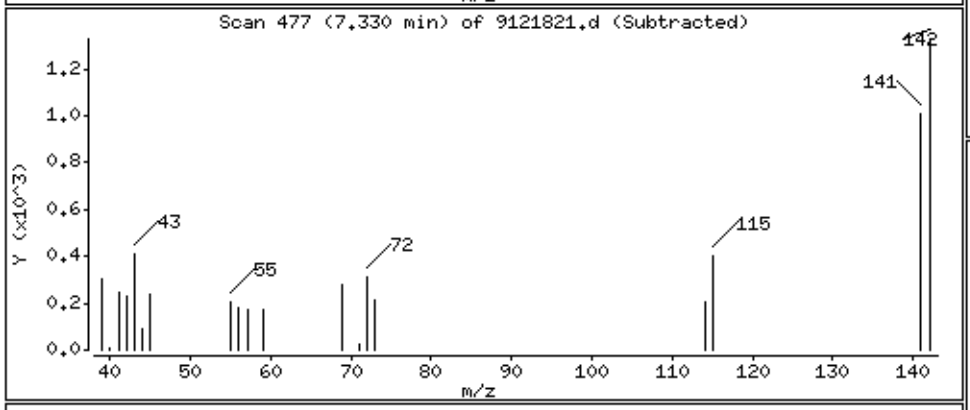
Column diameter: 0.25

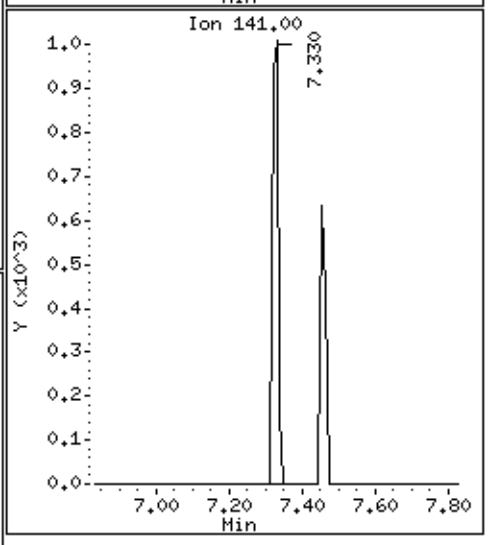
34 2-Methylnaphthalene

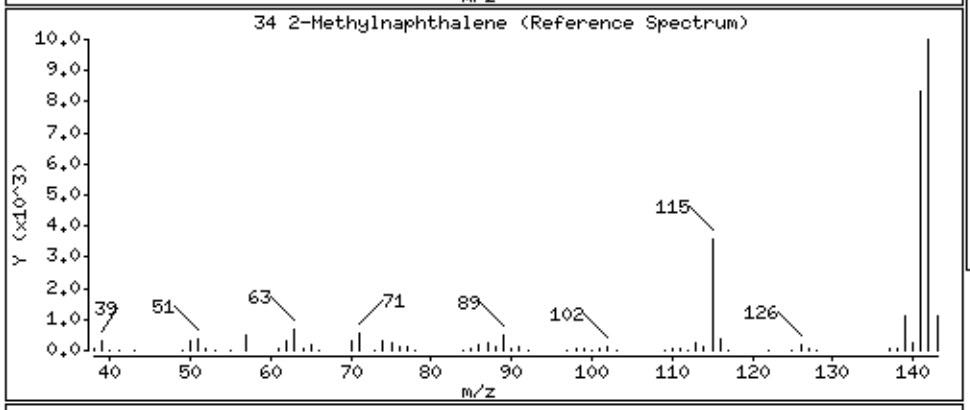
Concentration: 0.1132 ug

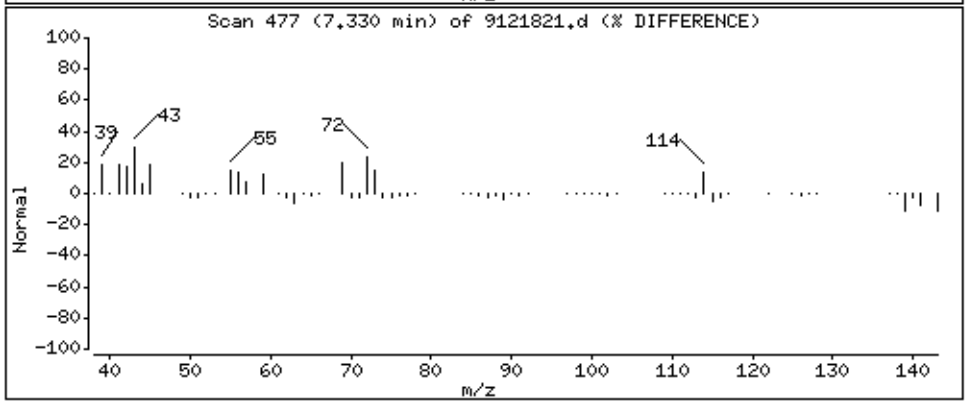












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Summary of Detected Compounds
MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

Client Sample ID: TRIPBLANK-1_1217

Lab ID#: 1712296-16A

No Detections Were Found.

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Client Sample ID: TRIPBLANK-1_1217

Lab ID#: 1712296-16A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121822**	**Date of Collection: 12/14/17 12:00:00 P**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/19/17 01:09 AM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.14	Not Detected	Not Detected
Acenaphthylene	1.0	0.14	Not Detected	Not Detected
Acenaphthene	1.0	0.14	Not Detected	Not Detected
Fluorene	1.0	0.14	Not Detected	Not Detected
Phenanthrene	1.0	0.14	Not Detected	Not Detected
Anthracene	1.0	0.14	Not Detected	Not Detected
Fluoranthene	1.0	0.14	Not Detected	Not Detected
Pyrene	1.0	0.14	Not Detected	Not Detected
Chrysene	1.0	0.14	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.14	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.14	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.14	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.14	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.14	Not Detected	Not Detected
Phenol	5.0	0.69	Not Detected	Not Detected
Dibenzofuran	1.0	0.14	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.6	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.69	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.14	Not Detected	Not Detected
2-Chlorophenol	5.0	0.69	Not Detected	Not Detected

Air Sample Volume(L): 7200

Container Type: PUF/XAD Cartridge

Surrogates	%Recovery	Method Limits
Fluorene-d10	64	60-120
Pyrene-d10	69	60-120
Benzo(a)pyrene-d12	68	50-150
Fluoranthene-d10	75	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121822.d
Lab Smp Id: 1712296-16A
Inj Date : 19-DEC-2017 01:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296-16A;
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	225561	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	887487	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	467169	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	810624	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	750085	40.0000	
* 115 Perylene-d12	264	18.439	18.460	(1.000)	743732	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	400146	31.8130	31.81
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	681407	34.5843	34.58
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	633523	37.3020	37.30
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	511859	33.9426	33.94
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
28	Naphthalene	128	Compound Not Detected.					
34	2-Methylnaphthalene	142	Compound Not Detected.					
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

Report Date: 21-Dec-2017 13:34

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121822.d
Lab Smp Id: 1712296-16A
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	225561	5.71
27 Naphthalene-d8	899817	449908	1799634	887487	-1.37
48 Acenaphthene-d10	468863	234432	937726	467169	-0.36
71 Phenanthrene-d10	743971	371986	1487942	810624	8.96
97 Chrysene-d12	659280	329640	1318560	750085	13.77
115 Perylene-d12	643165	321582	1286330	743732	15.64

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.44	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:34

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296-16A
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.81	63.63	60-120
$ 83 Pyrene-d10	50.00	34.58	69.17	60-120
$ 78 Fluoranthene-d10	50.00	37.30	74.60	50-150
$ 111 Benzo(a)pyrene-d12	50.00	33.94	67.89	50-150

Data File: /chem/msd9.i/18dec17.b/9121822.d

Date : 19-DEC-2017 01:09

Client ID:

Instrument: msd9.i

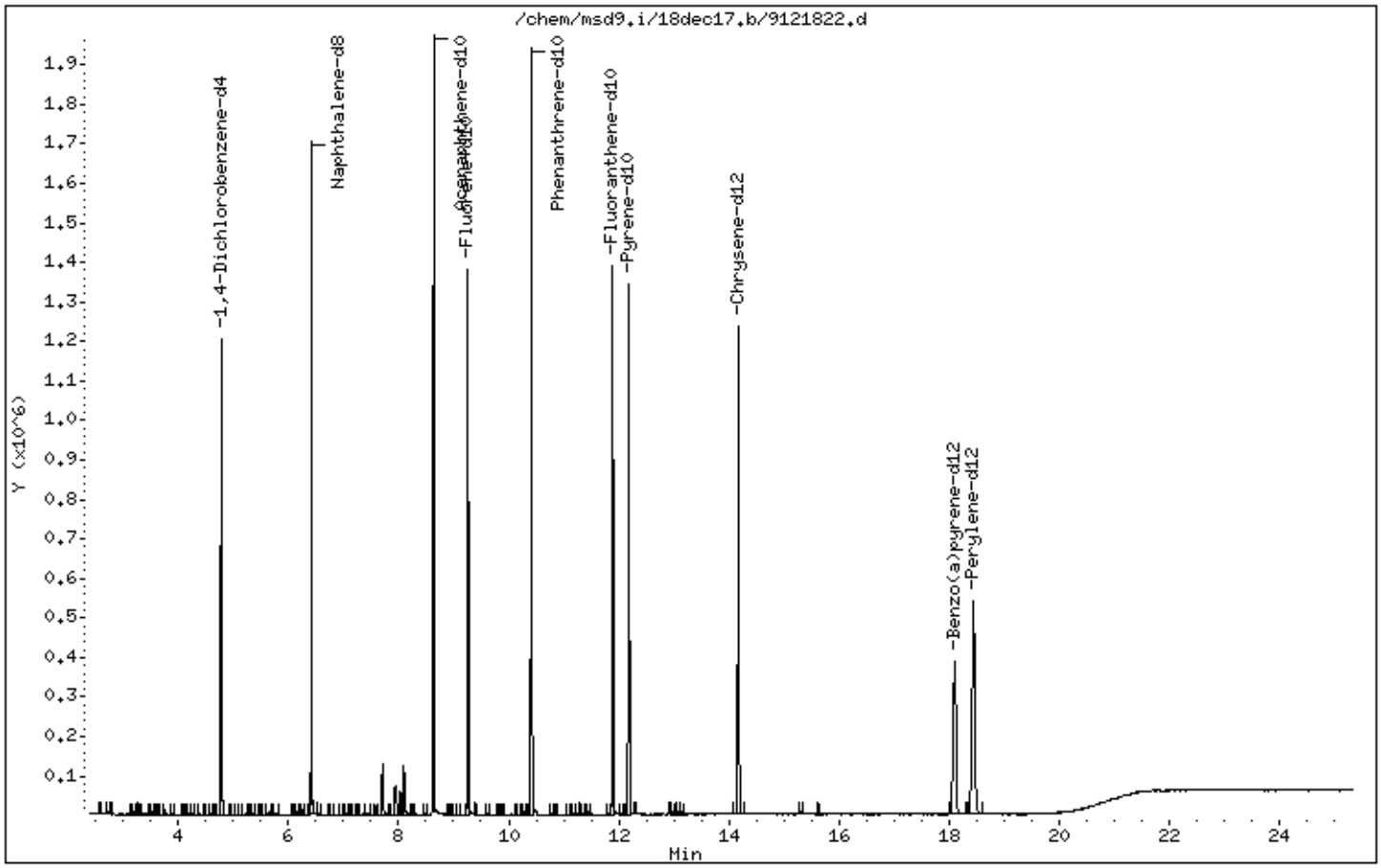
Sample Info: ;1712296-16A;

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



QC Results and Raw Data

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Client Sample ID: Lab Blank

Lab ID#: 1712296-17A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121806a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 05:09 PM**	
		Date of Extraction: 12/18/17	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Naphthalene	1.0	0.13	0.58 J	0.075 J
Acenaphthylene	1.0	0.13	Not Detected	Not Detected
Acenaphthene	1.0	0.13	Not Detected	Not Detected
Fluorene	1.0	0.13	Not Detected	Not Detected
Phenanthrene	1.0	0.13	Not Detected	Not Detected
Anthracene	1.0	0.13	Not Detected	Not Detected
Fluoranthene	1.0	0.13	Not Detected	Not Detected
Pyrene	1.0	0.13	Not Detected	Not Detected
Chrysene	1.0	0.13	Not Detected	Not Detected
Benzo(a)anthracene	1.0	0.13	Not Detected	Not Detected
Benzo(b)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(k)fluoranthene	1.0	0.13	Not Detected	Not Detected
Benzo(a)pyrene	1.0	0.13	Not Detected	Not Detected
Indeno(1,2,3-c,d)pyrene	1.0	0.13	Not Detected	Not Detected
Dibenz(a,h)anthracene	1.0	0.13	Not Detected	Not Detected
Phenol	5.0	0.65	Not Detected	Not Detected
Dibenzofuran	1.0	0.13	Not Detected	Not Detected
2,4-Dinitrophenol	40	5.2	Not Detected	Not Detected
2,4-Dimethylphenol	5.0	0.65	Not Detected	Not Detected
2-Methylnaphthalene	1.0	0.13	0.25 J	0.033 J
2-Chlorophenol	5.0	0.65	Not Detected	Not Detected

Air Sample Volume(L): 7720

J = Estimated value.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorene-d10	63	60-120
Pyrene-d10	72	60-120
Benzo(a)pyrene-d12	72	50-150
Fluoranthene-d10	74	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121806a.d
Lab Smp Id: 1712296 Client Smp ID: LAB BLANK
Inj Date : 18-DEC-2017 17:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296; LAB BLANK
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:29 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH2M22104.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	219890	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	870359	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	454889	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	734278	40.0000	
* 97 Chrysene-d12	240	14.170	14.180	(1.000)	661620	40.0000	
* 115 Perylene-d12	264	18.449	18.460	(1.000)	657569	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	387374	31.6290	31.63
$ 83 Pyrene-d10	212	12.180	12.190	(0.860)	630760	36.2943	36.29
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	570955	37.1133	37.11
$ 111 Benzo(a)pyrene-d12	264	18.097	18.118	(0.981)	483867	36.2908	36.29
3 Phenol*	94	Compound Not Detected.					
6 2-Chlorophenol	128	Compound Not Detected.					
22 2,4-Dimethylphenol	122	Compound Not Detected.					

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
28	Naphthalene	128	6.449	6.449	(1.005)	11286	0.57665	0.5766(a)
34	2-Methylnaphthalene	142	7.330	7.330	(1.142)	3366	0.25419	0.2542(a)
44	Acenaphthylene	152	Compound Not Detected.					
49	Acenaphthene*	154	Compound Not Detected.					
50	2,4-Dinitrophenol**	184	Compound Not Detected.					
52	Dibenzofuran	168	Compound Not Detected.					
56	Fluorene	166	Compound Not Detected.					
72	Phenanthrene	178	Compound Not Detected.					
73	Anthracene	178	Compound Not Detected.					
79	Fluoranthene*	202	Compound Not Detected.					
84	Pyrene	202	Compound Not Detected.					
96	Benzo(a)Anthracene	228	Compound Not Detected.					
99	Chrysene	228	Compound Not Detected.					
107	Benzo(b)fluoranthene	252	Compound Not Detected.					
109	Benzo(k)fluoranthene	252	Compound Not Detected.					
113	Benzo(a)pyrene*	252	Compound Not Detected.					
117	Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118	Dibenzo(a,h)anthracene	278	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Report Date: 21-Dec-2017 13:31

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121806a.d
Lab Smp Id: 1712296
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Client Smp ID: LAB BLANK
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	219890	3.05
27 Naphthalene-d8	899817	449908	1799634	870359	-3.27
48 Acenaphthene-d10	468863	234432	937726	454889	-2.98
71 Phenanthrene-d10	743971	371986	1487942	734278	-1.30
97 Chrysene-d12	659280	329640	1318560	661620	0.35
115 Perylene-d12	643165	321582	1286330	657569	2.24

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.17	-0.07
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Report Date: 21-Dec-2017 13:31

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296 Client Smp ID: LAB BLANK
Level: LOW Operator: KV
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: CH2M22104.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.63	63.26	60-120
$ 83 Pyrene-d10	50.00	36.29	72.59	60-120
$ 78 Fluoranthene-d10	50.00	37.11	74.23	50-150
$ 111 Benzo(a)pyrene-d12	50.00	36.29	72.58	50-150

Data File: /chem/msd9.i/18dec17.b/9121806a.d

Date : 18-DEC-2017 17:09

Client ID: LAB BLANK

Instrument: msd9.i

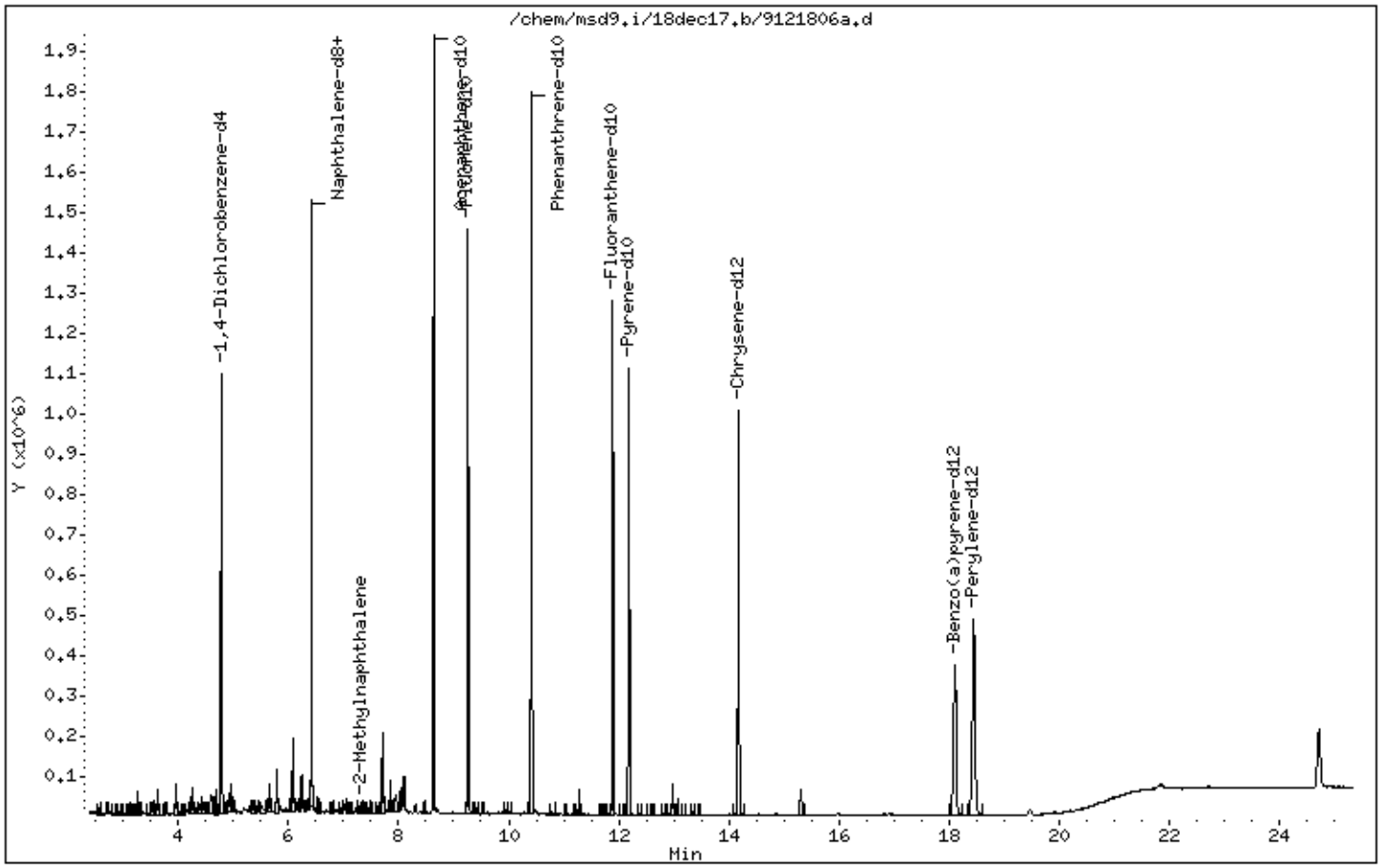
Sample Info: ;1712296; LAB BLANK

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121806a.d

Date : 18-DEC-2017 17:09

Client ID: LAB BLANK

Instrument: msd9.i

Sample Info: ;1712296; LAB BLANK

Volume Injected (uL): 1.0

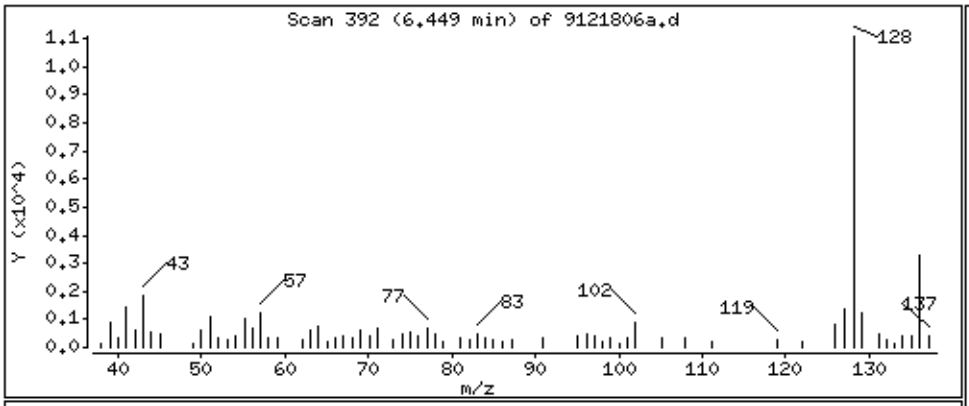
Operator: KV

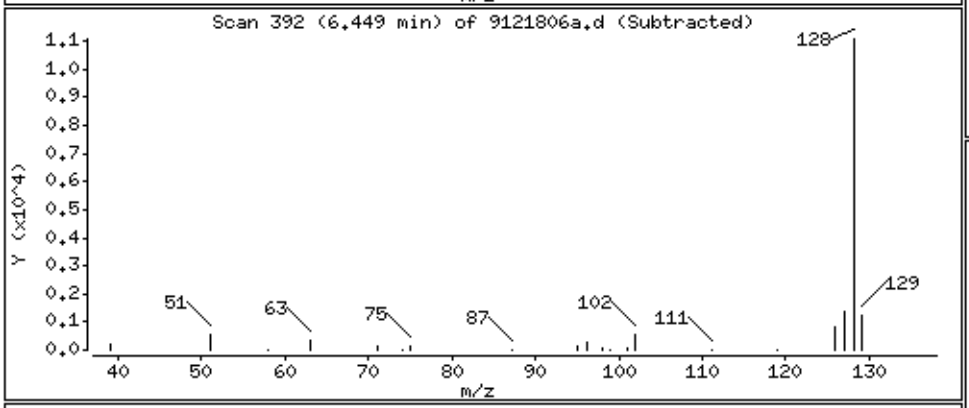
Column phase: DB-5.625

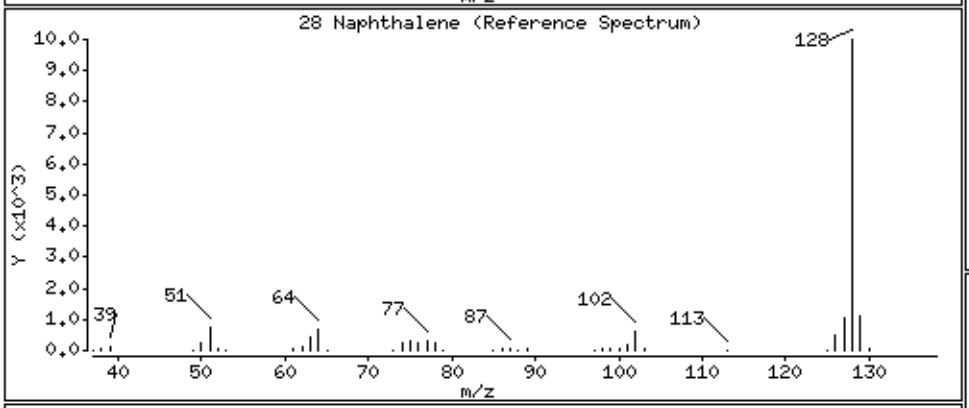
Column diameter: 0.25

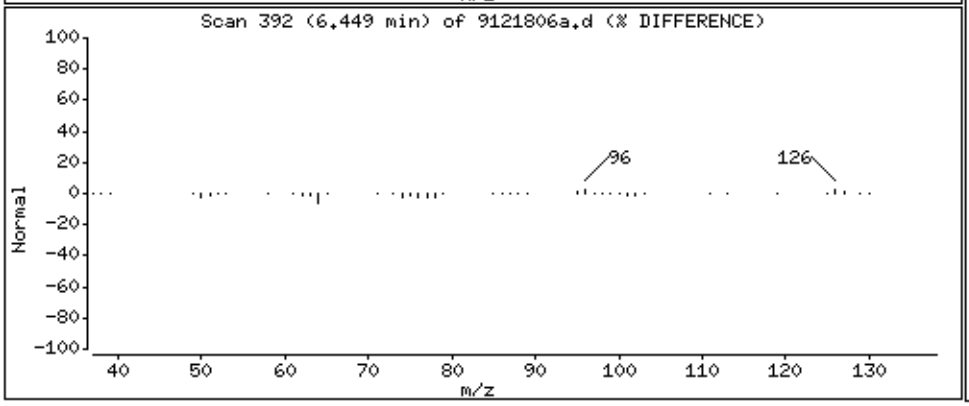
28 Naphthalene

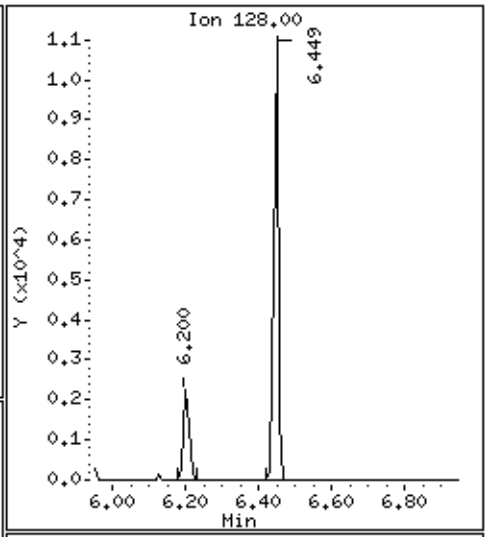
Concentration: 0.5766 ug

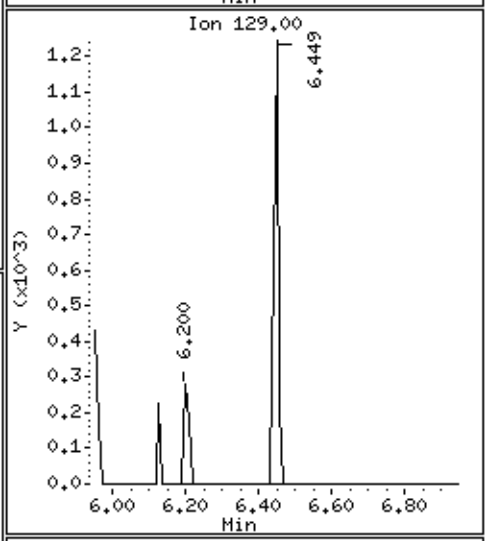


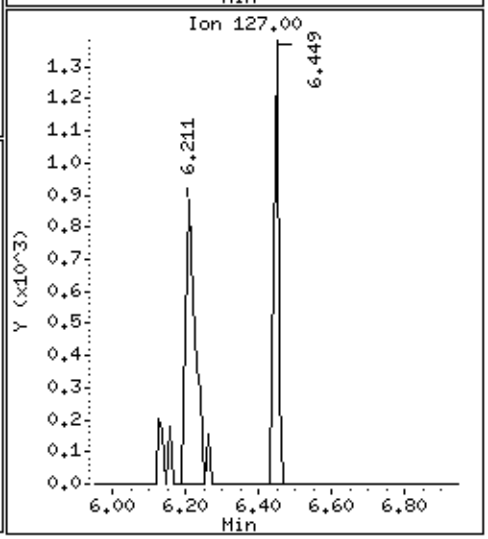












Data File: /chem/msd9.i/18dec17.b/9121806a.d

Date : 18-DEC-2017 17:09

Client ID: LAB BLANK

Instrument: msd9.i

Sample Info: ;1712296; LAB BLANK

Volume Injected (uL): 1.0

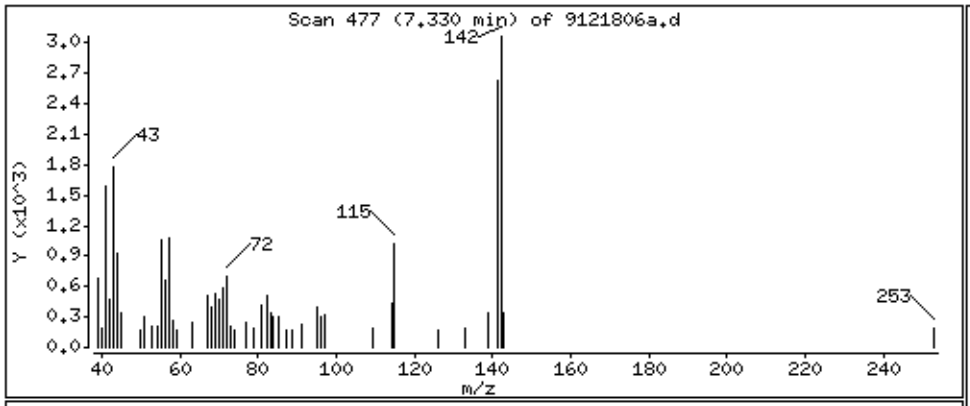
Operator: KV

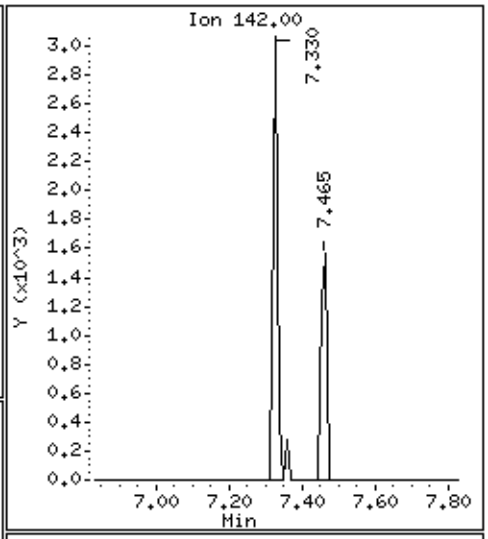
Column phase: DB-5.625

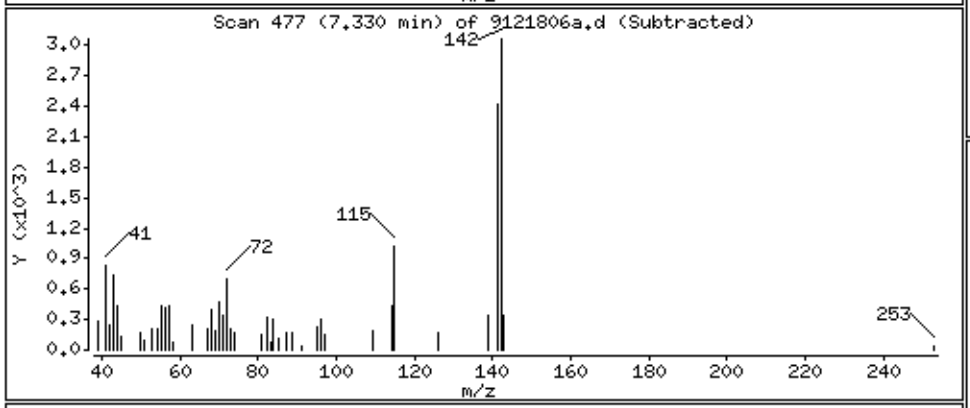
Column diameter: 0.25

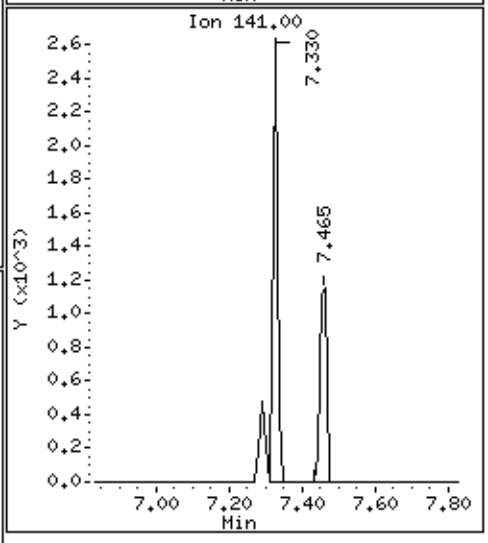
34 2-Methylnaphthalene

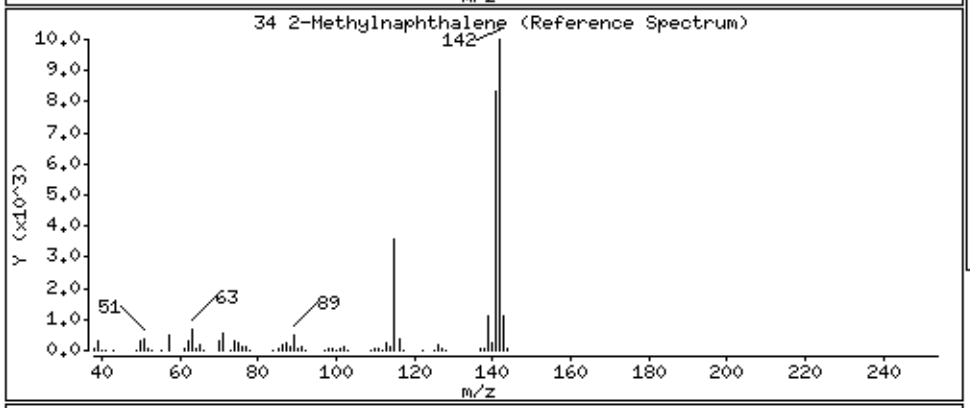
Concentration: 0.2542 ug

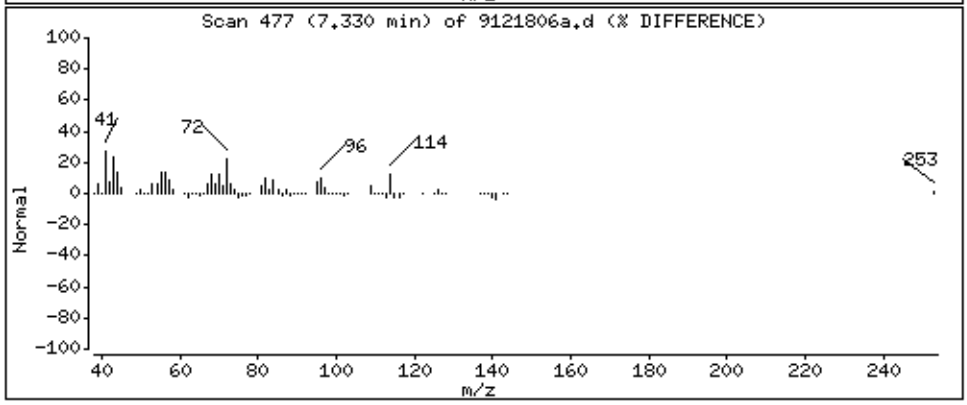












LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1712296

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY									
		Pyrene-d10	#	Fluorene-d10	#	Fluoranthene-d10	#	Benzo(a)pyrene-d12	#	TOTAL OUT
01	OA6_1217	80		68		76		70		0
02	OA7_1217	74		65		71		66		0
03	OA12_1217	74		64		73		65		0
04	OA13_1217	72		64		77		64		0
05	OA14_1217	72		66		82		68		0
06	OA1_1217	74		62		75		65		0
07	OA2_1217	75		64		75		68		0
08	OA2-1_1217	71		60		69		64		0
09	OA8_1217	70		61		69		63		0
10	OA9_1217	80		64		76		74		0
11	OA10_1217	73		62		68		66		0
12	OA11_1217	73		63		73		70		0
13	OA5_1217	69		61		70		63		0
14	OA5-1_1217	71		61		70		66		0
15	OA15_1217	73		63		72		64		0
16	TRIPBLANK-1_1217	69		64		75		68		0
17	Lab Blank	72		63		74		72		0
18	CCV	89		87		90		92		0
19	LCS	70		63		80		75		0
20	LCSD	76		65		79		77		0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

Pyrene-d10 60 - 120
Fluorene-d10 60 - 120
Fluoranthene-d10 50 - 150
Benzo(a)pyrene-d12 50 - 150

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-13A GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1712296

Lab File ID: 9121803a.d | Date Analyzed: 12/18/2017

Instrument ID: msd9.i | Time Analyzed: 03:39 PM

		Naphthalene-d8 Area	#	RT	#	Acenaphthene-d12 Area	#	RT	#	Phenanthrene-d10 Area	#	RT	#
	24-HOUR STD	899817		6.43		468863		8.64		743971		10.42	
	UPPER LIMIT	1799634		06.76		937726		08.97		1487942		10.75	
	LOWER LIMIT	449908		06.10		234432		08.31		371986		10.09	
	CLIENT SAMPLE NO												
01	OA6_1217	933990		6.42		492357		8.64		780121		10.42	
02	OA7_1217	863355		6.42		445283		8.64		739232		10.42	
03	OA12_1217	902456		6.42		461196		8.64		746196		10.42	
04	OA13_1217	733658		6.42		401414		8.64		719316		10.42	
05	OA14_1217	723421		6.42		397740		8.64		719807		10.42	
06	OA1_1217	904543		6.42		472907		8.64		785318		10.42	
07	OA2_1217	889856		6.42		464547		8.64		760342		10.42	
08	OA2-1_1217	939921		6.42		504631		8.64		784934		10.42	
09	OA8_1217	1091548		6.42		577977		8.64		910163		10.42	
10	OA9_1217	1002346		6.42		566180		8.64		873837		10.42	
11	OA10_1217	1102514		6.42		631908		8.64		985509		10.42	
12	OA11_1217	924147		6.42		490515		8.64		790924		10.42	
13	OA5_1217	954063		6.42		518253		8.64		851399		10.42	
14	OA5-1_1217	987402		6.42		534228		8.64		825831		10.42	
15	OA15_1217	952545		6.42		508837		8.64		791989		10.42	
16	TRIPBLANK-1_1217	887487		6.42		467169		8.64		810624		10.42	
17	Lab Blank	870359		6.42		454889		8.64		734278		10.42	
18	CCV	899817		6.43		468863		8.64		743971		10.42	
19	LCS	796204		6.42		421652		8.64		725591		10.42	
20	LCSD	820058		6.43		413957		8.64		685976		10.42	
21													
22													

'Area Upper Limit=+200% of internal standard area'

'Area Lower Limit=-50% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-13A GC/MS Full Scan

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1712296

Lab File ID: 9121803a.d | Date Analyzed: 12/18/2017

Instrument ID: msd9.i | Time Analyzed: 03:39 PM

		Perylene-d12 Area	#	RT	#	Chrysene-d12 Area	#	RT	#	1,4-Dichlorobenzene-d4 Area	#	RT	#
	24-HOUR STD	643165		18.46		659280		14.18		213385		4.79	
	UPPER LIMIT	1286330		18.79		1318560		14.51		426770		05.12	
	LOWER LIMIT	321582		18.13		329640		13.85		106692		04.46	
	CLIENT SAMPLE NO												
01	OA6_1217	674355		18.45		675292		14.18		224150		4.78	
02	OA7_1217	649866		18.45		654467		14.17		214566		4.78	
03	OA12_1217	671478		18.45		673342		14.18		227703		4.78	
04	OA13_1217	697599		18.44		693429		14.17		188315		4.78	
05	OA14_1217	704461		18.45		714903		14.18		184019		4.78	
06	OA1_1217	707996		18.45		715856		14.17		226157		4.78	
07	OA2_1217	675960		18.44		676165		14.17		220500		4.78	
08	OA2-1_1217	658967		18.44		664242		14.17		224115		4.78	
09	OA8_1217	782813		18.45		772819		14.18		261306		4.78	
10	OA9_1217	676905		18.44		693580		14.17		233564		4.78	
11	OA10_1217	766680		18.45		781261		14.17		255955		4.78	
12	OA11_1217	662254		18.44		663115		14.17		225855		4.78	
13	OA5_1217	741910		18.45		748101		14.17		234013		4.78	
14	OA5-1_1217	724905		18.45		719035		14.17		238443		4.78	
15	OA15_1217	682793		18.44		684207		14.17		231872		4.78	
16	TRIPBLANK-1_1217	743732		18.44		750085		14.17		225561		4.78	
17	Lab Blank	657569		18.45		661620		14.17		219890		4.78	
18	CCV	643165		18.46		659280		14.18		213385		4.79	
19	LCS	696272		18.45		705435		14.18		196994		4.78	
20	LCSD	625723		18.45		626819		14.18		205257		4.78	
21													
22													

'Area Upper Limit=+200% of internal standard area'

'Area Lower Limit=-50% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 9121805.d & 9121804.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 12/18/17 & 12/18/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
105-67-9	2,4-Dimethylphenol	ND		ND		0	
51-28-5	2,4-Dinitrophenol	ND		ND		0	
95-57-8	2-Chlorophenol	ND		ND		0	
91-57-6	2-Methylnaphthalene	68		73		7.1	
83-32-9	Acenaphthene	76		82		7.6	
208-96-8	Acenaphthylene	77		82		6.3	
120-12-7	Anthracene	74		78		5.3	
56-55-3	Benzo(a)anthracene	76		81		6.4	
50-32-8	Benzo(a)pyrene	78		83		6.2	
205-99-2	Benzo(b)fluoranthene	77		82		6.3	
207-08-9	Benzo(k)fluoranthene	82		85		3.6	
218-01-9	Chrysene	81		86		6.0	
53-70-3	Dibenz(a,h)anthracene	82		87		5.9	
132-64-9	Dibenzofuran	ND		ND		0	
206-44-0	Fluoranthene	83		82		1.2	
86-73-7	Fluorene	76		78		2.6	
193-39-5	Indeno(1,2,3-c,d)pyrene	85		92		7.9	
91-20-3	Naphthalene	70		76		8.2	
85-01-8	Phenanthrene	75		80		6.4	
108-95-2	Phenol	ND		ND		0	
129-00-0	Pyrene	75		81		7.7	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Calibration File Names:
Level 1: /chem/msd9.i/12dec17.b/9121203.d
Level 2: /chem/msd9.i/12dec17.b/9121204.d
Level 3: /chem/msd9.i/12dec17.b/9121205.d
Level 4: /chem/msd9.i/12dec17.b/9121206.d
Level 5: /chem/msd9.i/12dec17.b/9121207.d
Level 6: /chem/msd9.i/12dec17.b/9121208.d
Level 7: /chem/msd9.i/12dec17.b/9121209.d
Level 8: /chem/msd9.i/12dec17.b/9121210.d
Level 9: /chem/msd9.i/12dec17.b/9121211.d
Level 10: /chem/msd9.i/12dec17.b/9121212.d
Level 11: /chem/msd9.i/12dec17.b/9121214.d

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
3 Phenol*	+++++	+++++	1.35237	1.68151	1.65232	1.71862			
	1.60384	1.66435	1.78432	1.74120	+++++		1.64982	8.034	
4 Aniline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
5 bis(2-Chloroethyl)ether	+++++	1.28383	1.17357	1.35191	1.30207	1.35365			
	1.26514	1.24568	1.35014	1.27184	+++++		1.28865	4.602	
6 2-Chlorophenol	+++++	+++++	1.06160	1.26476	1.24775	1.31469			
	1.24258	1.25849	1.34473	1.28899	+++++		1.25295	6.776	
7 1,3-Dichlorobenzene	+++++	1.26968	1.25682	1.48099	1.42354	1.44270			
	1.37840	1.38262	1.42993	1.39624	+++++		1.38455	5.474	
9 1,4-Dichlorobenzene*	+++++	1.28459	1.28136	1.51322	1.43303	1.45213			
	1.38504	1.40735	1.43885	1.40670	+++++		1.40025	5.407	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
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Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	___ RRF	% RSD	
10 Benzyl Alcohol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	
11 1,2-Dichlorobenzene	+++++	1.24391	1.20758	1.44140	1.38497	1.40137			
	1.32239	1.33852	1.39906	1.32651	+++++		1.34063	5.706	
12 2-Methylphenol	+++++	+++++	0.96163	1.17573	1.13188	1.19775			
	1.10468	1.12761	1.28253	1.16740	+++++		1.14365	8.018	
13 bis(2-Chloroisopropyl)ether	+++++	2.31777	2.07680	2.42248	2.33261	2.39190			
	2.19551	2.20638	2.36704	2.18345	+++++		2.27711	5.095	
14 4-Methylphenol	+++++	+++++	1.04185	1.23413	1.21197	1.29517			
	1.19442	1.19156	1.32501	1.23182	+++++		1.21574	6.961	
15 N-Nitrosodipropylamine**	+++++	+++++	0.86520	0.96337	0.95989	1.01613			
	0.92134	0.92997	1.06064	0.95031	+++++		0.95836	6.204	
16 Hexachloroethane	+++++	0.55639	0.48990	0.59094	0.57533	0.58582			
	0.55837	0.56656	0.58705	0.56429	+++++		0.56385	5.412	
18 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
19 Nitrobenzene	+++++	0.27331	0.27158	0.30309	0.30221	0.32428			
	0.30402	0.31902	0.32461	0.32153	+++++		0.30485	6.722	
20 Isophorone	+++++	0.56492	0.51647	0.58524	0.58418	0.61634			
	0.56568	0.58515	0.61137	0.57920	+++++		0.57873	5.049	

Eurofins Air Toxics Inc.

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Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	___ RRF	% RSD
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11			
21 2-Nitrophenol*	+++++	+++++	0.09564	0.11775	0.12513	0.14511		
	0.13811	0.14972	0.16353	0.15905	+++++		0.13676	16.676
22 2,4-Dimethylphenol	+++++	+++++	0.22070	0.26045	0.26036	0.28316		
	0.25456	0.27208	0.28528	0.26781	+++++		0.26305	7.714
23 bis(2-Chloroethoxy)methane	+++++	0.33991	0.32783	0.37603	0.36752	0.38539		
	0.36211	0.36687	0.38966	0.36365	+++++		0.36433	5.466
24 Benzoic Acid	+++++	+++++	+++++	+++++	+++++	0.10423		
	0.10075	0.12519	0.16055	0.16333	+++++		0.13081	22.882
25 2,4-Dichlorophenol*	+++++	+++++	0.17787	0.23058	0.23932	0.25017		
	0.23492	0.24932	0.26340	0.25384	+++++		0.23743	11.088
26 1,2,4-Trichlorobenzene	+++++	0.25341	0.24312	0.28687	0.28173	0.28836		
	0.27125	0.28037	0.28501	0.27589	+++++		0.27400	5.745
28 Naphthalene	0.91330	0.85864	0.82607	0.93714	0.90635	0.94528		
	0.86820	0.91533	0.93102	0.87465	0.91822		0.89947	4.160
29 4-Chloroaniline	+++++	+++++	+++++	0.37160	0.37490	0.38877		
	0.35989	0.37707	0.39753	0.36956	+++++		0.37705	3.323
30 Hexachlorobutadiene*	+++++	0.12787	0.13284	0.15389	0.14997	0.15879		
	0.14660	0.15406	0.15806	0.15629	+++++		0.14871	7.496
31 Benzothiazole	+++++	+++++	+++++	+++++	+++++	+++++		
	+++++	+++++	+++++	+++++	+++++		+++++	+++++ <-

Eurofins Air Toxics Inc.

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End Cal Date : 12-DEC-2017 18:25
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Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	RRF	% RSD
33 4-Chloro-3-Methylphenol*	+++++ / 0.22561	+++++ / 0.24264	+++++ / 0.26244	0.23258 / 0.24515	0.22211 / +++++	0.24269	0.23903	5.715
34 2-Methylnaphthalene	0.60544 / 0.59825	0.58888 / 0.61642	0.55190 / 0.64266	0.63376 / 0.61705	0.62102 / 0.58191	0.63720	0.60859	4.449
35 1-Methylnaphthalene	+++++ / 0.56810	0.57124 / 0.59221	0.53868 / 0.60883	0.60216 / 0.58254	0.59484 / +++++	0.61510	0.58597	4.064
36 Hexachlorocyclopentadiene**	+++++ / 0.27419	+++++ / 0.29301	+++++ / 0.32799	+++++ / 0.33957	0.25011 / +++++	0.29123	0.29602	11.240
37 2,4,6-Trichlorophenol*	+++++ / 0.27841	+++++ / 0.29593	0.20331 / 0.31731	0.24896 / 0.31295	0.26571 / +++++	0.28780	0.27630	13.497
38 2,4,5-Trichlorophenol	+++++ / 0.31299	+++++ / 0.30252	0.23089 / 0.32262	0.29174 / 0.32149	0.29782 / +++++	0.32637	0.30080	10.276
40 2-Chloronaphthalene	0.93932 / 0.97158	0.85460 / 0.95949	0.85922 / 0.98749	1.02757 / 0.96861	0.98019 / 0.94203	0.99875	0.95353	5.647
41 2-Nitroaniline	+++++ / 0.27534	+++++ / 0.29443	+++++ / 0.30318	0.24290 / 0.28885	0.25744 / +++++	0.28256	0.27781	7.642
42 Pentachlorobenzene	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++ / +++++	+++++	+++++	+++++ <-
43 Dimethylphthalate	+++++ / 1.06303	+++++ / 1.10375	0.94709 / 1.08096	1.13004 / 1.10902	1.12754 / +++++	1.11114	1.08407	5.509

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INITIAL CALIBRATION DATA

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Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	___ RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
44 Acenaphthylene	1.49867	1.33274	1.35534	1.59691	1.57303	1.57161			
	1.51743	1.54819	1.57192	1.53823	1.43249		1.50332	6.040	
45 2,6-Dinitrotoluene	+++++	+++++	0.17718	0.23238	0.23867	0.25793			
	0.24827	0.25751	0.26789	0.25253	+++++		0.24154	11.729	
46 N-nitrosodimethylamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
47 3-Nitroaniline	+++++	+++++	+++++	0.26147	0.27118	0.28044			
	0.27785	0.30640	0.28759	0.30174	+++++		0.28381	5.666	
49 Acenaphthene*	0.95319	0.89825	0.87347	0.98956	0.96079	0.95999			
	0.91756	0.94662	0.95707	0.90875	0.88734		0.93205	3.946	
50 2,4-Dinitrophenol**	+++++	+++++	+++++	+++++	+++++	0.06945			
	0.07284	0.09249	0.10941	0.11146	+++++		0.09113	21.626	
51 4-Nitrophenol**	+++++	+++++	+++++	+++++	+++++	0.10450			
	0.10655	0.12244	0.12676	0.12868	+++++		0.11778	9.716	
52 Dibenzofuran	+++++	1.25275	1.26507	1.48132	1.42563	1.43348			
	1.36074	1.42023	1.43175	1.37241	+++++		1.38260	5.676	
53 2,4-Dinitrotoluene	+++++	+++++	0.19228	0.26374	0.29611	0.30852			
	0.31895	0.34394	0.32305	0.34285	+++++		0.29868	16.811	
55 Diethylphthalate	+++++	+++++	0.96593	1.15279	1.10057	1.11683			
	1.07274	1.15059	1.08460	1.08478	+++++		1.09111	5.387	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

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Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	___ RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
56 Fluorene	1.12274	1.05359	1.01675	1.19859	1.14479	1.15773			
	1.12924	1.17547	1.12810	1.13526	1.06757		1.12089	4.845	
57 4-Chlorophenyl phenyl ether	+++++	0.49287	0.49852	0.56727	0.55399	0.55765			
	0.53503	0.55584	0.54589	0.55071	+++++		0.53975	4.910	
60 4-Nitroaniline	+++++	+++++	+++++	0.25035	0.26165	0.27492			
	0.27735	0.31238	0.28831	0.30308	+++++		0.28115	7.805	
61 4,6-Dinitro-2-methylphenol	+++++	+++++	+++++	+++++	+++++	0.06596			
	0.06663	0.07766	0.08808	0.08678	+++++		0.07702	13.744	
62 N-nitrosodiphenylamine*	+++++	+++++	+++++	0.56927	0.57647	0.59072			
	0.55229	0.54923	0.58275	0.54132	+++++		0.56601	3.297	
63 Diphenylamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	
65 4-Bromophenyl phenyl ether	+++++	0.16071	0.16380	0.19074	0.18667	0.19503			
	0.18374	0.18854	0.19710	0.18856	+++++		0.18387	7.033	
66 Hexachlorobenzene	+++++	0.17521	0.17489	0.20334	0.20017	0.21080			
	0.19632	0.20029	0.20423	0.20266	+++++		0.19643	6.481	
68 2-Methylthiobenzothiazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
69 2-Aminobenothiazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

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Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	___ RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
70 Pentachlorophenol*	+++++	+++++	+++++	+++++	0.04484	0.07356			
	0.07188	0.08670	0.09838	0.10423	+++++		0.07993	26.913	
72 Phenanthrene	0.93662	0.87900	0.84574	0.97827	0.94856	0.96662			
	0.89963	0.93024	0.92868	0.87443	0.88575		0.91578	4.569	
73 Anthracene	0.85392	0.83605	0.81968	0.95492	0.94395	0.97022			
	0.90537	0.96168	0.93290	0.88727	0.95244		0.91076	5.923	
74 2-Hydroxybenzothiazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
75 Carbazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	
76 Di-n-butylphthalate	+++++	+++++	0.85610	1.01959	1.00471	1.05229			
	1.01586	1.04614	1.02043	1.00704	+++++		1.00277	6.151	
77 Bicyclo[2.2.1]hepta-2,5-diene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
79 Fluoranthene*	0.90015	0.82005	0.83483	0.99734	0.96357	0.97917			
	0.97614	1.01699	0.92330	0.93912	0.96752		0.93802	6.796	
80 1-Chloro-3,4-Dinitrobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
81 2-Methyl-benzenamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-

Eurofins Air Toxics Inc.

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Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	___ RRF	% RSD	
82 N,N-Dimethyl-benzenamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
84 Pyrene	1.02198	1.11363	1.05533	1.18184	1.13930	1.20169			
	1.08580	1.09034	1.17274	1.04662	1.08563		1.10863	5.311	
86 2-Mercaptobenzothiazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
87 2-Morpholinothiobenzothiazole	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
88 2,4-Dimethylbenzenamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
89 N,N,4-Trimethylbenzenamine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
90 Butyl benzyl phthalate	+++++	+++++	0.38792	0.46477	0.46746	0.50006			
	0.47181	0.48773	0.50281	0.48501	+++++		0.47095	7.734	
91 Cumene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
92 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
93 Diethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-

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Curve Type : Average

Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	RRF	% RSD	
94 Dicyclopentadiene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
96 Benzo(a)Anthracene	1.12750	0.95243	0.85909	0.99308	0.96452	1.02200			
	0.95988	0.98704	0.99804	0.96439	1.03982		0.98798	6.653	
98 3 3'-Dichlorobenzidine	+++++	+++++	+++++	+++++	0.36603	0.39954			
	0.37962	0.40350	0.40050	0.39768	+++++		0.39114	3.821	
99 Chrysene	0.96793	0.87520	0.86024	1.01748	0.95842	0.99792			
	0.92137	0.94589	0.95166	0.92543	0.96879		0.94458	5.007	
100 3-Methylphenol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
103 bis(2-ethylhexyl)Phthalate	+++++	+++++	0.51842	0.62771	0.63284	0.68459			
	0.64604	0.68269	0.69835	0.67793	+++++		0.64607	8.945	
104 Lindane	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
105 Di-n-octyl phthalate*	+++++	+++++	0.77155	1.00136	1.00709	1.10885			
	1.06381	1.13662	1.13104	1.16074	+++++		1.04763	12.057	
106 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
107 Benzo(b)fluoranthene	0.90572	0.84001	0.84031	1.00103	1.00720	1.05133			
	1.00944	1.07131	1.05218	1.04481	+++++		0.98233	8.943	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	___ RRF	% RSD	
108 Perylene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
109 Benzo(k)fluoranthene	0.92672	0.87096	0.87965	1.04592	1.02364	1.11443			
	1.01445	1.07145	1.11382	1.06245	+++++		1.01235	8.891	
110 Benzo(e)pyrene	+++++	0.79138	0.82647	0.96243	0.95130	1.01150			
	0.94216	1.00024	1.00410	0.97516	+++++		0.94053	8.380	
112 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
113 Benzo(a)pyrene*	0.82204	0.76212	0.80322	0.98831	0.97256	1.04562			
	0.97799	1.04125	1.04699	1.01540	+++++		0.94755	11.511	
114 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
116 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
117 Indeno(1,2,3-cd)pyrene	0.85367	0.61324	0.70103	0.86661	0.81923	0.86703			
	0.86267	0.90926	0.87843	0.89175	+++++		0.82629	11.437	
118 Dibenzo(a,h)anthracene	0.89861	0.72863	0.78037	0.93823	0.93009	0.99909			
	0.93121	0.99320	0.99790	0.93657	+++++		0.91339	9.971	
119 Benzo(g,h,i)perylene	0.99109	0.77994	0.82735	0.97610	0.96384	1.02980			
	0.97627	1.03374	1.03318	0.98346	+++++		0.95948	9.042	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
121 Coronene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
123 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
124 3,3'-Dimethoxybenzidine	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 1 2-Fluorophenol	+++++	+++++	0.95741	1.18403	1.17677	1.18667			
	1.15573	1.18437	1.24253	1.22037	+++++		1.16349	7.520	
$ 2 Phenol-d5	+++++	+++++	1.27061	1.56966	1.50288	1.59333			
	1.46718	1.51590	1.67095	1.54343	+++++		1.51674	7.737	
$ 17 Nitrobenzene-d5	+++++	0.26283	0.26014	0.31233	0.31825	0.33510			
	0.31551	0.32957	0.33774	0.33024	+++++		0.31130	9.496	
$ 32 13C-Phenol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 39 2-Fluorobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 54 Fluorene-d10	1.09473	1.00610	0.98109	1.13792	1.10117	1.10180			
	1.08590	1.11025	1.06862	1.08203	+++++		1.07696	4.456	
$ 58 d4-1,4-dibromobenzene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	___ RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
$ 59 2-Methylnaphthalene-d10	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 64 2,4,6-Tribromophenol	+++++	+++++	0.09850	0.12853	0.13929	0.15242			
	0.15381	0.16681	0.16164	0.17601	+++++		0.14713	16.800	
$ 67 1-Methylnaphthalene-d10	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 78 Fluoranthene-d10	0.80429	0.72370	0.72945	0.88843	0.86489	0.88122			
	0.88286	0.89937	0.83919	0.86713	+++++		0.83805	7.728	
$ 83 Pyrene-d10	0.96841	1.04273	0.98808	1.09548	1.08903	1.14048			
	1.01730	1.04300	1.12498	0.99746	+++++		1.05069	5.659	
$ 85 Terphenyl-d14	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 95 13c-Pentachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 101 1,3,5-Trichlorobenzene-d3	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 102 d10-Anthracene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 111 Benzo(a)pyrene-d12	0.77207	0.64414	0.68423	0.82291	0.81817	0.88243			
	0.83216	0.89031	0.89187	0.87222	+++++		0.81105	10.697	

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Compound	0.50000 Level 1	1.000 Level 2	5.000 Level 3	10.000 Level 4	20.000 Level 5	40.000 Level 6	RRF	% RSD	
	50.000 Level 7	80.000 Level 8	100.000 Level 9	160.000 Level 10	500.000 Level 11				
$ 120 Benzo(e)pyrene-d12	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
$ 122 d12-Benzo(a)pyrene	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Average %RSD Results.
Calculated Average %RSD = 8.17445945
Maximun Average %RSD = 15
* Passed Average %RSD Test.

Calibration History

Method : /chem/msd9.i/12dec17.b/917y1212.m
Start Cal Date: 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 0.50000		
12-DEC-2017 12:53	0.5	/chem/msd9.i/12dec17.b/9121203.d
Cal Level: 2 , Cal Amount: 1.00000		
12-DEC-2017 13:24	1ng	/chem/msd9.i/12dec17.b/9121204.d
Cal Level: 3 , Cal Amount: 5.00000		
12-DEC-2017 13:54	5ng	/chem/msd9.i/12dec17.b/9121205.d
Cal Level: 4 , Cal Amount: 10.00000		
12-DEC-2017 14:24	10ng	/chem/msd9.i/12dec17.b/9121206.d
Cal Level: 5 , Cal Amount: 20.00000		
12-DEC-2017 14:54	20ng	/chem/msd9.i/12dec17.b/9121207.d
Cal Level: 6 , Cal Amount: 40.00000		
12-DEC-2017 15:24	50ng	/chem/msd9.i/12dec17.b/9121208.d
Cal Level: 7 , Cal Amount: 50.00000		
12-DEC-2017 15:54	50ng	/chem/msd9.i/12dec17.b/9121209.d
Cal Level: 8 , Cal Amount: 80.00000		

|12-DEC-2017 16:25 |50ng |/chem/msd9.i/12dec17.b/9121210.d |

Cal Level: 9 , Cal Amount: 100.00000
12-DEC-2017 16:55 |50ng |/chem/msd9.i/12dec17.b/9121211.d

Cal Level: 10, Cal Amount: 160.00000
12-DEC-2017 17:25 |50ng |/chem/msd9.i/12dec17.b/9121212.d

Cal Level: 11, Cal Amount: 500.00000
12-DEC-2017 18:25 |0.5 |/chem/msd9.i/12dec17.b/9121214.d
12-DEC-2017 18:25 |50ng |/chem/msd9.i/12dec17.b/9121214.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 7

Ccal Level: 7 , Ccal Amount: 50.00
12-DEC-2017 15:54 |50ng |/chem/msd9.i/12dec17.b/9121209a.d

Ccal Level: 7 , Ccal Amount: 50.00
12-DEC-2017 15:54 |50ng |/chem/msd9.i/12dec17.b/9121209.d

Initial Calibration Narrative

- An initial calibration for TO-13 full list was analyzed on MSD-9 on December 12th , 2017.
  - **The upper end of the curve is 500ug for the following compounds:**

Naphthalene	Fluoranthene	2-Chloronaphthalene
Acenaphthylene	Pyrene	2-Methylnaphthalene
Acenaphthene	Chrysene	Anthracene
Fluorene	Benzo(a)anthracene	
Phenanthrene		

  - **All other compounds calibrated to 160ug**
  - **PAH compounds are calibrated down to special RL of 0.5ug.**

- ICAL: 917y1212.m.
  - **0 out**

- Chemstation method: BNA12

- The units used for calibration are in µg/mL.

- Relevant Tune File: 9121202.d

- ICV: file 9121216.d.
  - **0 out**

- PAH RL Spike file:
  - 0 Out.
    - 9121203a.d for RL of 0.5ug/mL
    - 9121204a.d for RL of 1.0ug/mL

- The following compounds need to meet the following %R in the CCV:
  - Naphthalene %R>78%
  - Acenaphthylene %R>87%
  - Acenaphthene %R>86%
  - Fluorene %R>80%
  - Phenanthrene %R>76%
  - Anthracene %R>77%
  - Fluoranthene %R>86%
  - Benzo(a)Anthracene %R>81%
  - Chrysene %R>74%
  - Benzo (b) fluoranthene %R>71%
  - Benzo (a) pyrene %R>74%

*Add the following narrative to all WO's requiring N-nitrosodiphenylamine:
N-Nitrosodiphenylamine decomposes to Diphenylamine in the gas chromatographic inlet and consequently cannot be distinguished from Diphenylamine. Calibration of the instrument is performed using Diphenylamine, and the reported result for n-Nitrosodiphenylamine will include the combined concentration of n-Nitrosodiphenylamine and Diphenylamine.

** Full list extracted MDL performed on 4/26/17.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:53
End Cal Date : 12-DEC-2017 18:25
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd9.i/12dec17.b/917y1212.m
Cal Date : 14-Dec-2017 15:49 lantonic
Curve Type : Average

Calibration File Names:
Level 1: /chem/msd9.i/12dec17.b/9121203.d
Level 2: /chem/msd9.i/12dec17.b/9121204.d
Level 3: /chem/msd9.i/12dec17.b/9121205.d
Level 4: /chem/msd9.i/12dec17.b/9121206.d
Level 5: /chem/msd9.i/12dec17.b/9121207.d
Level 6: /chem/msd9.i/12dec17.b/9121208.d
Level 7: /chem/msd9.i/12dec17.b/9121209.d
Level 8: /chem/msd9.i/12dec17.b/9121210.d
Level 9: /chem/msd9.i/12dec17.b/9121211.d
Level 10: /chem/msd9.i/12dec17.b/9121212.d
Level 11: /chem/msd9.i/12dec17.b/9121214.d

LM 12/14/17

gmw 12/14/17

Compound	0.50000 Level 1 / 50.000 Level 7	1.000 Level 2 / 80.000 Level 8	5.000 Level 3 / 100.000 Level 9	10.000 Level 4 / 160.000 Level 10	20.000 Level 5 / 500.000 Level 11	40.000 Level 6	___ RRF	% RSD	
3 Phenol*	+++++	+++++	1.35237	1.68151	1.65232	1.71862			
	1.60384	1.66435	1.78432	1.74120	+++++		1.64982	8.034	
4 Aniline	+++++	+++++	+++++	+++++	+++++	+++++			
	+++++	+++++	+++++	+++++	+++++		+++++	+++++	<-
5 bis(2-Chloroethyl)ether	+++++	1.28383	1.17357	1.35191	1.30207	1.35365			
	1.26514	1.24568	1.35014	1.27184	+++++		1.28865	4.602	
6 2-Chlorophenol	+++++	+++++	1.06160	1.26476	1.24775	1.31469			
	1.24258	1.25849	1.34473	1.28899	+++++		1.25295	6.776	
7 1,3-Dichlorobenzene	+++++	1.26968	1.25682	1.48099	1.42354	1.44270			
	1.37840	1.38262	1.42993	1.39624	+++++		1.38455	5.474	
9 1,4-Dichlorobenzene*	+++++	1.28459	1.28136	1.51322	1.43303	1.45213			
	1.38504	1.40735	1.43885	1.40670	+++++		1.40025	5.407	

MSD-9 Run Log | **Eurofins Air Toxics, Inc.** Method TO-13A | **Logbook#: 2888**

Target Folder Name:	12dec17-b		
Sample Type:	Full IST		
Tune		IS# :	Area Counts
DFTPP File ID:	9121202	1,4-Dichlorobenzene-d4:	142945
		Naphthalene-d8:	590466
DFTPP Injection Date:	12/12/17	Acenaphthene-d10:	325726
		Phenanthrene-d10:	562171
DFTPP Injection Time:	1234	Chrysene-d12:	525026
		Perylene-d12:	490780

	use	File #	Lab ID#	Dilution Factor	Date Analyzed	Time Analyzed	Initials	Comments
1	✓	9121201	DCM Wash	1.00	12/12/17	1217	gm/	
2	✓	02	2848-41-50			1234		Tune
3	✓	03	2848-71-0.5			1253		Level 1.
4	✓	04	-1.0			1324		2.
5	✓	05	-5.0			1354		3.
6	✓	06	-10			1424		4.
7	✓	07	-20			1454		5.
8	✓	08	-40			1524		6.
9	✓	09	-50			1554		7. ICCV
10	✓	10	-80			1625		8.
11	✓	11	-100			1655		9.
12	✓	12	2848-65-160			1725		↓ 10
13	✓	13	DCM Blank			1755		
14	✓	14	2848-71-500			1825		Level II
15	✓	15	DCM Blank			1855		
16	✓	↓ 16	2848-24-50	↓	↓	1925	↓	ICV
17								
18								
19								
20								
21								
22								
23								
24								
25							gm 12/13/17	

Calculation Check:

$$\text{ng of compound} = \frac{\text{Area}_{\text{Sample}}}{\text{Area}_{\text{IS}}} \times \frac{\text{Conc}_{\text{IS}}}{\text{RRF}} = \frac{723766}{643700} \times \frac{40.0}{0.89947} = 50.00 \checkmark$$

File ID: 9121216 Compound: naphthalene Initials: gm

Reviewed by: [illegible] Date: 12/14/17

Modified EPA Method TO-13A

Internal Standard and Associated Target Compounds and Surrogates.

1,4 Dichlorobenzene-d4
Target Compounds:
1,2-Dichlorobenzene
1,3-Dichlorobenzene
1,4-Dichlorobenzene
2-Chlorophenol
2-Methylphenol (o-Cresol)
4-Methylphenol/3-Methylphenol
bis(2-Chloroethyl) Ether
bis(2-Chloroisopropyl) Ether
Hexachloroethane
N-Nitroso-di-n-propylamine
Phenol
Surrogates:
2-Fluorophenol
Phenol-d5

Naphthalene-d8
Target Compounds:
1,2,4-Trichlorobenzene
2,4-Dichlorophenol
2,4-Dimethylphenol
*2-Methylnaphthalene
2-Nitrophenol
4-Chloro-3-methylphenol
4-Chloroaniline
Benzoic Acid
bis(2-Chloroethoxy) Methane
Hexachlorobutadiene
Isophorone
*Naphthalene
Nitrobenzene
Surrogates:
Nitrobenzene-d5

Acenaphthene-d10
Target Compounds:
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
*2-Chloronaphthalene
2-Nitroaniline
3-Nitroaniline
4-Chlorophenyl-phenyl Ether
4-Nitroaniline
4-Nitrophenol
*Acenaphthene
*Acenaphthylene
Dibenzofuran
Diethylphthalate
Dimethylphthalate
*Fluorene
Hexachlorocyclopentadiene
Surrogates:
2,4,6-Tribromophenol
Fluorene-d10

Phenanthrene-d10
Target Compounds:
4,6-Dinitro-2-methylphenol
4-Bromophenyl-phenyl Ether
*Anthracene
di-n-Butylphthalate
*Fluoranthene
Hexachlorobenzene
N-Nitrosodiphenylamine
Pentachlorophenol
*Phenanthrene
Surrogates:
Fluoranthene-d10

Chrysene-d12
Target Compounds:
3,3'-Dichlorobenzidine
*Benzo(a)anthracene
bis(2-Ethylhexyl)phthalate
Butylbenzylphthalate
*Chrysene
Di-n-Octylphthalate
*Indeno(1,2,3-c,d)pyrene
*Pyrene
Surrogates:
Pyrene-d10

Perylene-d12
Target Compounds:
*Benzo(a)pyrene
*Benzo(b)fluoranthene
*Benzo(g,h,i)perylene
*Benzo(k)fluoranthene
*Dibenz(a,h)anthracene
Surrogates:
Benzo(a)pyrene-d12

* = Method TO-13A PAH certified compounds

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121216.d
Lab Smp Id: 2848-24-50 Client Smp ID: ICV
Inj Date : 12-DEC-2017 19:25
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-24-50; ICV
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 15 QC Sample: Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TO13_ICV.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	157035	40.0000	
* 27 Naphthalene-d8	136	6.429	6.429	(1.000)	643700	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.642	(1.000)	372366	40.0000	
* 71 Phenanthrene-d10	188	10.429	10.426	(1.000)	678390	40.0000	
* 97 Chrysene-d12	240	14.190	14.190	(1.000)	645991	40.0000	
* 115 Perylene-d12	264	18.470	18.474	(1.000)	598081	40.0000	
3 Phenol*	94	4.449	4.492	(0.929)	320468	49.4780	49.48(H)
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	248388	49.0976	49.10
6 2-Chlorophenol	128	4.574	4.602	(0.955)	249561	50.7349	50.73
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	276576	50.8826	50.88
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	276352	50.2713	50.27
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	265336	50.4138	50.41
12 2-Methylphenol	108	5.206	5.237	(1.087)	210713	46.9312	46.93

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
13	bis(2-Chloroisopropyl)ether	45	5.216	5.249	(1.089)	412349	46.1260	46.12
14	4-Methylphenol	108	5.403	5.444	(1.128)	232212	48.6527	48.65
15	N-Nitrosodipropylamine**	70	5.403	5.435	(1.128)	184669	49.0829	49.08(H)
16	Hexachloroethane	117	5.434	5.446	(1.134)	109094	49.2835	49.28
19	Nitrobenzene	77	5.568	5.585	(0.866)	251447	51.2548	51.25
20	Isophorone	82	5.869	5.876	(0.913)	398545	42.7937	42.79
21	2-Nitrophenol*	139	5.973	5.985	(0.929)	125034	56.8145	56.81
22	2,4-Dimethylphenol	122	6.076	6.094	(0.945)	214012	50.5565	50.56
23	bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	287770	49.0828	49.08
24	Benzoic Acid	122	6.273	6.313	(0.976)	116037	55.1232	55.12
25	2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	204566	53.5401	53.54
26	1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	221580	50.2524	50.25
28	Naphthalene	128	6.449	6.454	(1.003)	723766	50.0019	50.00
29	4-Chloroaniline	127	6.574	6.580	(1.023)	256400	42.2571	42.26
30	Hexachlorobutadiene*	225	6.708	6.709	(1.044)	123988	51.8108	51.81
33	4-Chloro-3-Methylphenol*	107	7.226	7.248	(1.124)	200939	52.2381	52.24
34	2-Methylnaphthalene	142	7.330	7.334	(1.140)	454166	46.3731	46.37
35	1-Methylnaphthalene	142	7.465	7.482	(1.161)	464113	49.2185	49.22
36	Hexachlorocyclopentadiene**	237	7.631	7.632	(0.884)	122854	44.5822	44.58
37	2,4,6-Trichlorophenol*	196	7.734	7.741	(0.896)	141207	54.8998	54.90
38	2,4,5-Trichlorophenol	196	7.786	7.794	(0.902)	155762	55.6247	55.62
40	2-Chloronaphthalene	162	7.931	7.934	(0.918)	460970	51.9311	51.93
41	2-Nitroaniline	65	8.118	8.125	(0.940)	132663	51.2961	51.30
47	3-Nitroaniline	138	8.636	8.637	(1.000)	129896	49.1654	49.16
43	Dimethylphthalate	163	8.408	8.416	(0.974)	523956	51.9192	51.92
45	2,6-Dinitrotoluene	165	8.480	8.487	(0.982)	120109	53.4156	53.42
44	Acenaphthylene	152	8.449	8.452	(0.978)	753722	53.8578	53.86
49	Acenaphthene*	154	8.677	8.682	(1.005)	436739	50.3351	50.34
50	2,4-Dinitrophenol**	184	8.760	8.770	(1.014)	47369	55.8360	55.84
51	4-Nitrophenol**	109	8.895	8.905	(1.030)	62573	57.0675	57.07
53	2,4-Dinitrotoluene	165	8.947	8.949	(1.036)	158884	57.1431	57.14
52	Dibenzofuran	168	8.874	8.879	(1.028)	639740	49.7047	49.70
55	Diethylphthalate	149	9.278	9.286	(1.074)	528259	52.0080	52.01
56	Fluorene	166	9.299	9.299	(1.077)	548614	52.5766	52.58
57	4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.079)	256765	51.1011	51.10
60	4-Nitroaniline	138	9.392	9.388	(1.088)	132539	50.6405	50.64
61	4,6-Dinitro-2-methylphenol	198	9.444	9.439	(0.906)	73154	56.0022	56.00
62	N-nitrosodiphenylamine*	169	9.475	9.484	(0.909)	387639	40.3818	40.38
65	4-Bromophenyl phenyl ether	248	9.900	9.907	(0.949)	148490	47.6164	47.62
66	Hexachlorobenzene	284	10.066	10.068	(0.965)	170928	51.3070	51.31
70	Pentachlorophenol*	266	10.294	10.298	(0.987)	82194	60.6310	60.63
72	Phenanthrene	178	10.449	10.454	(1.002)	749705	48.2705	48.27
73	Anthracene	178	10.501	10.507	(1.007)	745556	48.2676	48.27
76	Di-n-butylphthalate	149	11.258	11.262	(1.079)	861043	50.6295	50.63
79	Fluoranthene*	202	11.921	11.926	(1.143)	811196	50.9912	50.99
84	Pyrene	202	12.211	12.219	(0.860)	855090	47.7595	47.76
90	Butyl benzyl phthalate	149	13.341	13.344	(0.940)	383784	50.4602	50.46

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
98 3 3'-Dichlorobenzidine	252	14.190	14.202	(1.000)	286307	45.3243	45.32
96 Benzo(a)Anthracene	228	14.159	14.157	(0.998)	769754	48.2433	48.24
99 Chrysene	228	14.242	14.245	(1.004)	757985	49.6886	49.69
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	525691	50.3829	50.38
105 Di-n-octyl phthalate*	149	16.336	16.349	(1.151)	877455	51.8620	51.86
107 Benzo(b)fluoranthene	252	17.051	17.060	(0.923)	785211	53.4598	53.46
109 Benzo(k)fluoranthene	252	17.134	17.150	(0.928)	789568	52.1626	52.16
110 Benzo(e)pyrene	252	18.025	18.052	(0.976)	749233	53.2777	53.28
113 Benzo(a)pyrene*	252	18.222	18.237	(0.987)	700010	49.4085	49.41
117 Indeno(1,2,3-cd)pyrene	276	21.268	21.280	(1.499)	705472	52.8664	52.87
118 Dibenzo(a,h)anthracene	278	21.351	21.356	(1.156)	743190	54.4181	54.42
119 Benzo(g,h,i)perylene	276	21.724	21.730	(1.176)	765248	53.3418	53.34

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121216.d
Lab Smp Id: 2848-24-50
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICV
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	157035	9.86
27 Naphthalene-d8	590466	295233	1180932	643700	9.02
48 Acenaphthene-d10	325726	162863	651452	372366	14.32
71 Phenanthrene-d10	562171	281086	1124342	678390	20.67
97 Chrysene-d12	525026	262513	1050052	645991	23.04
115 Perylene-d12	490780	245390	981560	598081	21.86

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.47	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 12dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 2848-24-50 Client Smp ID: ICV
Level: LOW Operator: KV
Data Type: MS DATA SampleType: Sample
SpikeList File: TO13_ICV.spk Quant Type: ISTD
Sublist File: TO13_ICV.sub
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

SPIKE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
3 Phenol*	50.00	49.48	98.96	70-130
5 bis(2-Chloroethyl)	50.00	49.10	98.20	70-130
6 2-Chlorophenol	50.00	50.73	101.47	70-130
7 1,3-Dichlorobenzen	50.00	50.88	101.77	70-130
9 1,4-Dichlorobenzen	50.00	50.27	100.54	70-130
11 1,2-Dichlorobenzen	50.00	50.41	100.83	70-130
12 2-Methylphenol	50.00	46.93	93.86	70-130
13 bis(2-Chloroisopro	50.00	46.12	92.25	70-130
14 4-Methylphenol	50.00	48.65	97.31	70-130
15 N-Nitrosodipropyla	50.00	49.08	98.17	70-130
16 Hexachloroethane	50.00	49.28	98.57	70-130
19 Nitrobenzene	50.00	51.25	102.51	70-130
20 Isophorone	50.00	42.79	85.59	70-130
21 2-Nitrophenol*	50.00	56.81	113.63	70-130
22 2,4-Dimethylphenol	50.00	50.56	101.11	70-130
23 bis(2-Chloroethoxy	50.00	49.08	98.17	70-130
24 Benzoic Acid	50.00	55.12	110.25	60-140
25 2,4-Dichlorophenol	50.00	53.54	107.08	70-130
26 1,2,4-Trichloroben	50.00	50.25	100.50	70-130
28 Naphthalene	50.00	50.00	100.00	70-130
29 4-Chloroaniline	50.00	42.26	84.51	70-130
30 Hexachlorobutadien	50.00	51.81	103.62	70-130
33 4-Chloro-3-Methylp	50.00	52.24	104.48	60-140
34 2-Methylnaphthalen	50.00	46.37	92.75	70-130
35 1-Methylnaphthalen	50.00	49.22	98.44	70-130
36 Hexachlorocyclopen	50.00	44.58	89.16	70-130
37 2,4,6-Trichlorophe	50.00	54.90	109.80	70-130
38 2,4,5-Trichlorophe	50.00	55.62	111.25	70-130
40 2-Chloronaphthalen	50.00	51.93	103.86	70-130
41 2-Nitroaniline	50.00	51.30	102.59	70-130
47 3-Nitroaniline	50.00	49.16	98.33	70-130
43 Dimethylphthalate	50.00	51.92	103.84	70-130
45 2,6-Dinitrotoluene	50.00	53.42	106.83	70-130

	SPIKE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
44	Acenaphthylene	50.00	53.86	107.72	70-130
49	Acenaphthene*	50.00	50.34	100.67	70-130
50	2,4-Dinitrophenol*	50.00	55.84	111.67	60-140
51	4-Nitrophenol**	50.00	57.07	114.13	60-140
53	2,4-Dinitrotoluene	50.00	57.14	114.29	70-130
52	Dibenzofuran	50.00	49.70	99.41	70-130
55	Diethylphthalate	50.00	52.01	104.02	70-130
56	Fluorene	50.00	52.58	105.15	70-130
57	4-Chlorophenyl phe	50.00	51.10	102.20	70-130
60	4-Nitroaniline	50.00	50.64	101.28	70-130
61	4,6-Dinitro-2-meth	50.00	56.00	112.00	60-140
62	N-nitrosodiphenyla	50.00	40.38	80.76	70-130
65	4-Bromophenyl phen	50.00	47.62	95.23	70-130
66	Hexachlorobenzene	50.00	51.31	102.61	70-130
70	Pentachlorophenol*	50.00	60.63	121.26	70-130
72	Phenanthrene	50.00	48.27	96.54	70-130
73	Anthracene	50.00	48.27	96.54	70-130
76	Di-n-butylphthalat	50.00	50.63	101.26	70-130
79	Fluoranthene*	50.00	50.99	101.98	70-130
84	Pyrene	50.00	47.76	95.52	70-130
90	Butyl benzyl phtha	50.00	50.46	100.92	70-130
98	3 3'-Dichlorobenzi	50.00	45.32	90.65	70-130
96	Benzo(a)Anthracene	50.00	48.24	96.49	70-130
99	Chrysene	50.00	49.69	99.38	70-130
103	bis(2-ethylhexyl)P	50.00	50.38	100.77	70-130
105	Di-n-octyl phthala	50.00	51.86	103.72	70-130
107	Benzo(b)fluoranthe	50.00	53.46	106.92	70-130
109	Benzo(k)fluoranthe	50.00	52.16	104.33	70-130
110	Benzo(e)pyrene	50.00	53.28	106.56	70-130
113	Benzo(a)pyrene*	50.00	49.41	98.82	70-130
117	Indeno(1,2,3-cd)py	50.00	52.87	105.73	70-130
118	Dibenzo(a,h)anthra	50.00	54.42	108.84	70-130
119	Benzo(g,h,i)peryle	50.00	53.34	106.68	70-130

Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

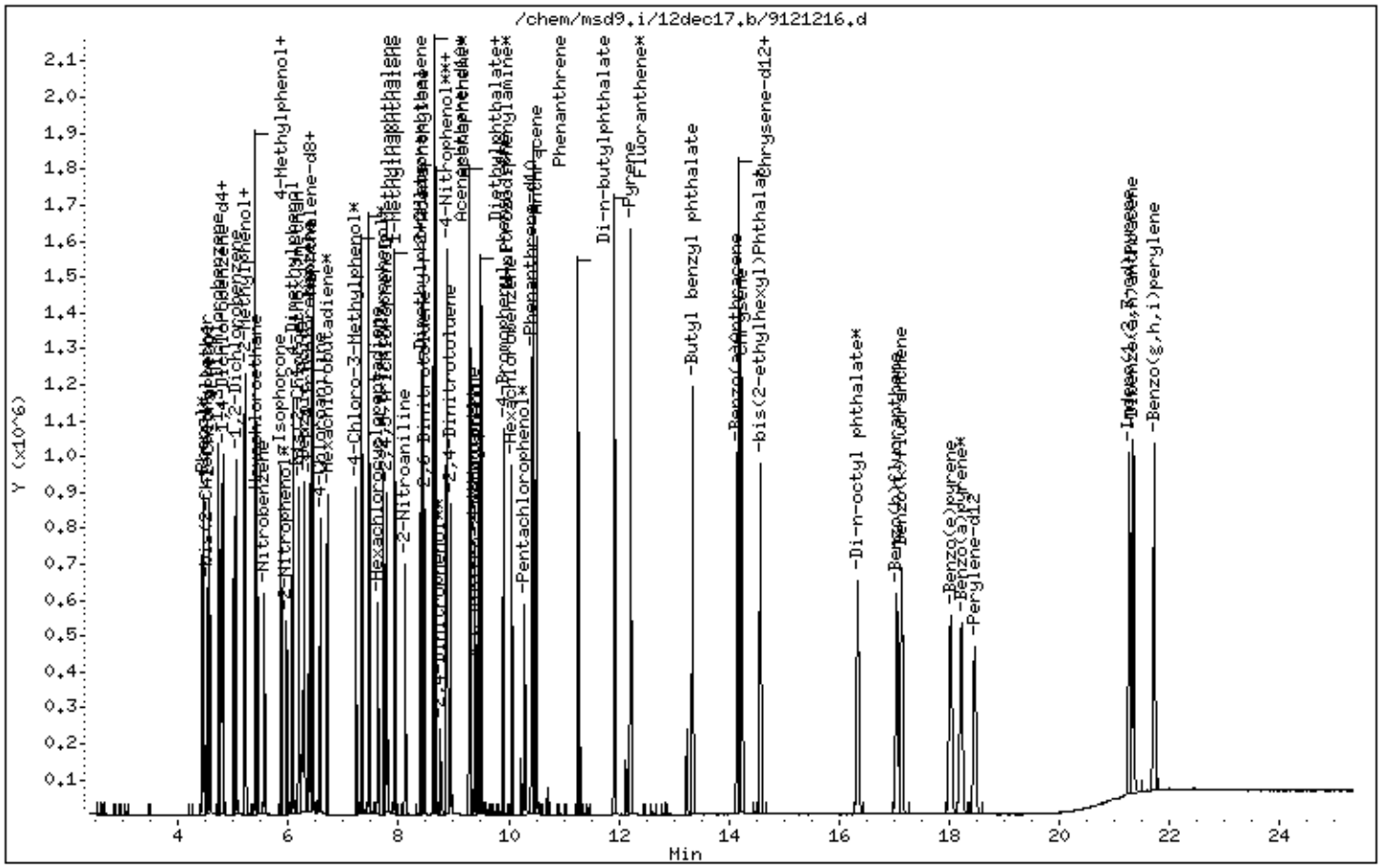
Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

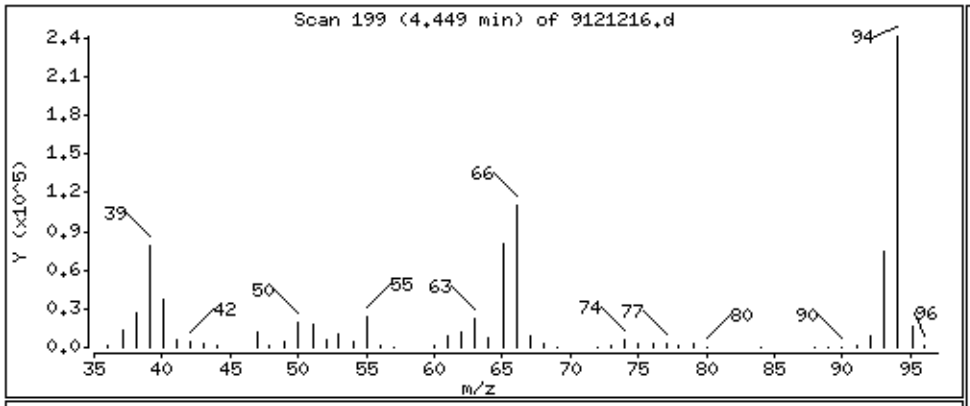
Operator: KV

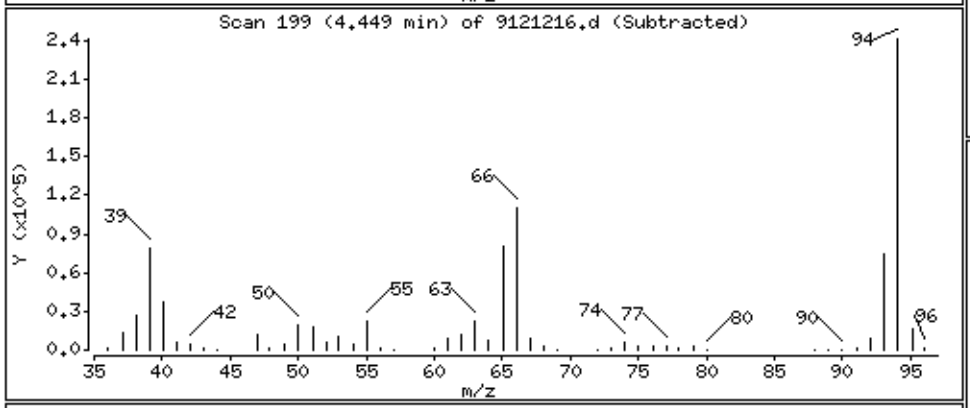
Column phase: DB-5.625

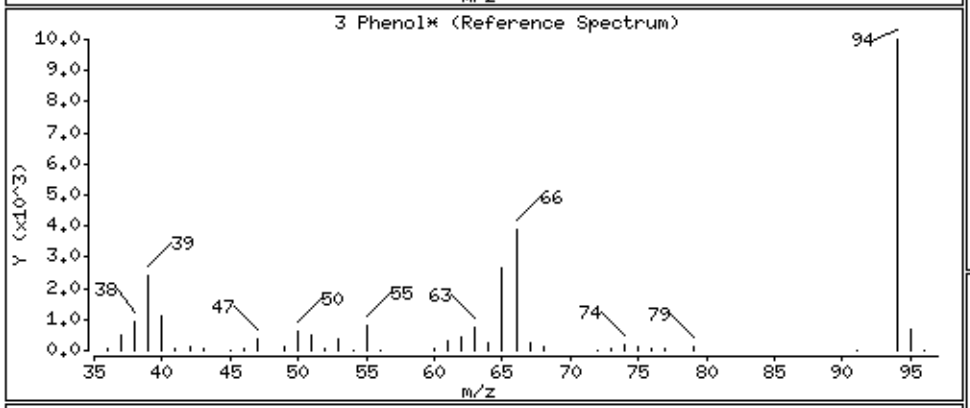
Column diameter: 0.25

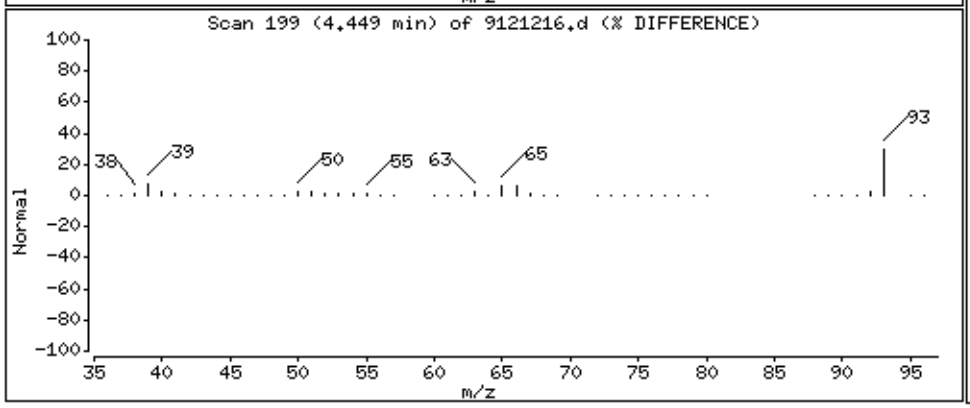
3 Phenol*

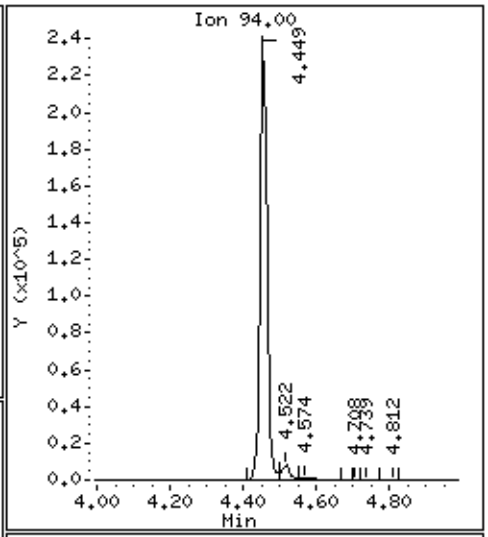
Concentration: 49.48 ug

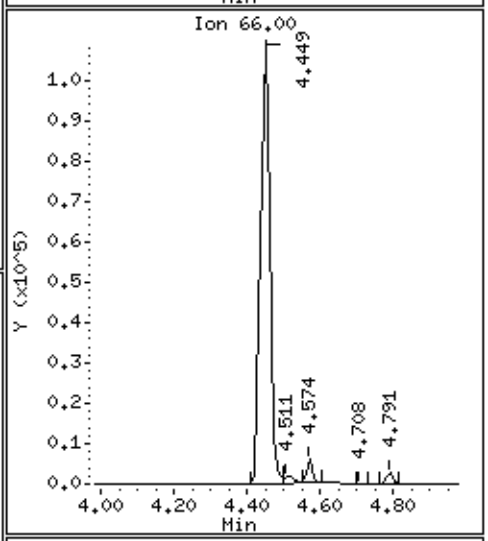


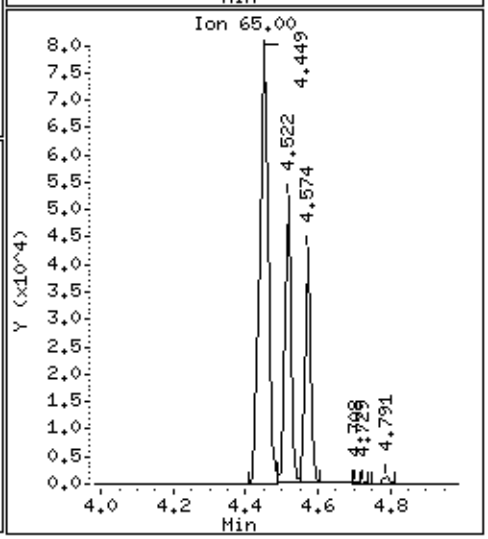












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

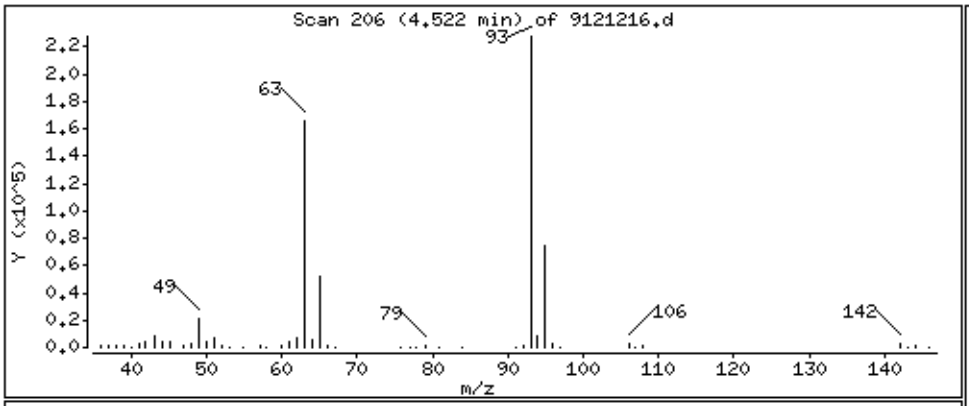
Operator: KV

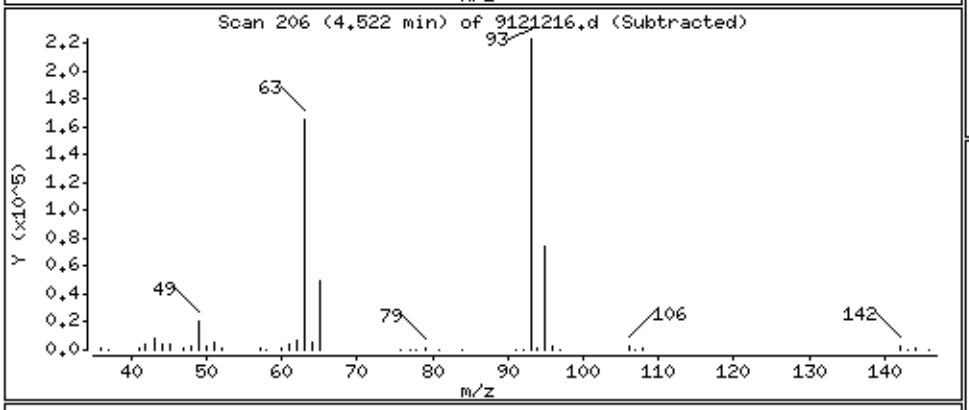
Column phase: DB-5.625

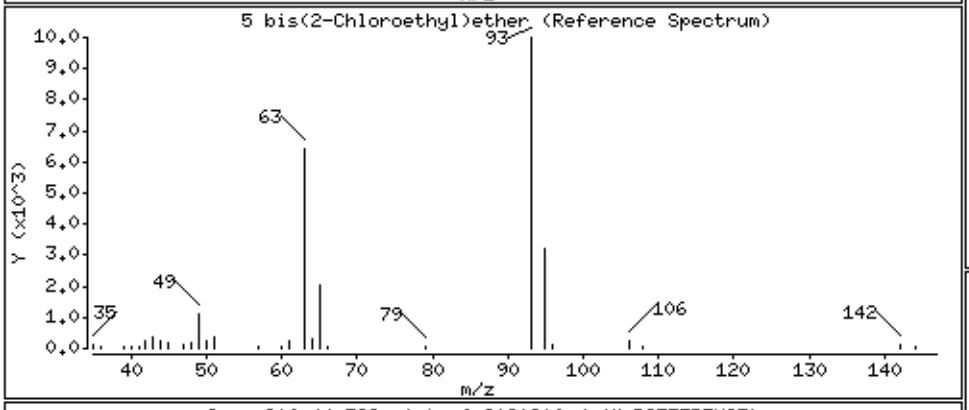
Column diameter: 0.25

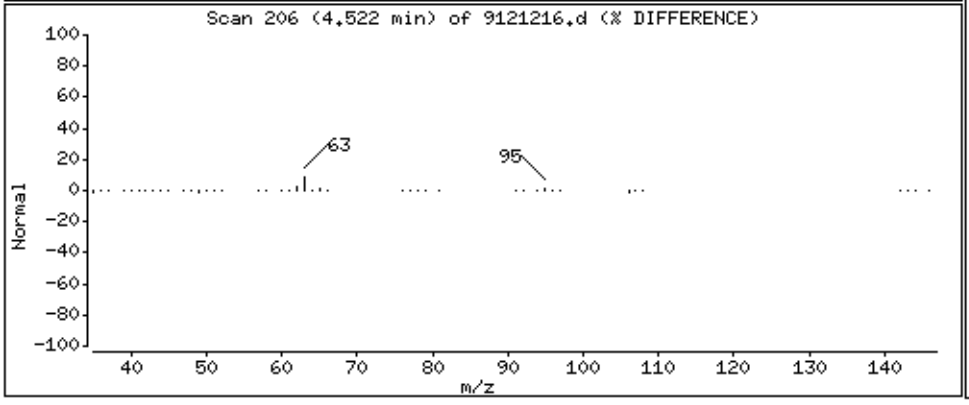
5 bis(2-Chloroethyl)ether

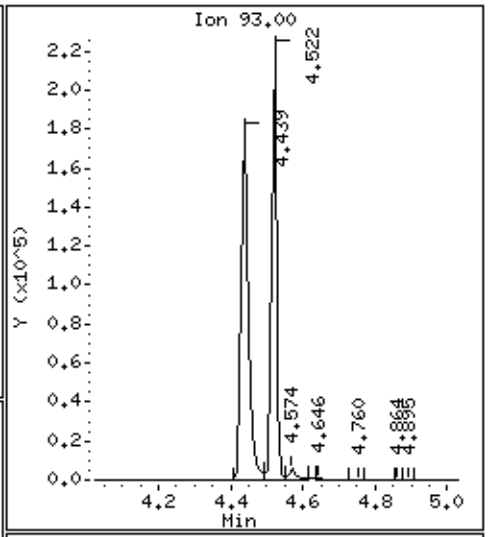
Concentration: 49.10 ug

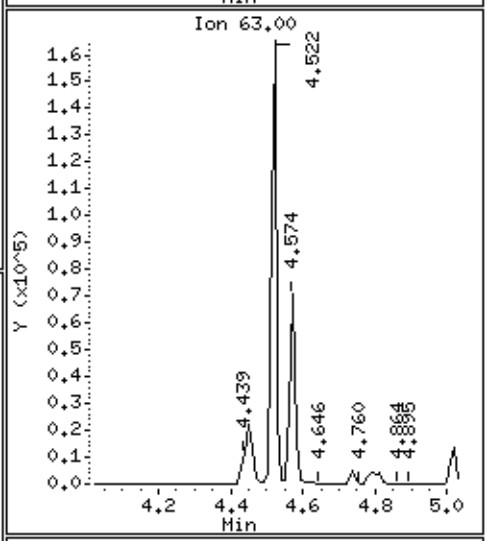


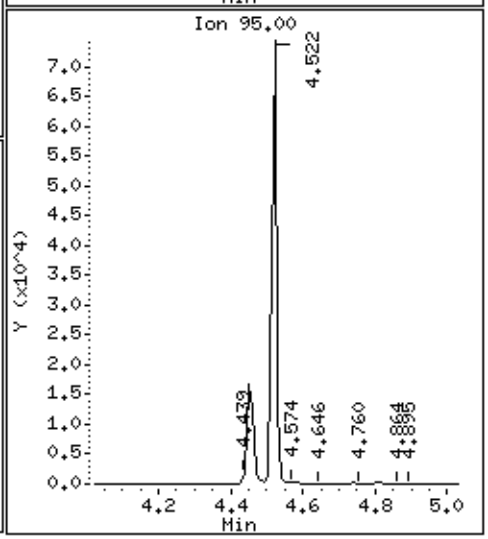












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

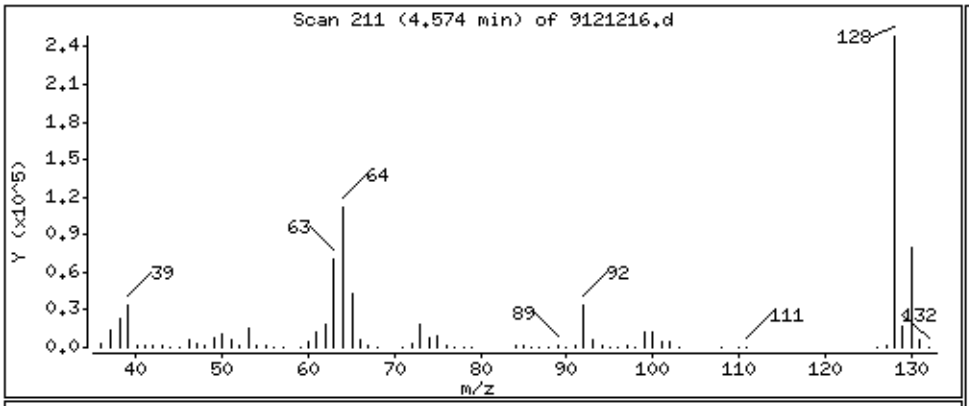
Operator: KV

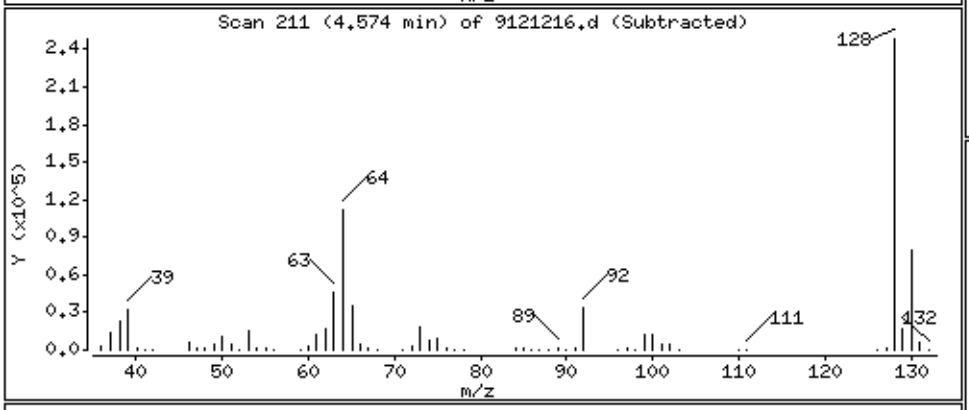
Column phase: DB-5.625

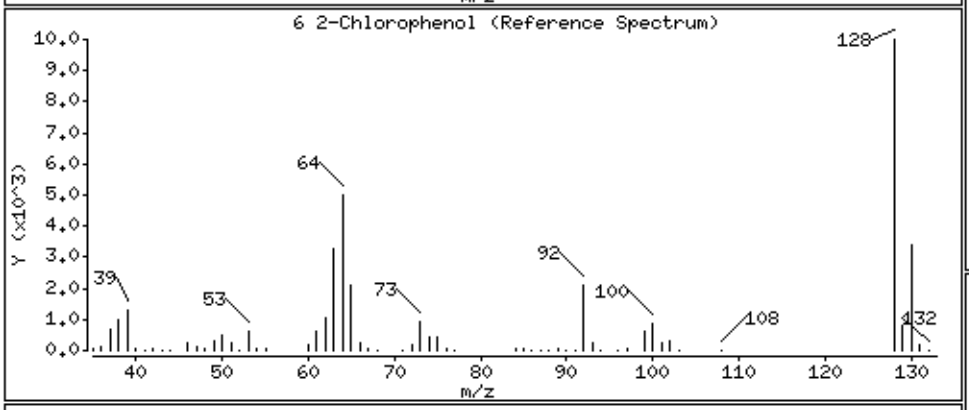
Column diameter: 0.25

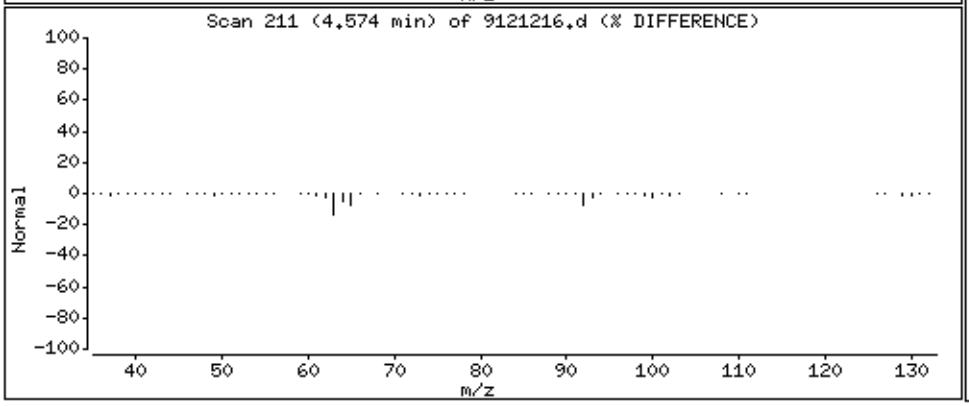
6 2-Chlorophenol

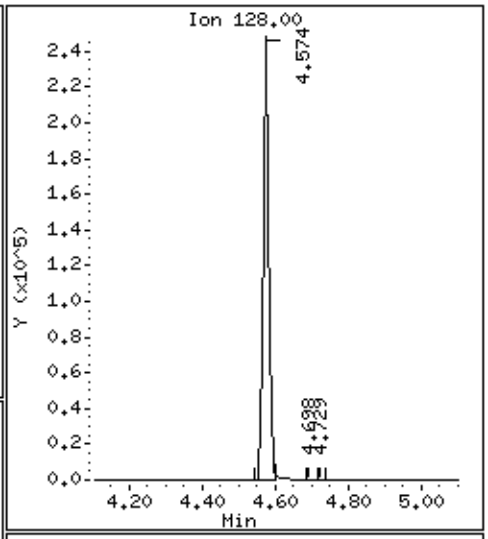
Concentration: 50.73 ug

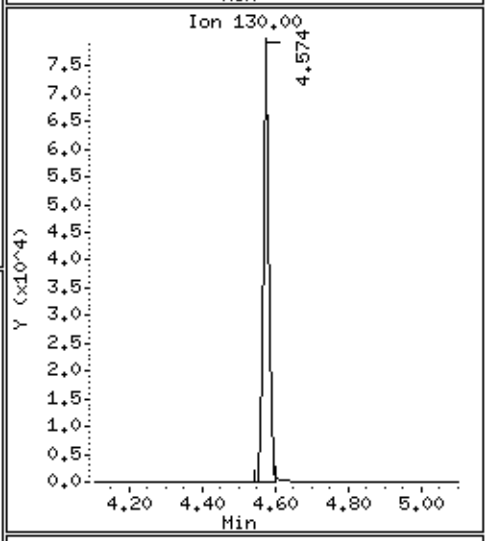


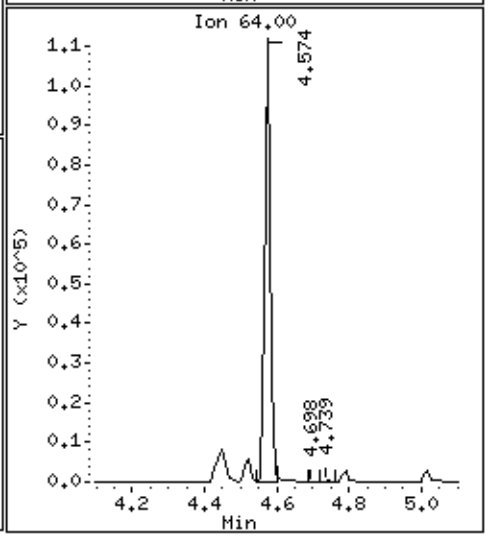












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

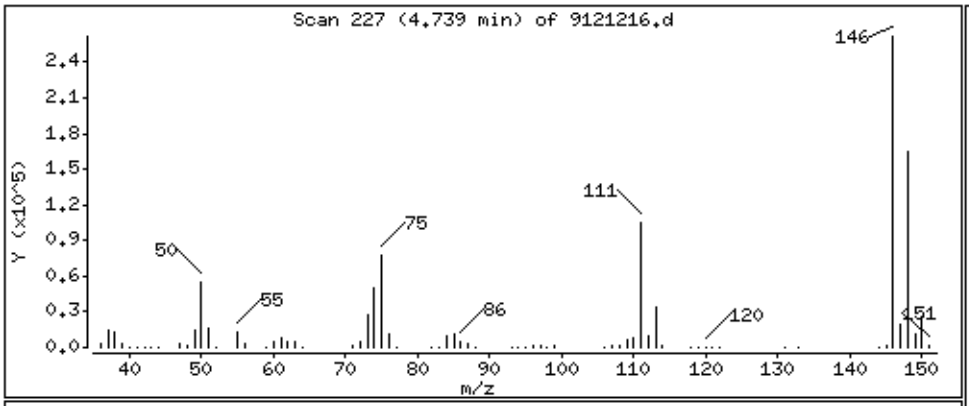
Operator: KV

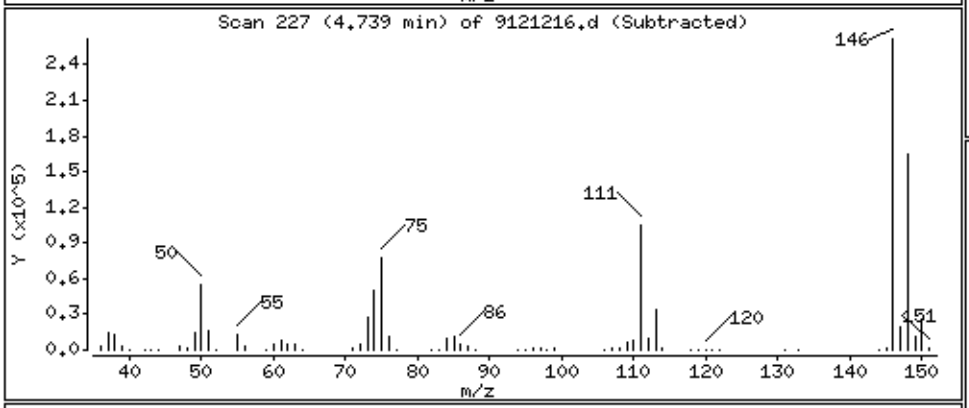
Column phase: DB-5.625

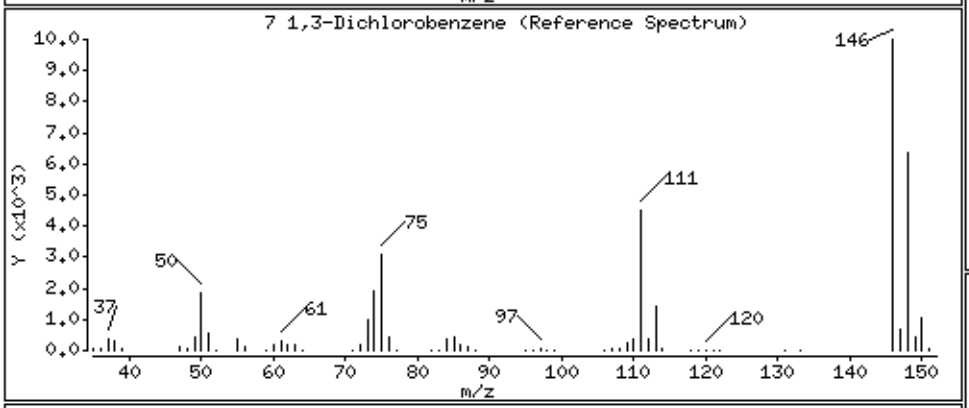
Column diameter: 0.25

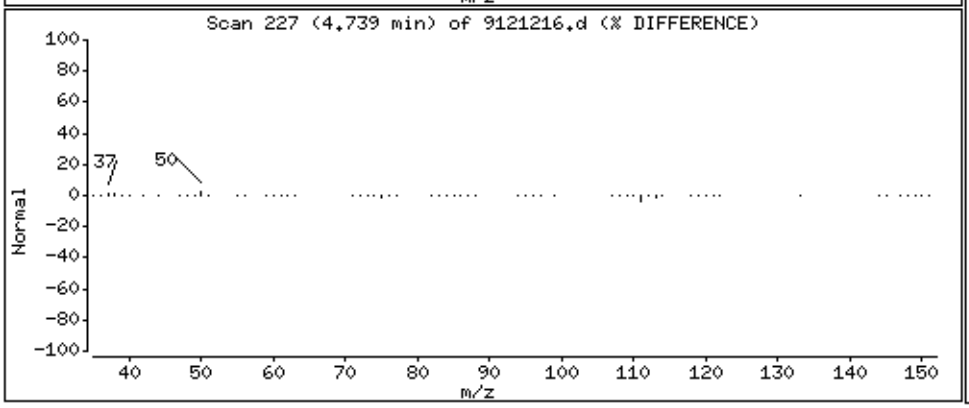
7 1,3-Dichlorobenzene

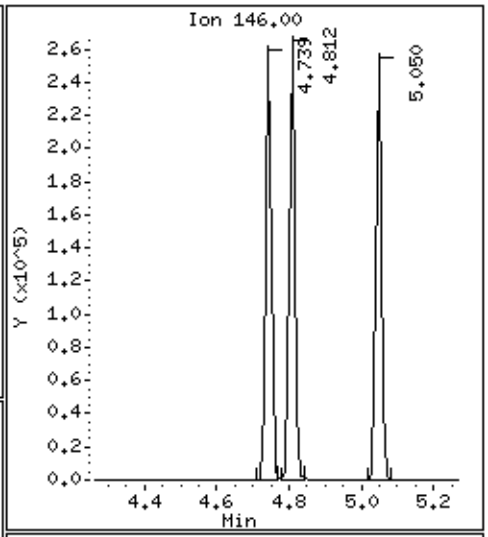
Concentration: 50.88 ug

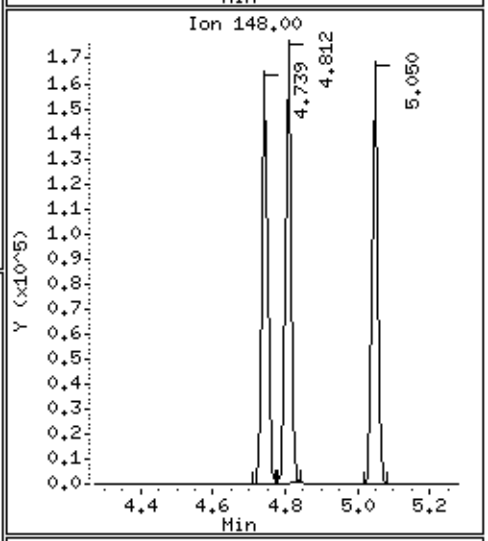


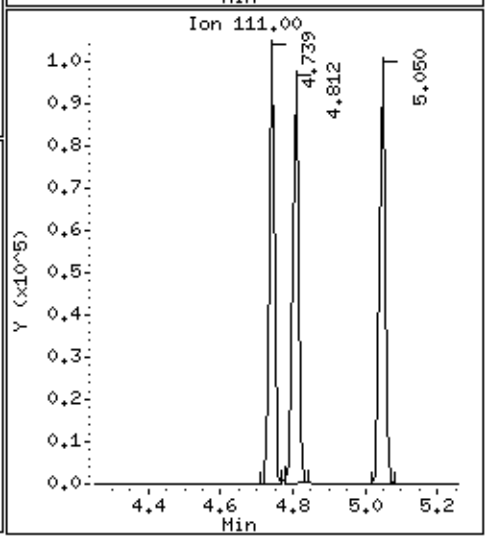












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

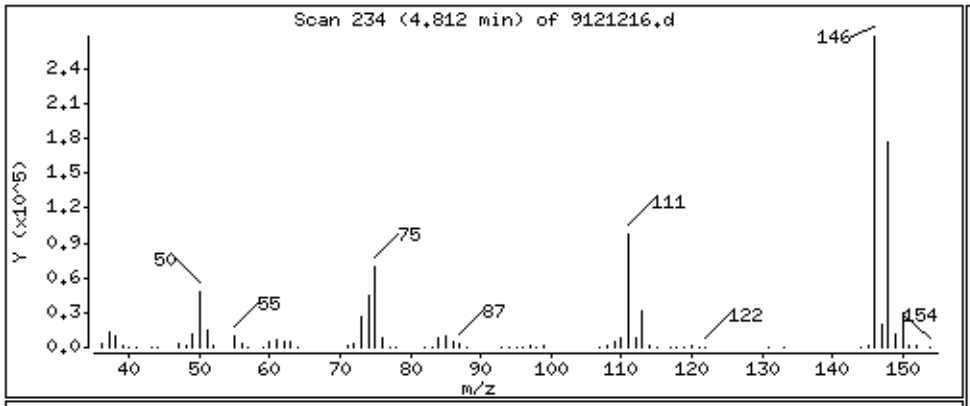
Operator: KV

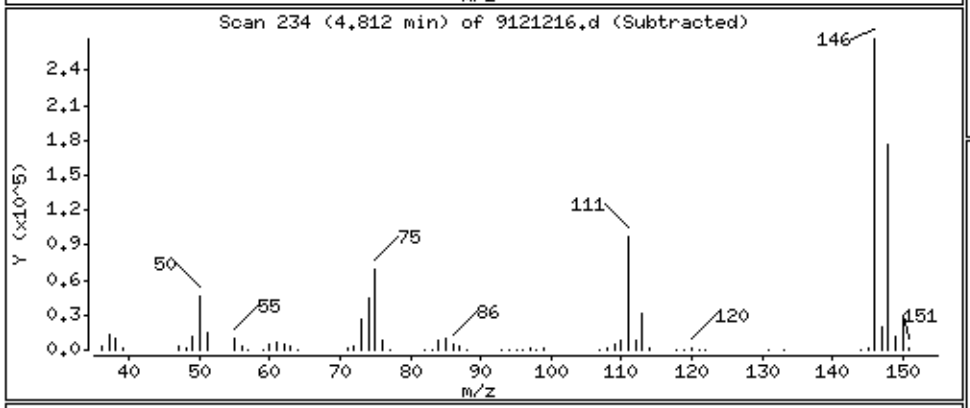
Column phase: DB-5.625

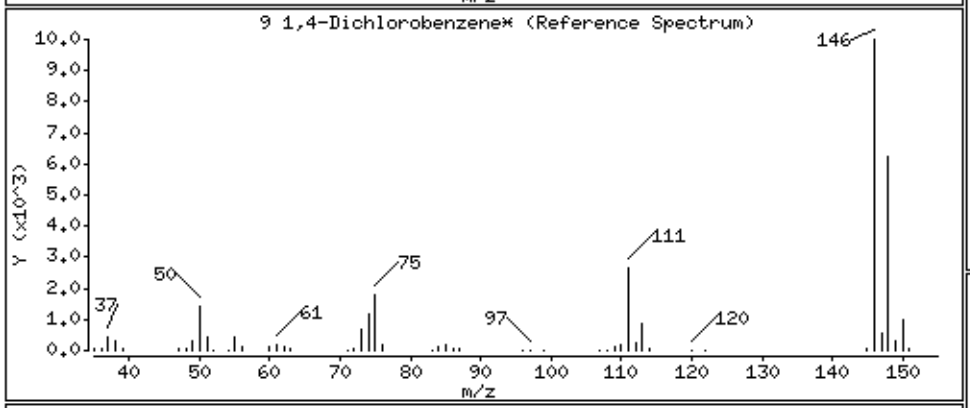
Column diameter: 0.25

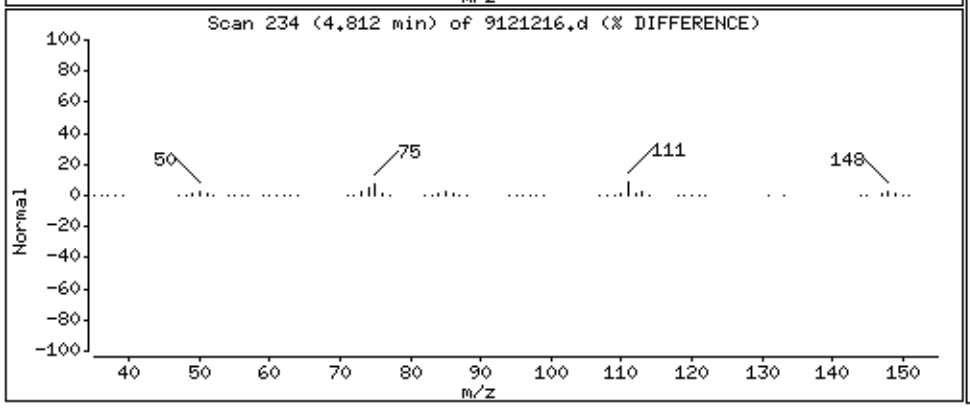
9 1,4-Dichlorobenzene*

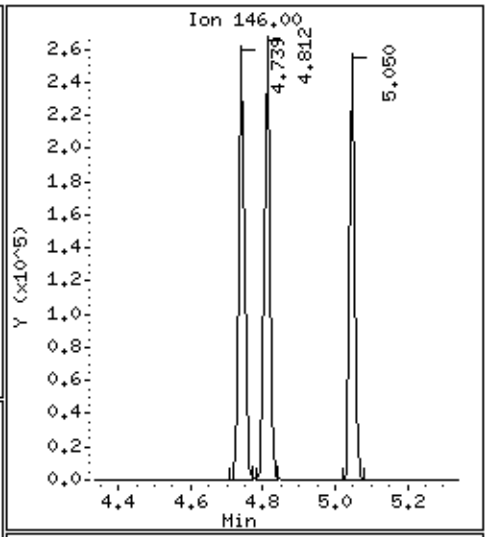
Concentration: 50.27 ug

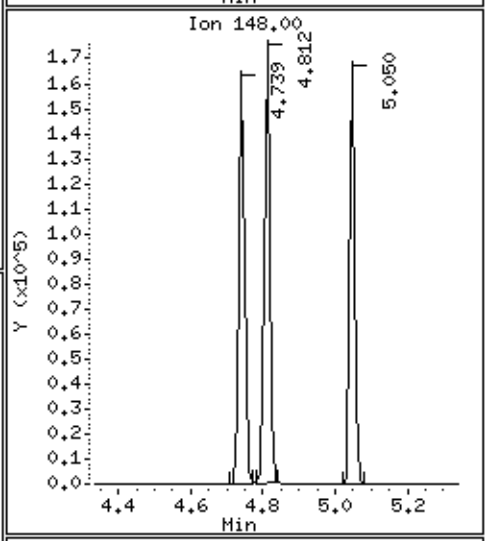


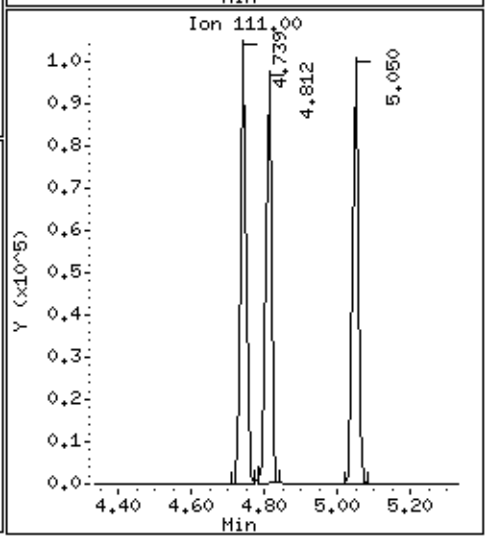












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

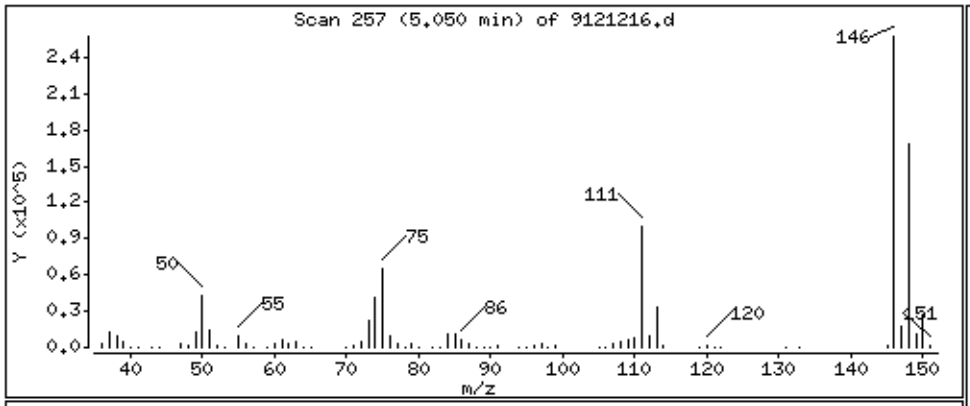
Operator: KV

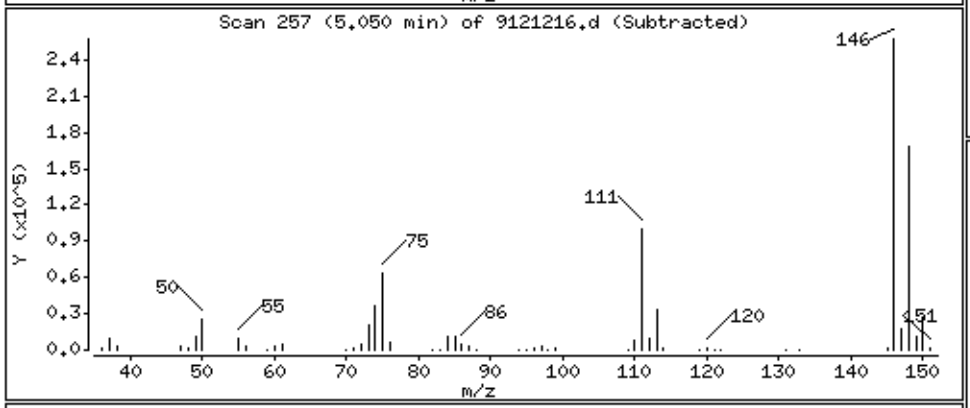
Column phase: DB-5.625

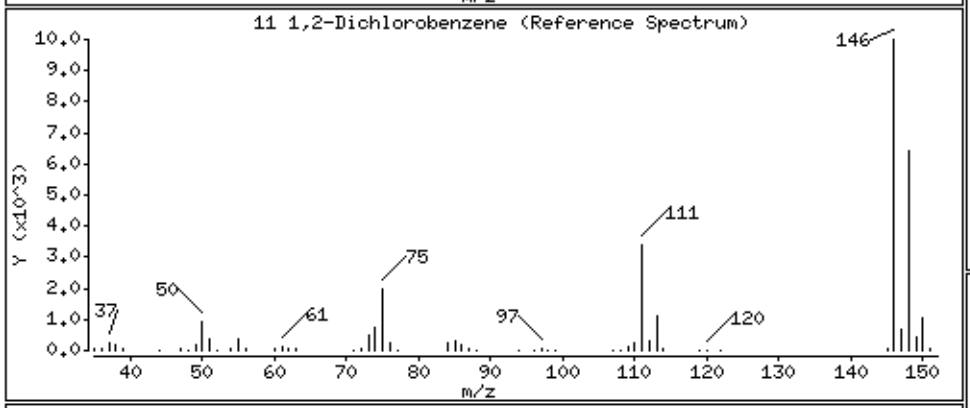
Column diameter: 0.25

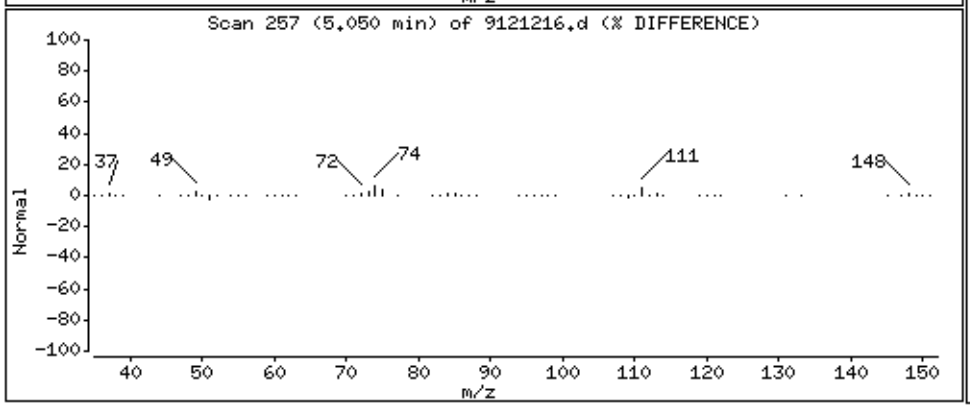
11 1,2-Dichlorobenzene

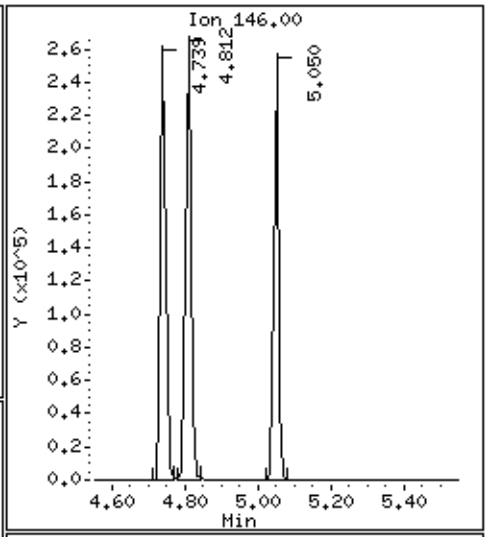
Concentration: 50.41 ug

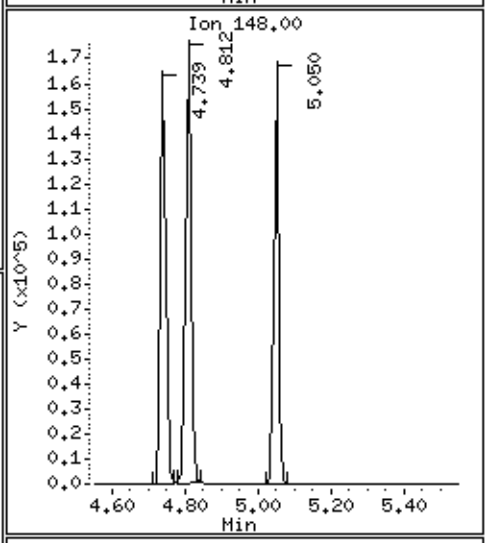


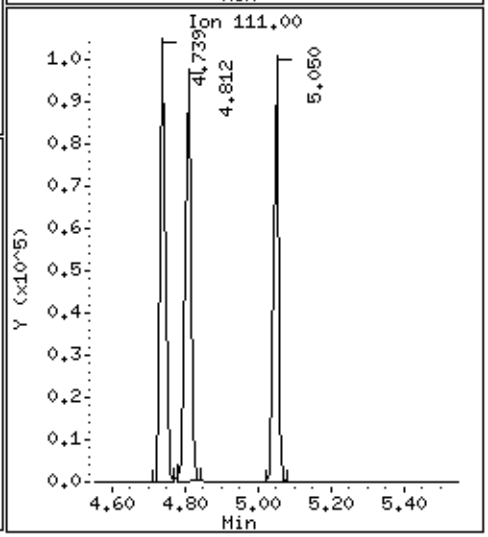












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

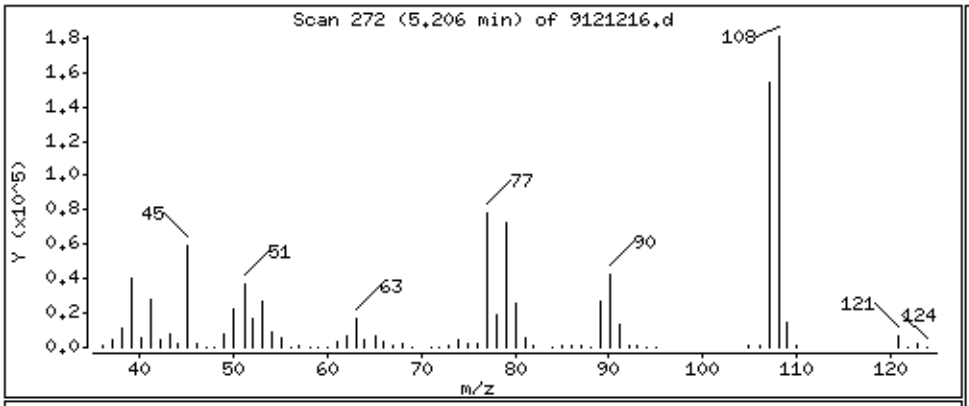
Operator: KV

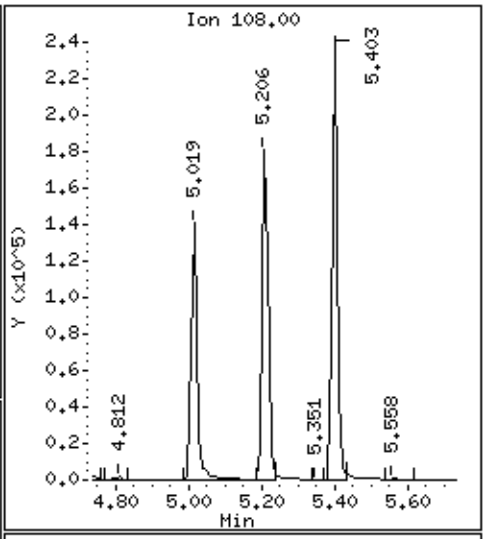
Column phase: DB-5.625

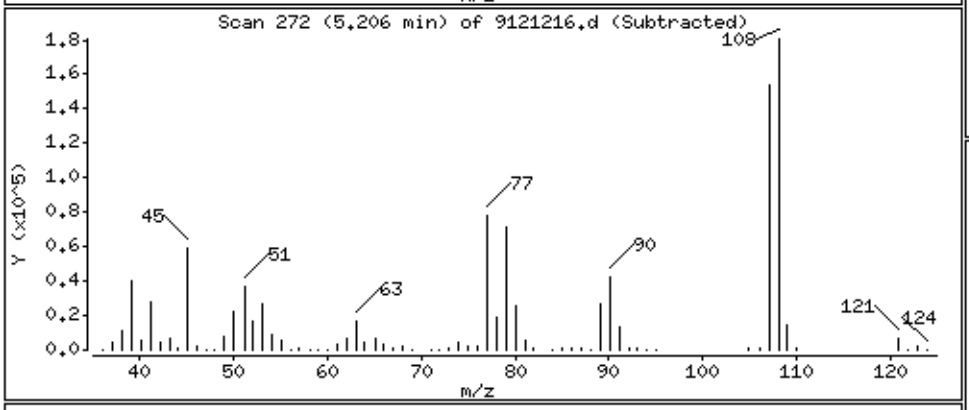
Column diameter: 0.25

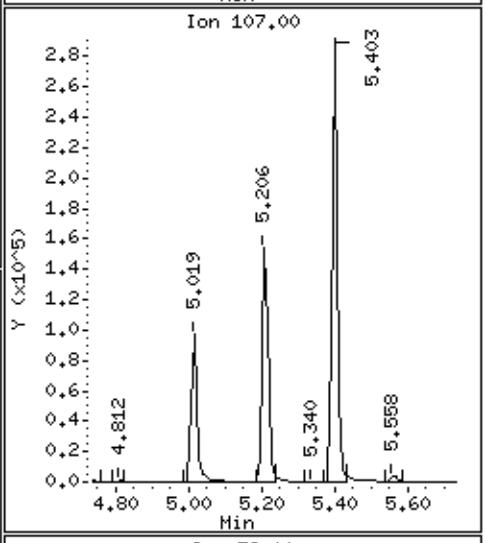
12 2-Methylphenol

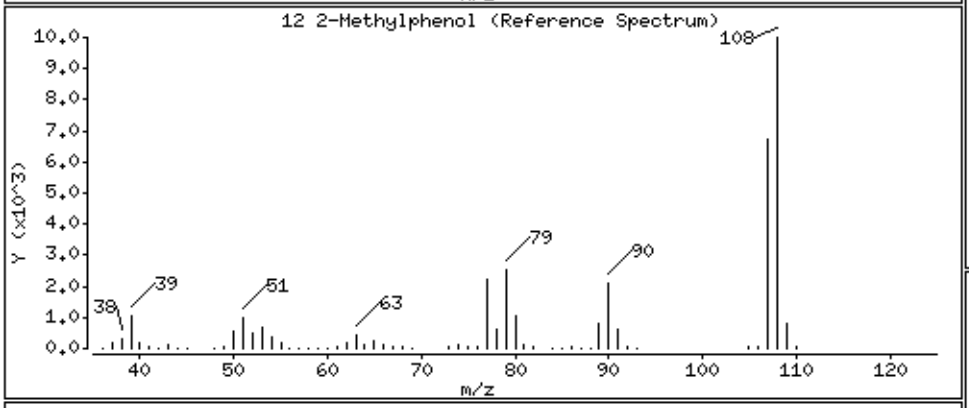
Concentration: 46.93 ug

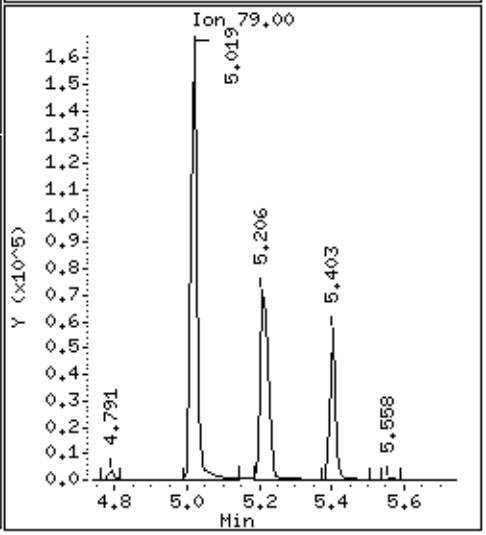


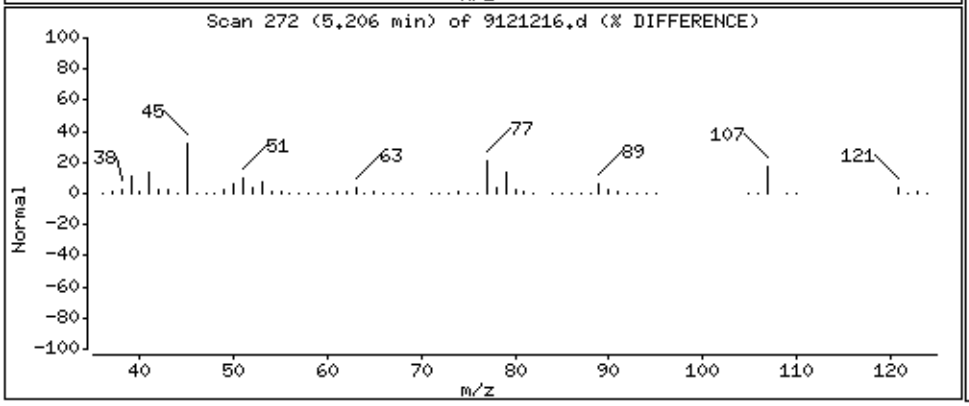












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

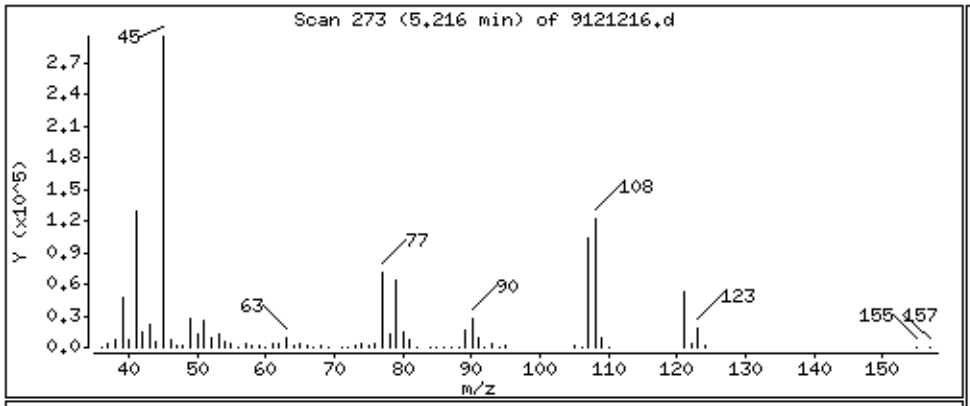
Operator: KV

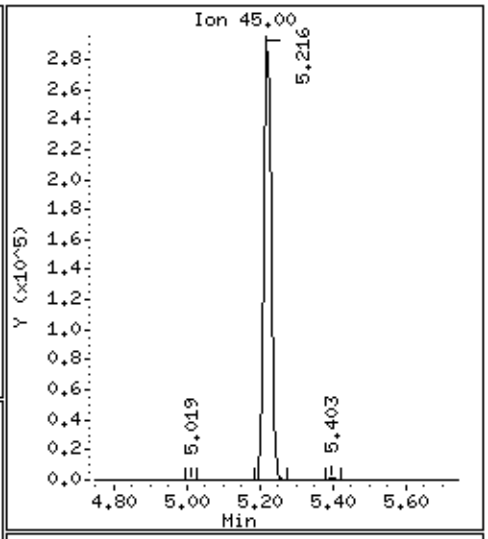
Column phase: DB-5.625

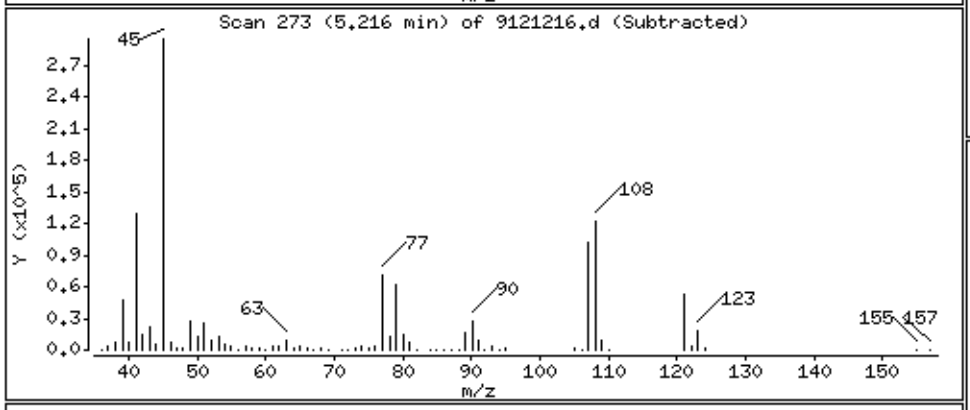
Column diameter: 0.25

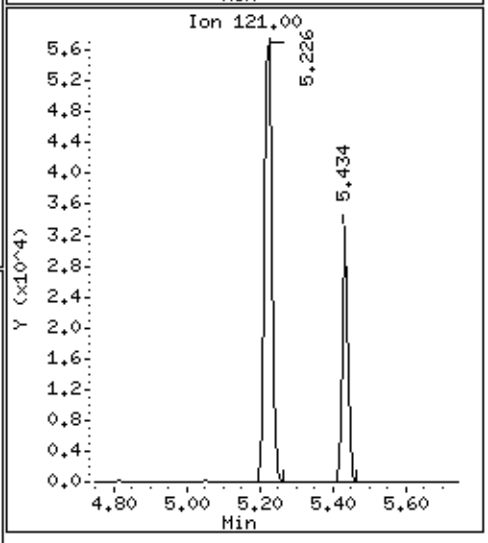
13 bis(2-Chloroisopropyl)ether

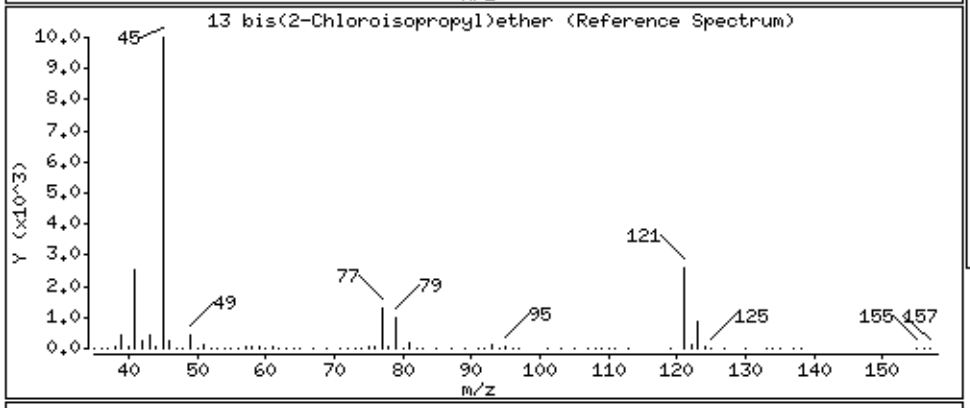
Concentration: 46.12 ug

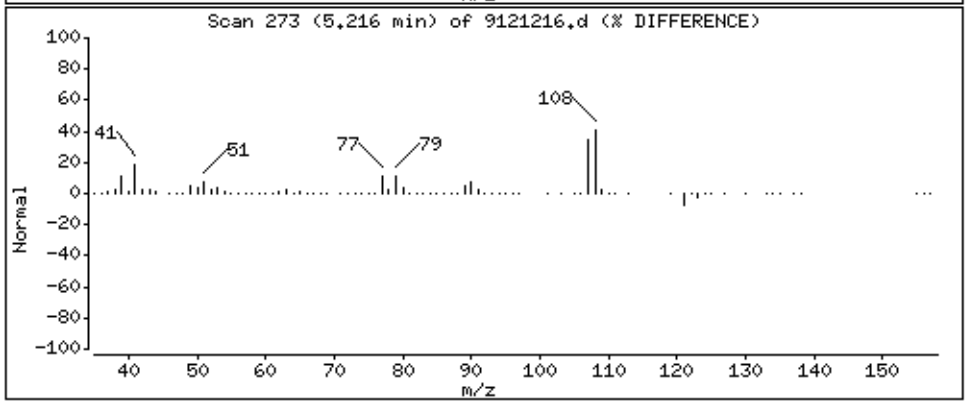












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

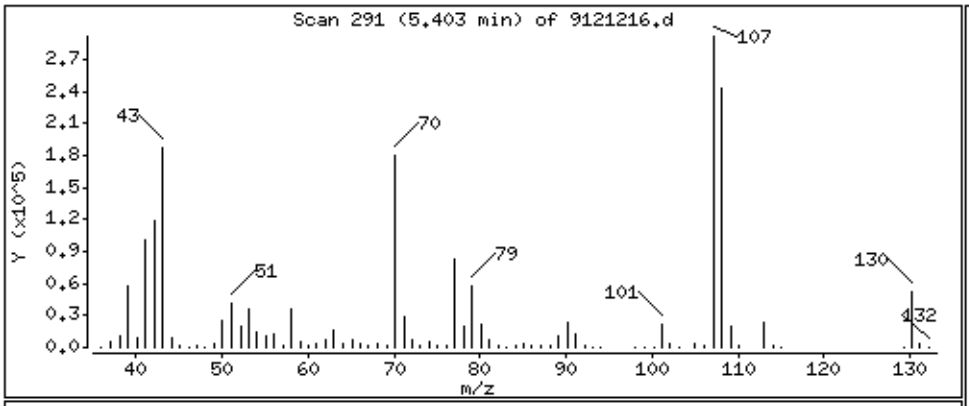
Operator: KV

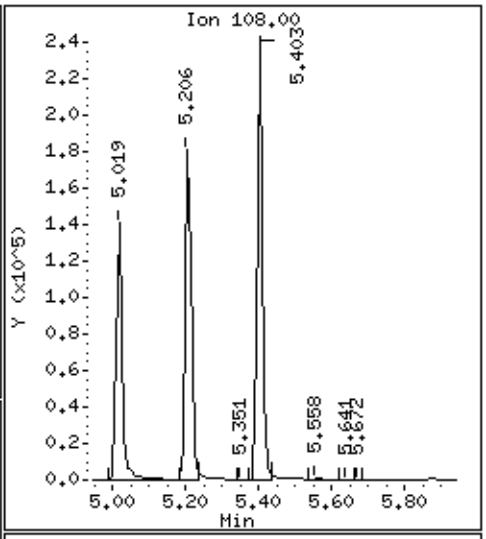
Column phase: DB-5.625

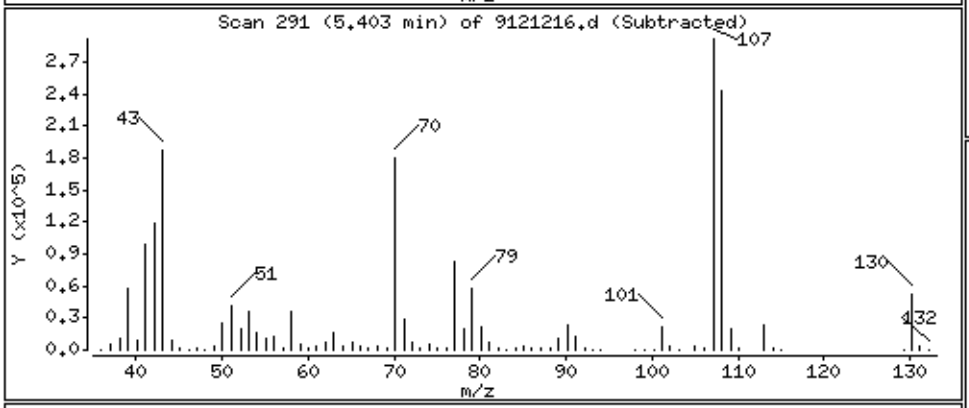
Column diameter: 0.25

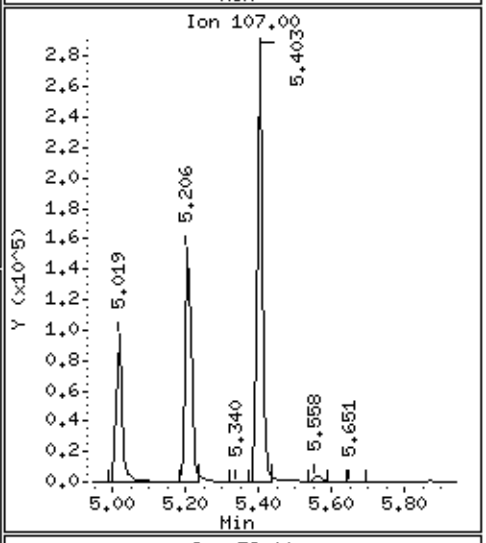
14 4-Methylphenol

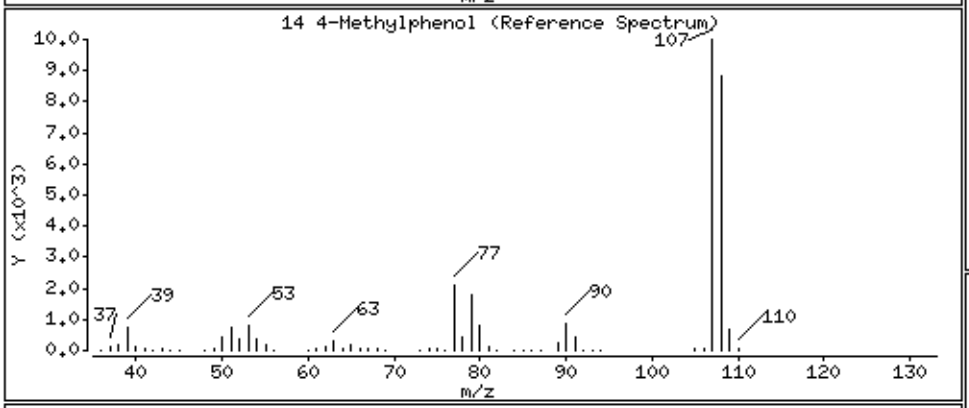
Concentration: 48.65 ug

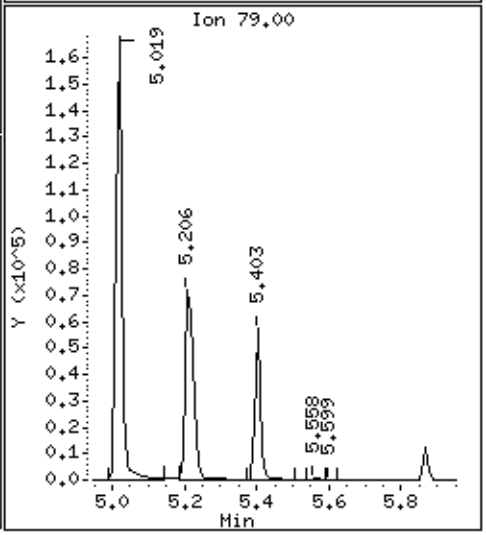


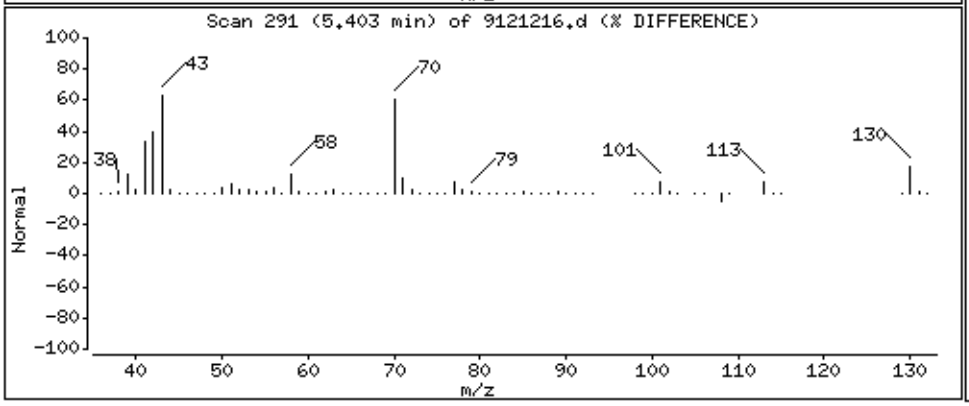












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

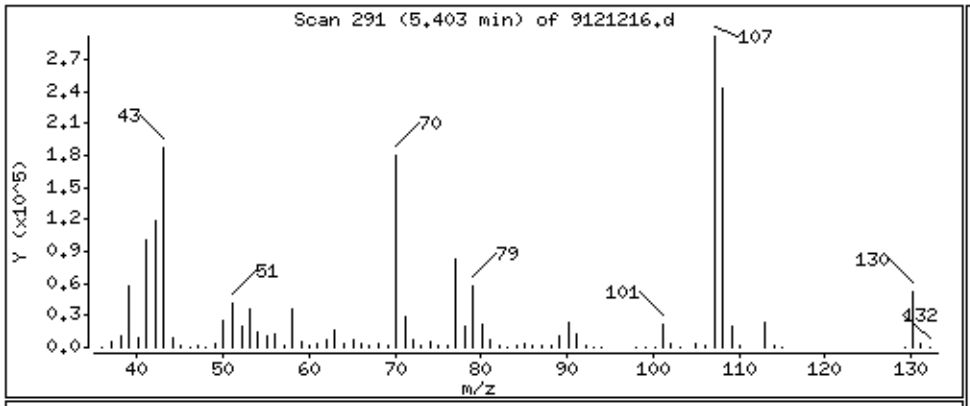
Operator: KV

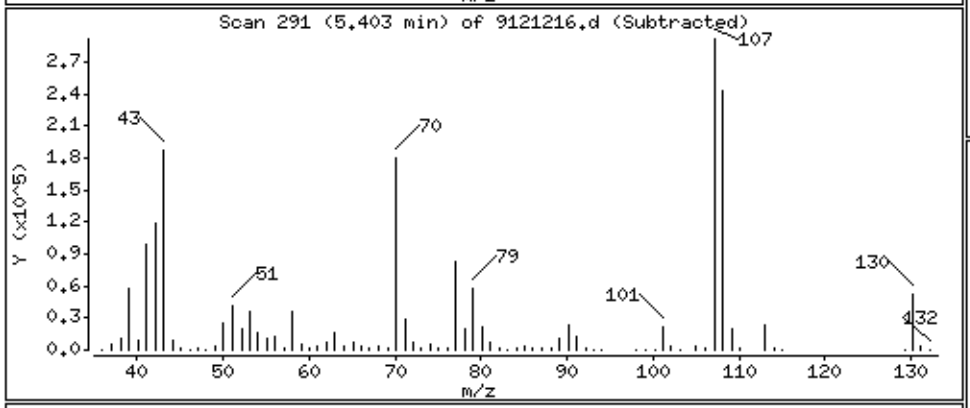
Column phase: DB-5.625

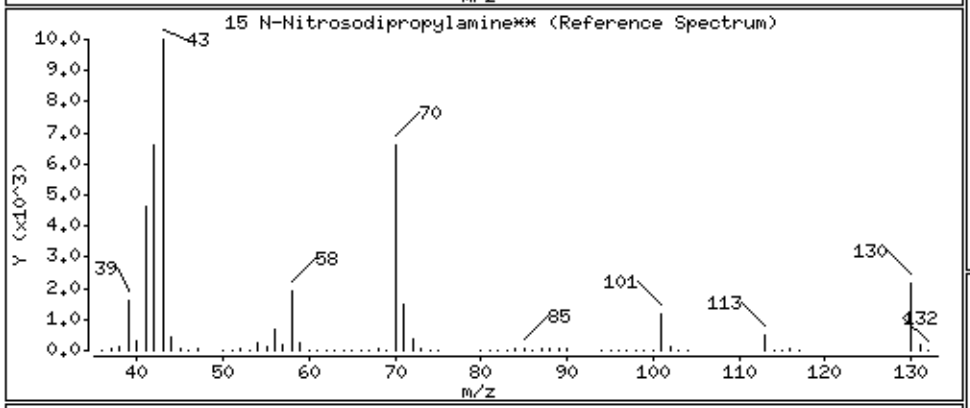
Column diameter: 0.25

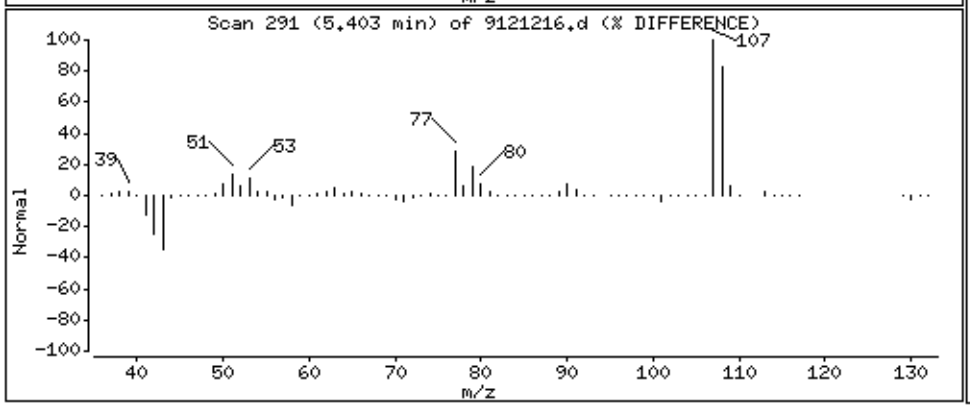
15 N-Nitrosodipropylamine**

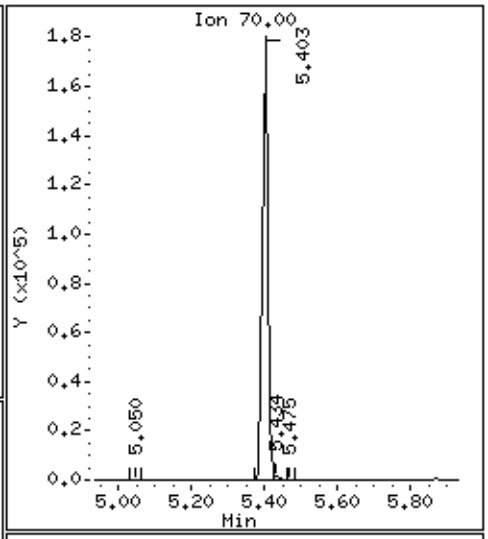
Concentration: 49.08 ug

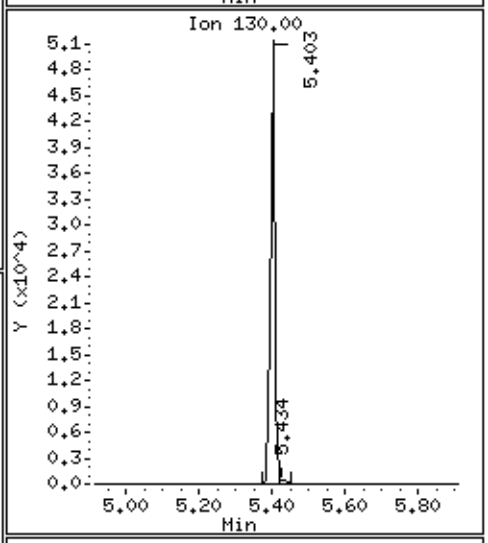


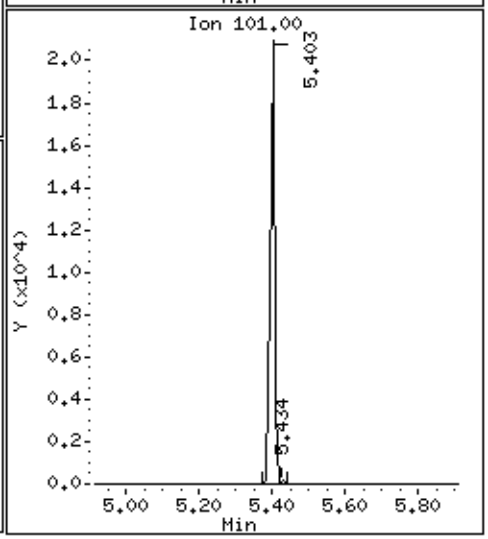












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

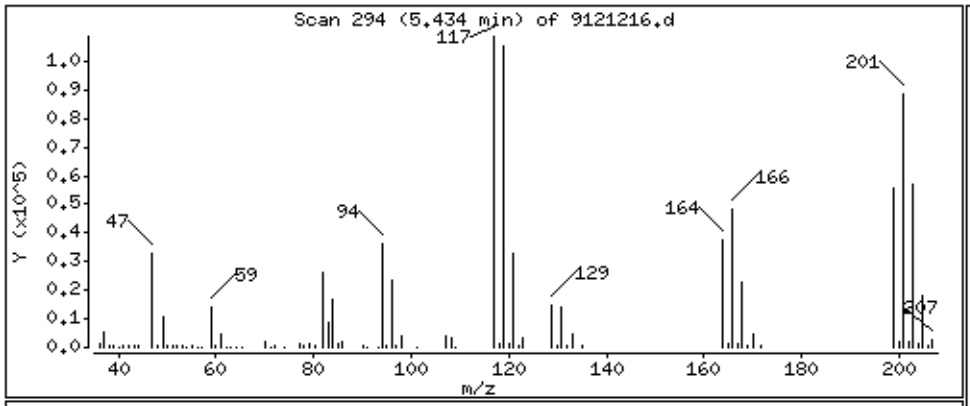
Operator: KV

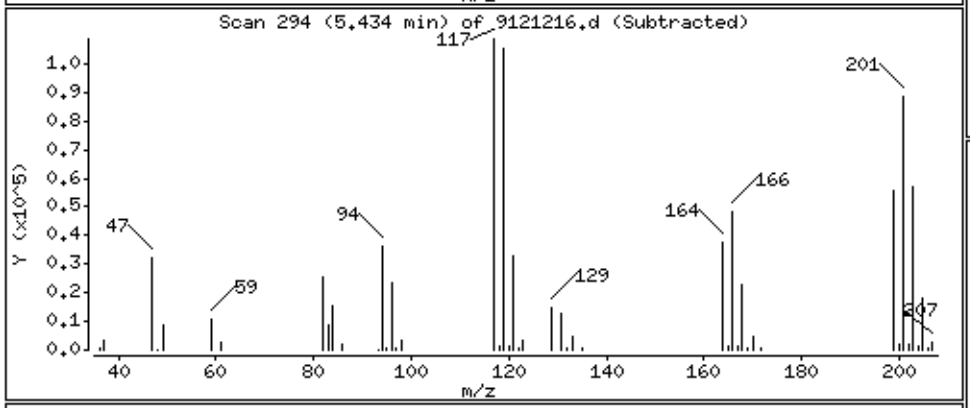
Column phase: DB-5.625

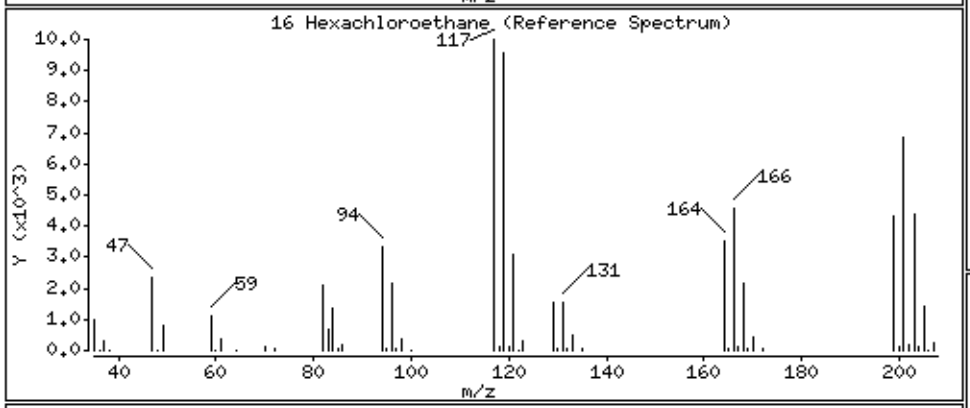
Column diameter: 0.25

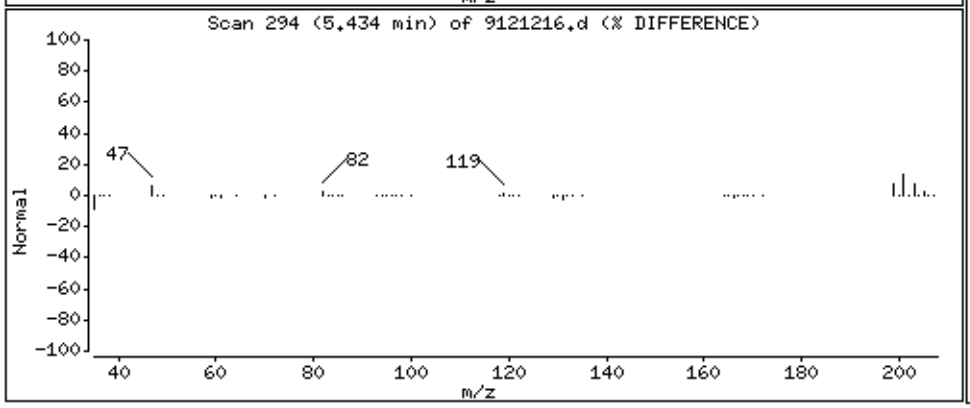
16 Hexachloroethane

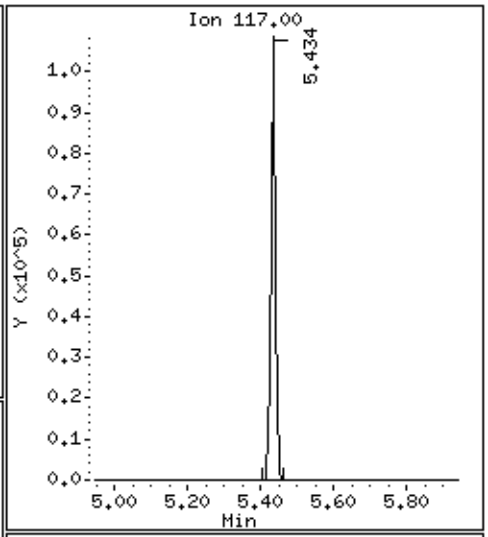
Concentration: 49.28 ug

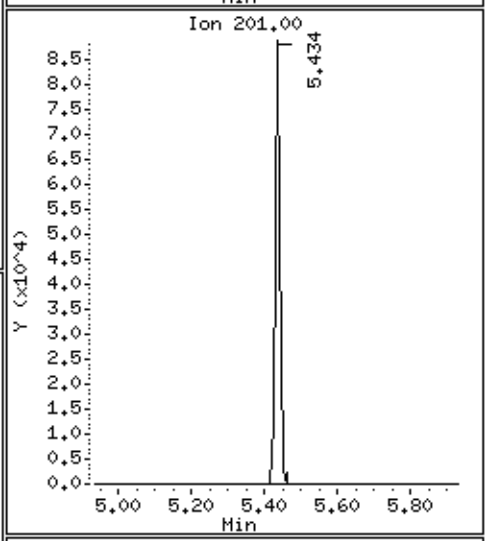


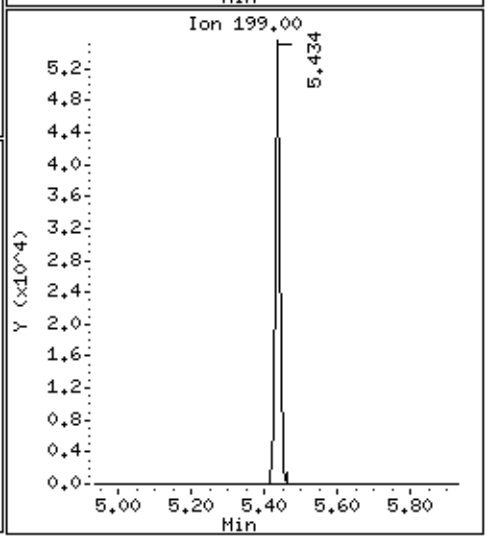












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

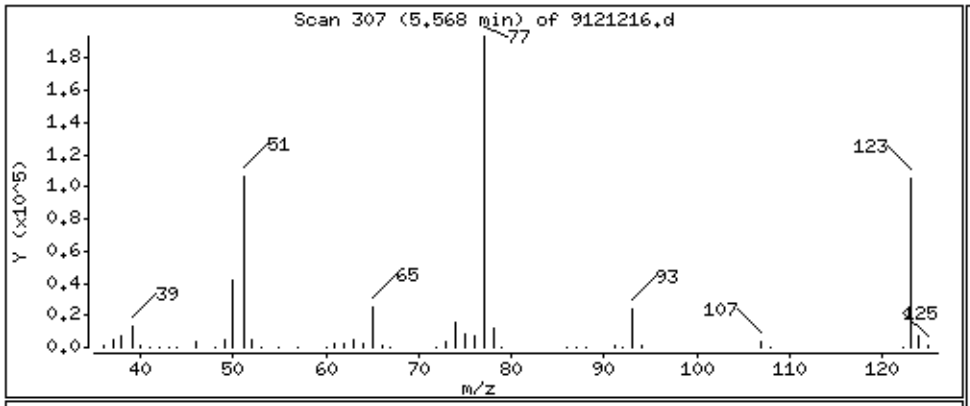
Operator: KV

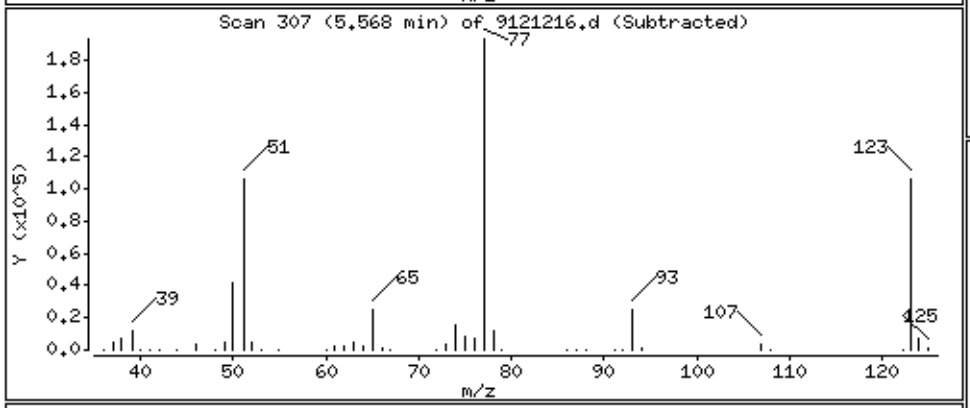
Column phase: DB-5.625

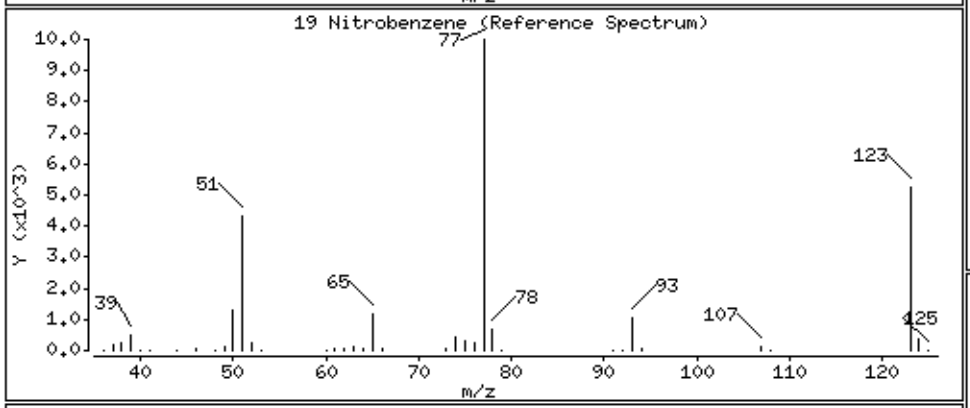
Column diameter: 0.25

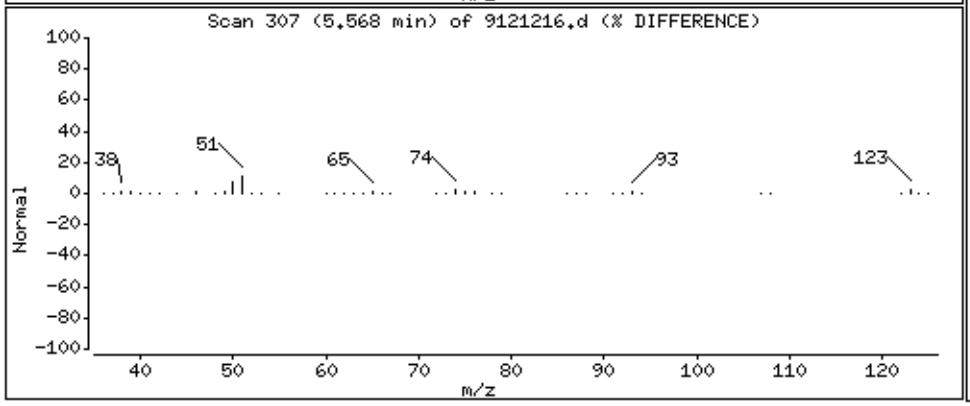
19 Nitrobenzene

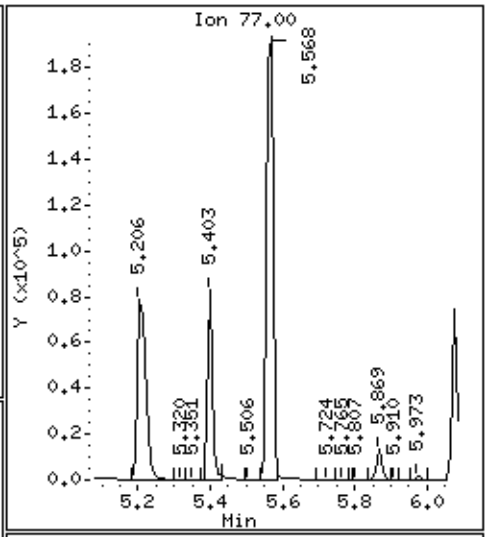
Concentration: 51.25 ug

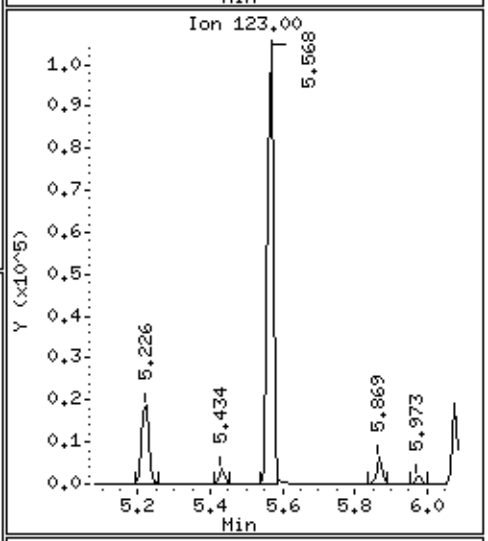


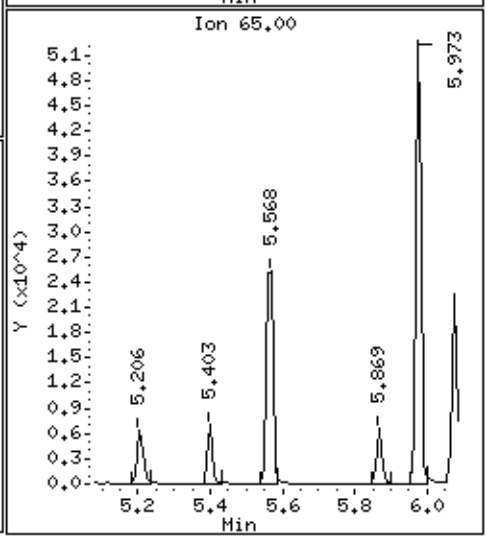












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

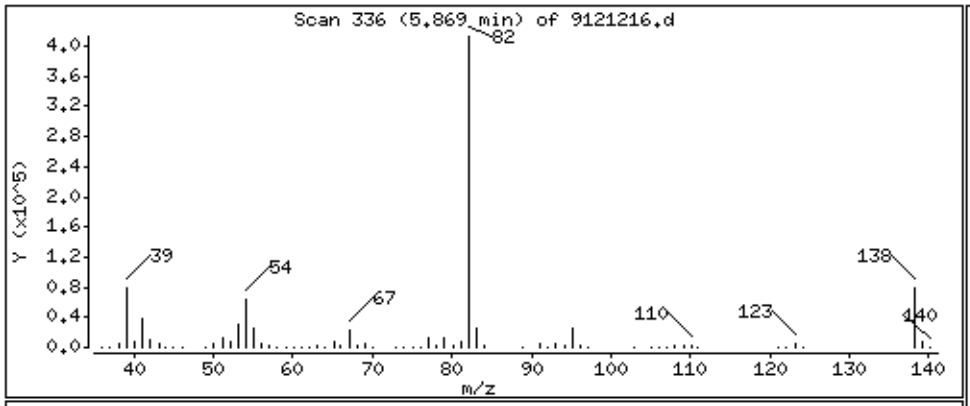
Operator: KV

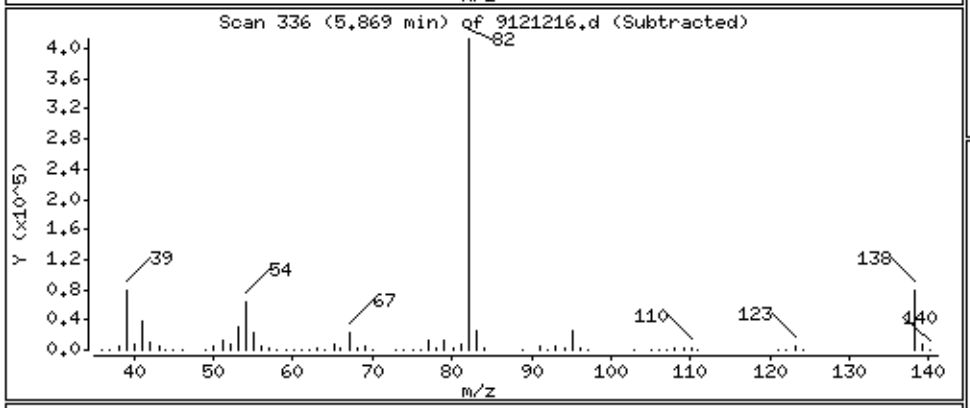
Column phase: DB-5.625

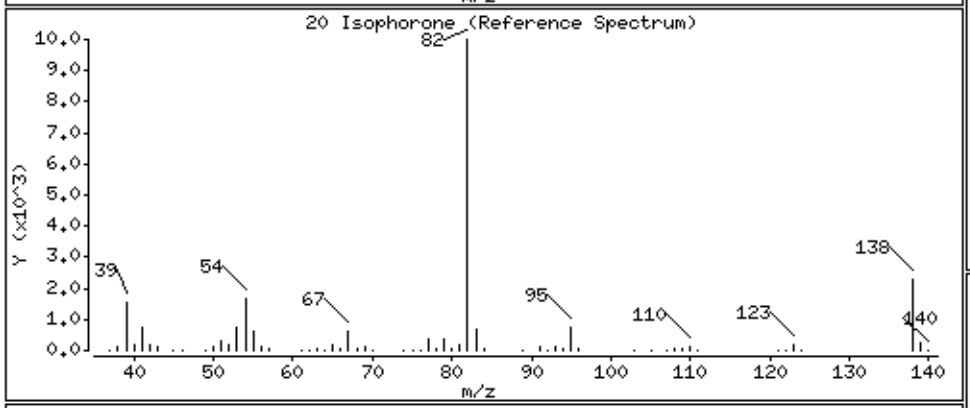
Column diameter: 0.25

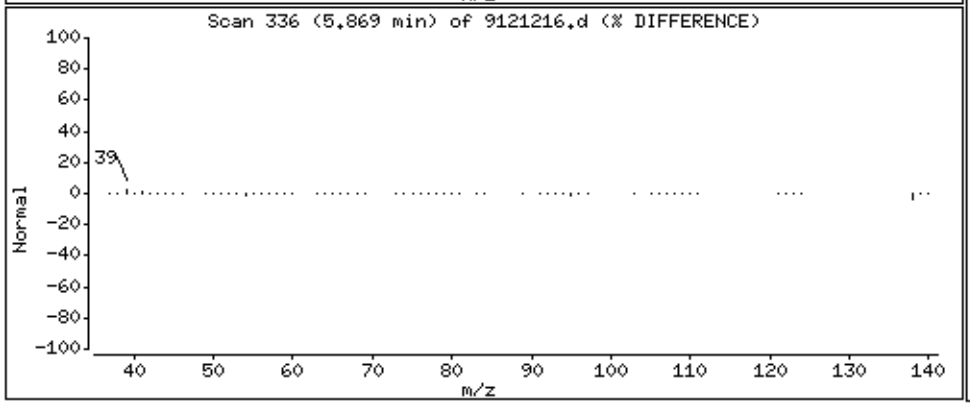
20 Isophorone

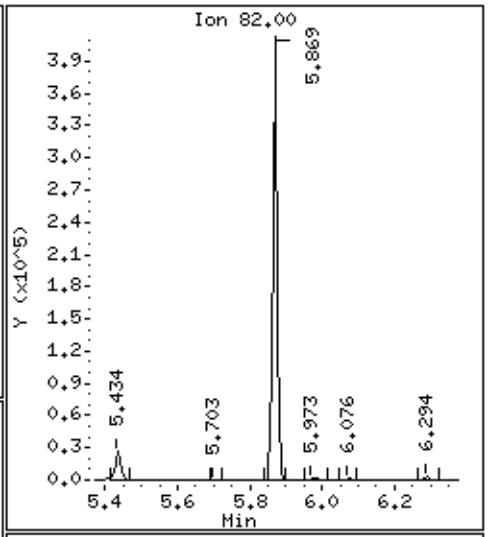
Concentration: 42.79 ug

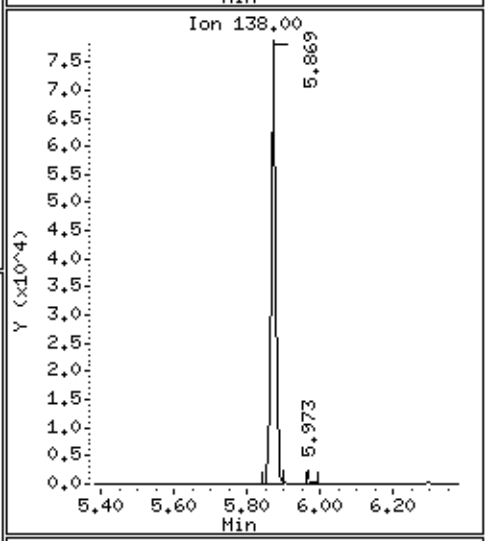


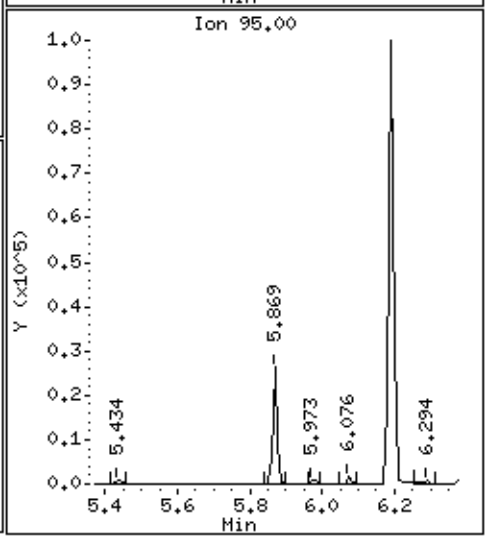












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

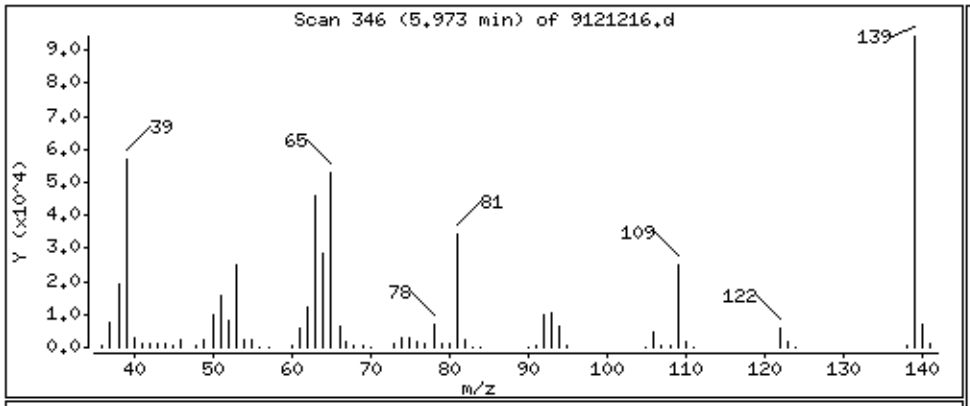
Operator: KV

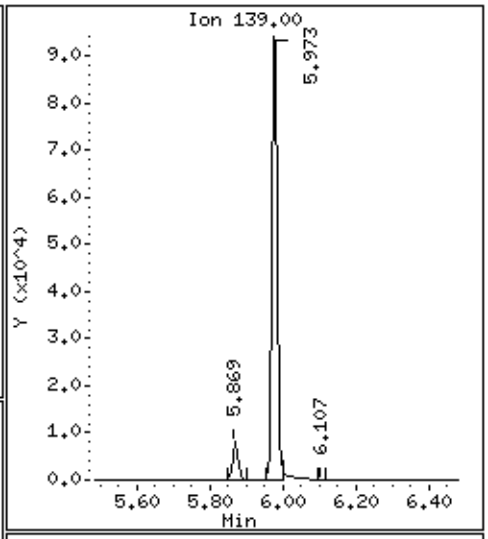
Column phase: DB-5.625

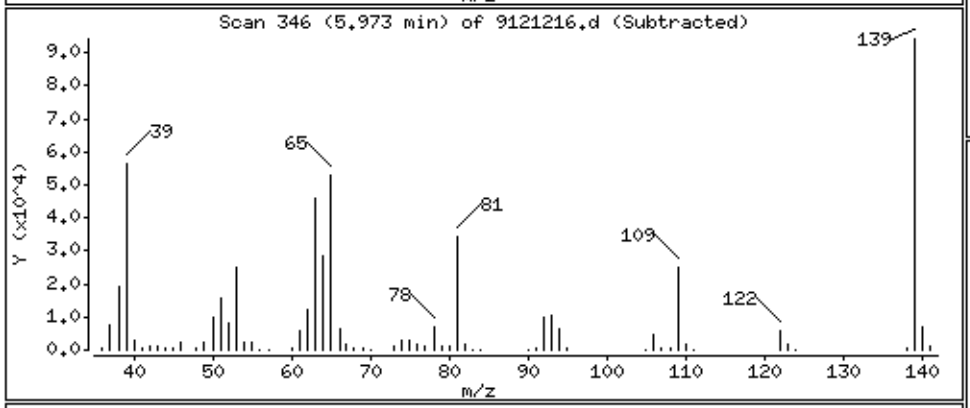
Column diameter: 0.25

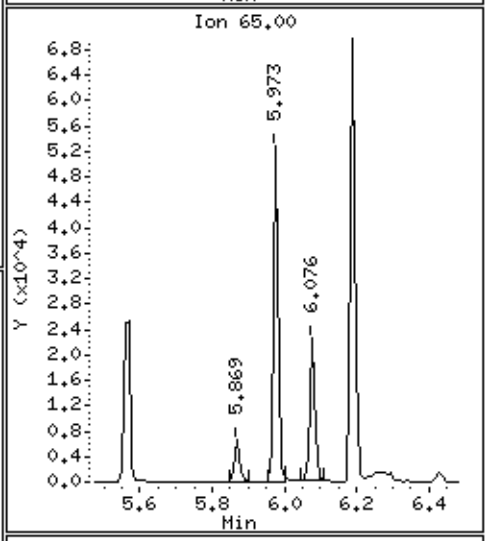
21 2-Nitrophenol*

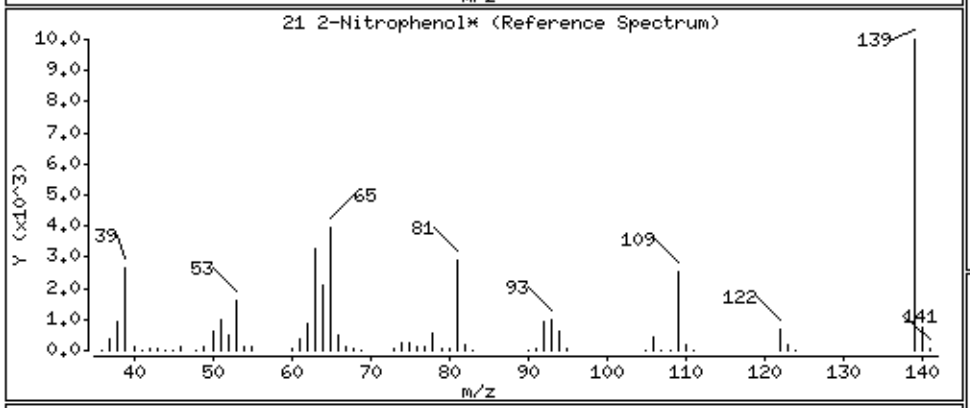
Concentration: 56.81 ug

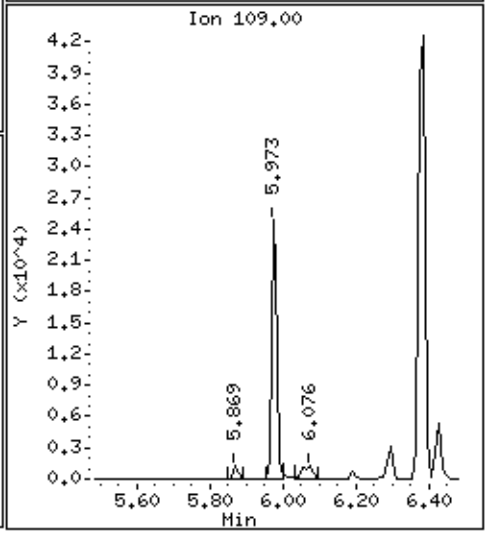


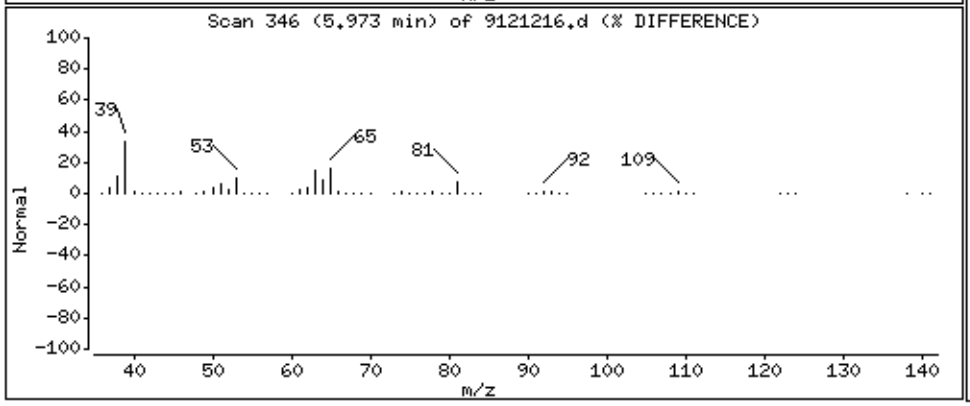












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

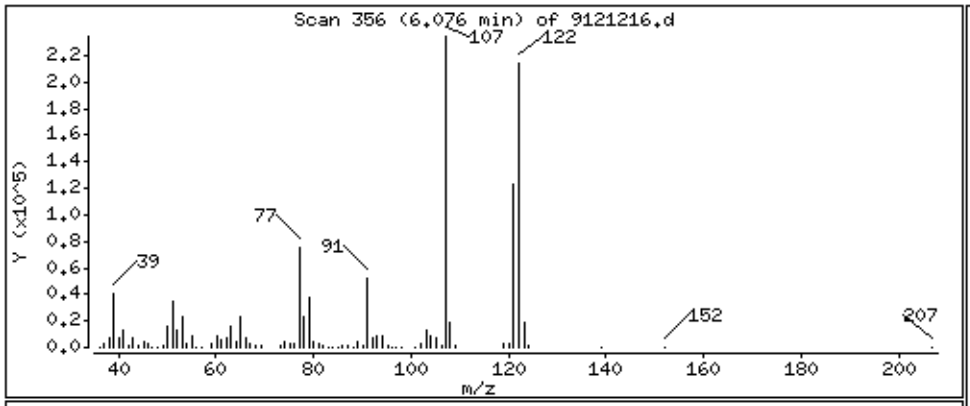
Operator: KV

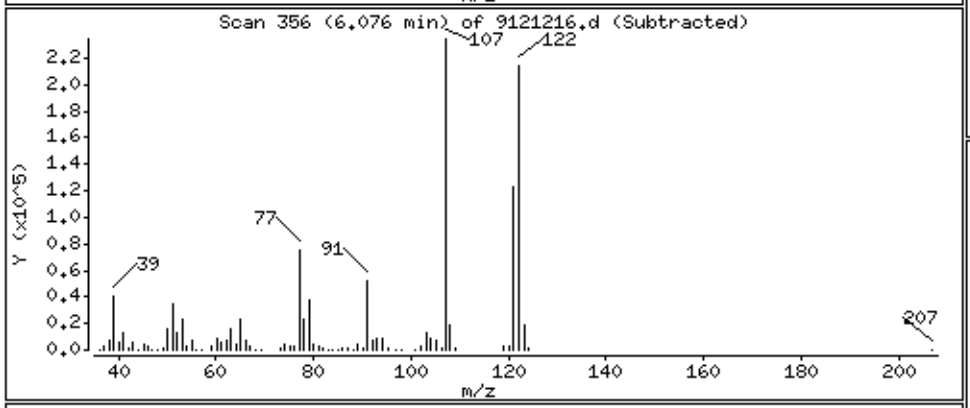
Column phase: DB-5.625

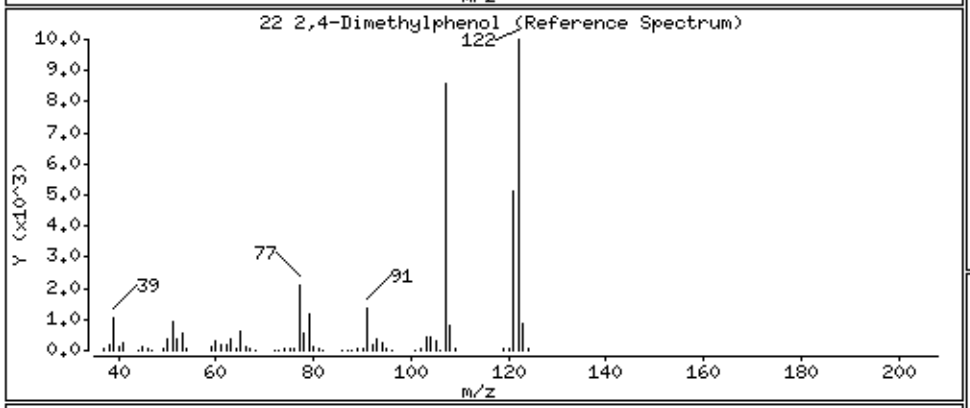
Column diameter: 0.25

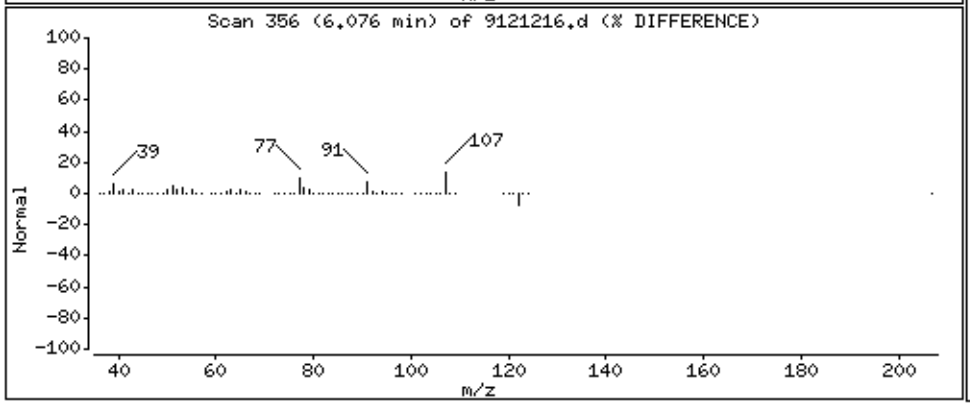
22 2,4-Dimethylphenol

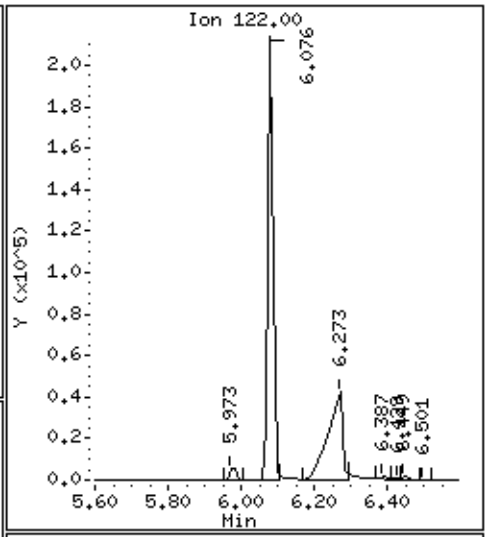
Concentration: 50.56 ug

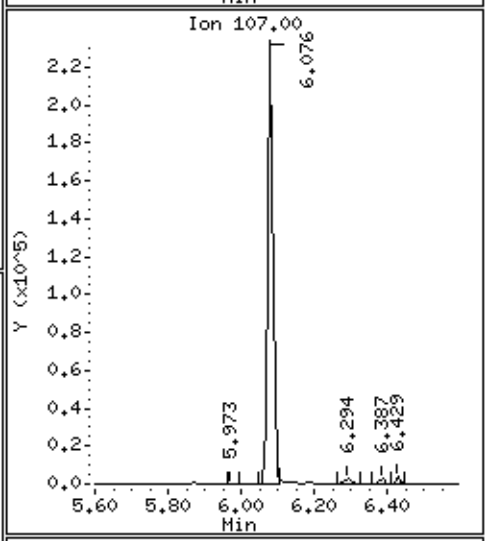


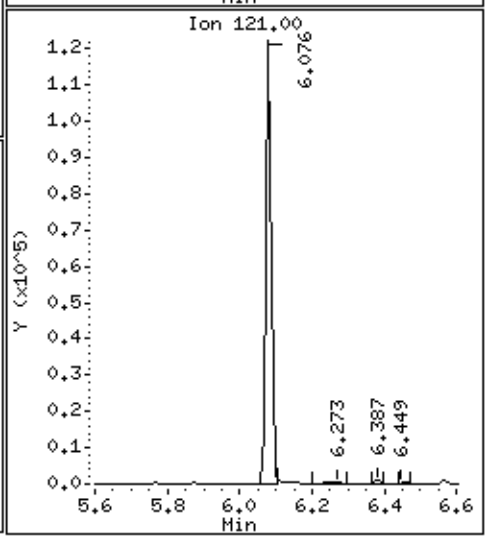












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

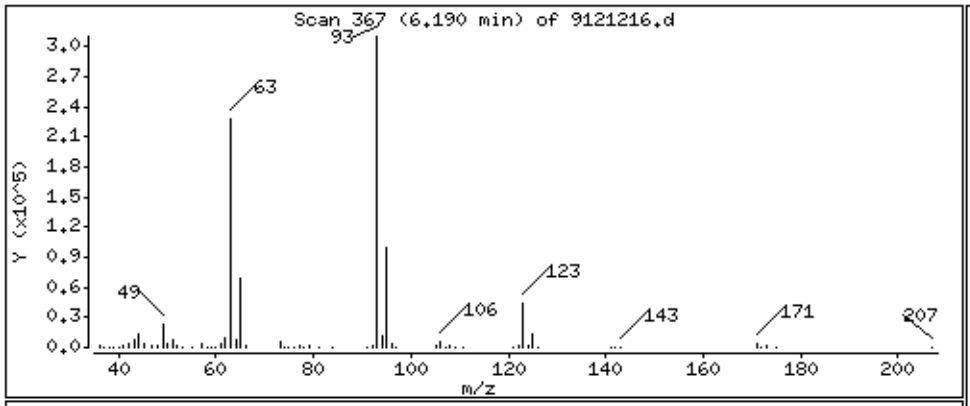
Operator: KV

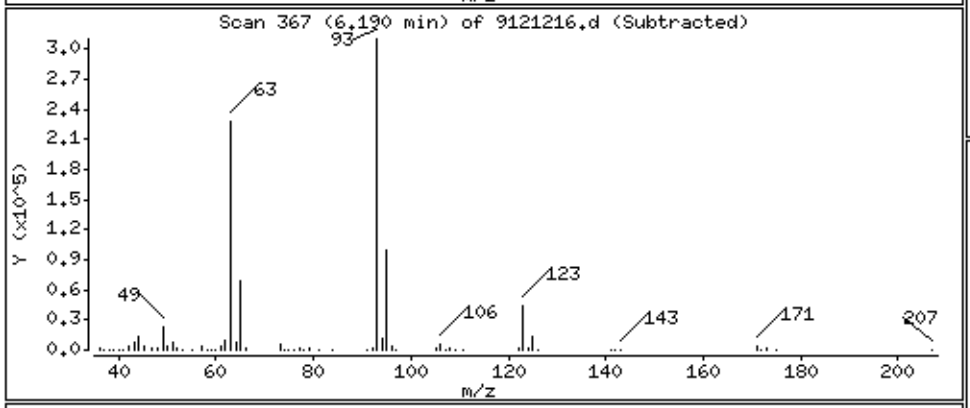
Column phase: DB-5.625

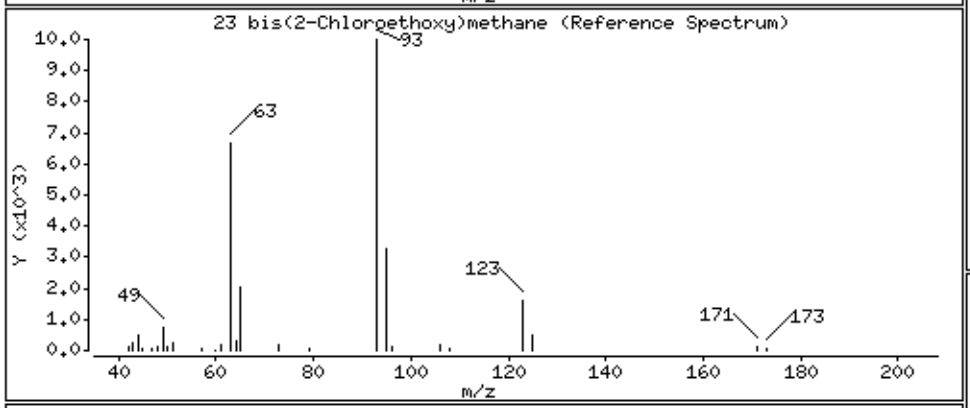
Column diameter: 0.25

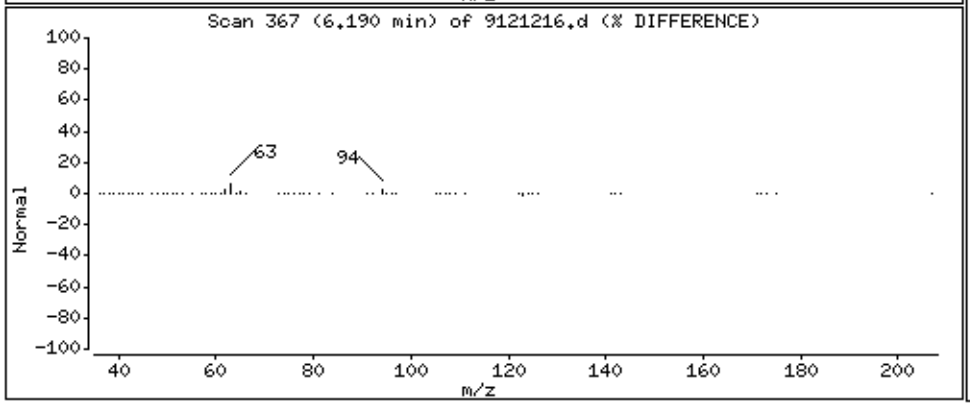
23 bis(2-Chloroethoxy)methane

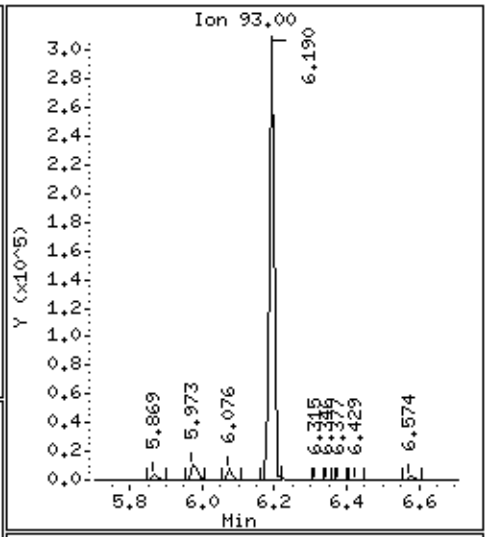
Concentration: 49.08 ug

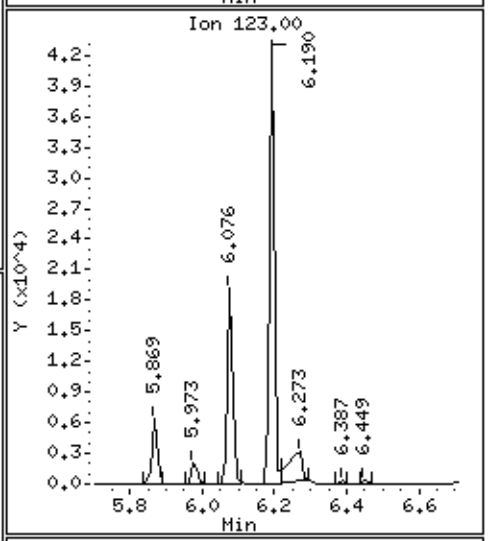


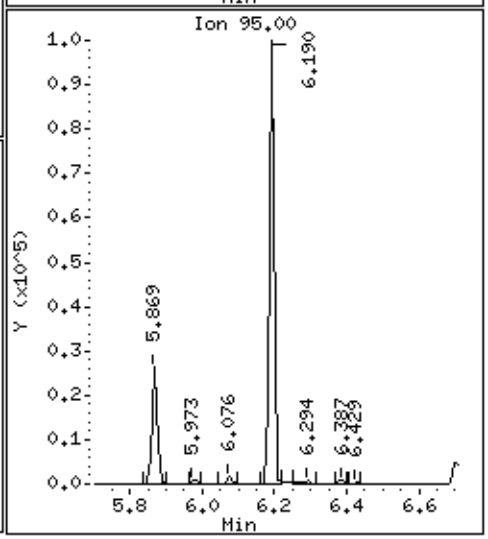












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

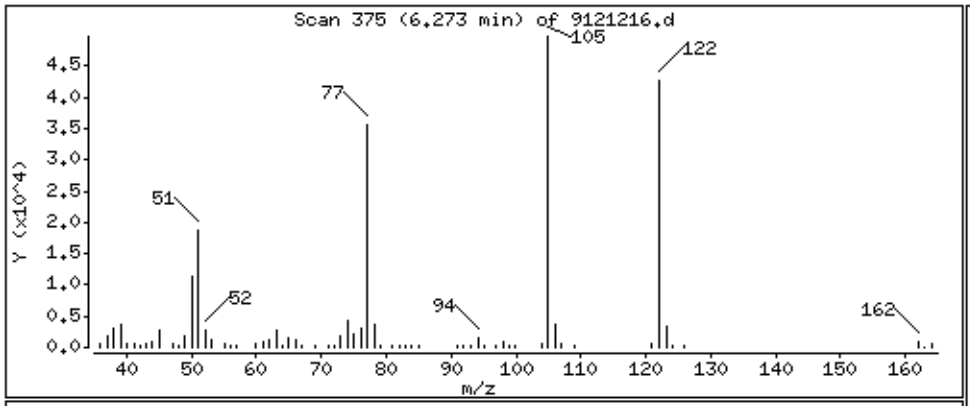
Operator: KV

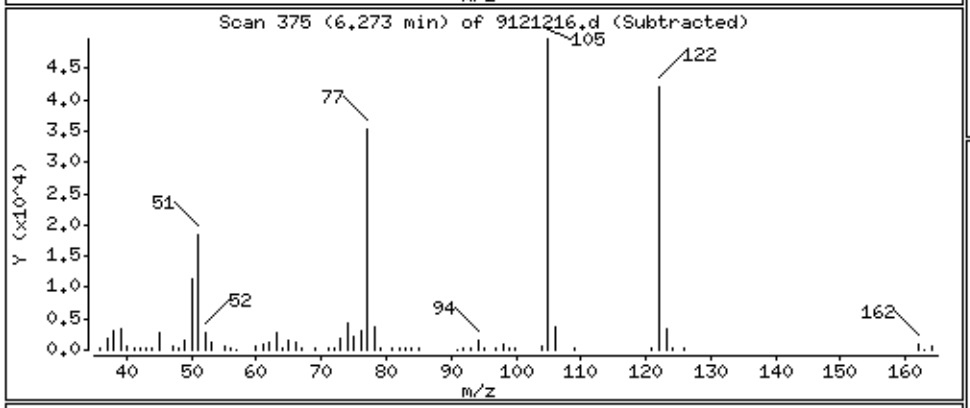
Column phase: DB-5.625

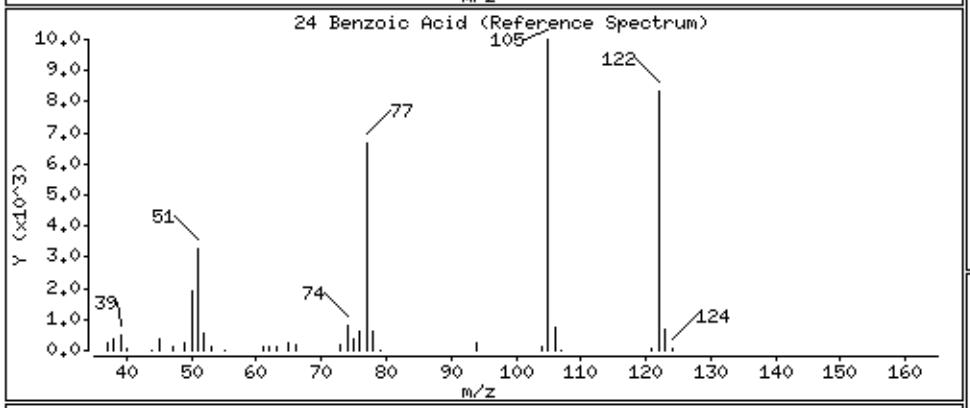
Column diameter: 0.25

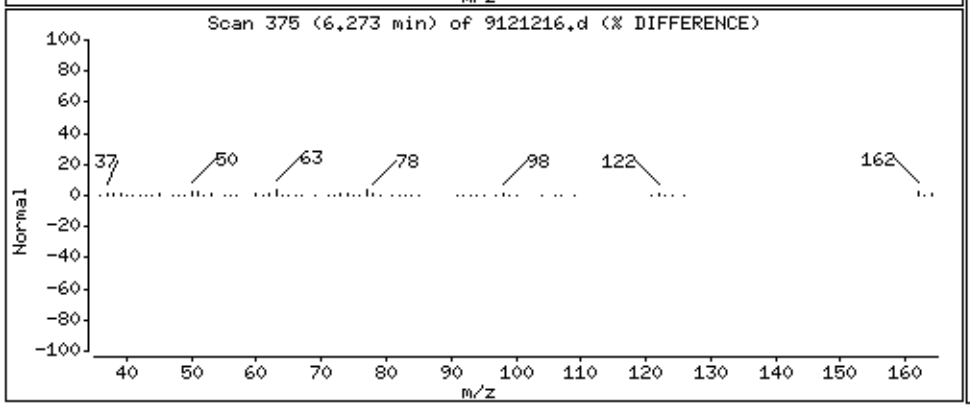
24 Benzoic Acid

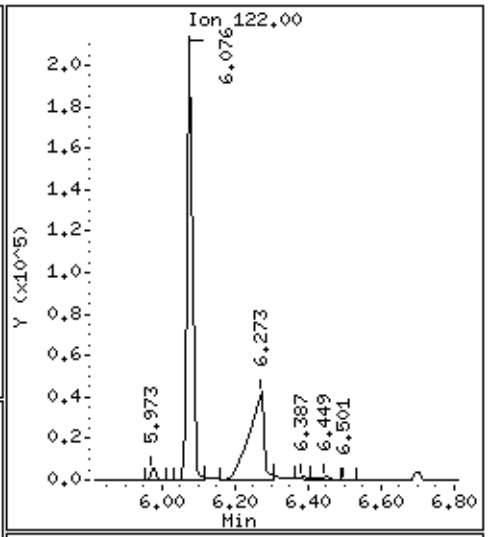
Concentration: 55.12 ug

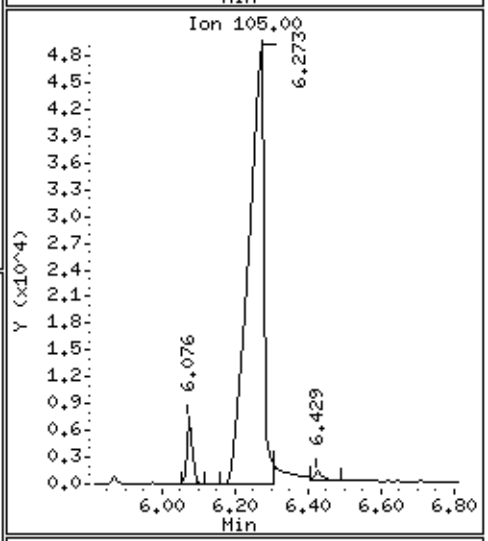


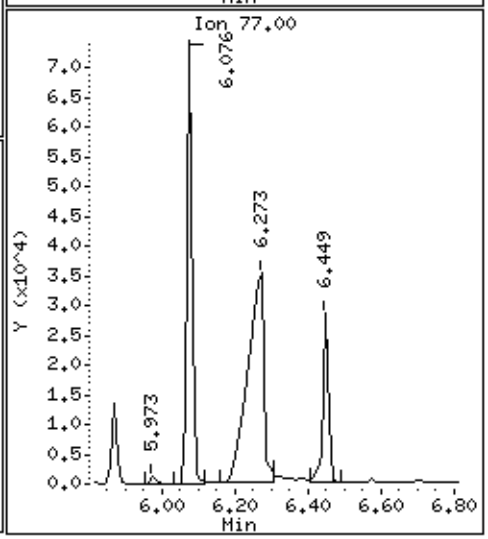












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

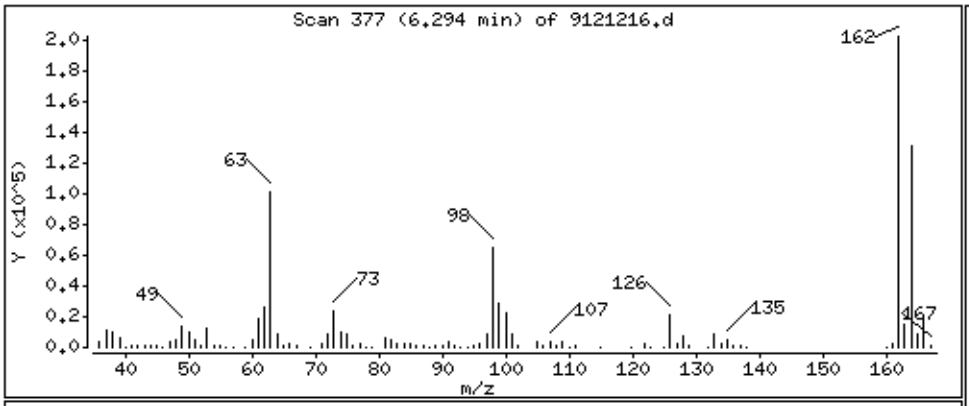
Operator: KV

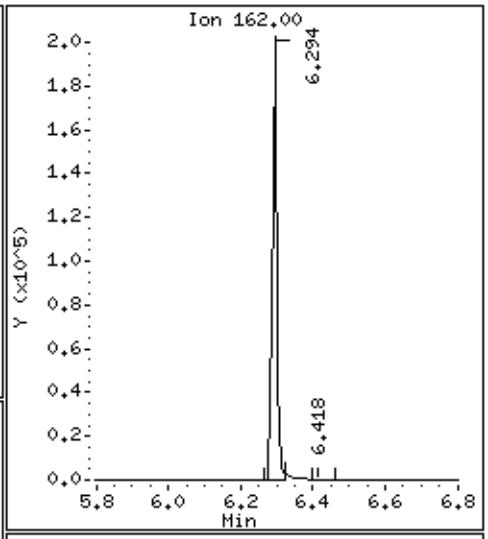
Column phase: DB-5.625

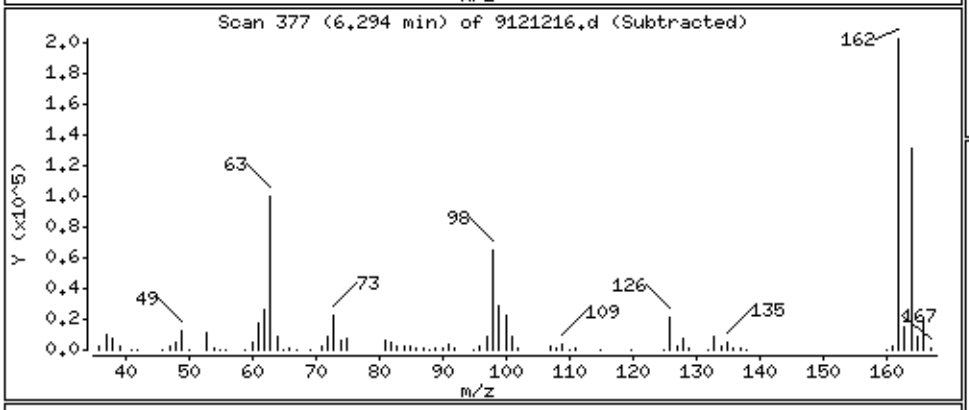
Column diameter: 0.25

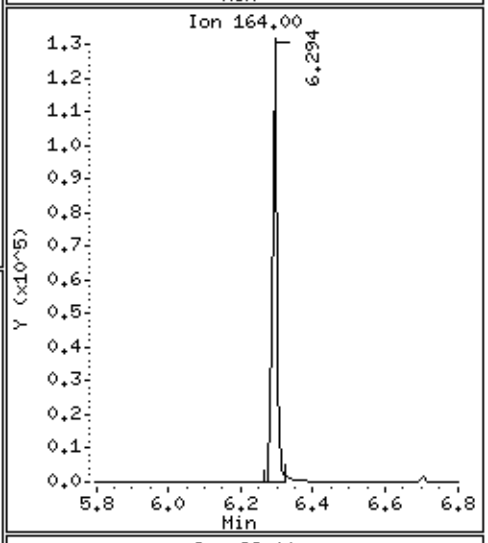
25 2,4-Dichlorophenol*

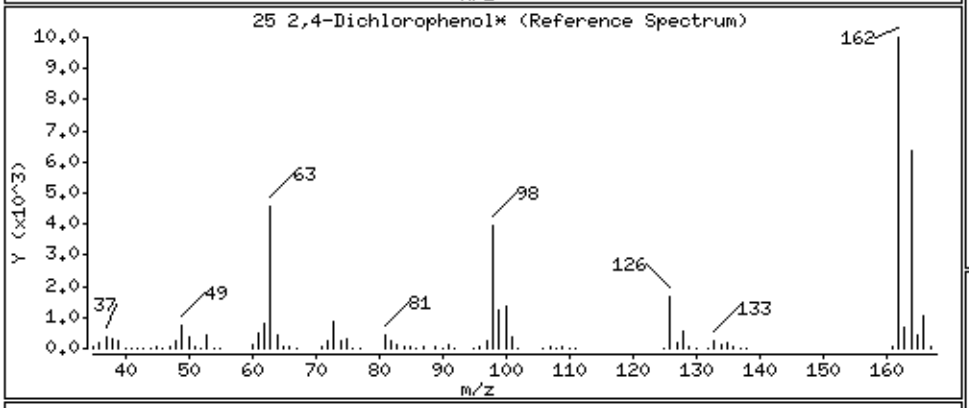
Concentration: 53.54 ug

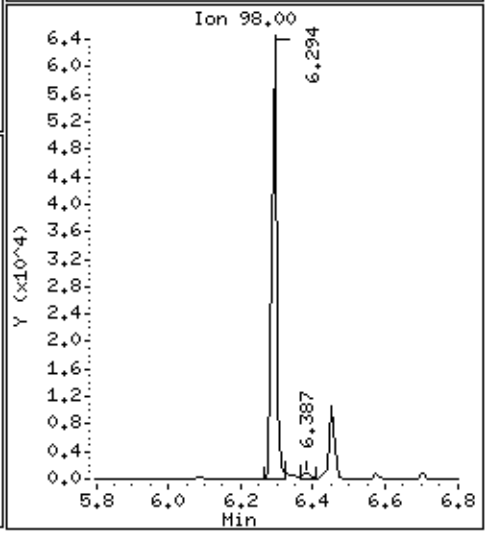


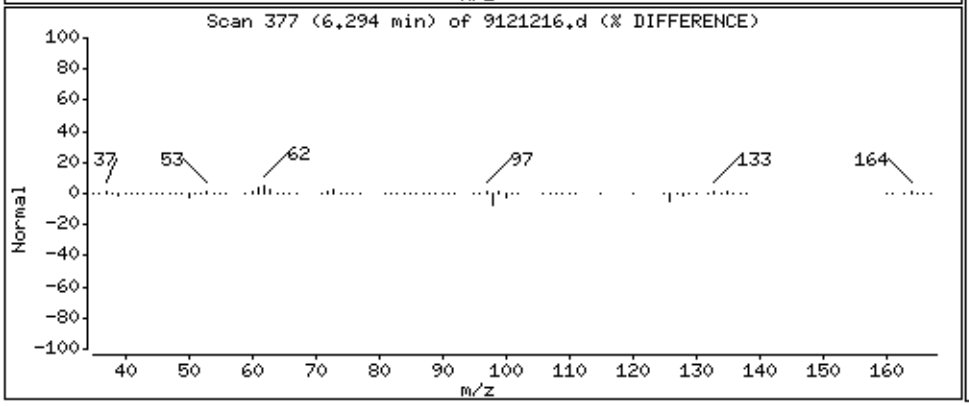












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

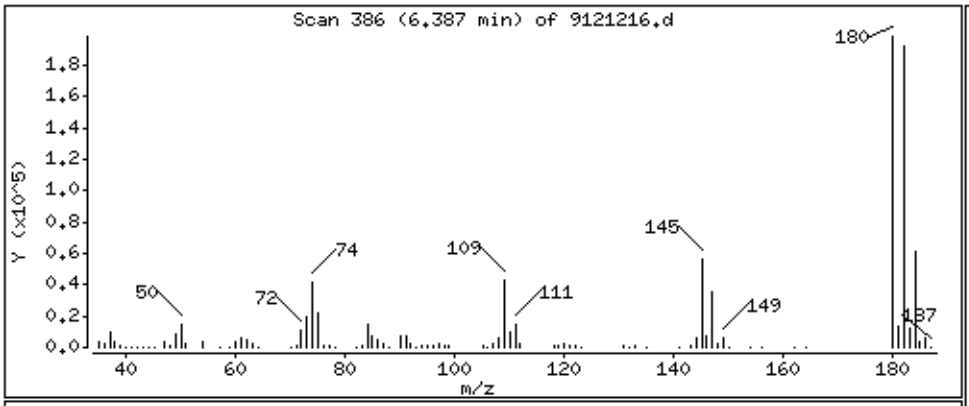
Operator: KV

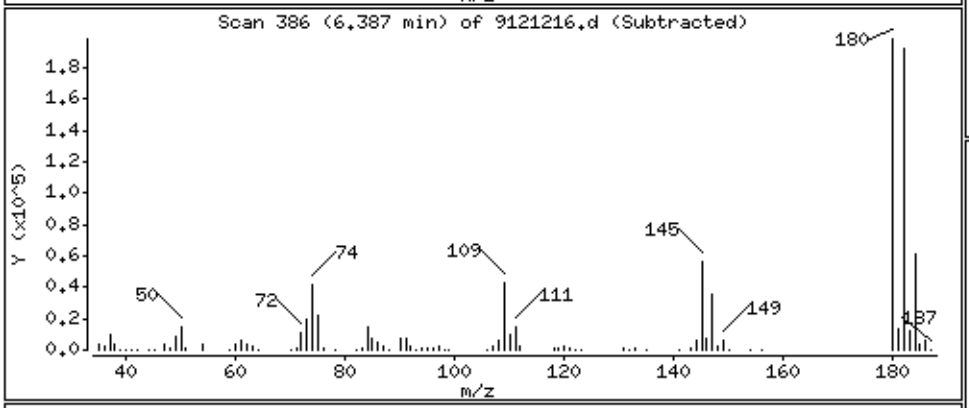
Column phase: DB-5.625

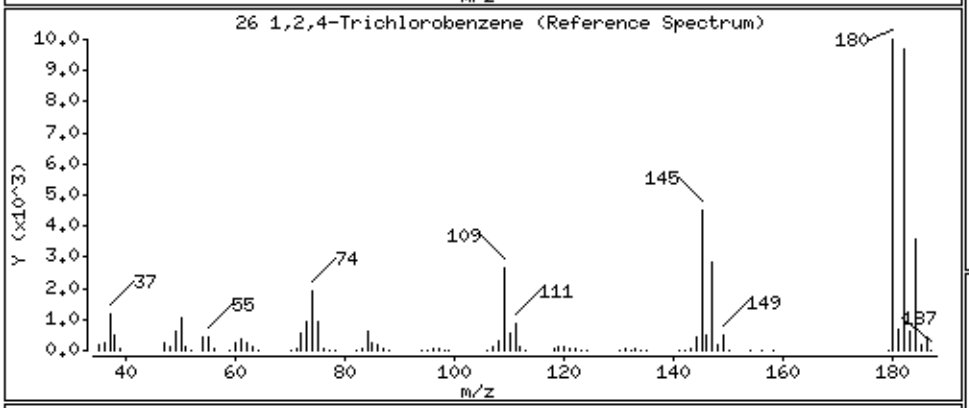
Column diameter: 0.25

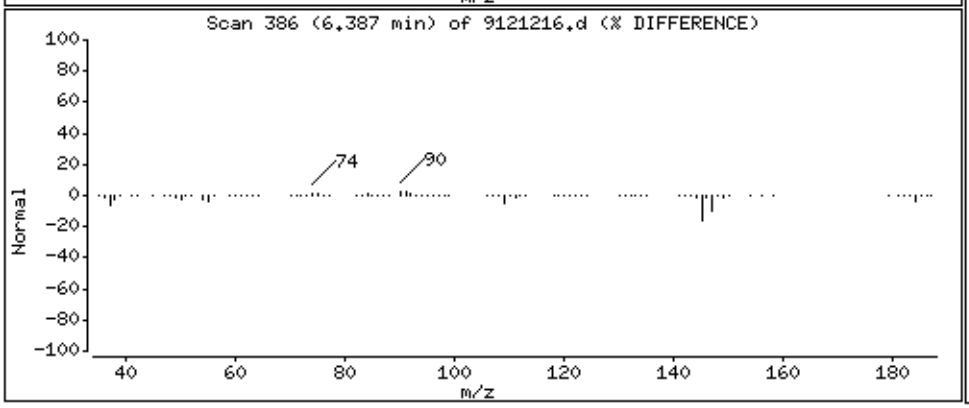
26 1,2,4-Trichlorobenzene

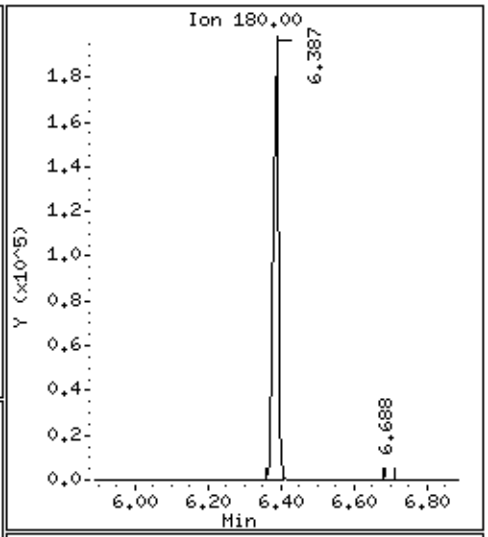
Concentration: 50.25 ug

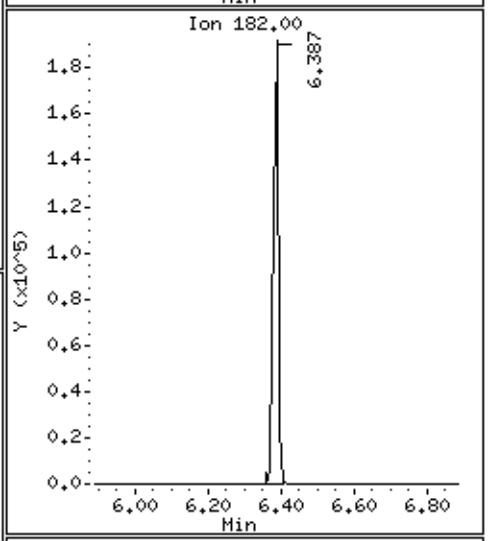


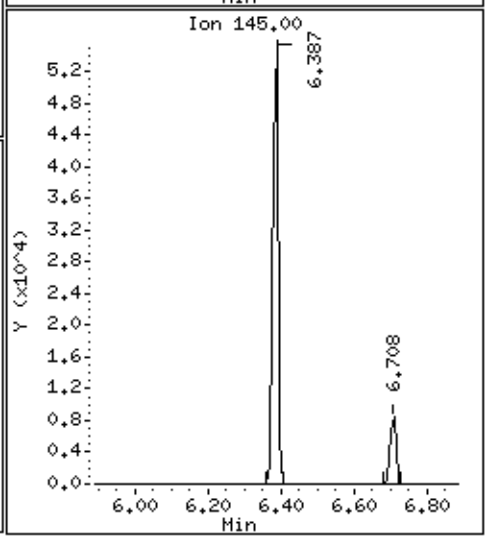












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

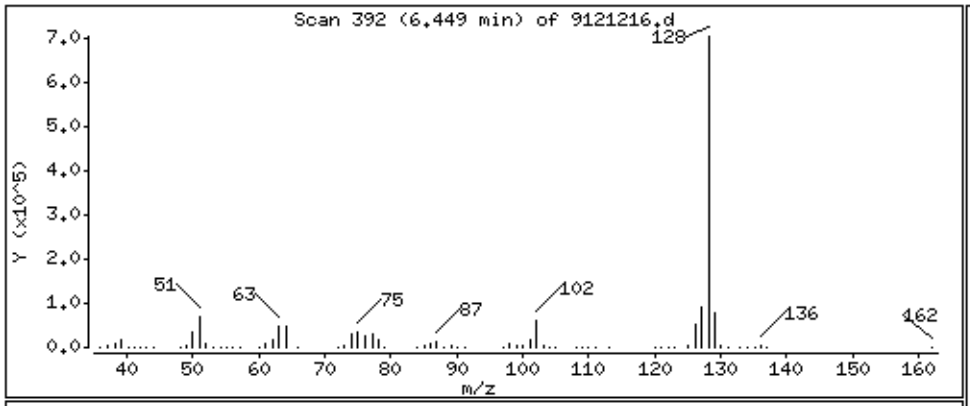
Operator: KV

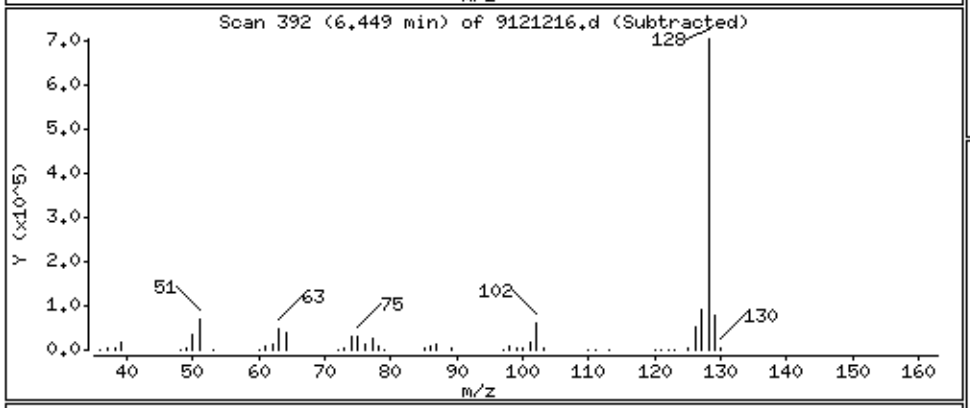
Column phase: DB-5.625

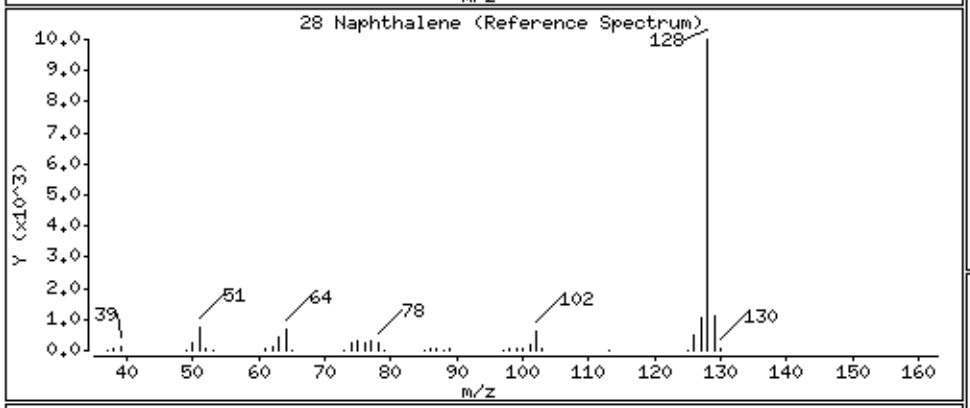
Column diameter: 0.25

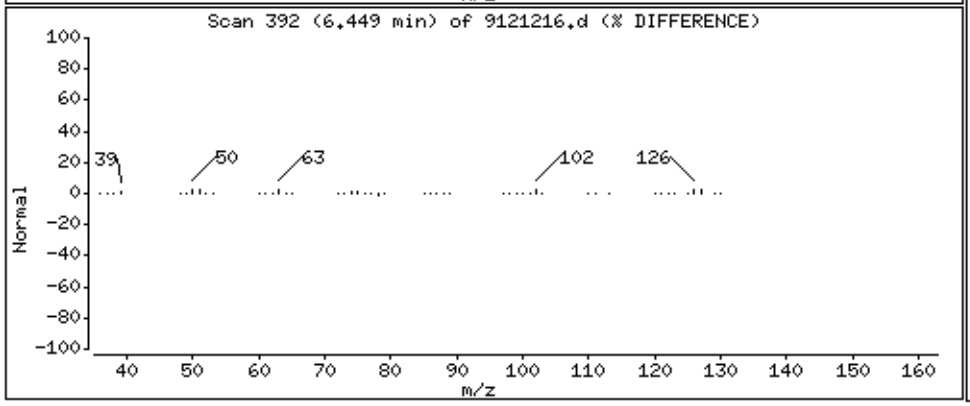
28 Naphthalene

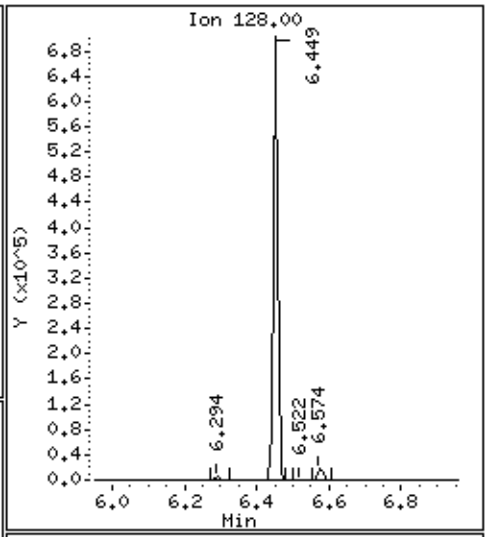
Concentration: 50.00 ug

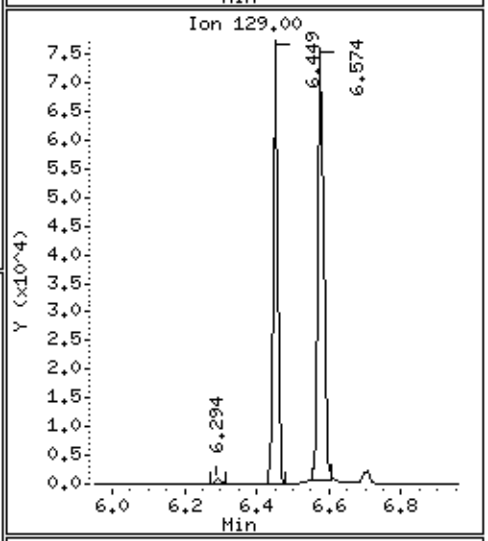


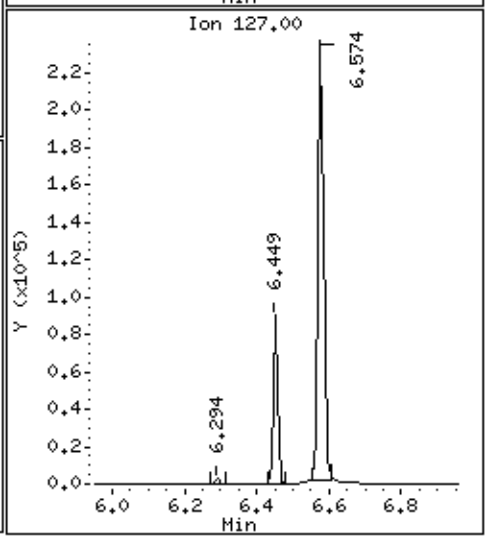












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

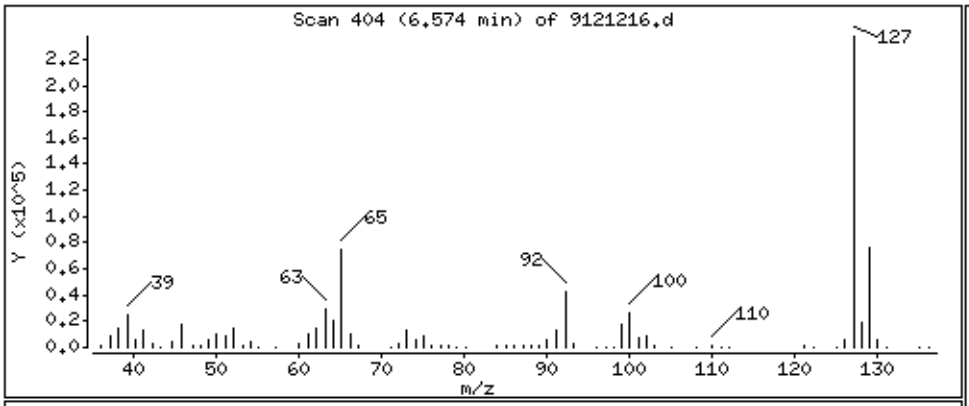
Operator: KV

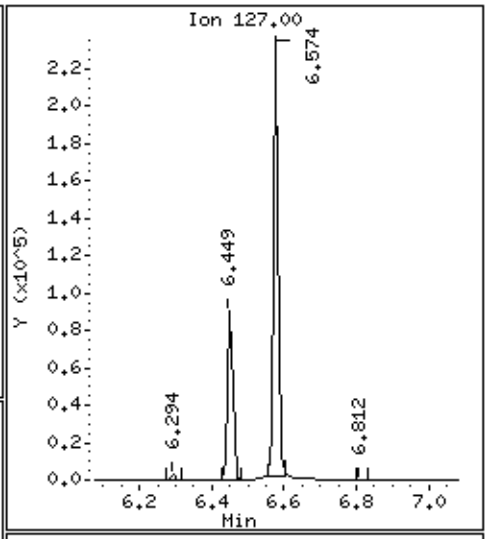
Column phase: DB-5.625

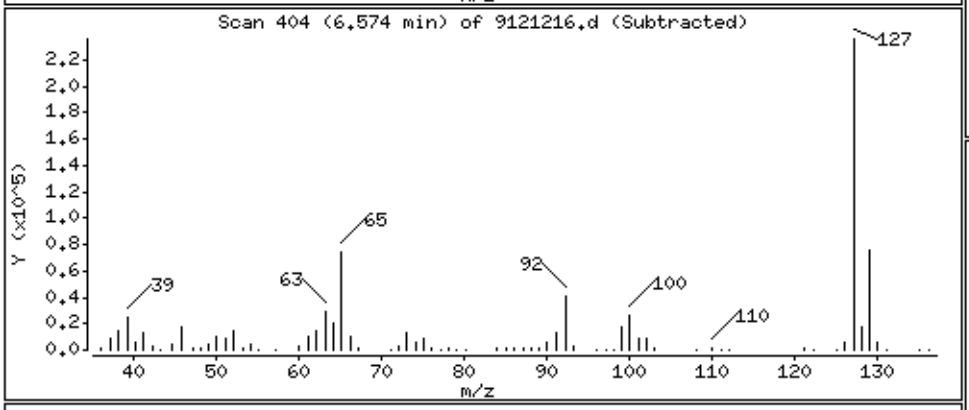
Column diameter: 0.25

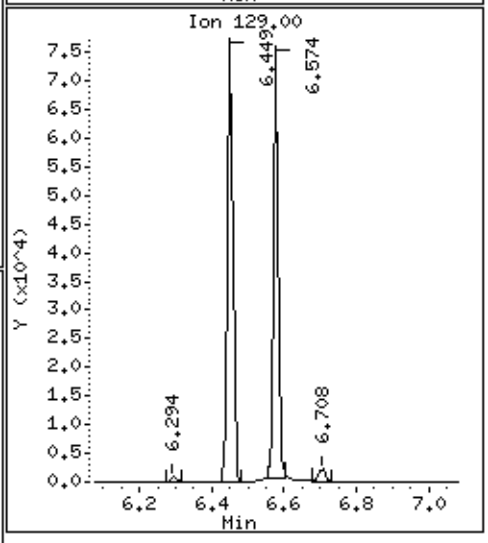
29 4-Chloroaniline

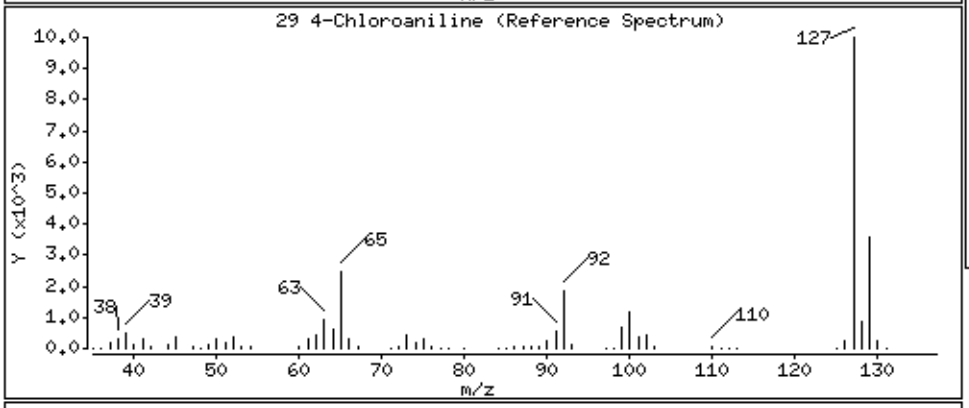
Concentration: 42.26 ug

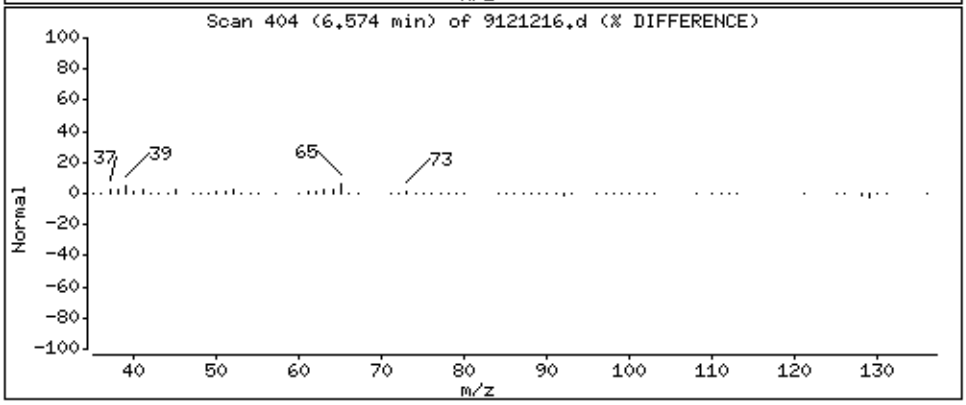












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

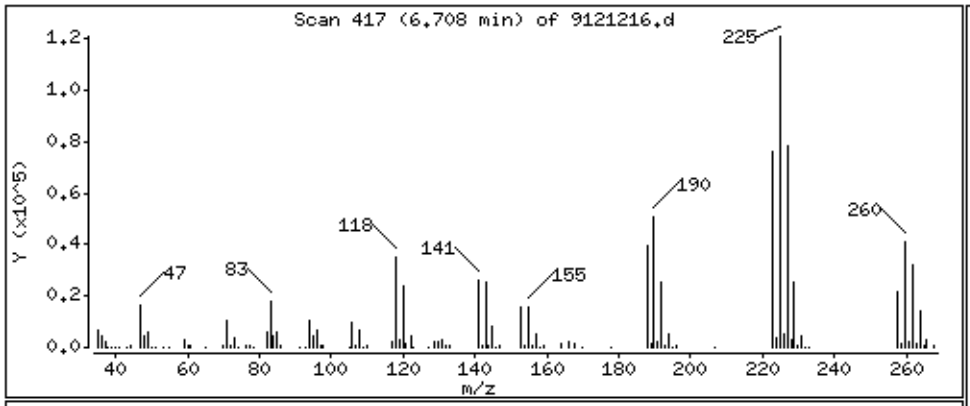
Operator: KV

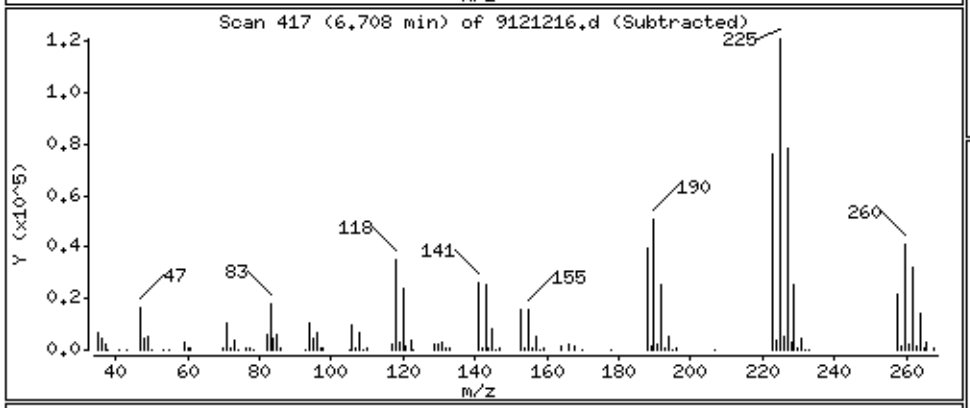
Column phase: DB-5.625

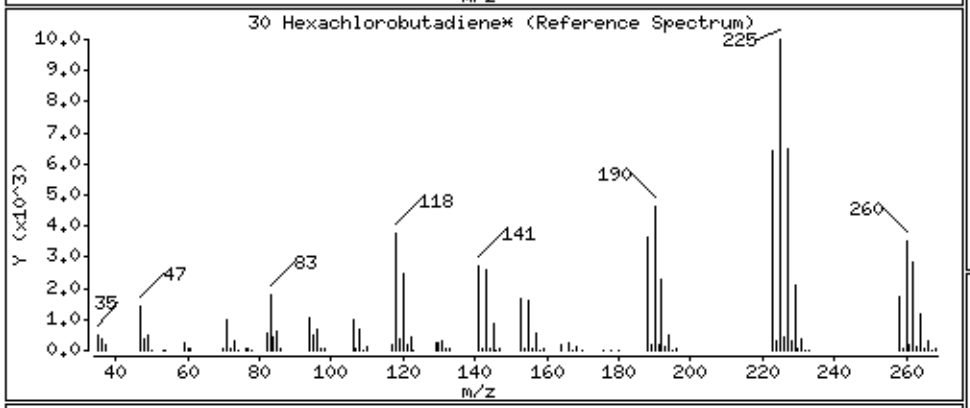
Column diameter: 0.25

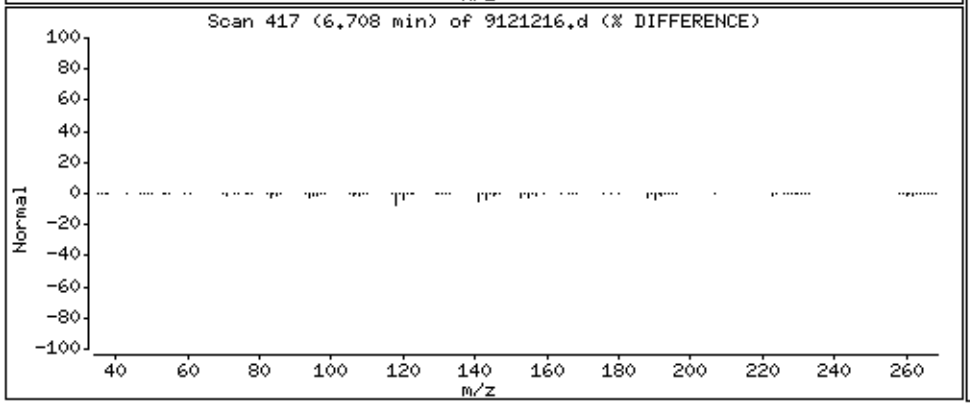
30 Hexachlorobutadiene*

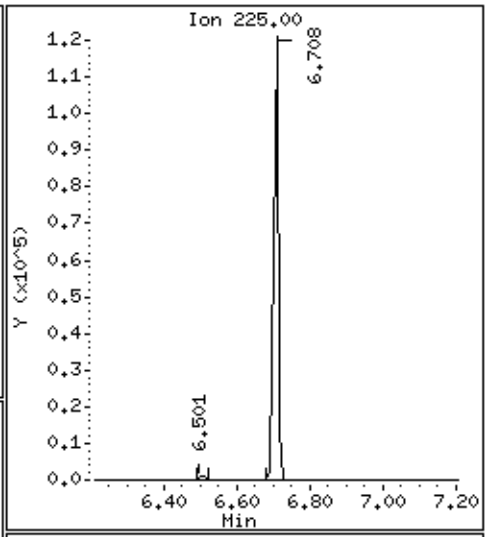
Concentration: 51.81 ug

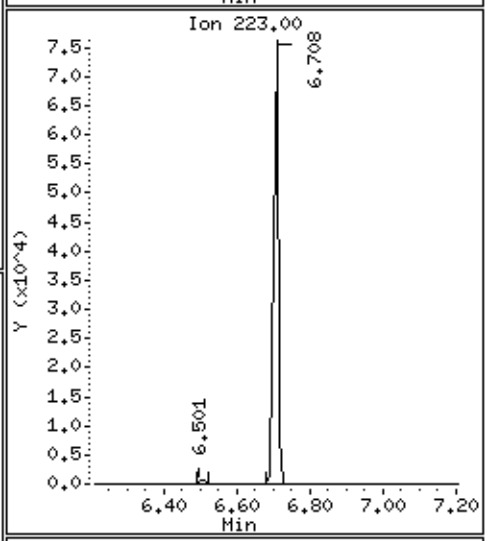


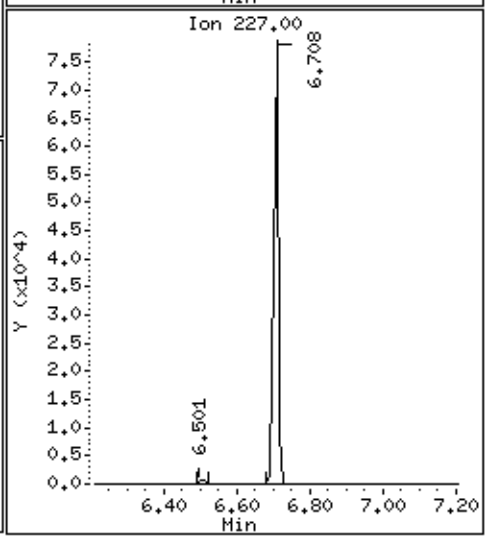












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

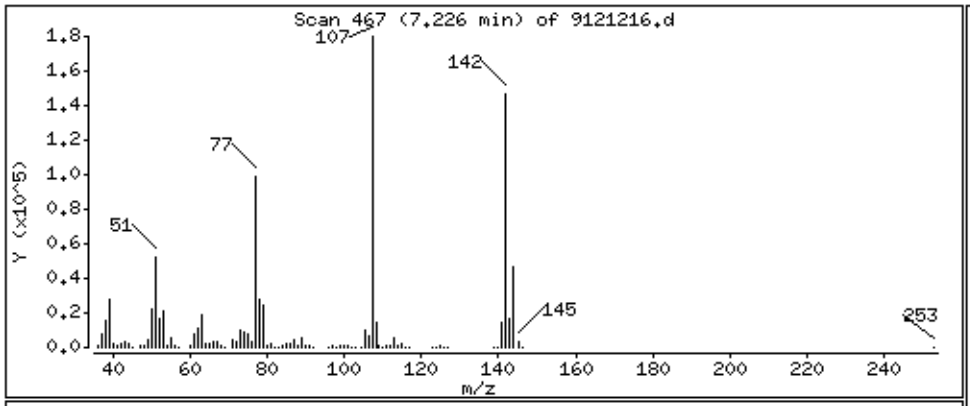
Operator: KV

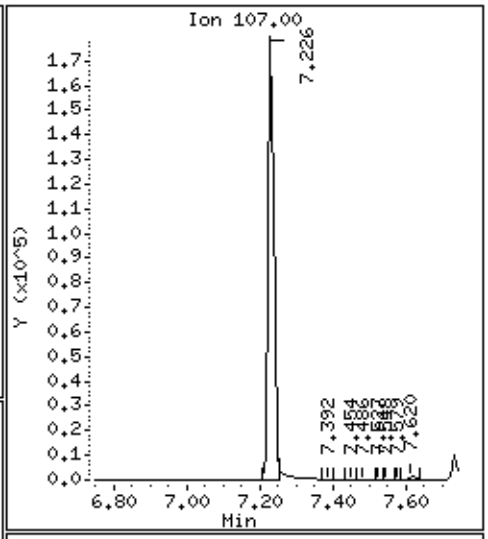
Column phase: DB-5.625

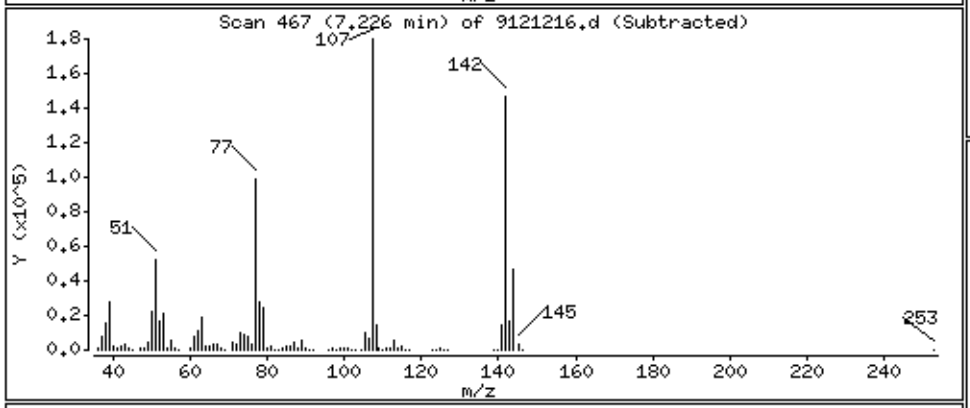
Column diameter: 0.25

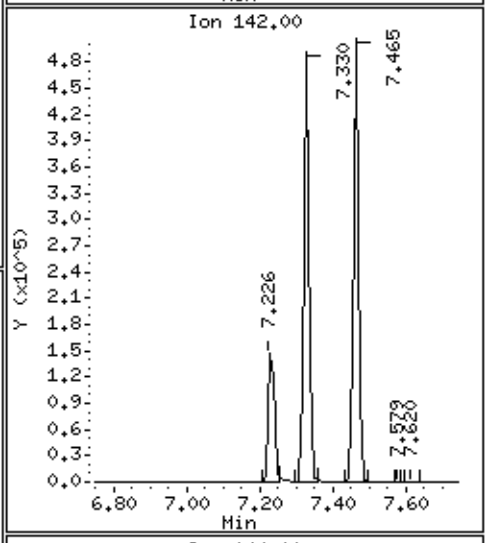
33 4-Chloro-3-Methylphenol*

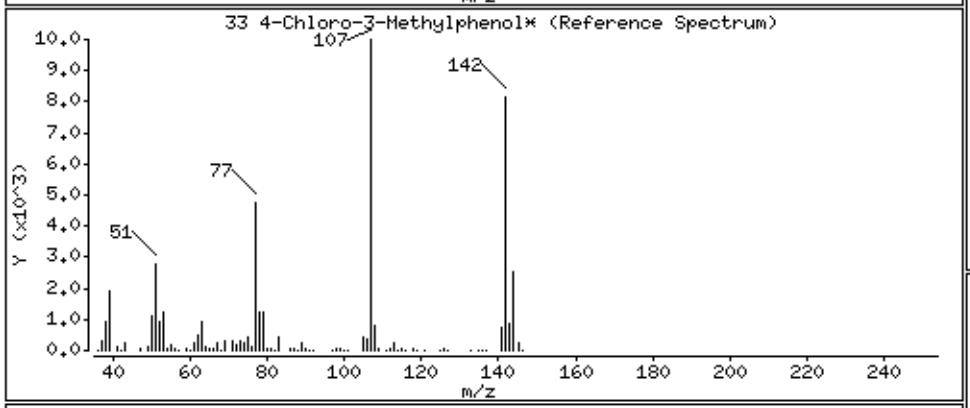
Concentration: 52.24 ug

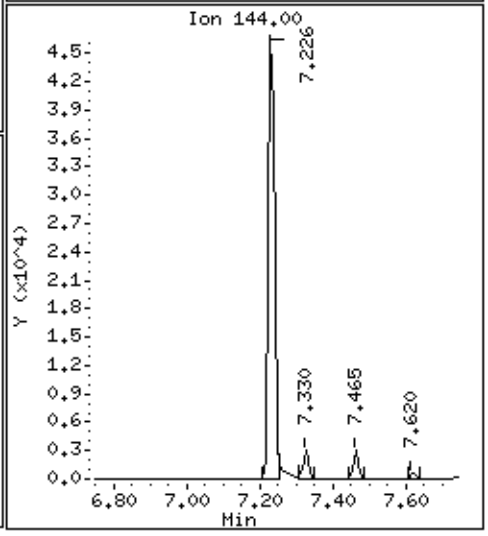


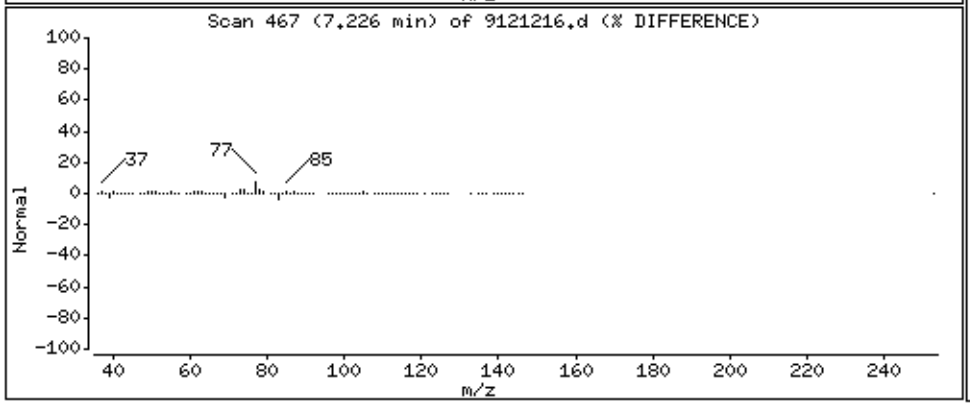












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

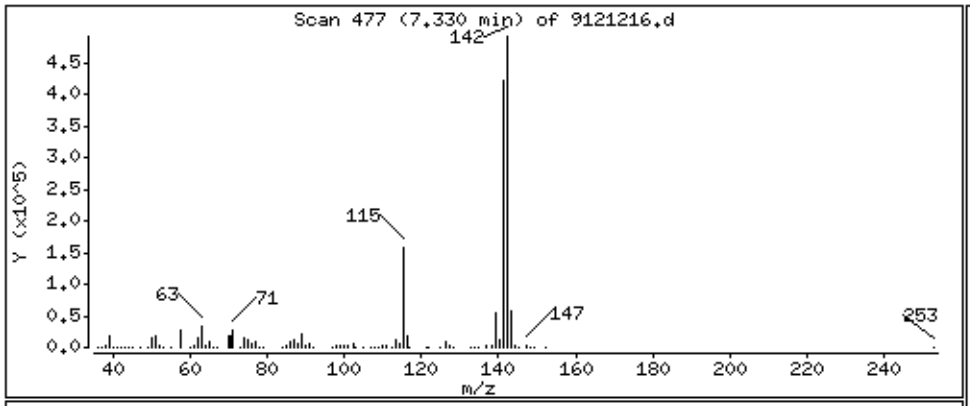
Operator: KV

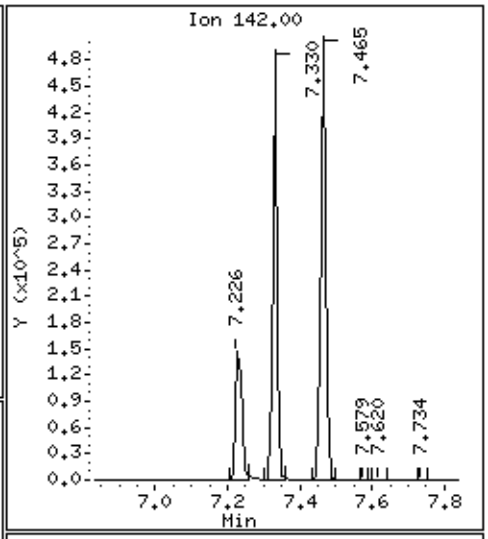
Column phase: DB-5.625

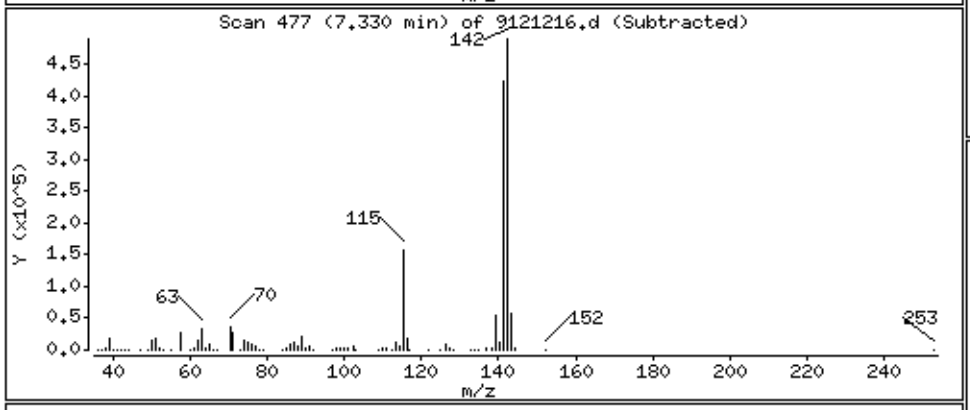
Column diameter: 0.25

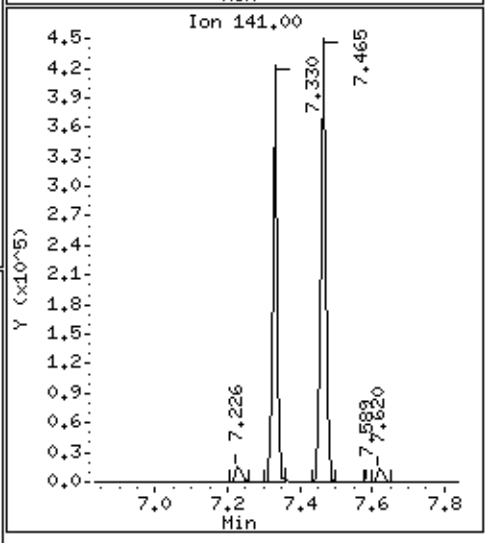
34 2-Methylnaphthalene

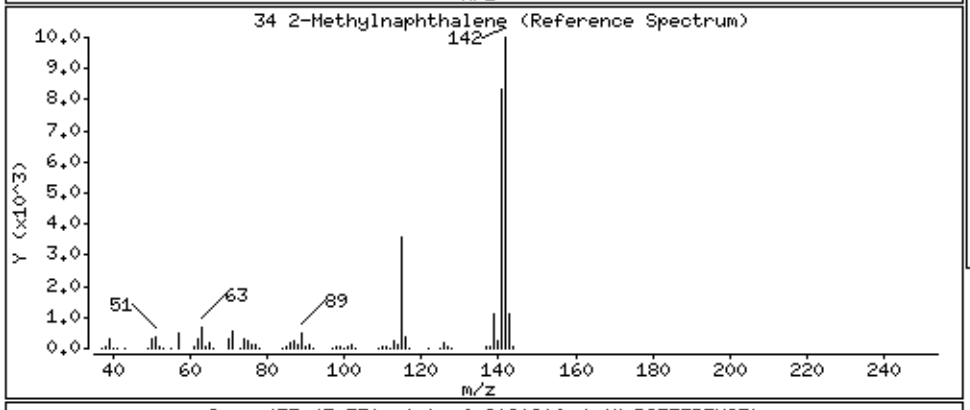
Concentration: 46.37 ug

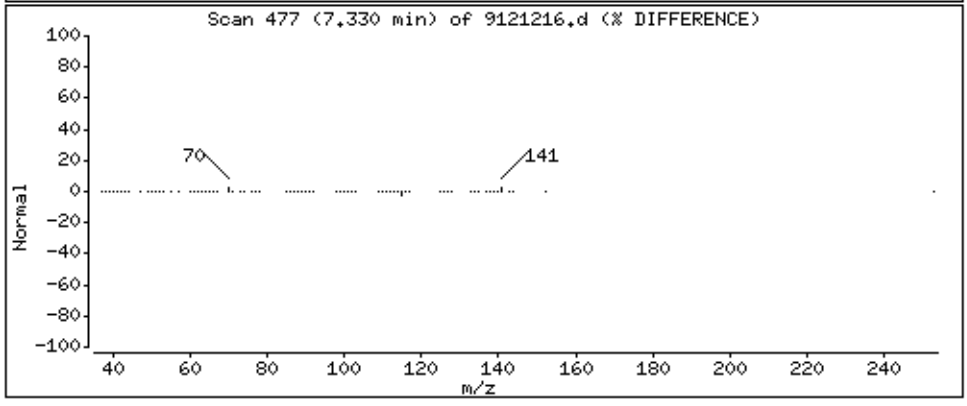












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

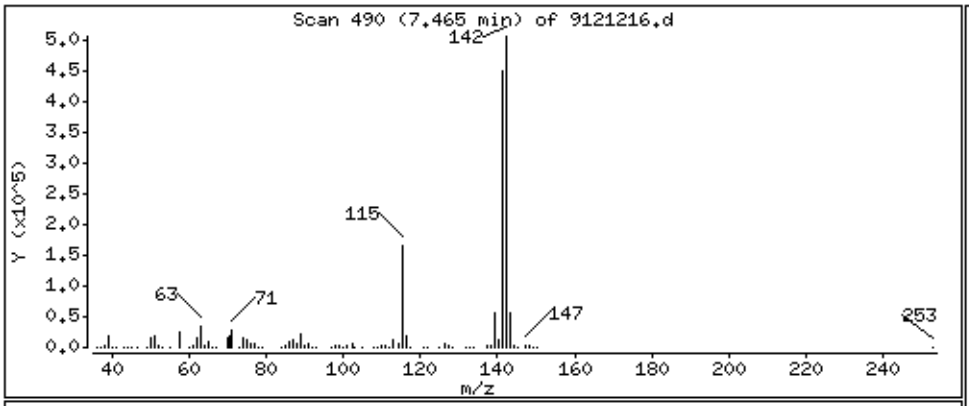
Operator: KV

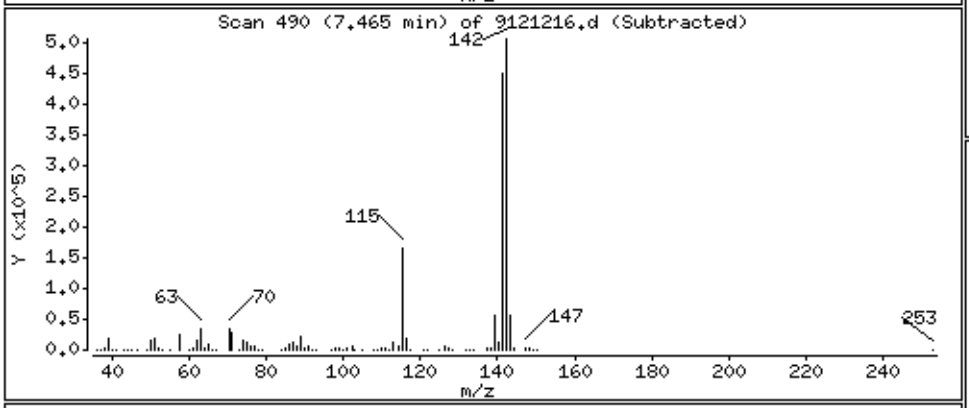
Column phase: DB-5.625

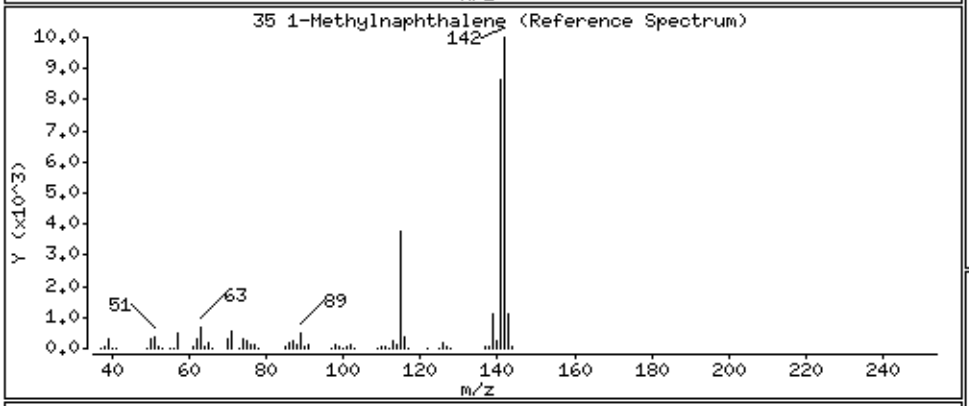
Column diameter: 0.25

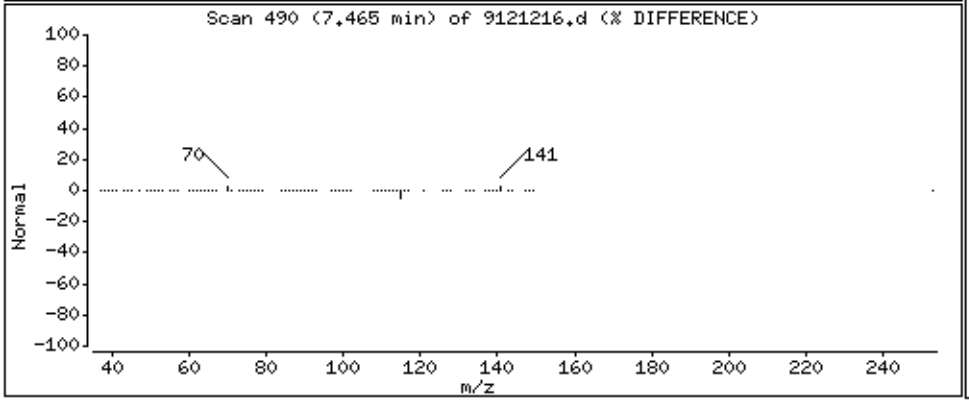
35 1-Methylnaphthalene

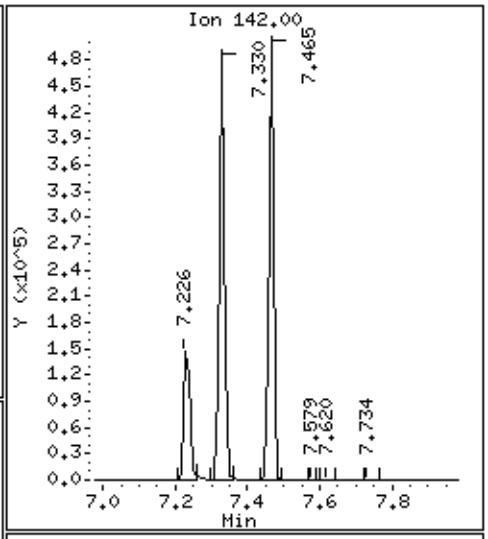
Concentration: 49.22 ug

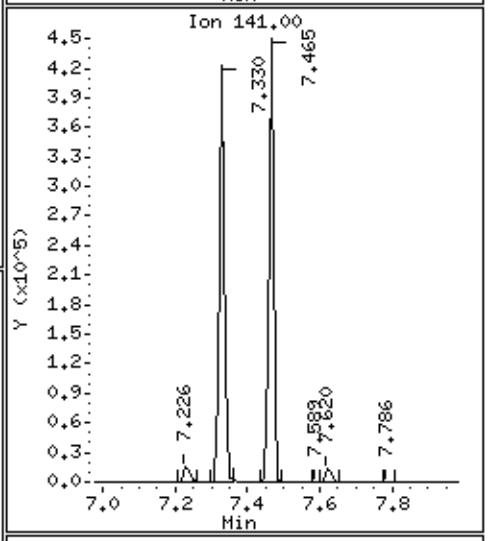


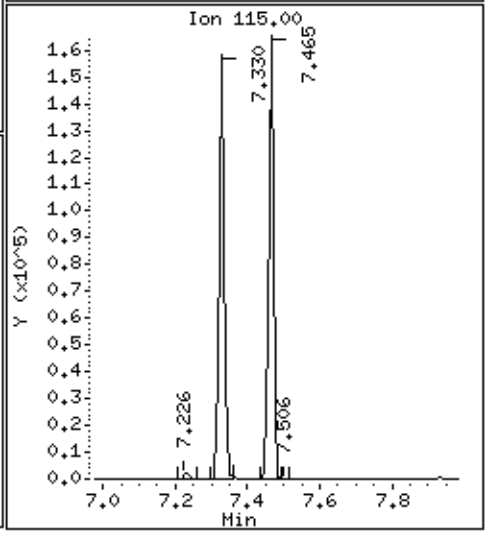












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

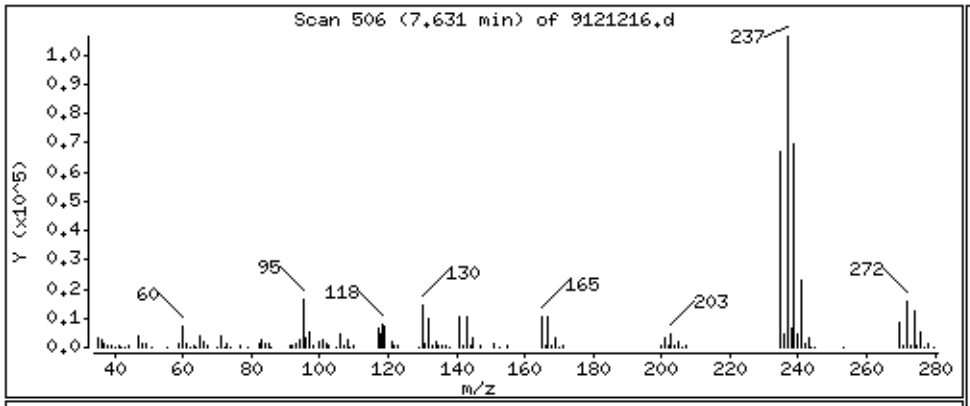
Operator: KV

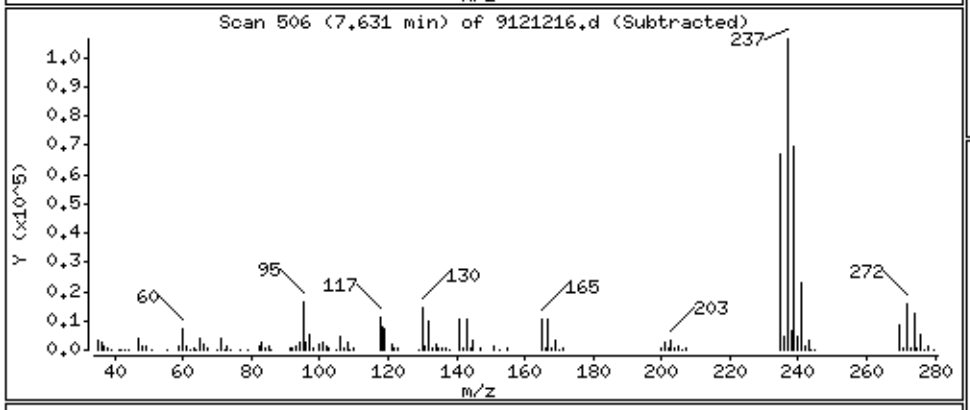
Column phase: DB-5.625

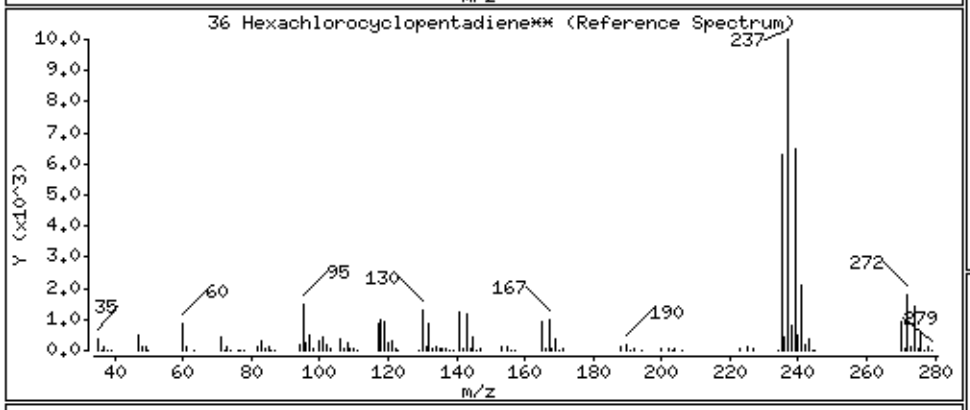
Column diameter: 0.25

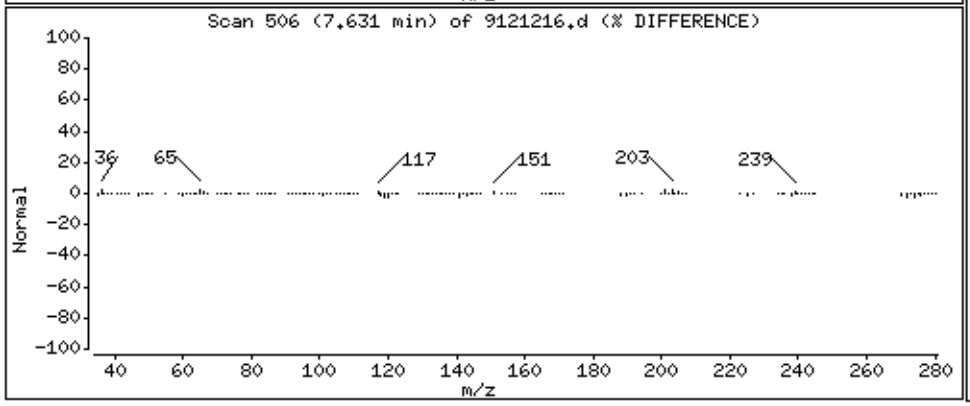
36 Hexachlorocyclopentadiene**

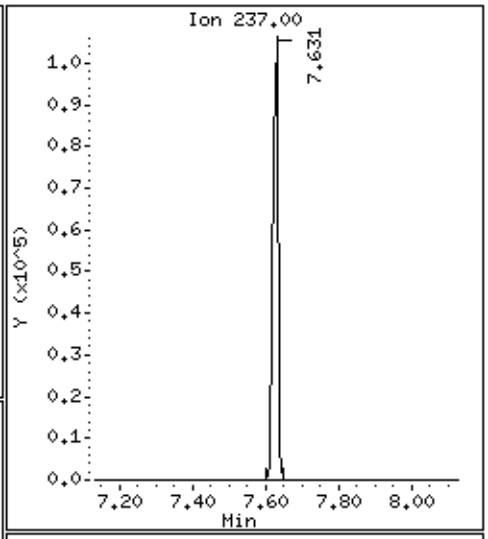
Concentration: 44.58 ug

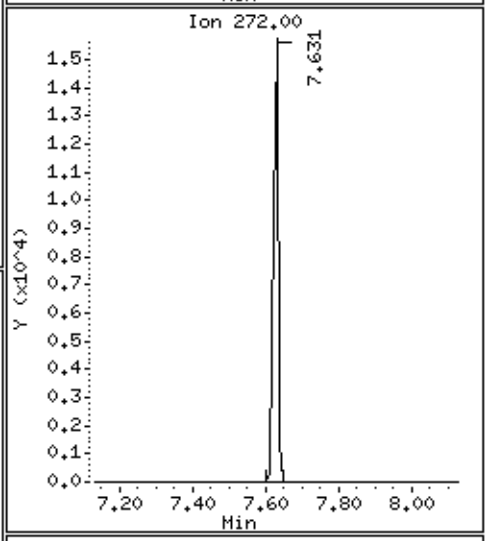


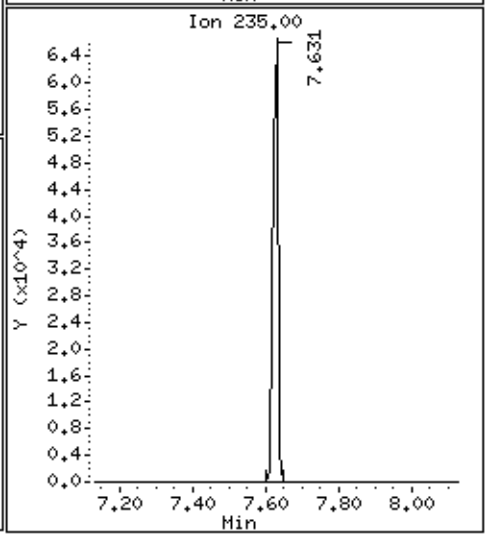












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

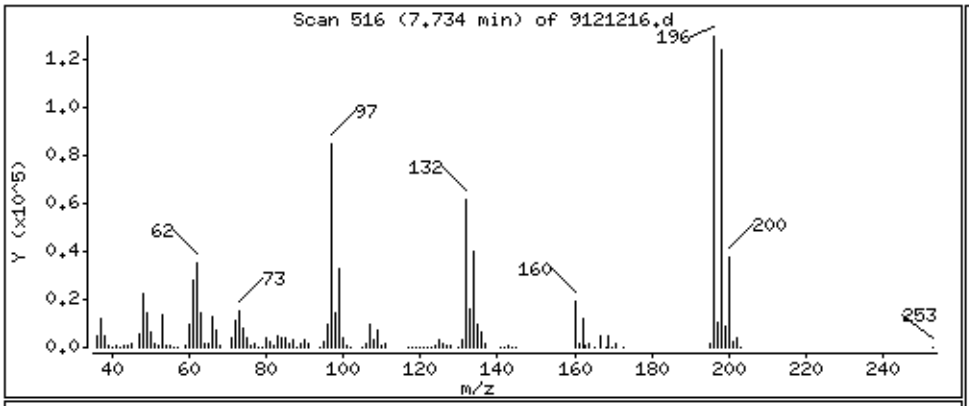
Operator: KV

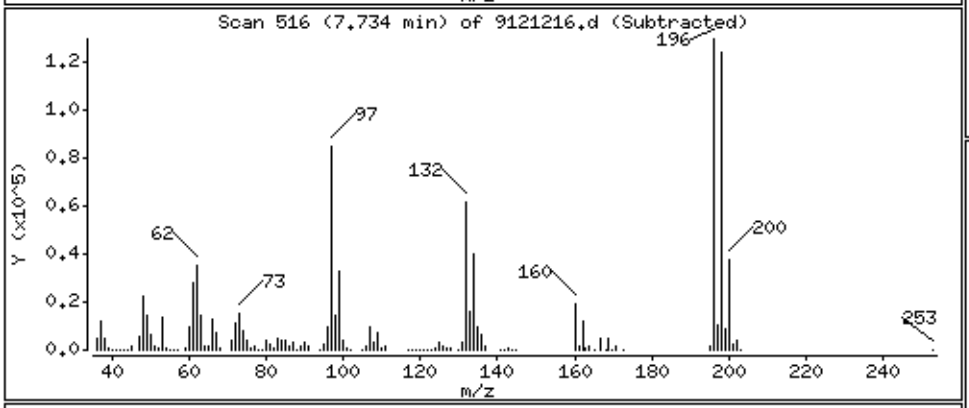
Column phase: DB-5.625

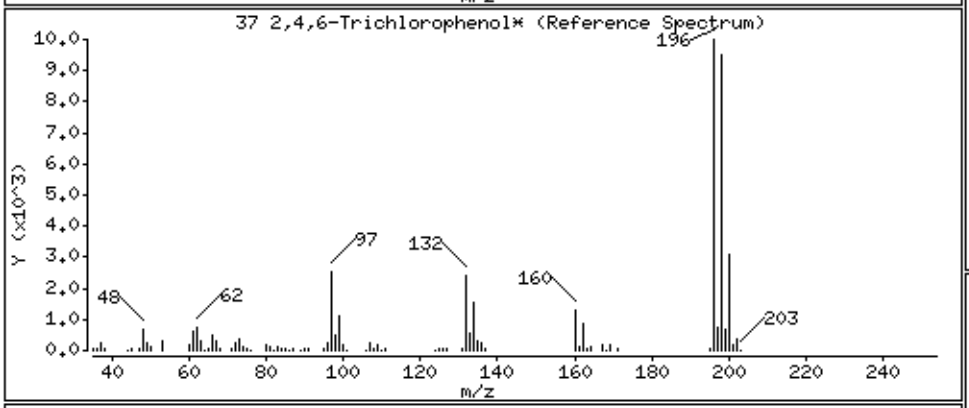
Column diameter: 0.25

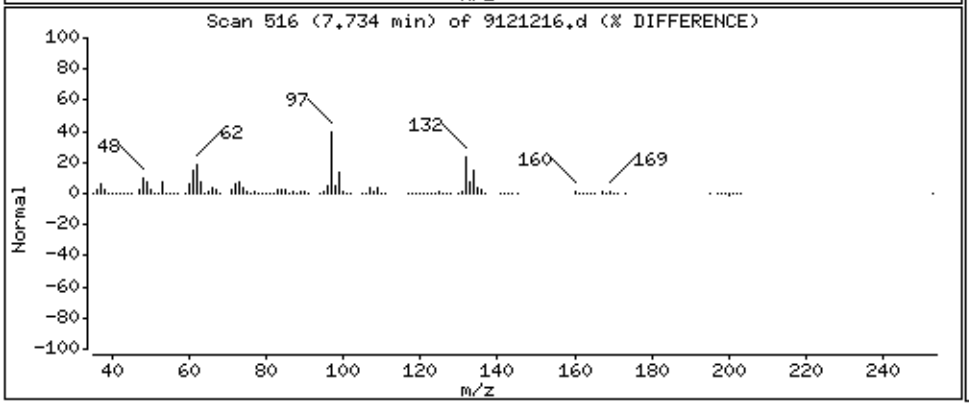
37 2,4,6-Trichlorophenol*

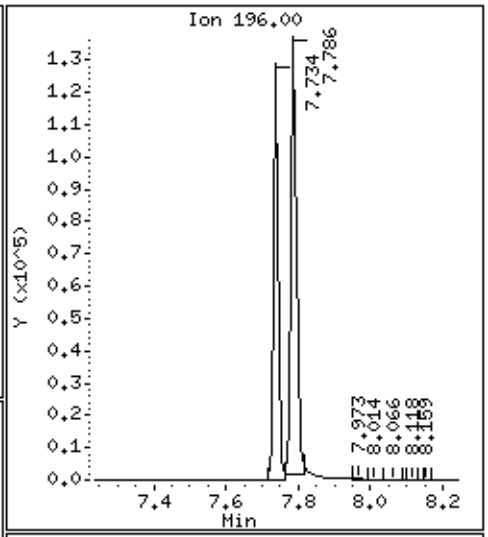
Concentration: 54.90 ug

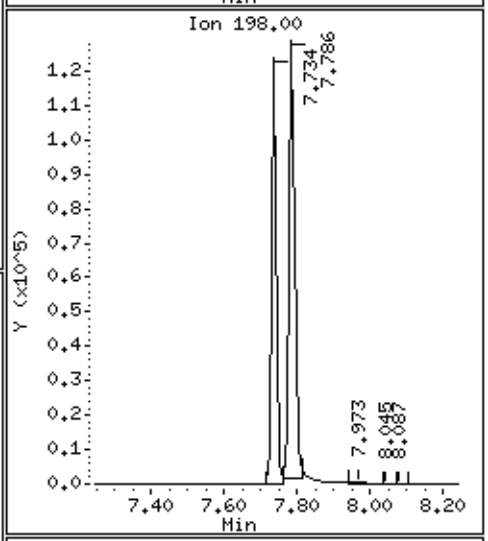


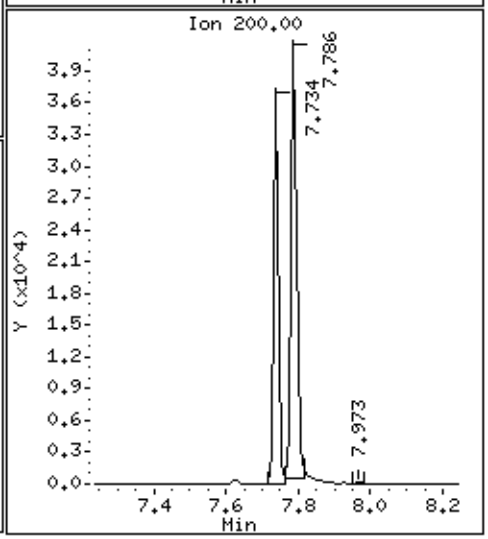












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

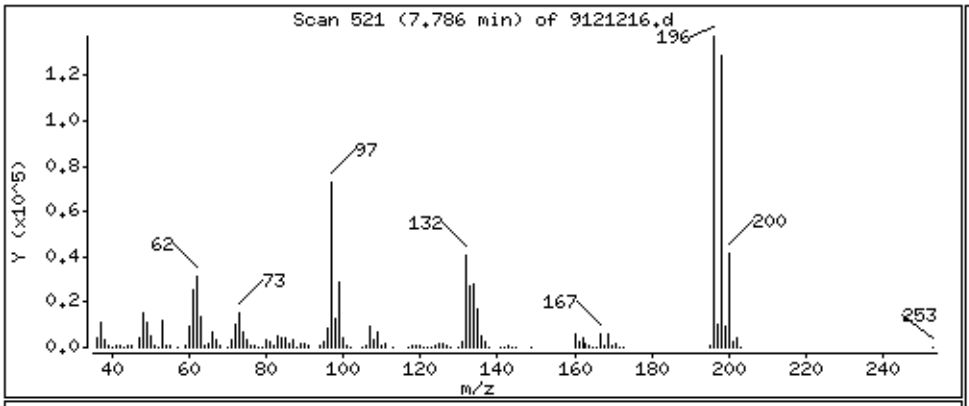
Operator: KV

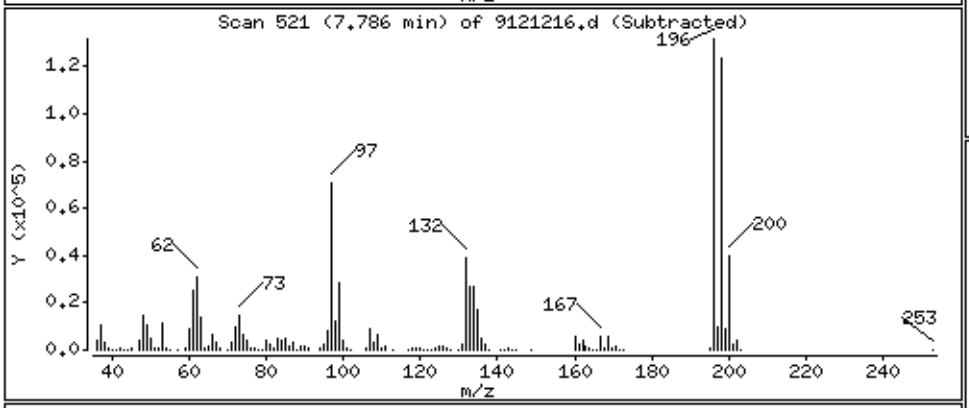
Column phase: DB-5.625

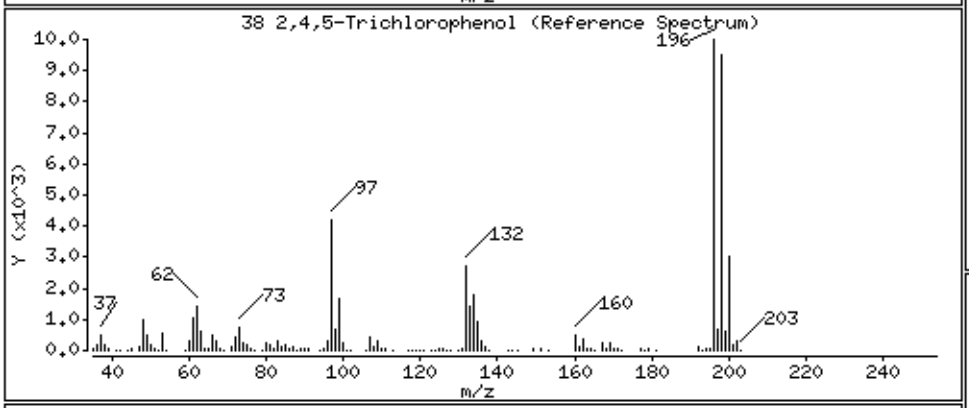
Column diameter: 0.25

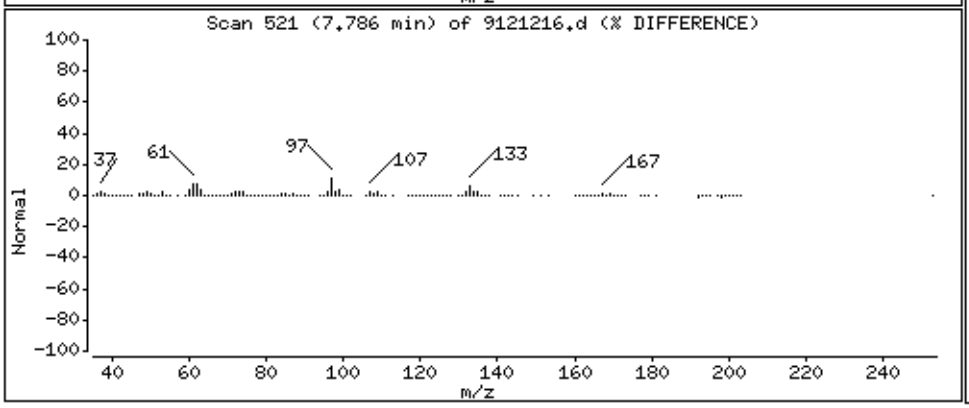
38 2,4,5-Trichlorophenol

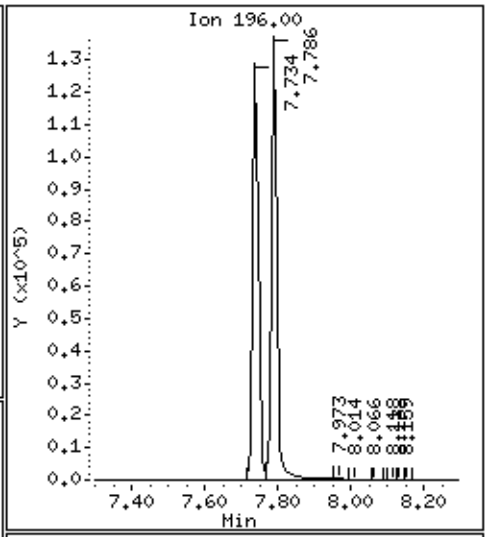
Concentration: 55.62 ug

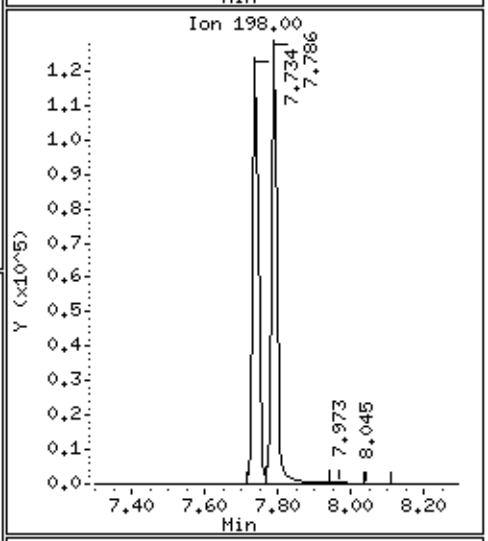


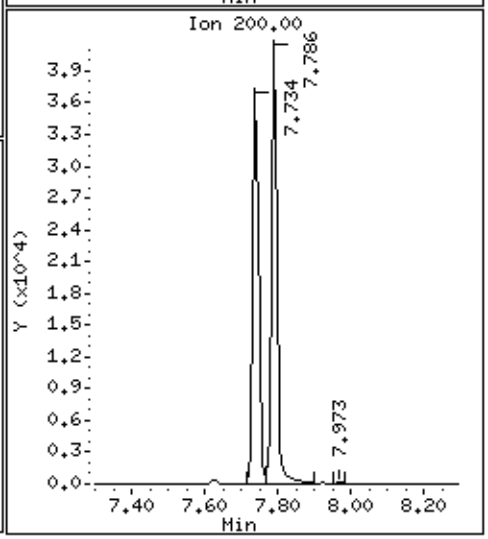












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

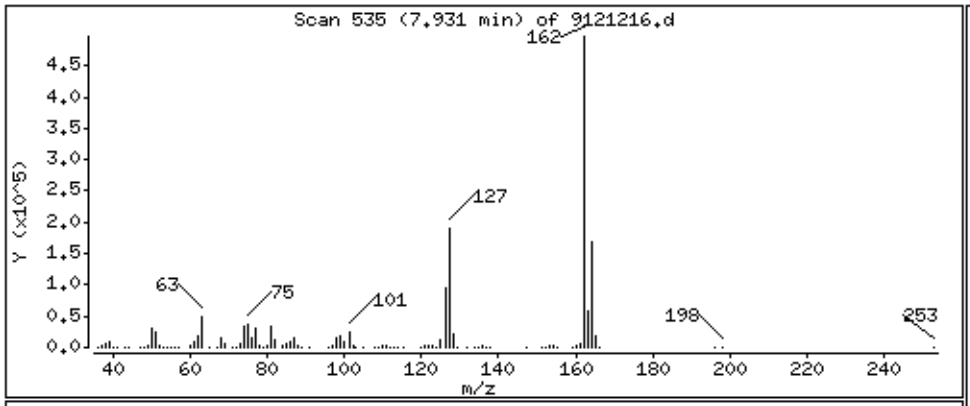
Operator: KV

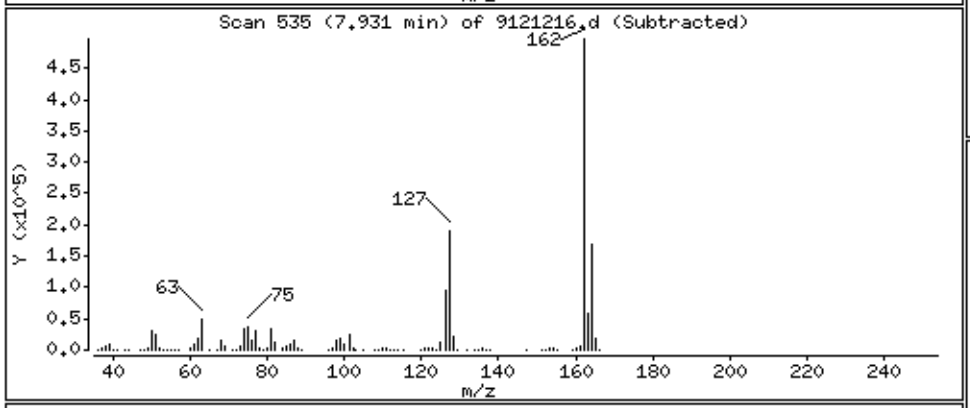
Column phase: DB-5.625

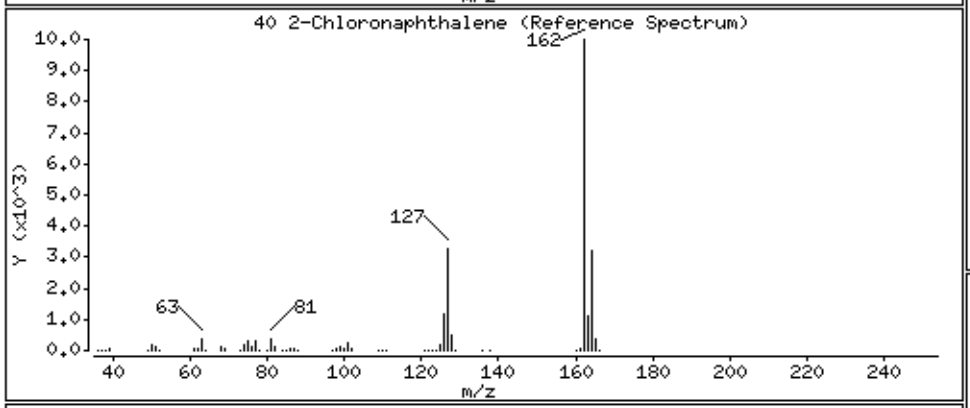
Column diameter: 0.25

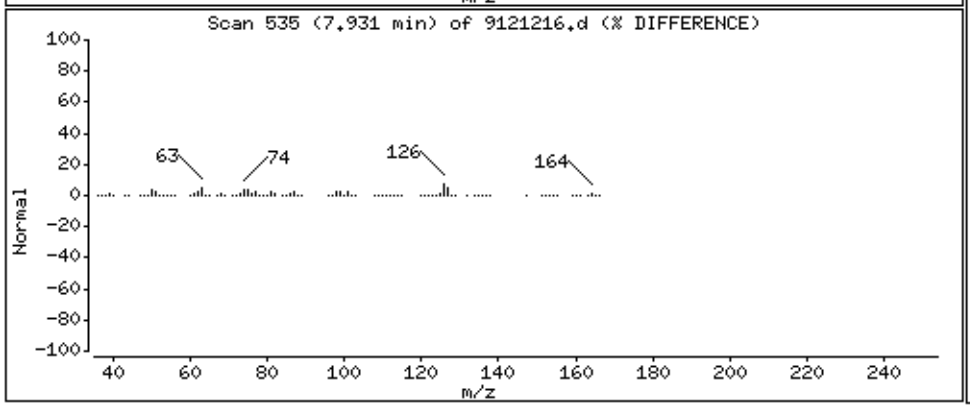
40 2-Chloronaphthalene

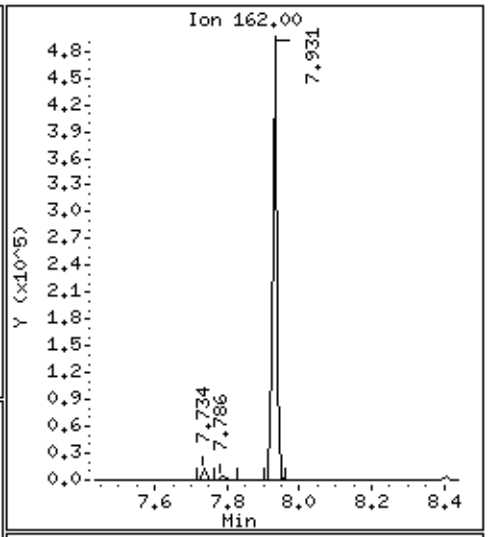
Concentration: 51.93 ug

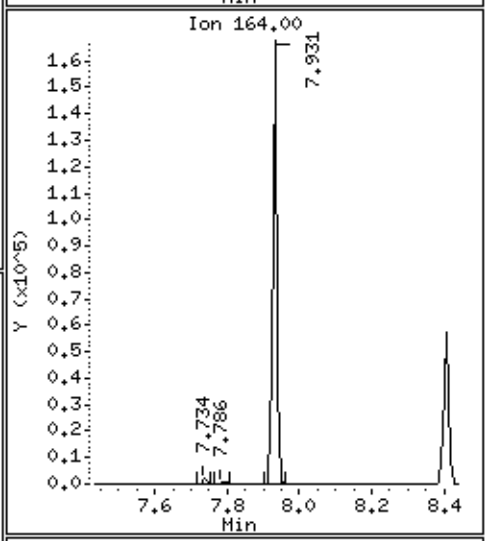


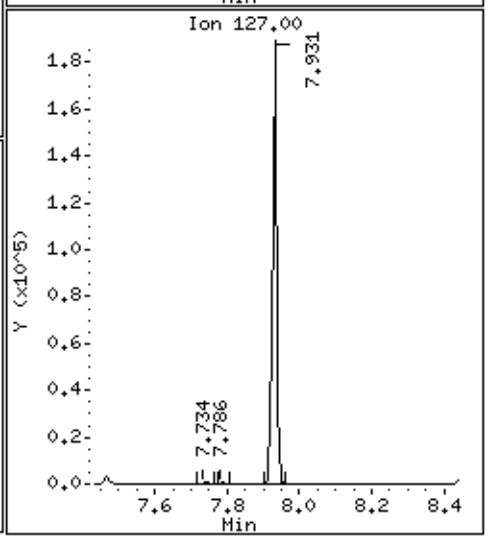












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

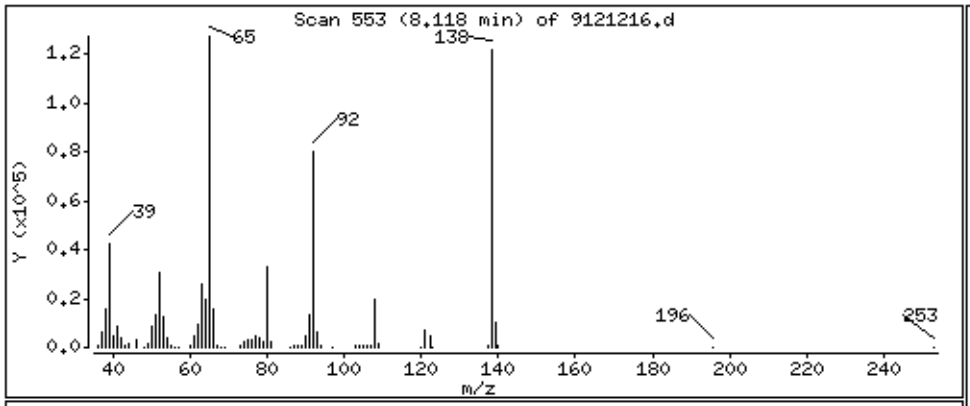
Operator: KV

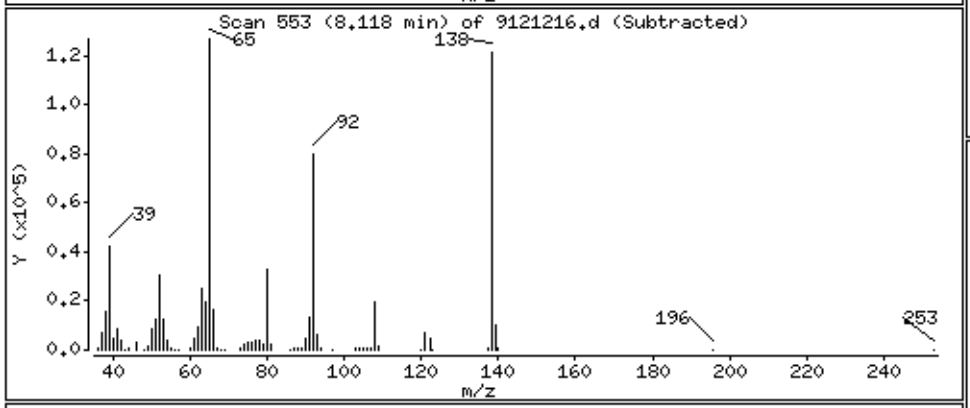
Column phase: DB-5.625

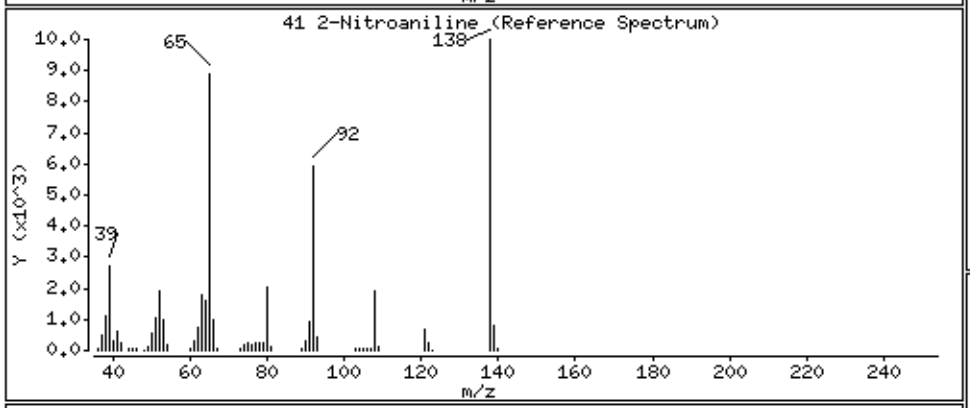
Column diameter: 0.25

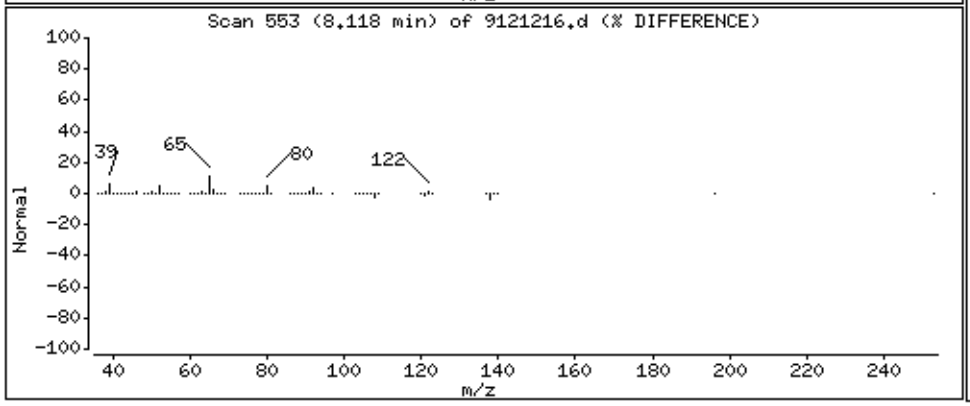
41 2-Nitroaniline

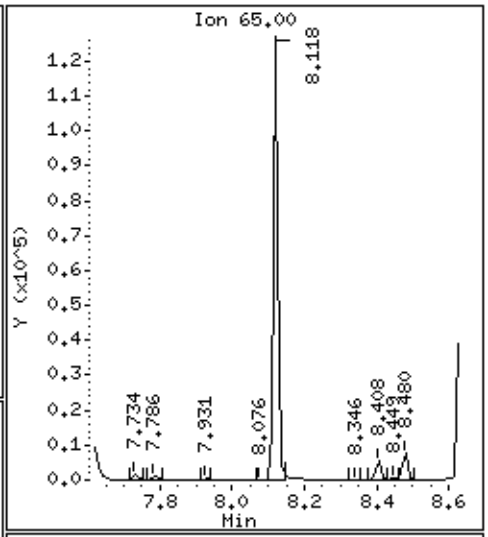
Concentration: 51.30 ug

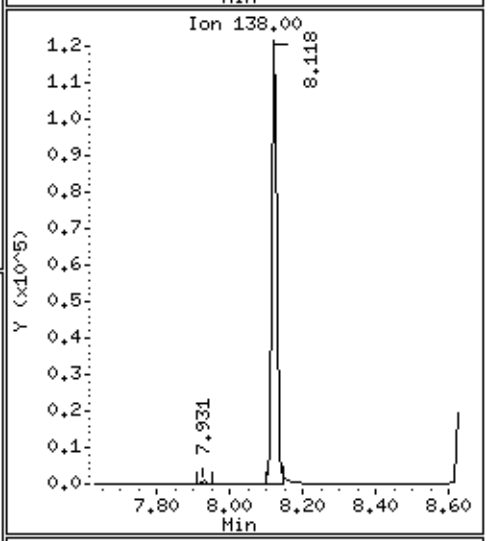


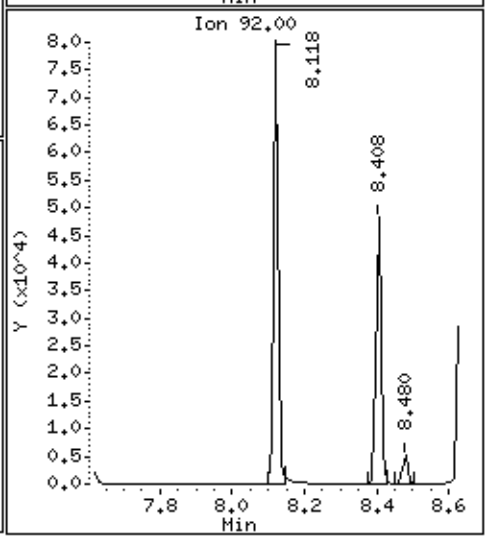












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

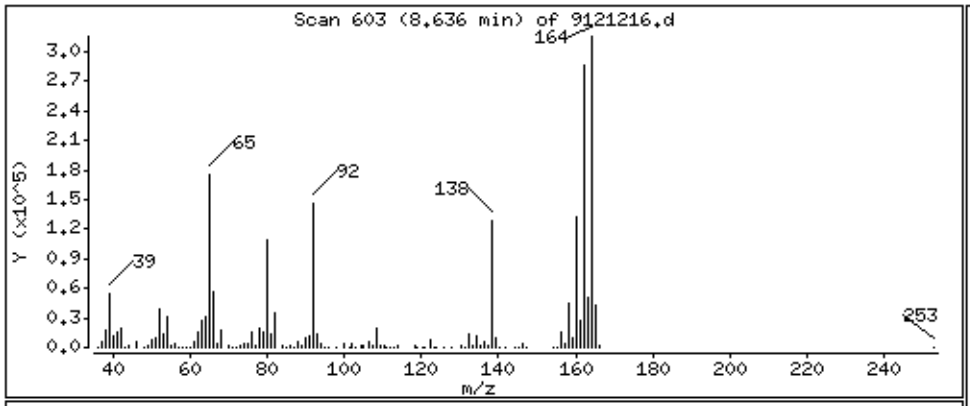
Operator: KV

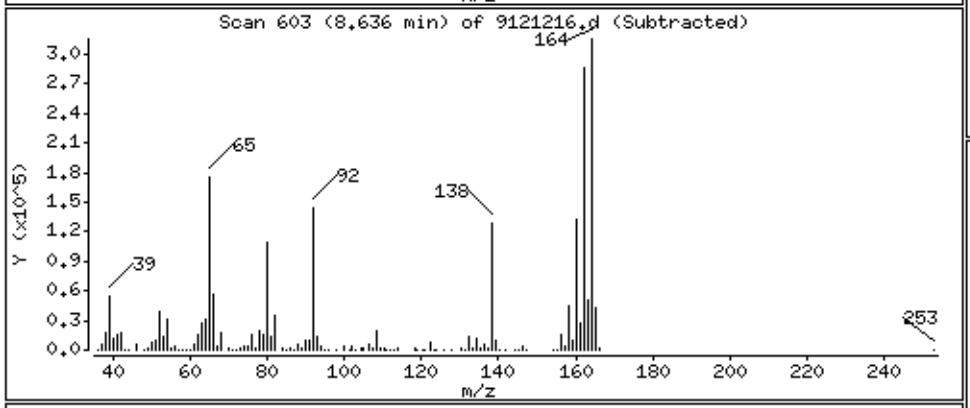
Column phase: DB-5.625

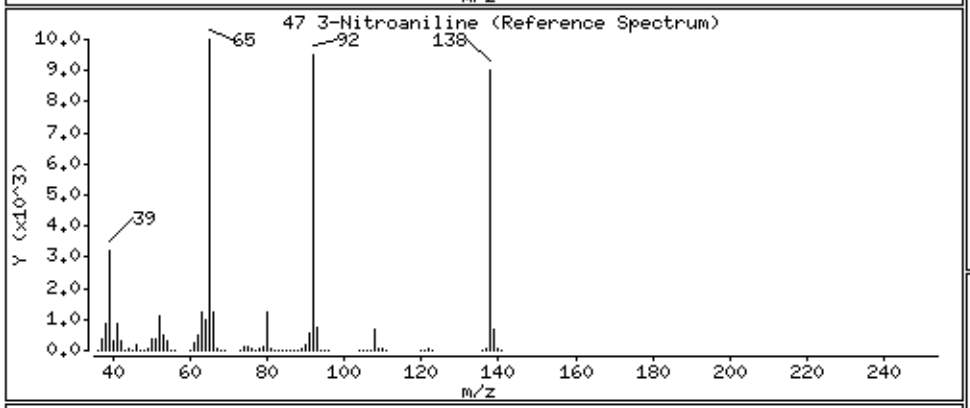
Column diameter: 0.25

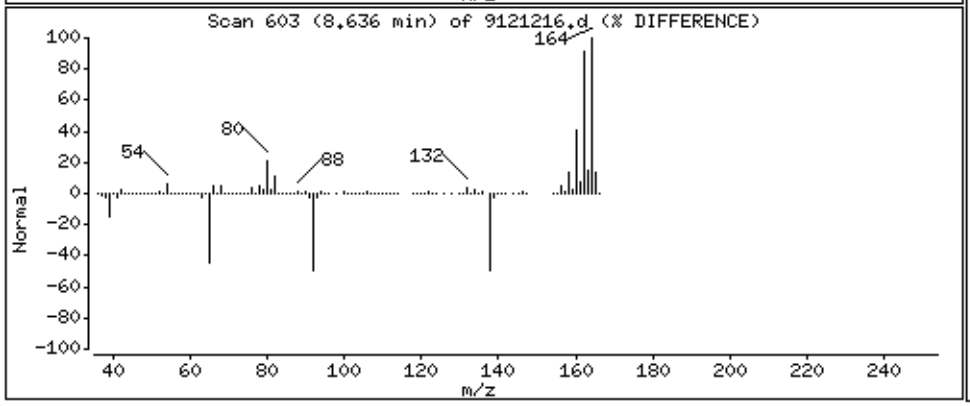
47 3-Nitroaniline

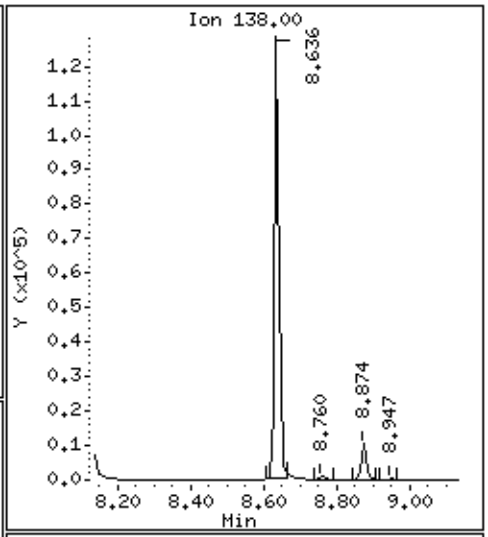
Concentration: 49.16 ug

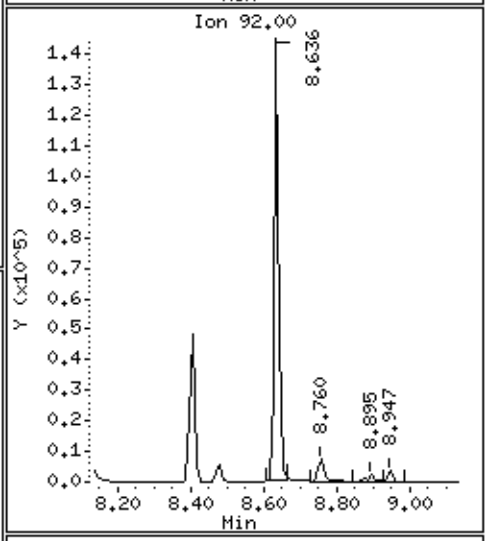


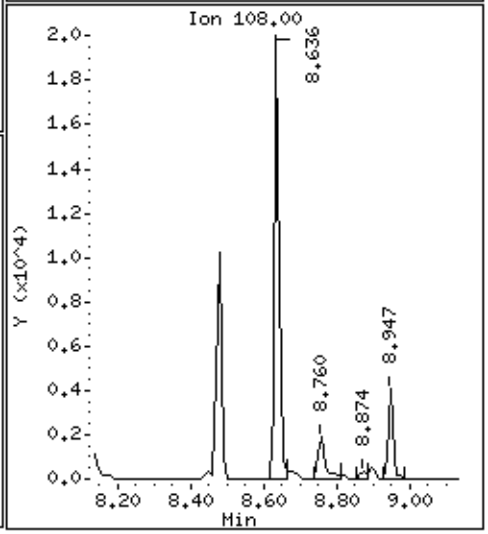












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

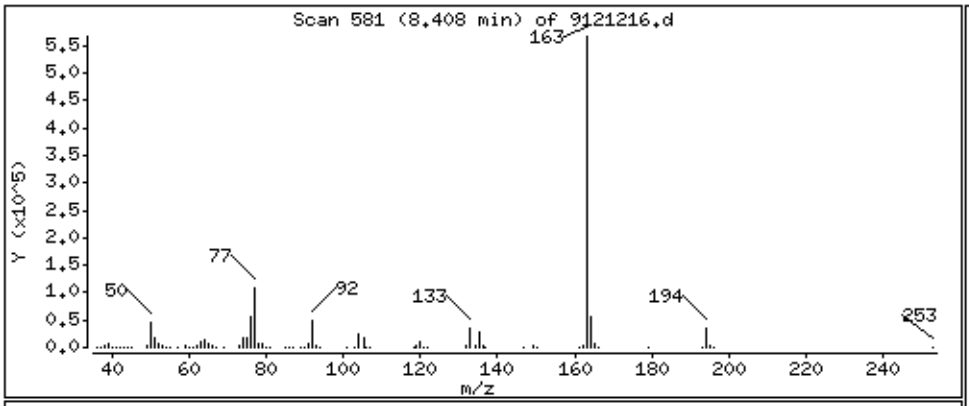
Operator: KV

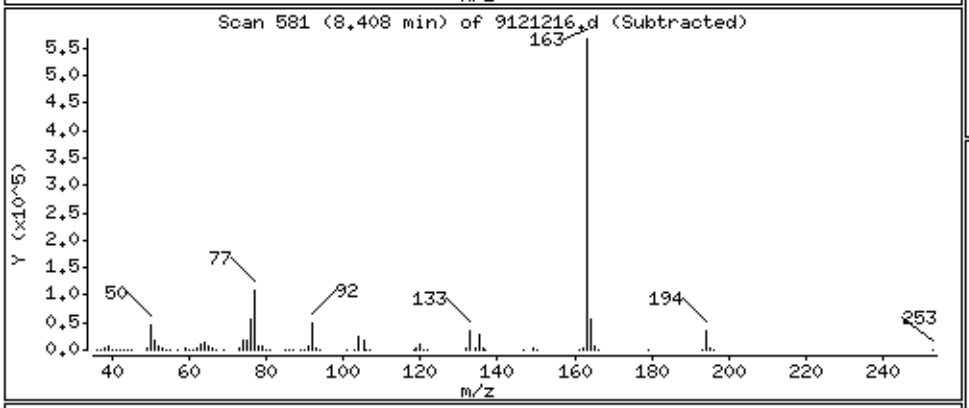
Column phase: DB-5.625

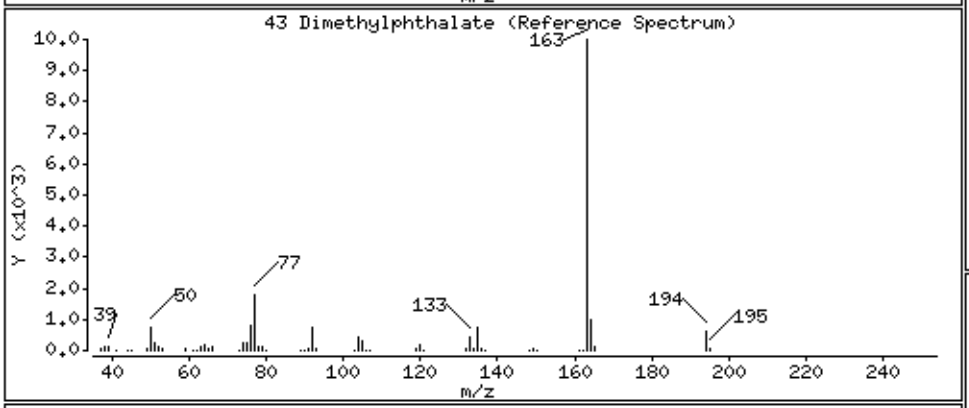
Column diameter: 0.25

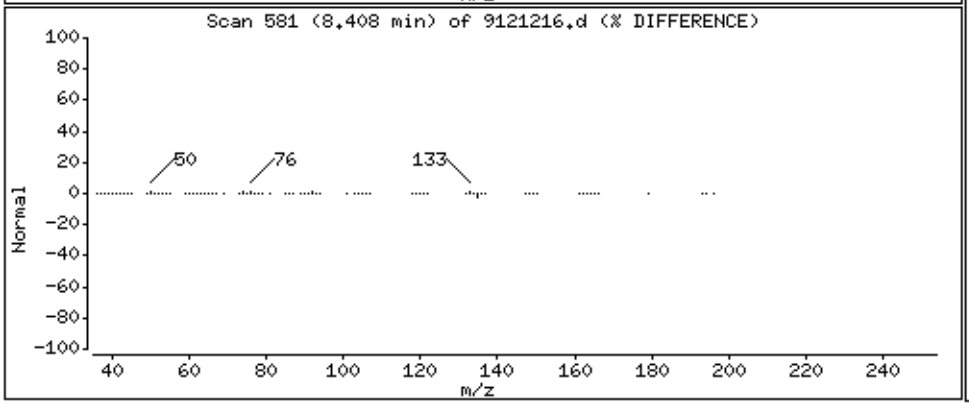
43 Dimethylphthalate

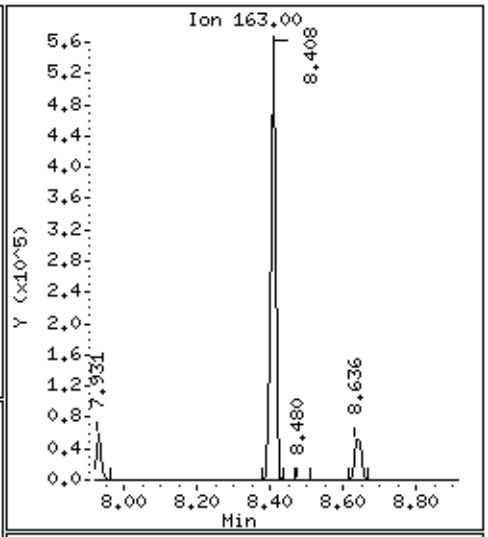
Concentration: 51.92 ug

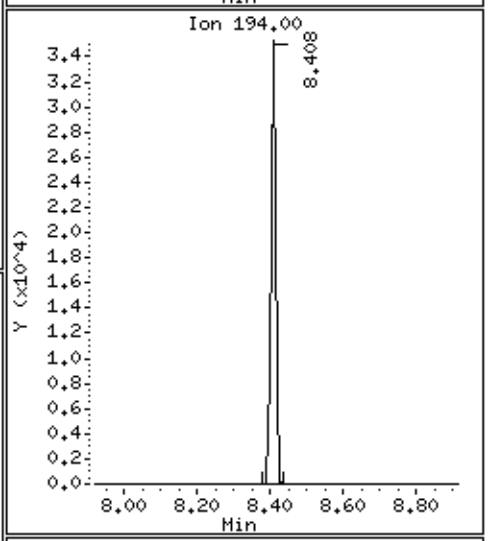


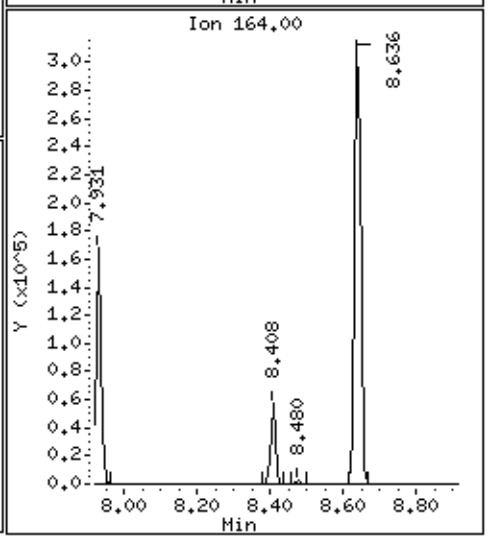












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

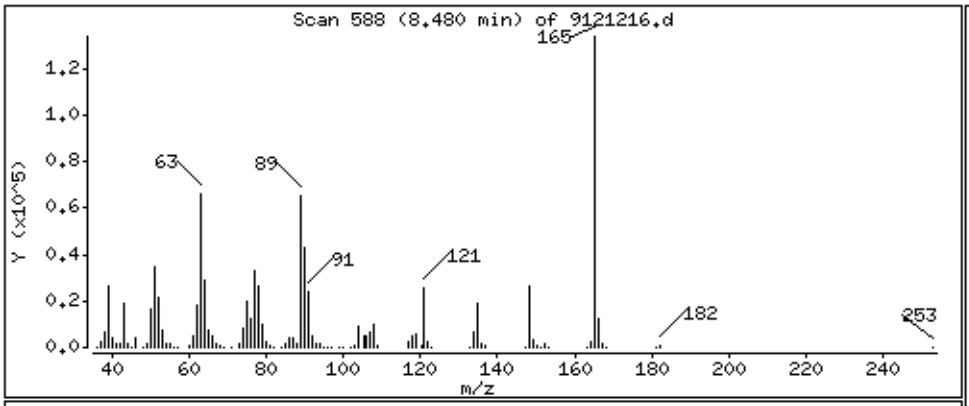
Operator: KV

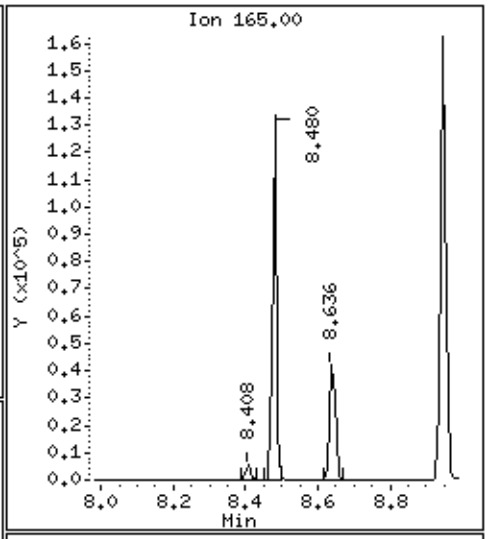
Column phase: DB-5.625

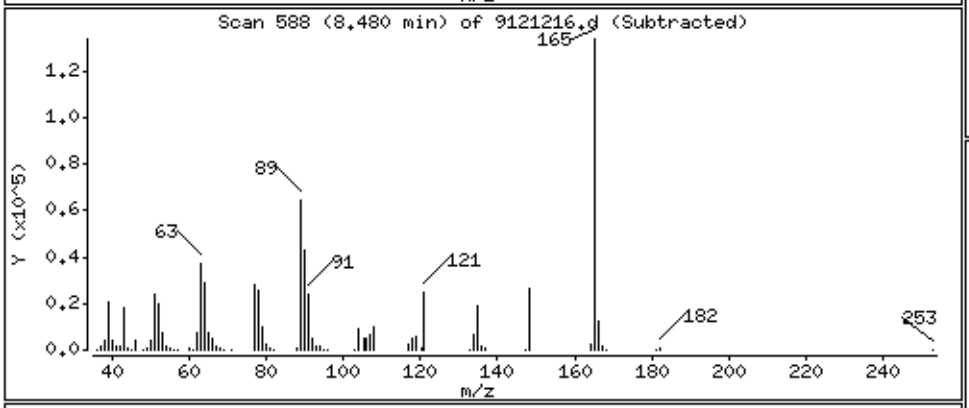
Column diameter: 0.25

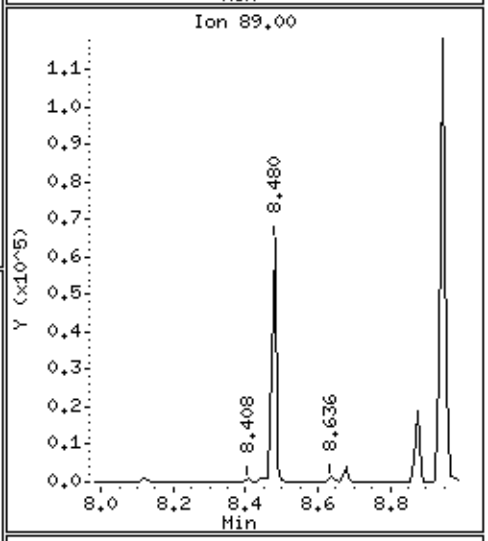
45 2,6-Dinitrotoluene

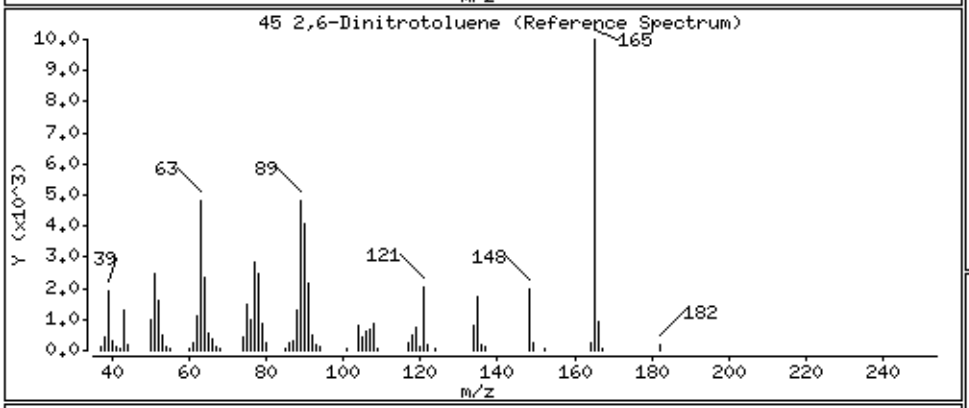
Concentration: 53.42 ug

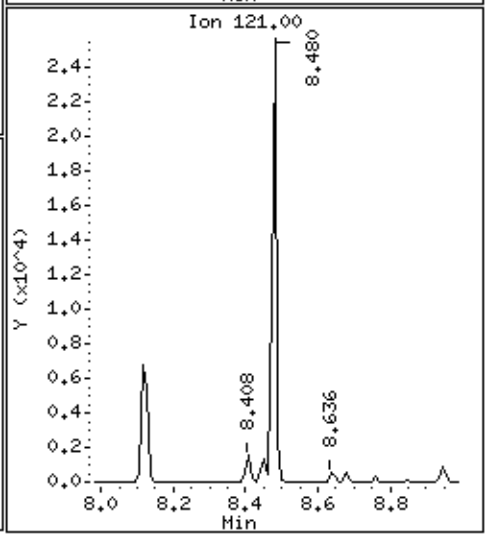


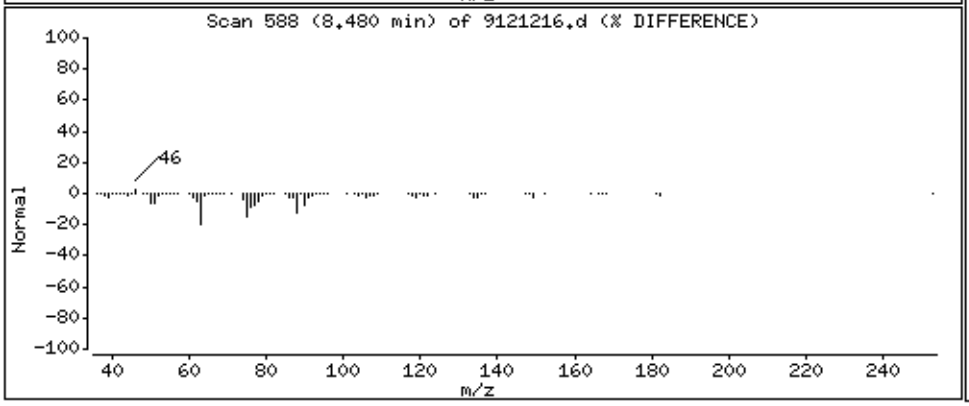












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

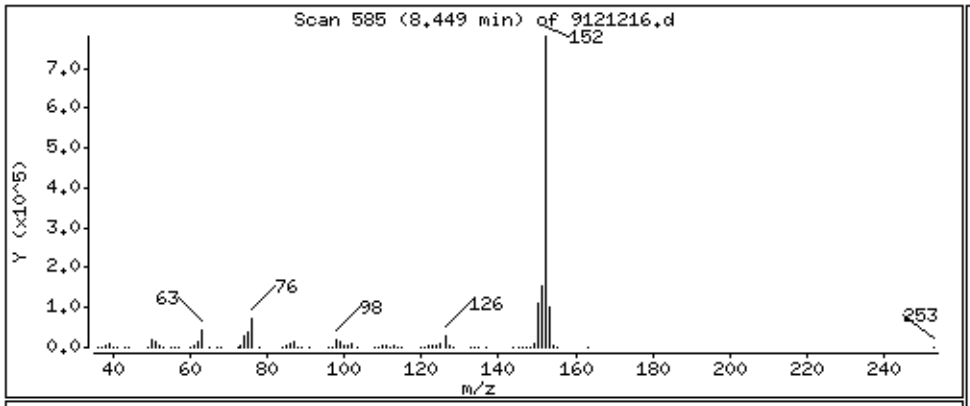
Operator: KV

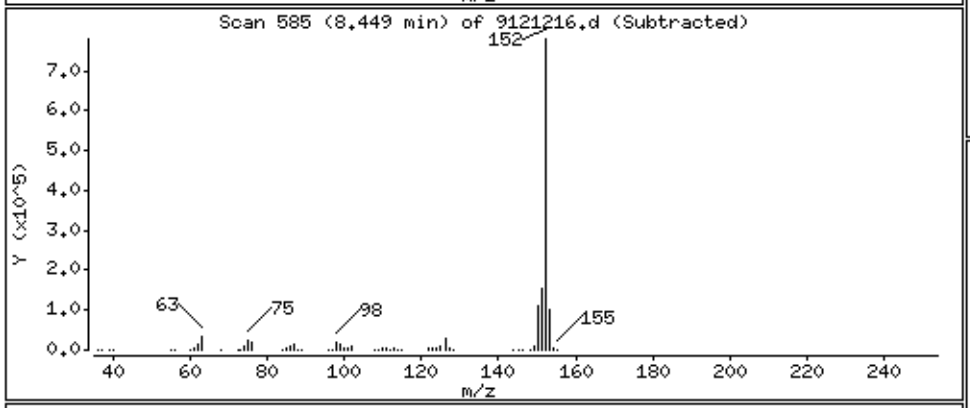
Column phase: DB-5.625

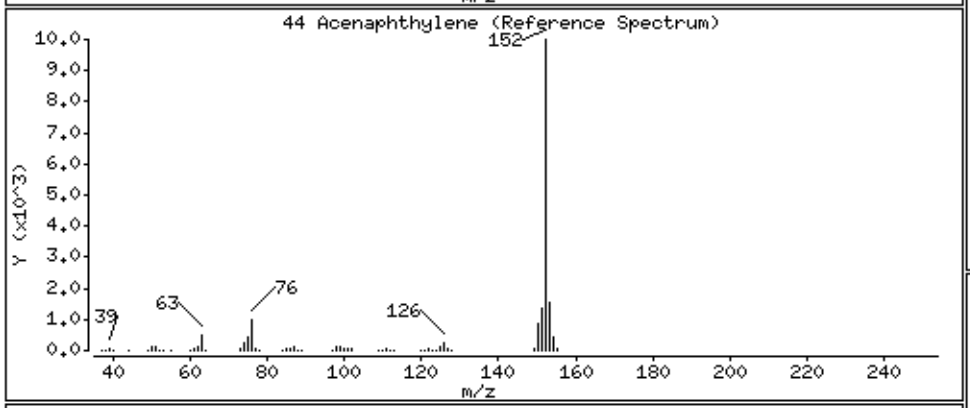
Column diameter: 0.25

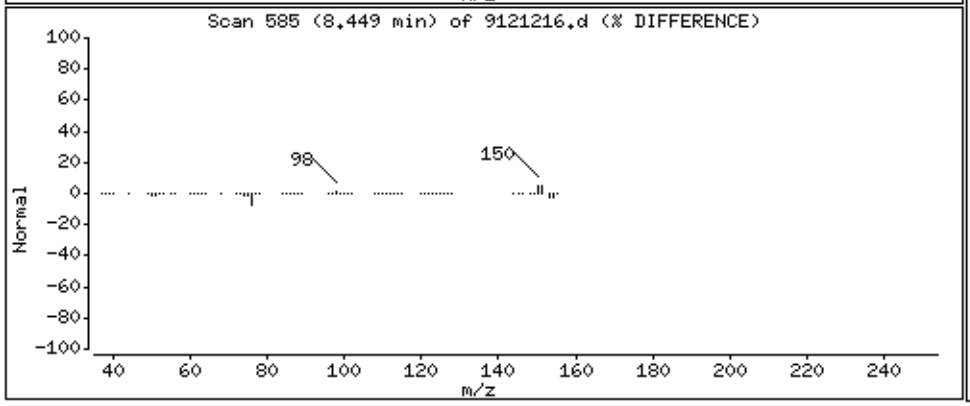
44 Acenaphthylene

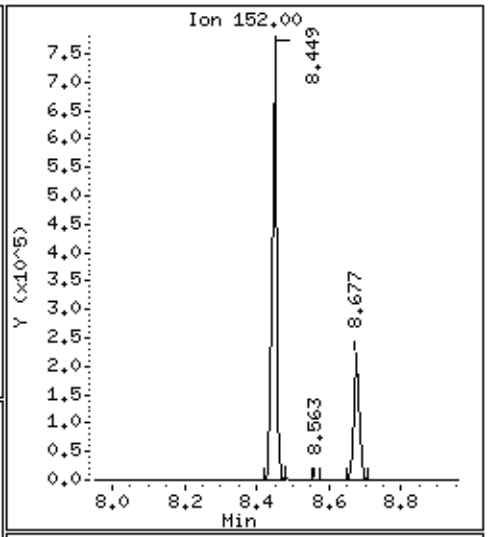
Concentration: 53.86 ug

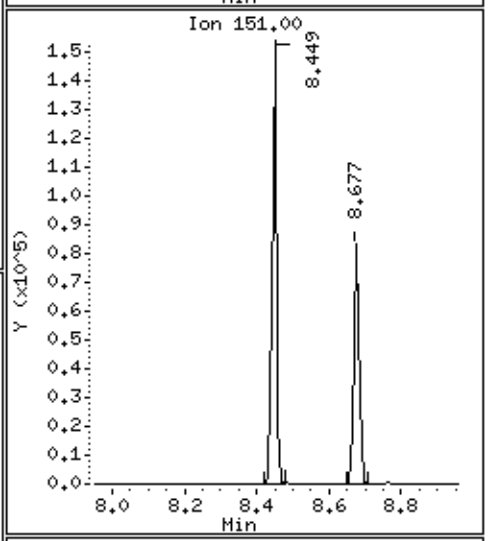


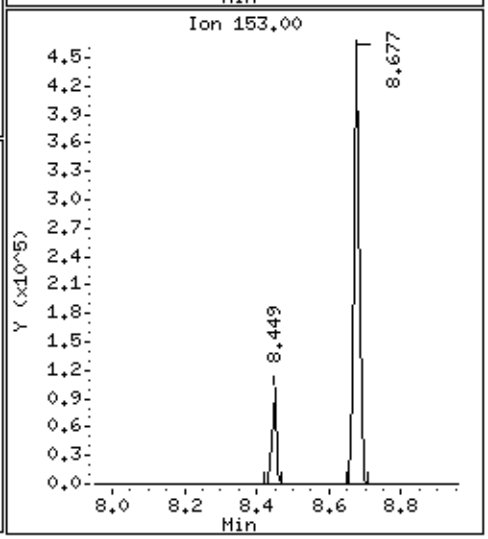












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

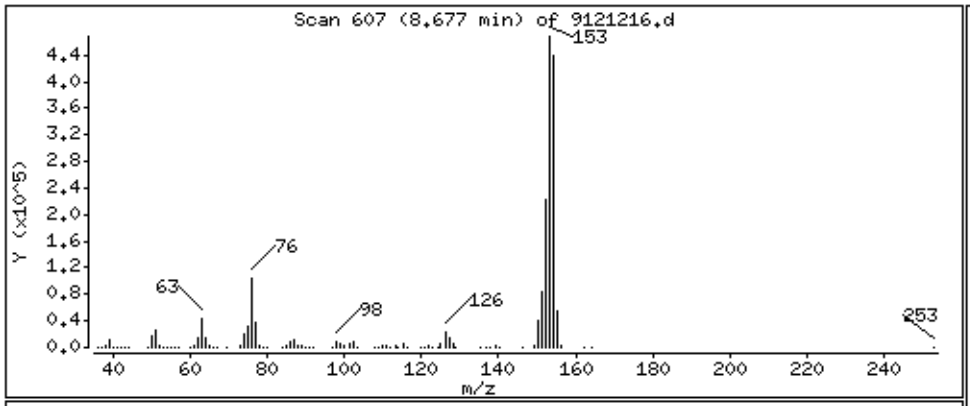
Operator: KV

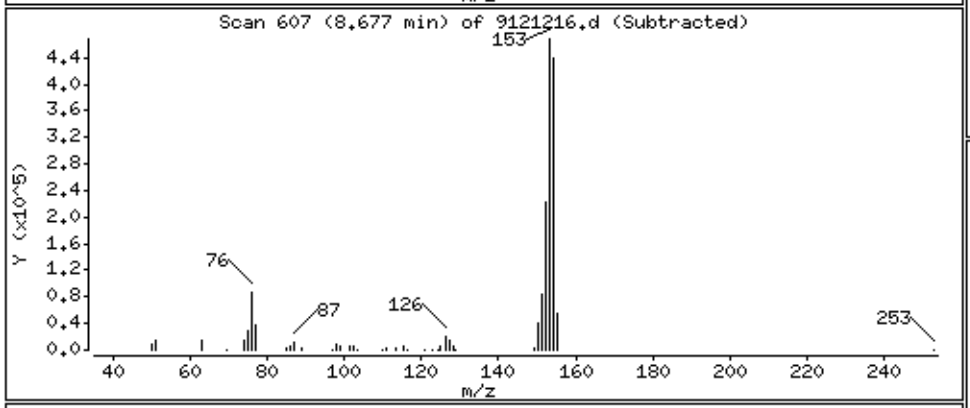
Column phase: DB-5.625

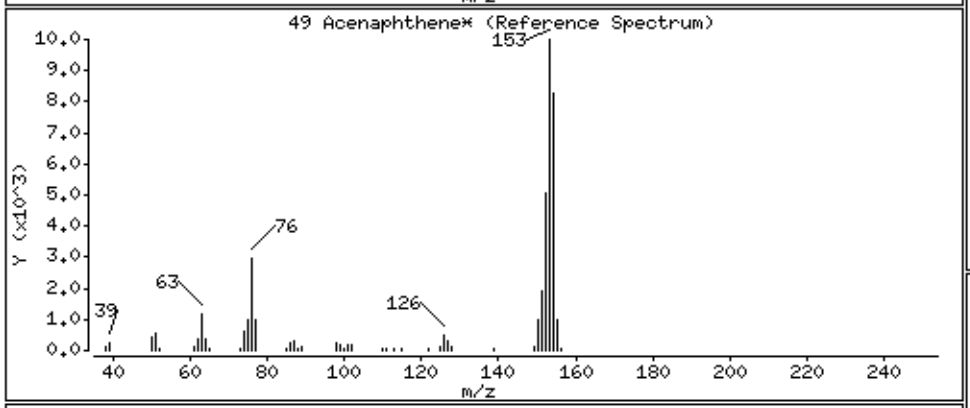
Column diameter: 0.25

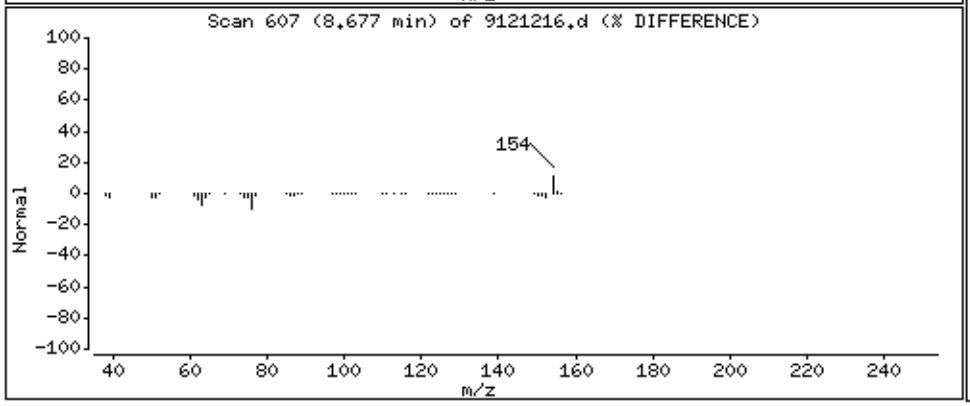
49 Acenaphthene*

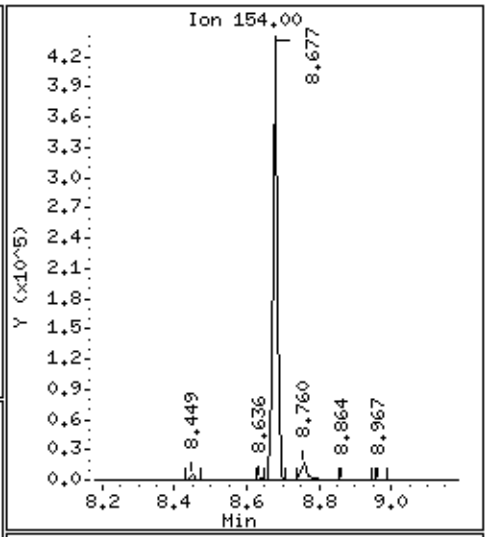
Concentration: 50.34 ug

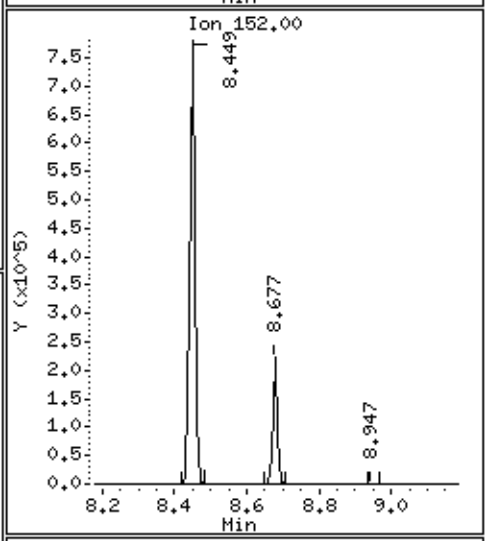


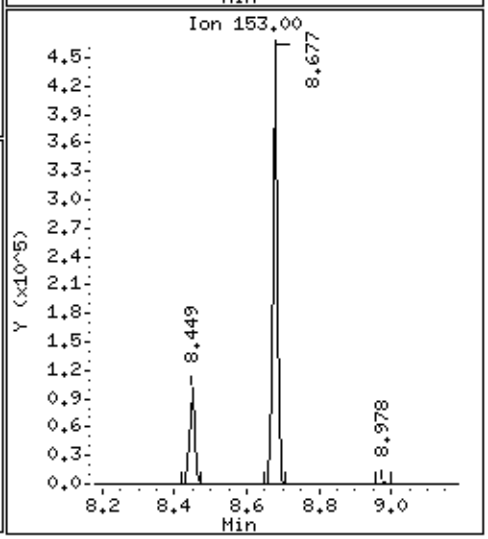












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

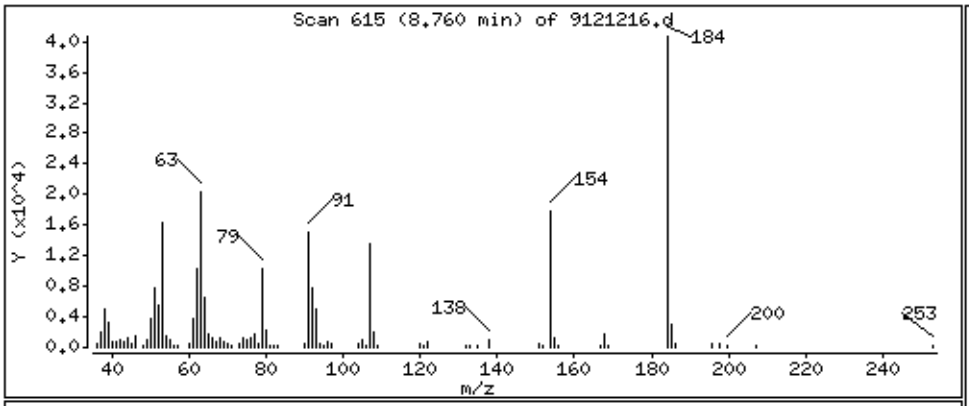
Operator: KV

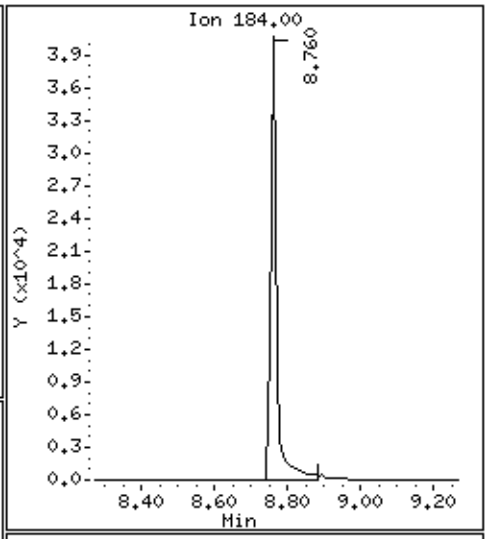
Column phase: DB-5.625

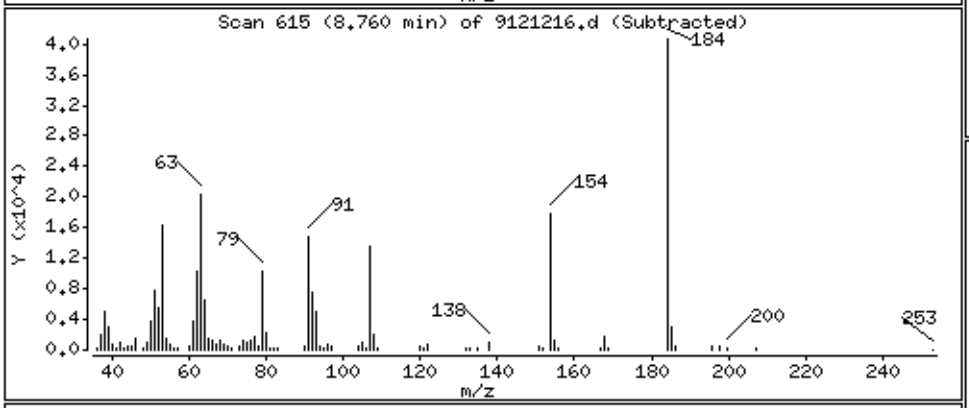
Column diameter: 0.25

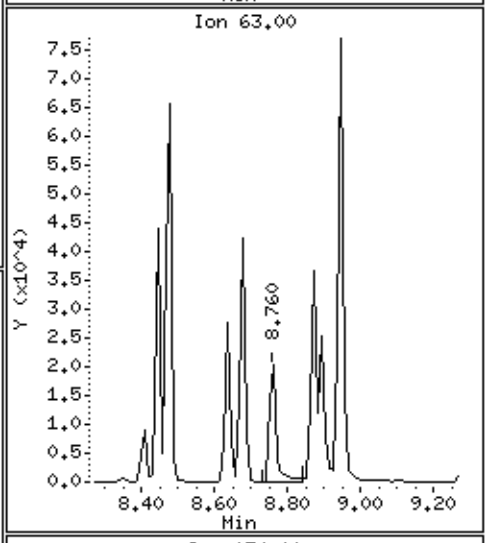
50 2,4-Dinitrophenol**

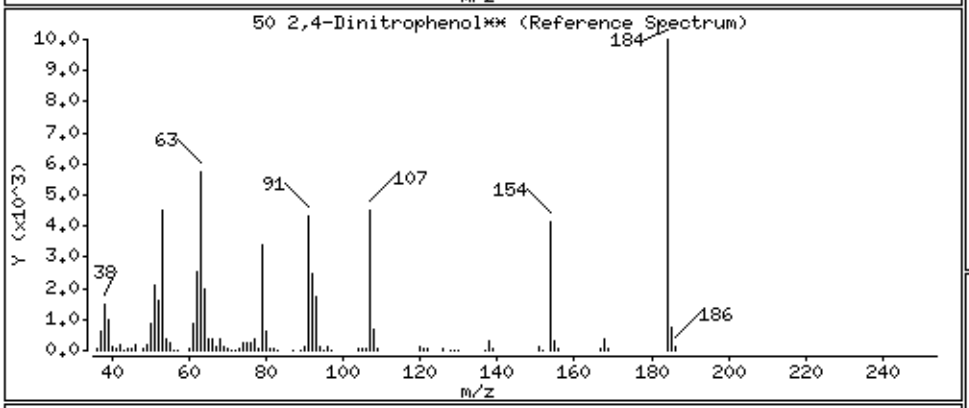
Concentration: 55.84 ug

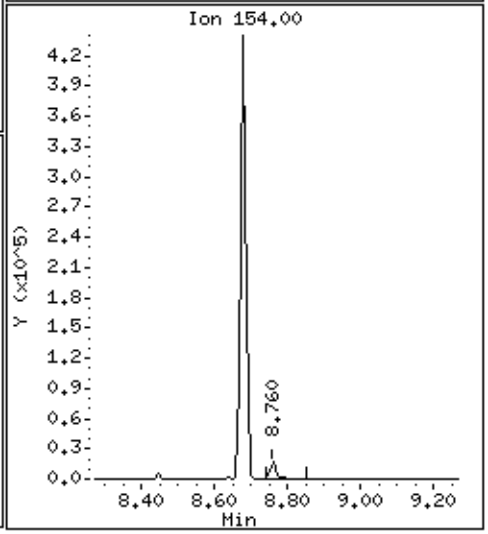


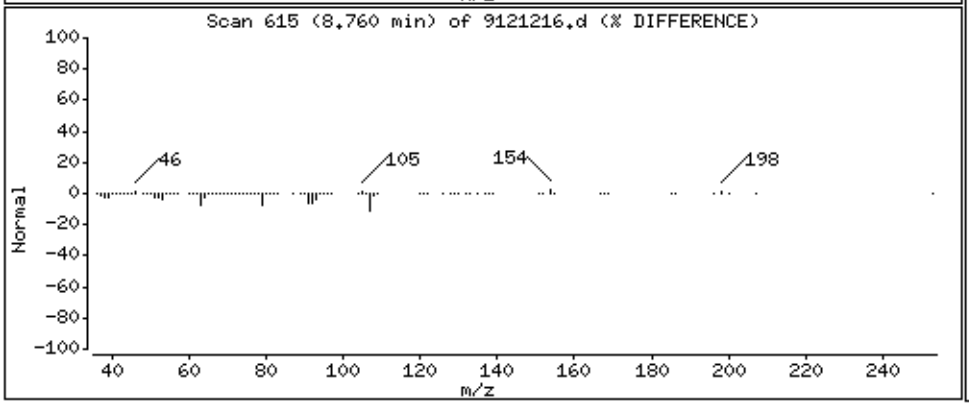












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

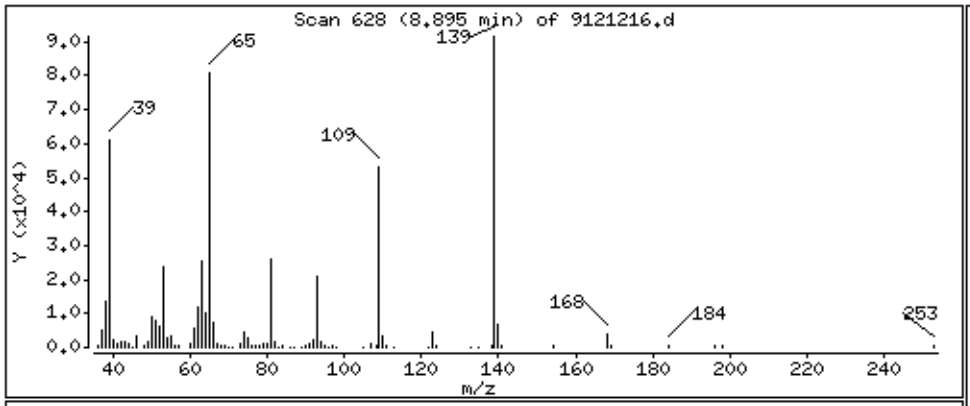
Operator: KV

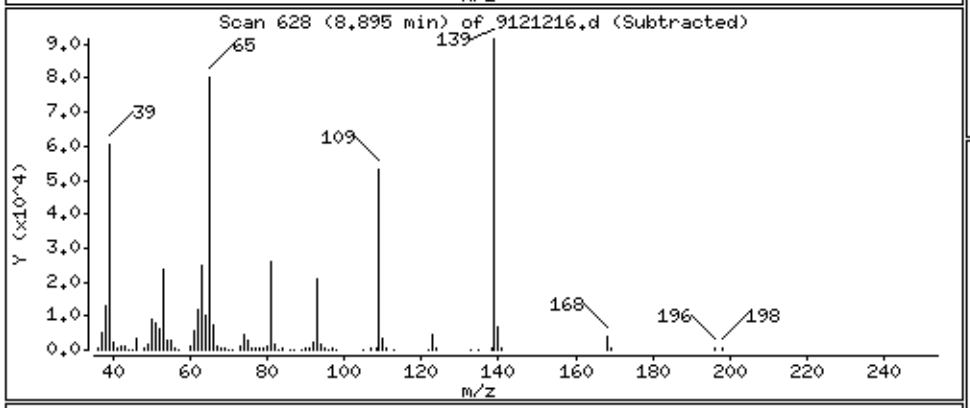
Column phase: DB-5.625

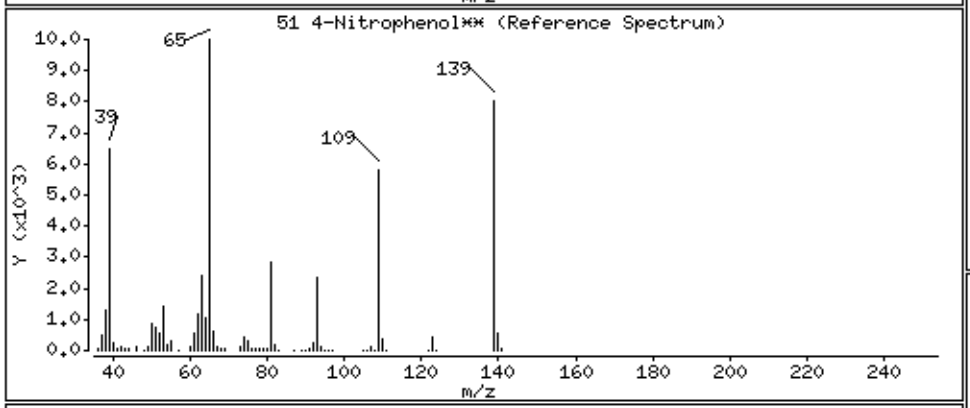
Column diameter: 0.25

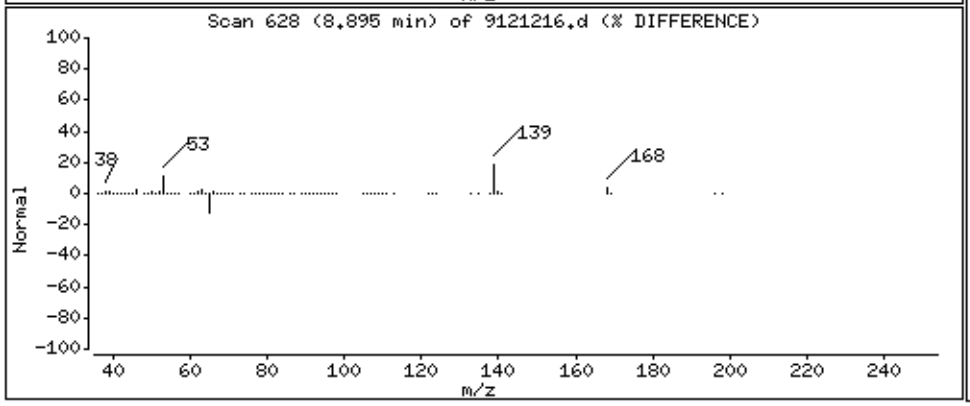
51 4-Nitrophenol**

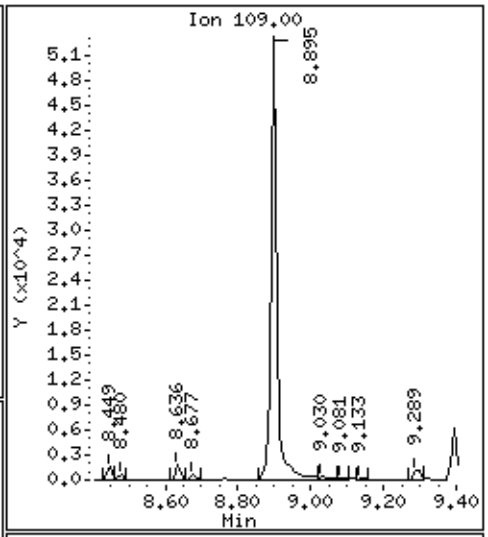
Concentration: 57.07 ug

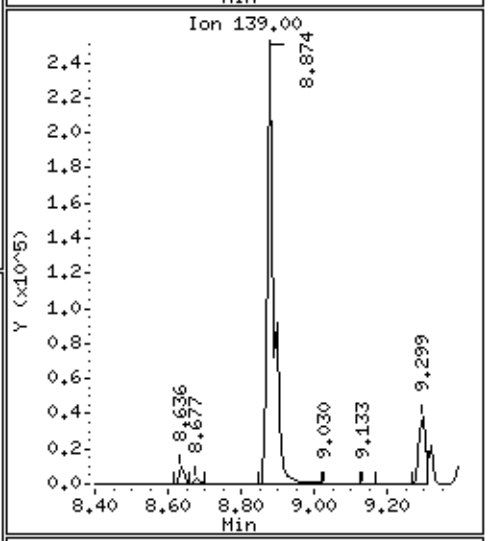


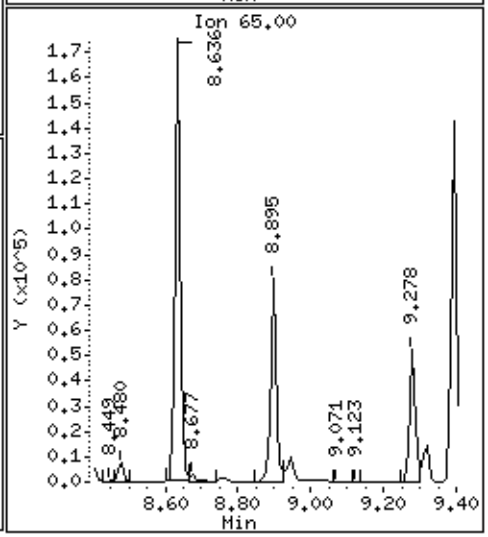












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

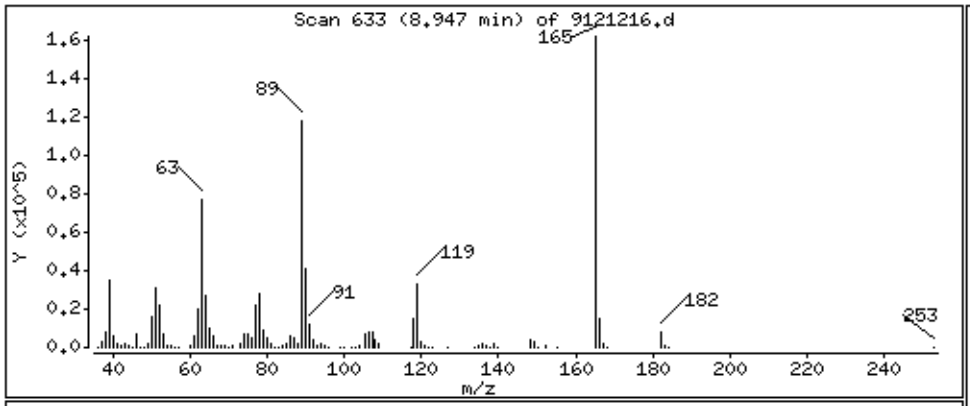
Operator: KV

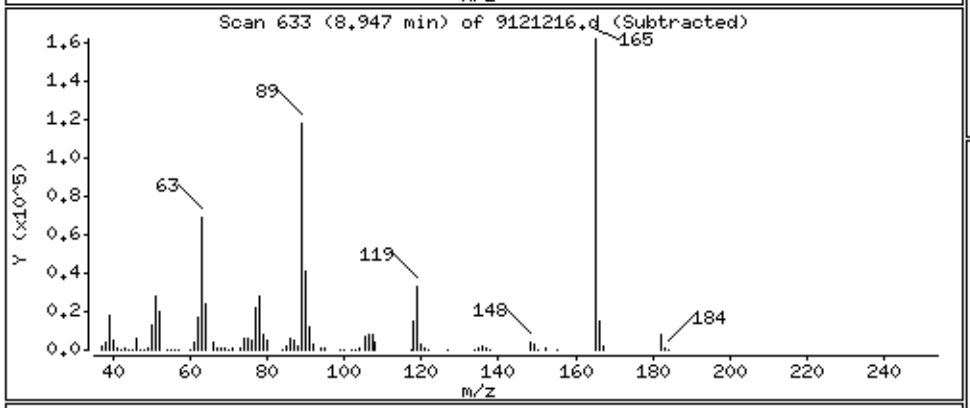
Column phase: DB-5.625

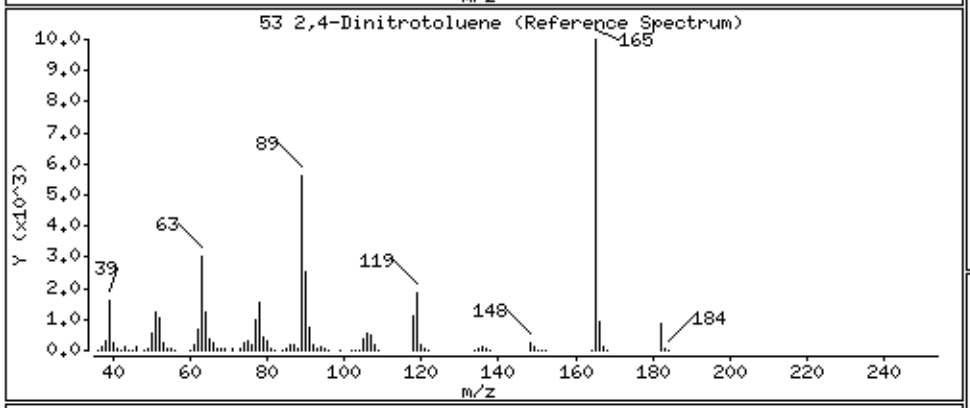
Column diameter: 0.25

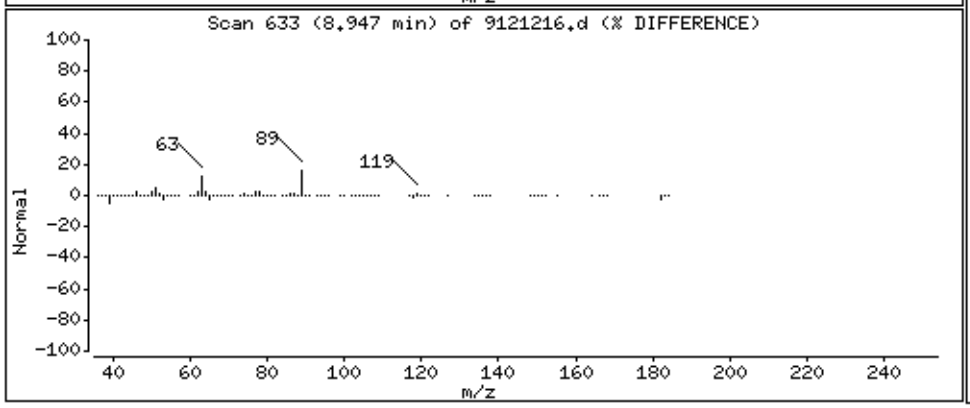
53 2,4-Dinitrotoluene

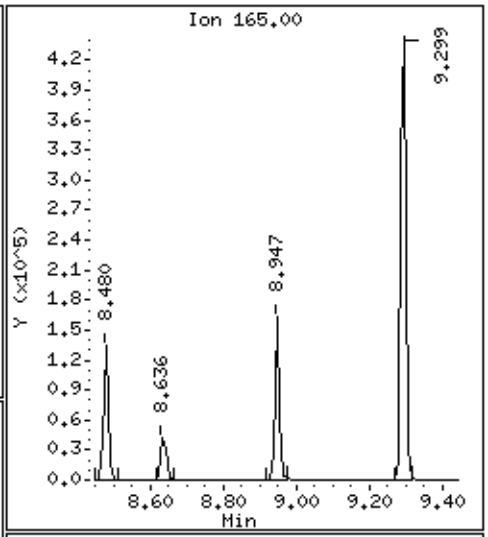
Concentration: 57.14 ug

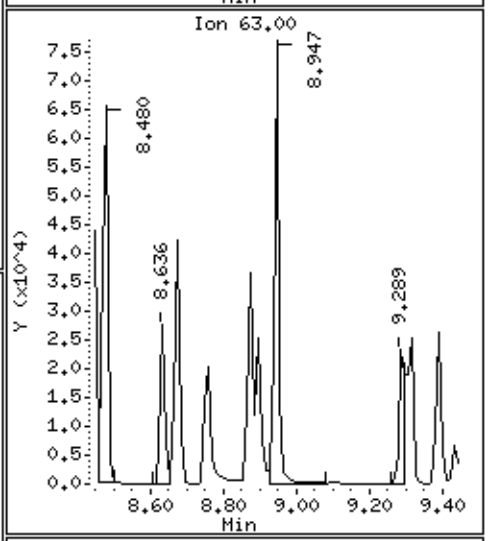


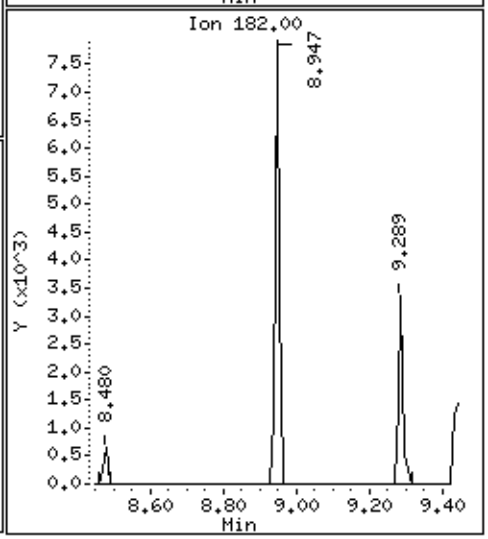












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

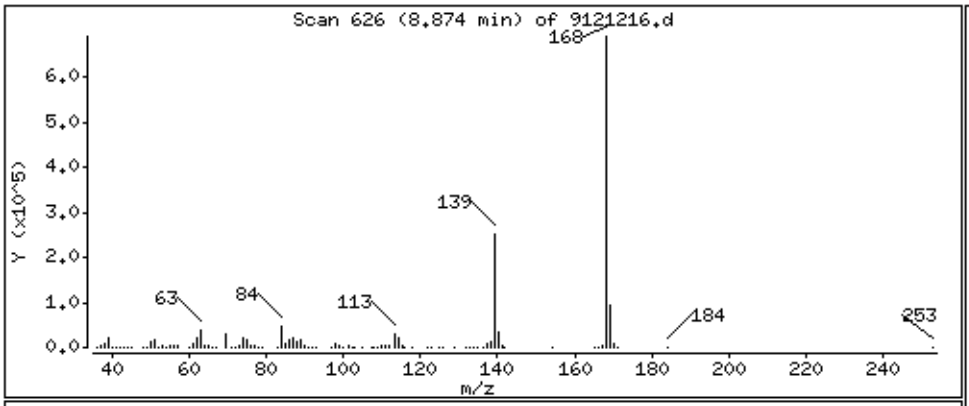
Operator: KV

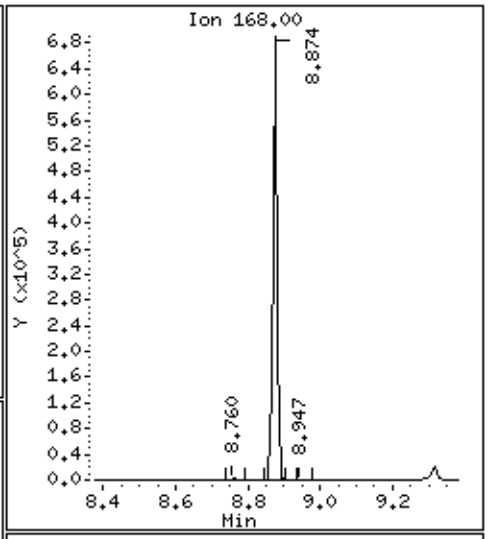
Column phase: DB-5.625

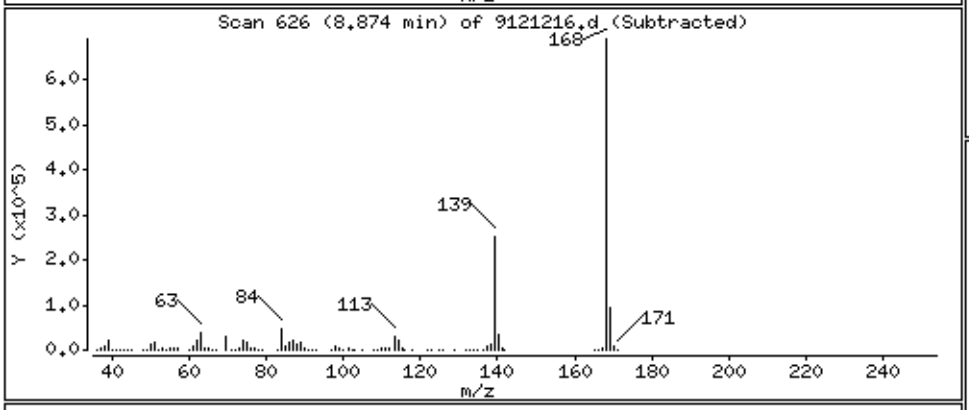
Column diameter: 0.25

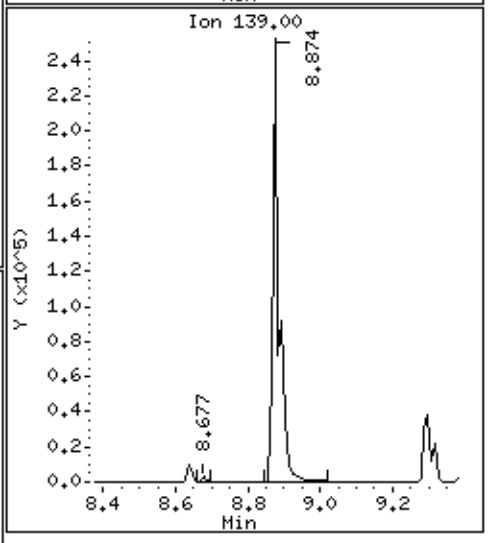
52 Dibenzofuran

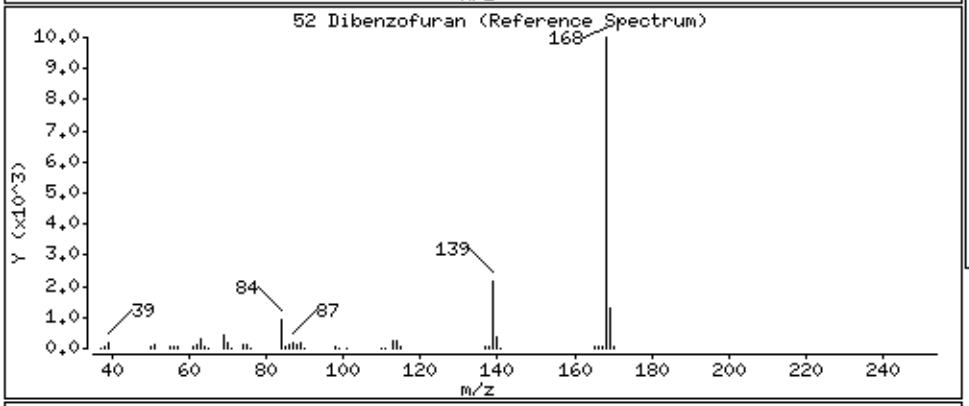
Concentration: 49.70 ug

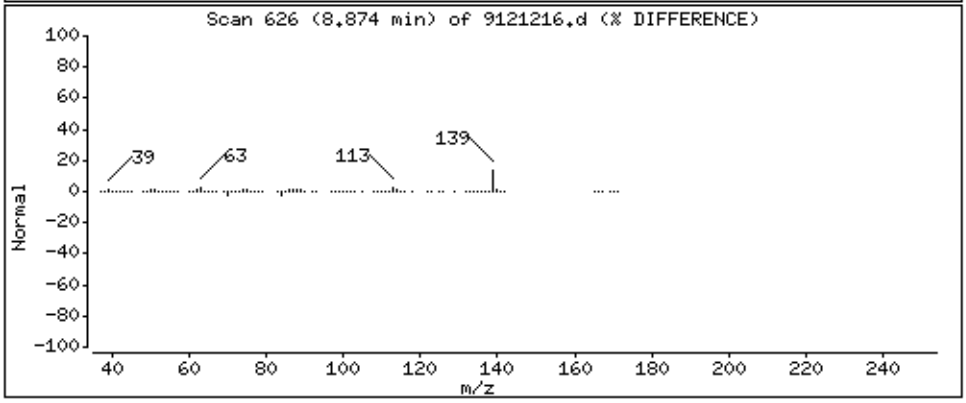












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

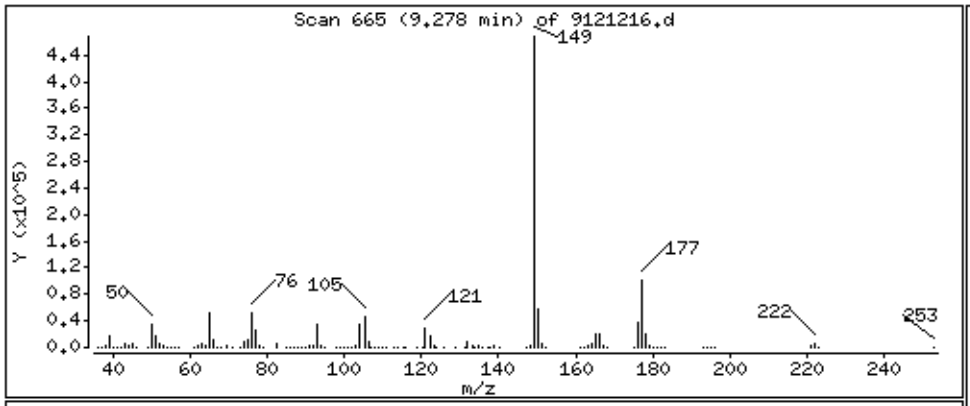
Operator: KV

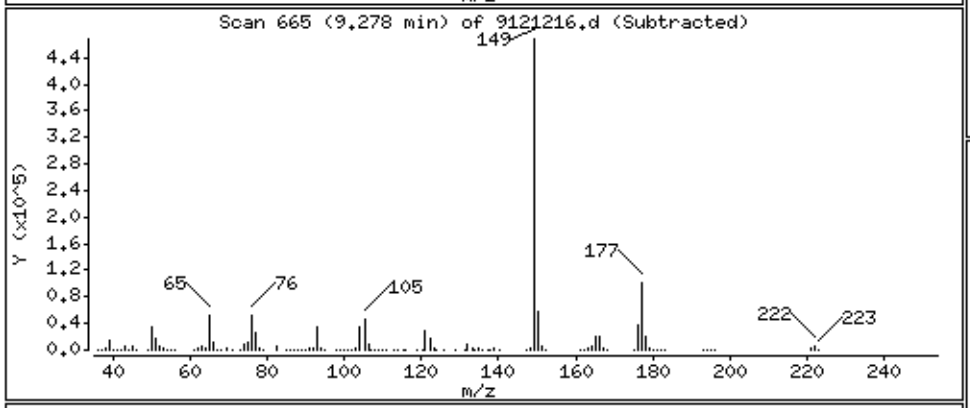
Column phase: DB-5.625

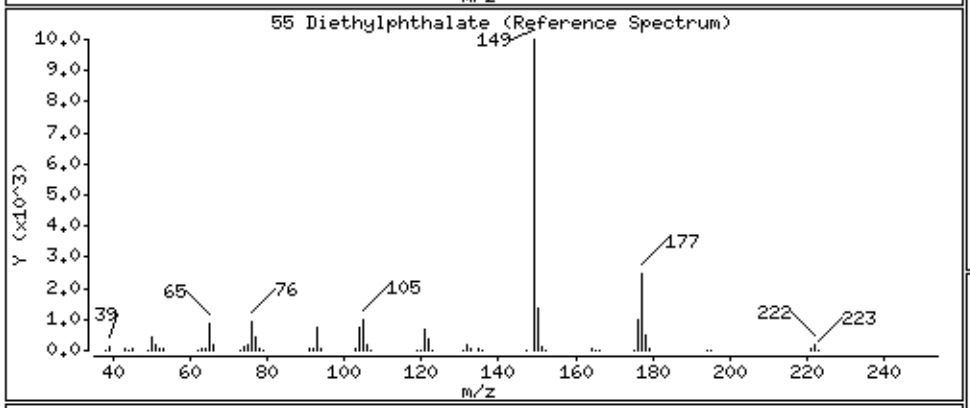
Column diameter: 0.25

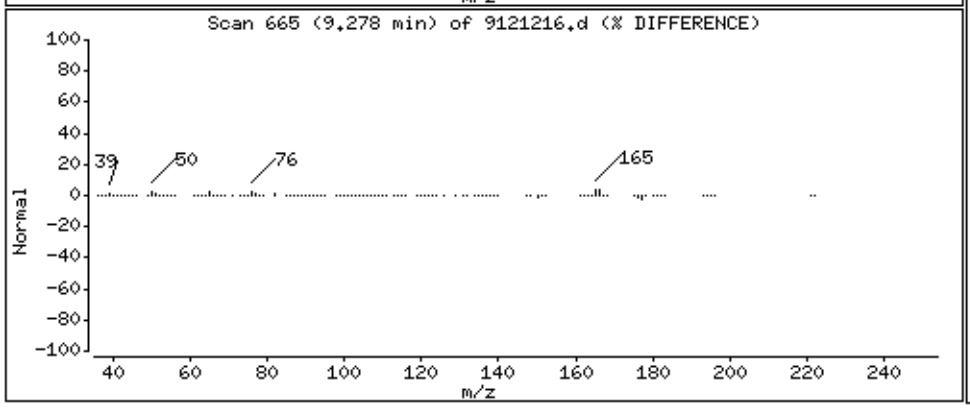
55 Diethylphthalate

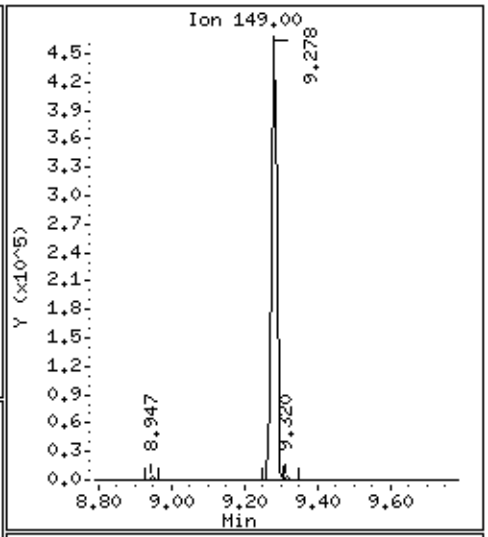
Concentration: 52.01 ug

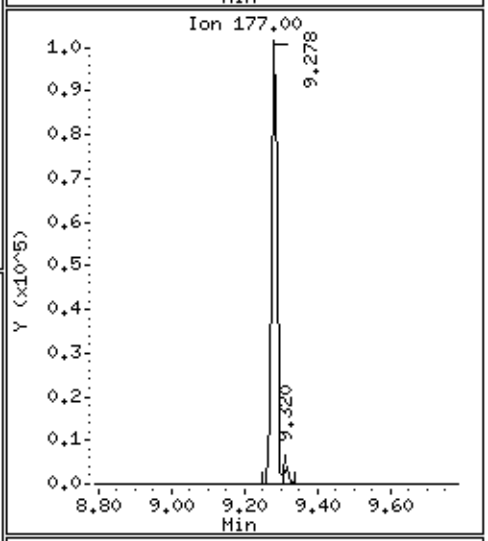


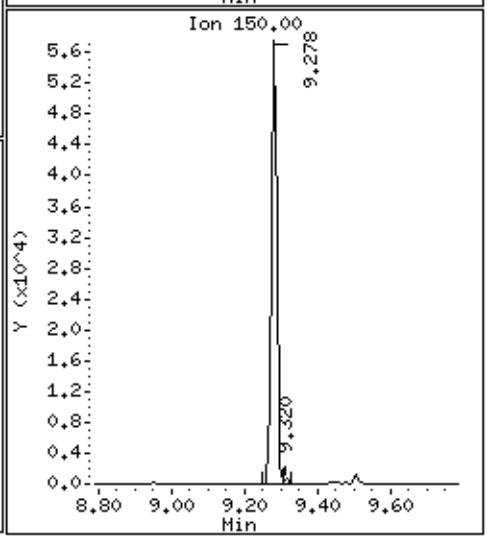












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

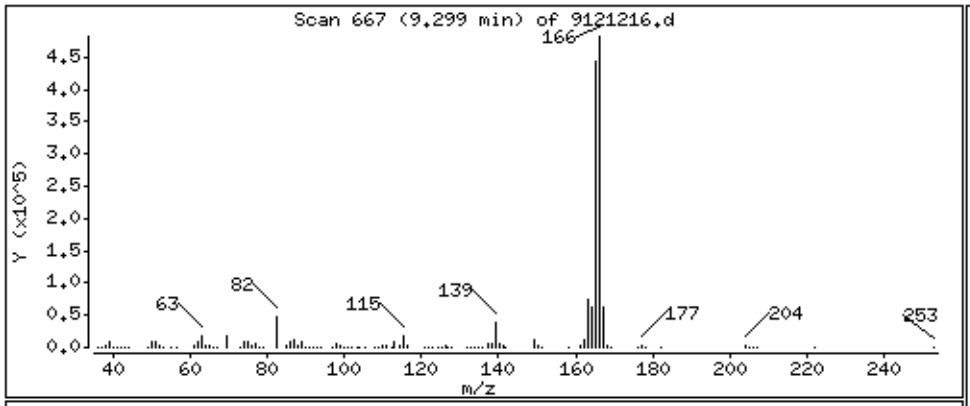
Operator: KV

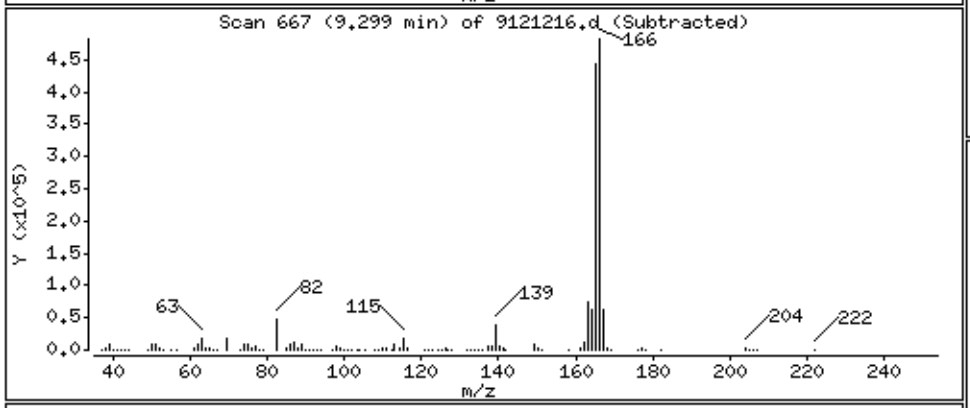
Column phase: DB-5.625

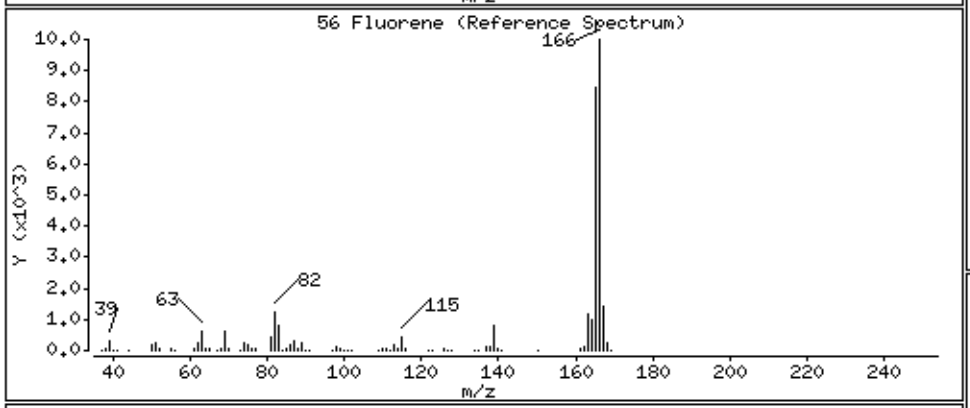
Column diameter: 0.25

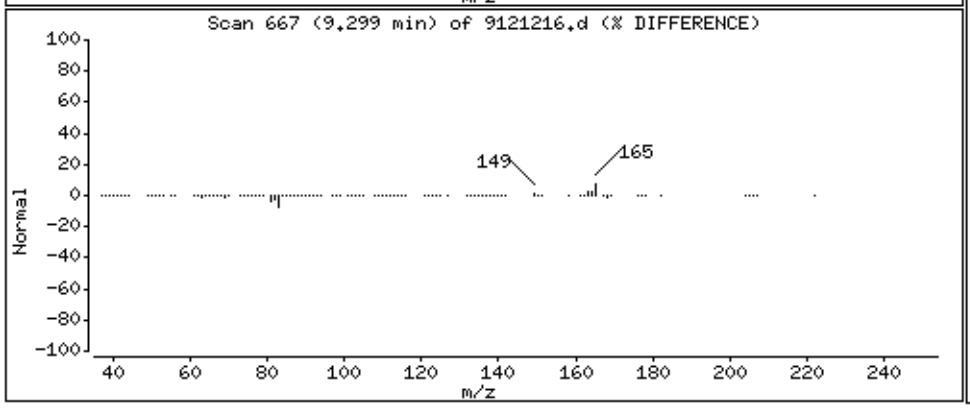
56 Fluorene

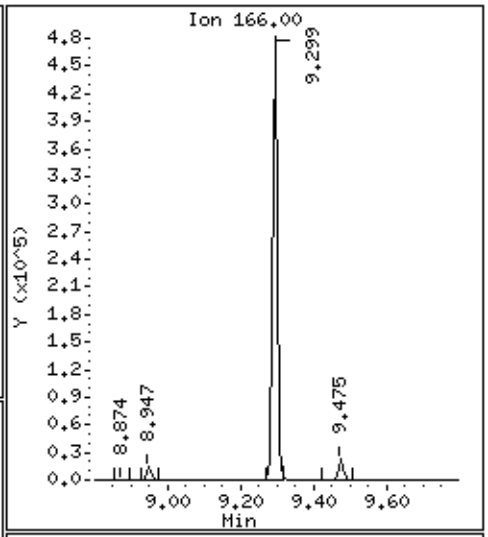
Concentration: 52.58 ug

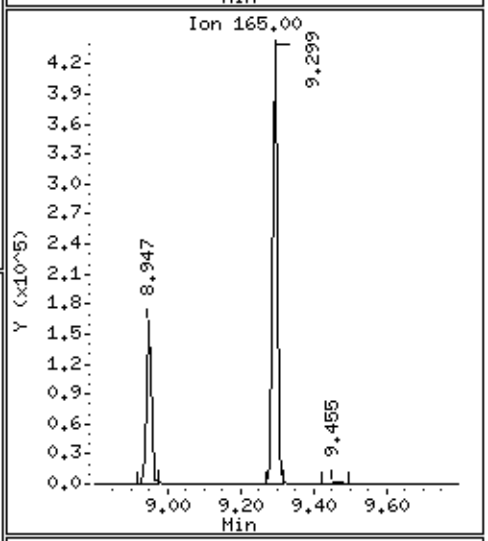


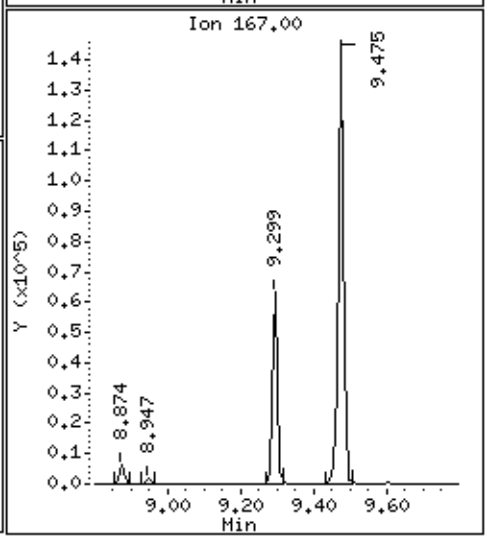












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

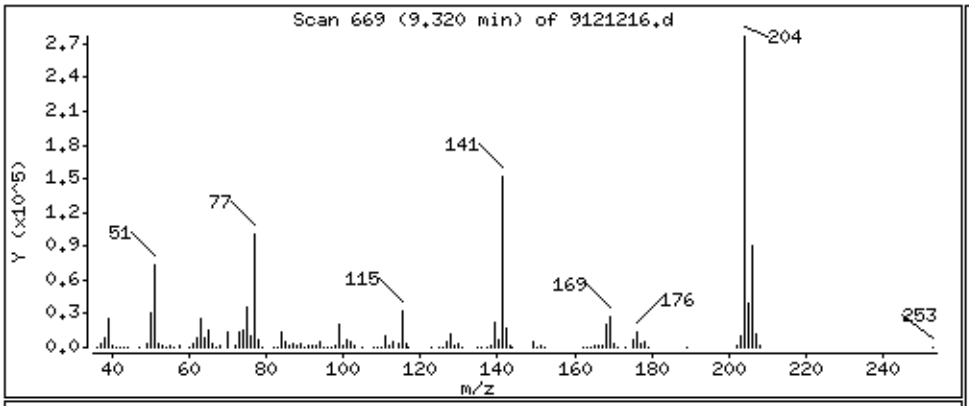
Operator: KV

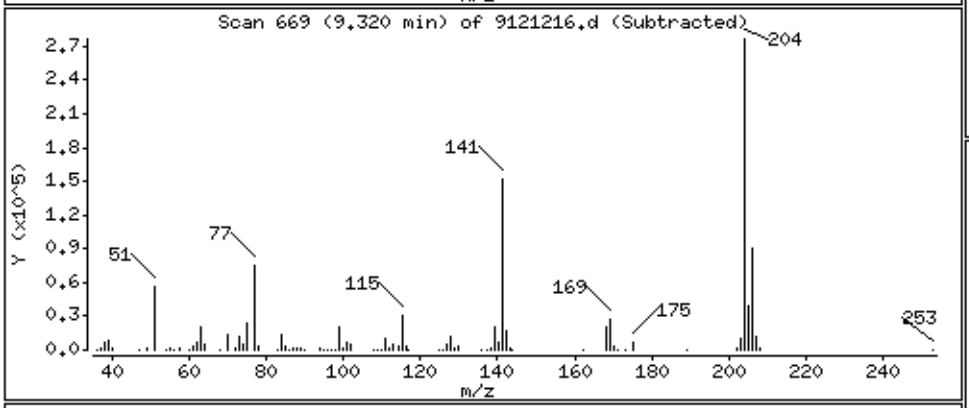
Column phase: DB-5.625

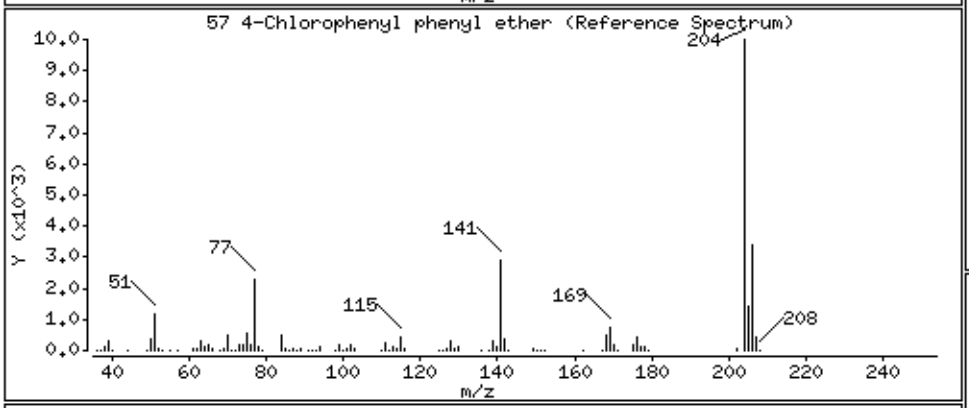
Column diameter: 0.25

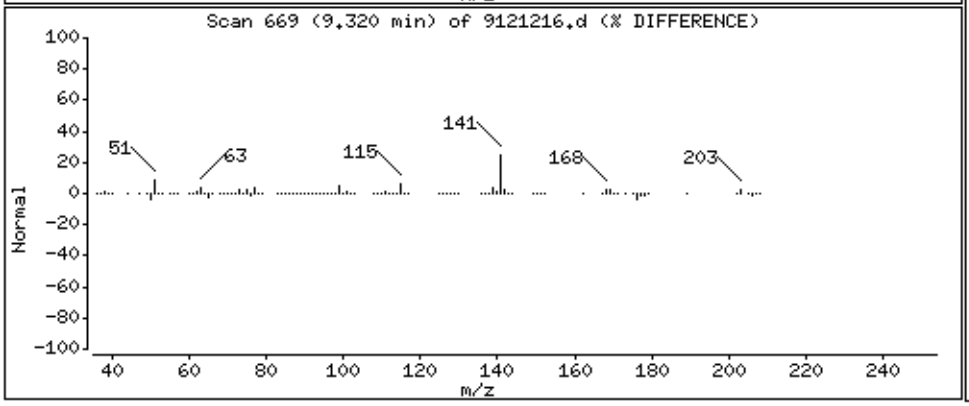
57 4-Chlorophenyl phenyl ether

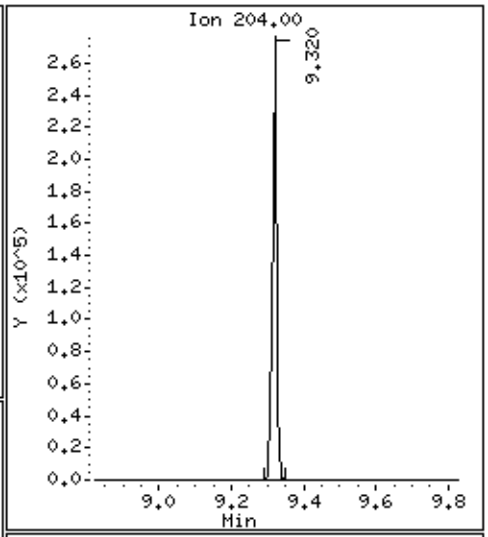
Concentration: 51.10 ug

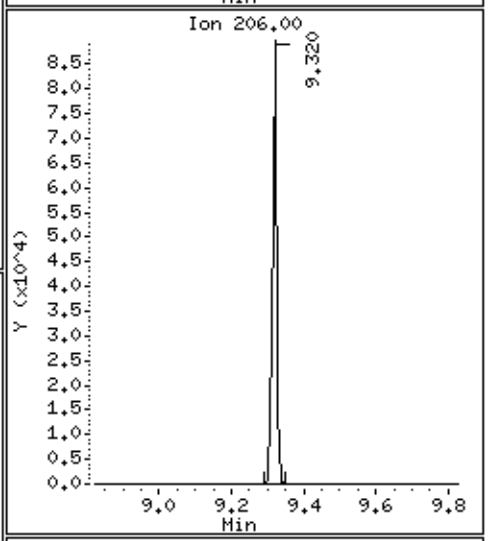


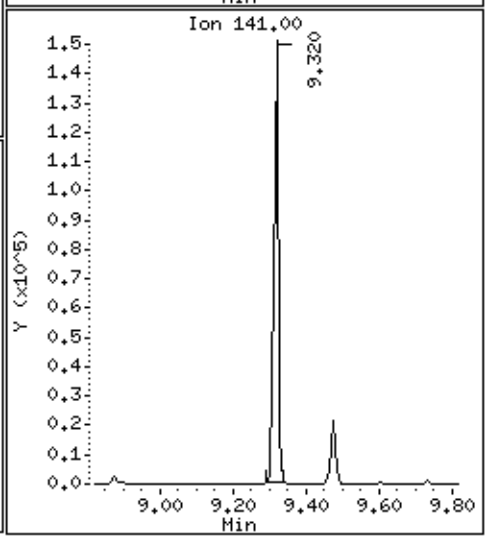












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

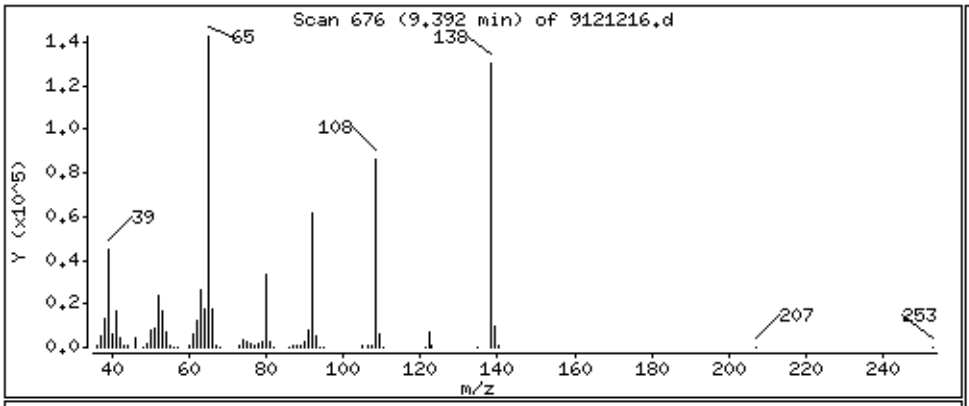
Operator: KV

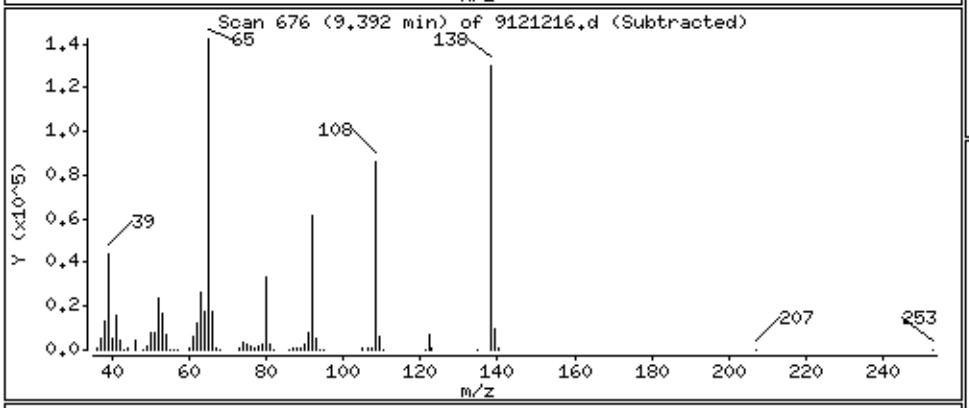
Column phase: DB-5.625

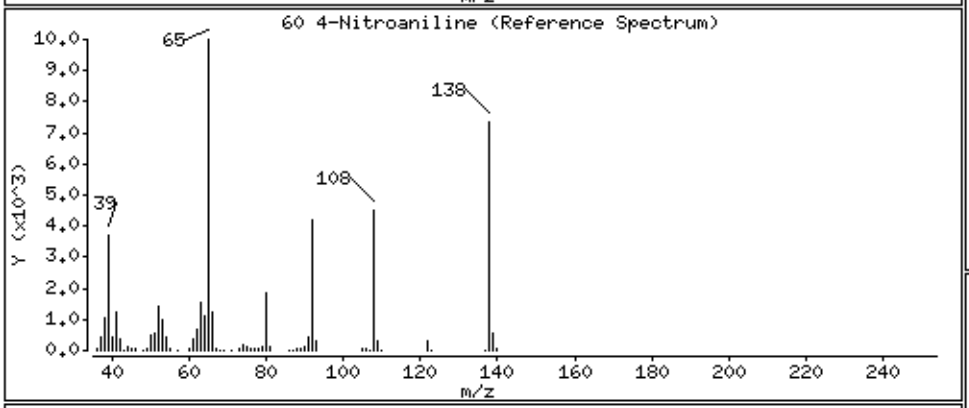
Column diameter: 0.25

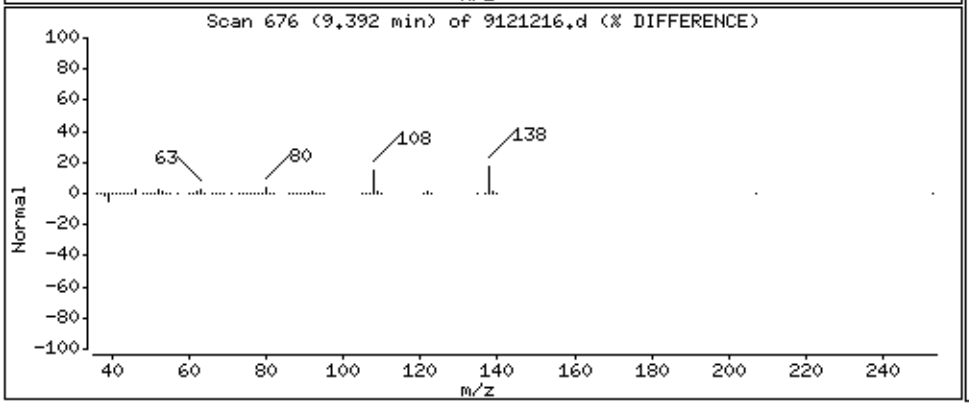
60 4-Nitroaniline

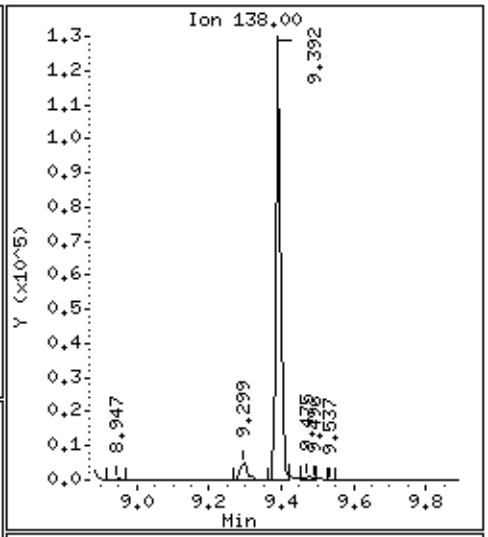
Concentration: 50.64 ug

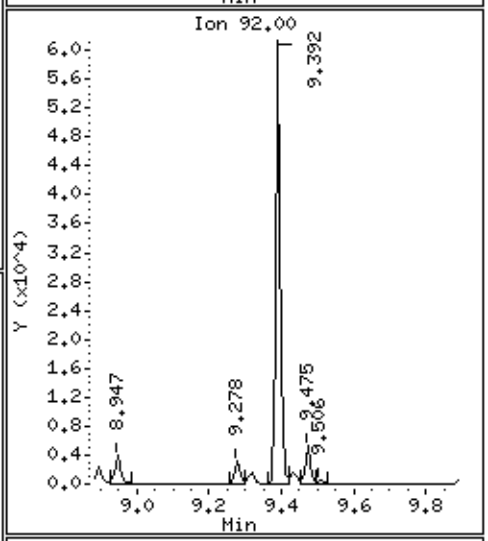


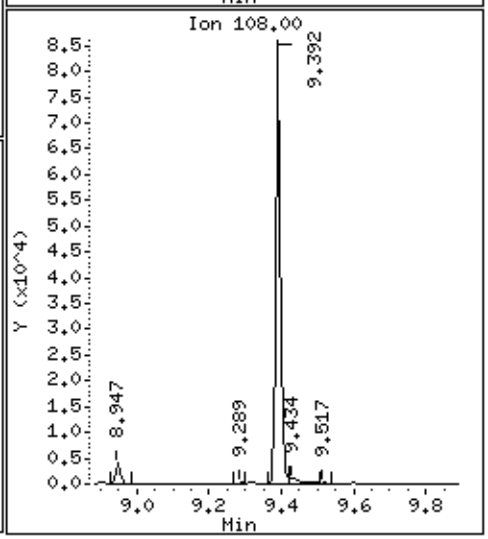












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

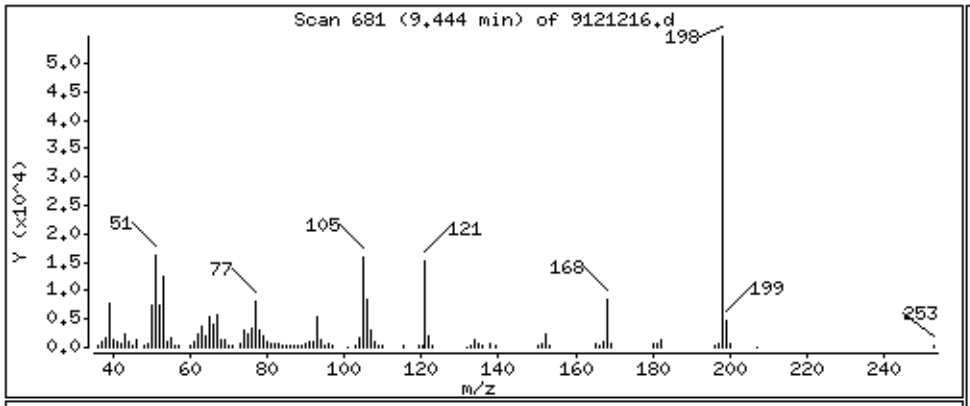
Operator: KV

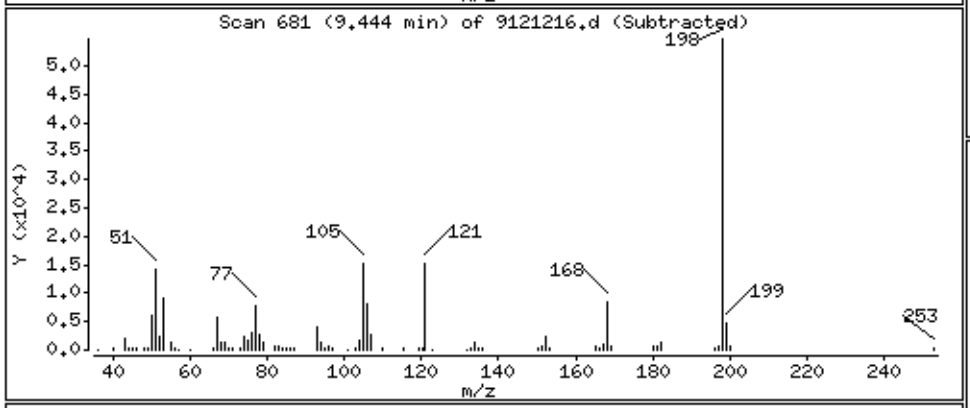
Column phase: DB-5.625

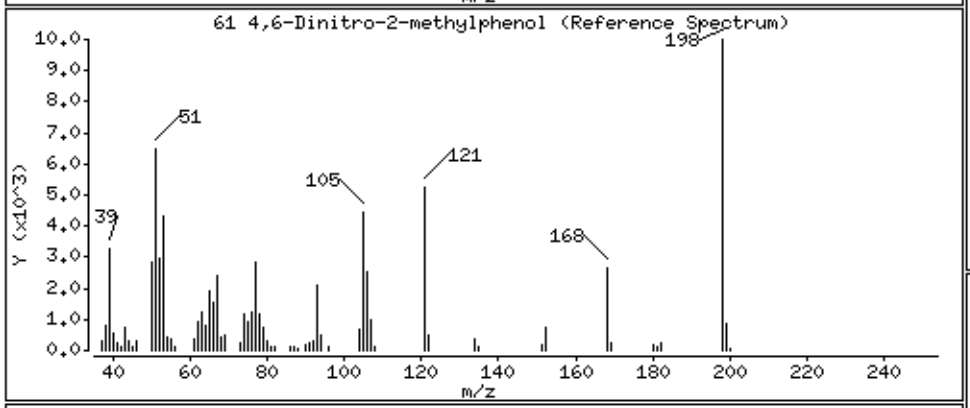
Column diameter: 0.25

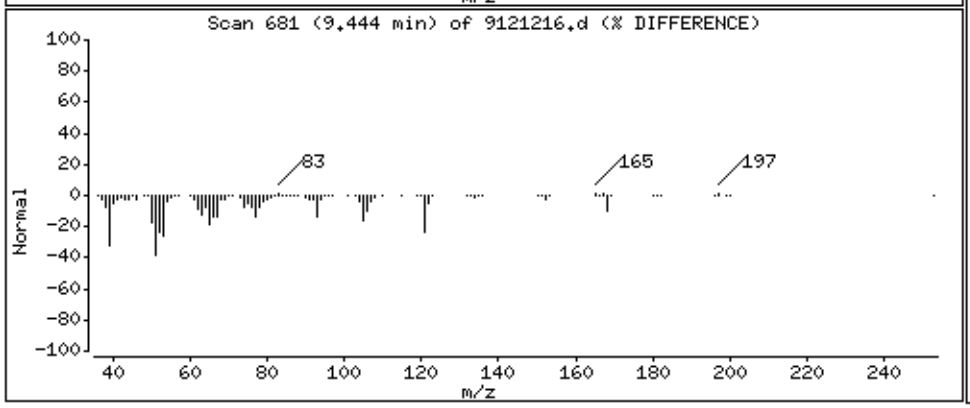
61 4,6-Dinitro-2-methylphenol

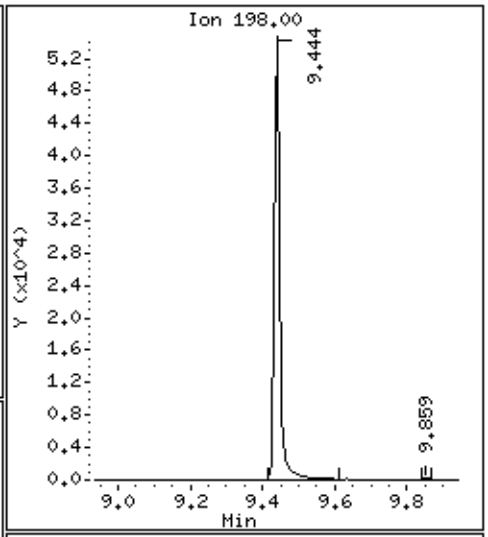
Concentration: 56.00 ug

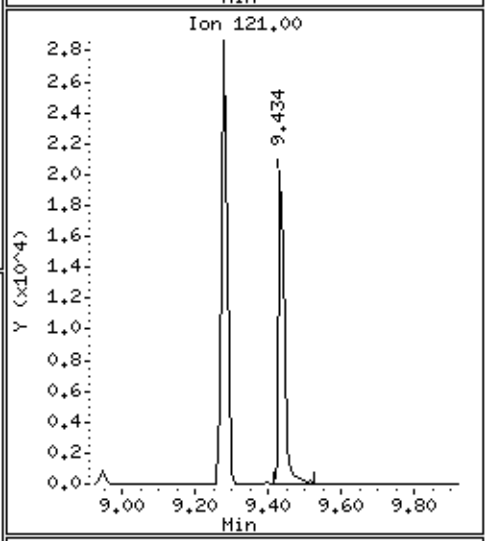


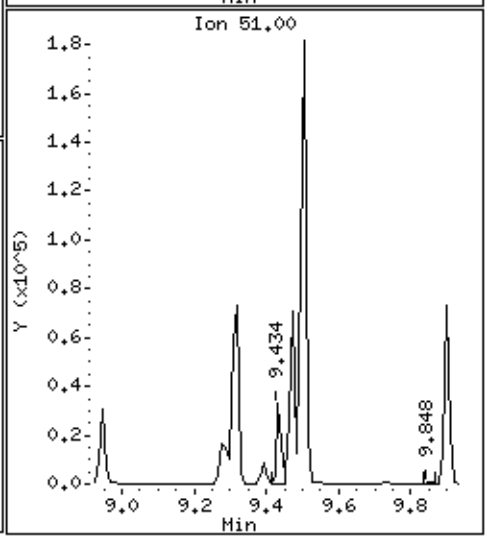












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

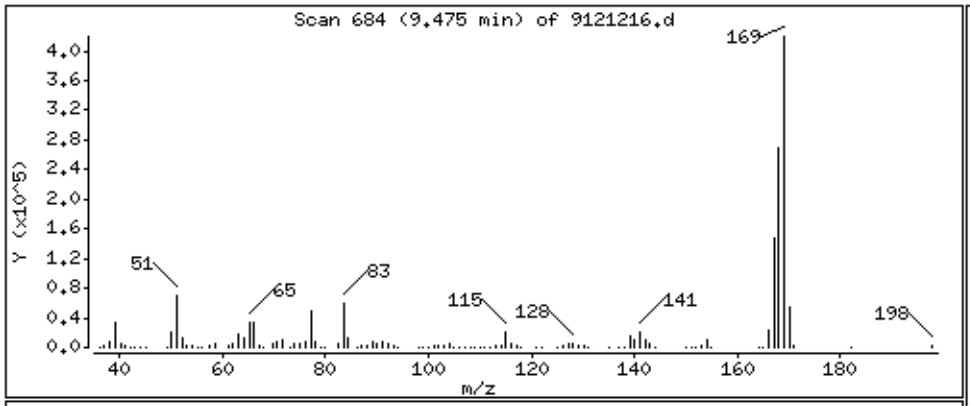
Operator: KV

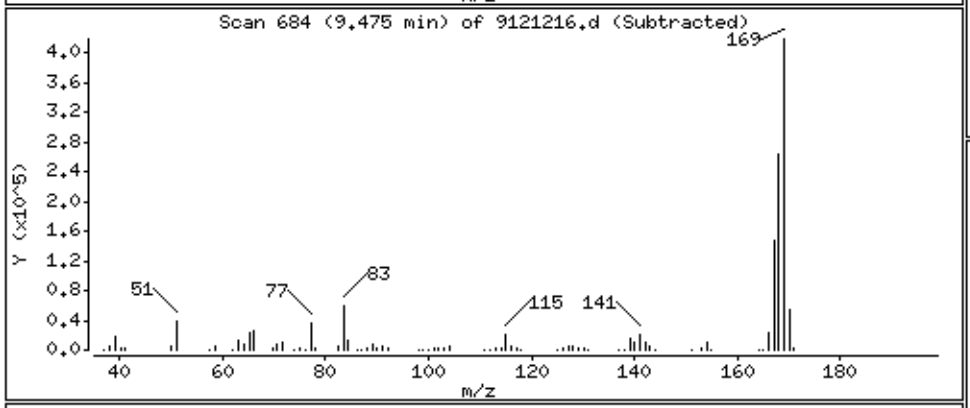
Column phase: DB-5.625

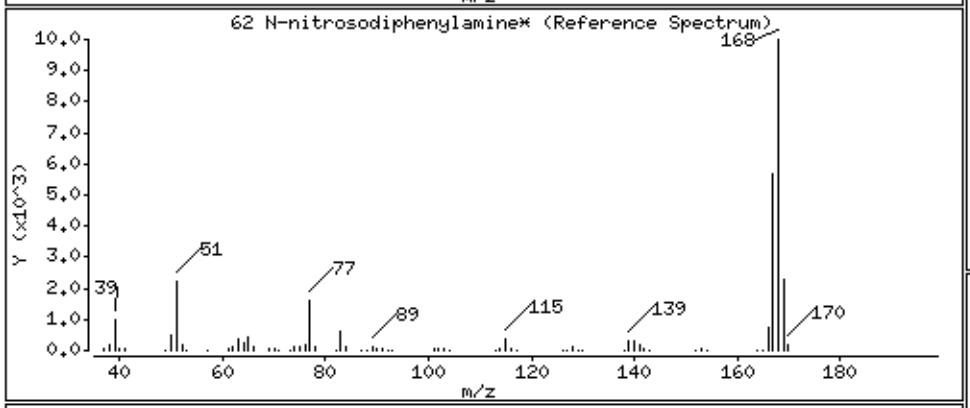
Column diameter: 0.25

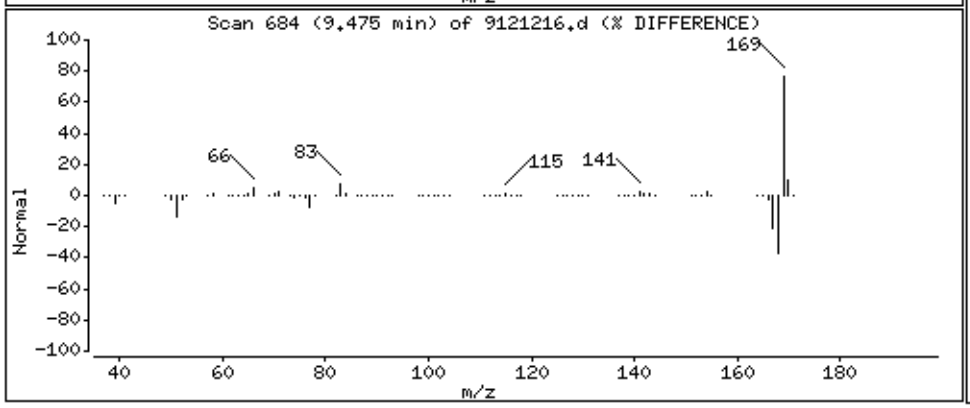
62 N-nitrosodiphenylamine*

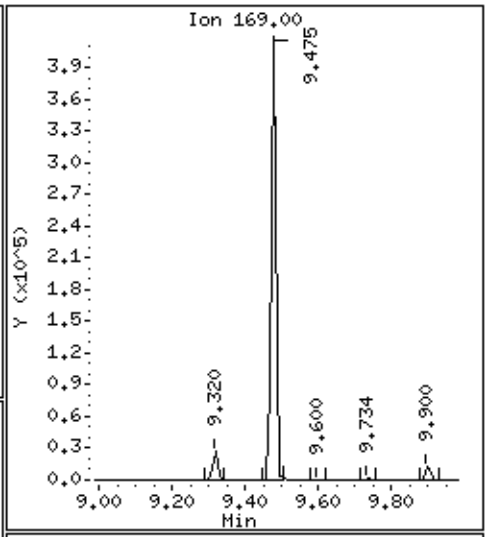
Concentration: 40.38 ug

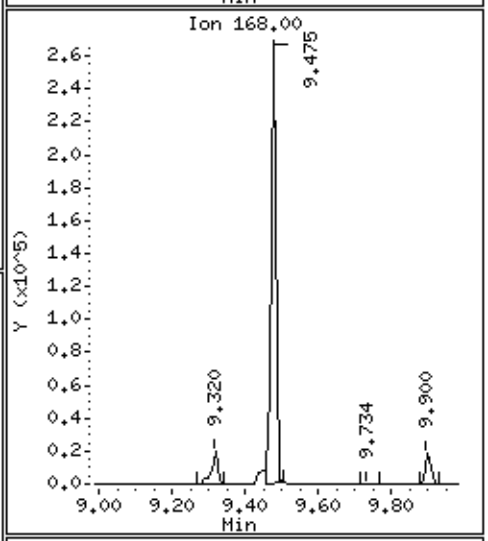


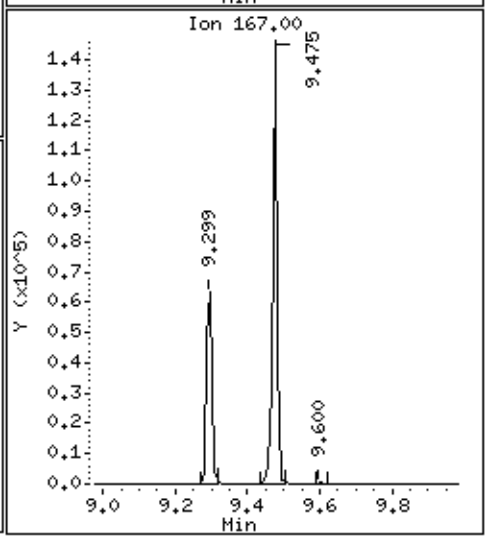












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

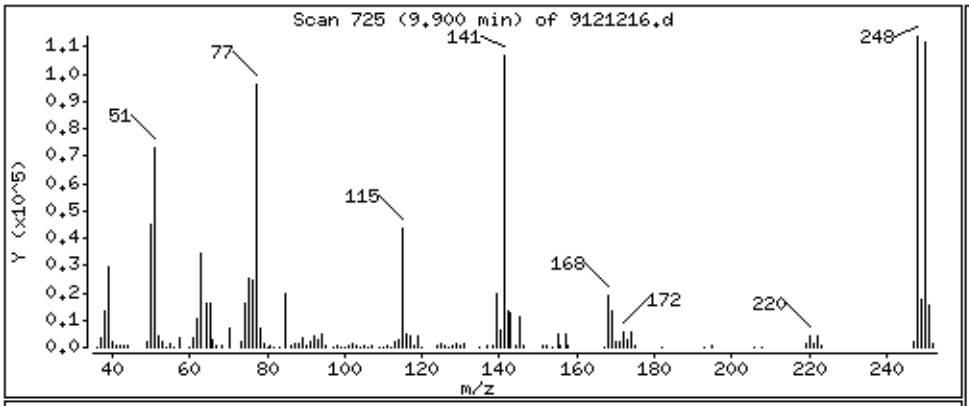
Operator: KV

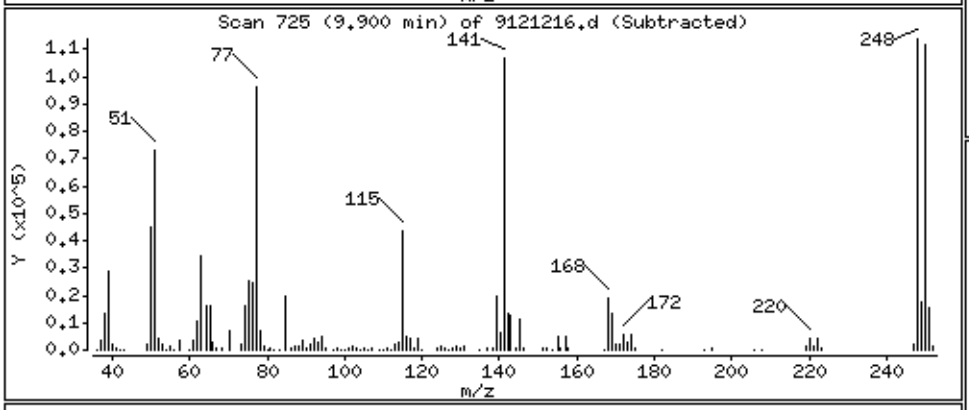
Column phase: DB-5.625

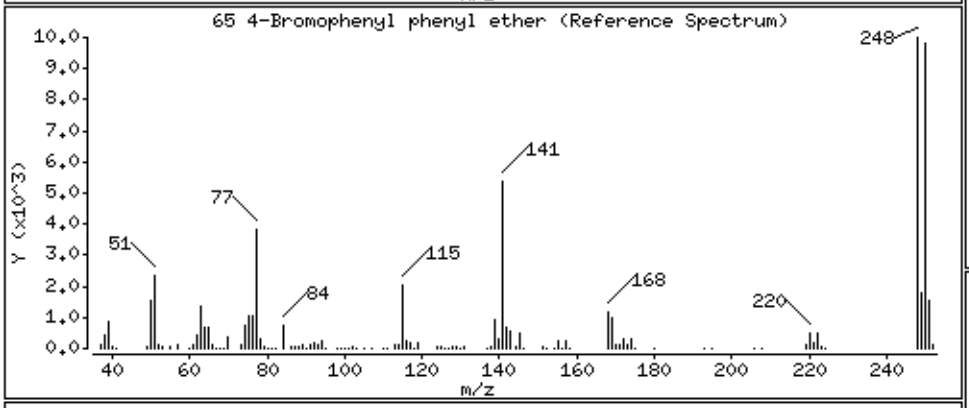
Column diameter: 0.25

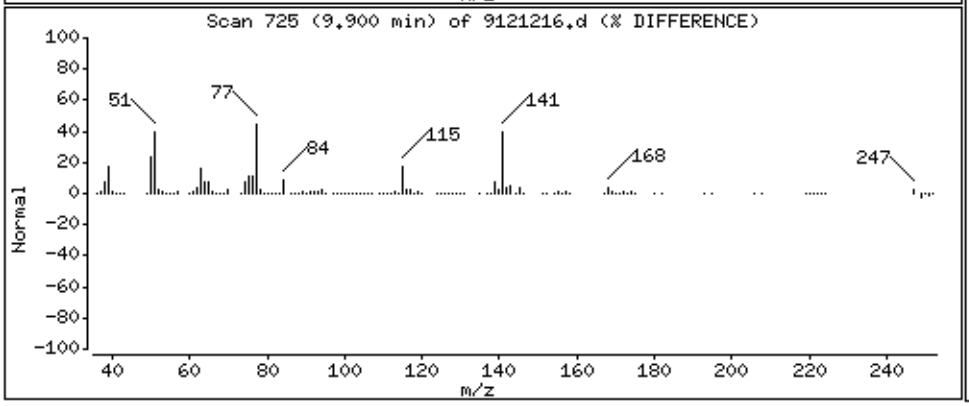
65 4-Bromophenyl phenyl ether

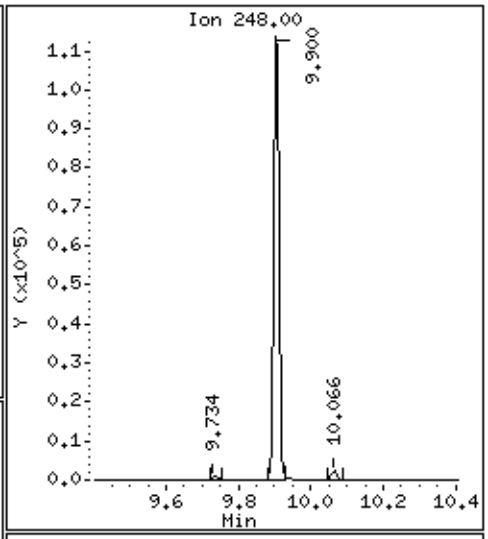
Concentration: 47.62 ug

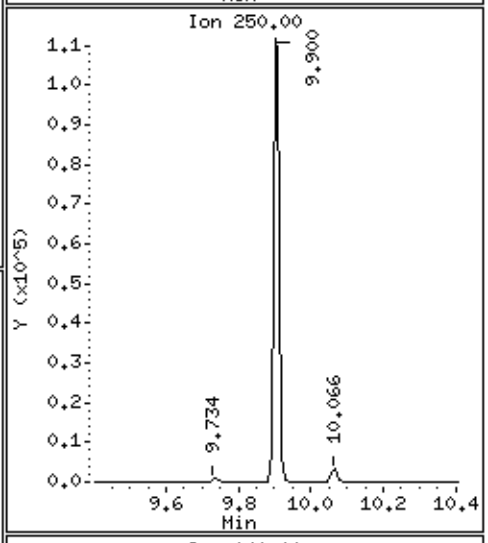


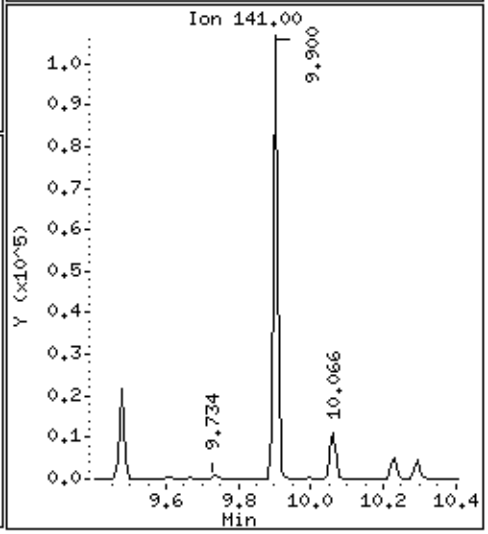












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

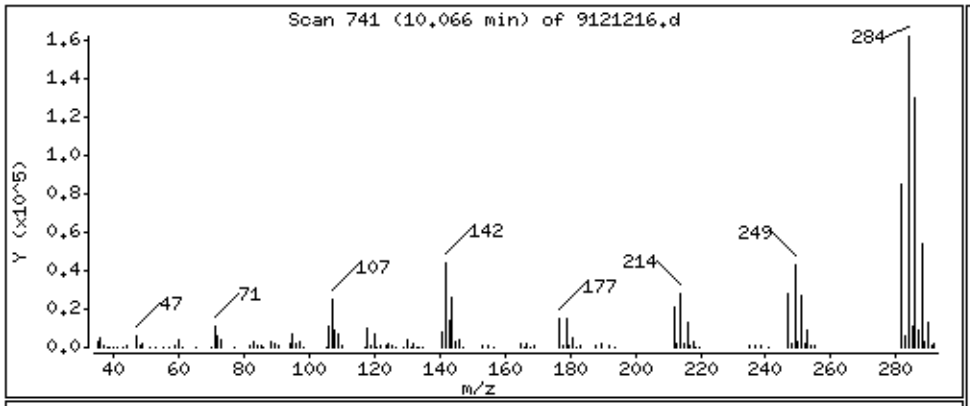
Operator: KV

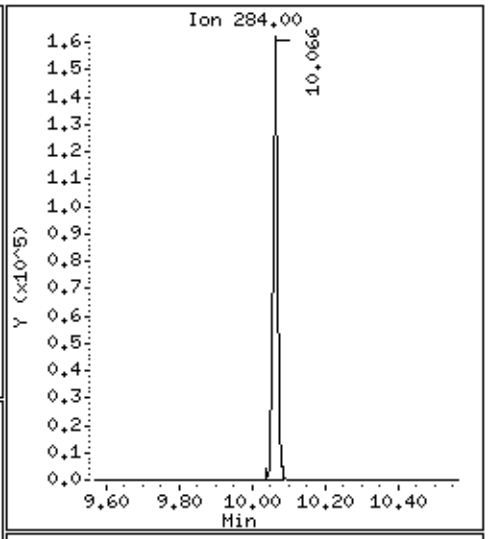
Column phase: DB-5.625

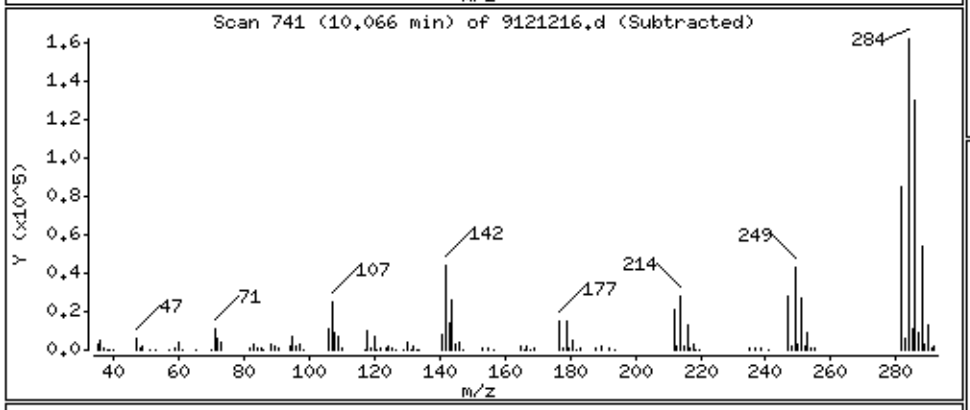
Column diameter: 0.25

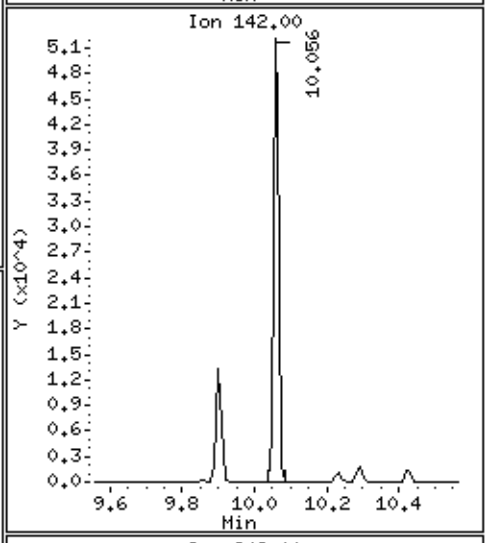
66 Hexachlorobenzene

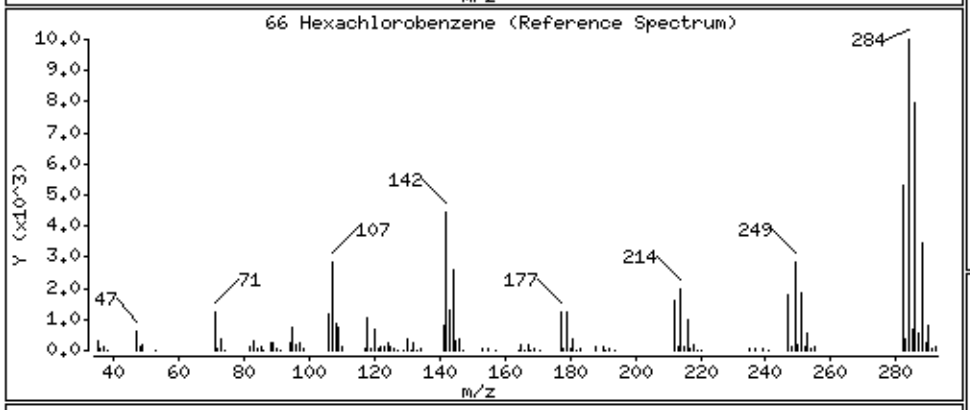
Concentration: 51.31 ug

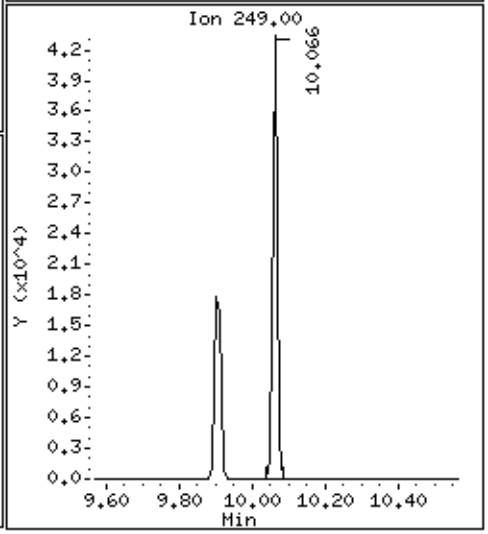


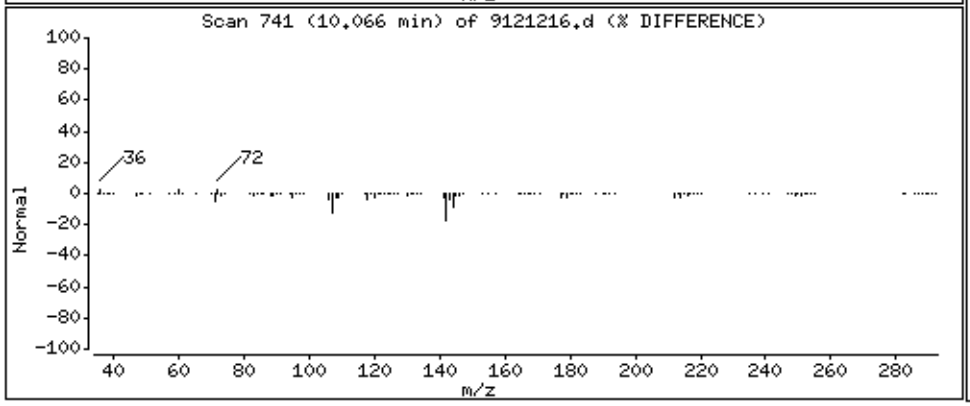












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

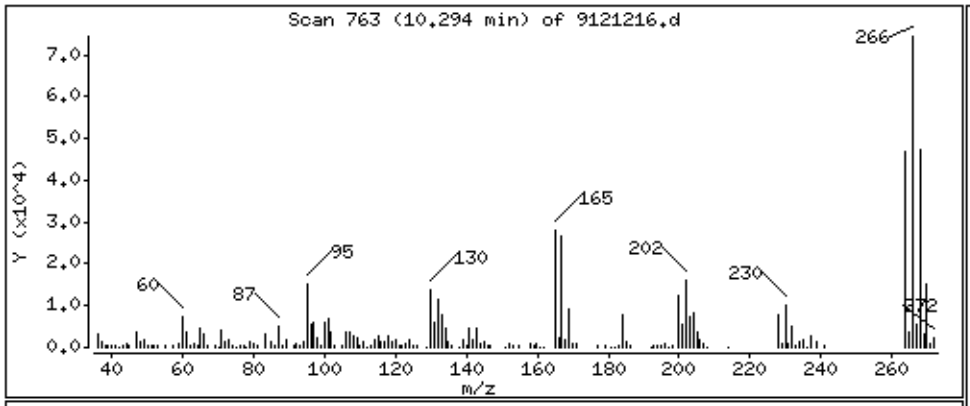
Operator: KV

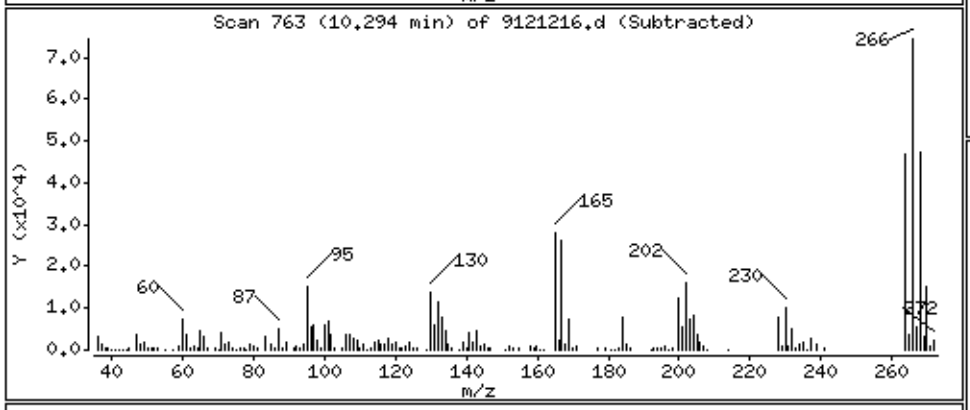
Column phase: DB-5.625

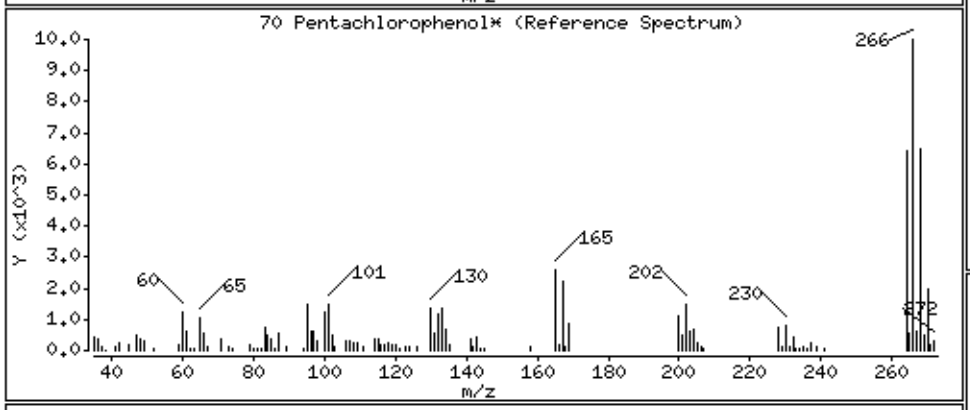
Column diameter: 0.25

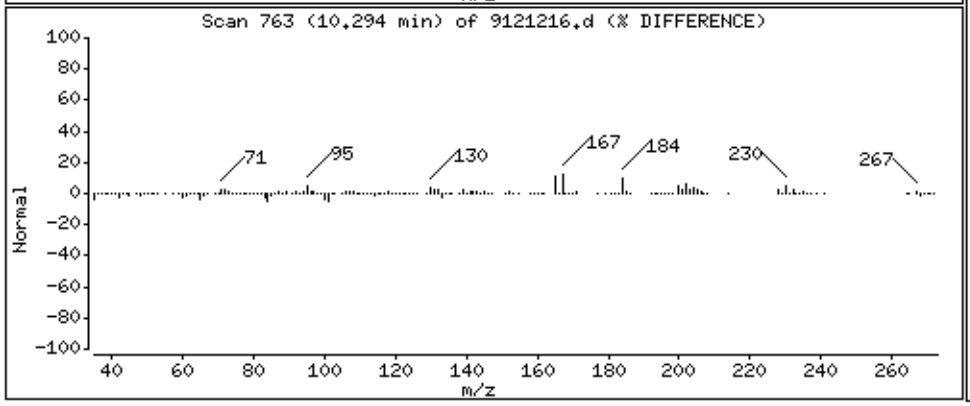
70 Pentachlorophenol*

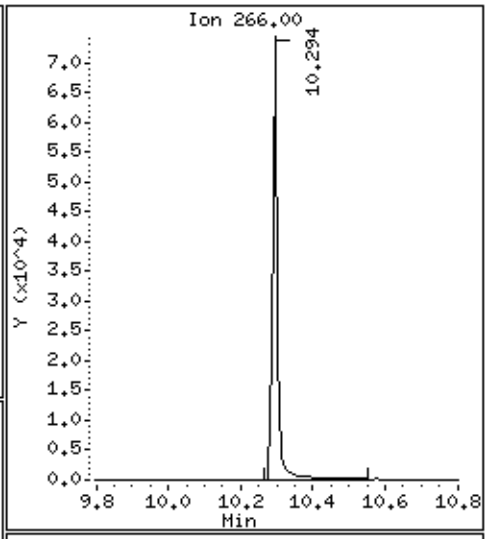
Concentration: 60.63 ug

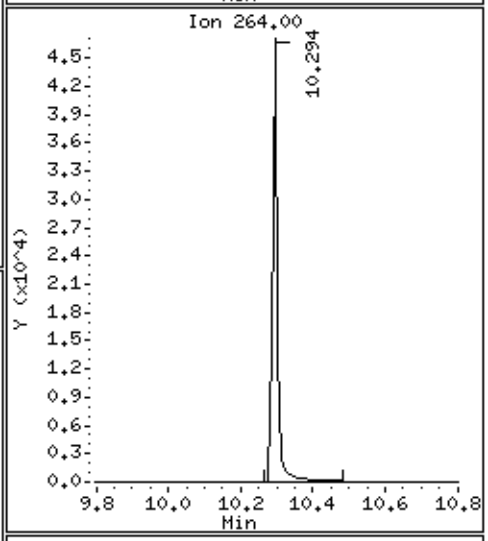


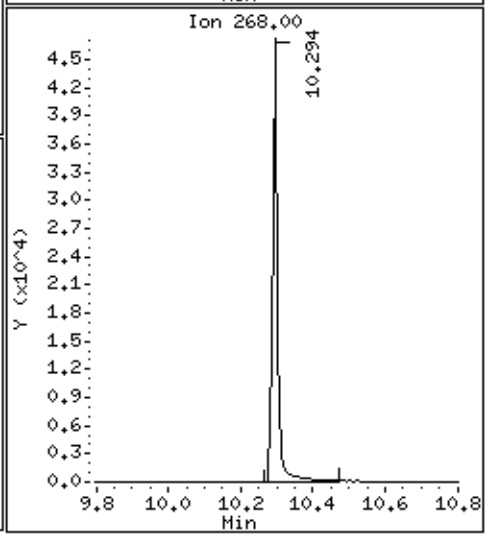












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

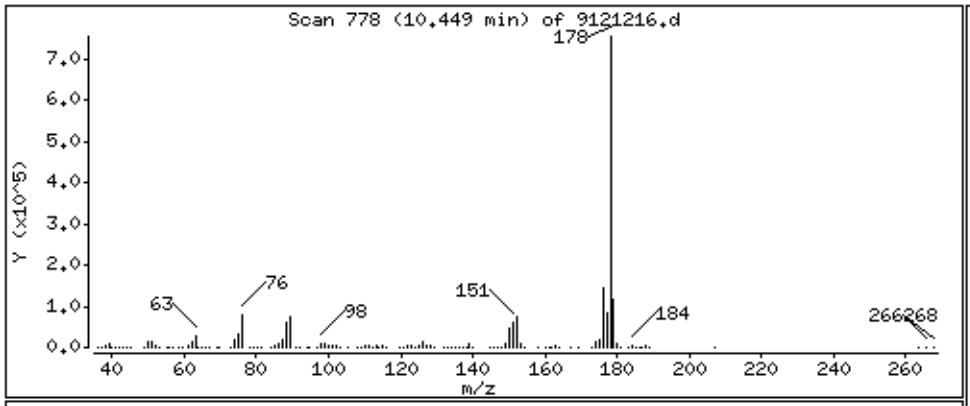
Operator: KV

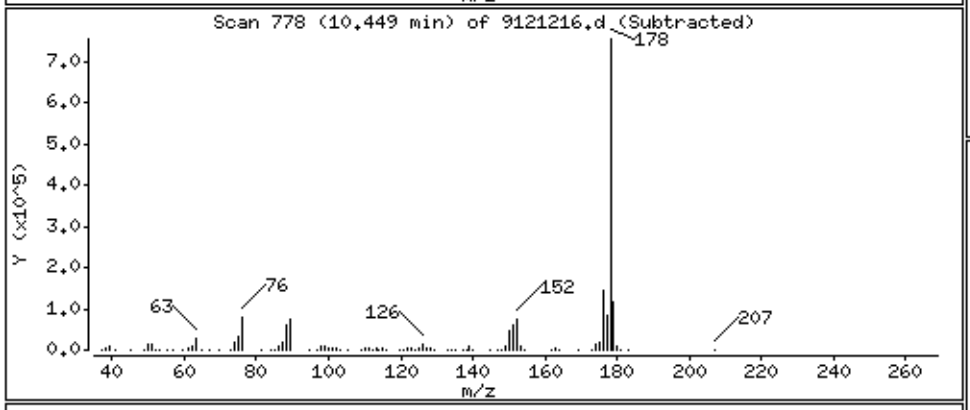
Column phase: DB-5.625

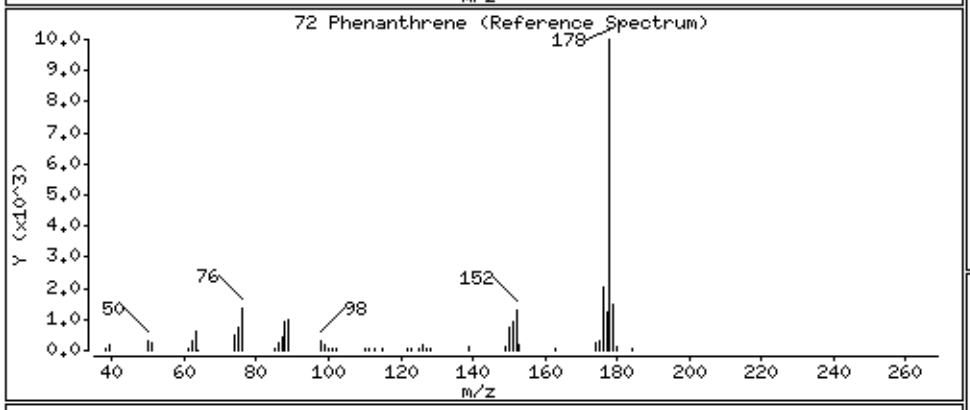
Column diameter: 0.25

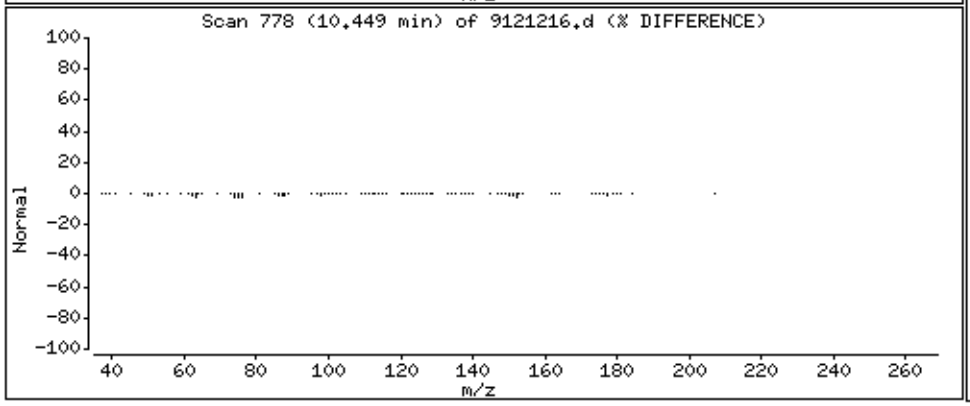
72 Phenanthrene

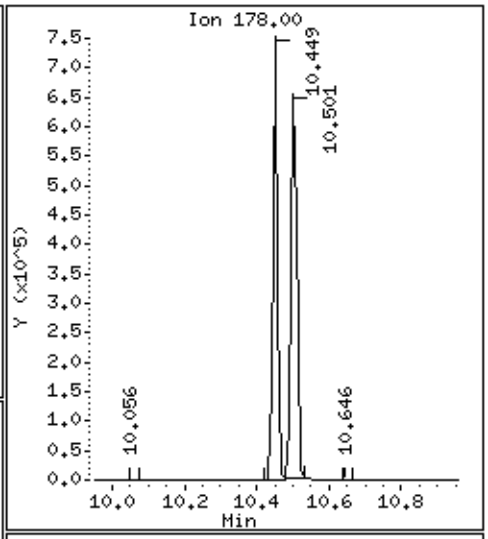
Concentration: 48.27 ug

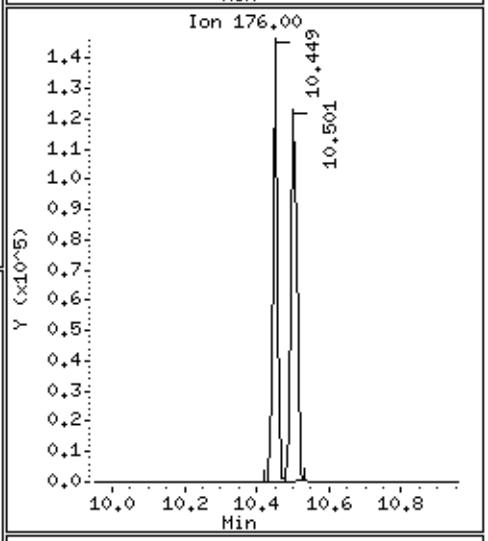


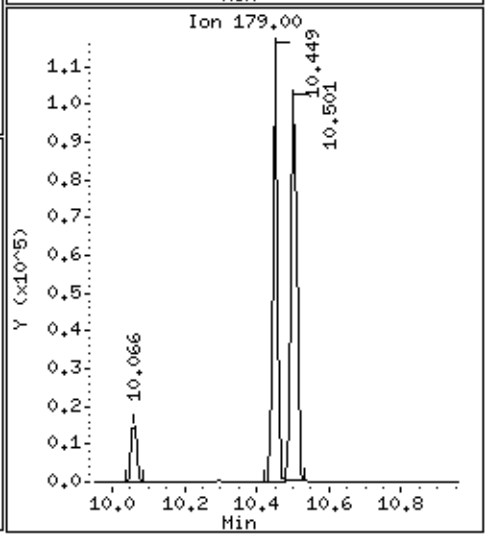












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

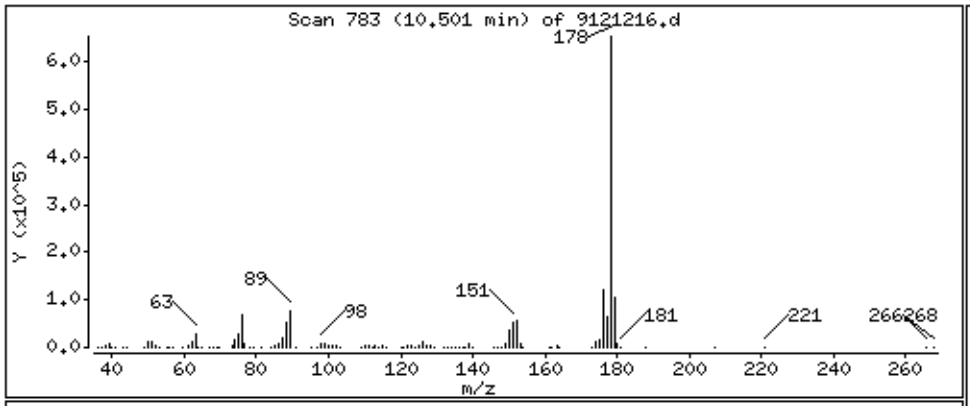
Operator: KV

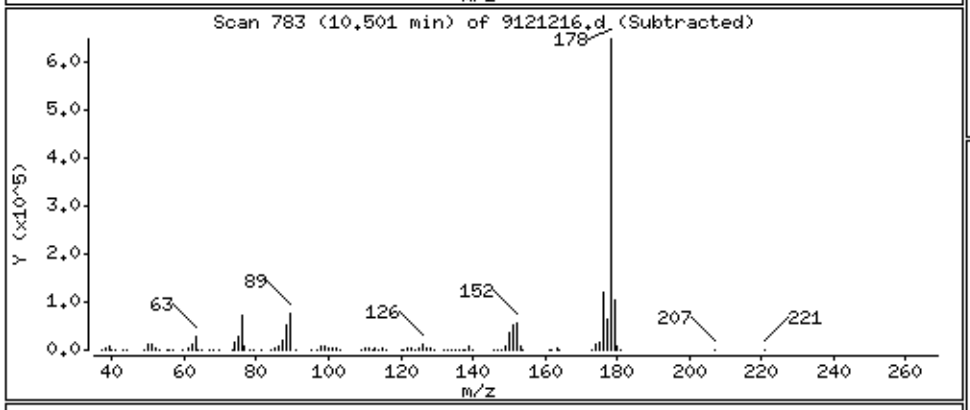
Column phase: DB-5.625

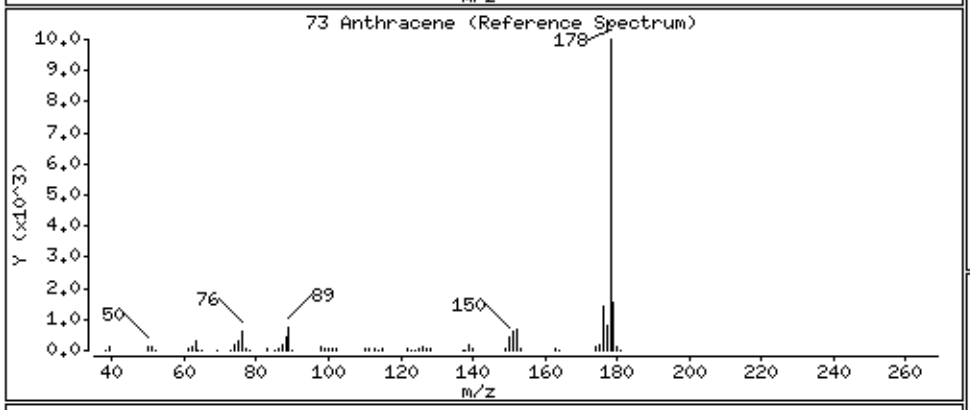
Column diameter: 0.25

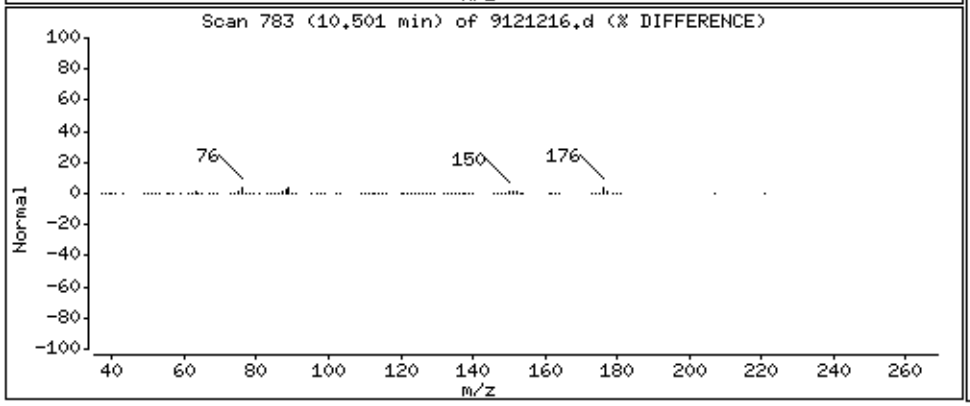
73 Anthracene

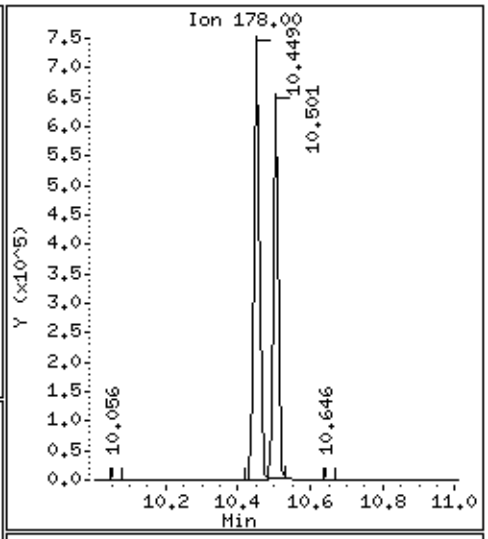
Concentration: 48.27 ug

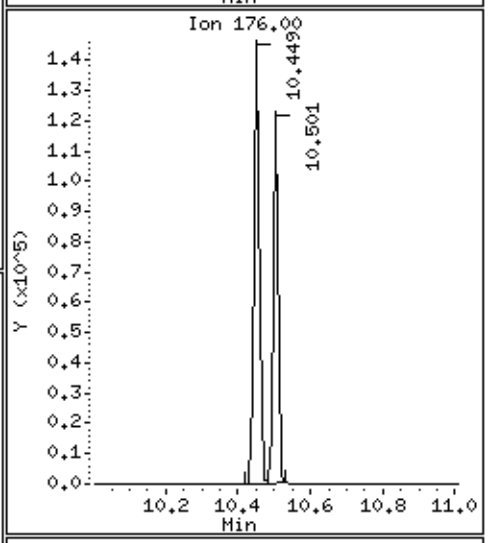


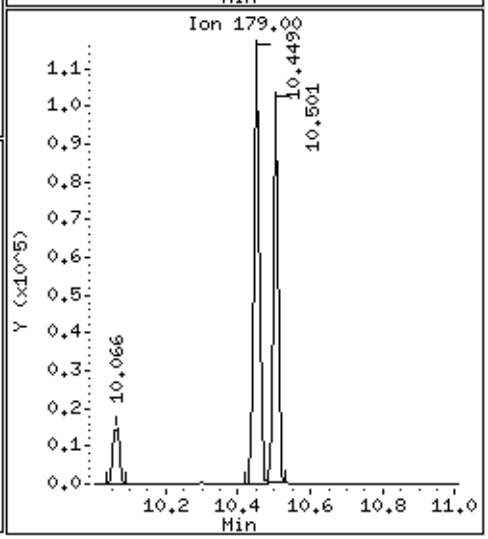












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

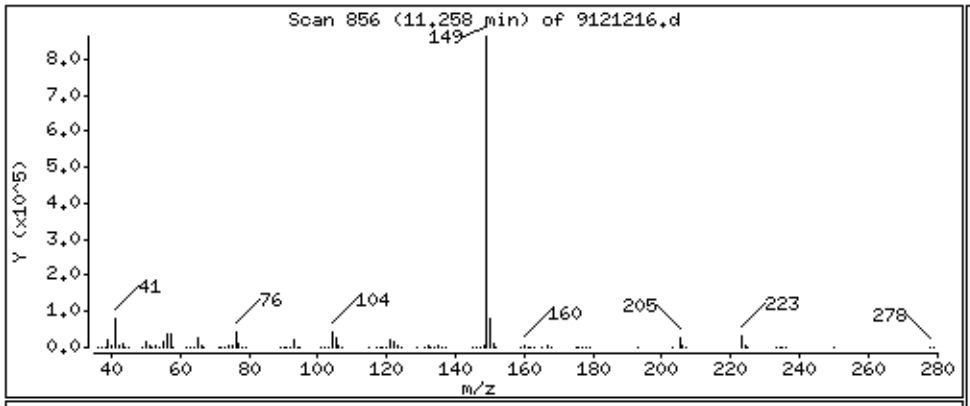
Operator: KV

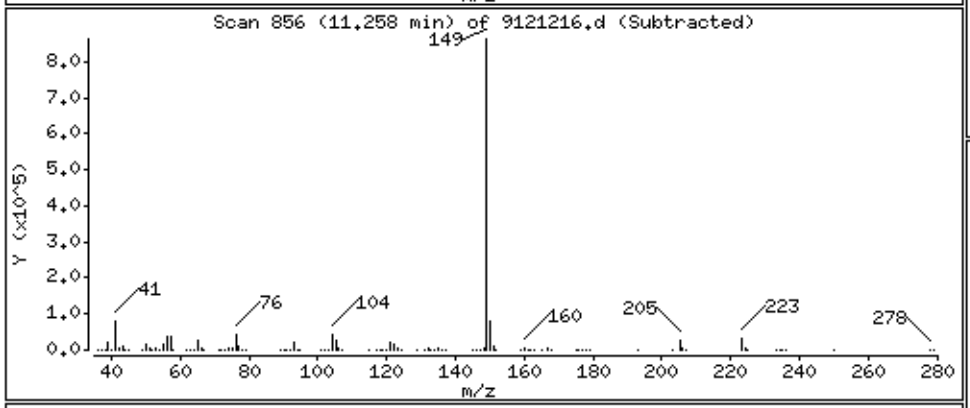
Column phase: DB-5.625

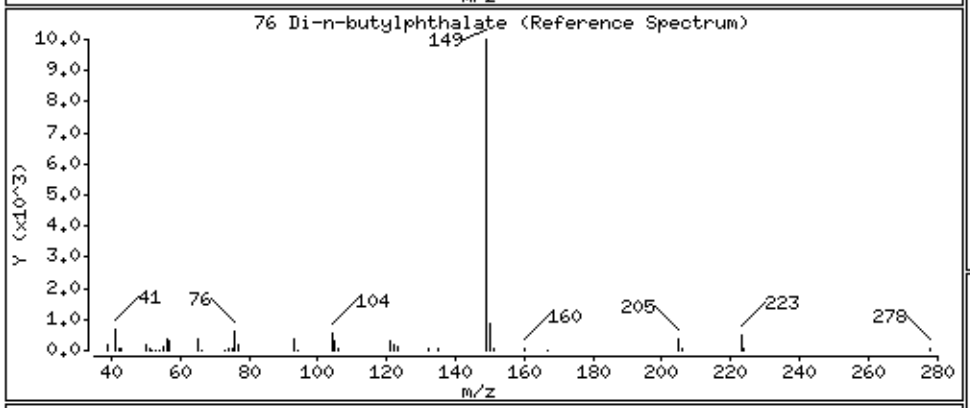
Column diameter: 0.25

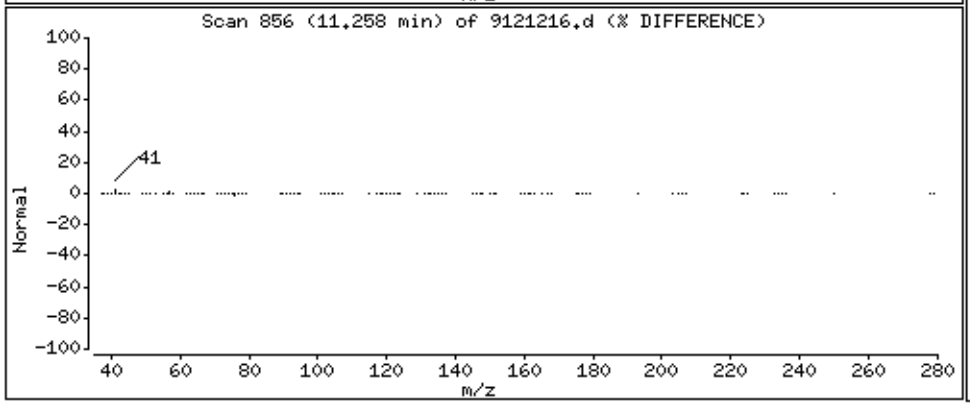
76 Di-n-butylphthalate

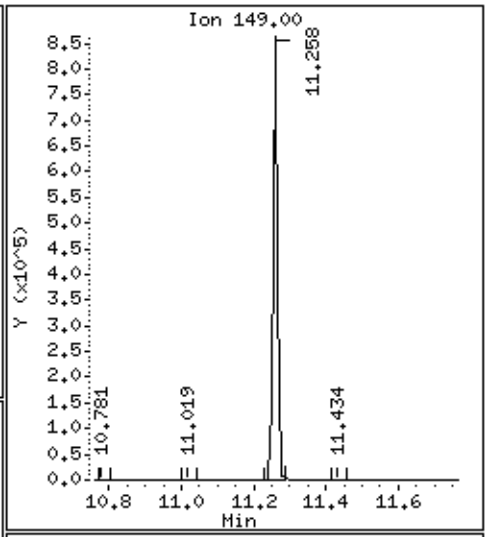
Concentration: 50.63 ug

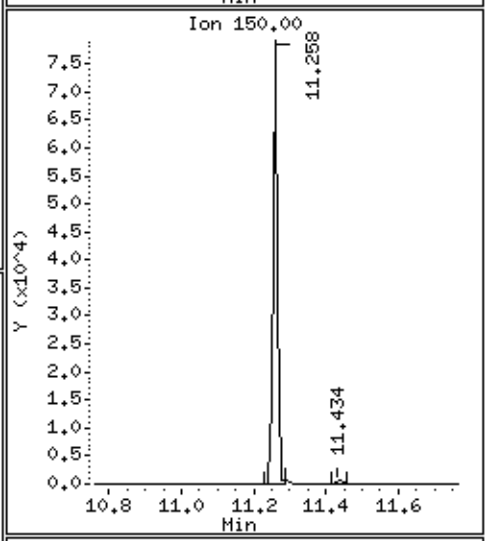


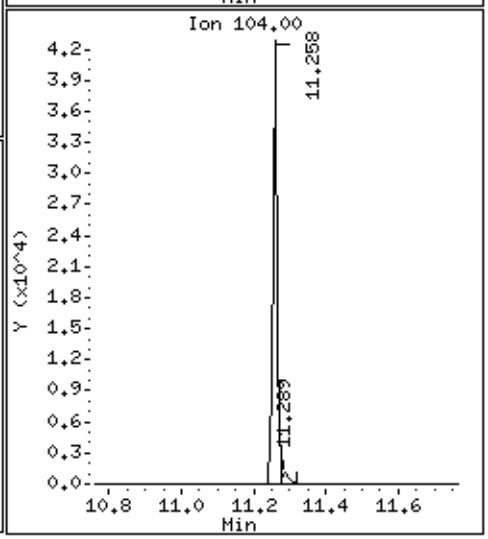












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

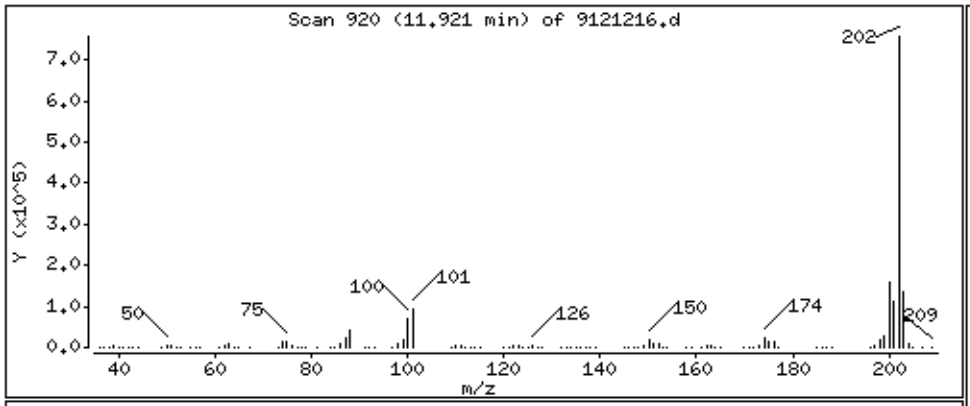
Operator: KV

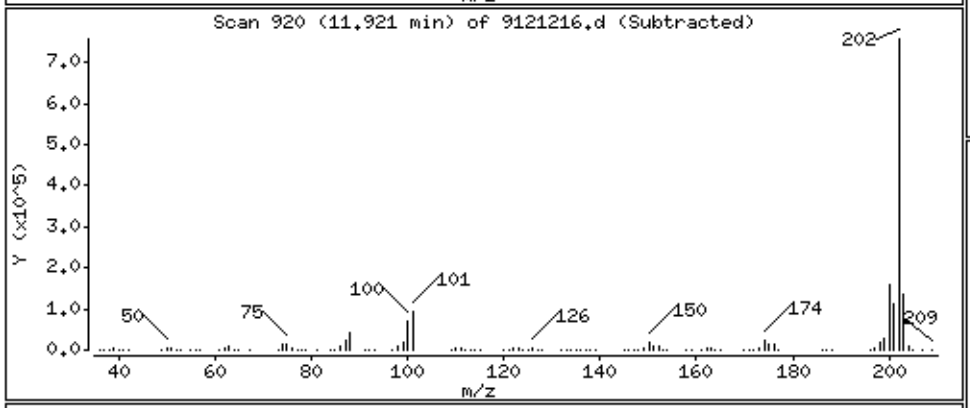
Column phase: DB-5.625

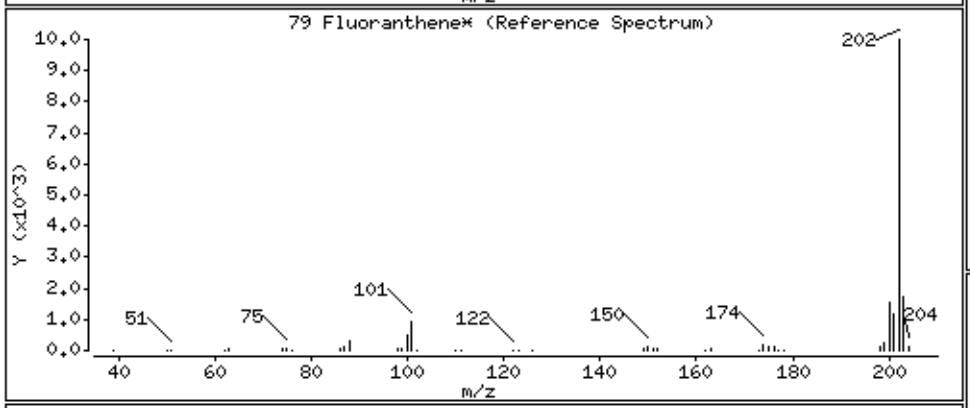
Column diameter: 0.25

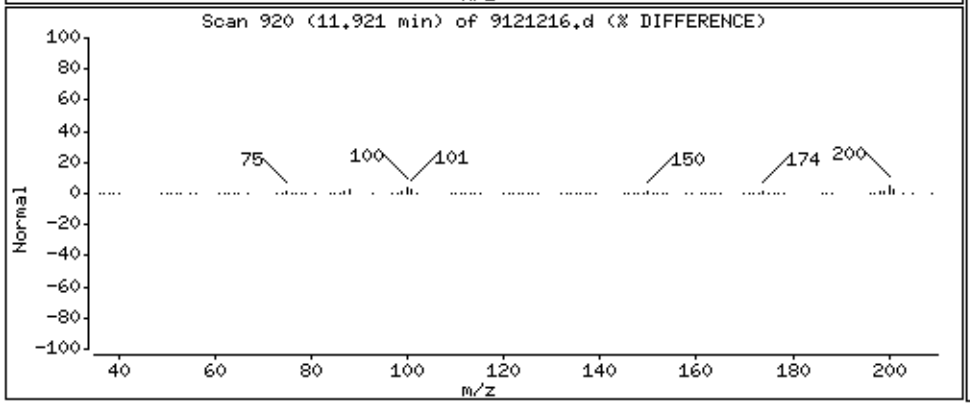
79 Fluoranthene*

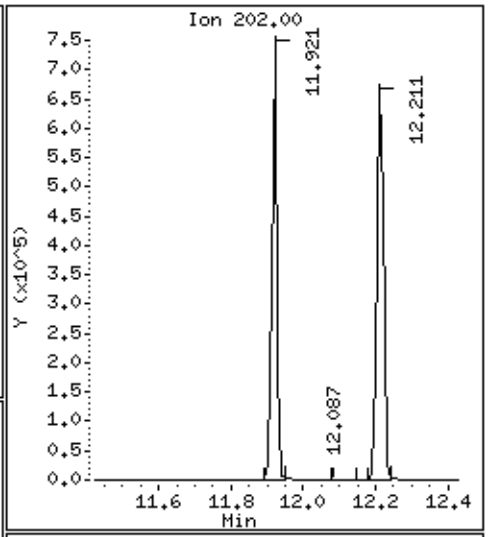
Concentration: 50.99 ug

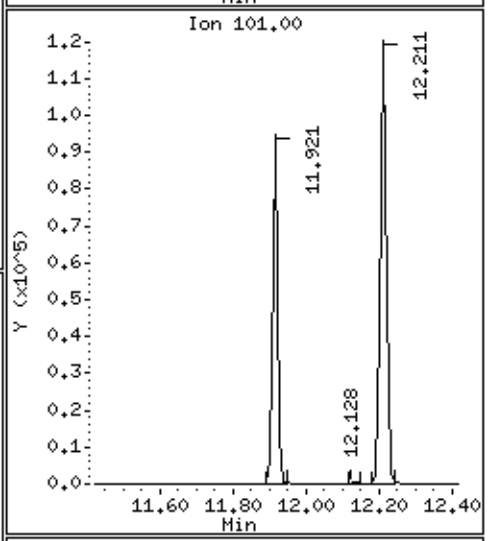


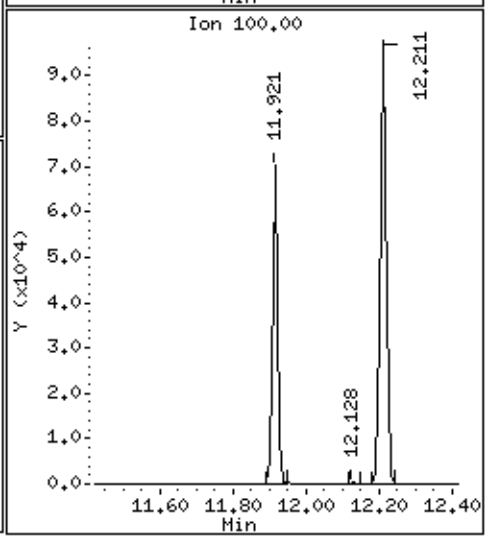












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

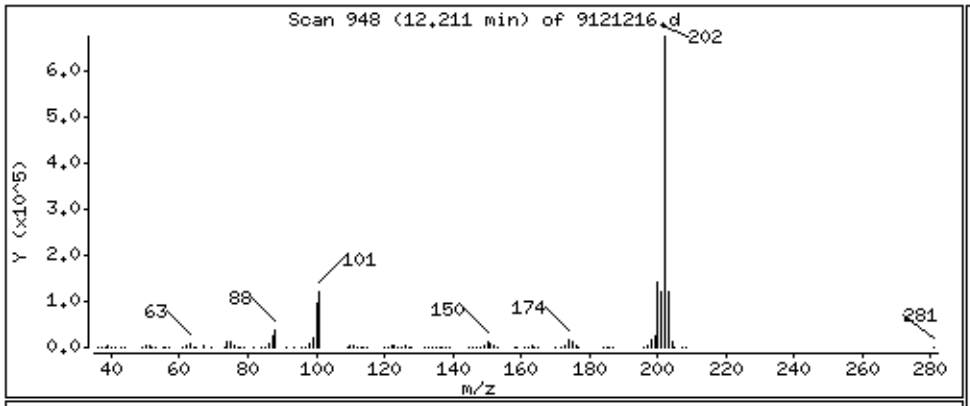
Operator: KV

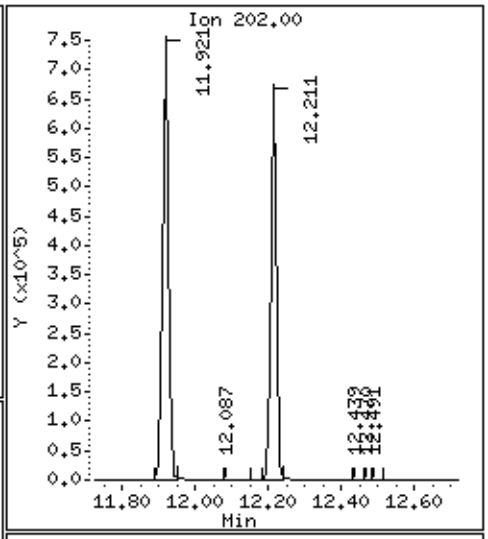
Column phase: DB-5.625

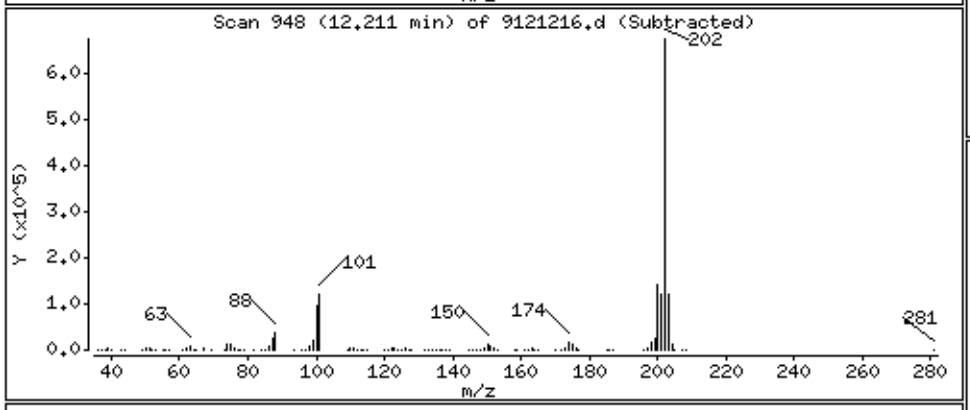
Column diameter: 0.25

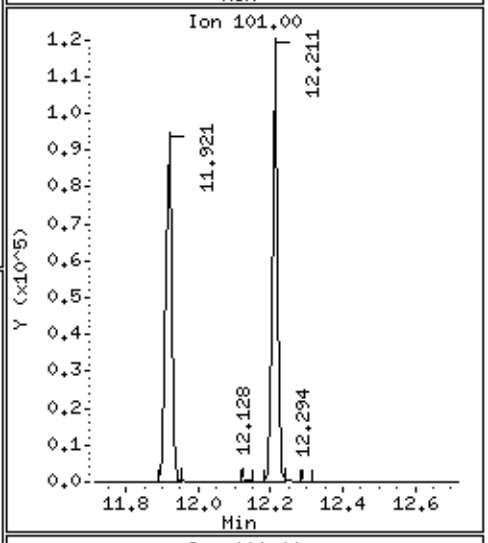
84 Pyrene

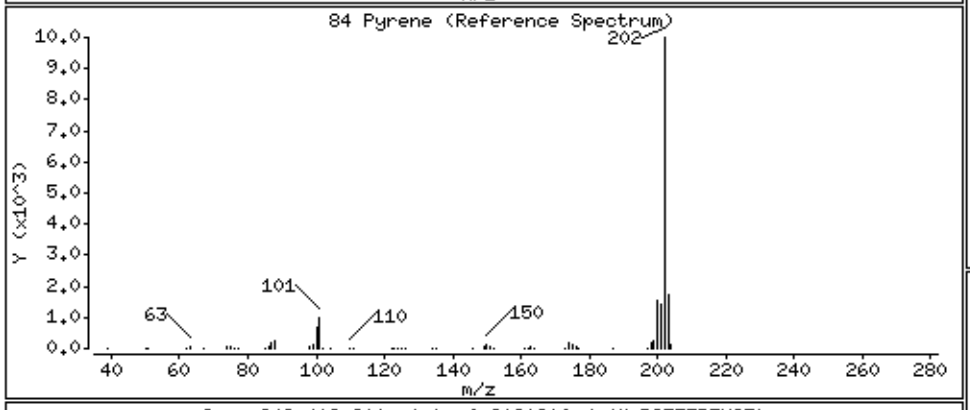
Concentration: 47.76 ug

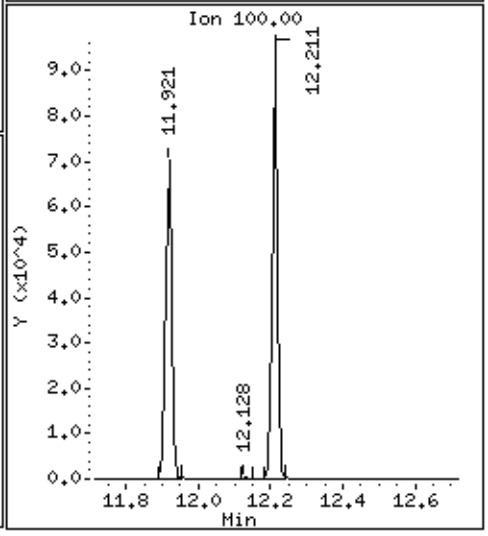


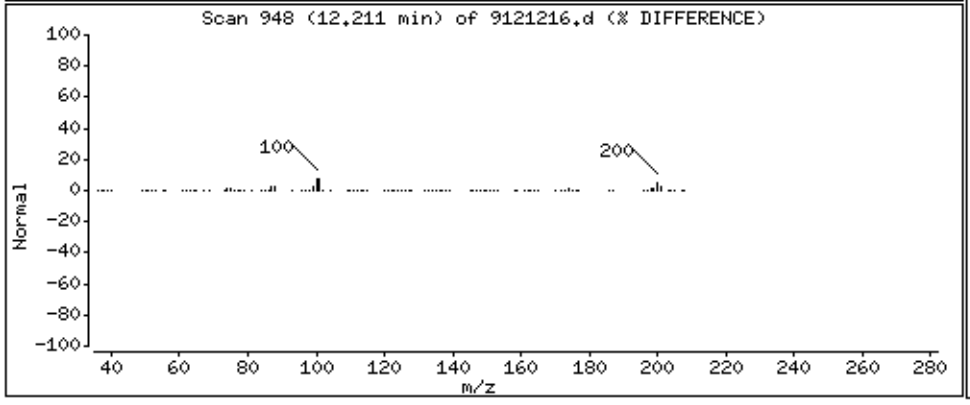












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

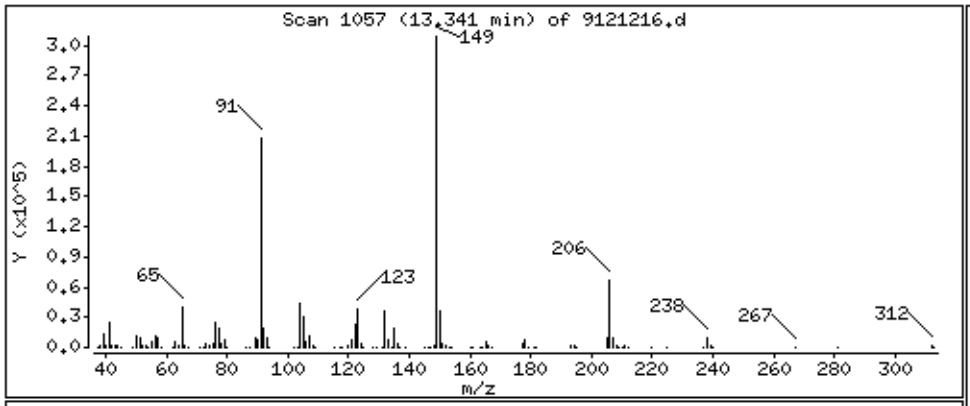
Operator: KV

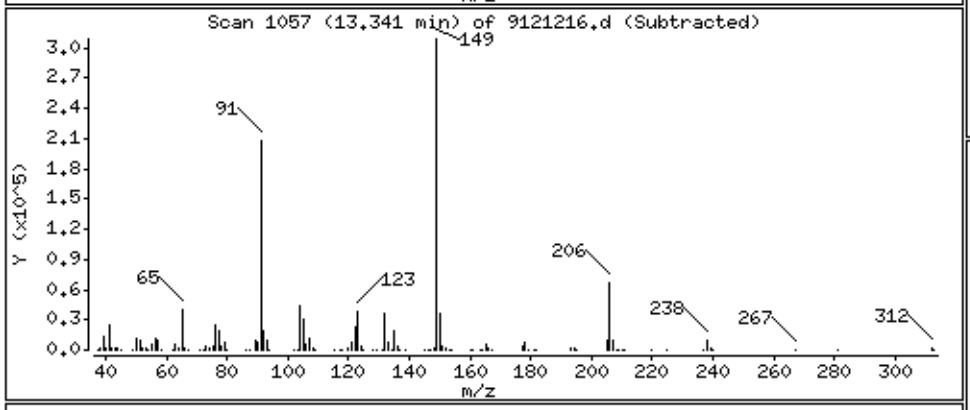
Column phase: DB-5.625

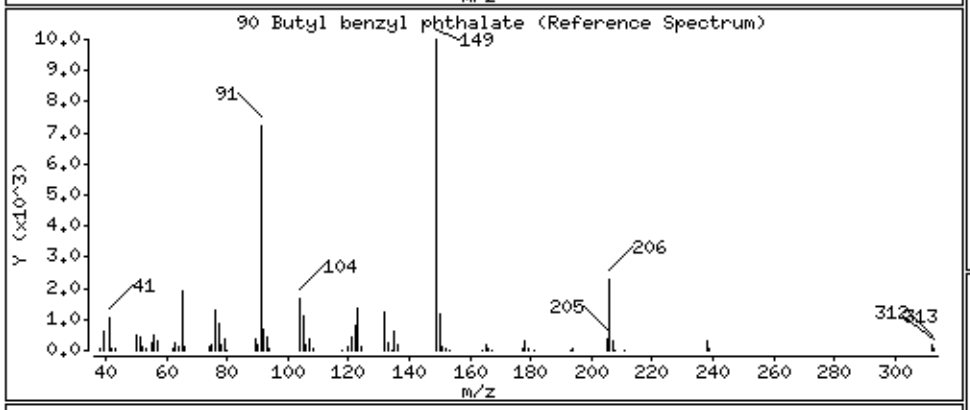
Column diameter: 0.25

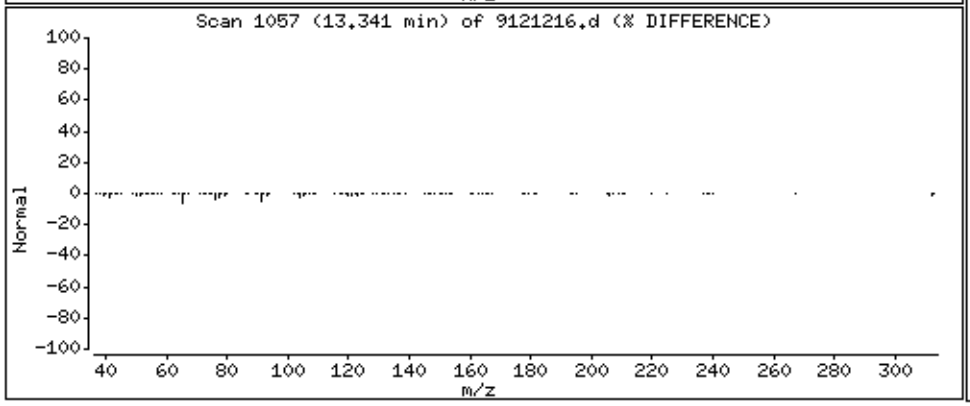
90 Butyl benzyl phthalate

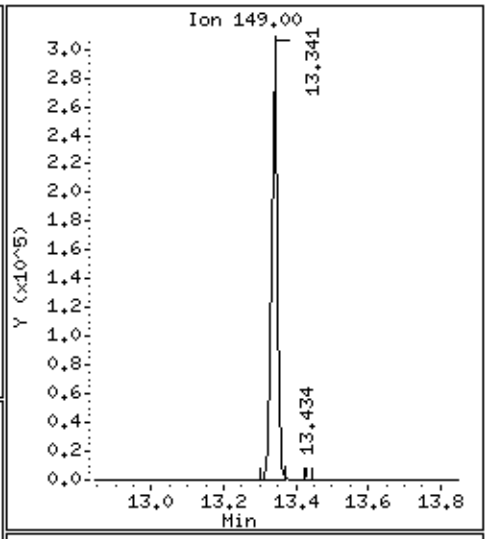
Concentration: 50.46 ug

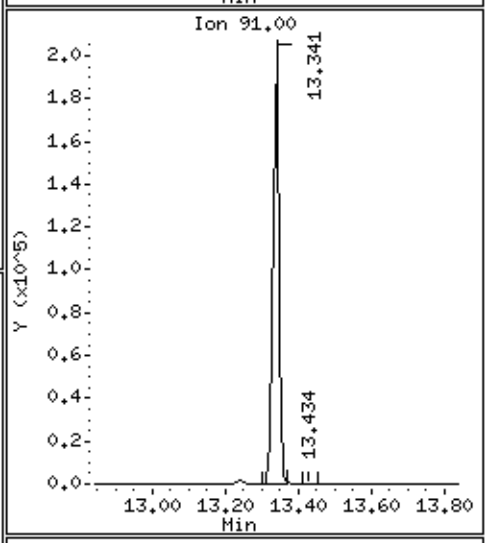


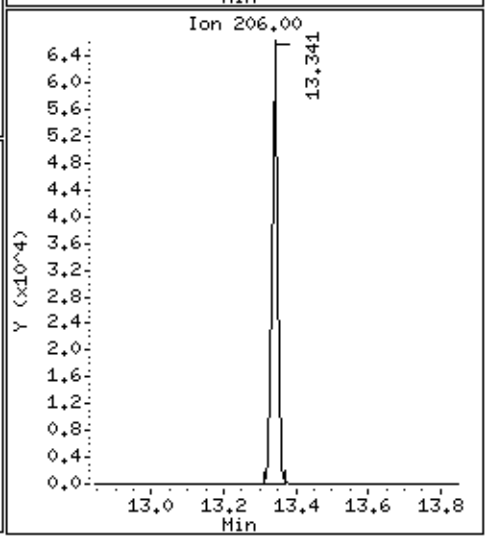












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

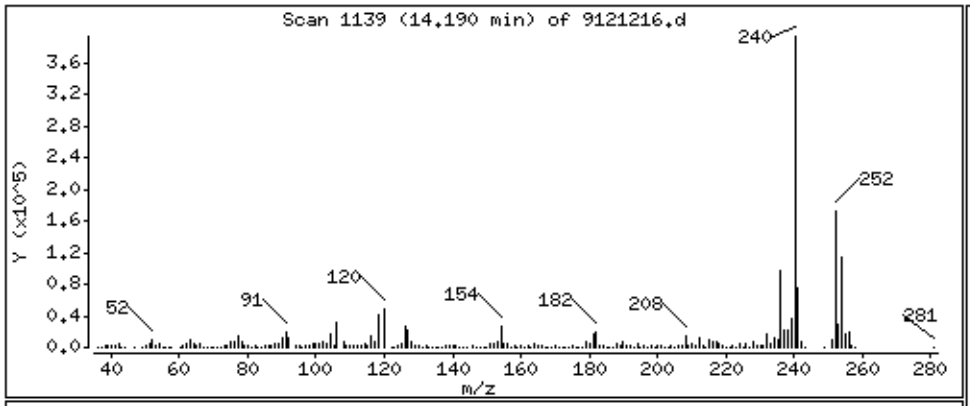
Operator: KV

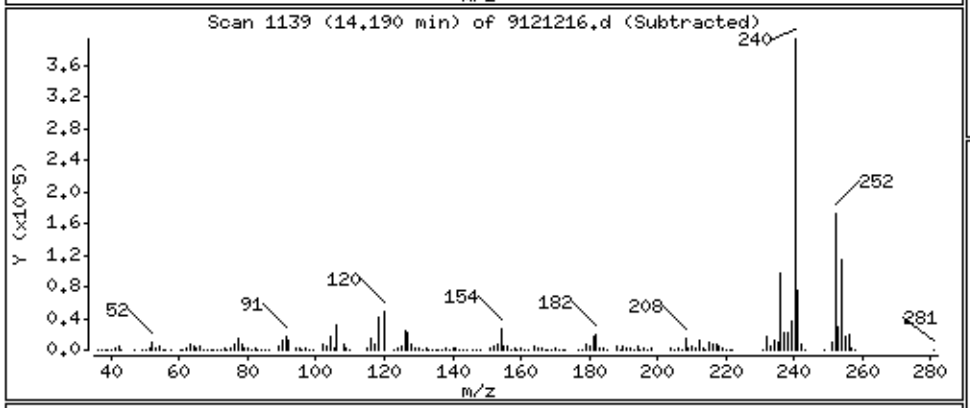
Column phase: DB-5.625

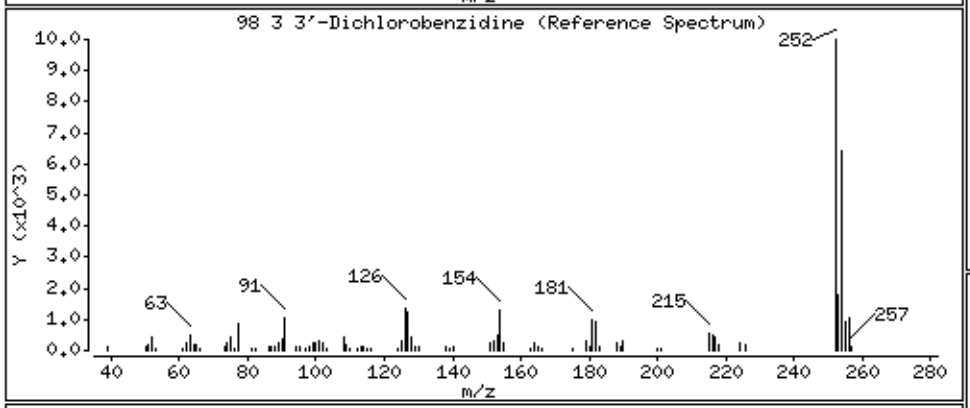
Column diameter: 0.25

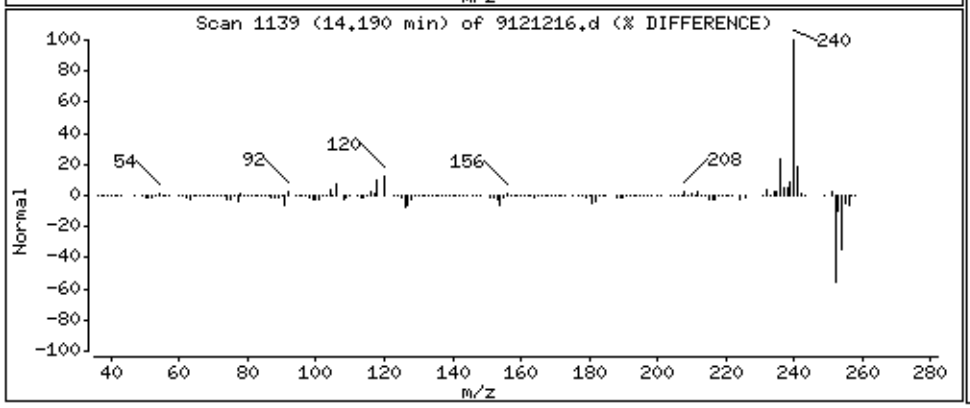
98 3 3'-Dichlorobenzidine

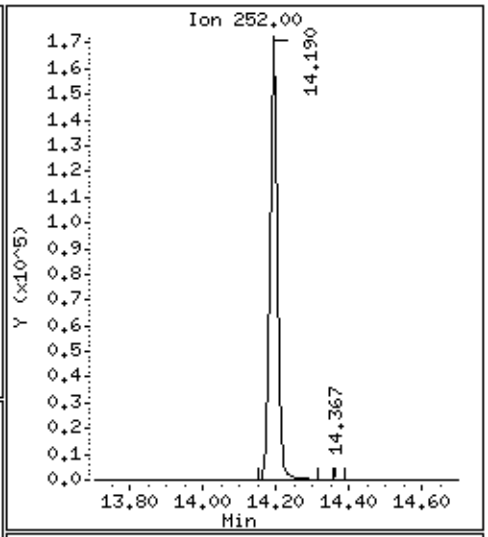
Concentration: 45.32 ug

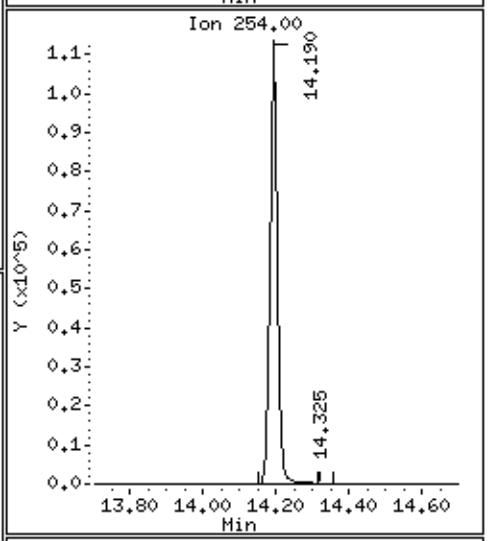


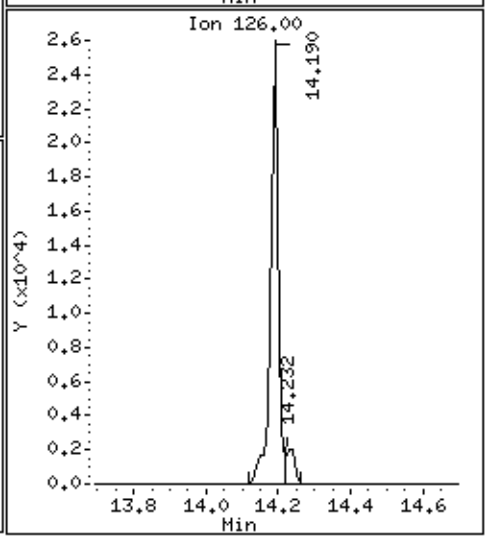












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

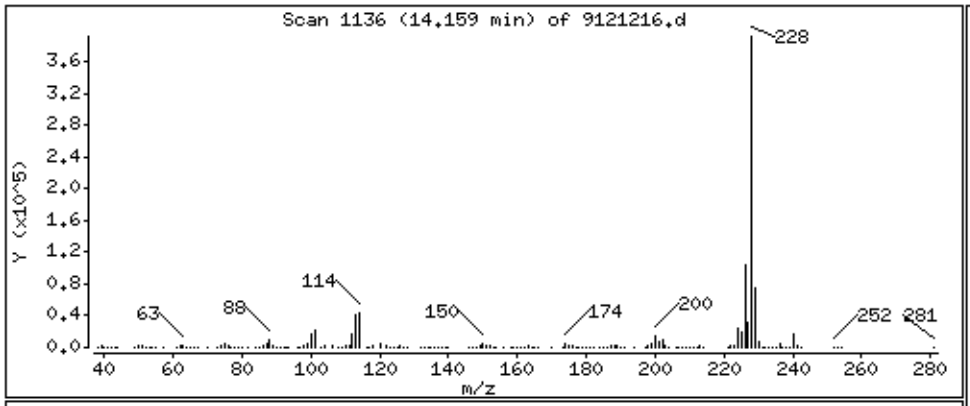
Operator: KV

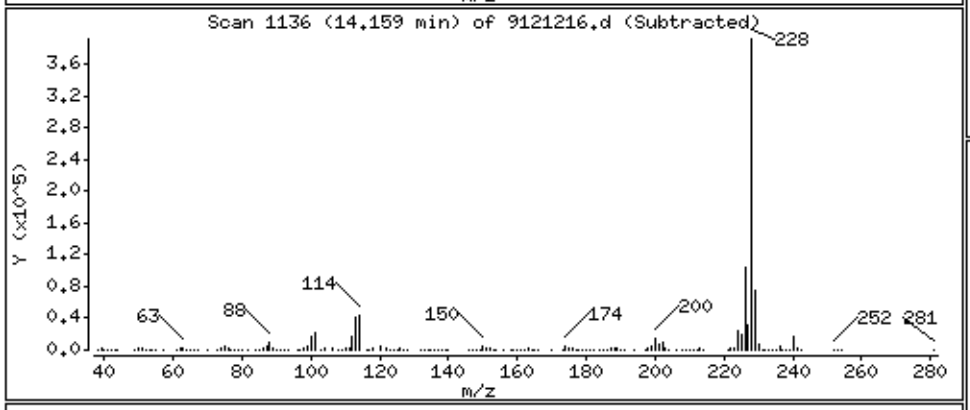
Column phase: DB-5.625

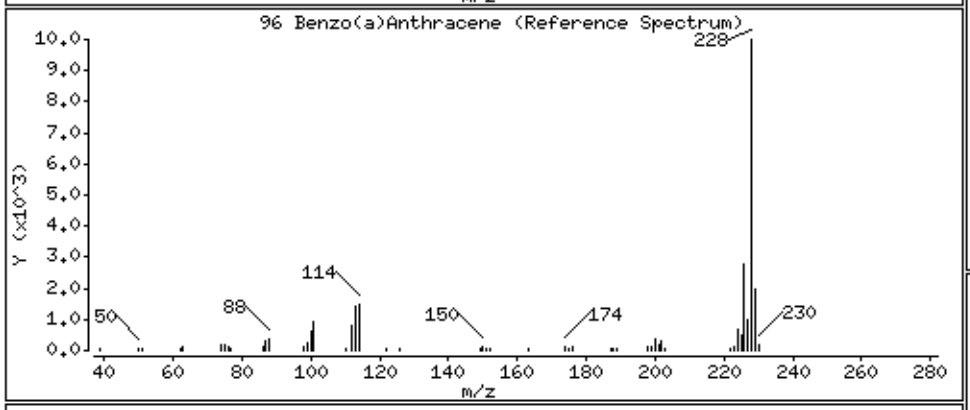
Column diameter: 0.25

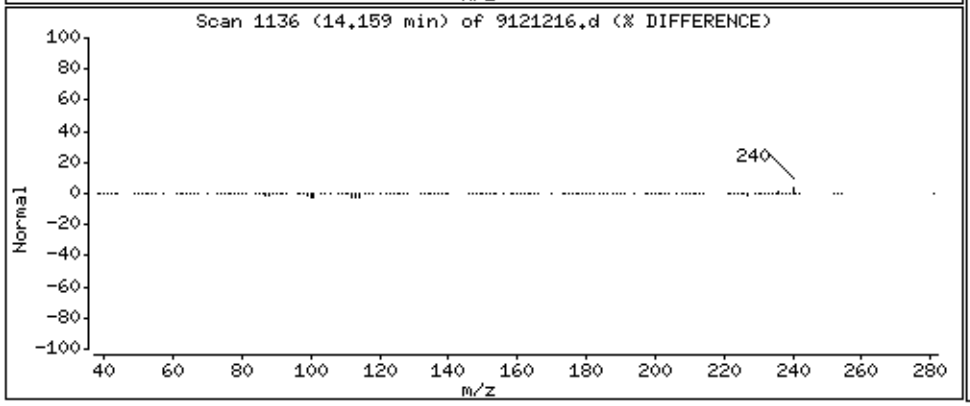
96 Benzo(a)Anthracene

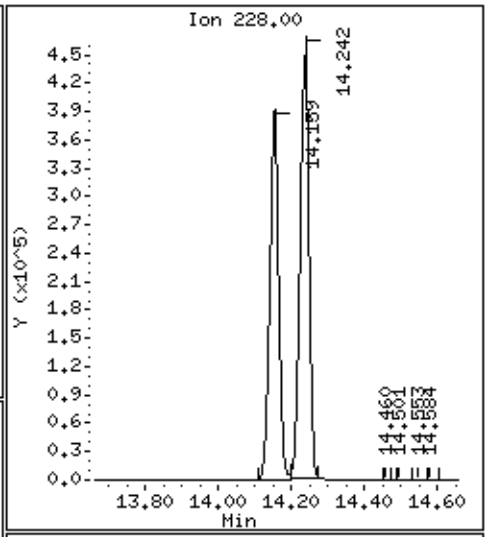
Concentration: 48.24 ug

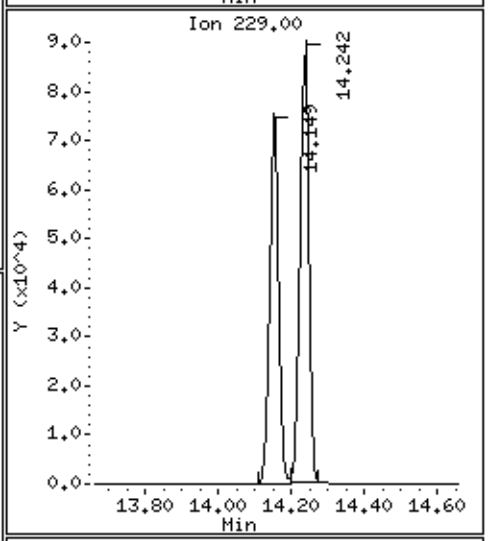


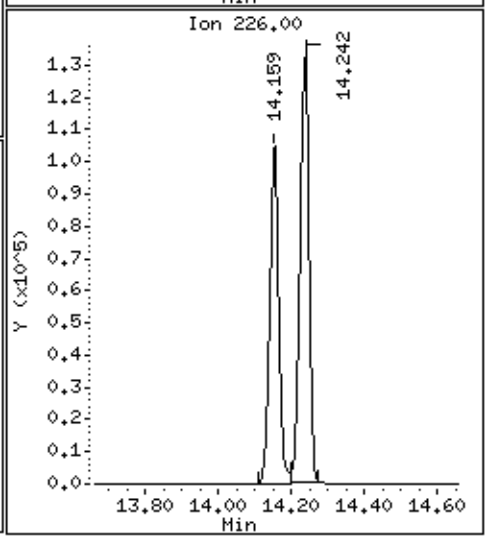












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

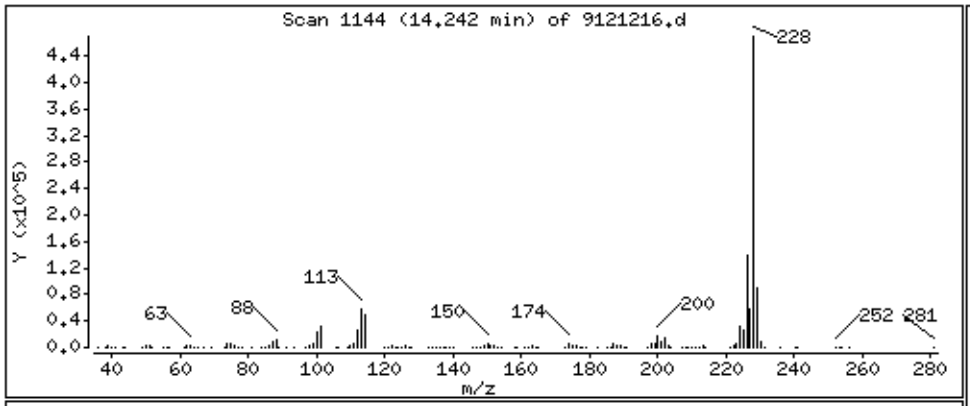
Operator: KV

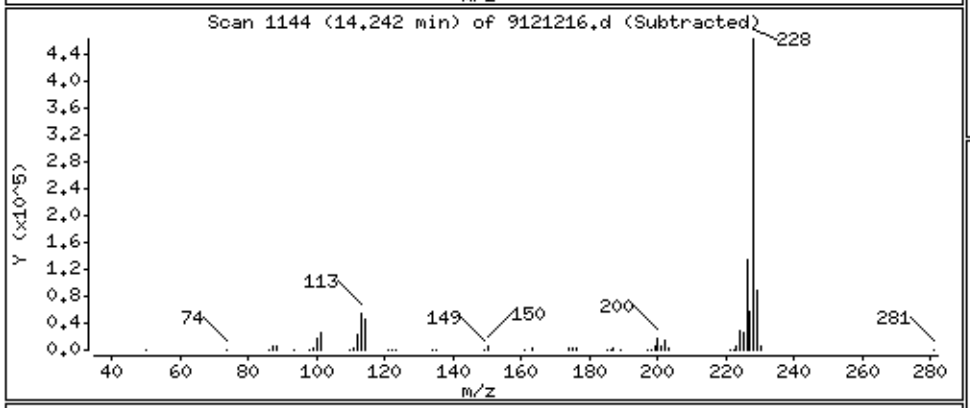
Column phase: DB-5.625

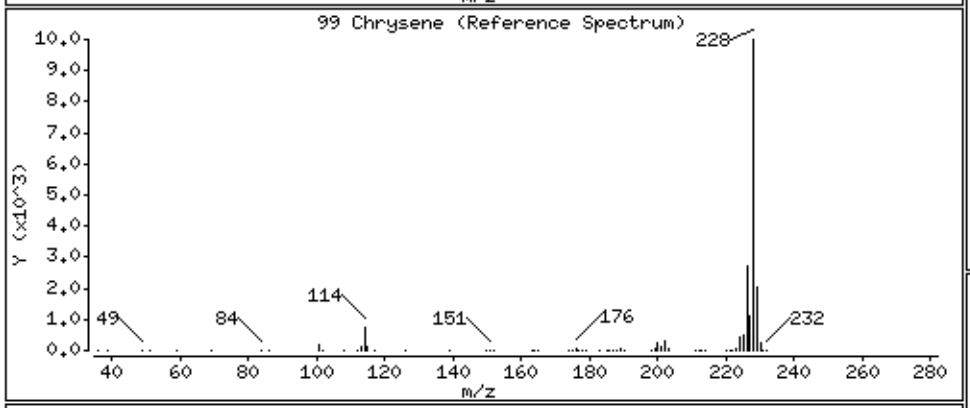
Column diameter: 0.25

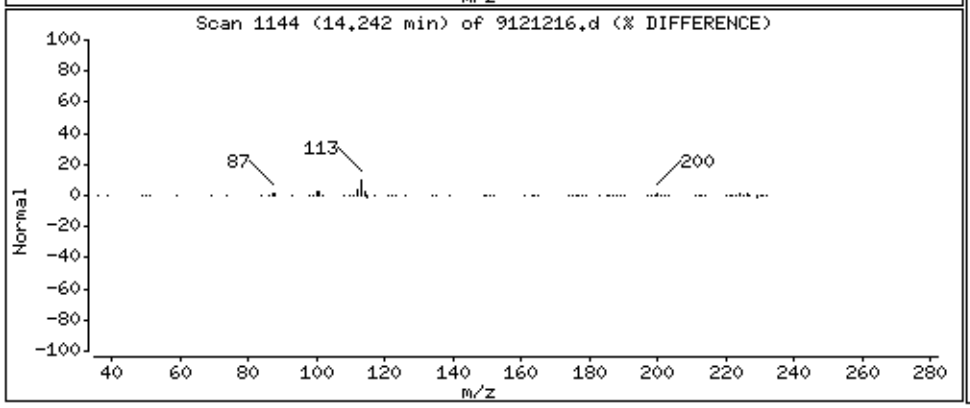
99 Chrysene

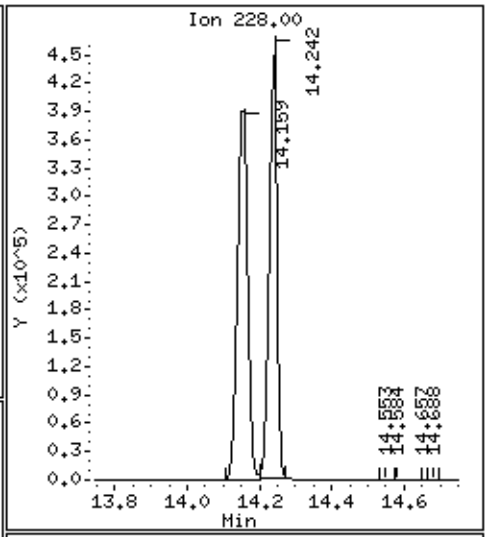
Concentration: 49.69 ug

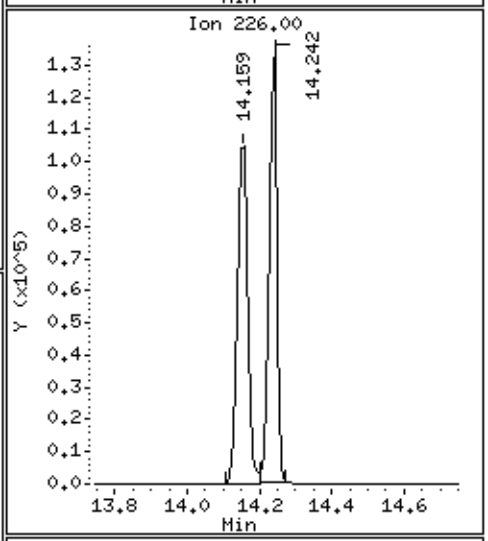


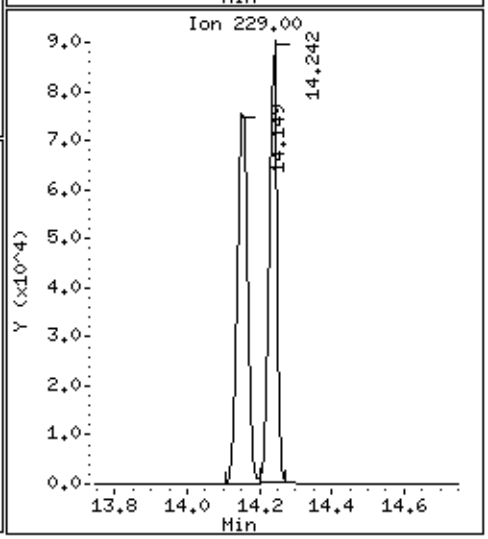












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

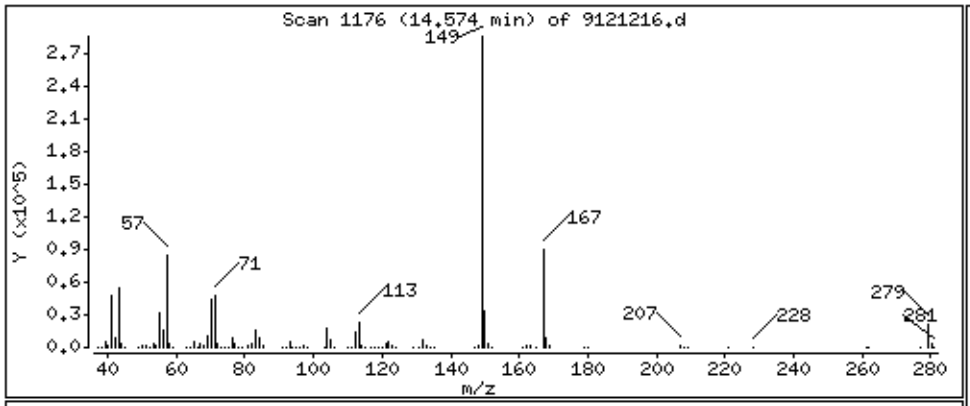
Operator: KV

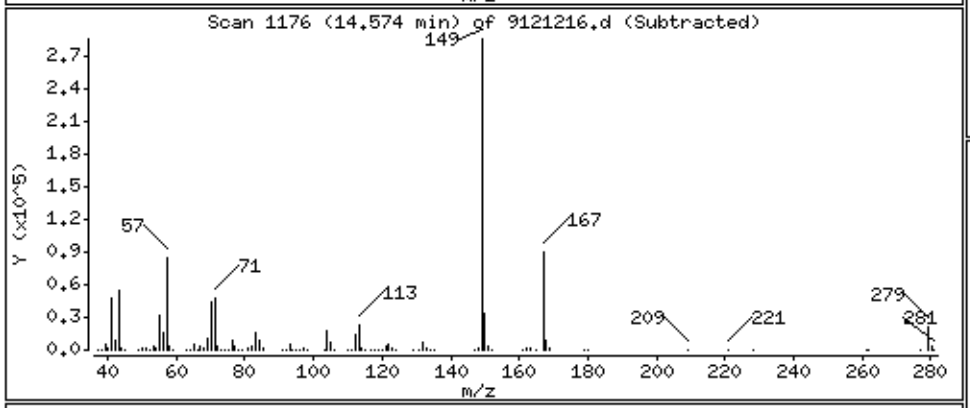
Column phase: DB-5.625

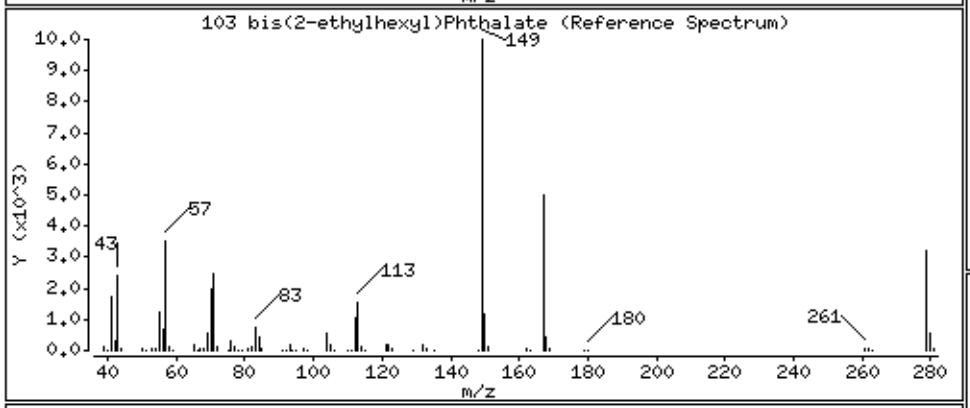
Column diameter: 0.25

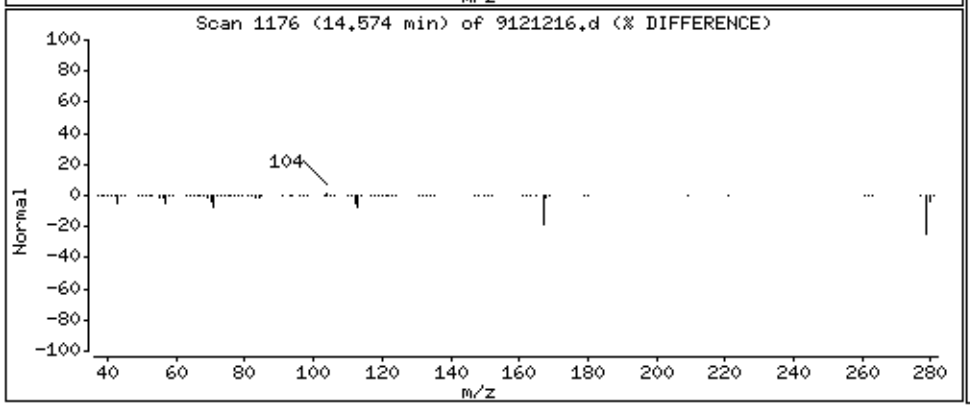
103 bis(2-ethylhexyl)Phthalate

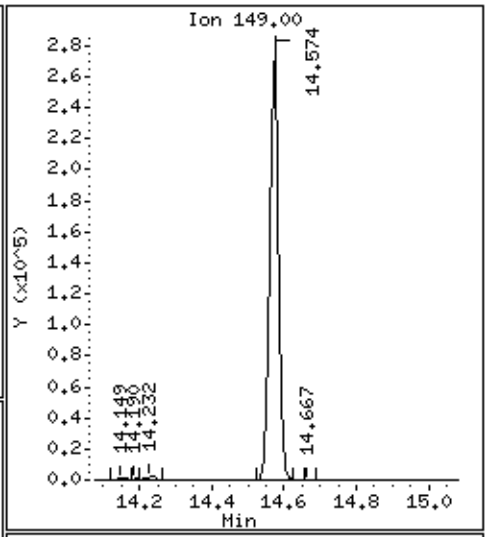
Concentration: 50.38 ug

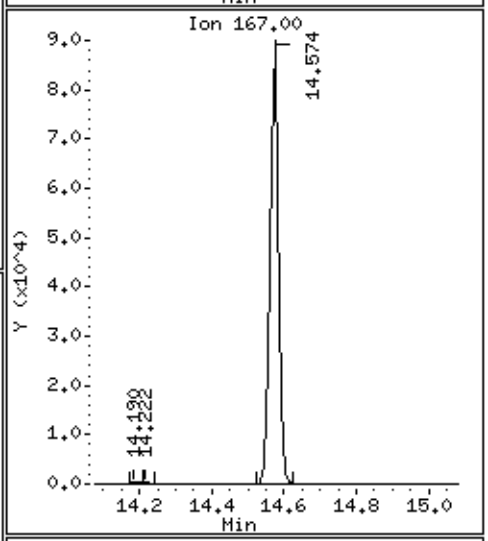


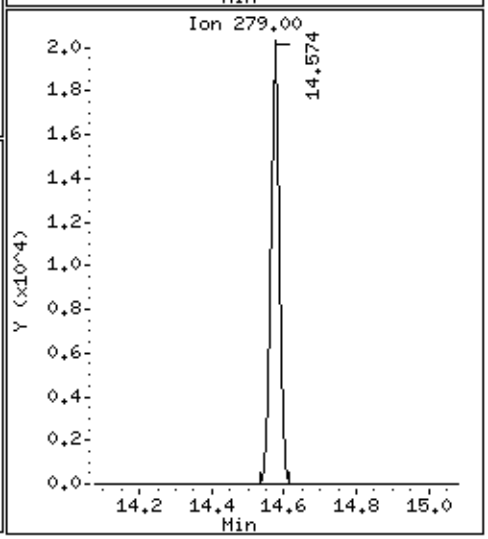












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

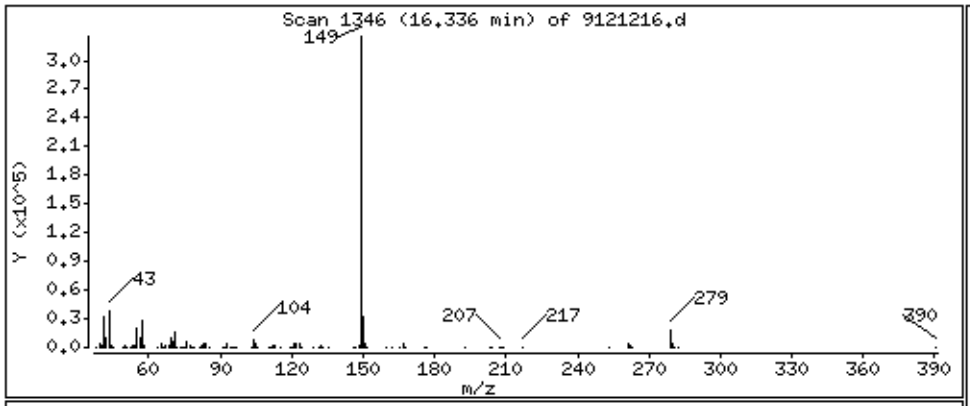
Operator: KV

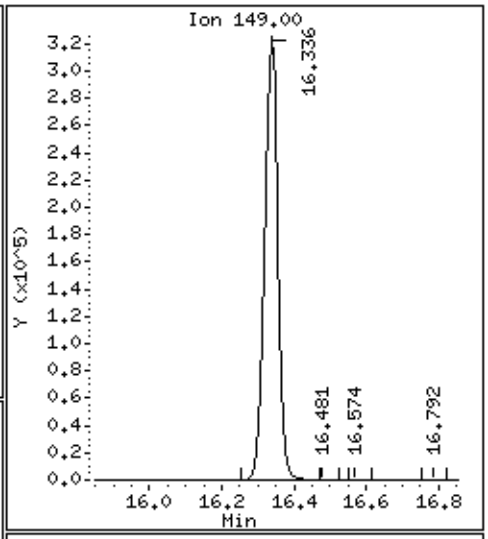
Column phase: DB-5.625

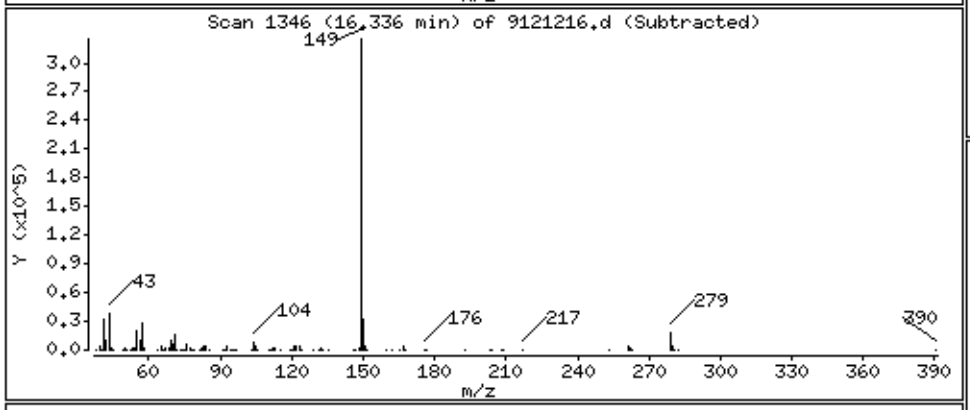
Column diameter: 0.25

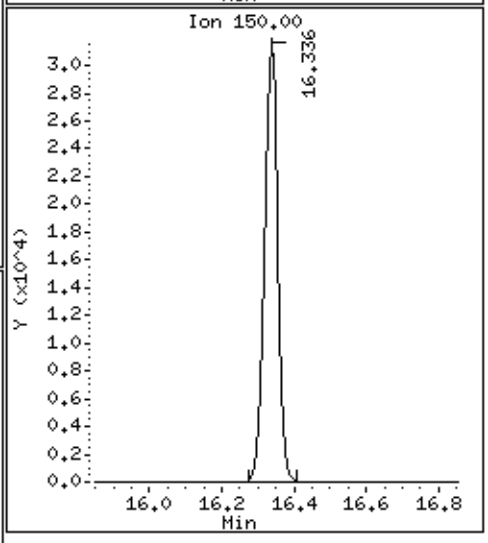
105 Di-n-octyl phthalate*

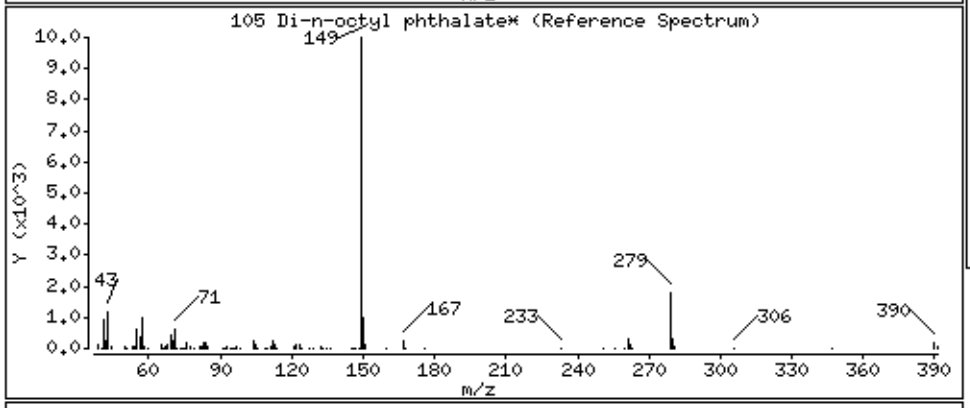
Concentration: 51.86 ug

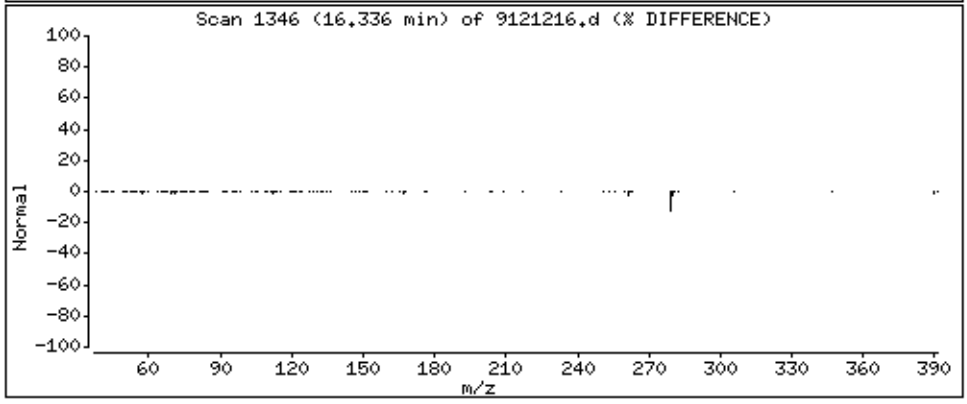












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

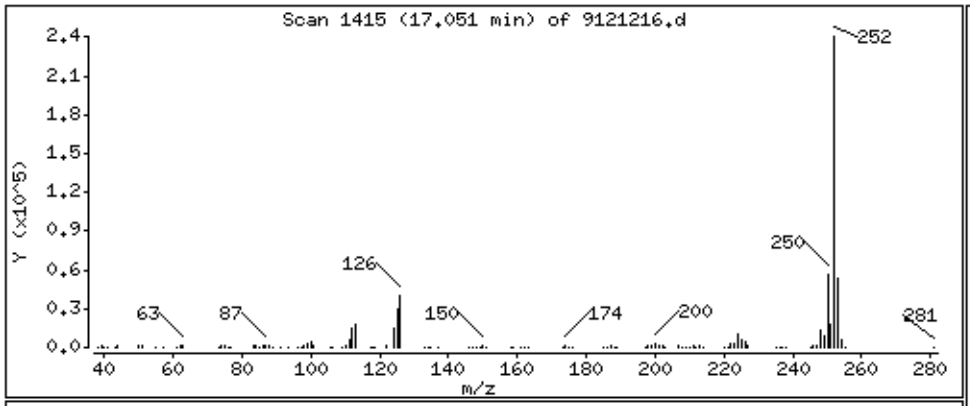
Operator: KV

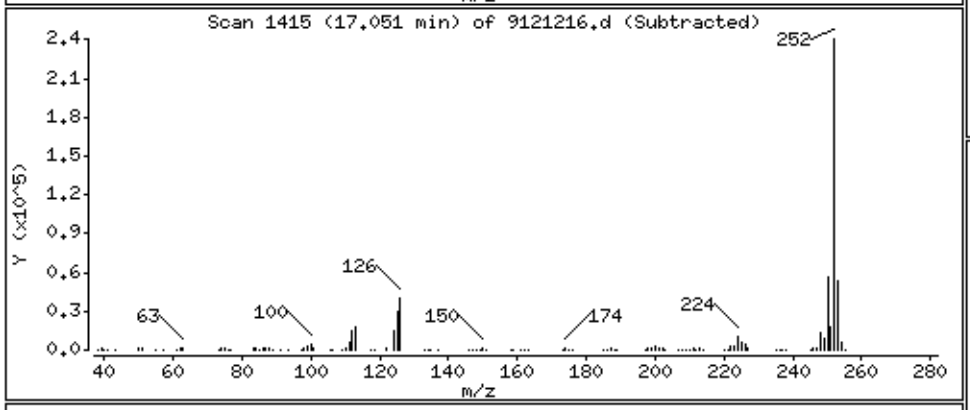
Column phase: DB-5.625

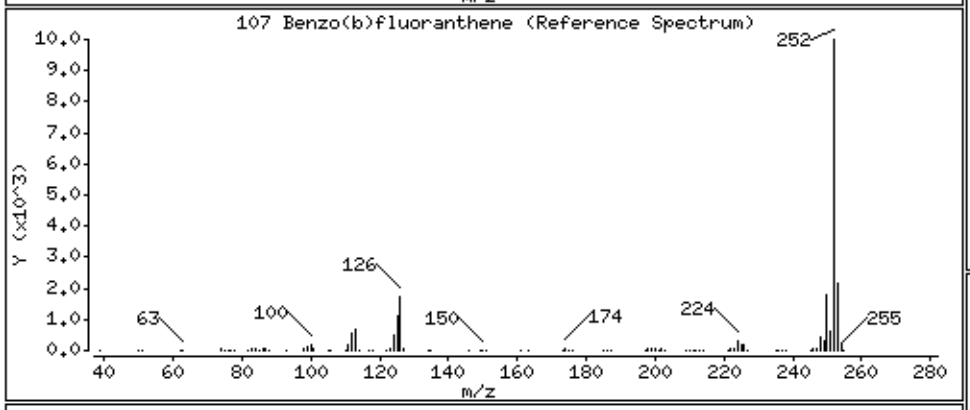
Column diameter: 0.25

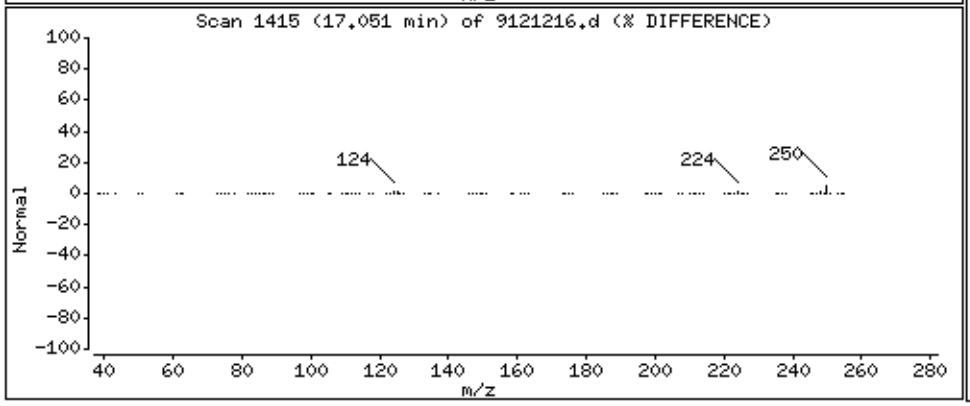
107 Benzo(b)fluoranthene

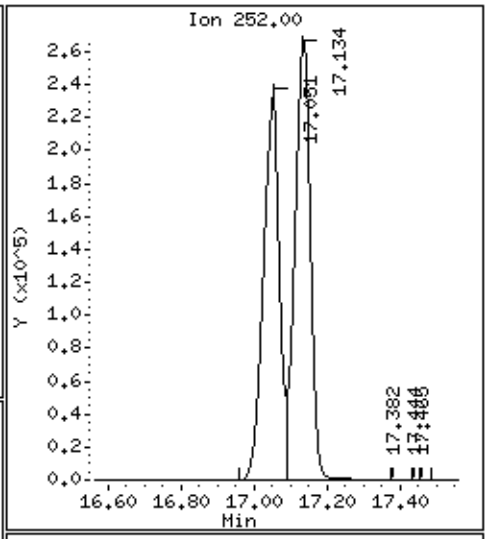
Concentration: 53.46 ug

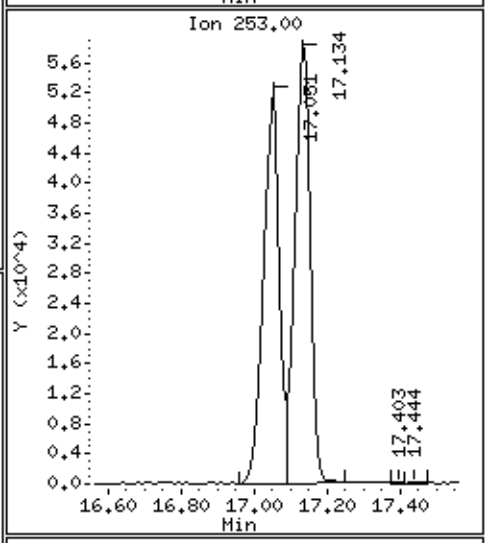


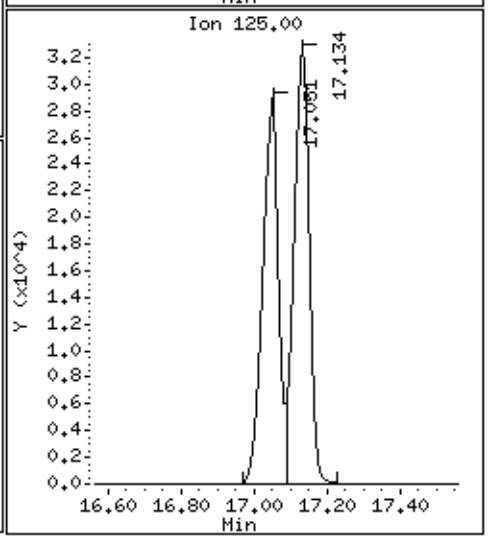












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

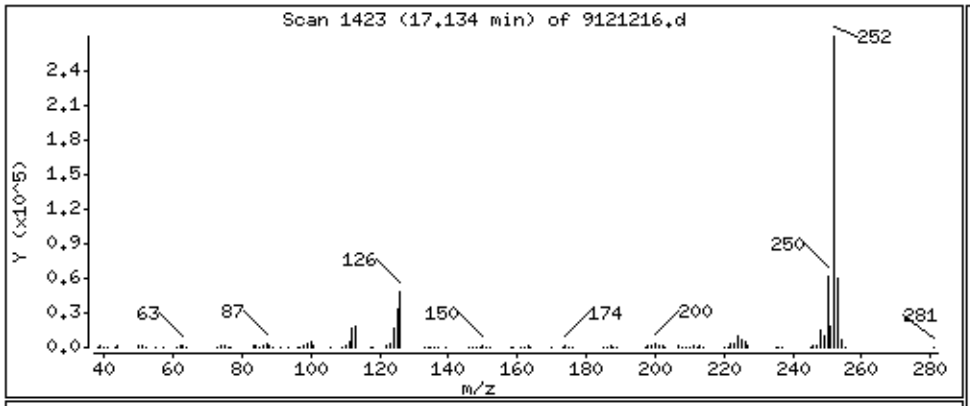
Operator: KV

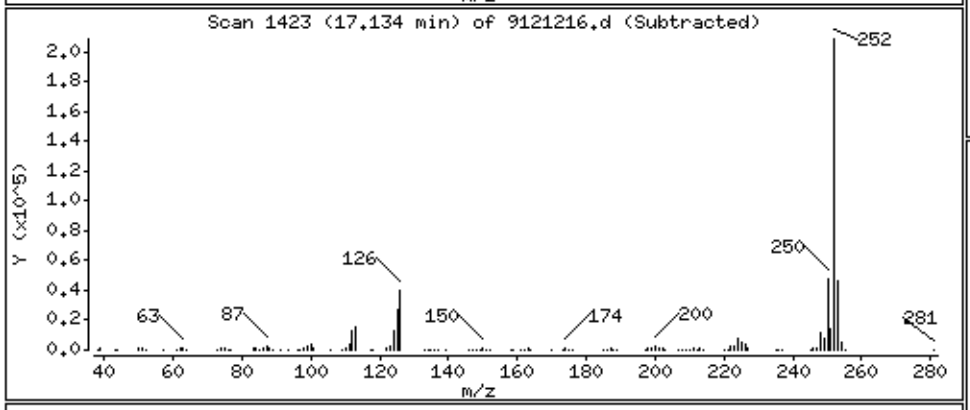
Column phase: DB-5.625

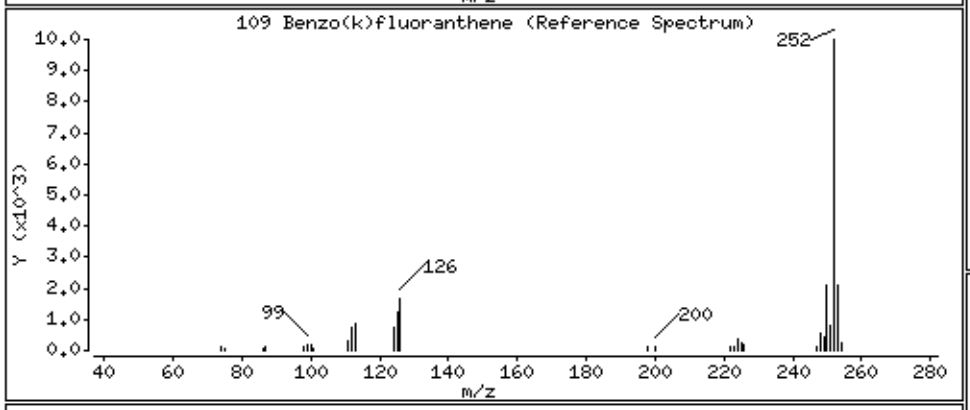
Column diameter: 0.25

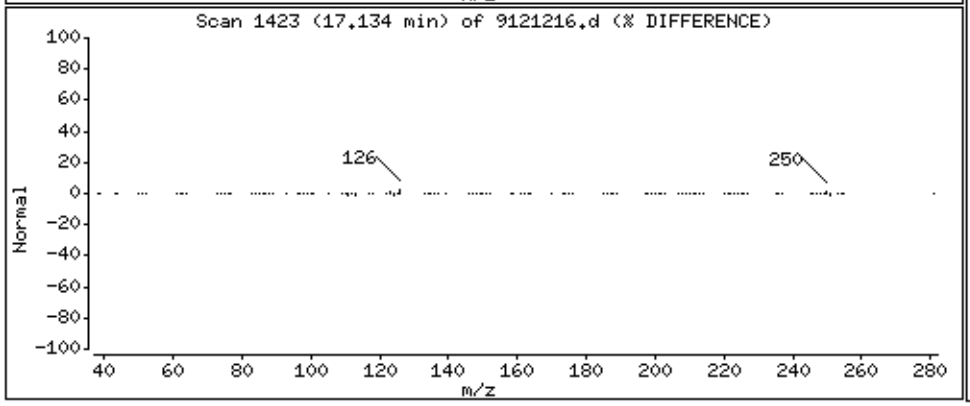
109 Benzo(k)fluoranthene

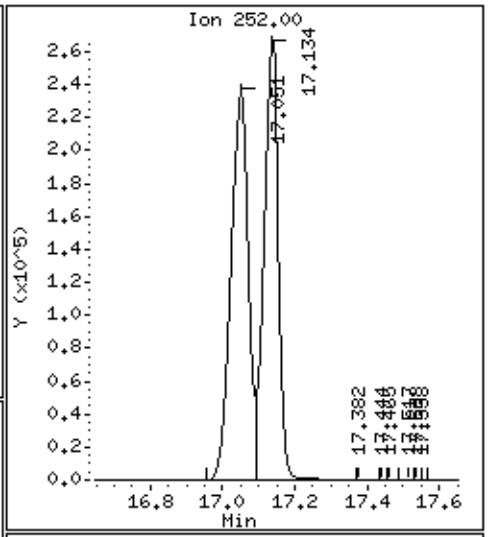
Concentration: 52.16 ug

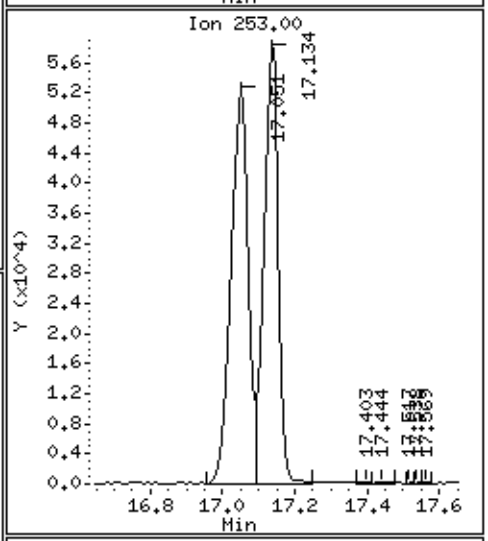


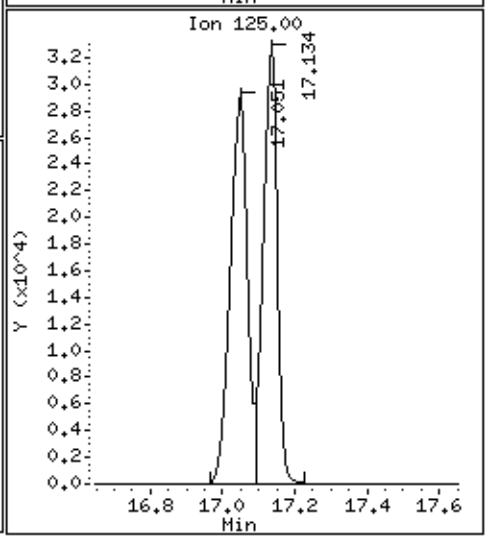












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

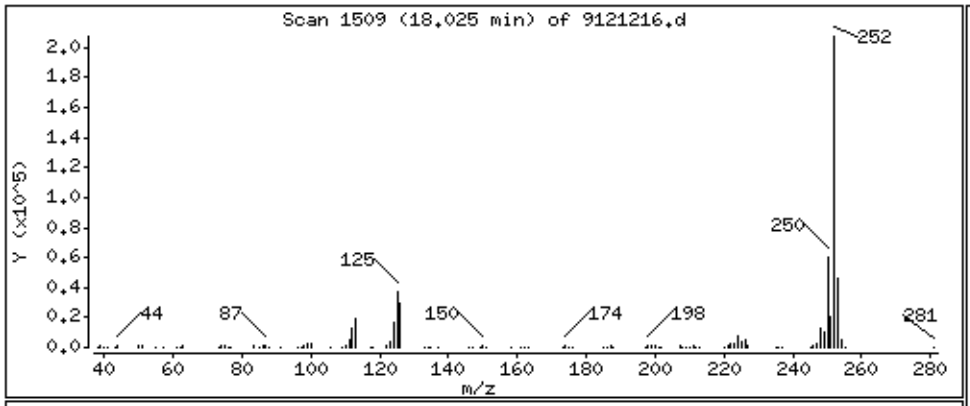
Operator: KV

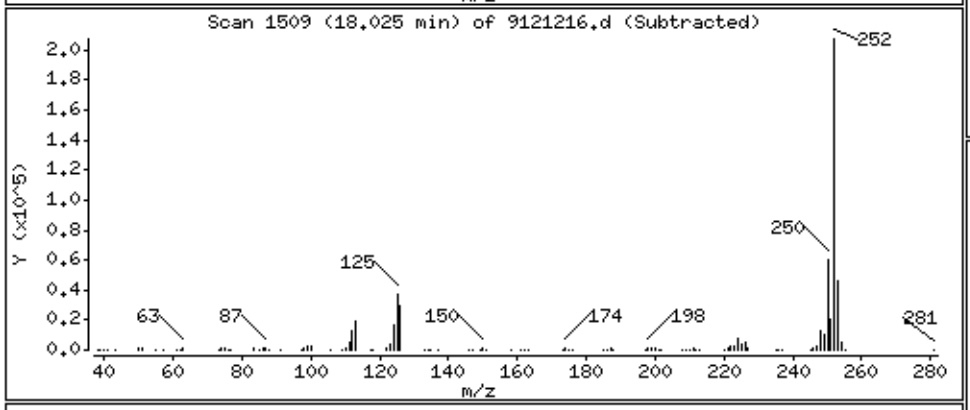
Column phase: DB-5.625

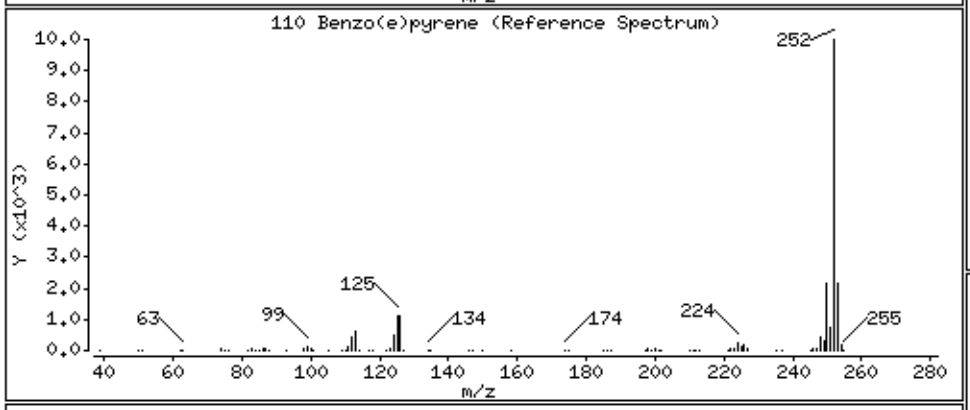
Column diameter: 0.25

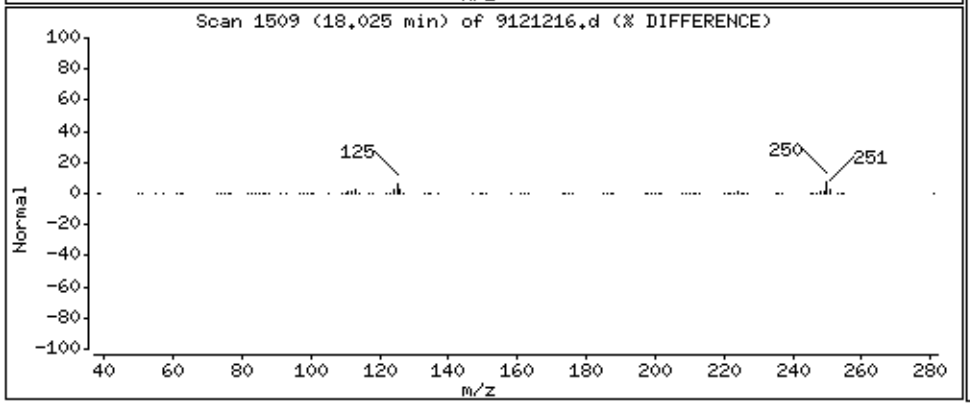
110 Benzo(e)pyrene

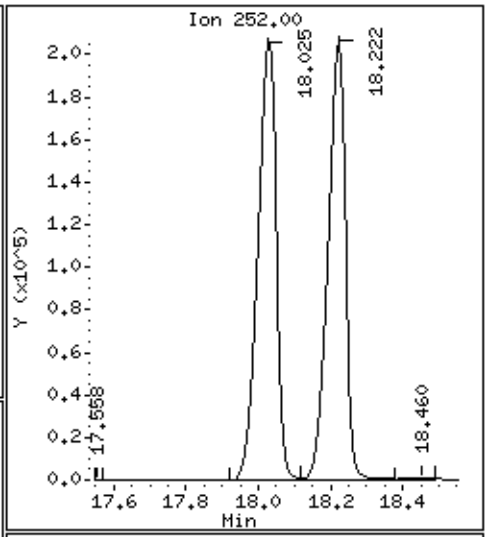
Concentration: 53.28 ug

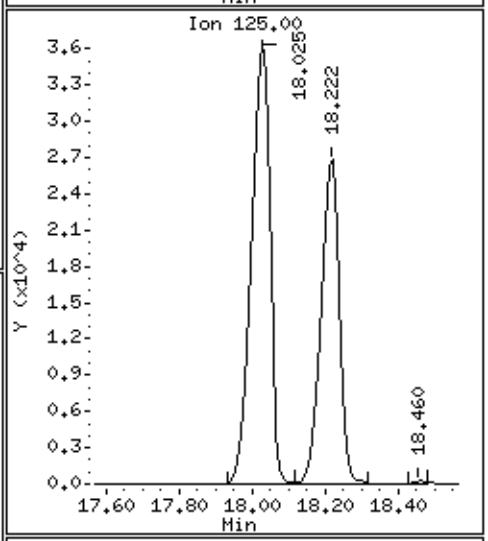


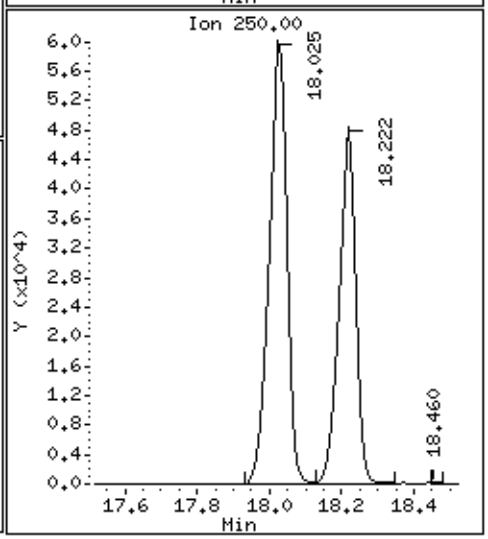












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

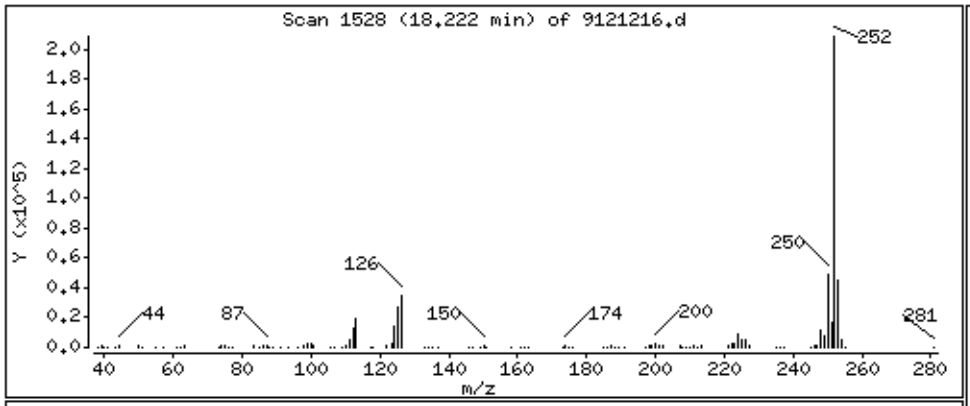
Operator: KV

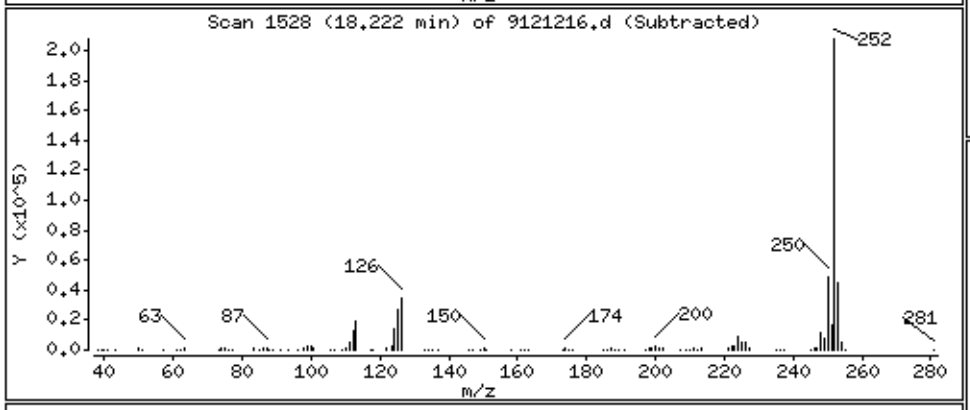
Column phase: DB-5.625

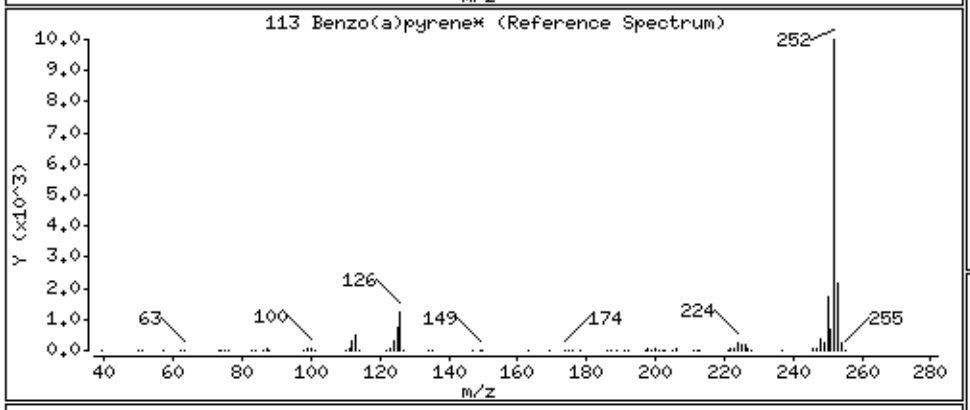
Column diameter: 0.25

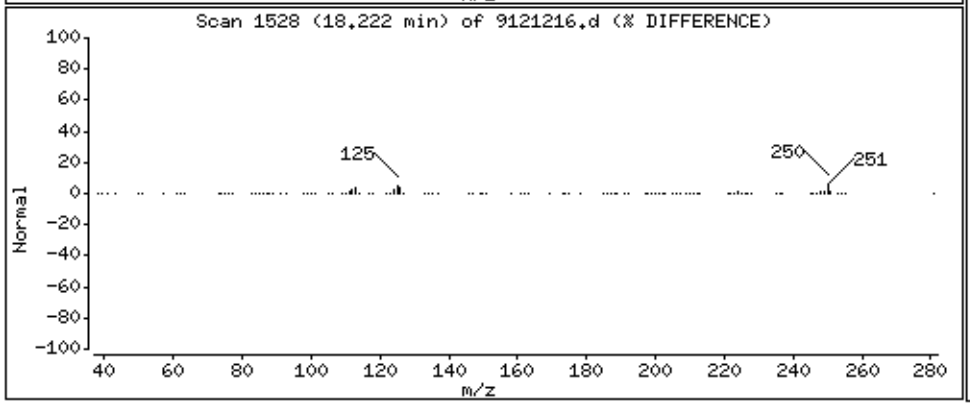
113 Benzo(a)pyrene*

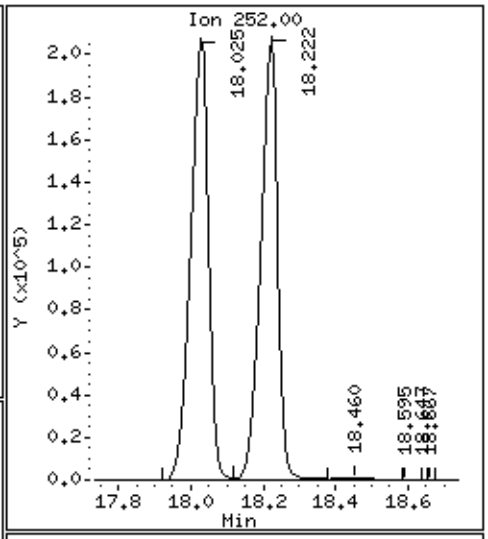
Concentration: 49.41 ug

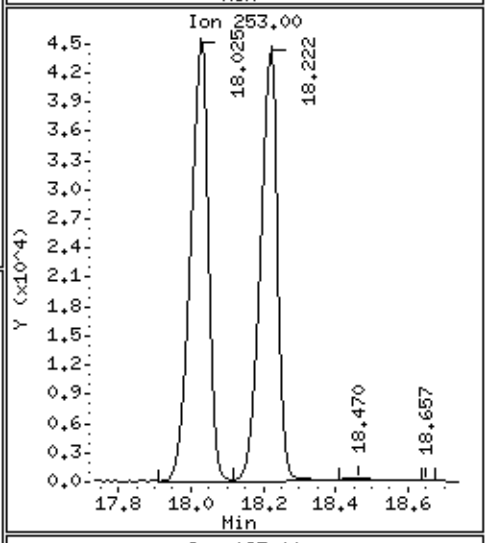


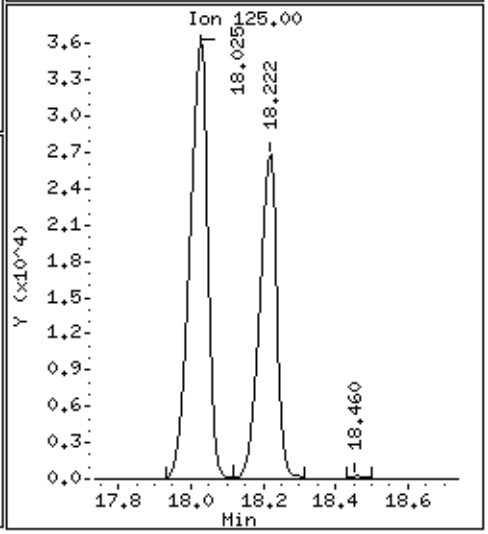












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

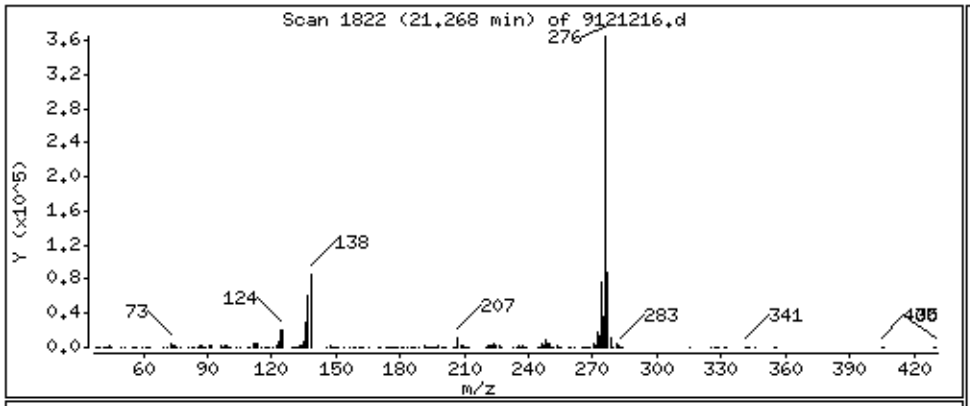
Operator: KV

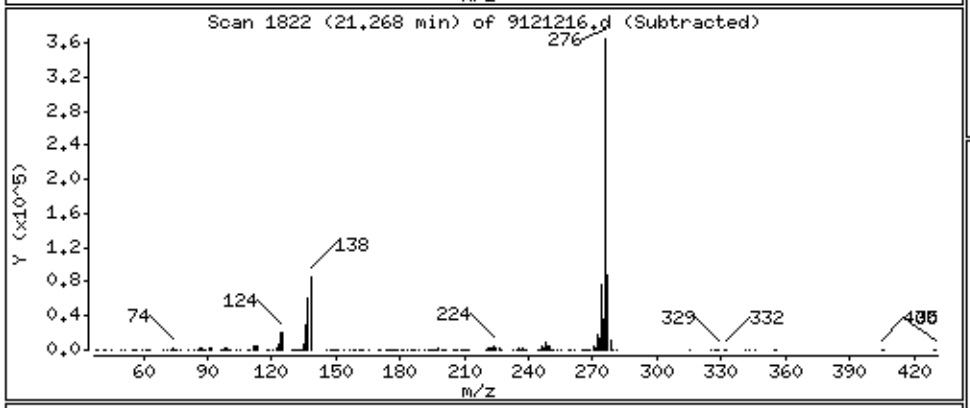
Column phase: DB-5.625

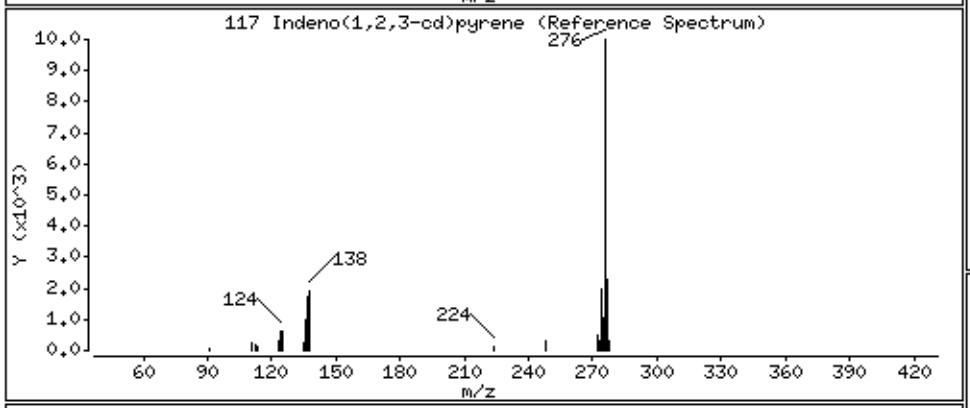
Column diameter: 0.25

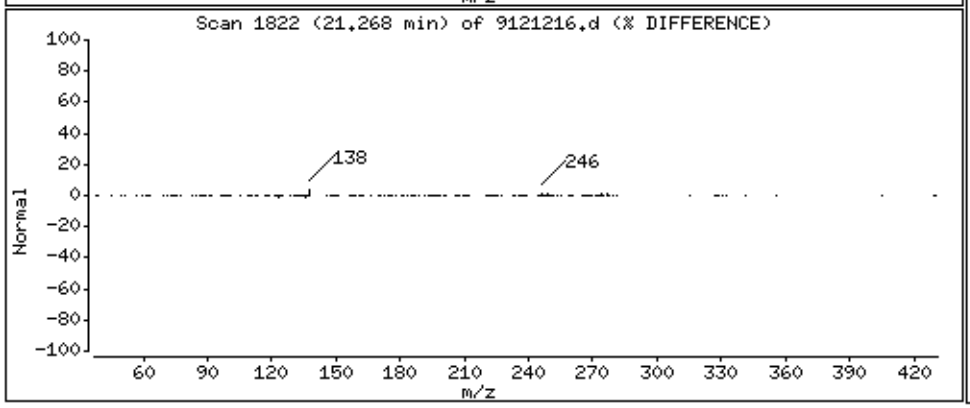
117 Indeno(1,2,3-cd)pyrene

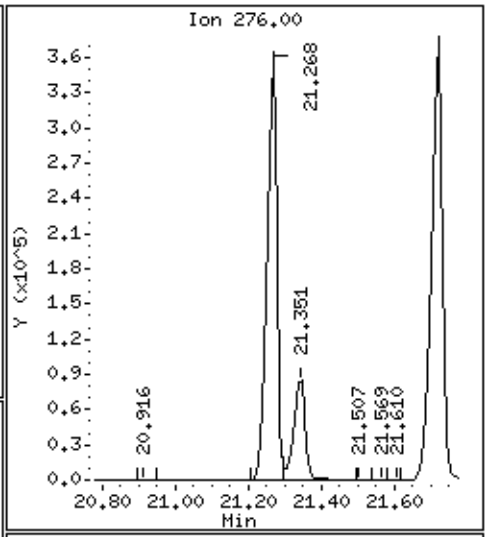
Concentration: 52.87 ug

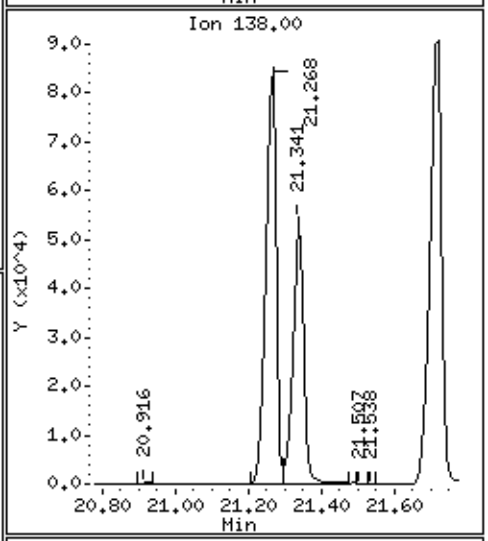


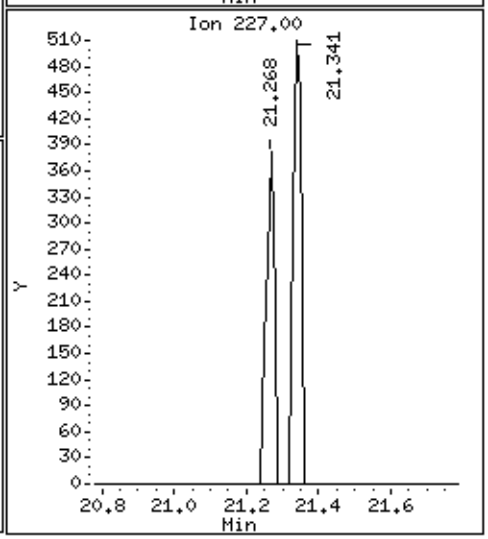












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

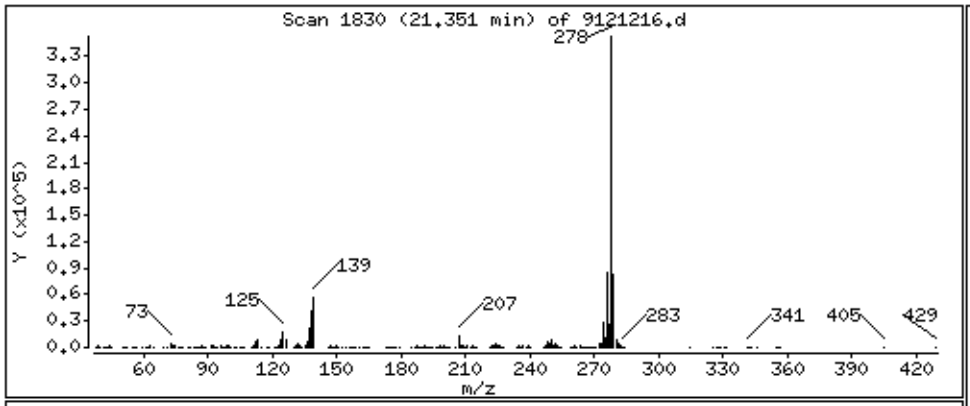
Operator: KV

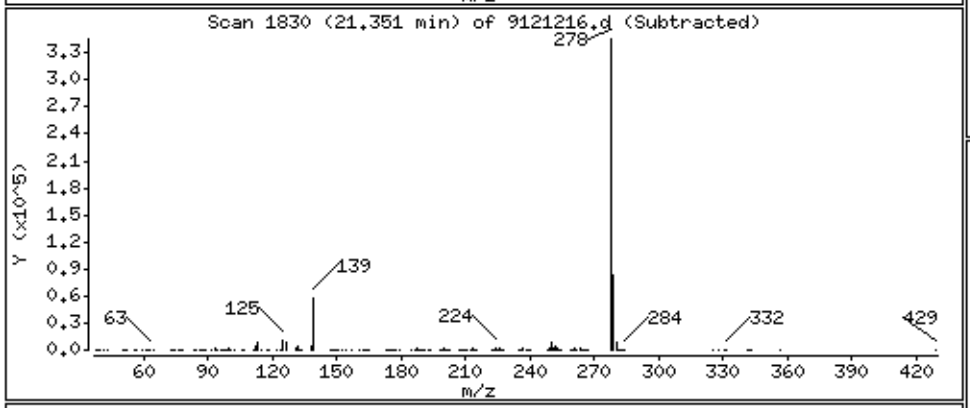
Column phase: DB-5.625

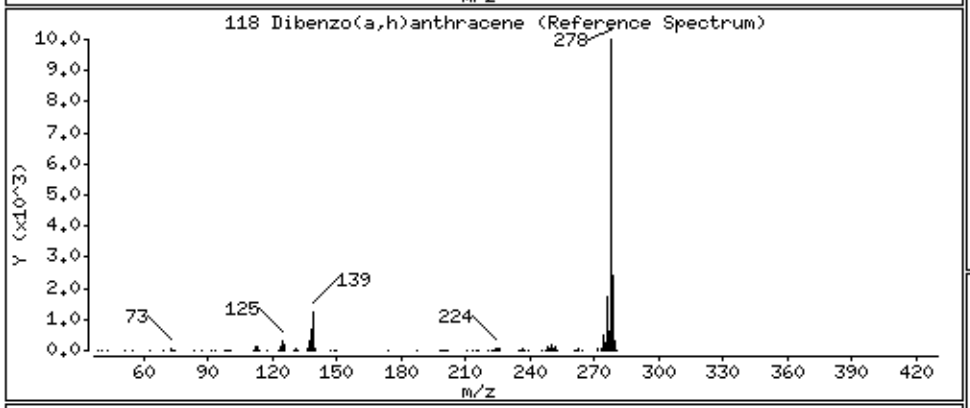
Column diameter: 0.25

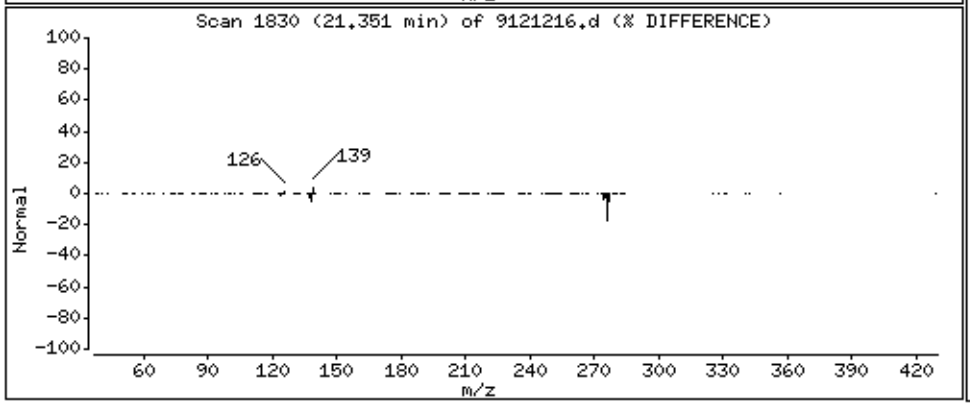
118 Dibenzo(a,h)anthracene

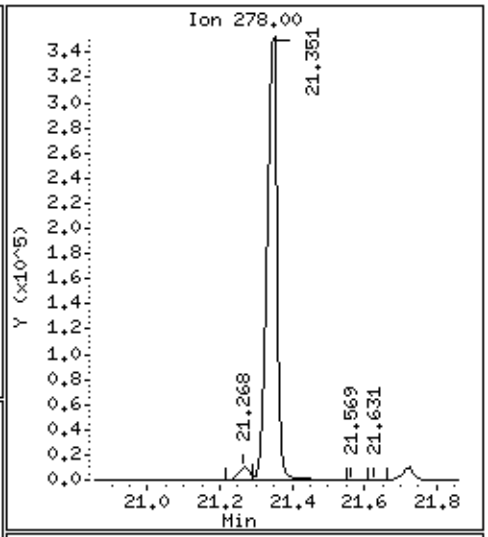
Concentration: 54.42 ug

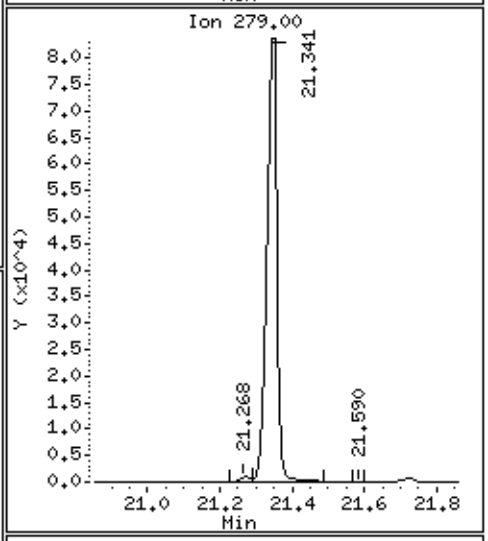


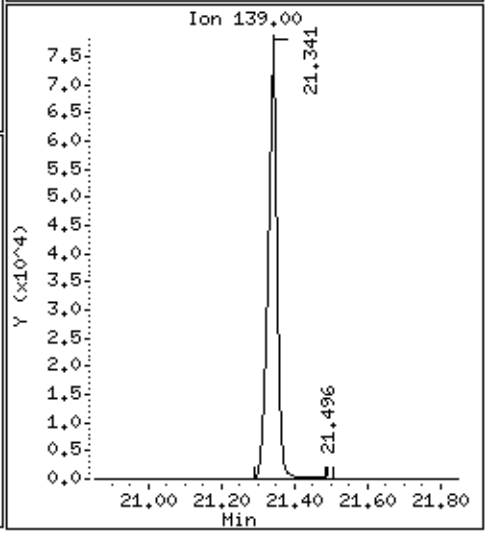












Data File: /chem/msd9.i/12dec17.b/9121216.d

Date : 12-DEC-2017 19:25

Client ID: ICV

Instrument: msd9.i

Sample Info: ;2848-24-50; ICV

Volume Injected (uL): 1.0

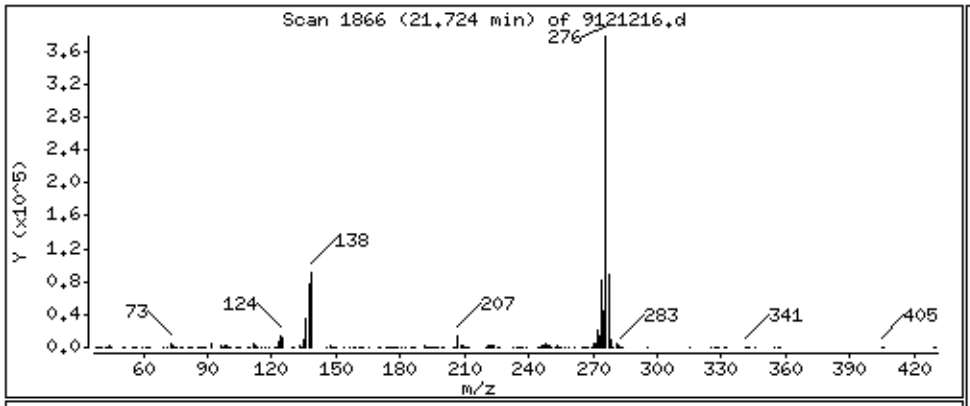
Operator: KV

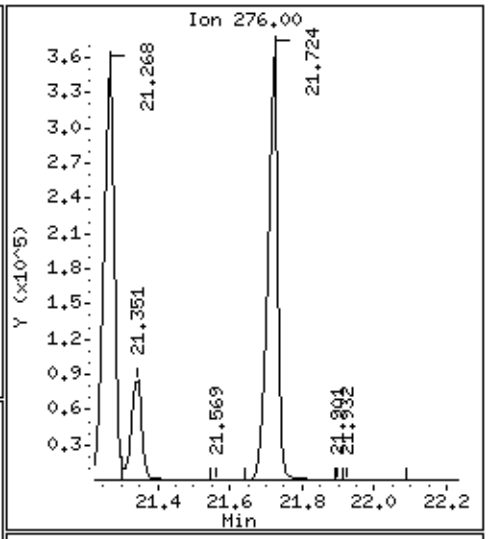
Column phase: DB-5.625

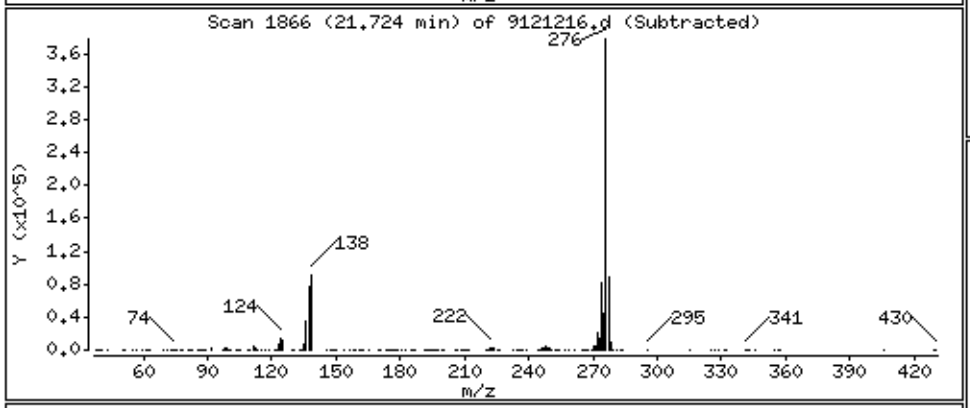
Column diameter: 0.25

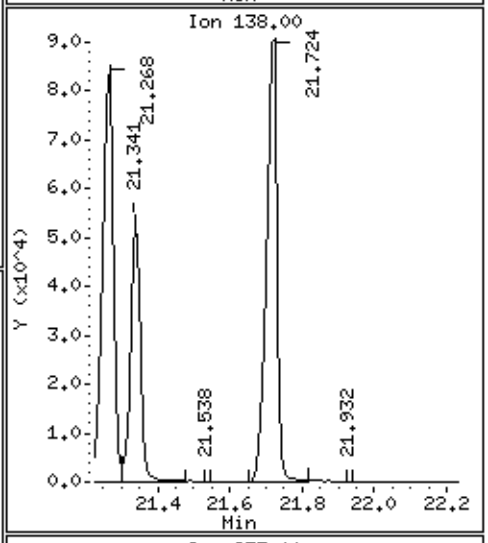
119 Benzo(g,h,i)perylene

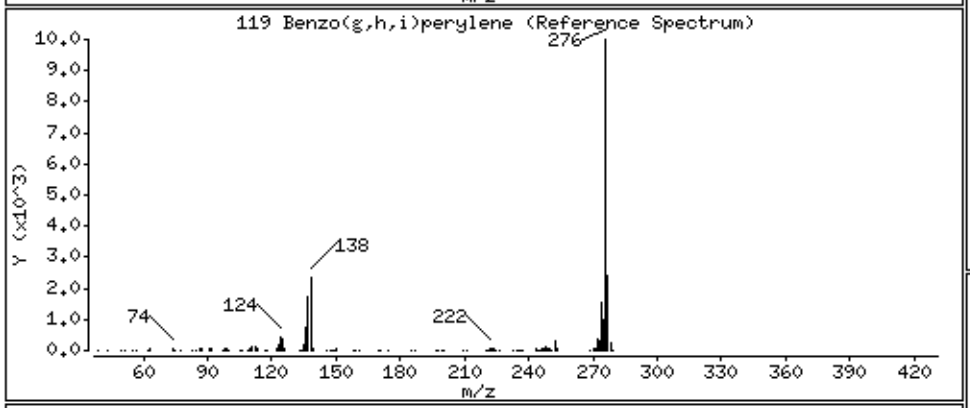
Concentration: 53.34 ug

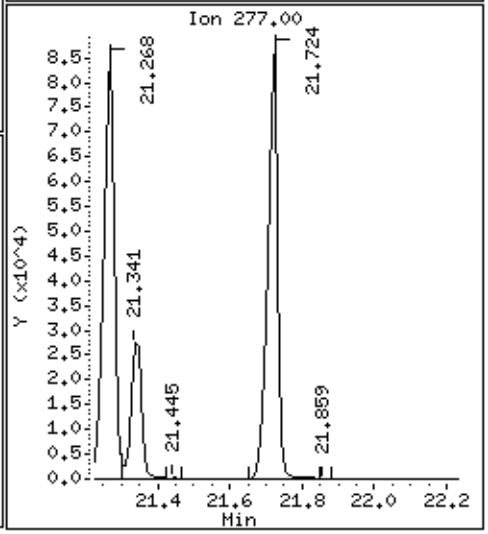


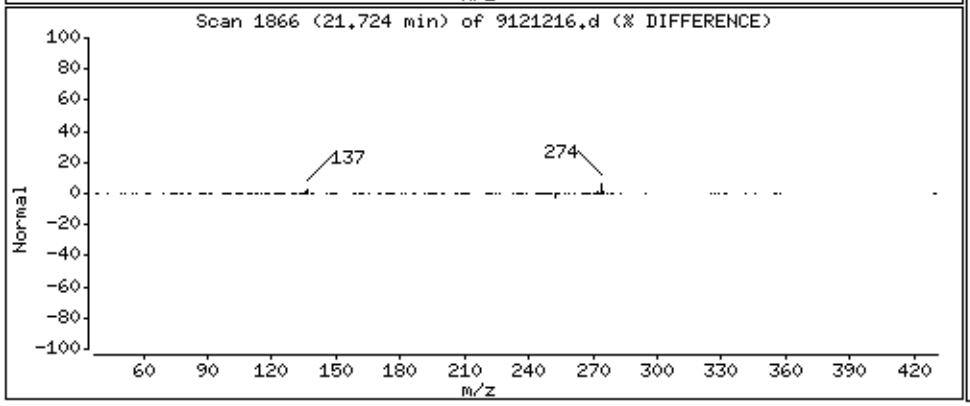












Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121203.d
Lab Smp Id: 2848-71-0.5 Client Smp ID: ICAL Level 1
Inj Date : 12-DEC-2017 12:53
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-0.5; ICAL Level 1
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 12:53 Cal File: 9121203.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0.5.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	132153	40.0000	
* 27 Naphthalene-d8	136	6.428	6.429	(1.000)	559729	40.0000	(H)
* 48 Acenaphthene-d10	164	8.636	8.642	(1.000)	317082	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.426	(1.000)	565863	40.0000	
* 97 Chrysene-d12	240	14.180	14.190	(1.000)	494334	40.0000	
* 115 Perylene-d12	264	18.460	18.474	(1.000)	472287	40.0000	(H)
$ 54 Fluorene-d10	176	9.258	9.268	(1.072)	4339	0.50000	0.5082
$ 83 Pyrene-d10	212	12.190	12.194	(0.860)	5984	0.50000	0.4608
$ 78 Fluoranthene-d10	212	11.890	11.899	(1.141)	5689	0.50000	0.4798
$ 111 Benzo(a)pyrene-d12	264	18.108	18.168	(0.970)	4558	0.50000	0.4760
28 Naphthalene	128	6.449	6.454	(0.983)	6390	0.50000	0.5077
34 2-Methylnaphthalene	142	7.330	7.346	(1.117)	4236	0.50000	0.4974(H)
40 2-Chloronaphthalene	162	7.931	7.934	(0.918)	3723	0.50000	0.4925

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
44 Acenaphthylene	152	8.449	8.452	(0.978)	5940	0.50000	0.4984
49 Acenaphthene*	154	8.677	8.682	(1.005)	3778	0.50000	0.5113
56 Fluorene	166	9.289	9.299	(1.076)	4450	0.50000	0.5008
72 Phenanthrene	178	10.449	10.454	(1.003)	6625	0.50000	0.5114
73 Anthracene	178	10.501	10.507	(1.008)	6040	0.50000	0.4688
79 Fluoranthene*	202	11.921	11.926	(1.144)	6367	0.50000	0.4798
84 Pyrene	202	12.211	12.219	(0.861)	6315	0.50000	0.4609
96 Benzo(a)Anthracene	228	14.149	14.157	(0.998)	6967	0.50000	0.5706
99 Chrysene	228	14.232	14.245	(1.004)	5981	0.50000	0.5124
107 Benzo(b)fluoranthene	252	17.030	17.060	(0.912)	5347	0.50000	0.4610(H)
109 Benzo(k)fluoranthene	252	17.123	17.150	(0.917)	5471	0.50000	0.4577
113 Benzo(a)pyrene*	252	18.201	18.237	(0.975)	4853	0.50000	0.4338(H)
117 Indeno(1,2,3-cd)pyrene	276	21.258	21.280	(1.499)	5275	0.50000	0.5166
118 Dibenzo(a,h)anthracene	278	21.341	21.356	(1.143)	5305	0.50000	0.4919
119 Benzo(g,h,i)perylene	276	21.704	21.730	(1.163)	5851	0.50000	0.5165

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121203.d
Lab Smp Id: 2848-71-0.5
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 1
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	132153	-7.55
27 Naphthalene-d8	590466	295233	1180932	559729	-5.21
48 Acenaphthene-d10	325726	162863	651452	317082	-2.65
71 Phenanthrene-d10	562171	281086	1124342	565863	0.66
97 Chrysene-d12	525026	262513	1050052	494334	-5.85
115 Perylene-d12	490780	245390	981560	472287	-3.77

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.42	-0.10
97 Chrysene-d12	14.19	13.69	14.69	14.18	-0.07
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121203.d

Date : 12-DEC-2017 12:53

Client ID: ICAL Level 1

Instrument: msd9.i

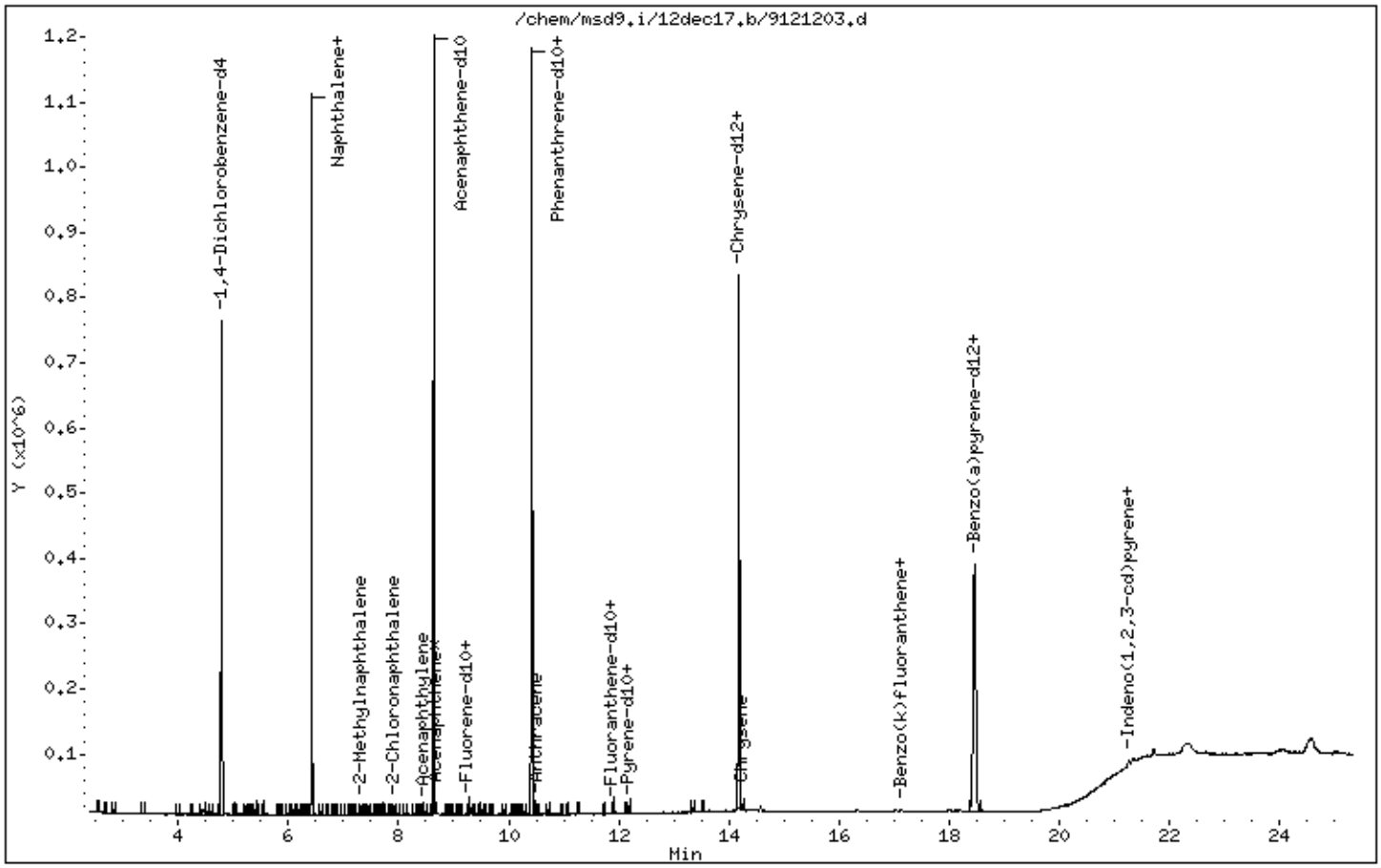
Sample Info: ;2848-71-0.5; ICAL Level 1

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121204.d
Lab Smp Id: 2848-71-1.0 Client Smp ID: ICAL Level 2
Inj Date : 12-DEC-2017 13:24
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-1.0; ICAL Level 2
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 13:24 Cal File: 9121204.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 1ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
$ 17 Nitrobenzene-d5	82	5.548	5.563	(0.863)	4740	1.00000	0.8443
$ 78 Fluoranthene-d10	212	11.890	11.899	(1.140)	14473	1.00000	0.8635
$ 111 Benzo(a)pyrene-d12	264	18.108	18.168	(0.974)	8386	1.00000	0.7942
$ 54 Fluorene-d10	176	9.258	9.268	(1.072)	11270	1.00000	0.9342
$ 83 Pyrene-d10	212	12.190	12.194	(0.860)	15958	1.00000	0.9924
* 8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	158307	40.0000	(H)
* 27 Naphthalene-d8	136	6.428	6.429	(1.000)	721373	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.642	(1.000)	448069	40.0000	
* 71 Phenanthrene-d10	188	10.429	10.426	(1.000)	799950	40.0000	
* 97 Chrysene-d12	240	14.180	14.190	(1.000)	612160	40.0000	
* 115 Perylene-d12	264	18.460	18.474	(1.000)	520758	40.0000	(H)
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.928)	5081	1.00000	0.9963
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.972)	5025	1.00000	0.9170(H)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
9	1,4-Dichlorobenzene*	146	4.812	4.837	(0.987)	5084	1.00000	0.9174
11	1,2-Dichlorobenzene	146	5.050	5.051	(1.036)	4923	1.00000	0.9278
13	bis(2-Chloroisopropyl)ether	45	5.226	5.249	(1.072)	9173	1.00000	1.018
16	Hexachloroethane	117	5.434	5.446	(1.115)	2202	1.00000	0.9868
19	Nitrobenzene	77	5.568	5.585	(0.866)	4929	1.00000	0.8965
20	Isophorone	82	5.869	5.876	(0.913)	10188	1.00000	0.9761
23	bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	6130	1.00000	0.9330
26	1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	4570	1.00000	0.9248
28	Naphthalene	128	6.449	6.454	(1.003)	15485	1.00000	0.9546
30	Hexachlorobutadiene*	225	6.708	6.709	(1.044)	2306	1.00000	0.8598
34	2-Methylnaphthalene	142	7.330	7.346	(1.140)	10620	1.00000	0.9676
35	1-Methylnaphthalene	142	7.465	7.482	(1.161)	10302	1.00000	0.9749
40	2-Chloronaphthalene	162	7.931	7.934	(0.918)	9573	1.00000	0.8962
44	Acenaphthylene	152	8.449	8.452	(0.978)	14929	1.00000	0.8865
49	Acenaphthene*	154	8.677	8.682	(1.005)	10062	1.00000	0.9637
52	Dibenzofuran	168	8.874	8.879	(1.028)	14033	1.00000	0.9061
56	Fluorene	166	9.289	9.299	(1.076)	11802	1.00000	0.9400
57	4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.079)	5521	1.00000	0.9131
65	4-Bromophenyl phenyl ether	248	9.900	9.907	(0.949)	3214	1.00000	0.8740
66	Hexachlorobenzene	284	10.066	10.068	(0.965)	3504	1.00000	0.8920
72	Phenanthrene	178	10.449	10.454	(1.002)	17579	1.00000	0.9598
73	Anthracene	178	10.501	10.507	(1.007)	16720	1.00000	0.9180
79	Fluoranthene*	202	11.921	11.926	(1.143)	16400	1.00000	0.8742
84	Pyrene	202	12.211	12.219	(0.861)	17043	1.00000	1.004
96	Benzo(a)Anthracene	228	14.149	14.157	(0.998)	14576	1.00000	0.9640
99	Chrysene	228	14.232	14.245	(1.004)	13394	1.00000	0.9265(H)
107	Benzo(b)fluoranthene	252	17.030	17.060	(0.916)	10936	1.00000	0.8551(H)
109	Benzo(k)fluoranthene	252	17.113	17.150	(0.920)	11339	1.00000	0.8603
110	Benzo(e)pyrene	252	18.004	18.069	(0.968)	10303	1.00000	0.8414(H)
113	Benzo(a)pyrene*	252	18.191	18.237	(0.978)	9922	1.00000	0.8043(H)
117	Indeno(1,2,3-cd)pyrene	276	21.258	21.280	(1.499)	9385	1.00000	0.7422
118	Dibenzo(a,h)anthracene	278	21.341	21.356	(1.148)	9486	1.00000	0.7977
119	Benzo(g,h,i)perylene	276	21.704	21.730	(1.167)	10154	1.00000	0.8129

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121204.d
Lab Smp Id: 2848-71-1.0
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 2
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	158307	10.75
27 Naphthalene-d8	590466	295233	1180932	721373	22.17
48 Acenaphthene-d10	325726	162863	651452	448069	37.56
71 Phenanthrene-d10	562171	281086	1124342	799950	42.30
97 Chrysene-d12	525026	262513	1050052	612160	16.60
115 Perylene-d12	490780	245390	981560	520758	6.11

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.18	-0.07
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121204.d

Date : 12-DEC-2017 13:24

Client ID: ICAL Level 2

Instrument: msd9.i

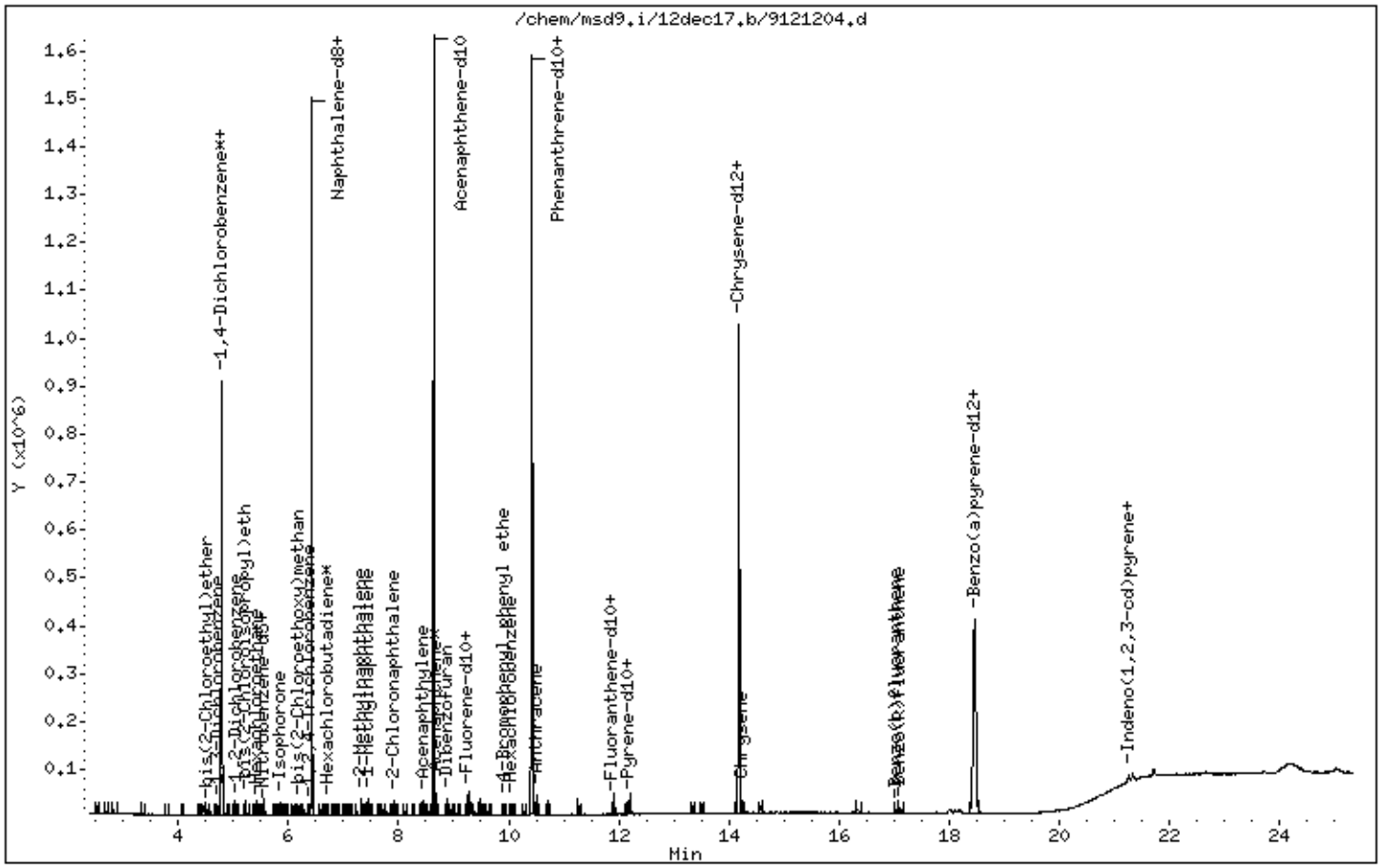
Sample Info: ;2848-71-1.0; ICAL Level 2

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121205.d
Lab Smp Id: 2848-71-5.0 Client Smp ID: ICAL Level 3
Inj Date : 12-DEC-2017 13:54
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-5.0; ICAL Level 3
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 13:54 Cal File: 9121205.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 5ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)	
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	18607	5.00000	4.114	
$	2 Phenol-d5	99	4.439	4.477	(0.926)	24694	5.00000	4.189	
$	17 Nitrobenzene-d5	82	5.537	5.563	(0.845)	21404	5.00000	4.178	(H)
$	64 2,4,6-Tribromophenol	330	9.620	9.623	(1.114)	4611	5.00000	3.348	
$	111 Benzo(a)pyrene-d12	264	18.108	18.168	(0.972)	40973	5.00000	4.218	
$	78 Fluoranthene-d10	212	11.890	11.899	(1.141)	57783	5.00000	4.352	
$	54 Fluorene-d10	176	9.258	9.268	(1.072)	45926	5.00000	4.555	
$	83 Pyrene-d10	212	12.190	12.194	(0.860)	64348	5.00000	4.702	
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	155478	40.0000		
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	658222	40.0000		(H)
*	48 Acenaphthene-d10	164	8.636	8.642	(1.000)	374488	40.0000		
*	71 Phenanthrene-d10	188	10.418	10.426	(1.000)	633718	40.0000		
*	97 Chrysene-d12	240	14.180	14.190	(1.000)	520996	40.0000		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.460	18.474	(1.000)	479052	40.0000	(H)
3 Phenol*	94	4.459	4.492	(0.931)	26283	5.00000	4.098
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	22808	5.00000	4.553
6 2-Chlorophenol	128	4.573	4.602	(0.955)	20632	5.00000	4.236
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	24426	5.00000	4.539
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	24903	5.00000	4.575
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	23469	5.00000	4.504
12 2-Methylphenol	108	5.216	5.237	(1.089)	18689	5.00000	4.204
13 bis(2-Chloroisopropyl)ether	45	5.216	5.249	(1.089)	40362	5.00000	4.560
14 4-Methylphenol	108	5.413	5.444	(1.130)	20248	5.00000	4.285
15 N-Nitrosodipropylamine**	70	5.402	5.435	(1.128)	16815	5.00000	4.514
16 Hexachloroethane	117	5.434	5.446	(1.134)	9521	5.00000	4.344
19 Nitrobenzene	77	5.568	5.585	(0.850)	22345	5.00000	4.454(H)
20 Isophorone	82	5.869	5.876	(0.896)	42494	5.00000	4.462(H)
21 2-Nitrophenol*	139	5.983	5.985	(0.913)	7869	5.00000	3.497
22 2,4-Dimethylphenol	122	6.076	6.094	(0.927)	18159	5.00000	4.195(H)
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.945)	26973	5.00000	4.499
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.960)	14635	5.00000	3.746
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.975)	20003	5.00000	4.436
28 Naphthalene	128	6.449	6.454	(0.984)	67967	5.00000	4.592
30 Hexachlorobutadiene*	225	6.708	6.709	(1.024)	10930	5.00000	4.466
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.104)	15855	5.00000	4.031
34 2-Methylnaphthalene	142	7.330	7.346	(1.119)	45409	5.00000	4.534(H)
35 1-Methylnaphthalene	142	7.465	7.482	(1.139)	44321	5.00000	4.596
37 2,4,6-Trichlorophenol*	196	7.745	7.741	(0.897)	9517	5.00000	3.679
38 2,4,5-Trichlorophenol	196	7.796	7.794	(0.903)	10808	5.00000	3.838
40 2-Chloronaphthalene	162	7.931	7.934	(0.918)	40221	5.00000	4.505
43 Dimethylphthalate	163	8.408	8.416	(0.974)	44334	5.00000	4.368
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.982)	8294	5.00000	3.668
44 Acenaphthylene	152	8.449	8.452	(0.978)	63445	5.00000	4.508
49 Acenaphthene*	154	8.677	8.682	(1.005)	40888	5.00000	4.686
53 2,4-Dinitrotoluene	165	8.947	8.949	(1.036)	9001	5.00000	3.219
52 Dibenzofuran	168	8.874	8.879	(1.028)	59219	5.00000	4.575
55 Diethylphthalate	149	9.278	9.286	(1.074)	45216	5.00000	4.426
56 Fluorene	166	9.289	9.299	(1.076)	47595	5.00000	4.535
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.079)	23336	5.00000	4.618
65 4-Bromophenyl phenyl ether	248	9.900	9.907	(0.950)	12975	5.00000	4.454
66 Hexachlorobenzene	284	10.066	10.068	(0.966)	13854	5.00000	4.452
72 Phenanthrene	178	10.449	10.454	(1.003)	66995	5.00000	4.618
73 Anthracene	178	10.501	10.507	(1.008)	64931	5.00000	4.500
76 Di-n-butylphthalate	149	11.258	11.262	(1.081)	67816	5.00000	4.269
79 Fluoranthene*	202	11.921	11.926	(1.144)	66131	5.00000	4.450
84 Pyrene	202	12.211	12.219	(0.861)	68728	5.00000	4.760
90 Butyl benzyl phthalate	149	13.341	13.344	(0.941)	25263	5.00000	4.118
96 Benzo(a)Anthracene	228	14.149	14.157	(0.998)	55948	5.00000	4.348
99 Chrysene	228	14.232	14.245	(1.004)	56023	5.00000	4.554
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.028)	33762	5.00000	4.012

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
105 Di-n-octyl phthalate*	149	16.335	16.349	(1.152)	50247	5.00000	3.682
107 Benzo(b)fluoranthene	252	17.030	17.060	(0.914)	50319	5.00000	4.277(H)
109 Benzo(k)fluoranthene	252	17.113	17.150	(0.919)	52675	5.00000	4.345
110 Benzo(e)pyrene	252	18.004	18.069	(0.967)	49490	5.00000	4.394(H)
113 Benzo(a)pyrene*	252	18.190	18.237	(0.977)	48098	5.00000	4.238(H)
117 Indeno(1,2,3-cd)pyrene	276	21.258	21.280	(1.499)	45654	5.00000	4.242
118 Dibenzo(a,h)anthracene	278	21.330	21.356	(1.145)	46730	5.00000	4.272
119 Benzo(g,h,i)perylene	276	21.703	21.730	(1.165)	49543	5.00000	4.311

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121205.d
Lab Smp Id: 2848-71-5.0
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 3
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	155478	8.77
27 Naphthalene-d8	590466	295233	1180932	658222	11.48
48 Acenaphthene-d10	325726	162863	651452	374488	14.97
71 Phenanthrene-d10	562171	281086	1124342	633718	12.73
97 Chrysene-d12	525026	262513	1050052	520996	-0.77
115 Perylene-d12	490780	245390	981560	479052	-2.39

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.42	-0.10
97 Chrysene-d12	14.19	13.69	14.69	14.18	-0.07
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121205.d

Date : 12-DEC-2017 13:54

Client ID: ICAL Level 3

Instrument: msd9.i

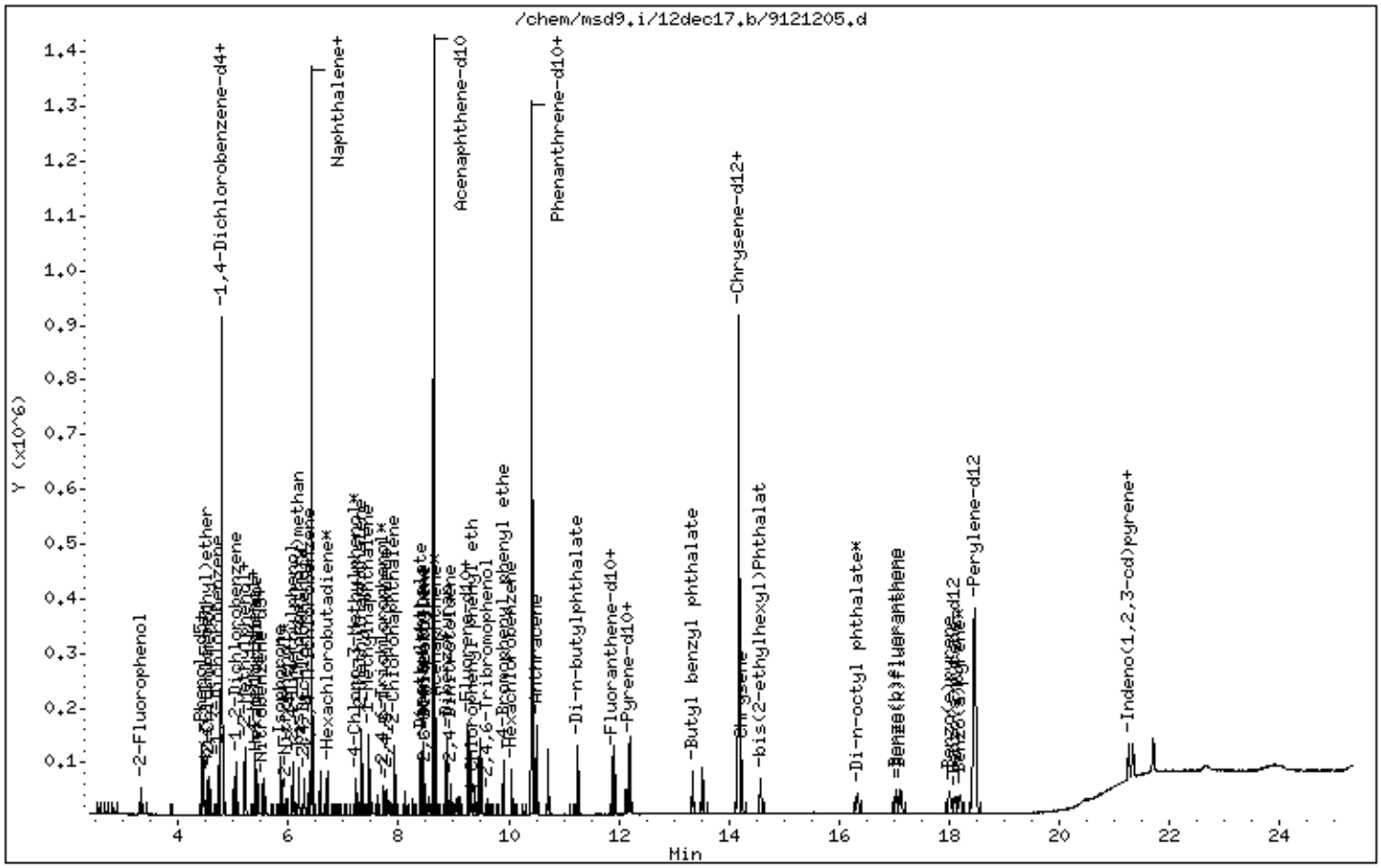
Sample Info: ;2848-71-5.0; ICAL Level 3

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121206.d
Lab Smp Id: 2848-71-10 Client Smp ID: ICAL Level 4
Inj Date : 12-DEC-2017 14:24
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-10; ICAL Level 4
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 14:24 Cal File: 9121206.d
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 10ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	42798	10.0000	10.18
$	2 Phenol-d5	99	4.439	4.477	(0.926)	56737	10.0000	10.35
$	17 Nitrobenzene-d5	82	5.537	5.563	(0.861)	47946	10.0000	10.03
$	64 2,4,6-Tribromophenol	330	9.620	9.623	(1.114)	10911	10.0000	8.736
$	111 Benzo(a)pyrene-d12	264	18.108	18.168	(0.971)	104874	10.0000	10.15
$	78 Fluoranthene-d10	212	11.890	11.899	(1.141)	132008	10.0000	10.60
$	54 Fluorene-d10	176	9.258	9.268	(1.072)	96598	10.0000	10.56
$	83 Pyrene-d10	212	12.190	12.194	(0.860)	146998	10.0000	10.43
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	144584	40.0000	
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	614041	40.0000	
*	48 Acenaphthene-d10	164	8.636	8.642	(1.000)	339561	40.0000	
*	71 Phenanthrene-d10	188	10.418	10.426	(1.000)	594343	40.0000	
*	97 Chrysene-d12	240	14.180	14.190	(1.000)	536744	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
* 115 Perylene-d12	264	18.460	18.474	(1.000)	509773	40.0000	(H)
3 Phenol*	94	4.449	4.492	(0.929)	60780	10.0000	10.19
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	48866	10.0000	10.49
6 2-Chlorophenol	128	4.573	4.602	(0.955)	45716	10.0000	10.09
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	53532	10.0000	10.70
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	54697	10.0000	10.81
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	52101	10.0000	10.75
12 2-Methylphenol	108	5.206	5.237	(1.087)	42498	10.0000	10.28(H)
13 bis(2-Chloroisopropyl)ether	45	5.216	5.249	(1.089)	87563	10.0000	10.64
14 4-Methylphenol	108	5.402	5.444	(1.128)	44609	10.0000	10.15(H)
15 N-Nitrosodipropylamine**	70	5.392	5.435	(1.125)	34822	10.0000	10.05
16 Hexachloroethane	117	5.434	5.446	(1.134)	21360	10.0000	10.48
19 Nitrobenzene	77	5.568	5.585	(0.866)	46528	10.0000	9.942
20 Isophorone	82	5.869	5.876	(0.913)	89840	10.0000	10.11
21 2-Nitrophenol*	139	5.983	5.985	(0.931)	18076	10.0000	8.610
22 2,4-Dimethylphenol	122	6.076	6.094	(0.945)	39981	10.0000	9.901
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	57724	10.0000	10.32
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	35397	10.0000	9.712
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	44038	10.0000	10.47
28 Naphthalene	128	6.449	6.454	(1.003)	143861	10.0000	10.42
29 4-Chloroaniline	127	6.574	6.580	(1.023)	57045	10.0000	9.856
30 Hexachlorobutadiene*	225	6.708	6.709	(1.044)	23624	10.0000	10.35
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.126)	35703	10.0000	9.730
34 2-Methylnaphthalene	142	7.330	7.346	(1.140)	97288	10.0000	10.41
35 1-Methylnaphthalene	142	7.465	7.482	(1.161)	92438	10.0000	10.28
37 2,4,6-Trichlorophenol*	196	7.734	7.741	(0.896)	21134	10.0000	9.010
38 2,4,5-Trichlorophenol	196	7.796	7.794	(0.903)	24766	10.0000	9.699
40 2-Chloronaphthalene	162	7.931	7.934	(0.918)	87231	10.0000	10.78
41 2-Nitroaniline	65	8.118	8.125	(0.940)	20620	10.0000	8.743
47 3-Nitroaniline	138	8.636	8.637	(1.000)	22196	10.0000	9.213
43 Dimethylphthalate	163	8.408	8.416	(0.974)	95929	10.0000	10.42
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.982)	19727	10.0000	9.621
44 Acenaphthylene	152	8.449	8.452	(0.978)	135562	10.0000	10.62
49 Acenaphthene*	154	8.677	8.682	(1.005)	84004	10.0000	10.62
53 2,4-Dinitrotoluene	165	8.947	8.949	(1.036)	22389	10.0000	8.830
52 Dibenzofuran	168	8.874	8.879	(1.028)	125750	10.0000	10.71
55 Diethylphthalate	149	9.278	9.286	(1.074)	97861	10.0000	10.56
56 Fluorene	166	9.289	9.299	(1.076)	101749	10.0000	10.69
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.079)	48156	10.0000	10.51
60 4-Nitroaniline	138	9.382	9.388	(1.086)	21252	10.0000	8.904
62 N-nitrosodiphenylamine*	169	9.475	9.484	(0.909)	84586	10.0000	10.06
65 4-Bromophenyl phenyl ether	248	9.900	9.907	(0.950)	28341	10.0000	10.37
66 Hexachlorobenzene	284	10.066	10.068	(0.966)	30213	10.0000	10.35
72 Phenanthrene	178	10.449	10.454	(1.003)	145357	10.0000	10.68
73 Anthracene	178	10.501	10.507	(1.008)	141887	10.0000	10.48
76 Di-n-butylphthalate	149	11.258	11.262	(1.081)	151497	10.0000	10.17
79 Fluoranthene*	202	11.921	11.926	(1.144)	148190	10.0000	10.63

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
84 Pyrene	202	12.211	12.219	(0.861)	158586	10.0000	10.66
90 Butyl benzyl phthalate	149	13.341	13.344	(0.941)	62365	10.0000	9.869
96 Benzo(a)Anthracene	228	14.149	14.157	(0.998)	133258	10.0000	10.05
99 Chrysene	228	14.232	14.245	(1.004)	136532	10.0000	10.77
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.028)	84230	10.0000	9.716
105 Di-n-octyl phthalate*	149	16.335	16.349	(1.152)	134369	10.0000	9.558
107 Benzo(b)fluoranthene	252	17.030	17.060	(0.913)	127575	10.0000	10.19(H)
109 Benzo(k)fluoranthene	252	17.123	17.150	(0.918)	133295	10.0000	10.33
110 Benzo(e)pyrene	252	18.014	18.069	(0.966)	122655	10.0000	10.23(H)
113 Benzo(a)pyrene*	252	18.201	18.237	(0.976)	125953	10.0000	10.43(H)
117 Indeno(1,2,3-cd)pyrene	276	21.258	21.280	(1.499)	116287	10.0000	10.49
118 Dibenzo(a,h)anthracene	278	21.341	21.356	(1.144)	119571	10.0000	10.27
119 Benzo(g,h,i)perylene	276	21.704	21.730	(1.163)	124397	10.0000	10.17

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121206.d
Lab Smp Id: 2848-71-10
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 4
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	144584	1.15
27 Naphthalene-d8	590466	295233	1180932	614041	3.99
48 Acenaphthene-d10	325726	162863	651452	339561	4.25
71 Phenanthrene-d10	562171	281086	1124342	594343	5.72
97 Chrysene-d12	525026	262513	1050052	536744	2.23
115 Perylene-d12	490780	245390	981560	509773	3.87

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.42	-0.10
97 Chrysene-d12	14.19	13.69	14.69	14.18	-0.07
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121206.d

Date : 12-DEC-2017 14:24

Client ID: ICAL Level 4

Instrument: msd9.i

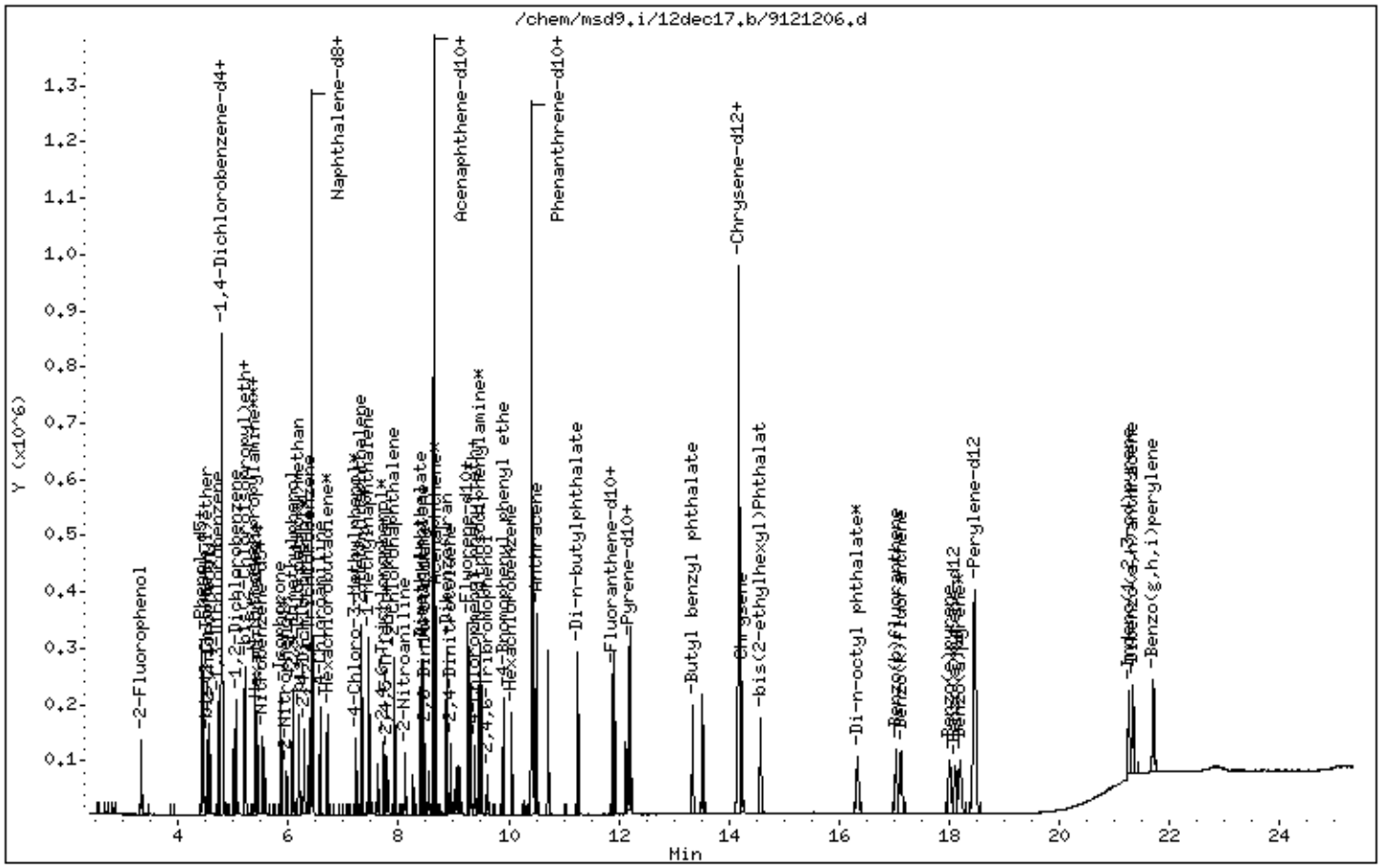
Sample Info: ;2848-71-10; ICAL Level 4

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121207.d
Lab Smp Id: 2848-71-20 Client Smp ID: ICAL Level 5
Inj Date : 12-DEC-2017 14:54
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-20; ICAL Level 5
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 14:54 Cal File: 9121207.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 20ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	90062	20.0000	20.23
$	2 Phenol-d5	99	4.439	4.477	(0.926)	115020	20.0000	19.82
$	17 Nitrobenzene-d5	82	5.537	5.563	(0.861)	102367	20.0000	20.45
$	64 2,4,6-Tribromophenol	330	9.620	9.623	(1.114)	24860	20.0000	18.93
$	111 Benzo(a)pyrene-d12	264	18.118	18.168	(0.972)	201535	20.0000	20.18
$	78 Fluoranthene-d10	212	11.900	11.899	(1.142)	263445	20.0000	20.64
$	54 Fluorene-d10	176	9.258	9.268	(1.072)	196537	20.0000	20.45
$	83 Pyrene-d10	212	12.190	12.194	(0.859)	291996	20.0000	20.73
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	153066	40.0000	
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	643313	40.0000	
*	48 Acenaphthene-d10	164	8.636	8.642	(1.000)	356960	40.0000	
*	71 Phenanthrene-d10	188	10.418	10.426	(1.000)	609197	40.0000	
*	97 Chrysene-d12	240	14.190	14.190	(1.000)	536252	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
* 115 Perylene-d12	264	18.460	18.474	(1.000)	492650	40.0000	(H)
3 Phenol*	94	4.449	4.492	(0.929)	126457	20.0000	20.03
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	99651	20.0000	20.21
6 2-Chlorophenol	128	4.573	4.602	(0.955)	95494	20.0000	19.92
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	108948	20.0000	20.56
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	109674	20.0000	20.47
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	105996	20.0000	20.66
12 2-Methylphenol	108	5.206	5.237	(1.087)	86626	20.0000	19.79
13 bis(2-Chloroisopropyl)ether	45	5.216	5.249	(1.089)	178522	20.0000	20.49
14 4-Methylphenol	108	5.402	5.444	(1.128)	92756	20.0000	19.94
15 N-Nitrosodipropylamine**	70	5.402	5.435	(1.128)	73463	20.0000	20.03
16 Hexachloroethane	117	5.434	5.446	(1.134)	44032	20.0000	20.41
19 Nitrobenzene	77	5.558	5.585	(0.865)	97208	20.0000	19.83
20 Isophorone	82	5.869	5.876	(0.913)	187904	20.0000	20.19
21 2-Nitrophenol*	139	5.983	5.985	(0.931)	40250	20.0000	18.30
22 2,4-Dimethylphenol	122	6.076	6.094	(0.945)	83747	20.0000	19.80
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	118214	20.0000	20.17
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	76980	20.0000	20.16
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	90620	20.0000	20.56
28 Naphthalene	128	6.449	6.454	(1.003)	291532	20.0000	20.15
29 4-Chloroaniline	127	6.573	6.580	(1.023)	120589	20.0000	19.89
30 Hexachlorobutadiene*	225	6.708	6.709	(1.044)	48239	20.0000	20.17
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.126)	71444	20.0000	18.58
34 2-Methylnaphthalene	142	7.330	7.346	(1.140)	199756	20.0000	20.41
35 1-Methylnaphthalene	142	7.465	7.482	(1.161)	191333	20.0000	20.30(H)
36 Hexachlorocyclopentadiene**	237	7.631	7.632	(0.884)	44640	20.0000	16.90
37 2,4,6-Trichlorophenol*	196	7.734	7.741	(0.896)	47424	20.0000	19.23
38 2,4,5-Trichlorophenol	196	7.796	7.794	(0.903)	53155	20.0000	19.80
40 2-Chloronaphthalene	162	7.931	7.934	(0.918)	174945	20.0000	20.56
41 2-Nitroaniline	65	8.118	8.125	(0.940)	45947	20.0000	18.53
47 3-Nitroaniline	138	8.636	8.637	(1.000)	48400	20.0000	19.11
43 Dimethylphthalate	163	8.408	8.416	(0.974)	201244	20.0000	20.80
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.982)	42597	20.0000	19.76
44 Acenaphthylene	152	8.449	8.452	(0.978)	280755	20.0000	20.93
49 Acenaphthene*	154	8.677	8.682	(1.005)	171481	20.0000	20.62
53 2,4-Dinitrotoluene	165	8.947	8.949	(1.036)	52850	20.0000	19.83
52 Dibenzofuran	168	8.874	8.879	(1.028)	254447	20.0000	20.62
55 Diethylphthalate	149	9.278	9.286	(1.074)	196430	20.0000	20.17
56 Fluorene	166	9.299	9.299	(1.077)	204322	20.0000	20.43
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.079)	98877	20.0000	20.53
60 4-Nitroaniline	138	9.382	9.388	(1.086)	46700	20.0000	18.61
62 N-nitrosodiphenylamine*	169	9.475	9.484	(0.909)	175592	20.0000	20.37
65 4-Bromophenyl phenyl ether	248	9.900	9.907	(0.950)	56858	20.0000	20.30
66 Hexachlorobenzene	284	10.066	10.068	(0.966)	60970	20.0000	20.38
70 Pentachlorophenol*	266	10.294	10.298	(0.988)	13657	20.0000	11.22
72 Phenanthrene	178	10.449	10.454	(1.003)	288929	20.0000	20.72
73 Anthracene	178	10.501	10.507	(1.008)	287526	20.0000	20.73

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
76 Di-n-butylphthalate	149	11.258	11.262	(1.081)	306034	20.0000	20.04
79 Fluoranthene*	202	11.921	11.926	(1.144)	293503	20.0000	20.54
84 Pyrene	202	12.211	12.219	(0.860)	305475	20.0000	20.55
90 Butyl benzyl phthalate	149	13.341	13.344	(0.940)	125337	20.0000	19.85
98 3 3'-Dichlorobenzidine	252	14.190	14.202	(1.000)	98141	20.0000	18.72
96 Benzo(a)Anthracene	228	14.149	14.157	(0.997)	258612	20.0000	19.52
99 Chrysene	228	14.232	14.245	(1.003)	256977	20.0000	20.29
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	169680	20.0000	19.59
105 Di-n-octyl phthalate*	149	16.335	16.349	(1.151)	270028	20.0000	19.23
107 Benzo(b)fluoranthene	252	17.040	17.060	(0.914)	248098	20.0000	20.51(H)
109 Benzo(k)fluoranthene	252	17.123	17.150	(0.918)	252148	20.0000	20.22(H)
110 Benzo(e)pyrene	252	18.014	18.069	(0.966)	234330	20.0000	20.23(H)
113 Benzo(a)pyrene*	252	18.201	18.237	(0.976)	239567	20.0000	20.53(H)
117 Indeno(1,2,3-cd)pyrene	276	21.258	21.280	(1.498)	219656	20.0000	19.83
118 Dibenzo(a,h)anthracene	278	21.341	21.356	(1.144)	229104	20.0000	20.36
119 Benzo(g,h,i)perylene	276	21.704	21.730	(1.164)	237417	20.0000	20.09(H)

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121207.d
Lab Smp Id: 2848-71-20
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 5
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	153066	7.08
27 Naphthalene-d8	590466	295233	1180932	643313	8.95
48 Acenaphthene-d10	325726	162863	651452	356960	9.59
71 Phenanthrene-d10	562171	281086	1124342	609197	8.37
97 Chrysene-d12	525026	262513	1050052	536252	2.14
115 Perylene-d12	490780	245390	981560	492650	0.38

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.42	-0.10
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121207.d

Date : 12-DEC-2017 14:54

Client ID: ICAL Level 5

Instrument: msd9.i

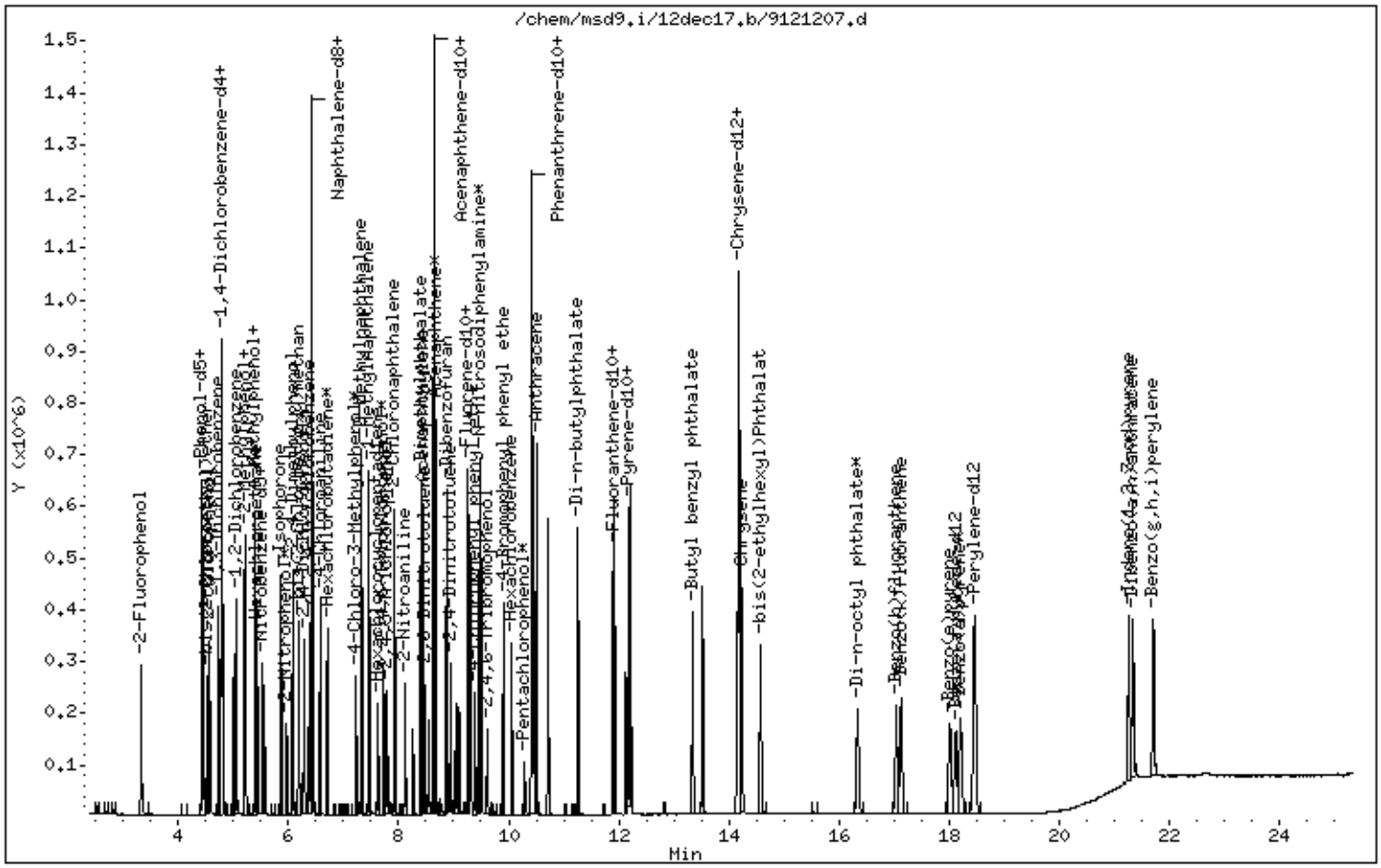
Sample Info: ;2848-71-20; ICAL Level 5

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121208.d
Lab Smp Id: 2848-71-40 Client Smp ID: ICAL Level 6
Inj Date : 12-DEC-2017 15:24
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-40; ICAL Level 6
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 15:24 Cal File: 9121208.d
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 50ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$ 1 2-Fluorophenol	112	3.330	3.330	(0.695)	198653	40.0000	40.80
$ 2 Phenol-d5	99	4.439	4.477	(0.926)	266730	40.0000	42.02
$ 17 Nitrobenzene-d5	82	5.537	5.563	(0.861)	234571	40.0000	43.06
$ 64 2,4,6-Tribromophenol	330	9.620	9.623	(1.113)	59653	40.0000	41.44
$ 78 Fluoranthene-d10	212	11.900	11.899	(1.141)	564134	40.0000	42.06
$ 111 Benzo(a)pyrene-d12	264	18.128	18.168	(0.970)	429927	40.0000	43.52
$ 54 Fluorene-d10	176	9.268	9.268	(1.072)	431206	40.0000	40.92
$ 83 Pyrene-d10	212	12.190	12.194	(0.859)	616927	40.0000	43.42
* 8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	167404	40.0000	
* 27 Naphthalene-d8	136	6.428	6.429	(1.000)	700009	40.0000	
* 48 Acenaphthene-d10	164	8.646	8.642	(1.000)	391364	40.0000	
* 71 Phenanthrene-d10	188	10.429	10.426	(1.000)	640171	40.0000	
* 97 Chrysene-d12	240	14.190	14.190	(1.000)	540936	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
* 115 Perylene-d12	264	18.470	18.474	(1.000)	487209	40.0000	(H)
3 Phenol*	94	4.459	4.492	(0.931)	287704	40.0000	41.67
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	226607	40.0000	42.02
6 2-Chlorophenol	128	4.573	4.602	(0.955)	220084	40.0000	41.97
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	241514	40.0000	41.68
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	243092	40.0000	41.48
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	234595	40.0000	41.81
12 2-Methylphenol	108	5.206	5.237	(1.087)	200508	40.0000	41.89
13 bis(2-Chloroisopropyl)ether	45	5.216	5.249	(1.089)	400413	40.0000	42.02
14 4-Methylphenol	108	5.402	5.444	(1.128)	216816	40.0000	42.61
15 N-Nitrosodipropylamine**	70	5.402	5.435	(1.128)	170105	40.0000	42.41
16 Hexachloroethane	117	5.434	5.446	(1.134)	98069	40.0000	41.56
19 Nitrobenzene	77	5.568	5.585	(0.866)	227000	40.0000	42.55
20 Isophorone	82	5.869	5.876	(0.913)	431445	40.0000	42.60
21 2-Nitrophenol*	139	5.983	5.985	(0.931)	101579	40.0000	42.44
22 2,4-Dimethylphenol	122	6.076	6.094	(0.945)	198216	40.0000	43.06
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	269773	40.0000	42.31
24 Benzoic Acid	122	6.263	6.313	(0.974)	72964	40.0000	31.87
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	175118	40.0000	42.15
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	201853	40.0000	42.10
28 Naphthalene	128	6.449	6.454	(1.003)	661705	40.0000	42.04
29 4-Chloroaniline	127	6.573	6.580	(1.023)	272141	40.0000	41.24
30 Hexachlorobutadiene*	225	6.708	6.709	(1.044)	111155	40.0000	42.71
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.126)	169886	40.0000	40.61
34 2-Methylnaphthalene	142	7.330	7.346	(1.140)	446049	40.0000	41.88
35 1-Methylnaphthalene	142	7.465	7.482	(1.161)	430574	40.0000	41.99
36 Hexachlorocyclopentadiene**	237	7.631	7.632	(0.883)	113977	40.0000	39.35
37 2,4,6-Trichlorophenol*	196	7.734	7.741	(0.895)	112635	40.0000	41.66
38 2,4,5-Trichlorophenol	196	7.786	7.794	(0.901)	127729	40.0000	43.40
40 2-Chloronaphthalene	162	7.931	7.934	(0.917)	390876	40.0000	41.90
41 2-Nitroaniline	65	8.118	8.125	(0.939)	110583	40.0000	40.68
47 3-Nitroaniline	138	8.636	8.637	(0.999)	109753	40.0000	39.52
43 Dimethylphthalate	163	8.408	8.416	(0.972)	434859	40.0000	41.00
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.981)	100944	40.0000	42.71
44 Acenaphthylene	152	8.449	8.452	(0.977)	615073	40.0000	41.82
49 Acenaphthene*	154	8.677	8.682	(1.004)	375704	40.0000	41.20
50 2,4-Dinitrophenol**	184	8.760	8.770	(1.013)	27182	40.0000	30.48
51 4-Nitrophenol**	109	8.895	8.905	(1.029)	40896	40.0000	35.49
53 2,4-Dinitrotoluene	165	8.947	8.949	(1.035)	120742	40.0000	41.32
52 Dibenzofuran	168	8.874	8.879	(1.026)	561011	40.0000	41.47
55 Diethylphthalate	149	9.278	9.286	(1.073)	437088	40.0000	40.94
56 Fluorene	166	9.299	9.299	(1.075)	453092	40.0000	41.31
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.078)	218244	40.0000	41.33
60 4-Nitroaniline	138	9.392	9.388	(1.086)	107595	40.0000	39.11
61 4,6-Dinitro-2-methylphenol	198	9.444	9.439	(0.906)	42226	40.0000	34.26
62 N-nitrosodiphenylamine*	169	9.475	9.484	(0.909)	378159	40.0000	41.75
65 4-Bromophenyl phenyl ether	248	9.910	9.907	(0.950)	124853	40.0000	42.43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Hexachlorobenzene	284	10.066	10.068	(0.965)	134946	40.0000	42.92
70	Pentachlorophenol*	266	10.294	10.298	(0.987)	47094	40.0000	36.81
72	Phenanthrene	178	10.449	10.454	(1.002)	618800	40.0000	42.22
73	Anthracene	178	10.501	10.507	(1.007)	621104	40.0000	42.61
76	Di-n-butylphthalate	149	11.258	11.262	(1.079)	673646	40.0000	41.98
79	Fluoranthene*	202	11.921	11.926	(1.143)	626836	40.0000	41.75
84	Pyrene	202	12.221	12.219	(0.861)	650035	40.0000	43.36(H)
90	Butyl benzyl phthalate	149	13.341	13.344	(0.940)	270500	40.0000	42.47
98	3 3'-Dichlorobenzidine	252	14.190	14.202	(1.000)	216124	40.0000	40.86
96	Benzo(a)Anthracene	228	14.149	14.157	(0.997)	552836	40.0000	41.38
99	Chrysene	228	14.232	14.245	(1.003)	539813	40.0000	42.26
103	bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	370322	40.0000	42.38
105	Di-n-octyl phthalate*	149	16.335	16.349	(1.151)	599817	40.0000	42.34
107	Benzo(b)fluoranthene	252	17.051	17.060	(0.912)	512218	40.0000	42.81(H)
109	Benzo(k)fluoranthene	252	17.133	17.150	(0.916)	542958	40.0000	44.03(H)
110	Benzo(e)pyrene	252	18.025	18.069	(0.964)	492811	40.0000	43.02(H)
113	Benzo(a)pyrene*	252	18.222	18.237	(0.974)	509437	40.0000	44.14(H)
117	Indeno(1,2,3-cd)pyrene	276	21.268	21.280	(1.499)	469006	40.0000	41.97
118	Dibenzo(a,h)anthracene	278	21.341	21.356	(1.141)	486768	40.0000	43.75(H)
119	Benzo(g,h,i)perylene	276	21.714	21.730	(1.161)	501726	40.0000	42.93(H)

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121208.d
Lab Smp Id: 2848-71-40
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 6
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	167404	17.11
27 Naphthalene-d8	590466	295233	1180932	700009	18.55
48 Acenaphthene-d10	325726	162863	651452	391364	20.15
71 Phenanthrene-d10	562171	281086	1124342	640171	13.87
97 Chrysene-d12	525026	262513	1050052	540936	3.03
115 Perylene-d12	490780	245390	981560	487209	-0.73

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.65	0.00
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.47	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121208.d

Date : 12-DEC-2017 15:24

Client ID: ICAL Level 6

Instrument: msd9.i

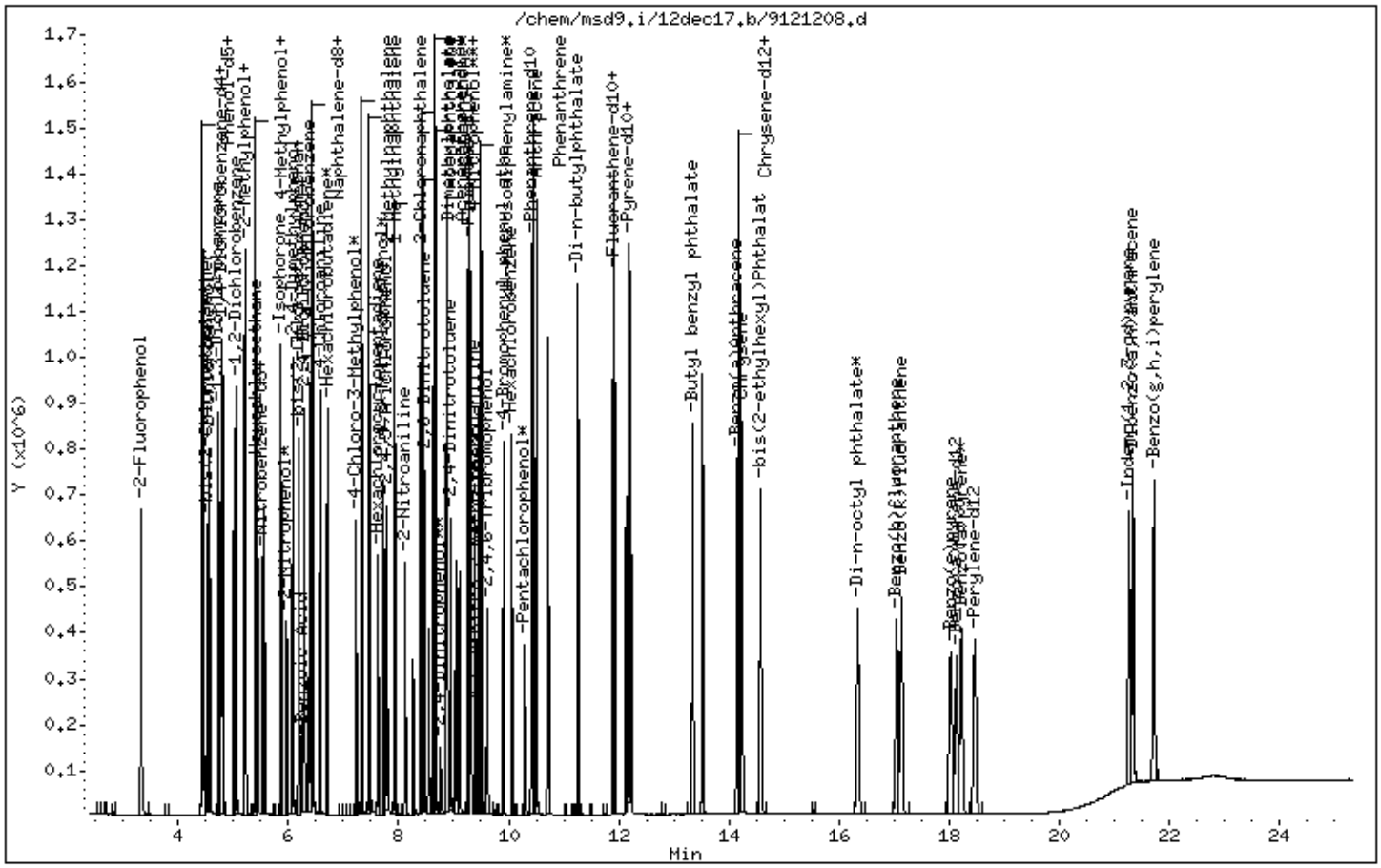
Sample Info: ;2848-71-40; ICAL Level 6

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121209.d
Lab Smp Id: 2848-71-50 Client Smp ID: ICAL Level 7
Inj Date : 12-DEC-2017 15:54
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-50; ICAL Level 7
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 15:54 Cal File: 9121209.d
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 50ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	206507	50.0000	49.67
$	2 Phenol-d5	99	4.439	4.477	(0.926)	262158	50.0000	48.37
$	17 Nitrobenzene-d5	82	5.547	5.563	(0.863)	232872	50.0000	50.68
$	64 2,4,6-Tribromophenol	330	9.620	9.623	(1.113)	62623	50.0000	52.27
$	78 Fluoranthene-d10	212	11.900	11.899	(1.141)	620400	50.0000	52.67
$	111 Benzo(a)pyrene-d12	264	18.139	18.168	(0.972)	510508	50.0000	51.30
$	54 Fluorene-d10	176	9.268	9.268	(1.072)	442132	50.0000	50.41
$	83 Pyrene-d10	212	12.190	12.194	(0.859)	667635	50.0000	48.41
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	142945	40.0000	
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	590466	40.0000	
*	48 Acenaphthene-d10	164	8.646	8.642	(1.000)	325726	40.0000	
*	71 Phenanthrene-d10	188	10.428	10.426	(1.000)	562171	40.0000	
*	97 Chrysene-d12	240	14.190	14.190	(1.000)	525026	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.470	18.474	(1.000)	490780	40.0000	(H)
3 Phenol*	94	4.459	4.492	(0.931)	286577	50.0000	48.61
5 bis(2-Chloroethyl)ether	93	4.521	4.526	(0.944)	226056	50.0000	49.09
6 2-Chlorophenol	128	4.573	4.602	(0.955)	222026	50.0000	49.59
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	246294	50.0000	49.78
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	247481	50.0000	49.46
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	236286	50.0000	49.32
12 2-Methylphenol	108	5.205	5.237	(1.087)	197385	50.0000	48.30
13 bis(2-Chloroisopropyl)ether	45	5.226	5.249	(1.091)	392297	50.0000	48.21
14 4-Methylphenol	108	5.402	5.444	(1.128)	213420	50.0000	49.12
15 N-Nitrosodipropylamine**	70	5.402	5.435	(1.128)	164627	50.0000	48.07
16 Hexachloroethane	117	5.433	5.446	(1.134)	99770	50.0000	49.51
19 Nitrobenzene	77	5.568	5.585	(0.866)	224393	50.0000	49.86
20 Isophorone	82	5.869	5.876	(0.913)	417518	50.0000	48.87
21 2-Nitrophenol*	139	5.983	5.985	(0.931)	101937	50.0000	50.50
22 2,4-Dimethylphenol	122	6.076	6.094	(0.945)	187887	50.0000	48.39
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	267264	50.0000	49.69
24 Benzoic Acid	122	6.262	6.313	(0.974)	74359	50.0000	38.51
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	173387	50.0000	49.47
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	200202	50.0000	49.50
28 Naphthalene	128	6.449	6.454	(1.003)	640803	50.0000	48.26
29 4-Chloroaniline	127	6.573	6.580	(1.023)	265629	50.0000	47.72
30 Hexachlorobutadiene*	225	6.708	6.709	(1.044)	108204	50.0000	49.29
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.126)	166517	50.0000	47.19
34 2-Methylnaphthalene	142	7.330	7.334	(1.140)	441556	50.0000	49.15
35 1-Methylnaphthalene	142	7.465	7.482	(1.161)	419301	50.0000	48.48
36 Hexachlorocyclopentadiene**	237	7.630	7.632	(0.883)	111639	50.0000	46.31
37 2,4,6-Trichlorophenol*	196	7.734	7.741	(0.895)	113356	50.0000	50.38
38 2,4,5-Trichlorophenol	196	7.786	7.794	(0.900)	127436	50.0000	52.02
40 2-Chloronaphthalene	162	7.931	7.934	(0.917)	395587	50.0000	50.95
41 2-Nitroaniline	65	8.117	8.125	(0.939)	112108	50.0000	49.56
47 3-Nitroaniline	138	8.636	8.637	(0.999)	113130	50.0000	48.95
43 Dimethylphthalate	163	8.408	8.416	(0.972)	432819	50.0000	49.03
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.981)	101083	50.0000	51.39
44 Acenaphthylene	152	8.449	8.452	(0.977)	617833	50.0000	50.47
49 Acenaphthene*	154	8.677	8.682	(1.004)	373593	50.0000	49.22
50 2,4-Dinitrophenol**	184	8.760	8.770	(1.013)	29658	50.0000	39.96
51 4-Nitrophenol**	109	8.895	8.905	(1.029)	43381	50.0000	45.23
53 2,4-Dinitrotoluene	165	8.947	8.949	(1.035)	129862	50.0000	53.39
52 Dibenzofuran	168	8.874	8.879	(1.026)	554034	50.0000	49.21
55 Diethylphthalate	149	9.278	9.286	(1.073)	436776	50.0000	49.16
56 Fluorene	166	9.299	9.299	(1.075)	459778	50.0000	50.37
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.078)	217843	50.0000	49.56
60 4-Nitroaniline	138	9.392	9.388	(1.086)	112924	50.0000	49.32
61 4,6-Dinitro-2-methylphenol	198	9.444	9.439	(0.906)	46823	50.0000	43.26
62 N-nitrosodiphenylamine*	169	9.475	9.484	(0.909)	388104	50.0000	48.79
65 4-Bromophenyl phenyl ether	248	9.910	9.907	(0.950)	129114	50.0000	49.96

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66 Hexachlorobenzene	284	10.066	10.068	(0.965)	137959	50.0000	49.97
70 Pentachlorophenol*	266	10.294	10.298	(0.987)	50512	50.0000	44.96
72 Phenanthrene	178	10.449	10.454	(1.002)	632179	50.0000	49.12
73 Anthracene	178	10.501	10.507	(1.007)	636215	50.0000	49.70
76 Di-n-butylphthalate	149	11.257	11.262	(1.079)	713861	50.0000	50.65
79 Fluoranthene*	202	11.921	11.926	(1.143)	685945	50.0000	52.03
84 Pyrene	202	12.221	12.219	(0.861)	712593	50.0000	48.97(H)
90 Butyl benzyl phthalate	149	13.340	13.344	(0.940)	309641	50.0000	50.09
98 3 3'-Dichlorobenzidine	252	14.201	14.202	(1.001)	249136	50.0000	48.53
96 Benzo(a)Anthracene	228	14.149	14.157	(0.997)	629952	50.0000	48.58
99 Chrysene	228	14.242	14.245	(1.004)	604682	50.0000	48.77
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	423988	50.0000	50.00
105 Di-n-octyl phthalate*	149	16.346	16.349	(1.152)	698160	50.0000	50.77
107 Benzo(b)fluoranthene	252	17.050	17.060	(0.914)	619264	50.0000	51.38(H)
109 Benzo(k)fluoranthene	252	17.133	17.150	(0.918)	622338	50.0000	50.10(H)
110 Benzo(e)pyrene	252	18.035	18.052	(0.967)	577994	50.0000	50.09(H)
113 Benzo(a)pyrene*	252	18.221	18.237	(0.977)	599974	50.0000	51.61(H)
117 Indeno(1,2,3-cd)pyrene	276	21.268	21.280	(1.499)	566155	50.0000	52.20
118 Dibenzo(a,h)anthracene	278	21.351	21.356	(1.144)	571276	50.0000	50.98(H)
119 Benzo(g,h,i)perylene	276	21.724	21.730	(1.164)	598919	50.0000	50.88

QC Flag Legend

H - Operator selected an alternate compound hit.

Report Date: 14-Dec-2017 15:49

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121209.d
Lab Smp Id: 2848-71-50
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 7
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	142945	0.00
27 Naphthalene-d8	590466	295233	1180932	590466	0.00
48 Acenaphthene-d10	325726	162863	651452	325726	0.00
71 Phenanthrene-d10	562171	281086	1124342	562171	0.00
97 Chrysene-d12	525026	262513	1050052	525026	0.00
115 Perylene-d12	490780	245390	981560	490780	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.65	0.00
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.47	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121209.d

Date : 12-DEC-2017 15:54

Client ID: ICAL Level 7

Instrument: msd9.i

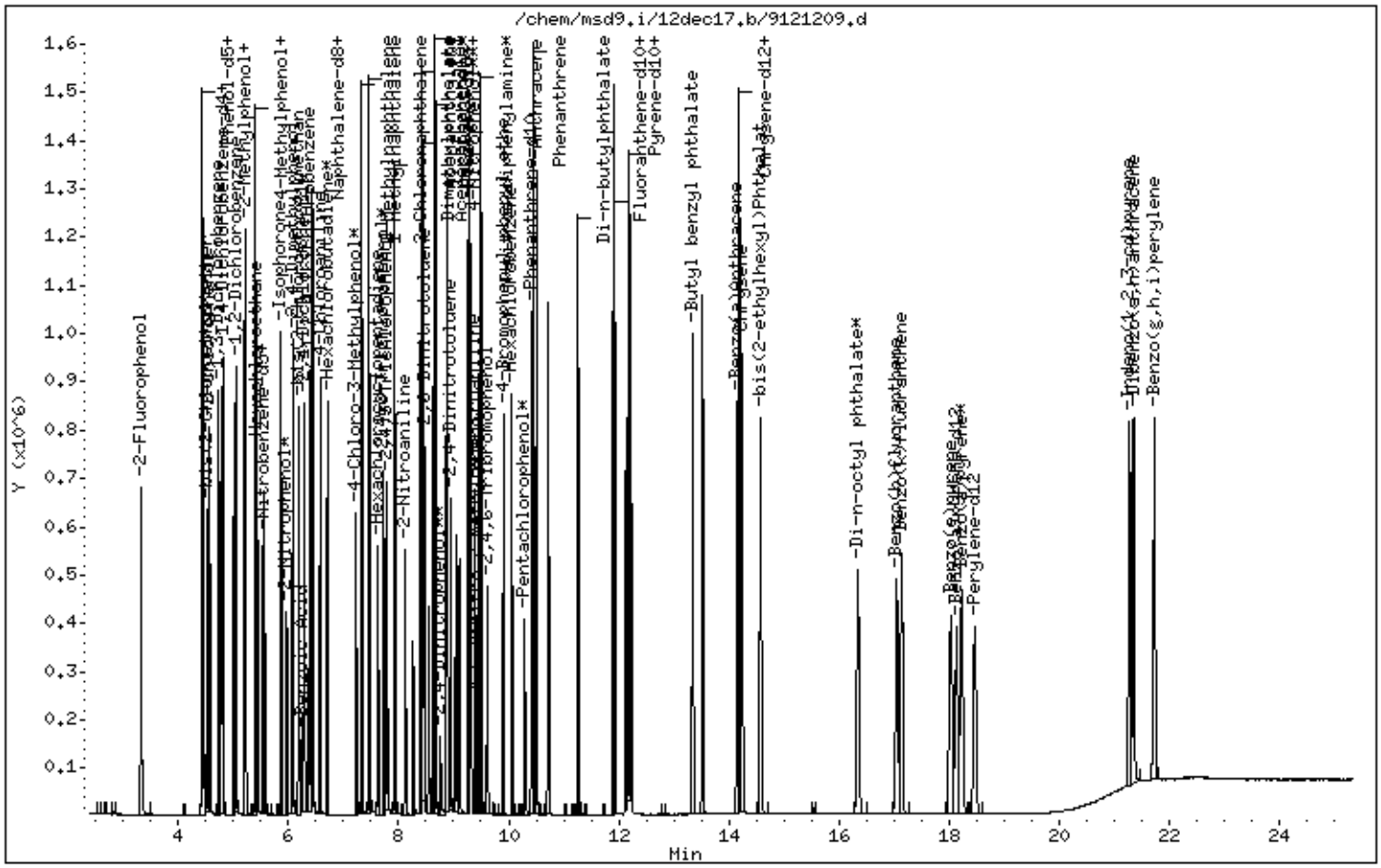
Sample Info: ;2848-71-50; ICAL Level 7

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121210.d
Lab Smp Id: 2848-71-80 Client Smp ID: ICAL Level 8
Inj Date : 12-DEC-2017 16:25
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-80; ICAL Level 8
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 16:25 Cal File: 9121210.d
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 50ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
$ 1 2-Fluorophenol	112	3.330	3.330	(0.695)	309812	80.0000	81.44
$ 2 Phenol-d5	99	4.439	4.477	(0.926)	396535	80.0000	79.96
$ 17 Nitrobenzene-d5	82	5.548	5.563	(0.863)	346950	80.0000	84.70
$ 64 2,4,6-Tribromophenol	330	9.620	9.623	(1.113)	99982	80.0000	90.70
$ 78 Fluoranthene-d10	212	11.900	11.899	(1.141)	964123	80.0000	85.85
$ 111 Benzo(a)pyrene-d12	264	18.149	18.168	(0.975)	847711	80.0000	87.82
$ 54 Fluorene-d10	176	9.268	9.268	(1.072)	665443	80.0000	82.47
$ 83 Pyrene-d10	212	12.190	12.194	(0.859)	1068775	80.0000	79.41(H)
* 8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	130792	40.0000	
* 27 Naphthalene-d8	136	6.428	6.429	(1.000)	526362	40.0000	
* 48 Acenaphthene-d10	164	8.646	8.642	(1.000)	299682	40.0000	
* 71 Phenanthrene-d10	188	10.429	10.426	(1.000)	536001	40.0000	
* 97 Chrysene-d12	240	14.190	14.190	(1.000)	512355	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.470	18.474	(1.000)	476075	40.0000	(H)
3 Phenol*	94	4.459	4.492	(0.931)	435368	80.0000	80.70
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	325851	80.0000	77.33
6 2-Chlorophenol	128	4.573	4.602	(0.955)	329201	80.0000	80.35
7 1,3-Dichlorobenzene	146	4.739	4.765	(0.989)	361672	80.0000	79.89
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	368139	80.0000	80.40
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	350135	80.0000	79.87
12 2-Methylphenol	108	5.216	5.237	(1.089)	294965	80.0000	78.88(H)
13 bis(2-Chloroisopropyl)ether	45	5.226	5.249	(1.091)	577154	80.0000	77.52
14 4-Methylphenol	108	5.413	5.444	(1.130)	311694	80.0000	78.41
15 N-Nitrosodipropylamine**	70	5.402	5.435	(1.128)	243264	80.0000	77.63
16 Hexachloroethane	117	5.434	5.446	(1.134)	148204	80.0000	80.38
19 Nitrobenzene	77	5.568	5.585	(0.866)	335839	80.0000	83.72
20 Isophorone	82	5.869	5.876	(0.913)	616006	80.0000	80.89
21 2-Nitrophenol*	139	5.983	5.985	(0.931)	157612	80.0000	87.58
22 2,4-Dimethylphenol	122	6.076	6.094	(0.945)	286421	80.0000	82.74
23 bis(2-Chloroethoxy)methane	93	6.190	6.206	(0.963)	386211	80.0000	80.56
24 Benzoic Acid	122	6.283	6.313	(0.977)	131789	80.0000	76.56
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.979)	262460	80.0000	84.00
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.994)	295156	80.0000	81.86
28 Naphthalene	128	6.449	6.454	(1.003)	963591	80.0000	81.41
29 4-Chloroaniline	127	6.573	6.580	(1.023)	396950	80.0000	80.00
30 Hexachlorobutadiene*	225	6.708	6.709	(1.044)	162185	80.0000	82.88
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.126)	255433	80.0000	81.21
34 2-Methylnaphthalene	142	7.330	7.334	(1.140)	648925	80.0000	81.03
35 1-Methylnaphthalene	142	7.465	7.482	(1.161)	623430	80.0000	80.85
36 Hexachlorocyclopentadiene**	237	7.630	7.632	(0.883)	175622	80.0000	79.19
37 2,4,6-Trichlorophenol*	196	7.744	7.741	(0.896)	177370	80.0000	85.68
38 2,4,5-Trichlorophenol	196	7.786	7.794	(0.901)	181318	80.0000	80.46
40 2-Chloronaphthalene	162	7.931	7.934	(0.917)	575084	80.0000	80.50
41 2-Nitroaniline	65	8.128	8.125	(0.940)	176473	80.0000	84.78
47 3-Nitroaniline	138	8.646	8.637	(1.000)	183646	80.0000	86.37
43 Dimethylphthalate	163	8.408	8.416	(0.972)	661551	80.0000	81.45
45 2,6-Dinitrotoluene	165	8.480	8.487	(0.981)	154344	80.0000	85.29
44 Acenaphthylene	152	8.449	8.452	(0.977)	927931	80.0000	82.39
49 Acenaphthene*	154	8.677	8.682	(1.004)	567368	80.0000	81.25
50 2,4-Dinitrophenol**	184	8.760	8.770	(1.013)	55437	80.0000	81.20
51 4-Nitrophenol**	109	8.895	8.905	(1.029)	73384	80.0000	83.16
53 2,4-Dinitrotoluene	165	8.957	8.949	(1.036)	206148	80.0000	92.12
52 Dibenzofuran	168	8.874	8.879	(1.026)	851234	80.0000	82.18
55 Diethylphthalate	149	9.289	9.286	(1.074)	689623	80.0000	84.36
56 Fluorene	166	9.299	9.299	(1.075)	704532	80.0000	83.90
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.078)	333149	80.0000	82.38
60 4-Nitroaniline	138	9.403	9.388	(1.087)	187227	80.0000	88.88
61 4,6-Dinitro-2-methylphenol	198	9.444	9.439	(0.906)	83247	80.0000	80.66
62 N-nitrosodiphenylamine*	169	9.485	9.484	(0.910)	588774	80.0000	77.63
65 4-Bromophenyl phenyl ether	248	9.910	9.907	(0.950)	202111	80.0000	82.03

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66 Hexachlorobenzene	284	10.066	10.068	(0.965)	214715	80.0000	81.57
70 Pentachlorophenol*	266	10.294	10.298	(0.987)	92944	80.0000	86.77
72 Phenanthrene	178	10.449	10.454	(1.002)	997215	80.0000	81.26
73 Anthracene	178	10.511	10.507	(1.008)	1030922	80.0000	84.47
76 Di-n-butylphthalate	149	11.258	11.262	(1.079)	1121464	80.0000	83.46
79 Fluoranthene*	202	11.921	11.926	(1.143)	1090218	80.0000	86.74
84 Pyrene	202	12.221	12.219	(0.861)	1117279	80.0000	78.68
90 Butyl benzyl phthalate	149	13.341	13.344	(0.940)	499785	80.0000	82.85
98 3 3'-Dichlorobenzidine	252	14.201	14.202	(1.001)	413468	80.0000	82.53
96 Benzo(a)Anthracene	228	14.159	14.157	(0.998)	1011425	80.0000	79.92
99 Chrysene	228	14.242	14.245	(1.004)	969264	80.0000	80.11
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	699556	80.0000	84.53
105 Di-n-octyl phthalate*	149	16.346	16.349	(1.152)	1164710	80.0000	86.80
107 Benzo(b)fluoranthene	252	17.061	17.060	(0.916)	1020052	80.0000	87.25(H)
109 Benzo(k)fluoranthene	252	17.154	17.150	(0.922)	1020180	80.0000	84.67
110 Benzo(e)pyrene	252	18.045	18.052	(0.969)	952377	80.0000	85.08(H)
113 Benzo(a)pyrene*	252	18.242	18.237	(0.980)	991430	80.0000	87.91(H)
117 Indeno(1,2,3-cd)pyrene	276	21.279	21.280	(1.500)	931727	80.0000	88.03
118 Dibenzo(a,h)anthracene	278	21.351	21.356	(1.147)	945671	80.0000	86.99
119 Benzo(g,h,i)perylene	276	21.735	21.730	(1.168)	984276	80.0000	86.19

QC Flag Legend

H - Operator selected an alternate compound hit.

Report Date: 14-Dec-2017 15:49

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121210.d
Lab Smp Id: 2848-71-80
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 8
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	130792	-8.50
27 Naphthalene-d8	590466	295233	1180932	526362	-10.86
48 Acenaphthene-d10	325726	162863	651452	299682	-8.00
71 Phenanthrene-d10	562171	281086	1124342	536001	-4.66
97 Chrysene-d12	525026	262513	1050052	512355	-2.41
115 Perylene-d12	490780	245390	981560	476075	-3.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.65	0.00
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.47	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121210.d

Date : 12-DEC-2017 16:25

Client ID: ICAL Level 8

Instrument: msd9.i

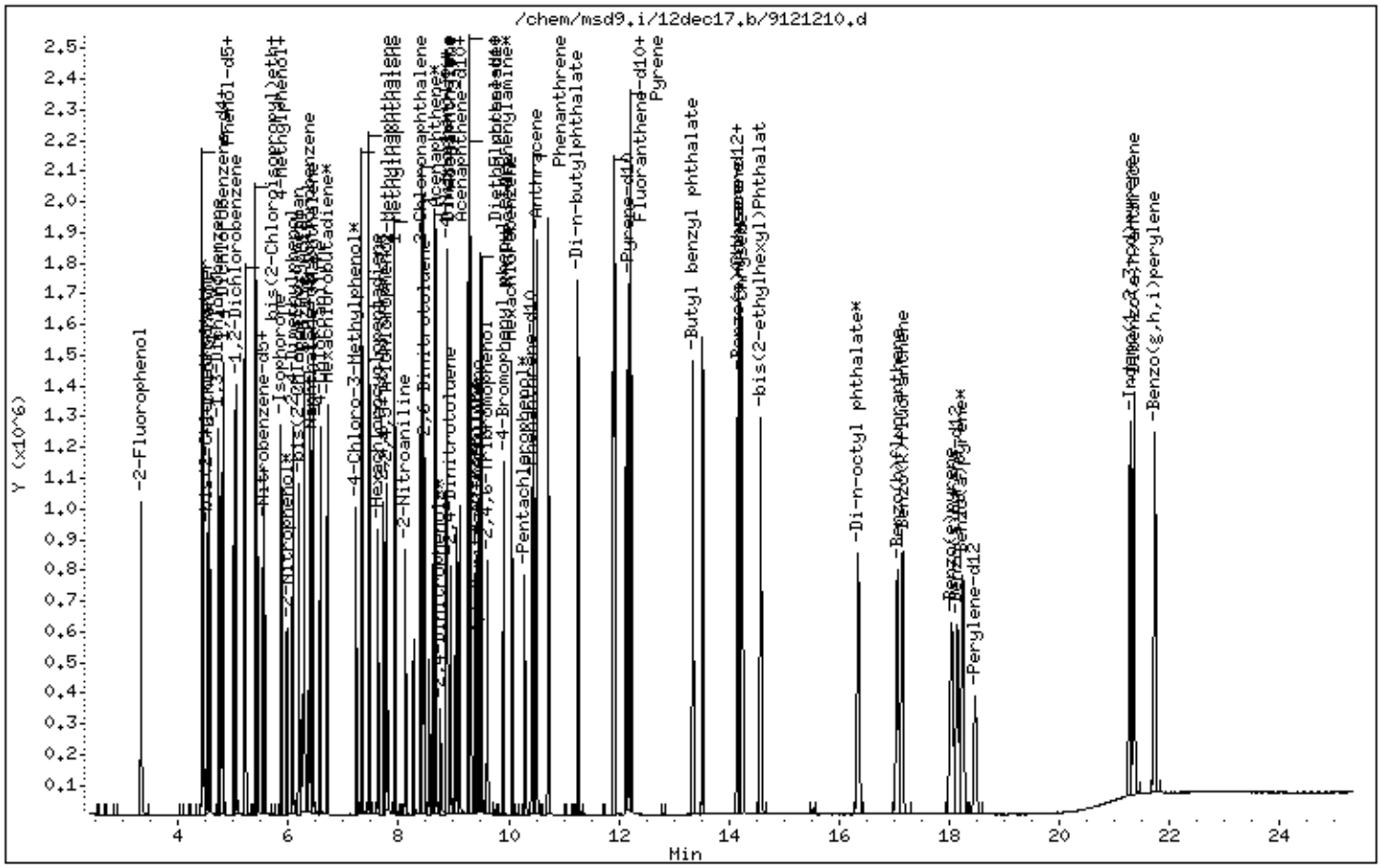
Sample Info: ;2848-71-80; ICAL Level 8

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121211.d
Lab Smp Id: 2848-71-100 Client Smp ID: ICAL Level 9
Inj Date : 12-DEC-2017 16:55
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-100; ICAL Level 9
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 16:55 Cal File: 9121211.d
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 50ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)	
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	557239	100.000	106.8	
$	2 Phenol-d5	99	4.449	4.477	(0.929)	749372	100.000	110.2	
$	17 Nitrobenzene-d5	82	5.548	5.563	(0.849)	654416	100.000	108.5	(H)
$	64 2,4,6-Tribromophenol	330	9.631	9.623	(1.114)	177997	100.000	109.9	
$	78 Fluoranthene-d10	212	11.900	11.899	(1.141)	1492445	100.000	100.1	
$	111 Benzo(a)pyrene-d12	264	18.159	18.168	(0.973)	1145610	100.000	110.0	
$	54 Fluorene-d10	176	9.268	9.268	(1.072)	1176791	100.000	99.22	
$	83 Pyrene-d10	212	12.201	12.194	(0.860)	1605245	100.000	107.1	(H)
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	179388	40.0000		
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	775043	40.0000		(H)
*	48 Acenaphthene-d10	164	8.646	8.642	(1.000)	440489	40.0000		
*	71 Phenanthrene-d10	188	10.429	10.426	(1.000)	711376	40.0000		
*	97 Chrysene-d12	240	14.190	14.190	(1.000)	570764	40.0000		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.481	18.474	(1.000)	513803	40.0000	(H)
3 Phenol*	94	4.459	4.492	(0.931)	800216	100.000	108.2
5 bis(2-Chloroethyl)ether	93	4.522	4.526	(0.944)	605496	100.000	104.8
6 2-Chlorophenol	128	4.573	4.602	(0.955)	603070	100.000	107.3
7 1,3-Dichlorobenzene	146	4.750	4.765	(0.991)	641282	100.000	103.3
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	645282	100.000	102.8
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	627437	100.000	104.4
12 2-Methylphenol	108	5.216	5.237	(1.089)	575178	100.000	112.1
13 bis(2-Chloroisopropyl)ether	45	5.226	5.249	(1.091)	1061548	100.000	103.9
14 4-Methylphenol	108	5.413	5.444	(1.130)	594228	100.000	109.0
15 N-Nitrosodipropylamine**	70	5.413	5.435	(1.130)	475664	100.000	110.7(H)
16 Hexachloroethane	117	5.434	5.446	(1.134)	263273	100.000	104.1
19 Nitrobenzene	77	5.568	5.585	(0.852)	628969	100.000	106.5(H)
20 Isophorone	82	5.879	5.876	(0.900)	1184588	100.000	105.6(H)
21 2-Nitrophenol*	139	5.983	5.985	(0.916)	316852	100.000	119.6(H)
22 2,4-Dimethylphenol	122	6.086	6.094	(0.932)	552763	100.000	108.4
23 bis(2-Chloroethoxy)methane	93	6.200	6.206	(0.949)	755014	100.000	107.0(H)
24 Benzoic Acid	122	6.325	6.313	(0.968)	311075	100.000	122.7
25 2,4-Dichlorophenol*	162	6.294	6.298	(0.964)	510365	100.000	110.9
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.978)	552234	100.000	104.0
28 Naphthalene	128	6.460	6.454	(0.989)	1803951	100.000	103.5
29 4-Chloroaniline	127	6.584	6.580	(1.008)	770264	100.000	105.4
30 Hexachlorobutadiene*	225	6.708	6.709	(1.027)	306249	100.000	106.3
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.108)	508501	100.000	109.8
34 2-Methylnaphthalene	142	7.340	7.334	(1.124)	1245222	100.000	105.6(H)
35 1-Methylnaphthalene	142	7.465	7.482	(1.143)	1179676	100.000	103.9(H)
36 Hexachlorocyclopentadiene**	237	7.631	7.632	(0.883)	361189	100.000	110.8
37 2,4,6-Trichlorophenol*	196	7.745	7.741	(0.896)	349425	100.000	114.8
38 2,4,5-Trichlorophenol	196	7.796	7.794	(0.902)	355273	100.000	107.2
40 2-Chloronaphthalene	162	7.931	7.934	(0.917)	1087444	100.000	103.6
41 2-Nitroaniline	65	8.128	8.125	(0.940)	333866	100.000	109.1
47 3-Nitroaniline	138	8.646	8.637	(1.000)	316696	100.000	101.3
43 Dimethylphthalate	163	8.418	8.416	(0.974)	1190374	100.000	99.71
45 2,6-Dinitrotoluene	165	8.491	8.487	(0.982)	295008	100.000	110.9
44 Acenaphthylene	152	8.449	8.452	(0.977)	1731036	100.000	104.6
49 Acenaphthene*	154	8.688	8.682	(1.005)	1053946	100.000	102.7
50 2,4-Dinitrophenol**	184	8.770	8.770	(1.014)	120480	100.000	120.0
51 4-Nitrophenol**	109	8.905	8.905	(1.030)	139593	100.000	107.6
53 2,4-Dinitrotoluene	165	8.957	8.949	(1.036)	355750	100.000	108.2
52 Dibenzofuran	168	8.884	8.879	(1.028)	1576670	100.000	103.6
55 Diethylphthalate	149	9.289	9.286	(1.074)	1194388	100.000	99.40
56 Fluorene	166	9.299	9.299	(1.075)	1242288	100.000	100.6
57 4-Chlorophenyl phenyl ether	204	9.320	9.323	(1.078)	601150	100.000	101.1
60 4-Nitroaniline	138	9.413	9.388	(1.089)	317495	100.000	102.5
61 4,6-Dinitro-2-methylphenol	198	9.454	9.439	(0.907)	156638	100.000	114.4
62 N-nitrosodiphenylamine*	169	9.486	9.484	(0.910)	1036378	100.000	103.0
65 4-Bromophenyl phenyl ether	248	9.910	9.907	(0.950)	350533	100.000	107.2

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66 Hexachlorobenzene	284	10.066	10.068	(0.965)	363209	100.000	104.0
70 Pentachlorophenol*	266	10.294	10.298	(0.987)	174962	100.000	123.1
72 Phenanthrene	178	10.460	10.454	(1.003)	1651595	100.000	101.4
73 Anthracene	178	10.511	10.507	(1.008)	1659104	100.000	102.4
76 Di-n-butylphthalate	149	11.268	11.262	(1.080)	1814782	100.000	101.8
79 Fluoranthene*	202	11.931	11.926	(1.144)	1642041	100.000	98.43
84 Pyrene	202	12.221	12.219	(0.861)	1673396	100.000	105.8
90 Butyl benzyl phthalate	149	13.341	13.344	(0.940)	717470	100.000	106.8
98 3 3'-Dichlorobenzidine	252	14.201	14.202	(1.001)	571473	100.000	102.4
96 Benzo(a)Anthracene	228	14.159	14.157	(0.998)	1424114	100.000	101.0
99 Chrysene	228	14.253	14.245	(1.004)	1357931	100.000	100.7
103 bis(2-ethylhexyl)Phthalate	149	14.574	14.578	(1.027)	996481	100.000	108.1
105 Di-n-octyl phthalate*	149	16.346	16.349	(1.152)	1613886	100.000	108.0
107 Benzo(b)fluoranthene	252	17.061	17.060	(0.914)	1351536	100.000	107.1(H)
109 Benzo(k)fluoranthene	252	17.165	17.150	(0.920)	1430715	100.000	110.0(H)
110 Benzo(e)pyrene	252	18.056	18.052	(0.968)	1289771	100.000	106.8(H)
113 Benzo(a)pyrene*	252	18.263	18.237	(0.979)	1344865	100.000	110.5(H)
117 Indeno(1,2,3-cd)pyrene	276	21.289	21.280	(1.500)	1253446	100.000	106.3
118 Dibenzo(a,h)anthracene	278	21.362	21.356	(1.145)	1281813	100.000	109.2
119 Benzo(g,h,i)perylene	276	21.745	21.730	(1.166)	1327123	100.000	107.7

QC Flag Legend

H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121211.d
Lab Smp Id: 2848-71-100
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 9
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	179388	25.49
27 Naphthalene-d8	590466	295233	1180932	775043	31.26
48 Acenaphthene-d10	325726	162863	651452	440489	35.23
71 Phenanthrene-d10	562171	281086	1124342	711376	26.54
97 Chrysene-d12	525026	262513	1050052	570764	8.71
115 Perylene-d12	490780	245390	981560	513803	4.69

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.65	0.00
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.19	0.00
115 Perylene-d12	18.47	17.97	18.97	18.48	0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121211.d

Date : 12-DEC-2017 16:55

Client ID: ICAL Level 9

Instrument: msd9.i

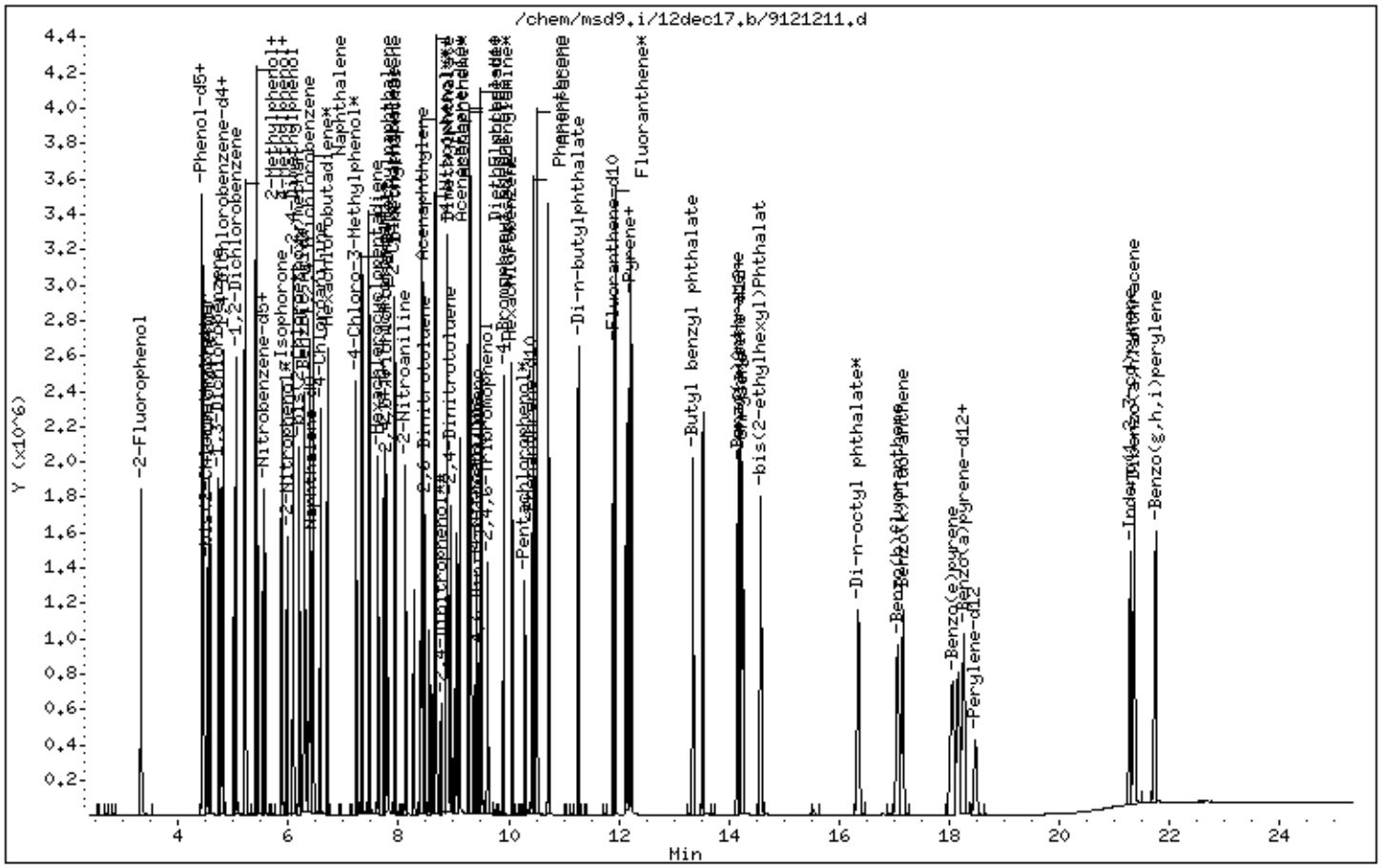
Sample Info: ;2848-71-100; ICAL Level 9

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121212.d
Lab Smp Id: 2848-65-160 Client Smp ID: ICAL Level 10
Inj Date : 12-DEC-2017 17:25
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-65-160; ICAL Level 10
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 17:25 Cal File: 9121212.d
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 50ng.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	770461	160.000	167.8(A)
$	2 Phenol-d5	99	4.449	4.477	(0.929)	974416	160.000	162.8(A)
$	17 Nitrobenzene-d5	82	5.547	5.563	(0.849)	855441	160.000	169.7(AH)
$	64 2,4,6-Tribromophenol	330	9.630	9.623	(1.114)	249628	160.000	191.4(A)
$	78 Fluoranthene-d10	212	11.910	11.899	(1.142)	2136217	160.000	165.6(A)
$	111 Benzo(a)pyrene-d12	264	18.190	18.168	(0.974)	1877307	160.000	172.1(A)
$	54 Fluorene-d10	176	9.268	9.268	(1.072)	1534571	160.000	160.8(A)
$	83 Pyrene-d10	212	12.200	12.194	(0.859)	2290149	160.000	151.9
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.792	(1.000)	157833	40.0000	
*	27 Naphthalene-d8	136	6.428	6.429	(1.000)	647586	40.0000	(H)
*	48 Acenaphthene-d10	164	8.646	8.642	(1.000)	354557	40.0000	
*	71 Phenanthrene-d10	188	10.428	10.426	(1.000)	615889	40.0000	
*	97 Chrysene-d12	240	14.201	14.190	(1.000)	573996	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.491	18.474	(1.000)	538080	40.0000	(H)
3 Phenol*	94	4.470	4.492	(0.933)	1099274	160.000	168.9(A)
5 bis(2-Chloroethyl)ether	93	4.532	4.526	(0.946)	802952	160.000	157.9
6 2-Chlorophenol	128	4.584	4.602	(0.957)	813781	160.000	164.6(A)
7 1,3-Dichlorobenzene	146	4.749	4.765	(0.991)	881494	160.000	161.4(A)
9 1,4-Dichlorobenzene*	146	4.812	4.837	(1.004)	888093	160.000	160.7(A)
11 1,2-Dichlorobenzene	146	5.050	5.051	(1.054)	837466	160.000	158.3
12 2-Methylphenol	108	5.216	5.237	(1.089)	737016	160.000	163.3(A)
13 bis(2-Chloroisopropyl)ether	45	5.226	5.249	(1.091)	1378479	160.000	153.4
14 4-Methylphenol	108	5.413	5.444	(1.130)	777689	160.000	162.1(A)
15 N-Nitrosodipropylamine**	70	5.413	5.435	(1.130)	599962	160.000	158.6(H)
16 Hexachloroethane	117	5.433	5.446	(1.134)	356255	160.000	160.1(A)
19 Nitrobenzene	77	5.579	5.585	(0.854)	832881	160.000	168.8(AH)
20 Isophorone	82	5.879	5.876	(0.900)	1500331	160.000	160.1(AH)
21 2-Nitrophenol*	139	5.983	5.985	(0.916)	412004	160.000	186.1(AH)
22 2,4-Dimethylphenol	122	6.086	6.094	(0.932)	693712	160.000	162.9(A)
23 bis(2-Chloroethoxy)methane	93	6.200	6.206	(0.949)	941991	160.000	159.7(H)
24 Benzoic Acid	122	6.345	6.313	(0.971)	423087	160.000	199.8(A)
25 2,4-Dichlorophenol*	162	6.304	6.298	(0.965)	657539	160.000	171.1(A)
26 1,2,4-Trichlorobenzene	180	6.387	6.388	(0.978)	714648	160.000	161.1(A)
28 Naphthalene	128	6.459	6.454	(0.989)	2265651	160.000	155.6
29 4-Chloroaniline	127	6.584	6.580	(1.008)	957292	160.000	156.8
30 Hexachlorobutadiene*	225	6.708	6.709	(1.027)	404856	160.000	168.2(A)
33 4-Chloro-3-Methylphenol*	107	7.237	7.248	(1.108)	635018	160.000	164.1(AH)
34 2-Methylnaphthalene	142	7.340	7.334	(1.124)	1598372	160.000	162.2(H)
35 1-Methylnaphthalene	142	7.475	7.482	(1.144)	1508981	160.000	159.1(H)
36 Hexachlorocyclopentadiene**	237	7.630	7.632	(0.883)	481590	160.000	183.5(A)
37 2,4,6-Trichlorophenol*	196	7.744	7.741	(0.896)	443836	160.000	181.2(A)
38 2,4,5-Trichlorophenol	196	7.796	7.794	(0.902)	455951	160.000	171.0(A)
40 2-Chloronaphthalene	162	7.941	7.934	(0.918)	1373703	160.000	162.5(A)
41 2-Nitroaniline	65	8.128	8.125	(0.940)	409661	160.000	166.4(A)
47 3-Nitroaniline	138	8.656	8.637	(1.001)	427936	160.000	170.1(A)
43 Dimethylphthalate	163	8.418	8.416	(0.974)	1572839	160.000	163.7(A)
45 2,6-Dinitrotoluene	165	8.491	8.487	(0.982)	358144	160.000	167.3(A)
44 Acenaphthylene	152	8.459	8.452	(0.978)	2181554	160.000	163.7(A)
49 Acenaphthene*	154	8.687	8.682	(1.005)	1288808	160.000	156.0
50 2,4-Dinitrophenol**	184	8.770	8.770	(1.014)	158081	160.000	195.7(A)
51 4-Nitrophenol**	109	8.905	8.905	(1.030)	182501	160.000	174.8(A)
53 2,4-Dinitrotoluene	165	8.967	8.949	(1.037)	486233	160.000	183.6(A)
52 Dibenzofuran	168	8.884	8.879	(1.028)	1946390	160.000	158.8
55 Diethylphthalate	149	9.288	9.286	(1.074)	1538471	160.000	159.1
56 Fluorene	166	9.309	9.299	(1.077)	1610052	160.000	162.0(A)
57 4-Chlorophenyl phenyl ether	204	9.330	9.323	(1.079)	781033	160.000	163.2(A)
60 4-Nitroaniline	138	9.413	9.388	(1.089)	429837	160.000	172.5(A)
61 4,6-Dinitro-2-methylphenol	198	9.454	9.439	(0.907)	213799	160.000	180.3(A)
62 N-nitrosodiphenylamine*	169	9.485	9.484	(0.910)	1333580	160.000	153.0
65 4-Bromophenyl phenyl ether	248	9.910	9.907	(0.950)	464521	160.000	164.1(A)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Hexachlorobenzene	284	10.066	10.068	(0.965)	499262	160.000	165.1(A)
70	Pentachlorophenol*	266	10.304	10.298	(0.988)	256788	160.000	208.6(A)
72	Phenanthrene	178	10.460	10.454	(1.003)	2154213	160.000	152.8
73	Anthracene	178	10.511	10.507	(1.008)	2185832	160.000	155.9
76	Di-n-butylphthalate	149	11.268	11.262	(1.080)	2480894	160.000	160.7(A)
79	Fluoranthene*	202	11.931	11.926	(1.144)	2313586	160.000	160.2(A)
84	Pyrene	202	12.232	12.219	(0.861)	2403028	160.000	151.0
90	Butyl benzyl phthalate	149	13.351	13.344	(0.940)	1113582	160.000	164.8(A)
98	3 3'-Dichlorobenzidine	252	14.211	14.202	(1.001)	913064	160.000	162.7(A)
96	Benzo(a)Anthracene	228	14.169	14.157	(0.998)	2214219	160.000	156.2
99	Chrysene	228	14.263	14.245	(1.004)	2124780	160.000	156.8
103	bis(2-ethylhexyl)Phthalate	149	14.584	14.578	(1.027)	1556514	160.000	167.9(A)
105	Di-n-octyl phthalate*	149	16.356	16.349	(1.152)	2665038	160.000	177.3(A)
107	Benzo(b)fluoranthene	252	17.081	17.060	(0.915)	2248771	160.000	170.2(AH)
109	Benzo(k)fluoranthene	252	17.185	17.150	(0.921)	2286735	160.000	167.9(AH)
110	Benzo(e)pyrene	252	18.087	18.052	(0.969)	2098856	160.000	165.9(AH)
113	Benzo(a)pyrene*	252	18.294	18.237	(0.980)	2185468	160.000	171.4(AH)
117	Indeno(1,2,3-cd)pyrene	276	21.299	21.280	(1.500)	2047455	160.000	172.7(A)
118	Dibenzo(a,h)anthracene	278	21.372	21.356	(1.145)	2015794	160.000	164.1(AH)
119	Benzo(g,h,i)perylene	276	21.755	21.730	(1.165)	2116727	160.000	164.0(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121212.d
Lab Smp Id: 2848-65-160
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 10
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	157833	10.42
27 Naphthalene-d8	590466	295233	1180932	647586	9.67
48 Acenaphthene-d10	325726	162863	651452	354557	8.85
71 Phenanthrene-d10	562171	281086	1124342	615889	9.56
97 Chrysene-d12	525026	262513	1050052	573996	9.33
115 Perylene-d12	490780	245390	981560	538080	9.64

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.65	0.00
71 Phenanthrene-d10	10.43	9.93	10.93	10.43	0.00
97 Chrysene-d12	14.19	13.69	14.69	14.20	0.07
115 Perylene-d12	18.47	17.97	18.97	18.49	0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121212.d

Date : 12-DEC-2017 17:25

Client ID: ICAL Level 10

Instrument: msd9.i

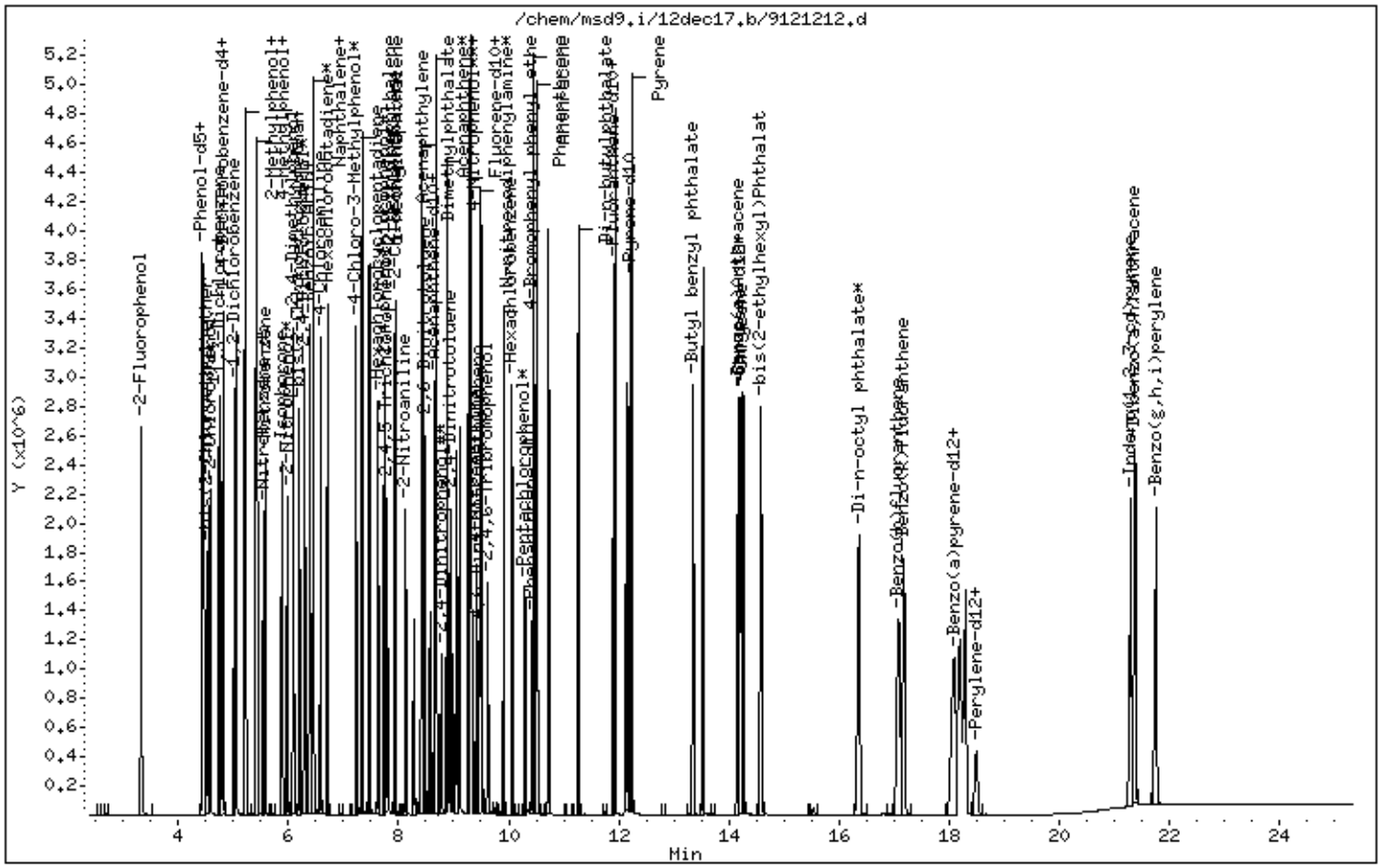
Sample Info: ;2848-65-160; ICAL Level 10

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/12dec17.b/9121214.d
Lab Smp Id: 2848-71-500 Client Smp ID: ICAL Level 11
Inj Date : 12-DEC-2017 18:25
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-500; ICAL Level 11
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/12dec17.b/917y1212.m
Meth Date : 14-Dec-2017 15:49 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 14 Calibration Sample, Level: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 0.5.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 8 1,4-Dichlorobenzene-d4	152	4.802	4.792	(1.000)	152334	40.0000	
* 27 Naphthalene-d8	136	6.439	6.429	(1.000)	619139	40.0000	
* 48 Acenaphthene-d10	164	8.657	8.642	(1.000)	343086	40.0000	
* 71 Phenanthrene-d10	188	10.439	10.426	(1.000)	596816	40.0000	
* 97 Chrysene-d12	240	14.222	14.190	(1.000)	582264	40.0000	
* 115 Perylene-d12	264	18.533	18.474	(1.000)	556311	40.0000	
$ 54 Fluorene-d10	176	Compound Not Detected.					
$ 83 Pyrene-d10	212	Compound Not Detected.					
$ 78 Fluoranthene-d10	212	Compound Not Detected.					
$ 111 Benzo(a)pyrene-d12	264	Compound Not Detected.					
28 Naphthalene	128	6.480	6.454	(1.006)	7106315	500.000	510.4(A)
34 2-Methylnaphthalene	142	7.351	7.334	(1.142)	4503551	500.000	478.1(A)
40 2-Chloronaphthalene	162	7.952	7.934	(0.919)	4039976	500.000	494.0(A)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
44 Acenaphthylene	152	8.470	8.452	(0.978)	6143334	500.000	476.4(A)
49 Acenaphthene*	154	8.708	8.682	(1.006)	3805439	500.000	476.0(A)
56 Fluorene	166	9.330	9.299	(1.078)	4578372	500.000	476.2(A)
72 Phenanthrene	178	10.480	10.454	(1.004)	6607848	500.000	483.6(A)
73 Anthracene	178	10.532	10.507	(1.009)	7105422	500.000	522.9(A)
79 Fluoranthene*	202	11.952	11.926	(1.145)	7217916	500.000	515.7(A)
84 Pyrene	202	12.242	12.219	(0.861)	7901543	500.000	489.6(A)
96 Benzo(a)Anthracene	228	14.201	14.157	(0.999)	7568115	500.000	526.2(A)
99 Chrysene	228	14.304	14.245	(1.006)	7051157	500.000	512.8(A)
107 Benzo(b)fluoranthene	252	Compound Not Detected.					
109 Benzo(k)fluoranthene	252	Compound Not Detected.					
113 Benzo(a)pyrene*	252	Compound Not Detected.					
117 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
118 Dibenzo(a,h)anthracene	278	21.445	21.356	(1.157)	7738125	500.000	609.1(A)
119 Benzo(g,h,i)perylene	276	21.838	21.730	(1.178)	7845271	500.000	587.9(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Report Date: 14-Dec-2017 15:49

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121214.d
Lab Smp Id: 2848-71-500
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/12dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 12-DEC-2017
Calibration Time: 15:54
Client Smp ID: ICAL Level 11
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	152334	6.57
27 Naphthalene-d8	590466	295233	1180932	619139	4.86
48 Acenaphthene-d10	325726	162863	651452	343086	5.33
71 Phenanthrene-d10	562171	281086	1124342	596816	6.16
97 Chrysene-d12	525026	262513	1050052	582264	10.90
115 Perylene-d12	490780	245390	981560	556311	13.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.80	0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.44	0.16
48 Acenaphthene-d10	8.65	8.15	9.15	8.66	0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.44	0.10
97 Chrysene-d12	14.19	13.69	14.69	14.22	0.22
115 Perylene-d12	18.47	17.97	18.97	18.53	0.34

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/12dec17.b/9121214.d

Date : 12-DEC-2017 18:25

Client ID: ICAL Level 11

Instrument: msd9.i

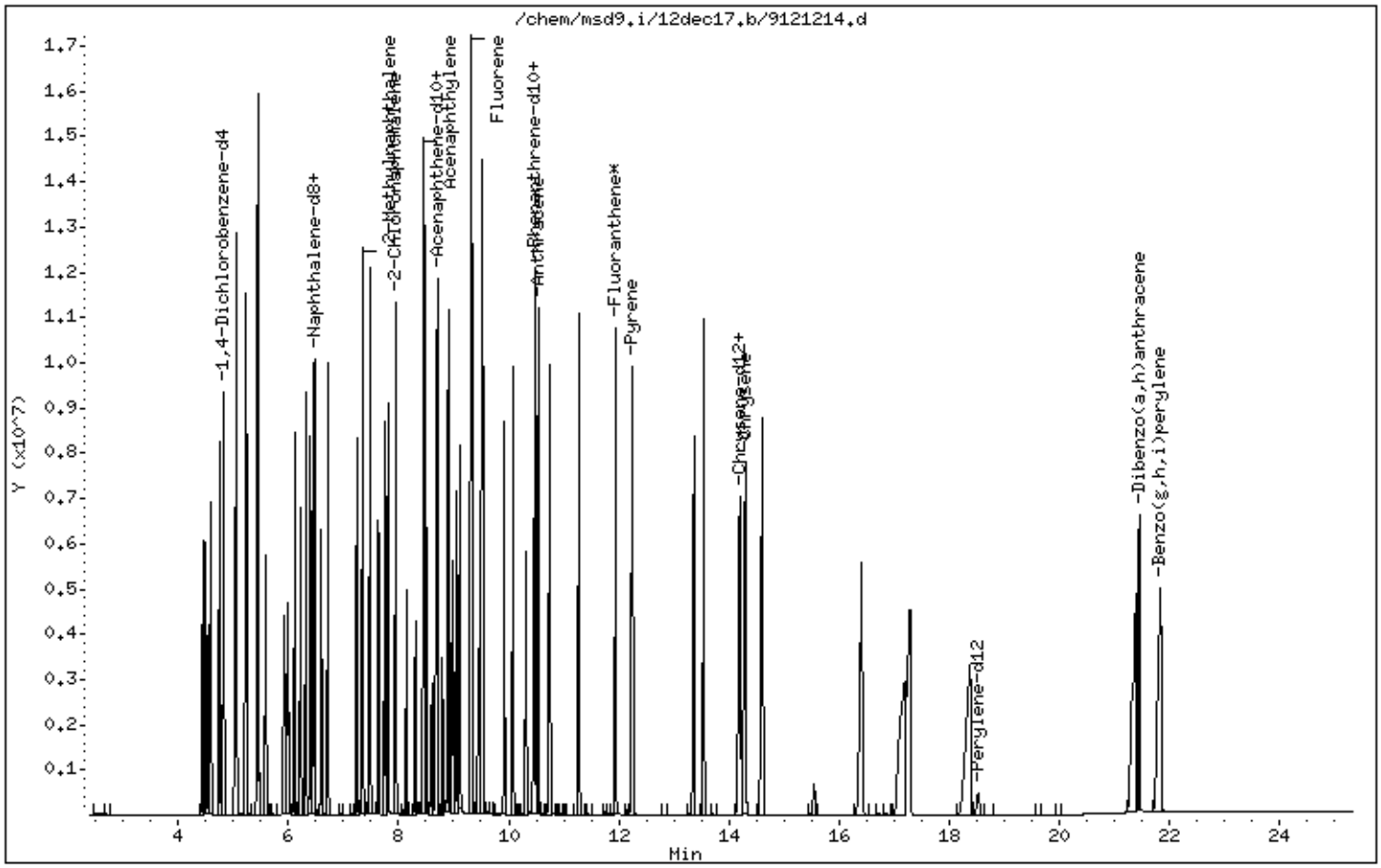
Sample Info: ;2848-71-500; ICAL Level 11

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Report Date : 09-May-2017 13:56

Analysis: TO13A Full List
Instrument: MSD-9
Column: HP5MS 30m x 0.25mm x 0.25µm
Extraction Date: 4/26/2017 using Buchi E914

Spike ID:	Spike Amount:
2744-211-160	0.25mL
2744-212-4	0.25mL

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	9050505	9050506	9050507	9050508	9050509	9050510	9050511	9050512
INJ.DATE:	05-MAY-2017	05-MAY-2017	05-MAY-2017	05-MAY-2017	05-MAY-2017	05-MAY-2017	05-MAY-2017	05-MAY-2017
INJ.TIME:	10:26	10:56	11:27	11:57	12:27	12:58	13:28	13:58

unit in ng/mL

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	amt spiked
$	1 2-Fluorophenol	31.91	33.11	32.28	29.58	29.64	33.11	29.70	28.36	30.96	1.85	5.54	surr	
$	2 Phenol-d5	34.26	37.70	35.72	31.39	31.90	35.25	31.30	28.92	33.31	2.90	8.69	surr	
	3 Phenol*	13.45	14.90	14.39	12.31	13.23	13.30	10.90	11.08	12.95	1.43	4.30	5.0	20
	4 Aniline	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	5 bis(2-Chloroethyl)ethe	4.52	4.85	4.72	4.18	4.50	4.80	4.29	4.12	4.50	0.28	0.84	1.0	5.0
	6 2-Chlorophenol	14.01	15.12	14.69	12.91	13.89	14.52	12.66	12.37	13.77	1.02	3.05	5.0	20
	7 1,3-Dichlorobenzene	4.22	4.43	4.39	3.95	4.01	4.39	3.97	3.84	4.15	0.24	0.70	1.0	5.0
*	8 1,4-Dichlorobenzene-d4	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
	9 1,4-Dichlorobenzene*	4.32	4.50	4.46	3.96	4.24	4.51	4.05	3.91	4.25	0.25	0.74	1.0	5.0
	10 Benzyl Alcohol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	11 1,2-Dichlorobenzene	4.29	4.54	4.49	3.98	4.17	4.45	4.00	3.96	4.23	0.24	0.72	1.0	5.0
	12 2-Methylphenol	14.36	15.99	15.03	13.07	14.33	14.58	12.12	12.07	13.94	1.40	4.20	5.0	20
	13 bis(2-Chloroisopropyl)	4.71	5.05	4.86	4.28	4.66	4.87	4.39	4.20	4.63	0.31	0.92	1.0	5.0
	14 4-Methylphenol	14.36	16.29	15.32	13.13	14.48	14.56	11.63	11.83	13.95	1.64	4.90	5.0	20
	15 N-Nitrosodipropylamine	4.38	5.10	4.76	4.01	4.51	4.66	4.08	3.89	4.42	0.42	1.25	5.0	5.0
	16 Hexachloroethane	4.23	4.45	4.30	3.87	4.12	4.40	4.02	3.82	4.15	0.23	0.70	1.0	5.0
$	17 Nitrobenzene-d5	36.95	36.57	37.35	34.37	35.26	37.68	35.32	33.72	35.90	1.45	4.34	surr	

Reviewer 1 _____ Date: 5/10/17
Reviewer 2 _____ Date: 5/11/17

Report Date : 09-May-2017 13:56

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

unit in ug/mL

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	amt spiked
	18 Acetophenone	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	19 Nitrobenzene	4.92	4.86	4.93	4.65	4.68	4.89	4.60	4.49	4.75	0.17	0.50	1.0	5.0
	20 Isophorone	4.73	5.17	5.01	4.41	4.70	4.90	4.36	4.22	4.69	0.33	1.00	1.0	5.0
	21 2-Nitrophenol*	14.81	15.74	15.51	13.74	14.37	15.32	13.71	12.88	14.51	1.01	3.03	5.0	20
	22 2,4-Dimethylphenol	14.23	14.82	14.79	13.07	14.06	14.45	11.22	11.47	13.51	1.45	4.33	5.0	20
	23 bis(2-Chloroethoxy)met	4.93	5.14	5.10	4.59	4.86	4.97	4.39	4.34	4.79	0.31	0.93	1.0	5.0
	24 Benzoic Acid	30.05	44.09	44.33	35.24	41.29	33.17	21.65	25.34	34.40	8.50	25.49	40	60
	25 2,4-Dichlorophenol*	15.06	16.42	16.17	13.98	15.11	15.11	12.97	13.16	14.75	1.28	3.84	5.0	20
	26 1,2,4-Trichlorobenzene	4.56	4.63	4.74	4.22	4.51	4.70	4.23	4.13	4.47	0.24	0.72	1.0	5.0
*	27 Naphthalene-d8	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
	28 Naphthalene	0.88	0.87	0.90	0.80	0.82	0.86	0.80	0.82	0.84	0.04	0.12	1.0	~~5.0~~ 1.0 duplicate
	29 4-Chloroaniline	5.65	5.69	5.50	4.93	6.02	6.40	3.59	3.85	5.20	1.01	3.03	10	10
	30 Hexachlorobutadiene*	4.69	4.78	4.81	4.32	4.52	4.69	4.40	4.20	4.55	0.23	0.68	1.0	5.0
	31 Benzothiazole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$	32 13C-Phenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	33 4-Chloro-3-Methylpheno	14.05	16.81	16.54	13.14	15.07	13.90	10.86	11.07	13.93	2.22	6.67	5.0	20
	34 2-Methylnaphthalene	0.70	0.74	0.73	0.64	0.71	0.75	0.66	0.68	0.70	0.04	0.11	1.0	~~5.0~~ 1.0 duplicate
	35 1-Methylnaphthalene	0.73	0.79	0.77	0.67	0.73	0.74	0.69	0.66	0.72	0.05	0.14	1.0	1.0
	36 Hexachlorocyclopentadi	52.74	50.96	53.44	48.86	49.13	47.05	44.35	40.94	48.43	4.23	12.69	20	60
	37 2,4,6-Trichlorophenol*	15.69	16.12	16.84	14.74	15.92	15.90	14.23	13.43	15.36	1.13	3.38	5.0	20
	38 2,4,5-Trichlorophenol	14.62	15.78	16.27	13.48	15.14	13.98	12.08	11.79	14.14	1.63	4.90	5.0	20
$	39 2-Fluorobiphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

#RL for 4-Chloro-3-Methylphenol raised to 10ug/mL

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

unit ng/mL

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	amt spiked
40	2-Chloronaphthalene	4.87	4.62	5.05	4.42	4.76	4.78	4.44	4.32	4.66	0.25	0.75	1.0	5.0
41	2-Nitroaniline	7.63	8.19	8.25	7.15	7.98	7.88	7.29	6.62	7.62	0.57	1.70	10.0	10
42	Pentachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
43	Dimethylphthalate	4.96	5.40	5.33	4.61	5.12	5.12	4.85	4.54	4.99	0.31	0.94	5.0	5.0
44	Acenaphthylene	0.78	0.80	0.82	0.72	0.76	0.78	0.73	0.71	0.76	0.04	0.12	1.0	1.0
45	2,6-Dinitrotoluene	3.99	4.61	4.51	3.77	4.18	4.24	4.02	3.55	4.11	0.36	1.07	5.0	5.0
46	N-nitrosodimethylamine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
47	3-Nitroaniline	6.02	6.54	6.12	5.52	6.50	6.59	5.09	4.96	5.92	0.65	1.96	10	10
* 48	Acenaphthene-d10	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
49	Acenaphthene*	0.87	0.89	0.91	0.78	0.83	0.89	0.80	0.79	0.84	0.05	0.15	1.0	1.0
50	2,4-Dinitrophenol**	37.32	45.95	43.62	34.78	41.15	37.63	33.12	26.06	37.45	6.32	18.95	40	60
51	4-Nitrophenol**	24.62	27.86	34.53	25.47	29.13	7.67	7.99	10.90	21.02	10.54	31.60	40	60
52	Dibenzofuran	0.77	0.82	0.82	0.74	0.81	0.80	0.76	0.70	0.78	0.04	0.13	1.0	1.0
53	2,4-Dinitrotoluene	4.49	5.18	4.99	4.15	4.81	4.81	4.32	3.94	4.59	0.43	1.29	5.0	5.0
$ 54	Fluorene-d10	35.32	36.43	36.32	32.79	35.81	36.28	35.24	31.97	35.02	1.70	5.11	surr	
55	Diethylphthalate	5.39	5.93	5.66	4.90	5.67	5.54	5.26	4.73	5.39	0.41	1.22	5.0	5.0
56	Fluorene	0.87	0.95	0.94	0.78	0.88	0.95	0.80	0.80	0.87	0.07	0.21	1.0	1.0
57	4-Chlorophenyl phenyl	4.86	5.20	5.27	4.57	5.18	5.05	4.72	4.45	4.91	0.31	0.93	1.0	5.0
$ 58	d4-1,4-dibromobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$ 59	2-Methylnaphthalene-d1	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
60	4-Nitroaniline	6.19	6.56	5.86	5.67	6.08	6.84	5.36	5.01	6.05	0.69	2.07	10	10
61	4,6-Dinitro-2-methylph	13.22	15.43	15.13	12.38	14.36	14.44	12.62	10.38	13.50	1.68	5.05	40	20
62	N-nitrosodiphenylamine	39.01	39.60	40.53	36.44	40.38	36.83	36.27	34.37	37.93	2.26	6.76	10	40
63	Diphenylamine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

Report Date : 09-May-2017 13:56

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

unit in ug/mL

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	amt spiked
$	64 2,4,6-Tribromophenol	38.07	42.22	40.35	34.59	38.33	40.30	37.92	33.02	38.10	3.05	9.14	surr	
	65 4-Bromophenyl phenyl e	4.74	4.92	5.09	4.49	4.90	4.77	4.50	4.34	4.72	0.26	0.77	1.0	5.0
	66 Hexachlorobenzene	4.73	4.89	5.02	4.54	5.11	4.92	4.49	4.36	4.76	0.27	0.81	1.0	5.0
$	67 1-Methylnaphthalene-d1	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	68 2-Methylthiobenzothiaz	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	69 2-Aminobenothiazole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	70 Pentachlorophenol*	43.89	47.96	48.09	41.75	47.76	39.34	40.31	36.69	43.22	4.40	13.19	20	60
*	71 Phenanthrene-d10	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
	72 Phenanthrene	0.88	0.89	0.91	0.80	0.92	0.85	0.82	0.77	0.85	0.05	0.16	1.0	1.0
	73 Anthracene	0.74	0.81	0.82	0.71	0.79	0.77	0.72	0.70	0.76	0.05	0.15	1.0	1.0
	74 2-Hydroxybenzothiazole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	75 Carbazole	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	76 Di-n-butylphthalate	5.06	5.97	5.53	4.73	5.34	5.22	5.15	4.56	5.20	0.44	1.33	5.0	5.0
	77 Bicyclo[2.2.1]hepta-2,	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$	78 Fluoranthene-d10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	79 Fluoranthene*	0.75	0.87	0.82	0.71	0.81	0.77	0.77	0.69	0.77	0.06	0.18	1.0	1.0
	80 1-Chloro-3,4-Dinitrobe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	81 2-Methyl-benzenamine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	82 N,N-Dimethyl-benzenami	+++++	41.40	40.86	35.22	40.02	40.01	37.93	33.69	38.28	2.78	8.34	surr	
$	83 Pyrene-d10	37.15	0.98	0.97	0.83	0.97	0.94	0.82	0.79	0.90	0.08	0.23	1.0	1.0
	84 Pyrene	0.91												
$	85 Terphenyl-d14	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	86 2-Mercaptobenzothiazol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

Report Date : 09-May-2017 13:56

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

unit is ng/mL

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	amt spiked
	87 2-Morpholinothiobenzot	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	88 2,4-Dimethylbenzenamin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	89 N,N,4-Trimethylbenzena	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	90 Butyl benzyl phthalate	4.60	5.68	5.09	4.39	5.18	5.21	4.71	4.10	4.87	0.51	1.54	5.0	5.0
	91 Cumene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	92 Biphenyl	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	93 Diethyl Ether	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	94 Dicyclopentadiene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$	95 13c-Pentachlorophenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	96 Benzo(a)Anthracene	0.79	0.87	0.87	0.74	0.85	0.82	0.81	0.73	0.81	0.05	0.16	1.0	1.0
*	97 Chrysene-d12	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
	98 3 3'-Dichlorobenzidine	11.92	10.53	10.97	10.86	13.16	13.28	9.29	9.74	11.22	1.47	4.40	2.0	2.0
	99 Chrysene	0.87	0.91	0.93	0.83	0.96	0.92	0.86	0.81	0.89	0.05	0.15	1.0	1.0
	100 3-Methylphenol	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$	101 1,3,5-Trichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$	102 d10-Anthracene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	103 bis(2-ethylhexyl)Phtha	3.97	5.18	4.60	4.10	4.72	4.61	4.36	3.73	4.41	0.46	1.39	5.0	5.0
	104 Lindane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	105 Di-n-octyl phthalate*	3.22	4.03	3.81	3.30	3.69	3.77	3.63	3.06	3.56	0.33	1.00	5.0	5.0
	106 4,4'-DDE	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	107 Benzo(b)fluoranthene	0.69	0.79	0.77	0.64	0.77	0.73	0.69	0.64	0.71	0.06	0.17	1.0	1.0
	108 Perylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
	109 Benzo(k)fluoranthene	0.73	0.75	0.74	0.64	0.73	0.70	0.66	0.61	0.69	0.05	0.16	1.0	1.0
	110 Benzo(e)pyrene	0.71	0.75	0.74	0.64	0.73	0.70	0.66	0.61	0.69	0.05	0.15	1.0	1.0

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem1/msd9.i/05may17.b/917y0504.m
Batch File: /chem/msd9.i/05may17.b
Inst ID: msd9.i

unit ng/mL

Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	RL	and spiked
$ 111 Benzo(a)pyrene-d12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
112 4,4'-DDD	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
113 Benzo(a)pyrene*	0.52	0.58	0.58	0.50	0.58	0.55	0.54	0.48	0.54	0.04	0.11	1.0	1.0
114 4,4'-DDT	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
* 115 Perylene-d12	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	0.00	0.00		
116 Dieldrin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
117 Indeno(1,2,3-cd)pyrene	0.72	0.51	0.70	0.65	0.73	0.67	0.66	0.60	0.65	0.07	0.21	1.0	1.0
118 Dibenzo(a,h)anthracene	0.75	0.64	0.76	0.67	0.75	0.72	0.68	0.62	0.70	0.05	0.16	1.0	1.0
119 Benzo(g,h,i)perylene	0.77	0.64	0.78	0.72	0.82	0.75	0.73	0.65	0.73	0.06	0.18	1.0	1.0
$ 120 Benzo(e)pyrene-d12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
121 Coronene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
$ 122 d12-Benzo(a)pyrene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
123 1,2-Diphenylhydrazine	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		
124 3,3'-Dimethoxybenzidin	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++		

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Client Sample ID: CCV

Lab ID#: 1712296-18A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121803a**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 03:39 PM**
		Date of Extraction: NA

Compound	%Recovery
Naphthalene	88
Acenaphthylene	92
Acenaphthene	91
Fluorene	88
Phenanthrene	89
Anthracene	91
Fluoranthene	89
Pyrene	88
Chrysene	89
Benzo(a)anthracene	87
Benzo(b)fluoranthene	90
Benzo(k)fluoranthene	89
Benzo(a)pyrene	93
Indeno(1,2,3-c,d)pyrene	97
Dibenz(a,h)anthracene	94
Phenol	90
Dibenzofuran	90
2,4-Dinitrophenol	100
2,4-Dimethylphenol	89
2-Methylnaphthalene	88
2-Chlorophenol	92

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorene-d10	87	70-130
Pyrene-d10	89	70-130
Benzo(a)pyrene-d12	92	70-130
Fluoranthene-d10	90	70-130

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd9.i Injection Date: 18-DEC-2017 15:39
Lab File ID: 9121803a.d Init. Cal. Date(s): 12-DEC-2017 12-DEC-2017
Analysis Type: PUF/XAD Init. Cal. Times: 12:53 18:25
Lab Sample ID: 2848-71-50 Quant Type: ISTD
Method: /chem/msd9.i/18dec17.b/917y1212.m

	COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
$	1 2-Fluorophenol	1.16349	1.05175	0.050	-9.60325	30.00000	Averaged
$	2 Phenol-d5	1.51674	1.37774	0.050	-9.16445	30.00000	Averaged
$	17 Nitrobenzene-d5	0.31130	0.28600	0.050	-8.12714	30.00000	Averaged
$	54 Fluorene-d10	1.07696	0.93559	0.050	-13.12712	30.00000	Averaged
$	64 2,4,6-Tribromophenol	0.14713	0.15037	0.050	2.20307	30.00000	Averaged
$	78 Fluoranthene-d10	0.83805	0.75428	0.050	-9.99593	30.00000	Averaged
$	83 Pyrene-d10	1.05069	0.93739	0.050	-10.78343	30.00000	Averaged
$	111 Benzo(a)pyrene-d12	0.81105	0.74408	0.050	-8.25742	30.00000	Averaged
	3 Phenol*	1.64982	1.49339	0.050	-9.48156	30.00000	Averaged
	5 bis(2-Chloroethyl)ether	1.28865	1.14266	0.050	-11.32856	30.00000	Averaged
	6 2-Chlorophenol	1.25295	1.15948	0.050	-7.46001	30.00000	Averaged
	7 1,3-Dichlorobenzene	1.38455	1.24863	0.050	-9.81678	30.00000	Averaged
	9 1,4-Dichlorobenzene*	1.40025	1.25320	0.050	-10.50205	30.00000	Averaged
	11 1,2-Dichlorobenzene	1.34063	1.19565	0.050	-10.81428	30.00000	Averaged
	12 2-Methylphenol	1.14365	1.02377	0.050	-10.48260	30.00000	Averaged
	13 bis(2-Chloroisopropyl)ether	2.27711	1.78982	0.050	-21.39947	30.00000	Averaged
	14 4-Methylphenol	1.21574	1.09304	0.050	-10.09254	30.00000	Averaged
	15 N-Nitrosodipropylamine**	0.95836	0.84154	0.050	-12.18920	30.00000	Averaged
	16 Hexachloroethane	0.56385	0.50424	0.050	-10.57271	30.00000	Averaged
	19 Nitrobenzene	0.30485	0.26819	0.050	-12.02493	30.00000	Averaged
	20 Isophorone	0.57873	0.51802	0.050	-10.49052	30.00000	Averaged
	21 2-Nitrophenol*	0.13676	0.14312	0.050	4.65409	30.00000	Averaged
	22 2,4-Dimethylphenol	0.26305	0.23374	0.050	-11.14239	30.00000	Averaged
	23 bis(2-Chloroethoxy)methane	0.36433	0.32732	0.050	-10.15821	30.00000	Averaged
	24 Benzoic Acid	0.13081	0.10812	0.050	-17.34357	40.00000	Averaged
	25 2,4-Dichlorophenol*	0.23743	0.21731	0.050	-8.47452	30.00000	Averaged
	26 1,2,4-Trichlorobenzene	0.27400	0.24807	0.050	-9.46205	30.00000	Averaged
	28 Naphthalene	0.89947	0.79413	0.050	-11.71113	30.00000	Averaged
	29 4-Chloroaniline	0.37705	0.32701	0.050	-13.27050	30.00000	Averaged
	30 Hexachlorobutadiene*	0.14871	0.13955	0.050	-6.15928	30.00000	Averaged
	33 4-Chloro-3-Methylphenol*	0.23903	0.19489	0.050	-18.46743	30.00000	Averaged
	34 2-Methylnaphthalene	0.60859	0.53859	0.050	-11.50239	30.00000	Averaged
	35 1-Methylnaphthalene	0.58597	0.51197	0.050	-12.62814	30.00000	Averaged
	36 Hexachlorocyclopentadiene**	0.29602	0.22917	0.050	-22.58125	30.00000	Averaged
	37 2,4,6-Trichlorophenol*	0.27630	0.28316	0.050	2.48484	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd9.i Injection Date: 18-DEC-2017 15:39
Lab File ID: 9121803a.d Init. Cal. Date(s): 12-DEC-2017 12-DEC-2017
Analysis Type: PUF/XAD Init. Cal. Times: 12:53 18:25
Lab Sample ID: 2848-71-50 Quant Type: ISTD
Method: /chem/msd9.i/18dec17.b/917y1212.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
38 2,4,5-Trichlorophenol	0.30080	0.29671	0.050	-1.35959	30.00000	Averaged
40 2-Chloronaphthalene	0.95353	0.90509	0.050	-5.07984	30.00000	Averaged
41 2-Nitroaniline	0.27781	0.24723	0.050	-11.00990	30.00000	Averaged
47 3-Nitroaniline	0.28381	0.23493	0.050	-17.22264	30.00000	Averaged
43 Dimethylphthalate	1.08407	0.99871	0.050	-7.87391	30.00000	Averaged
44 Acenaphthylene	1.50332	1.37903	0.050	-8.26784	30.00000	Averaged
45 2,6-Dinitrotoluene	0.24154	0.22808	0.050	-5.57317	30.00000	Averaged
49 Acenaphthene*	0.93205	0.84702	0.050	-9.12312	30.00000	Averaged
50 2,4-Dinitrophenol**	0.09113	0.09131	0.050	0.19223	40.00000	Averaged
51 4-Nitrophenol**	0.11778	0.09442	0.050	-19.83395	40.00000	Averaged
52 Dibenzofuran	1.38260	1.24344	0.050	-10.06481	30.00000	Averaged
53 2,4-Dinitrotoluene	0.29868	0.28874	0.050	-3.32940	30.00000	Averaged
55 Diethylphthalate	1.09111	0.95905	0.050	-12.10279	30.00000	Averaged
56 Fluorene	1.12089	0.99061	0.050	-11.62319	30.00000	Averaged
57 4-Chlorophenyl phenyl ether	0.53975	0.48363	0.050	-10.39846	30.00000	Averaged
60 4-Nitroaniline	0.28115	0.23149	0.050	-17.66432	40.00000	Averaged
61 4,6-Dinitro-2-methylphenol	0.07702	0.07649	0.050	-0.68648	40.00000	Averaged
62 N-nitrosodiphenylamine*	0.56601	0.50532	0.050	-10.72206	30.00000	Averaged
65 4-Bromophenyl phenyl ether	0.18387	0.17568	0.050	-4.45622	30.00000	Averaged
66 Hexachlorobenzene	0.19643	0.19087	0.050	-2.83016	30.00000	Averaged
70 Pentachlorophenol*	0.07993	0.08408	0.040	5.18332	40.00000	Averaged
72 Phenanthrene	0.91578	0.81732	0.050	-10.75082	30.00000	Averaged
73 Anthracene	0.91076	0.82990	0.050	-8.87809	30.00000	Averaged
76 Di-n-butylphthalate	1.00277	0.88579	0.050	-11.66551	30.00000	Averaged
79 Fluoranthene*	0.93802	0.83850	0.050	-10.60974	30.00000	Averaged
84 Pyrene	1.10863	0.97559	0.050	-12.00058	30.00000	Averaged
90 Butyl benzyl phthalate	0.47095	0.41624	0.050	-11.61600	30.00000	Averaged
96 Benzo(a)Anthracene	0.98798	0.86236	0.050	-12.71488	30.00000	Averaged
98 3 3'-Dichlorobenzidine	0.39114	0.34303	0.050	-12.30157	30.00000	Averaged
99 Chrysene	0.94458	0.83875	0.050	-11.20318	30.00000	Averaged
103 bis(2-ethylhexyl)Phthalate	0.64607	0.57284	0.050	-11.33459	30.00000	Averaged
105 Di-n-octyl phthalate*	1.04763	0.94861	0.050	-9.45176	30.00000	Averaged
107 Benzo(b)fluoranthene	0.98233	0.88691	0.050	-9.71401	30.00000	Averaged
109 Benzo(k)fluoranthene	1.01235	0.90357	0.050	-10.74556	30.00000	Averaged
110 Benzo(e)pyrene	0.94053	0.84130	0.050	-10.54981	30.00000	Averaged

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd9.i Injection Date: 18-DEC-2017 15:39
Lab File ID: 9121803a.d Init. Cal. Date(s): 12-DEC-2017 12-DEC-2017
Analysis Type: PUF/XAD Init. Cal. Times: 12:53 18:25
Lab Sample ID: 2848-71-50 Quant Type: ISTD
Method: /chem/msd9.i/18dec17.b/917y1212.m

COMPOUND	RRF / AMOUNT	RF50	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE
113 Benzo(a)pyrene*	0.94755	0.88374	0.050	-6.73437	30.00000	Averaged
117 Indeno(1,2,3-cd)pyrene	0.82629	0.80493	0.050	-2.58546	30.00000	Averaged
118 Dibenzo(a,h)anthracene	0.91339	0.85477	0.050	-6.41774	30.00000	Averaged
119 Benzo(g,h,i)perylene	0.95948	0.89119	0.050	-7.11686	30.00000	Averaged

Average %D / Drift Results.
Calculated Average %D/Drift = 9.85061
Maximun Average %D/Drift = 15.00000
* Passed Average %D/Drift Test.

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121803a.d
Lab Smp Id: 2848-71-50 Client Smp ID: CCV
Inj Date : 18-DEC-2017 15:39
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-71-50; CCV
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 21-Dec-2017 13:20 lantonic Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TO13CCV.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
$	1 2-Fluorophenol	112	3.330	3.330	(0.695)	280536	50.0000	45.20
$	2 Phenol-d5	99	4.439	4.439	(0.926)	367487	50.0000	45.42
$	17 Nitrobenzene-d5	82	5.537	5.537	(0.861)	321687	50.0000	45.94
$	54 Fluorene-d10	176	9.257	9.257	(1.072)	548328	50.0000	43.44(A)
$	64 2,4,6-Tribromophenol	330	9.620	9.620	(1.114)	88127	50.0000	51.10
$	78 Fluoranthene-d10	212	11.900	11.900	(1.142)	701454	50.0000	45.00
$	83 Pyrene-d10	212	12.190	12.190	(0.860)	772507	50.0000	44.61(A)
$	111 Benzo(a)pyrene-d12	264	18.118	18.118	(0.981)	598207	50.0000	45.87
*	8 1,4-Dichlorobenzene-d4	152	4.791	4.791	(1.000)	213385	40.0000	
*	27 Naphthalene-d8	136	6.428	6.428	(1.000)	899817	40.0000	
*	48 Acenaphthene-d10	164	8.636	8.636	(1.000)	468863	40.0000	
*	71 Phenanthrene-d10	188	10.418	10.418	(1.000)	743971	40.0000	
*	97 Chrysene-d12	240	14.180	14.180	(1.000)	659280	40.0000	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 115 Perylene-d12	264	18.460	18.460	(1.000)	643165	40.0000	
3 Phenol*	94	4.459	4.459	(0.931)	398334	50.0000	45.26
5 bis(2-Chloroethyl)ether	93	4.522	4.522	(0.944)	304784	50.0000	44.34
6 2-Chlorophenol	128	4.573	4.573	(0.955)	309270	50.0000	46.27
7 1,3-Dichlorobenzene	146	4.739	4.739	(0.989)	333049	50.0000	45.09
9 1,4-Dichlorobenzene*	146	4.812	4.812	(1.004)	334267	50.0000	44.75
11 1,2-Dichlorobenzene	146	5.050	5.050	(1.054)	318919	50.0000	44.59
12 2-Methylphenol	108	5.205	5.205	(1.087)	273071	50.0000	44.76
13 bis(2-Chloroisopropyl)ether	45	5.216	5.216	(1.089)	477401	50.0000	39.30
14 4-Methylphenol	108	5.402	5.402	(1.128)	291549	50.0000	44.95
15 N-Nitrosodipropylamine**	70	5.402	5.402	(1.128)	224465	50.0000	43.90
16 Hexachloroethane	117	5.433	5.433	(1.134)	134495	50.0000	44.71
19 Nitrobenzene	77	5.558	5.558	(0.865)	301656	50.0000	43.99
20 Isophorone	82	5.869	5.869	(0.913)	582650	50.0000	44.75
21 2-Nitrophenol*	139	5.972	5.972	(0.929)	160977	50.0000	52.33
22 2,4-Dimethylphenol	122	6.076	6.076	(0.945)	262903	50.0000	44.43
23 bis(2-Chloroethoxy)methane	93	6.190	6.190	(0.963)	368159	50.0000	44.92
24 Benzoic Acid	122	6.273	6.273	(0.976)	121612	50.0000	41.33
25 2,4-Dichlorophenol*	162	6.294	6.294	(0.979)	244420	50.0000	45.76
26 1,2,4-Trichlorobenzene	180	6.387	6.387	(0.994)	279026	50.0000	45.27
28 Naphthalene	128	6.449	6.449	(1.003)	893219	50.0000	44.14
29 4-Chloroaniline	127	6.573	6.573	(1.023)	367812	50.0000	43.36
30 Hexachlorobutadiene*	225	6.708	6.708	(1.044)	156960	50.0000	46.92
33 4-Chloro-3-Methylphenol*	107	7.226	7.226	(1.124)	219204	50.0000	40.77
34 2-Methylnaphthalene	142	7.330	7.330	(1.140)	605788	50.0000	44.25
35 1-Methylnaphthalene	142	7.465	7.465	(1.161)	575848	50.0000	43.68
36 Hexachlorocyclopentadiene**	237	7.620	7.620	(0.882)	134313	50.0000	38.71
37 2,4,6-Trichlorophenol*	196	7.734	7.734	(0.896)	165955	50.0000	51.24
38 2,4,5-Trichlorophenol	196	7.786	7.786	(0.902)	173898	50.0000	49.32
40 2-Chloronaphthalene	162	7.931	7.931	(0.918)	530456	50.0000	47.46
41 2-Nitroaniline	65	8.117	8.117	(0.940)	144894	50.0000	44.50
47 3-Nitroaniline	138	8.636	8.636	(1.000)	137687	50.0000	41.39
43 Dimethylphthalate	163	8.408	8.408	(0.974)	585323	50.0000	46.06
44 Acenaphthylene	152	8.449	8.449	(0.978)	808221	50.0000	45.87
45 2,6-Dinitrotoluene	165	8.480	8.480	(0.982)	133674	50.0000	47.21
49 Acenaphthene*	154	8.677	8.677	(1.005)	496421	50.0000	45.44
50 2,4-Dinitrophenol**	184	8.760	8.760	(1.014)	53513	50.0000	50.10
51 4-Nitrophenol**	109	8.905	8.905	(1.031)	55339	50.0000	40.08
52 Dibenzofuran	168	8.874	8.874	(1.028)	728754	50.0000	44.97
53 2,4-Dinitrotoluene	165	8.947	8.947	(1.036)	169221	50.0000	48.34
55 Diethylphthalate	149	9.278	9.278	(1.074)	562080	50.0000	43.95
56 Fluorene	166	9.299	9.299	(1.077)	580575	50.0000	44.19
57 4-Chlorophenyl phenyl ether	204	9.320	9.320	(1.079)	283443	50.0000	44.80
60 4-Nitroaniline	138	9.392	9.392	(1.088)	135668	50.0000	41.17
61 4,6-Dinitro-2-methylphenol	198	9.434	9.434	(0.906)	71135	50.0000	49.66
62 N-nitrosodiphenylamine*	169	9.475	9.475	(0.909)	469929	50.0000	44.64
65 4-Bromophenyl phenyl ether	248	9.900	9.900	(0.950)	163376	50.0000	47.77

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Hexachlorobenzene	284	10.066	10.066	(0.966)	177506	50.0000	48.58
70	Pentachlorophenol*	266	10.294	10.294	(0.988)	78187	50.0000	52.59
72	Phenanthrene	178	10.449	10.449	(1.003)	760080	50.0000	44.62
73	Anthracene	178	10.501	10.501	(1.008)	771781	50.0000	45.56
76	Di-n-butylphthalate	149	11.258	11.258	(1.081)	823756	50.0000	44.17
79	Fluoranthene*	202	11.921	11.921	(1.144)	779771	50.0000	44.70
84	Pyrene	202	12.211	12.211	(0.861)	803980	50.0000	44.00
90	Butyl benzyl phthalate	149	13.340	13.340	(0.941)	343024	50.0000	44.19
96	Benzo(a)Anthracene	228	14.149	14.149	(0.998)	710671	50.0000	43.64
98	3 3'-Dichlorobenzidine	252	14.190	14.190	(1.001)	282687	50.0000	43.85
99	Chrysene	228	14.232	14.232	(1.004)	691218	50.0000	44.40
103	bis(2-ethylhexyl)Phthalate	149	14.563	14.563	(1.027)	472079	50.0000	44.33
105	Di-n-octyl phthalate*	149	16.325	16.325	(1.151)	781753	50.0000	45.27
107	Benzo(b)fluoranthene	252	17.040	17.040	(0.923)	713037	50.0000	45.14
109	Benzo(k)fluoranthene	252	17.123	17.123	(0.928)	726428	50.0000	44.63
110	Benzo(e)pyrene	252	18.025	18.025	(0.976)	676371	50.0000	44.72
113	Benzo(a)pyrene*	252	18.221	18.221	(0.987)	710488	50.0000	46.63
117	Indeno(1,2,3-cd)pyrene	276	21.268	21.268	(1.500)	663342	50.0000	48.71
118	Dibenzo(a,h)anthracene	278	21.341	21.341	(1.156)	687198	50.0000	46.79
119	Benzo(g,h,i)perylene	276	21.714	21.714	(1.176)	716479	50.0000	46.44

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Report Date: 21-Dec-2017 13:20

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121803a.d
Lab Smp Id: 2848-71-50
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Client Smp ID: CCV
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	142945	71472	285890	213385	49.28
27 Naphthalene-d8	590466	295233	1180932	899817	52.39
48 Acenaphthene-d10	325726	162863	651452	468863	43.94
71 Phenanthrene-d10	562171	281086	1124342	743971	32.34
97 Chrysene-d12	525026	262513	1050052	659280	25.57
115 Perylene-d12	490780	245390	981560	643165	31.05

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.79	0.00
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.65	8.15	9.15	8.64	-0.12
71 Phenanthrene-d10	10.43	9.93	10.93	10.42	-0.10
97 Chrysene-d12	14.19	13.69	14.69	14.18	-0.07
115 Perylene-d12	18.47	17.97	18.97	18.46	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/18dec17.b/9121803a.d

Date : 18-DEC-2017 15:39

Client ID: CCV

Instrument: msd9.i

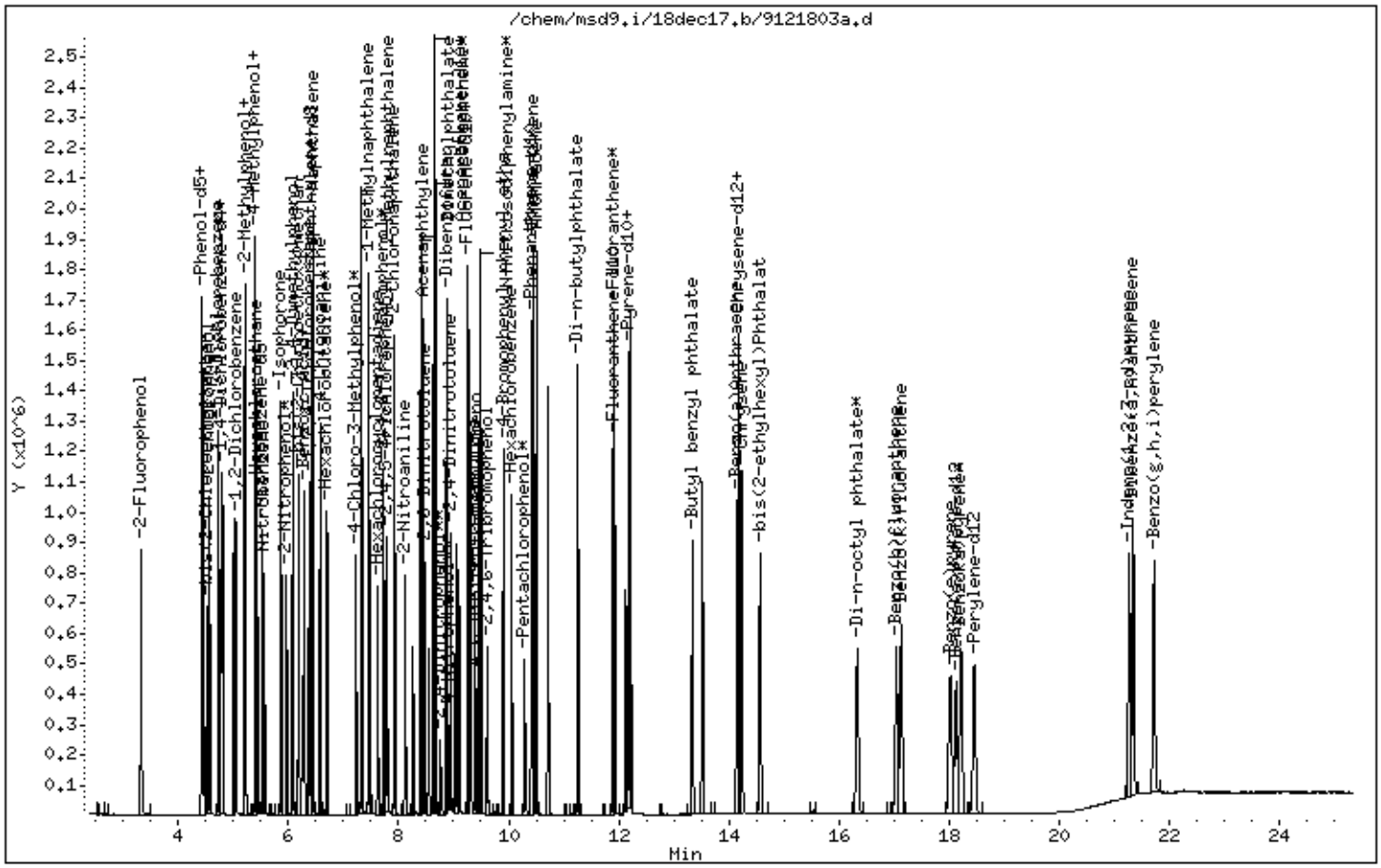
Sample Info: ;2848-71-50; CCV

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



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Client Sample ID: LCS

Lab ID#: 1712296-19A

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 04:09 PM**	
		Date of Extraction: 12/18/17	

Compound	%Recovery	Method Limits
Naphthalene	70	60-120
Acenaphthylene	77	60-120
Acenaphthene	76	60-120
Fluorene	76	60-120
Phenanthrene	75	60-120
Anthracene	74	60-120
Fluoranthene	83	60-120
Pyrene	75	60-120
Chrysene	81	60-120
Benzo(a)anthracene	76	60-120
Benzo(b)fluoranthene	77	60-120
Benzo(k)fluoranthene	82	60-120
Benzo(a)pyrene	78	60-120
Indeno(1,2,3-c,d)pyrene	85	60-120
Dibenz(a,h)anthracene	82	60-120
Phenol	Not Spiked	
Dibenzofuran	Not Spiked	
2,4-Dinitrophenol	Not Spiked	
2,4-Dimethylphenol	Not Spiked	
2-Methylnaphthalene	68	60-120
2-Chlorophenol	Not Spiked	

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorene-d10	63	60-120
Pyrene-d10	70	60-120
Benzo(a)pyrene-d12	75	50-150
Fluoranthene-d10	80	50-150

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296 Client Smp ID: LCS
Level: LOW Operator: KV
Data Type: MS DATA SampleType: LCS
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: PAH+fs50.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SPIKE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
28 Naphthalene	50.00	35.20	70.41	60-120
40 2-Chloronaphthalen	50.00	36.20	72.40	60-120
44 Acenaphthylene	50.00	38.64	77.29	60-120
49 Acenaphthene*	50.00	38.09	76.18	60-120
34 2-Methylnaphthalen	50.00	34.05	68.10	60-120
56 Fluorene	50.00	38.05	76.10	60-120
72 Phenanthrene	50.00	37.65	75.30	60-120
73 Anthracene	50.00	37.18	74.36	60-120
79 Fluoranthene*	50.00	41.39	82.79	60-120
84 Pyrene	50.00	37.72	75.45	60-120
96 Benzo(a)Anthracene	50.00	38.14	76.27	60-120
99 Chrysene	50.00	40.71	81.42	60-120
107 Benzo(b)fluoranthe	50.00	38.65	77.30	60-120
109 Benzo(k)fluoranthe	50.00	40.81	81.61	60-120
113 Benzo(a)pyrene*	50.00	38.92	77.84	60-120
117 Indeno(1,2,3-cd)py	50.00	42.49	84.99	60-120
118 Dibenzo(a,h)anthra	50.00	41.01	82.02	60-120
119 Benzo(g,h,i)peryle	50.00	38.61	77.21	60-120

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	31.39	62.78	60-120
$ 83 Pyrene-d10	50.00	35.07	70.14	60-120
$ 78 Fluoranthene-d10	50.00	39.96	79.93	50-150
$ 111 Benzo(a)pyrene-d12	50.00	37.70	75.41	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121804.d
Lab Smp Id: 1712296 Client Smp ID: LCS
Inj Date : 18-DEC-2017 16:09
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296; LCS
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 19-Dec-2017 08:30 ZQ76 Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH+fs50.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	196994	40.0000	
* 27 Naphthalene-d8	136	6.418	6.428	(1.000)	796204	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	421652	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	725591	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	705435	40.0000	
* 115 Perylene-d12	264	18.449	18.460	(1.000)	696272	40.0000	
$ 54 Fluorene-d10	176	9.257	9.257	(1.072)	356356	31.3899	31.39
$ 83 Pyrene-d10	212	12.190	12.190	(0.860)	649806	35.0679	35.07
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	607529	39.9635	39.96
$ 111 Benzo(a)pyrene-d12	264	18.107	18.118	(0.981)	532312	37.7050	37.70
28 Naphthalene	128	6.449	6.449	(1.005)	630328	35.2058	35.20
34 2-Methylnaphthalene	142	7.330	7.330	(1.142)	412492	34.0507	34.05
40 2-Chloronaphthalene	162	7.931	7.931	(0.918)	363858	36.1995	36.20

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
44	Acenaphthylene	152	8.449	8.449	(0.978)	612373	38.6429	38.64
49	Acenaphthene*	154	8.677	8.677	(1.005)	374258	38.0922	38.09
56	Fluorene	166	9.289	9.299	(1.076)	449565	38.0483	38.05
72	Phenanthrene	178	10.449	10.449	(1.003)	625410	37.6482	37.65
73	Anthracene	178	10.501	10.501	(1.008)	614283	37.1819	37.18
79	Fluoranthene*	202	11.921	11.921	(1.144)	704313	41.3927	41.39
84	Pyrene	202	12.211	12.211	(0.861)	737562	37.7239	37.72
96	Benzo(a)Anthracene	228	14.149	14.149	(0.998)	664500	38.1373	38.14
99	Chrysene	228	14.232	14.232	(1.004)	678151	40.7092	40.71
107	Benzo(b)fluoranthene	252	17.030	17.040	(0.923)	660869	38.6489	38.65
109	Benzo(k)fluoranthene	252	17.123	17.123	(0.928)	719089	40.8069	40.81
113	Benzo(a)pyrene*	252	18.211	18.221	(0.987)	641920	38.9188	38.92
117	Indeno(1,2,3-cd)pyrene	276	21.258	21.268	(1.499)	619228	42.4933	42.49
118	Dibenzo(a,h)anthracene	278	21.341	21.341	(1.157)	652065	41.0124	41.01
119	Benzo(g,h,i)perylene	276	21.714	21.714	(1.177)	644797	38.6073	38.61

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121804.d
Lab Smp Id: 1712296
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Client Smp ID: LCS
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	196994	-7.68
27 Naphthalene-d8	899817	449908	1799634	796204	-11.51
48 Acenaphthene-d10	468863	234432	937726	421652	-10.07
71 Phenanthrene-d10	743971	371986	1487942	725591	-2.47
97 Chrysene-d12	659280	329640	1318560	705435	7.00
115 Perylene-d12	643165	321582	1286330	696272	8.26

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.22
27 Naphthalene-d8	6.43	5.93	6.93	6.42	-0.16
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

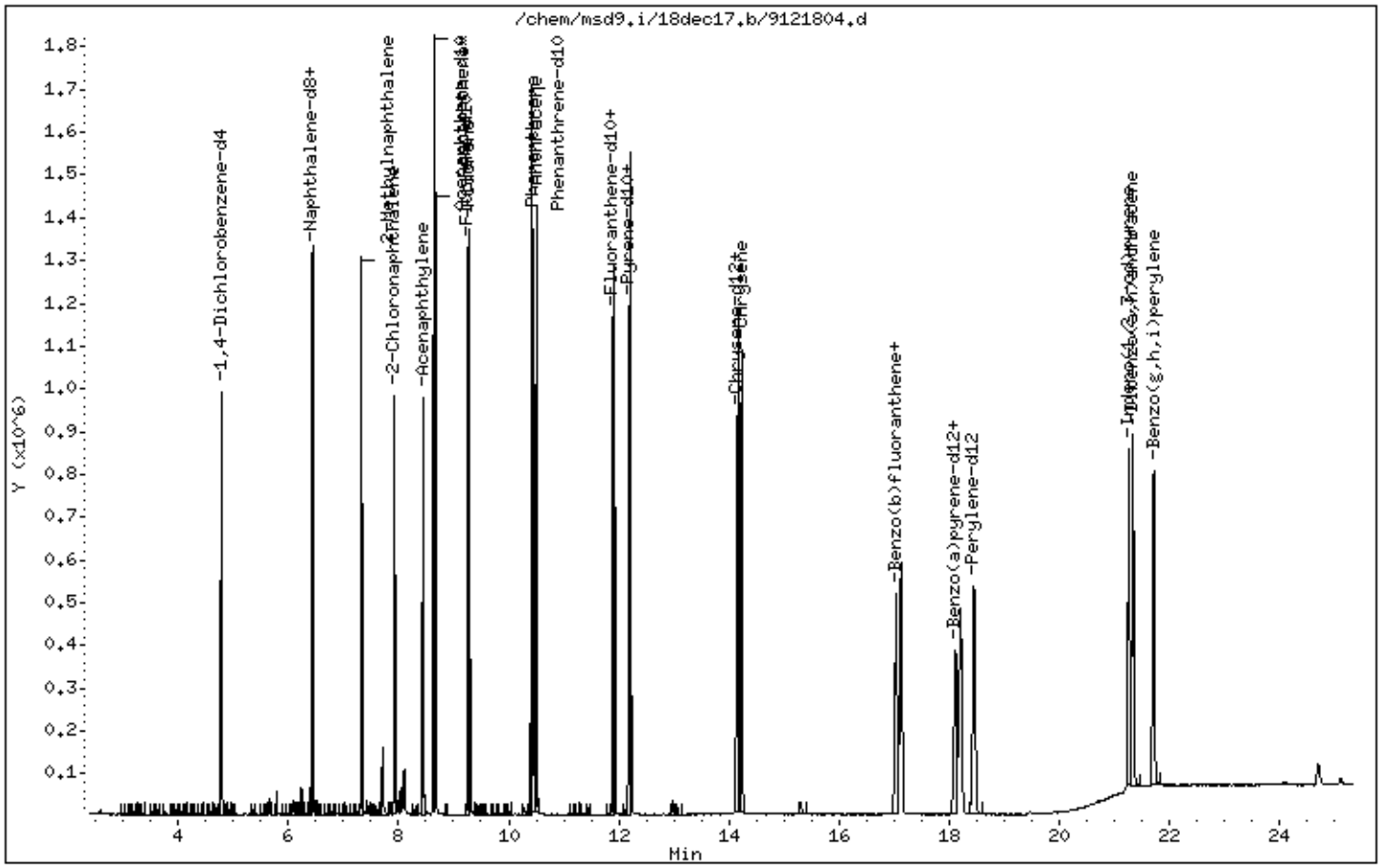
Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

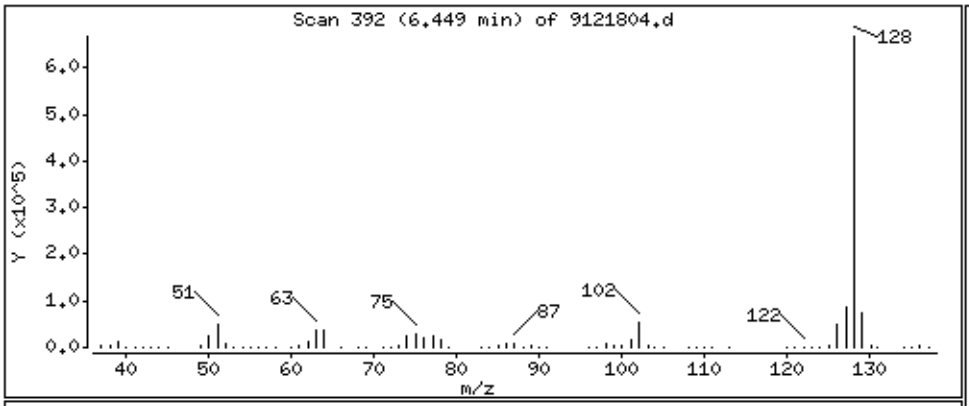
Operator: KV

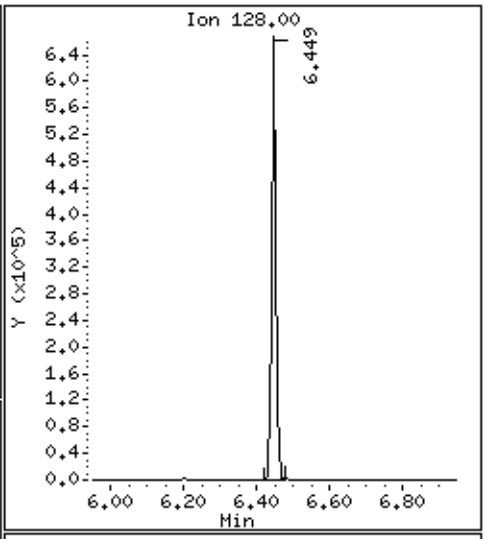
Column phase: DB-5.625

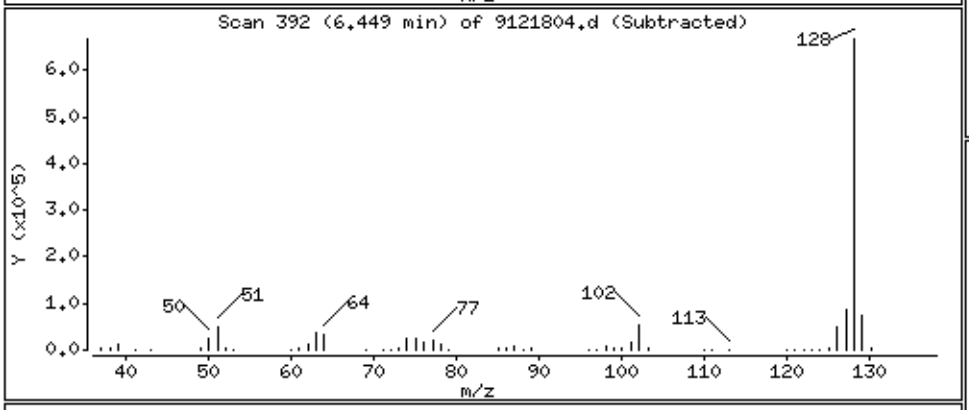
Column diameter: 0.25

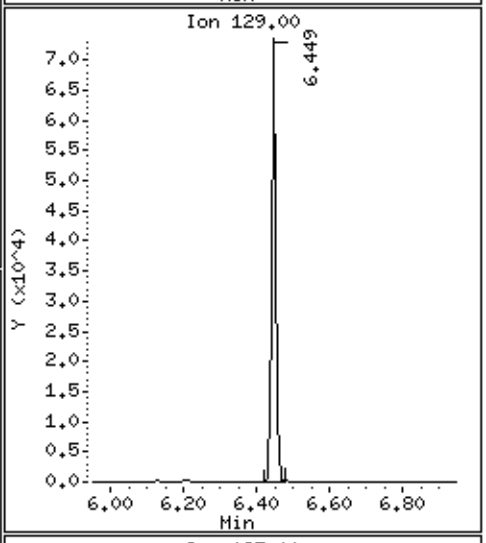
28 Naphthalene

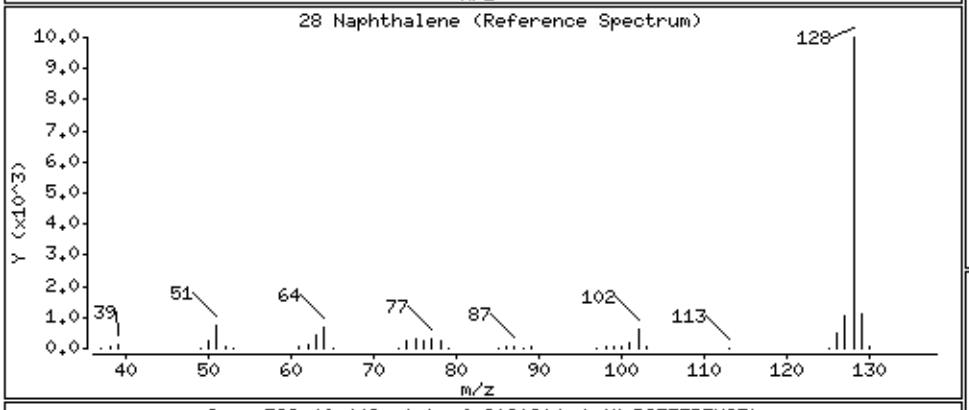
Concentration: 35.20 ug

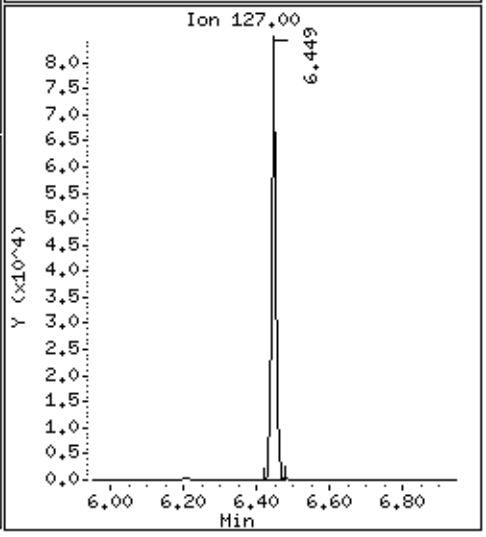


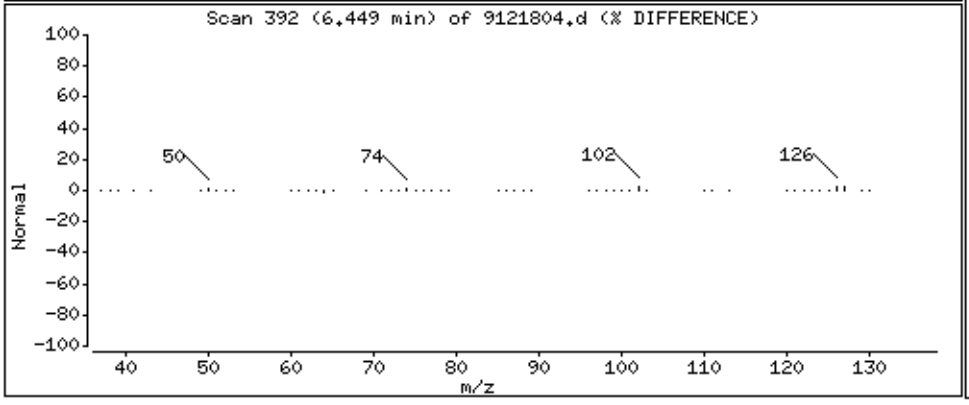












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

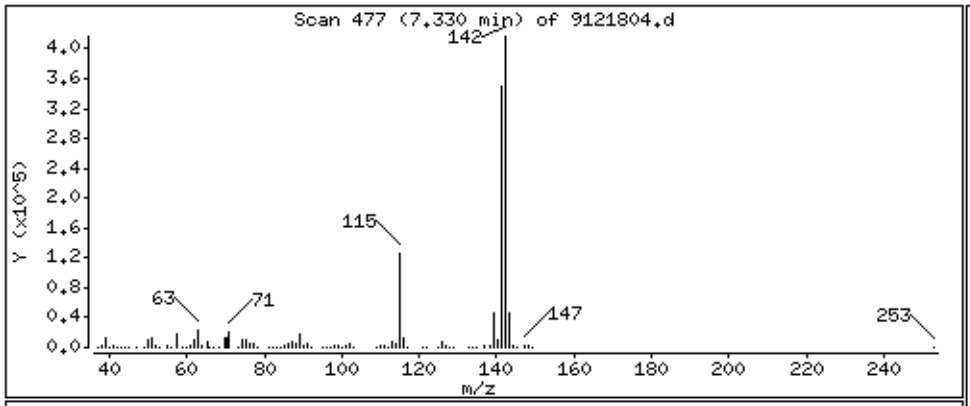
Operator: KV

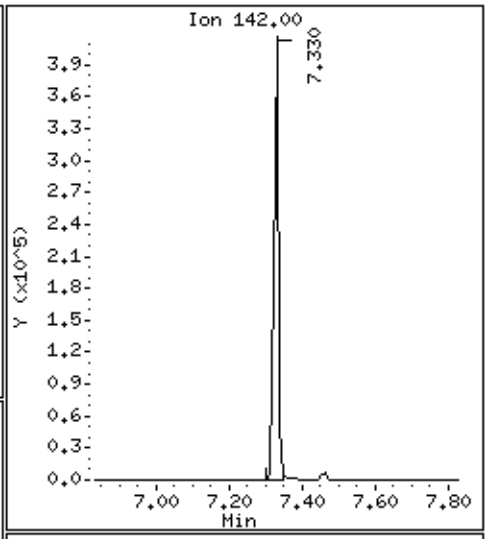
Column phase: DB-5.625

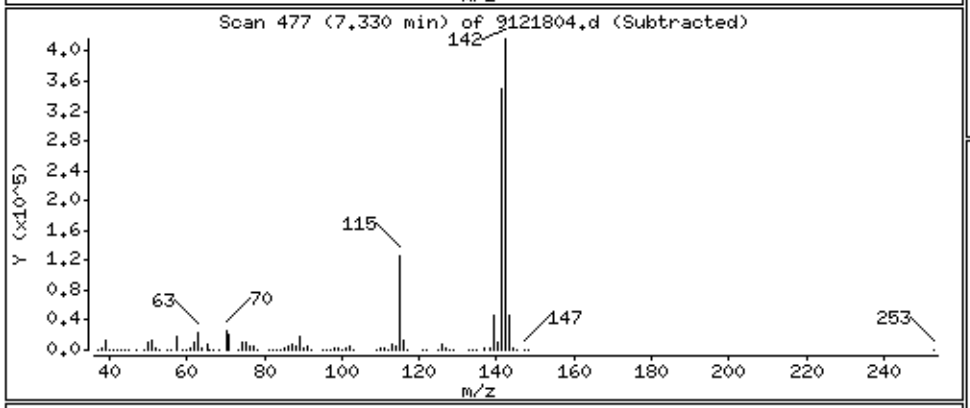
Column diameter: 0.25

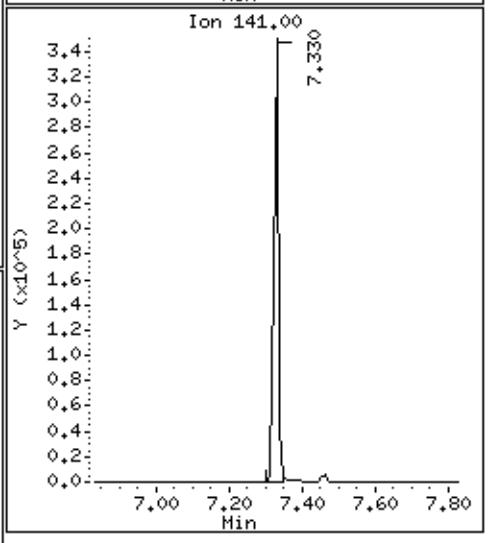
34 2-Methylnaphthalene

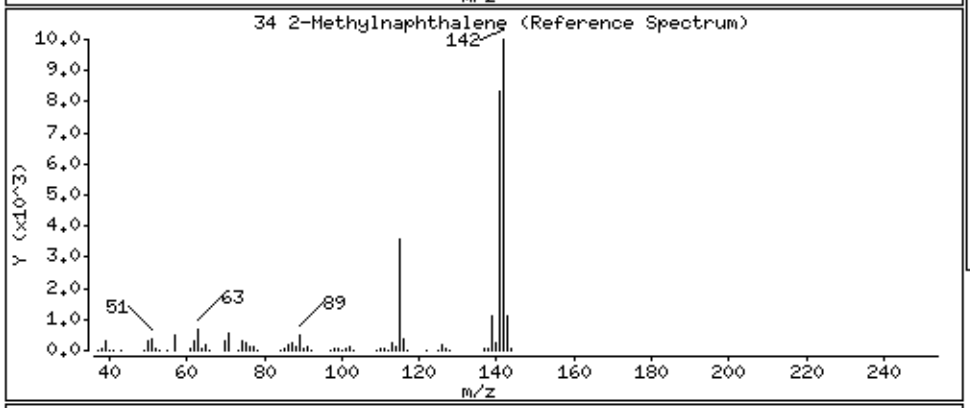
Concentration: 34.05 ug

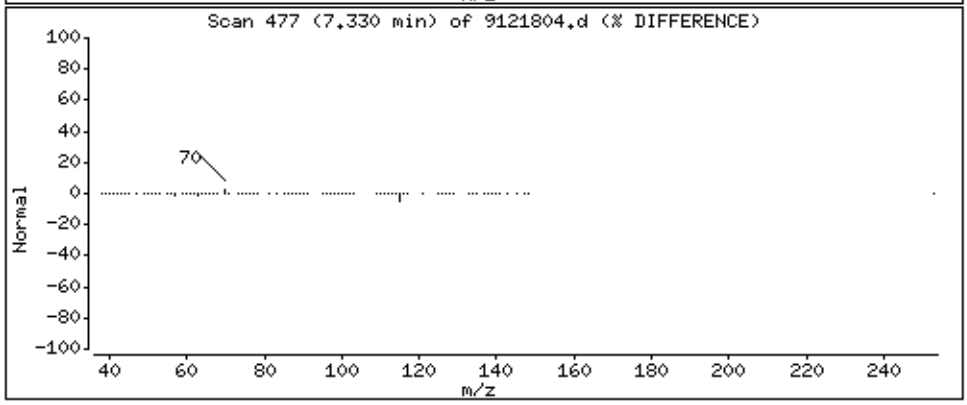












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

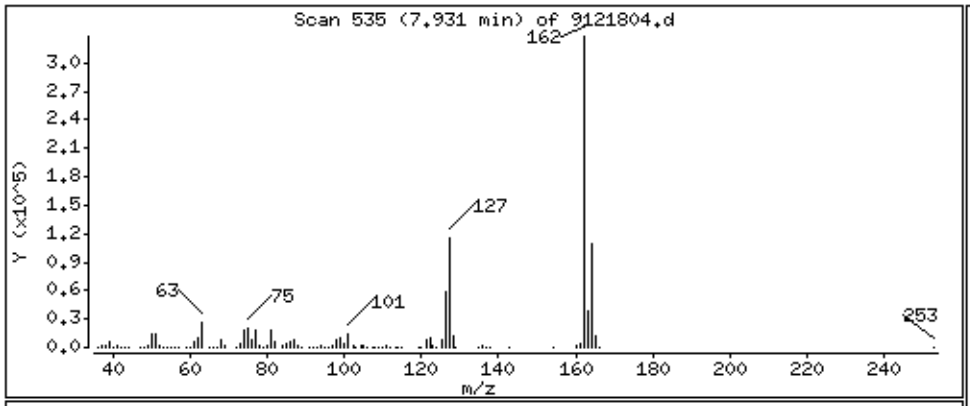
Operator: KV

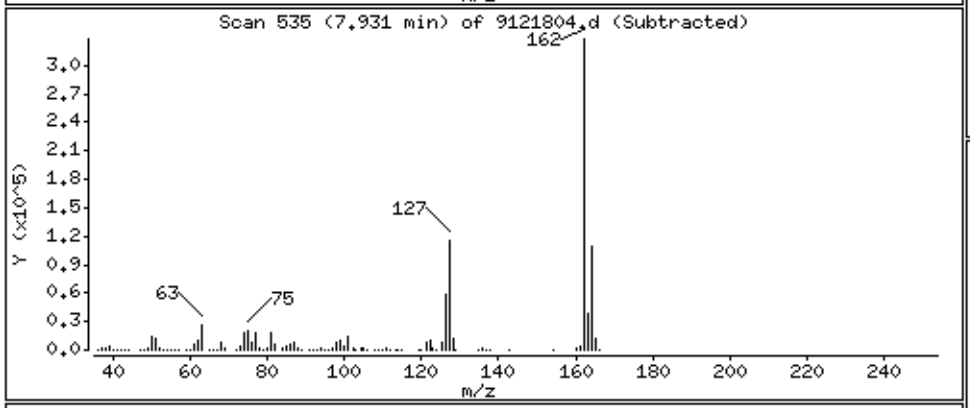
Column phase: DB-5.625

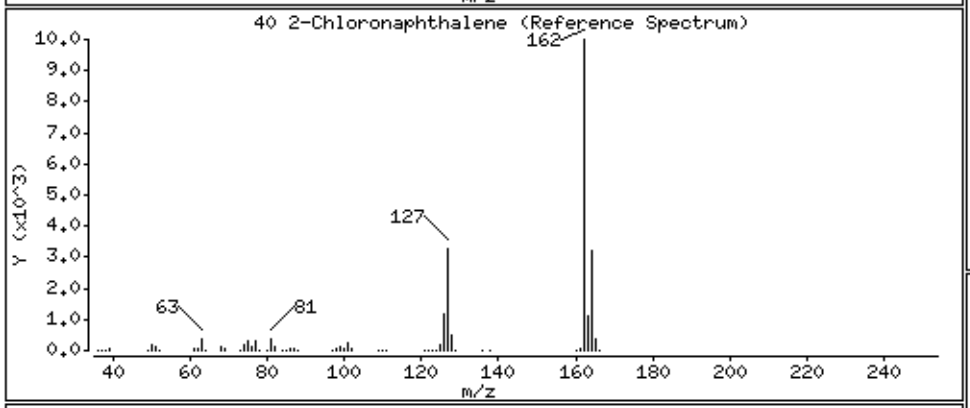
Column diameter: 0.25

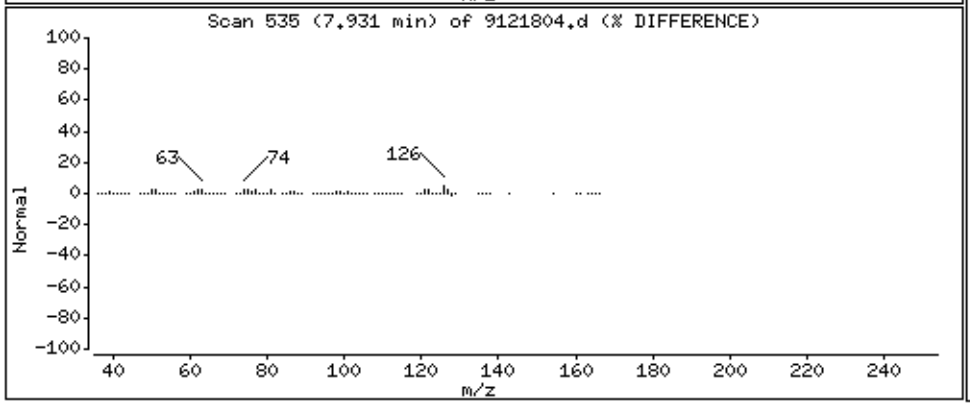
40 2-Chloronaphthalene

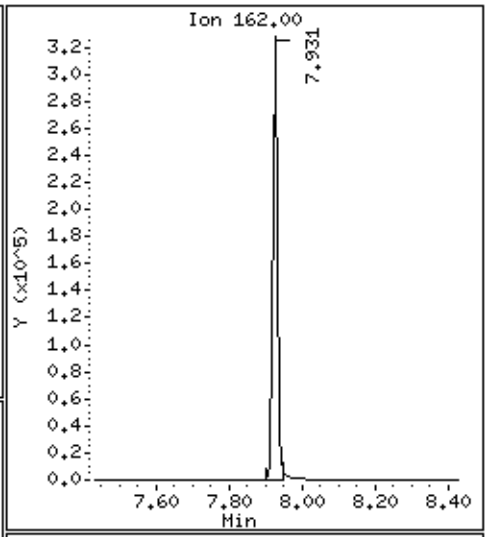
Concentration: 36.20 ug

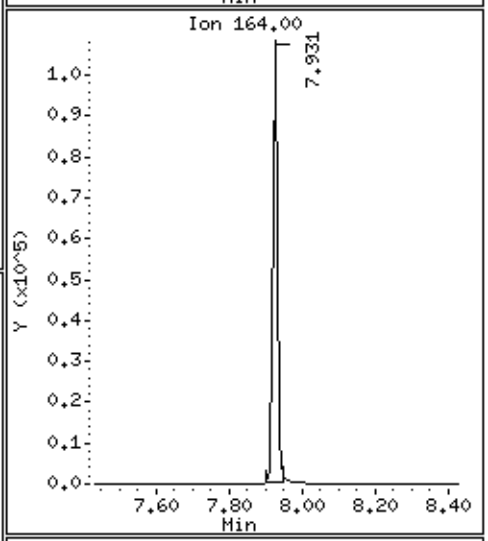


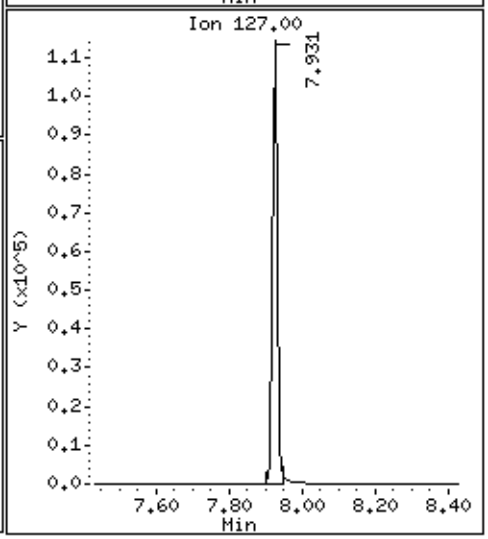












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

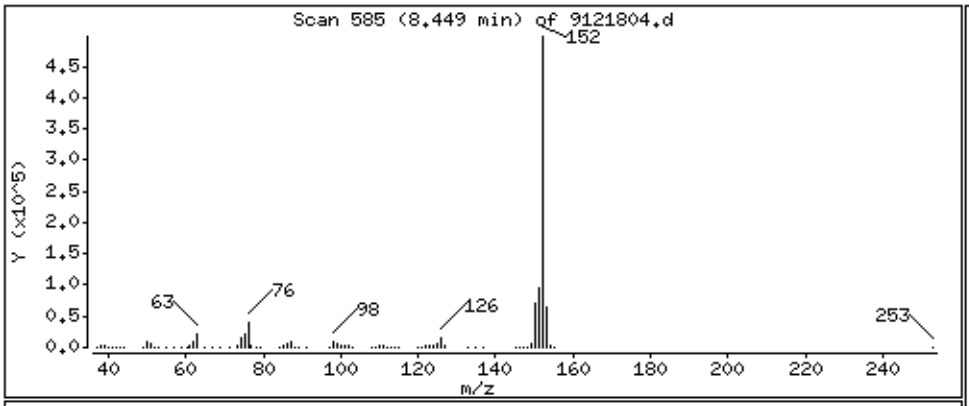
Operator: KV

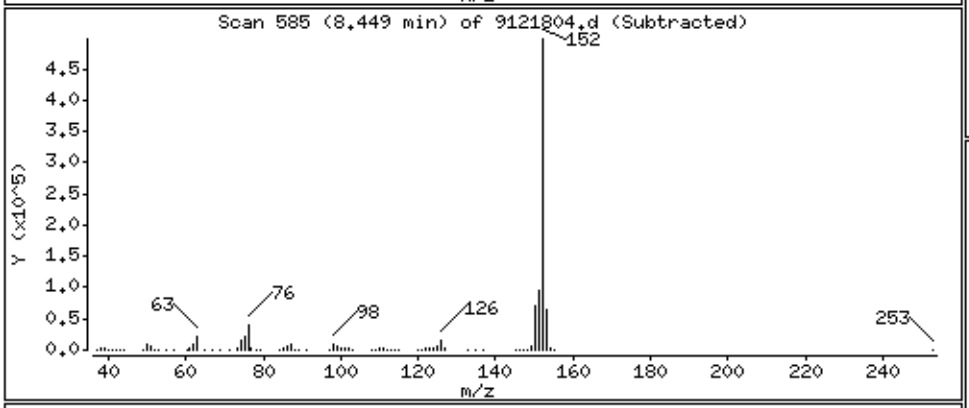
Column phase: DB-5.625

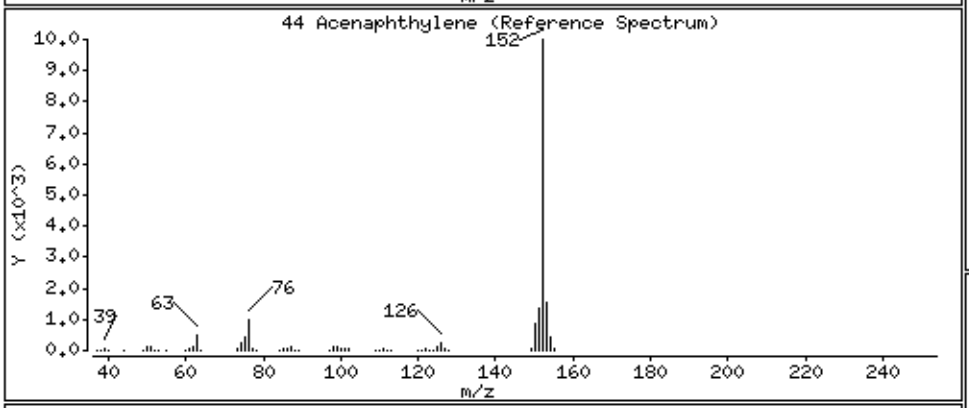
Column diameter: 0.25

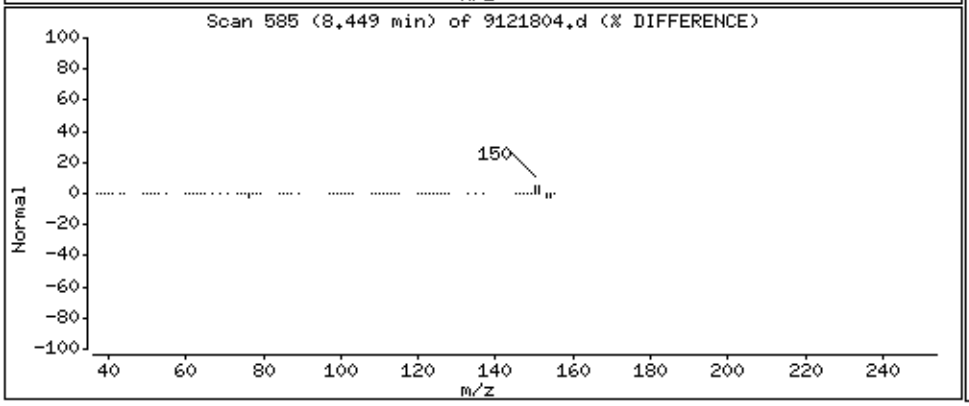
44 Acenaphthylene

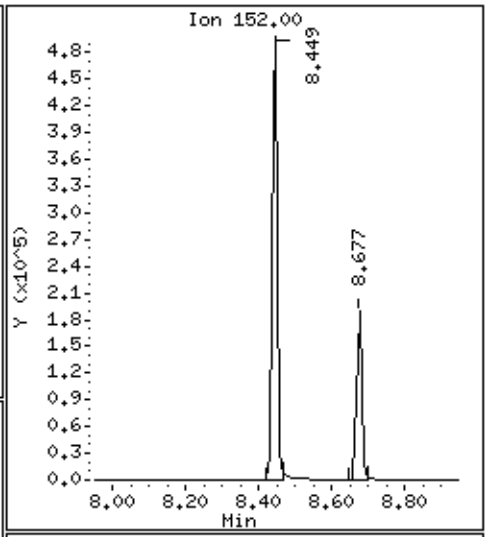
Concentration: 38.64 ug

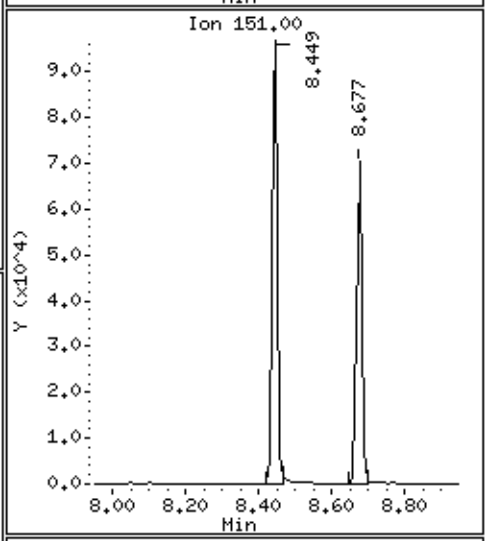


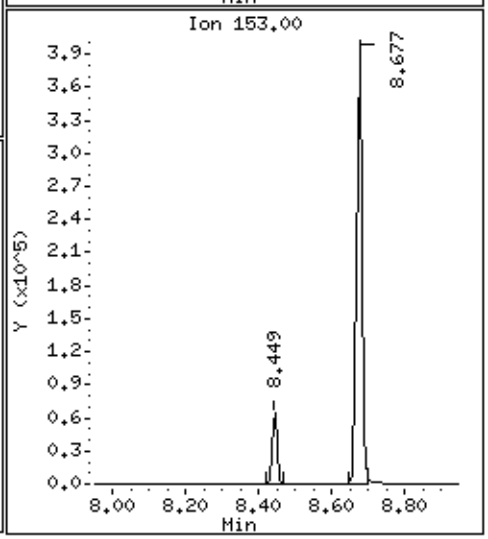












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

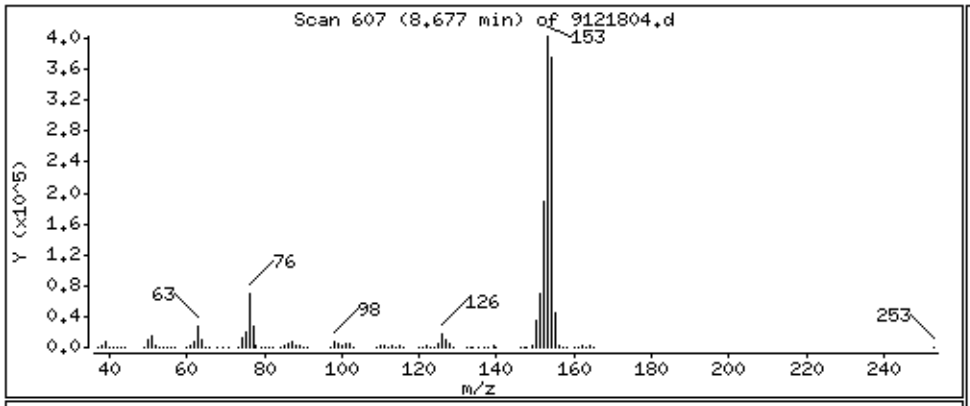
Operator: KV

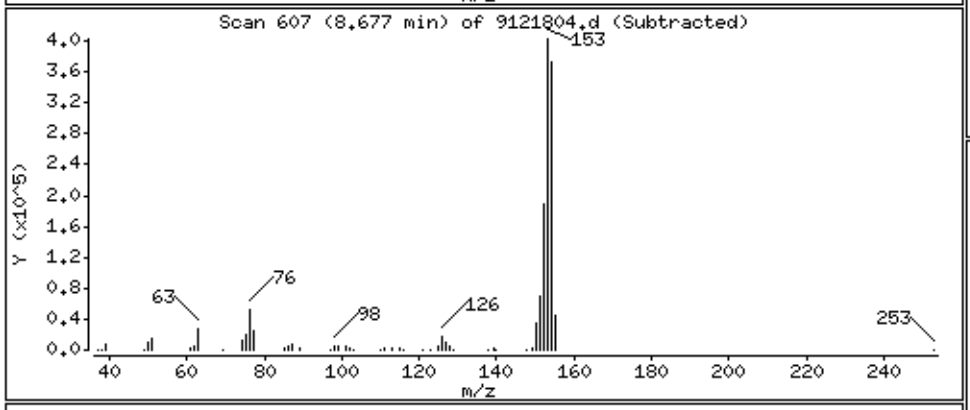
Column phase: DB-5.625

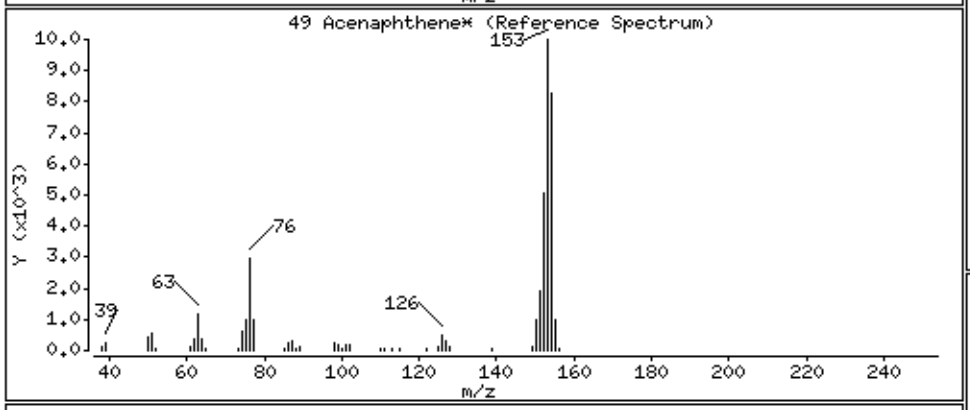
Column diameter: 0.25

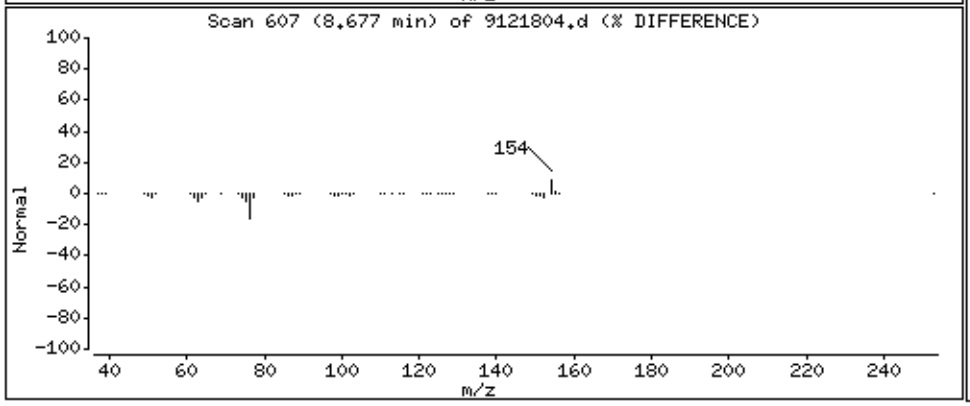
49 Acenaphthene*

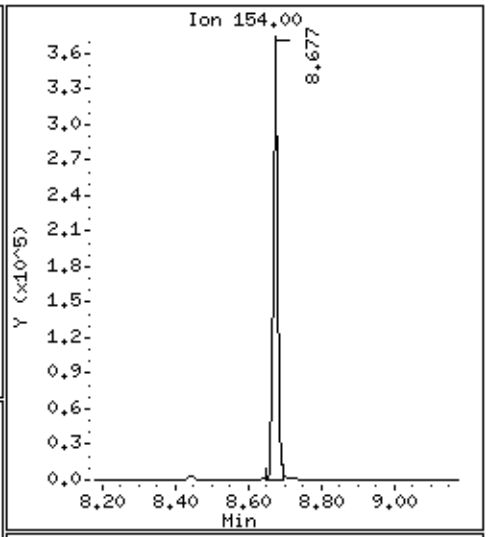
Concentration: 38.09 ug

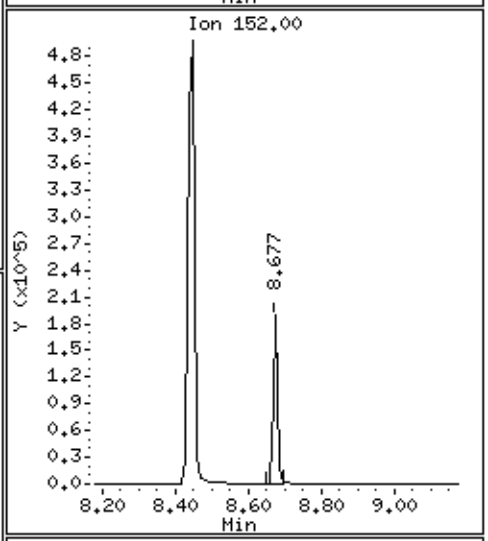


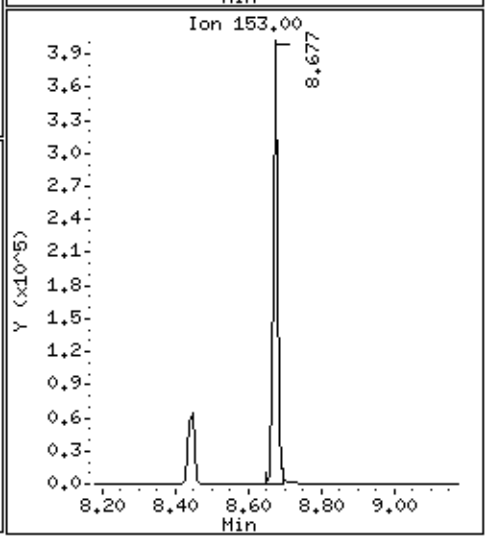












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

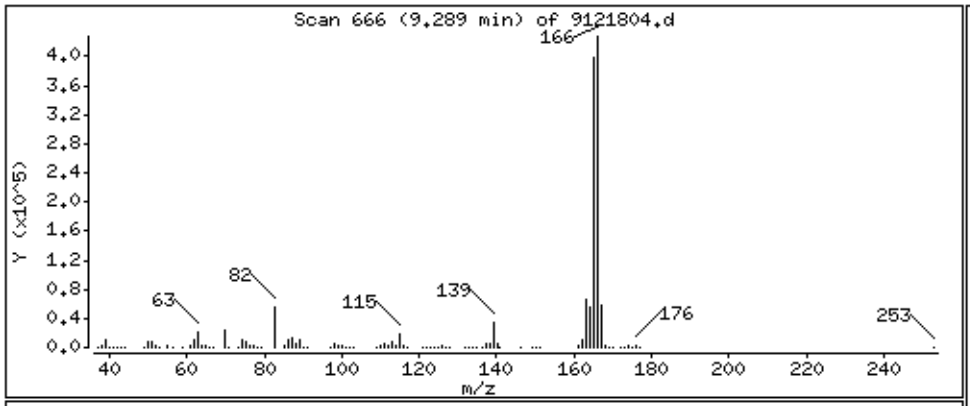
Operator: KV

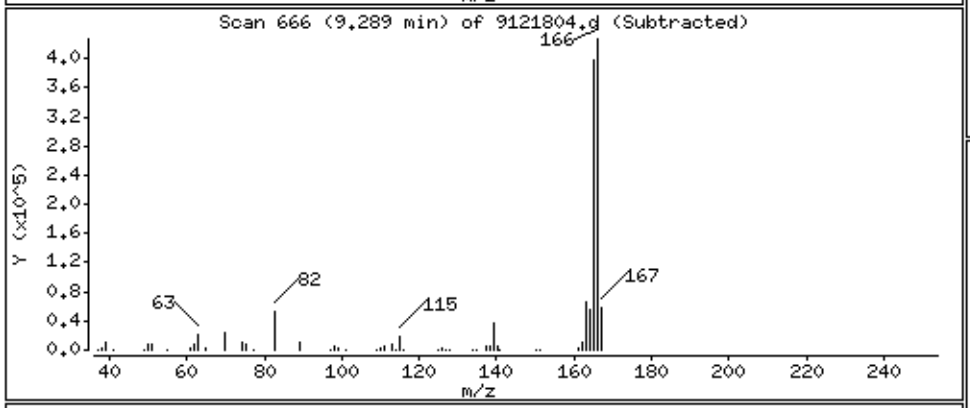
Column phase: DB-5.625

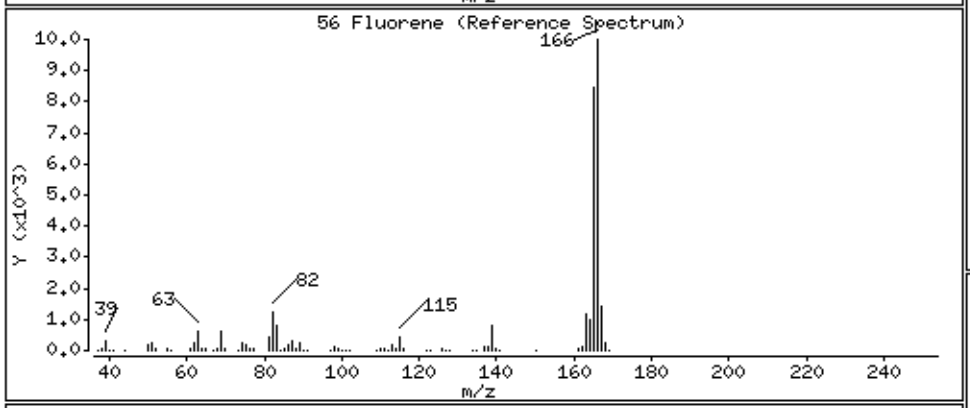
Column diameter: 0.25

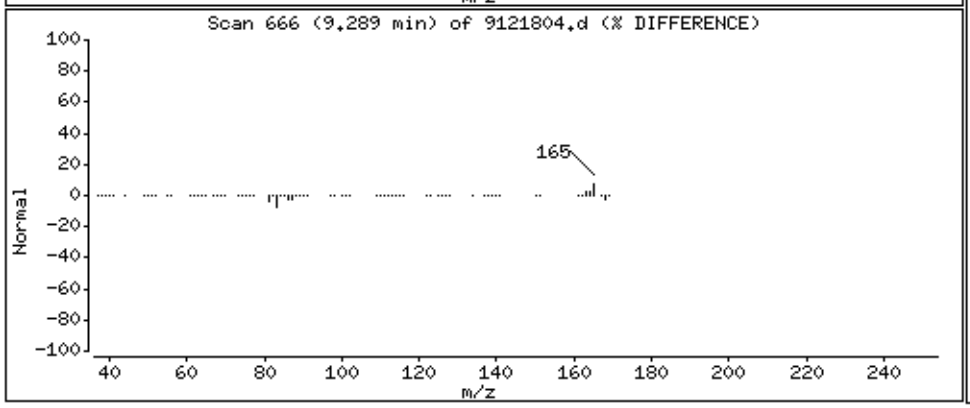
56 Fluorene

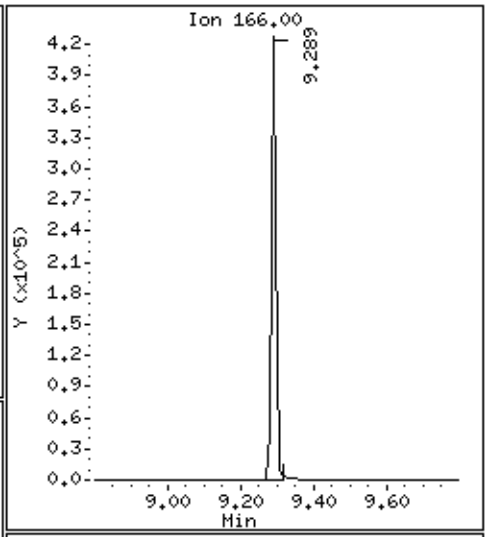
Concentration: 38.05 ug

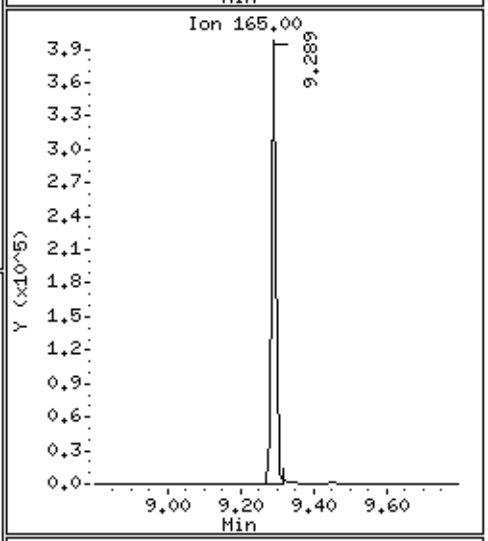


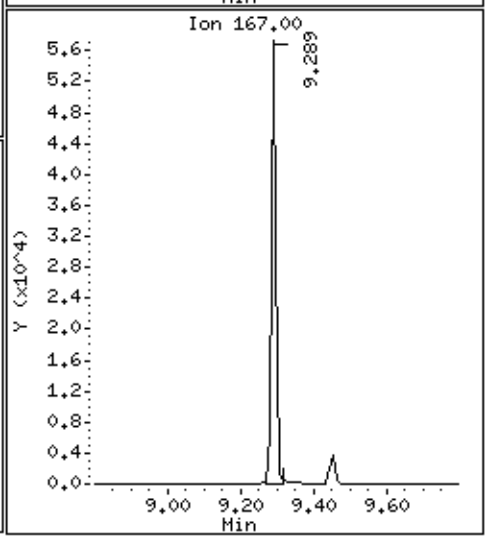












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

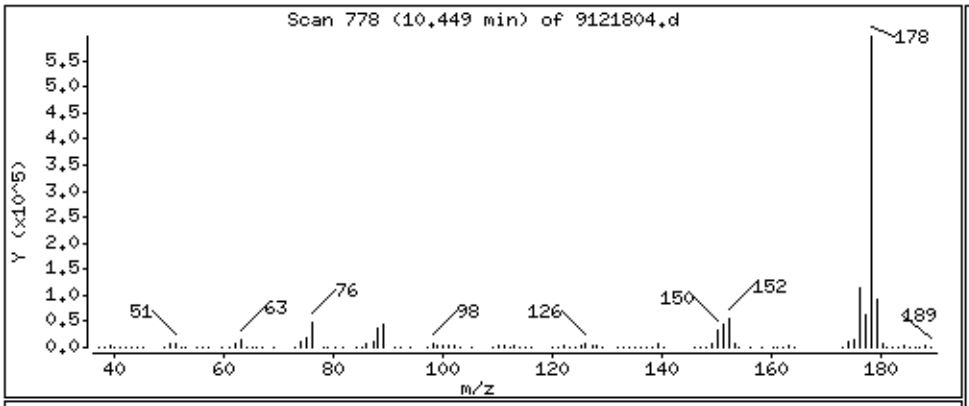
Operator: KV

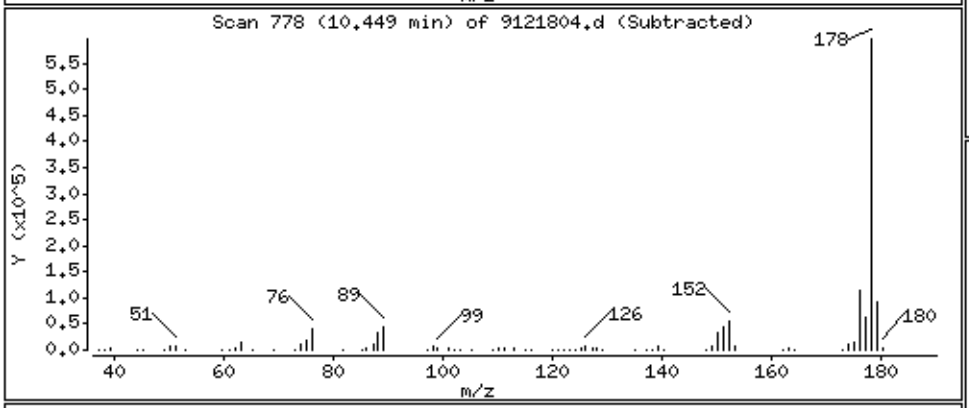
Column phase: DB-5.625

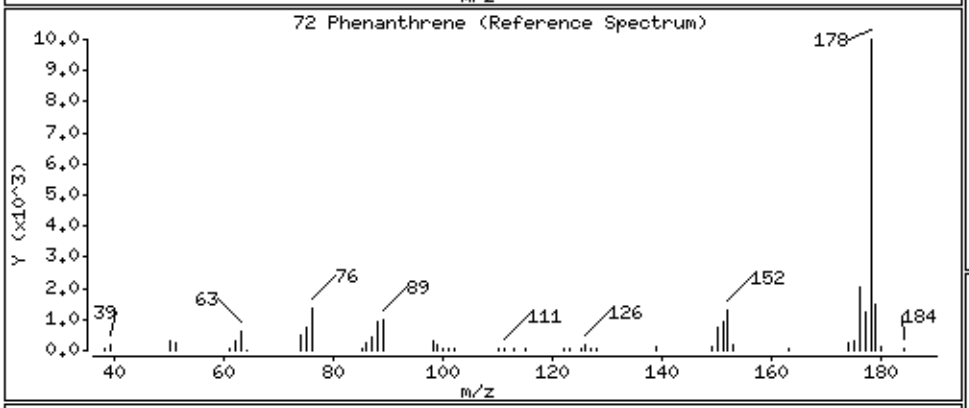
Column diameter: 0.25

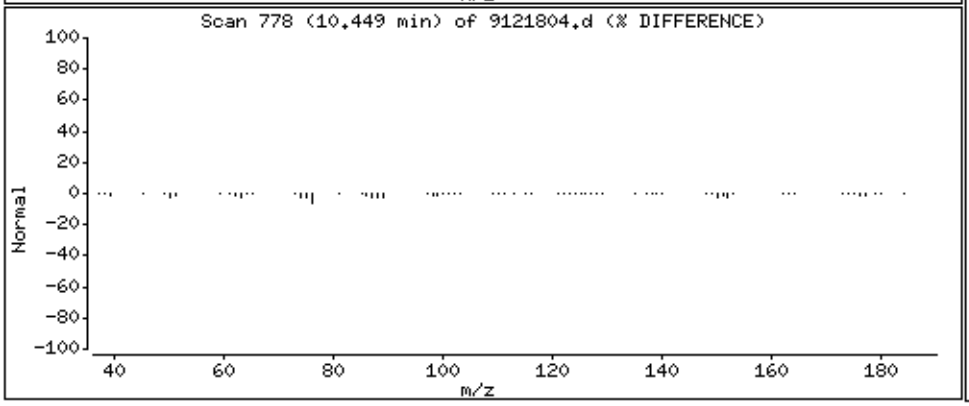
72 Phenanthrene

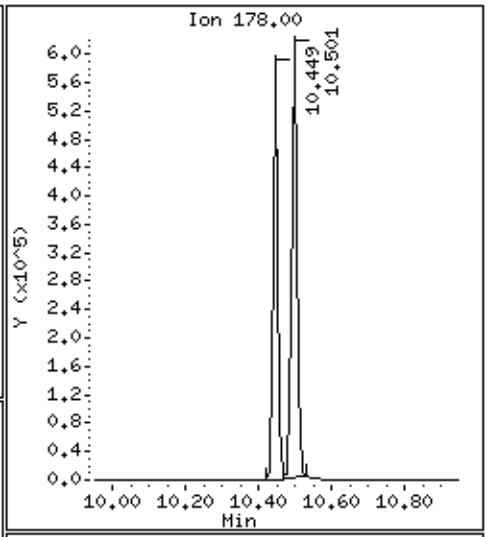
Concentration: 37.65 ug

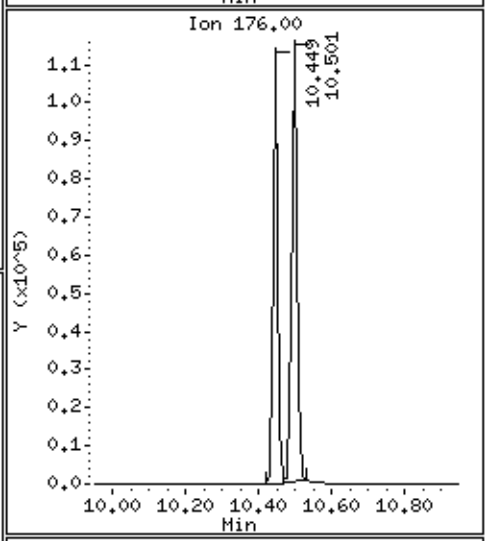


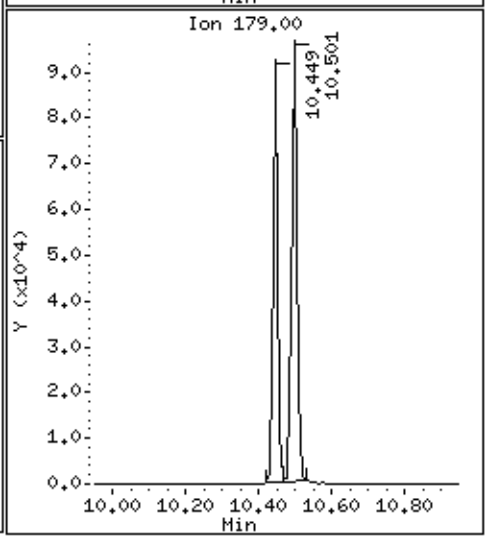












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

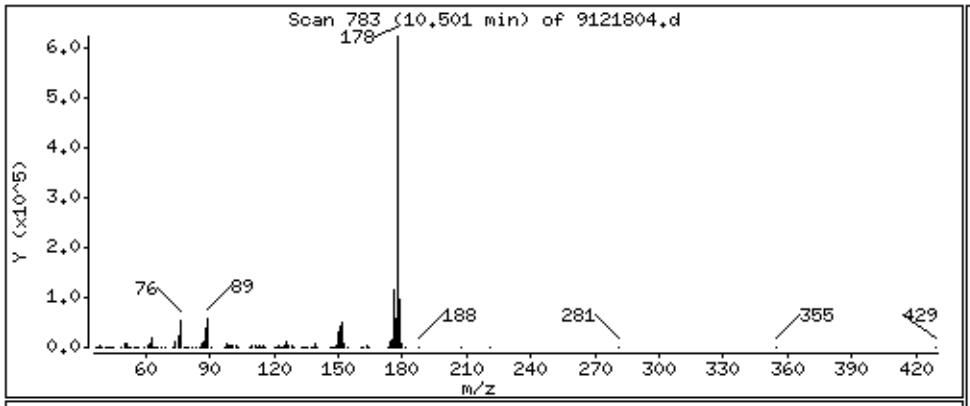
Operator: KV

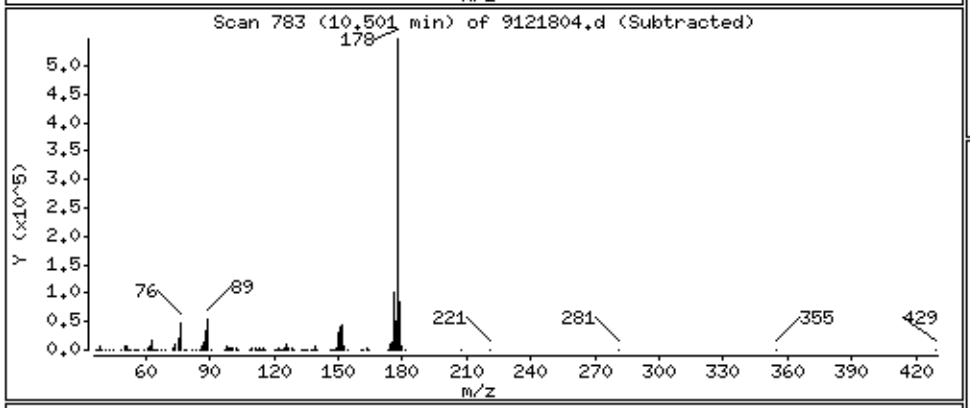
Column phase: DB-5.625

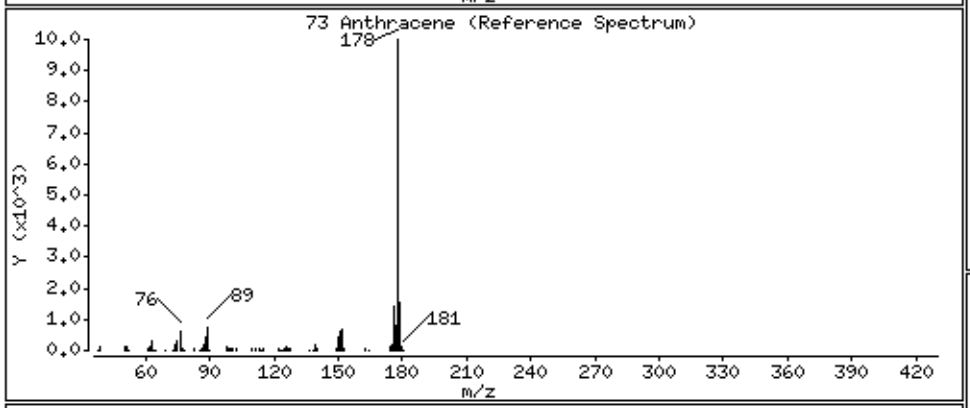
Column diameter: 0.25

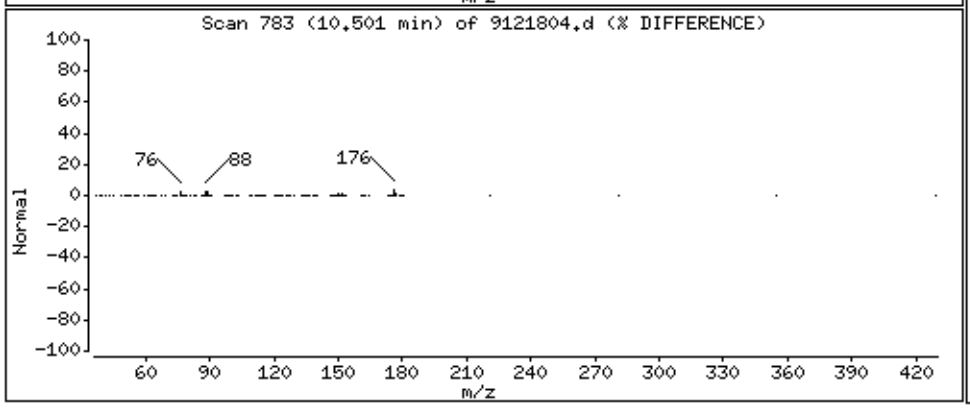
73 Anthracene

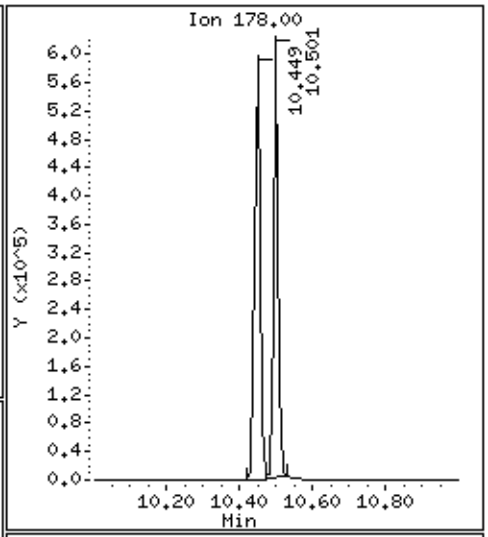
Concentration: 37.18 ug

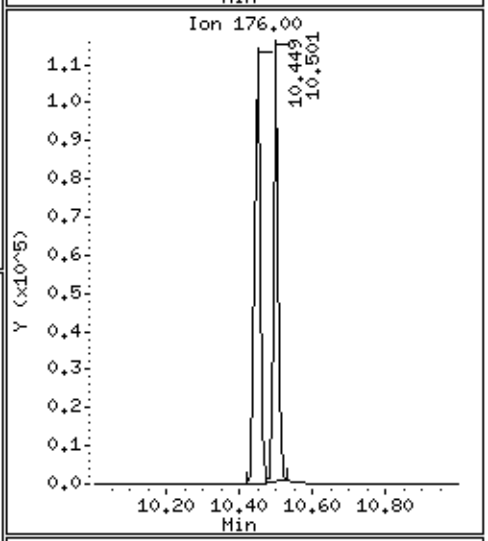


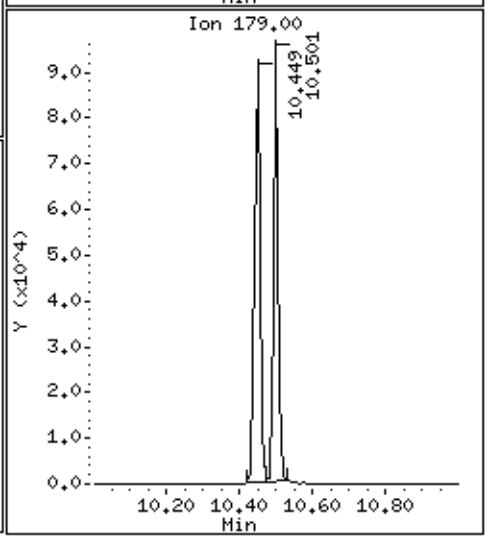












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

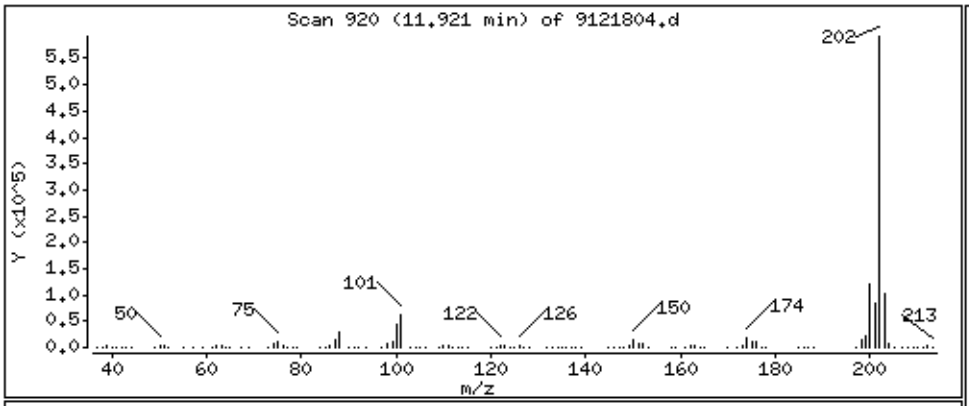
Operator: KV

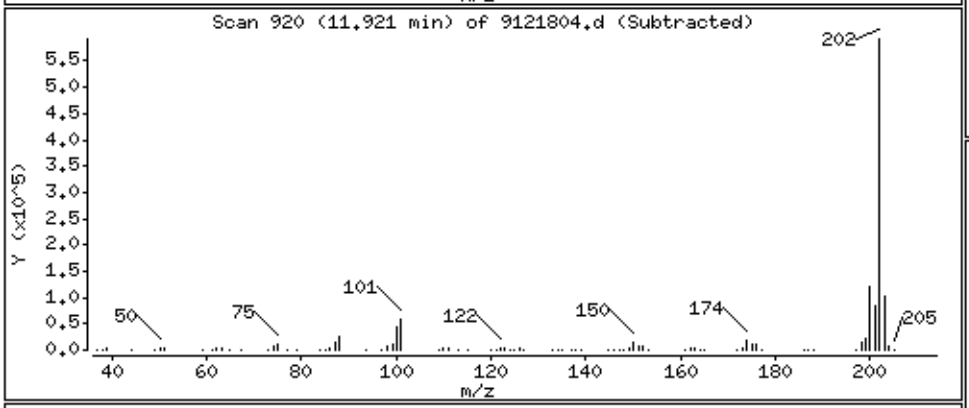
Column phase: DB-5.625

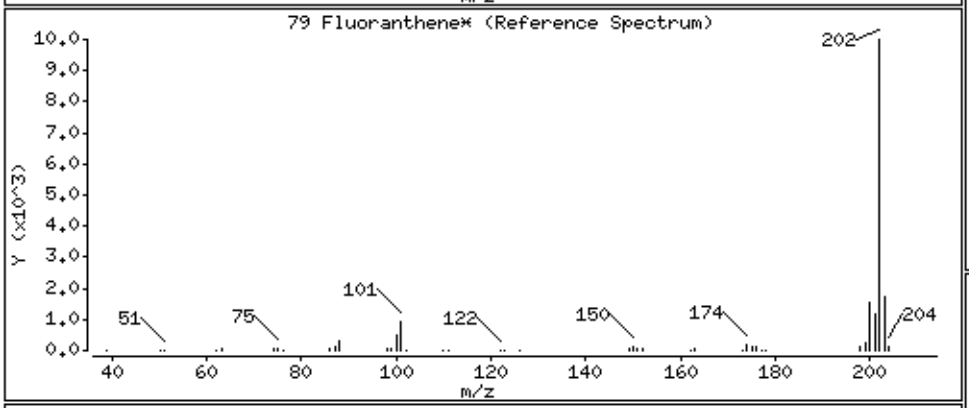
Column diameter: 0.25

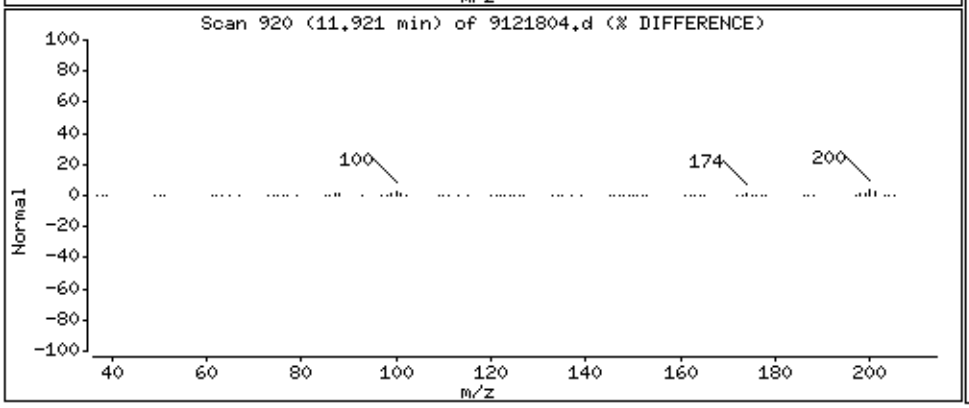
79 Fluoranthene*

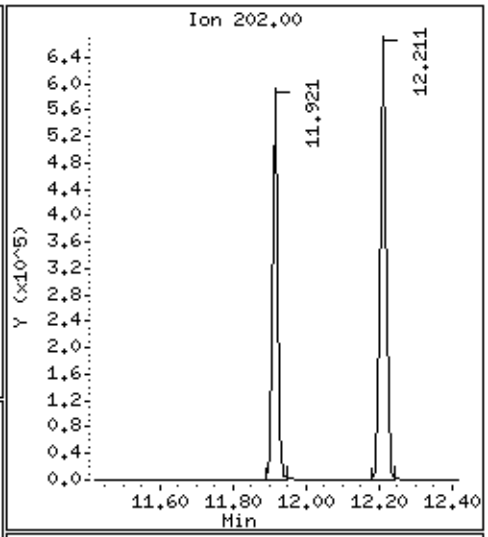
Concentration: 41.39 ug

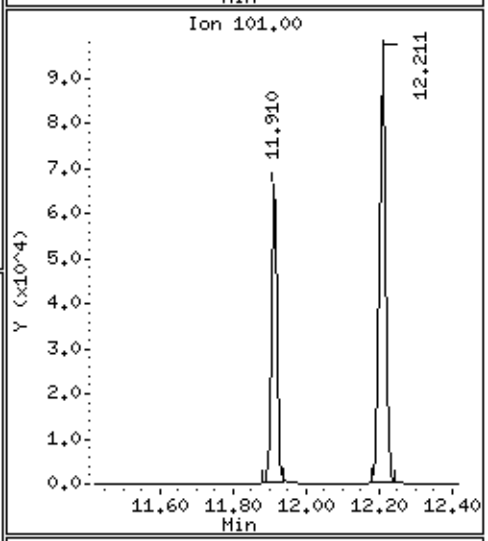


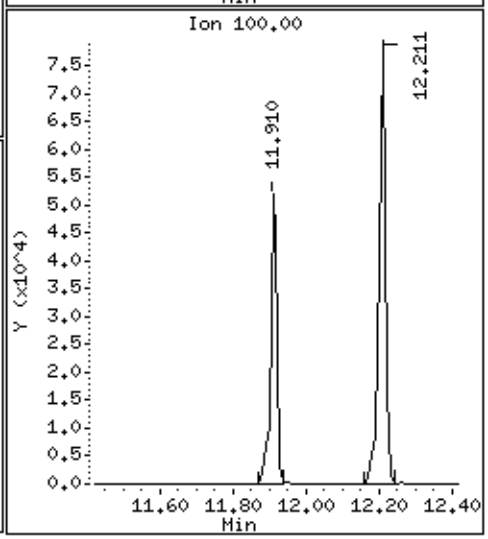












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

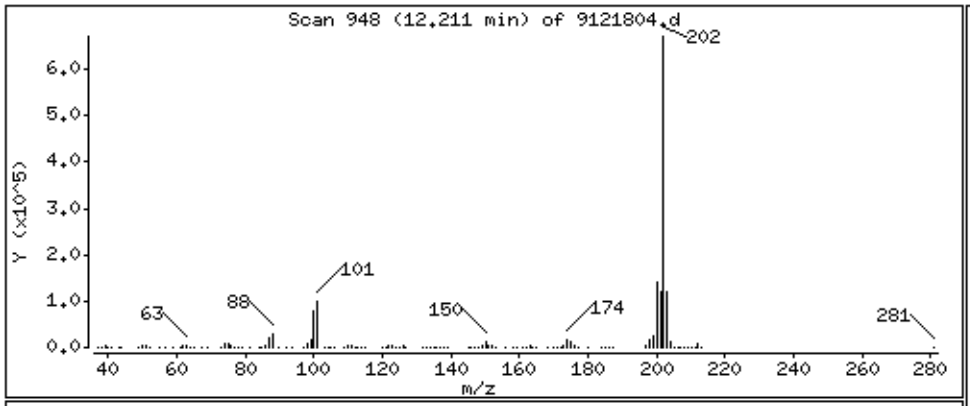
Operator: KV

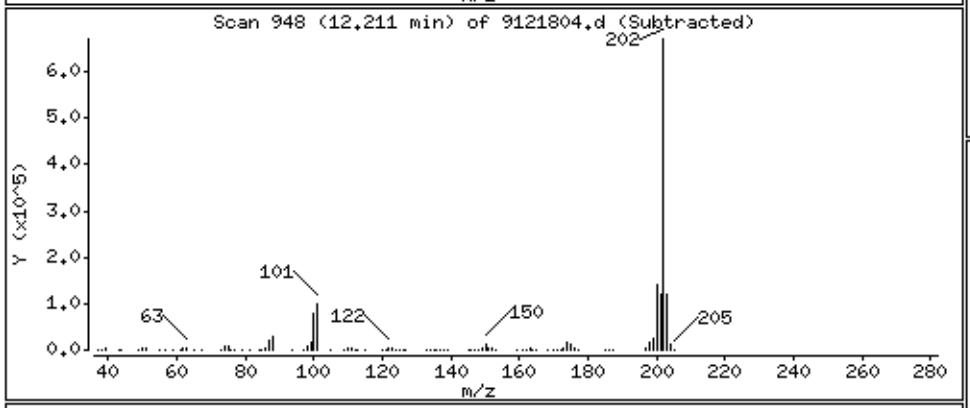
Column phase: DB-5.625

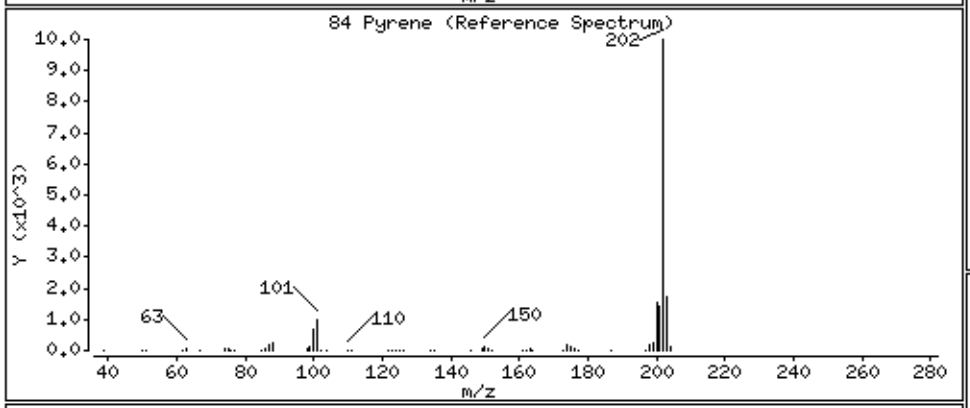
Column diameter: 0.25

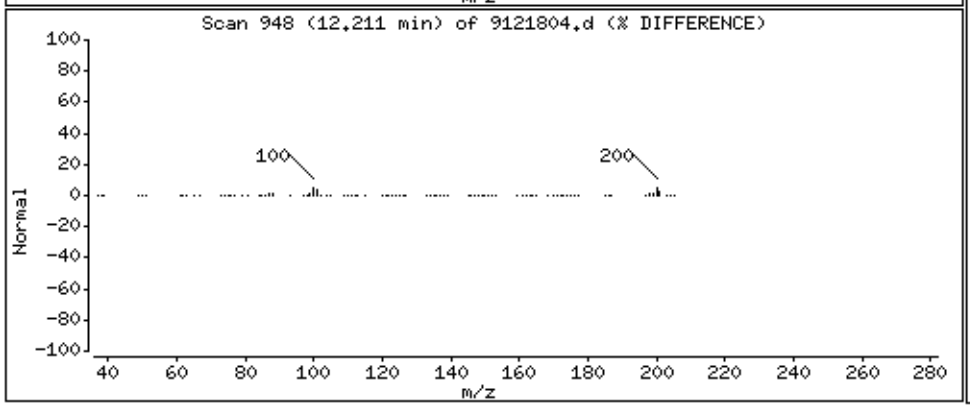
84 Pyrene

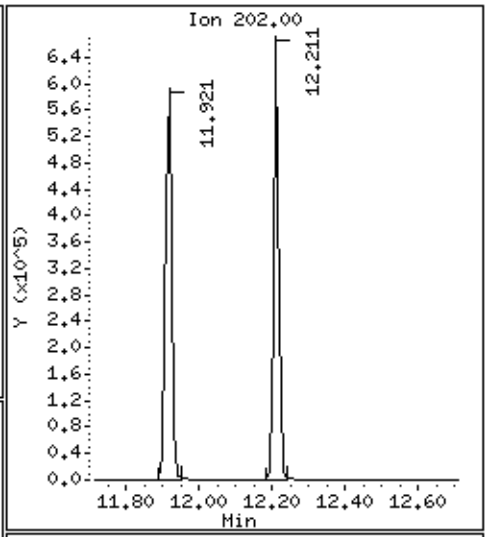
Concentration: 37.72 ug

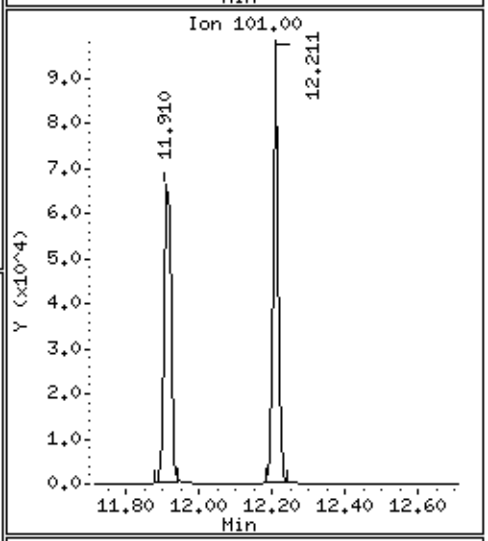


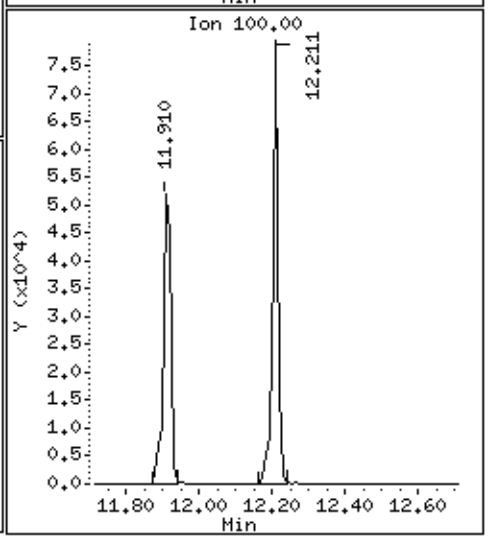












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

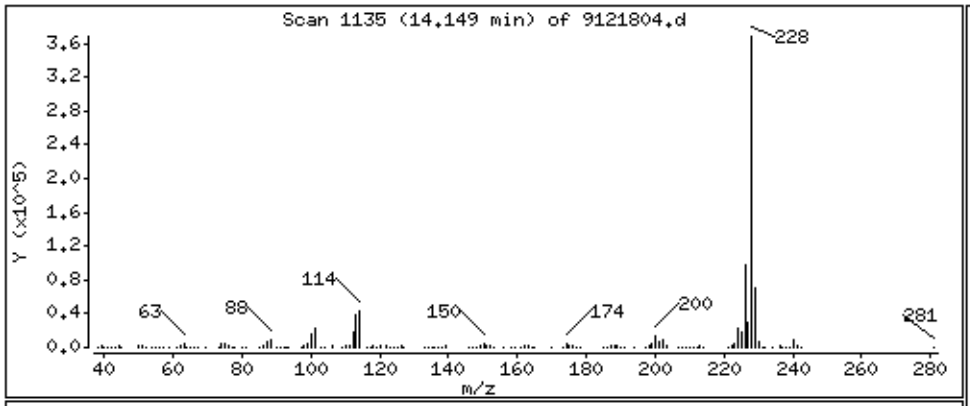
Operator: KV

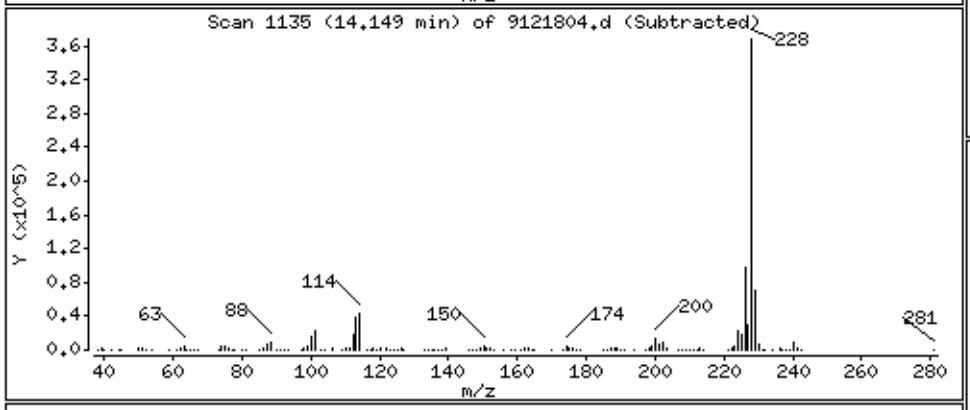
Column phase: DB-5.625

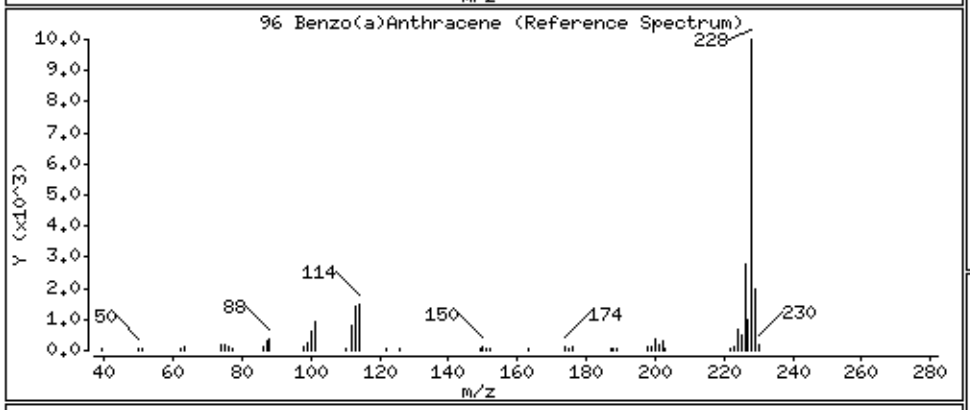
Column diameter: 0.25

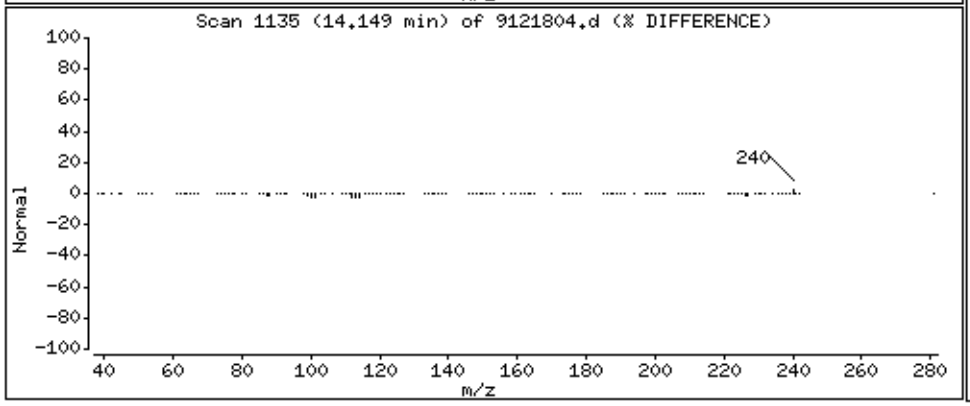
96 Benzo(a)Anthracene

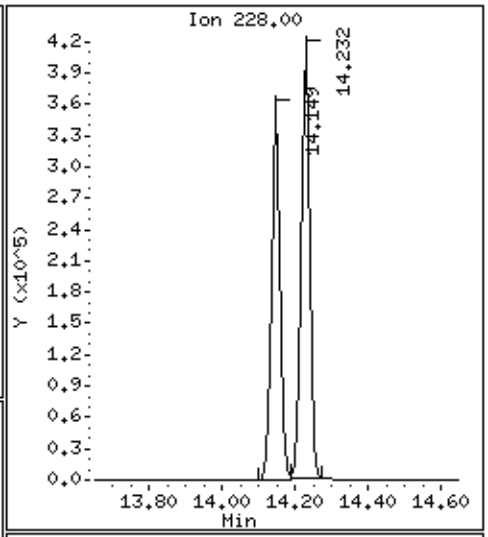
Concentration: 38.14 ug

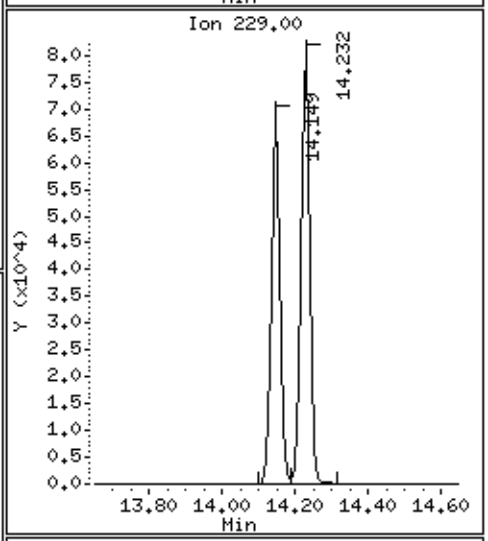


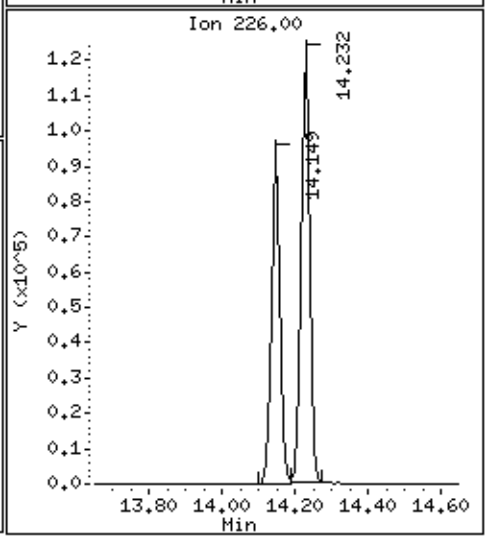












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

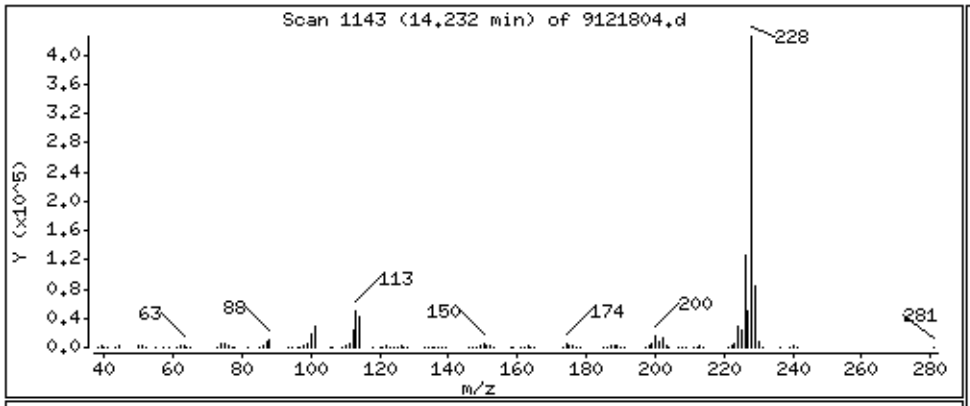
Operator: KV

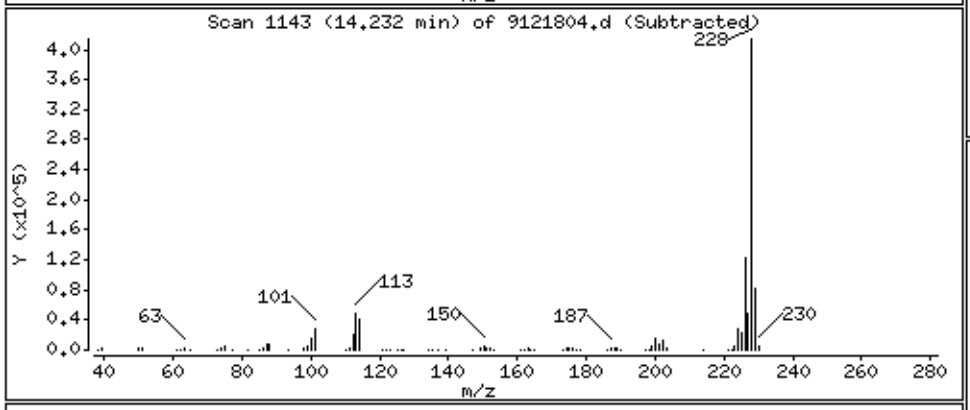
Column phase: DB-5.625

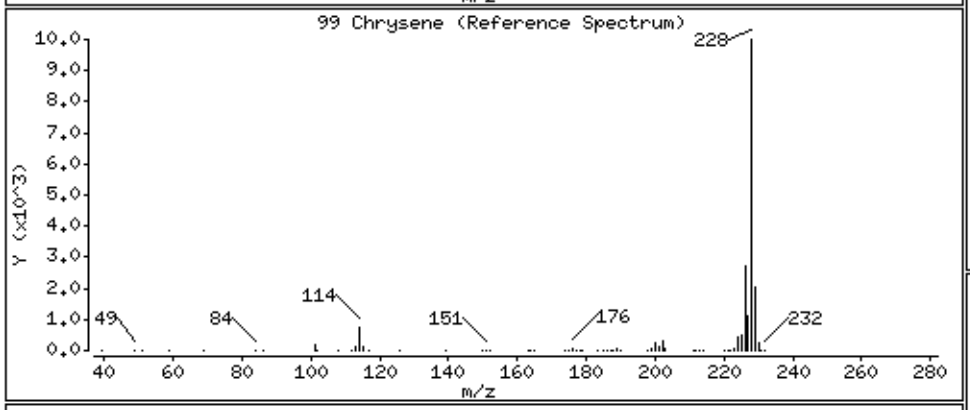
Column diameter: 0.25

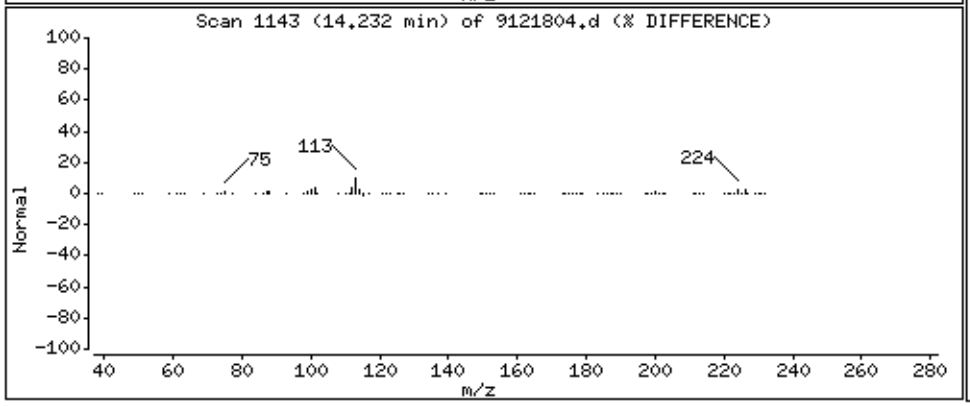
99 Chrysene

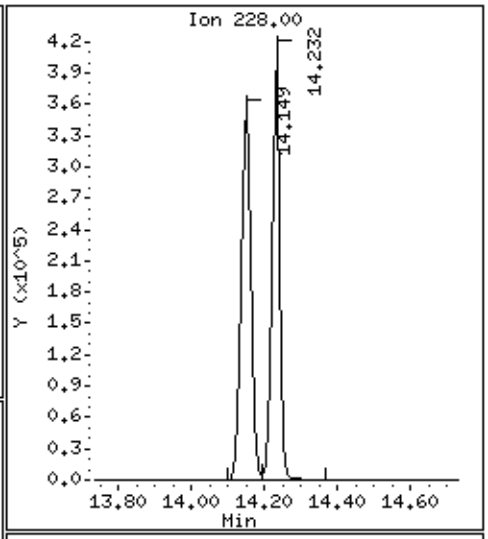
Concentration: 40.71 ug

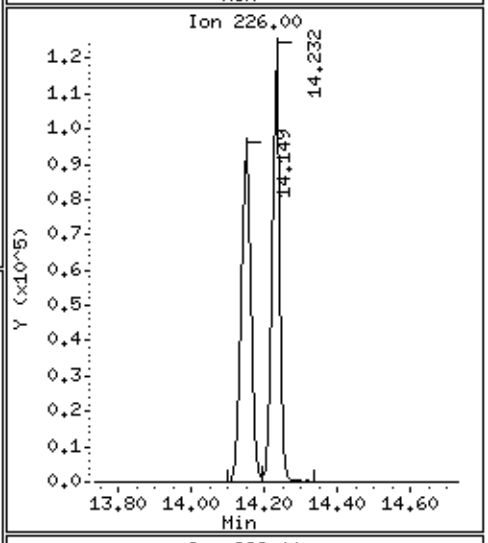


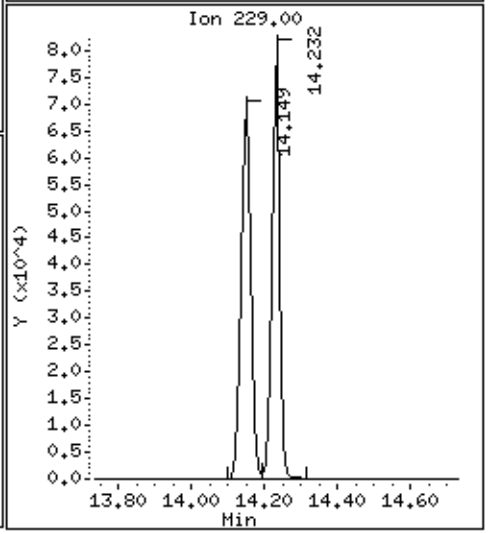












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

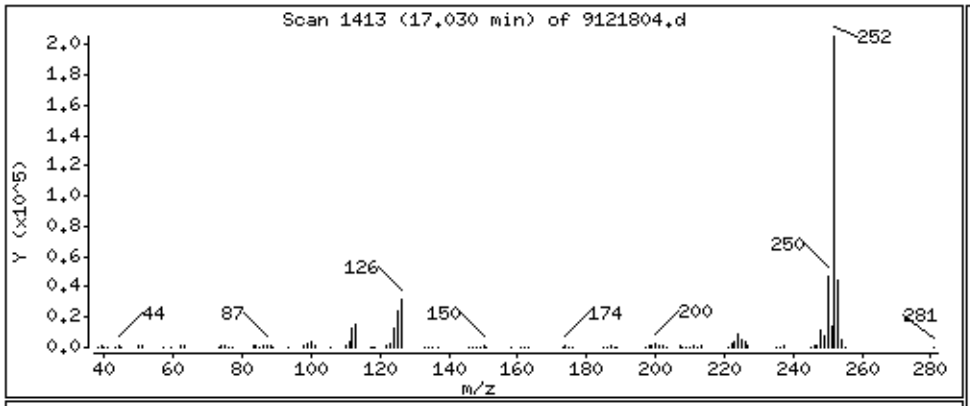
Operator: KV

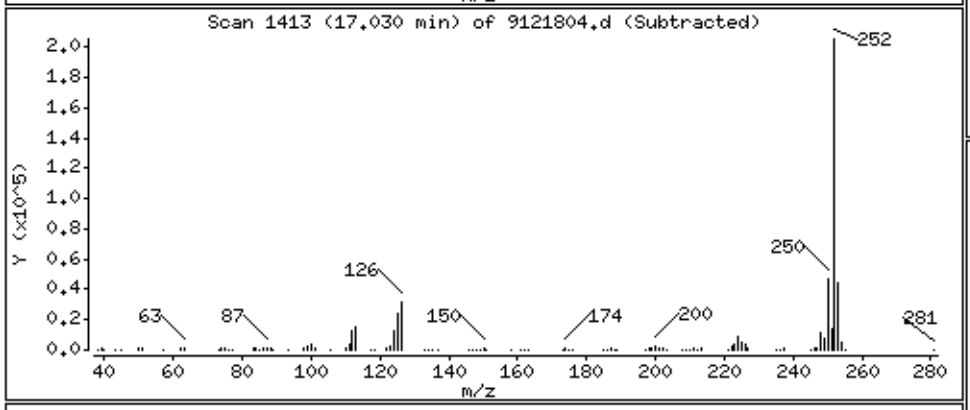
Column phase: DB-5.625

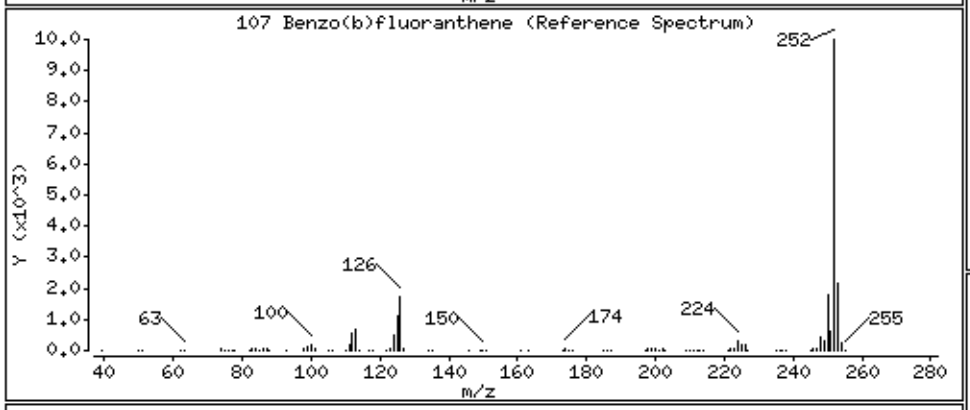
Column diameter: 0.25

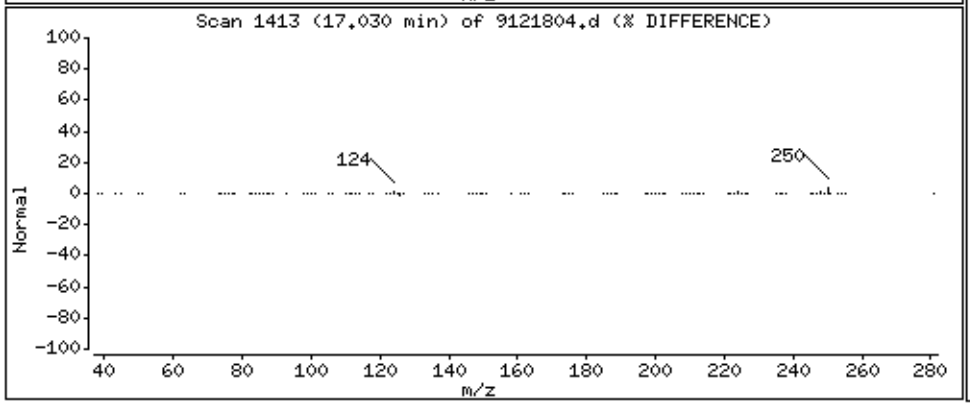
107 Benzo(b)fluoranthene

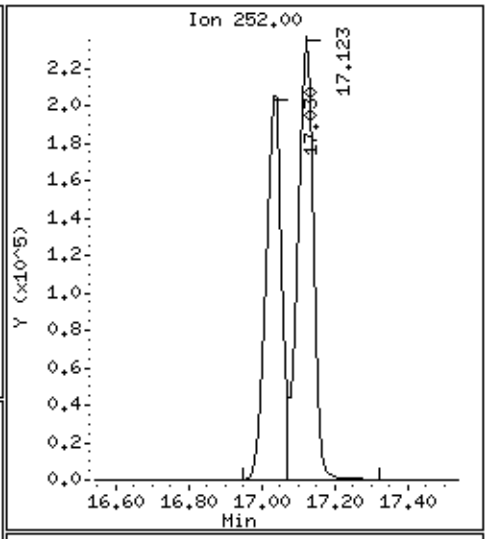
Concentration: 38.65 ug

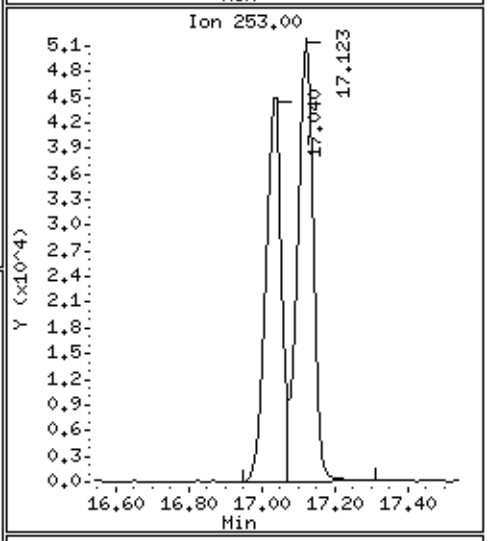


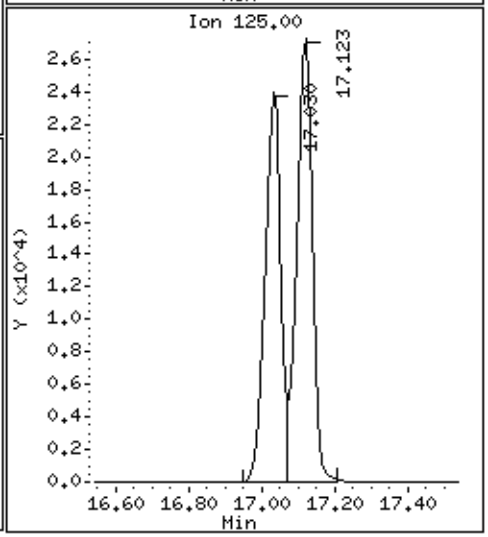












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

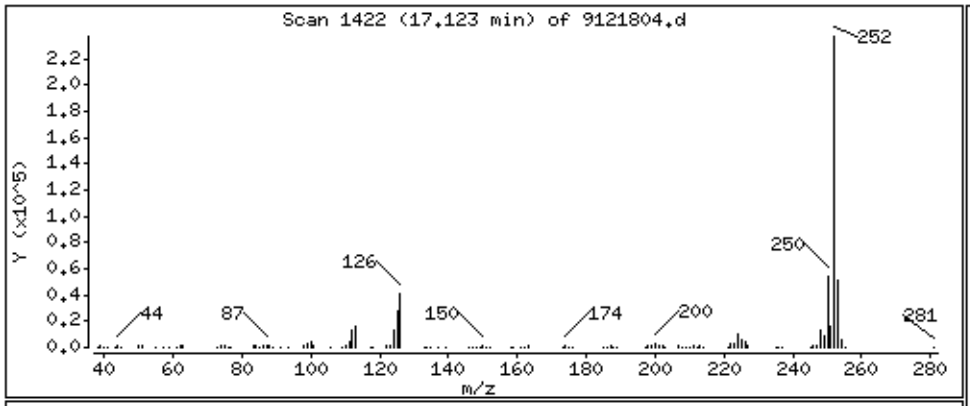
Operator: KV

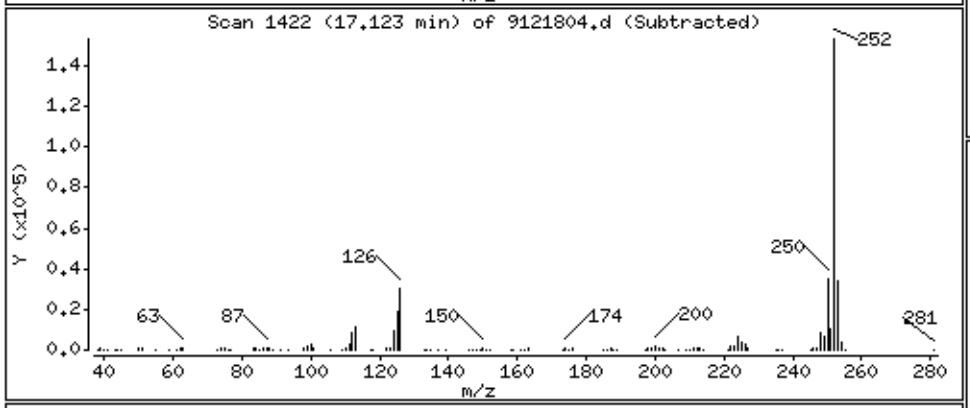
Column phase: DB-5.625

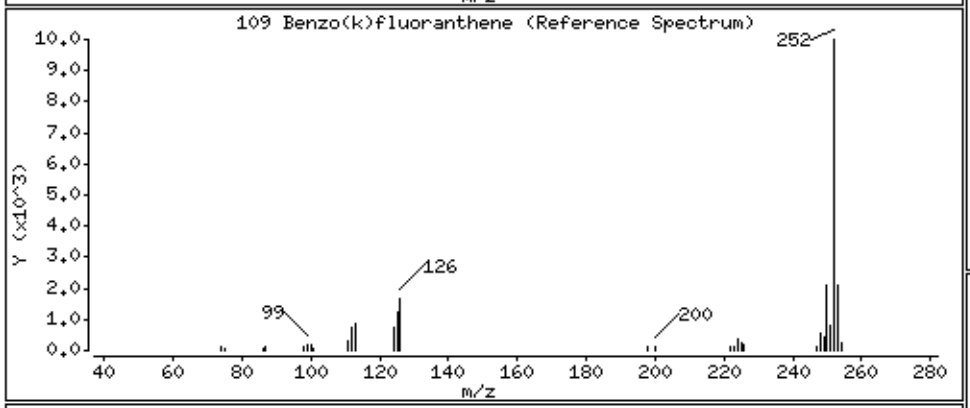
Column diameter: 0.25

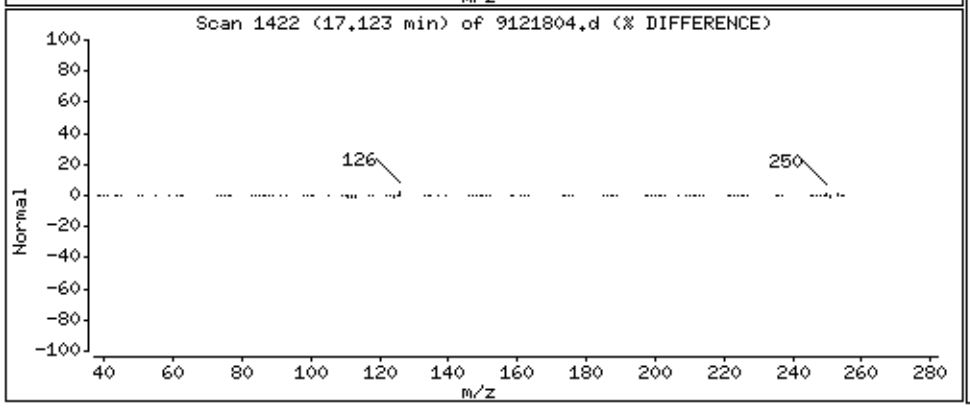
109 Benzo(k)fluoranthene

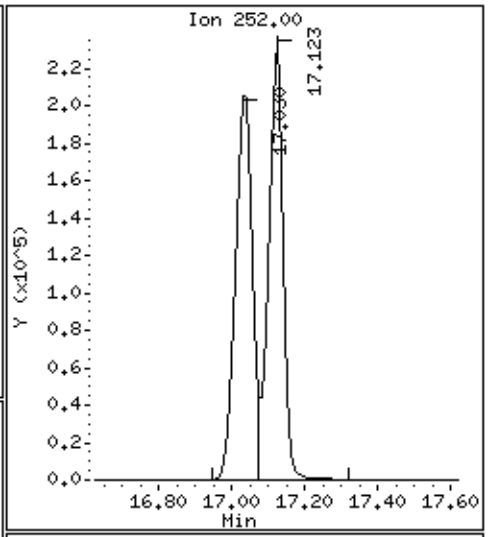
Concentration: 40.81 ug

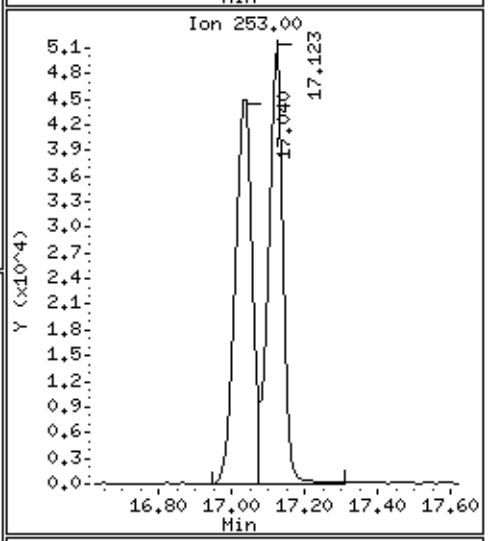


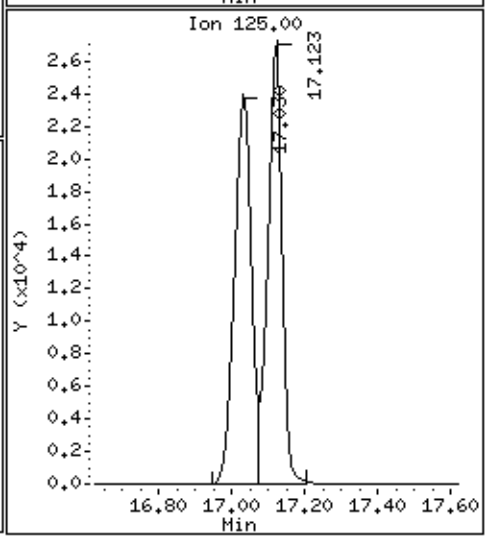












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

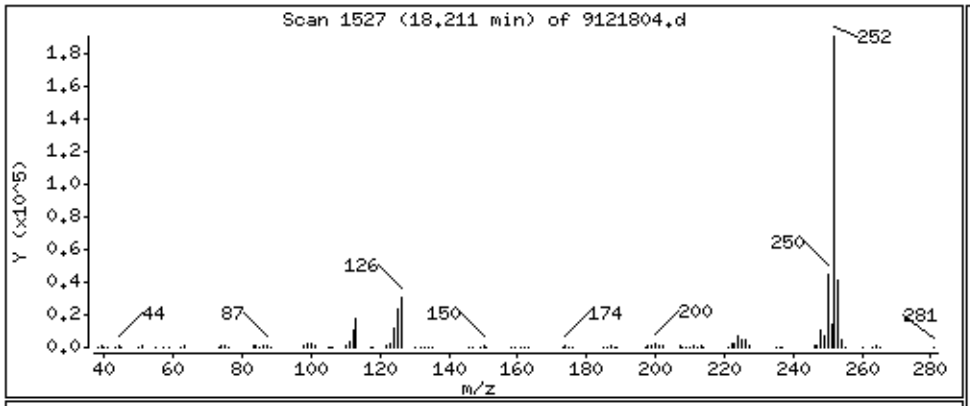
Operator: KV

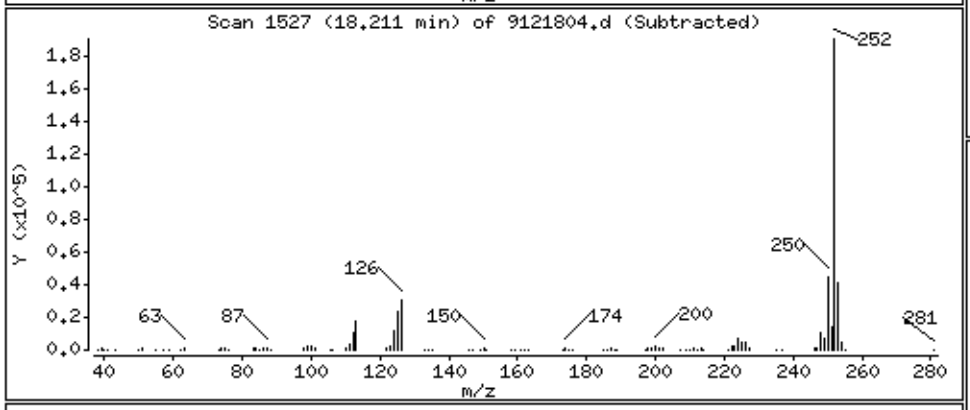
Column phase: DB-5.625

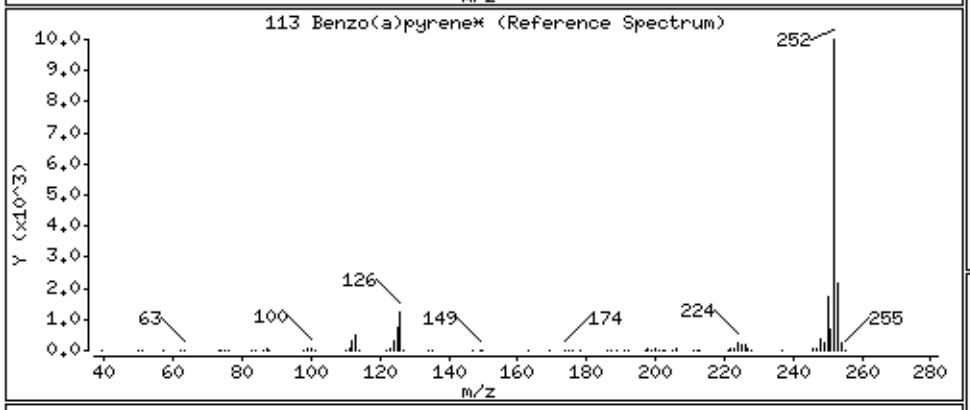
Column diameter: 0.25

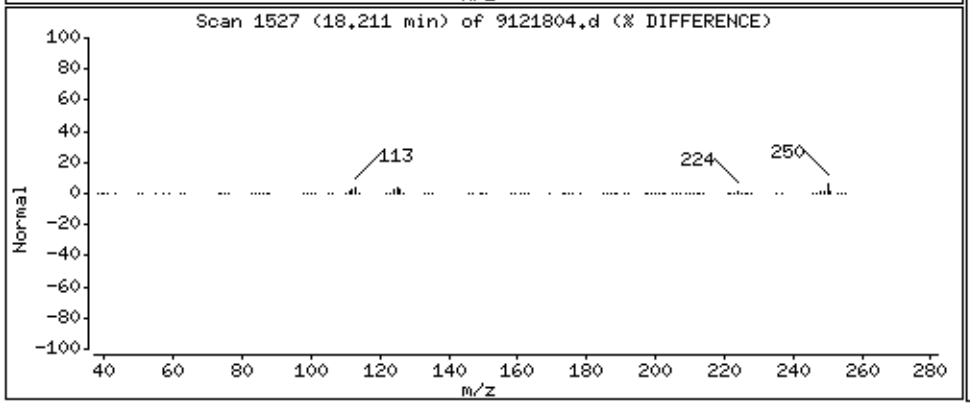
113 Benzo(a)pyrene*

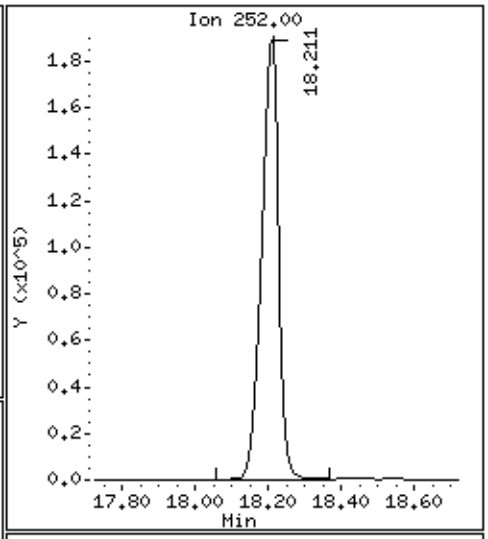
Concentration: 38.92 ug

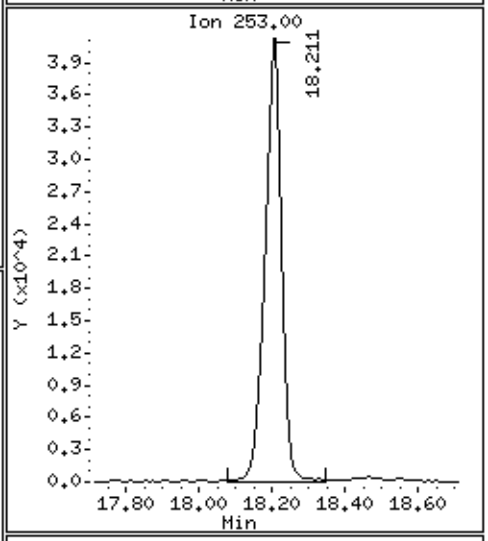


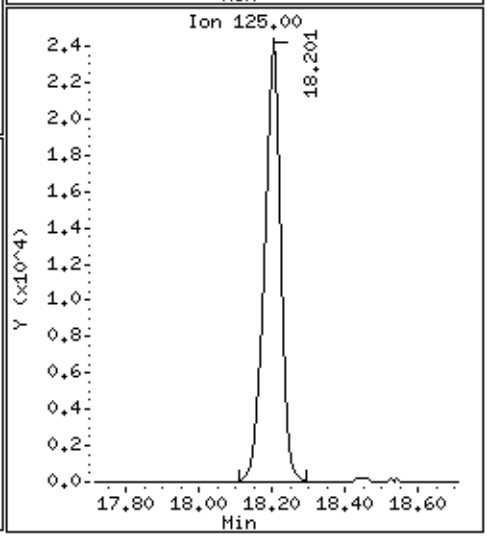












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

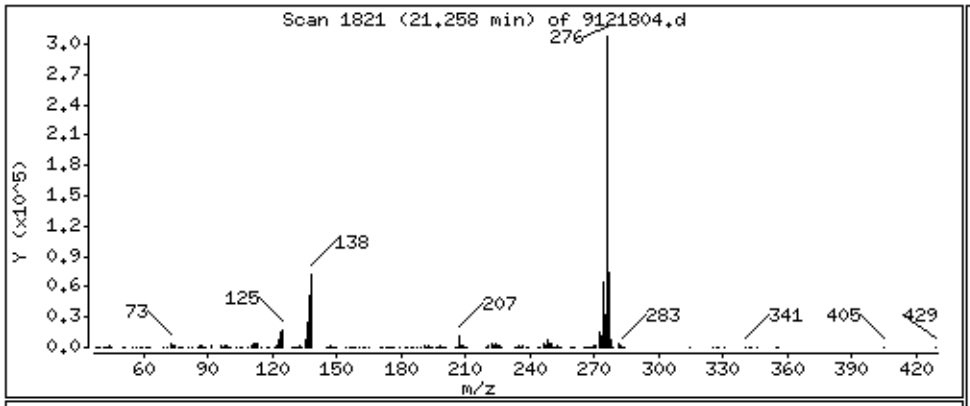
Operator: KV

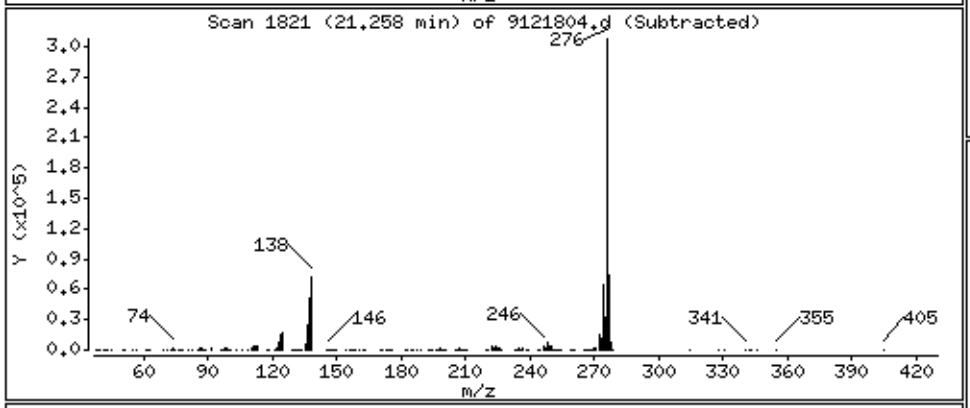
Column phase: DB-5.625

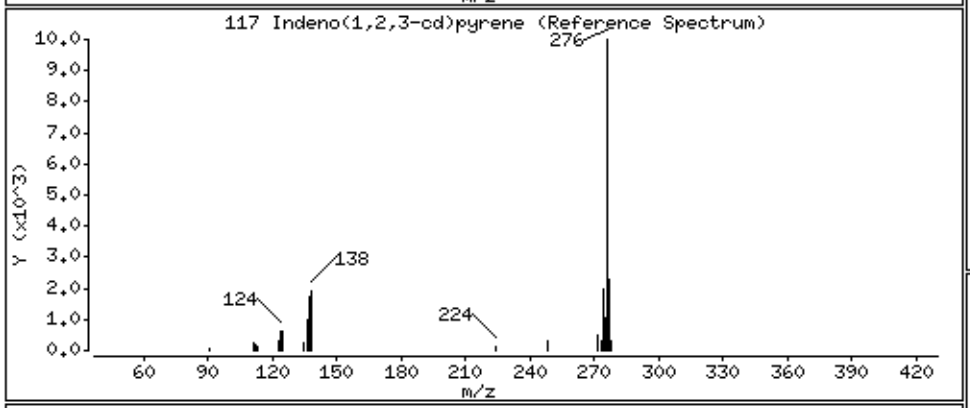
Column diameter: 0.25

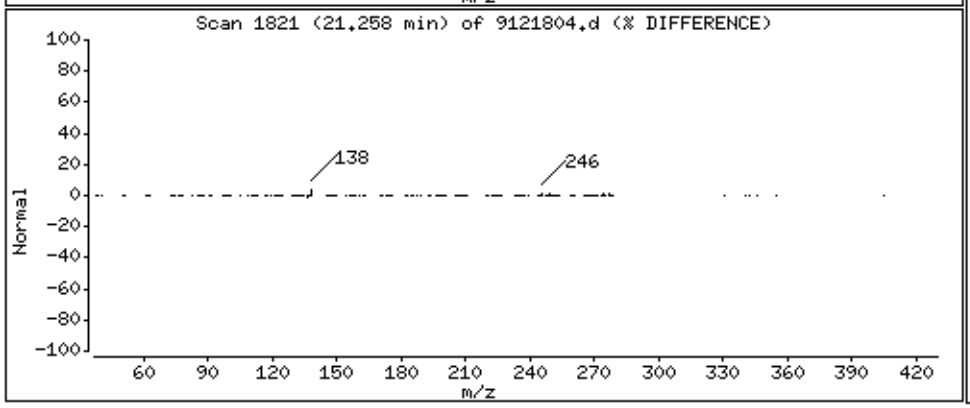
117 Indeno(1,2,3-cd)pyrene

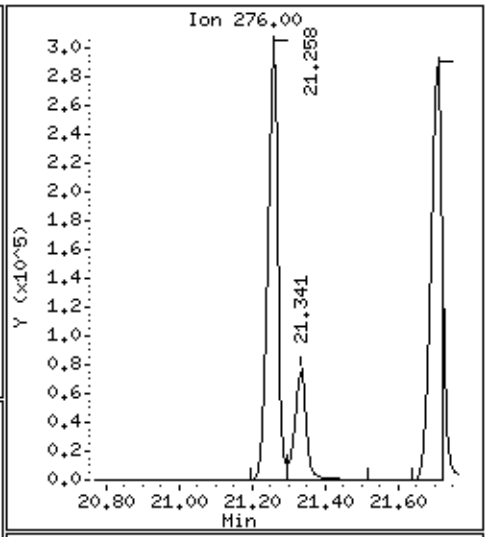
Concentration: 42.49 ug

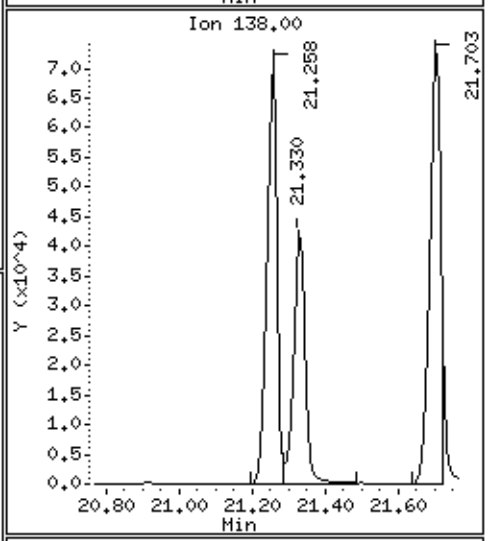


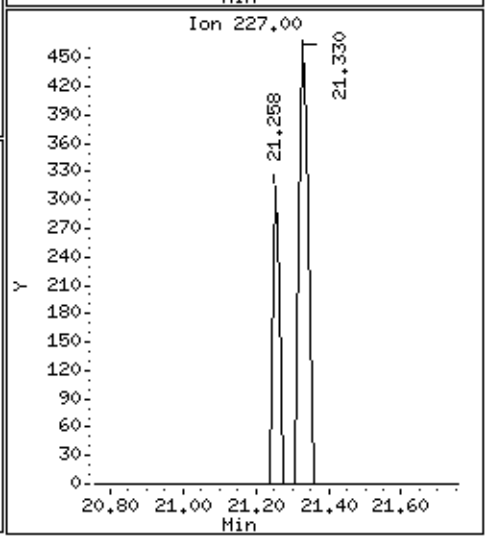












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

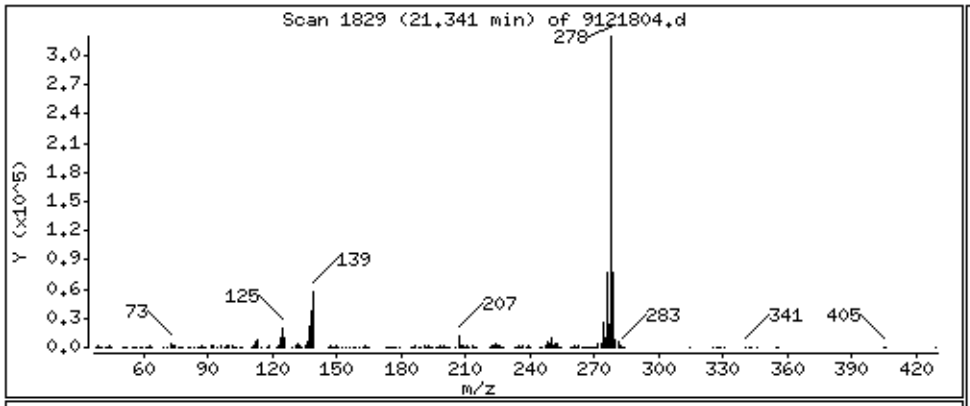
Operator: KV

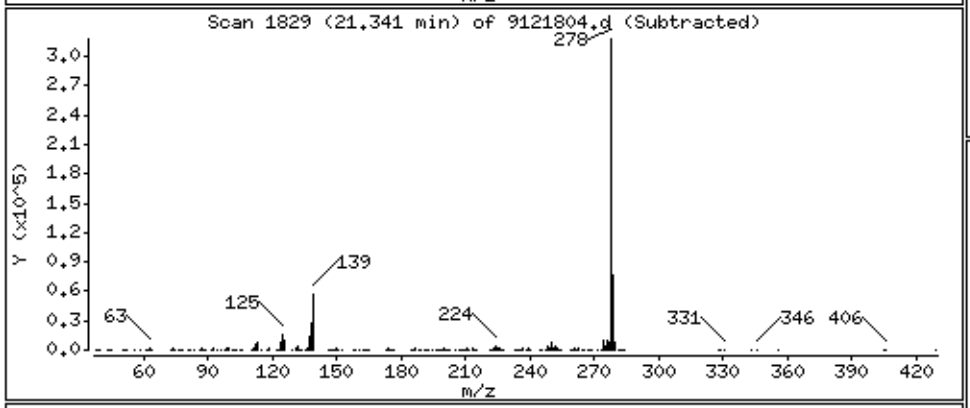
Column phase: DB-5.625

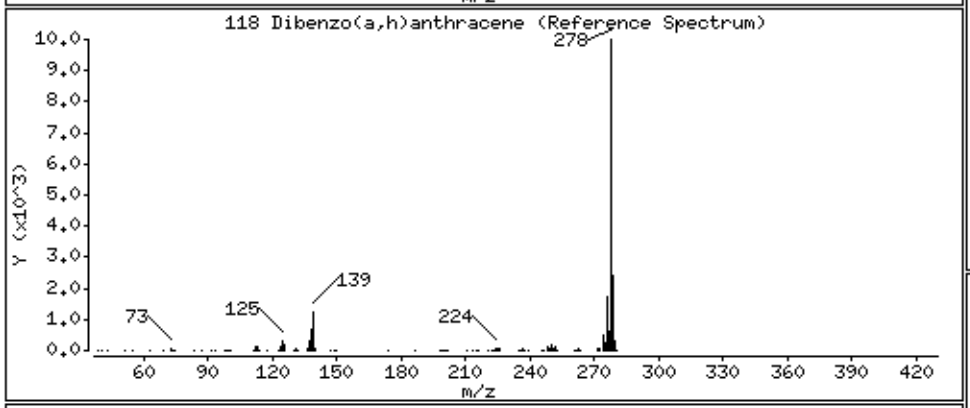
Column diameter: 0.25

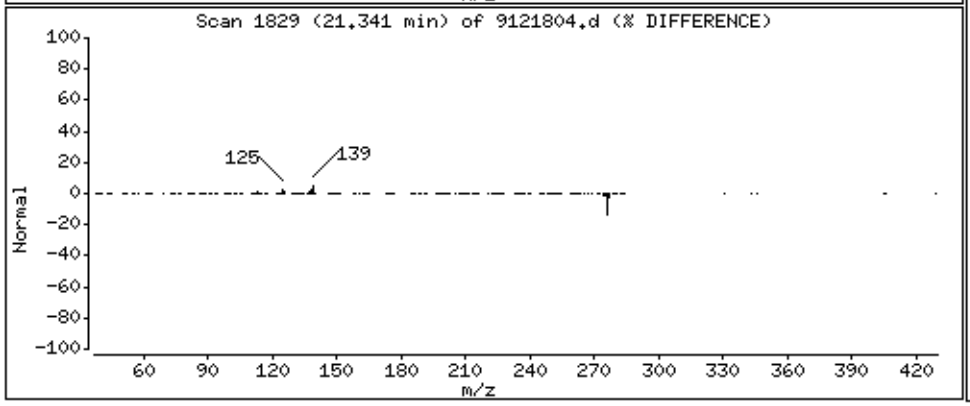
118 Dibenzo(a,h)anthracene

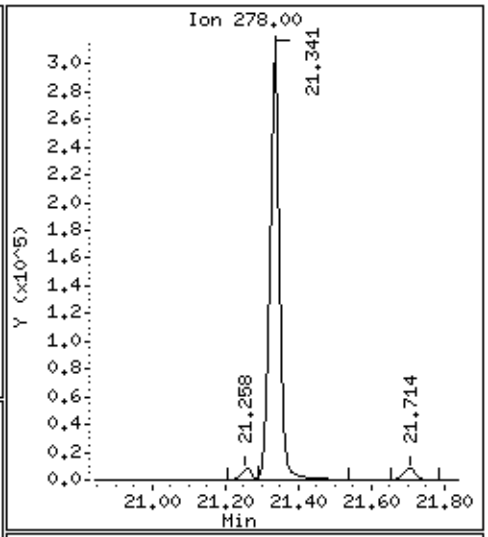
Concentration: 41.01 ug

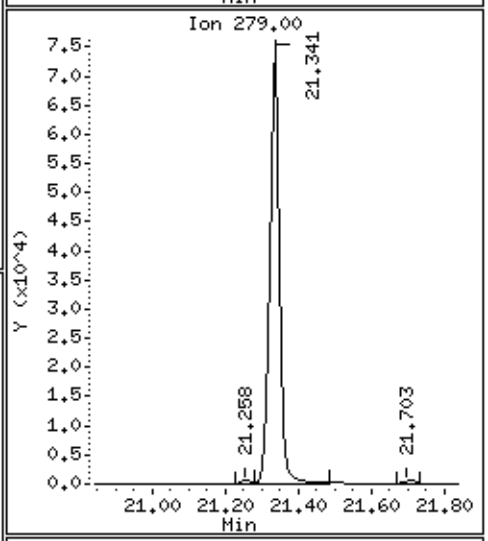


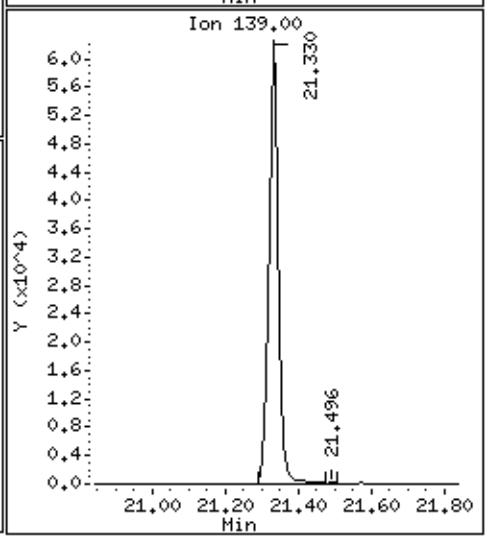












Data File: /chem/msd9.i/18dec17.b/9121804.d

Date : 18-DEC-2017 16:09

Client ID: LCS

Instrument: msd9.i

Sample Info: ;1712296; LCS

Volume Injected (uL): 1.0

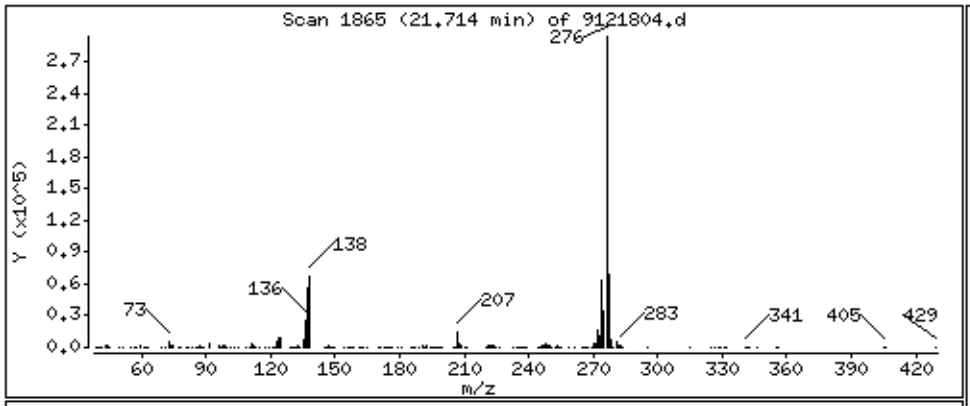
Operator: KV

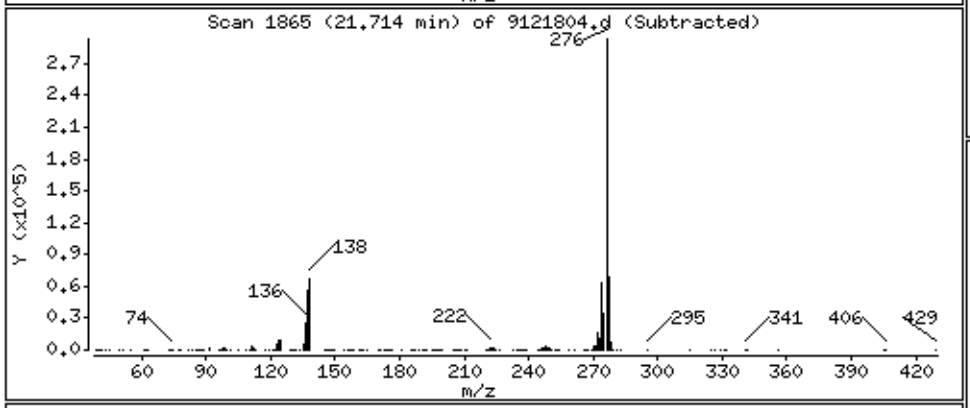
Column phase: DB-5.625

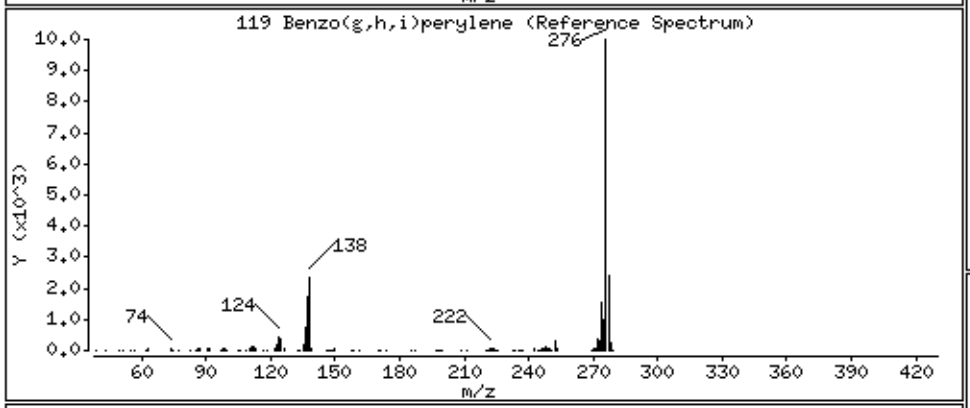
Column diameter: 0.25

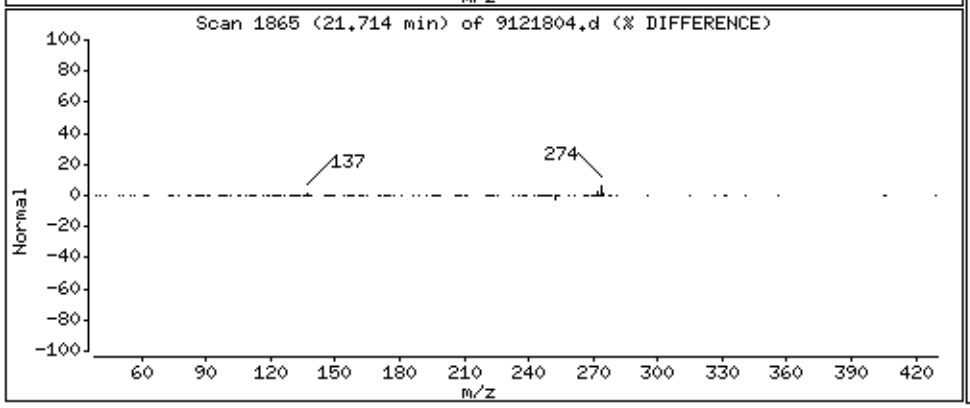
119 Benzo(g,h,i)perylene

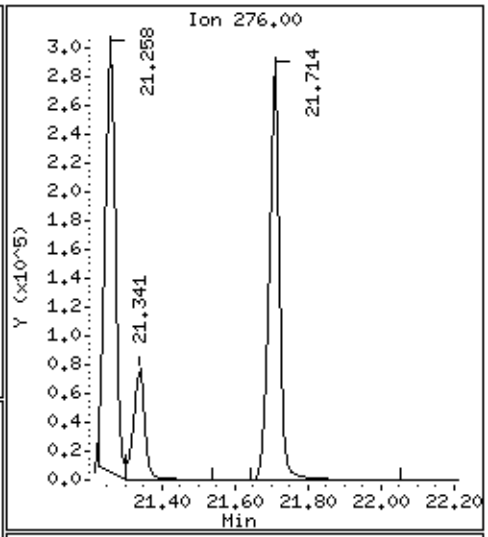
Concentration: 38.61 ug

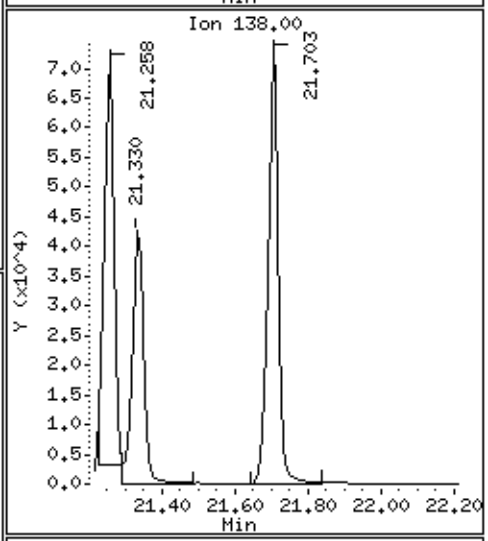


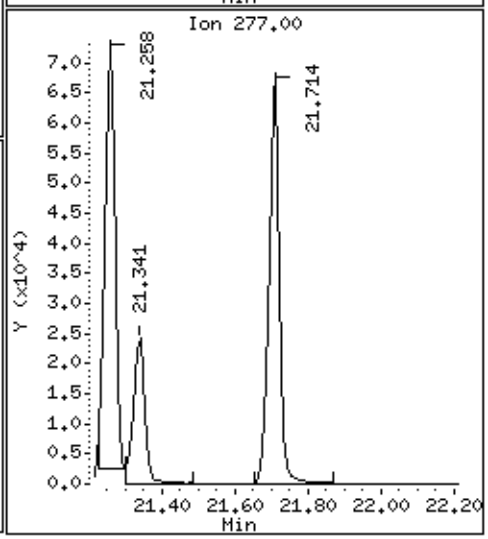












eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1712296-19AA

MODIFIED EPA METHOD TO-13A GC/MS FULL SCAN

File Name:	**9121805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/17 04:39 PM**	
		Date of Extraction: 12/18/17	

Compound	%Recovery	Method Limits
Naphthalene	76	60-120
Acenaphthylene	82	60-120
Acenaphthene	82	60-120
Fluorene	78	60-120
Phenanthrene	80	60-120
Anthracene	78	60-120
Fluoranthene	82	60-120
Pyrene	81	60-120
Chrysene	86	60-120
Benzo(a)anthracene	81	60-120
Benzo(b)fluoranthene	82	60-120
Benzo(k)fluoranthene	85	60-120
Benzo(a)pyrene	83	60-120
Indeno(1,2,3-c,d)pyrene	92	60-120
Dibenz(a,h)anthracene	87	60-120
Phenol	Not Spiked	
Dibenzofuran	Not Spiked	
2,4-Dinitrophenol	Not Spiked	
2,4-Dimethylphenol	Not Spiked	
2-Methylnaphthalene	73	60-120
2-Chlorophenol	Not Spiked	

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Fluorene-d10	65	60-120
Pyrene-d10	76	60-120
Benzo(a)pyrene-d12	77	50-150
Fluoranthene-d10	79	50-150

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 18dec17
Sample Matrix: GAS Fraction: SV
Lab Smp Id: 1712296 Client Smp ID: LCSD
Level: LOW Operator: KV
Data Type: MS DATA SampleType: LCSD
SpikeList File: PAH.spk Quant Type: ISTD
Sublist File: PAH+fs50.sub
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

SPIKE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
28 Naphthalene	50.00	38.16	76.32	60-120
40 2-Chloronaphthalen	50.00	39.98	79.97	60-120
44 Acenaphthylene	50.00	40.93	81.86	60-120
49 Acenaphthene*	50.00	41.13	82.27	60-120
34 2-Methylnaphthalen	50.00	36.58	73.17	60-120
56 Fluorene	50.00	38.76	77.53	60-120
72 Phenanthrene	50.00	39.83	79.66	60-120
73 Anthracene	50.00	38.93	77.85	60-120
79 Fluoranthene*	50.00	41.20	82.41	60-120
84 Pyrene	50.00	40.63	81.26	60-120
96 Benzo(a)Anthracene	50.00	40.43	80.86	60-120
99 Chrysene	50.00	43.17	86.35	60-120
107 Benzo(b)fluoranthe	50.00	41.26	82.52	60-120
109 Benzo(k)fluoranthe	50.00	42.47	84.94	60-120
113 Benzo(a)pyrene*	50.00	41.30	82.61	60-120
117 Indeno(1,2,3-cd)py	50.00	45.79	91.58	60-120
118 Dibenzo(a,h)anthra	50.00	43.68	87.36	60-120
119 Benzo(g,h,i)peryle	50.00	40.99	81.99	60-120

SURROGATE COMPOUND	CONC ADDED ug	CONC RECOVERED ug	% RECOVERED	LIMITS
$ 54 Fluorene-d10	50.00	32.66	65.33	60-120
$ 83 Pyrene-d10	50.00	37.90	75.81	60-120
$ 78 Fluoranthene-d10	50.00	39.37	78.74	50-150
$ 111 Benzo(a)pyrene-d12	50.00	38.36	76.71	50-150

Eurofins Air Toxics Inc.

Modified EPA Method TO-13A

Data file : /chem/msd9.i/18dec17.b/9121805.d
Lab Smp Id: 1712296 Client Smp ID: LCSD
Inj Date : 18-DEC-2017 16:39
Operator : KV Inst ID: msd9.i
Smp Info : ;1712296; LCSD
Misc Info : ,NOTICS
Comment : HP-5MS 30M X 0.25mm X 0.25u
Method : /chem/msd9.i/18dec17.b/917y1212.m
Meth Date : 19-Dec-2017 08:30 ZQ76 Quant Type: ISTD
Cal Date : 12-DEC-2017 18:25 Cal File: 9121214.d
Als bottle: 5 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: PAH+fs50.sub
Target Version: 3.50
Processing Host: eeyore

Concentration Formula: Amt * DF * (Vt/S*Vi)/CF * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vt	1000.00000	Volume of final extract (uL)
S	1.00000	Sample Portion
Vi	1.00000	Volume injected (uL)
CF	1000.00000	Conversion ng->ug

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug)
* 8 1,4-Dichlorobenzene-d4	152	4.781	4.791	(1.000)	205257	40.0000	
* 27 Naphthalene-d8	136	6.428	6.428	(1.000)	820058	40.0000	
* 48 Acenaphthene-d10	164	8.636	8.636	(1.000)	413957	40.0000	
* 71 Phenanthrene-d10	188	10.418	10.418	(1.000)	685976	40.0000	
* 97 Chrysene-d12	240	14.180	14.180	(1.000)	626819	40.0000	
* 115 Perylene-d12	264	18.450	18.460	(1.000)	625723	40.0000	
$ 54 Fluorene-d10	176	9.258	9.257	(1.072)	364057	32.6644	32.66
$ 83 Pyrene-d10	212	12.190	12.190	(0.860)	624089	37.9042	37.90
$ 78 Fluoranthene-d10	212	11.890	11.900	(1.141)	565834	39.3703	39.37
$ 111 Benzo(a)pyrene-d12	264	18.108	18.118	(0.981)	486643	38.3566	38.36
28 Naphthalene	128	6.449	6.449	(1.003)	703683	38.1597	38.16
34 2-Methylnaphthalene	142	7.330	7.330	(1.140)	456460	36.5842	36.58
40 2-Chloronaphthalene	162	7.931	7.931	(0.918)	394551	39.9828	39.98

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug)
44	Acenaphthylene	152	8.449	8.449	(0.978)	636743	40.9276	40.93
49	Acenaphthene*	154	8.677	8.677	(1.005)	396767	41.1339	41.13
56	Fluorene	166	9.289	9.299	(1.076)	449649	38.7627	38.76
72	Phenanthrene	178	10.449	10.449	(1.003)	625528	39.8299	39.83
73	Anthracene	178	10.501	10.501	(1.008)	607992	38.9264	38.93
79	Fluoranthene*	202	11.921	11.921	(1.144)	662815	41.2034	41.20
84	Pyrene	202	12.211	12.211	(0.861)	705815	40.6278	40.63
96	Benzo(a)Anthracene	228	14.149	14.149	(0.998)	625954	40.4307	40.43
99	Chrysene	228	14.232	14.232	(1.004)	639045	43.1729	43.17
107	Benzo(b)fluoranthene	252	17.030	17.040	(0.923)	634037	41.2604	41.26
109	Benzo(k)fluoranthene	252	17.123	17.123	(0.928)	672586	42.4713	42.47
113	Benzo(a)pyrene*	252	18.201	18.221	(0.987)	612246	41.3049	41.30
117	Indeno(1,2,3-cd)pyrene	276	21.258	21.268	(1.499)	592934	45.7921	45.79
118	Dibenzo(a,h)anthracene	278	21.341	21.341	(1.157)	624089	43.6785	43.68
119	Benzo(g,h,i)perylene	276	21.714	21.714	(1.177)	615265	40.9926	40.99

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd9.i
Lab File ID: 9121805.d
Lab Smp Id: 1712296
Analysis Type: SV
Quant Type: ISTD
Operator: KV
Method File: /chem/msd9.i/18dec17.b/917y1212.m
Misc Info: ,NOTICS

Calibration Date: 18-DEC-2017
Calibration Time: 15:39
Client Smp ID: LCSD
Level: LOW
Sample Type: PUF/XAD

Test Mode:
Use Last Continuing Calibrator.
If Continuing Cal. use Initial Cal. Level 7

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	213385	106692	426770	205257	-3.81
27 Naphthalene-d8	899817	449908	1799634	820058	-8.86
48 Acenaphthene-d10	468863	234432	937726	413957	-11.71
71 Phenanthrene-d10	743971	371986	1487942	685976	-7.80
97 Chrysene-d12	659280	329640	1318560	626819	-4.92
115 Perylene-d12	643165	321582	1286330	625723	-2.71

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
8 1,4-Dichlorobenze	4.79	4.29	5.29	4.78	-0.21
27 Naphthalene-d8	6.43	5.93	6.93	6.43	0.00
48 Acenaphthene-d10	8.64	8.14	9.14	8.64	0.00
71 Phenanthrene-d10	10.42	9.92	10.92	10.42	0.00
97 Chrysene-d12	14.18	13.68	14.68	14.18	0.00
115 Perylene-d12	18.46	17.96	18.96	18.45	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

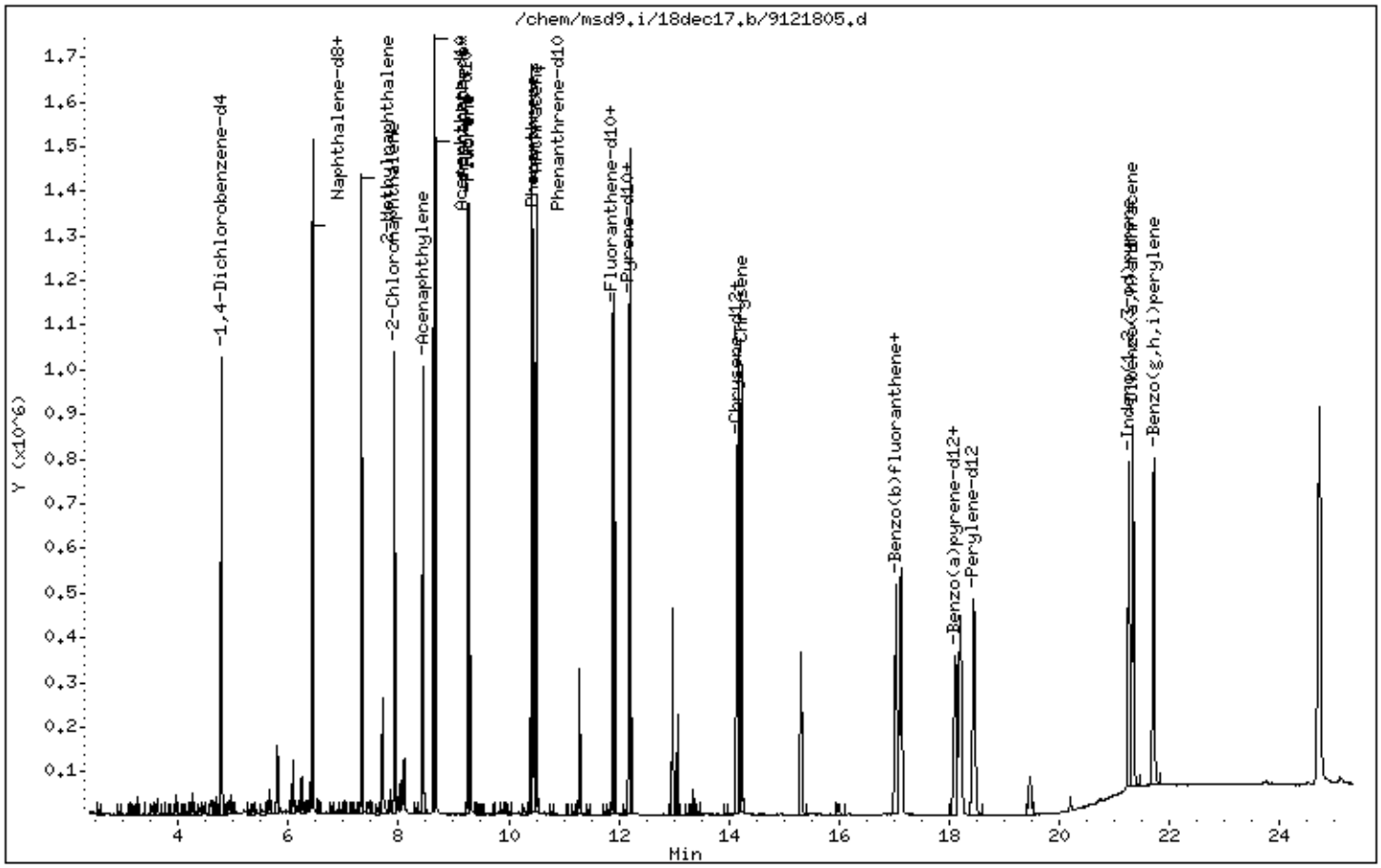
Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

Operator: KV

Column phase: DB-5.625

Column diameter: 0.25



Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

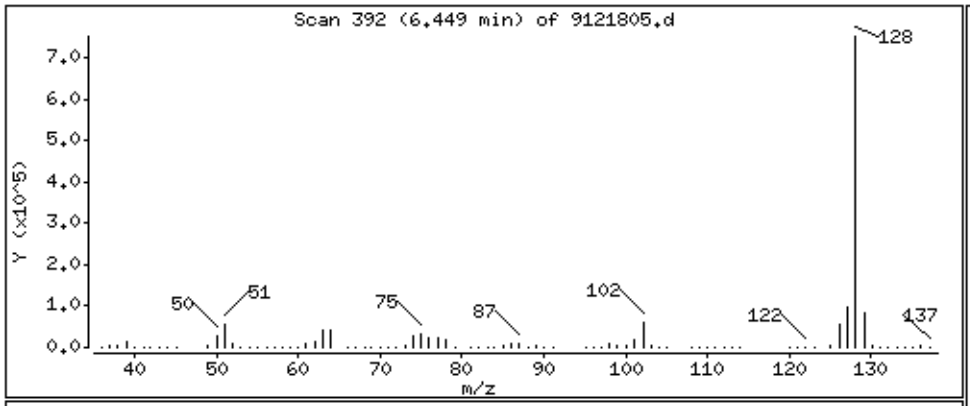
Operator: KV

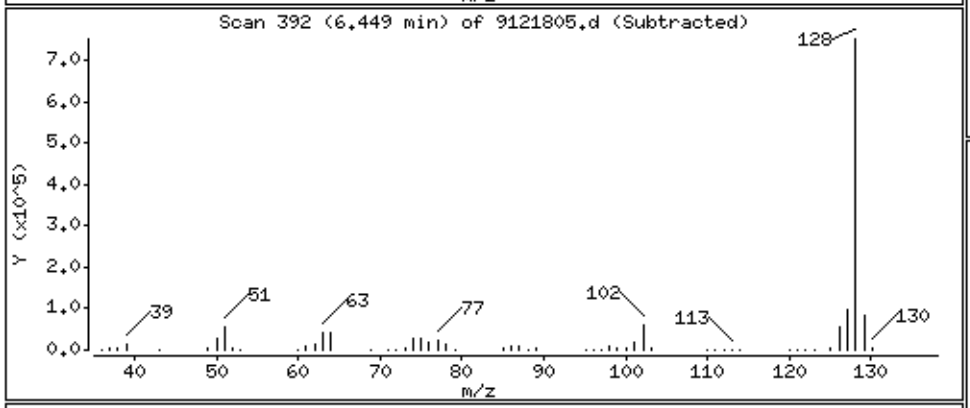
Column phase: DB-5.625

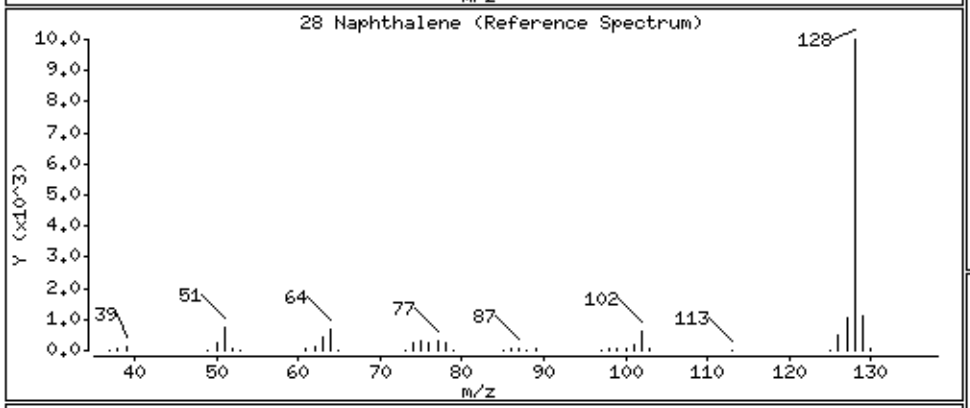
Column diameter: 0.25

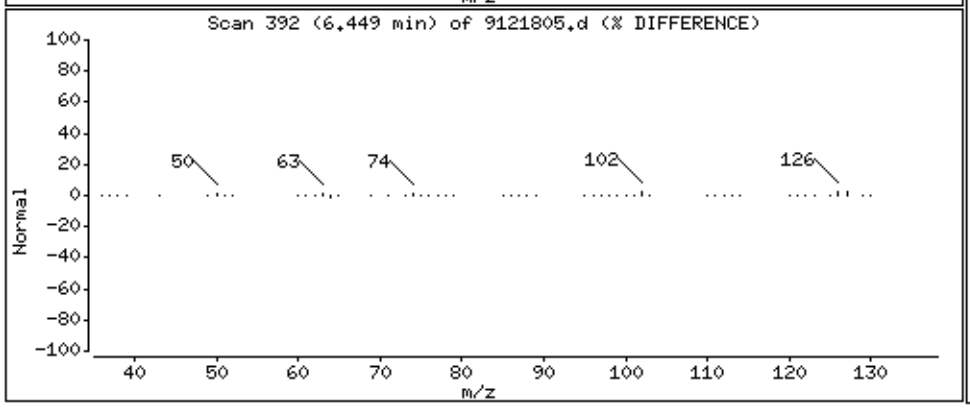
28 Naphthalene

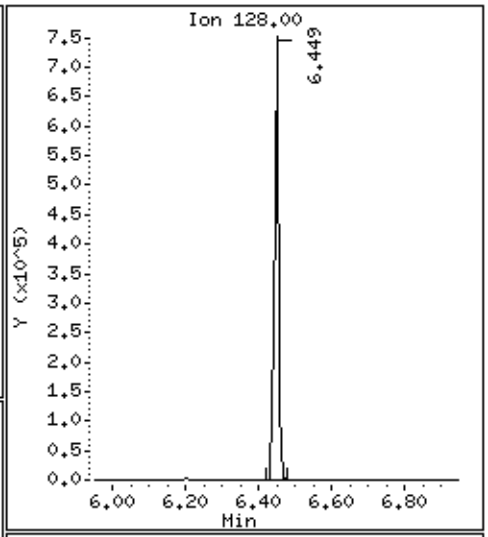
Concentration: 38.16 ug

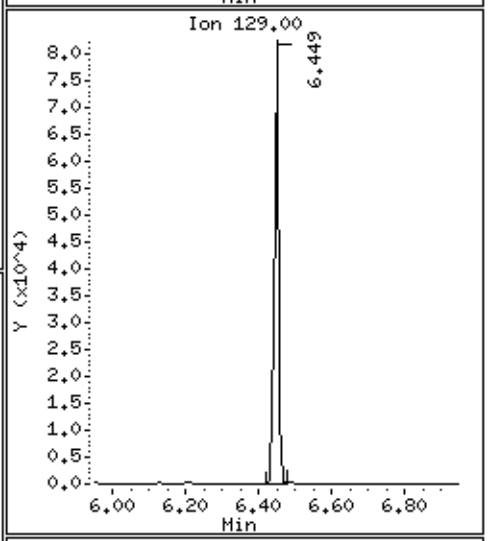


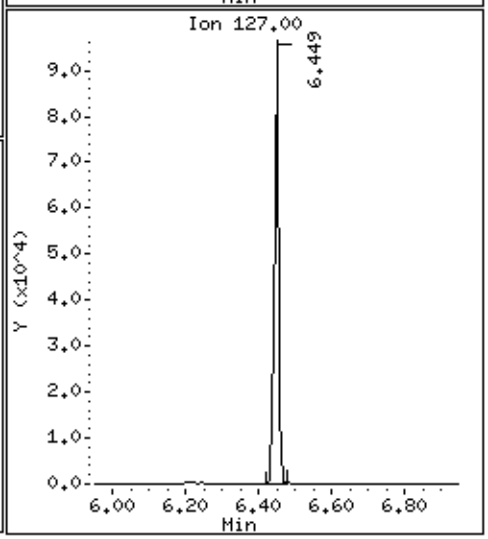












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

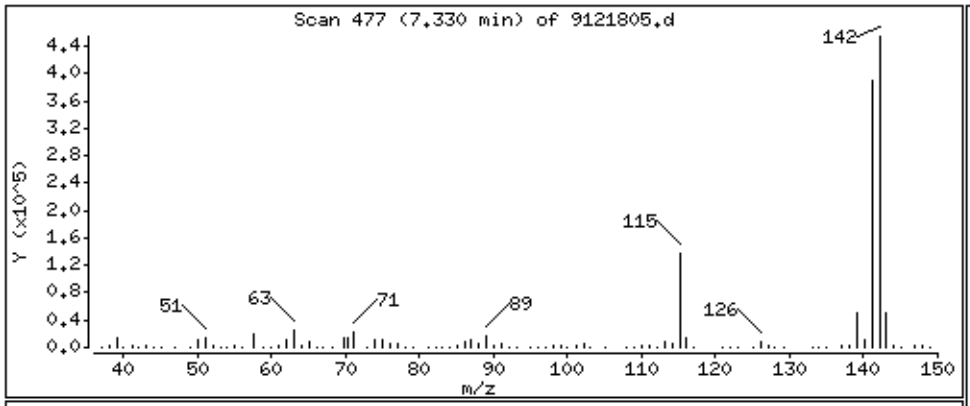
Operator: KV

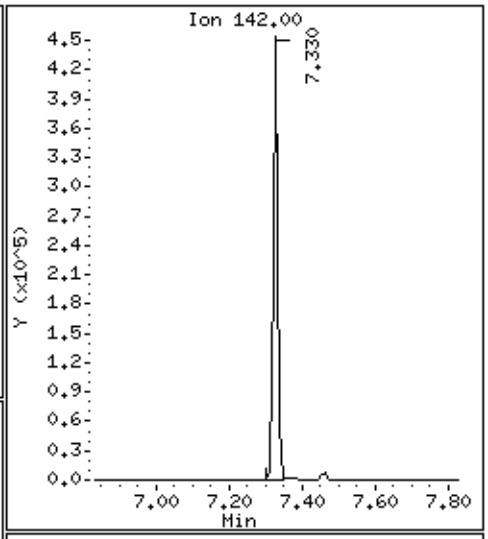
Column phase: DB-5.625

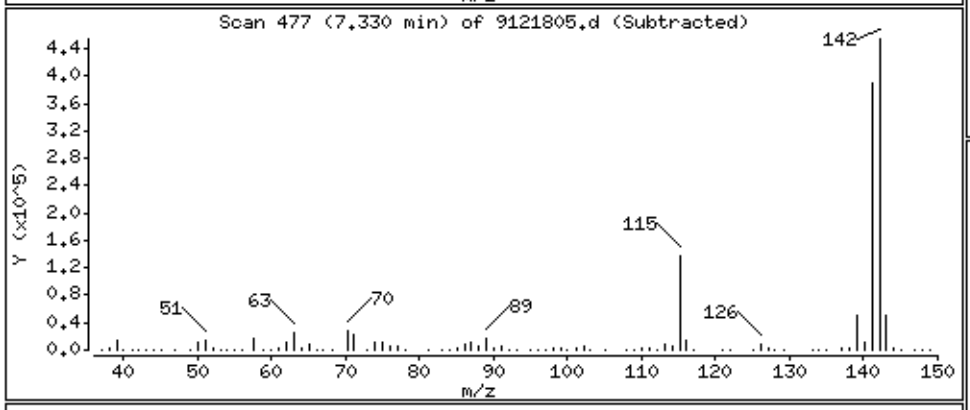
Column diameter: 0.25

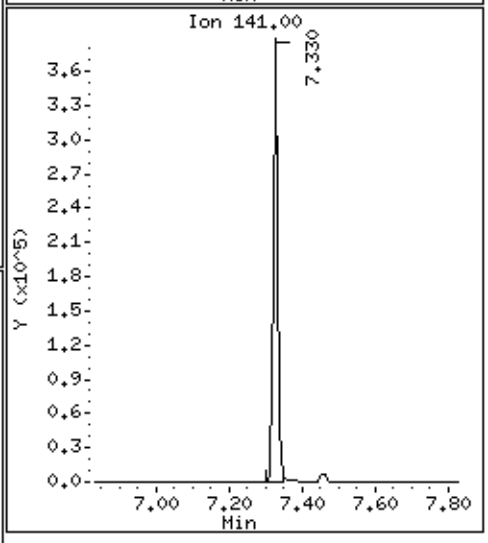
34 2-Methylnaphthalene

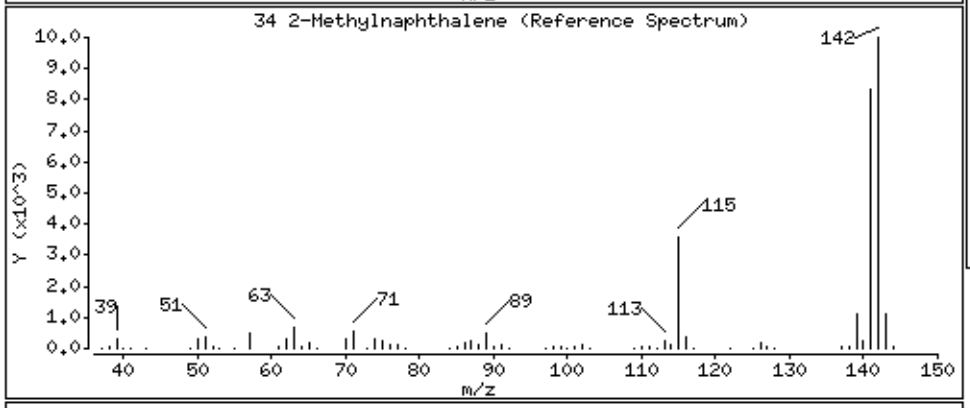
Concentration: 36.58 ug

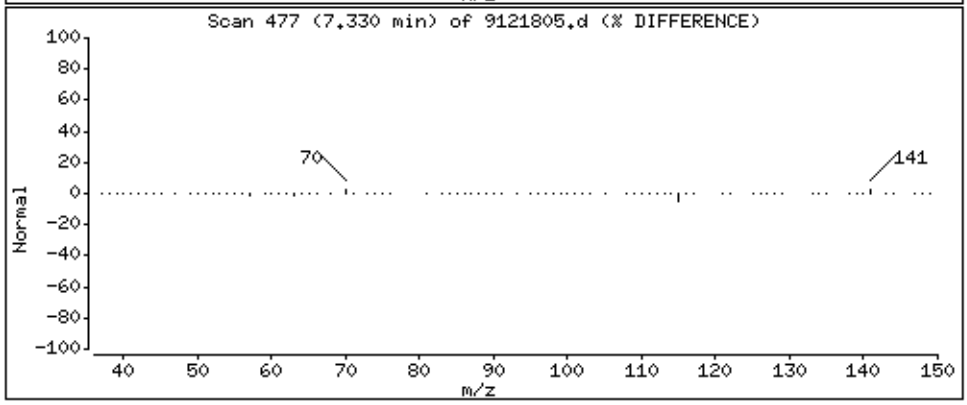












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

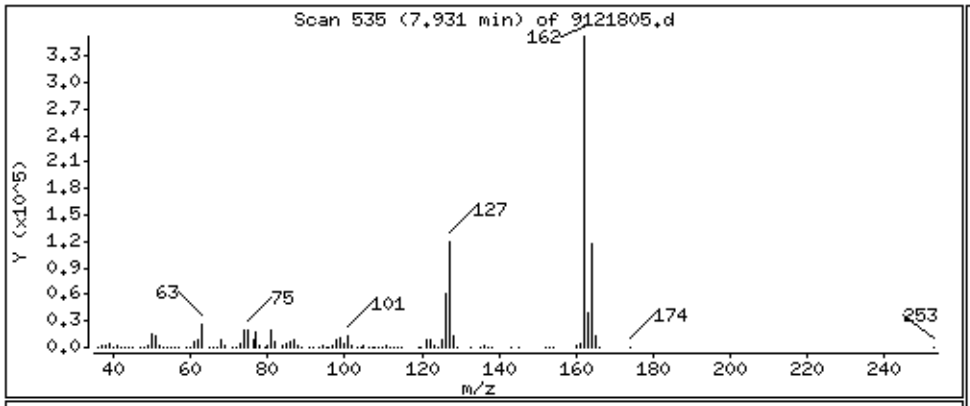
Operator: KV

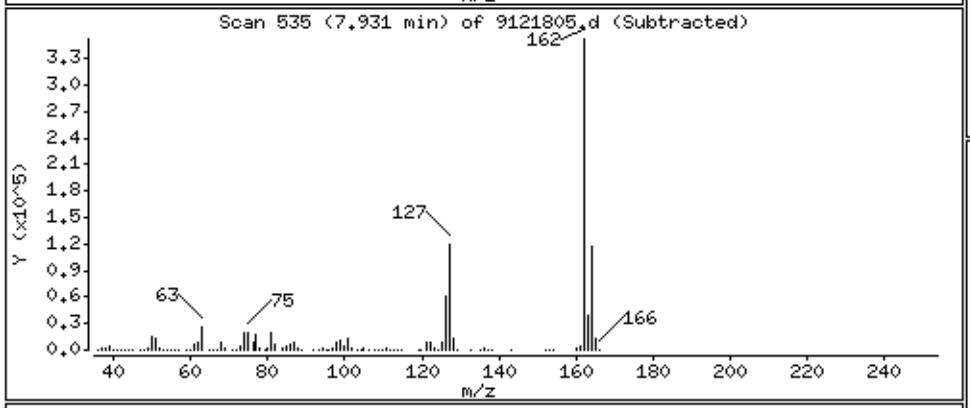
Column phase: DB-5.625

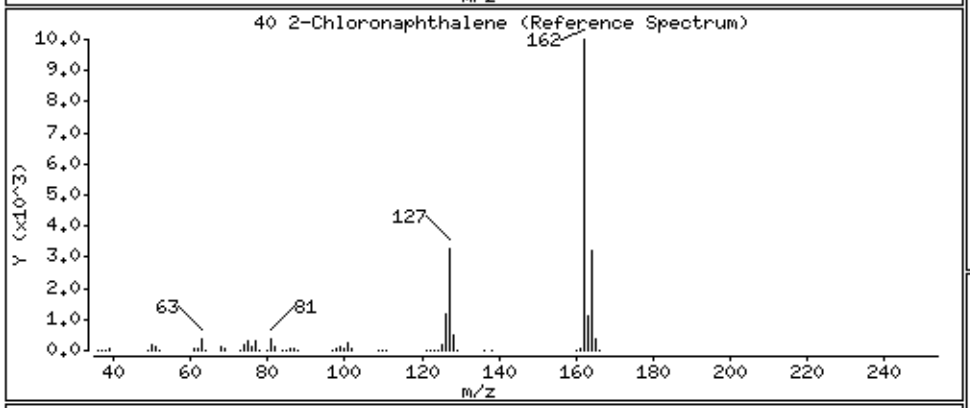
Column diameter: 0.25

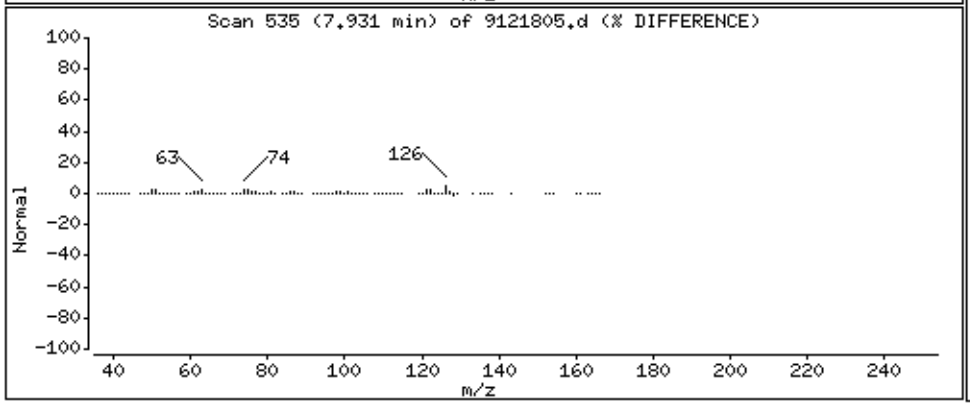
40 2-Chloronaphthalene

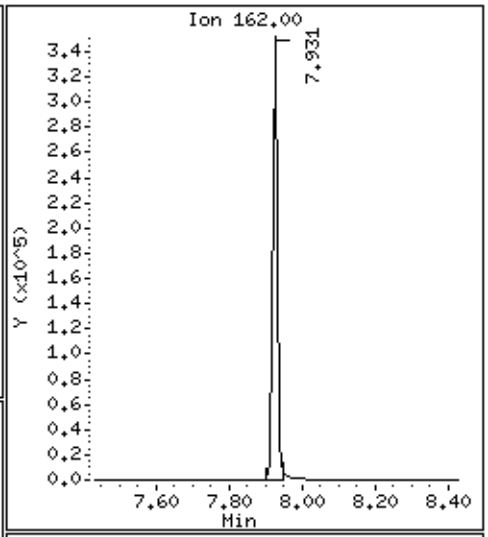
Concentration: 39.98 ug

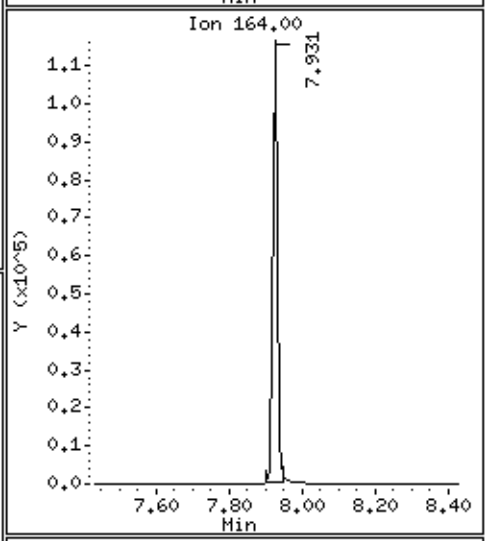


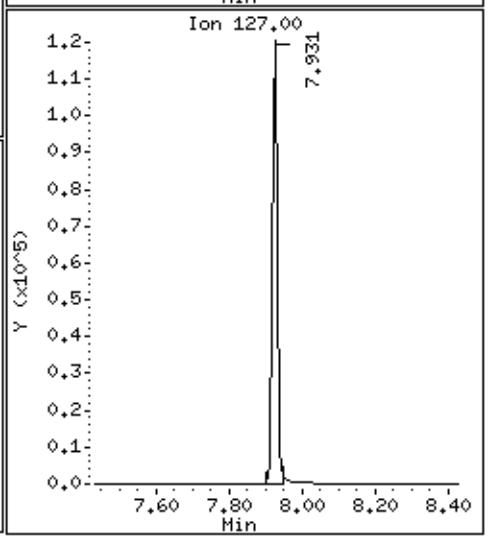












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

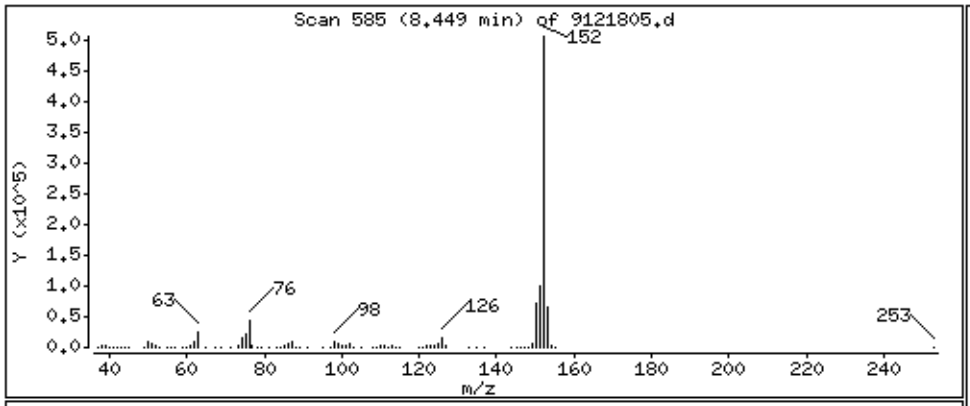
Operator: KV

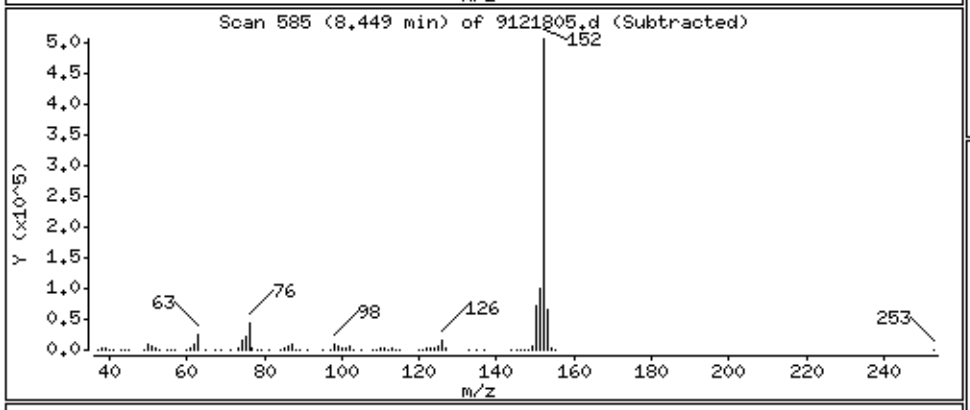
Column phase: DB-5.625

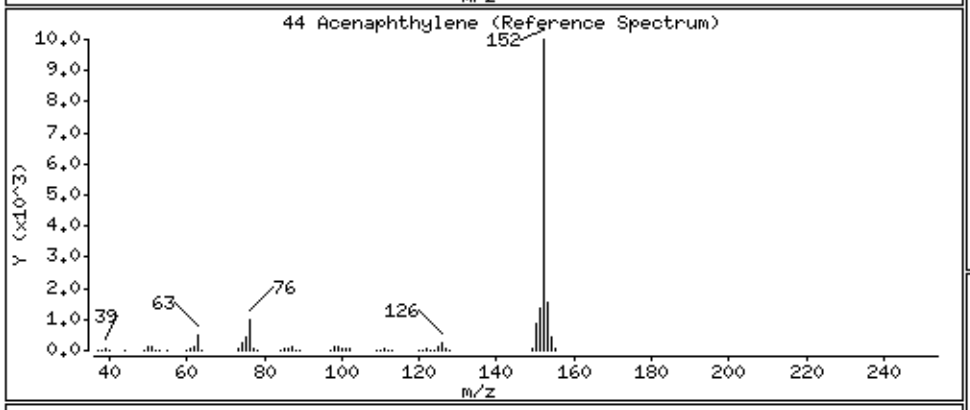
Column diameter: 0.25

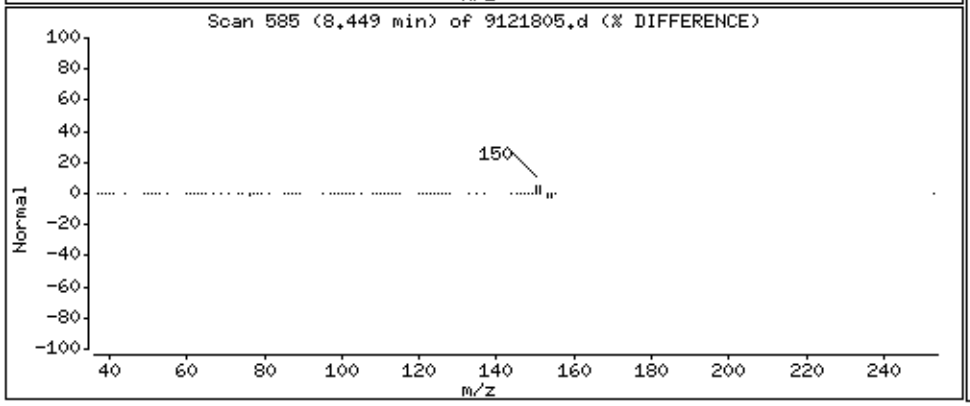
44 Acenaphthylene

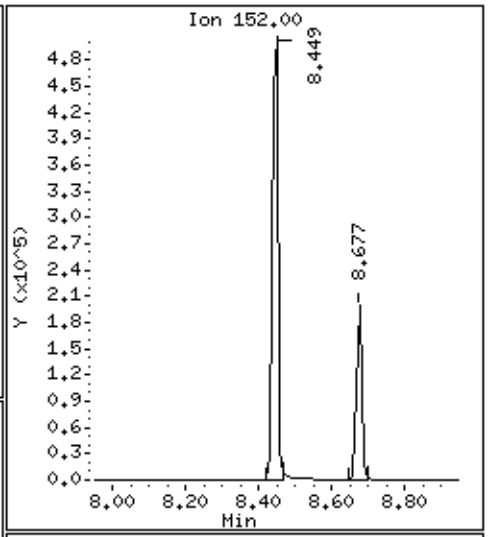
Concentration: 40.93 ug

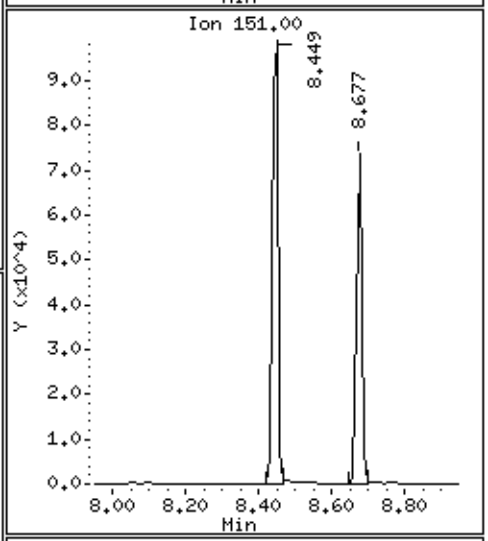


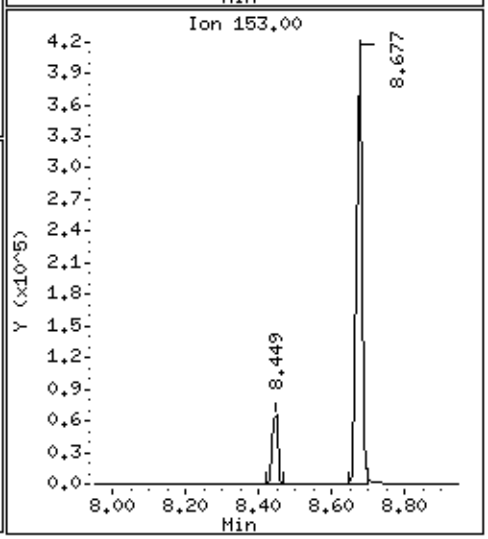












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

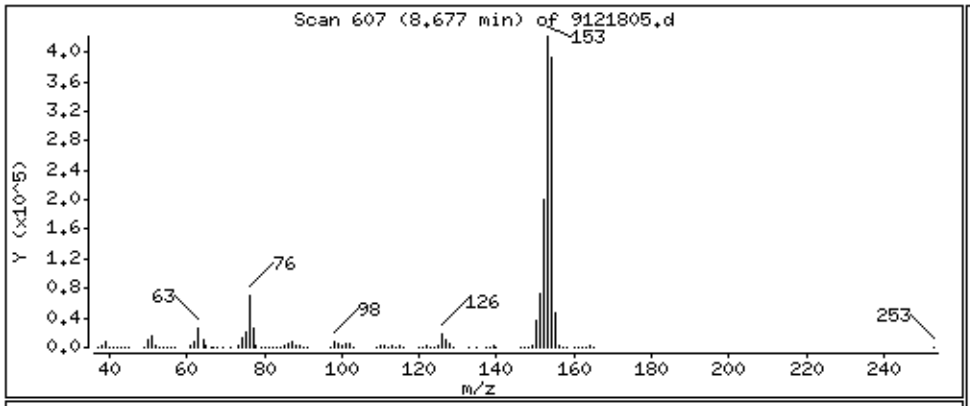
Operator: KV

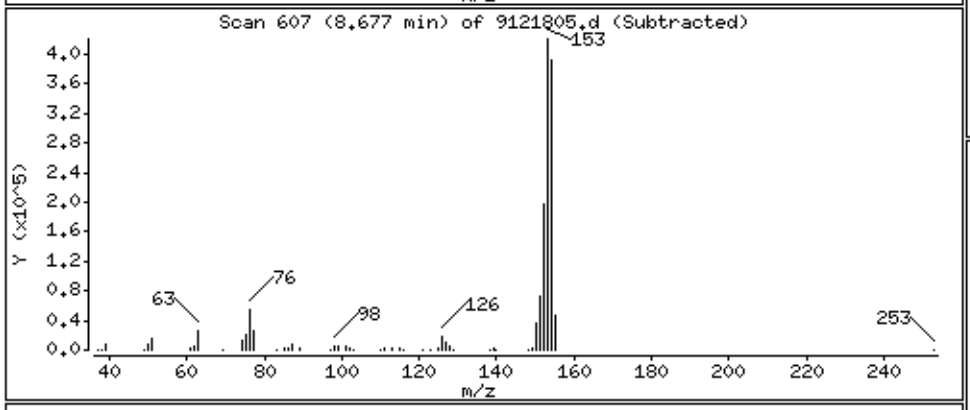
Column phase: DB-5.625

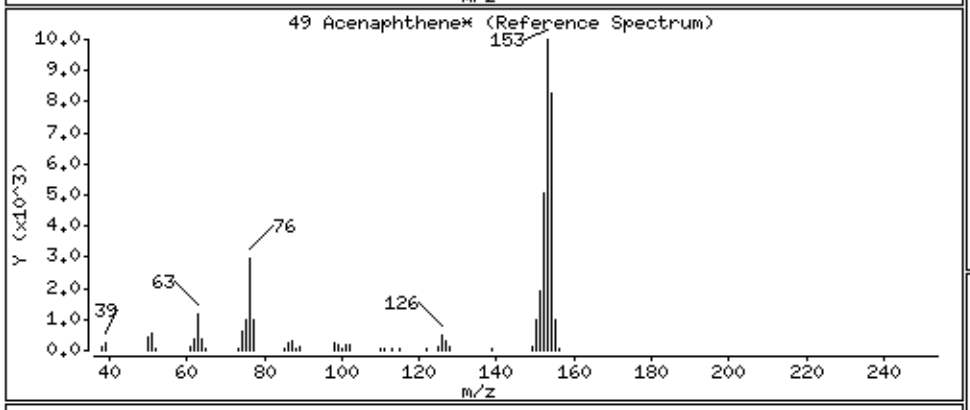
Column diameter: 0.25

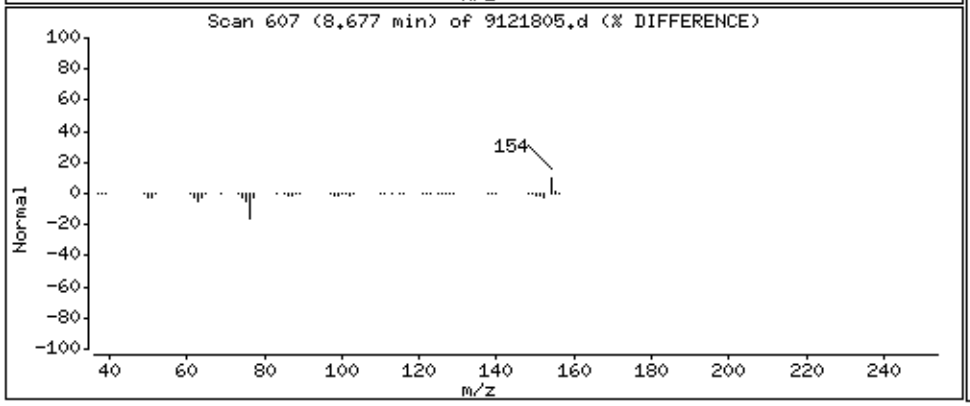
49 Acenaphthene*

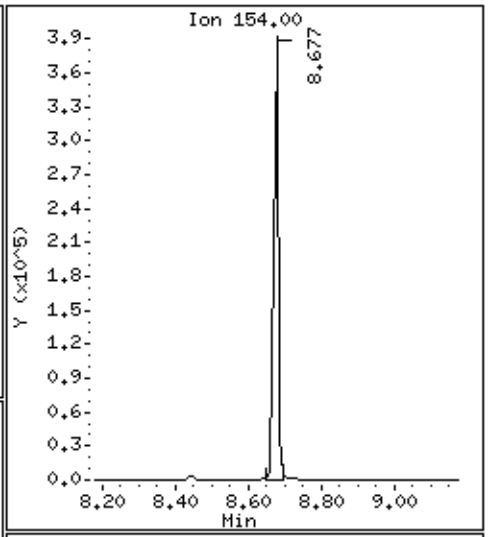
Concentration: 41.13 ug

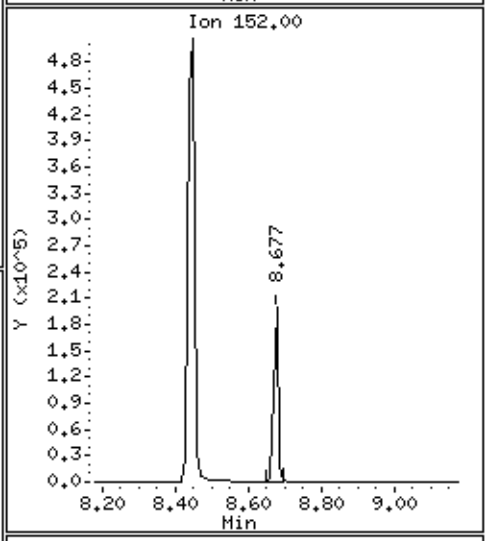


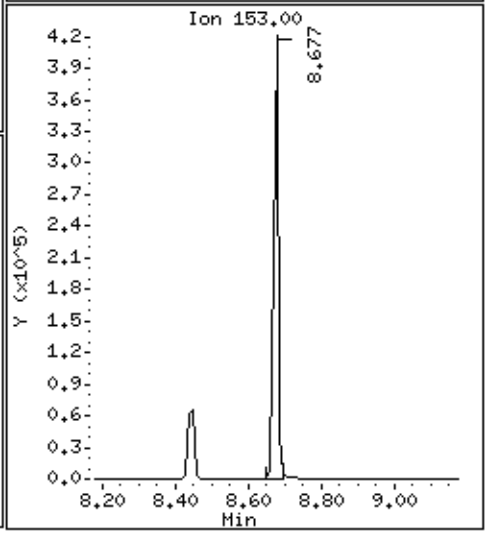












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

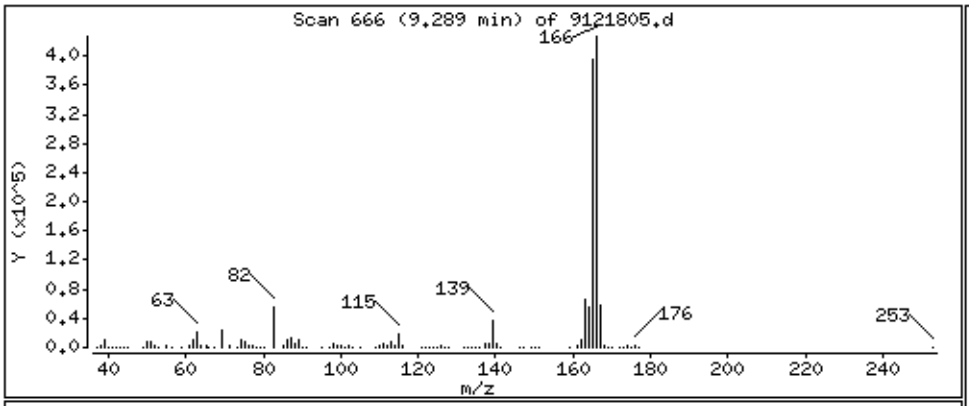
Operator: KV

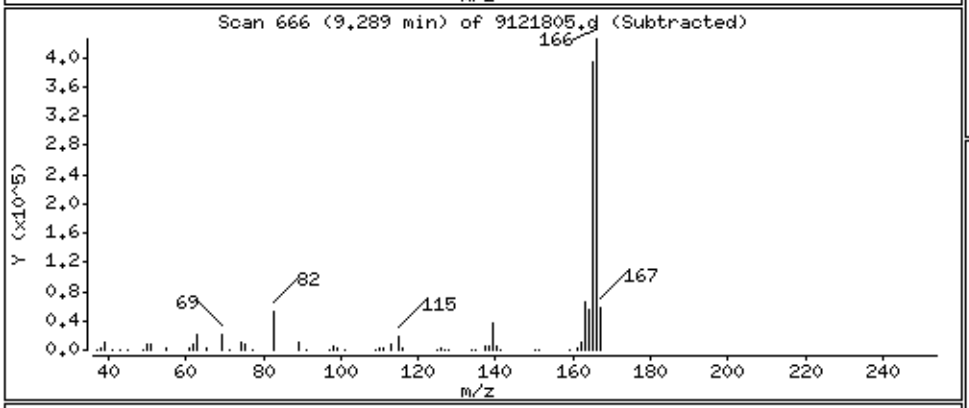
Column phase: DB-5.625

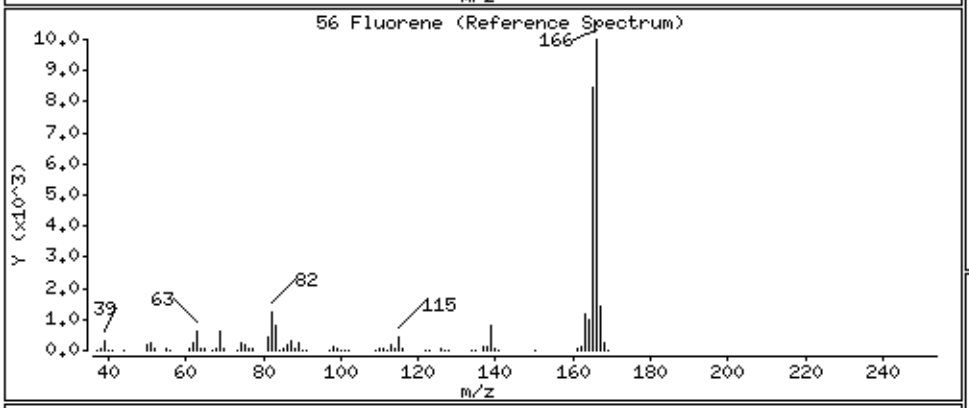
Column diameter: 0.25

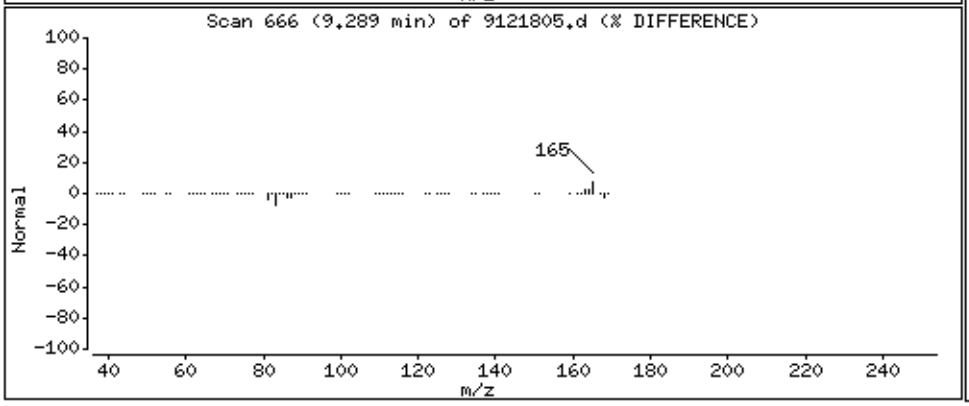
56 Fluorene

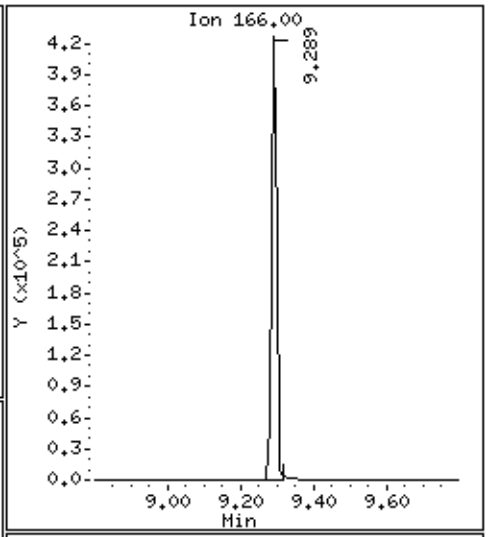
Concentration: 38.76 ug

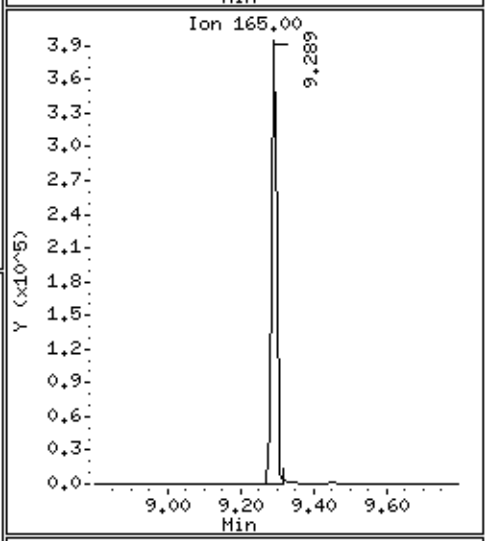


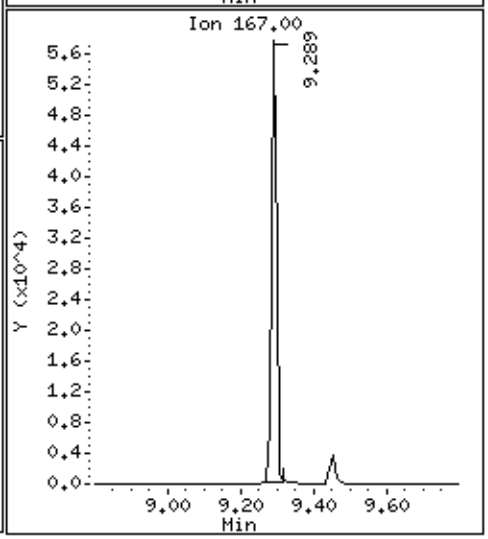












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

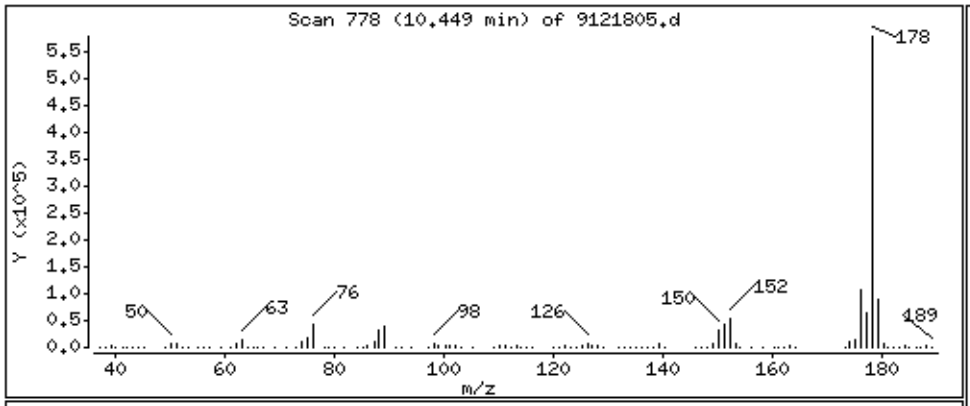
Operator: KV

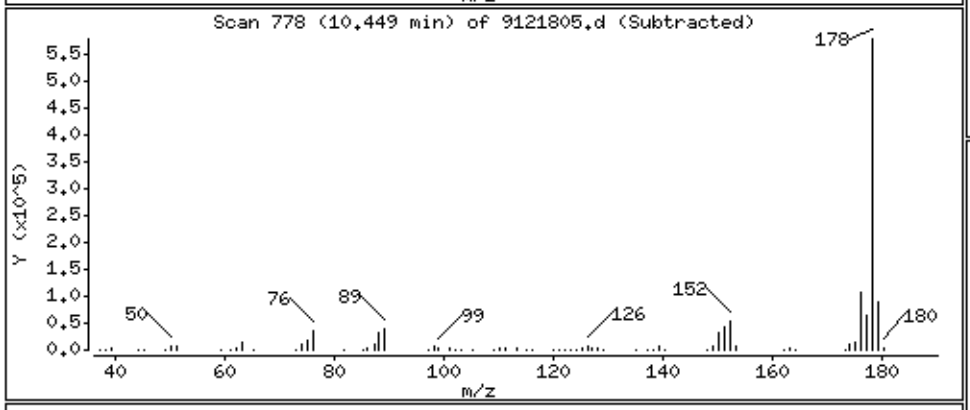
Column phase: DB-5.625

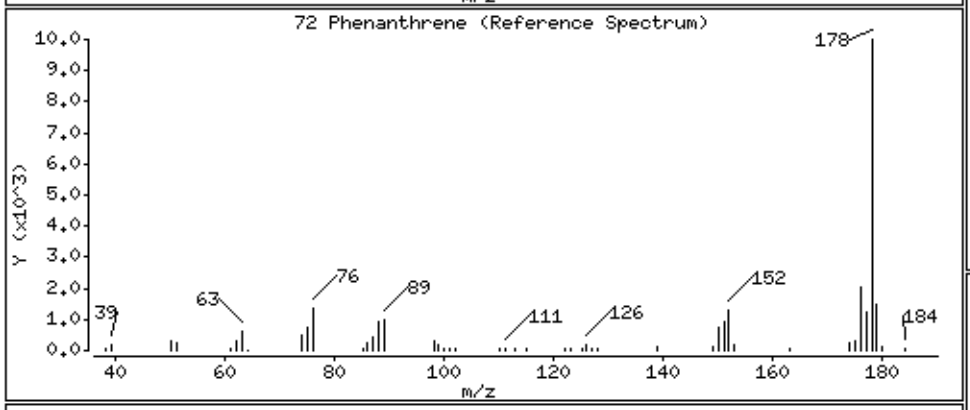
Column diameter: 0.25

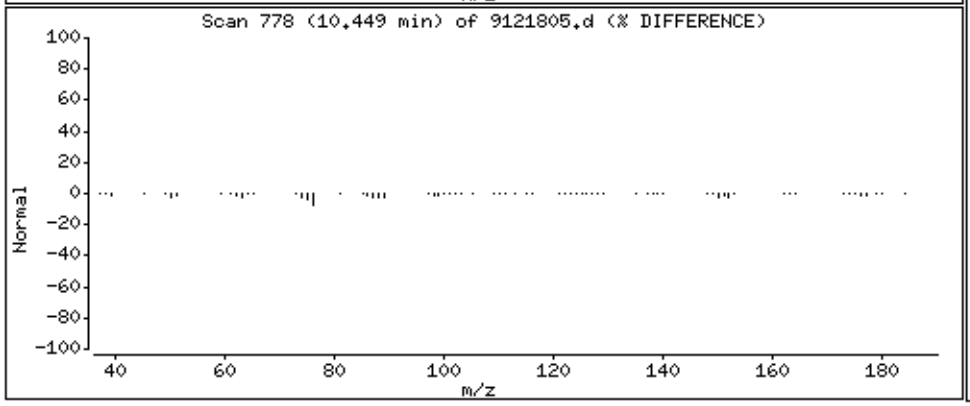
72 Phenanthrene

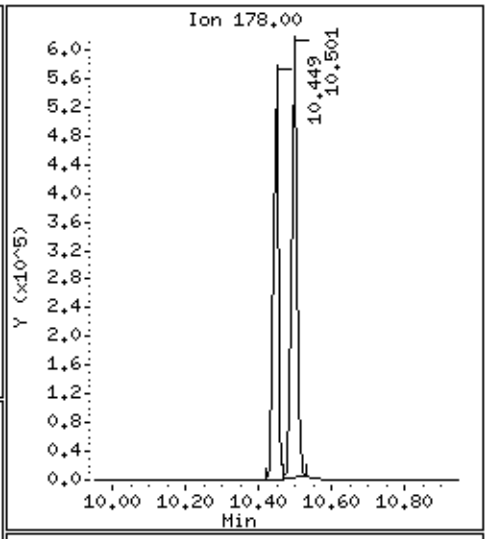
Concentration: 39.83 ug

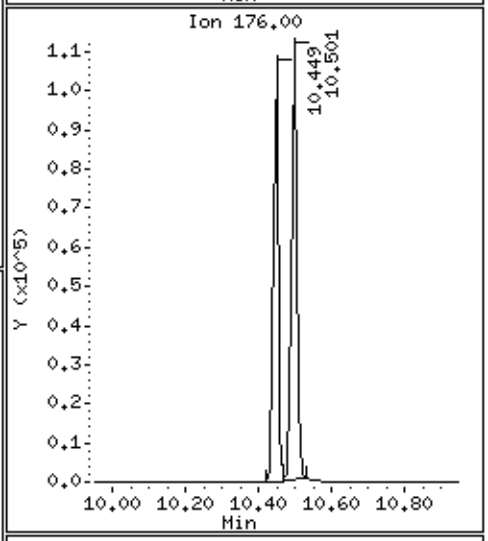


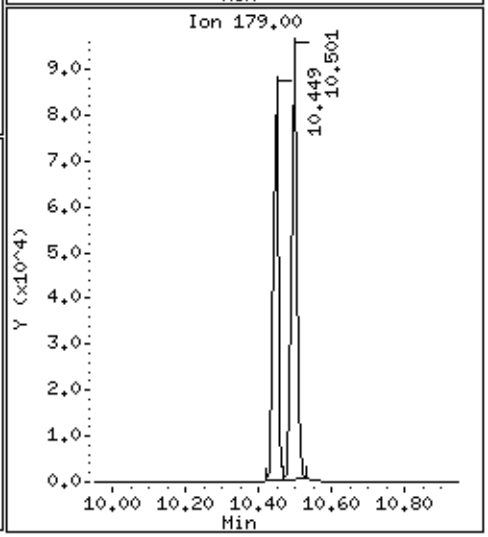












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

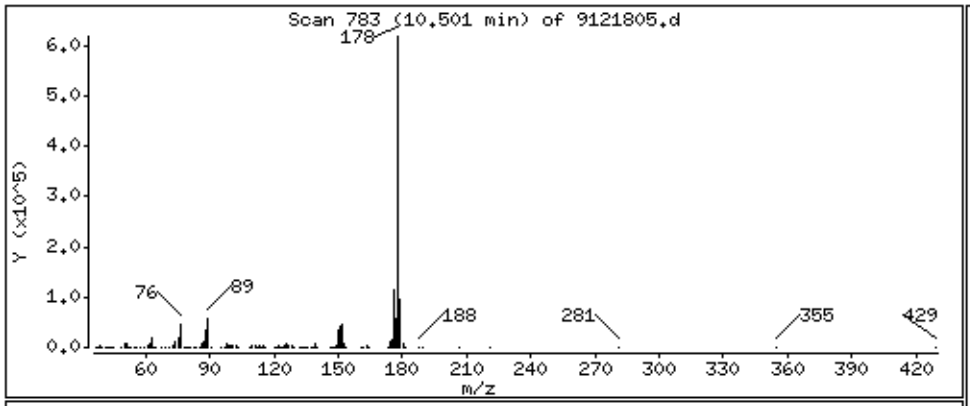
Operator: KV

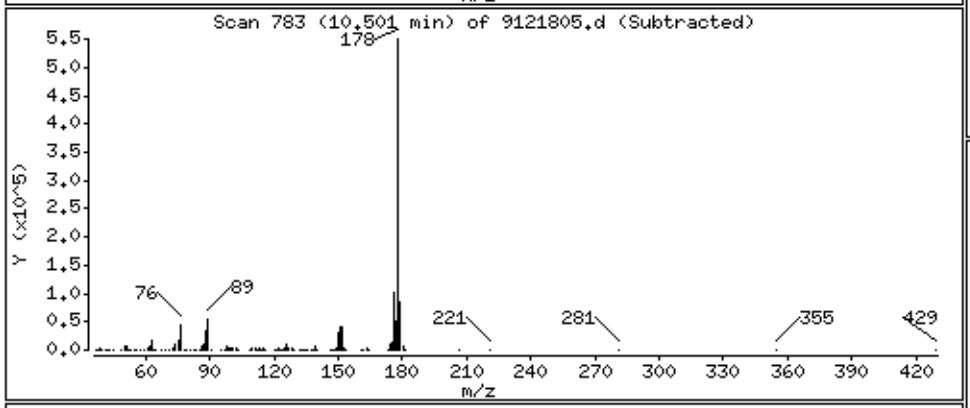
Column phase: DB-5.625

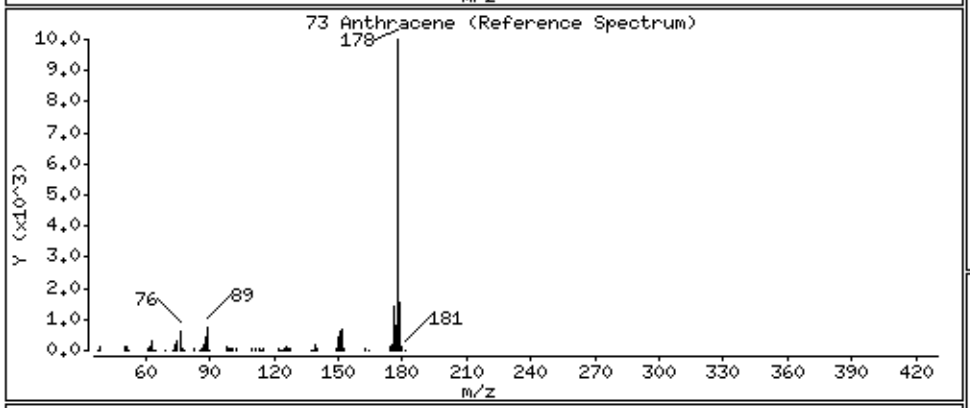
Column diameter: 0.25

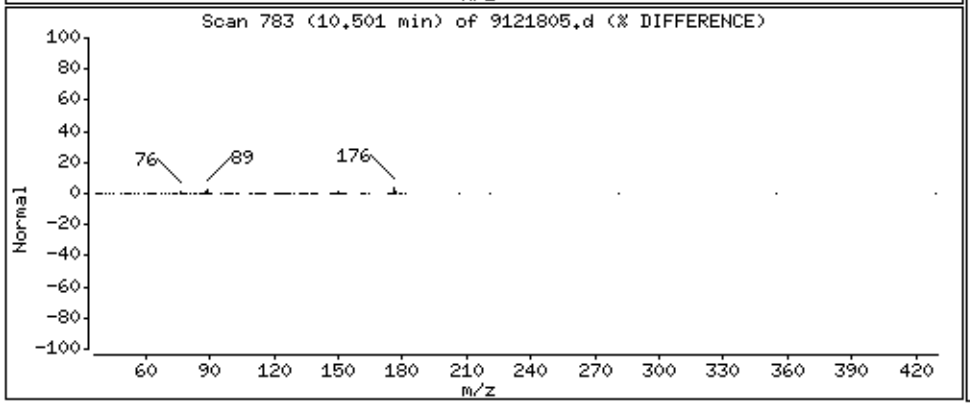
73 Anthracene

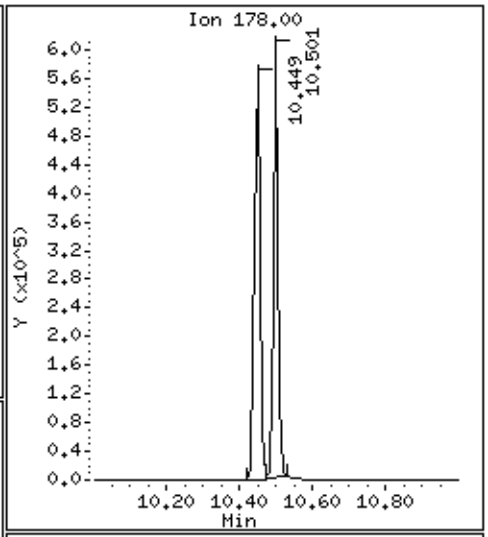
Concentration: 38.93 ug

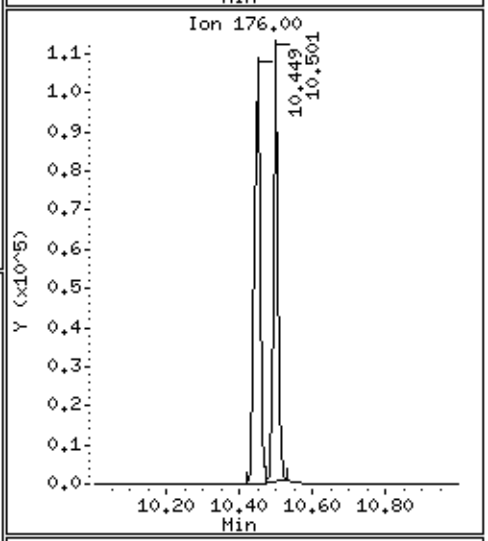


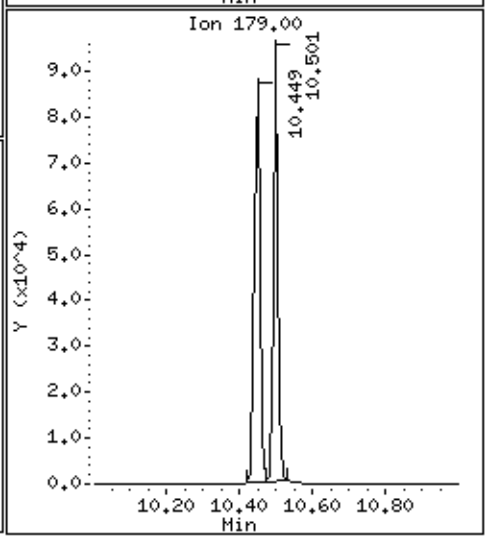












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

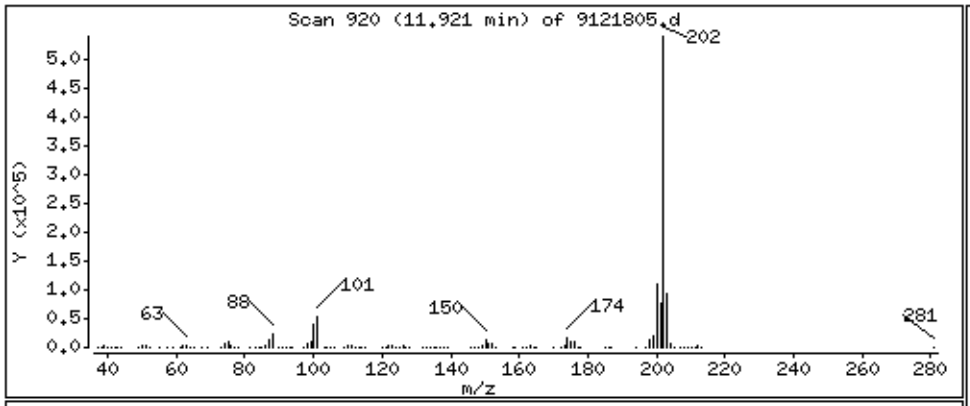
Operator: KV

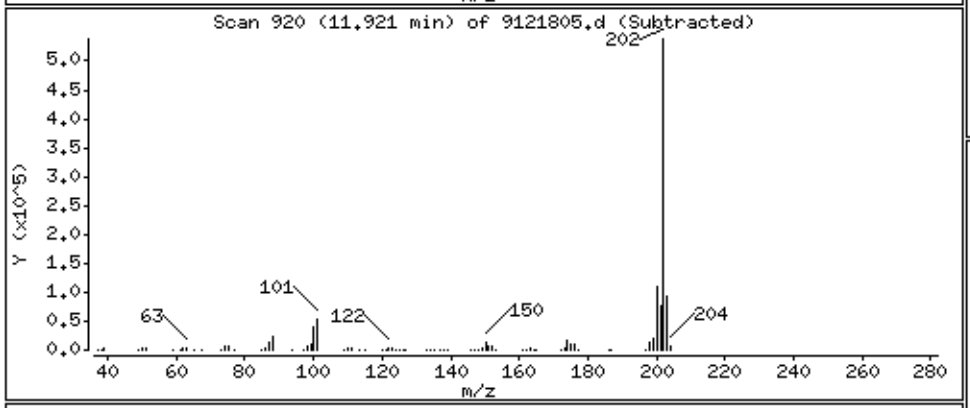
Column phase: DB-5.625

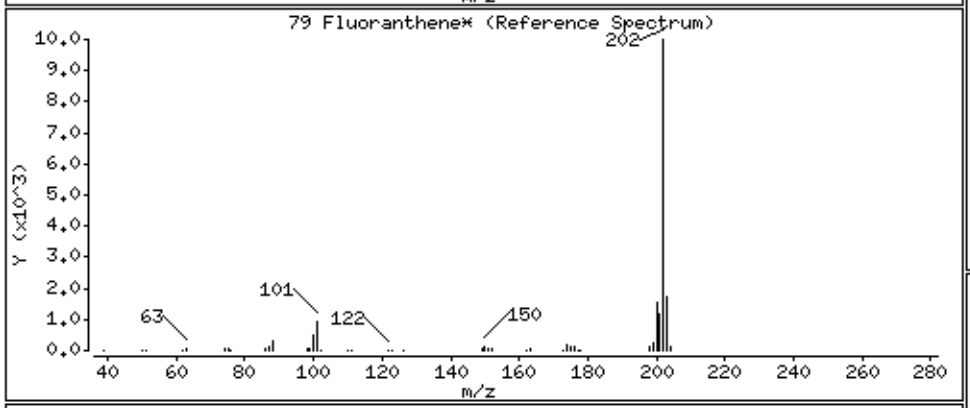
Column diameter: 0.25

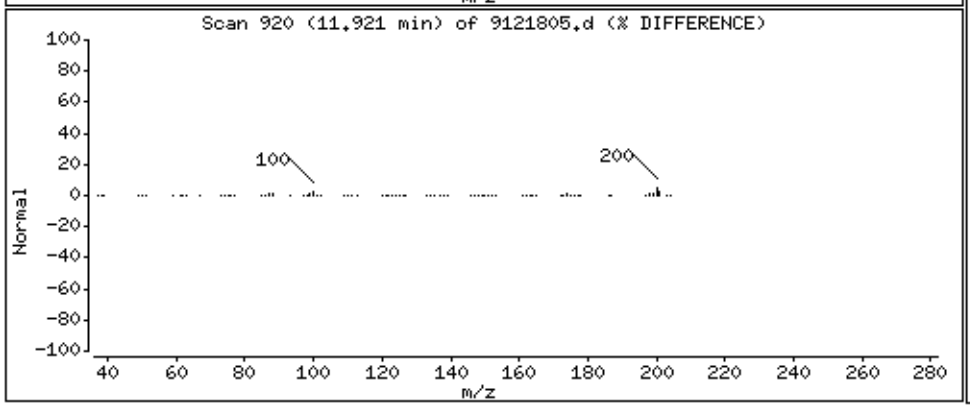
79 Fluoranthene*

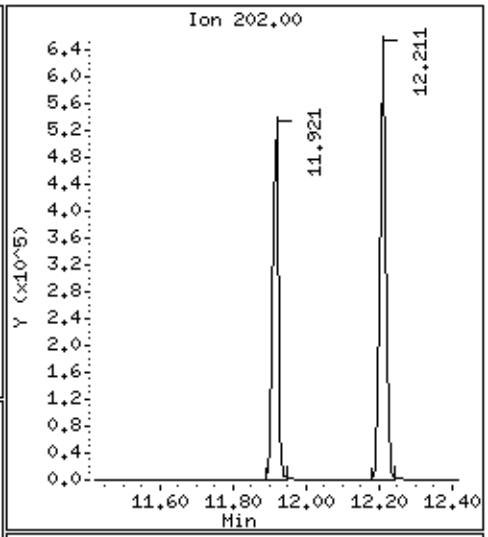
Concentration: 41.20 ug

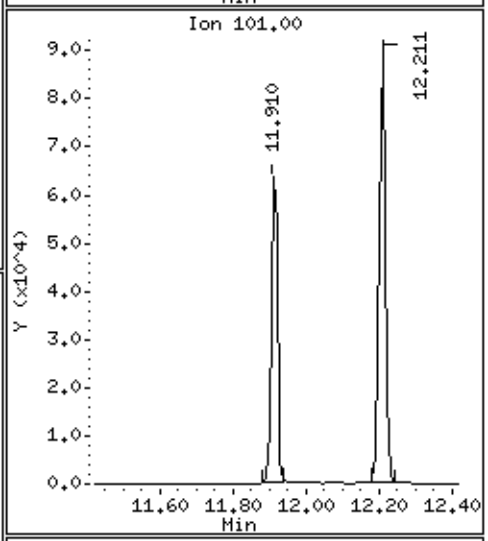


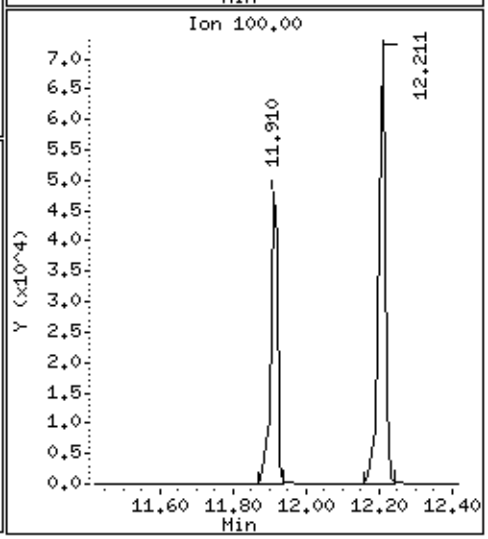












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

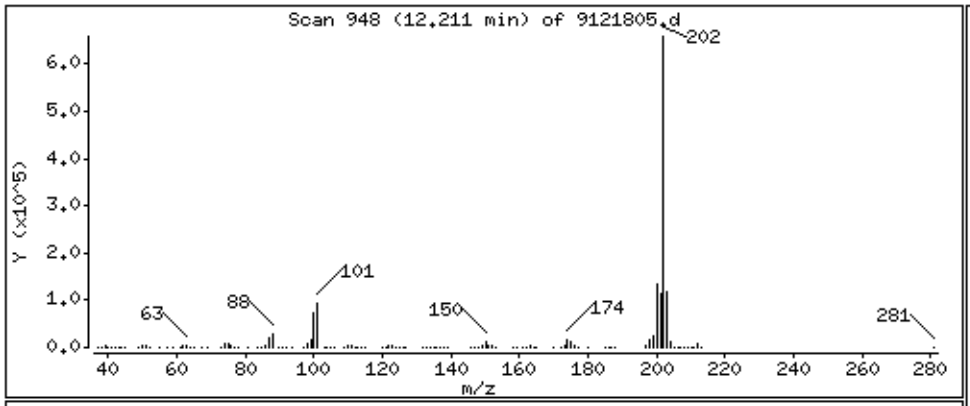
Operator: KV

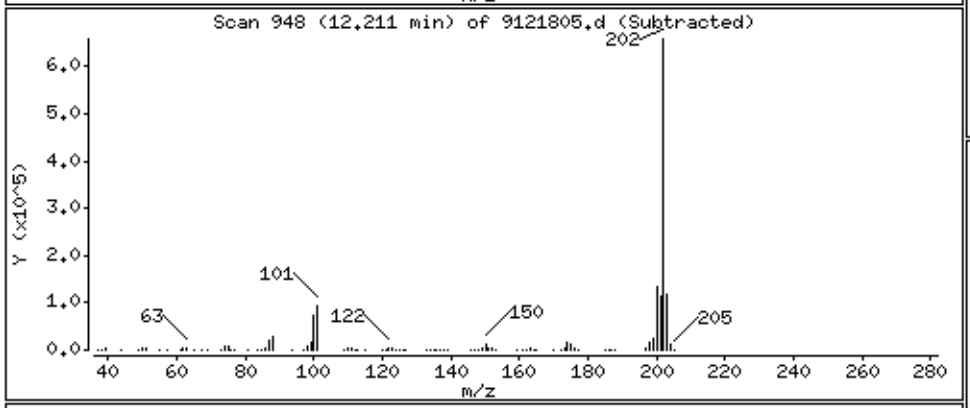
Column phase: DB-5.625

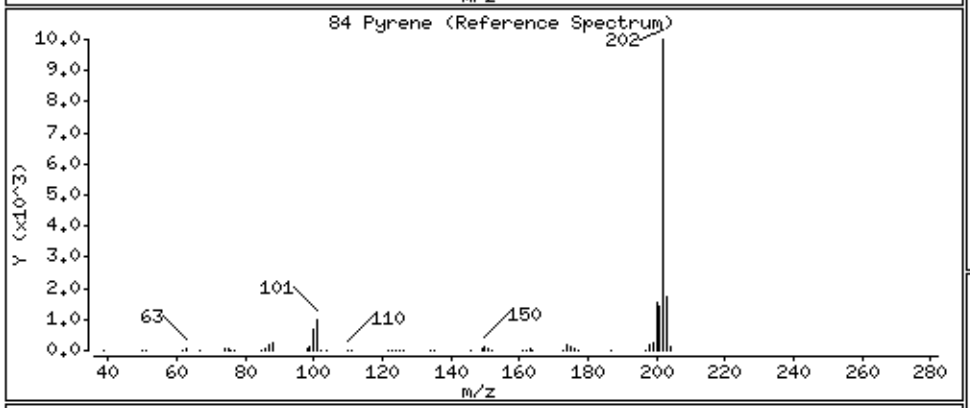
Column diameter: 0.25

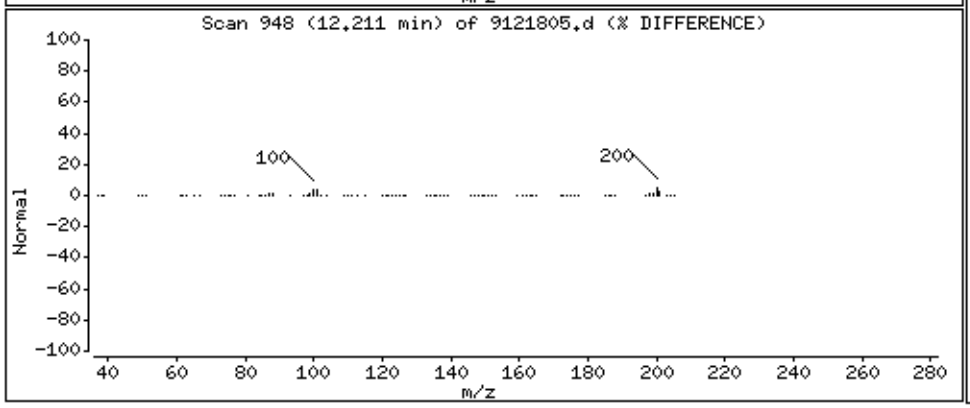
84 Pyrene

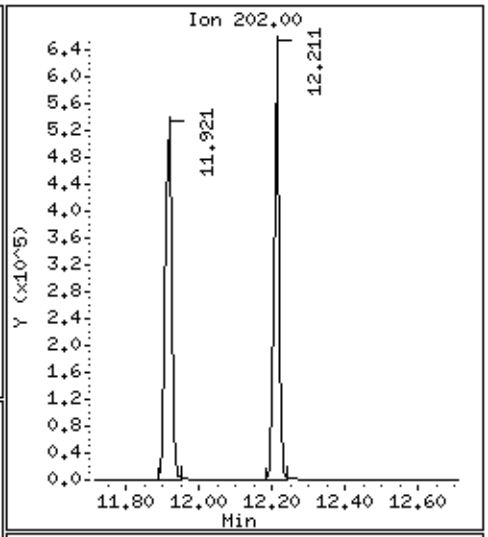
Concentration: 40.63 ug

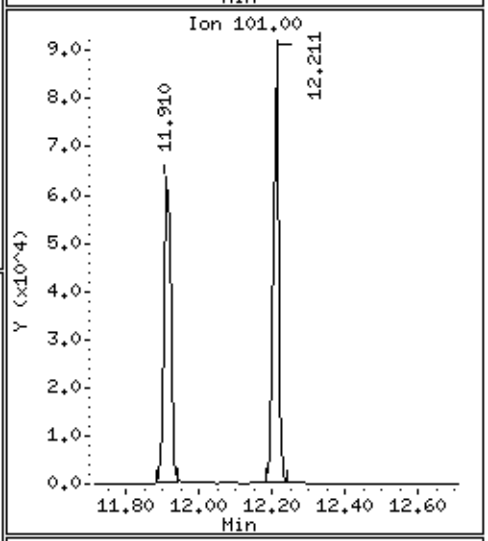


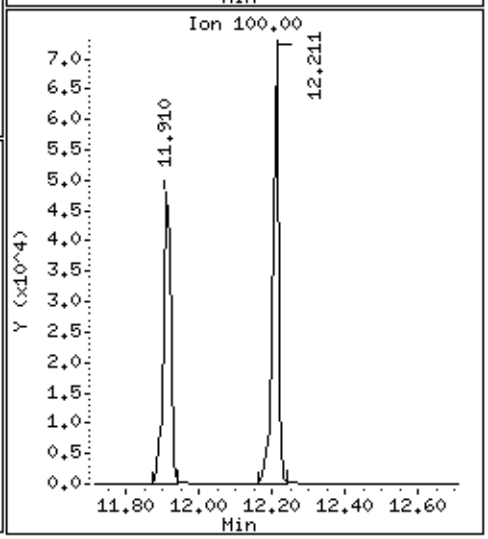












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

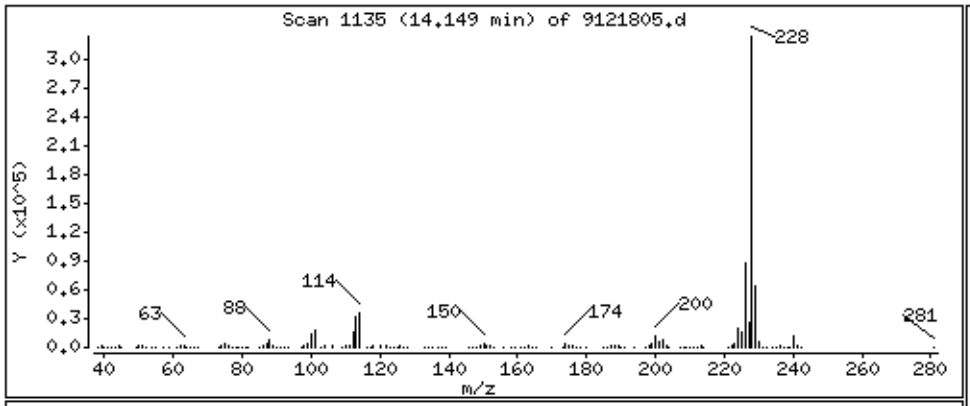
Operator: KV

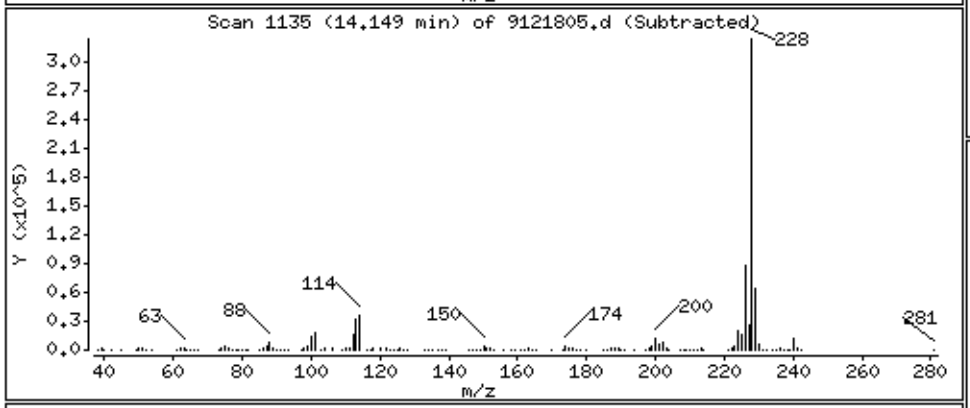
Column phase: DB-5.625

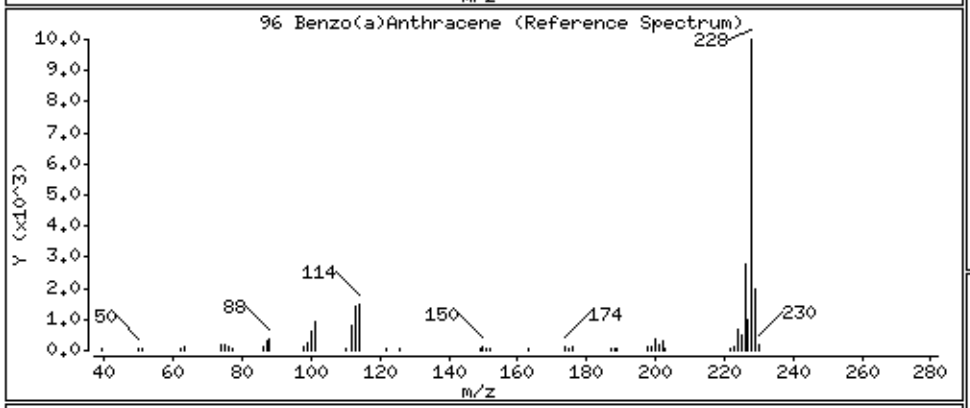
Column diameter: 0.25

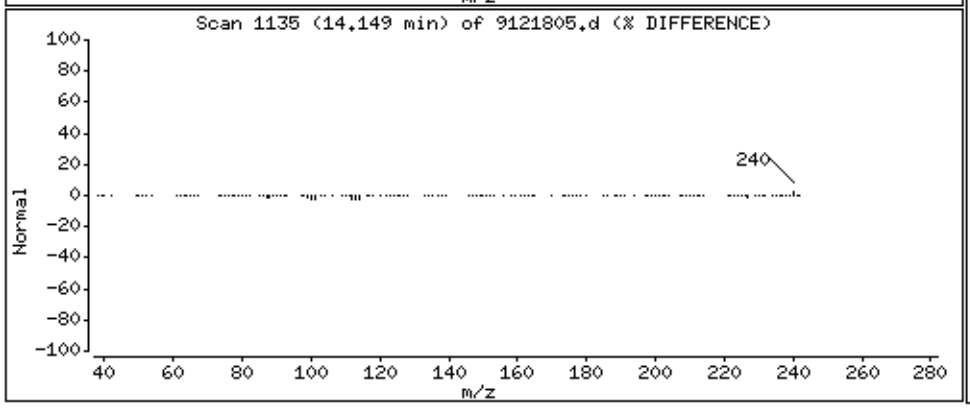
96 Benzo(a)Anthracene

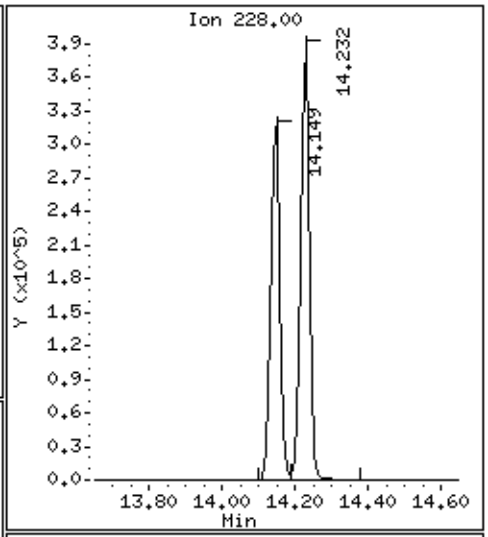
Concentration: 40.43 ug

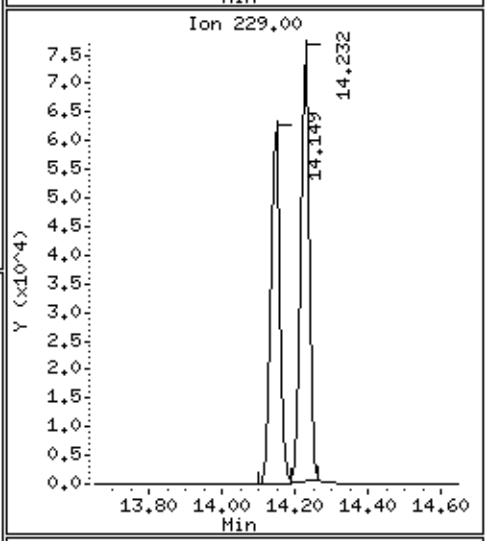


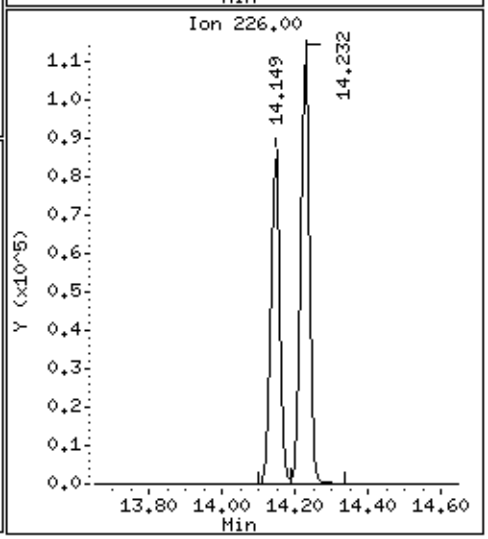












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

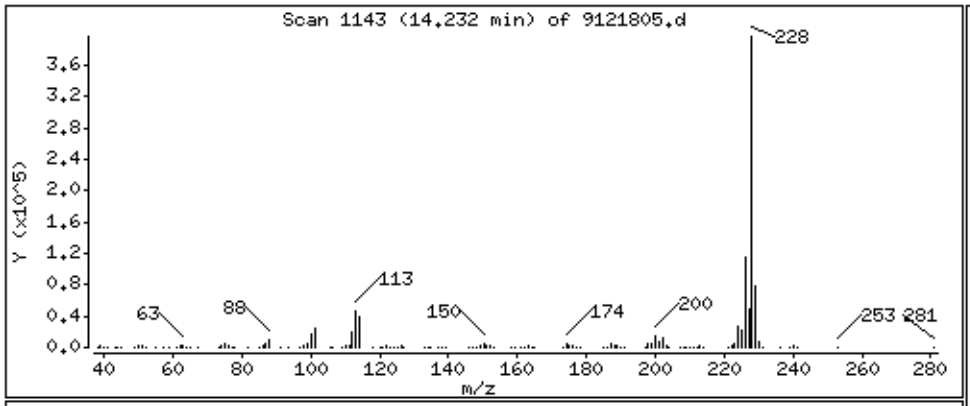
Operator: KV

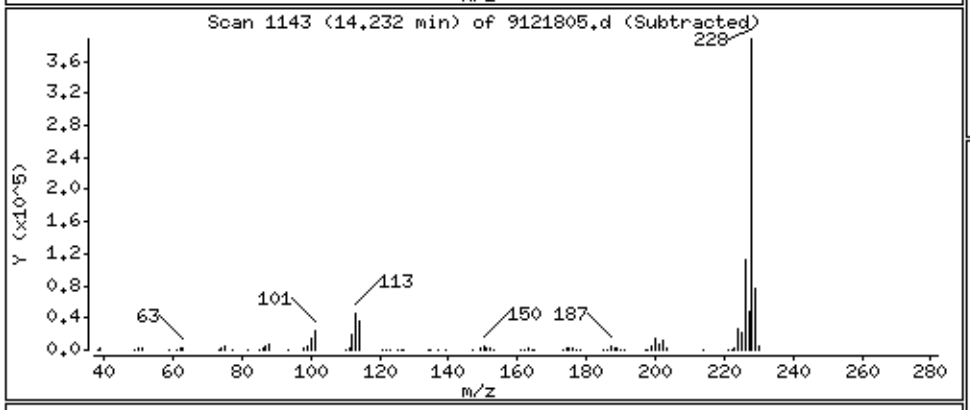
Column phase: DB-5.625

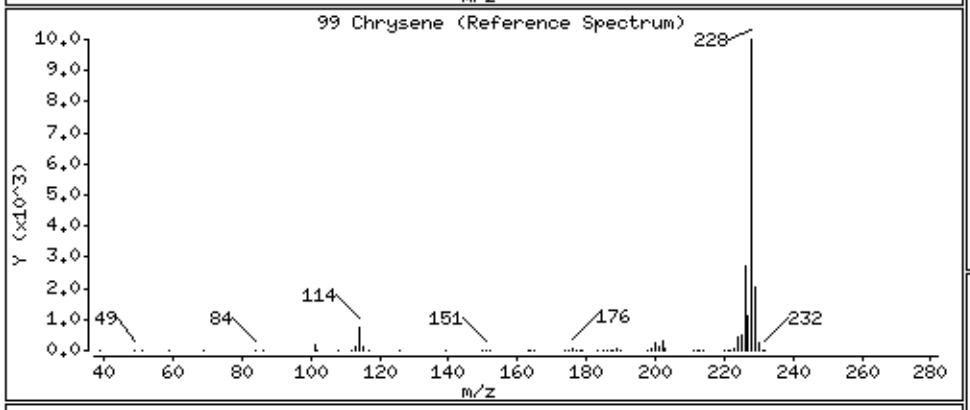
Column diameter: 0.25

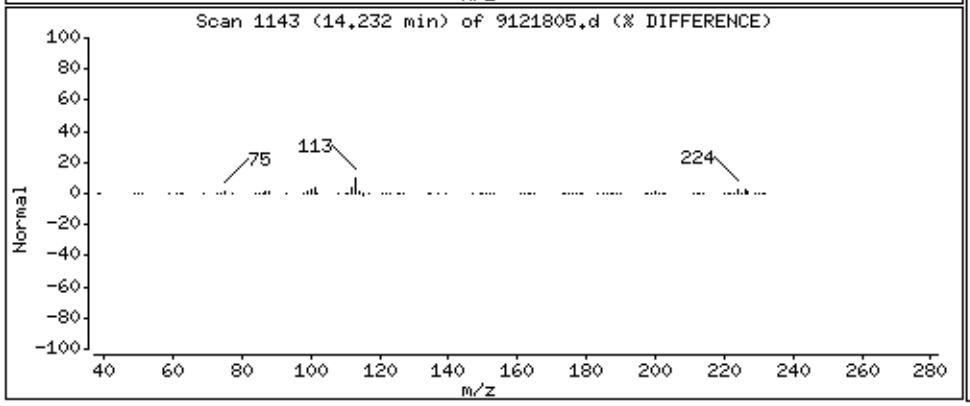
99 Chrysene

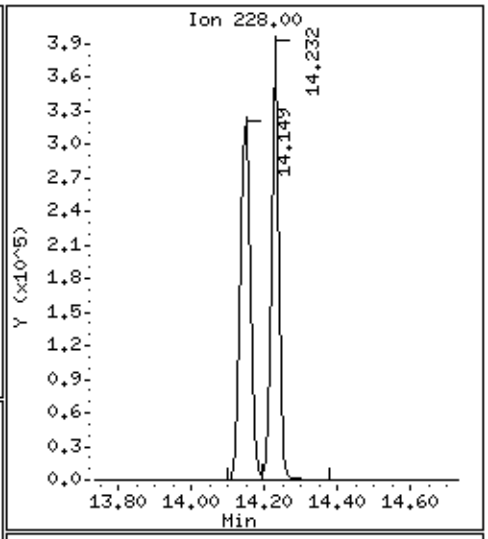
Concentration: 43.17 ug

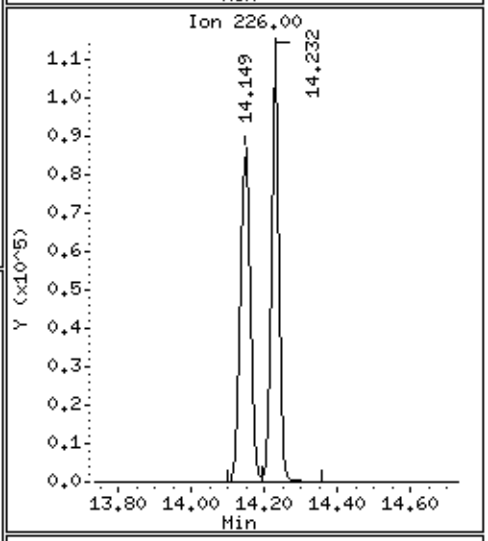


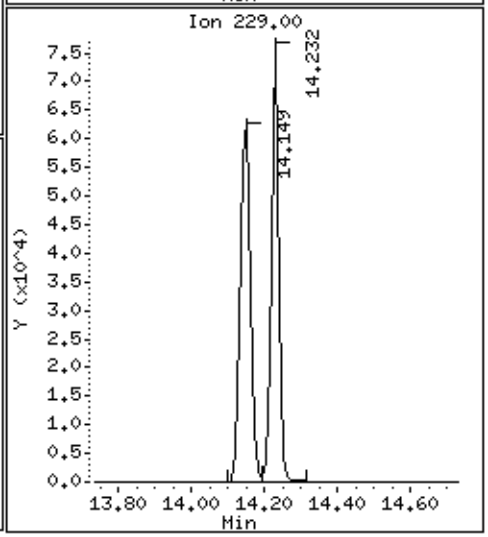












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

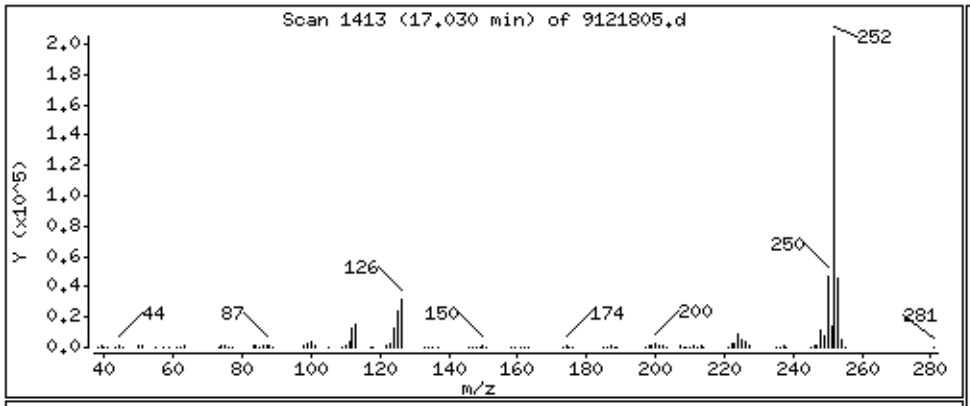
Operator: KV

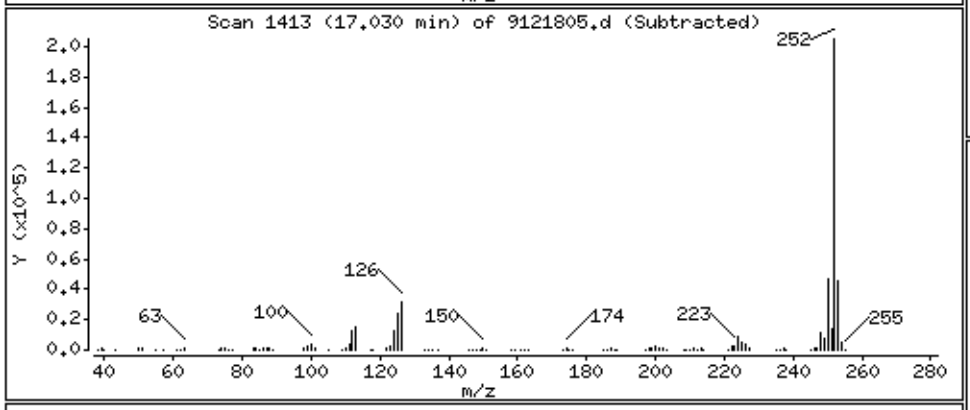
Column phase: DB-5.625

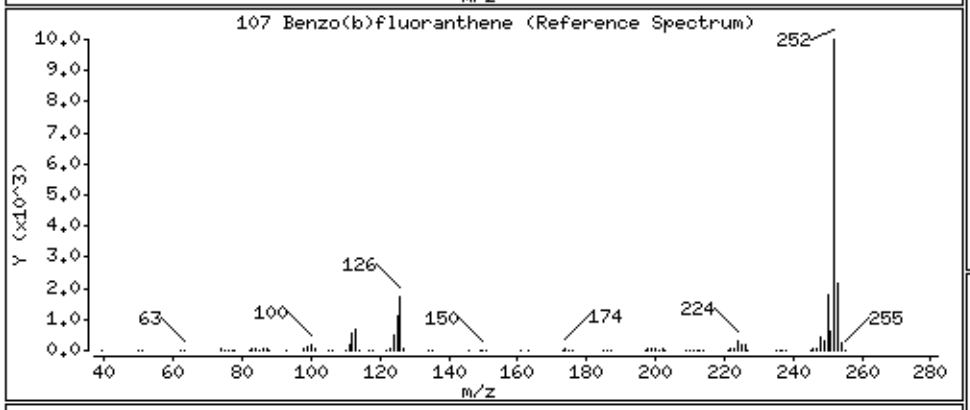
Column diameter: 0.25

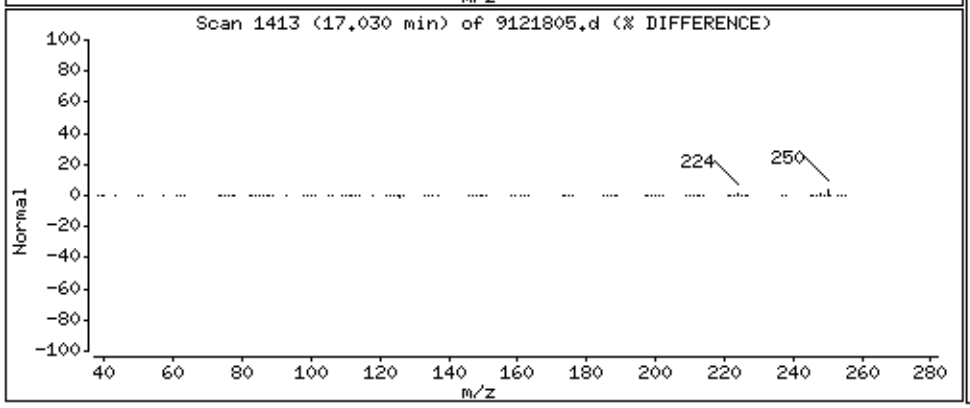
107 Benzo(b)fluoranthene

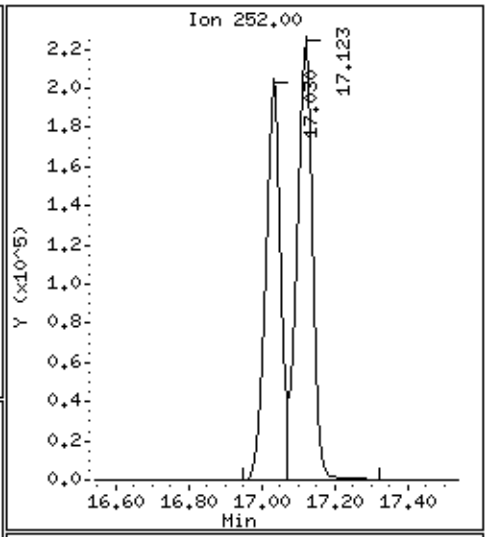
Concentration: 41.26 ug

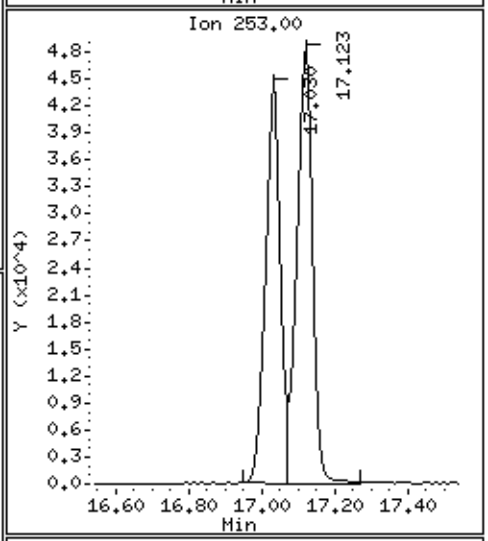


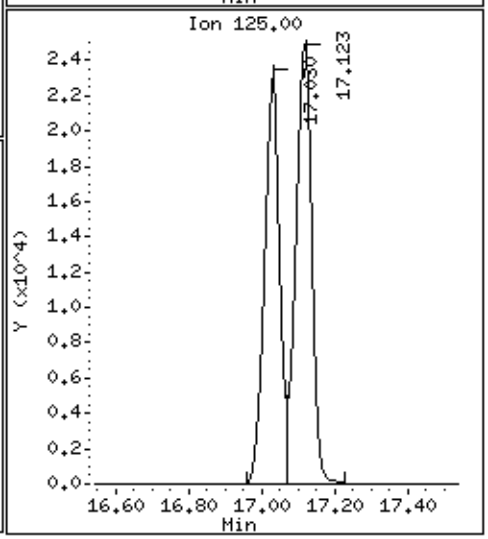












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

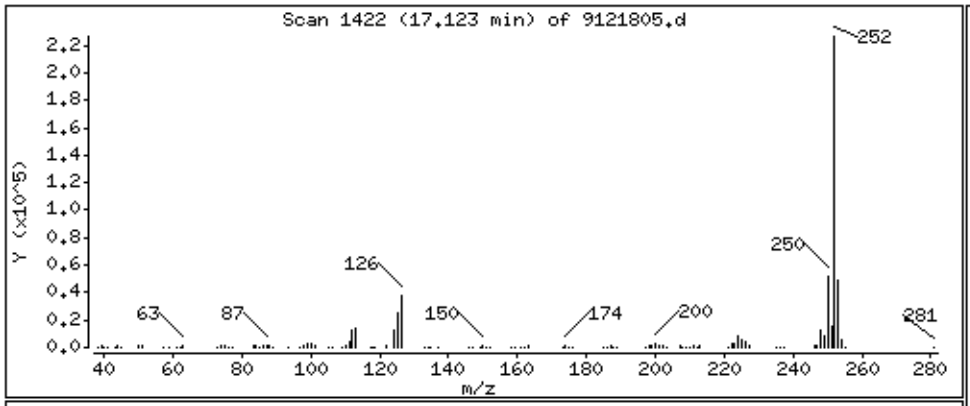
Operator: KV

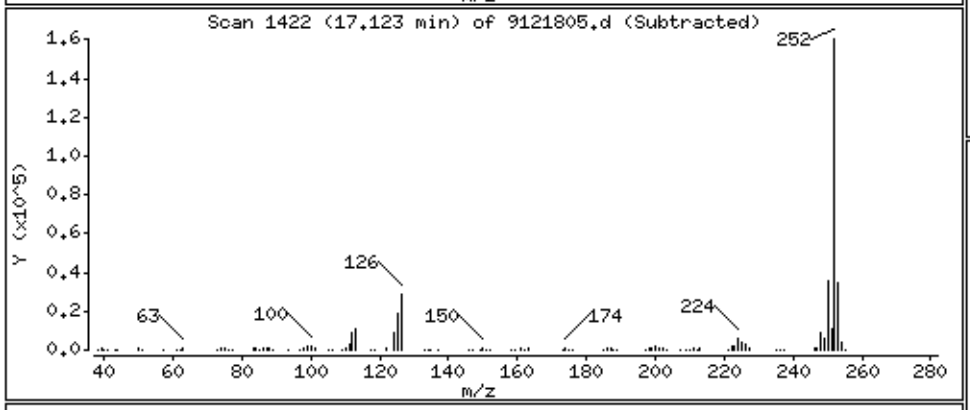
Column phase: DB-5.625

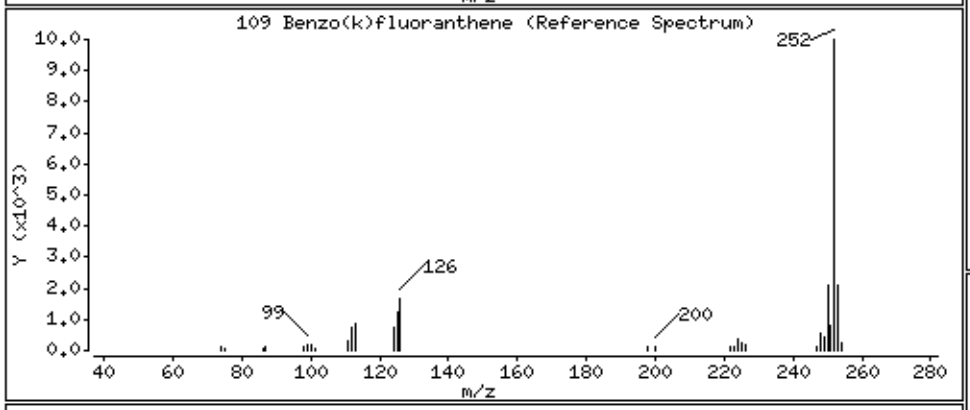
Column diameter: 0.25

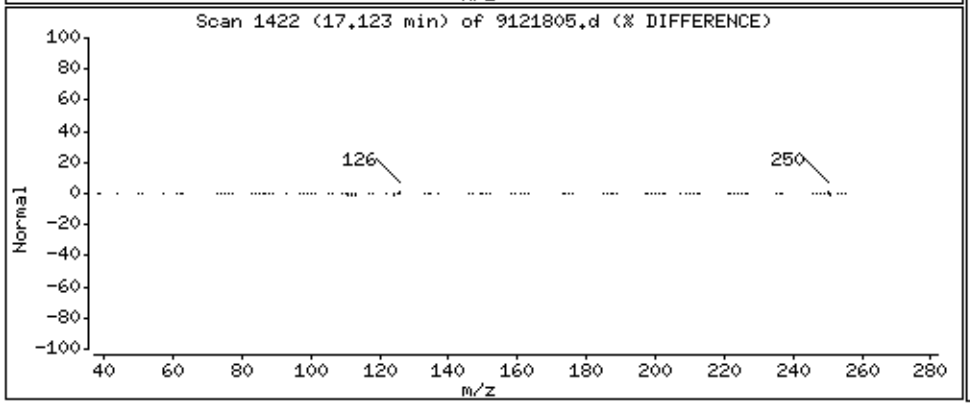
109 Benzo(k)fluoranthene

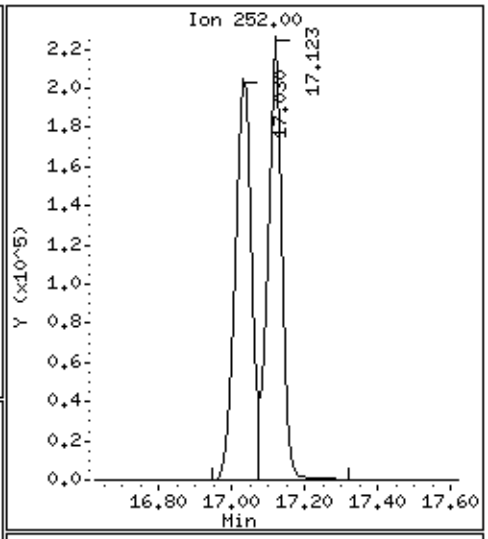
Concentration: 42.47 ug

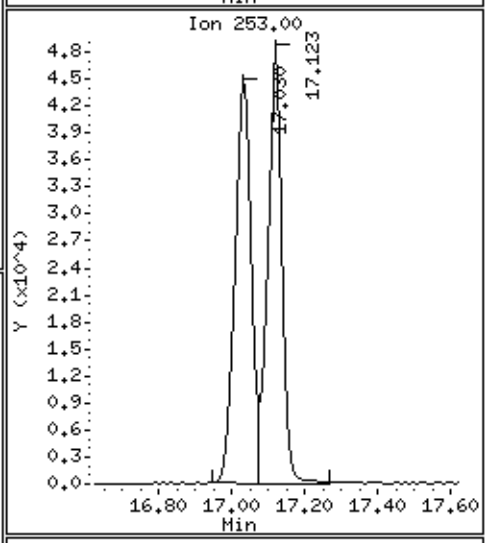


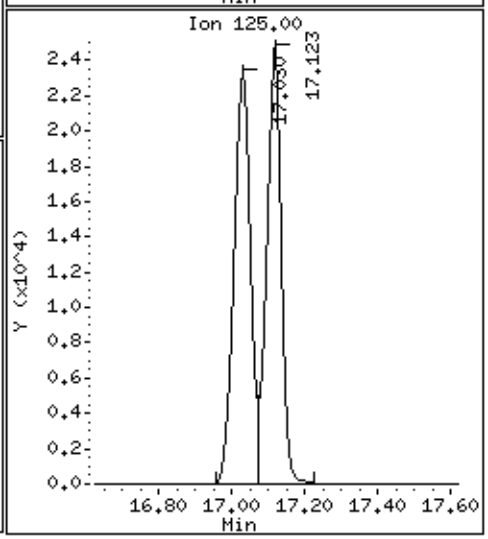












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

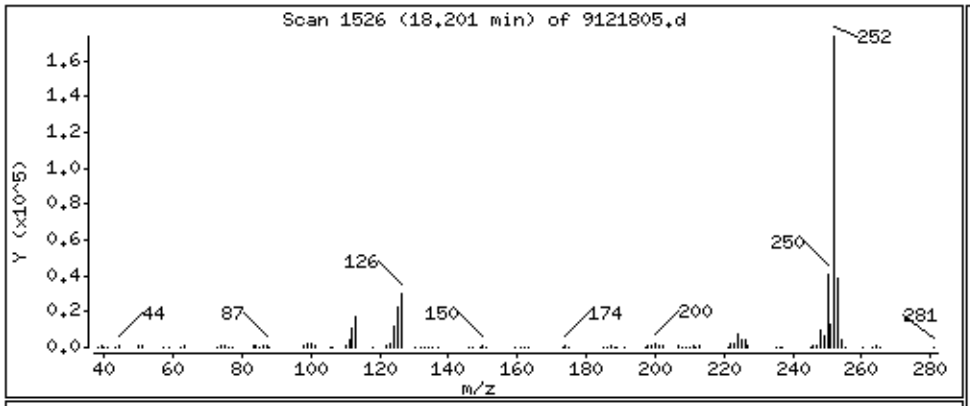
Operator: KV

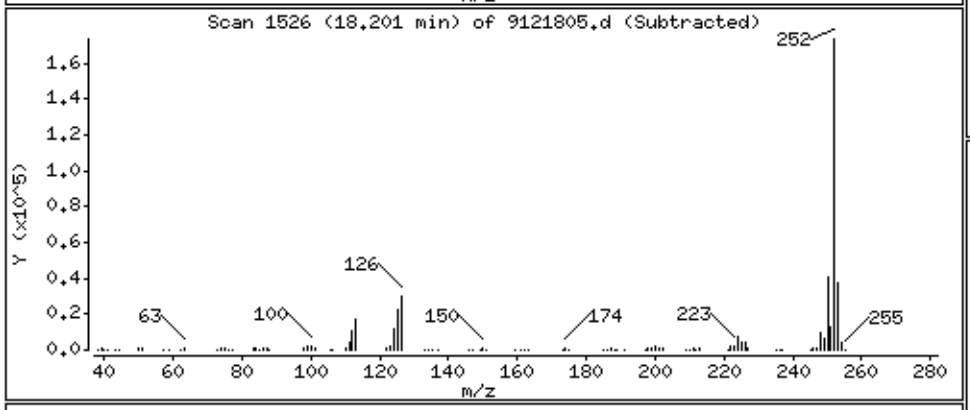
Column phase: DB-5.625

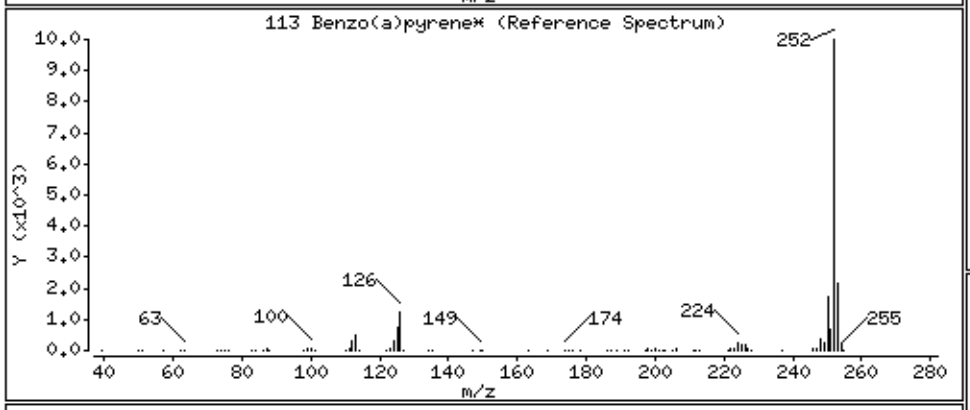
Column diameter: 0.25

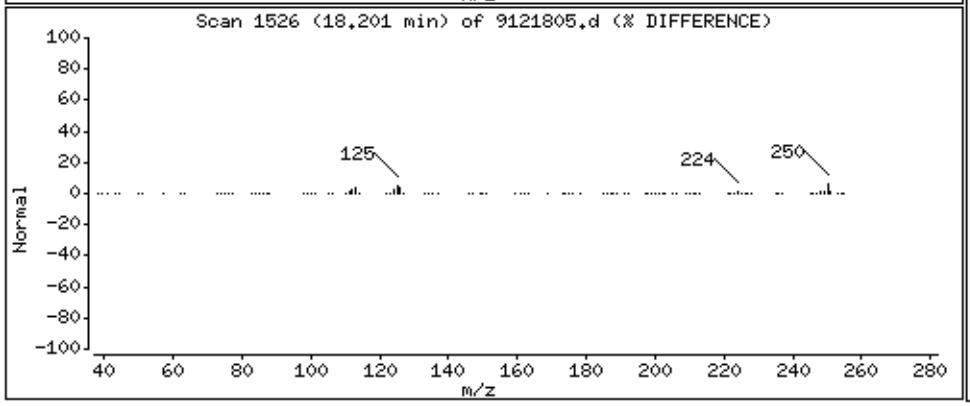
113 Benzo(a)pyrene*

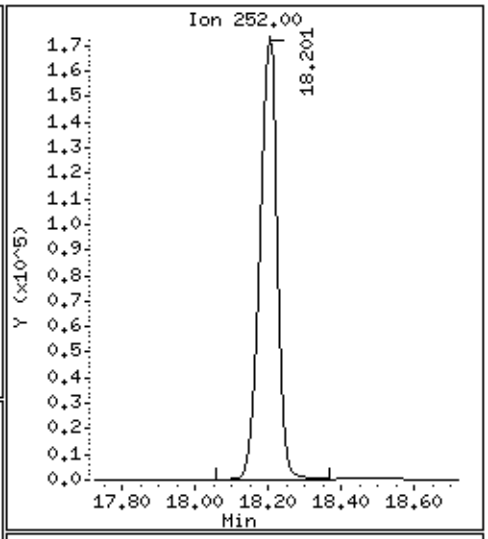
Concentration: 41.30 ug

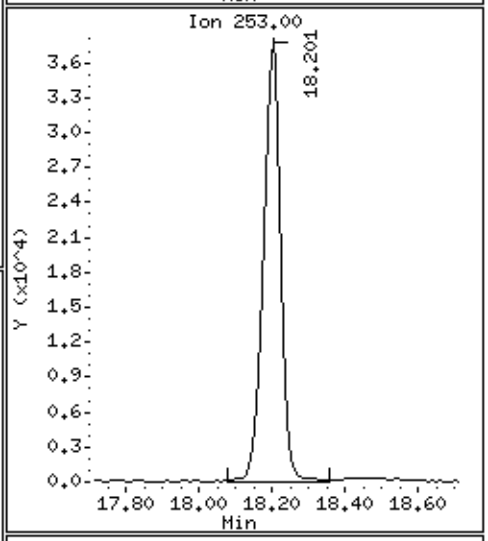


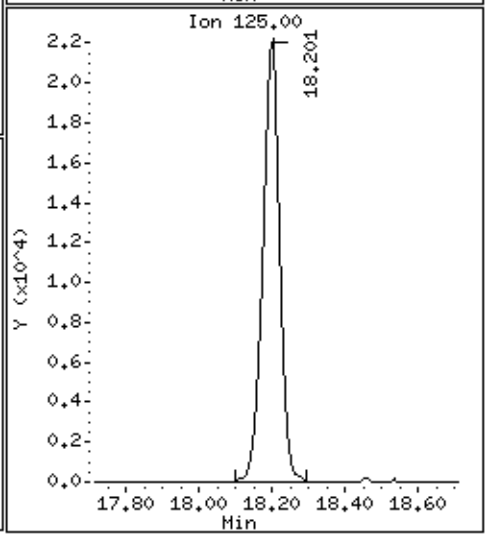












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

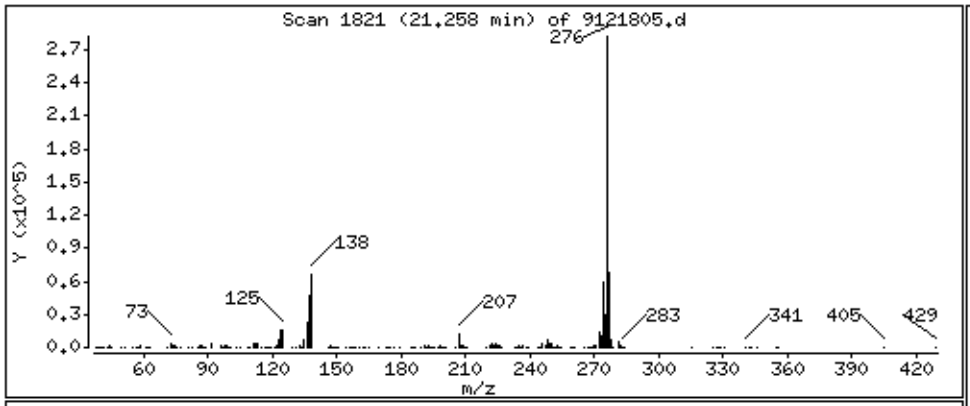
Operator: KV

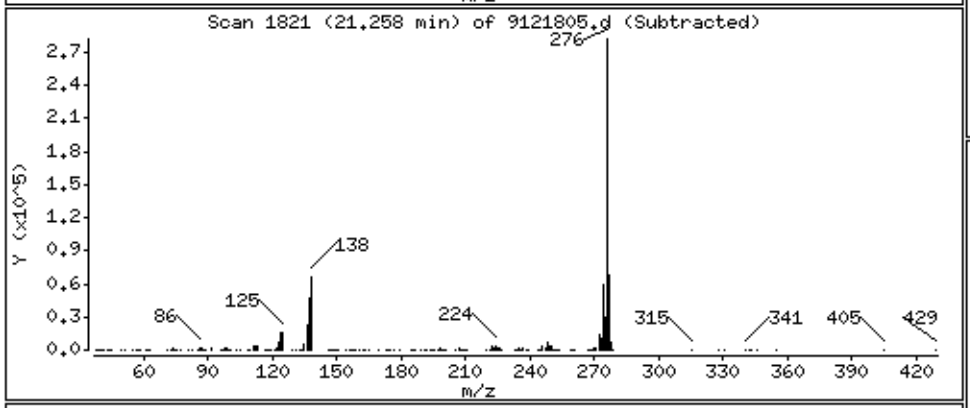
Column phase: DB-5.625

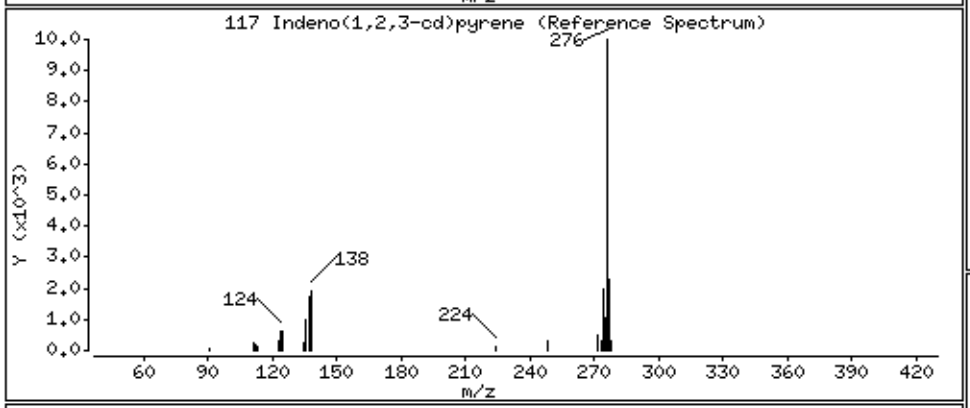
Column diameter: 0.25

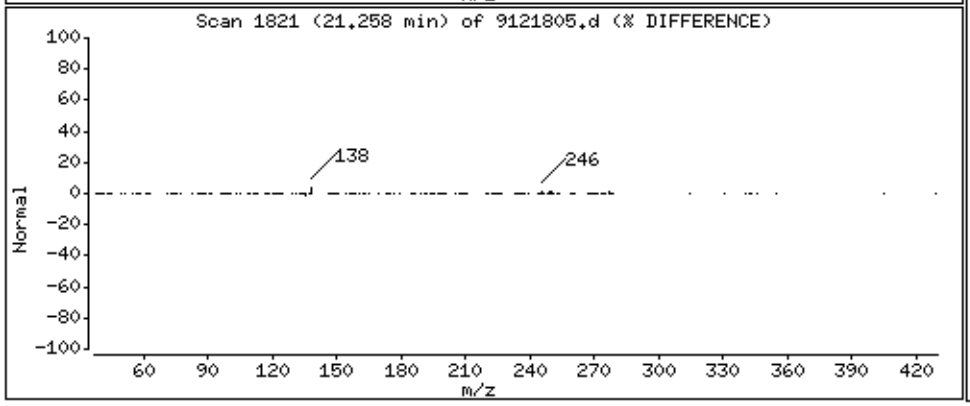
117 Indeno(1,2,3-cd)pyrene

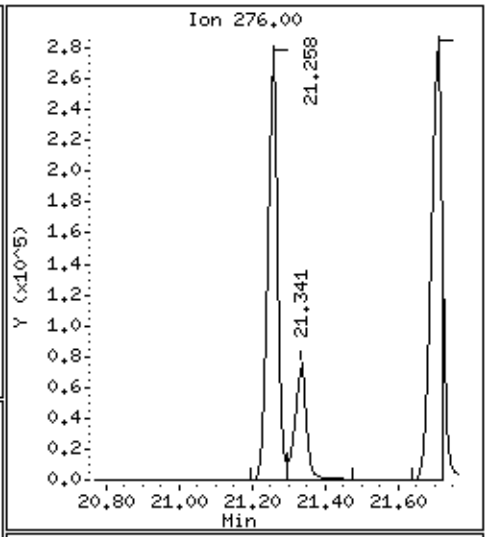
Concentration: 45.79 ug

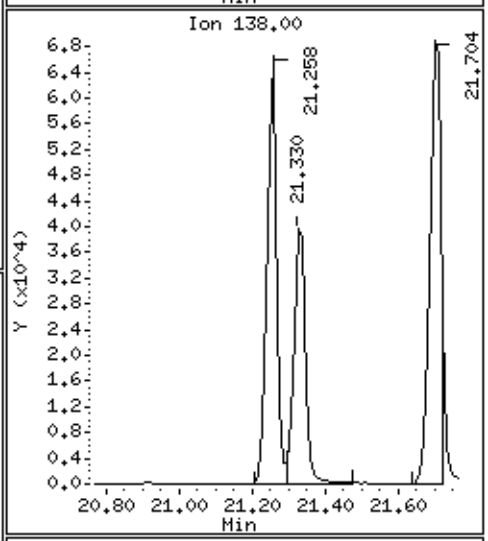


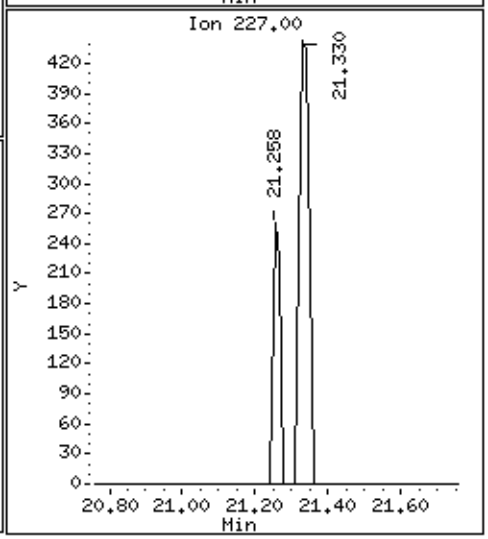












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

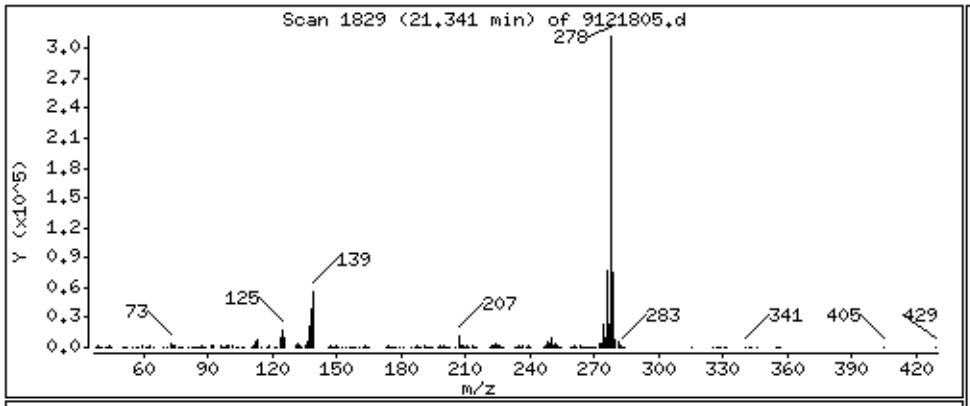
Operator: KV

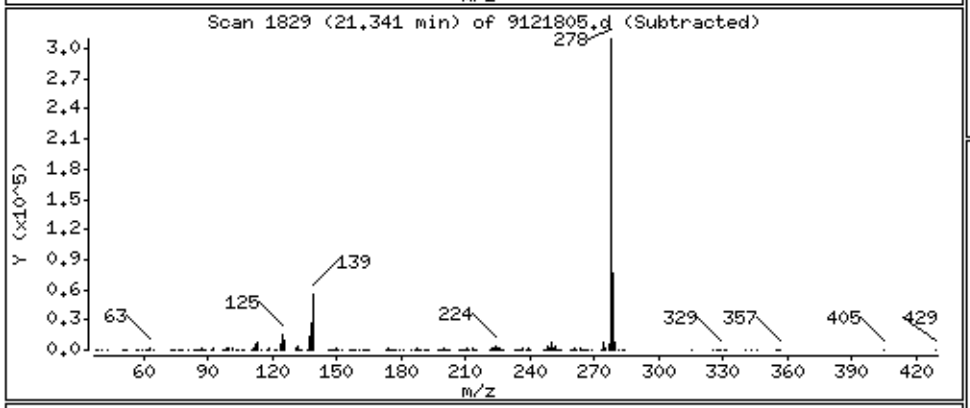
Column phase: DB-5.625

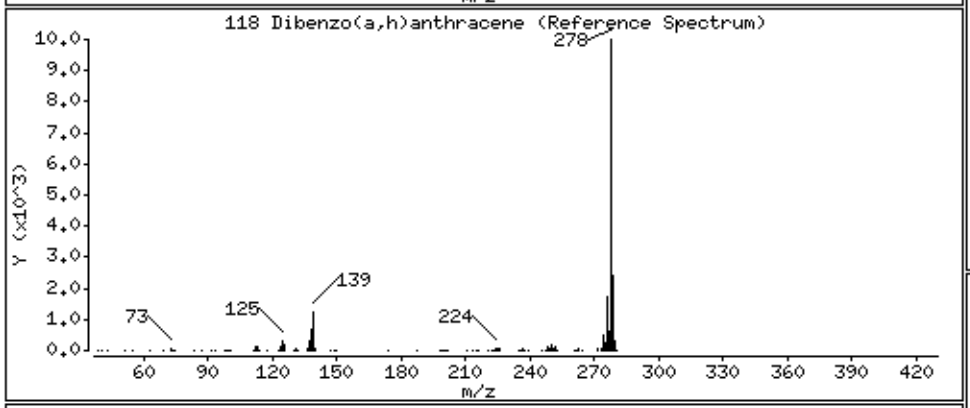
Column diameter: 0.25

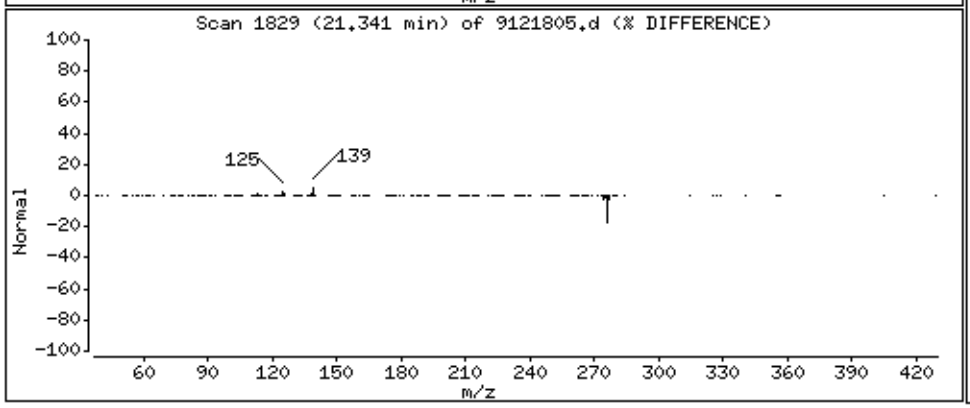
118 Dibenzo(a,h)anthracene

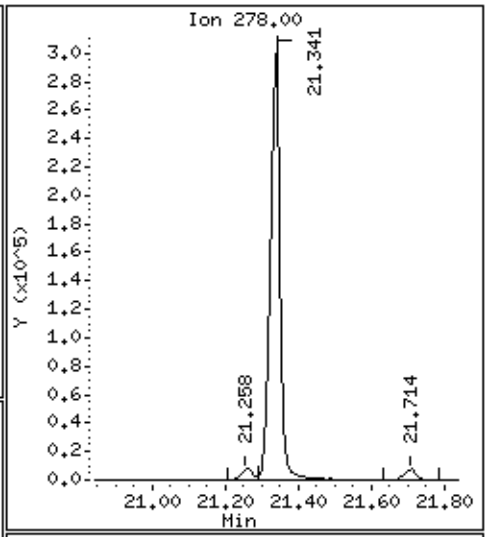
Concentration: 43.68 ug

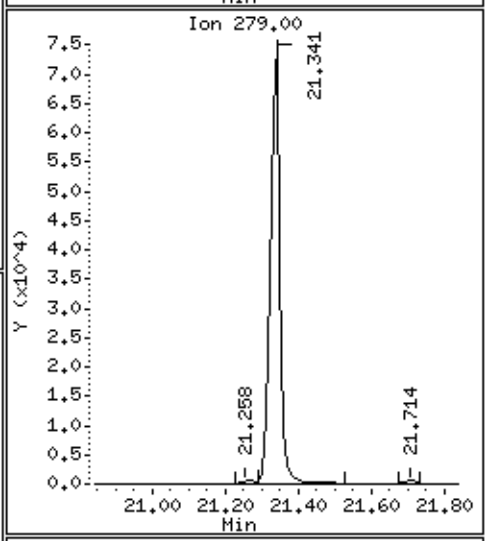


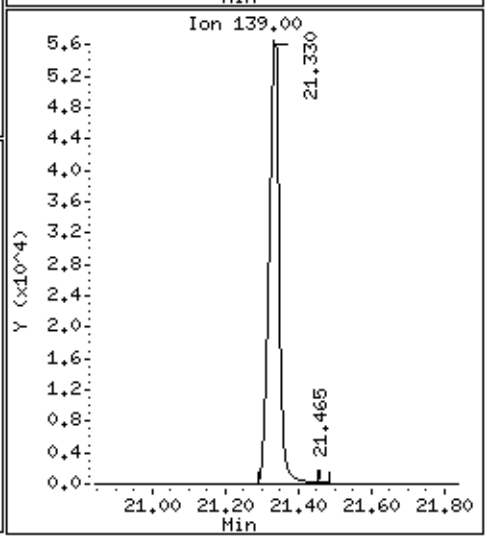












Data File: /chem/msd9.i/18dec17.b/9121805.d

Date : 18-DEC-2017 16:39

Client ID: LCSD

Instrument: msd9.i

Sample Info: ;1712296; LCSD

Volume Injected (uL): 1.0

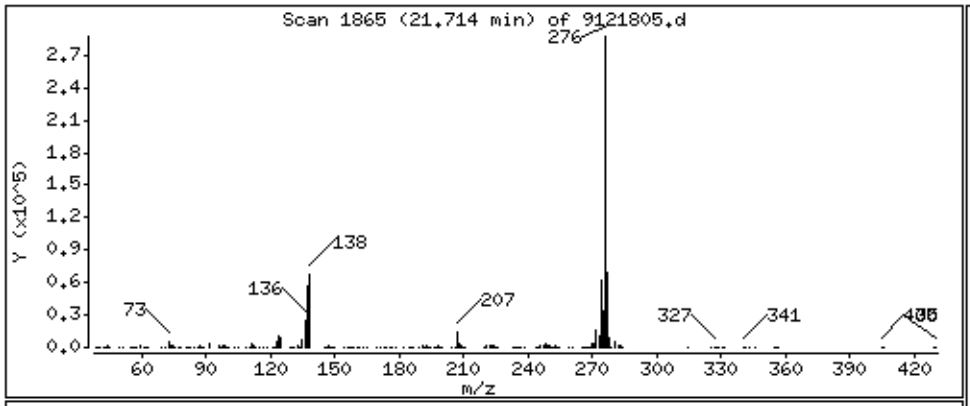
Operator: KV

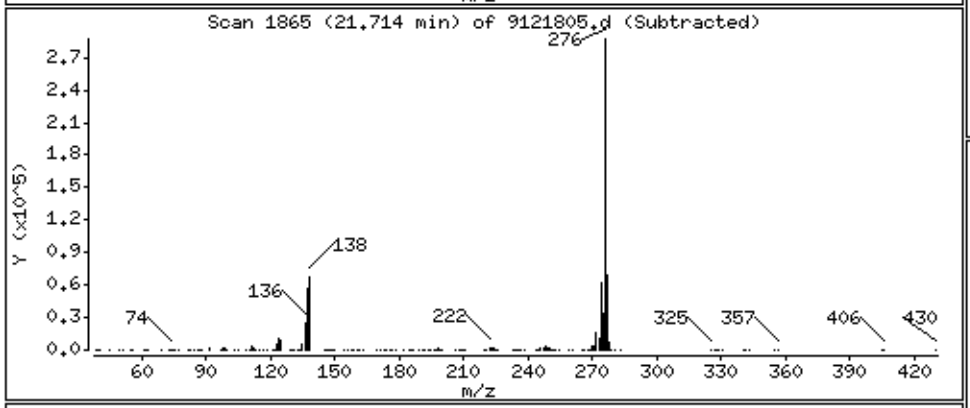
Column phase: DB-5.625

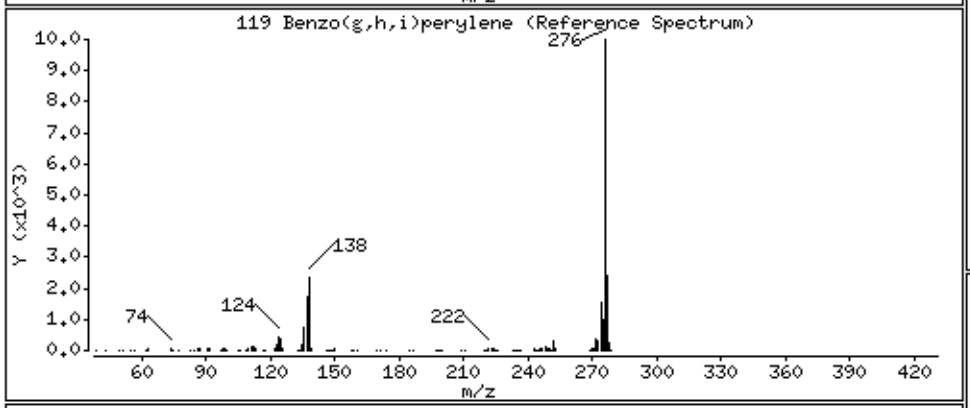
Column diameter: 0.25

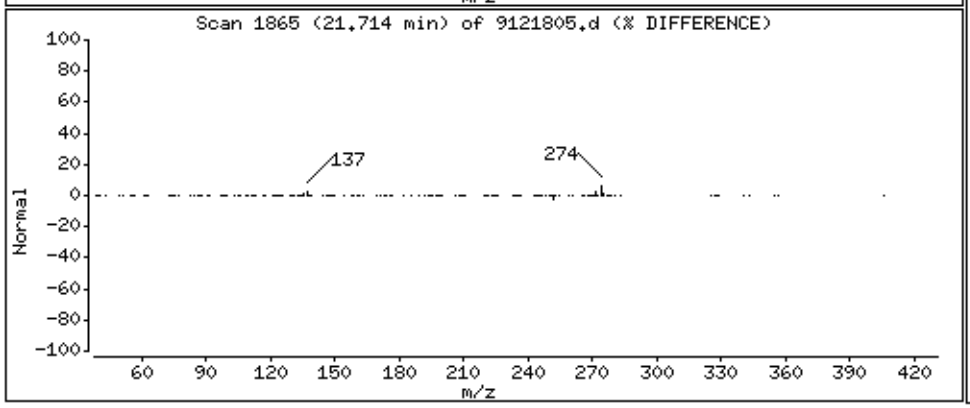
119 Benzo(g,h,i)perylene

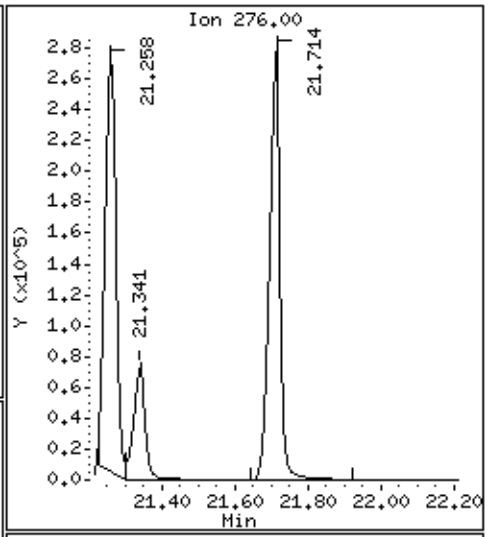
Concentration: 40.99 ug

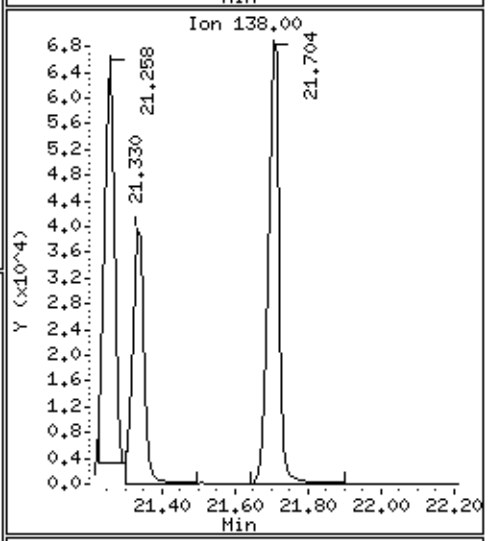


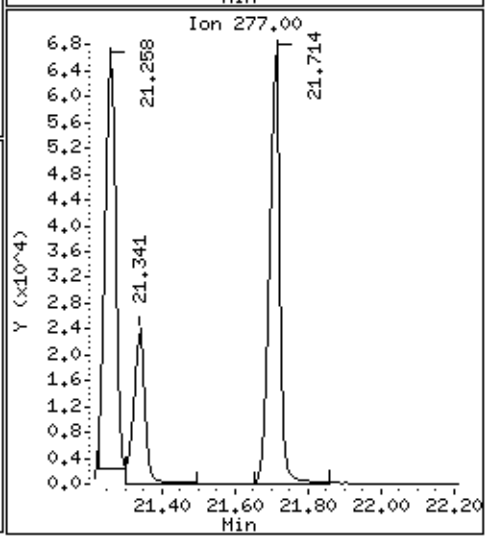












TO-13A Extraction Logbook | Eurofins Air Toxics, Inc | Logbook#: 3020

Method: Soxhlet/ASE/ Buchi-1
Date Extracted: 12/13/17
Set up by: KV
Date/Time Started: 2
Date/Time Ended: ICV 12/13/17

Spike Date: 12/18/17
Spiked By: ICV
Spike Witness by/ Date: (illegible)

Solvent: Dichloromethane
Solvent Lot #: 17F2640 06
Concentrated by/Date: ICV 12/18/17

ICV 12/18/17

☑ *Proj.Pr./COC checked* ☑ *Spike ID Verified* ☑ *Spike Amt. Verified* ☑ *Equipment checked* ☑ *Verified media certified*

ATL Sample ID #	Client I.D. #	Cart. #	PUF/XAD/Filter Lot #	Surr. ID/Conc. (µg/mL)*	Surr. Amt. (mL)	LCS ID/Conc. (µg/mL)	LCS Amt. (mL)	Fin. Vol. (mL)
LCJ	NA	278	P171130 / X171121	2742-95-100 2742-91-100	.5	2742-86-100	.5	1.0
LCSD	↓	310	↓	↓	↓	↓	↓	↓
BLK	↓	358	P171214 / ↓	↓	↓	NA	NA	
1712496-01A	OA6-1217	309	P160402LV / X171031	2742-95-100	.5			
02A	OA7	385						
03A	OA12	226						
04A	OA13	382						
05A	OA14	228						
06A	OA1	323						
07A	OA2	308						
08A	OA2-1	307						
09A	OA8	279						
10A	OA9	229						
11A	OA10	375						
12A	OA11	306						
13A	OA5	225						
14A	OA5-1	310						
15A	OA15	278						
16A	Trip blank-1	309						
X171214	NA	358	X171214					
					KV 12/18/17			

Pre-Spiked Surrogate	Surr. ID/Conc. (ug/mL)	Surr Amt (uL)	Spiked By	Spiked Date
Benzo(a)pyrene-d12 W	2742-96-100 2742-92-10	510	JCW	12/6/17
Fluoranthene-d10				

Water Bath Temperature °C	Initial Temp °C	Final Temp °C
		KV 12/18/17

Comments:

**TO-13A(mod) Surrogate Compounds: 2-Fluorophenol, Phenol-d_5, Nitrobenzene-d_5, 2,4,6-Tribromophenol, Fluorene-d_{10} and Pyrene-d_{10}*

**PAH Surrogate Compounds: Fluorene-d_{10} and Pyrene-d_{10}*

Signed: [signature] Date: 12/18/17

Revised: 04/03/17

MSD-9 Run Log | **Eurofins Air Toxics, Inc.** Method TO-13A | **Logbook#: 2888**

Target Folder Name:	13dec17.b		
Sample Type:	pa4		
Tune		IS#: 2848-45-1000	Area Counts
DFTPP File ID: 9121802		1,4-Dichlorobenzene-d4:	213385
		Naphthalene-d8:	899817
DFTPP Injection Date: 12/18/17		Acenaphthene-d10:	468853
		Phenanthrene-d10:	743971
DFTPP Injection Time: 1519		Chrysene-d12:	659280
		Perylene-d12:	643165

	use	File #	Lab ID#	Dilution Factor	Date Analyzed	Time Analyzed	Initials	Comments
1	✓	9121801	Acm wash	1.00	12/18/17	1502	KV/UA	
2	✓	02	2848-41-50			1519		tune
3	✓	03	2848-71-50			1539		CCV
4	✓	04	1712296 LCS			1609		
5	✓	05	LCSD			1639		
6	✓	06	BNK			1709		
7	✓	07	01A			1739		
8	✓	08	02A			1809		
9	✓	09	03A			1839		
10	✓	10	04A			1909		
11	✓	11	05A			1939		
12	✓	12	06A			2009		
13	✓	13	07A			2039		
14	✓	14	08A			2109		
15	✓	15	09A			2139		
16	✓	16	10A			2209		
17	✓	17	11A			2239		
18	✓	18	12A			2309		
19	✓	19	13A		↓	2339		
20	✓	20	14A		12/19/17	0009		
21	✓	21	15A			0039		
22	✓	22	16A	↓		0109		
23	✓	23	1712295B-05A	2.00		0139		
24	✓	24	-06A	10.00		0209		
25	✓	25	1712293B-02A	1.00	↓	0239	↓	all surrogates OKay

Calculation Check:

$$\text{ng of compound} = \frac{\text{Area}_{\text{Sample}}}{\text{Area}_{\text{IS}}} \times \frac{\text{Conc}_{\text{IS}}}{\text{RRF}} = \frac{670323}{796204} \times \frac{40.0}{.89947} = 35.20$$

File ID: 9121804 Compound: Naphthalene Initials: KV

Reviewed by: UA Date: 12/19/17

Eurofins Air Toxics Inc.

Data file : /var/chem/msd9.i/12dec17.b/9121202.d
Lab Smp Id: DFTPP 50ng Client Smp ID: DFTPP 50ng
Inj Date : 12-DEC-2017 12:34
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-41-50; TUNE
Misc Info :
Comment :
Method : /var/chem/msd9.i/12dec17.b/dftpp.m
Meth Date : 12-Dec-2017 12:32 Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 2 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug)	TARGET RANGE	RATIO
1 dftpp					CAS #:		
5.812	6.082 (0.000)	198	65704			100.00- 100.00	100.00
5.812	6.082 (0.000)	51	31491			30.00- 60.00	47.93
5.812	6.082 (0.000)	68	556			0.00- 2.00	1.93
5.812	6.082 (0.000)	69	28757			0.00- 99.90	43.77
5.812	6.082 (0.000)	70	151			0.00- 2.00	0.53
5.812	6.082 (0.000)	127	32610			40.00- 60.00	49.63
5.812	6.082 (0.000)	197	605			0.00- 2.00	0.92
5.812	6.082 (0.000)	199	4479			5.00- 9.00	6.82
5.812	6.082 (0.000)	275	15206			10.00- 30.00	23.14
5.812	6.082 (0.000)	365	1944			1.00- 0.00	2.96
5.812	6.082 (0.000)	441	7430			0.01- 99.99	77.46
5.812	6.082 (0.000)	442	49528			40.00- 100.00	75.38
5.812	6.082 (0.000)	443	9592			17.00- 23.00	19.37

Data File: /var/chem/msd9.i/12dec17.b/9121202.d

Date : 12-DEC-2017 12:34

Client ID: DFTPP 50ng

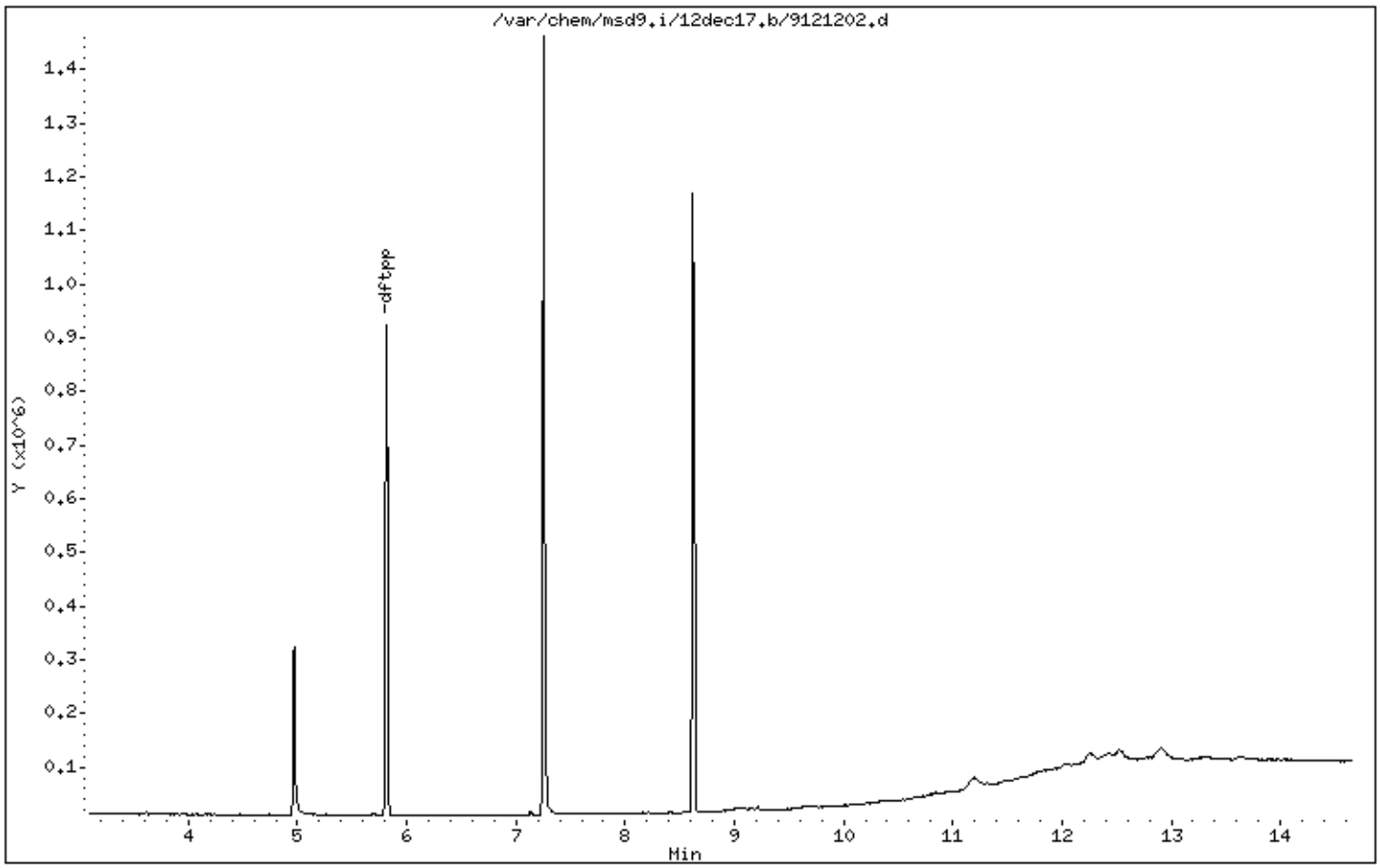
Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase:

Column diameter: 0.25



Data File: /var/chem/msd9.i/12dec17.b/9121202.d

Date : 12-DEC-2017 12:34

Client ID: DFTPP 50ng

Instrument: msd9.i

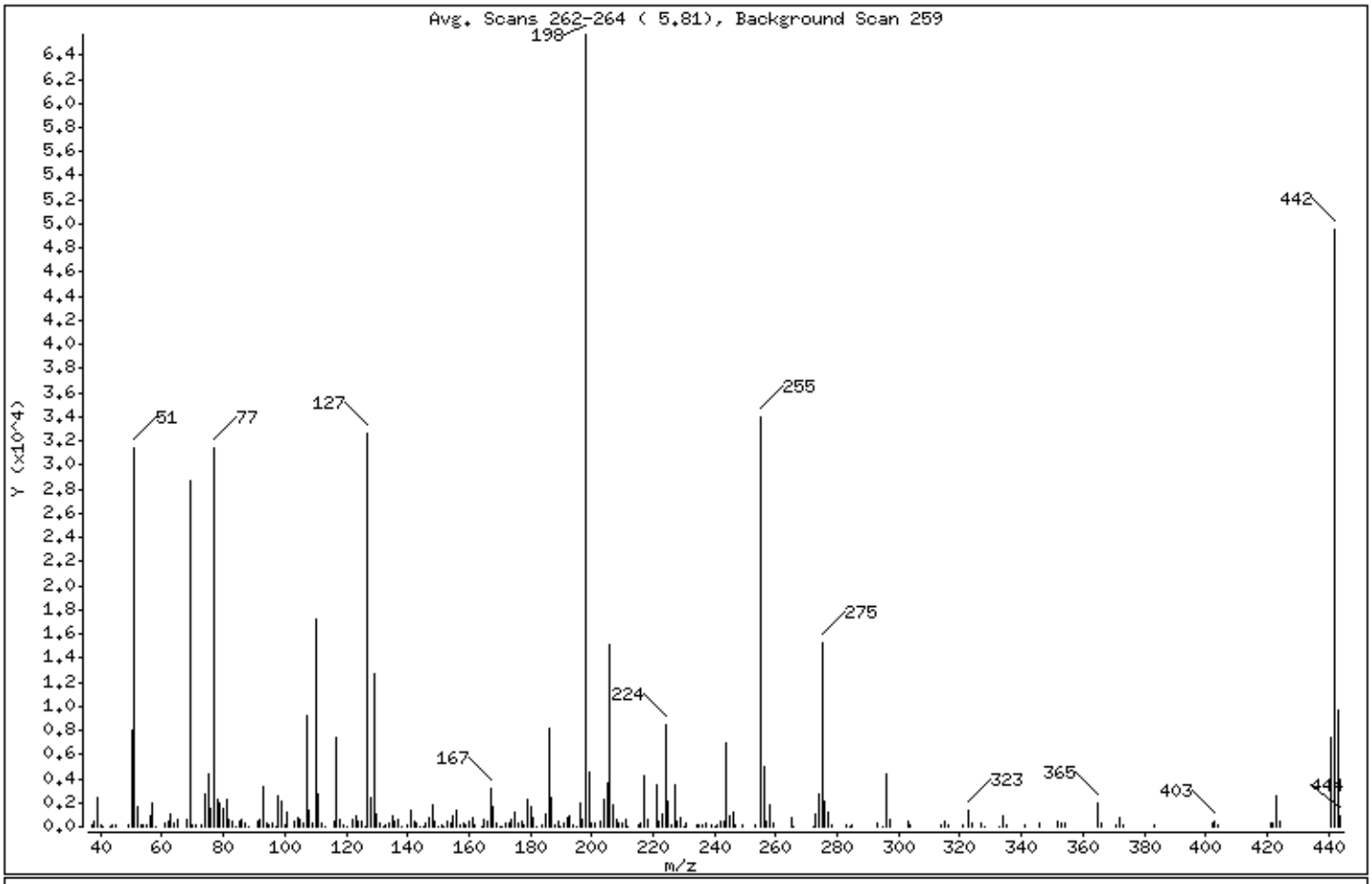
Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase:

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	47.93
68	Less than 2.00% of mass 69	0.85 (1.93)
69	Less than 99.90% of mass 198	43.77
70	Less than 2.00% of mass 69	0.23 (0.53)
127	40.00 - 60.00% of mass 198	49.63
197	Less than 2.00% of mass 198	0.92
199	5.00 - 9.00% of mass 198	6.82
275	10.00 - 30.00% of mass 198	23.14
365	Greater than 1.00% of mass 198	2.96
441	Present, but less than mass 443	11.31
442	40.00 - 100.00% of mass 198	75.38
443	17.00 - 23.00% of mass 442	14.60 (19.37)

Date : 12-DEC-2017 12:34

Client ID: DFTPP 50ng Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase: Column diameter: 0.25

Data File: 9121202.d
Spectrum: Avg. Scans 262-264 (5.81), Background Scan 259
Location of Maximum: 198.00
Number of points: 243

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	132	110.00	17168	176.00	377	246.00	1203
38.00	477	111.00	2647	177.00	527	247.00	210
39.00	2392	112.00	342	178.00	111	249.00	217
40.00	137	113.00	63	179.00	2278	253.00	147
41.00	70	116.00	490	180.00	1595	255.00	33976
43.00	45	117.00	7460	181.00	779	256.00	5023
44.00	99	118.00	584	182.00	69	257.00	406
45.00	192	119.00	155	184.00	159	258.00	1886
49.00	217	120.00	74	185.00	1068	259.00	245
50.00	8044	122.00	562	186.00	8226	265.00	825
51.00	31488	123.00	853	187.00	2345	266.00	74
52.00	1697	124.00	409	188.00	185	272.00	70
53.00	205	125.00	417	189.00	466	273.00	1065
54.00	177	126.00	58	190.00	54	274.00	2768
55.00	198	127.00	32608	191.00	258	275.00	15206
56.00	885	128.00	2447	192.00	755	276.00	2092
57.00	1948	129.00	12649	193.00	833	277.00	1216
58.00	74	130.00	1076	194.00	177	278.00	155
61.00	365	131.00	235	195.00	68	283.00	140
62.00	392	132.00	64	196.00	1985	284.00	62
63.00	1123	133.00	118	197.00	605	285.00	196
64.00	228	134.00	328	198.00	65704	293.00	248
65.00	619	135.00	972	199.00	4479	295.00	53
68.00	556	136.00	411	200.00	343	296.00	4386
69.00	28752	137.00	534	201.00	320	297.00	614
70.00	151	138.00	60	203.00	424	303.00	518
71.00	80	140.00	79	204.00	2206	304.00	128
73.00	128	141.00	1427	205.00	3690	314.00	200
74.00	2687	142.00	518	206.00	15108	315.00	505
75.00	4368	143.00	316	207.00	1852	316.00	221
76.00	1493	144.00	64	208.00	565	321.00	122
77.00	31480	145.00	53	209.00	238	323.00	1367
78.00	2234	146.00	269	210.00	264	324.00	229
79.00	1898	147.00	689	211.00	614	327.00	271
80.00	1461	148.00	1867	212.00	65	328.00	75

Date : 12-DEC-2017 12:34

Client ID: DFTPP 50ng Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase: Column diameter: 0.25

Data File: 9121202.d
Spectrum: Avg. Scans 262-264 (5.81), Background Scan 259
Location of Maximum: 198.00
Number of points: 243

m/z	Y	m/z	Y	m/z	Y	m/z	Y
81.00	2266	149.00	409	215.00	98	333.00	68
82.00	650	150.00	55	216.00	349	334.00	922
83.00	458	151.00	164	217.00	4175	335.00	185
84.00	58	152.00	71	218.00	540	341.00	170
85.00	435	153.00	472	221.00	3448	346.00	314
86.00	636	154.00	358	222.00	397	352.00	411
87.00	296	155.00	895	223.00	1011	353.00	270
88.00	56	156.00	1284	224.00	8401	354.00	334
91.00	472	157.00	201	225.00	2062	365.00	1944
92.00	570	158.00	289	226.00	211	366.00	244
93.00	3364	159.00	181	227.00	3545	371.00	128
94.00	275	160.00	472	228.00	493	372.00	705
95.00	119	161.00	752	229.00	738	373.00	141
96.00	308	162.00	176	230.00	58	383.00	167
97.00	52	164.00	57	231.00	239	402.00	280
98.00	2502	165.00	560	234.00	166	403.00	378
99.00	2124	166.00	472	235.00	208	404.00	132
100.00	185	167.00	3175	236.00	81	421.00	357
101.00	1205	168.00	1603	237.00	247	422.00	328
103.00	386	169.00	252	239.00	134	423.00	2519
104.00	780	170.00	59	240.00	69	424.00	473
105.00	667	171.00	64	241.00	178	441.00	7430
106.00	261	172.00	285	242.00	489	442.00	49528
107.00	9201	173.00	354	243.00	510	443.00	9592
108.00	1411	174.00	591	244.00	6918	444.00	840
109.00	272	175.00	1187	245.00	944		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd9.i/18dec17.b/9121802.d
Lab Smp Id: DFTPP 50ng Client Smp ID: DFTPP 50ng
Inj Date : 18-DEC-2017 15:19
Operator : KV Inst ID: msd9.i
Smp Info : ;2848-41-50; TUNE
Misc Info :
Comment :
Method : /var/chem/msd9.i/18dec17.b/dftpp.m
Meth Date : 18-Dec-2017 15:17 Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 2 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug)	TARGET RANGE	RATIO
1 dftpp					CAS #:		
5.812	6.082 (0.000)	198	58816			100.00- 100.00	100.00
5.812	6.082 (0.000)	51	24071			30.00- 60.00	40.93
5.812	6.082 (0.000)	68	366			0.00- 2.00	1.62
5.812	6.082 (0.000)	69	22658			0.00- 99.90	38.52
5.812	6.082 (0.000)	70	141			0.00- 2.00	0.62
5.812	6.082 (0.000)	127	27554			40.00- 60.00	46.85
5.812	6.082 (0.000)	197	340			0.00- 2.00	0.58
5.812	6.082 (0.000)	199	4020			5.00- 9.00	6.83
5.812	6.082 (0.000)	275	14104			10.00- 30.00	23.98
5.812	6.082 (0.000)	365	1905			1.00- 0.00	3.24
5.812	6.082 (0.000)	441	7018			0.01- 99.99	74.19
5.812	6.082 (0.000)	442	48482			40.00- 100.00	82.43
5.812	6.082 (0.000)	443	9460			17.00- 23.00	19.51

Data File: /var/chem/msd9.i/18dec17.b/9121802.d

Date : 18-DEC-2017 15:19

Client ID: DFTPP 50ng

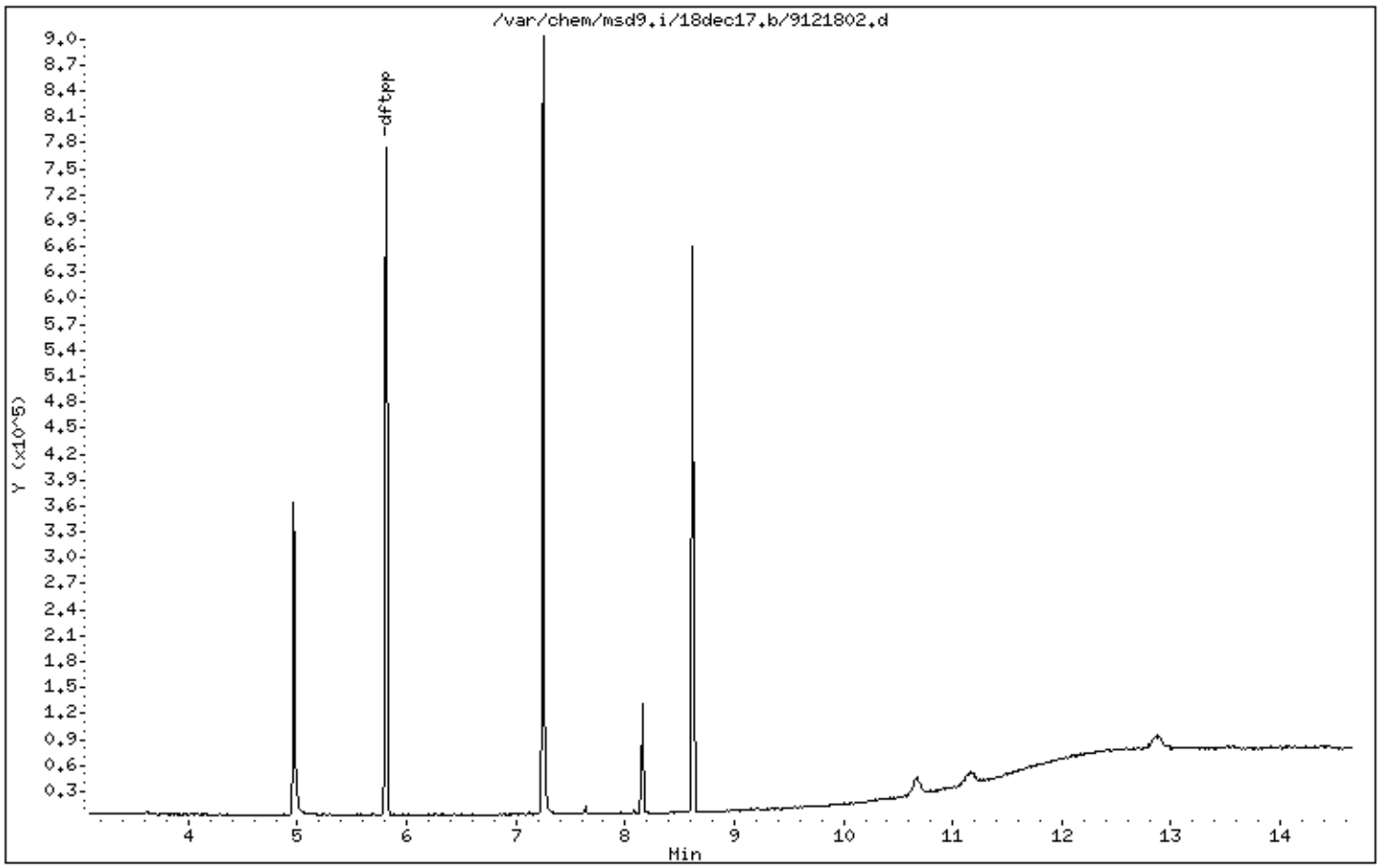
Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase:

Column diameter: 0.25



Data File: /var/chem/msd9.i/18dec17.b/9121802.d

Date : 18-DEC-2017 15:19

Client ID: DFTPP 50ng

Instrument: msd9.i

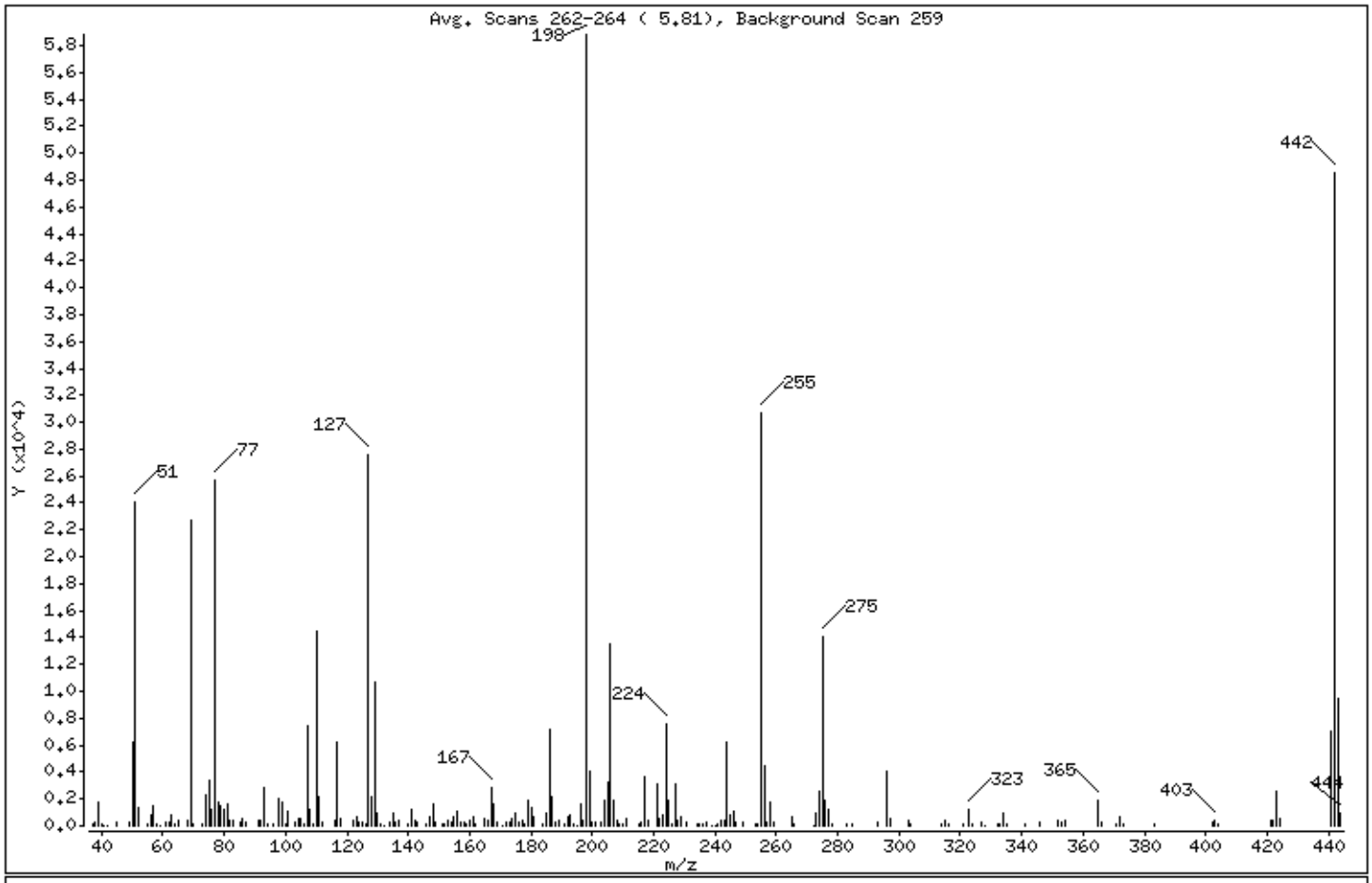
Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase:

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	40.93
68	Less than 2.00% of mass 69	0.62 (1.62)
69	Less than 99.90% of mass 198	38.52
70	Less than 2.00% of mass 69	0.24 (0.62)
127	40.00 - 60.00% of mass 198	46.85
197	Less than 2.00% of mass 198	0.58
199	5.00 - 9.00% of mass 198	6.83
275	10.00 - 30.00% of mass 198	23.98
365	Greater than 1.00% of mass 198	3.24
441	Present, but less than mass 443	11.93
442	40.00 - 100.00% of mass 198	82.43
443	17.00 - 23.00% of mass 442	16.08 (19.51)

Date : 18-DEC-2017 15:19

Client ID: DFTPP 50ng Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase: Column diameter: 0.25

Data File: 9121802.d
Spectrum: Avg. Scans 262-264 (5.81), Background Scan 259
Location of Maximum: 198.00
Number of points: 222

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	78	112.00	237	185.00	991	256.00	4464
38.00	330	116.00	394	186.00	7108	257.00	320
39.00	1805	117.00	6162	187.00	2102	258.00	1723
40.00	110	118.00	479	188.00	211	259.00	238
41.00	65	122.00	435	189.00	374	265.00	732
42.00	52	123.00	711	191.00	201	266.00	70
45.00	216	124.00	330	192.00	623	272.00	52
49.00	249	125.00	313	193.00	746	273.00	983
50.00	6158	126.00	74	194.00	84	274.00	2562
51.00	24064	127.00	27552	195.00	62	275.00	14104
52.00	1287	128.00	2134	196.00	1667	276.00	1845
55.00	184	129.00	10691	197.00	340	277.00	1180
56.00	748	130.00	931	198.00	58816	278.00	181
57.00	1543	131.00	176	199.00	4020	283.00	90
58.00	116	132.00	55	200.00	272	285.00	200
59.00	41	134.00	264	201.00	216	293.00	223
61.00	266	135.00	949	203.00	315	296.00	4090
62.00	264	136.00	317	204.00	1927	297.00	560
63.00	841	137.00	444	205.00	3285	303.00	454
64.00	120	140.00	69	206.00	13517	304.00	76
65.00	400	141.00	1235	207.00	1841	314.00	106
68.00	366	142.00	463	208.00	401	315.00	434
69.00	22656	143.00	278	209.00	171	316.00	187
70.00	141	146.00	197	210.00	198	321.00	72
73.00	151	147.00	684	211.00	544	323.00	1256
74.00	2245	148.00	1633	215.00	81	324.00	139
75.00	3433	149.00	289	216.00	273	327.00	265
76.00	1212	151.00	152	217.00	3693	328.00	60
77.00	25680	152.00	70	218.00	435	332.00	74
78.00	1775	153.00	369	221.00	3158	333.00	70
79.00	1483	154.00	291	222.00	521	334.00	881
80.00	1160	155.00	742	223.00	839	335.00	163
81.00	1647	156.00	1066	224.00	7538	341.00	87
82.00	429	157.00	211	225.00	1921	346.00	317
83.00	407	158.00	217	226.00	186	352.00	391

Date : 18-DEC-2017 15:19

Client ID: DFTPP 50ng Instrument: msd9.i

Sample Info: ;2848-41-50; TUNE

Operator: KV

Column phase: Column diameter: 0.25

Data File: 9121802.d
Spectrum: Avg. Scans 262-264 (5.81), Background Scan 259
Location of Maximum: 198.00
Number of points: 222

m/z	Y	m/z	Y	m/z	Y	m/z	Y
85.00	265	159.00	164	227.00	3053	353.00	204
86.00	506	160.00	344	228.00	463	354.00	396
87.00	242	161.00	631	229.00	668	365.00	1905
91.00	441	162.00	176	231.00	236	366.00	281
92.00	415	165.00	513	234.00	161	371.00	71
93.00	2774	166.00	346	235.00	199	372.00	708
94.00	165	167.00	2872	236.00	88	373.00	98
96.00	142	168.00	1667	237.00	214	383.00	175
98.00	2088	169.00	220	239.00	63	402.00	214
99.00	1815	171.00	55	240.00	51	403.00	405
100.00	148	172.00	205	241.00	169	404.00	76
101.00	1026	173.00	258	242.00	427	421.00	347
103.00	307	174.00	493	243.00	468	422.00	343
104.00	507	175.00	992	244.00	6236	423.00	2559
105.00	553	176.00	289	245.00	839	424.00	526
106.00	167	177.00	436	246.00	1098	441.00	7018
107.00	7491	178.00	149	247.00	213	442.00	48480
108.00	1174	179.00	1891	249.00	218	443.00	9460
109.00	187	180.00	1363	253.00	135	444.00	881
110.00	14492	181.00	628	254.00	118		
111.00	2143	184.00	79	255.00	30712		

Shipping/ Receiving Documents

eurofins | Air Toxics

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Laura Jovanovic at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

SORBENT SAMPLE COLLECTION

eurofins | Air Toxics

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Eurofins assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630
(916) 985-1000 FAX (916) 985-1020

Project Manager: Tom Hutchinson
Collected by: (Print and Sign) Shirley Steinmacher / Ben Thompson
Company: CH2M Email: mark.stinnett@ch2m.com
Address: 7545 S. Wise Rd City: Shepherd State: MI Zip: 48883
Phone: Tom H. 989-828-5237/352-384-7180 (Mark Stinnett) Fax:

Project Info:
P.O. #:
Project #: 690813.FI.01
Project Name: Former Tronox Facility

Turn Around Time: ☐ Normal ☒ Rush 5 days (specify)

Circle Reporting Units: ppbv ppmv (ug/m³) mg/m³

Lab I.D.	Field Sample I.D. (Location)	PUMP Tube # / SIS Cartridge #	Date of Collection	Start Time	End Time	5LPM Duration (Mins)	Final Volume (Liters)	Analysis Requested
01A	OA6_1217	14117	12/13-14/17	1530	1420	1370	6953 L	TO-13A
02A	OA7_1217	20811		1518	1431	1393	7202 L	
03A	sis ~~OA13_1217~~ OA12_1217	16566		1505	1446	1421	7119 L	
04A	sis ~~OA13-1_1217~~ OA13-1217	16326		1454	1500	1446	7375 L	
05A	OA14_1217	14018		1441	1519	1478	7715 L	
06A	OA1_1217	31999		1425	1425	1440	7315 L	
07A	OA2_1217	16664		1441	1410	1409	7073 L	
08A	OA21_1217	21307		1441	1410	1409	7151L	
09A	OA8_1217	14118		1453	1440	1427	7235L	
10A	OA9_1217	27933	12/13/17-12/14/17	1502	1451	1429	7459L	TO-13A

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Shirley Steinmacher	12/14/17 1730	FEDEX	12/14/17 1730
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
		Andrea Augustine EAD	12/15/17 1035
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Pump Calibration Information
Pre-test Flow Rate:
Post-test Flow Rate:
Average Flow Rate:
Notes: Certification ID 115788 PI60402LV/ X171031

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Ex		-1.2°C	Good	Yes No (None)	1712296

SORBENT SAMPLE COLLECTION

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CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Eurofins assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630
(916) 985-1000 FAX (916) 985-1020

Project Manager Tom Hutchinson, PM

Collected by: (Print and Sign) Shirley Steinmacher / Ben Thompson

Company CH2M Email Mark.Stinnette@ch2m.com

Address TOM H. 7545 S. Wise Rd. City Shepherd State MI Zip 48883
MARK S. 3011 SW Williston Rd. Gainesville FL 32608

Phone TOM H. 989-828-6[illegible] / MARK S. 352-384-7180 Fax

Project Info:
P.O. #
Project # 690813.FI.01
Project Name Former Tronox Facility

Turn Around Time:
☐ Normal
☒ Rush 5 days (specify)

Circle Reporting Units:
ppbv ppmv
(ug/m³) mg/m³

Lab I.D.	Field Sample I.D. (Location)	PUMP # Tube # / Cartridge #	Date of Collection	Start Time	End Time	Duration (mins)	Final Volume (Liters)	Analysis Requested
11A	OA10_1217	21651	12/13/17 - 12/14/17	1513	1512	1439	7195 L	TO-13A
12A	OA11_1217	31439	↓	1522	1526	1444	7191 L	↓
13A	OA5_1217	20856		0950	1005	1455	7428 L	
14A	OA5-1_1217	31367		0950	1005	1455	7508 L	
15A	OA15_1217	14334	12/13-14/17	1428	1327	1379	7005 L	TO-13A
16A	TRIPBLANK-1_1217	N/A	12/13-14/2017	—	1200	1440	7200 L	TO-13A
								X SIS

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Shirley Steinmacher	12/14/17 1730	FEDEX SH	12/14/17 1730
FEDEX	12/14/17 1730	Audra Augustin EAT	12/15/17 1035

Pump Calibration Information
Pre-test Flow Rate:
Post-test Flow Rate:
Average Flow Rate:
Notes: Certification ID P160402LV / X171031

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FedEx		NA	Good	Yes No (None)	1712296

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SAMPLE RECEIPT SUMMARY

WORKORDER 1712296

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: LJ

Date Promised: 12/22/17 2:00 pm
Date Completed: 12/21/17
Date Received: 12/15/17
PO#: Springfield, MO
Project#: 690813.FI.01 Former Tronox Facility

Total $: $ 3,040.00
Logged By: AA

Fraction	Sample #	Analysis	Collected	Amount$
01A	OA6_1217	Modified TO-13A	12/14/2017	$180.00
02A	OA7_1217	Modified TO-13A	12/14/2017	$180.00
03A	OA12_1217	Modified TO-13A	12/14/2017	$180.00
04A	OA13_1217	Modified TO-13A	12/14/2017	$180.00
05A	OA14_1217	Modified TO-13A	12/14/2017	$180.00
06A	OA1_1217	Modified TO-13A	12/14/2017	$180.00
07A	OA2_1217	Modified TO-13A	12/14/2017	$180.00
08A	OA2-1_1217	Modified TO-13A	12/14/2017	$180.00
09A	OA8_1217	Modified TO-13A	12/14/2017	$180.00
10A	OA9_1217	Modified TO-13A	12/14/2017	$180.00
11A	OA10_1217	Modified TO-13A	12/14/2017	$180.00
12A	OA11_1217	Modified TO-13A	12/14/2017	$180.00
13A	OA5_1217	Modified TO-13A	12/14/2017	$180.00
14A	OA5-1_1217	Modified TO-13A	12/14/2017	$180.00
15A	OA15_1217	Modified TO-13A	12/14/2017	$180.00
16A	TRIPBLANK-1_1217	Modified TO-13A	12/14/2017	$180.00
17A	Lab Blank	Modified TO-13A	NA	$0.00
18A	CCV	Modified TO-13A	NA	$0.00
19A	LCS	Modified TO-13A	NA	$0.00
19AA	LCSD	Modified TO-13A	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox - Springfield, MO/22104

BILL TO: Accounts Payable
Greenfield Environmental, Inc.
PO Box 1189
Helena, MT 59624

Analysis Code: TO-13A

TERMS:

Reporting Method: Modified TO-13A (Sp)-CH2M Hill (Springfield, MO)

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SAMPLE RECEIPT SUMMARY Continued

Client

Phone

Fax

Sales Rep:

Date Promised:
Date Completed:
Date Received:
PO#:
Project#:

Total $: $ 3,040.00
Logged By: AA

Fraction	Sample #	Analysis	Collected	Amount$
Misc. Charges	Client Specific EDD (16) @ $5.00 each.			$80.00
	eCVP (16) @ $5.00 each.			$80.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox - Springfield, MO/22104

BILL TO: Accounts Payable
Greenfield Environmental, Inc.
PO Box 1189
Helena, MT 59624

Analysis Code: TO-13A

TERMS:

Reporting Method: Modified TO-13A (Sp)-CH2M Hill (Springfield, MO)

Sample Discrepancy Report

Identification

Initiated By: AA **Project ID:**22104 **PM**: BSW **Date:** 12/15/2017 **Discrepancy Type:** ☒ **1.** ☐ **2.** ☐ **3.**

Workorder(s) affected:1712296 **Sample(s) affected:** All

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.
1.4. ☐ Sampling year not documented on COC but noted on sample tag.
1.5. ☒ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.
1.8. ☐ COC improperly relinquished / received.
☐Signature missing ☐date missing ☐time missing.
1.9. ☐ Sample ID on tags do not match the COC.
1.10. ☐ Can numbers do not match the COC.
1.11. ☐ Sampling date discrepancy.
1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.13. ☐ ID-none on the sample Tag/Blank.
1.14. ☐ Other (describe below).

Initials: AADate:12/15/2017

Describe the Discrepancy: 1.5, All

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Sorbent samples -sampling volume was not provided.
2.11. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
☐ Canister valve was open.
☐ Brass nut was loose/not present.
☐ Sample can be analyzed.
☐ Sample cannot be analyzed.
2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.
2.14. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).
2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.17. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐

Describe the Discrepancy:

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☐ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:_____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: _____

_____

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

Compound List

Modified TO-13A (Sp)-CH2M Hill (Springfield, MO)

CAS Number	Compound	Detection Limit ug	Type
91-20-3	Naphthalene	1.0	
91-57-6	2-Methylnaphthalene	1.0	
208-96-8	Acenaphthylene	1.0	
83-32-9	Acenaphthene	1.0	
86-73-7	Fluorene	1.0	
85-01-8	Phenanthrene	1.0	
120-12-7	Anthracene	1.0	
206-44-0	Fluoranthene	1.0	
129-00-0	Pyrene	1.0	
218-01-9	Chrysene	1.0	
56-55-3	Benzo(a)anthracene	1.0	
205-99-2	Benzo(b)fluoranthene	1.0	
207-08-9	Benzo(k)fluoranthene	1.0	
50-32-8	Benzo(a)pyrene	1.0	
193-39-5	Indeno(1,2,3-c,d)pyrene	1.0	
53-70-3	Dibenz(a,h)anthracene	1.0	
81103-79-9	Fluorene-d10		
1718-52-1	Pyrene-d10		
9999-9999-002	Benzo(a)pyrene-d12		
9999-9999-001	Fluoranthene-d10		
108-95-2	Phenol	5.0	
132-64-9	Dibenzofuran	1.0	
51-28-5	2,4-Dinitrophenol	40	
105-67-9	2,4-Dimethylphenol	5.0	
95-57-8	2-Chlorophenol	5.0	

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 11/21/17
Workorder # 1712296	Form F1.27	Revision #15	Revision Date: 11/21/17	Page 1 of 2

S1	S2	S3	S4	D	*Section 1* – Spec Out				
					Initials/Instrument/Date	**S1:** MSD-9 LA 12/21/17	**S2:**	**S3:**	**S4:**
✓				■	Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓				■	Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
✓				■	Manual Integrations included and approved				
✓					Chain of Custody verified for special comments (add comments below)				
✓				■	Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				
✓				■	Verified standard expiration dates				

Profile, analyses, reporting, special notes and unusual circumstances:

J-Flag to MDL

A1	A2	A3	A4	D	*Section 2* – Sample Analysis				
					Initials/Date	**A1:** LA 12/21/17	**A2:**	**A3:**	**A4:**
✓					IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
✓					**a)** Tedlar Bag IDs verified against COC **b)** Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
✓					Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓				■	12/24 Hr clock time & Hold Time met for all samples				
✓					Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓					All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes:

D1	D2	D3	D4	T	3T	*Section 3* – Target Data Reduction	**Technical Review Needed? Circle one: Yes/No**		**T:**	
						Initials/Instrument/Date	**D1:** MSD-9 LA 12/21/17	**D2:**	**D3:**	**D4:**
✓					■	CAR # *(if applicable)*				
✓					■	Spectra Verified *(documentation of spectral defense included if applicable)*				
✓					■	TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
✓					■	TPH/NMOC calculations complete and included in folder				

Special notes:

A	3T	*Section 4*- Atlas Data Entry	**Lumen verified and included in folder**	**Circle one: Yes/No**
✓		**Initials/Date:** LA 12/21/17.	**3rd Tier:** *(needed only for DOD or per client request)*	
✓		Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
✓		Manually entered results are checked		
✓		At least one result per sample is verified against Target quant sheets		
✓		Appropriate data qualifier flags are applied		
✓		Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				**Reason for Reissue:**
W	**T**	**3T**	**Q**	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder # :				**Reason for Reissue:**
W	**T**	**3T**	**Q**	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable

Electronic Comprehensive Validation Package (eCVP)

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COMPREHENSIVE VALIDATION PACKAGE

Modified TO-15 SIM

INVENTORY SHEET

Work Order #: 1712342

	Page Nos.	
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b. Target Compound Raw Data		
-Internal Standard Area and Retention Time Summary		
-Surrogate Recovery Summary (If Applicable)		
-Chromatogram(s) and Ion Profiles (If Applicable)		
3. QC Results and Raw Data		
a. Method Blank (Results+ Raw Data)	228	240
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c. Internal Standard Summary Form (If Applicable)	243	244
d. Duplicate Results Summary Sheet	245	246
e. Matrix Spike/Matrix Spike Duplicate (Results + Raw Data	--	--
f. Initial Calibration Data (Summary Sheet + Raw Data)	247	335
g. MDL Study (If Applicable)	336	340
h. Continuing Calibration Verification Data (Summary Sheet	341	358
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j. Extraction Logs	--	--
k. Instrument Run Logs/Software Verification	399	401
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b. Chain-of-Custody Records	415	416
c. Sample Log-In Sheet	417	418
d. Misc Shipping/Receiving Records (list of individual records)		
Sample Receipt Discrepancy Report	419	421
5. Other Records (describe or list)		
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b. Manual Integrations	--	--
c. Manual Calculations	--	--
d. Canister Dilution Factors	422	424
e. Laboratory Corrective Action Request	--	--
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g. Variance Table	--	--
h. Canister Certification	426	444
i. Data Review Check Sheet	445	446

Comments:

Completed by:

Vera Belitsky	Vera Belitsky / Document Control	12/28/17
(Signature)	(Print Name & Title)	(Date)

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WORK ORDER #: 1712342

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable Greenfield Environmental, Inc. PO Box 1189 Helena, MT 59624
PHONE:	352-335-7991	**P.O. #**	Springfield, MO
FAX:	352-3352959	**PROJECT #**	Outdoor Event #1 2017
DATE RECEIVED:	12/16/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	12/22/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	IAU-040_1217	Modified TO-15 SIM	7.3 "Hg	4.9 psi
02A	IAG-040_1217	Modified TO-15 SIM	6.5 "Hg	4.7 psi
03A	CS-040_1217	Modified TO-15 SIM	4.3 "Hg	4.8 psi
04A	OA-040_1217	Modified TO-15 SIM	4.9 "Hg	5 psi
05A	IAU-140_1217	Modified TO-15 SIM	9.4 "Hg	5.1 psi
06A	OA1_1217	Modified TO-15 SIM	2.2 "Hg	5 psi
07A	OA2_1217	Modified TO-15 SIM	4.5 "Hg	4.9 psi
08A	OA2-1_1217	Modified TO-15 SIM	6.7 "Hg	4.7 psi
09A	OA6_1217	Modified TO-15 SIM	2.2 "Hg	4.8 psi
10A	OA7_1217	Modified TO-15 SIM	4.9 "Hg	4.7 psi
11A	OA8_1217	Modified TO-15 SIM	4.9 "Hg	5.1 psi
12A	OA9_1217	Modified TO-15 SIM	6.9 "Hg	5.1 psi
13A	OA10_1217	Modified TO-15 SIM	6.3 "Hg	4.8 psi
14A	OA11_1217	Modified TO-15 SIM	6.9 "Hg	4.8 psi
15A	OA12_1217	Modified TO-15 SIM	4.1 "Hg	5.1 psi
16A	OA13_1217	Modified TO-15 SIM	5.9 "Hg	5.1 psi
17A	OA13-1_1217	Modified TO-15 SIM	3.1 "Hg	4.9 psi
18A	OA14_1217	Modified TO-15 SIM	3.9 "Hg	4.9 psi
19A	OA15_1217	Modified TO-15 SIM	1 "Hg	5 psi
20A	Lab Blank	Modified TO-15 SIM	NA	NA
20B	Lab Blank	Modified TO-15 SIM	NA	NA
21A	CCV	Modified TO-15 SIM	NA	NA
21B	CCV	Modified TO-15 SIM	NA	NA

Continued on next page

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WORK ORDER #: 1712342

Work Order Summary

CLIENT:	Mr. Mark Stinnett CH2M Hill 3011 SW Williston Road Gainesville, FL 32608	**BILL TO:**	Accounts Payable Greenfield Environmental, Inc. PO Box 1189 Helena, MT 59624
PHONE:	352-335-7991	**P.O. #**	Springfield, MO
FAX:	352-3352959	**PROJECT #**	Outdoor Event #1 2017
DATE RECEIVED:	12/16/2017	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	12/22/2017		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
22A	LCS	Modified TO-15 SIM	NA	NA
22AA	LCSD	Modified TO-15 SIM	NA	NA
22B	LCS	Modified TO-15 SIM	NA	NA
22BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 12/27/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 SIM
CH2M Hill
Workorder# 1712342

Nineteen 6 Liter Summa Canister (SIM Certified) samples were received on December 16, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A signature, date and time were not provided by the field sampler.

Analytical Notes

Dilution was performed on sample IAG-040_1217 due to the presence of high level target species.

Total Xylenes concentration is calculated by summing the individual concentrations of m,p-Xylene and O-Xylene.

A Limit of Detection (LOD) and Method Detection Limit (MDL) study are not maintained for Total Xylenes.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

Table 1

Client Sample ID	Lab Sample ID	Date Collected	Date Received	Date Extracted	Sample Holding Time (Days)	Date Analyzed	Sample Extract Holding Time (Days)	Sample Condition
IAU-040 1217	1712342-01A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
IAG-040 1217	1712342-02A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
CS-040 1217	1712342-03A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA-040 1217	1712342-04A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
IAU-140 1217	1712342-05A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA1 1217	1712342-06A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA2 1217	1712342-07A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA2-1 1217	1712342-08A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA6 1217	1712342-09A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA7 1217	1712342-10A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA8 1217	1712342-11A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA9 1217	1712342-12A	12/14/2017	12/16/2017	NA	5	12/19/2017	NA	Good
OA10 1217	1712342-13A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA11 1217	1712342-14A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA12 1217	1712342-15A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA13 1217	1712342-16A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA13-1 1217	1712342-17A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA14 1217	1712342-18A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
OA15 1217	1712342-19A	12/14/2017	12/16/2017	NA	6	12/20/2017	NA	Good
Lab Blank	1712342-20A	NA	NA	NA	NA	12/19/2017	NA	Good
Lab Blank	1712342-20B	NA	NA	NA	NA	12/20/2017	NA	Good
CCV	1712342-21A	NA	NA	NA	NA	12/19/2017	NA	Good
CCV	1712342-21B	NA	NA	NA	NA	12/20/2017	NA	Good
LCS	1712342-22A	NA	NA	NA	NA	12/19/2017	NA	Good
LCSD	1712342-22AA	NA	NA	NA	NA	12/19/2017	NA	Good
LCS	1712342-22B	NA	NA	NA	NA	12/20/2017	NA	Good
LCSD	1712342-22BB	NA	NA	NA	NA	12/20/2017	NA	Good

Sample Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	IAU-040_1217		
Lab ID:	1712342-01A	**Date/Time Analyzed:**	12/19/17 03:49 PM
Date/Time Collecte	12/14/17 10:20 AM	**Dilution Factor:**	1.76
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121909sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.070	0.070	0.28	2.3
Ethyl Benzene	100-41-4	0.0041	0.038	0.15	1.6
m,p-Xylene	108-38-3	0.0098	0.038	0.30	5.5
Naphthalene	91-20-3	0.069	0.092	0.46	3.8
o-Xylene	95-47-6	0.0078	0.038	0.15	2.0
Toluene	108-88-3	0.034	0.034	0.13	10
Total Xylenes	9999-9999-015	NA	D	0.46	7.6

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121909sim.d
Lab Smp Id: 1712342-01A
Inj Date : 19-DEC-2017 15:49
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# N1618
Misc Info : 7.3"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.76000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	101241	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	78782			47.49- 107.49	77.82
14.274	14.298 (1.000)	49	147727			114.87- 174.87	145.92
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	511447	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86489			0.00- 46.92	16.91
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	396989	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	219615			25.29- 85.29	55.32
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	149396	5.68153	5.682	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85160			30.16- 90.16	57.00
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	446306	4.97136	4.971	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55918			0.00- 42.34	12.53

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.860	16.860 (1.101)	100	304026			38.15- 98.15	68.12
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.787	19.787 (1.072)	174	153771	4.48165	4.482	80.00- 120.00	100.00
	19.768	19.787 (1.071)	95	185248			88.82- 148.82	120.47
	19.787	19.787 (1.072)	176	150901			68.26- 128.26	98.13
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	57675	0.40308	0.7094	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	13140			0.00- 52.85	22.78
	23 Toluene					CAS #: 108-88-3		
	16.921	16.921 (1.105)	91	218364	1.56134	2.748	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	133657			33.44- 93.44	61.21
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	9327	0.21152	0.3723	80.00- 120.00	100.00
	18.527	18.548 (1.003)	91	28440			259.51- 319.51	304.91
	31 m,p-Xylene					CAS #: 108-38-3		
	18.672	18.672 (1.011)	106	30907	0.71758	1.263	80.00- 120.00	100.00
	18.651	18.672 (1.010)	91	60682			159.47- 219.47	196.33
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	9992	0.25518	0.4491	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	20943			168.52- 228.52	209.59
	38 Naphthalene					CAS #: 91-20-3		
	24.153	24.154 (1.308)	128	84042	0.40851	0.7190	80.00- 120.00	100.00
	24.153	24.154 (1.308)	127	11318			0.00- 43.35	13.47
M	39 Total Xylene					CAS #: 1330-20-7		
				40900	0.97276	1.712		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121909sim.d
Lab Smp Id: 1712342-01A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 7.3"Hg -> 4.9psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	101241	-15.59
20 1,4-Difluorobenze	564150	338490	789810	511447	-9.34
28 Chlorobenzene-d5	433051	259831	606271	396989	-8.33

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:21

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-01A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 7.3"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.682	113.63	70-130
$ 22 Toluene-d8	5.000	4.971	99.43	70-130
$ 33 4-Bromofluorobenze	5.000	4.482	89.63	70-130

Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

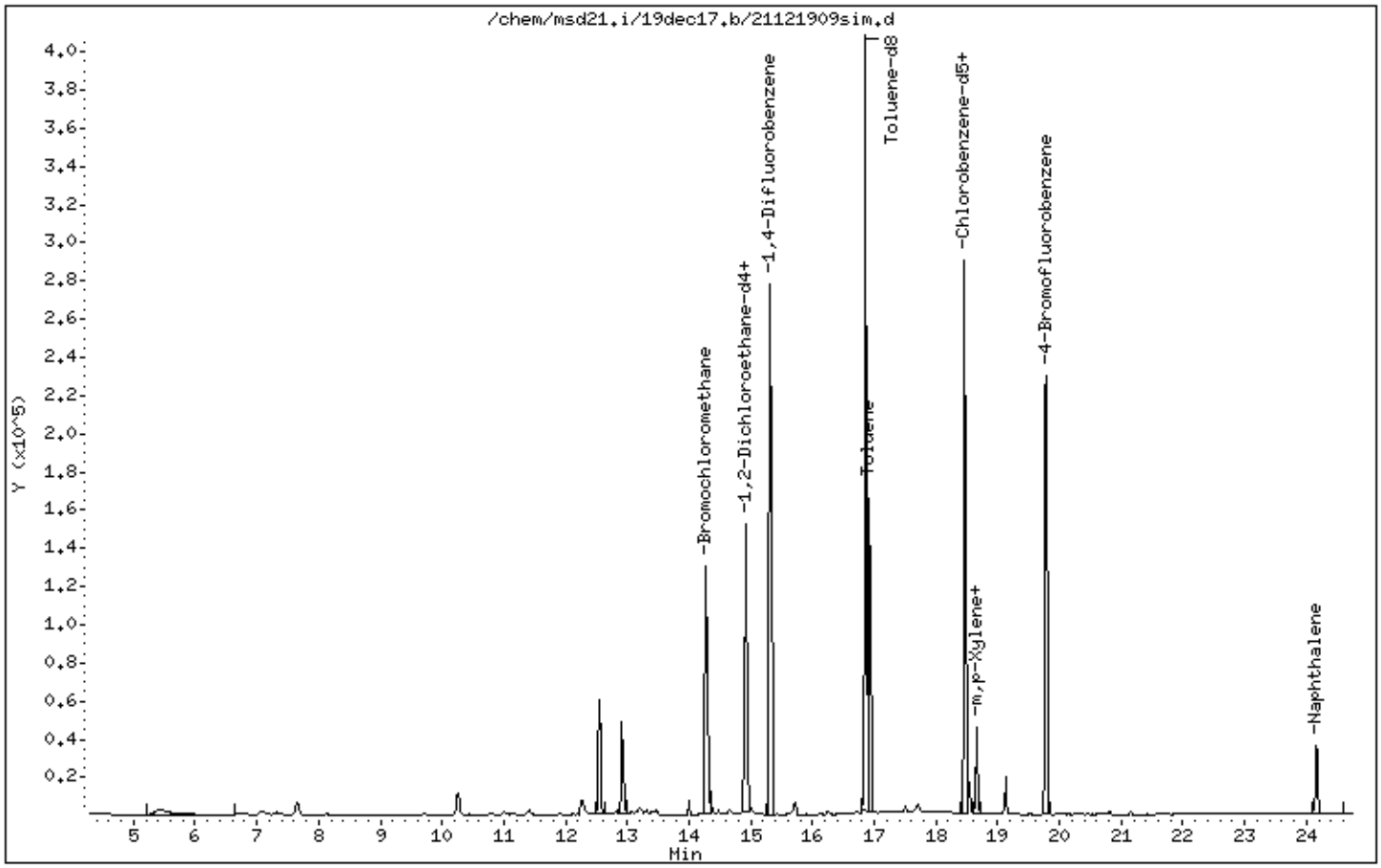
Instrument: msd21.i

Sample Info: 250mL# N1618

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

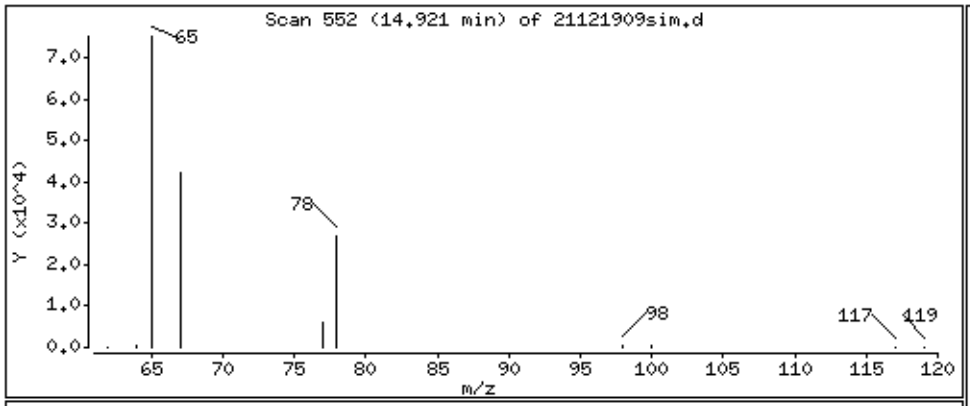
Operator: ef

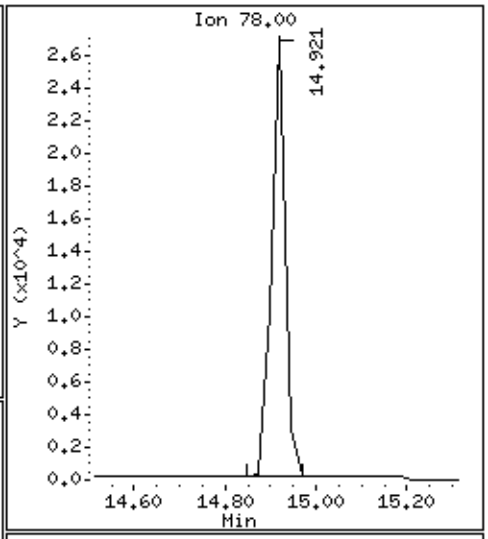
Column phase: RTX-624

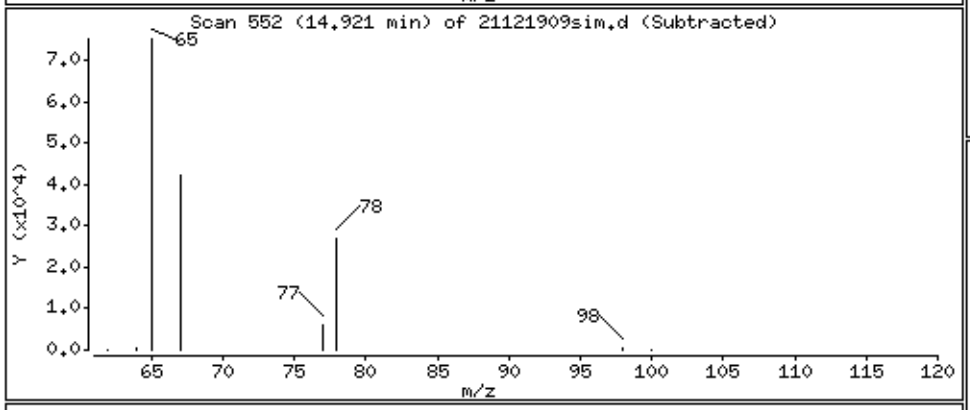
Column diameter: 0.32

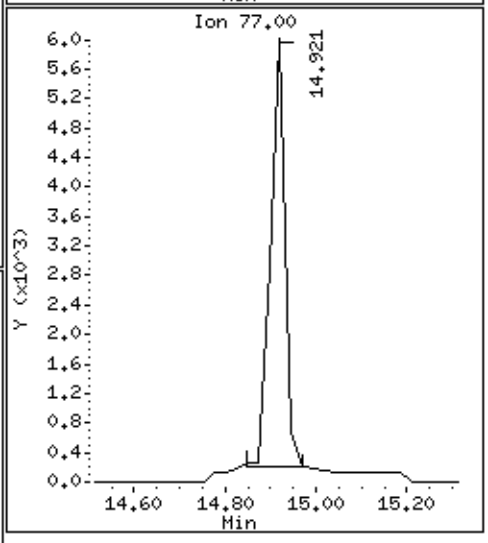
17 Benzene

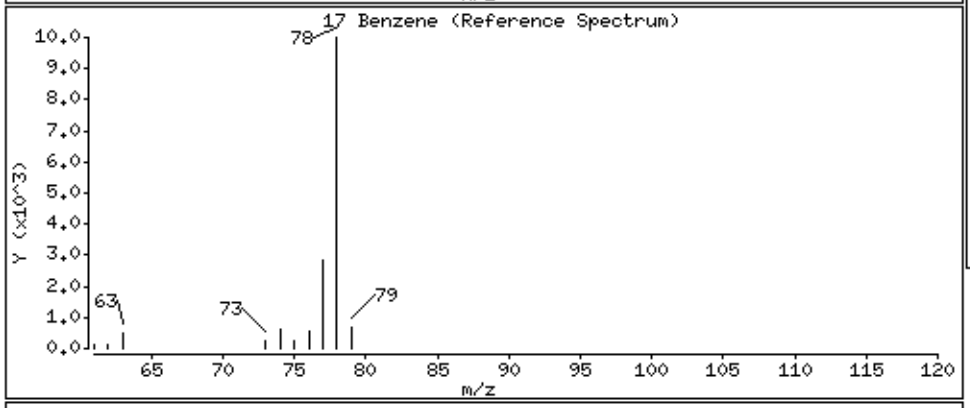
Concentration: 0.7094 PPBV

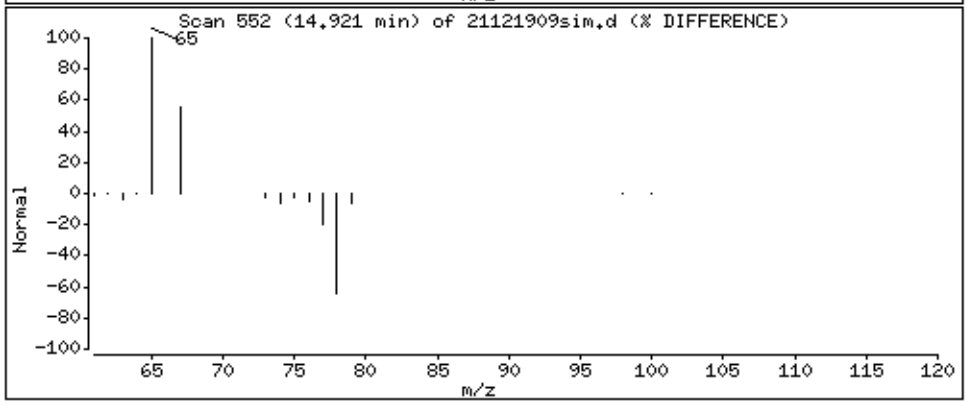












Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

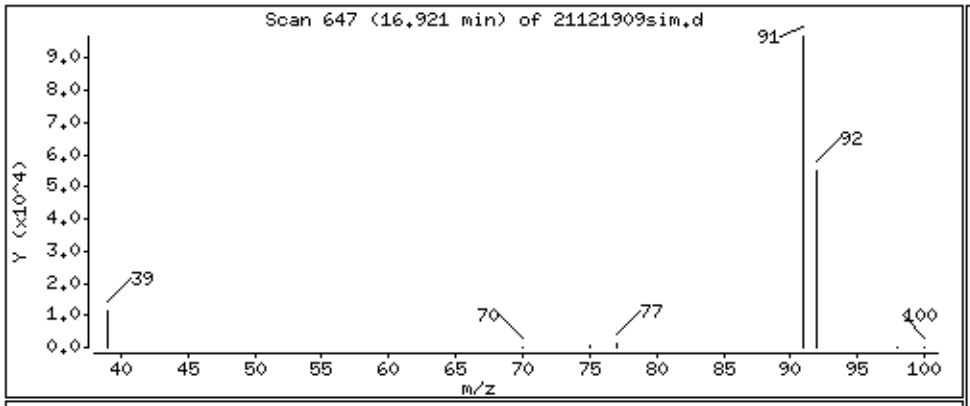
Operator: ef

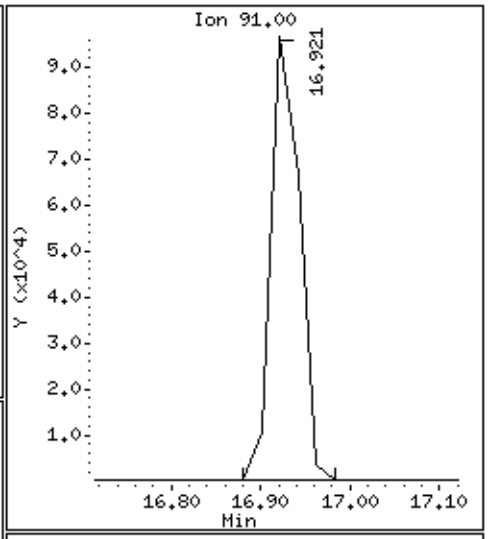
Column phase: RTX-624

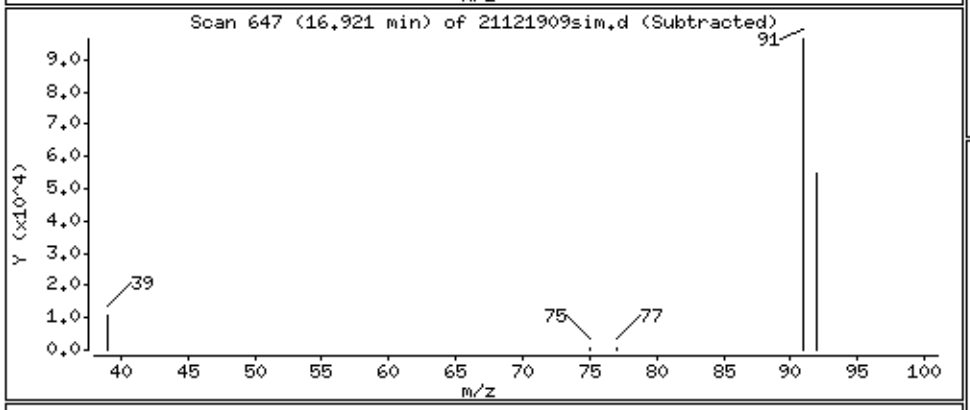
Column diameter: 0.32

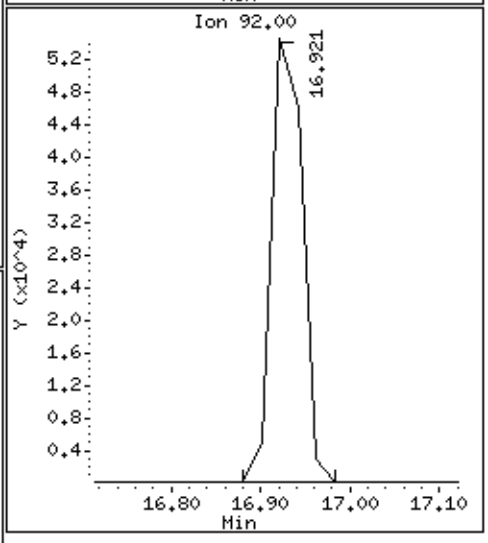
23 Toluene

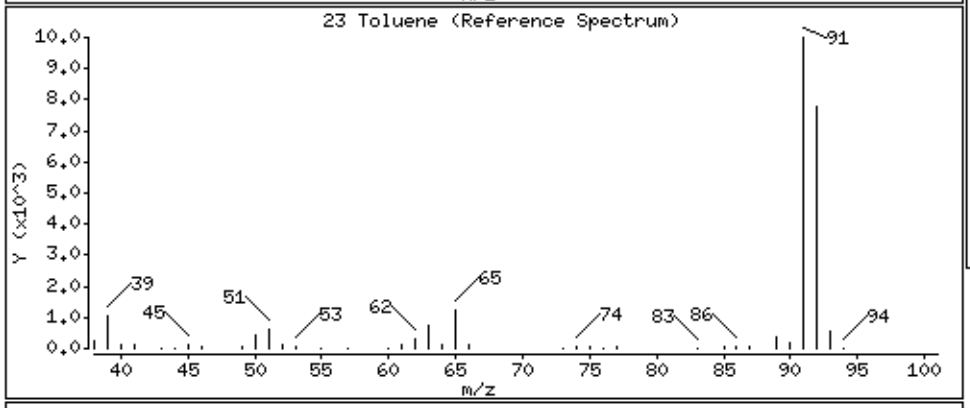
Concentration: 2.748 PPBV

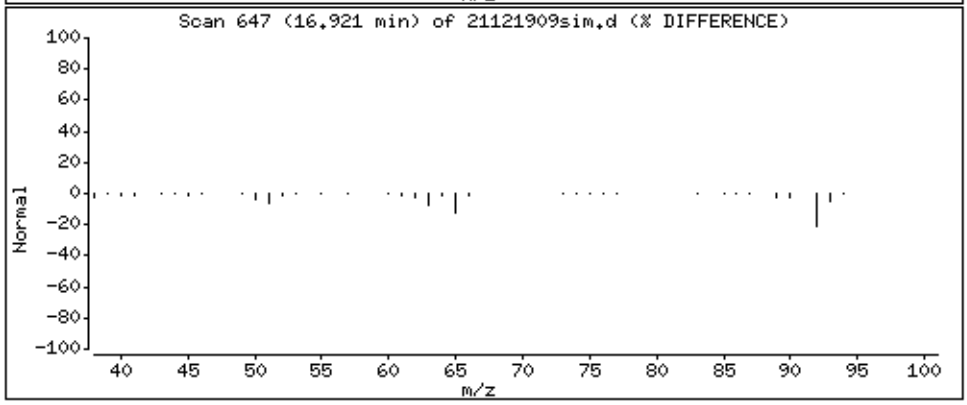












Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

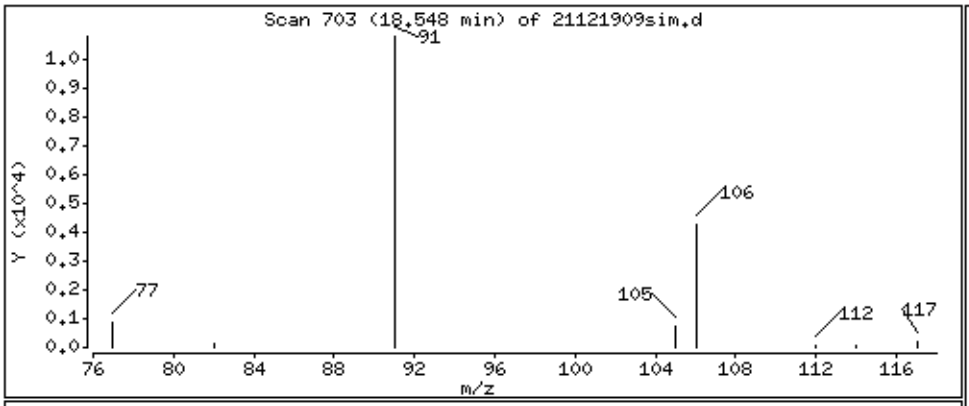
Operator: ef

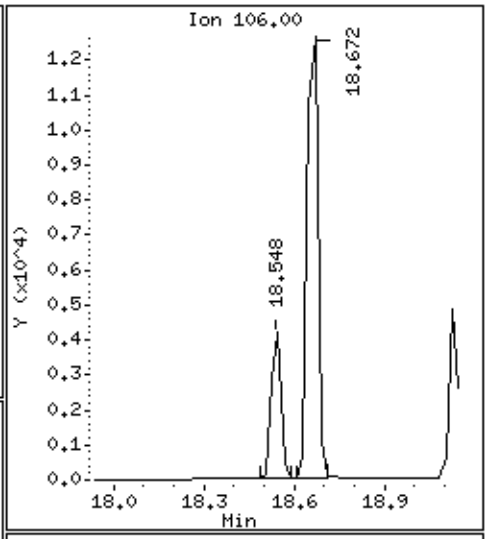
Column phase: RTX-624

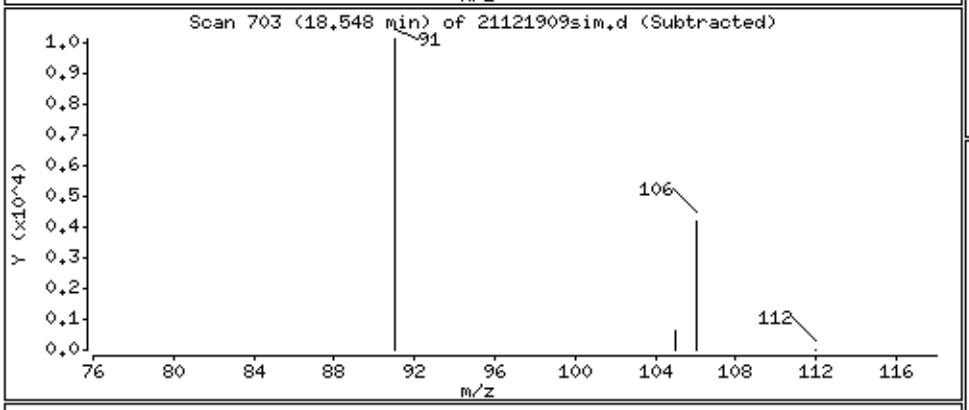
Column diameter: 0.32

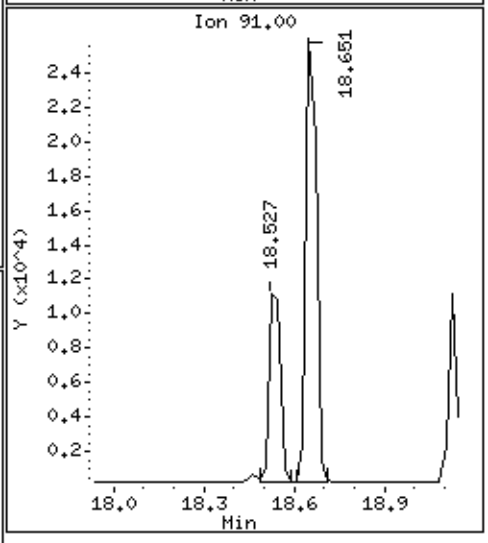
30 Ethyl Benzene

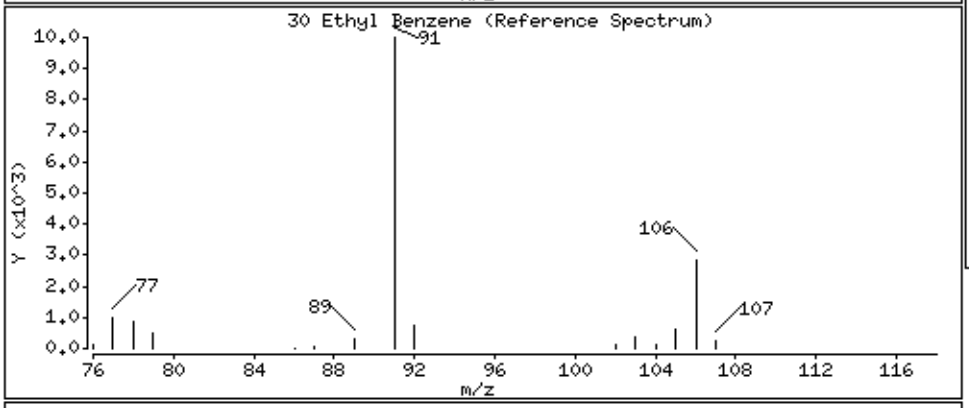
Concentration: 0.3723 PPBV

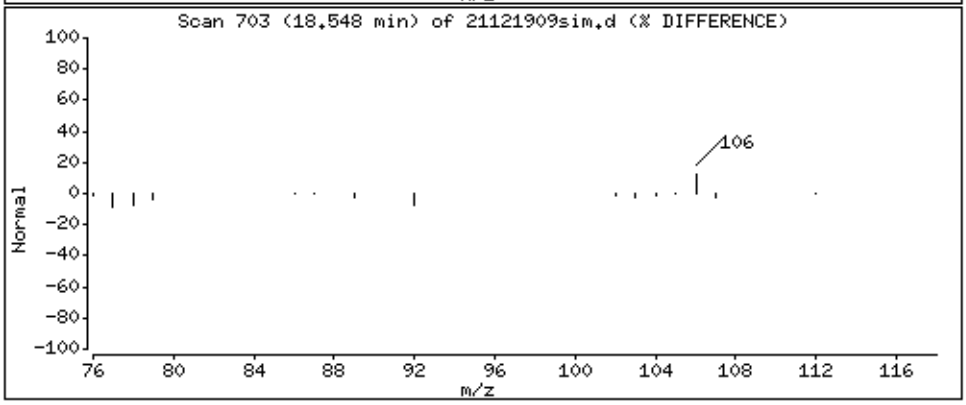












Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

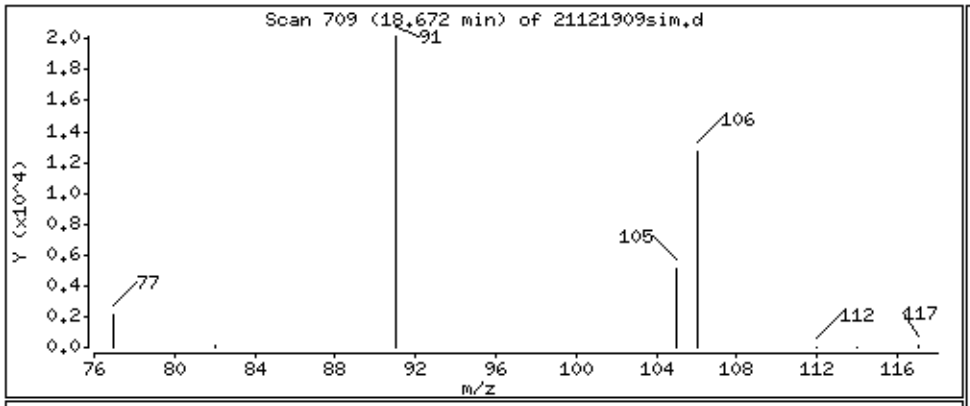
Operator: ef

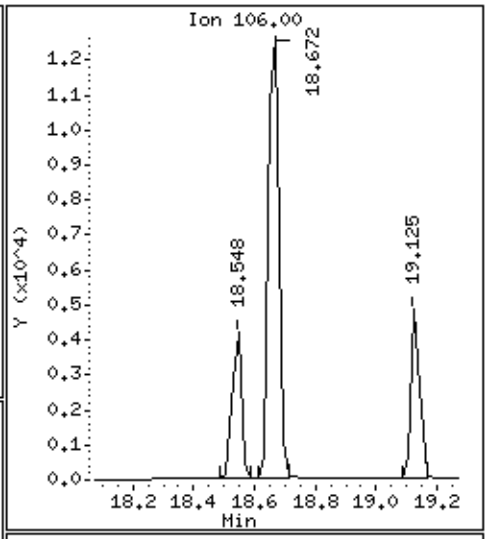
Column phase: RTX-624

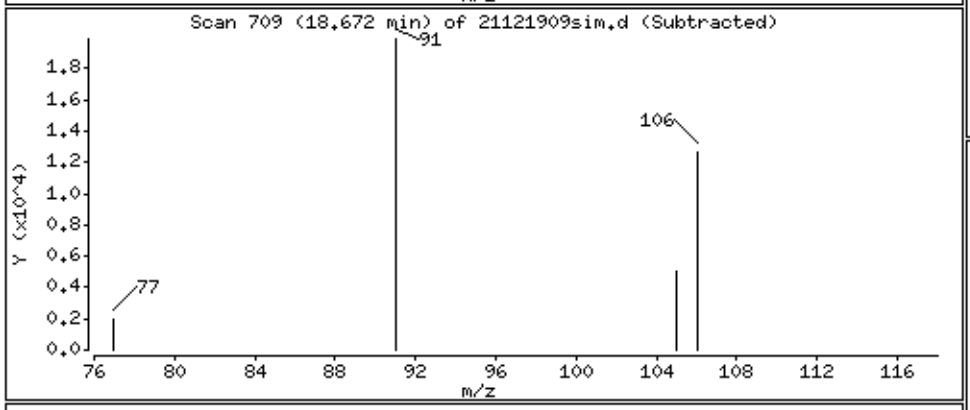
Column diameter: 0.32

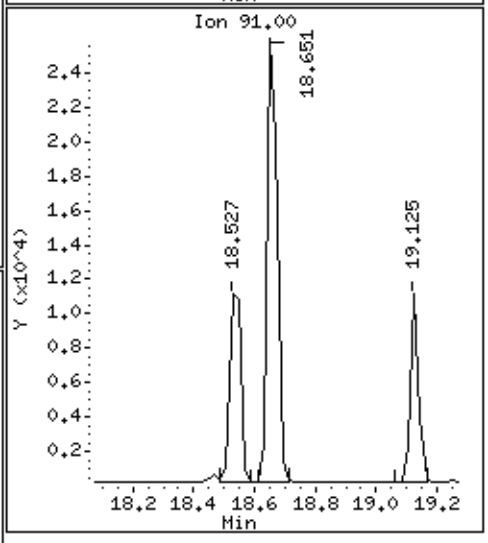
31 m,p-Xylene

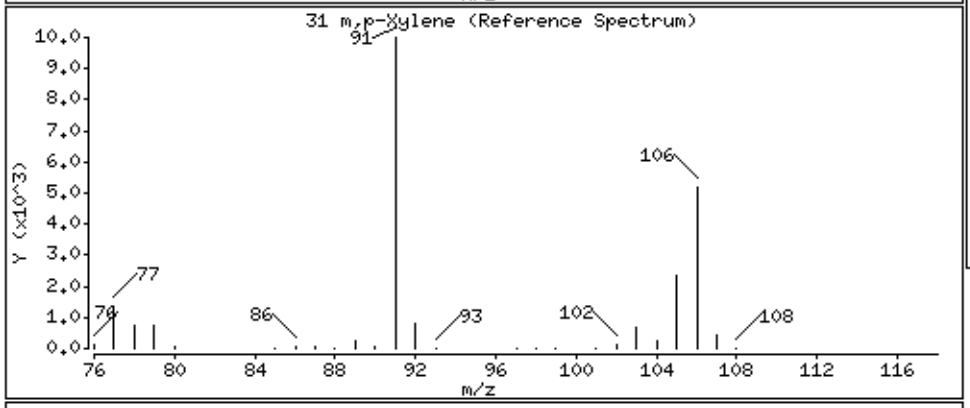
Concentration: 1.263 PPBV

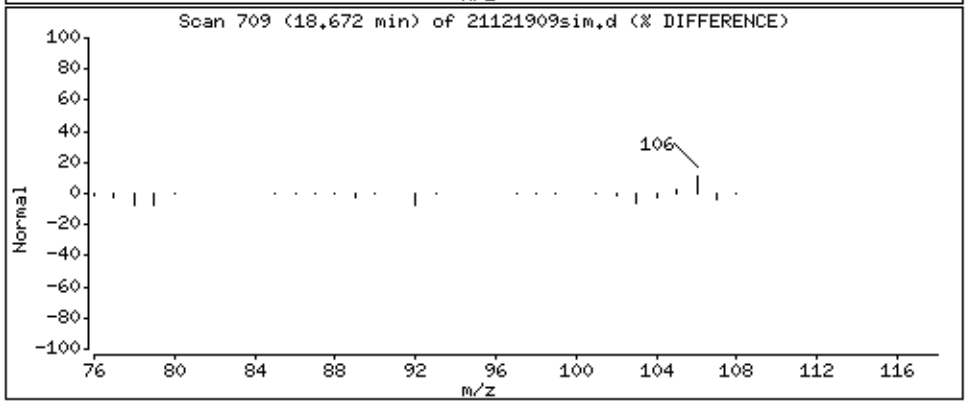












Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

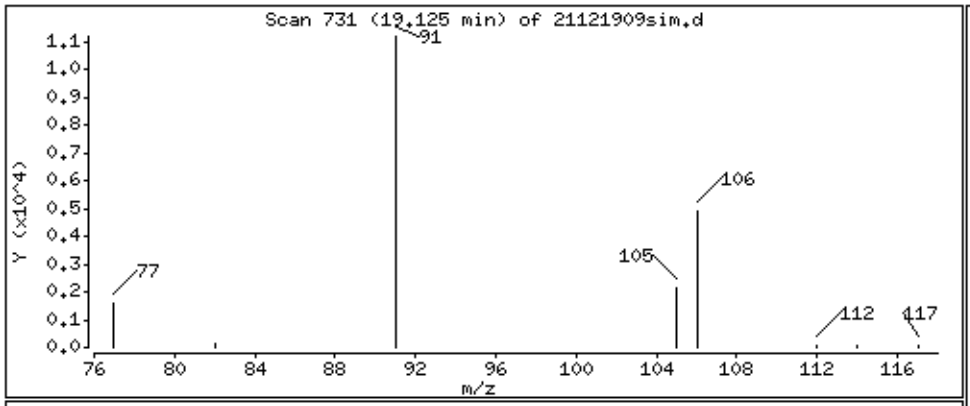
Operator: ef

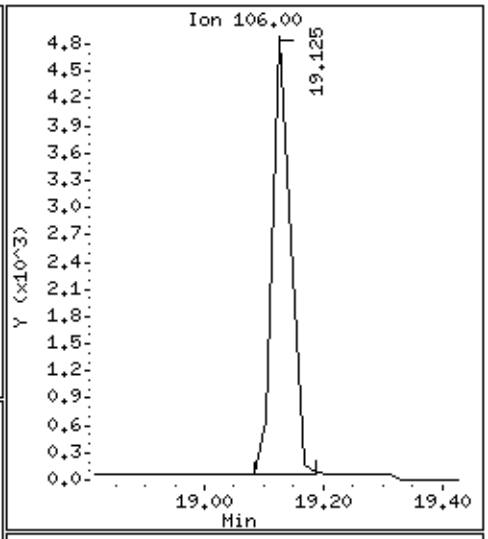
Column phase: RTX-624

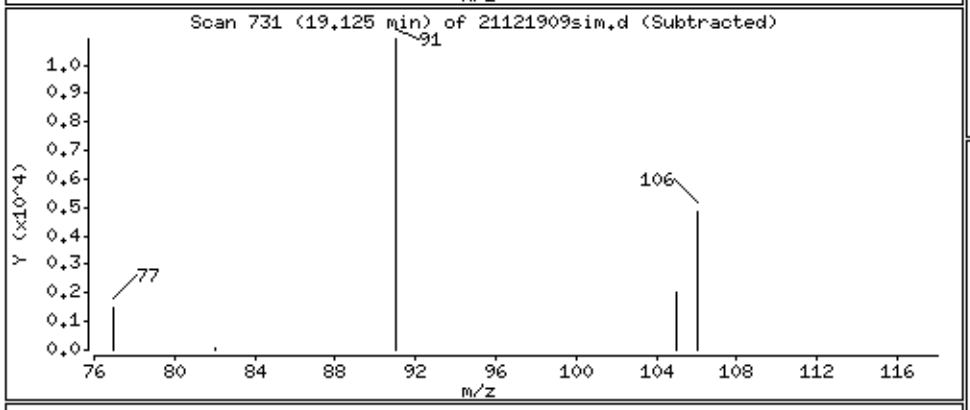
Column diameter: 0.32

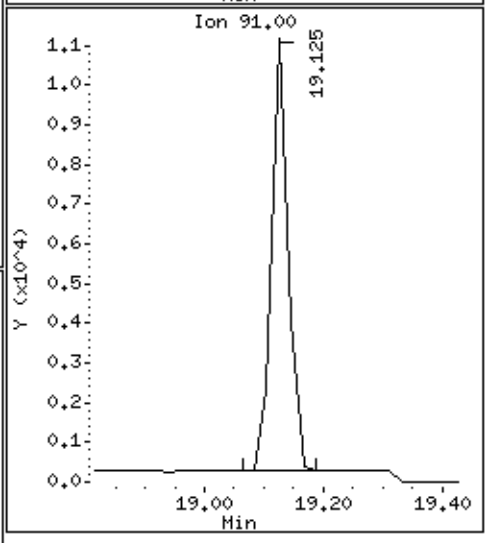
32 o-Xylene

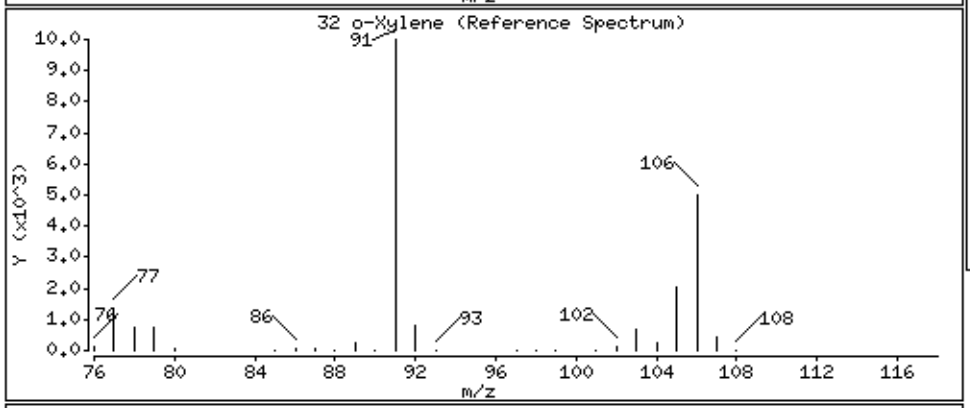
Concentration: 0.4491 PPBV

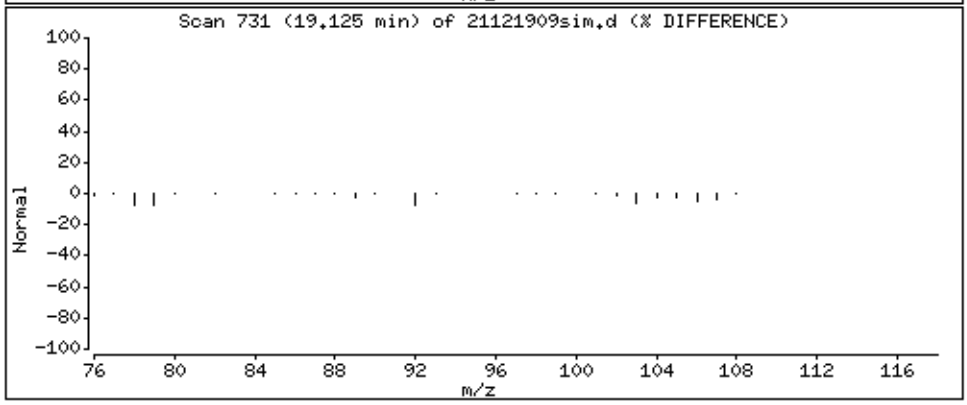












Data File: /chem/msd21.i/19dec17.b/21121909sim.d

Date : 19-DEC-2017 15:49

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1618

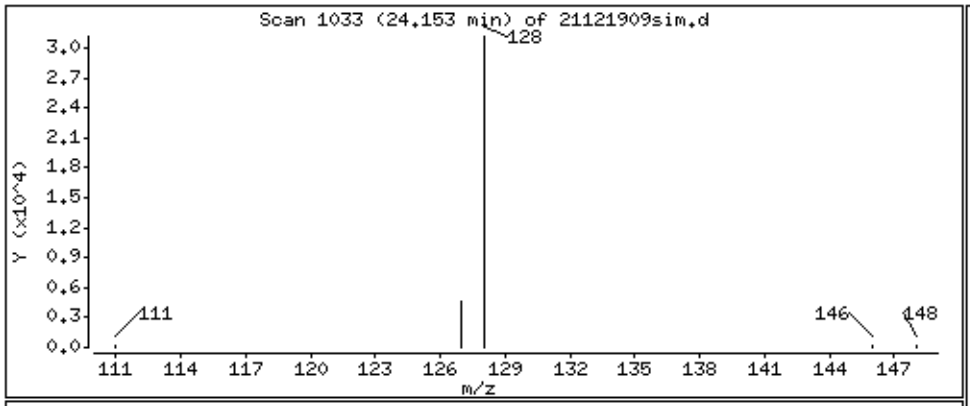
Operator: ef

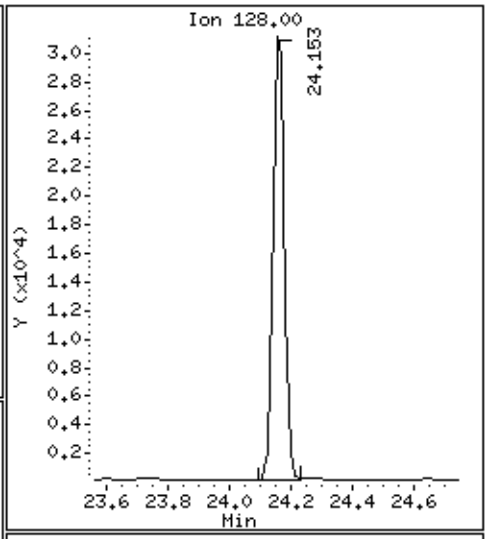
Column phase: RTX-624

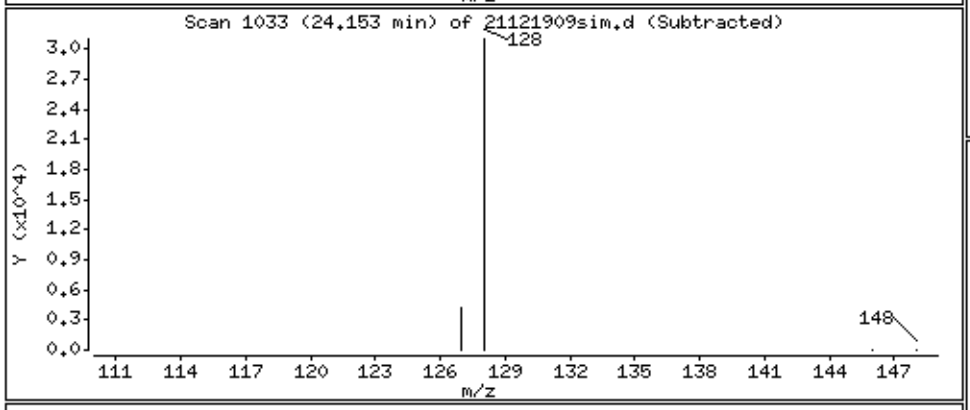
Column diameter: 0.32

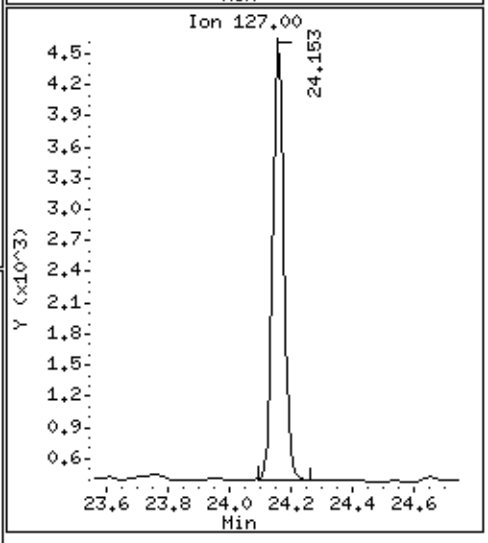
38 Naphthalene

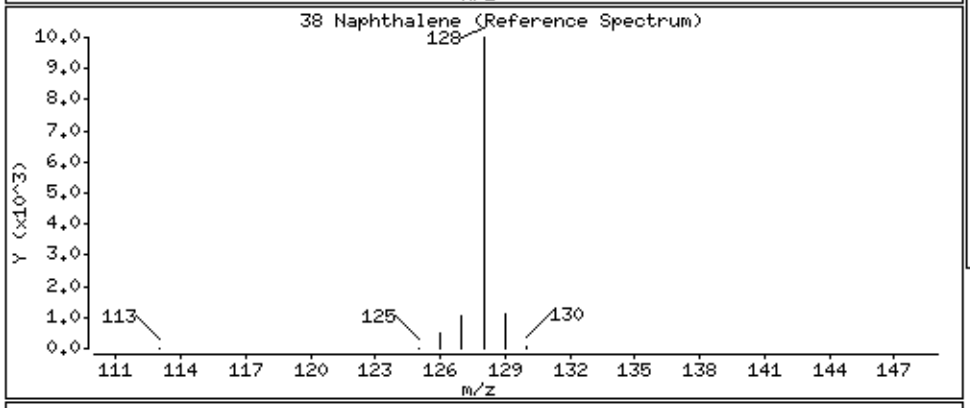
Concentration: 0.7190 PPBV

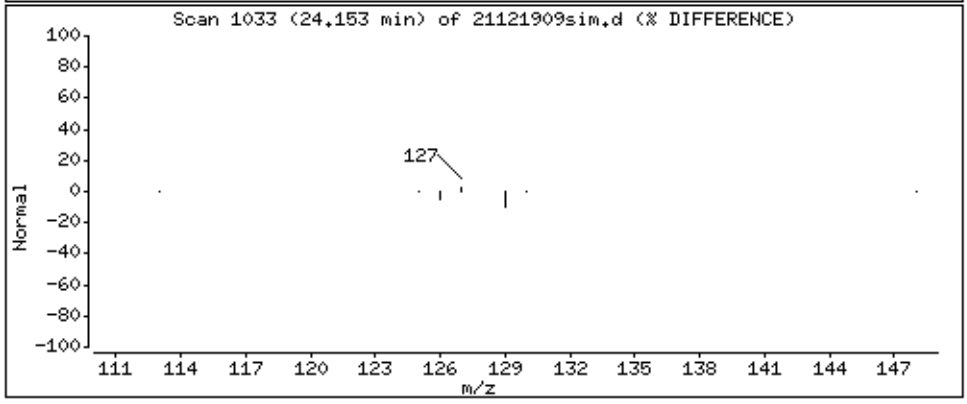












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	IAG-040_1217		
Lab ID:	1712342-02A	**Date/Time Analyzed:**	12/19/17 05:39 PM
Date/Time Collecte	12/14/17 10:25 AM	**Dilution Factor:**	4.22
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121912sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.17	0.17	0.67	43
Ethyl Benzene	100-41-4	0.0099	0.092	0.37	33
m,p-Xylene	108-38-3	0.024	0.092	0.73	110
Naphthalene	91-20-3	0.16	0.22	1.1	4.8
o-Xylene	95-47-6	0.019	0.092	0.37	39
Toluene	108-88-3	0.081	0.081	0.32	190
Total Xylenes	9999-9999-015	NA	D	1.1	150

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121912sim.d
Lab Smp Id: 1712342-02A
Inj Date : 19-DEC-2017 17:39
Operator : sw Inst ID: msd21.i
Smp Info : 100mL# 30853
Misc Info : 6.5"Hg -> 4.7psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 4.22000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	108153	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	83717			47.49- 107.49	77.41
14.274	14.298 (1.000)	49	156680			114.87- 174.87	144.87
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	522193	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	88590			0.00- 46.92	16.97
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	401305	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	224890			25.29- 85.29	56.04
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	145874	5.19303	5.193	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	91846			30.16- 90.16	62.96
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	456298	4.97807	4.978	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	66606			0.00- 42.34	14.60

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.860	16.860 (1.101)	100	310374			38.15- 98.15	68.02
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.787	19.787 (1.072)	174	155199	4.47463	4.475	80.00- 120.00	100.00
	19.768	19.787 (1.071)	95	187204			88.82- 148.82	120.62
	19.787	19.787 (1.072)	176	152123			68.26- 128.26	98.02
	17 Benzene					CAS #: 71-43-2		
	14.922	14.921 (0.974)	78	470067	3.21757	13.578	80.00- 120.00	100.00
	14.922	14.921 (0.974)	77	106684			0.00- 52.85	22.70
	23 Toluene					CAS #: 108-88-3		
	16.922	16.921 (1.105)	91	1692562	11.8530	50.020	80.00- 120.00	100.00
	16.922	16.921 (1.105)	92	1086049			33.44- 93.44	64.17
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	80931	1.81552	7.662	80.00- 120.00	100.00
	18.527	18.548 (1.003)	91	243918			259.51- 319.51	301.39
	31 m,p-Xylene					CAS #: 108-38-3		
	18.672	18.672 (1.011)	106	266442	6.11943	25.824	80.00- 120.00	100.00
	18.651	18.672 (1.010)	91	515610			159.47- 219.47	193.52
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	83995	2.12197	8.955	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	176621			168.52- 228.52	210.27
	38 Naphthalene					CAS #: 91-20-3		
	24.154	24.154 (1.308)	128	45286	0.21776	0.9189	80.00- 120.00	100.00
	24.154	24.154 (1.308)	127	6047			0.00- 43.35	13.35
M	39 Total Xylene					CAS #: 1330-20-7		
				350438	8.24141	34.779		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121912sim.d
Lab Smp Id: 1712342-02A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.5"Hg -> 4.7psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	108153	-9.83
20 1,4-Difluorobenze	564150	338490	789810	522193	-7.44
28 Chlorobenzene-d5	433051	259831	606271	401305	-7.33

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:21

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-02A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.5"Hg -> 4.7psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.193	103.86	70-130
$ 22 Toluene-d8	5.000	4.978	99.56	70-130
$ 33 4-Bromofluorobenze	5.000	4.475	89.49	70-130

Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

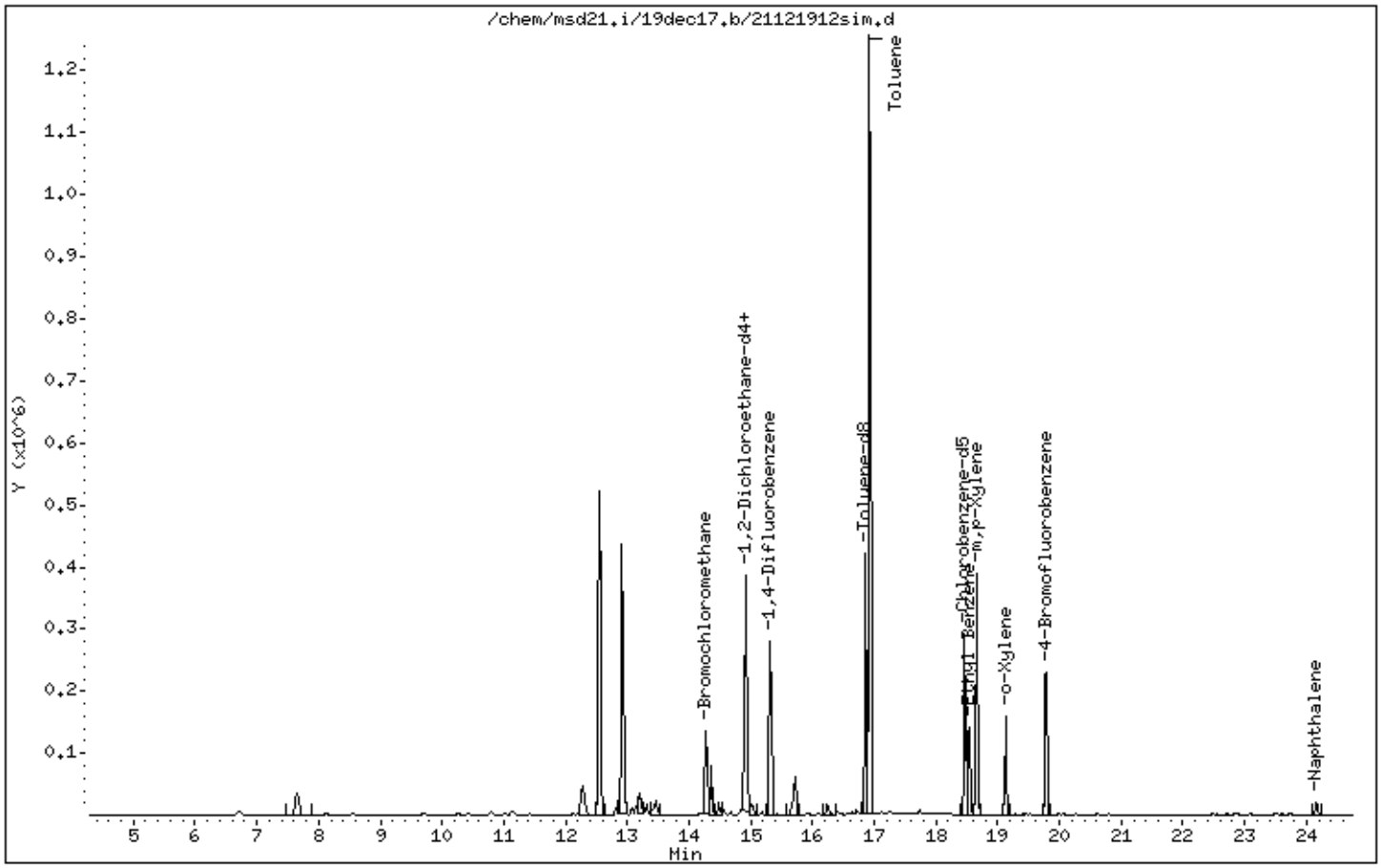
Instrument: msd21.i

Sample Info: 100mL# 30853

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

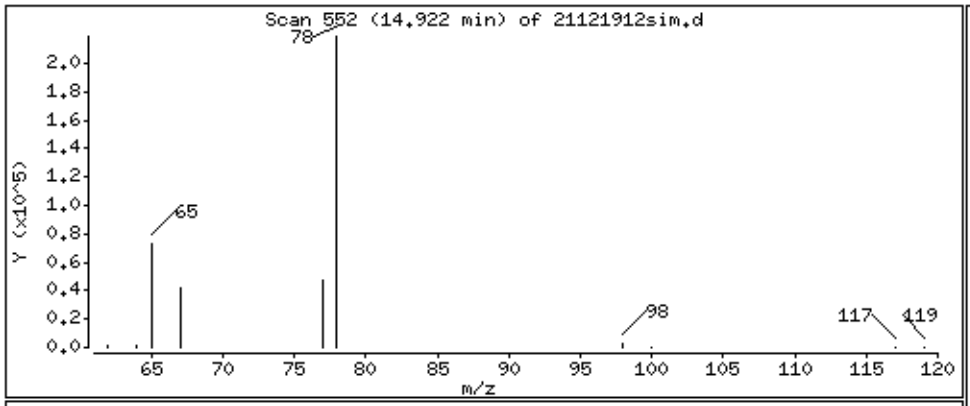
Operator: sw

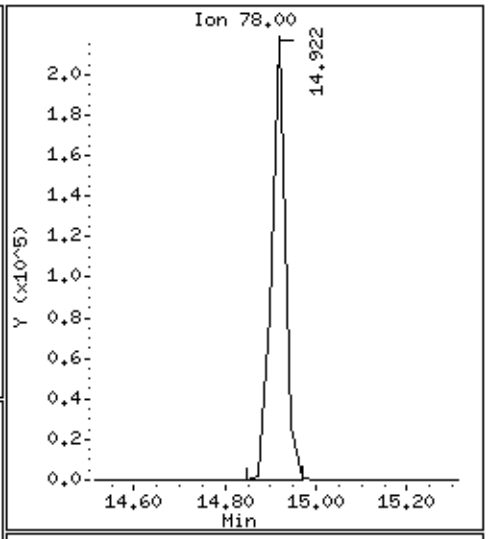
Column phase: RTX-624

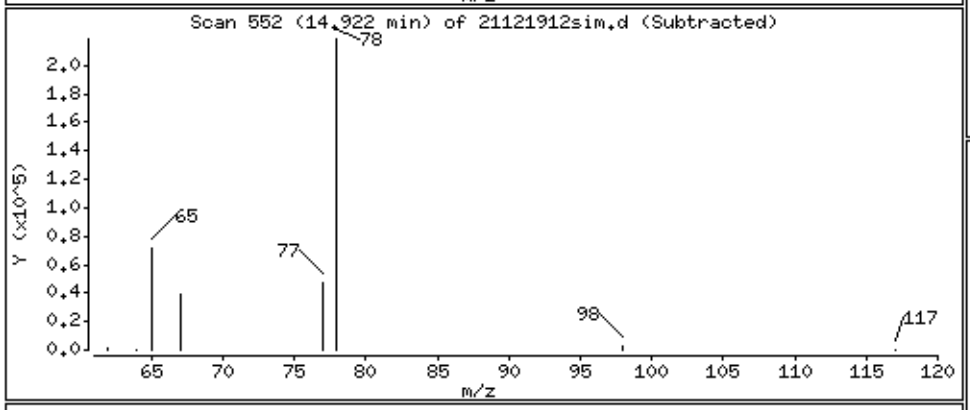
Column diameter: 0.32

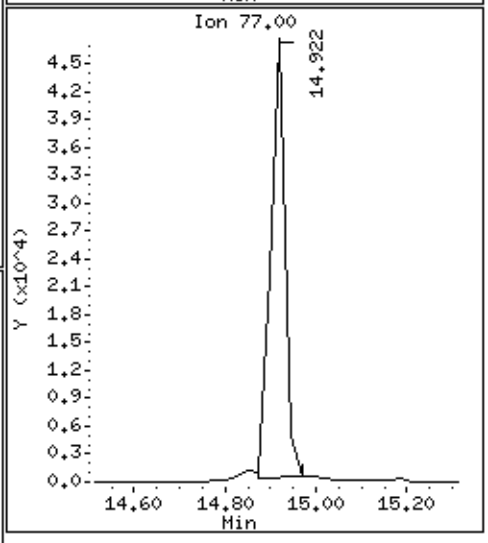
17 Benzene

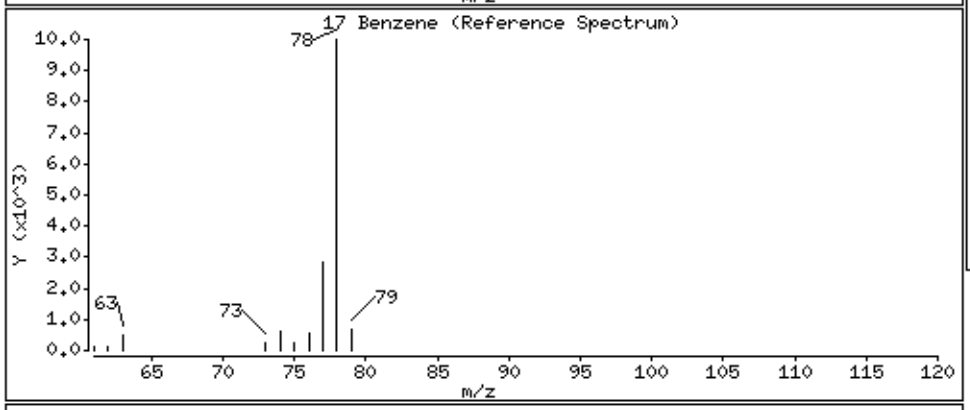
Concentration: 13.578 PPBV

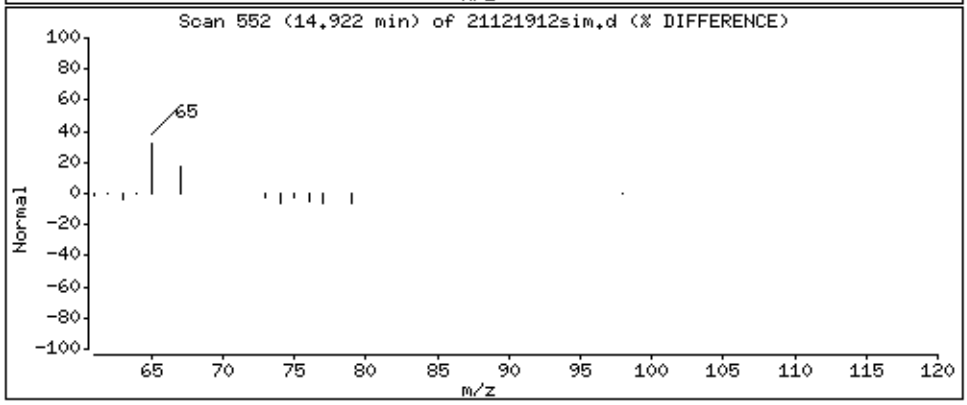












Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

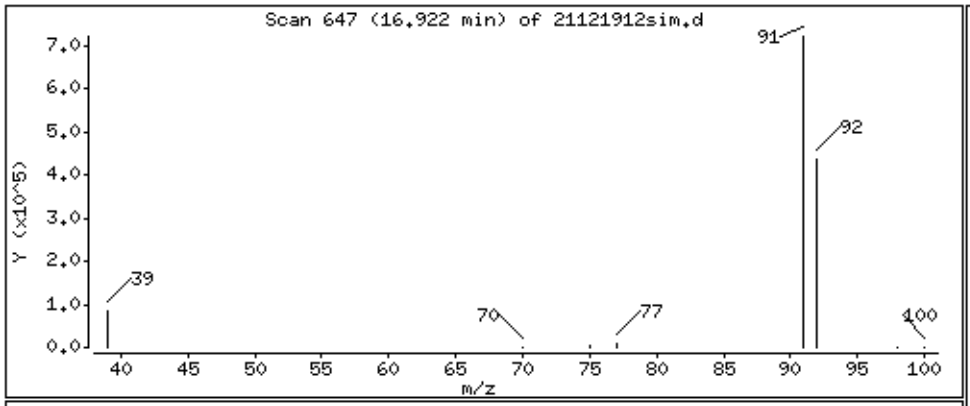
Operator: sw

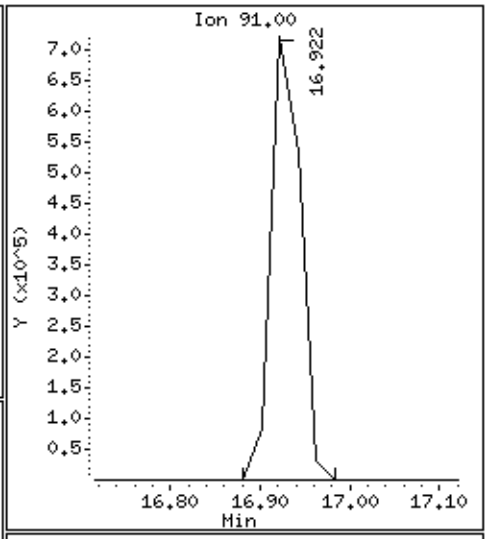
Column phase: RTX-624

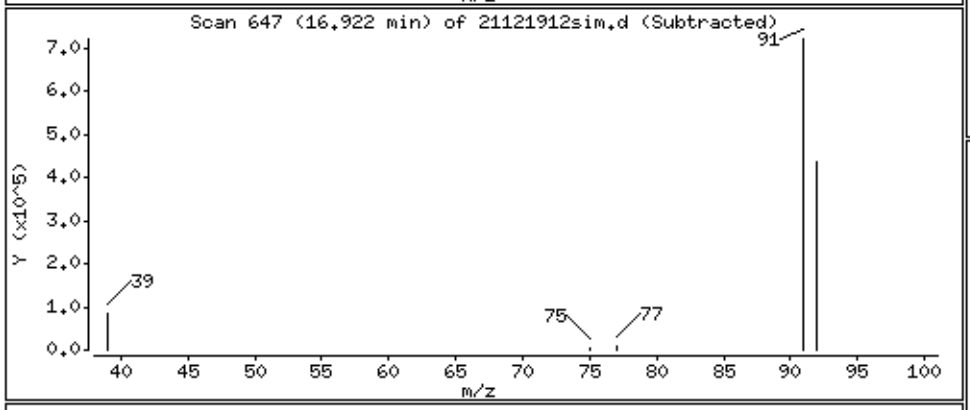
Column diameter: 0.32

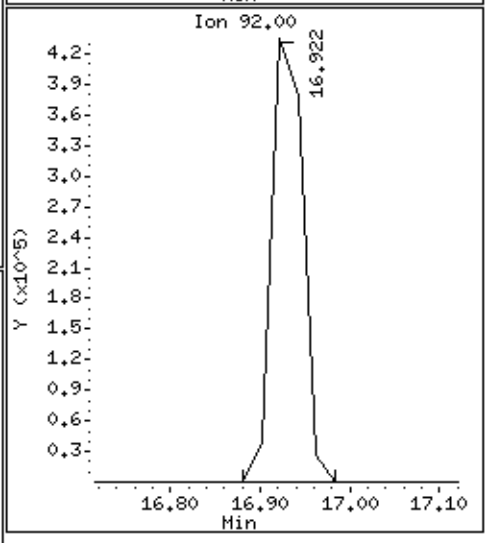
23 Toluene

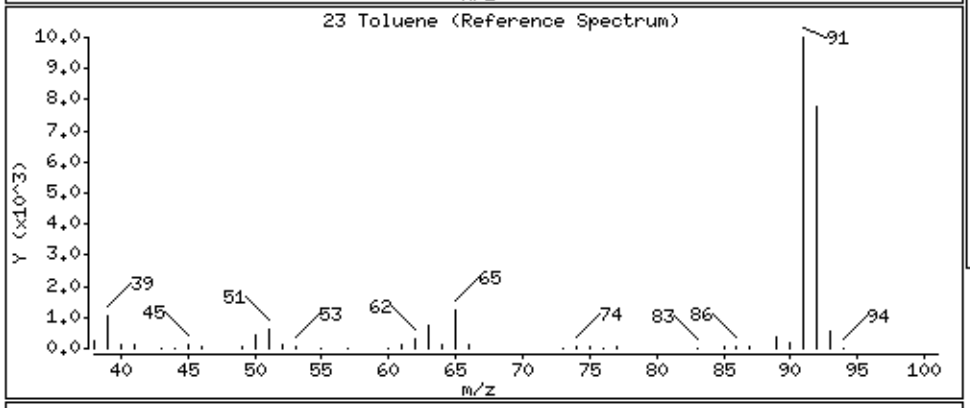
Concentration: 50.020 PPBV

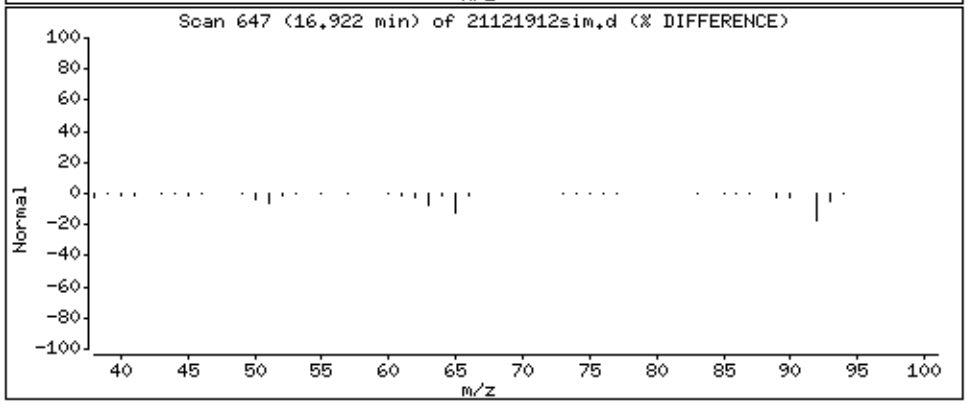












Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

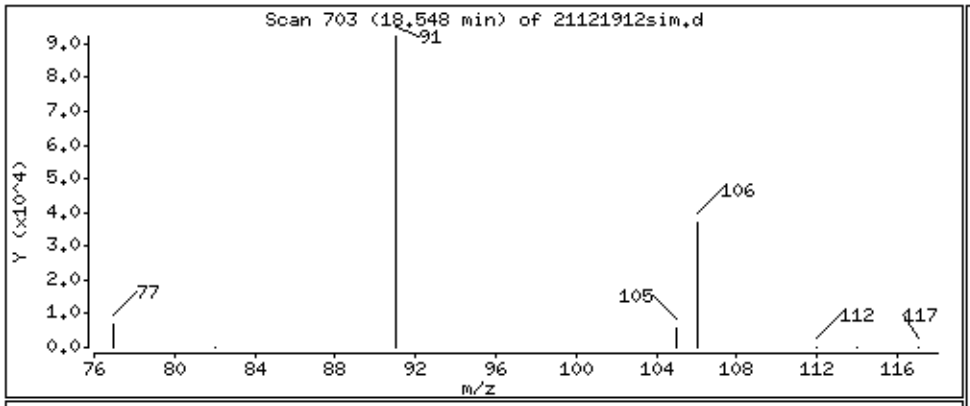
Operator: sw

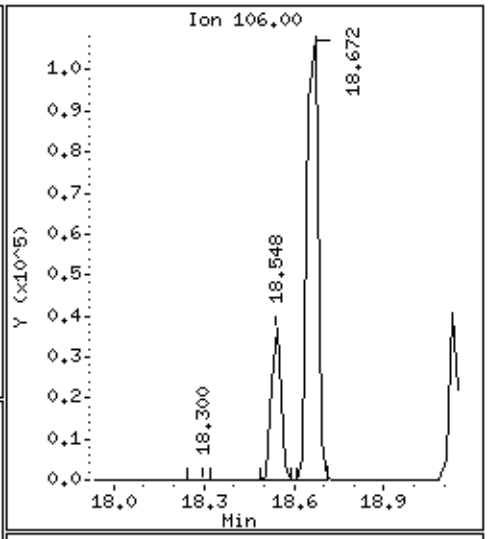
Column phase: RTX-624

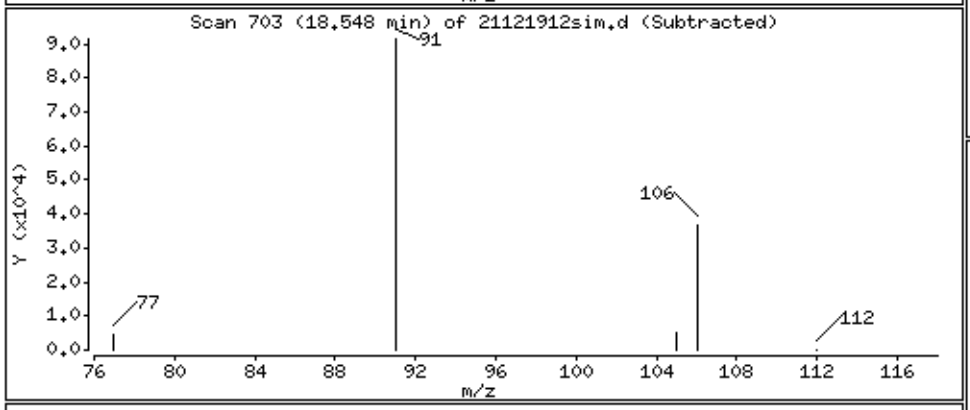
Column diameter: 0.32

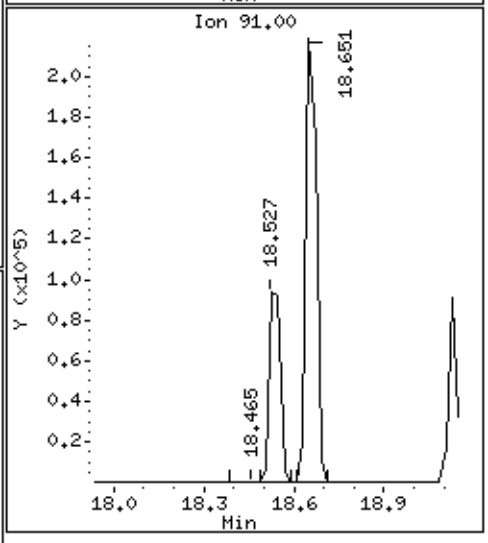
30 Ethyl Benzene

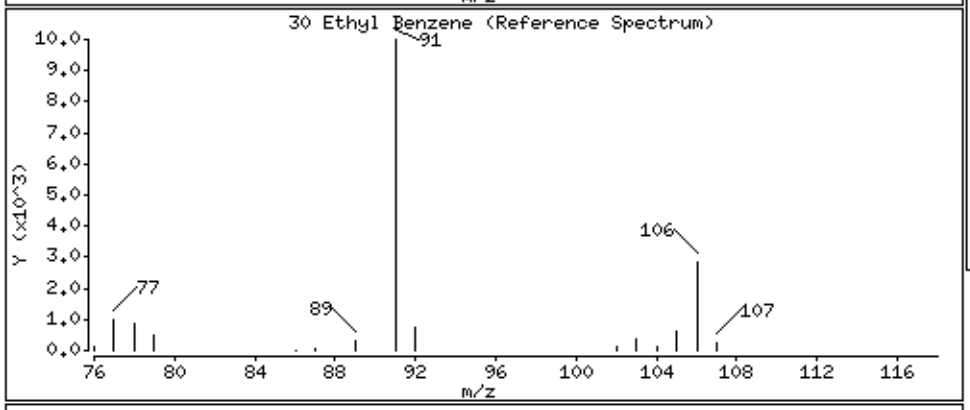
Concentration: 7.662 PPBV

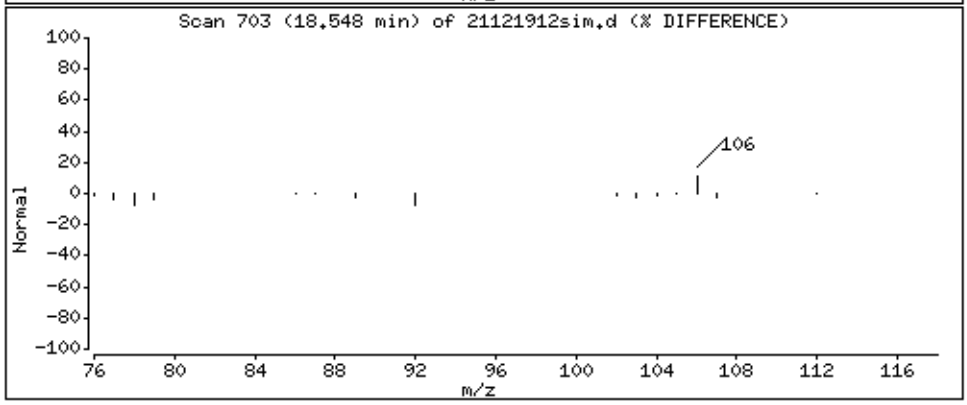












Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

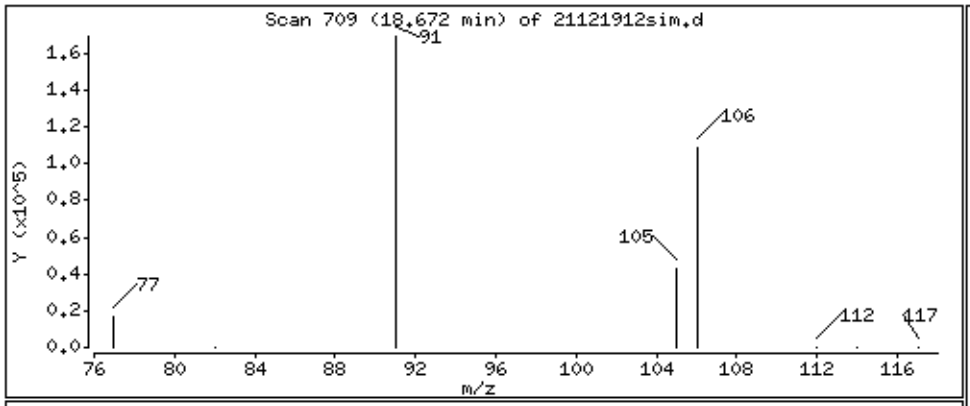
Operator: sw

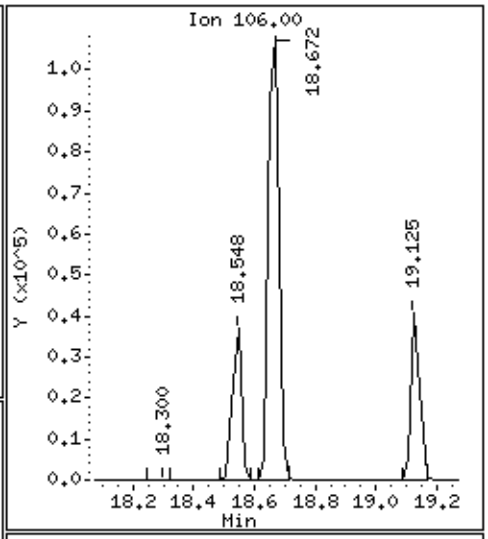
Column phase: RTX-624

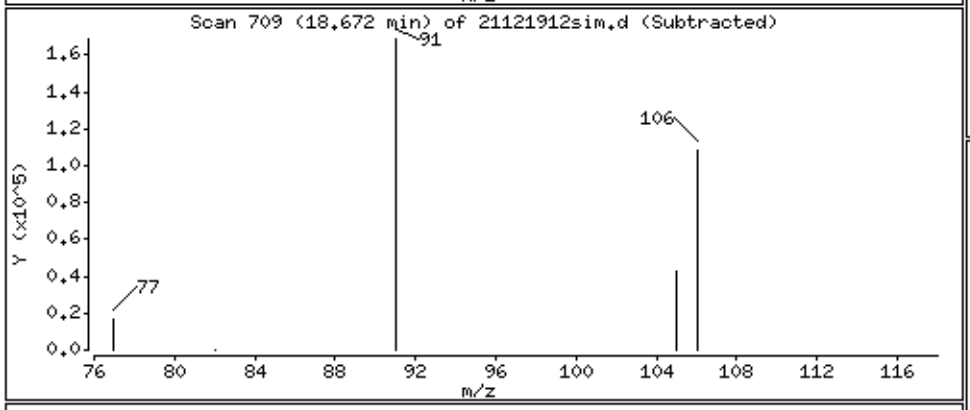
Column diameter: 0.32

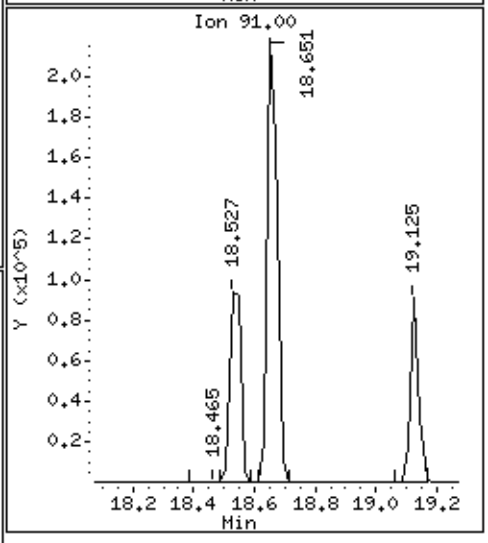
31 m,p-Xylene

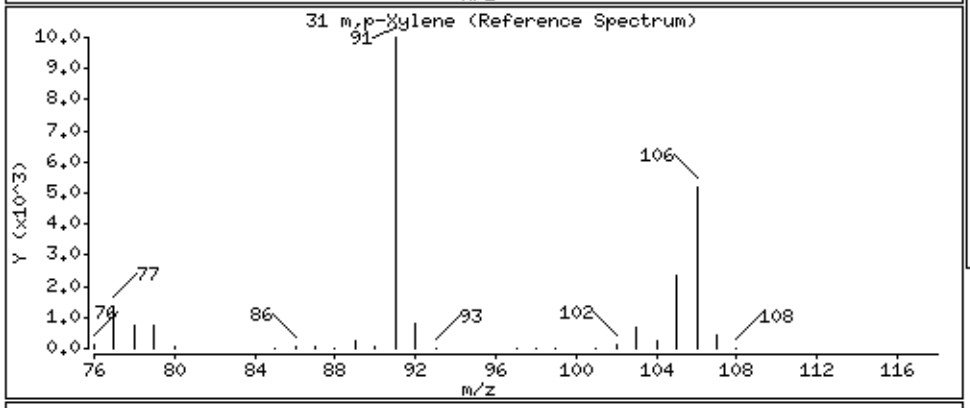
Concentration: 25.824 PPBV

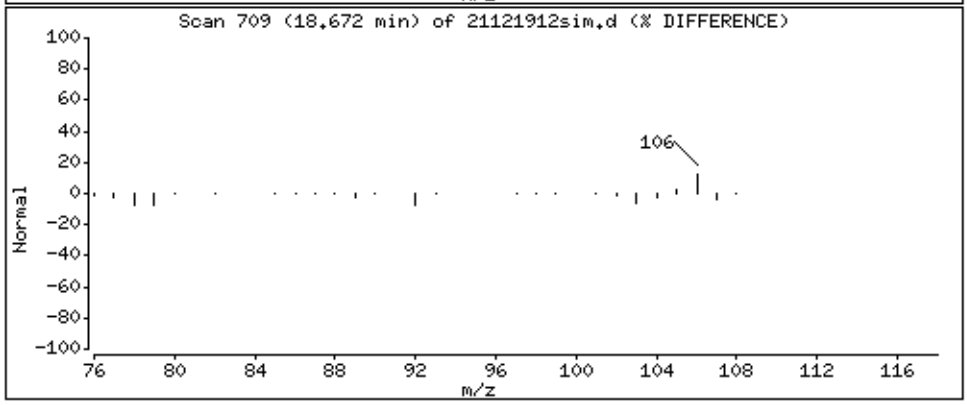












Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

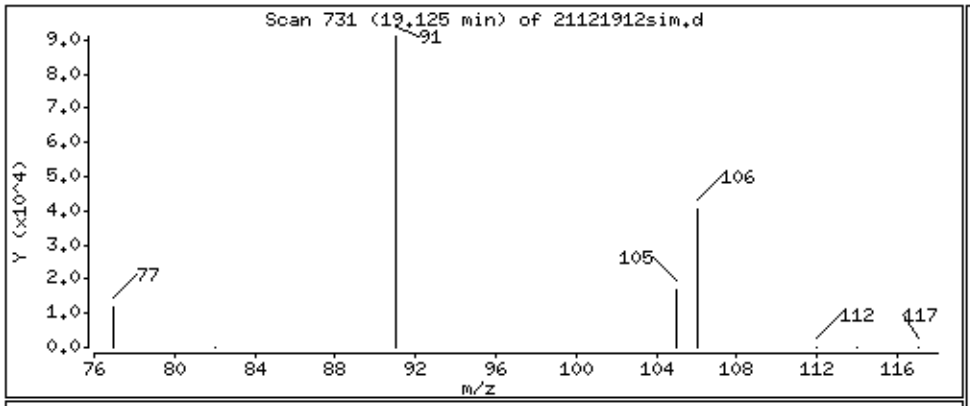
Operator: sw

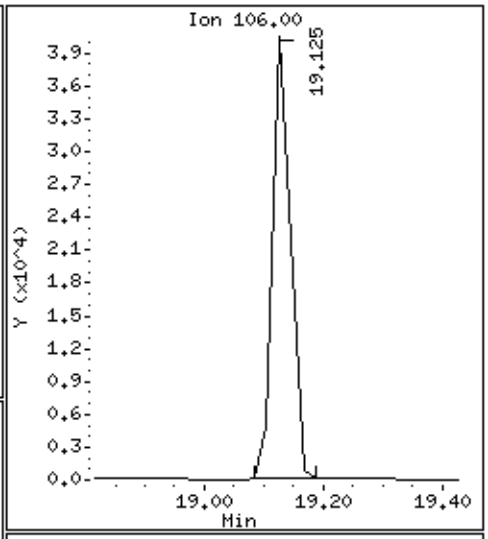
Column phase: RTX-624

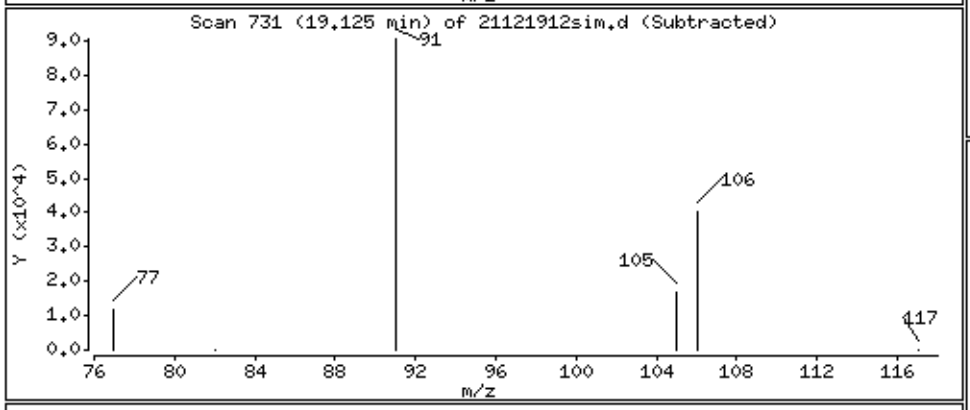
Column diameter: 0.32

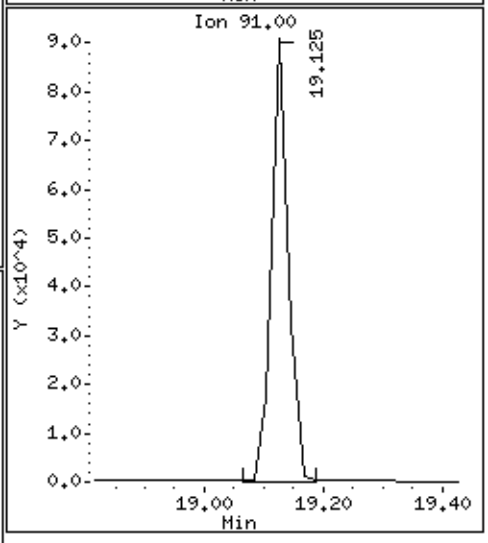
32 o-Xylene

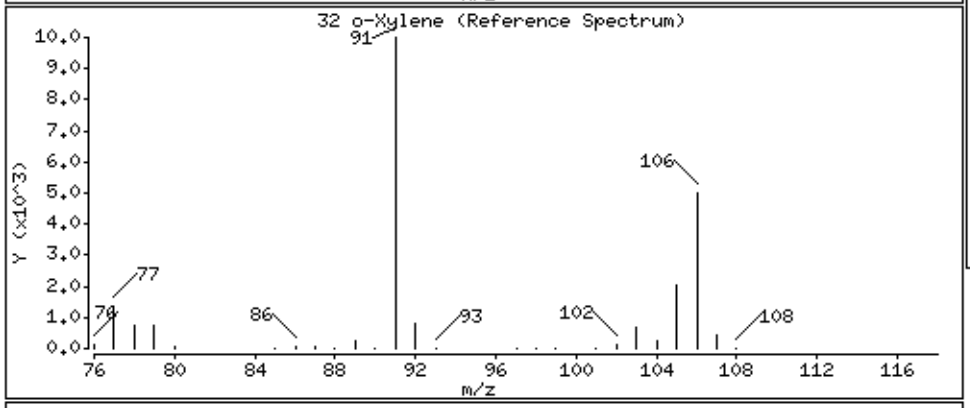
Concentration: 8.955 PPBV

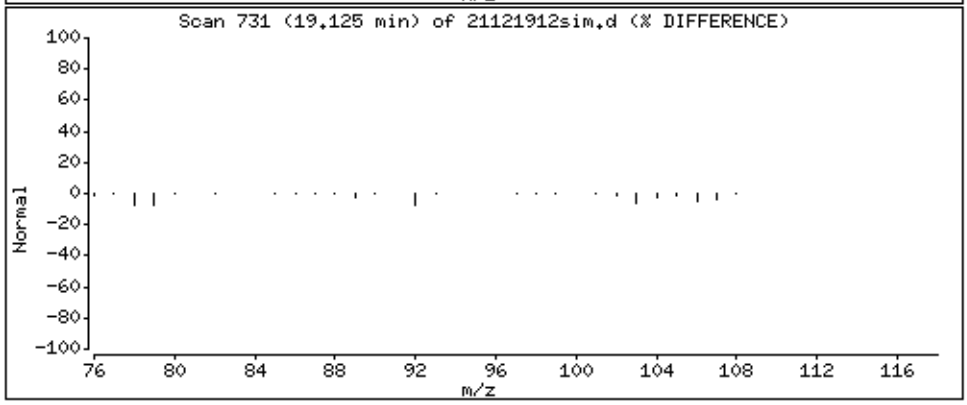












Data File: /chem/msd21.i/19dec17.b/21121912sim.d

Date : 19-DEC-2017 17:39

Client ID:

Instrument: msd21.i

Sample Info: 100mL# 30853

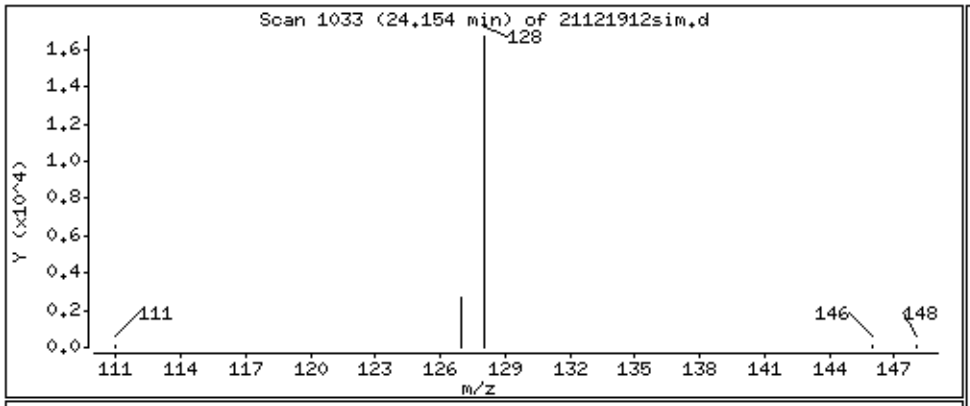
Operator: sw

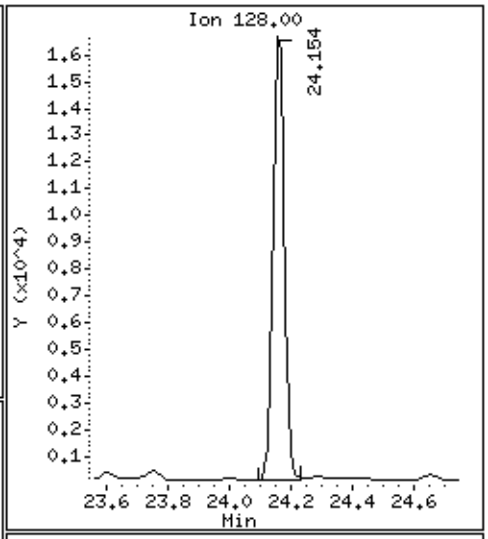
Column phase: RTX-624

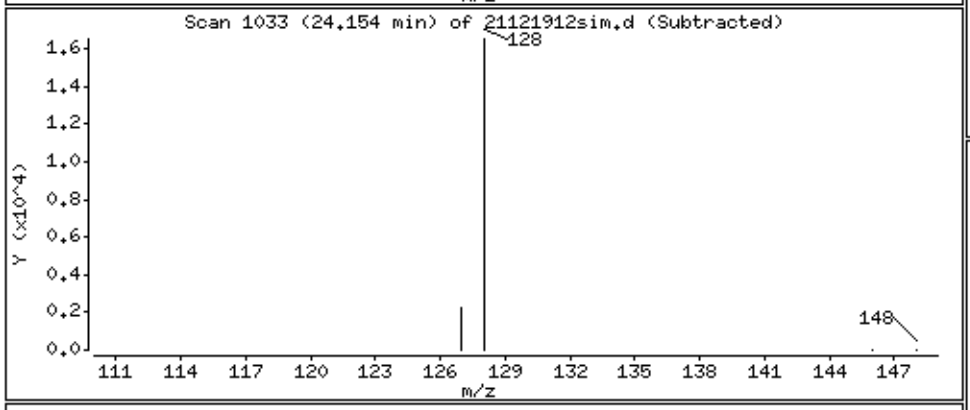
Column diameter: 0.32

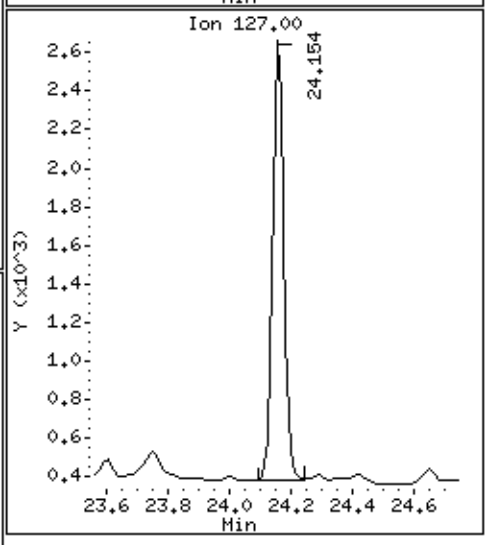
38 Naphthalene

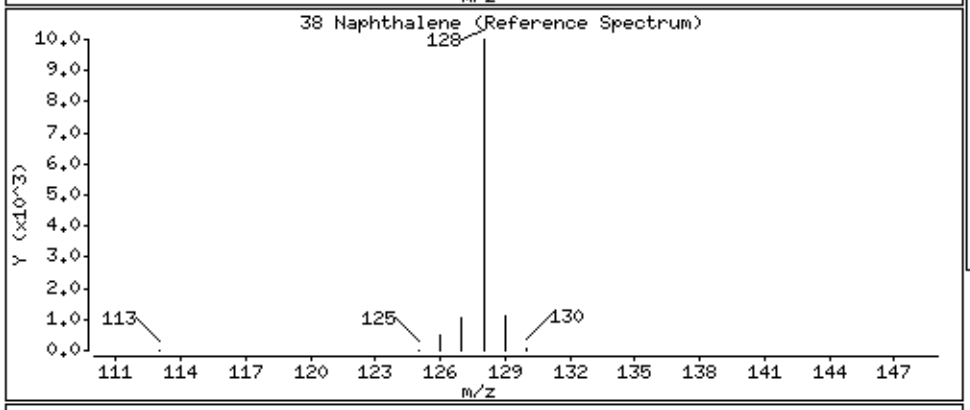
Concentration: 0.9189 PPBV

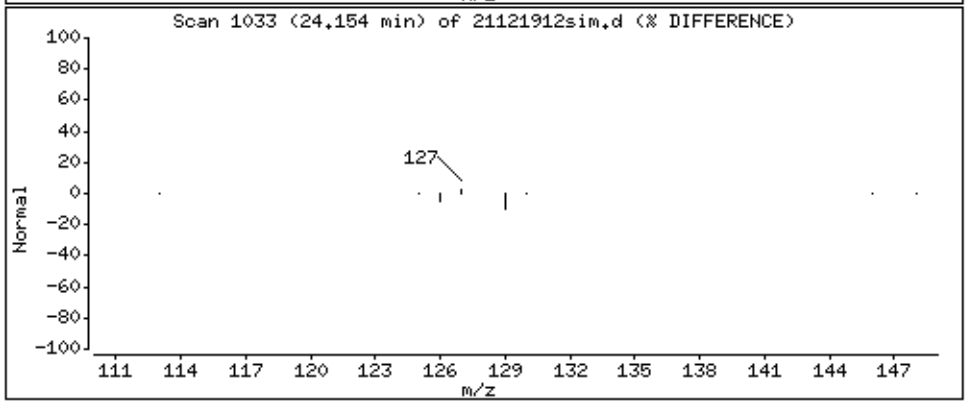












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	CS-040_1217		
Lab ID:	1712342-03A	**Date/Time Analyzed:**	12/19/17 05:05 PM
Date/Time Collecte	12/14/17 10:15 AM	**Dilution Factor:**	1.55
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121911sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.062	0.062	0.25	0.65
Ethyl Benzene	100-41-4	0.0036	0.034	0.13	0.32
m,p-Xylene	108-38-3	0.0087	0.034	0.27	1.1
Naphthalene	91-20-3	0.060	0.081	0.41	0.79
o-Xylene	95-47-6	0.0069	0.034	0.13	0.44
Toluene	108-88-3	0.030	0.030	0.12	2.3
Total Xylenes	9999-9999-015	NA	D	0.40	1.5

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	89
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121911sim.d
Lab Smp Id: 1712342-03A
Inj Date : 19-DEC-2017 17:05
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N0409
Misc Info : 4.3"Hg -> 4.8psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.55000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	102030	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	79082			47.49- 107.49	77.51
14.273	14.298 (1.000)	49	147062			114.87- 174.87	144.14
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	516295	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	87607			0.00- 46.92	16.97
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	400562	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	222080			25.29- 85.29	55.44
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150083	5.66352	5.664	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85228			30.16- 90.16	56.79
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	453567	5.00480	5.005	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	55677			0.00- 42.34	12.28

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.859	16.860 (1.101)	100	308472			38.15- 98.15	68.01
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.786	19.787 (1.072)	174	154743	4.46975	4.470	80.00- 120.00	100.00
	19.767	19.787 (1.071)	95	186410			88.82- 148.82	120.46
	19.786	19.787 (1.072)	176	151913			68.26- 128.26	98.17
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	19105	0.13227	0.2050	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	4613			0.00- 52.85	24.15
	23 Toluene					CAS #: 108-88-3		
	16.921	16.921 (1.105)	91	54969	0.38935	0.6035	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	33296			33.44- 93.44	60.57
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	2112	0.04748	0.07359	80.00- 120.00	100.00
	18.548	18.548 (1.004)	91	6573			259.51- 319.51	311.16
	31 m,p-Xylene					CAS #: 108-38-3		
	18.671	18.672 (1.011)	106	7002	0.16112	0.2497	80.00- 120.00	100.00
	18.651	18.672 (1.010)	91	13894			159.47- 219.47	198.43
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	2570	0.06505	0.1008	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	6663			168.52- 228.52	259.27
	38 Naphthalene					CAS #: 91-20-3		
	24.153	24.154 (1.308)	128	20215	0.09739	0.1510	80.00- 120.00	100.00
	24.169	24.154 (1.309)	127	4847			0.00- 43.35	23.98
M	39 Total Xylene					CAS #: 1330-20-7		
				9572	0.22617	0.3506		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121911sim.d
Lab Smp Id: 1712342-03A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.3"Hg -> 4.8psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	102030	-14.93
20 1,4-Difluorobenze	564150	338490	789810	516295	-8.48
28 Chlorobenzene-d5	433051	259831	606271	400562	-7.50

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:21

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-03A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.3"Hg -> 4.8psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.664	113.27	70-130
$ 22 Toluene-d8	5.000	5.005	100.10	70-130
$ 33 4-Bromofluorobenze	5.000	4.470	89.39	70-130

Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

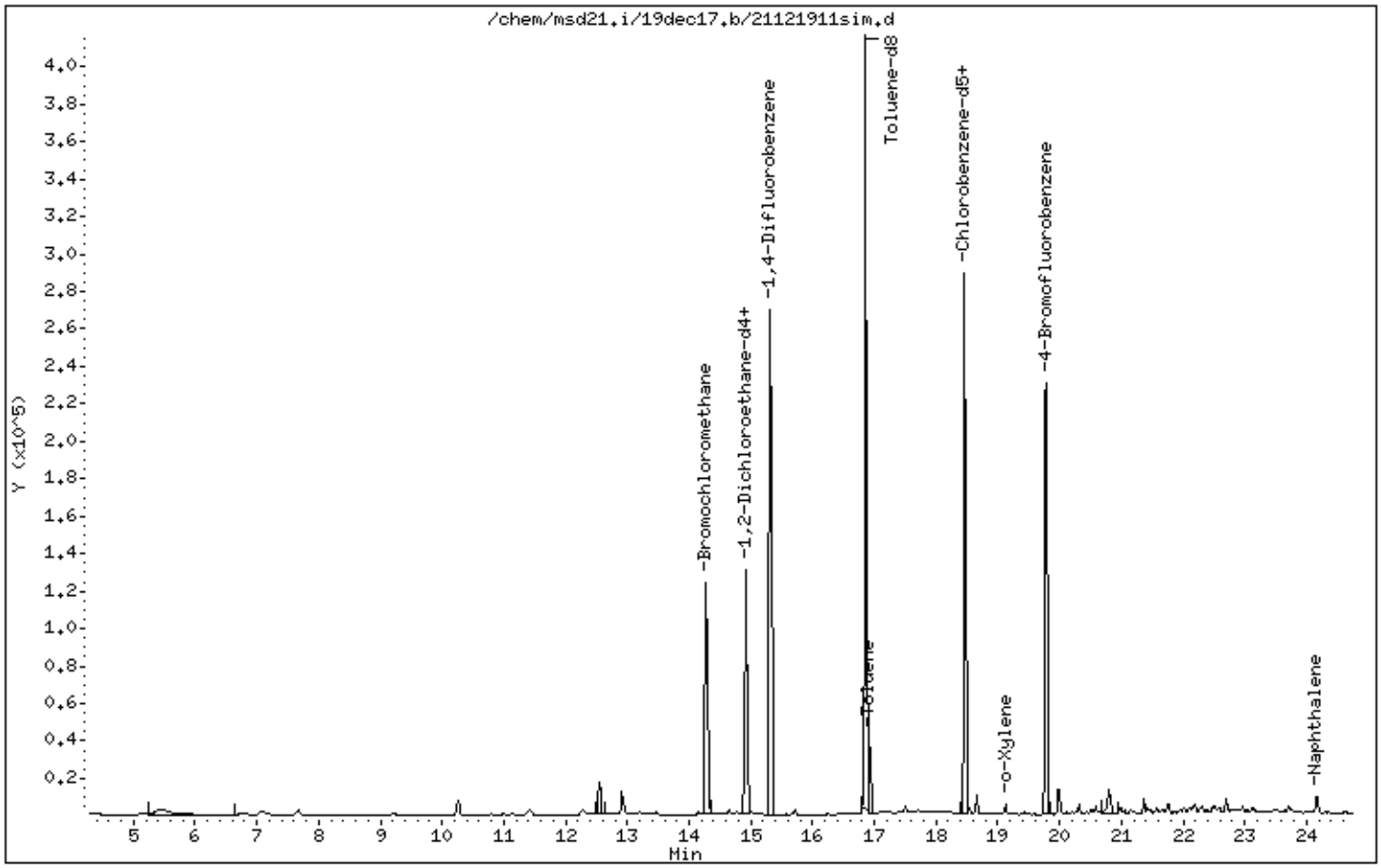
Instrument: msd21.i

Sample Info: 250mL# N0409

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

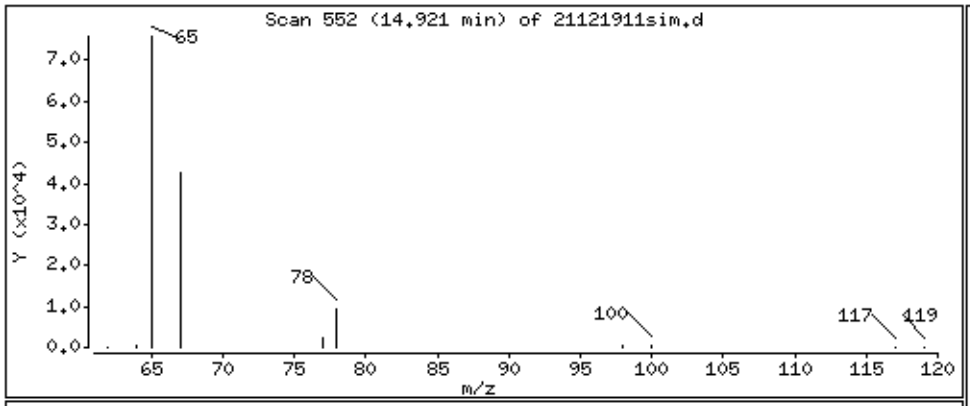
Operator: sw

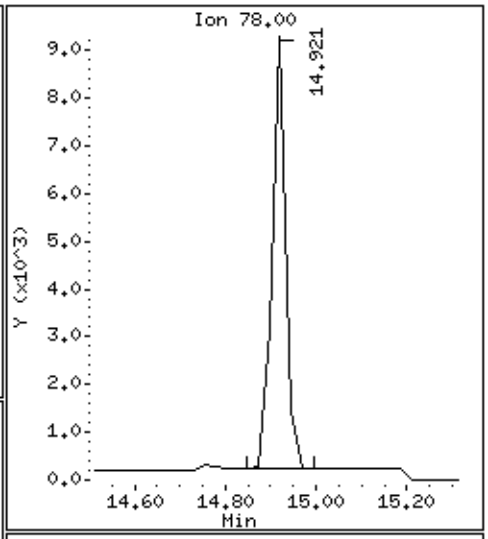
Column phase: RTX-624

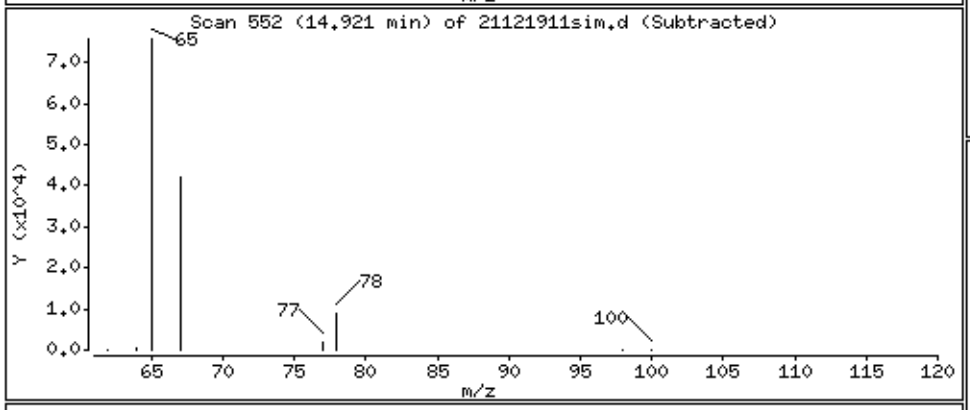
Column diameter: 0.32

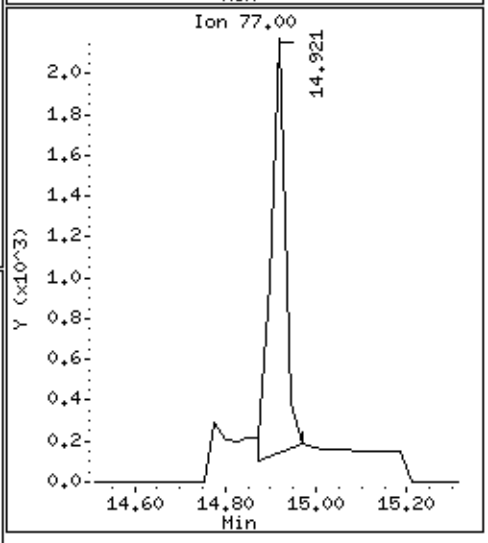
17 Benzene

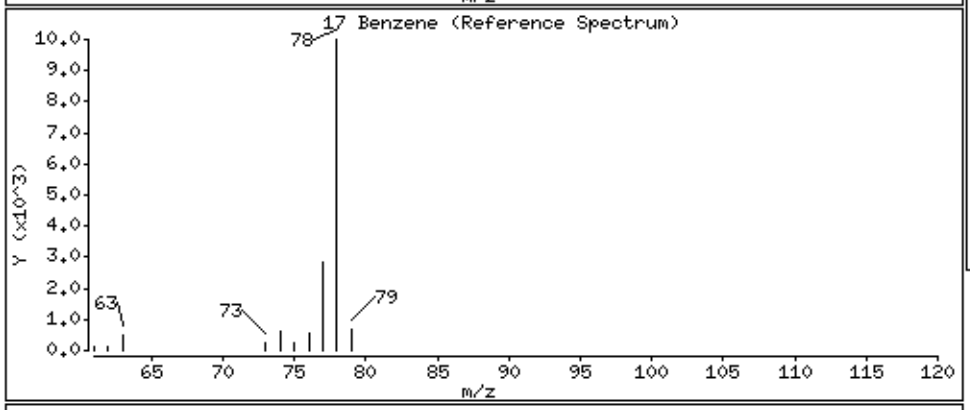
Concentration: 0.2050 PPBV

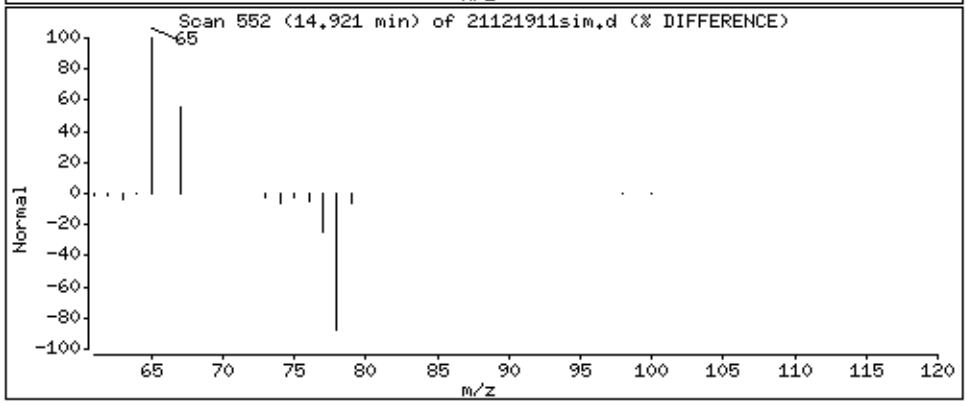












Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

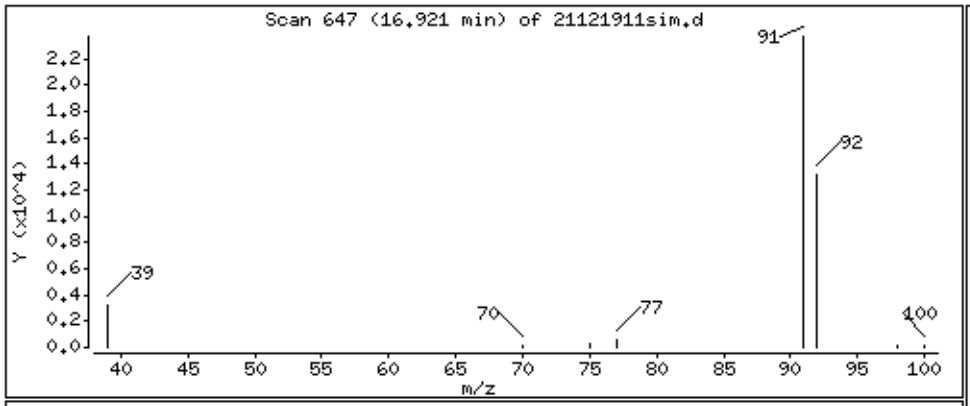
Operator: sw

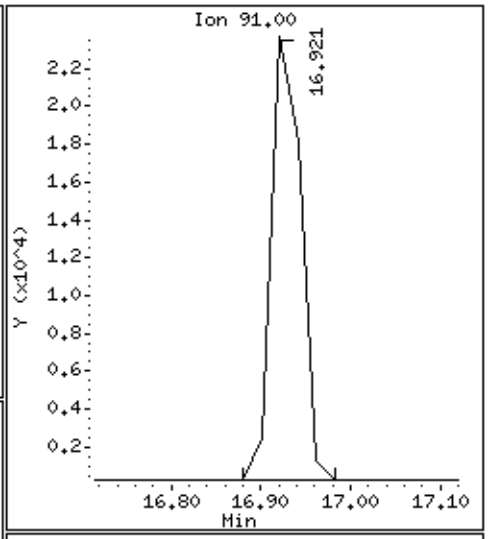
Column phase: RTX-624

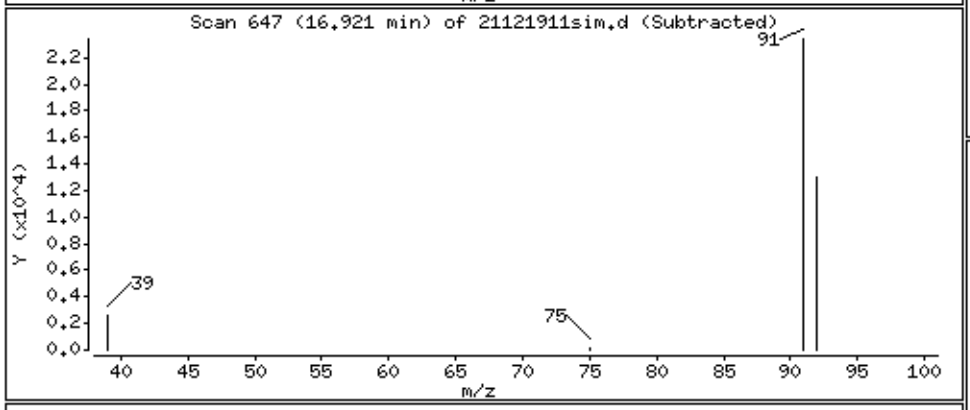
Column diameter: 0.32

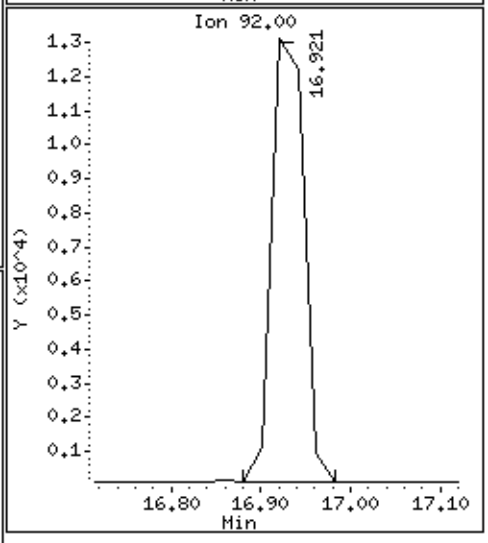
23 Toluene

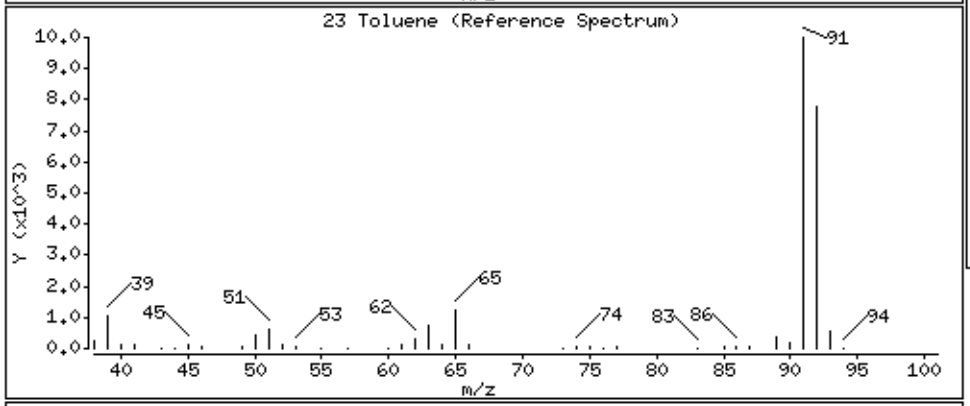
Concentration: 0.6035 PPBV

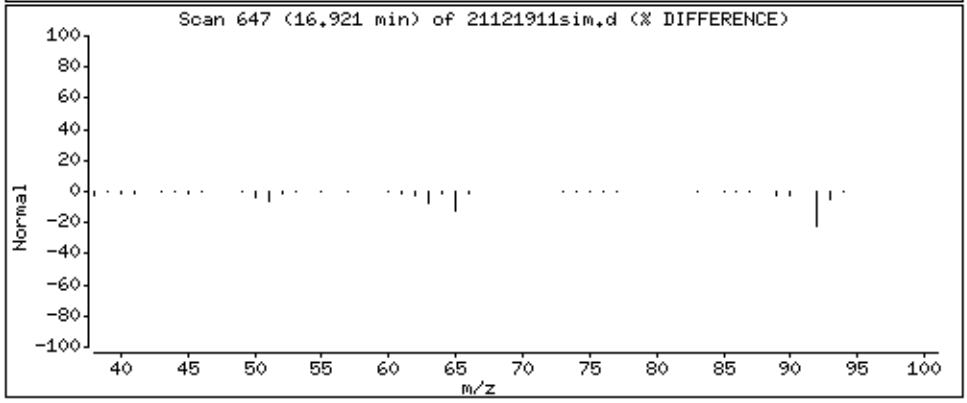












Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

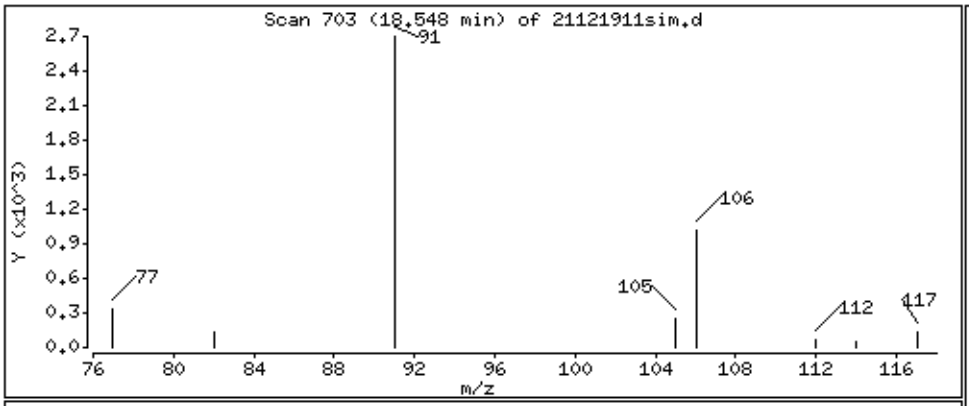
Operator: sw

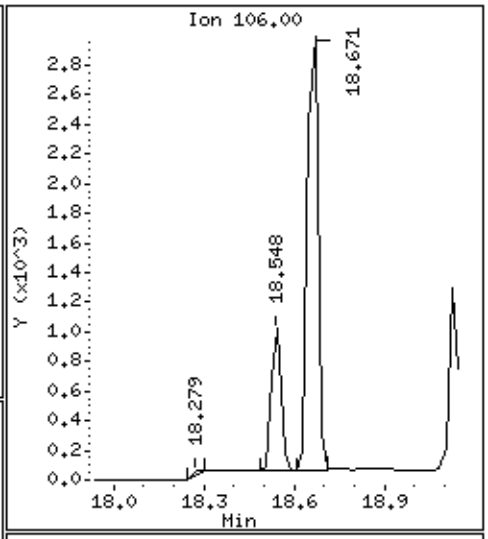
Column phase: RTX-624

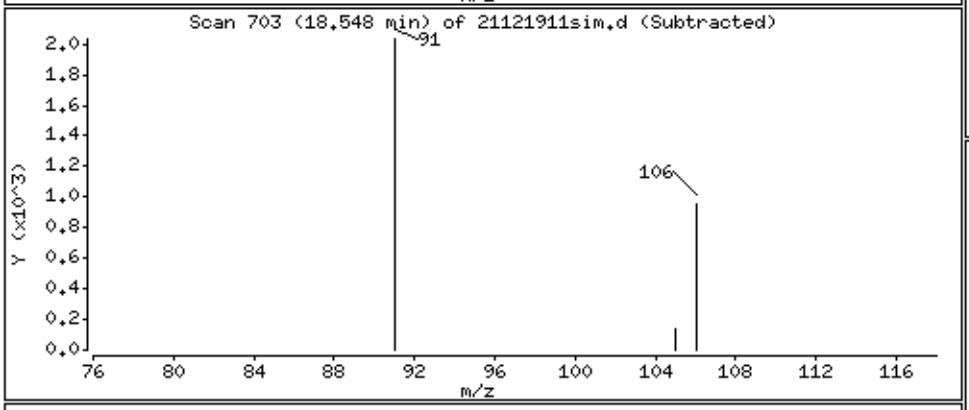
Column diameter: 0.32

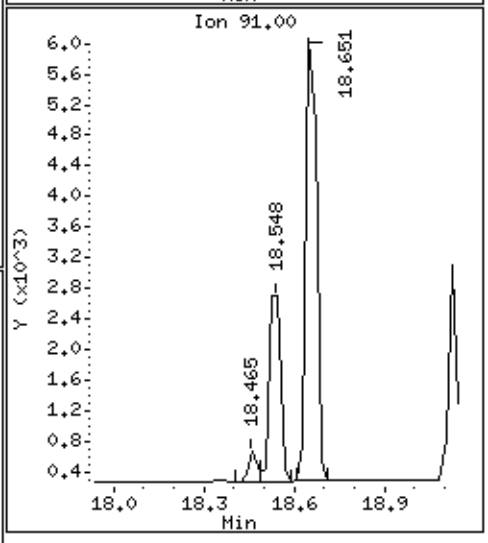
30 Ethyl Benzene

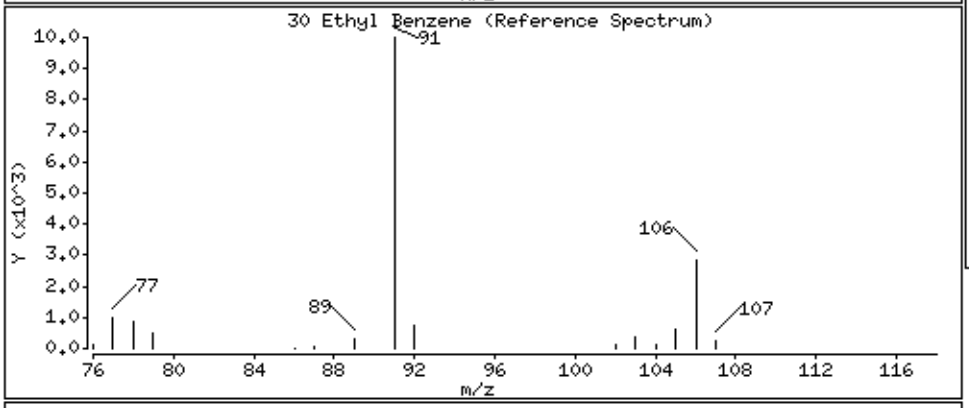
Concentration: 0.07359 PPBV

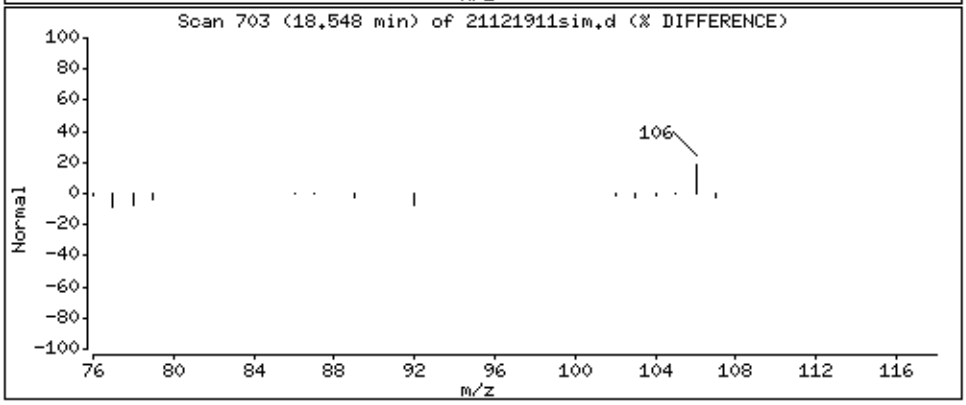












Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

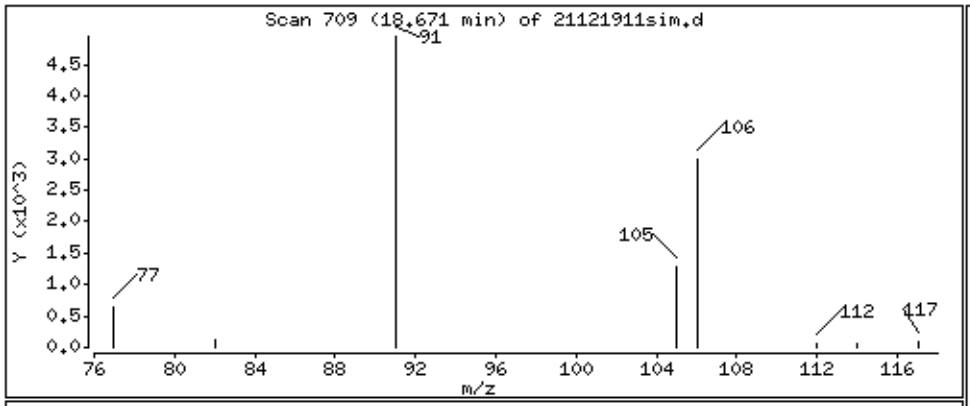
Operator: sw

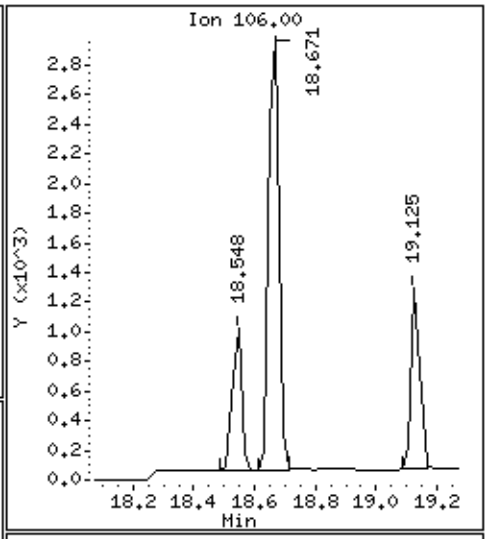
Column phase: RTX-624

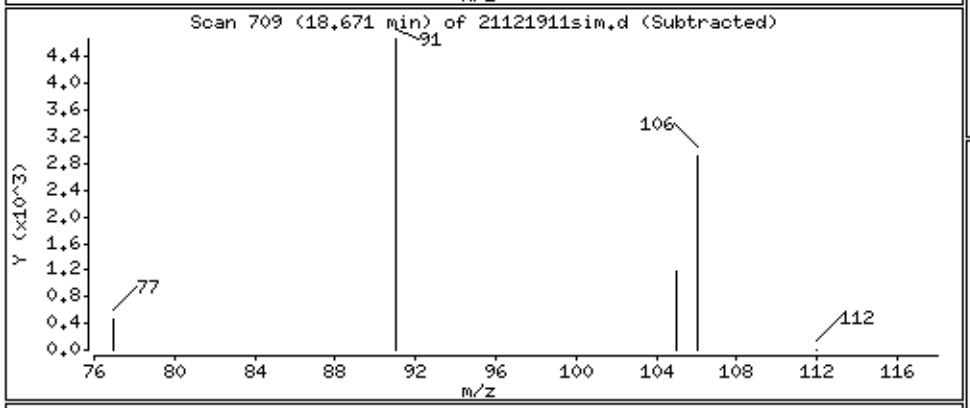
Column diameter: 0.32

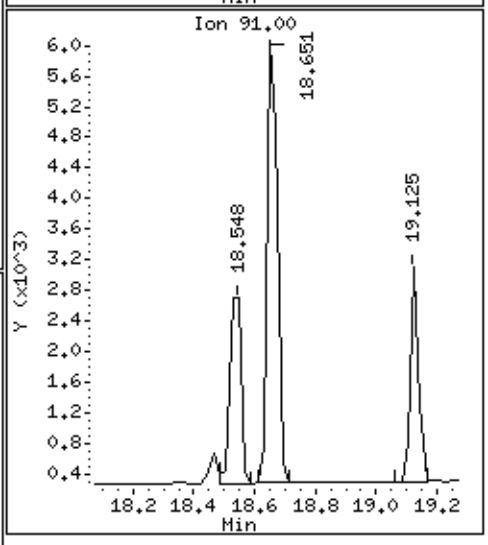
31 m,p-Xylene

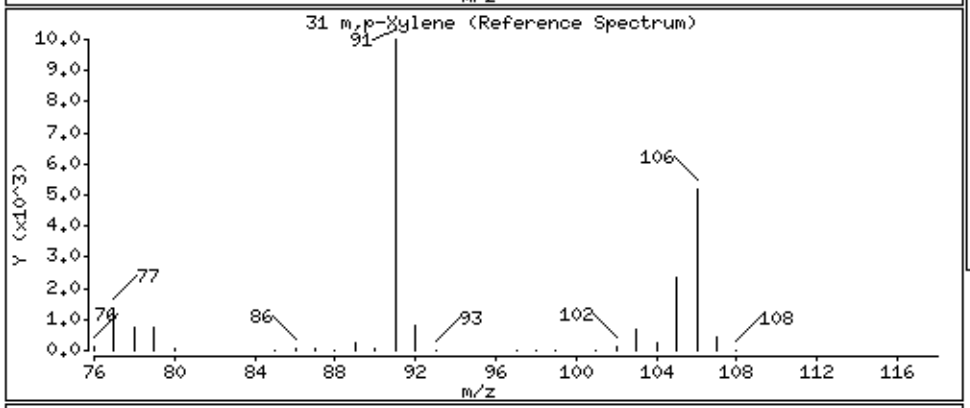
Concentration: 0.2497 PPBV

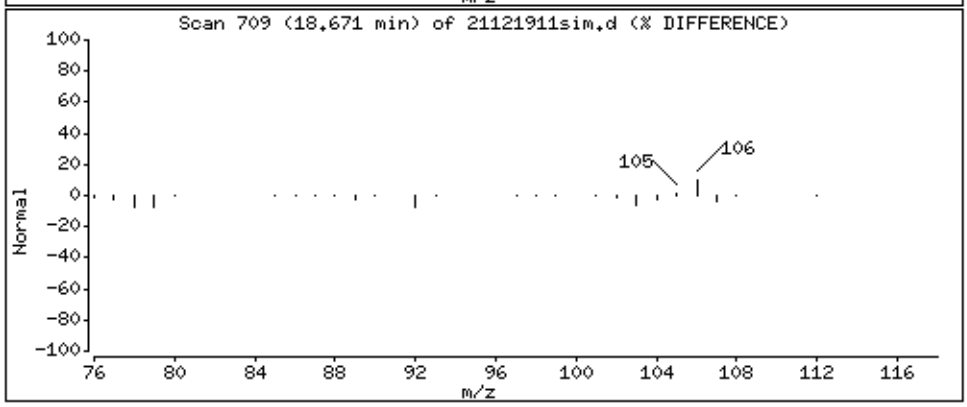












Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

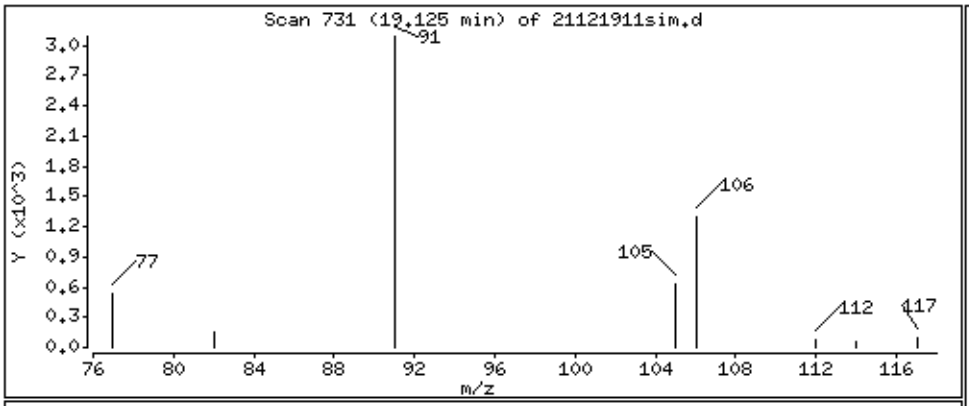
Operator: sw

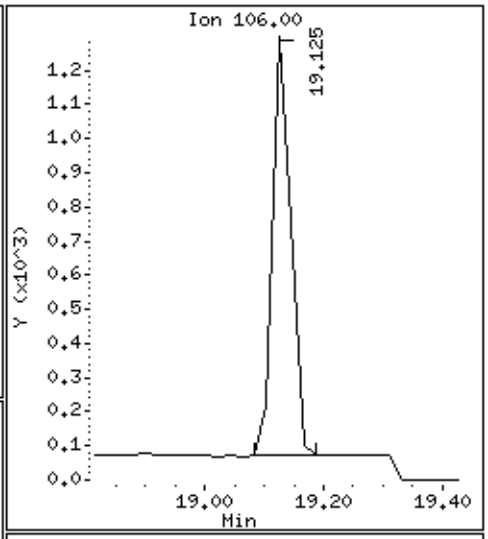
Column phase: RTX-624

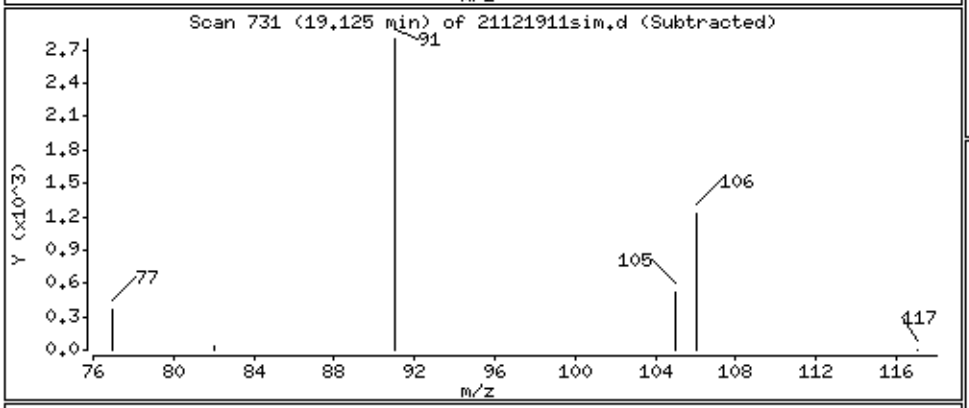
Column diameter: 0.32

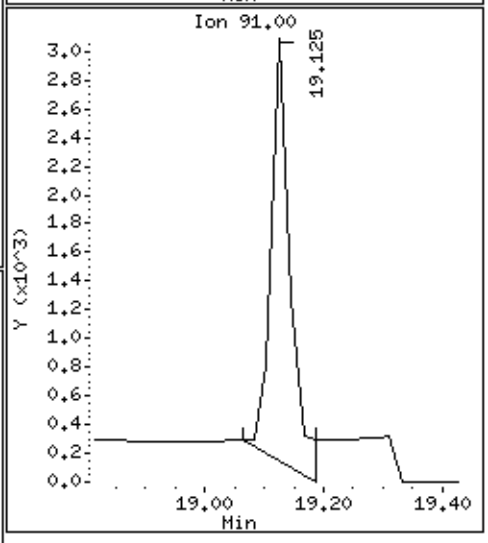
32 o-Xylene

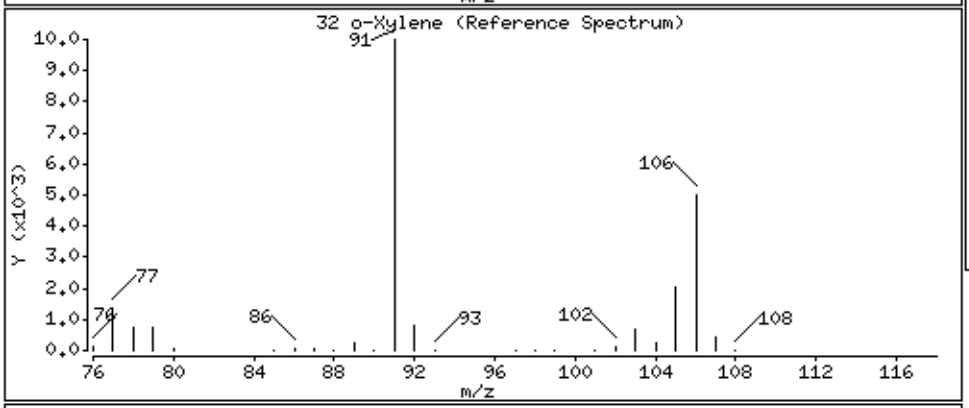
Concentration: 0.1008 PPBV

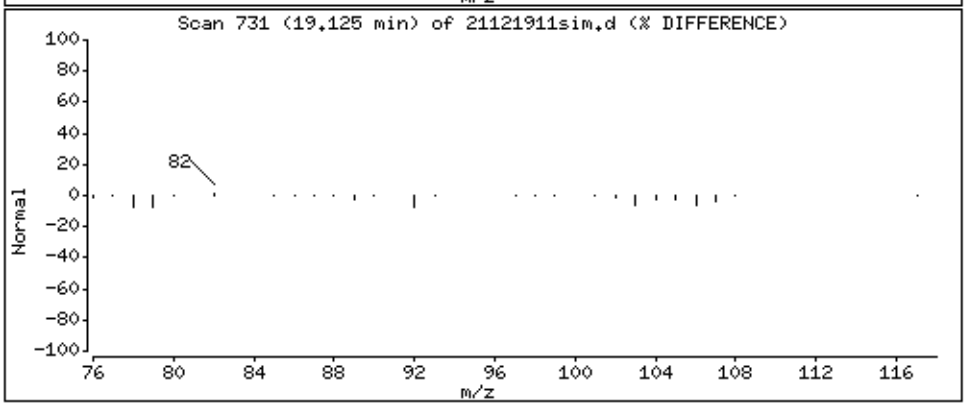












Data File: /chem/msd21.i/19dec17.b/21121911sim.d

Date : 19-DEC-2017 17:05

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0409

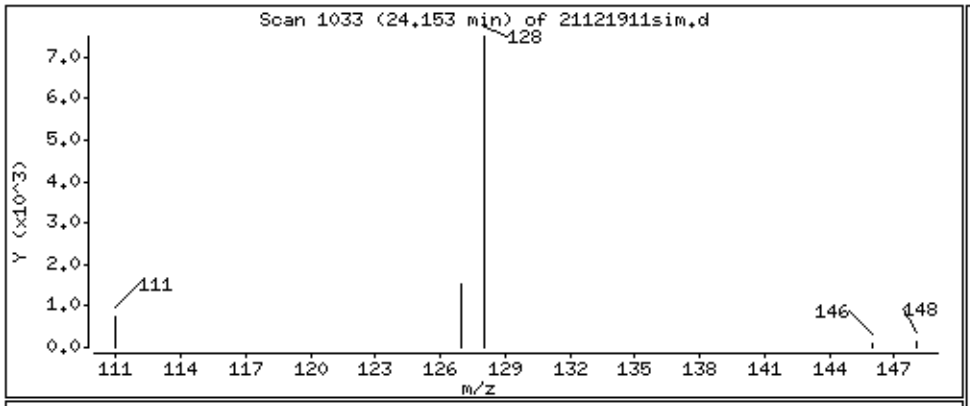
Operator: sw

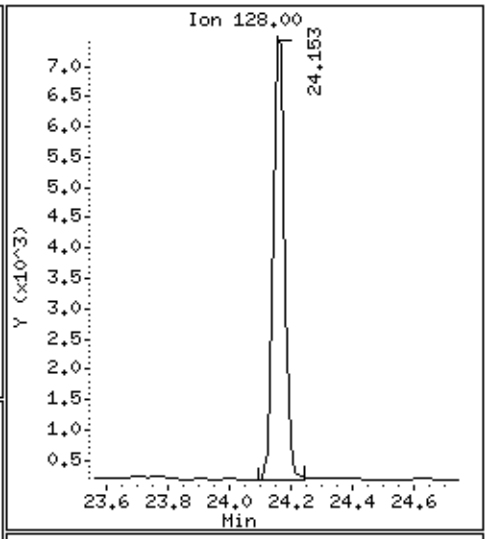
Column phase: RTX-624

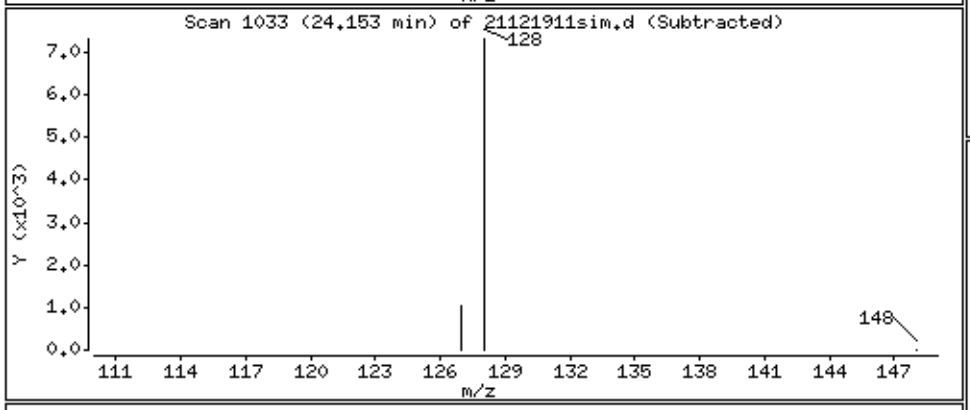
Column diameter: 0.32

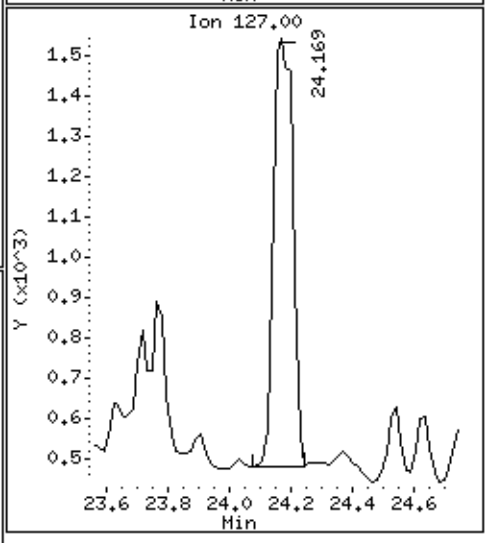
38 Naphthalene

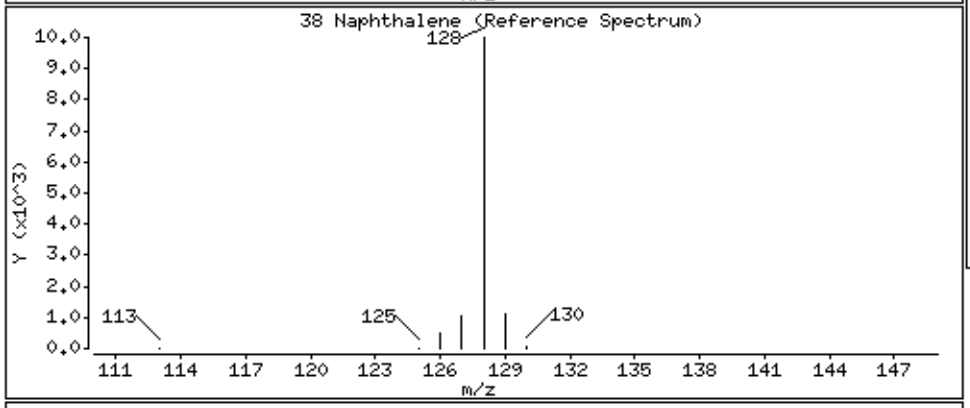
Concentration: 0.1510 PPBV

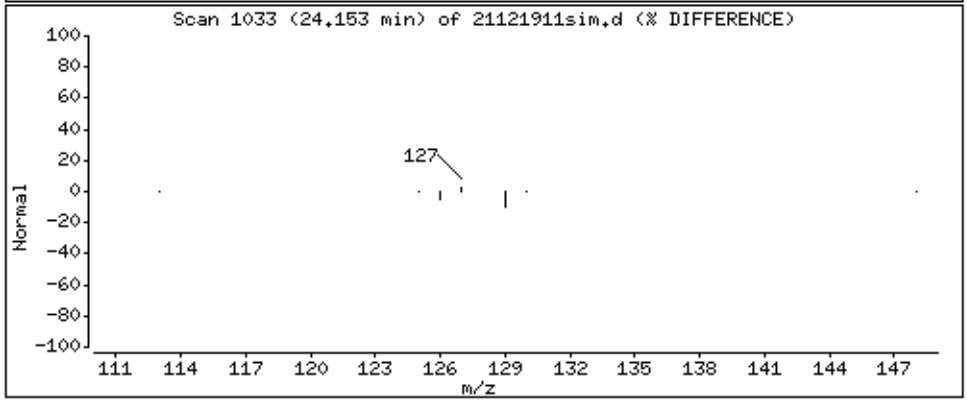












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA-040_1217		
Lab ID:	1712342-04A	**Date/Time Analyzed:**	12/19/17 06:38 PM
Date/Time Collecte	12/14/17 10:05 AM	**Dilution Factor:**	1.60
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121913sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.064	0.064	0.26	0.36
Ethyl Benzene	100-41-4	0.0038	0.035	0.14	0.099 J
m,p-Xylene	108-38-3	0.0090	0.035	0.28	0.34
Naphthalene	91-20-3	0.062	0.084	0.42	Not Detected U
o-Xylene	95-47-6	0.0071	0.035	0.14	0.13 J
Toluene	108-88-3	0.030	0.030	0.12	0.63
Total Xylenes	9999-9999-015	NA	D	0.42	0.46

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121913sim.d
Lab Smp Id: 1712342-04A
Inj Date : 19-DEC-2017 18:38
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N2416
Misc Info : 4.9"Hg -> 5psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.60000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	106015	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	82304			47.49- 107.49	77.63
14.274	14.298 (1.000)	49	152935			114.87- 174.87	144.26
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	514901	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	87087			0.00- 46.92	16.91
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	395234	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	222532			25.29- 85.29	56.30
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	153339	5.56887	5.569	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	86136			30.16- 90.16	56.17
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	446697	4.94234	4.942	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55396			0.00- 42.34	12.40

				CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	304948			38.15- 98.15	68.27
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	154151	4.51268	4.513	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	185406			88.82- 148.82	120.28
19.787	19.787 (1.072)	176	151128			68.26- 128.26	98.04
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	10072	0.06992	0.1119	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2284			0.00- 52.85	22.68
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	14747	0.10474	0.1676	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	8963			33.44- 93.44	60.78
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	627	0.01429	0.02287	80.00- 120.00	100.00(a)
18.548	18.548 (1.004)	91	1911			259.51- 319.51	304.61
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	2105	0.04909	0.07855	80.00- 120.00	100.00
18.651	18.672 (1.010)	91	4164			159.47- 219.47	197.82
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	714	0.01832	0.02931	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	2537			168.52- 228.52	355.39
M 39 Total Xylene					CAS #: 1330-20-7		
			2819	0.06741	0.1078		

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121913sim.d
Lab Smp Id: 1712342-04A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 5psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	106015	-11.61
20 1,4-Difluorobenze	564150	338490	789810	514901	-8.73
28 Chlorobenzene-d5	433051	259831	606271	395234	-8.73

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:22

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-04A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.569	111.38	70-130
$ 22 Toluene-d8	5.000	4.942	98.85	70-130
$ 33 4-Bromofluorobenze	5.000	4.513	90.25	70-130

Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

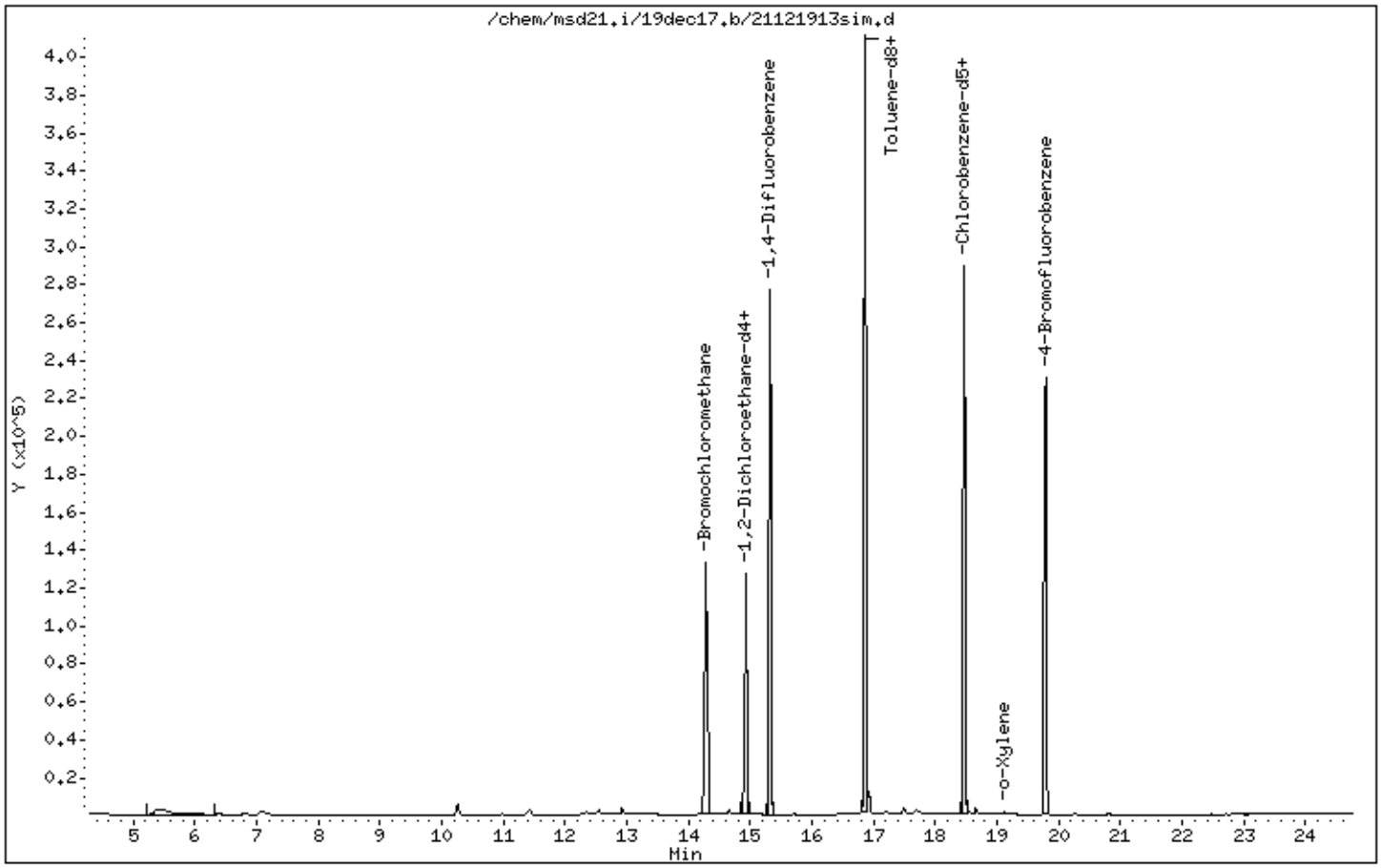
Instrument: msd21.i

Sample Info: 250mL# N2416

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2416

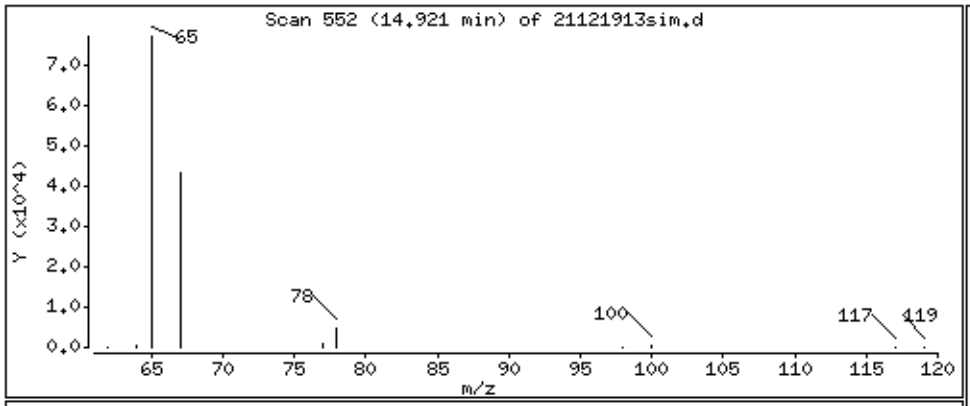
Operator: sw

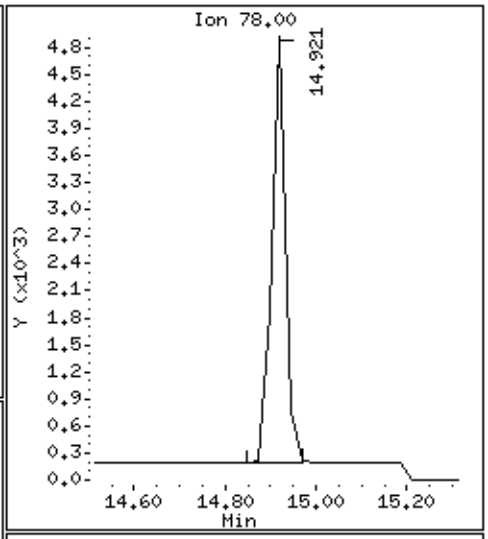
Column phase: RTX-624

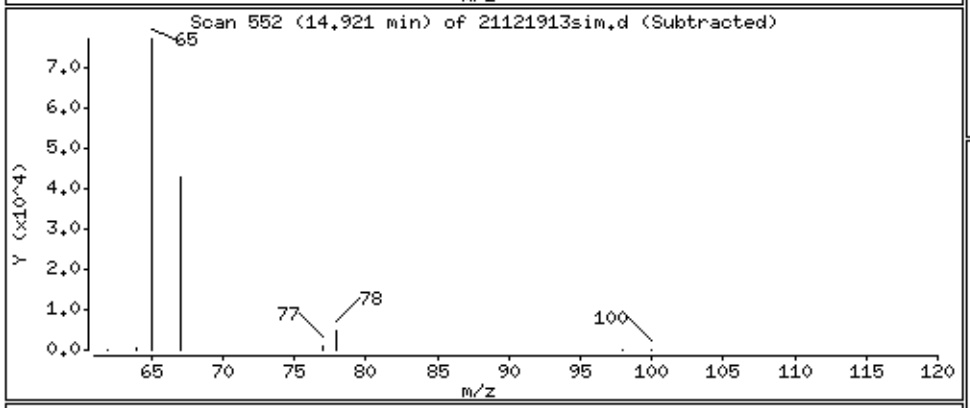
Column diameter: 0.32

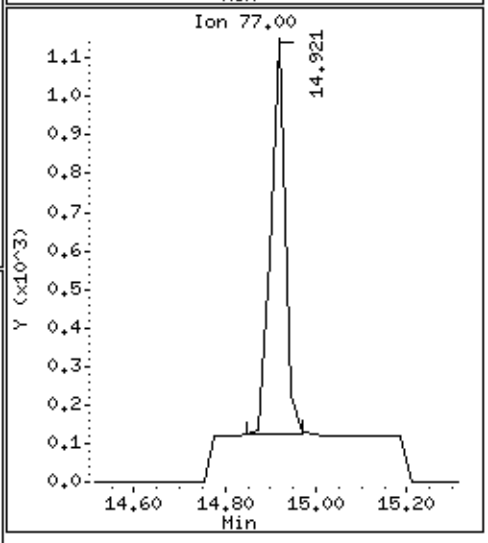
17 Benzene

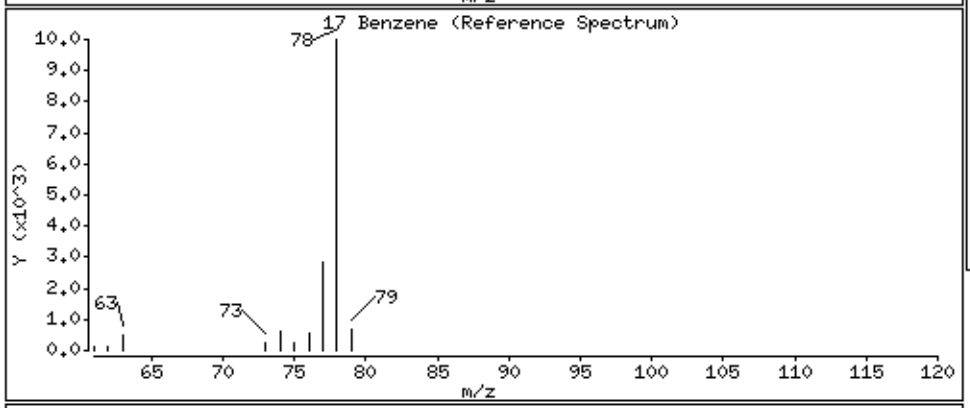
Concentration: 0.1119 PPBV

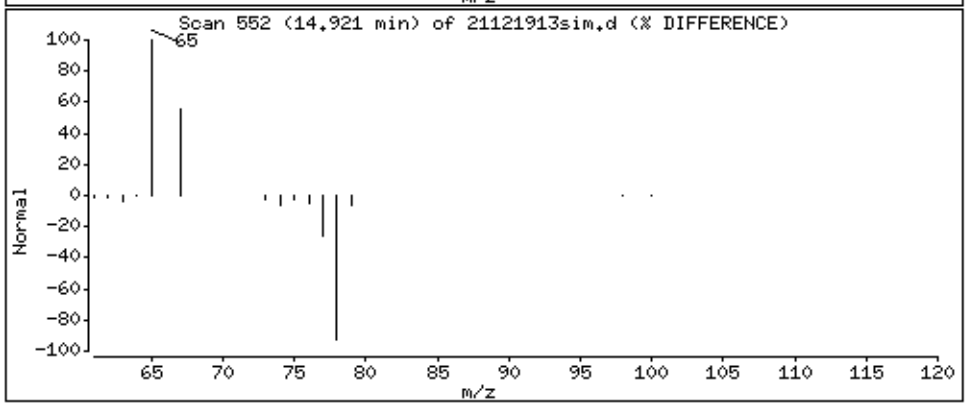












Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2416

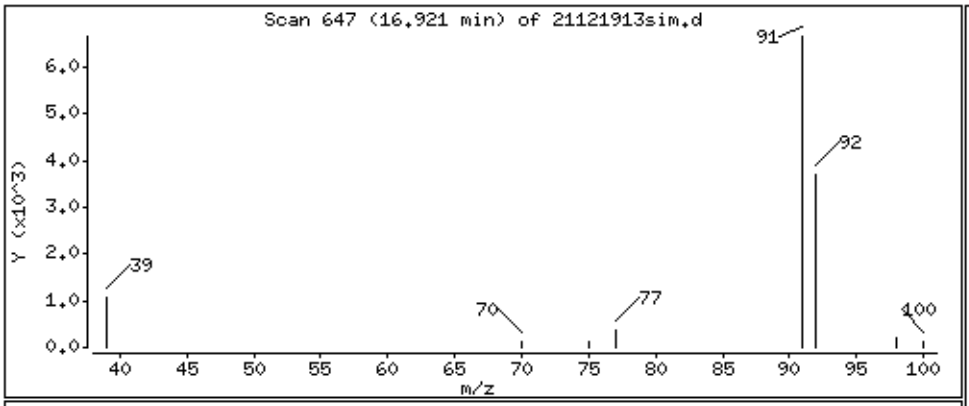
Operator: sw

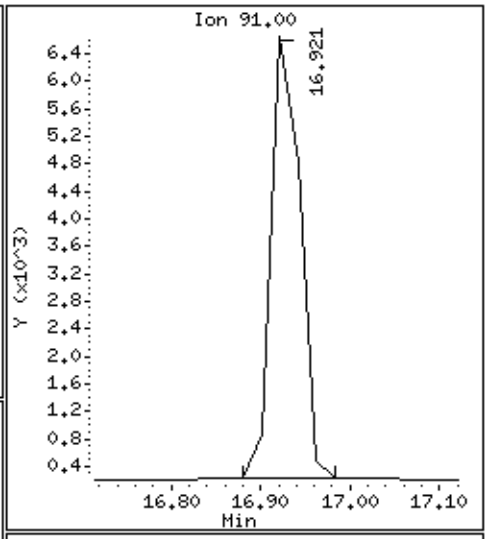
Column phase: RTX-624

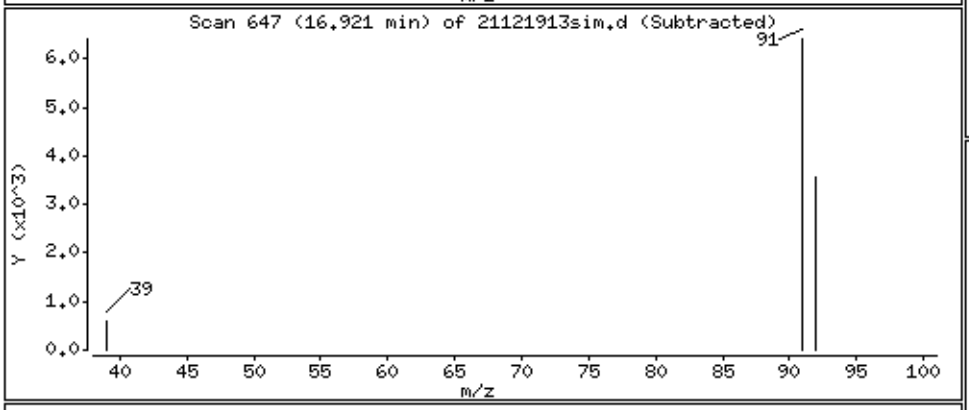
Column diameter: 0.32

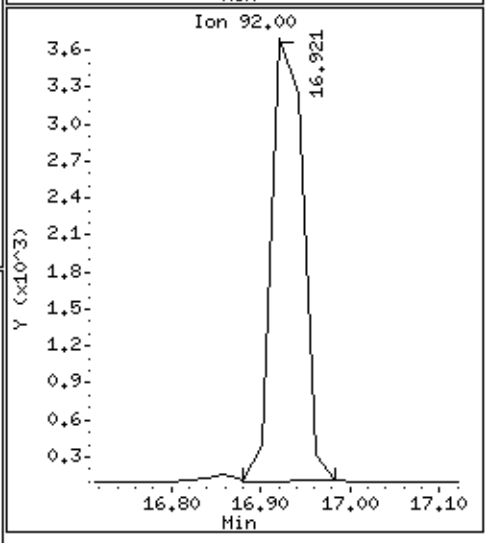
23 Toluene

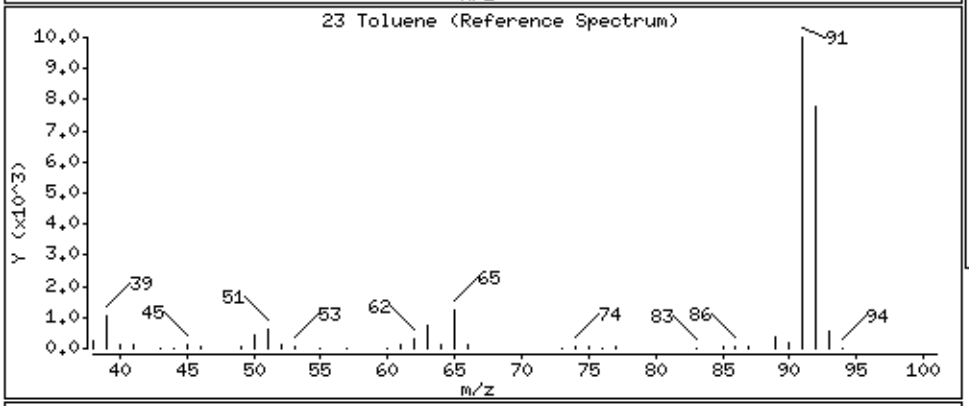
Concentration: 0.1676 PPBV

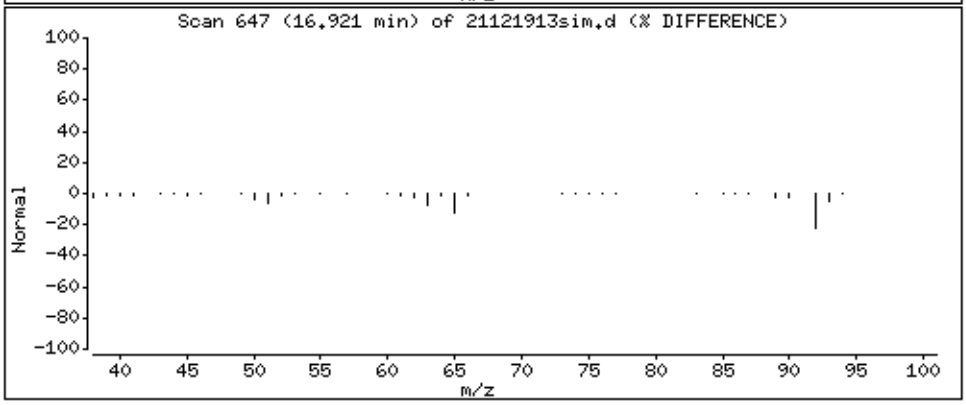












Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2416

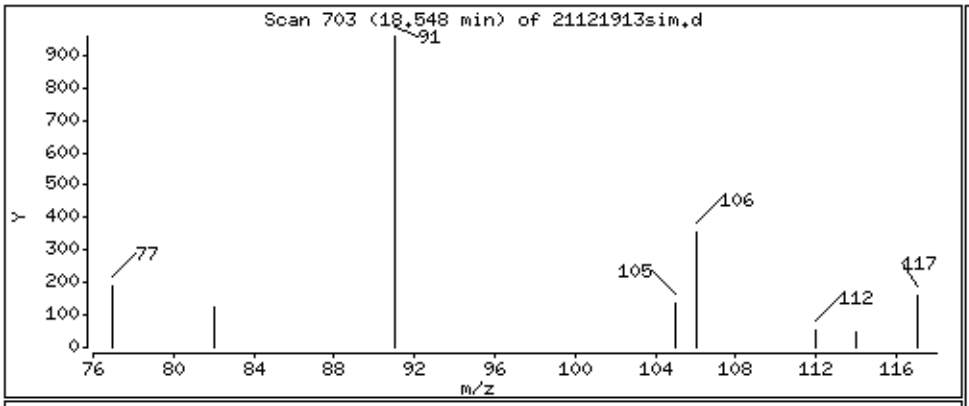
Operator: sw

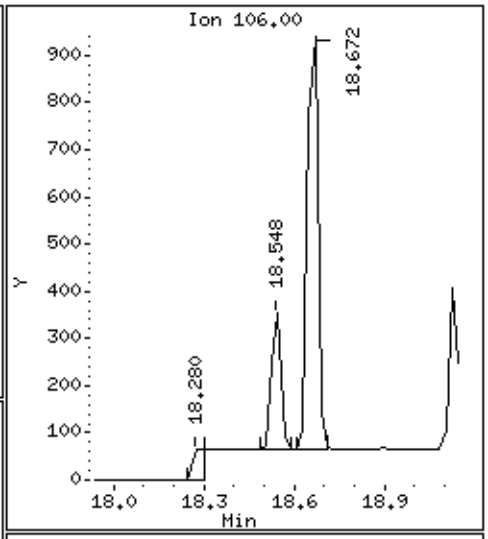
Column phase: RTX-624

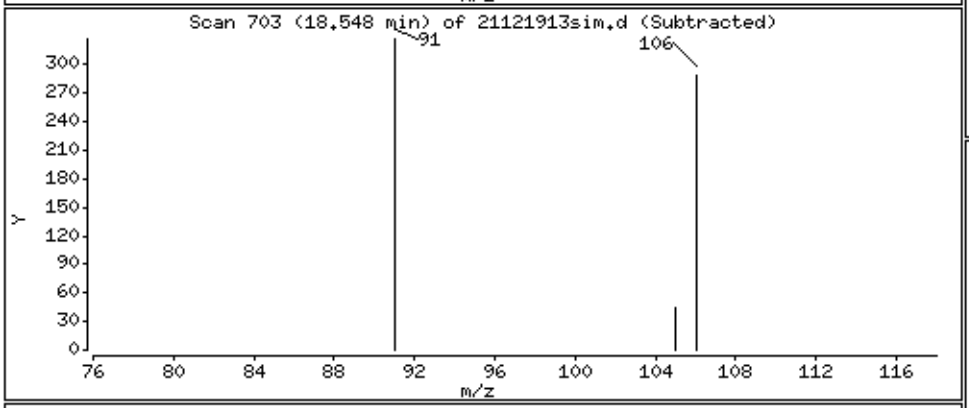
Column diameter: 0.32

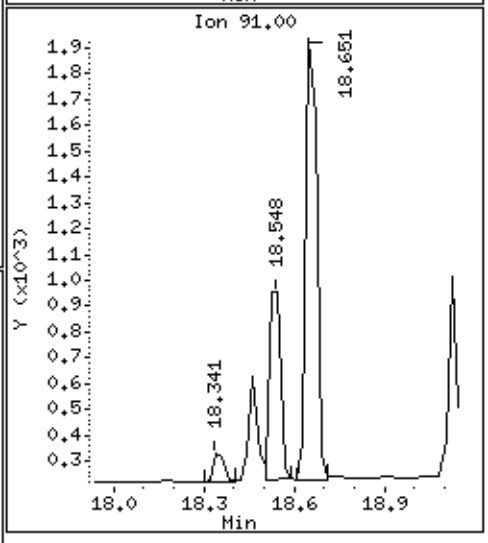
30 Ethyl Benzene

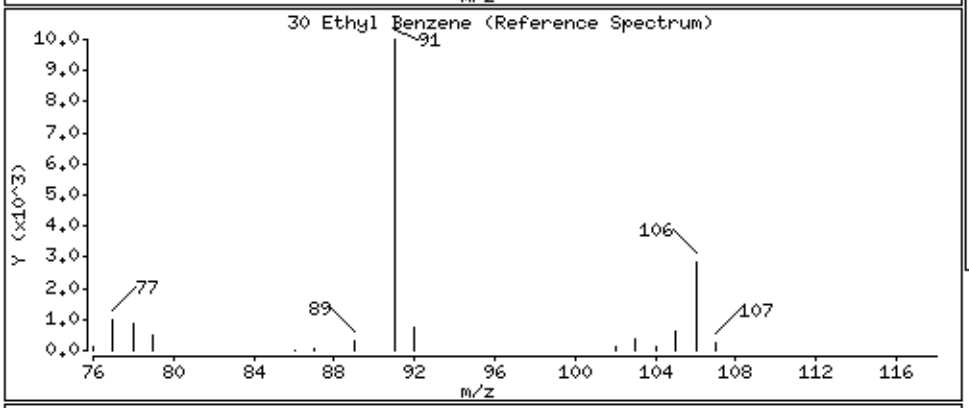
Concentration: 0.02287 PPBV

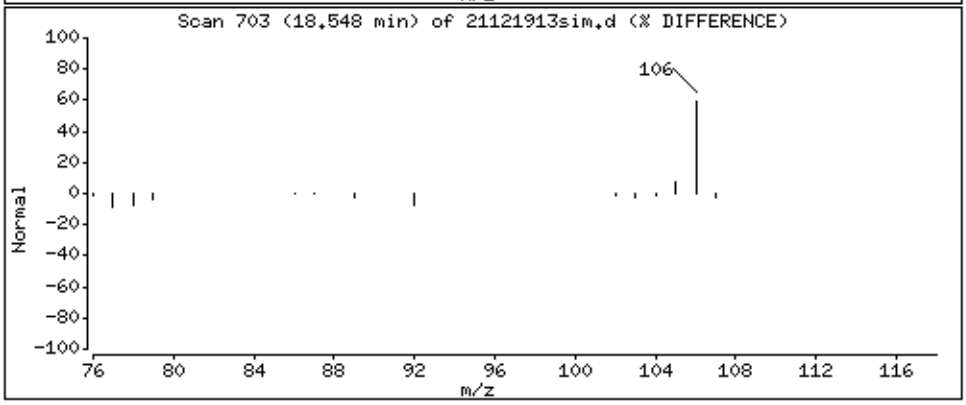












Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2416

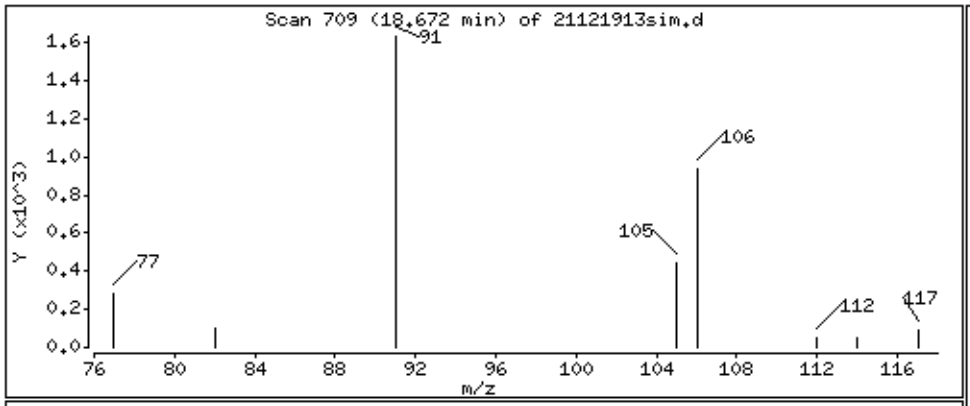
Operator: sw

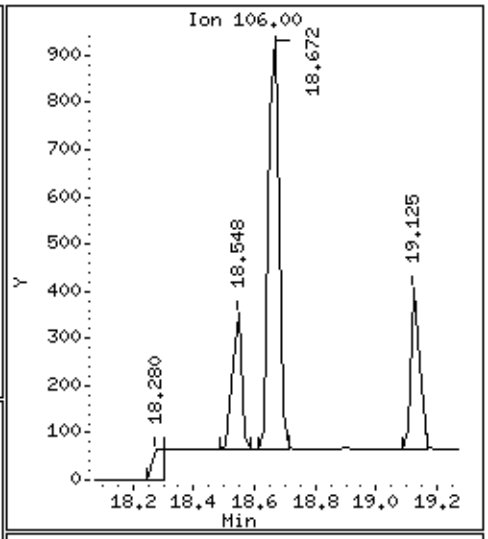
Column phase: RTX-624

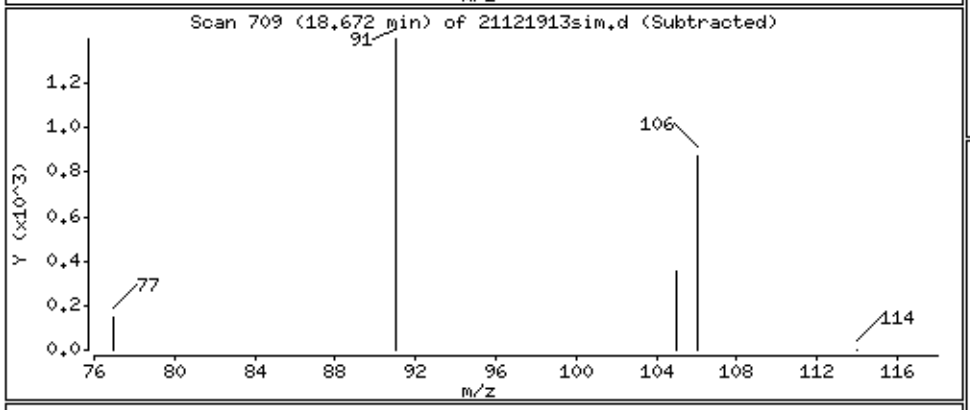
Column diameter: 0.32

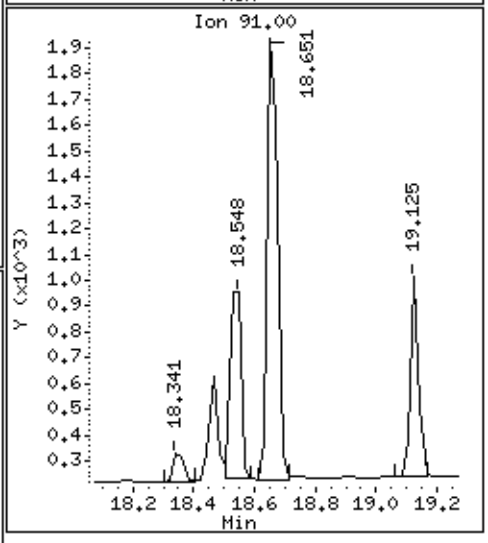
31 m,p-Xylene

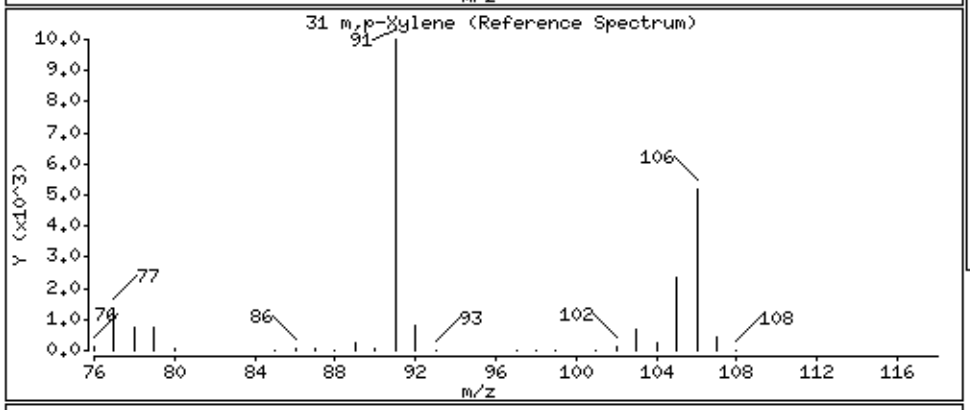
Concentration: 0.07855 PPBV

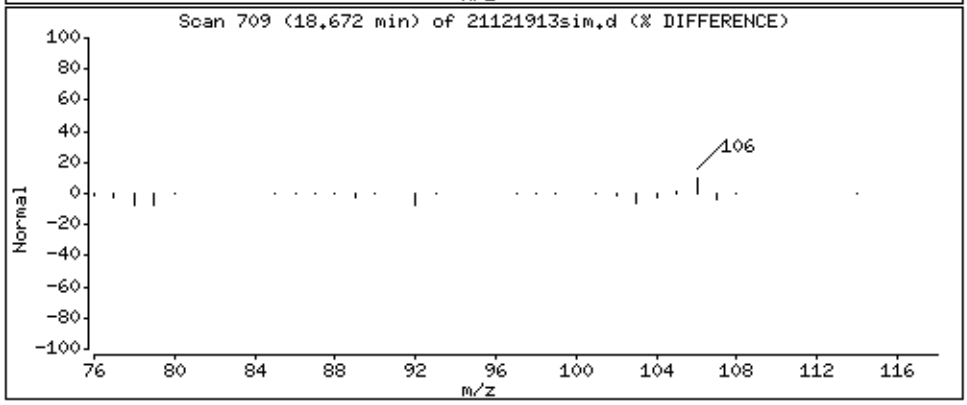












Data File: /chem/msd21.i/19dec17.b/21121913sim.d

Date : 19-DEC-2017 18:38

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2416

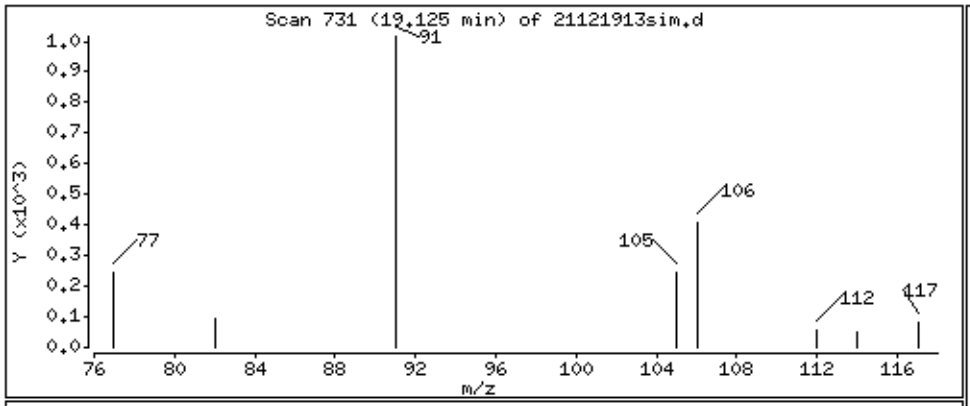
Operator: sw

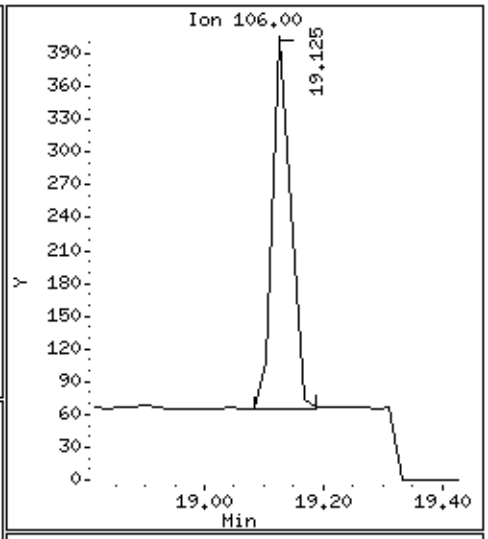
Column phase: RTX-624

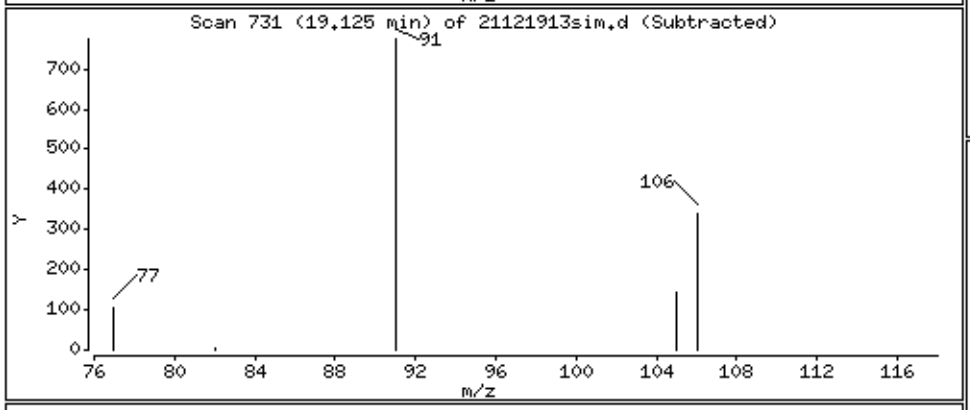
Column diameter: 0.32

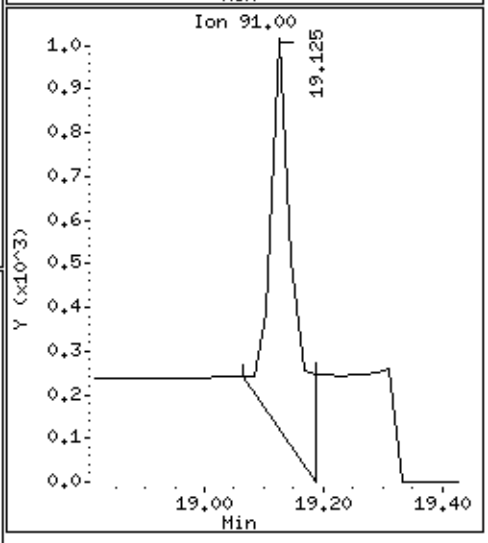
32 o-Xylene

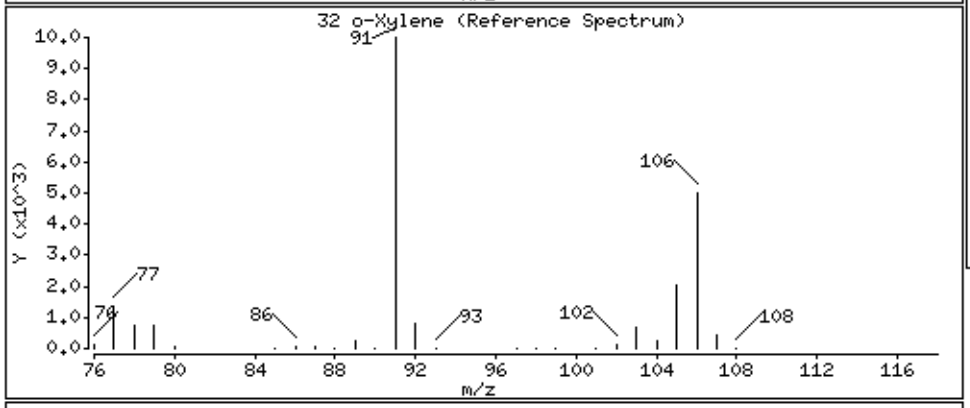
Concentration: 0.02931 PPBV

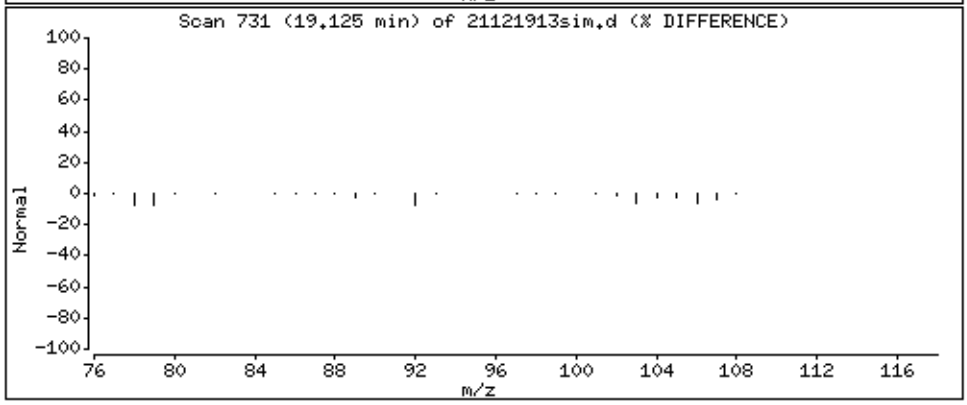












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	IAU-140_1217		
Lab ID:	1712342-05A	**Date/Time Analyzed:**	12/19/17 07:20 PM
Date/Time Collecte	12/14/17 10:20 AM	**Dilution Factor:**	1.96
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121914sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.078	0.078	0.31	2.3
Ethyl Benzene	100-41-4	0.0046	0.042	0.17	1.6
m,p-Xylene	108-38-3	0.011	0.042	0.34	5.6
Naphthalene	91-20-3	0.076	0.10	0.51	2.9
o-Xylene	95-47-6	0.0087	0.042	0.17	2.0
Toluene	108-88-3	0.037	0.037	0.15	11
Total Xylenes	9999-9999-015	NA	D	0.51	7.6

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	114
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121914sim.d
Lab Smp Id: 1712342-05A
Inj Date : 19-DEC-2017 19:20
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# 34407
Misc Info : 9.4"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.96000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	101955	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	79172			47.49- 107.49	77.65
14.273	14.298 (1.000)	49	148376			114.87- 174.87	145.53
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	514609	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	87230			0.00- 46.92	16.95
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	391533	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	217741			25.29- 85.29	55.61
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150899	5.69849	5.698	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85579			30.16- 90.16	56.71
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	447336	4.95222	4.952	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	55850			0.00- 42.34	12.49

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.859	16.860 (1.101)	100	305115			38.15- 98.15	68.21
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.786	19.787 (1.072)	174	145276	4.29308	4.293	80.00- 120.00	100.00
	19.768	19.787 (1.071)	95	174977			88.82- 148.82	120.44
	19.786	19.787 (1.072)	176	142729			68.26- 128.26	98.25
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	52926	0.36762	0.7205	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	12080			0.00- 52.85	22.83
	23 Toluene					CAS #: 108-88-3		
	16.921	16.921 (1.105)	91	204946	1.45640	2.854	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	125021			33.44- 93.44	61.00
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	8423	0.19367	0.3796	80.00- 120.00	100.00
	18.548	18.548 (1.004)	91	25860			259.51- 319.51	307.02
	31 m,p-Xylene					CAS #: 108-38-3		
	18.671	18.672 (1.011)	106	28065	0.66066	1.295	80.00- 120.00	100.00
	18.651	18.672 (1.010)	91	55445			159.47- 219.47	197.56
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	9160	0.23720	0.4649	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	19139			168.52- 228.52	208.93
	38 Naphthalene					CAS #: 91-20-3		
	24.153	24.154 (1.308)	128	58126	0.28647	0.5615	80.00- 120.00	100.00
	24.153	24.154 (1.308)	127	7847			0.00- 43.35	13.50
M	39 Total Xylene					CAS #: 1330-20-7		
				37225	0.89786	1.760		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121914sim.d
Lab Smp Id: 1712342-05A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 9.4"Hg -> 5.1psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	101955	-15.00
20 1,4-Difluorobenze	564150	338490	789810	514609	-8.78
28 Chlorobenzene-d5	433051	259831	606271	391533	-9.59

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:22

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-05A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 9.4"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.698	113.97	70-130
$ 22 Toluene-d8	5.000	4.952	99.04	70-130
$ 33 4-Bromofluorobenze	5.000	4.293	85.86	70-130

Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

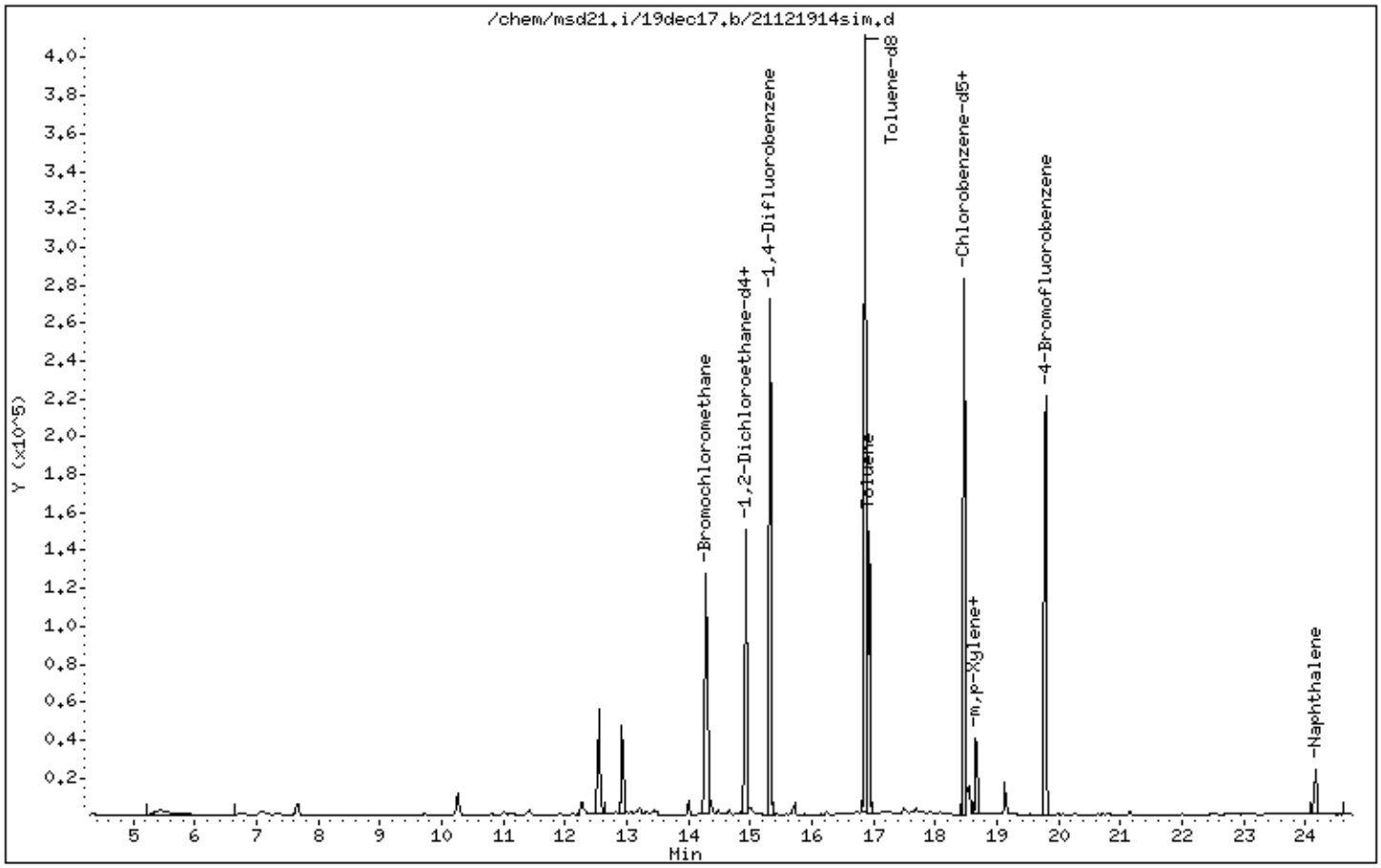
Instrument: msd21.i

Sample Info: 250mL# 34407

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

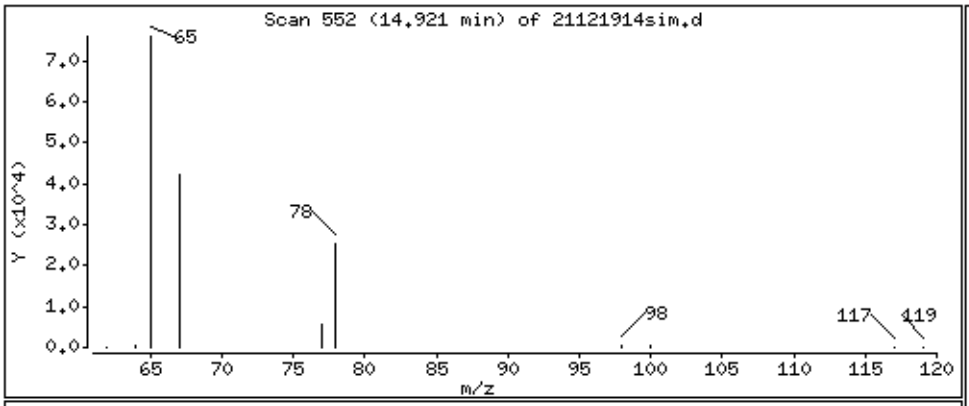
Operator: sw

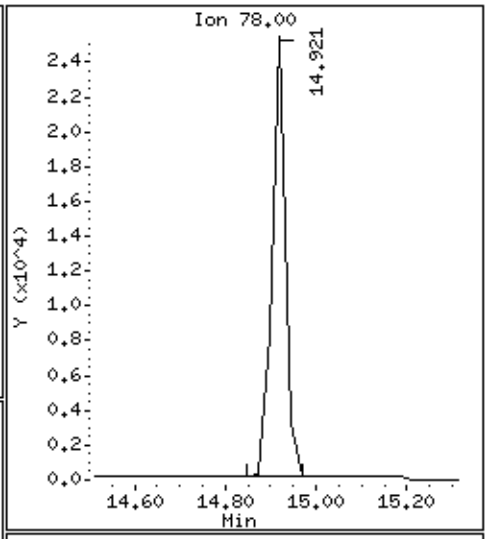
Column phase: RTX-624

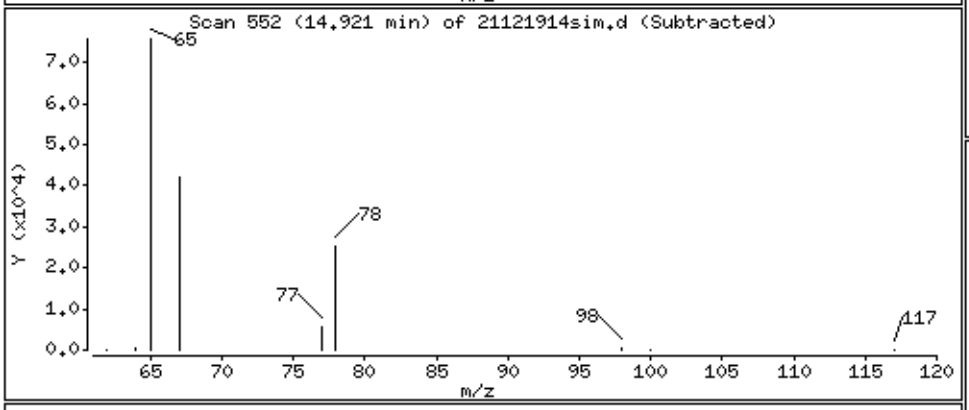
Column diameter: 0.32

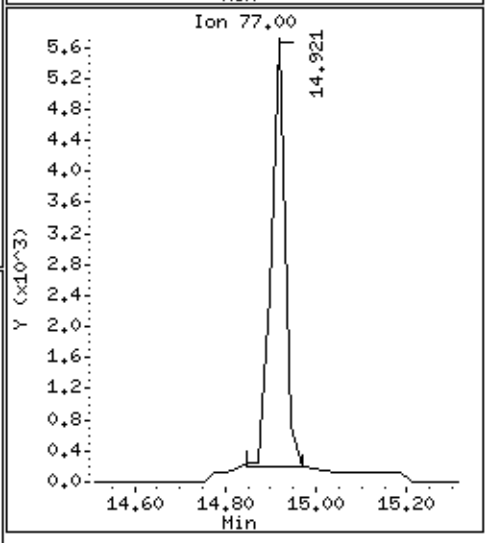
17 Benzene

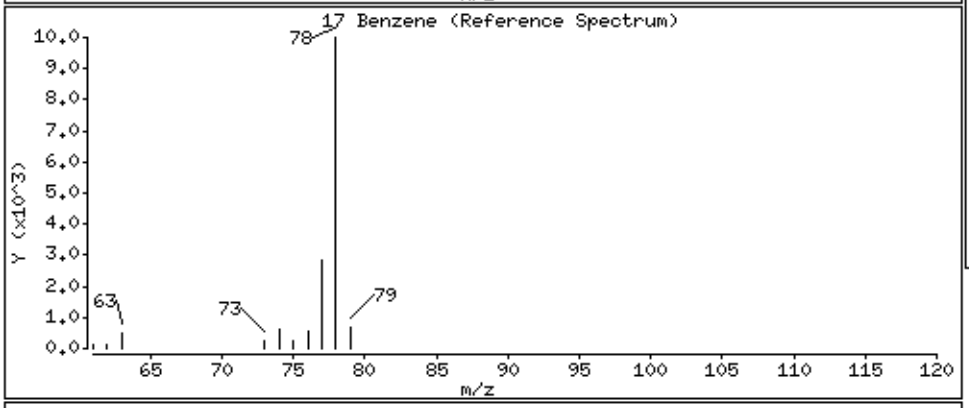
Concentration: 0.7205 PPBV

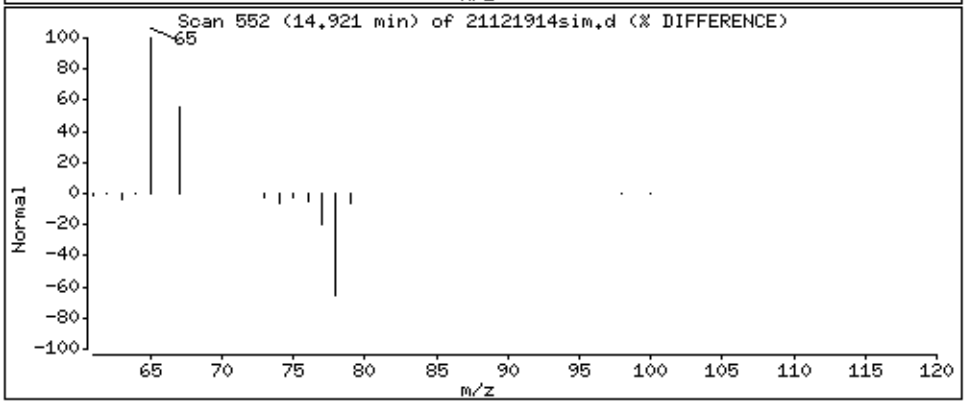












Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

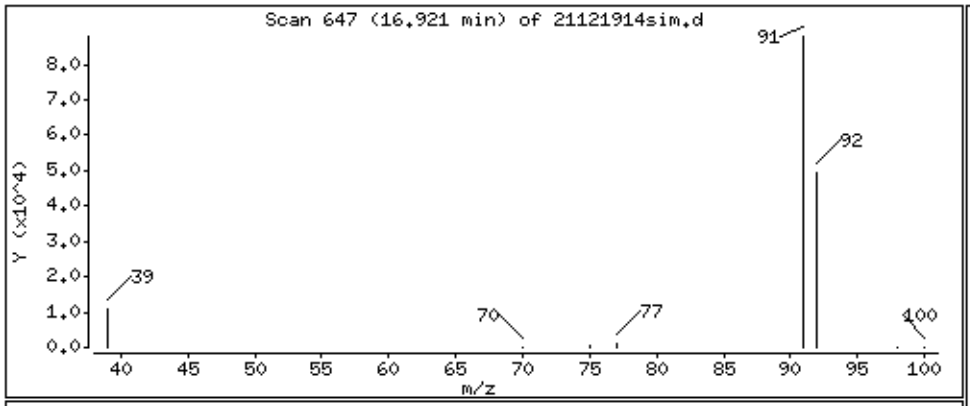
Operator: sw

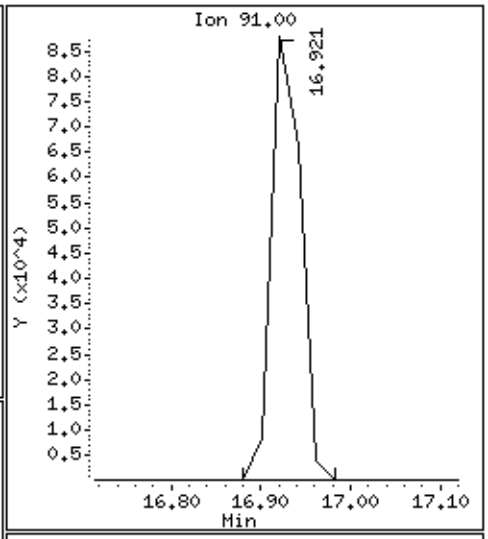
Column phase: RTX-624

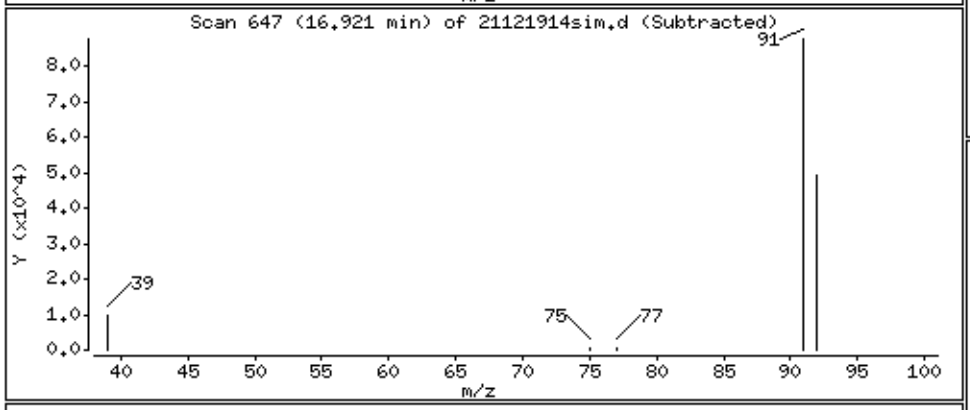
Column diameter: 0.32

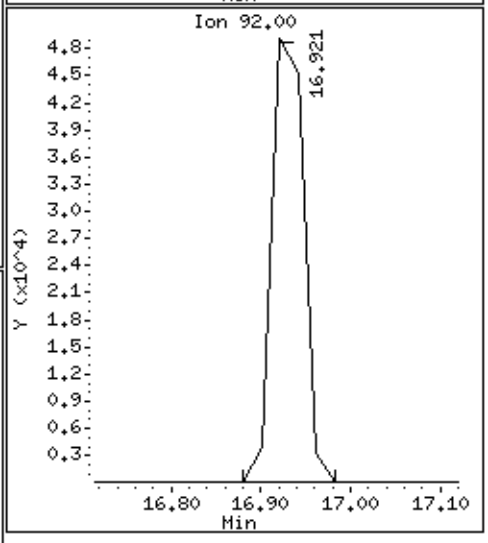
23 Toluene

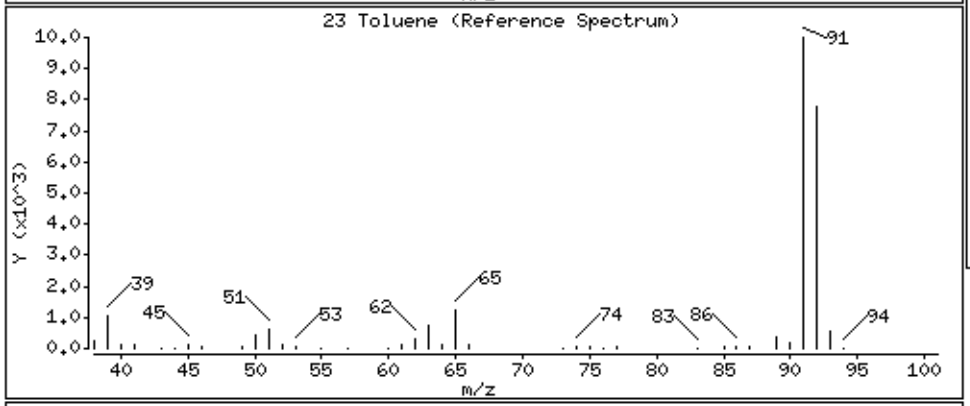
Concentration: 2.854 PPBV

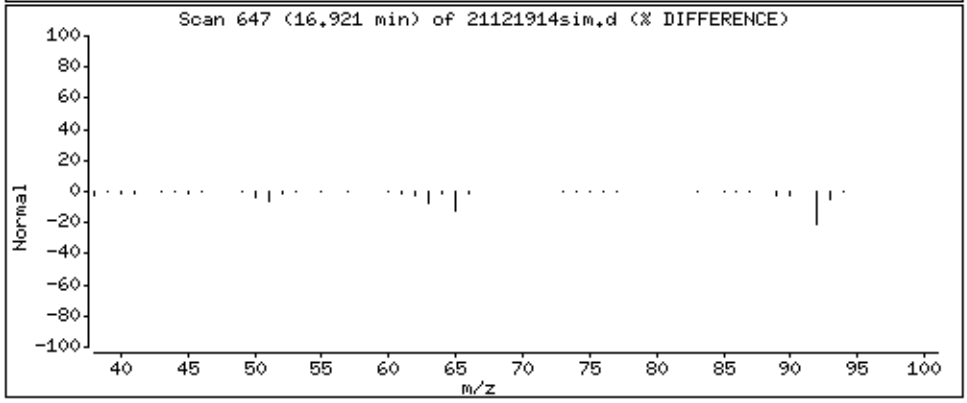












Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

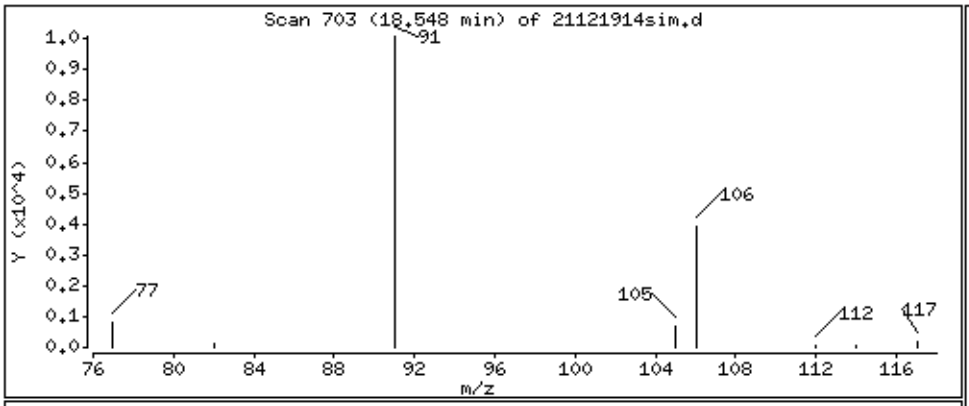
Operator: sw

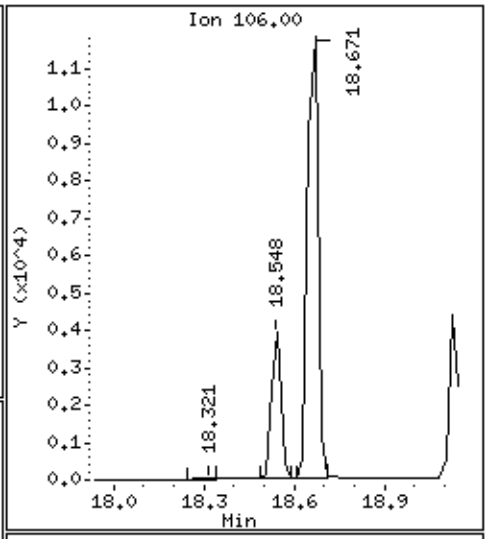
Column phase: RTX-624

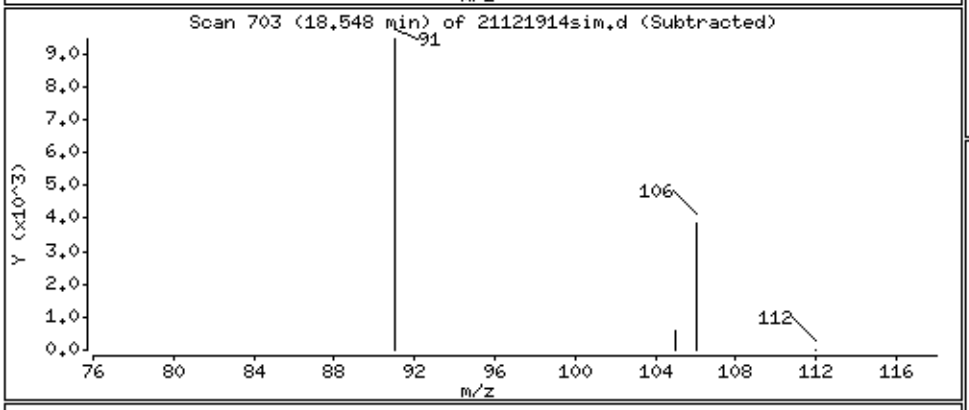
Column diameter: 0.32

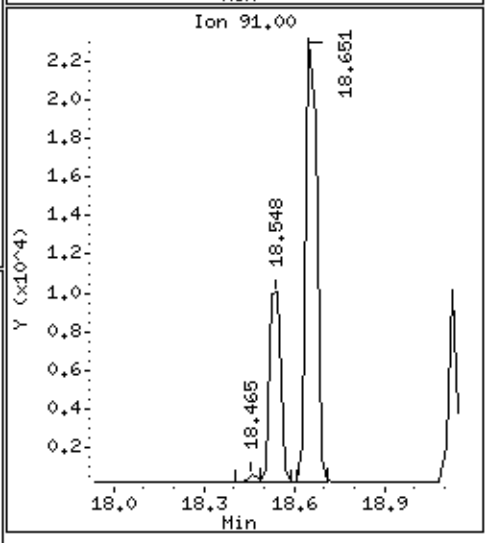
30 Ethyl Benzene

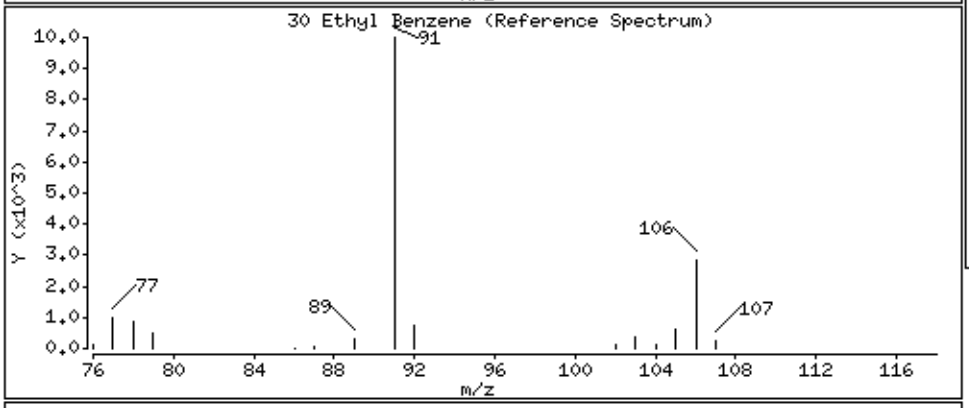
Concentration: 0.3796 PPBV

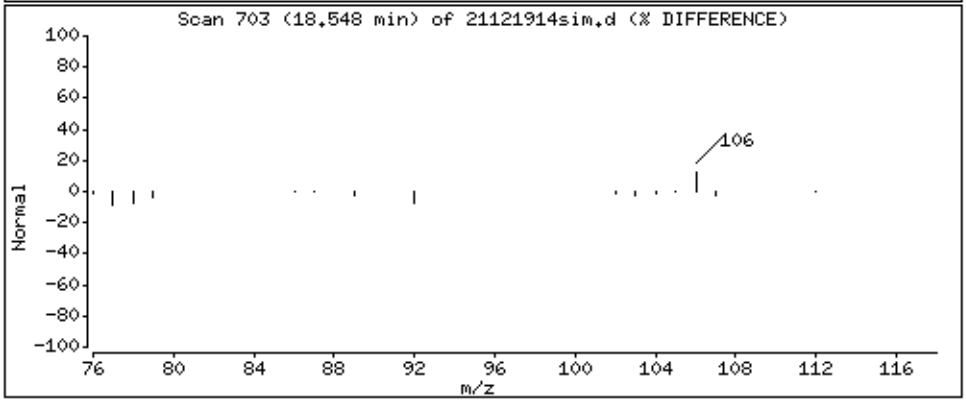












Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

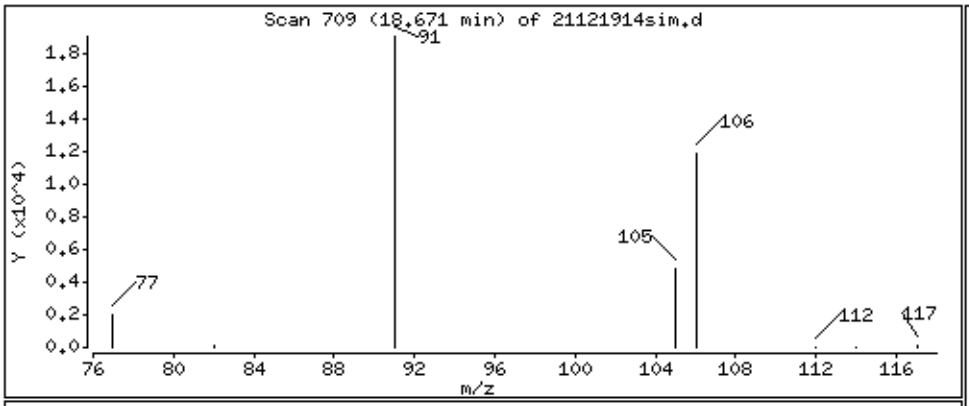
Operator: sw

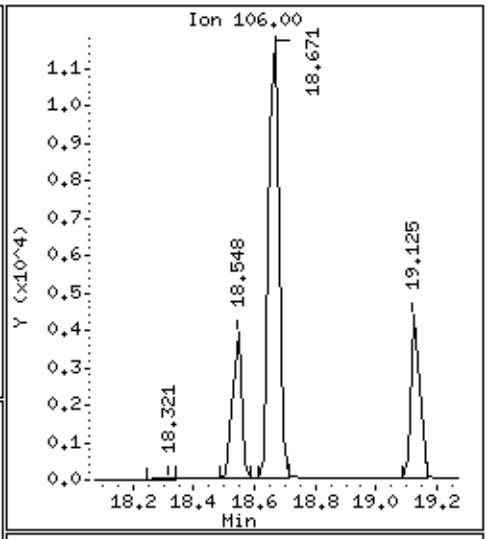
Column phase: RTX-624

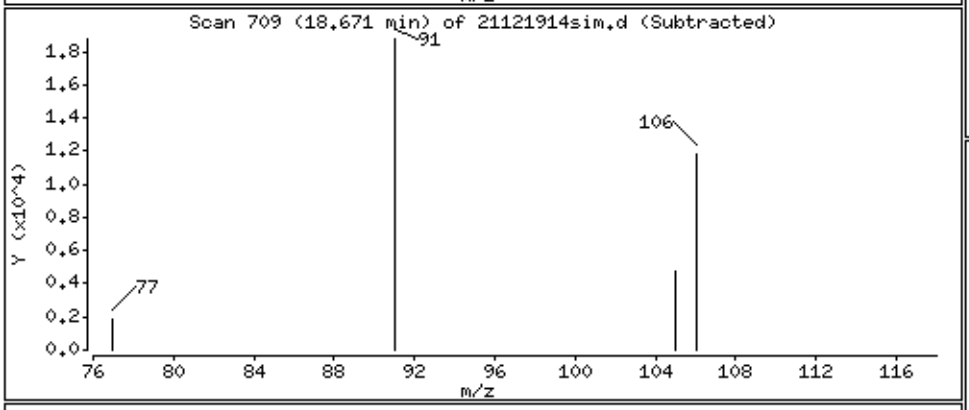
Column diameter: 0.32

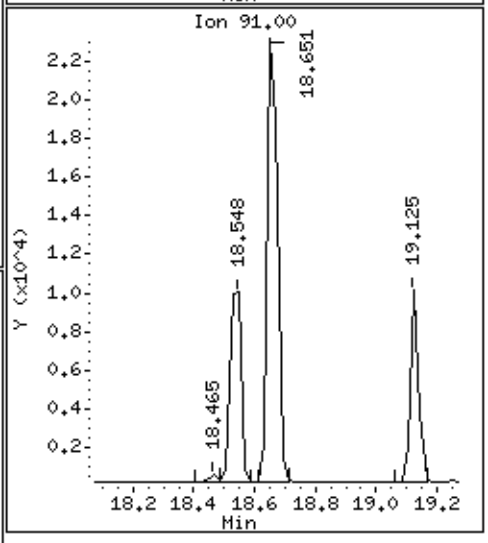
31 m,p-Xylene

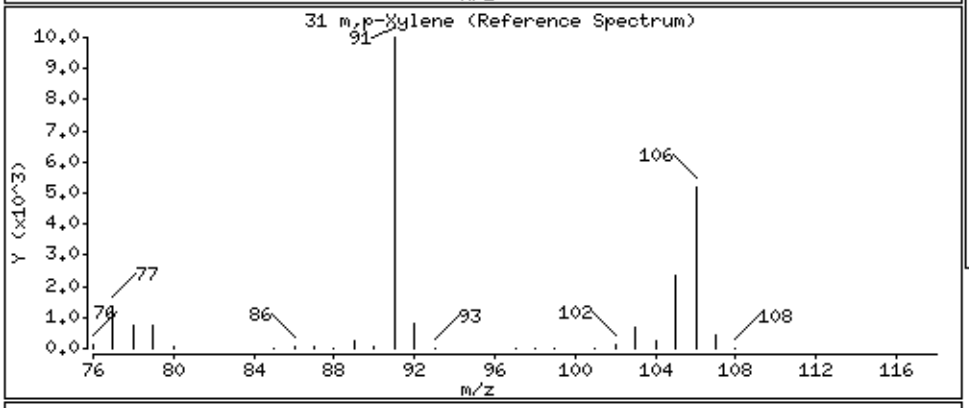
Concentration: 1.295 PPBV

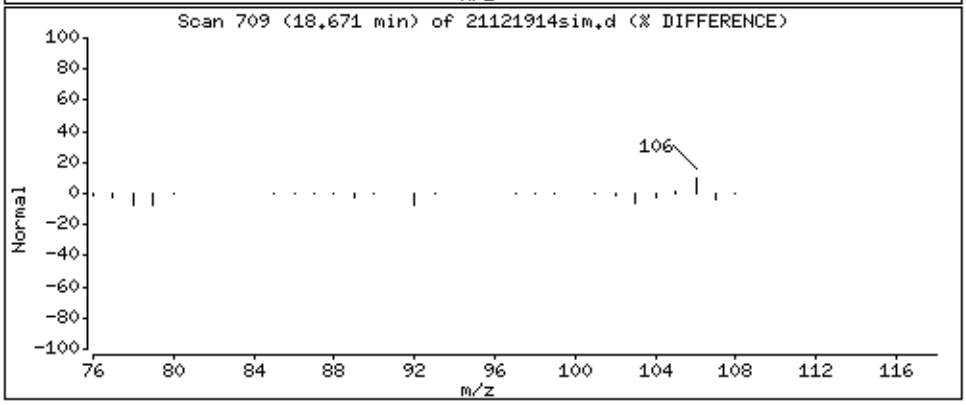












Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

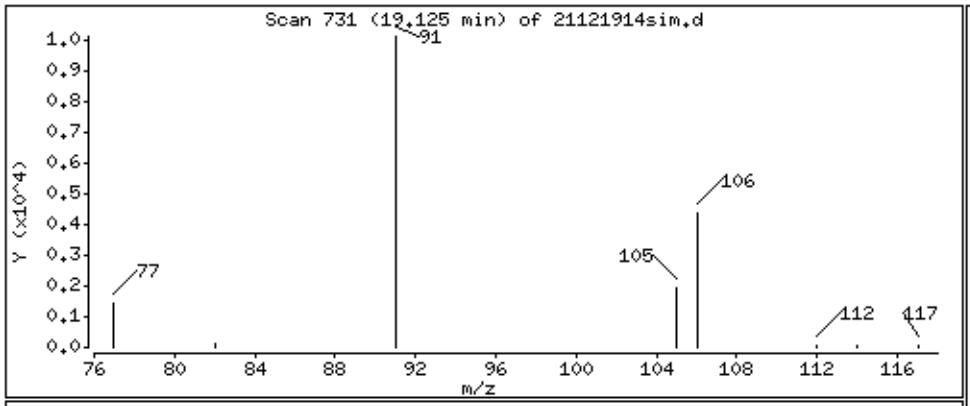
Operator: sw

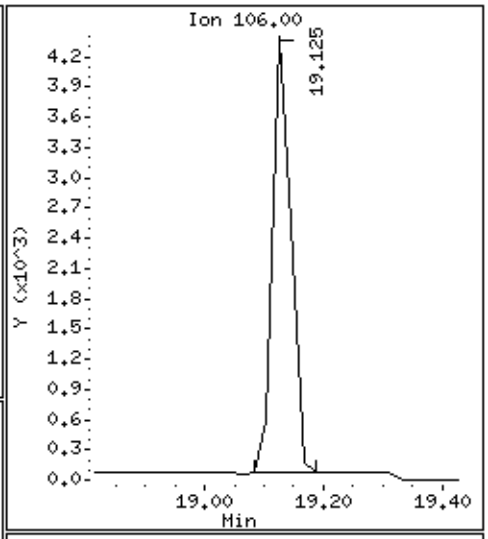
Column phase: RTX-624

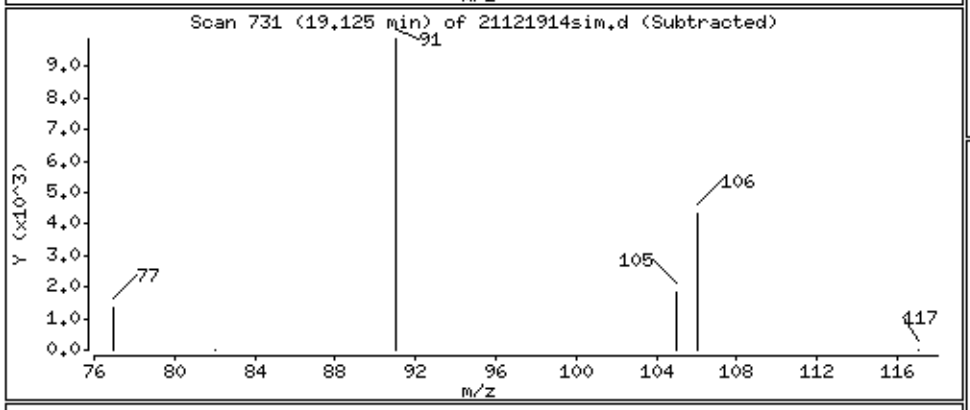
Column diameter: 0.32

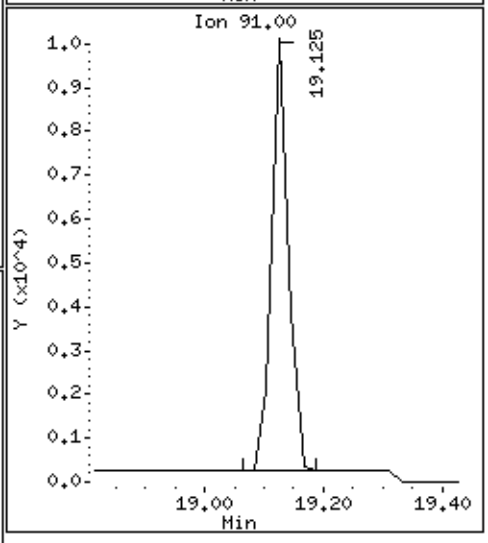
32 o-Xylene

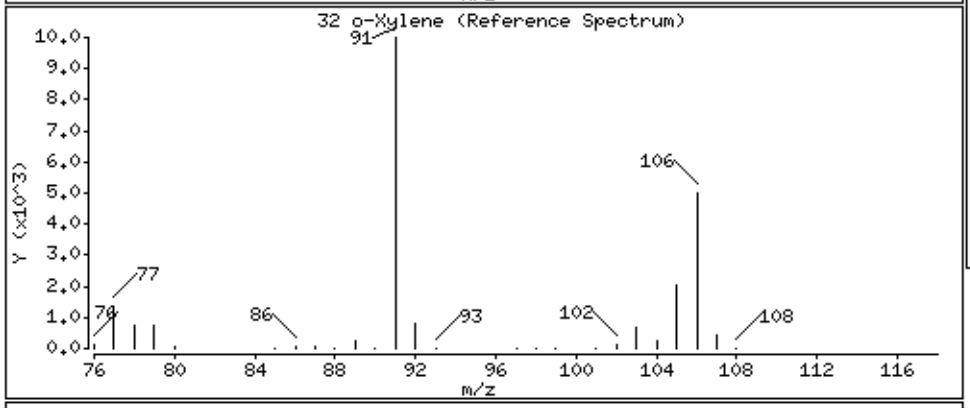
Concentration: 0.4649 PPBV

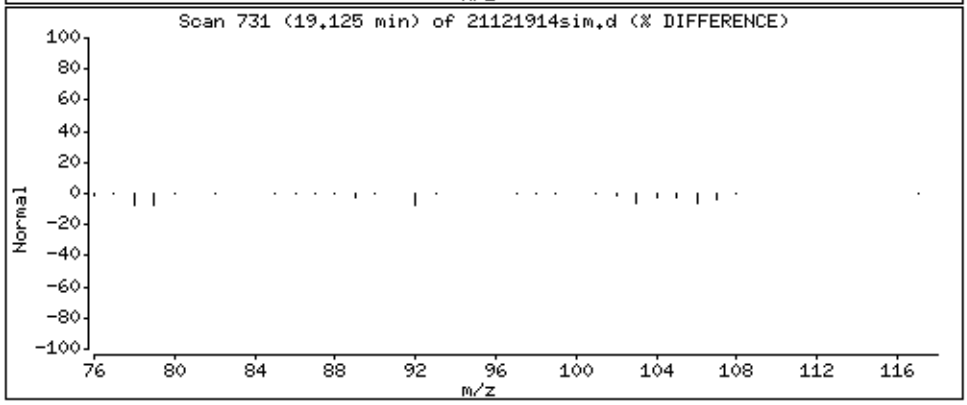












Data File: /chem/msd21.i/19dec17.b/21121914sim.d

Date : 19-DEC-2017 19:20

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 34407

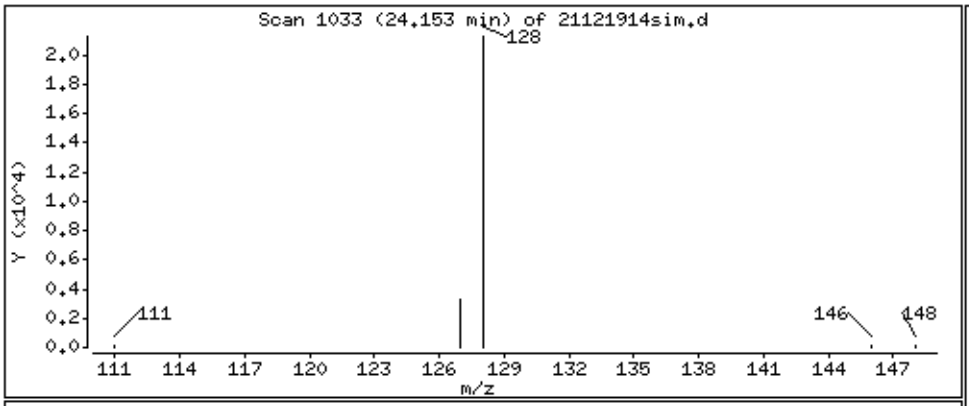
Operator: sw

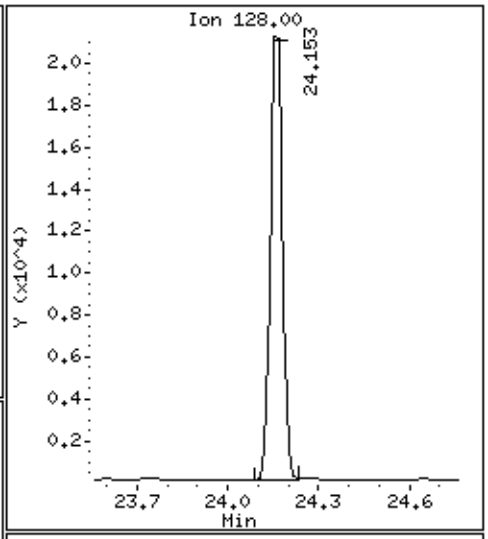
Column phase: RTX-624

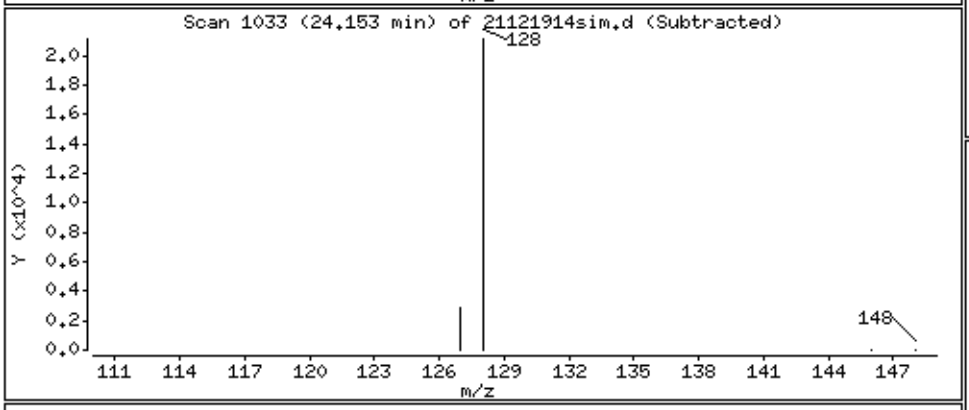
Column diameter: 0.32

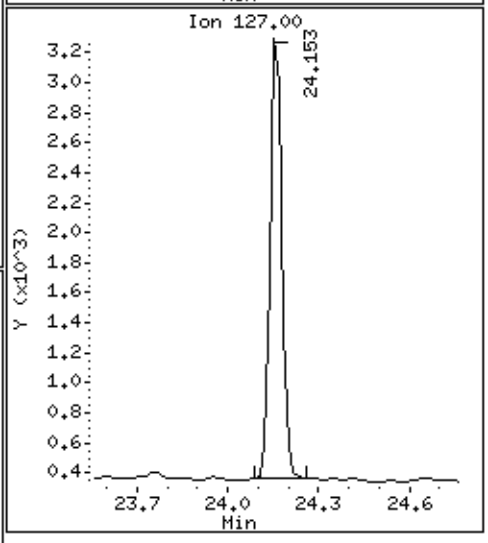
38 Naphthalene

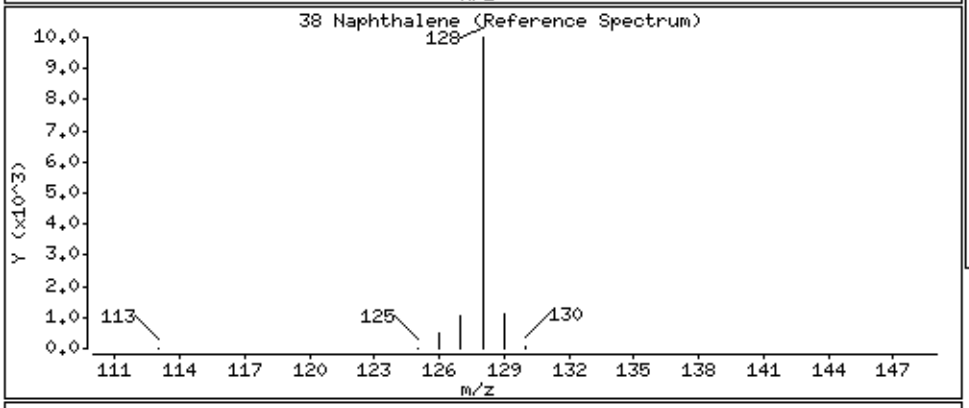
Concentration: 0.5615 PPBV

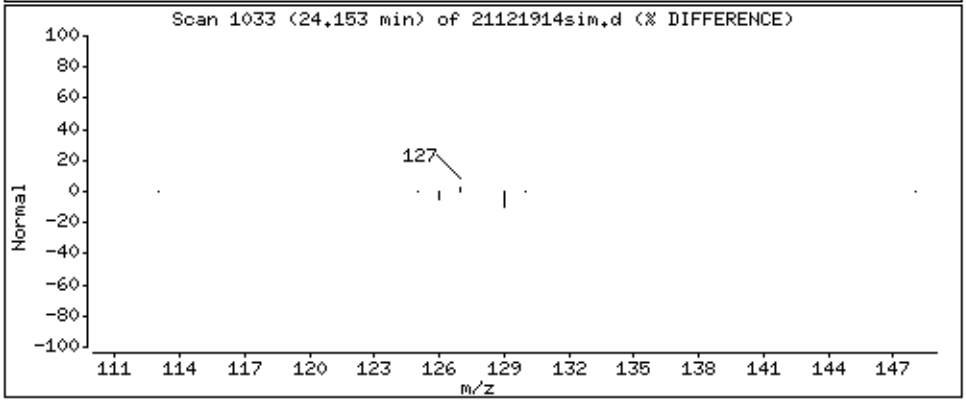












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA1_1217		
Lab ID:	1712342-06A	**Date/Time Analyzed:**	12/19/17 07:56 PM
Date/Time Collecte	12/14/17 02:25 PM	**Dilution Factor:**	1.45
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121915sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.058	0.058	0.23	0.33
Ethyl Benzene	100-41-4	0.0034	0.031	0.12	0.10 J
m,p-Xylene	108-38-3	0.0081	0.031	0.25	0.39
Naphthalene	91-20-3	0.057	0.076	0.38	Not Detected U
o-Xylene	95-47-6	0.0064	0.031	0.12	0.18
Toluene	108-88-3	0.028	0.028	0.11	0.41
Total Xylenes	9999-9999-015	NA	D	0.38	0.56

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121915sim.d
Lab Smp Id: 1712342-06A
Inj Date : 19-DEC-2017 19:56
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N1904
Misc Info : 2.2"Hg -> 5psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.45000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	106776	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	82782			47.49- 107.49	77.53
14.273	14.298 (1.000)	49	153962			114.87- 174.87	144.19
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	519294	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	88056			0.00- 46.92	16.96
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	394332	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	219448			25.29- 85.29	55.65
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	152368	5.49415	5.494	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	86020			30.16- 90.16	56.46
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	447200	4.90605	4.906	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	55476			0.00- 42.34	12.41

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	304830			38.15- 98.15	68.16
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.786	19.787 (1.072)	174	147511	4.32817	4.328	80.00- 120.00	100.00
19.767	19.787 (1.071)	95	177588			88.82- 148.82	120.39
19.786	19.787 (1.072)	176	144863			68.26- 128.26	98.20
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	10231	0.07043	0.1021	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2351			0.00- 52.85	22.99
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	10668	0.07513	0.1089	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	6452			33.44- 93.44	60.49
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	692	0.01582	0.02294	80.00- 120.00	100.00(a)
18.548	18.548 (1.004)	91	2144			259.51- 319.51	309.49
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	2627	0.06141	0.08905	80.00- 120.00	100.00
18.651	18.672 (1.010)	91	5189			159.47- 219.47	197.50
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	1139	0.02930	0.04248	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	2909			168.52- 228.52	255.34
M 39 Total Xylene					CAS #: 1330-20-7		
			3767	0.09071	0.1315		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121915sim.d
Lab Smp Id: 1712342-06A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 2.2"Hg -> 5psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	106776	-10.98
20 1,4-Difluorobenze	564150	338490	789810	519294	-7.95
28 Chlorobenzene-d5	433051	259831	606271	394332	-8.94

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:22

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-06A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 2.2"Hg -> 5psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.494	109.88	70-130
$ 22 Toluene-d8	5.000	4.906	98.12	70-130
$ 33 4-Bromofluorobenze	5.000	4.328	86.56	70-130

Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

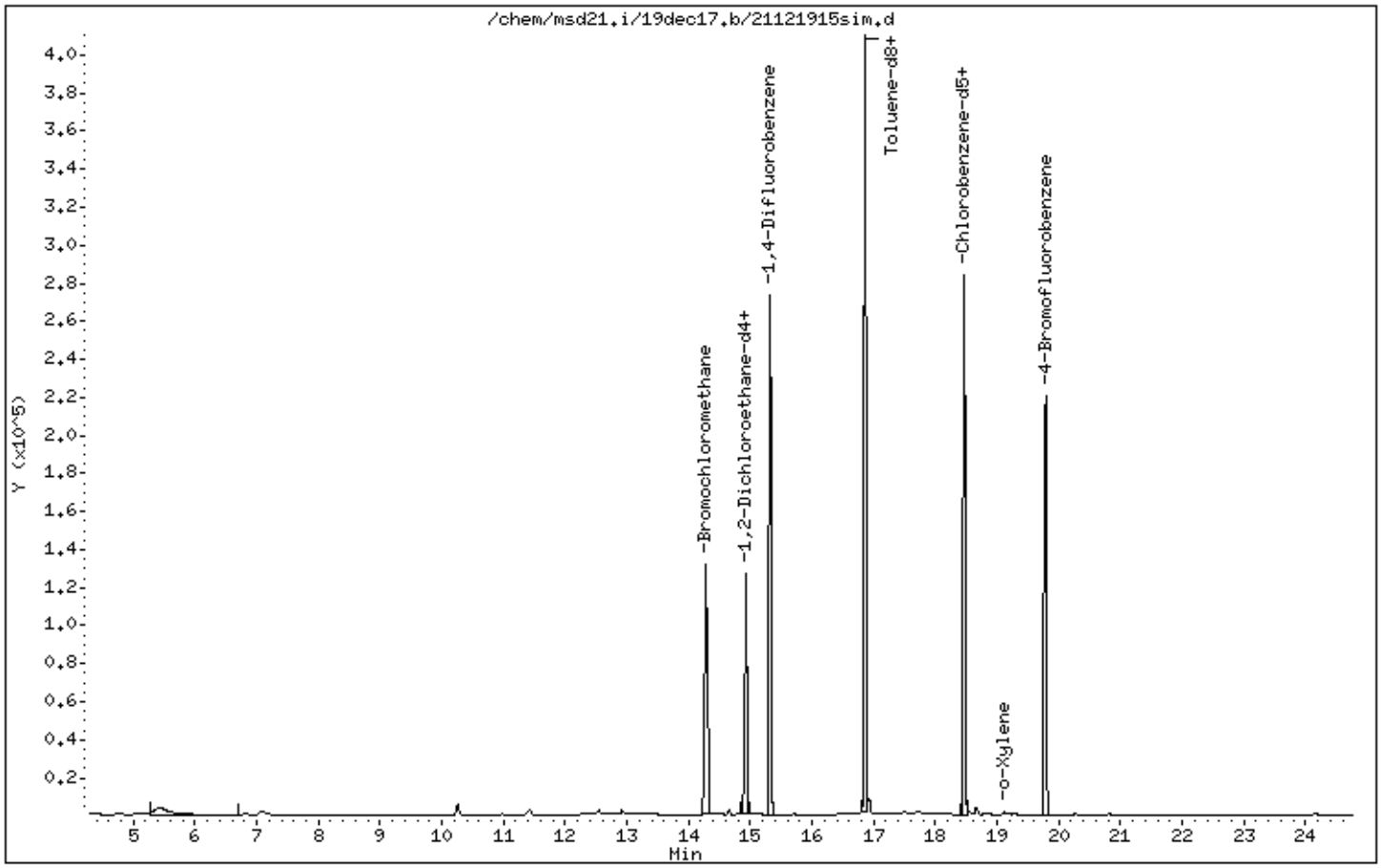
Instrument: msd21.i

Sample Info: 250mL# N1904

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1904

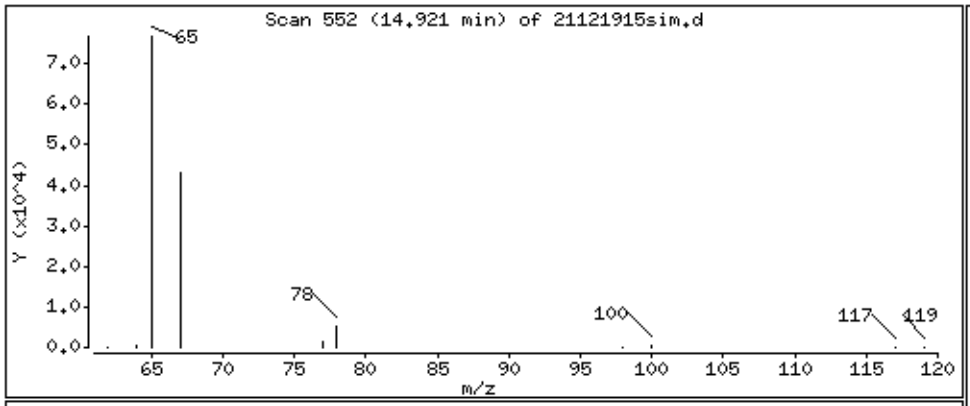
Operator: sw

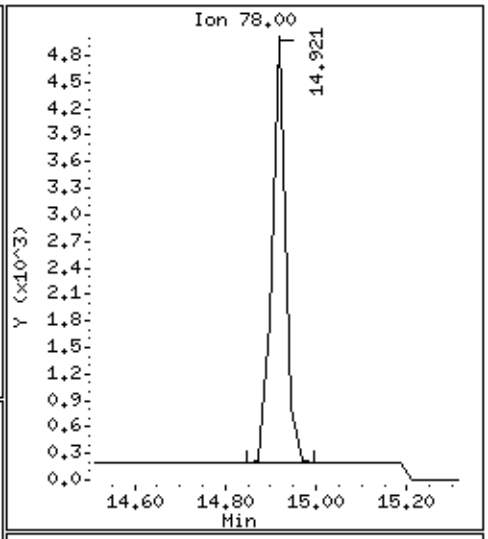
Column phase: RTX-624

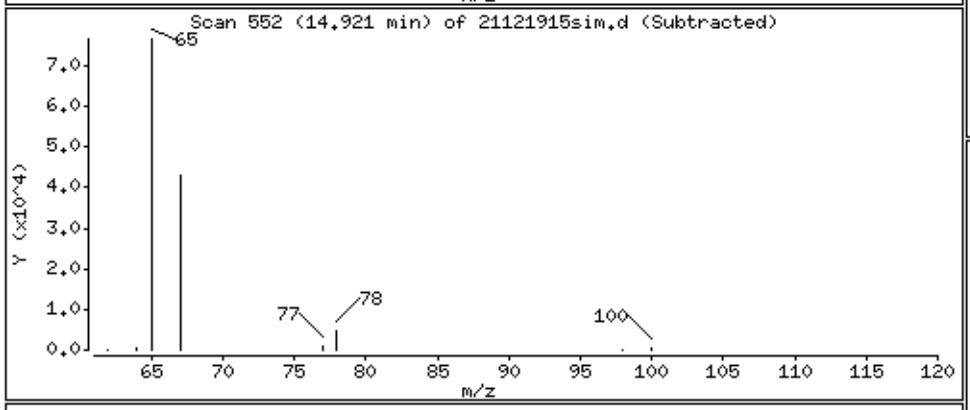
Column diameter: 0.32

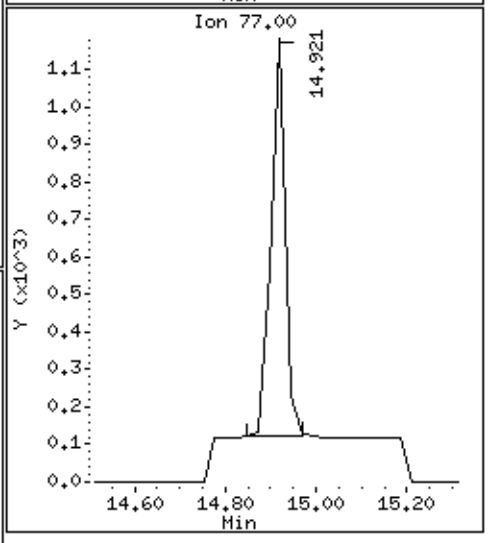
17 Benzene

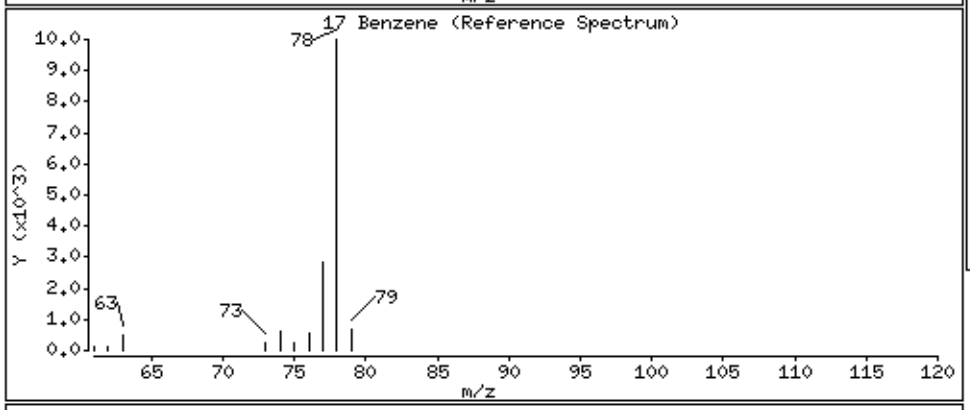
Concentration: 0.1021 PPBV

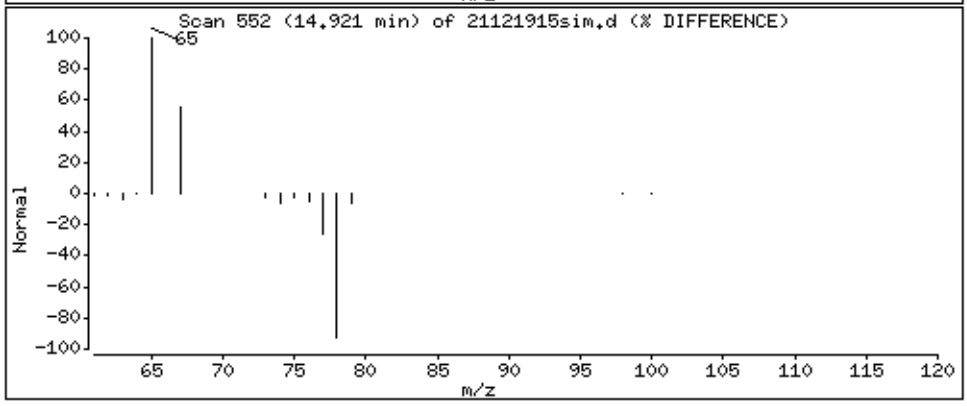












Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1904

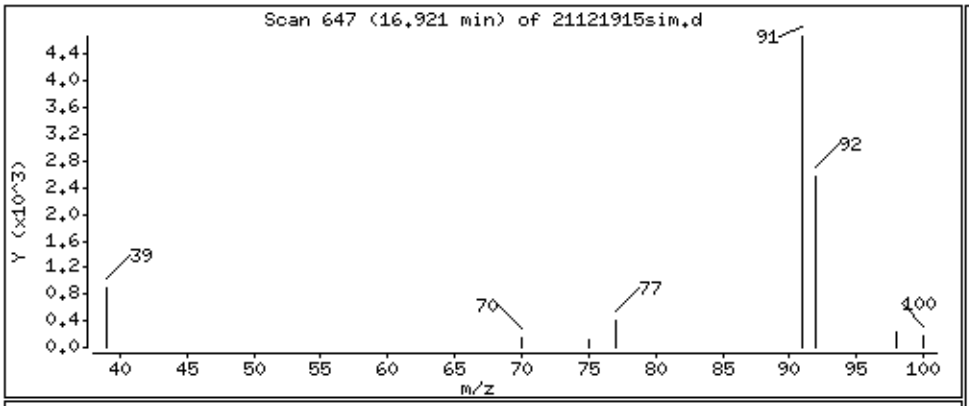
Operator: sw

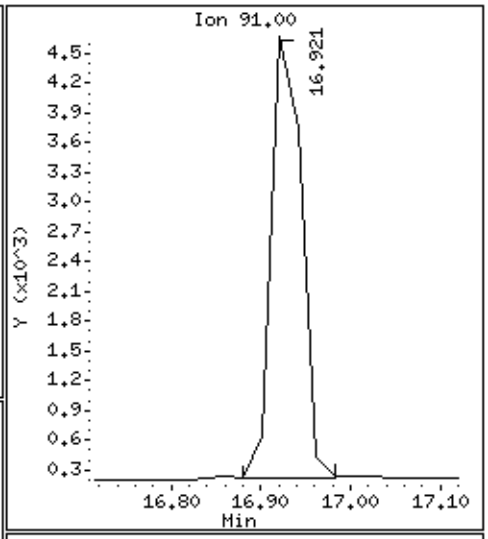
Column phase: RTX-624

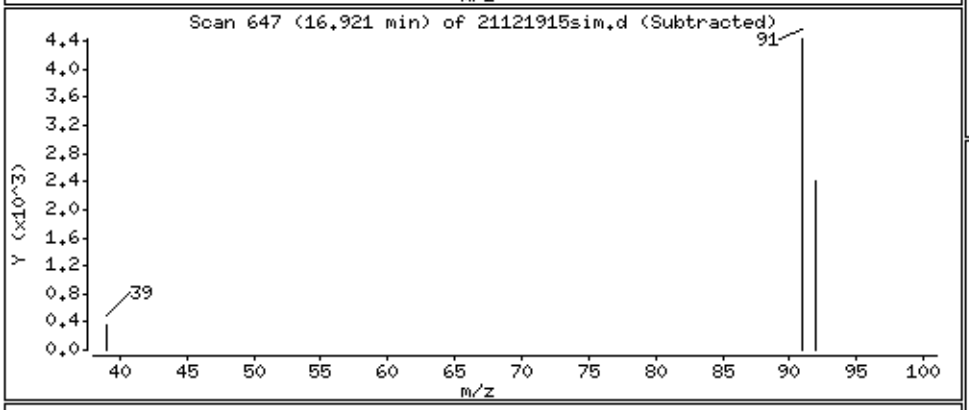
Column diameter: 0.32

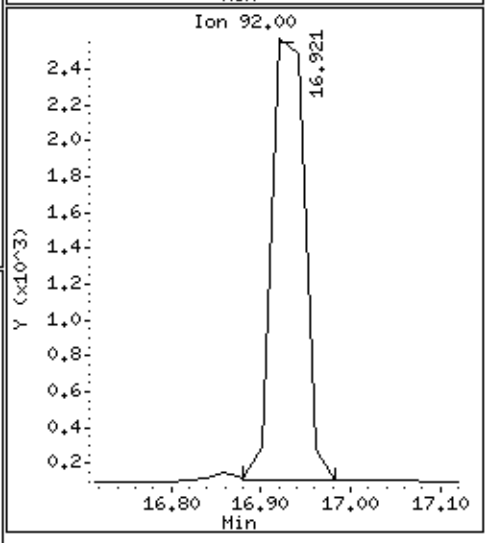
23 Toluene

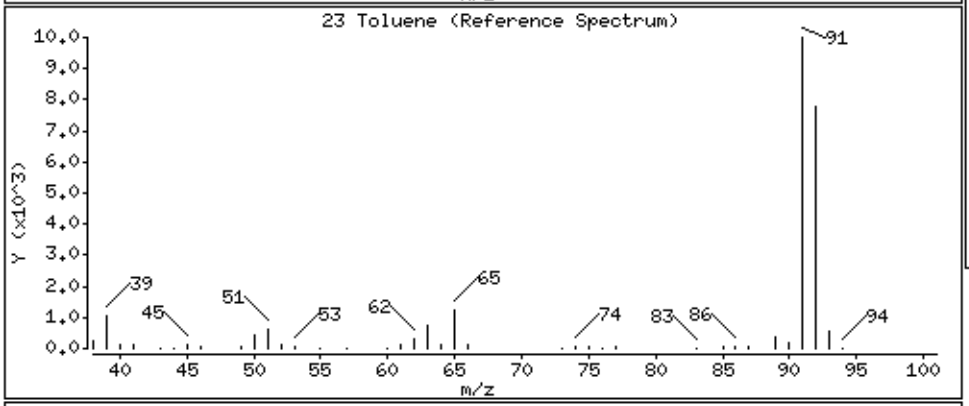
Concentration: 0.1089 PPBV

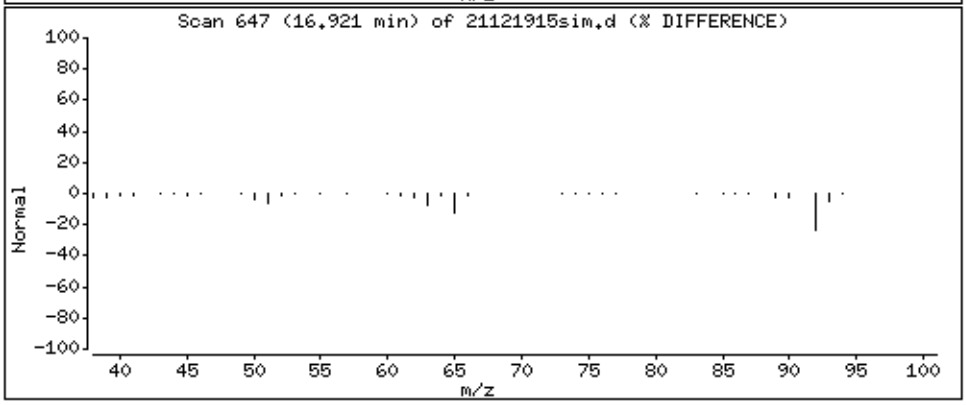












Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1904

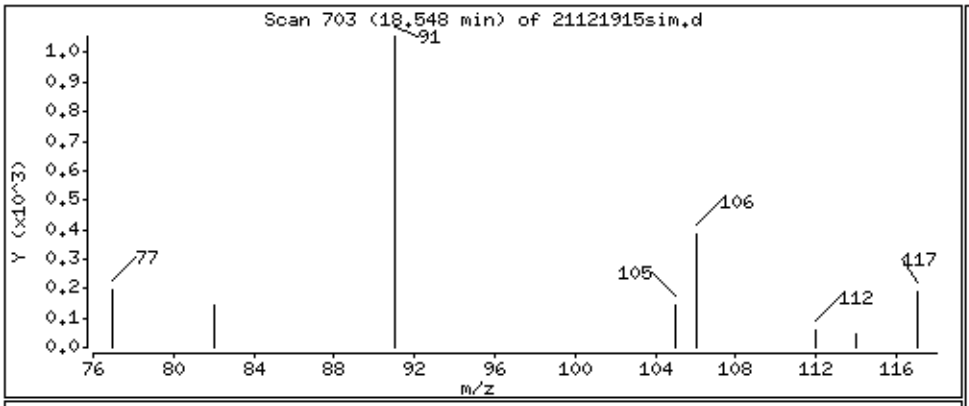
Operator: sw

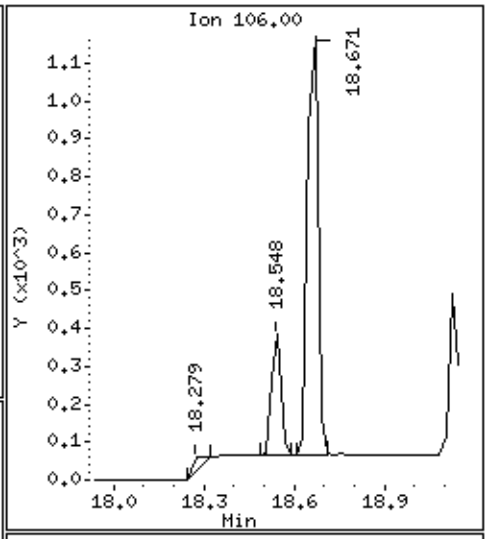
Column phase: RTX-624

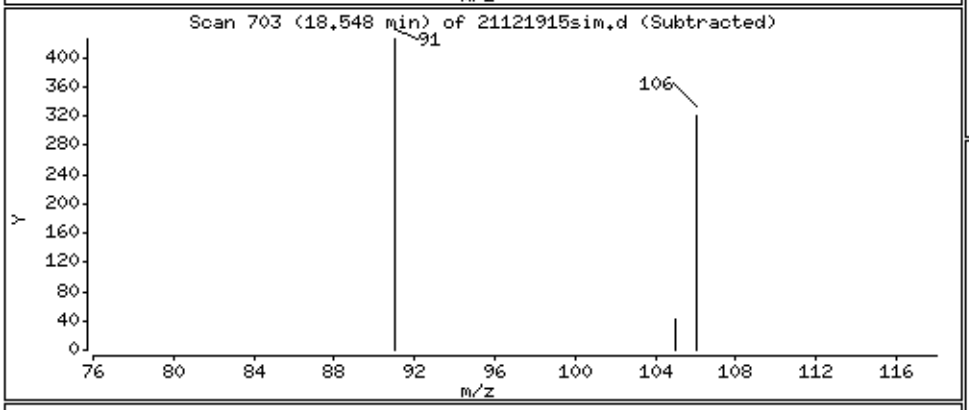
Column diameter: 0.32

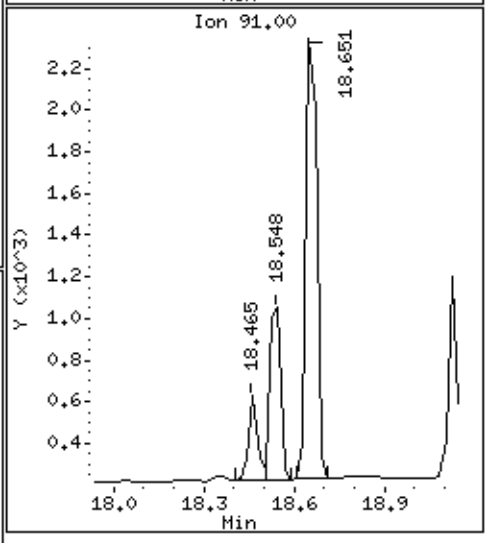
30 Ethyl Benzene

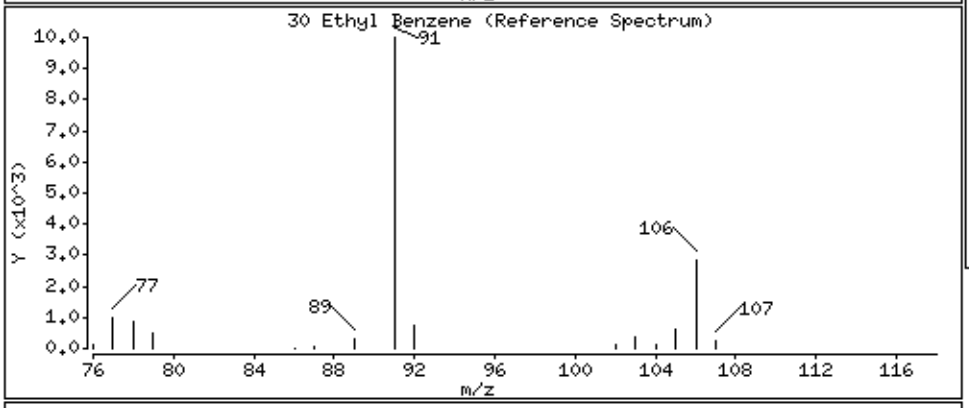
Concentration: 0.02294 PPBV

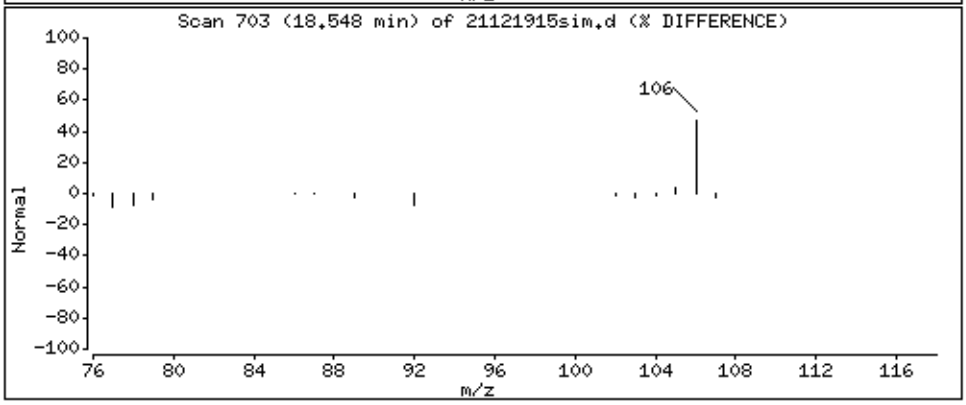












Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1904

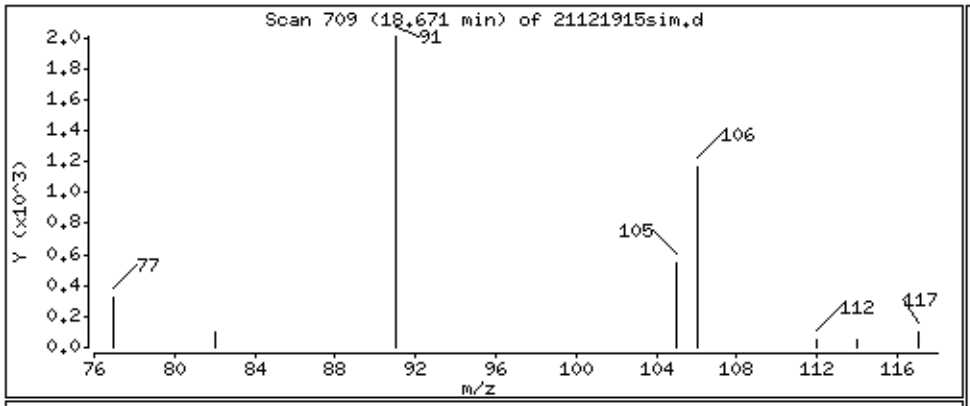
Operator: sw

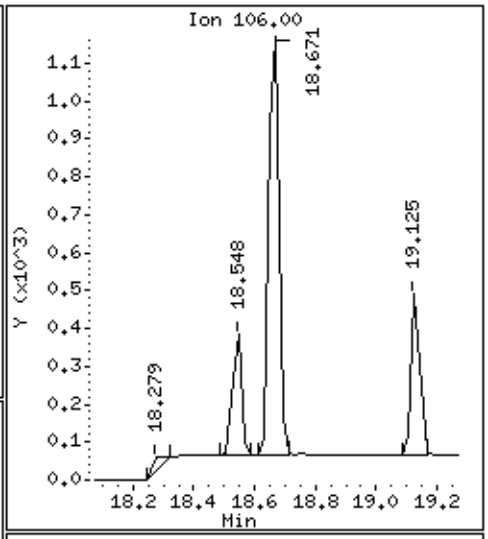
Column phase: RTX-624

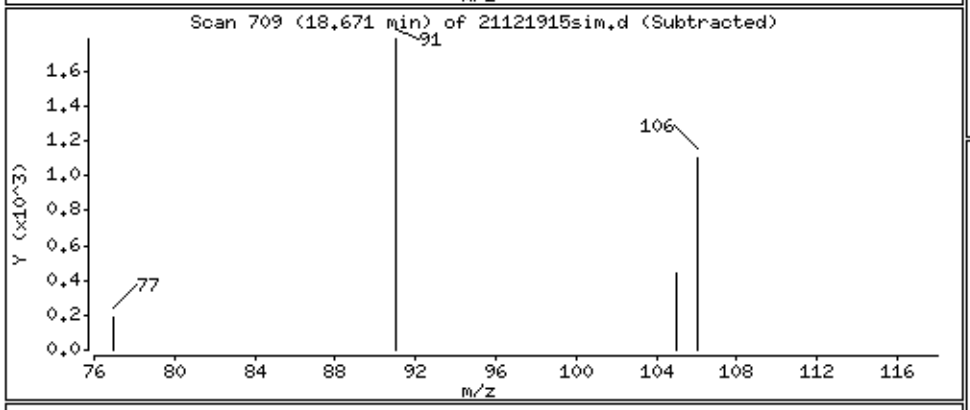
Column diameter: 0.32

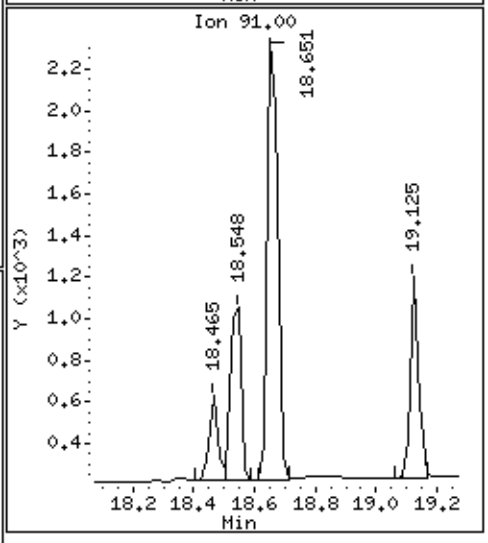
31 m,p-Xylene

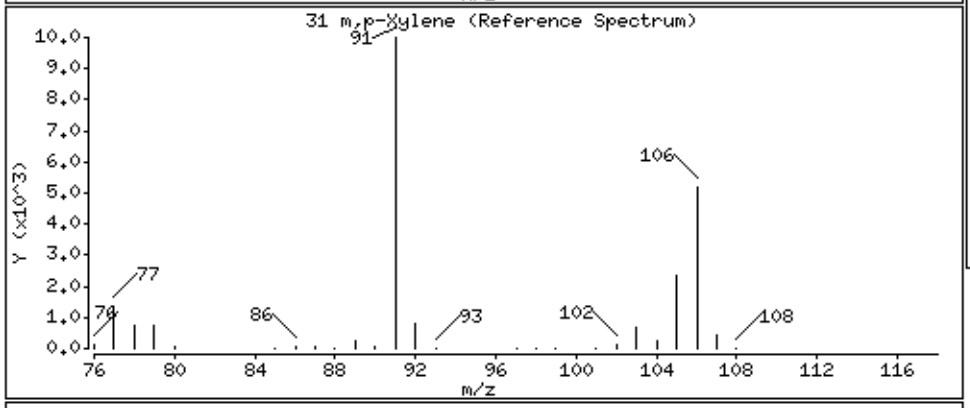
Concentration: 0.08905 PPBV

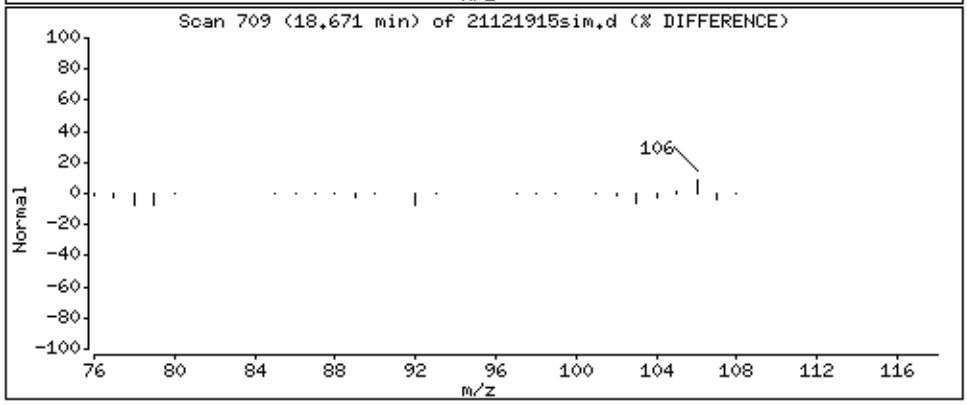












Data File: /chem/msd21.i/19dec17.b/21121915sim.d

Date : 19-DEC-2017 19:56

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1904

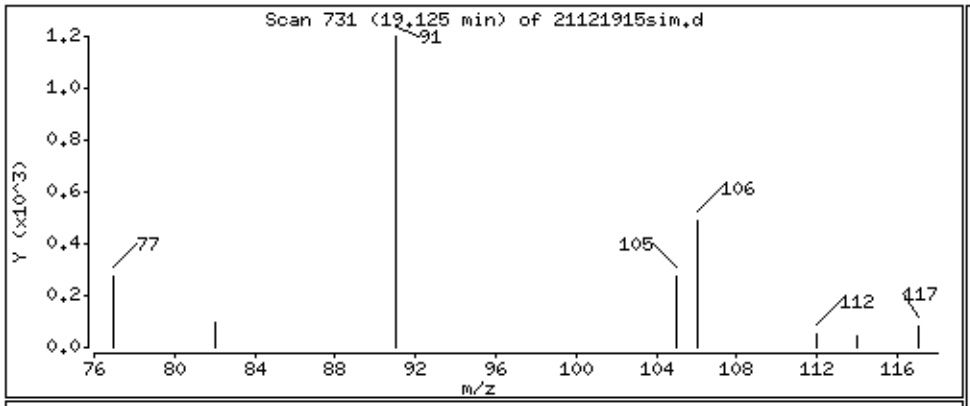
Operator: sw

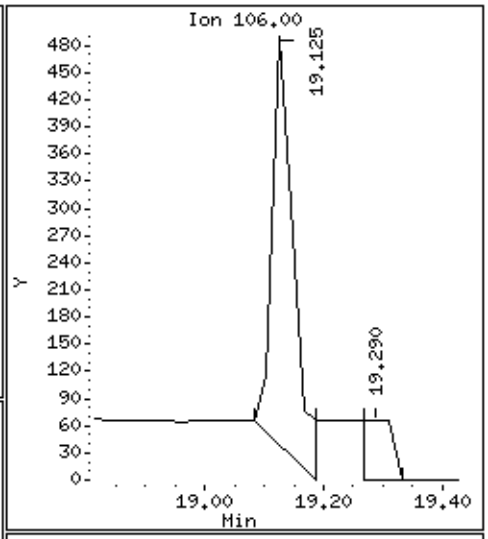
Column phase: RTX-624

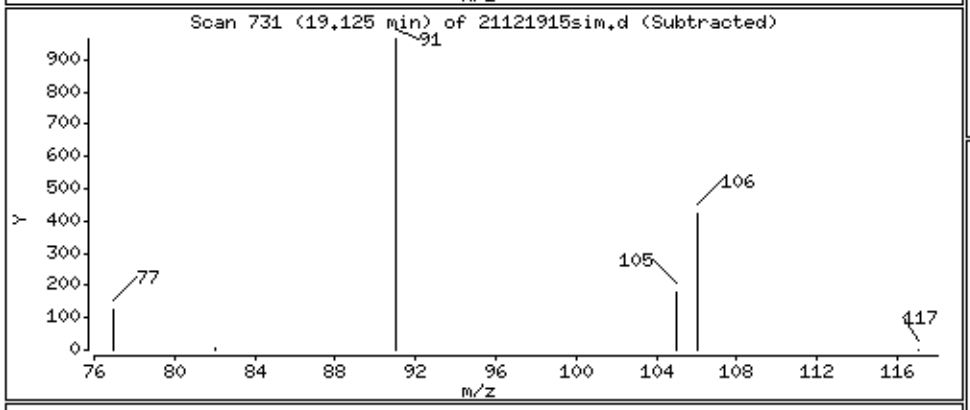
Column diameter: 0.32

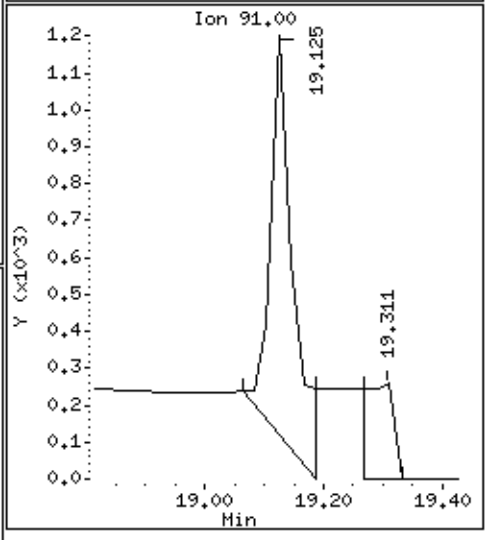
32 o-Xylene

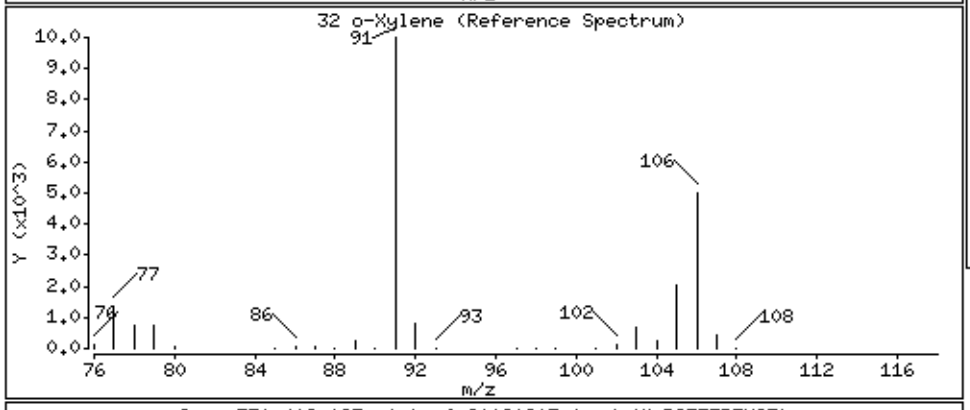
Concentration: 0.04248 PPBV

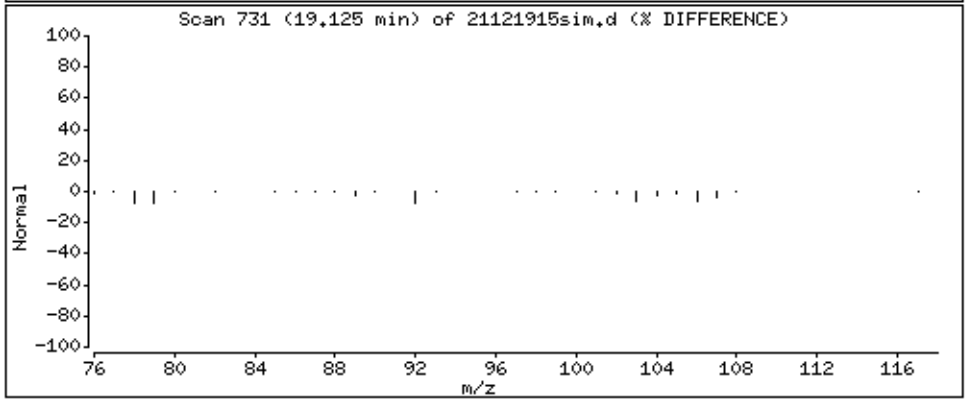












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA2_1217		
Lab ID:	1712342-07A	**Date/Time Analyzed:**	12/19/17 08:35 PM
Date/Time Collecte	12/14/17 02:10 PM	**Dilution Factor:**	1.57
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121916sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.063	0.063	0.25	0.29
Ethyl Benzene	100-41-4	0.0037	0.034	0.14	0.052 J
m,p-Xylene	108-38-3	0.0088	0.034	0.27	0.19 J
Naphthalene	91-20-3	0.061	0.082	0.41	0.079 J
o-Xylene	95-47-6	0.0070	0.034	0.14	0.11 J
Toluene	108-88-3	0.030	0.030	0.12	0.29
Total Xylenes	9999-9999-015	NA	D	0.41	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	89
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121916sim.d
Lab Smp Id: 1712342-07A
Inj Date : 19-DEC-2017 20:35
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N2864
Misc Info : 4.5"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.57000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	105056	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	81680			47.49- 107.49	77.75
14.274	14.298 (1.000)	49	152122			114.87- 174.87	144.80
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	518766	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	87955			0.00- 46.92	16.95
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.466	18.465 (1.000)	117	399077	5.00000		80.00- 120.00	100.00
18.466	18.465 (1.000)	82	222421			25.29- 85.29	55.73
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	152834	5.60119	5.601	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	86236			30.16- 90.16	56.42
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	451222	4.95520	4.955	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55449			0.00- 42.34	12.29

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	306443			38.15- 98.15	67.91
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	154064	4.46672	4.467	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	185147			88.82- 148.82	120.17
19.787	19.787 (1.072)	176	151139			68.26- 128.26	98.10
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	8305	0.05722	0.08984	80.00- 120.00	100.00
14.922	14.921 (0.974)	77	2176			0.00- 52.85	26.20
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	6898	0.04863	0.07635	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	4195			33.44- 93.44	60.82
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	339	0.00765	0.01201	80.00- 120.00	100.00(a)
18.527	18.548 (1.003)	91	1064			259.51- 319.51	313.84
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	1184	0.02735	0.04294	80.00- 120.00	100.00(a)
18.651	18.672 (1.010)	91	2336			159.47- 219.47	197.28
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	641	0.01629	0.02557	80.00- 120.00	100.00(a)
19.126	19.125 (1.036)	91	1833			168.52- 228.52	286.08
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	1983	0.00959	0.01506	80.00- 120.00	100.00(a)
24.154	24.154 (1.308)	127	311			0.00- 43.35	15.70

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121916sim.d
Lab Smp Id: 1712342-07A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.5"Hg -> 4.9psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	105056	-12.41
20 1,4-Difluorobenze	564150	338490	789810	518766	-8.04
28 Chlorobenzene-d5	433051	259831	606271	399077	-7.85

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:00

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-07A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.5"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.601	112.02	70-130
$ 22 Toluene-d8	5.000	4.955	99.10	70-130
$ 33 4-Bromofluorobenze	5.000	4.467	89.33	70-130

Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

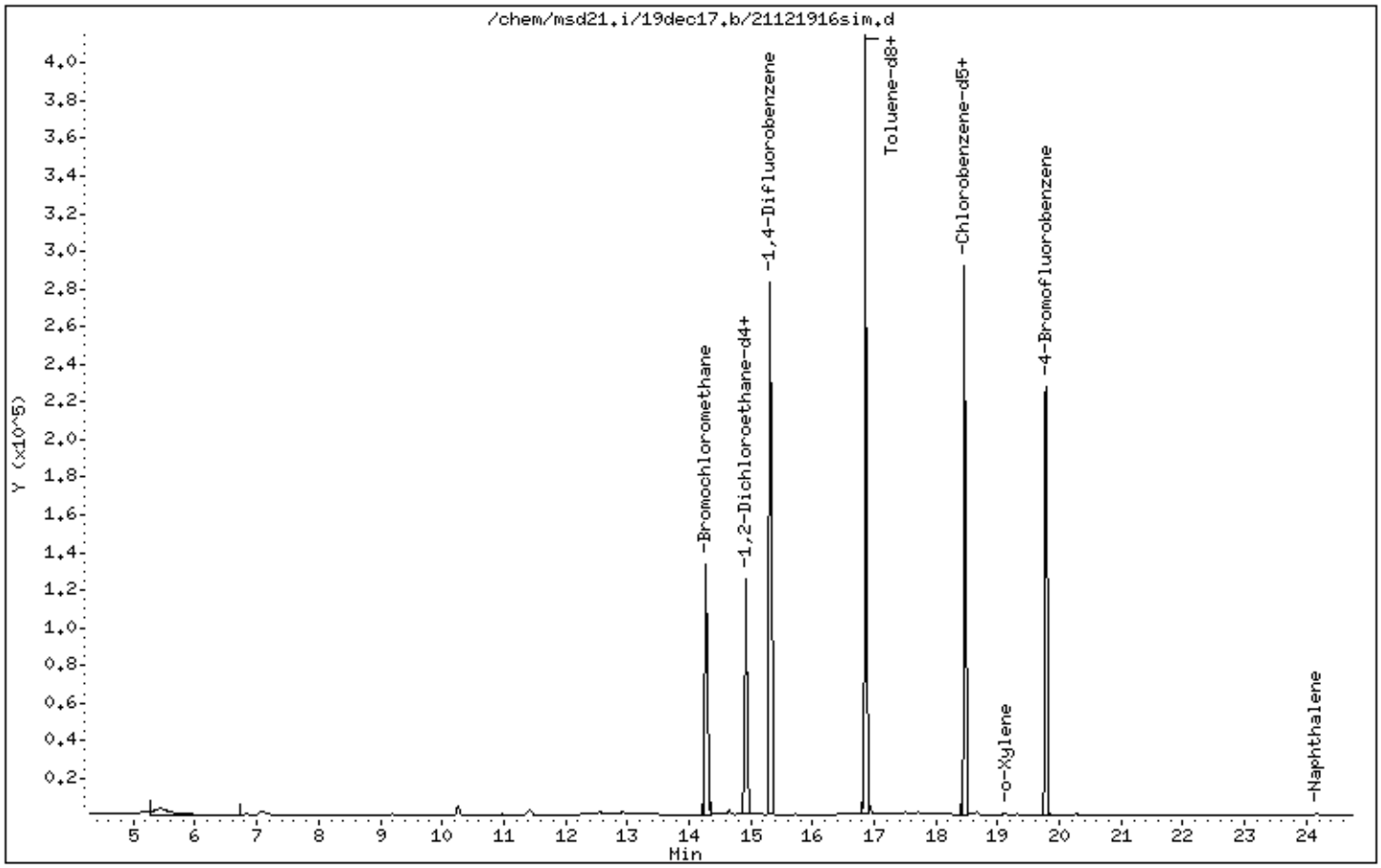
Instrument: msd21.i

Sample Info: 250mL# N2864

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

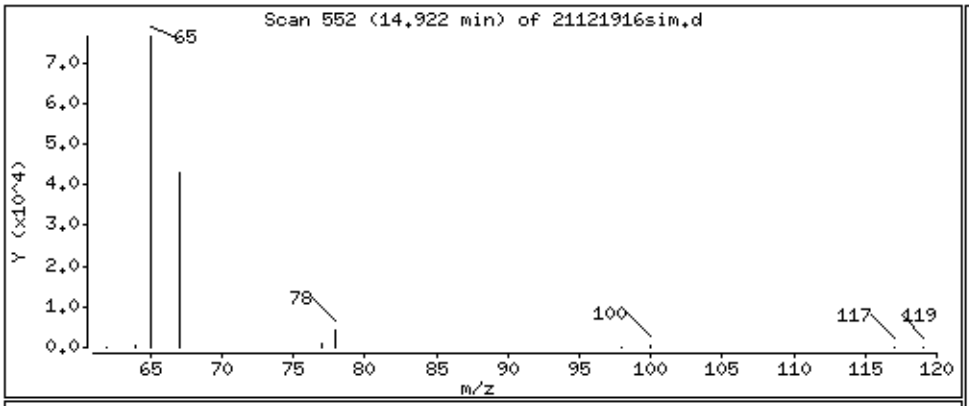
Operator: sw

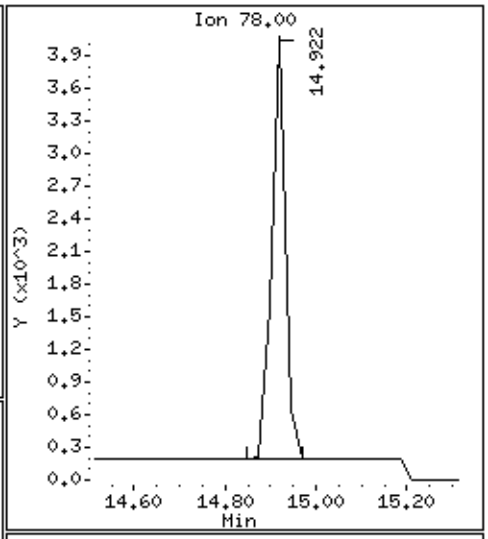
Column phase: RTX-624

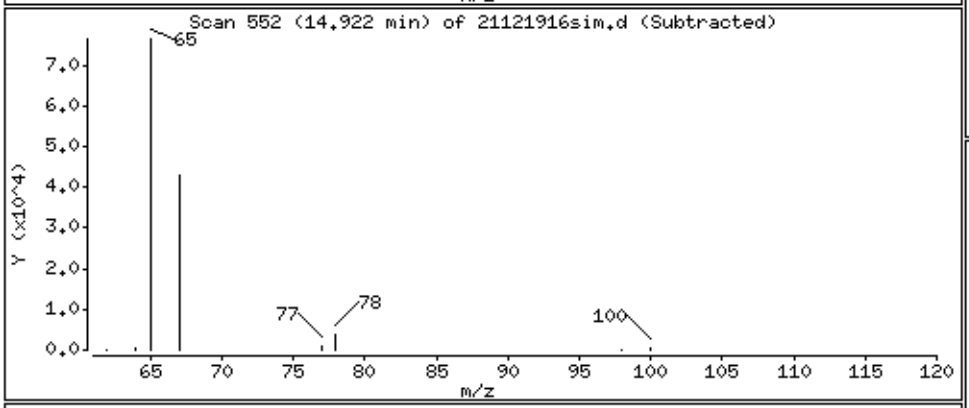
Column diameter: 0.32

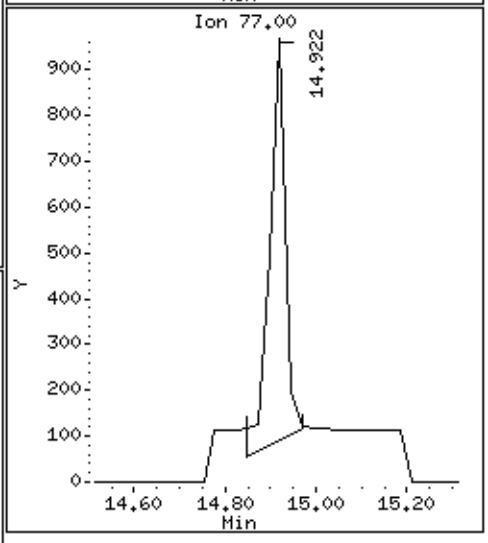
17 Benzene

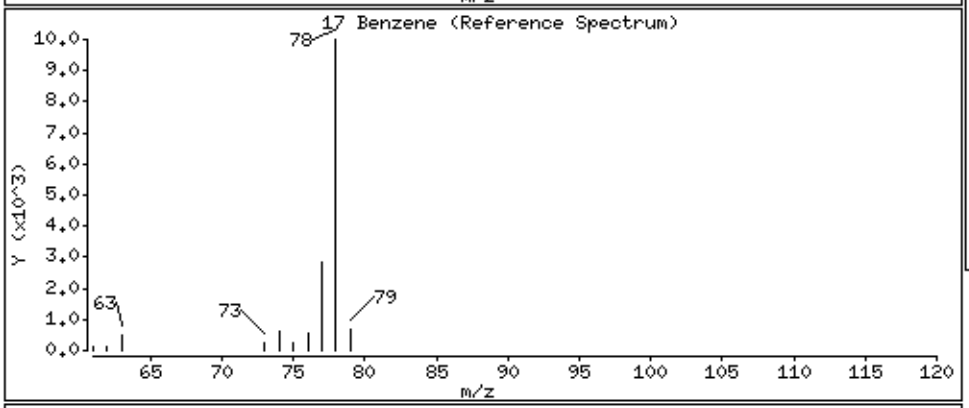
Concentration: 0.08984 PPBV

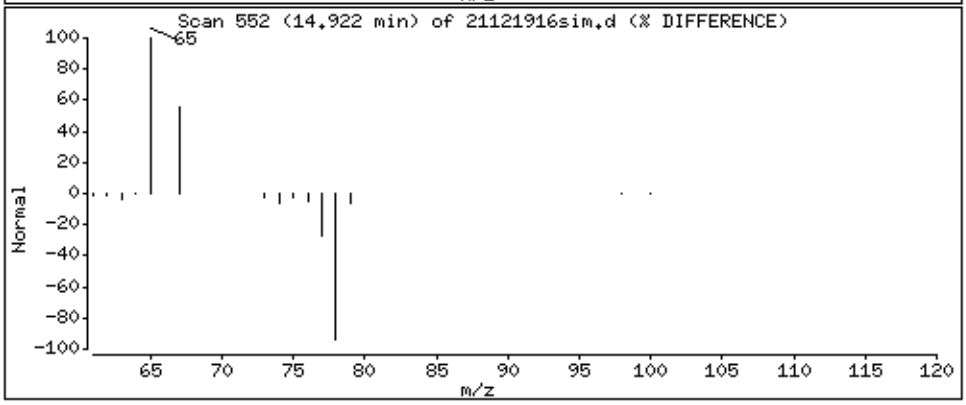












Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

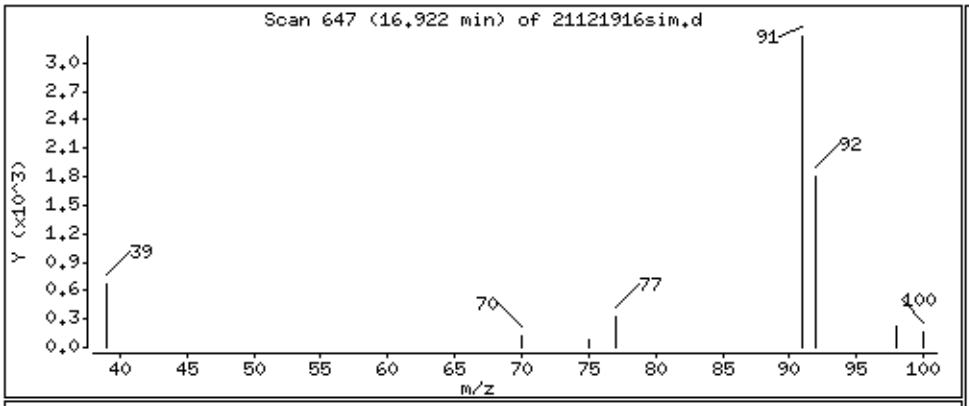
Operator: sw

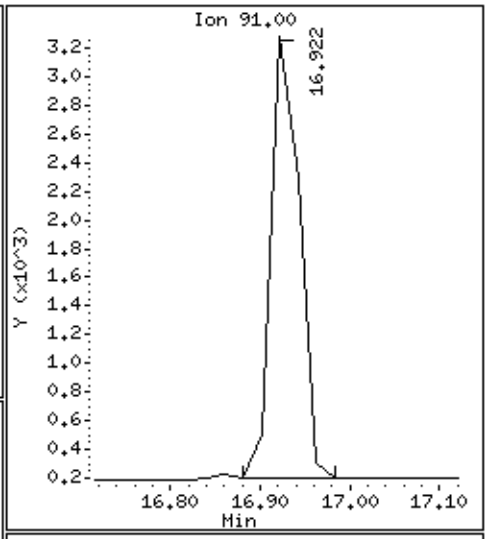
Column phase: RTX-624

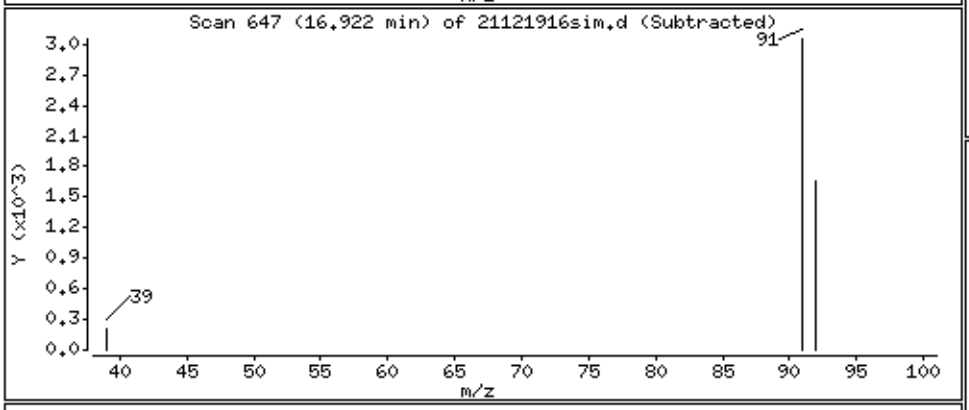
Column diameter: 0.32

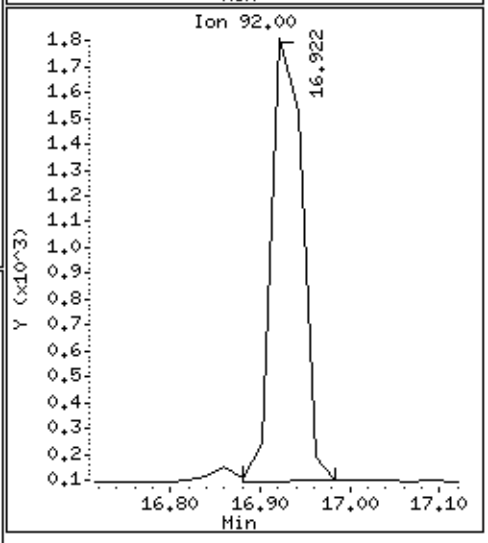
23 Toluene

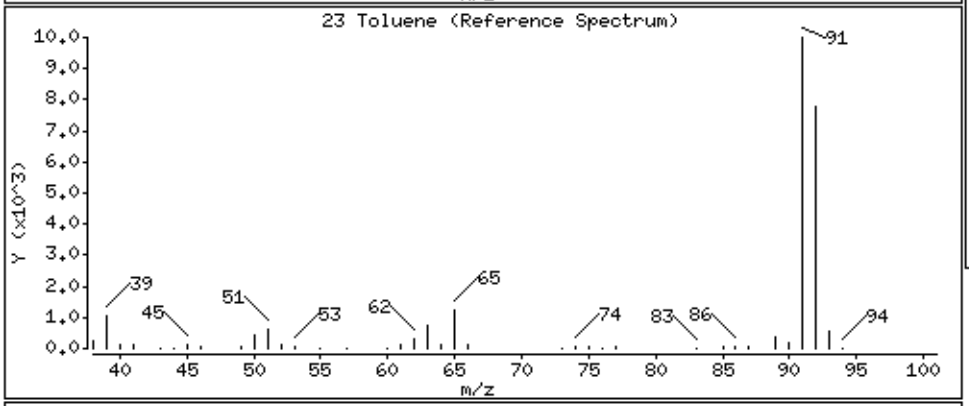
Concentration: 0.07635 PPBV

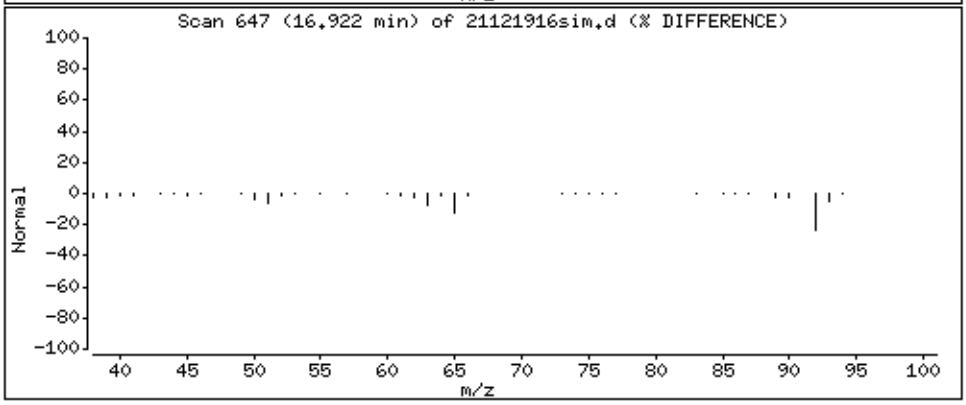












Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

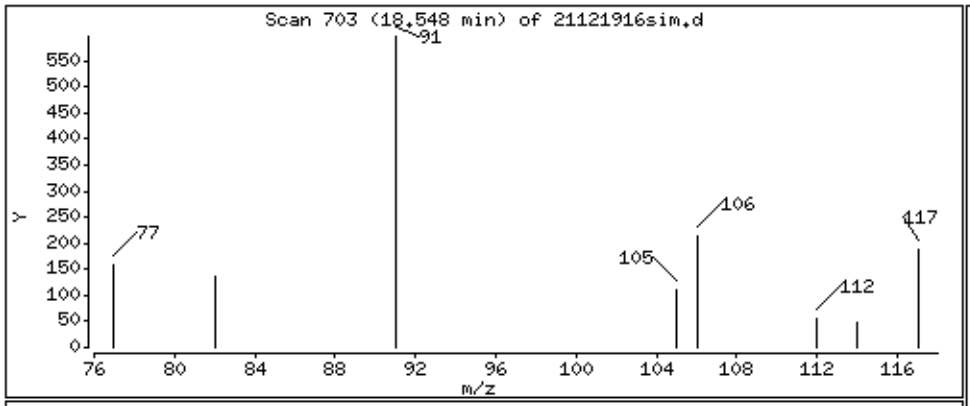
Operator: sw

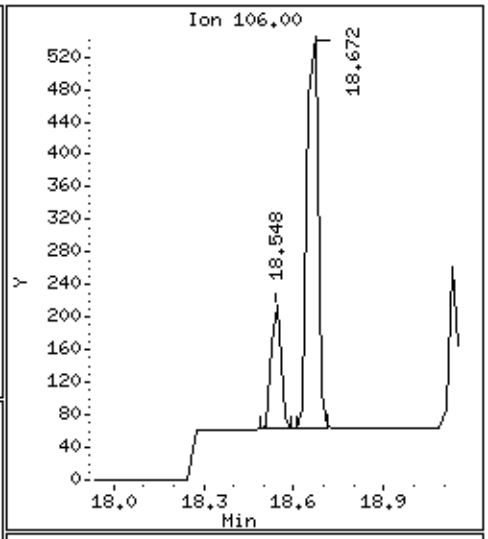
Column phase: RTX-624

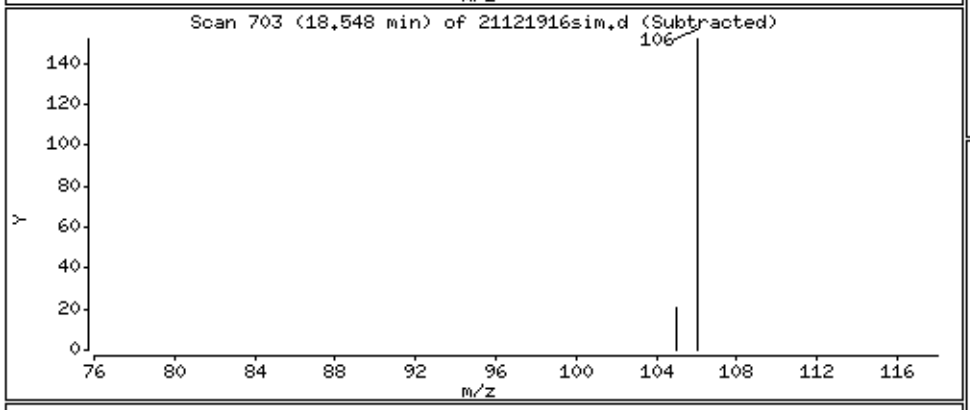
Column diameter: 0.32

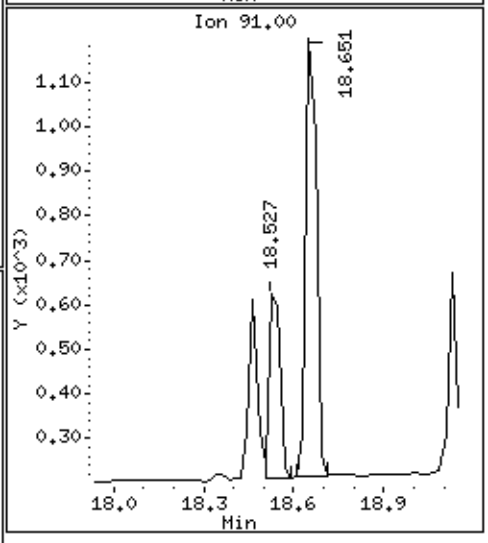
30 Ethyl Benzene

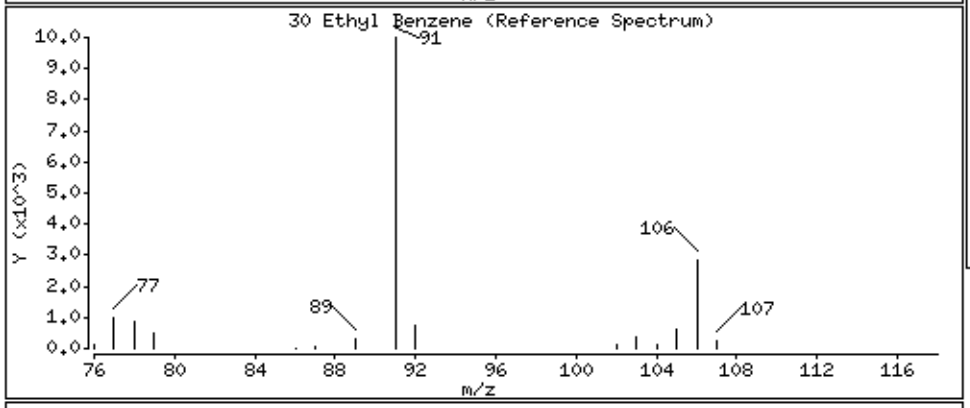
Concentration: 0.01201 PPBV

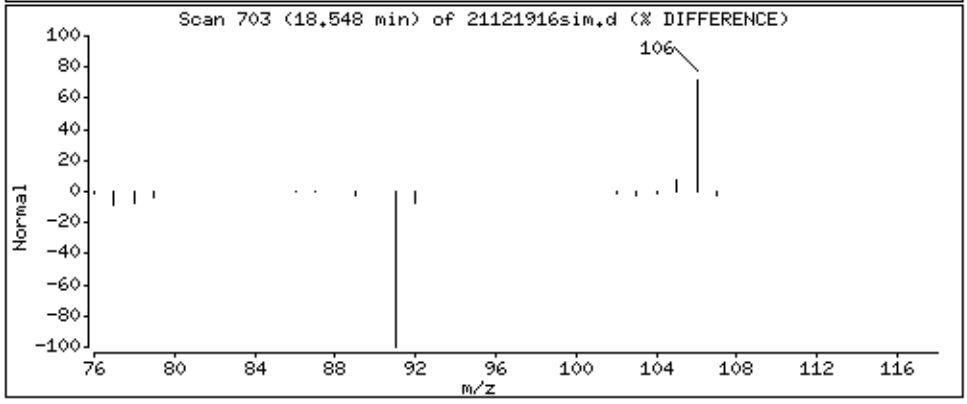












Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

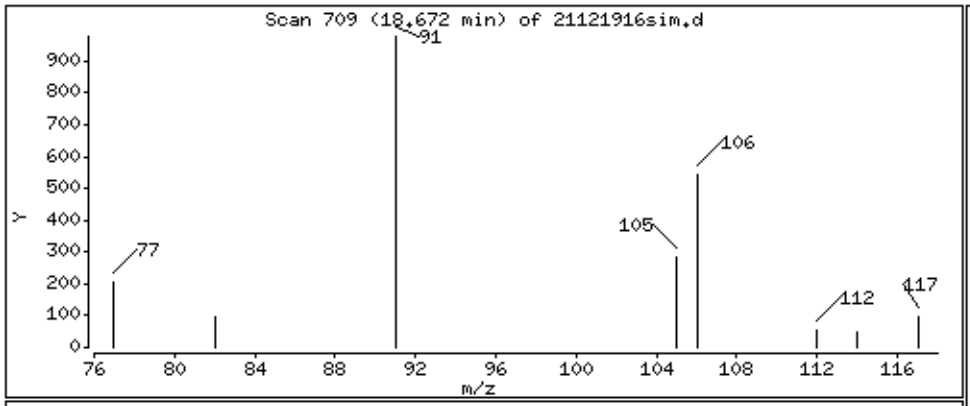
Operator: sw

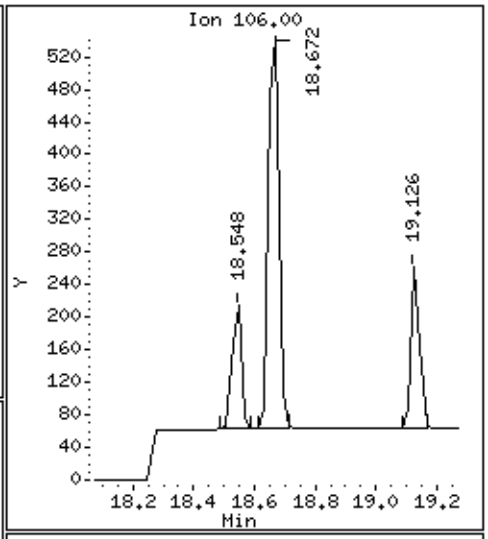
Column phase: RTX-624

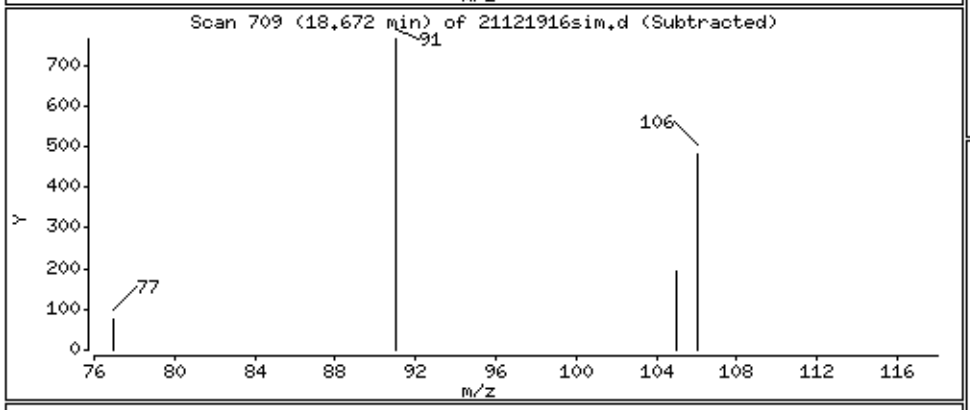
Column diameter: 0.32

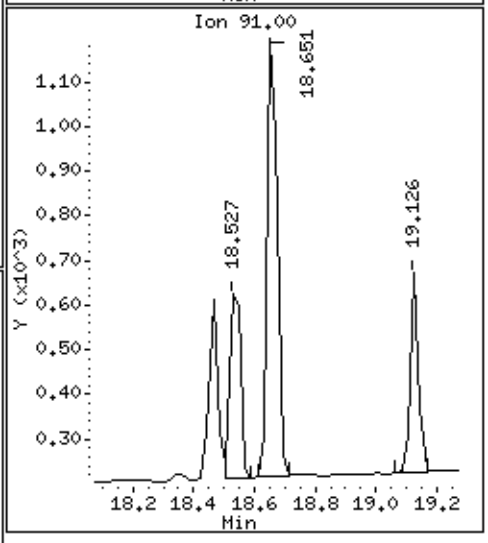
31 m,p-Xylene

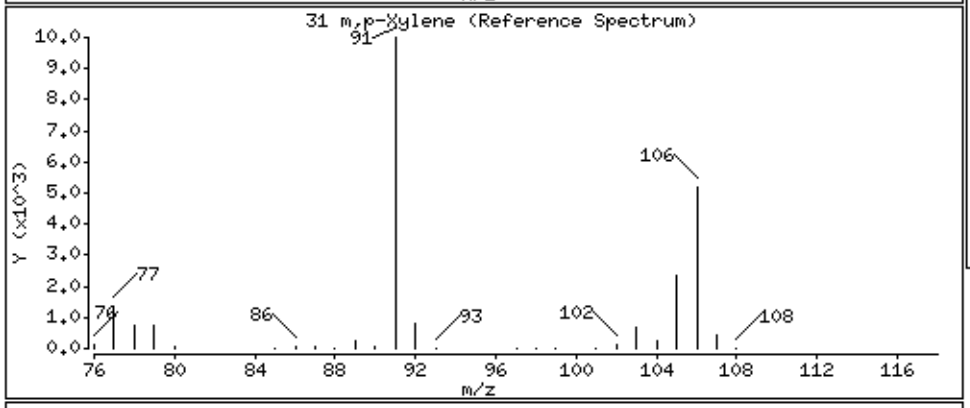
Concentration: 0.04294 PPBV

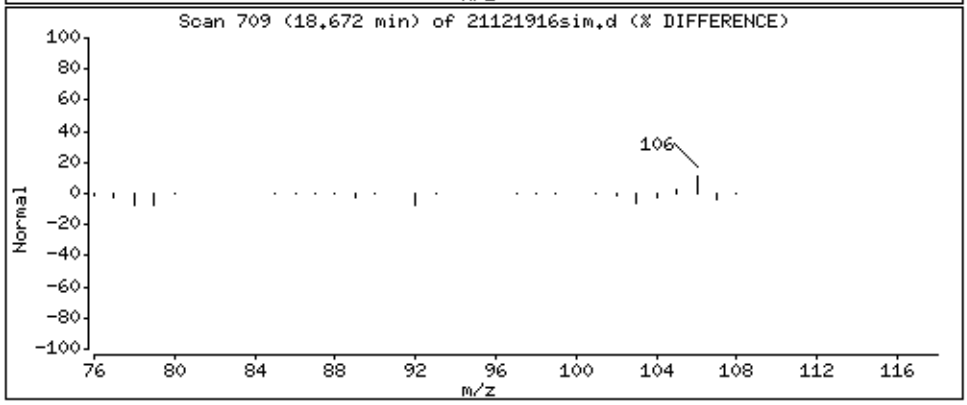












Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

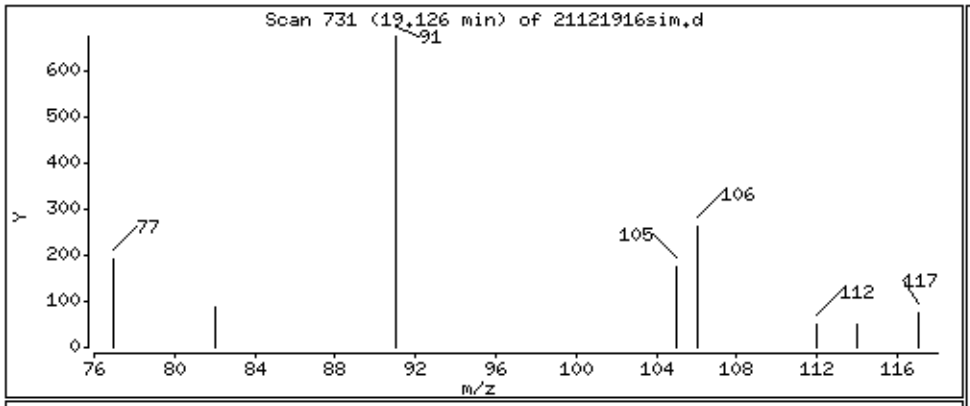
Operator: sw

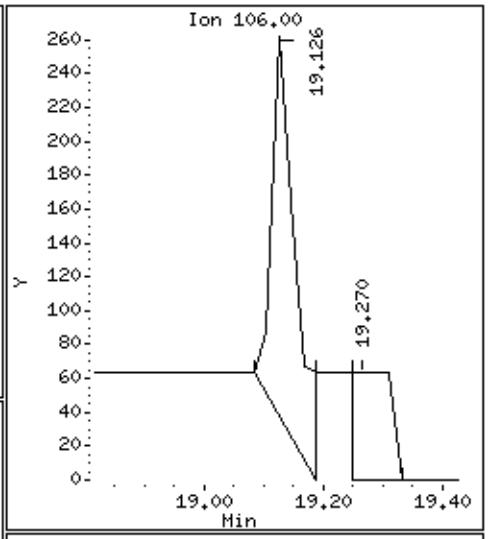
Column phase: RTX-624

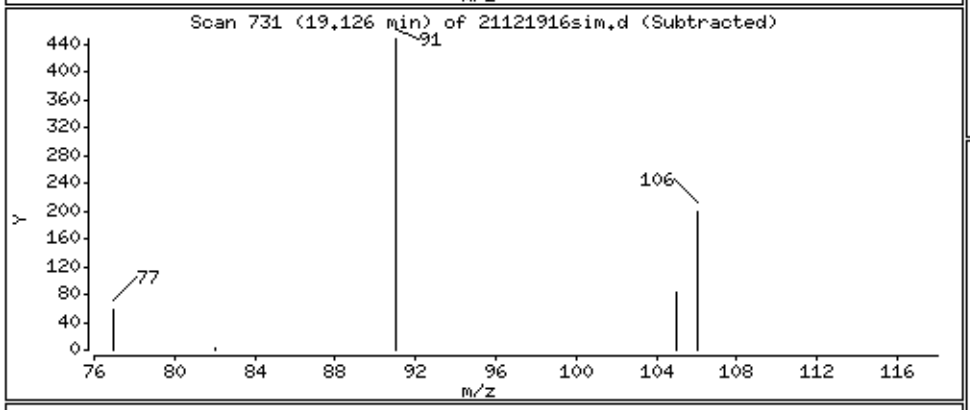
Column diameter: 0.32

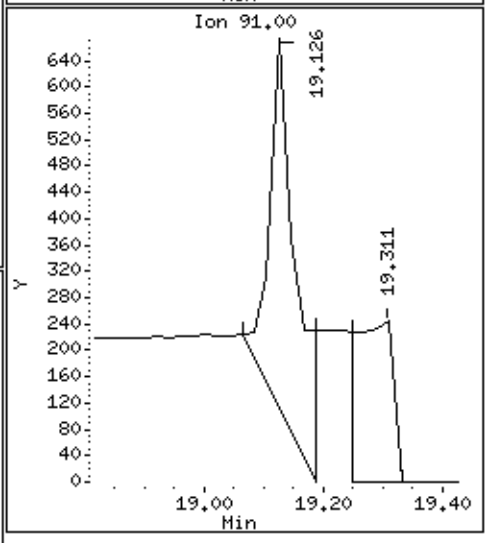
32 o-Xylene

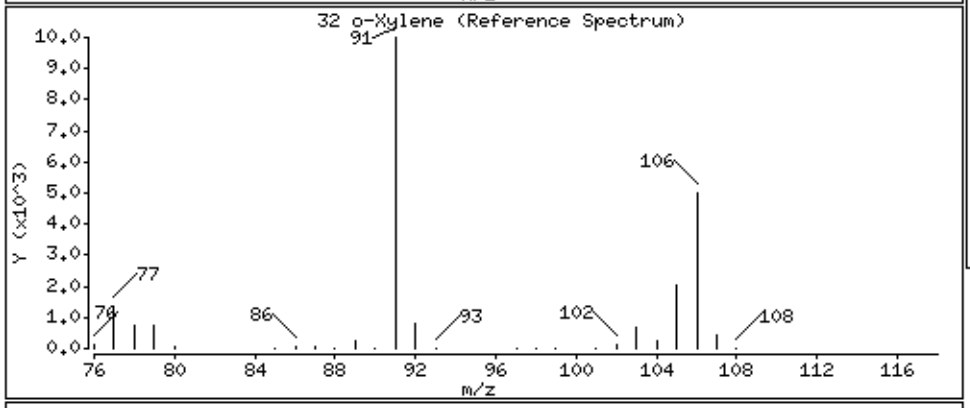
Concentration: 0.02557 PPBV

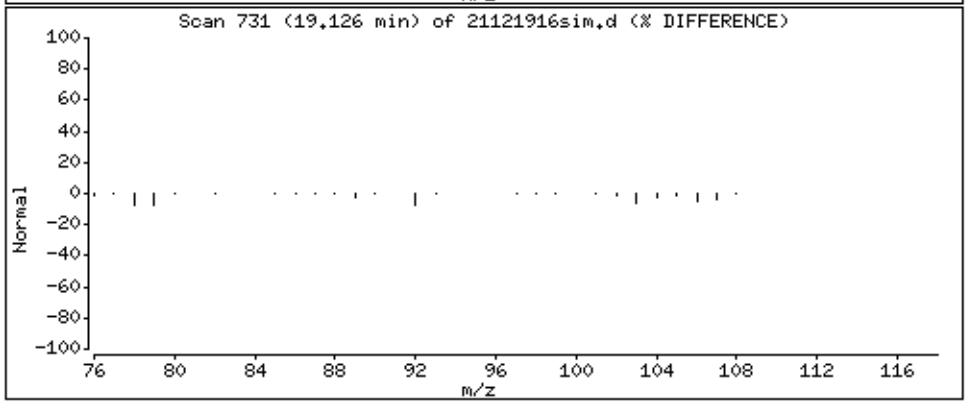












Data File: /chem/msd21.i/19dec17.b/21121916sim.d

Date : 19-DEC-2017 20:35

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2864

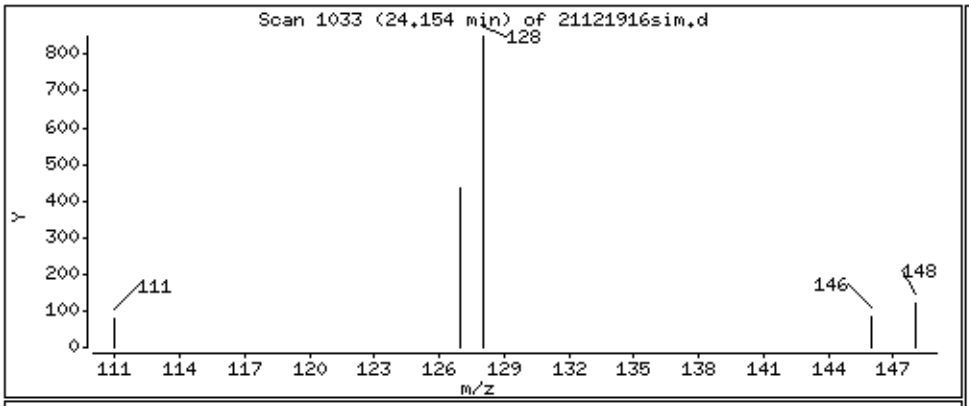
Operator: sw

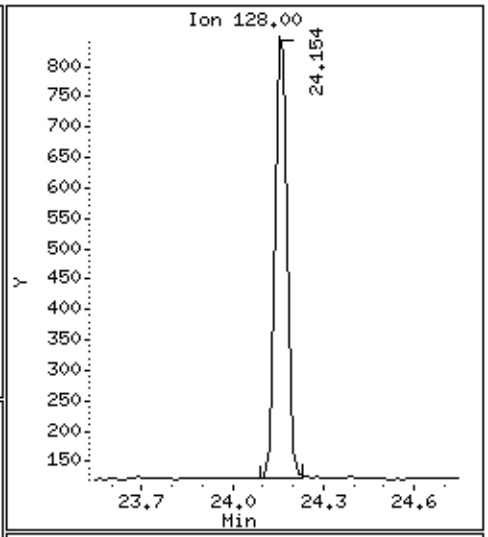
Column phase: RTX-624

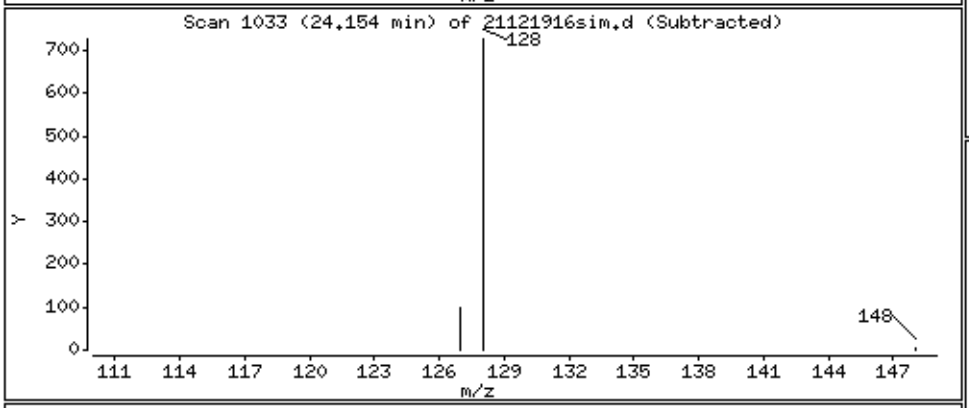
Column diameter: 0.32

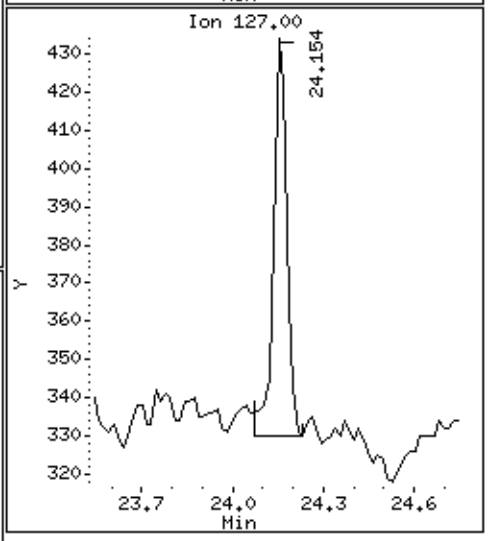
38 Naphthalene

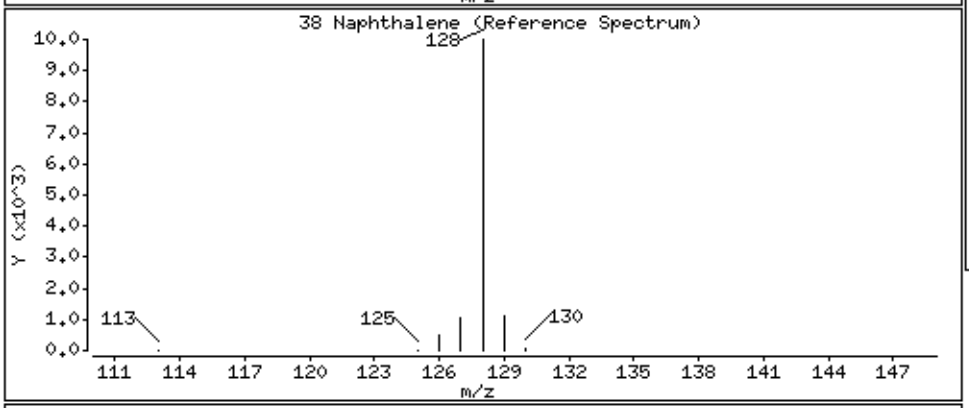
Concentration: 0.01506 PPBV

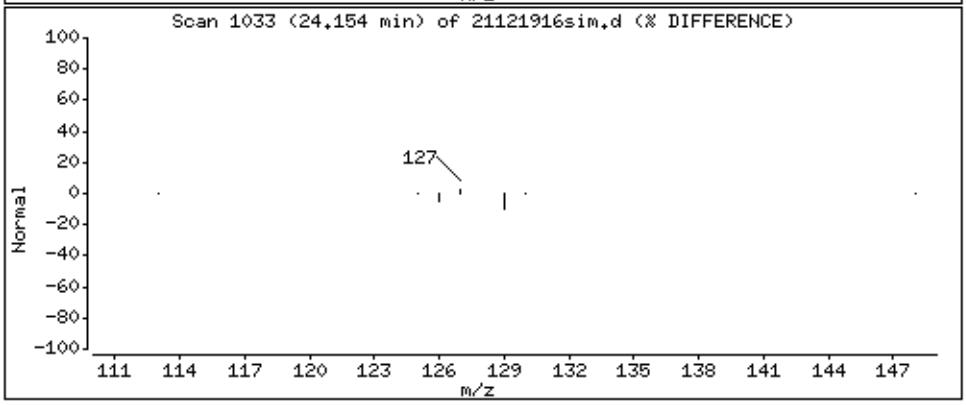












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA2-1_1217		
Lab ID:	1712342-08A	**Date/Time Analyzed:**	12/20/17 04:19 PM
Date/Time Collecte	12/14/17 02:10 PM	**Dilution Factor:**	1.70
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122015sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.068	0.068	0.27	0.30
Ethyl Benzene	100-41-4	0.0040	0.037	0.15	0.056 J
m,p-Xylene	108-38-3	0.0095	0.037	0.30	0.20 J
Naphthalene	91-20-3	0.066	0.089	0.44	Not Detected U
o-Xylene	95-47-6	0.0075	0.037	0.15	0.12 J
Toluene	108-88-3	0.032	0.032	0.13	0.32
Total Xylenes	9999-9999-015	NA	D	0.44	Not Detected

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	96

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122015sim.d
Lab Smp Id: 1712342-08A
Inj Date : 20-DEC-2017 16:19
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# N1705
Misc Info : 6.7"Hg -> 4.7psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.70000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	107737	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	83416			47.49- 107.49	77.43
14.273	14.274 (1.000)	49	156618			114.87- 174.87	145.37
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	514240	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	87483			0.00- 46.92	17.01
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	375668	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	209960			25.29- 85.29	55.89
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	154213	5.51108	5.511	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	86649			30.16- 90.16	56.19
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	435111	4.82034	4.820	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	53481			0.00- 42.34	12.29

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	296613			38.15- 98.15	68.17
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	139328	4.29120	4.291	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	168140			88.82- 148.82	120.68
19.787	19.787 (1.072)	176	136518			68.26- 128.26	97.98
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	7941	0.05520	0.09384	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2078			0.00- 52.85	26.17
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	6963	0.04952	0.08419	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	4232			33.44- 93.44	60.78
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	319	0.00765	0.01301	80.00- 120.00	100.00(a)
18.548	18.540 (1.004)	91	997			259.51- 319.51	312.40
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	1134	0.02784	0.04733	80.00- 120.00	100.00(a)
18.651	18.656 (1.010)	91	2253			159.47- 219.47	198.58
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	621	0.01677	0.02850	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	1744			168.52- 228.52	280.79

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122015sim.d
Lab Smp Id: 1712342-08A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.7"Hg -> 4.7psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	107737	-8.85
20 1,4-Difluorobenze	566094	339656	792532	514240	-9.16
28 Chlorobenzene-d5	446145	267687	624603	375668	-15.80

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:14

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-08A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.7"Hg -> 4.7psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.511	110.22	70-130
$ 22 Toluene-d8	5.000	4.820	96.41	70-130
$ 33 4-Bromofluorobenze	5.000	4.291	85.82	70-130

Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

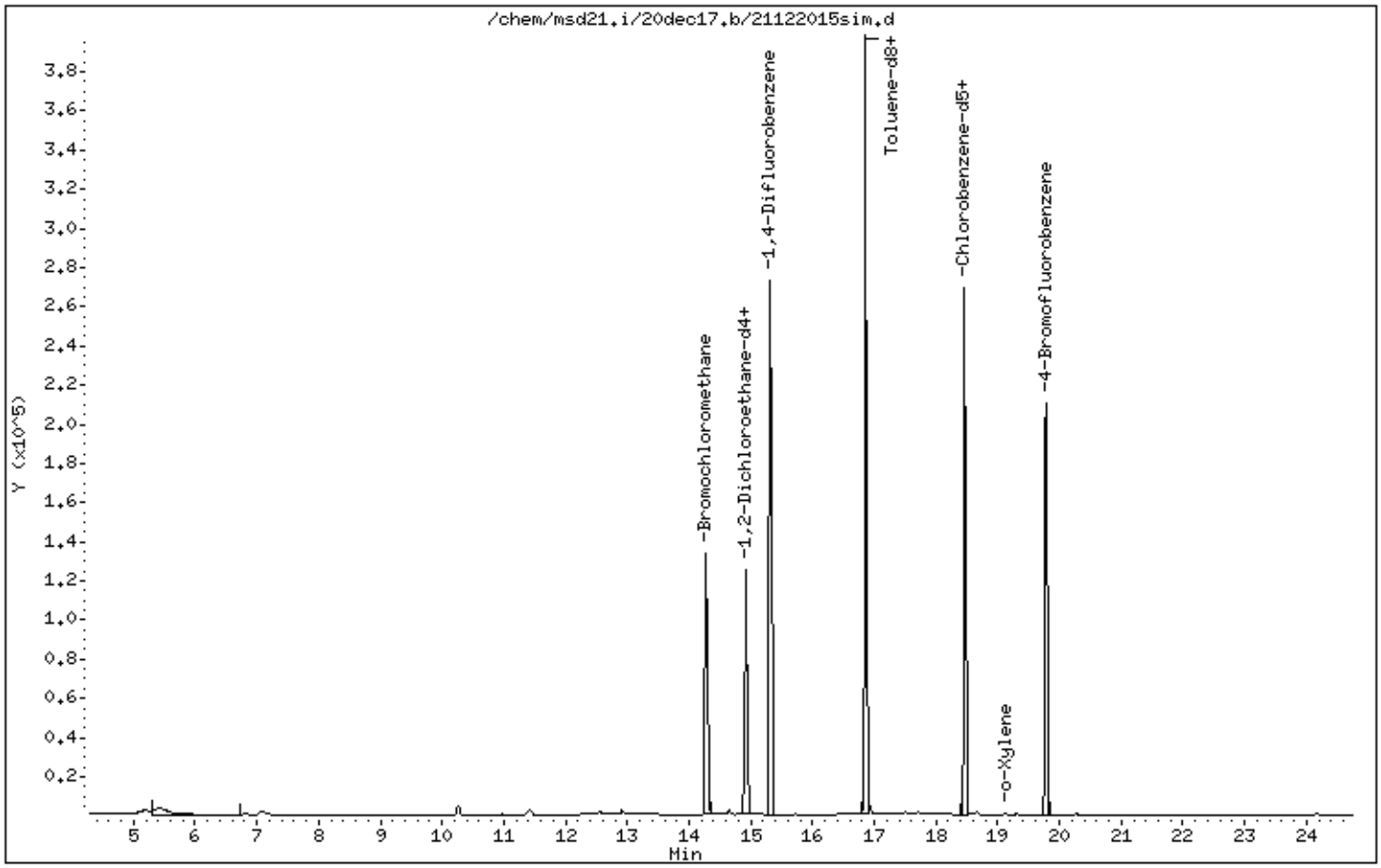
Instrument: msd21.i

Sample Info: 250mL# N1705

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1705

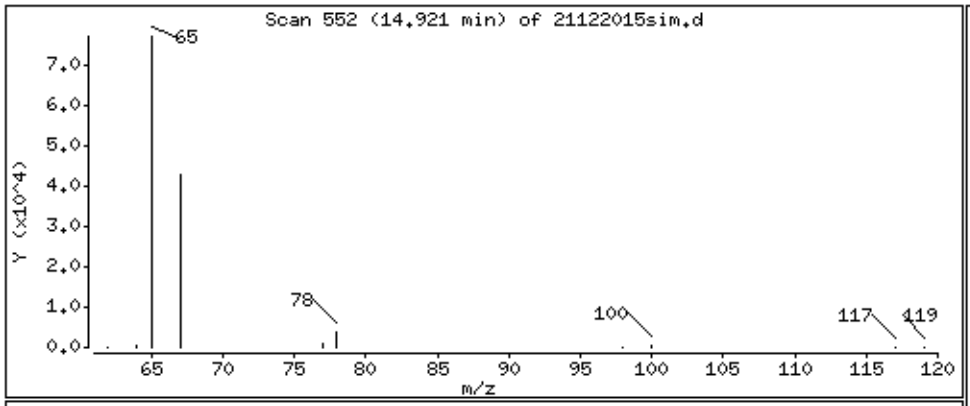
Operator: ef

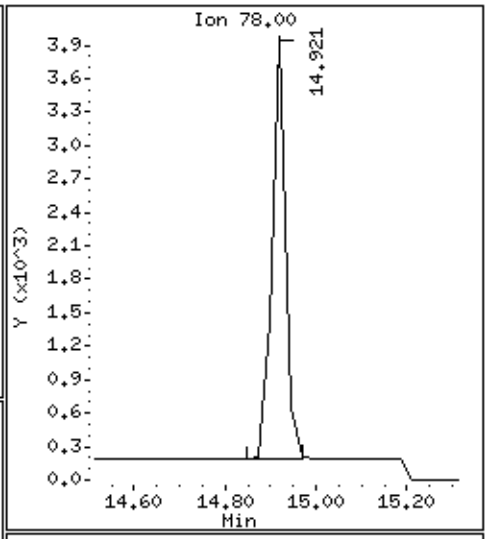
Column phase: RTX-624

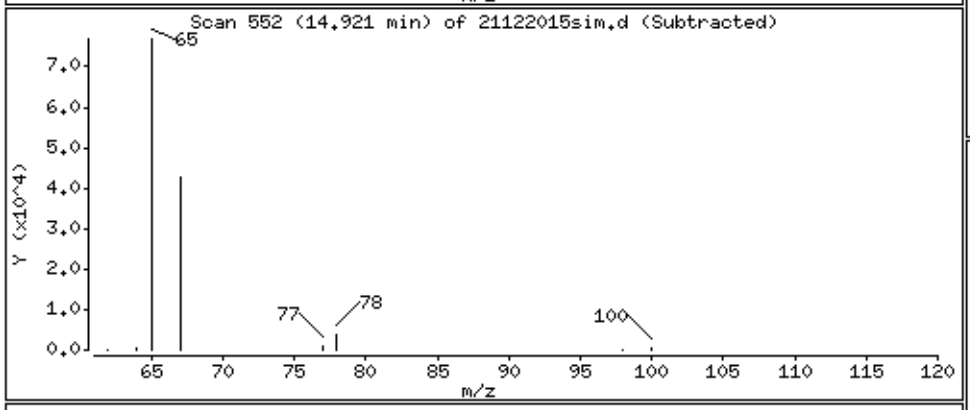
Column diameter: 0.32

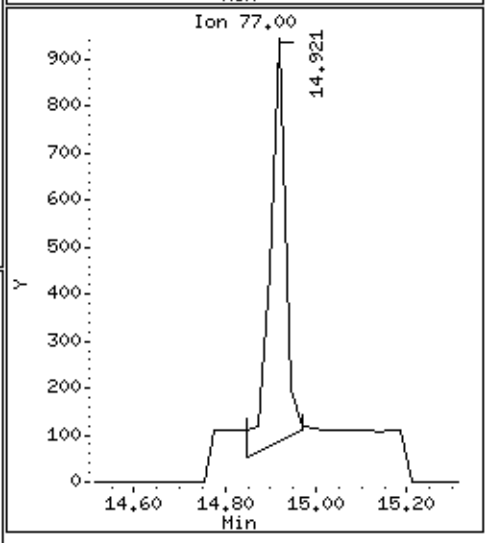
17 Benzene

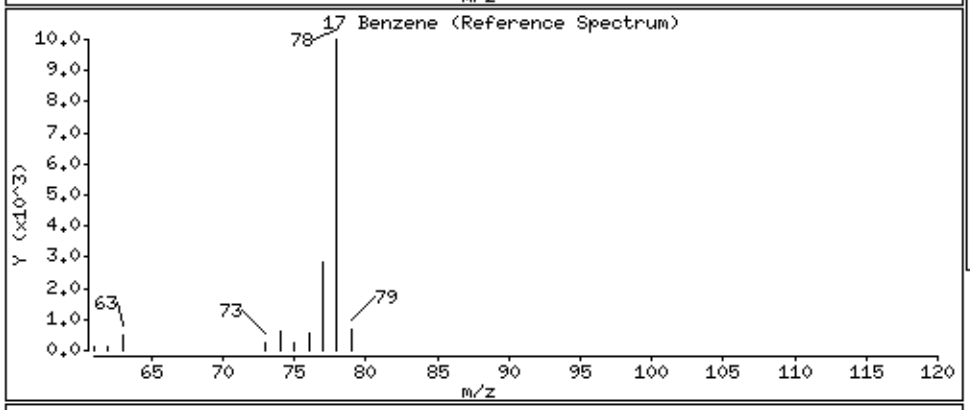
Concentration: 0.09384 PPBV

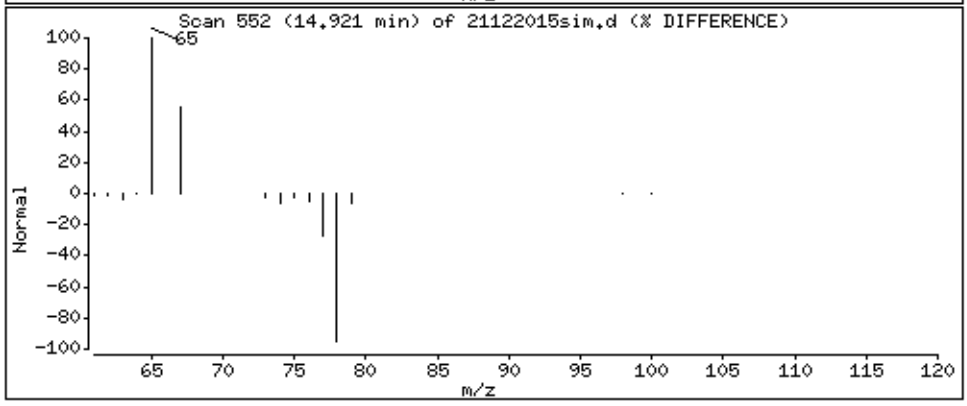












Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1705

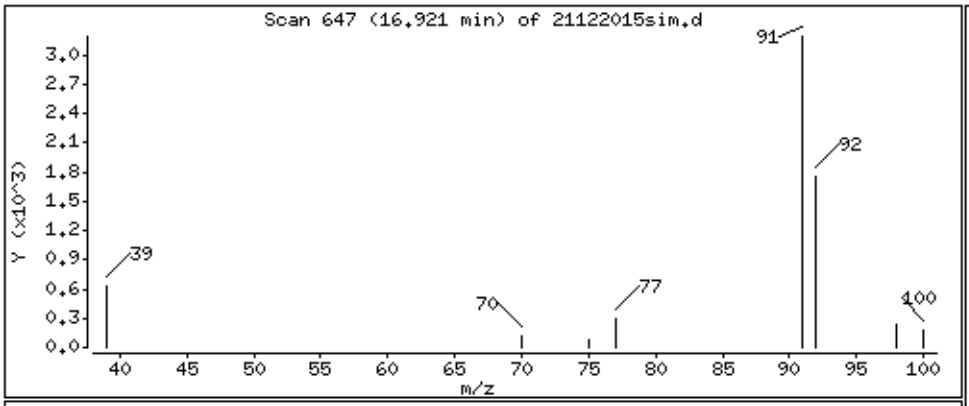
Operator: ef

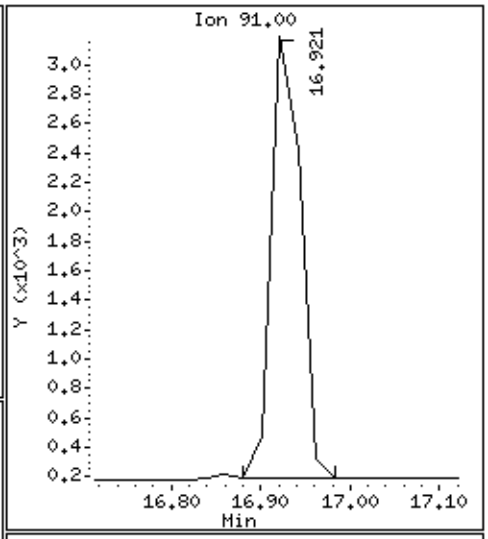
Column phase: RTX-624

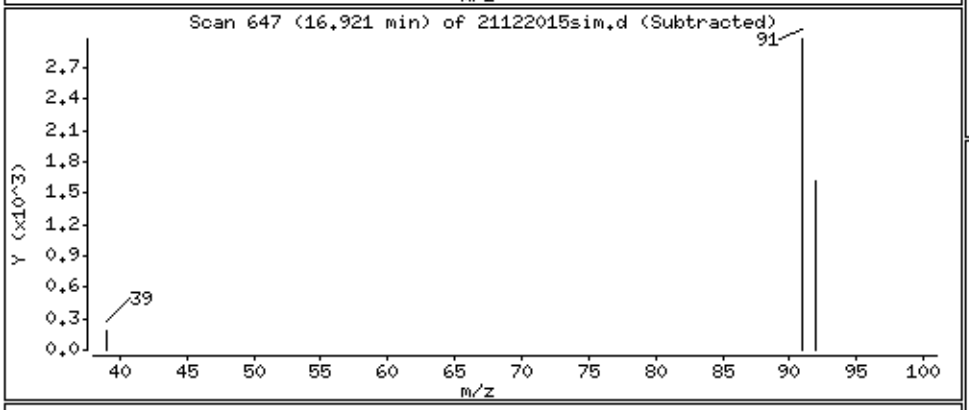
Column diameter: 0.32

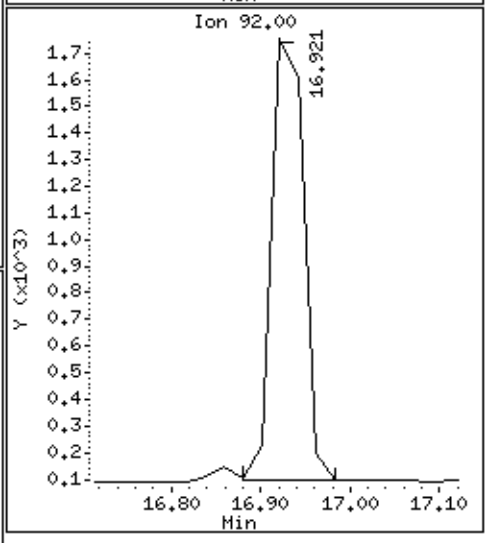
23 Toluene

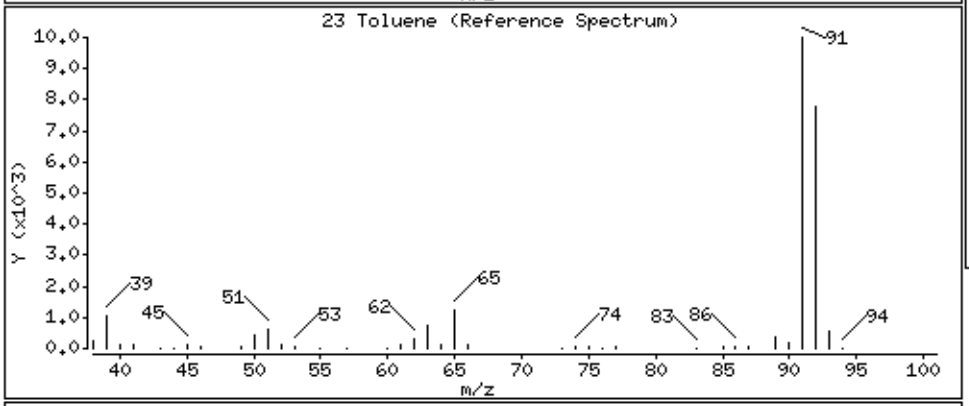
Concentration: 0.08419 PPBV

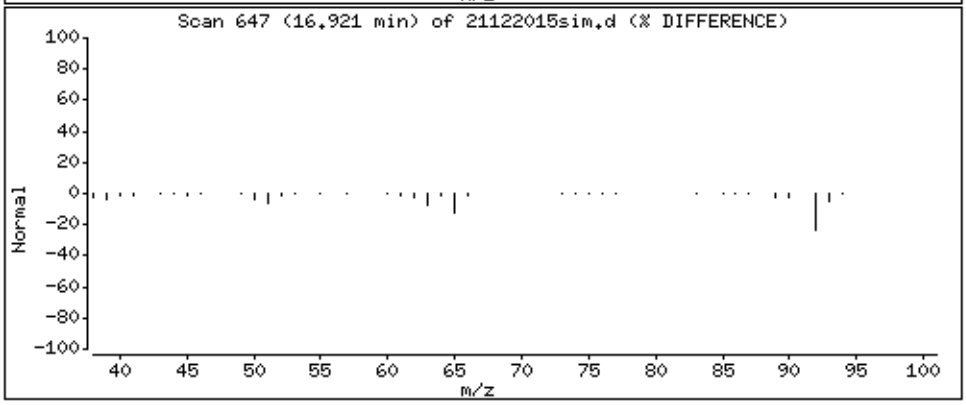












Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1705

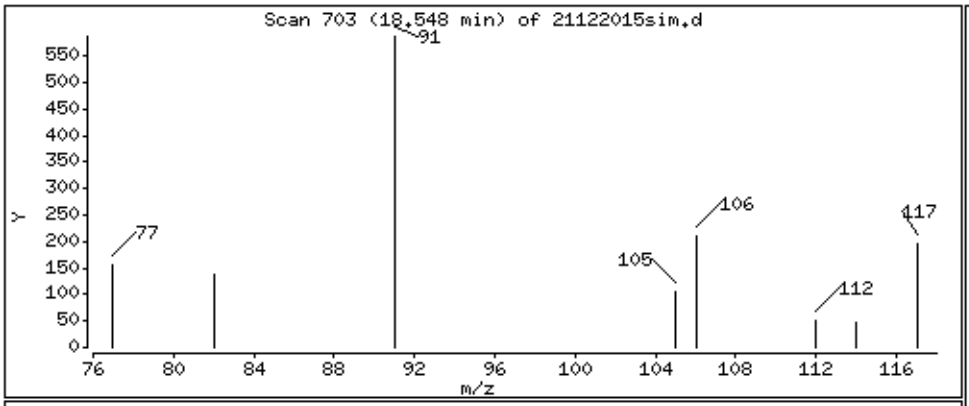
Operator: ef

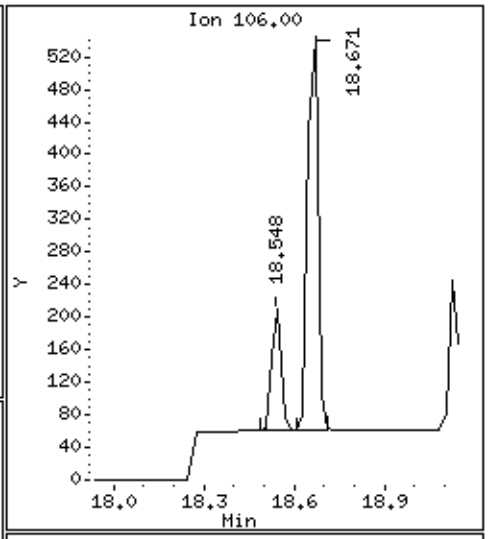
Column phase: RTX-624

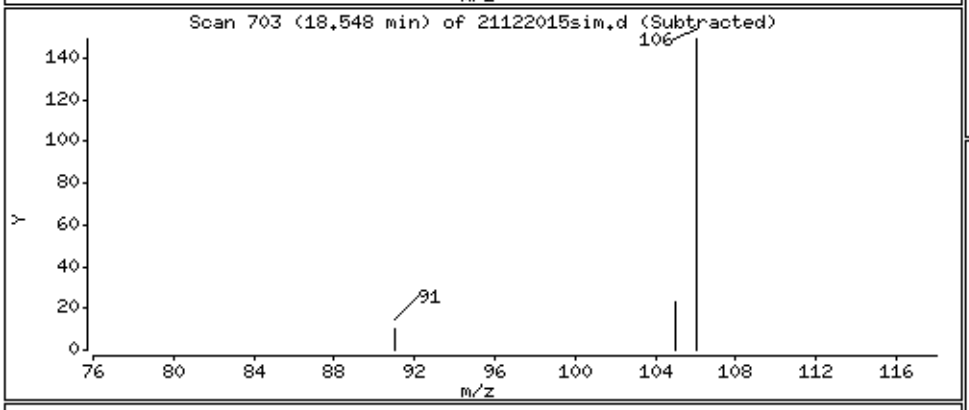
Column diameter: 0.32

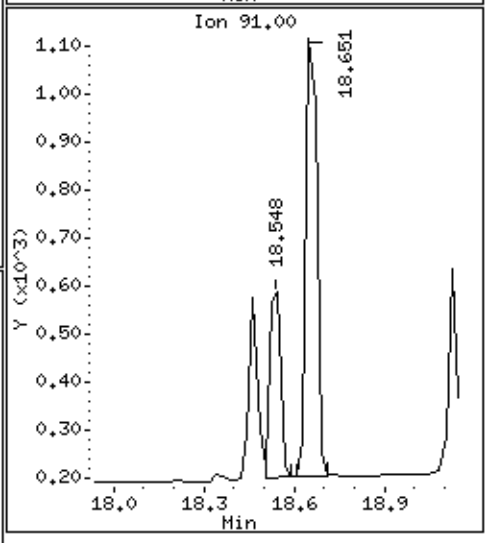
30 Ethyl Benzene

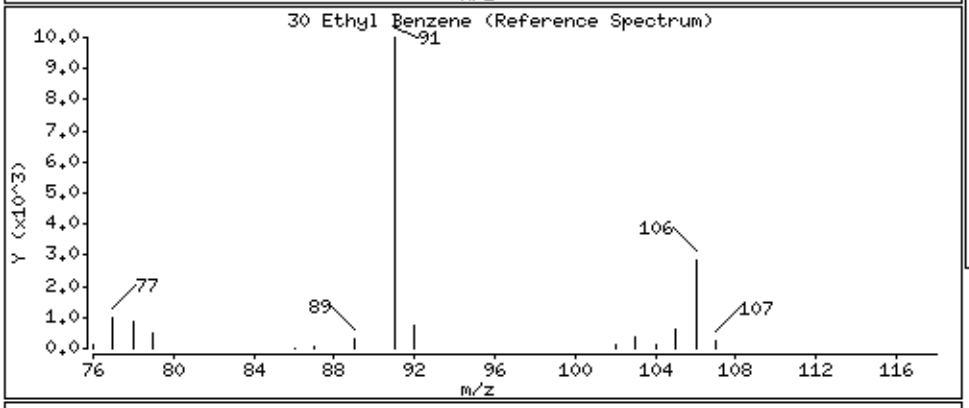
Concentration: 0.01301 PPBV

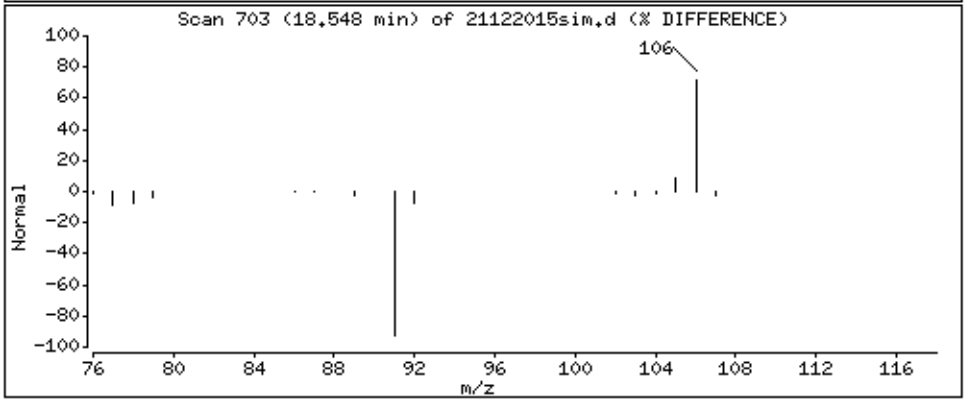












Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1705

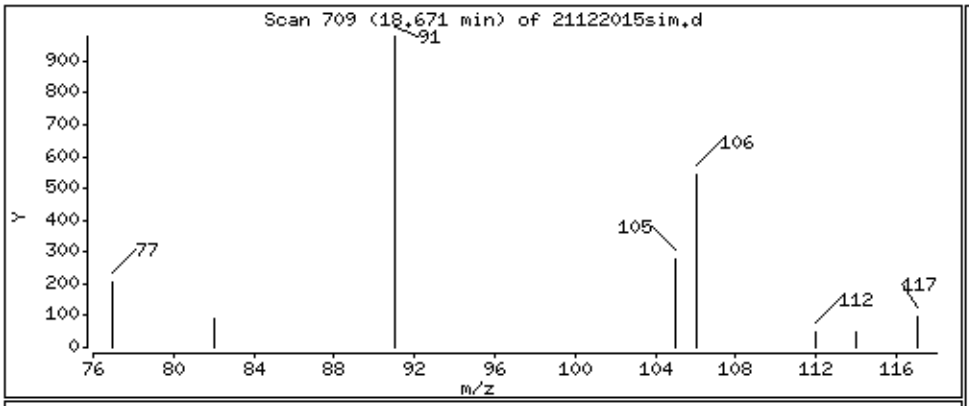
Operator: ef

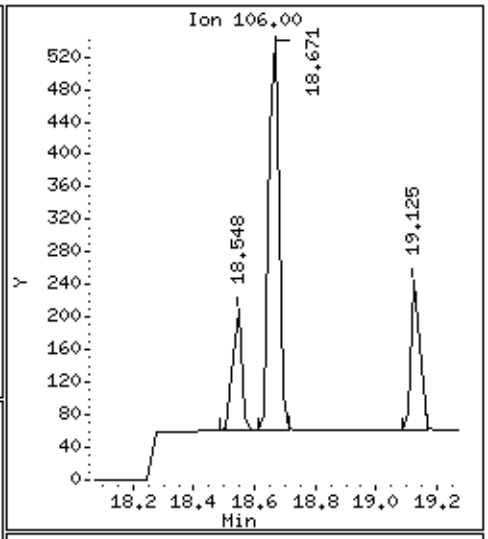
Column phase: RTX-624

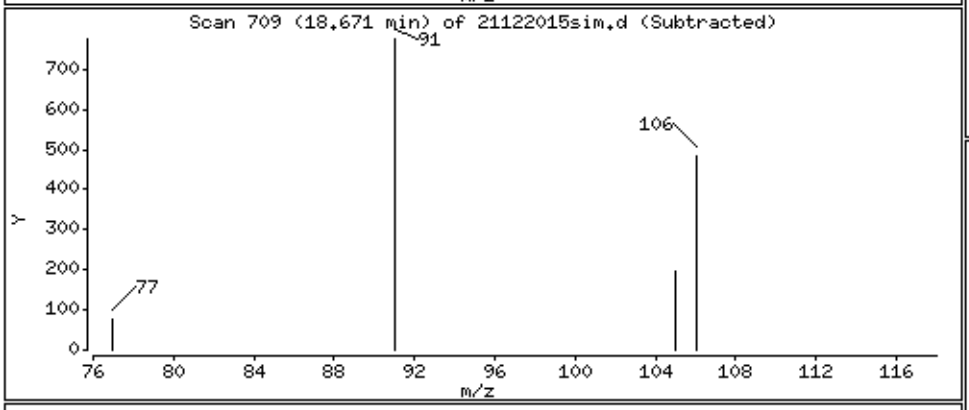
Column diameter: 0.32

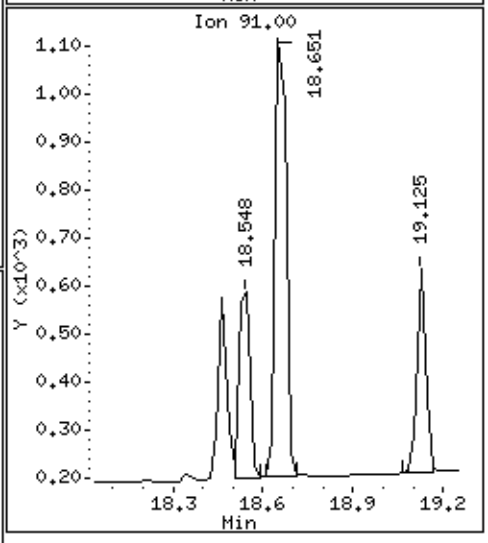
31 m,p-Xylene

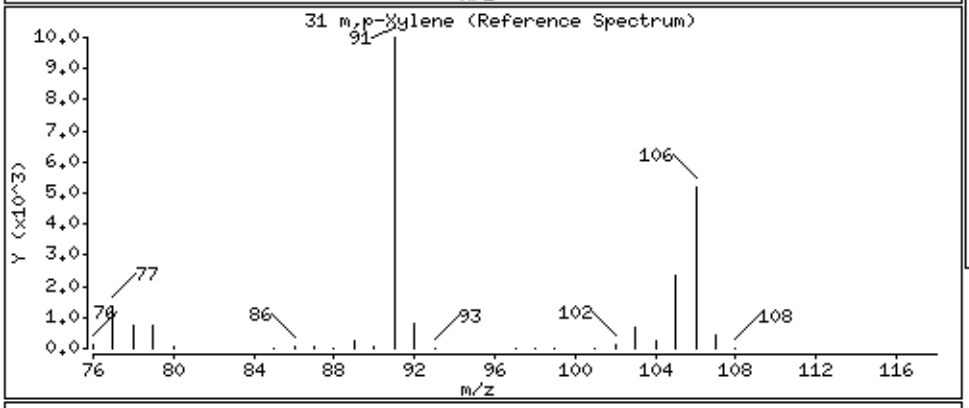
Concentration: 0.04733 PPBV

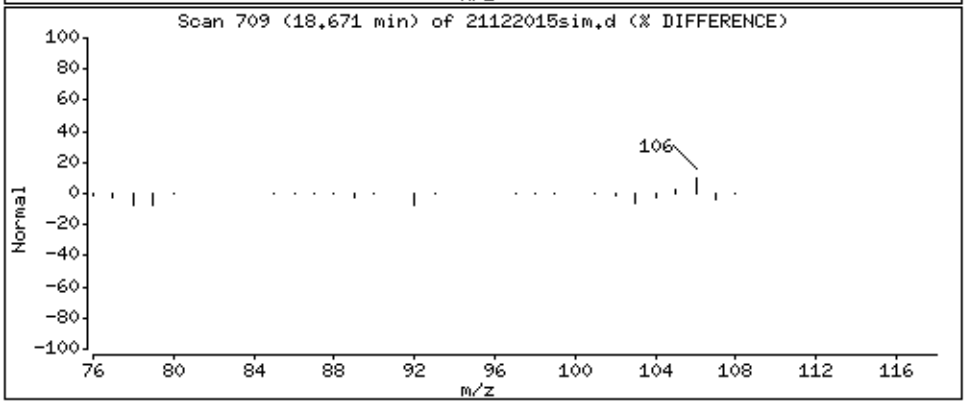












Data File: /chem/msd21.i/20dec17.b/21122015sim.d

Date : 20-DEC-2017 16:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1705

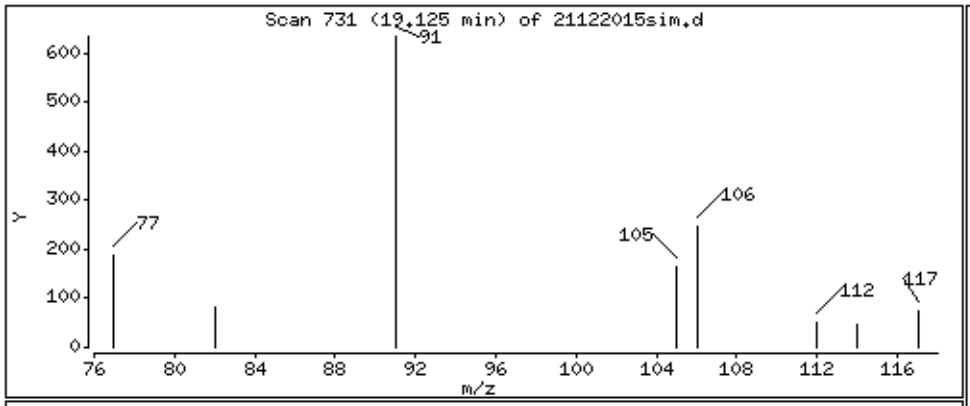
Operator: ef

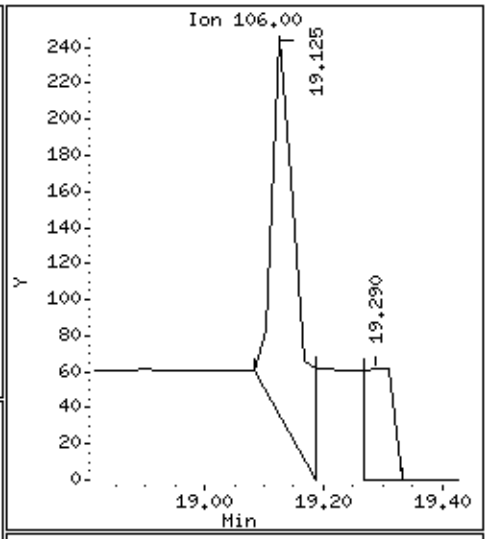
Column phase: RTX-624

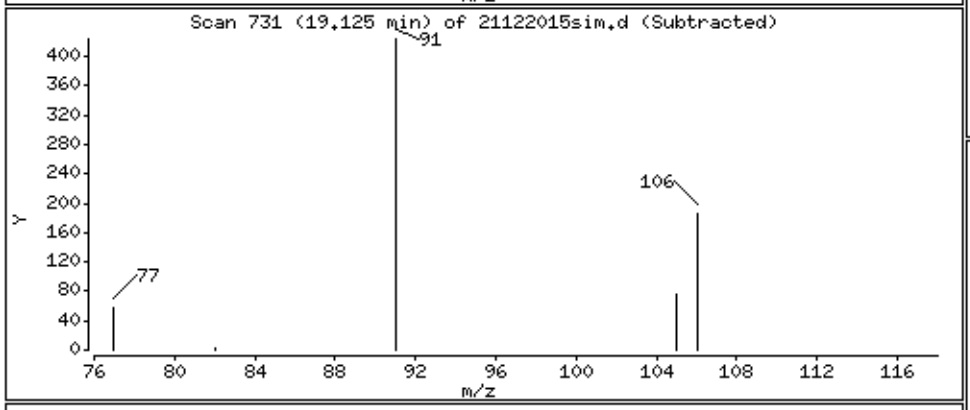
Column diameter: 0.32

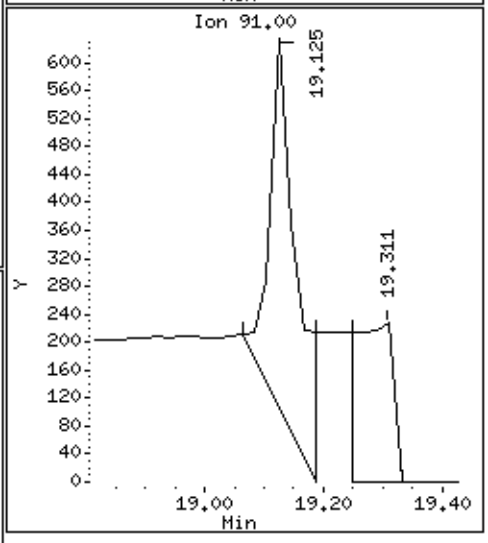
32 o-Xylene

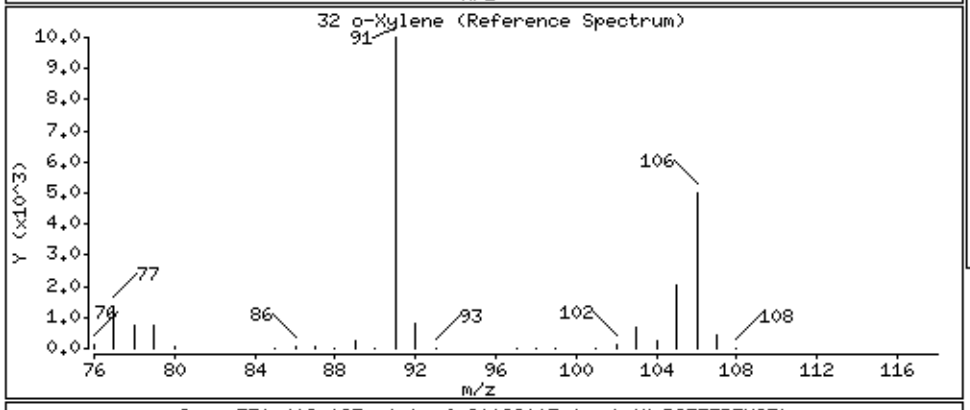
Concentration: 0.02850 PPBV

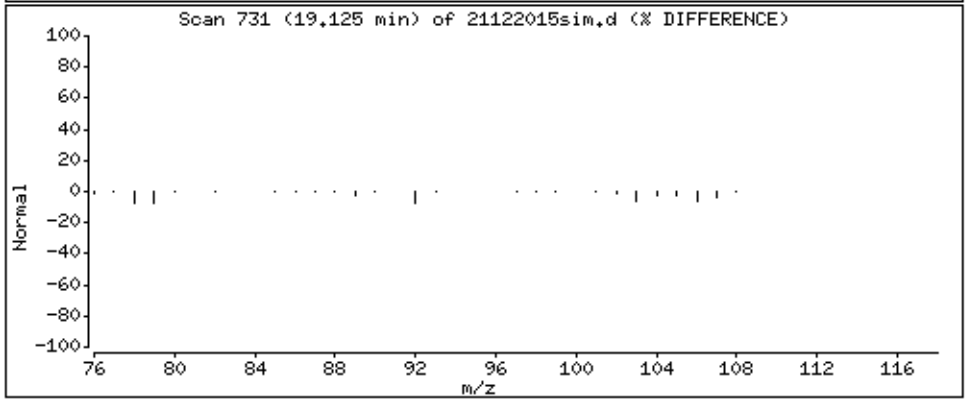












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA6_1217		
Lab ID:	1712342-09A	**Date/Time Analyzed:**	12/19/17 09:13 PM
Date/Time Collecte	12/14/17 02:20 PM	**Dilution Factor:**	1.43
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121917sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.057	0.057	0.23	0.29
Ethyl Benzene	100-41-4	0.0034	0.031	0.12	0.036 J
m,p-Xylene	108-38-3	0.0080	0.031	0.25	0.093 J
Naphthalene	91-20-3	0.056	0.075	0.37	0.067 J
o-Xylene	95-47-6	0.0063	0.031	0.12	0.040 J
Toluene	108-88-3	0.027	0.027	0.11	0.28
Total Xylenes	9999-9999-015	NA	D	0.37	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	88
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121917sim.d
Lab Smp Id: 1712342-09A
Inj Date : 19-DEC-2017 21:13
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# 33787
Misc Info : 2.2"Hg -> 4.8psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.43000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	105049	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	81520			47.49- 107.49	77.60
14.274	14.298 (1.000)	49	151563			114.87- 174.87	144.28
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	520206	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	88387			0.00- 46.92	16.99
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	400613	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	223077			25.29- 85.29	55.68
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	152041	5.57250	5.572	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	85804			30.16- 90.16	56.44
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	452185	4.95203	4.952	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55838			0.00- 42.34	12.35

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	307700			38.15- 98.15	68.05
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	152662	4.40908	4.409	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	183279			88.82- 148.82	120.06
19.787	19.787 (1.072)	176	149909			68.26- 128.26	98.20
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	9236	0.06347	0.09076	80.00- 120.00	100.00
14.922	14.921 (0.974)	77	2383			0.00- 52.85	25.81
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	7282	0.05119	0.07320	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	4409			33.44- 93.44	60.55
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	256	0.00576	0.008232	80.00- 120.00	100.00(a)
18.527	18.548 (1.003)	91	801			259.51- 319.51	312.78
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	652	0.01500	0.02145	80.00- 120.00	100.00(a)
18.651	18.672 (1.010)	91	1290			159.47- 219.47	197.91
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	252	0.00639	0.009136	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	1494			168.52- 228.52	591.86
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	1856	0.00894	0.01279	80.00- 120.00	100.00(a)
24.154	24.154 (1.308)	127	357			0.00- 43.35	19.24

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121917sim.d
Lab Smp Id: 1712342-09A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 2.2"Hg -> 4.8psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	105049	-12.42
20 1,4-Difluorobenze	564150	338490	789810	520206	-7.79
28 Chlorobenzene-d5	433051	259831	606271	400613	-7.49

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:01

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-09A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 2.2"Hg -> 4.8psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.572	111.45	70-130
$ 22 Toluene-d8	5.000	4.952	99.04	70-130
$ 33 4-Bromofluorobenze	5.000	4.409	88.18	70-130

Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

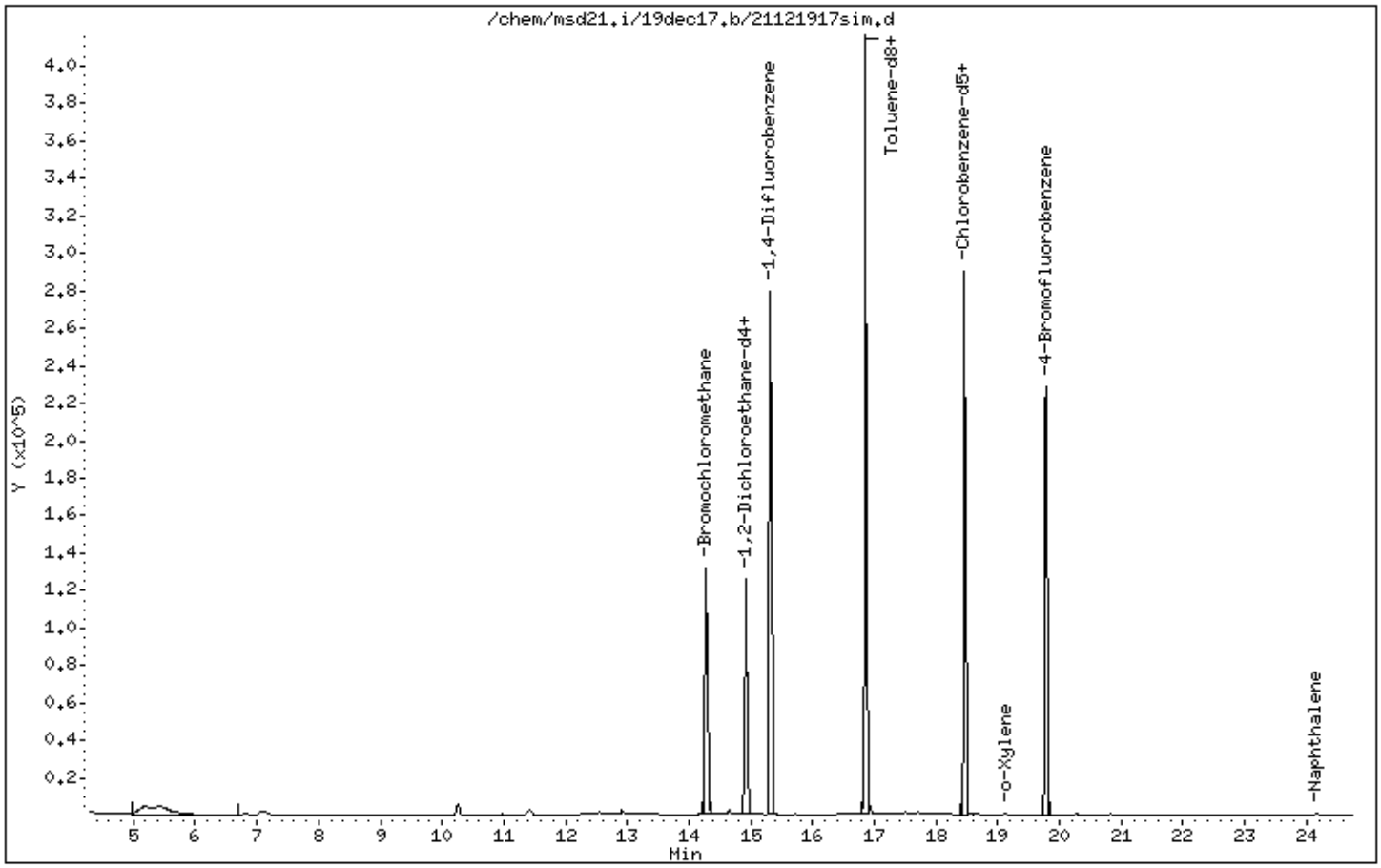
Instrument: msd21.i

Sample Info: 250mL# 33787

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

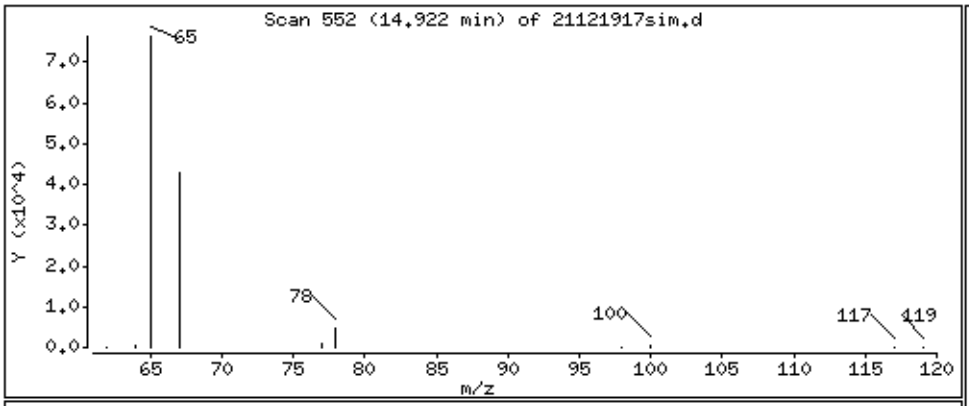
Operator: sw

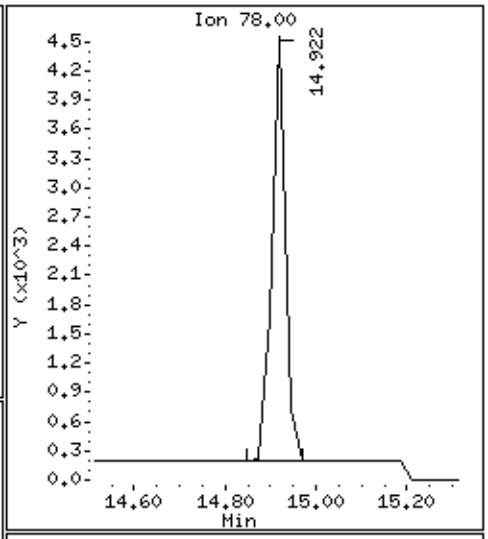
Column phase: RTX-624

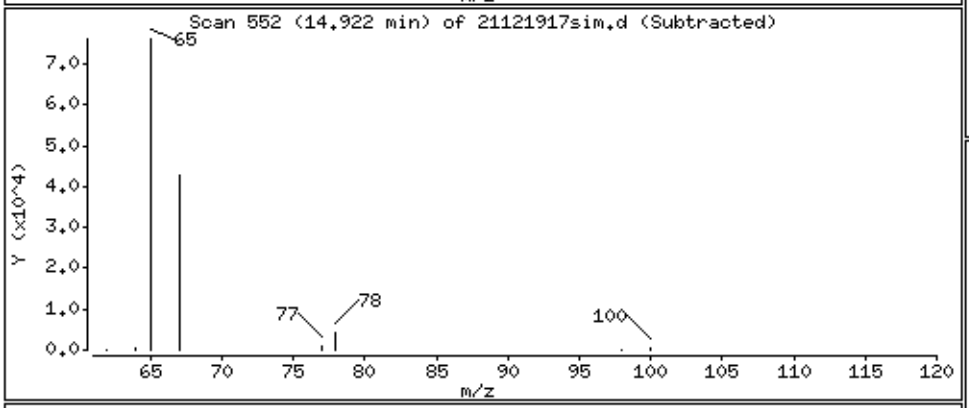
Column diameter: 0.32

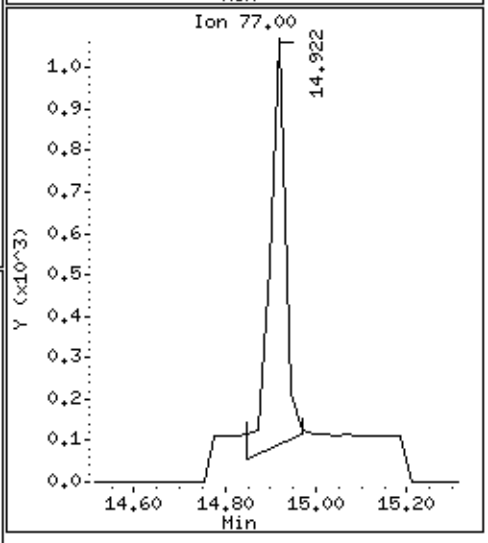
17 Benzene

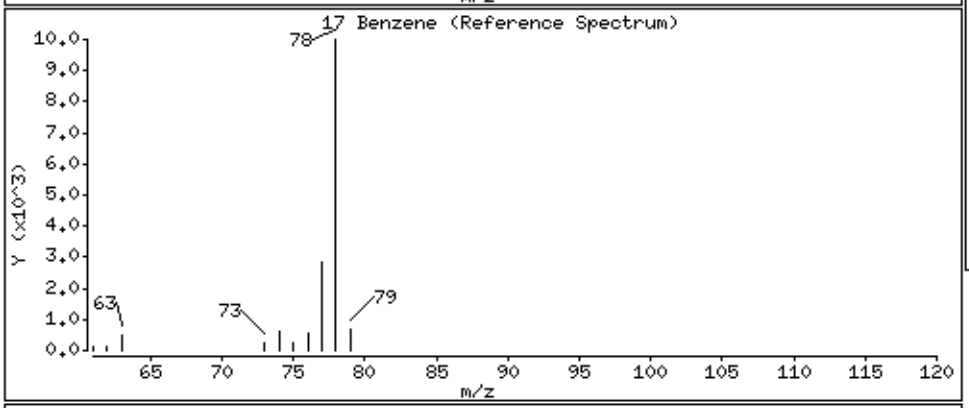
Concentration: 0.09076 PPBV

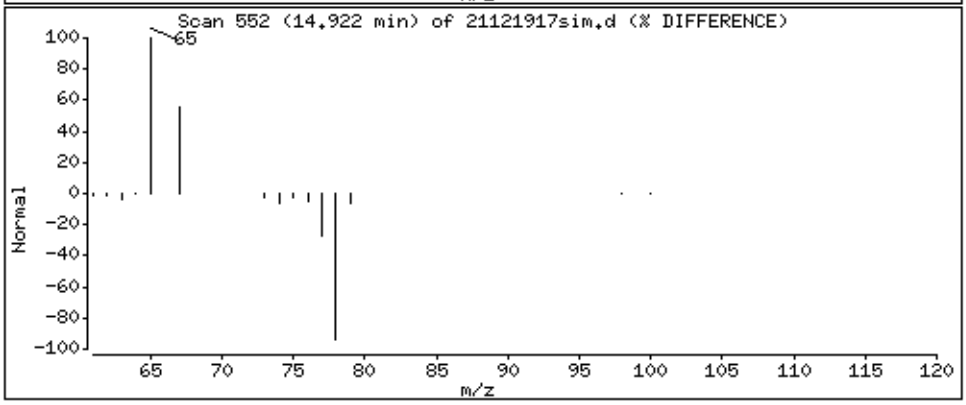












Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

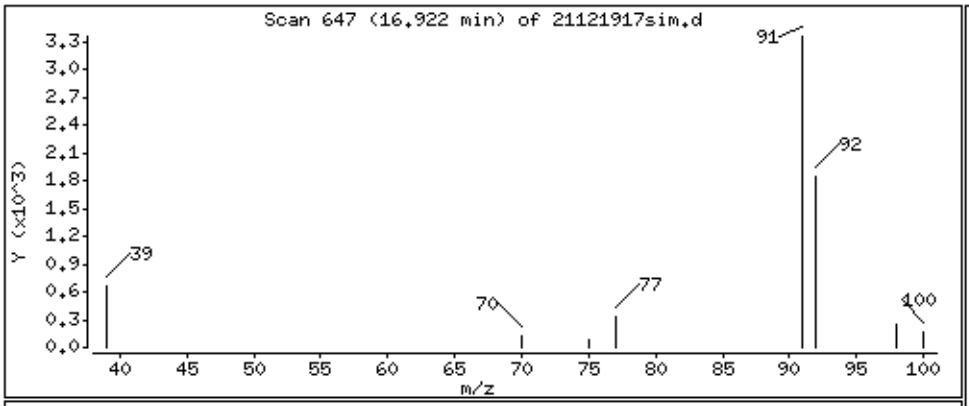
Operator: sw

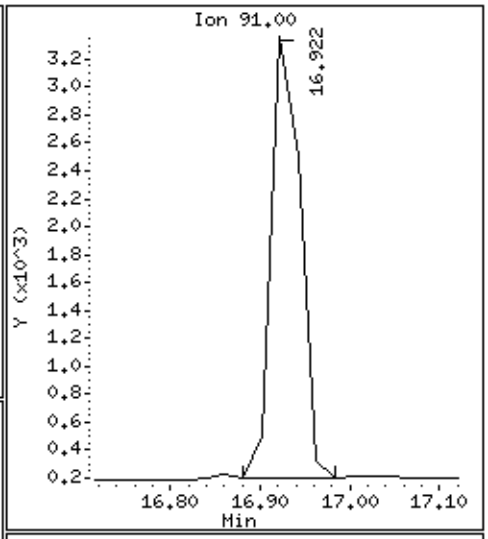
Column phase: RTX-624

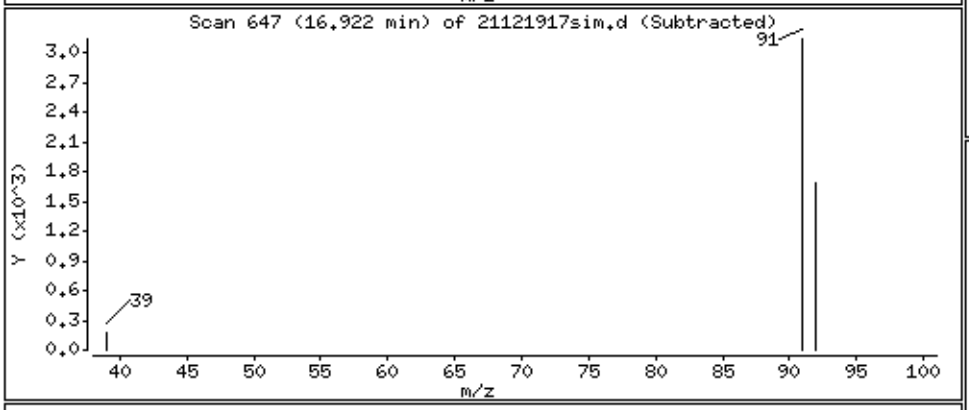
Column diameter: 0.32

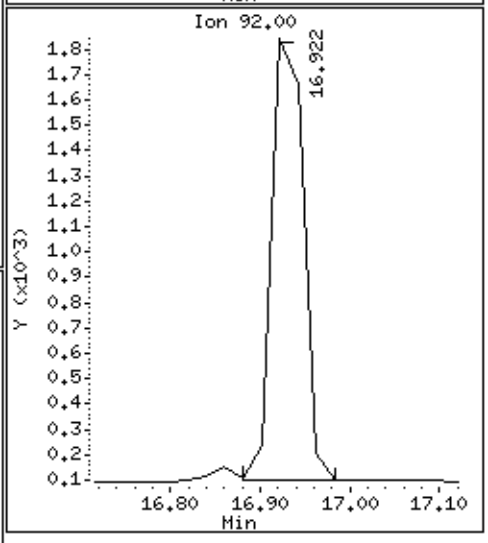
23 Toluene

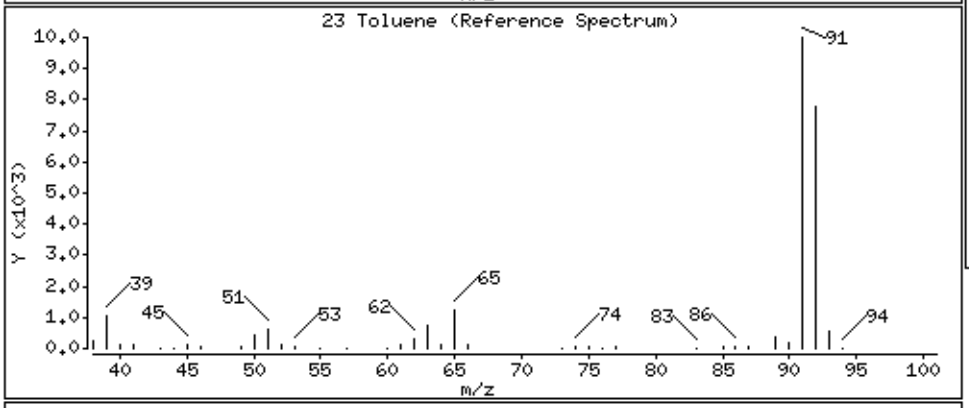
Concentration: 0.07320 PPBV

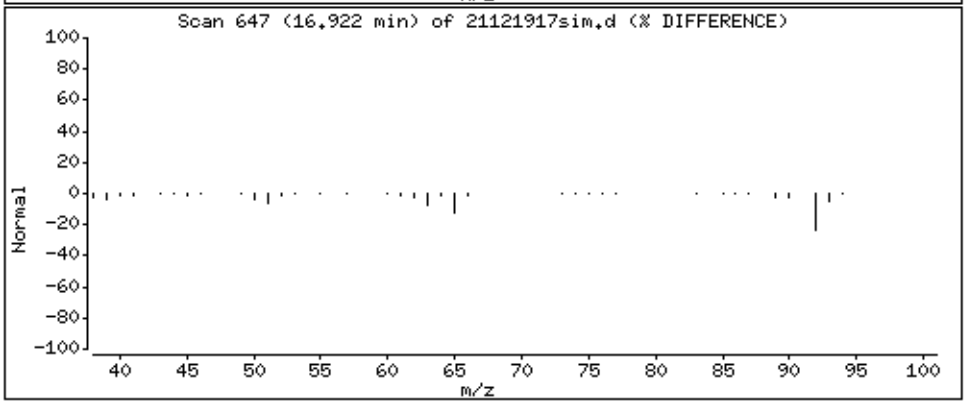












Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

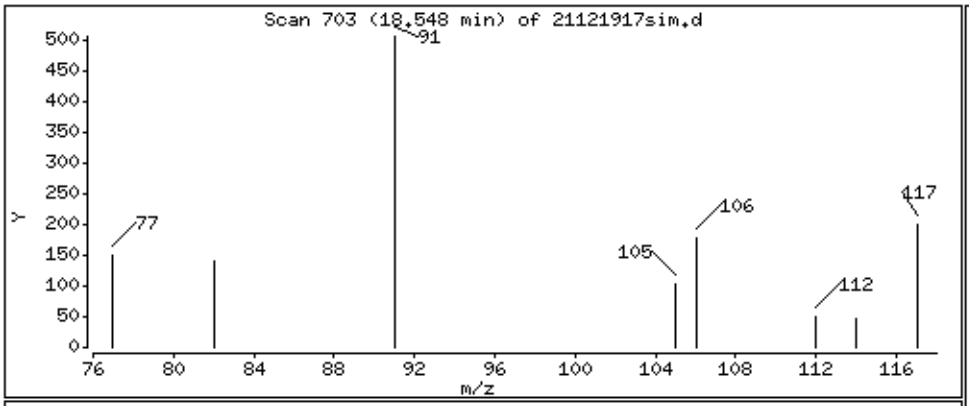
Operator: sw

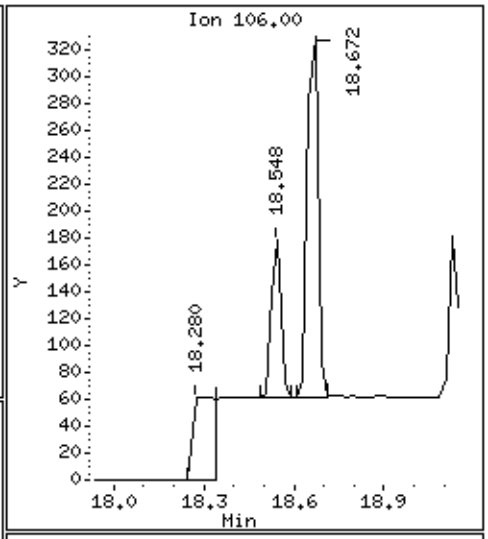
Column phase: RTX-624

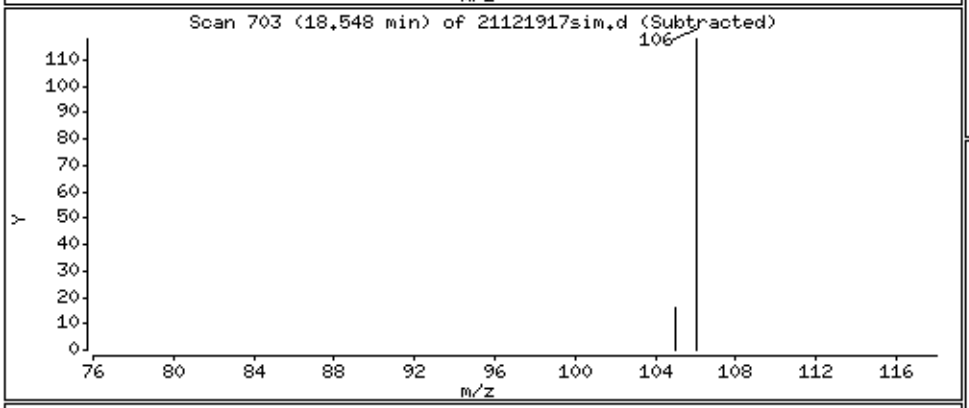
Column diameter: 0.32

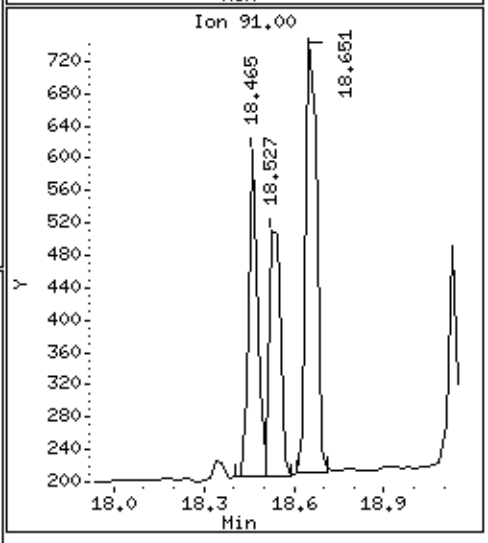
30 Ethyl Benzene

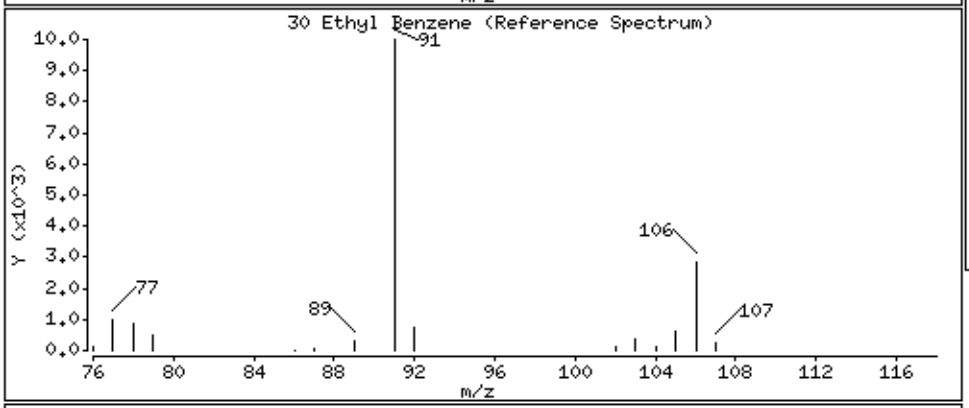
Concentration: 0.008232 PPBV

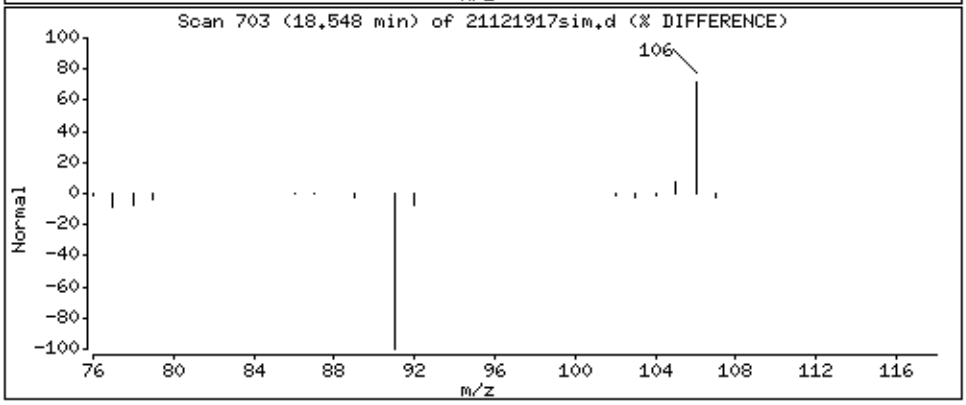












Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

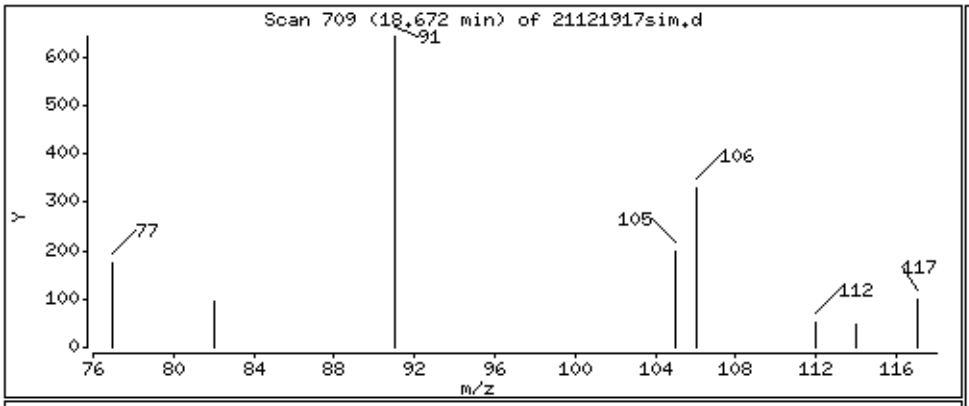
Operator: sw

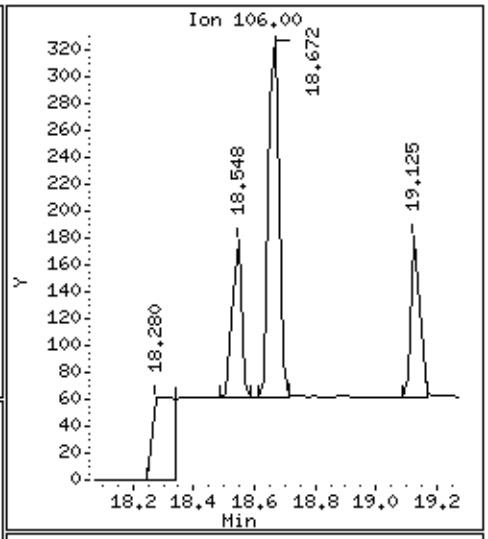
Column phase: RTX-624

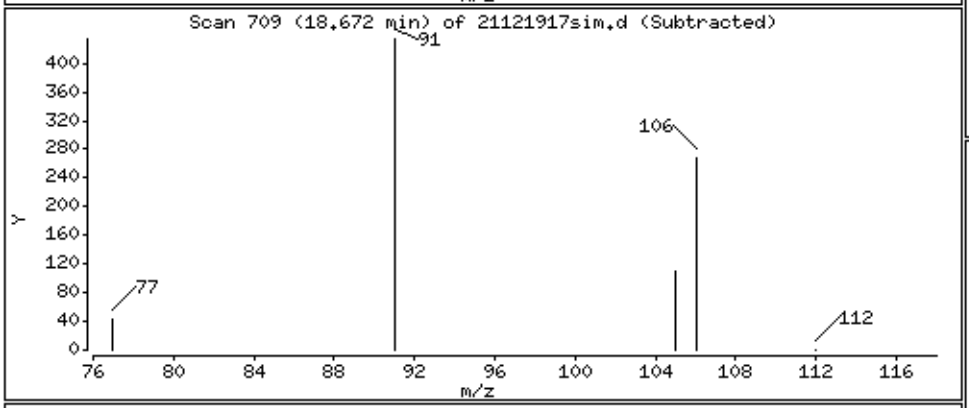
Column diameter: 0.32

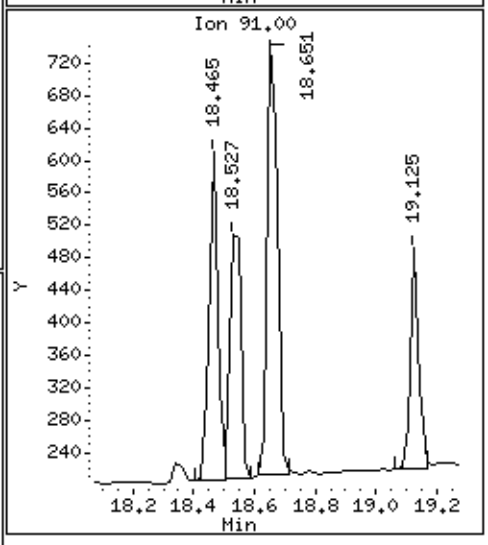
31 m,p-Xylene

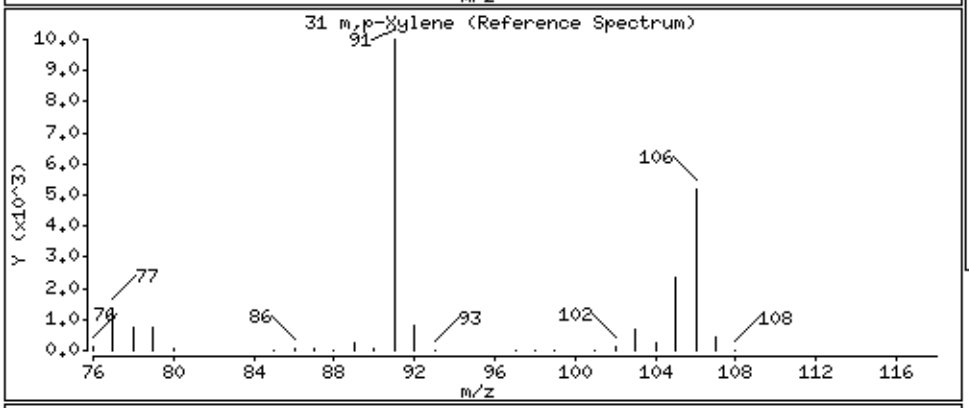
Concentration: 0.02145 PPBV

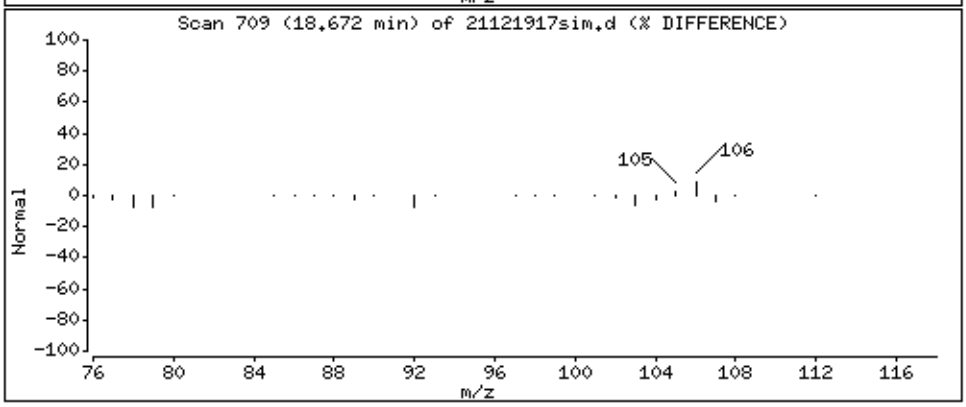












Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

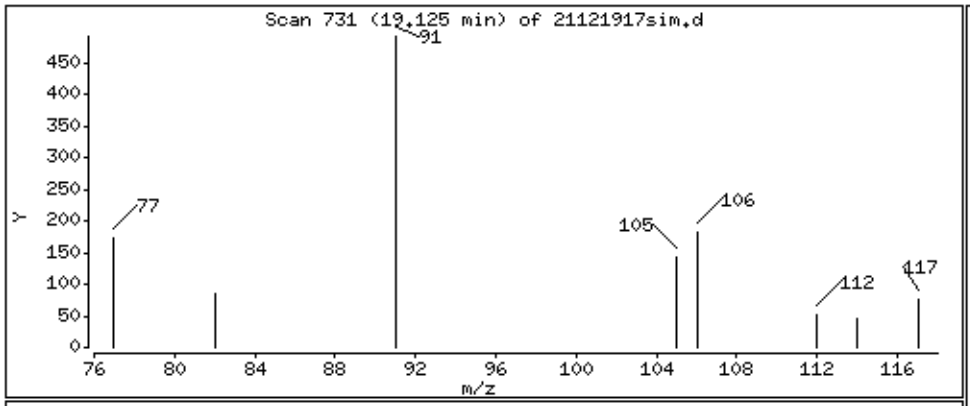
Operator: sw

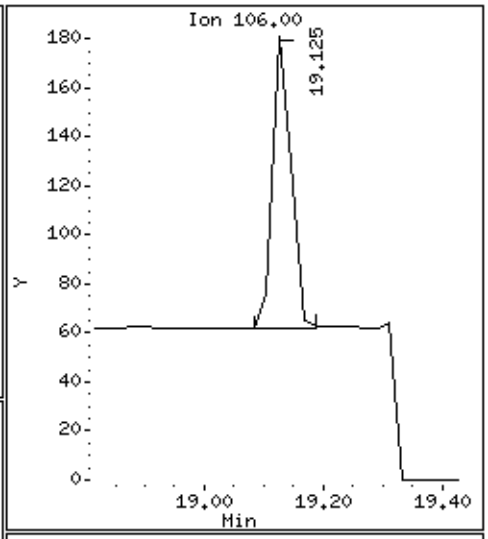
Column phase: RTX-624

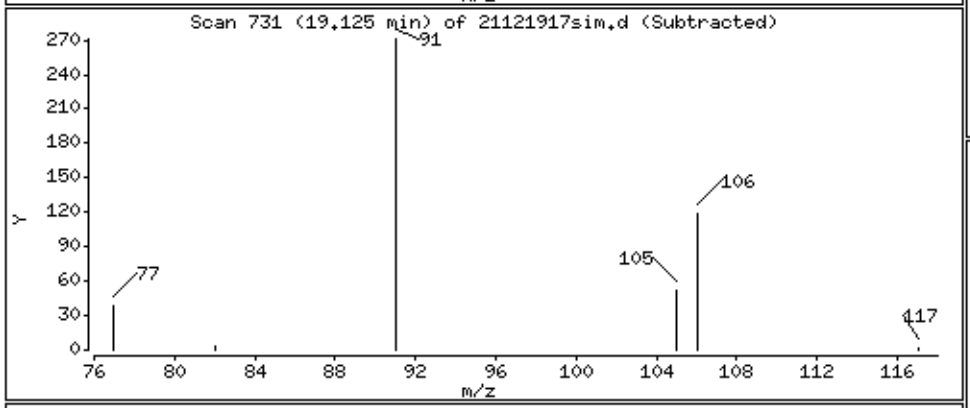
Column diameter: 0.32

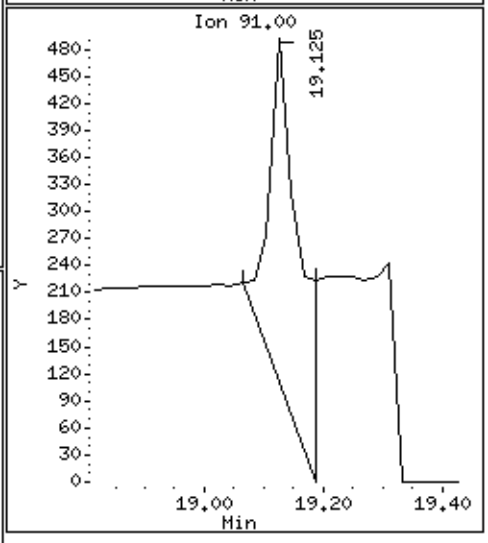
32 o-Xylene

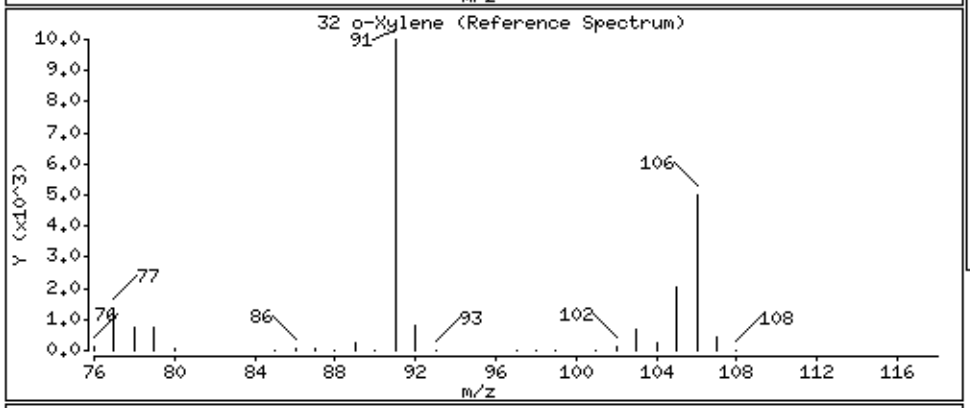
Concentration: 0.009136 PPBV

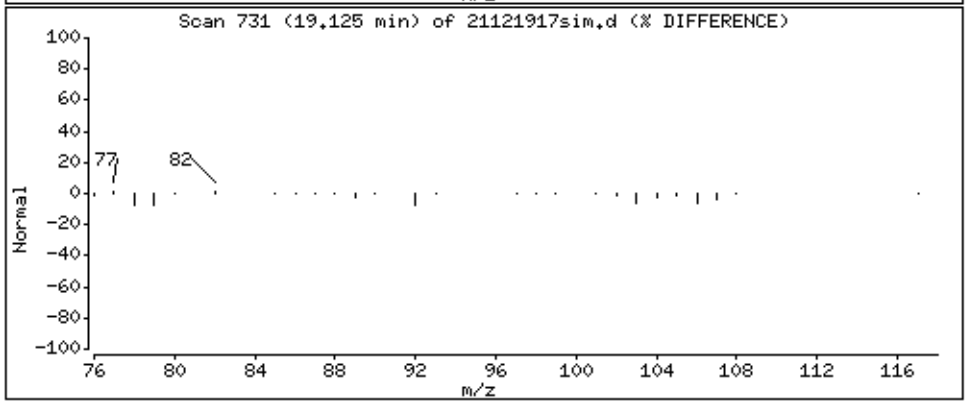












Data File: /chem/msd21.i/19dec17.b/21121917sim.d

Date : 19-DEC-2017 21:13

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 33787

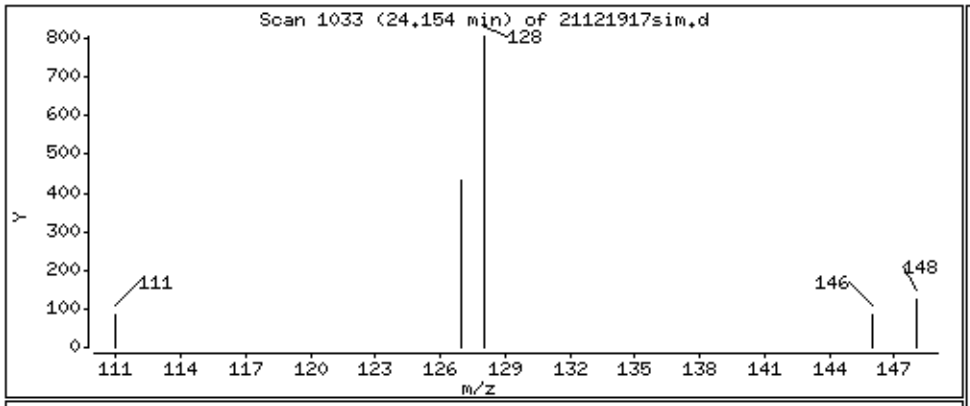
Operator: sw

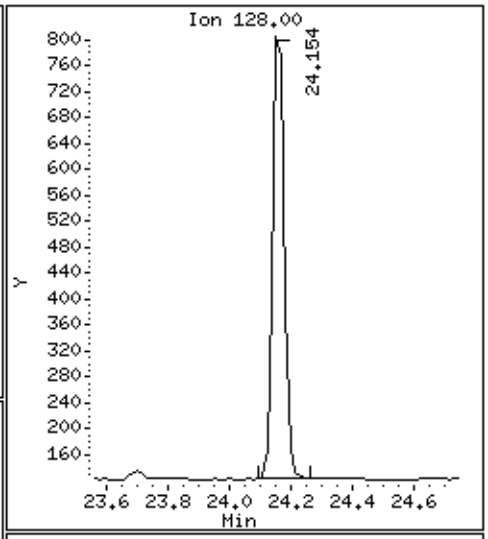
Column phase: RTX-624

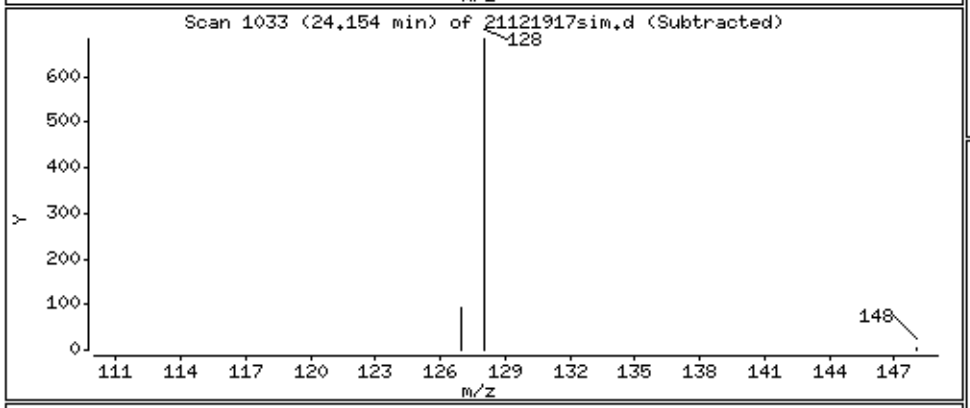
Column diameter: 0.32

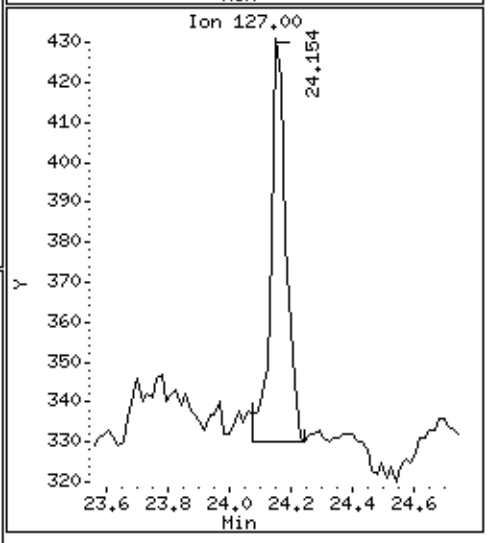
38 Naphthalene

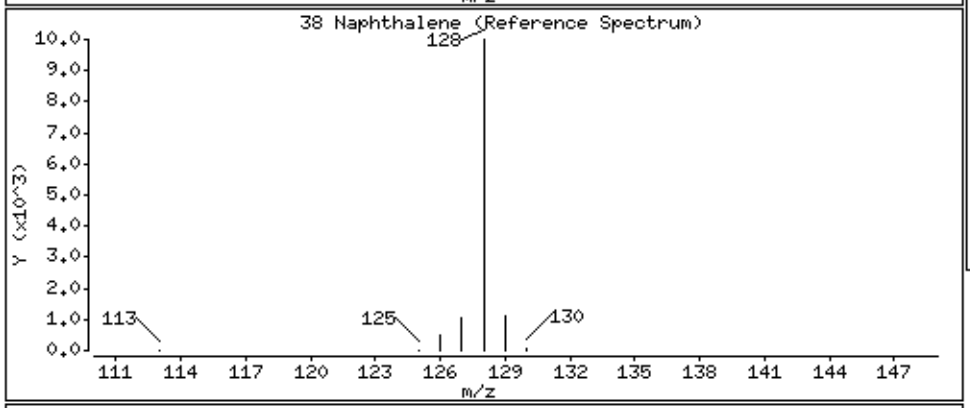
Concentration: 0.01279 PPBV

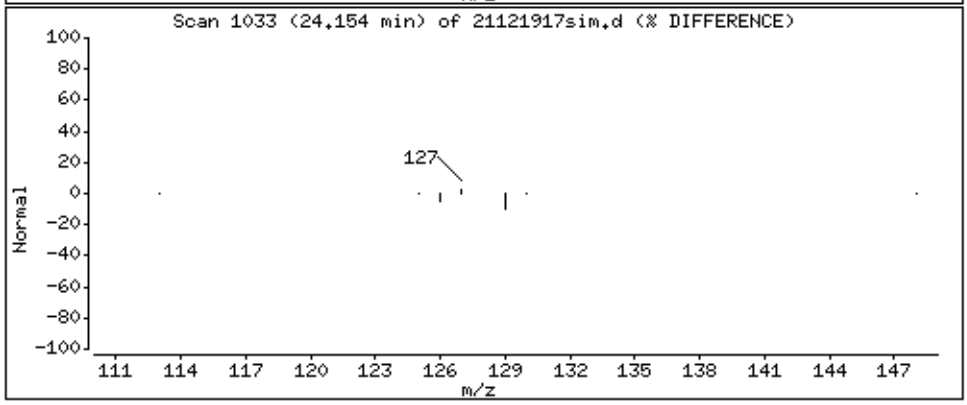












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA7_1217		
Lab ID:	1712342-10A	**Date/Time Analyzed:**	12/19/17 09:48 PM
Date/Time Collecte	12/14/17 02:31 PM	**Dilution Factor:**	1.58
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121918sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.063	0.063	0.25	0.42
Ethyl Benzene	100-41-4	0.0037	0.034	0.14	0.10 J
m,p-Xylene	108-38-3	0.0088	0.034	0.27	0.34
Naphthalene	91-20-3	0.062	0.083	0.41	Not Detected U
o-Xylene	95-47-6	0.0070	0.034	0.14	0.13 J
Toluene	108-88-3	0.030	0.030	0.12	0.59
Total Xylenes	9999-9999-015	NA	D	0.41	0.47

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121918sim.d
Lab Smp Id: 1712342-10A
Inj Date : 19-DEC-2017 21:48
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N0608
Misc Info : 4.9"Hg -> 4.7psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.58000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	110979	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	86236			47.49- 107.49	77.70
14.273	14.298 (1.000)	49	159169			114.87- 174.87	143.42
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	520353	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	88350			0.00- 46.92	16.98
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	391475	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	217765			25.29- 85.29	55.63
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	156546	5.43101	5.431	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	87957			30.16- 90.16	56.19
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	447932	4.90407	4.904	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	55036			0.00- 42.34	12.29

				CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	304836			38.15- 98.15	68.05
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	145381	4.29681	4.297	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	175096			88.82- 148.82	120.44
19.787	19.787 (1.072)	176	142070			68.26- 128.26	97.72
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	12029	0.08263	0.1306	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	3018			0.00- 52.85	25.09
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	14143	0.09940	0.1570	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	8585			33.44- 93.44	60.70
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	652	0.01500	0.02370	80.00- 120.00	100.00(a)
18.548	18.548 (1.004)	91	2009			259.51- 319.51	308.06
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	2123	0.05000	0.07900	80.00- 120.00	100.00
18.651	18.672 (1.010)	91	4220			159.47- 219.47	198.72
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	747	0.01936	0.03059	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	2539			168.52- 228.52	339.67
M 39 Total Xylene					CAS #: 1330-20-7		
			2871	0.06936	0.1096		

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121918sim.d
Lab Smp Id: 1712342-10A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 4.7psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	110979	-7.47
20 1,4-Difluorobenze	564150	338490	789810	520353	-7.76
28 Chlorobenzene-d5	433051	259831	606271	391475	-9.60

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:22

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-10A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 4.7psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.431	108.62	70-130
$ 22 Toluene-d8	5.000	4.904	98.08	70-130
$ 33 4-Bromofluorobenze	5.000	4.297	85.94	70-130

Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

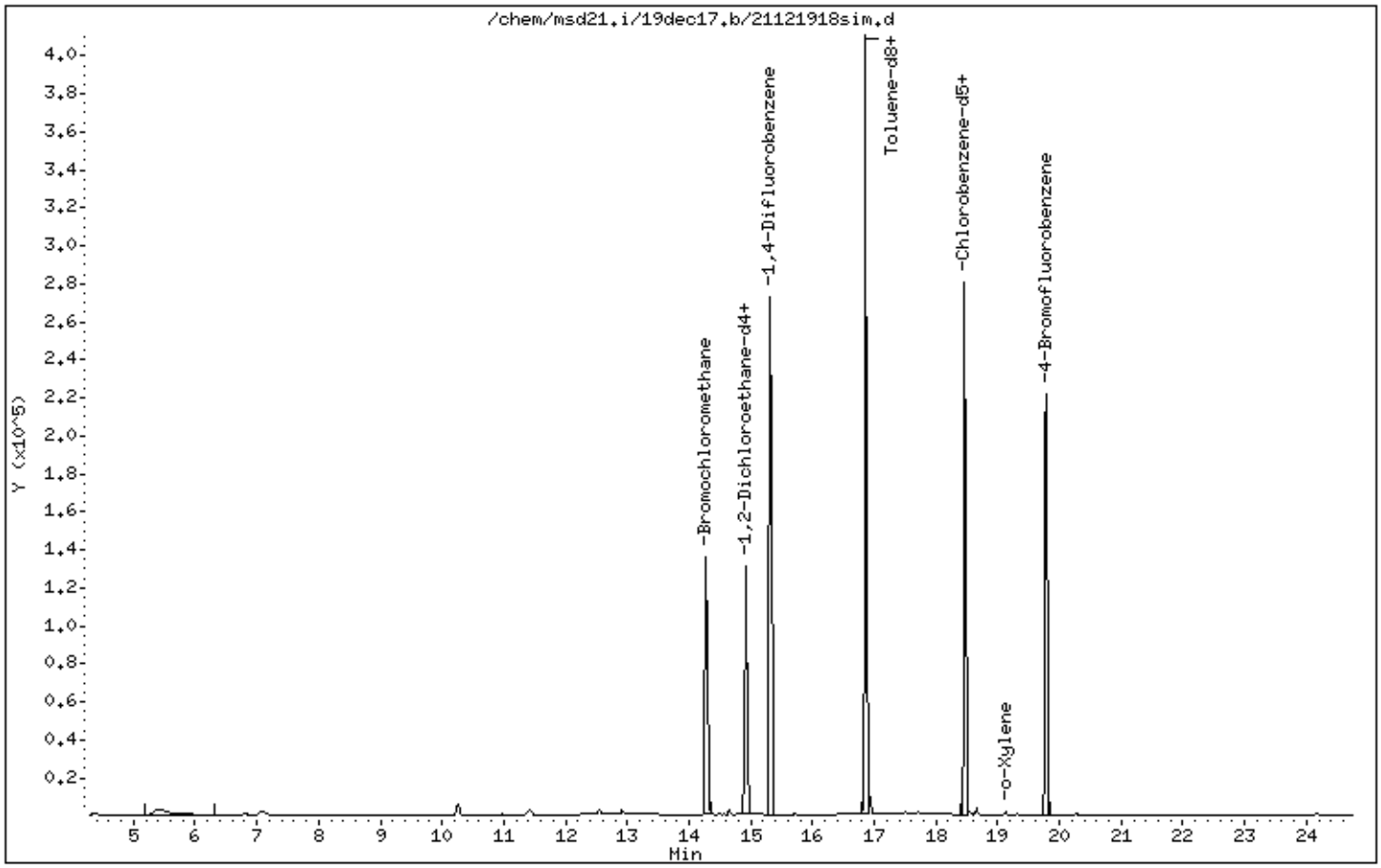
Instrument: msd21.i

Sample Info: 250mL# N0608

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0608

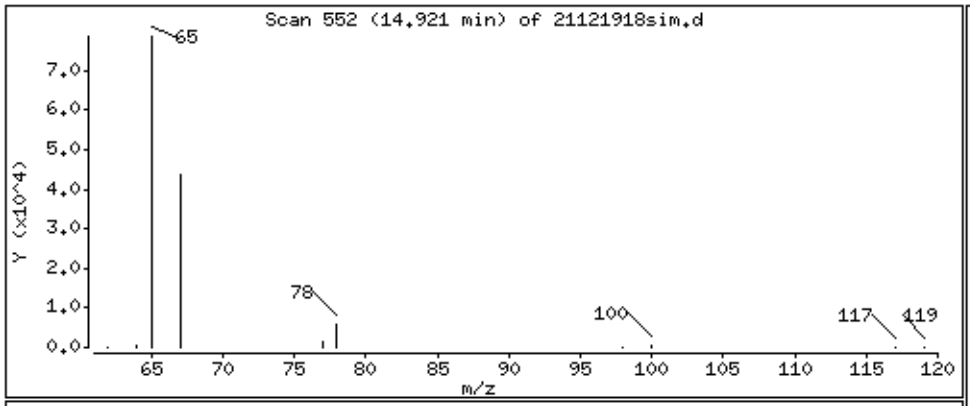
Operator: sw

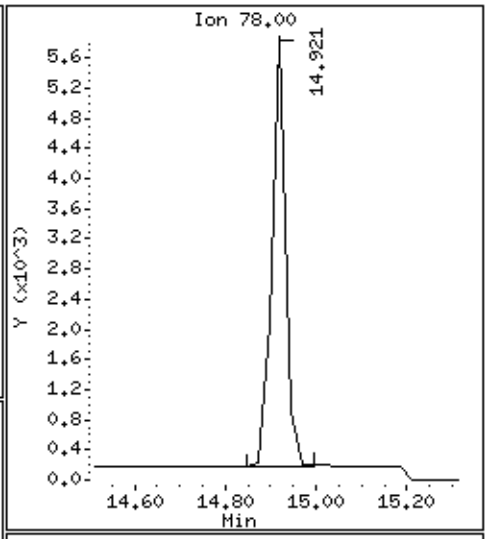
Column phase: RTX-624

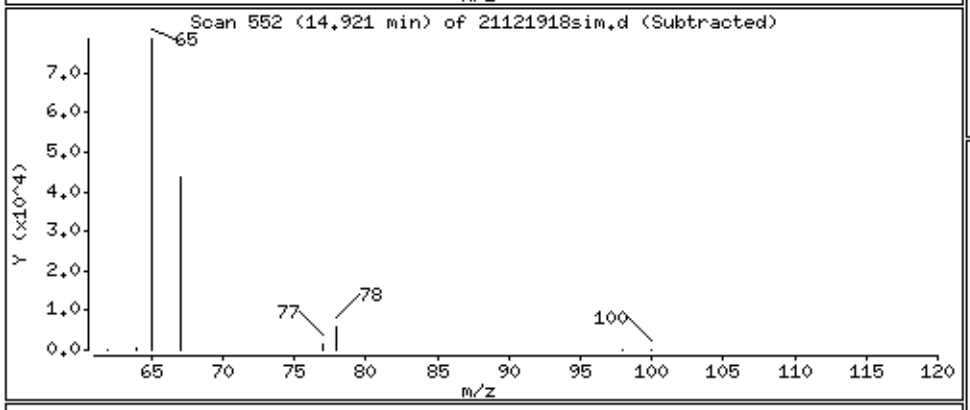
Column diameter: 0.32

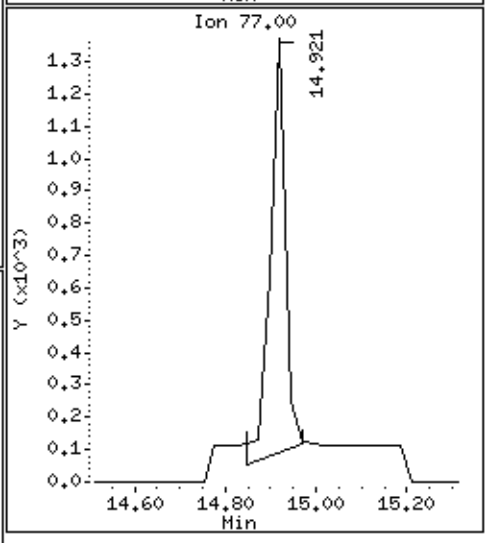
17 Benzene

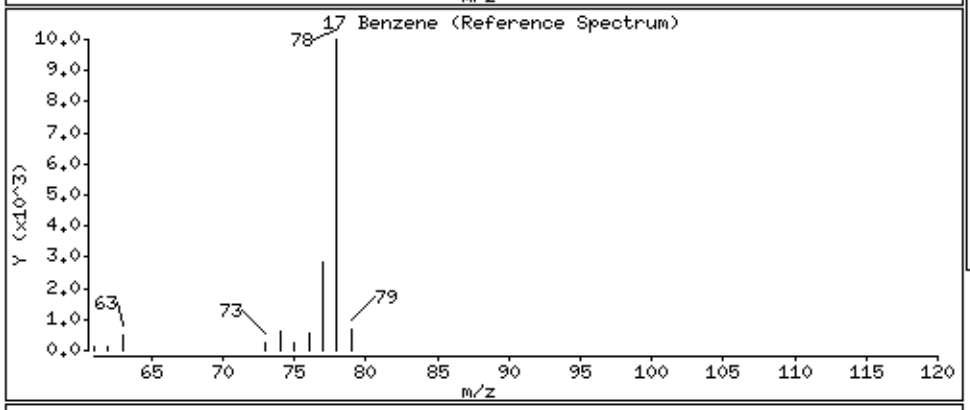
Concentration: 0.1306 PPBV

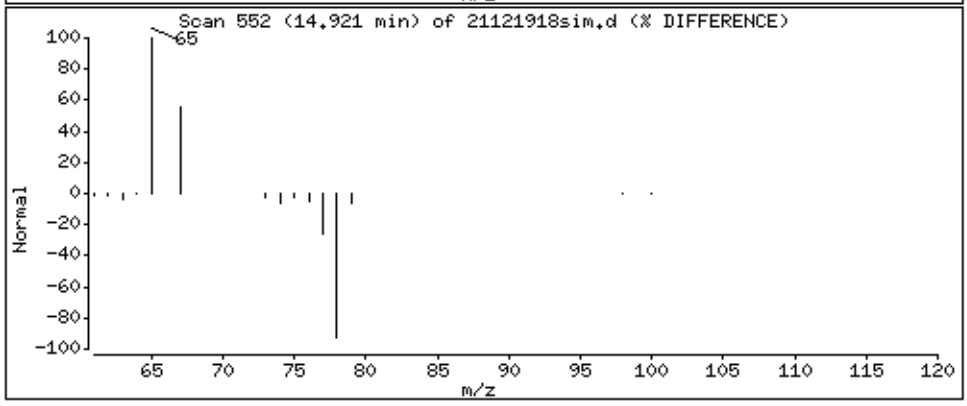












Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0608

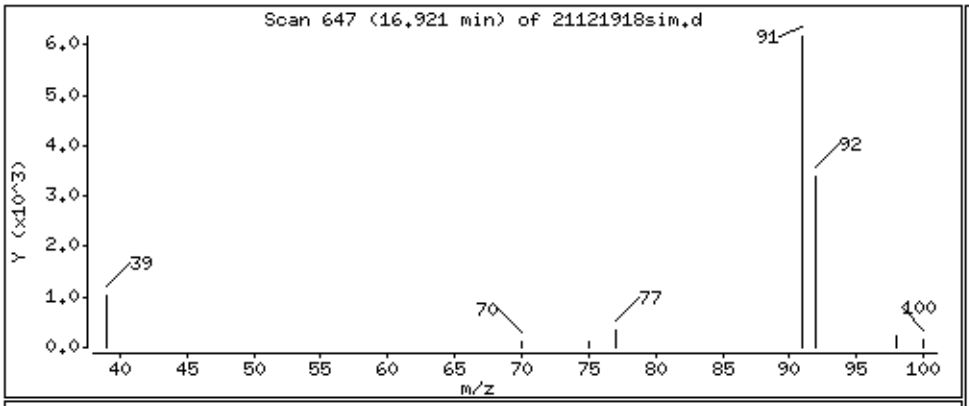
Operator: sw

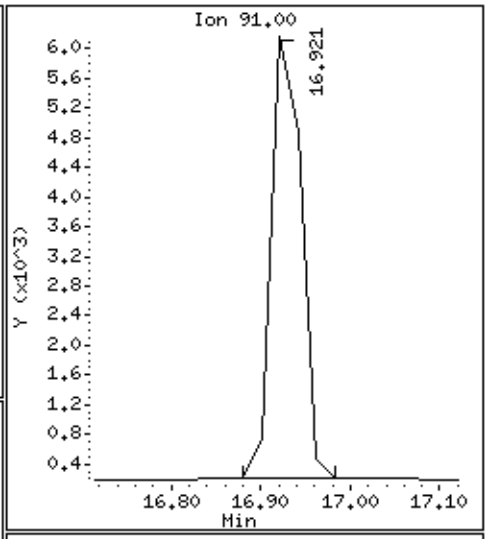
Column phase: RTX-624

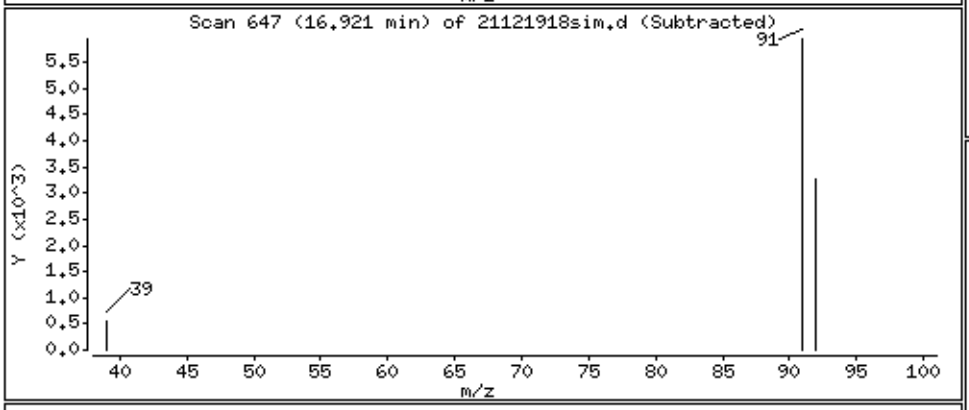
Column diameter: 0.32

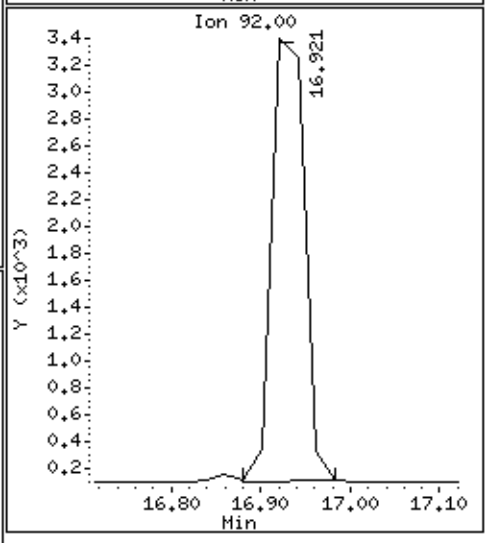
23 Toluene

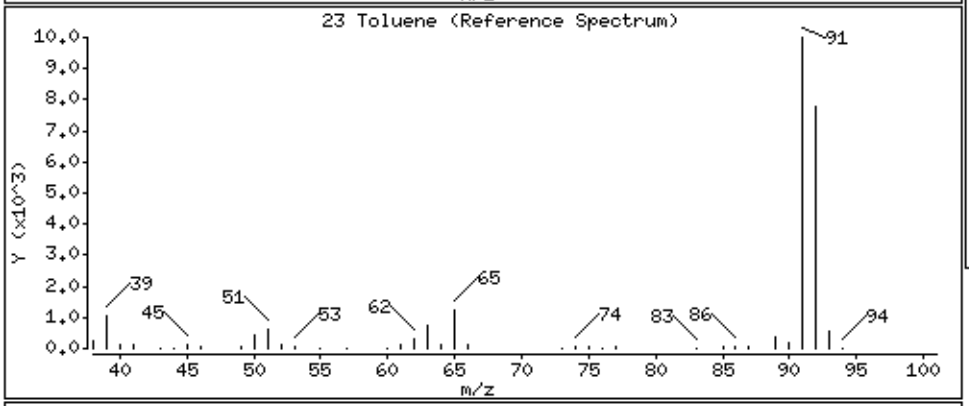
Concentration: 0.1570 PPBV

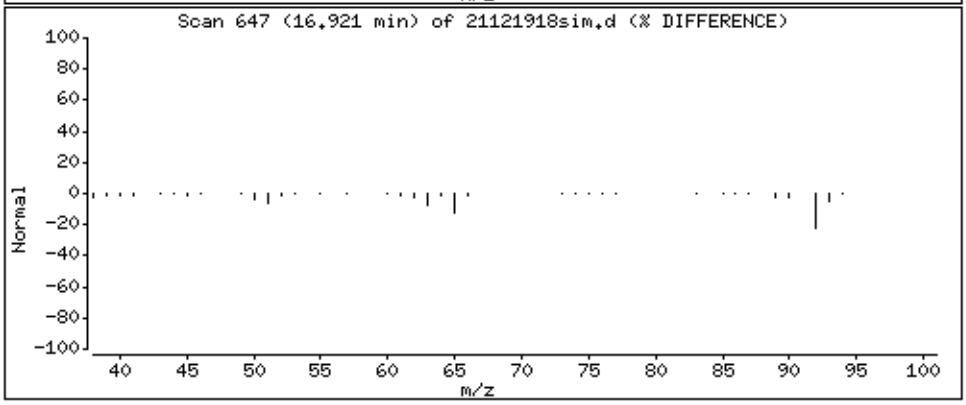












Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0608

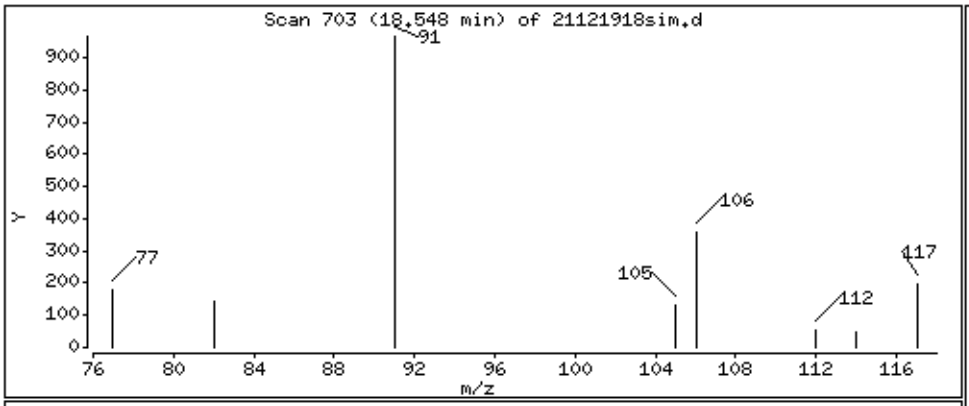
Operator: sw

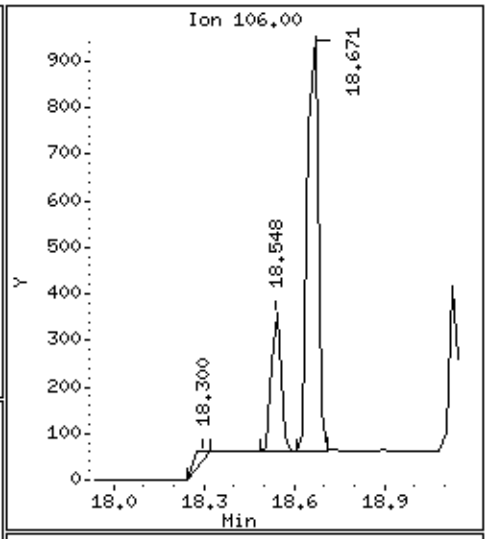
Column phase: RTX-624

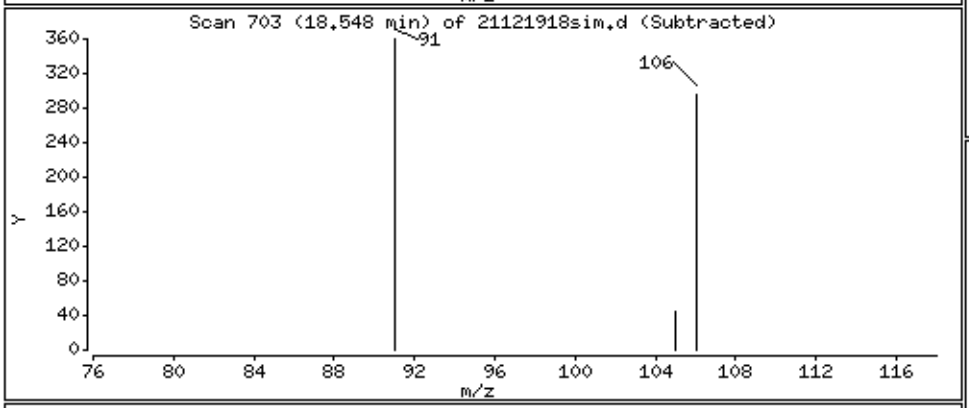
Column diameter: 0.32

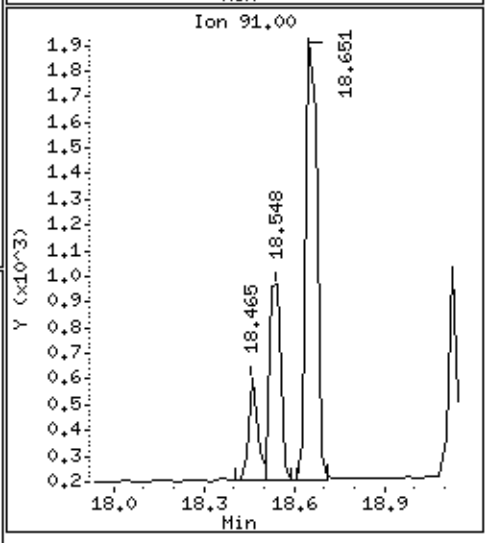
30 Ethyl Benzene

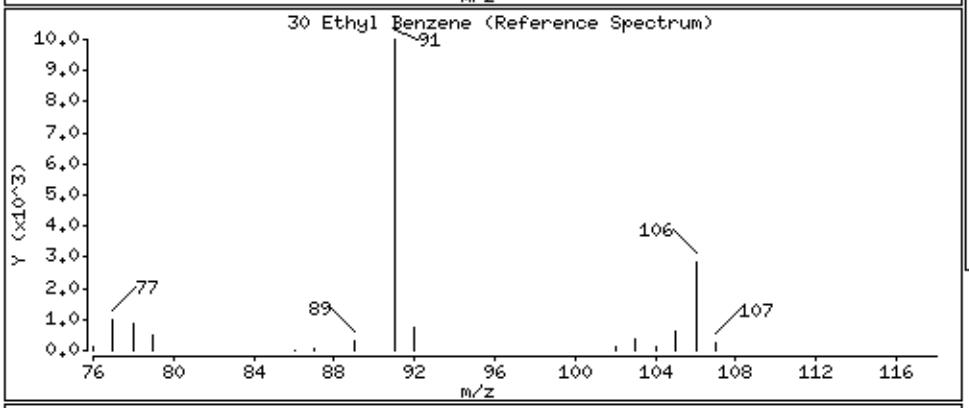
Concentration: 0.02370 PPBV

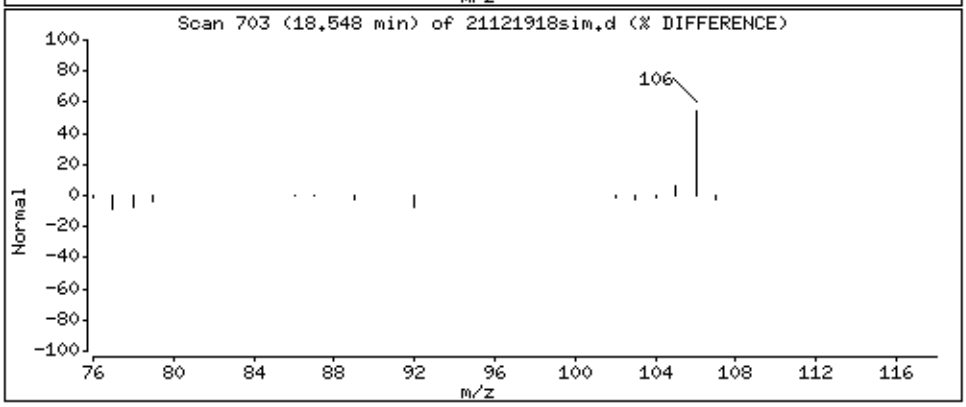












Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0608

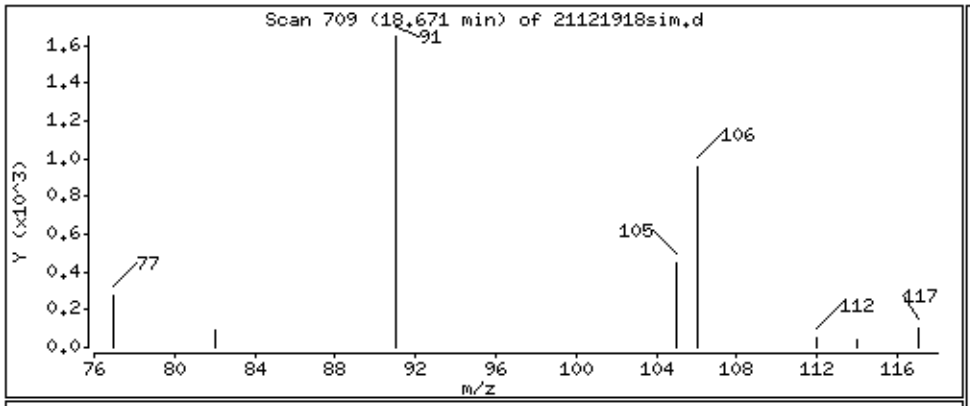
Operator: sw

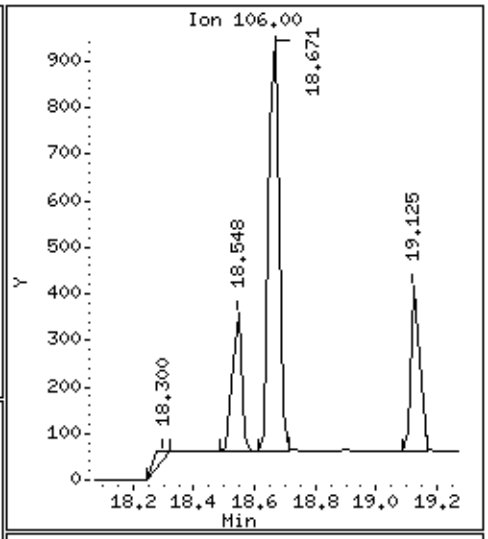
Column phase: RTX-624

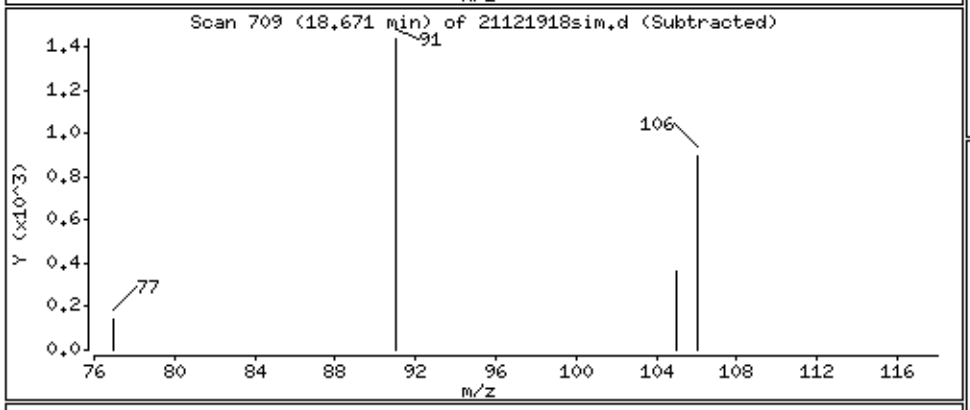
Column diameter: 0.32

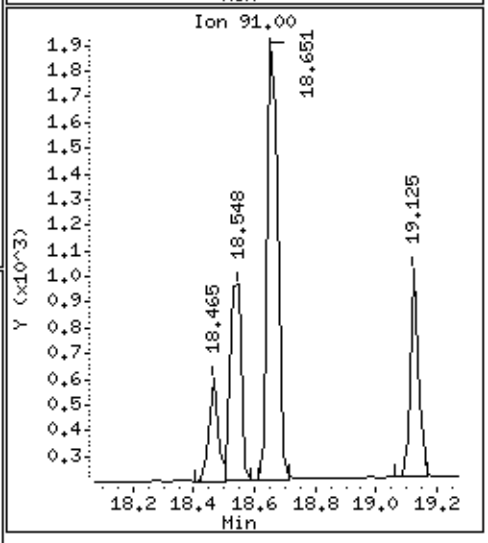
31 m,p-Xylene

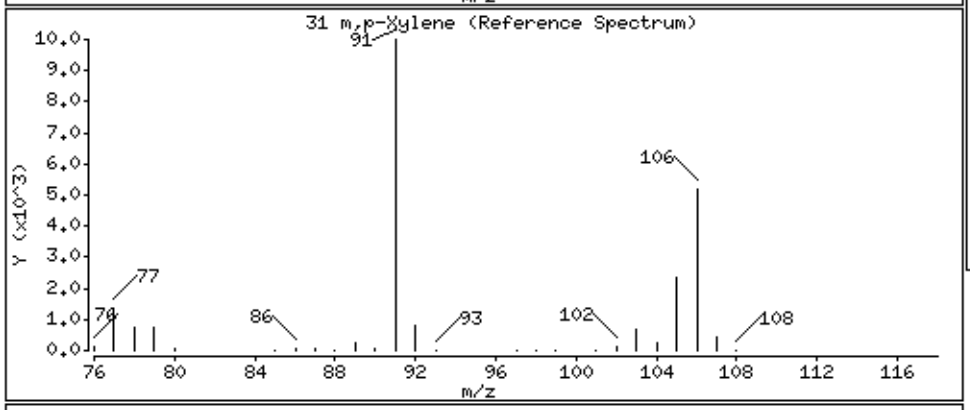
Concentration: 0.07900 PPBV

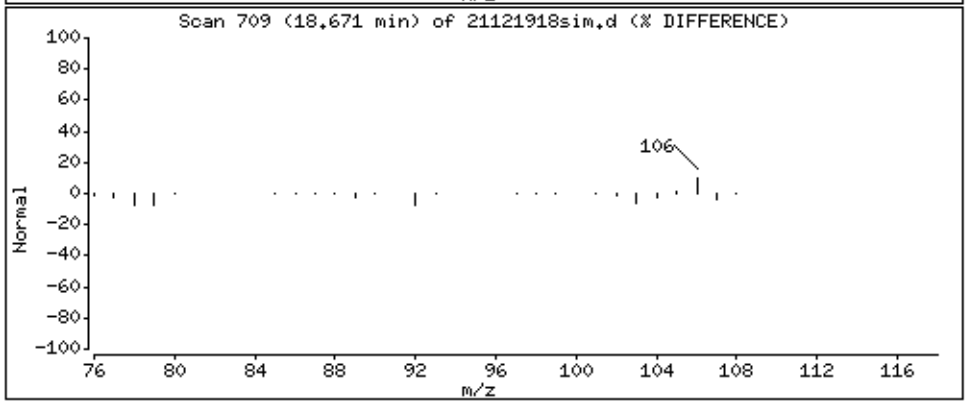












Data File: /chem/msd21.i/19dec17.b/21121918sim.d

Date : 19-DEC-2017 21:48

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0608

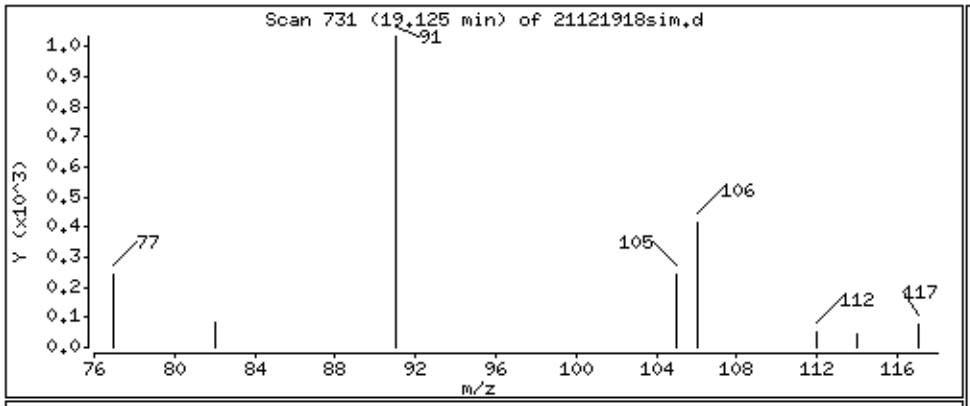
Operator: sw

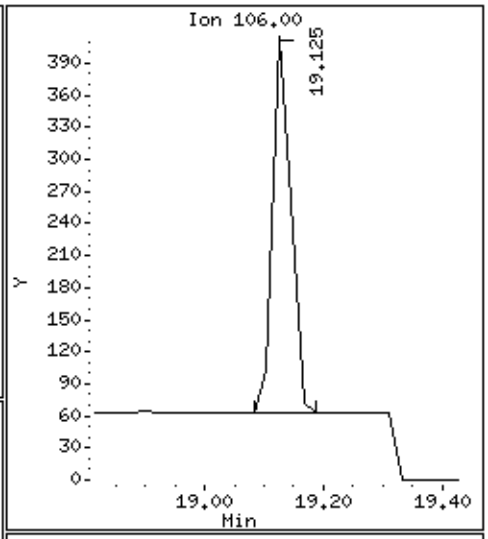
Column phase: RTX-624

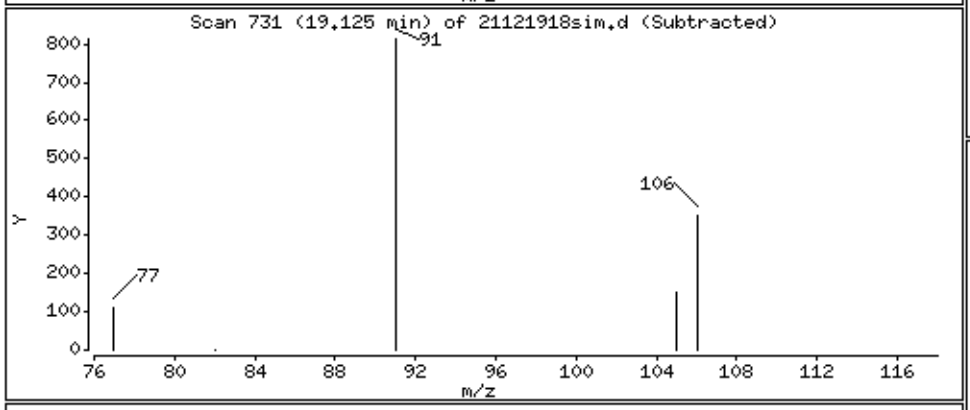
Column diameter: 0.32

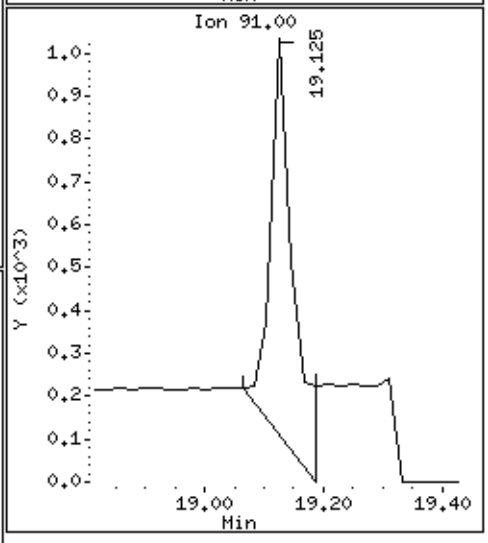
32 o-Xylene

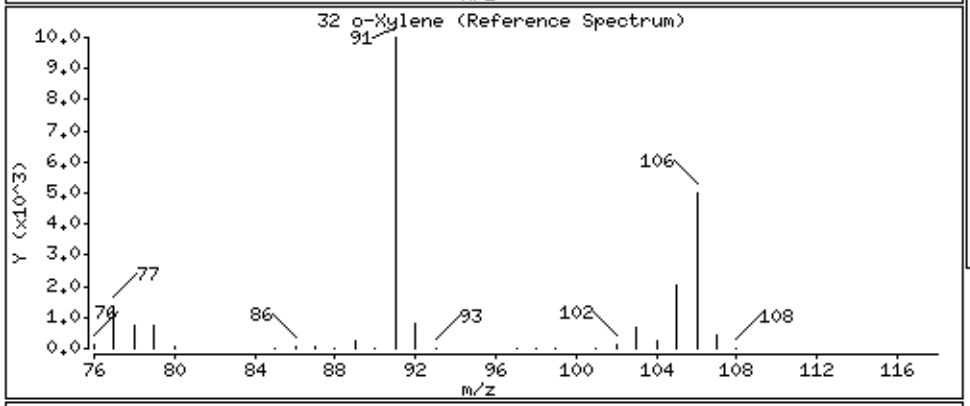
Concentration: 0.03059 PPBV

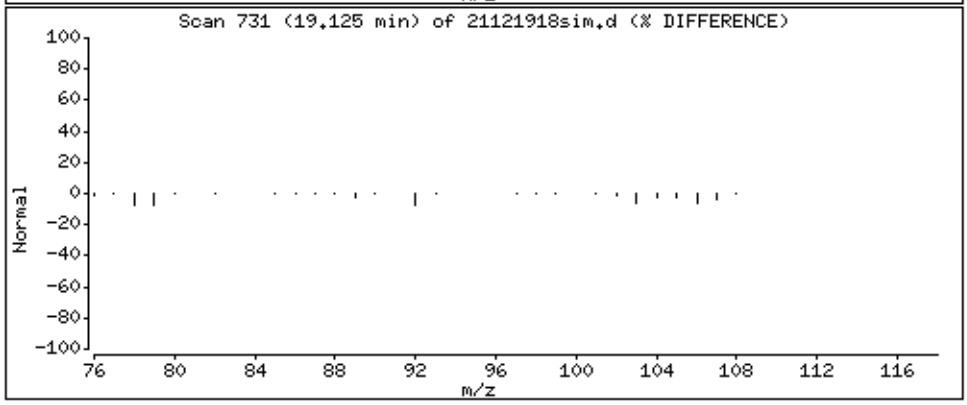












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA8_1217		
Lab ID:	1712342-11A	**Date/Time Analyzed:**	12/19/17 10:19 PM
Date/Time Collecte	12/14/17 02:40 PM	**Dilution Factor:**	1.61
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121919sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.064	0.064	0.26	0.33
Ethyl Benzene	100-41-4	0.0038	0.035	0.14	0.041 J
m,p-Xylene	108-38-3	0.0090	0.035	0.28	0.12 J
Naphthalene	91-20-3	0.063	0.084	0.42	Not Detected U
o-Xylene	95-47-6	0.0071	0.035	0.14	0.052 J
Toluene	108-88-3	0.031	0.031	0.12	0.25
Total Xylenes	9999-9999-015	NA	D	0.42	Not Detected

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121919sim.d
Lab Smp Id: 1712342-11A
Inj Date : 19-DEC-2017 22:19
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N2559
Misc Info : 4.9"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.61000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	103377	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	80129			47.49- 107.49	77.51
14.274	14.298 (1.000)	49	149270			114.87- 174.87	144.39
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	518691	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	88359			0.00- 46.92	17.03
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	403186	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	224853			25.29- 85.29	55.77
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150292	5.59747	5.597	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	84475			30.16- 90.16	56.21
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	454902	4.99634	4.996	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55756			0.00- 42.34	12.26

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	309878			38.15- 98.15	68.12
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	156720	4.49741	4.497	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	188460			88.82- 148.82	120.25
19.787	19.787 (1.072)	176	153734			68.26- 128.26	98.09
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	9250	0.06375	0.1026	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2114			0.00- 52.85	22.86
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	5787	0.04080	0.06569	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	3522			33.44- 93.44	60.86
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	263	0.00588	0.009475	80.00- 120.00	100.00(a)
18.527	18.548 (1.003)	91	814			259.51- 319.51	308.95
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	742	0.01697	0.02733	80.00- 120.00	100.00(a)
18.651	18.672 (1.010)	91	1485			159.47- 219.47	200.00
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	294	0.00741	0.01192	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	629			168.52- 228.52	213.83

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121919sim.d
Lab Smp Id: 1712342-11A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 5.1psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	103377	-13.81
20 1,4-Difluorobenze	564150	338490	789810	518691	-8.06
28 Chlorobenzene-d5	433051	259831	606271	403186	-6.90

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:02

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-11A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.9"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.597	111.95	70-130
$ 22 Toluene-d8	5.000	4.996	99.93	70-130
$ 33 4-Bromofluorobenze	5.000	4.497	89.95	70-130

Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

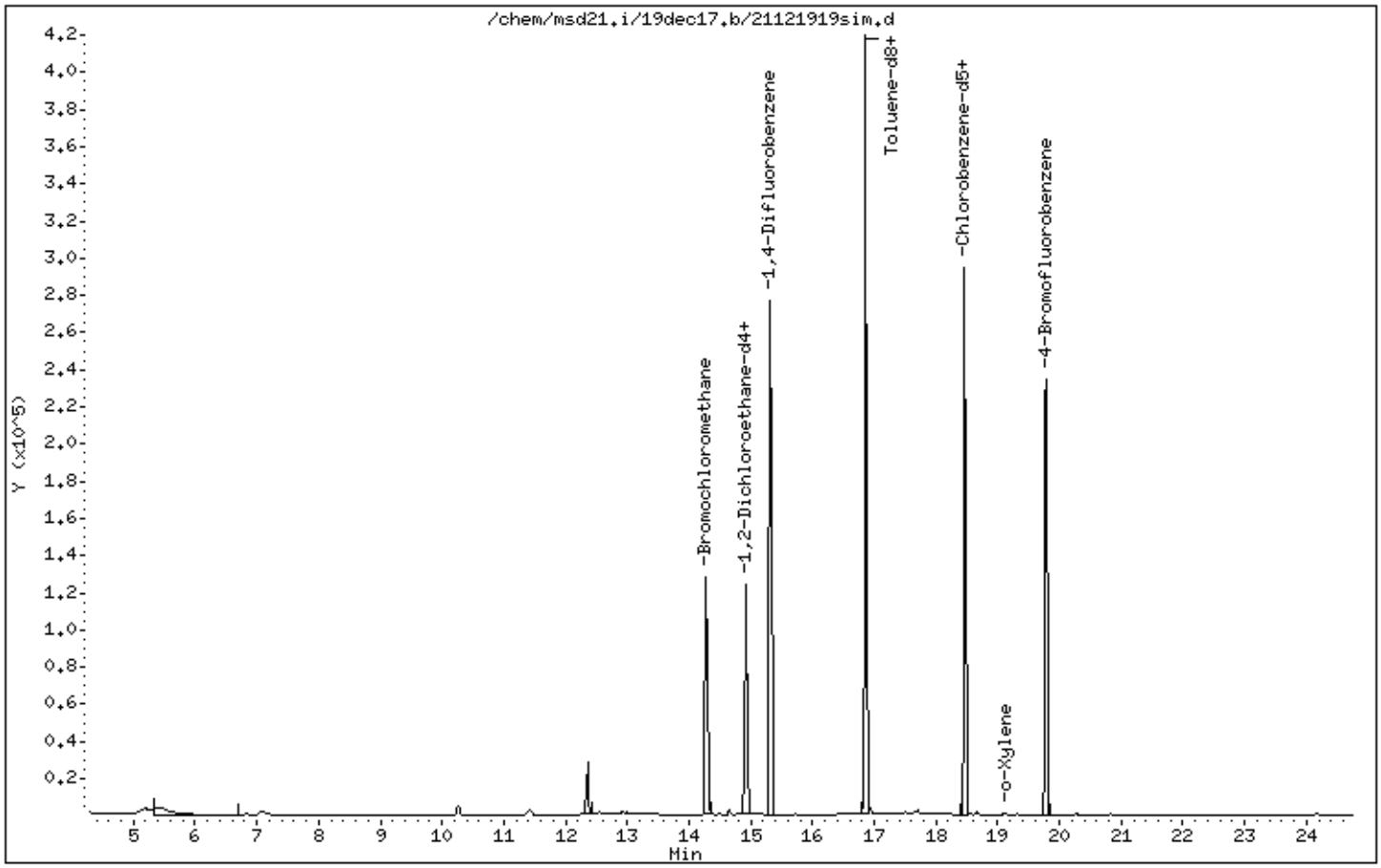
Instrument: msd21.i

Sample Info: 250mL# N2559

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2559

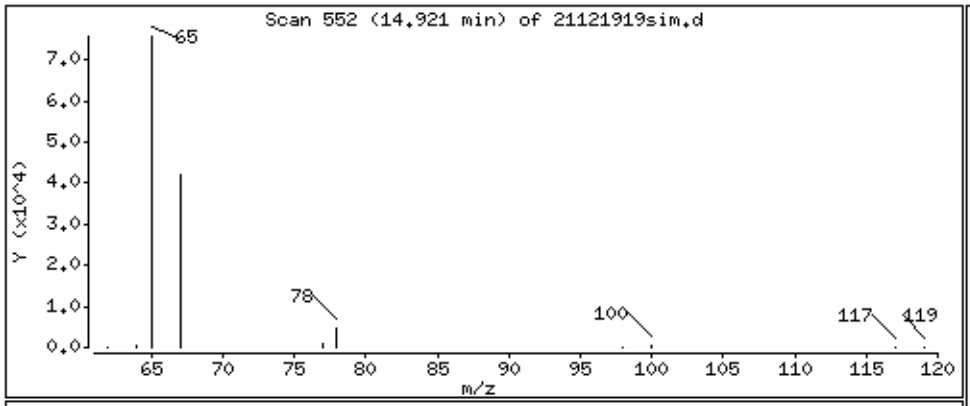
Operator: sw

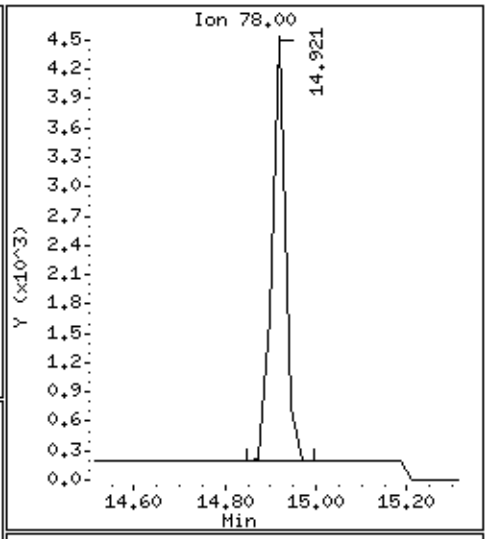
Column phase: RTX-624

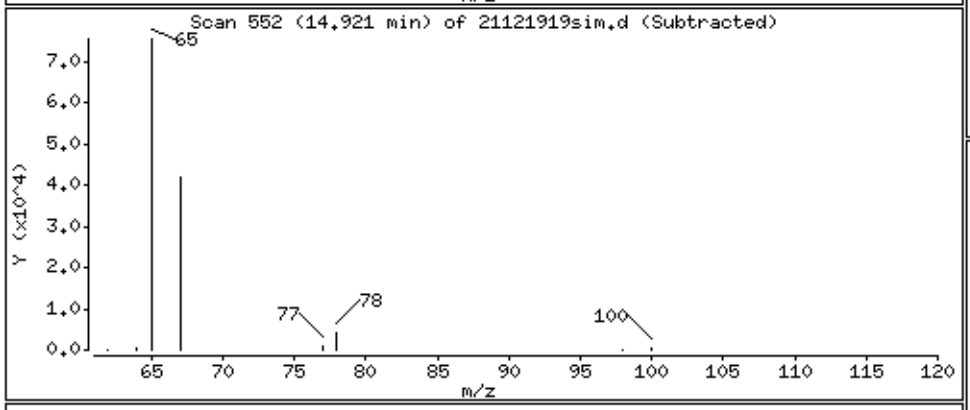
Column diameter: 0.32

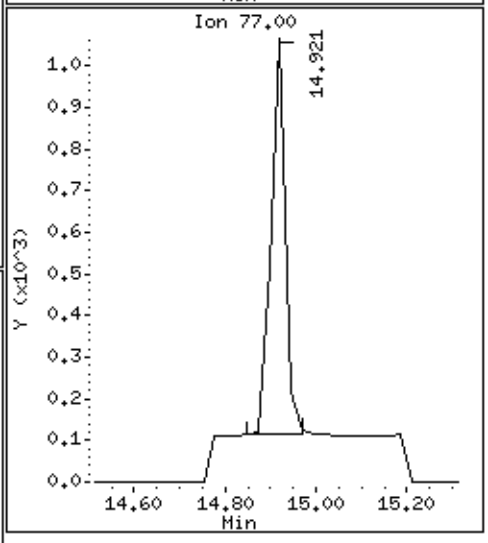
17 Benzene

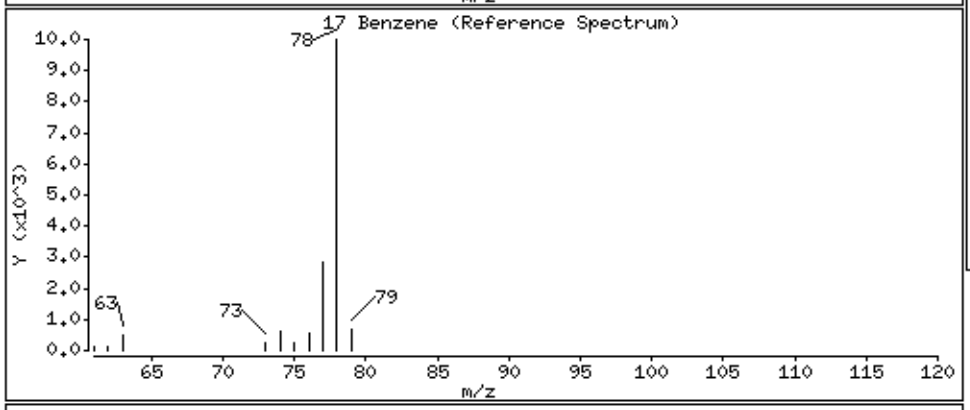
Concentration: 0.1026 PPBV

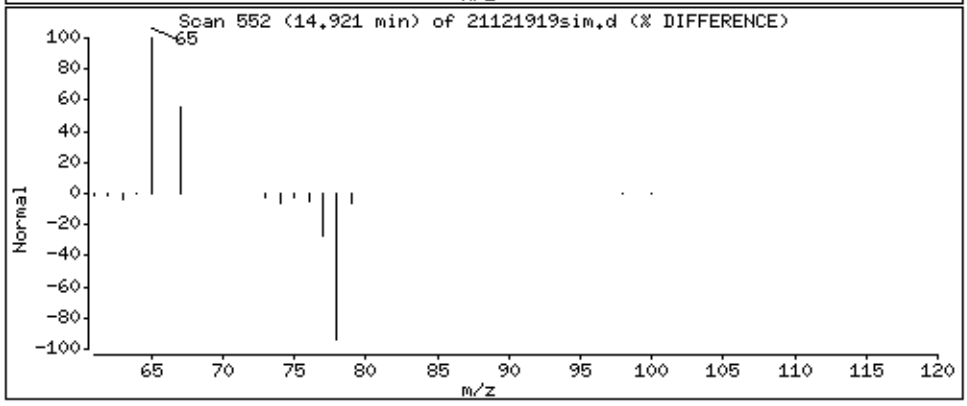












Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2559

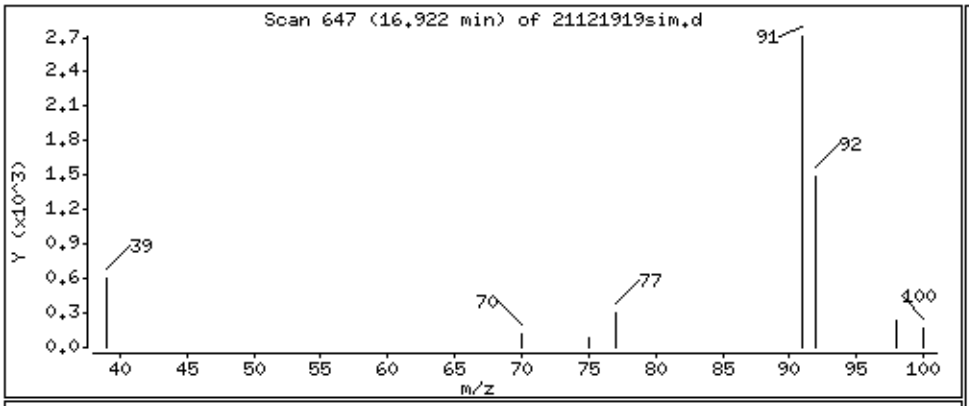
Operator: sw

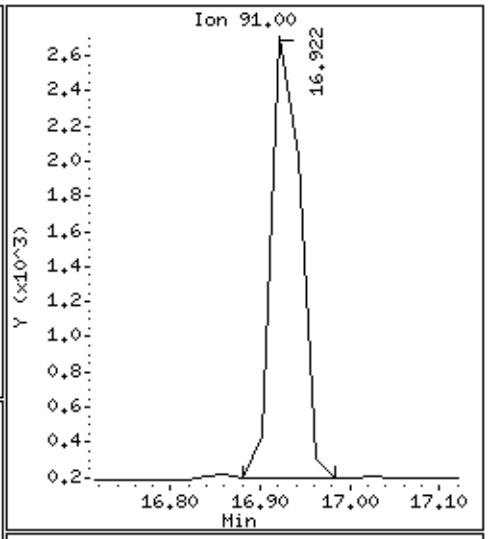
Column phase: RTX-624

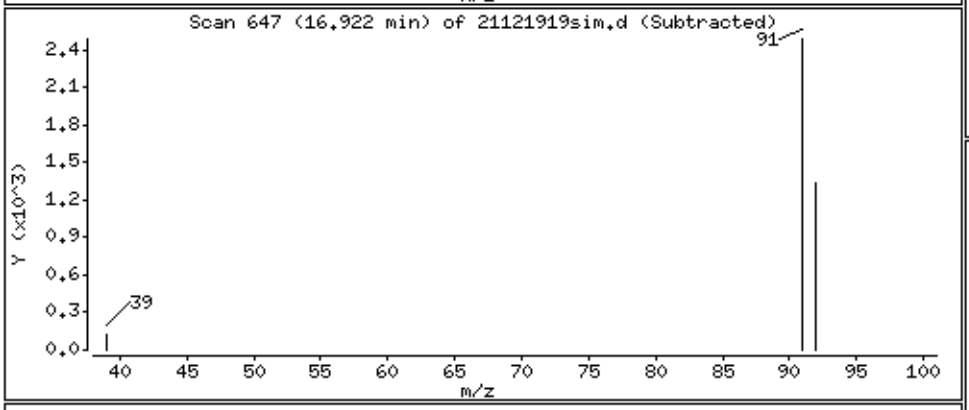
Column diameter: 0.32

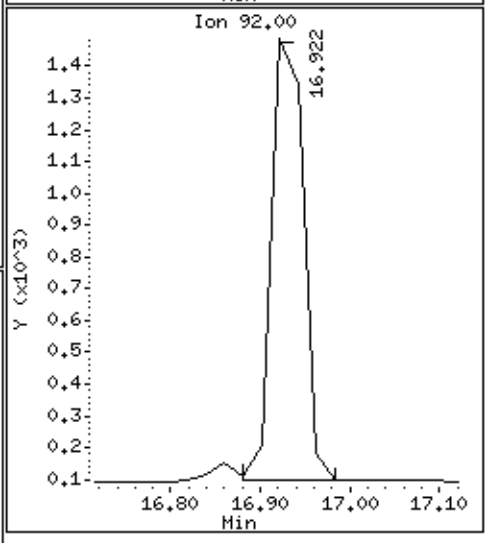
23 Toluene

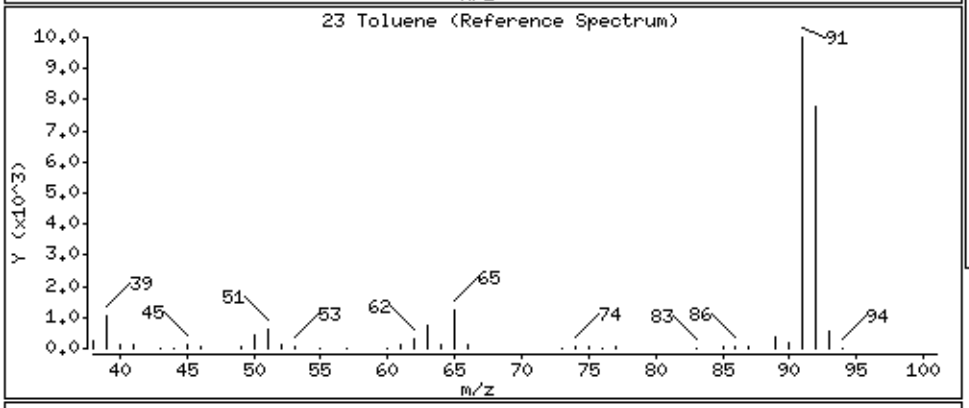
Concentration: 0.06569 PPBV

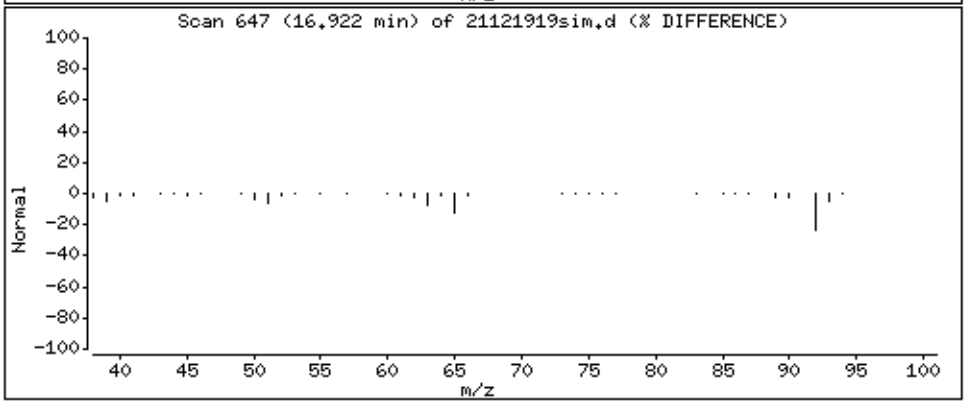












Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2559

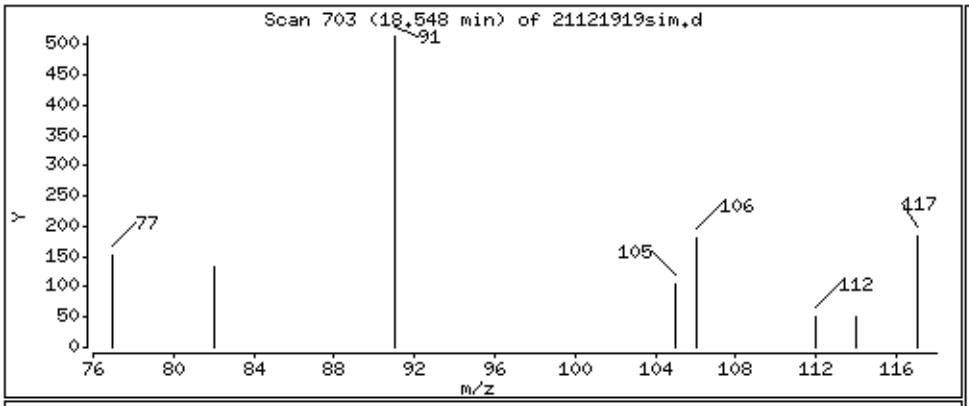
Operator: sw

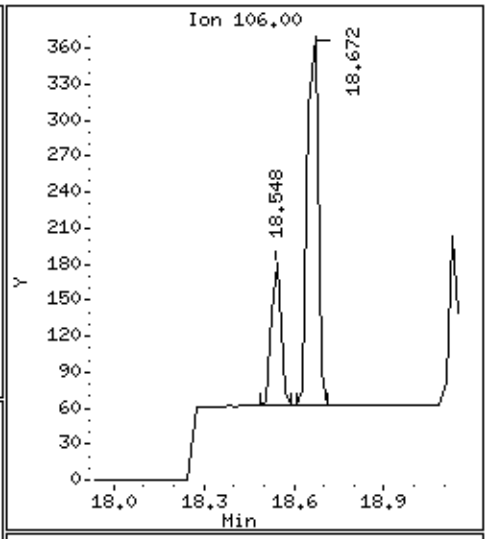
Column phase: RTX-624

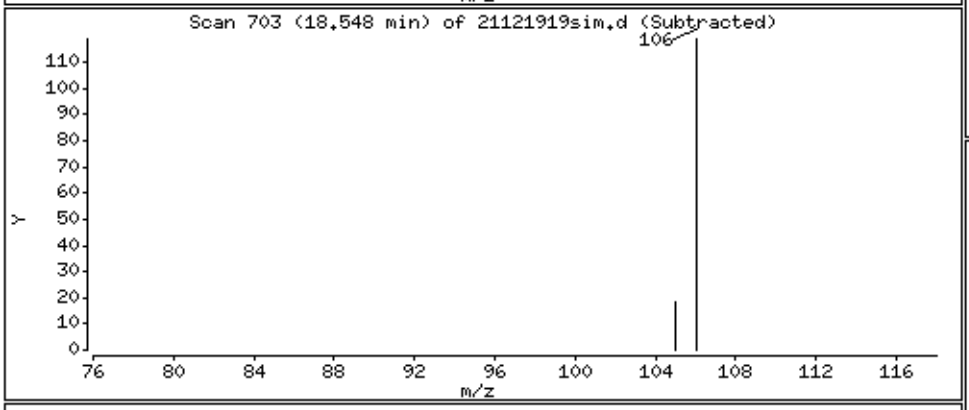
Column diameter: 0.32

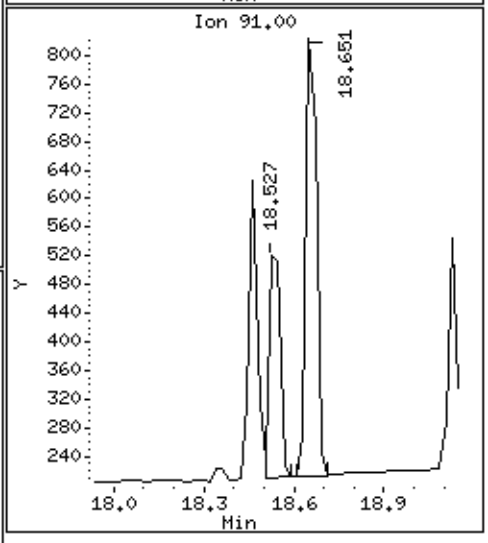
30 Ethyl Benzene

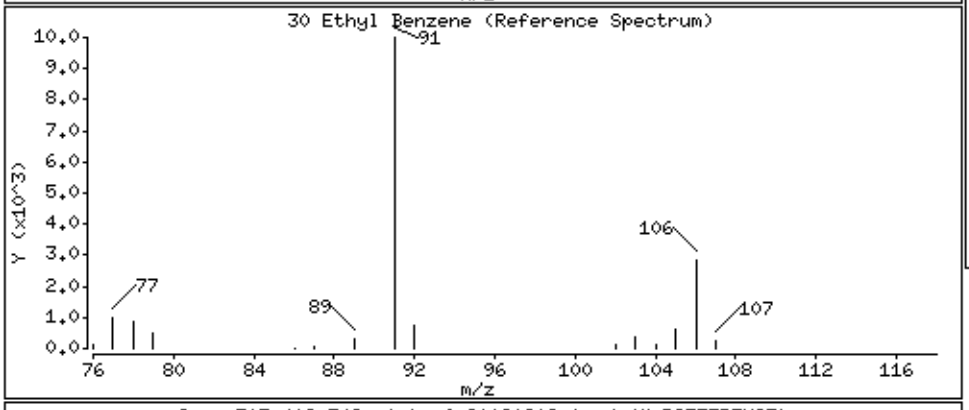
Concentration: 0.009475 PPBV

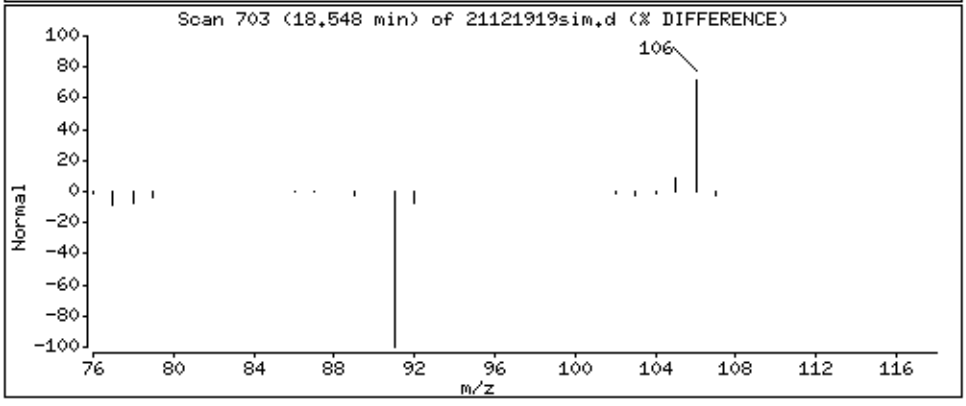












Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2559

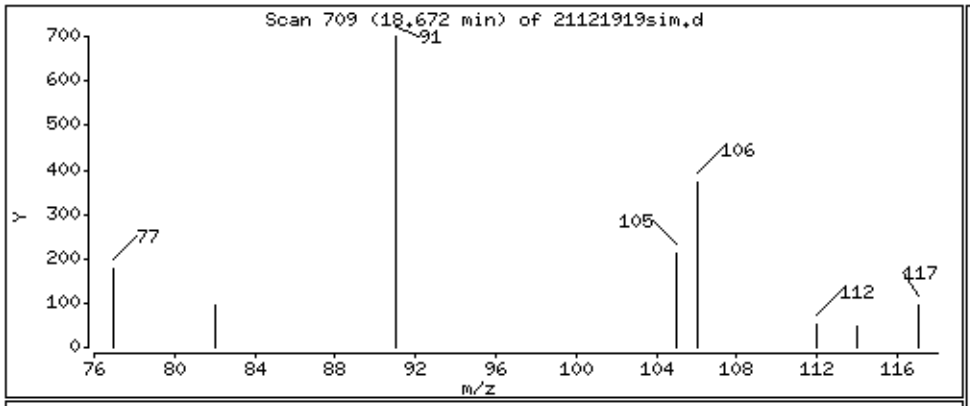
Operator: sw

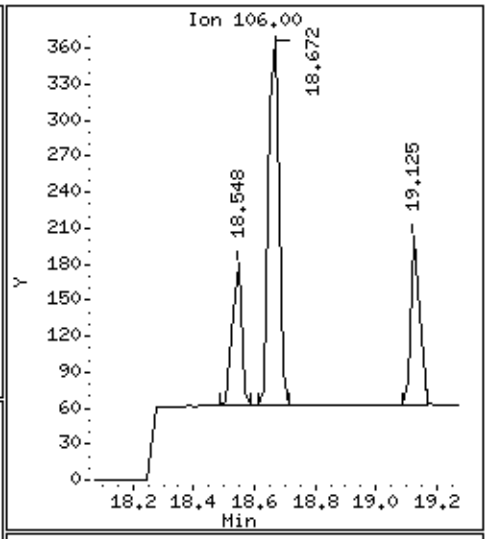
Column phase: RTX-624

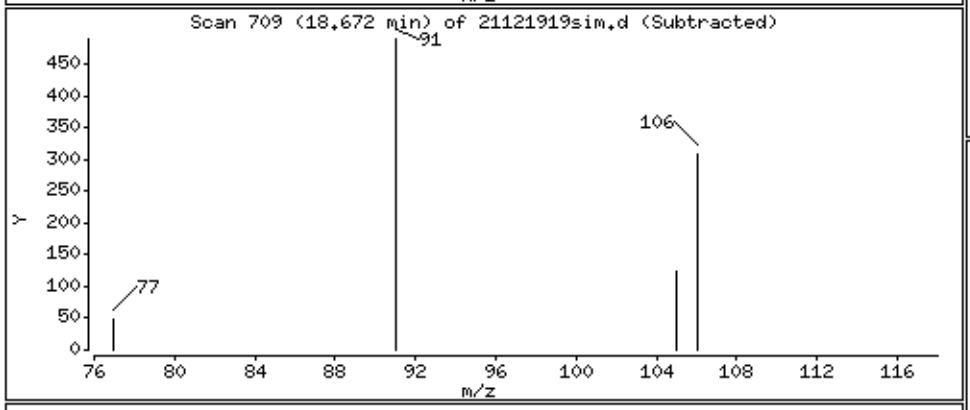
Column diameter: 0.32

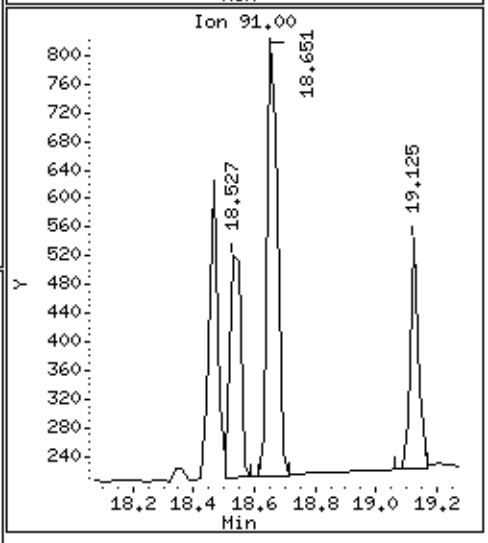
31 m,p-Xylene

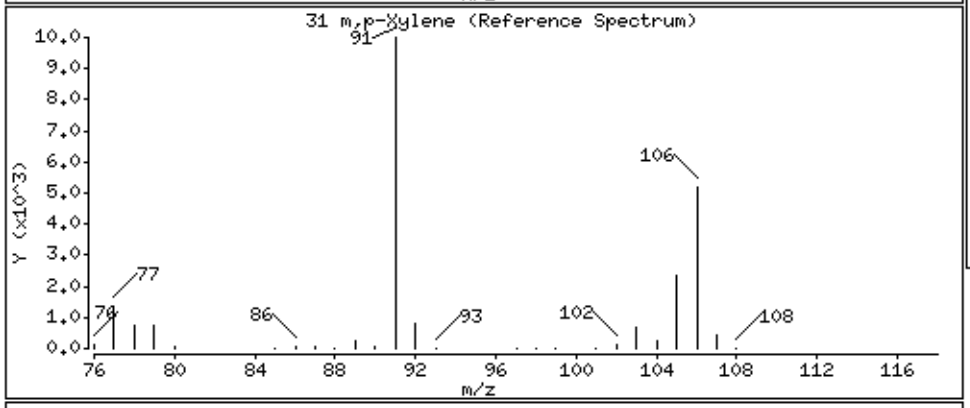
Concentration: 0.02733 PPBV

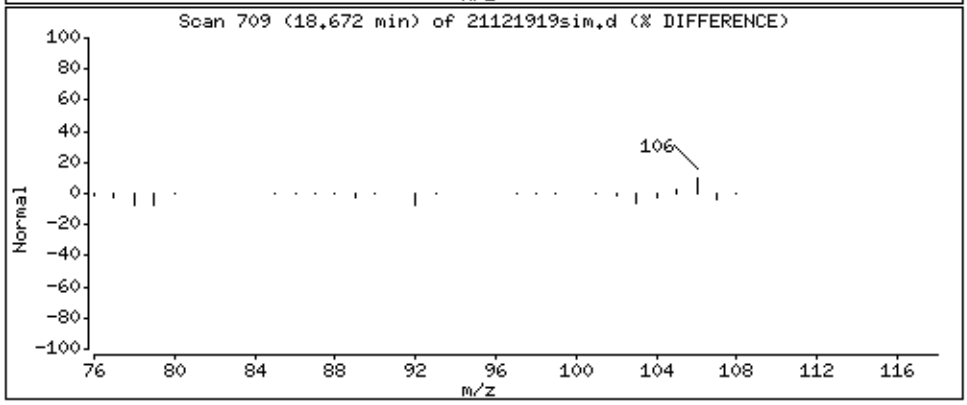












Data File: /chem/msd21.i/19dec17.b/21121919sim.d

Date : 19-DEC-2017 22:19

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2559

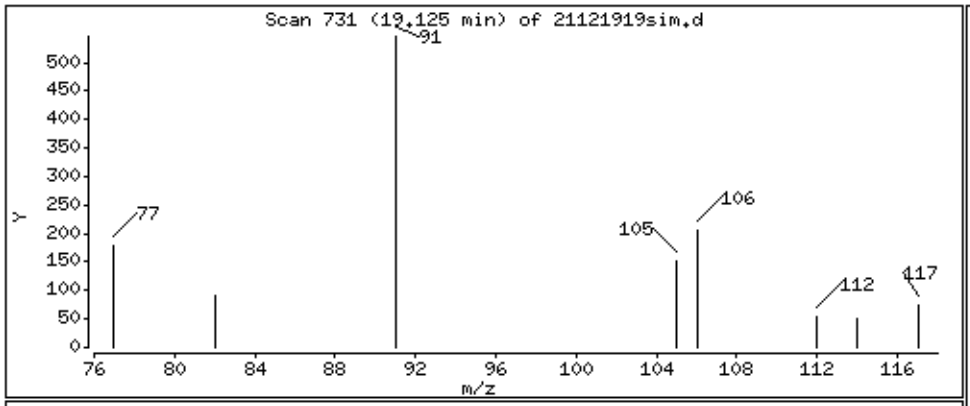
Operator: sw

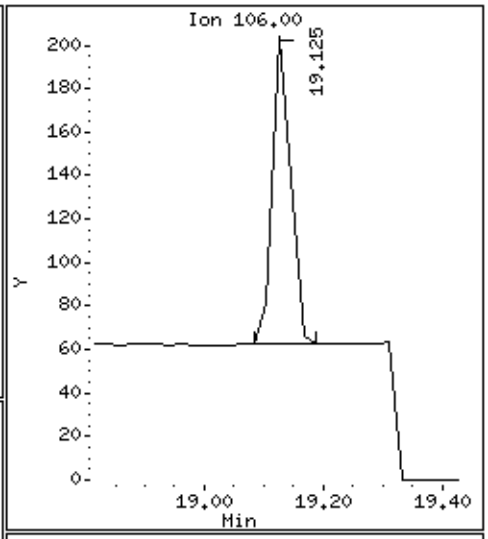
Column phase: RTX-624

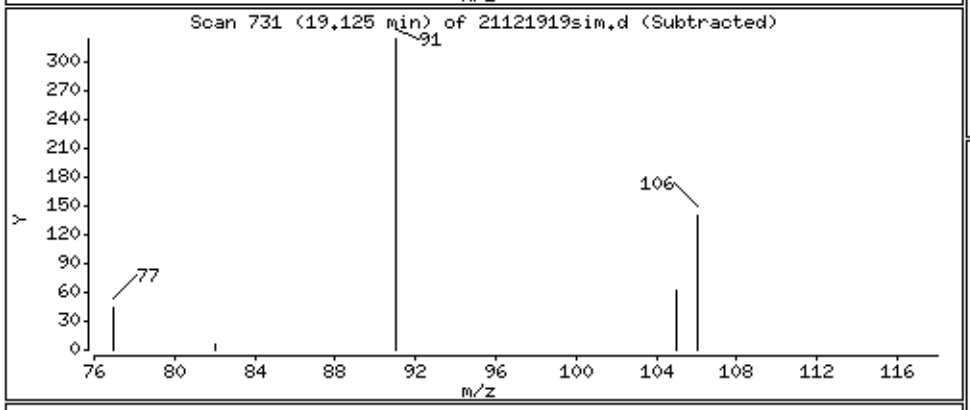
Column diameter: 0.32

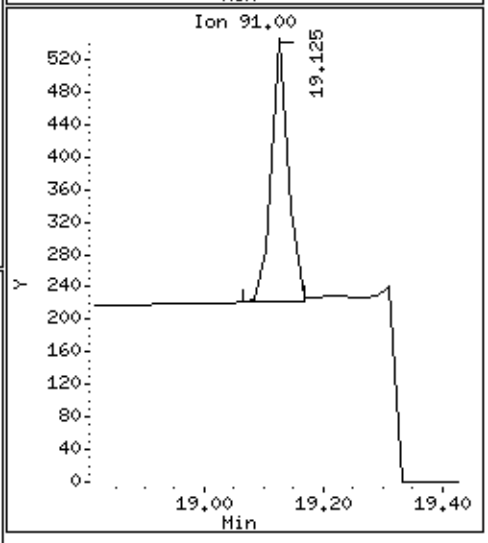
32 o-Xylene

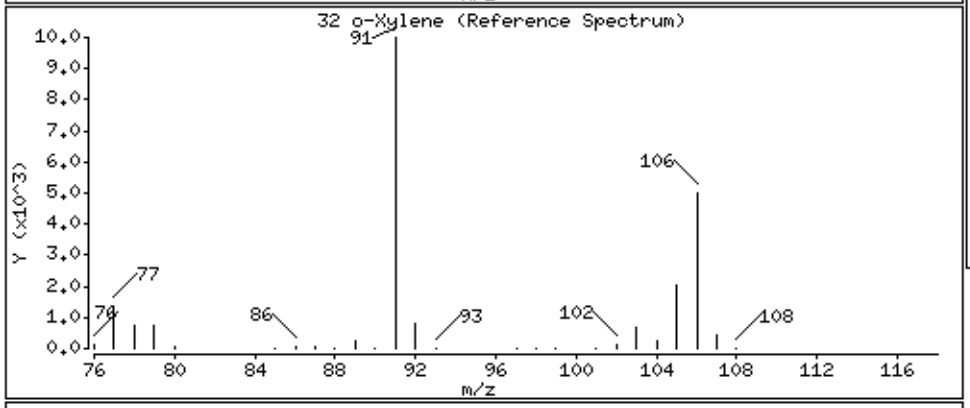
Concentration: 0.01192 PPBV

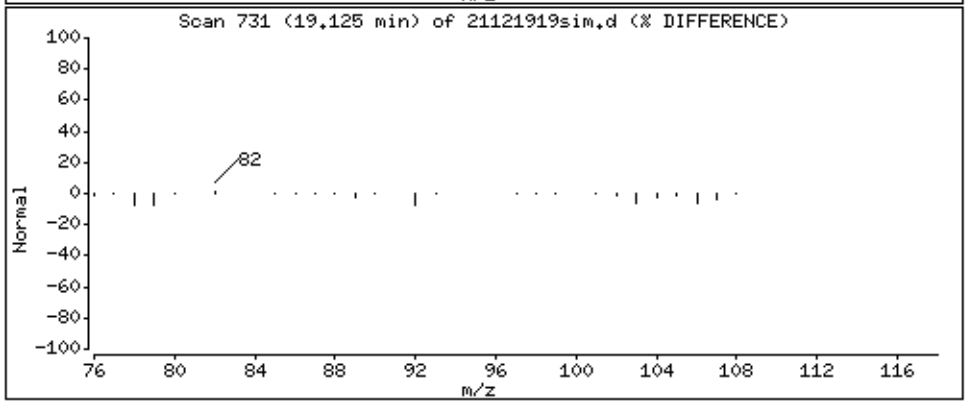












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA9_1217		
Lab ID:	1712342-12A	**Date/Time Analyzed:**	12/19/17 10:53 PM
Date/Time Collecte	12/14/17 02:51 PM	**Dilution Factor:**	1.75
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121920sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.070	0.070	0.28	0.30
Ethyl Benzene	100-41-4	0.0041	0.038	0.15	0.045 J
m,p-Xylene	108-38-3	0.0098	0.038	0.30	0.14 J
Naphthalene	91-20-3	0.068	0.092	0.46	Not Detected U
o-Xylene	95-47-6	0.0078	0.038	0.15	0.059 J
Toluene	108-88-3	0.033	0.033	0.13	0.27
Total Xylenes	9999-9999-015	NA	D	0.46	Not Detected

J = Estimated value.
U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121920sim.d
Lab Smp Id: 1712342-12A
Inj Date : 19-DEC-2017 22:53
Operator : sw Inst ID: msd21.i
Smp Info : 250mL# N2764
Misc Info : 6.9"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.75000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	107869	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	83774			47.49- 107.49	77.66
14.274	14.298 (1.000)	49	156233			114.87- 174.87	144.84
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	527472	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	89627			0.00- 46.92	16.99
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	401248	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	223575			25.29- 85.29	55.72
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	156151	5.57352	5.574	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	87763			30.16- 90.16	56.20
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	453787	4.90113	4.901	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55928			0.00- 42.34	12.32

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	308905			38.15- 98.15	68.07
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	156111	4.50158	4.502	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	187562			88.82- 148.82	120.15
19.787	19.787 (1.072)	176	153186			68.26- 128.26	98.13
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	7926	0.05371	0.09400	80.00- 120.00	100.00
14.922	14.921 (0.974)	77	2079			0.00- 52.85	26.24
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	5968	0.04138	0.07242	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	3642			33.44- 93.44	61.02
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	262	0.00589	0.01030	80.00- 120.00	100.00(a)
18.548	18.548 (1.004)	91	820			259.51- 319.51	312.76
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	787	0.01808	0.03164	80.00- 120.00	100.00(a)
18.651	18.672 (1.010)	91	1579			159.47- 219.47	200.63
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	309	0.00782	0.01368	80.00- 120.00	100.00(a)
19.126	19.125 (1.036)	91	643			168.52- 228.52	208.02

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121920sim.d
Lab Smp Id: 1712342-12A
Analysis Type: VOA
Quant Type: ISTD
Operator: sw
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.9"Hg -> 5.1psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	107869	-10.07
20 1,4-Difluorobenze	564150	338490	789810	527472	-6.50
28 Chlorobenzene-d5	433051	259831	606271	401248	-7.34

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:02

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-12A
Level: LOW Operator: sw
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.9"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.574	111.47	70-130
$ 22 Toluene-d8	5.000	4.901	98.02	70-130
$ 33 4-Bromofluorobenze	5.000	4.502	90.03	70-130

Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

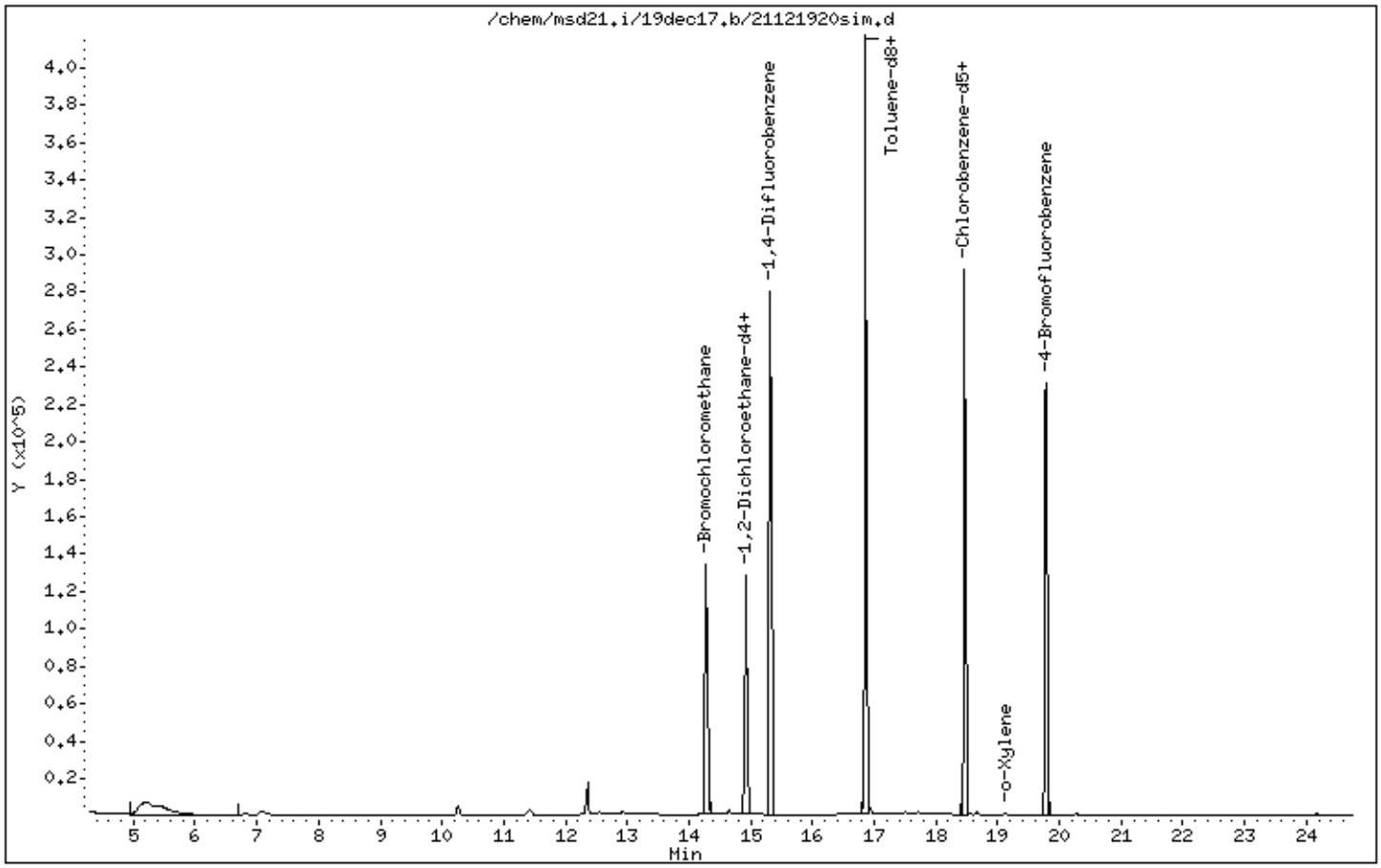
Instrument: msd21.i

Sample Info: 250mL# N2764

Operator: sw

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2764

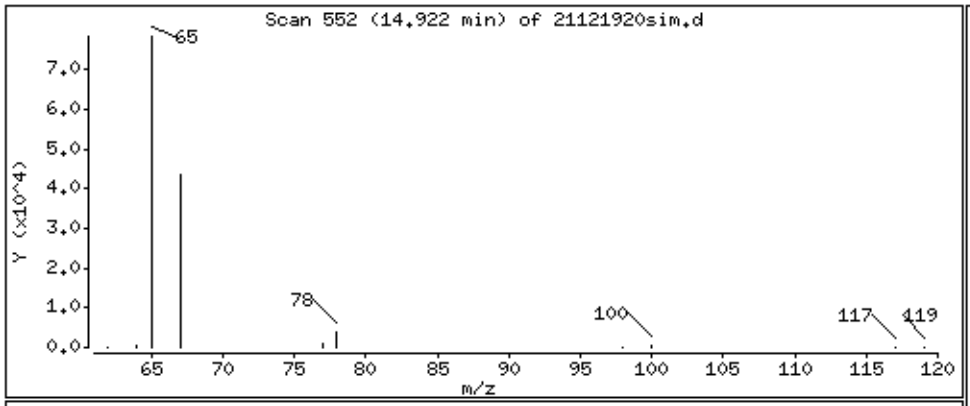
Operator: sw

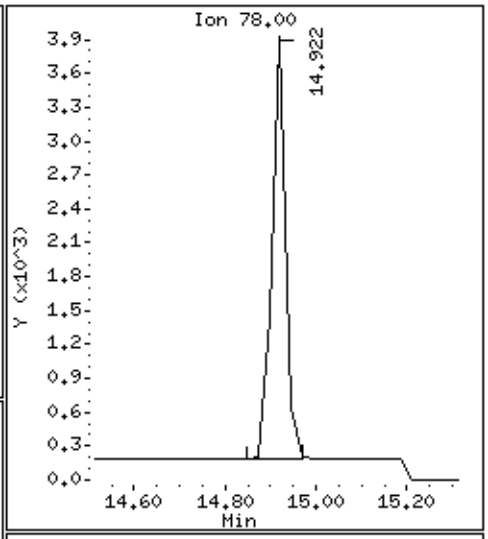
Column phase: RTX-624

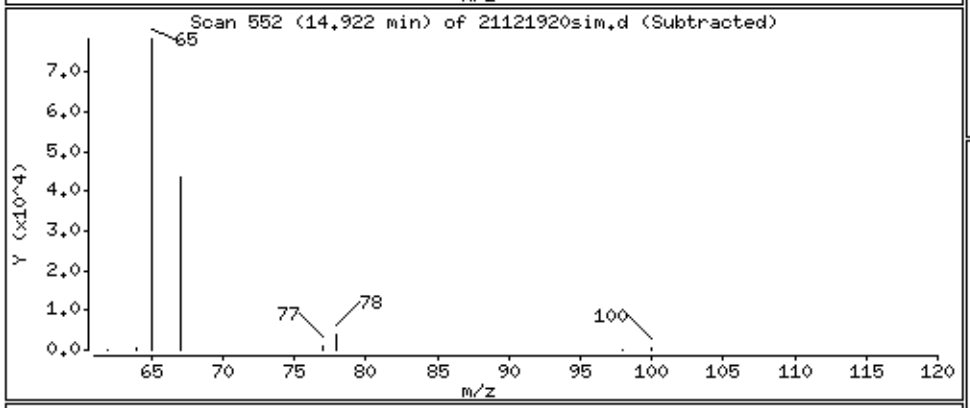
Column diameter: 0.32

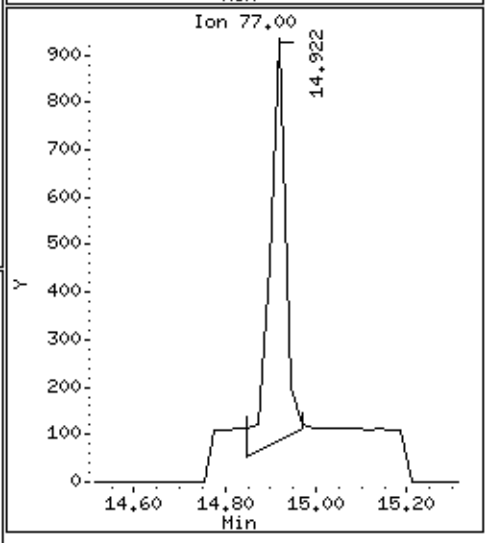
17 Benzene

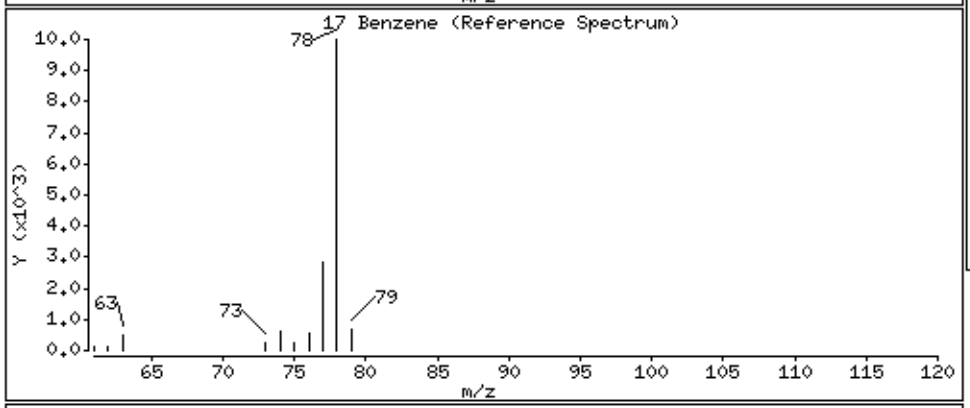
Concentration: 0.09400 PPBV

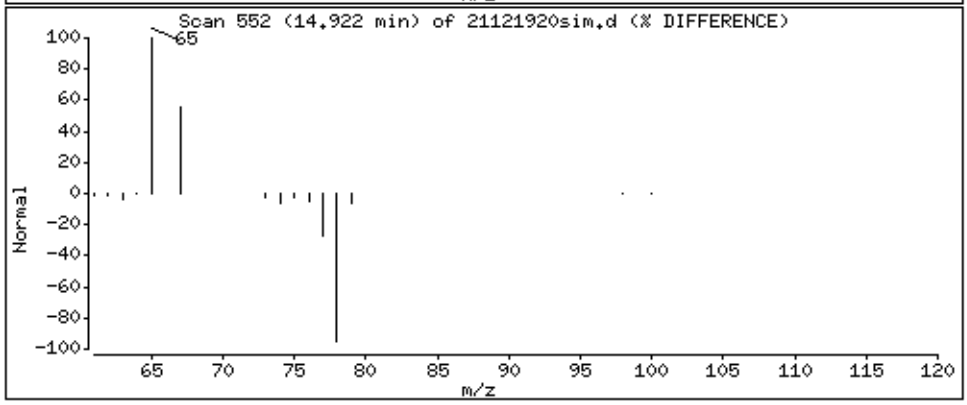












Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2764

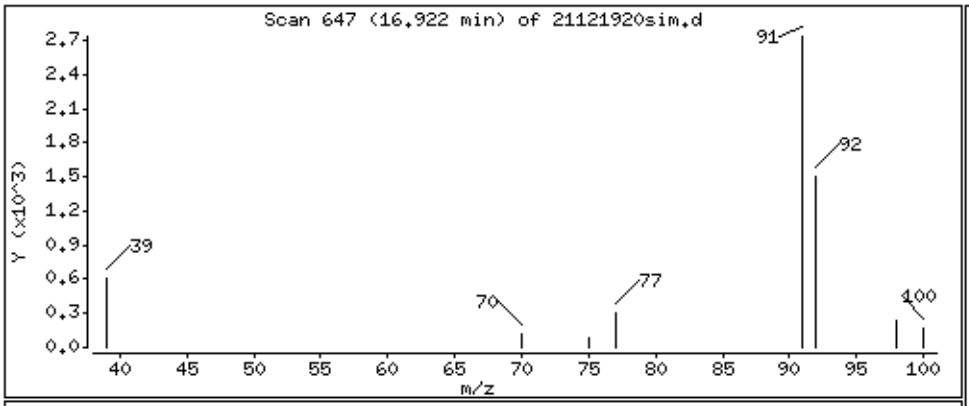
Operator: sw

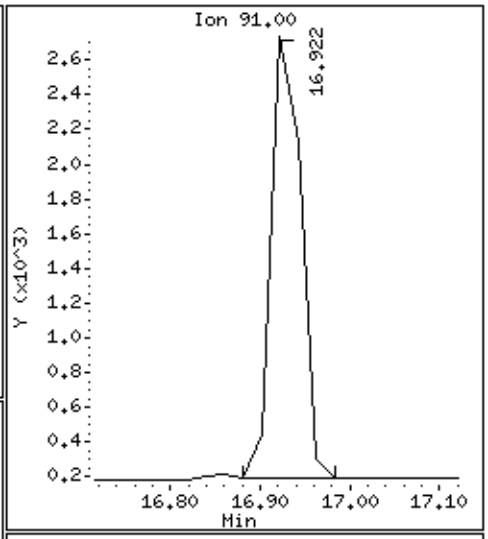
Column phase: RTX-624

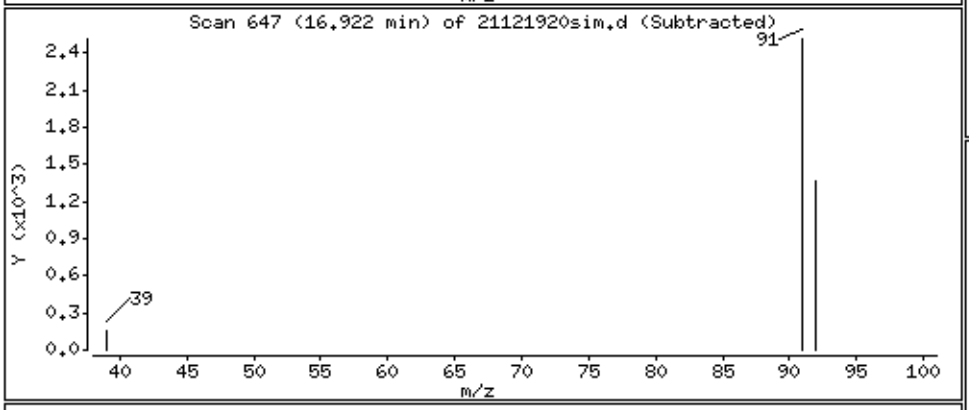
Column diameter: 0.32

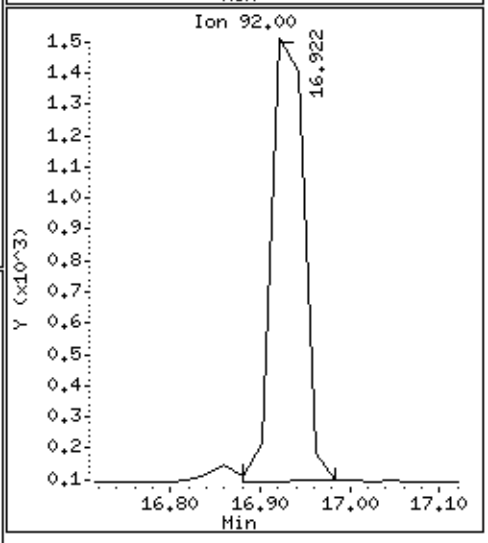
23 Toluene

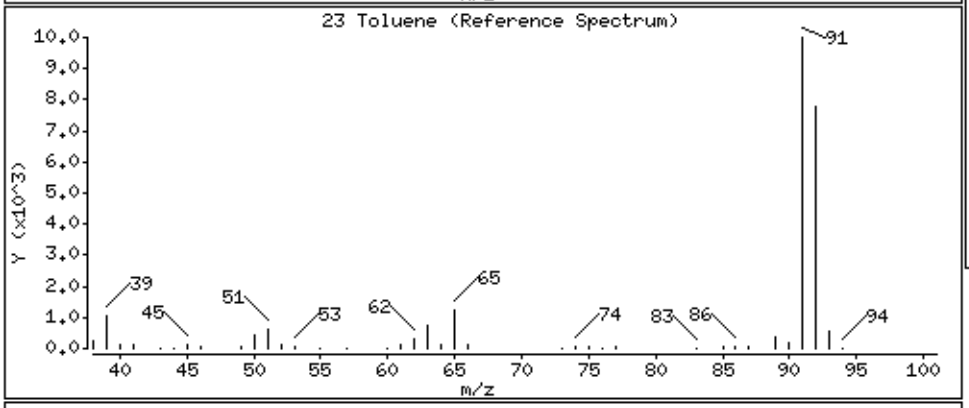
Concentration: 0.07242 PPBV

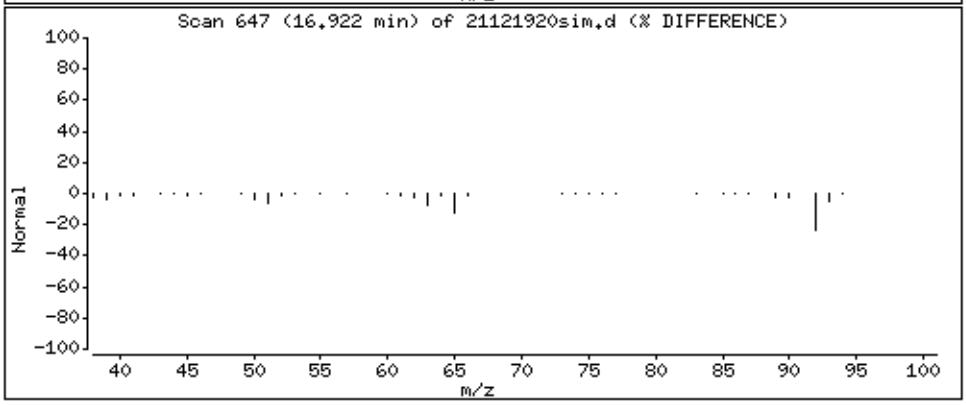












Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2764

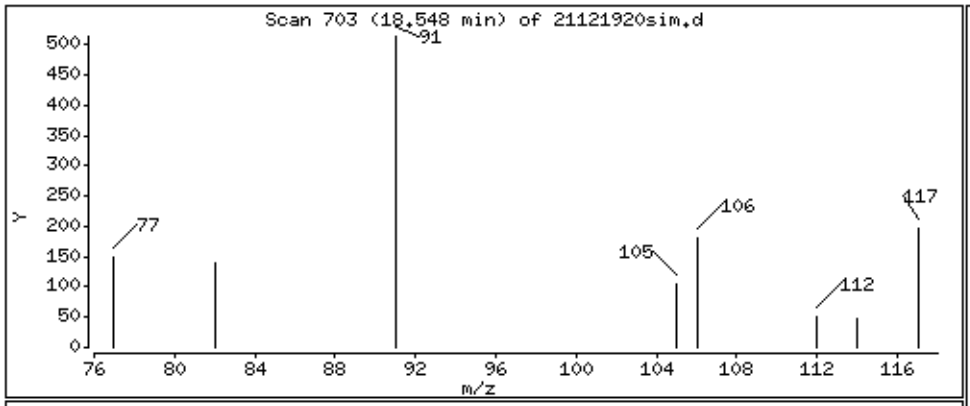
Operator: sw

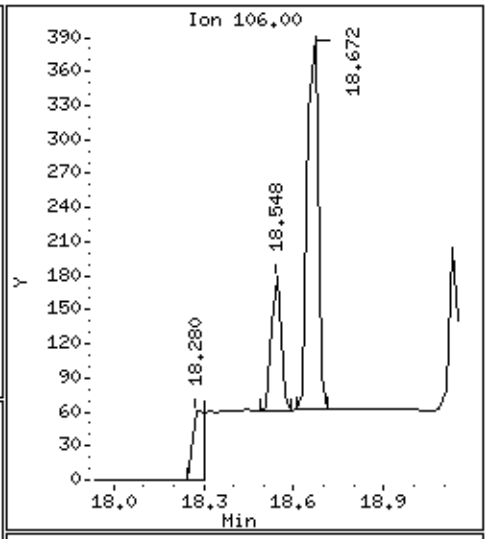
Column phase: RTX-624

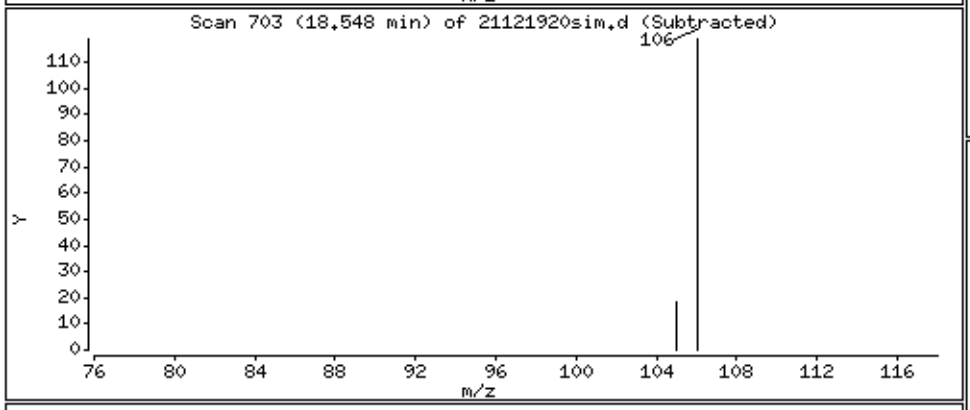
Column diameter: 0.32

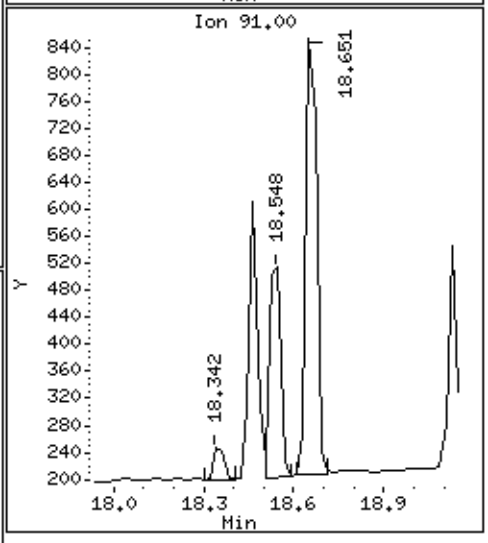
30 Ethyl Benzene

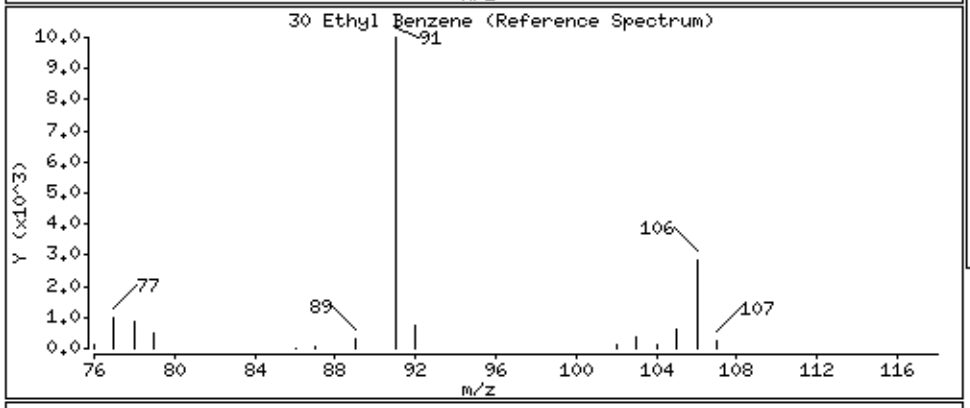
Concentration: 0.01030 PPBV

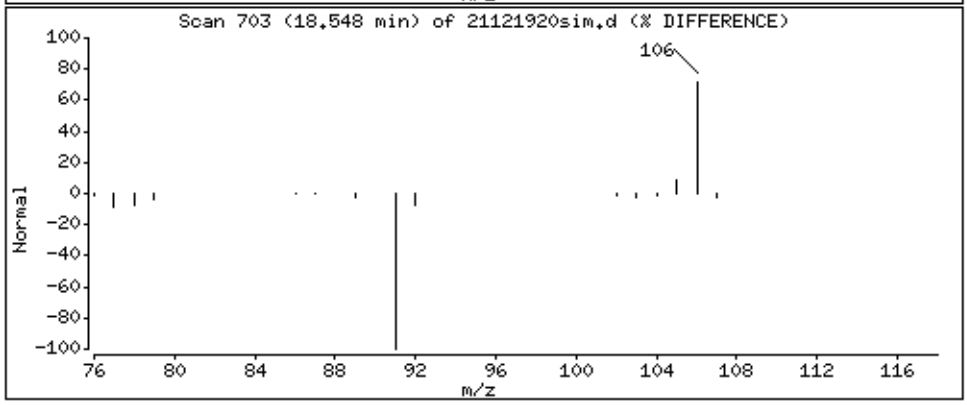












Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2764

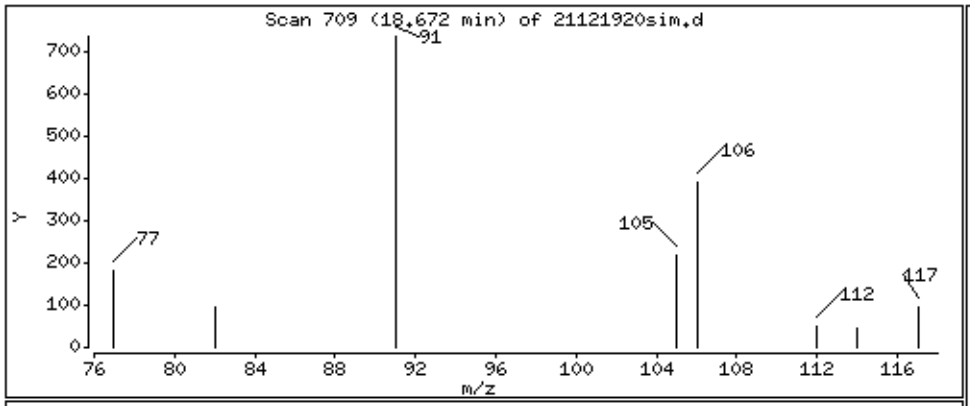
Operator: sw

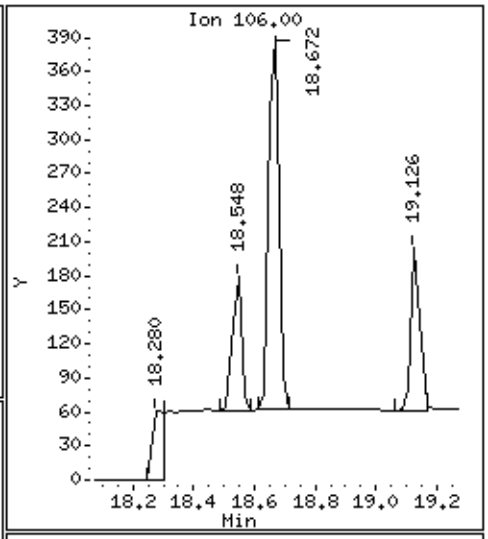
Column phase: RTX-624

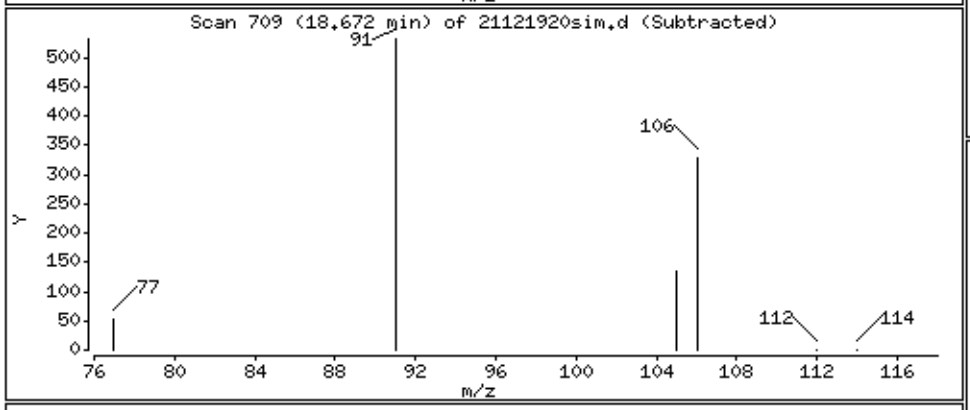
Column diameter: 0.32

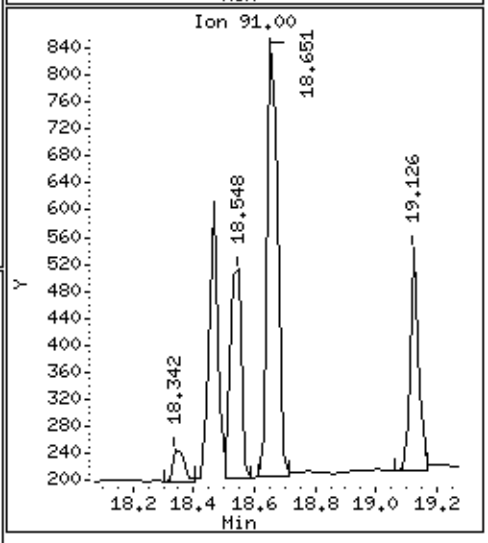
31 m,p-Xylene

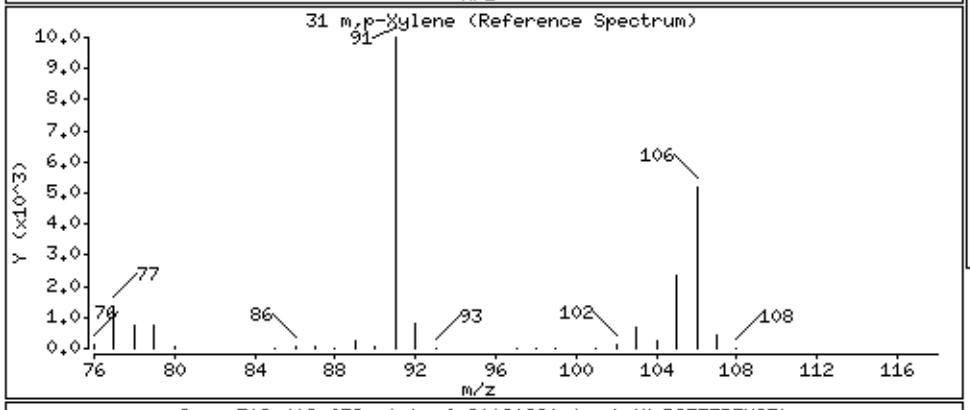
Concentration: 0.03164 PPBV

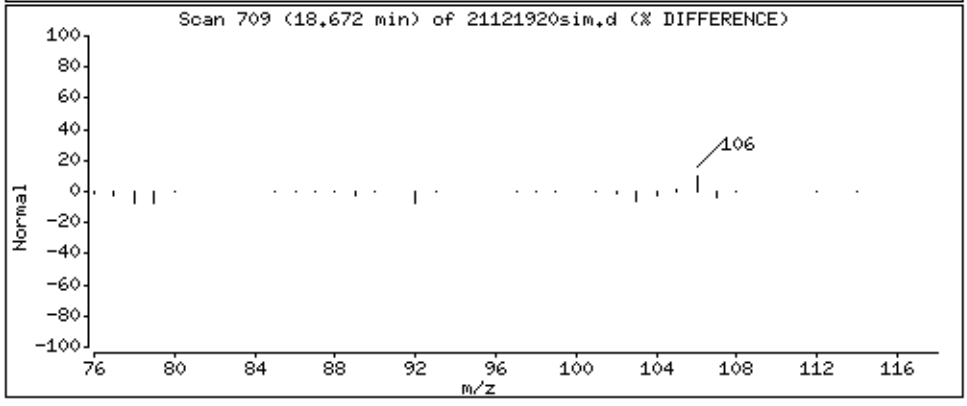












Data File: /chem/msd21.i/19dec17.b/21121920sim.d

Date : 19-DEC-2017 22:53

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N2764

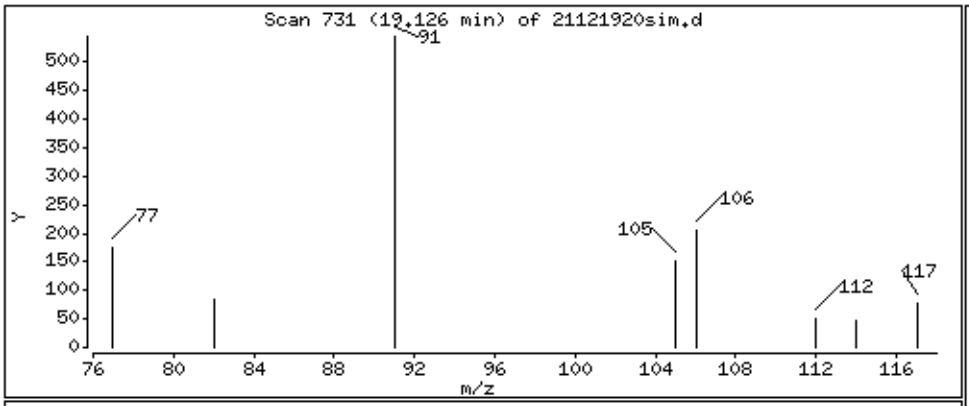
Operator: sw

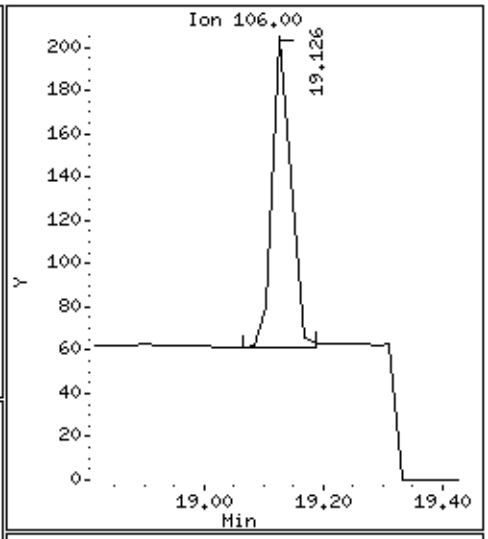
Column phase: RTX-624

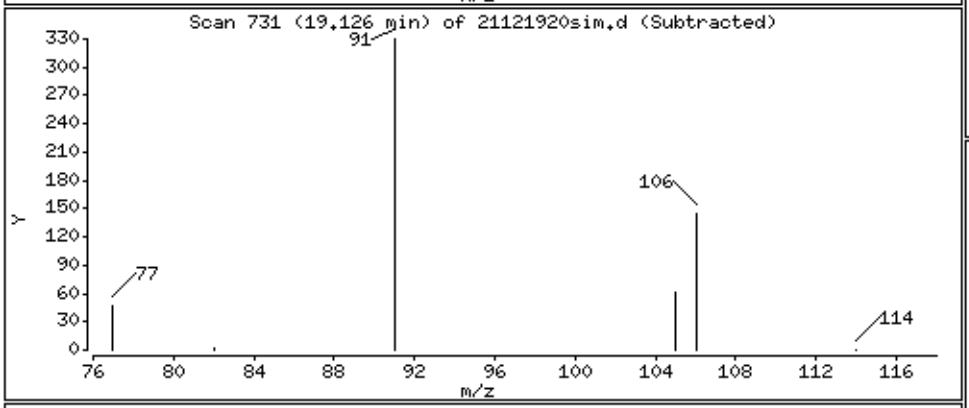
Column diameter: 0.32

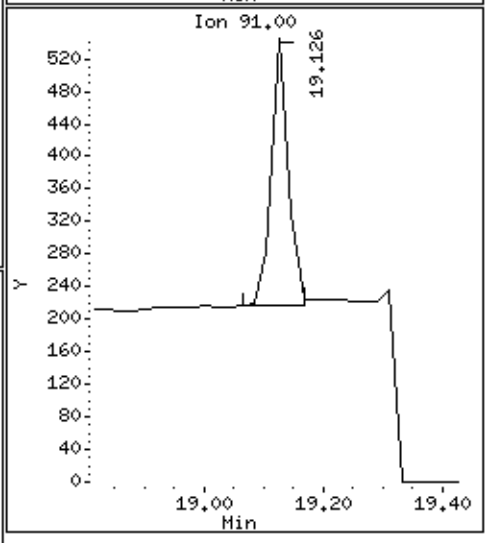
32 o-Xylene

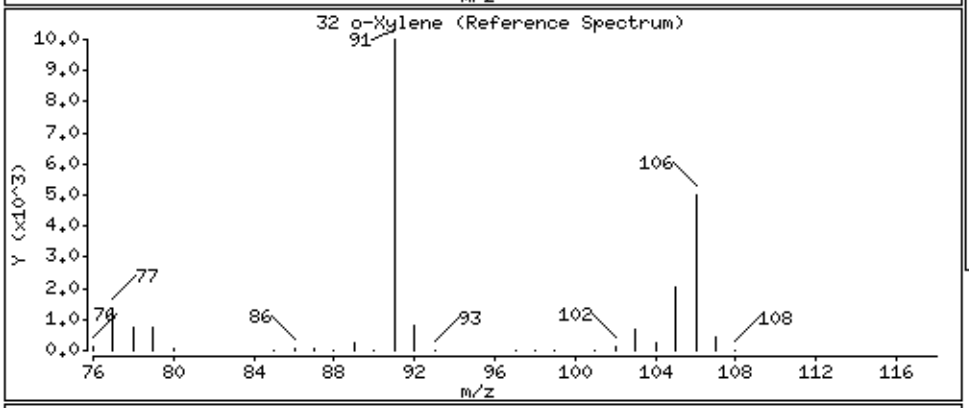
Concentration: 0.01368 PPBV

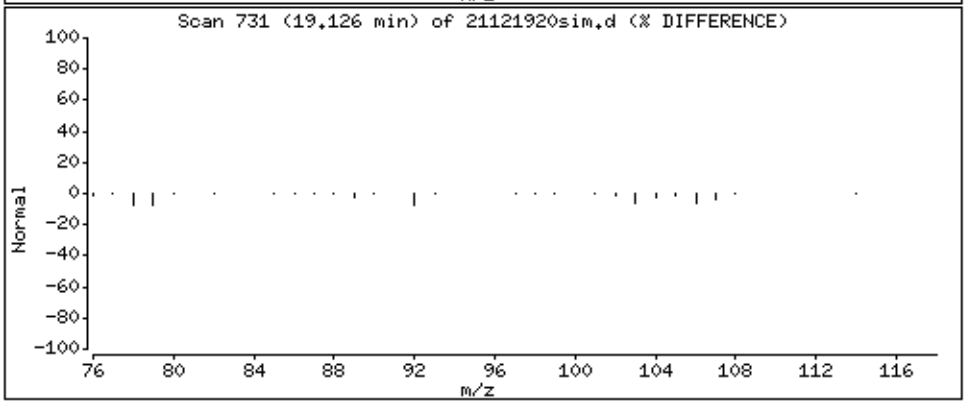












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA10_1217		
Lab ID:	1712342-13A	**Date/Time Analyzed:**	12/20/17 07:00 AM
Date/Time Collecte	12/14/17 03:12 PM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21121921sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.067	0.067	0.27	0.51
Ethyl Benzene	100-41-4	0.0039	0.036	0.14	0.17
m,p-Xylene	108-38-3	0.0094	0.036	0.29	0.60
Naphthalene	91-20-3	0.066	0.088	0.44	Not Detected U
o-Xylene	95-47-6	0.0074	0.036	0.14	0.22
Toluene	108-88-3	0.032	0.032	0.13	0.92
Total Xylenes	9999-9999-015	NA	D	0.44	0.83

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	101

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121921sim.d
Lab Smp Id: 1712342-13A
Inj Date : 20-DEC-2017 07:00
Operator : EA Inst ID: msd21.i
Smp Info : 250mL# N1810
Misc Info : 6.3"Hg ->4.8psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.68000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	110150	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	85555			47.49- 107.49	77.67
14.274	14.298 (1.000)	49	158110			114.87- 174.87	143.54
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	526982	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	89209			0.00- 46.92	16.93
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	422446	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	235908			25.29- 85.29	55.84
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	157874	5.51834	5.518	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	88724			30.16- 90.16	56.20
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	465872	5.03633	5.036	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	57314			0.00- 42.34	12.30

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.860	16.860 (1.101)	100	318643			38.15- 98.15	68.40
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.787	19.787 (1.072)	174	179338	4.91185	4.912	80.00- 120.00	100.00
	19.768	19.787 (1.071)	95	214112			88.82- 148.82	119.39
	19.787	19.787 (1.072)	176	175804			68.26- 128.26	98.03
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	14139	0.09590	0.1611	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	3546			0.00- 52.85	25.08
	23 Toluene					CAS #: 108-88-3		
	16.921	16.921 (1.105)	91	20923	0.14519	0.2439	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	12716			33.44- 93.44	60.78
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	1084	0.02310	0.03881	80.00- 120.00	100.00
	18.527	18.548 (1.003)	91	3299			259.51- 319.51	304.37
	31 m,p-Xylene					CAS #: 108-38-3		
	18.672	18.672 (1.011)	106	3783	0.08254	0.1387	80.00- 120.00	100.00
	18.651	18.672 (1.010)	91	7470			159.47- 219.47	197.45
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	1287	0.03089	0.05189	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	3753			168.52- 228.52	291.65
M	39 Total Xylene					CAS #: 1330-20-7		
				5070	0.11343	0.1906		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121921sim.d
Lab Smp Id: 1712342-13A
Analysis Type: VOA
Quant Type: ISTD
Operator: EA
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.3"Hg ->4.8psi

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	110150	-8.16
20 1,4-Difluorobenze	564150	338490	789810	526982	-6.59
28 Chlorobenzene-d5	433051	259831	606271	422446	-2.45

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:22

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-13A
Level: LOW Operator: EA
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.3"Hg ->4.8psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.518	110.37	70-130
$ 22 Toluene-d8	5.000	5.036	100.73	70-130
$ 33 4-Bromofluorobenze	5.000	4.912	98.24	70-130

Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

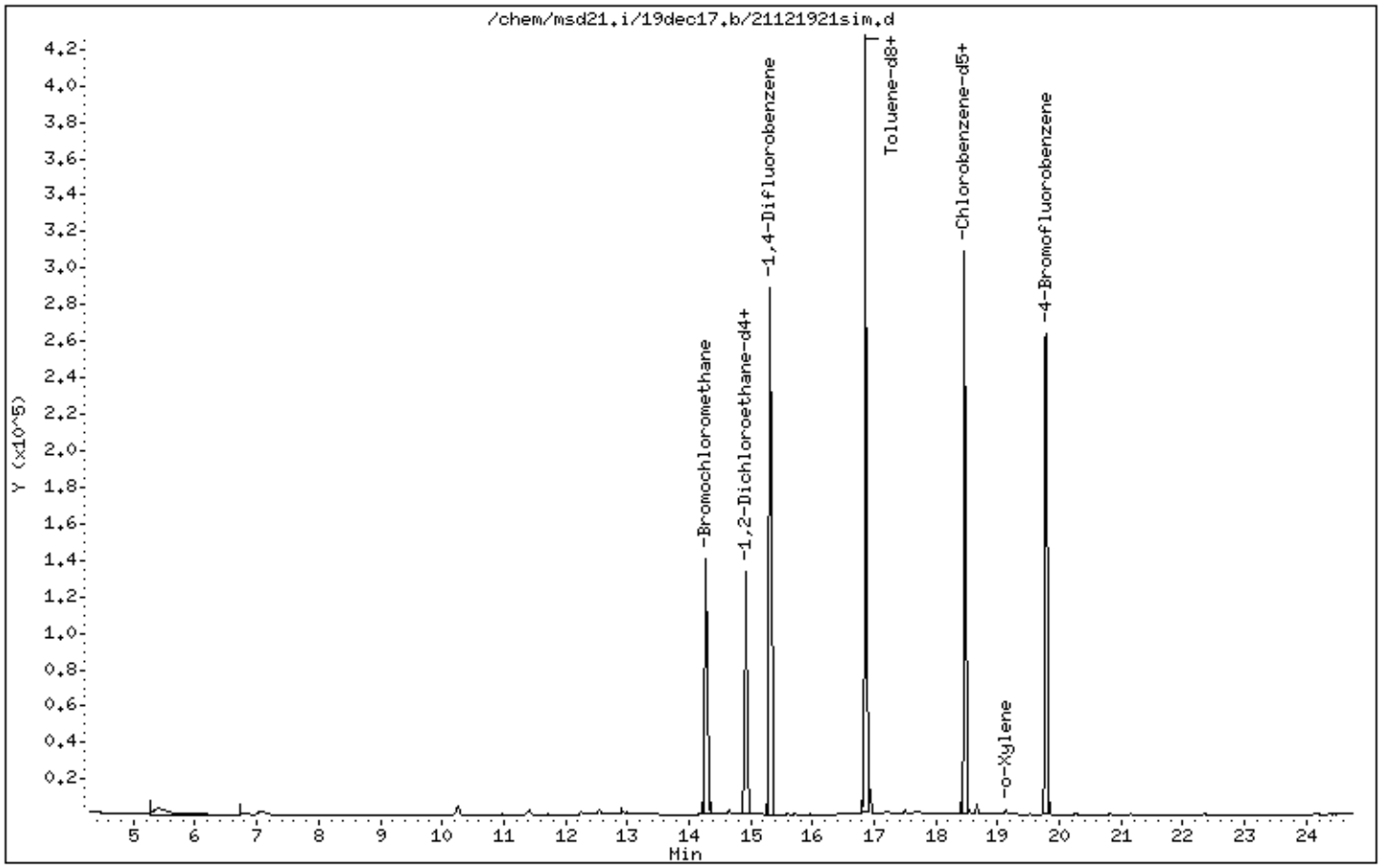
Instrument: msd21.i

Sample Info: 250mL# N1810

Operator: EA

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1810

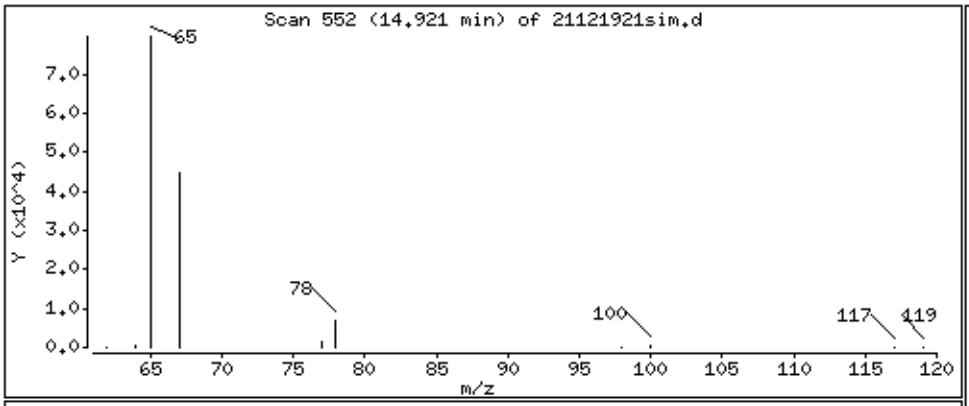
Operator: EA

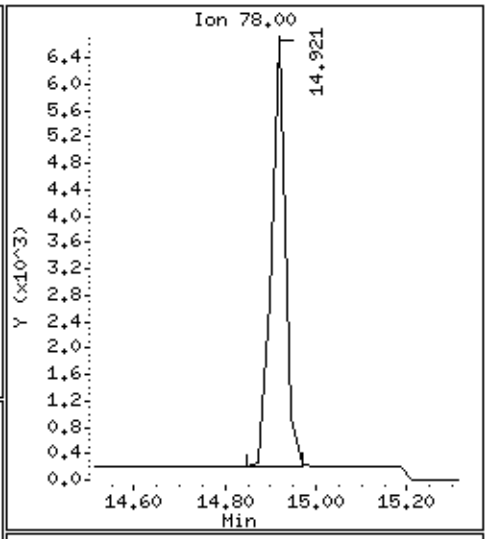
Column phase: RTX-624

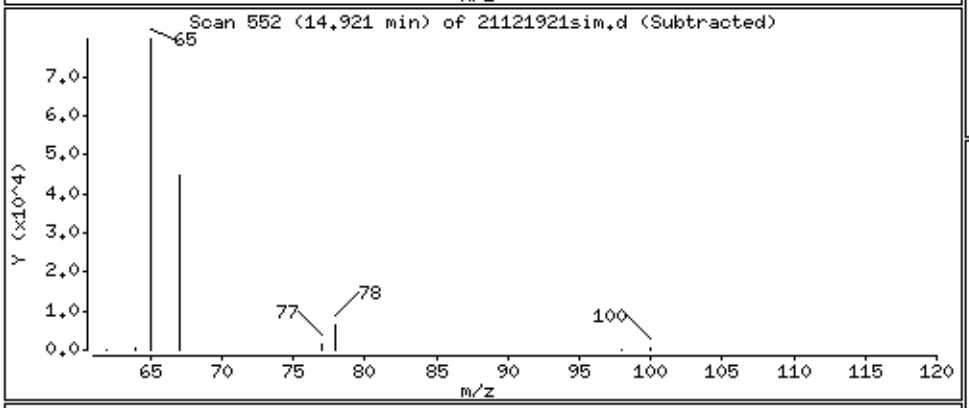
Column diameter: 0.32

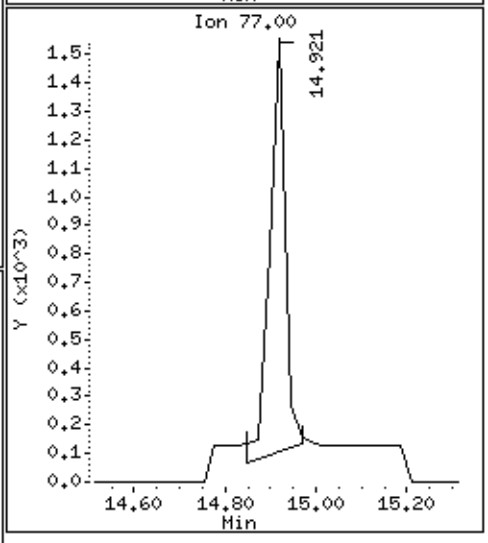
17 Benzene

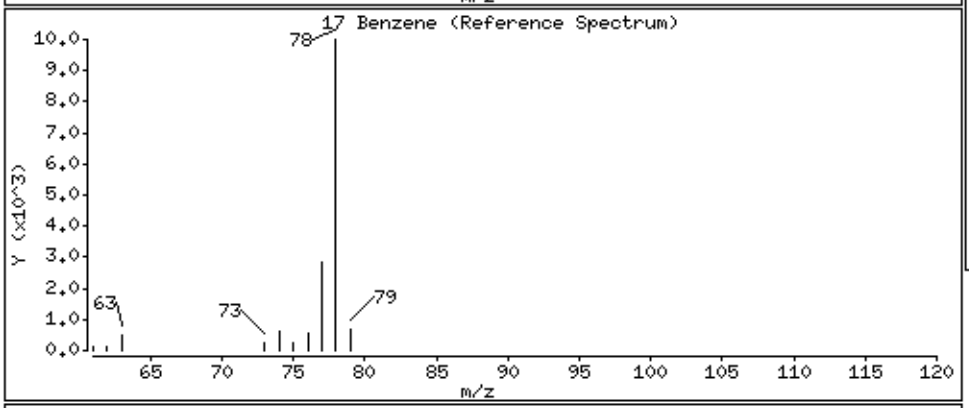
Concentration: 0.1611 PPBV

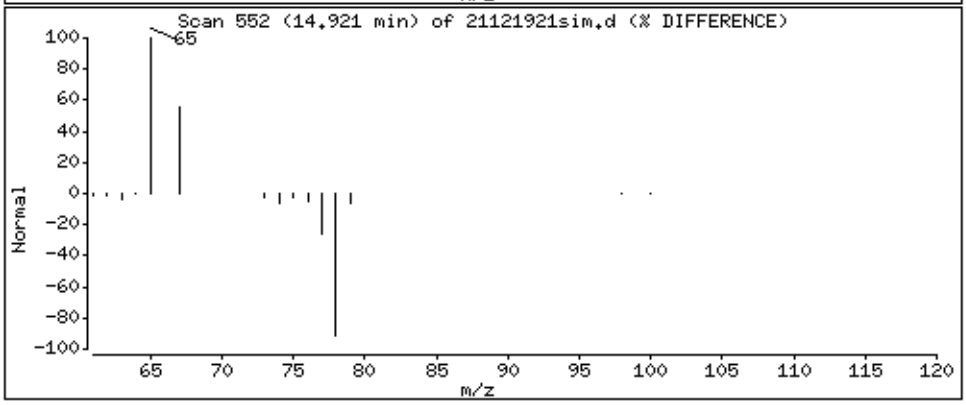












Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1810

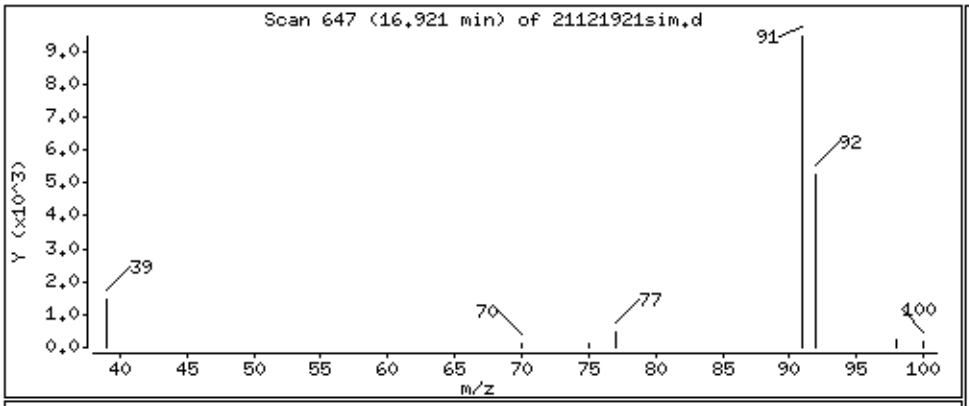
Operator: EA

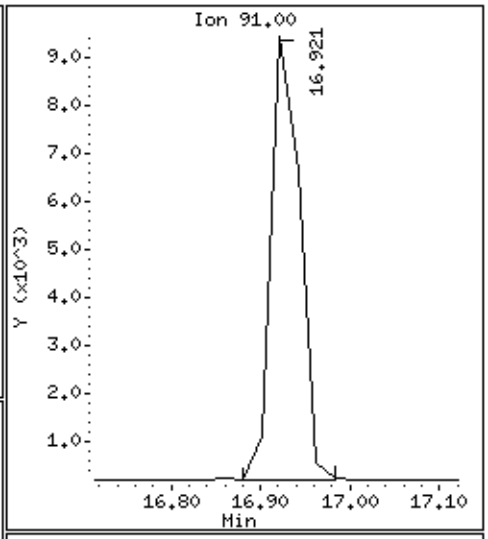
Column phase: RTX-624

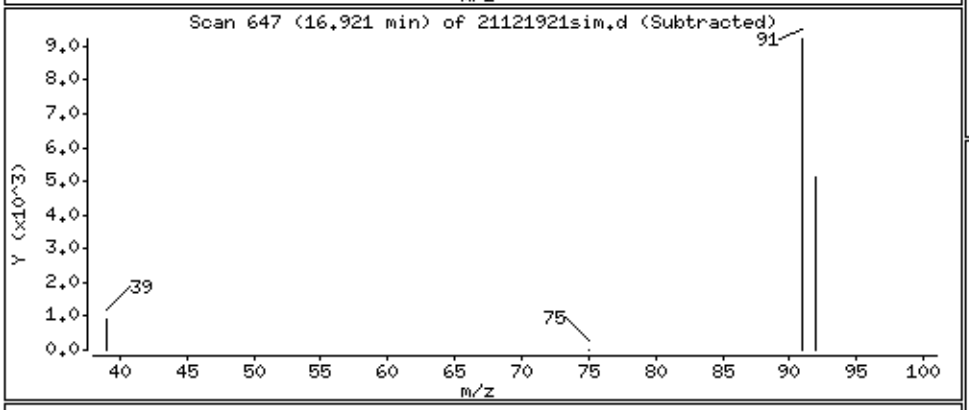
Column diameter: 0.32

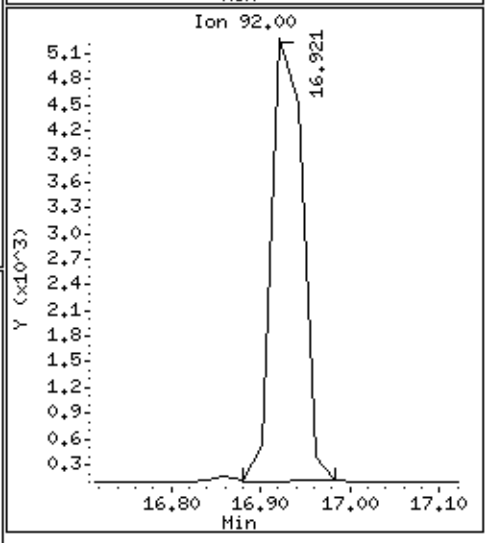
23 Toluene

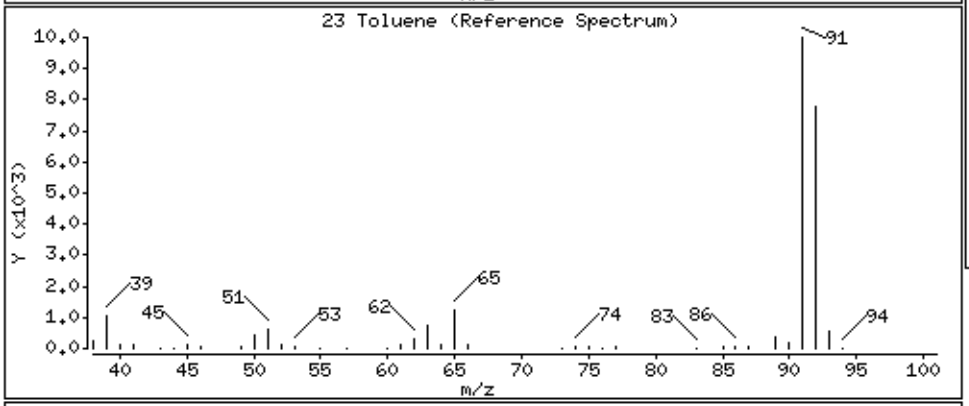
Concentration: 0.2439 PPBV

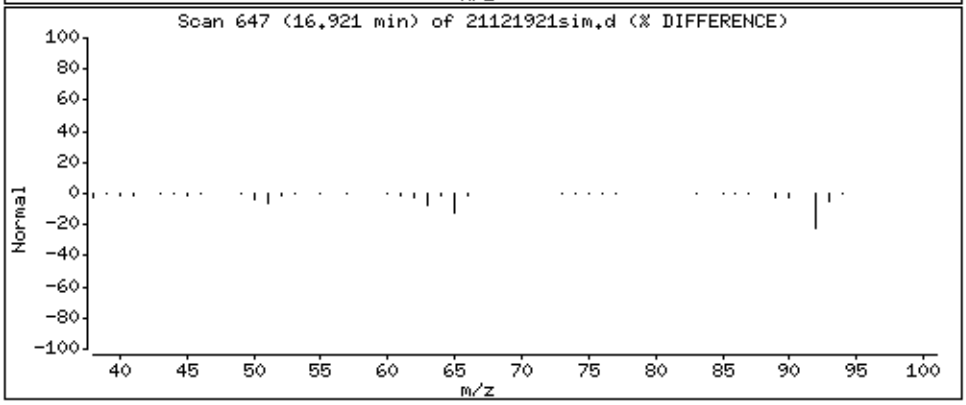












Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1810

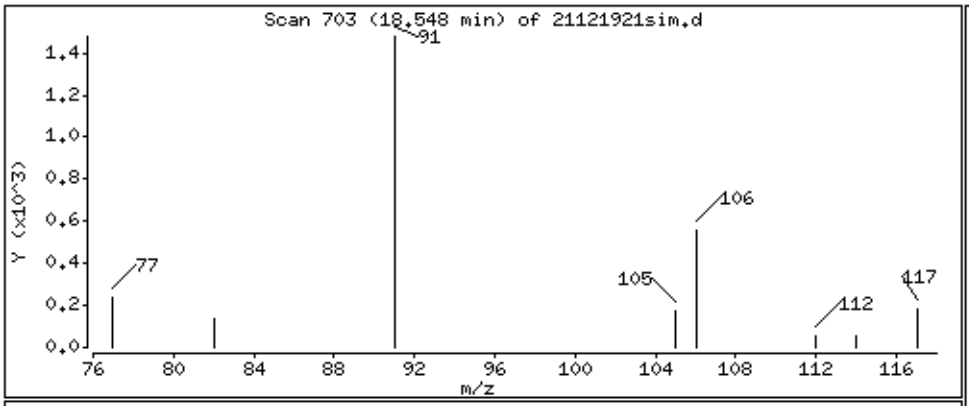
Operator: EA

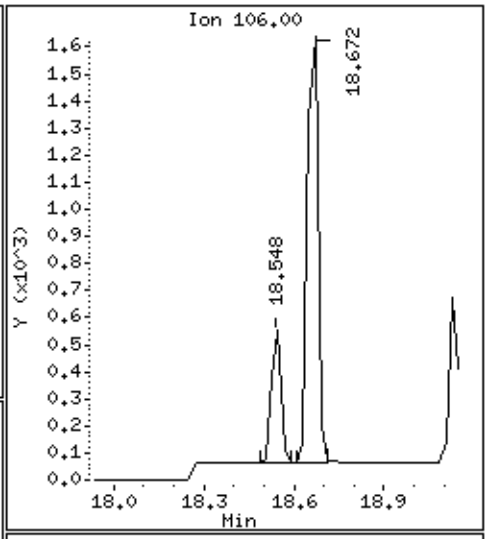
Column phase: RTX-624

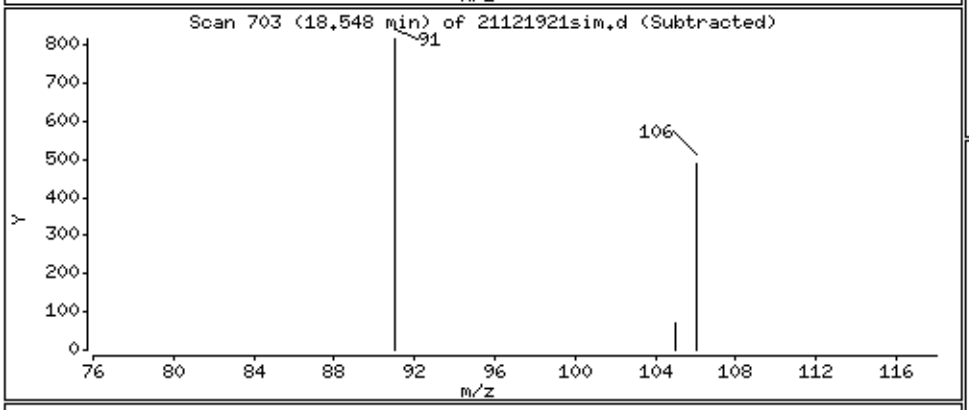
Column diameter: 0.32

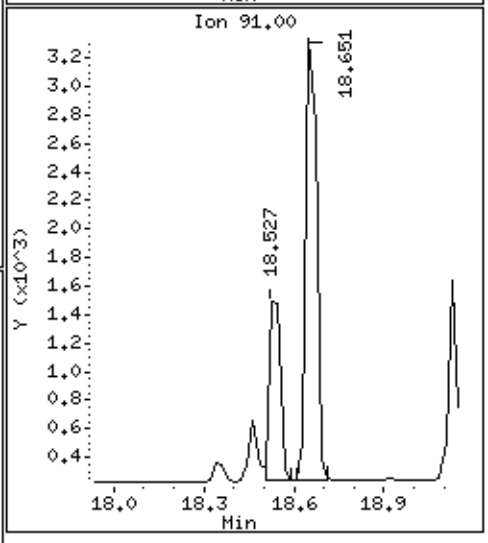
30 Ethyl Benzene

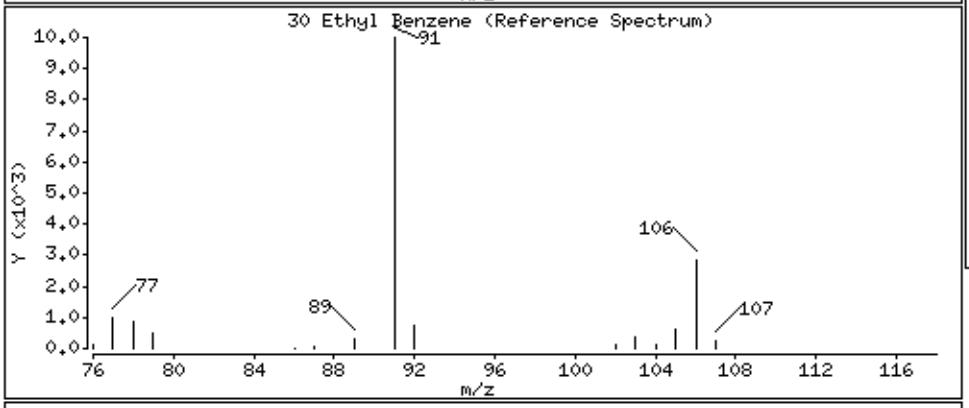
Concentration: 0.03881 PPBV

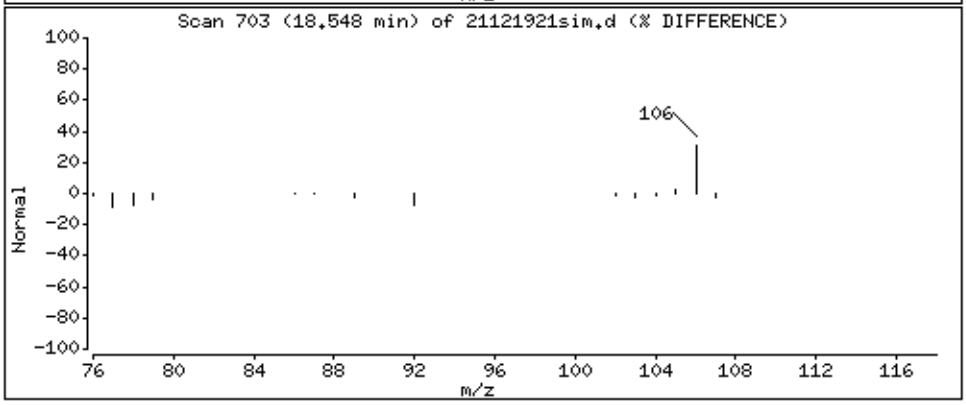












Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1810

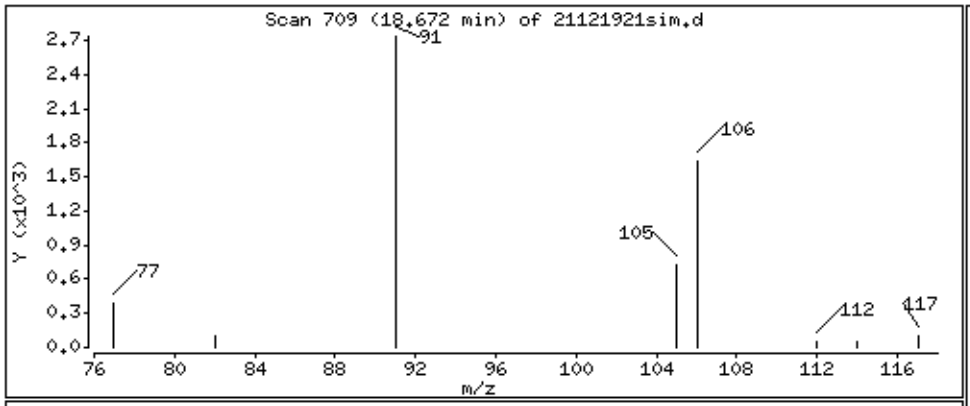
Operator: EA

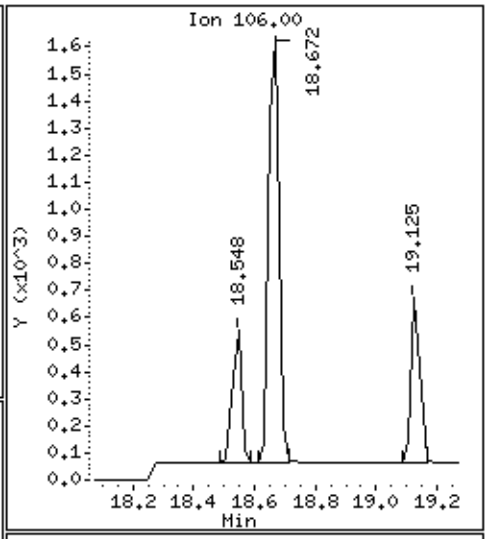
Column phase: RTX-624

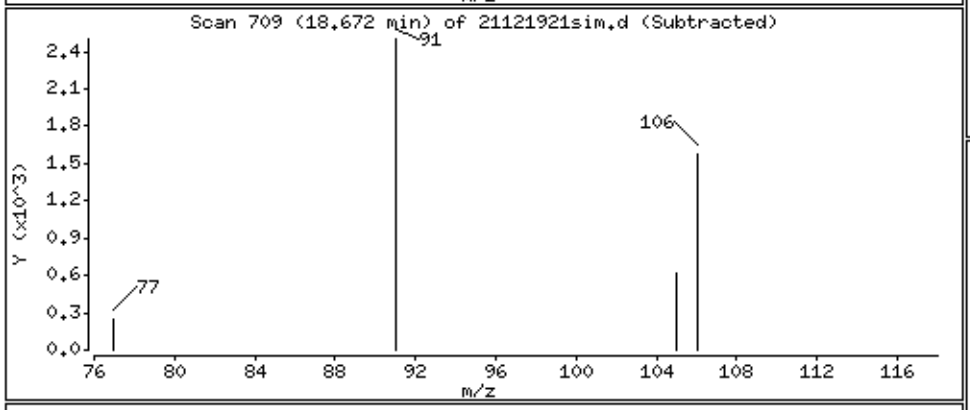
Column diameter: 0.32

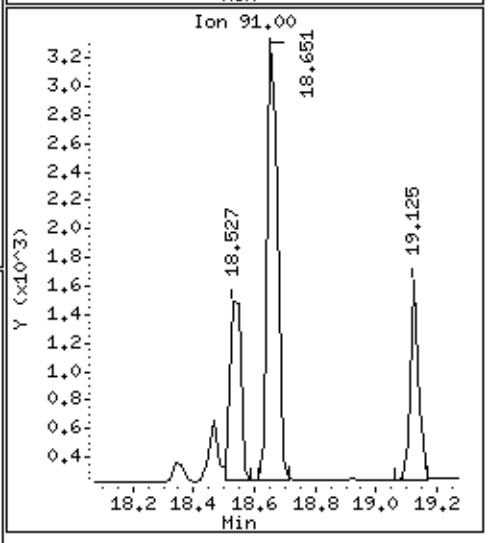
31 m,p-Xylene

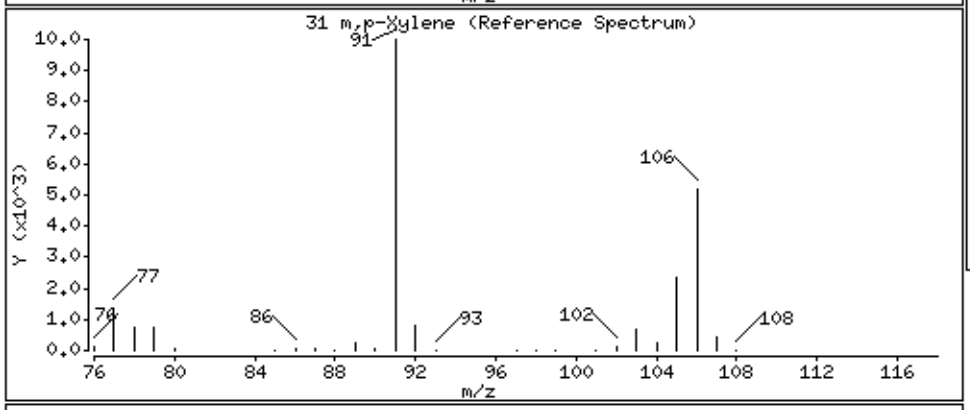
Concentration: 0.1387 PPBV

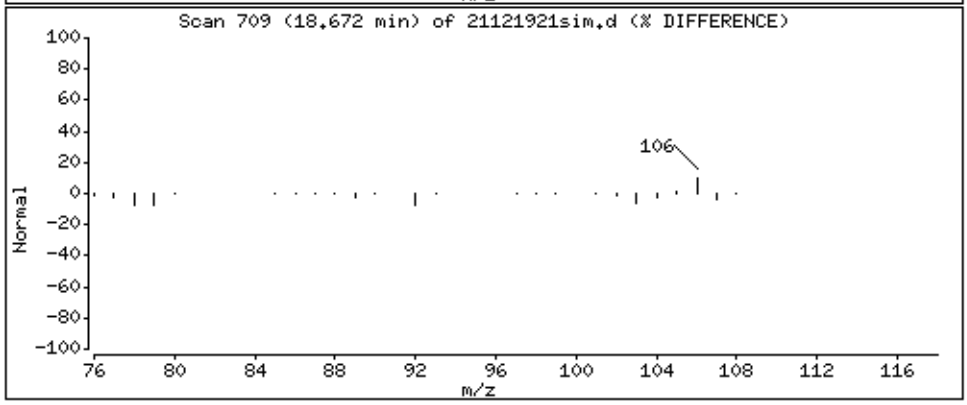












Data File: /chem/msd21.i/19dec17.b/21121921sim.d

Date : 20-DEC-2017 07:00

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1810

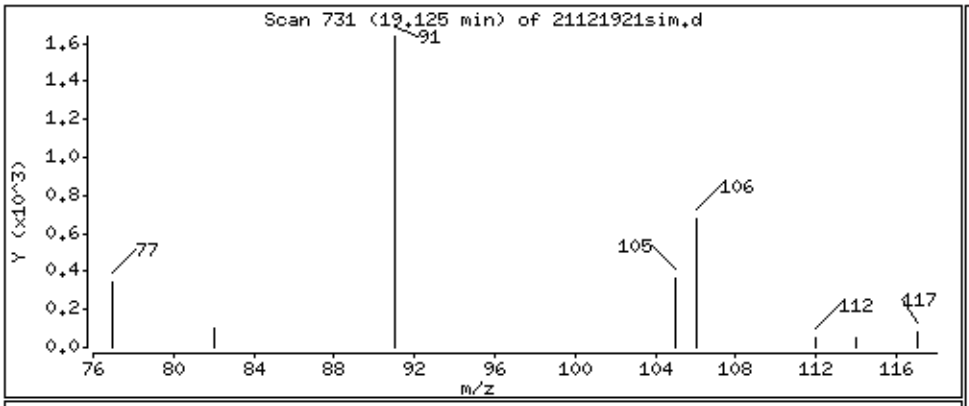
Operator: EA

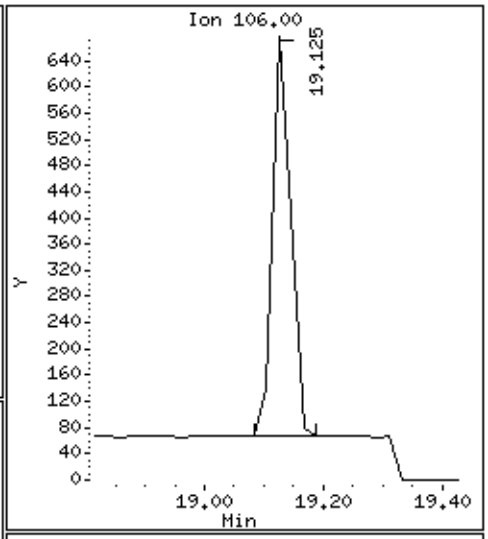
Column phase: RTX-624

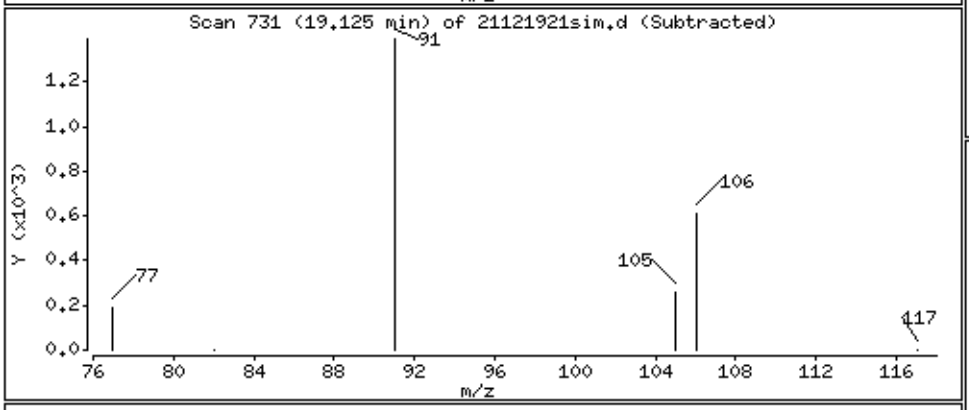
Column diameter: 0.32

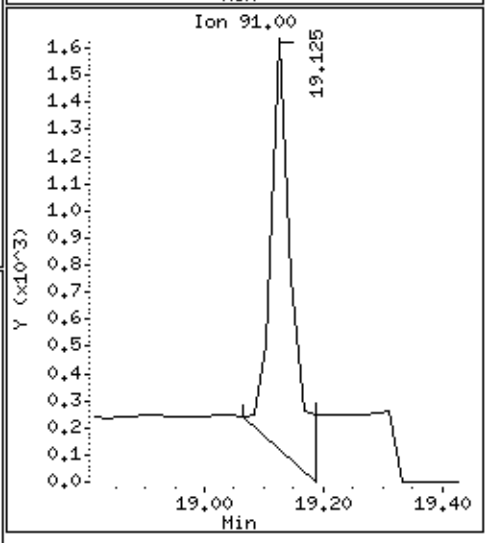
32 o-Xylene

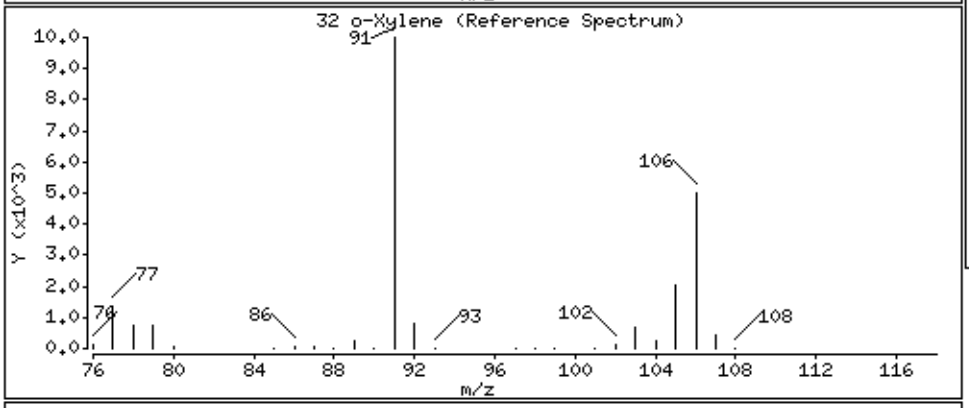
Concentration: 0.05189 PPBV

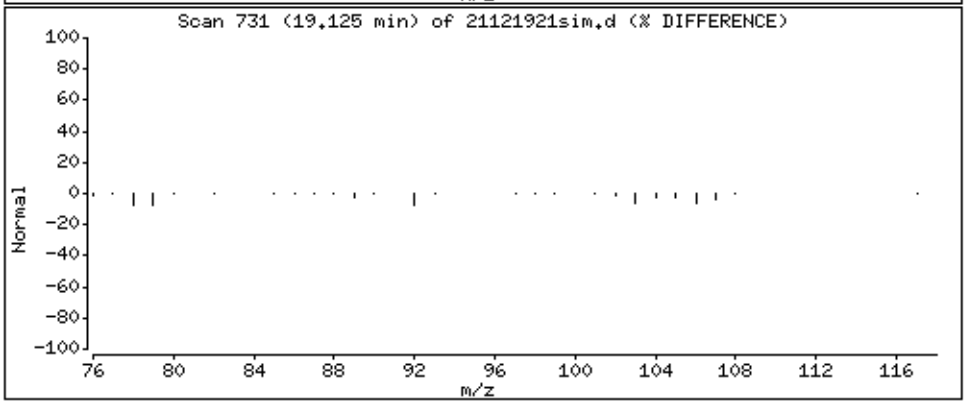












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA11_1217		
Lab ID:	1712342-14A	**Date/Time Analyzed:**	12/20/17 11:29 AM
Date/Time Collecte	12/14/17 03:26 PM	**Dilution Factor:**	1.72
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122007sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.069	0.069	0.27	0.46
Ethyl Benzene	100-41-4	0.0040	0.037	0.15	0.10 J
m,p-Xylene	108-38-3	0.0096	0.037	0.30	0.35
Naphthalene	91-20-3	0.067	0.090	0.45	0.077 J
o-Xylene	95-47-6	0.0076	0.037	0.15	0.13 J
Toluene	108-88-3	0.033	0.033	0.13	0.67
Total Xylenes	9999-9999-015	NA	D	0.45	0.49

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	87
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122007sim.d
Lab Smp Id: 1712342-14A
Inj Date : 20-DEC-2017 11:29
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 13853
Misc Info : 6.9"Hg -> 4.8psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.72000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	101951	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	79545			47.49- 107.49	78.02
14.274	14.274 (1.000)	49	148859			114.87- 174.87	146.01
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	505596	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	85654			0.00- 46.92	16.94
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	379549	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	212696			25.29- 85.29	56.04
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	148172	5.59573	5.596	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	83646			30.16- 90.16	56.45
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	435436	4.90641	4.906	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	53677			0.00- 42.34	12.33

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	295694			38.15- 98.15	67.91
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	142757	4.35184	4.352	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	172334			88.82- 148.82	120.72
19.787	19.787 (1.072)	176	140376			68.26- 128.26	98.33
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	11873	0.08394	0.1444	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	3009			0.00- 52.85	25.35
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	14221	0.10286	0.1769	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	8624			33.44- 93.44	60.65
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	595	0.01412	0.02428	80.00- 120.00	100.00(a)
18.548	18.540 (1.004)	91	1812			259.51- 319.51	304.60
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	1936	0.04703	0.08090	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	3819			159.47- 219.47	197.19
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	673	0.01798	0.03093	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	2486			168.52- 228.52	369.36
38 Naphthalene					CAS #: 91-20-3		
24.169	24.154 (1.309)	128	1675	0.00852	0.01465	80.00- 120.00	100.00(a)
24.154	24.154 (1.308)	127	269			0.00- 43.35	16.08
M 39 Total Xylene					CAS #: 1330-20-7		
			2610	0.06502	0.1118		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122007sim.d
Lab Smp Id: 1712342-14A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.9"Hg -> 4.8psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	101951	-13.74
20 1,4-Difluorobenze	566094	339656	792532	505596	-10.69
28 Chlorobenzene-d5	446145	267687	624603	379549	-14.93

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-14A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 6.9"Hg -> 4.8psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.596	111.91	70-130
$ 22 Toluene-d8	5.000	4.906	98.13	70-130
$ 33 4-Bromofluorobenze	5.000	4.352	87.04	70-130

Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

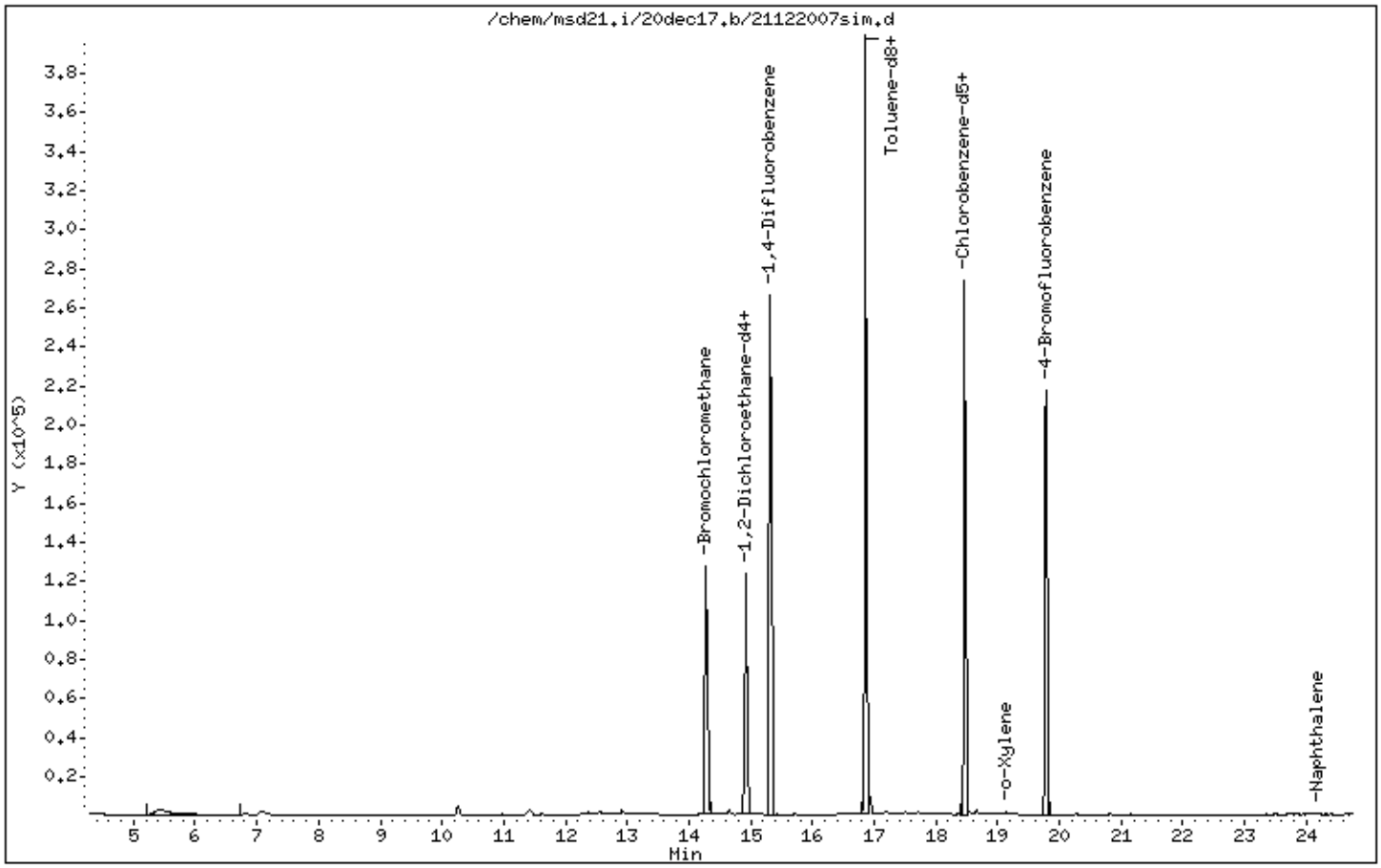
Instrument: msd21.i

Sample Info: 250mL# 13853

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

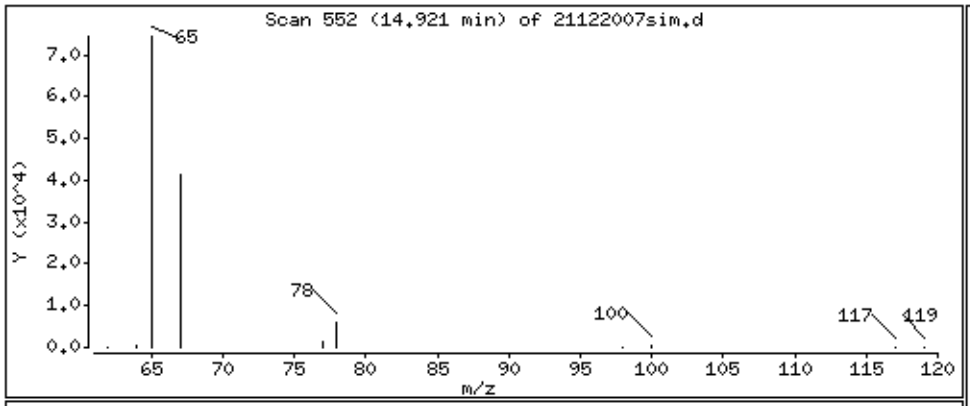
Operator: ef

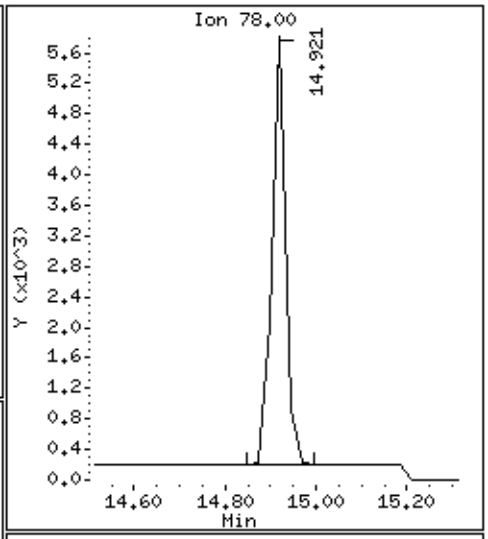
Column phase: RTX-624

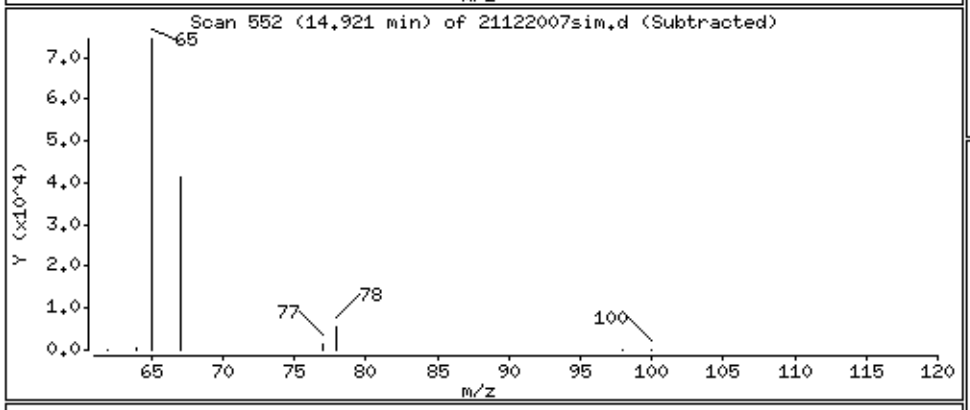
Column diameter: 0.32

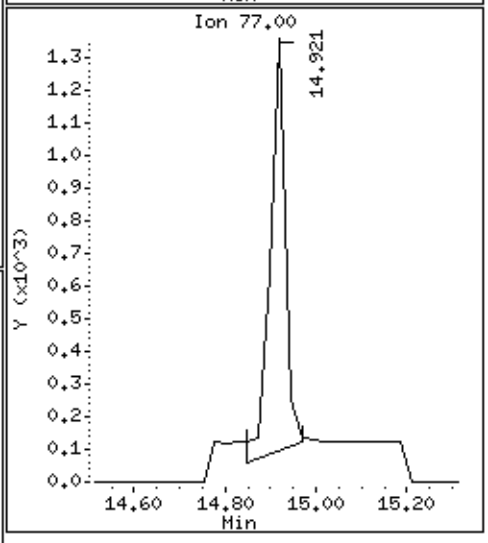
17 Benzene

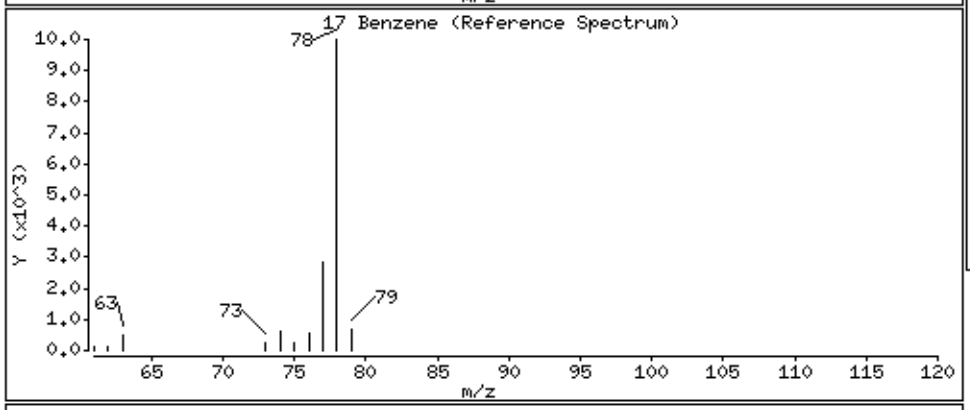
Concentration: 0.1444 PPBV

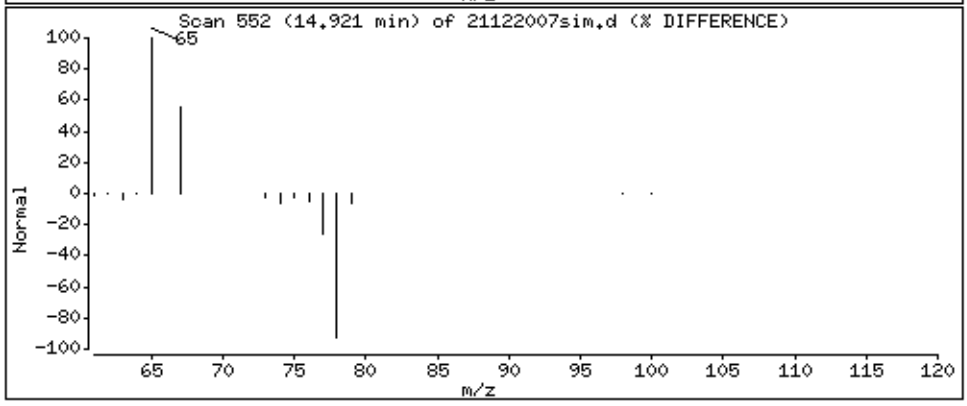












Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

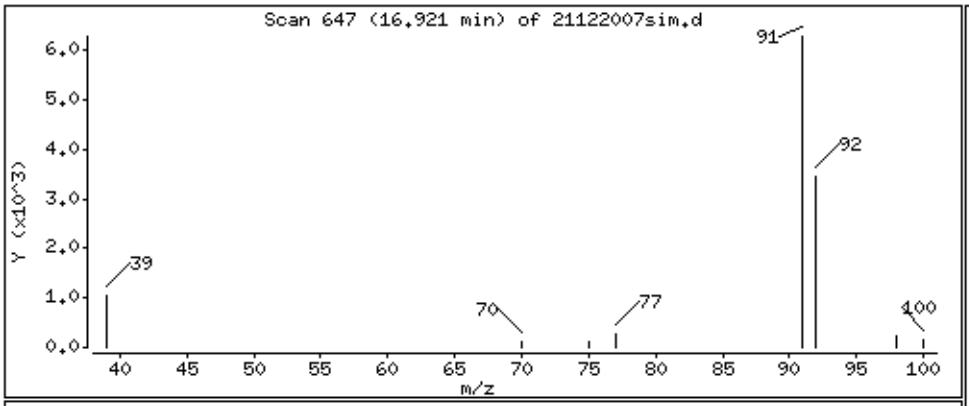
Operator: ef

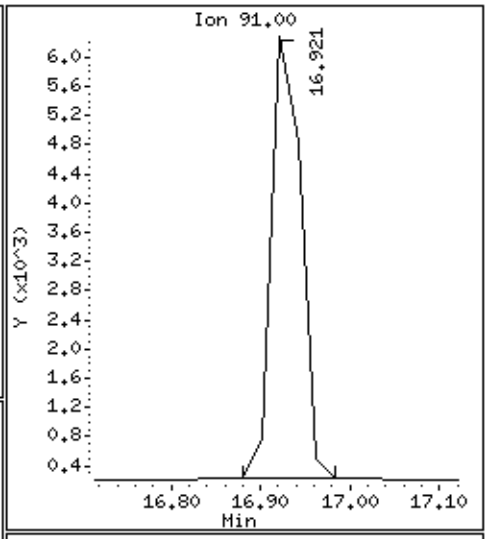
Column phase: RTX-624

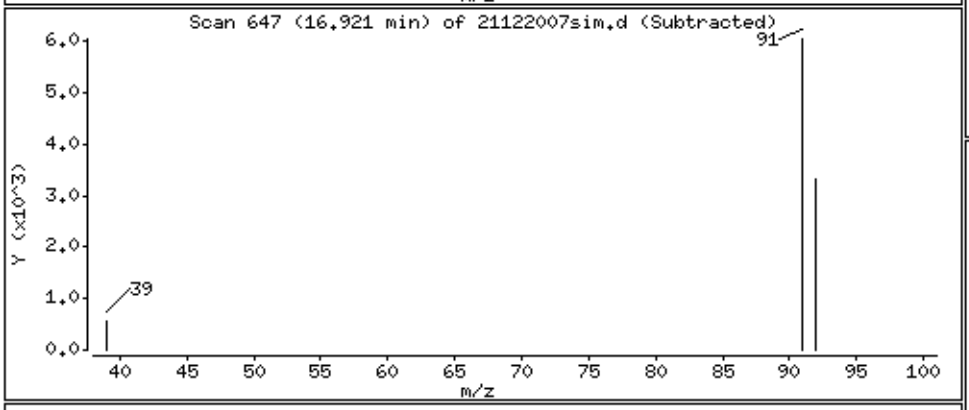
Column diameter: 0.32

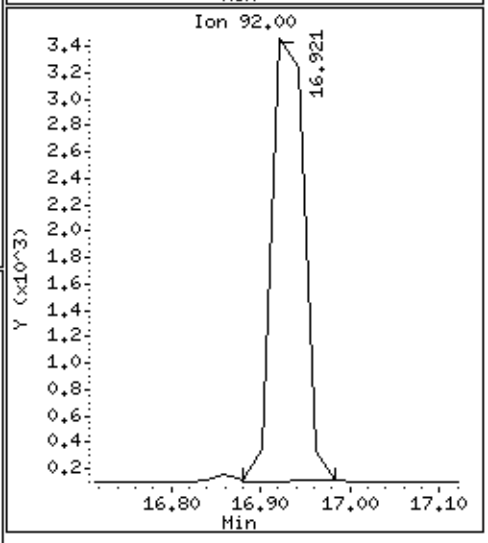
23 Toluene

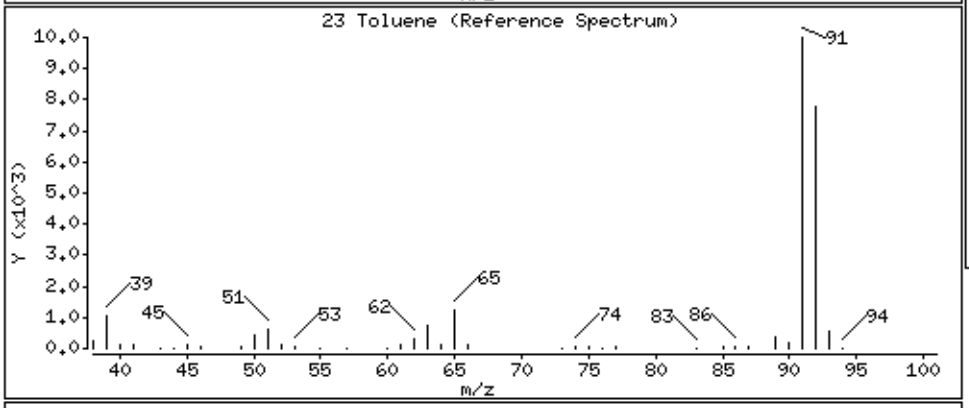
Concentration: 0.1769 PPBV

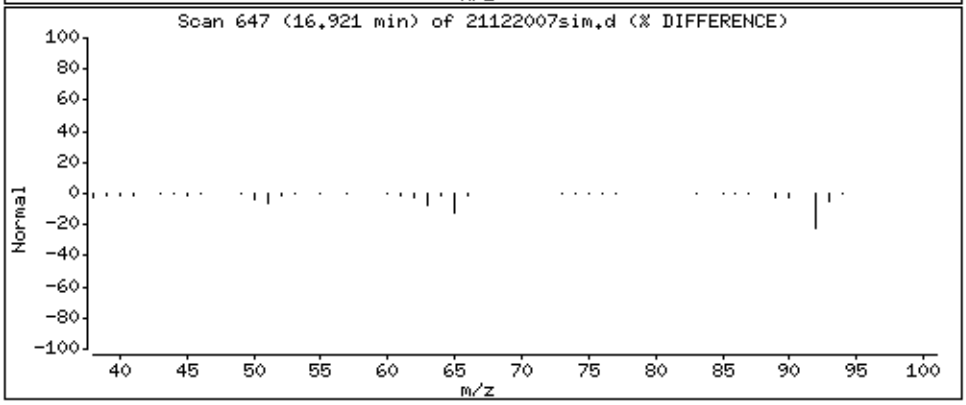












Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

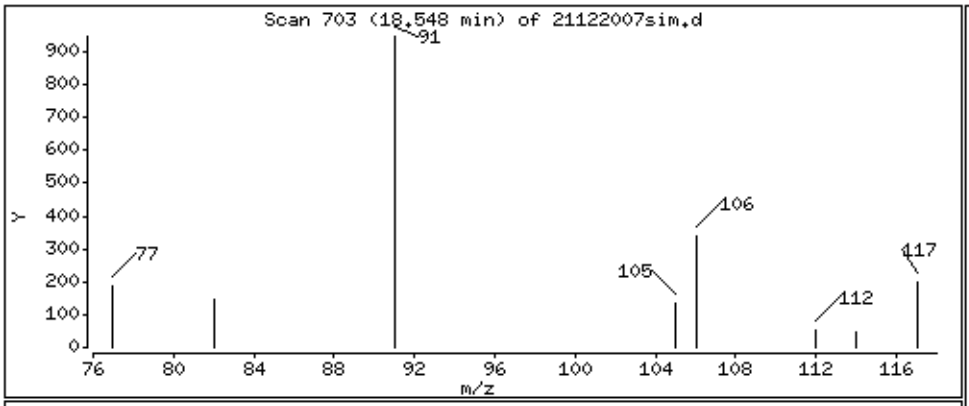
Operator: ef

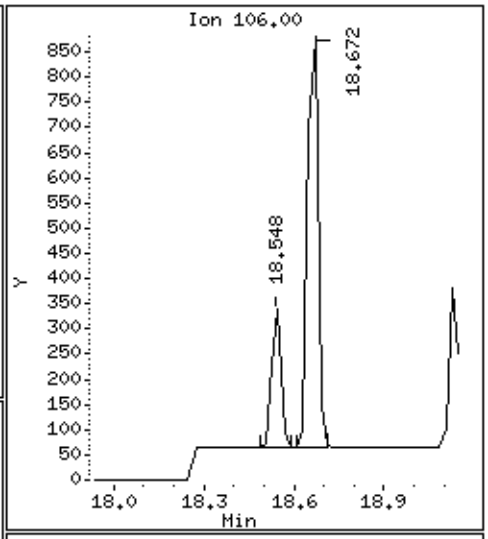
Column phase: RTX-624

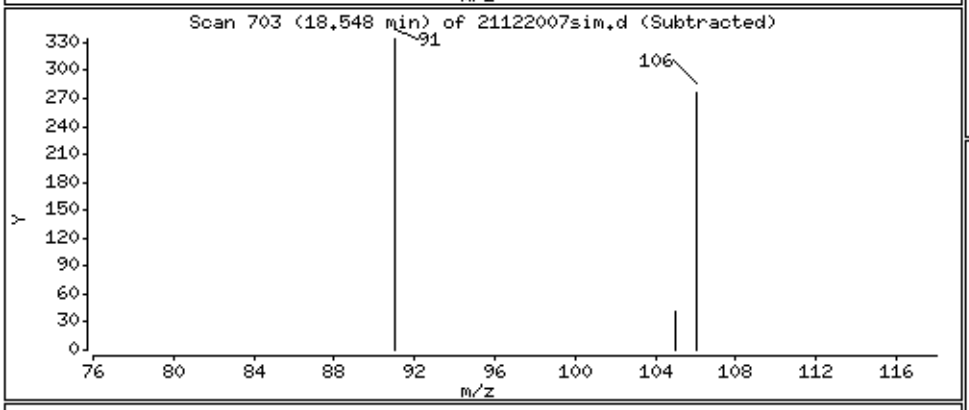
Column diameter: 0.32

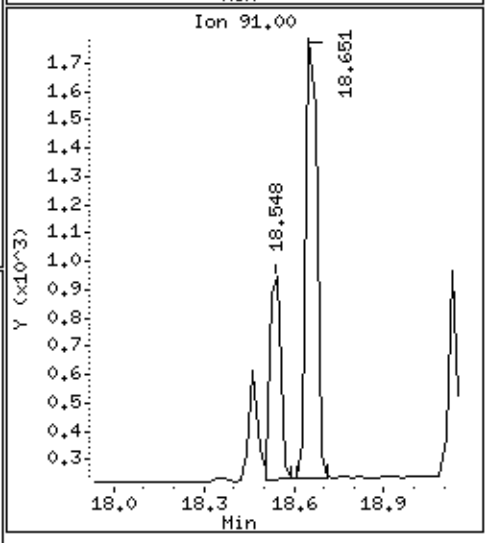
30 Ethyl Benzene

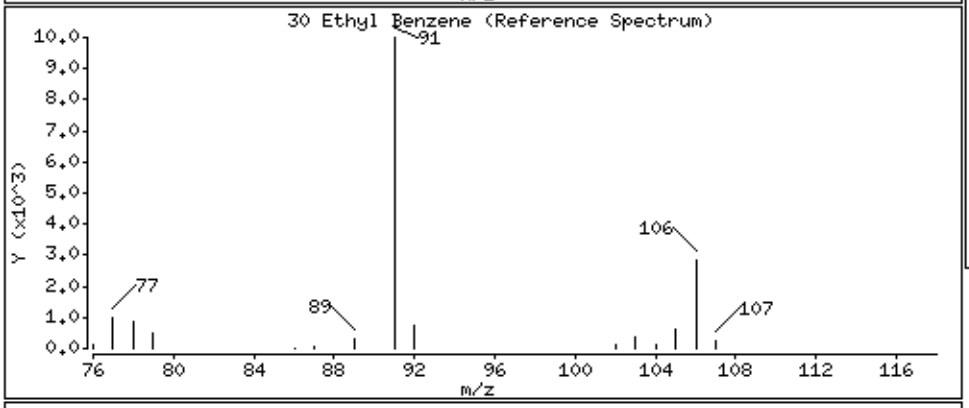
Concentration: 0.02428 PPBV

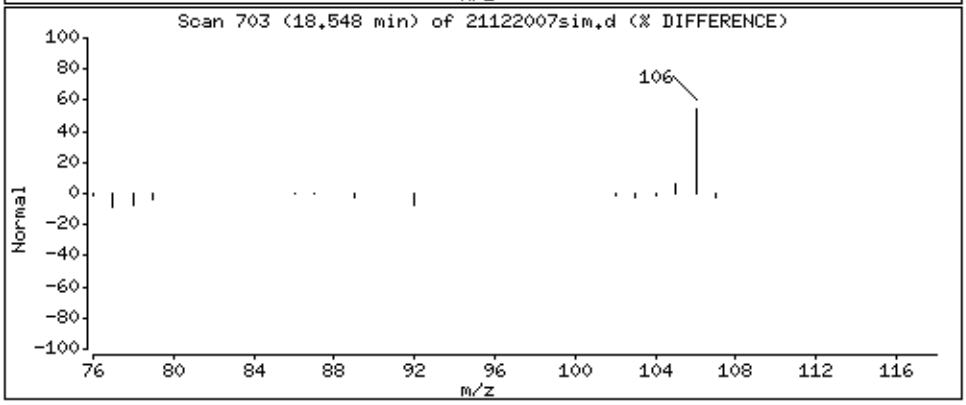












Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

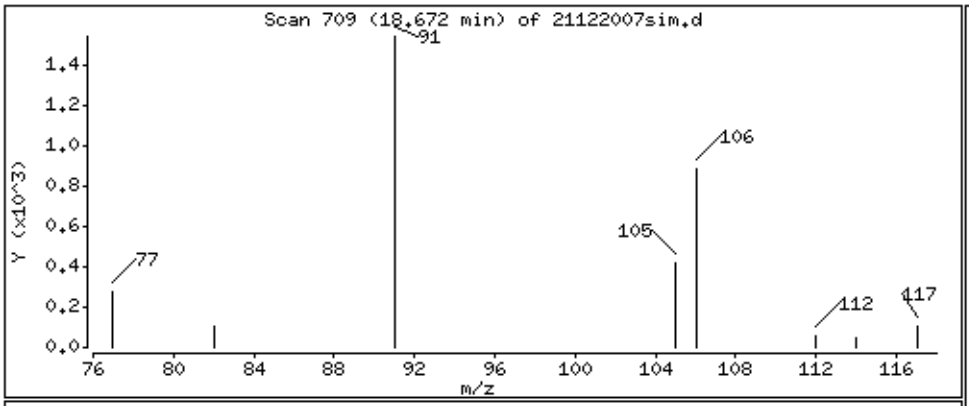
Operator: ef

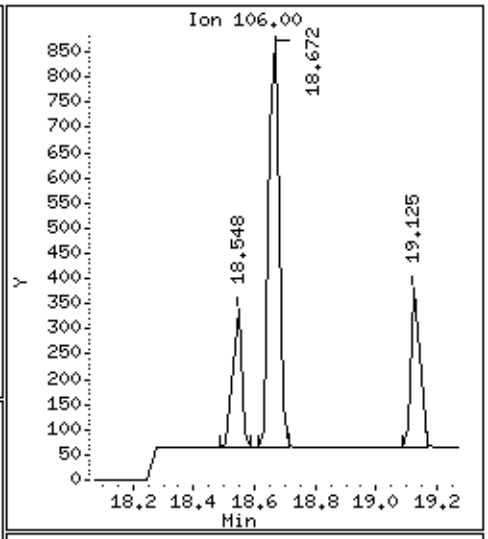
Column phase: RTX-624

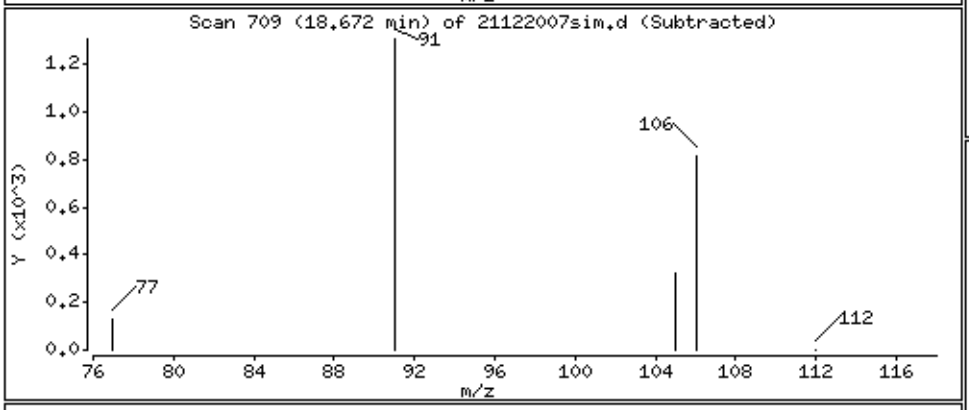
Column diameter: 0.32

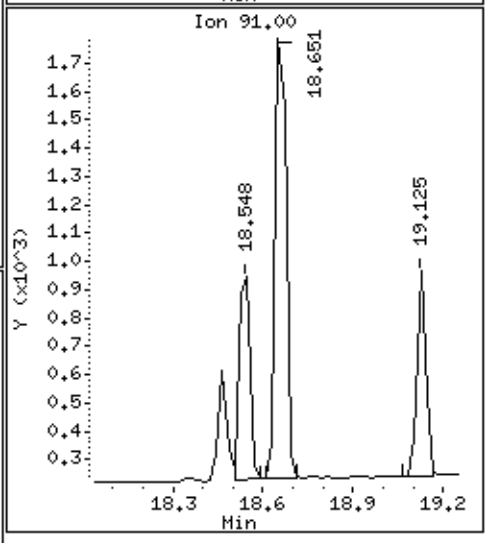
31 m,p-Xylene

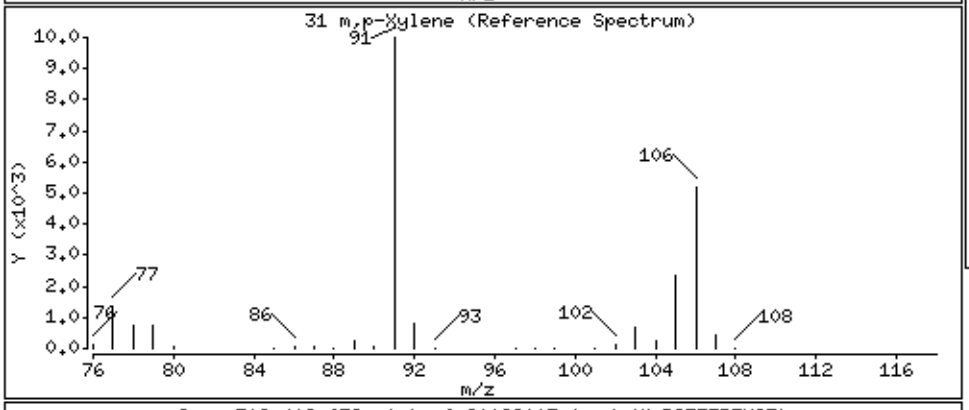
Concentration: 0.08090 PPBV

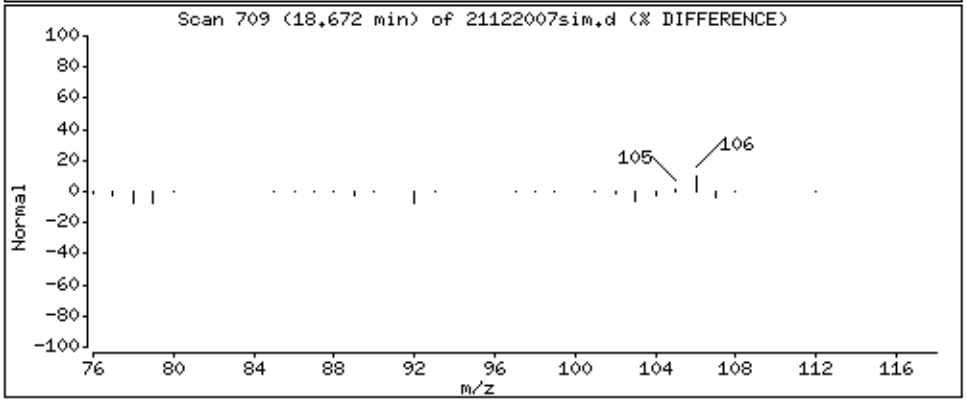












Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

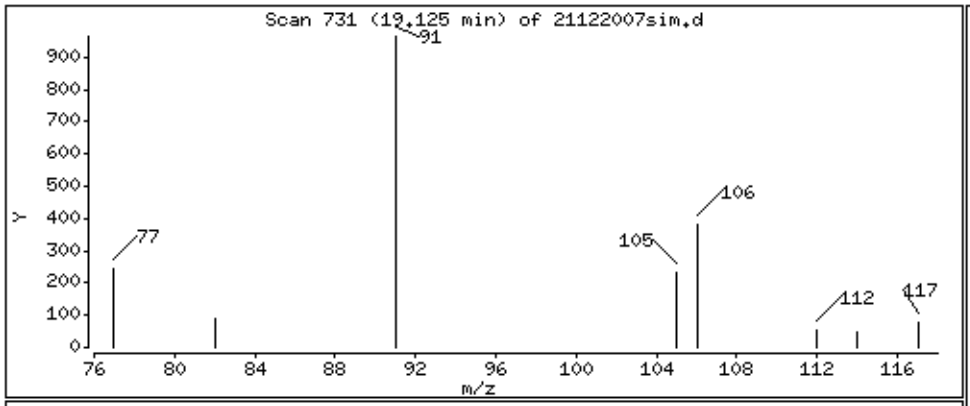
Operator: ef

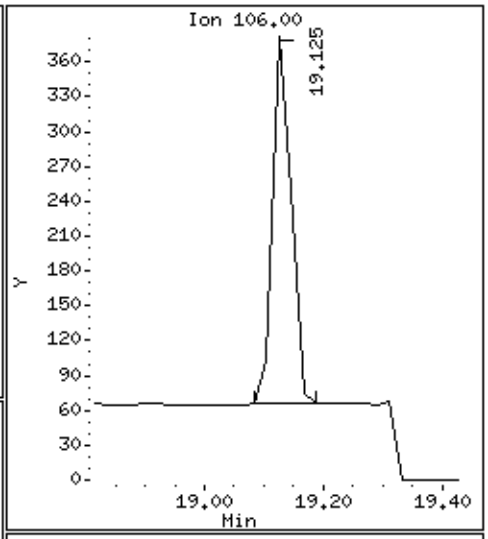
Column phase: RTX-624

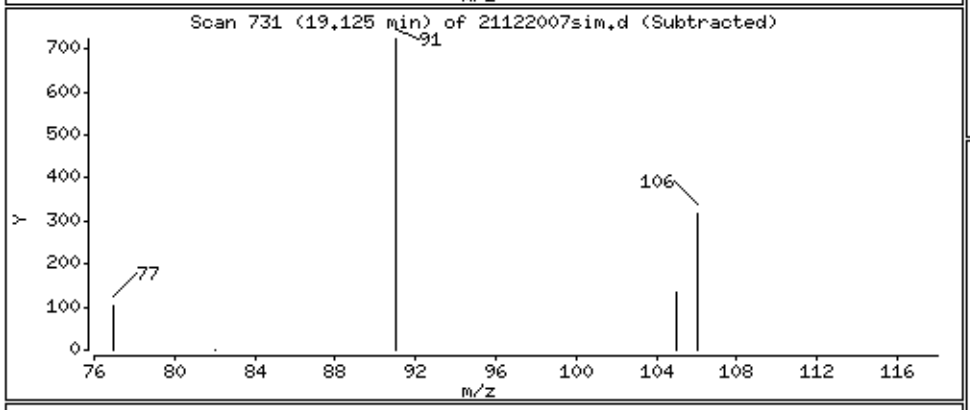
Column diameter: 0.32

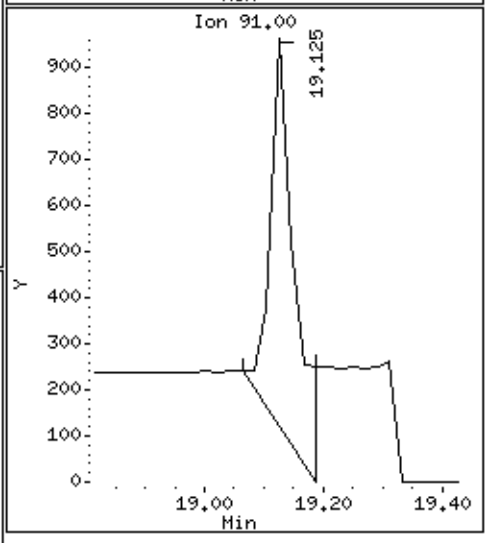
32 o-Xylene

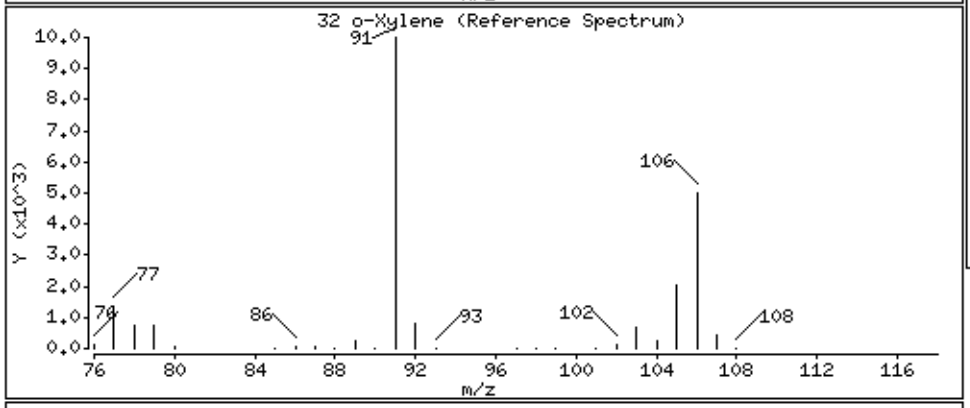
Concentration: 0.03093 PPBV

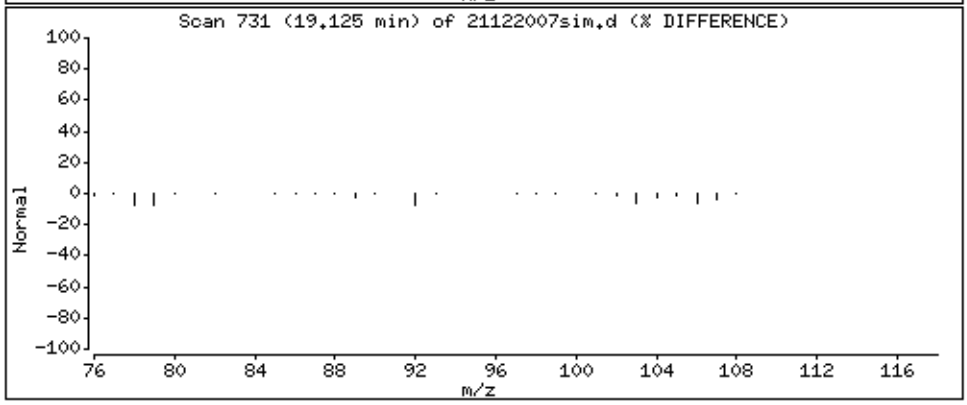












Data File: /chem/msd21.i/20dec17.b/21122007sim.d

Date : 20-DEC-2017 11:29

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 13853

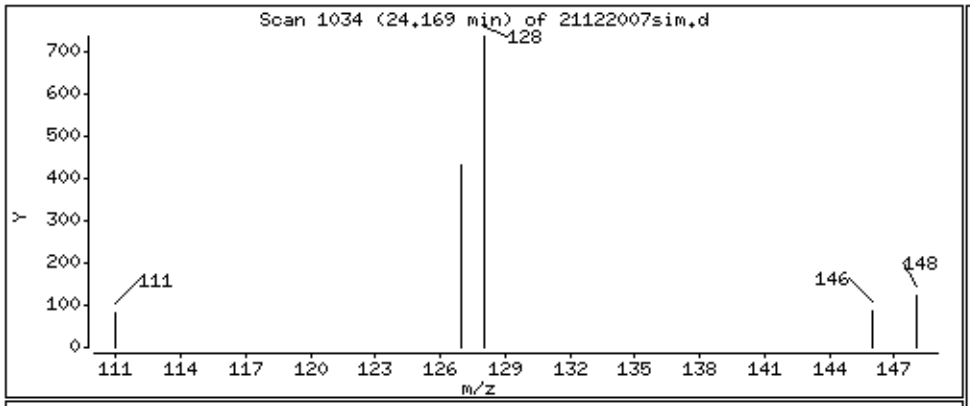
Operator: ef

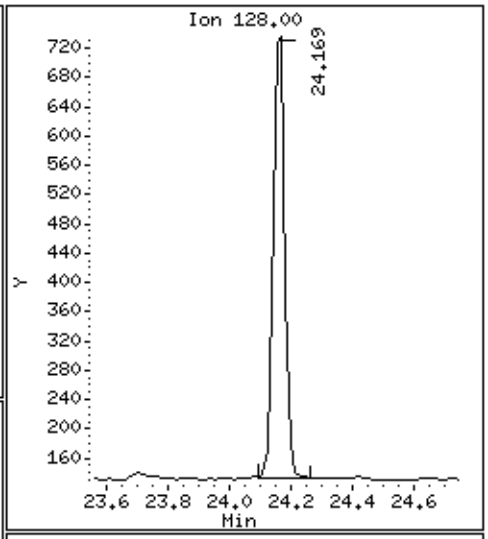
Column phase: RTX-624

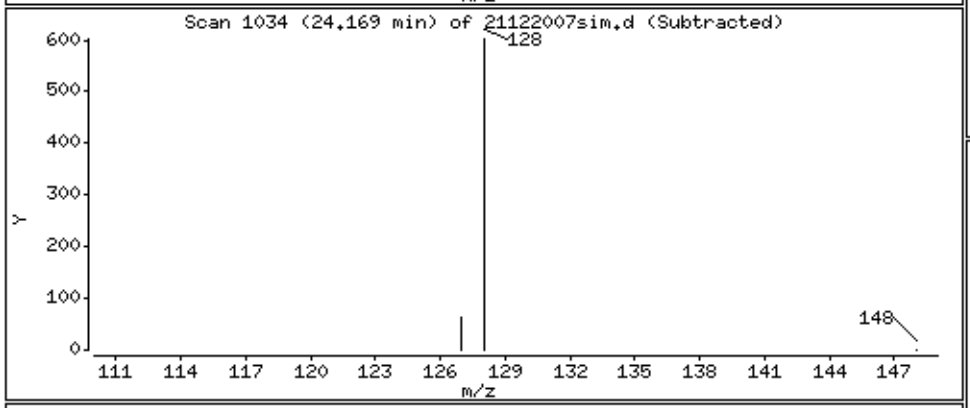
Column diameter: 0.32

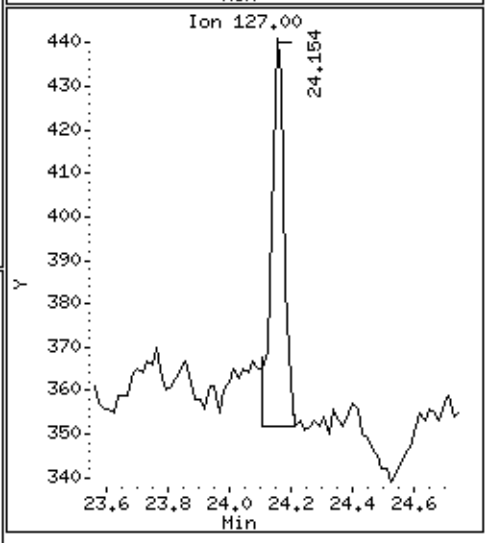
38 Naphthalene

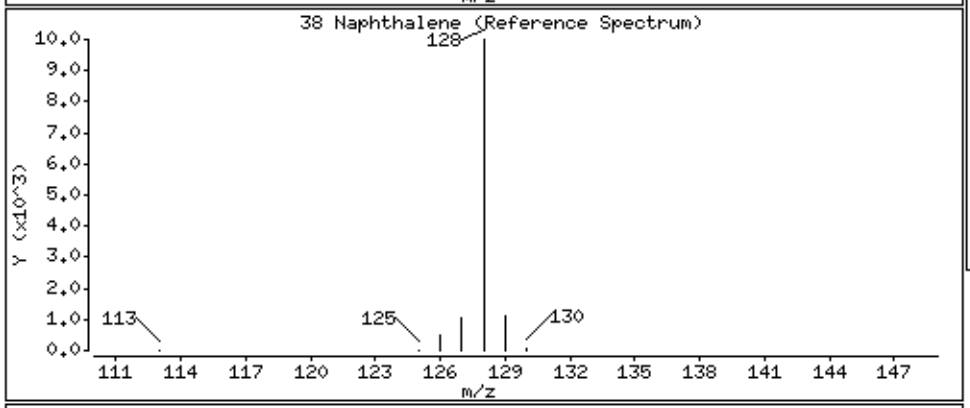
Concentration: 0.01465 PPBV

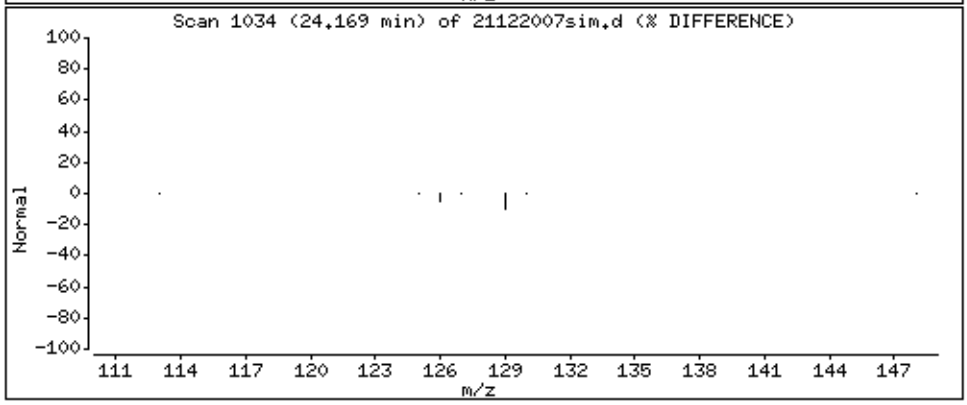












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA12_1217		
Lab ID:	1712342-15A	**Date/Time Analyzed:**	12/20/17 12:03 PM
Date/Time Collecte	12/14/17 02:46 PM	**Dilution Factor:**	1.56
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122008sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.062	0.062	0.25	0.42
Ethyl Benzene	100-41-4	0.0036	0.034	0.14	0.14
m,p-Xylene	108-38-3	0.0087	0.034	0.27	0.48
Naphthalene	91-20-3	0.061	0.082	0.41	Not Detected U
o-Xylene	95-47-6	0.0069	0.034	0.14	0.18
Toluene	108-88-3	0.030	0.030	0.12	1.3
Total Xylenes	9999-9999-015	NA	D	0.41	0.66

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	87
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122008sim.d
Lab Smp Id: 1712342-15A
Inj Date : 20-DEC-2017 12:03
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 31422
Misc Info : 4.1"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.56000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	104224	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	80795			47.49- 107.49	77.52
14.273	14.274 (1.000)	49	152824			114.87- 174.87	146.63
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	510604	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86702			0.00- 46.92	16.98
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	381727	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	212966			25.29- 85.29	55.79
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150322	5.55313	5.553	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85133			30.16- 90.16	56.63
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	437936	4.88618	4.886	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	54646			0.00- 42.34	12.48

	RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$	22 Toluene-d8 (continued)							
	16.859	16.860 (1.101)	100	297934			38.15- 98.15	68.03
$	33 4-Bromofluorobenzene					CAS #: 460-00-4		
	19.787	19.787 (1.072)	174	143125	4.33817	4.338	80.00- 120.00	100.00
	19.768	19.768 (1.071)	95	172749			88.82- 148.82	120.70
	19.787	19.787 (1.072)	176	140243			68.26- 128.26	97.99
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	12067	0.08447	0.1318	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	2742			0.00- 52.85	22.72
	23 Toluene					CAS #: 108-88-3		
	16.921	16.921 (1.105)	91	31042	0.22233	0.3468	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	18804			33.44- 93.44	60.57
	30 Ethyl Benzene					CAS #: 100-41-4		
	18.548	18.548 (1.004)	106	892	0.02104	0.03282	80.00- 120.00	100.00
	18.548	18.540 (1.004)	91	2734			259.51- 319.51	306.44
	31 m,p-Xylene					CAS #: 108-38-3		
	18.671	18.672 (1.011)	106	2935	0.07088	0.1106	80.00- 120.00	100.00
	18.651	18.656 (1.010)	91	5791			159.47- 219.47	197.30
	32 o-Xylene					CAS #: 95-47-6		
	19.125	19.125 (1.036)	106	1002	0.02662	0.04153	80.00- 120.00	100.00
	19.125	19.125 (1.036)	91	3137			168.52- 228.52	313.05
M	39 Total Xylene					CAS #: 1330-20-7		
				3937	0.09750	0.1521		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122008sim.d
Lab Smp Id: 1712342-15A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.1"Hg -> 5.1psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	104224	-11.82
20 1,4-Difluorobenze	566094	339656	792532	510604	-9.80
28 Chlorobenzene-d5	446145	267687	624603	381727	-14.44

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-15A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 4.1"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.553	111.06	70-130
$ 22 Toluene-d8	5.000	4.886	97.72	70-130
$ 33 4-Bromofluorobenze	5.000	4.338	86.76	70-130

Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

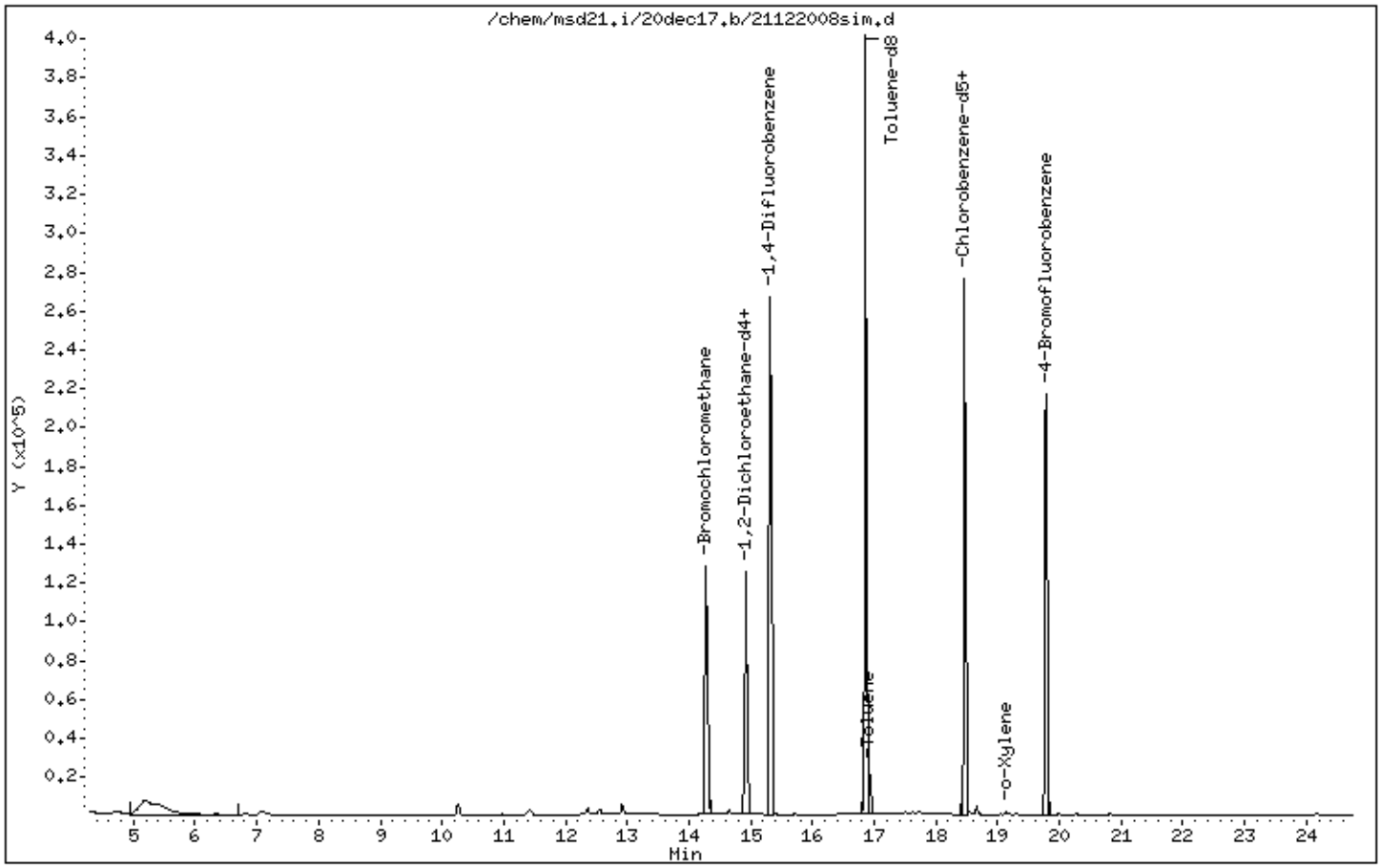
Instrument: msd21.i

Sample Info: 250mL# 31422

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 31422

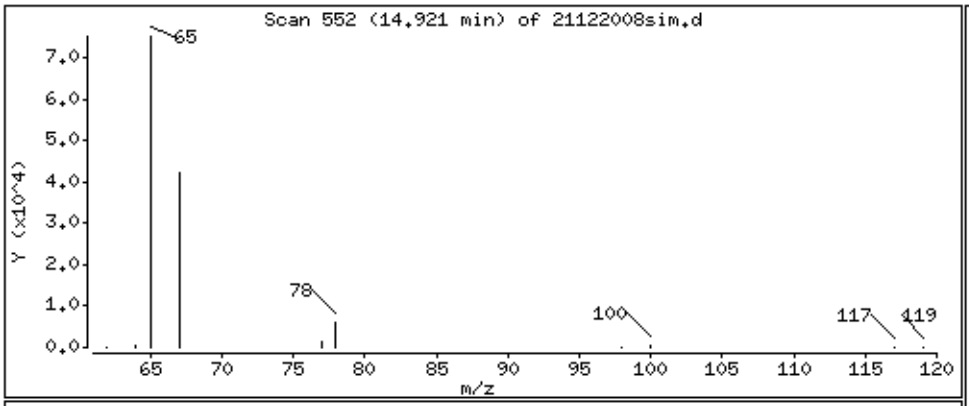
Operator: ef

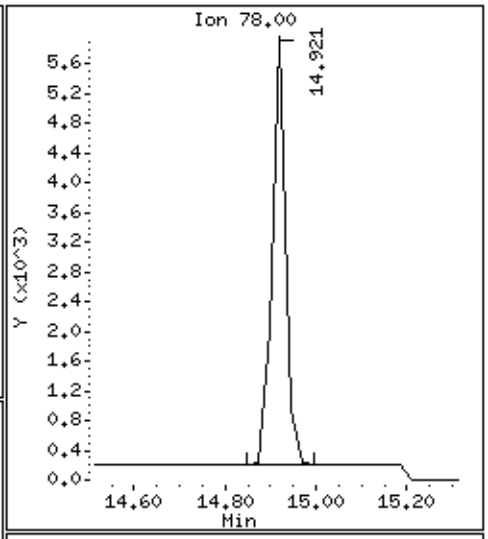
Column phase: RTX-624

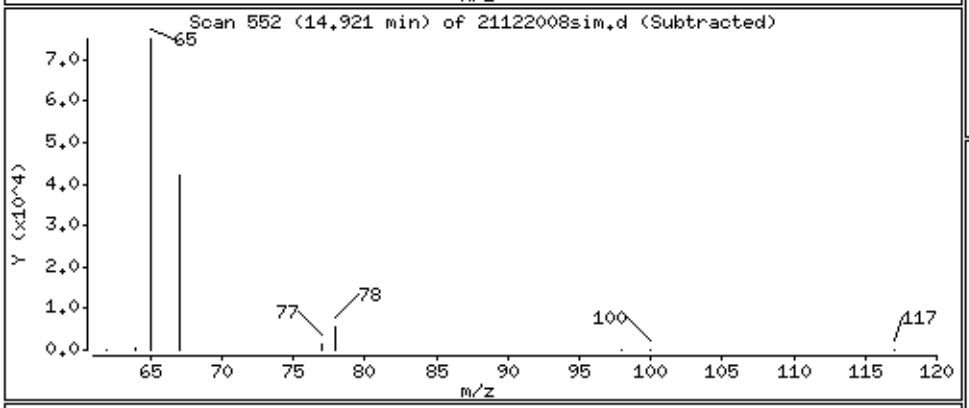
Column diameter: 0.32

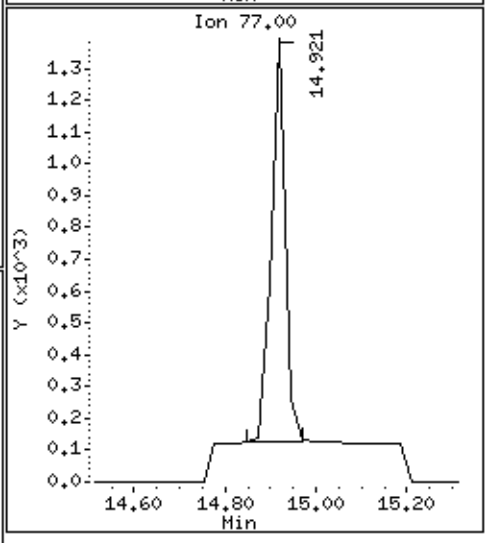
17 Benzene

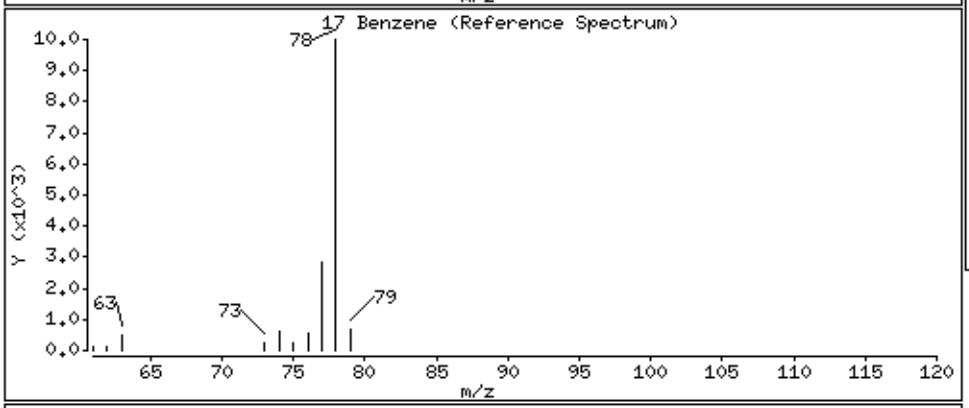
Concentration: 0.1318 PPBV

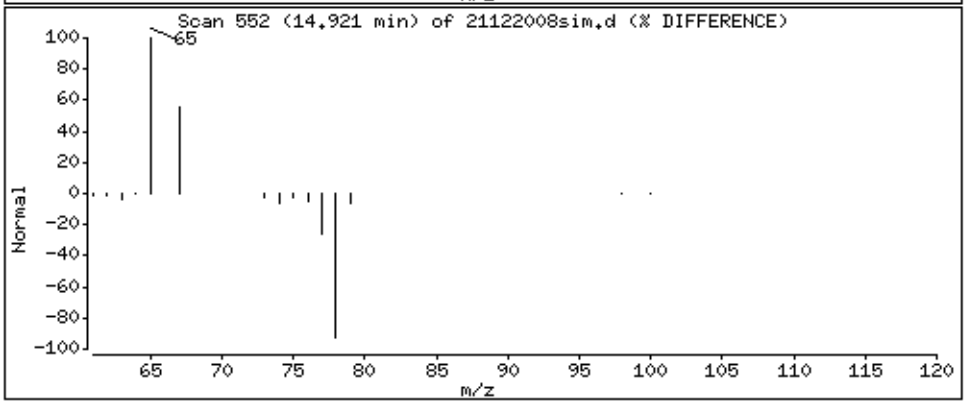












Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 31422

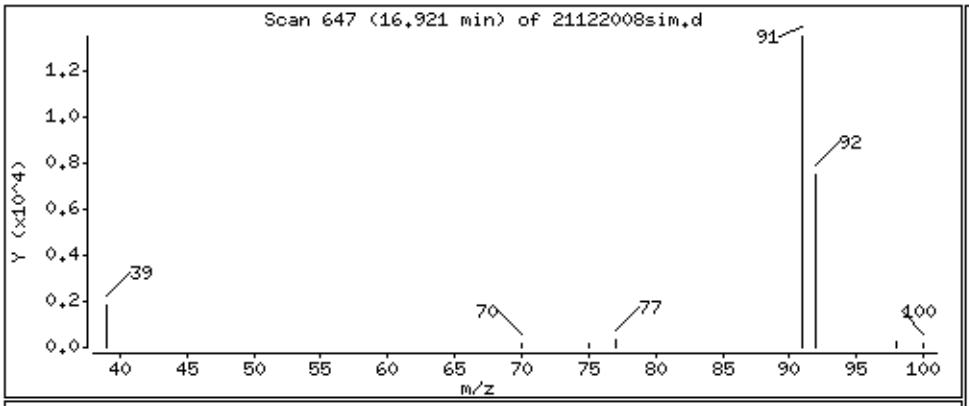
Operator: ef

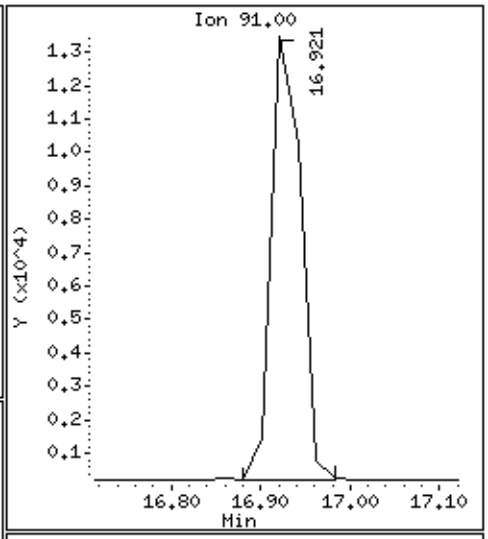
Column phase: RTX-624

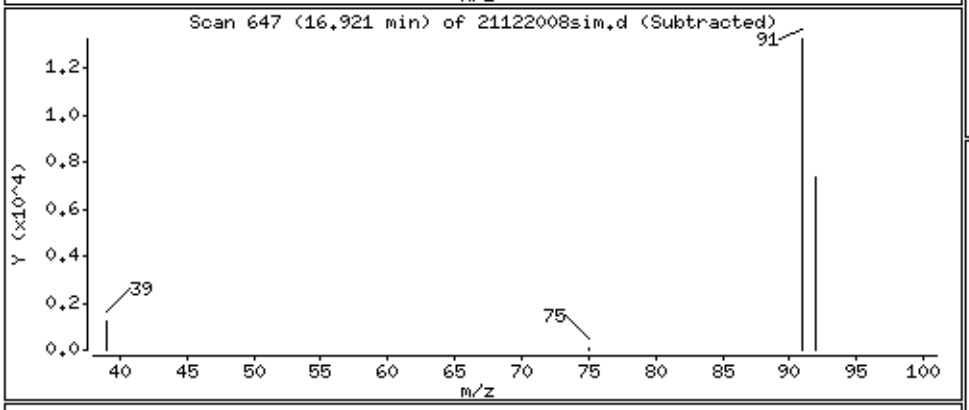
Column diameter: 0.32

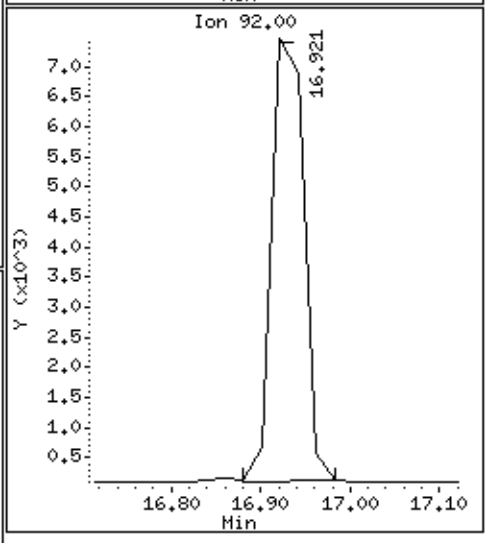
23 Toluene

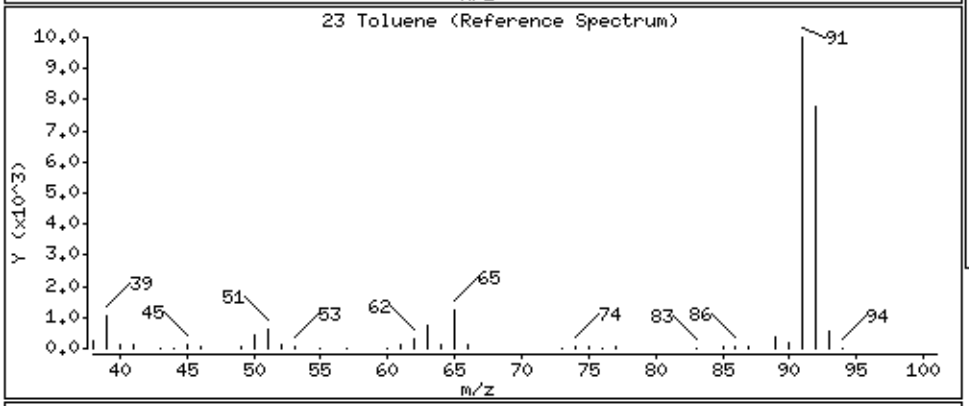
Concentration: 0.3468 PPBV

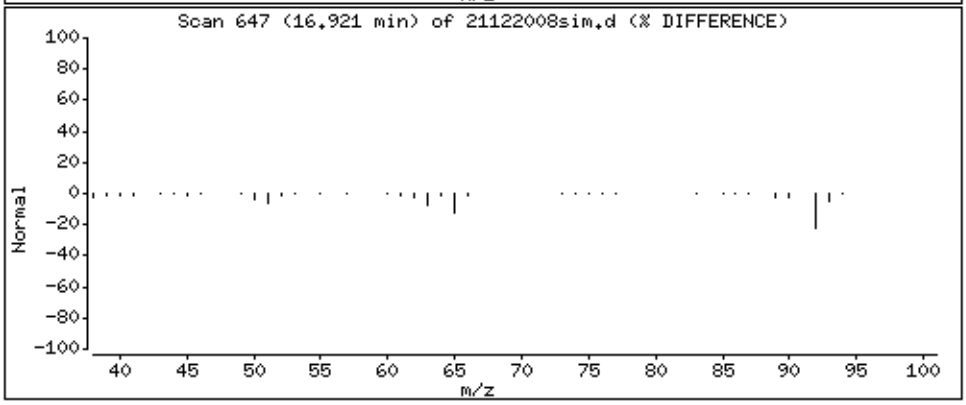












Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 31422

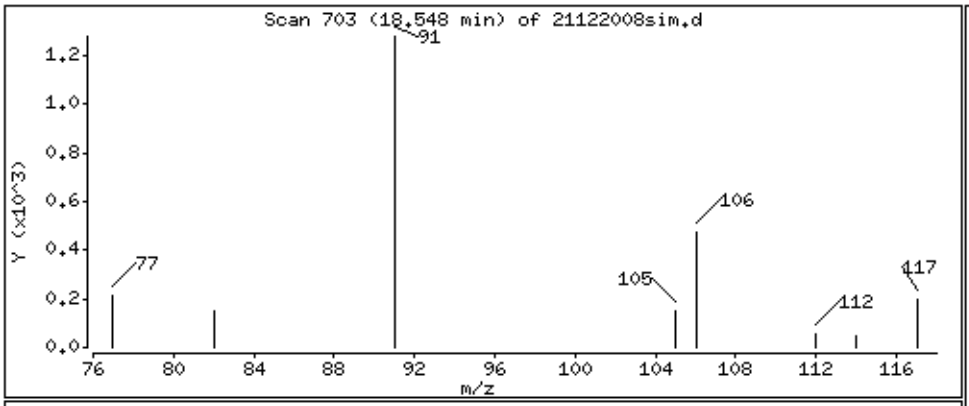
Operator: ef

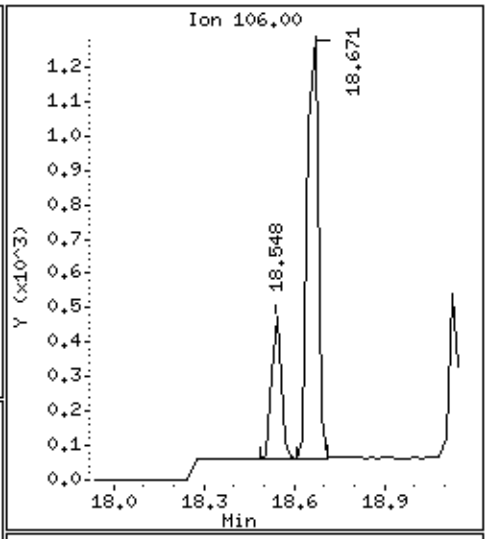
Column phase: RTX-624

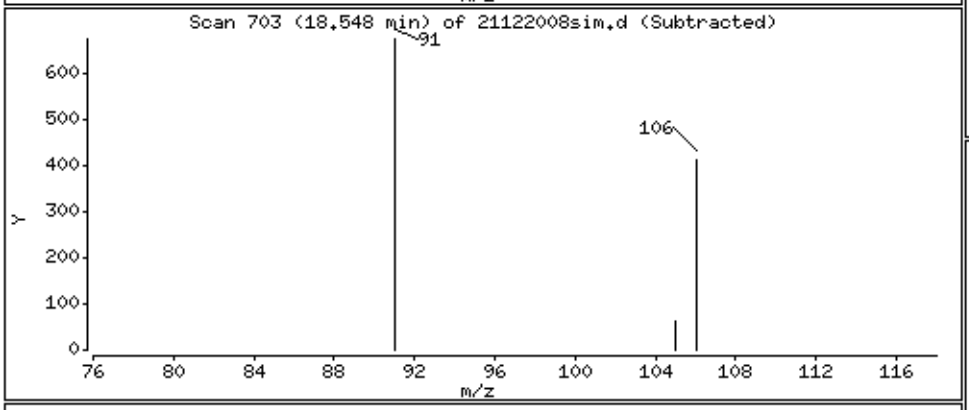
Column diameter: 0.32

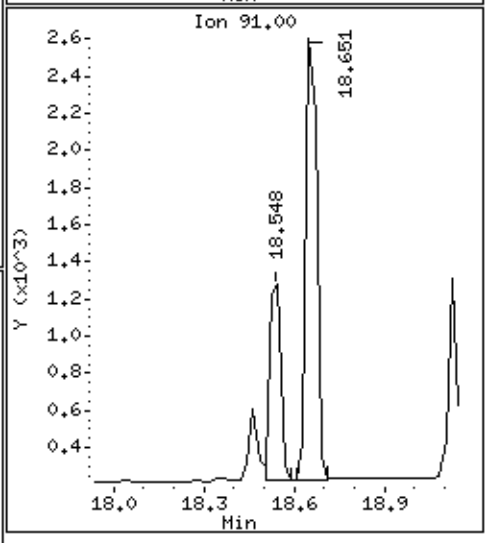
30 Ethyl Benzene

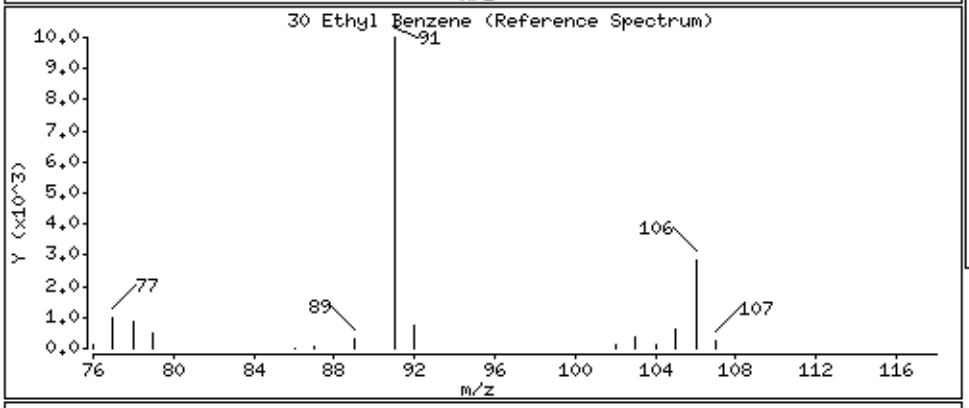
Concentration: 0.03282 PPBV

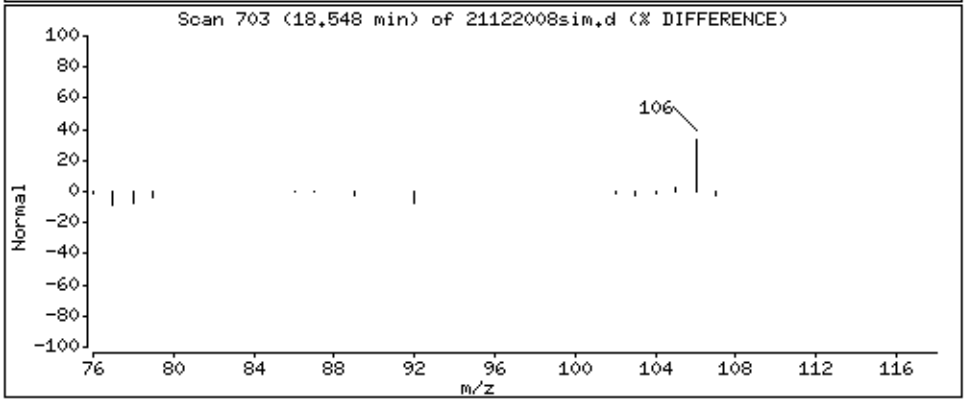












Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 31422

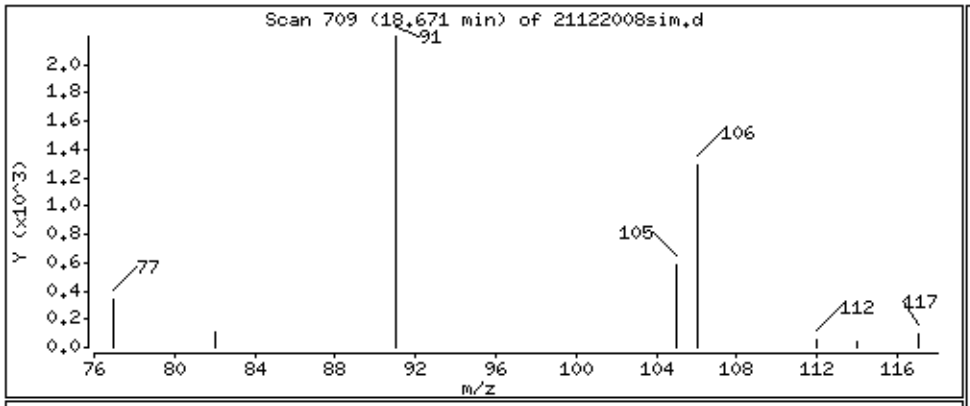
Operator: ef

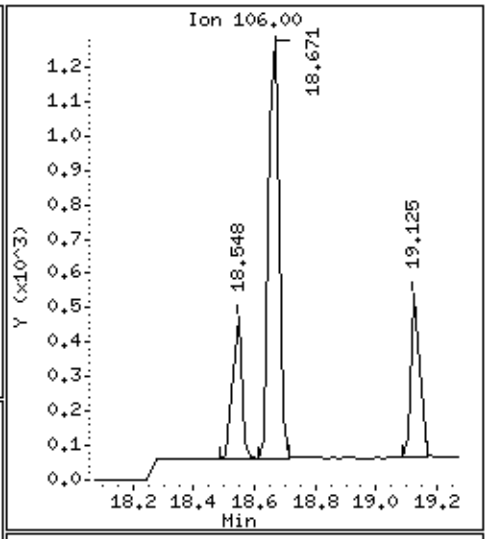
Column phase: RTX-624

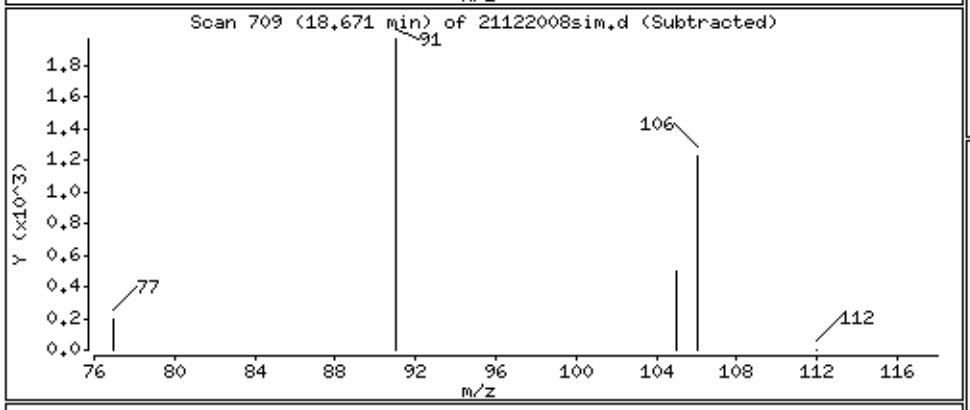
Column diameter: 0.32

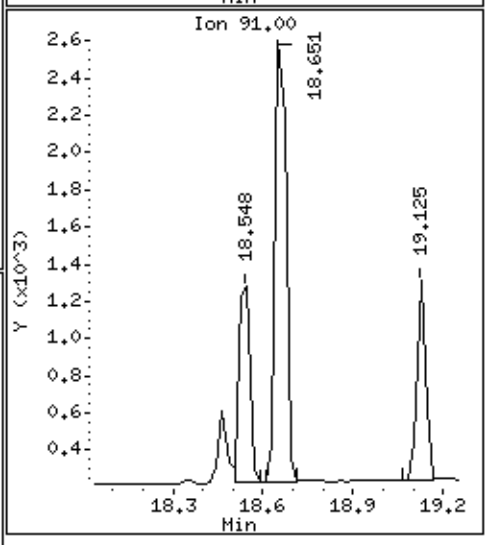
31 m,p-Xylene

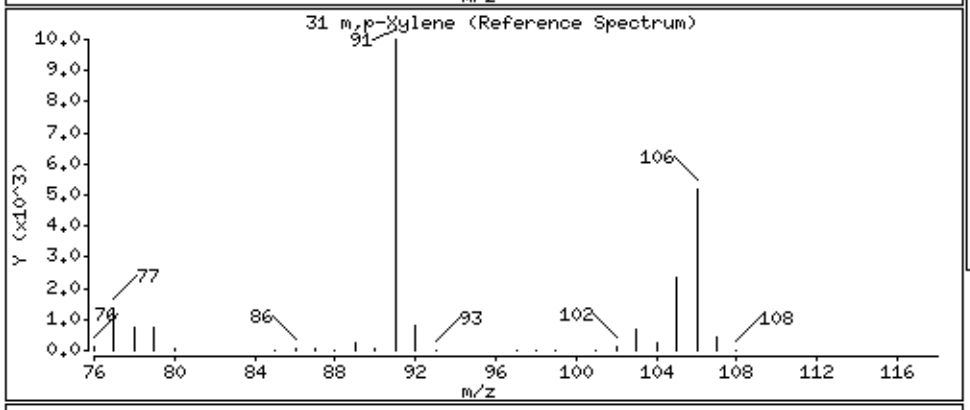
Concentration: 0.1106 PPBV

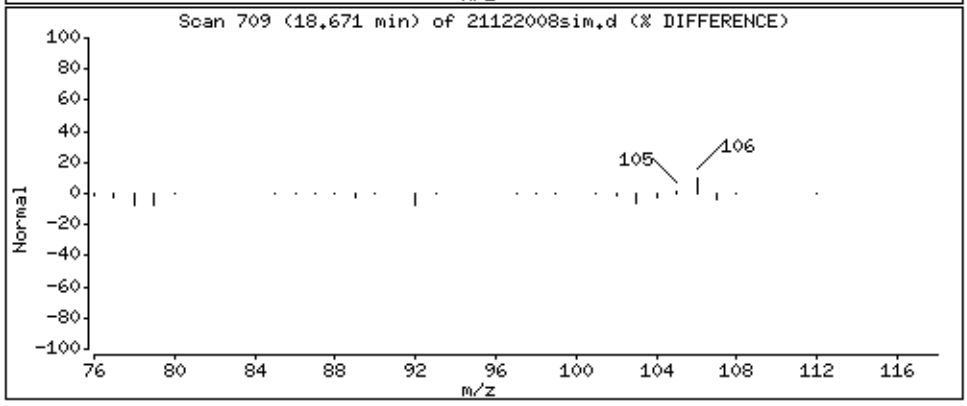












Data File: /chem/msd21.i/20dec17.b/21122008sim.d

Date : 20-DEC-2017 12:03

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 31422

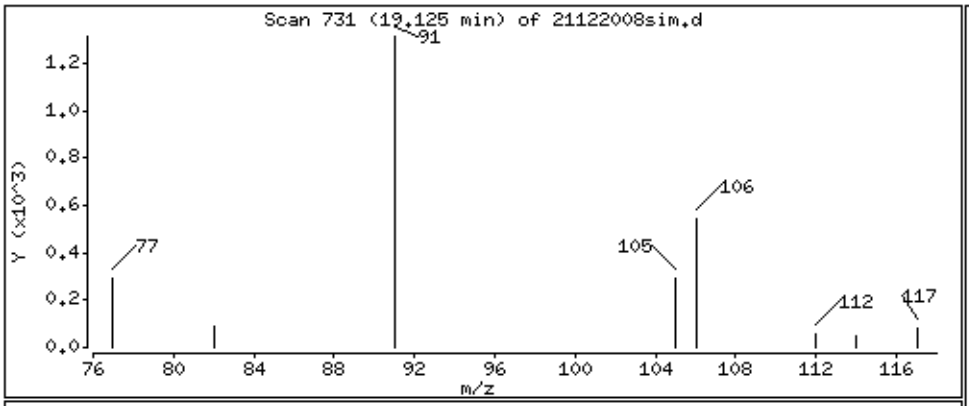
Operator: ef

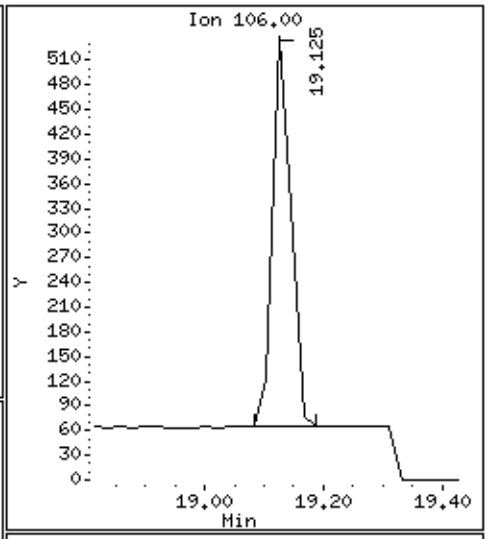
Column phase: RTX-624

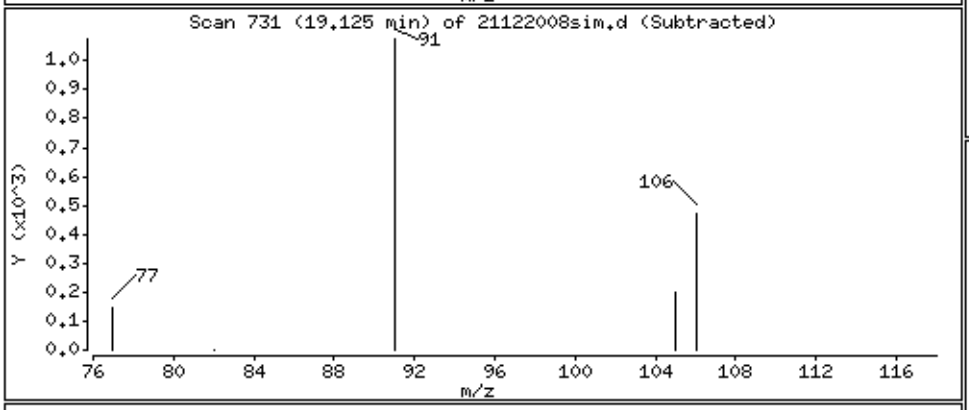
Column diameter: 0.32

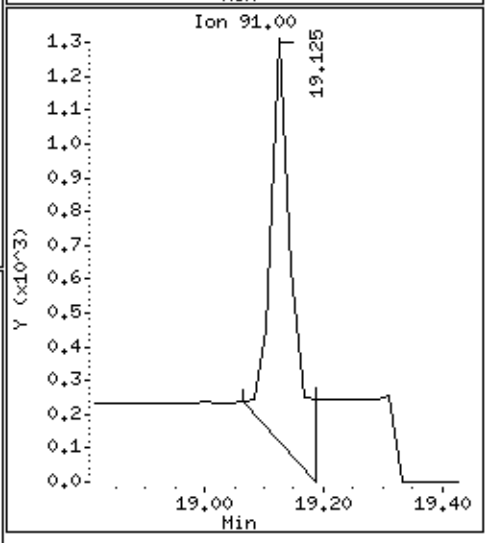
32 o-Xylene

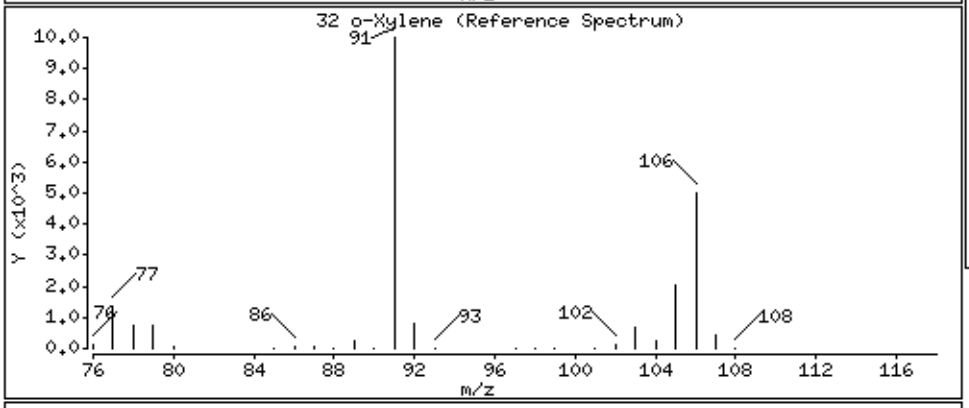
Concentration: 0.04153 PPBV

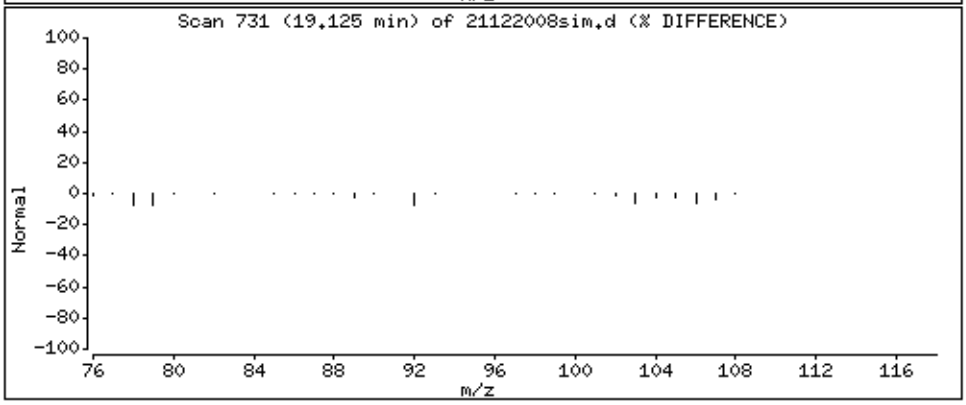












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA13_1217		
Lab ID:	1712342-16A	**Date/Time Analyzed:**	12/20/17 12:36 PM
Date/Time Collecte	12/14/17 03:00 PM	**Dilution Factor:**	1.68
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122009sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.067	0.067	0.27	0.42
Ethyl Benzene	100-41-4	0.0039	0.036	0.14	0.10 J
m,p-Xylene	108-38-3	0.0094	0.036	0.29	0.35
Naphthalene	91-20-3	0.066	0.088	0.44	0.13 J
o-Xylene	95-47-6	0.0074	0.036	0.14	0.18
Toluene	108-88-3	0.032	0.032	0.13	0.61
Total Xylenes	9999-9999-015	NA	D	0.44	0.52

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122009sim.d
Lab Smp Id: 1712342-16A
Inj Date : 20-DEC-2017 12:36
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# N1762
Misc Info : 5.9"Hg -> 5.1psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.68000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	101612	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	78808			47.49- 107.49	77.56
14.273	14.274 (1.000)	49	147555			114.87- 174.87	145.21
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	504887	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	85914			0.00- 46.92	17.02
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	382247	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	214592			25.29- 85.29	56.14
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	148727	5.63543	5.635	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	83794			30.16- 90.16	56.34
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	436560	4.92599	4.926	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	54071			0.00- 42.34	12.39

				CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	297396			38.15- 98.15	68.12
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.786	19.787 (1.072)	174	142987	4.32809	4.328	80.00- 120.00	100.00
19.767	19.768 (1.071)	95	173541			88.82- 148.82	121.37
19.786	19.787 (1.072)	176	140521			68.26- 128.26	98.28
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	11141	0.07888	0.1325	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2828			0.00- 52.85	25.39
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	13260	0.09605	0.1614	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	8049			33.44- 93.44	60.70
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	613	0.01446	0.02428	80.00- 120.00	100.00(a)
18.548	18.540 (1.004)	91	1879			259.51- 319.51	306.15
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	1986	0.04790	0.08046	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	3952			159.47- 219.47	199.00
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	924	0.02452	0.04119	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	2441			168.52- 228.52	264.14
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	3004	0.01517	0.02548	80.00- 120.00	100.00(a)
24.153	24.154 (1.308)	127	441			0.00- 43.35	14.70
M 39 Total Xylene					CAS #: 1330-20-7		
			2910	0.07241	0.1216		

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122009sim.d
Lab Smp Id: 1712342-16A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 5.9"Hg -> 5.1psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	101612	-14.03
20 1,4-Difluorobenze	566094	339656	792532	504887	-10.81
28 Chlorobenzene-d5	446145	267687	624603	382247	-14.32

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-16A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 5.9"Hg -> 5.1psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.635	112.71	70-130
$ 22 Toluene-d8	5.000	4.926	98.52	70-130
$ 33 4-Bromofluorobenze	5.000	4.328	86.56	70-130

Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

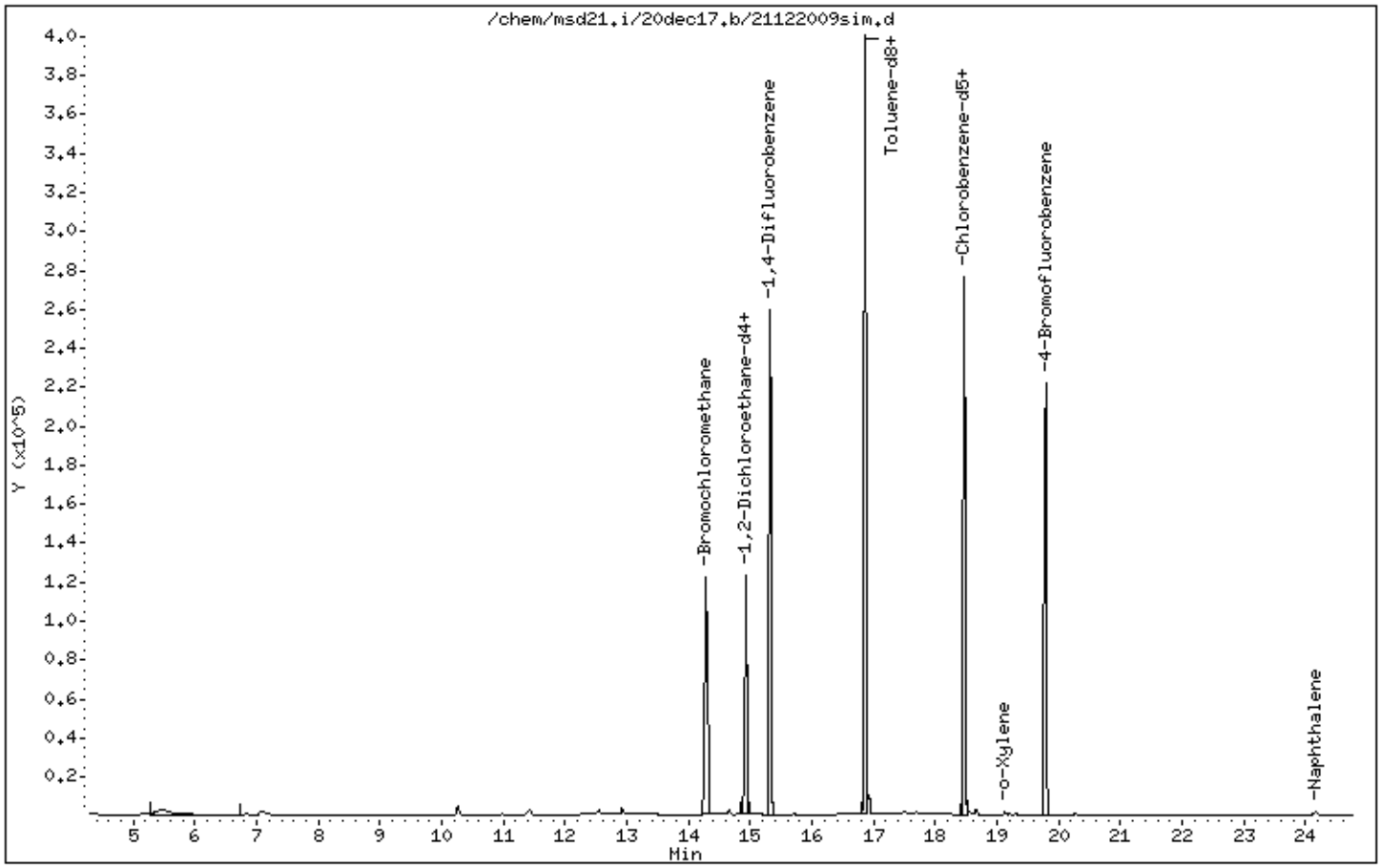
Instrument: msd21.i

Sample Info: 250mL# N1762

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

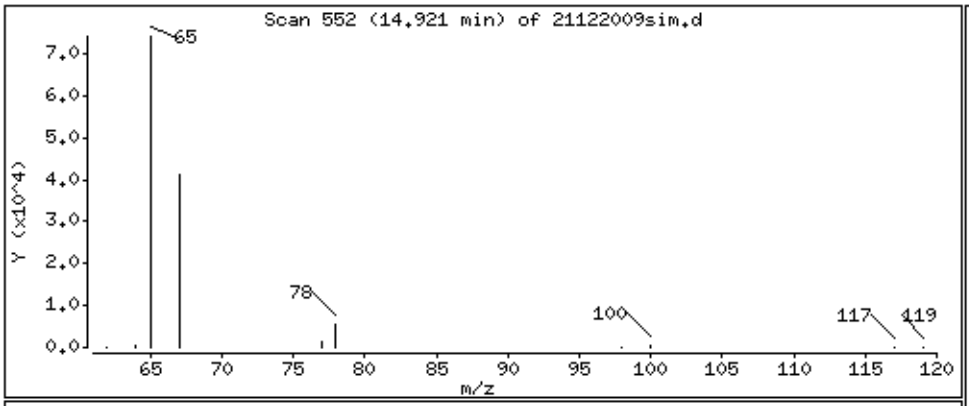
Operator: ef

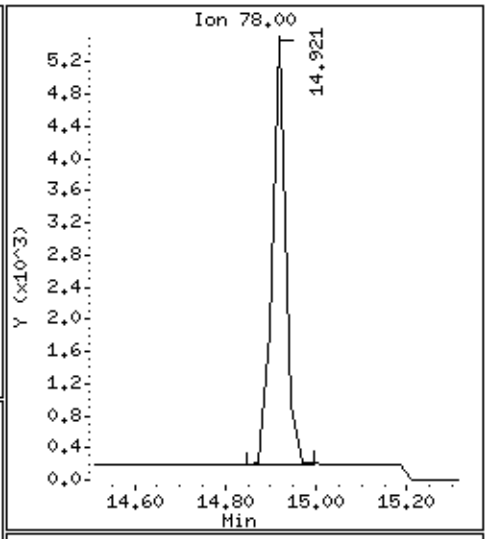
Column phase: RTX-624

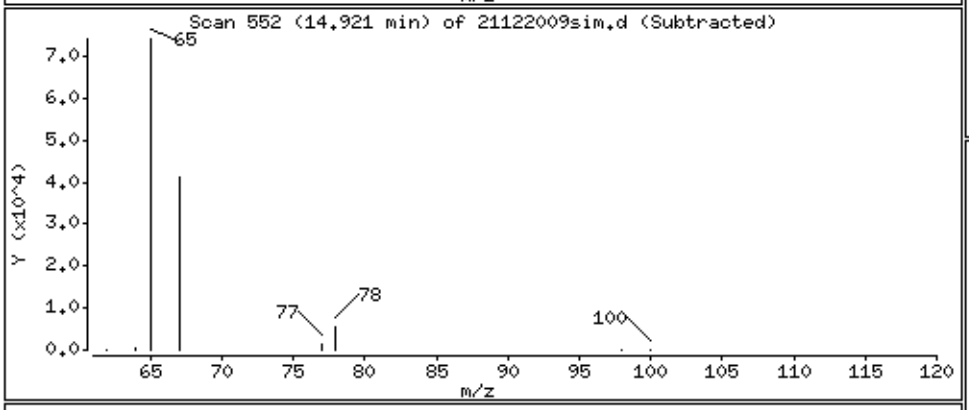
Column diameter: 0.32

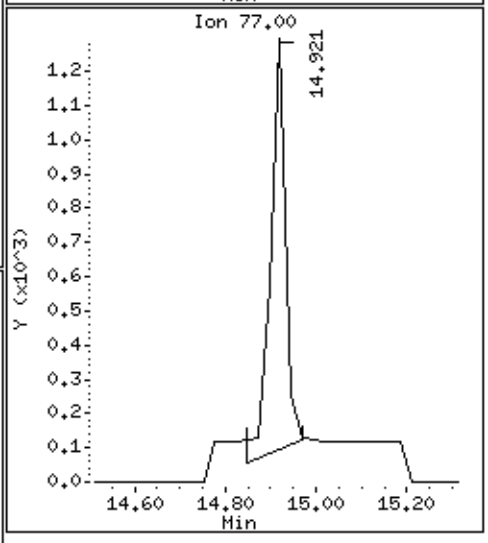
17 Benzene

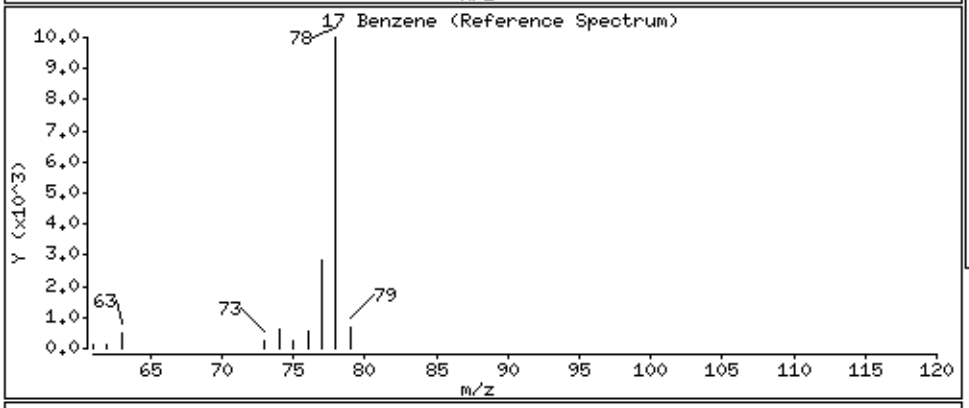
Concentration: 0.1325 PPBV

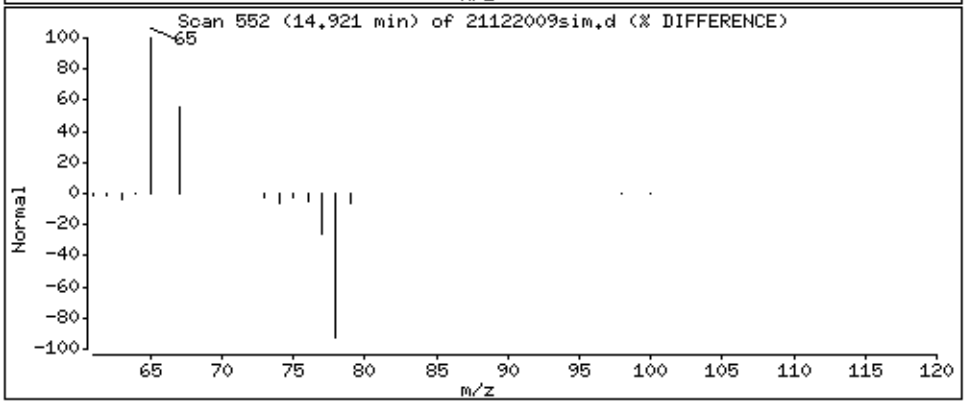












Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

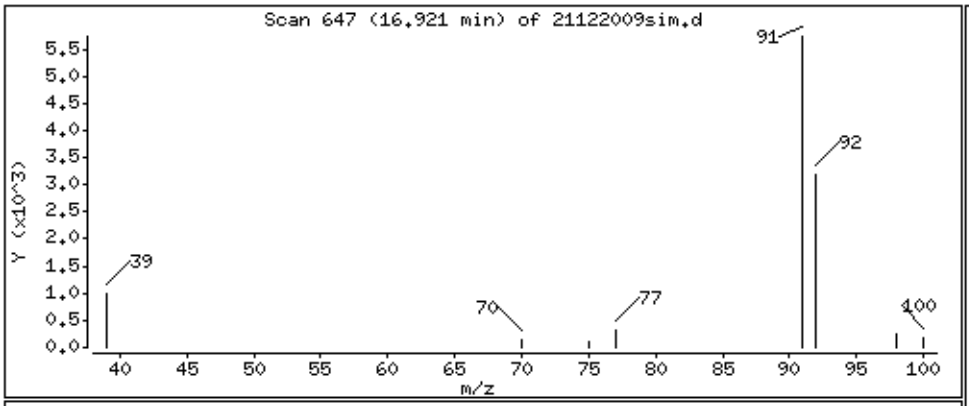
Operator: ef

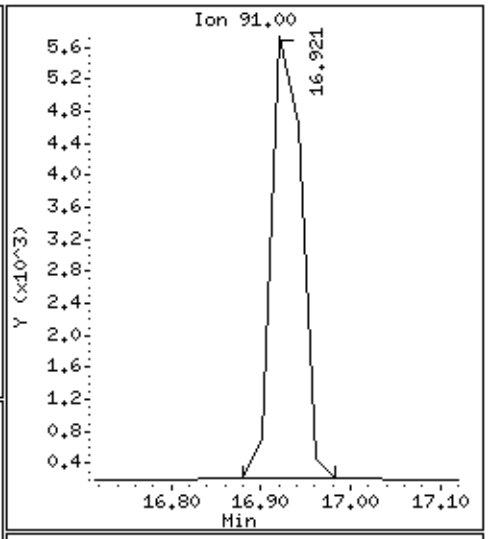
Column phase: RTX-624

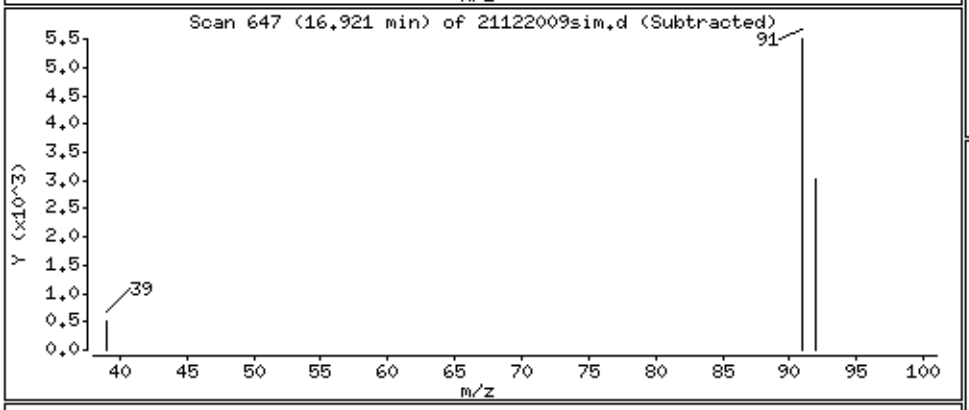
Column diameter: 0.32

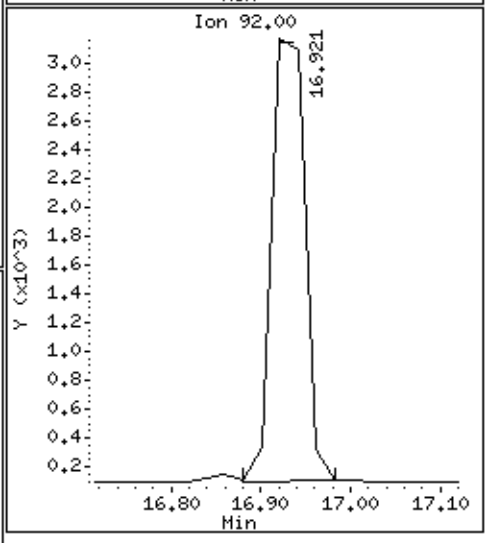
23 Toluene

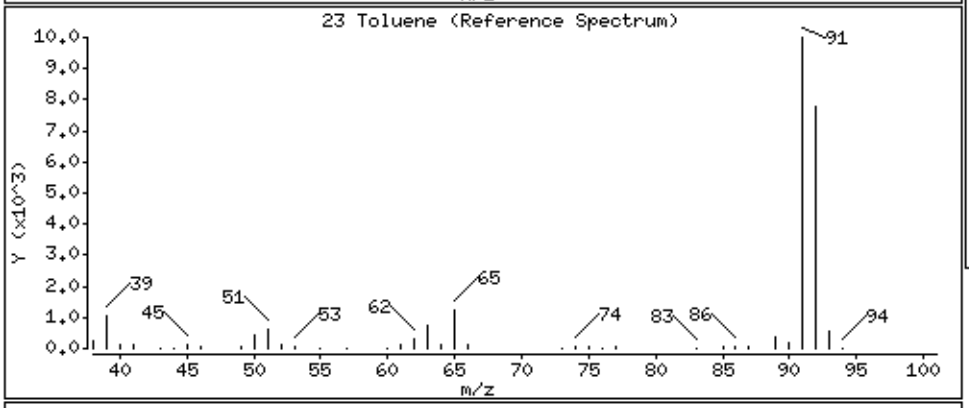
Concentration: 0.1614 PPBV

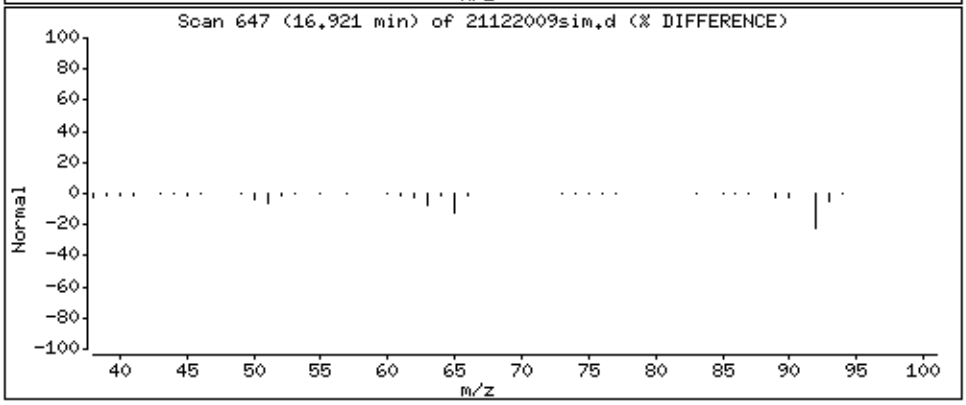












Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

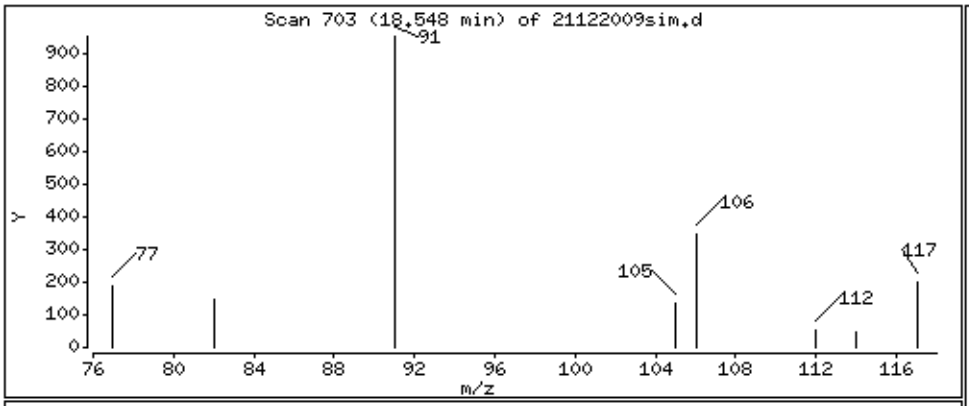
Operator: ef

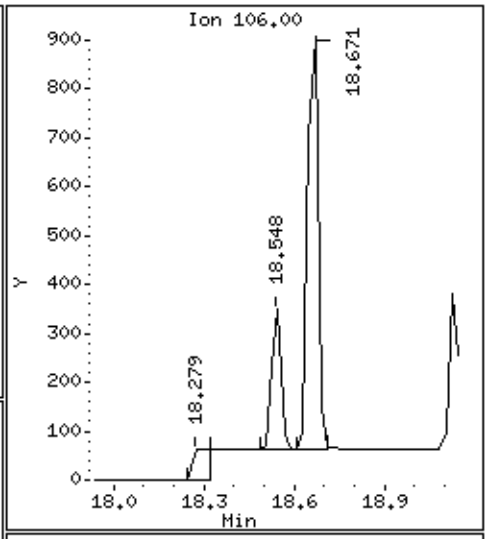
Column phase: RTX-624

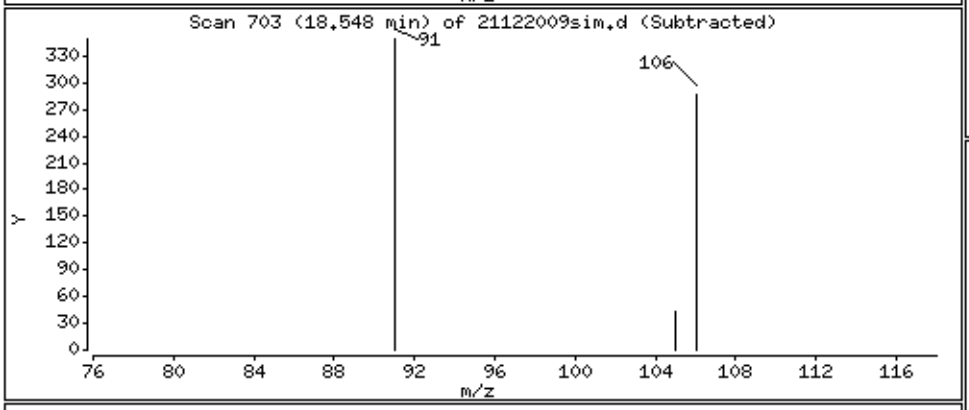
Column diameter: 0.32

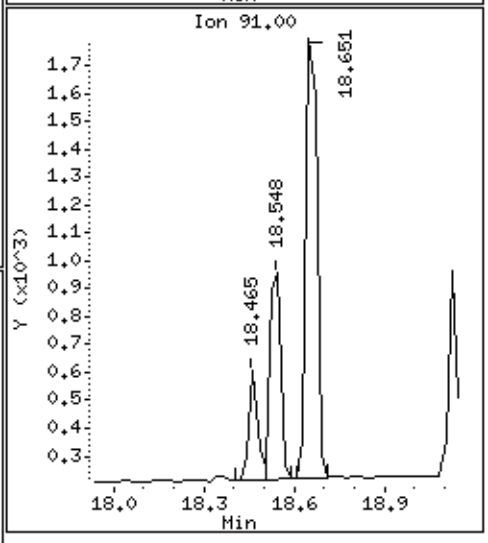
30 Ethyl Benzene

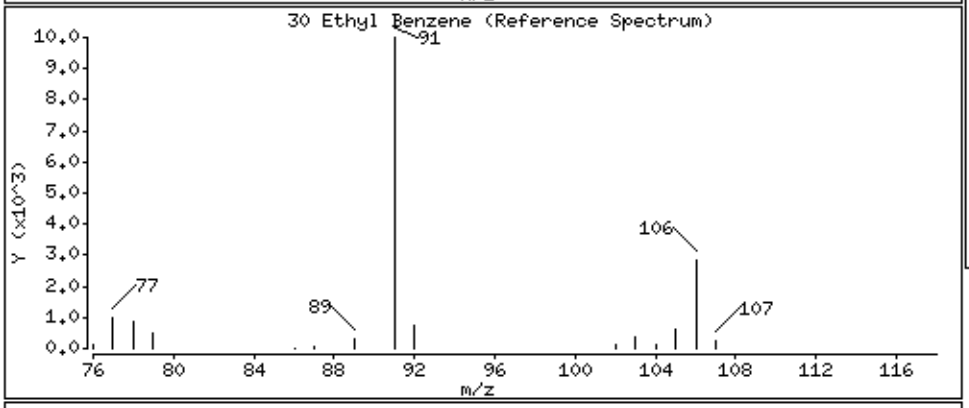
Concentration: 0.02428 PPBV

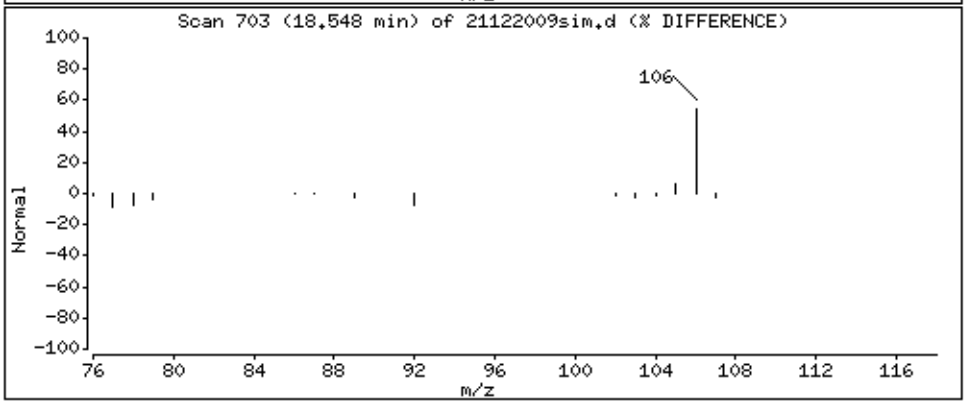












Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

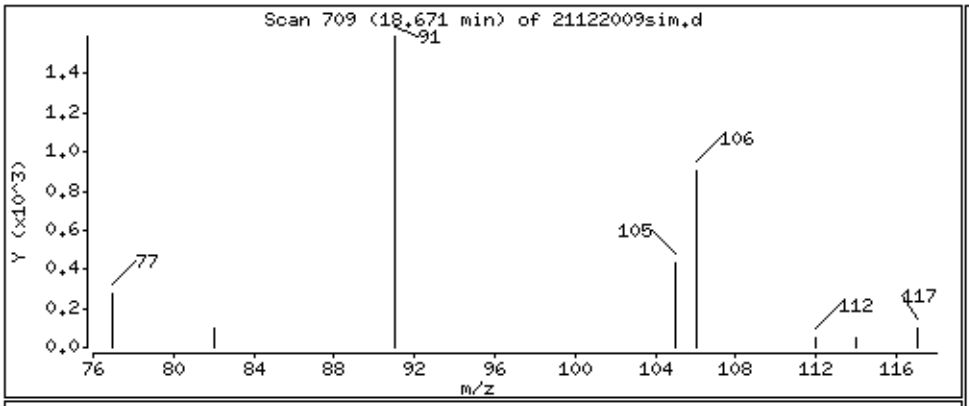
Operator: ef

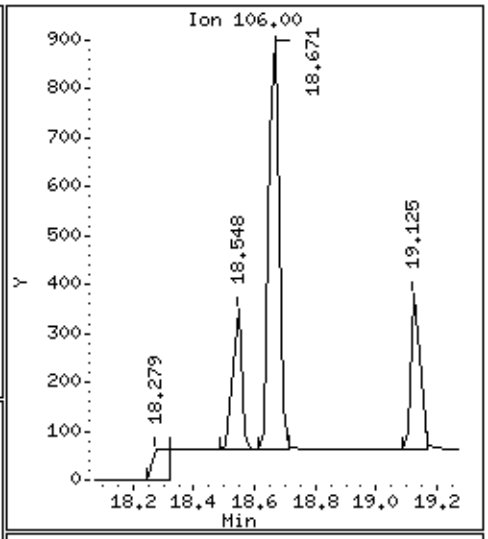
Column phase: RTX-624

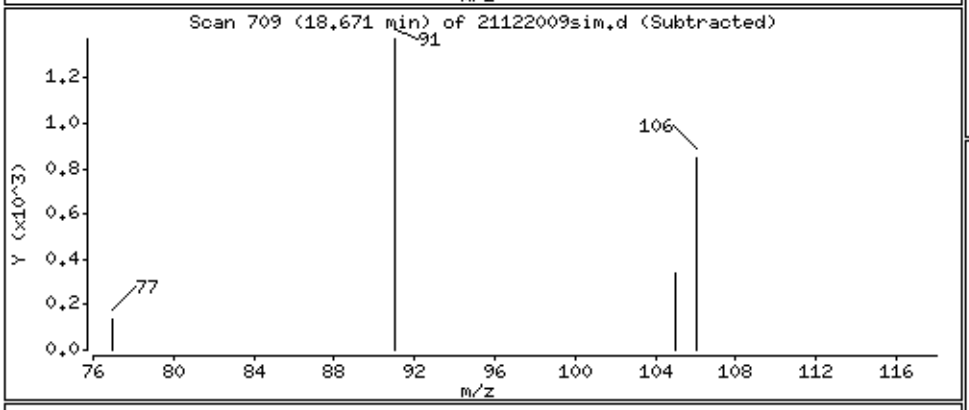
Column diameter: 0.32

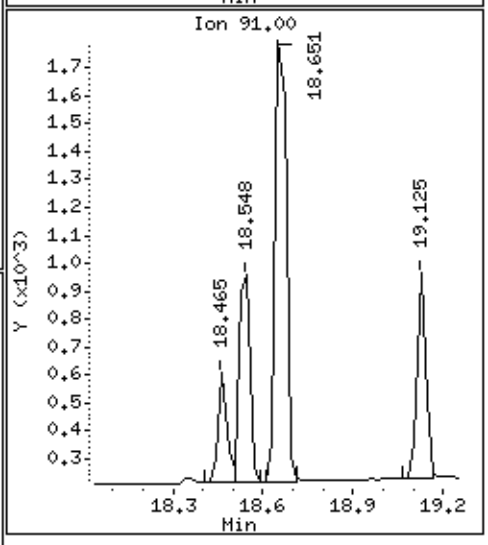
31 m,p-Xylene

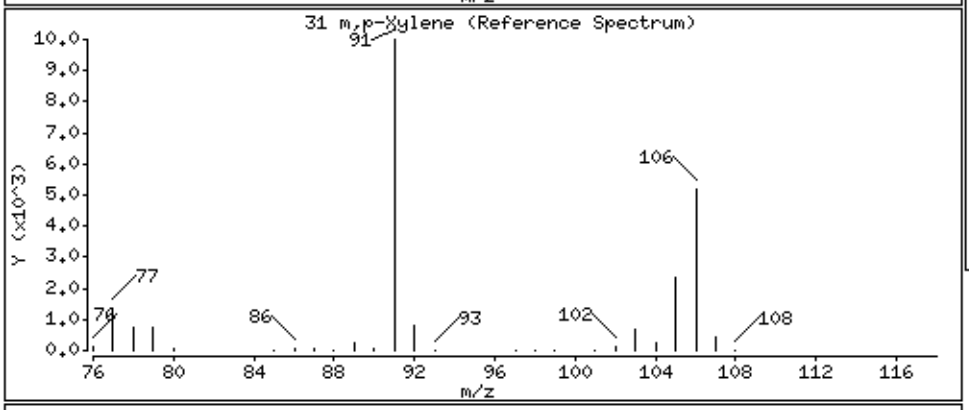
Concentration: 0.08046 PPBV

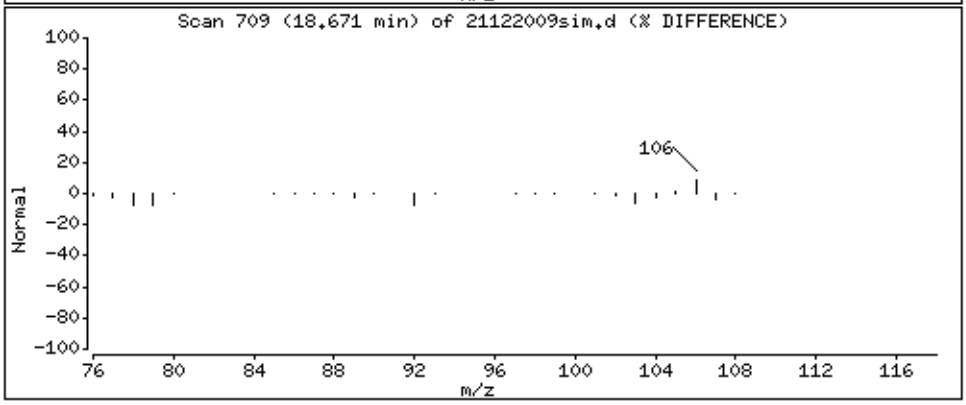












Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

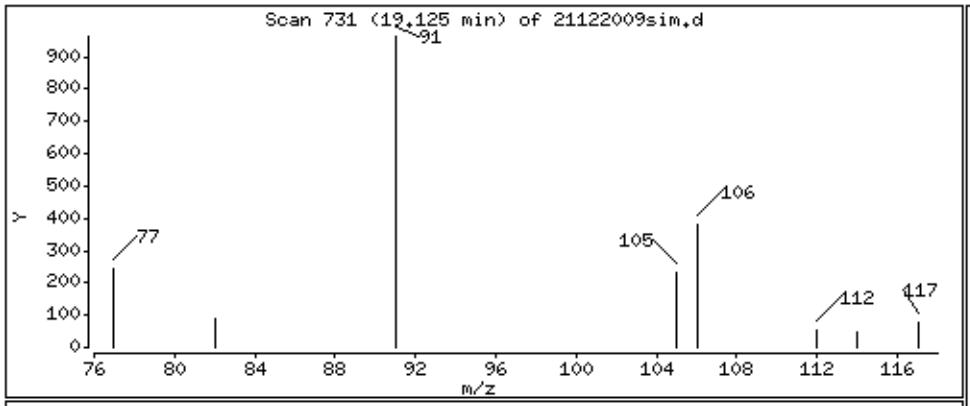
Operator: ef

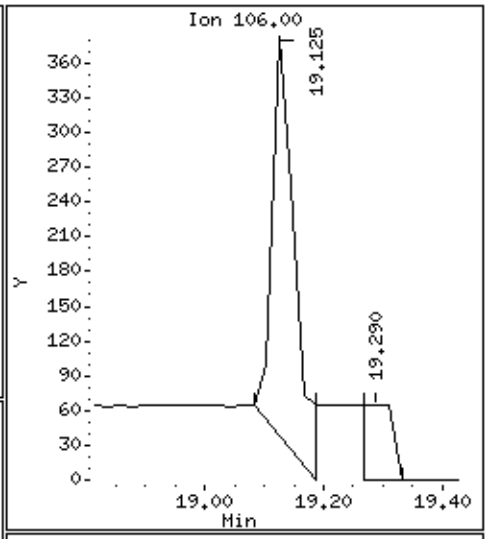
Column phase: RTX-624

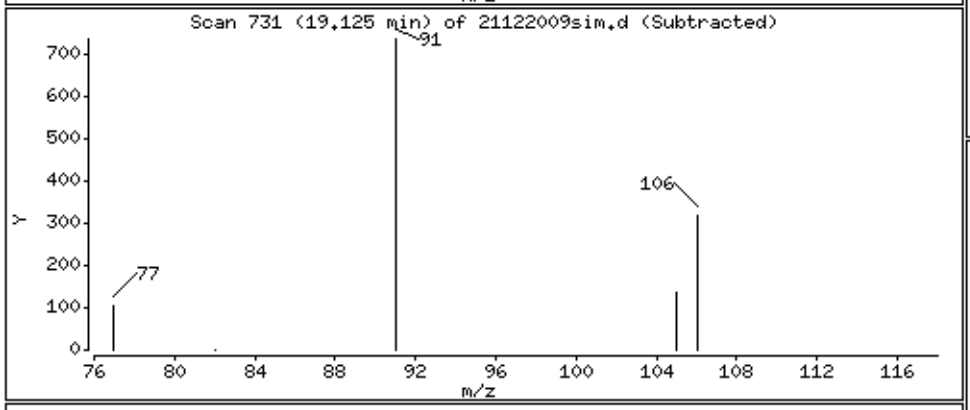
Column diameter: 0.32

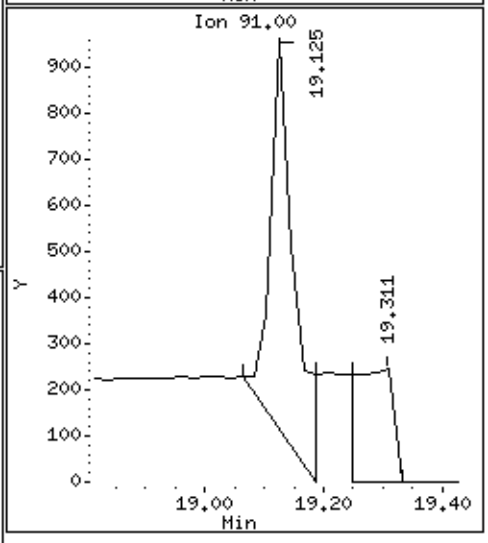
32 o-Xylene

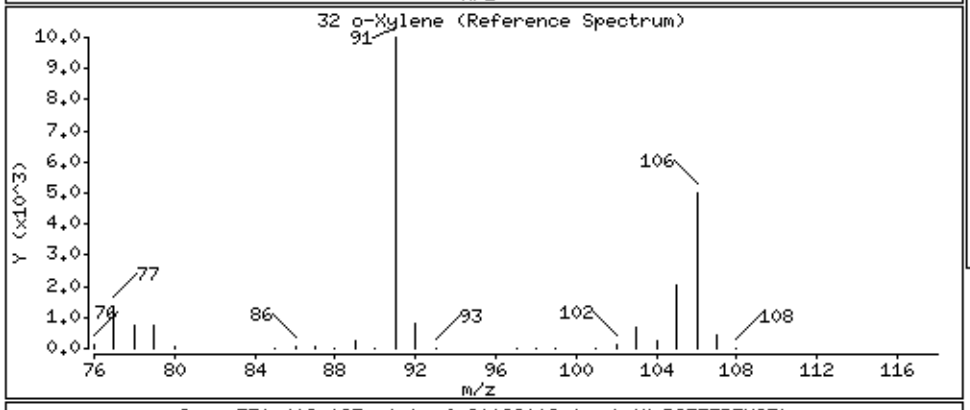
Concentration: 0.04119 PPBV

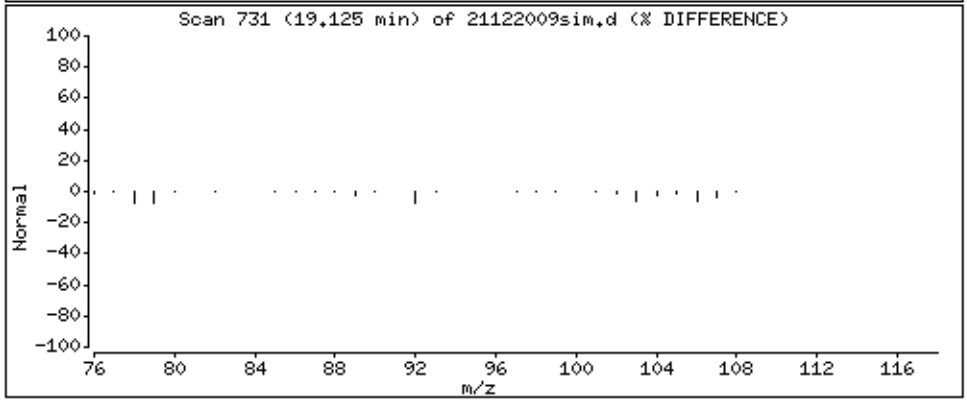












Data File: /chem/msd21.i/20dec17.b/21122009sim.d

Date : 20-DEC-2017 12:36

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N1762

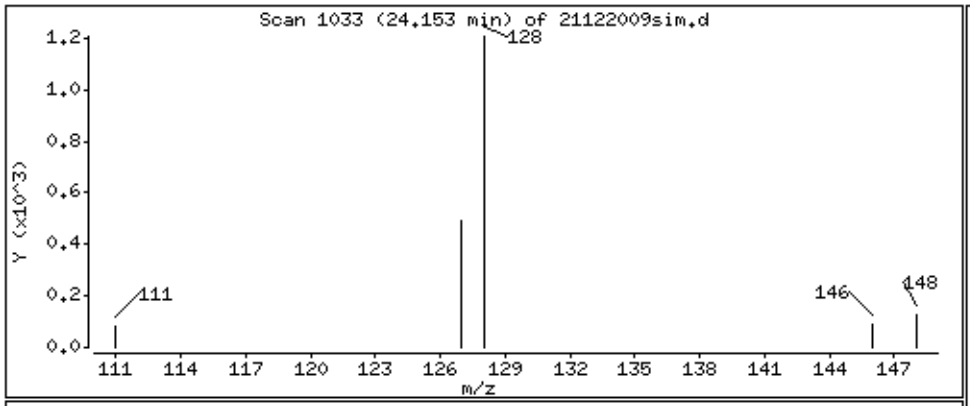
Operator: ef

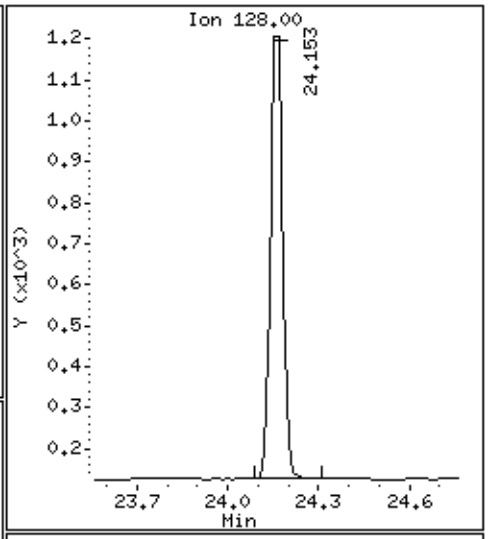
Column phase: RTX-624

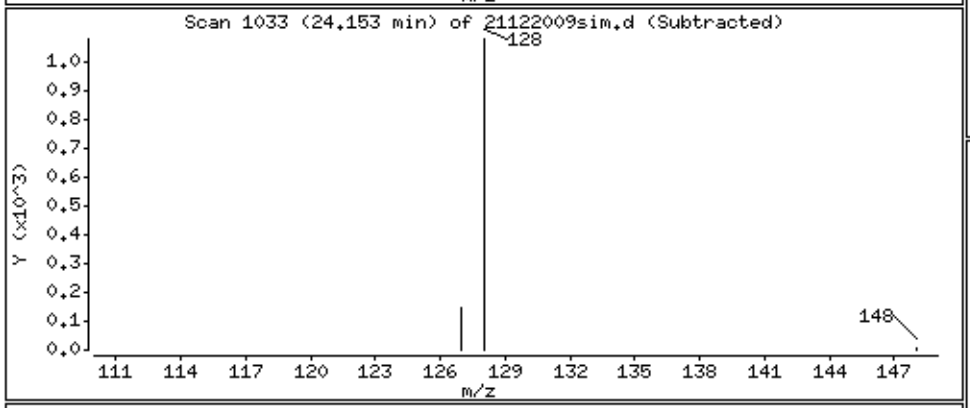
Column diameter: 0.32

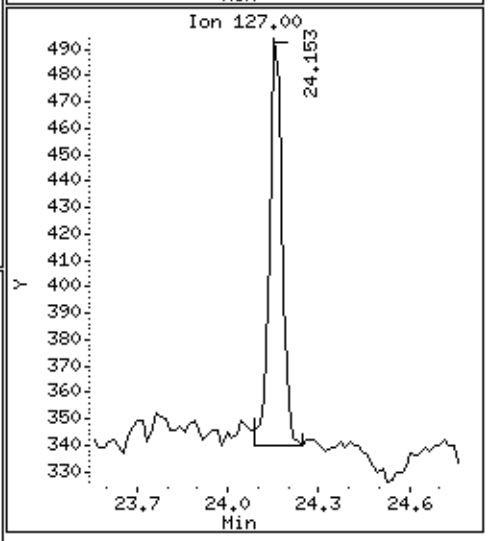
38 Naphthalene

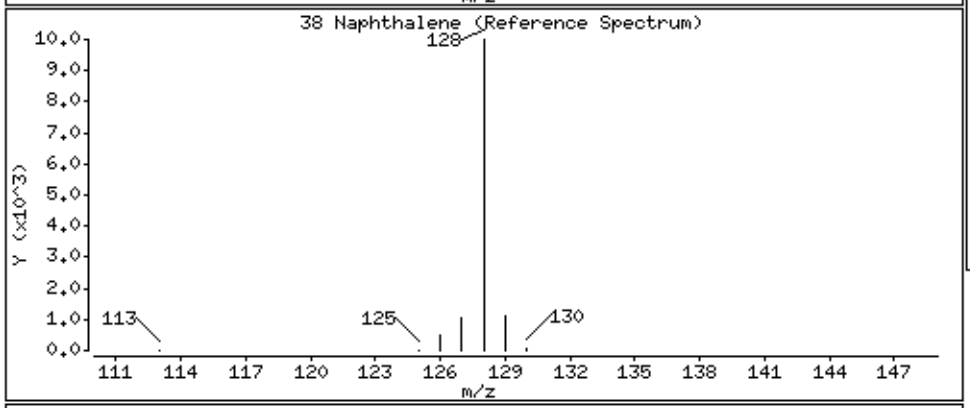
Concentration: 0.02548 PPBV

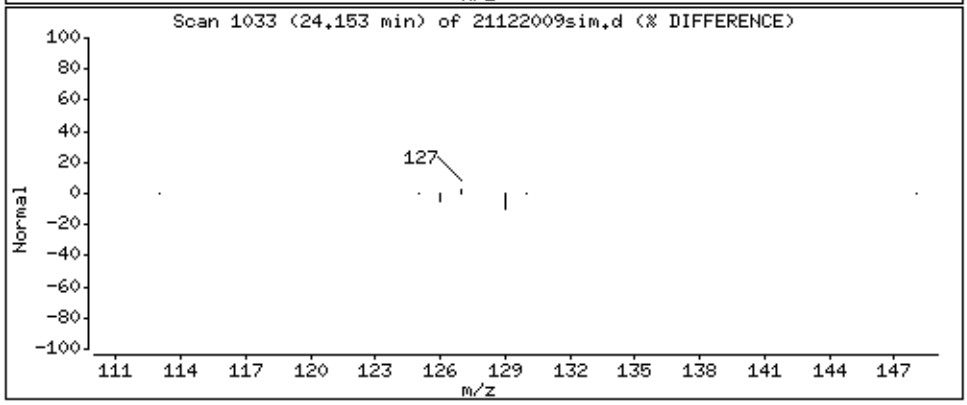












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA13-1_1217		
Lab ID:	1712342-17A	**Date/Time Analyzed:**	12/20/17 01:15 PM
Date/Time Collecte	12/14/17 03:00 PM	**Dilution Factor:**	1.48
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122010sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.059	0.059	0.24	0.45
Ethyl Benzene	100-41-4	0.0035	0.032	0.13	0.10 J
m,p-Xylene	108-38-3	0.0083	0.032	0.26	0.33
Naphthalene	91-20-3	0.058	0.078	0.39	0.084 J
o-Xylene	95-47-6	0.0066	0.032	0.13	0.12 J
Toluene	108-88-3	0.028	0.028	0.11	0.59
Total Xylenes	9999-9999-015	NA	D	0.38	0.45

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	111
4-Bromofluorobenzene	460-00-4	70-130	87
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122010sim.d
Lab Smp Id: 1712342-17A
Inj Date : 20-DEC-2017 13:15
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 5778
Misc Info : 3.1"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.48000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	105007	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	81285			47.49- 107.49	77.41
14.273	14.274 (1.000)	49	152814			114.87- 174.87	145.53
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	511462	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86888			0.00- 46.92	16.99
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	380564	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	214168			25.29- 85.29	56.28
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	151720	5.56296	5.563	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85622			30.16- 90.16	56.43
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	437845	4.87697	4.877	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	53864			0.00- 42.34	12.30

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	298114			38.15- 98.15	68.09
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	142769	4.34060	4.341	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	173217			88.82- 148.82	121.33
19.787	19.787 (1.072)	176	140268			68.26- 128.26	98.25
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	13582	0.09492	0.1405	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	3386			0.00- 52.85	24.93
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	14915	0.10665	0.1578	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	9054			33.44- 93.44	60.70
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	674	0.01596	0.02362	80.00- 120.00	100.00(a)
18.548	18.540 (1.004)	91	2075			259.51- 319.51	307.66
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	2098	0.05083	0.07522	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	4156			159.47- 219.47	198.05
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	730	0.01945	0.02879	80.00- 120.00	100.00(a)
19.125	19.125 (1.036)	91	2531			168.52- 228.52	346.75
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	2126	0.01078	0.01596	80.00- 120.00	100.00(a)
24.153	24.154 (1.308)	127	363			0.00- 43.35	17.11
M 39 Total Xylene					CAS #: 1330-20-7		
			2828	0.07028	0.1040		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122010sim.d
Lab Smp Id: 1712342-17A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 3.1"Hg -> 4.9psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	105007	-11.16
20 1,4-Difluorobenze	566094	339656	792532	511462	-9.65
28 Chlorobenzene-d5	446145	267687	624603	380564	-14.70

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-17A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 3.1"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.563	111.26	70-130
$ 22 Toluene-d8	5.000	4.877	97.54	70-130
$ 33 4-Bromofluorobenze	5.000	4.341	86.81	70-130

Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

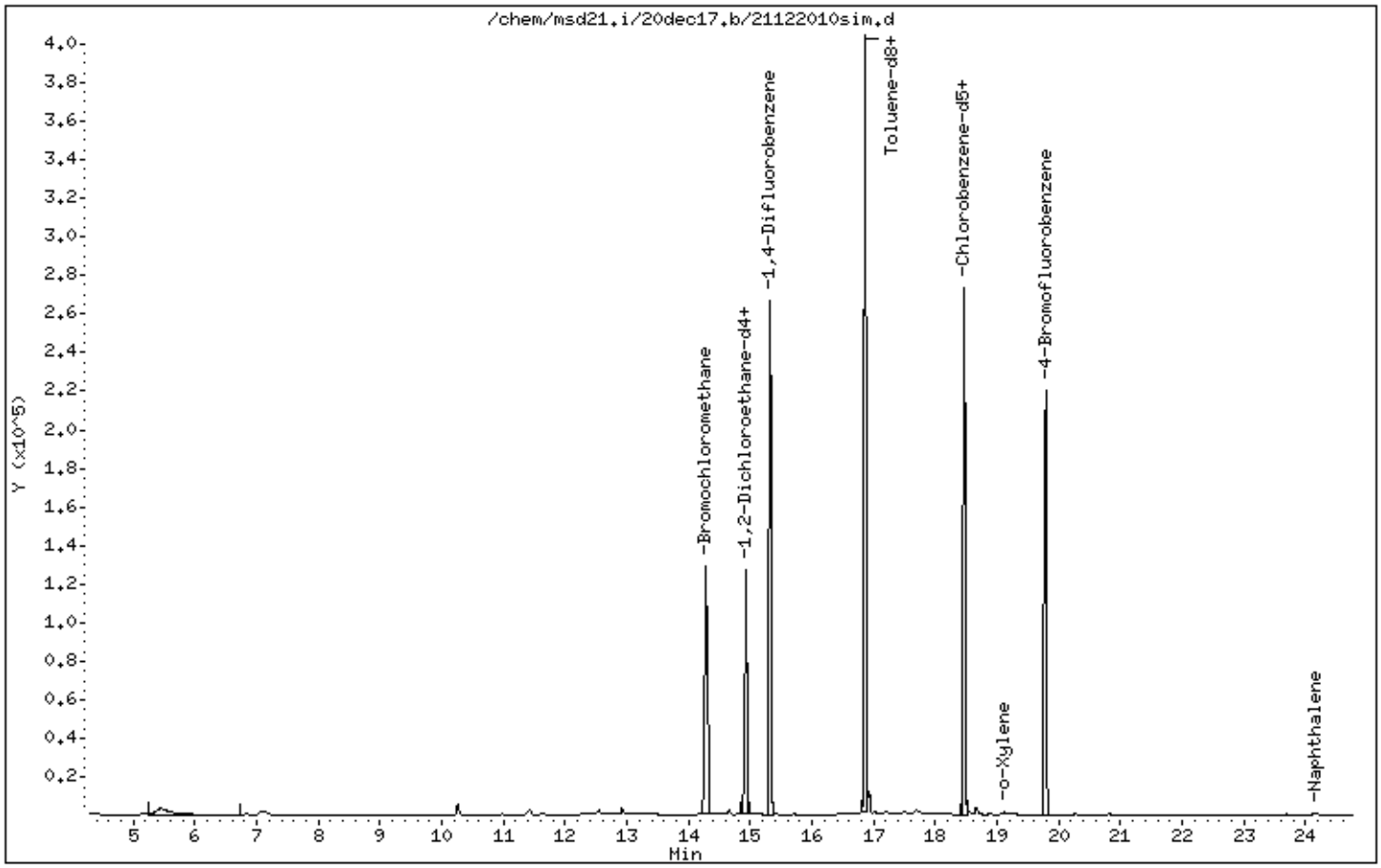
Instrument: msd21.i

Sample Info: 250mL# 5778

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

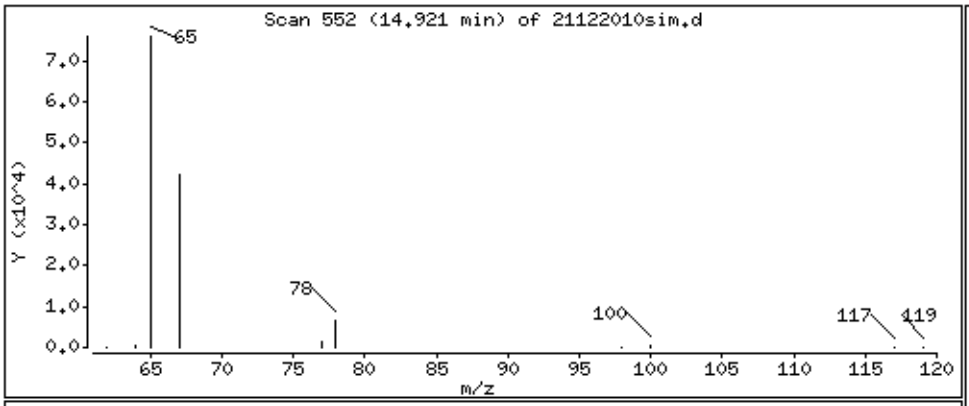
Operator: ef

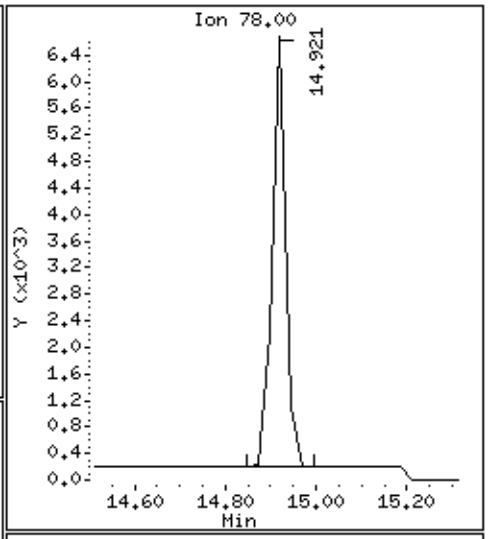
Column phase: RTX-624

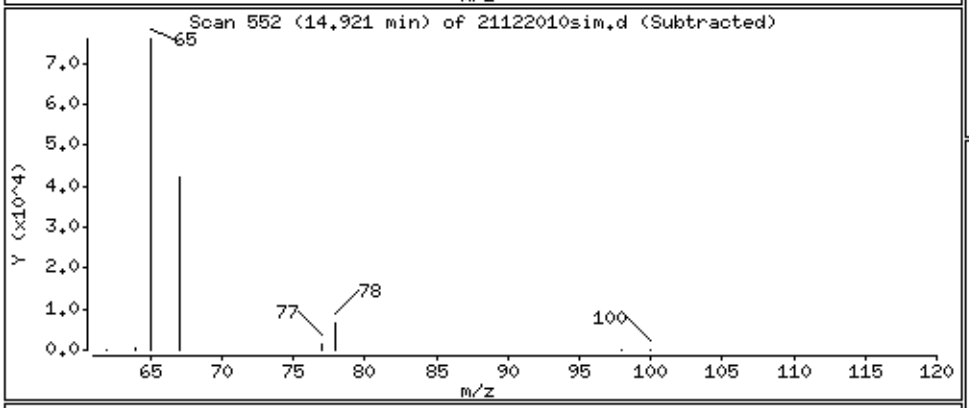
Column diameter: 0.32

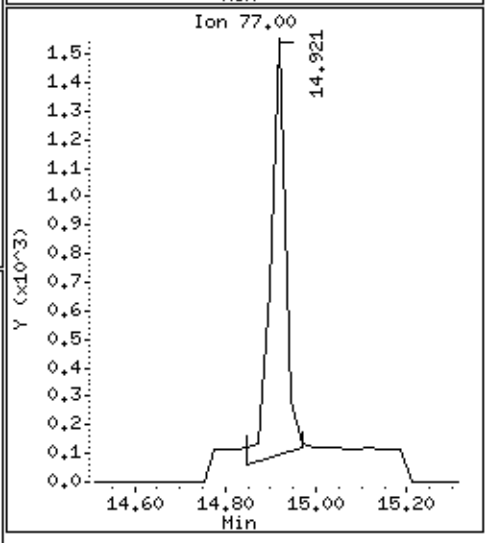
17 Benzene

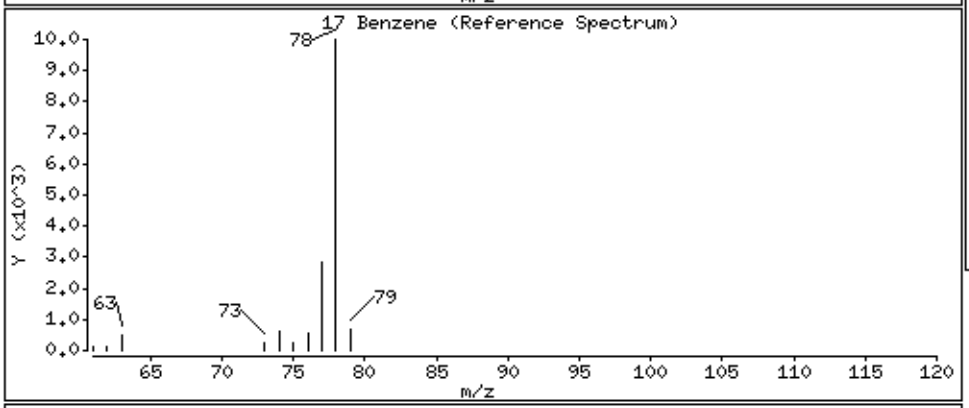
Concentration: 0.1405 PPBV

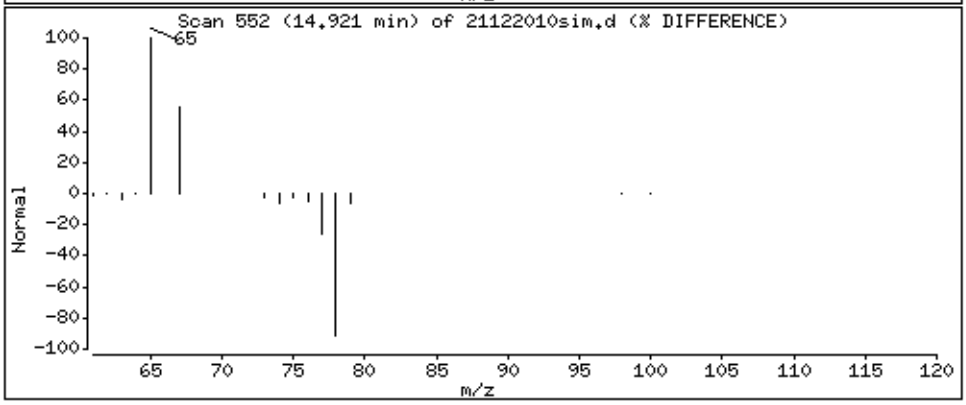












Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

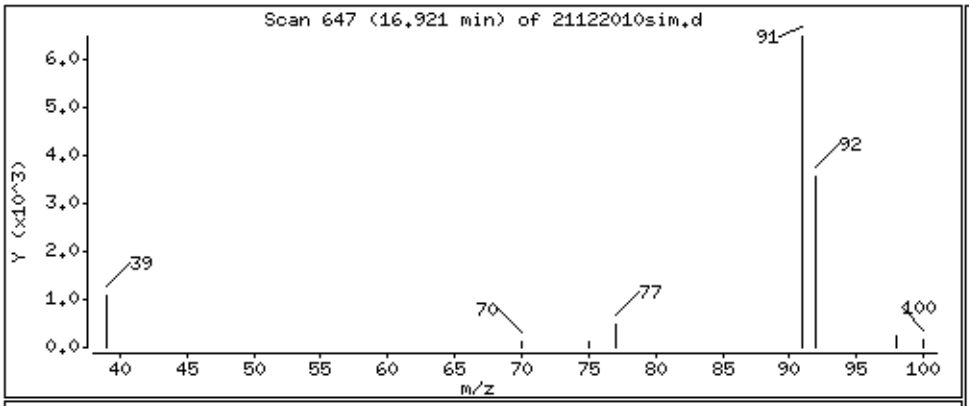
Operator: ef

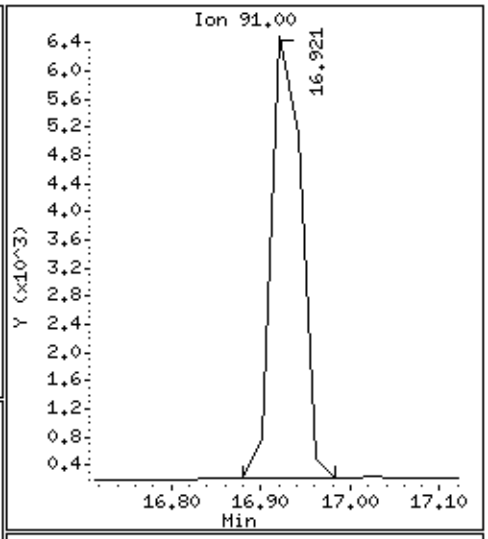
Column phase: RTX-624

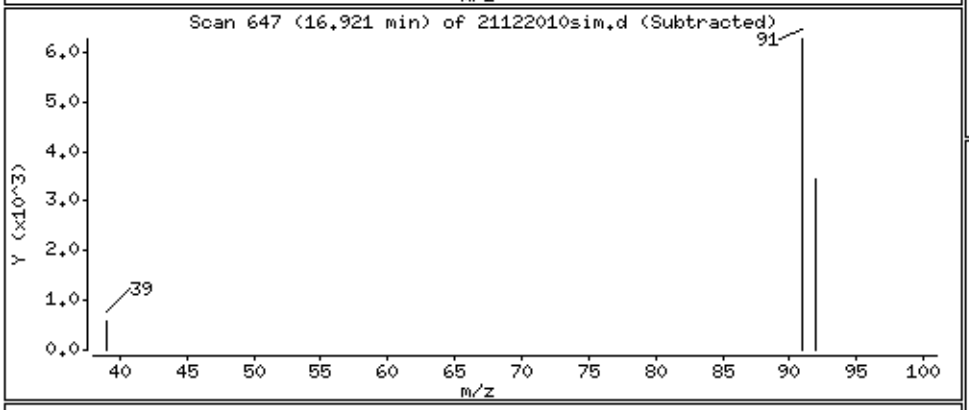
Column diameter: 0.32

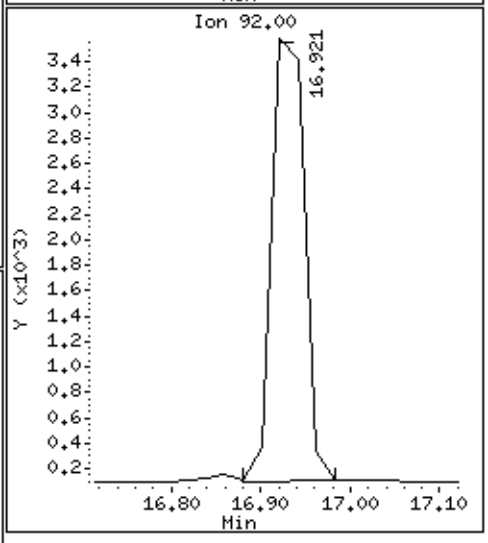
23 Toluene

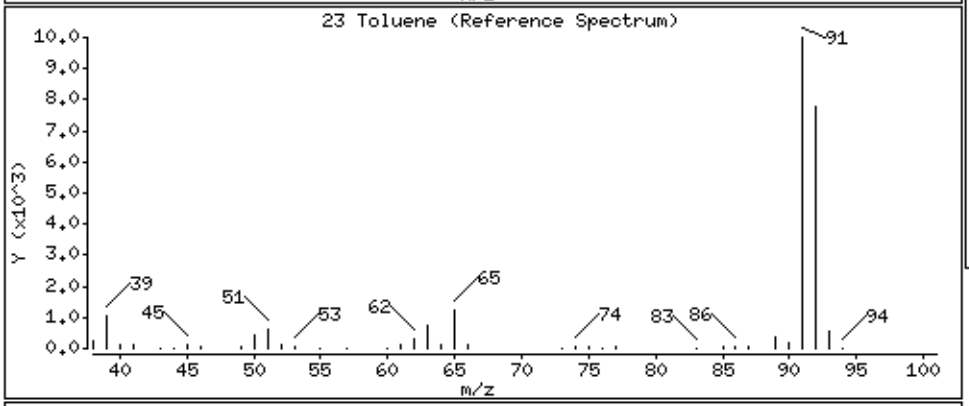
Concentration: 0.1578 PPBV

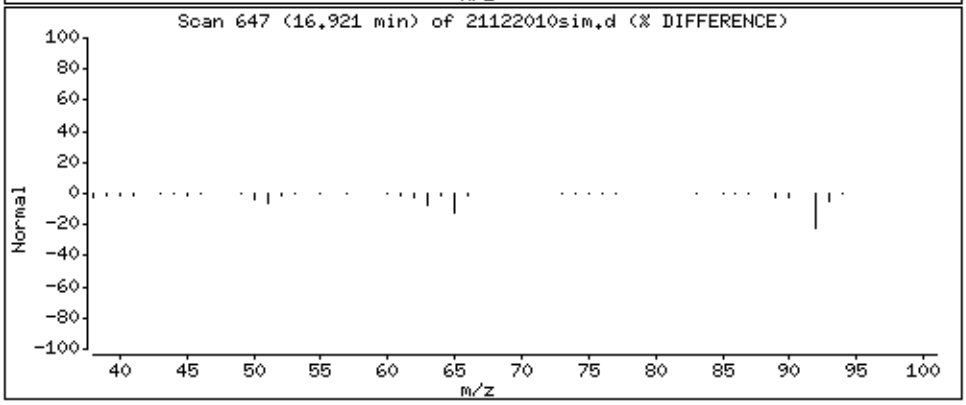












Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

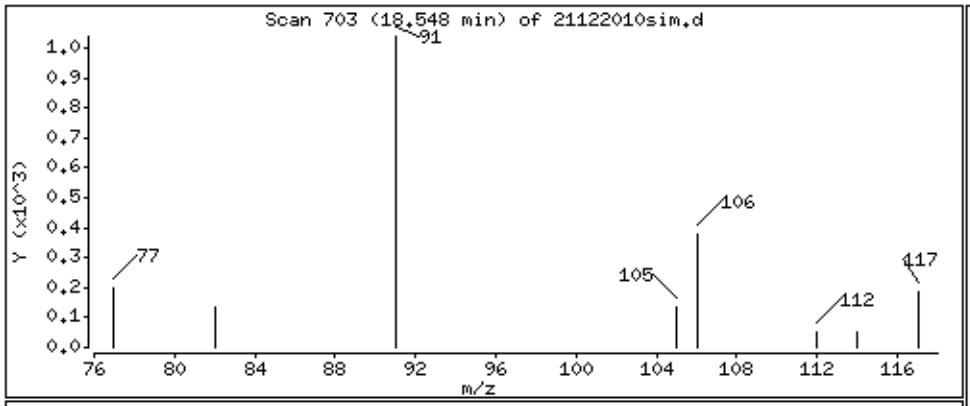
Operator: ef

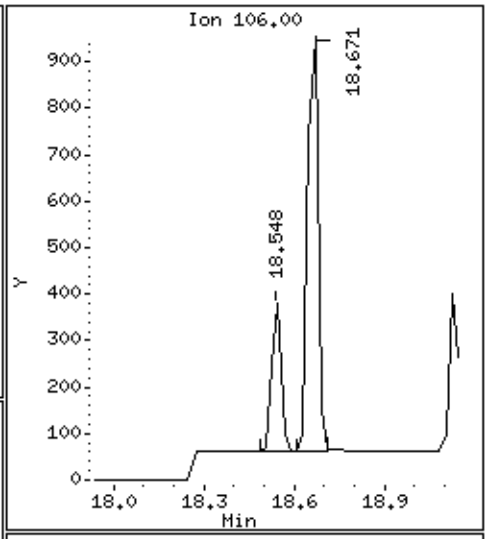
Column phase: RTX-624

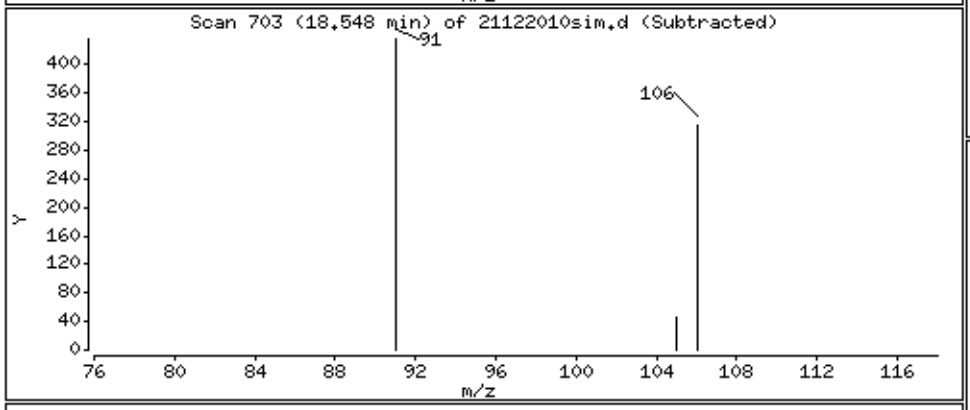
Column diameter: 0.32

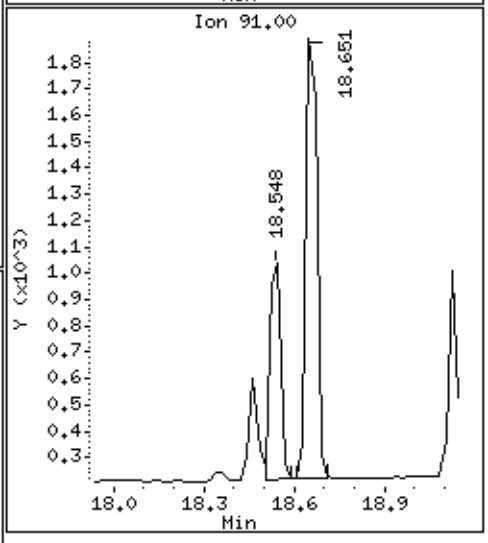
30 Ethyl Benzene

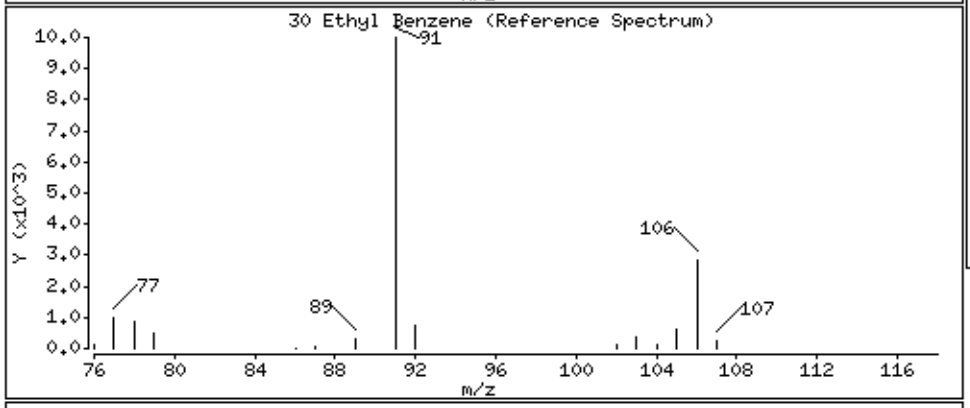
Concentration: 0.02362 PPBV

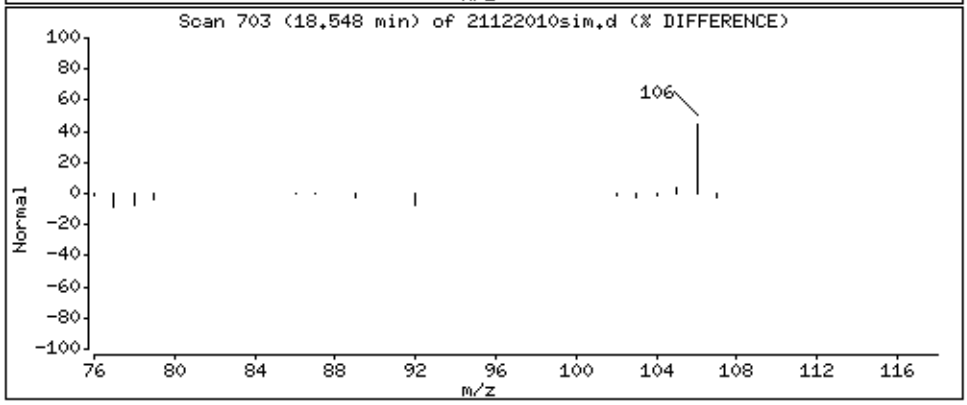












Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

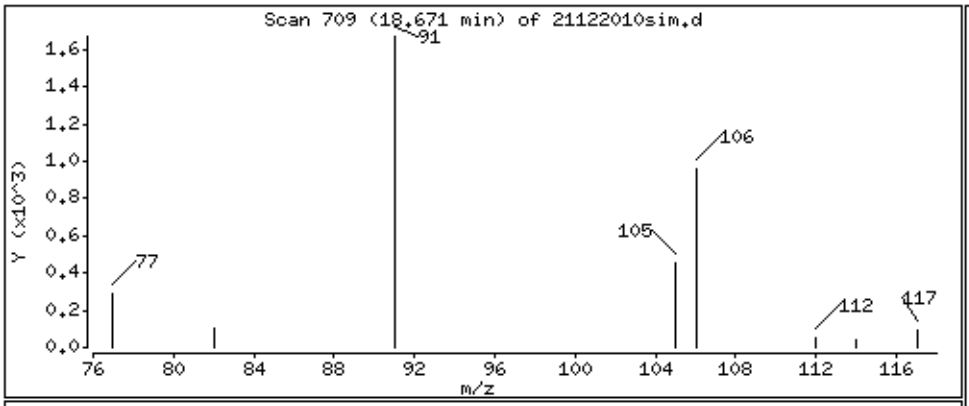
Operator: ef

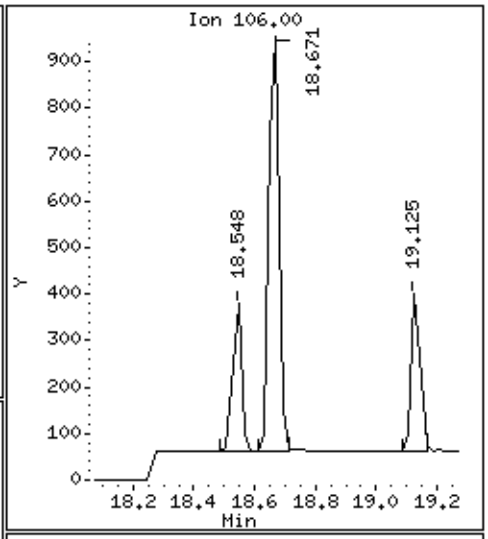
Column phase: RTX-624

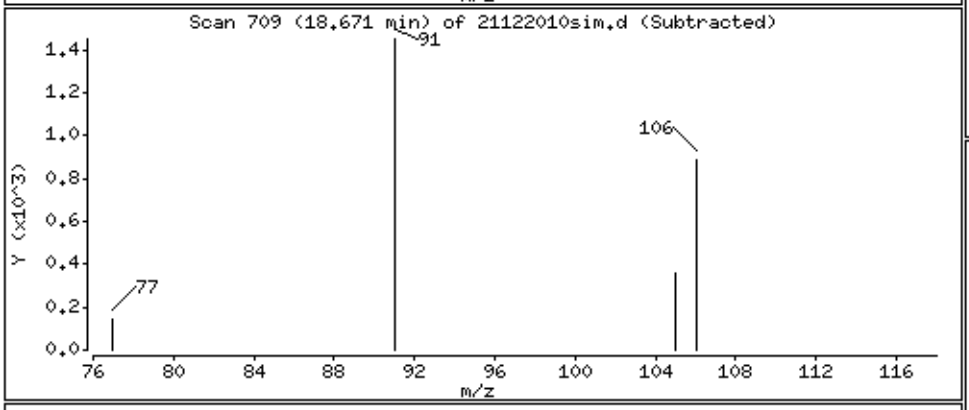
Column diameter: 0.32

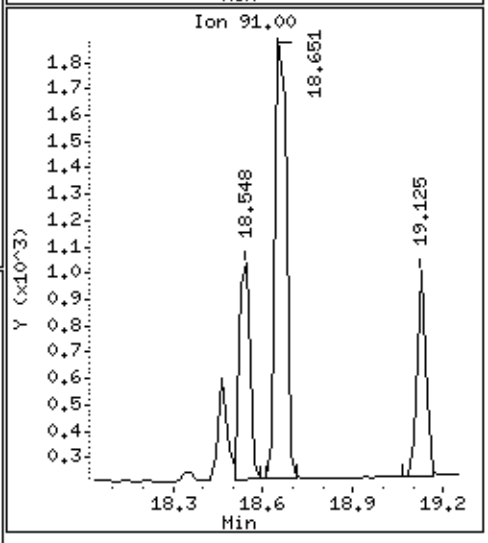
31 m,p-Xylene

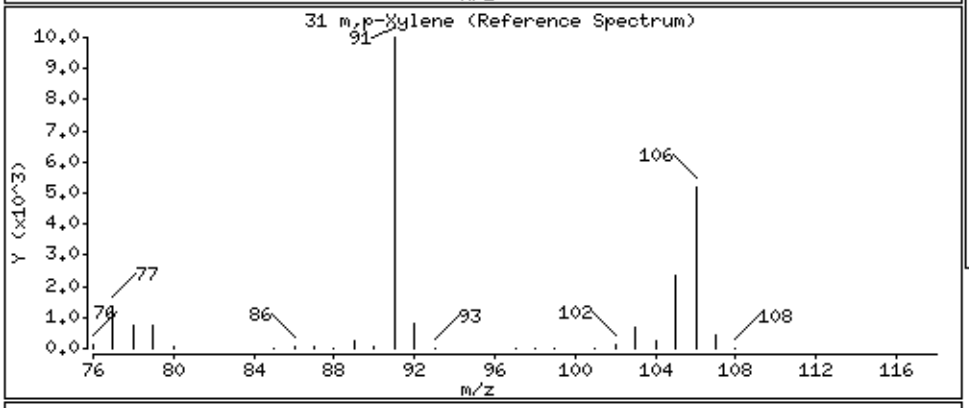
Concentration: 0.07522 PPBV

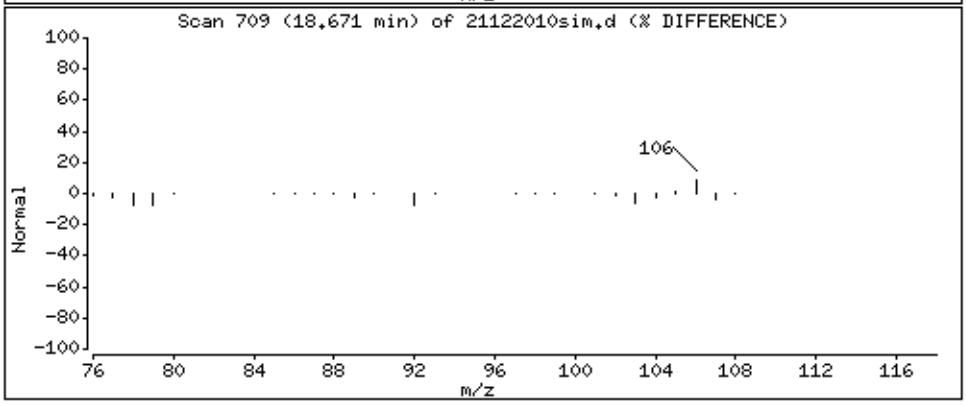












Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

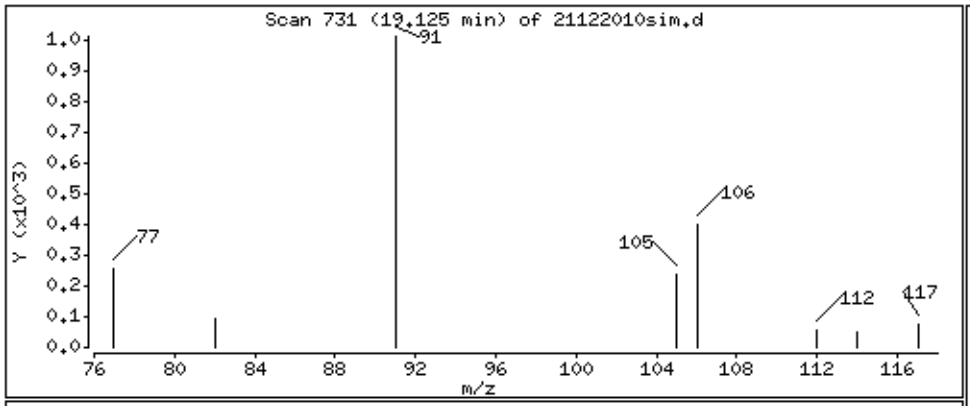
Operator: ef

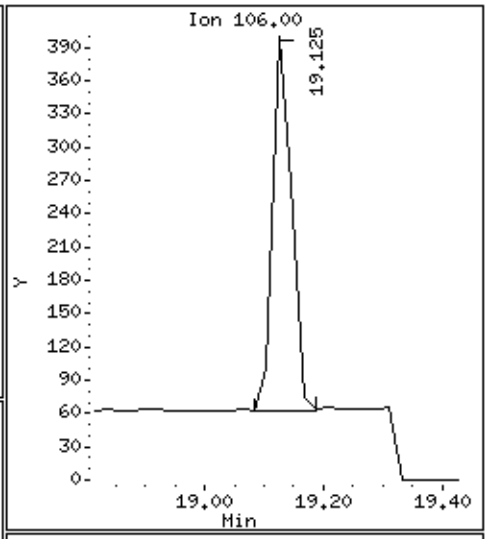
Column phase: RTX-624

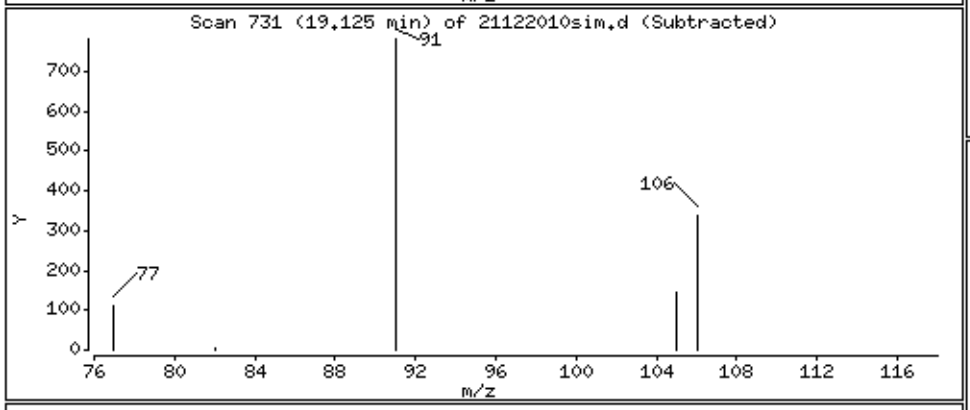
Column diameter: 0.32

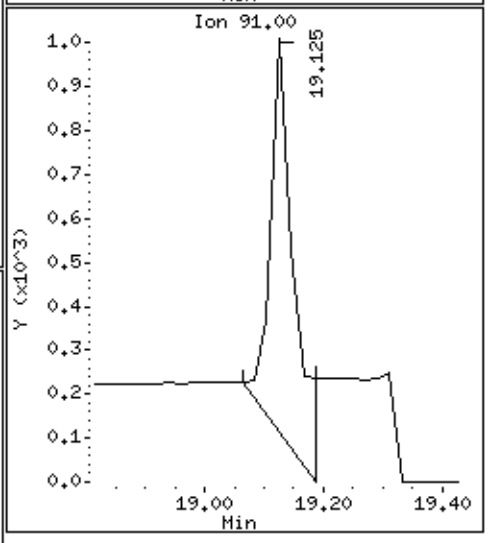
32 o-Xylene

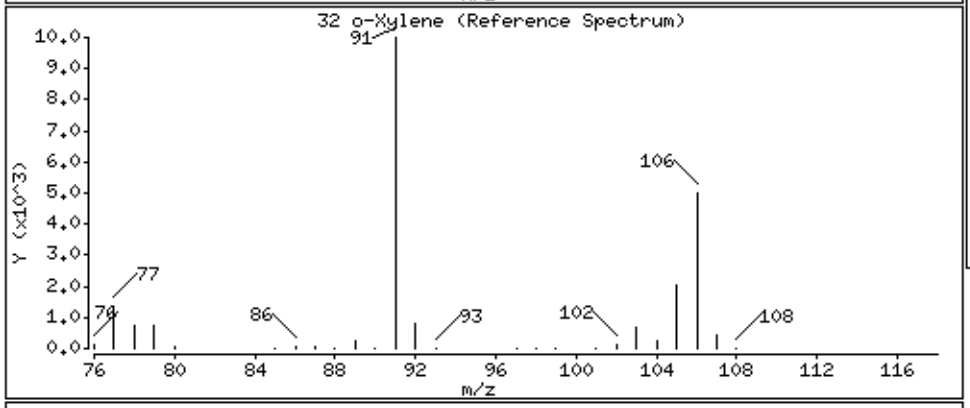
Concentration: 0.02879 PPBV

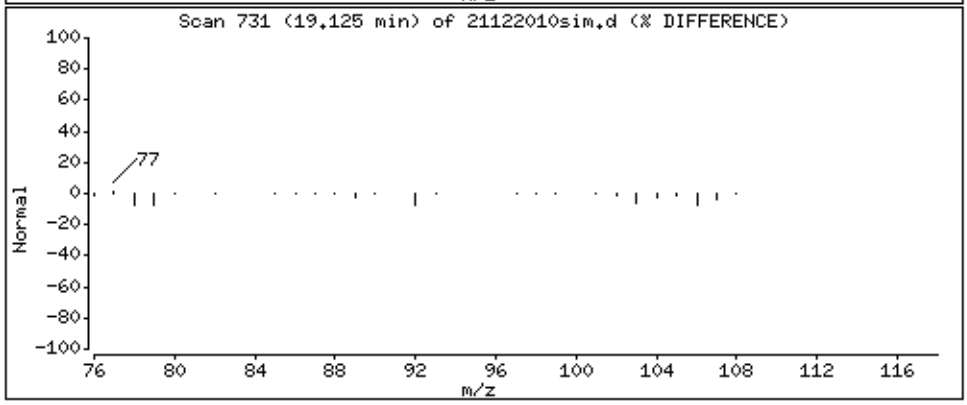












Data File: /chem/msd21.i/20dec17.b/21122010sim.d

Date : 20-DEC-2017 13:15

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 5778

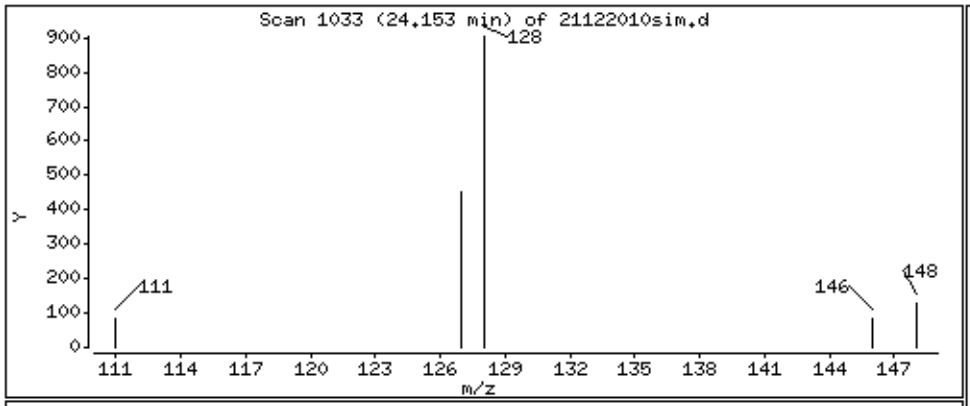
Operator: ef

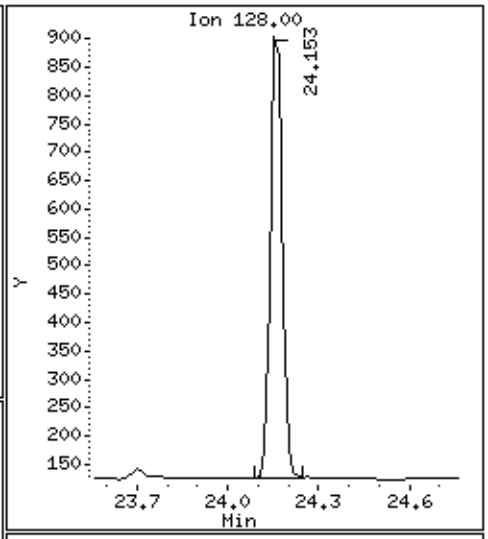
Column phase: RTX-624

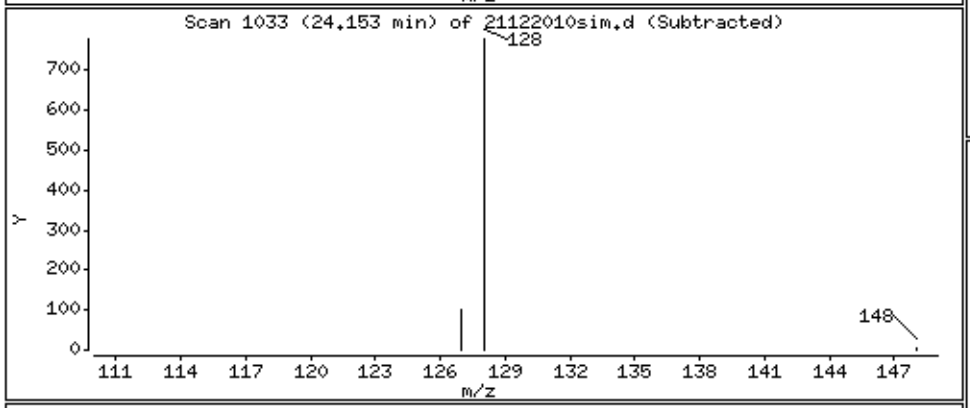
Column diameter: 0.32

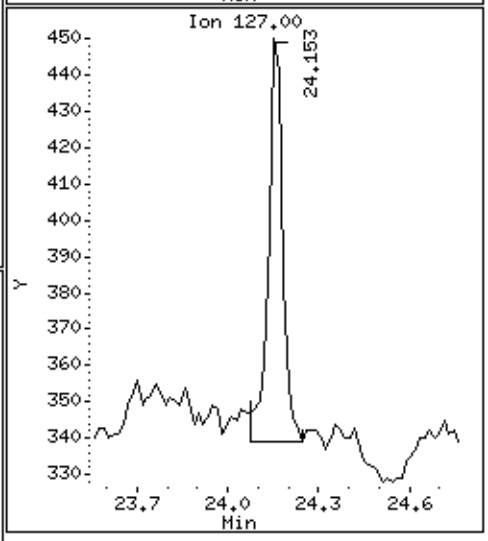
38 Naphthalene

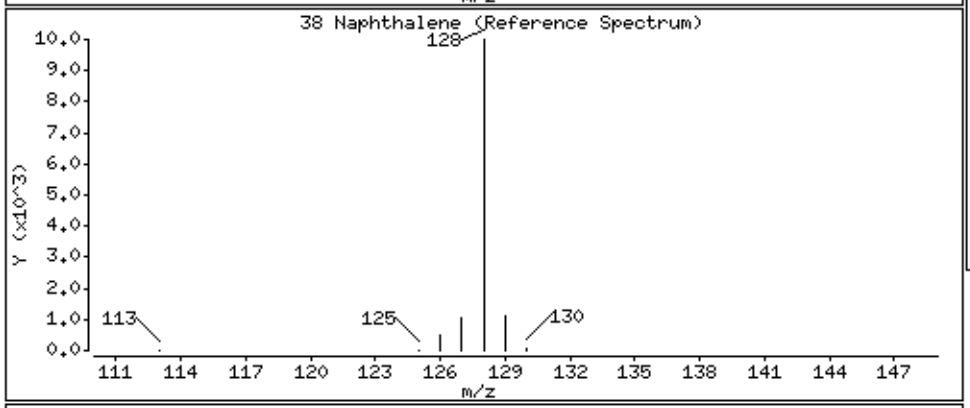
Concentration: 0.01596 PPBV

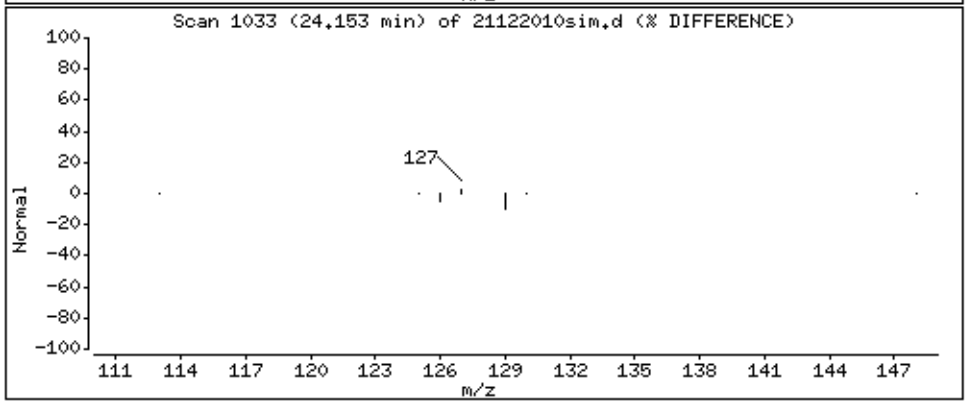












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA14_1217		
Lab ID:	1712342-18A	**Date/Time Analyzed:**	12/20/17 01:47 PM
Date/Time Collecte	12/14/17 03:19 PM	**Dilution Factor:**	1.53
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122011sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.061	0.061	0.24	0.52
Ethyl Benzene	100-41-4	0.0036	0.033	0.13	0.20
m,p-Xylene	108-38-3	0.0086	0.033	0.26	0.70
Naphthalene	91-20-3	0.060	0.080	0.40	0.16 J
o-Xylene	95-47-6	0.0068	0.033	0.13	0.26
Toluene	108-88-3	0.029	0.029	0.12	1.4
Total Xylenes	9999-9999-015	NA	D	0.40	0.95

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122011sim.d
Lab Smp Id: 1712342-18A
Inj Date : 20-DEC-2017 13:47
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 12955
Misc Info : 3.9"Hg -> 4.9psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.53000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	105226	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	81407			47.49- 107.49	77.36
14.273	14.274 (1.000)	49	152207			114.87- 174.87	144.65
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	507043	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86541			0.00- 46.92	17.07
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	378739	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	209498			25.29- 85.29	55.31
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150691	5.51372	5.514	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	84996			30.16- 90.16	56.40
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	435328	4.89119	4.891	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	53758			0.00- 42.34	12.35

				CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	296132			38.15- 98.15	68.03
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	140412	4.28949	4.289	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	171092			88.82- 148.82	121.85
19.787	19.787 (1.072)	176	137478			68.26- 128.26	97.91
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	15184	0.10705	0.1638	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	3470			0.00- 52.85	22.85
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	32534	0.23464	0.3590	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	19677			33.44- 93.44	60.48
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	1238	0.02945	0.04506	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	3798			259.51- 319.51	306.60
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	4354	0.10597	0.1621	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	8649			159.47- 219.47	198.64
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	1443	0.03863	0.05910	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	4007			168.52- 228.52	277.68
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	3917	0.01996	0.03054	80.00- 120.00	100.00(a)
24.153	24.154 (1.308)	127	622			0.00- 43.35	15.88
M 39 Total Xylene					CAS #: 1330-20-7		
			5797	0.14459	0.2212		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122011sim.d
Lab Smp Id: 1712342-18A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 3.9"Hg -> 4.9psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	105226	-10.97
20 1,4-Difluorobenze	566094	339656	792532	507043	-10.43
28 Chlorobenzene-d5	446145	267687	624603	378739	-15.11

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-18A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 3.9"Hg -> 4.9psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.514	110.27	70-130
$ 22 Toluene-d8	5.000	4.891	97.82	70-130
$ 33 4-Bromofluorobenze	5.000	4.289	85.79	70-130

Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

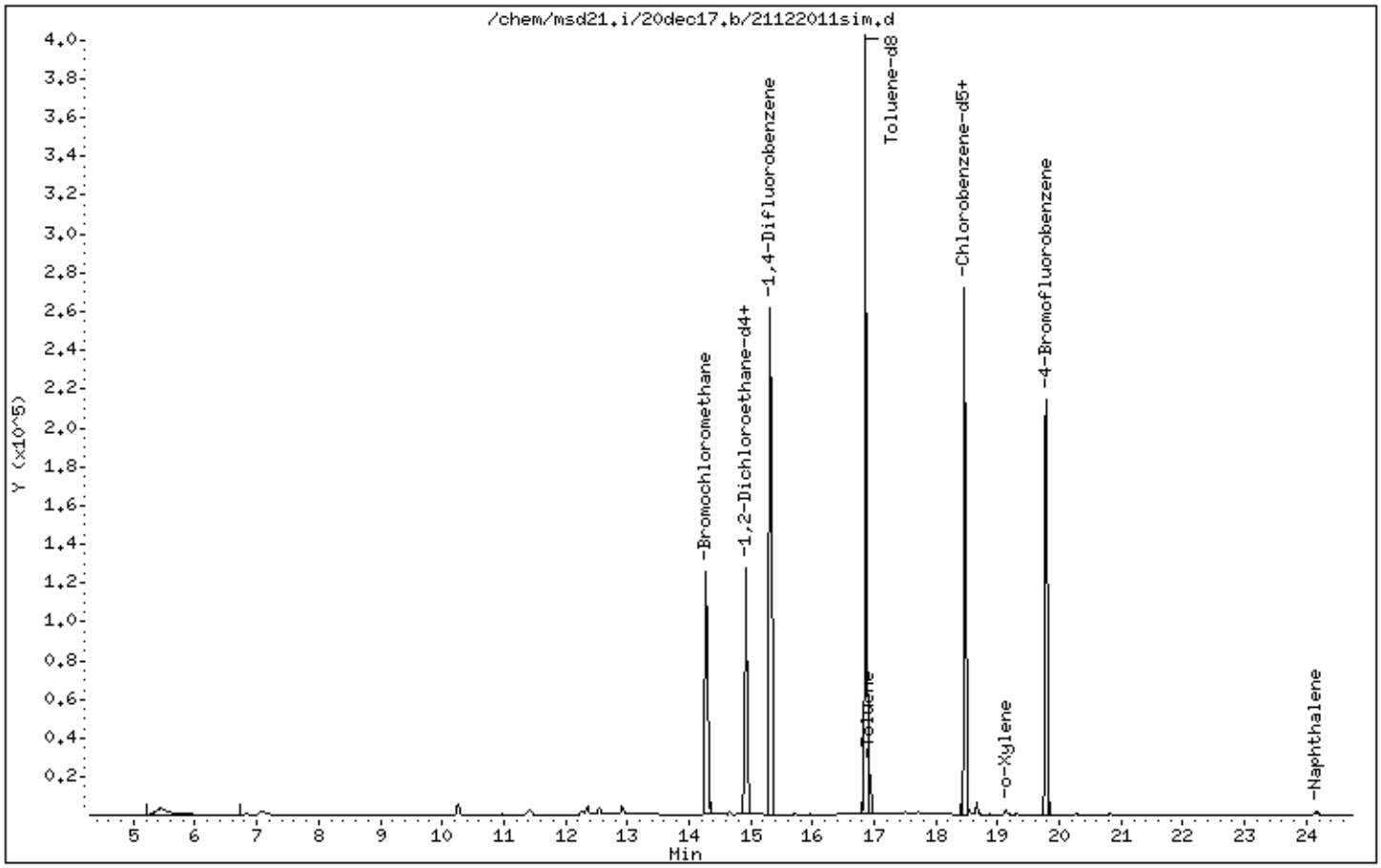
Instrument: msd21.i

Sample Info: 250mL# 12955

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

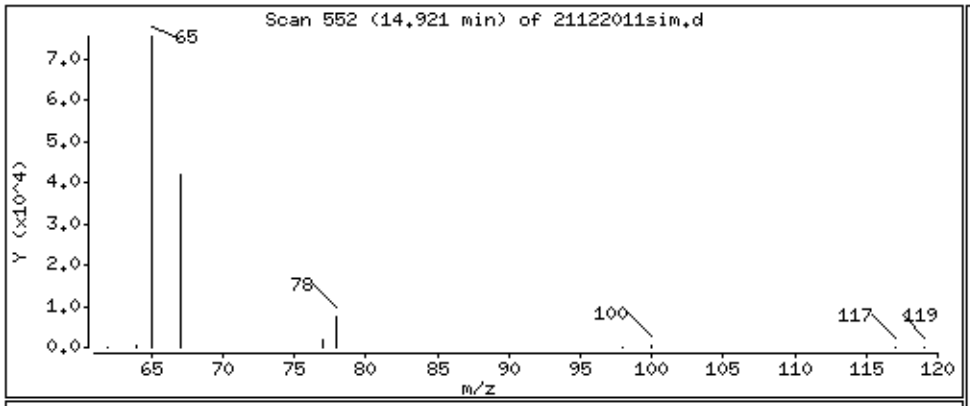
Operator: ef

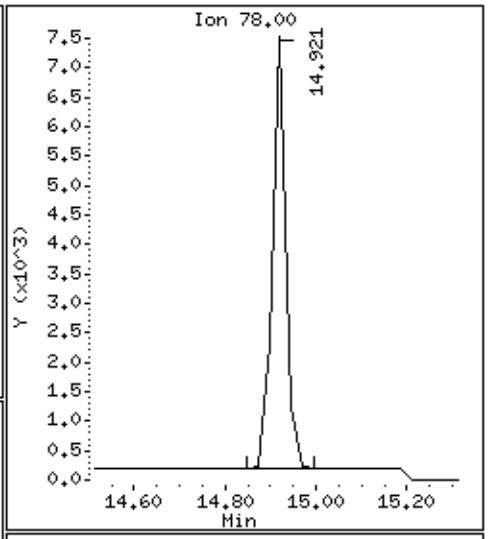
Column phase: RTX-624

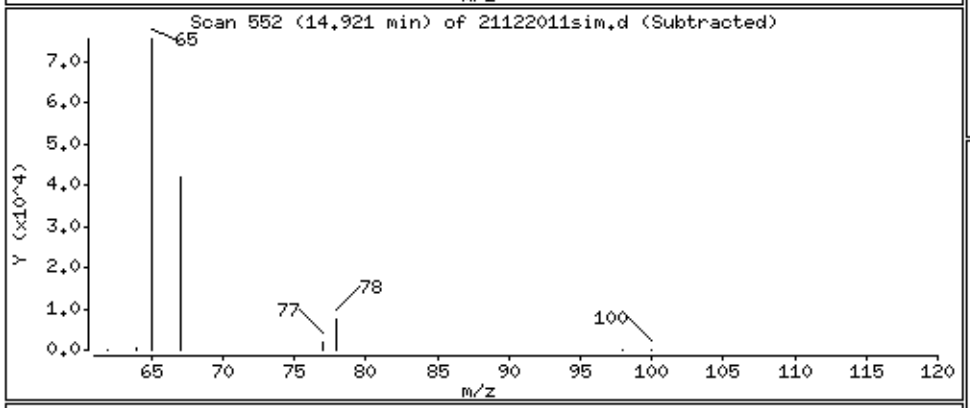
Column diameter: 0.32

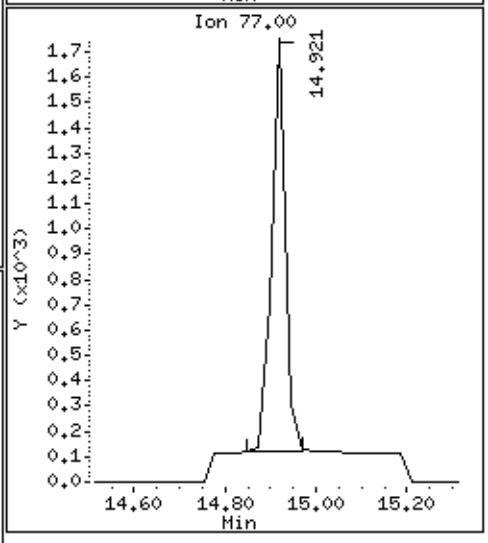
17 Benzene

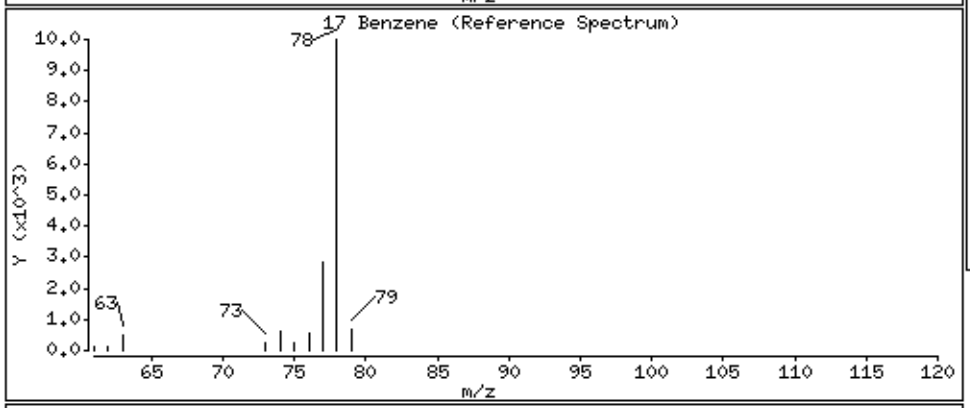
Concentration: 0.1638 PPBV

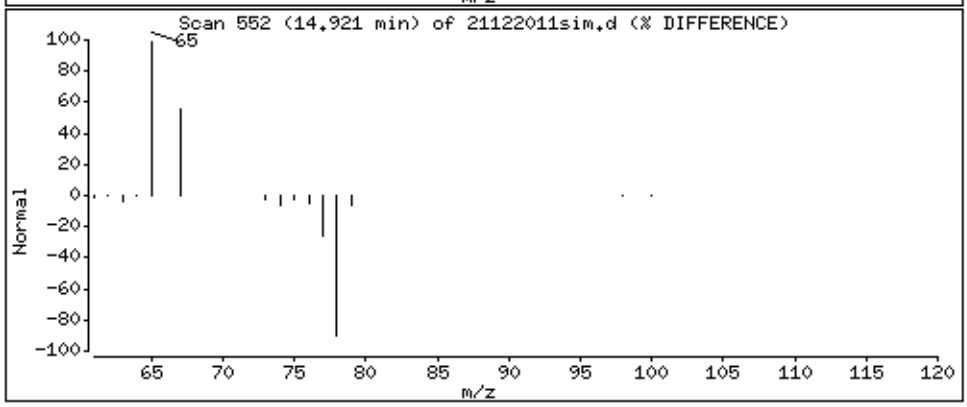












Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

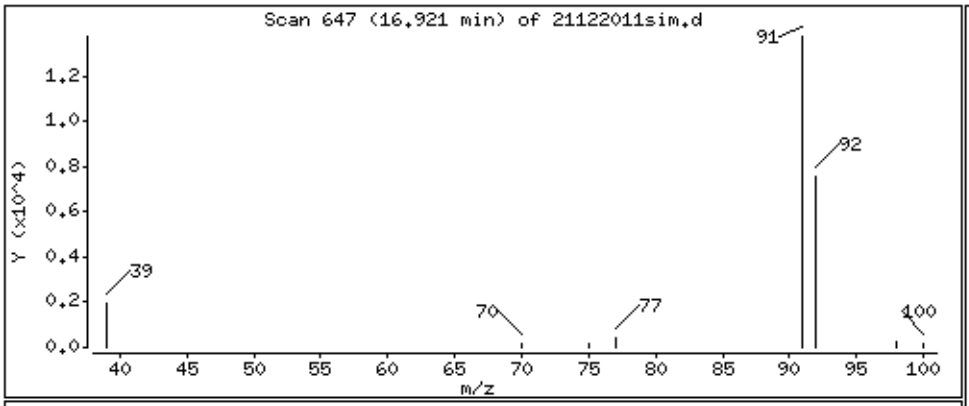
Operator: ef

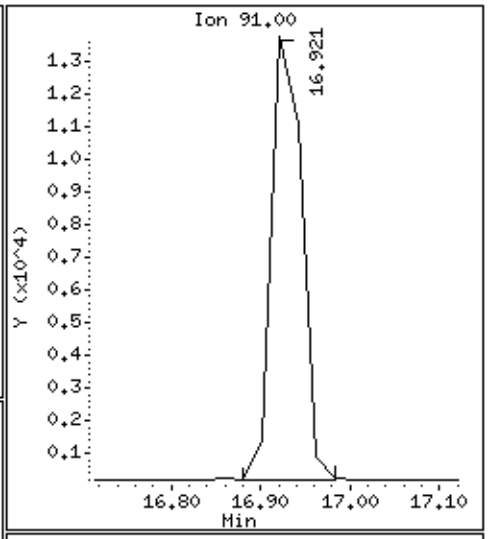
Column phase: RTX-624

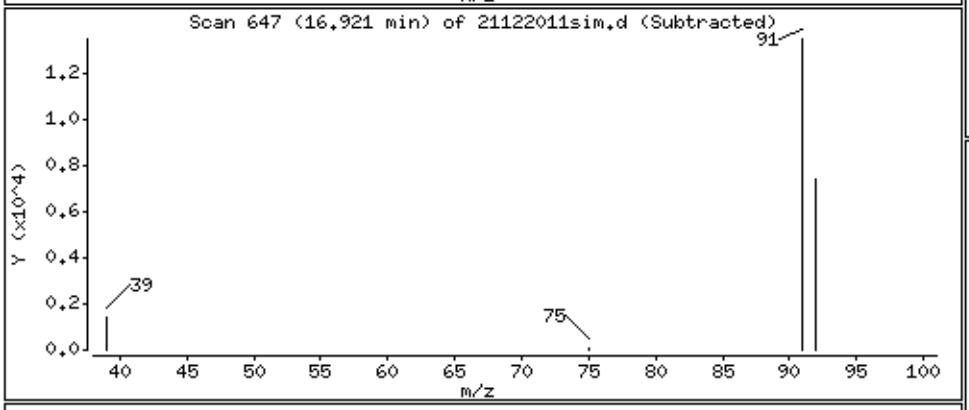
Column diameter: 0.32

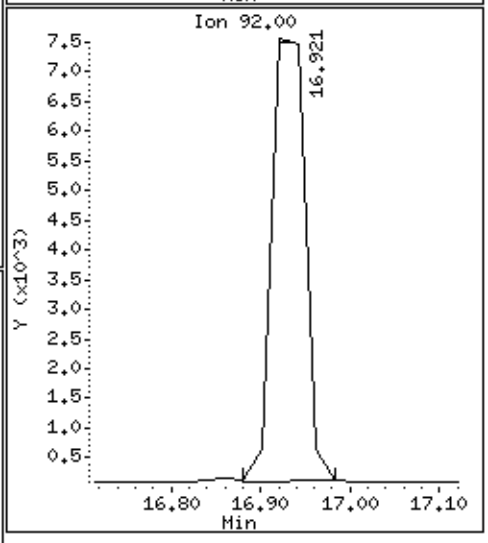
23 Toluene

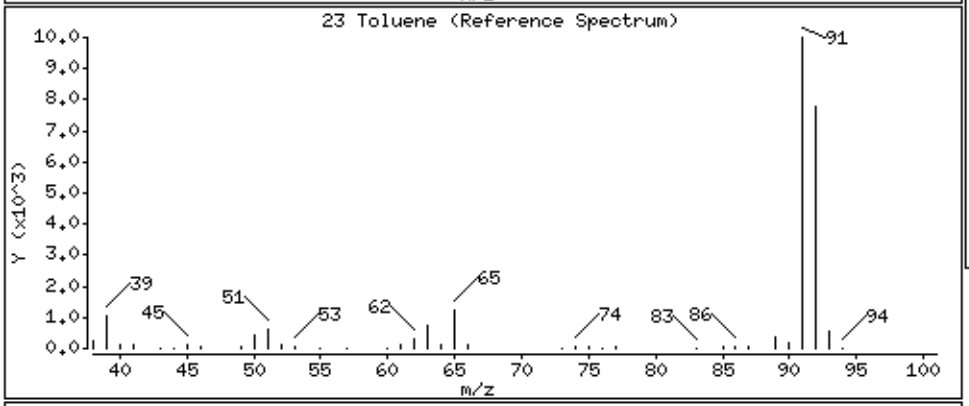
Concentration: 0.3590 PPBV

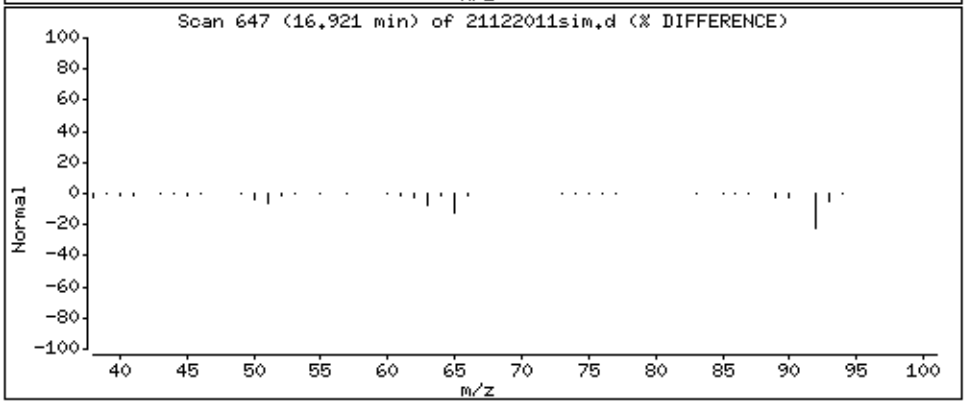












Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

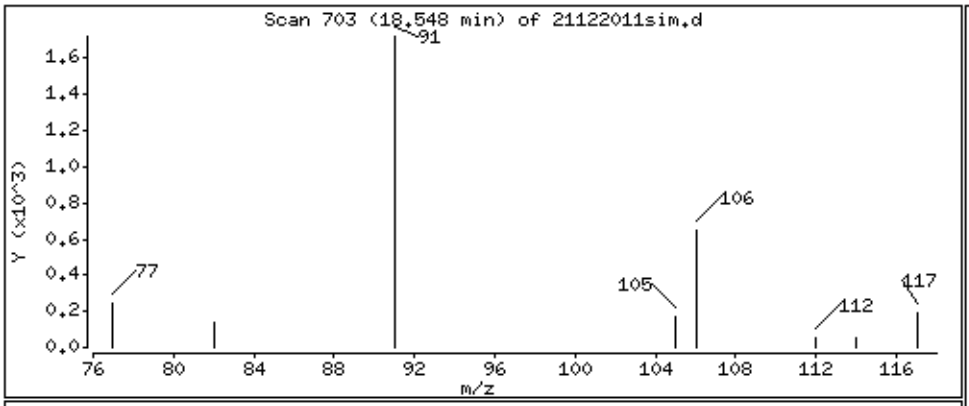
Operator: ef

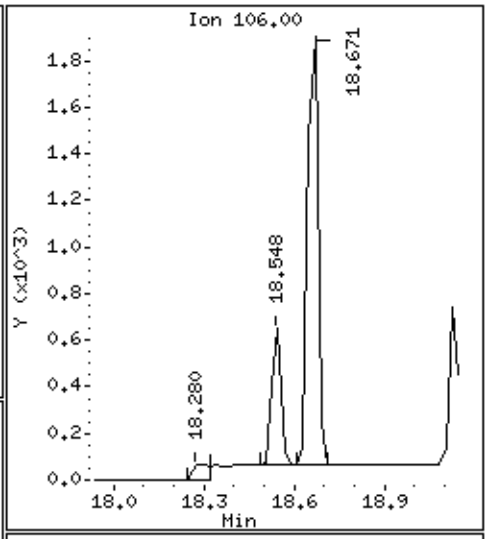
Column phase: RTX-624

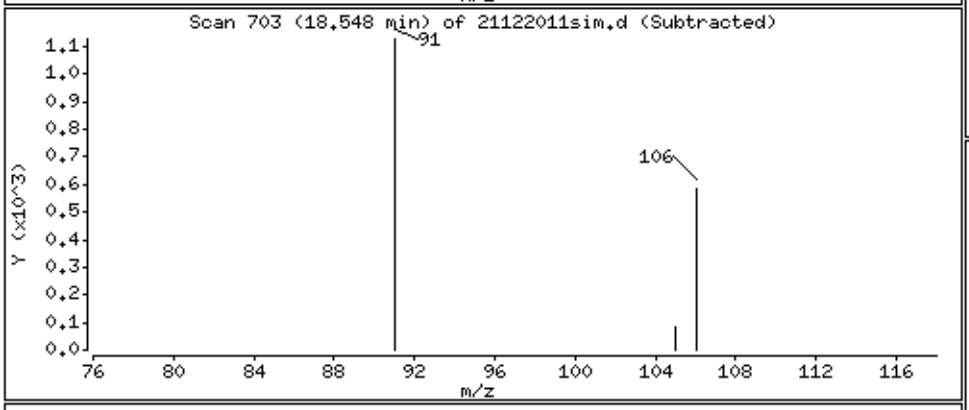
Column diameter: 0.32

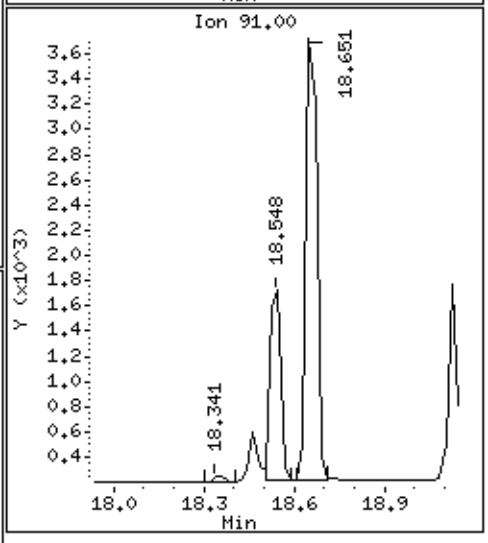
30 Ethyl Benzene

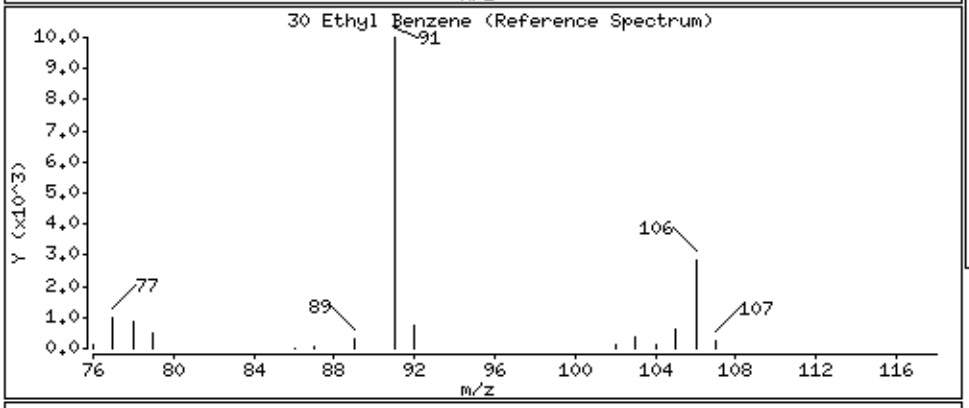
Concentration: 0.04506 PPBV

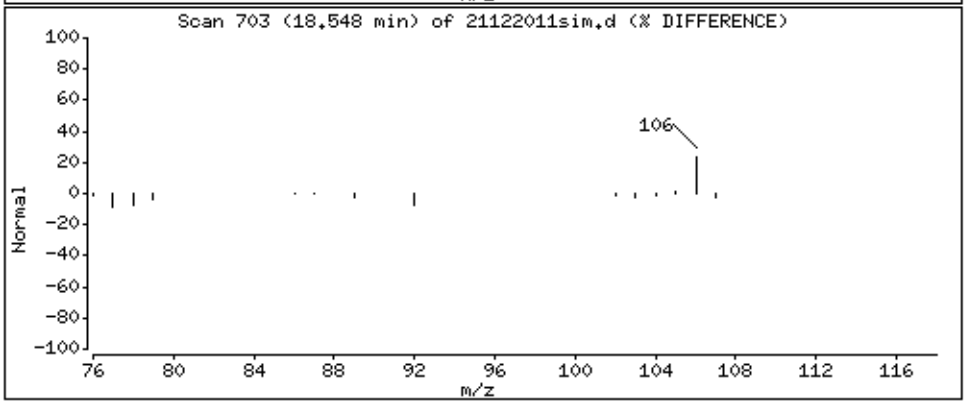












Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

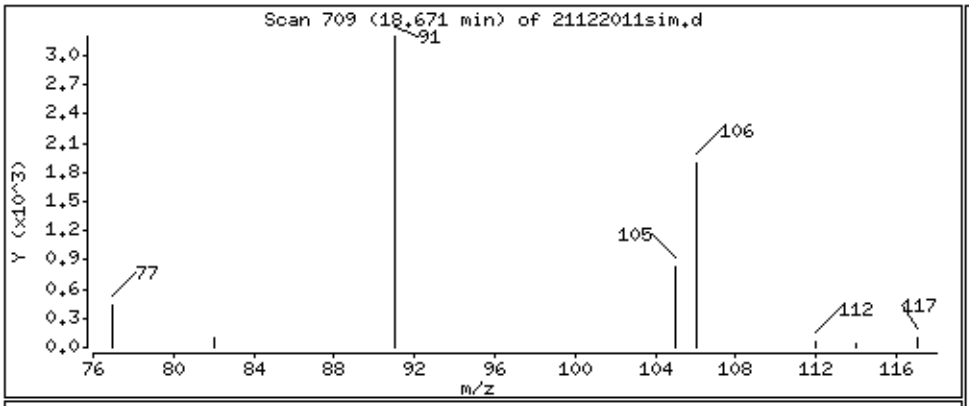
Operator: ef

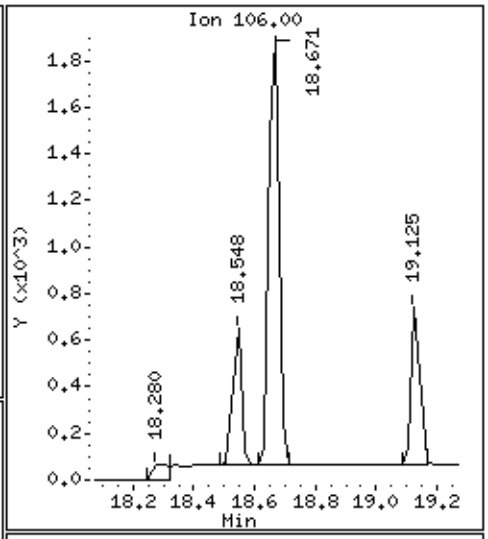
Column phase: RTX-624

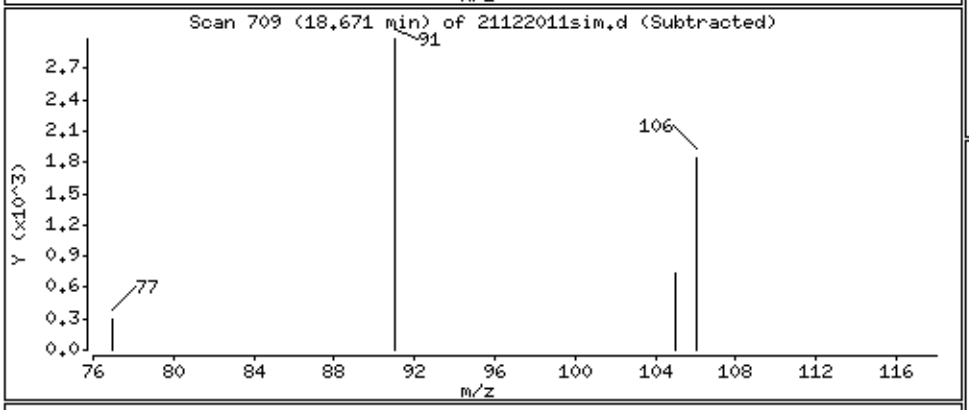
Column diameter: 0.32

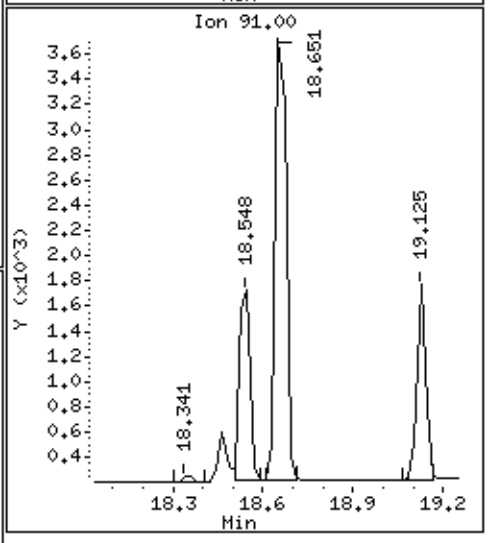
31 m,p-Xylene

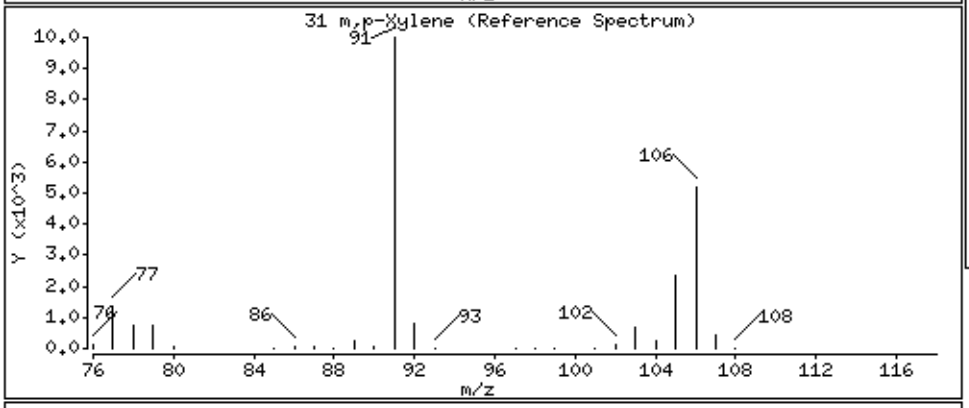
Concentration: 0.1621 PPBV

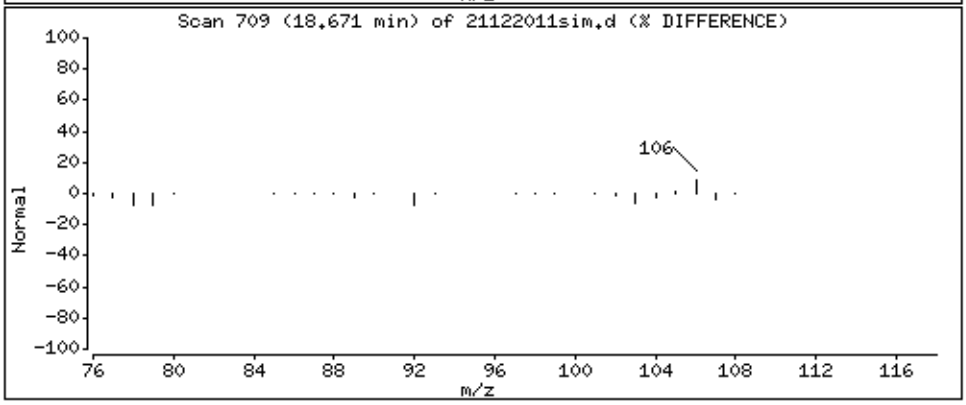












Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

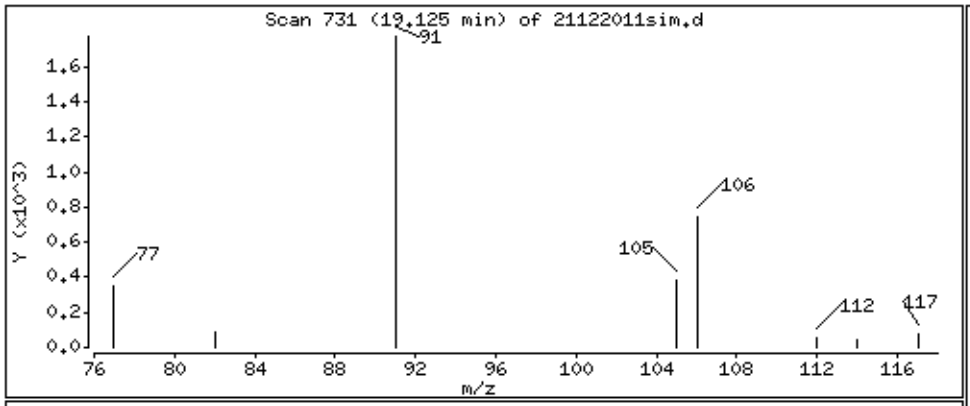
Operator: ef

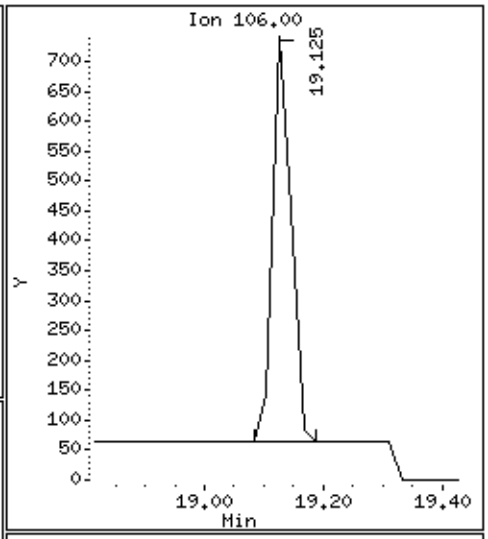
Column phase: RTX-624

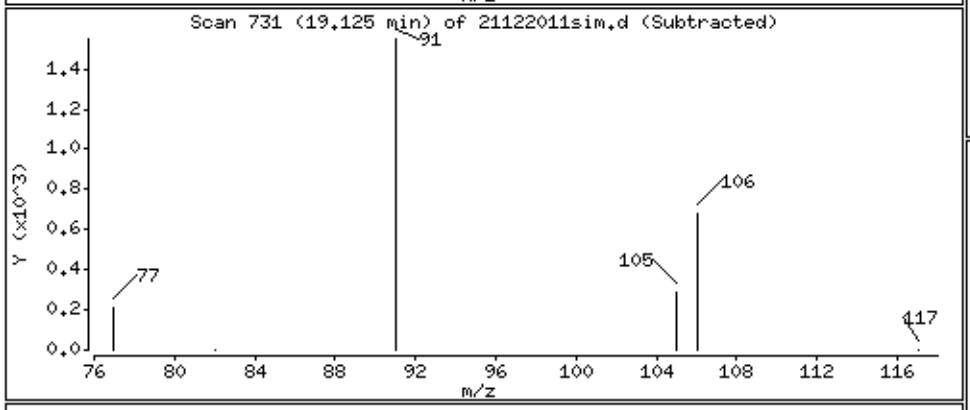
Column diameter: 0.32

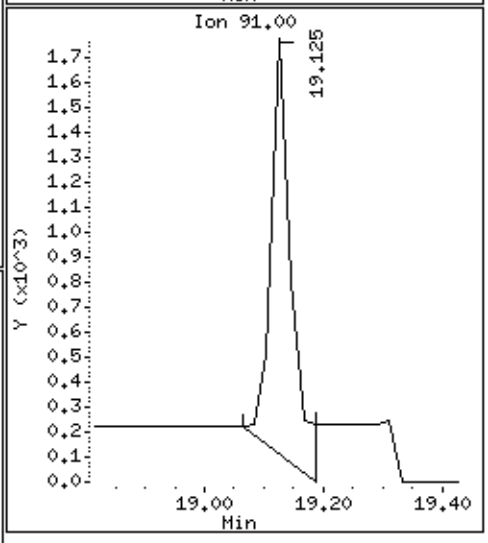
32 o-Xylene

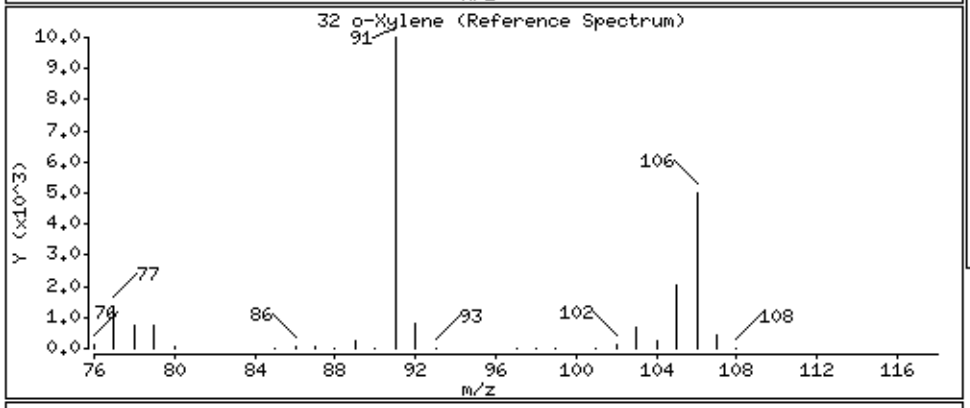
Concentration: 0.05910 PPBV

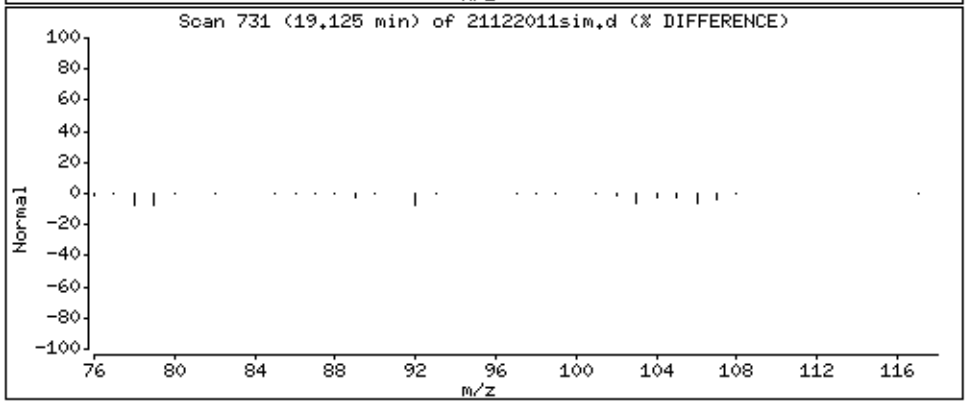












Data File: /chem/msd21.i/20dec17.b/21122011sim.d

Date : 20-DEC-2017 13:47

Client ID:

Instrument: msd21.i

Sample Info: 250mL# 12955

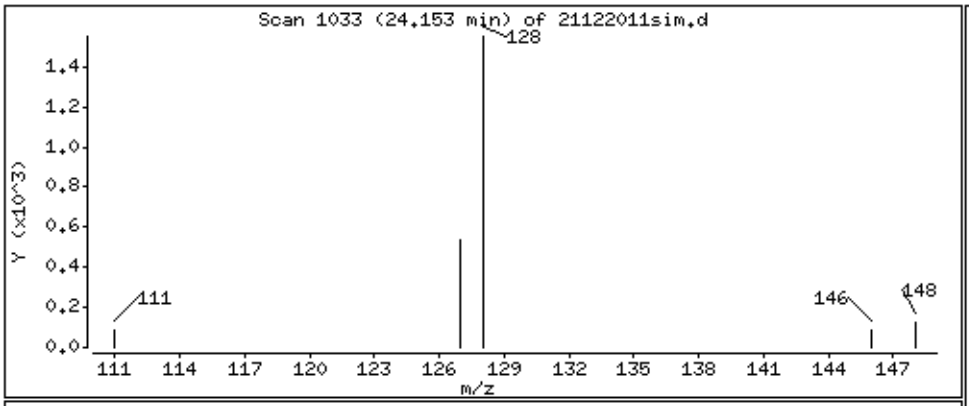
Operator: ef

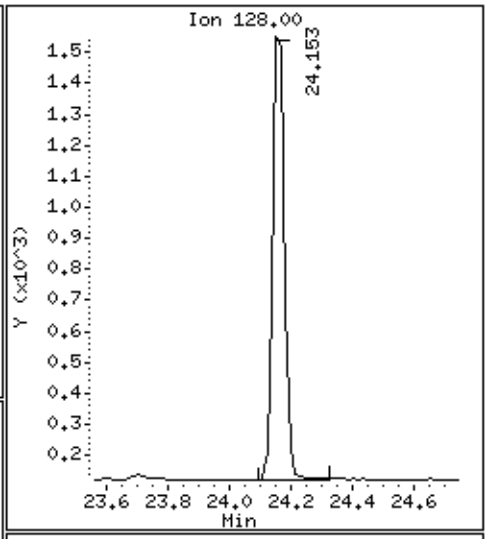
Column phase: RTX-624

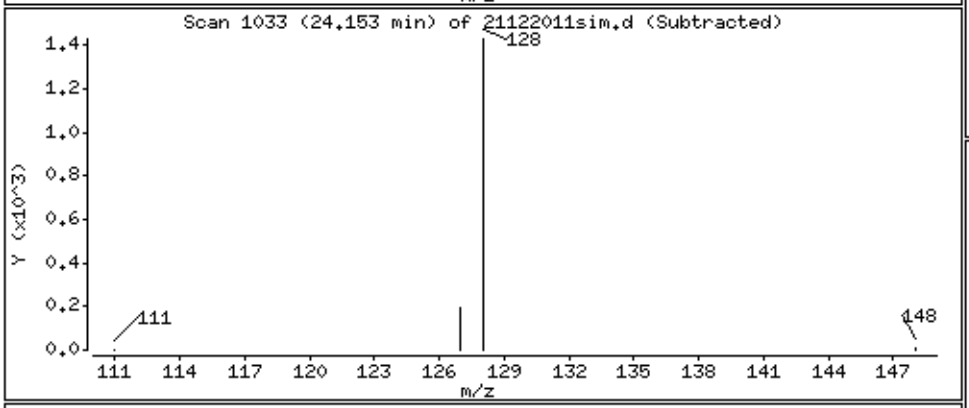
Column diameter: 0.32

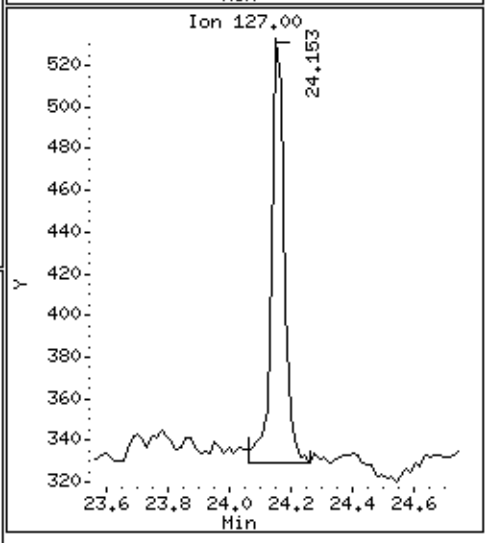
38 Naphthalene

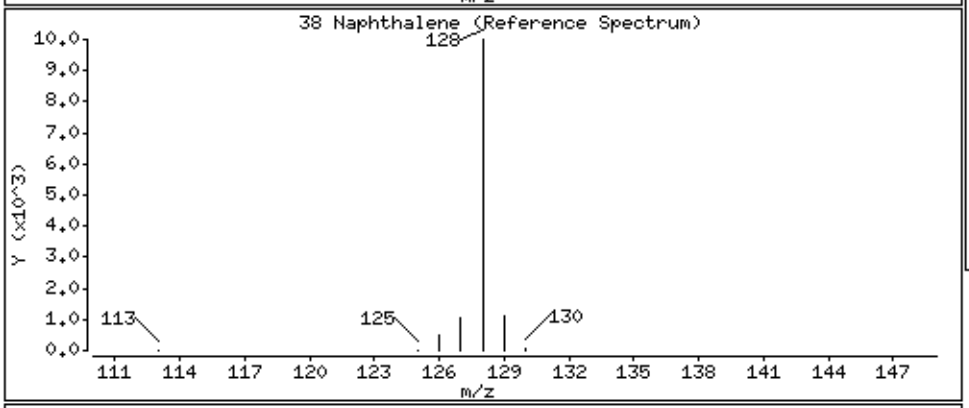
Concentration: 0.03054 PPBV

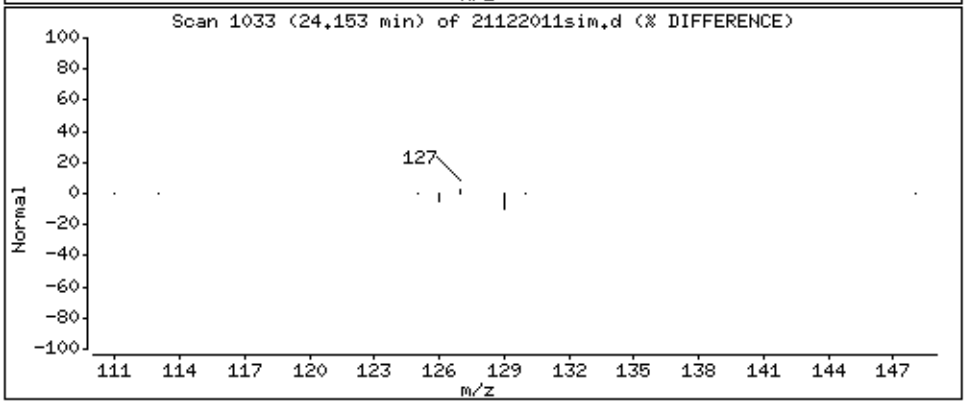












MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	OA15_1217		
Lab ID:	1712342-19A	**Date/Time Analyzed:**	12/20/17 02:31 PM
Date/Time Collecte	12/14/17 01:27 PM	**Dilution Factor:**	1.39
Media:	6 Liter Summa Canister (SIM Certified)	**Instrument/Filename:**	msd21.i / 21122012sim

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.056	0.056	0.22	0.42
Ethyl Benzene	100-41-4	0.0032	0.030	0.12	0.15
m,p-Xylene	108-38-3	0.0078	0.030	0.24	0.53
Naphthalene	91-20-3	0.054	0.073	0.36	0.063 J
o-Xylene	95-47-6	0.0062	0.030	0.12	0.19
Toluene	108-88-3	0.026	0.026	0.10	0.88
Total Xylenes	9999-9999-015	NA	D	0.36	0.71

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	86
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122012sim.d
Lab Smp Id: 1712342-19A
Inj Date : 20-DEC-2017 14:31
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# N0641
Misc Info : 1.0"Hg -> 5.0psi
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.39000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	103233	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	79949			47.49- 107.49	77.44
14.273	14.274 (1.000)	49	149837			114.87- 174.87	145.14
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	511652	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86862			0.00- 46.92	16.98
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	382698	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	213359			25.29- 85.29	55.75
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	150963	5.63030	5.630	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	85103			30.16- 90.16	56.37
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	438600	4.88357	4.884	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	54020			0.00- 42.34	12.32

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	298016			38.15- 98.15	67.95
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.786	19.787 (1.072)	174	142622	4.31195	4.312	80.00- 120.00	100.00
19.767	19.768 (1.071)	95	172285			88.82- 148.82	120.80
19.786	19.787 (1.072)	176	139976			68.26- 128.26	98.14
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	13532	0.09454	0.1314	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	3360			0.00- 52.85	24.84
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	23471	0.16775	0.2332	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	14211			33.44- 93.44	60.55
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	1064	0.02503	0.03480	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	3244			259.51- 319.51	304.83
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	3619	0.08718	0.1212	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	7186			159.47- 219.47	198.53
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	1197	0.03174	0.04411	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	3457			168.52- 228.52	288.60
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	1717	0.00866	0.01204	80.00- 120.00	100.00(a)
24.153	24.154 (1.308)	127	270			0.00- 43.35	15.74
M 39 Total Xylene					CAS #: 1330-20-7		
			4817	0.11892	0.1653		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122012sim.d
Lab Smp Id: 1712342-19A
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 1.0"Hg -> 5.0psi

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	103233	-12.66
20 1,4-Difluorobenze	566094	339656	792532	511652	-9.62
28 Chlorobenzene-d5	446145	267687	624603	382698	-14.22

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.46	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 13:07

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: 1712342-19A
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 1.0"Hg -> 5.0psi

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.630	112.61	70-130
$ 22 Toluene-d8	5.000	4.884	97.67	70-130
$ 33 4-Bromofluorobenze	5.000	4.312	86.24	70-130

Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

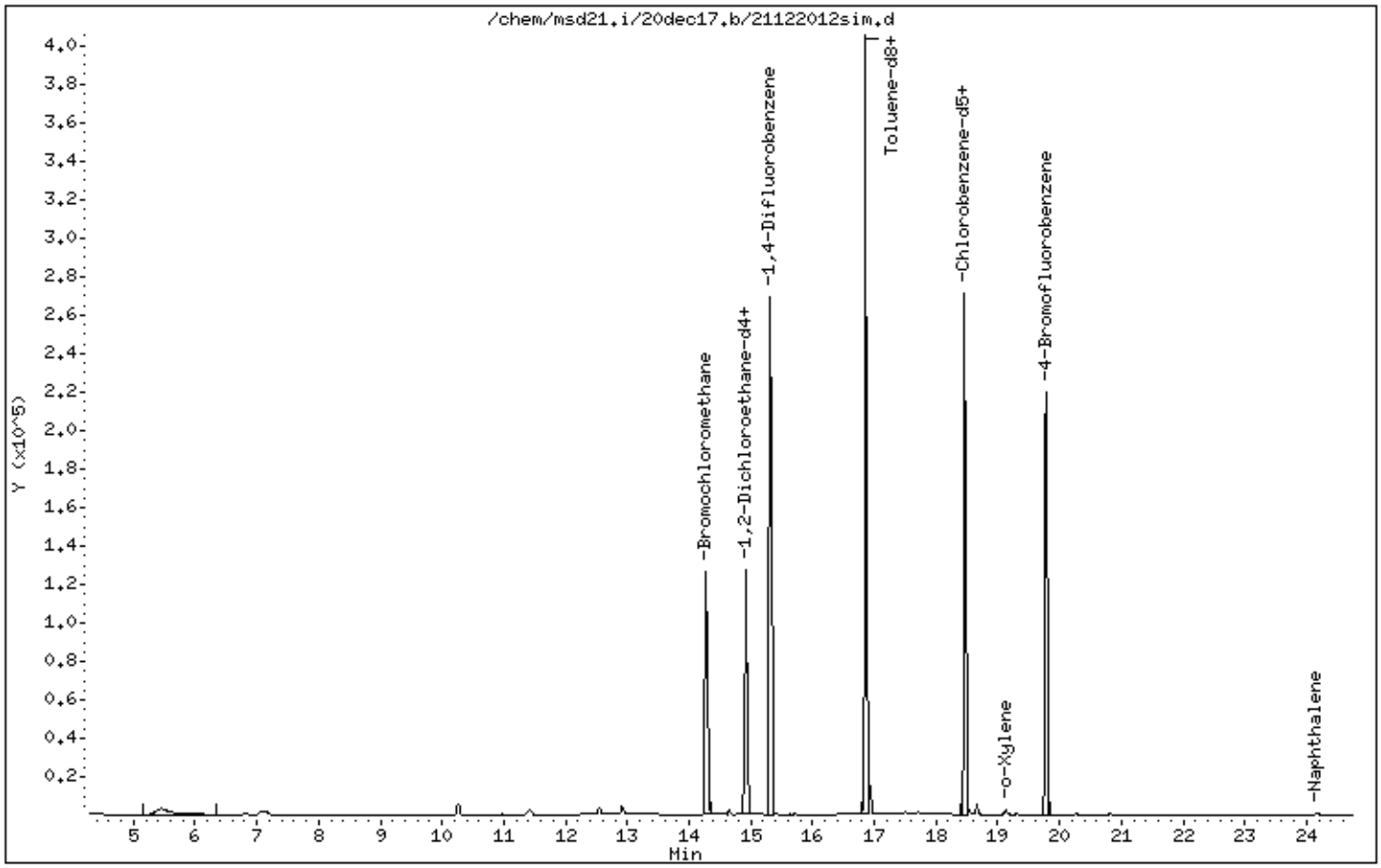
Instrument: msd21.i

Sample Info: 250mL# N0641

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

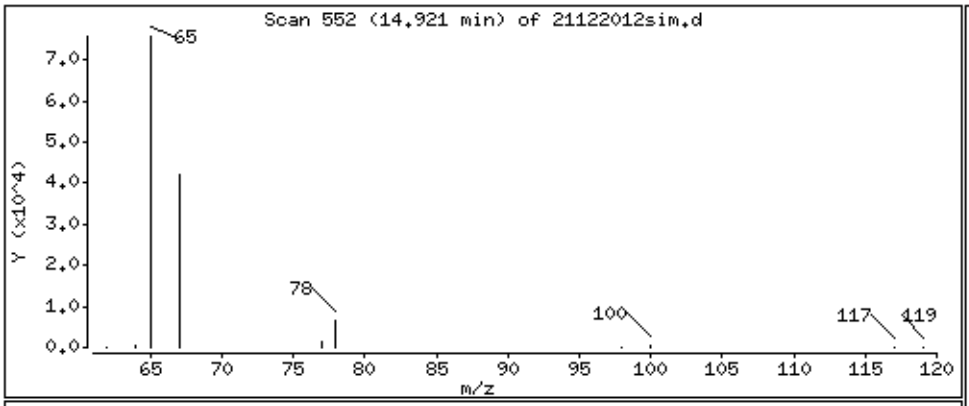
Operator: ef

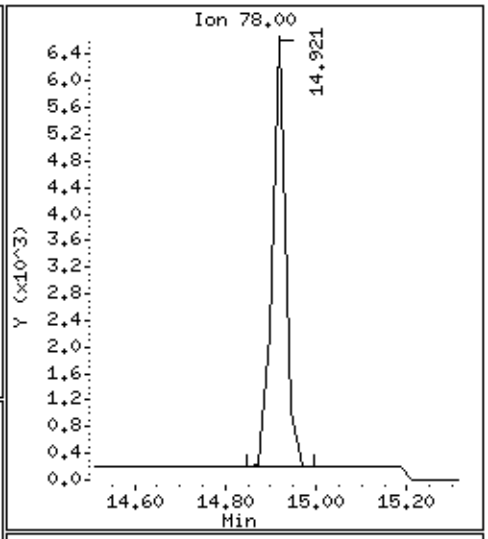
Column phase: RTX-624

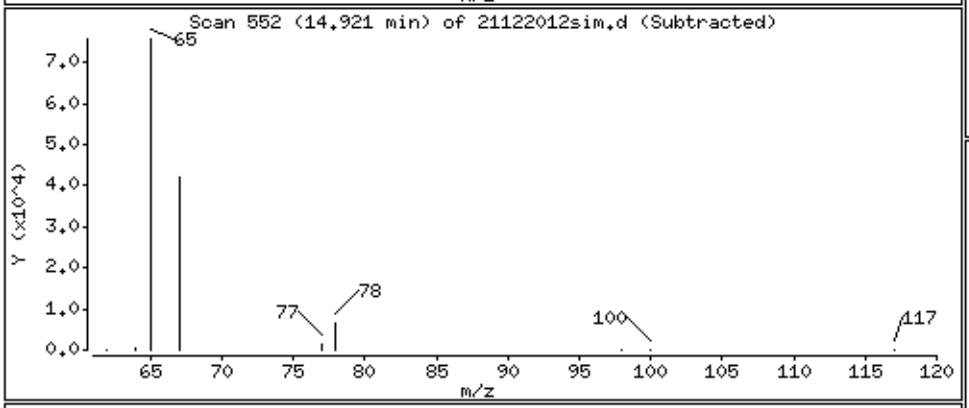
Column diameter: 0.32

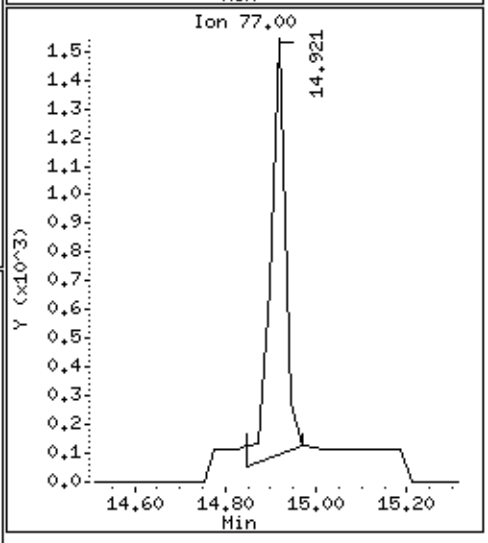
17 Benzene

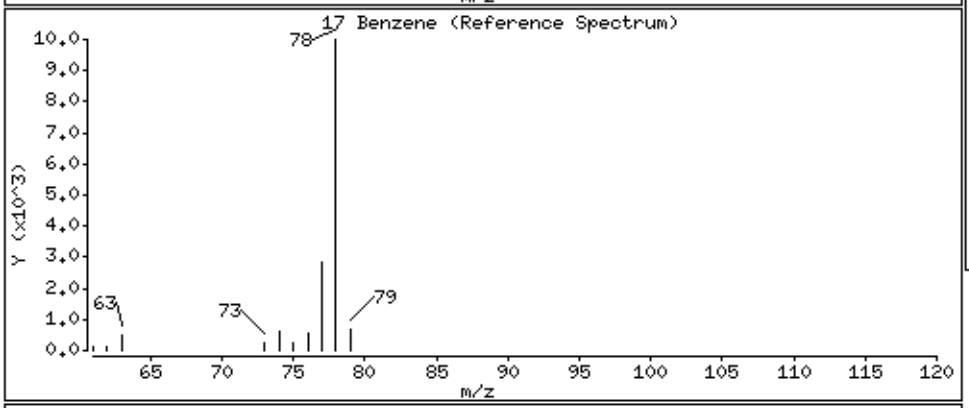
Concentration: 0.1314 PPBV

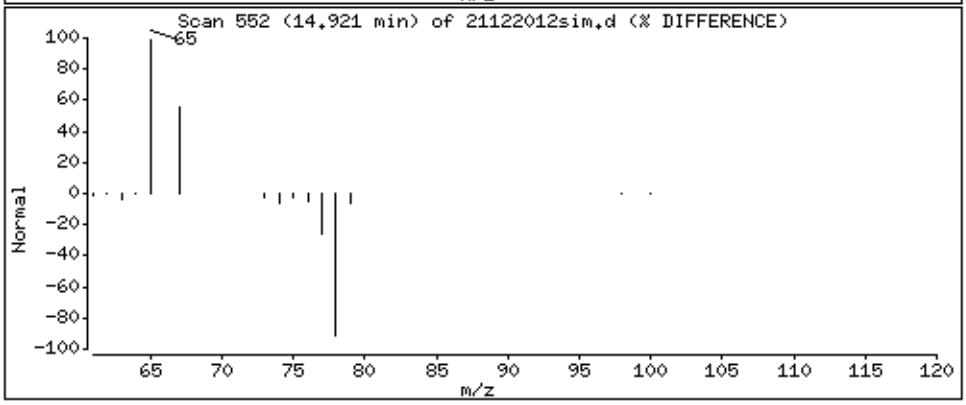












Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

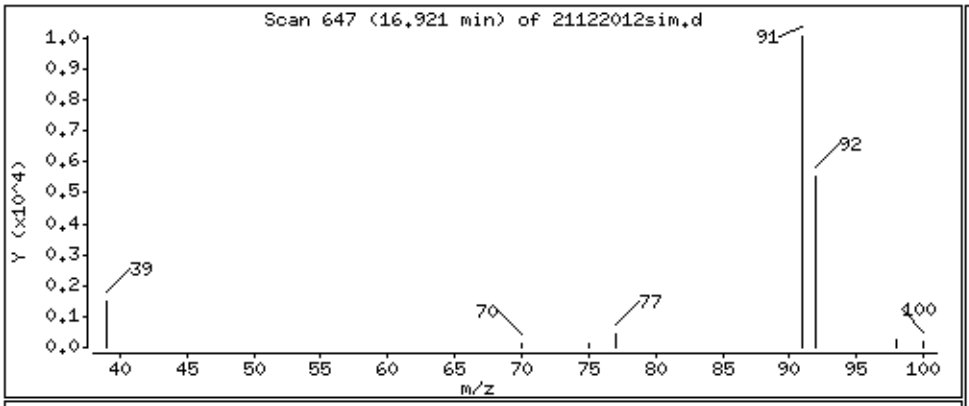
Operator: ef

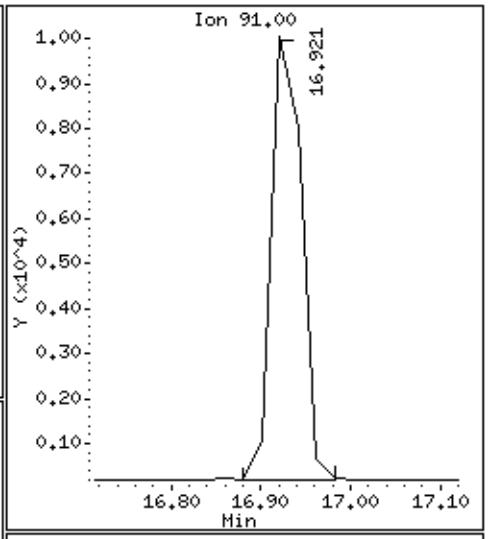
Column phase: RTX-624

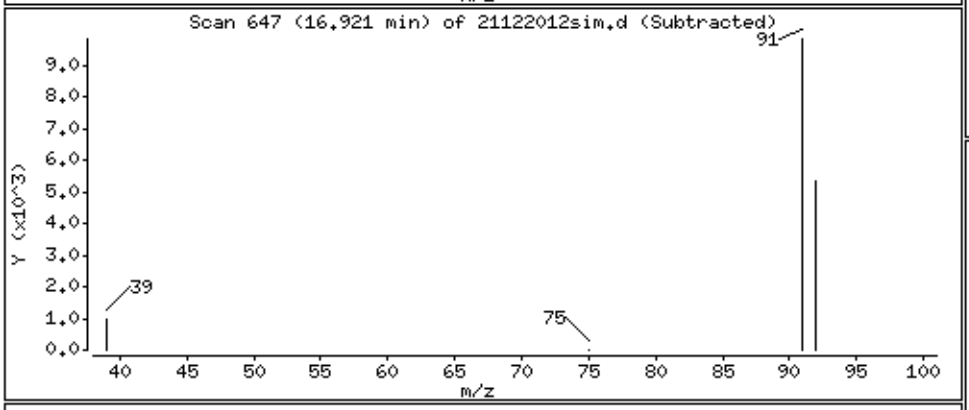
Column diameter: 0.32

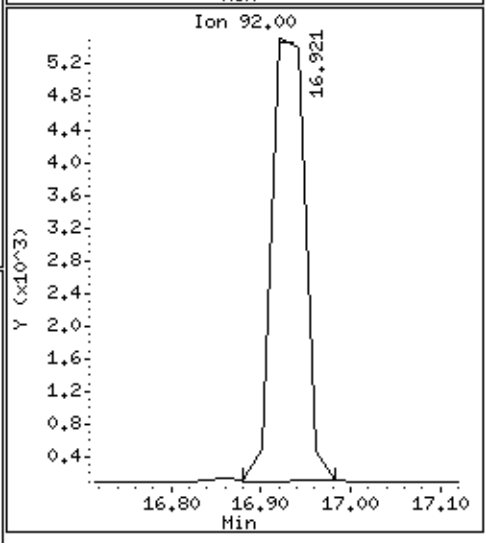
23 Toluene

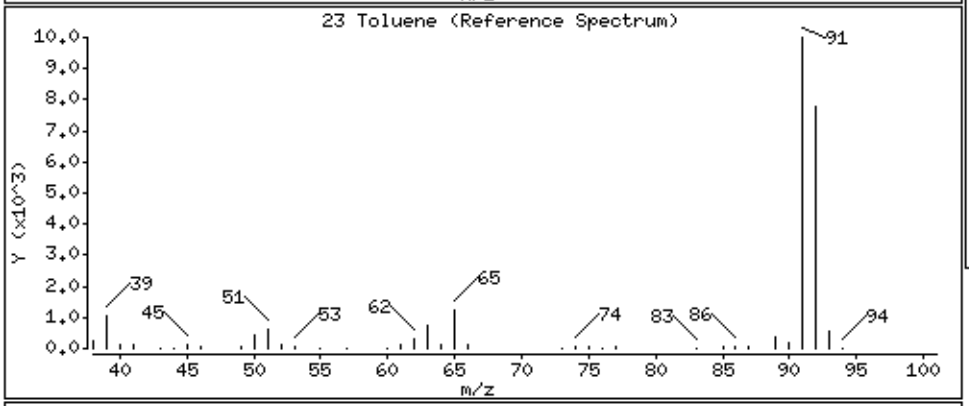
Concentration: 0.2332 PPBV

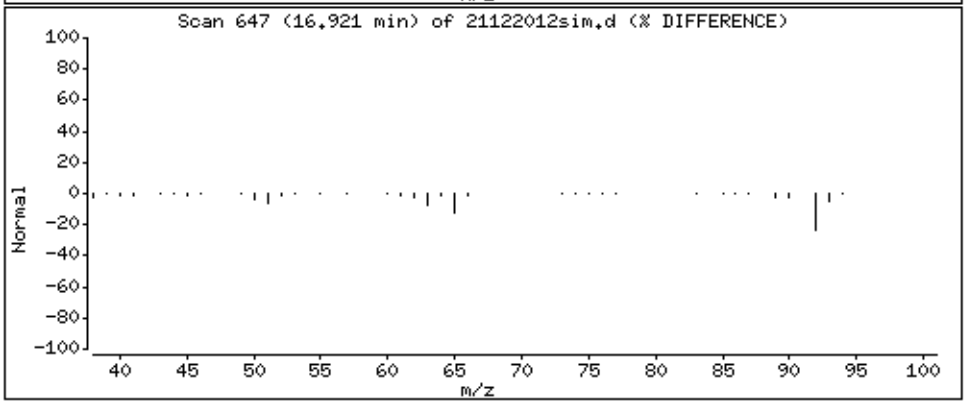












Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

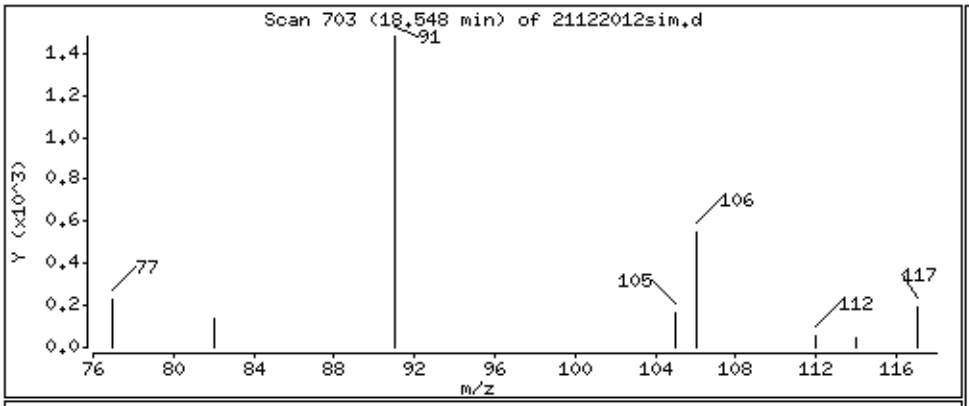
Operator: ef

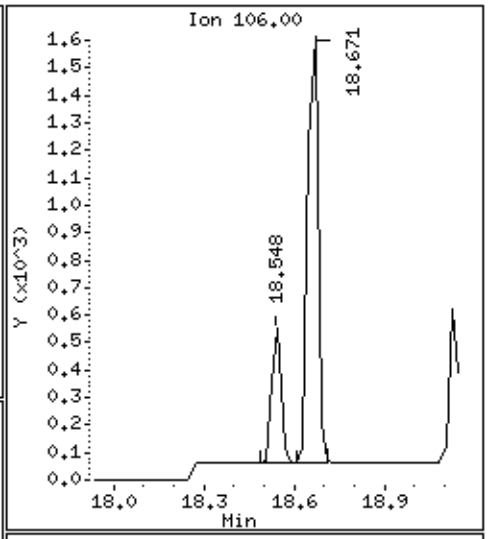
Column phase: RTX-624

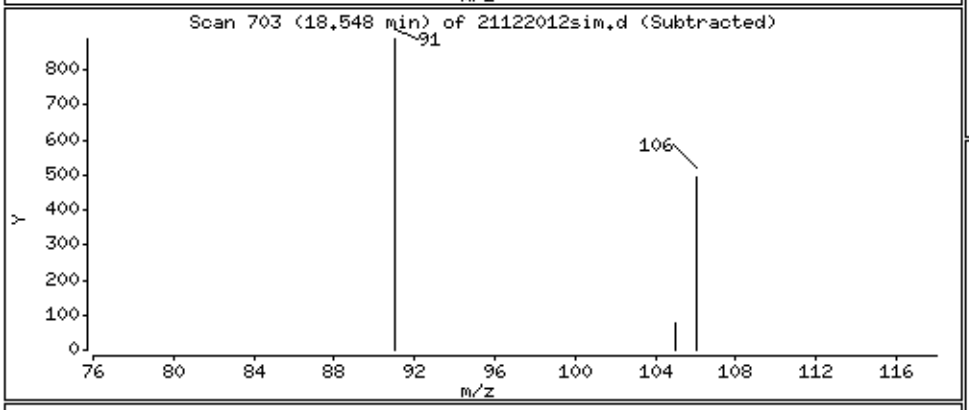
Column diameter: 0.32

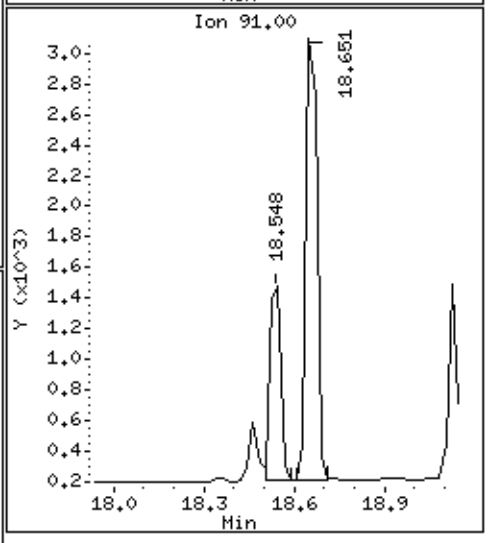
30 Ethyl Benzene

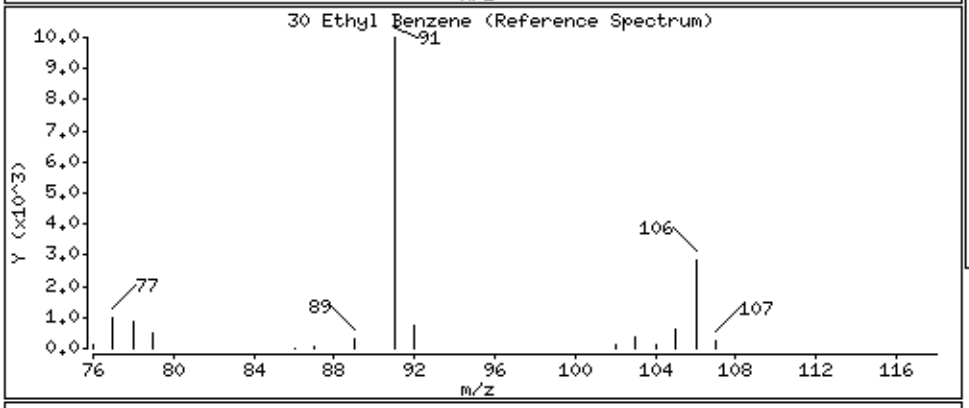
Concentration: 0.03480 PPBV

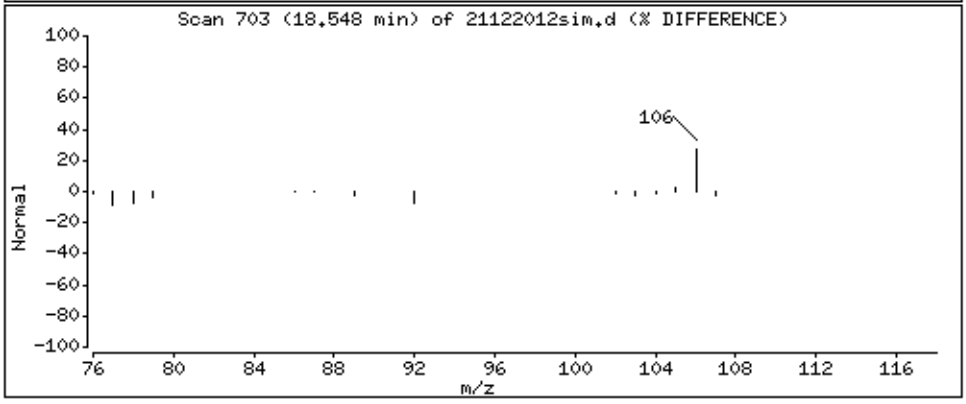












Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

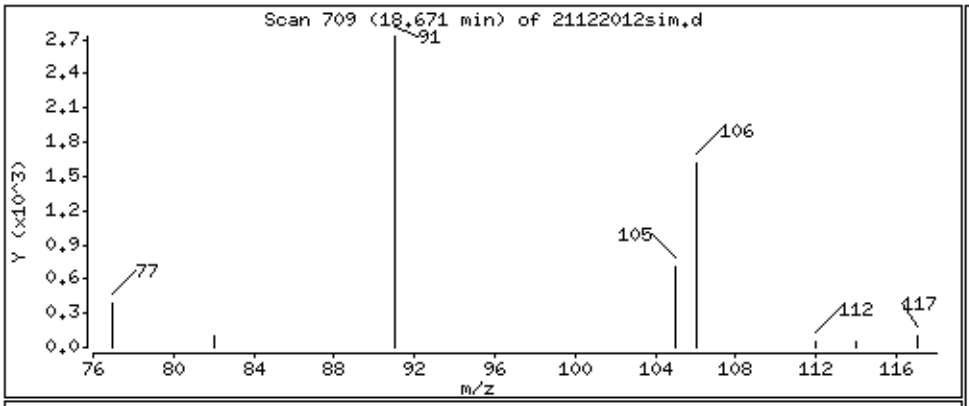
Operator: ef

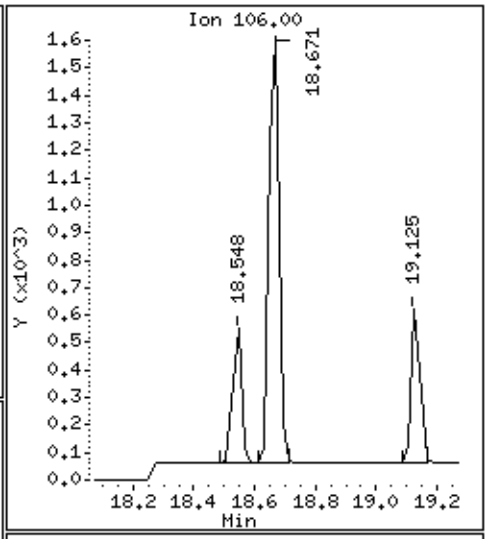
Column phase: RTX-624

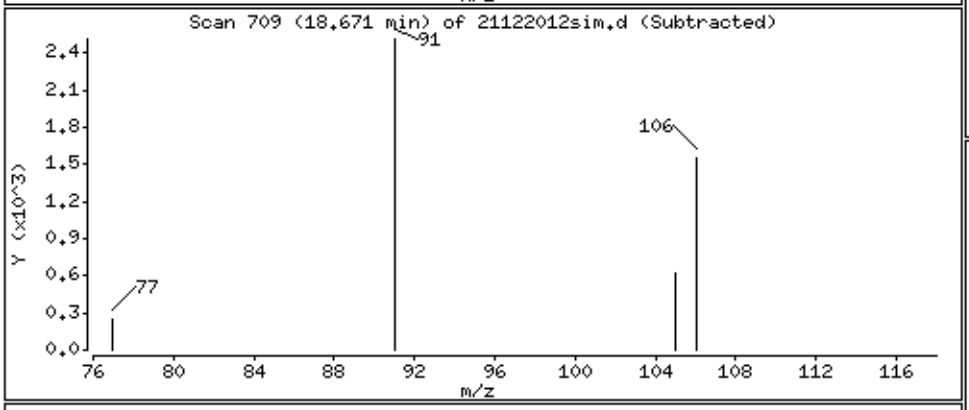
Column diameter: 0.32

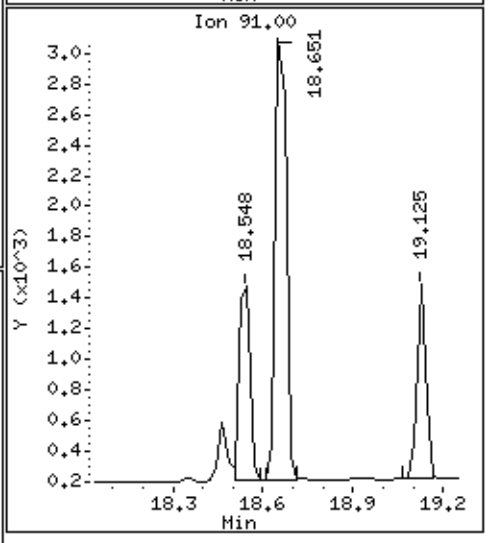
31 m,p-Xylene

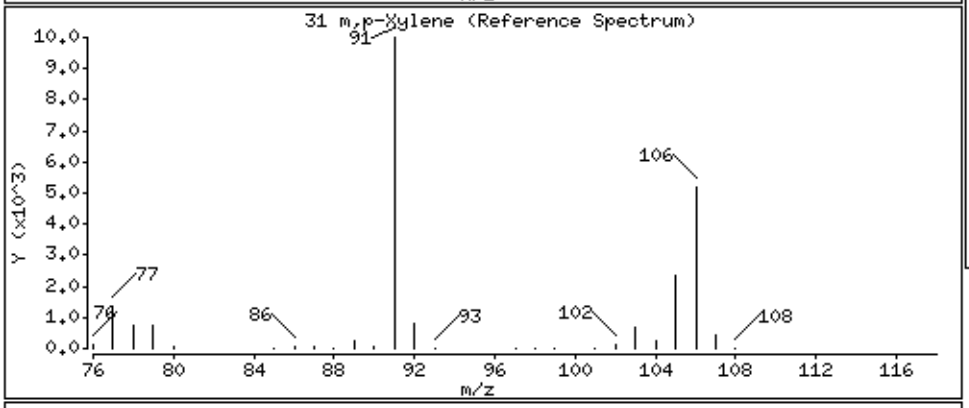
Concentration: 0.1212 PPBV

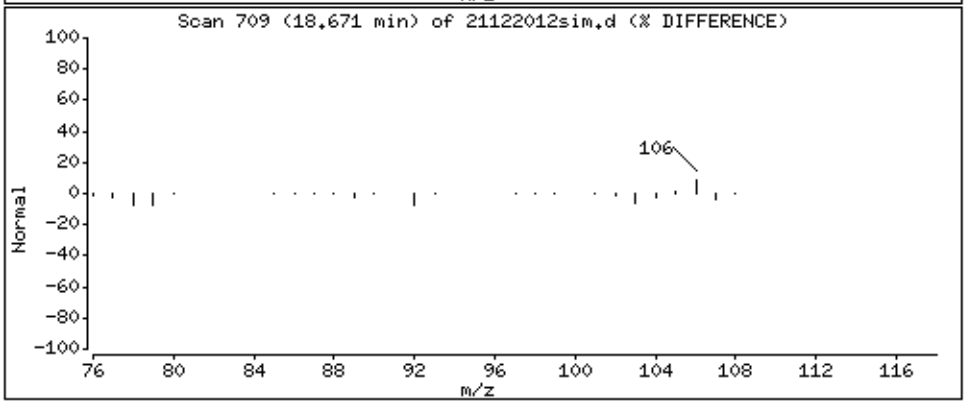












Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

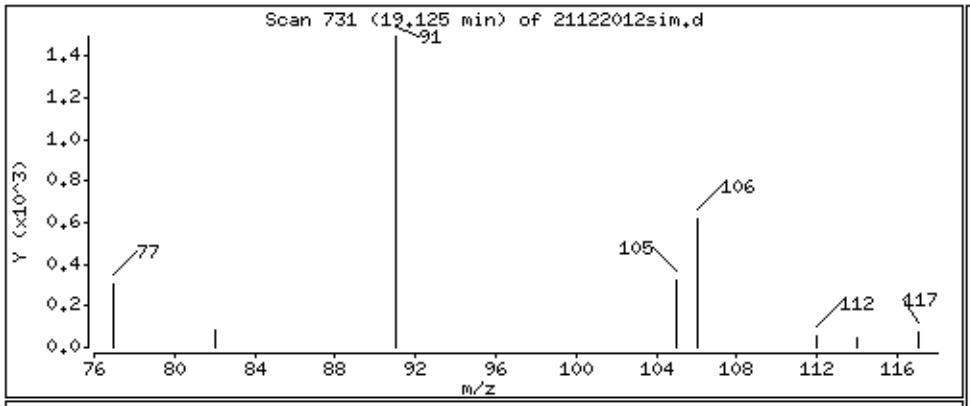
Operator: ef

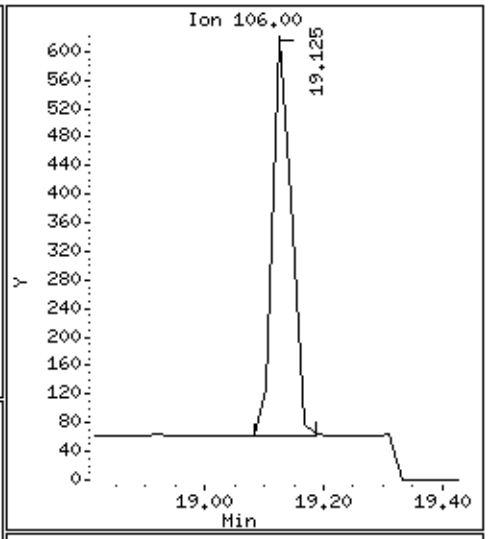
Column phase: RTX-624

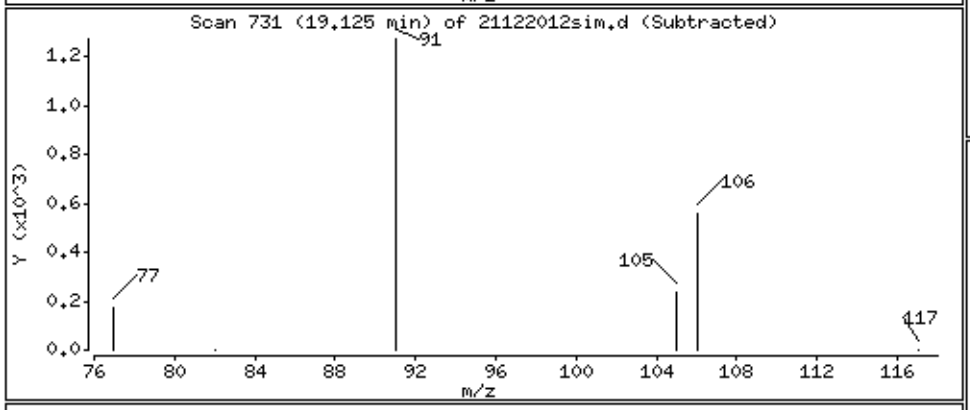
Column diameter: 0.32

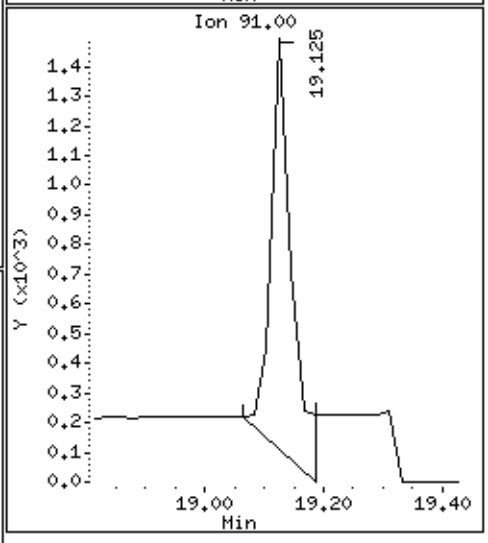
32 o-Xylene

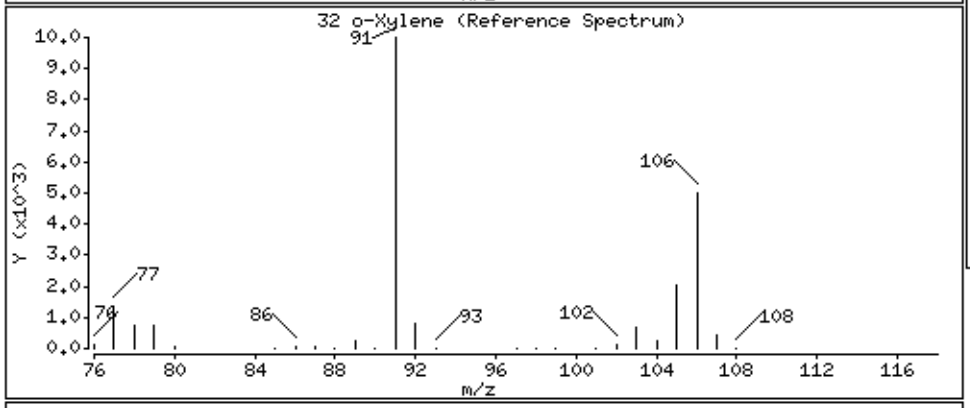
Concentration: 0.04411 PPBV

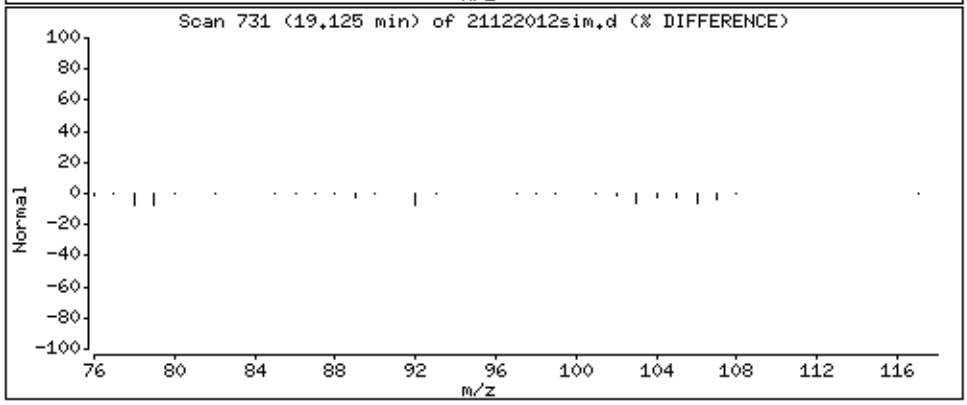












Data File: /chem/msd21.i/20dec17.b/21122012sim.d

Date : 20-DEC-2017 14:31

Client ID:

Instrument: msd21.i

Sample Info: 250mL# N0641

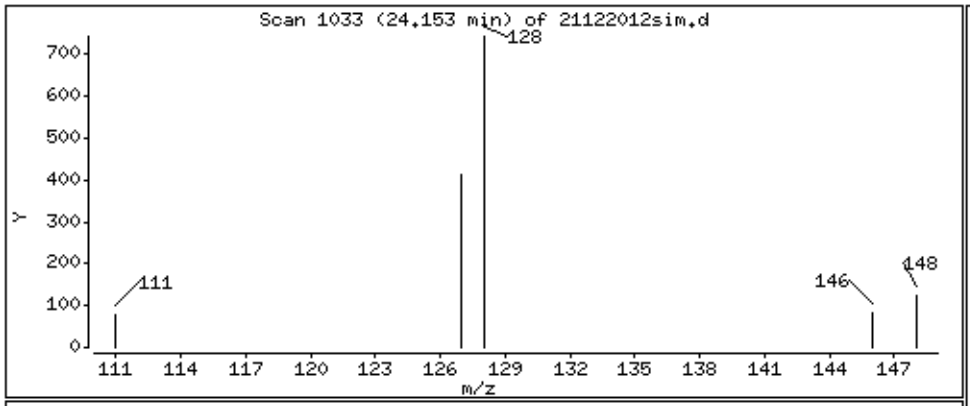
Operator: ef

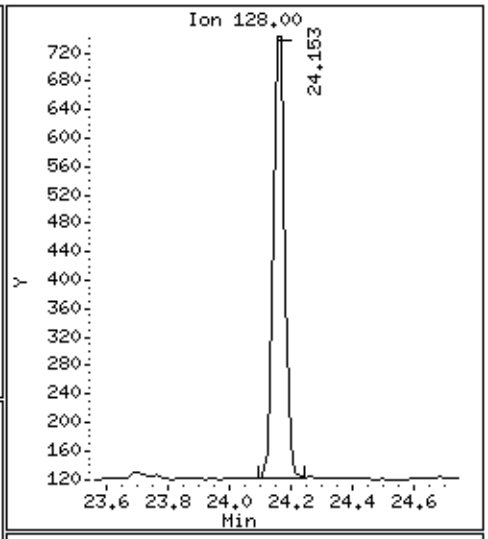
Column phase: RTX-624

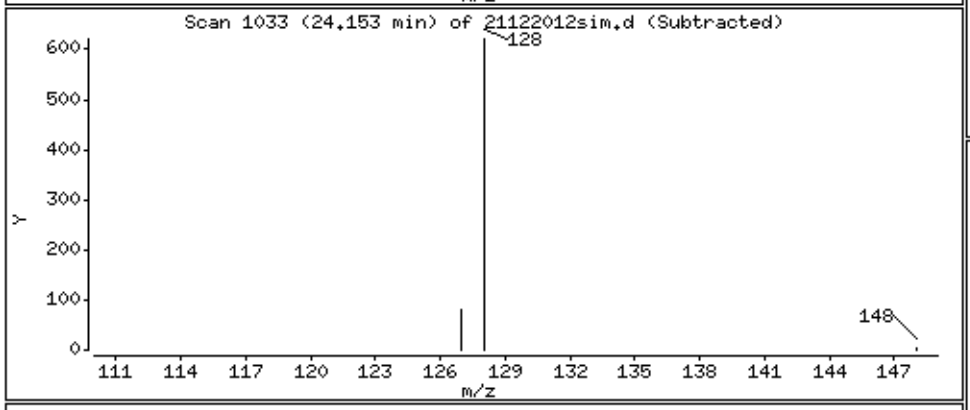
Column diameter: 0.32

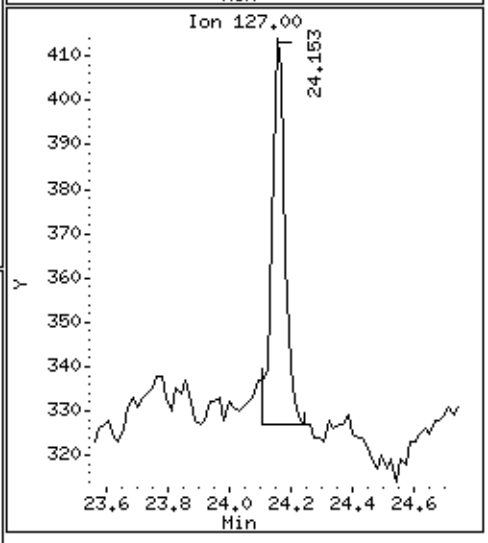
38 Naphthalene

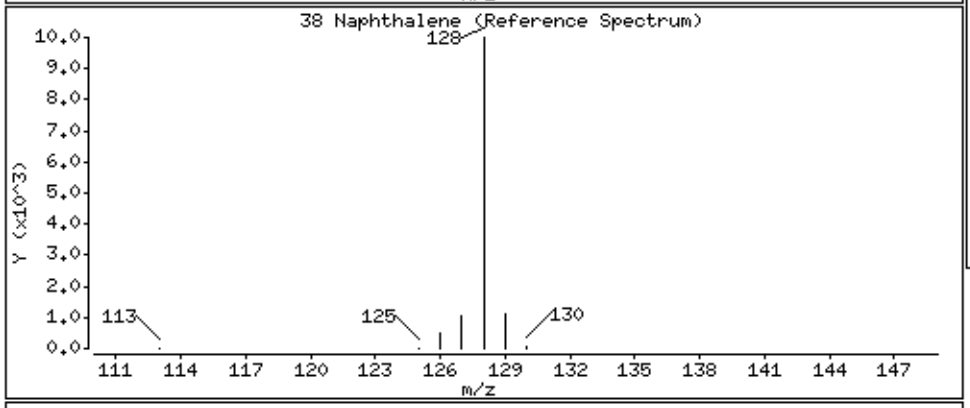
Concentration: 0.01204 PPBV

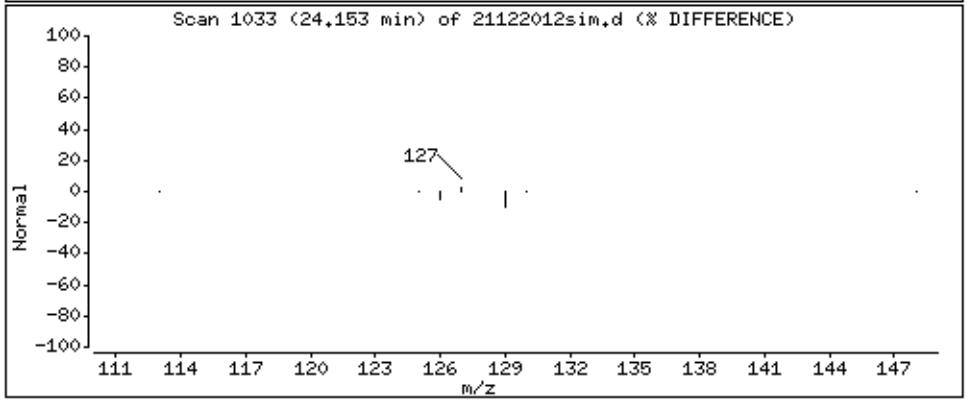












QC Results and Raw Data

MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	Lab Blank		
Lab ID:	1712342-20A	**Date/Time Analyzed:**	12/19/17 11:37 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21121906sima

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.040	0.040	0.16	Not Detected U
Ethyl Benzene	100-41-4	0.0023	0.022	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0056	0.022	0.17	Not Detected U
Naphthalene	91-20-3	0.039	0.052	0.26	Not Detected U
o-Xylene	95-47-6	0.0044	0.022	0.087	Not Detected U
Toluene	108-88-3	0.019	0.019	0.075	Not Detected U
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	90
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121906sima.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 19-DEC-2017 11:37
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 33552
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 22-Dec-2017 12:00 ejakob Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	102803	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	79593			47.49- 107.49	77.42
14.274	14.298 (1.000)	49	148292			114.87- 174.87	144.25
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	512311	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	86843			0.00- 46.92	16.95
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	399237	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	222188			25.29- 85.29	55.65
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	147429	5.52153	5.522	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	83269			30.16- 90.16	56.48
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	450483	5.00942	5.009	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	55297			0.00- 42.34	12.28

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	306914			38.15- 98.15	68.13
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	155199	4.49780	4.498	80.00- 120.00	100.00
19.768	19.787 (1.071)	95	186899			88.82- 148.82	120.43
19.787	19.787 (1.072)	176	152823			68.26- 128.26	98.47

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121906sima.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: Humid

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	102803	-14.29
20 1,4-Difluorobenze	564150	338490	789810	512311	-9.19
28 Chlorobenzene-d5	433051	259831	606271	399237	-7.81

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Report Date: 22-Dec-2017 12:03

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.522	110.43	70-130
$ 22 Toluene-d8	5.000	5.009	100.19	70-130
$ 33 4-Bromofluorobenze	5.000	4.498	89.96	70-130

Data File: /chem/msd21.i/19dec17.b/21121906sima.d

Date : 19-DEC-2017 11:37

Client ID: Lab Blank

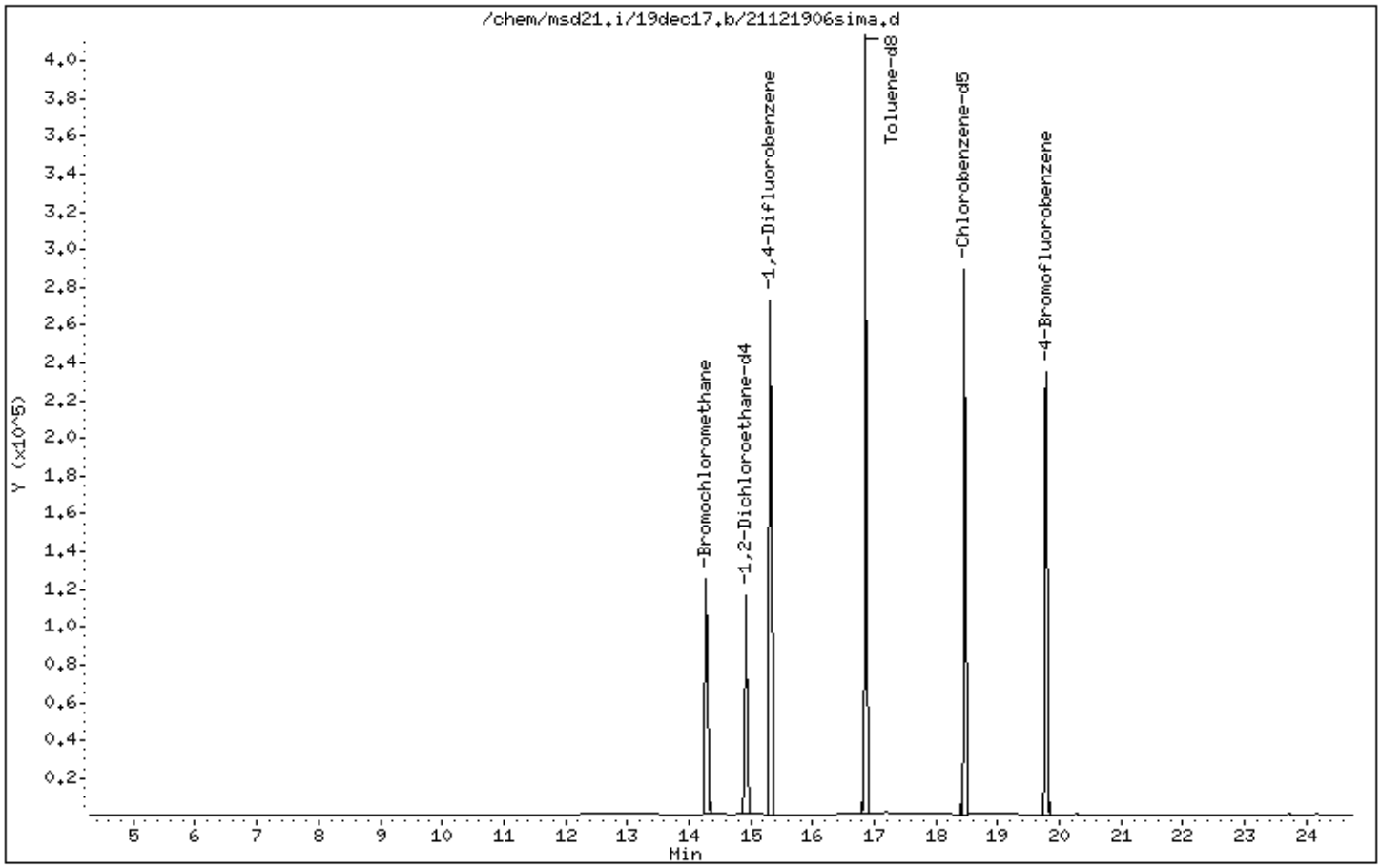
Instrument: msd21.i

Sample Info: 250mL# 33552

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	Lab Blank		
Lab ID:	1712342-20B	**Date/Time Analyzed:**	12/20/17 10:41 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21122006simc

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.040	0.040	0.16	Not Detected U
Ethyl Benzene	100-41-4	0.0023	0.022	0.087	Not Detected U
m,p-Xylene	108-38-3	0.0056	0.022	0.17	Not Detected U
Naphthalene	91-20-3	0.039	0.052	0.26	Not Detected U
o-Xylene	95-47-6	0.0044	0.022	0.087	Not Detected U
Toluene	108-88-3	0.019	0.019	0.075	Not Detected U
Total Xylenes	9999-9999-015	NA	D	0.26	Not Detected

U = The analyte was not detected above the MDL.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	87
Toluene-d8	2037-26-5	70-130	99

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122006simc.d
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Inj Date : 20-DEC-2017 10:41
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 35275
Misc Info : Humid
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CH222104.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	102410	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	79335			47.49- 107.49	77.47
14.273	14.274 (1.000)	49	149828			114.87- 174.87	146.30
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	504108	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	85450			0.00- 46.92	16.95
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	386292	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	215207			25.29- 85.29	55.71
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	149109	5.60588	5.606	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	84076			30.16- 90.16	56.39
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	439493	4.96674	4.967	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	54142			0.00- 42.34	12.32

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	298921			38.15- 98.15	68.01
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	145885	4.36955	4.370	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	176833			88.82- 148.82	121.21
19.787	19.787 (1.072)	176	143709			68.26- 128.26	98.51

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122006simc.d
Lab Smp Id: Lab Blank
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: Humid

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Client Smp ID: Lab Blank
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	102410	-13.35
20 1,4-Difluorobenze	566094	339656	792532	504108	-10.95
28 Chlorobenzene-d5	446145	267687	624603	386292	-13.42

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: Lab Blank Client Smp ID: Lab Blank
Level: LOW Operator: ef
Data Type: MS DATA SampleType: SAMPLE
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: CH222104.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: Humid

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	5.606	112.12	70-130
$ 22 Toluene-d8	5.000	4.967	99.33	70-130
$ 33 4-Bromofluorobenze	5.000	4.370	87.39	70-130

Data File: /chem/msd21.i/20dec17.b/21122006simc.d

Date : 20-DEC-2017 10:41

Client ID: Lab Blank

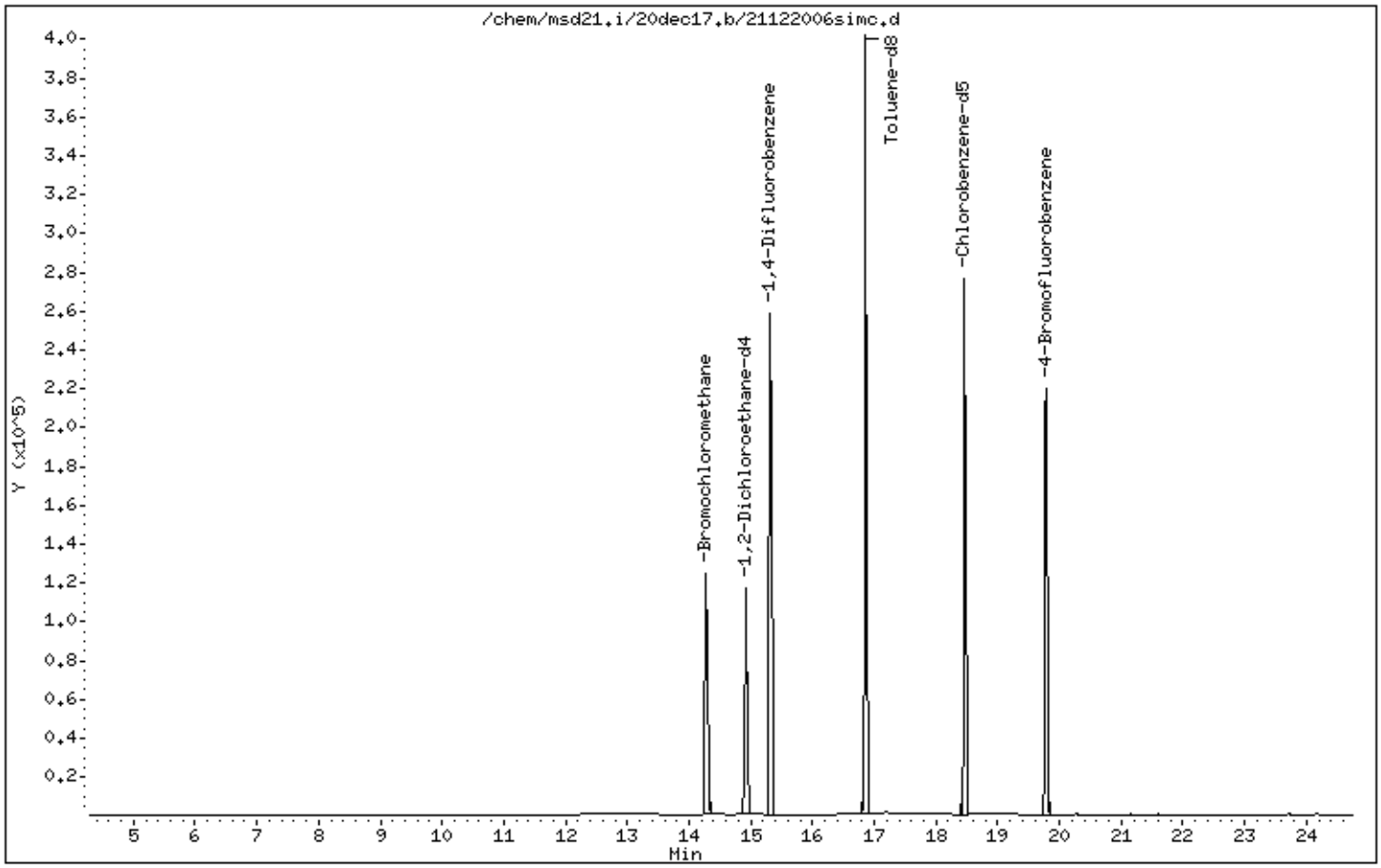
Instrument: msd21.i

Sample Info: 250mL# 35275

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1712342

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY								
		1,2-Dichloroethane-d4	#	Toluene-d8	#	4-Bromofluorobenzene	#		#	TOTAL OUT
01	IAU-040_1217	114		99		90				0
02	IAG-040_1217	104		100		90				0
03	CS-040_1217	113		100		89				0
04	OA-040_1217	111		99		90				0
05	IAU-140_1217	114		99		86				0
06	OA1_1217	110		98		86				0
07	OA2_1217	112		99		89				0
08	OA2-1_1217	110		96		86				0
09	OA6_1217	111		99		88				0
10	OA7_1217	109		98		86				0
11	OA8_1217	112		100		90				0
12	OA9_1217	111		98		90				0
13	OA10_1217	110		101		98				0
14	OA11_1217	112		98		87				0
15	OA12_1217	111		98		87				0
16	OA13_1217	113		98		86				0
17	OA13-1_1217	111		98		87				0
18	OA14_1217	110		98		86				0
19	OA15_1217	113		98		86				0
20	Lab Blank	110		100		90				0
21	Lab Blank	112		99		87				0
22	CCV	90		98		98				0
23	CCV	90		100		103				0
24	LCS	95		99		103				0

Surrogate Recovery Limits

1,2-Dichloroethane-d4 70 - 130
Toluene-d8 70 - 130
4-Bromofluorobenzene 70 - 130

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

MODIFIED EPA METHOD TO-15 GC/MS SIM

SURROGATE RECOVERY FORM

Lab Name: AIR TOXICS LIMITED. SDG No.: 1712342

	CLIENT SAMPLE NO.	SURROGATE % RECOVERY	#		#		#		#	TOTAL OUT
01	LCSD	95		100		106				0
02	LCS	95		100		104				0
03	LCSD	96		99		104				0
04										0
05										0
06										0
07										0
08										0
09										0
10										0
11										0
12										0
13										0
14										0
15										0
16										0
17										0
18										0
19										0
20										0
21										0
22										0
23										0
24										0

Surrogate Recovery Limits

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1712342

Lab File ID: 21121902sim.d | Date Analyzed: 12/19/2017

Instrument ID: msd21.i | Time Analyzed: 09:02 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	433051		18.47		564150		15.31		119943		14.3	
	UPPER LIMIT	606271		18.80		789810		15.64		167920		14.63	
	LOWER LIMIT	259831		18.14		338490		14.98		71966		13.97	
	CLIENT SAMPLE NO												
01	IAU-040_1217	396989		18.47		511447		15.31		101241		14.3	
02	IAG-040_1217	401305		18.47		522193		15.31		108153		14.3	
03	CS-040_1217	400562		18.47		516295		15.31		102030		14.3	
04	OA-040_1217	395234		18.47		514901		15.31		106015		14.3	
05	IAU-140_1217	391533		18.47		514609		15.31		101955		14.3	
06	OA1_1217	394332		18.47		519294		15.31		106776		14.3	
07	OA2_1217	399077		18.47		518766		15.31		105056		14.3	
08	OA6_1217	400613		18.47		520206		15.31		105049		14.3	
09	OA7_1217	391475		18.47		520353		15.31		110979		14.3	
10	OA8_1217	403186		18.47		518691		15.31		103377		14.3	
11	OA9_1217	401248		18.47		527472		15.31		107869		14.3	
12	OA10_1217	422446		18.47		526982		15.31		110150		14.3	
13	Lab Blank	399237		18.47		512311		15.31		102803		14.3	
14	CCV	433051		18.47		564150		15.31		119943		14.3	
15	LCS	419197		18.47		537987		15.31		113276		14.3	
16	LCSD	423140		18.47		535177		15.31		111895		14.3	
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

LEVEL-IV VALIDATABLE

Modified EPA Method TO-15 GC/MS SIM

INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: AIR TOXICS, LTD | SDG No: 1712342

Lab File ID: 21122002sim.d | Date Analyzed: 12/20/2017

Instrument ID: msd21.i | Time Analyzed: 08:39 AM

		Chlorobenzene-d5 Area	#	RT	#	1,4-Difluorobenzene Area	#	RT	#	Bromochloromethane Area	#	RT	#
	24-HOUR STD	446145		18.47		566094		15.31		118194		14.3	
	UPPER LIMIT	624603		18.80		792532		15.64		165472		14.63	
	LOWER LIMIT	267687		18.14		339656		14.98		70916		13.97	
	CLIENT SAMPLE NO												
01	OA2-1_1217	375668		18.47		514240		15.31		107737		14.3	
02	OA11_1217	379549		18.47		505596		15.31		101951		14.3	
03	OA12_1217	381727		18.47		510604		15.31		104224		14.3	
04	OA13_1217	382247		18.47		504887		15.31		101612		14.3	
05	OA13-1_1217	380564		18.47		511462		15.31		105007		14.3	
06	OA14_1217	378739		18.47		507043		15.31		105226		14.3	
07	OA15_1217	382698		18.46		511652		15.31		103233		14.3	
08	Lab Blank	386292		18.47		504108		15.31		102410		14.3	
09	CCV	446145		18.47		566094		15.31		118194		14.3	
10	LCS	425296		18.47		540682		15.31		112523		14.3	
11	LCSD	417814		18.47		534916		15.31		110643		14.3	
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

'Area Upper Limit=+40% of internal standard area'

'Area Lower Limit=-40% of internal standard area'

RT Upper Limit=+0.33 minutes of internal standard RT

RT Lower Limit=-0.33 minutes of internal standard RT

* Designates values outside of QC limits

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 21121904sim.d & 21121903sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 12/19/17 & 12/19/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	84		82		2.4	
100-41-4	Ethyl Benzene	94		95		1.0	
108-38-3	m,p-Xylene	92		96		4.2	
91-20-3	Naphthalene	83		81		2.4	
95-47-6	o-Xylene	95		98		3.1	
108-88-3	Toluene	86		86		0	
9999-9999-015	Total Xylenes	94		97		3.1	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

SAMPLE RESULTS/SAMPLE RESULTS DUPLICATE

Lab Name: Air Toxics Ltd.

Lab File ID: 21122004sim.d & 21122003sim.d

Lab Sample ID: &

Dilution: 1.00 & 1.00

Client Sample ID: LCS & LCSD

Date Analyzed: 12/20/17 & 12/20/17

CAS Number	Compound	Original Amount	Original Flags	Duplicate Amount	Duplicate Flags	RPD	Result Less Than 5X RL
71-43-2	Benzene	80		80		0	
100-41-4	Ethyl Benzene	93		89		4.4	
108-38-3	m,p-Xylene	92		90		2.2	
91-20-3	Naphthalene	78		82		5.0	
95-47-6	o-Xylene	96		93		3.2	
108-88-3	Toluene	85		83		2.4	
9999-9999-015	Total Xylenes	94		92		2.2	

Note: The results appearing in the Amount columns are the raw, unrounded numbers acquired from the instrument.

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Cal Date : 13-Dec-2017 10:44 efinn
Curve Type : Average

Calibration File Names:
Level 3: /chem/msd21.i/12dec17.b/21121203sim.d
Level 4: /chem/msd21.i/12dec17.b/21121204sim.d
Level 5: /chem/msd21.i/12dec17.b/21121205sim.d
Level 6: /chem/msd21.i/12dec17.b/21121206sim.d
Level 7: /chem/msd21.i/12dec17.b/21121207sim.d
Level 8: /chem/msd21.i/12dec17.b/21121208sim.d
Level 12: /chem/msd21.i/12dec17.b/21121209sim.d
Level 13: /chem/msd21.i/12dec17.b/21121210sim.d
Level 15: /chem/msd21.i/12dec17.b/21121211sim.d

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
1 Freon 12	+++++	6.75083	7.01329	7.52285	6.83521	6.80224		
	6.00790	5.82530	5.96467				6.59029	9.059
2 Freon 114	+++++	3.69045	3.66105	4.01995	3.59918	3.47978		
	3.11561	2.99762	2.87456				3.42978	11.530
3 Chloromethane	+++++	+++++	2.34030	2.18988	1.88803	1.86111		
	1.53222	1.51420	1.54492				1.83866	18.085
4 Vinyl Chloride	2.17871	2.01025	1.83955	1.95014	1.73896	1.73223		
	1.61423	1.58612	1.62422				1.80827	11.242
5 Chloroethane	+++++	+++++	0.90362	0.96180	0.87629	0.87716		
	0.81623	0.79468	0.81290				0.86324	6.878
6 Freon 11	+++++	3.81739	3.74277	4.13389	3.71322	3.61525		
	3.25100	3.08208	2.92826				3.53548	11.582
7 Freon 113	+++++	3.41581	3.40925	3.68955	3.29986	3.25606		
	2.83382	2.67324	2.60751				3.14814	12.501

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Cal Date : 13-Dec-2017 10:44 efinn
Curve Type : Average

Compound	0.01000 Level 3 / 5.000 Level 12	0.02000 Level 4 / 10.000 Level 13	0.05000 Level 5 / 20.000 Level 15	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
8 1,1-Dichloroethene	1.22472	1.20938	1.18488	1.29587	1.15723	1.12842		
	1.00133	0.94860	0.90182				1.11692	12.117
9 Methyl tert-butyl ether	+++++	5.07755	4.95710	5.51431	5.01888	5.03782		
	4.46853	4.27778	4.26431				4.82703	9.199
10 trans-1,2-Dichloroethene	1.32356	1.32478	1.30840	1.41676	1.26332	1.24678		
	1.10459	1.05672	1.04168				1.23184	10.790
11 1,1-Dichloroethane	+++++	3.59814	3.54798	3.89742	3.50773	3.44518		
	3.11132	2.93871	2.81842				3.35811	10.927
12 cis-1,2-Dichloroethene	1.46537	1.41941	1.40247	1.51886	1.36145	1.34063		
	1.20590	1.14656	1.10594				1.32962	10.886
14 Chloroform	3.96208	3.51966	3.87959	3.98727	3.53837	3.50808		
	3.16943	3.00050	2.89685				3.49576	11.617
15 1,1,1-Trichloroethane	+++++	3.35811	3.32659	3.59398	3.27005	3.29099		
	2.89404	2.70432	2.58126				3.12742	11.398
16 Carbon Tetrachloride	2.47952	2.34029	2.45432	2.92052	2.76487	2.82620		
	2.63747	2.55050	2.52728				2.61122	7.320
17 Benzene	1.94446	1.67848	1.48949	1.57331	1.35602	1.30445		
	1.17986	1.09629	0.96731				1.39885	21.903
19 1,2-Dichloroethane	0.51306	0.48376	0.47544	0.54235	0.47173	0.45173		
	0.42242	0.39215	0.34112				0.45486	13.578

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Cal Date : 13-Dec-2017 10:44 efinn
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
21 Trichloroethene	0.68230	0.59666	0.56474	0.62465	0.55154	0.53084		
	0.49901	0.47607	0.43301				0.55098	13.998
23 Toluene	+++++	1.59544	1.49081	1.61992	1.44539	1.39243		
	1.24646	1.13081	1.01689				1.36727	15.908
24 trans-1,3-Dichloropropene	+++++	0.72468	0.70932	0.78615	0.72335	0.76104		
	0.80182	0.79241	0.76119				0.75750	4.626
25 1,1,2-Trichloroethane	0.61053	0.54077	0.53451	0.63001	0.55487	0.53759		
	0.53121	0.53873	0.50099				0.55325	7.386
26 Tetrachloroethene	1.08820	0.97489	0.93515	1.08156	0.93985	0.89445		
	0.84227	0.82041	0.73572				0.92361	12.608
27 1,2-Dibromoethane (EDB)	0.90482	0.76388	0.74325	0.87011	0.78687	0.76472		
	0.79129	0.79906	0.73752				0.79573	7.117
29 Chlorobenzene	+++++	1.44878	1.41630	1.58342	1.39035	1.34491		
	1.22969	1.15816	1.07780				1.33117	12.468
30 Ethyl Benzene	+++++	0.59900	0.56844	0.63524	0.55965	0.54670		
	0.52184	0.51221	0.50018				0.55541	8.217
31 m,p-Xylene	+++++	0.65146	0.56493	0.63361	0.52218	0.49926		
	0.49441	0.48547	0.48856				0.54249	12.353
32 o-Xylene	+++++	0.57190	0.50455	0.62555	0.47546	0.44997		
	0.44546	0.44145	0.43117				0.49319	14.302

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Cal Date : 13-Dec-2017 10:44 efinn
Curve Type : Average

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	___ RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
34 1,1,2,2-Tetrachloroethane	1.04977	0.88437	0.86097	1.03245	0.89290	0.90644		
	0.87593	0.92720	0.83763				0.91863	8.066
35 1,3-Dichlorobenzene	+++++	1.07808	0.93796	1.07274	0.82856	0.76469		
	0.67879	0.62252	0.63181				0.82689	22.463
36 1,4-Dichlorobenzene	+++++	1.15303	1.00278	1.14776	0.84287	0.74884		
	0.63719	0.57381	0.58806				0.83679	28.670
37 1,2-Dichlorobenzene	+++++	1.08327	0.93632	1.08831	0.82947	0.76299		
	0.65629	0.60705	0.60975				0.82168	24.100
38 Naphthalene	+++++	+++++	+++++	3.19253	3.14629	3.33079		
	1.81033	2.01379	2.05307				2.59113	27.012
$ 18 1,2-Dichloroethane-d4	1.34379	1.36280	1.40303	1.35343	1.35448	1.38317		
	1.23863	1.15216	1.09626				1.29864	8.450
$ 22 Toluene-d8	0.89132	0.88584	0.88154	0.87163	0.88709	0.89103		
	0.87667	0.86032	0.85350				0.87766	1.538
$ 33 4-Bromofluorobenzene	0.45692	0.43084	0.41971	0.44070	0.41173	0.41652		
	0.41825	0.45328	0.44135				0.43214	3.862

Calibration History

Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Start Cal Date: 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 3 , Cal Amount: 0.01000		
12-DEC-2017 12:50	Level3	/chem/msd21.i/12dec17.b/21121203sim.d
Cal Level: 4 , Cal Amount: 0.02000		
12-DEC-2017 13:21	Level4	/chem/msd21.i/12dec17.b/21121204sim.d
Cal Level: 5 , Cal Amount: 0.05000		
12-DEC-2017 14:01	HILOcrvFULL	/chem/msd21.i/12dec17.b/21121205sim.d
Cal Level: 6 , Cal Amount: 0.10000		
12-DEC-2017 14:31	HILOcrvFULL	/chem/msd21.i/12dec17.b/21121206sim.d
Cal Level: 7 , Cal Amount: 0.50000		
12-DEC-2017 15:05	HILOcrvFULL	/chem/msd21.i/12dec17.b/21121207sim.d
Cal Level: 8 , Cal Amount: 1.00000		
12-DEC-2017 15:55	HILOcrvFULL	/chem/msd21.i/12dec17.b/21121208sim.d
Cal Level: 12, Cal Amount: 5.00000		
12-DEC-2017 16:32	HILOcrvFULL	/chem/msd21.i/12dec17.b/21121209sim.d
Cal Level: 13, Cal Amount: 10.00000		

|12-DEC-2017 17:02 |HILOcrvFULL |/chem/msd21.i/12dec17.b/21121210sim.d |

| Cal Level: 15, Cal Amount: 20.00000 |

|12-DEC-2017 17:51 |HILOcrvFULL |/chem/msd21.i/12dec17.b/21121211sim.d |

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 13

| Ccal Level: 13, Ccal Amount: 10.000 |

|12-DEC-2017 17:02 |HILOcrvFULL |/chem/msd21.i/12dec17.b/21121210sim.d |

| Ccal Level: 13, Ccal Amount: 10.000 |

|12-DEC-2017 17:02 |HILOcrvFULL |/chem/msd21.i/12dec17.b/21121210sima.d |

Curve Name: 2117s1212A

Initial Calibration Narrative

An initial calibration curve was analyzed on 12/12/17 on MSD-21. The instrument was set up to do Full Scan and Selective Ion Monitoring (SIM) simultaneously.

Tune File: 21121202.
ICAL: Zero (0) out.
ICV: Zero (0) out. File # 21121215sim.
DOD 5.0 ICV: Zero (0) out. File # 21121215sima.
DOD 4.2 ICV: Zero (0) out. File # 21121215simc.
Naphthalene recovery = 71.2%

The following compounds were calibrated down to a special RL of 0.01ppbv:

- trans-1,2-Dichloroethene
- cis-1,2-Dichloroethene
- Chloroform
- Carbon Tetrachloride
- Benzene
- 1,2-Dichloroethane*
- Trichloroethene
- 1,1,2-Trichloroethane
- Tetrachloroethene
- 1,2-Dibromoethane
- 1,1,2,2-Tetrachlorothane

MDL was run on 6/23/17.
Naphthalene MDL was run on 6/26/17

Eurofins Air Toxics Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 12-DEC-2017 12:50
End Cal Date : 12-DEC-2017 17:51
Quant Method : ISTD
Origin : Disabled
Target Version : 3.50
Integrator : HP RTE
Method file : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Cal Date : 13-Dec-2017 10:44 efinn
Curve Type : Average

Calibration File Names:
Level 3: /chem/msd21.i/12dec17.b/21121203sim.d
Level 4: /chem/msd21.i/12dec17.b/21121204sim.d
Level 5: /chem/msd21.i/12dec17.b/21121205sim.d
Level 6: /chem/msd21.i/12dec17.b/21121206sim.d
Level 7: /chem/msd21.i/12dec17.b/21121207sim.d
Level 8: /chem/msd21.i/12dec17.b/21121208sim.d
Level 12: /chem/msd21.i/12dec17.b/21121209sim.d
Level 13: /chem/msd21.i/12dec17.b/21121210sim.d
Level 15: /chem/msd21.i/12dec17.b/21121211sim.d

12/13/17

Compound	0.01000 Level 3	0.02000 Level 4	0.05000 Level 5	0.10000 Level 6	0.50000 Level 7	1.000 Level 8	RRF	% RSD
	5.000 Level 12	10.000 Level 13	20.000 Level 15					
1 Freon 12	+++++	6.75083	7.01329	7.52285	6.83521	6.80224		
	6.00790	5.82530	5.96467				6.59029	9.059
2 Freon 114	+++++	3.69045	3.66105	4.01995	3.59918	3.47978		
	3.11561	2.99762	2.87456				3.42978	11.530
3 Chloromethane	+++++	+++++	2.34030	2.18988	1.88803	1.86111		
	1.53222	1.51420	1.54492				1.83866	18.085
4 Vinyl Chloride	2.17871	2.01025	1.83955	1.95014	1.73896	1.73223		
	1.61423	1.58612	1.62422				1.80827	11.242
5 Chloroethane	+++++	+++++	0.90362	0.96180	0.87629	0.87716		
	0.81623	0.79468	0.81290				0.86324	6.878
6 Freon 11	+++++	3.81739	3.74277	4.13389	3.71322	3.61525		
	3.25100	3.08208	2.92826				3.53548	11.582
7 Freon 113	+++++	3.41581	3.40925	3.68955	3.29986	3.25606		
	2.83382	2.67324	2.60751				3.14814	12.501

CALIBRATED FLOW METER # 606610 EXP. 4/19/18
NOMINAL FLOW: 26.0mL/MIN
ACTUAL FLOW: 24.6mL/MIN

Eurofins Air Toxics, Inc. **MSD-21** **Logbook #3012**

(1086768/1074656) x 100 = 96.54

BFB Verification of 176/174 m/z Ratio: ~~(1286764/1325056) x 100 = 97.222~~	
Method Name: 2117L1212A / 2117S1212A	

IS/S Std. #: 2991-142	Exp. Date: 2/3/18
BCM	5.M: 1297164
1,4-DFB	601231
CB-d5	470778

Verified CCV IS vs ICAL mid-point (-40%D): _____

SOP# (Circle one): 6 / (83) / (38) / 91 / 109 / 132 Method (Circle one): (TO-14A/TO-15) TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	2112202	BFB TUNE LEVEL	2810-658	5lpsig	2.0mL	1.00		~~12/12/17~~ 12/12/17	1285		
2	✓	#3	ICAL LEVEL 3	2991-195	0.01ppbv ~~0.05ppbv~~	50mL	1.00		12/12/17	1260		Exp. 2/17/18
3	✓	04	4	|	0.02ppbv	100mL	1.00			1321		|
4	✓	05	5		0.05ppbv	250mL	1.00			1401		
5	✓	06	6	2991-196	0.1ppbv	25mL	1.00			1431		Exp. 2/17/18
6	✓	07	7	|	0.5ppbv	125mL	1.00			1505		|
7	✓	08	8	|	1.0ppbv	250mL	1.00			1555		
8	✓	09	~~9~~ 12	2991-164	5.0ppbv	25mL	1.00			1632		Exp 2/17/18
9	✓	10	13	|	10ppbv	50mL	1.00			1702		|
10	✓	11	15	|	20 ~~200~~ ppbv	100mL	1.00	MB		1751		|
11	✓	12	16	↓	40ppbv	200mL	1.00	MB		1920		↓
12	X	13	System Blank	25275	Humid	250mL	1.00	MB		2042		
13	✓	14	↓	↓	↓	↓	↓	↓		2128		
14		15	ICV	3018-16	10ppbv	50mL	1.00	MB		2205		Exp: 3/4/18
15												
16												
17											12/13/17	

Reviewed

12/13/17
Date

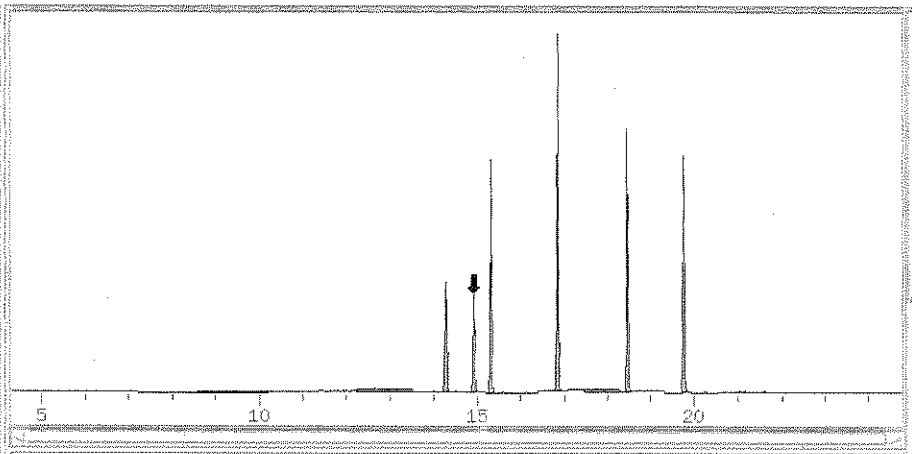
TargetReview: eeyore: ICAL: /chem/msd21.i/12dec17.b/21121203sim.d

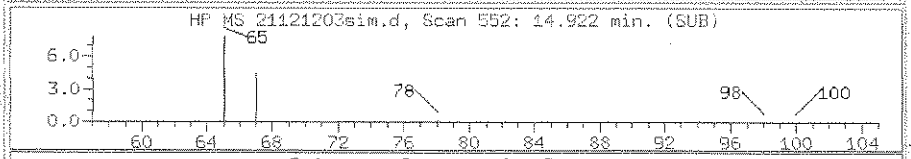
File Security Edit Display Process Spectra Help

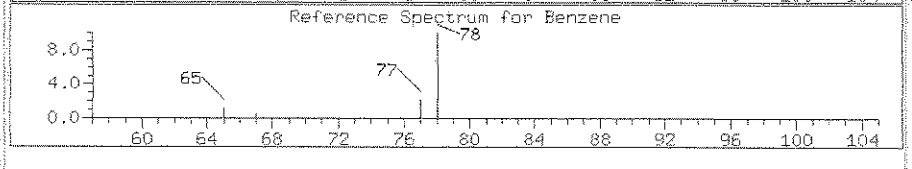
Sample: ICAL Type: SAMPLE Inj.Date: 12-DEC-2017 12:50

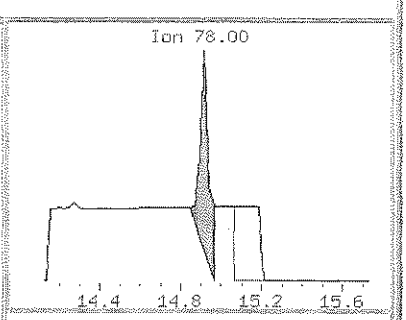
```
+    4 Vinyl Chloride
+    8 1,1-Dichloroetl
+   10 trans-1,2-Dich
+   12 cis-1,2-Dichlo
*+  13 Bromochlorometl
+   14 Chloroform
+   16 Carbon Tetrach
*+  17 Benzene
$+  18 1,2-Dichloroetl
+   19 1,2-Dichloroetl
*+  20 1,4-Difluorobe
+   21 Trichloroethen
$+  22 Toluene-d8
+   25 1,1,2-Trichlor
+   26 Tetrachloroeth
+   27 1,2-Dibromoeth
*+  28 Chlorobenzene-
$+  33 4-Bromofluorob
+   34 1,1,2,2-Tetrac
+   36 1,4-Dichlorobe
```

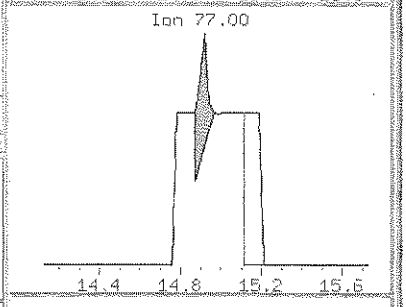
21121203sim.d







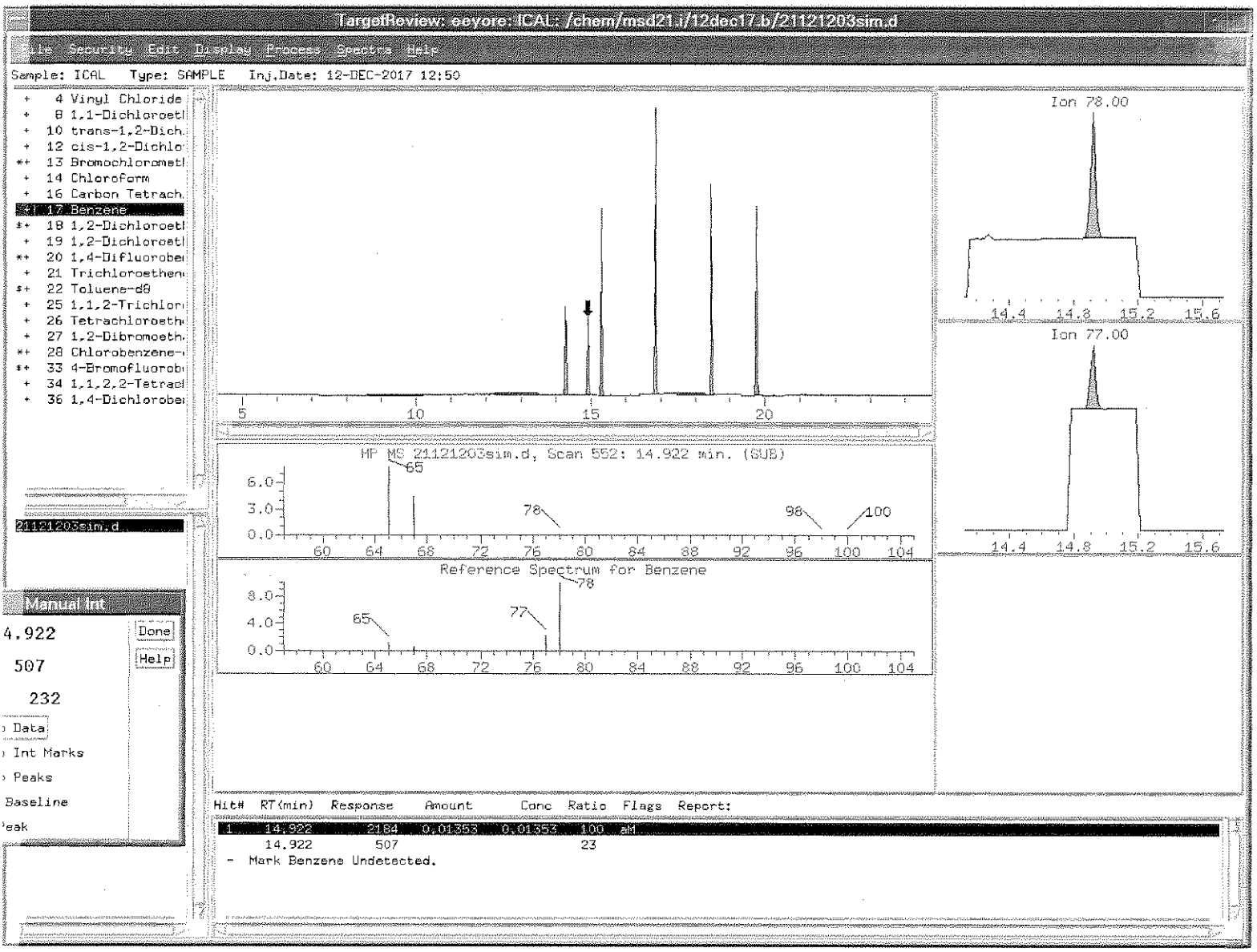




Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	14.922	4348	0.02694	0.02694	100	a	
	14.922	1216			28		
2	15.185	4317	0.02674	0.02674	100	a	
	15.161	2545			59		

- Mark Benzene Undetected.

B. Bone



12/12/17

After 12/13/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

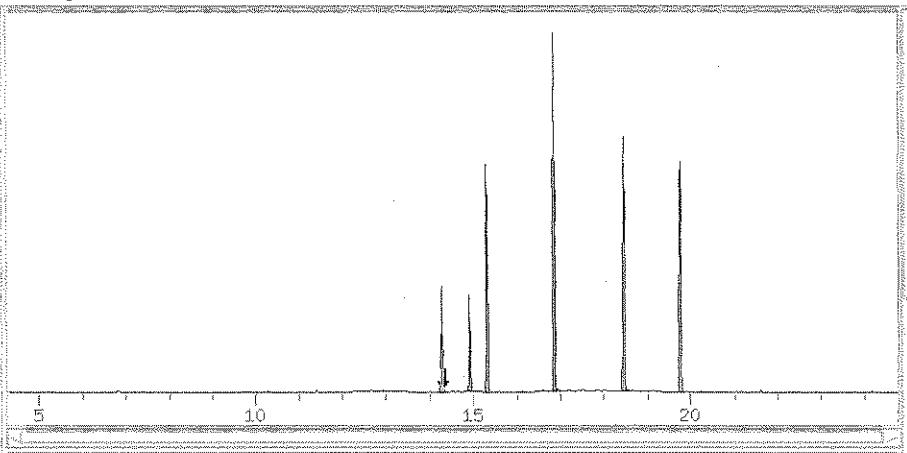
TargetReview: eeyore-ICAL: /chem/ms021.i/12dec17.b/21121204sim.d

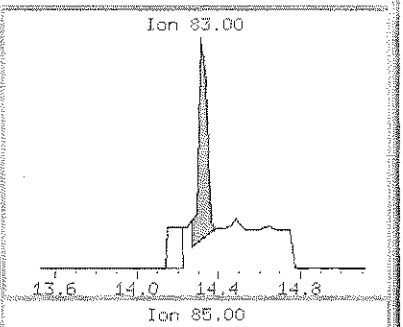
File Security Edit Display Process Spectra Help

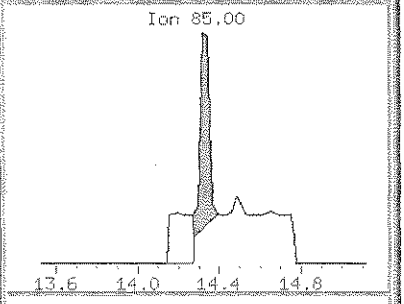
Sample: ICAL Type: SAMPLE Inj.Date: 12-DEC-2017 13:21

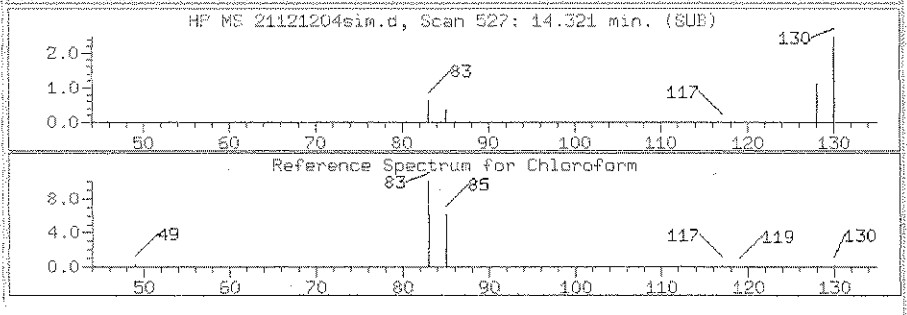
+	1	Freon 12
+	2	Freon 114
+	4	Vinyl Chloride
+	6	Freon 11
+	8	1,1-Dichloroetl
+	7	Freon 113
+	9	Methyl tert-bu
+	11	1,1-Dichloroetl
+	10	trans-1,2-Dich.
+	12	cis-1,2-Dichlo
*+	13	Bromochlorometl
+	14	Chloroform
+	15	1,1,1-Trichlor
+	16	Carbon Tetrach.
+	17	Benzene
$+	18	1,2-Dichloroetl
+	19	1,2-Dichloroetl
*+	20	1,4-Difluorobe
+	21	Trichloroethen
$+	22	Toluene-d8
+	23	Toluene
+	24	trans-1,3-Dich.
+	25	1,1,2-Trichlor
+	26	Tetrachloroeth
+	27	1,2-Dibromoeth.

21121204sim.d



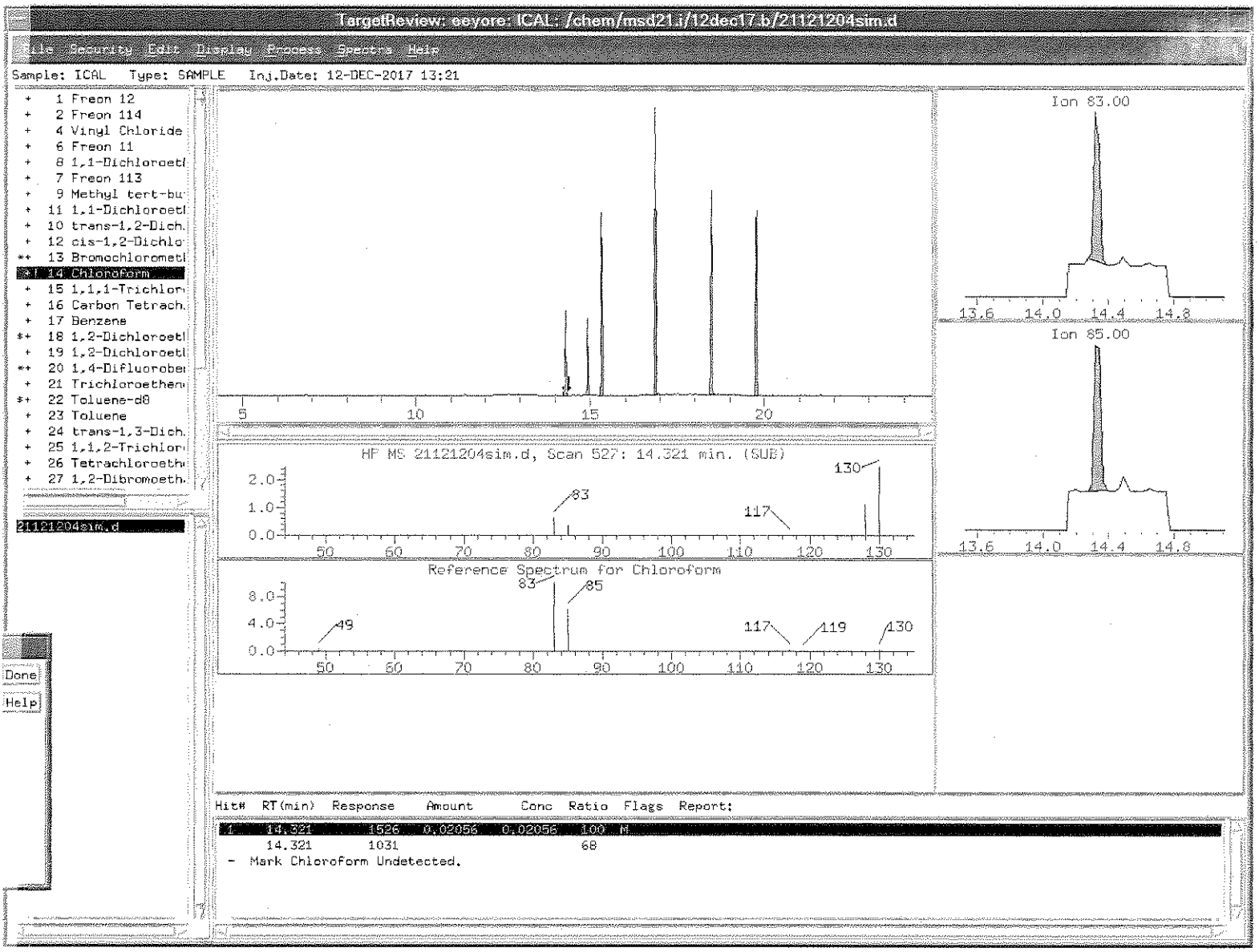






Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	14.153	655	0.008836	0.008836	100	a	
	14.201	745			114		
2	14.321	1888	0.02545	0.02545	100		
	14.321	1216			64		

- Mark Chloroform Undetected.

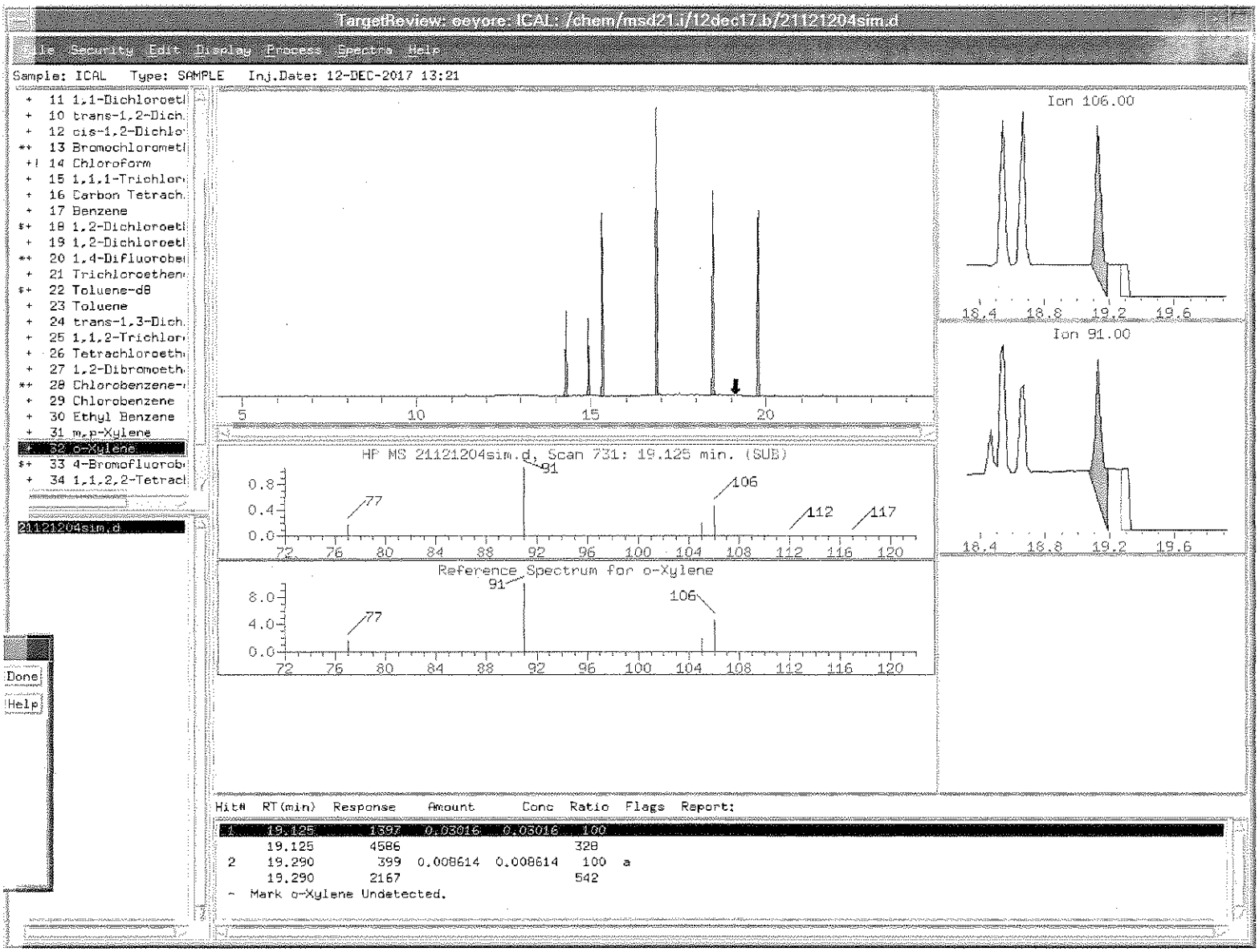


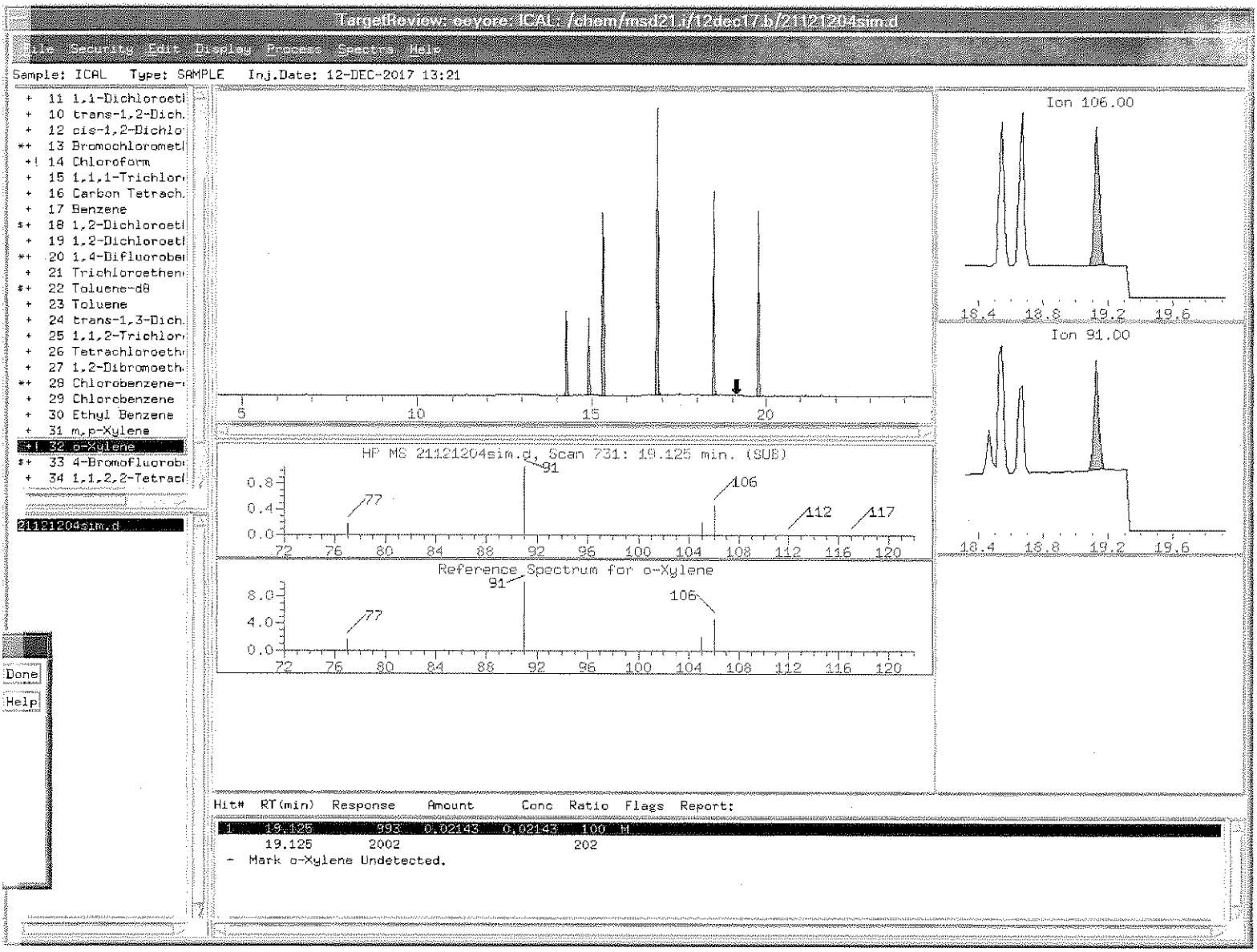
45 12/12/17

After

BT 12/13/17

Correct Baseline	✓
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	


TargetReview: eeyore: ICAL: /chem/msd21.i/12dec17.b/21121204sim.d
File Security Edit Display Process Spectra Help
Sample: ICAL Type: SAMPLE Inj.Date: 12-DEC-2017 13:21
+ 11 1,1-Dichloroetl
+ 10 trans-1,2-Dich
+ 12 cis-1,2-Dichlo
*+ 13 Bromochlorometl
+! 14 Chloroform
+ 15 1,1,1-Trichlor
+ 16 Carbon Tetrach
+ 17 Benzene
$+ 18 1,2-Dichloroetl
+ 19 1,2-Dichloroetl
*+ 20 1,4-Difluorobe
+ 21 Trichloroethen
$+ 22 Toluene-d8
+ 23 Toluene
+ 24 trans-1,3-Dich
+ 25 1,1,2-Trichlor
+ 26 Tetrachloroeth
+ 27 1,2-Dibromoeth
*+ 28 Chlorobenzene-
+ 29 Chlorobenzene
+ 30 Ethyl Benzene
+ 31 m,p-Xylene
+ 32 o-Xylene
$+ 33 4-Bromofluorob
+ 34 1,1,2,2-Tetrac
21121204sim.d
Ion 106.00
Ion 91.00
HP MS 21121204sim.d, Scan 731: 19.125 min. (SUB)
Reference Spectrum for o-Xylene
Done
Help
Hit# RT(min) Response Amount Conc Ratio Flags Report:
1 19.125 1397 0.03016 0.03016 100
19.125 4586 328
2 19.290 399 0.008614 0.008614 100 a
19.290 2167 542
~ Mark o-Xylene Undetected.



80 12/13/17

After 85 12/13/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

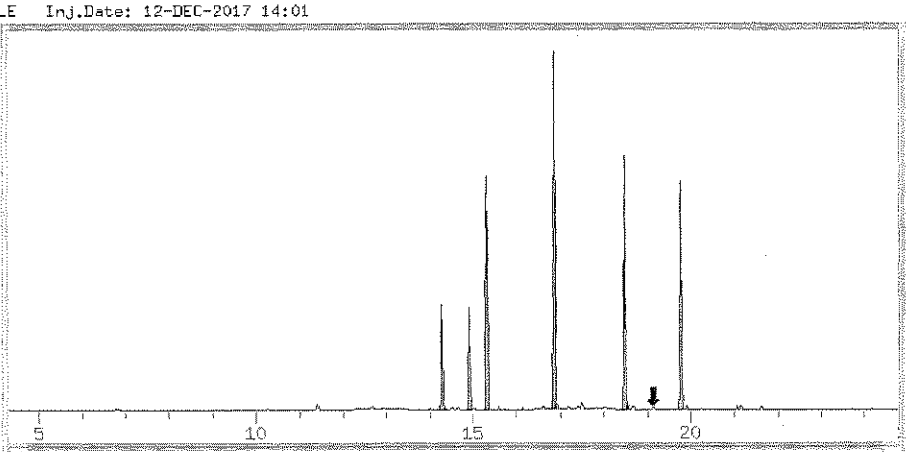
TargetReview: eeyore: ICAL: /chem/msd21.i/12dec17.b/21121205sim.d

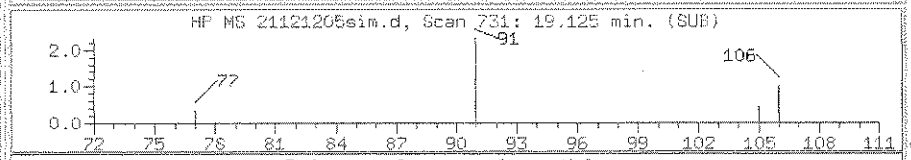
File Security Edit Display Process Spectra Help

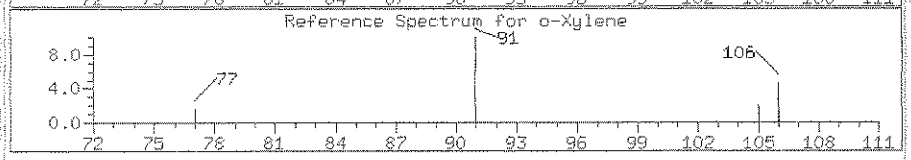
Sample: ICAL Type: SAMPLE Inj.Date: 12-DEC-2017 14:01

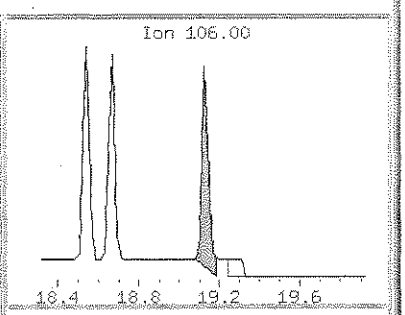
```
+  14 Chloroform
+  15 1,1,1-Trichlor
+  16 Carbon Tetrach
+  17 Benzene
$+ 18 1,2-Dichloroet
+  19 1,2-Dichloroet
*+ 20 1,4-Difluorobe
+  21 Trichloroethen
$+ 22 Toluene-d8
+  23 Toluene
+  24 trans-1,3-Dich
+  25 1,1,2-Trichlor
+  26 Tetrachloroeth
+  27 1,2-Dibromoeth
*+ 28 Chlorobenzene-
+  29 Chlorobenzene
+  30 Ethyl Benzene
+  31 m,p-Xylene
+  32 o-Xylene
$+ 33 4-Bromofluorob
+  34 1,1,2,2-Tetrac
+  35 1,3-Dichlorobe
+  36 1,4-Dichlorobe
+  37 1,2-Dichlorobe
+  38 Naphthalene
```

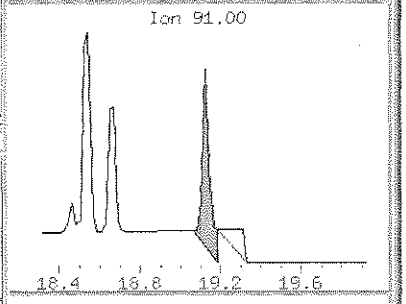
21121205sim.d





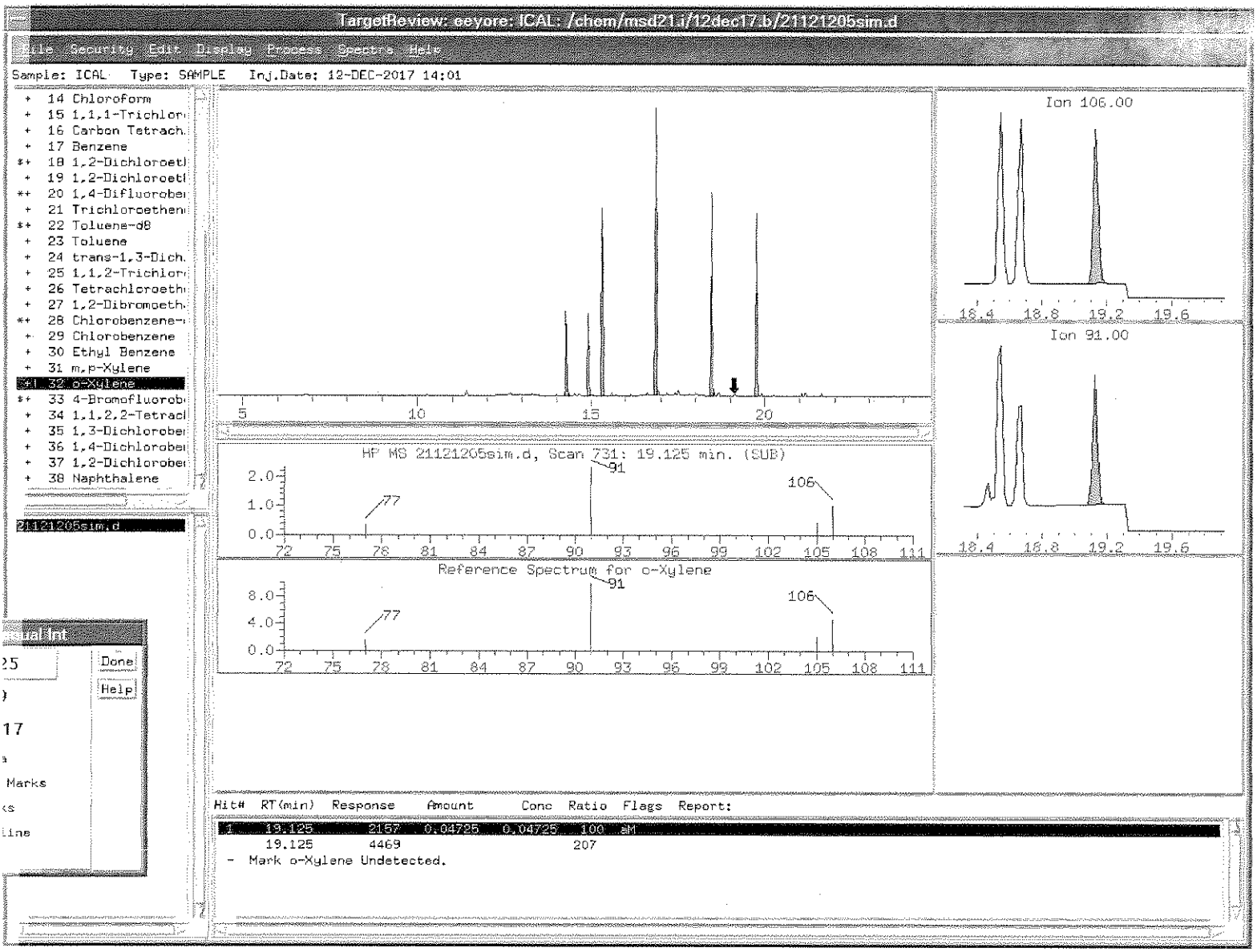






Hit#	RT(min)	Response	Amount	Conc	Ratio	Flags	Report:
1	19.125	2509	0.05498	0.05498	100		
	19.125	6529			260		
2	19.270	462	0.01014	0.01014	100	a	
	19.187	1740			376		

\- Mark o-Xylene Undetected.



AFTER.

5 12/13/17

After

5 12/13/17

Correct Baseline	X
Split Peak	
Merge Peak	
Zoom In	
Change Parameter	
System Peak Subtraction	
Peak Misidentified	
Corrected Peak Integration	

Modified EPA Methods TO-14A/TO-15 SIM
Internal Standard and Associated Target Compounds and Surrogates

Bromochloromethane
Target Compounds:
Dichlorodifluoromethane (Fr12)
Freon 114
Chloromethane
Vinyl Chloride
Chloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
Methyl tert-butyl ether
1,1-Dichloroethane
cis-1,2-Dichloroethene
Chloroform
1,1,1-Trichloroethane
Carbon Tetrachloride
Surrogates:
1,2-Dichloroethane-d4

1,4-Difluorobenzene
Target Compounds:
Benzene
1,2-Dichloroethane
Trichloroethene
Toluene
Surrogates:
Toluene-d8

Chlorobenzene-d5
Target Compounds:
1,1,2-Trichloroethane
Tetrachloroethene
1,2-Dibromoethane
Ethyl Benzene
m,p-Xylene
o-Xylene
1,1,2,2-Tetrachloroethane
1,4-Dichlorobenzene
Naphthalene
Surrogates:
Bromofluorobenzene

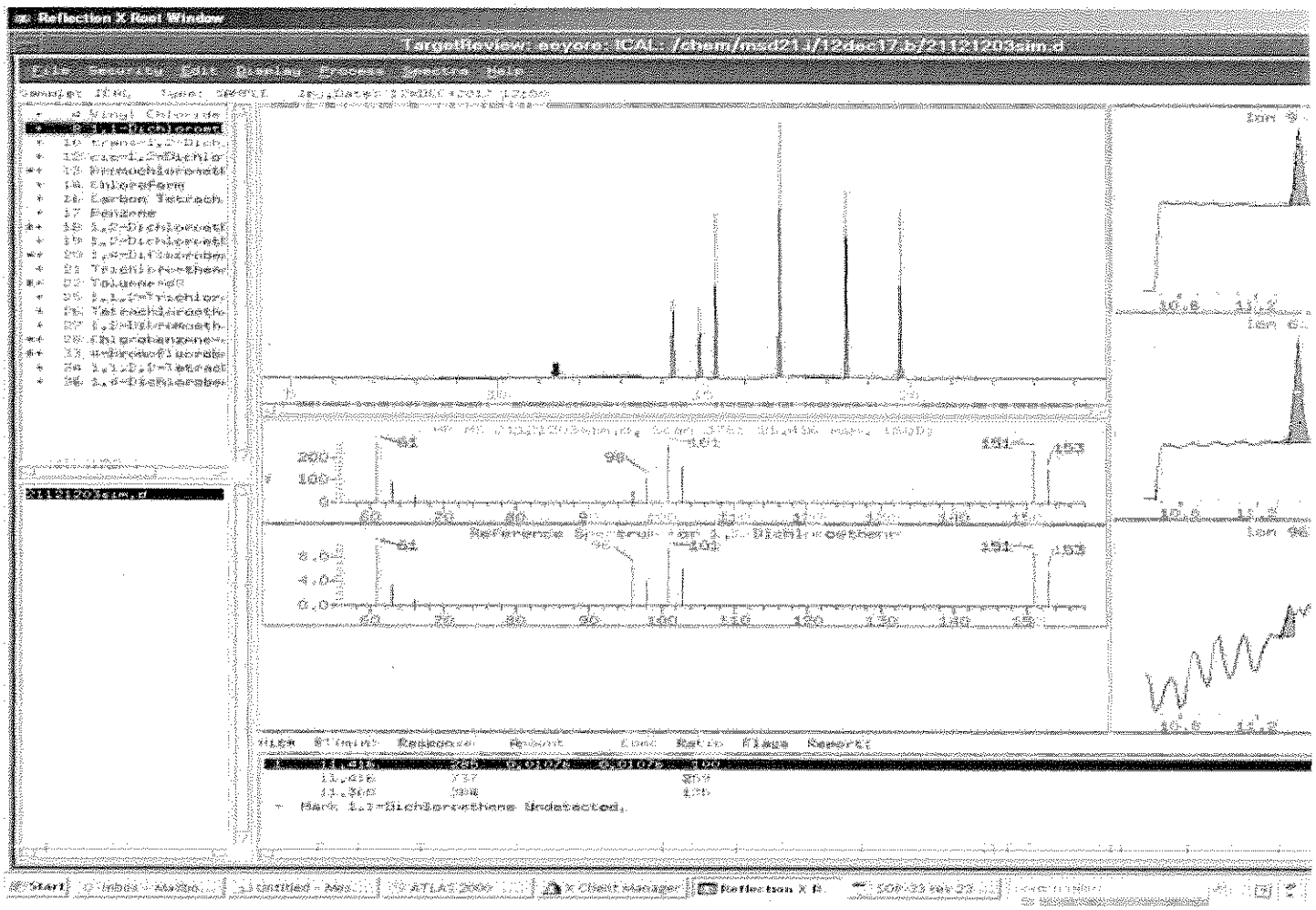
Eric Finn

From: Edward Jakab
Sent: Tuesday, December 12, 2017 2:36 PM
To: Eric Finn
Cc: Derek Frank; Excelsa Alcantara
Subject: RE: MSD21.

Yes, proceed.

From: Eric Finn
Sent: Tuesday, December 12, 2017 2:20 PM
To: Edward Jakab
Cc: Derek Frank; Excelsa Alcantara
Subject: MSD21.

Hey Ed, this is 1,1-DCE at the RL of 0.01 on MSD21. Primary and secondary look good, tertiary not so much. Think it will be acceptable to keep this?



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121215sim.d
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 12-DEC-2017 22:05
Operator : mjs Inst ID: msd21.i
Smp Info : 50ml #3018-16
Misc Info : 10ppbv(50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:51 Cal File: 21121211sim.d
Als bottle: 1 QC Sample: ICV
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	103975	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	80705			47.49- 107.49	77.62
14.274	14.274 (1.000)	49	154113			114.87- 174.87	148.22
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	498974	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	84509			0.00- 46.92	16.94
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	396307	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	220943			25.29- 85.29	55.75
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	131306	4.86225	4.862	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	75150			30.16- 90.16	57.23
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	441512	5.04090	5.041	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	54299			0.00- 42.34	12.30

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	299117			38.15- 98.15	67.75
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	174354	5.09029	5.090	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	210092			88.82- 148.82	120.50
19.787	19.787 (1.072)	176	171166			68.26- 128.26	98.17
1 Freon 12					CAS #: 75-71-8		
5.430	5.419 (0.380)	85	1320588	9.63616	9.636	80.00- 120.00	100.00
5.430	5.419 (0.380)	87	427295			2.41- 62.41	32.36
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	676179	9.48063	9.481	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	219387			2.42- 62.42	32.45
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	331532	8.67090	8.671	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	106865			2.20- 62.20	32.23
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	356803	9.48870	9.489	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	114091			1.85- 61.85	31.98
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	182925	10.1902	10.190	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	58523			1.99- 61.99	31.99
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	696226	9.46984	9.470	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	457857			35.88- 95.88	65.76
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	581752	8.88639	8.886	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	375686			34.82- 94.82	64.58
11.416	11.416 (0.798)	101	637979			79.00- 139.00	109.67
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	208871	8.99287	8.993	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	494822			204.09- 264.09	236.90
11.416	11.411 (0.798)	96	328133			127.27- 187.27	157.10
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	954446	9.50850	9.508	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	223907			0.00- 54.15	23.46
12.627	12.627 (0.883)	41	229742			0.00- 54.07	24.07

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	201867	7.88045	7.880	80.00- 120.00	100.00
12.669	12.669 (0.886)	61	444510			186.82- 246.82	220.20
12.689	12.689 (0.888)	96	314039			125.17- 185.17	155.57
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	661698	9.47558	9.476	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	215233			2.55- 62.55	32.53
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	277425	10.0337	10.034	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	539798			162.14- 222.14	194.57
14.001	14.001 (0.979)	96	429646			124.57- 184.57	154.87
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	668101	9.19055	9.190	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	440123			36.48- 96.48	65.88
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.514 (1.015)	97	599769	9.22230	9.222	80.00- 120.00	100.00
14.514	14.514 (1.015)	99	392676			35.76- 95.76	65.47
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.658	14.658 (1.025)	119	568096	10.4621	10.462	80.00- 120.00	100.00
14.658	14.658 (1.025)	117	580566			72.17- 132.17	102.20
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	1175951	8.42383	8.424	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	269059			0.00- 52.85	22.88
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	413882	9.11777	9.118	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	136731			3.19- 63.19	33.04
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	492995	8.96605	8.966	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	472052			64.81- 124.81	95.75
15.581	15.581 (1.018)	97	307964			32.10- 92.10	62.47
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	1211683	8.88030	8.880	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	764687			33.44- 93.44	63.11
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	650174	10.8290	10.829	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	219762			4.13- 64.13	33.80

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	269592			10.65- 70.65	41.46
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	430649	9.82074	9.821	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	268731			32.22- 92.22	62.40
17.393	17.393 (0.942)	83	412653			66.62- 126.62	95.82
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	649877	8.87729	8.877	80.00- 120.00	100.00
17.496	17.496 (0.947)	129	463493			39.65- 99.65	71.32
17.496	17.496 (0.947)	131	441860			37.15- 97.15	67.99
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	636990	10.0997	10.100	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	599744			64.51- 124.51	94.15
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	951446	9.01752	9.018	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	314855			3.25- 63.25	33.09
18.486	18.481 (1.001)	77	691837			42.62- 102.62	72.71
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	420838	9.55965	9.560	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1227266			259.51- 319.51	291.62
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	405688	9.43501	9.435	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	772665			159.47- 219.47	190.46
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	373672	9.55906	9.559	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	750403			168.52- 228.52	200.82
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	727869	9.99658	9.996	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	476983			35.89- 95.89	65.53
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	545474	8.32267	8.323	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	356796			35.46- 95.46	65.41
21.036	21.036 (1.139)	111	220286			10.46- 70.46	40.38
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	503868	7.59689	7.597	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	329317			35.29- 95.29	65.36

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	199133			9.14- 69.14	39.52
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.613	21.613 (1.170)	146	525780	8.07307	8.073	80.00- 120.00	100.00
21.613	21.613 (1.170)	148	342767			35.27- 95.27	65.19
21.613	21.613 (1.170)	111	222417			11.99- 71.99	42.30
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	146230	0.71201	0.7120	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	19423			0.00- 43.35	13.28

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121215sim.d
Lab Smp Id: ICV
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv(50ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: ICV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	103975	-19.87
20 1,4-Difluorobenze	609231	365539	852923	498974	-18.10
28 Chlorobenzene-d5	470778	282467	659089	396307	-15.82

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 12dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: ICV
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv(50ppbv)

SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
1 Freon 12	10.000	9.636	96.36	70-130
2 Freon 114	10.000	9.481	94.81	70-130
3 Chloromethane	10.000	8.671	86.71	70-130
4 Vinyl Chloride	10.000	9.489	94.89	70-130
5 Chloroethane	10.000	10.190	101.90	70-130
6 Freon 11	10.000	9.470	94.70	70-130
7 Freon 113	10.000	8.886	88.86	70-130
8 1,1-Dichloroethene	10.000	8.993	89.93	70-130
9 Methyl tert-butyl	10.000	9.508	95.08	70-130
10 trans-1,2-Dichloro	10.000	7.880	78.80	70-130
11 1,1-Dichloroethane	10.000	9.476	94.76	70-130
12 cis-1,2-Dichloroet	10.000	10.034	100.34	70-130
14 Chloroform	10.000	9.190	91.91	70-130
15 1,1,1-Trichloroeth	10.000	9.222	92.22	70-130
16 Carbon Tetrachlori	10.000	10.462	104.62	60-140
17 Benzene	10.000	8.424	84.24	70-130
19 1,2-Dichloroethane	10.000	9.118	91.18	70-130
21 Trichloroethene	10.000	8.966	89.66	70-130
23 Toluene	10.000	8.880	88.80	70-130
24 trans-1,3-Dichloro	10.000	10.829	108.29	70-130
25 1,1,2-Trichloroeth	10.000	9.821	98.21	70-130
26 Tetrachloroethene	10.000	8.877	88.77	70-130
27 1,2-Dibromoethane	10.000	10.100	101.00	70-130
29 Chlorobenzene	10.000	9.018	90.18	70-130
30 Ethyl Benzene	10.000	9.560	95.60	70-130
31 m,p-Xylene	10.000	9.435	94.35	70-130
32 o-Xylene	10.000	9.559	95.59	70-130
34 1,1,2,2-Tetrachlor	10.000	9.996	99.97	70-130
35 1,3-Dichlorobenzen	10.000	8.323	83.23	70-130
36 1,4-Dichlorobenzen	10.000	7.597	75.97	70-130
37 1,2-Dichlorobenzen	10.000	8.073	80.73	70-130
38 Naphthalene	1.000	0.7120	71.20	60-140

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 12dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: ICV Client Smp ID: ICV
Level: LOW Operator: mjs
Data Type: MS DATA SampleType: ICV
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv(50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.862	97.25	70-130
$ 22 Toluene-d8	5.000	5.041	100.82	70-130
$ 33 4-Bromofluorobenze	5.000	5.090	101.81	70-130

Data File: /chem/msd21.i/12dec17.b/21121215sim.d

Date : 12-DEC-2017 22:05

Client ID: ICV

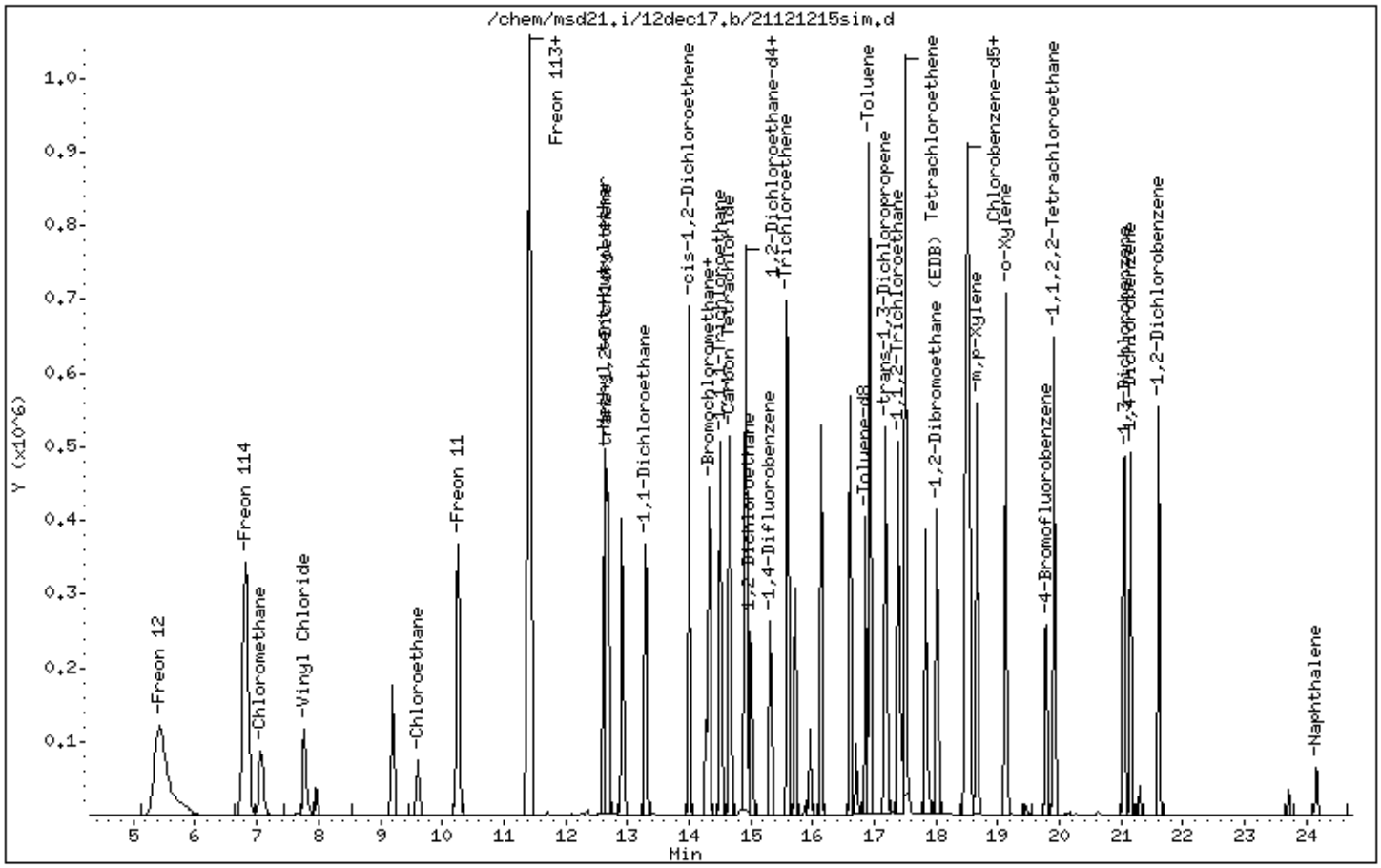
Instrument: msd21.i

Sample Info: 50ml #3018-16

Operator: mjs

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121203sim.d
Lab Smp Id: ICAL Client Smp ID: Level 3
Inj Date : 12-DEC-2017 12:50
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 2991-195
Misc Info : 0.01ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 12:50 Cal File: 21121203sim.d
Als bottle: 1 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level3.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	507	0.01000	0.01205	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	309			1.85- 61.85	60.95
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	285	0.01000	0.01096	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	737			204.09- 264.09	258.60
11.368	11.411 (0.795)	96	384			127.27- 187.27	134.74
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	308	0.01000	0.01074	80.00- 120.00	100.00(a)
12.669	12.669 (0.886)	61	723			186.82- 246.82	234.74
12.689	12.689 (0.888)	96	965			125.17- 185.17	313.31
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	341	0.01000	0.01102	80.00- 120.00	100.00(a)
14.001	14.001 (0.979)	61	666			162.14- 222.14	195.31
14.001	14.001 (0.979)	96	536			124.57- 184.57	157.18
* 13 Bromochloromethane					CAS #: 74-97-5		
14.298	14.298 (1.000)	130	116353	5.00000		80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
* 13 Bromochloromethane (continued)							
14.298	14.298 (1.000)	128	90528			47.49- 107.49	77.80
14.274	14.274 (1.000)	49	164024			114.87- 174.87	140.97
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	922	0.01000	0.01133	80.00- 120.00	100.00(a)
14.322	14.322 (1.002)	85	588			36.48- 96.48	63.77
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.658	14.658 (1.025)	119	577	0.01000	0.009496	80.00- 120.00	100.00(a)
14.658	14.658 (1.025)	117	567			72.17- 132.17	98.27
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	2183	0.01000	0.01390	80.00- 120.00	100.00(aMH)
14.922	14.921 (0.974)	77	507			0.00- 52.85	23.22
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
14.922	14.921 (1.044)	65	156354	5.00000	5.174	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	88813			30.16- 90.16	56.80
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.994	14.993 (0.979)	62	576	0.01000	0.01128	80.00- 120.00	100.00(a)
14.994	14.993 (0.979)	64	266			3.19- 63.19	46.18
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
15.313	15.312 (1.000)	114	561339	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	94586			0.00- 46.92	16.85
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	766	0.01000	0.01238	80.00- 120.00	100.00(a)
15.581	15.581 (1.018)	95	730			64.81- 124.81	95.30
15.581	15.581 (1.018)	97	555			32.10- 92.10	72.45
$ 22 Toluene-d8					CAS #: 2037-26-5		
16.860	16.860 (1.101)	98	500334	5.00000	5.078	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	60393			0.00- 42.34	12.07
16.860	16.860 (1.101)	100	341764			38.15- 98.15	68.31
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	556	0.01000	0.01104	80.00- 120.00	100.00(a)
17.393	17.397 (0.942)	99	329			32.22- 92.22	59.17
17.393	17.393 (0.942)	83	511			66.62- 126.62	91.91
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	991	0.01000	0.01178	80.00- 120.00	100.00(a)
17.496	17.496 (0.947)	129	746			39.65- 99.65	75.28

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.496	17.496 (0.947)	131	705			37.15- 97.15	71.14
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	824	0.01000	0.01137	80.00- 120.00	100.00(a)
18.007	18.007 (0.975)	109	777			64.51- 124.51	94.30
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	455339	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	249525			25.29- 85.29	54.80
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	208053	5.00000	5.287	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	246242			88.82- 148.82	118.36
19.787	19.787 (1.072)	176	204317			68.26- 128.26	98.20
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	956	0.01000	0.01143	80.00- 120.00	100.00(a)
19.920	19.919 (1.079)	85	621			35.89- 95.89	64.96

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121203sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 0.01ppbv (0.05ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 3
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	116353	-10.33
20 1,4-Difluorobenze	609231	365539	852923	561339	-7.86
28 Chlorobenzene-d5	470778	282467	659089	455339	-3.28

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121203sim.d

Date : 12-DEC-2017 12:50

Client ID: Level 3

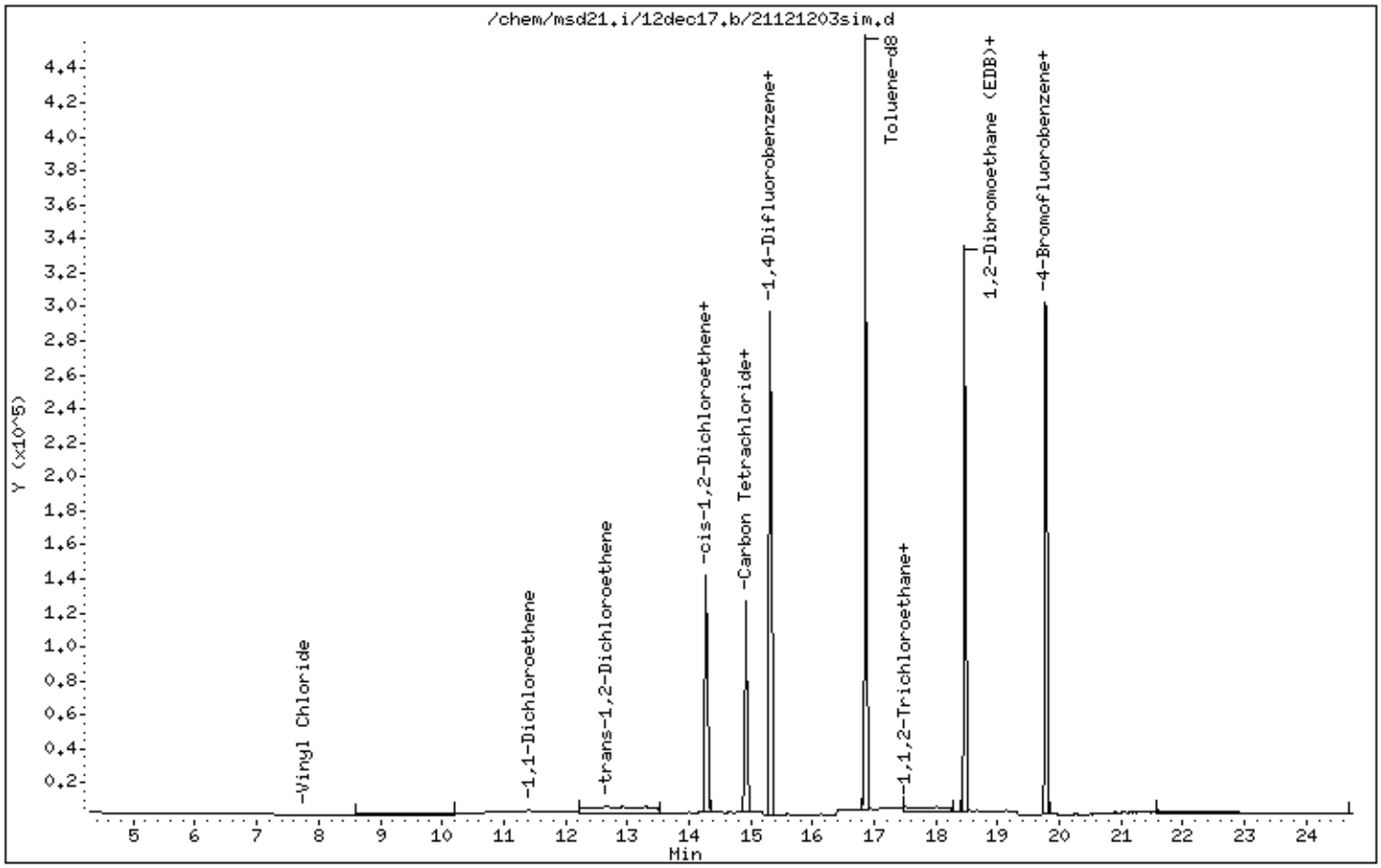
Instrument: msd21.i

Sample Info: 50mL# 2991-195

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121204sim.d
Lab Smp Id: ICAL Client Smp ID: Level 4
Inj Date : 12-DEC-2017 13:21
Operator : ef Inst ID: msd21.i
Smp Info : 100mL# 2991-195
Misc Info : 0.02ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 13:21 Cal File: 21121204sim.d
Als bottle: 1 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: Level4.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.429	5.419 (0.380)	85	2925	0.02000	0.02049	80.00- 120.00	100.00
5.429	5.419 (0.380)	87	991			2.41- 62.41	33.88
2 Freon 114					CAS #: 76-14-2		
6.833	6.820 (0.478)	135	1599	0.02000	0.02152	80.00- 120.00	100.00
6.833	6.825 (0.478)	137	513			2.42- 62.42	32.08
4 Vinyl Chloride					CAS #: 75-01-4		
7.778	7.766 (0.544)	62	871	0.02000	0.02223	80.00- 120.00	100.00
7.778	7.766 (0.544)	64	460			1.85- 61.85	52.81
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	1654	0.02000	0.02159	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	1061			35.88- 95.88	64.15
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	524	0.02000	0.02166	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	1247			204.09- 264.09	237.98
11.416	11.411 (0.798)	96	938			127.27- 187.27	179.01

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	7 Freon 113					CAS #: 76-13-1		
	11.416	11.416 (0.798)	151	1480	0.02000	0.02170	80.00- 120.00	100.00
	11.416	11.416 (0.798)	153	943			34.82- 94.82	63.72
	11.416	11.416 (0.798)	101	1654			79.00- 139.00	111.76
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	12.648	12.632 (0.885)	73	2200	0.02000	0.02104	80.00- 120.00	100.00(a)
	12.627	12.627 (0.883)	57	524			0.00- 54.15	23.82
	12.627	12.627 (0.883)	41	651			0.00- 54.07	29.59
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	13.287	13.287 (0.929)	63	1559	0.02000	0.02143	80.00- 120.00	100.00
	13.308	13.290 (0.931)	65	490			2.55- 62.55	31.43
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	12.689	12.689 (0.887)	98	574	0.02000	0.02151	80.00- 120.00	100.00(a)
	12.668	12.669 (0.886)	61	1266			186.82- 246.82	220.56
	12.689	12.689 (0.887)	96	930			125.17- 185.17	162.02
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	14.000	14.001 (0.979)	98	615	0.02000	0.02135	80.00- 120.00	100.00
	14.000	14.001 (0.979)	61	1231			162.14- 222.14	200.16
	14.000	14.001 (0.979)	96	967			124.57- 184.57	157.24
*	13 Bromochloromethane					CAS #: 74-97-5		
	14.297	14.298 (1.000)	130	108320	5.00000		80.00- 120.00	100.00
	14.297	14.298 (1.000)	128	83983			47.49- 107.49	77.53
	14.273	14.274 (1.000)	49	153655			114.87- 174.87	141.85
	14 Chloroform					CAS #: 67-66-3		
	14.321	14.322 (1.002)	83	1525	0.02000	0.02014	80.00- 120.00	100.00(M)
	14.321	14.322 (1.002)	85	1030			36.48- 96.48	67.54
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	14.513	14.514 (1.015)	97	1455	0.02000	0.02148	80.00- 120.00	100.00
	14.513	14.514 (1.015)	99	934			35.76- 95.76	64.19
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	14.657	14.658 (1.025)	119	1014	0.02000	0.01792	80.00- 120.00	100.00(a)
	14.657	14.658 (1.025)	117	1065			72.17- 132.17	105.03
	17 Benzene					CAS #: 71-43-2		
	14.921	14.921 (0.974)	78	3598	0.02000	0.02400	80.00- 120.00	100.00(a)
	14.921	14.921 (0.974)	77	1576			0.00- 52.85	43.80
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	14.921	14.921 (1.044)	65	147618	5.00000	5.247	80.00- 120.00	100.00

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 18 1,2-Dichloroethane-d4 (continued)							
14.921	14.921 (1.044)	67	83899			30.16- 90.16	56.84
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	1037	0.02000	0.02127	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	413			3.19- 63.19	39.83
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
15.312	15.312 (1.000)	114	535901	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	89583			0.00- 46.92	16.72
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	1279	0.02000	0.02166	80.00- 120.00	100.00
15.580	15.581 (1.018)	95	1256			64.81- 124.81	98.20
15.580	15.581 (1.018)	97	807			32.10- 92.10	63.10
$ 22 Toluene-d8					CAS #: 2037-26-5		
16.859	16.860 (1.101)	98	474723	5.00000	5.046	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	57665			0.00- 42.34	12.15
16.859	16.860 (1.101)	100	323914			38.15- 98.15	68.23
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	3420	0.02000	0.02334	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	2081			33.44- 93.44	60.85
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	1257	0.02000	0.01913	80.00- 120.00	100.00(a)
17.189	17.189 (0.931)	77	449			4.13- 64.13	35.72
17.189	17.189 (0.931)	39	566			10.65- 70.65	45.03
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	938	0.02000	0.01955	80.00- 120.00	100.00(a)
17.393	17.397 (0.942)	99	584			32.22- 92.22	62.26
17.393	17.393 (0.942)	83	900			66.62- 126.62	95.95
26 Tetrachloroethene					CAS #: 127-18-4		
17.495	17.496 (0.947)	166	1691	0.02000	0.02111	80.00- 120.00	100.00
17.495	17.496 (0.947)	129	1263			39.65- 99.65	74.69
17.495	17.496 (0.947)	131	1190			37.15- 97.15	70.37
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	1325	0.02000	0.01920	80.00- 120.00	100.00(a)
18.007	18.007 (0.975)	109	1239			64.51- 124.51	93.51
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	433640	5.00000		80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
* 28 Chlorobenzene-d5 (continued)							
18.465	18.465 (1.000)	82	238000			25.29- 85.29	54.88
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	2513	0.02000	0.02177	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	898			3.25- 63.25	35.73
18.465	18.481 (1.000)	77	5060			42.62- 102.62	201.35
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	1039	0.02000	0.02157	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	3124			259.51- 319.51	300.67
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	1130	0.02000	0.02402	80.00- 120.00	100.00(a)
18.671	18.656 (1.011)	91	2224			159.47- 219.47	196.81
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	992	0.02000	0.02319	80.00- 120.00	100.00(M)
19.125	19.125 (1.036)	91	2002			168.52- 228.52	201.81
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.786	19.787 (1.072)	174	186829	5.00000	4.985	80.00- 120.00	100.00
19.767	19.768 (1.071)	95	220825			88.82- 148.82	118.20
19.786	19.787 (1.072)	176	183193			68.26- 128.26	98.05
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	1534	0.02000	0.01925	80.00- 120.00	100.00(a)
19.919	19.919 (1.079)	85	992			35.89- 95.89	64.67
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	1870	0.02000	0.02608	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	1204			35.46- 95.46	64.39
21.035	21.036 (1.139)	111	737			10.46- 70.46	39.41
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.160	21.147 (1.146)	146	2000	0.02000	0.02756	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	1283			35.29- 95.29	64.15
21.145	21.145 (1.145)	111	771			9.14- 69.14	38.55
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.613 (1.170)	146	1879	0.02000	0.02637	80.00- 120.00	100.00
21.612	21.613 (1.170)	148	1193			35.27- 95.27	63.49
21.612	21.613 (1.170)	111	763			11.99- 71.99	40.61

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121204sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 0.02ppbv (0.05ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 4
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	108320	-16.52
20 1,4-Difluorobenze	609231	365539	852923	535901	-12.04
28 Chlorobenzene-d5	470778	282467	659089	433640	-7.89

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121204sim.d

Date : 12-DEC-2017 13:21

Client ID: Level 4

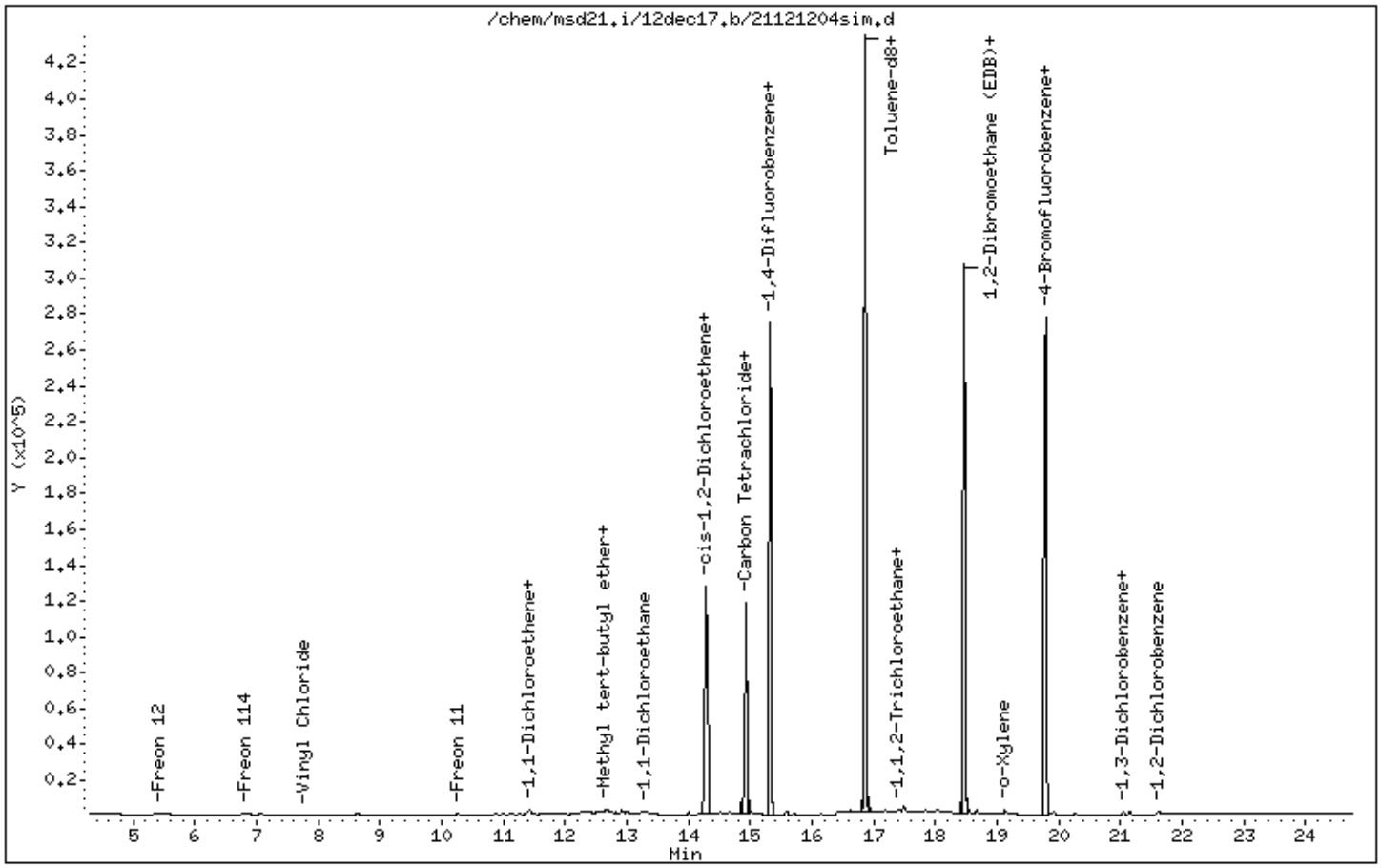
Instrument: msd21.i

Sample Info: 100mL# 2991-195

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121205sim.d
Lab Smp Id: ICAL Client Smp ID: Level 5
Inj Date : 12-DEC-2017 14:01
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 2991-195
Misc Info : 0.05ppbv (0.05ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 14:01 Cal File: 21121205sim.d
Als bottle: 1 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.430	5.419 (0.380)	85	7381	0.05000	0.05321	80.00- 120.00	100.00
5.430	5.419 (0.380)	87	2389			2.41- 62.41	32.37
2 Freon 114					CAS #: 76-14-2		
6.833	6.820 (0.478)	135	3853	0.05000	0.05337	80.00- 120.00	100.00
6.833	6.825 (0.478)	137	1236			2.42- 62.42	32.08
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	2463	0.05000	0.06364	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	891			2.20- 62.20	36.18
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	1936	0.05000	0.05086	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	814			1.85- 61.85	42.05
5 Chloroethane					CAS #: 75-00-3		
9.616	9.605 (0.673)	64	951	0.05000	0.05234	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	317			1.99- 61.99	33.33

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	6 Freon 11					CAS #: 75-69-4		
	10.260	10.260 (0.718)	101	3939	0.05000	0.05293	80.00- 120.00	100.00
	10.260	10.260 (0.718)	103	2555			35.88- 95.88	64.86
	7 Freon 113					CAS #: 76-13-1		
	11.416	11.416 (0.798)	151	3588	0.05000	0.05415	80.00- 120.00	100.00
	11.416	11.416 (0.798)	153	2305			34.82- 94.82	64.24
	11.416	11.416 (0.798)	101	3977			79.00- 139.00	110.84
	8 1,1-Dichloroethene					CAS #: 75-35-4		
	11.416	11.416 (0.798)	98	1247	0.05000	0.05304	80.00- 120.00	100.00
	11.416	11.416 (0.798)	61	2962			204.09- 264.09	237.53
	11.416	11.411 (0.798)	96	1918			127.27- 187.27	153.81
	9 Methyl tert-butyl ether					CAS #: 1634-04-4		
	12.648	12.632 (0.885)	73	5217	0.05000	0.05135	80.00- 120.00	100.00
	12.627	12.627 (0.883)	57	1250			0.00- 54.15	23.96
	12.627	12.627 (0.883)	41	1532			0.00- 54.07	29.37
	10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
	12.689	12.689 (0.888)	98	1377	0.05000	0.05311	80.00- 120.00	100.00
	12.668	12.669 (0.886)	61	3028			186.82- 246.82	219.90
	12.689	12.689 (0.888)	96	2190			125.17- 185.17	159.04
	11 1,1-Dichloroethane					CAS #: 75-34-3		
	13.287	13.287 (0.929)	63	3734	0.05000	0.05283	80.00- 120.00	100.00
	13.287	13.290 (0.929)	65	1191			2.55- 62.55	31.90
	12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
	14.001	14.001 (0.979)	98	1476	0.05000	0.05274	80.00- 120.00	100.00
	14.001	14.001 (0.979)	61	2922			162.14- 222.14	197.97
	14.001	14.001 (0.979)	96	2309			124.57- 184.57	156.44
*	13 Bromochloromethane					CAS #: 74-97-5		
	14.297	14.298 (1.000)	130	105243	5.00000		80.00- 120.00	100.00
	14.297	14.298 (1.000)	128	81713			47.49- 107.49	77.64
	14.273	14.274 (1.000)	49	148339			114.87- 174.87	140.95
	14 Chloroform					CAS #: 67-66-3		
	14.321	14.322 (1.002)	83	4083	0.05000	0.05549	80.00- 120.00	100.00
	14.321	14.322 (1.002)	85	2485			36.48- 96.48	60.86
	15 1,1,1-Trichloroethane					CAS #: 71-55-6		
	14.513	14.514 (1.015)	97	3501	0.05000	0.05318	80.00- 120.00	100.00
	14.513	14.514 (1.015)	99	2251			35.76- 95.76	64.30

				AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.657	14.658 (1.025)	119	2583	0.05000	0.04700	80.00- 120.00	100.00(a)
14.657	14.658 (1.025)	117	2723			72.17- 132.17	105.42
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	7923	0.05000	0.05324	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	2287			0.00- 52.85	28.87
$ 18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
14.921	14.921 (1.044)	65	147659	5.00000	5.402	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	83721			30.16- 90.16	56.70
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	2529	0.05000	0.05226	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	875			3.19- 63.19	34.60
* 20 1,4-Difluorobenzene					CAS #: 540-36-3		
15.312	15.312 (1.000)	114	531927	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	89080			0.00- 46.92	16.75
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	3004	0.05000	0.05125	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	2895			64.81- 124.81	96.37
15.581	15.581 (1.018)	97	1907			32.10- 92.10	63.48
$ 22 Toluene-d8					CAS #: 2037-26-5		
16.860	16.860 (1.101)	98	468915	5.00000	5.022	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	56949			0.00- 42.34	12.14
16.860	16.860 (1.101)	100	319010			38.15- 98.15	68.03
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	7930	0.05000	0.05452	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	4822			33.44- 93.44	60.81
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	3031	0.05000	0.04682	80.00- 120.00	100.00(a)
17.189	17.189 (0.931)	77	1080			4.13- 64.13	35.63
17.189	17.189 (0.931)	39	1374			10.65- 70.65	45.33
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	2284	0.05000	0.04831	80.00- 120.00	100.00(a)
17.427	17.397 (0.944)	99	1405			32.22- 92.22	61.51
17.393	17.393 (0.942)	83	2165			66.62- 126.62	94.79
26 Tetrachloroethene					CAS #: 127-18-4		
17.495	17.496 (0.947)	166	3996	0.05000	0.05062	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.495	17.496 (0.947)	129	3002			39.65- 99.65	75.13
17.495	17.496 (0.947)	131	2826			37.15- 97.15	70.72
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	3176	0.05000	0.04670	80.00- 120.00	100.00(a)
18.007	18.007 (0.975)	109	2937			64.51- 124.51	92.47
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	427311	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	233769			25.29- 85.29	54.71
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	6052	0.05000	0.05320	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	2025			3.25- 63.25	33.46
18.465	18.481 (1.000)	77	7457			42.62- 102.62	123.22
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	2429	0.05000	0.05117	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	7459			259.51- 319.51	307.08
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	2414	0.05000	0.05207	80.00- 120.00	100.00
18.671	18.656 (1.011)	91	4751			159.47- 219.47	196.81
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	2156	0.05000	0.05115	80.00- 120.00	100.00(M)
19.125	19.125 (1.036)	91	4469			168.52- 228.52	207.28
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	179348	5.00000	4.856	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	212379			88.82- 148.82	118.42
19.787	19.787 (1.072)	176	175703			68.26- 128.26	97.97
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	3679	0.05000	0.04686	80.00- 120.00	100.00(a)
19.919	19.919 (1.079)	85	2376			35.89- 95.89	64.58
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	4008	0.05000	0.05672	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	2589			35.46- 95.46	64.60
21.036	21.036 (1.139)	111	1593			10.46- 70.46	39.75
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	4285	0.05000	0.05992	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	2753			35.29- 95.29	64.25

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	1656			9.14- 69.14	38.65
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.613 (1.170)	146	4001	0.05000	0.05698	80.00- 120.00	100.00
21.612	21.613 (1.170)	148	2576			35.27- 95.27	64.38
21.612	21.613 (1.170)	111	1645			11.99- 71.99	41.11

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121205sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 0.05ppbv (0.05ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 5
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	105243	-18.89
20 1,4-Difluorobenze	609231	365539	852923	531927	-12.69
28 Chlorobenzene-d5	470778	282467	659089	427311	-9.23

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121205sim.d

Date : 12-DEC-2017 14:01

Client ID: Level 5

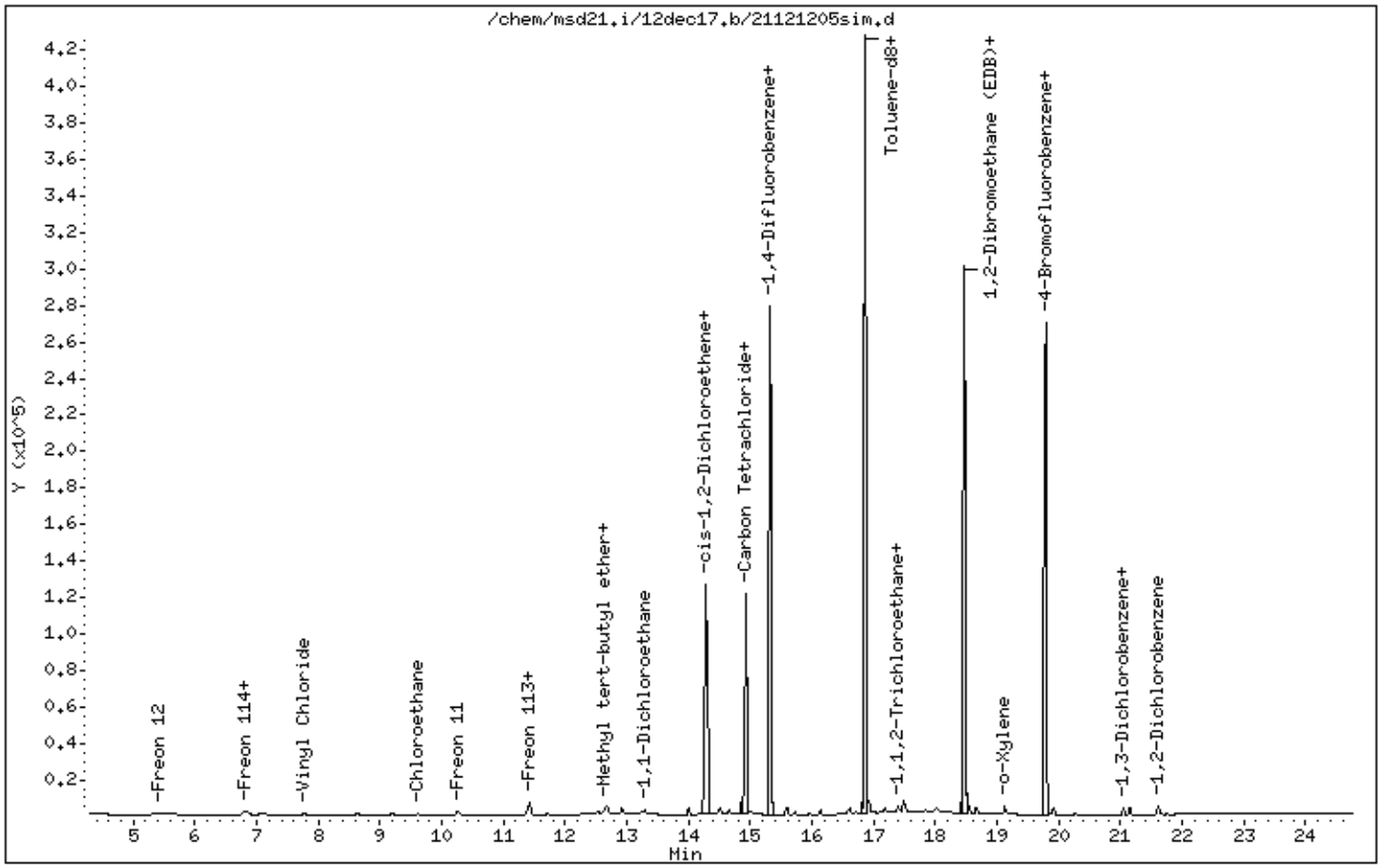
Instrument: msd21.i

Sample Info: 250mL# 2991-195

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121206sim.d
Lab Smp Id: ICAL Client Smp ID: Level 6
Inj Date : 12-DEC-2017 14:31
Operator : ef Inst ID: msd21.i
Smp Info : 25mL# 2991-196
Misc Info : 0.1ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 14:31 Cal File: 21121206sim.d
Als bottle: 1 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.388	5.419 (0.377)	85	18420	0.10000	0.1142	80.00- 120.00	100.00
5.388	5.419 (0.377)	87	5970			2.41- 62.41	32.41
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	9843	0.10000	0.1172	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	3168			2.42- 62.42	32.19
3 Chloromethane					CAS #: 74-87-3		
7.039	7.063 (0.492)	50	5362	0.10000	0.1191	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	1750			2.20- 62.20	32.64
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	4775	0.10000	0.1078	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	1734			1.85- 61.85	36.31
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	2355	0.10000	0.1114	80.00- 120.00	100.00
9.597	9.608 (0.671)	66	753			1.99- 61.99	31.97

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	10122	0.10000	0.1169	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	6550			35.88- 95.88	64.71
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	9034	0.10000	0.1172	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	5797			34.82- 94.82	64.17
11.416	11.416 (0.798)	101	10006			79.00- 139.00	110.76
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	3173	0.10000	0.1160	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	7515			204.09- 264.09	236.84
11.416	11.411 (0.798)	96	5001			127.27- 187.27	157.61
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	13502	0.10000	0.1142	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	3157			0.00- 54.15	23.38
12.627	12.627 (0.883)	41	3790			0.00- 54.07	28.07
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	3469	0.10000	0.1150	80.00- 120.00	100.00
12.669	12.669 (0.886)	61	7678			186.82- 246.82	221.33
12.689	12.689 (0.888)	96	5500			125.17- 185.17	158.55
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	9543	0.10000	0.1160	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	3024			2.55- 62.55	31.69
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	3719	0.10000	0.1142	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	7389			162.14- 222.14	198.68
14.001	14.001 (0.979)	96	5802			124.57- 184.57	156.01
* 13 Bromochloromethane					CAS #: 74-97-5		
14.298	14.298 (1.000)	130	122427	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	94918			47.49- 107.49	77.53
14.274	14.274 (1.000)	49	172958			114.87- 174.87	141.27
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	9763	0.10000	0.1141	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	6260			36.48- 96.48	64.12
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.514 (1.015)	97	8800	0.10000	0.1149	80.00- 120.00	100.00
14.514	14.514 (1.015)	99	5676			35.76- 95.76	64.50

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	14.658	14.658 (1.025)	119	7151	0.10000	0.1118	80.00- 120.00	100.00
	14.658	14.658 (1.025)	117	7464			72.17- 132.17	104.38
	17 Benzene						CAS #: 71-43-2	
	14.922	14.921 (0.974)	78	18296	0.10000	0.1125	80.00- 120.00	100.00
	14.922	14.921 (0.974)	77	4619			0.00- 52.85	25.25
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	14.922	14.921 (1.044)	65	165696	5.00000	5.211	80.00- 120.00	100.00
	14.922	14.921 (1.044)	67	94260			30.16- 90.16	56.89
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	14.993	14.993 (0.979)	62	6307	0.10000	0.1192	80.00- 120.00	100.00
	14.993	14.993 (0.979)	64	2089			3.19- 63.19	33.12
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	15.313	15.312 (1.000)	114	581450	5.00000		80.00- 120.00	100.00
	15.313	15.312 (1.000)	88	97652			0.00- 46.92	16.79
	21 Trichloroethene						CAS #: 79-01-6	
	15.601	15.594 (1.019)	130	7264	0.10000	0.1134	80.00- 120.00	100.00
	15.581	15.581 (1.018)	95	7016			64.81- 124.81	96.59
	15.581	15.581 (1.018)	97	4532			32.10- 92.10	62.39
$	22 Toluene-d8						CAS #: 2037-26-5	
	16.860	16.860 (1.101)	98	506812	5.00000	4.966	80.00- 120.00	100.00
	16.860	16.860 (1.101)	70	61448			0.00- 42.34	12.12
	16.860	16.860 (1.101)	100	345466			38.15- 98.15	68.16
	23 Toluene						CAS #: 108-88-3	
	16.922	16.921 (1.105)	91	18838	0.10000	0.1185	80.00- 120.00	100.00
	16.922	16.921 (1.105)	92	11385			33.44- 93.44	60.44
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	17.189	17.189 (0.931)	75	7220	0.10000	0.1038	80.00- 120.00	100.00
	17.189	17.189 (0.931)	77	2364			4.13- 64.13	32.74
	17.189	17.189 (0.931)	39	3133			10.65- 70.65	43.39
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	17.393	17.393 (0.942)	97	5786	0.10000	0.1139	80.00- 120.00	100.00
	17.393	17.397 (0.942)	99	3546			32.22- 92.22	61.29
	17.393	17.393 (0.942)	83	5569			66.62- 126.62	96.25
	26 Tetrachloroethene						CAS #: 127-18-4	
	17.496	17.496 (0.947)	166	9933	0.10000	0.1171	80.00- 120.00	100.00

				AMOUNTS CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
26 Tetrachloroethene (continued)							
17.496	17.496 (0.947)	129	7305			39.65- 99.65	73.54
17.496	17.496 (0.947)	131	6953			37.15- 97.15	70.00
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	7991	0.10000	0.1093	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	7295			64.51- 124.51	91.29
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	459197	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	253441			25.29- 85.29	55.19
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	14542	0.10000	0.1189	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	4751			3.25- 63.25	32.67
18.486	18.481 (1.001)	77	13673			42.62- 102.62	94.02
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	5834	0.10000	0.1144	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	17802			259.51- 319.51	305.14
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	5819	0.10000	0.1168	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	11389			159.47- 219.47	195.72
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	5745	0.10000	0.1268	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	12975			168.52- 228.52	225.85
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	202367	5.00000	5.099	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	238792			88.82- 148.82	118.00
19.787	19.787 (1.072)	176	199015			68.26- 128.26	98.34
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	9482	0.10000	0.1124	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	6089			35.89- 95.89	64.22
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	9852	0.10000	0.1297	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	6307			35.46- 95.46	64.02
21.036	21.036 (1.139)	111	3917			10.46- 70.46	39.76
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	10541	0.10000	0.1372	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	6754			35.29- 95.29	64.07

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	4088			9.14- 69.14	38.78
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.613	21.613 (1.170)	146	9995	0.10000	0.1324	80.00- 120.00	100.00
21.613	21.613 (1.170)	148	6401			35.27- 95.27	64.04
21.613	21.613 (1.170)	111	4135			11.99- 71.99	41.37
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	2932	0.01000	0.01232	80.00- 120.00	100.00(a)
24.154	24.154 (1.308)	127	624			0.00- 43.35	21.28

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121206sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 0.1ppbv (1.0ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 6
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	122427	-5.65
20 1,4-Difluorobenze	609231	365539	852923	581450	-4.56
28 Chlorobenzene-d5	470778	282467	659089	459197	-2.46

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121206sim.d

Date : 12-DEC-2017 14:31

Client ID: Level 6

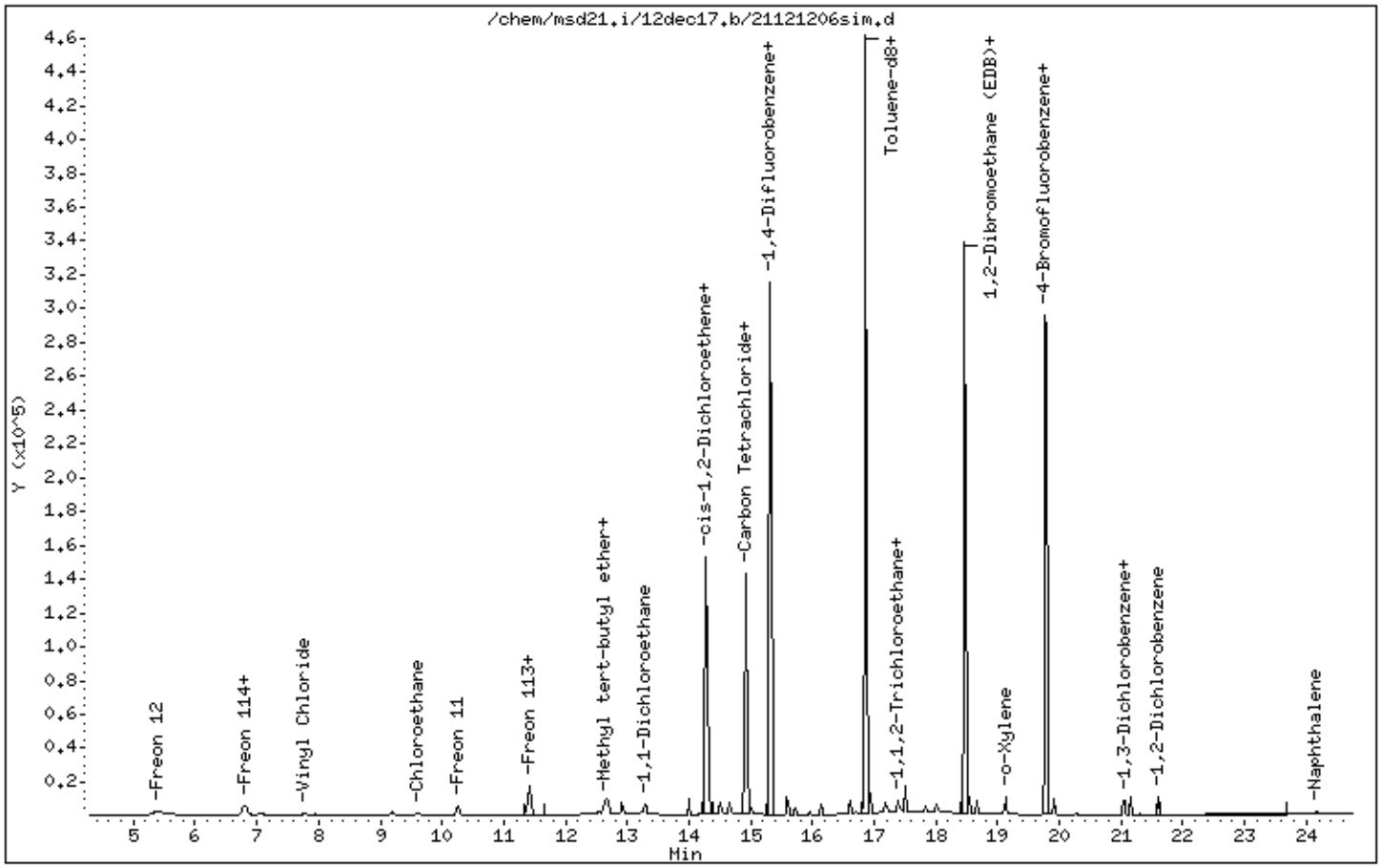
Instrument: msd21.i

Sample Info: 25mL# 2991-196

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121207sim.d
Lab Smp Id: ICAL Client Smp ID: Level 7
Inj Date : 12-DEC-2017 15:05
Operator : ef Inst ID: msd21.i
Smp Info : 125mL# 2991-196
Misc Info : 0.5ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 15:05 Cal File: 21121207sim.d
Als bottle: 1 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.430	5.419 (0.380)	85	74741	0.50000	0.5186	80.00- 120.00	100.00
5.430	5.419 (0.380)	87	24108			2.41- 62.41	32.26
2 Freon 114					CAS #: 76-14-2		
6.813	6.820 (0.476)	135	39356	0.50000	0.5247	80.00- 120.00	100.00
6.833	6.825 (0.478)	137	12653			2.42- 62.42	32.15
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	20645	0.50000	0.5134	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	6657			2.20- 62.20	32.25
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	19015	0.50000	0.4808	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	6248			1.85- 61.85	32.86
5 Chloroethane					CAS #: 75-00-3		
9.616	9.605 (0.673)	64	9582	0.50000	0.5076	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	3075			1.99- 61.99	32.09

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.261	10.260 (0.718)	101	40603	0.50000	0.5251	80.00- 120.00	100.00
10.261	10.260 (0.718)	103	26258			35.88- 95.88	64.67
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	36083	0.50000	0.5241	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	23140			34.82- 94.82	64.13
11.416	11.416 (0.798)	101	39939			79.00- 139.00	110.69
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	12654	0.50000	0.5180	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	29966			204.09- 264.09	236.81
11.416	11.411 (0.798)	96	19836			127.27- 187.27	156.76
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	54880	0.50000	0.5199	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	12878			0.00- 54.15	23.47
12.627	12.627 (0.883)	41	15030			0.00- 54.07	27.39
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	13814	0.50000	0.5128	80.00- 120.00	100.00
12.669	12.669 (0.886)	61	30687			186.82- 246.82	222.14
12.689	12.689 (0.888)	96	21737			125.17- 185.17	157.35
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.288	13.287 (0.929)	63	38356	0.50000	0.5223	80.00- 120.00	100.00
13.288	13.290 (0.929)	65	12186			2.55- 62.55	31.77
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	14887	0.50000	0.5120	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	29517			162.14- 222.14	198.27
14.001	14.001 (0.979)	96	23266			124.57- 184.57	156.28
* 13 Bromochloromethane					CAS #: 74-97-5		
14.298	14.298 (1.000)	130	109347	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	84839			47.49- 107.49	77.59
14.274	14.274 (1.000)	49	157027			114.87- 174.87	143.60
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	38691	0.50000	0.5061	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	25017			36.48- 96.48	64.66
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.514 (1.015)	97	35757	0.50000	0.5228	80.00- 120.00	100.00
14.514	14.514 (1.015)	99	23077			35.76- 95.76	64.54

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	14.658	14.658 (1.025)	119	30233	0.50000	0.5294	80.00- 120.00	100.00
	14.658	14.658 (1.025)	117	31503			72.17- 132.17	104.20
	17 Benzene						CAS #: 71-43-2	
	14.922	14.921 (0.974)	78	71993	0.50000	0.4847	80.00- 120.00	100.00
	14.922	14.921 (0.974)	77	16378			0.00- 52.85	22.75
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	14.922	14.921 (1.044)	65	148108	5.00000	5.215	80.00- 120.00	100.00
	14.922	14.921 (1.044)	67	84364			30.16- 90.16	56.96
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	14.994	14.993 (0.979)	62	25045	0.50000	0.5185	80.00- 120.00	100.00
	14.994	14.993 (0.979)	64	8159			3.19- 63.19	32.58
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	15.313	15.312 (1.000)	114	530914	5.00000		80.00- 120.00	100.00
	15.313	15.312 (1.000)	88	89496			0.00- 46.92	16.86
	21 Trichloroethene						CAS #: 79-01-6	
	15.581	15.594 (1.018)	130	29282	0.50000	0.5005	80.00- 120.00	100.00
	15.581	15.581 (1.018)	95	28242			64.81- 124.81	96.45
	15.581	15.581 (1.018)	97	18224			32.10- 92.10	62.24
$	22 Toluene-d8						CAS #: 2037-26-5	
	16.860	16.860 (1.101)	98	470967	5.00000	5.054	80.00- 120.00	100.00
	16.860	16.860 (1.101)	70	57058			0.00- 42.34	12.12
	16.860	16.860 (1.101)	100	320653			38.15- 98.15	68.08
	23 Toluene						CAS #: 108-88-3	
	16.922	16.921 (1.105)	91	76738	0.50000	0.5286	80.00- 120.00	100.00
	16.922	16.921 (1.105)	92	46595			33.44- 93.44	60.72
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	17.189	17.189 (0.931)	75	31028	0.50000	0.4775	80.00- 120.00	100.00
	17.189	17.189 (0.931)	77	9955			4.13- 64.13	32.08
	17.189	17.189 (0.931)	39	13234			10.65- 70.65	42.65
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	17.394	17.393 (0.942)	97	23801	0.50000	0.5015	80.00- 120.00	100.00
	17.394	17.397 (0.942)	99	14615			32.22- 92.22	61.40
	17.394	17.393 (0.942)	83	23200			66.62- 126.62	97.47
	26 Tetrachloroethene						CAS #: 127-18-4	
	17.496	17.496 (0.947)	166	40315	0.50000	0.5088	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.496	17.496 (0.947)	129	29498			39.65- 99.65	73.17
17.496	17.496 (0.947)	131	28163			37.15- 97.15	69.86
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	33753	0.50000	0.4944	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	31006			64.51- 124.51	91.86
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.466	18.465 (1.000)	117	428950	5.00000		80.00- 120.00	100.00
18.466	18.465 (1.000)	82	234881			25.29- 85.29	54.76
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	59639	0.50000	0.5222	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	19214			3.25- 63.25	32.22
18.486	18.481 (1.001)	77	45064			42.62- 102.62	75.56
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	24006	0.50000	0.5038	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	72449			259.51- 319.51	301.80
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	22399	0.50000	0.4813	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	43756			159.47- 219.47	195.35
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	20395	0.50000	0.4820	80.00- 120.00	100.00
19.126	19.125 (1.036)	91	41968			168.52- 228.52	205.78
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	176611	5.00000	4.764	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	208426			88.82- 148.82	118.01
19.787	19.787 (1.072)	176	173246			68.26- 128.26	98.09
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	38301	0.50000	0.4860	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	24681			35.89- 95.89	64.44
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.052	21.049 (1.140)	146	35541	0.50000	0.5010	80.00- 120.00	100.00
21.052	21.051 (1.140)	148	22828			35.46- 95.46	64.23
21.036	21.036 (1.139)	111	14160			10.46- 70.46	39.84
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	36155	0.50000	0.5036	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	23153			35.29- 95.29	64.04

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	13871			9.14- 69.14	38.37
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.613	21.613 (1.170)	146	35580	0.50000	0.5047	80.00- 120.00	100.00
21.613	21.613 (1.170)	148	22786			35.27- 95.27	64.04
21.613	21.613 (1.170)	111	14695			11.99- 71.99	41.30
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	13496	0.05000	0.06071	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	2100			0.00- 43.35	15.56

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121207sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 0.5ppbv (1.0ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 7
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	109347	-15.73
20 1,4-Difluorobenze	609231	365539	852923	530914	-12.86
28 Chlorobenzene-d5	470778	282467	659089	428950	-8.88

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121207sim.d

Date : 12-DEC-2017 15:05

Client ID: Level 7

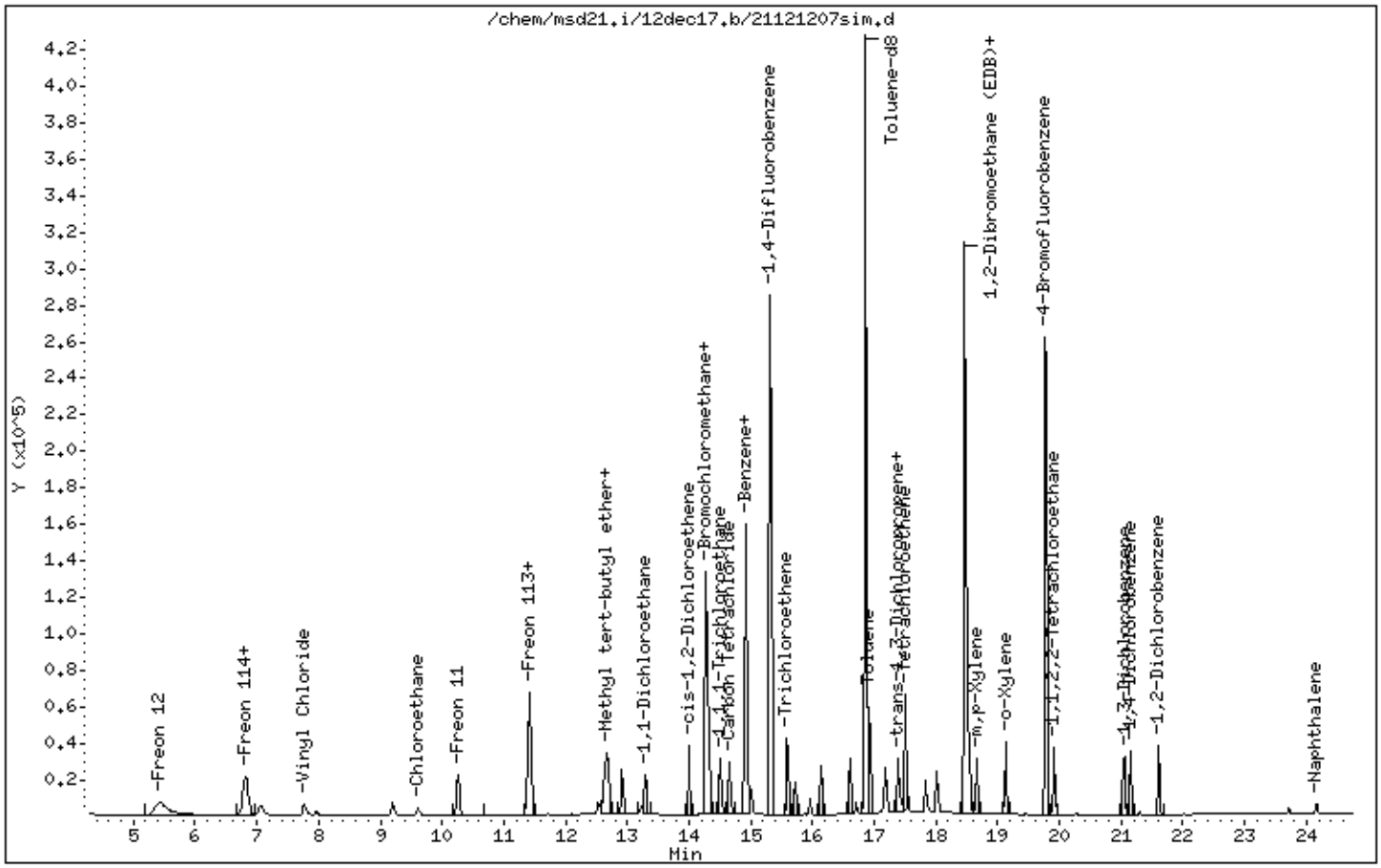
Instrument: msd21.i

Sample Info: 125mL# 2991-196

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121208sim.d
Lab Smp Id: ICAL Client Smp ID: Level 8
Inj Date : 12-DEC-2017 15:55
Operator : ef Inst ID: msd21.i
Smp Info : 250mL# 2991-196
Misc Info : 1.0ppbv (1.0ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 15:55 Cal File: 21121208sim.d
Als bottle: 1 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.429	5.419 (0.380)	85	143511	1.00000	1.032	80.00- 120.00	100.00
5.429	5.419 (0.380)	87	46305			2.41- 62.41	32.27
2 Freon 114					CAS #: 76-14-2		
6.833	6.820 (0.478)	135	73415	1.00000	1.014	80.00- 120.00	100.00
6.833	6.825 (0.478)	137	23603			2.42- 62.42	32.15
3 Chloromethane					CAS #: 74-87-3		
7.080	7.063 (0.495)	50	39265	1.00000	1.012	80.00- 120.00	100.00
7.080	7.066 (0.495)	52	12607			2.20- 62.20	32.11
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	36546	1.00000	0.9580	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	11805			1.85- 61.85	32.30
5 Chloroethane					CAS #: 75-00-3		
9.616	9.605 (0.673)	64	18506	1.00000	1.016	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	5944			1.99- 61.99	32.12

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	76273	1.00000	1.022	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	49482			35.88- 95.88	64.87
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	68695	1.00000	1.034	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	44069			34.82- 94.82	64.15
11.416	11.416 (0.798)	101	75857			79.00- 139.00	110.43
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	23807	1.00000	1.010	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	56365			204.09- 264.09	236.76
11.416	11.411 (0.798)	96	37432			127.27- 187.27	157.23
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	106286	1.00000	1.044	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	24785			0.00- 54.15	23.32
12.627	12.627 (0.883)	41	28516			0.00- 54.07	26.83
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	26304	1.00000	1.012	80.00- 120.00	100.00
12.668	12.669 (0.886)	61	57900			186.82- 246.82	220.12
12.689	12.689 (0.888)	96	41211			125.17- 185.17	156.67
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	72685	1.00000	1.026	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	23090			2.55- 62.55	31.77
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	28284	1.00000	1.008	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	56008			162.14- 222.14	198.02
14.001	14.001 (0.979)	96	44237			124.57- 184.57	156.40
* 13 Bromochloromethane					CAS #: 74-97-5		
14.297	14.298 (1.000)	130	105488	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	81836			47.49- 107.49	77.58
14.273	14.274 (1.000)	49	153583			114.87- 174.87	145.59
14 Chloroform					CAS #: 67-66-3		
14.321	14.322 (1.002)	83	74012	1.00000	1.004	80.00- 120.00	100.00
14.321	14.322 (1.002)	85	48063			36.48- 96.48	64.94
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.514 (1.015)	97	69432	1.00000	1.052	80.00- 120.00	100.00
14.513	14.514 (1.015)	99	44910			35.76- 95.76	64.68

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	14.657	14.658 (1.025)	119	59626	1.00000	1.082	80.00- 120.00	100.00
	14.657	14.658 (1.025)	117	61895			72.17- 132.17	103.81
	17 Benzene						CAS #: 71-43-2	
	14.921	14.921 (0.974)	78	138263	1.00000	0.9325	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	32327			0.00- 52.85	23.38
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	14.921	14.921 (1.044)	65	145908	5.00000	5.325	80.00- 120.00	100.00
	14.921	14.921 (1.044)	67	83488			30.16- 90.16	57.22
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	14.993	14.993 (0.979)	62	47880	1.00000	0.9931	80.00- 120.00	100.00
	14.993	14.993 (0.979)	64	15602			3.19- 63.19	32.59
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	15.312	15.312 (1.000)	114	529966	5.00000		80.00- 120.00	100.00
	15.312	15.312 (1.000)	88	88841			0.00- 46.92	16.76
	21 Trichloroethene						CAS #: 79-01-6	
	15.601	15.594 (1.019)	130	56265	1.00000	0.9634	80.00- 120.00	100.00
	15.580	15.581 (1.018)	95	54332			64.81- 124.81	96.56
	15.580	15.581 (1.018)	97	35045			32.10- 92.10	62.29
$	22 Toluene-d8						CAS #: 2037-26-5	
	16.859	16.860 (1.101)	98	472218	5.00000	5.076	80.00- 120.00	100.00
	16.859	16.860 (1.101)	70	56961			0.00- 42.34	12.06
	16.859	16.860 (1.101)	100	321392			38.15- 98.15	68.06
	23 Toluene						CAS #: 108-88-3	
	16.921	16.921 (1.105)	91	147588	1.00000	1.018	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	89837			33.44- 93.44	60.87
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	17.189	17.189 (0.931)	75	65212	1.00000	1.005	80.00- 120.00	100.00
	17.189	17.189 (0.931)	77	21078			4.13- 64.13	32.32
	17.189	17.189 (0.931)	39	27588			10.65- 70.65	42.31
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	17.393	17.393 (0.942)	97	46065	1.00000	0.9717	80.00- 120.00	100.00
	17.393	17.397 (0.942)	99	28619			32.22- 92.22	62.13
	17.393	17.393 (0.942)	83	44383			66.62- 126.62	96.35
	26 Tetrachloroethene						CAS #: 127-18-4	
	17.495	17.496 (0.947)	166	76644	1.00000	0.9684	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.495	17.496 (0.947)	129	56920			39.65- 99.65	74.27
17.495	17.496 (0.947)	131	53948			37.15- 97.15	70.39
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	65528	1.00000	0.9610	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	60781			64.51- 124.51	92.76
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	428442	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	235355			25.29- 85.29	54.93
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	115243	1.00000	1.010	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	37159			3.25- 63.25	32.24
18.486	18.481 (1.001)	77	84121			42.62- 102.62	72.99
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	46846	1.00000	0.9843	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	141403			259.51- 319.51	301.85
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	42781	1.00000	0.9203	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	83712			159.47- 219.47	195.68
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	38557	1.00000	0.9124	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	79834			168.52- 228.52	207.05
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	178455	5.00000	4.819	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	211947			88.82- 148.82	118.77
19.787	19.787 (1.072)	176	174453			68.26- 128.26	97.76
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	77671	1.00000	0.9867	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	49957			35.89- 95.89	64.32
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	65525	1.00000	0.9248	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	42136			35.46- 95.46	64.31
21.036	21.036 (1.139)	111	26132			10.46- 70.46	39.88
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	64167	1.00000	0.8949	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	41187			35.29- 95.29	64.19

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	24774			9.14- 69.14	38.61
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.613 (1.170)	146	65379	1.00000	0.9286	80.00- 120.00	100.00
21.612	21.613 (1.170)	148	41907			35.27- 95.27	64.10
21.612	21.613 (1.170)	111	26845			11.99- 71.99	41.06
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	28541	0.10000	0.1285	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	3877			0.00- 43.35	13.58

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121208sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 1.0ppbv (1.0ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 8
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	105488	-18.70
20 1,4-Difluorobenze	609231	365539	852923	529966	-13.01
28 Chlorobenzene-d5	470778	282467	659089	428442	-8.99

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121208sim.d

Date : 12-DEC-2017 15:55

Client ID: Level 8

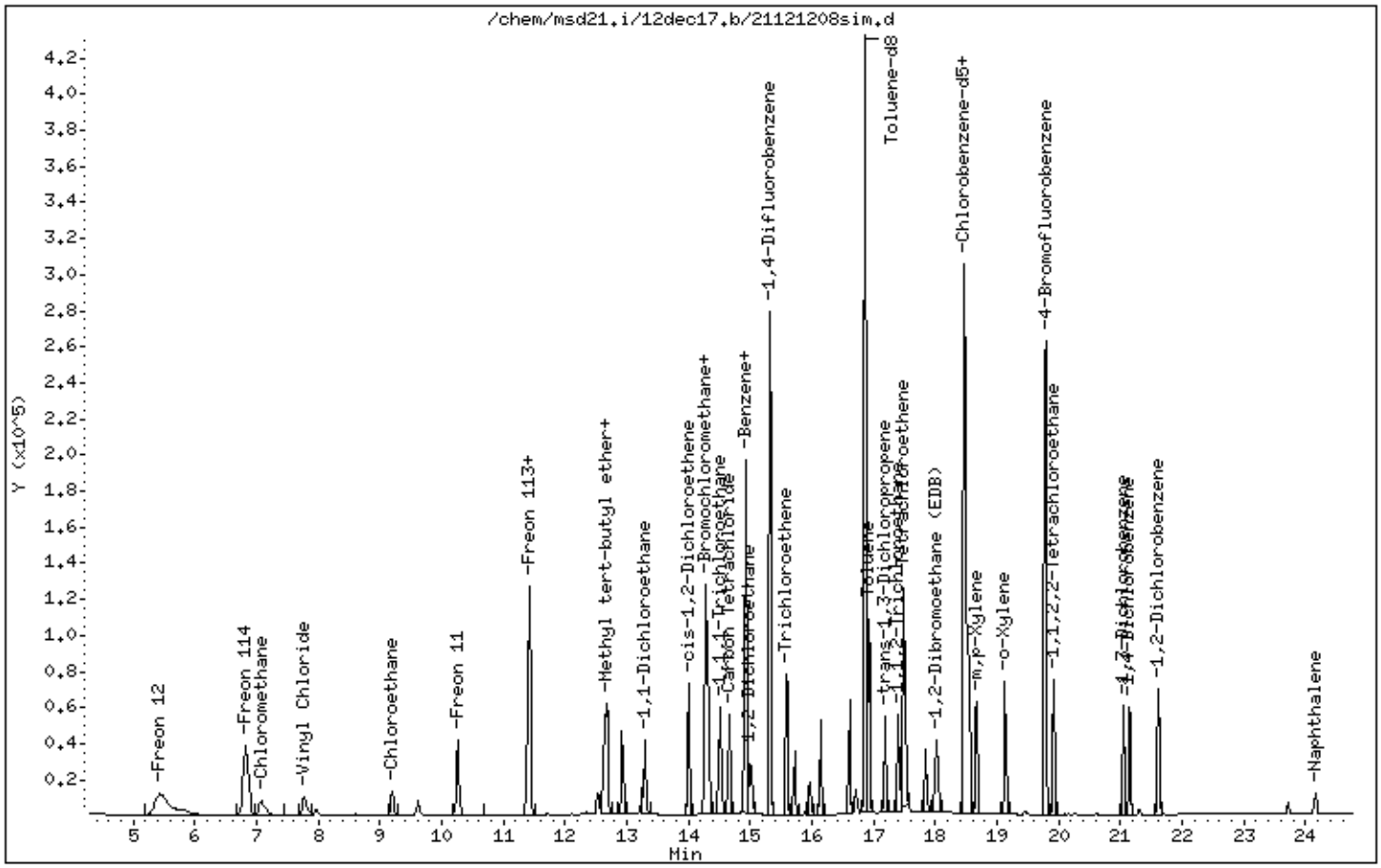
Instrument: msd21.i

Sample Info: 250mL# 2991-196

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121209sim.d
Lab Smp Id: ICAL Client Smp ID: Level 12
Inj Date : 12-DEC-2017 16:32
Operator : ef Inst ID: msd21.i
Smp Info : 25mL# 2991-164
Misc Info : 5.0ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 16:32 Cal File: 21121209sim.d
Als bottle: 1 Calibration Sample, Level: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.409	5.419 (0.378)	85	771415	5.00000	4.558	80.00- 120.00	100.00
5.409	5.419 (0.378)	87	249482			2.41- 62.41	32.34
2 Freon 114					CAS #: 76-14-2		
6.813	6.820 (0.476)	135	400044	5.00000	4.542	80.00- 120.00	100.00
6.813	6.825 (0.476)	137	129173			2.42- 62.42	32.29
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	196737	5.00000	4.167	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	63260			2.20- 62.20	32.15
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	207267	5.00000	4.463	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	66019			1.85- 61.85	31.85
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	104804	5.00000	4.728	80.00- 120.00	100.00
9.597	9.608 (0.671)	66	33483			1.99- 61.99	31.95

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.261	10.260 (0.718)	101	417429	5.00000	4.598	80.00- 120.00	100.00
10.261	10.260 (0.718)	103	272906			35.88- 95.88	65.38
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	363863	5.00000	4.501	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	234849			34.82- 94.82	64.54
11.416	11.416 (0.798)	101	398747			79.00- 139.00	109.59
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	128571	5.00000	4.482	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	302091			204.09- 264.09	234.96
11.416	11.411 (0.798)	96	202188			127.27- 187.27	157.26
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	573759	5.00000	4.629	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	135980			0.00- 54.15	23.70
12.627	12.627 (0.883)	41	146061			0.00- 54.07	25.46
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	141829	5.00000	4.483	80.00- 120.00	100.00
12.669	12.669 (0.886)	61	309692			186.82- 246.82	218.36
12.689	12.689 (0.888)	96	221257			125.17- 185.17	156.00
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.288	13.287 (0.929)	63	399494	5.00000	4.632	80.00- 120.00	100.00
13.288	13.290 (0.929)	65	128436			2.55- 62.55	32.15
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	154837	5.00000	4.535	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	301777			162.14- 222.14	194.90
14.001	14.001 (0.979)	96	240486			124.57- 184.57	155.32
* 13 Bromochloromethane					CAS #: 74-97-5		
14.298	14.298 (1.000)	130	128400	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	99356			47.49- 107.49	77.38
14.274	14.274 (1.000)	49	211322			114.87- 174.87	164.58
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	406955	5.00000	4.533	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	267543			36.48- 96.48	65.74
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.514 (1.015)	97	371595	5.00000	4.627	80.00- 120.00	100.00
14.514	14.514 (1.015)	99	242748			35.76- 95.76	65.33

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	14.658	14.658 (1.025)	119	338651	5.00000	5.050	80.00- 120.00	100.00
	14.658	14.658 (1.025)	117	348407			72.17- 132.17	102.88
	17 Benzene					CAS #: 71-43-2		
	14.922	14.921 (0.974)	78	712114	5.00000	4.217	80.00- 120.00	100.00
	14.922	14.921 (0.974)	77	162899			0.00- 52.85	22.88
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	14.922	14.921 (1.044)	65	159040	5.00000	4.769	80.00- 120.00	100.00
	14.922	14.921 (1.044)	67	93147			30.16- 90.16	58.57
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	14.994	14.993 (0.979)	62	254952	5.00000	4.643	80.00- 120.00	100.00
	14.994	14.993 (0.979)	64	84193			3.19- 63.19	33.02
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	15.313	15.312 (1.000)	114	603558	5.00000		80.00- 120.00	100.00
	15.313	15.312 (1.000)	88	101641			0.00- 46.92	16.84
	21 Trichloroethene					CAS #: 79-01-6		
	15.581	15.594 (1.018)	130	301179	5.00000	4.528	80.00- 120.00	100.00
	15.581	15.581 (1.018)	95	288374			64.81- 124.81	95.75
	15.581	15.581 (1.018)	97	187414			32.10- 92.10	62.23
$	22 Toluene-d8					CAS #: 2037-26-5		
	16.860	16.860 (1.101)	98	529121	5.00000	4.994	80.00- 120.00	100.00
	16.860	16.860 (1.101)	70	65771			0.00- 42.34	12.43
	16.860	16.860 (1.101)	100	360414			38.15- 98.15	68.12
	23 Toluene					CAS #: 108-88-3		
	16.922	16.921 (1.105)	91	752309	5.00000	4.558	80.00- 120.00	100.00
	16.922	16.921 (1.105)	92	469379			33.44- 93.44	62.39
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
	17.189	17.189 (0.931)	75	382661	5.00000	5.293	80.00- 120.00	100.00
	17.189	17.189 (0.931)	77	127588			4.13- 64.13	33.34
	17.189	17.189 (0.931)	39	157064			10.65- 70.65	41.05
	25 1,1,2-Trichloroethane					CAS #: 79-00-5		
	17.394	17.393 (0.942)	97	253512	5.00000	4.801	80.00- 120.00	100.00
	17.394	17.397 (0.942)	99	157784			32.22- 92.22	62.24
	17.394	17.393 (0.942)	83	242822			66.62- 126.62	95.78
	26 Tetrachloroethene					CAS #: 127-18-4		
	17.496	17.496 (0.947)	166	401963	5.00000	4.560	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.496	17.496 (0.947)	129	289481			39.65- 99.65	72.02
17.496	17.496 (0.947)	131	277465			37.15- 97.15	69.03
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	377634	5.00000	4.972	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	352880			64.51- 124.51	93.44
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.466	18.465 (1.000)	117	477238	5.00000		80.00- 120.00	100.00
18.466	18.465 (1.000)	82	262940			25.29- 85.29	55.10
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	586853	5.00000	4.619	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	192915			3.25- 63.25	32.87
18.486	18.481 (1.001)	77	419333			42.62- 102.62	71.45
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	249042	5.00000	4.698	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	735501			259.51- 319.51	295.33
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	235950	5.00000	4.557	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	454991			159.47- 219.47	192.83
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	212590	5.00000	4.516	80.00- 120.00	100.00
19.126	19.125 (1.036)	91	431747			168.52- 228.52	203.09
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	199604	5.00000	4.839	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	236300			88.82- 148.82	118.38
19.787	19.787 (1.072)	176	196785			68.26- 128.26	98.59
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	418026	5.00000	4.768	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	273087			35.89- 95.89	65.33
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.052	21.049 (1.140)	146	323944	5.00000	4.104	80.00- 120.00	100.00
21.052	21.051 (1.140)	148	210542			35.46- 95.46	64.99
21.036	21.036 (1.139)	111	129873			10.46- 70.46	40.09
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	304093	5.00000	3.807	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	197179			35.29- 95.29	64.84

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
	36 1,4-Dichlorobenzene (continued)						
21.145	21.145 (1.145)	111	118199			9.14- 69.14	38.87
	37 1,2-Dichlorobenzene				CAS #: 95-50-1		
21.613	21.613 (1.170)	146	313206	5.00000	3.994	80.00- 120.00	100.00
21.613	21.613 (1.170)	148	202773			35.27- 95.27	64.74
21.613	21.613 (1.170)	111	130259			11.99- 71.99	41.59
	38 Naphthalene				CAS #: 91-20-3		
24.154	24.154 (1.308)	128	86396	0.50000	0.3493	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	11465			0.00- 43.35	13.27

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121209sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 5.0ppbv (50ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 12
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	128400	-1.04
20 1,4-Difluorobenze	609231	365539	852923	603558	-0.93
28 Chlorobenzene-d5	470778	282467	659089	477238	1.37

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121209sim.d

Date : 12-DEC-2017 16:32

Client ID: Level 12

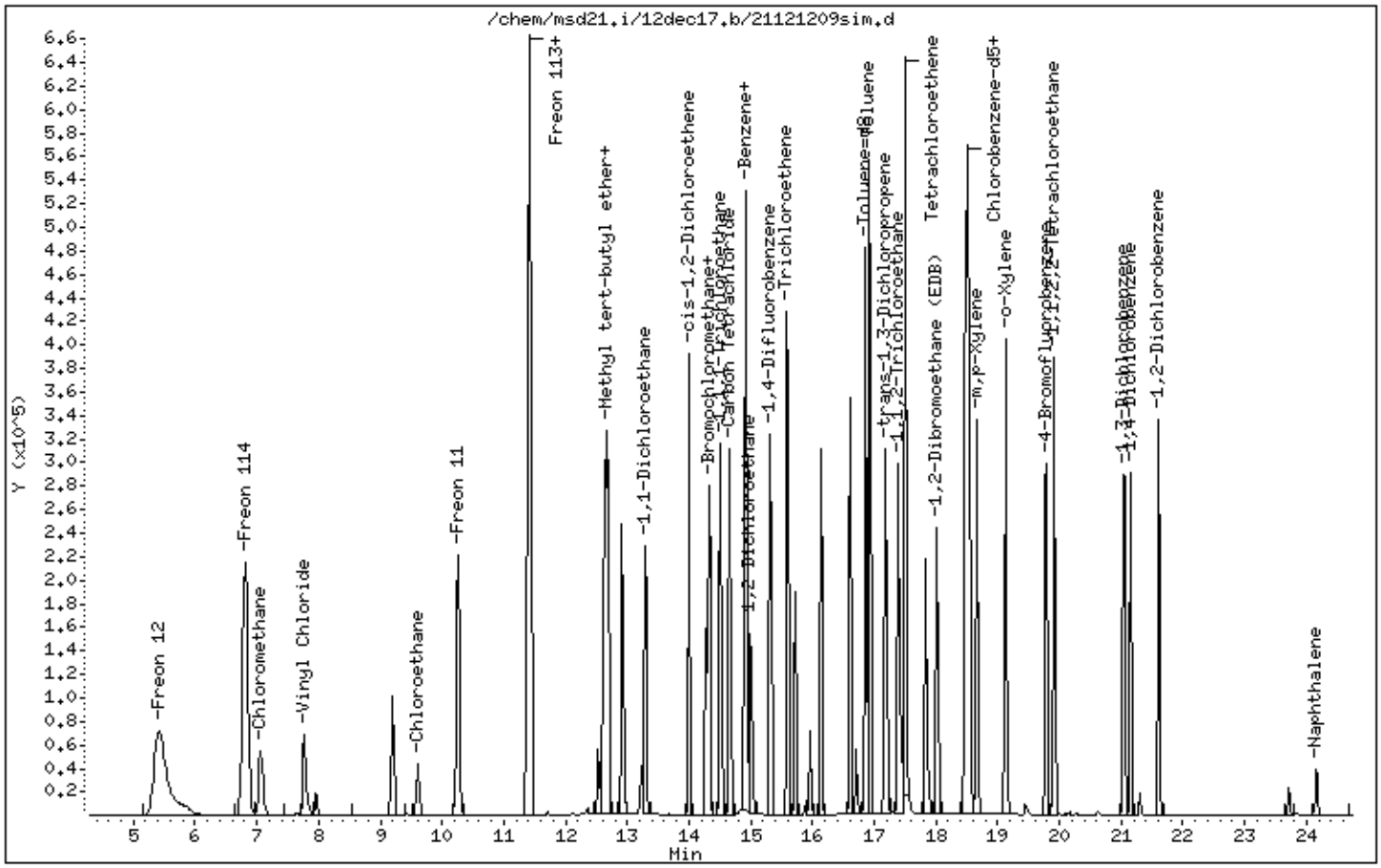
Instrument: msd21.i

Sample Info: 25mL# 2991-164

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121210sim.d
Lab Smp Id: ICAL Client Smp ID: Level 13
Inj Date : 12-DEC-2017 17:02
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 2991-164
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:44 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 Calibration Sample, Level: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.409	5.419 (0.378)	85	1511711	10.0000	8.839	80.00- 120.00	100.00
5.409	5.419 (0.378)	87	489953			2.41- 62.41	32.41
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	777906	10.0000	8.740	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	252169			2.42- 62.42	32.42
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	392947	10.0000	8.235	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	126520			2.20- 62.20	32.20
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	411610	10.0000	8.771	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	131085			1.85- 61.85	31.85
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	206227	10.0000	9.206	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	65970			1.99- 61.99	31.99

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	799825	10.0000	8.718	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	526891			35.88- 95.88	65.88
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	693727	10.0000	8.491	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	449704			34.82- 94.82	64.82
11.416	11.416 (0.798)	101	756161			79.00- 139.00	109.00
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	246168	10.0000	8.493	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	576249			204.09- 264.09	234.09
11.416	11.411 (0.798)	96	387141			127.27- 187.27	157.27
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	1110117	10.0000	8.862	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	268069			0.00- 54.15	24.15
12.627	12.627 (0.883)	41	267248			0.00- 54.07	24.07
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	274228	10.0000	8.578	80.00- 120.00	100.00
12.669	12.669 (0.886)	61	594577			186.82- 246.82	216.82
12.689	12.689 (0.888)	96	425513			125.17- 185.17	155.17
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	762619	10.0000	8.751	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	248215			2.55- 62.55	32.55
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	297541	10.0000	8.623	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	571695			162.14- 222.14	192.14
14.001	14.001 (0.979)	96	459916			124.57- 184.57	154.57
* 13 Bromochloromethane					CAS #: 74-97-5		
14.298	14.298 (1.000)	130	129754	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	100547			47.49- 107.49	77.49
14.274	14.274 (1.000)	49	187970			114.87- 174.87	144.87
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	778655	10.0000	8.583	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	517635			36.48- 96.48	66.48
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.514 (1.015)	97	701792	10.0000	8.647	80.00- 120.00	100.00
14.514	14.514 (1.015)	99	461466			35.76- 95.76	65.76

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride					CAS #: 56-23-5		
	14.658	14.658 (1.025)	119	661875	10.0000	9.767	80.00- 120.00	100.00
	14.658	14.658 (1.025)	117	676227			72.17- 132.17	102.17
	17 Benzene					CAS #: 71-43-2		
	14.922	14.921 (0.974)	78	1335782	10.0000	7.837	80.00- 120.00	100.00
	14.922	14.921 (0.974)	77	305288			0.00- 52.85	22.85
$	18 1,2-Dichloroethane-d4					CAS #: 17060-07-0		
	14.922	14.921 (1.044)	65	149497	5.00000	4.436	80.00- 120.00	100.00
	14.922	14.921 (1.044)	67	89939			30.16- 90.16	60.16
	19 1,2-Dichloroethane					CAS #: 107-06-2		
	14.994	14.993 (0.979)	62	477818	10.0000	8.621	80.00- 120.00	100.00
	14.994	14.993 (0.979)	64	158601			3.19- 63.19	33.19
*	20 1,4-Difluorobenzene					CAS #: 540-36-3		
	15.313	15.312 (1.000)	114	609231	5.00000		80.00- 120.00	100.00
	15.313	15.312 (1.000)	88	103092			0.00- 46.92	16.92
	21 Trichloroethene					CAS #: 79-01-6		
	15.581	15.594 (1.018)	130	580068	10.0000	8.640	80.00- 120.00	100.00
	15.581	15.581 (1.018)	95	549959			64.81- 124.81	94.81
	15.581	15.581 (1.018)	97	360240			32.10- 92.10	62.10
$	22 Toluene-d8					CAS #: 2037-26-5		
	16.860	16.860 (1.101)	98	524136	5.00000	4.901	80.00- 120.00	100.00
	16.860	16.860 (1.101)	70	64679			0.00- 42.34	12.34
	16.860	16.860 (1.101)	100	357184			38.15- 98.15	68.15
	23 Toluene					CAS #: 108-88-3		
	16.922	16.921 (1.105)	91	1377843	10.0000	8.270	80.00- 120.00	100.00
	16.922	16.921 (1.105)	92	874104			33.44- 93.44	63.44
	24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
	17.189	17.189 (0.931)	75	746094	10.0000	10.461	80.00- 120.00	100.00
	17.189	17.189 (0.931)	77	254627			4.13- 64.13	34.13
	17.189	17.189 (0.931)	39	303255			10.65- 70.65	40.65
	25 1,1,2-Trichloroethane					CAS #: 79-00-5		
	17.394	17.393 (0.942)	97	507244	10.0000	9.738	80.00- 120.00	100.00
	17.394	17.397 (0.942)	99	315616			32.22- 92.22	62.22
	17.394	17.393 (0.942)	83	490117			66.62- 126.62	96.62
	26 Tetrachloroethene					CAS #: 127-18-4		
	17.496	17.496 (0.947)	166	772458	10.0000	8.882	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.496	17.496 (0.947)	129	538044			39.65- 99.65	69.65
17.496	17.496 (0.947)	131	518716			37.15- 97.15	67.15
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	752361	10.0000	10.042	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	711079			64.51- 124.51	94.51
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	470778	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	260275			25.29- 85.29	55.29
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	1090470	10.0000	8.700	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	362615			3.25- 63.25	33.25
18.486	18.481 (1.001)	77	791904			42.62- 102.62	72.62
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	482270	10.0000	9.222	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1396227			259.51- 319.51	289.51
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	457097	10.0000	8.949	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	866072			159.47- 219.47	189.47
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	415651	10.0000	8.951	80.00- 120.00	100.00
19.126	19.125 (1.036)	91	825134			168.52- 228.52	198.52
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	213393	5.00000	5.244	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	253549			88.82- 148.82	118.82
19.787	19.787 (1.072)	176	209683			68.26- 128.26	98.26
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	873008	10.0000	10.093	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	575211			35.89- 95.89	65.89
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.036	21.049 (1.139)	146	586139	10.0000	7.528	80.00- 120.00	100.00
21.052	21.051 (1.140)	148	383671			35.46- 95.46	65.46
21.036	21.036 (1.139)	111	237160			10.46- 70.46	40.46
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	540277	10.0000	6.857	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	352732			35.29- 95.29	65.29

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
	36 1,4-Dichlorobenzene (continued)						
21.145	21.145 (1.145)	111	211457			9.14- 69.14	39.14
	37 1,2-Dichlorobenzene				CAS #: 95-50-1		
21.613	21.613 (1.170)	146	571573	10.0000	7.388	80.00- 120.00	100.00
21.613	21.613 (1.170)	148	373051			35.27- 95.27	65.27
21.613	21.613 (1.170)	111	239986			11.99- 71.99	41.99
	38 Naphthalene				CAS #: 91-20-3		
24.154	24.154 (1.308)	128	189610	1.00000	0.7772	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	25305			0.00- 43.35	13.35

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121210sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 13
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	129754	0.00
20 1,4-Difluorobenze	609231	365539	852923	609231	0.00
28 Chlorobenzene-d5	470778	282467	659089	470778	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121210sim.d

Date : 12-DEC-2017 17:02

Client ID: Level 13

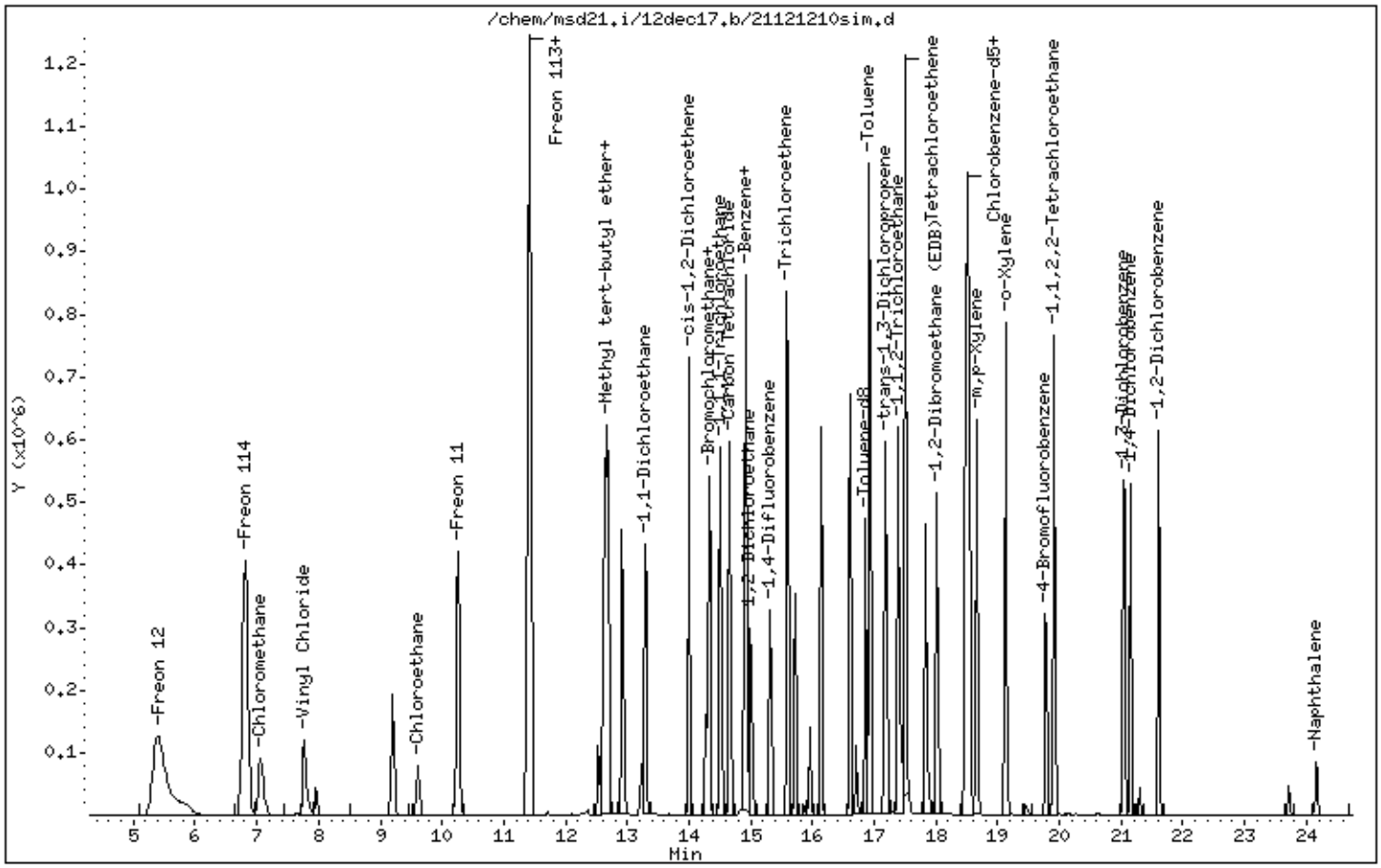
Instrument: msd21.i

Sample Info: 50mL# 2991-164

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/12dec17.b/21121211sim.d
Lab Smp Id: ICAL Client Smp ID: Level 15
Inj Date : 12-DEC-2017 17:51
Operator : mjs Inst ID: msd21.i
Smp Info : 100mL #2991-164
Misc Info : 20ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 13-Dec-2017 10:35 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:51 Cal File: 21121211sim.d
Als bottle: 1 Calibration Sample, Level: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: HILOcrvFULL.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS			
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
==	====== ========	====	========	=======	=======	==========	=====
1 Freon 12					CAS #: 75-71-8		
5.429	5.419 (0.380)	85	2644546	20.0000	18.101	80.00- 120.00	100.00
5.429	5.419 (0.380)	87	860658			2.41- 62.41	32.54
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	1274488	20.0000	16.762	80.00- 120.00	100.00
6.833	6.825 (0.478)	137	415724			2.42- 62.42	32.62
3 Chloromethane					CAS #: 74-87-3		
7.080	7.063 (0.495)	50	684969	20.0000	16.805	80.00- 120.00	100.00
7.080	7.066 (0.495)	52	212876			2.20- 62.20	31.08
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	720126	20.0000	17.964	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	230227			1.85- 61.85	31.97
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	360414	20.0000	18.834	80.00- 120.00	100.00
9.597	9.608 (0.671)	66	116308			1.99- 61.99	32.27

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	1298297	20.0000	16.565	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	863013			35.88- 95.88	66.47
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	1156087	20.0000	16.565	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	754507			34.82- 94.82	65.26
11.416	11.416 (0.798)	101	1251019			79.00- 139.00	108.21
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	399836	20.0000	16.148	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	924406			204.09- 264.09	231.20
11.416	11.411 (0.798)	96	628434			127.27- 187.27	157.17
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	1890660	20.0000	17.668	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	451904			0.00- 54.15	23.90
12.627	12.627 (0.883)	41	451112			0.00- 54.07	23.86
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	461849	20.0000	16.912	80.00- 120.00	100.00
12.668	12.669 (0.886)	61	982698			186.82- 246.82	212.77
12.689	12.689 (0.888)	96	712455			125.17- 185.17	154.26
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	1249596	20.0000	16.786	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	412033			2.55- 62.55	32.97
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	490337	20.0000	16.635	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	925346			162.14- 222.14	188.72
14.001	14.001 (0.979)	96	753111			124.57- 184.57	153.59
* 13 Bromochloromethane					CAS #: 74-97-5		
14.297	14.298 (1.000)	130	110842	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	85892			47.49- 107.49	77.49
14.273	14.274 (1.000)	49	163952			114.87- 174.87	147.92
14 Chloroform					CAS #: 67-66-3		
14.321	14.322 (1.002)	83	1284372	20.0000	16.574	80.00- 120.00	100.00
14.321	14.322 (1.002)	85	862594			36.48- 96.48	67.16
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.514 (1.015)	97	1144448	20.0000	16.507	80.00- 120.00	100.00
14.513	14.514 (1.015)	99	758589			35.76- 95.76	66.28

	RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
	16 Carbon Tetrachloride						CAS #: 56-23-5	
	14.657	14.658 (1.025)	119	1120514	20.0000	19.357	80.00- 120.00	100.00
	14.657	14.658 (1.025)	117	1136803			72.17- 132.17	101.45
	17 Benzene						CAS #: 71-43-2	
	14.921	14.921 (0.974)	78	2200577	20.0000	13.830	80.00- 120.00	100.00
	14.921	14.921 (0.974)	77	506018			0.00- 52.85	22.99
$	18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
	14.921	14.921 (1.044)	65	121512	5.00000	4.221	80.00- 120.00	100.00
	14.921	14.921 (1.044)	67	76509			30.16- 90.16	62.96
	19 1,2-Dichloroethane						CAS #: 107-06-2	
	14.993	14.993 (0.979)	62	776029	20.0000	14.999	80.00- 120.00	100.00
	14.993	14.993 (0.979)	64	259269			3.19- 63.19	33.41
*	20 1,4-Difluorobenzene						CAS #: 540-36-3	
	15.312	15.312 (1.000)	114	568736	5.00000		80.00- 120.00	100.00
	15.312	15.312 (1.000)	88	95865			0.00- 46.92	16.86
	21 Trichloroethene						CAS #: 79-01-6	
	15.601	15.594 (1.019)	130	985064	20.0000	15.718	80.00- 120.00	100.00
	15.580	15.581 (1.018)	95	929094			64.81- 124.81	94.32
	15.580	15.581 (1.018)	97	611363			32.10- 92.10	62.06
$	22 Toluene-d8						CAS #: 2037-26-5	
	16.859	16.860 (1.101)	98	485415	5.00000	4.862	80.00- 120.00	100.00
	16.859	16.860 (1.101)	70	60476			0.00- 42.34	12.46
	16.859	16.860 (1.101)	100	330195			38.15- 98.15	68.02
	23 Toluene						CAS #: 108-88-3	
	16.921	16.921 (1.105)	91	2313378	20.0000	14.875	80.00- 120.00	100.00
	16.921	16.921 (1.105)	92	1499088			33.44- 93.44	64.80
	24 trans-1,3-Dichloropropene						CAS #: 10061-02-6	
	17.189	17.189 (0.931)	75	1316035	20.0000	20.098	80.00- 120.00	100.00(A)
	17.189	17.189 (0.931)	77	454183			4.13- 64.13	34.51
	17.189	17.189 (0.931)	39	538604			10.65- 70.65	40.93
	25 1,1,2-Trichloroethane						CAS #: 79-00-5	
	17.393	17.393 (0.942)	97	866173	20.0000	18.111	80.00- 120.00	100.00
	17.393	17.397 (0.942)	99	549368			32.22- 92.22	63.42
	17.393	17.393 (0.942)	83	816703			66.62- 126.62	94.29
	26 Tetrachloroethene						CAS #: 127-18-4	
	17.495	17.496 (0.947)	166	1271991	20.0000	15.931	80.00- 120.00	100.00

				AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
RT	EXP RT (REL RT)	MASS	RESPONSE				
26 Tetrachloroethene (continued)							
17.495	17.496 (0.947)	129	887352			39.65- 99.65	69.76
17.495	17.496 (0.947)	131	847894			37.15- 97.15	66.66
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	1275108	20.0000	18.537	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	1225336			64.51- 124.51	96.10
* 28 Chlorobenzene-d5					CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	432228	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	237847			25.29- 85.29	55.03
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	1863423	20.0000	16.193	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	633513			3.25- 63.25	34.00
18.486	18.481 (1.001)	77	1374264			42.62- 102.62	73.75
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	864774	20.0000	18.011	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	2413886			259.51- 319.51	279.13
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	844683	20.0000	18.012	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	1567136			159.47- 219.47	185.53
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	745455	20.0000	17.485	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	1443084			168.52- 228.52	193.58
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	190762	5.00000	5.106	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	228098			88.82- 148.82	119.57
19.787	19.787 (1.072)	176	187683			68.26- 128.26	98.39
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	1448197	20.0000	18.237	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	960479			35.89- 95.89	66.32
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.049 (1.140)	146	1092340	20.0000	15.281	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	722970			35.46- 95.46	66.19
21.036	21.036 (1.139)	111	445638			10.46- 70.46	40.80
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	1016706	20.0000	14.055	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	672380			35.29- 95.29	66.13

			AMOUNTS				
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	402530			9.14- 69.14	39.59
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.613 (1.170)	146	1054210	20.0000	14.842	80.00- 120.00	100.00
21.612	21.613 (1.170)	148	698265			35.27- 95.27	66.24
21.612	21.613 (1.170)	111	445753			11.99- 71.99	42.28
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	354958	2.00000	1.585	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	47137			0.00- 43.35	13.28

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121211sim.d
Lab Smp Id: ICAL
Analysis Type: VOA
Quant Type: ISTD
Operator: mjs
Method File: /chem/msd21.i/12dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 20ppbv (50ppbv)

Calibration Date: 12-DEC-2017
Calibration Time: 17:02
Client Smp ID: Level 15
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	129754	77852	181656	110842	-14.58
20 1,4-Difluorobenze	609231	365539	852923	568736	-6.65
28 Chlorobenzene-d5	470778	282467	659089	432228	-8.19

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/12dec17.b/21121211sim.d

Date : 12-DEC-2017 17:51

Client ID: Level 15

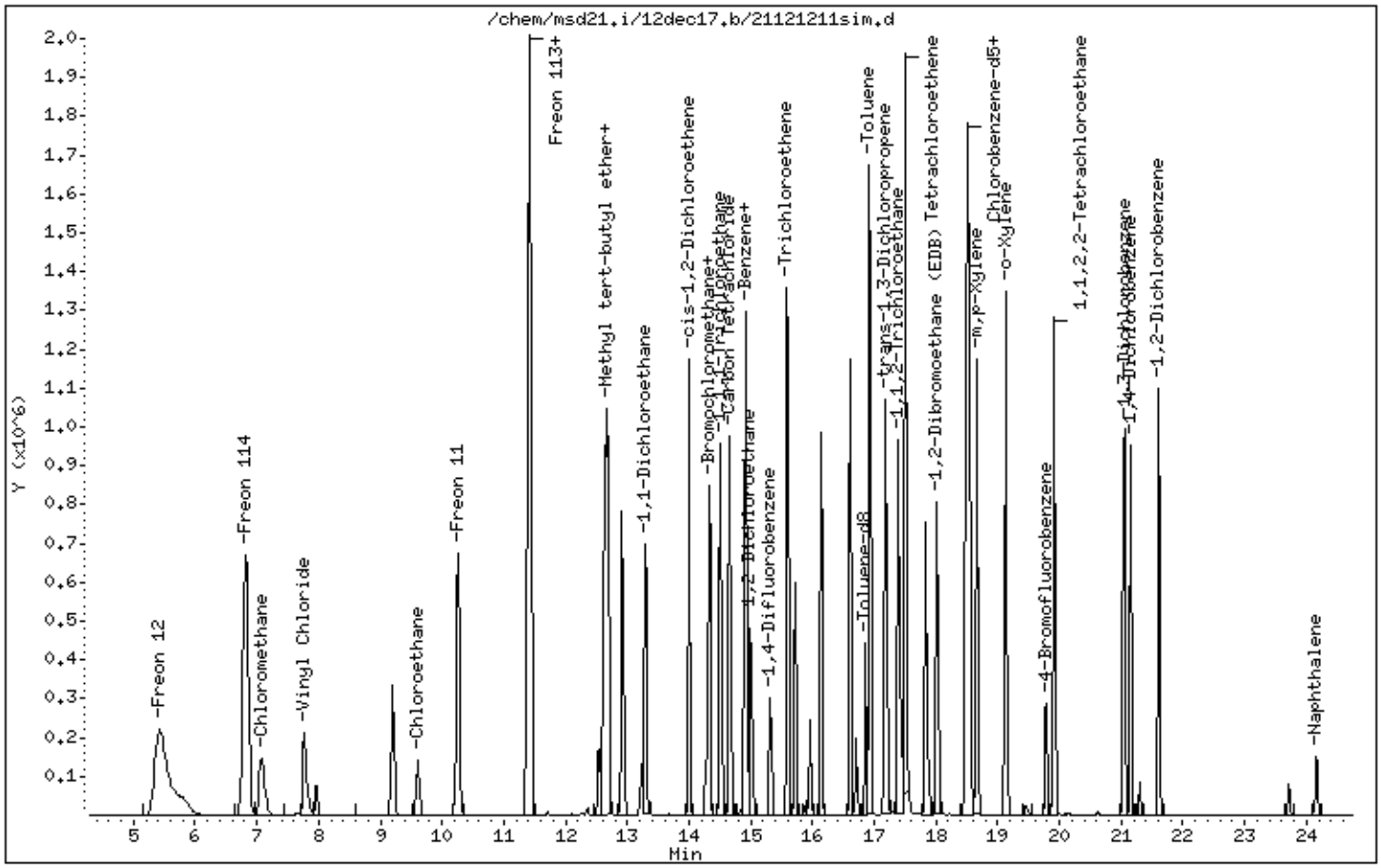
Instrument: msd21.i

Sample Info: 100mL #2991-164

Operator: mjs

Column phase: RTX-624

Column diameter: 0.32



Eurofins Air Toxics, Inc. 3Q 2017 TO-14A/TO-15 SIM Limit of Detections (LODs) Effective 10-01-17						
CAS #	Analyte	Molecular Weight (MW)	LOD (ppbv)	LOQ (ppbv)	LOD (ug/m3)	LOQ (ug/m3)
71-55-6	1,1,1-Trichloroethane	133.42	0.005	0.02	0.02728	0.10914
79-34-5	1,1,2,2-Tetrachloroethane	167.86	0.005	0.02	0.03433	0.13731
79-00-5	1,1,2-Trichloroethane	133.42	0.005	0.02	0.02728	0.10914
75-34-3	1,1-Dichloroethane	98.97	0.005	0.02	0.02024	0.08096
75-35-4	1,1-Dichloroethene	96.95	0.005	0.01	0.01983	0.03965
106-93-4	1,2-Dibromoethane (EDB)	187.88	0.005	0.02	0.03842	0.15369
107-06-2	1,2-Dichloroethane	98.96	0.005	0.02	0.02024	0.08095
106-46-7	1,4-Dichlorobenzene	147.01	0.005	0.02	0.03006	0.12025
71-43-2	Benzene*	78.11	0.01251	0.05	0.03997	0.15973
56-23-5	Carbon Tetrachloride	153.84	0.01	0.02	0.06292	0.12584
75-00-3	Chloroethane	64.52	0.005	0.05	0.01319	0.13194
67-66-3	Chloroform	119.39	0.005	0.02	0.02442	0.09766
74-87-3	Chloromethane*	50.49	0.00799	0.05	0.0165	0.10325
156-59-2	cis-1,2-Dichloroethene	96.94	0.005	0.02	0.01982	0.0793
100-41-4	Ethyl Benzene	106.16	0.005	0.02	0.02171	0.08684
76-14-2	Freon 114	170.93	0.005	0.02	0.03496	0.13982
75-71-8	Freon 12	120.92	0.005	0.02	0.02473	0.09891
108-38-3	m,p-Xylene	106.17	0.005	0.04	0.02171	0.17369
1634-04-4	Methyl tert-butyl ether	88.15	0.005	0.1	0.01803	0.36053
91-20-3	Naphthalene	128.17	0.01	0.05	0.05242	0.26211
95-47-6	o-Xylene	106.17	0.005	0.02	0.02171	0.08685
127-18-4	Tetrachloroethene	165.85	0.005	0.02	0.03392	0.13566
108-88-3	Toluene*	92.13	0.00507	0.02	0.0191	0.07536
156-60-5	trans-1,2-Dichloroethene	96.94	0.005	0.1	0.01982	0.39648
79-01-6	Trichloroethene*	131.39	0.00593	0.02	0.03187	0.10748
75-01-4	Vinyl Chloride	62.5	0.005	0.01	0.01278	0.02556

ppbv - part per billion by volume

Concentration (ug/m3) = Concentration (ppbv)*MW/24.45

Instrument ID - msd21.i file msd21.i/05sep17.b/21090518sim.d msd21.i/06jul17.b/21070610simf.d msd21.i/06jul17.b/21070613simf.d

*LOD was less then the MDL therefore was raised to equal the MDL value.

Report Date : 29-Jun-2017 14:17

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd21.i/23Jun17.b/2117l0622a.m/2117s0622a.m
Batch File: /chem/msd21.i/23Jun17.b
Inst ID: msd21.i

TO-15 SIM MDL:
 # 2850-200 (0.05ppbv); 50mL load.
Naphthalene SIM MDL:
2850-201 (1.0ppbv, 0.1ppbv for Naphthalene); 125mL load.

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	21062306sim	21062307sim	21062308sim	21062309sim	21062310sim	21062311sim	21062312sim	21062313sim
INJ.DATE:	23-JUN-2017	23-JUN-2017	23-JUN-2017	23-JUN-2017	24-JUN-2017	24-JUN-2017	24-JUN-2017	24-JUN-2017
INJ.TIME:	20:48	21:18	21:48	22:18	08:11	08:46	09:21	09:57

MDL (PPV)

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
1	Freon 12	10.47	10.12	10.15	9.77	10.11	9.76	9.78	9.63	9.97	0.28	0.85	20
2	Freon 114	10.24	10.17	10.28	10.02	9.90	10.19	10.05	10.09	10.12	0.12	0.37	20
3	Chloromethane	13.65	13.40	13.25	12.74	20.30	12.35	13.13	11.97	13.85	2.66	7.99	500
4	Vinyl Chloride	11.25	10.86	10.90	10.79	10.88	10.37	10.58	10.35	10.75	0.30	0.91	10
5	Chloroethane	10.47	10.05	10.13	10.02	10.09	9.87	9.69	9.50	9.98	0.29	0.88	50
6	Freon 11	10.26	10.17	10.28	10.18	10.13	10.22	10.10	10.09	10.18	0.07	0.21	20
7	Freon 113	10.50	10.44	10.44	10.47	10.25	10.47	10.37	10.40	10.42	0.08	0.24	20
8	1,1-Dichloroethene	10.06	9.88	9.83	9.71	9.49	9.34	9.51	9.52	9.67	0.24	0.73	10
9	Methyl tert-butyl ethe	9.83	9.58	9.81	9.68	9.11	9.36	9.04	9.21	9.45	0.31	0.94	100
10	trans-1,2-Dichloroethe	10.25	10.11	10.12	10.03	9.59	9.69	9.67	9.68	9.89	0.26	0.78	100
11	1,1-Dichloroethane	10.42	10.26	10.42	10.16	9.78	9.96	9.80	9.87	10.08	0.27	0.80	20
12	cis-1,2-Dichloroethene	10.26	10.04	10.03	9.70	9.63	9.77	9.38	9.54	9.80	0.29	0.88	20
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
14	Chloroform	10.78	10.60	10.74	10.59	10.44	10.71	10.42	10.57	10.61	0.13	0.39	20
15	1,1,1-Trichloroethane	10.24	10.23	10.27	10.09	9.95	10.06	9.89	10.05	10.10	0.14	0.42	20
16	Carbon Tetrachloride	7.35	6.92	7.01	6.61	9.02	7.42	6.69	6.88	7.24	0.77	2.32	20
17	Benzene	13.60	12.59	12.74	12.54	24.97	14.19	13.81	13.62	14.76	4.17	12.51	50

MDL Verification:
 # 2850-200 (0.05ppbv)
25mL load (0.005ppbv).
Naphthalene:
 # 2850-201 (0.1ppbv for Naphthalene);
25mL load (0.01ppbv).

Reviewer 1 _____ Date: 6/29/17
Reviewer 2 _____ Date: 6/29/17

The ratio of the mean recovered concentration and the MDL value is greater than 20 for multiple compounds. See MDL case narrative for details. OK per S.S., see included email.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd21.i/23Jun17.b/2117l0622a.m/2117s0622a.m
Batch File: /chem/msd21.i/23Jun17.b
Inst ID: msd21.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL	
$	18 1,2-Dichloroethane-d4	5320.52	5231.87	5272.40	5245.18	5120.33	5138.34	5170.65	5135.68	5204.37	73.50	220.36	
	19 1,2-Dichloroethane	11.03	10.95	10.99	10.99	10.95	10.71	10.52	10.52	10.83	0.22	0.65	20
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	21 Trichloroethene	11.20	10.72	10.84	10.74	16.62	11.77	11.23	11.30	11.80	1.98	5.93	20
$	22 Toluene-d8	4909.00	4888.27	4910.53	4892.93	4947.21	4933.75	4928.56	4933.93	4918.02	21.10	63.25	
	23 Toluene	12.35	11.26	11.36	11.26	16.43	13.00	12.58	12.66	12.61	1.69	5.07	20
	24 trans-1,3-Dichloroprop	10.19	10.20	9.94	9.96	9.57	9.66	9.32	9.20	9.76	0.38	1.14	20
	25 1,1,2-Trichloroethane	9.55	10.05	9.84	9.87	9.60	9.90	9.79	9.96	9.82	0.17	0.51	20
	26 Tetrachloroethene	11.13	11.17	11.19	11.13	11.62	11.50	11.42	11.14	11.29	0.20	0.59	20
	27 1,2-Dibromoethane (EDB	9.49	9.74	9.66	9.51	9.54	9.41	9.11	9.13	9.45	0.23	0.68	20
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00	
	29 Chlorobenzene	11.23	11.11	11.15	10.97	13.29	10.97	10.88	10.88	11.31	0.81	2.43	20
	30 Ethyl Benzene	10.07	9.89	9.99	10.00	10.37	10.02	9.78	9.84	9.99	0.18	0.54	20
	31 m,p-Xylene	10.34	9.78	10.33	9.84	11.10	10.19	9.95	9.90	10.18	0.43	1.29	40
	32 o-Xylene	9.90	9.66	10.20	9.80	10.23	9.60	9.31	9.41	9.76	0.34	1.02	20
$	33 4-Bromofluorobenzene	4788.89	4951.07	5071.24	4996.80	4786.57	4643.30	4624.87	4631.31	4811.76	176.48	529.07	
	34 1,1,2,2-Tetrachloroeth	9.42	10.10	10.05	9.96	9.68	9.49	9.50	9.44	9.70	0.29	0.86	20
	35 1,3-Dichlorobenzene	12.87	11.90	12.49	11.95	14.64	11.98	11.55	11.46	12.36	1.03	3.10	20
	36 1,4-Dichlorobenzene	13.51	12.29	12.96	12.20	15.99	12.07	11.81	11.72	12.82	1.42	4.24	20
	37 1,2-Dichlorobenzene	13.03	12.28	12.96	12.31	14.65	12.24	11.92	11.84	12.65	0.92	2.74	20
	38 Naphthalene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	
M	~~39 Total Xylene~~	~~40.75~~	~~39.59~~	~~40.68~~	~~39.97~~	~~40.55~~	~~39.25~~	~~39.32~~	~~38.54~~	~~39.63~~	~~0.95~~	~~2.85~~	

CS 6/29/17

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd21.i/26jun17.b/2117l0622a.m/2117s0622a.m
Batch File: /chem/msd21.i/26jun17.b
Inst ID: msd21.i

ID:	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08
FILENAME:	21062607sim	21062608sim	21062609sim	21062610sim	21062611sim	21062612sim	21062613sim	21062614sim
INJ.DATE:	26-JUN-2017	26-JUN-2017	26-JUN-2017	26-JUN-2017	26-JUN-2017	26-JUN-2017	26-JUN-2017	26-JUN-2017
INJ.TIME:	12:19	12:49	13:28	14:14	14:45	15:14	15:56	16:34

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
1	Freon 12	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
2	Freon 114	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
3	Chloromethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
4	Vinyl Chloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
5	Chloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
6	Freon 11	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
7	Freon 113	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
8	1,1-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
9	Methyl tert-butyl ethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
10	trans-1,2-Dichloroethe	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
11	1,1-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
12	cis-1,2-Dichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
* 13	Bromochloromethane	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
14	Chloroform	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
15	1,1,1-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
16	Carbon Tetrachloride	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
17	Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

Reviewer 1 lvf Date: 6/23/17
Reviewer 2 [signature] Date: 6/29/17

$\bar{x}$ = 0.0046
$2\bar{x}$ = 0.0147
$3\bar{x}$ = 0.2235

The ratio of Naphthalenes mean recovered concentration and the MDL value is between 1 and 20.

Eurofins Air Toxics Inc.
METHOD DETECTION LIMIT SUMMARY REPORT

Method File: /chem/msd21.i/26jun17.b/2117l0622a.m/2117s0622a.m
Batch File: /chem/msd21.i/26jun17.b
Inst ID: msd21.i

	Compound	MDL01	MDL02	MDL03	MDL04	MDL05	MDL06	MDL07	MDL08	AVG CONC	STD DEV	MDL
$	18 1,2-Dichloroethane-d4	5394.07	5332.78	5373.50	5359.67	5280.08	5334.42	5394.33	5388.53	5357.17	39.74	119.14
	19 1,2-Dichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	20 1,4-Difluorobenzene	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	21 Trichloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	22 Toluene-d8	4930.02	4871.78	4951.73	4907.65	4916.97	4912.98	4934.43	4909.11	4916.83	23.57	70.67
	23 Toluene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	24 trans-1,3-Dichloroprop	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	25 1,1,2-Trichloroethane	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	26 Tetrachloroethene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	27 1,2-Dibromoethane (EDB	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
*	28 Chlorobenzene-d5	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	5000.00	0.00	0.00
	29 Chlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	30 Ethyl Benzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	31 m,p-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	32 o-Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
$	33 4-Bromofluorobenzene	4792.56	4930.47	4707.70	4519.76	4732.85	4798.38	4526.70	4558.59	4695.88	148.75	445.94
	34 1,1,2,2-Tetrachloroeth	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	35 1,3-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	36 1,4-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	37 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
	38 Naphthalene	77.18	77.04	75.71	75.54	75.94	70.64	72.41	77.75	75.28	2.49	7.45
M	39 Total Xylene	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++

MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	CCV		
Lab ID:	1712342-21A	**Date/Time Analyzed:**	12/19/17 09:02 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21121902sim

Compound	CAS#	%Recovery
Benzene	71-43-2	77
Ethyl Benzene	100-41-4	89
m,p-Xylene	108-38-3	86
Naphthalene	91-20-3	78
o-Xylene	95-47-6	87
Toluene	108-88-3	82
Total Xylenes	9999-9999-015	86

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	98

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd21.i Injection Date: 19-DEC-2017 09:02
Lab File ID: 21121902sim.d Init. Cal. Date(s): 12-DEC-2017 12-DEC-2017
Analysis Type: AIR Init. Cal. Times: 12:50 17:51
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m

	COMPOUND	RRF / AMOUNT	RF10	MIN RRF	%D / %DRIFT	MAX %D / %DRIFT	CURVE TYPE	
$	18 1,2-Dichloroethane-d4	1.29864	1.16344	0.010	10.41040	30.00000	Averaged	
$	22 Toluene-d8	0.87766	0.85967	0.010	2.04947	30.00000	Averaged	
$	33 4-Bromofluorobenzene	0.43214	0.42531	0.010	1.58067	30.00000	Averaged	
	1 Freon 12	6.59029	5.77907	0.010	12.30936	30.00000	Averaged	
	2 Freon 114	3.42978	2.91109	0.010	15.12310	30.00000	Averaged	
	3 Chloromethane	1.83866	1.46247	0.010	20.46001	30.00000	Averaged	
	4 Vinyl Chloride	1.80827	1.53906	0.010	14.88738	30.00000	Averaged	
	5 Chloroethane	0.86324	0.77891	0.010	9.76897	30.00000	Averaged	
	6 Freon 11	3.53548	3.01410	0.010	14.74709	30.00000	Averaged	
	7 Freon 113	3.14814	2.61201	0.010	17.02993	30.00000	Averaged	
	8 1,1-Dichloroethene	1.11692	0.93792	0.010	16.02554	30.00000	Averaged	
	9 Methyl tert-butyl ether	4.82703	4.21785	0.010	12.62037	30.00000	Averaged	
	10 trans-1,2-Dichloroethene	1.23184	1.03829	0.010	15.71222	30.00000	Averaged	
	11 1,1-Dichloroethane	3.35811	2.88363	0.010	14.12938	30.00000	Averaged	
	12 cis-1,2-Dichloroethene	1.32962	1.12609	0.010	15.30706	30.00000	Averaged	
	14 Chloroform	3.49576	2.94687	0.010	15.70147	30.00000	Averaged	
	15 1,1,1-Trichloroethane	3.12742	2.64815	0.010	15.32455	30.00000	Averaged	
	16 Carbon Tetrachloride	2.61122	2.47174	0.010	5.34161	40.00000	Averaged	
	17 Benzene	1.39885	1.07343	0.010	23.26355	30.00000	Averaged	
	19 1,2-Dichloroethane	0.45486	0.38610	0.010	15.11689	30.00000	Averaged	
	21 Trichloroethene	0.55098	0.46672	0.010	15.29296	30.00000	Averaged	
	23 Toluene	1.36727	1.11491	0.010	18.45704	30.00000	Averaged	
	24 trans-1,3-Dichloropropene	0.75750	0.79310	0.010	-4.69998	30.00000	Averaged	
	25 1,1,2-Trichloroethane	0.55325	0.52203	0.010	5.64141	30.00000	Averaged	
	26 Tetrachloroethene	0.92361	0.79116	0.010	14.34068	30.00000	Averaged	
	27 1,2-Dibromoethane (EDB)	0.79573	0.77880	0.010	2.12670	30.00000	Averaged	
	29 Chlorobenzene	1.33117	1.14145	0.010	14.25210	30.00000	Averaged	
	30 Ethyl Benzene	0.55541	0.49322	0.010	11.19616	30.00000	Averaged	
	31 m,p-Xylene	0.54249	0.46591	0.010	14.11639	30.00000	Averaged	
	32 o-Xylene	0.49319	0.42978	0.010	12.85751	30.00000	Averaged	
	34 1,1,2,2-Tetrachloroethane	0.91863	0.91477	0.010	0.41968	30.00000	Averaged	
	35 1,3-Dichlorobenzene	0.82689	0.62332	0.010	24.61947	30.00000	Averaged	
	36 1,4-Dichlorobenzene	0.83679	0.58606	0.010	29.96326	30.00000	Averaged	
	37 1,2-Dichlorobenzene	0.82168	0.61656	0.010	24.96402	30.00000	Averaged	
	38 Naphthalene	2.59113	2.03147	0.010	21.59921	40.00000	Averaged	
M	39 Total Xylene	++++	0.89568	0.010	++++	30.00000	Averaged	<-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121902sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 19-DEC-2017 09:02
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 2991-164
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:09 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
==	====== ========	====	========	=======	=======	==========		=====
* 13 Bromochloromethane						CAS #: 74-97-5		
14.298	14.298 (1.000)	130	119943	5.00000		80.00- 120.00		100.00
14.298	14.298 (1.000)	128	93090			47.49- 107.49		77.61
14.322	14.279 (1.000)	49	73210			114.87- 174.87		61.04
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
15.312	15.312 (1.000)	114	564150	5.00000		80.00- 120.00		100.00
15.312	15.312 (1.000)	88	95040			0.00- 46.92		16.85
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	433051	5.00000		80.00- 120.00		100.00
18.465	18.465 (1.000)	82	237961			25.29- 85.29		54.95
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
14.921	14.921 (1.044)	65	139547	5.00000	4.479	80.00- 120.00		100.00
14.921	14.921 (1.044)	67	83562			30.16- 90.16		59.88
$ 22 Toluene-d8						CAS #: 2037-26-5		
16.860	16.860 (1.101)	98	484985	5.00000	4.898	80.00- 120.00		100.00
16.860	16.860 (1.101)	70	59658			0.00- 42.34		12.30

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	330190			38.15- 98.15	68.08
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	184182	5.00000	4.921	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	218682			88.82- 148.82	118.73
19.787	19.787 (1.072)	176	181131			68.26- 128.26	98.34
1 Freon 12					CAS #: 75-71-8		
5.388	5.417 (0.377)	85	1386317	10.0000	8.769	80.00- 120.00	100.00
5.388	5.417 (0.377)	87	449182			2.41- 62.41	32.40
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	698329	10.0000	8.488	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	226223			2.42- 62.42	32.39
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	350827	10.0000	7.954	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	112966			2.20- 62.20	32.20
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	369200	10.0000	8.511	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	117520			1.85- 61.85	31.83
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	186850	10.0000	9.023	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	60363			1.99- 61.99	32.31
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	723041	10.0000	8.525	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	476191			35.88- 95.88	65.86
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	626585	10.0000	8.297	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	406088			34.82- 94.82	64.81
11.416	11.416 (0.798)	101	682735			79.00- 139.00	108.96
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	224995	10.0000	8.397	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	524039			204.09- 264.09	232.91
11.416	11.411 (0.798)	96	353877			127.27- 187.27	157.28
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	1011802	10.0000	8.738	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	243613			0.00- 54.15	24.08
12.627	12.627 (0.883)	41	241301			0.00- 54.07	23.85

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	249072	10.0000	8.429	80.00- 120.00	100.00
12.668	12.668 (0.886)	61	535634			186.82- 246.82	215.05
12.689	12.689 (0.888)	96	386968			125.17- 185.17	155.36
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	691743	10.0000	8.587	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	224671			2.55- 62.55	32.48
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	270134	10.0000	8.469	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	518927			162.14- 222.14	192.10
14.001	14.001 (0.979)	96	417258			124.57- 184.57	154.46
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	706914	10.0000	8.430	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	468716			36.48- 96.48	66.30
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.513 (1.015)	97	635255	10.0000	8.468	80.00- 120.00	100.00
14.513	14.513 (1.015)	99	417284			35.76- 95.76	65.69
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.657	14.657 (1.025)	119	592935	10.0000	9.466	80.00- 120.00	100.00
14.657	14.657 (1.025)	117	604829			72.17- 132.17	102.01
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	1211150	10.0000	7.674	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	277140			0.00- 52.85	22.88
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	435638	10.0000	8.488	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	144128			3.19- 63.19	33.08
21 Trichloroethene					CAS #: 79-01-6		
15.581	15.594 (1.018)	130	526596	10.0000	8.471	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	500432			64.81- 124.81	95.03
15.581	15.581 (1.018)	97	327159			32.10- 92.10	62.13
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	1257954	10.0000	8.154	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	798052			33.44- 93.44	63.44
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	686903	10.0000	10.470	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	232929			4.13- 64.13	33.91

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	280969			10.65- 70.65	40.90
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	452135	10.0000	9.436	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	280515			32.22- 92.22	62.04
17.393	17.393 (0.942)	83	442582			66.62- 126.62	97.89
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	685224	10.0000	8.566	80.00- 120.00	100.00
17.496	17.496 (0.947)	129	481781			39.65- 99.65	70.31
17.496	17.496 (0.947)	131	461815			37.15- 97.15	67.40
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	674523	10.0000	9.787	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	636460			64.51- 124.51	94.36
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	988616	10.0000	8.575	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	327704			3.25- 63.25	33.15
18.486	18.481 (1.001)	77	710253			42.62- 102.62	71.84
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	427181	10.0000	8.880	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1236088			259.51- 319.51	289.36
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	403522	10.0000	8.588	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	760744			159.47- 219.47	188.53
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	372231	10.0000	8.714	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	739011			168.52- 228.52	198.54
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	792287	10.0000	9.958	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	521956			35.89- 95.89	65.88
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.051 (1.140)	146	539856	10.0000	7.538	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	352197			35.46- 95.46	65.24
21.036	21.036 (1.139)	111	217131			10.46- 70.46	40.22
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	507591	10.0000	7.004	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	332162			35.29- 95.29	65.44

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	198198			9.14- 69.14	39.05
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.612 (1.170)	146	534001	10.0000	7.504	80.00- 120.00	100.00
21.612	21.612 (1.170)	148	347371			35.27- 95.27	65.05
21.612	21.612 (1.170)	111	222038			11.99- 71.99	41.58
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	175946	1.00000	0.7840	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	24180			0.00- 43.35	13.74
M 39 Total Xylene					CAS #: 1330-20-7		
			775753	10.0000	17.303		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121902sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	119943	0.00
20 1,4-Difluorobenze	564150	338490	789810	564150	0.00
28 Chlorobenzene-d5	433051	259831	606271	433051	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/19dec17.b/21121902sim.d

Date : 19-DEC-2017 09:02

Client ID: CCV

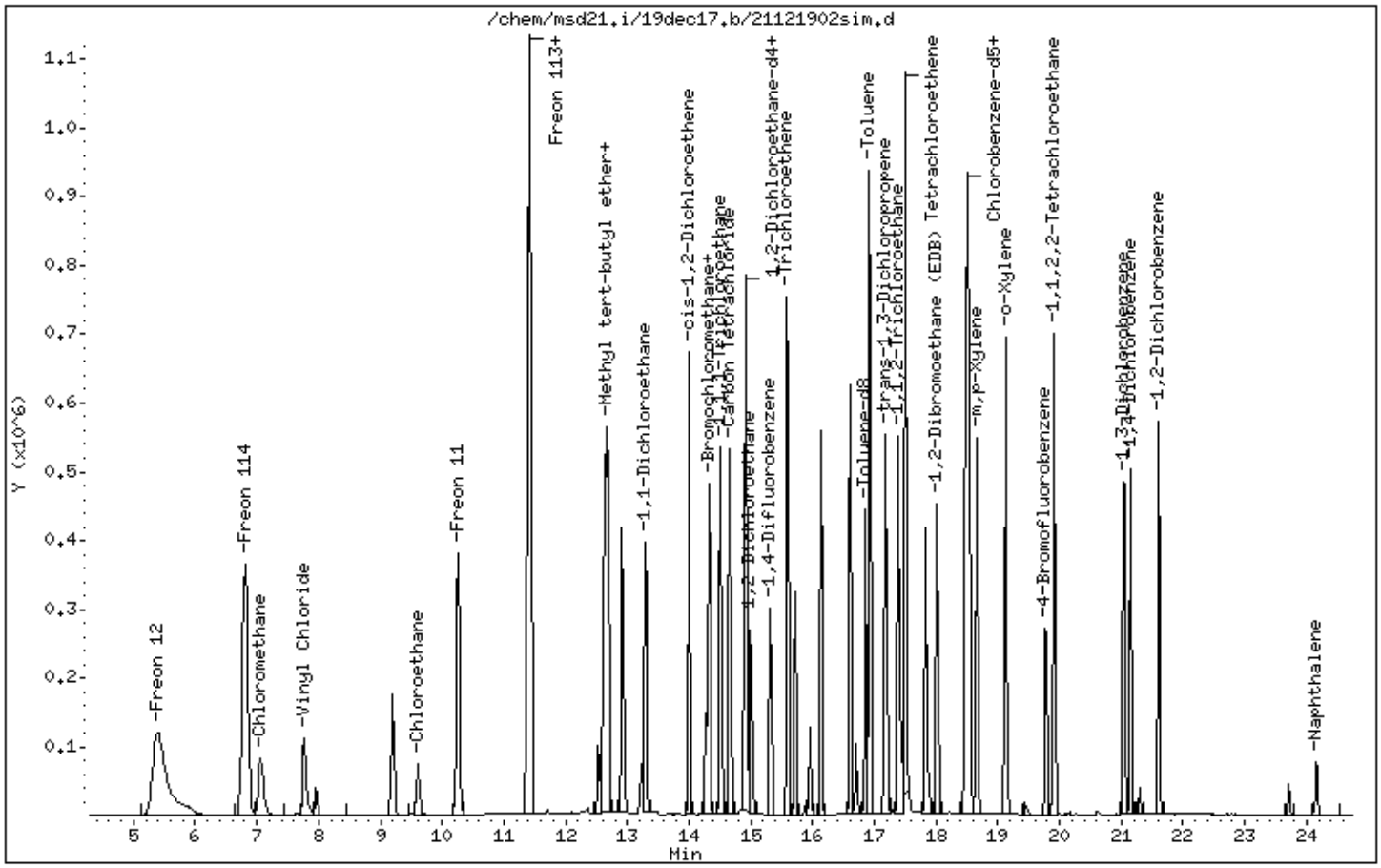
Instrument: msd21.i

Sample Info: 50mL# 2991-164

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	CCV		
Lab ID:	1712342-21B	**Date/Time Analyzed:**	12/20/17 08:39 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21122002sim

Compound	CAS#	%Recovery
Benzene	71-43-2	77
Ethyl Benzene	100-41-4	94
m,p-Xylene	108-38-3	93
Naphthalene	91-20-3	72
o-Xylene	95-47-6	94
Toluene	108-88-3	84
Total Xylenes	9999-9999-015	94

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	90
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	100

Eurofins Air Toxics Inc.

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: msd21.i Injection Date: 20-DEC-2017 08:39
Lab File ID: 21122002sim.d Init. Cal. Date(s): 12-DEC-2017 12-DEC-2017
Analysis Type: AIR Init. Cal. Times: 12:50 17:51
Lab Sample ID: CCV Quant Type: ISTD
Method: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m

			MIN		MAX	
COMPOUND	RRF / AMOUNT	RF10	RRF	%D / %DRIFT	%D / %DRIFT	CURVE TYPE
$ 18 1,2-Dichloroethane-d4	1.29864	1.17127	0.010	9.80785	30.00000	Averaged
$ 22 Toluene-d8	0.87766	0.87817	0.010	-0.05842	30.00000	Averaged
$ 33 4-Bromofluorobenzene	0.43214	0.44681	0.010	-3.39289	30.00000	Averaged
1 Freon 12	6.59029	5.84589	0.010	11.29540	30.00000	Averaged
2 Freon 114	3.42978	2.95421	0.010	13.86576	30.00000	Averaged
3 Chloromethane	1.83866	1.48936	0.010	18.99794	30.00000	Averaged
4 Vinyl Chloride	1.80827	1.55942	0.010	13.76196	30.00000	Averaged
5 Chloroethane	0.86324	0.78925	0.010	8.57147	30.00000	Averaged
6 Freon 11	3.53548	3.05723	0.010	13.52731	30.00000	Averaged
7 Freon 113	3.14814	2.65046	0.010	15.80875	30.00000	Averaged
8 1,1-Dichloroethene	1.11692	0.94787	0.010	15.13553	30.00000	Averaged
9 Methyl tert-butyl ether	4.82703	4.27135	0.010	11.51201	30.00000	Averaged
10 trans-1,2-Dichloroethene	1.23184	1.05194	0.010	14.60404	30.00000	Averaged
11 1,1-Dichloroethane	3.35811	2.92924	0.010	12.77114	30.00000	Averaged
12 cis-1,2-Dichloroethene	1.32962	1.14245	0.010	14.07703	30.00000	Averaged
14 Chloroform	3.49576	2.99144	0.010	14.42670	30.00000	Averaged
15 1,1,1-Trichloroethane	3.12742	2.66852	0.010	14.67321	30.00000	Averaged
16 Carbon Tetrachloride	2.61122	2.48128	0.010	4.97627	40.00000	Averaged
17 Benzene	1.39885	1.07796	0.010	22.93980	30.00000	Averaged
19 1,2-Dichloroethane	0.45486	0.38371	0.010	15.64315	30.00000	Averaged
21 Trichloroethene	0.55098	0.46259	0.010	16.04233	30.00000	Averaged
23 Toluene	1.36727	1.14524	0.010	16.23901	30.00000	Averaged
24 trans-1,3-Dichloropropene	0.75750	0.75731	0.010	0.02504	30.00000	Averaged
25 1,1,2-Trichloroethane	0.55325	0.50907	0.010	7.98516	30.00000	Averaged
26 Tetrachloroethene	0.92361	0.78011	0.010	15.53684	30.00000	Averaged
27 1,2-Dibromoethane (EDB)	0.79573	0.75216	0.010	5.47539	30.00000	Averaged
29 Chlorobenzene	1.33117	1.15524	0.010	13.21668	30.00000	Averaged
30 Ethyl Benzene	0.55541	0.51951	0.010	6.46266	30.00000	Averaged
31 m,p-Xylene	0.54249	0.50690	0.010	6.55899	30.00000	Averaged
32 o-Xylene	0.49319	0.46476	0.010	5.76405	30.00000	Averaged
34 1,1,2,2-Tetrachloroethane	0.91863	0.89419	0.010	2.66068	30.00000	Averaged
35 1,3-Dichlorobenzene	0.82689	0.66398	0.010	19.70199	30.00000	Averaged
36 1,4-Dichlorobenzene	0.83679	0.62524	0.010	25.28108	30.00000	Averaged
37 1,2-Dichlorobenzene	0.82168	0.64825	0.010	21.10649	30.00000	Averaged
38 Naphthalene	2.59113	1.87631	0.010	27.58743	40.00000	Averaged
M 39 Total Xylene	++++	0.97167	0.010	++++	30.00000	Averaged <-

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122002sim.d
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 20-DEC-2017 08:39
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 2991-164
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				AMOUNTS				
				CAL-AMT	ON-COL			
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE		RATIO
* 13 Bromochloromethane						CAS #: 74-97-5		
14.297	14.298 (1.000)	130	118194	5.00000		80.00- 120.00		100.00
14.297	14.298 (1.000)	128	92017			47.49- 107.49		77.85
14.274	14.274 (1.000)	49	171426			114.87- 174.87		145.04
* 20 1,4-Difluorobenzene						CAS #: 540-36-3		
15.312	15.312 (1.000)	114	566094	5.00000		80.00- 120.00		100.00
15.312	15.312 (1.000)	88	95123			0.00- 46.92		16.80
* 28 Chlorobenzene-d5						CAS #: 3114-55-4		
18.465	18.465 (1.000)	117	446145	5.00000		80.00- 120.00		100.00
18.465	18.465 (1.000)	82	248764			25.29- 85.29		55.76
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0		
14.921	14.921 (1.044)	65	138437	5.00000	4.510	80.00- 120.00		100.00
14.921	14.921 (1.044)	67	83040			30.16- 90.16		59.98
$ 22 Toluene-d8						CAS #: 2037-26-5		
16.860	16.860 (1.101)	98	497129	5.00000	5.003	80.00- 120.00		100.00
16.860	16.860 (1.101)	70	61125			0.00- 42.34		12.30

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	AMOUNTS ON-COL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	338611			38.15- 98.15	68.11
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	199340	5.00000	5.170	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	237594			88.82- 148.82	119.19
19.787	19.787 (1.072)	176	196522			68.26- 128.26	98.59
1 Freon 12					CAS #: 75-71-8		
5.388	5.417 (0.377)	85	1381898	10.0000	8.870	80.00- 120.00	100.00
5.388	5.417 (0.377)	87	447834			2.41- 62.41	32.41
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	698340	10.0000	8.613	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	226022			2.42- 62.42	32.37
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	352066	10.0000	8.100	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	113289			2.20- 62.20	32.18
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	368627	10.0000	8.624	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	117308			1.85- 61.85	31.82
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	186569	10.0000	9.143	80.00- 120.00	100.00
9.597	9.605 (0.671)	66	60438			1.99- 61.99	32.39
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	722692	10.0000	8.647	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	475681			35.88- 95.88	65.82
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	626536	10.0000	8.419	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	406156			34.82- 94.82	64.83
11.416	11.416 (0.798)	101	684099			79.00- 139.00	109.19
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	224064	10.0000	8.486	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	524878			204.09- 264.09	234.25
11.416	11.411 (0.798)	96	352461			127.27- 187.27	157.30
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	1009695	10.0000	8.849	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	242931			0.00- 54.15	24.06
12.627	12.627 (0.883)	41	255017			0.00- 54.07	25.26

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	248667	10.0000	8.540	80.00- 120.00	100.00
12.668	12.668 (0.886)	61	538032			186.82- 246.82	216.37
12.689	12.689 (0.888)	96	386777			125.17- 185.17	155.54
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	692438	10.0000	8.723	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	225400			2.55- 62.55	32.55
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	270061	10.0000	8.592	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	520408			162.14- 222.14	192.70
14.001	14.001 (0.979)	96	417193			124.57- 184.57	154.48
14 Chloroform					CAS #: 67-66-3		
14.321	14.322 (1.002)	83	707140	10.0000	8.557	80.00- 120.00	100.00
14.321	14.322 (1.002)	85	467989			36.48- 96.48	66.18
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.513 (1.015)	97	630807	10.0000	8.533	80.00- 120.00	100.00
14.513	14.513 (1.015)	99	414677			35.76- 95.76	65.74
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.657	14.657 (1.025)	119	586544	10.0000	9.502	80.00- 120.00	100.00
14.657	14.657 (1.025)	117	598603			72.17- 132.17	102.06
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	1220451	10.0000	7.706	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	279348			0.00- 52.85	22.89
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	434429	10.0000	8.436	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	144004			3.19- 63.19	33.15
21 Trichloroethene					CAS #: 79-01-6		
15.581	15.594 (1.018)	130	523736	10.0000	8.396	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	498583			64.81- 124.81	95.20
15.581	15.581 (1.018)	97	326501			32.10- 92.10	62.34
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	1296624	10.0000	8.376	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	823666			33.44- 93.44	63.52
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	675736	10.0000	9.997	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	229468			4.13- 64.13	33.96

RT	EXP RT (REL RT)	MASS	RESPONSE	AMOUNTS CAL-AMT (PPBV)	ON-COL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	276846			10.65- 70.65	40.97
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	454236	10.0000	9.201	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	282585			32.22- 92.22	62.21
17.393	17.393 (0.942)	83	437765			66.62- 126.62	96.37
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	696085	10.0000	8.446	80.00- 120.00	100.00
17.496	17.496 (0.947)	129	490846			39.65- 99.65	70.52
17.496	17.496 (0.947)	131	470252			37.15- 97.15	67.56
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	671142	10.0000	9.452	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	632987			64.51- 124.51	94.31
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	1030807	10.0000	8.678	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	341819			3.25- 63.25	33.16
18.486	18.481 (1.001)	77	747204			42.62- 102.62	72.49
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	463556	10.0000	9.354	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1337718			259.51- 319.51	288.58
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	452305	10.0000	9.344	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	855690			159.47- 219.47	189.18
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	414702	10.0000	9.424	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	825830			168.52- 228.52	199.14
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	797874	10.0000	9.734	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	524837			35.89- 95.89	65.78
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.051 (1.140)	146	592462	10.0000	8.030	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	387644			35.46- 95.46	65.43
21.036	21.036 (1.139)	111	238480			10.46- 70.46	40.25
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	557899	10.0000	7.472	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	364334			35.29- 95.29	65.30

			AMOUNTS				
				CAL-AMT	ON-COL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	216545			9.14- 69.14	38.81
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.612 (1.170)	146	578430	10.0000	7.889	80.00- 120.00	100.00
21.612	21.612 (1.170)	148	377399			35.27- 95.27	65.25
21.612	21.612 (1.170)	111	242887			11.99- 71.99	41.99
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	167421	1.00000	0.7241	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	23067			0.00- 43.35	13.78
M 39 Total Xylene					CAS #: 1330-20-7		
			867007	10.0000	18.768		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122002sim.d
Lab Smp Id: CCV
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Client Smp ID: CCV
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	118194	0.00
20 1,4-Difluorobenze	566094	339656	792532	566094	0.00
28 Chlorobenzene-d5	446145	267687	624603	446145	0.00

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/20dec17.b/21122002sim.d

Page 1

Date : 20-DEC-2017 08:39

Client ID: CCV

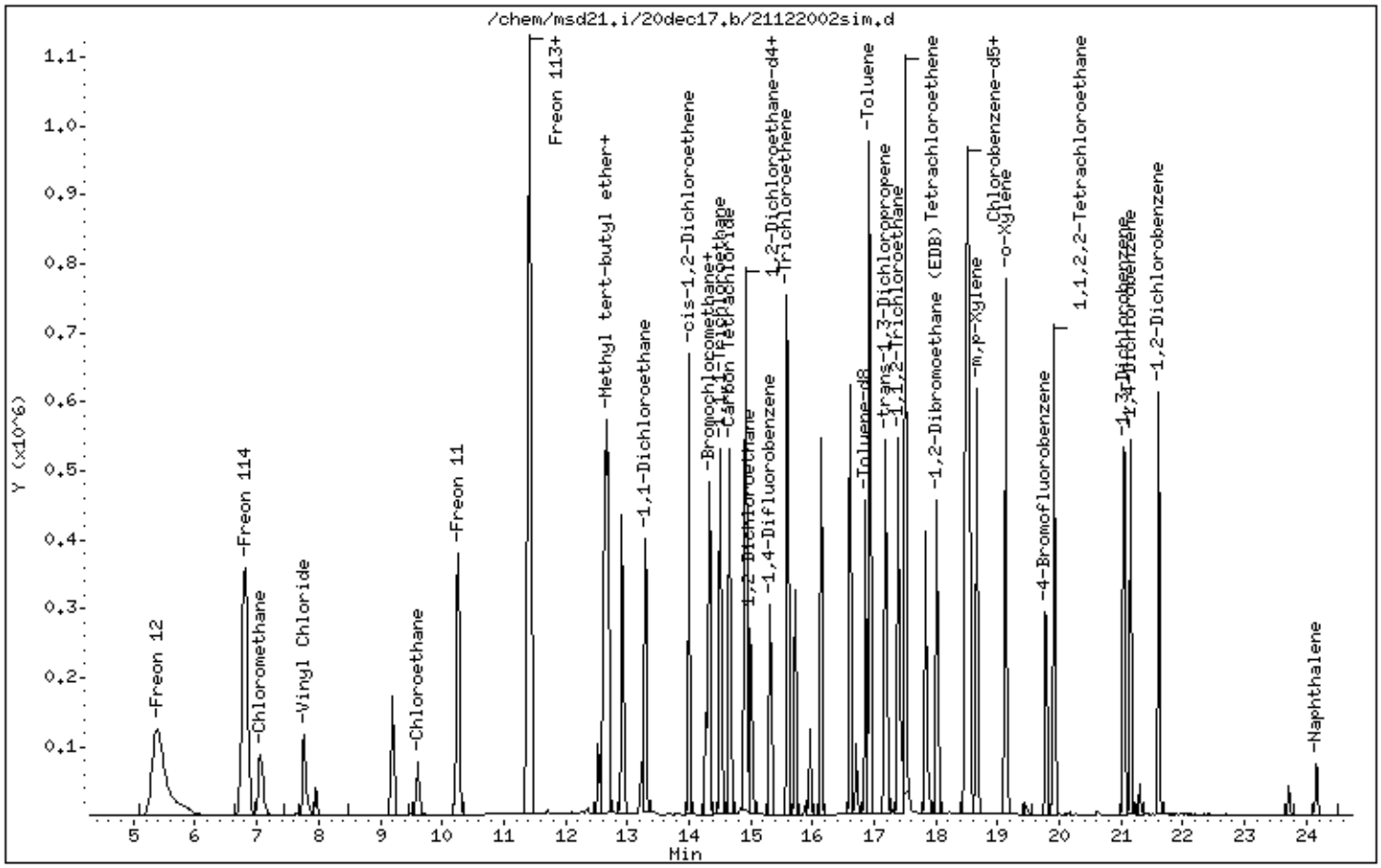
Instrument: msd21.i

Sample Info: 50mL# 2991-164

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	LCS		
Lab ID:	1712342-22A	**Date/Time Analyzed:**	12/19/17 09:32 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21121903sim

Compound	CAS#	%Recovery
Benzene	71-43-2	84
Ethyl Benzene	100-41-4	94
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	83
o-Xylene	95-47-6	95
Toluene	108-88-3	86
Total Xylenes	9999-9999-015	94

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	99

* % Recovery is calculated using unrounded analytical results.

Report Date: 20-Dec-2017 12:09

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.682	96.82	70-130
	2 Freon 114	10.000	9.574	95.74	70-130
	3 Chloromethane	10.000	8.638	86.38	70-130
	4 Vinyl Chloride	10.000	9.415	94.15	70-130
	5 Chloroethane	10.000	10.098	100.98	70-130
	6 Freon 11	10.000	9.409	94.09	70-130
	7 Freon 113	10.000	8.840	88.40	70-130
	8 1,1-Dichloroethene	10.000	8.934	89.34	70-130
	9 Methyl tert-butyl	10.000	9.328	93.28	70-130
	10 trans-1,2-Dichloro	10.000	7.842	78.42	70-130
	11 1,1-Dichloroethane	10.000	9.311	93.11	70-130
	12 cis-1,2-Dichloroet	10.000	9.949	99.49	70-130
	14 Chloroform	10.000	9.014	90.14	70-130
	15 1,1,1-Trichloroeth	10.000	9.005	90.05	70-130
	16 Carbon Tetrachlori	10.000	10.185	101.85	60-140
	17 Benzene	10.000	8.363	83.63	70-130
	19 1,2-Dichloroethane	10.000	9.068	90.68	70-130
	21 Trichloroethene	10.000	8.980	89.80	70-130
	23 Toluene	10.000	8.642	86.42	70-130
	24 trans-1,3-Dichloro	10.000	10.819	108.19	70-130
	25 1,1,2-Trichloroeth	10.000	10.031	100.31	70-130
	26 Tetrachloroethene	10.000	8.969	89.69	70-130
	27 1,2-Dibromoethane	10.000	10.191	101.91	70-130
	29 Chlorobenzene	10.000	8.950	89.50	70-130
	30 Ethyl Benzene	10.000	9.411	94.11	70-130
	31 m,p-Xylene	10.000	9.245	92.45	70-130
	32 o-Xylene	10.000	9.519	95.19	70-130
	34 1,1,2,2-Tetrachlor	10.000	10.545	105.45	70-130
	35 1,3-Dichlorobenzen	10.000	8.128	81.28	70-130
	36 1,4-Dichlorobenzen	10.000	7.498	74.98	70-130
	37 1,2-Dichlorobenzen	10.000	8.100	81.00	70-130
	38 Naphthalene	1.000	0.8281	82.81	60-140
M	39 Total Xylene	20.000	18.764	93.82	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.753	95.07	70-130
$ 22 Toluene-d8	5.000	4.935	98.70	70-130
$ 33 4-Bromofluorobenze	5.000	5.168	103.35	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121903sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 19-DEC-2017 09:32
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 3018-16
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:09 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	113276	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	87899			47.49- 107.49	77.60
14.273	14.279 (1.000)	49	165770			114.87- 174.87	146.34
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	537987	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	90118			0.00- 46.92	16.75
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	419197	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	231695			25.29- 85.29	55.27
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	139852	4.75349	4.753	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	80699			30.16- 90.16	57.70
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	466021	4.93488	4.935	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	56667			0.00- 42.34	12.16

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	317911			38.15- 98.15	68.22
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	187227	5.16764	5.168	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	223226			88.82- 148.82	119.23
19.787	19.787 (1.072)	176	183513			68.26- 128.26	98.02
1 Freon 12					CAS #: 75-71-8		
5.388	5.417 (0.377)	85	1445547	9.68188	9.682	80.00- 120.00	100.00
5.388	5.417 (0.377)	87	468317			2.41- 62.41	32.40
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	743918	9.57396	9.574	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	241498			2.42- 62.42	32.46
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	359834	8.63837	8.638	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	116023			2.20- 62.20	32.24
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	385709	9.41519	9.415	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	123499			1.85- 61.85	32.02
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	197488	10.0981	10.098	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	63350			1.99- 61.99	32.08
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	753615	9.40877	9.409	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	496339			35.88- 95.88	65.86
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	630457	8.83963	8.840	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	407220			34.82- 94.82	64.59
11.416	11.416 (0.798)	101	685939			79.00- 139.00	108.80
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	226075	8.93437	8.934	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	531372			204.09- 264.09	235.04
11.416	11.411 (0.798)	96	355779			127.27- 187.27	157.37
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	1020036	9.32754	9.328	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	239132			0.00- 54.15	23.44
12.627	12.627 (0.883)	41	244977			0.00- 54.07	24.02

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	218851	7.84197	7.842	80.00- 120.00	100.00
12.668	12.668 (0.886)	61	477405			186.82- 246.82	218.14
12.689	12.689 (0.888)	96	340355			125.17- 185.17	155.52
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	708399	9.31140	9.311	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	230988			2.55- 62.55	32.61
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	299681	9.94865	9.949	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	579164			162.14- 222.14	193.26
14.001	14.001 (0.979)	96	463792			124.57- 184.57	154.76
14 Chloroform					CAS #: 67-66-3		
14.321	14.322 (1.002)	83	713883	9.01400	9.014	80.00- 120.00	100.00
14.321	14.322 (1.002)	85	472435			36.48- 96.48	66.18
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.513 (1.015)	97	638013	9.00484	9.005	80.00- 120.00	100.00
14.513	14.513 (1.015)	99	417708			35.76- 95.76	65.47
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.657	14.657 (1.025)	119	602540	10.1853	10.185	80.00- 120.00	100.00
14.657	14.657 (1.025)	117	615640			72.17- 132.17	102.17
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	1258754	8.36310	8.363	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	288311			0.00- 52.85	22.90
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	443807	9.06802	9.068	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	146659			3.19- 63.19	33.05
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	532364	8.97994	8.980	80.00- 120.00	100.00
15.580	15.581 (1.018)	95	505534			64.81- 124.81	94.96
15.580	15.581 (1.018)	97	330617			32.10- 92.10	62.10
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	1271362	8.64199	8.642	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	805344			33.44- 93.44	63.34
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	687085	10.8189	10.819	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	233931			4.13- 64.13	34.05

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	281475			10.65- 70.65	40.97
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	465265	10.0308	10.031	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	289699			32.22- 92.22	62.27
17.393	17.393 (0.942)	83	446701			66.62- 126.62	96.01
26 Tetrachloroethene					CAS #: 127-18-4		
17.495	17.496 (0.947)	166	694547	8.96942	8.969	80.00- 120.00	100.00
17.495	17.496 (0.947)	129	493004			39.65- 99.65	70.98
17.495	17.496 (0.947)	131	471150			37.15- 97.15	67.84
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	679867	10.1909	10.191	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	640947			64.51- 124.51	94.28
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	998895	8.95028	8.950	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	331261			3.25- 63.25	33.16
18.486	18.481 (1.001)	77	726506			42.62- 102.62	72.73
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	438234	9.41124	9.411	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1270523			259.51- 319.51	289.92
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	420462	9.24466	9.245	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	798795			159.47- 219.47	189.98
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	393612	9.51934	9.519	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	782844			168.52- 228.52	198.89
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	812184	10.5455	10.545	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	532450			35.89- 95.89	65.56
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.036	21.051 (1.139)	146	563513	8.12842	8.128	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	368671			35.46- 95.46	65.42
21.036	21.036 (1.139)	111	227988			10.46- 70.46	40.46
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	526017	7.49778	7.498	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	343446			35.29- 95.29	65.29

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	205753			9.14- 69.14	39.12
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.612 (1.170)	146	558031	8.10040	8.100	80.00- 120.00	100.00
21.612	21.612 (1.170)	148	363759			35.27- 95.27	65.19
21.612	21.612 (1.170)	111	233703			11.99- 71.99	41.88
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	179891	0.82808	0.8281	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	23888			0.00- 43.35	13.28
M 39 Total Xylene					CAS #: 1330-20-7		
			814074	18.7640	18.764		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121903sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	113276	-5.56
20 1,4-Difluorobenze	564150	338490	789810	537987	-4.64
28 Chlorobenzene-d5	433051	259831	606271	419197	-3.20

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/19dec17.b/21121903sim.d

Date : 19-DEC-2017 09:32

Client ID: LCS

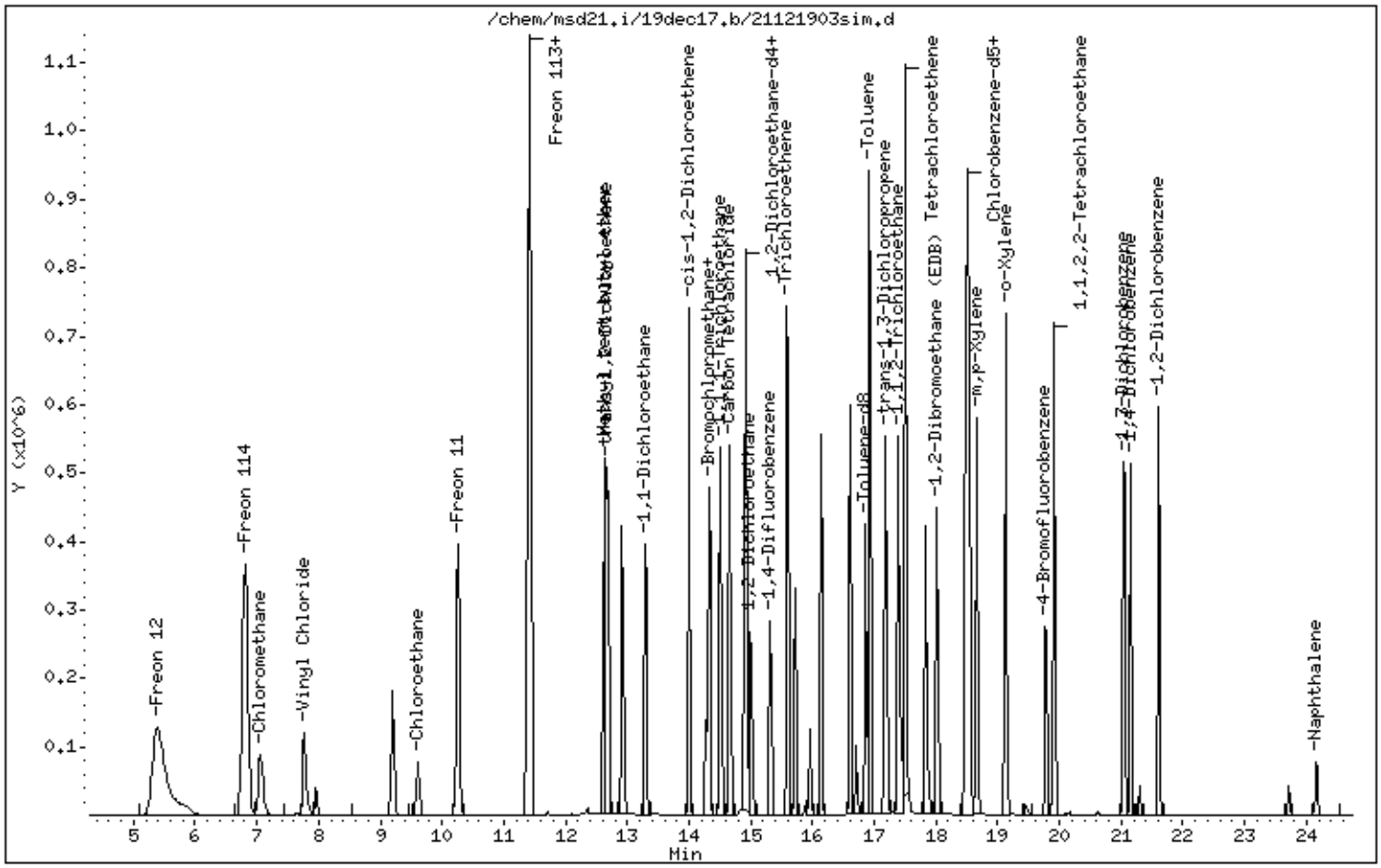
Instrument: msd21.i

Sample Info: 50mL# 3018-16

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	LCSD		
Lab ID:	1712342-22AA	**Date/Time Analyzed:**	12/19/17 10:01 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21121904sim

Compound	CAS#	%Recovery
Benzene	71-43-2	82
Ethyl Benzene	100-41-4	95
m,p-Xylene	108-38-3	96
Naphthalene	91-20-3	81
o-Xylene	95-47-6	98
Toluene	108-88-3	86
Total Xylenes	9999-9999-015	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

Report Date: 20-Dec-2017 12:09

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.476	94.76	70-130
	2 Freon 114	10.000	9.412	94.12	70-130
	3 Chloromethane	10.000	8.539	85.39	70-130
	4 Vinyl Chloride	10.000	9.239	92.39	70-130
	5 Chloroethane	10.000	9.858	98.58	70-130
	6 Freon 11	10.000	9.203	92.03	70-130
	7 Freon 113	10.000	8.632	86.32	70-130
	8 1,1-Dichloroethene	10.000	8.716	87.16	70-130
	9 Methyl tert-butyl	10.000	9.160	91.61	70-130
	10 trans-1,2-Dichloro	10.000	7.644	76.44	70-130
	11 1,1-Dichloroethane	10.000	9.133	91.33	70-130
	12 cis-1,2-Dichloroet	10.000	9.721	97.21	70-130
	14 Chloroform	10.000	8.825	88.25	70-130
	15 1,1,1-Trichloroeth	10.000	8.852	88.52	70-130
	16 Carbon Tetrachlori	10.000	10.012	100.12	60-140
	17 Benzene	10.000	8.196	81.96	70-130
	19 1,2-Dichloroethane	10.000	8.822	88.22	70-130
	21 Trichloroethene	10.000	8.711	87.11	70-130
	23 Toluene	10.000	8.595	85.95	70-130
	24 trans-1,3-Dichloro	10.000	10.648	106.48	70-130
	25 1,1,2-Trichloroeth	10.000	9.552	95.52	70-130
	26 Tetrachloroethene	10.000	8.738	87.38	70-130
	27 1,2-Dibromoethane	10.000	9.867	98.67	70-130
	29 Chlorobenzene	10.000	8.795	87.95	70-130
	30 Ethyl Benzene	10.000	9.472	94.72	70-130
	31 m,p-Xylene	10.000	9.584	95.84	70-130
	32 o-Xylene	10.000	9.836	98.37	70-130
	34 1,1,2,2-Tetrachlor	10.000	10.174	101.74	70-130
	35 1,3-Dichlorobenzen	10.000	8.491	84.91	70-130
	36 1,4-Dichlorobenzen	10.000	7.869	78.69	70-130
	37 1,2-Dichlorobenzen	10.000	8.431	84.31	70-130
	38 Naphthalene	1.000	0.8120	81.20	60-140
M	39 Total Xylene	20.000	19.421	97.10	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 19dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.738	94.77	70-130
$ 22 Toluene-d8	5.000	4.994	99.88	70-130
$ 33 4-Bromofluorobenze	5.000	5.327	106.54	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/19dec17.b/21121904sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 19-DEC-2017 10:01
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 3018-16
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:09 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.297	14.298 (1.000)	130	111895	5.00000		80.00- 120.00	100.00
14.297	14.298 (1.000)	128	86750			47.49- 107.49	77.53
14.273	14.279 (1.000)	49	162372			114.87- 174.87	145.11
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.312	15.312 (1.000)	114	535177	5.00000		80.00- 120.00	100.00
15.312	15.312 (1.000)	88	90410			0.00- 46.92	16.89
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	423140	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	235078			25.29- 85.29	55.56
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.921	14.921 (1.044)	65	137710	4.73846	4.738	80.00- 120.00	100.00
14.921	14.921 (1.044)	67	79340			30.16- 90.16	57.61
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.859	16.860 (1.101)	98	469117	4.99375	4.994	80.00- 120.00	100.00
16.859	16.860 (1.101)	70	57689			0.00- 42.34	12.30

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.859	16.860 (1.101)	100	318501			38.15- 98.15	67.89
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.786	19.787 (1.072)	174	194807	5.32676	5.327	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	235003			88.82- 148.82	120.63
19.786	19.787 (1.072)	176	190961			68.26- 128.26	98.03
1 Freon 12					CAS #: 75-71-8		
5.388	5.417 (0.377)	85	1397594	9.47624	9.476	80.00- 120.00	100.00
5.388	5.417 (0.377)	87	452318			2.41- 62.41	32.36
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	722445	9.41236	9.412	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	234598			2.42- 62.42	32.47
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	351366	8.53919	8.539	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	113246			2.20- 62.20	32.23
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	373896	9.23948	9.239	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	119529			1.85- 61.85	31.97
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	190448	9.85833	9.858	80.00- 120.00	100.00
9.616	9.608 (0.673)	66	61227			1.99- 61.99	32.15
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	728126	9.20274	9.203	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	479149			35.88- 95.88	65.81
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	608127	8.63177	8.632	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	393096			34.82- 94.82	64.64
11.416	11.416 (0.798)	101	662644			79.00- 139.00	108.96
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	217863	8.71610	8.716	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	514448			204.09- 264.09	236.13
11.416	11.411 (0.798)	96	342658			127.27- 187.27	157.28
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	989560	9.16054	9.160	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	231682			0.00- 54.15	23.41
12.627	12.627 (0.883)	41	237473			0.00- 54.07	24.00

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	210735	7.64435	7.644	80.00- 120.00	100.00
12.668	12.668 (0.886)	61	462678			186.82- 246.82	219.55
12.689	12.689 (0.888)	96	327795			125.17- 185.17	155.55
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	686336	9.13273	9.133	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	223839			2.55- 62.55	32.61
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.000	14.001 (0.979)	98	289267	9.72145	9.721	80.00- 120.00	100.00
14.000	14.001 (0.979)	61	559960			162.14- 222.14	193.58
14.000	14.001 (0.979)	96	447108			124.57- 184.57	154.57
14 Chloroform					CAS #: 67-66-3		
14.321	14.322 (1.002)	83	690420	8.82533	8.825	80.00- 120.00	100.00
14.321	14.322 (1.002)	85	456279			36.48- 96.48	66.09
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.513	14.513 (1.015)	97	619517	8.85170	8.852	80.00- 120.00	100.00
14.513	14.513 (1.015)	99	405093			35.76- 95.76	65.39
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.657	14.657 (1.025)	119	585094	10.0125	10.012	80.00- 120.00	100.00
14.657	14.657 (1.025)	117	598347			72.17- 132.17	102.27
17 Benzene					CAS #: 71-43-2		
14.921	14.921 (0.974)	78	1227129	8.19580	8.196	80.00- 120.00	100.00
14.921	14.921 (0.974)	77	280615			0.00- 52.85	22.87
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	429488	8.82153	8.822	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	142129			3.19- 63.19	33.09
21 Trichloroethene					CAS #: 79-01-6		
15.601	15.594 (1.019)	130	513732	8.71115	8.711	80.00- 120.00	100.00
15.580	15.581 (1.018)	95	490445			64.81- 124.81	95.47
15.580	15.581 (1.018)	97	319946			32.10- 92.10	62.28
23 Toluene					CAS #: 108-88-3		
16.921	16.921 (1.105)	91	1257787	8.59461	8.595	80.00- 120.00	100.00
16.921	16.921 (1.105)	92	797895			33.44- 93.44	63.44
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	682583	10.6478	10.648	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	230185			4.13- 64.13	33.72

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	282056			10.65- 70.65	41.32
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	447228	9.55207	9.552	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	279274			32.22- 92.22	62.45
17.393	17.393 (0.942)	83	428174			66.62- 126.62	95.74
26 Tetrachloroethene					CAS #: 127-18-4		
17.495	17.496 (0.947)	166	682986	8.73793	8.738	80.00- 120.00	100.00
17.495	17.496 (0.947)	129	482680			39.65- 99.65	70.67
17.495	17.496 (0.947)	131	462176			37.15- 97.15	67.67
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	664448	9.86696	9.867	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	627508			64.51- 124.51	94.44
29 Chlorobenzene					CAS #: 108-90-7		
18.506	18.507 (1.002)	112	990812	8.79513	8.795	80.00- 120.00	100.00
18.506	18.507 (1.002)	114	328067			3.25- 63.25	33.11
18.486	18.481 (1.001)	77	728123			42.62- 102.62	73.49
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	445231	9.47240	9.472	80.00- 120.00	100.00
18.548	18.540 (1.004)	91	1292402			259.51- 319.51	290.28
31 m,p-Xylene					CAS #: 108-38-3		
18.671	18.672 (1.011)	106	440010	9.58430	9.584	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	836045			159.47- 219.47	190.01
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	410556	9.83660	9.836	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	817852			168.52- 228.52	199.21
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.919	19.919 (1.079)	83	790936	10.1739	10.174	80.00- 120.00	100.00
19.919	19.919 (1.079)	85	518911			35.89- 95.89	65.61
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.051	21.051 (1.140)	146	594211	8.49135	8.491	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	389626			35.46- 95.46	65.57
21.035	21.036 (1.139)	111	240163			10.46- 70.46	40.42
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	557243	7.86886	7.869	80.00- 120.00	100.00
21.160	21.160 (1.146)	148	363583			35.29- 95.29	65.25

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	218282			9.14- 69.14	39.17
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.612	21.612 (1.170)	146	586290	8.43131	8.431	80.00- 120.00	100.00
21.612	21.612 (1.170)	148	382585			35.27- 95.27	65.26
21.612	21.612 (1.170)	111	246559			11.99- 71.99	42.05
38 Naphthalene					CAS #: 91-20-3		
24.153	24.154 (1.308)	128	178048	0.81196	0.8120	80.00- 120.00	100.00
24.153	24.154 (1.308)	127	23590			0.00- 43.35	13.25
M 39 Total Xylene					CAS #: 1330-20-7		
			850566	19.4209	19.421		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21121904sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/19dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 19-DEC-2017
Calibration Time: 09:02
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	119943	71966	167920	111895	-6.71
20 1,4-Difluorobenze	564150	338490	789810	535177	-5.14
28 Chlorobenzene-d5	433051	259831	606271	423140	-2.29

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/19dec17.b/21121904sim.d

Date : 19-DEC-2017 10:01

Client ID: LCSD

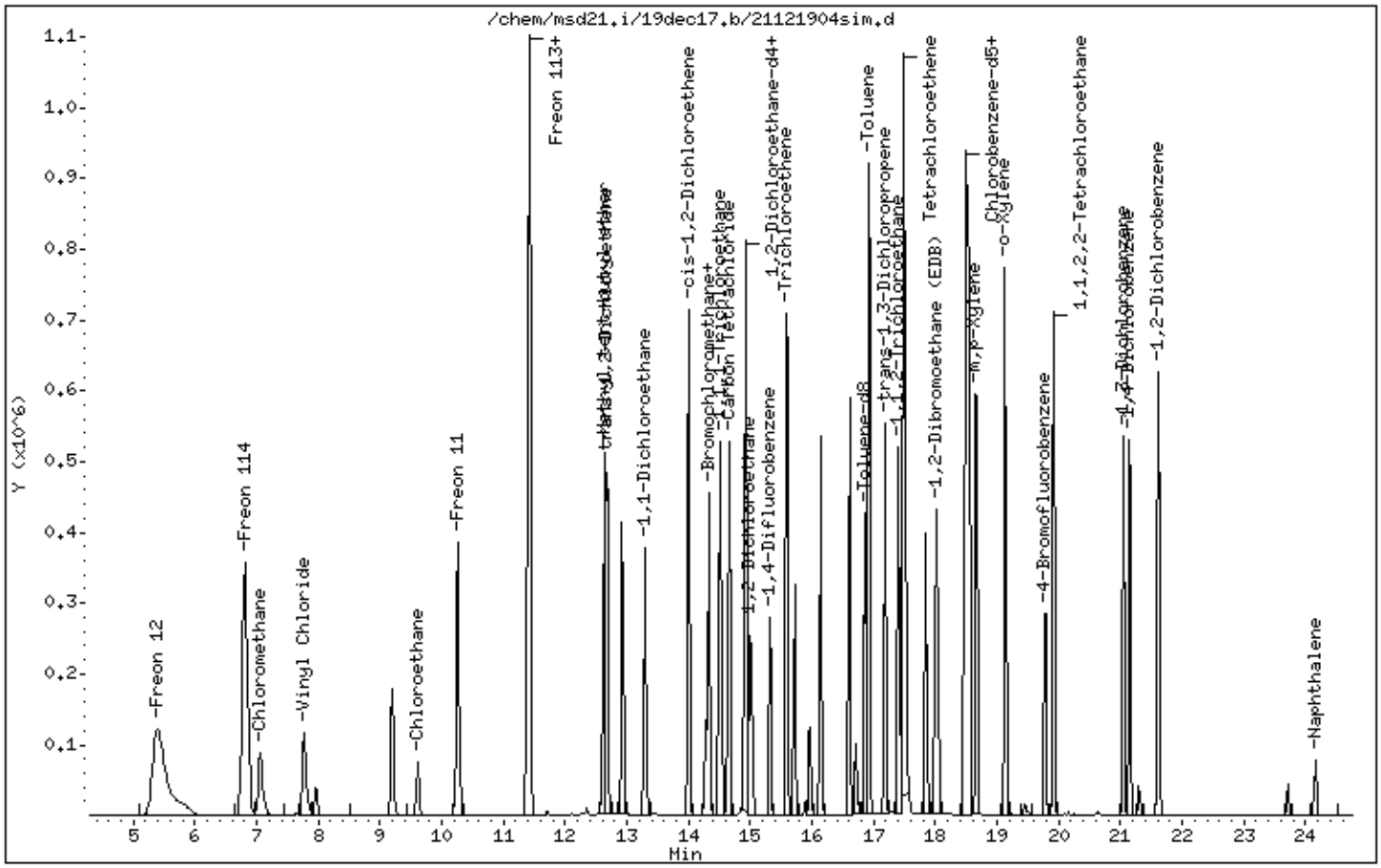
Instrument: msd21.i

Sample Info: 50mL# 3018-16

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	LCS		
Lab ID:	1712342-22B	**Date/Time Analyzed:**	12/20/17 09:08 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21122003sim

Compound	CAS#	%Recovery
Benzene	71-43-2	80
Ethyl Benzene	100-41-4	93
m,p-Xylene	108-38-3	92
Naphthalene	91-20-3	78
o-Xylene	95-47-6	96
Toluene	108-88-3	85
Total Xylenes	9999-9999-015	94

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	100

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.347	93.47	70-130
	2 Freon 114	10.000	9.304	93.04	70-130
	3 Chloromethane	10.000	8.419	84.19	70-130
	4 Vinyl Chloride	10.000	9.141	91.41	70-130
	5 Chloroethane	10.000	9.837	98.37	70-130
	6 Freon 11	10.000	9.114	91.14	70-130
	7 Freon 113	10.000	8.523	85.23	70-130
	8 1,1-Dichloroethene	10.000	8.647	86.47	70-130
	9 Methyl tert-butyl	10.000	9.017	90.17	70-130
	10 trans-1,2-Dichloro	10.000	7.561	75.61	70-130
	11 1,1-Dichloroethane	10.000	9.020	90.20	70-130
	12 cis-1,2-Dichloroet	10.000	9.647	96.47	70-130
	14 Chloroform	10.000	8.713	87.13	70-130
	15 1,1,1-Trichloroeth	10.000	8.703	87.03	70-130
	16 Carbon Tetrachlori	10.000	9.779	97.79	60-140
	17 Benzene	10.000	8.042	80.42	70-130
	19 1,2-Dichloroethane	10.000	8.668	86.68	70-130
	21 Trichloroethene	10.000	8.544	85.44	70-130
	23 Toluene	10.000	8.478	84.78	70-130
	24 trans-1,3-Dichloro	10.000	10.340	103.40	70-130
	25 1,1,2-Trichloroeth	10.000	9.415	94.15	70-130
	26 Tetrachloroethene	10.000	8.559	85.59	70-130
	27 1,2-Dibromoethane	10.000	9.639	96.39	70-130
	29 Chlorobenzene	10.000	8.730	87.30	70-130
	30 Ethyl Benzene	10.000	9.287	92.87	70-130
	31 m,p-Xylene	10.000	9.255	92.55	70-130
	32 o-Xylene	10.000	9.624	96.25	70-130
	34 1,1,2,2-Tetrachlor	10.000	10.070	100.70	70-130
	35 1,3-Dichlorobenzen	10.000	8.222	82.22	70-130
	36 1,4-Dichlorobenzen	10.000	7.629	76.29	70-130
	37 1,2-Dichlorobenzen	10.000	8.164	81.64	70-130
	38 Naphthalene	1.000	0.7846	78.46	60-140
M	39 Total Xylene	20.000	18.880	94.40	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCS Client Smp ID: LCS
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCS
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.769	95.39	70-130
$ 22 Toluene-d8	5.000	4.988	99.76	70-130
$ 33 4-Bromofluorobenze	5.000	5.220	104.39	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122003sim.d
Lab Smp Id: LCS Client Smp ID: LCS
Inj Date : 20-DEC-2017 09:08
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 3018-16
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	112523	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	87290			47.49- 107.49	77.58
14.274	14.274 (1.000)	49	163981			114.87- 174.87	145.73
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	540682	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	90879			0.00- 46.92	16.81
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.465	18.465 (1.000)	117	425296	5.00000		80.00- 120.00	100.00
18.465	18.465 (1.000)	82	236603			25.29- 85.29	55.63
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	139383	4.76925	4.769	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	80309			30.16- 90.16	57.62
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	473376	4.98778	4.988	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	58133			0.00- 42.34	12.28

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	321751			38.15- 98.15	67.97
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	191859	5.21955	5.220	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	230394			88.82- 148.82	120.09
19.787	19.787 (1.072)	176	188331			68.26- 128.26	98.16
1 Freon 12					CAS #: 75-71-8		
5.388	5.417 (0.377)	85	1386339	9.34746	9.347	80.00- 120.00	100.00
5.388	5.417 (0.377)	87	448717			2.41- 62.41	32.37
2 Freon 114					CAS #: 76-14-2		
6.812	6.820 (0.476)	135	718105	9.30360	9.304	80.00- 120.00	100.00
6.812	6.825 (0.476)	137	233121			2.42- 62.42	32.46
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	348357	8.41881	8.419	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	112326			2.20- 62.20	32.24
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	371986	9.14097	9.141	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	119020			1.85- 61.85	32.00
5 Chloroethane					CAS #: 75-00-3		
9.597	9.605 (0.671)	64	191098	9.83677	9.837	80.00- 120.00	100.00
9.597	9.605 (0.671)	66	61407			1.99- 61.99	32.13
6 Freon 11					CAS #: 75-69-4		
10.260	10.260 (0.718)	101	725143	9.11388	9.114	80.00- 120.00	100.00
10.260	10.260 (0.718)	103	477401			35.88- 95.88	65.84
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	603813	8.52271	8.523	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	390339			34.82- 94.82	64.65
11.416	11.416 (0.798)	101	658661			79.00- 139.00	109.08
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	217339	8.64660	8.647	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	510901			204.09- 264.09	235.07
11.416	11.411 (0.798)	96	341389			127.27- 187.27	157.08
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.627	12.632 (0.883)	73	979555	9.01731	9.017	80.00- 120.00	100.00
12.627	12.627 (0.883)	57	229677			0.00- 54.15	23.45
12.627	12.627 (0.883)	41	237082			0.00- 54.07	24.20

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	209620	7.56147	7.561	80.00- 120.00	100.00
12.669	12.668 (0.886)	61	461673			186.82- 246.82	220.24
12.689	12.689 (0.888)	96	326171			125.17- 185.17	155.60
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.287	13.287 (0.929)	63	681694	9.02034	9.020	80.00- 120.00	100.00
13.287	13.290 (0.929)	65	222407			2.55- 62.55	32.63
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	288659	9.64688	9.647	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	556944			162.14- 222.14	192.94
14.001	14.001 (0.979)	96	446500			124.57- 184.57	154.68
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	685468	8.71313	8.713	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	452279			36.48- 96.48	65.98
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.513 (1.015)	97	612563	8.70350	8.703	80.00- 120.00	100.00
14.514	14.513 (1.015)	99	400346			35.76- 95.76	65.36
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.658	14.657 (1.025)	119	574667	9.77917	9.779	80.00- 120.00	100.00
14.658	14.657 (1.025)	117	586917			72.17- 132.17	102.13
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	1216523	8.04223	8.042	80.00- 120.00	100.00
14.922	14.921 (0.974)	77	278614			0.00- 52.85	22.90
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.993	14.993 (0.979)	62	426340	8.66771	8.668	80.00- 120.00	100.00
14.993	14.993 (0.979)	64	140842			3.19- 63.19	33.04
21 Trichloroethene					CAS #: 79-01-6		
15.581	15.594 (1.018)	130	509084	8.54445	8.544	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	485332			64.81- 124.81	95.33
15.581	15.581 (1.018)	97	316501			32.10- 92.10	62.17
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	1253483	8.47799	8.478	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	793891			33.44- 93.44	63.33
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	666213	10.3398	10.340	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	226469			4.13- 64.13	33.99

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	273569			10.65- 70.65	41.06
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.393	17.393 (0.942)	97	443073	9.41535	9.415	80.00- 120.00	100.00
17.393	17.397 (0.942)	99	275860			32.22- 92.22	62.26
17.393	17.393 (0.942)	83	426282			66.62- 126.62	96.21
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	672425	8.55921	8.559	80.00- 120.00	100.00
17.496	17.496 (0.947)	129	477164			39.65- 99.65	70.96
17.496	17.496 (0.947)	131	456371			37.15- 97.15	67.87
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	652425	9.63931	9.639	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	614996			64.51- 124.51	94.26
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	988464	8.72980	8.730	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	327704			3.25- 63.25	33.15
18.486	18.481 (1.001)	77	718491			42.62- 102.62	72.69
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	438762	9.28745	9.287	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1271896			259.51- 319.51	289.88
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	427061	9.25509	9.255	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	809785			159.47- 219.47	189.62
32 o-Xylene					CAS #: 95-47-6		
19.125	19.125 (1.036)	106	403751	9.62451	9.624	80.00- 120.00	100.00
19.125	19.125 (1.036)	91	801970			168.52- 228.52	198.63
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	786852	10.0701	10.070	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	516418			35.89- 95.89	65.63
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.036	21.051 (1.139)	146	578271	8.22168	8.222	80.00- 120.00	100.00
21.051	21.051 (1.140)	148	378879			35.46- 95.46	65.52
21.036	21.036 (1.139)	111	235083			10.46- 70.46	40.65
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	543013	7.62904	7.629	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	355307			35.29- 95.29	65.43

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	213478			9.14- 69.14	39.31
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.613	21.612 (1.170)	146	570621	8.16438	8.164	80.00- 120.00	100.00
21.613	21.612 (1.170)	148	372581			35.27- 95.27	65.29
21.613	21.612 (1.170)	111	239681			11.99- 71.99	42.00
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	172930	0.78462	0.7846	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	22939			0.00- 43.35	13.26
M 39 Total Xylene					CAS #: 1330-20-7		
			830812	18.8796	18.880		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122003sim.d
Lab Smp Id: LCS
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Client Smp ID: LCS
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	112523	-4.80
20 1,4-Difluorobenze	566094	339656	792532	540682	-4.49
28 Chlorobenzene-d5	446145	267687	624603	425296	-4.67

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/20dec17.b/21122003sim.d

Date : 20-DEC-2017 09:08

Client ID: LCS

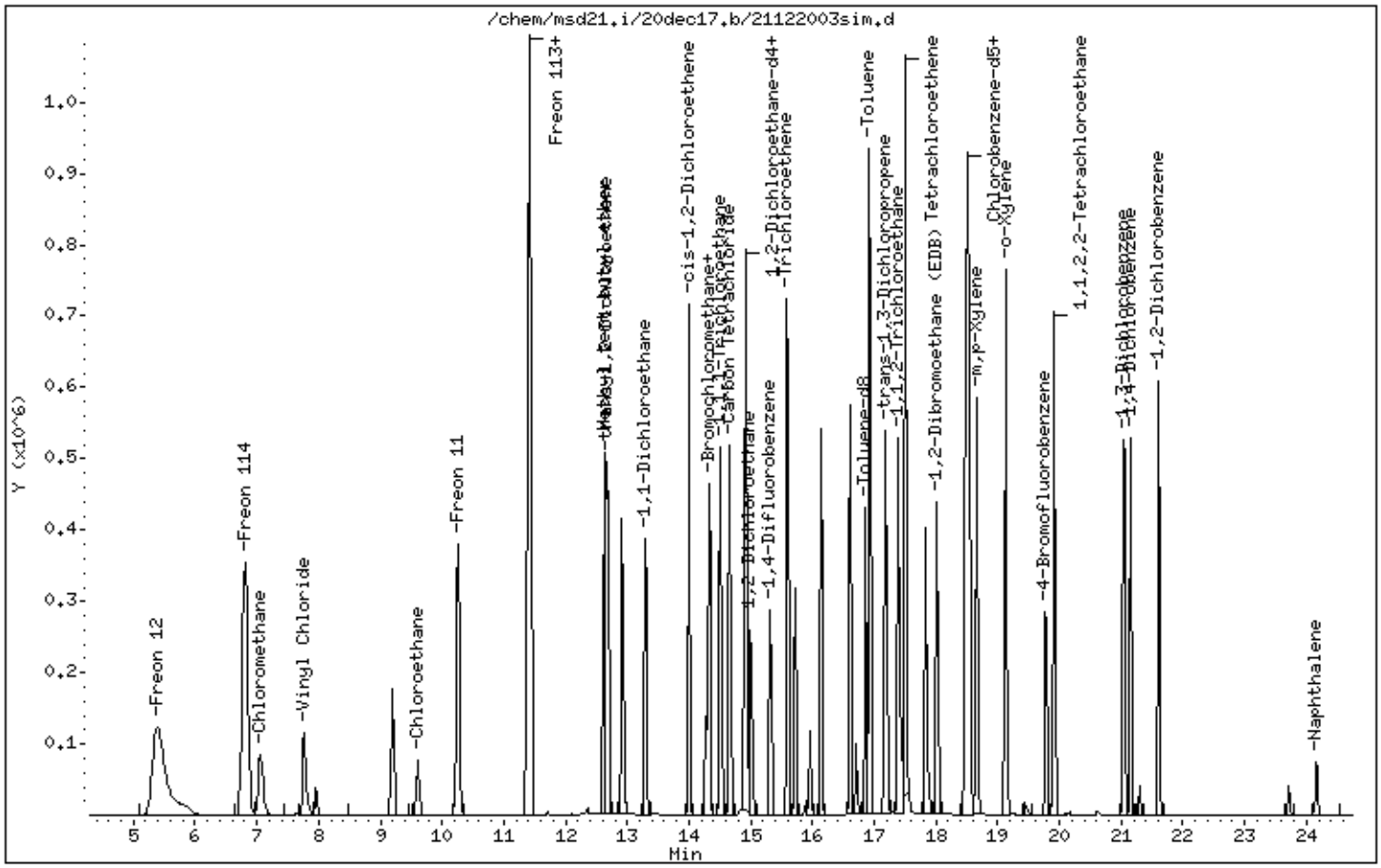
Instrument: msd21.i

Sample Info: 50mL# 3018-16

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



MODIFIED EPA METHOD TO-15 GC/MS SIM
Outdoor Event #1 2017

Client ID:	LCSD		
Lab ID:	1712342-22BB	**Date/Time Analyzed:**	12/20/17 09:37 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd21.i / 21122004sim

Compound	CAS#	%Recovery
Benzene	71-43-2	80
Ethyl Benzene	100-41-4	89
m,p-Xylene	108-38-3	90
Naphthalene	91-20-3	82
o-Xylene	95-47-6	93
Toluene	108-88-3	83
Total Xylenes	9999-9999-015	92

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	96
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	99

* % Recovery is calculated using unrounded analytical results.

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

	SPIKE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
	1 Freon 12	10.000	9.243	92.43	70-130
	2 Freon 114	10.000	9.223	92.23	70-130
	3 Chloromethane	10.000	8.161	81.61	70-130
	4 Vinyl Chloride	10.000	9.096	90.96	70-130
	5 Chloroethane	10.000	9.797	97.97	70-130
	6 Freon 11	10.000	9.005	90.05	70-130
	7 Freon 113	10.000	8.424	84.24	70-130
	8 1,1-Dichloroethene	10.000	8.501	85.01	70-130
	9 Methyl tert-butyl	10.000	8.979	89.79	70-130
	10 trans-1,2-Dichloro	10.000	7.490	74.90	70-130
	11 1,1-Dichloroethane	10.000	8.934	89.34	70-130
	12 cis-1,2-Dichloroet	10.000	9.513	95.13	70-130
	14 Chloroform	10.000	8.650	86.50	70-130
	15 1,1,1-Trichloroeth	10.000	8.658	86.58	70-130
	16 Carbon Tetrachlori	10.000	9.741	97.41	60-140
	17 Benzene	10.000	8.009	80.09	70-130
	19 1,2-Dichloroethane	10.000	8.550	85.50	70-130
	21 Trichloroethene	10.000	8.433	84.33	70-130
	23 Toluene	10.000	8.336	83.36	70-130
	24 trans-1,3-Dichloro	10.000	10.273	102.73	70-130
	25 1,1,2-Trichloroeth	10.000	9.346	93.46	70-130
	26 Tetrachloroethene	10.000	8.600	86.00	70-130
	27 1,2-Dibromoethane	10.000	9.754	97.54	70-130
	29 Chlorobenzene	10.000	8.637	86.37	70-130
	30 Ethyl Benzene	10.000	8.941	89.41	70-130
	31 m,p-Xylene	10.000	8.950	89.50	70-130
	32 o-Xylene	10.000	9.334	93.34	70-130
	34 1,1,2,2-Tetrachlor	10.000	10.022	100.22	70-130
	35 1,3-Dichlorobenzen	10.000	8.179	81.79	70-130
	36 1,4-Dichlorobenzen	10.000	7.635	76.35	70-130
	37 1,2-Dichlorobenzen	10.000	8.168	81.68	70-130
	38 Naphthalene	1.000	0.8219	82.19	60-140
M	39 Total Xylene	20.000	18.284	91.42	70-130

Eurofins Air Toxics Inc.

RECOVERY REPORT

Client Name: Client SDG: 20dec17
Sample Matrix: GAS Fraction: VOA
Lab Smp Id: LCSD Client Smp ID: LCSD
Level: LOW Operator: ef
Data Type: MS DATA SampleType: LCSD
SpikeList File: AT12.spk Quant Type: ISTD
Sublist File: AT12.sub
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

SURROGATE COMPOUND	CONC ADDED PPBV	CONC RECOVERED PPBV	% RECOVERED	LIMITS
$ 18 1,2-Dichloroethane	5.000	4.779	95.58	70-130
$ 22 Toluene-d8	5.000	4.957	99.14	70-130
$ 33 4-Bromofluorobenze	5.000	5.204	104.09	70-130

Eurofins Air Toxics Inc.

EPA TO-15/MODIFIED TO14A

Data file : /chem/msd21.i/20dec17.b/21122004sim.d
Lab Smp Id: LCSD Client Smp ID: LCSD
Inj Date : 20-DEC-2017 09:37
Operator : ef Inst ID: msd21.i
Smp Info : 50mL# 3018-16
Misc Info : 10ppbv (50ppbv)
Comment : SIM - GC/MS
Method : /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Meth Date : 20-Dec-2017 12:06 efinn Quant Type: ISTD
Cal Date : 12-DEC-2017 17:02 Cal File: 21121210sim.d
Als bottle: 1 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: AT12.sub
Target Version: 3.50 Sample Matrix: AIR
Processing Host: eeyore

Concentration Formula: Amt * DF * CpndVariable

Cpnd Variable Local Compound Variable

				CONCENTRATIONS ON-COL	CONCENTRATIONS FINAL		
RT	EXP RT (REL RT)	MASS	RESPONSE	(PPBV)	(PPBV)	TARGET RANGE	RATIO
* 13 Bromochloromethane						CAS #: 74-97-5	
14.298	14.298 (1.000)	130	110643	5.00000		80.00- 120.00	100.00
14.298	14.298 (1.000)	128	85890			47.49- 107.49	77.63
14.274	14.274 (1.000)	49	162082			114.87- 174.87	146.49
* 20 1,4-Difluorobenzene						CAS #: 540-36-3	
15.313	15.312 (1.000)	114	534916	5.00000		80.00- 120.00	100.00
15.313	15.312 (1.000)	88	90410			0.00- 46.92	16.90
* 28 Chlorobenzene-d5						CAS #: 3114-55-4	
18.466	18.465 (1.000)	117	417814	5.00000		80.00- 120.00	100.00
18.466	18.465 (1.000)	82	234331			25.29- 85.29	56.09
$ 18 1,2-Dichloroethane-d4						CAS #: 17060-07-0	
14.922	14.921 (1.044)	65	137338	4.77913	4.779	80.00- 120.00	100.00
14.922	14.921 (1.044)	67	79105			30.16- 90.16	57.60
$ 22 Toluene-d8						CAS #: 2037-26-5	
16.860	16.860 (1.101)	98	465450	4.95713	4.957	80.00- 120.00	100.00
16.860	16.860 (1.101)	70	57575			0.00- 42.34	12.37

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
$ 22 Toluene-d8 (continued)							
16.860	16.860 (1.101)	100	316301			38.15- 98.15	67.96
$ 33 4-Bromofluorobenzene					CAS #: 460-00-4		
19.787	19.787 (1.072)	174	187933	5.20430	5.204	80.00- 120.00	100.00
19.768	19.768 (1.071)	95	226016			88.82- 148.82	120.26
19.787	19.787 (1.072)	176	184850			68.26- 128.26	98.36
1 Freon 12					CAS #: 75-71-8		
5.389	5.417 (0.377)	85	1347896	9.24268	9.243	80.00- 120.00	100.00
5.409	5.417 (0.378)	87	435999			2.41- 62.41	32.35
2 Freon 114					CAS #: 76-14-2		
6.813	6.820 (0.476)	135	699990	9.22300	9.223	80.00- 120.00	100.00
6.813	6.825 (0.476)	137	227264			2.42- 62.42	32.47
3 Chloromethane					CAS #: 74-87-3		
7.060	7.063 (0.494)	50	332056	8.16121	8.161	80.00- 120.00	100.00
7.060	7.066 (0.494)	52	109791			2.20- 62.20	33.06
4 Vinyl Chloride					CAS #: 75-01-4		
7.765	7.766 (0.543)	62	363969	9.09594	9.096	80.00- 120.00	100.00
7.765	7.766 (0.543)	64	116432			1.85- 61.85	31.99
5 Chloroethane					CAS #: 75-00-3		
9.598	9.605 (0.671)	64	187144	9.79692	9.797	80.00- 120.00	100.00
9.616	9.605 (0.673)	66	60042			1.99- 61.99	32.08
6 Freon 11					CAS #: 75-69-4		
10.261	10.260 (0.718)	101	704498	9.00486	9.005	80.00- 120.00	100.00
10.261	10.260 (0.718)	103	463546			35.88- 95.88	65.80
7 Freon 113					CAS #: 76-13-1		
11.416	11.416 (0.798)	151	586829	8.42372	8.424	80.00- 120.00	100.00
11.416	11.416 (0.798)	153	379046			34.82- 94.82	64.59
11.416	11.416 (0.798)	101	643188			79.00- 139.00	109.60
8 1,1-Dichloroethene					CAS #: 75-35-4		
11.416	11.416 (0.798)	98	210108	8.50096	8.501	80.00- 120.00	100.00
11.416	11.416 (0.798)	61	499206			204.09- 264.09	237.59
11.416	11.411 (0.798)	96	330950			127.27- 187.27	157.51
9 Methyl tert-butyl ether					CAS #: 1634-04-4		
12.628	12.632 (0.883)	73	959121	8.97923	8.979	80.00- 120.00	100.00
12.628	12.627 (0.883)	57	224791			0.00- 54.15	23.44
12.628	12.627 (0.883)	41	232363			0.00- 54.07	24.23

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
10 trans-1,2-Dichloroethene					CAS #: 156-60-5		
12.689	12.689 (0.888)	98	204178	7.49031	7.490	80.00- 120.00	100.00
12.669	12.668 (0.886)	61	448173			186.82- 246.82	219.50
12.689	12.689 (0.888)	96	317853			125.17- 185.17	155.67
11 1,1-Dichloroethane					CAS #: 75-34-3		
13.288	13.287 (0.929)	63	663853	8.93352	8.934	80.00- 120.00	100.00
13.288	13.290 (0.929)	65	216037			2.55- 62.55	32.54
12 cis-1,2-Dichloroethene					CAS #: 156-59-2		
14.001	14.001 (0.979)	98	279907	9.51333	9.513	80.00- 120.00	100.00
14.001	14.001 (0.979)	61	542762			162.14- 222.14	193.91
14.001	14.001 (0.979)	96	432668			124.57- 184.57	154.58
14 Chloroform					CAS #: 67-66-3		
14.322	14.322 (1.002)	83	669102	8.64961	8.650	80.00- 120.00	100.00
14.322	14.322 (1.002)	85	441416			36.48- 96.48	65.97
15 1,1,1-Trichloroethane					CAS #: 71-55-6		
14.514	14.513 (1.015)	97	599156	8.65766	8.658	80.00- 120.00	100.00
14.514	14.513 (1.015)	99	392420			35.76- 95.76	65.50
16 Carbon Tetrachloride					CAS #: 56-23-5		
14.658	14.657 (1.025)	119	562861	9.74101	9.741	80.00- 120.00	100.00
14.658	14.657 (1.025)	117	575191			72.17- 132.17	102.19
17 Benzene					CAS #: 71-43-2		
14.922	14.921 (0.974)	78	1198557	8.00887	8.009	80.00- 120.00	100.00
14.922	14.921 (0.974)	77	273785			0.00- 52.85	22.84
19 1,2-Dichloroethane					CAS #: 107-06-2		
14.994	14.993 (0.979)	62	416058	8.54985	8.550	80.00- 120.00	100.00
14.994	14.993 (0.979)	64	137553			3.19- 63.19	33.06
21 Trichloroethene					CAS #: 79-01-6		
15.581	15.594 (1.018)	130	497110	8.43341	8.433	80.00- 120.00	100.00
15.581	15.581 (1.018)	95	475922			64.81- 124.81	95.74
15.581	15.581 (1.018)	97	310097			32.10- 92.10	62.38
23 Toluene					CAS #: 108-88-3		
16.922	16.921 (1.105)	91	1219299	8.33568	8.336	80.00- 120.00	100.00
16.922	16.921 (1.105)	92	771888			33.44- 93.44	63.31
24 trans-1,3-Dichloropropene					CAS #: 10061-02-6		
17.189	17.189 (0.931)	75	650293	10.2734	10.273	80.00- 120.00	100.00
17.189	17.189 (0.931)	77	220712			4.13- 64.13	33.94

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	FINAL (PPBV)	TARGET RANGE	RATIO
24 trans-1,3-Dichloropropene (continued)							
17.189	17.189 (0.931)	39	269381			10.65- 70.65	41.42
25 1,1,2-Trichloroethane					CAS #: 79-00-5		
17.394	17.393 (0.942)	97	432081	9.34619	9.346	80.00- 120.00	100.00
17.394	17.397 (0.942)	99	268981			32.22- 92.22	62.25
17.394	17.393 (0.942)	83	419754			66.62- 126.62	97.15
26 Tetrachloroethene					CAS #: 127-18-4		
17.496	17.496 (0.947)	166	663736	8.59990	8.600	80.00- 120.00	100.00
17.496	17.496 (0.947)	129	467392			39.65- 99.65	70.42
17.496	17.496 (0.947)	131	448412			37.15- 97.15	67.56
27 1,2-Dibromoethane (EDB)					CAS #: 106-93-4		
18.007	18.007 (0.975)	107	648594	9.75431	9.754	80.00- 120.00	100.00
18.007	18.007 (0.975)	109	610257			64.51- 124.51	94.09
29 Chlorobenzene					CAS #: 108-90-7		
18.507	18.507 (1.002)	112	960746	8.63695	8.637	80.00- 120.00	100.00
18.507	18.507 (1.002)	114	318260			3.25- 63.25	33.13
18.486	18.481 (1.001)	77	694688			42.62- 102.62	72.31
30 Ethyl Benzene					CAS #: 100-41-4		
18.548	18.548 (1.004)	106	414968	8.94109	8.941	80.00- 120.00	100.00
18.527	18.540 (1.003)	91	1210125			259.51- 319.51	291.62
31 m,p-Xylene					CAS #: 108-38-3		
18.672	18.672 (1.011)	106	405708	8.94979	8.950	80.00- 120.00	100.00
18.651	18.656 (1.010)	91	770566			159.47- 219.47	189.93
32 o-Xylene					CAS #: 95-47-6		
19.126	19.125 (1.036)	106	384664	9.33373	9.334	80.00- 120.00	100.00
19.126	19.125 (1.036)	91	764412			168.52- 228.52	198.72
34 1,1,2,2-Tetrachloroethane					CAS #: 79-34-5		
19.920	19.919 (1.079)	83	769326	10.0221	10.022	80.00- 120.00	100.00
19.920	19.919 (1.079)	85	505100			35.89- 95.89	65.65
35 1,3-Dichlorobenzene					CAS #: 541-73-1		
21.052	21.051 (1.140)	146	565134	8.17878	8.179	80.00- 120.00	100.00
21.052	21.051 (1.140)	148	369578			35.46- 95.46	65.40
21.036	21.036 (1.139)	111	228449			10.46- 70.46	40.42
36 1,4-Dichlorobenzene					CAS #: 106-46-7		
21.145	21.147 (1.145)	146	533895	7.63526	7.635	80.00- 120.00	100.00
21.161	21.160 (1.146)	148	348882			35.29- 95.29	65.35

RT	EXP RT (REL RT)	MASS	RESPONSE	CONCENTRATIONS ON-COL (PPBV)	CONCENTRATIONS FINAL (PPBV)	TARGET RANGE	RATIO
36 1,4-Dichlorobenzene (continued)							
21.145	21.145 (1.145)	111	210625			9.14- 69.14	39.45
37 1,2-Dichlorobenzene					CAS #: 95-50-1		
21.613	21.612 (1.170)	146	560852	8.16830	8.168	80.00- 120.00	100.00
21.613	21.612 (1.170)	148	365394			35.27- 95.27	65.15
21.613	21.612 (1.170)	111	236214			11.99- 71.99	42.12
38 Naphthalene					CAS #: 91-20-3		
24.154	24.154 (1.308)	128	177962	0.82191	0.8219	80.00- 120.00	100.00
24.154	24.154 (1.308)	127	23597			0.00- 43.35	13.26
M 39 Total Xylene					CAS #: 1330-20-7		
			790372	18.2835	18.284		

Eurofins Air Toxics Inc.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: msd21.i
Lab File ID: 21122004sim.d
Lab Smp Id: LCSD
Analysis Type: VOA
Quant Type: ISTD
Operator: ef
Method File: /chem/msd21.i/20dec17.b/2117l1212a.m/2117s1212a.m
Misc Info: 10ppbv (50ppbv)

Calibration Date: 20-DEC-2017
Calibration Time: 08:39
Client Smp ID: LCSD
Level: LOW
Sample Type: AIR

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	118194	70916	165472	110643	-6.39
20 1,4-Difluorobenze	566094	339656	792532	534916	-5.51
28 Chlorobenzene-d5	446145	267687	624603	417814	-6.35

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	%DIFF
13 Bromochloromethan	14.30	13.97	14.63	14.30	0.00
20 1,4-Difluorobenze	15.31	14.98	15.64	15.31	0.00
28 Chlorobenzene-d5	18.47	18.14	18.80	18.47	0.00

AREA UPPER LIMIT = + 40% of internal standard area.
AREA LOWER LIMIT = - 40% of internal standard area.
RT UPPER LIMIT = + 0.33 minutes of internal standard RT.
RT LOWER LIMIT = - 0.33 minutes of internal standard RT.

Data File: /chem/msd21.i/20dec17.b/21122004sim.d

Date : 20-DEC-2017 09:37

Client ID: LCSD

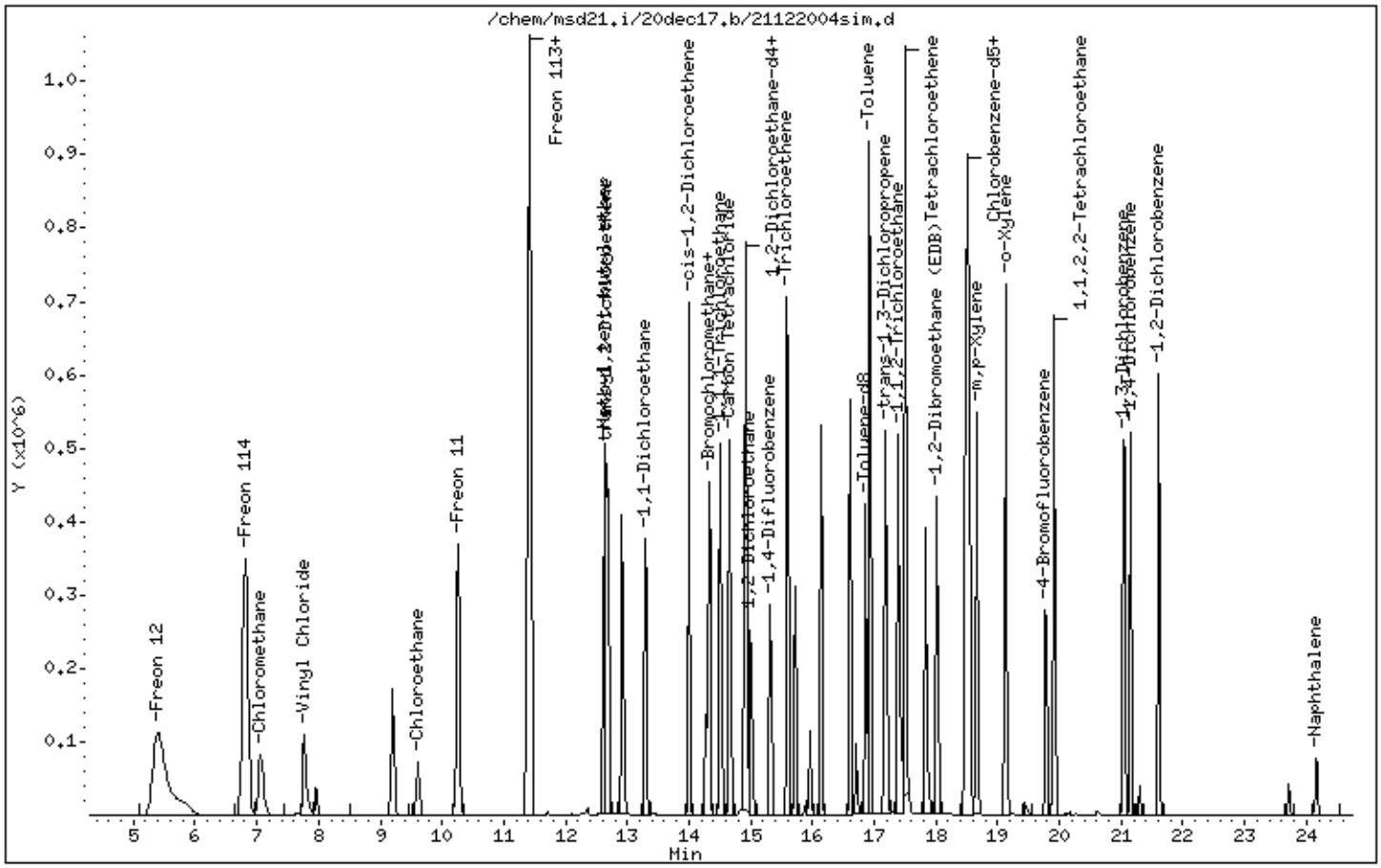
Instrument: msd21.i

Sample Info: 50mL# 3018-16

Operator: ef

Column phase: RTX-624

Column diameter: 0.32



0399 of 0447

BFB Verification of 176/174 m/z Ratio:	(723456/747200) x100 = 96.82
Method Name:	2117L1212A / 2117S1212A

IS/S Std. #: 2991-142	Exp. Date: 2/3/18
BCM LL: 1252666	SIM: 118194
1,4-DFB 538735	566094
CB-d5 426028	446145

Verified CCV IS vs ICAL mid-point (-40%D): SS

SOP# (Circle one): 6 / (83) / (38) / 91 / 109 / 132   Method (Circle one): (TO-14A/TO-15) / TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	21122001	BFB TUNE CHECK	2610-658	50ng	2.0µL	1.00	SS	12/20/17	0824	SS	
2	✓	02	CCV (50ppbv)	2991-164	10ppbv	50mL	1.00	SS		0839	SS	Exp. 2/17/18 SS
3	✓	03	LCS (50ppbv)	3018-16	10ppbv	50mL	1.00	SS		0908	SS	Exp. 3/4/18
4	✓	04	LCSD (50ppbv)	3018-16	10ppbv	50mL	1.00	SS		0937	SS	Exp. 3/4/18
5	✓	05	CCV SIM (5.0ppbv)	2991-177	1.0ppbv	50mL	1.00	SS		1007	SS	Exp. 2/13/18 COMBO
6	✓	06	LAB BLANK	38215	HUMID	250mL	1.00	SS		1041	SS	
7	✓	07	1712342-14A	13853	6.9"Hg, 4.8psi	250mL	1.72	SS		1129	SS	Green Dot Initial: 4psi Final: 3psi
8	✓	08	-15A	31422	4.1"Hg, 5.1psi	250mL	1.56	SS		1203	SS	Green Dot Initial: 5psi Final: 4psi
9	✓	09	-16A	N1762	5.9"Hg, 5.1psi	250mL	1.68	SS		1236	SS	
10	✓	10	-17A	5728	3.1"Hg, 4.9psi	250mL	1.48	SS		1315	SS	
11	✓	11	-18A	12955	3.9"Hg, 4.9psi	250mL	1.53	SS		1347	SS	
12	✓	12	-19A	N0641	1.0"Hg, 5.0psi	250mL	1.39	SS		1431	SS	
13	✓	13	1712365-01A	34342	3.0"Hg, 5.0psi	250mL	1.49	SS		1505	SS	"E" Exceed (AT)
14	X	14	1712342-08A	N1705	6.7"Hg, 4.7psi	25mL	~~1.70~~ 17.0 SS 12/20/17	SS		1534	SS	OVERDILUTE.
15	✓	15	-08A	N1705	6.7"Hg, 4.7psi	250mL	1.70	SS		1619	SS	
16		~~16~~	~~1712301-01A~~ SS 12/20/17	~~N1905~~	~~3.9"Hg, 5.2psi~~	~~25mL~~	~~1.55~~	~~SS~~				
17												SS 12/20/17

Reviewed: [signature]   Date: 12/20/17

Eurofins Air Toxics, Inc. **MSD-21** **Logbook #3012**

BFB Verification of 176/174 m/z Ratio: (457088/472896)×100 = 96.66	
Method Name: 21171212A / 21175i212A	

IS/5 Std. #:	2991-142	Exp. Date: 2/3/18
BCM	4: 122655	5m: 119743
1,4-DFB	537527	564150
CB-d5	411490	433051

Verified CCV IS vs ICAL mid-point (-40%D): ✓

SOP# (Circle one): 6 (83) (38) / 91 / 109 / 132 Method (Circle one): TO-14A/TO-15/TO-17

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
1	✓	21121901	BFB 176/174 CHECK	2810-658	50ng	2.0 pL	1.00	✓	12/19/17	0348	✓	
2	✓	02	CCV (50 ppbv)	2991-164	10 ppbv	50mL	1.00	✓		0702	✓	Exp. 2/17/18 ✓ out
3	✓	03	LCS (50 ppbv)	3018-16	10 ppbv	50mL	1.00	✓		0932	✓	Exp. 3/4/18 ✓ out
4	✓	04	LCSD (50 ppbv)	3018-16	10 ppbv	50mL	1.00	✓		1001	✓	Exp. 3/4/18
5	X	05	LAB BLANK	33552	Humid	250mL	1.00	✓		1103	✓	
6	✓	06	LAB BLANK	33552	Humid	250mL	1.00	✓		1137	✓	
7	NR	07	171230SC - 07AB	1556	3.3"Hg · 5.0psi	125mL	3.00	✓		1245	✓	✓ 12/19/17 ~~5 out~~ Small out in house co when Helium, Hydrogen > psi.
8	✓	08	DRUM CONC	House line	Dry	250mL	1.00	✓		1420	✓	CPM 02k107 confirm.
9	✓	09	171234L - 01A	N1618	7.3"Hg · 4.9psi	250mL	1.76	✓		1549	SW	Orange dot initial: 5psi final: 5psi
10	X	10	-02A	30853	6.5"Hg · 4.7psi	~~125mL~~ 50mL 250mL	1.69	✓		1626	SW	Green dot initial: 5psi after final: 5psi dilute
11	✓	11	-03A	N0409	4.3"Hg → 4.8psi	250mL	1.55	SW		1705	SW	Green dot pi: 4psi pf: 3psi
12	✓	12	-02A	30853	6.5"Hg → 4.7psi	100mL	4.22	SW		1734	SW	dil TL
13	✓	13	-04A	N2416	4.9"Hg → 5psi	250mL	1.60	SW		1838	SW	
14	✓	14	-05A	34407	9.4"Hg → 5.1psi	250mL	1.96	SW		1920	SW	
15	✓	15	-06A	N1904	2.2"Hg → 5psi	250mL	1.45	SW		1956	SW	
16	✓	16	-07A	N2864	4.5"Hg → 4.9psi	250mL	1.57	SW		2035	SW	
17	✓	17	-09A	33787	2.2"Hg → 4.8psi	250mL	1.43	SW		2113	SW	green dot pi: 5psi pf: 4psi

Reviewed

12/19/17
Date

	Use	File	Lab ID#	Can#/ Standard ID#	Pressure	Amt. Loaded	DF	Loaded By Initials	Date Analyzed	Time Analyzed	Reviewed By Initials	Comments/Standard Expiration Date
18	✓	21121918	1712342 - 10A	N06086	4.9"Hg + 4.7psi	250mL	1.58	SW	12/19/17	2148	SW	
19	✓	19	-11A	N2559	4.9"Hg + 5.1psi	250mL	1.61	SW		2219	SW	9 recv'd dil pi: 5psi pf: 4psi
20	/	20	-12A	N2764	6.9"Hg + 5.1psi	250mL	1.75	SW		~~2213~~ 2253	~~SW~~	
21	/	~~21~~ 22	-13A	M810	6.3"Hg - 4.8psi	250mL	1.68	EA	12/20/17	0700	~~SW~~	
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												~~25~~ 12/20/17
39												

Reviewed

12/20/17
Date

Eurofins Air Toxics Inc.

Data file : /var/chem/msd21.i/12dec17.b/21121202.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 12-DEC-2017 12:35
Operator : ef Inst ID: msd21.i
Smp Info : 2.0uL# 2810-658; BFB;BFB
Misc Info : 50ng
Comment :
Method : /chem/msd21.i/12dec17.b/bfb60.m
Meth Date : 16-May-2017 08:45 dpage Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
7.342	7.385	-0.043	95	1423546			100.00- 100.00	100.00
7.342	7.385	-0.043	50	178647			8.00- 40.00	12.55
7.342	7.385	-0.043	75	646188			30.00- 66.00	45.39
7.342	7.385	-0.043	96	112768			5.00- 9.00	7.92
7.342	7.385	-0.043	173	0			0.00- 1.99	0.00
7.342	7.385	-0.043	174	1095126			50.00- 120.00	76.93
7.342	7.385	-0.043	175	85809			4.00- 9.00	7.84
7.342	7.385	-0.043	176	1057223			93.00- 101.00	96.54
7.342	7.385	-0.043	177	78531			5.00- 9.00	7.43

Eurofins Air Toxics Inc.

Data file : /var/chem/msd21.i/19dec17.b/21121901.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 19-DEC-2017 08:48
Operator : ef Inst ID: msd21.i
Smp Info : 2.0uL# 2810-658; BFB;BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd21.i/19dec17.b/bfb60.m
Meth Date : 16-May-2017 08:45 dpage Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
7.356	7.385	-0.029	95	629776			100.00- 100.00	100.00
7.356	7.385	-0.029	50	99329			8.00- 40.00	15.77
7.356	7.385	-0.029	75	311659			30.00- 66.00	49.49
7.356	7.385	-0.029	96	48529			5.00- 9.00	7.71
7.356	7.385	-0.029	173	3475			0.00- 1.99	0.73
7.356	7.385	-0.029	174	472896			50.00- 120.00	75.09
7.356	7.385	-0.029	175	35551			4.00- 9.00	7.52
7.356	7.385	-0.029	176	457151			93.00- 101.00	96.67
7.356	7.385	-0.029	177	32821			5.00- 9.00	7.18

Data File: /chem/msd21.i/19dec17.b/21121901.d

Date : 19-DEC-2017 08:48

Client ID: BFB

Instrument: msd21.i

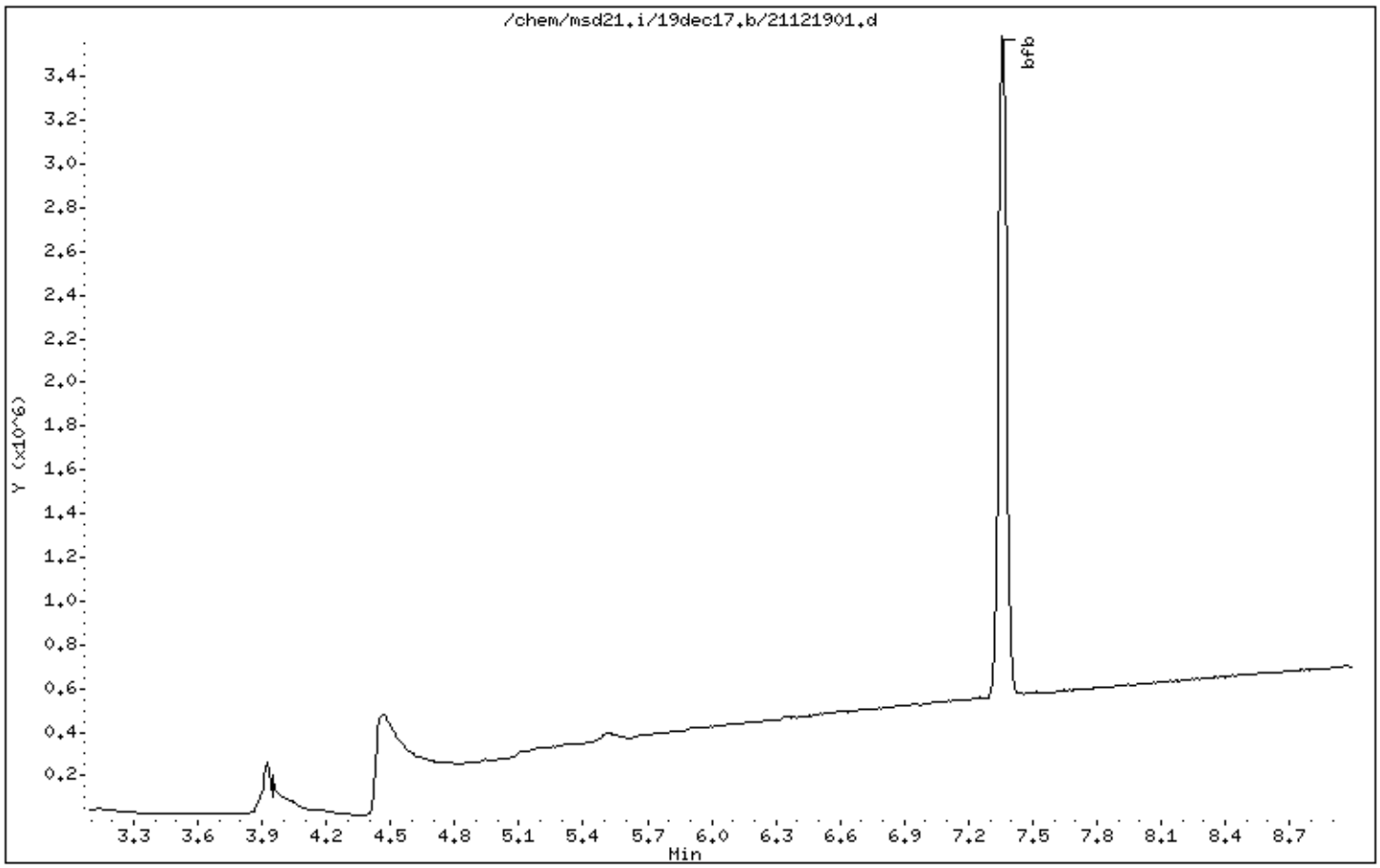
Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00



Data File: /chem/msd21.i/19dec17.b/21121901.d

Date : 19-DEC-2017 08:48

Client ID: BFB

Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

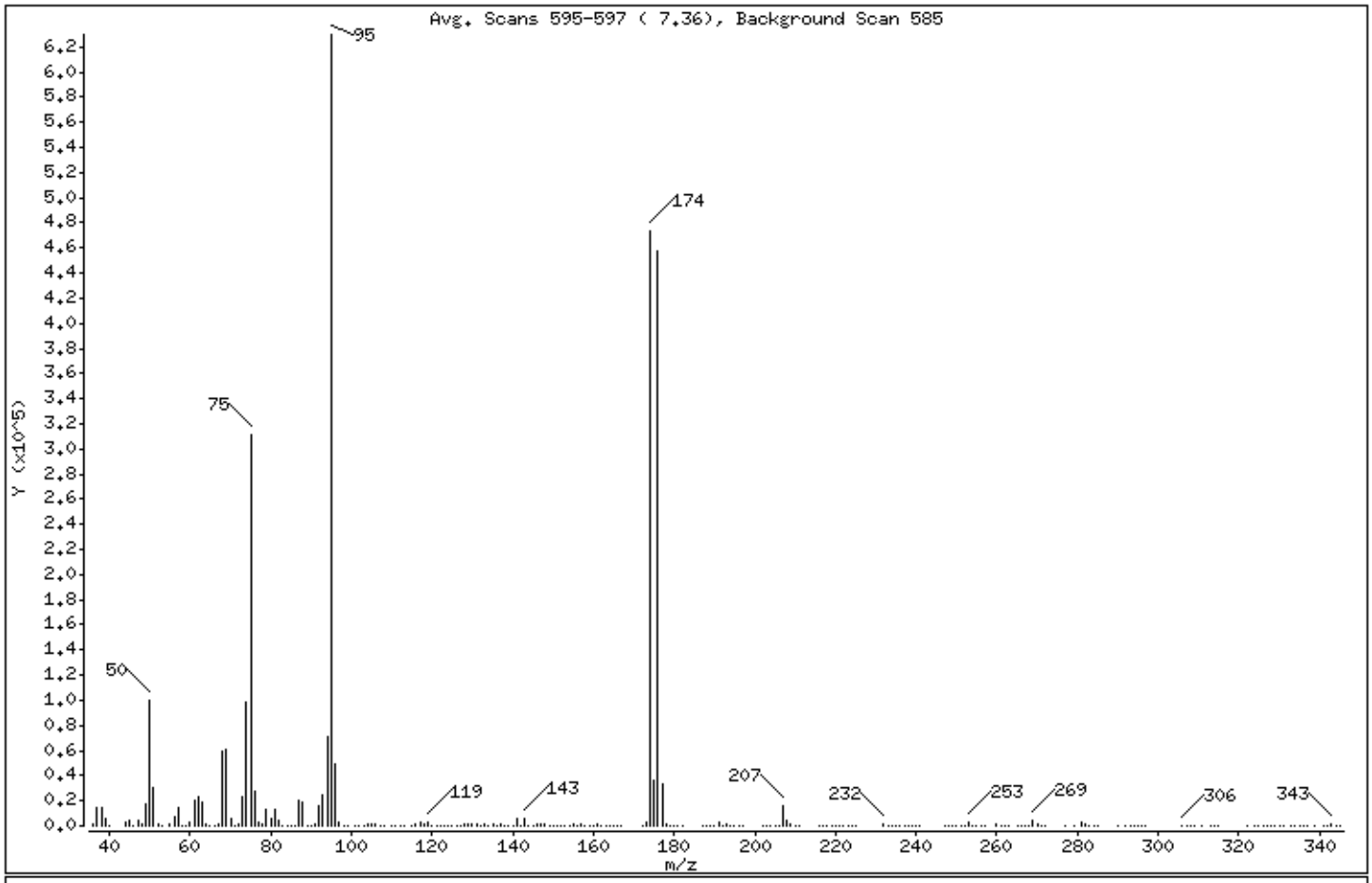
Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	15.77
75	30.00 - 66.00% of mass 95	49.49
96	5.00 - 9.00% of mass 95	7.71
173	Less than 1.99% of mass 174	0.55 (0.73)
174	50.00 - 120.00% of mass 95	75.09
175	4.00 - 9.00% of mass 174	5.65 (7.52)
176	93.00 - 101.00% of mass 174	72.59 (96.67)
177	5.00 - 9.00% of mass 176	5.21 (7.18)

Date : 19-DEC-2017 08:48

Client ID: BFB Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 21121901.d
Spectrum: Avg. Scans 595-597 (7.36), Background Scan 585
Location of Maximum: 95.00
Number of points: 242

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1958	102.00	111	165.00	496	253.00	2426
37.00	14481	103.00	551	166.00	113	254.00	541
38.00	14952	104.00	2108	167.00	106	255.00	371
39.00	6454	105.00	911	172.00	340	256.00	87
40.00	33	106.00	2097	173.00	3475	257.00	39
44.00	2196	107.00	593	174.00	472896	260.00	1479
45.00	4053	108.00	257	175.00	35544	261.00	307
46.00	426	110.00	328	176.00	457088	262.00	142
47.00	5038	111.00	517	177.00	32816	263.00	18
48.00	2041	112.00	326	178.00	1197	265.00	523
49.00	17592	113.00	711	179.00	477	266.00	236
50.00	99328	115.00	703	180.00	101	267.00	562
51.00	30920	116.00	1763	181.00	142	268.00	161
52.00	1299	117.00	3255	182.00	34	269.00	3880
53.00	61	118.00	1795	187.00	54	270.00	857
55.00	857	119.00	3278	188.00	54	271.00	646
56.00	6528	120.00	175	189.00	175	272.00	119
57.00	13975	121.00	165	190.00	116	277.00	42
58.00	532	122.00	334	191.00	2674	279.00	18
59.00	91	123.00	204	192.00	527	281.00	3498
60.00	3018	124.00	421	193.00	1107	282.00	1024
61.00	20264	125.00	321	194.00	235	283.00	558
62.00	22776	126.00	378	195.00	455	284.00	289
63.00	18672	127.00	707	196.00	70	285.00	93
64.00	1642	128.00	1958	197.00	62	290.00	26
65.00	146	129.00	953	202.00	39	292.00	43
66.00	75	130.00	1935	203.00	136	293.00	173
67.00	1273	131.00	882	204.00	60	294.00	105
68.00	59272	132.00	226	205.00	233	295.00	34
69.00	60520	133.00	2038	206.00	185	296.00	27
70.00	5168	134.00	474	207.00	15586	297.00	43
71.00	200	135.00	1882	208.00	4072	306.00	291
72.00	2022	136.00	307	209.00	1693	307.00	47
73.00	23192	137.00	975	210.00	305	308.00	67
74.00	98976	138.00	290	211.00	112	309.00	34

Date : 19-DEC-2017 08:48

Client ID: BFB Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 21121901.d
Spectrum: Avg. Scans 595-597 (7.36), Background Scan 585
Location of Maximum: 95.00
Number of points: 242

m/z	Y	m/z	Y	m/z	Y	m/z	Y
75.00	311616	139.00	168	216.00	91	311.00	39
76.00	27496	140.00	454	217.00	57	313.00	18
77.00	2843	141.00	5583	218.00	322	314.00	12
78.00	1867	142.00	587	219.00	689	315.00	32
79.00	12656	143.00	5716	220.00	160	322.00	83
80.00	5071	144.00	334	221.00	153	324.00	29
81.00	13454	145.00	484	222.00	27	325.00	111
82.00	4024	146.00	845	223.00	114	326.00	64
83.00	352	147.00	974	224.00	67	327.00	567
84.00	49	148.00	1365	225.00	65	328.00	117
85.00	107	149.00	634	232.00	1190	329.00	123
86.00	569	150.00	553	233.00	335	330.00	40
87.00	20144	151.00	93	234.00	224	331.00	7
88.00	19304	152.00	257	235.00	136	333.00	69
89.00	496	153.00	477	236.00	42	334.00	616
90.00	46	154.00	364	237.00	68	335.00	157
91.00	1802	155.00	1406	238.00	29	336.00	132
92.00	15845	156.00	416	239.00	261	337.00	215
93.00	24968	157.00	1026	240.00	31	339.00	33
94.00	70736	158.00	181	241.00	50	341.00	350
95.00	629760	159.00	606	247.00	273	342.00	75
96.00	48528	160.00	280	248.00	31	343.00	859
97.00	3337	161.00	881	249.00	698	344.00	266
98.00	66	162.00	174	250.00	221	345.00	209
99.00	68	163.00	698	251.00	374		
101.00	79	164.00	332	252.00	92		

Eurofins Air Toxics Inc.

Data file : /var/chem/msd21.i/20dec17.b/21122001.d
Lab Smp Id: Client Smp ID: BFB
Inj Date : 20-DEC-2017 08:24
Operator : ef Inst ID: msd21.i
Smp Info : 2.0uL# 2810-658; BFB;BFB
Misc Info : 50ng
Comment :
Method : /var/chem/msd21.i/20dec17.b/bfb60.m
Meth Date : 16-May-2017 08:45 dpage Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.50 Sample Matrix: WATER
Processing Host: eeyore

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	ng unit correction factor
Vf	1.00000	Volumetric correction factor
Vi	1.00000	Injection Volume

Cpnd Variable Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
7.349	7.385	-0.036	95	1005357			100.00- 100.00	100.00
7.349	7.385	-0.036	50	144509			8.00- 40.00	14.37
7.349	7.385	-0.036	75	484632			30.00- 66.00	48.20
7.349	7.385	-0.036	96	78957			5.00- 9.00	7.85
7.349	7.385	-0.036	173	6020			0.00- 1.99	0.81
7.349	7.385	-0.036	174	747221			50.00- 120.00	74.32
7.349	7.385	-0.036	175	57976			4.00- 9.00	7.76
7.349	7.385	-0.036	176	723487			93.00- 101.00	96.82
7.349	7.385	-0.036	177	53628			5.00- 9.00	7.41

Data File: /chem/msd21.i/20dec17.b/21122001.d

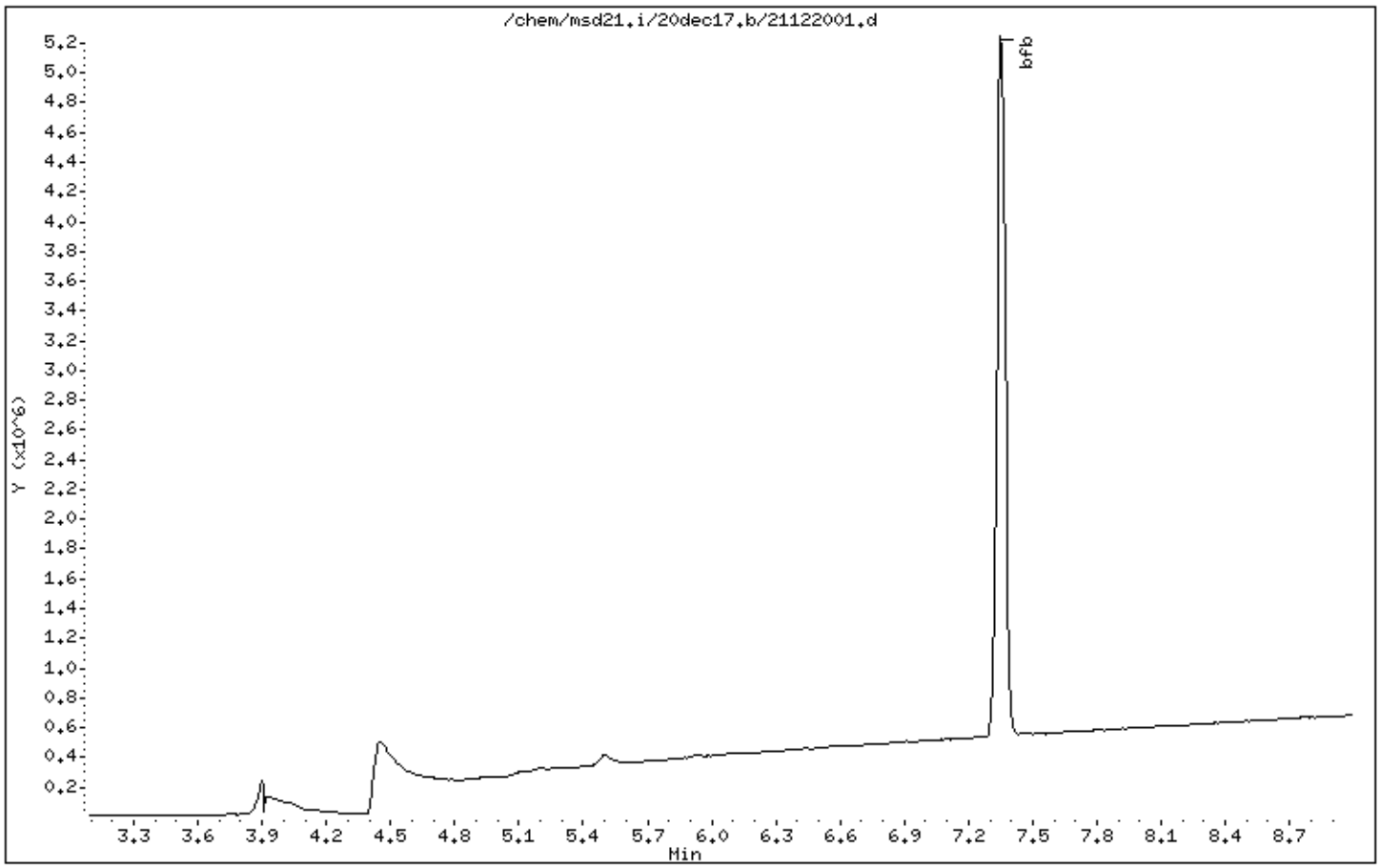
Date : 20-DEC-2017 08:24

Client ID: BFB Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00



Data File: /chem/msd21.i/20dec17.b/21122001.d

Date : 20-DEC-2017 08:24

Client ID: BFB

Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

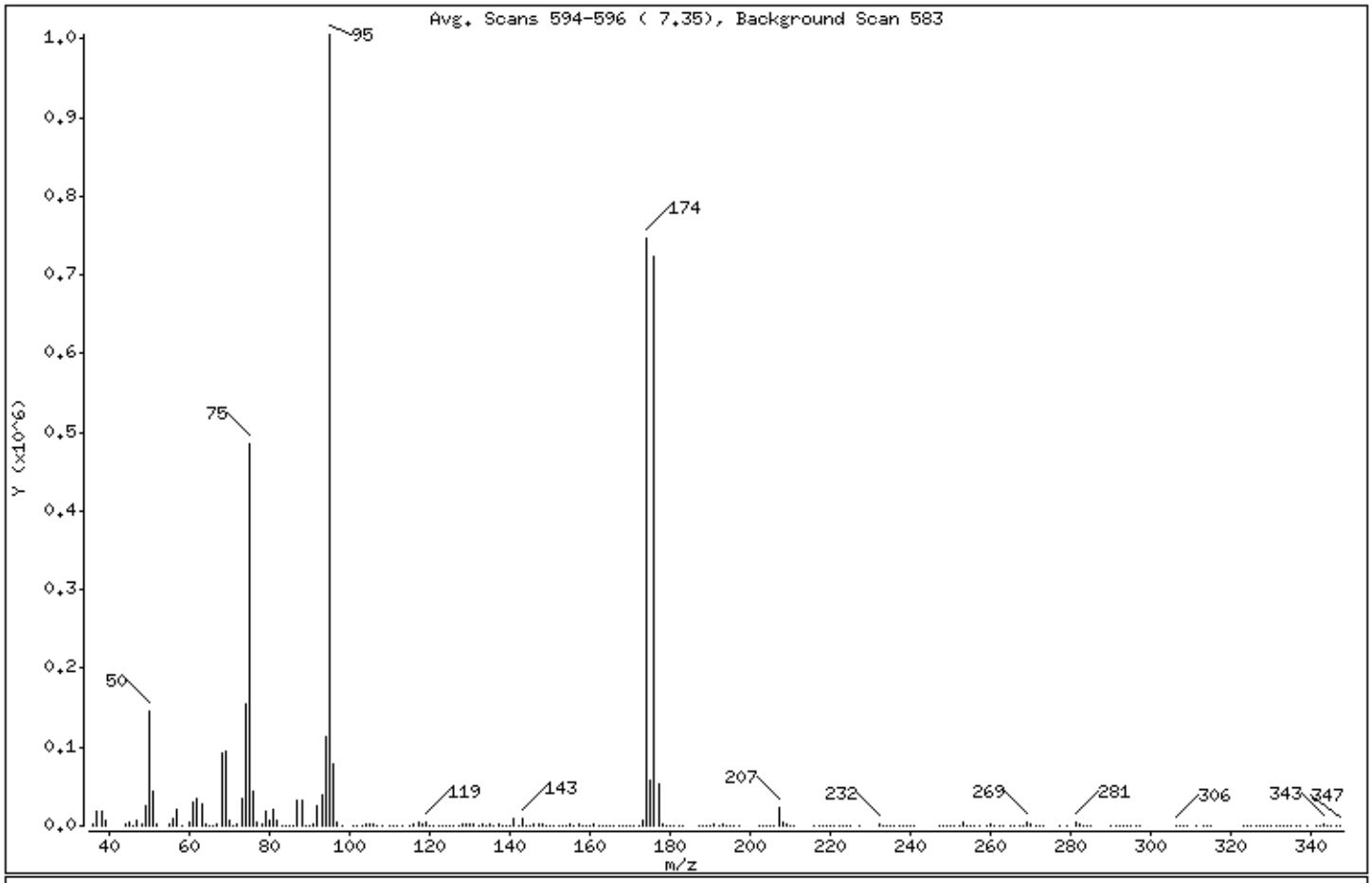
Volume Injected (uL): 1.0

Operator: ef

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	8.00 - 40.00% of mass 95	14.37
75	30.00 - 66.00% of mass 95	48.20
96	5.00 - 9.00% of mass 95	7.85
173	Less than 1.99% of mass 174	0.60 (0.81)
174	50.00 - 120.00% of mass 95	74.32
175	4.00 - 9.00% of mass 174	5.77 (7.76)
176	93.00 - 101.00% of mass 174	71.96 (96.82)
177	5.00 - 9.00% of mass 176	5.33 (7.41)

Date : 20-DEC-2017 08:24

Client ID: BFB Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 21122001.d
Spectrum: Avg. Scans 594-596 (7.35), Background Scan 583
Location of Maximum: 95.00
Number of points: 250

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2569	108.00	365	173.00	6020	257.00	42
37.00	19024	110.00	437	174.00	747200	259.00	70
38.00	19264	111.00	761	175.00	57976	260.00	2100
39.00	7716	112.00	476	176.00	723456	261.00	539
44.00	2745	113.00	945	177.00	53624	262.00	315
45.00	5410	115.00	1076	178.00	1787	263.00	76
46.00	493	116.00	2770	179.00	524	265.00	852
47.00	7537	117.00	5200	180.00	109	266.00	273
48.00	2791	118.00	2840	181.00	227	267.00	641
49.00	25136	119.00	5336	182.00	53	268.00	248
50.00	144448	120.00	333	183.00	142	269.00	5266
51.00	43440	121.00	212	187.00	271	270.00	1465
52.00	1874	122.00	199	188.00	30	271.00	746
55.00	1209	123.00	335	189.00	256	272.00	155
56.00	9606	124.00	613	190.00	256	273.00	44
57.00	20552	125.00	468	191.00	3213	277.00	68
58.00	798	126.00	593	192.00	780	279.00	40
60.00	4636	127.00	1108	193.00	1322	281.00	5757
61.00	30672	128.00	3269	194.00	350	282.00	1424
62.00	35120	129.00	1620	195.00	620	283.00	986
63.00	28352	130.00	3146	196.00	157	284.00	250
64.00	2534	131.00	1474	197.00	78	285.00	88
65.00	176	132.00	308	202.00	86	290.00	54
66.00	59	133.00	2950	203.00	320	291.00	67
67.00	2009	134.00	648	204.00	95	292.00	40
68.00	91648	135.00	2606	205.00	340	293.00	235
69.00	93640	136.00	375	206.00	284	294.00	65
70.00	8002	137.00	1519	207.00	23096	295.00	80
71.00	325	138.00	255	208.00	4261	296.00	238
72.00	3253	139.00	255	209.00	3241	297.00	48
73.00	34640	140.00	632	210.00	470	306.00	283
74.00	154304	141.00	8803	211.00	163	307.00	81
75.00	484608	142.00	979	216.00	80	308.00	81
76.00	42864	143.00	9108	217.00	103	309.00	34
77.00	4679	144.00	569	218.00	363	311.00	78

Date : 20-DEC-2017 08:24

Client ID: BFB Instrument: msd21.i

Sample Info: 2.0uL# 2810-658; BFB;BFB

Volume Injected (uL): 1.0 Operator: ef

Column phase: Column diameter: 2.00

Data File: 21122001.d
Spectrum: Avg. Scans 594-596 (7.35), Background Scan 583
Location of Maximum: 95.00
Number of points: 250

m/z	Y	m/z	Y	m/z	Y	m/z	Y
78.00	3011	145.00	792	219.00	796	313.00	71
79.00	18448	146.00	1340	220.00	202	314.00	11
80.00	7564	147.00	1518	221.00	247	315.00	41
81.00	19760	148.00	2216	222.00	71	323.00	46
82.00	6025	149.00	956	223.00	242	324.00	41
83.00	579	150.00	959	224.00	68	325.00	90
84.00	88	151.00	128	225.00	97	326.00	31
85.00	123	152.00	478	227.00	71	327.00	789
86.00	852	153.00	826	232.00	1659	328.00	201
87.00	32856	154.00	625	233.00	437	329.00	168
88.00	31896	155.00	2361	234.00	271	330.00	61
89.00	891	156.00	736	235.00	173	331.00	132
90.00	69	157.00	1744	236.00	41	332.00	66
91.00	2627	158.00	351	237.00	105	333.00	149
92.00	25200	159.00	990	238.00	266	334.00	465
93.00	39800	160.00	304	239.00	248	335.00	156
94.00	112200	161.00	1314	240.00	76	336.00	112
95.00	1005312	162.00	221	241.00	59	337.00	135
96.00	78952	163.00	903	247.00	384	339.00	26
97.00	4267	164.00	412	248.00	110	341.00	241
98.00	91	165.00	752	249.00	967	342.00	52
101.00	99	166.00	166	250.00	273	343.00	1165
102.00	143	167.00	115	251.00	444	344.00	456
103.00	802	168.00	71	252.00	152	345.00	212
104.00	3322	169.00	139	253.00	3533	346.00	64
105.00	1448	170.00	241	254.00	957	347.00	67
106.00	3233	171.00	152	255.00	513		
107.00	927	172.00	176	256.00	103		

Shipping/ Receiving Documents

eurofins | Air Toxics

Eurofins Air Toxics, Inc. Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics, Inc. (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Laura Jovanovic at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct: _____ WO # _____ Sample #s: _____

COC#: R1 of 2

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct:

Project Name: Outdoor Event #1 2017

Project Manager: Tom Hutchinson-CH2M HILL P.O.#

Samplers: Shirley Steinmacher, Ben Thompson

Site Name: Former Tronox Facility-Springfield, MO

Lab ID	Sample Identification	Can #	Date of Collection (pickup)	Time of Collection (24-hr)	Check analyses requested: TO-15 SIM							Canister Vacuum/Pressure: Initial	Final	Lab Use Only: Receipt	Final (psig)	Turn Around Time: Normal / Rush! Specify: 5 Day TAT FORM 1
01A	IAU-040_1217	6L0805	12/14/2017	1030-1020	X							-28.61	-5.40			Remarks:
02A	IAG-040_1217	000002557	12/14/2017	1024-1025	X							-28.60	-5.52			
03A	CS-040_1217	6L1305	12/14/2017	1012-1015	X							-28.65	-3.89			
04A	OA-040_1217	6L1508	12/14/2017	0950-1005	X							-28.65	-4.90			
05A	IAU-140_1217	000001904	12/14/2017	1030-1020	X							-28.64	-8.37			
06A	OA1_1217	6L1045	12/14/2017	1425-1425	X							-29.06	-1.83			
07A	OA2_1217	6L1743	12/14/2017	1437-1410	X							-29.00	-3.91			
08A	OA2-1_1217	6L0861	12/14/2017	1437-1410	X							-28.36	-6.30			
09A	OA6_1217	33787	12/14/2017	1530-1420	X							-28.55	-1.11			
10A	OA7_1217	6L0458	12/14/2017	1518-1431	X							-28.63	-4.28			

	Date	Time		Date	Time	
Relinquished by:			Received by: alex m GAIR	12/16/17	1000	Level IV Data Required? Yes / No (Circle One)
Relinquished by:			Received by:			Specific EDD format Required? Yes / No (Circle One)
Relinquished by:			Received by:			

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No None

Sample Condition Upon Receipt: Good Temp: NA

Note: Primary TCL TO-15 **SIM** BTEXN

Eurofins Air Toxics, Inc. 180 Blue Ravine Rd. Suite B Folsom, CA 95630 (916) 985-1000 Fax: (916) 351-8279

1712342

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

Acct: _____ WO #_____ Sample #s:_____

COC#: P. 2 of 2

Sample Transportation Notice

CH2M HILL

Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, of shipping of samples. D.O.T Hotline (800) 467-4922

Client: Former Tronox-Springfield, Mo Acct: _____

Project Name: Outdoor Event #1 2017

Project Manager: Tom Hutchinson-CH2M HILL P.O.# _____

Samplers: Shirley Steinmacher, Ben Thompson

Site Name: Former Tronox Facility-Springfield, MO

Lab ID	Sample Identification	Can #	Date of Collection (pickup)	Time of Collection (24-hr)	Check analyses requested: TO-15 SIM	Canister Vacuum/Pressure: Initial	Canister Vacuum/Pressure: Final	Lab Use Only: Receipt	Lab Use Only: Final (psig)
11A	OA8_1217	6L1615	12/14/2017	1453-1440	X	-28.86	-4.17		
12A	OA9_1217	6L1653	12/14/2017	1502-1451	X	-28.84	-6.13		
13A	OA10_1217	6L0958	12/14/2017	1513-1512	X	-28.87	-5.64		
14A	OA11_1217	0000000233	12/14/2017	1522-1526	X	-28.34	-6.03		
15A	OA12_1217	31422	12/14/2017	1505-1446	X	-28.72	-3.33		
16A	OA13_1217	6L0916	12/14/2017	1454-1500	X	-28.62	-5.28		
17A	OA13-1_1217	000001373	12/14/2017	1454-1500	X	-28.00	-2.70		
18A	OA14_1217	0000000269	12/14/2017	1441-1519	X	-28.65	-3.10		
19A	OA15_1217	6L0414	12/14/2017	1428-1327	X	-28.66	-1.35		
	----------	------	-------	-------					

Turn Around Time: ☐ Normal ■ Rush! **Specify:** 5 Day TAT FORM 1

Remarks:

	Date	Time		Date	Time	
Relinquished by:			Received by: GAT	12/16/17	1000	Level IV Data Required? Yes / No (Circle One)
Relinquished by:			Received by:			Specific EDD format Required? Yes / No (Circle One)
Relinquished by:			Received by:			

Lab Use Only

Shipper Name: Fed Ex

Custody Seals Intact? Yes No None

Sample Condition Upon Receipt: Good Temp: NA

Note: Primary TCL TO-15 **SIM** BTEXN

Eurofins Air Toxics, Inc. 180 Blue Ravine Rd. Suite B Folsom, CA 95630 (916) 985-1000 Fax: (916) 351-8279

1712342

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 1712342

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Date Promised: 12/27/17 12:00 pm
Date Completed: 12/27/17
Date Received: 12/16/17
PO#: Springfield, MO
Project#: Outdoor Event #1 2017

Sales Rep: LJ

Total $: $ 5,336.00
Logged By: JV

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
01A	IAU-040_1217	Modified TO-15 SIM	12/14/2017	7.3 "Hg	$180.00
02A	IAG-040_1217	Modified TO-15 SIM	12/14/2017	6.5 "Hg	$180.00
03A	CS-040_1217	Modified TO-15 SIM	12/14/2017	4.3 "Hg	$180.00
04A	OA-040_1217	Modified TO-15 SIM	12/14/2017	4.9 "Hg	$180.00
05A	IAU-140_1217	Modified TO-15 SIM	12/14/2017	9.4 "Hg	$180.00
06A	OA1_1217	Modified TO-15 SIM	12/14/2017	2.2 "Hg	$180.00
07A	OA2_1217	Modified TO-15 SIM	12/14/2017	4.5 "Hg	$180.00
08A	OA2-1_1217	Modified TO-15 SIM	12/14/2017	6.7 "Hg	$180.00
09A	OA6_1217	Modified TO-15 SIM	12/14/2017	2.2 "Hg	$180.00
10A	OA7_1217	Modified TO-15 SIM	12/14/2017	4.9 "Hg	$180.00
11A	OA8_1217	Modified TO-15 SIM	12/14/2017	4.9 "Hg	$180.00
12A	OA9_1217	Modified TO-15 SIM	12/14/2017	6.9 "Hg	$180.00
13A	OA10_1217	Modified TO-15 SIM	12/14/2017	6.3 "Hg	$180.00
14A	OA11_1217	Modified TO-15 SIM	12/14/2017	6.9 "Hg	$180.00
15A	OA12_1217	Modified TO-15 SIM	12/14/2017	4.1 "Hg	$180.00
16A	OA13_1217	Modified TO-15 SIM	12/14/2017	5.9 "Hg	$180.00
17A	OA13-1_1217	Modified TO-15 SIM	12/14/2017	3.1 "Hg	$180.00
18A	OA14_1217	Modified TO-15 SIM	12/14/2017	3.9 "Hg	$180.00
19A	OA15_1217	Modified TO-15 SIM	12/14/2017	1 "Hg	$180.00
20A	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox - Springfield, MO/22104

BILL TO: Accounts Payable
Greenfield Environmental, Inc.
PO Box 1189
Helena, MT 59624

Analysis Code: pptv

TERMS:

Reporting Method: Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY Continued

Client

Mr. Mark Stinnett
CH2M Hill
3011 SW Williston Road
Gainesville, FL 32608

Phone

352-335-7991

Fax

352-3352959

Sales Rep: LJ

Date Promised: 12/27/17 12:00 pm
Date Completed: 12/27/17
Date Received: 12/16/17
PO#: Springfield, MO
Project#: Outdoor Event #1 2017

Total $: $ 5,336.00
Logged By: JV

Fraction	Sample #	Analysis	Collected	Receipt Vac./Pres.	Amount$
20B	Lab Blank	Modified TO-15 SIM	NA	NA	$0.00
21A	CCV	Modified TO-15 SIM	NA	NA	$0.00
21B	CCV	Modified TO-15 SIM	NA	NA	$0.00
22A	LCS	Modified TO-15 SIM	NA	NA	$0.00
22AA	LCSD	Modified TO-15 SIM	NA	NA	$0.00
22B	LCS	Modified TO-15 SIM	NA	NA	$0.00
22BB	LCSD	Modified TO-15 SIM	NA	NA	$0.00

Misc. Charges	6 Liter Summa Canister (SIM Certified) (19) @ $60.00 each., Shipmer	$1,140.00
	Flow Controller-24 hr (SIM Certified) (19) @ $30.00 each., Shipment	$570.00
	Client Specific EDD (19) @ $5.00 each.	$95.00
	eCVP (19) @ $5.00 each.	$95.00
	Duplicate Sampling T (2) @ $8.00 each.	$16.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: Former Tronox - Springfield, MO/22104

BILL TO: Accounts Payable
Greenfield Environmental, Inc.
PO Box 1189
Helena, MT 59624

Analysis Code: pptv

TERMS:

Reporting Method: Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

Sample Discrepancy Report

Identification

Initiated By: JV **Project ID:**22104 **PM**: BSW **Date:** 12/19/2017 **Discrepancy Type:** ☒ **1.** ☐ **2.** ☐ **3.**

Workorder(s) affected:1712342 **Sample(s) affected:** all

1. Sample Receipt Discrepancies

Narration Not Required:

1.1. ☐ Sample container (cartridge/tube) was received broken, however sample was intact.
1.2. ☐ No brass cap on canister.
1.3. ☐ Date of Collection noted on first sample, but no arrow down to indicate all samples.
1.4. ☐ Sampling year not documented on COC but noted on sample tag.
1.5. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C but less than 6°C.

Notify Lab for further determination:

1.6. ☐ Tedlar bag received with minimal volume.

Narration Required in Lab Narrative and Sample Confirmation:

1.7. ☐ COC was not filled out in ink.
1.8. ☒ COC improperly relinquished / received.
☒Signature missing ☒date missing ☒time missing.
1.9. ☐ Sample ID on tags do not match the COC.
1.10. ☐ Can numbers do not match the COC.
1.11. ☐ Sampling date discrepancy.
1.12. ☐ Custody Seal on the outside of the container was ☐ broken / ☐ improperly placed (check one).
1.13. ☐ ID-none on the sample Tag/Blank.
1.14. ☐ Other (describe below).

Initials: _____ Date: _____

Describe the Discrepancy: 1.8: all

2. Sample Receipt/Screening Discrepancies requiring PM notification

Document on Cover Page of Sample Receipt Confirmation and in Receiving Notes of Lab Narrative

If Section II. is filled out PM must be notified within 24 hrs of initiation

2.1. ☐ COC was not received with samples.
2.2. ☐ Analysis method(s) is ☐ not specified / ☐ incorrectly specified (check one) on the COC.
2.3. ☐ Incorrect sampling media / container for analysis requested.
2.4. ☐ Number of samples on the COC does not match the number of samples that were received.
2.5. ☐ Samples were received expired.
2.6. ☐ Sampling date is not documented for ☐ *some* / ☐ *any* samples (check one).
2.7. ☐ Sample received with amount of H_2O in the Tedlar Bag.
2.8. ☐ Sample cannot be analyzed. Container was ☐ received broken / ☐ leaking / ☐ flat / ☐ defective.
2.9. ☐ Tedlar bag / canister received emitting a strong odor; Sample ☐ can / ☐ cannot (check one) be analyzed.
2.10. ☐ Sorbent samples -sampling volume was not provided.
2.11. ☐ Flow controller used – canister samples received at ambient or under pressure.
2.12. ☐ Canister was at ambient pressure at time of pressurization and (check all that apply):
☐ Canister valve was open.
☐ Brass nut was loose/not present.
☐ Sample can be analyzed.
☐ Sample cannot be analyzed.
2.13. ☐ Canister sample received with a vacuum difference >5.0"Hg between the receipt vac. and the final recorded vac. on the COC.
☐ Canister passed leak check in lab <2psi, no evidence sample was compromised.
☐ Canister failed lab leak check, canister found to be leaking. Canister sample compromised.
2.14. ☐ Canister sample received at >15"Hg (*not* identified as a Trip/Field Blank).
2.15. ☐ Canister Trip Blank received at low vacuum (<25"Hg).
2.16. ☐ Sorbent Sample received outside method required temperature of 2°C to 6°C; ☐ ice / ☐ blue ice (check one) was present. A temp. Blank ☐ was / ☐ was not present (check one).
2.17. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Describe the Discrepancy:

3. Lab Discrepancies requiring Team Leader/PM notification

Document in Analytical Notes of Lab Narrative

If Section III. is filled out PM must be notified within 24 hrs of initiation

3.1. ☐ Tedlar Bag found to be leaking at the time of analysis; sample ☐ can / ☐ cannot (check one) be analyzed.

3.2. ☐ Tedlar Bag found to be flat/low volume; sample cannot be analyzed.

3.3. ☐ Samples received with insufficient time to analyze prior to expiration.

3.4. ☐ Canister found to be leaking at the time of analysis.

3.5. ☐ Sample loss due to instrument malfunction / broken glassware.

3.6. ☐ Low/high surrogate recoveries noted in QC/sample(s) for extractable samples.

3.7. ☐ Reporting Limit was raised.

3.8. ☐ Post weight > Pre weight in field/lab Blank for PM10/TSP samples.

3.9. ☐ Sample Trip Blank has a reportable level(s) of target compound(s) present. Re-analysis confirmed the initial result.

3.10. ☐ Other (describe below).

Initials: _____ **Date:** _____ **Notify Receiving:** ☐ **Notify PM:** ☐ _____

Team Lead Initials: _____ **Date:** _____

Describe the Discrepancy: _____

_____

_____

How Does this Affect Client: _____

_____

_____

Project Manager Use Only

Project Manager Notification ☐ **Section 2 Complete** ☐ **Section 3 Complete**

Action:

☐ It is not necessary to notify the client. Narrate the discrepancy in Receiving Notes/Analytical Notes of Lab Narrative.

PM Initials:_____ Date: _____

☐ Client notification required. See attached client contact / email, or comments below:

Client Notification:

PM Initials:_____ Person notified: _____ Date: _____

☐ Waiting for Client Reply

Comments: _____

_____

☐ Notify Lab Name: _____ Date: _____ **Notify Receiving:** ☐

☐ **Additional notifications attached.**

Additional Comments:

_____

Other Records

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Vacuum}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} - [\text{Init. Pressure (“Hg)})*(14.7\text{psi}/30\text{”Hg})]}$$

$$\text{Dilution Factor} = \frac{\text{Final Pressure}}{\text{Initial Pressure}} = \frac{14.7\text{psi} + \text{Final Pressure (psi)}}{14.7\text{psi} + \text{Initial Pressure (psi)}}$$

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
0.0	1.34	2.02
0.2	1.35	2.03
0.4	1.36	2.05
0.5	1.36	2.05
0.6	1.37	2.06
0.8	1.38	2.08
1.0	1.39	2.09
1.2	1.40	2.10
1.4	1.40	2.12
1.5	1.41	2.13
1.6	1.42	2.13
1.8	1.42	2.15
2.0	1.44	2.16
2.2	1.45	2.18
2.4	1.46	2.20
2.5	1.46	2.20
2.6	1.47	2.21
2.8	1.48	2.23
3.0	1.49	2.24
3.2	1.50	2.26
3.4	1.51	2.28
3.5	1.52	2.29
3.6	1.52	2.30
3.8	1.53	2.31
4.0	1.55	2.33
4.2	1.56	2.35
4.4	1.57	2.37
4.5	1.58	2.38
4.6	1.58	2.39
4.8	1.60	2.40
5.0	1.61	2.42
5.2	1.62	2.44
5.4	1.63	2.46
5.5	1.64	2.47
5.6	1.65	2.48
5.8	1.66	2.50
6.0	1.68	2.52
6.2	1.69	2.55
6.4	1.70	2.57
6.5	1.71	2.58
6.6	1.72	2.59
6.8	1.73	2.61
7.0	1.75	2.64
7.2	1.76	2.66
7.4	1.78	2.68
7.5	1.79	2.69
7.6	1.79	2.70

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
7.7	1.80	2.72
7.8	1.81	2.73
8.0	1.83	2.76
8.2	1.84	2.78
8.4	1.86	2.81
8.5	1.87	2.82
8.6	1.88	2.83
8.8	1.90	2.86
9.0	1.91	2.89
9.2	1.93	2.91
9.4	1.95	2.94
9.5	1.96	2.96
9.6	1.97	2.97
9.8	1.99	3.00
10.0	2.01	3.03
10.2	2.03	3.06
10.4	2.05	3.09
10.5	2.06	3.11
10.6	2.07	3.12
10.8	2.09	3.16
11.0	2.12	3.19
11.2	2.14	3.22
11.4	2.16	3.26
11.5	2.17	3.28
11.6	2.18	3.29
11.8	2.21	3.33
12.0	2.23	3.37
12.2	2.26	3.40
12.4	2.28	3.44
12.5	2.30	3.46
12.6	2.31	3.48
12.8	2.34	3.52
13.0	2.36	3.56
13.2	2.39	3.61
13.4	2.42	3.65
13.5	2.44	3.67
13.6	2.45	3.70
13.8	2.48	3.74
14.0	2.51	3.79
14.2	2.54	3.84
14.4	2.58	3.88
14.5	2.59	3.91
14.6	2.61	3.94
14.8	2.64	3.99
15.0	2.68	4.04
15.2	2.72	4.10
15.4	2.75	4.15

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
15.5	2.77	4.18
15.6	2.79	4.21
15.8	2.83	4.27
16.0	2.87	4.33
16.2	2.91	4.39
16.4	2.96	4.46
16.5	2.98	4.49
16.6	3.00	4.52
16.8	3.05	4.59
17.0	3.09	4.66
17.2	3.14	4.74
17.4	3.19	4.81
17.5	3.22	4.85
17.6	3.24	4.89
17.8	3.30	4.97
18.0	3.35	5.05
18.2	3.41	5.14
18.4	3.47	5.22
18.5	3.50	5.27
18.6	3.53	5.32
18.8	3.59	5.41
19.0	3.65	5.51
19.2	3.72	5.61
19.4	3.79	5.72
19.5	3.83	5.77
19.6	3.87	5.83
19.8	3.94	5.94
20.0	4.02	6.06
20.2	4.10	6.18
20.4	4.19	6.31
20.5	4.23	6.38
20.6	4.28	6.45
20.8	4.37	6.59
21.0	4.47	6.73
21.2	4.57	6.89
21.4	4.67	7.05
21.5	4.73	7.13
21.6	4.79	7.22
21.8	4.90	7.39
22.0	5.03	7.58
22.4	5.29	7.98

Initial Vacuum (" of Hg)	5 psi Final Pressure Dilution Factor	15 psi Final Pressure Dilution Factor
22.5	5.36	8.08
22.6	5.43	8.19
22.8	5.58	8.42
23.0	5.74	8.66
23.2	5.91	8.91
23.4	6.09	9.18
23.5	6.19	9.32
23.6	6.28	9.47
23.8	6.48	9.78
24.0	6.70	10.10
24.2	6.93	10.45
24.4	7.18	10.82
24.5	7.31	11.02
24.6	7.45	11.22
24.8	7.73	11.66
25.0	8.04	12.12
25.2	8.38	12.63
25.4	8.74	13.18
25.5	8.93	13.47
25.6	9.14	13.78
25.8	9.57	14.43
26.0	10.05	15.15
26.2	10.58	15.95
26.4	11.17	16.84
26.5	11.49	17.32
26.6	11.82	17.83
26.8	12.56	18.94
27.0	13.40	20.20
27.2	14.36	21.65
27.4	15.46	23.31
27.5	16.08	24.24
27.6	16.75	25.26
27.8	18.27	27.55
28.0	20.10	30.31
28.2	22.34	33.67
28.4	25.13	37.88
28.5	26.80	40.41
28.6	28.72	43.29
28.8	33.50	50.51
29.0	40.20	60.61

Compound List

Modified TO-15 SIM (Sh)-BTEX, Naph &Total Xylenes

CAS Number	Compound	Detection Limit ppbv	Type
71-43-2	Benzene	0.050	
108-88-3	Toluene	0.020	
100-41-4	Ethyl Benzene	0.020	
9999-9999-015	Total Xylenes	0.060	
91-20-3	Naphthalene	0.050	
17060-07-0	1,2-Dichloroethane-d4		
2037-26-5	Toluene-d8		
460-00-4	4-Bromofluorobenzene		
108-38-3	m,p-Xylene	0.040	
95-47-6	o-Xylene	0.020	

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L# 1618
Can#: 115789-1618
Date : 11/22/17 20:23
Data File: d112212.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		102.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	96.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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Media Certification Report

Canister Number: 6L# 30853
Can#: 115789-30853
Date : 11/16/17 6:21
Data File: d111537.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		100.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	97.00	% Recovery
Toluene-d8	2037-26-5	0.500	100.00	% Recovery

eurofins | Air Toxics

www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L# 6L1305
Can#: 115789-0409
Date : 11/23/17 1:55
Data File: d112221.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		104.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	98.00	% Recovery
Toluene-d8	2037-26-5	0.500	97.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2416
Can#: 115789-2416
Date : 11/22/17 19:26
Data File: o112217.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		98.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	98.00	% Recovery
Toluene-d8	2037-26-5	0.500	100.00	% Recovery

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Media Certification Report

Canister Number: 6L# 34407
Can#: 115789-34407
Date : 11/22/17 23:28
Data File: d112217.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		103.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	95.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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Media Certification Report

Canister Number: 6L#1904
Can#: 115789-1904
Date : 11/07/17 21:55
Data File: d110715.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		99.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	97.00	% Recovery
Toluene-d8	2037-26-5	0.500	101.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2864
Can#: 115789-2864
Date : 12/05/17 21:07
Data File: o120521.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		96.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	101.00	% Recovery
Toluene-d8	2037-26-5	0.500	110.00	% Recovery

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Media Certification Report

Canister Number: 6L# 1705
Can#: 115789-1705
Date : 12/05/17 21:52
Data File: d120509.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		101.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	94.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L# 33787
Can#: 115789-33787
Date : 11/22/17 19:09
Data File: d112210.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		102.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	97.00	% Recovery
Toluene-d8	2037-26-5	0.500	98.00	% Recovery

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Media Certification Report

Canister Number: 6L# 0608
Can#: 115789-0608
Date : 11/22/17 17:18
Data File: d112207.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		103.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	96.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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www.airtoxics.com
1-800-985-5955

Media Certification Report

Canister Number: 6L# 2559
Can#: 115789-2559
Date : 12/05/17 20:35
Data File: o120520.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		90.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	87.00	% Recovery
Toluene-d8	2037-26-5	0.500	104.00	% Recovery

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Media Certification Report

Canister Number: 6L# 2764
Can#: 115789-2764
Date : 11/23/17 3:09
Data File: d112223.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		103.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	96.00	% Recovery
Toluene-d8	2037-26-5	0.500	98.00	% Recovery

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Media Certification Report

Canister Number: 6L# 1810
Can#: 115789-1810
Date : 12/05/17 22:41
Data File: o120524.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		98.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	102.00	% Recovery
Toluene-d8	2037-26-5	0.500	105.00	% Recovery

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Media Certification Report

Canister Number: 6L# 13853
Can#: 115789-13853
Date : 11/15/17 21:12
Data File: o111511.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		101.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	101.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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Media Certification Report

www.airtoxics.com
1-800-985-5955

Canister Number: 6L# 31422
Can#: 115789-31422
Date : 12/05/17 21:38
Data File: o120522.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		103.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	100.00	% Recovery
Toluene-d8	2037-26-5	0.500	106.00	% Recovery

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Media Certification Report

Canister Number: 6L# 1762
Can#: 115789-1762
Date : 11/22/17 21:00
Data File: d112213.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	95.00	% Recovery
Toluene-d8	2037-26-5	0.500	98.00	% Recovery

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Media Certification Report

www.airtoxics.com
1-800-985-5955

Canister Number: 6L# 5778
Can#: 115789-5778
Date : 11/16/17 7:48
Data File: o111531.d

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		106.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	100.00	% Recovery
Toluene-d8	2037-26-5	0.500	98.00	% Recovery

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Media Certification Report

Canister Number: 6L# 12955
Can#: 115789-12955
Date : 11/16/17 3:02
Data File: o111522.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		100.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	100.00	% Recovery
Toluene-d8	2037-26-5	0.500	99.00	% Recovery

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Media Certification Report

Canister Number: 6L# 0641
Can#: 115789-0641
Date : 11/23/17 0:41
Data File: d112219.d

www.airtoxics.com
1-800-985-5955

Name	CAS	Cert RL	Conc.	Units
Benzene	71-43-2	0.050	ND	ppbv
Ethyl Benzene	100-41-4	0.020	ND	ppbv
m,p-Xylene	108-38-3	0.040	ND	ppbv
Naphthalene	91-20-3	0.050	ND	ppbv
o-Xylene	95-47-6	0.020	ND	ppbv
Toluene	108-88-3	0.020	ND	ppbv
1,2-Dichloroethane-d4	17060-07-0		103.00	% Recovery
4-Bromofluorobenzene	460-00-4	0.500	97.00	% Recovery
Toluene-d8	2037-26-5	0.500	98.00	% Recovery

Eurofins Air Toxics, Inc.	Data Review Checklist			Release Date: 11/21/17
Workorder # 1712342	Form F1.27	Revision #15	Revision Date: 11/21/17	Page 1 of 2

S1	S2	S3	S4	D	*Section 1* – Spec Out				
					Initials/Instrument/Date	**S1:** GT MSD2c 12/19/17	**S2:** ~~GT 12/20/17~~ 12/26/17	**S3:**	**S4:**
✓	✓				Project Identification (PID), Project Requirements Table (PRT), Daily QC and ICAL met Criteria				
✓	✓				Lumen QC and ICAL evaluation (ref. SOP/Method) report initialed and in folder				
NA	NA				Manual Integrations included and approved				
✓	✓			✓	Chain of Custody verified for special comments (add comments below)				
✓	✓				Non-standard Target sublist verified (MDL, LOD, RL, control limits, etc.)				
✓	✓				Verified standard expiration dates				

Profile, analyses, reporting, special notes and unusual circumstances:

S1: 6 out in QC. J- flag to MDL. S2: 6 out in QC.

A1	A2	A3	A4	D	*Section 2* – Sample Analysis				
					Initials/Date	**A1:** GW 12/19/17	**A2:** GT 12/20/17	**A3:** GT 12/22/17	**A4:**
✓	✓	✓		✓	IS/Surr Recoveries, Dilution Factors, Load Volumes, leg(s) of instrument, Initial/Final Pressures, Canister #s Verified and dilution ranges are met per SOP (ex. Over-ranged/overdiluted)				
NA	NA	NA		NA	**a)** Tedlar Bag IDs verified against COC **b)** Tedlar Bag ID confirmed with loading sequence/leg(s) of instrument				
NA	NA	NA		NA	Manual Integrations/Bag or Can Dilution Forms/Re-pressurization Forms/Bag-Can Transfer Forms present (circle all that apply)				
✓	✓	✓			12/24 Hr clock time & Hold Time met for all samples				
✓	✓	✓		✓	Re-analysis of sample(s) has been evaluated for comparability and/or sample(s) has/have been checked for trends (Inf/Eff), field dups/trip blanks, samples following bad loads on CIAAs have been verified (system blks, confirmation runs).				
✓	✓			✓	All runs have been evaluated for potential carry-over (TPHg/non-Target/over-range compounds/ etc.)				

Analytical and special notes: A1: 01A, 03A-07A, 09A-11A full loads. 02A dil TL

A2: 12A, 13A + Fuel loads. A3: 14A, 15A, 08A : Fuel loads.

D1	D2	D3	D4	T	3T	*Section 3* – Target Data Reduction	**Technical Review Needed? Circle one: Yes/No**		**T:**	
						Initials/Instrument/ Date	**D1:** GT 12/22/17	**D2:**	**D3:**	**D4:**
NA						CAR # *(if applicable)*				
✓						Spectra Verified *(documentation of spectral defense included if applicable)*				
NA						TICs resemble reference spectra/ TICs between sample dups. are consistent *(if applicable)*				
✓						Lab Narrative is correct				
NA						TPH/NMOC calculations complete and included in folder				

Special notes:

A3T	*Section 4*- Atlas Data Entry	Lumen verified and included in folder	Circle one: Yes/No
	Initials/Date: GT 12/22/17	**3rd Tier:** *(needed only for DOD or per client request)*	
✓	Sample Discrepancy Report (SDR) complete and approved *(if applicable)*		
✓	Manually entered results are checked		
✓	At least one result per sample is verified against Target quant sheets		
✓	Appropriate data qualifier flags are applied		
✓	Final Invoice is correct/ Final PDF report, COC and EDD reviewed and correct		

Special Notes:

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Workorder # :				Reason for Reissue:
W	T	3T	Q	
				Reissue Request form Present
				Client or QA or Lab contact present with reason for reissue
				Review all affected data
				Report header has correct R1, R2 etc
				The Lab Narrative clearly explains the reissue (Date, Reason and whether client requested)
				Date for Reissue in Report Header matches date in Lab Narrative
				Check Project Profile for correct reporting instructions (multiple clients, # hardcopies, etc)
				Corrective Action issued - #
				The reissued workorder has been approved by QA Manager or a Technical Director
Additional Comments:				

Write Up (Initials/Date)	**Tech Review** (Initials/Date)	***3rd Tier Review** ** 3rd Tier Report Review is for DoD & Client Specific projects only* (Initials/Date)	**QA Review** (Initials/Date)

Note (1) *Please check all the appropriate boxes. Indicate "NA" for any statement that doesn't apply*
Note (2) 3rd Tier Report Reviewer and Write Up Reviewer must be separate individuals for DoD & Client Specific Projects

Not Applicable