

Draft-Final Report

VAPOR INTRUSION INVESTIGATION (DRY SEASON) FORMER MAKAH AIR FORCE STATION NEAH BAY, WASHINGTON

Submitted to:

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LIST OF ABBREVIATIONS AND ACRONYMS

AFS	Air Force Station
ALS	ALS Global
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CAP	Corrective Action Plan
cm/sec	Centimeter per second
COC	Contaminant of Concern
CoC	Chain of Custody
DoD	Department of Defense
DRO	Diesel Range Organics
EC	Equivalent Carbon
FAA	Federal Aviation Administration
ft	feet/foot
gal/day/ft ²	gallons per day per square foot
GRO	Gasoline Range Organics
IDQTF	Intergovernmental Data Quality Task Force
LLC	Limited Liability Company
MRO	Motor Oil Range Organics
MTCA	Model Toxics Control Act
µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
OFJV	Olgoonik - FPM Joint Venture
ORC	Oxygen Release Compound
PAH	Polycyclic Aromatic Hydrocarbons
PID	Photoionization Detector
PVI	Petroleum Vapor Intrusion
QA/QC	Quality Assurance / Quality Control
TPH	Total Petroleum Hydrocarbons
UFP-QAPP	Uniform Federal Policy – Quality Assurance Project Plan
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	Vapor Intrusion
VOCs	Volatile Organic Compounds
WA	Washington State
WDOE	Washington State Department of Ecology
WP	Work Plan

WRCC

Western Region Climate Center

1 INTRODUCTION

Olgoonik - FPM Joint Venture (OFJV), Limited Liability Company (LLC) has conducted a vapor intrusion (VI) investigation for petroleum related contamination at Buildings 16 and 18 at the former Makah Air Force Station (Installation) in Neah Bay, Washington (WA) (**Figure 1**). This work is being completed under the U.S. Army Corps of Engineers (USACE) Seattle District, Contract Number W912WD-19-D-1025.

The project objectives were to assess the VI pathway in Buildings 16 and 18 in the Cantonment Area (Site) of the installation and the potential exposure of building occupants to petroleum volatile organic compounds (VOCs) from underground storage tanks (USTs) C, D, and E (**Figure 2**).

The VI investigation was conducted in accordance with the United States Environmental Protection Agency (USEPA) and Makah Tribe approved Uniform Federal Policy – Quality Assurance Project Plan (UFP-QAPP) Work Plan (WP) (OFJV, March 2021) and covers the proposed sampling during the ‘dry’ season (typically May to September).

1.1 Report Organization

The report has been organized into the following sections:

Section 1.0 Introduction

Section 2.0 Site Background

Section 3.0 Air Monitoring Results

Section 4.0 Summary, Conclusions and Recommendations

Section 5.0 References

Relevant maps and illustrations for the Site are provided in **Figures 1 through 4** and tabulated data generated for the sites are provided in **Tables 1 through 5**. Field forms including equipment calibration forms, daily weather form, field forms, inventory questionnaires and a scan of the field book are provided in **Appendix A**. A photographic log is provided as **Appendix B**, the laboratory analytical report is included in **Appendix C**, and the data validation report is included in **Appendix D**.

1.2 Facility and Site Information

The Air Force leased approximately 255 acres from the Makah Tribe for use as a radar surveillance station from the 1950s until 1988. Buildings 16 and 18 lie within the Cantonment Area of the Installation and are used as office space and storage for fisheries related equipment (Building 16) and general office space (Building 18) (**Figure 1**). Multiple USTs were used to store diesel fuel and gasoline within the Cantonment Area, which left behind petroleum contaminated soil and

groundwater within the Cantonment Area (**Figure 2**). More specifically UST E, which was used to store gasoline, was located northeast of Building 16 and USTs C and D, which were used to store diesel fuel, were located northwest of Building 18 (**Figures 3 and 4**).

2 BACKGROUND

2.1 Installation Location

The Installation lies within the Makah Indian Reservation (the Reservation), located in the northwest corner of the Olympic Peninsula in the state of Washington (**Figure 1**). The United States Air Force (USAF) leased approximately 255 acres from the Makah Tribe. The Reservation encompasses approximately 42 square miles and is bordered on the west by the Pacific Ocean and on the north by the Strait of Juan de Fuca. The City of Port Angeles lies approximately 60 miles east of the Reservation. Neah Bay is the only town located on the Reservation.

The military facilities at the Site were separated into four main areas: Cantonment, family housing, Top Camp, and trailer court/family campground. The former USTs are located within the Top Camp and Cantonment Areas. A total of 26 USTs were located on the Installation and were historically used to store diesel fuel and gasoline. The USTs left behind petroleum contaminated soil and groundwater (**Figure 2**). In the Cantonment Area, UST E, which was used to store gasoline, was located northeast of Building 16 and USTs C and D, which were used to store diesel fuel, were located northwest of Building 18 (**Figures 3 and 4**).

2.2 Cantonment Area Environmental Setting

2.2.1 Cantonment Area Geology

The geologic units encountered during previous Site investigations were fill soil, unconsolidated alluvium and siltstone bedrock. The fill soil consisted of brown silt fine sand gravel- and cobble-sized siltstone fragments and wood. It was reportedly obtained from adjacent hillsides to form a level surface during Site construction. The fill layer is continuous over the Site, ranging in thickness between about 3 and 7 feet. Where it contains little gravel and cobble material, the fill material is difficult to distinguish from the underlying native alluvium.

The unconsolidated alluvium consists of brown to dark gray, slightly silty, very fine to fine sand with occasional shell fragments and peat. The alluvium thickness varies across the Site, with the unit pinching out against the base of the hill at the northwest edge of the Site. The thickness exceeds 20 feet beneath most of the Installation where the bedrock surface declines to the southeast beneath the Wa'atch River.

The bedrock consists of an unnamed moderately hard, brown to greenish-gray siltstone and sandstone deposited during the Middle to Upper Eocene. It is similar to the Lyre and Twin River formations located to the east. The rock was encountered at depths of 7.5 and 16.5 feet in borings from MW-01 and MW-04, respectively, at the north end of the Installation and exceeding 22 feet elsewhere (Ridolfi, 2008; Shannon & Wilson, 1990).

2.2.2 Cantonment Area Hydrogeology

A single unconfined aquifer was identified beneath the Site, occurring in the alluvium and some lower parts of the overlying fill soil. The base of the aquifer is formed by the siltstone bedrock. The water table occurs between 4 to 7 feet below ground surface. The water table has a gradient of about 65 feet per mile, sloping to the southeast, towards the Wa'atch River.

Local recharge to the aquifer occurs directly from precipitation onto the permeable soil from the Site, from surface and subsurface runoff from the adjacent hills bordering the Site, and possibly from groundwater discharging from the bedrock into the aquifer, although this last source is expected to be minor. According to the Western Region Climate Center (WRCC), the average annual precipitation at Neah Bay is approximately 100.5 inches (WRCC, 2018). Three quarters of the annual precipitation occurs during the six-month period from October through March.

The groundwater moves across the Cantonment Area to the southeast and likely discharges into the channel of the Wa'atch estuary. The water table does not appear to fluctuate more than about 0.1 feet with the tide (Shannon & Wilson, 1990).

The hydraulic conductivity of the aquifer material (very fine to fine sand) is estimated to be between 10 and 1,000 gallon per day per square foot (gal/day/ft²) (10^{-4} to 10^{-2} centimeters per second [cm/sec]). This estimate is based on the visual observation of the soil samples (Shannon & Wilson, 1990).

2.3 Installation History

The Installation was used as a radar surveillance station operated by the USAF. The station began operations in the 1950s and was closed in 1988.

The Cantonment Area was constructed in the early 1950s to support the former Makah Air Force Station (AFS). It is located on Cape Flattery Road near the beaches and estuary where the Wa'atch River flows into Makah Bay. The Cantonment Area served as the Makah AFS administrative headquarters until the station was closed. Buildings and structures at the Cantonment Area included offices, motor equipment garages, medical treatment facilities, various shops, a chapel, a dining hall, a boiler building, a gas station, dormitories, and recreational facilities, including tennis courts, a bowling center, a gymnasium and a weight room (Radian, 1987).

There were ten former USTs (UST A, B, C, D, E, F, G, Y1, Y2, and Y3) within the Cantonment Area. Nine groundwater monitoring wells (MW-01 through -09) are in the Cantonment Area in the vicinity and downgradient of the former USTs.

USTs C and D were 10,000- and 8,000-gallon steel tanks used to store No. 2 diesel fuel for the boilers in the adjacent heating plant (Building 14). Former contents also included bunker fuel (No. 5 diesel). USTs C and D were installed in 1979 and 1976, respectively (Tetra Tech, 1988, 1989).

UST E was a 2,000-gallon steel tank containing both leaded and unleaded gasoline for refueling motor vehicles. UST E was installed in 1953 and located northeast of Building 16. A former dispenser island is located hydraulically upgradient from UST E.

After the AFS closed, all the land leases, except one, were terminated and the property was transferred back to the Makah Tribe. The remaining lease, which contained the Top Camp areas, was transferred to the Federal Aviation Administration (FAA) in June 1989. The FAA continues to maintain radar operations on Bahokus Peak.

In June 2009, the USEPA received seven Certification of Completed Closure forms from the USAF documenting that 24 USTs were permanently closed at the Site between the years 1988 and 1989. After 2009, the closed UST count increased to 26 USTs as it was determined that UST Y was actually three USTs. These USTs were renamed USTs Y1, Y2, and Y3.

2.3.1 Contaminants of Concern / Exposure Media

Site operations have contributed to petroleum-related contamination of soil and groundwater in the areas surrounding USTs C, D and E in the Cantonment Area of the former Makah AFS.

Building 16 (UST E)

In 2007, an investigation at UST E showed DRO, Gasoline Range Organics (GRO) and benzene, toluene, ethylbenzene, and xylene (BTEX) compounds were detected in multiple locations. Two samples had GRO exceedances of the MTCA Method A soil cleanup level. Lead was not detected in any soil samples (USACE, 2015).

In 2015, three soil sample locations (GP11-E6-10, -E11-10 and -E11-15) exceeded the GRO Model Toxics Control Act (MTCA) Method A soil cleanup level at depth from 5 to 10 foot (ft) below ground surface (bgs), 5-10 ft bgs and 10-15 ft bgs, respectively. No DRO or MRO exceedances were reported. In 2017, four soil locations were investigated including two at a 45-degree angle under Building 16, which showed GRO detections indicating soil contamination under the building (USACE, 2019a).

Groundwater sampling at monitoring well MW-06, downgradient of UST E, showed that GRO consistently exceeded MTCA Method A cleanup level since 1989. GRO decreased to 407 µg/L in May 2018 which was the first time GRO was below the MTCA Method A cleanup level. Diesel Range Organics (DRO) has not exceeded the MTCA Method A groundwater cleanup level since 2014. Lead was detected at 20 µg/L in January 2010 but has not exceeded the MTCA Method A groundwater cleanup level since (USACE, 2019b).

Additional grab groundwater sampling in 2015 showed expected GRO and unexpected DRO exceedances of the MTCA Method A groundwater cleanup levels (USACE, 2019a).

Building 18 (USTs C and D)

In 2007, an investigation at USTs C and D showed DRO and Motor Oil Range Organics (MRO) exceeded MTCA Method A soil cleanup levels. In 2015, contaminants of concern (COCs) reported in soil included naphthalene and polycyclic aromatic hydrocarbons (PAHs). DRO exceeded MTCA Method A soil cleanup levels but MRO did not (USACE, 2015).

Groundwater sampling at monitoring well MW-05, located downgradient of USTs C and D, showed that DRO consistently exceeded MTCA Method A cleanup level. Lead occasionally was detected but has not exceeded the MTCA Method A groundwater cleanup level since October 2012. Monitoring well MW-08, 150 ft downgradient, has not had DRO exceedances of the MTCA Method A groundwater cleanup level, except in October 2012 (USACE, 2015).

Additional grab groundwater sampling in 2015 showed naphthalene as the only VOC exceeding the MTCA Method A groundwater cleanup level of 150 micrograms per liter ($\mu\text{g/L}$) at 210 $\mu\text{g/L}$. Five additional grab groundwater samples were collected in 2017 and only one exceeded the MTCA Method A groundwater cleanup level for DRO (USACE, 2019a).

3 AIR MONITORING RESULTS

3.1 Air Monitoring

The ‘dry’ season VI investigation field work was originally planned for September 2021, but due to an increase in covid cases on the reservation in September, it was postponed until mid-October 2021. The VI investigation was conducted on October 15th and 18th, 2021 in accordance with the USEPA and Makah Tribe approved UFP-QAPP WP (OFJV, March 2021). Prior to field mobilization, the field work was planned in accordance with SOP SP-1 – Field Planning and Mobilization. The VI investigation was performed in two days; the first day included the building inventories at Buildings 16 and 18, removing potential VOC sources (a gas-powered pressure washer in Building 16) and airing out the buildings for two days. The second day entailed the sampling effort consisting of two outdoor air samples (one upwind of each building) and three paired indoor and crawlspace air samples in each building. A total of 15 air samples were collected: three indoor air, three crawlspace air and one outdoor air per building and one duplicate. All air samples were collected with 6-L Summa canisters for 8 hours due to the commercial/industrial use of the buildings.

For comparison purposes, the March 2021 wet season VI sampling results are provided in **Table 2** (Building 16) and **Table 4** (Building 18).

3.2 Air Monitoring Procedures

3.2.1 Building Inventory

The building inventory was performed on October 15th, 2021. Buildings 16 and 18 were visited and the Indoor Air Questionnaire and Building Inventory Forms were completed (one per building). Makah personnel (Steve Pendleton) assisted with answering the questions on the questionnaire. Floor plans and outdoor plots were drawn and the product inventory form was completed which summarized potential VOC sources in each building. As part of the building walk through, a photoionization detector (PID) was used to identify potential VOC sources. Photos were taken of all potential indoor VOC sources. A significant potential VOC source (a gas-powered pressure washer in Building 16) was removed. The garbage cans in Building 18 were emptied during the building inventory to eliminate any possible VOCs emitted from the garbage. The buildings were aired on October 16th and 17th during business hours to remove any potentially accumulated indoor VOCs, which could impact the VI sampling results. The completed building questionnaires are provided in **Appendix A**. The photographic logs are provided in **Appendix B**.

3.2.2 Air Sampling

The air sampling was conducted on October 18th, 2021. All samples were collected during normal business hours (8 am to 5 pm) with 6-L Summa canisters with an 8-hr sample collection duration to assess commercial/industrial exposure. The air samples collected are summarized in **Table 1**.

At the start of the day, the weather observation form was completed with additional entries midday and at the end of the sampling (**Appendix A**).

For each air sample, an indoor/outdoor/crawlspace air monitoring form was completed. Air sampling was conducted as described in field SOP AS-1 Soil Vapor Intrusion / Soil Vapor Sampling (Soil Vapor, Sub-Slab Vapor, Indoor Air, and Outdoor Air). Air sampling started at Building 18 with accessing the crawl space and setting up the three crawlspace air sample canisters. Sampling forms were completed including canister and regulator numbers and photos of each canister were collected. Then, the outdoor air sample canister was set up with Makah personnel assistance with a step ladder to reach the appropriate height. Again, a sampling form was completed with all pertinent information. Lastly, the three indoor air sample canisters were set up and sampling forms were completed and photos collected. Building occupants were instructed not to linger near the canisters as the samples were being collected for their 8-hr duration. The samples were recorded on the chain of custody (CoC). The completed sampling forms are provided in **Appendix A**. The photographic logs are provided in **Appendix B**.

This same procedure was repeated for Building 16 and sampling forms were completed and photos collected. One difference was that in Building 16, a parent and duplicate sample were collected in the main room (sample IDs 16IA05/16IA05D).

Throughout the 8-hr air sample duration, the regulators were checked frequently to verify that sampling was proceeding as expected (i.e., if the vacuum in the sample canisters was decreasing as expected). After approximately 8 hours, the sampling was stopped and the remaining vacuum in each canister was recorded in the field book, on each sample canister's sample tag, on each sample form and the CoC. The CoCs were completed and signed for sample release and packaged with the sample canisters in their shipping boxes. Regulators were also placed back in their respective shipping boxes.

The samples were handled and shipped as detailed in SOP SH-1 – Sample Handling, Documentation and Tracking and shipped under COC via Fedex Ground through the Makah tribe shipping department back to the subcontracted lab (ALS Global [ALS] in Simi Valley, CA) for air analysis under USEPA Method TO-15 for VOC compounds.

3.3 Air Monitoring Results

The indoor air analytical results for both Building 16 and 18 were screened against the indoor air cleanup levels as provided in Table 1 in *Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings, Implementation Memorandum No. 18* (WDOE [Washington State Department of Ecology], 2018a).

The Building 16 analytical results (**Table 3**) indicate that the petroleum equivalent carbon (EC) fractions were non detect for all fractions and all samples. The petroleum VOC analysis indicated

that BTEX and naphthalene were detected in all air samples. All benzene detections met the indoor air cleanup level of $0.32 \mu\text{g}/\text{m}^3$ and were reported in a relatively narrow range (0.16 to $0.22 \mu\text{g}/\text{m}^3$). Crawlspace air benzene concentrations (0.16 to $0.22 \mu\text{g}/\text{m}^3$) were similar in value to the outdoor benzene concentration ($0.21 \mu\text{g}/\text{m}^3$). The indoor air samples also had benzene concentrations in a narrow range (0.21 – $0.22 \mu\text{g}/\text{m}^3$) which was similar to the outdoor benzene concentration.

One naphthalene exceedance of the indoor air cleanup level of $0.078 \mu\text{g}/\text{m}^3$ was reported for the duplicate indoor air sample 16IA05D at $0.27 \mu\text{g}/\text{m}^3$, while the parent sample 16IA05 had a non-detect naphthalene result. The naphthalene results for the outdoor and crawlspace air samples were non-detect. All air samples results were well below the total petroleum hydrocarbons (TPH) indoor air cleanup level of $140 \mu\text{g}/\text{m}^3$.

The Building 18 analytical results (**Table 5**) indicate that the petroleum EC fractions were non detect for all fractions, except one: the EC9-12 fraction was reported for indoor air sample 18IA04 ($14 \mu\text{g}/\text{m}^3$) and crawlspace air samples 18CA05 ($18 \mu\text{g}/\text{m}^3$) and 18CA06 ($14 \mu\text{g}/\text{m}^3$). The petroleum VOC analysis indicated that BTEX and/or naphthalene were detected in all air samples. All benzene detections met the indoor air cleanup level ($0.32 \mu\text{g}/\text{m}^3$) and were reported in a narrow range (0.20 to $0.23 \mu\text{g}/\text{m}^3$), with similar benzene concentrations reported in indoor, outdoor and crawlspace air. One naphthalene exceedance of the indoor air cleanup level ($0.074 \mu\text{g}/\text{m}^3$) was reported for crawlspace air sample 18CA06 at $0.13 \mu\text{g}/\text{m}^3$. All other naphthalene results were non detect. All air samples results were well below the TPH indoor air cleanup level of $140 \mu\text{g}/\text{m}^3$.

The laboratory analytical results are included in **Appendix C** and the validation report is included in **Appendix D**.

3.4 Quality Assurance/Quality Control

As part of routine Quality Assurance / Quality Control (QA/QC) sampling conducted during the October 2021 VI sampling event, one duplicate sample was collected at Building 16 at indoor air location 5 in the main room. Two canisters were set up adjacent to each other and both collected air samples from the same ambient air for the same timeframe. The duplicate and parent sample had identical benzene concentrations ($0.22 \mu\text{g}/\text{m}^3$) and two different naphthalene concentrations (non detect for the parent sample and $0.27 \mu\text{g}/\text{m}^3$ for the duplicate). The duplicate sample analytical results are included with the parent sample's results in **Table 3**.

The sample canisters were stored in their original shipping boxes. The custody seals were applied to the shipping boxes and shipped via FedEx Ground to the analytical laboratory (ALS Global) in Simi Valley, CA. Upon receipt, the laboratory confirmed the vacuum pressures remaining in the sample canisters.

Data validation was performed in accordance with the UFP-QAPP WP by the project chemist for the air sample laboratory results. Holding times, surrogate recoveries, laboratory control sample recoveries, MS/MSD recoveries, method blanks, field duplicates, instrument tuning, internal standards, and calibrations were reviewed. No deficiencies were noted during the data validation process, and 100% of the sample results are deemed acceptable for their intended use. An

electronic copy of the laboratory analytical data is included in **Appendix C** and the data validation report is included in **Appendix D**.

3.5 Groundwater Levels

Groundwater elevation measurements were collected on October 18th, 2021 during the ‘dry’ season VI sampling event to confirm that groundwater elevations were indicative of the ‘dry’ season. The following groundwater measurements were collected:

- MW-5. Ground water elevation was 3.05 ft. below the top of the well casing. The PID reading was 0.1 – 2.6 ppm. The MW-5 monument was full of water and was bailed out before removing the cap. PID readings continually fluctuated in MW-5 with initial readings taken less than a 1 minute after the cap was removed and highest reading was taken after ground water elevation was measured.
- MW-6. Ground water elevation was 2.85 ft. below the top of the well casing. The PID reading: 0.1 ppm. The MW-6 monument had very little water.

The ground water elevations are more indicative of the wet season than ‘dry’ season. Local weather was wet the week before the VI sampling event, with significant rain all day in the week prior to the October 18th, 2021 VI sampling event.

4 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

4.1 Summary

The Building 16 air sampling results indicated no detections for the petroleum EC fractions in any samples. Benzene was detected in all indoor, outdoor and crawlspace air samples in a narrow range and none exceeded the indoor air cleanup level. One naphthalene exceedance was reported for the indoor air duplicate sample; the corresponding parent sample result was non detect for naphthalene. All other air samples were non-detect. No TPH exceedances of the indoor air cleanup level of $140 \mu\text{g}/\text{m}^3$ were reported.

The Building 18 air sampling results indicated three minor detections for the petroleum EC fractions; the EC9-12 fraction for indoor air sample 18IA04 and crawlspace air samples 18CA05 and 18CA06 had detections in the $14\text{-}18 \mu\text{g}/\text{m}^3$ range. Benzene was detected in all indoor, outdoor and crawlspace air samples in a narrow range and none exceeded the indoor air cleanup level. One exceedance of the naphthalene indoor air cleanup level was reported for crawlspace air sample 18CA06. All other air samples were non-detect. No TPH exceedances of the indoor air cleanup level of $140 \mu\text{g}/\text{m}^3$ were reported.

4.2 Conclusions

The ventilation of the indoor air in Building 16 performed on the two days between the building questionnaire and the air sampling resulted in lower benzene concentrations in the indoor air that met the benzene indoor air cleanup level in all samples. No petroleum EC detections were reported in Building 16. The only exceedance reported (naphthalene in the duplicate indoor air sample) was not confirmed in the parent sample. Benzene concentrations in indoor, outdoor and crawlspace air are in the same narrow range, indicating that vapor intrusion does not appear to be occurring.

The ventilation of the indoor air in Building 18 performed on the two days between the building questionnaire and the air sampling resulted in lower benzene concentrations in the indoor air that met the benzene indoor air cleanup level in all samples. Three minor petroleum EC detections were reported in Building 18; two in crawlspace samples and one in an indoor air sample. This may indicate that vapor intrusion from soil vapor to crawlspace air to indoor air is occurring. However, the narrow range of benzene detections in indoor, outdoor and crawlspace air seem to indicate that vapor intrusion is not occurring, as all benzene concentrations are essentially the same. One naphthalene exceedance was reported for one crawlspace air sample, but all other air samples were non detect for naphthalene. Therefore, this does not seem to indicate a vapor intrusion issue.

4.3 Recommendations

FPM recommends the following:

- Encourage the building occupants to continue proper ventilation of the buildings as ventilation for two days prior to sampling seems to have reduced benzene concentrations to below the indoor air cleanup level.
- No additional VI sampling is recommended despite both sampling events occurring during the wet season. Wet season VI sampling results are more conservative than dry season VI sampling results due to the higher groundwater elevations causing a shallower vadose zone, which minimizes the soil air space volume available for petroleum vapor dilution (USEPA, 2015). The wet season at the Site corresponds with cooler temperatures, resulting in lower petroleum biodegradation rates, which are associated with “worst case” VI results.

5 REFERENCES

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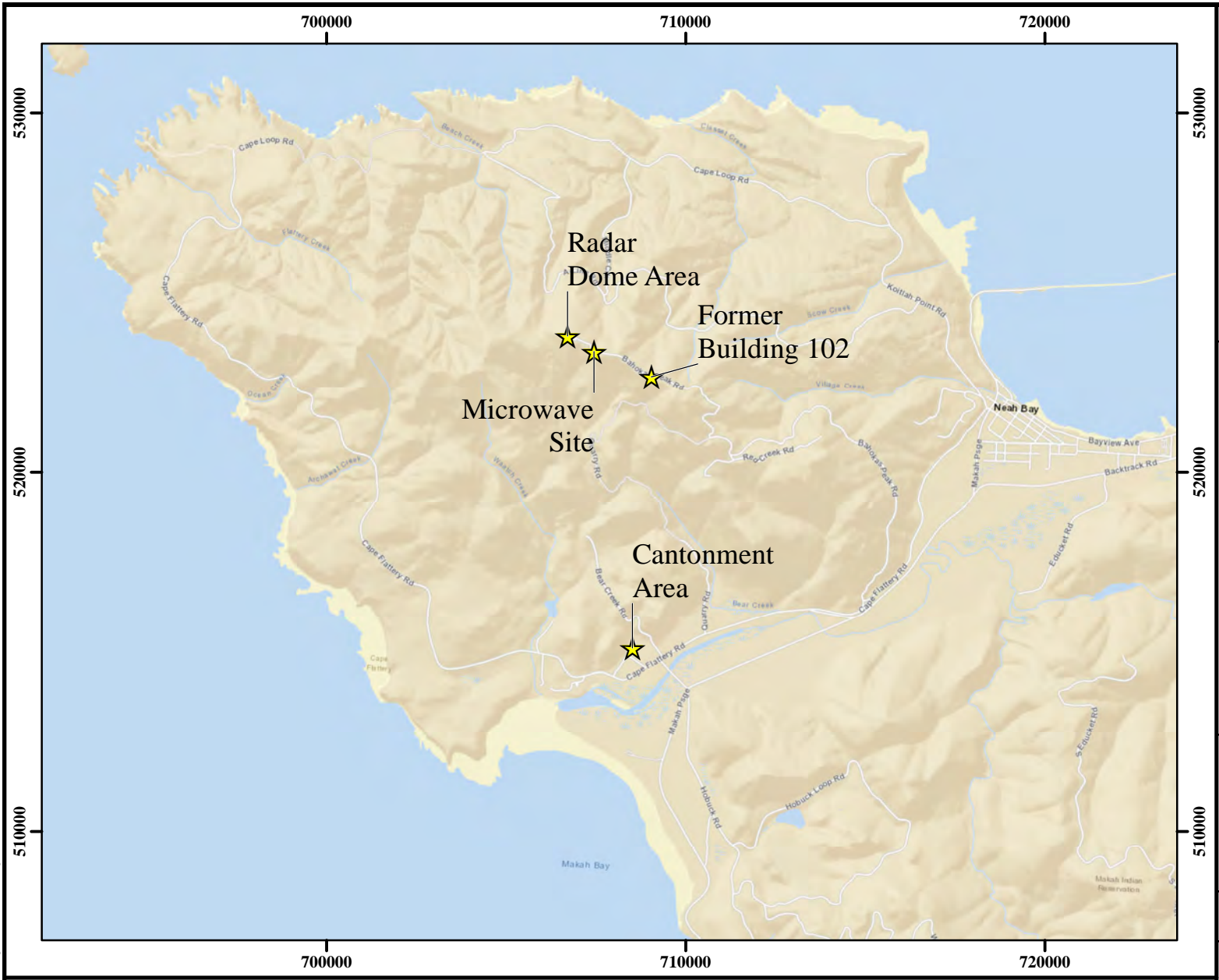
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Key Features

★ Sites

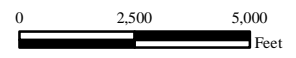
Former Makah AFS
VI Investigation
Neah Bay, Washington

FIGURE 1

Former Makah AFS
Location

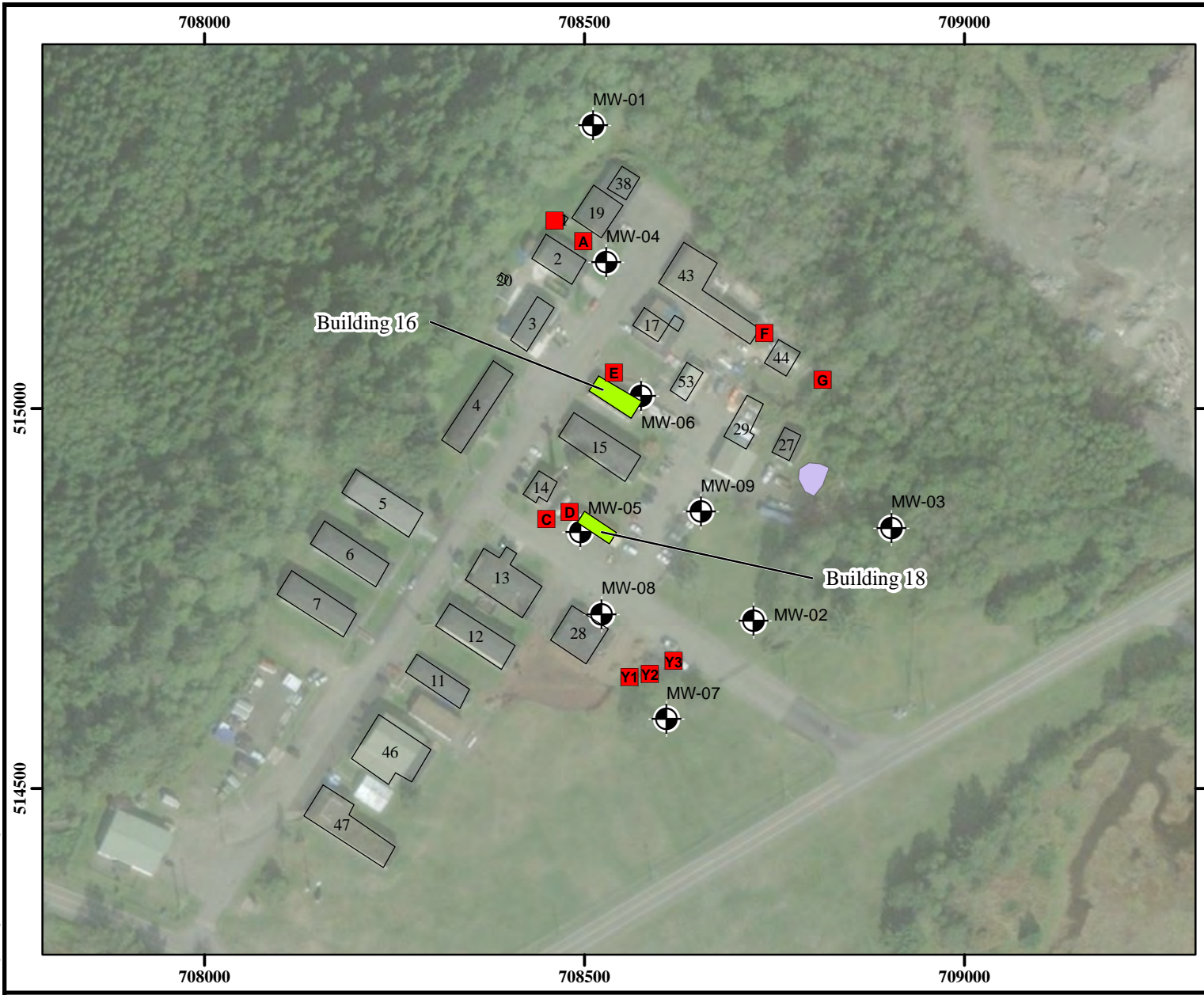
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Revision Date: 4/27/2021

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Projection: Lambert Conformal Conic
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Basemap Date: Apr 9, 2021



Olgoonik
FPM JV, LLC

2021



Key Features

- Monitoring Well
- Underground Storage Tank
- Building of Interest
- Building
- Burn Pit

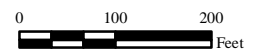
Former Makah AFS
VI Investigation
Neah Bay, Washington

FIGURE 2

Former Makah AFS
Cantonment Area

NOTES:
Revision Date: 4/28/2021

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Units: Foot US
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 Basemap Date: December 16, 2020



2021

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- Key Features**
- Monitoring well
 - Crawspace Air Sample
 - Indoor Air Sample
 - Outdoor Air Sample
 - Building
 - Underground Storage Tank

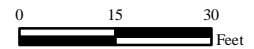
Former Makah AFS
VI Investigation
Neah Bay, Washington

FIGURE 3

Former Makah AFS
Building 16
Air Sample Locations

NOTES:
Revision Date: 11/16/2021

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Units: Foot US
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 Basemap Date: December 16, 2020



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Key Features

- Monitoring well
- Crawlspace Air Sample
- Indoor Air Sample
- Outdoor Air Sample
- Building
- Underground Storage Tank

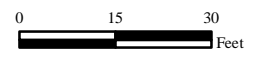
Former Makah AFS
VI Investigation
Neah Bay, Washington

FIGURE 4

Former Makah AFS
Building 18
Air Sample Locations

NOTES:
Revision Date: 11/16/2021

Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet
 Projection: Lambert Conformal Conic
 Datum: North American 1983
 Units: Foot US
 Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 Basemap Date: December 16, 2020



2021

Path: Y:\GIS_Projects\Makah\Projects\Reports\Oct_2021\Figure4_Building_18.mxd

Tables

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Table 1
List of Samples Collected
October 2021

Sample ID	Sample Type	Sample Canister	Sample Duration (hr)
Building 16			
16CA04	Indoor	6-L Summa	8
16CA05	Indoor	6-L Summa	8
16CA05D	Indoor, duplicate sample	6-L Summa	8
16CA06	Indoor	6-L Summa	8
16OA02	Outdoor	6-L Summa	8
16CA04	Crawlspace	6-L Summa	8
16CA05	Crawlspace	6-L Summa	8
16CA06	Crawlspace	6-L Summa	8
Building 18			
18CA04	Indoor	6-L Summa	8
18CA05	Indoor	6-L Summa	8
18CA06	Indoor	6-L Summa	8
18OA02	Outdoor	6-L Summa	8
18CA04	Crawlspace	6-L Summa	8
18CA05	Crawlspace	6-L Summa	8
18CA06	Crawlspace	6-L Summa	8

Table 2
Air Analytical Results
Building 16
March 2021

Sample ID	Ecology Indoor Air Cleanup Levels ¹	16CA01	16CA02	16CA03	16OA01	16IA01	16IA02	16IA02D	16IA03
Matrix		Crawlspace	Crawlspace	Crawlspace	Outdoor	Indoor	Indoor	Indoor	Indoor
Sample Type	µg/m3	Parent	Parent	Parent	Parent	Parent	Parent	Duplicate	Parent
Sample Date	-	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021
Petroleum equivalent carbon (EC) fractions²									
EC5-8 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
EC9-12 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
EC9-10 (aromatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum VOCs									
benzene	0.32	0.73	0.35	0.36	0.34	0.63	0.57	0.54	0.57
ethylbenzene	-	0.12 J	0.052 J	0.058 J	0.063 J	0.36	0.32	0.33	0.37
toluene	-	0.83	0.27	0.32	0.33	2.5	1.8	1.8	2.2
xylenes	-	0.28	0.14 J	0.14	0.18	1.4	1.2	1.2	1.4
o-xylene	-	0.11 J	0.059 J	0.062 J	0.076 J	0.58	0.51	0.51	0.57
naphthalene	0.074	0.026 J	ND	0.025 J	ND	0.048 J	0.11 J	0.11 J	0.21
TPH	140	2.096	0.871	0.965	0.989	5.518	4.51	4.49	5.32

Table 2
Air Analytical Results
Building 16
March 2021

Notes:

1 - Table 1 in Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings Implementation Memorandum No. 18, January 2018.

2 - The three carbon fractions listed should be analyzed using the Massachusetts DEP APH Test Methods WSC-CAM-IX, July 2010 rather than a bulk analysis of TPHg and TPHd. This is because diesel range organics can contain a significant amount of lighter end compounds, especially EC5-8. aliphatics.

J - The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ND - Compound was analyzed for, but not detected above the laboratory reporting limit.

TPH - Total Petroleum Hydrocarbons

Bold indicates an exceedance of the indoor air standard.

Table 3
Air Analytical Results
Building 16
October 2021

Sample ID	Ecology Indoor Air Cleanup Levels ¹	16CA04	16CA05	16CA06	16OA02	16IA04	16IA05	16IA05D	16IA06
Matrix		Crawlspace	Crawlspace	Crawlspace	Outdoor	Indoor	Indoor	Indoor	Indoor
Sample Type	µg/m ³	Parent	Parent	Parent	Parent	Parent	Parent	Duplicate	Parent
Sample Date	-	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021
Petroleum equivalent carbon (EC) fractions²									
EC5-8 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
EC9-12 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
EC9-10 (aromatics)	-	ND	ND	ND	ND	ND	ND	ND	ND
Petroleum VOCs									
benzene	0.32	0.22	0.20	0.16	0.21	0.21	0.22	0.22	0.22
ethylbenzene	-	ND	ND	ND	ND	ND	ND	ND	ND
toluene	-	0.27	0.22	0.16	0.28	0.95	0.88	0.92	1.0
xylenes	-	ND	ND	ND	0.17	0.27	0.25	0.27	0.28
o-xylene	-	ND	ND	ND	ND	ND	ND	ND	ND
naphthalene	0.074	ND	ND	ND	ND	ND	ND	0.27	ND
TPH	140	0.49	0.42	0.32	0.66	1.43	1.35	1.68	1.5

Table 3
Air Analytical Results
Building 16
October 2021

Notes:

1 - Table 1 in Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings Implementation Memorandum No. 18, January 2018.

2 - The three carbon fractions listed should be analyzed using the Massachusetts DEP APH Test Methods WSC-CAM-IX, July 2010 rather than a bulk analysis of TPHg and TPHd. This is because diesel range organics can contain a significant amount of lighter end compounds, especially EC5-8. aliphatics.

ND - Compound was analyzed for, but not detected above the laboratory reporting limit.

TPH - Total Petroleum Hydrocarbons

Bold indicates an exceedance of the indoor air standard.

Table 4
Air Analytical Results
Building 18
March 2021

Sample ID	Ecology Indoor Air	18CA01	18CA02	18CA03	18OA01	18IA01	18IA02	18IA03
Matrix	Cleanup Levels ¹	Crawlspace	Crawlspace	Crawlspace	Outdoor	Indoor	Indoor	Indoor
Sample Type	µg/m ³	Parent	Parent	Parent	Parent	Parent	Parent	Parent
Sample Date	-	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021	3/17/2021
Petroleum equivalent carbon (EC) fractions²								
EC5-8 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND
EC9-12 (aliphatics)	-	ND	ND	ND	ND	24	ND	ND
EC9-10 (aromatics)	-	ND	ND	ND	ND	ND	ND	ND
Petroleum VOCs								
benzene	0.32	0.29	0.29	0.32	0.31	0.65	0.33	0.36
ethylbenzene	-	0.037 J	0.045 J	0.057 J	0.041 J	0.43	0.12 J	0.091 J
toluene	-	0.20	0.25	0.24	0.24	2.8	0.76	0.75
xylenes	-	0.10 J	0.12 J	0.12 J	0.11 J	1.5	0.38	0.26
o-xylene	-	0.043 J	0.053 J	0.055 J	0.046 J	0.56	0.16	0.12
naphthalene	0.074	ND	ND	0.023 J	ND	0.078 J	0.074 J	ND
TPH	140	0.67	0.758	0.815	0.747	6.018	1.824	1.49

Table 4
Air Analytical Results
Building 18
March 2021

Notes:

1 - Table 1 in Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings Implementation Memorandum No. 18, January 2018.

2 - The three carbon fractions listed should be analyzed using the Massachusetts DEP APH Test Methods WSC-CAM-IX, July 2010 rather than a bulk analysis of TPHg and TPHd. This is because diesel range organics can contain a significant amount of lighter end compounds, especially EC5-8 aliphatics.

J - The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ND - Compound was analyzed for, but not detected above the laboratory reporting limit.

TPH - Total Petroleum Hydrocarbons

Bold indicates an exceedance of the indoor air standard.

Table 5
Air Analytical Results
Building 18
October 2021

Sample ID	Ecology Indoor Air	18CA04	18CA05	18CA06	18OA02	18IA04	18IA05	18IA06
Matrix	Cleanup Levels ¹	Crawlspace	Crawlspace	Crawlspace	Outdoor	Indoor	Indoor	Indoor
Sample Type	µg/m3	Parent	Parent	Parent	Parent	Parent	Parent	Parent
Sample Date	-	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021	10/18/2021
Petroleum equivalent carbon (EC) fractions²								
EC5-8 (aliphatics)	-	ND	ND	ND	ND	ND	ND	ND
EC9-12 (aliphatics)	-	ND	18	14	ND	14	ND	ND
EC9-10 (aromatics)	-	ND	ND	ND	ND	ND	ND	ND
Petroleum VOCs								
benzene	0.32	0.21	0.22	0.20	0.20	0.22	0.22	0.23
ethylbenzene	-	ND	ND	ND	ND	0.18	0.25	0.21
toluene	-	0.44	0.75	0.30	0.22	1.3	1.2	1.4
xylenes	-	0.14	0.16	0.038	ND	0.47	0.56	0.57
o-xylene	-	ND	ND	ND	ND	0.19	0.21	0.22
naphthalene	0.074	ND	ND	0.13	ND	ND	ND	ND
TPH	140	0.79	1.13	0.668	0.42	2.36	2.44	2.63

Table 5
Air Analytical Results
Building 18
October 2021

Notes:

1 - Table 1 in Petroleum Vapor Intrusion (PVI): Updated Screening Levels, Cleanup Levels, and Assessing PVI Threats to Future Buildings Implementation Memorandum No. 18, January 2018.

2 - The three carbon fractions listed should be analyzed using the Massachusetts DEP APH Test Methods WSC-CAM-IX, July 2010 rather than a bulk analysis of TPHg and TPHd. This is because diesel range organics can contain a significant amount of lighter end compounds, especially EC5-8 aliphatics.

ND - Compound was analyzed for, but not detected above the laboratory reporting limit.

TPH - Total Petroleum Hydrocarbons

Bold indicates an exceedance of the indoor air standard.

Appendix A
Field Forms

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INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

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

Preparer's Name Nels van Hoese Date/Time Prepared 10/15/21 9:00

Preparer's Affiliation FPM Remediation Phone No. 315-336-7721

Purpose of Investigation VI investigation

1. OCCUPANT:

Interviewed: **Y/N**

Last Name: Cook First Name: Harry

Address: Resort Drive, Neah Bay, WA

County: Clallam

Home Phone: — Office Phone: 360-645-2201

Number of Occupants/persons at this location 2 Age of Occupants 25-65

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

Interviewed: **Y/N**

Last Name: Colby First Name: Ray

Address: Resort Drive, Neah Bay, WA

County: Clallam

Home Phone: — Office Phone: 360-645-3289

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial/Multi-use
Other: _____

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

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

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) vehicles management, storage, work space

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

Other characteristics:

Number of floors 1

Building age 3

Is the building insulated? (Y) N

How air tight? (Tight) Average / Not Tight

4. AIRFLOW

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

Airflow between floors

none. solid floors with 2 electrical outlets in floor

Airflow near source

none.

Outdoor air infiltration

windows (closed)

Infiltration into air ducts

none

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

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

Basement/Lowest level depth below grade: 0 (feet)

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

2 electrical outlets in floor

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

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

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

The primary type of fuel used is:

- Natural Gas Fuel Oil Kerosene
- Electric Propane Solar
- Wood Coal

Domestic hot water tank fueled by: electric

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y N

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

air returns in side wall w/ vents in center of ceiling every 6-8 ft.

7. OCCUPANCY

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

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

Basement	<i>crawlspace</i>
1 st Floor	<i>office / storage / workspace</i>
2 nd Floor	
3 rd Floor	
4 th Floor	

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y N
- b. Does the garage have a separate heating unit? Y N NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify *pressure washer*
- d. Has the building ever had a fire? Y N When? _____
- e. Is a kerosene or unvented gas space heater present? Y N Where? _____
- f. Is there a workshop or hobby/craft area? Y / N Where & Type? *broom room*
- g. Is there smoking in the building? Y N How frequently? _____
- h. Have cleaning products been used recently? Y N When & Type? _____
- i. Have cosmetic products been used recently? Y N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y N Where & When? _____

l. Have air fresheners been used recently? Y N When & Type? _____

m. Is there a kitchen exhaust fan? Y N If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y N If yes, where vented? in bathrooms, outside

o. Is there a clothes dryer? Y N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y N When & Type? _____

Are there odors in the building? Y N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y N

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

- Yes, use dry-cleaning regularly (weekly) No
- Yes, use dry-cleaning infrequently (monthly or less) Unknown
- Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

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

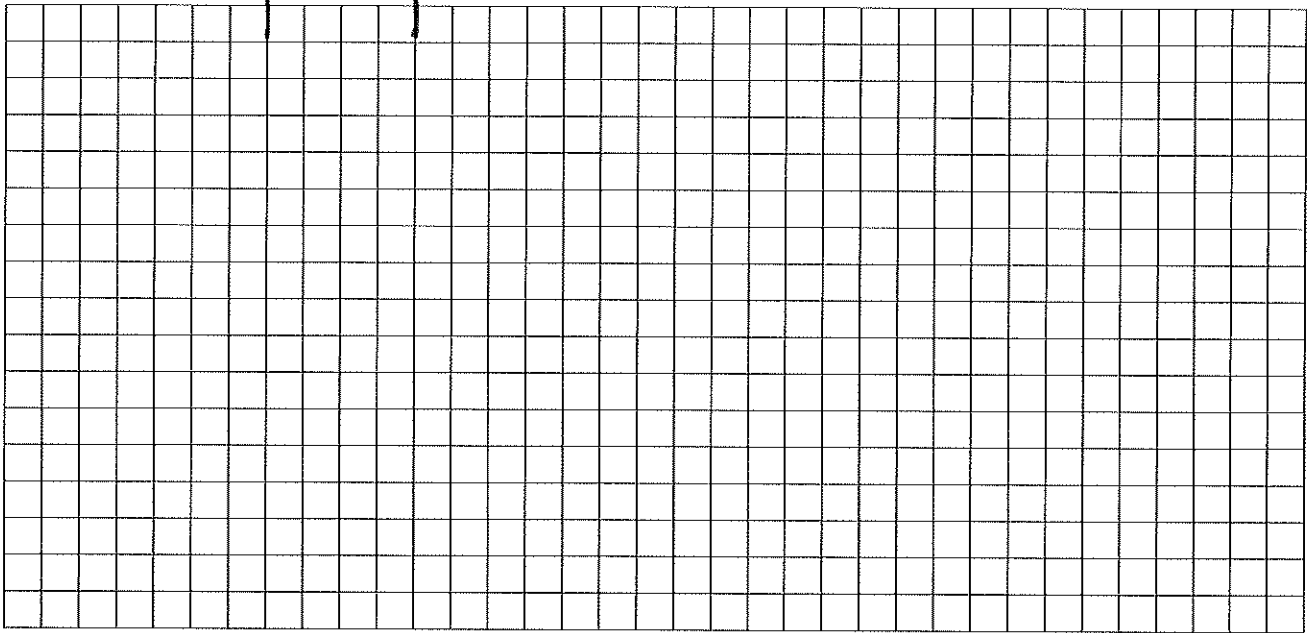
c. Responsibility for costs associated with reimbursement explained? Y / N

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

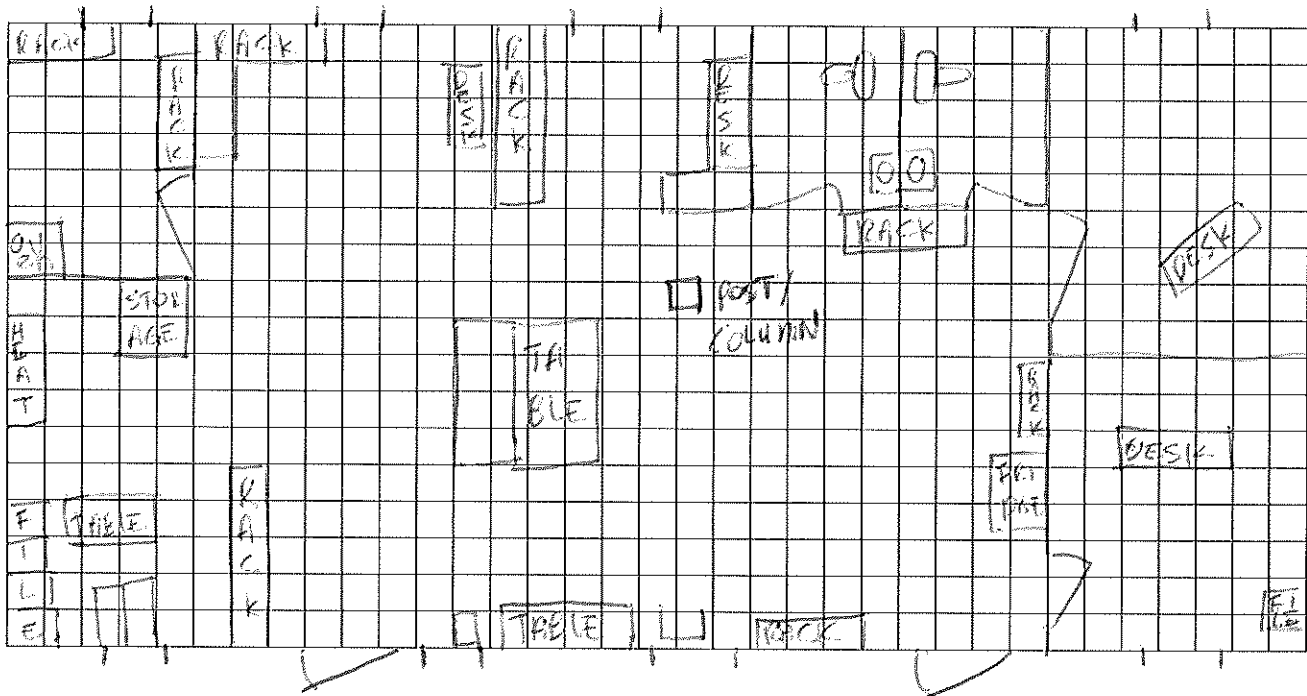
11. FLOOR PLANS

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

Basement: *crawlspace / access hatch*



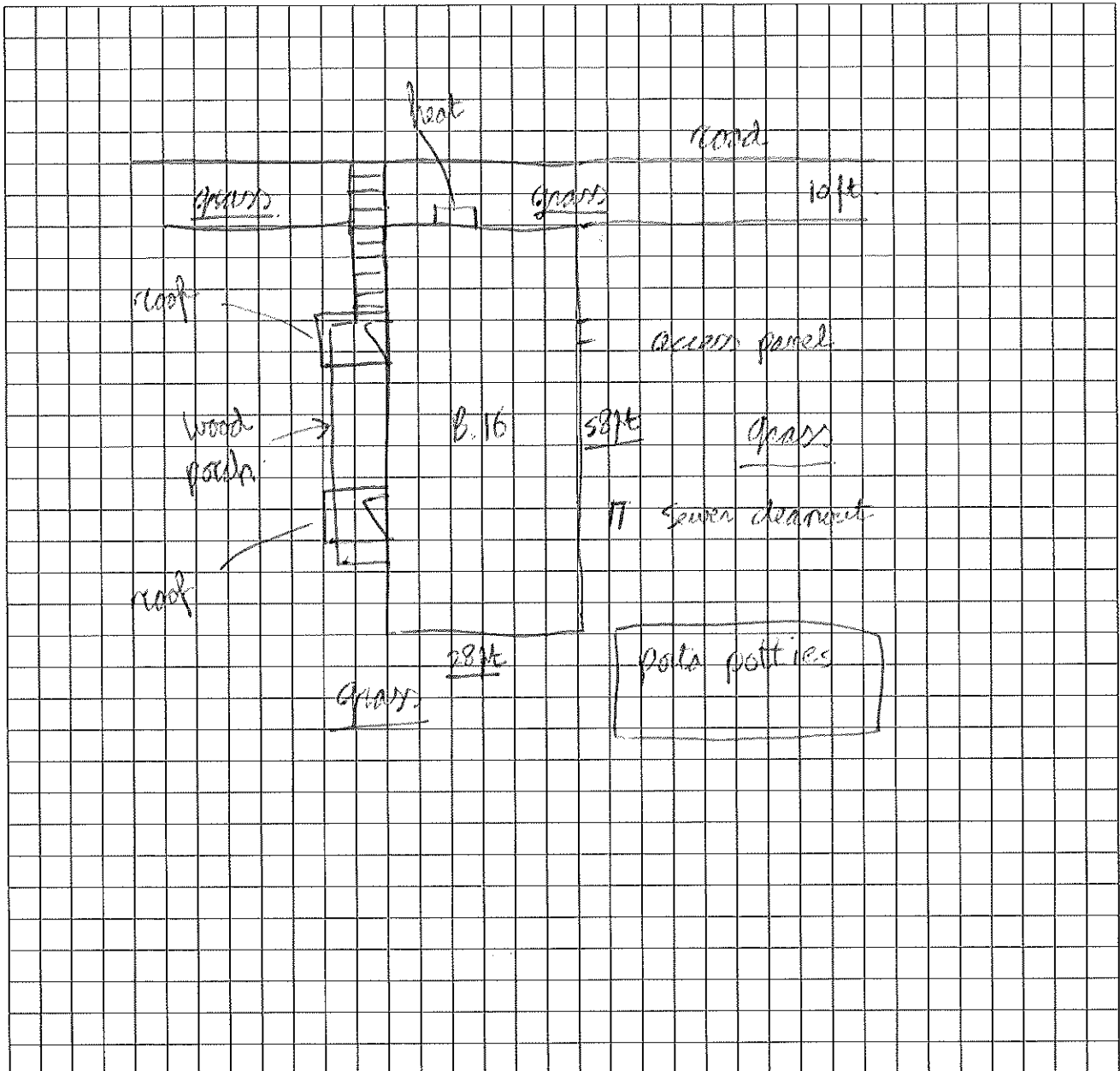
First Floor:



12. OUTDOOR PLOT

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

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



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: Mina Rae 3000

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

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** Y/N
Main Room	Kydo gas powered pressure washer	—	good	gasoline	—	N
MR	Indel 1 OW-40 motor oil	5 qt.	dirty	motor oil (synthetic)	0.0	Y
MR	GE silicone II 100% silicone sealant	10.1 oz	dirty, used	See photo	0.3	Y
MR	Sharpie highlighter Sharpquad	pen	used	—	0.0	Y
MR	WD-40 spray can	12 oz.	used	—	0.0	Y
	AERVOE tree washing paint	12 oz.	used	—	0.0	Y
	Ruthard silicone sealant	10.3 oz	new	—	0.0	Y
men bath	Oxiver TB wipes	1.9 lb	used	0.5% hydrogen peroxide	0.0	Y
MB	Lysol disinfect wipes	18.3 oz	used	—	0.0	Y
MB	Simple Green 2 Pro5	1 gal	used	—	0.0	Y
MB	Windex powered	1 gal	used	—	0.0	Y

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

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

Preparer's Name Niels van Koesel Date/Time Prepared 10/15/21 11:45

Preparer's Affiliation FPM Remediations Phone No. 315-336-7721

Purpose of Investigation VI Investigation

1. OCCUPANT:

Interviewed: Y/N

Last Name: _____ First Name: _____

Address: 70 Mateah Bay Drive (Building 18)

County: Dallam

Home Phone: — Office Phone: 360-645-2200

Number of Occupants/persons at this location 1 Age of Occupants 60+

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

Interviewed: Y N

Last Name: Makah Tribe First Name: —

Address: See above

County: Dallam

Home Phone: — Office Phone: 360-645-2201

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial/Multi-use
Other: _____

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

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

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Office space

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

Other characteristics:

Number of floors 1

Building age 8

Is the building insulated? (Y) N

How air tight? (Tight) / Average / Not Tight

4. AIRFLOW

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

Airflow between floors

None

Airflow near source

Not available

Outdoor air infiltration

open windows

Infiltration into air ducts

None

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

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: uncovered covered covered with _____
- e. Concrete floor: none unsealed sealed sealed with _____
- f. Foundation walls: none poured block stone other _____
- g. Foundation walls: none unsealed sealed sealed with _____
- h. The basement is: crawlspace wet damp dry moldy
- i. The basement is: finished unfinished partially finished
- j. Sump present? Y / N
- k. Water in sump? Y / N not applicable

Basement/Lowest level depth below grade: 0 (feet)

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

water line / sewer line

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

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

- Hot air circulation
- Space Heaters
- Electric baseboard
- Heat pump in wall
- Stream radiation
- Wood stove
- Hot water baseboard
- Radiant floor
- Outdoor wood boiler
- Other _____

The primary type of fuel used is:

- Natural Gas
- Electric
- Wood
- Fuel Oil
- Propane
- Coal
- Kerosene
- Solar

Domestic hot water tank fueled by: electric

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: heat pump in wall Central Air Window units Open Windows None

Are there air distribution ducts present? Y N

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

Not used original system broke and was replaced with a Mitsubishi heat pump.

7. OCCUPANCY

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

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

Basement	<i>crawl space</i>
1 st Floor	<i>office space, bathroom</i>
2 nd Floor	<i>—</i>
3 rd Floor	<i>—</i>
4 th Floor	<i>—</i>

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y N
- b. Does the garage have a separate heating unit? Y N / NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y N / NA
Please specify _____
- d. Has the building ever had a fire? Y N When? _____
- e. Is a kerosene or unvented gas space heater present? Y N Where? _____
- f. Is there a workshop or hobby/craft area? Y N Where & Type? _____
- g. Is there smoking in the building? Y N How frequently? _____
- h. Have cleaning products been used recently? Y N When & Type? _____
- i. Have cosmetic products been used recently? Y N When & Type? *bathroom spray*

j. Has painting/staining been done in the last 6 months? Y N _____ Where & When? _____

k. Is there new carpet, drapes or other textiles? Y N _____ Where & When? _____

l. Have air fresheners been used recently? Y N _____ When & Type? _____

m. Is there a kitchen exhaust fan? Y N _____ If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y N _____ If yes, where vented? through roof

o. Is there a clothes dryer? Y N _____ If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y N _____ When & Type? _____

Are there odors in the building? Y N _____
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y N _____
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y N _____

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

- Yes, use dry-cleaning regularly (weekly) No
- Yes, use dry-cleaning infrequently (monthly or less) Unknown
- Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y N _____ Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

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

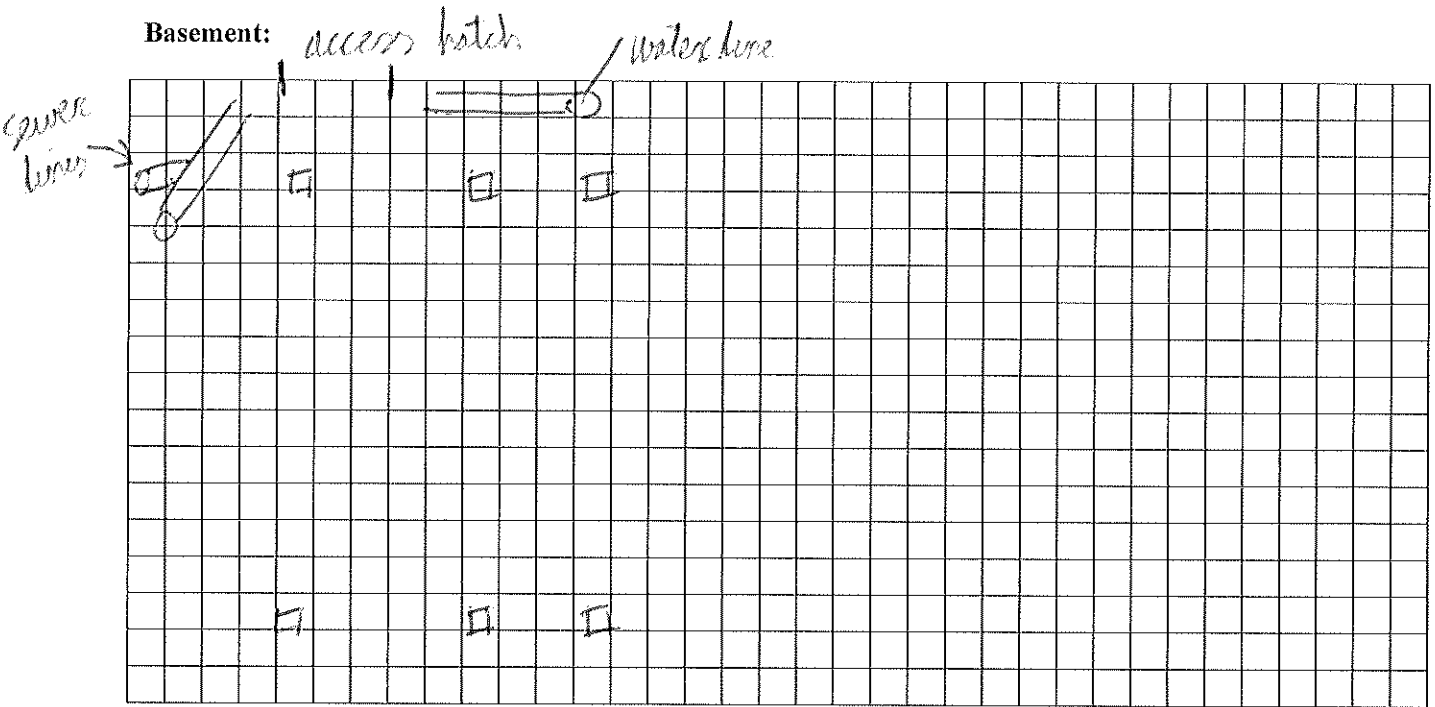
c. Responsibility for costs associated with reimbursement explained? Y / N

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

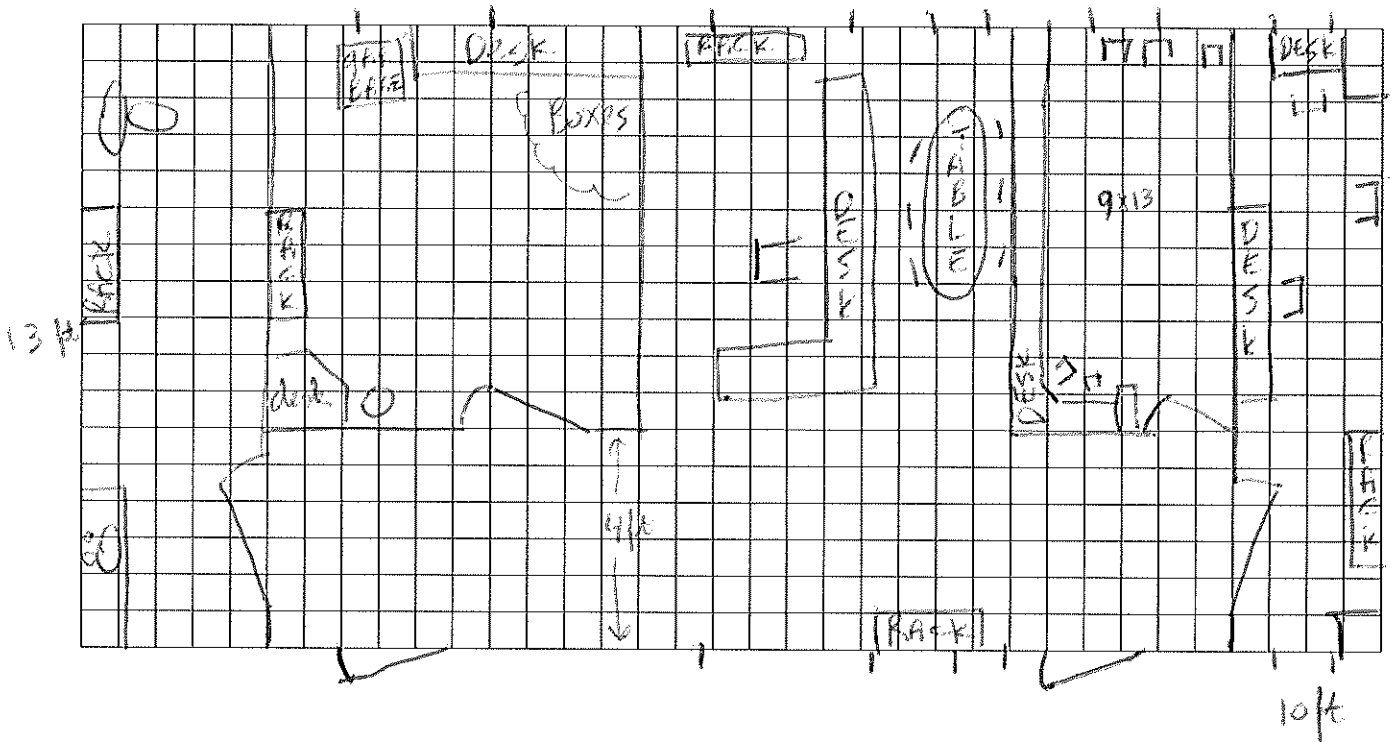
11. FLOOR PLANS

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

Basement:



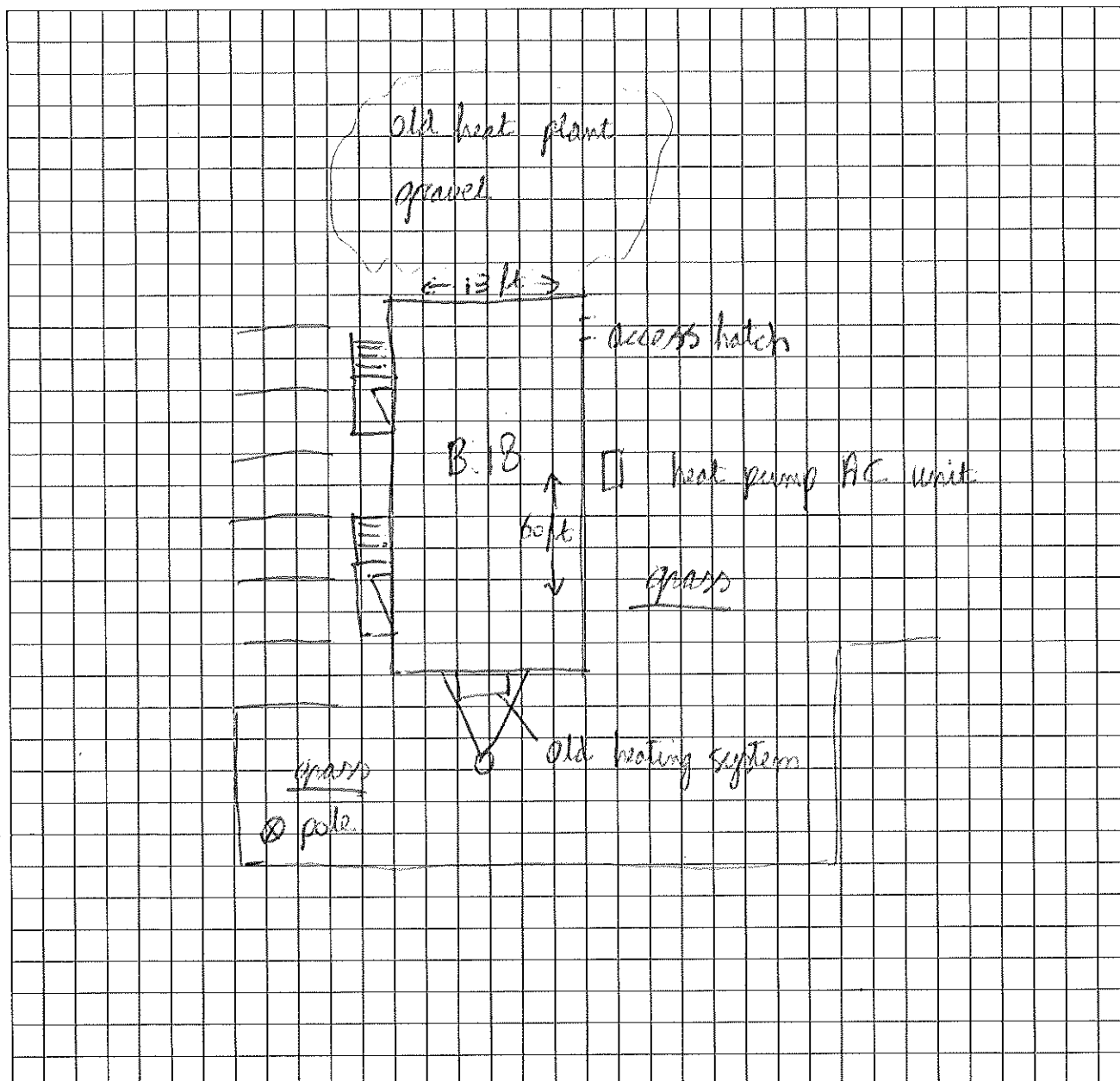
First Floor:



12. OUTDOOR PLOT

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

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



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: Minci Pro 3000

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

Location	Product Description	Size (units)	Condition *	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y/N
bathroom	windex	23 oz	new	—	0.0	Y
	Soft scrub	21 oz	used	—	0.0	Y
	Pledge lemon spray	13.8 oz	used	—	0.0	Y
	Spartan disinfecting wipes	2 lb.	new	—	0.0	Y
	Gojo orig. formula	4.5 lb	used	—	0.0	Y
	Freshome Tropical breeze	6.5 oz	used	—	0.0	Y
office	HotShot fogger	6 oz	used	—	0.0	Y
main deck	Chemical Wipes	30	used	—	0.0	Y
back office	Purcell advanced moist	8 oz	used	—	0.9	Y
	exps white bond care	2 oz	used	—	0.0	Y
	Johnson also eliminat.	32oz	used	—	0.0	Y
Desk office	garage.com	—	used	—	0.7	Y
main deck	Shapize	9	used	—	0.0	N

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Calibration Date: 10/13/2021
 Report Date (check-out): 10/13/2021

Company Name: FPM Remediations Inc
 Rental Description: Rae Systems MiniRae 3000 PID
 Sales Order#: SS210376
 19.90117 Serial #: 592-901170

CALIBRATION*

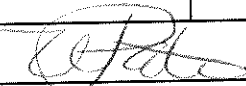
Sensor	Fresh air value	Calibration*		Alarm Level	
		Desired reading	Instrument reading	Low	High
PID - 10.6 eV	0.0	100 ppm	101.1 ppm	50ppm	100ppm

* Calibrated per manufacturer specifications

CALIBRATION GAS INFORMATION

Components	Conc.	Lot #	Manuf.	Accuracy	Fill Date	Exp. Date
Isobutylene (PID)	100 ppm	304-402043469-1	GASCO	+/- 2%	N/A	3/16/2025

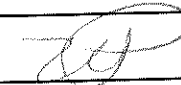
Calibrated by: Vicki Pate

Signature: 

INSTRUMENT INSPECTION

Item	Pre-rental Check-out (Do not rent inst. if any "No's")		Post-rental Check-in ("No's" may indicate customer damage)	
	Yes	No	Yes	No
Calibrated within the last 10 days?:	<input checked="" type="radio"/>	<input type="radio"/>	Check for cracks or any damage to housing and LCD display.	
Water trap filter installed on meter?:	<input checked="" type="radio"/>	<input type="radio"/>		
Instrument powers on properly ("Test Passed" is indicated) & w/o "Low Bat", "LAMP", etc displayed?:	<input checked="" type="radio"/>	<input type="radio"/>	Yes	No
Display contrast is legable and no black streaks or cracks in LCD screen exist?:	<input checked="" type="radio"/>	<input type="radio"/>	Yes	No
PID reads no greater than 2.0 ppm?:	<input checked="" type="radio"/>	<input type="radio"/>		
Battery icon in upper right corner is at least 1/2?:	<input checked="" type="radio"/>	<input type="radio"/>		
Remove filter; reading increases no more than 3.0 ppm when a long heavy breath is blown into inlet?:	<input checked="" type="radio"/>	<input type="radio"/>		
Pump stops & alarms when inlet filter is plugged with finger?:	<input checked="" type="radio"/>	<input type="radio"/>		
Visual & audio alarms work correctly?:	<input checked="" type="radio"/>	<input type="radio"/>		
Press "Y" key; pump starts, alarm clears, & reading is as before?:	<input checked="" type="radio"/>	<input type="radio"/>		
Hold "MODE" button down and meter turns off w/5 second count down?:	<input checked="" type="radio"/>	<input type="radio"/>	Yes	No
Rental checklist completed?:	<input checked="" type="radio"/>	<input type="radio"/>	Yes	No

Comments: _____

Signature (Check-out): 

Signature (Check-in): _____

TTT Environmental

The preferred source for Instrument Rentals, Sales, Service, and Supplies!

INSTRUMENT RENTAL CHECKLIST

Company Name: FPM Remediations Sales Order #: SS210376

Rental Description: MiniRae 3000 PID

Item Description	Qty	Checked Out?	Checked In?	Damaged / Missing?
MiniRae 3000 w/ water trap filter installed on probe	1	✓		
Hard sided case	1	✓		
12V 1.25A output wall adapter w/TTT velcro strap	1	✓		
Travel charger	1	✓		
Alkaline battery adaptor (4-AA)	1	✓		
Water traps filters (to be used at all times) no charge	2	2✓		
Users Guide for MiniRae 3000 in resealable bag	1	✓		
0.5 lpm female regulator (for Isobutylene cal. gas)	1	✓		
Optional Items:				
Computer interface cable	1	✓		
Rae tool kit	1	✓		
Pocket reference	1	✓		
Charging Cradle	1	✓		

Instrument Function Test / Inspection (Correct all deficiencies)	
Pelican case general condition, rubber seal, TTT label, & foam in place and in good condition:	Yes
TTT property tag in place on front of instrument:	Yes
Instrument display face plate in good condition (only minor scratches and smears):	Yes
Flex probe near base to insure no damage:	Yes
Turn instrument on; press "mode" & "-" buttons together for 3 seconds, enter "0000" password, scroll to and select "Datalog", select "Clear Data", answer "yes", select "Back" 2 times to get to main screen and turn off instrument.	Yes
If necessary install new tubing for water trap on end of probe:	Yes
Regulator test (properly threads onto canister, gauge and valve doesn't leak and turns on and off properly, 6" of tubing in good clean condition):	Yes
12.13V Check charger wire for damage and ensure output is 12VDC:	Yes
Place instrument on charge in service center:	Yes

Signature (Check-out): [Signature] Signature (Check-in): _____

Declared Value: \$4,200

- * By renting with TTT customer agrees to the rental terms and conditions (copy available upon request).
- * Notify TTT within 24hrs of receipt if any thing is damaged or missing.
- * Customer is responsible for all parts and equipment damaged or missing during rental.
- * All instruments have been inspected and calibrated (when applicable) prior to rental.
- * TTT suggests calibrating/bump testing instruments prior to each days use.

WEATHER OBSERVATION FORM

LOCATION: Makah Tribal Center (B. 16+18)

DATE: 10/18/21

FIELD PERSONNEL: Niels van Noesel

INSTRUMENTS (model and serial number):

Thermometer: —

Anemometer: —

	Time (military)	Precip. (in)	Atmospheric pressure (in)	Temp. (degrees F)	Wind (mph)	Comments
Prior to Sampling	7:30	0.0	29.95	45	3	SE direction
Mid Day	11:50	0.0	29.96	51	3	SE direction
End of Sampling	16:00	0.0	29.98	54	3	E.SE direction

Notes: Additional measurements should be taken in case of weather condition changes.
Air sampling will be postponed if conditions move outside the acceptable range.

Sampling Event Acceptable Range:

1. Precipitation: dry while conducting sampling.
2. Atmospheric pressure: 29.7 – 30.4 in Hg.
3. Temperature: 35 – 95 degrees F. The ground must be completely thawed.
4. Wind: <10 mph.

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 7:40

SAMPLE IDENTIFICATION: 180A #2

SAMPLE DEPTH: _____

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: _____

PID: mini Pae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6 L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.96

SC1923/SC194 VACUUM AFTER SAMPLING: -2.5

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: open div.

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: _____

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 7:45

SAMPLE IDENTIFICATION: 18 CA 44

SAMPLE DEPTH:

FIELD PERSONNEL: NVA

INSTRUMENTS (model and serial number):

PUMP:

PID: minikae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR **CRAWLSPACE**

DURATION OF AIR SAMPLING: 8 hrs.

VOLUME OF AIR SAMPLED: 6 L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.97

SC44474 / SPC 271 VACUUM AFTER SAMPLING: -2.5

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: none

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: cross breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location:

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 7:50

SAMPLE IDENTIFICATION: 18CA95

SAMPLE DEPTH:

FIELD PERSONNEL: NVA

INSTRUMENTS (model and serial number):

PUMP:

PID: Mini Rae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.72

SLC1811/SLC28 VACUUM AFTER SAMPLING: -2.0

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: cross breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location:

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 7:55

SAMPLE IDENTIFICATION: 18CA06

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini Rae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -30.01

SSC 557 / SPCL 483 VACUUM AFTER SAMPLING: -3.0

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):
—

VOCs used during normal operations of facility: none

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: cross breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: —

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 8:00

SAMPLE IDENTIFICATION: 18 LA 04

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini Roe 30000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 3 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.94

VACUUM AFTER SAMPLING: -3.8

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

—

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: None

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: bathroom

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 8:02

SAMPLE IDENTIFICATION: 1B IAP 5

SAMPLE DEPTH: —

FIELD PERSONNEL: NVA

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini floe 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6 L.

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.93

S/C 554/SFC 39 VACUUM AFTER SAMPLING: -38

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

—

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: None

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: main office

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 8:04

SAMPLE IDENTIFICATION: 13 IA 66

SAMPLE DEPTH:

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP:

PID: mini for 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.94

VACUUM AFTER SAMPLING: -2.7

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: None

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: side office

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 805

SAMPLE IDENTIFICATION: 160A φ.2

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini Rae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.99

SC 783/SFC 491 VACUUM AFTER SAMPLING: -2.8

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: none

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: outdoor

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: —

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 810

SAMPLE IDENTIFICATION: 16CA04

SAMPLE DEPTH:

FIELD PERSONNEL: NVA

INSTRUMENTS (model and serial number):

PUMP:

PID: mini Vap 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8h

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.97

SC-2097/SFC-457 VACUUM AFTER SAMPLING: -3.2

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 20 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: cross breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location:

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 815

SAMPLE IDENTIFICATION: 16CA #5

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: Minn Pac 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -30.00

SSC154/SFC33 VACUUM AFTER SAMPLING: -3.2

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: cross breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: —

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 820

SAMPLE IDENTIFICATION: 16CAF6

SAMPLE DEPTH: _____

FIELD PERSONNEL: Van NVH

INSTRUMENTS (model and serial number):

PUMP: _____

PID: mini Pdz 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.96

AS1290 / SF6336 VACUUM AFTER SAMPLING: -1.8

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: Good breeze

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: _____

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 822

SAMPLE IDENTIFICATION: 16 IA #4

SAMPLE DEPTH: —

FIELD PERSONNEL: NVA

INSTRUMENTS (model and serial number):

PUMP: —

PID: Mini Pac 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6 L.

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -29.98

SC2337/SFC481 VACUUM AFTER SAMPLING: -3.7

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: None

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: None

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: Wet gear room

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 824

SAMPLE IDENTIFICATION: 16IAΦ5 / 16IAΦ5D

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini for 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE Dupl.

DURATION OF AIR SAMPLING: 8 hrs. SCΦΦ861

VOLUME OF AIR SAMPLED: 6 L SFCΦΦΦ3Φ

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -2999 / -2994

SC2319/SFC24 VACUUM AFTER SAMPLING: -57 -4.5

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: none

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: none

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: Main room

Windows Closed? Yes No

INDOOR/OUTDOOR/CRAWL SPACE AIR MONITORING FORM

DATE: 10/18/21 TIME: 826

SAMPLE IDENTIFICATION: 16IA06

SAMPLE DEPTH: —

FIELD PERSONNEL: NVH

INSTRUMENTS (model and serial number):

PUMP: —

PID: mini Rae 3000

TYPE OF SAMPLE: INDOOR OUTDOOR CRAWLSPACE

DURATION OF AIR SAMPLING: 8 hr.

VOLUME OF AIR SAMPLED: 6L

SUMMA CANISTER: VACUUM BEFORE SAMPLING: -30.07

SC691 / SPC 222 VACUUM AFTER SAMPLING: -2.0

Comments/Observations during sampling (spills, floor stains, odors, other instrument readings):

VOCs used during normal operations of facility: none

Weather conditions: Outdoor temperature: 45

Barometric pressure: 29.95

Precipitation: 0.0

Ventilation conditions: none

Heating System Active? Yes No Indoor Air Temp.: 72

Location in relation to sample location: side office

Windows Closed? Yes No

10/15/21

- 800 @ B 16.
- 810 Harvey let me in.
Carly talked about fish
- 840 Steve P arrived.
- 900 Roy visited.
- 920 Roy left. Steve left to check shipments
- 955 Carly left.
- 1005 Start PID + inventory test
- 1045 completed inventory
- 1100 mob to shipping building
Got 5 boxes w/ 15 canisters + regulators
and paperwork
- 1120 Nick arrived. Discussed Monday shipping
- 1140 mob to Building 13.
- 1215 Steve arrived. Discussed inventory and
Monday's field work planning.
- 1230 Inventory + screening. Steve left.
- 1330 Inventory complete.
- 1400 Mob to Steve's office. Discuss next few
days of work.
- 1500 end of meeting. mob to cabin. Unload
boxes w/ canisters. Sort regulators + canisters.
- 1630 end of day

10/16/21
Carely opened windows in B. 16 and B. 18
@

10/17/21
930 Niels opened windows in B. 18. Garbage
was not removed. Niels consolidate and
remove 2 bags of garbage from 5 garbage
cans.

945 Niels open windows in B. 16 / B. 18 remove
1000 Niels back to cabin. garbage.
start writing labels / COC / field forms
Review QPP for MB.

1300 Back to B. 16 / 18 to close windows. No garbage
in B. 16.

1900 Continue labels / forms

2030 prep work complete.

10/18/21

- 730 mob to B.18
740 Steve and David were there. Installed 18 OA ϕ 2
745 Installed 18 CA ϕ 4
750 " 18 CA ϕ 5
755 " 18 CA ϕ 6

mob inside Building 18.

- 800 installed 18 IA ϕ 4. Bathroom
802 installed 18 IA ϕ 5 main room table
804 installed 18 IA ϕ 6 extra office

mob to Building 16

- 805 installed 16 OA ϕ 2
810 installed 16 CA ϕ 4
815 installed 16 CA ϕ 5 ~~16 CA ϕ 5~~ MVH
820 installed 16 CA ϕ 6
821 mob inside Building 16
822 installed 16 IA ϕ 4
824 installed 16 IA ϕ 5 / ϕ 5 D
826 installed 16 IA ϕ 6

830 Discussed sampling w/ David. WD-40 + oil in B.16. I said I put it and reading was 0.0 ppm. David was OK. We discussed changed condition w/ B.16 "wet room", which was now open and had no heaters remaining. Last time (3/21), it was closed w/ 2 electric heaters on.

900 Did round to check all canisters to see if vacuum dropped. All are OK. Talked to Joy (B.18).

1130 Did round to all IA and OA canisters to check vac drop. All around 17-19 in Hg vacuum.

10/13/21

Lunch @ cabin. Saw David next door and discussed progress.

1300 mob to B.18. Check CA canisters. All around 12-13 in. Hg vacuum.

1315 mob to B.16. Check CA canisters. All around 14 in. Hg vacuum.

1325 checked w/ Nick (shipping) about change of plans to tomorrow AM shipping. No big deal bcz. FedEx doesn't come until 1-2pm each day.

1350 Back to cabin.

1600 collect sample canisters. OA + IA

1605. 11 CA canisters.

1610 mob to B.18 meet Bruno Rudolphi + Andrew.

1615 collect IA OA canisters

1620 collect CA canisters

1630 talk to Nick about shipping.

1645 met with Dave @ mw-5 for WL reading

1710 mob to mw6 for WL reading

1730 mob to cabin. Finish paperwork, COC and remove and pack regulators / canisters.

1800 end of day.

Appendix B
Photographic Log

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Appendix B – Photolog
Building 16 – Wet Season VI Sampling



Building 16 Interior. Open door to 'wet' room



Building 16 Interior. Sample 16IA04

Appendix B – Photolog
Building 16 – Wet Season VI Sampling



Building 16 Interior. Sample IDs: 16IA05 and 16IA05D (parent and duplicate samples).



Building 16 Interior. Sample 16IA06

Appendix B – Photolog
Building 16 – Wet Season VI Sampling

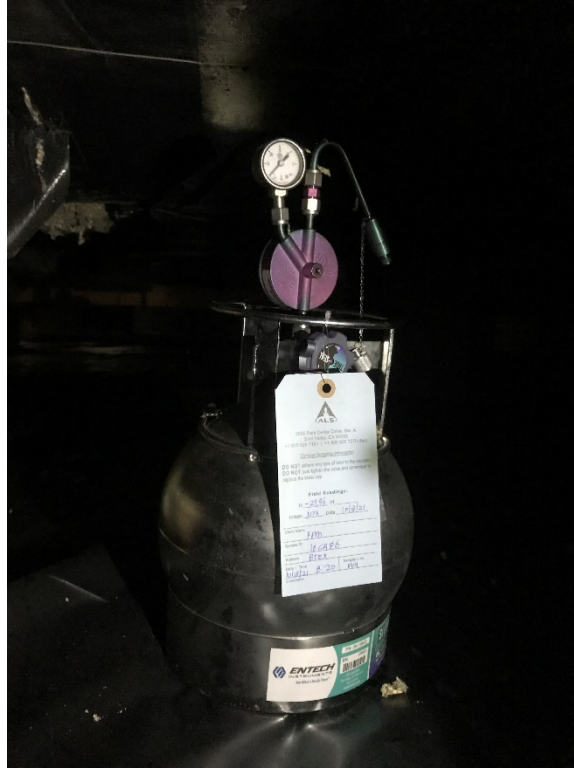


Building 16 Crawlspace. Sample 16CA04



Building 16 Crawlspace. Sample 16CA05

Appendix B – Photolog
Building 16 – Wet Season VI Sampling



Building 16 Crawlspace. Sample 16CA06



Building 16 Outdoor Sample 16OA02

**Appendix B – Photolog
Building 16 – Wet Season VI Sampling**

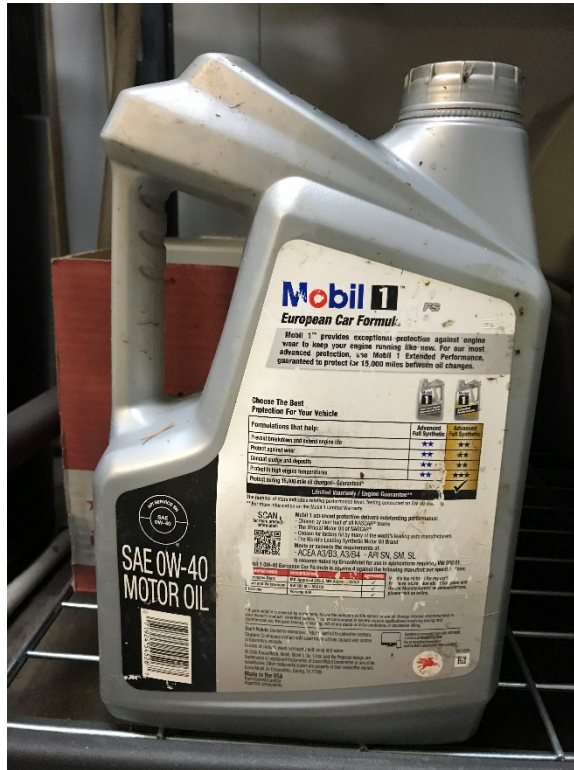


Building 16 Inventory. Gas-powered pressure washer was removed the day before indoor sampling.



Appendix B – Photolog
Building 16 – Wet Season VI Sampling

Building 16 Inventory.



Building 16 Inventory.



**Appendix B – Photolog
Building 16 – Wet Season VI Sampling**

Building 16 Inventory.



Building 16 Inventory.



Appendix B – Photolog
Building 16 – Wet Season VI Sampling

Building 16 Inventory.



Building 16 Inventory.

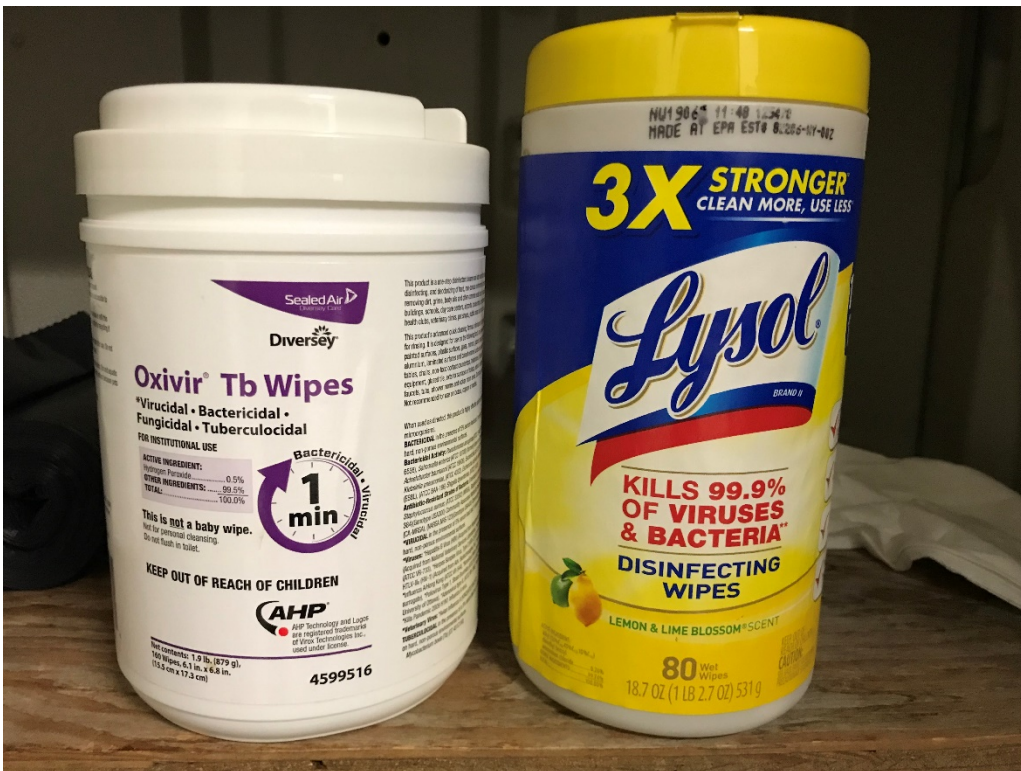


Appendix B – Photolog
Building 16 – Wet Season VI Sampling

Building 16 Inventory.

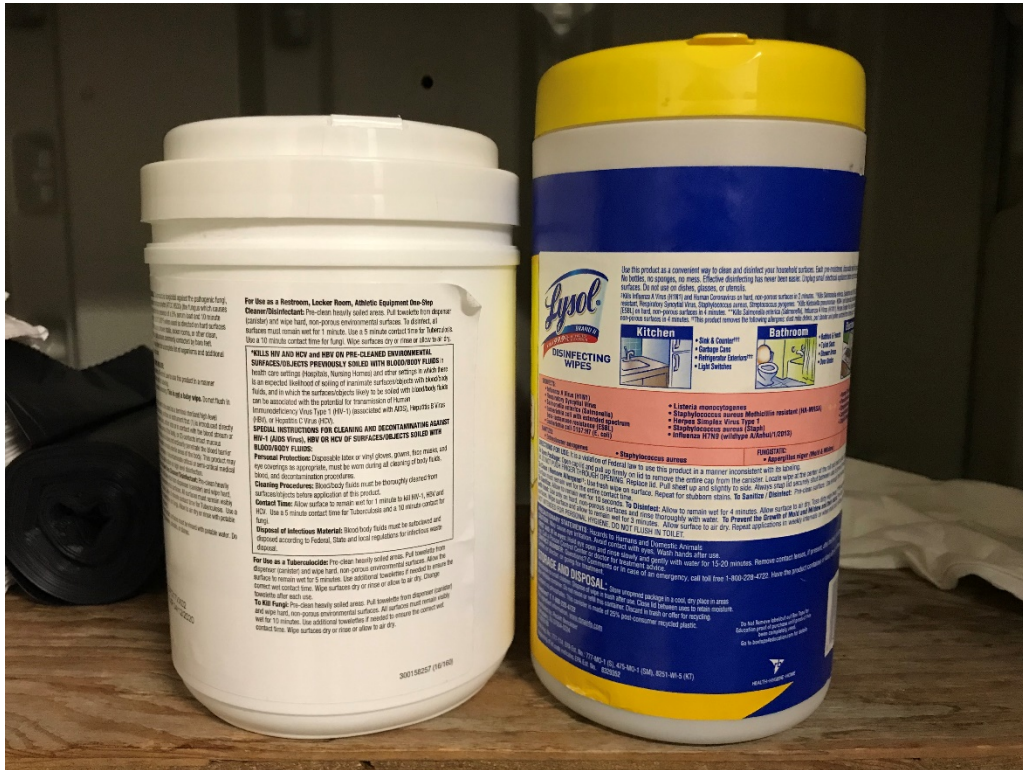


Building 16 Inventory.

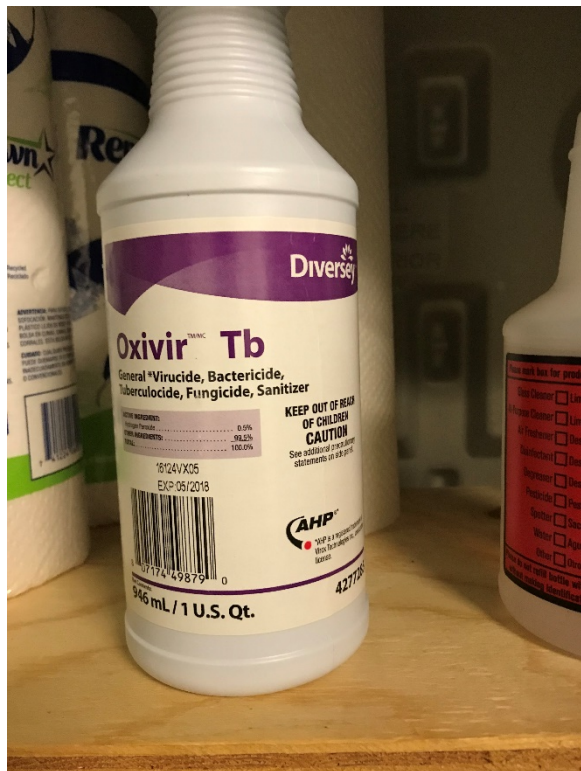


Appendix B – Photolog
 Building 16 – Wet Season VI Sampling

Building 16 Inventory.

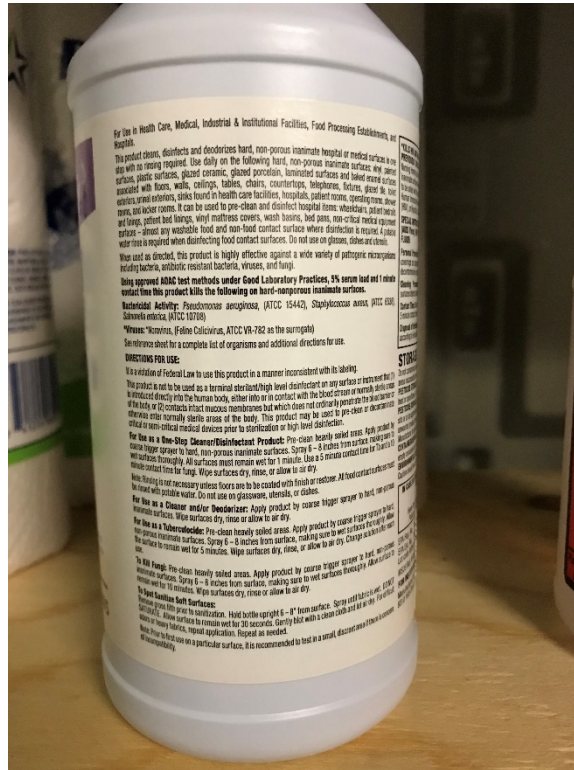


Building 16 Inventory.



Appendix B – Photolog
Building 16 – Wet Season VI Sampling

Building 16 Inventory.

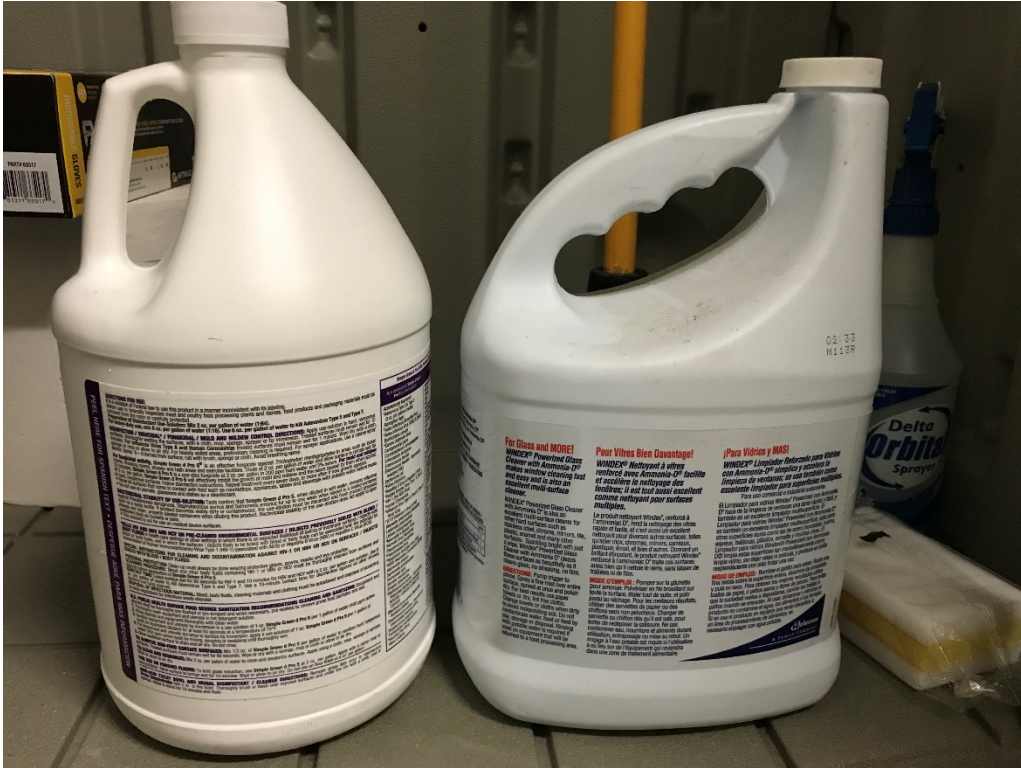


Building 16 Inventory.



Appendix B – Photolog
Building 16 – Wet Season VI Sampling

Building 16 Inventory.



Building 16 Inventory.

Appendix B – Photolog
Building 18 – Wet Season VI Sampling



Building 18 Interior Sample. 18IA04



Building 18 Interior Sample. 18IA05

**Appendix B – Photolog
Building 18 – Wet Season VI Sampling**



Building 18 Interior Sample. 18IA06



Building 18 Crawlspace Sample. 18CA04

Appendix B – Photolog
Building 18 – Wet Season VI Sampling



Building 18 Crawlspace Sample. 18CA05



Building 18 Crawlspace Sample. 18CA06

Appendix B – Photolog
Building 18 – Wet Season VI Sampling



Building 18 Outdoor Sample. 18OA02



Building 18 Inventory.

Appendix B – Photolog
 Building 18 – Wet Season VI Sampling

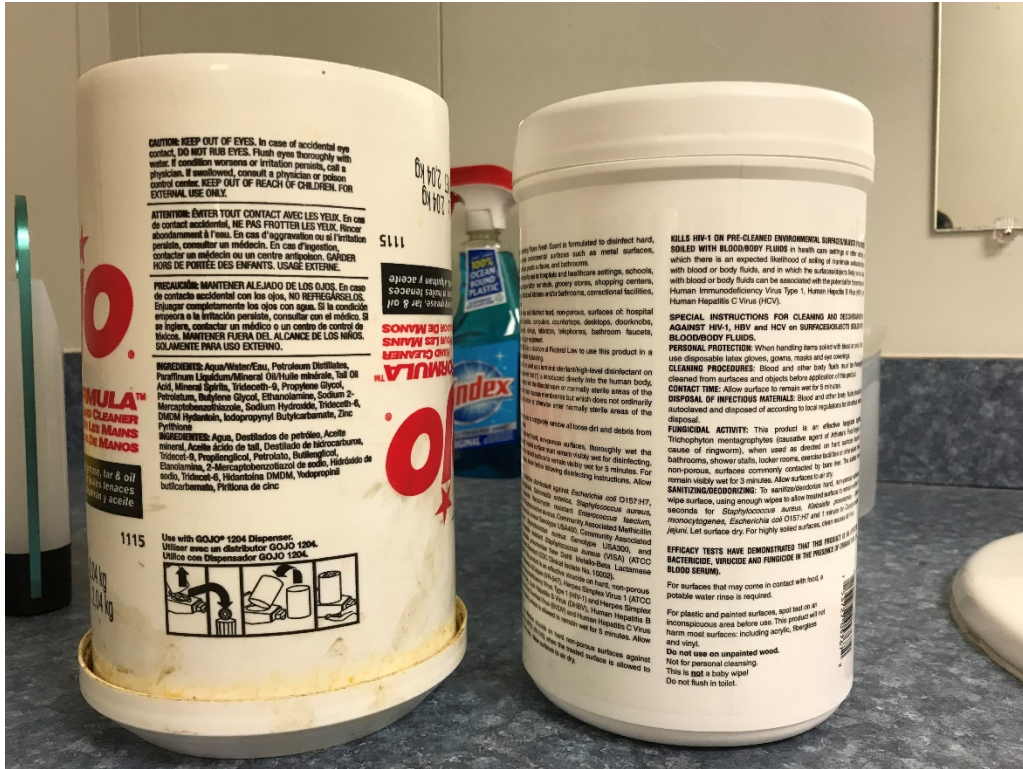


Building 18 Inventory.



Building 18 Inventory.

Appendix B – Photolog
 Building 18 – Wet Season VI Sampling

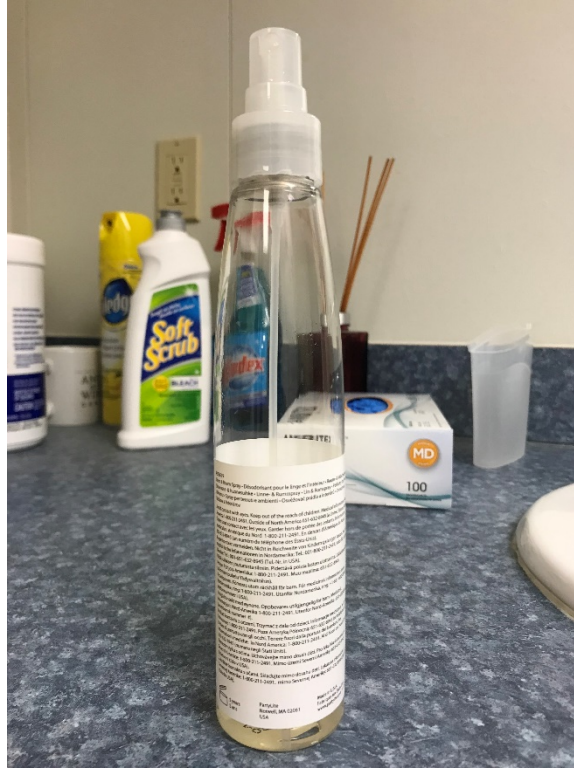


Building 18 Inventory.



Building 18 Inventory.

Appendix B – Photolog
Building 18 – Wet Season VI Sampling

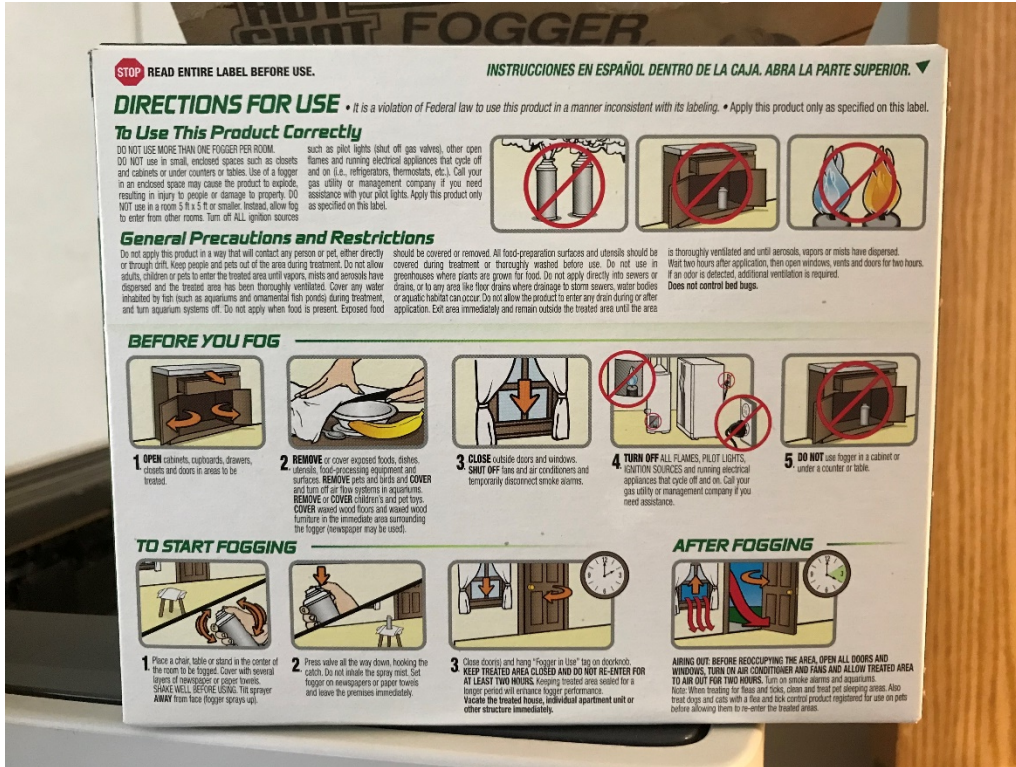


Building 18 Inventory.



Building 18 Inventory.

Appendix B – Photolog Building 18 – Wet Season VI Sampling

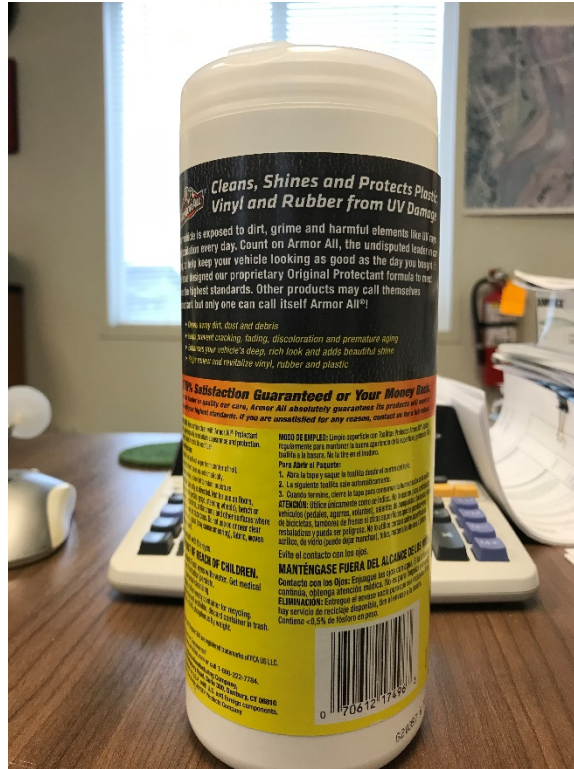


Building 18 Inventory.



Building 18 Inventory.

Appendix B – Photolog
Building 18 – Wet Season VI Sampling

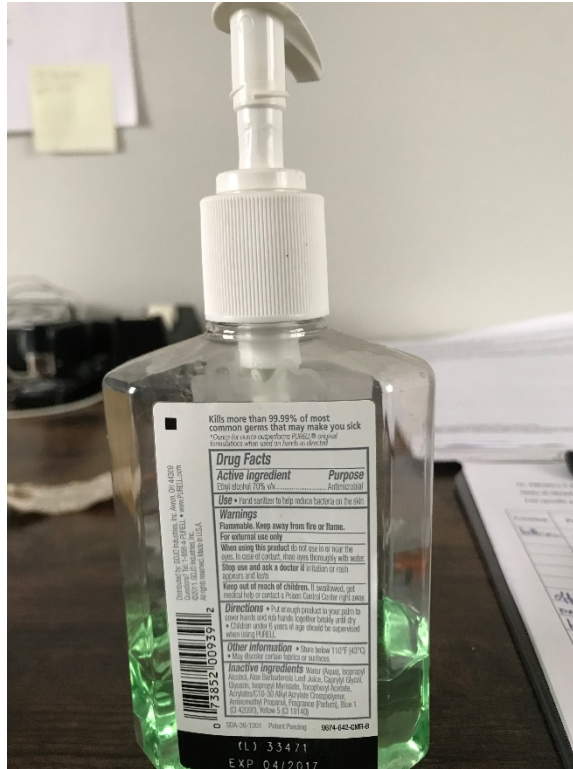


Building 18 Inventory.

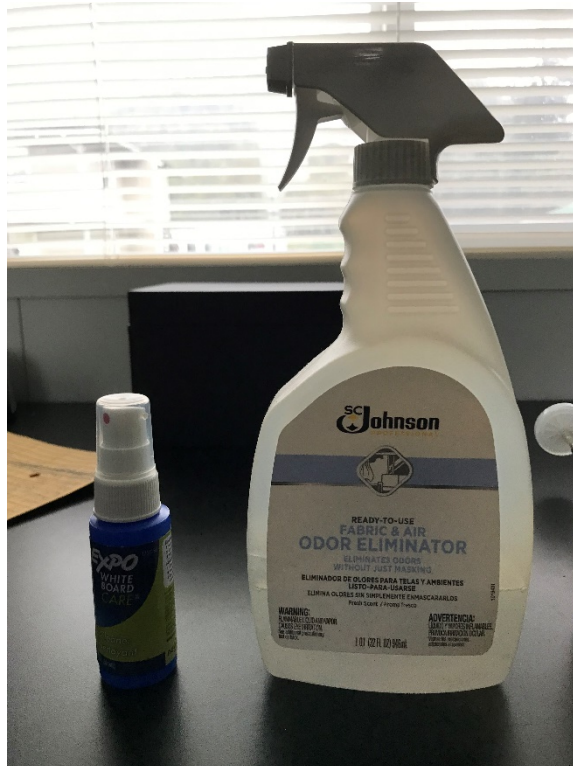


Building 18 Inventory.

**Appendix B – Photolog
Building 18 – Wet Season VI Sampling**

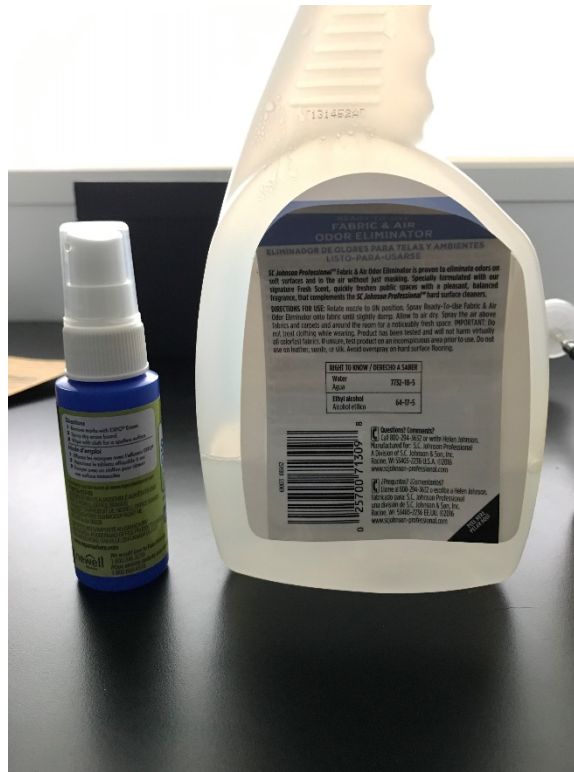


Building 18 Inventory.



Building 18 Inventory.

**Appendix B – Photolog
Building 18 – Wet Season VI Sampling**



Building 18 Inventory.



Building 18 Inventory. The waste was removed prior to sampling.

**Appendix B – Photolog
Building 18 – Wet Season VI Sampling**



Building 18 Inventory.

Appendix C

Laboratory Analytical Report (CD only)

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2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

LABORATORY REPORT

November 12, 2021

Niels van Hoesel
FPM Remediations, Inc.
181 Kenwood Ave
Oneida, NY 13421

RE: MAKAH VI Investigation / 1085-20-03:04

Dear Niels:

Enclosed are the results of the samples submitted to our laboratory on October 21, 2021. For your reference, these analyses have been assigned our service request number P2105519.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 2:33 pm, Nov 12, 2021

Sue Anderson
Project Manager



2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
www.alsglobal.com

Client: FPM Remediations, Inc.
Project: MAKAH VI Investigation / 1085-20-03:04

Service Request No: P2105519
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on October 21, 2021 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were also analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009. This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present. Any internal/tuning standards and target APH analytes eluting in the hydrocarbon ranges are also subtracted. Additionally, C₉-C₁₀ Aromatic Hydrocarbons are excluded from the C₉-C₁₂ Aliphatic Hydrocarbon range.

Volatile Organic Compound Analysis

The samples were analyzed in SIM mode for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.



2655 Park Center Dr., Suite A
 Simi Valley, CA 93065
 T: +1 805 526 7161
www.alsglobal.com

ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2018027
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1776326
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-008
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413- 19-10
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA01627201 9-10
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: FPM Remediations, Inc.
 Project ID: MAKAH VI Investigation / 1085-20-03:04

Service Request: P2105519

Date Received: 10/21/2021
 Time Received: 10:00

MA APH 1.0 - MA VOC PH Can
TO-15 - VOC SIM

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfi (psig)	MA APH 1.0 - MA VOC PH Can	TO-15 - VOC SIM
18CA04	P2105519-001	Air	10/18/2021	07:45	SC00074	0.32	3.97	X	X
18CA05	P2105519-002	Air	10/18/2021	07:50	SC01811	0.14	3.77	X	X
18CA06	P2105519-003	Air	10/18/2021	07:55	SSC00557	0.11	3.85	X	X
18OA02	P2105519-004	Air	10/18/2021	07:40	SC01923	-0.83	3.92	X	X
18IA04	P2105519-005	Air	10/18/2021	08:00	AS01007	-0.45	3.89	X	X
18IA05	P2105519-006	Air	10/18/2021	08:02	SSC00554	-0.90	3.99	X	X
18IA06	P2105519-007	Air	10/18/2021	08:04	SSC00180	-0.36	4.08	X	X
16CA04	P2105519-008	Air	10/18/2021	08:10	SC02097	0.20	3.72	X	X
16CA05	P2105519-009	Air	10/18/2021	08:15	SSC00154	0.21	3.97	X	X
16IA05D	P2105519-010	Air	10/18/2021	08:24	SC00861	-1.03	3.89	X	X
16CA06	P2105519-011	Air	10/18/2021	08:20	AS01290	0.37	3.76	X	X
16OA02	P2105519-012	Air	10/18/2021	08:05	SC00783	-0.30	3.87	X	X
16IA04	P2105519-013	Air	10/18/2021	08:22	SC02337	-0.76	5.05	X	X
16IA05	P2105519-014	Air	10/18/2021	08:24	SC02319	-1.82	3.95	X	X
16IA06	P2105519-015	Air	10/18/2021	08:26	SC00051	-0.54	3.89	X	X



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161

P2105519

Company Name & Address (Reporting Information)		Project Name		Requested Turnaround Time in Business Days (Surcharges) please circle		ALS Project No.	
OF JV 181 Kenwood Ave., Orinda, NY 13421		MAKAH VI Investigation		1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard		Hayden Ackels	
Project Manager		Project Number		Analysis Method		Comments	
Niels van Noessel		1085-20-03:04		BTX + TO-15 Groups (as certified)		e.g. Actual Preservative or specific instructions	
Phone		P.O. # / Billing Information		ALS Contact:			
315-336-7721		See above		Hayden Ackels			
Fax		Sampler (Print & Sign)					
		Niels van Noessel					
Email Address for Result Reporting		Canister ID (Bar code # - AC, SC, etc.)		Flow Controller ID (Bar code # - FC #)		Canister Start Pressure "Hg	
N.VANHOESEL@FPM-REMEDIATIONS.COM						Canister End Pressure "Hg/psig	
Client Sample ID		Date Collected		Time Collected		Sample Volume	
LABORATORY ID NUMBER							
1		10/18/21		745		6L	
2		10/18/21		750		6L	
3		10/18/21		755		6L	
4		10/18/21		740		6L	
5		10/18/21		800		6L	
6		10/18/21		802		6L	
7		10/18/21		804		6L	
8		10/18/21		810		6L	
9		10/18/21		815		6L	
10		10/18/21		824		6L	
11		10/18/21		820		6L	
12		10/18/21		805		6L	
13		10/18/21		822		6L	
14		10/18/21		824		6L	
Report Tier Levels - please select		Canister Pressure "Hg		Canister End Pressure "Hg/psig		Sample Volume	
Tier I - Results (Default if not specified)		SC00074		SFC00271		-2.5	
Tier II (Results + QC Summaries)		SC01811		SFC0028		-2.0	
Tier III (Results + QC & Calibration Summaries)		SC00553		SFC0083		-3.0	
Tier IV (Data Validation Package) 10% Surcharge		SC01923		SFC00194		-2.5	
		AS01007		SFC00560		-3.0	
		SSC00554		SFC00039		-3.8	
		SSC00180		SFC00221		-2.7	
		SC02097		SFC00457		-3.2	
		SSC00154		SFC00033		-3.2	
		SC00061		SFC00030		-4.5	
		AS01290		SFC00336		-1.8	
		SC00783		SFC00491		-2.8	
		SC02337		SFC00481		-3.7	
		SC02319		SFC00024		-5.7	
Relinquished by: (Signature)		Date		Time		Chain of Custody Seal: (Circle)	
[Signature]		10/19/21		12:00		INTACT	
Relinquished by: (Signature)		Date		Time		BROKEN	
[Signature]		10/19/21		12:00		ASSENT	
Relinquished by: (Signature)		Date		Time		Project Requirements (MRLs, QAPP)	
[Signature]		10/12/21		1000			
Relinquished by: (Signature)		Date		Time		Cooler / Blank Temperature °C	
[Signature]		10/12/21		1000			



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

PG 105519

Company Name & Address (Reporting Information) OFJV 181 Kernwood Ave, Orinda, NY 13421 Project Manager: <u>Niels van Hoesel</u>		Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard	
Project Name: MAKAH VI Investigations Project Number: 1085-20-03:04 P.O. # / Billing Information: See above.		ALS Contact:	
Project Name: MAKAH VI Investigations		Analysis Method: TO-15 BTEX+ groups (as provided)	
Comments: e.g. Actual Preservative or specific instructions			
Email Address for Result Reporting: N.VANHOESEL@FPM-REMEDIATIONS.COM			
Client Sample ID: 16TA06			
Laboratory ID Number: 15	Date Collected: 10/18/21	Time Collected: 826	Sample Volume: 6L
Canister ID (Bar code # - AC, SC, etc.): SC09651	Flow Controller ID (Bar code # - FC #): 5FC0222	Canister Start Pressure "Hg: -30.07	Canister End Pressure "Hg/postig: -2.0
Sampler (Print & Sign): Niels van Hoesel			
Report Tier Levels - please select			
Tier I - Results (Default if not specified) _____ Tier II (Data Validation Package) 10% Surchage A			
Tier III (Results + QC & Calibration Summaries) _____ EDD required <input checked="" type="checkbox"/> Yes / No <u>SRPIMS</u> Units: _____			
Tier IV (Data Validation Package) 10% Surchage _____ Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT			
Relinquished by: (Signature) <i>[Signature]</i>		Date: 10/18/21 Time: 12:00	
Relinquished by: (Signature) <i>[Signature]</i>		Date: 10/21/21 Time: 1000	
Project Requirements (MRLs, QAPP)			
Cooler / Blank Temperature _____ °C			

**ALS Environmental
Sample Acceptance Check Form**

Client: FPM Remediations, Inc. Work order: P2105519
 Project: MAKAH VI Investigation / 1085-20-03:04
 Sample(s) received on: 10/21/21 Date opened: 10/21/21 by: DENISE.POSADA

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

- | | Yes | No | N/A |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1 Were sample containers properly marked with client sample ID? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Did sample containers arrive in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Were chain-of-custody papers used and filled out? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Did sample container labels and/or tags agree with custody papers? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Was sample volume received adequate for analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Are samples within specified holding times? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Was proper temperature (thermal preservation) of cooler at receipt adhered to? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8 Were custody seals on outside of cooler/Box/Container? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Location of seal(s)? _____ Sealing Lid? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were signature and date included? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were seals intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9 Do containers have appropriate preservation , according to method/SOP or Client specified information? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Is there a client indication that the submitted samples are pH preserved? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were VOA vials checked for presence/absence of air bubbles? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10 Tubes: Are the tubes capped and intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 Badges: Are the badges properly capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Are dual bed badges separated and individually capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2105519-001.01	6.0 L Source Can					
P2105519-002.01	6.0 L Source Can					
P2105519-003.01	6.0 L Silonite Can					
P2105519-004.01	6.0 L Source Can					
P2105519-005.01	6.0 L Silonite Can					
P2105519-006.01	6.0 L Silonite Can					
P2105519-007.01	6.0 L Silonite Can					
P2105519-008.01	6.0 L Source Can					
P2105519-009.01	6.0 L Silonite Can					
P2105519-010.01	6.0 L Source Can					
P2105519-011.01	6.0 L Silonite Can					
P2105519-012.01	6.0 L Source Can					
P2105519-013.01	6.0 L Source Can					
P2105519-014.01	6.0 L Source Can					
P2105519-015.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.

Client Sample ID: 18CA04

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-001

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC00074

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.32 Final Pressure (psig): 3.97

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.

Client Sample ID: 18CA05

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-002

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC01811

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.14 Final Pressure (psig): 3.77

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	18	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

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Client: FPM Remediations, Inc.

Client Sample ID: 18CA06

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-003

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: SSC00557

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.11 Final Pressure (psig): 3.85

Container Dilution Factor: 1.25

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	14	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 180A02

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-004

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC01923

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.83 Final Pressure (psig): 3.92

Container Dilution Factor: 1.34

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.

Client Sample ID: 18IA04

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-005

Test Code: Massachusetts APH, Revision 1, December 2009

Date Collected: 10/18/21

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Date Received: 10/21/21

Analyst: Wida Ang

Date Analyzed: 11/3/21

Sample Type: 6.0 L Silonite Canister

Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container ID: AS01007

Initial Pressure (psig): -0.45 Final Pressure (psig): 3.89

Container Dilution Factor: 1.30

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	14	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 18IA05

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-006

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: SSC00554

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.90 Final Pressure (psig): 3.99

Container Dilution Factor: 1.35

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 18IA06

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-007

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: SSC00180

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.36 Final Pressure (psig): 4.08

Container Dilution Factor: 1.31

Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 16CA04

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-008

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC02097

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.20 Final Pressure (psig): 3.72

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 16CA05

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-009

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: SSC00154

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.21 Final Pressure (psig): 3.97

Container Dilution Factor: 1.25

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

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Client: FPM Remediations, Inc.

Client Sample ID: 16IA05D

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-010

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC00861

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.03 Final Pressure (psig): 3.89

Container Dilution Factor: 1.36

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.

Client Sample ID: 16CA06

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-011

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01290

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 3.76

Container Dilution Factor: 1.22

Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	24	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 16OA02

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-012

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC00783

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.30 Final Pressure (psig): 3.87

Container Dilution Factor: 1.29

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.

Client Sample ID: 16IA04

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-013

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC02337

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.76 Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	28	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 16IA05

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-014

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC02319

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.82 Final Pressure (psig): 3.95

Container Dilution Factor: 1.45

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	29	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	15	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 16IA06

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-015

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC00051

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.54 Final Pressure (psig): 3.89

Container Dilution Factor: 1.31

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: Method Blank

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P211103-MB

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	20	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	10	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	2.5	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: Method Blank

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P211103-MB

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 11/3/21

Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	20	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	10	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	2.5	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-DLCS

Test Code: Massachusetts APH, Revision 1, December 2009
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
 Analyst: Wida Ang
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/3/21
 Volume(s) Analyzed: 0.125 Liter(s)

Compound	Spike Amount		Result		ALS				
	LCS / DLCS	LCS	DLCS	% Recovery		Acceptance	RPD	RPD	Data
	µg/m ³	µg/m ³	µg/m ³	LCS	DLCS	Limits	Limit	Qualifier	
C5 - C8 Aliphatic Hydrocarbons	206	185	175	90	85	70-130	6	30	
C9 - C12 Aliphatic Hydrocarbons	208	215	207	103	100	70-130	3	30	
C9 - C10 Aromatic Hydrocarbons	414	398	385	96	93	70-130	3	30	

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-DLCS

Test Code: Massachusetts APH, Revision 1, December 2009
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
 Analyst: Wida Ang
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 0.125 Liter(s)

Compound	Spike Amount		Result		% Recovery		ALS		Data Qualifier
	LCS / DLCS	LCS	DLCS	LCS	DLCS	Acceptance	RPD	RPD	
	µg/m ³	µg/m ³	µg/m ³	Limits	Limit				
C5 - C8 Aliphatic Hydrocarbons	206	204	194	99	94	70-130	5	30	
C9 - C12 Aliphatic Hydrocarbons	208	224	220	108	106	70-130	2	30	
C9 - C10 Aromatic Hydrocarbons	414	393	391	95	94	70-130	1	30	

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 1 of 1

Client: FPM Remediations, Inc.

Client Sample ID: 161A04

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-013DUP

Test Code: Massachusetts APH, Revision 1, December 2009

Date Collected: 10/18/21

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Date Received: 10/21/21

Analyst: Wida Ang

Date Analyzed: 11/4/21

Sample Type: 6.0 L Summa Canister

Volume(s) Analyzed: 1.00 Liter(s)

Test Notes:

Container ID: SC02337

Initial Pressure (psig): -0.76 Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

Compound	Sample Result $\mu\text{g}/\text{m}^3$	Duplicate Sample Result $\mu\text{g}/\text{m}^3$	Average $\mu\text{g}/\text{m}^3$	% RPD	RPD Limit	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	ND	-	-	30	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	ND	-	-	30	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	ND	-	-	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-001

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC00074

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.32 Final Pressure (psig): 3.97

Container Dilution Factor: 1.24

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.093	0.067	0.029	
108-88-3	Toluene	0.44	0.12	0.12	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	0.14	0.12	0.031	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18CA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-002

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC01811

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.14 Final Pressure (psig): 3.77

Container Dilution Factor: 1.24

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.093	0.069	0.029	
108-88-3	Toluene	0.75	0.12	0.20	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	0.16	0.12	0.037	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.

Client Sample ID: 18CA06

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-003

Test Code: EPA TO-15 SIM

Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19

Analyst: Topacio Zavala

Sample Type: 6.0 L Silonite Canister

Test Notes:

Container ID: SSC00557

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.11 Final Pressure (psig): 3.85

Container Dilution Factor: 1.25

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.20	0.094	0.062	0.029	
108-88-3	Toluene	0.30	0.13	0.079	0.033	
100-41-4	Ethylbenzene	ND	0.13	ND	0.029	
179601-23-1	m,p-Xylenes	0.17	0.13	0.038	0.029	
95-47-6	o-Xylene	ND	0.13	ND	0.029	
91-20-3	Naphthalene	0.13	0.13	0.024	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18OA02
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-004

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC01923

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.83 Final Pressure (psig): 3.92

Container Dilution Factor: 1.34

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.20	0.10	0.061	0.031	
108-88-3	Toluene	0.22	0.13	0.057	0.036	
100-41-4	Ethylbenzene	ND	0.13	ND	0.031	
179601-23-1	m,p-Xylenes	ND	0.13	ND	0.031	
95-47-6	o-Xylene	ND	0.13	ND	0.031	
91-20-3	Naphthalene	ND	0.13	ND	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-005

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Silonite Canister
 Test Notes:
 Container ID: AS01007

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.45 Final Pressure (psig): 3.89

Container Dilution Factor: 1.30

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.098	0.069	0.031	
108-88-3	Toluene	1.3	0.13	0.35	0.035	
100-41-4	Ethylbenzene	0.18	0.13	0.041	0.030	
179601-23-1	m,p-Xylenes	0.47	0.13	0.11	0.030	
95-47-6	o-Xylene	0.19	0.13	0.043	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-006

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Silonite Canister
 Test Notes:
 Container ID: SSC00554

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.90 Final Pressure (psig): 3.99

Container Dilution Factor: 1.35

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.10	0.069	0.032	
108-88-3	Toluene	1.2	0.14	0.32	0.036	
100-41-4	Ethylbenzene	0.25	0.14	0.058	0.031	
179601-23-1	m,p-Xylenes	0.56	0.14	0.13	0.031	
95-47-6	o-Xylene	0.21	0.14	0.047	0.031	
91-20-3	Naphthalene	ND	0.14	ND	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-007

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Silonite Canister
 Test Notes:
 Container ID: SSC00180

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.36 Final Pressure (psig): 4.08

Container Dilution Factor: 1.31

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.23	0.098	0.072	0.031	
108-88-3	Toluene	1.4	0.13	0.37	0.035	
100-41-4	Ethylbenzene	0.21	0.13	0.048	0.030	
179601-23-1	m,p-Xylenes	0.57	0.13	0.13	0.030	
95-47-6	o-Xylene	0.22	0.13	0.050	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-008

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC02097

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.20 Final Pressure (psig): 3.72

Container Dilution Factor: 1.24

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.093	0.070	0.029	
108-88-3	Toluene	0.27	0.12	0.071	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	ND	0.12	ND	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-009

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Silonite Canister
 Test Notes:
 Container ID: SSC00154

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.21 Final Pressure (psig): 3.97

Container Dilution Factor: 1.25

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.20	0.094	0.064	0.029	
108-88-3	Toluene	0.22	0.13	0.059	0.033	
100-41-4	Ethylbenzene	ND	0.13	ND	0.029	
179601-23-1	m,p-Xylenes	ND	0.13	ND	0.029	
95-47-6	o-Xylene	ND	0.13	ND	0.029	
91-20-3	Naphthalene	ND	0.13	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA05D
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-010

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC00861

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.03 Final Pressure (psig): 3.89

Container Dilution Factor: 1.36

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.10	0.069	0.032	
108-88-3	Toluene	0.92	0.14	0.24	0.036	
100-41-4	Ethylbenzene	ND	0.14	ND	0.031	
179601-23-1	m,p-Xylenes	0.27	0.14	0.063	0.031	
95-47-6	o-Xylene	ND	0.14	ND	0.031	
91-20-3	Naphthalene	0.27	0.14	0.052	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-011

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Silonite Canister
 Test Notes:
 Container ID: AS01290

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 3.76

Container Dilution Factor: 1.22

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.16	0.092	0.051	0.029	
108-88-3	Toluene	0.16	0.12	0.043	0.032	
100-41-4	Ethylbenzene	ND	0.12	ND	0.028	
179601-23-1	m,p-Xylenes	ND	0.12	ND	0.028	
95-47-6	o-Xylene	ND	0.12	ND	0.028	
91-20-3	Naphthalene	ND	0.12	ND	0.023	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16OA02
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-012

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC00783

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.30 Final Pressure (psig): 3.87

Container Dilution Factor: 1.29

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.097	0.066	0.030	
108-88-3	Toluene	0.28	0.13	0.075	0.034	
100-41-4	Ethylbenzene	ND	0.13	ND	0.030	
179601-23-1	m,p-Xylenes	0.17	0.13	0.040	0.030	
95-47-6	o-Xylene	ND	0.13	ND	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-013

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC02337

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.76 Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.11	0.065	0.033	
108-88-3	Toluene	0.95	0.14	0.25	0.038	
100-41-4	Ethylbenzene	ND	0.14	ND	0.033	
179601-23-1	m,p-Xylenes	0.27	0.14	0.062	0.033	
95-47-6	o-Xylene	ND	0.14	ND	0.033	
91-20-3	Naphthalene	ND	0.14	ND	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: 16IA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-014

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC02319

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.82 Final Pressure (psig): 3.95

Container Dilution Factor: 1.45

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.11	0.068	0.034	
108-88-3	Toluene	0.88	0.15	0.23	0.038	
100-41-4	Ethylbenzene	ND	0.15	ND	0.033	
179601-23-1	m,p-Xylenes	0.25	0.15	0.058	0.033	
95-47-6	o-Xylene	ND	0.15	ND	0.033	
91-20-3	Naphthalene	ND	0.15	ND	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-015

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:
 Container ID: SC00051

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.54 Final Pressure (psig): 3.89

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.098	0.070	0.031	
108-88-3	Toluene	1.0	0.13	0.27	0.035	
100-41-4	Ethylbenzene	ND	0.13	ND	0.030	
179601-23-1	m,p-Xylenes	0.28	0.13	0.064	0.030	
95-47-6	o-Xylene	ND	0.13	ND	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: Method Blank
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211104-MB

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	0.075	ND	0.023	
108-88-3	Toluene	ND	0.10	ND	0.027	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
179601-23-1	m,p-Xylenes	ND	0.10	ND	0.023	
95-47-6	o-Xylene	ND	0.10	ND	0.023	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Method Blank
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211105-MB

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	ND	0.075	ND	0.023	
108-88-3	Toluene	ND	0.10	ND	0.027	
100-41-4	Ethylbenzene	ND	0.10	ND	0.023	
179601-23-1	m,p-Xylenes	ND	0.10	ND	0.023	
95-47-6	o-Xylene	ND	0.10	ND	0.023	
91-20-3	Naphthalene	ND	0.10	ND	0.019	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister(s)
 Test Notes:

Date(s) Collected: 10/18/21
 Date(s) Received: 10/21/21
 Date(s) Analyzed: 11/4 - 11/5/21

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		% Recovered	% Recovered	% Recovered		
Method Blank	P211104-MB	92	105	96	70-130	
Method Blank	P211105-MB	93	106	93	70-130	
Lab Control Sample	P211104-LCS	94	100	108	70-130	
Lab Control Sample	P211105-LCS	94	99	108	70-130	
Duplicate Lab Control Sample	P211104-DLCS	94	100	108	70-130	
Duplicate Lab Control Sample	P211105-DLCS	94	100	108	70-130	
18CA04	P2105519-001	92	100	109	70-130	
18CA05	P2105519-002	92	101	110	70-130	
18CA06	P2105519-003	92	101	111	70-130	
18OA02	P2105519-004	92	102	112	70-130	
18IA04	P2105519-005	93	102	108	70-130	
18IA05	P2105519-006	91	102	113	70-130	
18IA06	P2105519-007	90	102	113	70-130	
16CA04	P2105519-008	93	102	103	70-130	
16CA05	P2105519-009	94	101	107	70-130	
16IA05D	P2105519-010	90	101	115	70-130	
16CA06	P2105519-011	90	100	114	70-130	
16OA02	P2105519-012	90	103	113	70-130	
16IA04	P2105519-013	91	102	113	70-130	
16IA05	P2105519-014	91	102	114	70-130	
16IA06	P2105519-015	91	102	114	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.

Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211104-DLCS

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 0.050 Liter(s)

CAS #	Compound	Spike Amount		Result		% Recovery		ALS		Data Qualifier
		LCS / DLCS µg/m ³	LCS µg/m ³	DLCS µg/m ³	LCS	DLCS	Acceptance Limits	RPD	RPD Limit	
71-43-2	Benzene	20.8	19.7	19.5	95	94	60-122	1	25	
108-88-3	Toluene	20.6	19.8	19.6	96	95	69-120	1	25	
100-41-4	Ethylbenzene	20.6	20.3	20.0	99	97	70-134	2	25	
179601-23-1	m,p-Xylenes	41.6	40.8	40.2	98	97	73-132	1	25	
95-47-6	o-Xylene	20.8	19.5	19.2	94	92	69-136	2	25	
91-20-3	Naphthalene	21.0	18.0	17.9	86	85	43-144	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
 Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211105-DLCS

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 0.050 Liter(s)

CAS #	Compound	Spike Amount		Result		% Recovery		ALS		Data Qualifier
		LCS / DLCS µg/m ³	LCS µg/m ³	DLCS µg/m ³	LCS	DLCS	Acceptance Limits	RPD	RPD Limit	
71-43-2	Benzene	20.8	19.8	19.8	95	95	60-122	0	25	
108-88-3	Toluene	20.6	19.7	19.9	96	97	69-120	1	25	
100-41-4	Ethylbenzene	20.6	20.5	20.7	100	100	70-134	0	25	
179601-23-1	m,p-Xylenes	41.6	39.9	40.3	96	97	73-132	1	25	
95-47-6	o-Xylene	20.8	19.0	19.2	91	92	69-136	1	25	
91-20-3	Naphthalene	21.0	18.6	19.0	89	90	43-144	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
 Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

Method Blank Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 11042104.D
Date Analyzed: 11/4/21
Time Analyzed: 07:35

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P211104-LCS	11042105.D	08:06
Duplicate Lab Control Sample	P211104-DLCS	11042106.D	08:37
18CA04	P2105519-001	11042122.D	19:09
18CA05	P2105519-002	11042123.D	19:41
18CA06	P2105519-003	11042124.D	20:12
18OA02	P2105519-004	11042125.D	20:44
16CA04	P2105519-008	11042126.D	21:16
16CA05	P2105519-009	11042127.D	21:48
18IA04	P2105519-005	11042128.D	22:20

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

Method Blank Summary

Test Code: EPA TO-15 SIM

Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19

Analyst: Topacio Zavala

Sample Type: 6.0 L Summa Canister(s)

Test Notes:

Lab File ID: 11052105.D

Date Analyzed: 11/5/21

Time Analyzed: 01:51

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P211105-LCS	11052106.D	02:22
Duplicate Lab Control Sample	P211105-DLCS	11052107.D	02:54
18IA05	P2105519-006	11052112.D	11:08
18IA06	P2105519-007	11052113.D	11:40
16IA05D	P2105519-010	11052115.D	13:15
16CA06	P2105519-011	11052116.D	13:46
16OA02	P2105519-012	11052117.D	14:18
16IA04	P2105519-013	11052118.D	14:53
16IA05	P2105519-014	11052119.D	15:25
16IA06	P2105519-015	11052120.D	15:57

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister(s)
 Test Notes:

Lab File ID: 11042102.D
 Date Analyzed: 11/4/21
 Time Analyzed: 06:32

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	# RT	AREA	# RT	AREA	# RT
24 Hour Standard	18914	9.61	94655	11.56	20265	15.90
Upper Limit	26480	9.94	132517	11.89	28371	16.23
Lower Limit	11348	9.28	56793	11.23	12159	15.57

Client Sample ID		IS1 (BCM)	IS2 (DFB)	IS3 (CBZ)
Client Sample ID	Description	AREA	RT	AREA
01	Method Blank	18197	9.62	82525
02	Lab Control Sample	17835	9.61	89322
03	Duplicate Lab Control Sample	17935	9.61	90009
04	18CA04	20772	9.61	105310
05	18CA05	20664	9.61	104773
06	18CA06	20378	9.61	103811
07	18OA02	20368	9.61	102271
08	16CA04	19875	9.61	99924
09	16CA05	21789	9.61	108679
10	18IA04	22255	9.61	110871
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

IS1 (BCM) = Bromochloromethane
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
 AREA LOWER LIMIT = 60% of internal standard area
 RT UPPER LIMIT = 0.33 minutes of internal standard RT
 RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an I.
 I = Internal standard not within the specified limits. See case narrative.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19
 Analyst: Topacio Zavala
 Sample Type: 6.0 L Summa Canister(s)
 Test Notes:

Lab File ID: 11052102.D
 Date Analyzed: 11/5/21
 Time Analyzed: 00:16

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	# RT	AREA	# RT	AREA	# RT
24 Hour Standard	18119	9.61	91653	11.56	19993	15.90
Upper Limit	25367	9.94	128314	11.89	27990	16.23
Lower Limit	10871	9.28	54992	11.23	11996	15.57

Client Sample ID		IS1 (BCM)	IS2 (DFB)	IS3 (CBZ)
ID	Description	AREA	RT	AREA
01	Method Blank	17222	9.62	76810
02	Lab Control Sample	16906	9.61	84470
03	Duplicate Lab Control Sample	16455	9.61	81987
04	18IA05	23676	9.61	119595
05	18IA06	22231	9.61	112449
06	16IA05D	22074	9.61	111339
07	16CA06	21236	9.61	107112
08	16OA02	20818	9.61	104160
09	16IA04	20461	9.61	102680
10	16IA05	20183	9.61	101464
11	16IA06	20091	9.61	100158
12				
13				
14				
15				
16				
17				
18				
19				
20				

IS1 (BCM) = Bromochloromethane
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
 AREA LOWER LIMIT = 60% of internal standard area
 RT UPPER LIMIT = 0.33 minutes of internal standard RT
 RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an I.
 I = Internal standard not within the specified limits. See case narrative.

Data File : I:\MS16\DATA\2021 11\03\11032128.D
 Acq On : 3 Nov 2021 18:42
 Sample : P2105519-001 (1000mL)
 Misc : S34-09132101

Vial: 4
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 15:29:17 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/4/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	168047	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	765808	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	353362	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	300536	11.662	ng	0.00
Spiked Amount	12.500		Recovery	=	93.28%	
12) Toluene-d8 (SS2)	15.65	98	773729	12.207	ng	0.00
Spiked Amount	12.500		Recovery	=	97.68%	
20) p-Bromofluorobenzene (...)	18.92	174	264629	13.048	ng	0.00
Spiked Amount	12.500		Recovery	=	104.40%	

Target Compounds

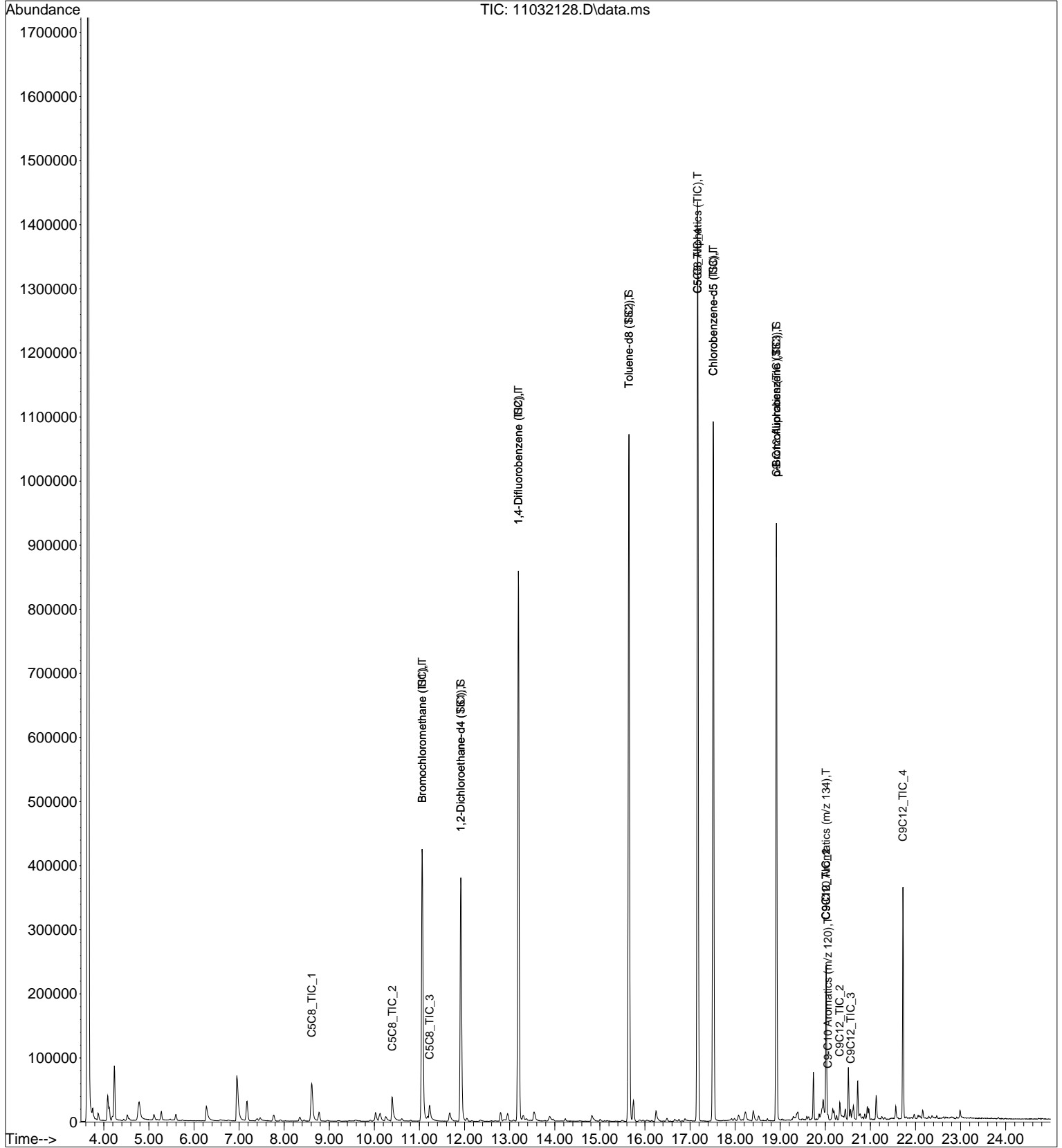
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	1031140	12.187	ng	100
3) Isopentane	6.95	TIC	224608	No Calib	#	
4) n-Hexane	11.18	TIC	14585	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	875177	11.742	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1775399	12.377	ng	100
9) Cyclohexane	13.19	TIC	1775399	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	6846	No Calib		
11) n-Heptane	14.24	TIC	8039	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2195632	12.181	ng	100
14) n-Octane	16.76	TIC	4965	No Calib		
15) C5-C8 Aliphatics (TIC)	17.17	TIC	12299126m	64.681	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	2095691	12.565	ng	100
18) 2,3-Dimethylheptane	17.98	TIC	6485	No Calib		
19) n-Nonane	18.72	TIC	5484	No Calib	#	
21) p-Bromofluorobenzene (...)	18.92	TIC	1548376	12.781	ng	100
22) Isopropylbenzene	0.00	120	0	N.D.		
23) 1-Methyl-3-ethylbenzene	19.69	120	498	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	498	No Calib	#	
25) n-Decane	20.17	TIC	55810	No Calib		
26) p-Isopropyltoluene	20.43	134	631	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	617	No Calib		
28) Butylcyclohexane	20.62	TIC	47955	No Calib		
29) n-Undecane	21.25	TIC	7707	No Calib		
30) n-Dodecane	22.06	TIC	8922	No Calib		
31) C9-C12 Aliphatics- (TIC)	18.92	TIC	3692028m	95.776	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	4952m	0.656	ng	
33) C9-C10 Aromatics (m/z ...)	20.02	134	3535m	0.841	ng	
34) C5C8 TIC 1	8.61	TIC	256806m	0.212	ng	
35) C5C8 TIC 2	10.39	TIC	231709m	0.192	ng	
36) C5C8 TIC 3	11.22	TIC	111747m	0.092	ng	
37) C5C8 TIC 4	17.17	TIC	2671980m	2.211	ng	
38) C9C12 TIC 1	20.02	TIC	380623m	1.781	ng	
39) C9C12 TIC 2	20.32	TIC	70542m	0.330	ng	
40) C9C12 TIC 3	20.56	TIC	26041m	0.122	ng	
41) C9C12 TIC 4	21.72	TIC	629243m	2.945	ng	
42) C9C10 TIC 1	20.02	120	584	N.D.		
43) C9C10 TIC 2	20.02	134	2208m	0.107	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032128.D
Acq On : 3 Nov 2021 18:42
Sample : P2105519-001 (1000mL)
Misc : S34-09132101

Vial: 4
Operator: WA
Inst : GCMS-16

Quant Time: Nov 04 15:29:17 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032129.D
 Acq On : 3 Nov 2021 19:16
 Sample : P2105519-002 (1000mL)
 Misc : S34-09132101

Vial: 5
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 15:14:36 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	154544	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	717157	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	337629	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	287843	12.145	ng	0.00
Spiked Amount	12.500		Recovery	=	97.20%	
12) Toluene-d8 (SS2)	15.65	98	730064	12.299	ng	0.00
Spiked Amount	12.500		Recovery	=	98.40%	
20) p-Bromofluorobenzene (...)	18.92	174	245752	12.682	ng	0.00
Spiked Amount	12.500		Recovery	=	101.44%	

Target Compounds

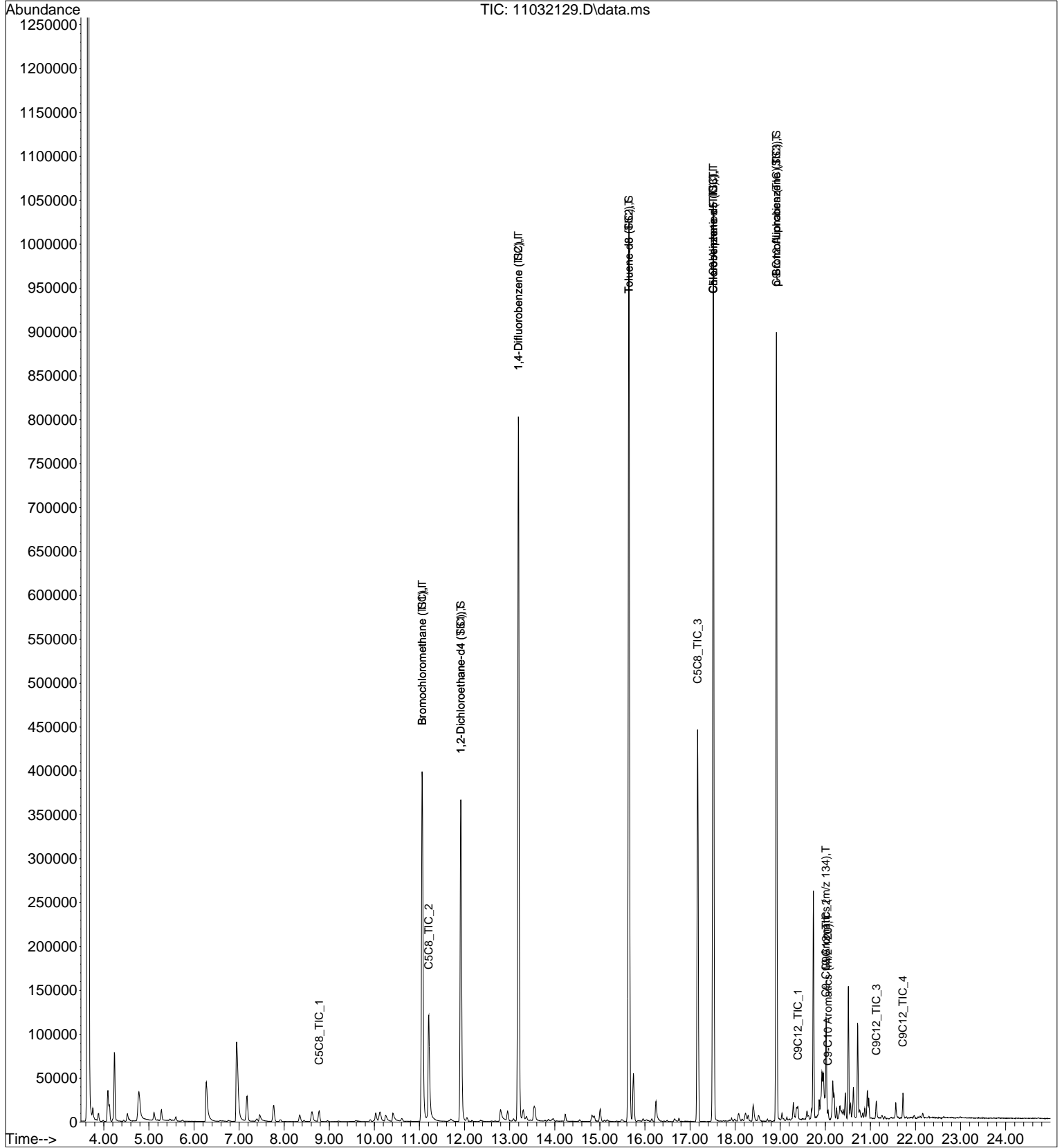
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	972534	12.499	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	836584	12.205	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1678439	12.495	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	2084701	12.350	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	9915234m	55.682	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1994451	12.515	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1469196	12.692	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	4010304m	108.880	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	3966m	0.550	ng	
33) C9-C10 Aromatics (m/z ...)	20.01	134	995m	0.248	ng	
34) C5C8 TIC 1	8.78	TIC	204365m	0.177	ng	
35) C5C8 TIC 2	11.21	TIC	296996m	0.257	ng	
36) C5C8 TIC 3	17.17	TIC	831231m	0.720	ng	
38) C9C12 TIC 1	19.39	TIC	56255m	0.276	ng	
39) C9C12 TIC 2	20.02	TIC	188409m	0.923	ng	
40) C9C12 TIC 3	21.13	TIC	34754m	0.170	ng	
41) C9C12 TIC 4	21.72	TIC	94896m	0.465	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032129.D
 Acq On : 3 Nov 2021 19:16
 Sample : P2105519-002 (1000mL)
 Misc : S34-09132101

Vial: 5
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 15:14:36 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032130.D
 Acq On : 3 Nov 2021 19:49
 Sample : P2105519-003 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 14:15:00 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/5/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	146289	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	679658	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	323968	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	277601	12.374	ng	0.00
Spiked Amount	12.500		Recovery	=	98.96%	
12) Toluene-d8 (SS2)	15.65	98	699692	12.438	ng	0.00
Spiked Amount	12.500		Recovery	=	99.52%	
20) p-Bromofluorobenzene (...)	18.92	174	235445	12.663	ng	0.00
Spiked Amount	12.500		Recovery	=	101.28%	

Target Compounds

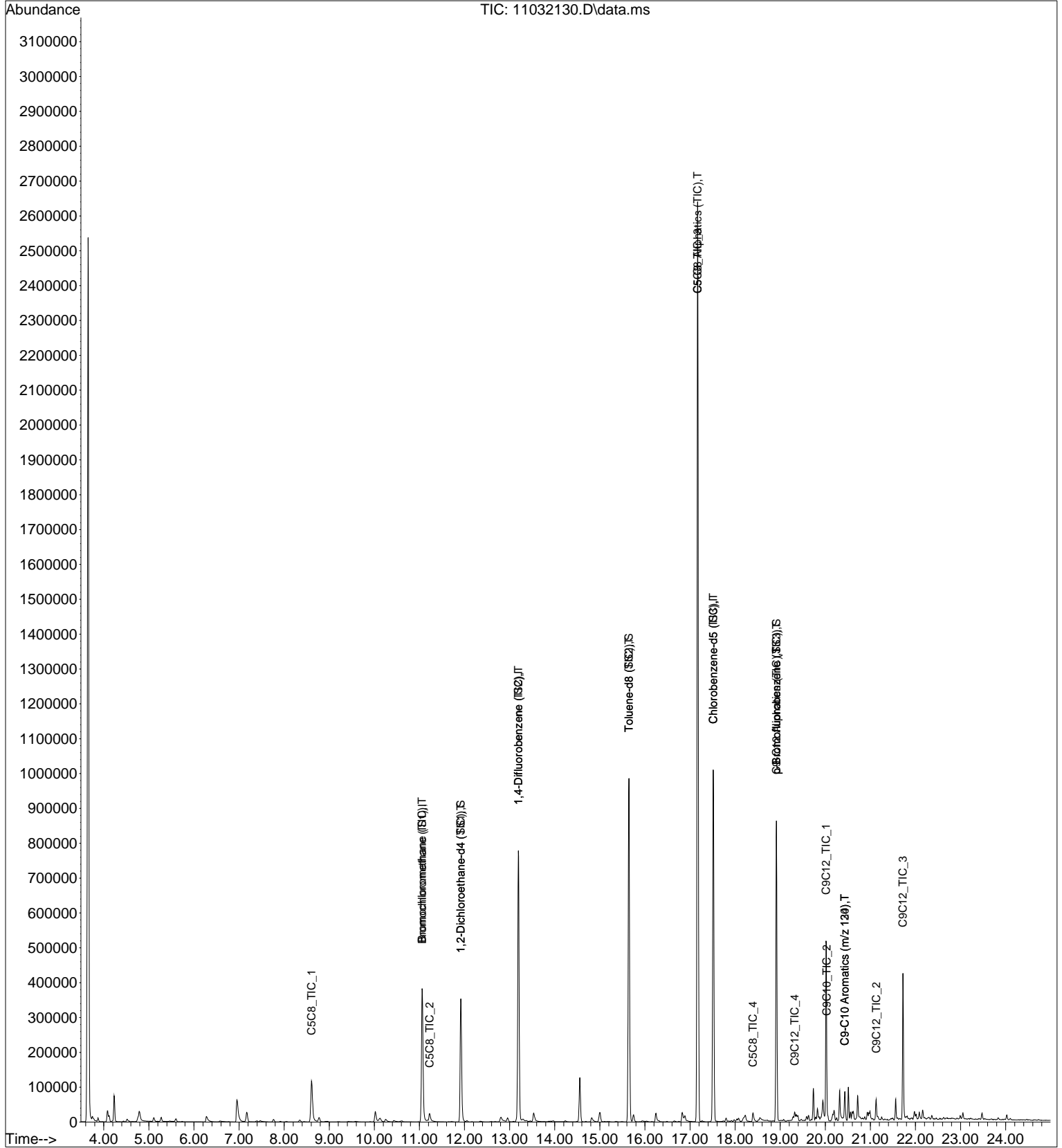
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	933157	12.670	ng	100
3) Isopentane	6.95	TIC	198205	No Calib	#	
4) n-Hexane	11.18	TIC	9261	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	803489	12.384	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1648333	12.948	ng	100
9) Cyclohexane	13.19	TIC	1648333	No Calib		
10) 2,3-Dimethylpentane	13.30	TIC	12568	No Calib		
11) n-Heptane	14.23	TIC	9422	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2004292	12.529	ng	100
14) n-Octane	16.75	TIC	2511	No Calib		
15) C5-C8 Aliphatics (TIC)	17.17	TIC	14208787m	84.196	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1927868	12.608	ng	100
18) 2,3-Dimethylheptane	17.98	TIC	8920	No Calib		
19) n-Nonane	18.55	TIC	55665	No Calib	#	
21) p-Bromofluorobenzene (...)	18.92	TIC	1414622	12.736	ng	100
22) Isopropylbenzene	0.00	120	0	N.D.		
23) 1-Methyl-3-ethylbenzene	19.59	120	767	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	701	No Calib		
25) n-Decane	20.19	TIC	86773	No Calib	#	
26) p-Isopropyltoluene	20.43	134	9017	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	5819	No Calib	#	
28) Butylcyclohexane	20.72	TIC	130262	No Calib		
29) n-Undecane	21.25	TIC	13741	No Calib		
30) n-Dodecane	22.08	TIC	34838	No Calib		
31) C9-C12 Aliphatics- (TIC)	18.92	TIC	5213477m	147.515	ng	
32) C9-C10 Aromatics (m/z ...)	20.43	120	13091m	1.892	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	14777m	3.837	ng	
34) C5C8 TIC 1	8.61	TIC	584454m	0.527	ng	
35) C5C8 TIC 2	11.22	TIC	71736m	0.065	ng	
36) C5C8 TIC 3	17.17	TIC	5015945m	4.526	ng	
37) C5C8 TIC 4	18.39	TIC	116585m	0.105	ng	
38) C9C12 TIC 1	20.02	TIC	783909m	4.002	ng	
39) C9C12 TIC 2	21.13	TIC	215246m	1.099	ng	
40) C9C12 TIC 3	21.72	TIC	921722m	4.705	ng	
41) C9C12 TIC 4	19.32	TIC	105157m	0.537	ng	
42) C9C10 TIC 1	20.02	120	1129	N.D.		
43) C9C10 TIC 2	20.03	134	1047m	0.056	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032130.D
 Acq On : 3 Nov 2021 19:49
 Sample : P2105519-003 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 14:15:00 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032131.D
 Acq On : 3 Nov 2021 20:23
 Sample : P2105519-004 (1000mL)
 Misc : S34-09132101

Vial: 7
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 14:18:29 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/5/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	140299	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	656780	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	309112	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	270178	12.557	ng	0.00
Spiked Amount	12.500		Recovery	=	100.48%	
12) Toluene-d8 (SS2)	15.65	98	670766	12.339	ng	0.00
Spiked Amount	12.500		Recovery	=	98.72%	
20) p-Bromofluorobenzene (...)	18.92	174	218810	12.334	ng	0.00
Spiked Amount	12.500		Recovery	=	98.64%	

Target Compounds

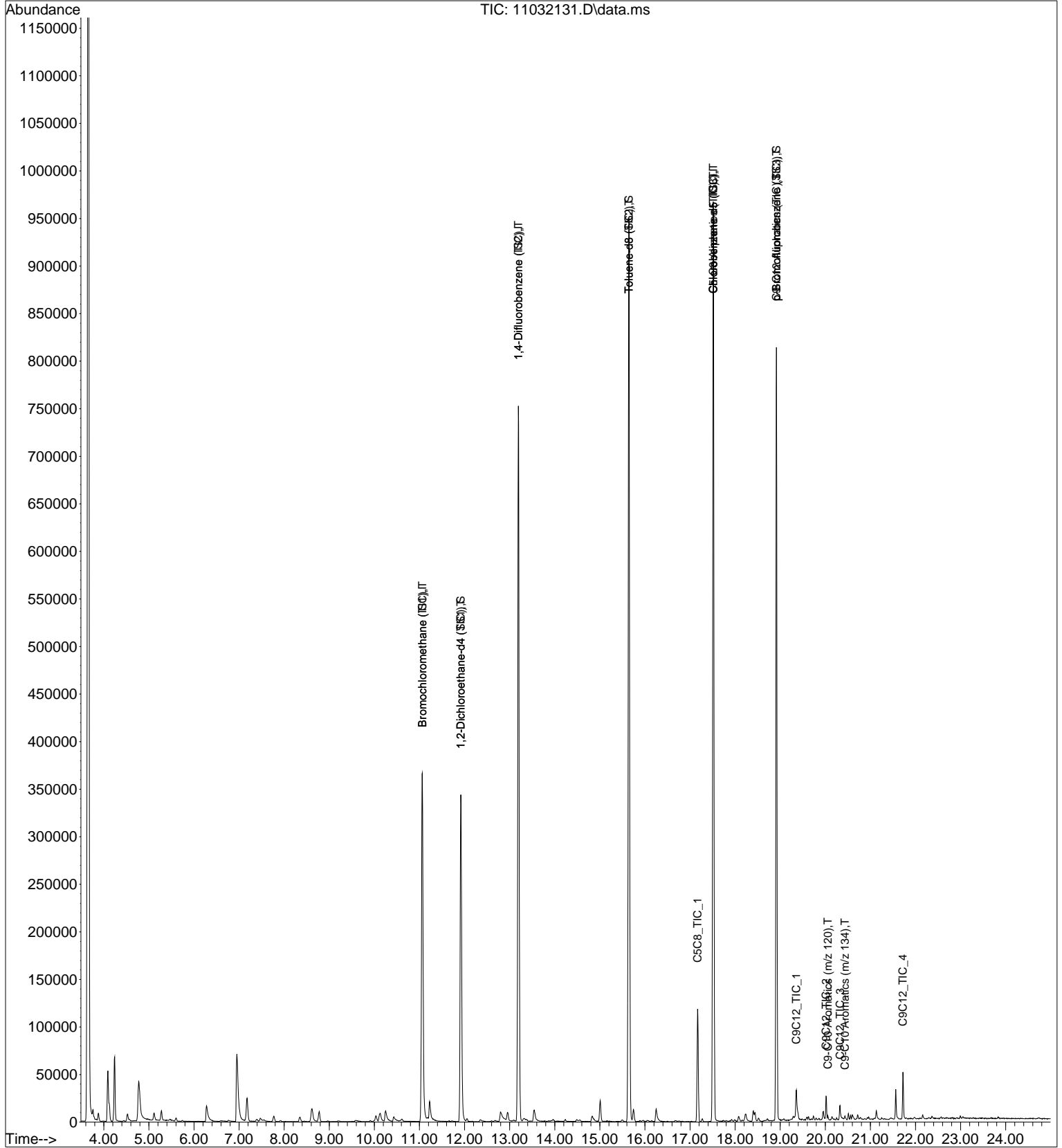
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	904600	12.806	ng	100
3) Isopentane	6.95	TIC	221812	No Calib	#	
4) n-Hexane	11.22	TIC	59479	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	786869	12.646	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1550560	12.604	ng	100
9) Cyclohexane	13.19	TIC	1550560	No Calib		
10) 2,3-Dimethylpentane	13.32	TIC	7869	No Calib		
11) n-Heptane	14.23	TIC	4088	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1924229	12.448	ng	100
14) n-Octane	16.76	TIC	1083	No Calib		
15) C5-C8 Aliphatics (TIC)	17.51	TIC	8115557m	49.765	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1823551	12.499	ng	100
18) 2,3-Dimethylheptane	17.99	TIC	3442	No Calib		
19) n-Nonane	18.71	TIC	4654	No Calib	#	
21) p-Bromofluorobenzene (...)	18.92	TIC	1332728	12.576	ng	100
22) Isopropylbenzene	0.00	120	0	N.D.		
23) 1-Methyl-3-ethylbenzene	19.69	120	207	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	207	No Calib	#	
25) n-Decane	20.15	TIC	7651	No Calib	#	
26) p-Isopropyltoluene	20.43	134	265	No Calib	#	
27) 1,2,3-Trimethylbenzene	20.43	120	227	No Calib	#	
28) Butylcyclohexane	20.72	TIC	9100	No Calib		
29) n-Undecane	21.25	TIC	2239	No Calib		
30) n-Dodecane	22.04	TIC	661	No Calib		
31) C9-C12 Aliphatics- (TIC)	18.92	TIC	1952554m	57.903	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	2086m	0.316	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	349m	0.095	ng	
34) C5C8 TIC 1	17.17	TIC	225575m	0.213	ng	
35) C5C8 TIC 2	0.00	TIC	0	N.D.	d	
36) C5C8 TIC 3	0.00	TIC	0	N.D.	d	
37) C5C8 TIC 4	0.00	TIC	0	N.D.	d	
38) C9C12 TIC 1	19.36	TIC	81297m	0.435	ng	
39) C9C12 TIC 2	20.02	TIC	44533m	0.238	ng	
40) C9C12 TIC 3	20.32	TIC	35386m	0.189	ng	
41) C9C12 TIC 4	21.72	TIC	154032m	0.824	ng	
42) C9C10 TIC 1	0.00	120	0	N.D.	d	
43) C9C10 TIC 2	0.00	134	0	N.D.	d	

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

Data File : I:\MS16\DATA\2021 11\03\11032131.D
Acq On : 3 Nov 2021 20:23
Sample : P2105519-004 (1000mL)
Misc : S34-09132101

Vial: 7
Operator: WA
Inst : GCMS-16

Quant Time: Nov 05 14:18:29 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032132.D
 Acq On : 3 Nov 2021 20:57
 Sample : P2105519-005 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 14:26:23 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/5/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.07	130	137142	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	632826	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	304444	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	265594	12.628	ng	0.00
Spiked Amount	12.500		Recovery	=	101.04%	
12) Toluene-d8 (SS2)	15.65	98	660091	12.602	ng	0.00
Spiked Amount	12.500		Recovery	=	100.80%	
20) p-Bromofluorobenzene (...)	18.92	174	214501	12.276	ng	0.00
Spiked Amount	12.500		Recovery	=	98.24%	

Target Compounds

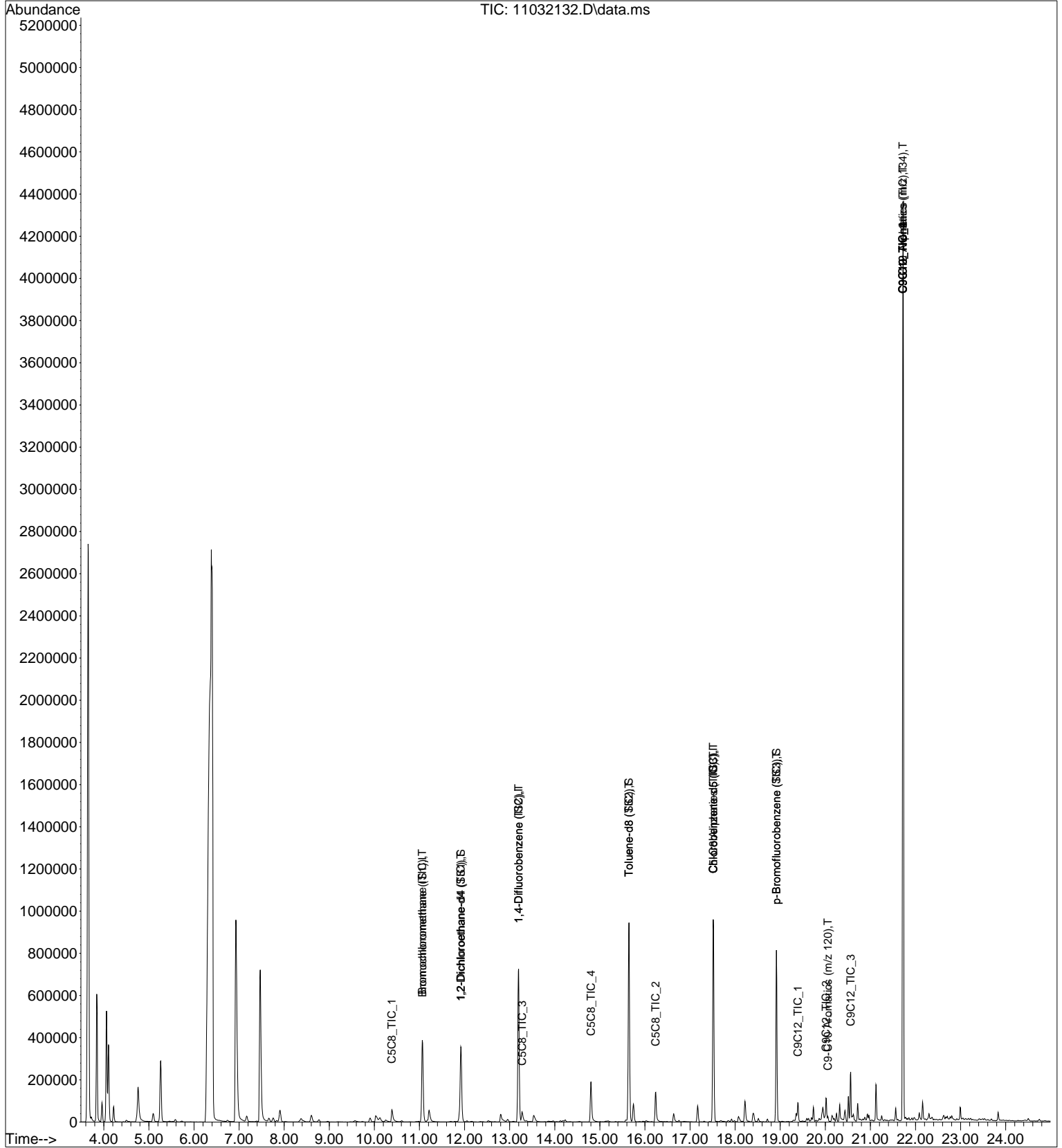
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	893154	12.935	ng	100
3) Isopentane	6.93	TIC	2584786	No Calib	#	
4) n-Hexane	11.21	TIC	161677	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	894376	14.704	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1519493	12.819	ng	100
9) Cyclohexane	13.09	TIC	5990	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	8951	No Calib		
11) n-Heptane	14.23	TIC	21333	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1912757	12.842	ng	100
14) n-Octane	16.76	TIC	11795	No Calib		
15) C5-C8 Aliphatics (TIC)	17.51	TIC	10852932m	69.070	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1803063	12.548	ng	100
18) 2,3-Dimethylheptane	17.98	TIC	10079	No Calib		
19) n-Nonane	18.71	TIC	24275	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1325466	12.699	ng	100
22) Isopropylbenzene	19.04	120	186	No Calib	#	
23) 1-Methyl-3-ethylbenzene	19.59	120	1888	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	1050	No Calib	#	
25) n-Decane	20.15	TIC	62353	No Calib	#	
26) p-Isopropyltoluene	20.43	134	4721	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	2909	No Calib	#	
28) Butylcyclohexane	20.62	TIC	55854	No Calib		
29) n-Undecane	21.25	TIC	35071	No Calib		
30) n-Dodecane	22.08	TIC	61830	No Calib		
31) C9-C12 Aliphatics- (TIC)	21.72	TIC	11407451m	343.473	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	16002m	2.461	ng	
33) C9-C10 Aromatics (m/z ...)	21.72	134	15272m	4.220	ng	
34) C5C8 TIC 1	10.39	TIC	678166m	0.651	ng	
35) C5C8 TIC 2	16.24	TIC	613893m	0.590	ng	
36) C5C8 TIC 3	13.27	TIC	261970m	0.252	ng	
37) C5C8 TIC 4	14.80	TIC	450820m	0.433	ng	
38) C9C12 TIC 1	19.39	TIC	231703m	1.259	ng	
39) C9C12 TIC 2	20.02	TIC	445146m	2.418	ng	
40) C9C12 TIC 3	20.56	TIC	352084m	1.913	ng	
41) C9C12 TIC 4	21.72	TIC	7508275m	40.788	ng	
42) C9C10 TIC 1	21.72	120	2136m	0.067	ng	
43) C9C10 TIC 2	21.72	134	5323m	0.301	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032132.D
 Acq On : 3 Nov 2021 20:57
 Sample : P2105519-005 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 14:26:23 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032150.D
 Acq On : 4 Nov 2021 8:24
 Sample : P2105519-006 (1000mL)
 Misc : S34-09132101

Vial: 4
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:08:42 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.07	130	144989	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	664846	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	314364	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	274479	12.345	ng	0.00
Spiked Amount	12.500		Recovery	=	98.72%	
12) Toluene-d8 (SS2)	15.65	98	684363	12.436	ng	0.00
Spiked Amount	12.500		Recovery	=	99.52%	
20) p-Bromofluorobenzene (...)	18.92	174	220337	12.212	ng	0.00
Spiked Amount	12.500		Recovery	=	97.68%	

Target Compounds

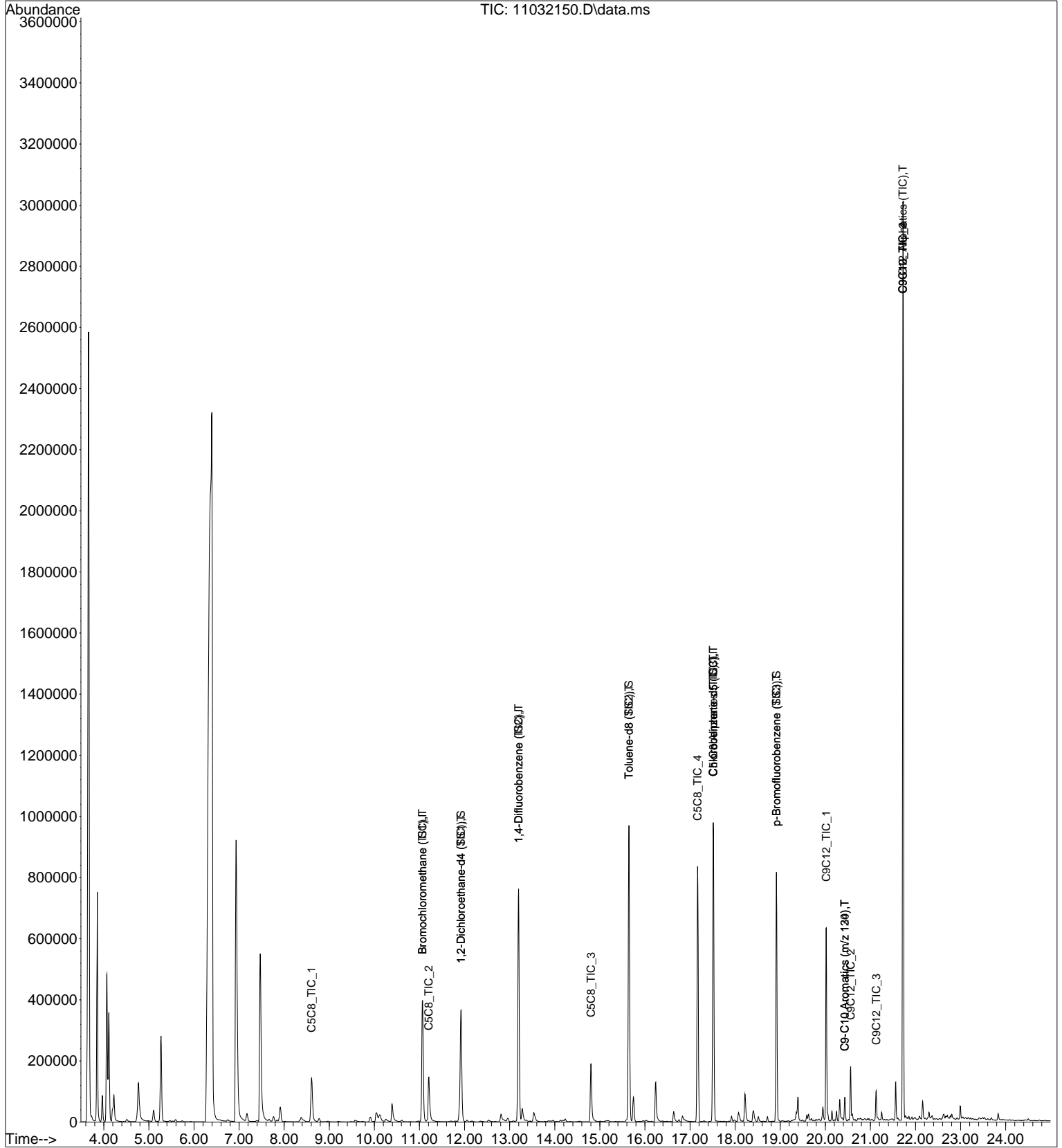
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.07	TIC	932246	12.771	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	945697	14.707	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1581165	12.697	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1983673	12.676	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	12912976m	78.222	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1868328	12.591	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1347556	12.503	ng	100
31) C9-C12 Aliphatics-(TIC)	21.72	TIC	8998789m	262.399	ng	
32) C9-C10 Aromatics (m/z ...)	20.43	120	19635m	2.925	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	17810m	4.766	ng	
34) C5C8 TIC 1	8.61	TIC	497232m	0.462	ng	
35) C5C8 TIC 2	11.21	TIC	394856m	0.367	ng	
36) C5C8 TIC 3	14.80	TIC	670521m	0.624	ng	
37) C5C8 TIC 4	17.17	TIC	2045197m	1.902	ng	
38) C9C12 TIC 1	20.02	TIC	1416660m	7.453	ng	
39) C9C12 TIC 2	20.56	TIC	637216m	3.352	ng	
40) C9C12 TIC 3	21.13	TIC	159230m	0.838	ng	
41) C9C12 TIC 4	21.72	TIC	4577622m	24.083	ng	
43) C9C10 TIC 2	21.72	134	3642m	0.199	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032150.D
 Acq On : 4 Nov 2021 8:24
 Sample : P2105519-006 (1000mL)
 Misc : S34-09132101

Vial: 4
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:08:42 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032151.D
 Acq On : 4 Nov 2021 8:58
 Sample : P2105519-007 (1000mL)
 Misc : S34-09132101

Vial: 5
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:13:32 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.07	130	145457	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	672961	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	315969	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	278866	12.502	ng	0.00
Spiked Amount	12.500		Recovery	=	100.00%	
12) Toluene-d8 (SS2)	15.65	98	687837	12.349	ng	0.00
Spiked Amount	12.500		Recovery	=	98.80%	
20) p-Bromofluorobenzene (...)	18.92	174	222805	12.286	ng	0.00
Spiked Amount	12.500		Recovery	=	98.32%	

Target Compounds

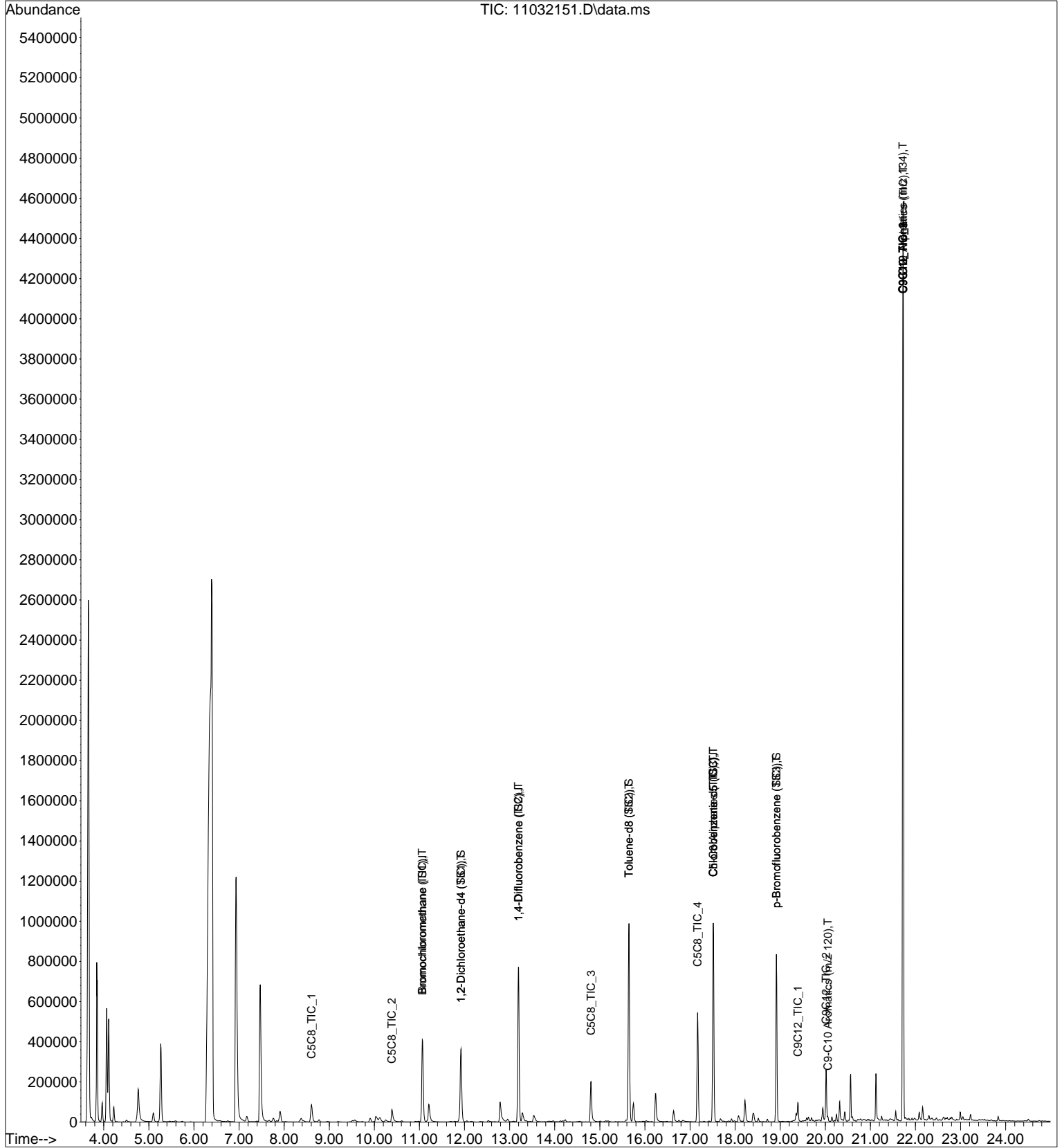
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	938253	12.812	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	889348	13.786	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1594332	12.648	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1992761	12.581	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	12694154m	75.969	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1875262	12.574	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1370544	12.652	ng	100
31) C9-C12 Aliphatics-(TIC)	21.73	TIC	11865766m	344.241	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	18481m	2.739	ng	
33) C9-C10 Aromatics (m/z ...)	21.72	134	16791m	4.470	ng	
34) C5C8 TIC 1	8.61	TIC	427652m	0.396	ng	
35) C5C8 TIC 2	10.39	TIC	318499m	0.295	ng	
36) C5C8 TIC 3	14.80	TIC	472311m	0.437	ng	
37) C5C8 TIC 4	17.17	TIC	1568789m	1.452	ng	
38) C9C12 TIC 1	19.39	TIC	249975m	1.308	ng	
39) C9C12 TIC 2	20.02	TIC	566651m	2.966	ng	
40) C9C12 TIC 3	21.73	TIC	9020752m	47.217	ng	
42) C9C10 TIC 1	21.72	120	2144m	0.065	ng	
43) C9C10 TIC 2	21.72	134	5927m	0.323	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032151.D
Acq On : 4 Nov 2021 8:58
Sample : P2105519-007 (1000mL)
Misc : S34-09132101

Vial: 5
Operator: WA
Inst : GCMS-16

Quant Time: Nov 08 12:13:32 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032152.D
 Acq On : 4 Nov 2021 9:32
 Sample : P2105519-008 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:18:02 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	139982	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	651174	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	316710	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	270808	12.615	ng	0.00
Spiked Amount	12.500		Recovery	=	100.96%	
12) Toluene-d8 (SS2)	15.65	98	665261	12.343	ng	0.00
Spiked Amount	12.500		Recovery	=	98.72%	
20) p-Bromofluorobenzene (...)	18.92	174	217583	11.970	ng	0.00
Spiked Amount	12.500		Recovery	=	95.76%	

Target Compounds

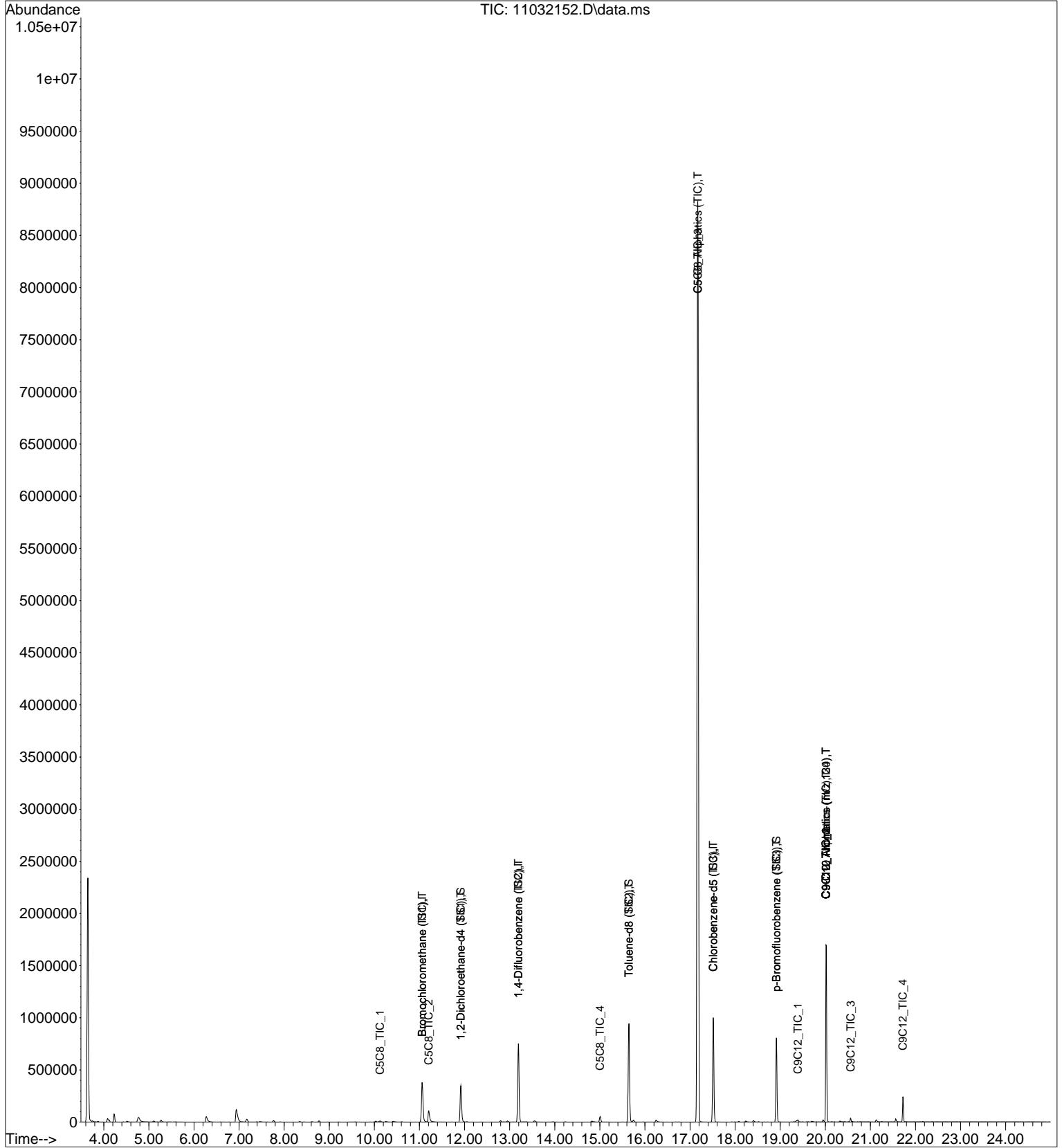
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	911321	12.931	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	787211	12.680	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1544381	12.662	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1922545	12.544	ng	100
15) C5-C8 Aliphatics (TIC)	17.17	TIC	27503434m	170.104	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1869330	12.505	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1333243	12.279	ng	100
31) C9-C12 Aliphatics-(TIC)	20.02	TIC	4774897m	138.202	ng	
32) C9-C10 Aromatics (m/z ...)	20.02	120	5527m	0.817	ng	
33) C9-C10 Aromatics (m/z ...)	20.02	134	9851m	2.616	ng	
34) C5C8 TIC 1	10.12	TIC	64022m	0.059	ng	
35) C5C8 TIC 2	11.21	TIC	286797m	0.265	ng	
36) C5C8 TIC 3	17.17	TIC	19245645m	17.765	ng	
37) C5C8 TIC 4	15.01	TIC	121188m	0.112	ng	
38) C9C12 TIC 1	19.39	TIC	66273m	0.346	ng	
39) C9C12 TIC 2	20.02	TIC	2559141m	13.364	ng	
40) C9C12 TIC 3	20.56	TIC	105212m	0.549	ng	
41) C9C12 TIC 4	21.72	TIC	435523m	2.274	ng	
42) C9C10 TIC 1	20.02	120	3769m	0.114	ng	
43) C9C10 TIC 2	20.02	134	9354m	0.508	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032152.D
 Acq On : 4 Nov 2021 9:32
 Sample : P2105519-008 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:18:02 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032153.D
 Acq On : 4 Nov 2021 10:06
 Sample : P2105519-009 (1000mL)
 Misc : S34-09132101

Vial: 7
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:21:33 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	129040	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	610855	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	294659	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	261333	13.206	ng	0.00
Spiked Amount 12.500						Recovery = 105.68%
12) Toluene-d8 (SS2)	15.65	98	633703	12.534	ng	0.00
Spiked Amount 12.500						Recovery = 100.24%
20) p-Bromofluorobenzene (...)	18.92	174	200884	11.879	ng	0.00
Spiked Amount 12.500						Recovery = 95.04%

Target Compounds

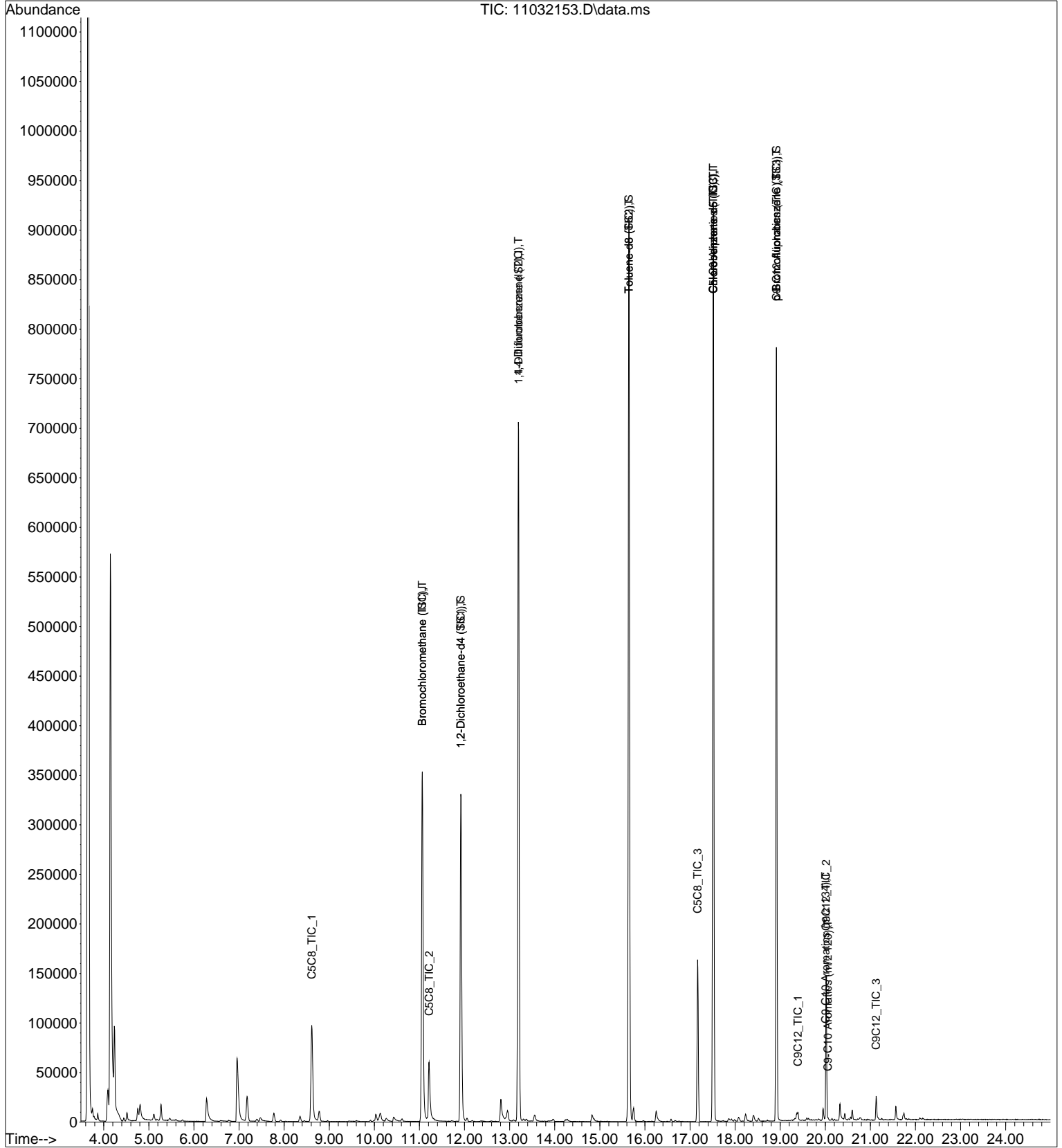
						Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	854944	13.160	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	756735	13.223	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1467442	12.825	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1843712	12.823	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	8089965m	53.337	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1744178	12.541	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1249911	12.373	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	1877220m	58.399	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	1875m	0.298	ng	
33) C9-C10 Aromatics (m/z ...)	20.01	134	1157m	0.330	ng	
34) C5C8 TIC 1	8.61	TIC	319625m	0.317	ng	
35) C5C8 TIC 2	11.21	TIC	162156m	0.161	ng	
36) C5C8 TIC 3	17.17	TIC	302405m	0.300	ng	
38) C9C12 TIC 1	19.39	TIC	35272m	0.198	ng	
39) C9C12 TIC 2	20.02	TIC	289736m	1.626	ng	
40) C9C12 TIC 3	21.13	TIC	108232m	0.607	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032153.D
 Acq On : 4 Nov 2021 10:06
 Sample : P2105519-009 (1000mL)
 Misc : S34-09132101

Vial: 7
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:21:33 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032154.D
 Acq On : 4 Nov 2021 10:40
 Sample : P2105519-010 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 12:34:33 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	123883	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	582985	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	289500	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	251854	13.257	ng	0.00
Spiked Amount	12.500		Recovery	=	106.08%	
12) Toluene-d8 (SS2)	15.65	98	613305	12.710	ng	0.00
Spiked Amount	12.500		Recovery	=	101.68%	
20) p-Bromofluorobenzene (...)	18.92	174	195673	11.777	ng	0.00
Spiked Amount	12.500		Recovery	=	94.24%	

Target Compounds

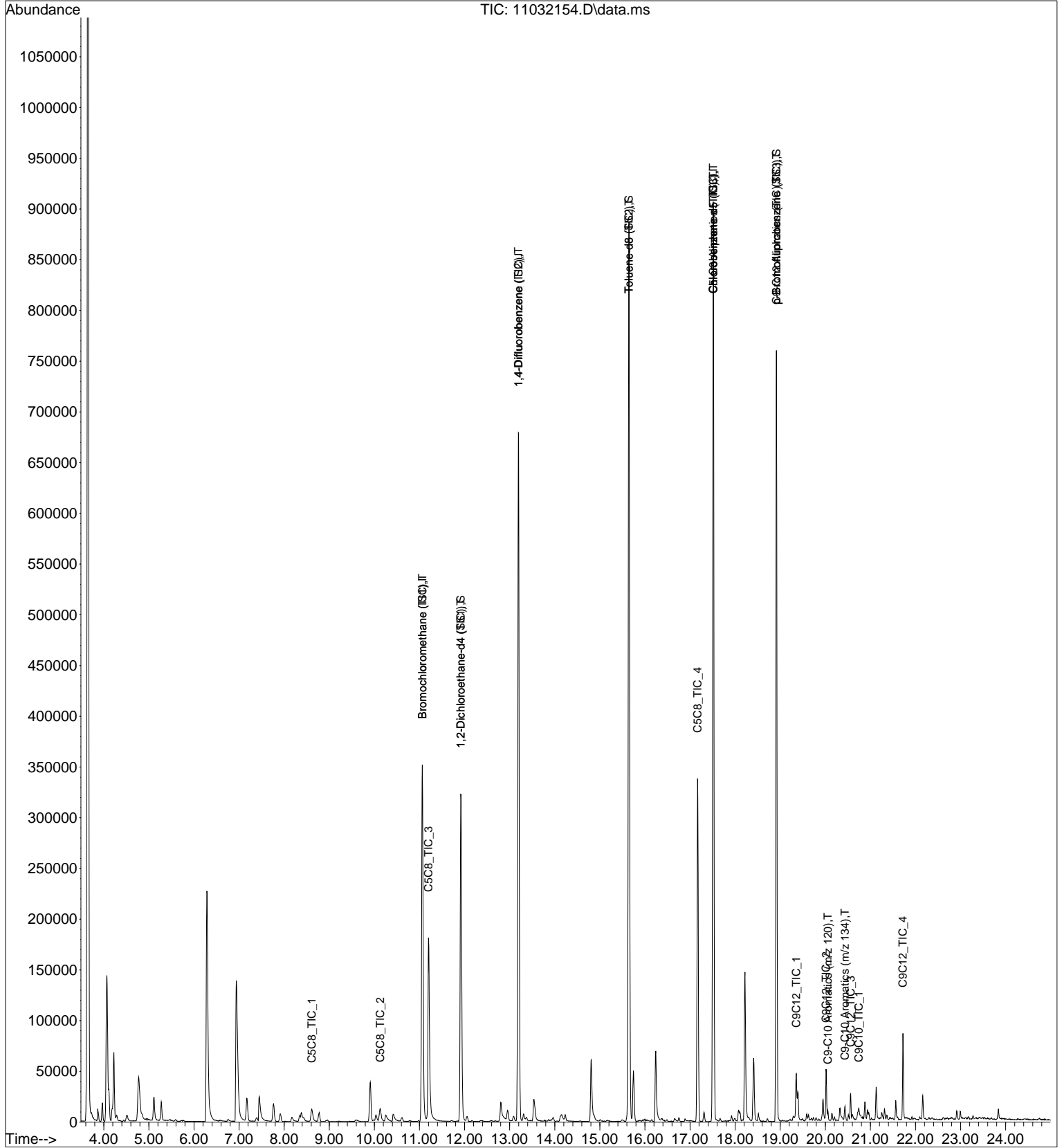
						Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	825261	13.231	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	734071	13.360	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1409292	12.906	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1790740	13.050	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	9426628m	65.121	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1712752	12.534	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1228265	12.375	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	2238739m	70.887	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	6949m	1.124	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	2731m	0.794	ng	
34) C5C8 TIC 1	8.61	TIC	123083m	0.124	ng	
35) C5C8 TIC 2	10.13	TIC	107719m	0.109	ng	
36) C5C8 TIC 3	11.20	TIC	446673m	0.451	ng	
37) C5C8 TIC 4	17.17	TIC	831539m	0.840	ng	
38) C9C12 TIC 1	19.36	TIC	151921m	0.868	ng	
39) C9C12 TIC 2	20.02	TIC	117709m	0.672	ng	
40) C9C12 TIC 3	20.56	TIC	95477m	0.545	ng	
41) C9C12 TIC 4	21.72	TIC	162537m	0.929	ng	
42) C9C10 TIC 1	20.74	120	2020m	0.067	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032154.D
Acq On : 4 Nov 2021 10:40
Sample : P2105519-010 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

Quant Time: Nov 08 12:34:33 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032155.D
 Acq On : 4 Nov 2021 11:13
 Sample : P2105519-011 (1000mL)
 Misc : S34-09132101

Vial: 1
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 14:20:57 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

USA 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	118623	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	568082	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	278408	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	245959	13.521	ng	0.00
Spiked Amount 12.500			Recovery =	108.16%		
12) Toluene-d8 (SS2)	15.65	98	593168	12.615	ng	0.00
Spiked Amount 12.500			Recovery =	100.96%		
20) p-Bromofluorobenzene (...)	18.92	174	187509	11.735	ng	0.00
Spiked Amount 12.500			Recovery =	93.84%		

Target Compounds

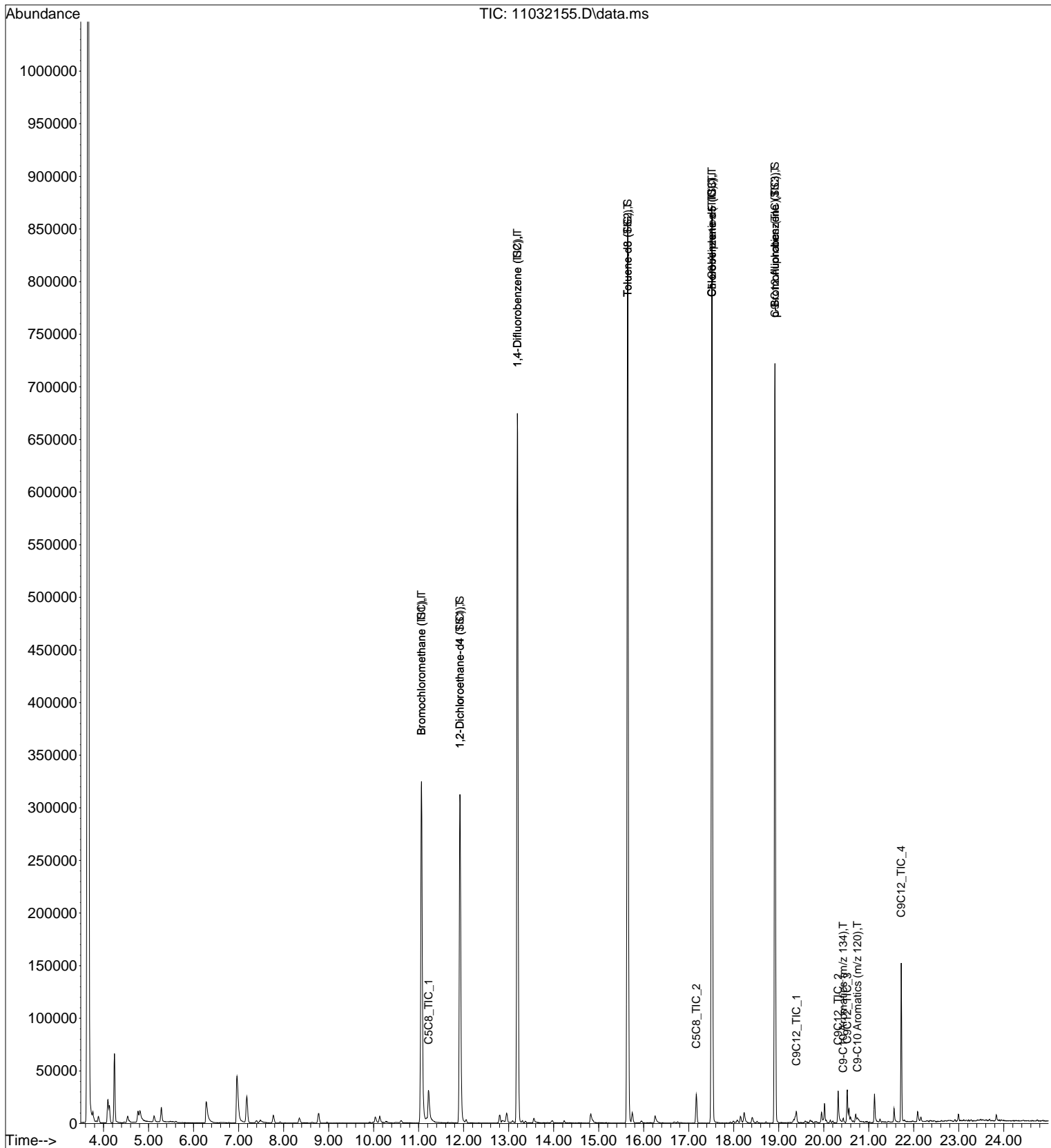
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	798943	13.377	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	713468	13.561	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1374449	12.917	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1726260	12.910	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	6874378m	48.736	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1648737	12.547	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1182522	12.389	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	1857930m	61.173	ng	
32) C9-C10 Aromatics (m/z ...)	20.75	120	1685m	0.283	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	425m	0.128	ng	
34) C5C8 TIC 1	11.22	TIC	78576m	0.083	ng	
35) C5C8 TIC 2	17.17	TIC	50940m	0.053	ng	
38) C9C12 TIC 1	19.39	TIC	38096m	0.226	ng	
39) C9C12 TIC 2	20.32	TIC	130963m	0.778	ng	
40) C9C12 TIC 3	20.52	TIC	101148m	0.601	ng	
41) C9C12 TIC 4	21.72	TIC	336809m	2.001	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032155.D
 Acq On : 4 Nov 2021 11:13
 Sample : P2105519-011 (1000mL)
 Misc : S34-09132101

Vial: 1
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 14:20:57 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032158.D
 Acq On : 4 Nov 2021 13:02
 Sample : P2105519-012 (1000mL)
 Misc : S34-09132101

Vial: 5
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 14:48:12 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

USA 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	138167	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	642780	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	317215	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	268829	12.687	ng	0.00
Spiked Amount	12.500		Recovery	=	101.52%	
12) Toluene-d8 (SS2)	15.65	98	667541	12.547	ng	0.00
Spiked Amount	12.500		Recovery	=	100.40%	
20) p-Bromofluorobenzene (...)	18.92	174	224395	12.325	ng	0.00
Spiked Amount	12.500		Recovery	=	98.64%	

Target Compounds

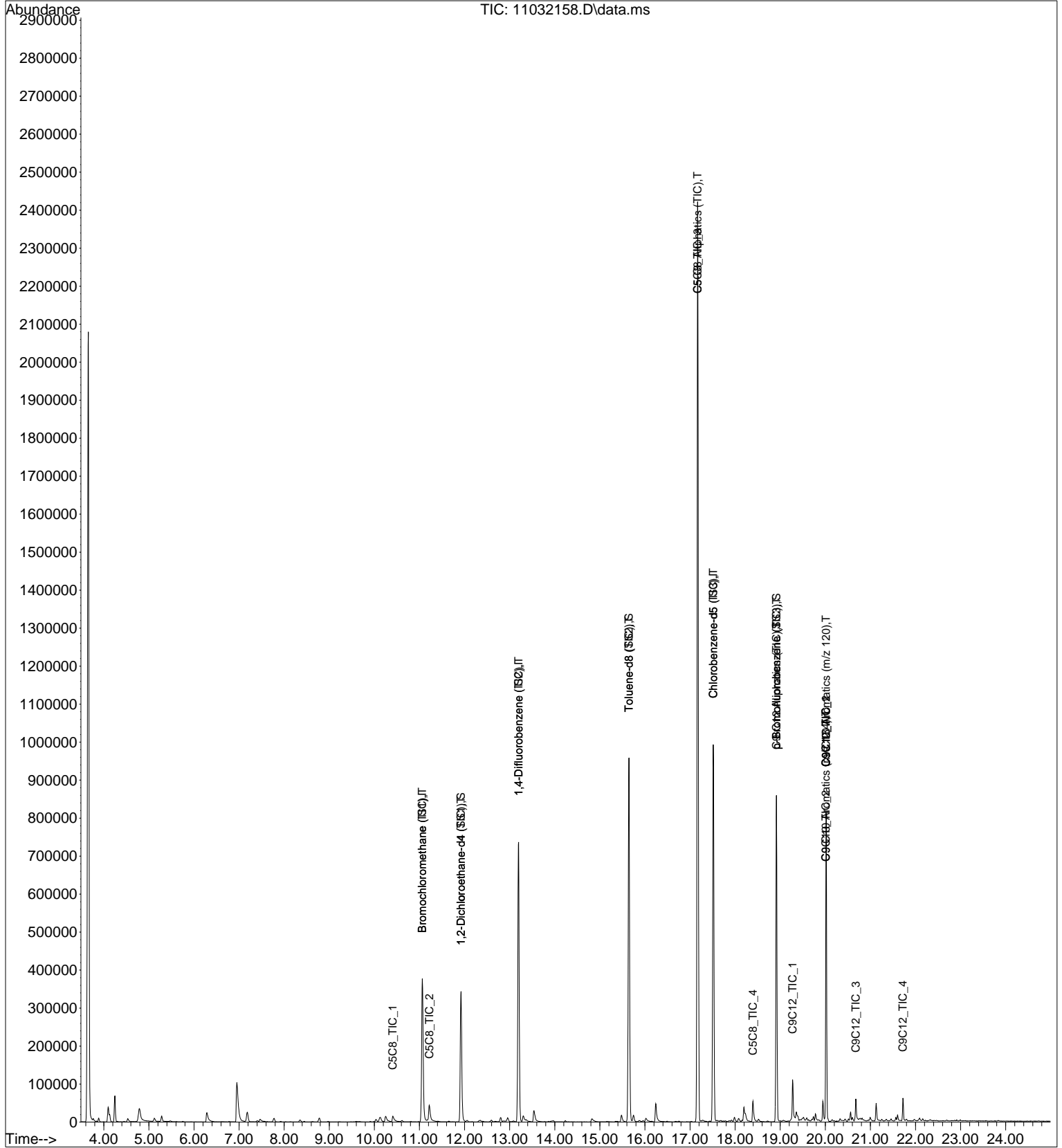
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	905488	13.017	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	783230	12.781	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1534167	12.743	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1939848	12.822	ng	100
15) C5-C8 Aliphatics (TIC)	17.17	TIC	13006094m	81.491	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1870886	12.495	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1382722	12.714	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	3989265m	115.279	ng	
32) C9-C10 Aromatics (m/z ...)	20.02	120	7850m	1.159	ng	
33) C9-C10 Aromatics (m/z ...)	20.01	134	3979m	1.055	ng	
34) C5C8 TIC 1	10.41	TIC	164477m	0.152	ng	
35) C5C8 TIC 2	11.22	TIC	111868m	0.103	ng	
36) C5C8 TIC 3	17.17	TIC	4538066m	4.182	ng	
37) C5C8 TIC 4	18.39	TIC	253156m	0.233	ng	
38) C9C12 TIC 1	19.27	TIC	283718m	1.479	ng	
39) C9C12 TIC 2	20.02	TIC	1275075m	6.648	ng	
40) C9C12 TIC 3	20.68	TIC	174758m	0.911	ng	
41) C9C12 TIC 4	21.72	TIC	242494m	1.264	ng	
42) C9C10 TIC 1	20.02	120	1936m	0.058	ng	
43) C9C10 TIC 2	20.01	134	3596m	0.195	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032158.D
Acq On : 4 Nov 2021 13:02
Sample : P2105519-012 (1000mL)
Misc : S34-09132101

Vial: 5
Operator: WA
Inst : GCMS-16

Quant Time: Nov 08 14:48:12 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032159.D
 Acq On : 4 Nov 2021 13:36
 Sample : P2105519-013 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 14:55:22 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	132820	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	618115	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	298972	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	260122	12.771	ng	0.00
Spiked Amount	12.500					Recovery = 102.16%
12) Toluene-d8 (SS2)	15.65	98	642618	12.561	ng	0.00
Spiked Amount	12.500					Recovery = 100.48%
20) p-Bromofluorobenzene (...)	18.92	174	206934	12.060	ng	0.00
Spiked Amount	12.500					Recovery = 96.48%

Target Compounds

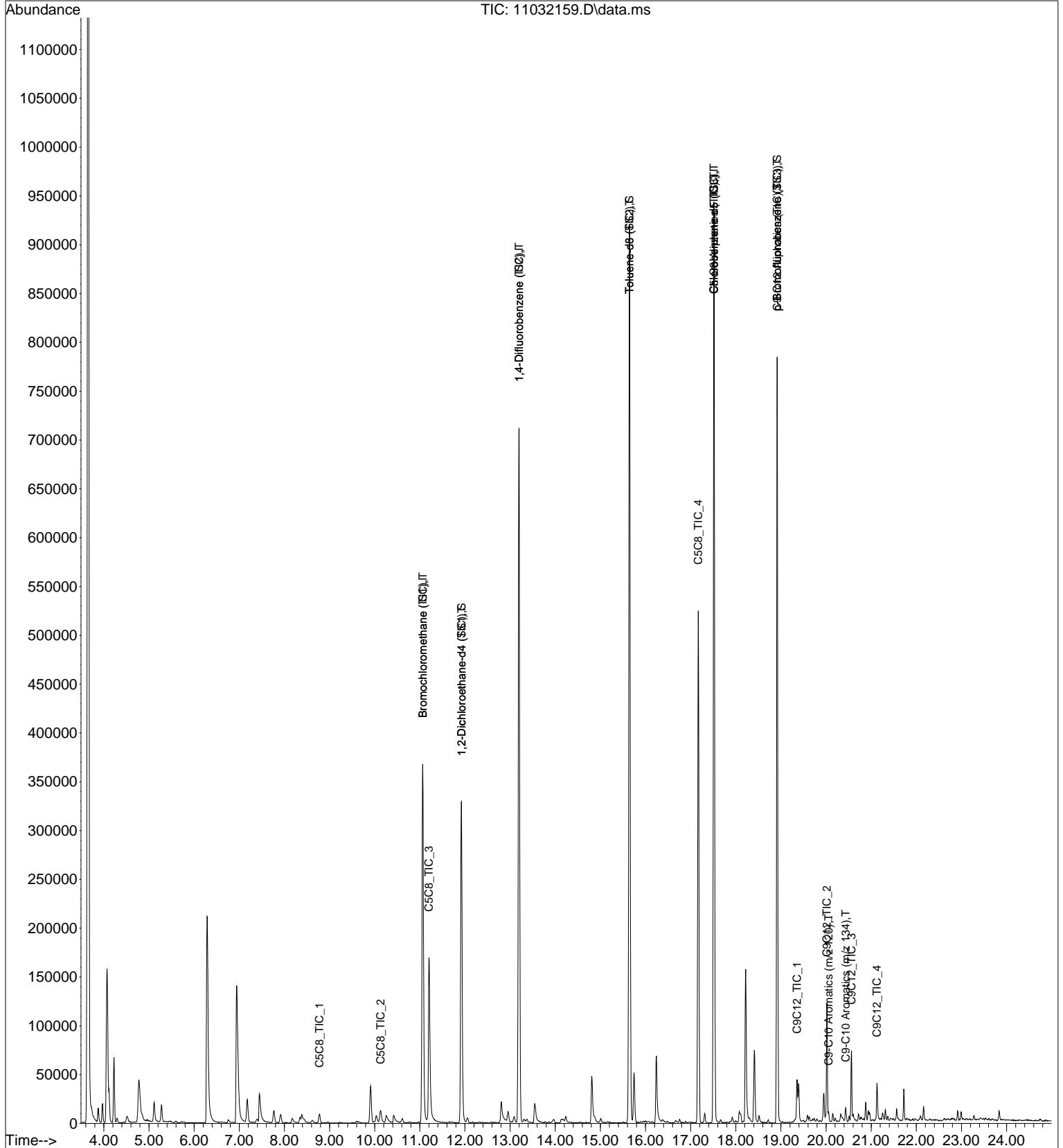
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	870218	13.013	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	758569	12.877	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1477923	12.765	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1865581	12.823	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	10048838m	65.474	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1776087	12.586	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1283838	12.525	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	2484759m	76.184	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	5898m	0.924	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	2777m	0.781	ng	
34) C5C8 TIC 1	8.78	TIC	99843m	0.098	ng	
35) C5C8 TIC 2	10.13	TIC	139716m	0.137	ng	
36) C5C8 TIC 3	11.20	TIC	423258m	0.414	ng	
37) C5C8 TIC 4	17.17	TIC	1181547m	1.155	ng	
38) C9C12 TIC 1	19.36	TIC	155944m	0.863	ng	
39) C9C12 TIC 2	20.02	TIC	249812m	1.382	ng	
40) C9C12 TIC 3	20.56	TIC	112213m	0.621	ng	
41) C9C12 TIC 4	21.13	TIC	287412m	1.590	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032159.D
 Acq On : 4 Nov 2021 13:36
 Sample : P2105519-013 (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 14:55:22 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032161.D
 Acq On : 4 Nov 2021 14:45
 Sample : P2105519-014 (1000mL)
 Misc : S34-09132101

Vial: 7
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 15:02:12 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	124799	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	583557	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	284211	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	249603	13.042	ng	0.00
Spiked Amount	12.500					Recovery = 104.32%
12) Toluene-d8 (SS2)	15.65	98	606643	12.560	ng	0.00
Spiked Amount	12.500					Recovery = 100.48%
20) p-Bromofluorobenzene (...)	18.92	174	196704	12.059	ng	0.00
Spiked Amount	12.500					Recovery = 96.48%

Target Compounds

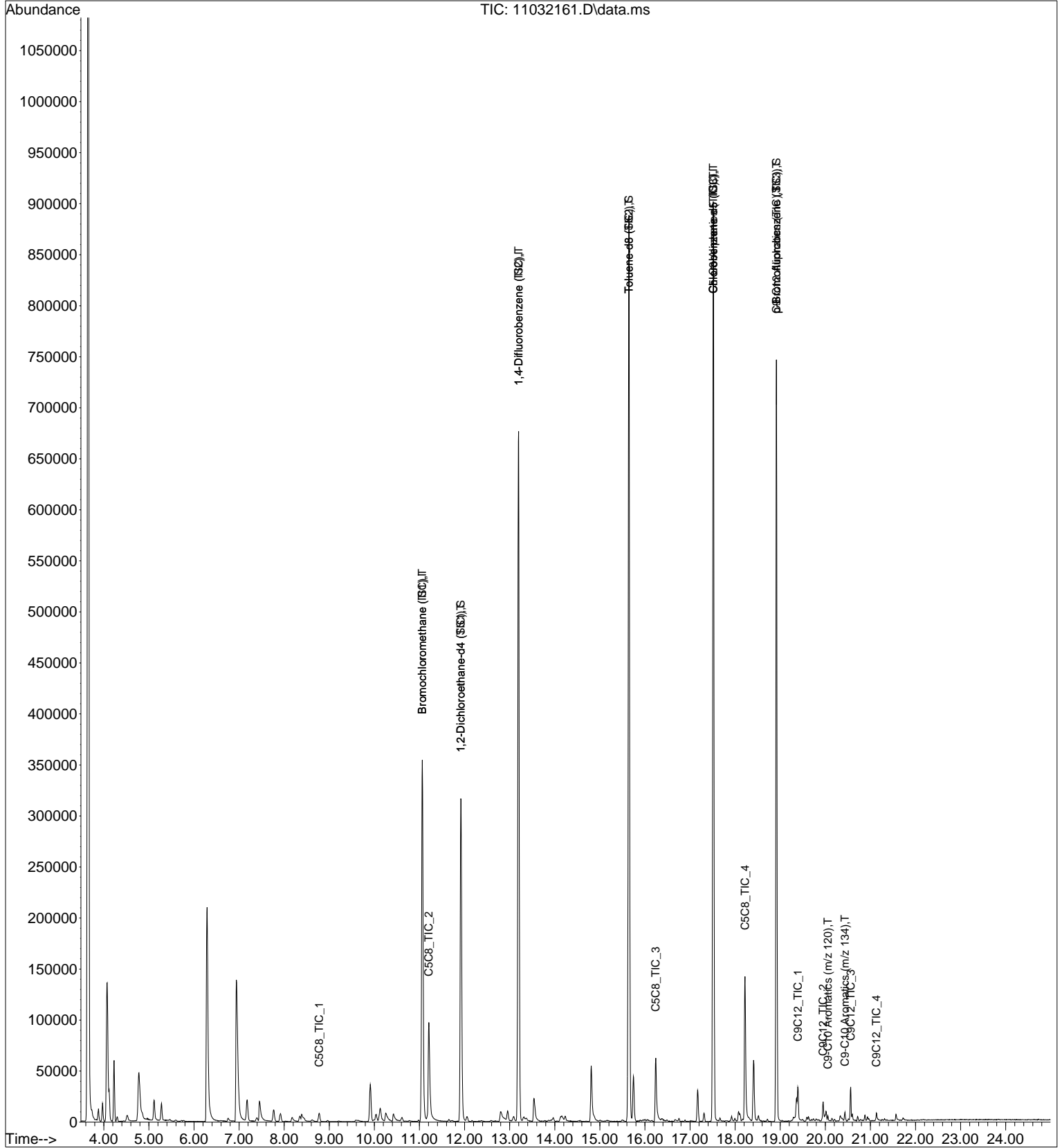
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	828772	13.190	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	727663	13.147	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1406084	12.864	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1775768	12.929	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	8503471m	58.686	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1698772	12.663	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1229558	12.619	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	1741246m	56.160	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	2550m	0.420	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	991m	0.293	ng	
34) C5C8 TIC 1	8.78	TIC	91296m	0.094	ng	
35) C5C8 TIC 2	11.21	TIC	270377m	0.278	ng	
36) C5C8 TIC 3	16.24	TIC	150047m	0.154	ng	
37) C5C8 TIC 4	18.22	TIC	440162m	0.453	ng	
38) C9C12 TIC 1	19.39	TIC	115019m	0.669	ng	
39) C9C12 TIC 2	19.95	TIC	55290m	0.322	ng	
40) C9C12 TIC 3	20.56	TIC	48833m	0.284	ng	
41) C9C12 TIC 4	21.13	TIC	53555m	0.312	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032161.D
 Acq On : 4 Nov 2021 14:45
 Sample : P2105519-014 (1000mL)
 Misc : S34-09132101

Vial: 7
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 15:02:12 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032162.D
 Acq On : 4 Nov 2021 15:21
 Sample : P2105519-015 (1000mL)
 Misc : S34-09132101

Vial: 8
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 08 15:06:47 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/8/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	122327	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	576591	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	289115	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	248540	13.249	ng	0.00
Spiked Amount	12.500					Recovery = 106.00%
12) Toluene-d8 (SS2)	15.65	98	607791	12.735	ng	0.00
Spiked Amount	12.500					Recovery = 101.92%
20) p-Bromofluorobenzene (...)	18.92	174	196917	11.867	ng	0.00
Spiked Amount	12.500					Recovery = 94.96%

Target Compounds

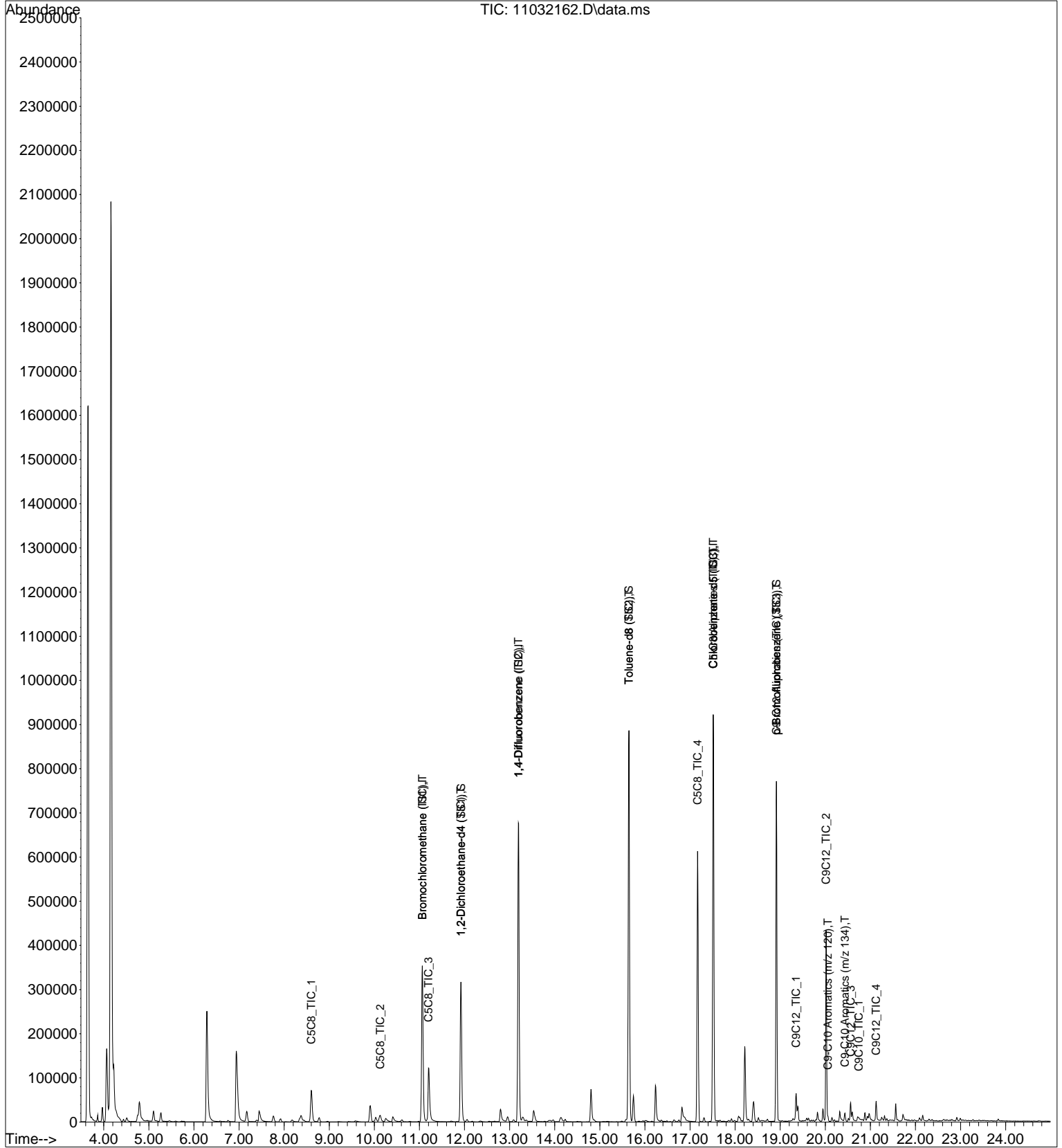
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	821932	13.346	ng	100
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	727218	13.404	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1413243	13.086	ng	100
13) Toluene-d8 (TIC)	15.65	TIC	1775557	13.083	ng	100
15) C5-C8 Aliphatics (TIC)	17.51	TIC	10430945m	72.858	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1715388	12.570	ng	100
21) p-Bromofluorobenzene (...)	18.92	TIC	1244397	12.554	ng	100
31) C9-C12 Aliphatics-(TIC)	18.92	TIC	3186134m	101.019	ng	
32) C9-C10 Aromatics (m/z ...)	20.06	120	8487m	1.375	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	3347m	0.974	ng	
34) C5C8 TIC 1	8.60	TIC	294580m	0.298	ng	
35) C5C8 TIC 2	10.13	TIC	161513m	0.163	ng	
36) C5C8 TIC 3	11.20	TIC	318973m	0.323	ng	
37) C5C8 TIC 4	17.17	TIC	1464730m	1.481	ng	
38) C9C12 TIC 1	19.35	TIC	175305m	1.003	ng	
39) C9C12 TIC 2	20.02	TIC	734723m	4.203	ng	
40) C9C12 TIC 3	20.56	TIC	72543m	0.415	ng	
41) C9C12 TIC 4	21.13	TIC	280814m	1.606	ng	
42) C9C10 TIC 1	20.74	120	1706m	0.057	ng	

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

Data File : I:\MS16\DATA\2021 11\03\11032162.D
Acq On : 4 Nov 2021 15:21
Sample : P2105519-015 (1000mL)
Misc : S34-09132101

Vial: 8
Operator: WA
Inst : GCMS-16

Quant Time: Nov 08 15:06:47 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032104.D
 Acq On : 3 Nov 2021 3:10
 Sample : MB R16110321_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:56:57 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	147387	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	669750	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	305765	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	268509	11.880	ng	0.00
Spiked Amount	12.500		Recovery	=	95.04%	
12) Toluene-d8 (SS2)	15.65	98	679258	12.253	ng	0.00
Spiked Amount	12.500		Recovery	=	98.00%	
20) p-Bromofluorobenzene (...)	18.92	174	215592	12.285	ng	0.00
Spiked Amount	12.500		Recovery	=	98.32%	

Target Compounds

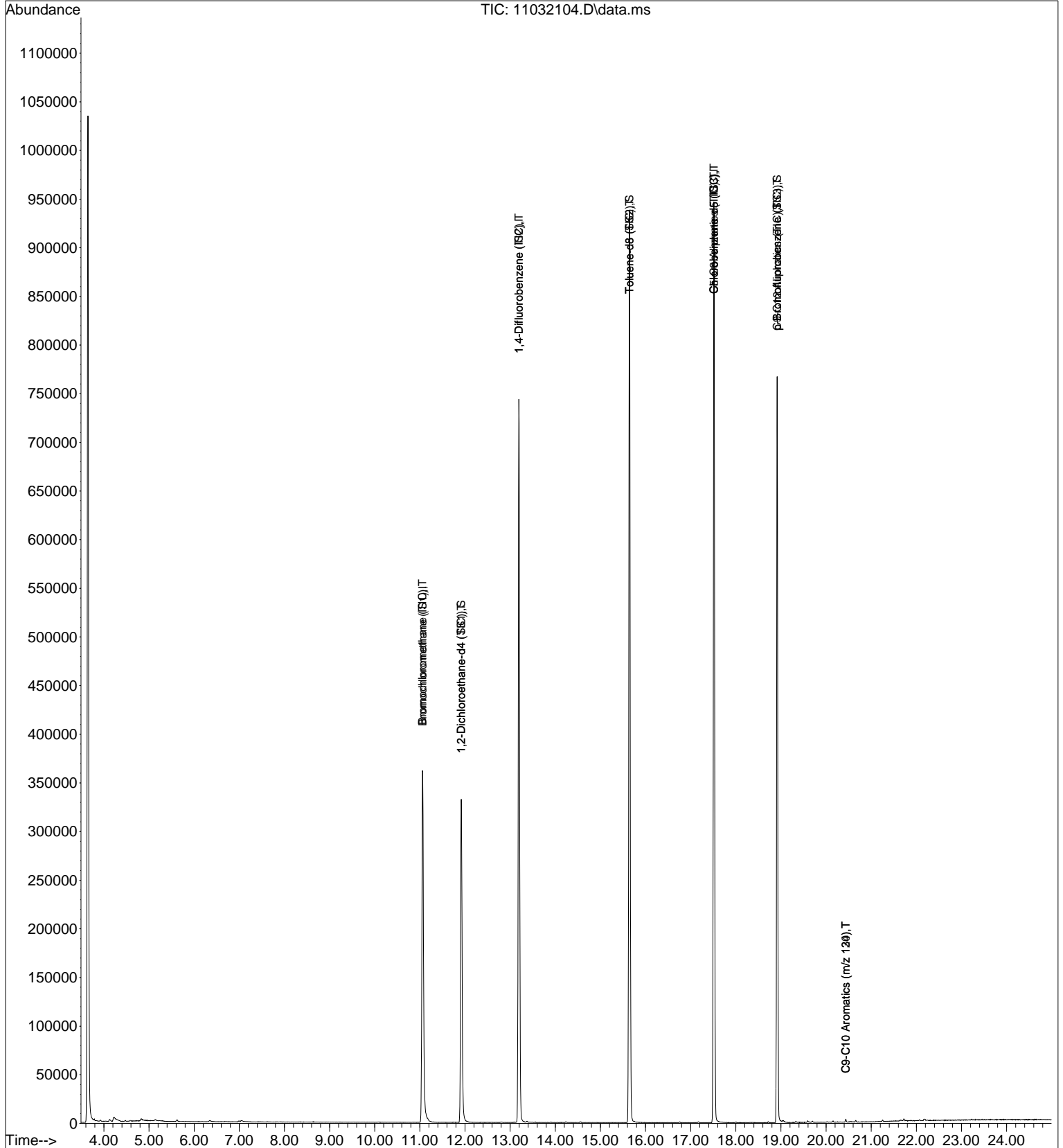
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	925382	12.471	ng	100
3) Isopentane	6.98	TIC	1784	No Calib	#	
4) n-Hexane	11.06	TIC	925587	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	779576	11.926	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1556178	12.405	ng	100
9) Cyclohexane	13.19	TIC	1554987	No Calib		
10) 2,3-Dimethylpentane	13.19	TIC	1552194	No Calib		
11) n-Heptane	14.23	TIC	1479	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1920480	12.183	ng	100
14) n-Octane	16.76	TIC	1272	No Calib		
15) C5-C8 Aliphatics (TIC)	17.51	TIC	7294582m	43.864	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1794468	12.434	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	1321	No Calib		
19) n-Nonane	18.92	TIC	1257368	No Calib	#	
21) p-Bromofluorobenzene (...)	18.92	TIC	1274040	12.153	ng	100
22) Isopropylbenzene	19.05	120	326	No Calib	#	
23) 1-Methyl-3-ethylbenzene	19.69	120	417	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	417	No Calib	#	
25) n-Decane	20.15	TIC	1914	No Calib	#	
26) p-Isopropyltoluene	20.43	134	232	No Calib	#	
27) 1,2,3-Trimethylbenzene	20.43	120	521	No Calib		
28) Butylcyclohexane	20.65	TIC	2597	No Calib		
29) n-Undecane	21.25	TIC	2489	No Calib		
30) n-Dodecane	22.06	TIC	1622	No Calib		
31) C9-C12 Aliphatics- (TIC)	18.92	TIC	1357608m	40.700	ng	
32) C9-C10 Aromatics (m/z ...)	20.43	120	1660m	0.254	ng	
33) C9-C10 Aromatics (m/z ...)	20.43	134	232m	0.064	ng	
34) C5C8 TIC 1	0.00	TIC	0	N.D.	d	
35) C5C8 TIC 2	0.00	TIC	0	N.D.	d	
36) C5C8 TIC 3	0.00	TIC	0	N.D.	d	
37) C5C8 TIC 4	0.00	TIC	0	N.D.	d	
38) C9C12 TIC 1	19.59	TIC	5818	N.D.		
39) C9C12 TIC 2	21.72	TIC	7292	N.D.		
40) C9C12 TIC 3	0.00	TIC	0	N.D.	d	
41) C9C12 TIC 4	0.00	TIC	0	N.D.	d	
42) C9C10 TIC 1	19.69	120	417	N.D.		
43) C9C10 TIC 2	20.43	134	232	N.D.		

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

Data File : I:\MS16\DATA\2021 11\03\11032104.D
 Acq On : 3 Nov 2021 3:10
 Sample : MB R16110321_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:56:57 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032137.D
 Acq On : 3 Nov 2021 23:48
 Sample : MB2 R16110321_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 11:44:00 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/4/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	128063	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	601679	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	286331	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	254402	12.954	ng	0.00
Spiked Amount	12.500		Recovery	=	103.60%	
12) Toluene-d8 (SS2)	15.65	98	621100	12.472	ng	0.00
Spiked Amount	12.500		Recovery	=	99.76%	
20) p-Bromofluorobenzene (...)	18.92	174	192177	11.694	ng	0.00
Spiked Amount	12.500		Recovery	=	93.52%	

Target Compounds

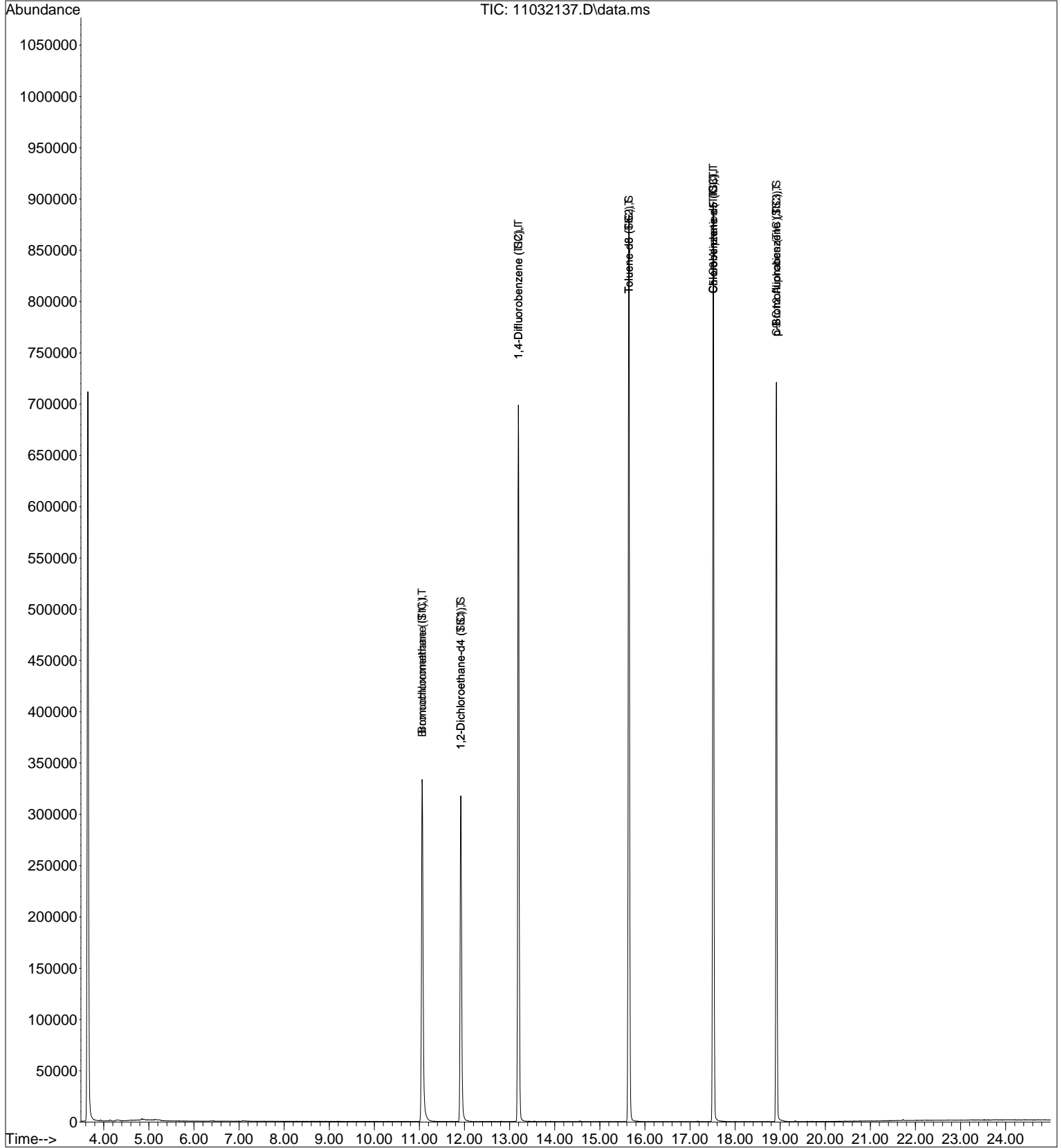
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	848246	13.156	ng	100
3) Isopentane	7.00	TIC	265	No Calib	#	
4) n-Hexane	11.06	TIC	849492	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	739524	13.020	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1435910	12.741	ng	100
9) Cyclohexane	13.19	TIC	1434949	No Calib		
10) 2,3-Dimethylpentane	13.19	TIC	1432453	No Calib		
11) n-Heptane	14.23	TIC	185	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1785967	12.611	ng	100
14) n-Octane	16.75	TIC	128	No Calib		
15) C5-C8 Aliphatics (TIC)	17.51	TIC	6666215m	44.621	ng	
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1687579	12.487	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	593	No Calib		
19) n-Nonane	18.92	TIC	1173503	No Calib	#	
21) p-Bromofluorobenzene (...)	18.92	TIC	1193550	12.158	ng	100
22) Isopropylbenzene	0.00	120	0	N.D.		
23) 1-Methyl-3-ethylbenzene	0.00	120	0	N.D.		
24) 1,3,5-Trimethylbenzene	0.00	120	0	N.D.		
25) n-Decane	20.16	TIC	62	No Calib	#	
26) p-Isopropyltoluene	0.00	134	0	N.D.		
27) 1,2,3-Trimethylbenzene	0.00	120	0	N.D.		
28) Butylcyclohexane	20.64	TIC	100	No Calib		
29) n-Undecane	21.25	TIC	252	No Calib		
30) n-Dodecane	22.05	TIC	65	No Calib		
31) C9-C12 Aliphatics- (TIC)	18.92	TIC	1317168m	42.168	ng	
32) C9-C10 Aromatics (m/z ...)	18.59	120	0	N.D.		
33) C9-C10 Aromatics (m/z ...)	18.59	134	0	N.D.		
34) C5C8 TIC 1	0.00	TIC	0	N.D.	d	
35) C5C8 TIC 2	0.00	TIC	0	N.D.	d	
36) C5C8 TIC 3	0.00	TIC	0	N.D.	d	
37) C5C8 TIC 4	0.00	TIC	0	N.D.	d	
38) C9C12 TIC 1	0.00	TIC	0	N.D.		
39) C9C12 TIC 2	0.00	TIC	0	N.D.		
40) C9C12 TIC 3	0.00	TIC	0	N.D.		
41) C9C12 TIC 4	0.00	TIC	0	N.D.		
42) C9C10 TIC 1	0.00	120	0	N.D.		
43) C9C10 TIC 2	0.00	134	0	N.D.		

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

Data File : I:\MS16\DATA\2021 11\03\11032137.D
 Acq On : 3 Nov 2021 23:48
 Sample : MB2 R16110321_1000mL
 Misc : S34-09132101

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 11:44:00 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032105.D
 Acq On : 3 Nov 2021 3:43
 Sample : LCS R16110321 25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:51:51 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	146297	12.500	ng	0.02
7) 1,4-Difluorobenzene (IS2)	13.20	114	672282	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.52	82	351690	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.93	65	269749	12.023	ng	0.02
Spiked Amount 12.500			Recovery =	96.16%		
12) Toluene-d8 (SS2)	15.65	98	701627	12.609	ng	0.00
Spiked Amount 12.500			Recovery =	100.88%		
20) p-Bromofluorobenzene (...)	18.92	174	238846	11.833	ng	0.00
Spiked Amount 12.500			Recovery =	94.64%		

Target Compounds

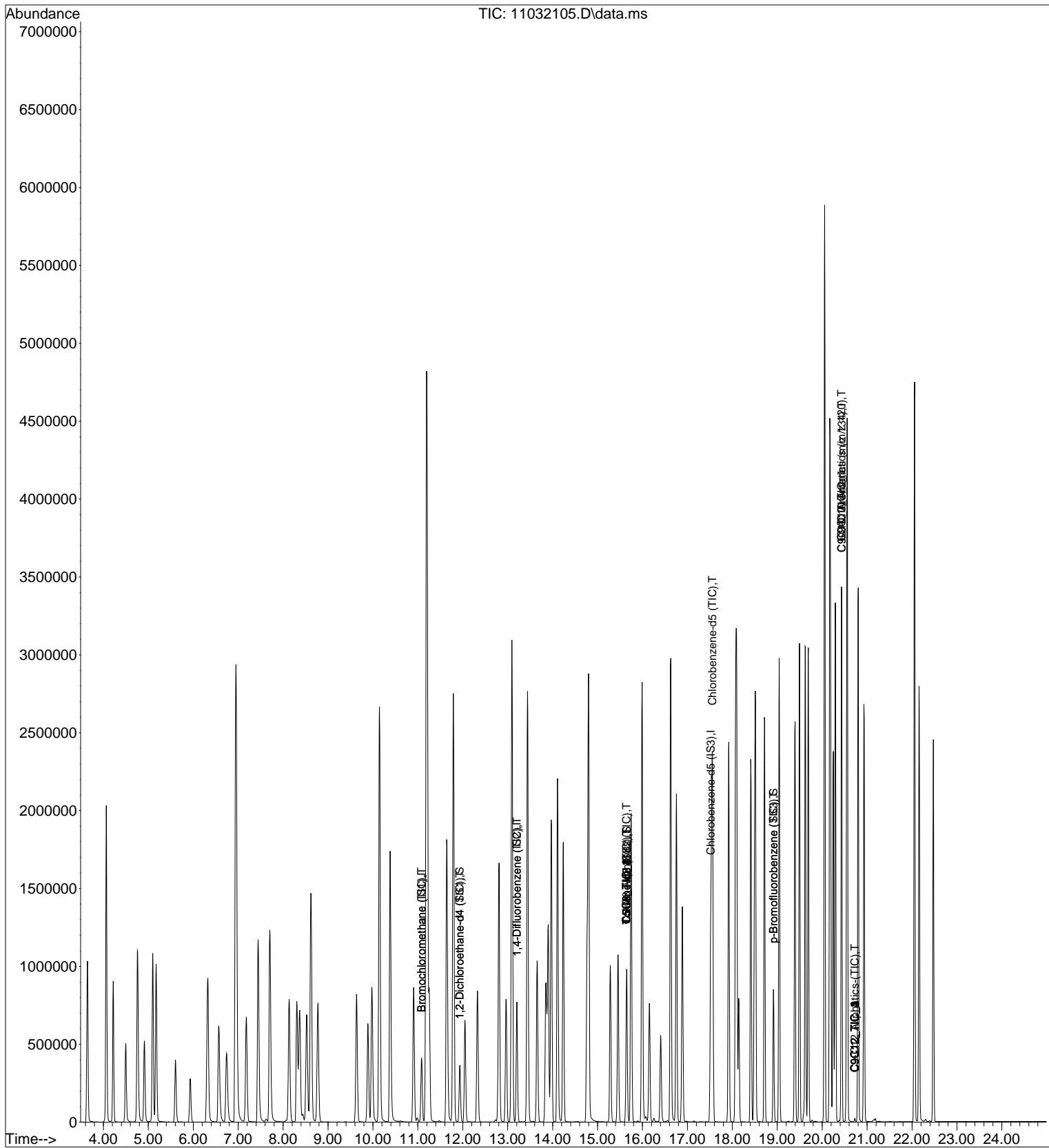
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.08	TIC	913772	12.406	ng	100
3) Isopentane	6.95	TIC	8388717	No Calib	#	
4) n-Hexane	11.20	TIC	15320396	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.93	TIC	789709	12.171	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1573894	12.499	ng	100
9) Cyclohexane	13.09	TIC	6837864	No Calib		
10) 2,3-Dimethylpentane	13.44	TIC	5947828	No Calib		
11) n-Heptane	14.24	TIC	3519371	No Calib		
13) Toluene-d8 (TIC)	15.64	TIC	2011688	12.713	ng	100
14) n-Octane	16.76	TIC	3885027	No Calib		
15) C5-C8 Aliphatics (TIC)	15.64	TIC	2012107	12.054	ng	100
17) Chlorobenzene-d5 (TIC)	17.55	TIC	7928708	47.764	ng	100
18) 2,3-Dimethylheptane	18.09	TIC	8688127	No Calib		
19) n-Nonane	18.71	TIC	4152703	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1408510	11.682	ng	100
22) Isopropylbenzene	19.04	120	520281	No Calib		
23) 1-Methyl-3-ethylbenzene	19.63	120	590782	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	824127	No Calib		
25) n-Decane	20.17	TIC	9661806	No Calib	#	
26) p-Isopropyltoluene	20.43	134	519690	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	188352	No Calib	#	
28) Butylcyclohexane	20.73	TIC	34114	No Calib		
29) n-Undecane	21.25	TIC	3855	No Calib		
30) n-Dodecane	22.06	TIC	7247116	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.73	TIC	32384	0.844	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	188352	25.081	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	519690	124.299	ng	100
34) C5C8 TIC 1	15.64	TIC	2012107	1.673	ng	100
35) C5C8 TIC 2	15.64	TIC	2012107	1.673	ng	100
36) C5C8 TIC 3	15.64	TIC	2012107	1.673	ng	100
37) C5C8 TIC 4	15.64	TIC	2012107	1.673	ng	100
38) C9C12 TIC 1	20.73	TIC	32384	0.152	ng	100
39) C9C12 TIC 2	20.73	TIC	32384	0.152	ng	100
40) C9C12 TIC 3	20.73	TIC	32384	0.152	ng	100
41) C9C12 TIC 4	20.73	TIC	32384	0.152	ng	100
42) C9C10 TIC 1	20.43	120	188352	5.129	ng	100
43) C9C10 TIC 2	20.43	134	519690	25.419	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032105.D
Acq On : 3 Nov 2021 3:43
Sample : LCS R16110321 25ng
Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Nov 03 06:51:51 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032106.D
 Acq On : 3 Nov 2021 4:17
 Sample : LCSD R16110321 25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 13
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:51:42 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.08	130	167461	12.500	ng	0.02
7) 1,4-Difluorobenzene (IS2)	13.20	114	755451	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.52	82	382751	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.93	65	297689	11.592	ng	0.02
Spiked Amount	12.500		Recovery	=	92.72%	
12) Toluene-d8 (SS2)	15.65	98	780103	12.476	ng	0.00
Spiked Amount	12.500		Recovery	=	99.84%	
20) p-Bromofluorobenzene (...)	18.92	174	267056	12.157	ng	0.00
Spiked Amount	12.500		Recovery	=	97.28%	

Target Compounds

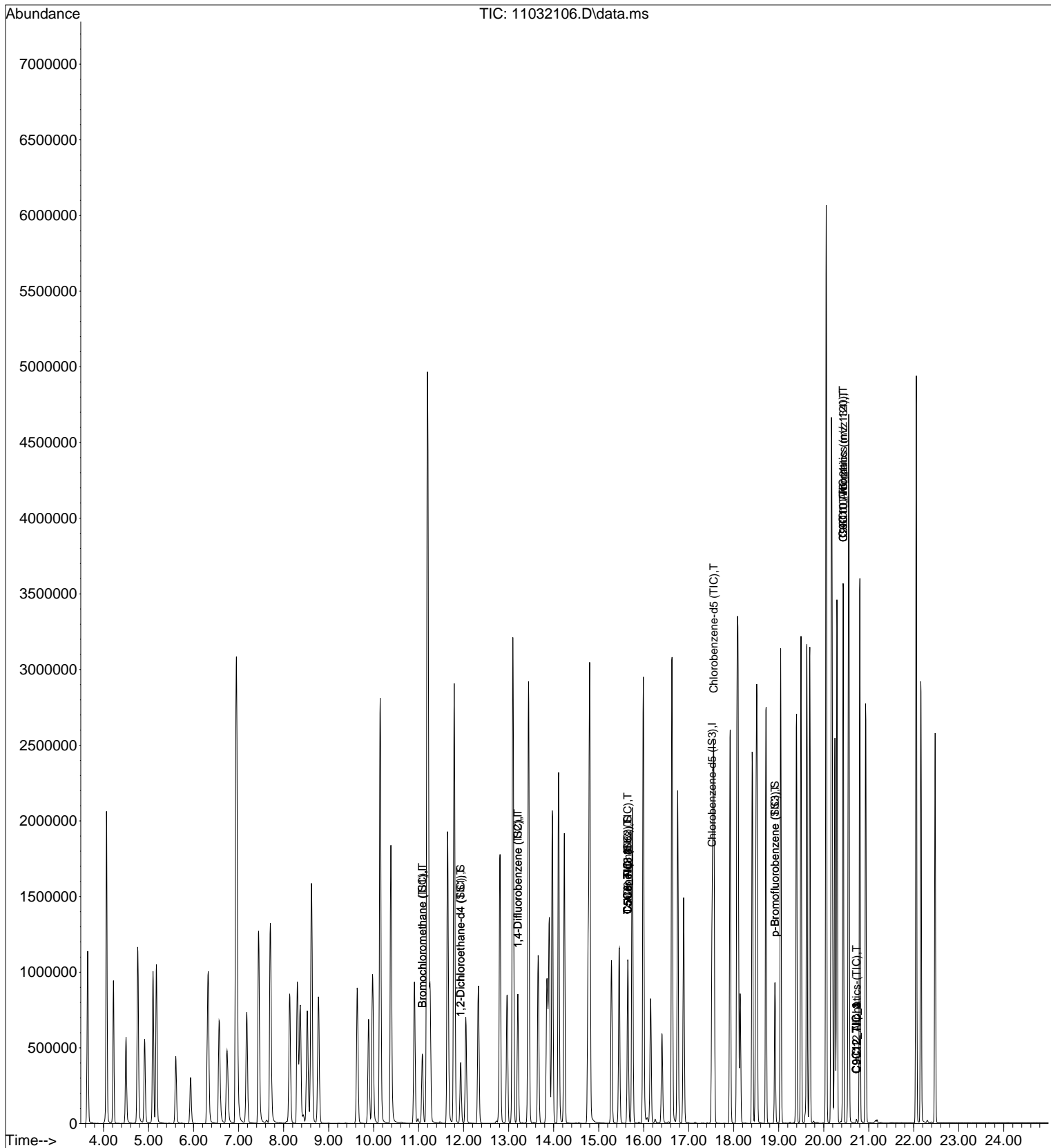
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.08	TIC	1019708	12.095	ng	100
3) Isopentane	6.95	TIC	8931868	No Calib	#	
4) n-Hexane	11.20	TIC	15988675	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.93	TIC	872272	11.744	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1752857	12.388	ng	100
9) Cyclohexane	13.09	TIC	7260125	No Calib		
10) 2,3-Dimethylpentane	13.44	TIC	6312618	No Calib		
11) n-Heptane	14.24	TIC	3746150	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2223464	12.505	ng	100
14) n-Octane	16.76	TIC	4095295	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2223464	11.854	ng	100
17) Chlorobenzene-d5 (TIC)	17.55	TIC	8476034	46.917	ng	100
18) 2,3-Dimethylheptane	18.09	TIC	9187787	No Calib		
19) n-Nonane	18.72	TIC	4362948	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1542762	11.757	ng	100
22) Isopropylbenzene	19.04	120	553454	No Calib		
23) 1-Methyl-3-ethylbenzene	19.63	120	624159	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	869513	No Calib		
25) n-Decane	20.17	TIC	10121439	No Calib	#	
26) p-Isopropyltoluene	20.43	134	542246	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	197892	No Calib	#	
28) Butylcyclohexane	20.73	TIC	37504	No Calib		
29) n-Undecane	21.25	TIC	3203	No Calib		
30) n-Dodecane	22.06	TIC	7545599	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.73	TIC	35846	0.858	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	197892	24.213	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	542246	119.169	ng	100
34) C5C8 TIC 1	15.65	TIC	2223464	1.698	ng	100
35) C5C8 TIC 2	15.65	TIC	2223464	1.698	ng	100
36) C5C8 TIC 3	15.65	TIC	2223464	1.698	ng	100
37) C5C8 TIC 4	15.65	TIC	2223464	1.698	ng	100
38) C9C12 TIC 1	20.73	TIC	35846	0.155	ng	100
39) C9C12 TIC 2	20.73	TIC	35846	0.155	ng	100
40) C9C12 TIC 3	20.73	TIC	35846	0.155	ng	100
41) C9C12 TIC 4	20.73	TIC	35846	0.155	ng	100
42) C9C10 TIC 1	20.43	120	197892	4.951	ng	100
43) C9C10 TIC 2	20.43	134	542246	24.370	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032106.D
 Acq On : 3 Nov 2021 4:17
 Sample : LCSD R16110321 25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 13
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:51:42 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032138.D
 Acq On : 4 Nov 2021 00:22
 Sample : LCS2 R16110321 25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 11:44:22 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

10/11/21 11/4/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.08	130	135073	12.500	ng	0.02
7) 1,4-Difluorobenzene (IS2)	13.20	114	630073	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.52	82	351510	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.93	65	265473	12.816	ng	0.02
Spiked Amount	12.500		Recovery	=	102.56%	
12) Toluene-d8 (SS2)	15.65	98	673292	12.910	ng	0.00
Spiked Amount	12.500		Recovery	=	103.28%	
20) p-Bromofluorobenzene (...)	18.92	174	228506	11.327	ng	0.00
Spiked Amount	12.500		Recovery	=	90.64%	

Target Compounds

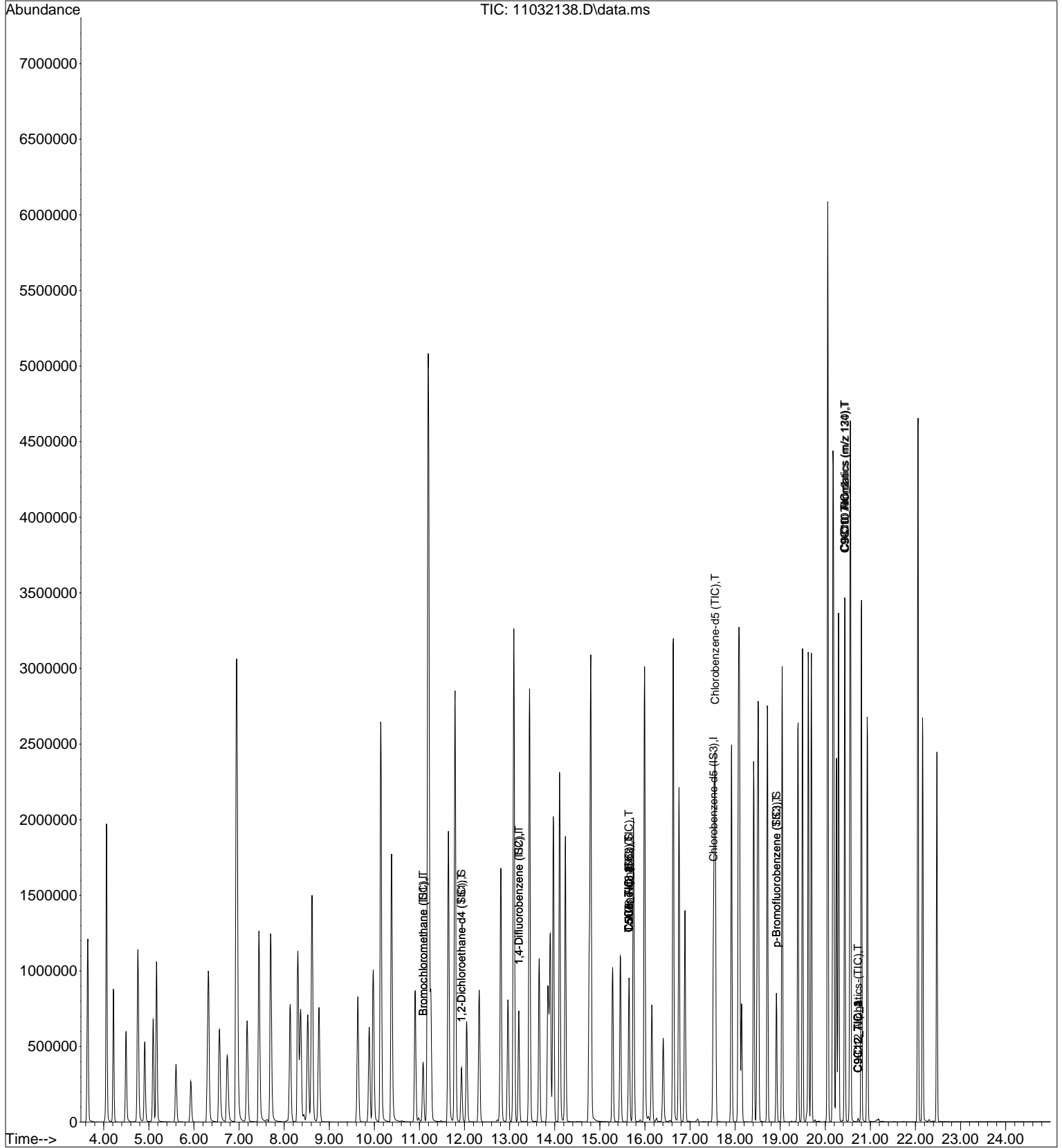
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.08	TIC	878579	12.919	ng	100
3) Isopentane	6.95	TIC	8701559	No Calib	#	
4) n-Hexane	11.20	TIC	16043072	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.93	TIC	776764	12.966	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1508856	12.785	ng	100
9) Cyclohexane	13.09	TIC	7142177	No Calib		
10) 2,3-Dimethylpentane	13.44	TIC	6124754	No Calib		
11) n-Heptane	14.24	TIC	3650920	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1965107	13.251	ng	100
14) n-Octane	16.76	TIC	4042791	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	1966776	12.572	ng	100
17) Chlorobenzene-d5 (TIC)	17.55	TIC	8040370	48.461	ng	100
18) 2,3-Dimethylheptane	18.09	TIC	8876744	No Calib		
19) n-Nonane	18.71	TIC	4334940	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1397308	11.595	ng	100
22) Isopropylbenzene	19.04	120	516792	No Calib		
23) 1-Methyl-3-ethylbenzene	19.63	120	584102	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	813609	No Calib		
25) n-Decane	20.17	TIC	9528732	No Calib	#	
26) p-Isopropyltoluene	20.43	134	511416	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	187543	No Calib	#	
28) Butylcyclohexane	20.73	TIC	32849	No Calib		
29) n-Undecane	21.25	TIC	4946	No Calib		
30) n-Dodecane	22.06	TIC	6997192	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.73	TIC	32480	0.847	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	187543	24.986	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	511416	122.382	ng	100
34) C5C8 TIC 1	15.65	TIC	1966776	1.636	ng	100
35) C5C8 TIC 2	15.65	TIC	1966776	1.636	ng	100
36) C5C8 TIC 3	15.65	TIC	1966776	1.636	ng	100
37) C5C8 TIC 4	15.65	TIC	1966776	1.636	ng	100
38) C9C12 TIC 1	20.73	TIC	32480	0.153	ng	100
39) C9C12 TIC 2	20.73	TIC	32480	0.153	ng	100
40) C9C12 TIC 3	20.73	TIC	32480	0.153	ng	100
41) C9C12 TIC 4	20.73	TIC	32480	0.153	ng	100
42) C9C10 TIC 1	20.43	120	187543	5.110	ng	100
43) C9C10 TIC 2	20.43	134	511416	25.027	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032138.D
Acq On : 4 Nov 2021 00:22
Sample : LCS2 R16110321 25ng
Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Nov 04 11:44:22 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032139.D
 Acq On : 4 Nov 2021 00:56
 Sample : LCSD2 R16110321 25ng
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 11:45:39 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

107 11/4/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.08	130	156943	12.500	ng	0.02
7) 1,4-Difluorobenzene (IS2)	13.20	114	717094	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.52	82	378025	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.93	65	292846	12.167	ng	0.02
Spiked Amount	12.500		Recovery	=	97.36%	
12) Toluene-d8 (SS2)	15.65	98	746198	12.572	ng	0.00
Spiked Amount	12.500		Recovery	=	100.56%	
20) p-Bromofluorobenzene (...)	18.92	174	254131	11.713	ng	0.00
Spiked Amount	12.500		Recovery	=	93.68%	

Target Compounds

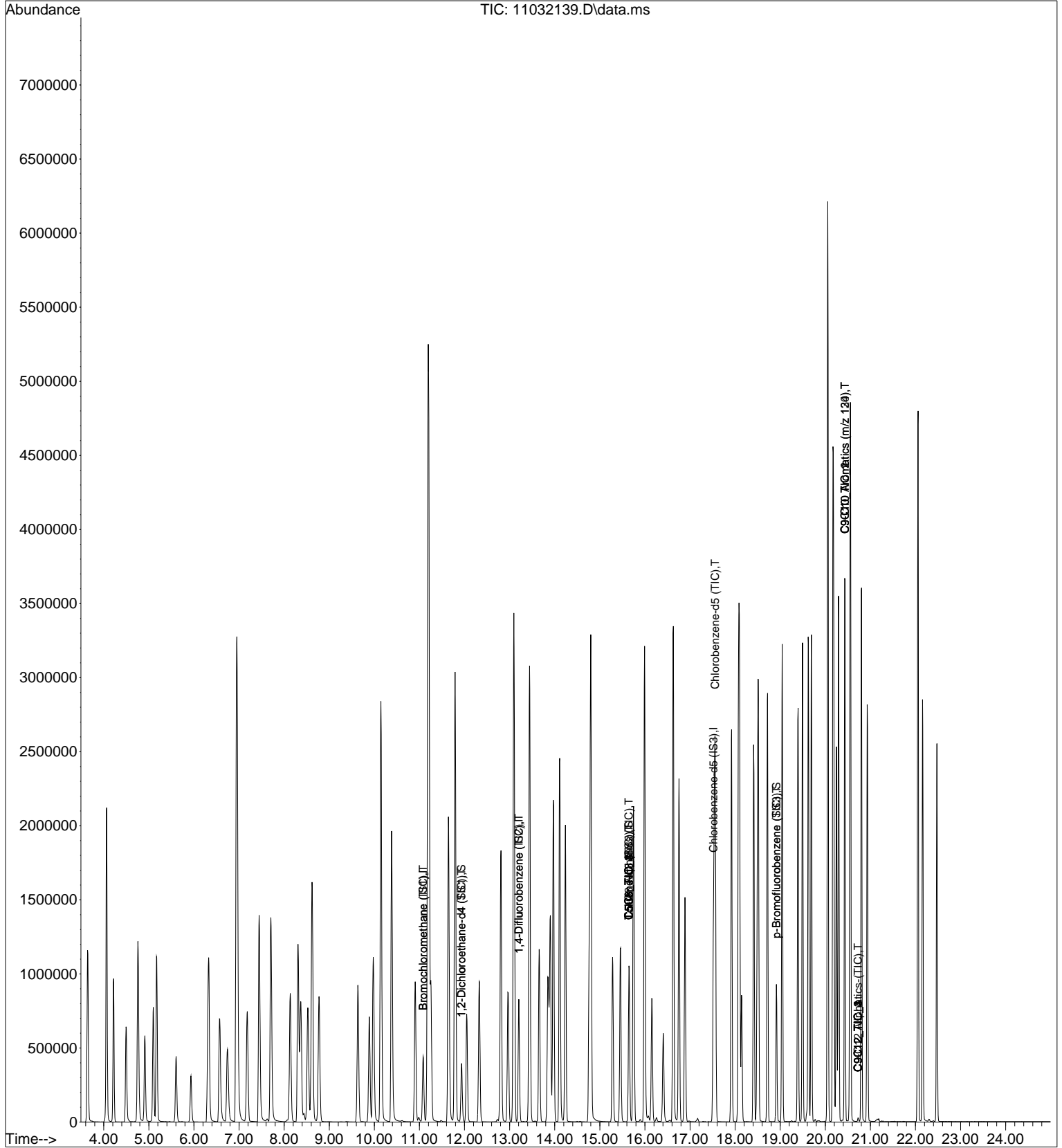
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.08	TIC	990952	12.541	ng	100
3) Isopentane	6.95	TIC	9427185	No Calib	#	
4) n-Hexane	11.20	TIC	16955795	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.93	TIC	853477	12.262	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1691408	12.593	ng	100
9) Cyclohexane	13.09	TIC	7666917	No Calib		
10) 2,3-Dimethylpentane	13.44	TIC	6633137	No Calib		
11) n-Heptane	14.24	TIC	3933509	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2165492	12.830	ng	100
14) n-Octane	16.76	TIC	4315079	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2165480	12.162	ng	100
17) Chlorobenzene-d5 (TIC)	17.55	TIC	8587882	48.131	ng	100
18) 2,3-Dimethylheptane	18.09	TIC	9422217	No Calib		
19) n-Nonane	18.72	TIC	4572823	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1523108	11.752	ng	100
22) Isopropylbenzene	19.04	120	553277	No Calib		
23) 1-Methyl-3-ethylbenzene	19.63	120	626872	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	873022	No Calib		
25) n-Decane	20.17	TIC	10028222	No Calib	#	
26) p-Isopropyltoluene	20.43	134	543655	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	197922	No Calib	#	
28) Butylcyclohexane	20.73	TIC	36225	No Calib		
29) n-Undecane	21.25	TIC	5589	No Calib		
30) n-Dodecane	22.06	TIC	7318140	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.73	TIC	35412	0.859	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	197922	24.519	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	543655	120.972	ng	100
34) C5C8 TIC 1	15.65	TIC	2165480	1.675	ng	100
35) C5C8 TIC 2	15.65	TIC	2165480	1.675	ng	100
36) C5C8 TIC 3	15.65	TIC	2165480	1.675	ng	100
37) C5C8 TIC 4	15.65	TIC	2165480	1.675	ng	100
38) C9C12 TIC 1	20.73	TIC	35412	0.155	ng	100
39) C9C12 TIC 2	20.73	TIC	35412	0.155	ng	100
40) C9C12 TIC 3	20.73	TIC	35412	0.155	ng	100
41) C9C12 TIC 4	20.73	TIC	35412	0.155	ng	100
42) C9C10 TIC 1	20.43	120	197922	5.014	ng	100
43) C9C10 TIC 2	20.43	134	543655	24.739	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032139.D
Acq On : 4 Nov 2021 00:56
Sample : LCSD2 R16110321 25ng
Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Nov 04 11:45:39 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 11\03\11032160.D
 Acq On : 4 Nov 2021 14:10
 Sample : P2105519-013dup (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 15:39:23 2021

Quant Method : I:\MS16\METHODS\R16102821.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Sat Oct 30 07:47:28 2021

Response via : Initial Calibration

DataAcq Meth:TO15.M

107 11/5/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	130052	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.20	114	606679	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.51	54	149846	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	11.92	65	258294	13.551	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	108.40%	
57) Toluene-d8 (SS2)	15.65	98	631492	11.788	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	94.32%	
73) Bromofluorobenzene (SS3)	18.92	174	208135	11.059	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	88.48%	

Target Compounds

						Qvalue
2) Propene	4.08	42	20806	0.811	ng	# 80
3) Dichlorodifluoromethan...	4.23	85	53478	1.875	ng	100
4) Chloromethane	4.51	50	6440	0.252	ng	94
5) 1,2-Dichloro-1,1,2,2-t...	4.77	135	1223	0.094	ng	82
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	5.12	54	167	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.29	45	309943	21.465	ng	99
11) Acetonitrile	6.60	41	1430	N.D.		
12) Acrolein	6.76	56	5603	0.548	ng	98
13) Acetone	6.95	58	73731	6.082	ng	87
14) Trichlorofluoromethane	7.18	101	22061	0.884	ng	100
15) 2-Propanol (Isopropanol)	7.45	45	54156	1.532	ng	95
16) Acrylonitrile	7.77	53	54	N.D.		
17) 1,1-Dichloroethene	8.13	96	244	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	8.35	84	2967	0.218	ng	95
20) 3-Chloro-1-propene (Al...	8.43	41	670	N.D.		
21) Trichlorotrifluoroethane	8.78	151	3635	0.335	ng	92
22) Carbon Disulfide	8.62	76	5579	0.113	ng	81
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.	d	
27) 2-Butanone (MEK)	10.42	72	3282	0.388	ng	97
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	11.20	61	30047	5.667	ng	92
31) n-Hexane	11.18	57	3739	0.149	ng	# 95
32) Chloroform	11.23	83	3380	0.151	ng	97
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.05	62	586	N.D.		
38) 1,1,1-Trichloroethane	12.32	97	2060	0.093	ng	94
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.81	56	14449	No Calib	#	
41) Benzene	12.80	78	8836	0.157	ng	100
42) Carbon Tetrachloride	12.95	117	5410	0.288	ng	97
43) Cyclohexane	13.09	84	1986	0.097	ng	# 57
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	13.97	57	2863	N.D.		
50) Methyl Methacrylate	14.13	100	410	0.078	ng	# 19

Data File : I:\MS16\DATA\2021 11\03\11032160.D
 Acq On : 4 Nov 2021 14:10
 Sample : P2105519-013dup (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 15:39:23 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

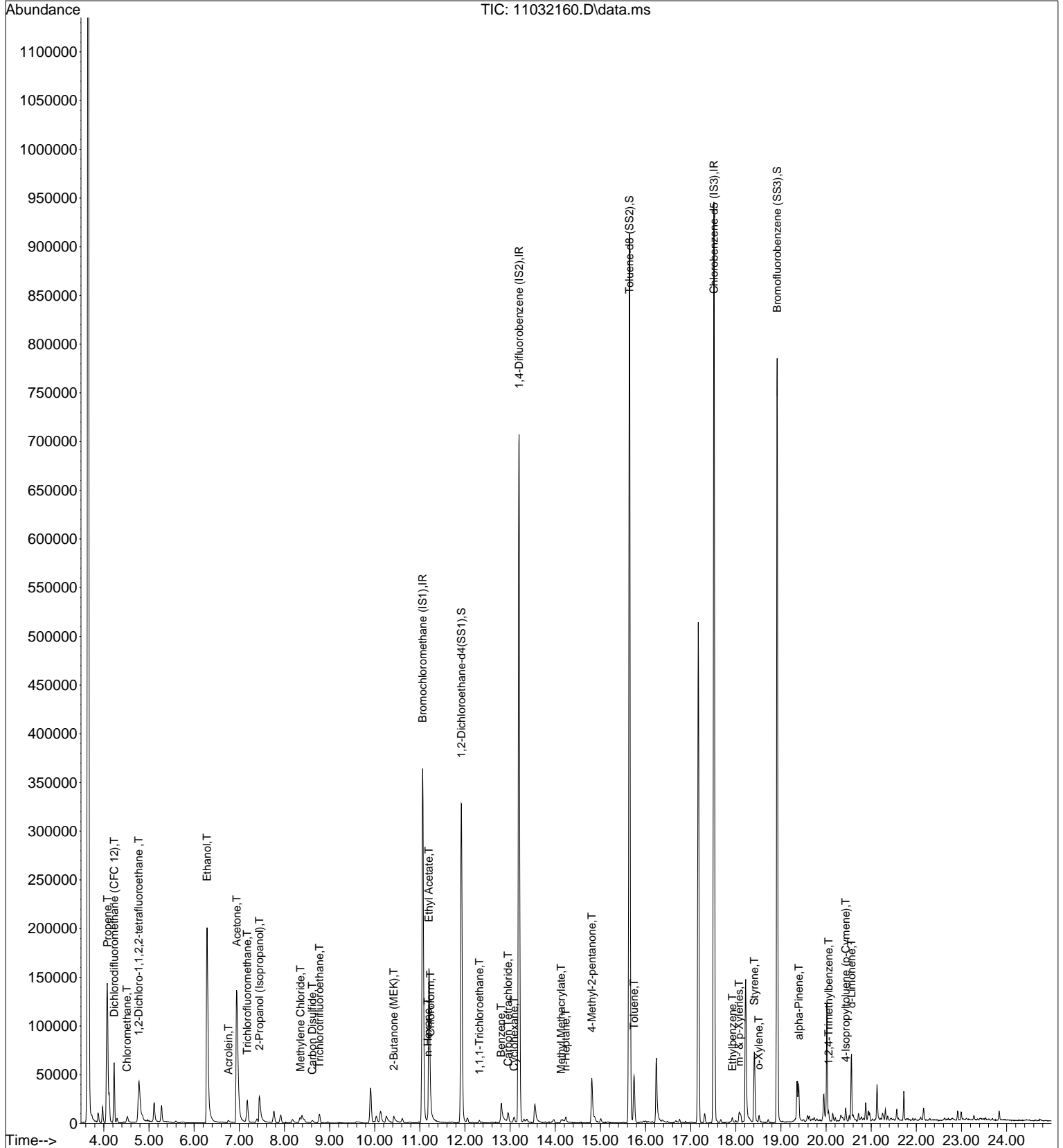
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.23	71	927	0.068	ng #	72
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	14.81	58	16203	1.135	ng	75
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.74	91	37791	0.642	ng	100
59) 2-Hexanone	15.96	43	811	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.	d	
63) n-Octane	16.76	57	553	N.D.		
64) Tetrachloroethene	16.89	166	616	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	17.92	91	4243	0.066	ng	94
67) m- & p-Xylenes	18.08	91	9096	0.181	ng	98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.41	104	29086	0.755	ng	98
70) o-Xylene	18.51	91	3904	0.078	ng	98
71) n-Nonane	0.00	43	0	N.D.	d	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	19.05	105	493	N.D.		
75) alpha-Pinene	19.40	93	10852	0.342	ng #	1
76) n-Propylbenzene	19.49	91	1458	N.D.		
77) 3-Ethyltoluene	19.63	105	1675	No Calib		
78) 4-Ethyltoluene	19.63	105	1675	N.D.		
79) 1,3,5-Trimethylbenzene	19.69	105	1367	N.D.		
80) alpha-Methylstyrene	19.83	118	109	No Calib	#	
81) 2-Ethyltoluene	19.63	105	1675	No Calib		
82) 1,2,4-Trimethylbenzene	20.06	105	4916	0.100	ng	90
83) n-Decane	19.95	58	281	No Calib	#	
84) Benzyl Chloride	20.06	91	580	N.D.		
85) 1,3-Dichlorobenzene	20.25	146	117	N.D.		
86) 1,4-Dichlorobenzene	20.25	146	117	N.D.		
87) sec-Butylbenzene	20.43	105	1496	N.D.		
88) 4-Isopropyltoluene (p-...	20.43	119	5670	0.098	ng	93
89) 1,2,3-Trimethylbenzene	20.43	105	1496	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.56	68	14692	0.791	ng	94
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	21.13	57	7838	No Calib		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.17	128	2531	N.D.		
96) n-Dodecane	22.16	57	3163	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.11	55	714	No Calib	#	
99) tert-Butylbenzene	20.06	119	442	N.D.		
100) n-Butylbenzene	20.80	91	779	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Data File : I:\MS16\DATA\2021 11\03\11032160.D
 Acq On : 4 Nov 2021 14:10
 Sample : P2105519-013dup (1000mL)
 Misc : S34-09132101

Vial: 6
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 05 15:39:23 2021
 Quant Method : I:\MS16\METHODS\R16102821.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Sat Oct 30 07:47:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Method Path : I:\MS16\METHODS\
 Method File : M16103021A.M
 Title : Massachusetts APH
 Last Update : Wed Nov 03 02:50:28 2021
 Response Via : Initial Calibration

11/3/21

Calibration Files

0.5 =10302115.D 1 =10302116.D 5 =10302117.D 25 =10302118.D 50 =10302119.D
 100 =10302120.D

Compound	0.5	1	5	25	50	100	Avg	%RSD
1) I Bromochloromethane... -----ISTD-----								
2) T Bromochloromet...	6.036	6.118	6.318	6.366	6.469	6.453	6.293	2.84
3) UN Isopentane							0.000	-1.00
4) UN n-Hexane							0.000	-1.00
5) S 1,2-Dichloroet...	1.807	1.833	1.931	1.974	1.998	1.959	1.917	4.12
6) T 1,2-Dichloroet...	5.237	5.322	5.585	5.691	5.763	5.665	5.544	3.87
7) I 1,4-Difluorobenzen... -----ISTD-----								
8) T 1,4-Difluorobe...	2.308	2.312	2.344	2.364	2.362	2.357	2.341	1.07
9) UN Cyclohexane							0.000	-1.00
10) UN 2,3-Dimethylpe...							0.000	-1.00
11) UN n-Heptane							0.000	-1.00
12) S Toluene-d8 (SS2)	1.013	1.017	1.036	1.039	1.049	1.054	1.035	1.61
13) T Toluene-d8 (TIC)	2.858	2.874	2.940	2.970	2.997	3.016	2.942	2.20
14) UN n-Octane							0.000	-1.00
15) T C5-C8 Aliphati...	1.134	0.570	0.117	0.024	0.012	0.006	0.310	E1 147.46
16) I Chlorobenzene-d5 (... -----ISTD-----								
17) T Chlorobenzene-...	5.890	5.872	5.855	5.900	5.935	5.949	5.900	0.61
18) UN 2,3-Dimethylhe...							0.000	-1.00
19) UN n-Nonane							0.000	-1.00
20) S p-Bromofluorob...	0.739	0.723	0.702	0.704	0.714	0.723	0.717	1.93
21) T p-Bromofluorob...	4.274	4.227	4.236	4.292	4.319	4.365	4.286	1.21
22) UN Isopropylbenzene							0.000	-1.00
23) UN 1-Methyl-3-eth...							0.000	-1.00
24) UN 1,3,5-Trimethy...							0.000	-1.00
25) UN n-Decane							0.000	-1.00
26) UN p-Isopropyltol...							0.000	-1.00
27) UN 1,2,3-Trimethy...							0.000	-1.00
28) UN Butylcyclohexane							0.000	-1.00
29) UN n-Undecane							0.000	-1.00
30) UN n-Dodecane							0.000	-1.00
31) T C9-C12 Aliphati...	1.871	1.215	1.272	1.440	1.302	1.081	1.364	20.15
32) T C9-C10 Aromati...	0.262	0.250	0.275	0.328	0.292	0.196	0.267	16.58
33) T C9-C10 Aromati...	0.142	0.137	0.151	0.186	0.165	0.111	0.149	17.05
34) C5C8 TIC 1	1.574	0.783	0.154	0.031	0.015	0.008	0.428	E2 148.61
35) C5C8 TIC 2	1.574	0.783	0.154	0.031	0.015	0.008	0.428	E2 148.61
36) C5C8 TIC 3	1.574	0.783	0.154	0.031	0.015	0.008	0.428	E2 148.61
37) C5C8 TIC 4	1.574	0.783	0.154	0.031	0.015	0.008	0.428	E2 148.61
38) C9C12 TIC 1	7.484	7.287	7.634	8.641	7.815	6.487	7.558	9.30
39) C9C12 TIC 2	7.484	7.287	7.634	8.641	7.815	6.487	7.558	9.30
40) C9C12 TIC 3	7.484	7.287	7.634	8.641	7.815	6.487	7.558	9.30
41) C9C12 TIC 4	7.484	7.287	7.634	8.641	7.815	6.487	7.558	9.30
42) C9C10 TIC 1	1.280	1.221	1.343	1.604	1.426	0.957	1.305	16.58
43) C9C10 TIC 2	0.693	0.672	0.739	0.908	0.805	0.544	0.727	17.05

(#) = Out of Range

**AIR-PHASE PETROLEUM HYDROCARBONS (APH)
Primary Source Standards Concentrations**

4ng/L Std. ID:
 20ng/L Std. ID: S34-10192102
 200ng/L Std. ID: S34-10192101

Dilution Factors:	Source Std. mg/m ³	Primary Working Standards		Working STD Conc.(ng/L): Injection (L):	ICAL Concentrations (Primary Source)					
		5 200ng/L	50 20ng/L		20	20	20	200	200	200
Compounds				ICAL Points:	0.025	0.050	0.25	0.125	0.25	0.50
1-Methyl-3-ethylbenzene	1.00	200	20.0		0.500	1.00	5.00	25.00	50.0	100
1,3,5-Trimethylbenzene	1.02	204	20.4		0.510	1.02	5.10	25.50	51.0	102
n-Decane	1.08	216	21.6		0.540	1.01	5.40	27.00	54.0	108
1,2,3-Trimethylbenzene	1.07	214	21.4		0.535	0.97	5.35	26.75	53.5	107
p-Isopropyltoluene	1.08	216	21.6		0.540	1.08	5.40	27.00	54.0	108
n-Butylcyclohexane	1.08	216	21.6		0.540	1.04	5.40	27.00	54.0	108
n-Undecane	1.06	212	21.2		0.530	0.97	5.30	26.50	53.0	106
n-Dodecane	1.02	204	20.4		0.510	0.94	5.10	25.50	51.0	102
Isopentane	0.97	194	19.4		0.485	0.97	4.85	24.25	48.5	97
n-Hexane	1.00	200	20.0		0.500	1.00	5.00	25.00	50.0	100
Cyclohexane	1.01	202	20.2		0.505	1.02	5.05	25.25	50.5	101
2,3-Dimethylpentane	1.02	204	20.4		0.510	1.10	5.10	25.50	51.0	102
n-Heptane	1.03	206	20.6		0.515	1.03	5.15	25.75	51.5	103
n-Octane	1.03	206	20.6		0.515	1.03	5.15	25.75	51.5	103
2,3-Dimethylheptane	1.02	204	20.4		0.510	1.03	5.10	25.50	51.0	102
n-Nonane	1.04	208	20.8		0.520	1.04	5.20	26.00	52.0	104
Isopropylbenzene	1.01	202	20.2		0.505	1.01	5.05	25.25	50.5	101

Primary Source Standard:
 Std. ID: S34-10192102
 Spectra Gas Cyl. #: CC-741183
 Expiration: 9/10/22

**AIR-PHASE PETROLEUM HYDROCARBONS (APH)
Secondary Source Standards Concentrations**

200ng/L Working Std. ID: S34-10122104

Dilution Factor: 5

Working Std. Conc. Utilized: 200

Working Std. Injection Amount (L): 0.125

Compounds	mg/m ³	Secondary Working Std.	ICV / LCS
		200ng/L	Actual Conc.(ng)
1-Methyl-3-ethylbenzene	NA	NA	NA
1,3,5-Trimethylbenzene	1.03	206.0	25.750
n-Decane	NA	NA	NA
1,2,3-Trimethylbenzene	NA	NA	NA
p-Isopropyltoluene	1.03	206.0	25.750
n-Butylcyclohexane	NA	NA	NA
n-Undecane	NA	NA	NA
n-Dodecane	NA	NA	NA
Isopentane	NA	NA	NA
n-Hexane	1.06	212.0	26.500
Cyclohexane	2.07	414.0	51.750
2,3-Dimethylpentane	NA	NA	NA
n-Heptane	1.03	206.0	25.750
n-Octane	1.05	210.0	26.250
2,3-Dimethylheptane	NA	NA	NA
n-Nonane	1.04	208.0	26.000
Isopropylbenzene	1.04	208.0	26.000

Secondary Source Standard:
 Std. ID: S34-09012103
 Spectra Gas Cyl. #: CC-735182
 Expiration: 08/27/2022

Method : I:\MS16\METHODS\M16103021A.M (RTE Integrator)
 Title : Massachusetts APH
 Last Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration

 11/12/21

#	ID	Conc	ISTD Conc	Path\File
1	0.5	3	13	I:\MS16\DATA\2021_10\30\10302115.D
2	1	6	13	I:\MS16\DATA\2021_10\30\10302116.D
3	5	32	13	I:\MS16\DATA\2021_10\30\10302117.D
4	25	158	13	I:\MS16\DATA\2021_10\30\10302118.D
5	50	315	13	I:\MS16\DATA\2021_10\30\10302119.D
6	100	630	13	I:\MS16\DATA\2021_10\30\10302120.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.5	Nov 03 02:49 2021	Nov 03 02:39 2021	30 Oct 2021 8:55
2	1	Nov 03 02:49 2021	Nov 03 02:39 2021	30 Oct 2021 9:30
3	5	Nov 03 02:49 2021	Nov 03 02:39 2021	30 Oct 2021 10:04
4	25	Nov 03 02:49 2021	Nov 03 02:39 2021	30 Oct 2021 10:38
5	50	Nov 03 02:50 2021	Nov 03 02:39 2021	30 Oct 2021 11:12
6	100	Nov 03 02:50 2021	Nov 03 02:39 2021	30 Oct 2021 11:46

M16103021A.M

Fri Nov 12 13:50:38 2021

Data File : I:\MS16\DATA\2021 10\30\10302115.D
 Acq On : 30 Oct 2021 8:55
 Sample : 0.5ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:19 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	170913	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	776406	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	352475	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	308778	11.781	ng	0.00
Spiked Amount	12.500		Recovery	=	94.24%	
12) Toluene-d8 (SS2)	15.65	98	786670	12.241	ng	0.00
Spiked Amount	12.500		Recovery	=	97.92%	
20) p-Bromofluorobenzene (...)	18.92	174	260424	6.755	ng	0.00
Spiked Amount	12.500		Recovery	=	54.08%	

Target Compounds

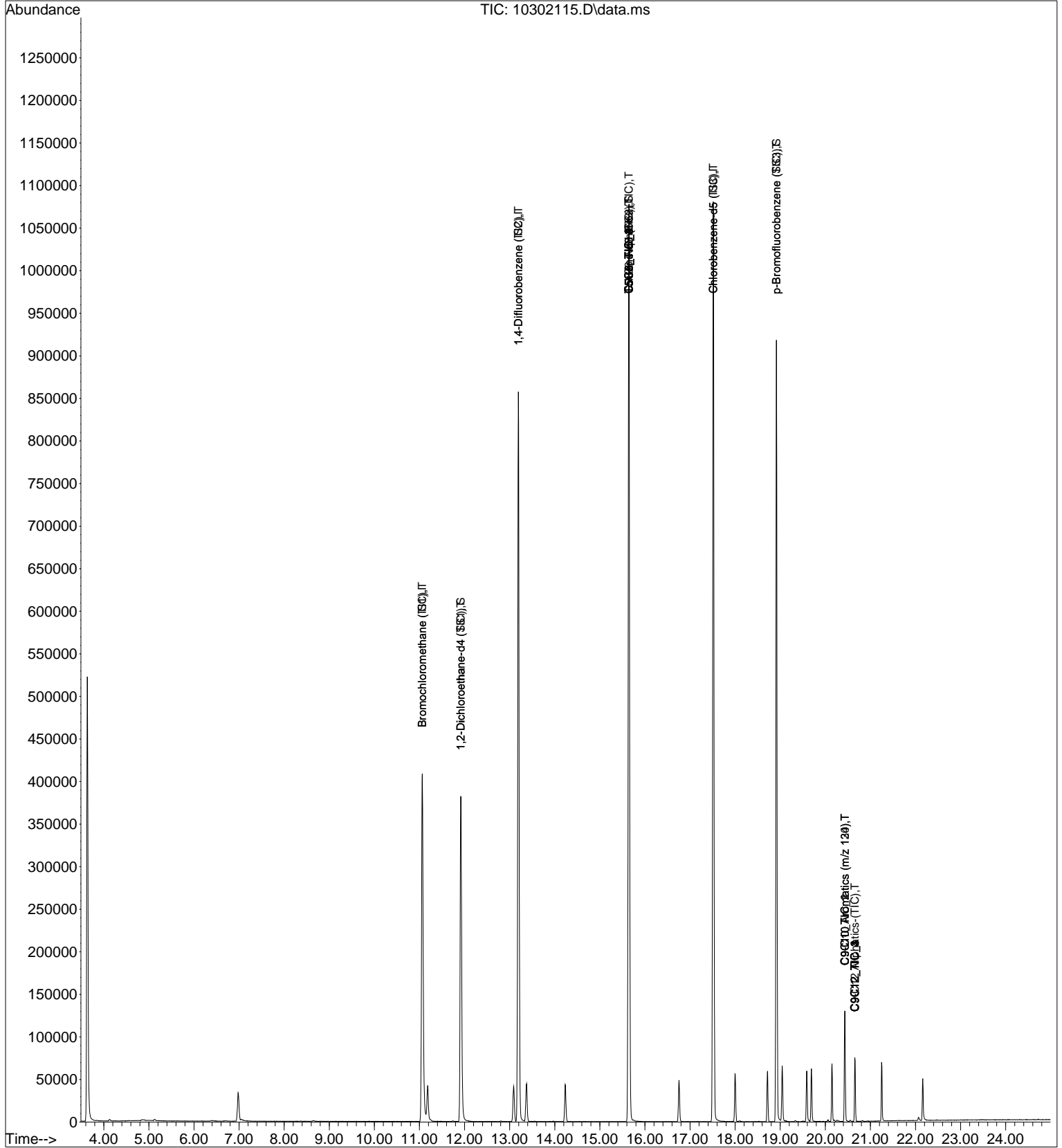
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	1031619	11.989	ng	100
3) Isopentane	6.98	TIC	82920	No Calib		
4) n-Hexane	11.18	TIC	104658	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	895002	11.807	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1792094	12.323	ng	100
9) Cyclohexane	13.09	TIC	90547	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	95025	No Calib		
11) n-Heptane	14.23	TIC	85631	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2218749	12.141	ng	100
14) n-Octane	16.76	TIC	90061	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2218749	11.509	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	2076072	6.561	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	96283	No Calib		
19) n-Nonane	18.72	TIC	91869	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1506368	6.555	ng	100
22) Isopropylbenzene	19.04	120	10991	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	11535	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	16074	No Calib		
25) n-Decane	20.15	TIC	94150	No Calib		
26) p-Isopropyltoluene	20.43	134	9769	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	18047	No Calib		
28) Butylcyclohexane	20.65	TIC	105522	No Calib		
29) n-Undecane	21.25	TIC	92676	No Calib		
30) n-Dodecane	22.07	TIC	7132	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.65	TIC	105522	1.449	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	18047	1.288	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	9769	1.255	ng	100
34) C5C8 TIC 1	15.65	TIC	2218749	0.879	ng	100
35) C5C8 TIC 2	15.65	TIC	2218749	0.879	ng	100
36) C5C8 TIC 3	15.65	TIC	2218749	0.879	ng	100
37) C5C8 TIC 4	15.65	TIC	2218749	0.879	ng	100
38) C9C12 TIC 1	20.65	TIC	105522	0.264	ng	100
39) C9C12 TIC 2	20.65	TIC	105522	0.264	ng	100
40) C9C12 TIC 3	20.65	TIC	105522	0.264	ng	100
41) C9C12 TIC 4	20.65	TIC	105522	0.264	ng	100
42) C9C10 TIC 1	20.43	120	18047	0.263	ng	100
43) C9C10 TIC 2	20.43	134	9769	0.257	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302115.D
 Acq On : 30 Oct 2021 8:55
 Sample : 0.5ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:19 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302116.D
 Acq On : 30 Oct 2021 9:30
 Sample : 1.0ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:21 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	158999	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	727178	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	333369	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	291372	11.950	ng	0.00
Spiked Amount	12.500		Recovery	=	95.60%	
12) Toluene-d8 (SS2)	15.65	98	739242	12.282	ng	0.00
Spiked Amount	12.500		Recovery	=	98.24%	
20) p-Bromofluorobenzene (...)	18.92	174	240936	6.608	ng	0.00
Spiked Amount	12.500		Recovery	=	52.88%	

Target Compounds

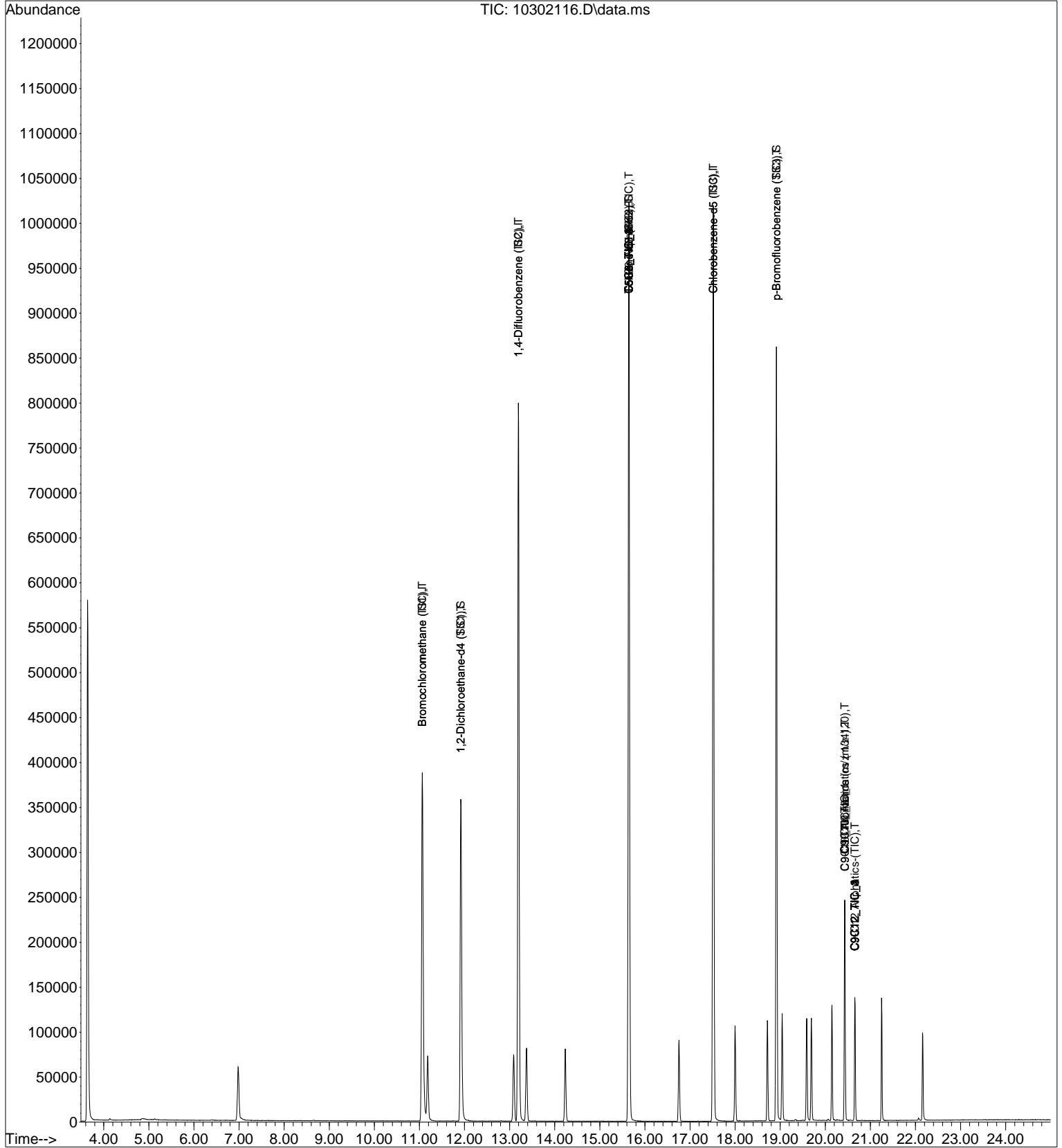
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	972709	12.151	ng	100
3) Isopentane	6.98	TIC	159516	No Calib		
4) n-Hexane	11.18	TIC	173766	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	846241	12.000	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1681595	12.346	ng	100
9) Cyclohexane	13.09	TIC	162024	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	172607	No Calib		
11) n-Heptane	14.23	TIC	156884	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2089550	12.208	ng	100
14) n-Octane	16.76	TIC	164817	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2089550	11.573	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1957393	6.540	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	177379	No Calib		
19) n-Nonane	18.71	TIC	172221	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1409303	6.484	ng	100
22) Isopropylbenzene	19.04	120	19334	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	20963	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	29490	No Calib		
25) n-Decane	20.15	TIC	178564	No Calib		
26) p-Isopropyltoluene	20.43	134	17912	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	32558	No Calib		
28) Butylcyclohexane	20.65	TIC	194352	No Calib		
29) n-Undecane	21.25	TIC	173975	No Calib		
30) n-Dodecane	22.07	TIC	4328	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.65	TIC	194352	2.821	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	32558	2.457	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	17912	2.433	ng	100
34) C5C8 TIC 1	15.65	TIC	2089550	0.875	ng	100
35) C5C8 TIC 2	15.65	TIC	2089550	0.875	ng	100
36) C5C8 TIC 3	15.65	TIC	2089550	0.875	ng	100
37) C5C8 TIC 4	15.65	TIC	2089550	0.875	ng	100
38) C9C12 TIC 1	20.65	TIC	194352	0.514	ng	100
39) C9C12 TIC 2	20.65	TIC	194352	0.514	ng	100
40) C9C12 TIC 3	20.65	TIC	194352	0.514	ng	100
41) C9C12 TIC 4	20.65	TIC	194352	0.514	ng	100
42) C9C10 TIC 1	20.43	120	32558	0.502	ng	100
43) C9C10 TIC 2	20.43	134	17912	0.498	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302116.D
 Acq On : 30 Oct 2021 9:30
 Sample : 1.0ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:21 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302117.D
 Acq On : 30 Oct 2021 10:04
 Sample : 5.0ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:23 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

WA 11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	141557	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	662795	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	315436	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	273412	12.595	ng	0.00
Spiked Amount	12.500		Recovery	=	100.72%	
12) Toluene-d8 (SS2)	15.65	98	686337	12.511	ng	0.00
Spiked Amount	12.500		Recovery	=	100.08%	
20) p-Bromofluorobenzene (...)	18.92	174	221319	6.415	ng	0.00
Spiked Amount	12.500		Recovery	=	51.36%	

Target Compounds

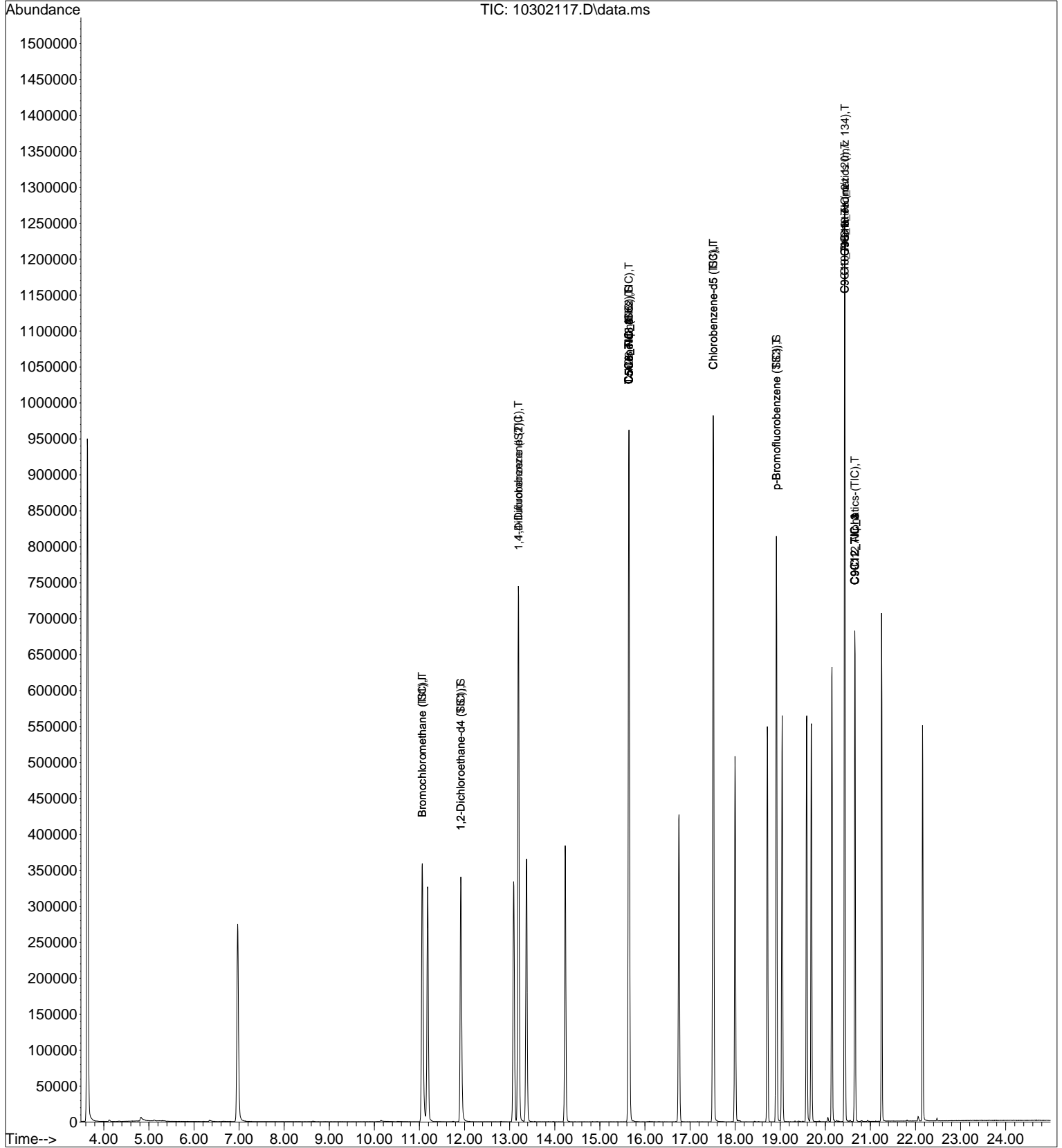
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	894388	12.549	ng	100
3) Isopentane	6.97	TIC	719932	No Calib		
4) n-Hexane	11.18	TIC	717124	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	790644	12.593	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1553555	12.514	ng	100
9) Cyclohexane	13.09	TIC	739778	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	782955	No Calib		
11) n-Heptane	14.23	TIC	739788	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1948298	12.489	ng	100
14) n-Octane	16.76	TIC	795346	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	1948298	11.839	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1846747	6.521	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	849806	No Calib		
19) n-Nonane	18.71	TIC	841274	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1336092	6.497	ng	100
22) Isopropylbenzene	19.04	120	92277	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	103315	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	143105	No Calib		
25) n-Decane	20.15	TIC	891368	No Calib		
26) p-Isopropyltoluene	20.43	134	93266	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	169502	No Calib		
28) Butylcyclohexane	20.65	TIC	963241	No Calib		
29) n-Undecane	21.25	TIC	895338	No Calib		
30) n-Dodecane	22.06	TIC	10031	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.65	TIC	963241	14.776	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	169502	13.518	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	93266	13.389	ng	100
34) C5C8 TIC 1	15.65	TIC	1948298	0.862	ng	100
35) C5C8 TIC 2	15.65	TIC	1948298	0.862	ng	100
36) C5C8 TIC 3	15.65	TIC	1948298	0.862	ng	100
37) C5C8 TIC 4	15.65	TIC	1948298	0.862	ng	100
38) C9C12 TIC 1	20.65	TIC	963241	2.691	ng	100
39) C9C12 TIC 2	20.65	TIC	963241	2.691	ng	100
40) C9C12 TIC 3	20.65	TIC	963241	2.691	ng	100
41) C9C12 TIC 4	20.65	TIC	963241	2.691	ng	100
42) C9C10 TIC 1	20.43	120	169502	2.764	ng	100
43) C9C10 TIC 2	20.43	134	93266	2.738	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302117.D
 Acq On : 30 Oct 2021 10:04
 Sample : 5.0ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192104 (12/18)

Vial: 10
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:23 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302118.D
 Acq On : 30 Oct 2021 10:38
 Sample : 25ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:24 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	135220	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	643299	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	309185	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	266950	12.873	ng	0.00
Spiked Amount	12.500		Recovery	=	102.96%	
12) Toluene-d8 (SS2)	15.65	98	668506	12.555	ng	0.00
Spiked Amount	12.500		Recovery	=	100.48%	
20) p-Bromofluorobenzene (...)	18.92	174	217677	6.437	ng	0.00
Spiked Amount	12.500		Recovery	=	51.52%	

Target Compounds

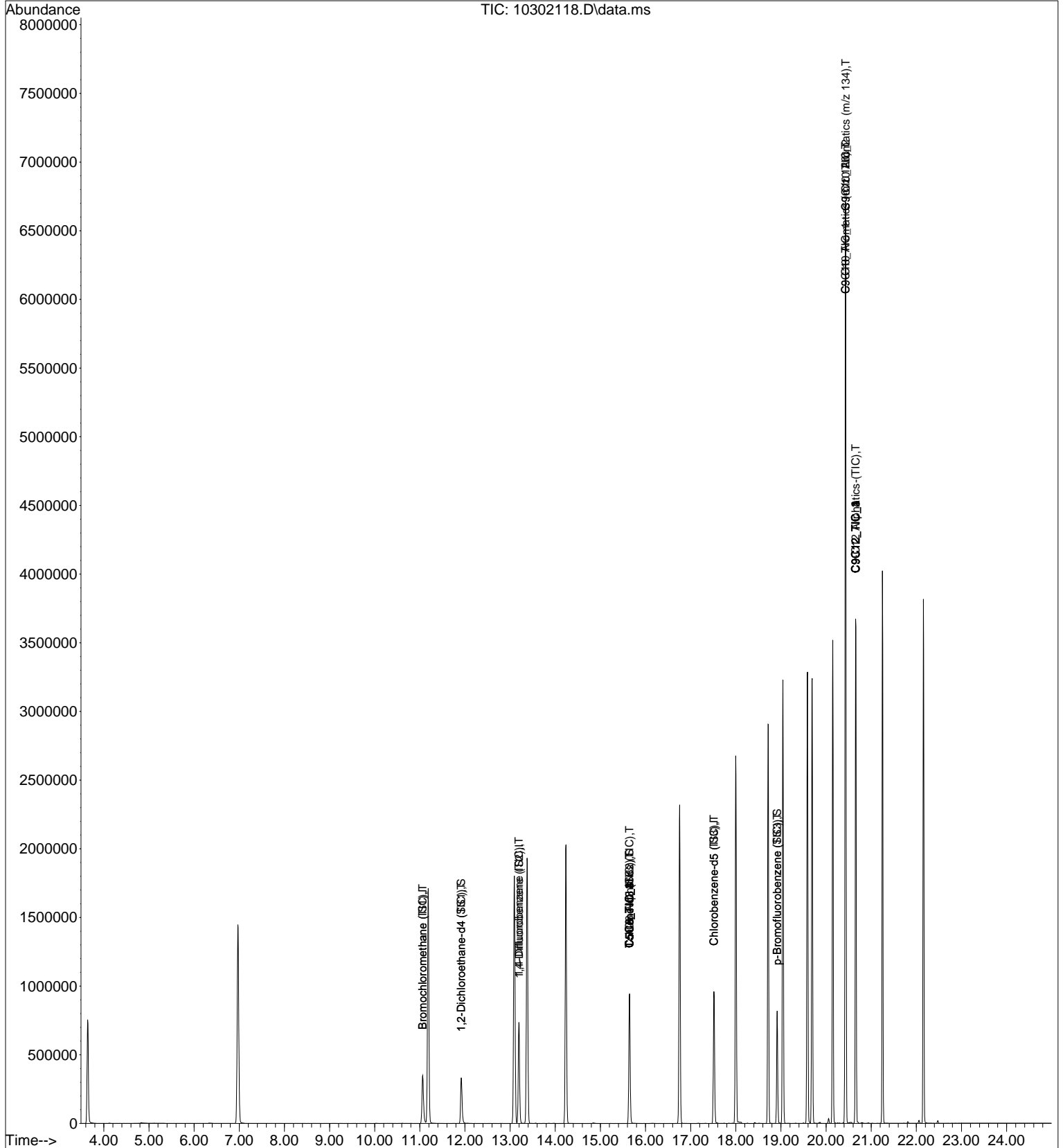
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	860842	12.645	ng	100
3) Isopentane	6.97	TIC	3542035	No Calib		
4) n-Hexane	11.19	TIC	3706340	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	769570	12.832	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1520467	12.619	ng	100
9) Cyclohexane	13.09	TIC	3936624	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	4127469	No Calib		
11) n-Heptane	14.24	TIC	3950241	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1910380	12.617	ng	100
14) n-Octane	16.76	TIC	4256678	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	1910380	11.960	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1824284	6.572	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	4535151	No Calib		
19) n-Nonane	18.71	TIC	4545823	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1326989	6.583	ng	100
22) Isopropylbenzene	19.04	120	553209	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	638699	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	880206	No Calib		
25) n-Decane	20.15	TIC	4874094	No Calib		
26) p-Isopropyltoluene	20.43	134	561488	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	991900	No Calib		
28) Butylcyclohexane	20.65	TIC	5342902	No Calib		
29) n-Undecane	21.25	TIC	5163942	No Calib		
30) n-Dodecane	22.06	TIC	31347	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.65	TIC	5343210	83.620	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	991900	80.706	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	561488	82.236	ng	100
34) C5C8 TIC 1	15.65	TIC	1910380	0.863	ng	100
35) C5C8 TIC 2	15.65	TIC	1910380	0.863	ng	100
36) C5C8 TIC 3	15.65	TIC	1910380	0.863	ng	100
37) C5C8 TIC 4	15.65	TIC	1910380	0.863	ng	100
38) C9C12 TIC 1	20.65	TIC	5343210	15.229	ng	100
39) C9C12 TIC 2	20.65	TIC	5343210	15.229	ng	100
40) C9C12 TIC 3	20.65	TIC	5343210	15.229	ng	100
41) C9C12 TIC 4	20.65	TIC	5343210	15.229	ng	100
42) C9C10 TIC 1	20.43	120	991900	16.504	ng	100
43) C9C10 TIC 2	20.43	134	561488	16.817	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302118.D
 Acq On : 30 Oct 2021 10:38
 Sample : 25ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:24 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302119.D
 Acq On : 30 Oct 2021 11:12
 Sample : 50ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:25 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

10A 11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	135242	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	644368	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	316177	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	270244	13.030	ng	0.00
Spiked Amount	12.500		Recovery	=	104.24%	
12) Toluene-d8 (SS2)	15.65	98	676043	12.676	ng	0.00
Spiked Amount	12.500		Recovery	=	101.44%	
20) p-Bromofluorobenzene (...)	18.92	174	225888	6.532	ng	0.00
Spiked Amount	12.500		Recovery	=	52.24%	

Target Compounds

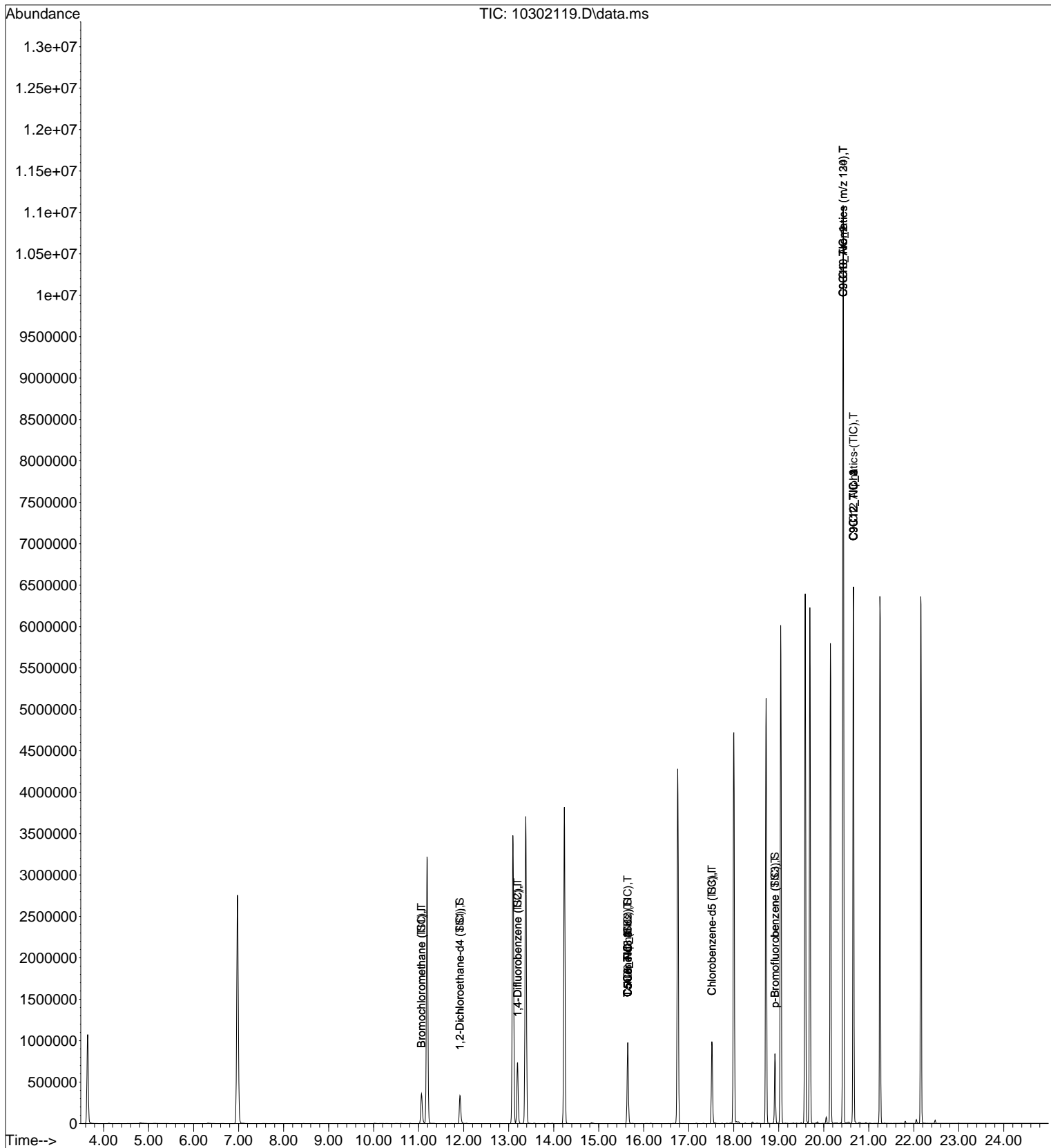
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	874882	12.849	ng	100
3) Isopentane	6.97	TIC	6913950	No Calib		
4) n-Hexane	11.19	TIC	7201550	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	779404	12.994	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1522171	12.612	ng	100
9) Cyclohexane	13.09	TIC	7749864	No Calib		
10) 2,3-Dimethylpentane	13.38	TIC	8026901	No Calib		
11) n-Heptane	14.24	TIC	7619917	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1931010	12.732	ng	100
14) n-Octane	16.76	TIC	8164798	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	1931010	12.069	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1876390	6.611	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	8576515	No Calib		
19) n-Nonane	18.72	TIC	8439872	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1365613	6.625	ng	100
22) Isopropylbenzene	19.04	120	1117033	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	1283560	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	1750318	No Calib		
25) n-Decane	20.15	TIC	8807851	No Calib		
26) p-Isopropyltoluene	20.43	134	1017554	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	1803219	No Calib		
28) Butylcyclohexane	20.66	TIC	9883529	No Calib		
29) n-Undecane	21.25	TIC	9232869	No Calib		
30) n-Dodecane	22.06	TIC	71583	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.66	TIC	9883529	151.254	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	1803219	143.474	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	1017554	145.737	ng	100
34) C5C8 TIC 1	15.65	TIC	1931010	0.853	ng	100
35) C5C8 TIC 2	15.65	TIC	1931010	0.853	ng	100
36) C5C8 TIC 3	15.65	TIC	1931010	0.853	ng	100
37) C5C8 TIC 4	15.65	TIC	1931010	0.853	ng	100
38) C9C12 TIC 1	20.66	TIC	9883529	27.547	ng	100
39) C9C12 TIC 2	20.66	TIC	9883529	27.547	ng	100
40) C9C12 TIC 3	20.66	TIC	9883529	27.547	ng	100
41) C9C12 TIC 4	20.66	TIC	9883529	27.547	ng	100
42) C9C10 TIC 1	20.43	120	1803219	29.340	ng	100
43) C9C10 TIC 2	20.43	134	1017554	29.803	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302119.D
 Acq On : 30 Oct 2021 11:12
 Sample : 50ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:25 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302120.D
 Acq On : 30 Oct 2021 11:46
 Sample : 100ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:26 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.06	130	139595	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	659970	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	325807	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	273407	12.771	ng	0.00
Spiked Amount	12.500		Recovery	=	102.16%	
12) Toluene-d8 (SS2)	15.65	98	695638	12.735	ng	0.00
Spiked Amount	12.500		Recovery	=	101.84%	
20) p-Bromofluorobenzene (...)	18.92	174	235509	6.609	ng	0.00
Spiked Amount	12.500		Recovery	=	52.88%	

Target Compounds

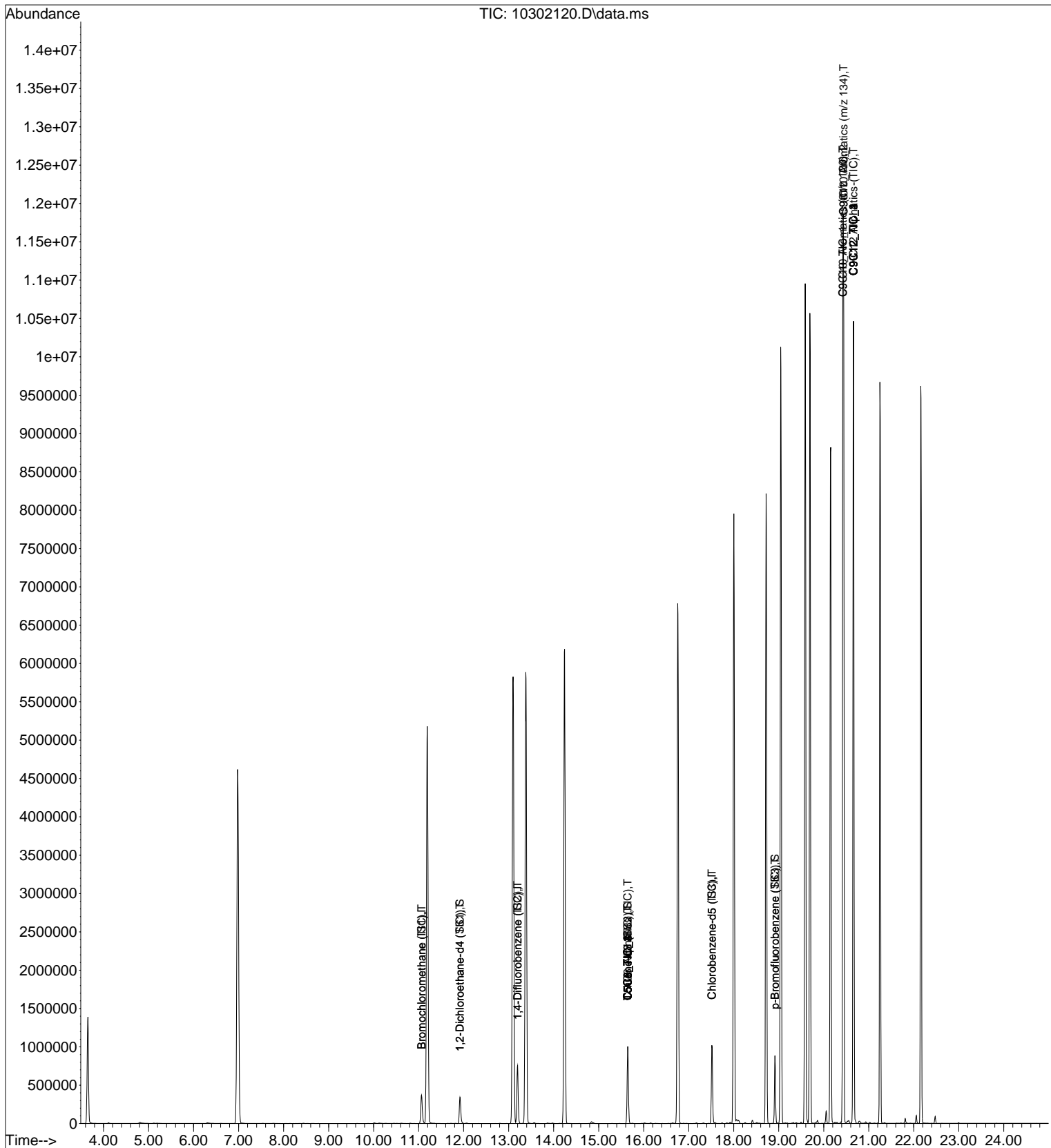
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	900820	12.817	ng	100
3) Isopentane	6.98	TIC	12766065	No Calib		
4) n-Hexane	11.19	TIC	12822236	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	790794	12.773	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1555852	12.586	ng	100
9) Cyclohexane	13.10	TIC	14208340	No Calib		
10) 2,3-Dimethylpentane	13.38	TIC	14133829	No Calib		
11) n-Heptane	14.24	TIC	13296183	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	1990275	12.813	ng	100
14) n-Octane	16.76	TIC	14021595	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	1990275	12.145	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1938251	6.627	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	14753513	No Calib		
19) n-Nonane	18.72	TIC	14358706	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1422300	6.696	ng	100
22) Isopropylbenzene	19.05	120	2078697	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	2411084	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	3208429	No Calib		
25) n-Decane	20.15	TIC	14727237	No Calib		
26) p-Isopropyltoluene	20.44	134	1417215	No Calib		
27) 1,2,3-Trimethylbenzene	20.42	120	2495175	No Calib		
28) Butylcyclohexane	20.66	TIC	16907478	No Calib		
29) n-Undecane	21.25	TIC	15075094	No Calib		
30) n-Dodecane	22.06	TIC	156595	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.66	TIC	16908245	251.110	ng	100
32) C9-C10 Aromatics (m/z ...)	20.42	120	2495175	192.662	ng	100
33) C9-C10 Aromatics (m/z ...)	20.44	134	1417215	196.978	ng	100
34) C5C8 TIC 1	15.65	TIC	1990275	0.853	ng	100
35) C5C8 TIC 2	15.65	TIC	1990275	0.853	ng	100
36) C5C8 TIC 3	15.65	TIC	1990275	0.853	ng	100
37) C5C8 TIC 4	15.65	TIC	1990275	0.853	ng	100
38) C9C12 TIC 1	20.66	TIC	16908245	45.734	ng	100
39) C9C12 TIC 2	20.66	TIC	16908245	45.734	ng	100
40) C9C12 TIC 3	20.66	TIC	16908245	45.734	ng	100
41) C9C12 TIC 4	20.66	TIC	16908245	45.734	ng	100
42) C9C10 TIC 1	20.42	120	2495175	39.399	ng	100
43) C9C10 TIC 2	20.44	134	1417215	40.282	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302120.D
 Acq On : 30 Oct 2021 11:46
 Sample : 100ng M16103021 ICAL Std
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 11
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 02:39:26 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:38:59 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2021 10\30\10302121.D
 Acq On : 30 Oct 2021 12:21
 Sample : 25ng M16103021 ICV Std
 Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 11:51:13 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

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Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.09	130	167978	12.500	ng	0.02
7) 1,4-Difluorobenzene (IS2)	13.20	114	772193	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.52	82	408160	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.93	65	314360	12.203	ng	0.02
Spiked Amount	12.500		Recovery	=	97.60%	
12) Toluene-d8 (SS2)	15.65	98	809650	12.668	ng	0.00
Spiked Amount	12.500		Recovery	=	101.36%	
20) p-Bromofluorobenzene (...)	18.92	174	279007	11.910	ng	0.00
Spiked Amount	12.500		Recovery	=	95.28%	

Target Compounds

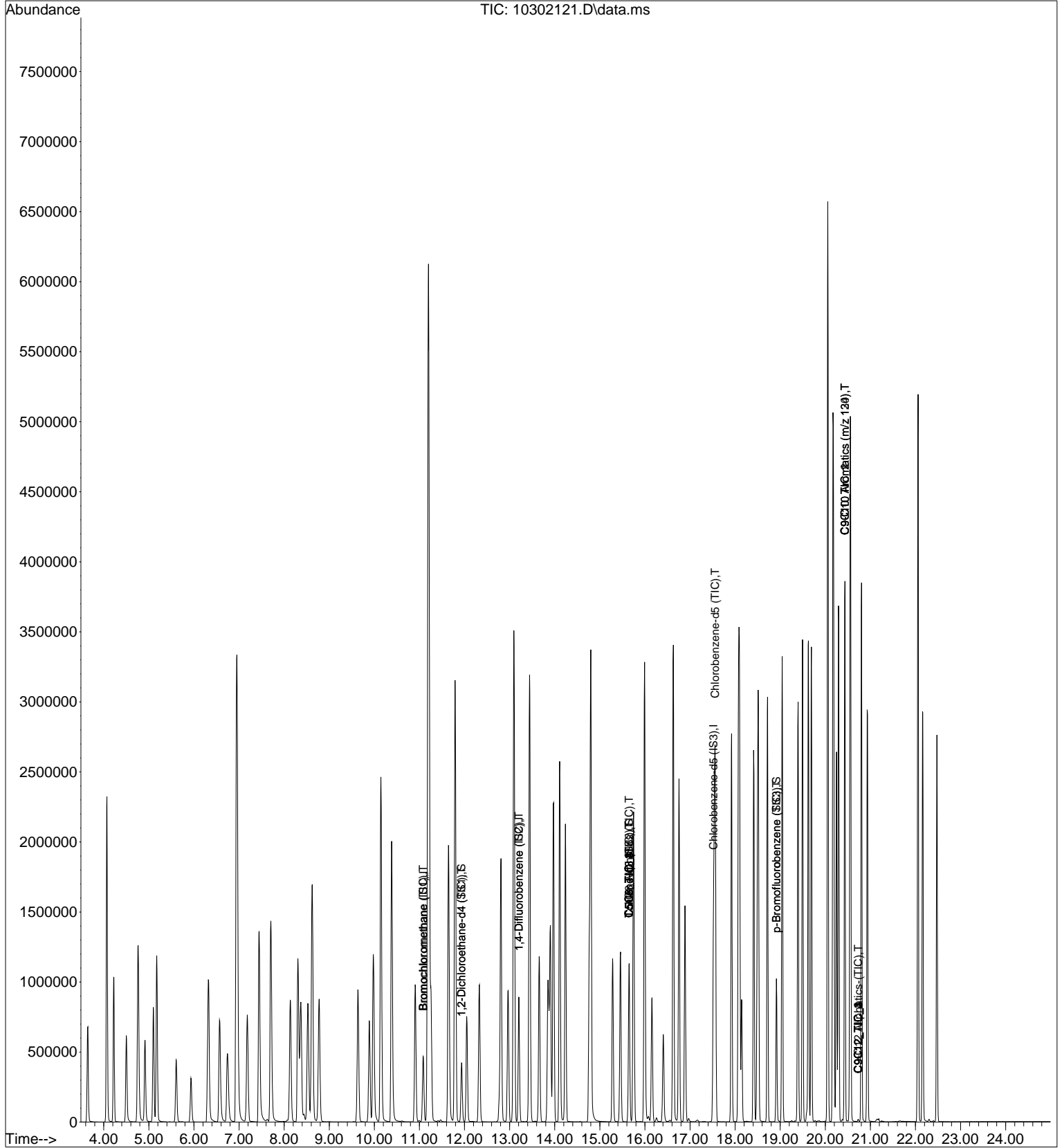
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.08	TIC	1060230	12.536	ng	100
3) Isopentane	6.95	TIC	9574074	No Calib	#	
4) n-Hexane	11.20	TIC	19017201	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.93	TIC	912647	12.250	ng	100
8) 1,4-Difluorobenzene (TIC)	13.20	TIC	1810368	12.517	ng	100
9) Cyclohexane	13.09	TIC	7913867	No Calib		
10) 2,3-Dimethylpentane	13.44	TIC	6899862	No Calib		
11) n-Heptane	14.24	TIC	4129123	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2333467	12.839	ng	100
14) n-Octane	16.76	TIC	4512074	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2334001	12.173	ng	100
17) Chlorobenzene-d5 (TIC)	17.55	TIC	9028784	46.866	ng	100
18) 2,3-Dimethylheptane	18.09	TIC	9616645	No Calib		
19) n-Nonane	18.72	TIC	4731627	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1660632	11.867	ng	100
22) Isopropylbenzene	19.04	120	579130	No Calib		
23) 1-Methyl-3-ethylbenzene	19.63	120	662179	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	901622	No Calib		
25) n-Decane	20.17	TIC	10867993	No Calib	#	
26) p-Isopropyltoluene	20.43	134	576044	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	210968	No Calib	#	
28) Butylcyclohexane	20.73	TIC	22828	No Calib		
29) n-Undecane	21.25	TIC	8680	No Calib		
30) n-Dodecane	22.06	TIC	7728312	No Calib		
31) C9-C12 Aliphatics-(TIC)	20.73	TIC	22709	0.510	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	210968	24.206	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	576044	118.715	ng	100
34) C5C8 TIC 1	15.65	TIC	2334001	1.672	ng	100
35) C5C8 TIC 2	15.65	TIC	2334001	1.672	ng	100
36) C5C8 TIC 3	15.65	TIC	2334001	1.672	ng	100
37) C5C8 TIC 4	15.65	TIC	2334001	1.672	ng	100
38) C9C12 TIC 1	20.73	TIC	22709	0.092	ng	100
39) C9C12 TIC 2	20.73	TIC	22709	0.092	ng	100
40) C9C12 TIC 3	20.73	TIC	22709	0.092	ng	100
41) C9C12 TIC 4	20.73	TIC	22709	0.092	ng	100
42) C9C10 TIC 1	20.43	120	210968	4.950	ng	100
43) C9C10 TIC 2	20.43	134	576044	24.277	ng	100

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

Data File : I:\MS16\DATA\2021 10\30\10302121.D
Acq On : 30 Oct 2021 12:21
Sample : 25ng M16103021 ICV Std
Misc : S34-09132101/S34-10122104 (11/11)

Vial: 2
Operator: WA
Inst : GCMS-16

Quant Time: Nov 03 11:51:13 2021
Quant Method : I:\MS16\METHODS\M16103021A.M
Quant Title : Massachusetts APH
QLast Update : Wed Nov 03 02:50:28 2021
Response via : Initial Calibration
DataAcq Meth:TO15.M



Massachusetts APH
Initial Calibration Verification/Laboratory Control Sample Check Sheet

Data File Name: **10302121.D**
 Data File Path: **I:\MS16\DATA\2021_10\30**
 Operator: **WA**
 Date Acquired: **10/30/2021 12:21**
 Acq. Method File: **TO15.M**
 Sample Name: **25ng M16103021 ICV Std**
 Misc Info: **S34-09132101/S34-10122104 (11/11)**
 Instrument Name: **GCMS-16**

Enter RRFs from current ICAL!

WA 11/4/21

Internal Standards	<u>RT</u>	<u>Area</u>							
7) 1,4-Difluorobenzene (IS2)	13.20	772193							
16) Chlorobenzene-d5 (IS3)	17.52	408160							
C5-C8 Aliphatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% Rec.</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fail</u>	
11) n-Heptane	14.24	4129123	2.596	23.59	91.6	70	130	Pass	
			<u>Spike Amt (ng)</u>		<u>ICAL RRF</u>				
			25.75		2.834				
C9-C12 Aliphatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% Rec.</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fail</u>	
29) n-Nonane	18.72	4731627	5.573	26.34	101.3	70	130	Pass	
			<u>Spike Amt (ng)</u>		<u>ICAL RRF</u>				
			26.00		5.502				
C9-C10 Aromatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% Rec.</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fail</u>	
24) 1,3,5-Trimethylbenzene	19.69	901622	0.874	47.19	91.2	70	130	Pass	
26) p-Isopropyltoluene	20.43	576044							
		1477666							
			<u>Spike Amt (ng)</u>		<u>ICAL RRF</u>				
			51.75		0.959				

Data File : I:\MS16\DATA\2021 11\03\11032103.D
 Acq On : 3 Nov 2021 2:36
 Sample : CCV M16110321 25ng
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:45:49 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

11/3/21

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	160100	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.19	114	739155	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	335470	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	288426	11.747	ng	0.00
Spiked Amount	12.500		Recovery	=	94.00%	
12) Toluene-d8 (SS2)	15.65	98	746433	12.201	ng	0.00
Spiked Amount	12.500		Recovery	=	97.60%	
20) p-Bromofluorobenzene (...)	18.92	174	248622	12.913	ng	0.00
Spiked Amount	12.500		Recovery	=	103.28%	

Target Compounds

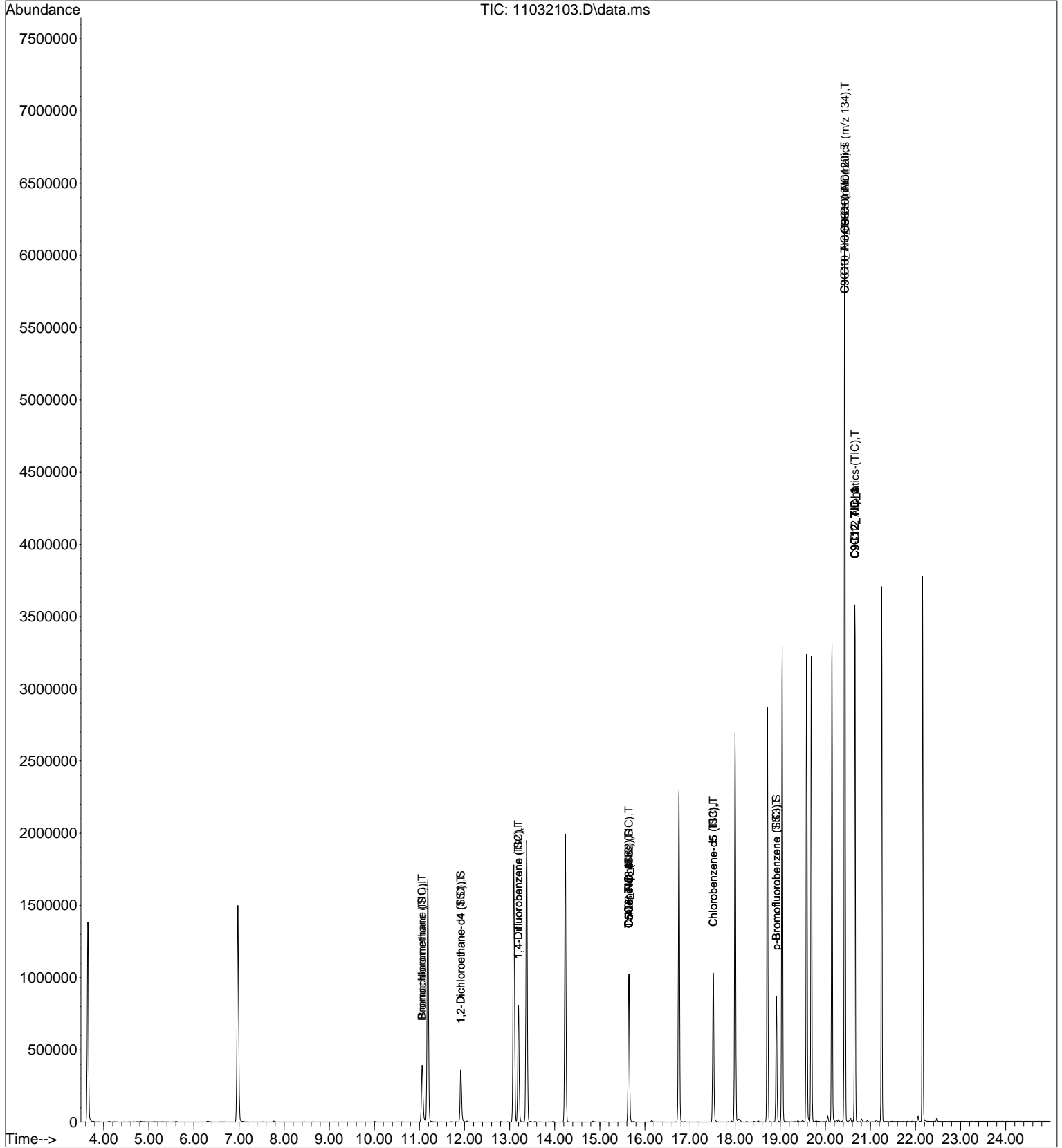
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	967871	12.008	ng	100
3) Isopentane	6.97	TIC	3649303	No Calib		
4) n-Hexane	11.19	TIC	3694299	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	836952	11.787	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1692846	12.227	ng	100
9) Cyclohexane	13.09	TIC	3975735	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	4226654	No Calib		
11) n-Heptane	14.23	TIC	3980215	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2094250	12.038	ng	100
14) n-Octane	16.76	TIC	4382763	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2094250	11.411	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1985345	12.538	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	4609661	No Calib		
19) n-Nonane	18.71	TIC	4501673	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1446513	12.577	ng	100
22) Isopropylbenzene	19.04	120	586747	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	654242	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	899592	No Calib		
25) n-Decane	20.15	TIC	4744401	No Calib		
26) p-Isopropyltoluene	20.43	134	551117	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	940274	No Calib		
28) Butylcyclohexane	20.65	TIC	5160375	No Calib		
29) n-Undecane	21.25	TIC	4864443	No Calib		
30) n-Dodecane	22.06	TIC	56890	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.65	TIC	5160375	141.007	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	940274	131.260	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	551117	138.188	ng	100
34) C5C8 TIC 1	15.65	TIC	2094250	1.825	ng	100
35) C5C8 TIC 2	15.65	TIC	2094250	1.825	ng	100
36) C5C8 TIC 3	15.65	TIC	2094250	1.825	ng	100
37) C5C8 TIC 4	15.65	TIC	2094250	1.825	ng	100
38) C9C12 TIC 1	20.65	TIC	5160375	25.440	ng	100
39) C9C12 TIC 2	20.65	TIC	5160375	25.440	ng	100
40) C9C12 TIC 3	20.65	TIC	5160375	25.440	ng	100
41) C9C12 TIC 4	20.65	TIC	5160375	25.440	ng	100
42) C9C10 TIC 1	20.43	120	940274	26.843	ng	100
43) C9C10 TIC 2	20.43	134	551117	28.259	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032103.D
 Acq On : 3 Nov 2021 2:36
 Sample : CCV M16110321 25ng
 Misc : S34-09132101/S34-10192103 (12/18)

Vial: 2
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 03 06:45:49 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Massachusetts APH
Continuing Calibration Verification Check Sheet

Data File Name: **11032103.D**
 Data File Path: **I:\MS16\DATA\2021_11\03**
 Operator: **WA**
 Date Acquired: **11/3/2021 2:36**
 Acq. Method File: **TO15.M**
 Sample Name: **CCV M16110321_25ng**
 Misc Info: **S34-09132101/S34-10192103 (12/18)**
 Instrument Name: **GCMS-16**

Enter RRFs from current ICAL!

Internal Standards	<u>RT</u>	<u>Area</u>
7) 1,4-Difluorobenzene (IS2)	13.19	739155
16) Chlorobenzene-d5 (IS3)	17.51	335470

WA 11/3/21

C5-C8 Aliphatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% D</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fai</u>
3) Isopentane	6.97	3649303	2.669	142.7	-5.83	-30	30	Pass
4) n-Hexane	11.19	3694299						
9) Cyclohexane	13.09	3975735						
10) 2,3-Dimethylpentane	13.37	4226654	Spike	ICAL				
11) n-Heptane	14.23	3980215	Amt (ng)	RRF				
14) n-Octane	16.76	<u>4382763</u>	151.50	2.834				
		23908969						

C9-C12 Aliphatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% D</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fai</u>
18) 2,3-Dimethylheptane	18.00	4609661	5.663	162.1	2.93	-30	30	Pass
19) n-Nonane	18.71	4501673						
25) n-Decane	20.15	4744401						
28) Butylcyclohexane	20.65	5160375	Spike	ICAL				
29) n-Undecane	21.25	4864443	Amt (ng)	RRF				
30) n-Dodecane	22.06	<u>56890</u>	157.50	5.502				
		23937443						

C9-C10 Aromatics	<u>RT</u>	<u>Area</u>	<u>RRF</u>	<u>ng</u>	<u>% D</u>	<u>LCL</u>	<u>UCL</u>	<u>Pass/Fai</u>
22) Isopropylbenzene	19.04	586747	1.045	141.1	8.97	-30	30	Pass
23) 1-Methyl-3-ethylbenzene	19.59	654242						
24) 1,3,5-Trimethylbenzene	19.69	899592						
26) p-Isopropyltoluene	20.43	551117	Spike	ICAL				
27) 1,2,3-Trimethylbenzene	20.43	<u>940274</u>	Amt (ng)	RRF				
		3631972	129.5	0.959				

Data File : I:\MS16\DATA\2021 11\03\11032135.D
 Acq On : 3 Nov 2021 22:39
 Sample : CCV2 M16110321 25ng
 Misc : S34-09132101/S34-11022101 (12/31)

Vial: 3
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 02:56:17 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

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Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	11.06	130	151167	12.500	ng	0.00
7) 1,4-Difluorobenzene (IS2)	13.20	114	693007	12.500	ng	0.00
16) Chlorobenzene-d5 (IS3)	17.51	82	327622	12.500	ng	0.00

System Monitoring Compounds

5) 1,2-Dichloroethane-d4 ...	11.92	65	284772	12.284	ng	0.00
Spiked Amount	12.500		Recovery	=	98.24%	
12) Toluene-d8 (SS2)	15.65	98	707233	12.330	ng	0.00
Spiked Amount	12.500		Recovery	=	98.64%	
20) p-Bromofluorobenzene (...)	18.92	174	238391	12.678	ng	0.00
Spiked Amount	12.500		Recovery	=	101.44%	

Target Compounds

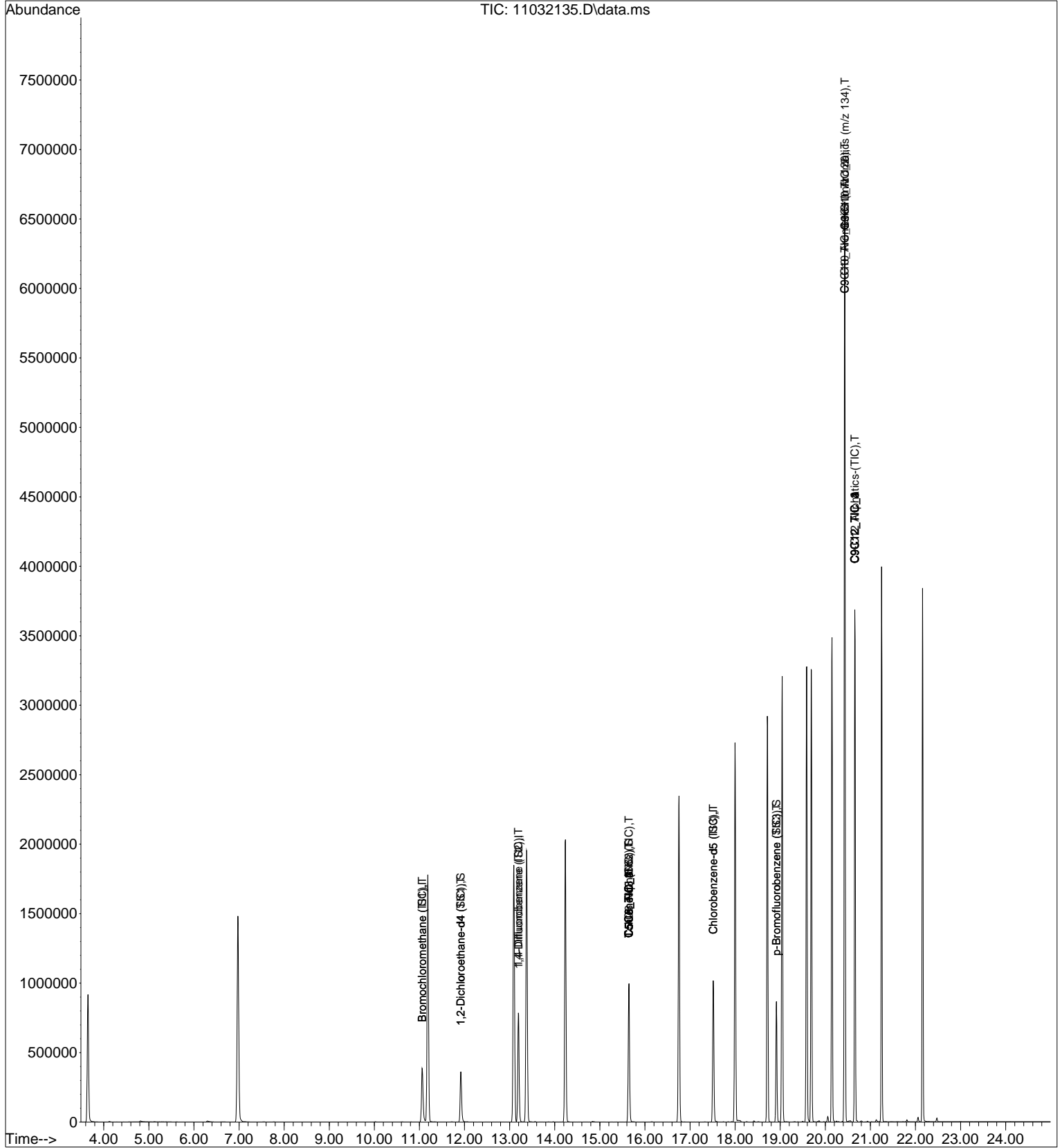
	R.T.	QIon	Response	Conc	Units	Qvalue
2) Bromochloromethane (TIC)	11.06	TIC	946165	12.432	ng	100
3) Isopentane	6.97	TIC	3640596	No Calib		
4) n-Hexane	11.19	TIC	3842110	No Calib		
6) 1,2-Dichloroethane-d4 ...	11.92	TIC	825832	12.318	ng	100
8) 1,4-Difluorobenzene (TIC)	13.19	TIC	1624119	12.512	ng	100
9) Cyclohexane	13.09	TIC	4073611	No Calib		
10) 2,3-Dimethylpentane	13.37	TIC	4227182	No Calib		
11) n-Heptane	14.24	TIC	4036900	No Calib		
13) Toluene-d8 (TIC)	15.65	TIC	2020432	12.387	ng	100
14) n-Octane	16.76	TIC	4349108	No Calib		
15) C5-C8 Aliphatics (TIC)	15.65	TIC	2020432	11.742	ng	100
17) Chlorobenzene-d5 (TIC)	17.51	TIC	1939591	12.543	ng	100
18) 2,3-Dimethylheptane	18.00	TIC	4613366	No Calib		
19) n-Nonane	18.71	TIC	4622021	No Calib		
21) p-Bromofluorobenzene (...)	18.92	TIC	1423880	12.677	ng	100
22) Isopropylbenzene	19.04	120	556570	No Calib		
23) 1-Methyl-3-ethylbenzene	19.59	120	638274	No Calib		
24) 1,3,5-Trimethylbenzene	19.69	120	871929	No Calib		
25) n-Decane	20.15	TIC	4891346	No Calib		
26) p-Isopropyltoluene	20.43	134	549447	No Calib		
27) 1,2,3-Trimethylbenzene	20.43	120	972857	No Calib		
28) Butylcyclohexane	20.65	TIC	5315120	No Calib		
29) n-Undecane	21.25	TIC	5150894	No Calib		
30) n-Dodecane	22.06	TIC	50557	No Calib		
31) C9-C12 Aliphatics- (TIC)	20.65	TIC	5315120	148.714	ng	100
32) C9-C10 Aromatics (m/z ...)	20.43	120	972857	139.062	ng	100
33) C9-C10 Aromatics (m/z ...)	20.43	134	549447	141.070	ng	100
34) C5C8 TIC 1	15.65	TIC	2020432	1.803	ng	100
35) C5C8 TIC 2	15.65	TIC	2020432	1.803	ng	100
36) C5C8 TIC 3	15.65	TIC	2020432	1.803	ng	100
37) C5C8 TIC 4	15.65	TIC	2020432	1.803	ng	100
38) C9C12 TIC 1	20.65	TIC	5315120	26.831	ng	100
39) C9C12 TIC 2	20.65	TIC	5315120	26.831	ng	100
40) C9C12 TIC 3	20.65	TIC	5315120	26.831	ng	100
41) C9C12 TIC 4	20.65	TIC	5315120	26.831	ng	100
42) C9C10 TIC 1	20.43	120	972857	28.438	ng	100
43) C9C10 TIC 2	20.43	134	549447	28.849	ng	100

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

Data File : I:\MS16\DATA\2021 11\03\11032135.D
 Acq On : 3 Nov 2021 22:39
 Sample : CCV2 M16110321 25ng
 Misc : S34-09132101/S34-11022101 (12/31)

Vial: 3
 Operator: WA
 Inst : GCMS-16

Quant Time: Nov 04 02:56:17 2021
 Quant Method : I:\MS16\METHODS\M16103021A.M
 Quant Title : Massachusetts APH
 QLast Update : Wed Nov 03 02:50:28 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15.M



Massachusetts APH
Continuing Calibration Verification Check Sheet

Data File Name: 11032135.D
 Data File Path: I:\MS16\DATA\2021_11\03\
 Operator: WA
 Date Acquired: 11/3/2021 22:39
 Acq. Method File: TO15.M
 Sample Name: CCV2 M16110321_25ng
 Misc Info: S34-09132101/S34-11022101 (12/31)
 Instrument Name: GCMS-16

Enter RRFs from current ICAL!

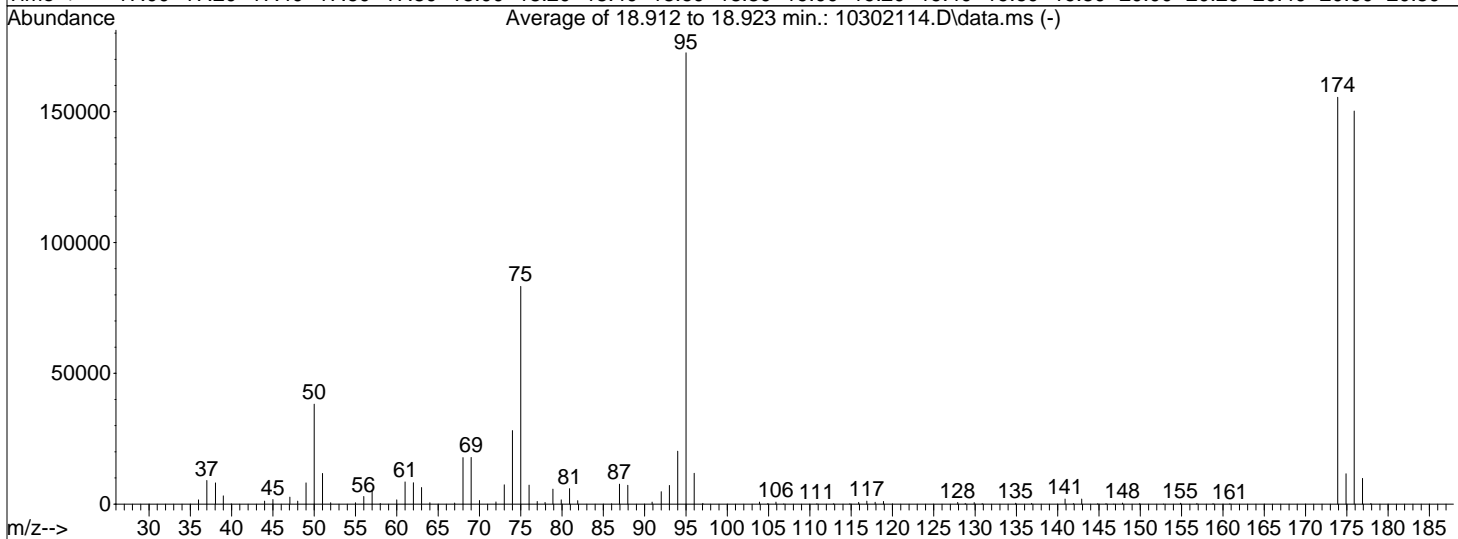
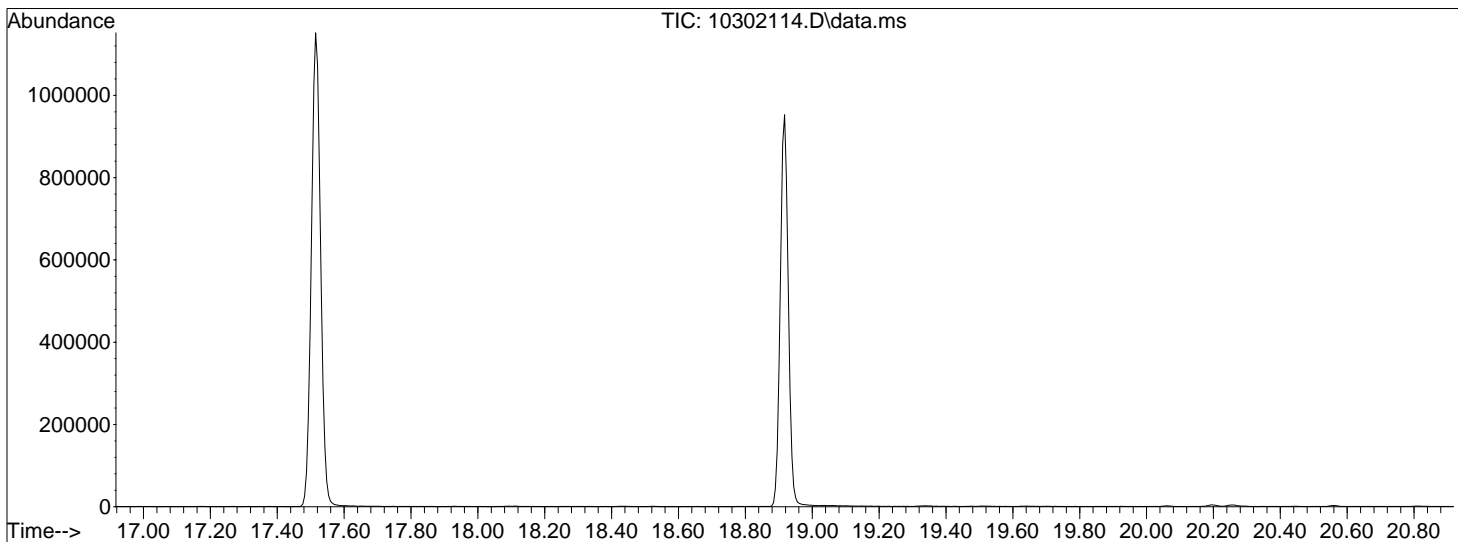
Internal Standards	RT	Area						
7) 1,4-Difluorobenzene (IS2)	13.20	693007						
16) Chlorobenzene-d5 (IS3)	17.51	327622						
C5-C8 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
3) Isopentane	6.97	3640596	2.878	153.8	1.54	-30	30	Pass
4) n-Hexane	11.19	3842110						
9) Cyclohexane	13.09	4073611						
10) 2,3-Dimethylpentane	13.37	4227182	Spike	ICAL				
11) n-Heptane	14.24	4036900	Amt (ng)	RRF				
14) n-Octane	16.76	4349108	151.50	2.834				
		24169507						
C9-C12 Aliphatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
18) 2,3-Dimethylheptane	18.00	4613366	5.970	170.9	8.50	-30	30	Pass
19) n-Nonane	18.71	4622021						
25) n-Decane	20.15	4891346						
28) Butylcyclohexane	20.65	5315120	Spike	ICAL				
29) n-Undecane	21.25	5150894	Amt (ng)	RRF				
30) n-Dodecane	22.06	50557	157.50	5.502				
		24643304						
C9-C10 Aromatics	RT	Area	RRF	ng	% D	LCL	UCL	Pass/Fai
22) Isopropylbenzene	19.04	556570	1.057	142.8	10.26	-30	30	Pass
23) 1-Methyl-3-ethylbenzene	19.59	638274						
24) 1,3,5-Trimethylbenzene	19.69	871929						
26) p-Isopropyltoluene	20.43	549447	Spike	ICAL				
27) 1,2,3-Trimethylbenzene	20.43	972857	Amt (ng)	RRF				
		3589077	129.5	0.959				

WA 11/4/21

Data Path : I:\MS16\DATA\2021 10\30\
 Data File : 10302114.D
 Acq On : 30 Oct 2021 8:21
 Operator : WA
 Sample : BFB Std
 Misc : S34-09132101
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16102821.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

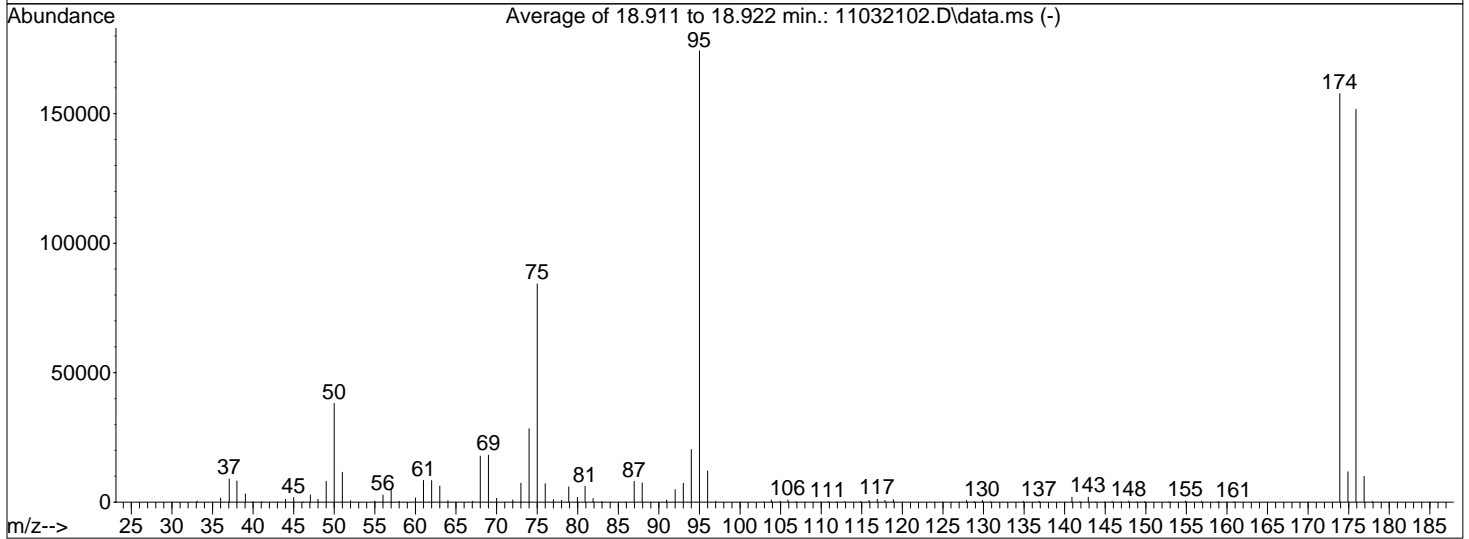
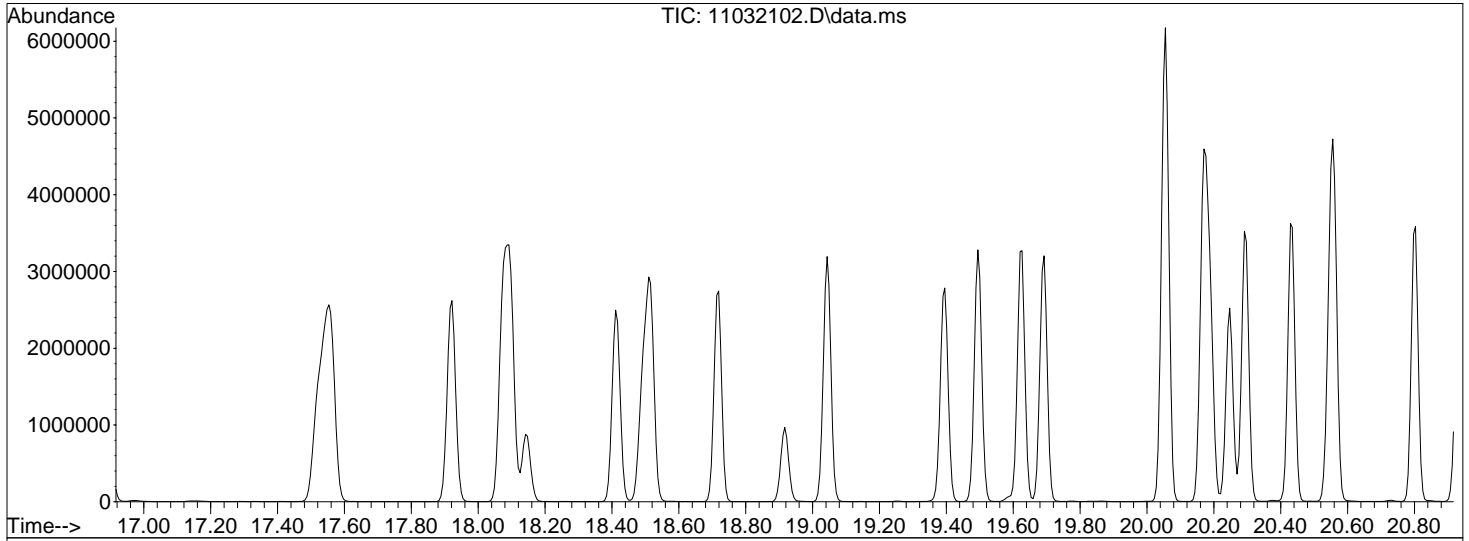
WA 11/3/21

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.1	38200	PASS
75	95	30	66	48.3	83232	PASS
95	95	100	100	100.0	172501	PASS
96	95	5	9	6.8	11783	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.2	155520	PASS
175	174	4	9	7.5	11626	PASS
176	174	93	101	96.6	150229	PASS
177	176	5	9	6.6	9879	PASS

Data Path : I:\MS16\DATA\2021 11\03\
 Data File : 11032102.D
 Acq On : 3 Nov 2021 2:03
 Operator : WA
 Sample : CCV R16110321 25ng
 Misc : S34-09132101/S34-10122102 (11/11)
 ALS Vial : 3 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16102821.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

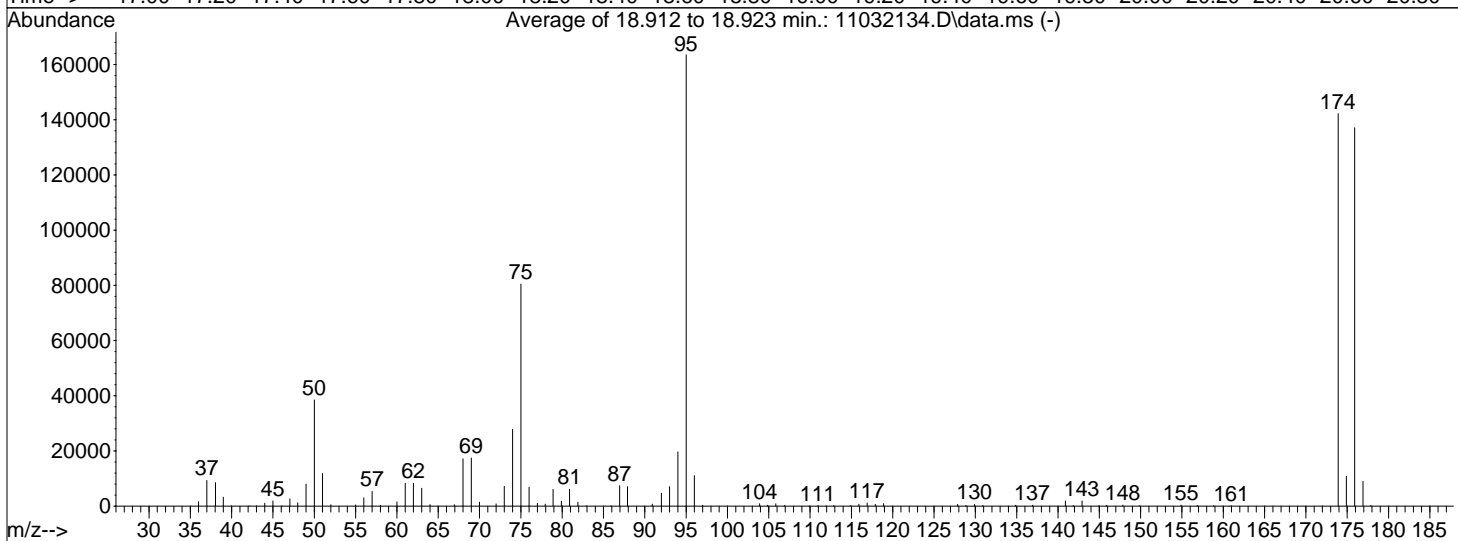
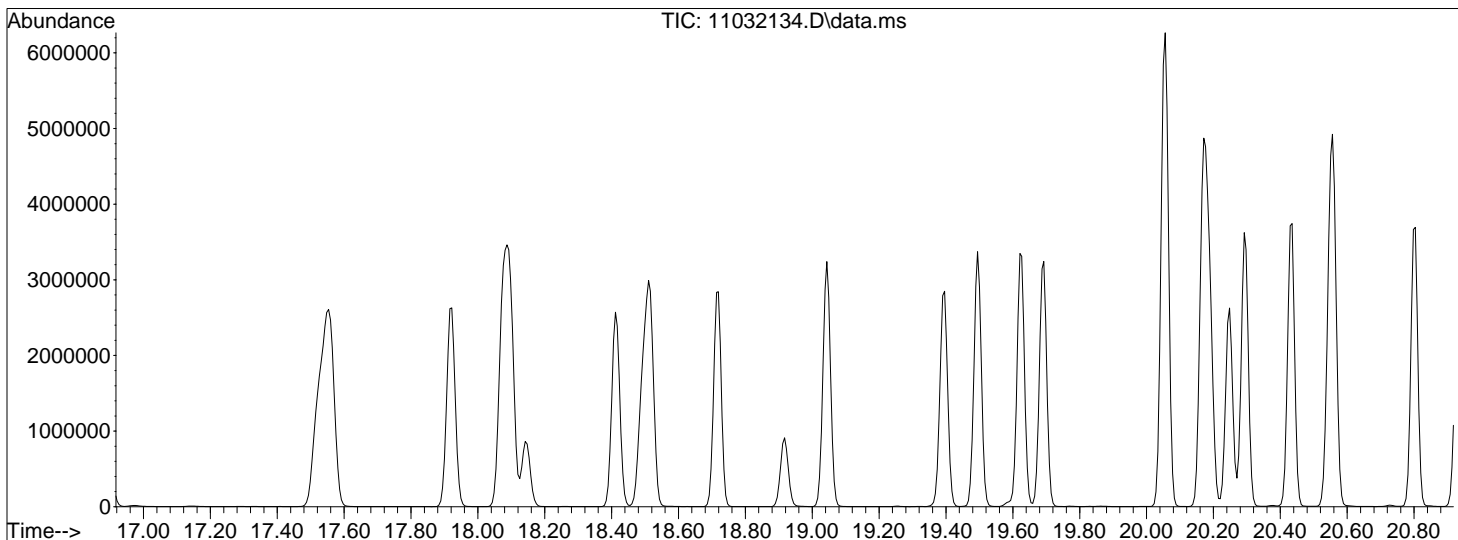
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.9	38101	PASS
75	95	30	66	48.3	84256	PASS
95	95	100	100	100.0	174293	PASS
96	95	5	9	6.9	12061	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.5	157760	PASS
175	174	4	9	7.4	11716	PASS
176	174	93	101	96.1	151680	PASS
177	176	5	9	6.6	9975	PASS

WA 11/3/21

Data Path : I:\MS16\DATA\2021 11\03\
 Data File : 11032134.D
 Acq On : 3 Nov 2021 22:05
 Operator : WA
 Sample : CCV2 R16110321 25ng
 Misc : S34-09132101/S34-10192101 (11/18)
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16102821.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Sat Oct 30 07:47:28 2021



AutoFind: Scans 2805, 2806, 2807; Background Corrected with Scan 2797

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	23.5	38488	PASS
75	95	30	66	49.2	80440	PASS
95	95	100	100	100.0	163541	PASS
96	95	5	9	6.8	11095	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.0	142229	PASS
175	174	4	9	7.6	10808	PASS
176	174	93	101	96.4	137133	PASS
177	176	5	9	6.6	9014	PASS

WA 11/4/21

Injection Log

Directory: J:\MS16\DATA\2021_10\30\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
14	10/30/21 8:21	10302114.D	BFB Std	S34-09132101	WA	2	Pass
15	10/30/21 8:55	10302115.D	0.5ng M16103021 ICAL Std	S34-09132101/S34-10192104 (12/18)	WA	10	M16103021A.M
16	10/30/21 9:30	10302116.D	1.0ng M16103021 ICAL Std	S34-09132101/S34-10192104 (12/18)	WA	10	
17	10/30/21 10:04	10302117.D	5.0ng M16103021 ICAL Std	S34-09132101/S34-10192104 (12/18)	WA	10	
18	10/30/21 10:38	10302118.D	25ng M16103021 ICAL Std	S34-09132101/S34-10192103 (12/18)	WA	11	
19	10/30/21 11:12	10302119.D	50ng M16103021 ICAL Std	S34-09132101/S34-10192103 (12/18)	WA	11	
20	10/30/21 11:46	10302120.D	100ng M16103021 ICAL Std	S34-09132101/S34-10192103 (12/18)	WA	11	
21	10/30/21 12:21	10302121.D	25ng M16103021 ICV Std	S34-09132101/S34-10122104 (11/11)	WA	2	Pass
22	10/30/21 12:55	10302122.D	25ng M16103021 ICV Std	S34-09132101/S34-10252107 (11/24)	WA	12	Pass
23							

DA 11/3/21

Injection Log

Directory: I:\MS16\DATA\2021_11\03\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/3/21 1:29	11032101.D	System	S34-09132101/S34-10192101 (11/18)	WA	2	
2	11/3/21 2:03	11032102.D	CCV R16110321_25ng	S34-09132101/S34-10122102 (11/11)	WA	3	Passed
3	11/3/21 2:36	11032103.D	CCV M16110321_25ng	S34-09132101/S34-10192103 (12/18)	WA	2	Passed
4	11/3/21 3:10	11032104.D	MB R16110321_1000mL	S34-09132101	WA	2	Passed
5	11/3/21 3:43	11032105.D	LCS R16110321_25ng	S34-09132101/S34-10122104 (11/11)	WA	2	Passed
6	11/3/21 4:17	11032106.D	LCSD R16110321_25ng	S34-09132101/S34-10122104 (11/11)	WA	13	Passed
7	11/3/21 4:50	11032107.D	P2105459-004dil (100mL)	S34-09132101	WA	15	
8	11/3/21 5:55	11032108.D	P2105459-006dil (50mL)	S34-09132101	WA	15	
9	11/3/21 6:31	11032109.D	P2105459-006 (300mL)	S34-09132101	WA	15	
10	11/3/21 7:05	11032110.D	P2105459-004 (1000mL)	S34-09132101	WA	13	
11	11/3/21 7:50	11032111.D	P2105746-001 (2.5mL)	S34-09132101	WA	1	
12	11/3/21 8:41	11032112.D	P2105746-001 (100mL)	S34-09132101	WA	5	
13	11/3/21 9:19	11032113.D	P2105746-001dup (100mL)	S34-09132101	WA	5	Passed
14	11/3/21 9:52	11032114.D	P2105506-003 (200mL)	S34-09132101	WA	10	
15	11/3/21 10:26	11032115.D	P2105523-001 (1000mL) pf2	S34-09132101	WA	6	
16	11/3/21 11:00	11032116.D	P2105523-002 (400mL) pf2	S34-09132101	WA	7	
17	11/3/21 11:34	11032117.D	P2105506-001 (1000mL) pf2	S34-09132101	WA	8	
18	11/3/21 12:08	11032118.D	P2105506-002 (1000mL) pf2	S34-09132101	WA	9	
19	11/3/21 12:42	11032119.D	P2105506-004 (200mL)	S34-09132101	WA	11	
20	11/3/21 13:31	11032120.D	P2105506-005dil (200mL)	S34-09132101	WA	12	rerun
21	11/3/21 14:06	11032121.D	P2105506-006 (1000mL)	S34-09132101	WA	13	
22	11/3/21 14:40	11032122.D	P2105506-005 (1000mL)	S34-09132101	WA	12	
23	11/3/21 15:13	11032123.D	P2105506-007 (1000mL) pf2	S34-09132101	WA	14	
24	11/3/21 16:26	11032124.D	P2105506-008 (1000mL) pf2	S34-09132101	WA	15	
25	11/3/21 17:00	11032125.D	P2105504-002 (1000mL)	S34-09132101	WA	11	need dil
26	11/3/21 17:35	11032126.D	P2105504-003 (1000mL)	S34-09132101	WA	12	need dil
27	11/3/21 18:08	11032127.D	System	S34-09132101	WA	2	
28	11/3/21 18:42	11032128.D	P2105519-001 (1000mL)	S34-09132101	WA	4	
29	11/3/21 19:16	11032129.D	P2105519-002 (1000mL)	S34-09132101	WA	5	
30	11/3/21 19:49	11032130.D	P2105519-003 (1000mL)	S34-09132101	WA	6	
31	11/3/21 20:23	11032131.D	P2105519-004 (1000mL)	S34-09132101	WA	7	
32	11/3/21 20:57	11032132.D	P2105519-005 (1000mL)	S34-09132101	WA	8	

~~IDA~~ 11/4/21

Injection Log

Directory: I:\MS16\DATA\2021_11\03\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/3/21 22:05	11032134.D	CCV2 R16110321_25ng	S34-09132101/S34-10192101 (11/18)	WA	2	Passed
2	11/3/21 22:39	11032135.D	CCV2 M16110321_25ng	S34-09132101/S34-11022101 (12/31)	WA	3	Passed
3	11/3/21 23:13	11032136.D	Blank	S34-09132101	WA	2	
4	11/3/21 23:48	11032137.D	MB2 R16110321_1000mL	S34-09132101	WA	2	Passed
5	11/4/21 0:22	11032138.D	LCS2 R16110321_25ng	S34-09132101/S34-10122104 (11/11)	WA	2	Passed
6	11/4/21 0:56	11032139.D	LCSD2 R16110321_25ng	S34-09132101/S34-10122104 (11/11)	WA	2	Passed
7	11/4/21 1:30	11032140.D	P2105504-001 (1000mL)	S34-09132101	WA	1	
8	11/4/21 2:04	11032141.D	P2105504-004 (1000mL)	S34-09132101	WA	13	
9	11/4/21 2:38	11032142.D	P2105504-005 (1000mL)	S34-09132101	WA	14	saturated-not used
10	11/4/21 3:12	11032143.D	P2105504-006 (1000mL)	S34-09132101	WA	16	
11	11/4/21 3:46	11032144.D	P2105504-007 (1000mL)	S34-09132101	WA	9	
12	11/4/21 4:20	11032145.D	P2105504-008 (1000mL)	S34-09132101	WA	10	
13	11/4/21 5:55	11032146.D	P2105504-002dil (40mL)	S34-09132101	WA	11	
14	11/4/21 6:29	11032147.D	P2105504-003dil (40mL)	S34-09132101	WA	12	
15	11/4/21 7:03	11032148.D	P2105504-001dil (50mL)	S34-09132101	WA	1	
16	11/4/21 7:50	11032149.D	P2105504-004dil (50mL)	S34-09132101	WA	13	
17	11/4/21 8:24	11032150.D	P2105519-006 (1000mL)	S34-09132101	WA	4	
18	11/4/21 8:58	11032151.D	P2105519-007 (1000mL)	S34-09132101	WA	5	
19	11/4/21 9:32	11032152.D	P2105519-008 (1000mL)	S34-09132101	WA	6	
20	11/4/21 10:06	11032153.D	P2105519-009 (1000mL)	S34-09132101	WA	7	
21	11/4/21 10:40	11032154.D	P2105519-010 (1000mL)	S34-09132101	WA	8	
22	11/4/21 11:13	11032155.D	P2105519-011 (1000mL)	S34-09132101	WA	1	
23	11/4/21 11:47	11032156.D	System	S34-09132101	WA	2	
24	11/4/21 12:28	11032157.D	P2105506-005 (200mL)	S34-09132101	WA	13	
25	11/4/21 13:02	11032158.D	P2105519-012 (1000mL)	S34-09132101	WA	5	
26	11/4/21 13:36	11032159.D	P2105519-013 (1000mL)	S34-09132101	WA	6	
27	11/4/21 14:10	11032160.D	P2105519-013dup (1000mL)	S34-09132101	WA	6	Passed
28	11/4/21 14:45	11032161.D	P2105519-014 (1000mL)	S34-09132101	WA	7	
29	11/4/21 15:21	11032162.D	P2105519-015 (1000mL)	S34-09132101	WA	8	
30	11/4/21 15:59	11032163.D	P2105708-001dil (25mL)	S34-09132101	WA	14	
31	11/4/21 16:32	11032164.D	System	S34-09132101	WA	2	
32	11/4/21 17:06	11032165.D	P2105624-002 (400mL)	S34-09132101	WA	12	
33	11/4/21 17:40	11032166.D	P2105504-005dil (50mL)	S34-09132101	WA	14	
34	11/4/21 18:14	11032167.D	P2105504-006dil (100mL)	S34-09132101	WA	16	
35	11/4/21 18:48	11032168.D	P2105504-007dil (50mL)	S34-09132101	WA	9	
36	11/4/21 19:22	11032169.D	P2105504-008dil (100mL)	S34-09132101	WA	10	

CCV: 1,2,4-trichlorobenzene out high

LCS : Freon-114 and THF above Lab limits; w/in method guidelines

WA 11/5/21

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 14:44:18 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20772	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	105310	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	23025	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	42199	915.578	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	91.56%
33) Toluene-d8 (SS2)	14.00	98	117892	1002.177	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	100.22%
45) Bromofluorobenzene (SS3)	17.42	174	33581	1086.929	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	108.69%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	98390	1442.593	pg	100
3) Chloromethane	4.54	52	721	45.550	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3907	59.212	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.	d	
7) Bromomethane	5.33	94	284	13.392	pg	98
8) Chloroethane	5.56	64	295	16.480	pg	99
9) Acrolein	6.15	56	2624	193.991	pg	100
10) Acetone	6.27	58	43558	2285.333	pg	# 87
11) Trichlorofluoromethane	6.46	101	36177	813.702	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.34	84	5256	176.249	pg	95
14) Trichlorotrifluoroethane	7.65	151	8011	380.678	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	214	N.D.		
17) Methyl tert-Butyl Ether	8.68	73	222	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	5196	98.666	pg	99
21) 1,2-Dichloroethane	10.50	62	1220	29.299	pg	98
22) 1,1,1-Trichloroethane	10.76	97	207	N.D.		
23) Benzene	11.22	78	20966	172.658	pg	100
24) Carbon Tetrachloride	11.37	117	11636	327.557	pg	99
26) 1,2-Dichloropropane	12.03	63	286	N.D.		
27) Bromodichloromethane	12.22	83	383	N.D.		
28) Trichloroethene	12.27	130	402	14.896	pg	100
29) 1,4-Dioxane	12.25	88	8436	358.963	pg	89
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	110	N.D.		
34) Toluene	14.10	91	41516	350.968	pg	99
35) Dibromochloromethane	14.51	129	131	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	1242	51.270	pg	97
39) Chlorobenzene	15.95	112	163	N.D.		
40) Ethylbenzene	16.34	91	4254	33.861	pg	98
41) m,p-Xylene	16.51	91	10990	110.089	pg	100
42) Styrene	16.87	104	2401	33.740	pg	96
43) o-Xylene	16.98	106	2055	41.795	pg	98
44) 1,1,2,2-Tetrachloroethane	16.98	83	295	N.D.		
46) 1,3,5-Trimethylbenzene	18.26	105	1502	13.257	pg	98
47) 1,2,4-Trimethylbenzene	18.65	105	5094	43.419	pg	89
48) 1,3-Dichlorobenzene	18.80	146	60	N.D.		
49) 1,4-Dichlorobenzene	18.87	146	112	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	530	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:44:18 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

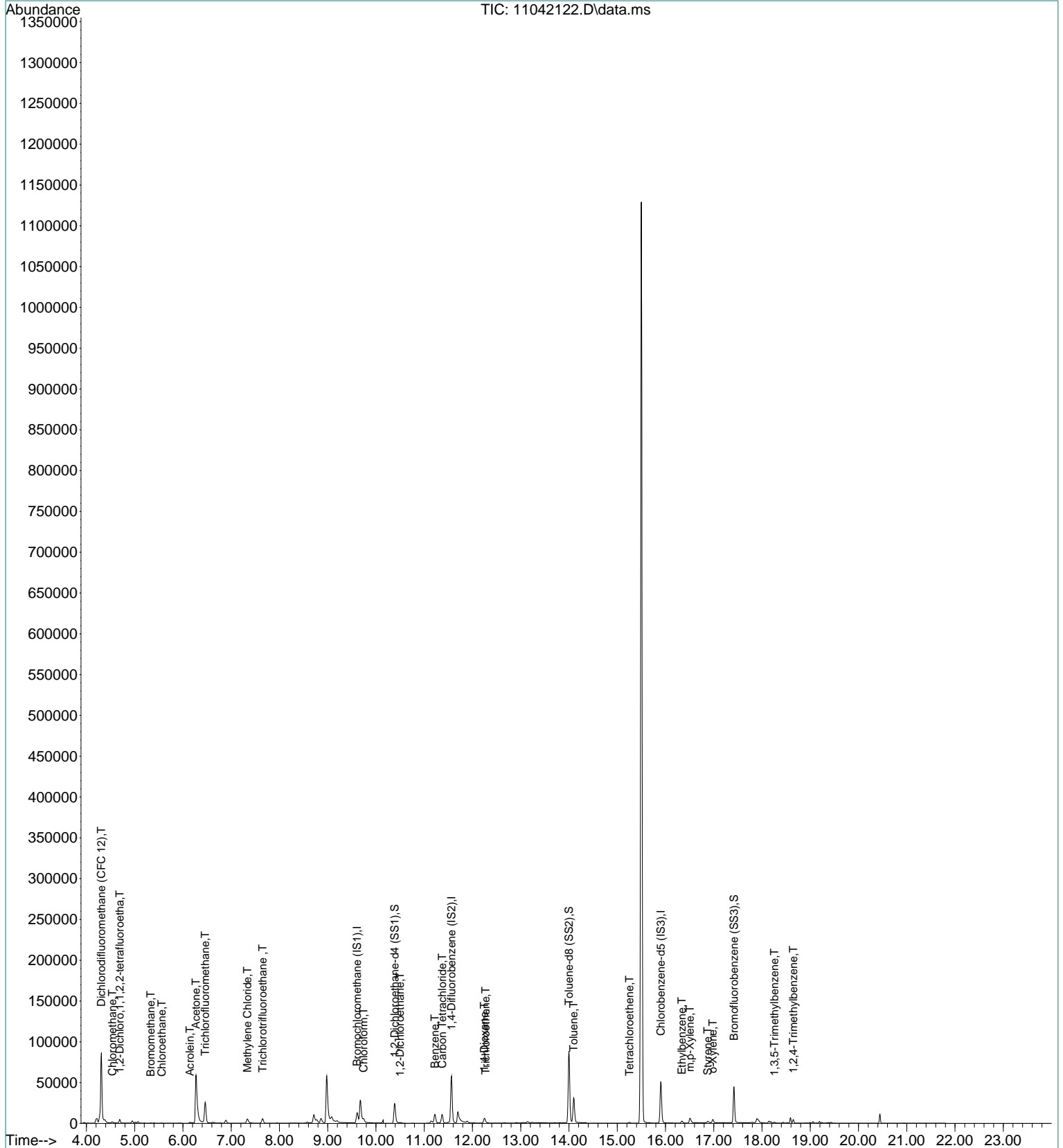
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042122.D
Acq On : 4 Nov 2021 19:09
Sample : P2105519-001 (1000mL)
Misc : S34-10062101

Vial: 4
Operator: TZ
Inst : MS19

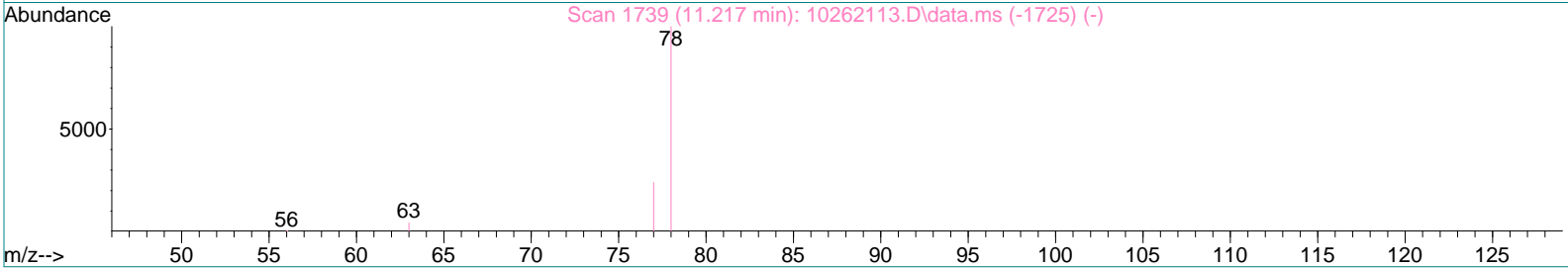
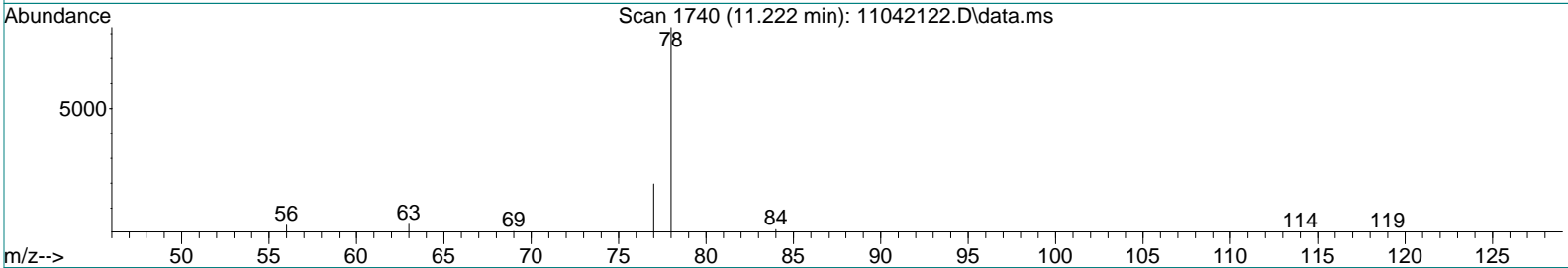
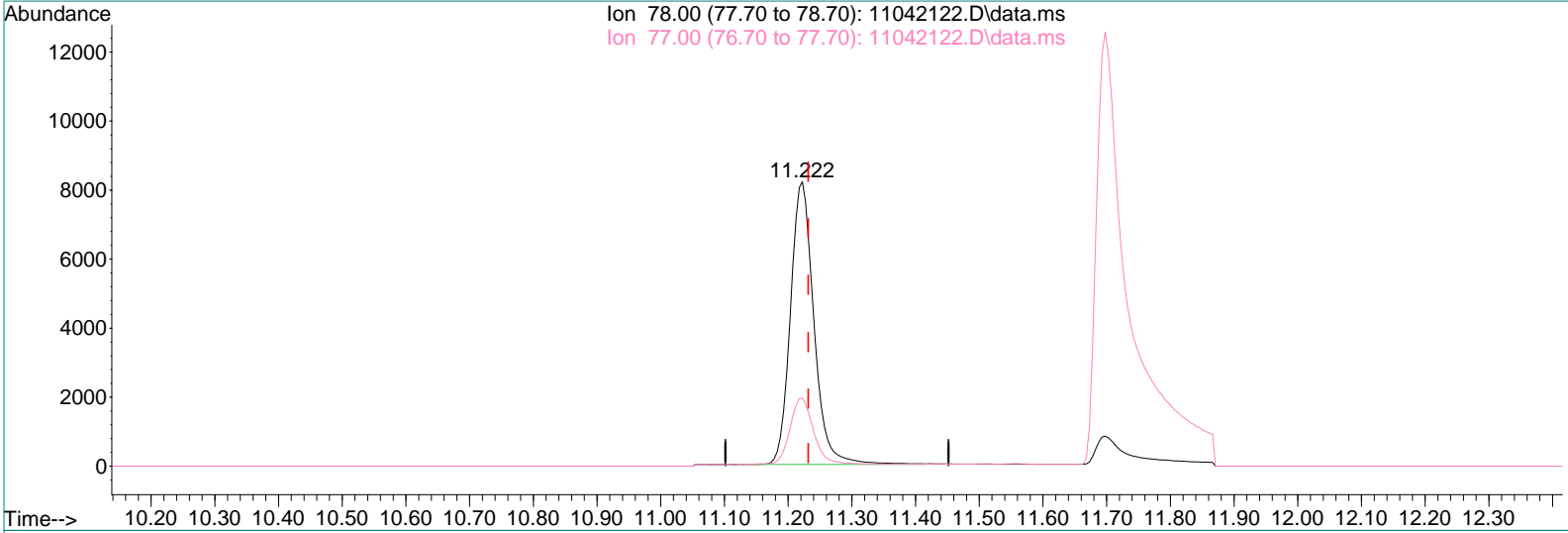
Quant Time: Nov 05 14:44:18 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042122.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 172.66pg

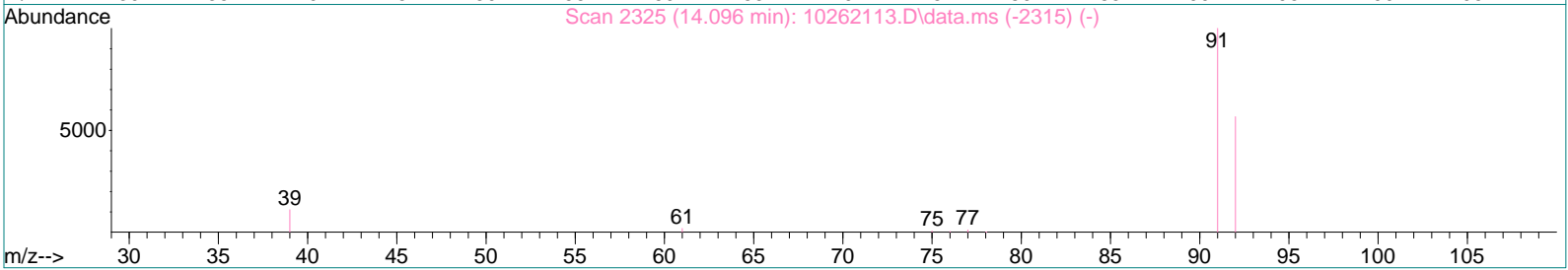
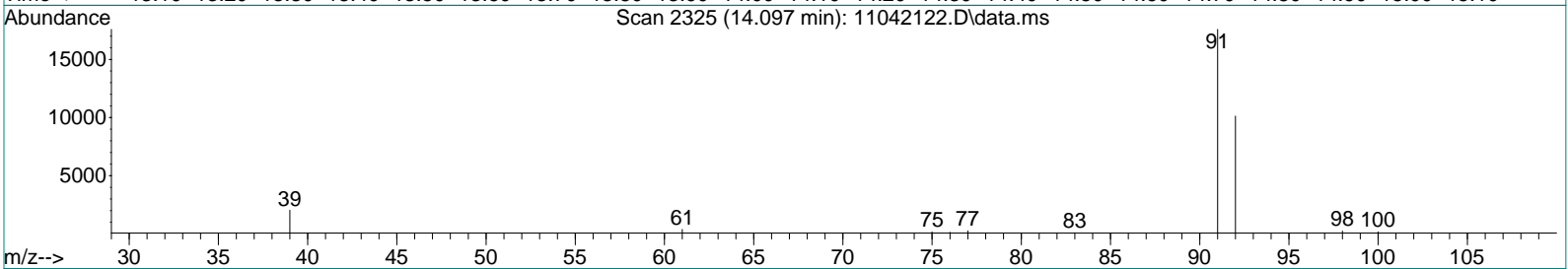
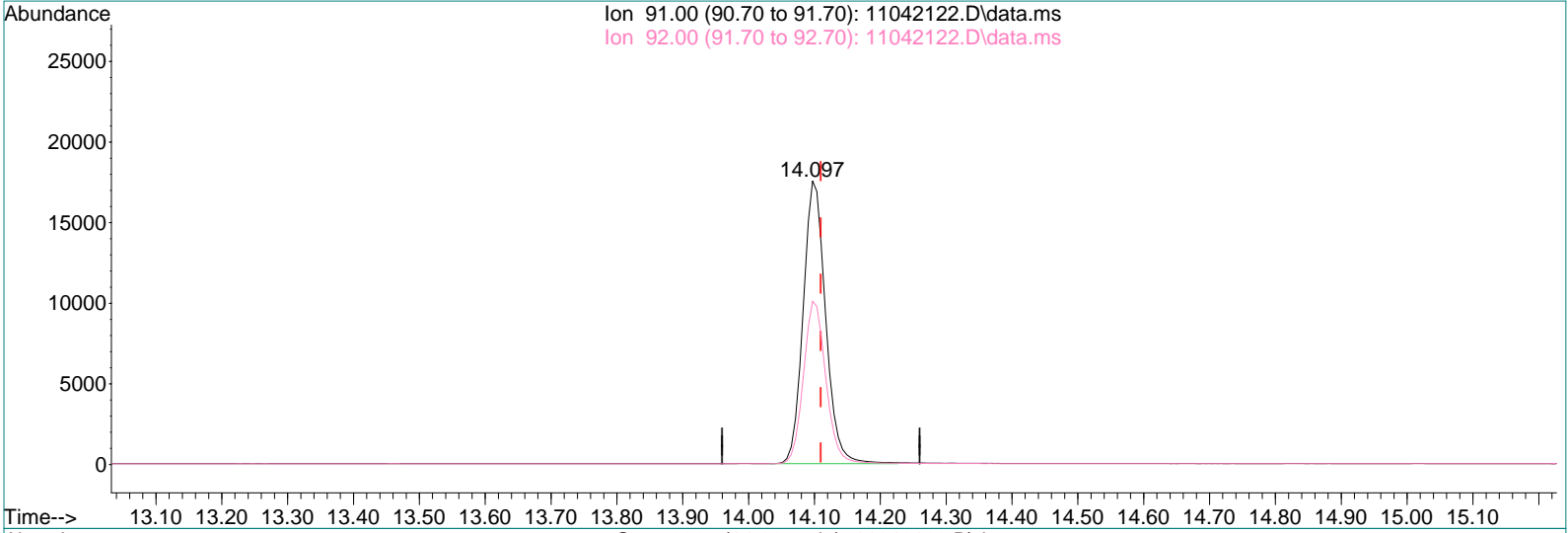
response 20966

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.62
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042122.D\data.ms

(34) Toluene (T)

14.097min (-0.012) 350.97pg

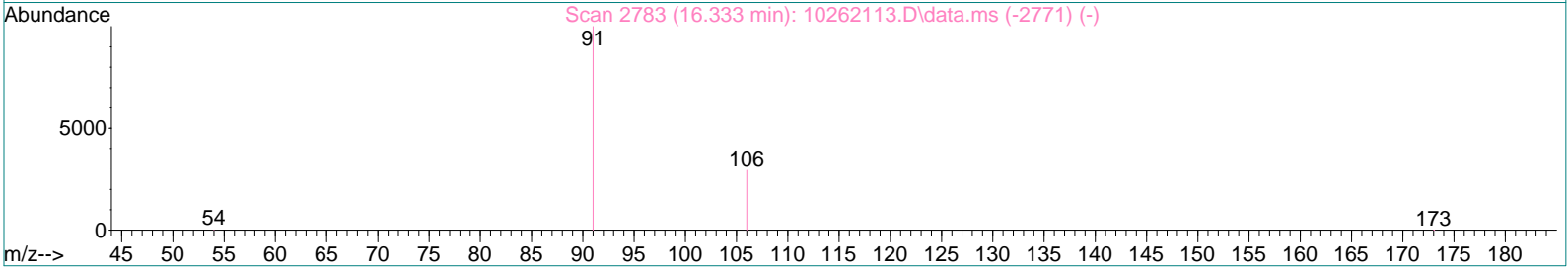
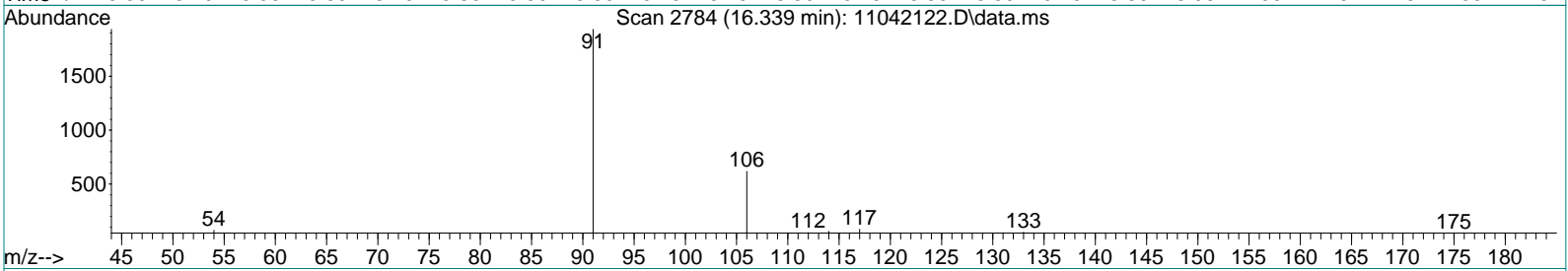
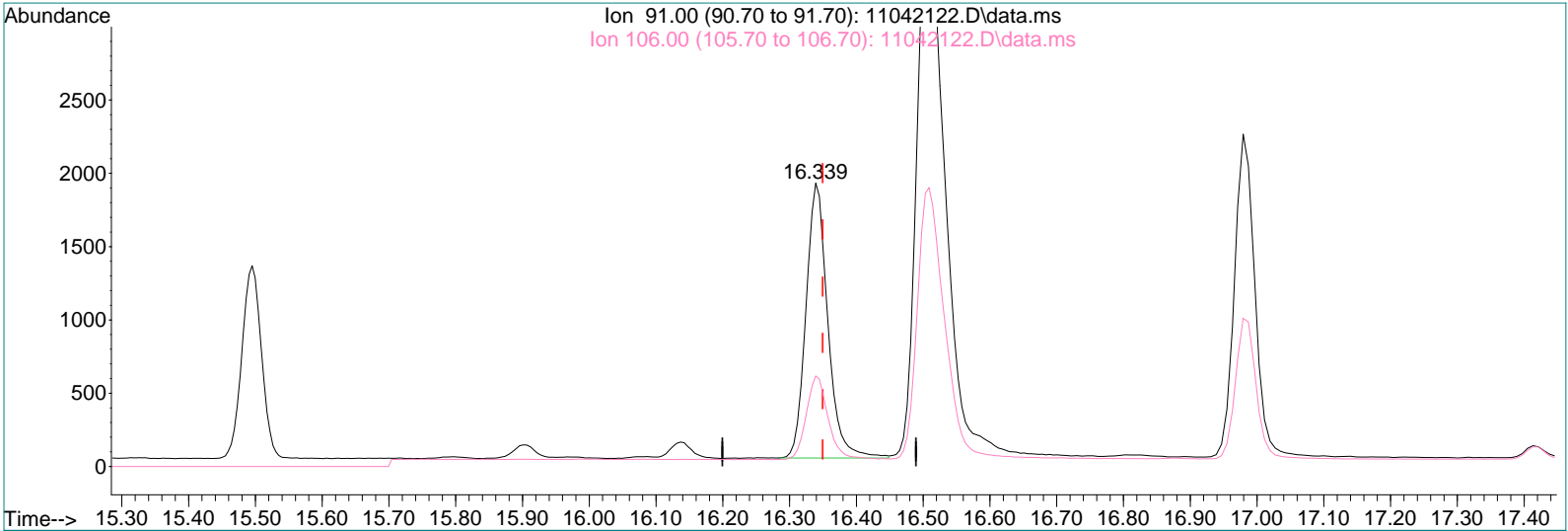
response 41516

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.47
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042122.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.010) 33.86pg

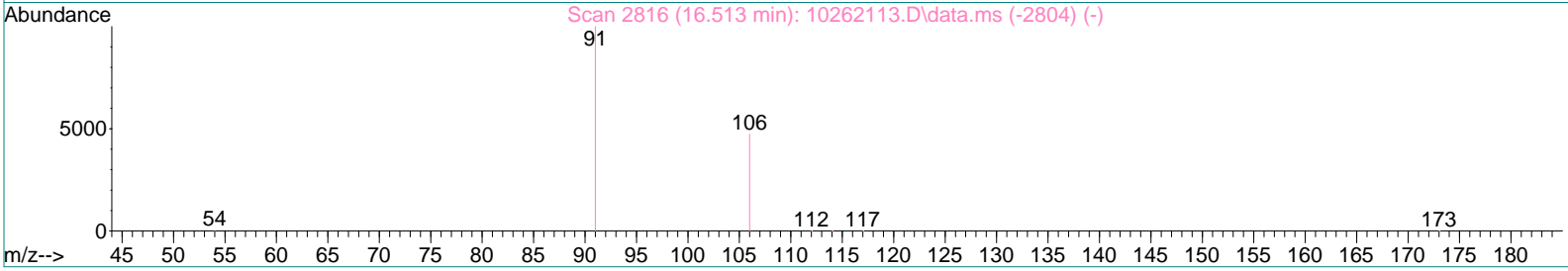
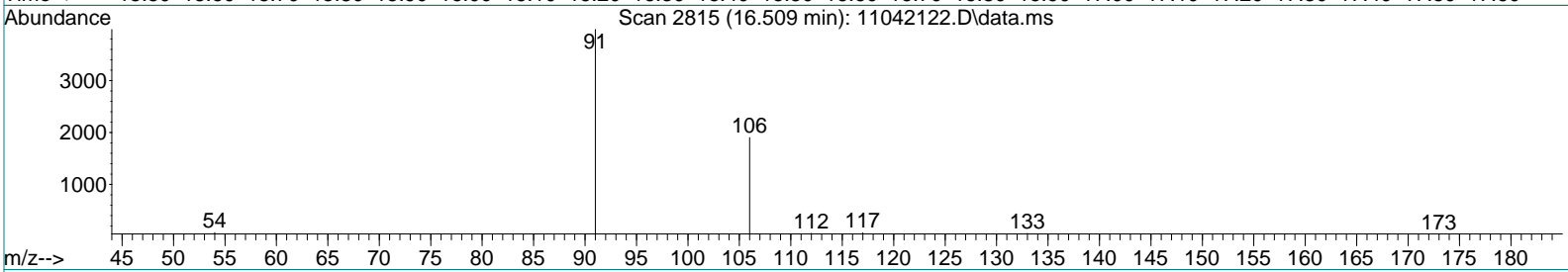
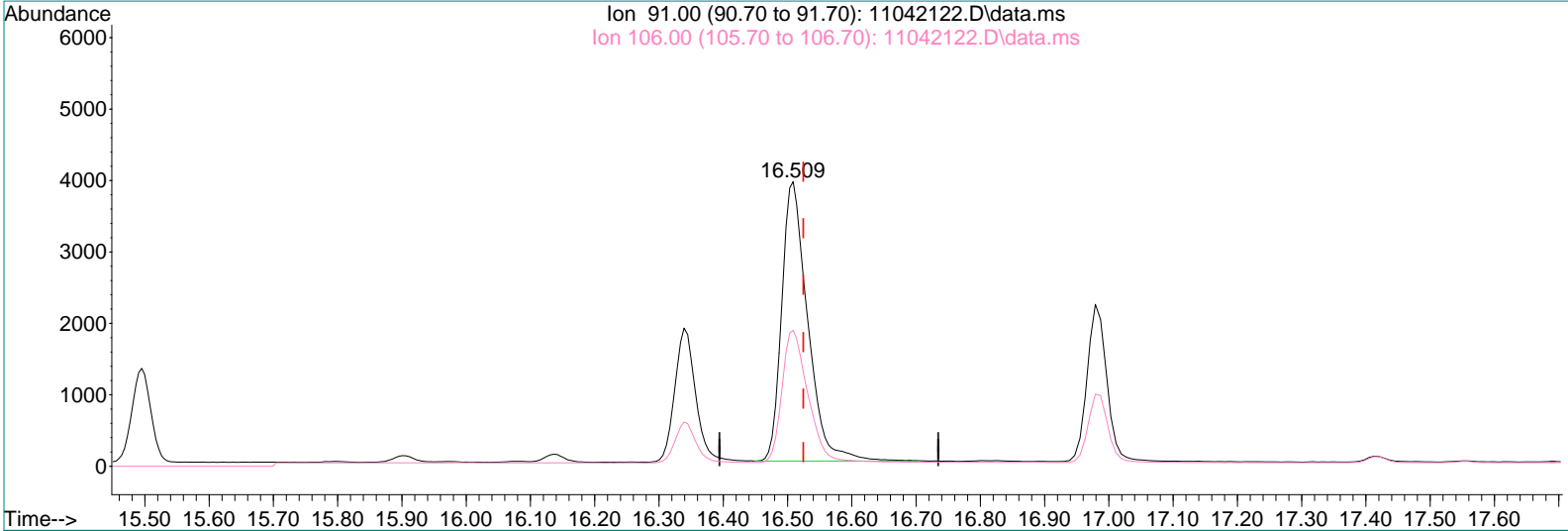
response 4254

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.54
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042122.D\data.ms

(41) m,p-Xylene (T)

16.509min (-0.016) 110.09pg

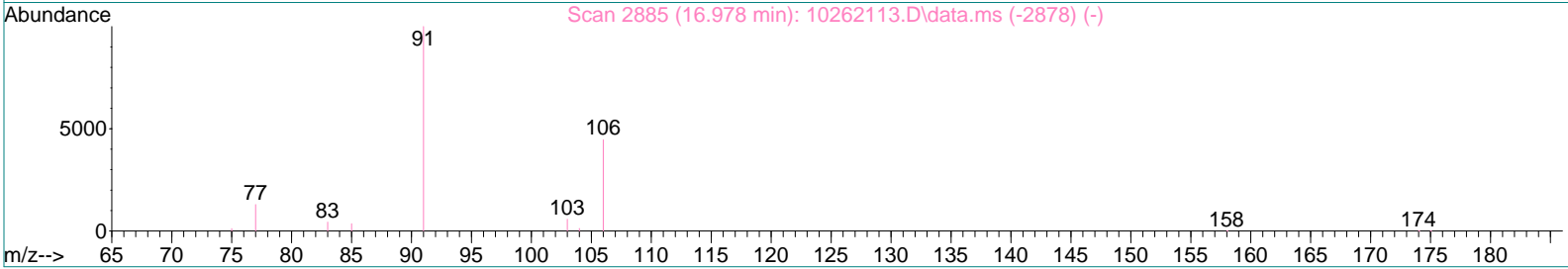
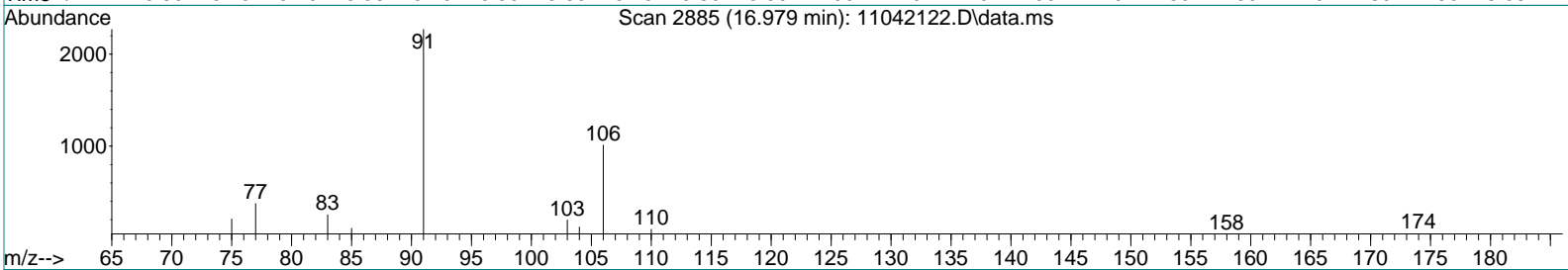
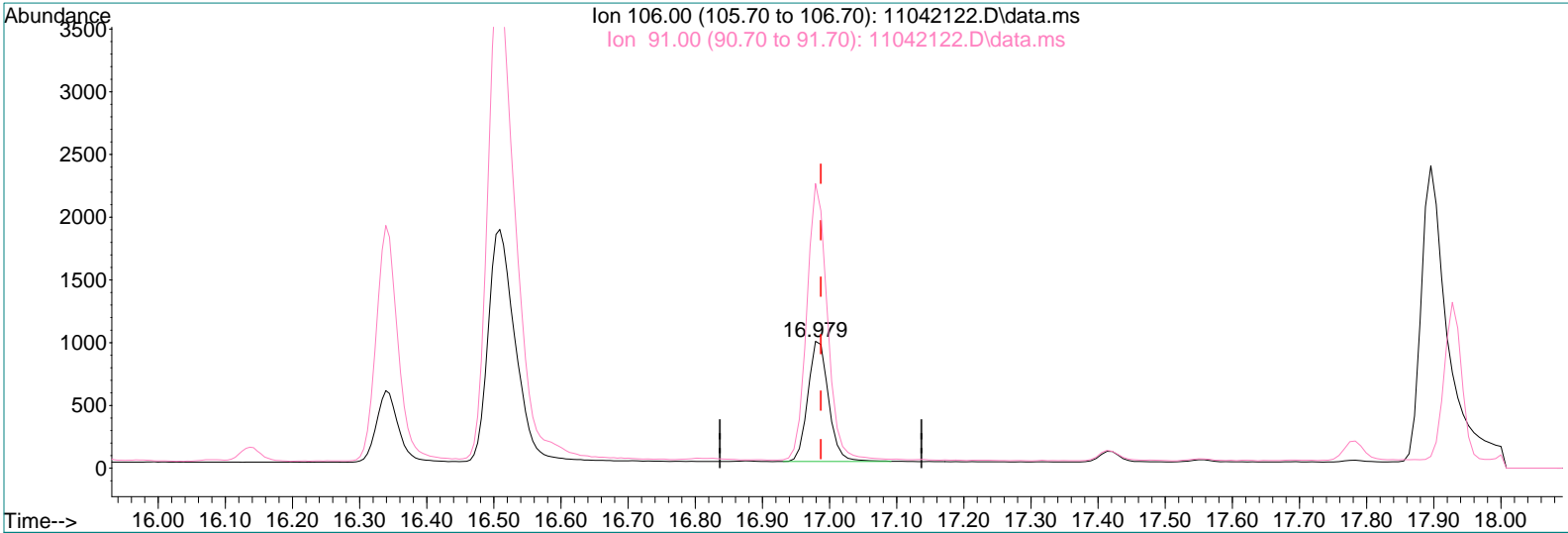
response 10990

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.42
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042122.D
 Acq On : 4 Nov 2021 19:09
 Sample : P2105519-001 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042122.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 41.79pg

response 2055

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	227.88
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 14:45:12 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20664	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	104773	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	22697	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	42210	920.603	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	92.06%
33) Toluene-d8 (SS2)	14.00	98	117733	1005.955	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	100.60%
45) Bromofluorobenzene (SS3)	17.42	174	33507	1100.207	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	110.02%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	96600	1423.750	pg	100
3) Chloromethane	4.54	52	700	44.455	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3899	59.399	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.	d	
7) Bromomethane	5.34	94	327	15.500	pg	100
8) Chloroethane	5.56	64	277	15.555	pg	97
9) Acrolein	6.14	56	2913	216.483	pg	99
10) Acetone	6.26	58	58333	3076.520	pg	92
11) Trichlorofluoromethane	6.46	101	35657	806.197	pg	100
12) 1,1-Dichloroethene	7.19	96	121	N.D.		
13) Methylene Chloride	7.33	84	6951	234.306	pg	97
14) Trichlorotrifluoroethane	7.65	151	7936	379.085	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	210	N.D.		
17) Methyl tert-Butyl Ether	8.67	73	272	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	5025	95.918	pg	100
21) 1,2-Dichloroethane	10.50	62	1245	30.056	pg	99
22) 1,1,1-Trichloroethane	10.76	97	215	N.D.		
23) Benzene	11.22	78	21513	178.088	pg	100
24) Carbon Tetrachloride	11.37	117	11354	321.289	pg	99
26) 1,2-Dichloropropane	12.03	63	321	10.310	pg	99
27) Bromodichloromethane	12.22	83	376	N.D.		
28) Trichloroethene	12.27	130	270	10.056	pg	97
29) 1,4-Dioxane	12.27	88	429	18.348	pg	82
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	125	N.D.		
34) Toluene	14.10	91	71363	606.380	pg	99
35) Dibromochloromethane	14.52	129	131	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	729	30.248	pg	95
39) Chlorobenzene	15.96	112	242	N.D.		
40) Ethylbenzene	16.34	91	5253	42.417	pg	99
41) m,p-Xylene	16.51	91	12914	131.231	pg	100
42) Styrene	16.87	104	5527	78.791	pg	100
43) o-Xylene	16.98	106	2652	54.716	pg	99
44) 1,1,2,2-Tetrachloroethane	16.98	83	127	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	1666	14.917	pg	95
47) 1,2,4-Trimethylbenzene	18.65	105	5029	43.484	pg	89
48) 1,3-Dichlorobenzene	18.80	146	120	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	226	N.D.		
50) 1,2-Dichlorobenzene	19.19	146	96	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.82	182	142	N.D.		
53) Naphthalene	20.94	128	854	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:45:12 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

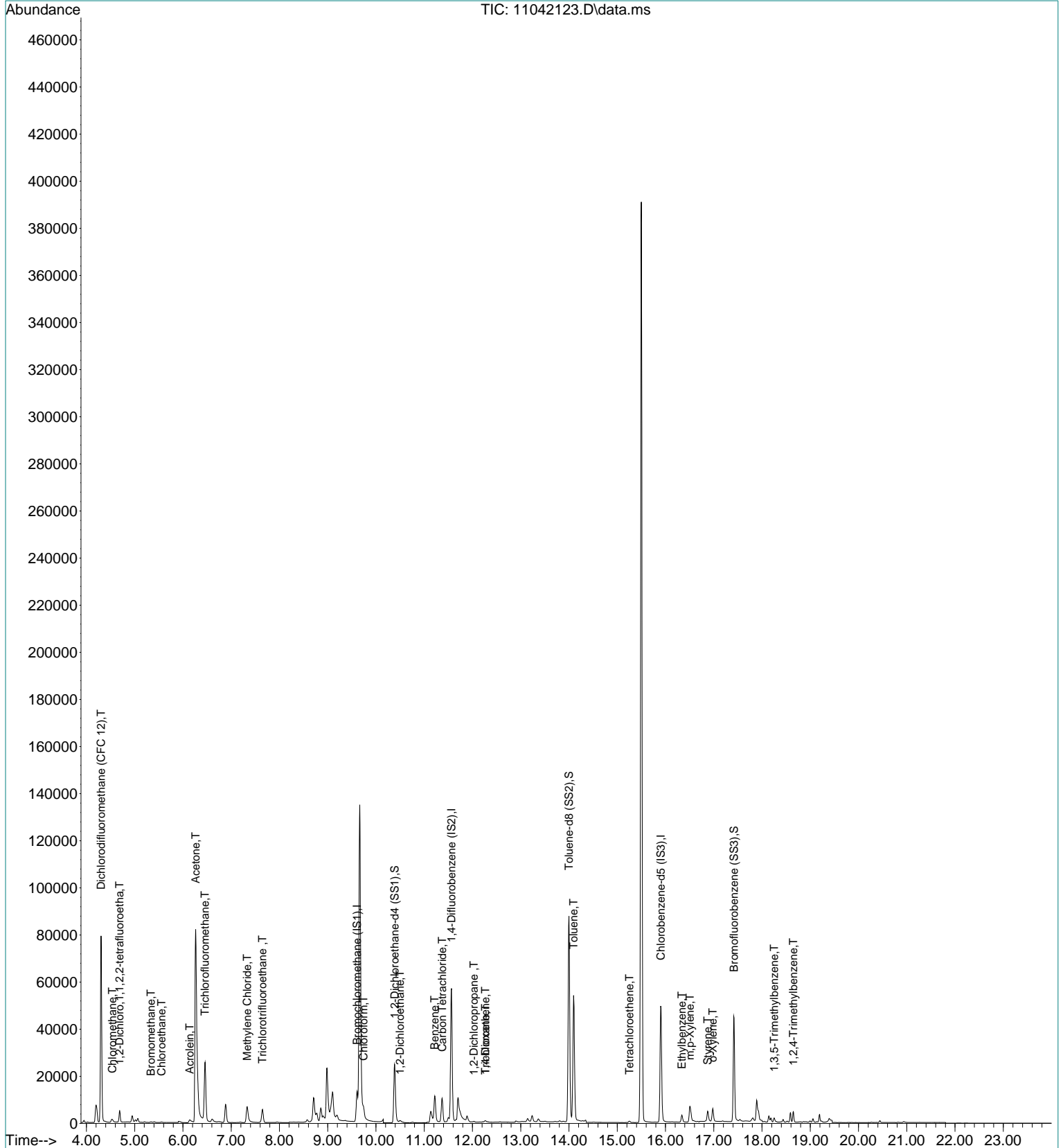
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

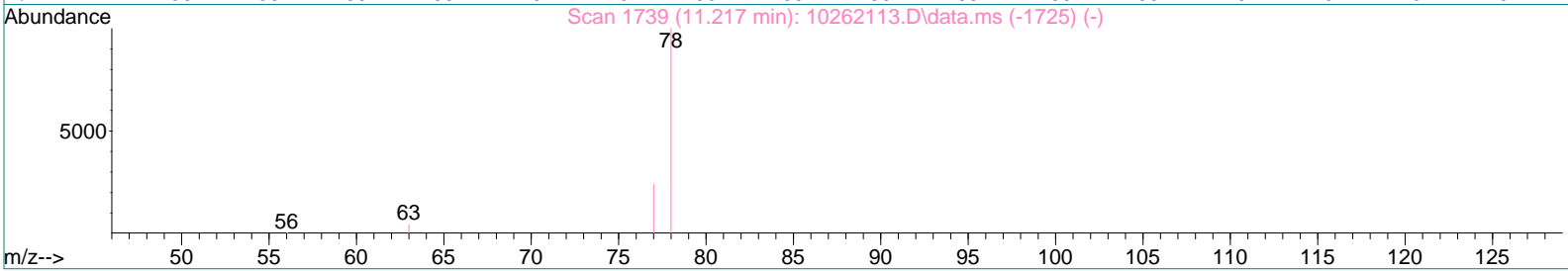
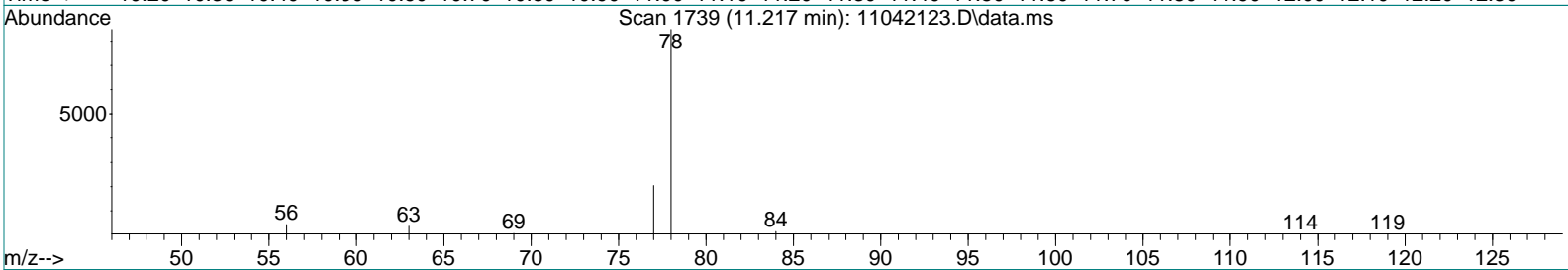
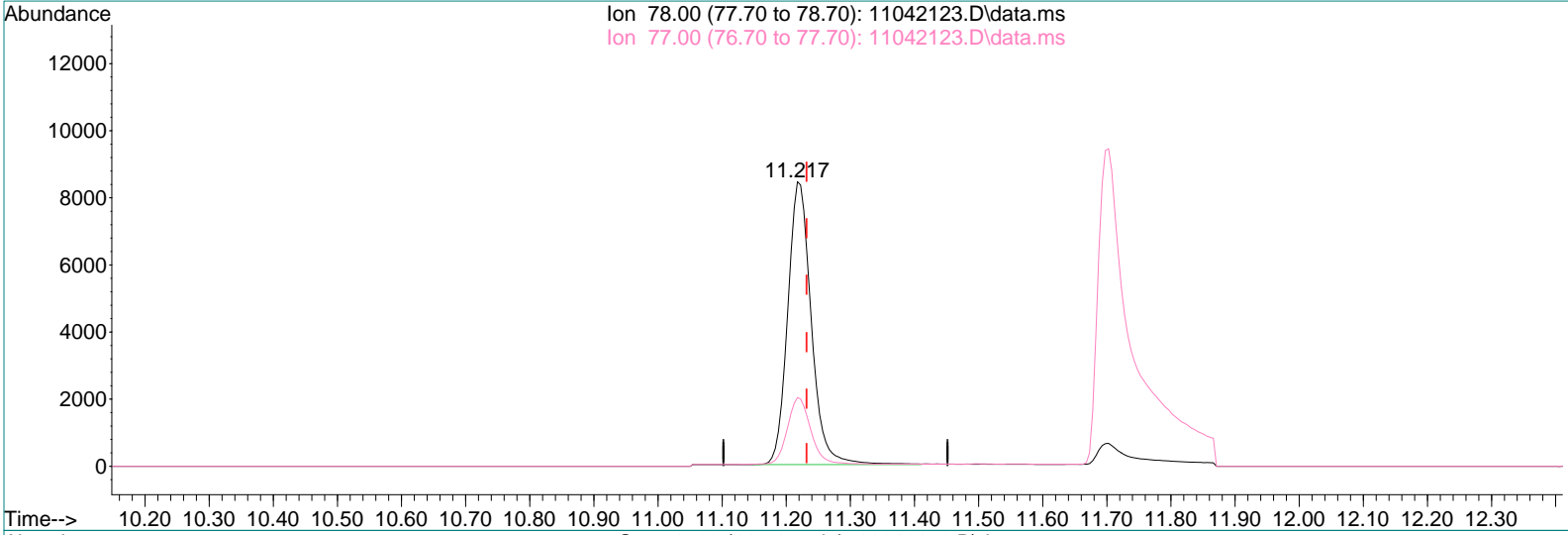
Quant Time: Nov 05 14:45:12 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042123.D\data.ms

(23) Benzene (T)

11.217min (-0.014) 178.09pg

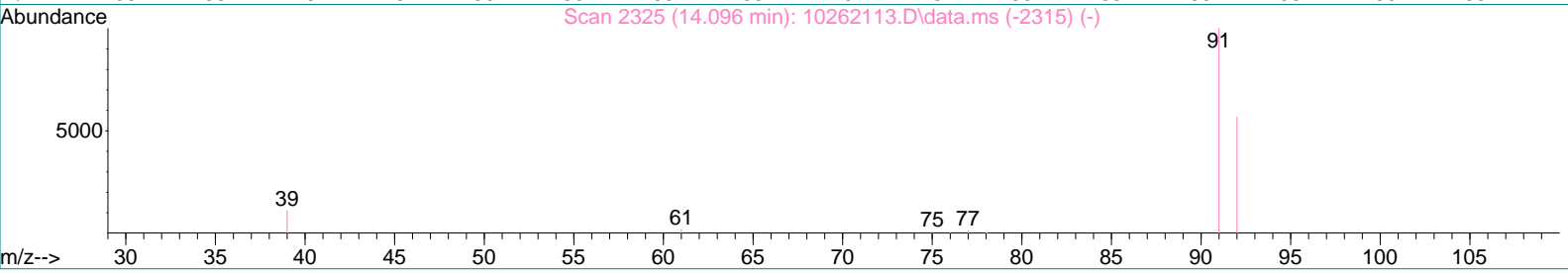
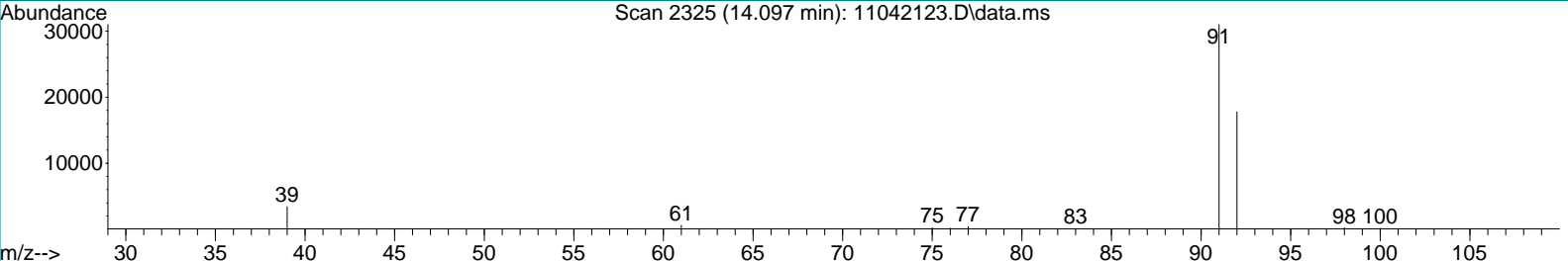
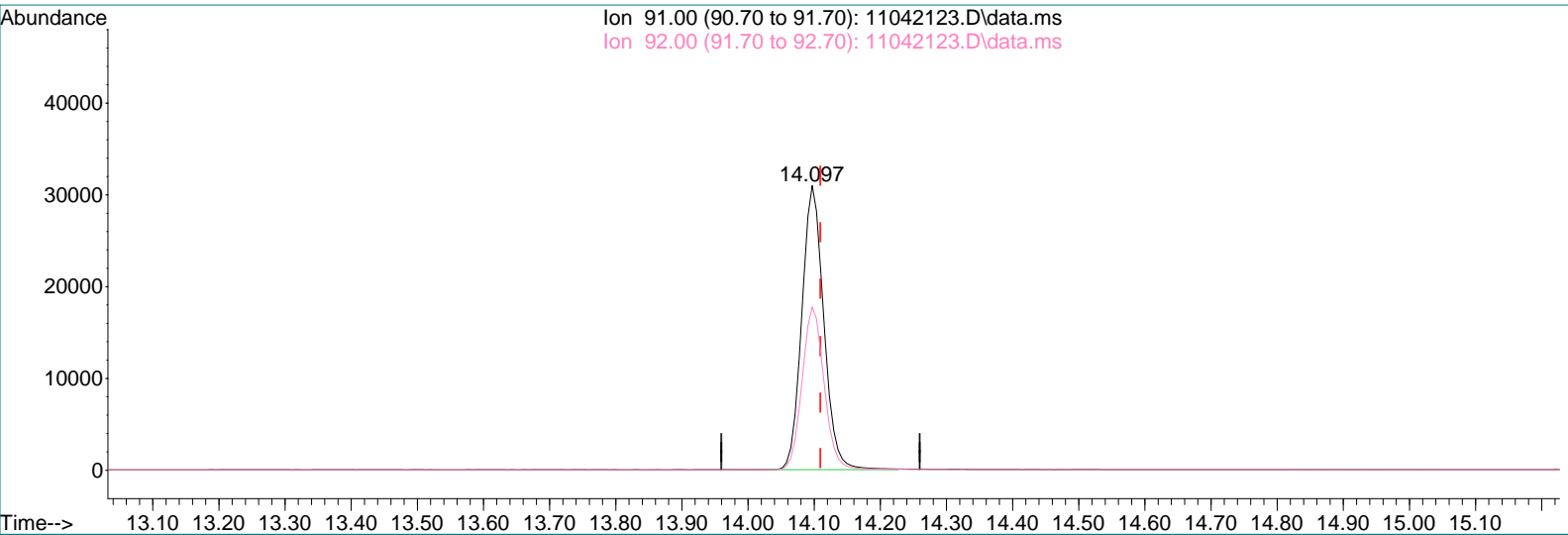
response 21513

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.66
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042123.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 606.38pg

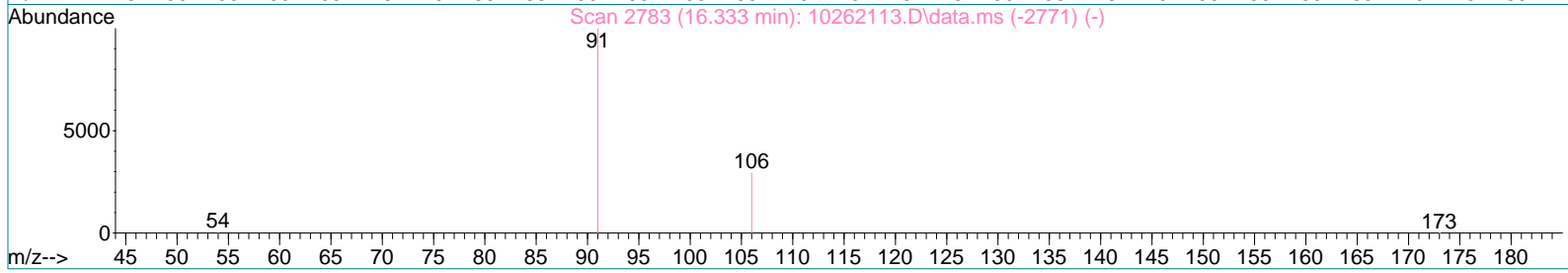
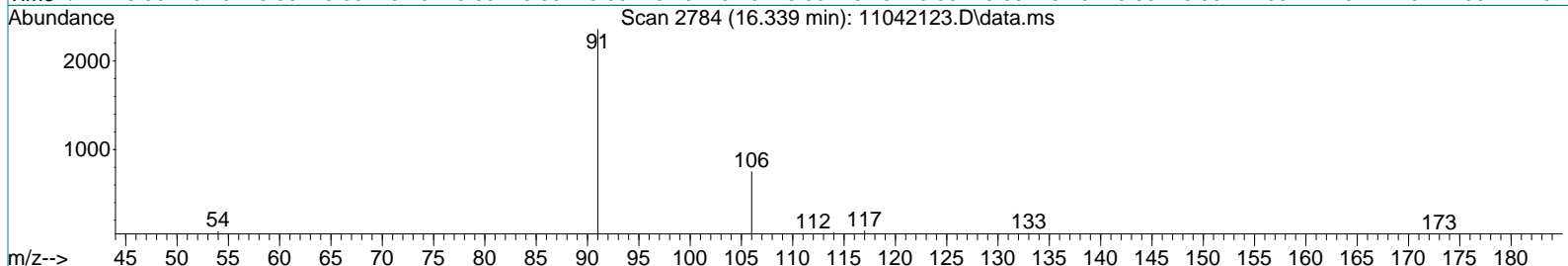
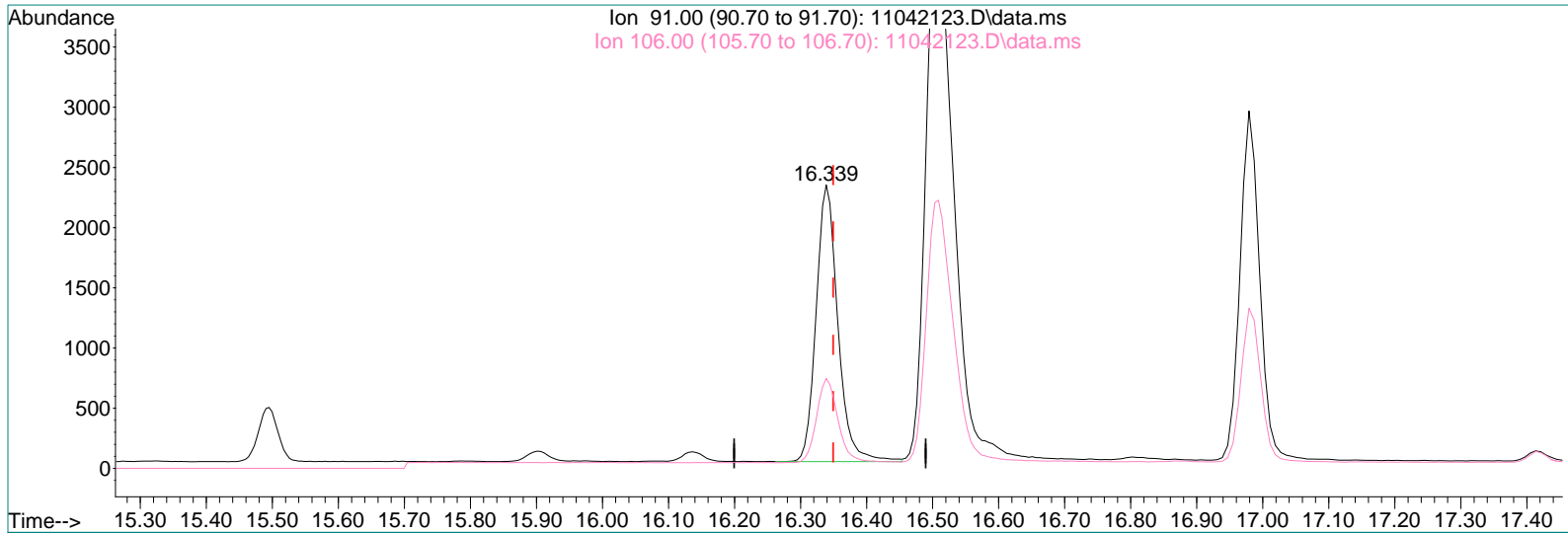
response 71363

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.56
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042123.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 42.42pg

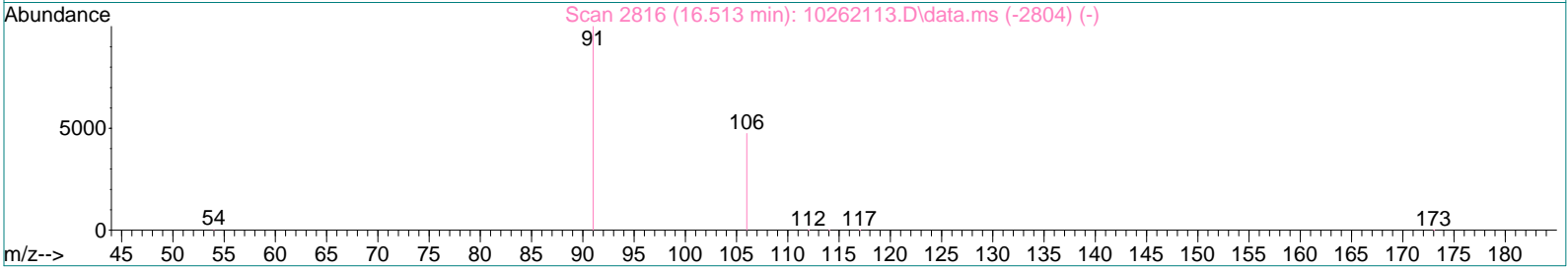
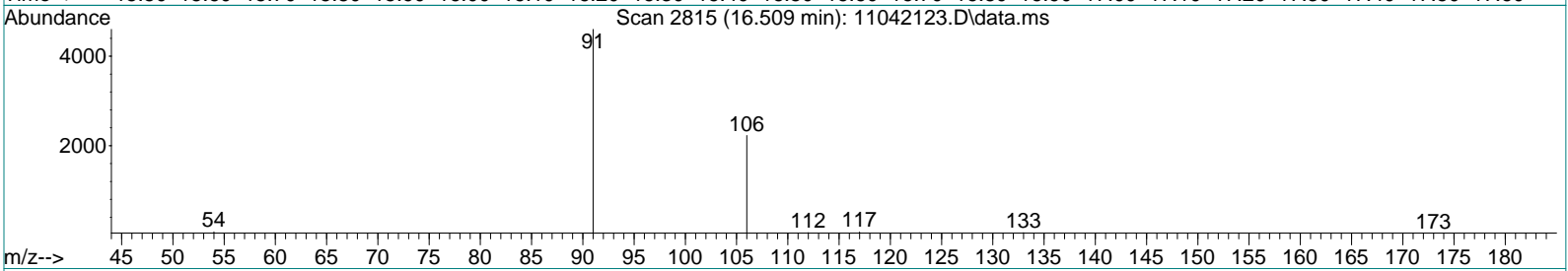
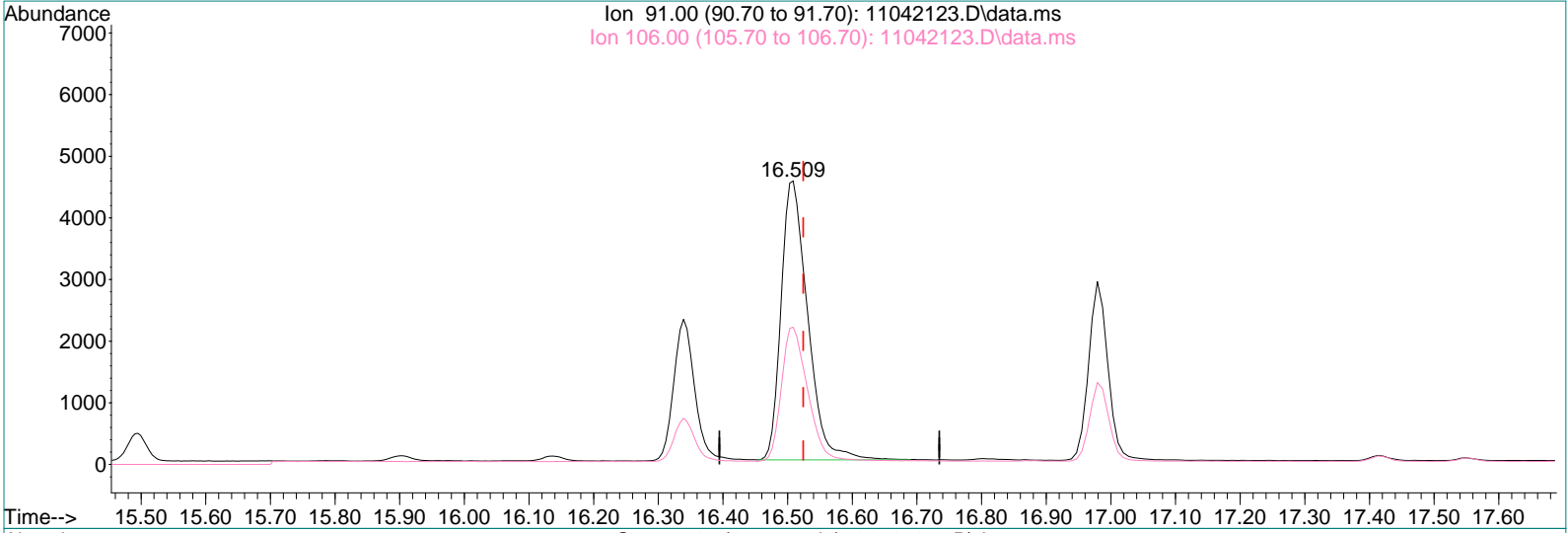
response 5253

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	29.98
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042123.D\data.ms

(41) m,p-Xylene (T)

16.509min (-0.016) 131.23pg

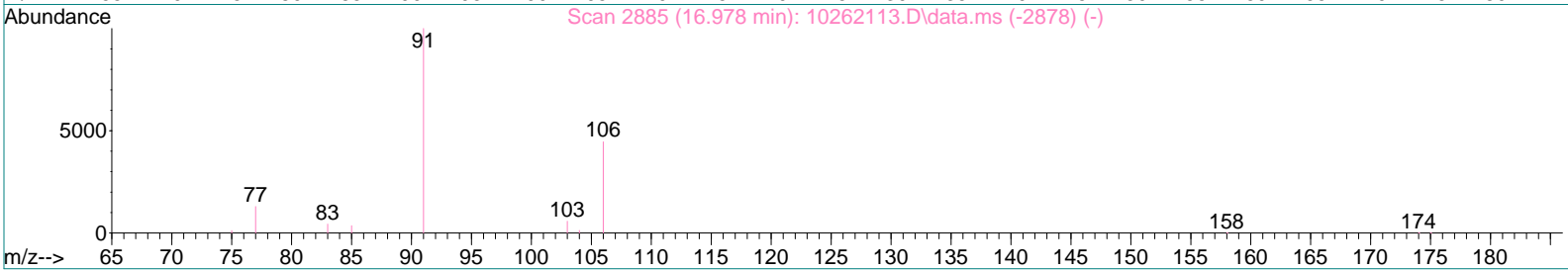
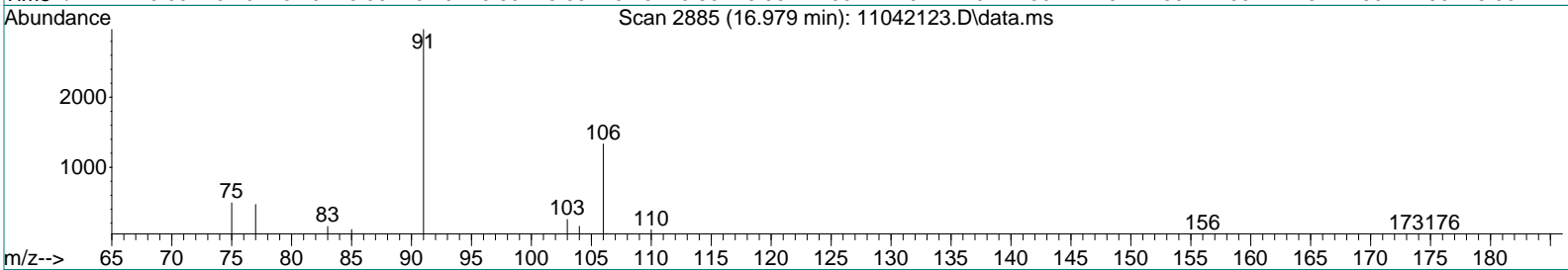
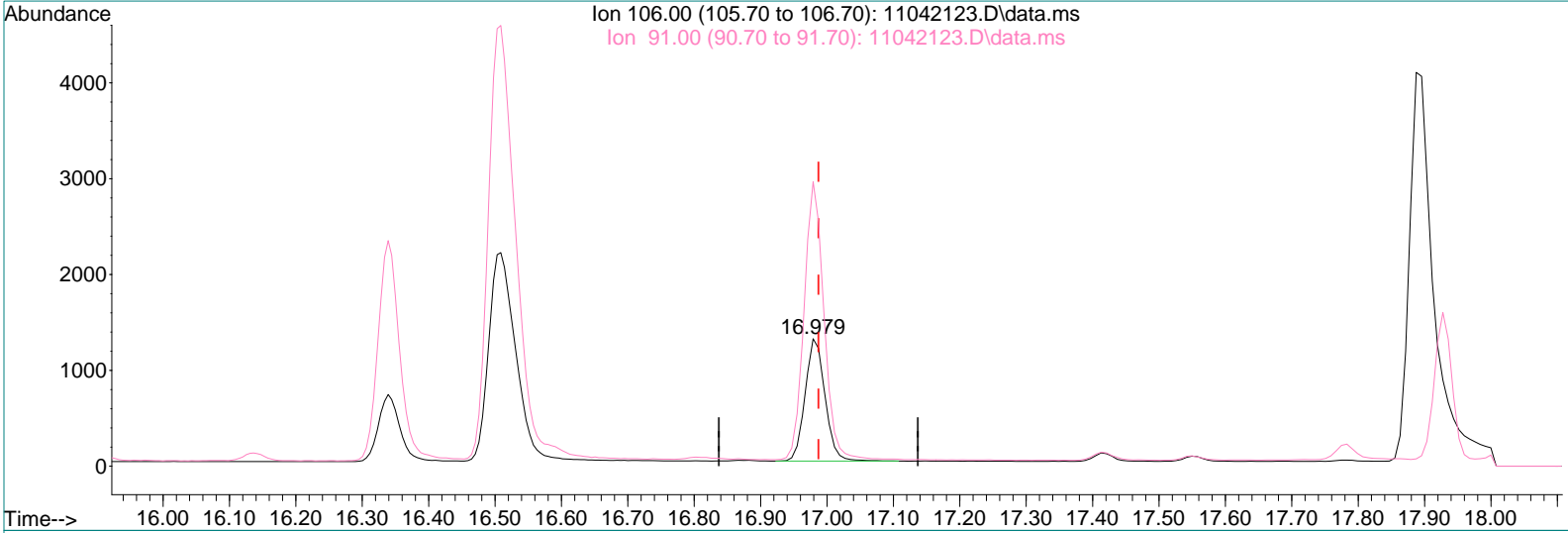
response 12914

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.62
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042123.D
 Acq On : 4 Nov 2021 19:41
 Sample : P2105519-002 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042123.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 54.72pg

response 2652

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	226.02
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	20378	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	103811	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	23045	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	41598	919.988	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	92.00%	
33) Toluene-d8 (SS2)	14.00	98	117442	1012.767	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	101.28%	
45) Bromofluorobenzene (SS3)	17.42	174	34201	1106.036	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	110.60%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	95383	1425.544	pg	100
3) Chloromethane	4.53	52	651	41.923	pg	# 86
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	3830	59.167	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.06	54	58	N.D.		
7) Bromomethane	5.32	94	338	16.247	pg	100
8) Chloroethane	5.55	64	198	11.275	pg	96
9) Acrolein	6.14	56	1966	148.156	pg	100
10) Acetone	6.27	58	42643	2280.584	pg	# 88
11) Trichlorofluoromethane	6.45	101	34990	802.220	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	5001	170.941	pg	97
14) Trichlorotrifluoroethane	7.65	151	7748	375.299	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	264	N.D.		
17) Methyl tert-Butyl Ether	8.68	73	231	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4846	93.799	pg	100
21) 1,2-Dichloroethane	10.50	62	1193	29.205	pg	100
22) 1,1,1-Trichloroethane	10.76	97	204	N.D.		
23) Benzene	11.22	78	19004	159.526	pg	99
24) Carbon Tetrachloride	11.37	117	11290	323.962	pg	99
26) 1,2-Dichloropropane	12.03	63	277	N.D.		
27) Bromodichloromethane	12.22	83	313	N.D.		
28) Trichloroethene	12.27	130	202	N.D.		
29) 1,4-Dioxane	12.25	88	1611	69.540	pg	88
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	76	N.D.		
34) Toluene	14.10	91	27879	239.086	pg	99
35) Dibromochloromethane	14.51	129	128	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	5646	236.435	pg	96
39) Chlorobenzene	15.95	112	415	N.D.		
40) Ethylbenzene	16.34	91	4483	35.652	pg	99
41) m,p-Xylene	16.50	91	13253	132.643	pg	99
42) Styrene	16.87	104	3758	52.764	pg	100
43) o-Xylene	16.98	106	2335	47.448	pg	96
44) 1,1,2,2-Tetrachloroethane	16.98	83	91	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	2840	25.044	pg	100
47) 1,2,4-Trimethylbenzene	18.65	105	6975	59.400	pg	94
48) 1,3-Dichlorobenzene	18.80	146	86	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	1653	29.392	pg	100
50) 1,2-Dichlorobenzene	19.18	146	86	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.81	182	159	N.D.		
53) Naphthalene	20.93	128	11856	100.252	pg	92

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

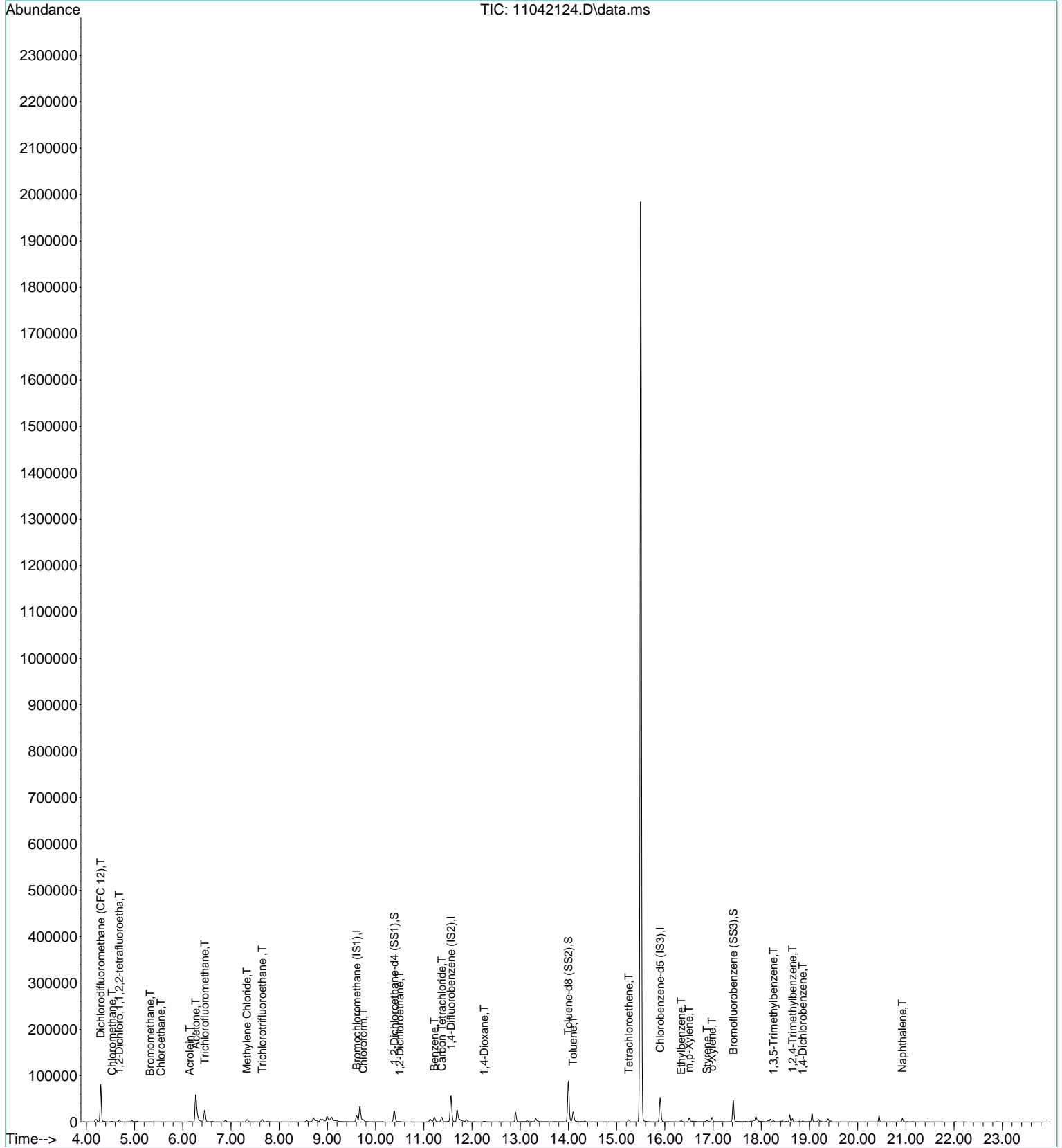
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042124.D
Acq On : 4 Nov 2021 20:12
Sample : P2105519-003 (1000mL)
Misc : S34-10062101

Vial: 6
Operator: TZ
Inst : MS19

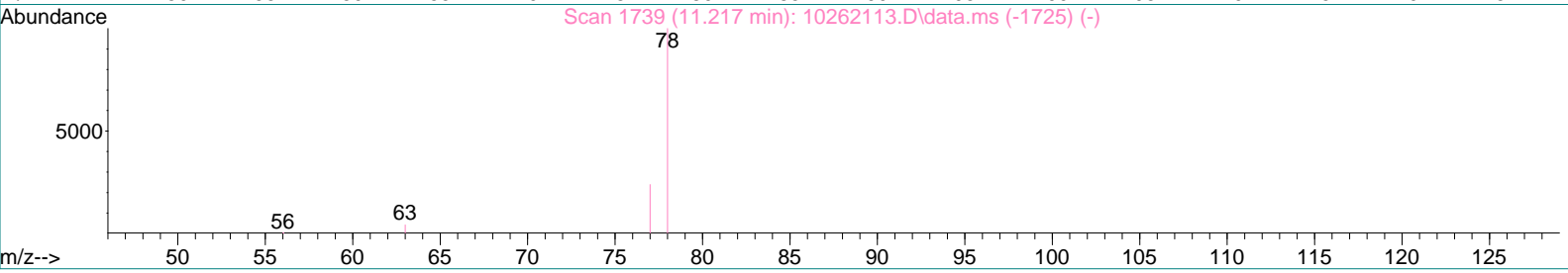
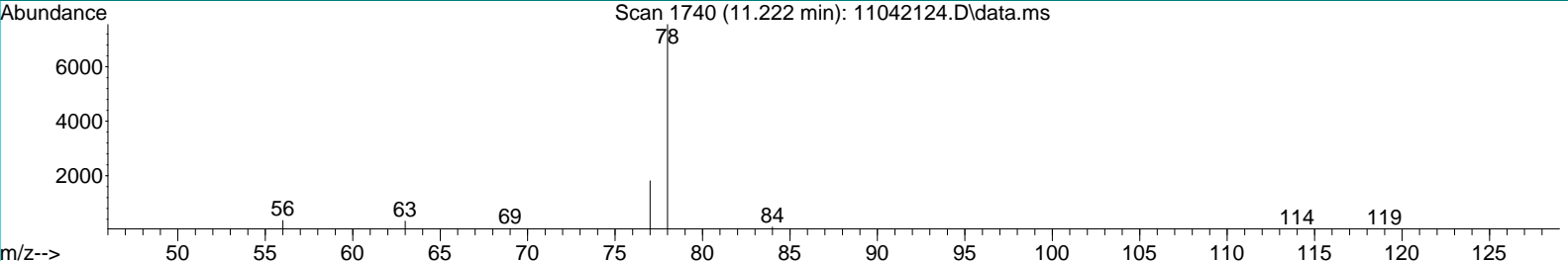
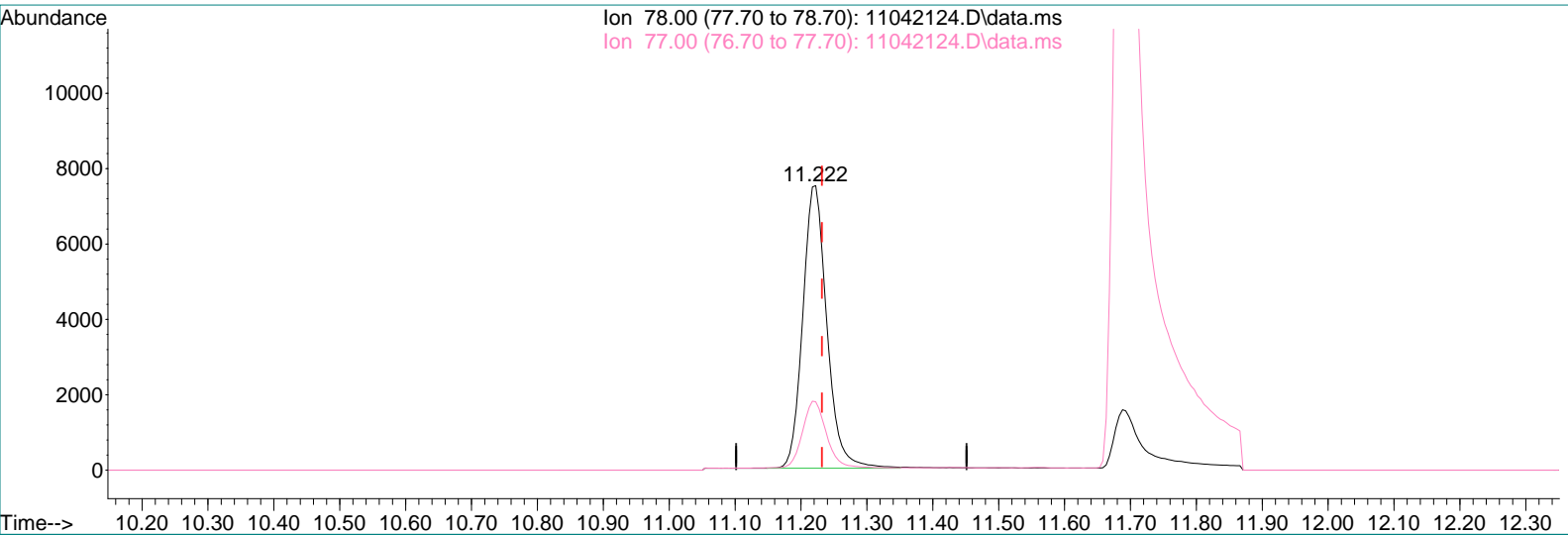
Quant Time: Nov 05 07:42:42 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 159.53pg

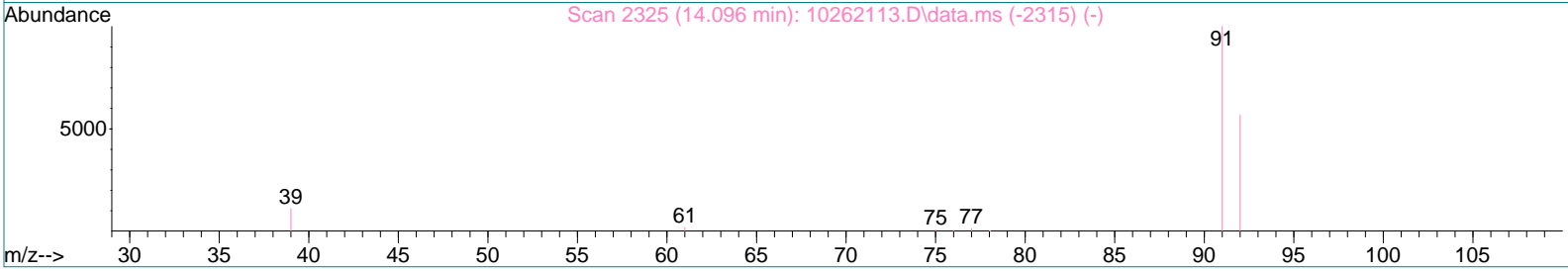
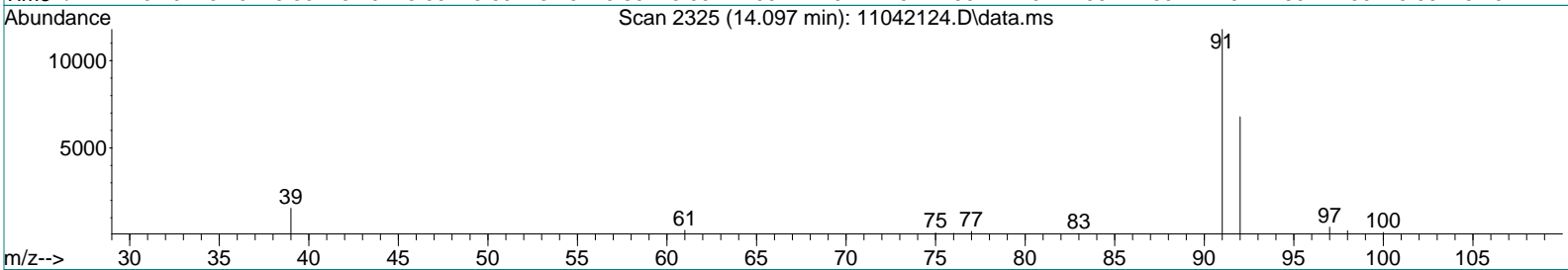
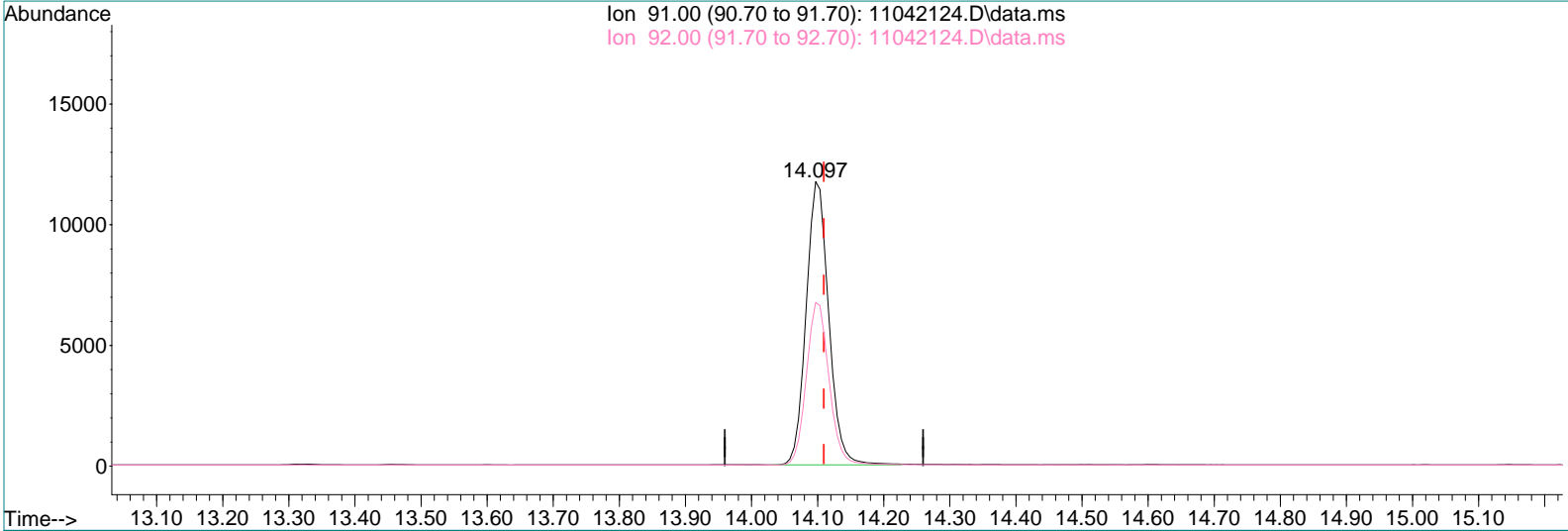
response 19004

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.24
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 239.09pg

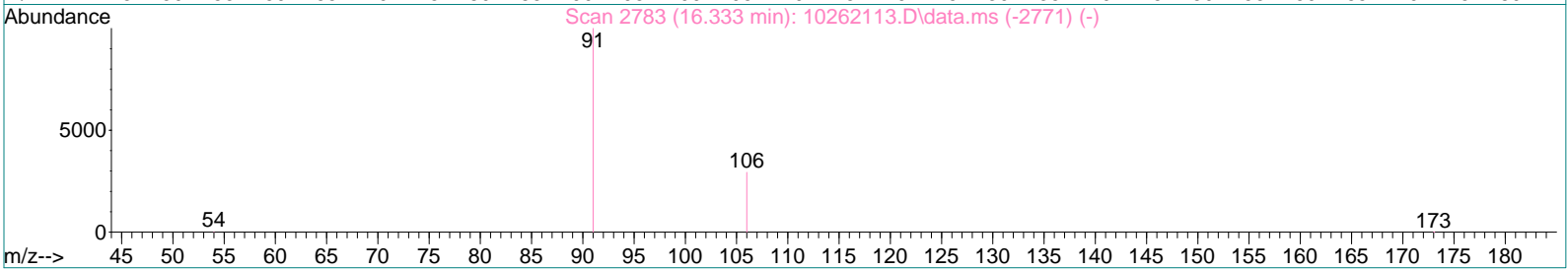
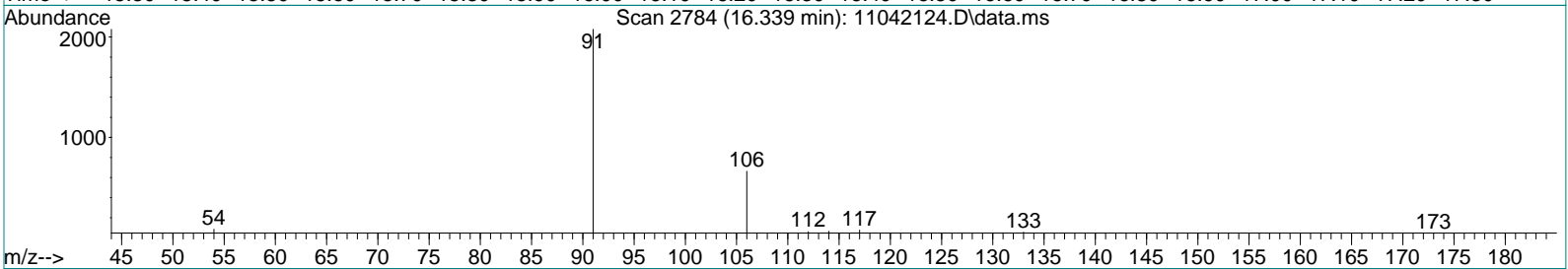
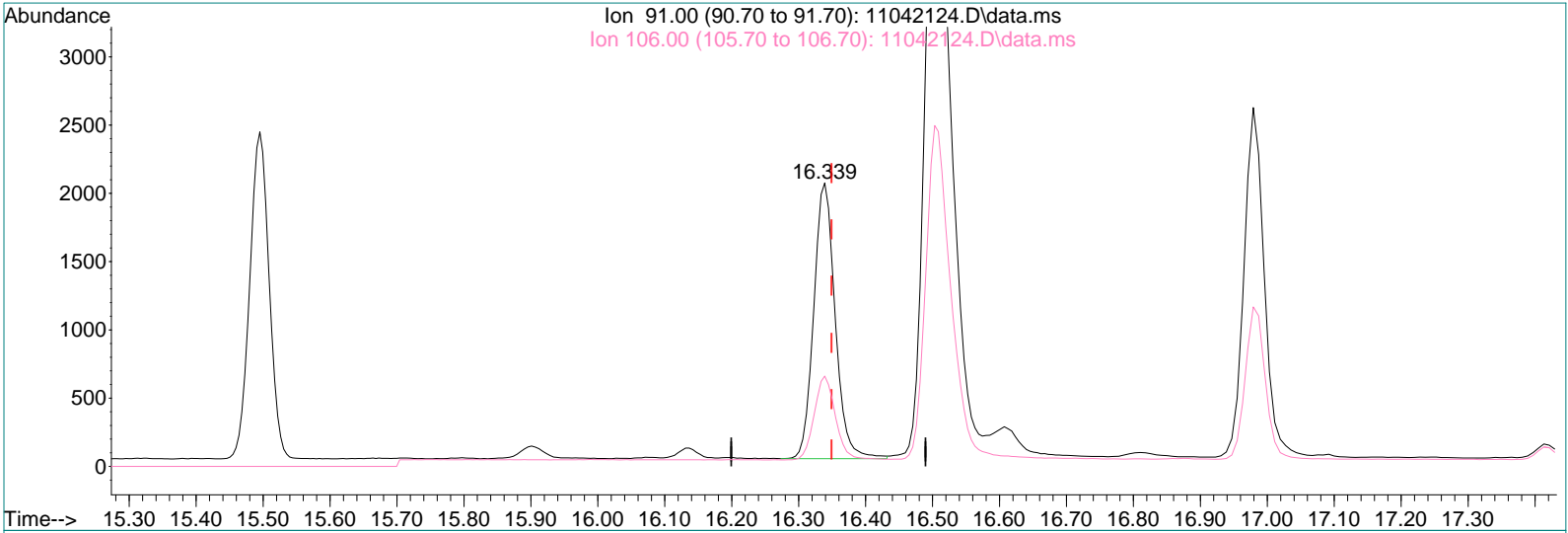
response 27879

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.59
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.010) 35.65pg

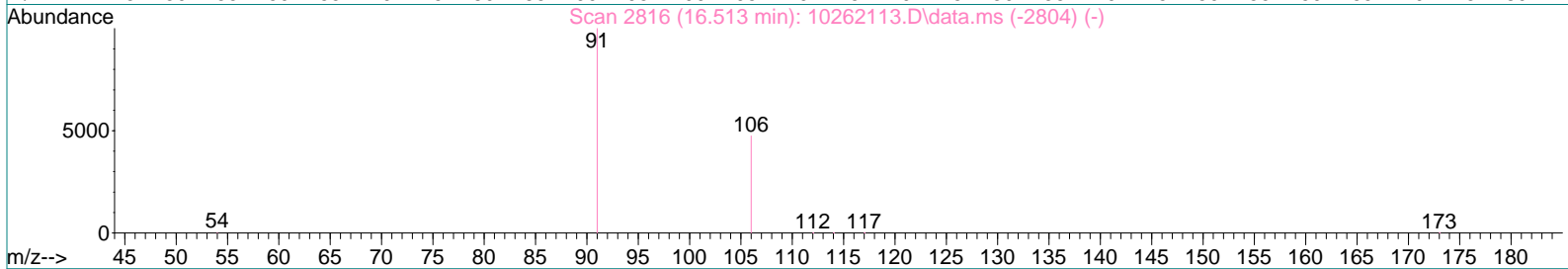
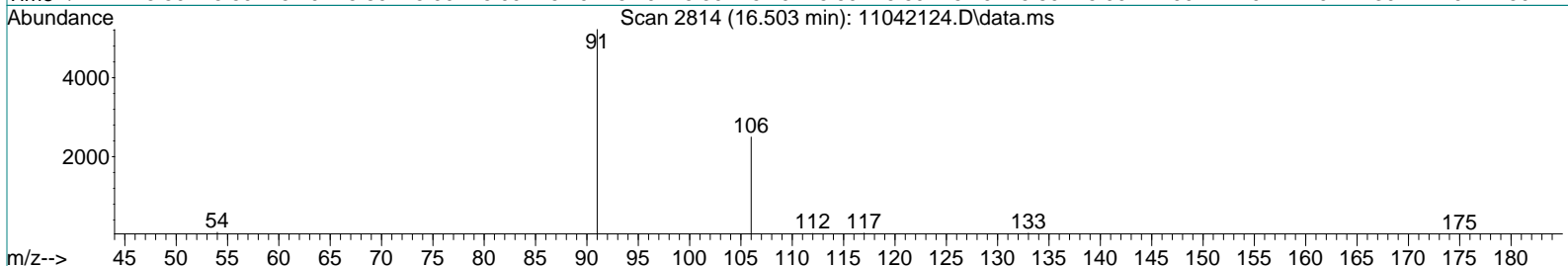
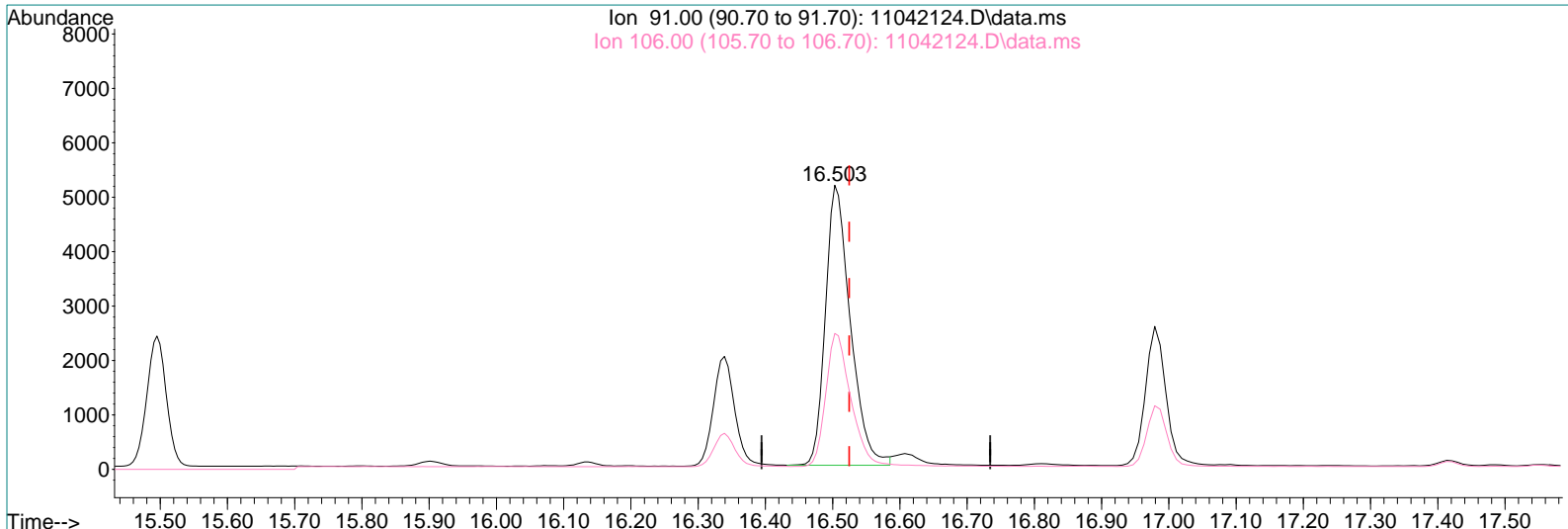
response 4483

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.25
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.021) 132.64pg

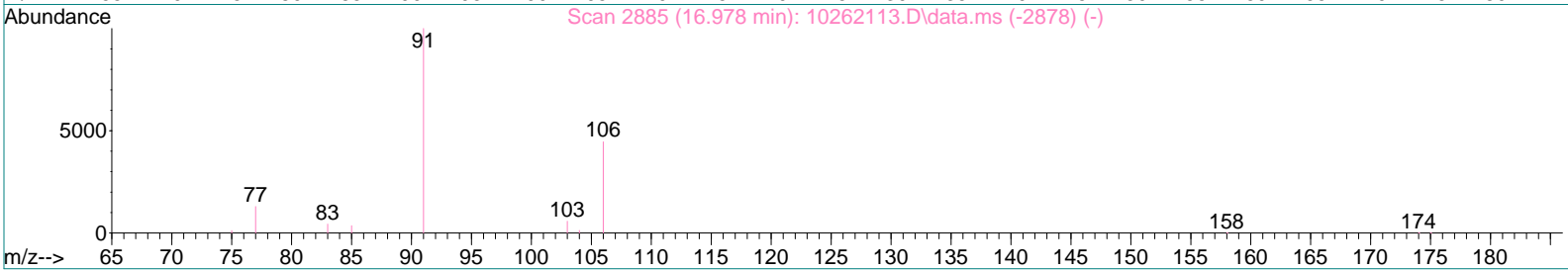
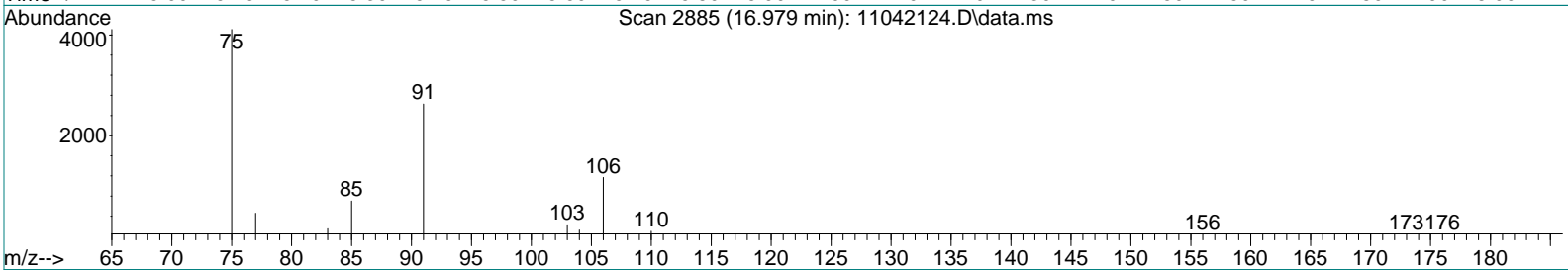
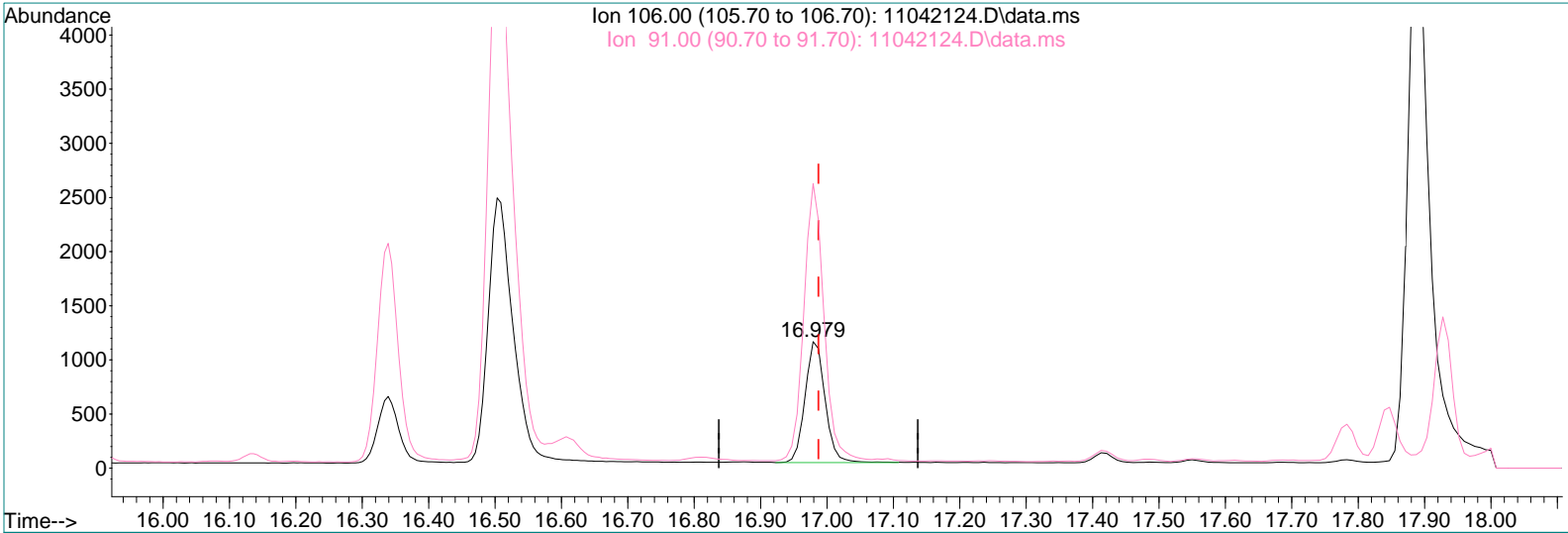
response 13253

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	48.06
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 47.45pg

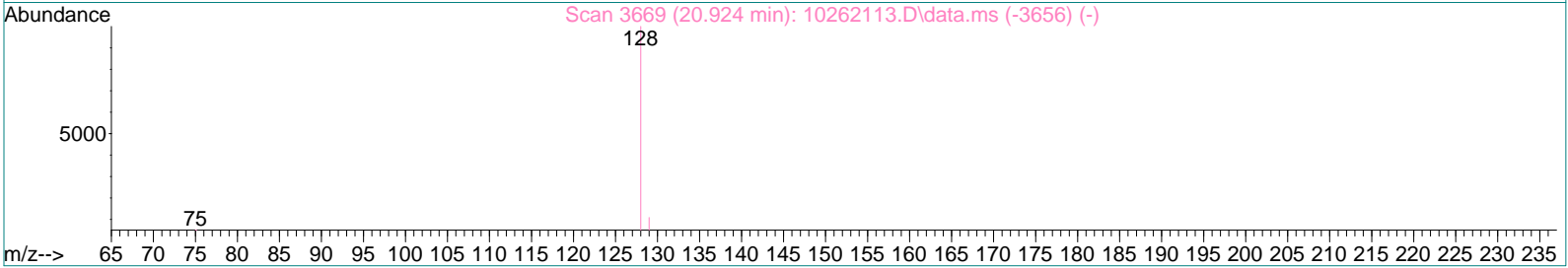
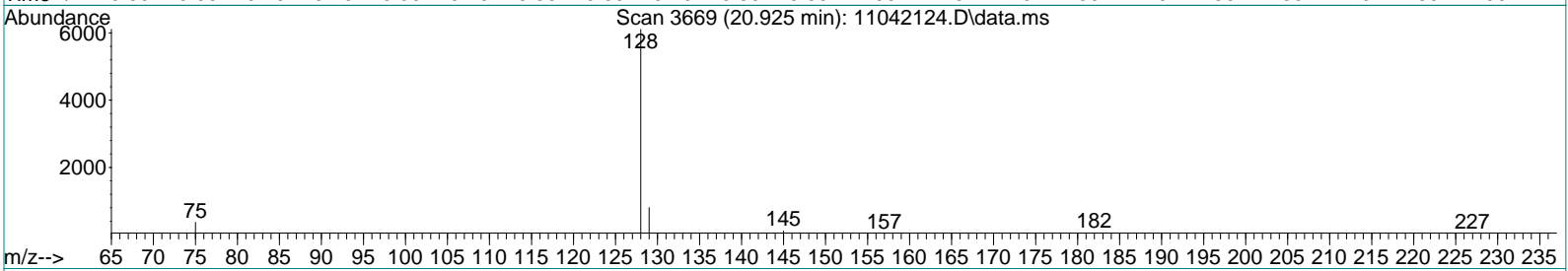
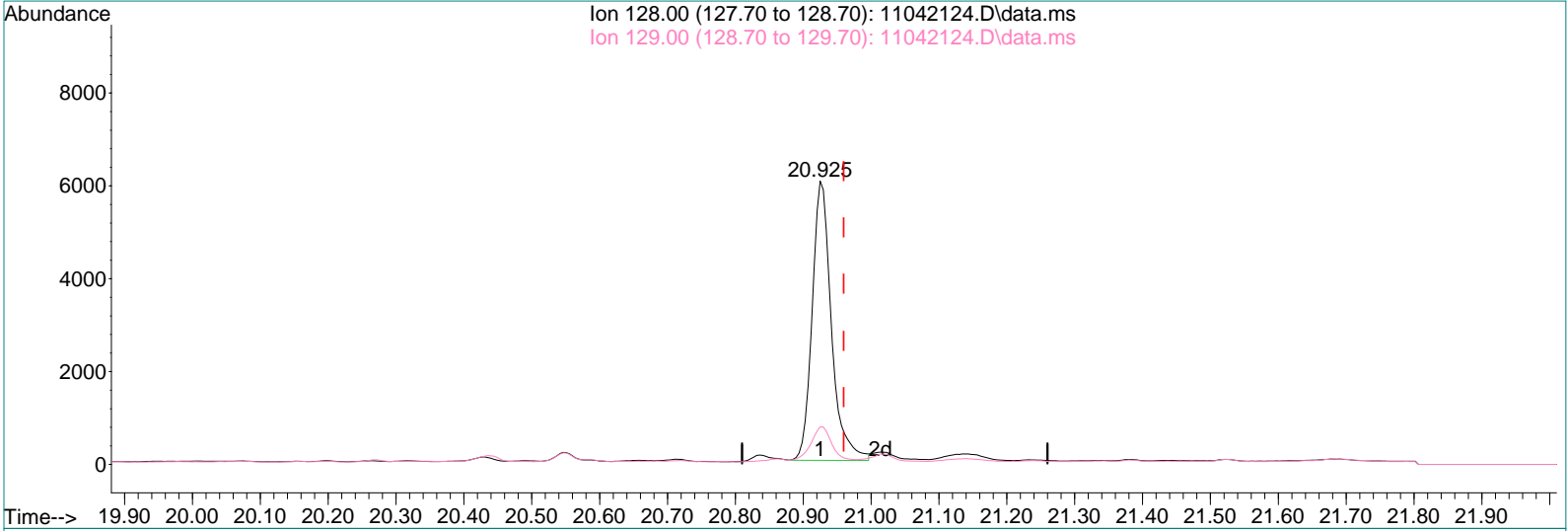
response 2335

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	230.66
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042124.D
 Acq On : 4 Nov 2021 20:12
 Sample : P2105519-003 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042124.D\data.ms

(53) Naphthalene (T)

20.925min (-0.035) 100.25pg

response 11856

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	13.93
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20368	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	102271	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	22429	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	41611	920.728	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	92.07%	
33) Toluene-d8 (SS2)	14.00	98	116222	1017.339	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	101.73%	
45) Bromofluorobenzene (SS3)	17.42	174	33536	1114.317	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	111.43%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	88977	1330.456	pg	100
3) Chloromethane	4.54	52	726	46.776	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3541	54.729	pg	100
5) Vinyl Chloride	4.84	62	67	N.D.		
6) 1,3-Butadiene	5.06	54	86	N.D.		
7) Bromomethane	5.33	94	326	15.677	pg	96
8) Chloroethane	5.56	64	391	22.276	pg	100
9) Acrolein	6.14	56	3209	241.946	pg	99
10) Acetone	6.27	58	51905	2777.286	pg	# 85
11) Trichlorofluoromethane	6.46	101	32485	745.153	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	4618	157.927	pg	96
14) Trichlorotrifluoroethane	7.65	151	7187	348.296	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	174	N.D.		
17) Methyl tert-Butyl Ether	8.68	73	197	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4382	84.860	pg	99
21) 1,2-Dichloroethane	10.50	62	1113	27.260	pg	98
22) 1,1,1-Trichloroethane	10.76	97	191	N.D.		
23) Benzene	11.22	78	17355	145.755	pg	99
24) Carbon Tetrachloride	11.37	117	10385	298.139	pg	100
26) 1,2-Dichloropropane	12.03	63	272	N.D.		
27) Bromodichloromethane	12.22	83	263	N.D.		
28) Trichloroethene	12.27	130	146	N.D.		
29) 1,4-Dioxane	12.27	88	318	13.933	pg	96
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	115	N.D.		
34) Toluene	14.10	91	18559	161.556	pg	99
35) Dibromochloromethane	14.52	129	118	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	323	13.730	pg	96
39) Chlorobenzene	15.95	112	155	N.D.		
40) Ethylbenzene	16.34	91	3573	29.196	pg	99
41) m,p-Xylene	16.51	91	8667	89.126	pg	100
42) Styrene	16.87	104	2783	40.148	pg	100
43) o-Xylene	16.99	106	1751	36.558	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	55	N.D.		
46) 1,3,5-Trimethylbenzene	18.26	105	1224	11.090	pg	98
47) 1,2,4-Trimethylbenzene	18.65	105	4304	37.660	pg	89
48) 1,3-Dichlorobenzene	18.86	146	111	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	111	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	1103	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

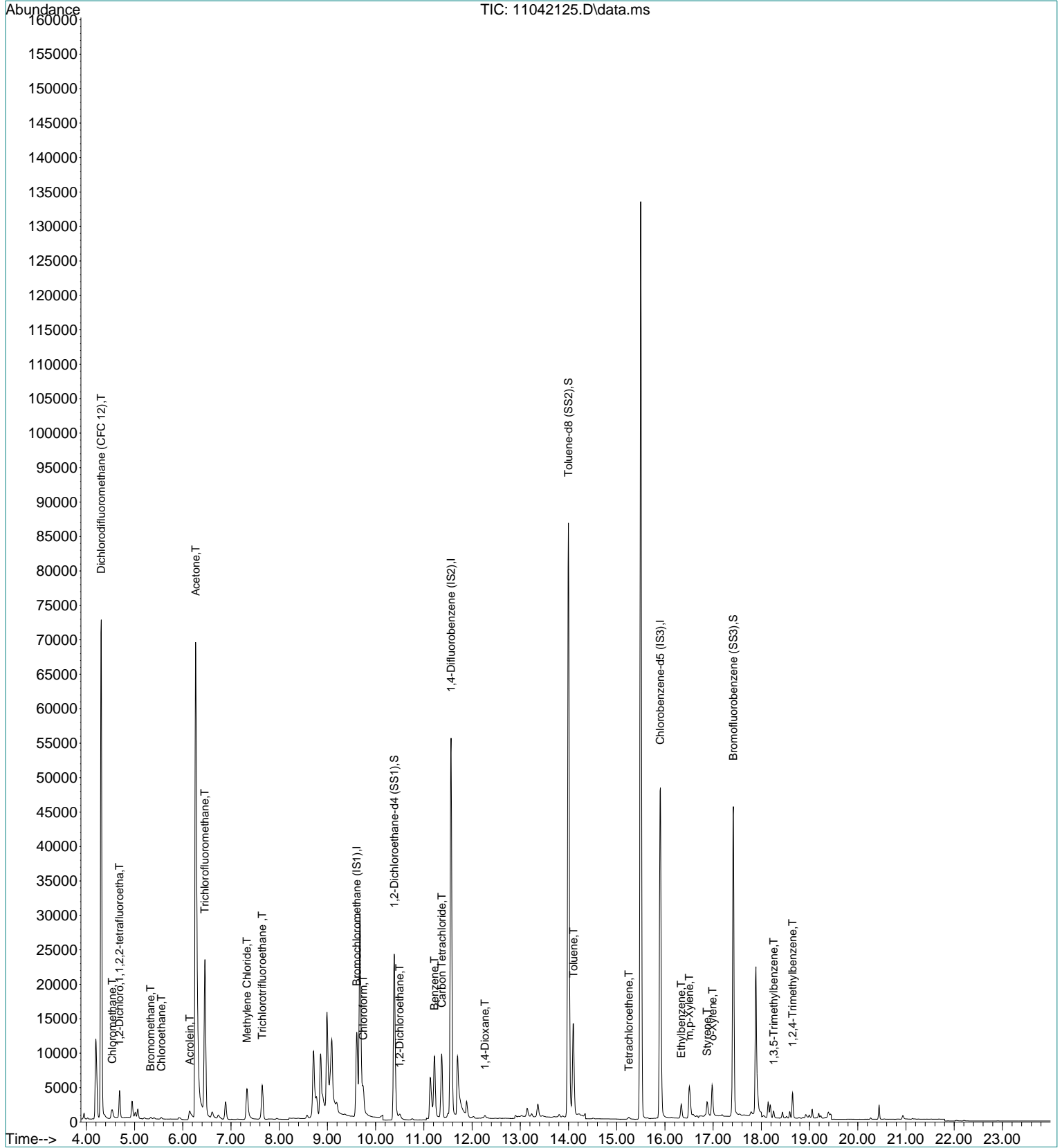
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

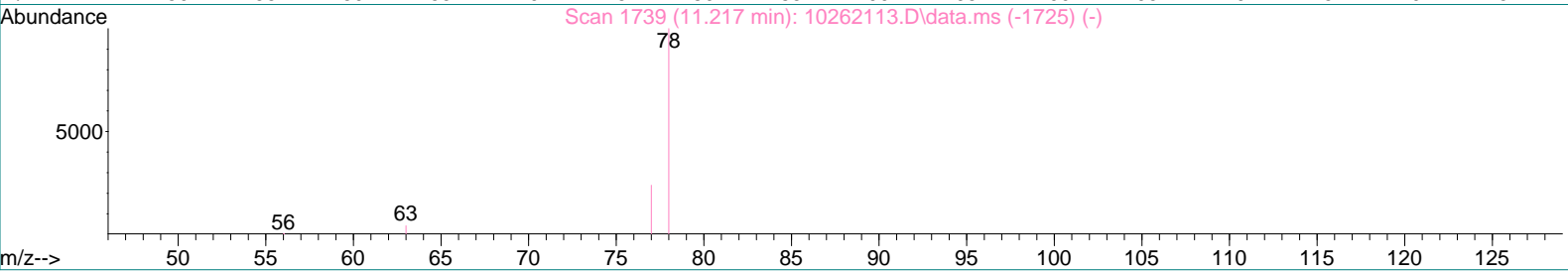
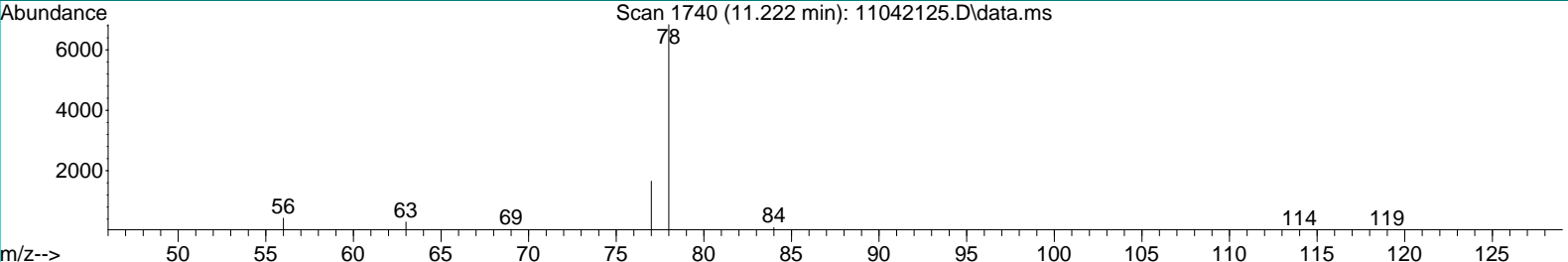
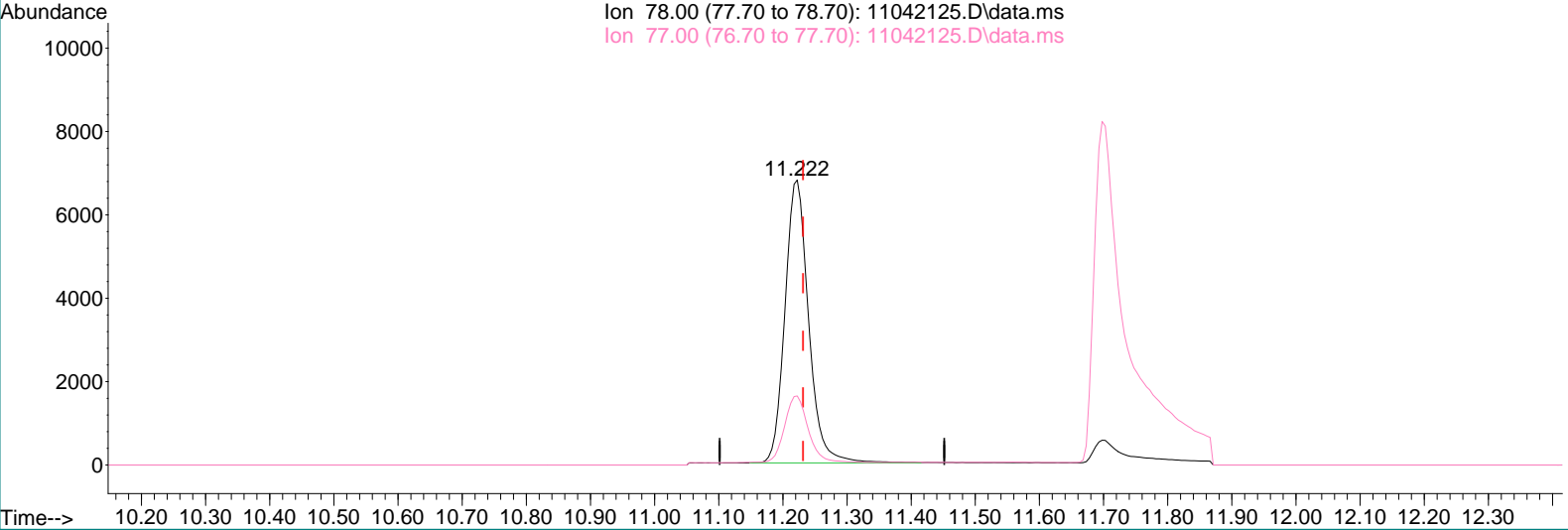
Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042125.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 145.76pg

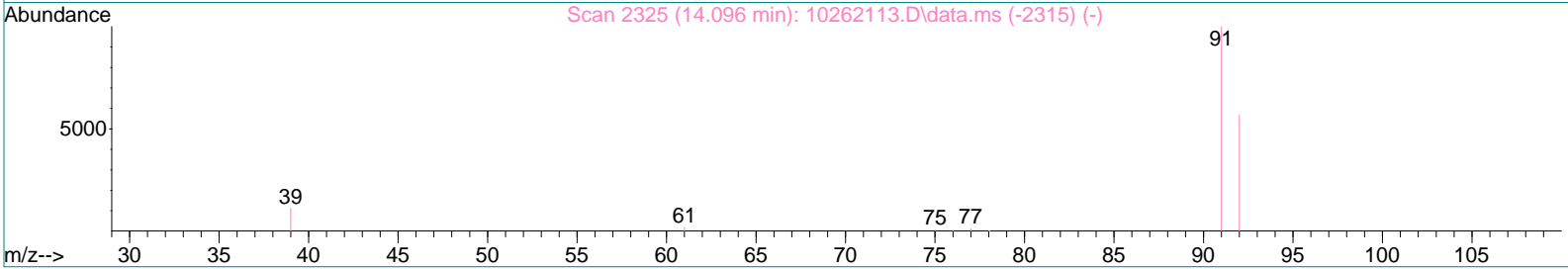
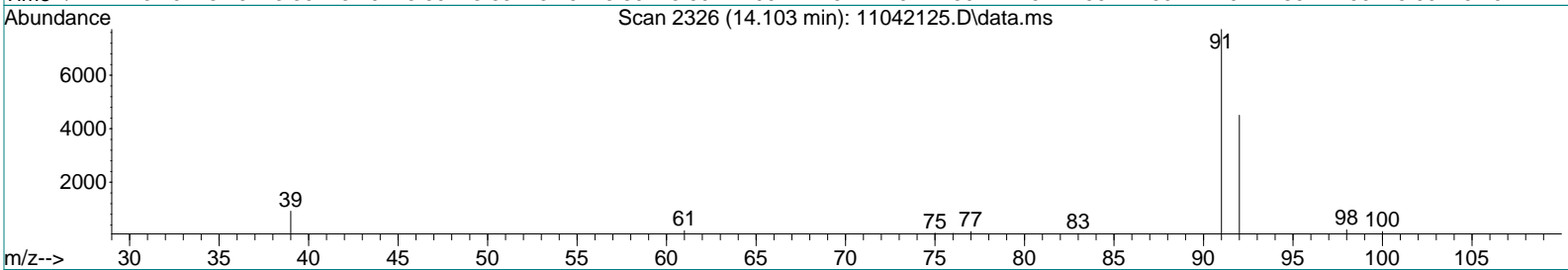
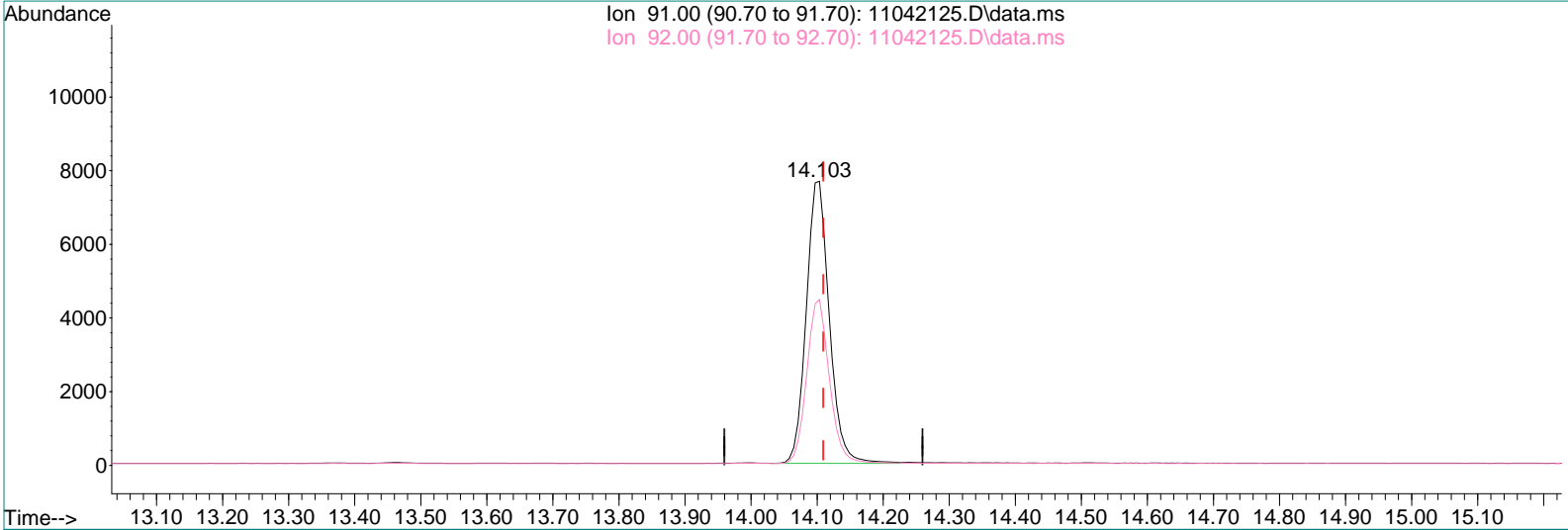
response 17355

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.20
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042125.D\data.ms

(34) Toluene (T)

14.103min (-0.006) 161.56pg

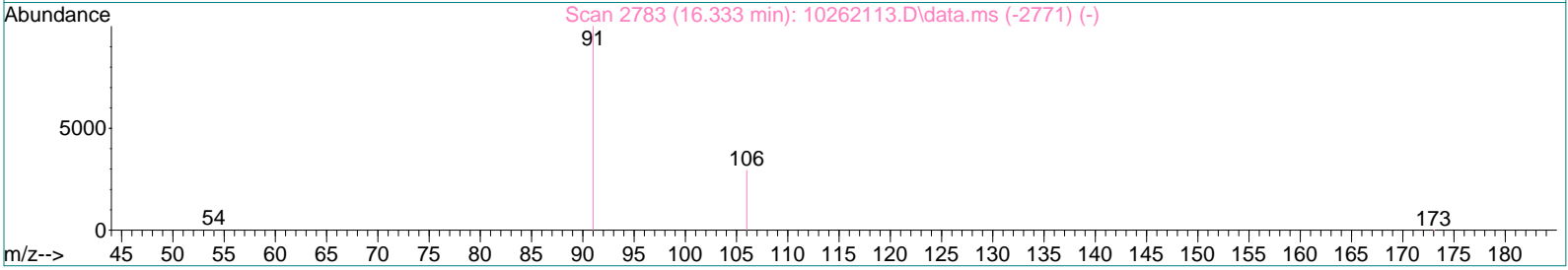
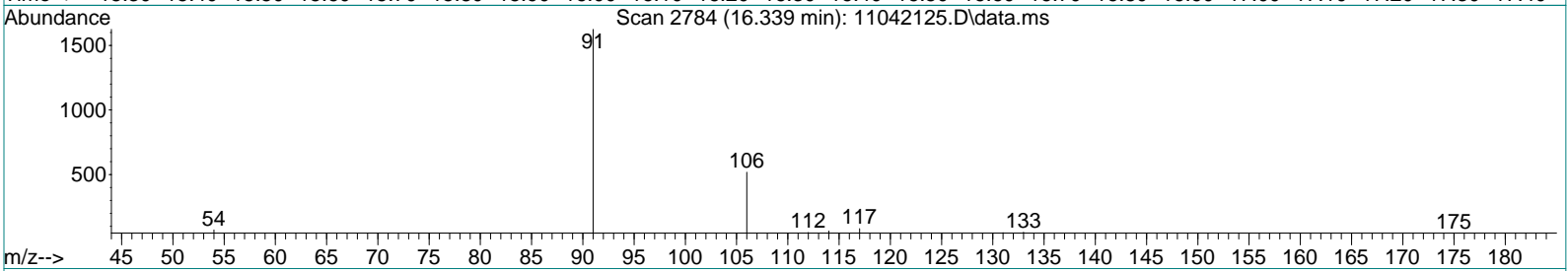
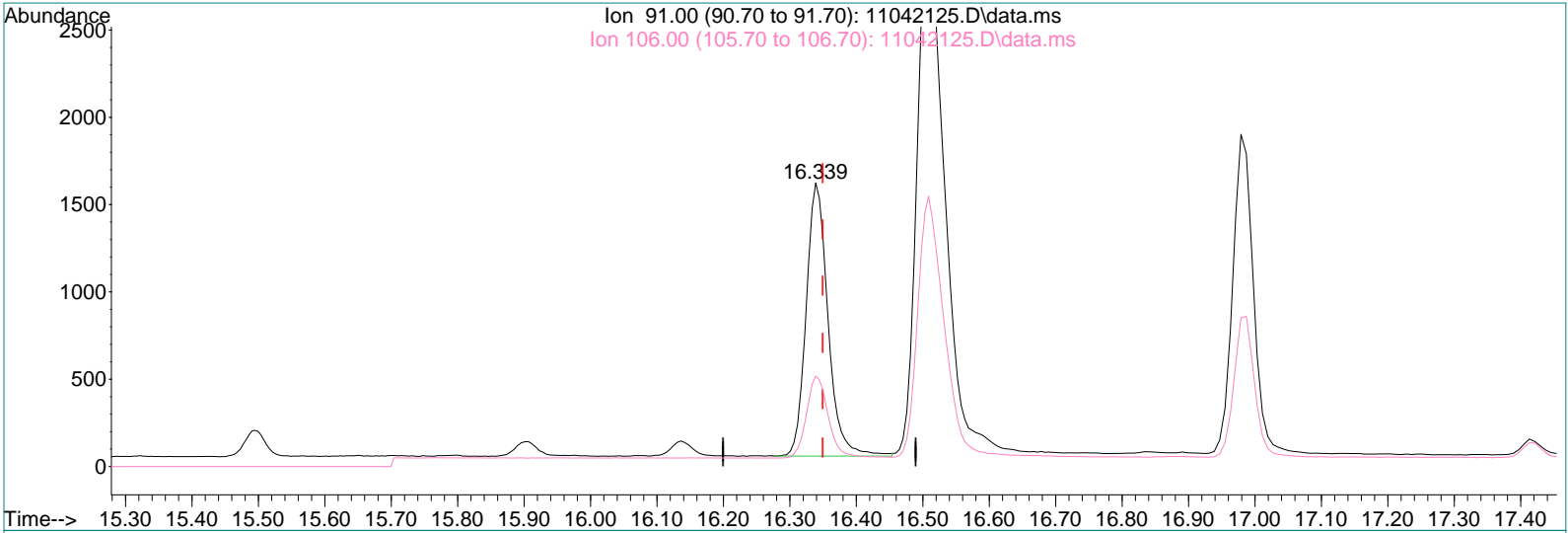
response 18559

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.41
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042125.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 29.20pg

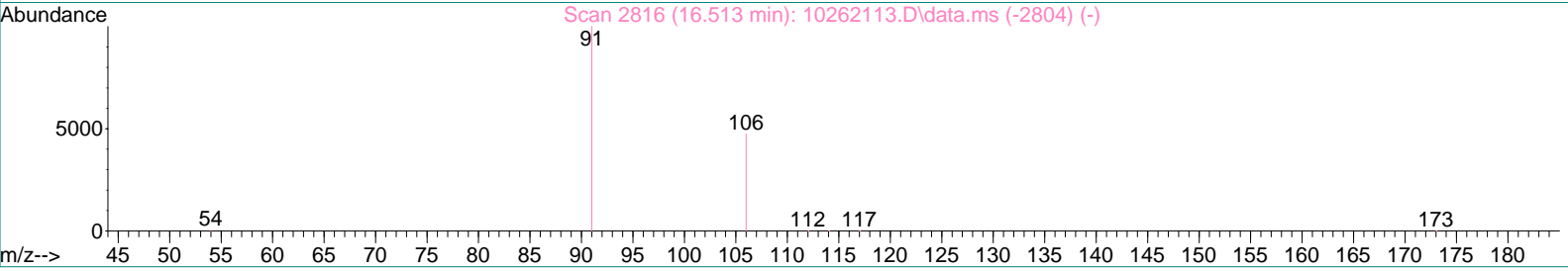
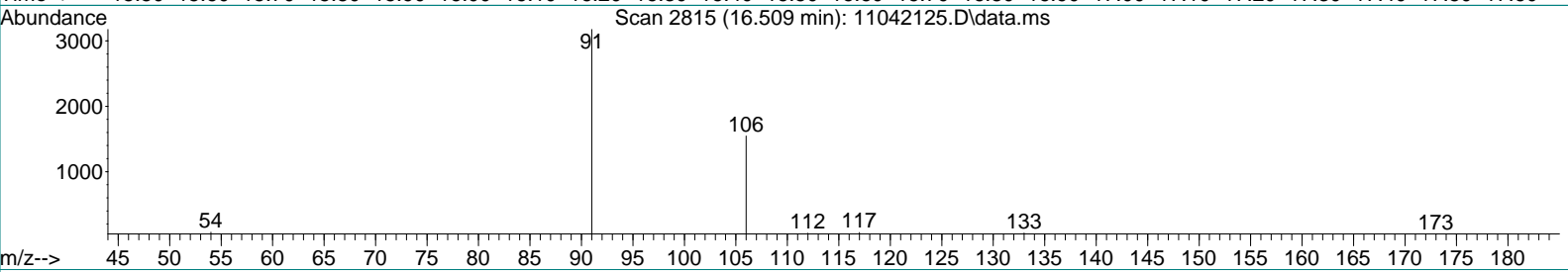
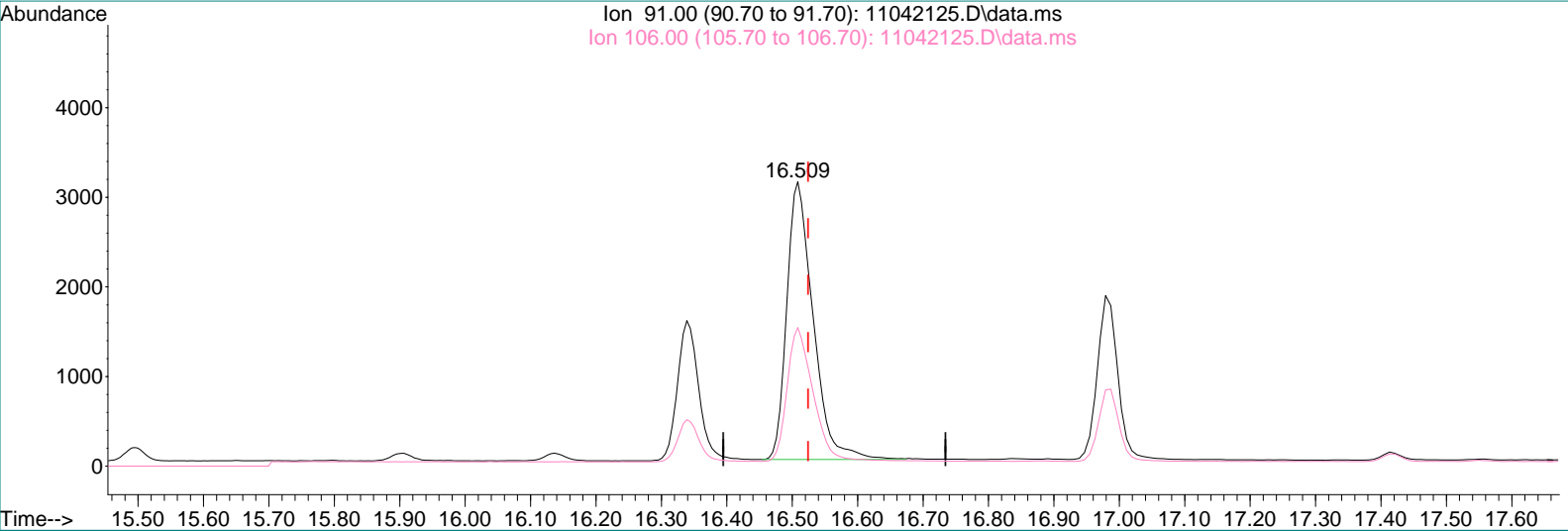
response 3573

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042125.D\data.ms

(41) m,p-Xylene (T)

16.509min (-0.016) 89.13pg

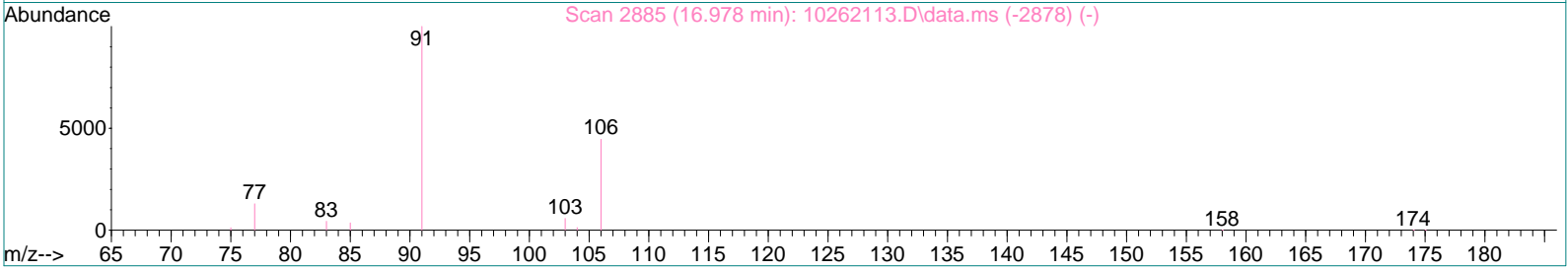
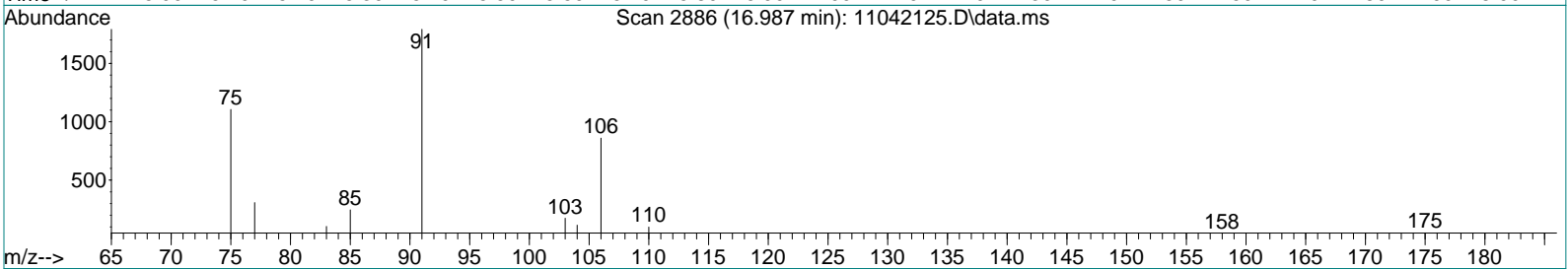
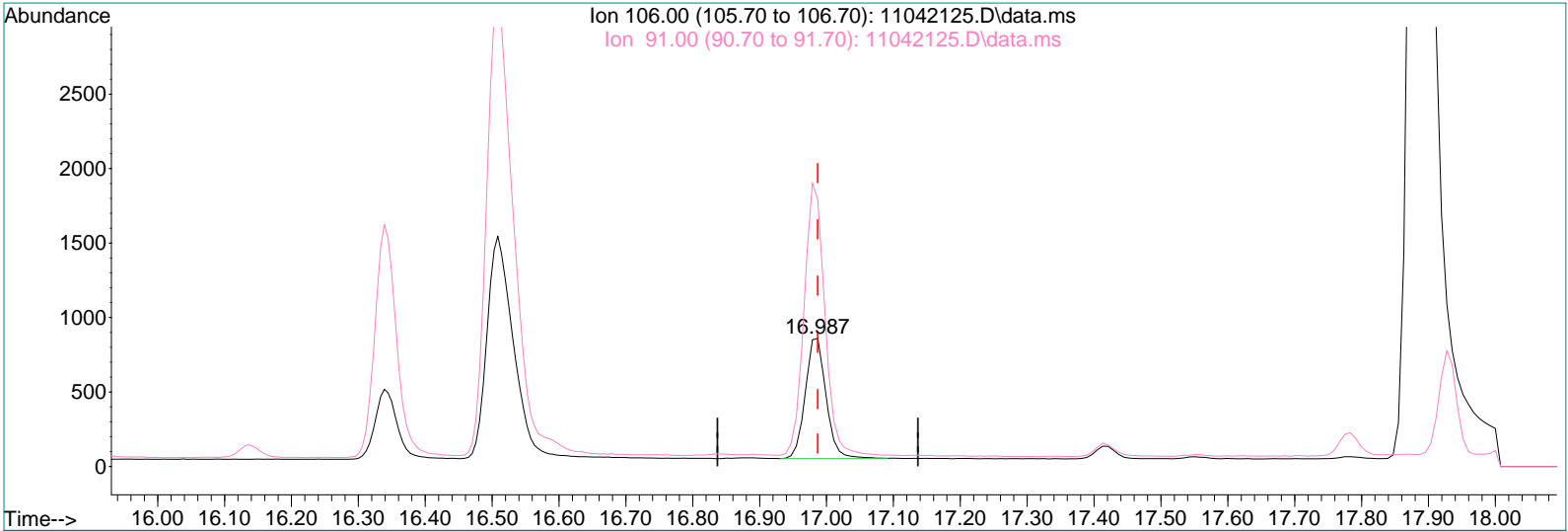
response 8667

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.71
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042125.D
 Acq On : 4 Nov 2021 20:44
 Sample : P2105519-004 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:43 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042125.D\data.ms

(43) o-Xylene (T)

16.987min (0.000) 36.56pg

response 1751

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	224.96
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:13:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	22255	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.56	114	110871	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	25068	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	45782	927.126	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	92.71%	
33) Toluene-d8 (SS2)	14.00	98	126625	1022.424	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	102.24%	
45) Bromofluorobenzene (SS3)	17.42	174	36282	1078.646	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	107.87%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	94739	1296.499	pg	100
3) Chloromethane	4.53	52	866	51.065	pg	95
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3800	53.753	pg	100
5) Vinyl Chloride	4.82	62	600	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.	d	
7) Bromomethane	5.33	94	294	12.940	pg	94
8) Chloroethane	5.54	64	1751	91.300	pg	99
9) Acrolein	6.12	56	10391	717.013	pg	99
10) Acetone	6.25	58	626204	30665.358	pg	97
11) Trichlorofluoromethane	6.45	101	37020	777.177	pg	100
12) 1,1-Dichloroethene	7.19	96	158	N.D.		
13) Methylene Chloride	7.33	84	6670	208.760	pg	93
14) Trichlorotrifluoroethane	7.65	151	7997	354.690	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	538	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
18) cis-1,2-Dichloroethene	9.45	96	59	N.D.		
19) Chloroform	9.75	83	9432	167.168	pg	99
21) 1,2-Dichloroethane	10.50	62	1825	40.908	pg	98
22) 1,1,1-Trichloroethane	10.76	97	220	N.D.		
23) Benzene	11.22	78	22006	169.146	pg	99
24) Carbon Tetrachloride	11.37	117	12109	318.157	pg	100
26) 1,2-Dichloropropane	12.03	63	678	20.578	pg	98
27) Bromodichloromethane	12.22	83	693	15.550	pg	# 77
28) Trichloroethene	12.27	130	102	N.D.		
29) 1,4-Dioxane	12.25	88	1642	66.365	pg	94
30) cis-1,3-Dichloropropene	13.13	75	58	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	176	N.D.		
34) Toluene	14.10	91	127092	1020.520	pg	99
35) Dibromochloromethane	14.51	129	391	13.874	pg	99
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	442	17.331	pg	96
39) Chlorobenzene	15.96	112	608	N.D.		
40) Ethylbenzene	16.34	91	18514	135.356	pg	99
41) m,p-Xylene	16.50	91	38923	358.123	pg	100
42) Styrene	16.87	104	21887	282.504	pg	92
43) o-Xylene	16.98	106	7745	144.681	pg	99
44) 1,1,2,2-Tetrachloroethane	16.98	83	207	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	4835	39.197	pg	99
47) 1,2,4-Trimethylbenzene	18.65	105	18365	143.777	pg	88
48) 1,3-Dichlorobenzene	18.79	146	77	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	21585	352.834	pg	100
50) 1,2-Dichlorobenzene	19.19	146	83	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.81	182	84	N.D.		
53) Naphthalene	20.93	128	4916	38.214	pg	98

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:13:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

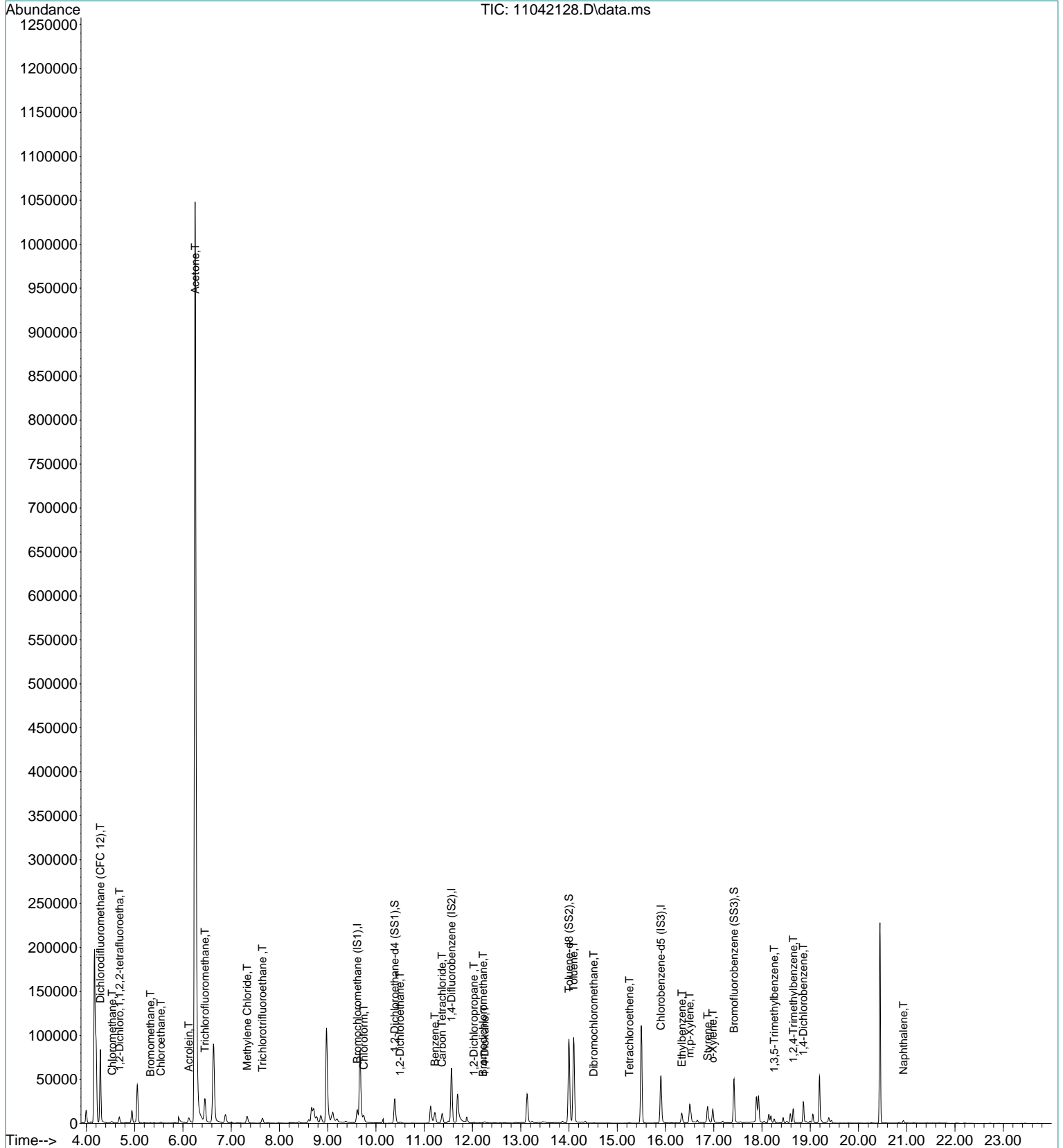
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

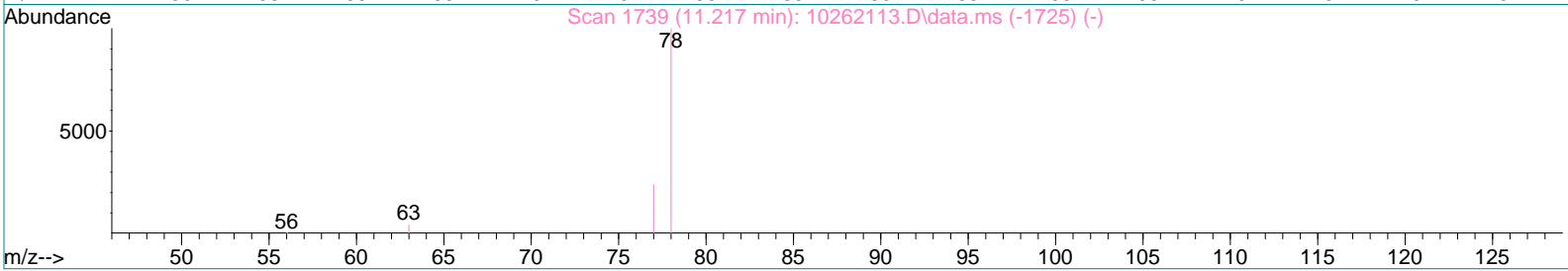
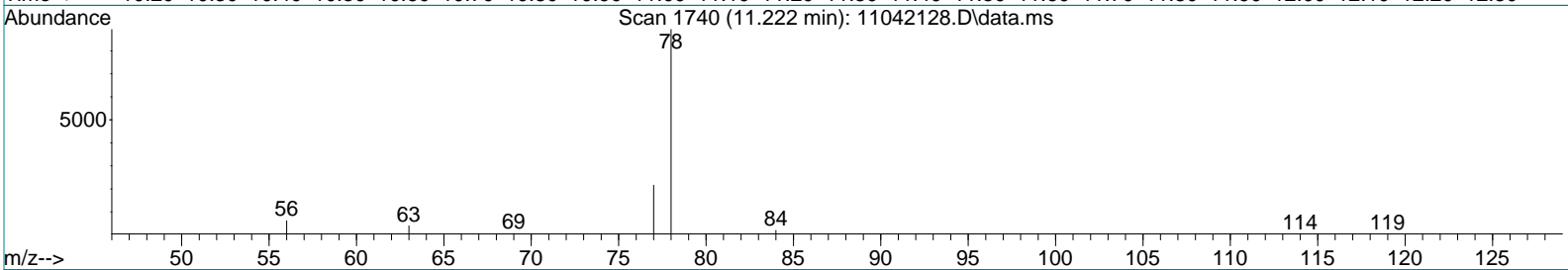
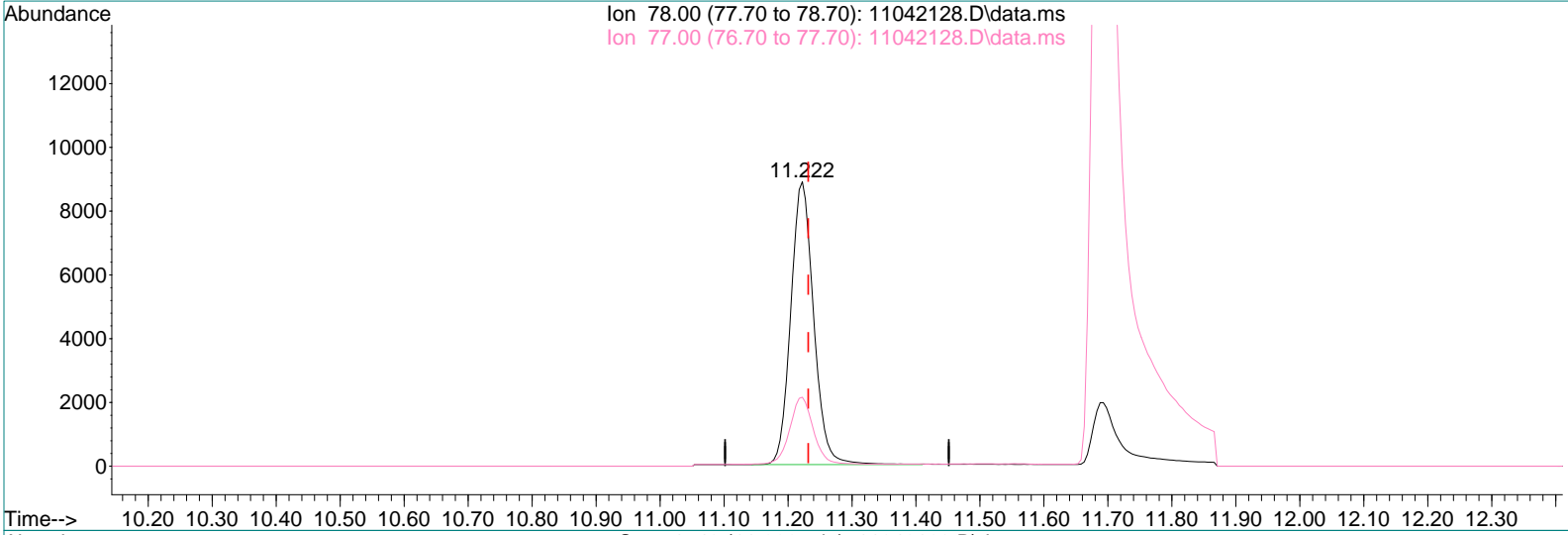
Quant Time: Nov 05 15:13:40 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 169.15pg

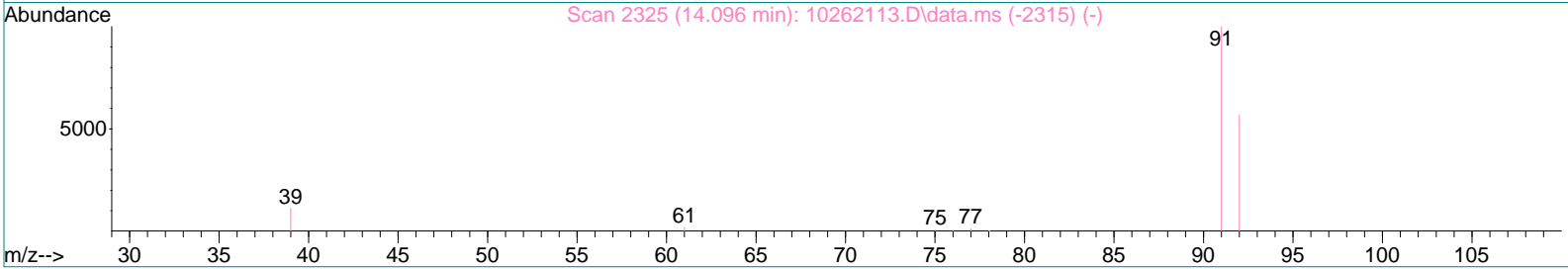
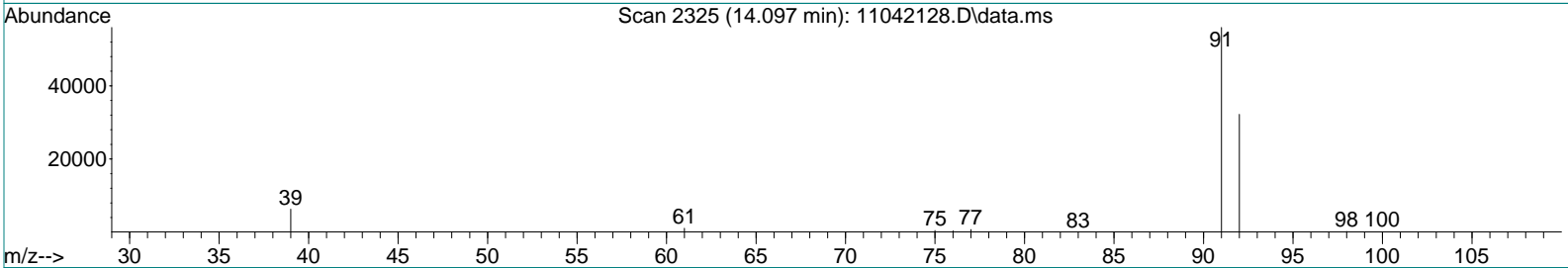
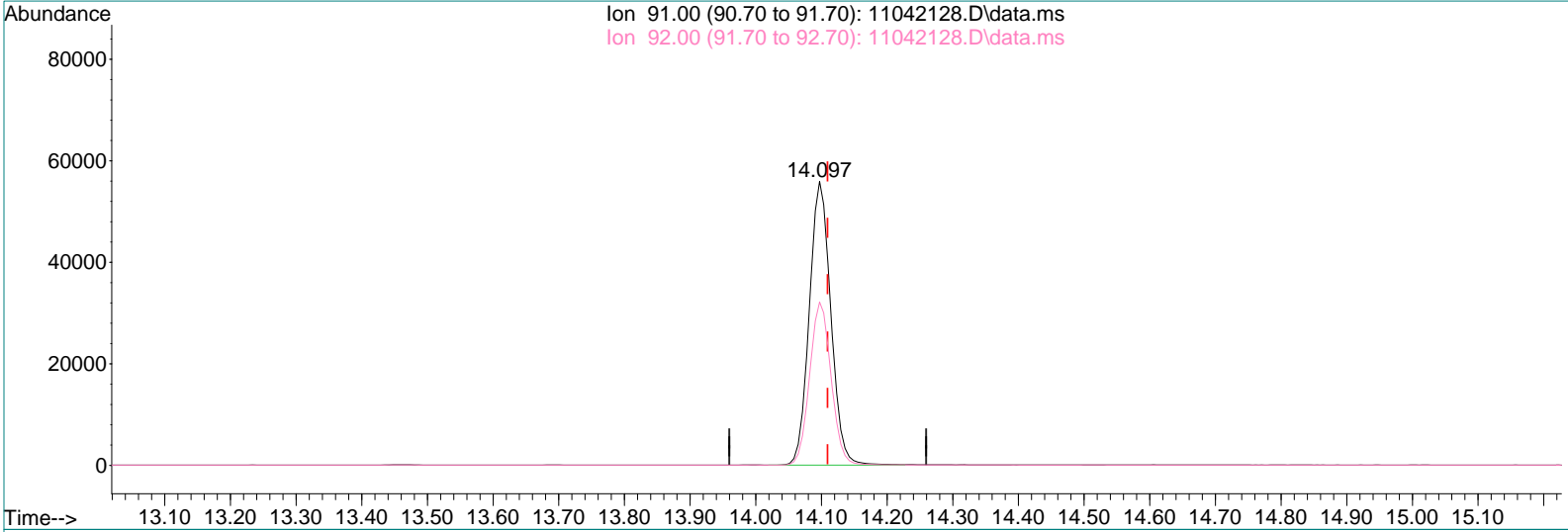
response 22006

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	24.19
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 1020.52pg

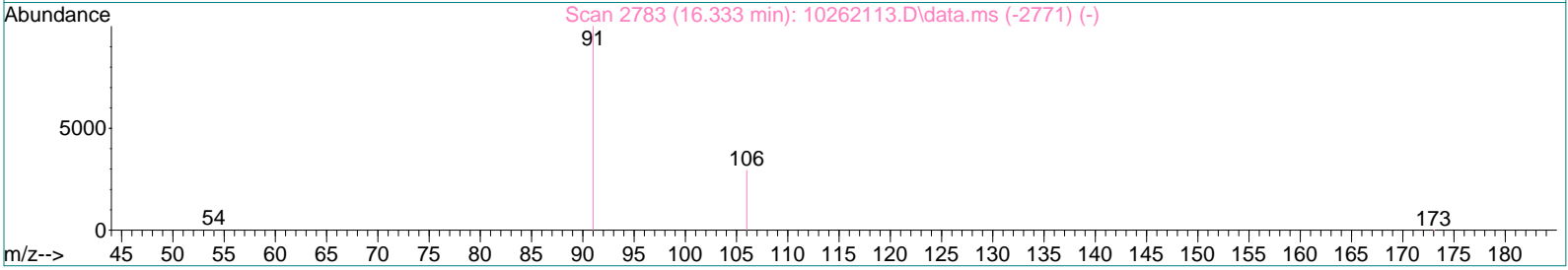
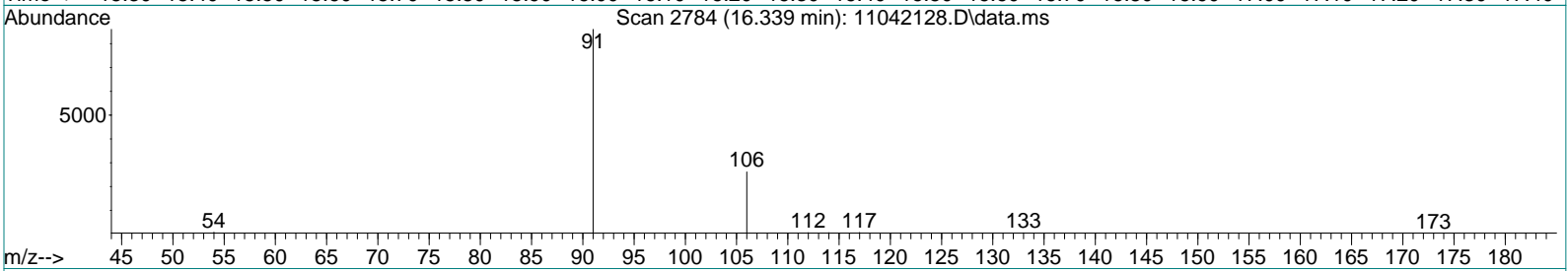
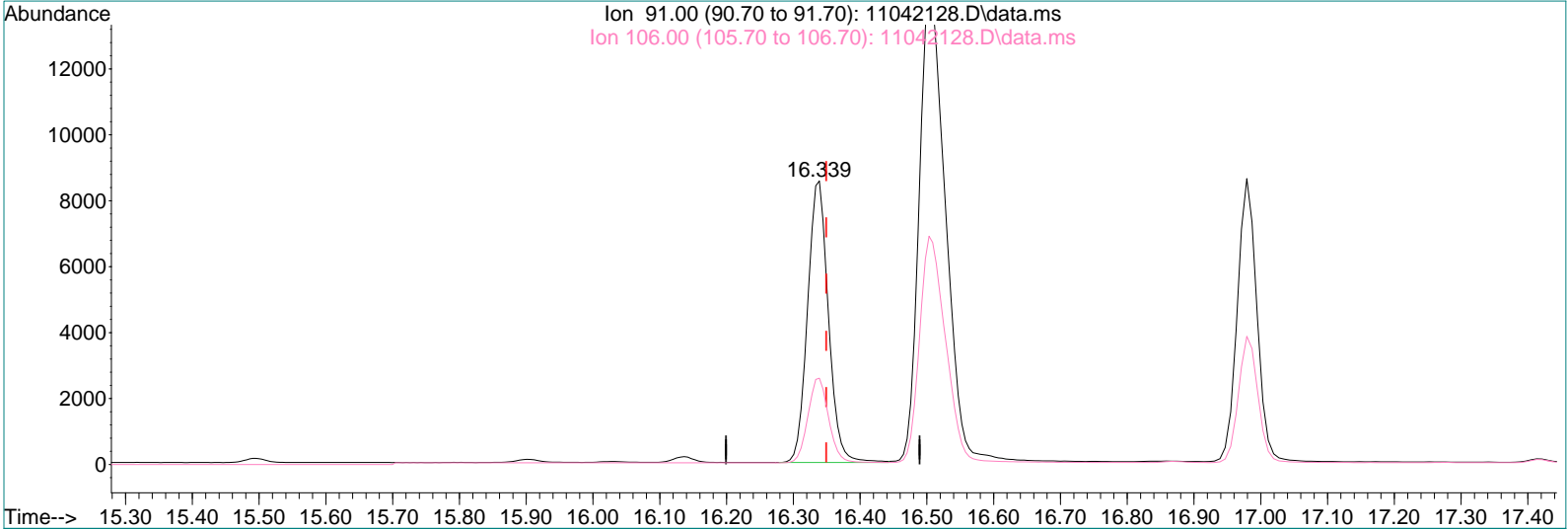
response 127092

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.41
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 135.36pg

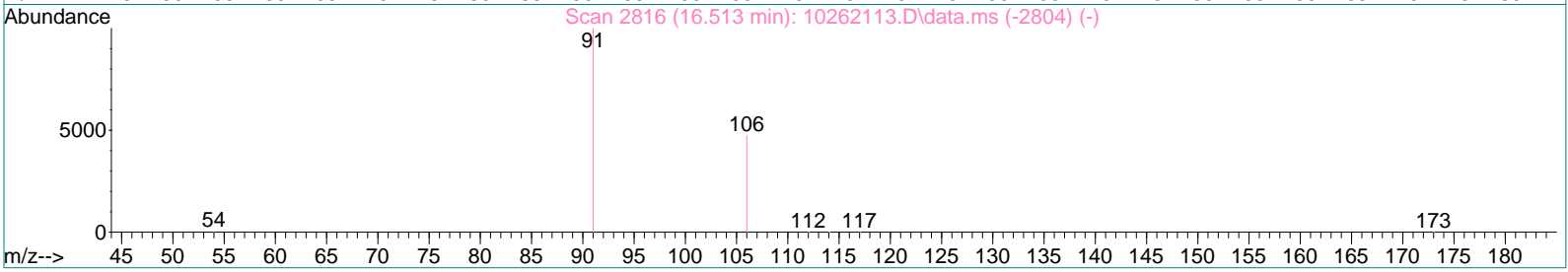
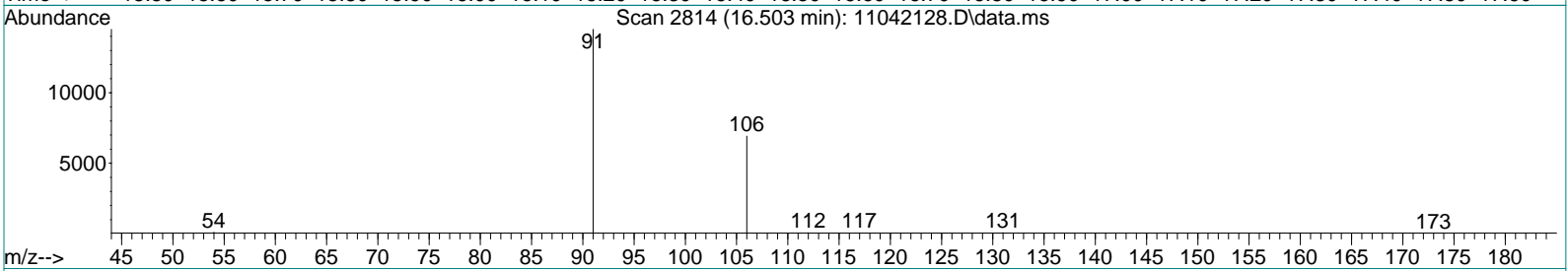
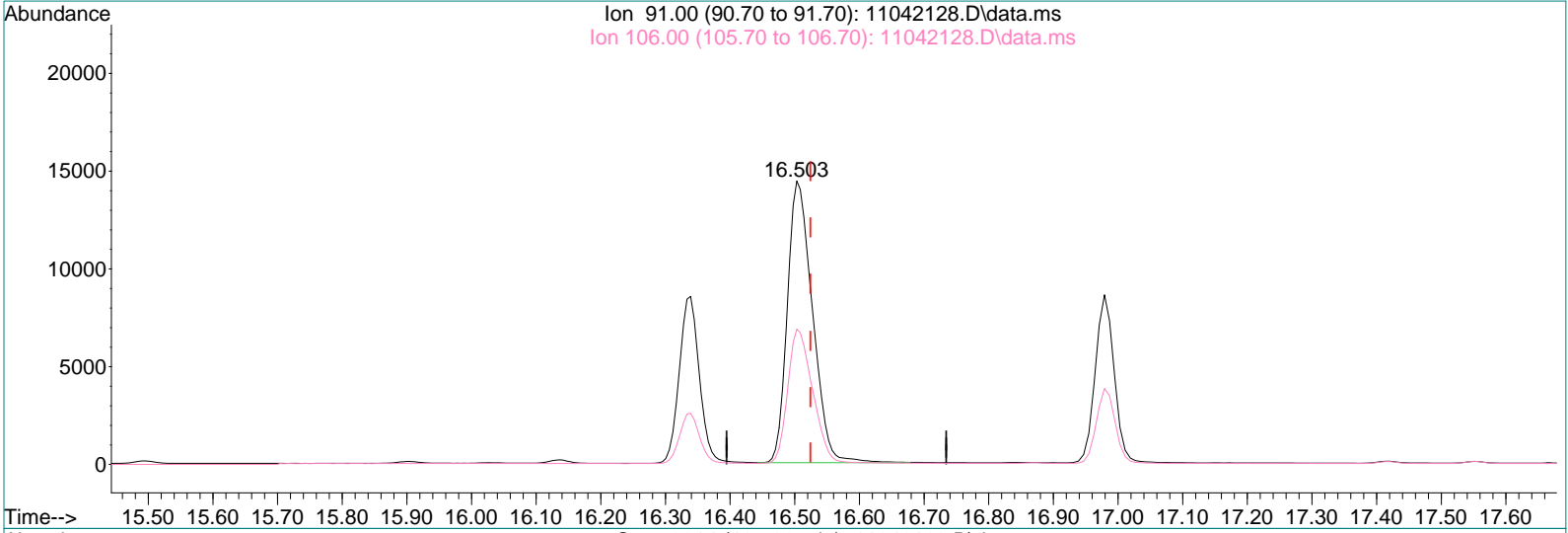
response 18514

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.03
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.021) 358.12pg

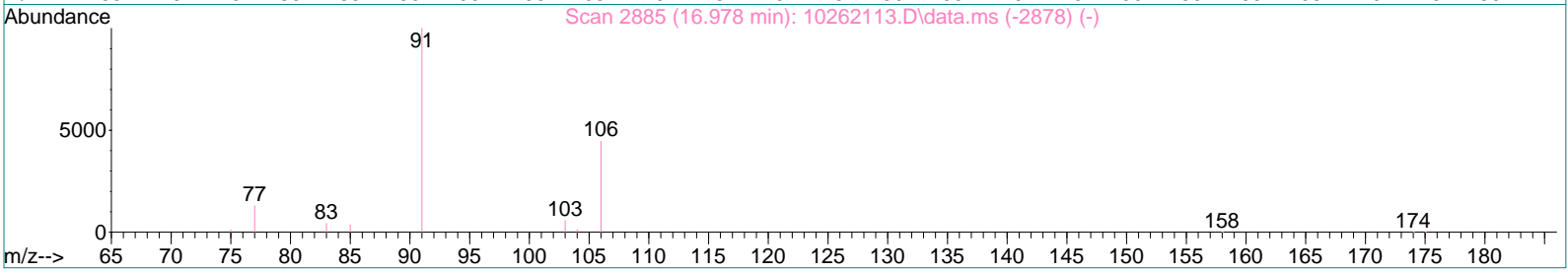
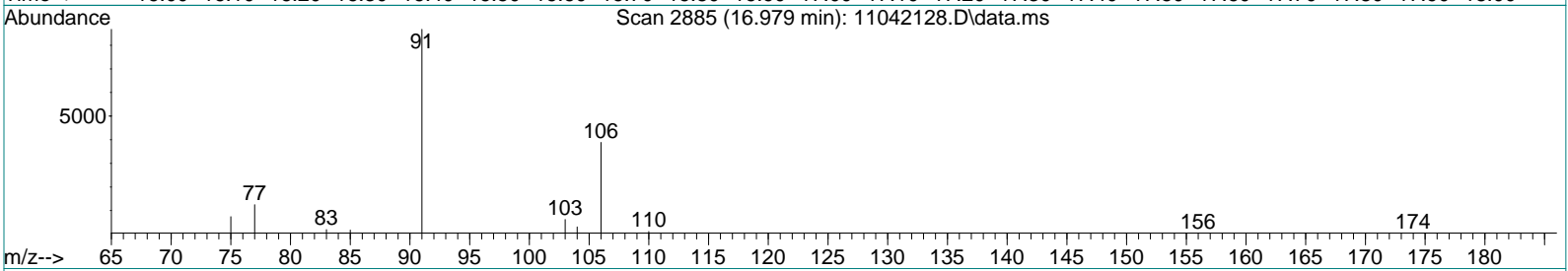
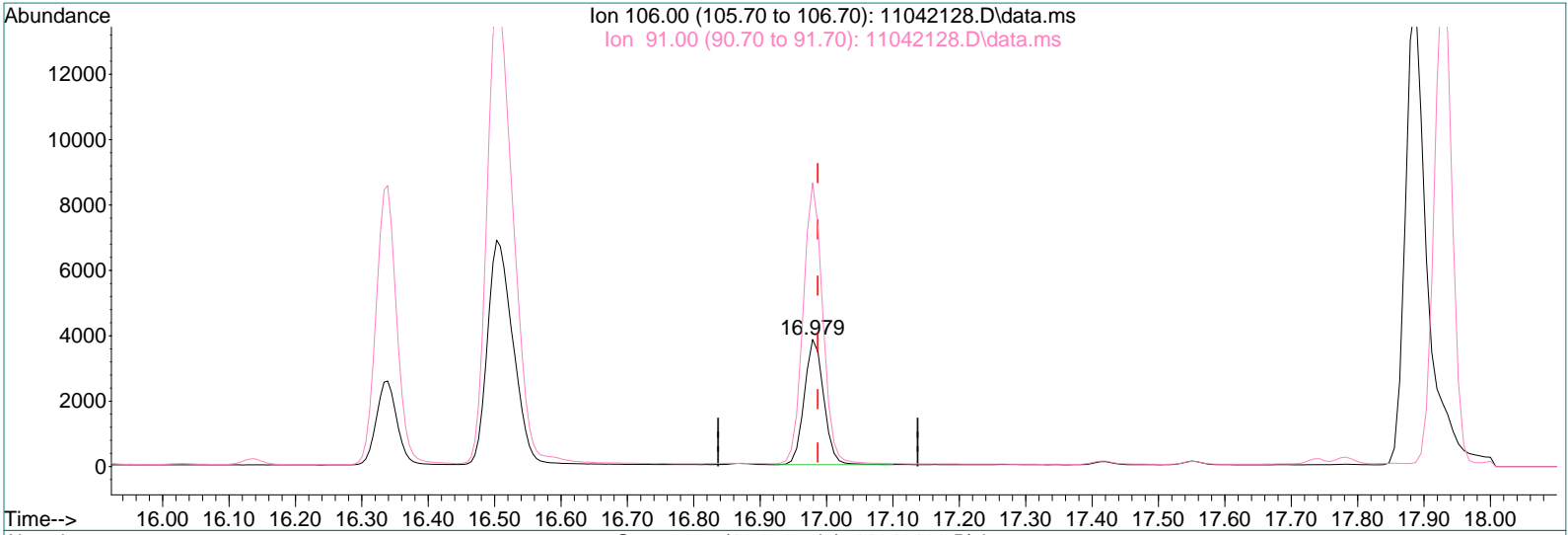
response 38923

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.42
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 144.68pg

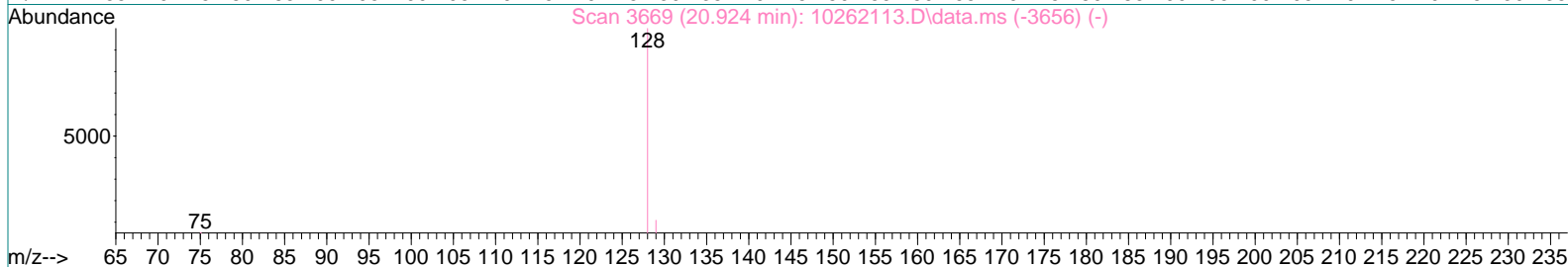
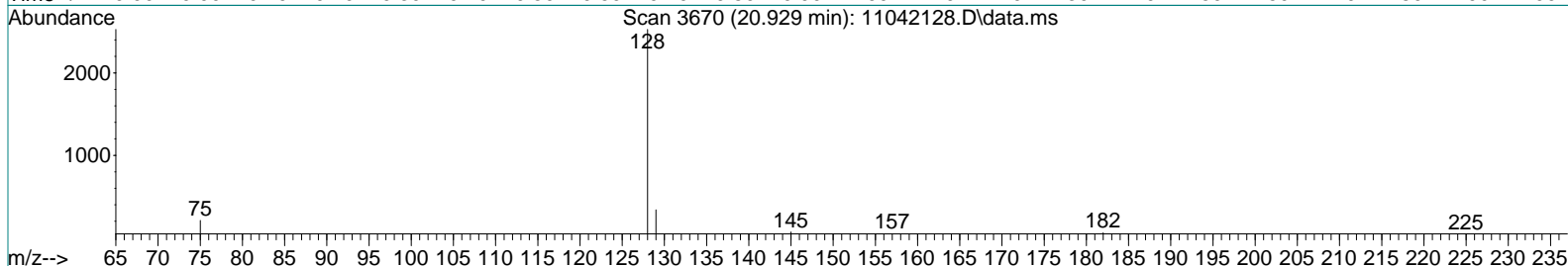
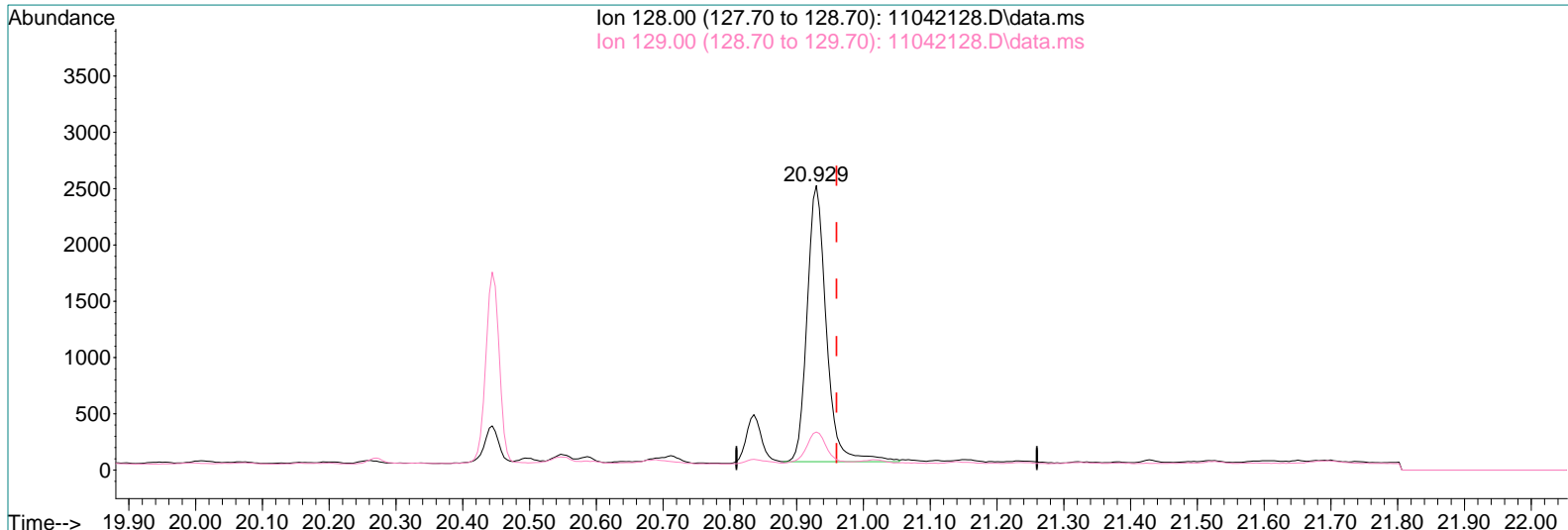
response 7745

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	225.85
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042128.D
 Acq On : 4 Nov 2021 22:20
 Sample : P2105519-005 (1000mL)
 Misc : S34-10062101

Vial: 8
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:47 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042128.D\data.ms

(53) Naphthalene (T)

20.929min (-0.031) 38.21pg

response 4916

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.70
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:15:58 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	23676	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.56	114	119595	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	25984	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	47526	904.679	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	90.47%		
33) Toluene-d8 (SS2)	14.00	98	135756	1016.192	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	101.62%		
45) Bromofluorobenzene (SS3)	17.42	174	39529	1133.749	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	113.38%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	89951	1157.094	pg	100
3) Chloromethane	4.52	52	800	44.342	pg	90
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3609	47.987	pg	100
5) Vinyl Chloride	4.82	62	525	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.	d	
7) Bromomethane	5.32	94	433	17.914	pg	98
8) Chloroethane	5.54	64	1619	79.350	pg	99
9) Acrolein	6.12	56	10552	684.421	pg	99
10) Acetone	6.25	58	575719	26500.986	pg	94
11) Trichlorofluoromethane	6.45	101	35133	693.295	pg	100
12) 1,1-Dichloroethene	7.18	96	114	N.D.		
13) Methylene Chloride	7.33	84	5972	175.696	pg	97
14) Trichlorotrifluoroethane	7.65	151	7721	321.895	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	499	N.D.		
17) Methyl tert-Butyl Ether	8.66	73	275	N.D.		
18) cis-1,2-Dichloroethene	9.45	96	70	N.D.		
19) Chloroform	9.74	83	8997	149.888	pg	99
21) 1,2-Dichloroethane	10.50	62	1666	35.103	pg	98
22) 1,1,1-Trichloroethane	10.76	97	211	N.D.		
23) Benzene	11.22	78	22712	164.095	pg	98
24) Carbon Tetrachloride	11.37	117	11701	288.985	pg	100
26) 1,2-Dichloropropane	12.03	63	660	18.571	pg	99
27) Bromodichloromethane	12.22	83	663	13.792	pg	# 74
28) Trichloroethene	12.26	130	137	N.D.		
29) 1,4-Dioxane	12.25	88	1630	61.074	pg	95
30) cis-1,3-Dichloropropene	13.12	75	61	N.D.		
31) trans-1,3-Dichloropropene	13.64	75	73	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	171	N.D.		
34) Toluene	14.10	91	121691	905.871	pg	99
35) Dibromochloromethane	14.51	129	357	11.743	pg	97
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	511	18.575	pg	97
39) Chlorobenzene	15.95	112	619	N.D.		
40) Ethylbenzene	16.33	91	26419	186.340	pg	99
41) m,p-Xylene	16.50	91	46876	416.093	pg	100
42) Styrene	16.87	104	15621	194.518	pg	93
43) o-Xylene	16.98	106	8457	152.412	pg	98
44) 1,1,2,2-Tetrachloroethane	16.98	83	81	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	5088	39.793	pg	99
47) 1,2,4-Trimethylbenzene	18.65	105	19100	144.260	pg	89
48) 1,3-Dichlorobenzene	18.80	146	52	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	20845	328.726	pg	100
50) 1,2-Dichlorobenzene	19.19	146	112	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.82	182	101	N.D.		
53) Naphthalene	20.93	128	5553	41.644	pg	99

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:15:58 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

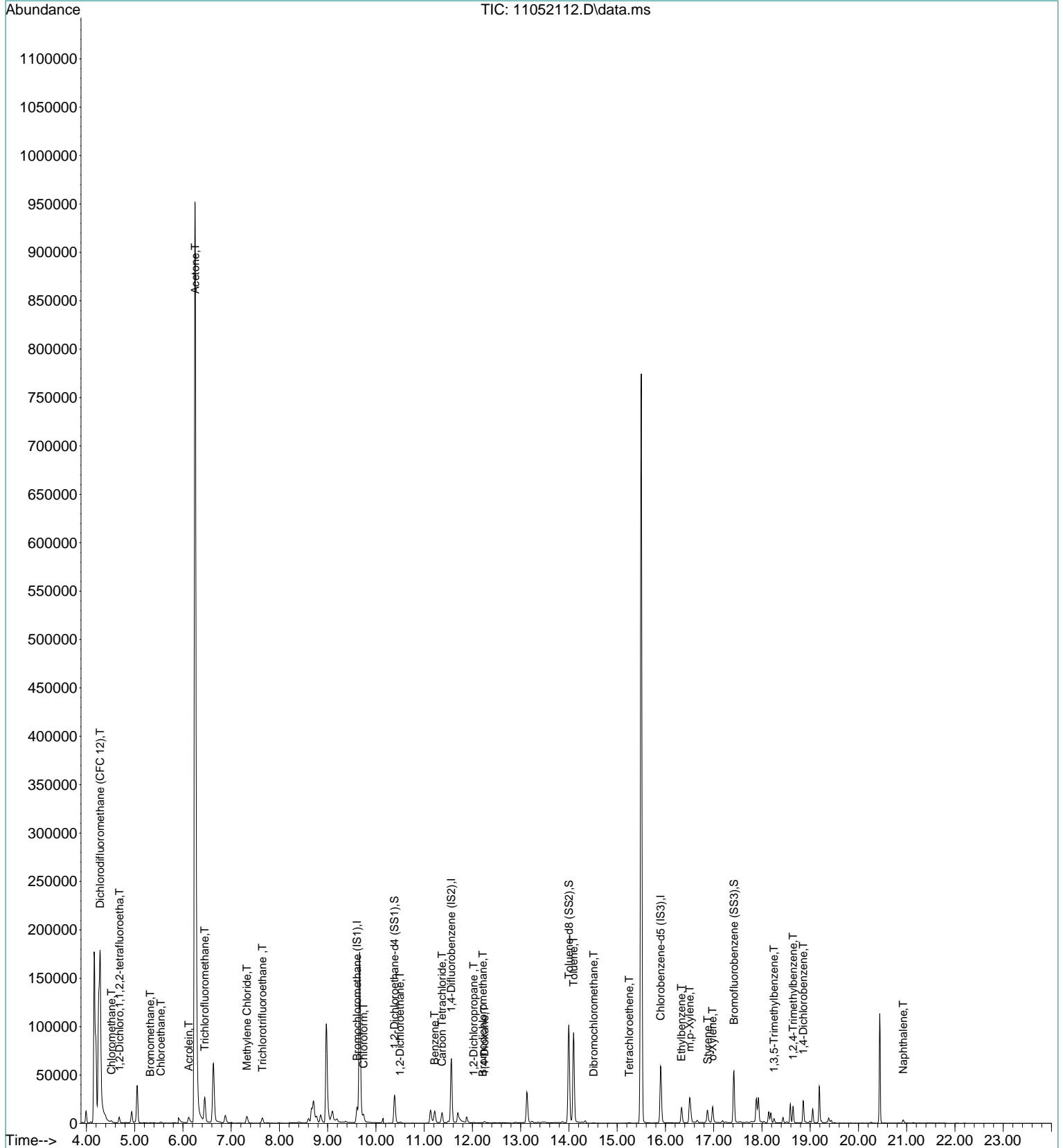
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

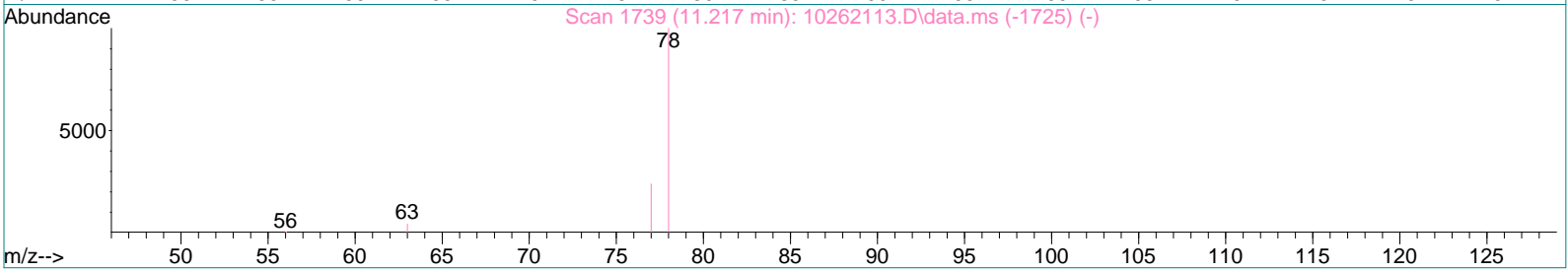
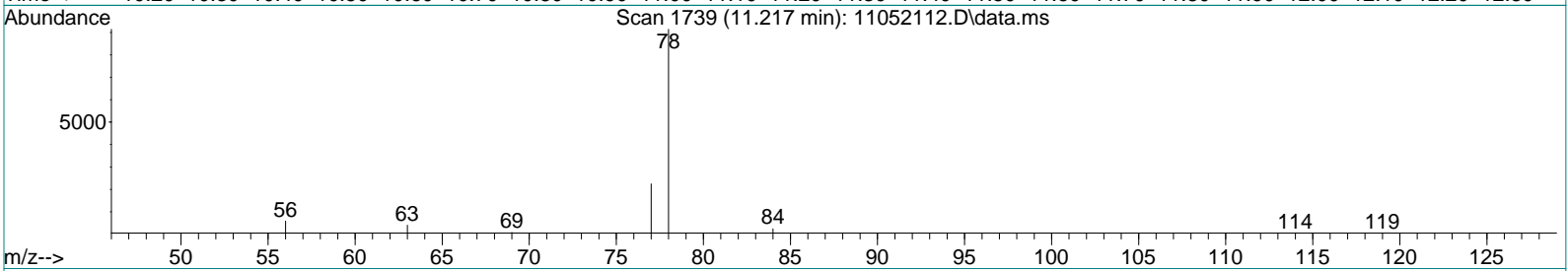
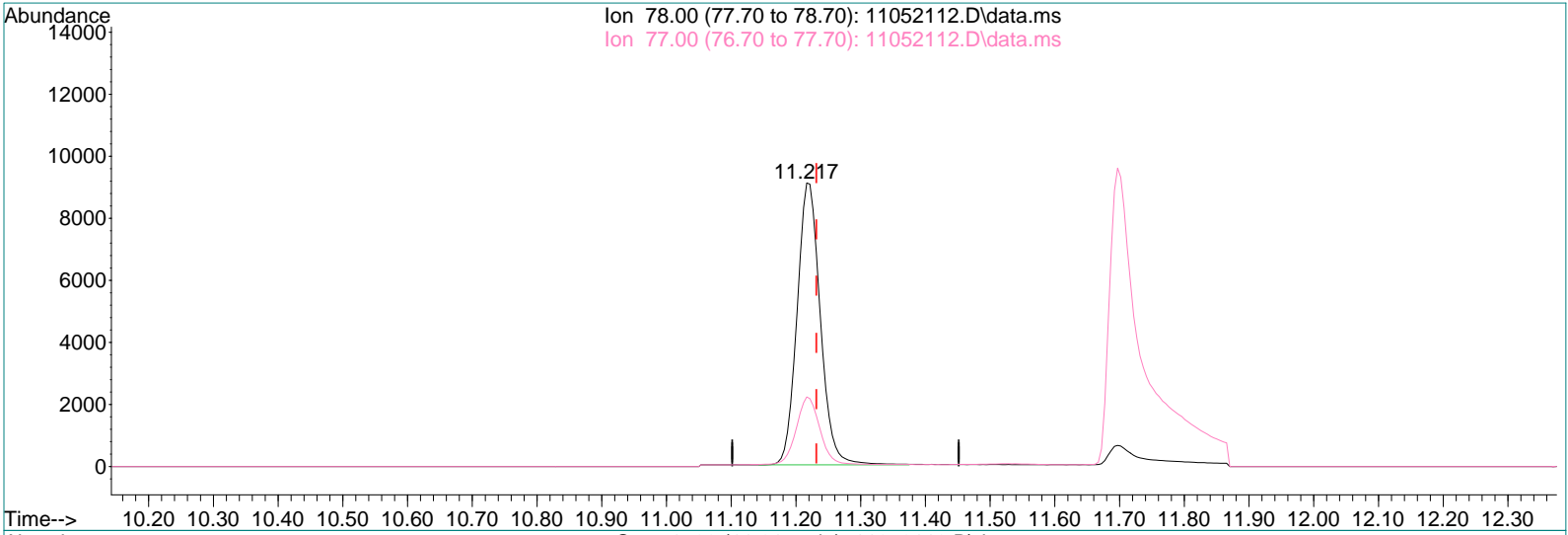
Quant Time: Nov 05 15:15:58 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(23) Benzene (T)

11.217min (-0.015) 164.10pg

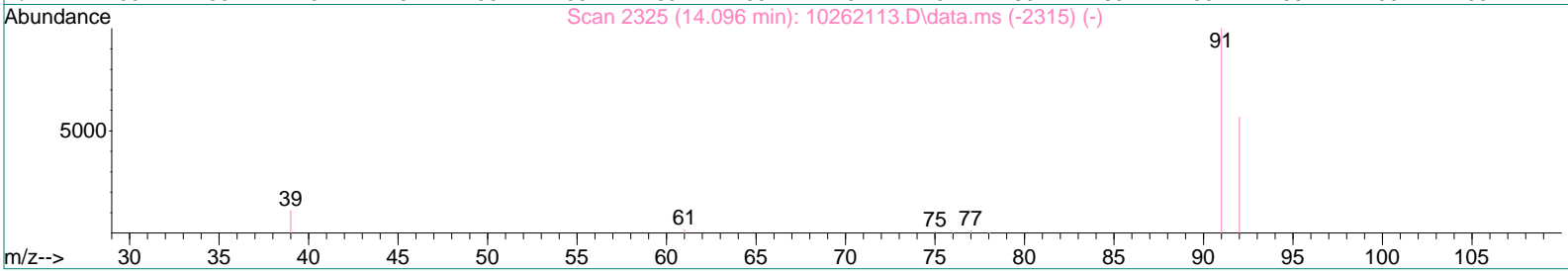
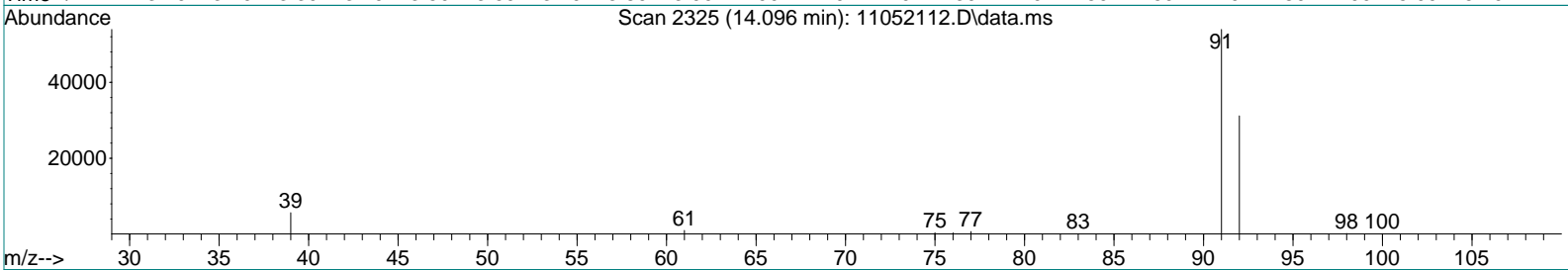
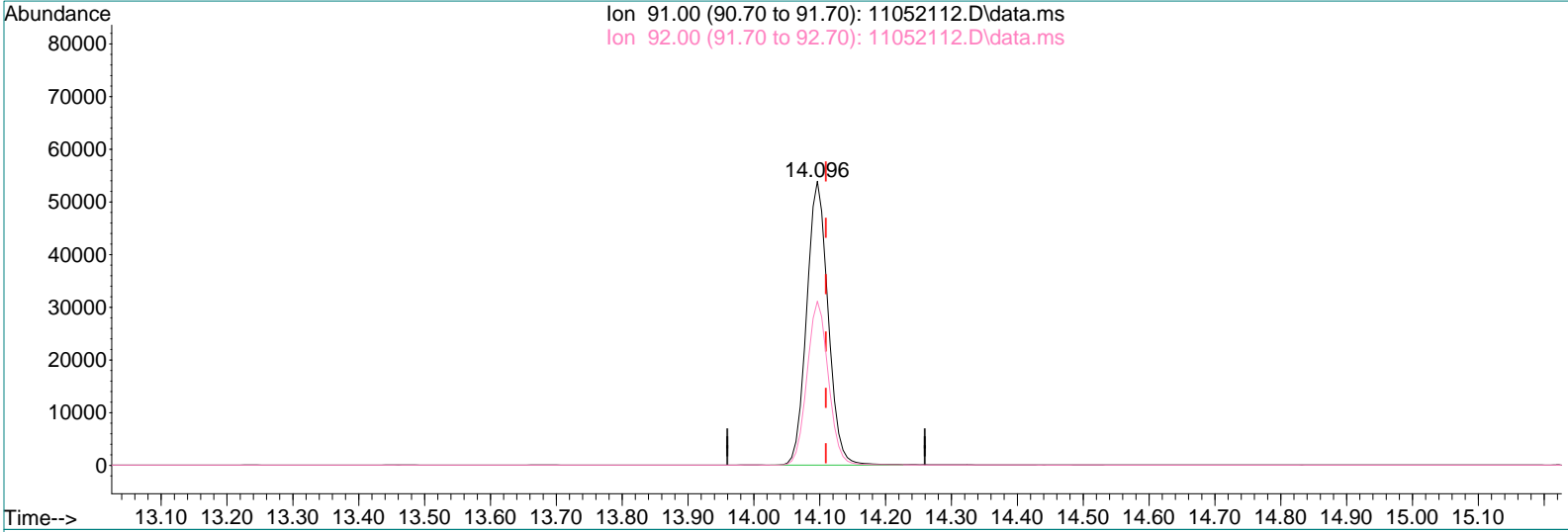
response 22712

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	24.58
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(34) Toluene (T)

14.096min (-0.013) 905.87pg

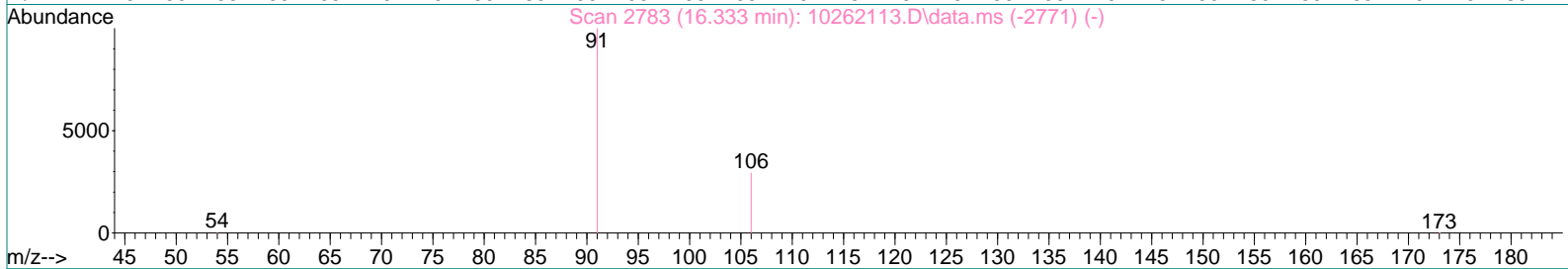
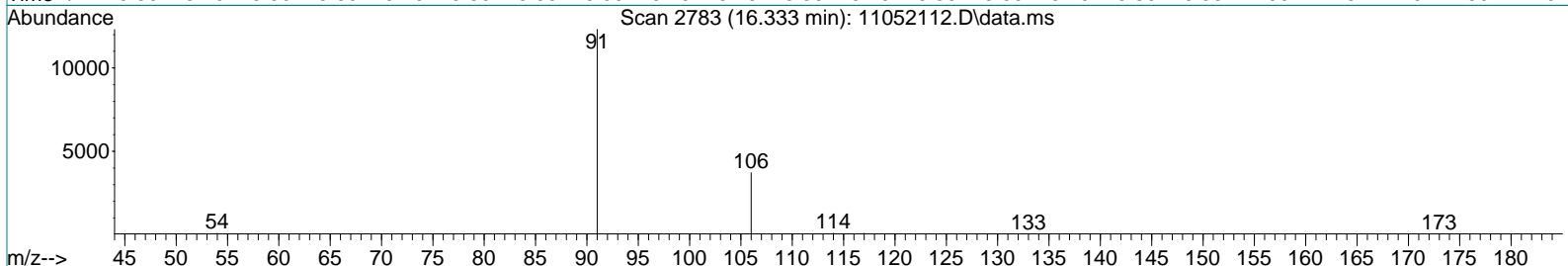
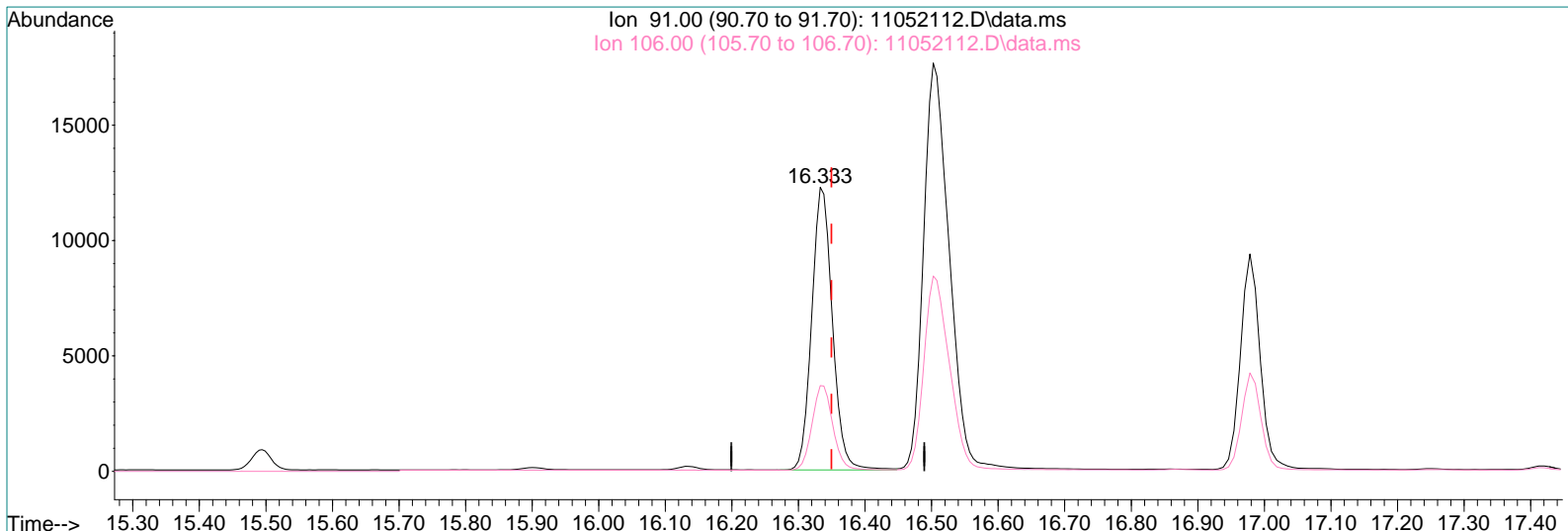
response 121691

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.49
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(40) Ethylbenzene (T)

16.333min (-0.017) 186.34pg

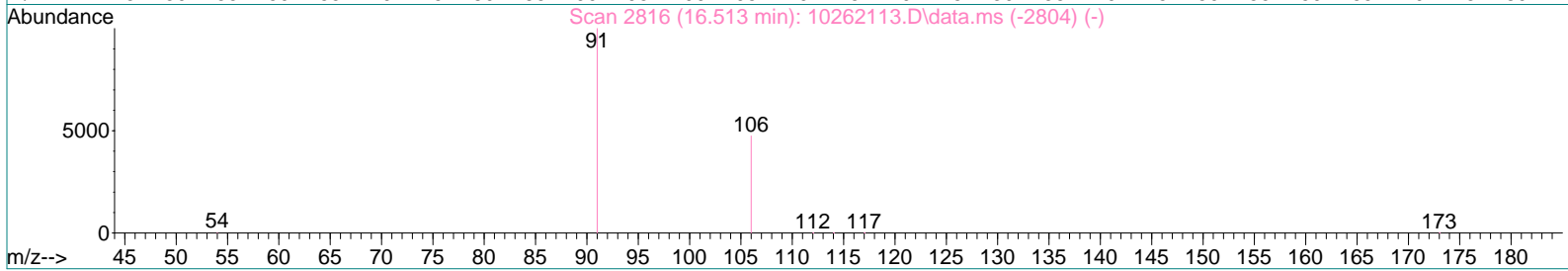
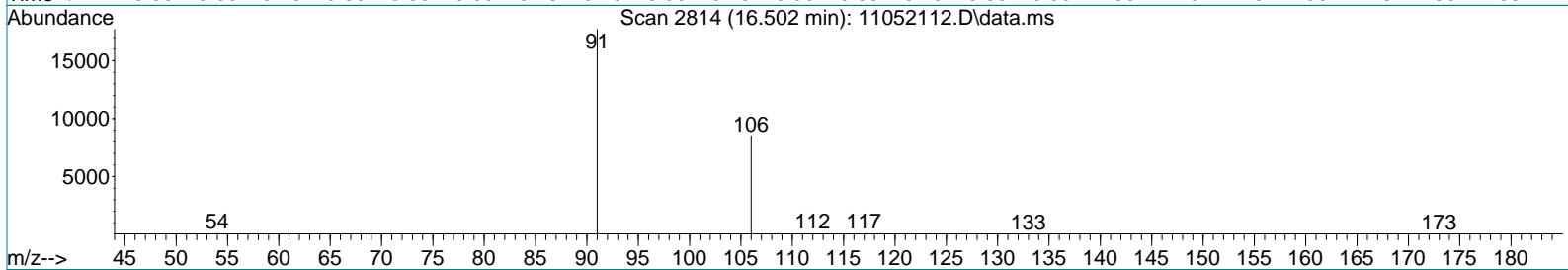
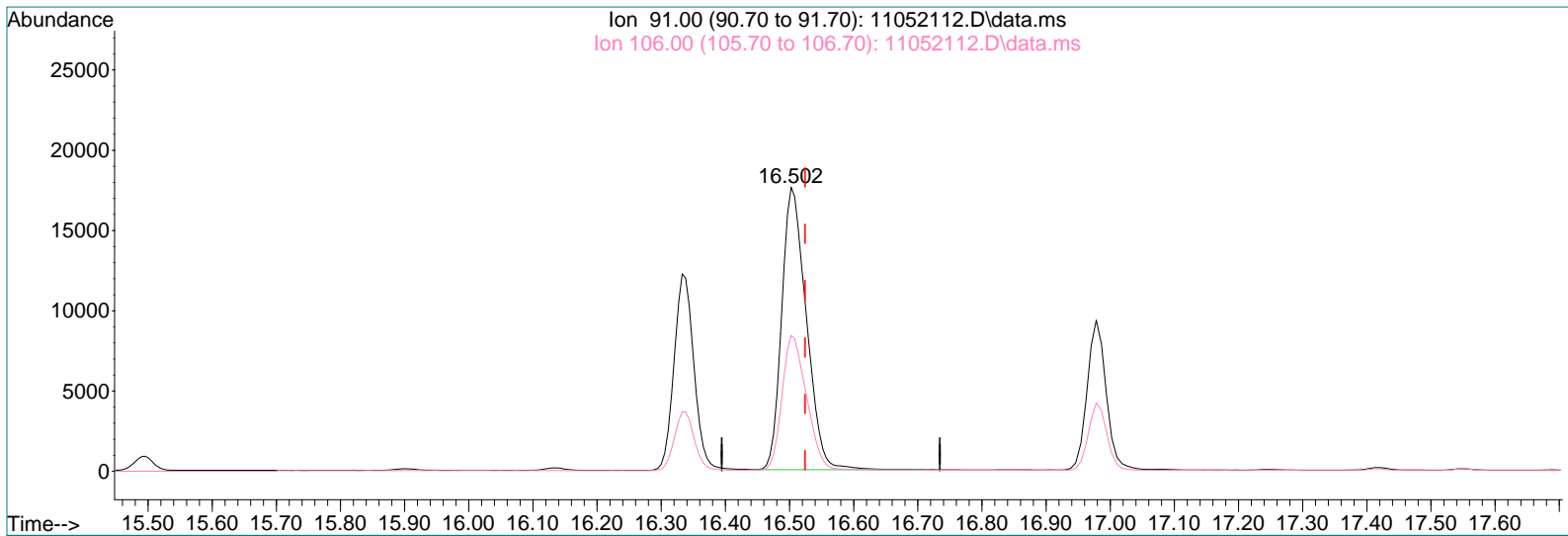
response 26419

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.22
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(41) m,p-Xylene (T)

16.502min (-0.022) 416.09pg

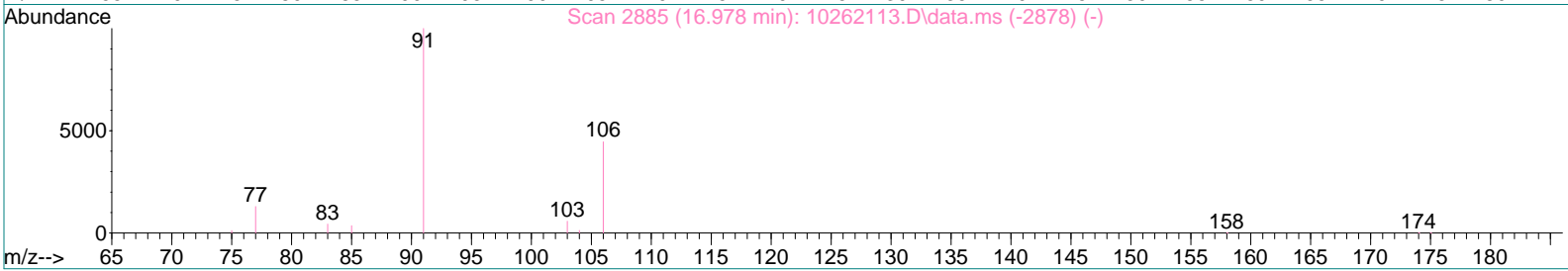
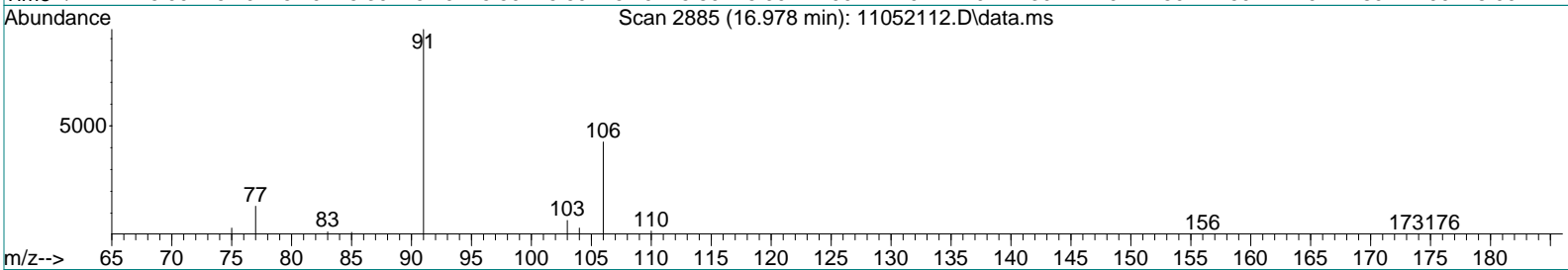
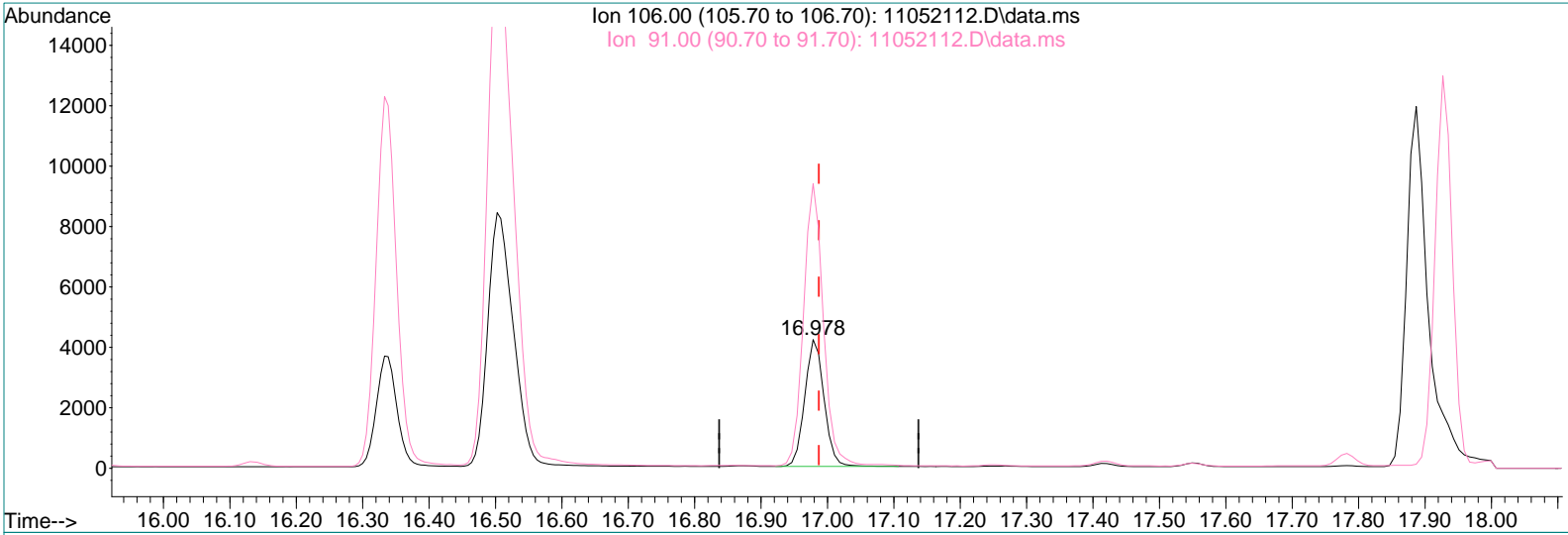
response 46876

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.79
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(43) o-Xylene (T)

16.978min (-0.009) 152.41pg

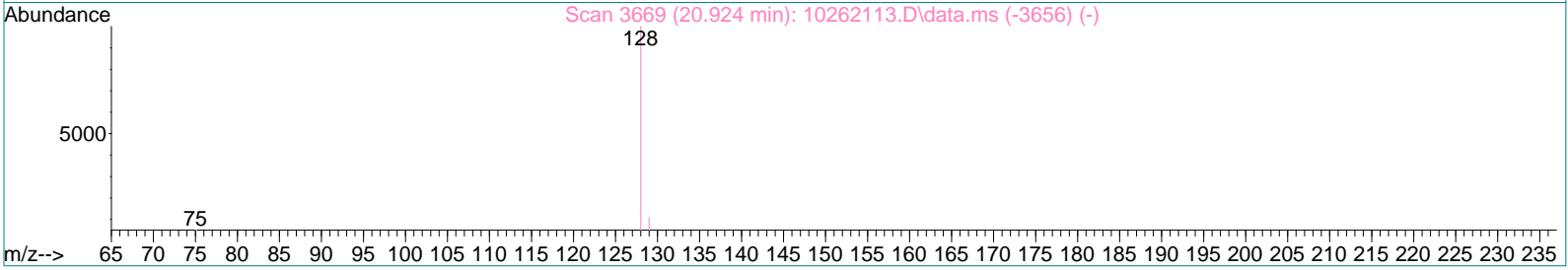
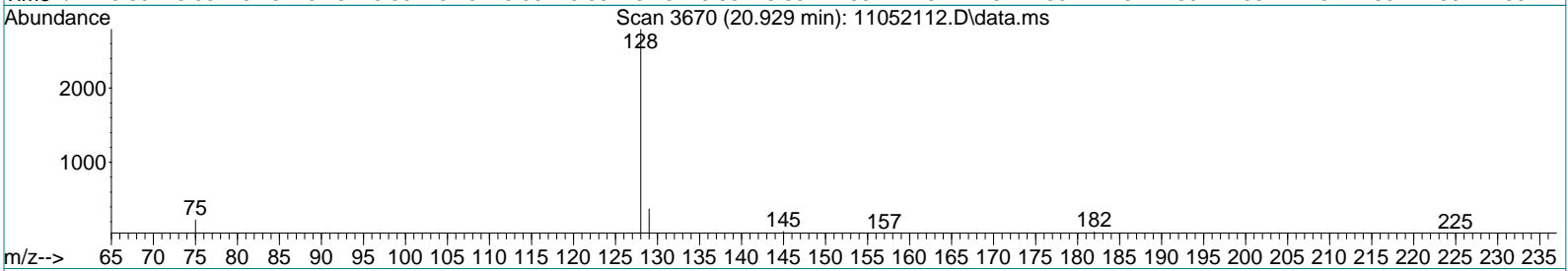
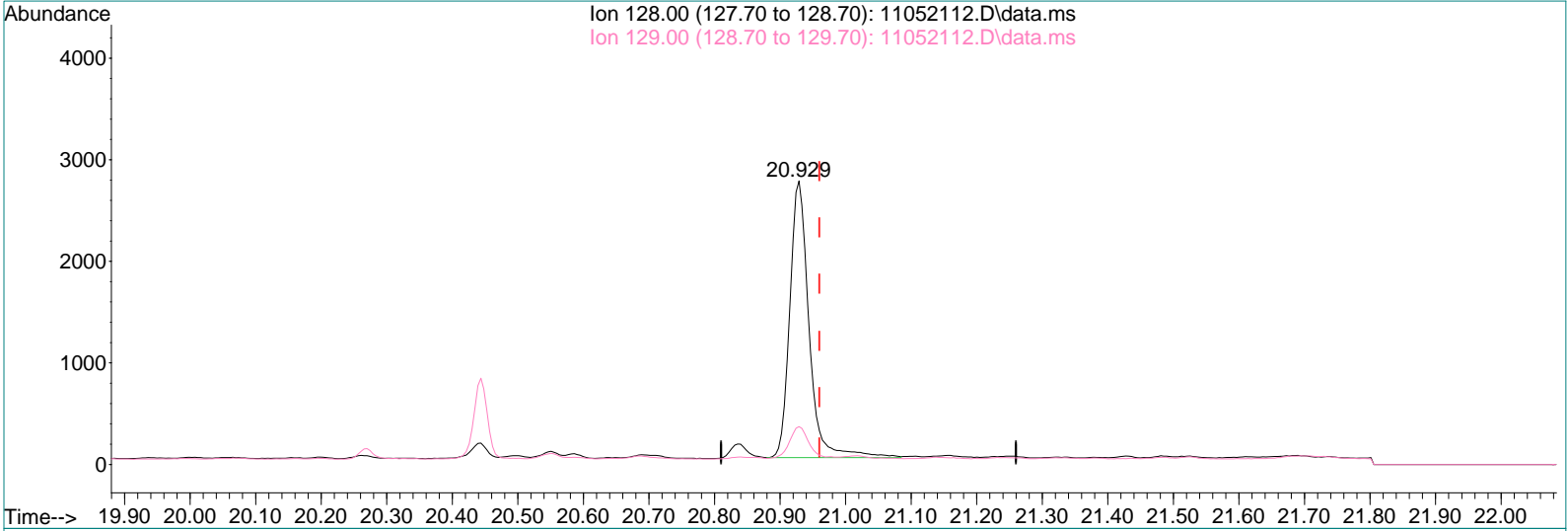
response 8457

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	228.11
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052112.D
 Acq On : 5 Nov 2021 11:08
 Sample : P2105519-006 (1000mL)
 Misc : S34-10062101

Vial: 12
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052112.D\data.ms

(53) Naphthalene (T)

20.929min (-0.031) 41.64pg

response 5553

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.26
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:18:17 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	22231	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	112449	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	24607	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	44431	900.738	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	90.07%		
33) Toluene-d8 (SS2)	14.00	98	128130	1020.058	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	102.01%		
45) Bromofluorobenzene (SS3)	17.42	174	37202	1126.717	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	112.67%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	95763	1311.927	pg	100
3) Chloromethane	4.53	52	901	53.186	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3799	53.796	pg	100
5) Vinyl Chloride	4.82	62	559	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.	d	
7) Bromomethane	5.33	94	437	19.254	pg	99
8) Chloroethane	5.54	64	1754	91.555	pg	99
9) Acrolein	6.13	56	8283	572.171	pg	99
10) Acetone	6.26	58	771450	37818.873	pg	92
11) Trichlorofluoromethane	6.46	101	36434	765.700	pg	100
12) 1,1-Dichloroethene	7.19	96	151	N.D.		
13) Methylene Chloride	7.33	84	7400	231.858	pg	97
14) Trichlorotrifluoroethane	7.65	151	7997	355.073	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.58	63	482	N.D.		
17) Methyl tert-Butyl Ether	8.66	73	294	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.75	83	8885	157.644	pg	99
21) 1,2-Dichloroethane	10.50	62	1800	40.391	pg	99
22) 1,1,1-Trichloroethane	10.77	97	220	N.D.		
23) Benzene	11.22	78	22729	174.892	pg	98
24) Carbon Tetrachloride	11.37	117	12067	317.396	pg	100
26) 1,2-Dichloropropane	12.03	63	683	20.439	pg	98
27) Bromodichloromethane	12.21	83	663	14.668	pg	# 72
28) Trichloroethene	12.27	130	90	N.D.		
29) 1,4-Dioxane	12.25	88	2888	115.087	pg	93
30) cis-1,3-Dichloropropene	13.12	75	70	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	176	N.D.		
34) Toluene	14.10	91	136174	1078.102	pg	99
35) Dibromochloromethane	14.51	129	367	12.839	pg	100
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	414	16.005	pg	95
39) Chlorobenzene	15.95	112	750	N.D.		
40) Ethylbenzene	16.34	91	21453	159.781	pg	99
41) m,p-Xylene	16.50	91	46062	431.748	pg	100
42) Styrene	16.87	104	22350	293.884	pg	99
43) o-Xylene	16.98	106	8712	165.794	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	186	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	4703	38.841	pg	99
47) 1,2,4-Trimethylbenzene	18.64	105	18137	144.652	pg	88
48) 1,3-Dichlorobenzene	0.00	146	0	N.D.	d	
49) 1,4-Dichlorobenzene	18.86	146	22612	376.547	pg	100
50) 1,2-Dichlorobenzene	19.19	146	89	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.93	128	5363	42.470	pg	98

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:18:17 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

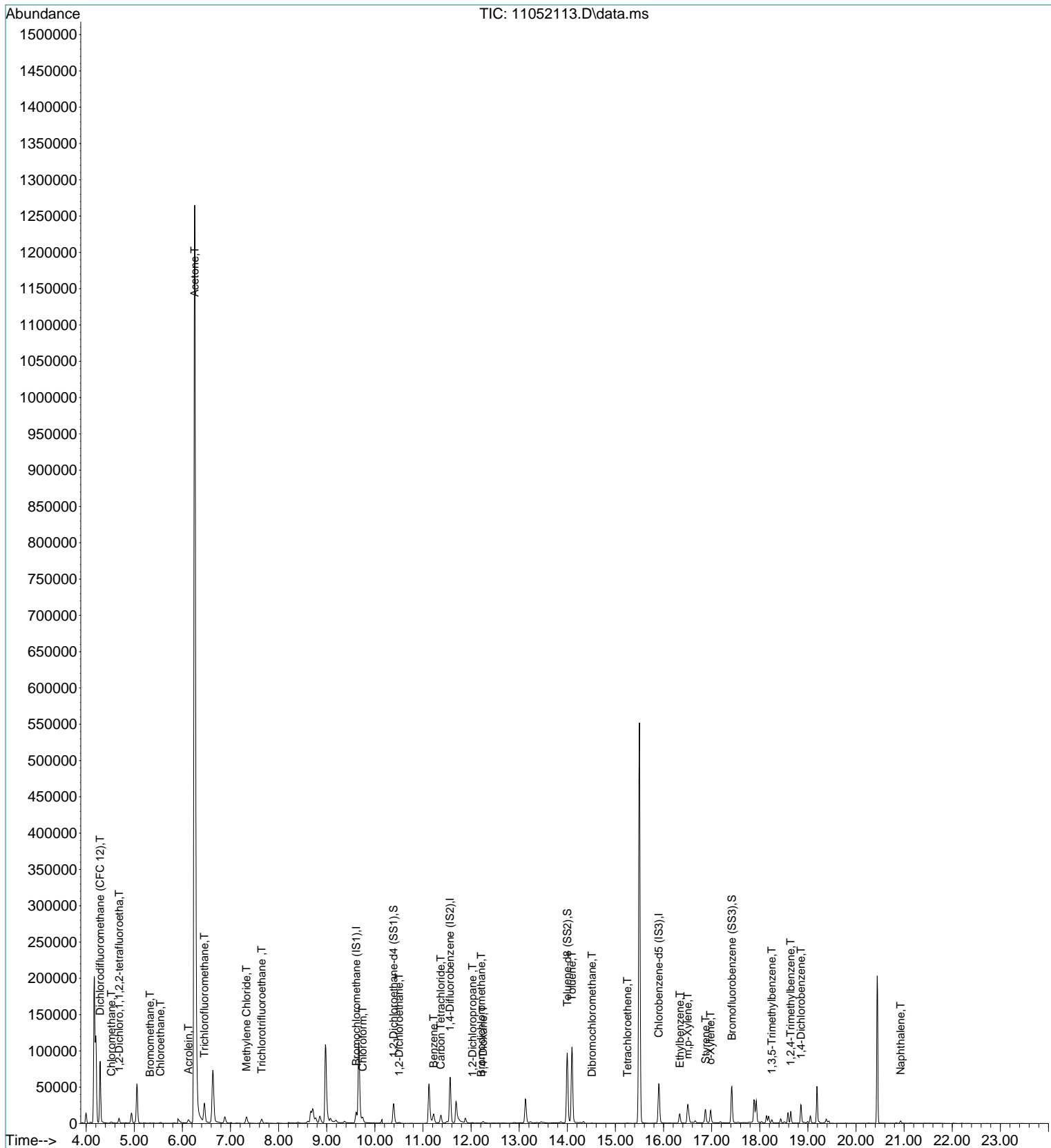
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052113.D
Acq On : 5 Nov 2021 11:40
Sample : P2105519-007 (1000mL)
Misc : S34-10062101

Vial: 5
Operator: TZ
Inst : MS19

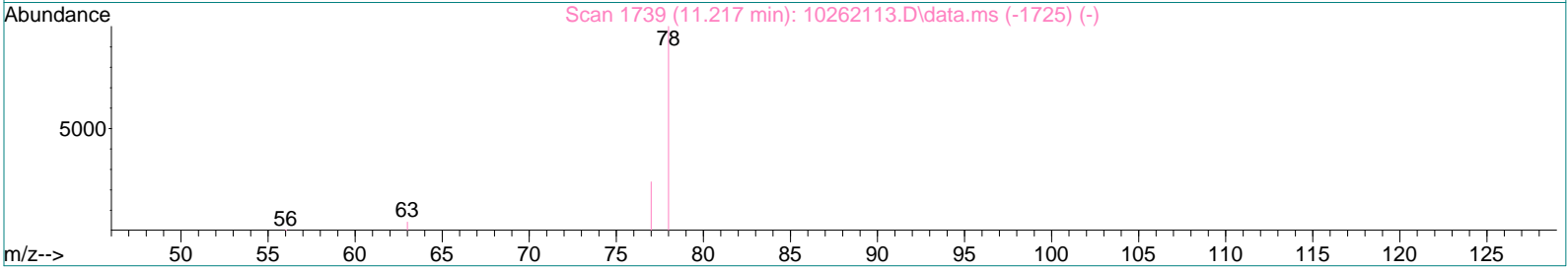
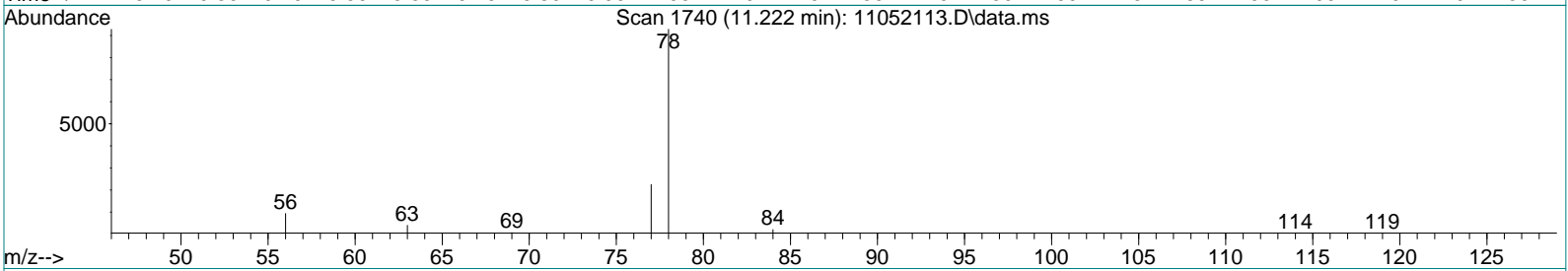
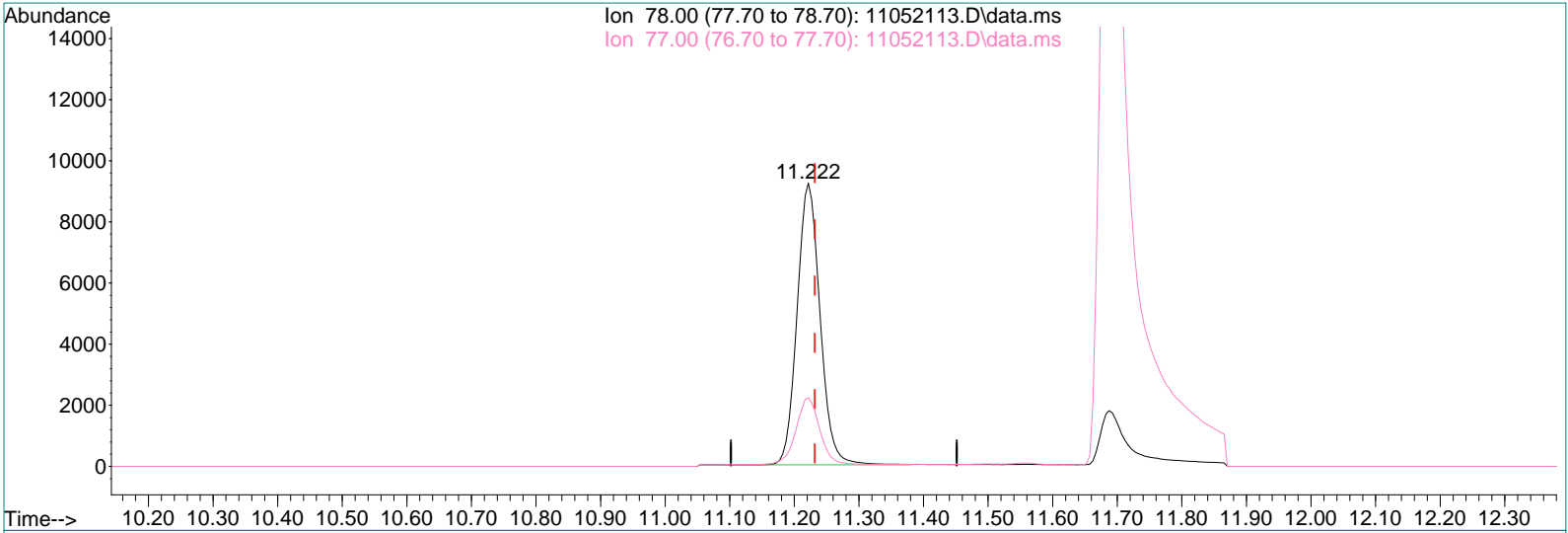
Quant Time: Nov 05 15:18:17 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(23) Benzene (T)

11.222min (-0.010) 174.89pg

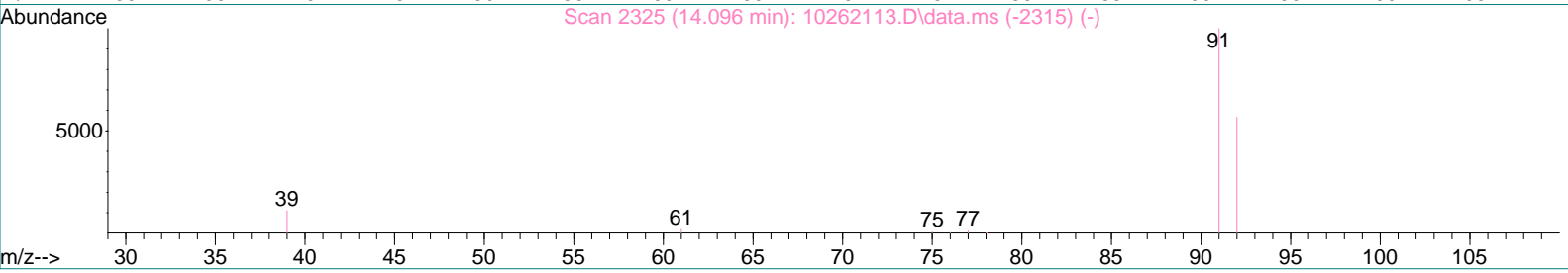
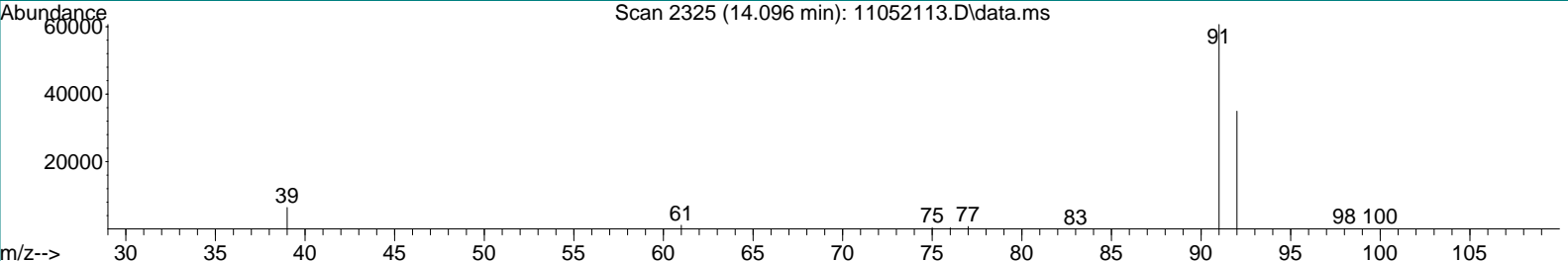
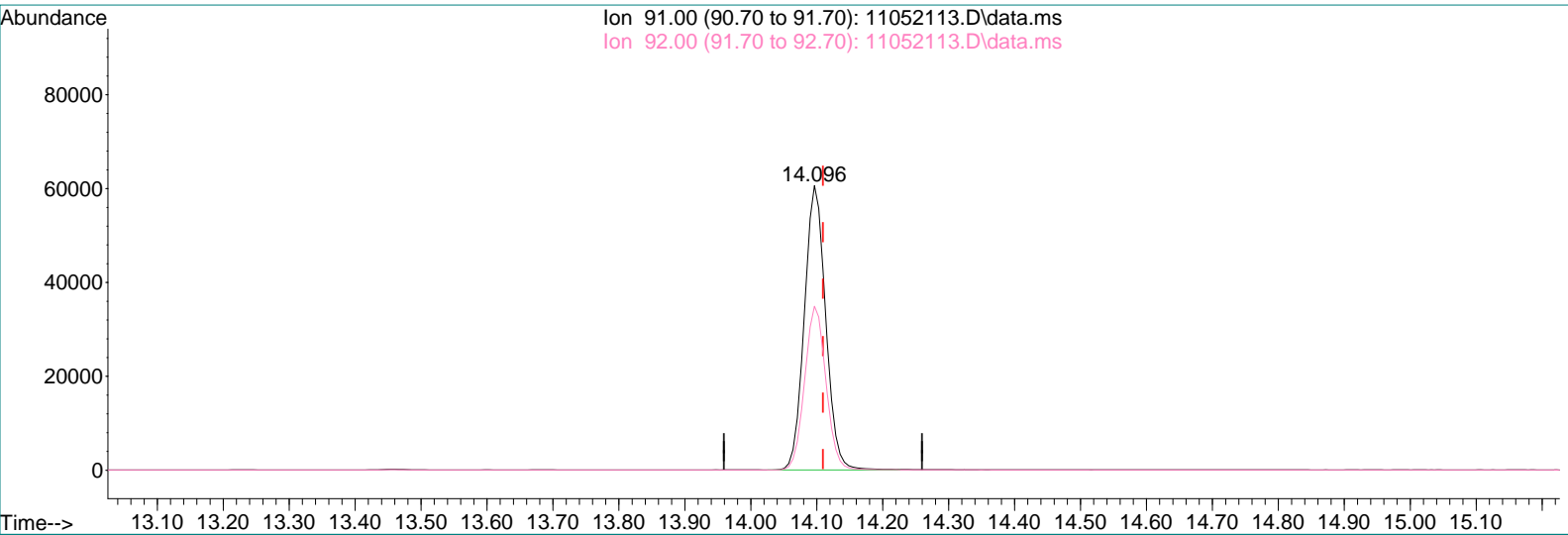
response 22729

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	24.54
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(34) Toluene (T)

14.096min (-0.013) 1078.10pg

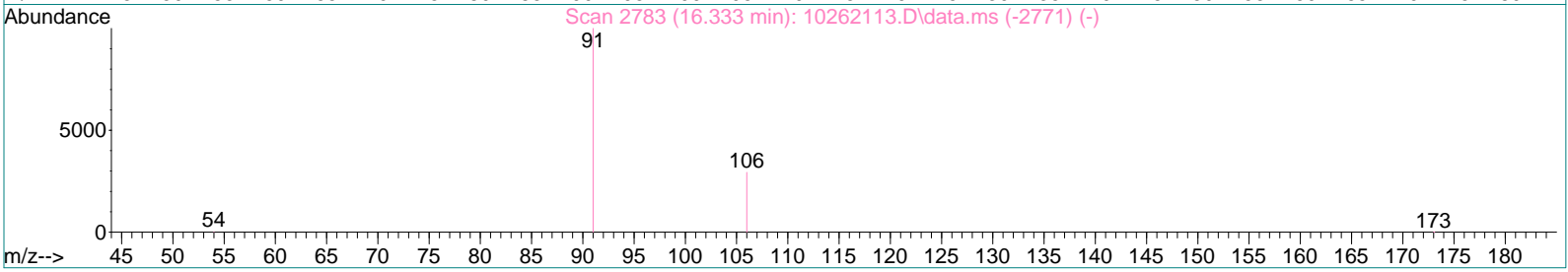
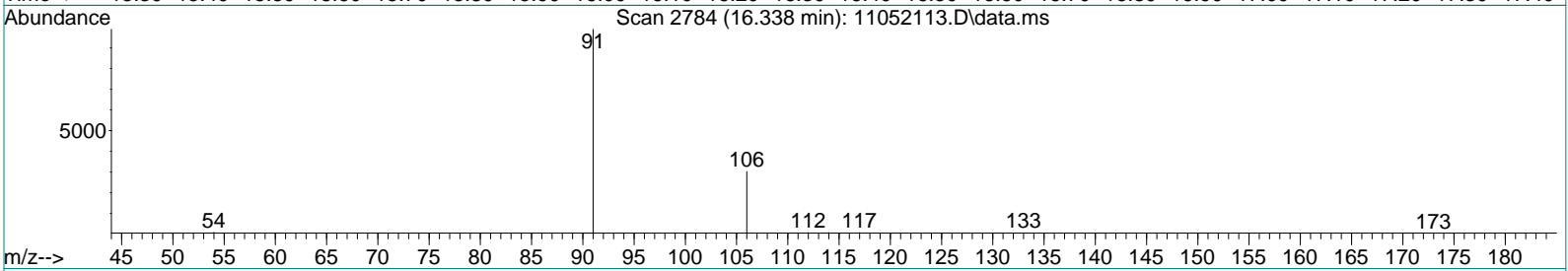
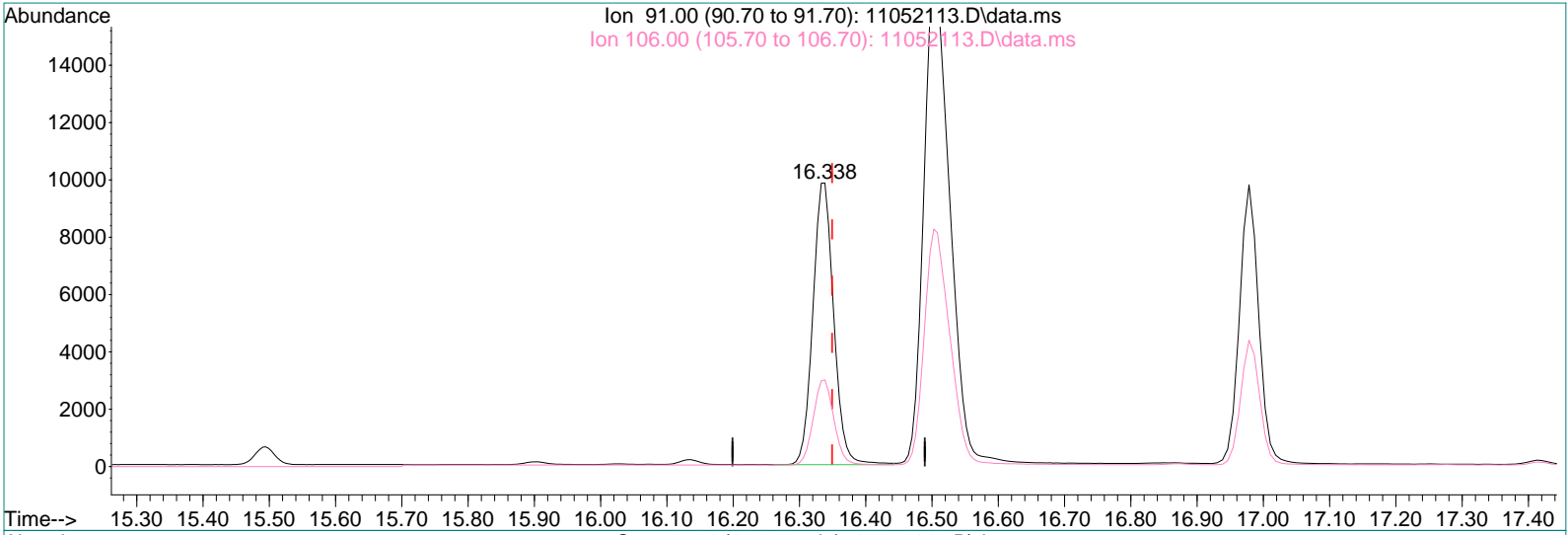
response 136174

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.56
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(40) Ethylbenzene (T)

16.338min (-0.011) 159.78pg

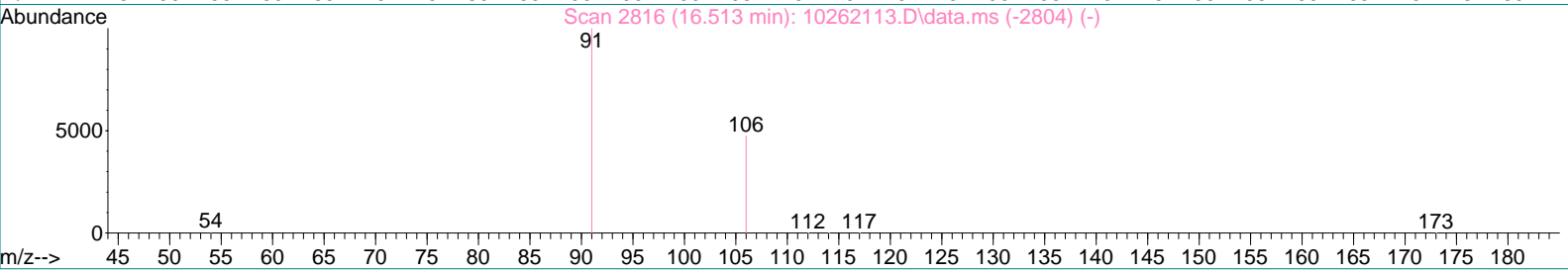
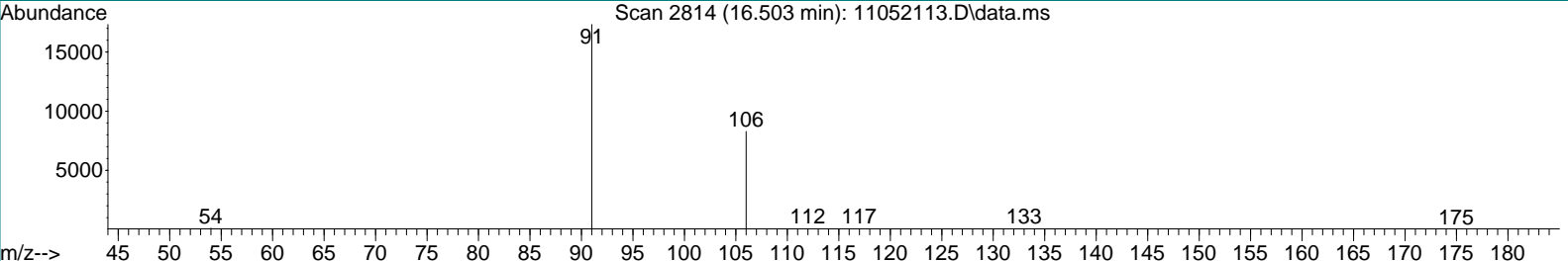
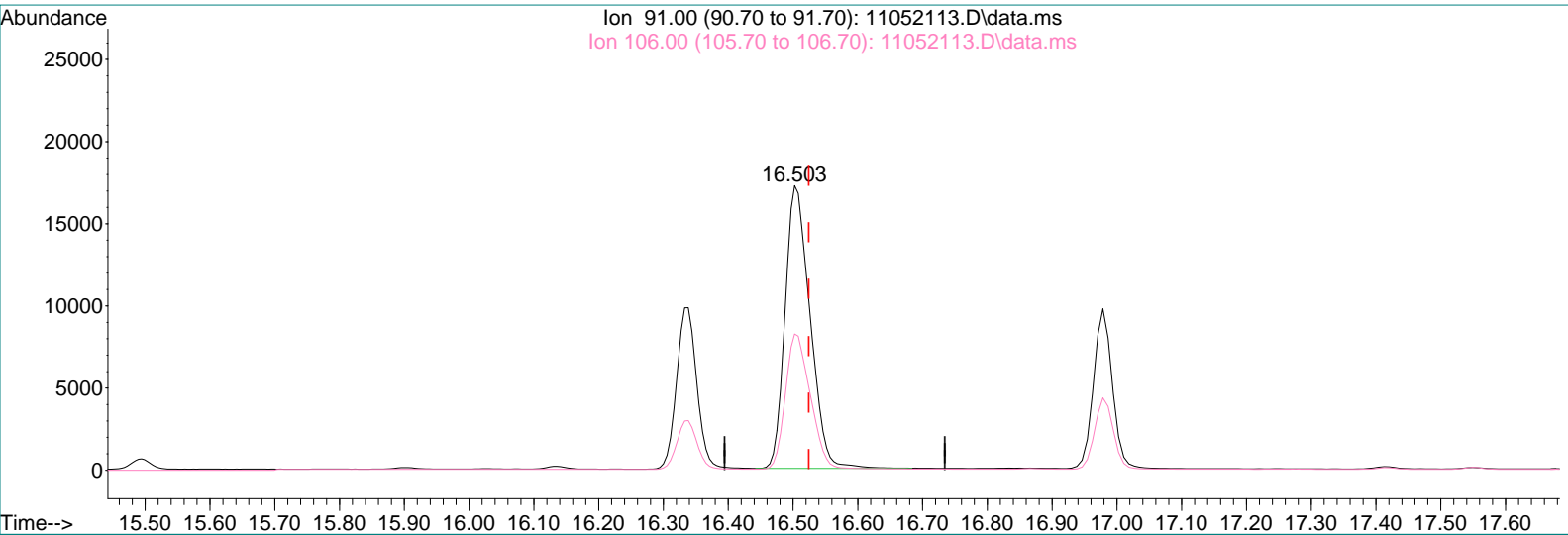
response 21453

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.20
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.022) 431.75pg

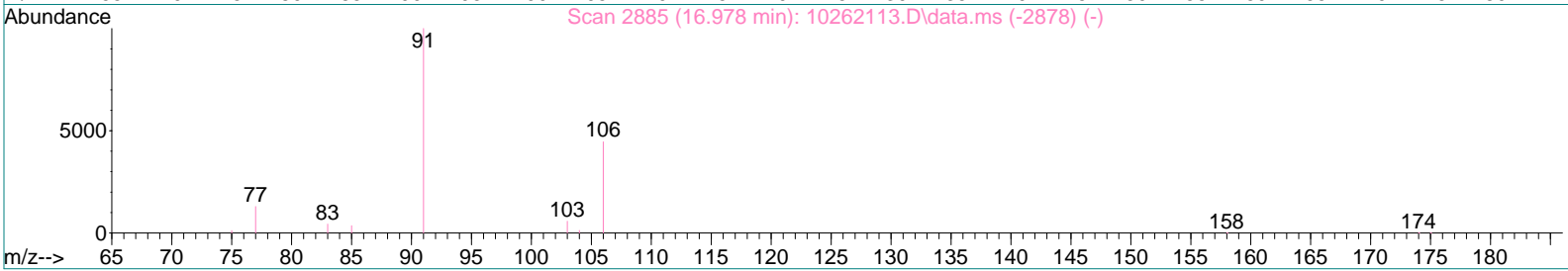
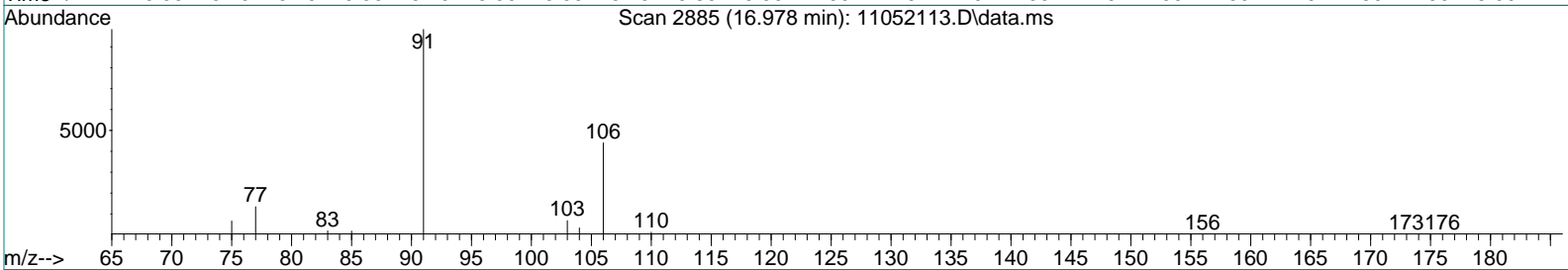
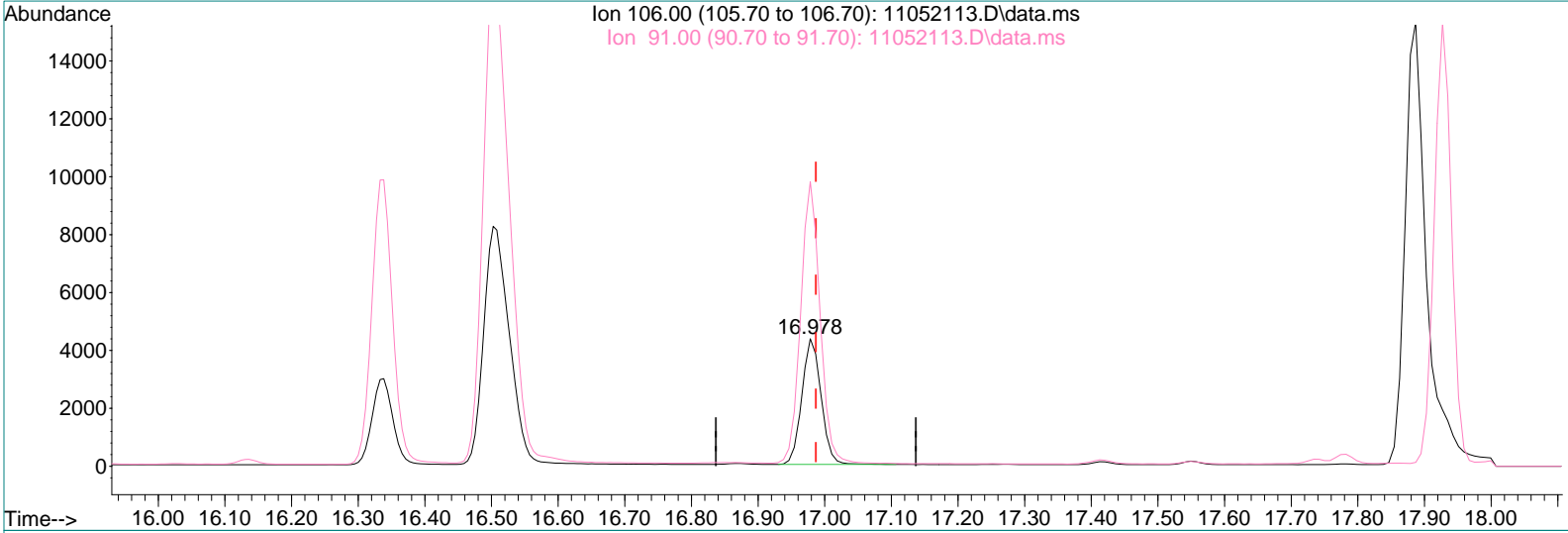
response 46062

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.91
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(43) o-Xylene (T)

16.978min (-0.009) 165.79pg

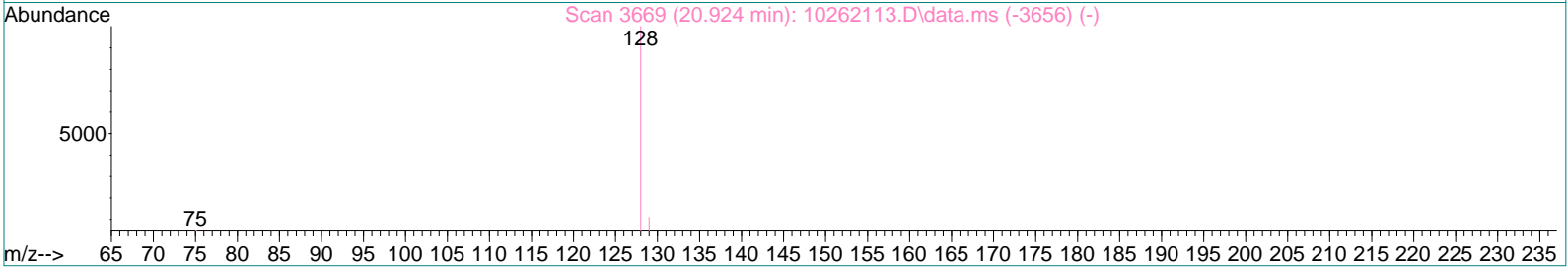
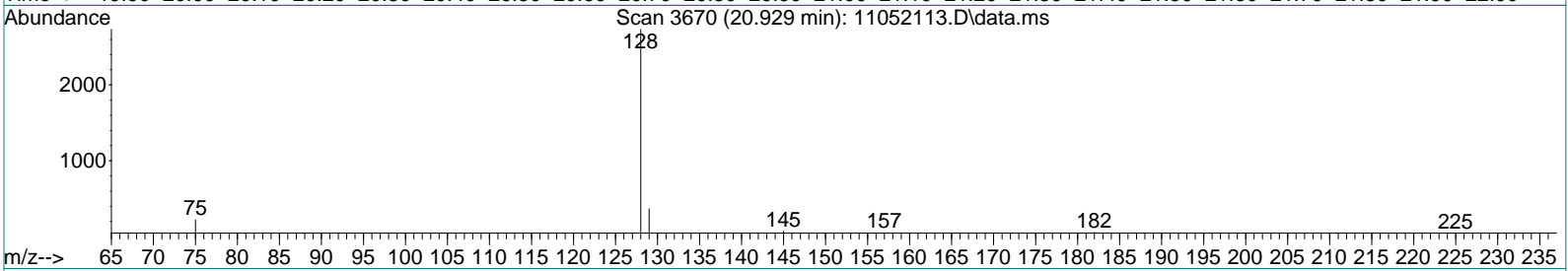
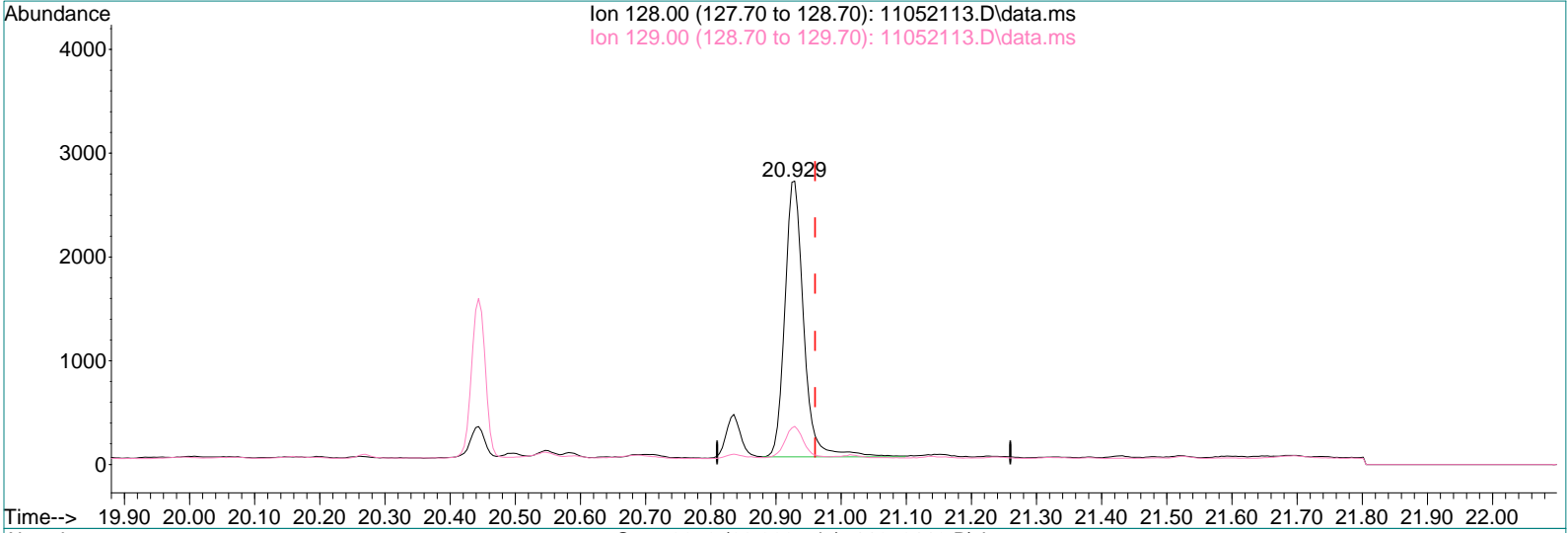
response 8712

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	224.74
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052113.D
 Acq On : 5 Nov 2021 11:40
 Sample : P2105519-007 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 12:11:26 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052113.D\data.ms

(53) Naphthalene (T)

20.929min (-0.031) 42.47pg

response 5363

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.37
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	19875	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	99924	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	27366	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	40828	925.811	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	92.58%
33) Toluene-d8 (SS2)	14.00	98	113435	1016.265	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.63%
45) Bromofluorobenzene (SS3)	17.42	174	37931	1032.976	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	103.30%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	94075	1441.578	pg	100
3) Chloromethane	4.53	52	750	49.521	pg	94
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3800	60.189	pg	99
5) Vinyl Chloride	4.83	62	437	N.D.		
6) 1,3-Butadiene	5.06	54	99	N.D.		
7) Bromomethane	5.34	94	511	25.184	pg	96
8) Chloroethane	5.55	64	139	N.D.		
9) Acrolein	6.14	56	3290	254.206	pg	98
10) Acetone	6.26	58	74875	4105.722	pg	94
11) Trichlorofluoromethane	6.46	101	35771	840.882	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	5196	182.101	pg	98
14) Trichlorotrifluoroethane	7.65	151	7647	379.781	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	199	N.D.		
17) Methyl tert-Butyl Ether	8.67	73	214	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4499	89.287	pg	99
21) 1,2-Dichloroethane	10.50	62	1195	29.994	pg	100
22) 1,1,1-Trichloroethane	10.76	97	204	N.D.		
23) Benzene	11.22	78	20882	179.727	pg	100
24) Carbon Tetrachloride	11.37	117	9924	291.972	pg	99
26) 1,2-Dichloropropane	12.03	63	289	N.D.		
27) Bromodichloromethane	12.22	83	293	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	12.27	88	231	10.359	pg	90
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	107	N.D.		
34) Toluene	14.10	91	24131	214.994	pg	100
35) Dibromochloromethane	14.52	129	118	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	255	11.094	pg	97
39) Chlorobenzene	15.95	112	217	N.D.		
40) Ethylbenzene	16.34	91	4237	28.376	pg	99
41) m,p-Xylene	16.51	91	10650	89.760	pg	100
42) Styrene	16.87	104	4962	58.668	pg	96
43) o-Xylene	16.98	106	2057	35.199	pg	98
44) 1,1,2,2-Tetrachloroethane	16.98	83	173	N.D.		
46) 1,3,5-Trimethylbenzene	18.26	105	1374	10.203	pg	97
47) 1,2,4-Trimethylbenzene	18.65	105	4905	35.176	pg	88
48) 1,3-Dichlorobenzene	18.80	146	124	N.D.		
49) 1,4-Dichlorobenzene	18.87	146	237	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	1027	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

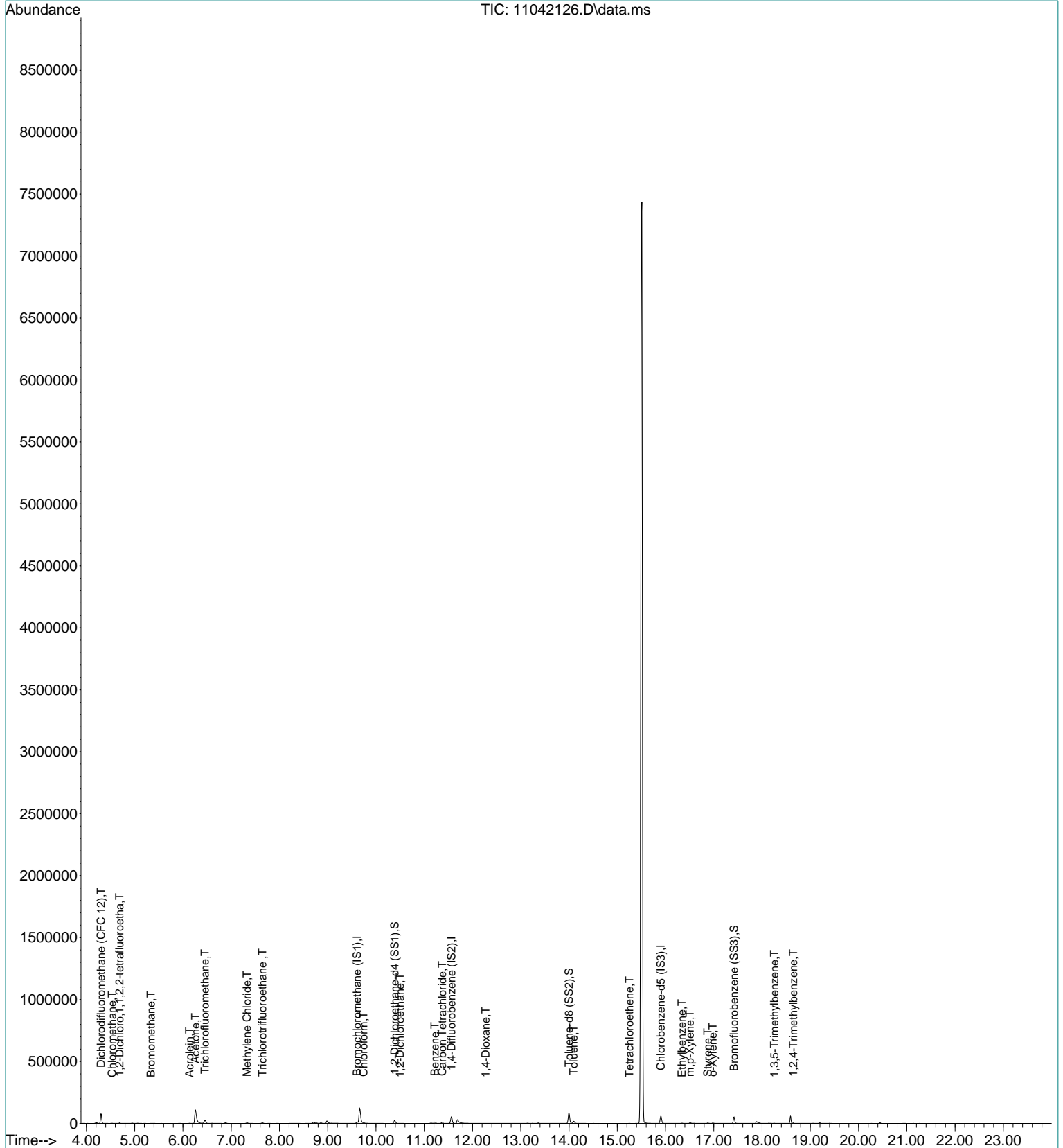
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

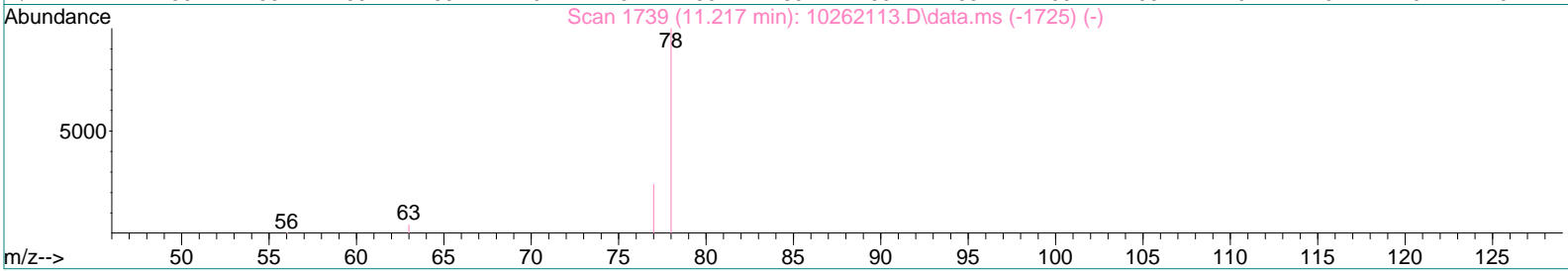
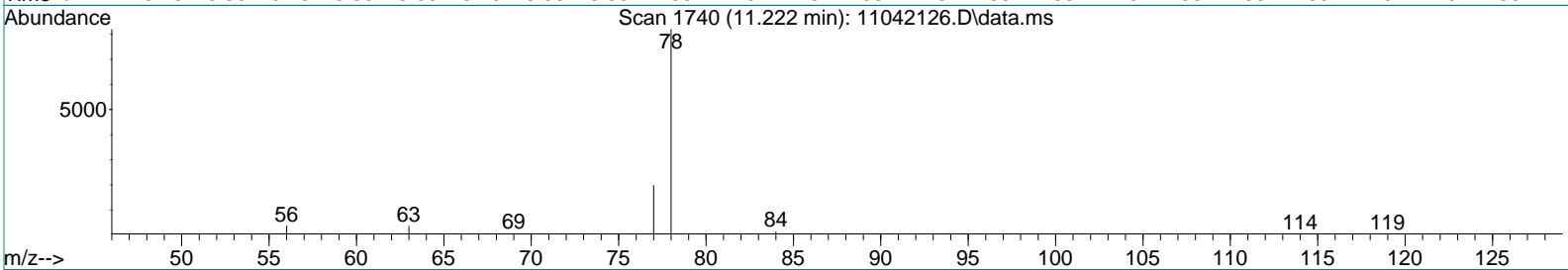
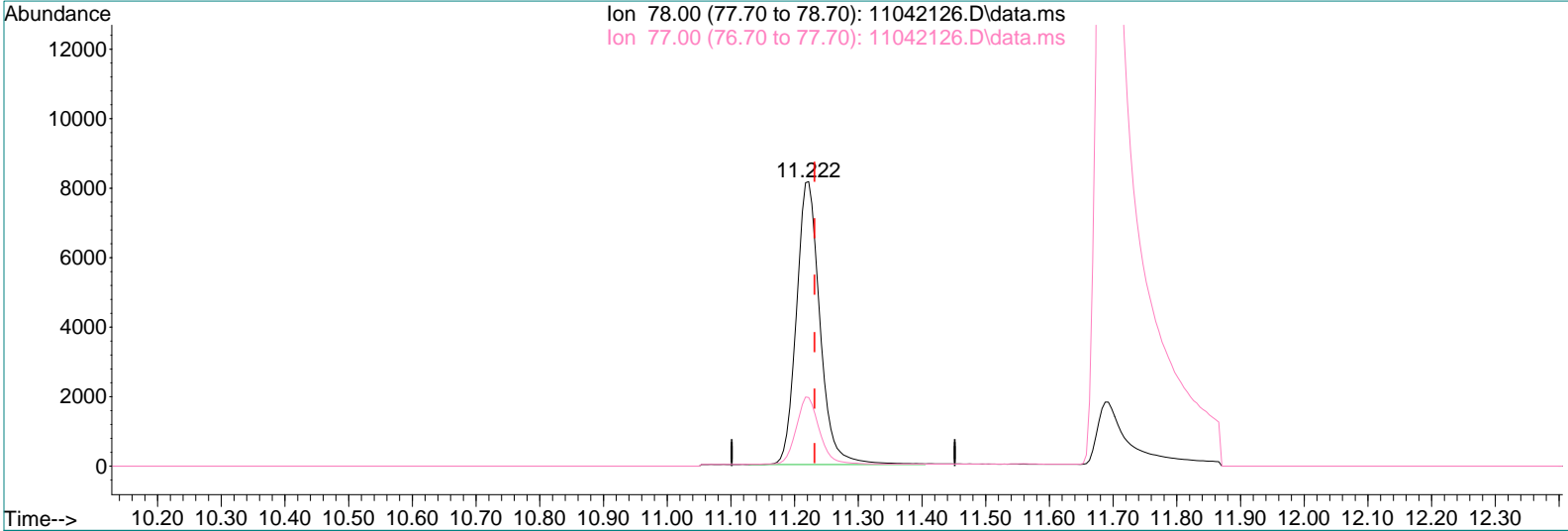
Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042126.D\data.ms

(23) Benzene (T)

11.222min (-0.010) 179.73pg

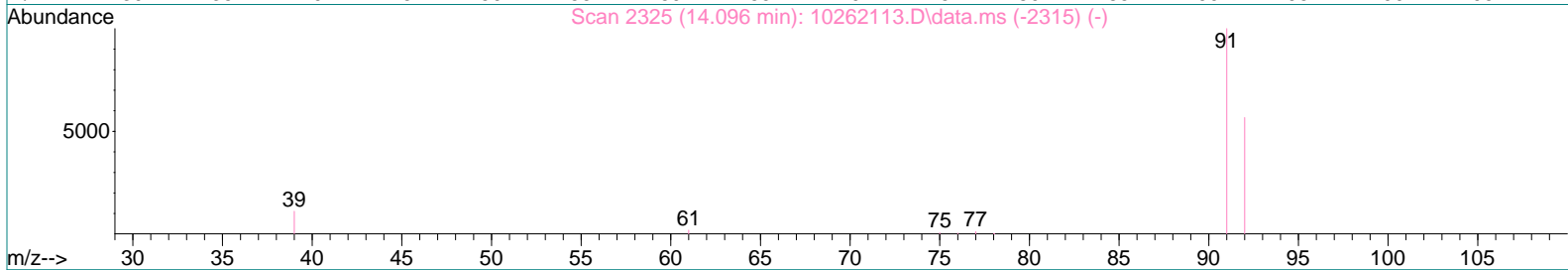
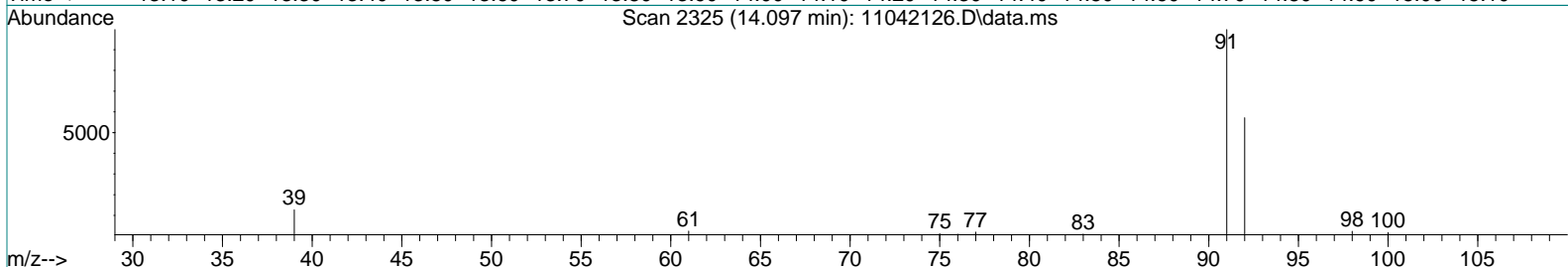
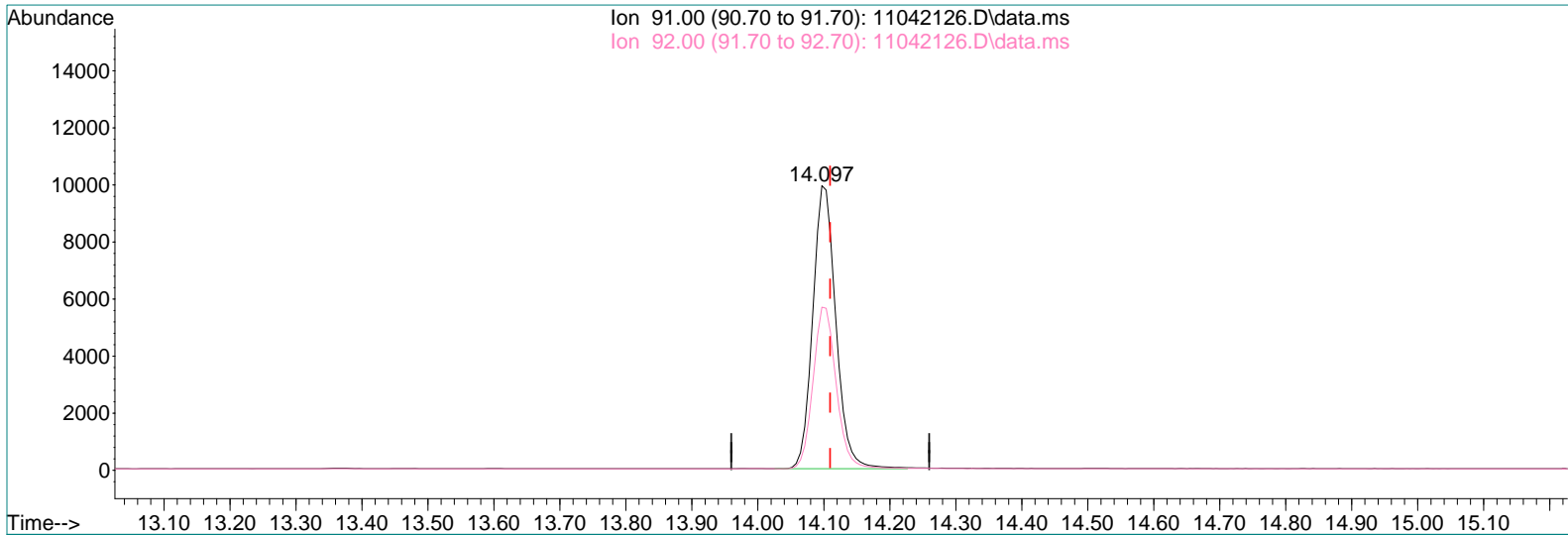
response 20882

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.64
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042126.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 214.99pg

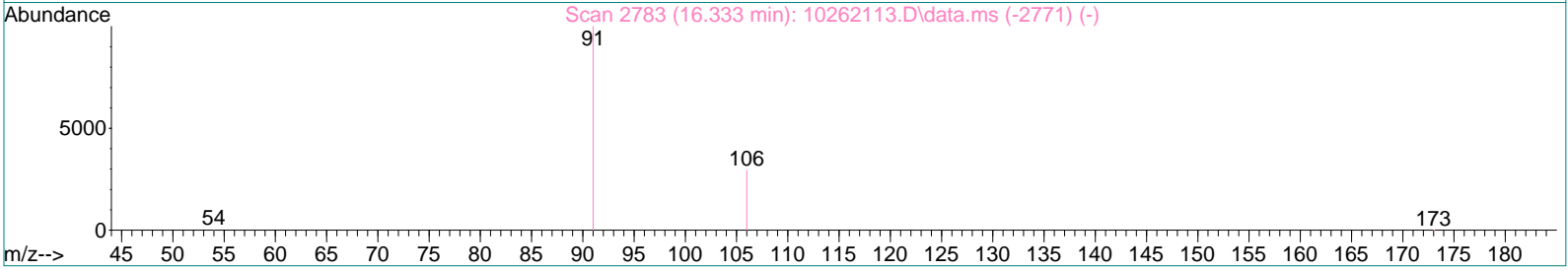
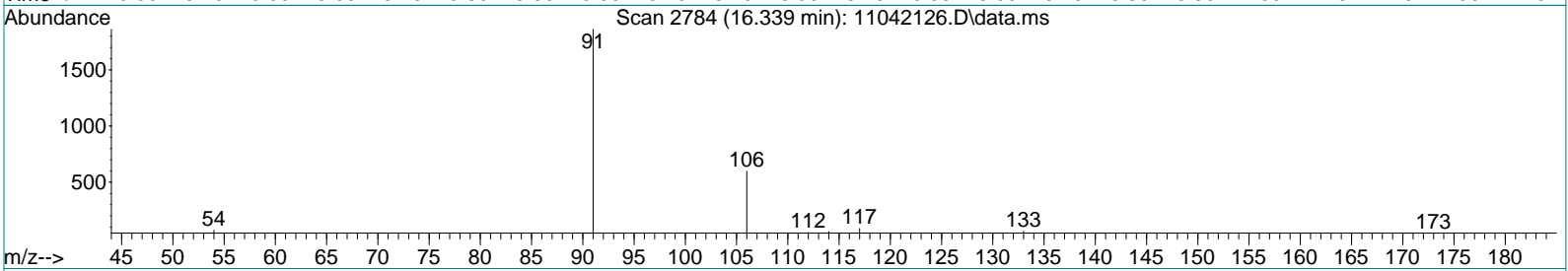
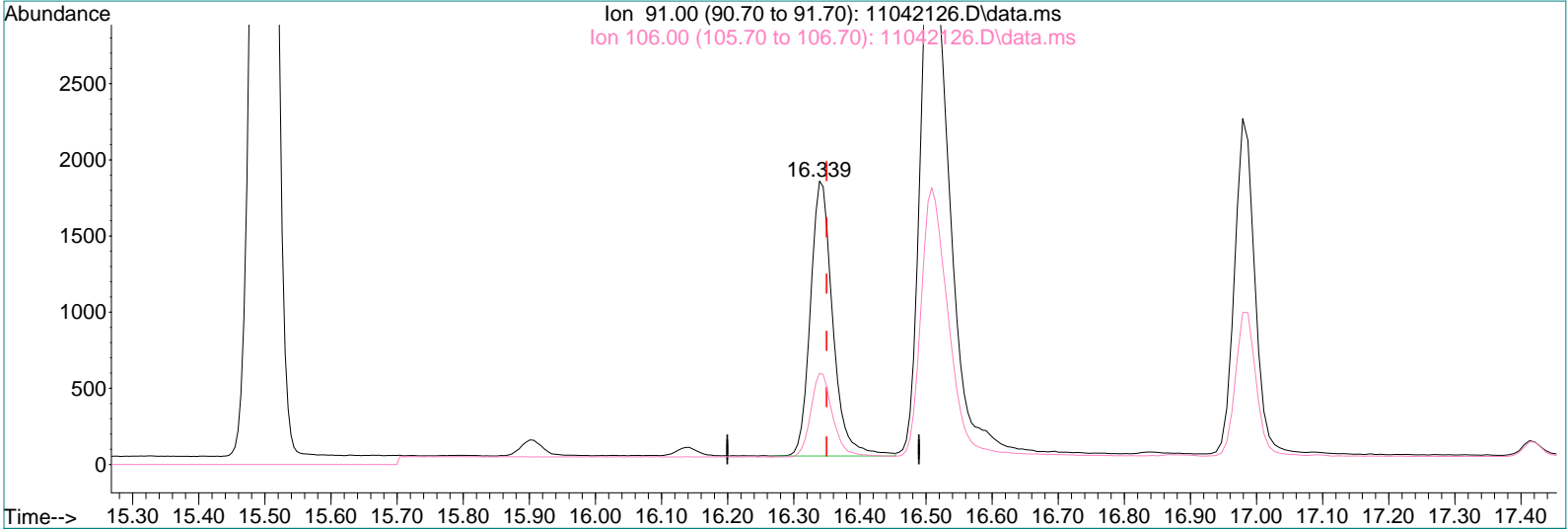
response 24131

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042126.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 28.38pg

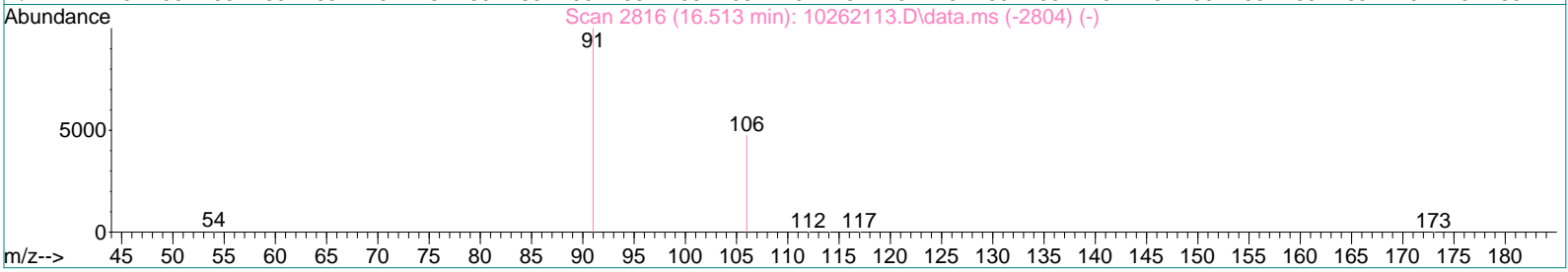
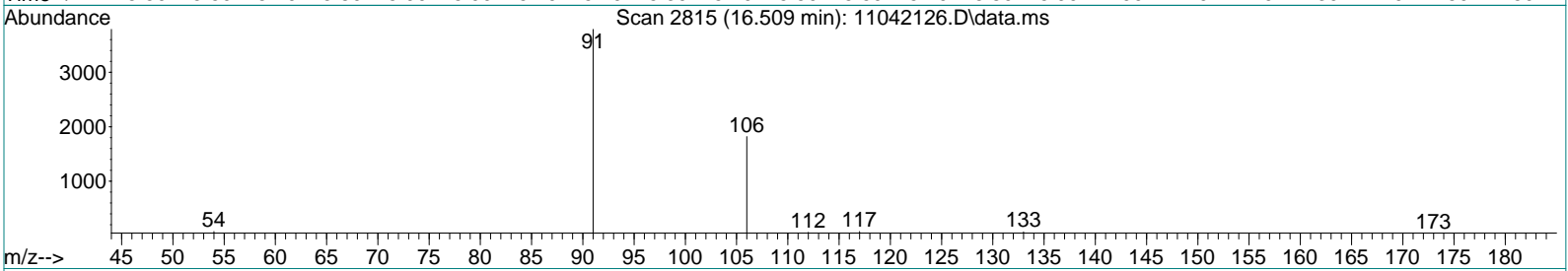
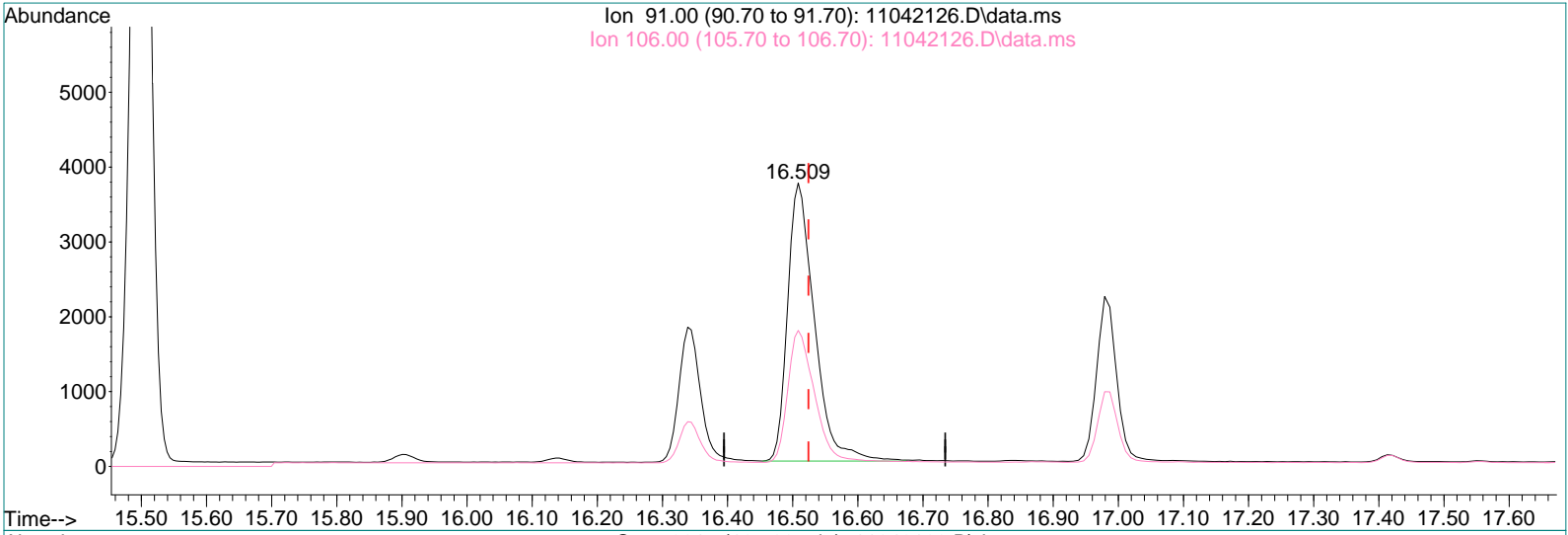
response 4237

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	29.90
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042126.D\data.ms

(41) m,p-Xylene (T)

16.509min (-0.016) 89.76pg

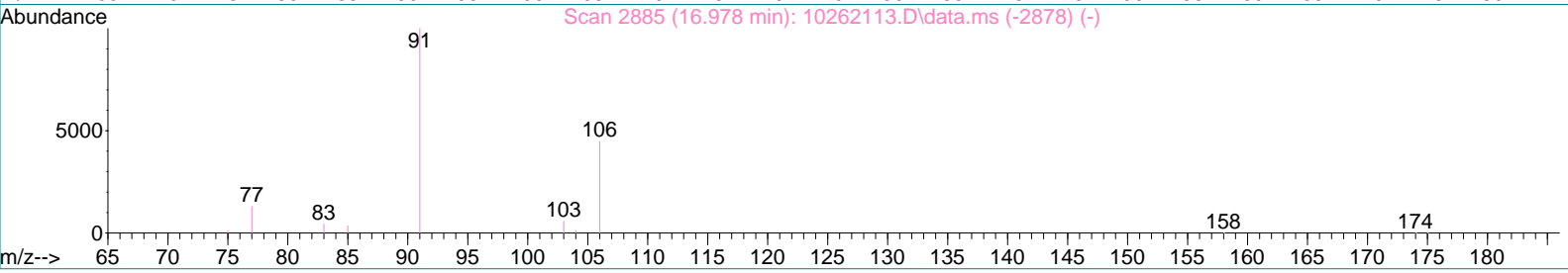
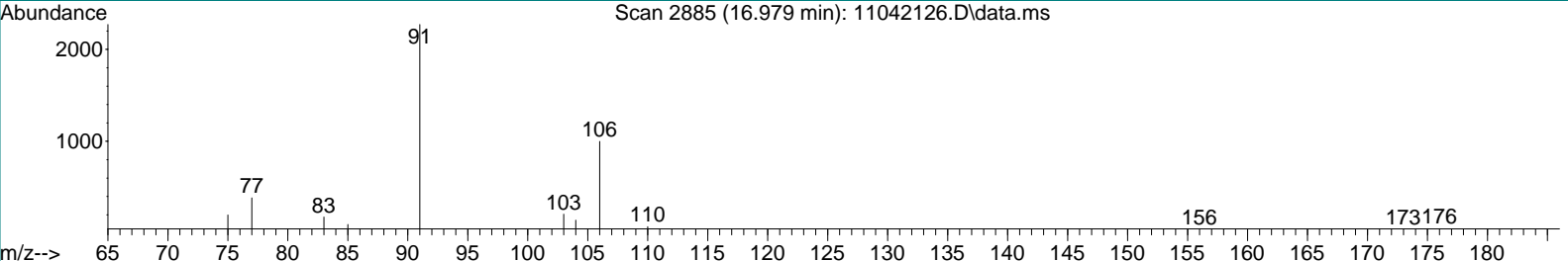
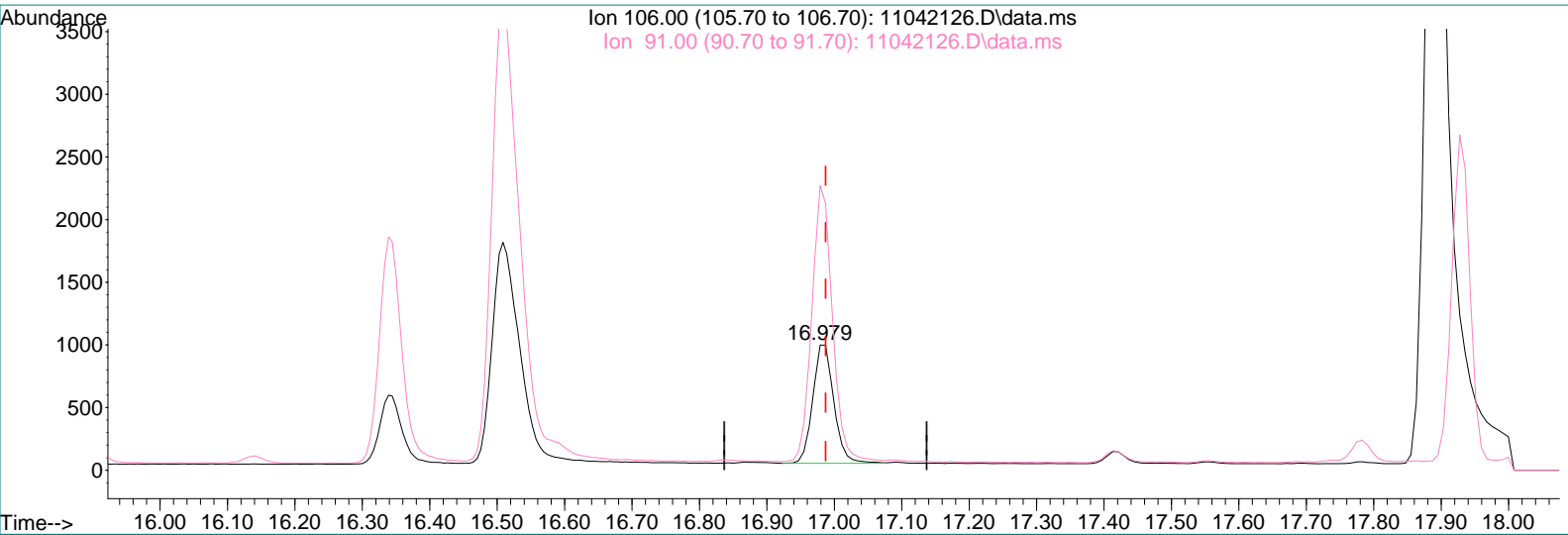
response 10650

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.32
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042126.D
 Acq On : 4 Nov 2021 21:16
 Sample : P2105519-008 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042126.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 35.20pg

response 2057

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	227.47
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	21789	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.56	114	108679	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	24328	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	45165	934.192	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	93.42%		
33) Toluene-d8 (SS2)	14.00	98	122555	1009.520	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	100.95%		
45) Bromofluorobenzene (SS3)	17.42	174	34982	1071.632	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	107.16%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	104944	1466.869	pg	100
3) Chloromethane	4.52	52	754	45.412	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	4221	60.985	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.06	54	88	N.D.		
7) Bromomethane	5.32	94	344	15.464	pg	98
8) Chloroethane	5.55	64	144	N.D.		
9) Acrolein	6.15	56	3212	226.379	pg	99
10) Acetone	6.27	58	47361	2368.882	pg	92
11) Trichlorofluoromethane	6.46	101	39196	840.457	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.34	84	5684	181.705	pg	94
14) Trichlorotrifluoroethane	7.65	151	8281	375.141	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	191	N.D.		
17) Methyl tert-Butyl Ether	8.68	73	196	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4860	87.979	pg	99
21) 1,2-Dichloroethane	10.50	62	1304	29.855	pg	96
22) 1,1,1-Trichloroethane	10.77	97	214	N.D.		
23) Benzene	11.22	78	20676	162.322	pg	100
24) Carbon Tetrachloride	11.37	117	12010	322.305	pg	99
26) 1,2-Dichloropropane	12.03	63	281	N.D.		
27) Bromodichloromethane	12.22	83	289	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	12.26	88	885	36.491	pg	86
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.81	83	62	N.D.		
34) Toluene	14.10	91	21745	178.129	pg	99
35) Dibromochloromethane	14.52	129	130	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	277	11.080	pg	95
39) Chlorobenzene	15.96	112	137	N.D.		
40) Ethylbenzene	16.34	91	4002	30.149	pg	99
41) m,p-Xylene	16.50	91	9010	85.421	pg	100
42) Styrene	16.88	104	2243	29.832	pg	100
43) o-Xylene	16.98	106	1651	31.780	pg	96
44) 1,1,2,2-Tetrachloroethane	16.98	83	102	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	1015	N.D.		
47) 1,2,4-Trimethylbenzene	18.65	105	3923	31.647	pg	91
48) 1,3-Dichlorobenzene	18.86	146	321	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	331	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	1221	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

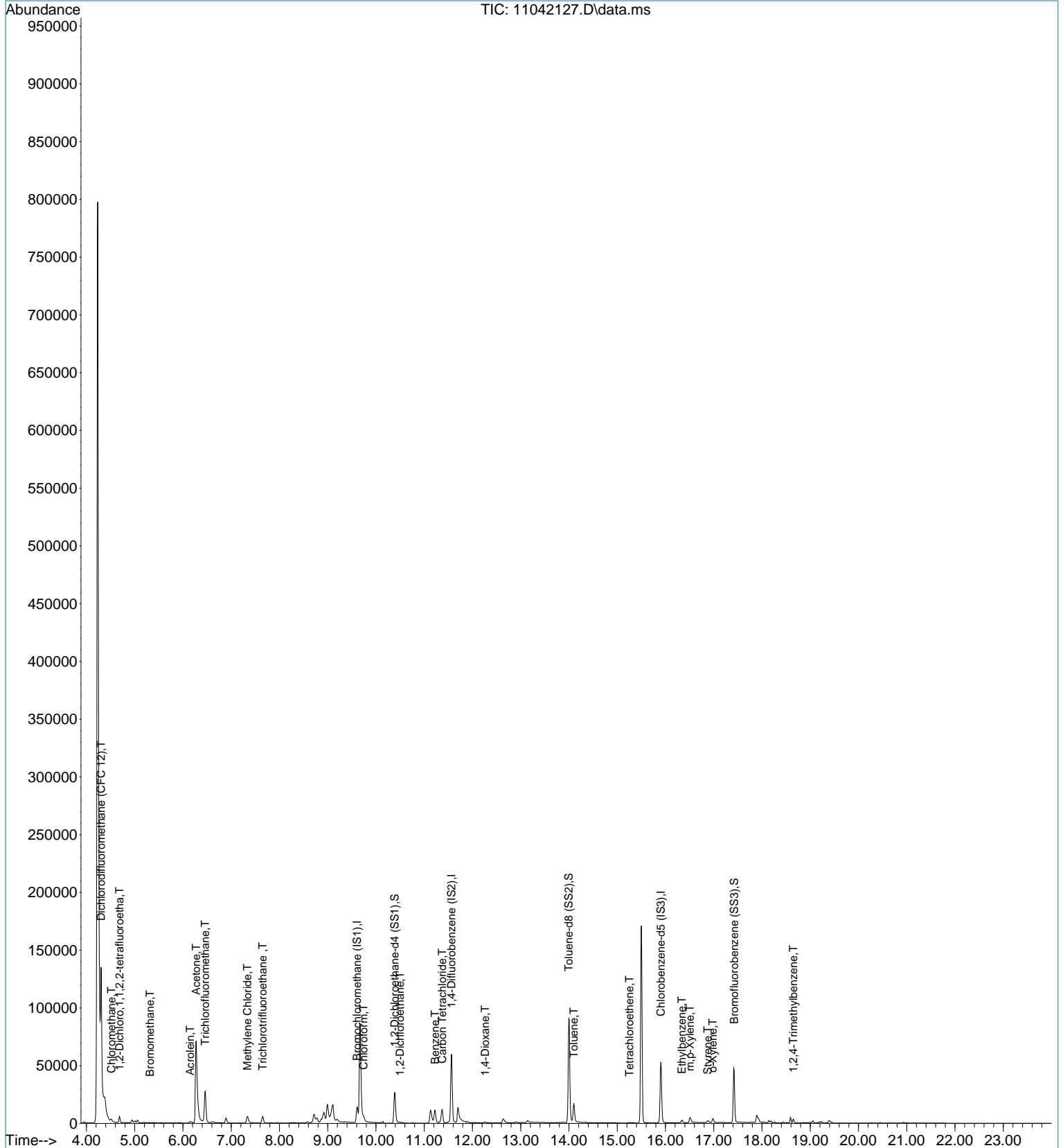
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

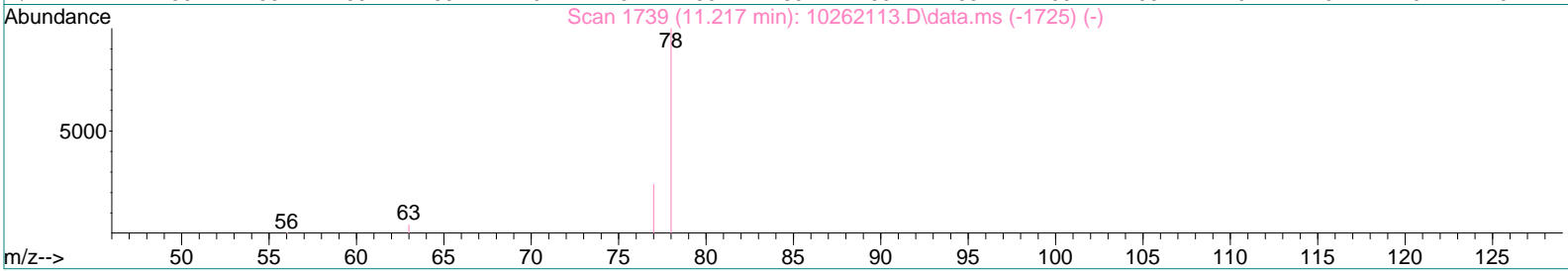
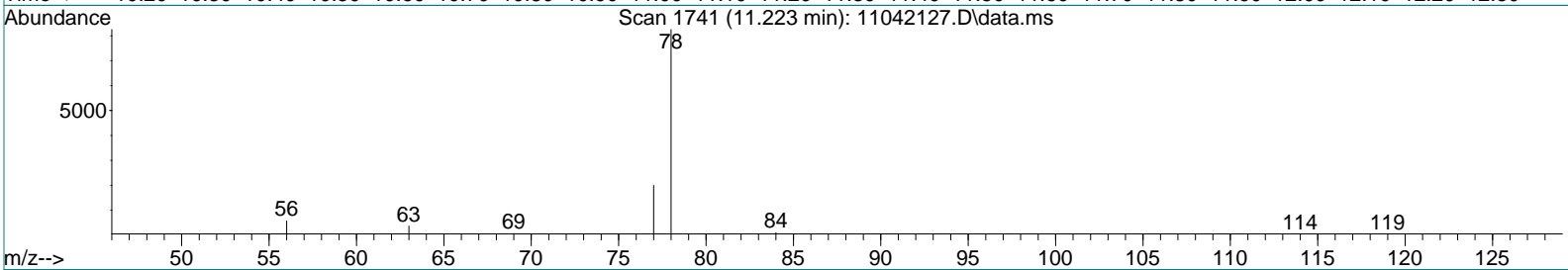
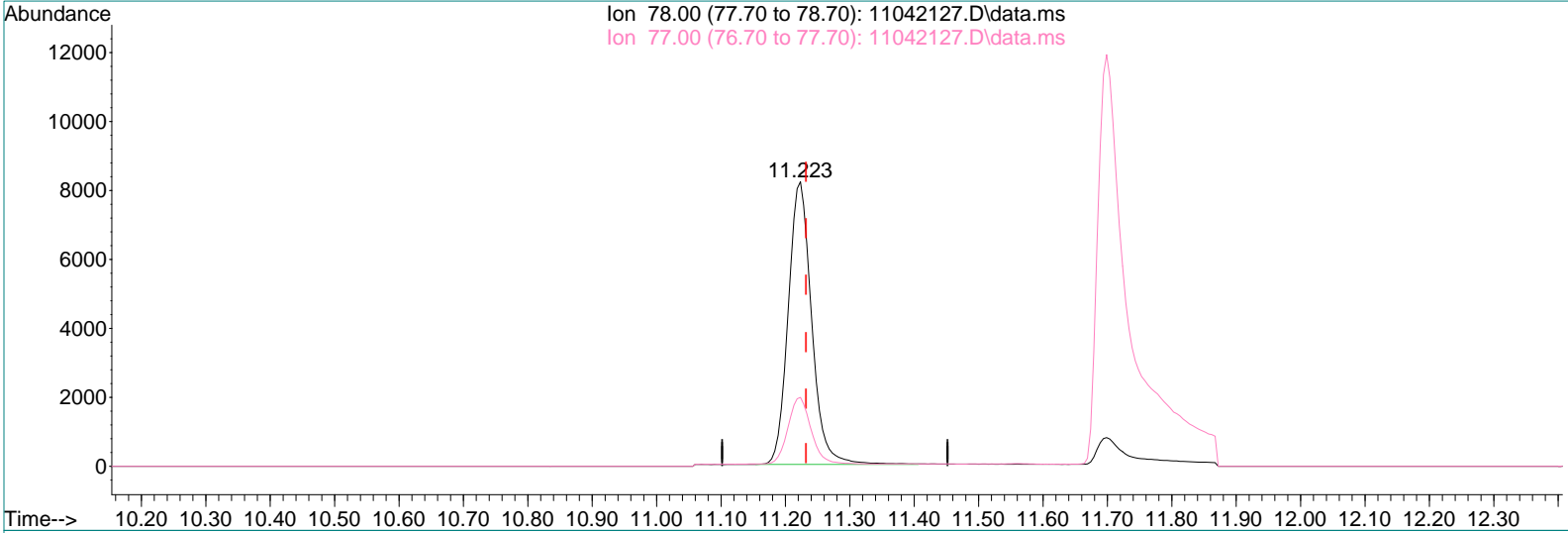
Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042127.D\data.ms

(23) Benzene (T)

11.223min (-0.008) 162.32pg

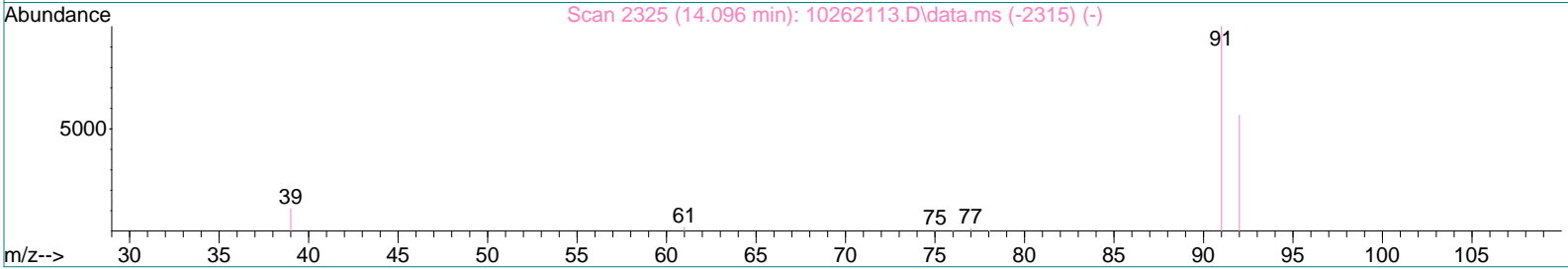
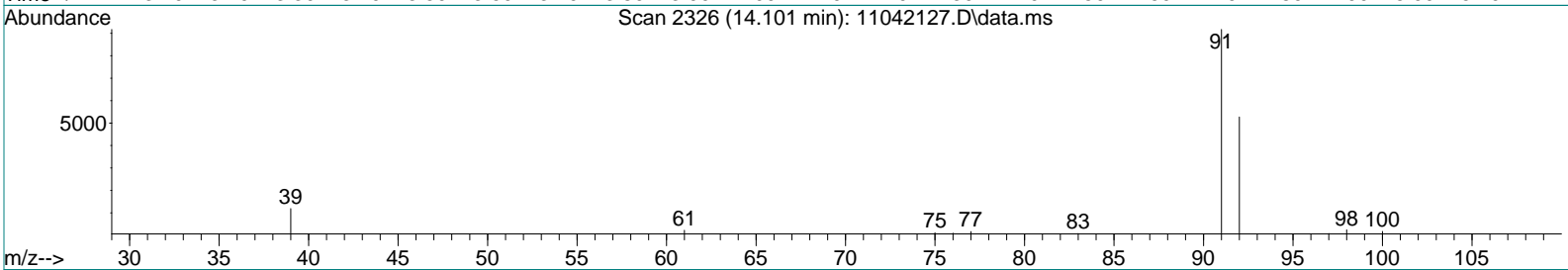
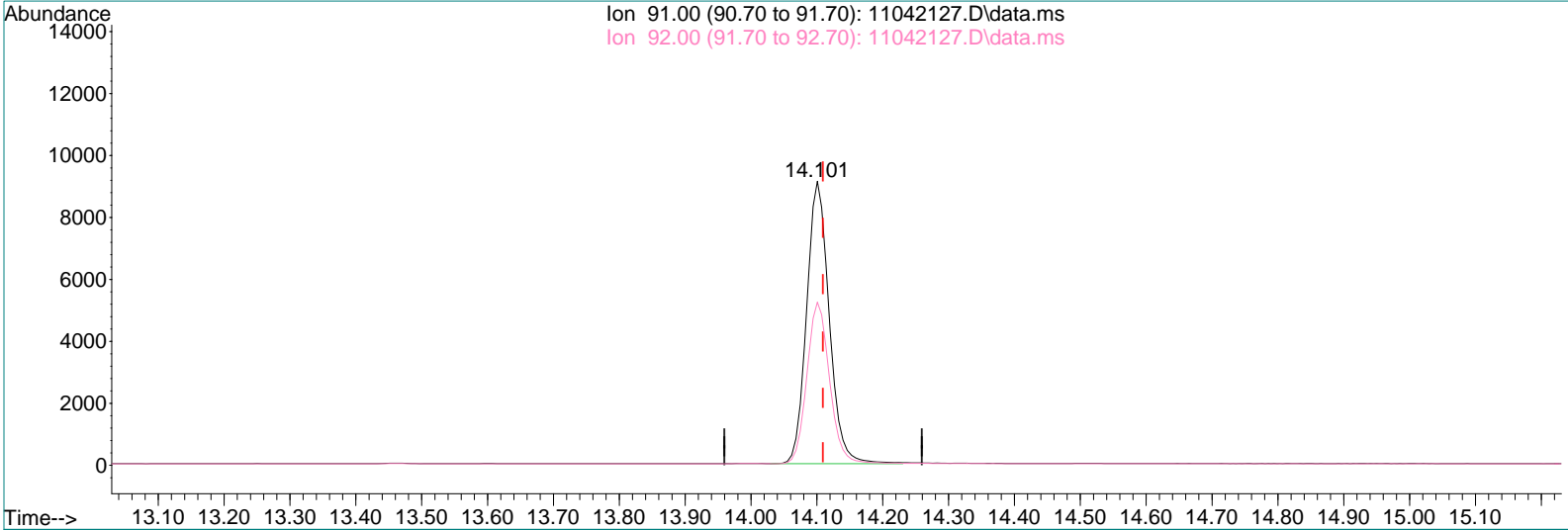
response 20676

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.73
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042127.D\data.ms

(34) Toluene (T)

14.101min (-0.009) 178.13pg

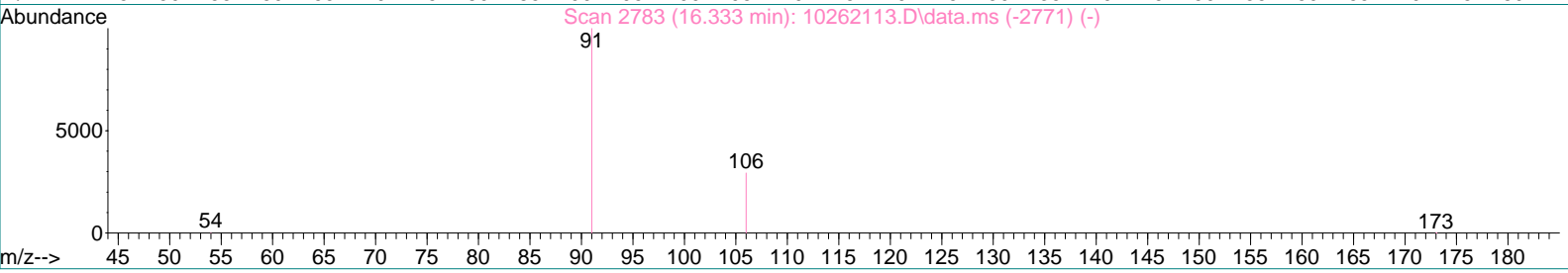
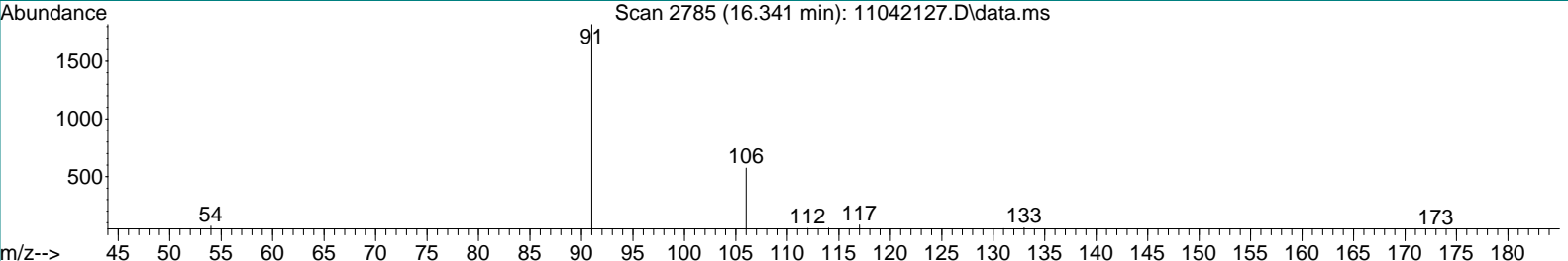
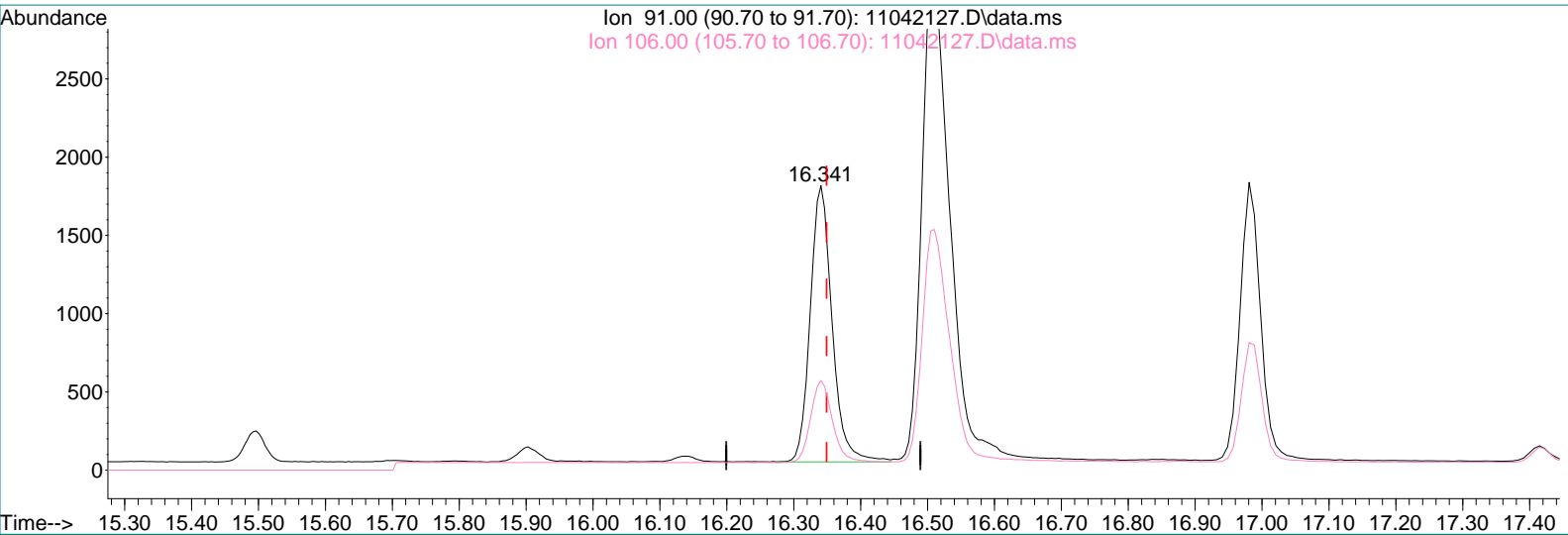
response 21745

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.40
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042127.D\data.ms

(40) Ethylbenzene (T)

16.341min (-0.009) 30.15pg

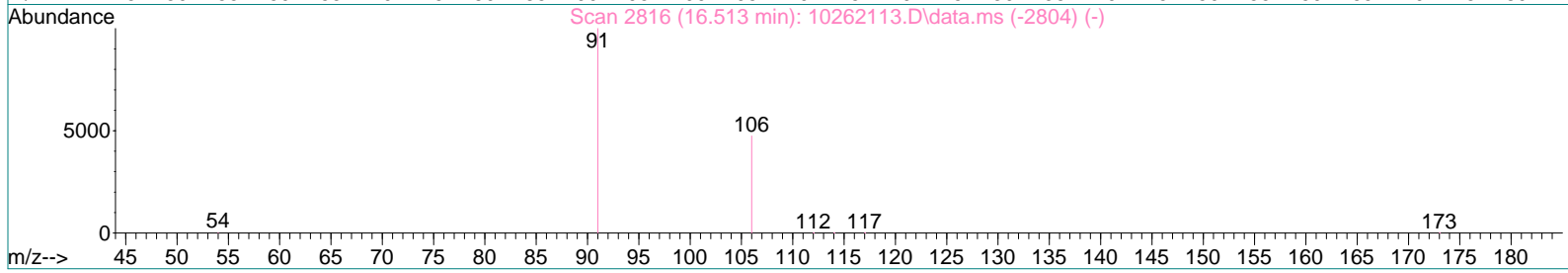
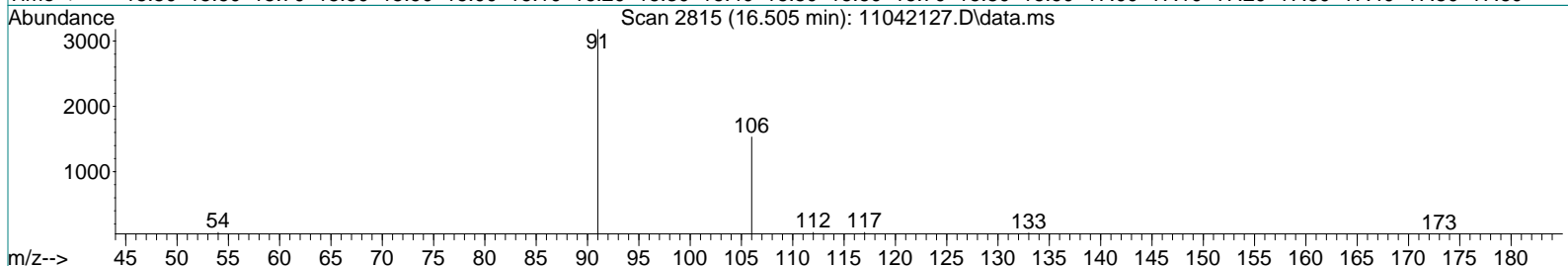
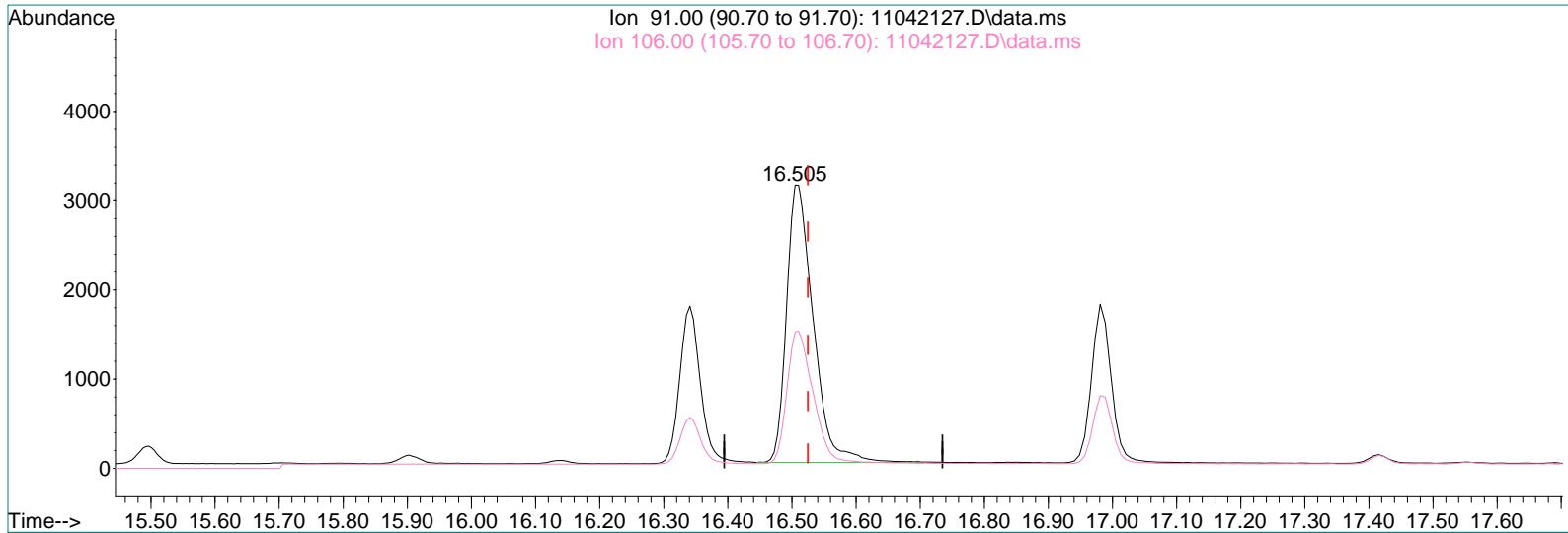
response 4002

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.03
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042127.D\data.ms

(41) m,p-Xylene (T)

16.505min (-0.020) 85.42pg

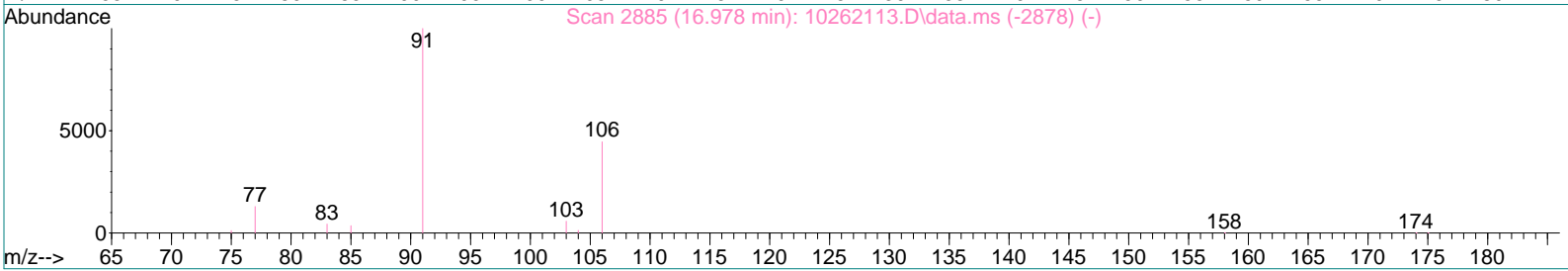
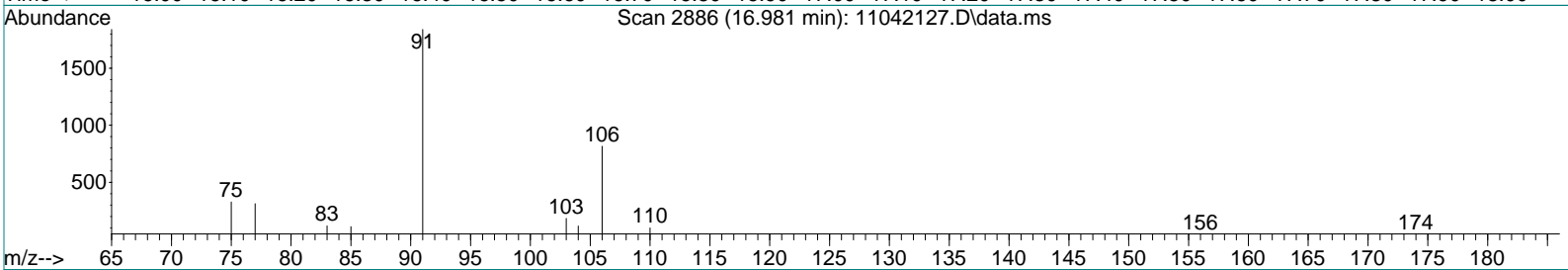
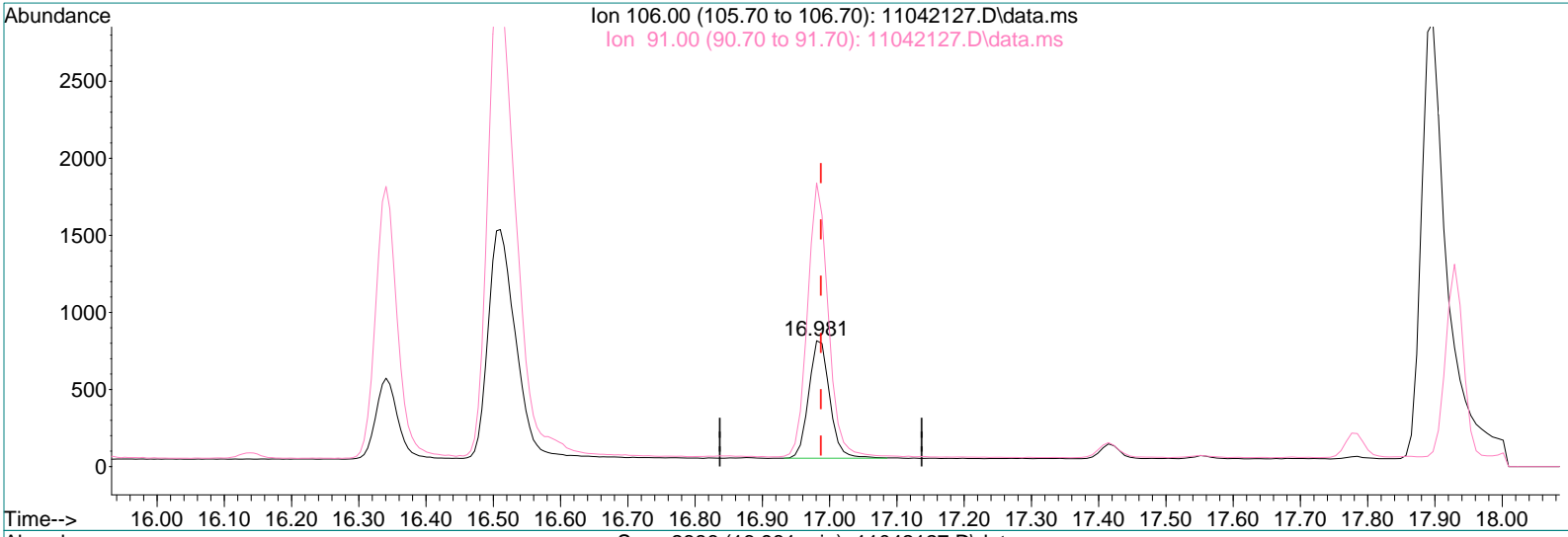
response 9010

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042127.D
 Acq On : 4 Nov 2021 21:48
 Sample : P2105519-009 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:45 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11042127.D\data.ms

(43) o-Xylene (T)

16.981min (-0.006) 31.78pg

response 1651

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	231.25
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 13:42:38 2021

Quant Method : I:\MS19\METHODS\S19102621.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 27 10:48:57 2021

Response via : Initial Calibration

DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	22074	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	111339	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	23873	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	44203	902.489	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	90.25%
33) Toluene-d8 (SS2)	14.00	98	125769	1011.244	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.12%
45) Bromofluorobenzene (SS3)	17.42	174	36696	1145.563	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	114.56%

Target Compounds

						Qvalue
2) Dichlorodifluoromethan...	4.30	85	91352	1260.399	pg	100
3) Chloromethane	4.53	52	664	39.475	pg	# 90
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3721	53.067	pg	99
5) Vinyl Chloride	4.83	62	86	N.D.		
6) 1,3-Butadiene	5.06	54	96	N.D.		
7) Bromomethane	5.33	94	287	12.735	pg	100
8) Chloroethane	5.55	64	203	10.671	pg	93
9) Acrolein	6.13	56	6441	448.094	pg	99
10) Acetone	6.26	58	104647	5166.608	pg	93
11) Trichlorofluoromethane	6.45	101	34865	737.937	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	6997	220.791	pg	99
14) Trichlorotrifluoroethane	7.65	151	7651	342.126	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	631	11.689	pg	83
17) Methyl tert-Butyl Ether	8.67	73	620	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	7249	129.531	pg	99
21) 1,2-Dichloroethane	10.50	62	1258	28.430	pg	99
22) 1,1,1-Trichloroethane	10.76	97	204	N.D.		
23) Benzene	11.22	78	20918	162.102	pg	100
24) Carbon Tetrachloride	11.37	117	12854	340.501	pg	99
26) 1,2-Dichloropropane	12.03	63	337	10.186	pg	98
27) Bromodichloromethane	12.22	83	429	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	12.26	88	421	16.944	pg	96
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	83	N.D.		
34) Toluene	14.10	91	84793	678.006	pg	99
35) Dibromochloromethane	14.51	129	183	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	1406	54.897	pg	96
39) Chlorobenzene	15.95	112	378	N.D.		
40) Ethylbenzene	16.34	91	10572	81.161	pg	99
41) m,p-Xylene	16.50	91	20797	200.928	pg	100
42) Styrene	16.87	104	55414	751.053	pg	99
43) o-Xylene	16.98	106	4188	82.150	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	101	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	2758	23.478	pg	100
47) 1,2,4-Trimethylbenzene	18.65	105	10748	88.357	pg	89
48) 1,3-Dichlorobenzene	18.80	146	74	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	487	N.D.		
50) 1,2-Dichlorobenzene	19.19	146	60	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.92	128	24632	201.060	pg	100

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

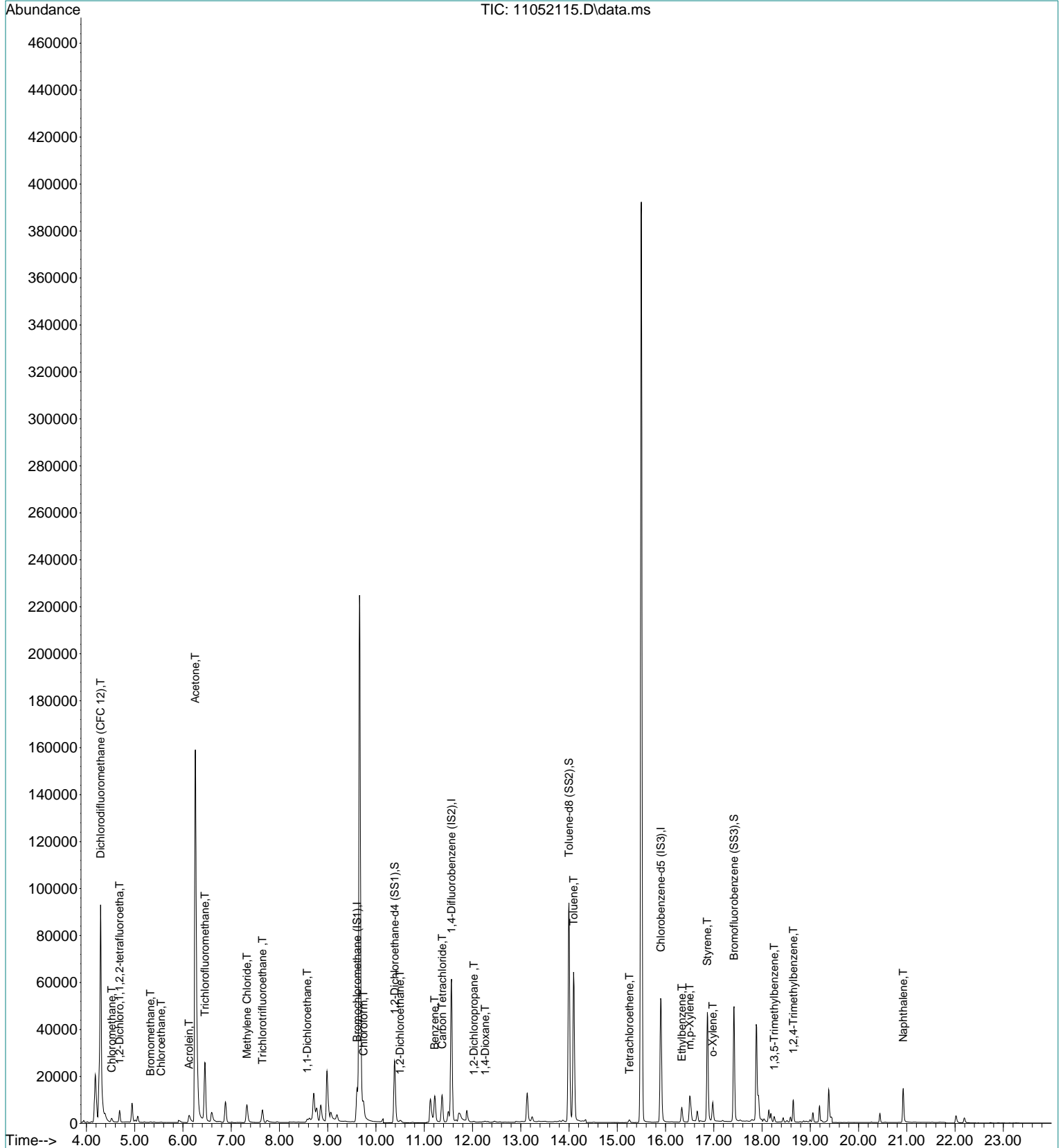
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

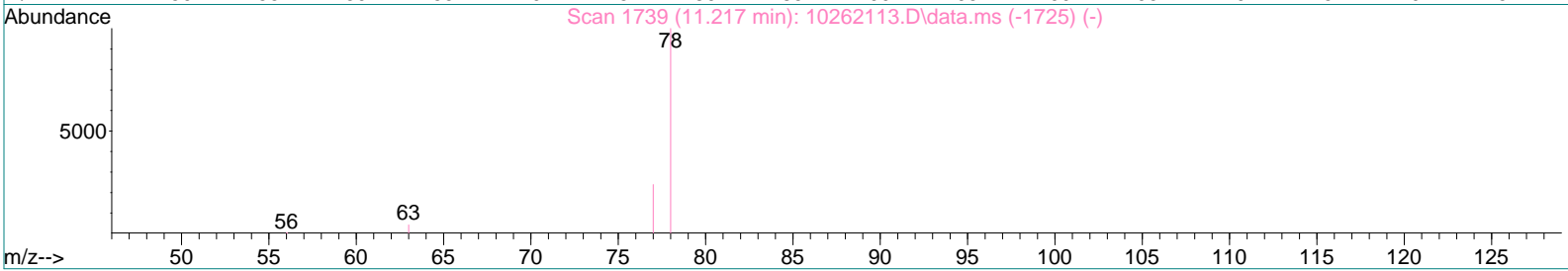
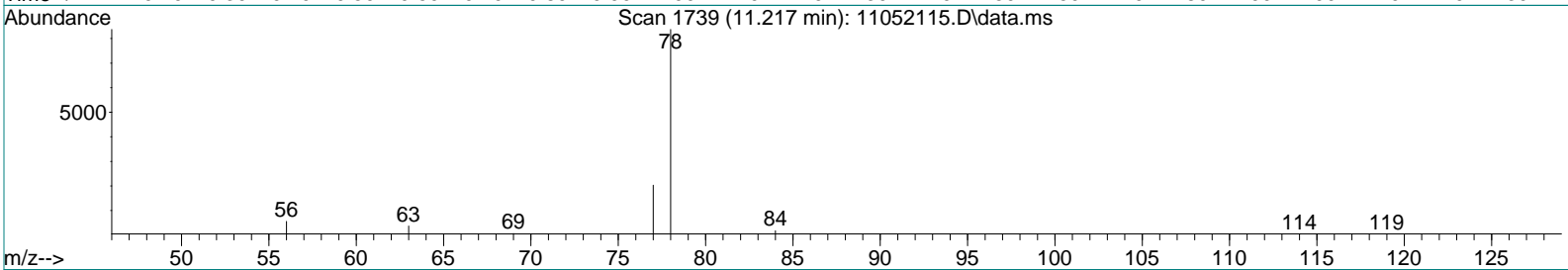
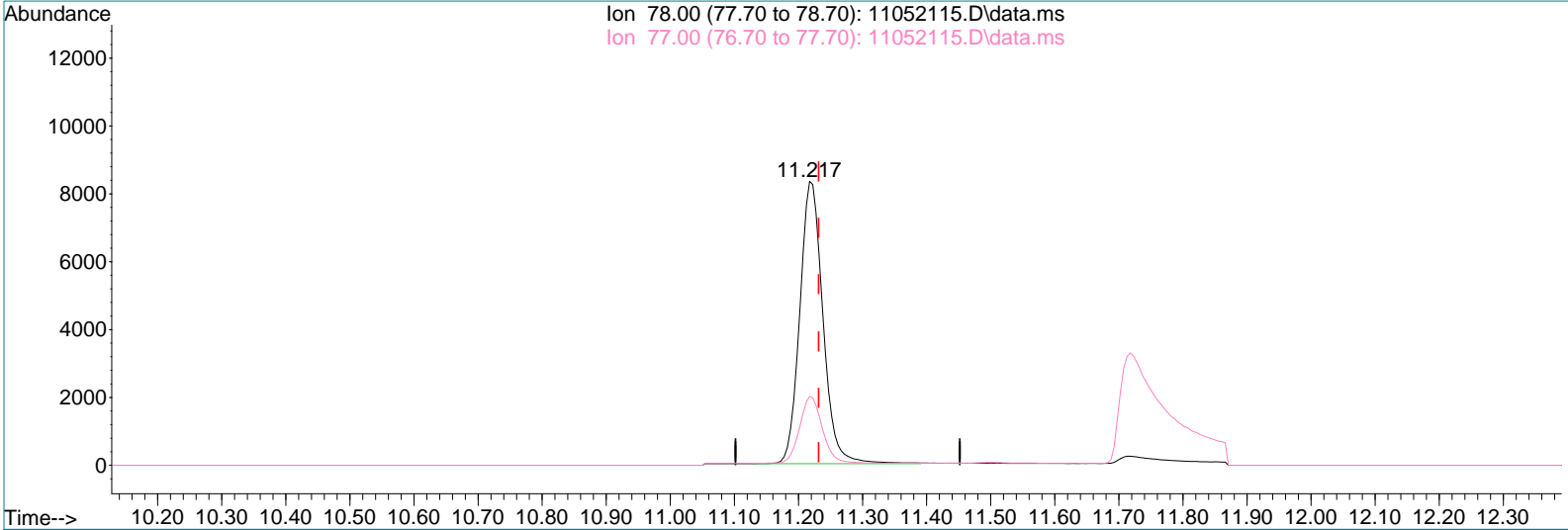
Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
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 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
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 Misc : S34-10062101

Vial: 2
 Operator: TZ
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Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(23) Benzene (T)

11.217min (-0.014) 162.10pg

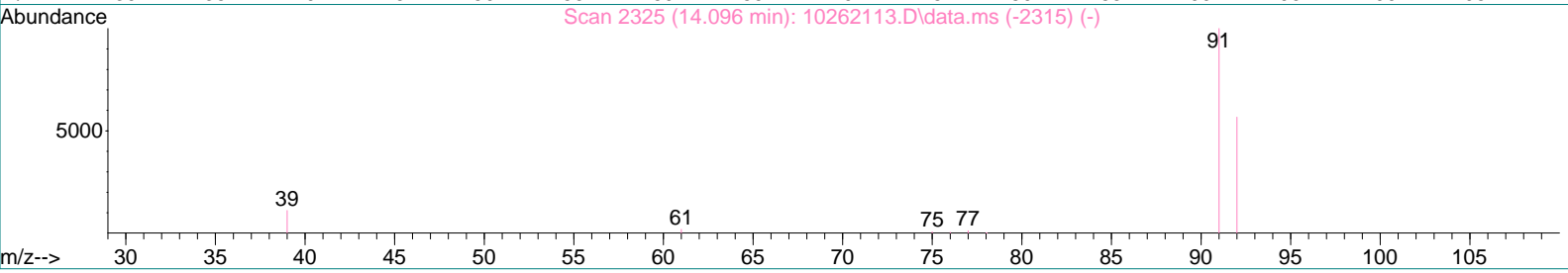
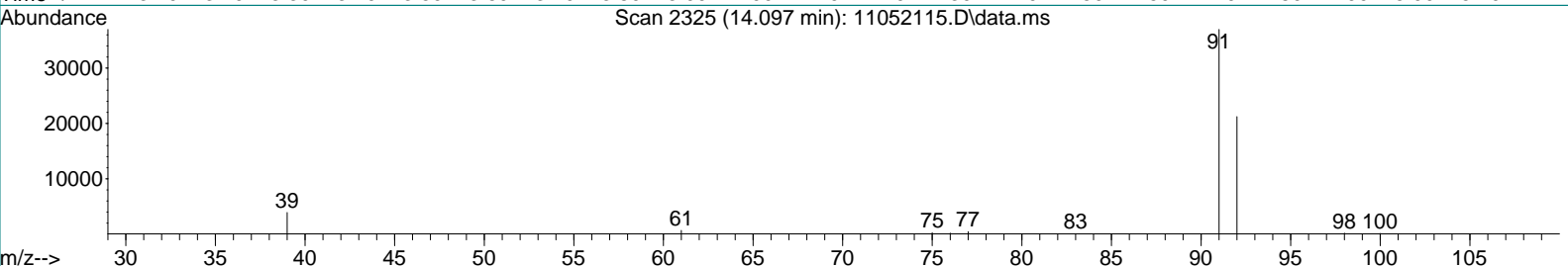
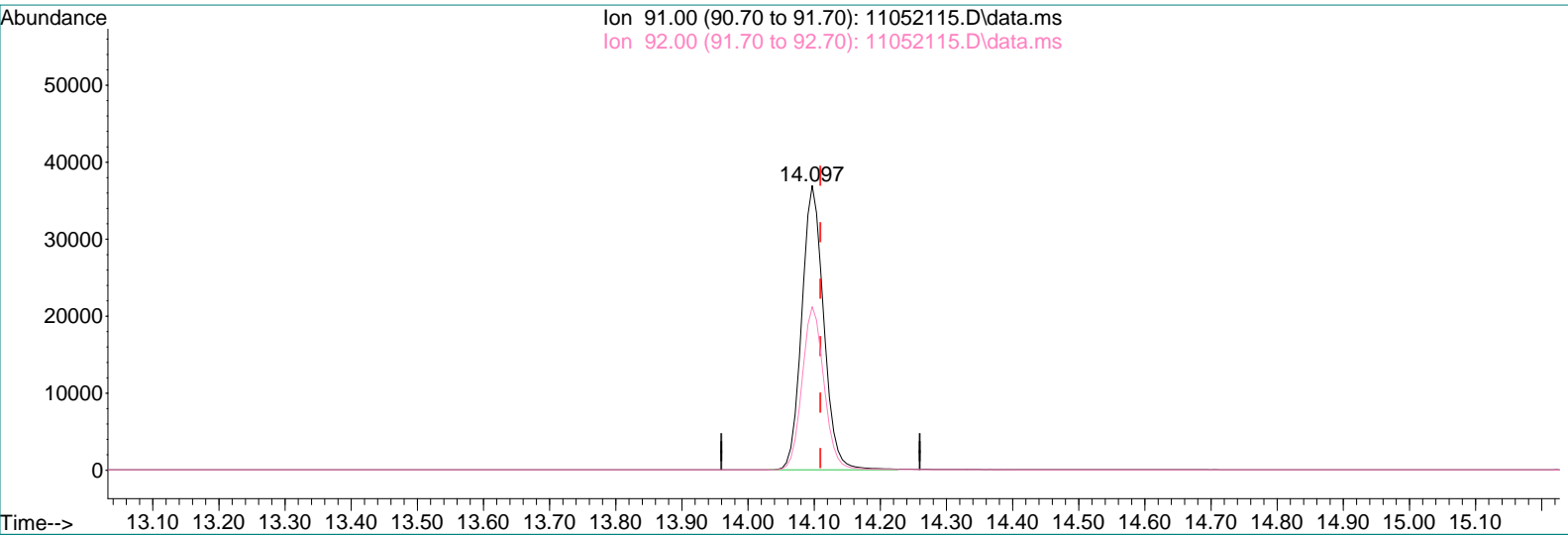
response 20918

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.57
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
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 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
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 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 678.01pg

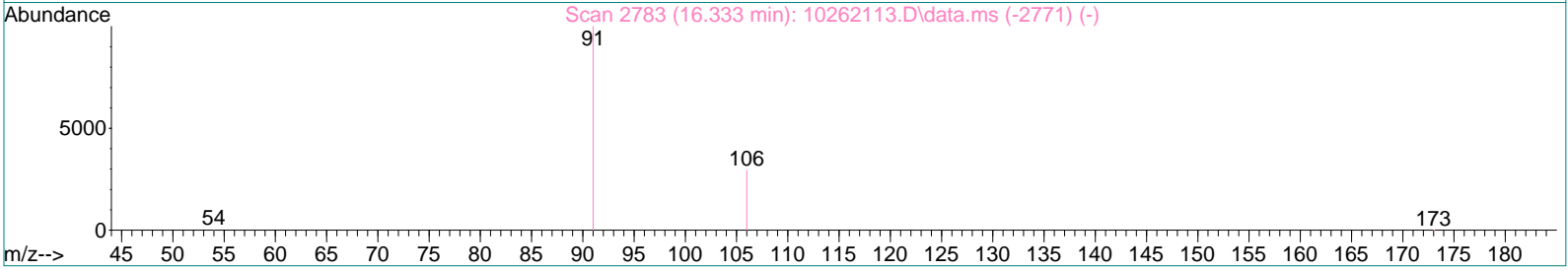
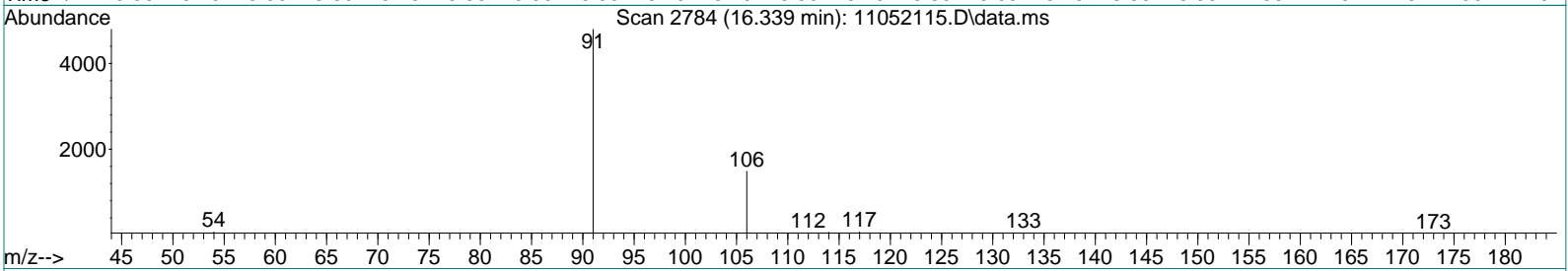
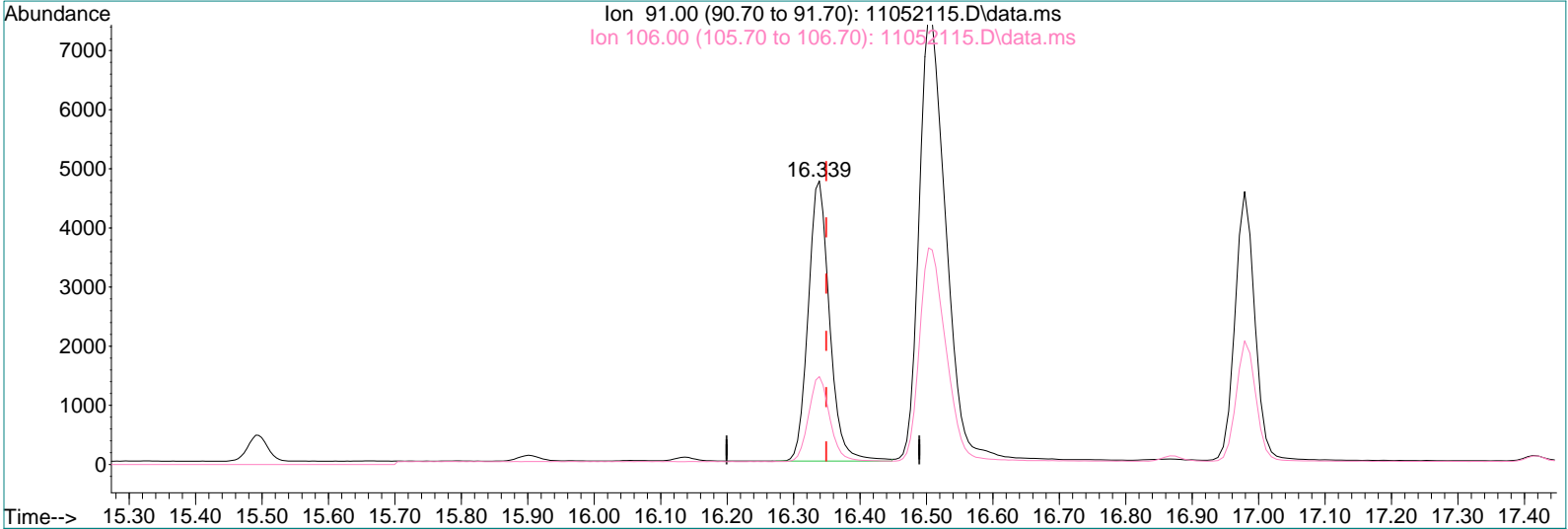
response 84793

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.50
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
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 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 81.16pg

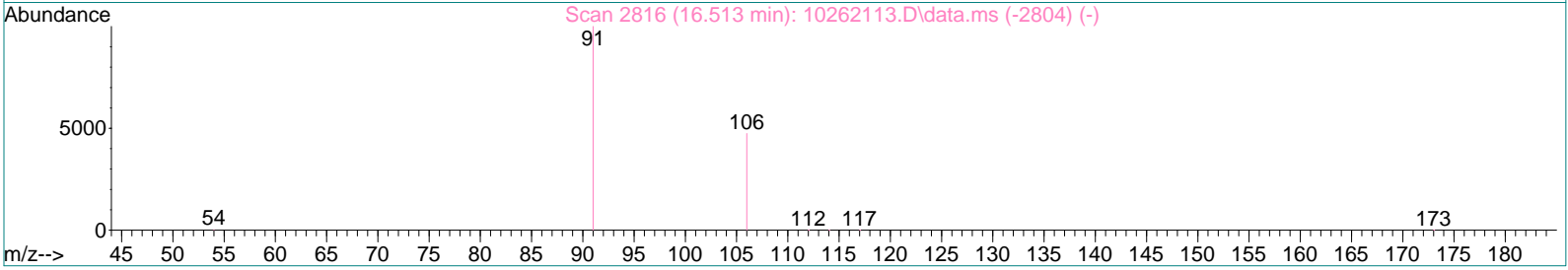
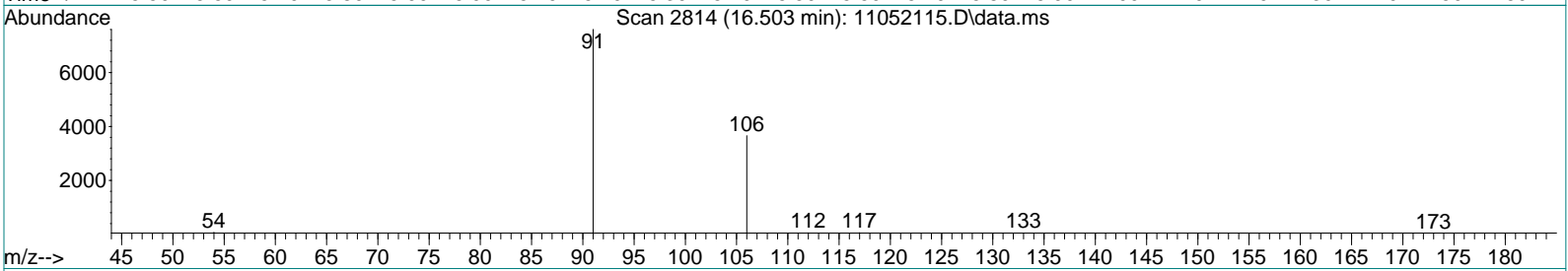
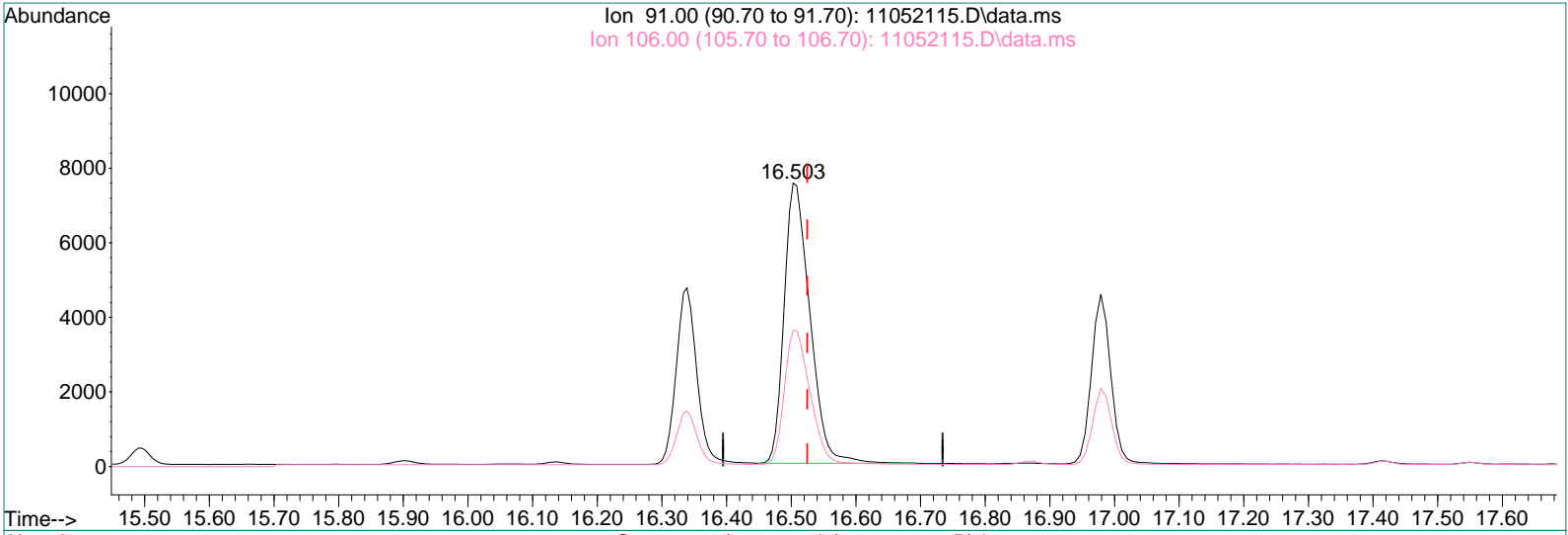
response 10572

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.29
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.021) 200.93pg

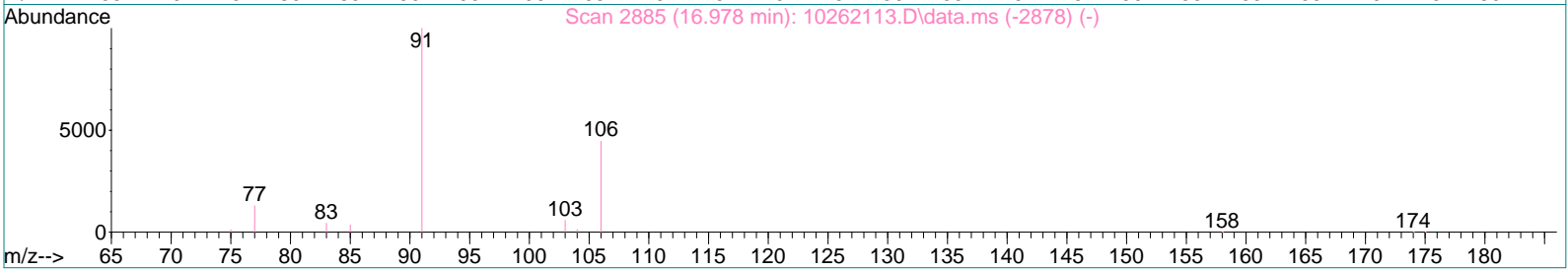
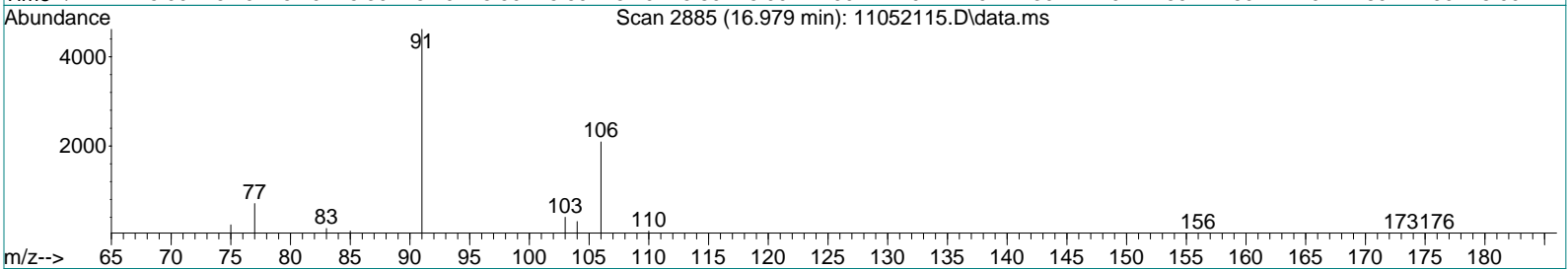
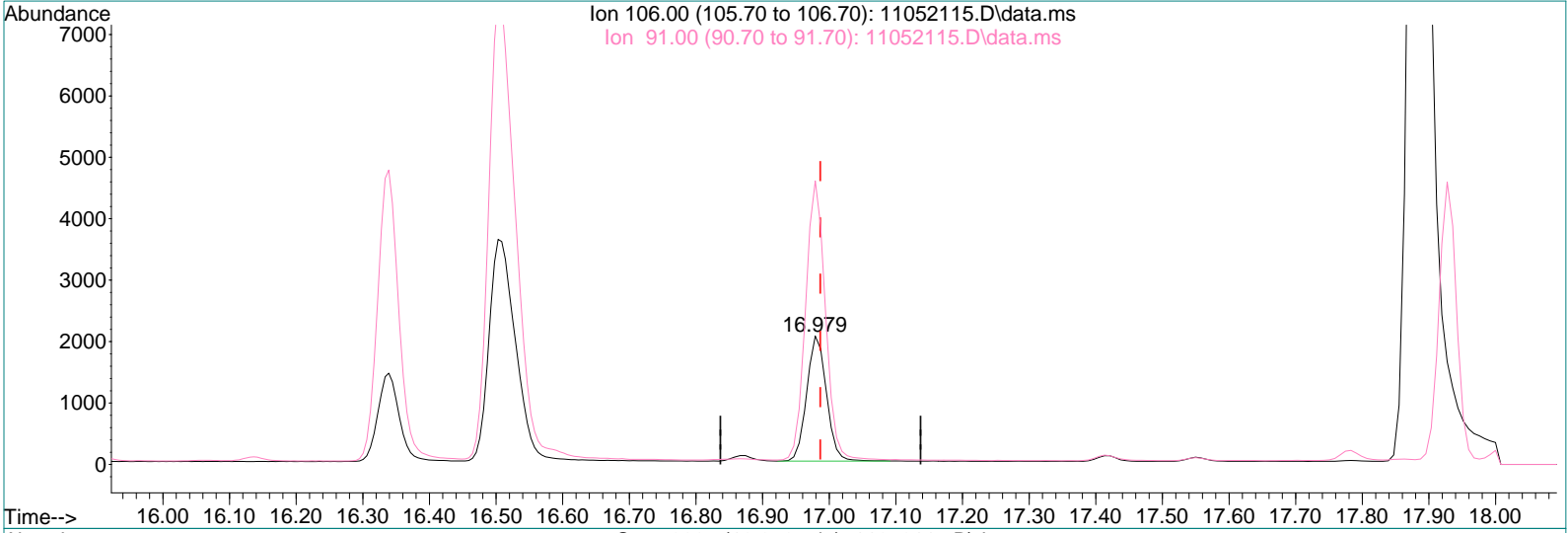
response 20797

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.81
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 82.15pg

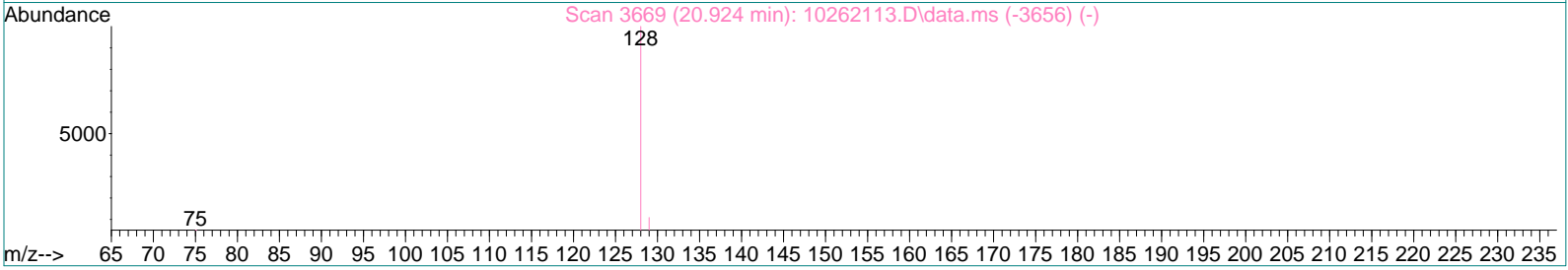
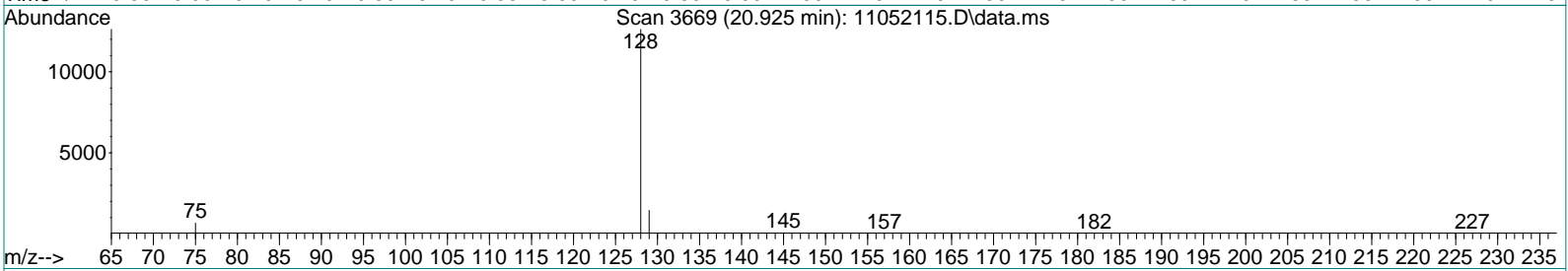
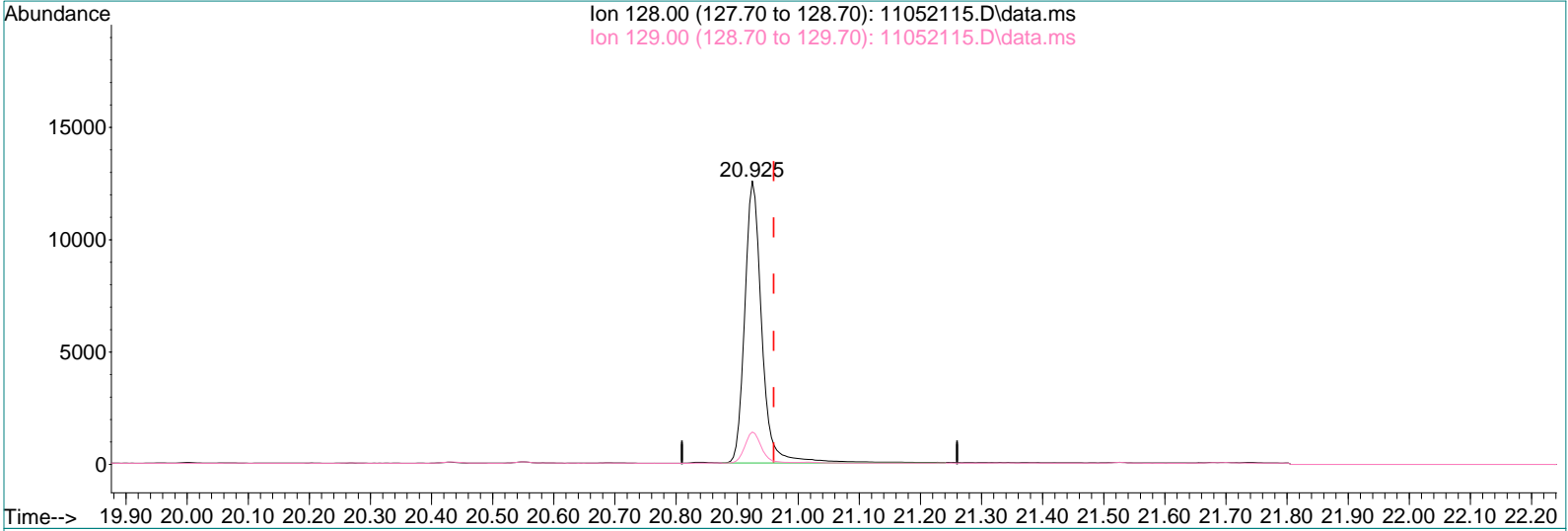
response 4188

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	224.57
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052115.D
 Acq On : 5 Nov 2021 13:15
 Sample : P2105519-010 (1000mL)
 Misc : S34-10062101

Vial: 2
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 13:42:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052115.D\data.ms

(53) Naphthalene (T)

20.925min (-0.035) 201.06pg

response 24632

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	10.81
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	21236	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.56	114	107112	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	22691	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	42380	899.414	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	89.94%		
33) Toluene-d8 (SS2)	14.00	98	119168	995.981	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	99.60%		
45) Bromofluorobenzene (SS3)	17.42	174	34701	1139.713	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	113.97%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	99492	1426.877	pg	100
3) Chloromethane	4.55	52	665	41.095	pg	95
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	4030	59.741	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.03	54	285	N.D.		
7) Bromomethane	5.36	94	357	16.467	pg	96
8) Chloroethane	5.57	64	83	N.D.		
9) Acrolein	6.15	56	1440	104.133	pg	99
10) Acetone	6.28	58	32412	1663.386	pg	99
11) Trichlorofluoromethane	6.46	101	38863	855.017	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.34	84	5351	175.514	pg	98
14) Trichlorotrifluoroethane	7.65	151	8224	382.261	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	195	N.D.		
17) Methyl tert-Butyl Ether	8.69	73	195	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4757	88.357	pg	99
21) 1,2-Dichloroethane	10.50	62	1215	28.542	pg	100
22) 1,1,1-Trichloroethane	10.76	97	219	N.D.		
23) Benzene	11.22	78	16432	132.363	pg	100
24) Carbon Tetrachloride	11.37	117	11808	325.136	pg	99
26) 1,2-Dichloropropane	12.03	63	272	N.D.		
27) Bromodichloromethane	12.22	83	280	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	12.28	88	55	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.81	83	64	N.D.		
34) Toluene	14.10	91	16119	133.974	pg	99
35) Dibromochloromethane	14.51	129	128	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	273	11.080	pg	97
39) Chlorobenzene	15.95	112	137	N.D.		
40) Ethylbenzene	16.34	91	2681	21.654	pg	99
41) m,p-Xylene	16.51	91	6502	66.091	pg	100
42) Styrene	16.87	104	3077	43.876	pg	99
43) o-Xylene	16.99	106	1280	26.416	pg	97
44) 1,1,2,2-Tetrachloroethane	16.98	83	88	N.D.		
46) 1,3,5-Trimethylbenzene	18.26	105	718	N.D.		
47) 1,2,4-Trimethylbenzene	18.65	105	2914	25.203	pg	89
48) 1,3-Dichlorobenzene	18.87	146	191	N.D.		
49) 1,4-Dichlorobenzene	18.87	146	189	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.93	128	1544	13.259	pg	98

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

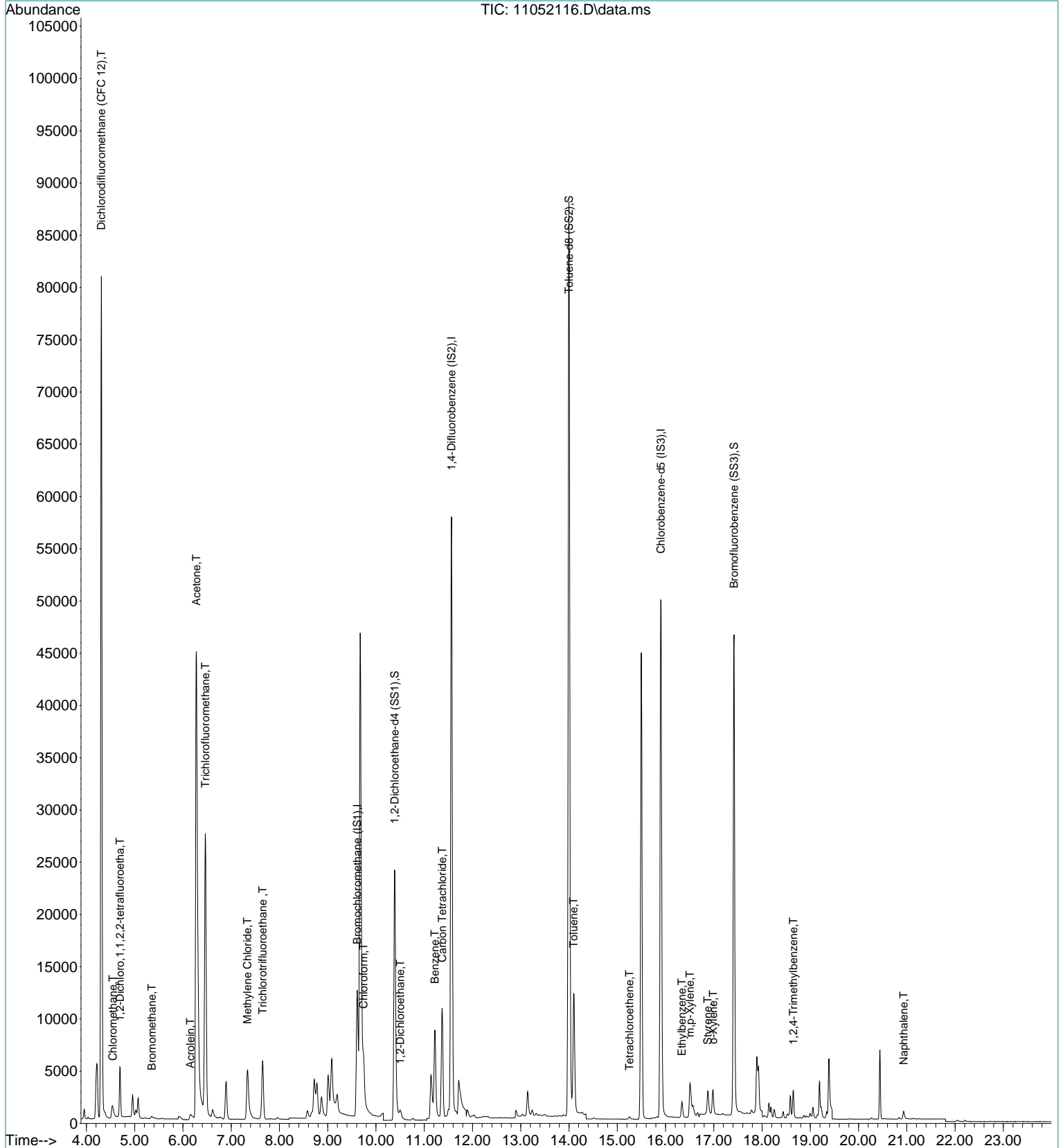
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

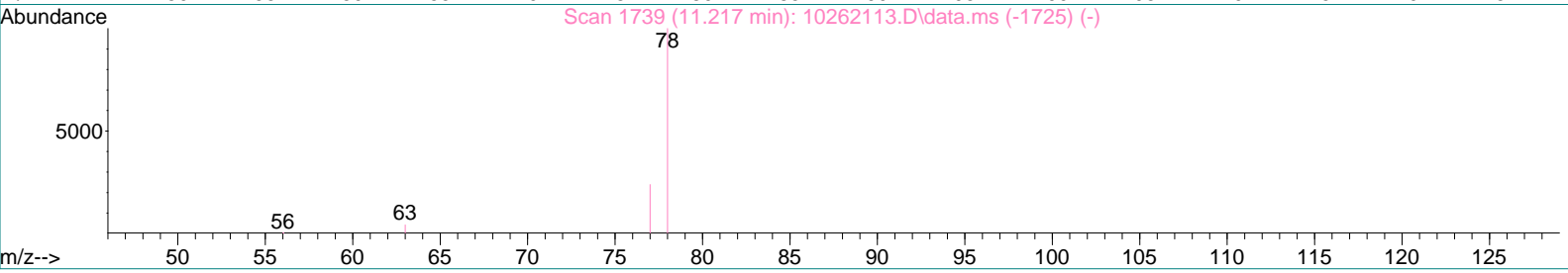
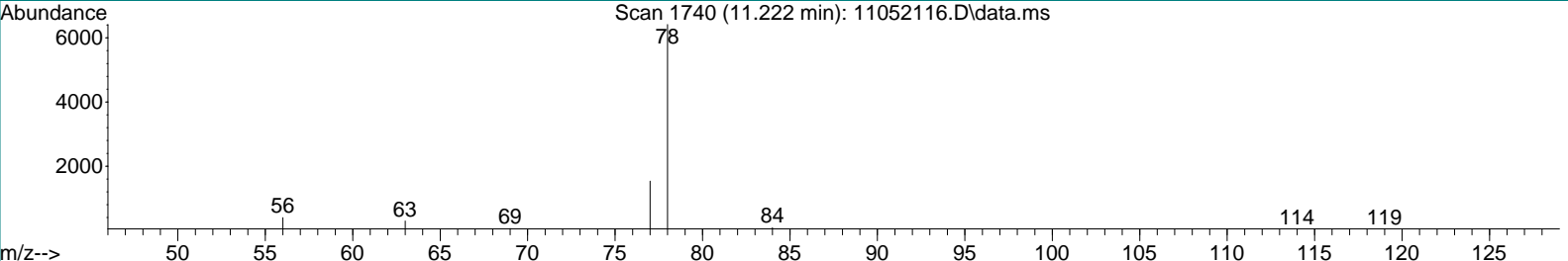
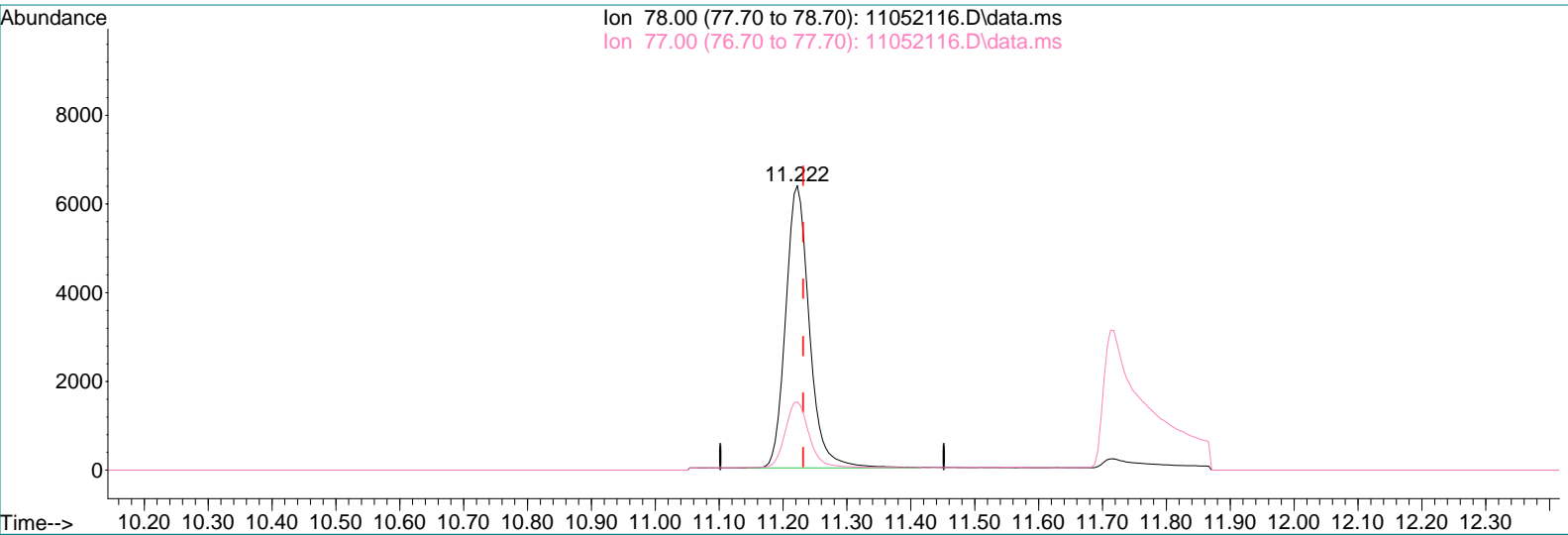
Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052116.D\data.ms

(23) Benzene (T)

11.222min (-0.010) 132.36pg

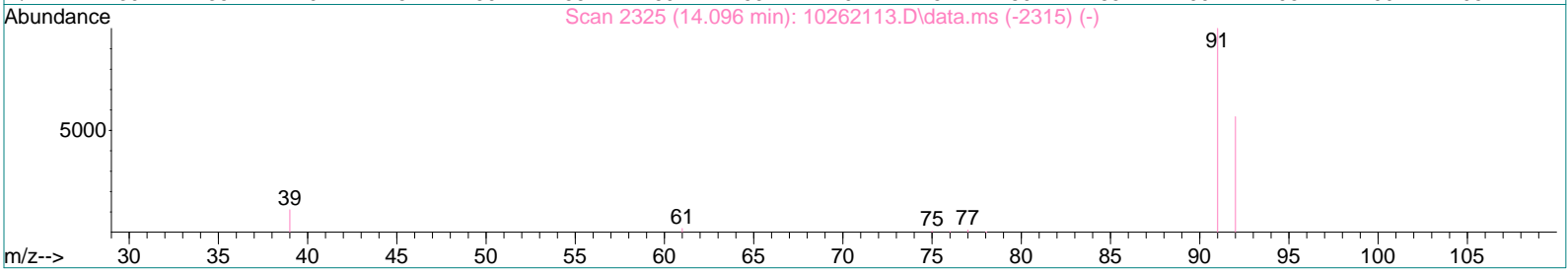
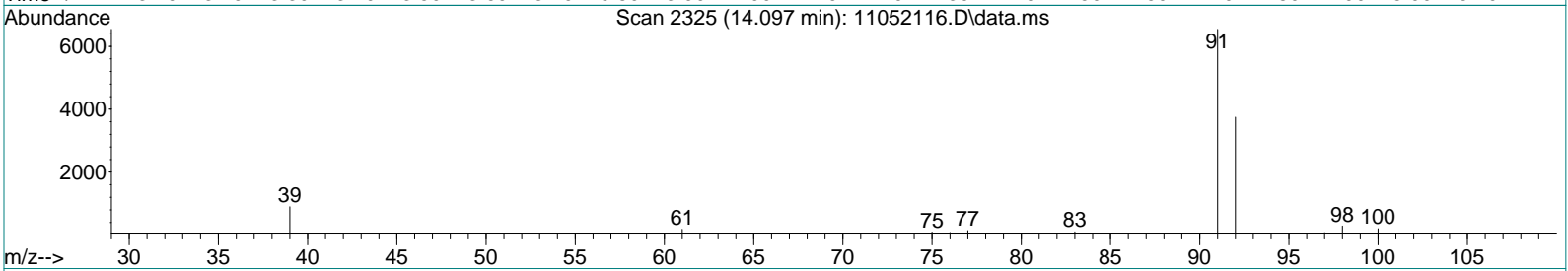
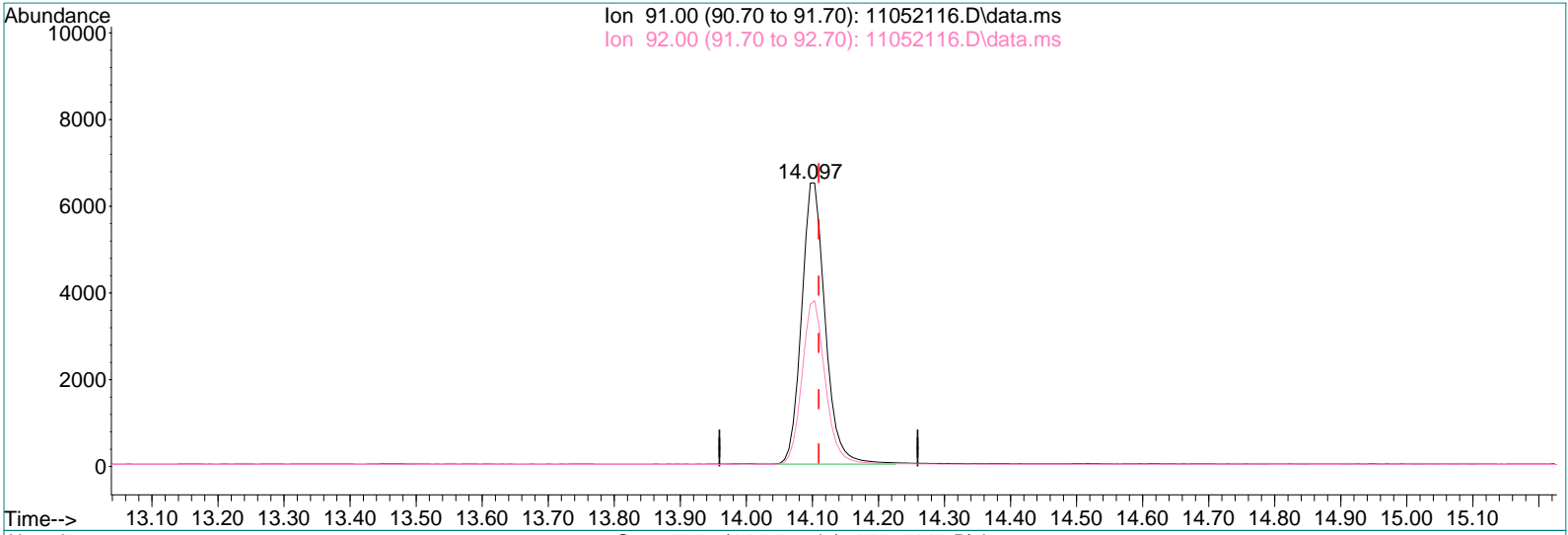
response 16432

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.55
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052116.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 133.97pg

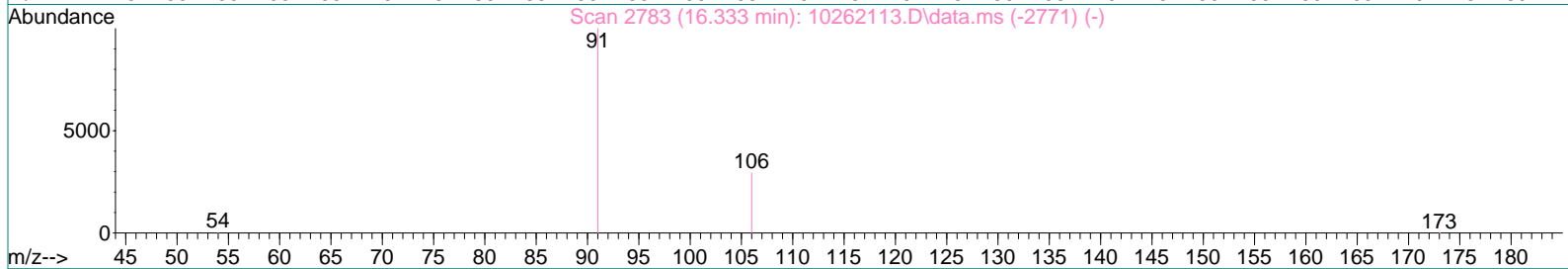
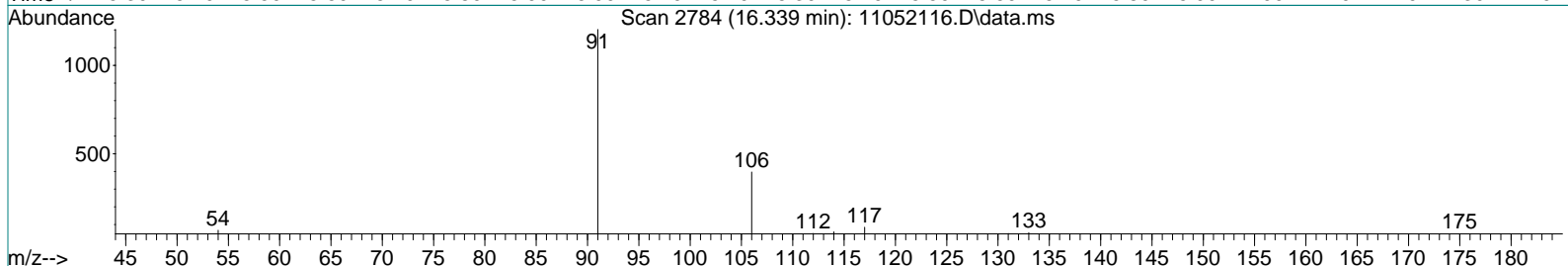
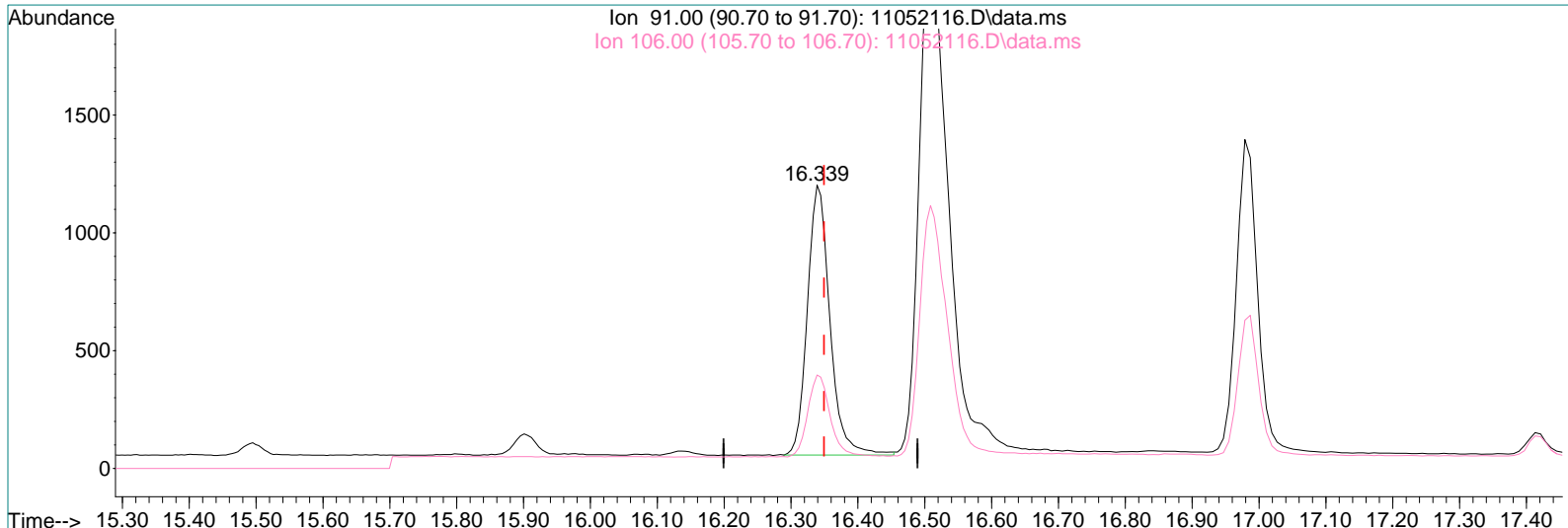
response 16119

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.53
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052116.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.011) 21.65pg

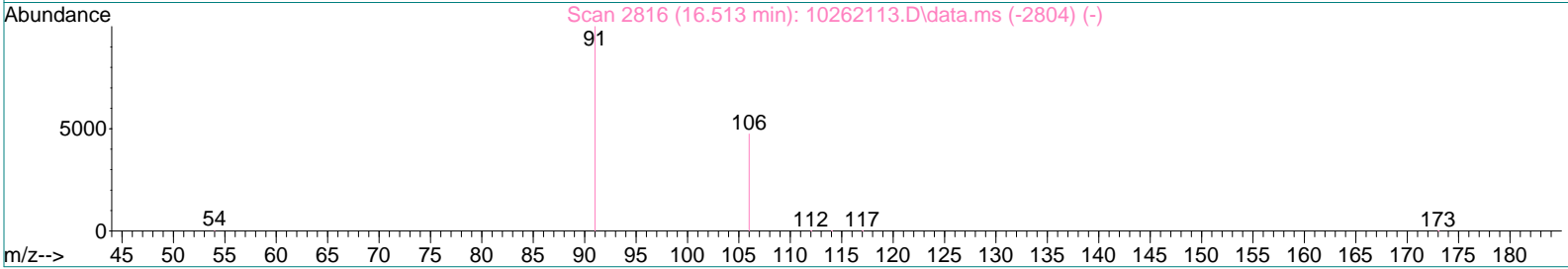
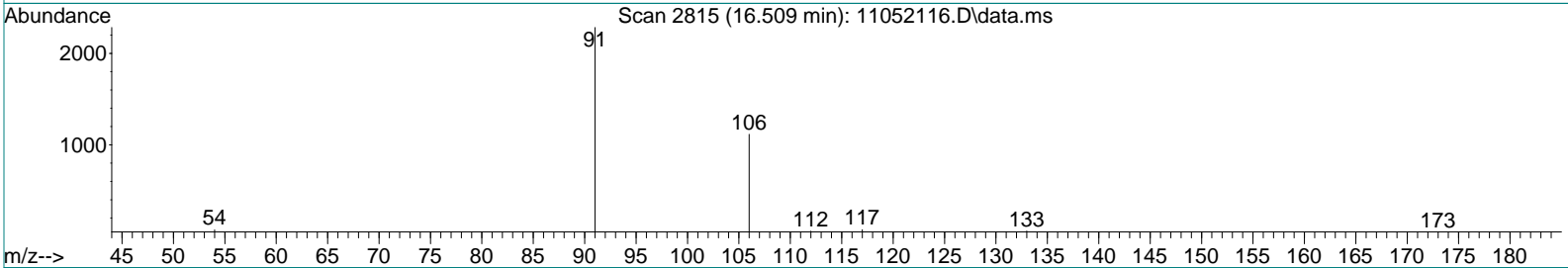
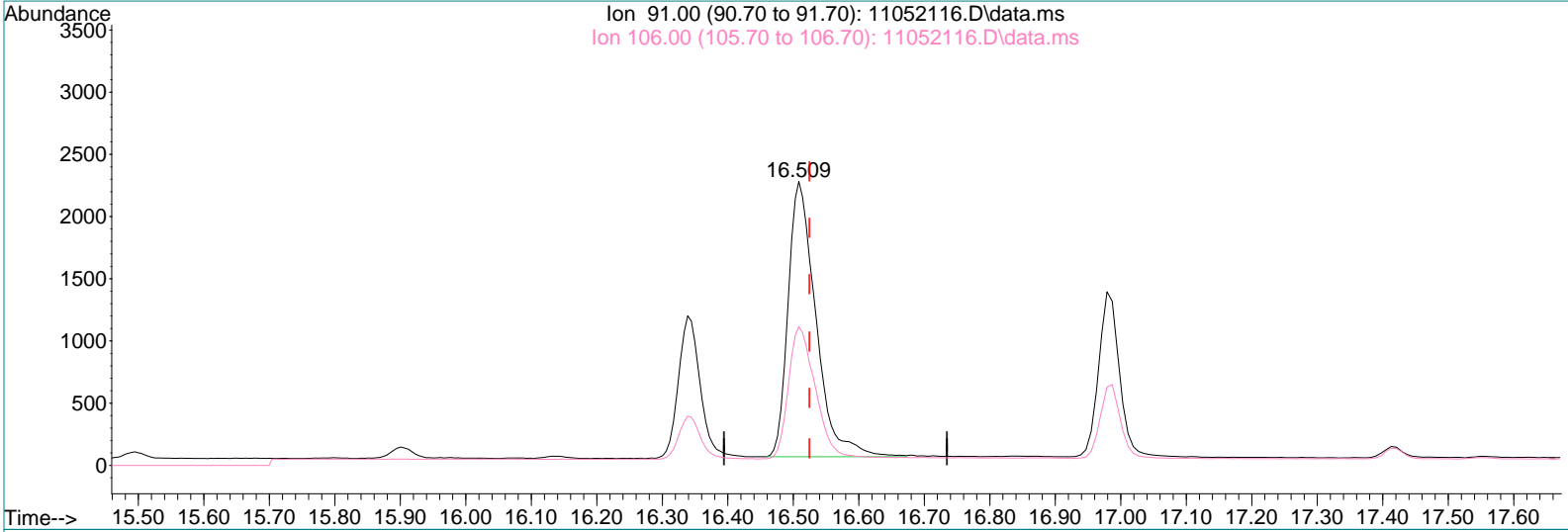
response 2681

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.36
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052116.D\data.ms

(41) m,p-Xylene (T)

16.509min (-0.016) 66.09pg

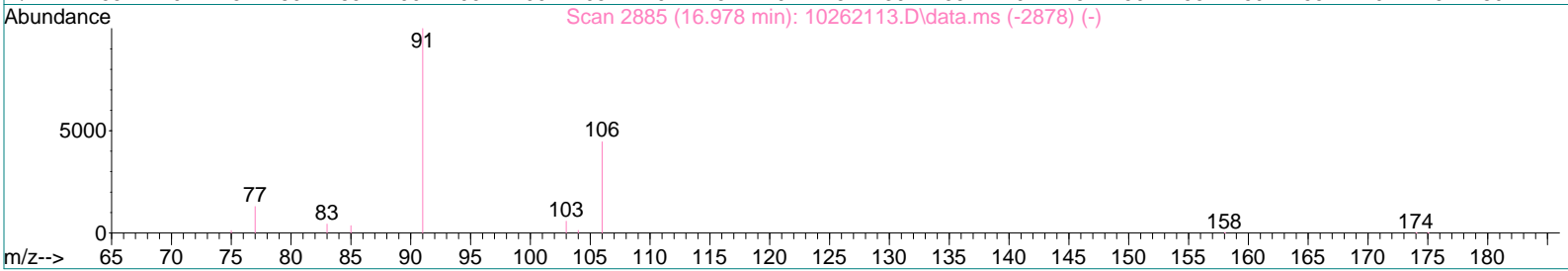
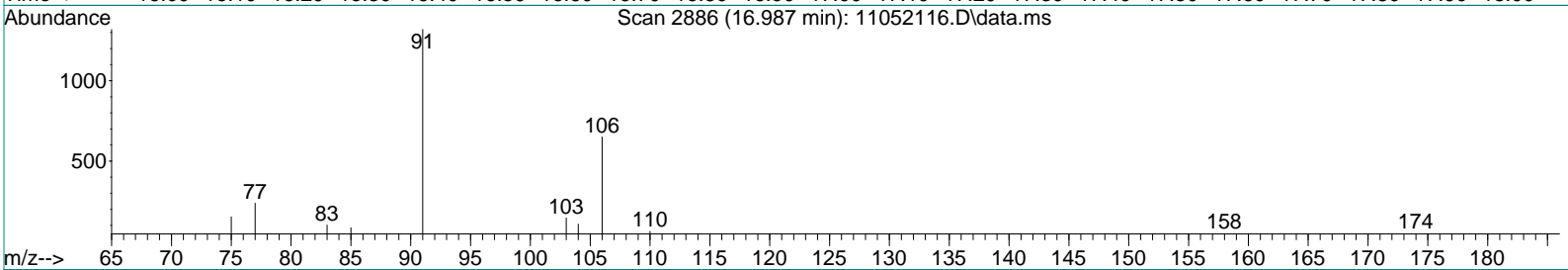
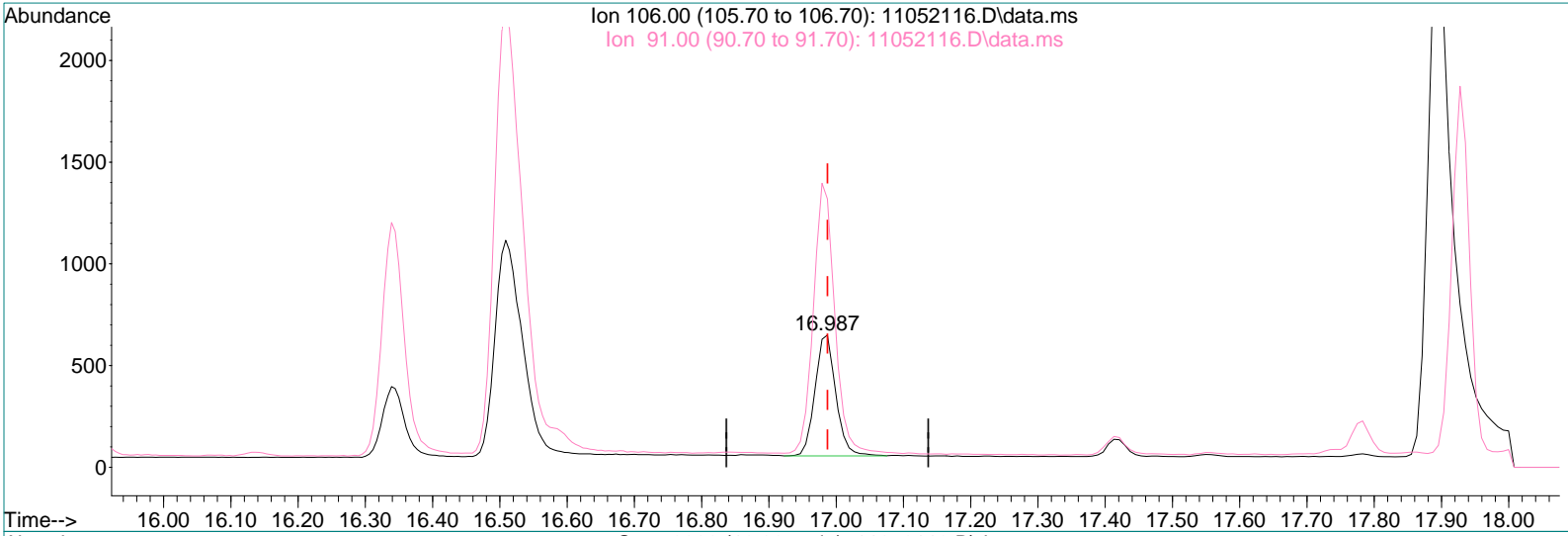
response 6502

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.32
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052116.D
 Acq On : 5 Nov 2021 13:46
 Sample : P2105519-011 (1000mL)
 Misc : S34-10062101

Vial: 3
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 14:37:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052116.D\data.ms

(43) o-Xylene (T)

16.987min (-0.000) 26.42pg

response 1280

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	228.28
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:56:06 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	20818	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	104160	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	22841	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	41667	902.038	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	90.20%
33) Toluene-d8 (SS2)	14.00	98	119665	1028.480	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	102.85%
45) Bromofluorobenzene (SS3)	17.42	174	34628	1129.847	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	112.98%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	93174	1363.097	pg	100
3) Chloromethane	4.54	52	752	47.404	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3805	57.539	pg	100
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.02	54	624	16.565	pg	# 78
7) Bromomethane	5.34	94	319	15.009	pg	100
8) Chloroethane	5.56	64	1113	62.039	pg	100
9) Acrolein	6.14	56	3248	239.593	pg	98
10) Acetone	6.26	58	76905	4026.015	pg	# 82
11) Trichlorofluoromethane	6.46	101	34779	780.529	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	5061	169.335	pg	100
14) Trichlorotrifluoroethane	7.65	151	7690	364.617	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	169	N.D.		
17) Methyl tert-Butyl Ether	8.68	73	208	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	4252	80.562	pg	99
21) 1,2-Dichloroethane	10.50	62	1170	28.036	pg	100
22) 1,1,1-Trichloroethane	10.76	97	202	N.D.		
23) Benzene	11.22	78	19870	163.270	pg	99
24) Carbon Tetrachloride	11.37	117	10992	308.744	pg	99
26) 1,2-Dichloropropane	12.03	63	275	N.D.		
27) Bromodichloromethane	12.23	83	362	N.D.		
28) Trichloroethene	12.27	130	63	N.D.		
29) 1,4-Dioxane	12.27	88	112	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.10	91	25722	219.849	pg	99
35) Dibromochloromethane	14.51	129	119	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	335	13.982	pg	98
39) Chlorobenzene	15.95	112	226	N.D.		
40) Ethylbenzene	16.34	91	5274	42.318	pg	98
41) m,p-Xylene	16.50	91	13242	133.716	pg	100
42) Styrene	16.87	104	3599	50.983	pg	99
43) o-Xylene	16.98	106	2444	50.107	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	167	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	1809	16.095	pg	94
47) 1,2,4-Trimethylbenzene	18.65	105	6210	53.358	pg	89
48) 1,3-Dichlorobenzene	18.86	146	156	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	156	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.93	128	2046	17.455	pg	98

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:06 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

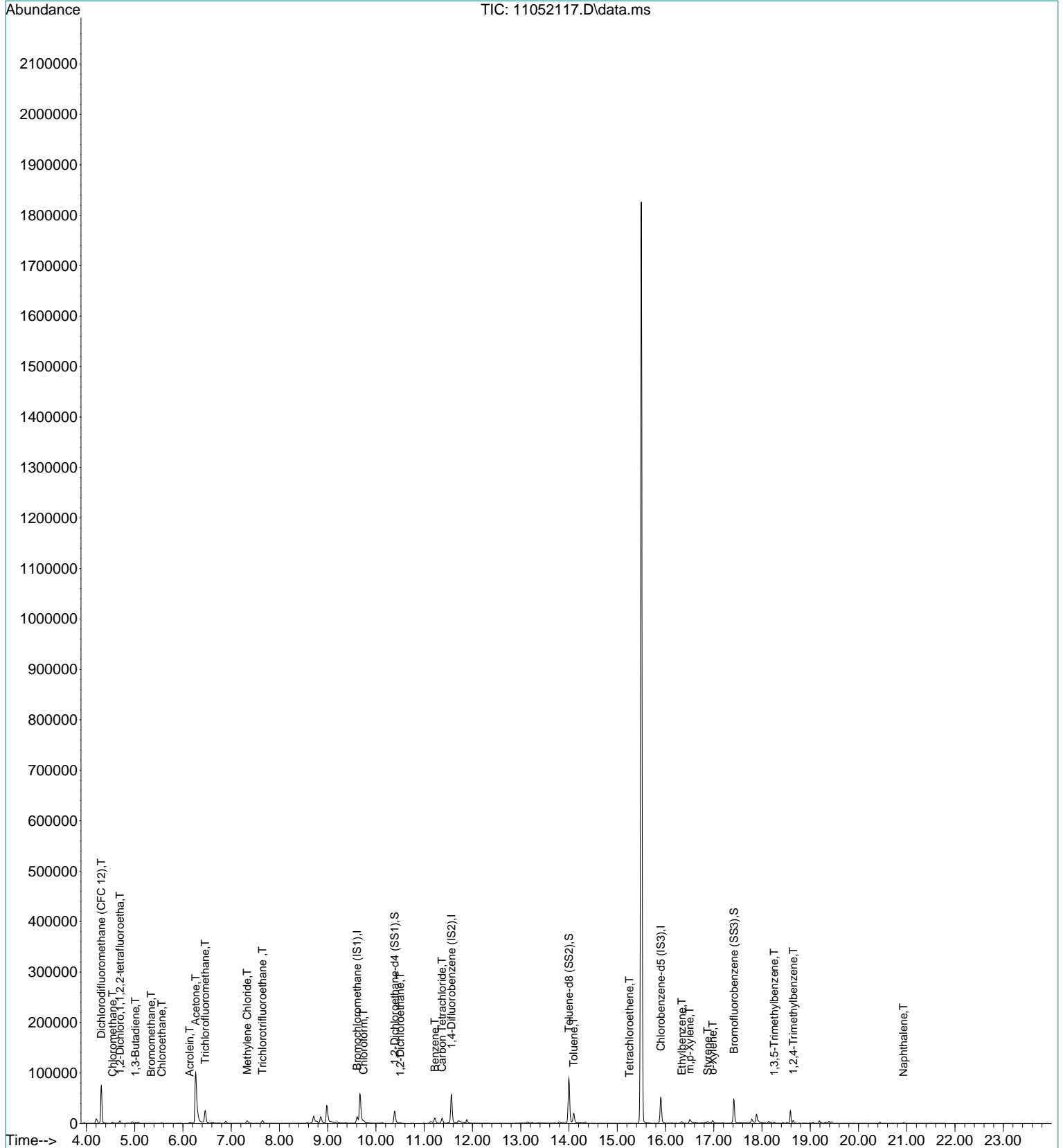
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052117.D
Acq On : 5 Nov 2021 14:18
Sample : P2105519-012 (1000mL)
Misc : S34-10062101

Vial: 4
Operator: TZ
Inst : MS19

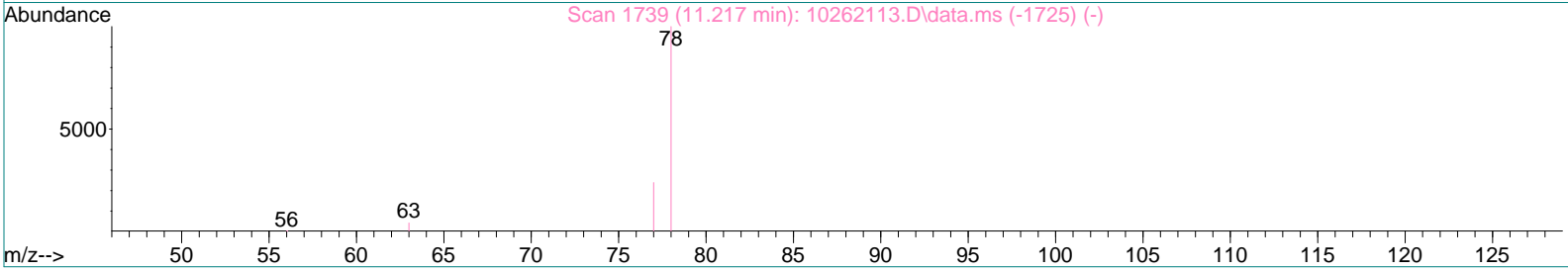
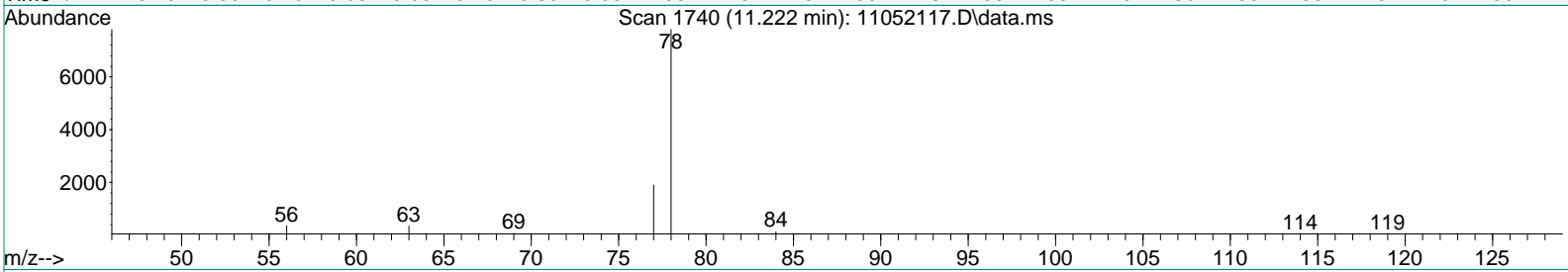
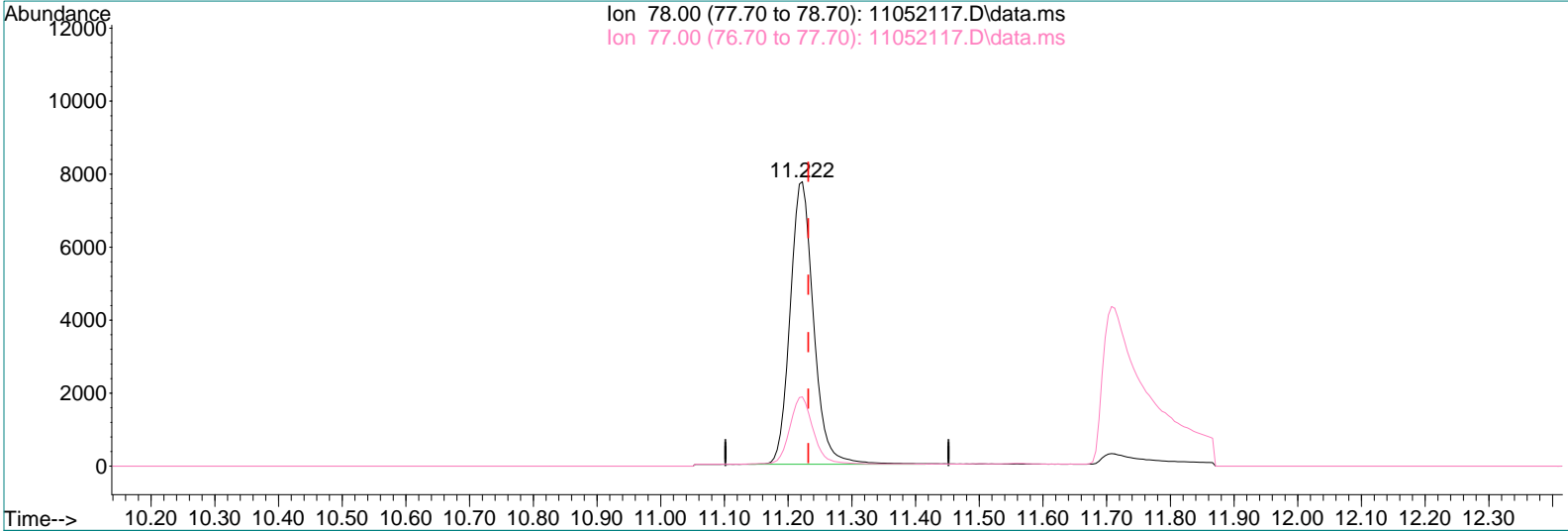
Quant Time: Nov 05 15:56:06 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:55:05 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052117.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 163.27pg

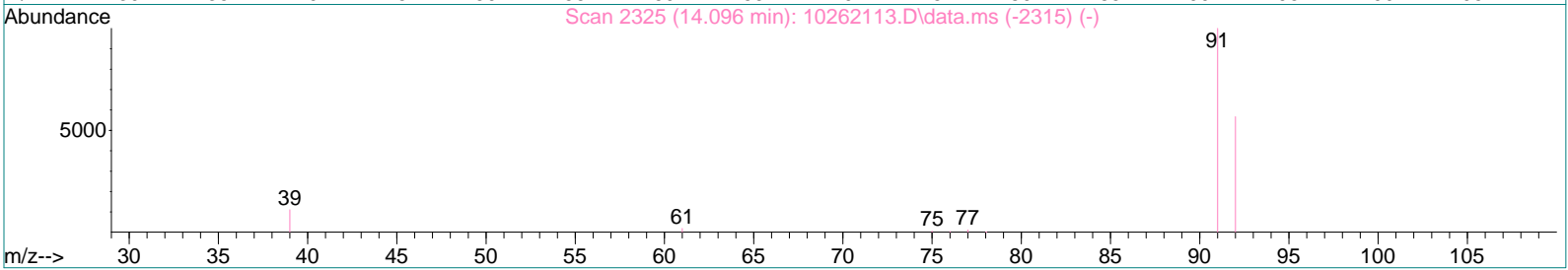
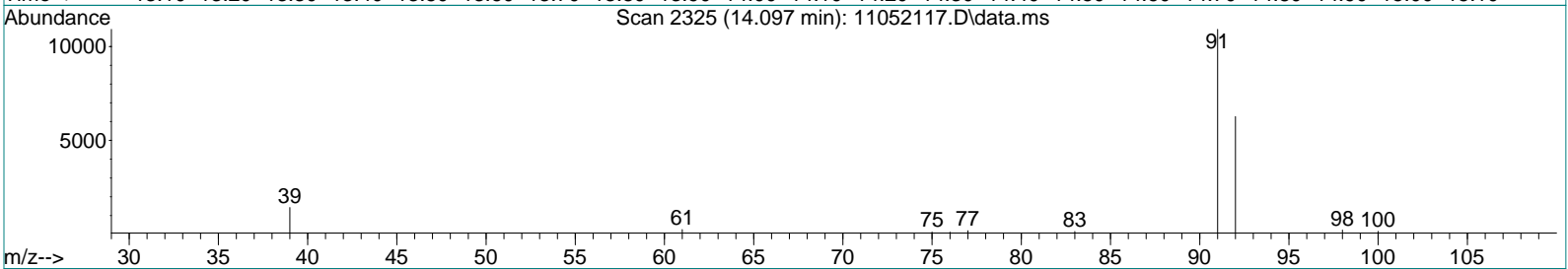
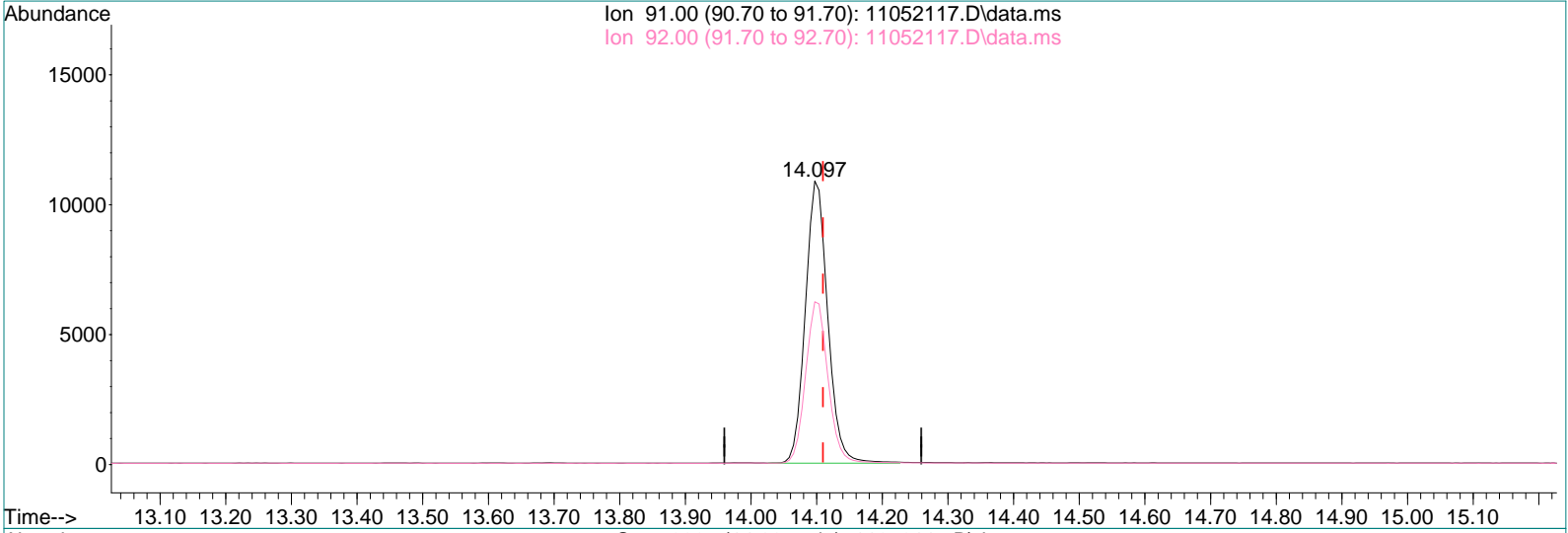
response 19870

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.28
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:55:05 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052117.D\data.ms

(34) Toluene (T)

14.097min (-0.012) 219.85pg

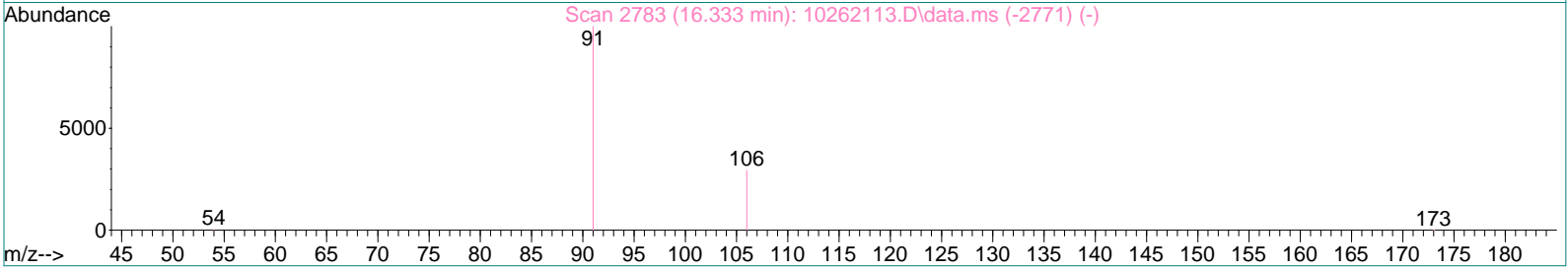
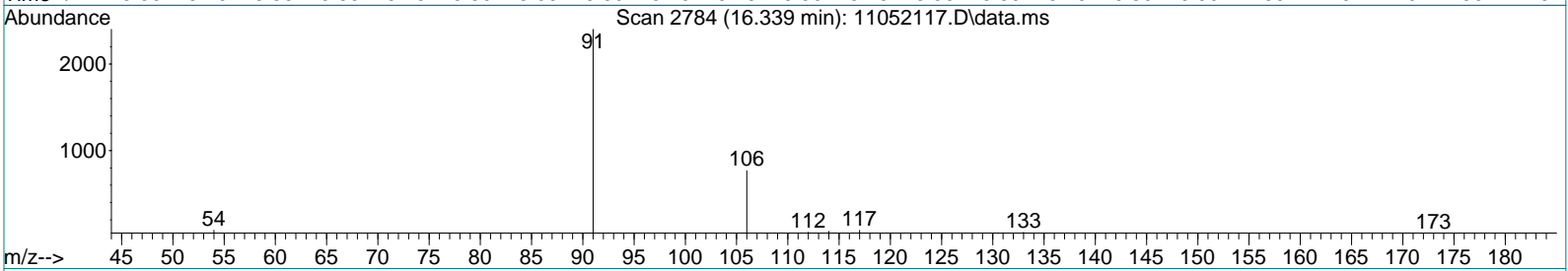
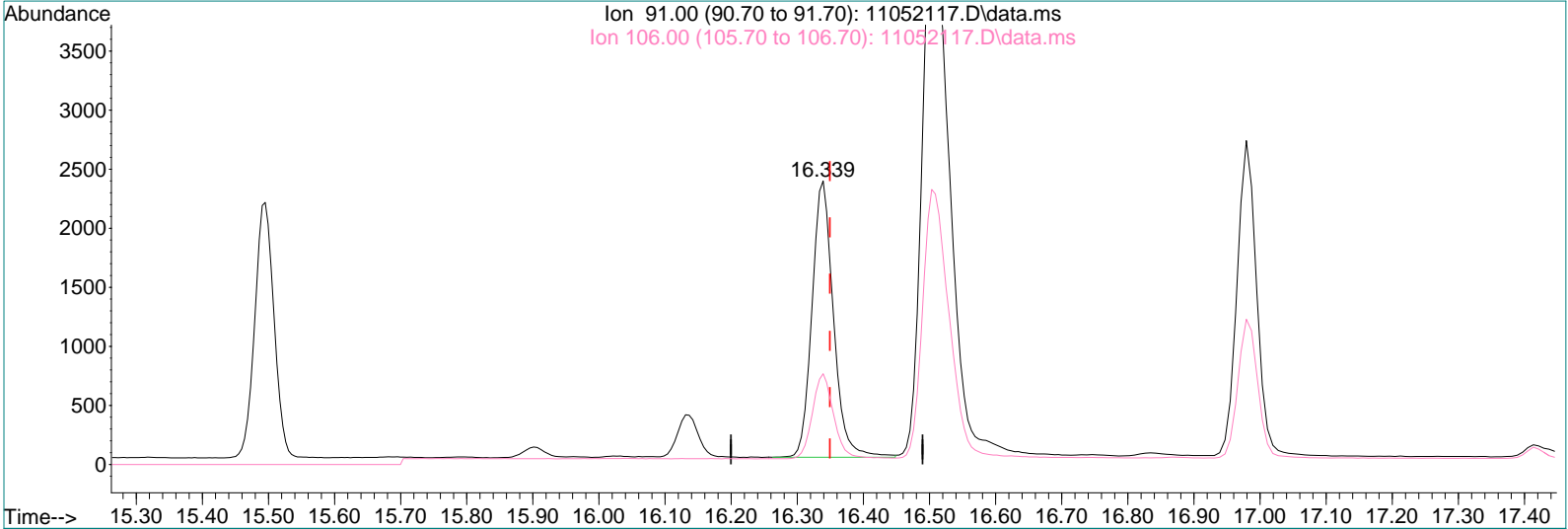
response 25722

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.47
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:55:05 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052117.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.010) 42.32pg

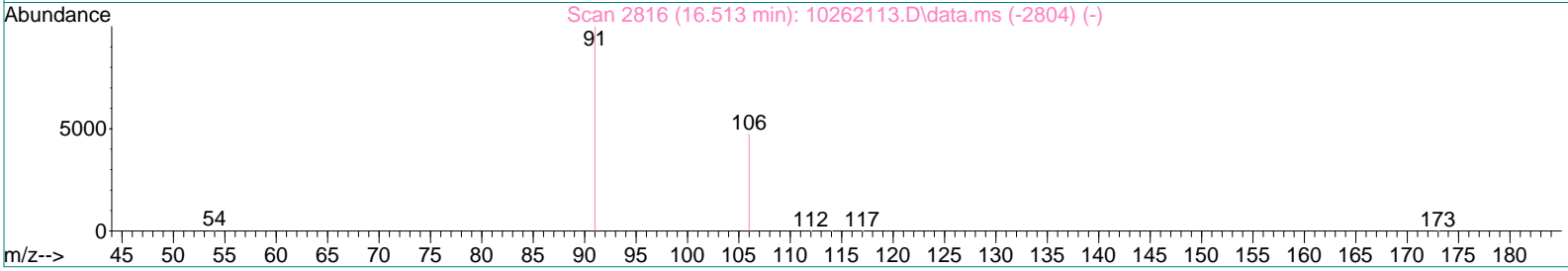
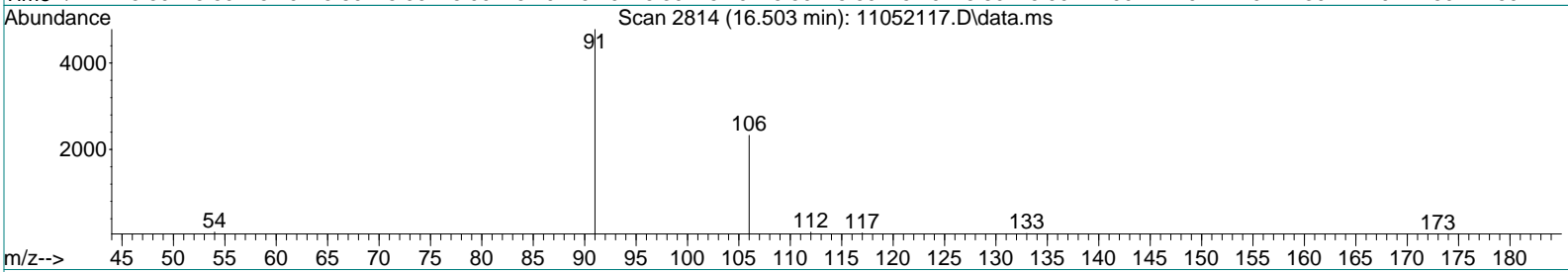
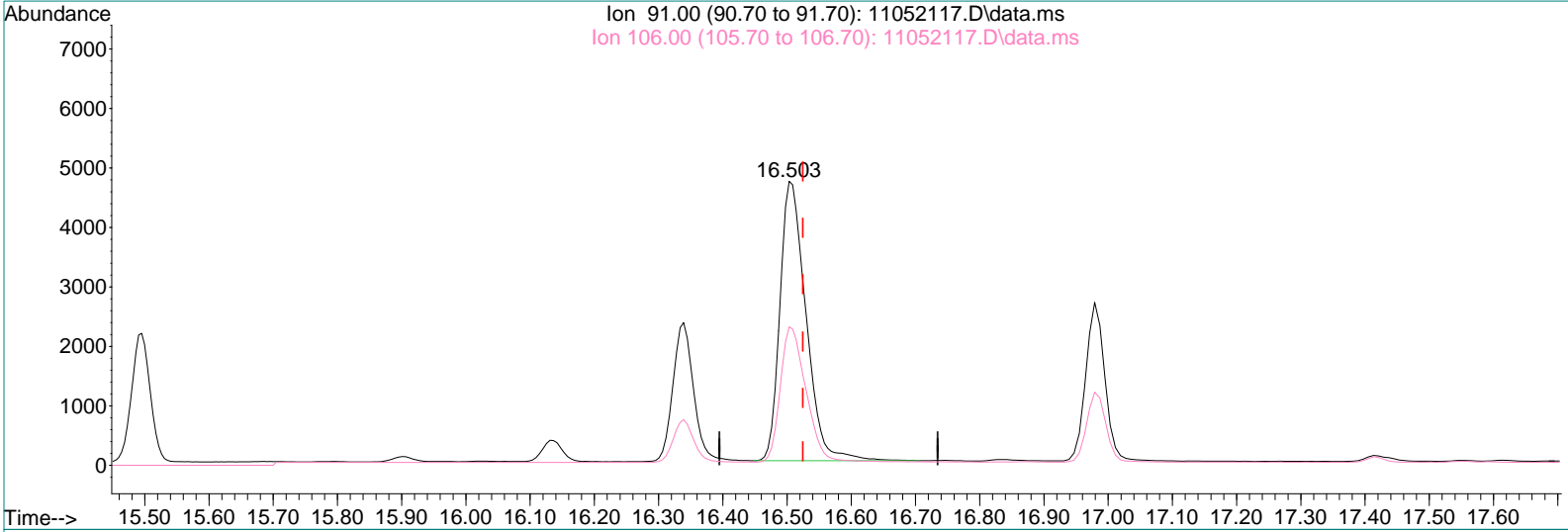
response 5274

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.45
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:55:05 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052117.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.021) 133.72pg

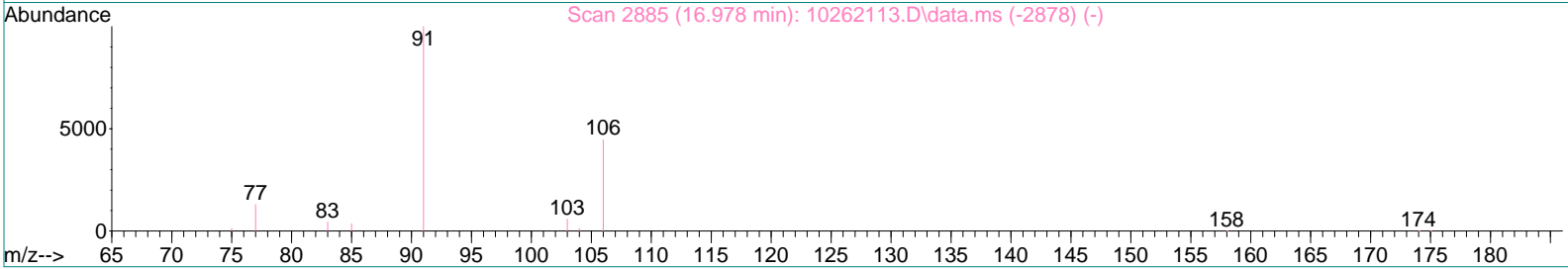
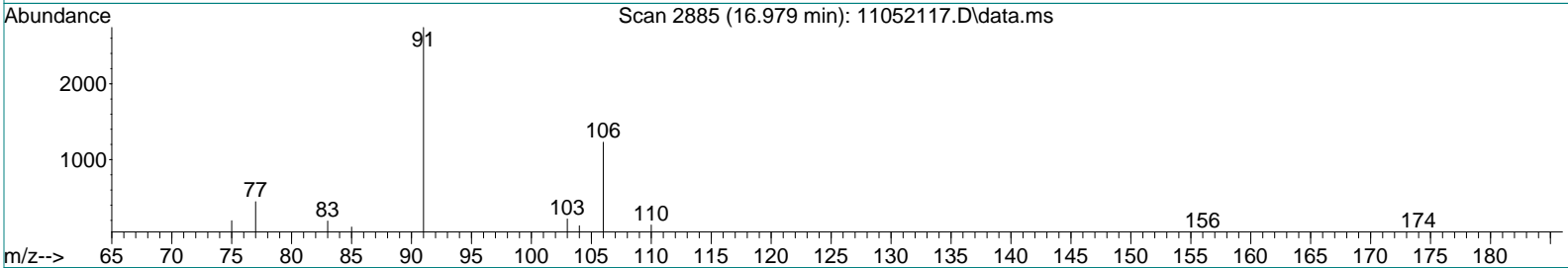
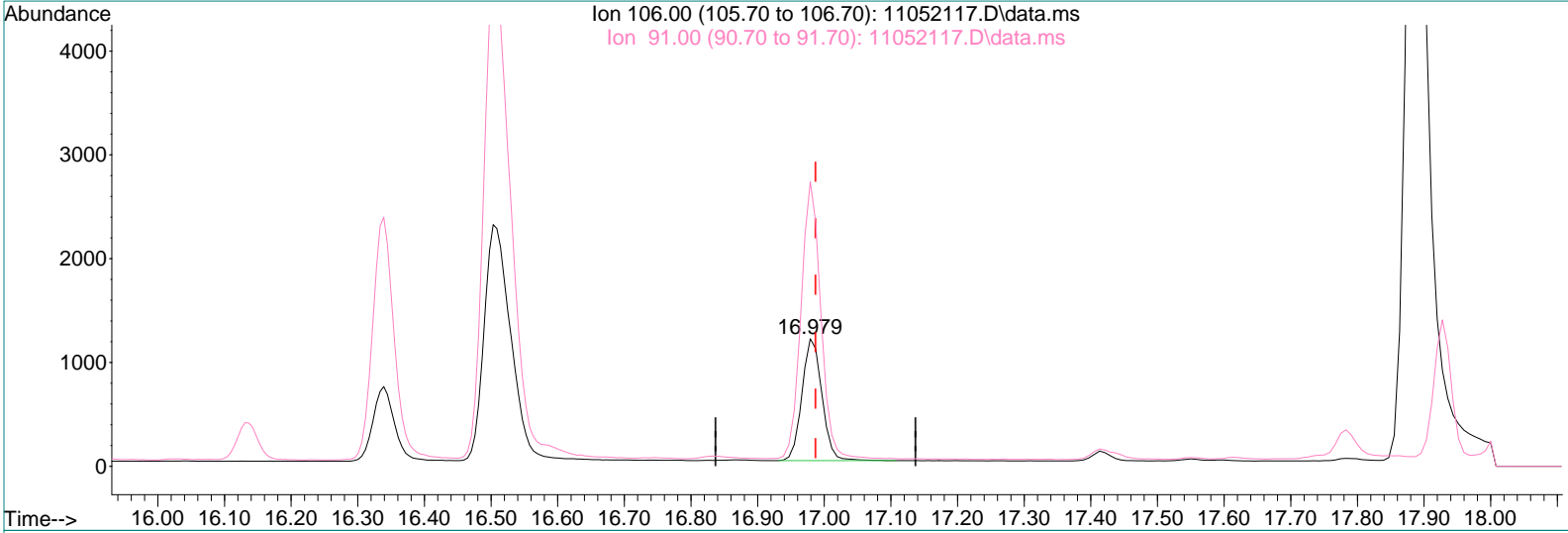
response 13242

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.51
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052117.D
 Acq On : 5 Nov 2021 14:18
 Sample : P2105519-012 (1000mL)
 Misc : S34-10062101

Vial: 4
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:55:05 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052117.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 50.11pg

response 2444

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	224.75
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20461	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.56	114	102680	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	22404	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	41168	906.785	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	90.68%
33) Toluene-d8 (SS2)	14.00	98	116800	1018.326	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.83%
45) Bromofluorobenzene (SS3)	17.42	174	33913	1128.101	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	112.81%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	83318	1240.175	pg	100
3) Chloromethane	4.53	52	590	37.841	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3430	52.773	pg	100
5) Vinyl Chloride	4.83	62	86	N.D.		
6) 1,3-Butadiene	5.06	54	101	N.D.		
7) Bromomethane	5.33	94	261	12.495	pg	95
8) Chloroethane	5.55	64	141	N.D.		
9) Acrolein	6.13	56	7447	558.922	pg	100
10) Acetone	6.26	58	94979	5058.952	pg	93
11) Trichlorofluoromethane	6.46	101	31546	720.325	pg	100
12) 1,1-Dichloroethene	7.18	96	50	N.D.		
13) Methylene Chloride	7.33	84	5692	193.771	pg	97
14) Trichlorotrifluoroethane	7.65	151	6874	331.613	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	536	10.712	pg	91
17) Methyl tert-Butyl Ether	8.67	73	578	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	6401	123.395	pg	99
21) 1,2-Dichloroethane	10.50	62	1116	27.209	pg	100
22) 1,1,1-Trichloroethane	10.76	97	184	N.D.		
23) Benzene	11.22	78	17441	145.812	pg	100
24) Carbon Tetrachloride	11.37	117	11565	330.506	pg	99
26) 1,2-Dichloropropane	12.03	63	311	10.192	pg	96
27) Bromodichloromethane	12.22	83	375	N.D.		
28) Trichloroethene	12.27	130	58	N.D.		
29) 1,4-Dioxane	12.27	88	406	17.718	pg	96
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	62	N.D.		
34) Toluene	14.10	91	76933	667.034	pg	99
35) Dibromochloromethane	14.51	129	163	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	1257	53.219	pg	97
39) Chlorobenzene	15.95	112	317	N.D.		
40) Ethylbenzene	16.34	91	9100	74.441	pg	98
41) m,p-Xylene	16.50	91	18290	188.293	pg	99
42) Styrene	16.87	104	59615	860.970	pg	99
43) o-Xylene	16.98	106	3704	77.420	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	103	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	2515	22.813	pg	99
47) 1,2,4-Trimethylbenzene	18.65	105	9868	86.442	pg	89
48) 1,3-Dichlorobenzene	18.86	146	433	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	447	N.D.		
50) 1,2-Dichlorobenzene	19.19	146	70	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.82	182	84	N.D.		
53) Naphthalene	20.93	128	4865	42.315	pg	99

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

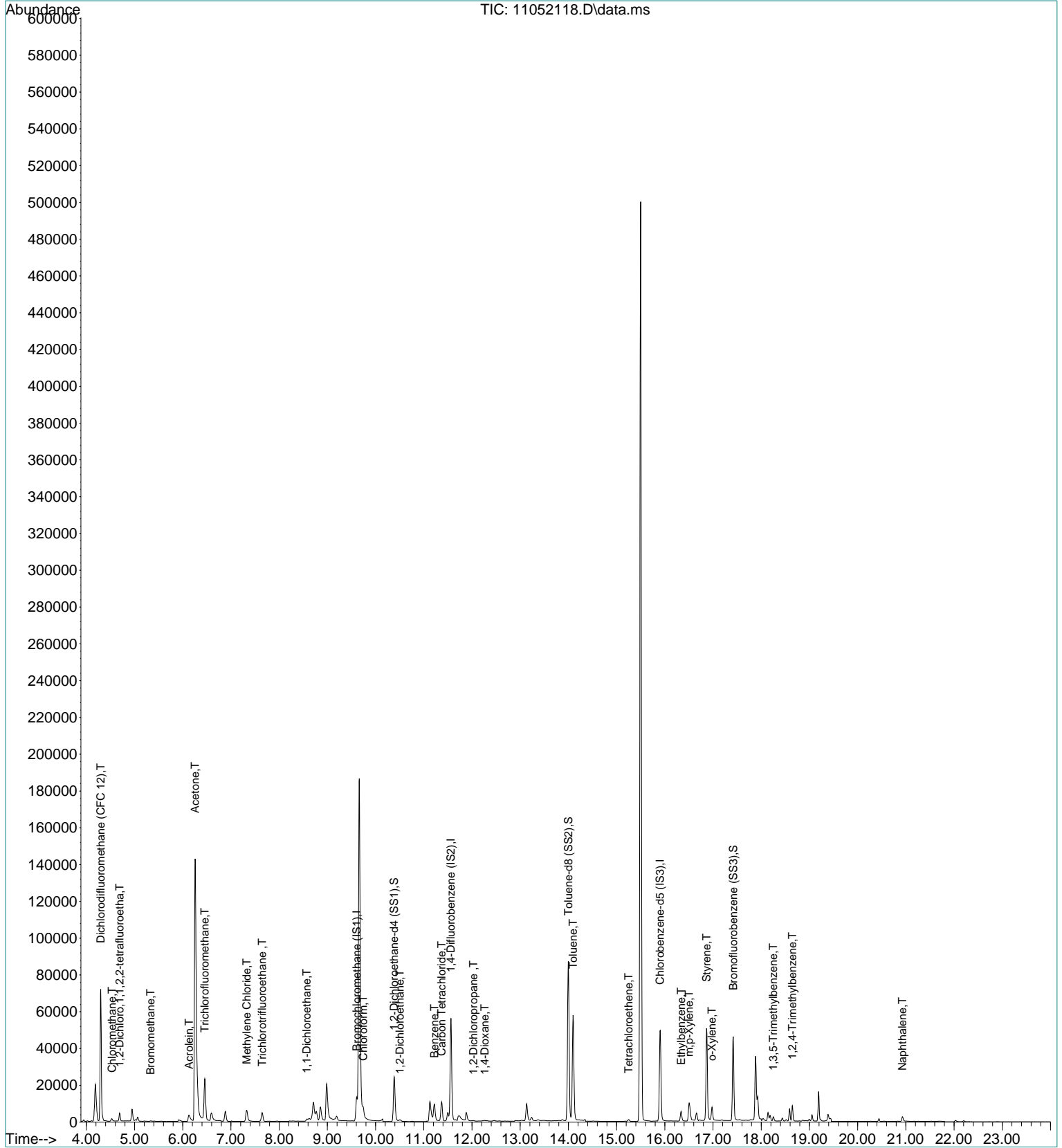
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

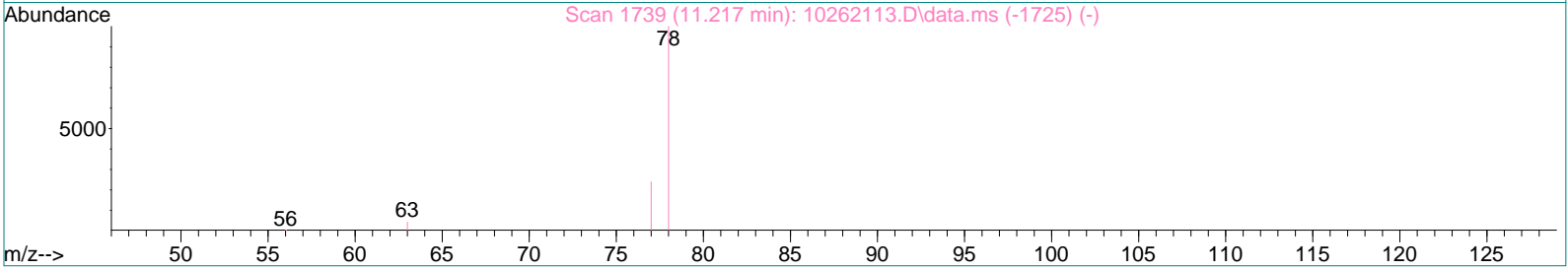
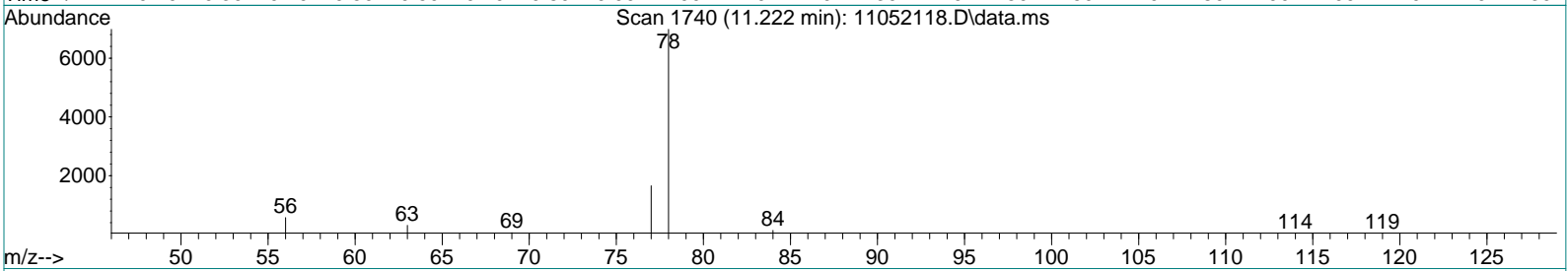
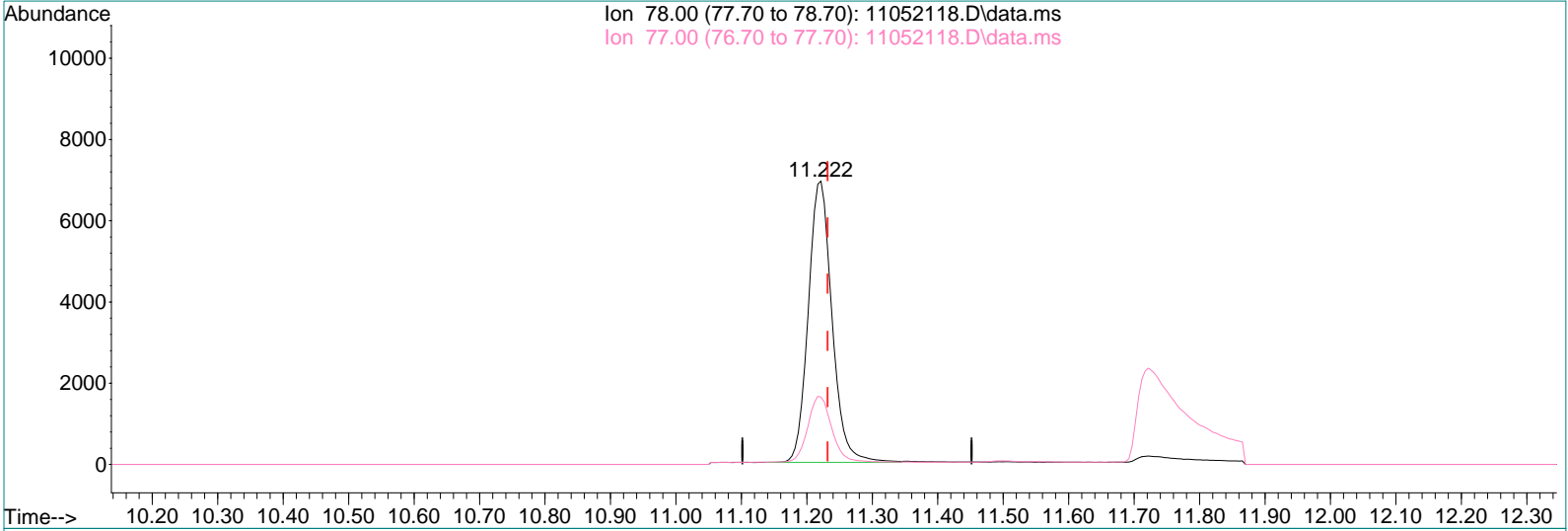
Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(23) Benzene (T)

11.222min (-0.010) 145.81pg

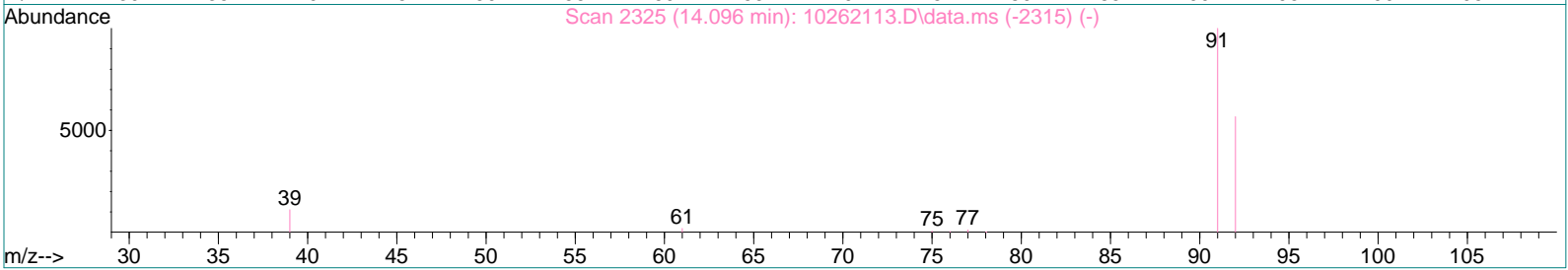
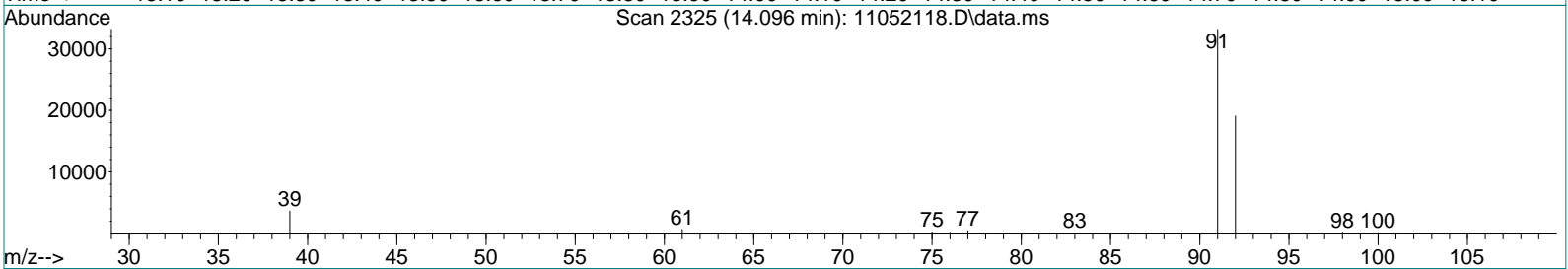
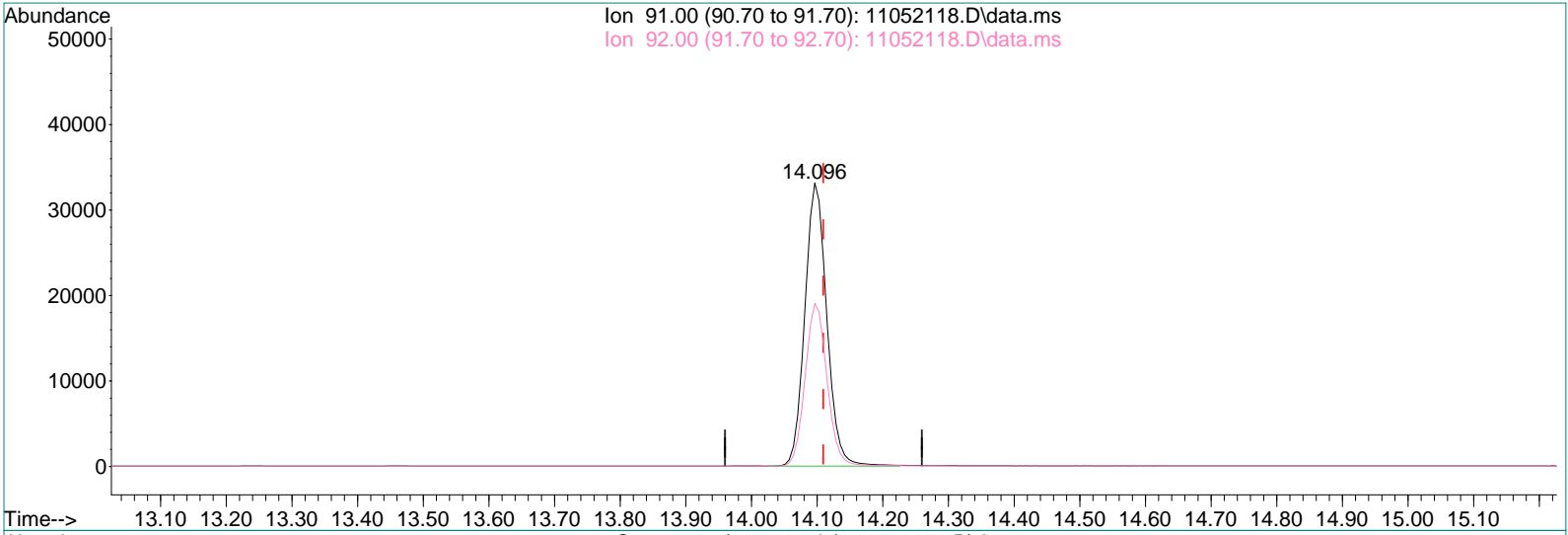
response 17441

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.75
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(34) Toluene (T)

14.096min (-0.013) 667.03pg

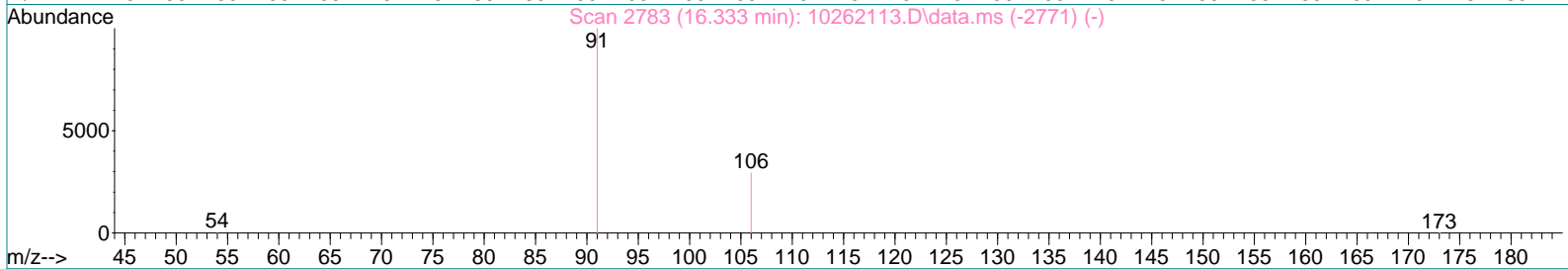
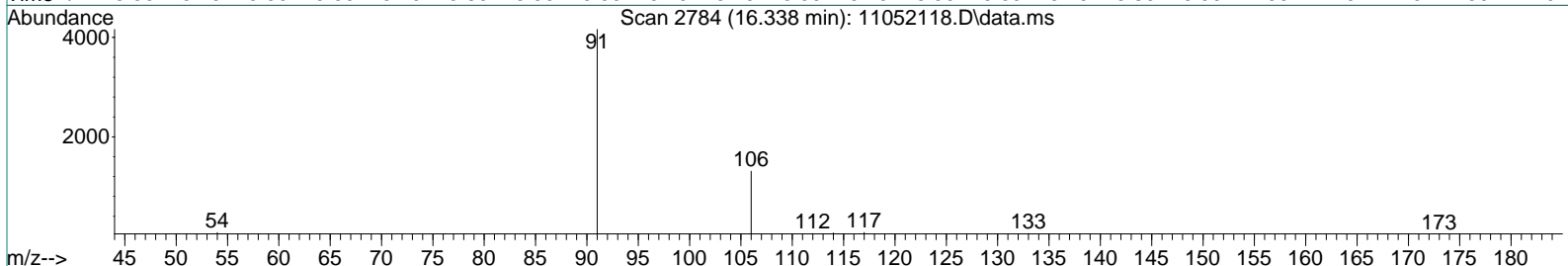
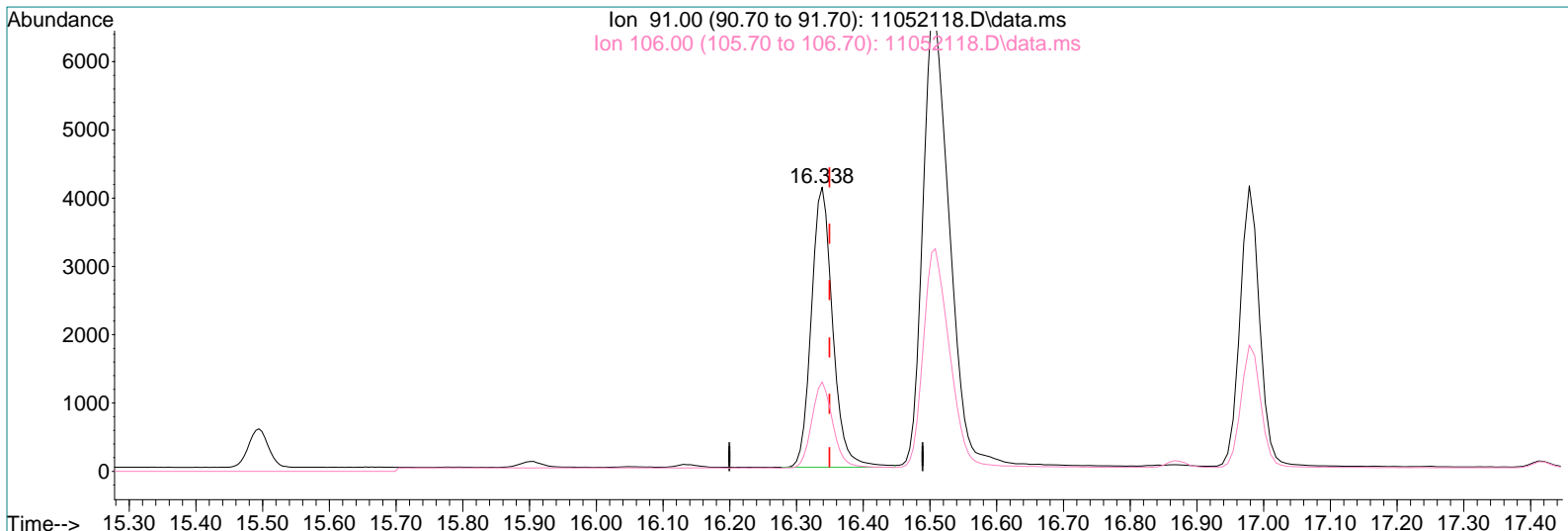
response 76933

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.53
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(40) Ethylbenzene (T)

16.338min (-0.011) 74.44pg

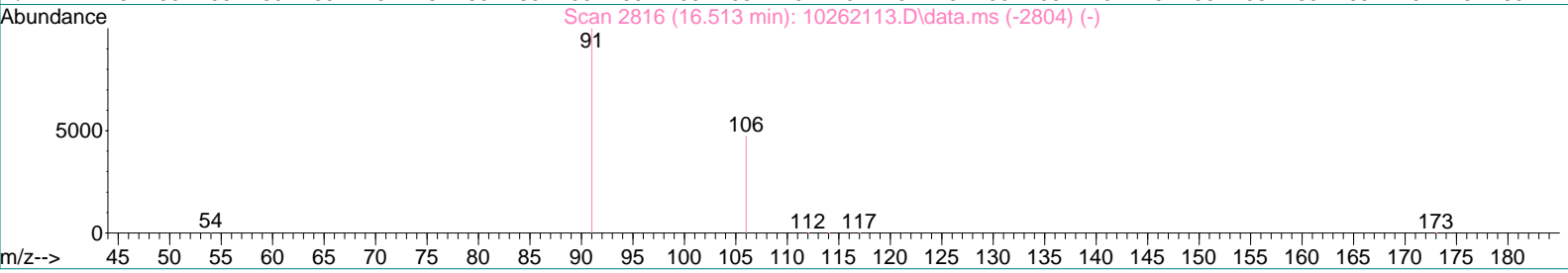
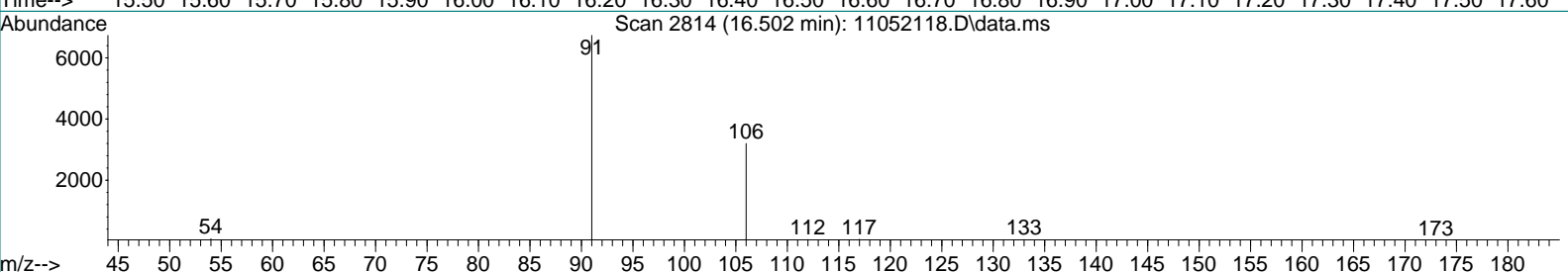
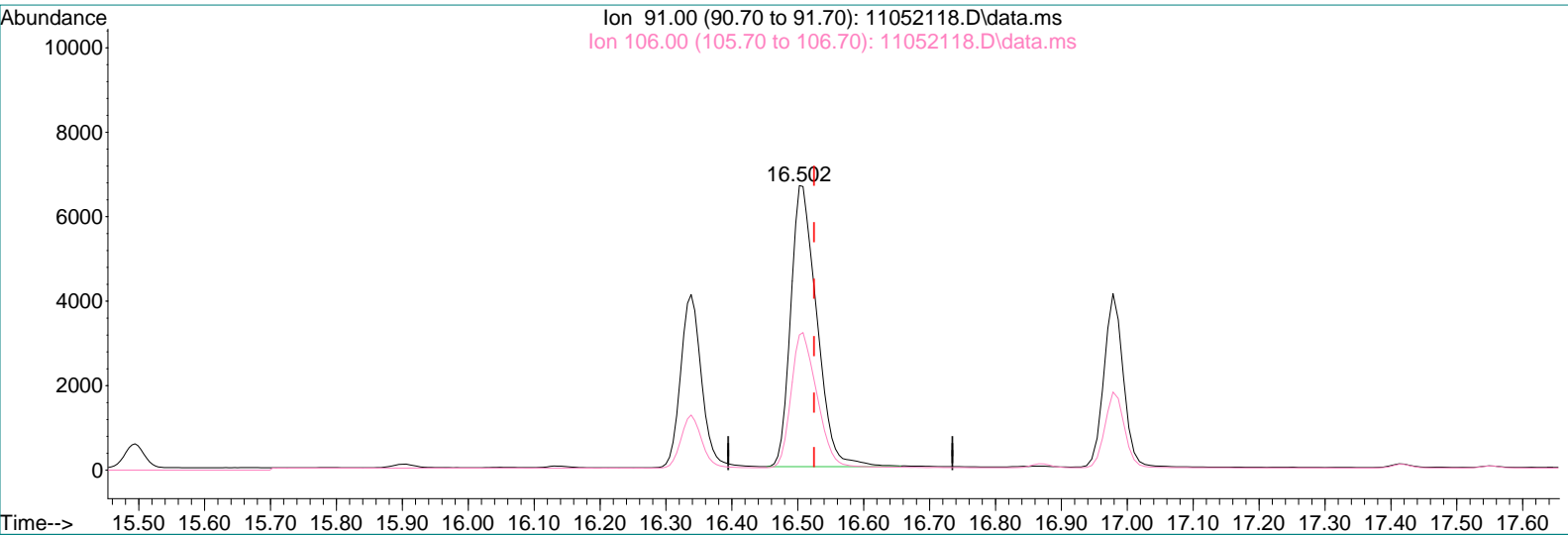
response 9100

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.48
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(41) m,p-Xylene (T)

16.502min (-0.022) 188.29pg

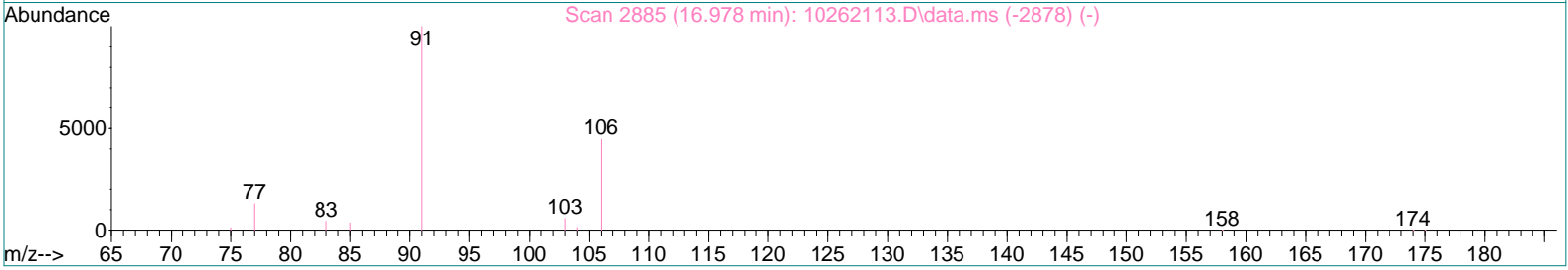
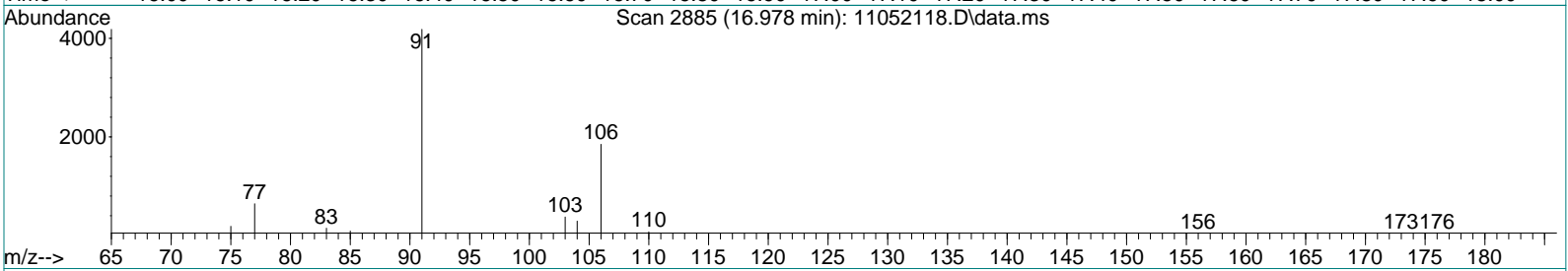
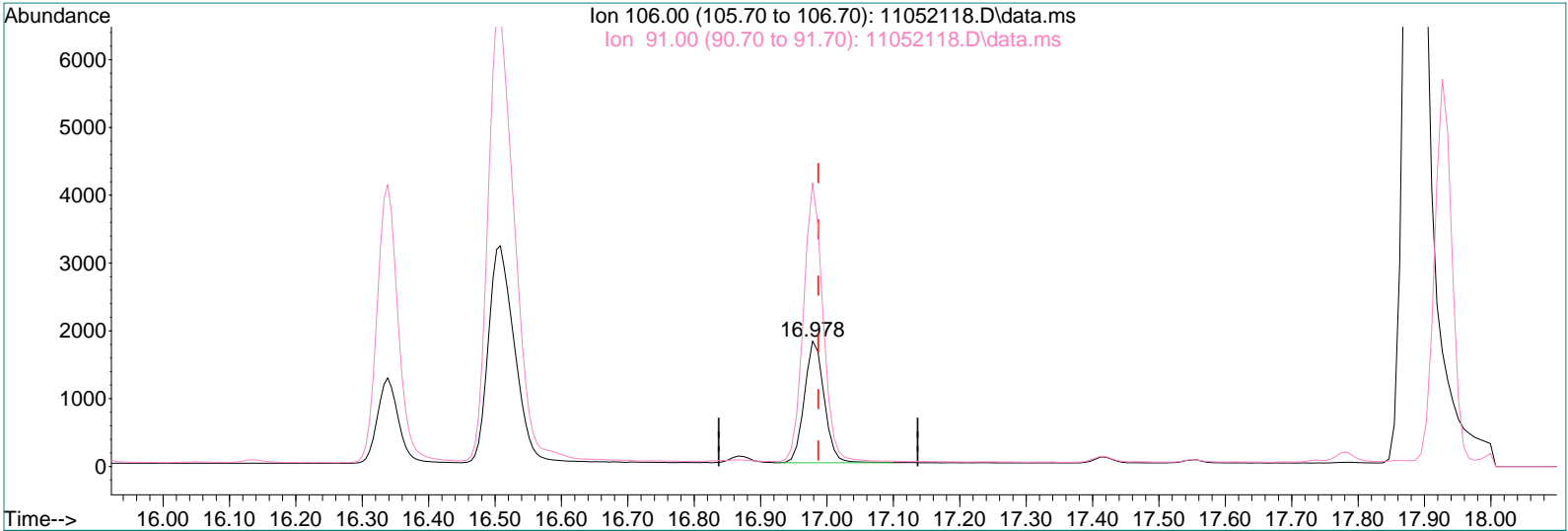
response 18290

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	48.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(43) o-Xylene (T)

16.978min (-0.009) 77.42pg

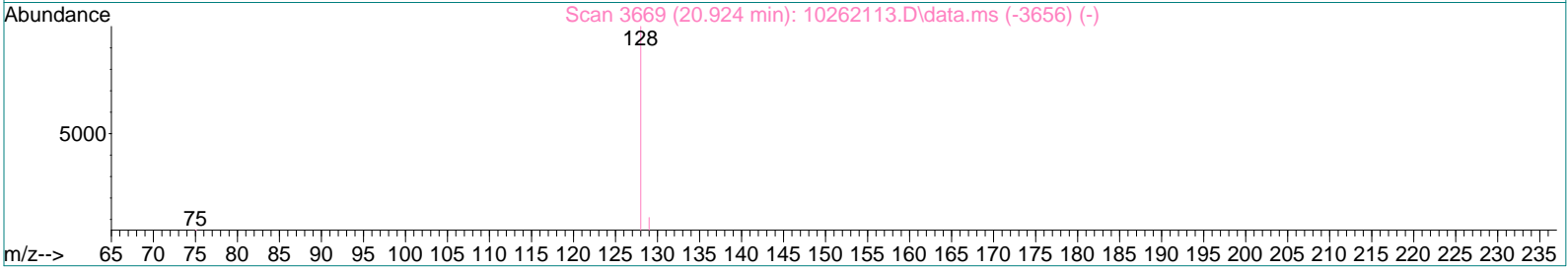
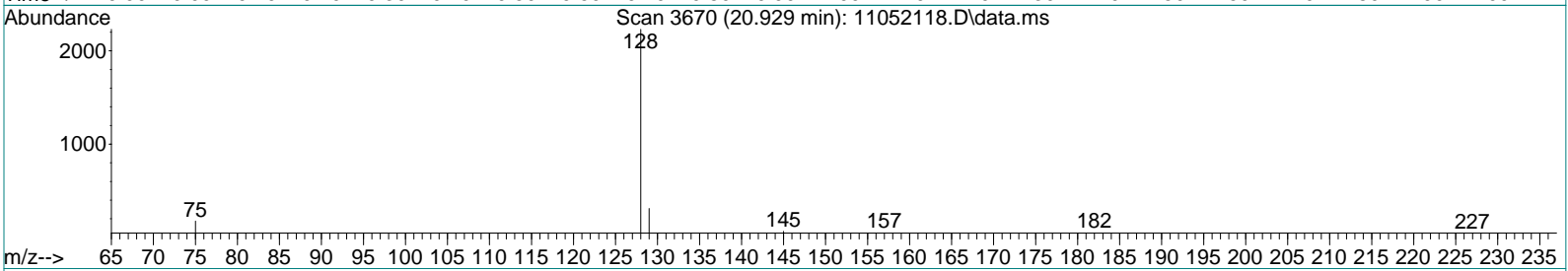
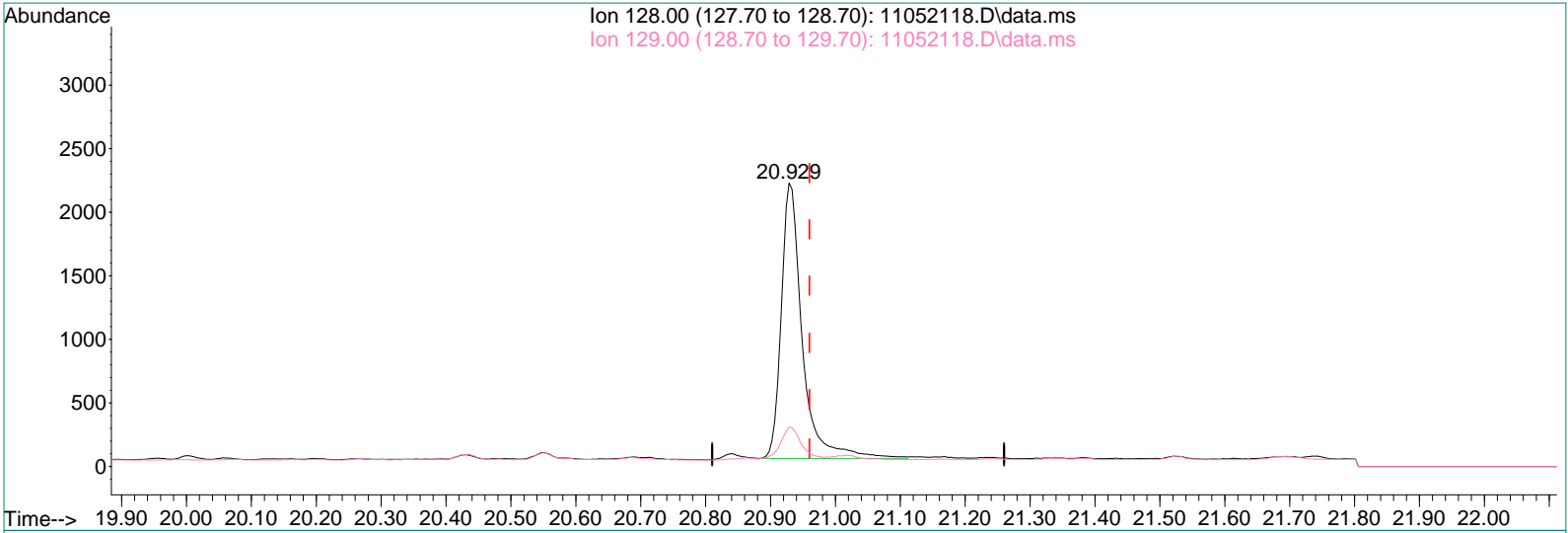
response 3704

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	225.00
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052118.D
 Acq On : 5 Nov 2021 14:53
 Sample : P2105519-013 (1000mL)
 Misc : S34-10062101

Vial: 5
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:56:32 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052118.D\data.ms

(53) Naphthalene (T)

20.929min (-0.031) 42.31pg

response 4865

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.14
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20183	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.57	114	101464	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	21837	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	40616	906.949	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	90.70%	
33) Toluene-d8 (SS2)	14.00	98	115099	1015.522	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	101.55%	
45) Bromofluorobenzene (SS3)	17.41	174	33445	1141.420	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	114.14%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	80429	1213.663	pg	100
3) Chloromethane	4.53	52	602	39.142	pg	# 90
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	3295	51.394	pg	100
5) Vinyl Chloride	4.83	62	72	N.D.		
6) 1,3-Butadiene	5.06	54	92	N.D.		
7) Bromomethane	5.34	94	267	12.958	pg	98
8) Chloroethane	5.55	64	149	N.D.		
9) Acrolein	6.13	56	8539	649.708	pg	99
10) Acetone	6.26	58	100704	5437.770	pg	# 90
11) Trichlorofluoromethane	6.46	101	30593	708.186	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	5412	186.776	pg	98
14) Trichlorotrifluoroethane	7.65	151	6635	324.492	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	527	10.677	pg	90
17) Methyl tert-Butyl Ether	8.67	73	534	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	6278	122.691	pg	99
21) 1,2-Dichloroethane	10.50	62	1089	26.916	pg	98
22) 1,1,1-Trichloroethane	10.77	97	181	N.D.		
23) Benzene	11.22	78	17656	149.643	pg	99
24) Carbon Tetrachloride	11.37	117	11156	323.209	pg	100
26) 1,2-Dichloropropane	12.03	63	314	10.414	pg	95
27) Bromodichloromethane	12.23	83	365	N.D.		
28) Trichloroethene	12.27	130	73	N.D.		
29) 1,4-Dioxane	12.27	88	431	19.035	pg	98
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	13.64	75	52	N.D.		
32) 1,1,2-Trichloroethane	13.80	83	83	N.D.		
34) Toluene	14.10	91	69467	609.520	pg	99
35) Dibromochloromethane	14.52	129	165	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	1228	52.614	pg	96
39) Chlorobenzene	15.95	112	376	N.D.		
40) Ethylbenzene	16.34	91	8512	71.439	pg	99
41) m,p-Xylene	16.50	91	16360	172.797	pg	99
42) Styrene	16.87	104	48418	717.417	pg	99
43) o-Xylene	16.98	106	3284	70.424	pg	100
44) 1,1,2,2-Tetrachloroethane	16.98	83	68	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	1751	16.295	pg	99
47) 1,2,4-Trimethylbenzene	18.65	105	5829	52.387	pg	90
48) 1,3-Dichlorobenzene	18.80	146	59	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	363	N.D.		
50) 1,2-Dichlorobenzene	19.19	146	76	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.82	182	98	N.D.		
53) Naphthalene	20.94	128	1053	N.D.		

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

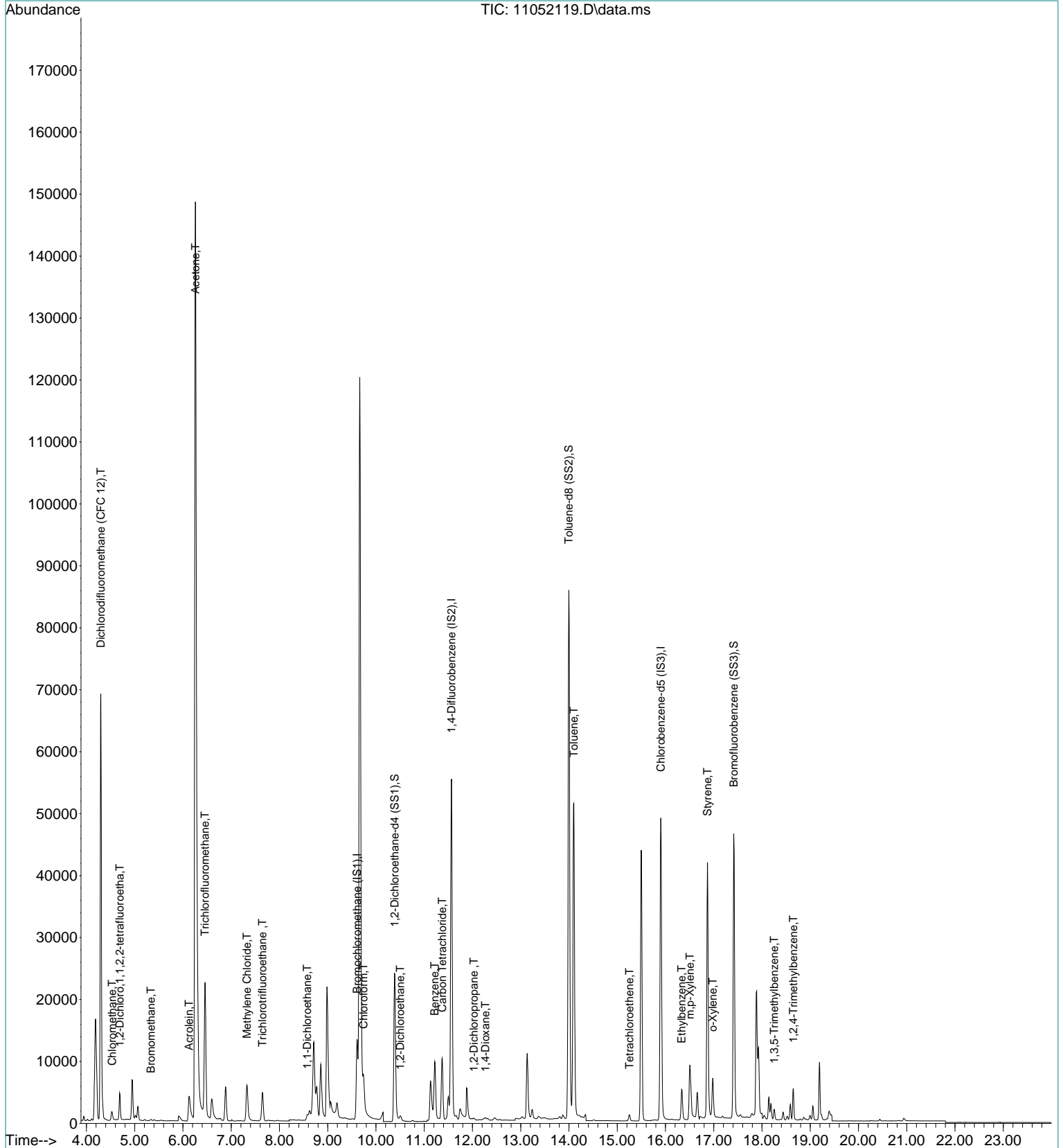
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

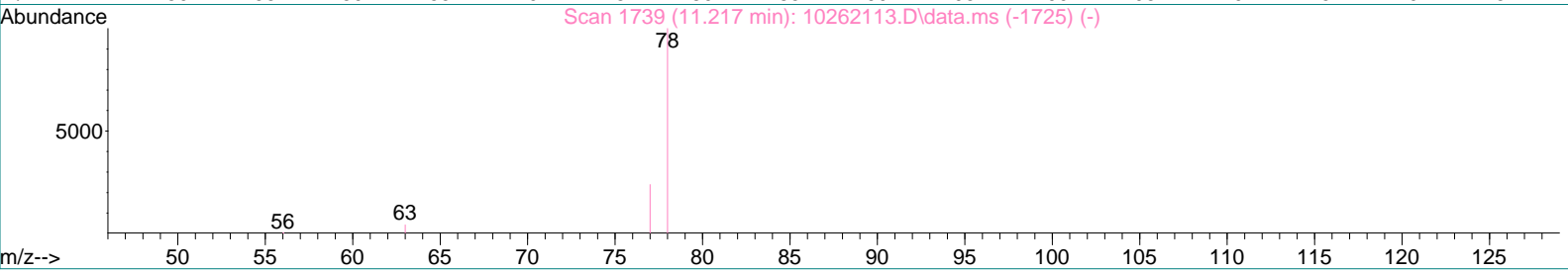
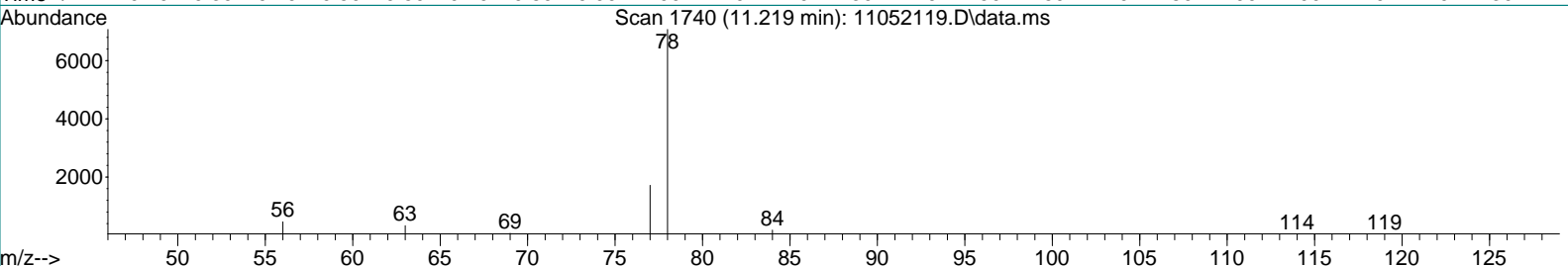
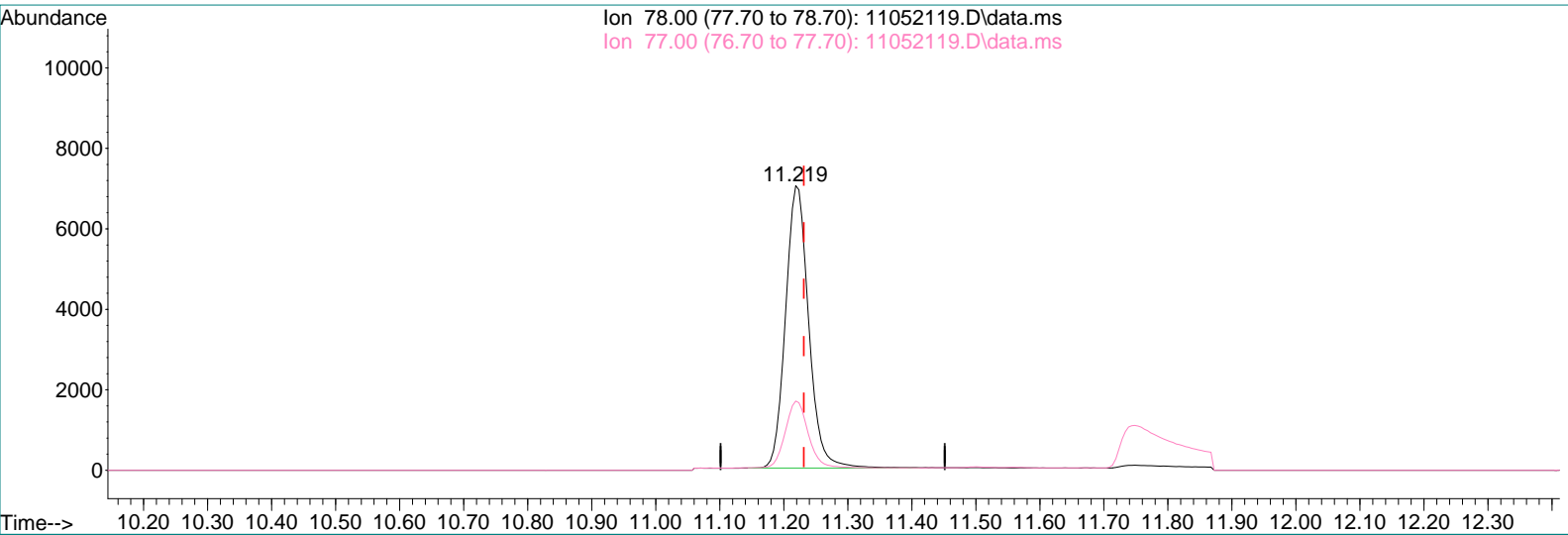
Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052119.D\data.ms

(23) Benzene (T)

11.219min (-0.013) 149.64pg

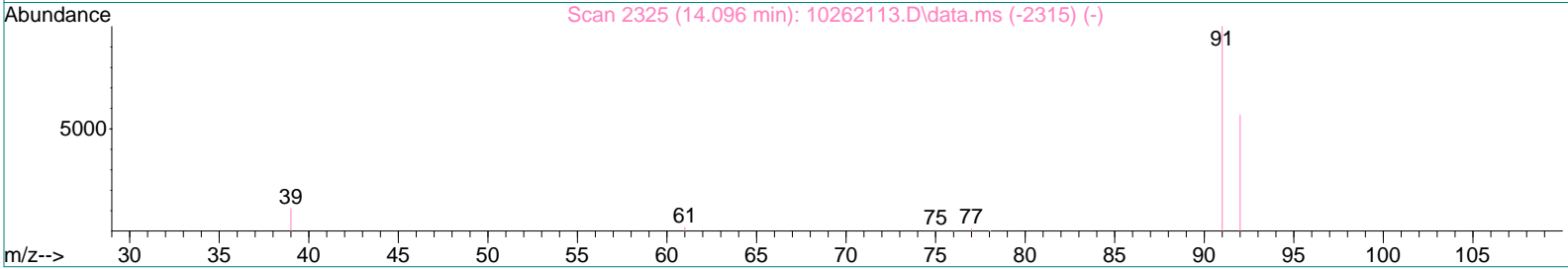
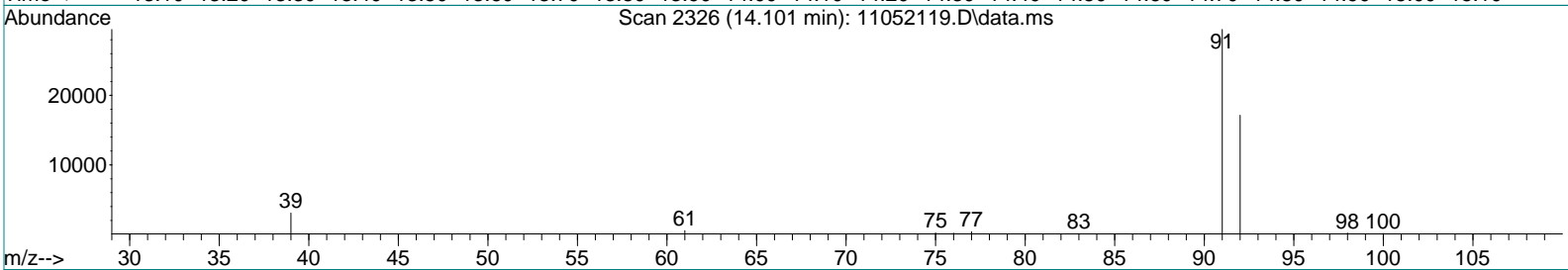
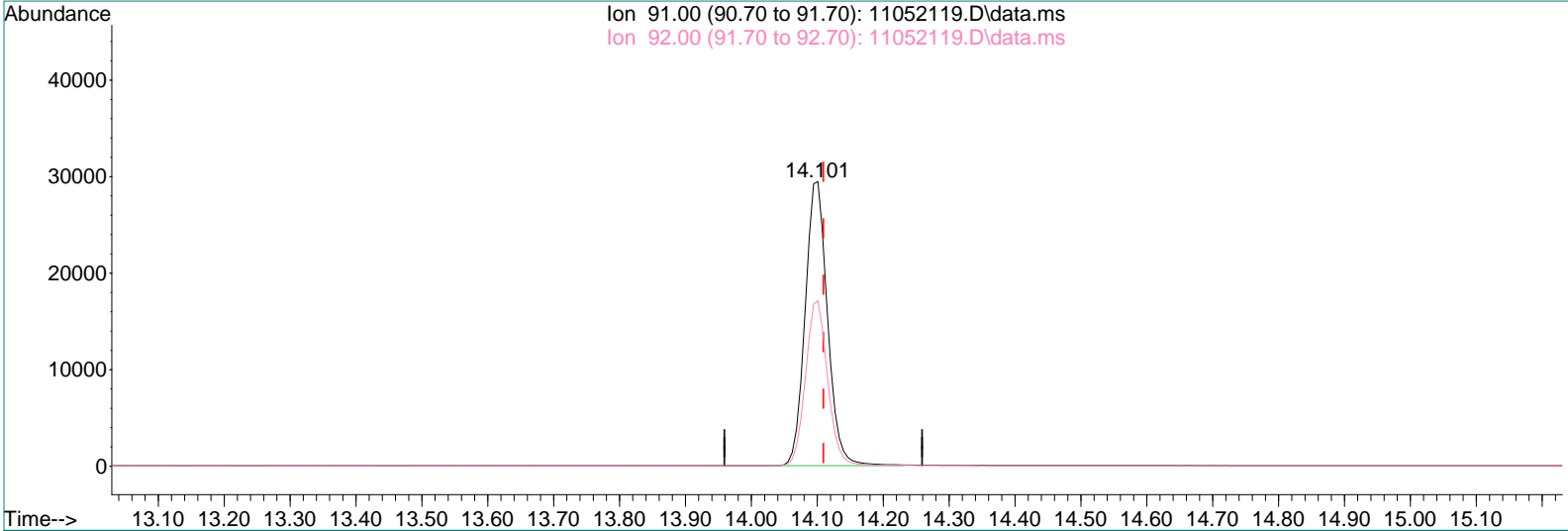
response 17656

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.28
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052119.D\data.ms

(34) Toluene (T)

14.101min (-0.009) 609.52pg

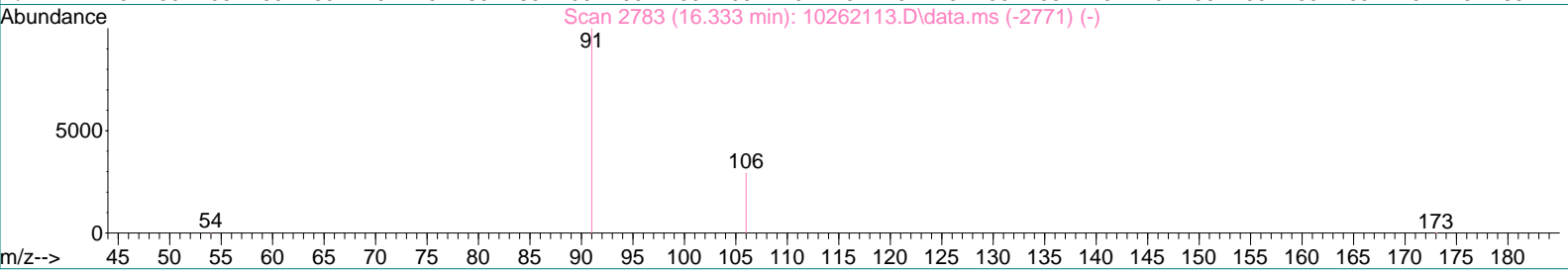
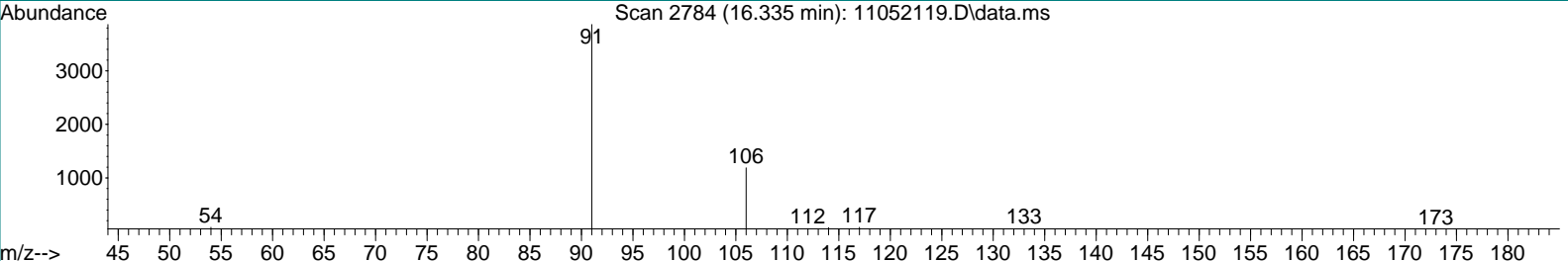
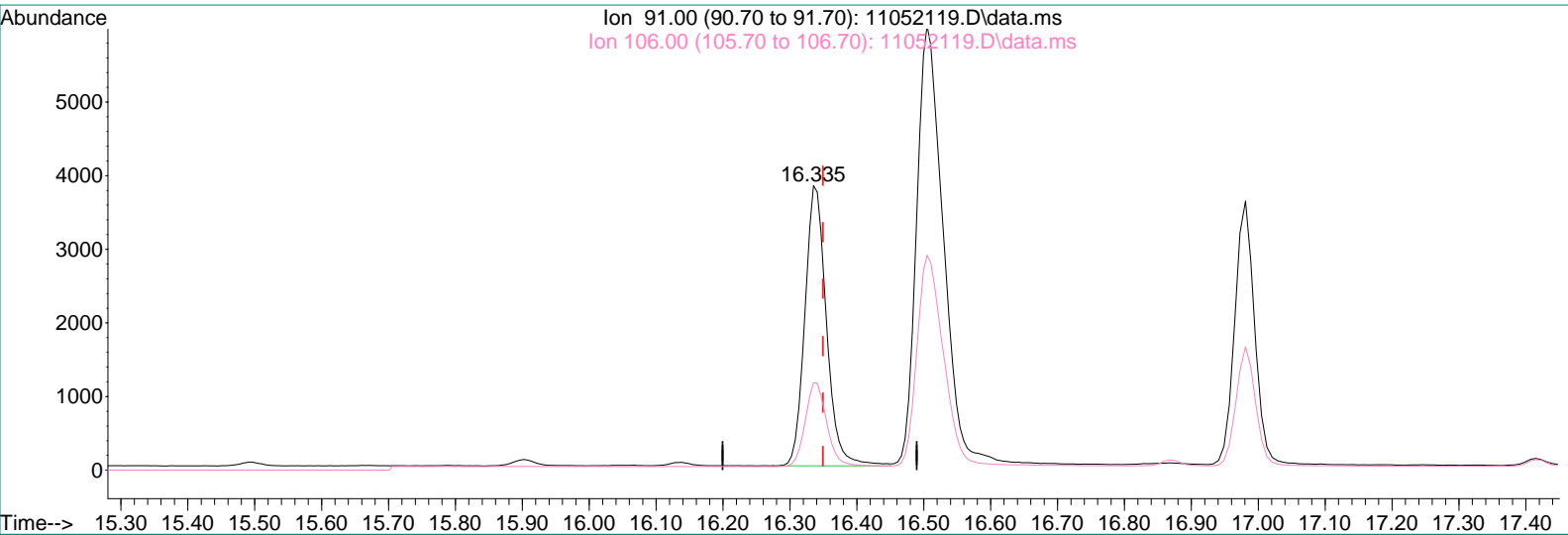
response 69467

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.45
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052119.D\data.ms

(40) Ethylbenzene (T)

16.335min (-0.014) 71.44pg

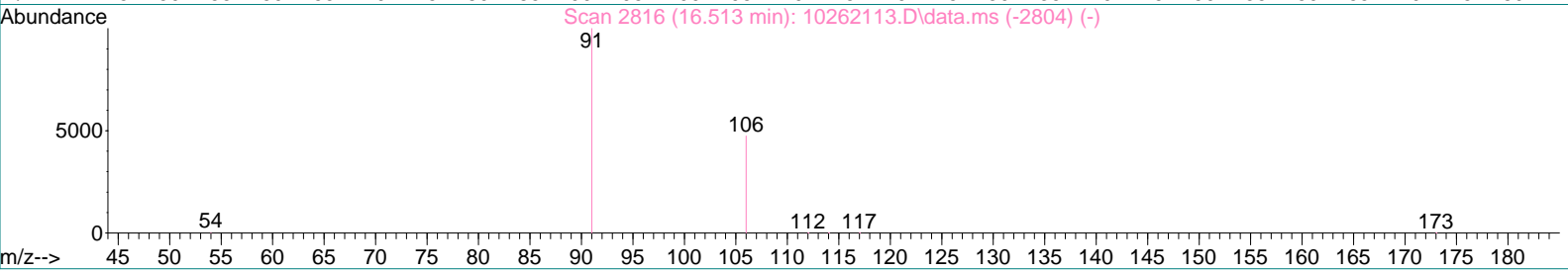
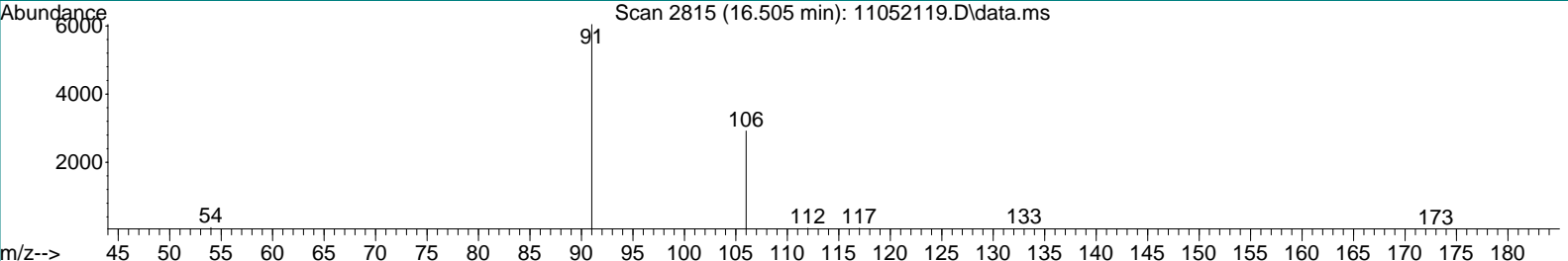
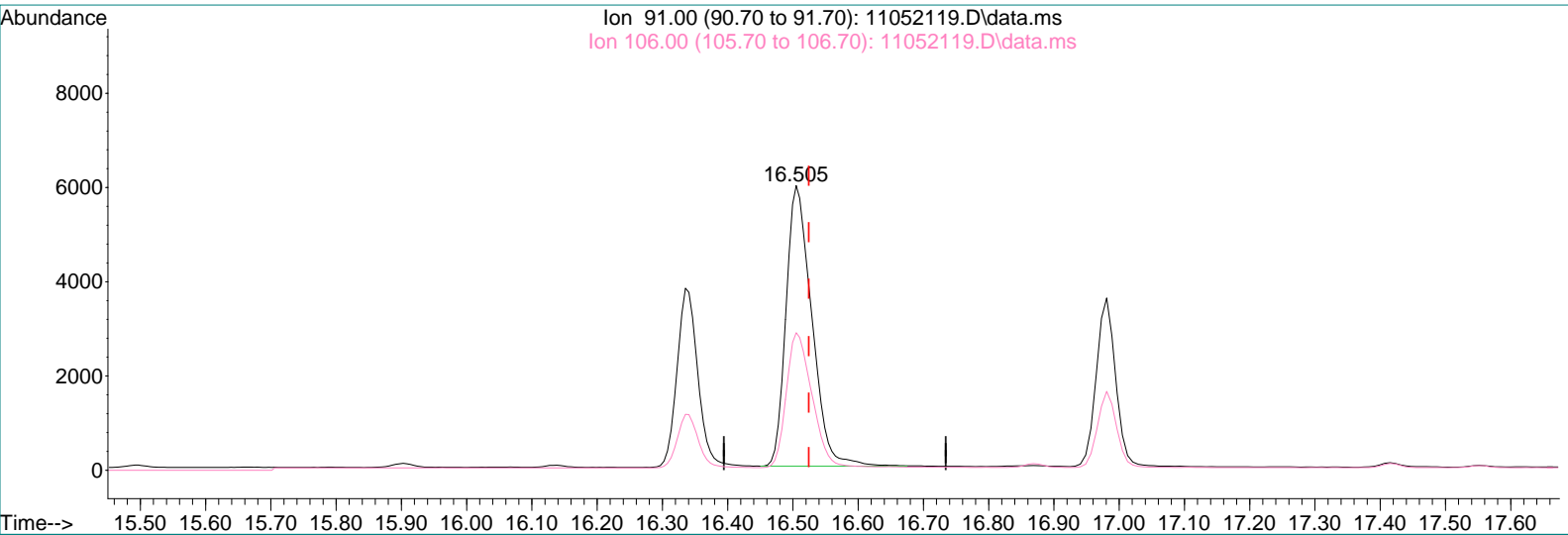
response 8512

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.08
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052119.D\data.ms

(41) m,p-Xylene (T)

16.505min (-0.020) 172.80pg

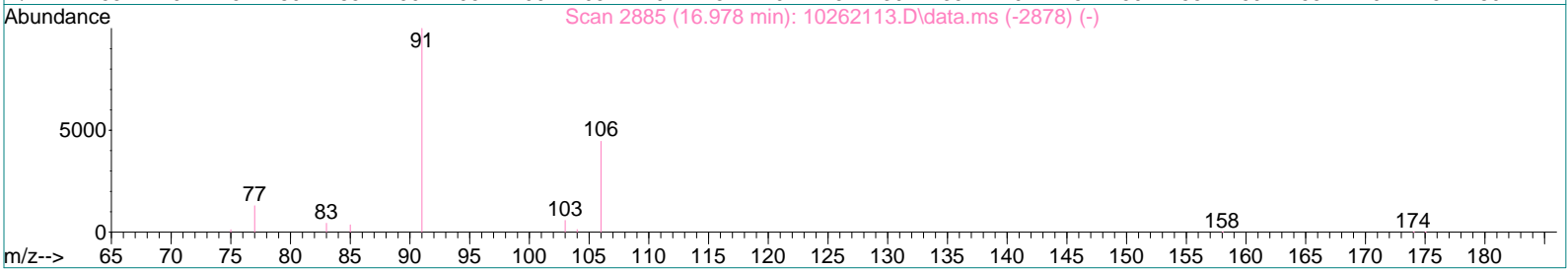
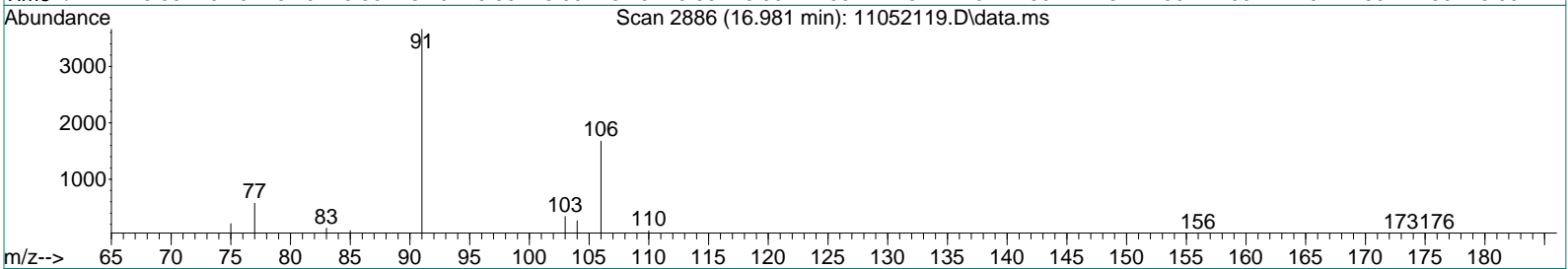
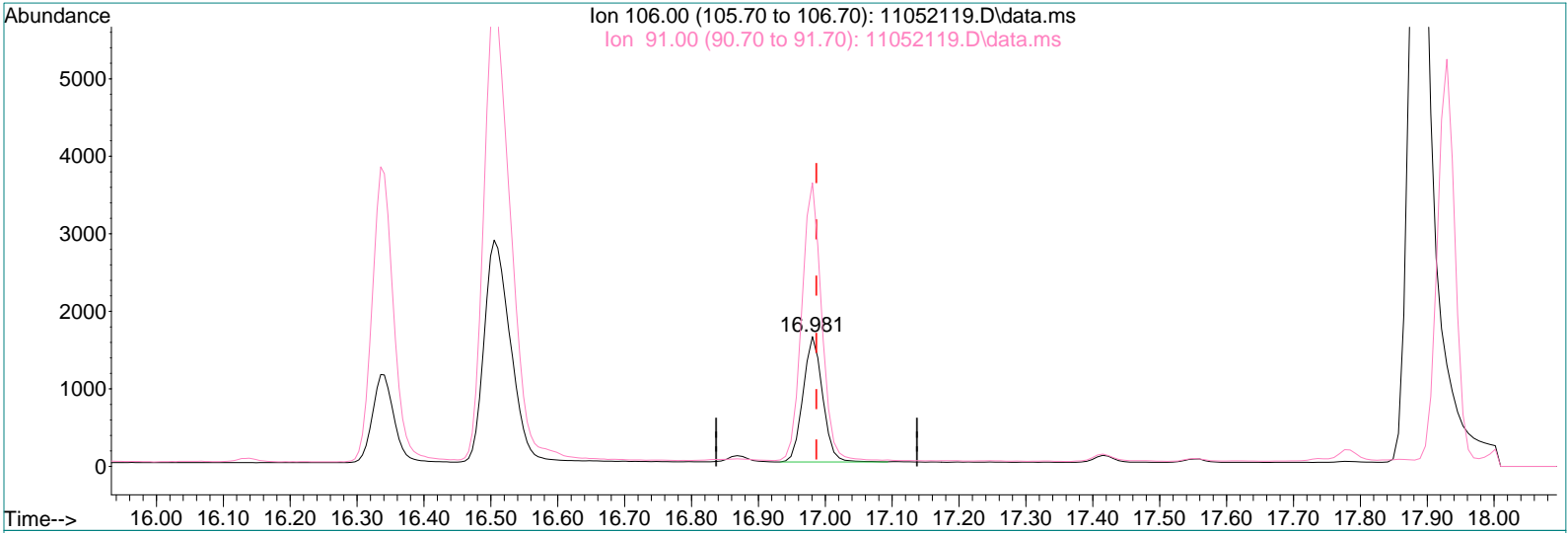
response 16360

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.95
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052119.D
 Acq On : 5 Nov 2021 15:25
 Sample : P2105519-014 (1000mL)
 Misc : S34-10062101

Vial: 6
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 15:57:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052119.D\data.ms

(43) o-Xylene (T)

16.981min (-0.006) 70.42pg

response 3284

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	224.76
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 16:39:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20091	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	100158	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	21886	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	40365	905.471	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	90.55%
33) Toluene-d8 (SS2)	14.00	98	113895	1018.002	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.80%
45) Bromofluorobenzene (SS3)	17.42	174	33389	1136.958	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	113.70%

Target Compounds

						Qvalue
2) Dichlorodifluoromethan...	4.30	85	89528	1357.152	pg	100
3) Chloromethane	4.51	52	684	44.678	pg	97
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	3656	57.286	pg	100
5) Vinyl Chloride	4.81	62	91	N.D.		
6) 1,3-Butadiene	5.00	54	583	16.037	pg	90
7) Bromomethane	5.31	94	289	14.090	pg	97
8) Chloroethane	5.54	64	189	10.916	pg	100
9) Acrolein	6.13	56	7373	563.559	pg	99
10) Acetone	6.26	58	104325	5659.090	pg	95
11) Trichlorofluoromethane	6.45	101	33473	778.402	pg	100
12) 1,1-Dichloroethene	7.19	96	51	N.D.		
13) Methylene Chloride	7.33	84	5785	200.563	pg	98
14) Trichlorotrifluoroethane	7.65	151	7328	360.026	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.57	63	614	12.496	pg	97
17) Methyl tert-Butyl Ether	8.67	73	559	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.74	83	7086	139.116	pg	99
21) 1,2-Dichloroethane	10.50	62	1201	29.821	pg	98
22) 1,1,1-Trichloroethane	10.76	97	200	N.D.		
23) Benzene	11.22	78	20127	171.366	pg	100
24) Carbon Tetrachloride	11.37	117	12877	374.778	pg	99
26) 1,2-Dichloropropane	12.03	63	317	10.651	pg	96
27) Bromodichloromethane	0.00	83	0	N.D.	d	
28) Trichloroethene	12.26	130	61	N.D.		
29) 1,4-Dioxane	12.25	88	4449	199.049	pg	94
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.10	91	86058	764.939	pg	99
35) Dibromochloromethane	14.51	129	184	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.25	166	1425	61.851	pg	96
39) Chlorobenzene	15.95	112	350	N.D.		
40) Ethylbenzene	16.34	91	9962	83.421	pg	99
41) m,p-Xylene	16.50	91	20130	212.140	pg	100
42) Styrene	16.87	104	33473	494.864	pg	99
43) o-Xylene	16.98	106	4045	86.549	pg	99
44) 1,1,2,2-Tetrachloroethane	16.98	83	80	N.D.		
46) 1,3,5-Trimethylbenzene	18.25	105	2636	24.477	pg	100
47) 1,2,4-Trimethylbenzene	18.65	105	10706	96.002	pg	89
48) 1,3-Dichlorobenzene	18.86	146	453	N.D.		
49) 1,4-Dichlorobenzene	18.86	146	453	N.D.		
50) 1,2-Dichlorobenzene	19.18	146	54	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.93	128	4275	38.063	pg	98

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:39:38 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

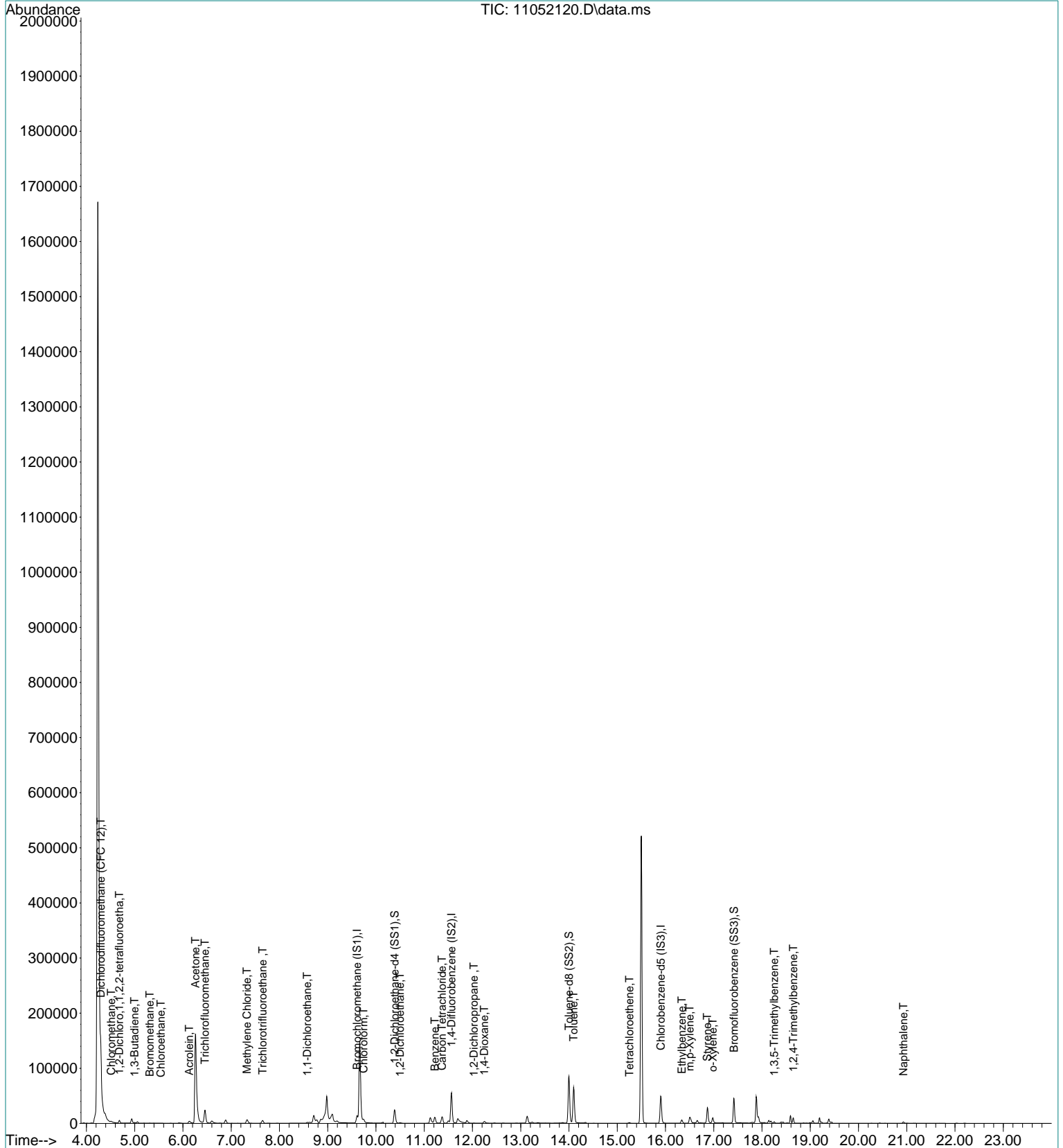
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052120.D
Acq On : 5 Nov 2021 15:57
Sample : P2105519-015 (1000mL)
Misc : S34-10062101

Vial: 7
Operator: TZ
Inst : MS19

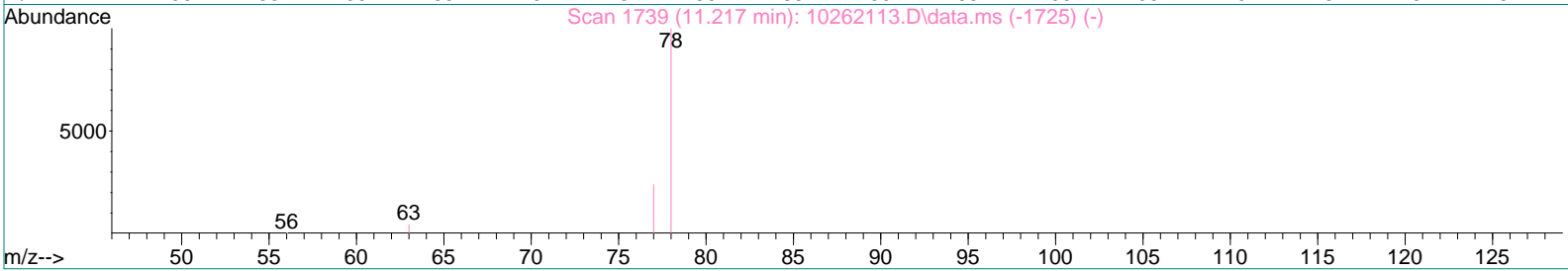
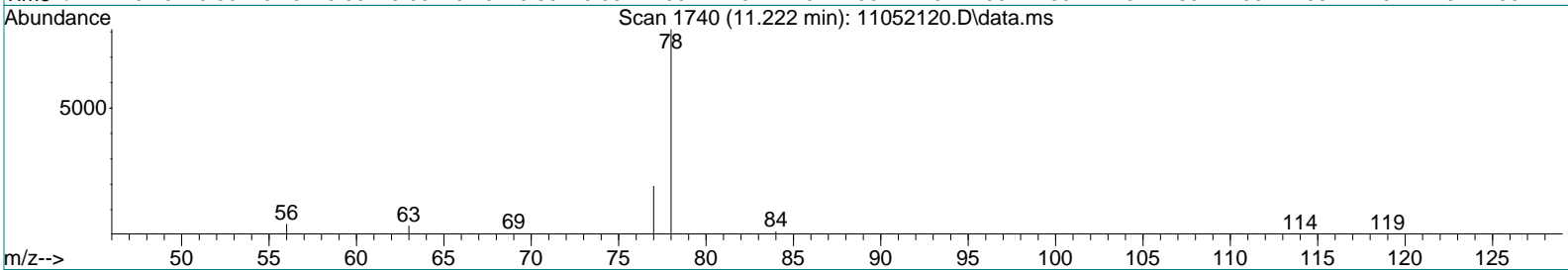
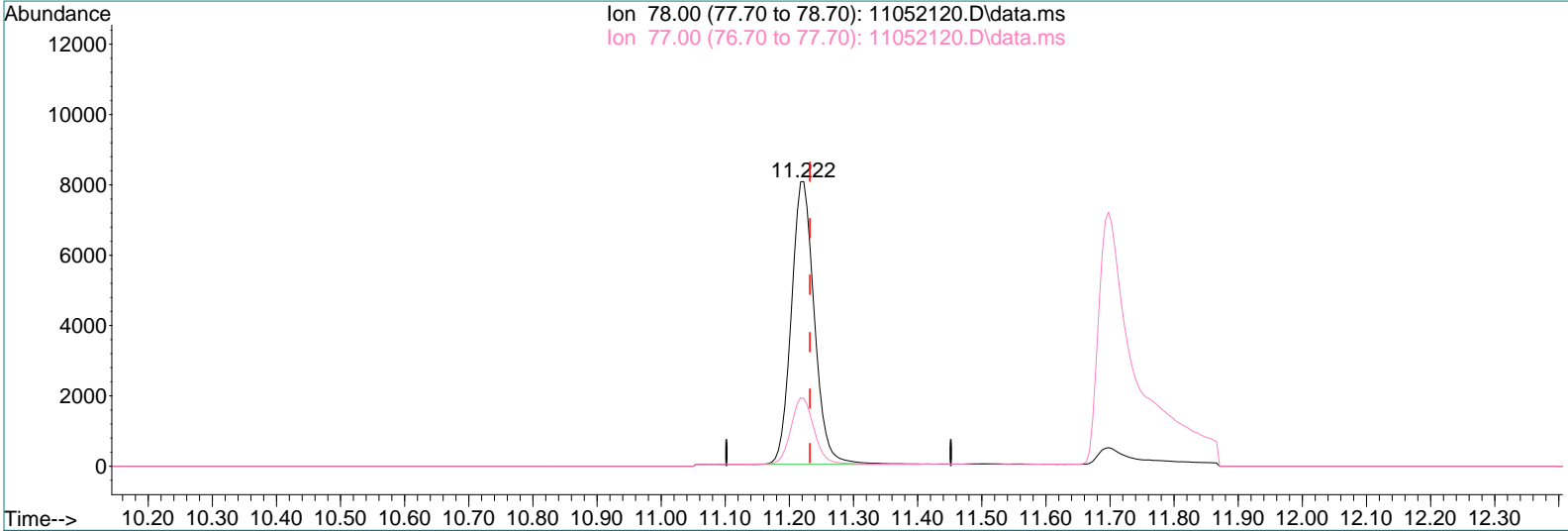
Quant Time: Nov 05 16:39:38 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(23) Benzene (T)

11.222min (-0.009) 171.37pg

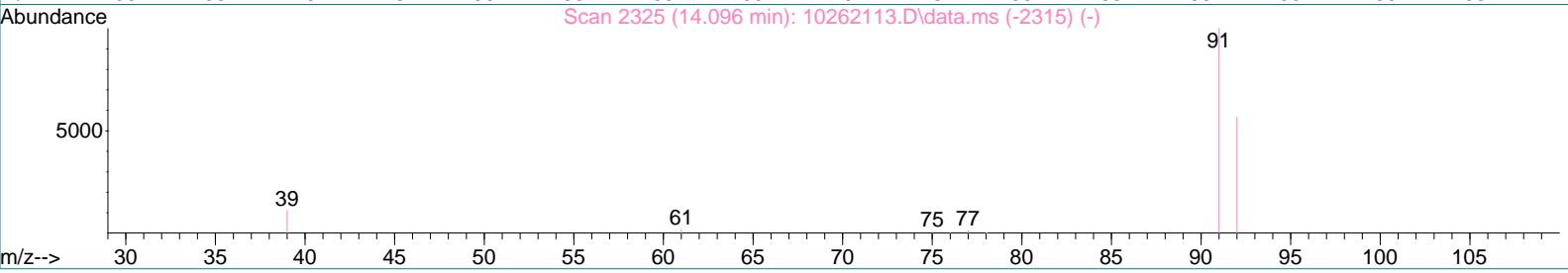
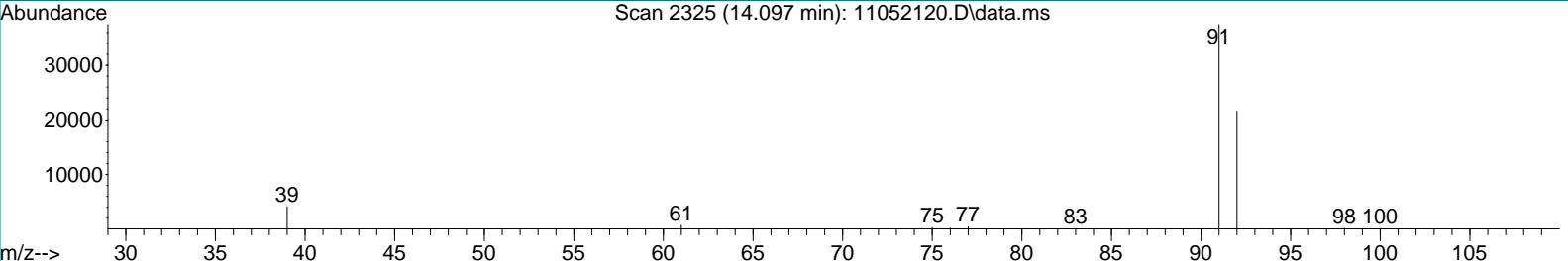
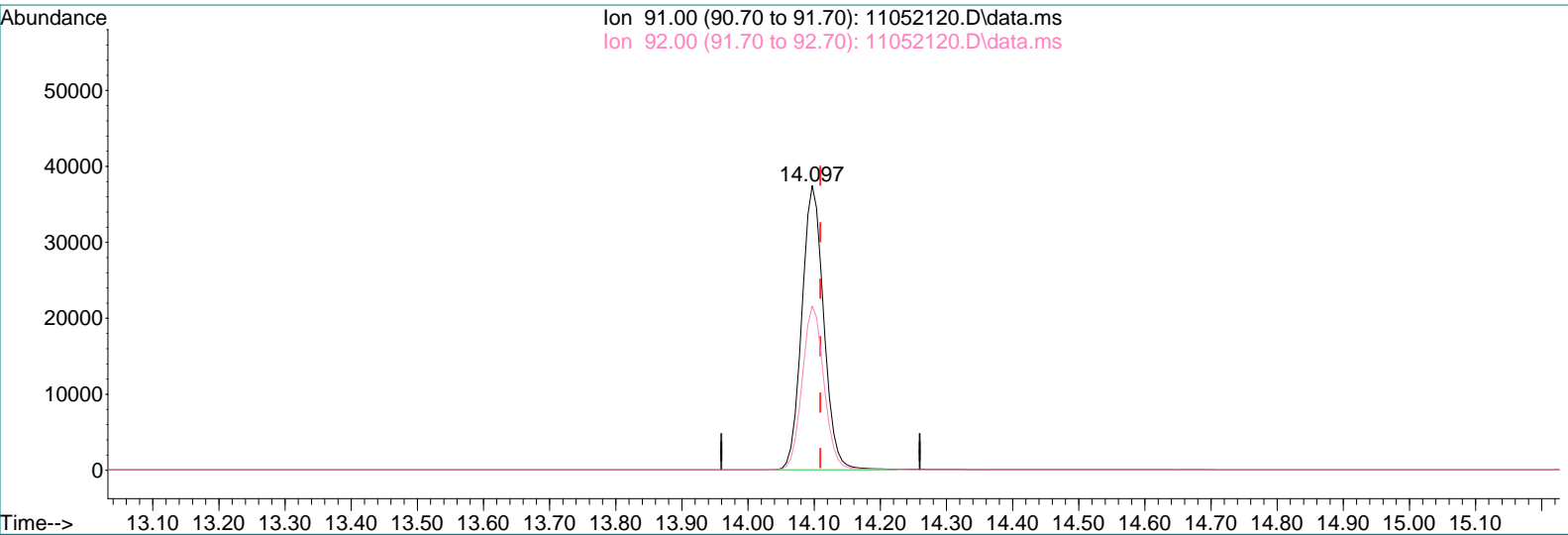
response 20127

Ion	Exp%	Act%
78.00	100	100
77.00	23.60	23.72
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(34) Toluene (T)

14.097min (-0.013) 764.94pg

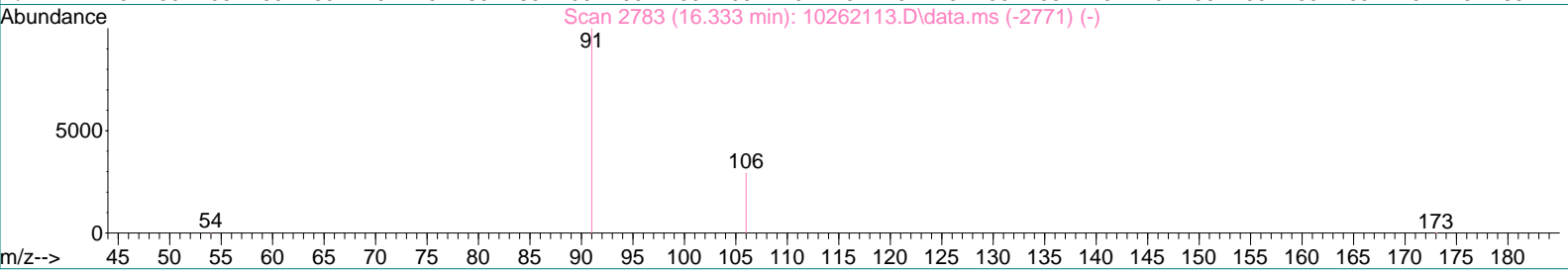
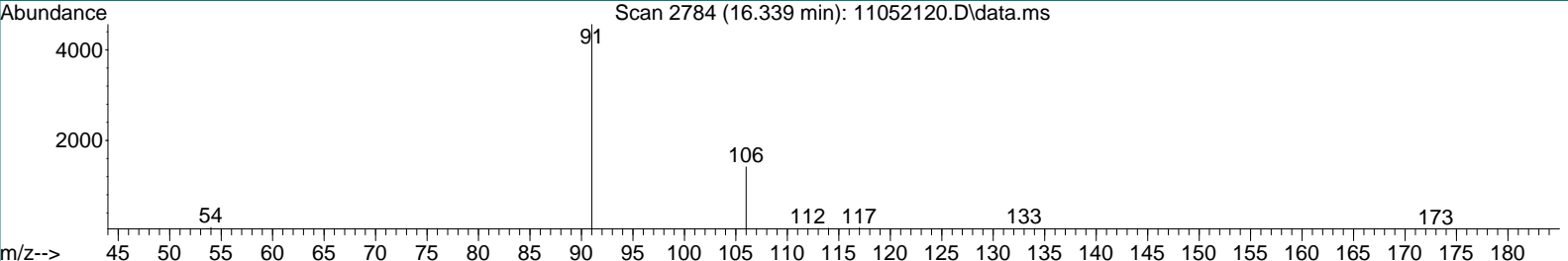
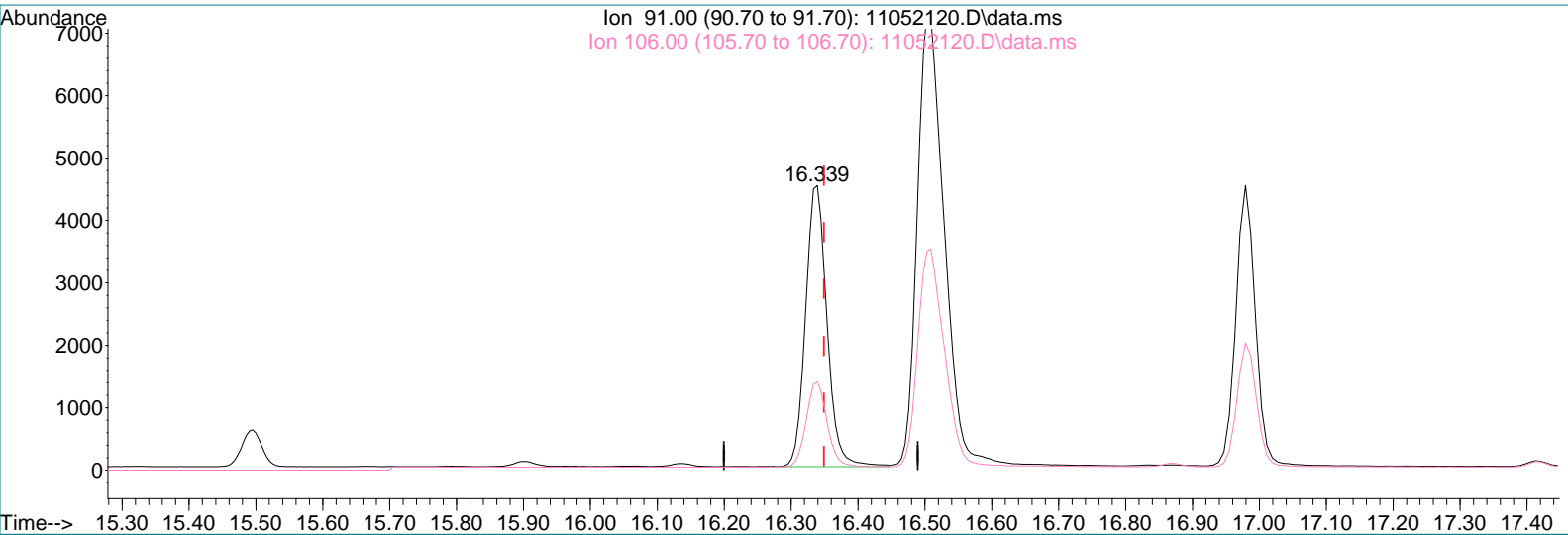
response 86058

Ion	Exp%	Act%
91.00	100	100
92.00	57.00	57.44
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(40) Ethylbenzene (T)

16.339min (-0.010) 83.42pg

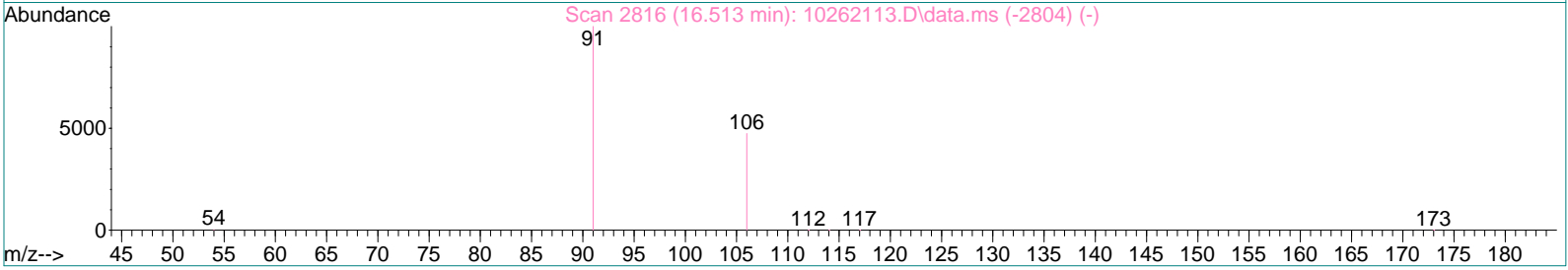
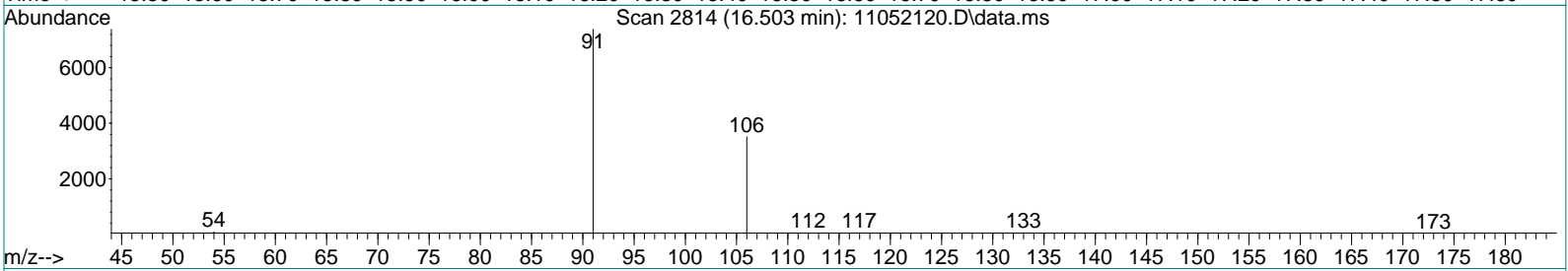
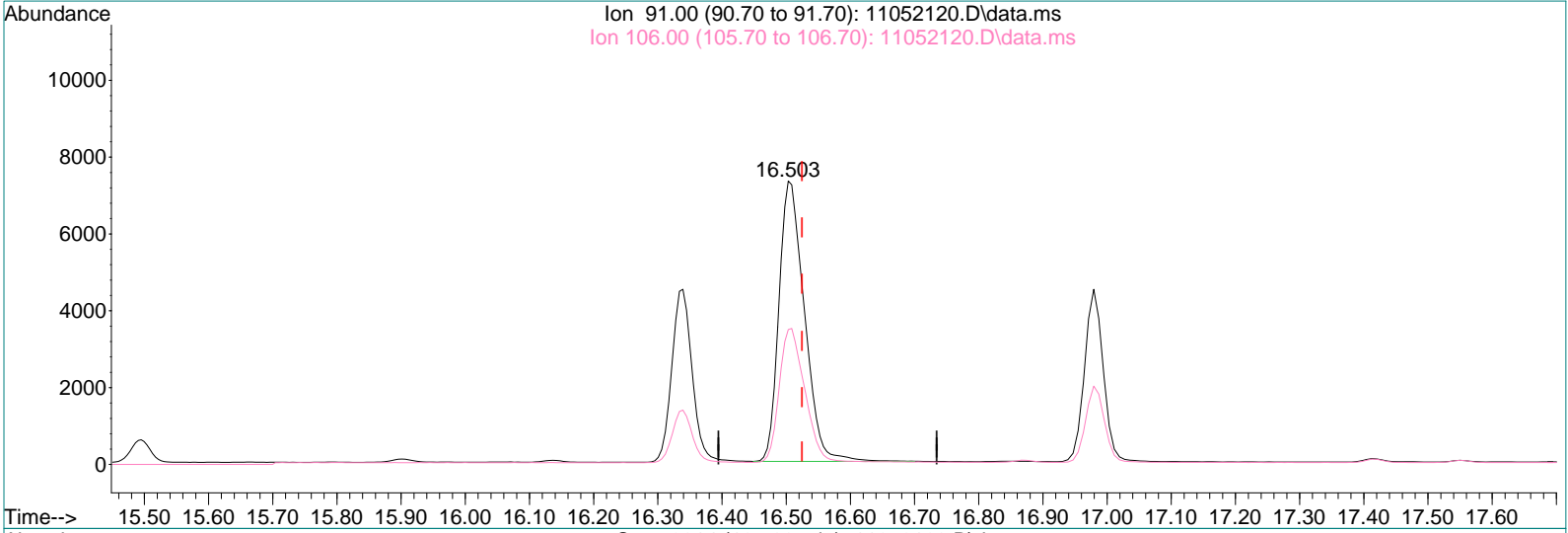
response 9962

Ion	Exp%	Act%
91.00	100	100
106.00	29.60	30.02
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(41) m,p-Xylene (T)

16.503min (-0.021) 212.14pg

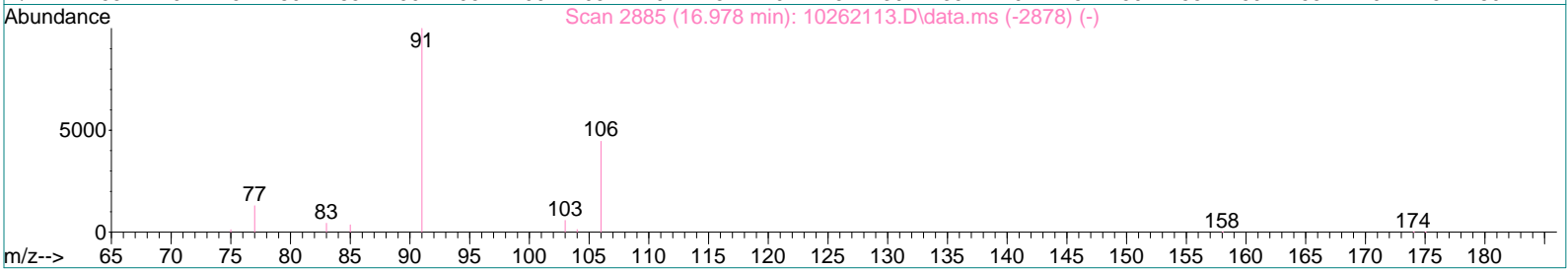
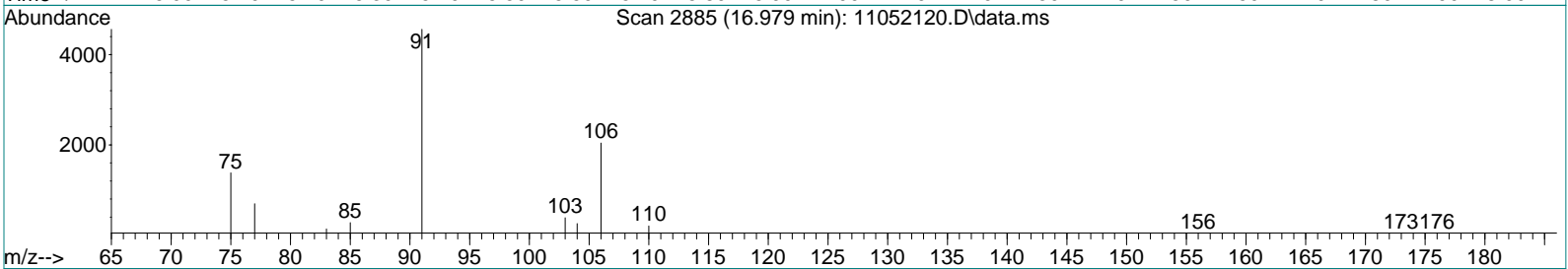
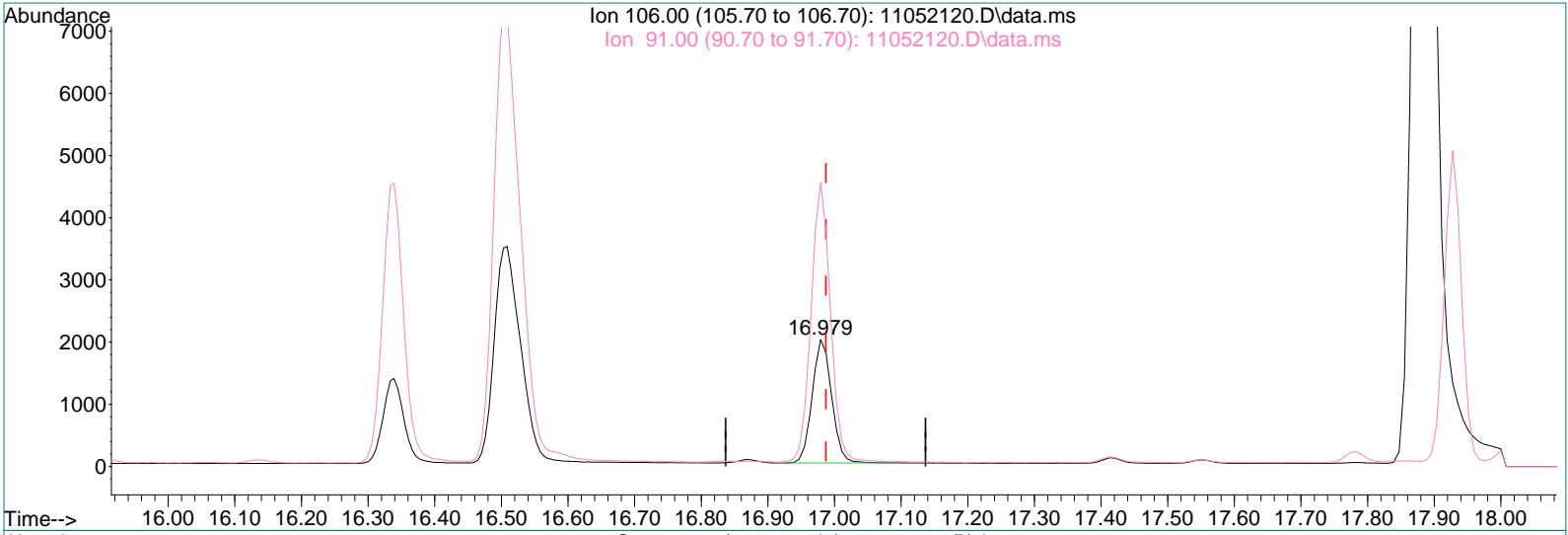
response 20130

Ion	Exp%	Act%
91.00	100	100
106.00	47.60	47.79
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(43) o-Xylene (T)

16.979min (-0.008) 86.55pg

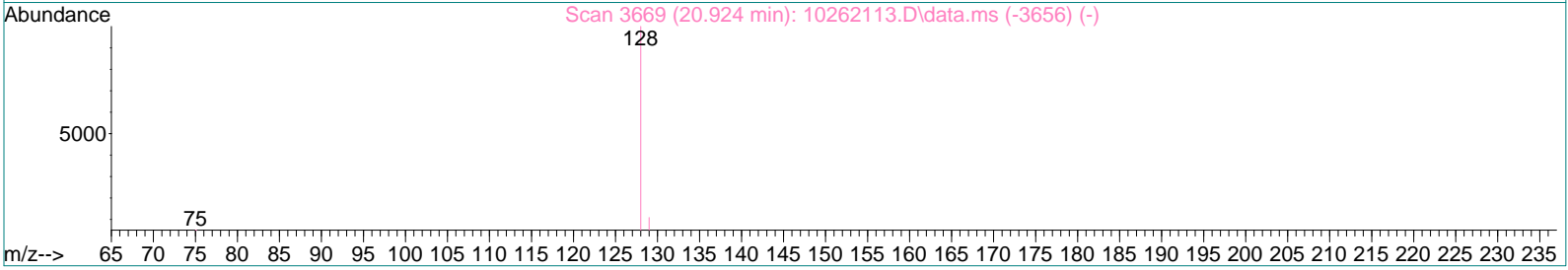
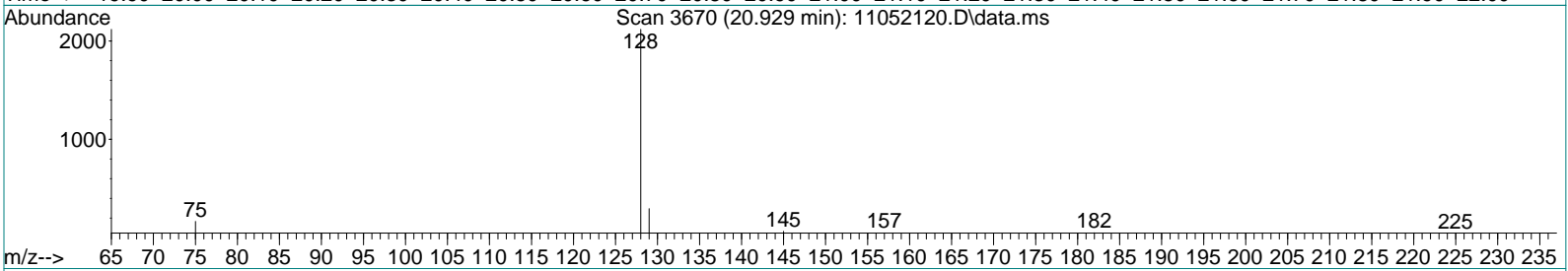
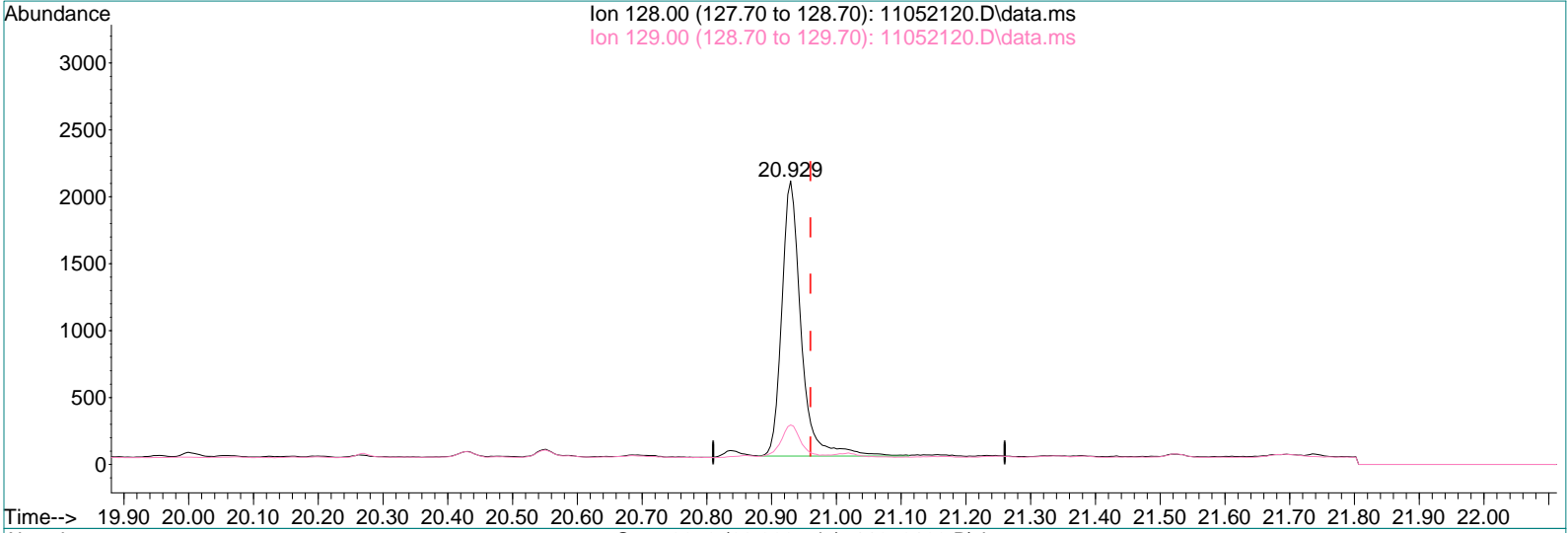
response 4045

Ion	Exp%	Act%
106.00	100	100
91.00	224.20	225.39
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\05\11052120.D
 Acq On : 5 Nov 2021 15:57
 Sample : P2105519-015 (1000mL)
 Misc : S34-10062101

Vial: 7
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 16:38:16 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 11052120.D\data.ms

(53) Naphthalene (T)

20.929min (-0.031) 38.06pg

response 4275

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.39
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 11\04\11042104.D
 Acq On : 4 Nov 2021 7:35
 Sample : MB S19110421 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 11/4/21

Quant Time: Nov 04 08:35:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18197	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.57	114	82525	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.91	54	19254	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	37183	920.907	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	92.09%		
33) Toluene-d8 (SS2)	14.00	98	96938	1051.570	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	105.16%		
45) Bromofluorobenzene (SS3)	17.42	174	24787	959.423	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	95.94%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.34	85	116	N.D.		
3) Chloromethane	0.00	52	0	N.D.		
4) 1,2-Dichloro,1,1,2,2-t...	4.72	85	63	N.D.		
5) Vinyl Chloride	4.88	62	82	N.D.		
6) 1,3-Butadiene	5.07	54	55	N.D.		
7) Bromomethane	5.38	94	54	N.D.		
8) Chloroethane	0.00	64	0	N.D.		
9) Acrolein	0.00	56	0	N.D.		
10) Acetone	6.36	58	1006	60.250	pg	97
11) Trichlorofluoromethane	6.49	101	68	N.D.		
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.37	84	98	N.D.		
14) Trichlorotrifluoroethane	0.00	151	0	N.D.		
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.58	63	56	N.D.		
17) Methyl tert-Butyl Ether	8.72	73	61	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.75	83	61	N.D.		
21) 1,2-Dichloroethane	0.00	62	0	N.D.		
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.24	78	803	7.549	pg	99
24) Carbon Tetrachloride	0.00	117	0	N.D.		
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	0.00	88	0	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.11	91	389	N.D.		
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	0.00	166	0	N.D.		
39) Chlorobenzene	15.95	112	99	N.D.		
40) Ethylbenzene	16.37	91	129	N.D.		
41) m,p-Xylene	16.56	91	232	N.D.		
42) Styrene	0.00	104	0	N.D.		
43) o-Xylene	17.01	106	54	N.D.		
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
46) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
47) 1,2,4-Trimethylbenzene	18.68	105	70	N.D.		
48) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
49) 1,4-Dichlorobenzene	18.90	146	79	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.86	182	73	N.D.		
53) Naphthalene	21.04	128	106	N.D.		

Data File : I:\MS19\DATA\2021 11\04\11042104.D
 Acq On : 4 Nov 2021 7:35
 Sample : MB S19110421 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 08:35:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

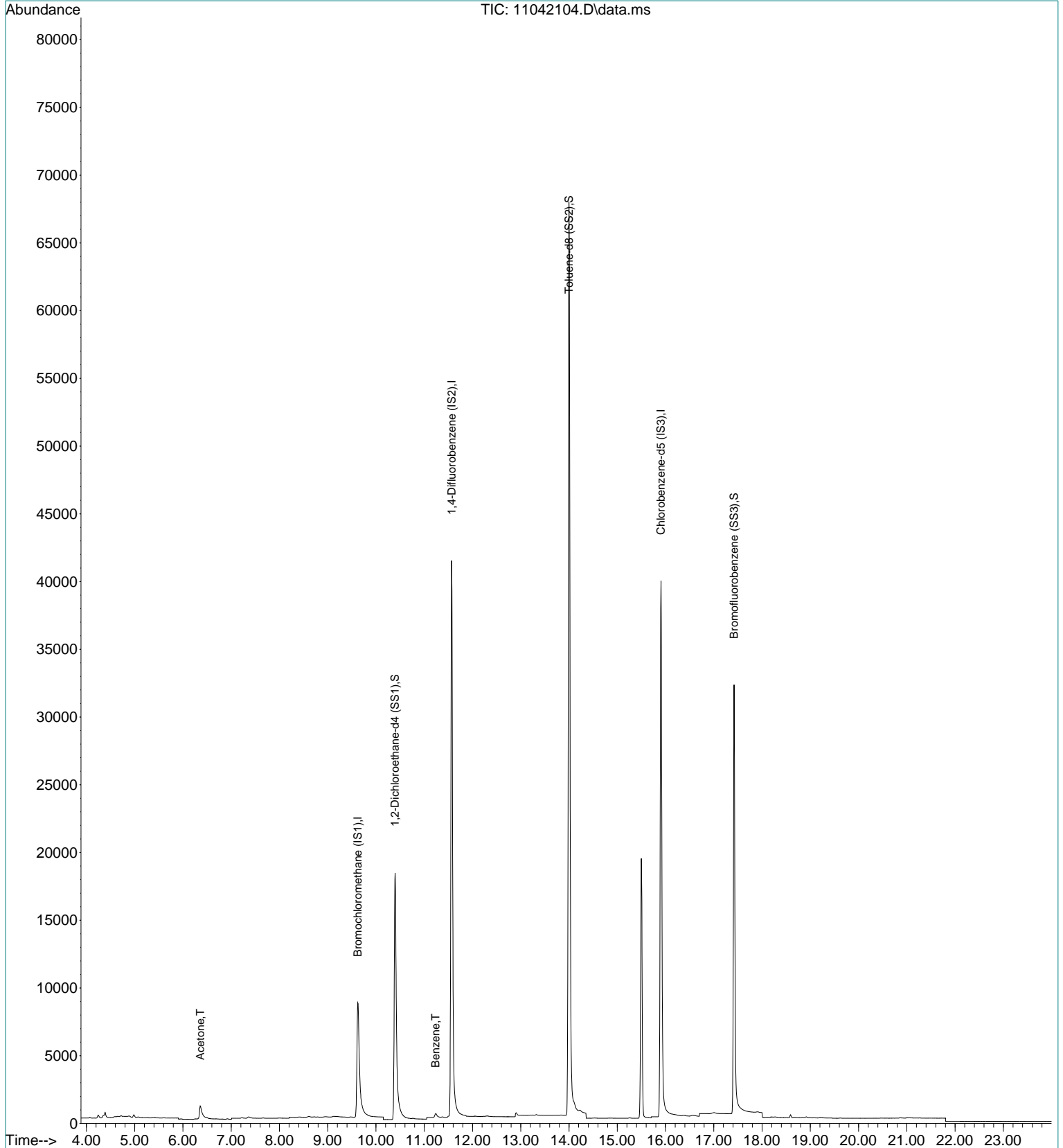
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\04\11042104.D
 Acq On : 4 Nov 2021 7:35
 Sample : MB S19110421 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 08:35:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052105.D
 Acq On : 5 Nov 2021 1:51
 Sample : MB S19110521 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:56 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.62	130	17222	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.57	114	76810	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	18371	1000.000	pg	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev (Min)
20) 1,2-Dichloroethane-d4 ...	10.39	65	35443	927.509	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	92.75%		
33) Toluene-d8 (SS2)	14.00	98	90678	1056.851	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	105.68%		
45) Bromofluorobenzene (SS3)	17.42	174	22987	932.517	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	93.25%		

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.33	85	101	N.D.		
3) Chloromethane	0.00	52	0	N.D.		
4) 1,2-Dichloro,1,1,2,2-t...	4.71	85	50	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.		
7) Bromomethane	0.00	94	0	N.D.		
8) Chloroethane	0.00	64	0	N.D.		
9) Acrolein	0.00	56	0	N.D.		
10) Acetone	6.36	58	882	55.814	pg	99
11) Trichlorofluoromethane	6.49	101	57	N.D.		
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	0.00	84	0	N.D.		
14) Trichlorotrifluoroethane	0.00	151	0	N.D.		
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.76	83	77	N.D.		
21) 1,2-Dichloroethane	0.00	62	0	N.D.		
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.24	78	644	6.397	pg	97
24) Carbon Tetrachloride	0.00	117	0	N.D.		
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	0.00	88	0	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.11	91	310	N.D.		
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	0.00	166	0	N.D.		
39) Chlorobenzene	15.96	112	70	N.D.		
40) Ethylbenzene	16.38	91	96	N.D.		
41) m,p-Xylene	16.57	91	129	N.D.		
42) Styrene	0.00	104	0	N.D.		
43) o-Xylene	0.00	106	0	N.D.		
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
46) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
47) 1,2,4-Trimethylbenzene	18.60	105	71	N.D.		
48) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
49) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	0.00	128	0	N.D.		

Data File : I:\MS19\DATA\2021 11\05\11052105.D
 Acq On : 5 Nov 2021 1:51
 Sample : MB S19110521 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:56 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

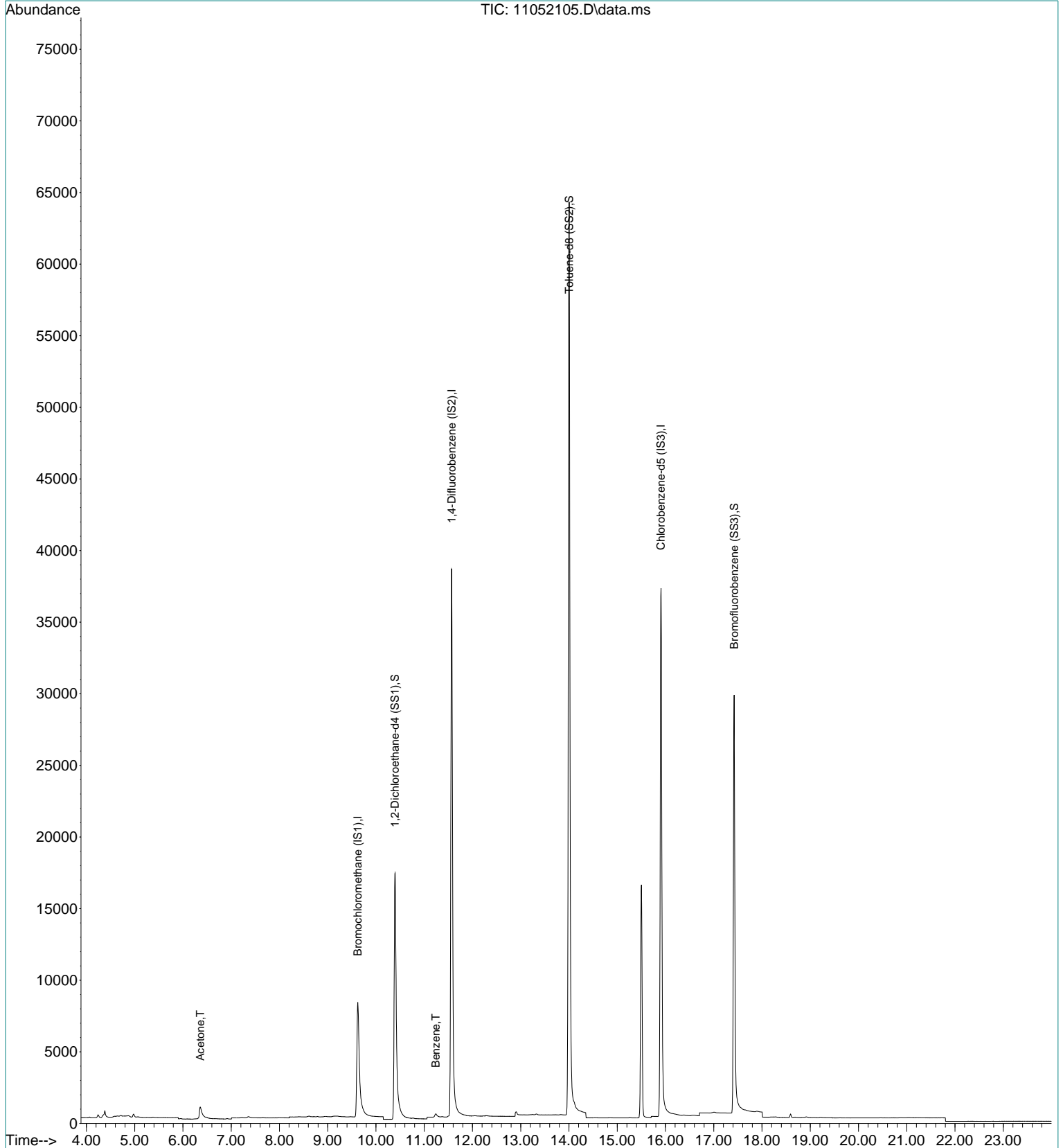
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

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

Data File : I:\MS19\DATA\2021 11\05\11052105.D
 Acq On : 5 Nov 2021 1:51
 Sample : MB S19110521 1000mL
 Misc : S34-10062101_AS01329

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:56 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042105.D
 Acq On : 4 Nov 2021 8:06
 Sample : LCS S19110421 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 11/4/21

Quant Time: Nov 04 08:35:31 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	17835	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	89322	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	19378	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	37132	938.311	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	93.83%		
33) Toluene-d8 (SS2)	14.00	98	99311	995.333	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	99.53%		
45) Bromofluorobenzene (SS3)	17.42	174	28160	1083.006	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	108.30%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	51752	883.741	pg	100
3) Chloromethane	4.52	52	12287	904.083	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	39996	705.971	pg	100
5) Vinyl Chloride	4.82	62	47024	754.588	pg	100
6) 1,3-Butadiene	5.00	54	28660	888.100	pg	97
7) Bromomethane	5.33	94	16636	913.656	pg	100
8) Chloroethane	5.55	64	15743	1024.294	pg	99
9) Acrolein	6.12	56	25869	2227.427	pg	100
10) Acetone	6.26	58	84284	5150.292	pg	96
11) Trichlorofluoromethane	6.46	101	36091	945.446	pg	100
12) 1,1-Dichloroethene	7.19	96	22784	1092.981	pg	98
13) Methylene Chloride	7.33	84	25759	1006.018	pg	98
14) Trichlorotrifluoroethane	7.65	151	19464	1077.230	pg	100
15) trans-1,2-Dichloroethene	8.36	96	23805	1101.804	pg	100
16) 1,1-Dichloroethane	8.57	63	48224	1105.618	pg	100
17) Methyl tert-Butyl Ether	8.64	73	70241	1103.581	pg	99
18) cis-1,2-Dichloroethene	9.45	96	25025	1053.665	pg	99
19) Chloroform	9.74	83	44608	986.547	pg	100
21) 1,2-Dichloroethane	10.50	62	36330	1016.172	pg	100
22) 1,1,1-Trichloroethane	10.76	97	37494	993.479	pg	100
23) Benzene	11.22	78	102882	986.767	pg	100
24) Carbon Tetrachloride	11.37	117	28500	934.400	pg	100
26) 1,2-Dichloropropane	12.03	63	27404	1032.419	pg	98
27) Bromodichloromethane	12.21	83	34150	951.139	pg	100
28) Trichloroethene	12.27	130	23294	1017.675	pg	99
29) 1,4-Dioxane	12.24	88	19333	969.893	pg	95
30) cis-1,3-Dichloropropene	13.11	75	37534	1059.046	pg	100
31) trans-1,3-Dichloropropene	13.62	75	31231	1003.700	pg	100
32) 1,1,2-Trichloroethane	13.80	83	21115	987.623	pg	98
34) Toluene	14.10	91	99397	990.686	pg	99
35) Dibromochloromethane	14.51	129	22539	992.689	pg	100
36) 1,2-Dibromoethane	14.77	107	24126	1030.875	pg	100
37) Tetrachloroethene	15.25	166	21753	1058.705	pg	97
39) Chlorobenzene	15.95	112	61355	1000.737	pg	100
40) Ethylbenzene	16.33	91	107123	1013.142	pg	99
41) m,p-Xylene	16.51	91	171586	2042.296	pg	100
42) Styrene	16.87	104	56232	938.928	pg	99
43) o-Xylene	16.98	106	40439	977.237	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	43936	1041.888	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	89366	937.204	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	88780	899.136	pg	100
48) 1,3-Dichlorobenzene	18.79	146	46708	1017.561	pg	100
49) 1,4-Dichlorobenzene	18.86	146	46187	976.673	pg	100
50) 1,2-Dichlorobenzene	19.18	146	45546	1010.745	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	29916	2025.035	pg	92
52) 1,2,4-Trichlorobenzene	20.81	182	51728	2059.182	pg	98
53) Naphthalene	20.92	128	89301	898.008	pg	100

Data File : I:\MS19\DATA\2021 11\04\11042105.D
 Acq On : 4 Nov 2021 8:06
 Sample : LCS S19110421 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 08:35:31 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

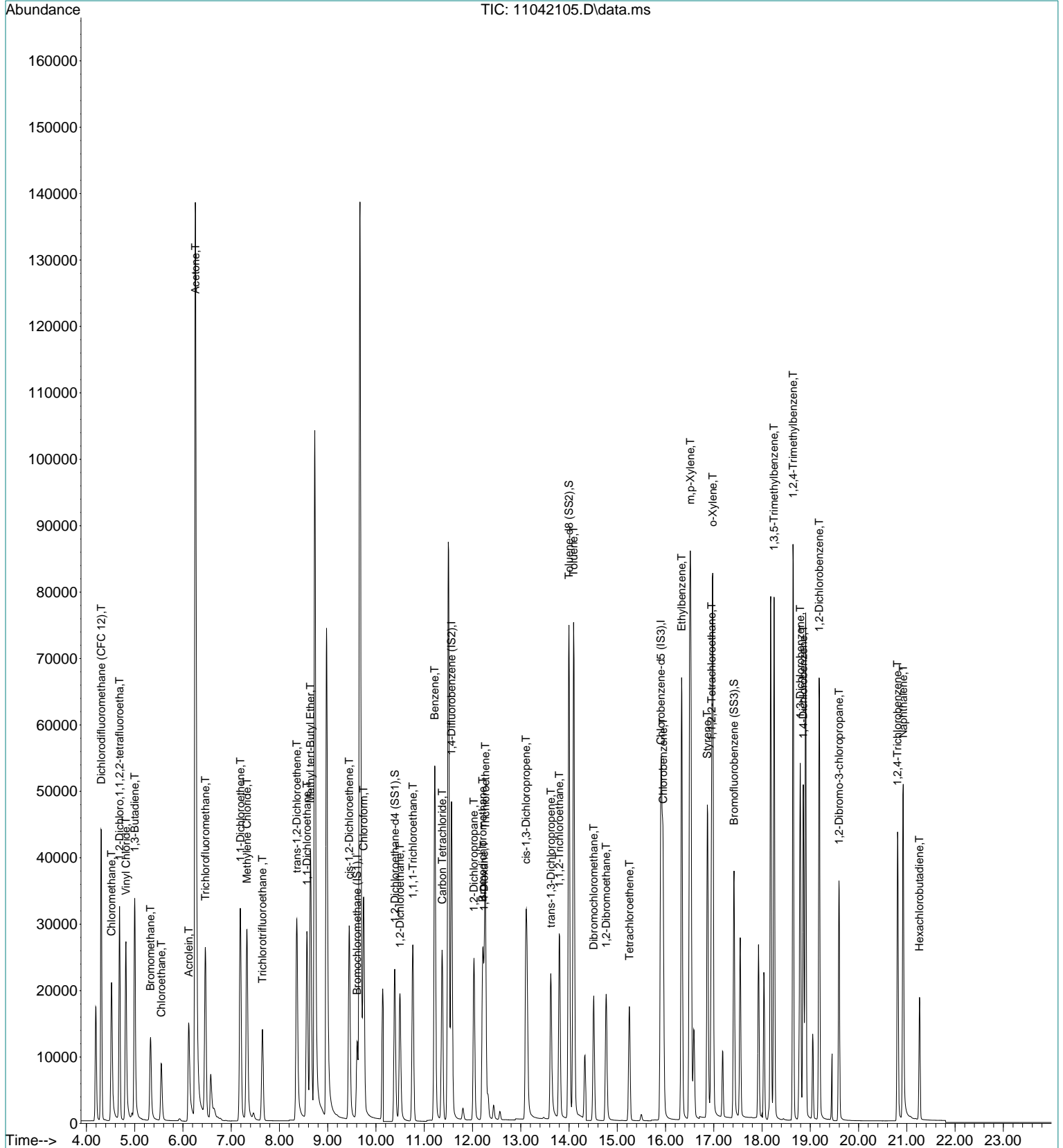
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	17469	1019.589	pg	100

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

Data File : I:\MS19\DATA\2021 11\04\11042105.D
Acq On : 4 Nov 2021 8:06
Sample : LCS S19110421 1000pg
Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
Operator: TZ
Inst : MS19

Quant Time: Nov 04 08:35:31 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\04\11042106.D
 Acq On : 4 Nov 2021 8:37
 Sample : LCSD S19110421 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 10:16:11 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	17935	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.57	114	90009	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	19600	1000.000	pg	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 1,2-Dichloroethane-d4 ...	10.39	65	37415	940.190	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	94.02%		
33) Toluene-d8 (SS2)	14.00	98	100565	1000.209	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	100.02%		
45) Bromofluorobenzene (SS3)	17.42	174	28420	1080.626	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	108.06%		

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	51293	871.019	pg	100
3) Chloromethane	4.52	52	12187	891.725	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	39513	693.557	pg	100
5) Vinyl Chloride	4.82	62	46610	743.774	pg	99
6) 1,3-Butadiene	5.00	54	28476	877.479	pg	98
7) Bromomethane	5.33	94	16559	904.356	pg	100
8) Chloroethane	5.55	64	15666	1013.601	pg	100
9) Acrolein	6.12	56	25868	2214.922	pg	100
10) Acetone	6.26	58	83102	5049.750	pg	96
11) Trichlorofluoromethane	6.46	101	35713	930.328	pg	100
12) 1,1-Dichloroethene	7.19	96	22597	1077.966	pg	99
13) Methylene Chloride	7.33	84	25601	994.273	pg	97
14) Trichlorotrifluoroethane	7.65	151	19322	1063.408	pg	100
15) trans-1,2-Dichloroethene	8.36	96	23627	1087.468	pg	100
16) 1,1-Dichloroethane	8.57	63	47880	1091.611	pg	100
17) Methyl tert-Butyl Ether	8.64	73	70635	1103.584	pg	99
18) cis-1,2-Dichloroethene	9.45	96	24869	1041.258	pg	99
19) Chloroform	9.74	83	44334	975.020	pg	100
21) 1,2-Dichloroethane	10.50	62	36055	1002.857	pg	100
22) 1,1,1-Trichloroethane	10.76	97	37228	980.931	pg	100
23) Benzene	11.22	78	102367	976.353	pg	100
24) Carbon Tetrachloride	11.37	117	28383	925.376	pg	100
26) 1,2-Dichloropropane	12.03	63	27229	1017.996	pg	98
27) Bromodichloromethane	12.21	83	34024	940.397	pg	100
28) Trichloroethene	12.26	130	23073	1000.326	pg	100
29) 1,4-Dioxane	12.24	88	19286	960.151	pg	96
30) cis-1,3-Dichloropropene	13.11	75	37519	1050.543	pg	100
31) trans-1,3-Dichloropropene	13.62	75	31347	999.738	pg	100
32) 1,1,2-Trichloroethane	13.80	83	21018	975.582	pg	98
34) Toluene	14.10	91	99135	980.533	pg	99
35) Dibromochloromethane	14.51	129	22357	977.158	pg	100
36) 1,2-Dibromoethane	14.77	107	24064	1020.378	pg	100
37) Tetrachloroethene	15.25	166	21553	1040.965	pg	97
39) Chlorobenzene	15.95	112	60898	982.033	pg	100
40) Ethylbenzene	16.34	91	106772	998.384	pg	99
41) m,p-Xylene	16.51	91	170973	2011.950	pg	100
42) Styrene	16.87	104	55833	921.707	pg	100
43) o-Xylene	16.98	106	40138	958.977	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	43436	1018.364	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	88944	922.213	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	88317	884.316	pg	100
48) 1,3-Dichlorobenzene	18.79	146	46473	1000.974	pg	100
49) 1,4-Dichlorobenzene	18.86	146	45646	954.300	pg	100
50) 1,2-Dichlorobenzene	19.18	146	45164	990.916	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	29642	1983.761	pg	93
52) 1,2,4-Trichlorobenzene	20.81	182	51571	2029.680	pg	99
53) Naphthalene	20.92	128	89879	893.583	pg	100

Data File : I:\MS19\DATA\2021 11\04\11042106.D
 Acq On : 4 Nov 2021 8:37
 Sample : LCSD S19110421 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 10:16:11 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

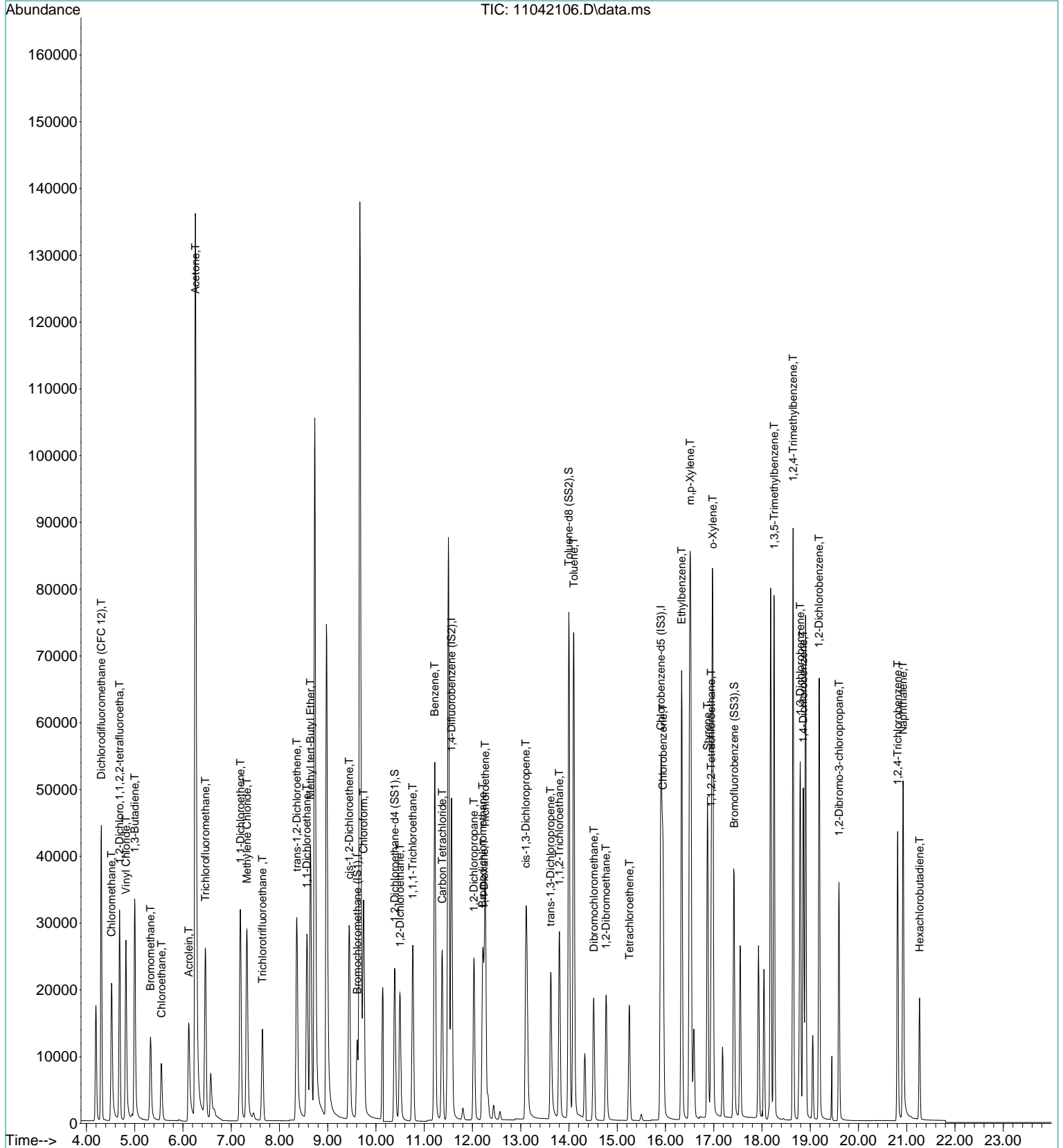
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.27	225	17283	997.308	pg	100

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

Data File : I:\MS19\DATA\2021 11\04\11042106.D
Acq On : 4 Nov 2021 8:37
Sample : LCSD S19110421 1000pg
Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
Operator: TZ
Inst : MS19

Quant Time: Nov 04 10:16:11 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052106.D
 Acq On : 5 Nov 2021 2:22
 Sample : LCS S19110521 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:58 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	16906	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.56	114	84470	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	18486	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	35231	939.194	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	93.92%	
33) Toluene-d8 (SS2)	14.00	98	93457	990.465	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	99.05%	
45) Bromofluorobenzene (SS3)	17.42	174	26752	1078.501	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	107.85%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	48868	880.349	pg	100
3) Chloromethane	4.51	52	9281	720.426	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	38065	708.808	pg	100
5) Vinyl Chloride	4.81	62	45152	764.363	pg	100
6) 1,3-Butadiene	5.00	54	27858	910.685	pg	98
7) Bromomethane	5.32	94	15481	896.943	pg	100
8) Chloroethane	5.55	64	14933	1024.983	pg	99
9) Acrolein	6.12	56	24294	2206.760	pg	100
10) Acetone	6.26	58	81211	5235.206	pg	# 87
11) Trichlorofluoromethane	6.46	101	34161	944.062	pg	100
12) 1,1-Dichloroethene	7.18	96	24164	1222.880	pg	99
13) Methylene Chloride	7.32	84	24442	1007.038	pg	96
14) Trichlorotrifluoroethane	7.65	151	18320	1069.631	pg	100
15) trans-1,2-Dichloroethene	8.36	96	22317	1089.693	pg	100
16) 1,1-Dichloroethane	8.57	63	45253	1094.515	pg	100
17) Methyl tert-Butyl Ether	8.64	73	65947	1093.052	pg	99
18) cis-1,2-Dichloroethene	9.45	96	23505	1044.049	pg	99
19) Chloroform	9.74	83	41982	979.491	pg	100
21) 1,2-Dichloroethane	10.50	62	34175	1008.422	pg	100
22) 1,1,1-Trichloroethane	10.76	97	35306	986.910	pg	100
23) Benzene	11.22	78	97986	991.452	pg	99
24) Carbon Tetrachloride	11.37	117	26918	931.029	pg	100
26) 1,2-Dichloropropane	12.03	63	26014	1036.347	pg	98
27) Bromodichloromethane	12.21	83	32321	951.906	pg	100
28) Trichloroethene	12.27	130	21864	1010.068	pg	99
29) 1,4-Dioxane	12.24	88	17983	953.988	pg	95
30) cis-1,3-Dichloropropene	13.11	75	34953	1042.871	pg	99
31) trans-1,3-Dichloropropene	13.62	75	29160	990.972	pg	100
32) 1,1,2-Trichloroethane	13.80	83	19748	976.740	pg	99
34) Toluene	14.10	91	93381	984.186	pg	100
35) Dibromochloromethane	14.51	129	21005	978.267	pg	100
36) 1,2-Dibromoethane	14.77	107	22633	1022.631	pg	100
37) Tetrachloroethene	15.25	166	20203	1039.747	pg	97
39) Chlorobenzene	15.95	112	57057	975.540	pg	100
40) Ethylbenzene	16.33	91	103329	1024.414	pg	99
41) m,p-Xylene	16.51	91	159877	1994.751	pg	99
42) Styrene	16.87	104	52445	917.950	pg	99
43) o-Xylene	16.98	106	37476	949.333	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	41009	1019.402	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	83186	914.488	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	82838	879.439	pg	100
48) 1,3-Dichlorobenzene	18.79	146	43589	995.434	pg	100
49) 1,4-Dichlorobenzene	18.86	146	43132	956.082	pg	100
50) 1,2-Dichlorobenzene	19.18	146	42497	988.589	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	28055	1990.697	pg	93
52) 1,2,4-Trichlorobenzene	20.81	182	50754	2117.899	pg	98
53) Naphthalene	20.92	128	88200	929.733	pg	100

Data File : I:\MS19\DATA\2021 11\05\11052106.D
 Acq On : 5 Nov 2021 2:22
 Sample : LCS S19110521 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:58 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

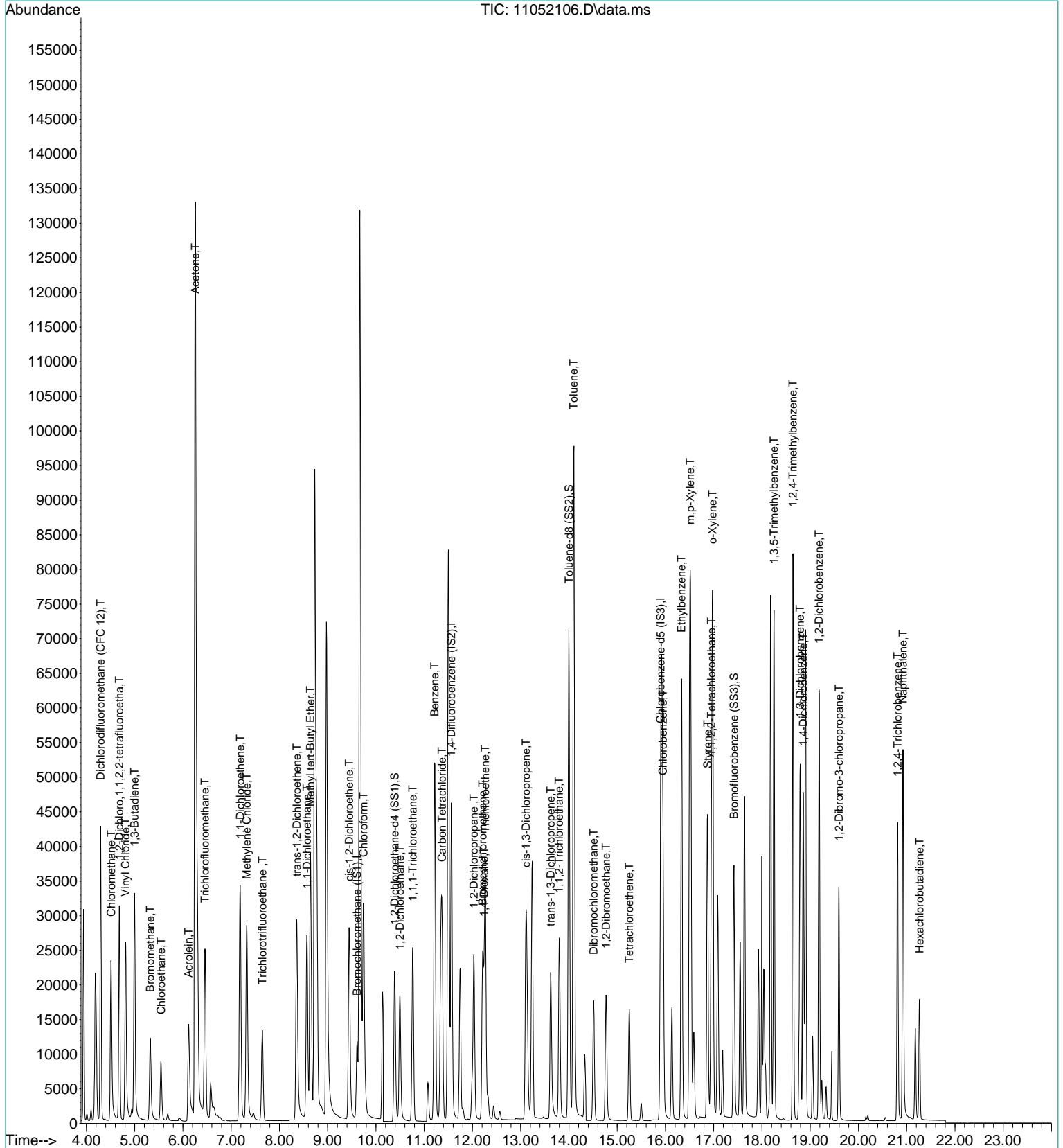
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.27	225	16466	1007.422	pg	100

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

Data File : I:\MS19\DATA\2021 11\05\11052106.D
Acq On : 5 Nov 2021 2:22
Sample : LCS S19110521 1000pg
Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
Operator: TZ
Inst : MS19

Quant Time: Nov 05 07:42:58 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052107.D
 Acq On : 5 Nov 2021 2:54
 Sample : LCSD S19110521 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:59 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	16455	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	81987	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	18022	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	34350	940.806	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	94.08%	
33) Toluene-d8 (SS2)	14.00	98	91464	998.700	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	99.87%	
45) Bromofluorobenzene (SS3)	17.42	174	26116	1079.968	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	108.00%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	47774	884.229	pg	100
3) Chloromethane	4.51	52	8989	716.884	pg	94
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	37242	712.490	pg	100
5) Vinyl Chloride	4.81	62	43884	763.258	pg	100
6) 1,3-Butadiene	4.99	54	27886	936.585	pg	96
7) Bromomethane	5.32	94	15030	894.680	pg	100
8) Chloroethane	5.54	64	14514	1023.527	pg	99
9) Acrolein	6.11	56	23733	2214.888	pg	100
10) Acetone	6.25	58	78013	5166.886	pg	# 87
11) Trichlorofluoromethane	6.45	101	33005	937.115	pg	100
12) 1,1-Dichloroethene	7.19	96	23504	1222.080	pg	99
13) Methylene Chloride	7.32	84	23699	1003.187	pg	96
14) Trichlorotrifluoroethane	7.64	151	17763	1065.535	pg	100
15) trans-1,2-Dichloroethene	8.36	96	21765	1091.867	pg	100
16) 1,1-Dichloroethane	8.57	63	43905	1091.016	pg	100
17) Methyl tert-Butyl Ether	8.64	73	64786	1103.240	pg	99
18) cis-1,2-Dichloroethene	9.45	96	22867	1043.549	pg	99
19) Chloroform	9.74	83	40882	979.969	pg	100
21) 1,2-Dichloroethane	10.50	62	33376	1011.839	pg	100
22) 1,1,1-Trichloroethane	10.76	97	34333	986.016	pg	100
23) Benzene	11.22	78	95448	992.241	pg	100
24) Carbon Tetrachloride	11.37	117	26187	930.570	pg	100
26) 1,2-Dichloropropane	12.03	63	25304	1038.591	pg	98
27) Bromodichloromethane	12.21	83	31562	957.704	pg	100
28) Trichloroethene	12.27	130	21331	1015.289	pg	100
29) 1,4-Dioxane	12.24	88	17704	967.631	pg	96
30) cis-1,3-Dichloropropene	13.11	75	34443	1058.777	pg	99
31) trans-1,3-Dichloropropene	13.62	75	29033	1016.537	pg	99
32) 1,1,2-Trichloroethane	13.80	83	19382	987.670	pg	99
34) Toluene	14.10	91	91659	995.294	pg	100
35) Dibromochloromethane	14.51	129	20628	989.804	pg	99
36) 1,2-Dibromoethane	14.77	107	22093	1028.463	pg	100
37) Tetrachloroethene	15.25	166	19754	1047.428	pg	97
39) Chlorobenzene	15.95	112	56045	982.908	pg	100
40) Ethylbenzene	16.33	91	101759	1034.823	pg	99
41) m,p-Xylene	16.51	91	157373	2014.063	pg	100
42) Styrene	16.87	104	51776	929.573	pg	99
43) o-Xylene	16.98	106	36877	958.211	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	40236	1025.938	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	81864	923.125	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	81732	890.037	pg	100
48) 1,3-Dichlorobenzene	18.79	146	42929	1005.602	pg	100
49) 1,4-Dichlorobenzene	18.86	146	42466	965.554	pg	100
50) 1,2-Dichlorobenzene	19.18	146	41822	997.935	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	27674	2014.220	pg	93
52) 1,2,4-Trichlorobenzene	20.81	182	50162	2147.088	pg	99
53) Naphthalene	20.93	128	87848	949.864	pg	100

Data File : I:\MS19\DATA\2021 11\05\11052107.D
 Acq On : 5 Nov 2021 2:54
 Sample : LCSD S19110521 1000pg
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:59 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

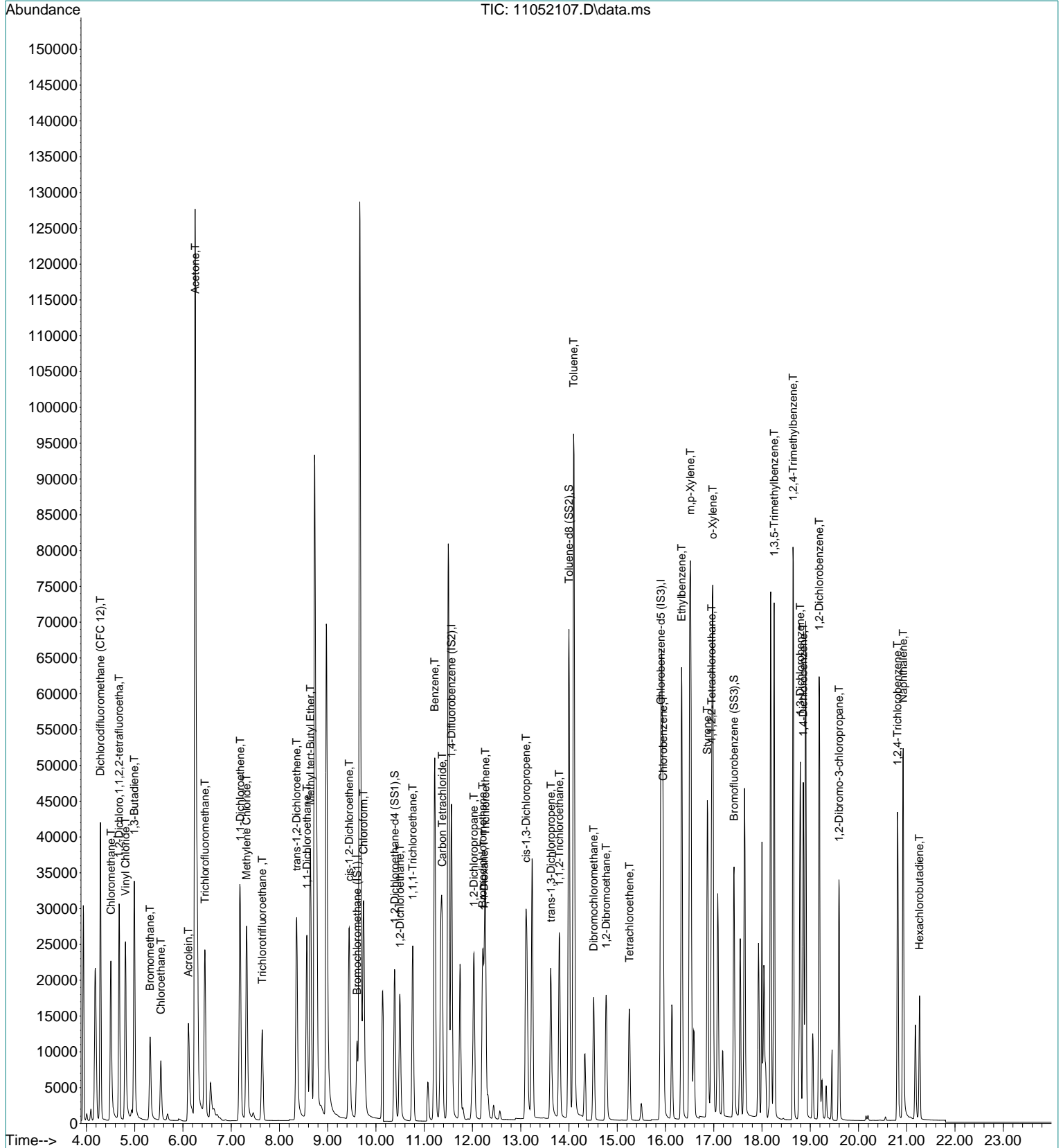
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	16149	1013.465	pg	100

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

Data File : I:\MS19\DATA\2021 11\05\11052107.D
Acq On : 5 Nov 2021 2:54
Sample : LCSD S19110521 1000pg
Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
Operator: TZ
Inst : MS19

Quant Time: Nov 05 07:42:59 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Method Path : I:\MS19\METHODS\
 Method File : S19102621.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Oct 27 10:48:57 2021
 Response Via : Initial Calibration

Calibration Files
 20 =10262109.D 50 =10262110.D 100 =10262122.D 500 =10262112.D 1000=10262113.D 5000=10262114.D 10K =10262116.D

Compound	20	50	100	500	1000	5000	10K	Avg	%RSD
1) I Bromochloromethane...				ISTD					
2) T Dichlorodifluo...	3.505	3.247	3.181	3.820	3.446	3.026	2.759	3.283	10.53
3) T Chloromethane	0.864	0.766	0.332	1.011	0.883	0.803	0.675	0.762	28.42
4) T 1,2-Dichloro,1...	3.199	3.160	2.910	3.809	3.406	3.029	2.724	3.177	11.14
5) T Vinyl Chloride	3.068	3.369	3.184	4.325	3.899	3.483	3.131	3.494	13.22
6) T 1,3-Butadiene		1.372	1.386	2.035	2.565	1.759	1.739	1.809	24.71
7) T Bromomethane	0.905	1.091	0.792	1.308	1.166	0.890	0.996	1.021	17.51
8) T Chloroethane	0.680	0.878	0.693	1.174	0.971	0.766	0.871	0.862	20.11
9) T Acrolein	0.499	0.507	0.464	0.901	0.707	0.731	0.748	0.651	25.12
10) T Acetone	0.870	0.771	0.856	1.227	0.920	0.913	0.867	0.918	15.79
11) T Trichlorofluor...	1.920	1.952	1.915	2.906	2.207	2.118	1.964	2.140	16.59
12) T 1,1-Dichloroet...	1.000	1.005	1.053	1.354	1.278	1.278	1.214	1.169	12.54
13) T Methylene Chlo...	1.377	1.300	1.317	1.640	1.524	1.488	1.405	1.436	8.50
14) T Trichlorotrifl...	0.924	0.951	0.945	1.161	1.076	1.040	0.995	1.013	8.37
15) T trans-1,2-Dich...	0.906	1.033	1.084	1.436	1.366	1.357	1.298	1.211	16.66
16) T 1,1-Dichloroet...	2.085	2.199	2.207	2.912	2.701	2.595	2.420	2.446	12.43
17) T Methyl tert-Bu...	2.544	2.679	3.130	4.093	4.042	4.342	4.151	3.569	21.31
18) T cis-1,2-Dichlo...	1.003	1.048	1.340	1.553	1.455	1.490	1.433	1.332	16.44
19) T Chloroform	2.169	2.214	2.632	2.902	2.698	2.646	2.486	2.535	10.47
20) S 1,2-Dichloroet...	2.291	2.311	1.997	2.284	2.294	2.225	2.131	2.219	5.22
21) T 1,2-Dichloroet...	1.667	1.685	1.821	2.420	2.254	2.170	2.015	2.005	14.58
22) T 1,1,1-Trichlor...	1.858	1.861	1.956	2.447	2.283	2.256	2.151	2.116	10.83
23) T Benzene	6.191	5.478	5.127	6.358	6.005	5.993	5.770	5.846	7.28
24) T Carbon Tetrach...	1.633	1.632	1.518	1.917	1.783	1.780	1.709	1.710	7.62
25) I 1,4-Difluorobenzen...				ISTD					
26) T 1,2-Dichloropr...	0.238	0.252	0.306	0.330	0.304	0.342	0.309	0.297	12.98
27) T Bromodichlorom...	0.349	0.348	0.403	0.437	0.406	0.445	0.425	0.402	9.83
28) T Trichloroethene	0.215	0.216	0.255	0.283	0.263	0.296	0.267	0.256	12.10
29) T 1,4-Dioxane		0.160	0.211	0.229	0.221	0.264	0.254	0.223	16.57
30) T cis-1,3-Dichlo...		0.254	0.355	0.422	0.414	0.465	0.471	0.397	20.51
31) T trans-1,3-Dich...		0.199	0.273	0.392	0.362	0.429	0.435	0.348	27.04
32) T 1,1,2-Trichlor...	0.191	0.210	0.247	0.298	0.247	0.244	0.238	0.239	14.08
33) S Toluene-d8 (SS2)	1.028	1.174	1.148	1.111	1.108	1.118	1.131	1.117	4.08
34) T Toluene	0.874	1.009	1.218	1.234	1.156	1.195	1.177	1.123	11.82
35) T Dibromochlorom...	0.187	0.222	0.260	0.284	0.264	0.280	0.281	0.254	14.38
36) T 1,2-Dibromoethane	0.163	0.219	0.270	0.301	0.284	0.298	0.298	0.262	19.89
37) T Tetrachloroethene	0.178	0.216	0.249	0.258	0.234	0.237	0.238	0.230	11.42
38) I Chlorobenzene-d5 (...)				ISTD					

39)	T	Chlorobenzene	2.665	2.733	3.418	3.406	3.191	3.326	3.407	3.164	10.35
40)	T	Ethylbenzene	4.107	5.234	5.543	5.513	6.225	6.117	5.456	13.98	13.98
41)	T	m,p-Xylene	2.870	4.101	4.647	4.492	4.994	4.910	4.336	18.13	18.13
42)	T	Styrene		2.329	2.794	2.942	3.677	3.711	3.091	19.27	19.27
43)	T	o-Xylene		1.892	2.105	2.080	2.315	2.286	2.135	8.04	8.04
44)	T	1,1,2,2-Tetrac...	1.646	1.755	2.329	2.427	2.303	2.425	2.348	2.176	15.16
45)	S	Bromofluoroben...	1.128	1.169	1.152	1.287	1.305	1.748	1.604	1.342	18.00
46)	T	1,3,5-Trimethy...		3.486	4.618	5.384	5.953	5.163	4.921	18.98	18.98
47)	T	1,2,4-Trimethy...		3.518	4.462	5.552	6.269	5.676	5.095	21.53	21.53
48)	T	1,3-Dichlorobe...	1.636	1.468	2.078	2.442	2.921	3.237	2.801	2.369	28.24
49)	T	1,4-Dichlorobe...	2.096	1.612	2.121	2.472	2.876	3.212	2.693	2.440	22.18
50)	T	1,2-Dichlorobe...	1.932	1.594	2.105	2.414	2.336	3.157	2.739	2.325	22.27
51)	T	1,2-Dibromo-3-...	0.592	0.480	0.647	0.773	0.772	1.115	0.957	0.762	28.54
52)	T	1,2,4-Trichlor...	1.062	0.815	1.106	1.216	1.235	1.938	1.702	1.296	30.03
53)	T	Naphthalene		3.668	4.109	4.504	7.105	6.273	5.132	28.87	28.87
54)	T	Hexachlorobuta...	0.929	0.694	0.756	0.980	0.800	1.123	0.907	0.884	16.56

(#) = Out of Range

SS19102621.M Wed Oct 27 14:02:56 2021

T2 10/28/21

Primary Source Standards Concentrations (Working & Initial Calibration)

4ng/L Std. ID: S34-10252104
20ng/L Std. ID: S34-10252107
200ng/L Std. ID: S34-10252102

0.2ng/L Std. ID: S34-10252106/S34-1017
1ng/L Std. ID: S34-10252106/S34-1017
2ng/L Std. ID: S34-10252102

Table with columns: Compounds, Source Std. mg/m3, 200ng/L, 20ng/L, 4ng/L, 2ng/L, 1ng/L, 0.2ng/L, Working STD Conc. (ng/L), Injection (L), ICAL Points, 1, 2, 20, 20, 200, 200, 200, 200, 200, NA. Rows include various chemical compounds like Dichlorodifluoromethane, Chloromethane, Freon-114, Vinyl Chloride, 1,3-Butadiene, Bromomethane, Chloroethane, Acrolein, Acetone, Trichlorofluoromethane, 1,1-Dichloroethane, Methylene Chloride, 1,1,2-Trichloroethane, Trans-1,2-Dichloroethane, 1,1-Dichloroethane, Methyl tert-Butyl Ether, cis-1,2-Dichloroethane, Chloroform, 1,2-Dichloroethane, 1,1,1-Trichloroethane, Benzene, Carbon Tetrachloride, 1,2-Dichloropropane, Bromodichloromethane, Trichloroethene, 1,4-Dioxane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, 1,1,2-Trichloroethane, Toluene, Dibromochloromethane, 1,2-Dibromoethane, Tetrachloroethene, Chlorobenzene, Ethylbenzene, m-&p-Xylene, Styrene, o-Xylene, 1,1,2,2-Tetrachloroethane, 1,3,5-Trimethylbenzene, 1,2,4-Trimethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene.

Primary Source Standards Concentrations (Working & Initial Calibration)

0.2ng/L Std. ID: [Redacted]
 1ng/L Std. ID: S34-10252106/S34-107
 2ng/L Std. ID: [Redacted]
 4ng/L Std. ID: [Redacted]
 20ng/L Std. ID: S34-10252104
 200ng/L Std. ID: S34-10252102

Compounds	Source Std. mg/m ³	Primary Working Standards						Working STD Conc.(ng/L):	Injection (L):	ICAL Points:							
		5	20	40	200	500	1000				5000						
Naphthalene	1.04	208	20.8	4.16	2.08	1.04	0.208	0.0208	0.0520	0.104	0.520	1.04	5.20	10.4	26.00	NA	NA
Hexachloro-1,3-butadiene	1.03	206	20.6	4.12	2.06	1.03	0.206	0.0206	0.0515	0.103	0.515	1.03	5.15	10.3	25.75	NA	NA

Method : I:\MS19\METHODS\S19102621.M (RTE Integrator)
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration

TZ 10/27/21

#	ID	Conc	ISTD Conc	Path\File
1	20	21	1000	I:\MS19\DATA\2021_10\26\10262109.D
2	50	53	1000	I:\MS19\DATA\2021_10\26\10262110.D
3	100	105	1000	I:\MS19\DATA\2021_10\26\10262122.D
4	500	525	1000	I:\MS19\DATA\2021_10\26\10262112.D
5	1000	1050	1000	I:\MS19\DATA\2021_10\26\10262113.D
6	5000	5250	1000	I:\MS19\DATA\2021_10\26\10262114.D
7	10K	10500	1000	I:\MS19\DATA\2021_10\26\10262116.D

#	ID	Update Time	Quant Time	Acquisition Time
1	20	Oct 27 07:49 2021	Oct 27 07:48 2021	26 Oct 2021 16:59
2	50	Oct 27 10:45 2021	Oct 27 10:44 2021	26 Oct 2021 17:31
3	100	Oct 27 10:20 2021	Oct 27 10:20 2021	27 Oct 2021 9:11
4	500	Oct 27 07:49 2021	Oct 27 07:46 2021	26 Oct 2021 18:33
5	1000	Oct 27 07:49 2021	Oct 27 07:46 2021	26 Oct 2021 19:05
6	5000	Oct 27 07:49 2021	Oct 27 07:46 2021	26 Oct 2021 19:36
7	10K	Oct 27 07:49 2021	Oct 27 07:46 2021	26 Oct 2021 20:39

S19102621.M

Wed Oct 27 14:04:46 2021

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 07:48:55 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	13272	1000.000	pg	0.01
25) 1,4-Difluorobenzene (IS2)	11.57	114	69283	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.91	54	14520	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	30407	1220.244	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	122.02%
33) Toluene-d8 (SS2)	14.00	98	71223	937.488	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	93.75%
45) Bromofluorobenzene (SS3)	17.42	174	16375	683.830	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	68.38%#

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.34	85	977	28.939	pg	100
3) Chloromethane	4.57	52	234	30.729	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.72	85	917	23.215	pg	99
5) Vinyl Chloride	4.87	62	847	21.241	pg	# 31
6) 1,3-Butadiene	5.06	54	287	12.585	pg	# 84
7) Bromomethane	5.38	94	245	19.362	pg	97
8) Chloroethane	5.60	64	184	18.353	pg	98
9) Acrolein	6.26	56	265m	33.504	pg	
10) Acetone	6.36	58	1198m	115.154	pg	
11) Trichlorofluoromethane	6.49	101	525	17.620	pg	97
12) 1,1-Dichloroethene	7.22	96	284	16.837	pg	97
13) Methylene Chloride	7.36	84	380	19.652	pg	99
14) Trichlorotrifluoroethane	7.66	151	265	16.942	pg	100
15) trans-1,2-Dichloroethene	8.42	96	255	14.414	pg	98
16) 1,1-Dichloroethane	8.59	63	581	18.594	pg	98
17) Methyl tert-Butyl Ether	8.70	73	709	14.143	pg	100
18) cis-1,2-Dichloroethene	9.48	96	277	14.760	pg	96
19) Chloroform	9.75	83	616	18.898	pg	99
21) 1,2-Dichloroethane	10.51	62	469	18.556	pg	100
22) 1,1,1-Trichloroethane	10.77	97	513	17.227	pg	98
23) Benzene	11.24	78	1709	23.376	pg	100
24) Carbon Tetrachloride	11.38	117	455	18.870	pg	99
26) 1,2-Dichloropropane	12.05	63	339	17.228	pg	86
27) Bromodichloromethane	12.23	83	508	17.934	pg	97
28) Trichloroethene	12.29	130	307	14.950	pg	94
29) 1,4-Dioxane	12.30	88	174	10.798	pg	# 25
30) cis-1,3-Dichloropropene	13.17	75	278	9.823	pg	98
31) trans-1,3-Dichloropropene	13.73	75	208m	8.686	pg	
32) 1,1,2-Trichloroethane	13.82	83	275	16.185	pg	96
34) Toluene	14.11	91	1247	14.870	pg	100
35) Dibromochloromethane	14.54	129	272	13.292	pg	99
36) 1,2-Dibromoethane	14.81	107	235	11.192	pg	93
37) Tetrachloroethene	15.26	166	257	13.072	pg	99
39) Chlorobenzene	15.96	112	805	13.773	pg	96
40) Ethylbenzene	16.36	91	998	10.825	pg	100
41) m,p-Xylene	16.54	91	1407	19.511	pg	99
42) Styrene	16.94	104	477m	9.214	pg	
43) o-Xylene	16.99	106	337	9.916	pg	100
44) 1,1,2,2-Tetrachloroethane	16.97	83	497	13.649	pg	96
46) 1,3,5-Trimethylbenzene	18.26	105	631	8.737	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	743	9.869	pg	99
48) 1,3-Dichlorobenzene	18.82	146	494	11.405	pg	98
49) 1,4-Dichlorobenzene	18.88	146	633	14.315	pg	100
50) 1,2-Dichlorobenzene	19.20	146	589	13.704	pg	97
51) 1,2-Dibromo-3-chloropr...	19.61	157	344	25.058	pg	99
52) 1,2,4-Trichlorobenzene	20.85	182	629	24.765	pg	98
53) Naphthalene	20.99	128	1057	11.328	pg	# 71

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:48:55 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

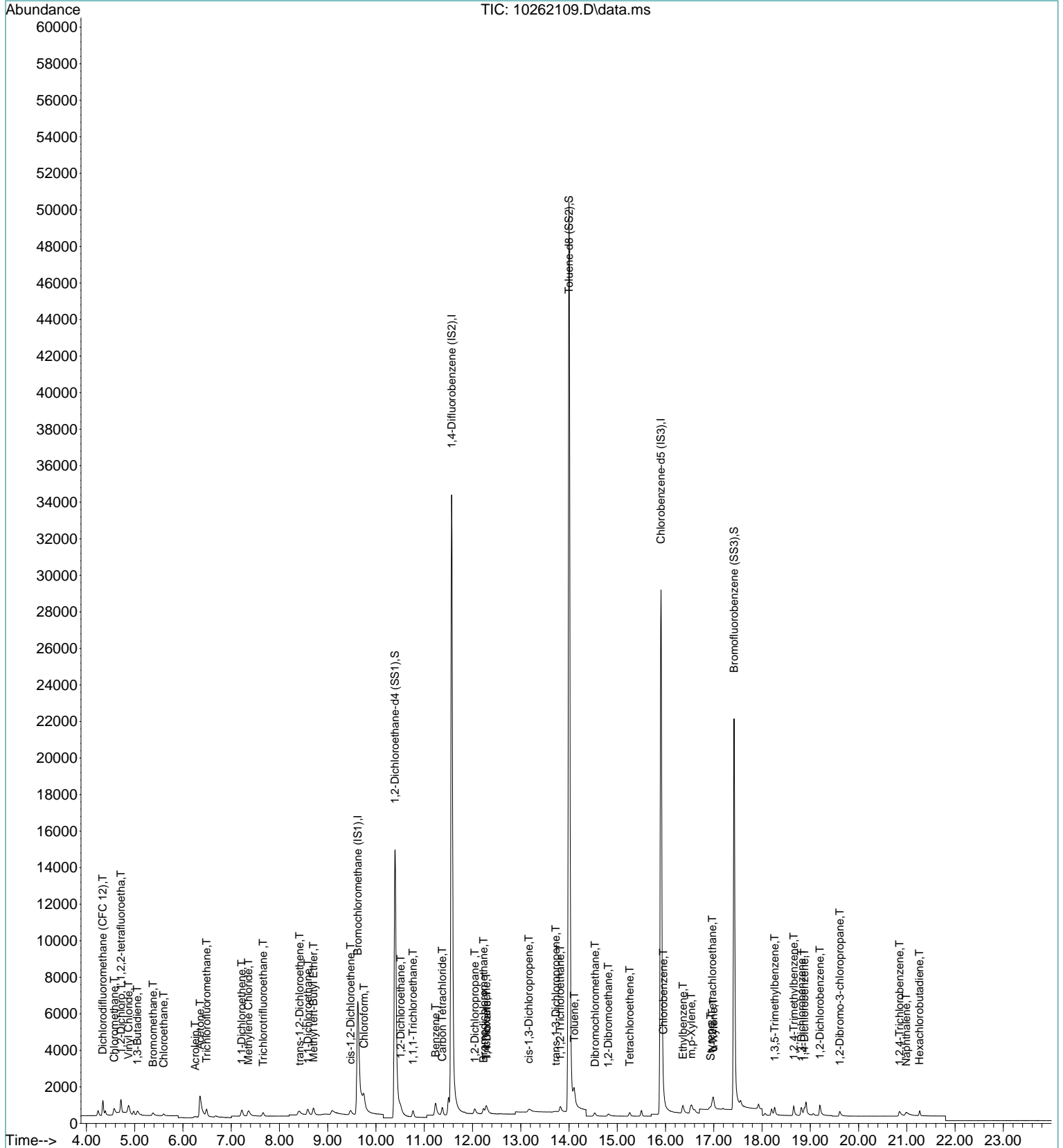
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
54) Hexachlorobutadiene	21.26	225	278	18.398	pg	98

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

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

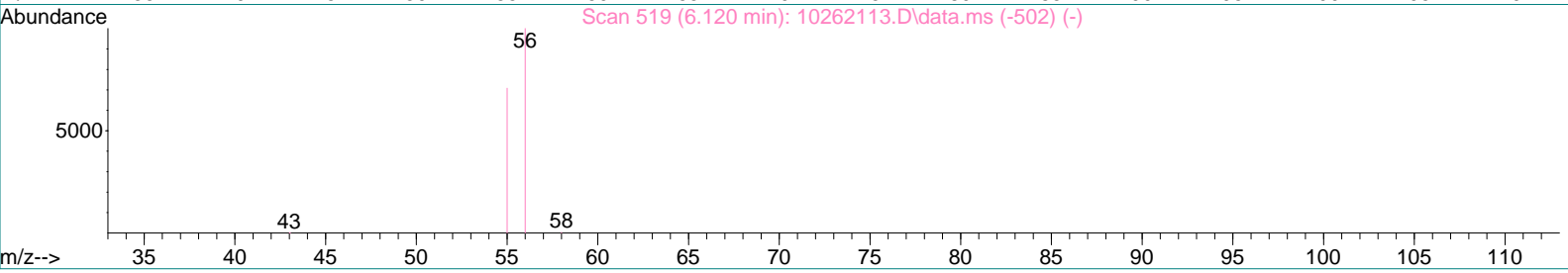
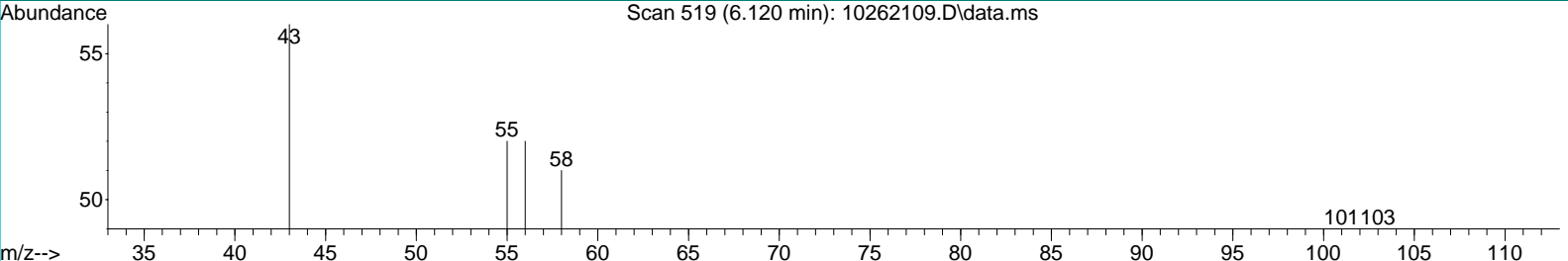
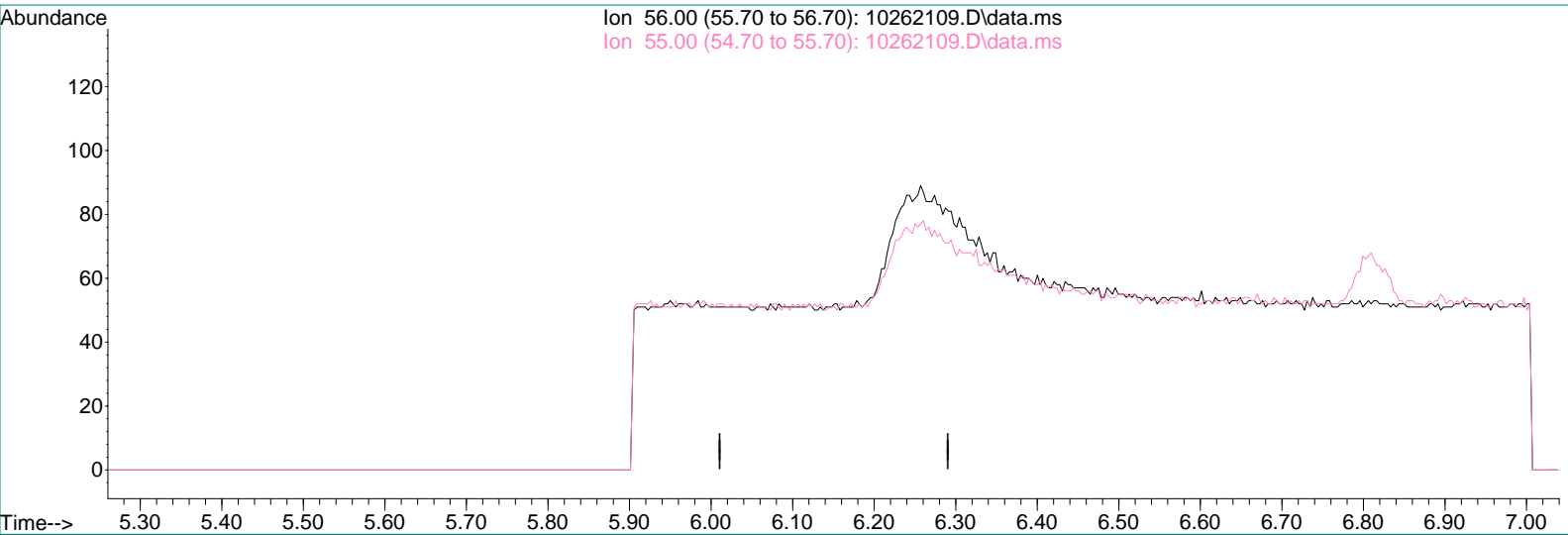
Quant Time: Oct 27 07:48:55 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(9) Acrolein (T)

6.120min (-6.120) 0.00pg

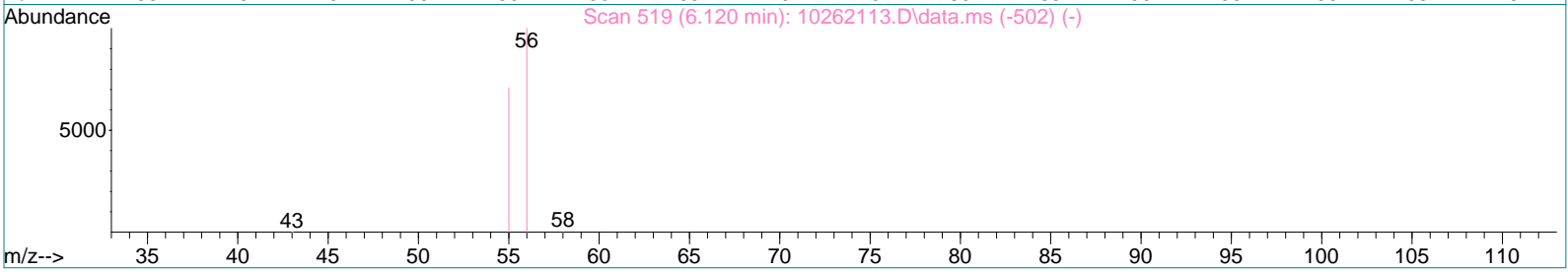
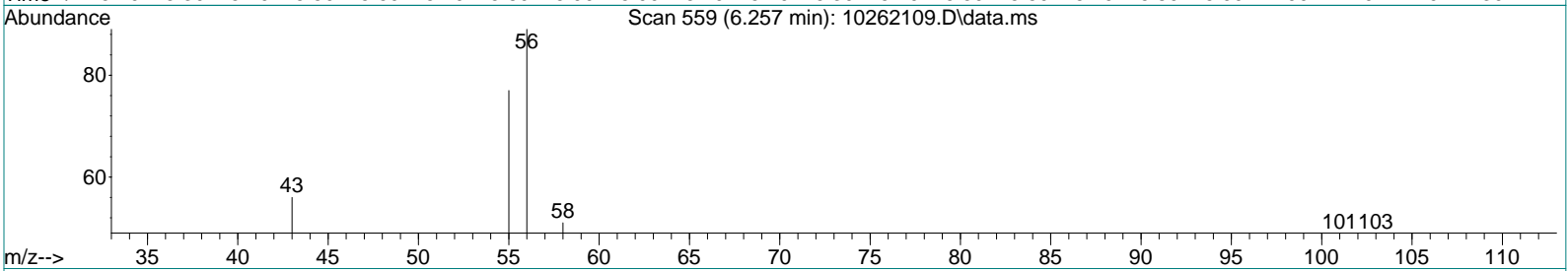
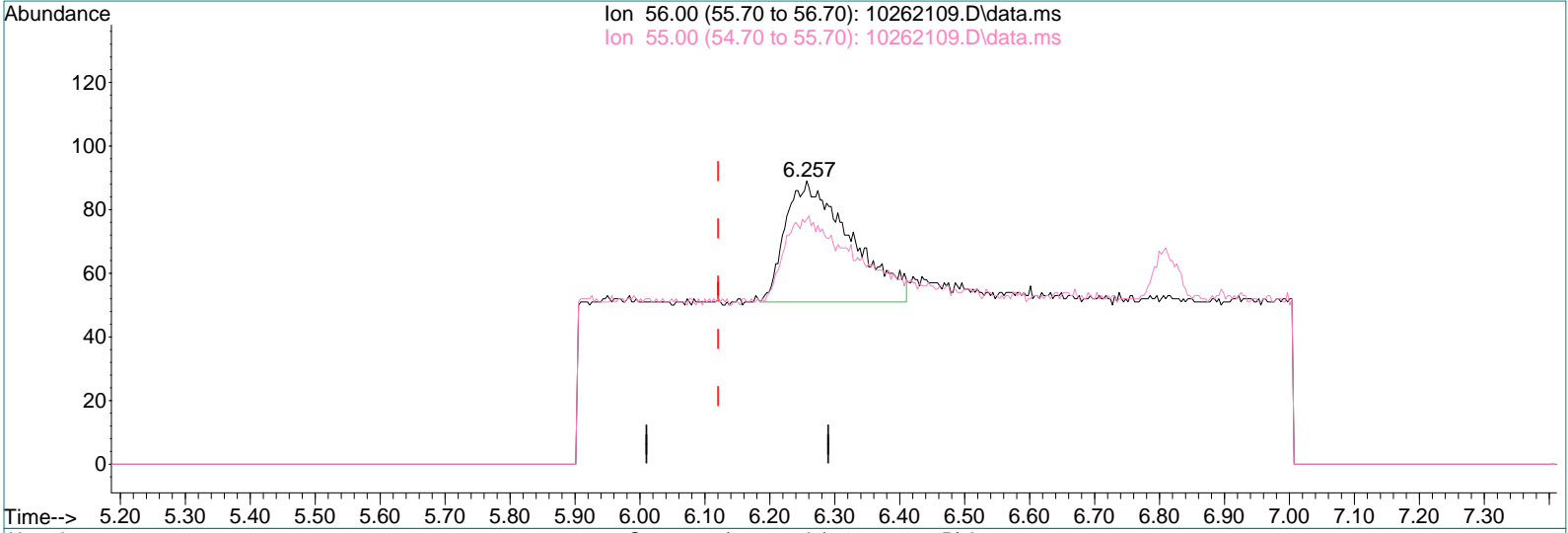
response 0

Ion	Exp%	Act%
56.00	100	0.00
55.00	69.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(9) Acrolein (T)

6.257min (+0.137) 33.50pg m

response 265

MP

TZ 10/27/21

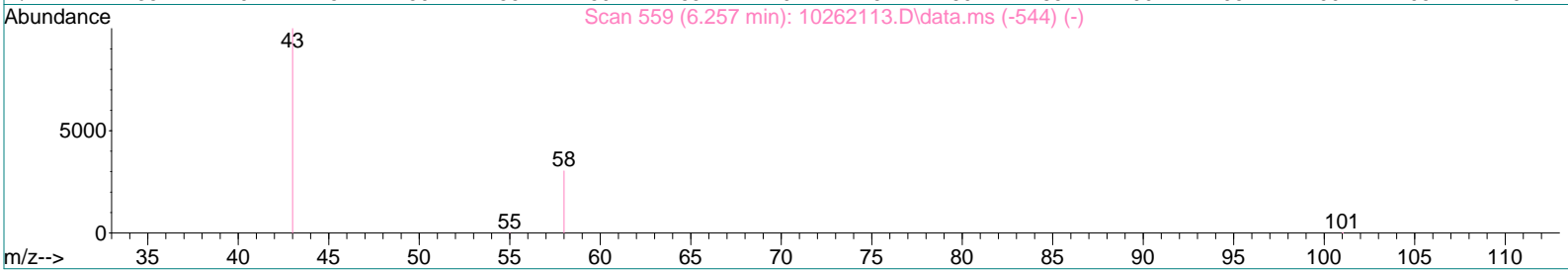
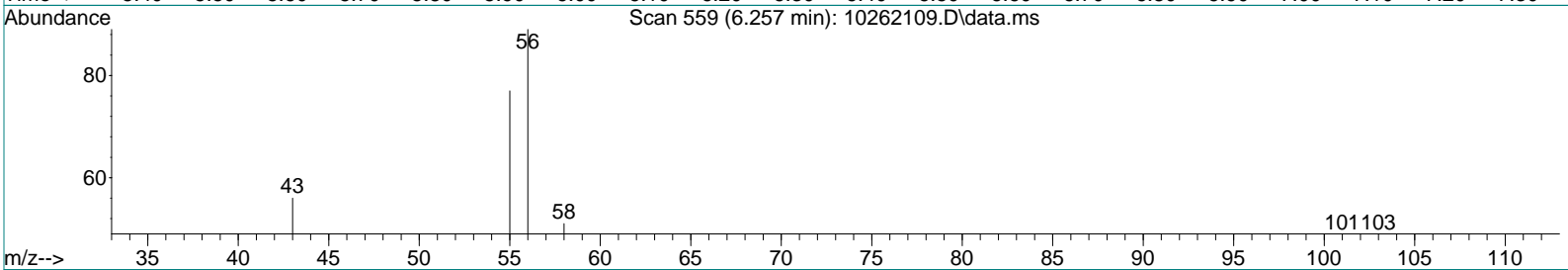
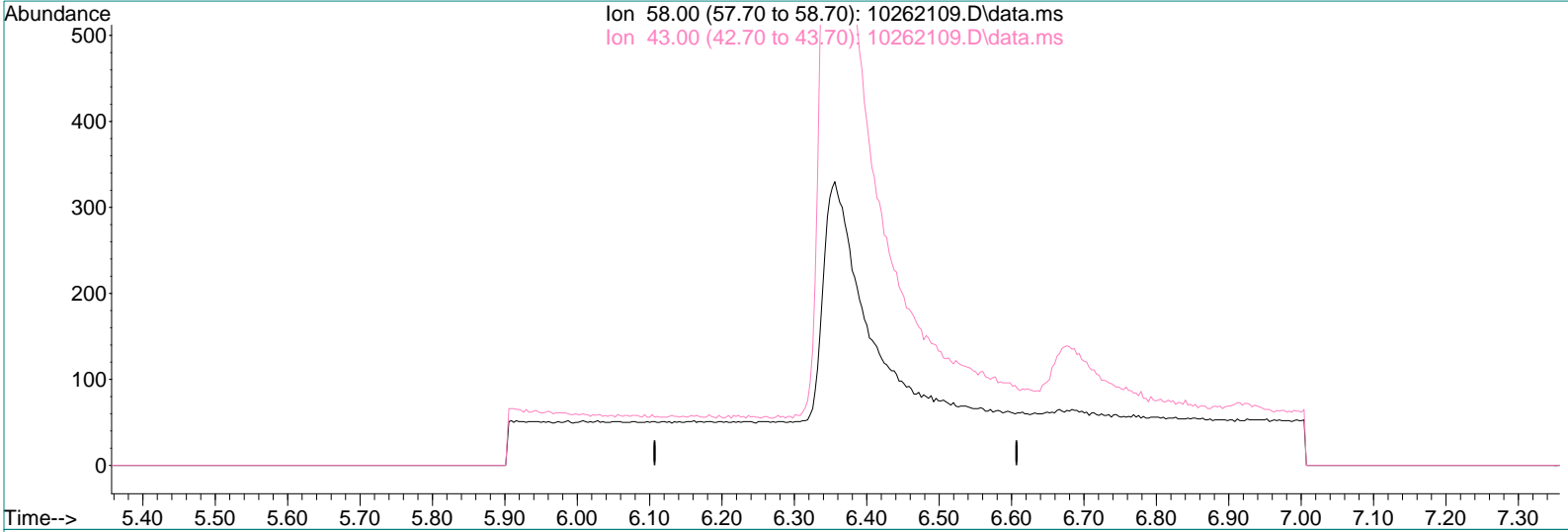
DA 11/3/21

Ion	Exp%	Act%
56.00	100	100
55.00	69.80	70.57
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(10) Acetone (T)

6.257min (-6.257) 0.00pg

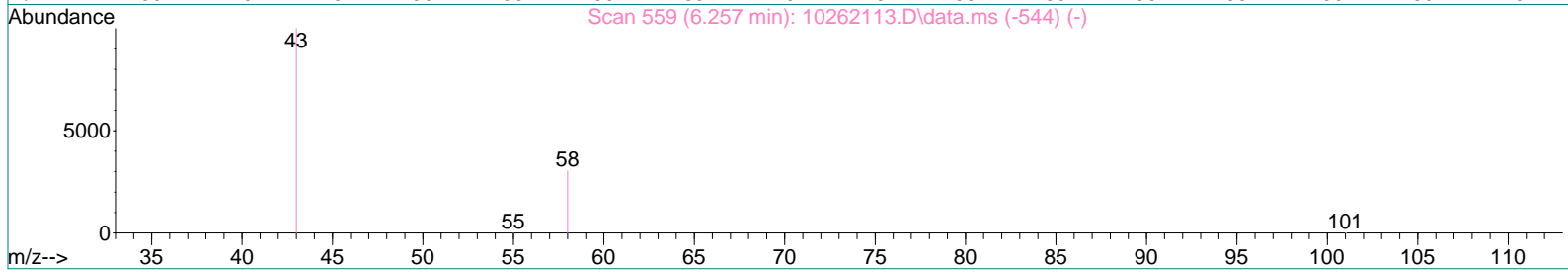
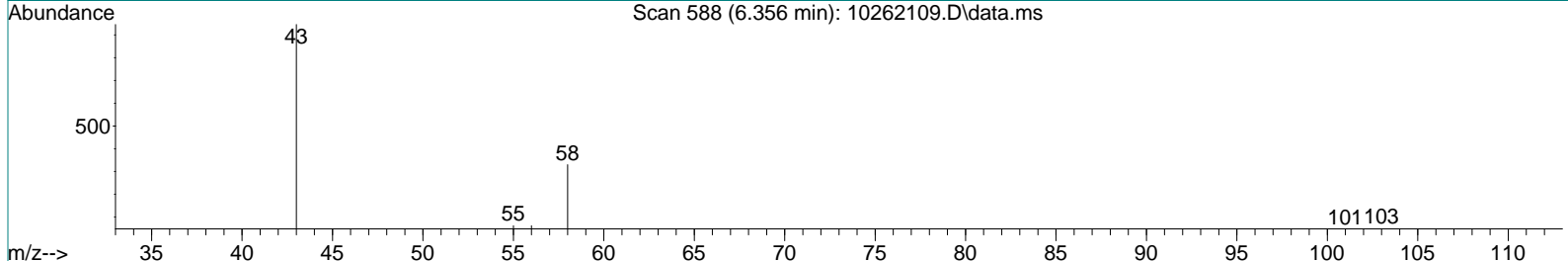
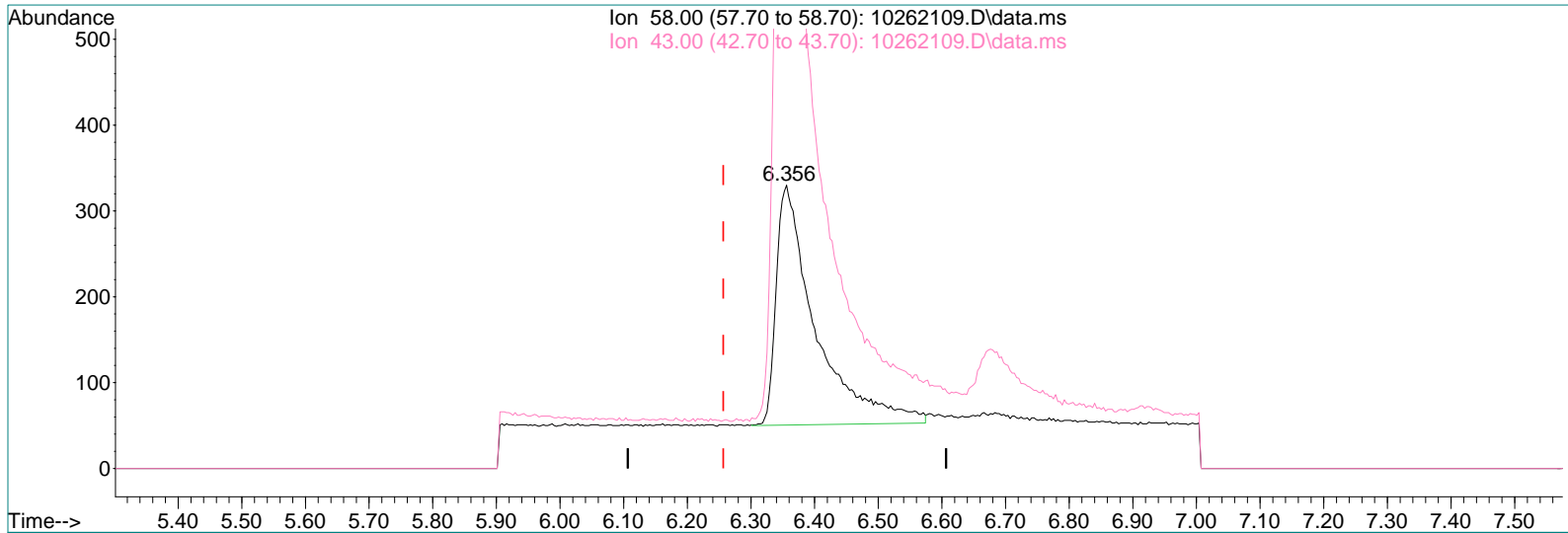
response 0

Ion	Exp%	Act%
58.00	100	0.00
43.00	327.70	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(10) Acetone (T)

6.356min (+0.099) 115.15pg m

response 1198

Ion	Exp%	Act%
58.00	100	100
43.00	327.70	332.55
0.00	0.00	0.00
0.00	0.00	0.00

MP

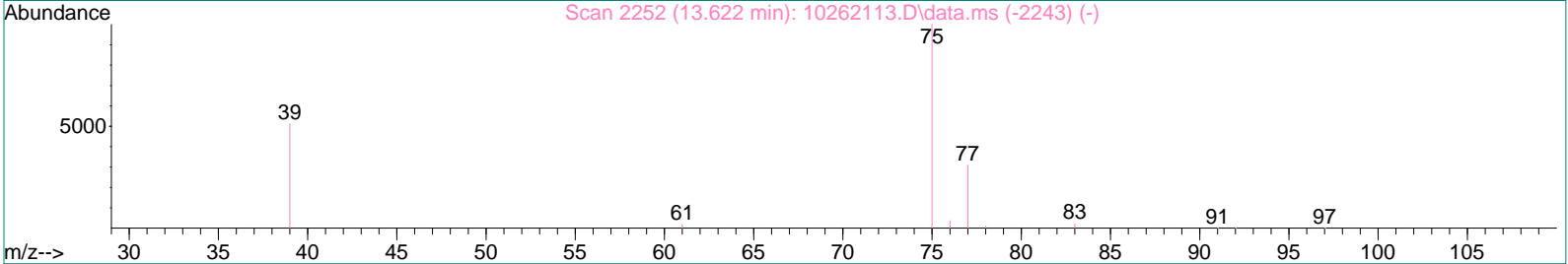
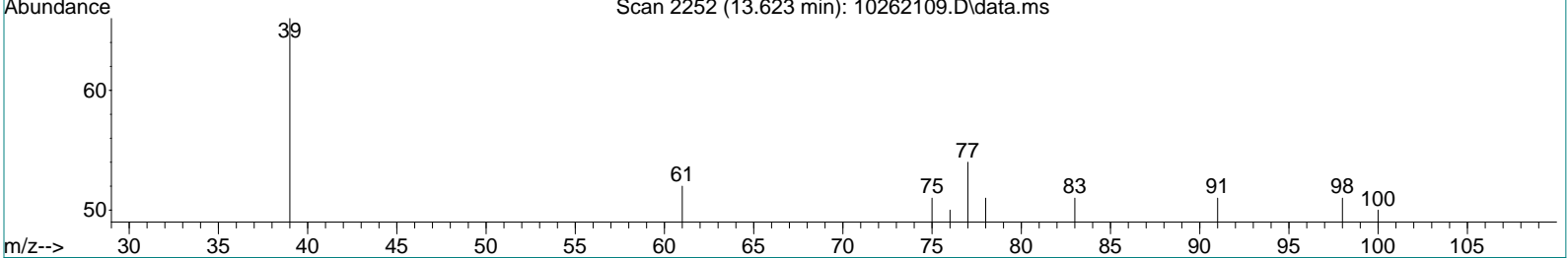
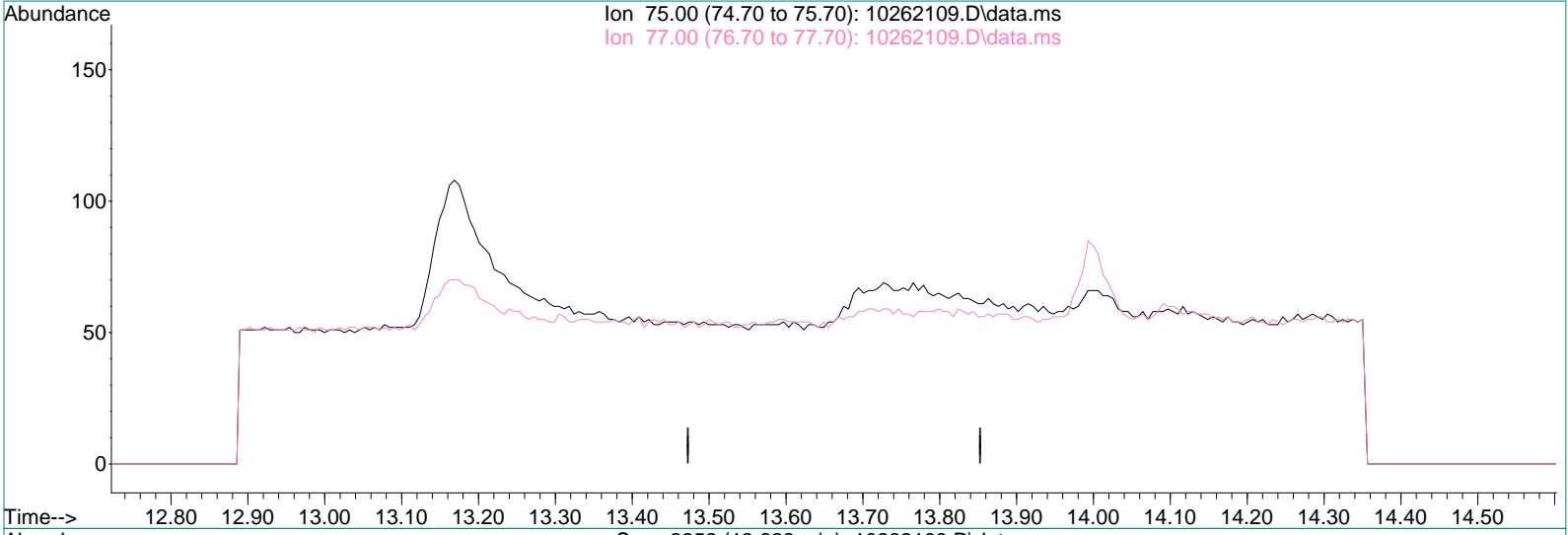
TZ 10/27/21

IDA 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(31) trans-1,3-Dichloropropene (T)

13.622min (-13.622) 0.00pg

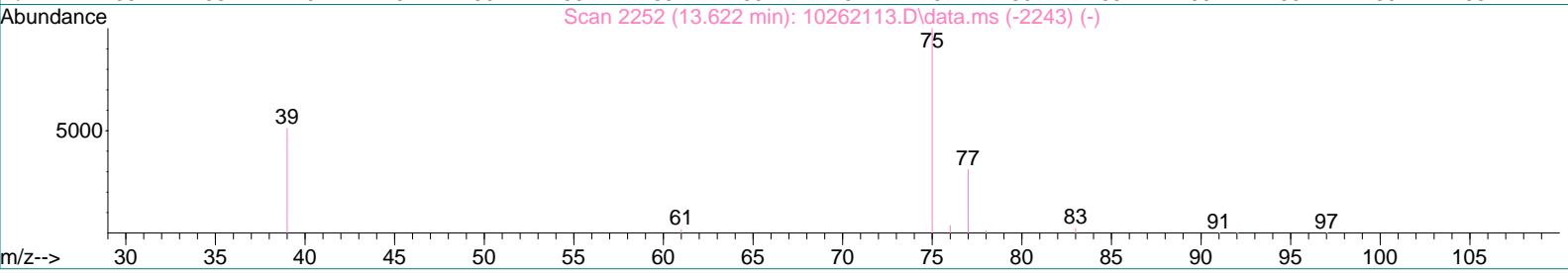
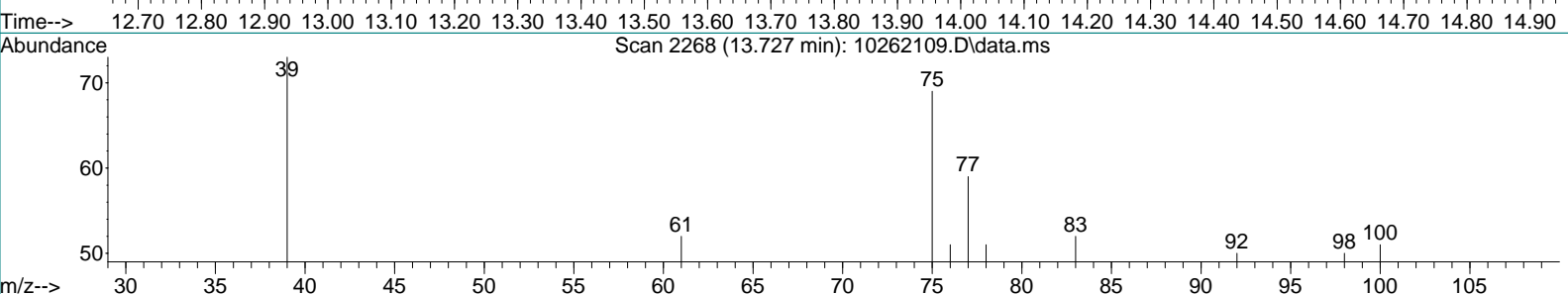
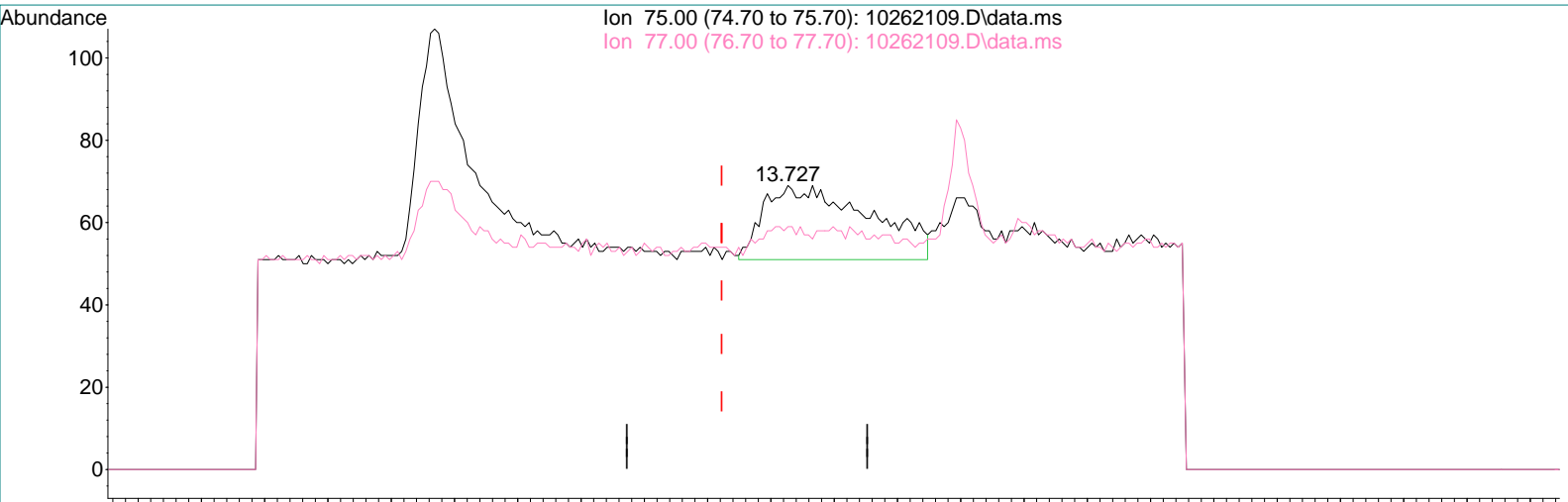
response 0

Ion	Exp%	Act%
75.00	100	0.00
77.00	31.50	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(31) trans-1,3-Dichloropropene (T)

13.727min (+0.104) 8.69pg m

MP

response 208

TZ 10/27/21

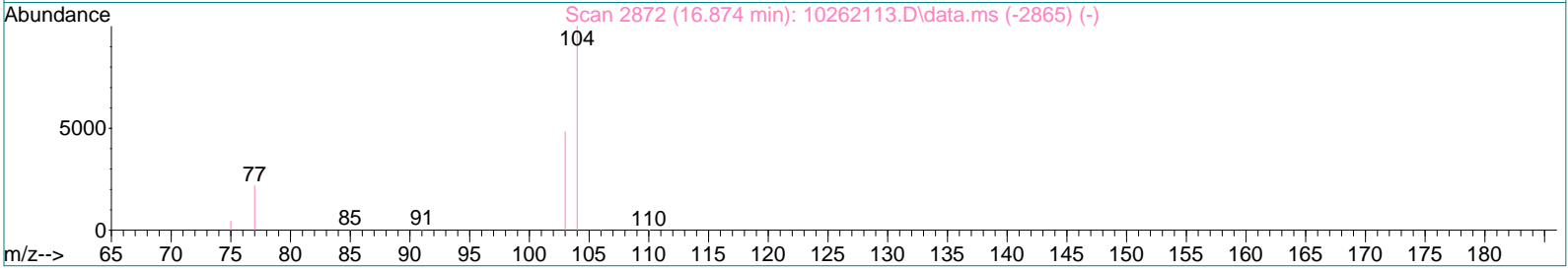
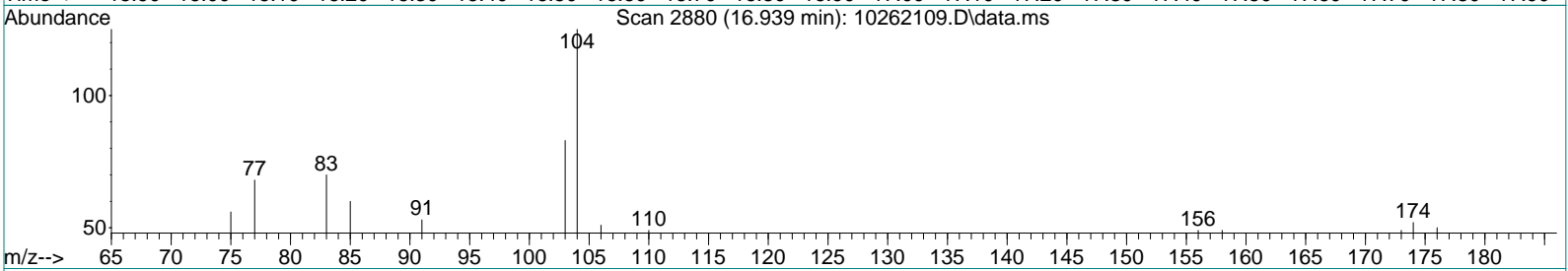
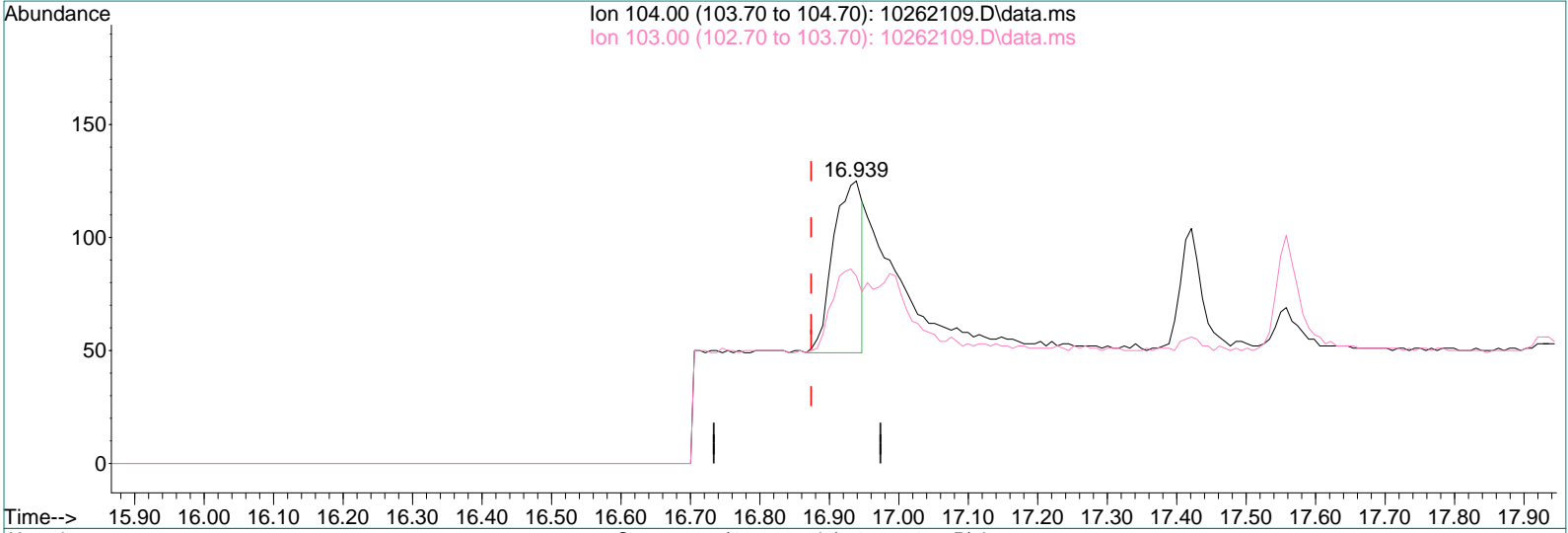
Ion	Exp%	Act%
75.00	100	100
77.00	31.50	50.96#
0.00	0.00	0.00
0.00	0.00	0.00

10/27/21 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(42) Styrene (T)

16.939min (+0.065) 4.23pg

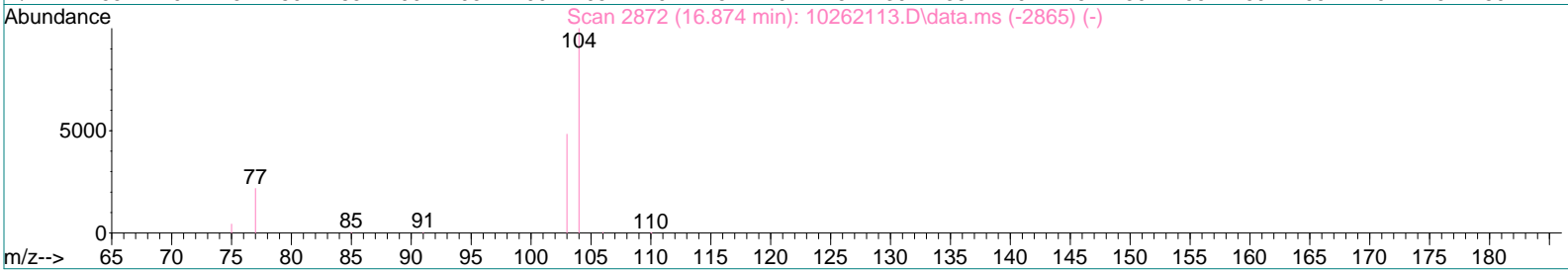
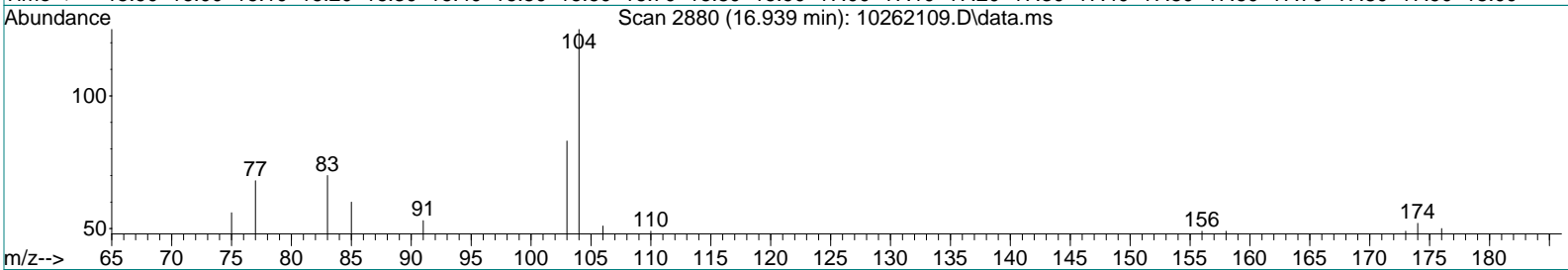
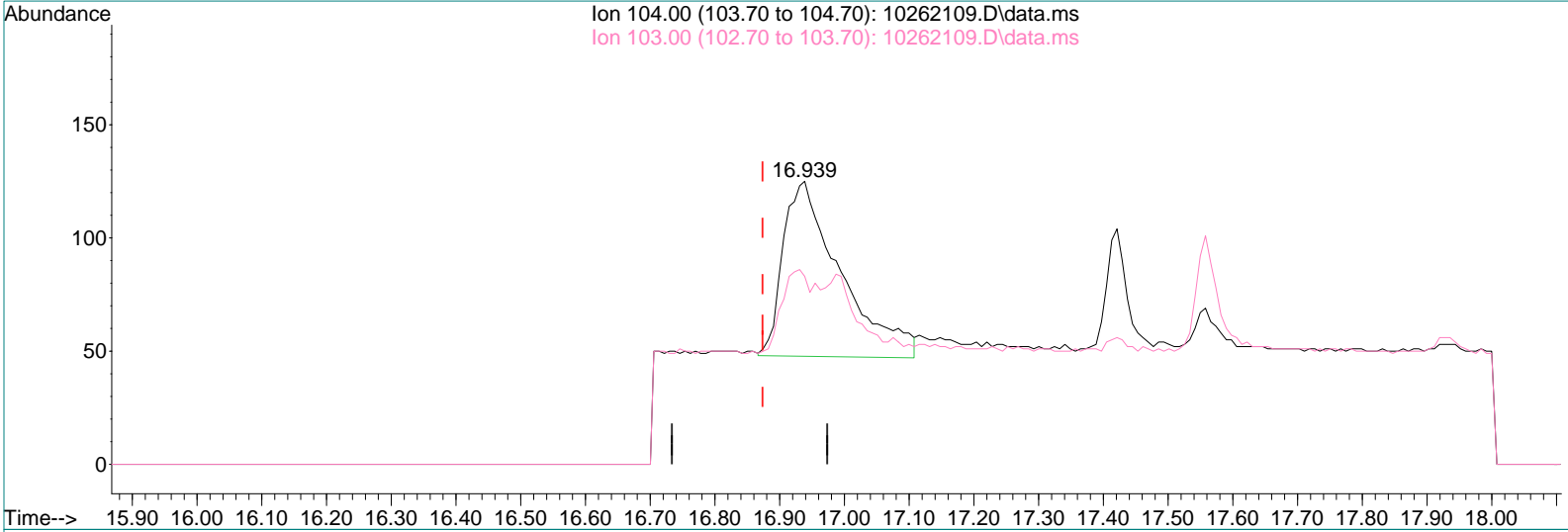
response 219

Ion	Exp%	Act%
104.00	100	100
103.00	48.60	48.86
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262109.D
 Acq On : 26 Oct 2021 16:59
 Sample : 20pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:35 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262109.D\data.ms

(42) Styrene (T)

16.939min (+0.065) 9.21pg m

response 477

IC-

Ion	Exp%	Act%
104.00	100	100
103.00	48.60	55.14
0.00	0.00	0.00
0.00	0.00	0.00

TZ 10/27/21

WA 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 10:44:54 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	13340	1000.000	pg	0.01
25) 1,4-Difluorobenzene (IS2)	11.57	114	61804	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	14781	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	30832	1230.992	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	123.10%		
33) Toluene-d8 (SS2)	14.00	98	72571	1070.825	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	107.08%		
45) Bromofluorobenzene (SS3)	17.42	174	17277	708.758	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	70.88%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.34	85	2274	67.012	pg	100
3) Chloromethane	4.57	52	521	68.070	pg	98
4) 1,2-Dichloro,1,1,2,2-t...	4.71	85	2276	57.326	pg	100
5) Vinyl Chloride	4.86	62	2337	58.308	pg	79
6) 1,3-Butadiene	5.05	54	952	41.532	pg	96
7) Bromomethane	5.37	94	742	58.340	pg	99
8) Chloroethane	5.60	64	597	59.245	pg	98
9) Acrolein	6.22	56	677m	85.156	pg	
10) Acetone	6.33	58	2668	255.146	pg	# 90
11) Trichlorofluoromethane	6.48	101	1341	44.778	pg	99
12) 1,1-Dichloroethene	7.22	96	717	42.291	pg	99
13) Methylene Chloride	7.35	84	902	46.411	pg	99
14) Trichlorotrifluoroethane	7.66	151	685	43.571	pg	98
15) trans-1,2-Dichloroethene	8.40	96	730	41.054	pg	98
16) 1,1-Dichloroethane	8.58	63	1540	49.034	pg	99
17) Methyl tert-Butyl Ether	8.69	73	1876	37.232	pg	100
18) cis-1,2-Dichloroethene	9.47	96	727	38.540	pg	99
19) Chloroform	9.75	83	1580	48.225	pg	99
21) 1,2-Dichloroethane	10.51	62	1191	46.881	pg	96
22) 1,1,1-Trichloroethane	10.77	97	1291	43.132	pg	99
23) Benzene	11.23	78	3800	51.712	pg	100
24) Carbon Tetrachloride	11.38	117	1143	47.160	pg	100
26) 1,2-Dichloropropane	12.04	63	802	45.689	pg	98
27) Bromodichloromethane	12.22	83	1130	44.719	pg	96
28) Trichloroethene	12.28	130	686	37.449	pg	98
29) 1,4-Dioxane	12.28	88	514	35.756	pg	77
30) cis-1,3-Dichloropropene	13.14	75	825	32.678	pg	94
31) trans-1,3-Dichloropropene	13.69	75	620m	29.023	pg	
32) 1,1,2-Trichloroethane	13.82	83	676	44.601	pg	97
34) Toluene	14.11	91	3211	42.925	pg	99
35) Dibromochloromethane	14.53	129	720	39.444	pg	97
36) 1,2-Dibromoethane	14.79	107	705	37.640	pg	94
37) Tetrachloroethene	15.25	166	693	39.515	pg	99
39) Chlorobenzene	15.96	112	2101	35.313	pg	97
40) Ethylbenzene	16.35	91	3126	33.308	pg	99
41) m,p-Xylene	16.52	91	4369	59.514	pg	97
42) Styrene	16.90	104	927	17.590	pg	100
43) o-Xylene	16.99	106	903	26.101	pg	100
44) 1,1,2,2-Tetrachloroethane	16.96	83	1349	36.393	pg	100
46) 1,3,5-Trimethylbenzene	18.26	105	1776	24.157	pg	97
47) 1,2,4-Trimethylbenzene	18.65	105	1645	21.463	pg	98
48) 1,3-Dichlorobenzene	18.80	146	1128	25.582	pg	100
49) 1,4-Dichlorobenzene	18.86	146	1239	27.525	pg	99
50) 1,2-Dichlorobenzene	19.19	146	1237	28.273	pg	99
51) 1,2-Dibromo-3-chloropr...	19.60	157	710	50.805	pg	93
52) 1,2,4-Trichlorobenzene	20.83	182	1229	47.534	pg	99
53) Naphthalene	20.96	128	1922	20.235	pg	92

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:44:54 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

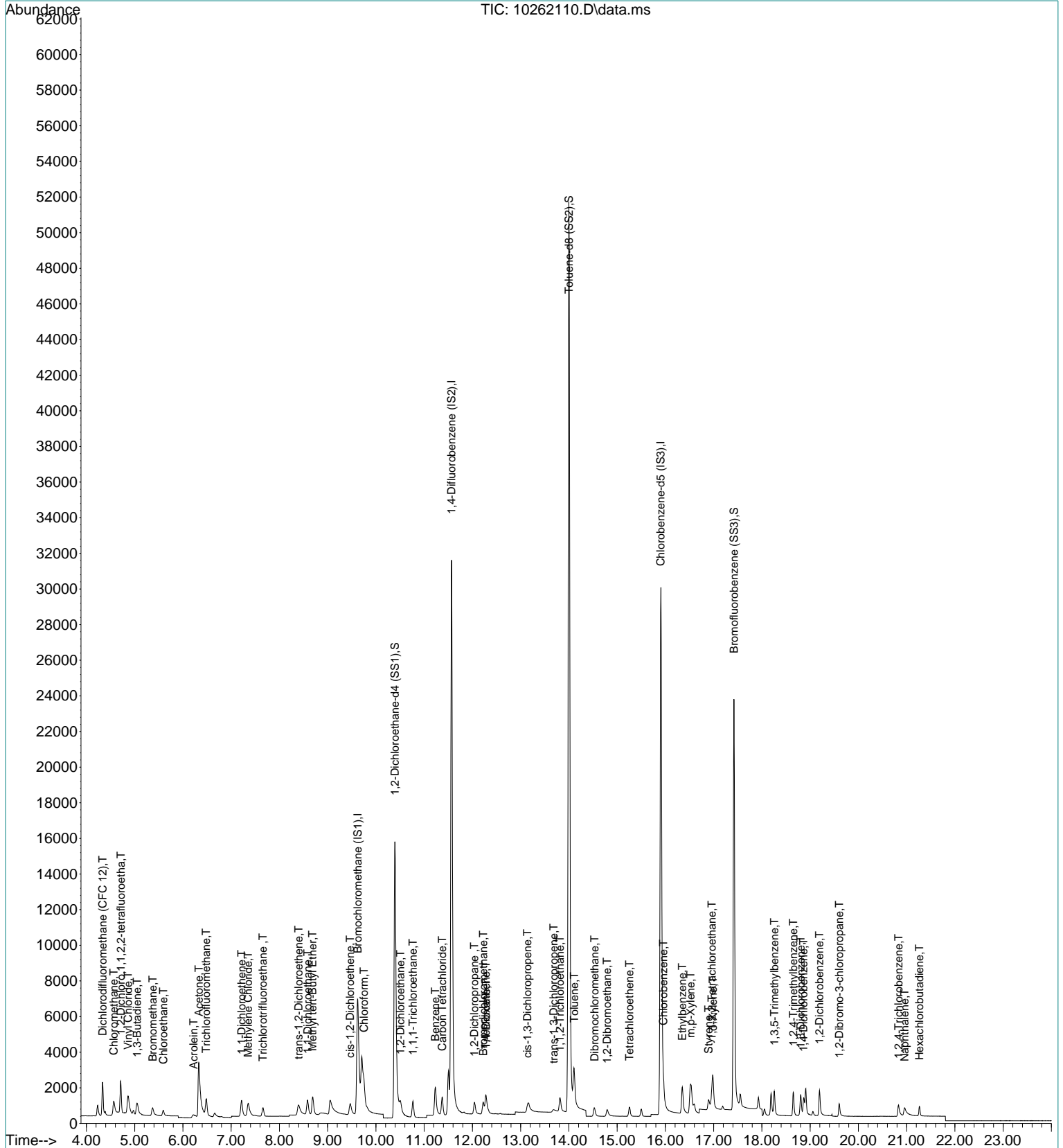
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	528	34.327	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

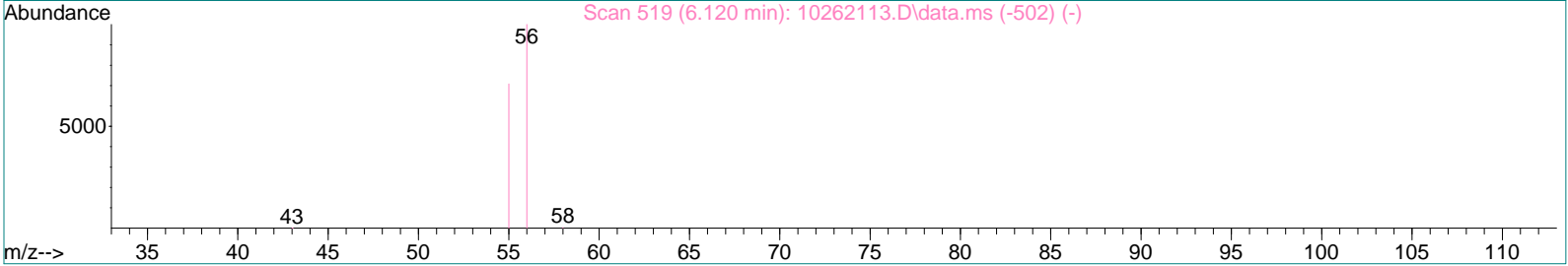
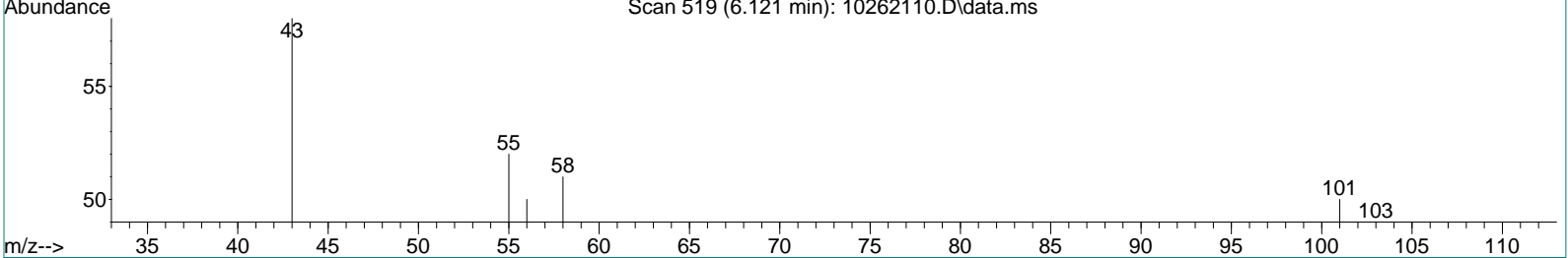
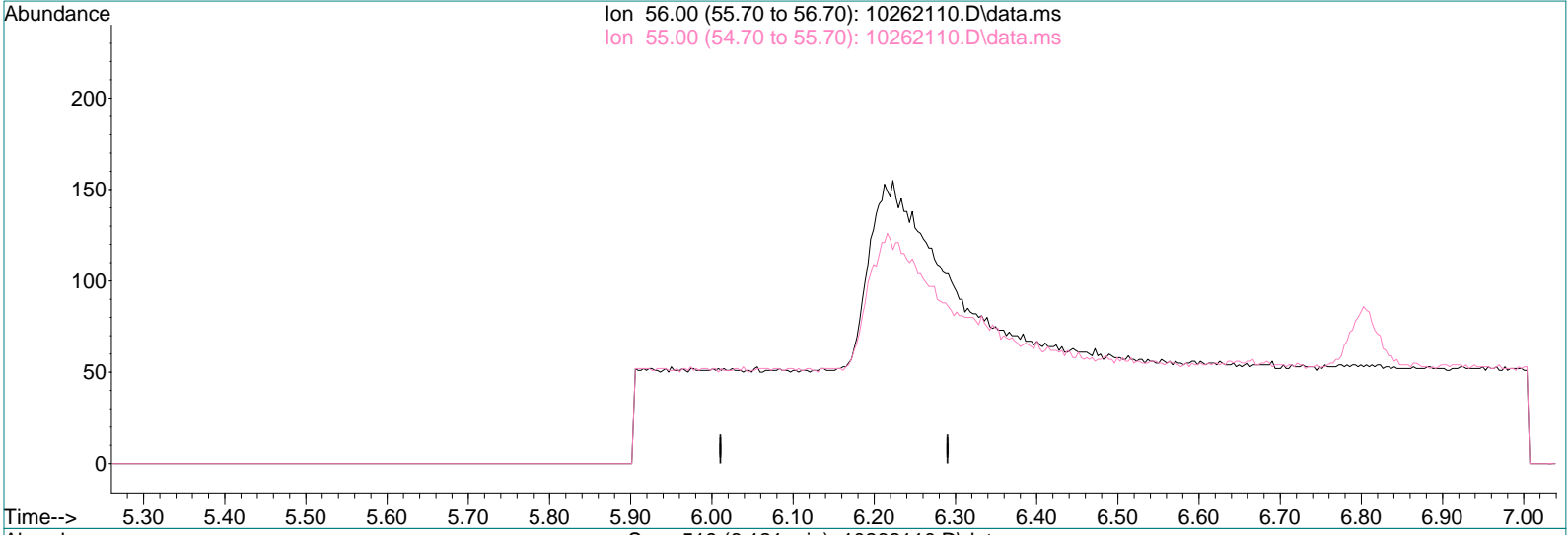
Quant Time: Oct 27 10:44:54 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262110.D\data.ms

(9) Acrolein (T)

6.120min (-6.120) 0.00pg

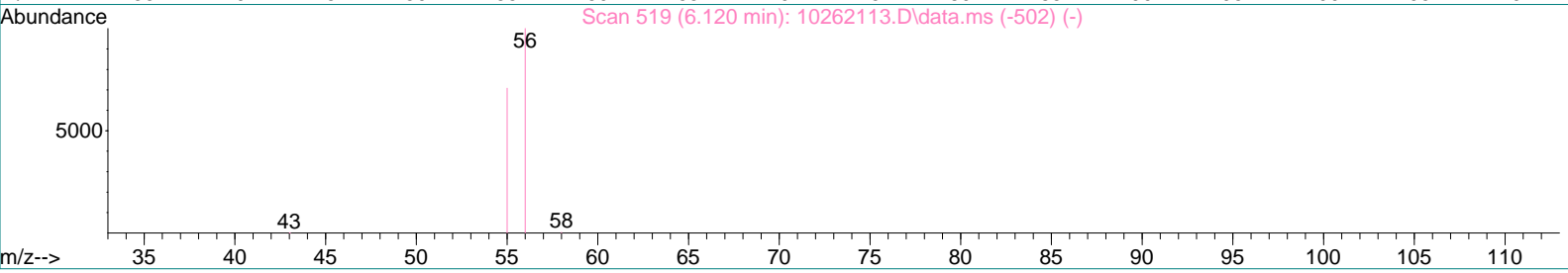
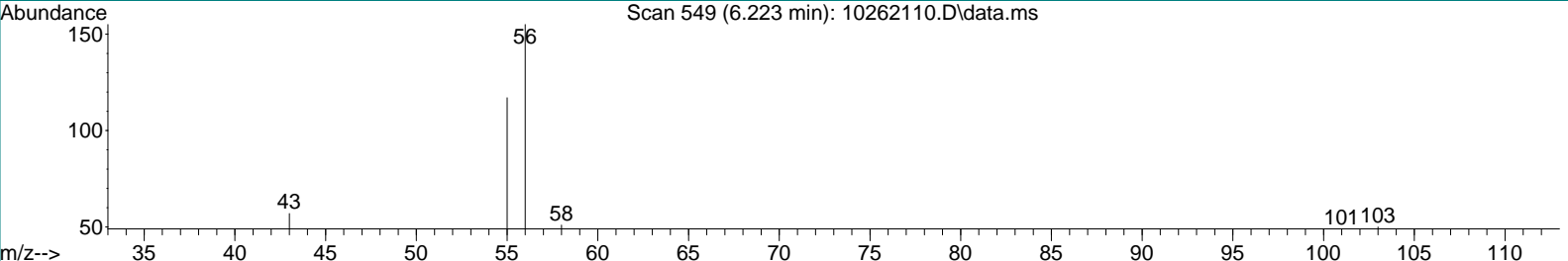
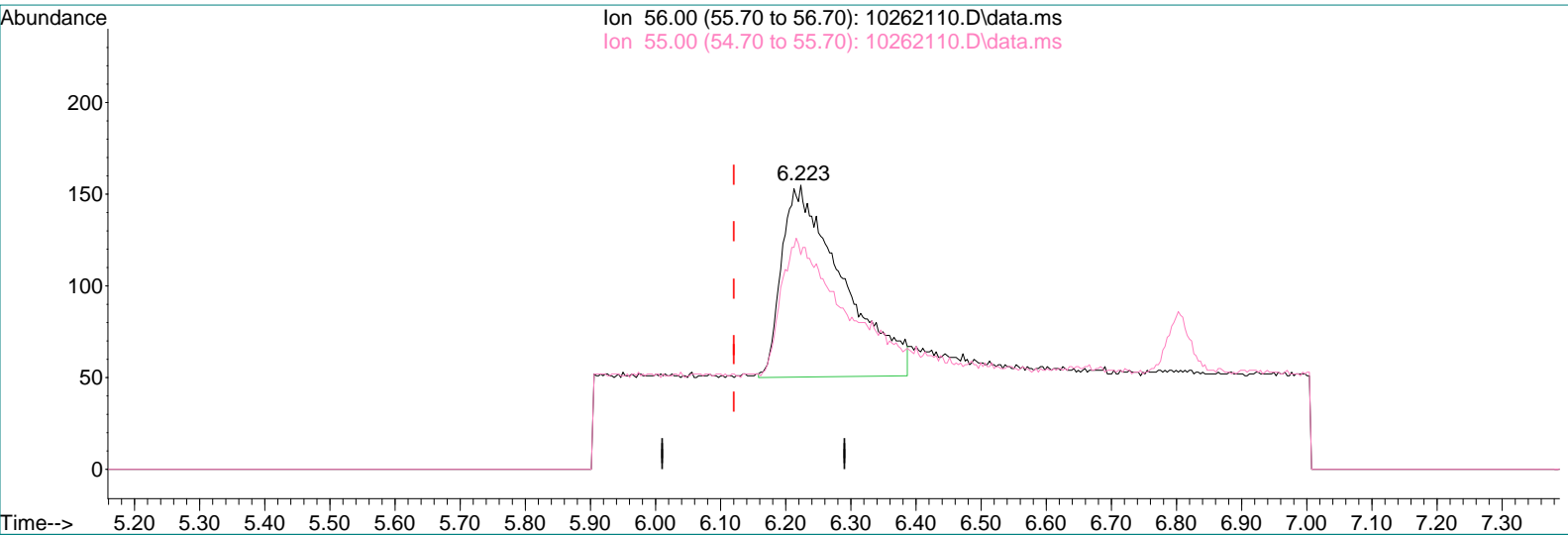
response 0

Ion	Exp%	Act%
56.00	100	0.00
55.00	69.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:37 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262110.D\data.ms

(9) Acrolein (T)

6.223min (+0.103) 85.16pg m

response 677

MP

Ion	Exp%	Act%
56.00	100	100
55.00	69.80	71.34
0.00	0.00	0.00
0.00	0.00	0.00

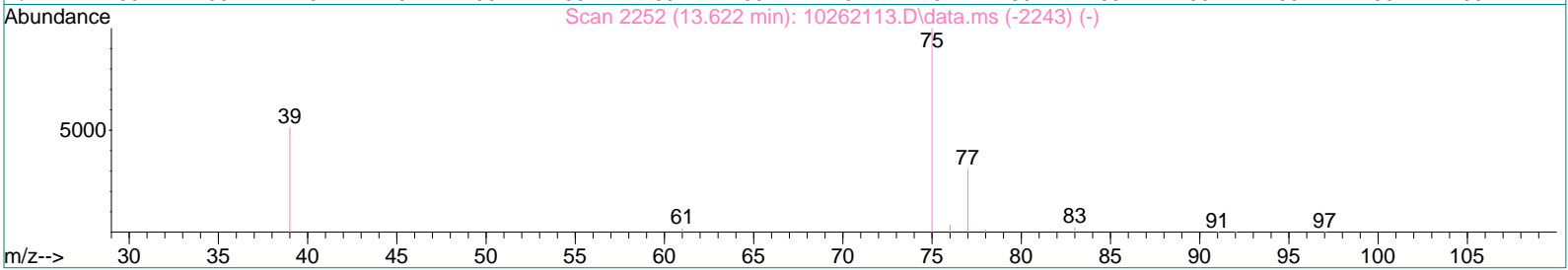
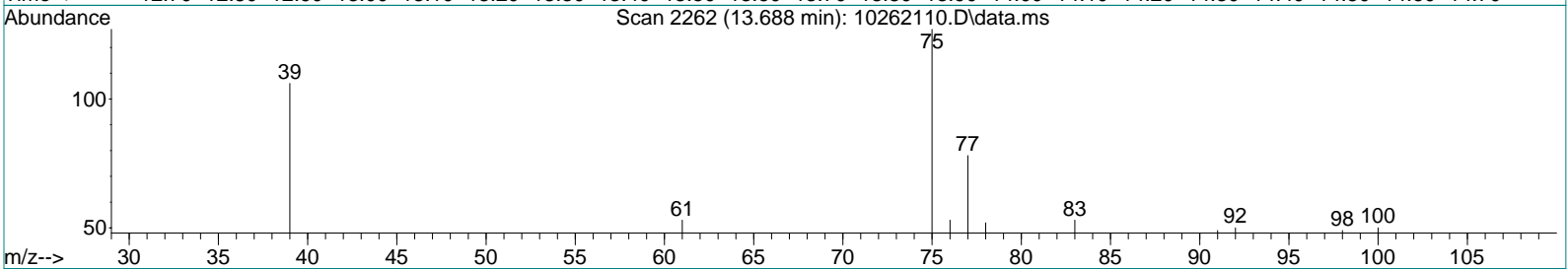
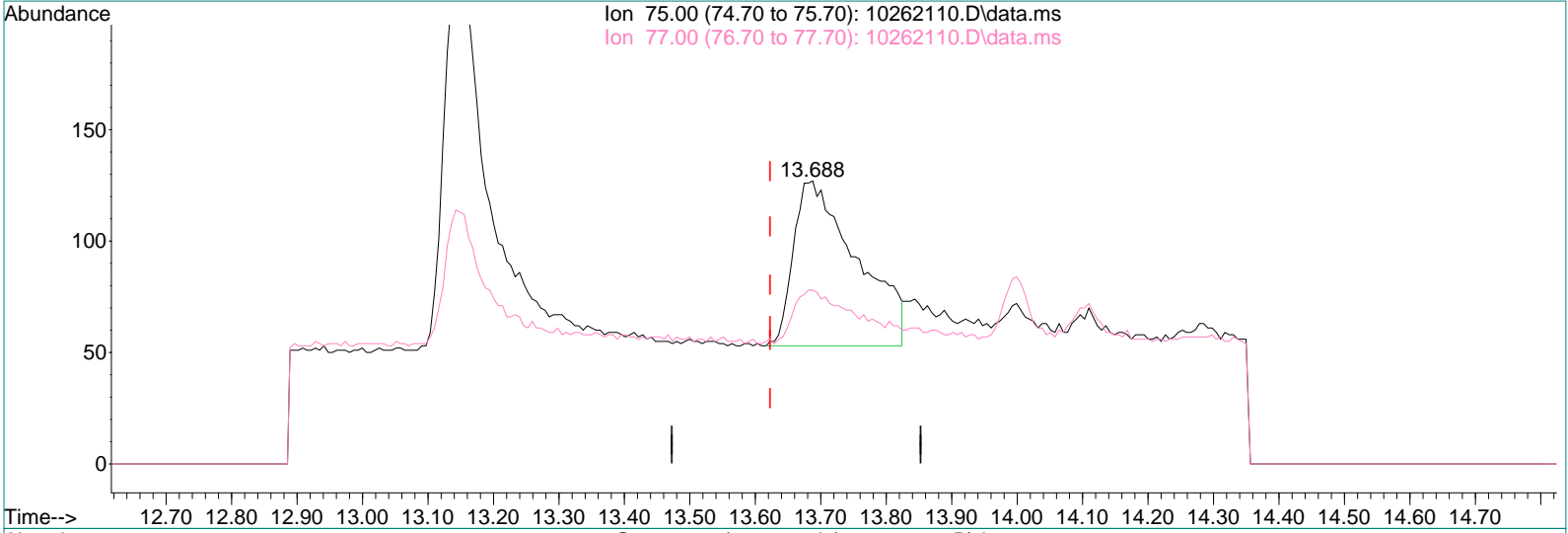
TZ 10/27/21

DA 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:43:10 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262110.D\data.ms

(31) trans-1,3-Dichloropropene (T)

13.688min (+0.065) 23.31pg

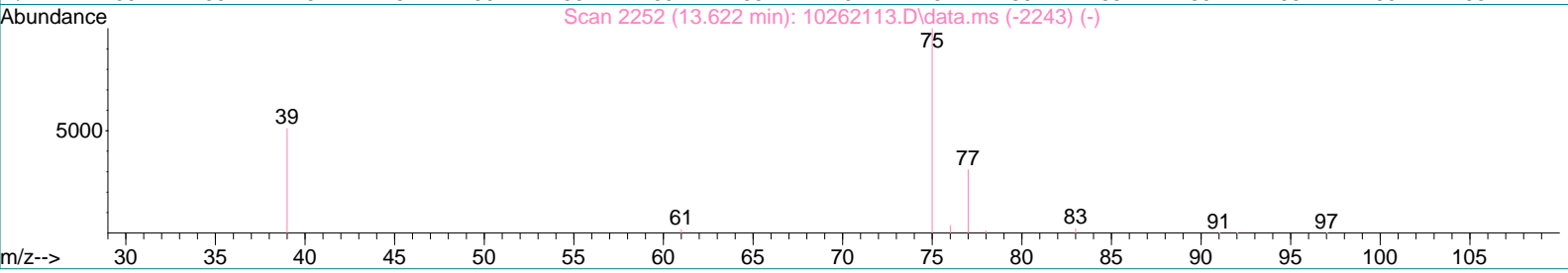
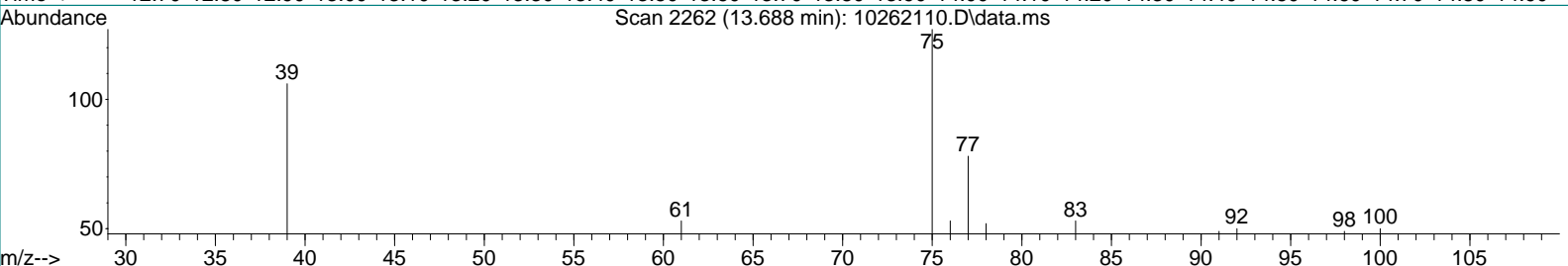
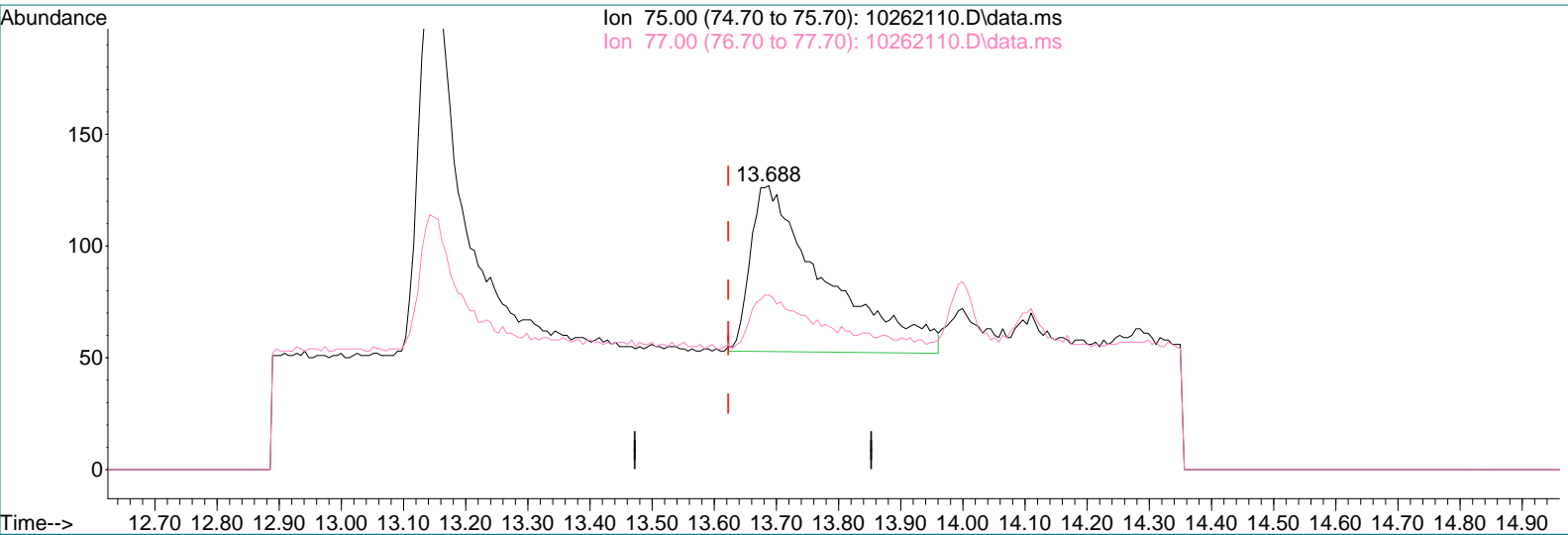
response 498

Ion	Exp%	Act%
75.00	100	100
77.00	31.50	29.72
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262110.D
 Acq On : 26 Oct 2021 17:31
 Sample : 50pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252106 (11/24)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:43:10 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262110.D\data.ms

(31) trans-1,3-Dichloropropene (T)

13.688min (+0.065) 29.02pg m

response 620

BLC

Ion	Exp%	Act%
75.00	100	100
77.00	31.50	34.35
0.00	0.00	0.00
0.00	0.00	0.00

TZ 10/27/21

107 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262122.D
 Acq On : 27 Oct 2021 9:11
 Sample : 100pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10272101 (11/26)

Vial: 9
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 10:20:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:52:55 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	20106	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.56	114	86684	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	15.90	54	21747	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	40145	880.787	pg	-0.02
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	88.08%	
33) Toluene-d8 (SS2)	13.99	98	99535	1026.265	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	102.63%	
45) Bromofluorobenzene (SS3)	17.42	174	25046	864.803	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	86.48%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.33	85	6716	98.147	pg	100
3) Chloromethane	4.55	52	681m	39.128	pg	
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	6319	94.702	pg	99
5) Vinyl Chloride	4.84	62	6657	90.376	pg	91
6) 1,3-Butadiene	5.02	54	2898	82.367	pg	98
7) Bromomethane	5.35	94	1624	73.972	pg	99
8) Chloroethane	5.58	64	1422	77.849	pg	99
9) Acrolein	6.16	56	1864	132.522	pg	97
10) Acetone	6.29	58	8928	463.187	pg	99
11) Trichlorofluoromethane	6.47	101	3966	89.360	pg	100
12) 1,1-Dichloroethene	7.20	96	2266	93.832	pg	99
13) Methylene Chloride	7.34	84	2753	92.844	pg	99
14) Trichlorotrifluoroethane	7.65	151	2053	97.735	pg	100
15) trans-1,2-Dichloroethene	8.38	96	2311	91.815	pg	98
16) 1,1-Dichloroethane	8.57	63	4659	91.562	pg	99
17) Methyl tert-Butyl Ether	8.67	73	6608	90.651	pg	99
18) cis-1,2-Dichloroethene	9.45	96	2801	104.039	pg	100
19) Chloroform	9.74	83	5662	110.221	pg	99
21) 1,2-Dichloroethane	10.50	62	3882	93.197	pg	100
22) 1,1,1-Trichloroethane	10.76	97	4091	93.641	pg	100
23) Benzene	11.22	78	10720	88.976	pg	100
24) Carbon Tetrachloride	11.37	117	3204	90.709	pg	99
26) 1,2-Dichloropropane	12.03	63	2734	104.931	pg	99
27) Bromodichloromethane	12.21	83	3665	103.947	pg	100
28) Trichloroethene	12.27	130	2275	101.332	pg	99
29) 1,4-Dioxane	12.26	88	1899	98.081	pg	99
30) cis-1,3-Dichloropropene	13.12	75	3231	93.744	pg	100
31) trans-1,3-Dichloropropene	13.64	75	2387	80.779	pg	99
32) 1,1,2-Trichloroethane	13.80	83	2228	106.080	pg	98
34) Toluene	14.10	91	10871	111.368	pg	100
35) Dibromochloromethane	14.52	129	2371	106.544	pg	99
36) 1,2-Dibromoethane	14.77	107	2435	106.340	pg	99
37) Tetrachloroethene	15.25	166	2247	111.494	pg	100
39) Chlorobenzene	15.95	112	7731	112.522	pg	99
40) Ethylbenzene	16.34	91	11723	101.988	pg	99
41) m,p-Xylene	16.51	91	18373	202.329	pg	98
42) Styrene	16.87	104	5217	80.832	pg	100
43) o-Xylene	16.98	106	4279	95.941	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	5268	113.786	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	7884	75.321	pg	100
47) 1,2,4-Trimethylbenzene	18.65	105	7880	73.343	pg	100
48) 1,3-Dichlorobenzene	18.80	146	4699	92.963	pg	100
49) 1,4-Dichlorobenzene	18.86	146	4798	92.061	pg	99
50) 1,2-Dichlorobenzene	19.19	146	4807	97.267	pg	99
51) 1,2-Dibromo-3-chloropr...	19.60	157	2815	175.539	pg	96
52) 1,2,4-Trichlorobenzene	20.81	182	4906	185.325	pg	99
53) Naphthalene	20.93	128	8295	80.643	pg	100

Data File : I:\MS19\DATA\2021 10\26\10262122.D
 Acq On : 27 Oct 2021 9:11
 Sample : 100pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10272101 (11/26)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:20:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:52:55 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

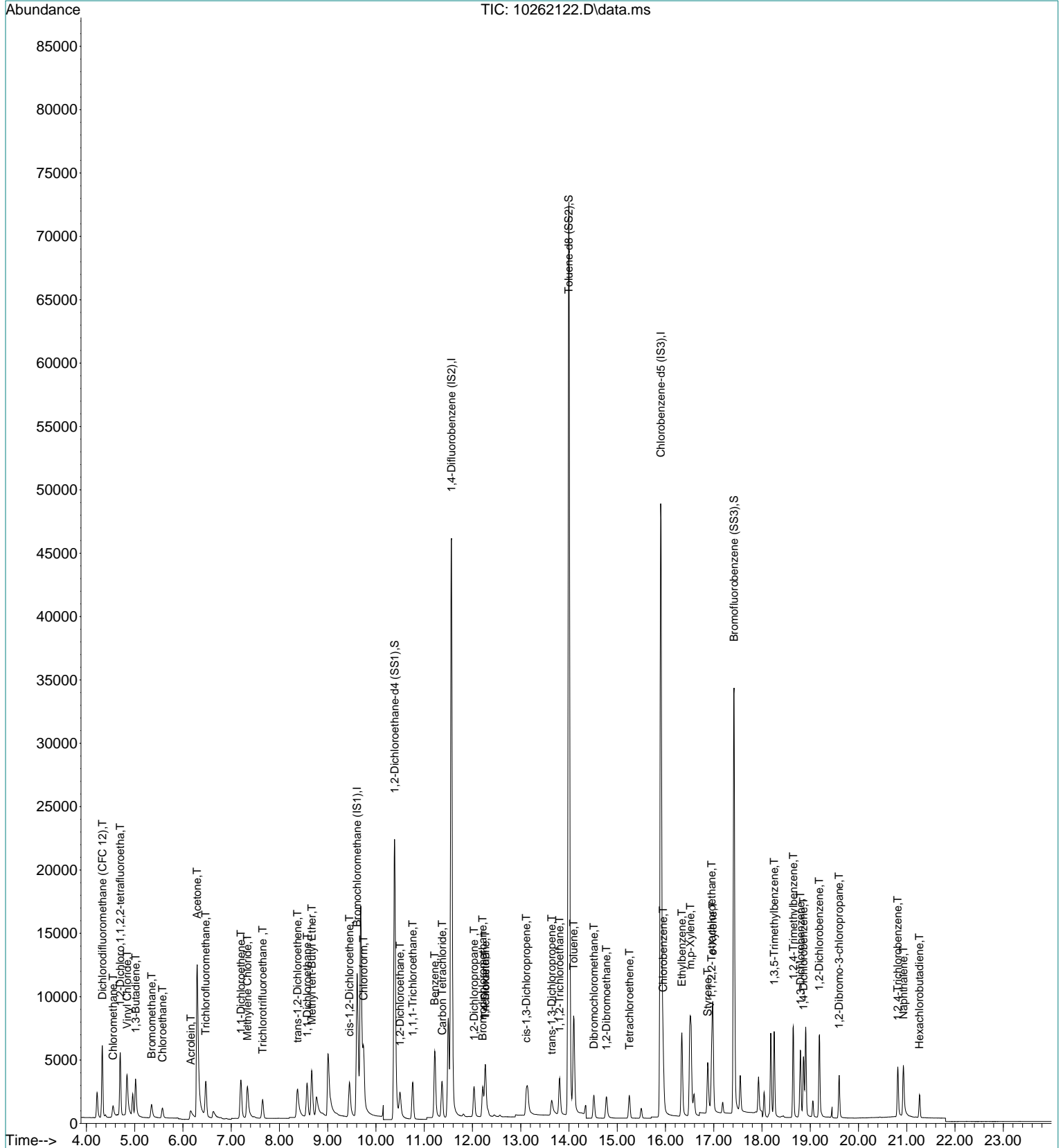
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	1694	93.160	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262122.D
 Acq On : 27 Oct 2021 9:11
 Sample : 100pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10272101 (11/26)

Vial: 9
 Operator: TZ
 Inst : MS19

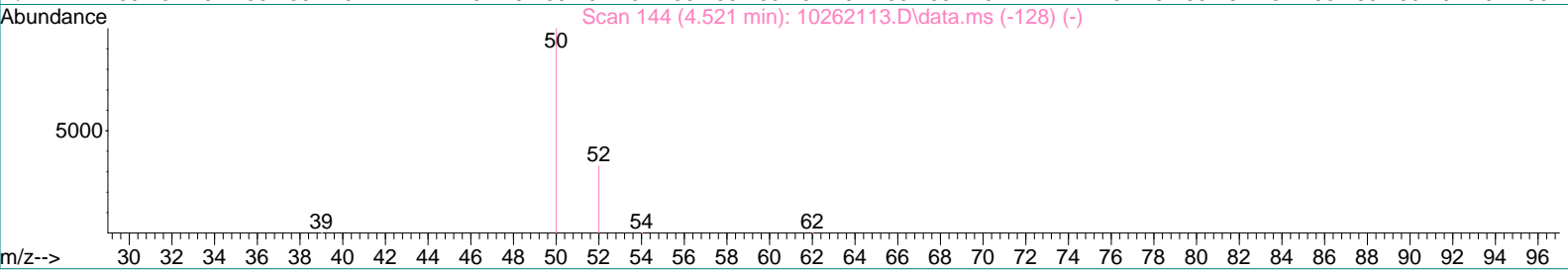
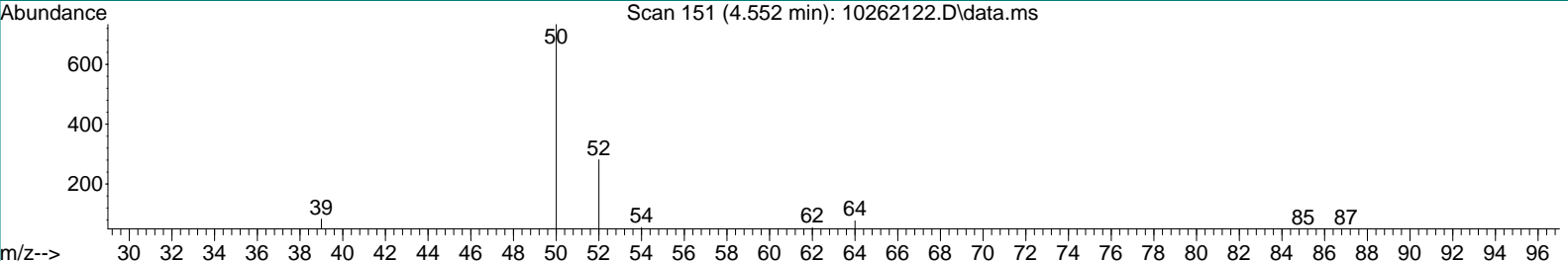
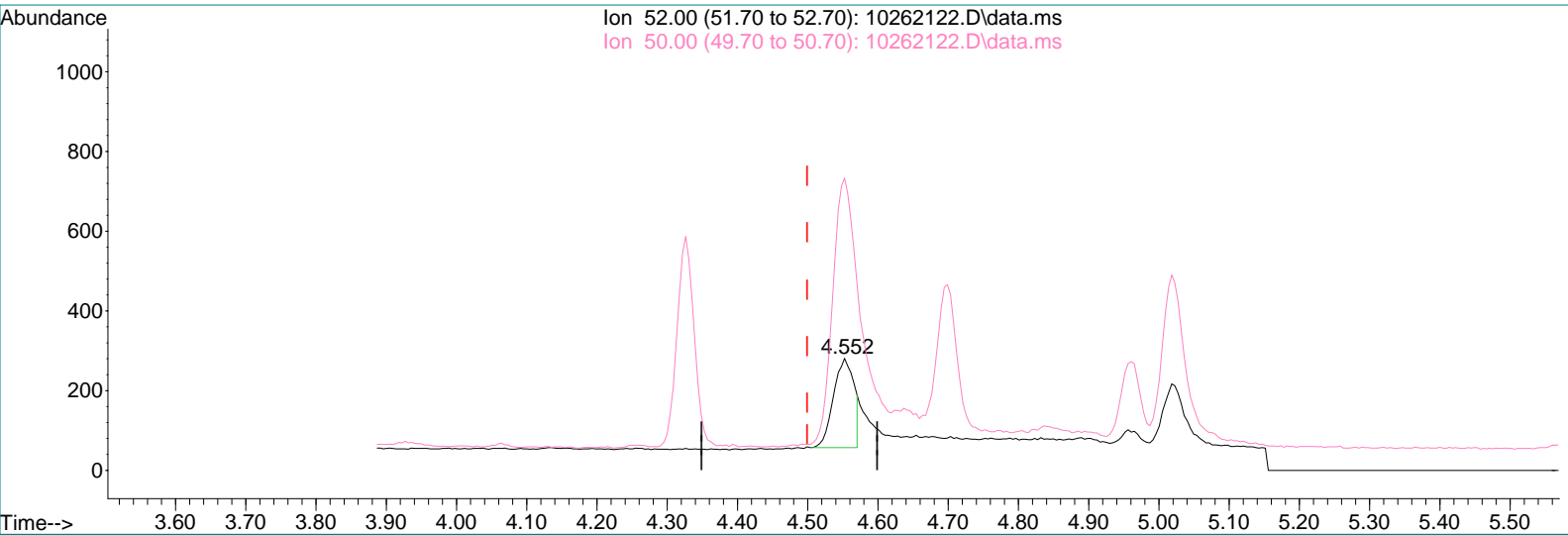
Quant Time: Oct 27 10:20:09 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:52:55 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262122.D
 Acq On : 27 Oct 2021 9:11
 Sample : 100pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10272101 (11/26)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:15:22 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:52:55 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262122.D\data.ms

(3) Chloromethane (T)

4.552min (+0.053) 26.26pg

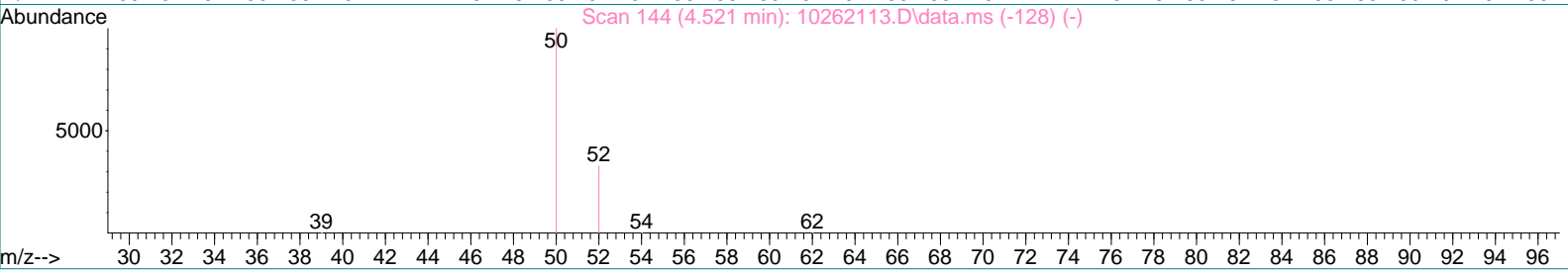
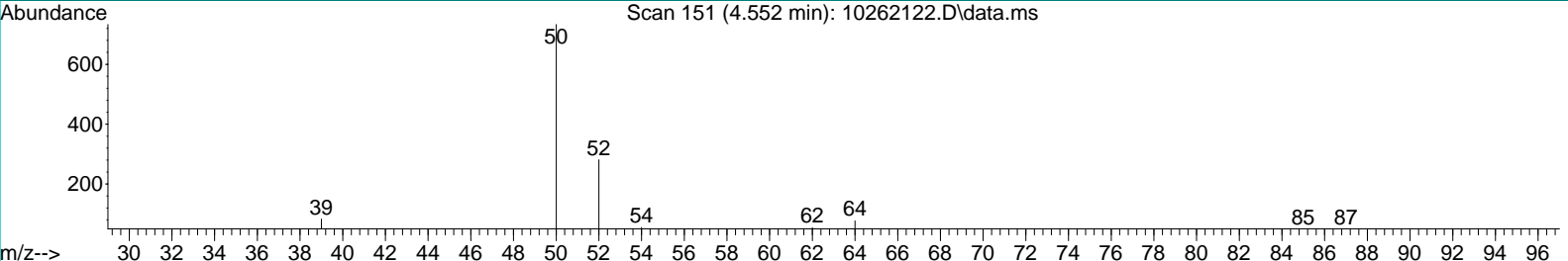
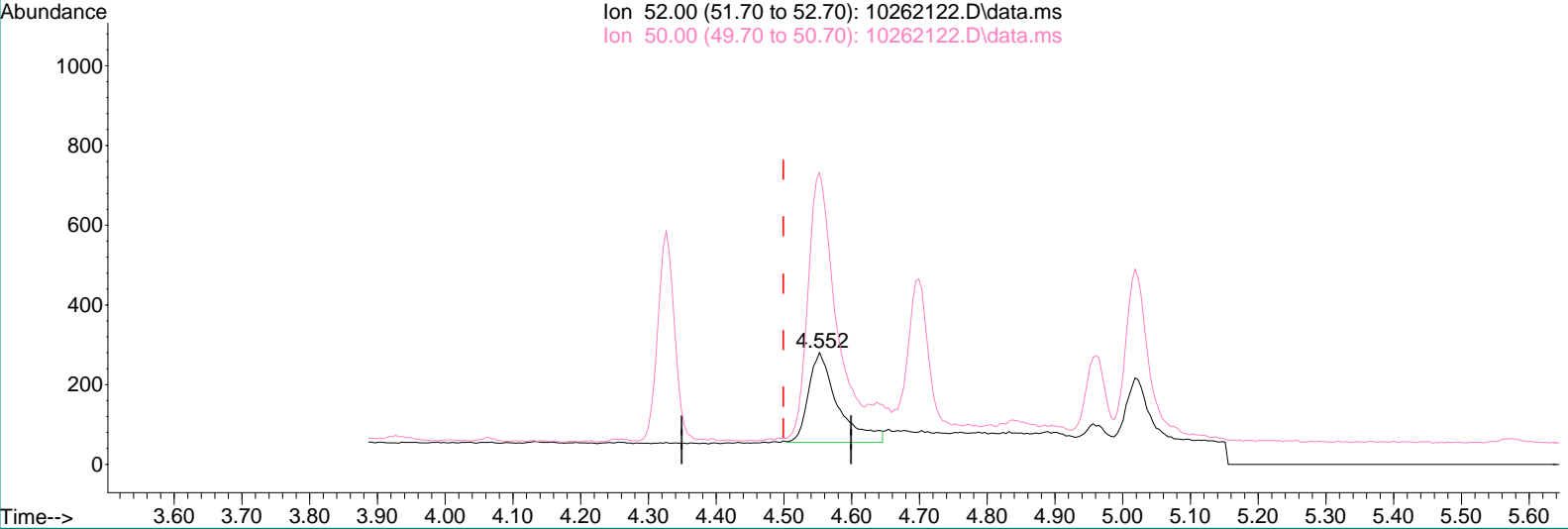
response 457

Ion	Exp%	Act%
52.00	100	100
50.00	306.20	308.75
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2021 10\26\10262122.D
 Acq On : 27 Oct 2021 9:11
 Sample : 100pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10272101 (11/26)

Vial: 9
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 10:15:22 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:52:55 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10262122.D\data.ms

(3) Chloromethane (T)

4.552min (+0.053) 39.13pg m

response 681

Ion	Exp%	Act%
52.00	100	100
50.00	306.20	280.32#
0.00	0.00	0.00
0.00	0.00	0.00

IC-
TZ 10/27/21

DA 11/3/21

Data File : I:\MS19\DATA\2021 10\26\10262112.D
 Acq On : 26 Oct 2021 18:33
 Sample : 500pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:41 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	14028	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.56	114	71872	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	16110	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	32034	1216.256	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	121.63%		
33) Toluene-d8 (SS2)	14.00	98	79879	1013.549	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	101.35%		
45) Bromofluorobenzene (SS3)	17.42	174	20734	780.407	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	78.04%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	28136	788.473	pg	100
3) Chloromethane	4.53	52	7236	899.034	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	28851	691.040	pg	100
5) Vinyl Chloride	4.82	62	31547	748.487	pg	98
6) 1,3-Butadiene	5.00	54	14846	615.907	pg	99
7) Bromomethane	5.33	94	9355	699.464	pg	100
8) Chloroethane	5.56	64	8396	792.341	pg	100
9) Acrolein	6.13	56	12646	1512.652	pg	97
10) Acetone	6.26	58	44667	4062.093	pg	94
11) Trichlorofluoromethane	6.46	101	20992	666.571	pg	100
12) 1,1-Dichloroethene	7.19	96	10163	570.049	pg	100
13) Methylene Chloride	7.33	84	11964	585.392	pg	100
14) Trichlorotrifluoroethane	7.65	151	8796	532.052	pg	100
15) trans-1,2-Dichloroethene	8.36	96	10678	571.059	pg	100
16) 1,1-Dichloroethane	8.57	63	21449	649.454	pg	100
17) Methyl tert-Butyl Ether	8.65	73	30146	568.947	pg	100
18) cis-1,2-Dichloroethene	9.45	96	11327	571.021	pg	99
19) Chloroform	9.74	83	21777	632.088	pg	100
21) 1,2-Dichloroethane	10.50	62	17996	673.631	pg	99
22) 1,1,1-Trichloroethane	10.76	97	17851	567.152	pg	100
23) Benzene	11.22	78	46376	600.154	pg	100
24) Carbon Tetrachloride	11.37	117	14115	553.826	pg	100
26) 1,2-Dichloropropane	12.03	63	12207	598.004	pg	100
27) Bromodichloromethane	12.21	83	16506	561.715	pg	100
28) Trichloroethene	12.27	130	10462	491.122	pg	100
29) 1,4-Dioxane	12.25	88	8554	511.699	pg	99
30) cis-1,3-Dichloropropene	13.11	75	15906	541.777	pg	100
31) trans-1,3-Dichloropropene	13.63	75	14241	573.254	pg	100
32) 1,1,2-Trichloroethane	13.80	83	11151	632.656	pg	99
34) Toluene	14.10	91	45690	525.223	pg	100
35) Dibromochloromethane	14.51	129	10722	505.101	pg	100
36) 1,2-Dibromoethane	14.77	107	11239	515.995	pg	100
37) Tetrachloroethene	15.25	166	9629	472.137	pg	99
39) Chlorobenzene	15.95	112	28535	440.044	pg	100
40) Ethylbenzene	16.34	91	45986	449.570	pg	100
41) m,p-Xylene	16.51	91	77114	963.787	pg	98
42) Styrene	16.87	104	23180	403.568	pg	100
43) o-Xylene	16.98	106	17632	467.603	pg	100
44) 1,1,2,2-Tetrachloroethane	16.95	83	20332	503.263	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	38682	482.740	pg	99
47) 1,2,4-Trimethylbenzene	18.65	105	37021	443.190	pg	99
48) 1,3-Dichlorobenzene	18.79	146	20455	425.633	pg	100
49) 1,4-Dichlorobenzene	18.86	146	20708	422.085	pg	100
50) 1,2-Dichlorobenzene	19.18	146	20420	428.215	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	12454	817.652	pg	99
52) 1,2,4-Trichlorobenzene	20.81	182	19989	709.340	pg	100
53) Naphthalene	20.92	128	34426	332.541	pg	99

Data File : I:\MS19\DATA\2021 10\26\10262112.D
 Acq On : 26 Oct 2021 18:33
 Sample : 500pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:41 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

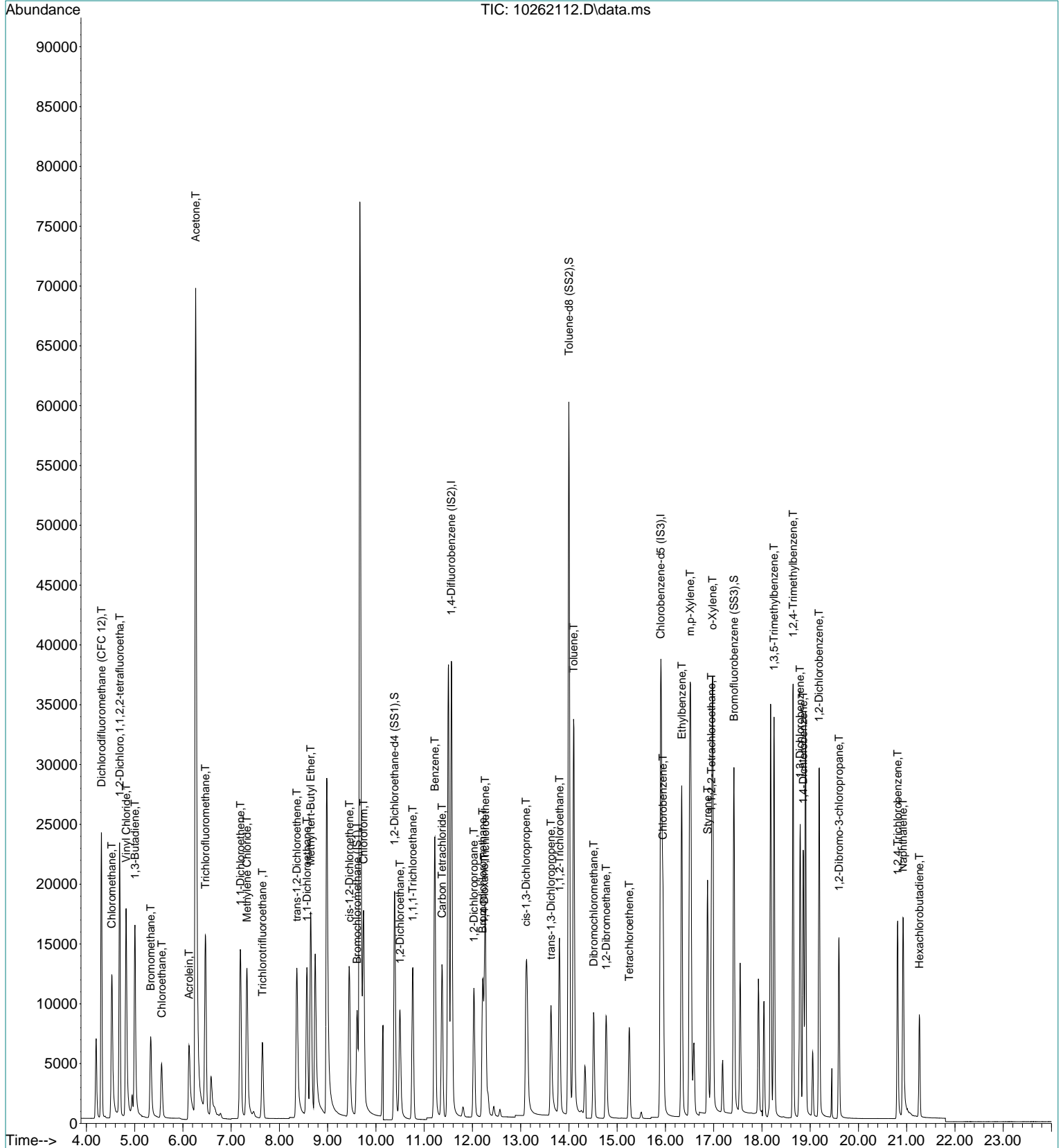
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	8129	484.890	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262112.D
Acq On : 26 Oct 2021 18:33
Sample : 500pg S19102621 ICAL Std.
Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
Operator: TZ
Inst : MS19

Quant Time: Oct 27 07:46:41 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 07:46:22 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262113.D
 Acq On : 26 Oct 2021 19:05
 Sample : 1000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 07:46:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	14848	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.56	114	76794	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	17121	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	34054	1221.546	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	122.15%		
33) Toluene-d8 (SS2)	14.00	98	85120	1010.826	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	101.08%		
45) Bromofluorobenzene (SS3)	17.42	174	22348	791.486	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	79.15%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	53722	1422.344	pg	100
3) Chloromethane	4.52	52	13371	1569.529	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	54622	1236.054	pg	100
5) Vinyl Chloride	4.81	62	60213	1349.722	pg	99
6) 1,3-Butadiene	5.00	54	39610	1552.523	pg	100
7) Bromomethane	5.32	94	17656	1247.215	pg	100
8) Chloroethane	5.55	64	14706	1311.179	pg	100
9) Acrolein	6.12	56	20988	2371.836	pg	99
10) Acetone	6.26	58	70874	6089.446	pg	100
11) Trichlorofluoromethane	6.46	101	33754	1012.617	pg	100
12) 1,1-Dichloroethene	7.19	96	20297	1075.597	pg	100
13) Methylene Chloride	7.32	84	23533	1087.867	pg	100
14) Trichlorotrifluoroethane	7.65	151	17248	985.679	pg	100
15) trans-1,2-Dichloroethene	8.36	96	21496	1086.117	pg	100
16) 1,1-Dichloroethane	8.57	63	42103	1204.431	pg	100
17) Methyl tert-Butyl Ether	8.64	73	63021	1123.713	pg	100
18) cis-1,2-Dichloroethene	9.44	96	22466	1070.018	pg	100
19) Chloroform	9.74	83	42868	1175.549	pg	100
21) 1,2-Dichloroethane	10.49	62	35470	1254.397	pg	100
22) 1,1,1-Trichloroethane	10.76	97	35253	1058.183	pg	100
23) Benzene	11.22	78	92730	1133.750	pg	100
24) Carbon Tetrachloride	11.37	117	27798	1030.466	pg	100
26) 1,2-Dichloropropane	12.03	63	24030	1101.746	pg	100
27) Bromodichloromethane	12.21	83	32726	1042.317	pg	100
28) Trichloroethene	12.27	130	20780	912.962	pg	100
29) 1,4-Dioxane	12.24	88	17660	988.710	pg	100
30) cis-1,3-Dichloropropene	13.11	75	33395	1064.568	pg	100
31) trans-1,3-Dichloropropene	13.62	75	28076	1057.729	pg	100
32) 1,1,2-Trichloroethane	13.80	83	19704	1046.262	pg	100
34) Toluene	14.10	91	91411	983.452	pg	100
35) Dibromochloromethane	14.51	129	21323	940.119	pg	100
36) 1,2-Dibromoethane	14.77	107	22718	976.159	pg	100
37) Tetrachloroethene	15.25	166	18724	859.246	pg	100
39) Chlorobenzene	15.95	112	56823	824.535	pg	100
40) Ethylbenzene	16.33	91	97225	894.367	pg	100
41) m,p-Xylene	16.51	91	158434	1863.213	pg	100
42) Styrene	16.87	104	51880	849.904	pg	100
43) o-Xylene	16.98	106	37038	924.250	pg	100
44) 1,1,2,2-Tetrachloroethane	16.95	83	41005	955.033	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	95861	1125.674	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	97908	1102.876	pg	100
48) 1,3-Dichlorobenzene	18.79	146	52008	1018.291	pg	100
49) 1,4-Dichlorobenzene	18.86	146	51216	982.276	pg	100
50) 1,2-Dichlorobenzene	19.18	146	42003	828.806	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	26433	1632.949	pg	100
52) 1,2,4-Trichlorobenzene	20.81	182	43132	1440.222	pg	100
53) Naphthalene	20.92	128	80199	728.943	pg	100

Data File : I:\MS19\DATA\2021 10\26\10262113.D
 Acq On : 26 Oct 2021 19:05
 Sample : 1000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

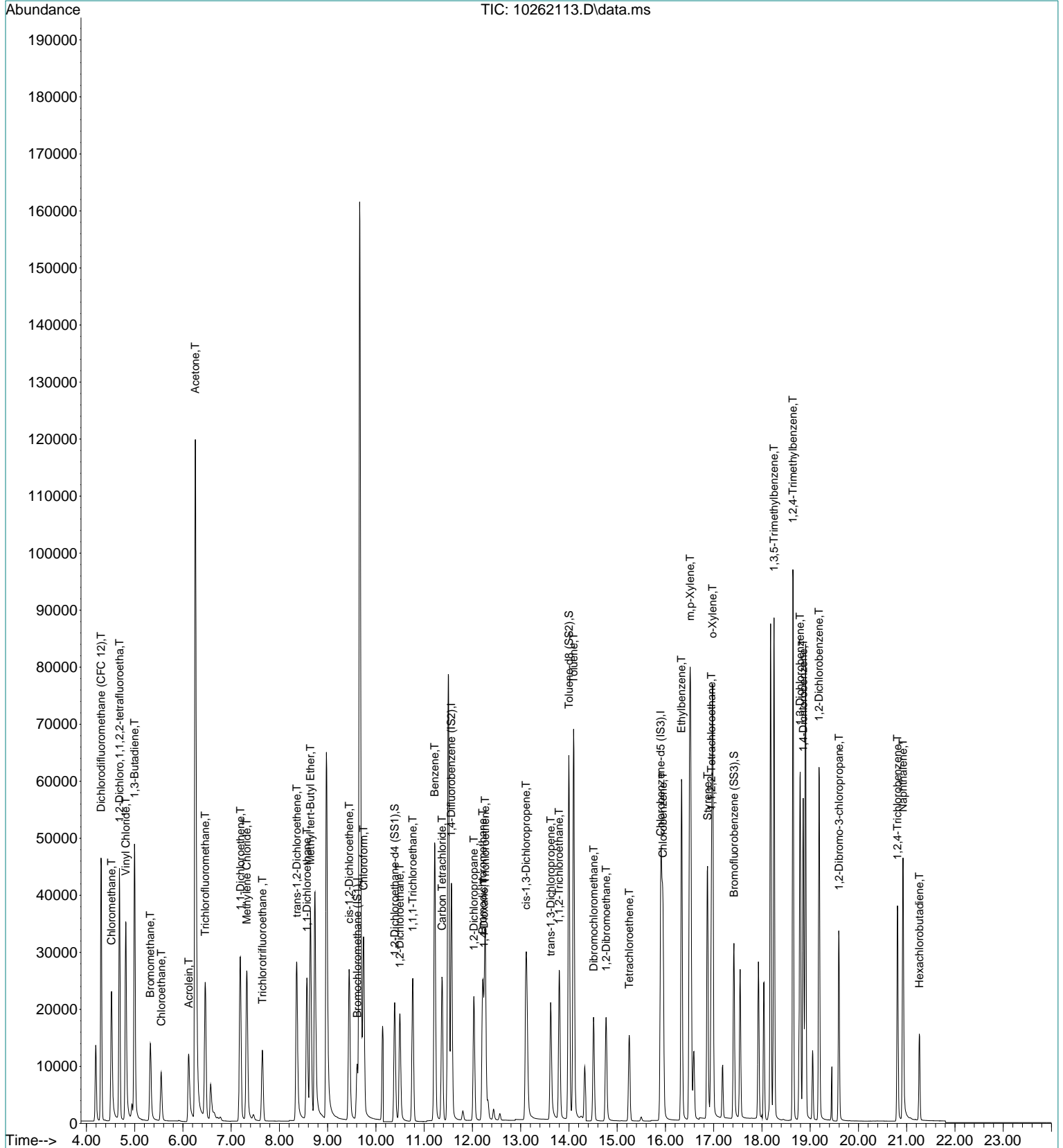
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	14106	791.728	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262113.D
 Acq On : 26 Oct 2021 19:05
 Sample : 1000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 10
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:42 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262114.D
 Acq On : 26 Oct 2021 19:36
 Sample : 5000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.62	130	17187	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.57	114	89374	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	19815	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	38240	1185.024	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	118.50%
33) Toluene-d8 (SS2)	14.00	98	99922	1019.581	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.96%
45) Bromofluorobenzene (SS3)	17.42	174	34645	1060.181	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	106.02%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	273006	6244.424	pg	100
3) Chloromethane	4.50	52	70367	7135.794	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	281127	5495.920	pg	100
5) Vinyl Chloride	4.80	62	311277	6027.941	pg	100
6) 1,3-Butadiene	4.99	54	157199	5322.933	pg	98
7) Bromomethane	5.32	94	77988	4759.319	pg	100
8) Chloroethane	5.54	64	67140	5171.500	pg	100
9) Acrolein	6.11	56	125709	12272.921	pg	100
10) Acetone	6.26	58	407205	30225.385	pg	96
11) Trichlorofluoromethane	6.46	101	187490	4859.216	pg	100
12) 1,1-Dichloroethene	7.18	96	117526	5380.462	pg	99
13) Methylene Chloride	7.33	84	132948	5309.432	pg	99
14) Trichlorotrifluoroethane	7.65	151	96487	4763.580	pg	100
15) trans-1,2-Dichloroethene	8.36	96	123598	5395.085	pg	98
16) 1,1-Dichloroethane	8.58	63	234196	5787.836	pg	100
17) Methyl tert-Butyl Ether	8.64	73	391799	6035.335	pg	99
18) cis-1,2-Dichloroethene	9.45	96	133149	5478.619	pg	99
19) Chloroform	9.75	83	243337	5764.789	pg	99
21) 1,2-Dichloroethane	10.50	62	197659	6038.905	pg	100
22) 1,1,1-Trichloroethane	10.77	97	201583	5227.407	pg	100
23) Benzene	11.22	78	535625	5657.514	pg	100
24) Carbon Tetrachloride	11.38	117	160621	5143.872	pg	100
26) 1,2-Dichloropropane	12.03	63	157345	6198.642	pg	99
27) Bromodichloromethane	12.21	83	208980	5719.101	pg	100
28) Trichloroethene	12.27	130	136055	5136.152	pg	100
29) 1,4-Dioxane	12.23	88	122726	5903.788	pg	98
30) cis-1,3-Dichloropropene	13.11	75	218024	5971.899	pg	100
31) trans-1,3-Dichloropropene	13.62	75	193813	6273.907	pg	100
32) 1,1,2-Trichloroethane	13.80	83	113392	5173.501	pg	98
34) Toluene	14.09	91	550178	5085.972	pg	99
35) Dibromochloromethane	14.51	129	131358	4976.307	pg	100
36) 1,2-Dibromoethane	14.77	107	138685	5120.309	pg	99
37) Tetrachloroethene	15.25	166	110136	4342.745	pg	99
39) Chlorobenzene	15.95	112	342687	4296.528	pg	100
40) Ethylbenzene	16.34	91	635210	5048.824	pg	99
41) m,p-Xylene	16.51	91	1019231	10356.710	pg	99
42) Styrene	16.87	104	375207	5310.995	pg	100
43) o-Xylene	16.98	106	238518	5142.784	pg	98
44) 1,1,2,2-Tetrachloroethane	16.95	83	249869	5028.388	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	613427	6223.984	pg	98
47) 1,2,4-Trimethylbenzene	18.64	105	639759	6226.730	pg	99
48) 1,3-Dichlorobenzene	18.79	146	333506	5642.096	pg	100
49) 1,4-Dichlorobenzene	18.85	146	330995	5485.096	pg	100
50) 1,2-Dichlorobenzene	19.18	146	328470	5600.200	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	220920	11792.238	pg	83
52) 1,2,4-Trichlorobenzene	20.81	182	391674	11300.293	pg	99
53) Naphthalene	20.92	128	732076	5749.314	pg	100

Data File : I:\MS19\DATA\2021 10\26\10262114.D
 Acq On : 26 Oct 2021 19:36
 Sample : 5000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:44 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

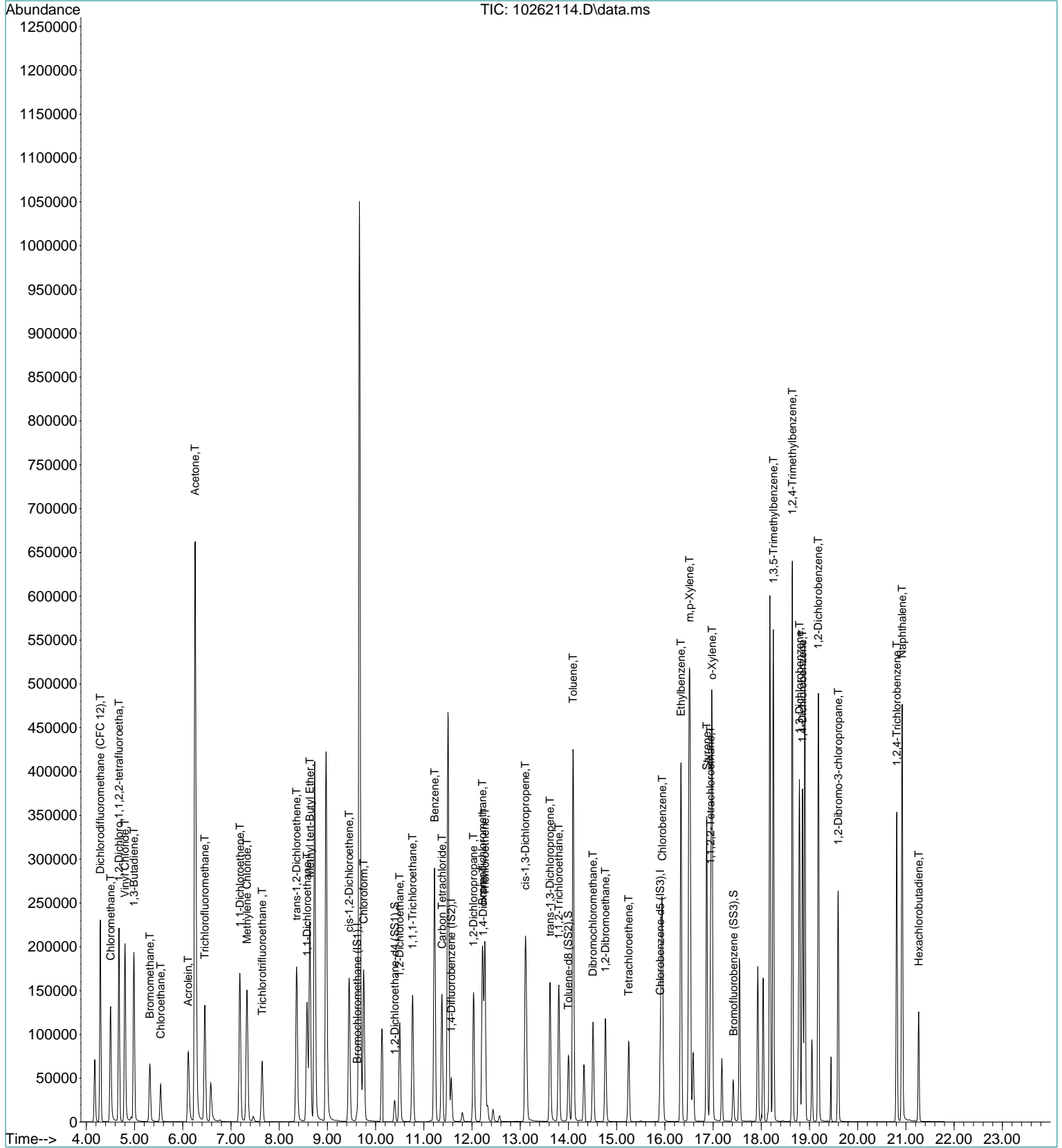
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.27	225	114621	5558.678	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262114.D
Acq On : 26 Oct 2021 19:36
Sample : 5000pg S19102621 ICAL Std.
Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
Operator: TZ
Inst : MS19

Quant Time: Oct 27 07:46:44 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 07:46:22 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262116.D
 Acq On : 26 Oct 2021 20:39
 Sample : 10000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 07:46:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.62	130	19133	1000.000	pg	0.01
25) 1,4-Difluorobenzene (IS2)	11.57	114	97689	1000.000	pg	0.01
38) Chlorobenzene-d5 (IS3)	15.90	54	22033	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	40772	1134.981	pg	0.01
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	113.50%
33) Toluene-d8 (SS2)	14.00	98	110486	1031.415	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	103.14%
45) Bromofluorobenzene (SS3)	17.42	174	35333	972.390	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	97.24%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.29	85	554202	11386.895	pg	100
3) Chloromethane	4.50	52	131714	11998.369	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.68	85	562798	9883.424	pg	100
5) Vinyl Chloride	4.81	62	623018	10837.761	pg	100
6) 1,3-Butadiene	4.99	54	346035	10525.391	pg	97
7) Bromomethane	5.32	94	194360	10654.692	pg	100
8) Chloroethane	5.55	64	170047	11765.792	pg	100
9) Acrolein	6.12	56	286385	25115.905	pg	100
10) Acetone	6.27	58	861287	57427.993	pg	92
11) Trichlorofluoromethane	6.46	101	387108	9012.332	pg	100
12) 1,1-Dichloroethene	7.19	96	248523	10220.431	pg	97
13) Methylene Chloride	7.34	84	279472	10025.857	pg	97
14) Trichlorotrifluoroethane	7.65	151	205507	9113.985	pg	100
15) trans-1,2-Dichloroethene	8.37	96	263219	10320.985	pg	98
16) 1,1-Dichloroethane	8.58	63	486238	10794.502	pg	100
17) Methyl tert-Butyl Ether	8.64	73	833873	11538.649	pg	99
18) cis-1,2-Dichloroethene	9.46	96	285193	10541.177	pg	99
19) Chloroform	9.76	83	508928	10830.503	pg	99
21) 1,2-Dichloroethane	10.51	62	408699	11216.624	pg	99
22) 1,1,1-Trichloroethane	10.77	97	428010	9970.187	pg	100
23) Benzene	11.23	78	1148134	10893.674	pg	100
24) Carbon Tetrachloride	11.38	117	343386	9878.418	pg	100
26) 1,2-Dichloropropane	12.03	63	310929	11206.510	pg	99
27) Bromodichloromethane	12.22	83	435924	10914.388	pg	100
28) Trichloroethene	12.27	130	269072	9293.031	pg	100
29) 1,4-Dioxane	12.23	88	258369	11371.038	pg	98
30) cis-1,3-Dichloropropene	13.11	75	483210	12109.037	pg	100
31) trans-1,3-Dichloropropene	13.62	75	429280	12713.390	pg	100
32) 1,1,2-Trichloroethane	13.80	83	241904	10097.426	pg	97
34) Toluene	14.10	91	1184587	10018.512	pg	99
35) Dibromochloromethane	14.51	129	288693	10005.815	pg	100
36) 1,2-Dibromoethane	14.77	107	302716	10225.101	pg	100
37) Tetrachloroethene	15.25	166	241728	8720.221	pg	100
39) Chlorobenzene	15.95	112	753598	8497.285	pg	100
40) Ethylbenzene	16.33	91	1388269	9923.549	pg	98
41) m,p-Xylene	16.51	91	2228372	20363.730	pg	98
42) Styrene	16.87	104	842234	10721.564	pg	100
43) o-Xylene	16.98	106	523738	10155.742	pg	96
44) 1,1,2,2-Tetrachloroethane	16.95	83	538070	9738.131	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	1183094	10795.563	pg	98
47) 1,2,4-Trimethylbenzene	18.64	105	1288058	11274.556	pg	99
48) 1,3-Dichlorobenzene	18.79	146	641858	9765.539	pg	100
49) 1,4-Dichlorobenzene	18.86	146	617042	9195.979	pg	100
50) 1,2-Dichlorobenzene	19.18	146	633581	9714.723	pg	100
51) 1,2-Dibromo-3-chloropr...	19.59	157	421613	20239.307	pg	87
52) 1,2,4-Trichlorobenzene	20.81	182	765180	19854.045	pg	99
53) Naphthalene	20.92	128	1437360	10151.866	pg	99

Data File : I:\MS19\DATA\2021 10\26\10262116.D
 Acq On : 26 Oct 2021 20:39
 Sample : 10000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

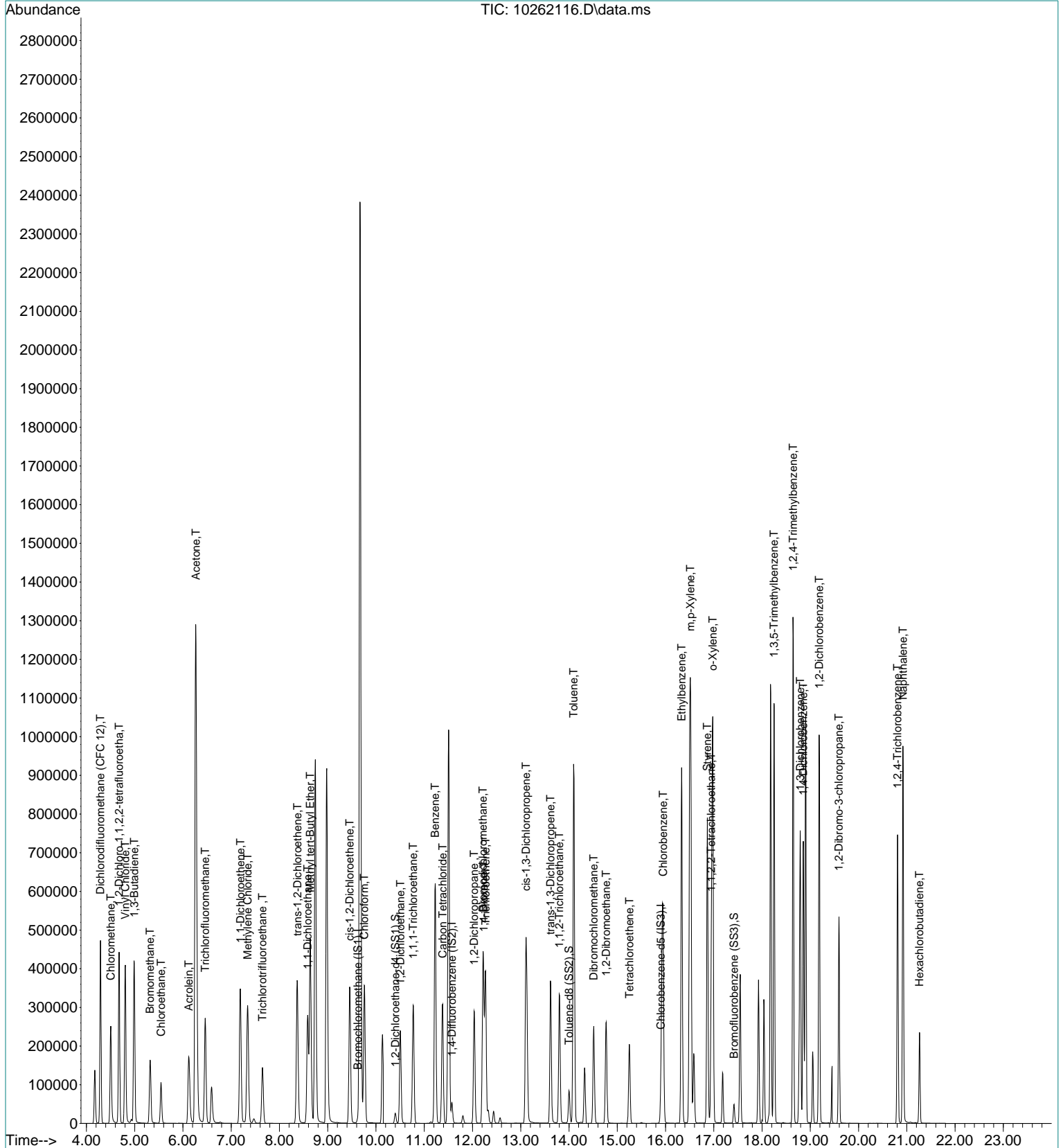
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	205821	8976.716	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262116.D
 Acq On : 26 Oct 2021 20:39
 Sample : 10000pg S19102621 ICAL Std.
 Misc : S34-10062101/S34-10252102 (11/24)

Vial: 11
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 07:46:46 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 07:46:22 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 10\26\10262124.D
 Acq On : 27 Oct 2021 11:10
 Sample : 1000pg S19102621 ICV Std.
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

TZ 10/27/21

Quant Time: Oct 27 11:35:01 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	15645	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	81217	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	19926	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	35293	1016.680	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	101.67%
33) Toluene-d8 (SS2)	14.00	98	101013	1113.423	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	111.34%
45) Bromofluorobenzene (SS3)	17.42	174	24067	900.138	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	90.01%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	53054	1032.794	pg	100
3) Chloromethane	4.53	52	13337	1118.712	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	53983	1086.238	pg	100
5) Vinyl Chloride	4.82	62	60771	1111.691	pg	99
6) 1,3-Butadiene	5.00	54	28609	1010.616	pg	97
7) Bromomethane	5.33	94	14397	901.370	pg	99
8) Chloroethane	5.56	64	12641	937.597	pg	100
9) Acrolein	6.12	56	20908	2052.267	pg	100
10) Acetone	6.26	58	70552	4914.661	pg	98
11) Trichlorofluoromethane	6.47	101	33942	1013.614	pg	100
12) 1,1-Dichloroethene	7.19	96	20584	1125.667	pg	99
13) Methylene Chloride	7.33	84	23567	1049.249	pg	99
14) Trichlorotrifluoroethane	7.65	151	17286	1090.607	pg	100
15) trans-1,2-Dichloroethene	8.36	96	20999	1107.981	pg	99
16) 1,1-Dichloroethane	8.57	63	42670	1115.224	pg	100
17) Methyl tert-Butyl Ether	8.64	73	62233	1114.633	pg	99
18) cis-1,2-Dichloroethene	9.45	96	23044	1106.073	pg	99
19) Chloroform	9.74	83	43253	1090.483	pg	100
21) 1,2-Dichloroethane	10.50	62	35271	1124.649	pg	100
22) 1,1,1-Trichloroethane	10.76	97	35912	1084.761	pg	100
23) Benzene	11.22	78	95263	1041.591	pg	100
24) Carbon Tetrachloride	11.37	117	27291	1020.011	pg	100
26) 1,2-Dichloropropane	12.03	63	24659	1021.713	pg	100
27) Bromodichloromethane	12.21	83	33118	1014.446	pg	99
28) Trichloroethene	12.27	130	21506	1033.323	pg	100
29) 1,4-Dioxane	12.24	88	18049	995.840	pg	99
30) cis-1,3-Dichloropropene	13.11	75	33821	1049.514	pg	100
31) trans-1,3-Dichloropropene	13.62	75	31008	1095.981	pg	99
32) 1,1,2-Trichloroethane	13.80	83	22275	1145.854	pg	98
34) Toluene	14.10	91	113482	1243.945	pg	99
35) Dibromochloromethane	14.51	129	26035	1261.095	pg	99
36) 1,2-Dibromoethane	14.77	107	27940	1312.982	pg	99
37) Tetrachloroethene	15.25	166	24428	1307.541	pg	98
39) Chlorobenzene	15.95	112	66648	1057.173	pg	100
40) Ethylbenzene	16.33	91	100685	926.064	pg	100
41) m,p-Xylene	16.51	91	163143	1888.400	pg	100
42) Styrene	16.87	104	51871	842.291	pg	99
43) o-Xylene	16.98	106	38214	898.071	pg	100
44) 1,1,2,2-Tetrachloroethane	16.95	83	41588	959.085	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	83607	852.694	pg	99
47) 1,2,4-Trimethylbenzene	18.64	105	83028	817.756	pg	99
48) 1,3-Dichlorobenzene	18.79	146	42421	898.750	pg	100
49) 1,4-Dichlorobenzene	18.86	146	41938	862.434	pg	100
50) 1,2-Dichlorobenzene	19.18	146	41341	892.198	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	25604	1685.488	pg	99
52) 1,2,4-Trichlorobenzene	20.81	182	43154	1670.625	pg	100
53) Naphthalene	20.92	128	78278	765.512	pg	100

Data File : I:\MS19\DATA\2021 10\26\10262124.D
 Acq On : 27 Oct 2021 11:10
 Sample : 1000pg S19102621 ICV Std.
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 11:35:01 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

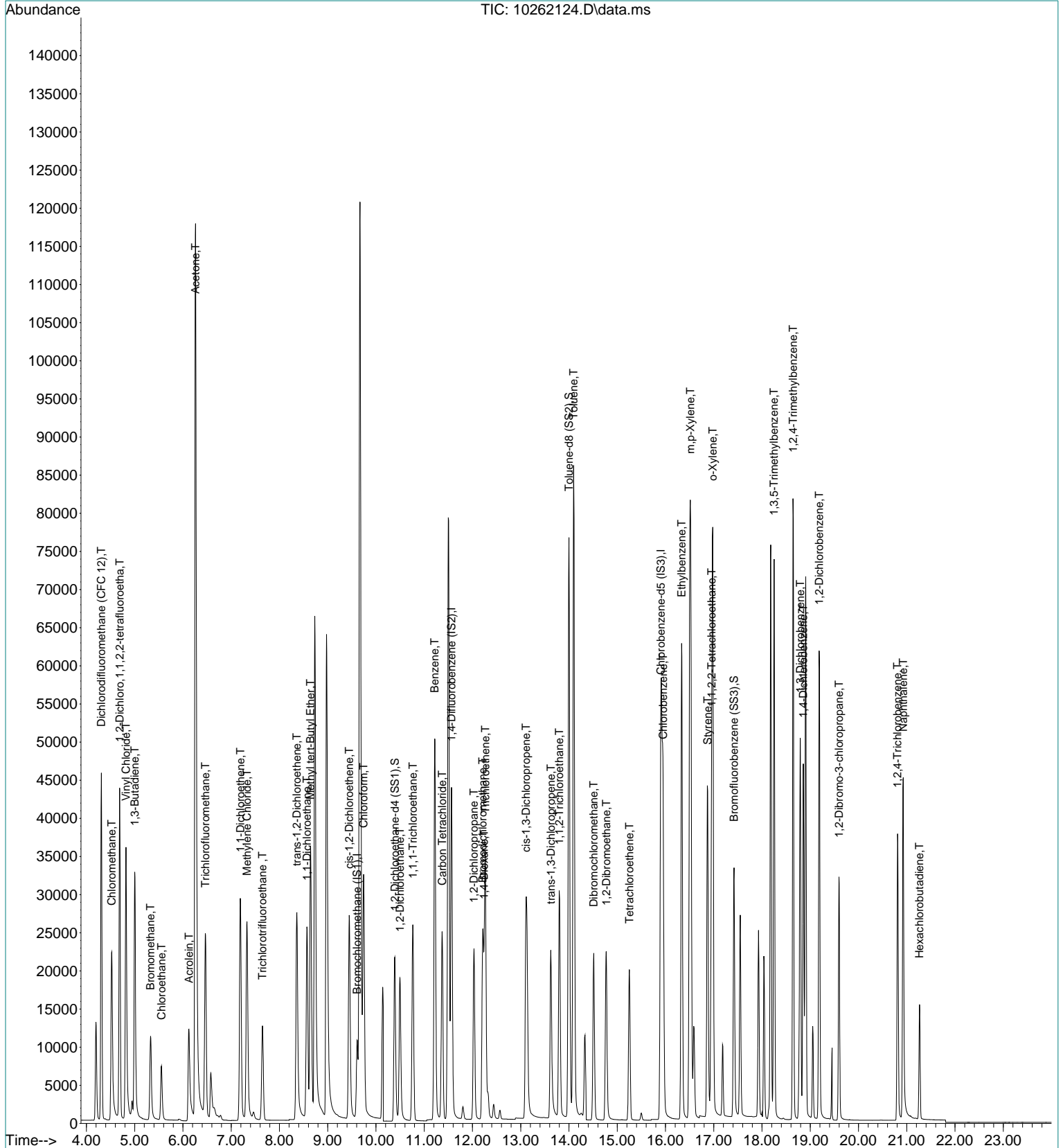
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	13771	781.649	pg	100

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

Data File : I:\MS19\DATA\2021 10\26\10262124.D
 Acq On : 27 Oct 2021 11:10
 Sample : 1000pg S19102621 ICV Std.
 Misc : S34-10062101/S34-10182102 (11/17)

Vial: 1
 Operator: TZ
 Inst : MS19

Quant Time: Oct 27 11:35:01 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Laboratory Control Sample Recovery Check Sheet - MS19

Data File Name: 10262124.D
 Data File Path: I:\MS19\DATA\2021_10\26\
 Operator: TZ
 Instrument Name: MS19
 Sample Name: 1000pg S19102621 ICV Std.
 Misc Info: S34-10062101/S34-10182102 (11/17)
 Date Acquired: 10/27/2021 11:10
 Acq. Method File: TO15SIM.M

#	Compound Name	Ret. Time	Amount Spiked (pg)	Amount Found (pg)	Percent Recovery	Lower Limit	Upper Limit	Flag	70-130% Method
2)	Dichlorodifluoromethane (CFC 12)	4.31	1040.0	1032.8	99	65	122	*	*
3)	Chloromethane	4.53	1030.0	1118.7	109	48	162	*	*
4)	1,2-Dichloro,1,1,2,2-tetrafluoroetha *	4.69	1040.0	1086.2	104	49	133	*	*
5)	Vinyl Chloride	4.82	1040.0	1111.7	107	43	138	*	*
6)	1,3-Butadiene *	5.00	1030.0	1010.6	98	45	150	*	*
7)	Bromomethane	5.33	1030.0	901.4	88	60	126	*	*
8)	Chloroethane	5.56	1030.0	937.6	91	57	130	*	*
9)	Acrolein *	6.12	2080.0	2052.3	99	54	130	*	*
10)	Acetone	6.26	5120.0	4914.7	96	54	123	*	*
11)	Trichlorofluoromethane	6.47	1010.0	1013.6	100	69	117	*	*
12)	1,1-Dichloroethene	7.19	1050.0	1125.7	107	65	135	*	*
13)	Methylene Chloride	7.33	1040.0	1049.2	101	63	120	*	*
14)	Trichlorotrifluoroethane	7.65	1080.0	1090.6	101	67	123	*	*
15)	trans-1,2-Dichloroethene	8.36	1040.0	1108.0	107	67	123	*	*
16)	1,1-Dichloroethane	8.57	1070.0	1115.2	104	62	123	*	*
17)	Methyl tert-Butyl Ether	8.64	1030.0	1114.6	108	75	131	*	*
18)	cis-1,2-Dichloroethene	9.45	1030.0	1106.1	107	69	123	*	*
19)	Chloroform	9.74	1050.0	1090.5	104	67	117	*	*
21)	1,2-Dichloroethane	10.50	1050.0	1124.6	107	68	118	*	*
22)	1,1,1-Trichloroethane	10.76	1040.0	1084.8	104	73	124	*	*
25)	Benzene	11.22	1040.0	1041.6	100	60	122	*	*
24)	Carbon Tetrachloride	11.37	1010.0	1020.0	101	73	118	*	*
26)	1,2-Dichloropropane	12.03	1030.0	1021.7	99	66	126	*	*
27)	Bromodichloromethane	12.21	1040.0	1014.4	98	69	117	*	*
28)	Trichloroethene	12.27	1020.0	1033.3	101	71	119	*	*
29)	1,4-Dioxane	12.24	1030.0	995.8	97	69	119	*	*
30)	cis-1,3-Dichloropropene	13.11	1040.0	1049.5	101	73	125	*	*
31)	trans-1,3-Dichloropropene	13.62	1000.0	1096.0	110	77	128	*	*
32)	1,1,2-Trichloroethane	13.80	1040.0	1145.9	110	68	123	*	*
34)	Toluene	14.00	1030.0	1243.9	121	69	120	Fail	*
35)	Dibromochloromethane *	14.51	1050.0	1261.1	120	74	122	*	*
36)	1,2-Dibromoethane	14.77	1040.0	1313.0	126	72	124	Fail	*
37)	Tetrachloroethene	15.25	1060.0	1307.5	123	72	122	Fail	*
39)	Chlorobenzene	15.95	1030.0	1057.2	103	65	133	*	*
40)	Ethylbenzene	16.33	1030.0	926.1	90	70	134	*	*
41)	m,p-Xylene	16.51	2080.0	1888.4	91	73	132	*	*
42)	Styrene *	16.87	1010.0	842.3	83	71	142	*	*
43)	o-Xylene	16.98	1040.0	898.1	86	69	136	*	*
44)	1,1,2,2-Tetrachloroethane	16.95	1040.0	959.1	92	66	136	*	*
46)	1,3,5-Trimethylbenzene *	18.25	1040.0	852.7	82	76	139	*	*
47)	1,2,4-Trimethylbenzene *	18.64	1030.0	817.8	79	75	139	*	*
48)	1,3-Dichlorobenzene	18.79	1040.0	898.8	86	64	138	*	*
49)	1,4-Dichlorobenzene	18.86	1050.0	862.4	82	55	137	*	*
50)	1,2-Dichlorobenzene	19.18	1050.0	892.2	85	62	138	*	*
51)	1,2-Dibromo-3-chloropropane *	19.60	2020.0	1685.5	83	66	149	*	*
52)	1,2,4-Trichlorobenzene	20.81	2100.0	1670.6	80	53	145	*	*
53)	Naphthalene	19.18	1050.0	765.5	73	43	144	*	*
54)	Hexachlorobutadiene	21.26	1060.0	781.6	74	54	146	*	*

* Compounds with 70 - 130 as advisory limits

Data File : I:\MS19\DATA\2021 11\04\11042102.D
 Acq On : 4 Nov 2021 6:32
 Sample : CCV S19110421 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

TZ 11/4/21

Quant Time: Nov 04 07:50:48 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev (min)
1 I	Bromochloromethane (IS1)	1.000	1.000	0.0	127	-0.01
2 T	Dichlorodifluoromethane (CF	3.283	2.795	14.9	103	-0.03
3 T	Chloromethane	0.762	0.662	13.1	96	-0.04
4 T	1,2-Dichloro,1,1,2,2-tetra	3.177	2.121	33.2#	79	-0.03
5 T	Vinyl Chloride	3.494	2.542	27.2	83	-0.04
6 T	1,3-Butadiene	1.809	1.772	2.0	88	-0.05
7 T	Bromomethane	1.021	0.915	10.4	100	-0.05
8 T	Chloroethane	0.862	0.864	-0.2	113	-0.04
9 T	Acrolein	0.651	0.715	-9.8	129	0.02
10 T	Acetone	0.918	0.927	-1.0	128	-0.07
11 T	Trichlorofluoromethane	2.140	2.010	6.1	116	-0.02
12 T	1,1-Dichloroethene	1.169	1.231	-5.3	123	-0.03
13 T	Methylene Chloride	1.436	1.429	0.5	119	-0.03
14 T	Trichlorotrifluoroethane	1.013	1.046	-3.3	124	-0.01
15 T	trans-1,2-Dichloroethene	1.211	1.321	-9.1	123	-0.04
16 T	1,1-Dichloroethane	2.446	2.591	-5.9	122	-0.01
17 T	Methyl tert-Butyl Ether	3.569	4.045	-13.3	127	-0.04
18 T	cis-1,2-Dichloroethene	1.332	1.402	-5.3	123	-0.02
19 T	Chloroform	2.535	2.389	5.8	113	0.00
20 S	1,2-Dichloroethane-d4 (SS1)	2.219	2.065	6.9	115	0.00
21 T	1,2-Dichloroethane	2.005	1.978	1.3	112	-0.01
22 T	1,1,1-Trichloroethane	2.116	2.081	1.7	116	0.00
23 T	Benzene	5.846	5.613	4.0	119	-0.01
24 T	Carbon Tetrachloride	1.710	1.634	4.4	117	0.00
25 I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	123	0.00
26 T	1,2-Dichloropropane	0.297	0.301	-1.3	122	-0.01
27 T	Bromodichloromethane	0.402	0.374	7.0	114	-0.01
28 T	Trichloroethene	0.256	0.259	-1.2	121	-0.01
29 T	1,4-Dioxane	0.223	0.219	1.8	122	-0.04
30 T	cis-1,3-Dichloropropene	0.397	0.421	-6.0	125	-0.03
31 T	trans-1,3-Dichloropropene	0.348	0.376	-8.0	128	-0.06
32 T	1,1,2-Trichloroethane	0.239	0.233	2.5	117	-0.02
33 S	Toluene-d8 (SS2)	1.117	1.110	0.6	123	0.00
34 T	Toluene	1.123	1.110	1.2	118	-0.01
35 T	Dibromochloromethane	0.254	0.257	-1.2	120	-0.02
36 T	1,2-Dibromoethane	0.262	0.276	-5.3	120	-0.02
37 T	Tetrachloroethene	0.230	0.241	-4.8	126	0.00
38 I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	118	0.00
39 T	Chlorobenzene	3.164	3.226	-2.0	120	0.00
40 T	Ethylbenzene	5.456	5.613	-2.9	121	-0.02
41 T	m,p-Xylene	4.336	4.477	-3.3	118	-0.01
42 T	Styrene	3.091	3.064	0.9	123	-0.03
43 T	o-Xylene	2.135	2.084	2.4	119	0.00
44 T	1,1,2,2-Tetrachloroethane	2.176	2.257	-3.7	116	0.00
45 S	Bromofluorobenzene (SS3)	1.342	1.465	-9.2	133	0.00
46 T	1,3,5-Trimethylbenzene	4.921	4.592	6.7	101	0.00
47 T	1,2,4-Trimethylbenzene	5.095	4.630	9.1	99	0.00
48 T	1,3-Dichlorobenzene	2.369	2.471	-4.3	100	0.00
49 T	1,4-Dichlorobenzene	2.440	2.477	-1.5	102	0.00
50 T	1,2-Dichlorobenzene	2.325	2.409	-3.6	122	0.00
51 T	1,2-Dibromo-3-chloropropane	0.762	0.852	-11.8	131	0.00
52 T	1,2,4-Trichlorobenzene	1.296	1.435	-10.7	138	-0.02
53 T	Naphthalene	5.132	4.965	3.3	130	-0.04
54 T	Hexachlorobutadiene	0.884	0.961	-8.7	142	0.00

Data File : I:\MS19\DATA\2021 11\04\11042102.D
 Acq On : 4 Nov 2021 6:32
 Sample : CCV S19110421 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 07:50:48 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev Area%	Dev(min)
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(#) = Out of Range

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

Data File : I:\MS19\DATA\2021 11\04\11042102.D
 Acq On : 4 Nov 2021 6:32
 Sample : CCV S19110421 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

TZ 11/4/21

Quant Time: Nov 04 07:50:48 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	18914	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	94655	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	20265	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	39058	930.675	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	93.07%		
33) Toluene-d8 (SS2)	14.00	98	105086	993.873	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	99.39%		
45) Bromofluorobenzene (SS3)	17.42	174	29693	1091.980	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	109.20%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	55517	893.951	pg	100
3) Chloromethane	4.52	52	12773	886.227	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	43333	721.238	pg	100
5) Vinyl Chloride	4.82	62	50007	756.677	pg	100
6) 1,3-Butadiene	5.00	54	34851	1018.335	pg	98
7) Bromomethane	5.32	94	17643	913.683	pg	100
8) Chloroethane	5.55	64	16663	1022.304	pg	100
9) Acrolein	6.12	56	27043	2195.677	pg	100
10) Acetone	6.26	58	91037	5245.590	pg	97
11) Trichlorofluoromethane	6.46	101	39166	967.468	pg	100
12) 1,1-Dichloroethene	7.19	96	24914	1126.979	pg	98
13) Methylene Chloride	7.32	84	28100	1034.839	pg	98
14) Trichlorotrifluoroethane	7.65	151	21374	1115.454	pg	100
15) trans-1,2-Dichloroethene	8.36	96	26487	1156.002	pg	100
16) 1,1-Dichloroethane	8.57	63	51452	1112.331	pg	100
17) Methyl tert-Butyl Ether	8.64	73	80327	1190.049	pg	99
18) cis-1,2-Dichloroethene	9.45	96	27576	1094.837	pg	99
19) Chloroform	9.74	83	48343	1008.158	pg	100
21) 1,2-Dichloroethane	10.50	62	39658	1045.977	pg	100
22) 1,1,1-Trichloroethane	10.76	97	40943	1022.978	pg	100
23) Benzene	11.22	78	110408	998.540	pg	100
24) Carbon Tetrachloride	11.37	117	32443	1002.995	pg	99
26) 1,2-Dichloropropane	12.03	63	29369	1044.110	pg	98
27) Bromodichloromethane	12.21	83	37215	978.106	pg	99
28) Trichloroethene	12.27	130	25220	1039.740	pg	100
29) 1,4-Dioxane	12.24	88	21513	1018.452	pg	96
30) cis-1,3-Dichloropropene	13.11	75	41803	1113.044	pg	100
31) trans-1,3-Dichloropropene	13.62	75	35915	1089.203	pg	99
32) 1,1,2-Trichloroethane	13.80	83	22972	1013.943	pg	98
34) Toluene	14.10	91	108183	1017.505	pg	99
35) Dibromochloromethane	14.51	129	25493	1059.533	pg	100
36) 1,2-Dibromoethane	14.77	107	27161	1095.170	pg	100
37) Tetrachloroethene	15.25	166	23683	1087.696	pg	96
39) Chlorobenzene	15.95	112	67986	1060.357	pg	100
40) Ethylbenzene	16.33	91	117162	1059.587	pg	99
41) m,p-Xylene	16.51	91	186887	2127.052	pg	100
42) Styrene	16.87	104	63954	1021.125	pg	99
43) o-Xylene	16.98	106	43931	1015.156	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	47575	1078.801	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	96773	970.462	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	96644	935.939	pg	100
48) 1,3-Dichlorobenzene	18.79	146	52079	1084.912	pg	100
49) 1,4-Dichlorobenzene	18.86	146	52201	1055.530	pg	100
50) 1,2-Dichlorobenzene	19.18	146	51254	1087.631	pg	100
51) 1,2-Dibromo-3-chloropr...	19.59	157	34551	2236.412	pg	92
52) 1,2,4-Trichlorobenzene	20.81	182	59331	2258.463	pg	98
53) Naphthalene	20.92	128	104634	1006.141	pg	100

Data File : I:\MS19\DATA\2021 11\04\11042102.D
 Acq On : 4 Nov 2021 6:32
 Sample : CCV S19110421 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 07:50:48 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

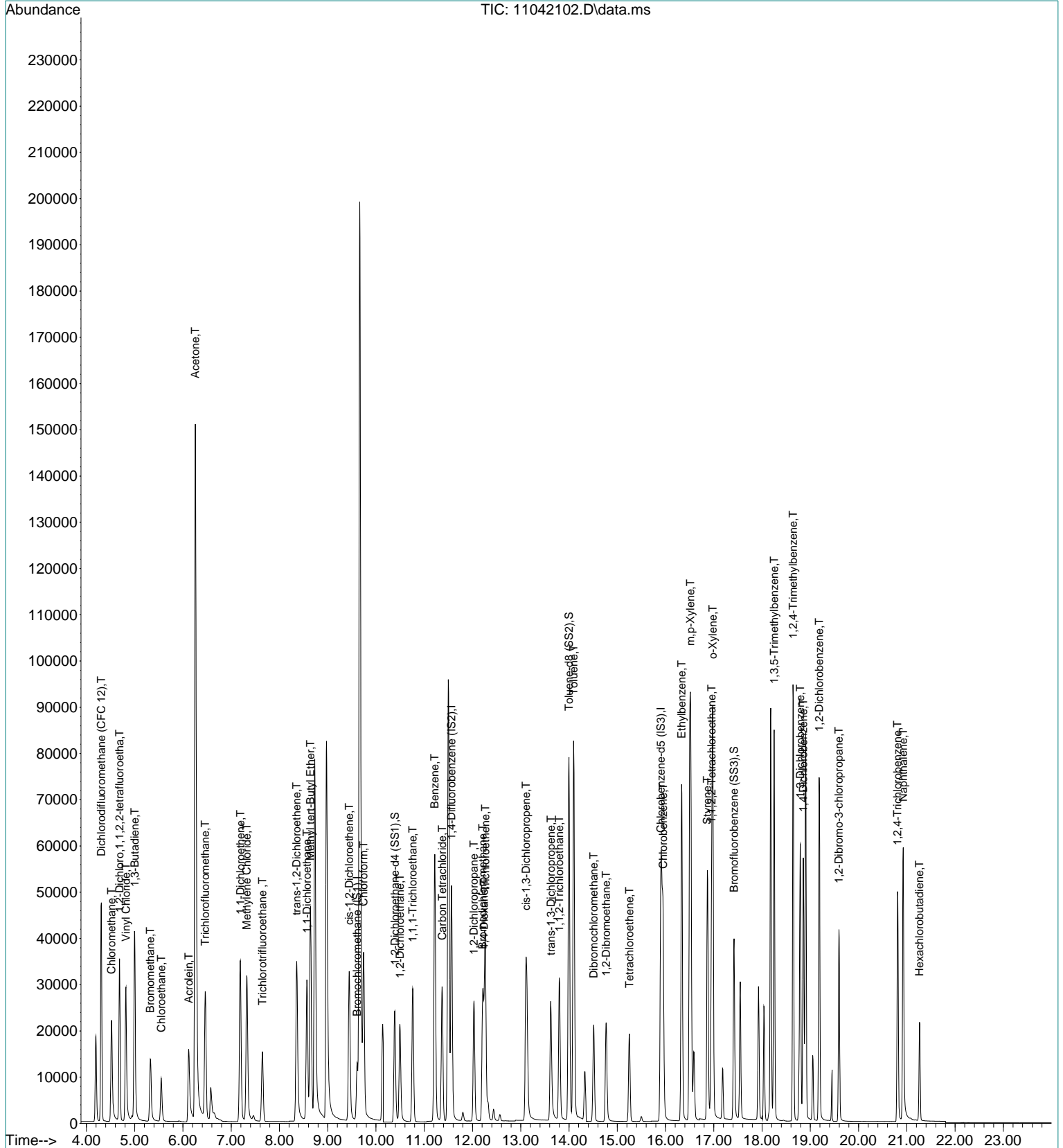
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	20060	1119.568	pg	100

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

Data File : I:\MS19\DATA\2021 11\04\11042102.D
 Acq On : 4 Nov 2021 6:32
 Sample : CCV S19110421 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

Quant Time: Nov 04 07:50:48 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2021 11\05\11052102.D
 Acq On : 5 Nov 2021 00:16
 Sample : CCV S19110521 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:52 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

TZ 11/5/21

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev (min)
1 I	Bromochloromethane (IS1)	1.000	1.000	0.0	122	-0.01
2 T	Dichlorodifluoromethane (CF	3.283	2.872	12.5	102	-0.03
3 T	Chloromethane	0.762	0.680	10.8	94	-0.05
4 T	1,2-Dichloro,1,1,2,2-tetra	3.177	2.183	31.3#	78	-0.03
5 T	Vinyl Chloride	3.494	2.632	24.7	82	-0.05
6 T	1,3-Butadiene	1.809	1.814	-0.3	86	-0.05
7 T	Bromomethane	1.021	0.923	9.6	97	-0.05
8 T	Chloroethane	0.862	0.877	-1.7	110	-0.05
9 T	Acrolein	0.651	0.718	-10.3	124	0.02
10 T	Acetone	0.918	0.940	-2.4	125	-0.07
11 T	Trichlorofluoromethane	2.140	2.049	4.3	113	-0.02
12 T	1,1-Dichloroethene	1.169	1.240	-6.1	118	-0.03
13 T	Methylene Chloride	1.436	1.447	-0.8	116	-0.03
14 T	Trichlorotrifluoroethane	1.013	1.054	-4.0	120	-0.02
15 T	trans-1,2-Dichloroethene	1.211	1.327	-9.6	119	-0.04
16 T	1,1-Dichloroethane	2.446	2.625	-7.3	119	-0.01
17 T	Methyl tert-Butyl Ether	3.569	4.023	-12.7	121	-0.04
18 T	cis-1,2-Dichloroethene	1.332	1.406	-5.6	118	-0.02
19 T	Chloroform	2.535	2.428	4.2	110	0.00
20 S	1,2-Dichloroethane-d4 (SS1)	2.219	2.102	5.3	112	0.00
21 T	1,2-Dichloroethane	2.005	2.020	-0.7	109	-0.01
22 T	1,1,1-Trichloroethane	2.116	2.107	0.4	113	0.00
23 T	Benzene	5.846	5.667	3.1	115	-0.01
24 T	Carbon Tetrachloride	1.710	1.655	3.2	113	0.00
25 I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	119	0.00
26 T	1,2-Dichloropropane	0.297	0.303	-2.0	119	-0.01
27 T	Bromodichloromethane	0.402	0.377	6.2	111	-0.01
28 T	Trichloroethene	0.256	0.259	-1.2	118	-0.01
29 T	1,4-Dioxane	0.223	0.217	2.7	117	-0.04
30 T	cis-1,3-Dichloropropene	0.397	0.418	-5.3	120	-0.03
31 T	trans-1,3-Dichloropropene	0.348	0.369	-6.0	122	-0.06
32 T	1,1,2-Trichloroethane	0.239	0.234	2.1	113	-0.02
33 S	Toluene-d8 (SS2)	1.117	1.111	0.5	120	0.00
34 T	Toluene	1.123	1.108	1.3	114	-0.01
35 T	Dibromochloromethane	0.254	0.256	-0.8	116	-0.02
36 T	1,2-Dibromoethane	0.262	0.274	-4.6	115	-0.02
37 T	Tetrachloroethene	0.230	0.239	-3.9	122	0.00
38 I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	117	0.00
39 T	Chlorobenzene	3.164	3.157	0.2	116	0.00
40 T	Ethylbenzene	5.456	5.448	0.1	115	-0.02
41 T	m,p-Xylene	4.336	4.363	-0.6	113	-0.01
42 T	Styrene	3.091	2.952	4.5	117	-0.02
43 T	o-Xylene	2.135	2.040	4.4	115	0.00
44 T	1,1,2,2-Tetrachloroethane	2.176	2.221	-2.1	113	0.00
45 S	Bromofluorobenzene (SS3)	1.342	1.461	-8.9	131	0.00
46 T	1,3,5-Trimethylbenzene	4.921	4.487	8.8	97	0.00
47 T	1,2,4-Trimethylbenzene	5.095	4.513	11.4	95	0.00
48 T	1,3-Dichlorobenzene	2.369	2.420	-2.2	97	0.00
49 T	1,4-Dichlorobenzene	2.440	2.425	0.6	98	0.00
50 T	1,2-Dichlorobenzene	2.325	2.363	-1.6	118	0.00
51 T	1,2-Dibromo-3-chloropropane	0.762	0.828	-8.7	125	0.00
52 T	1,2,4-Trichlorobenzene	1.296	1.386	-6.9	131	-0.02
53 T	Naphthalene	5.132	4.809	6.3	125	-0.04
54 T	Hexachlorobutadiene	0.884	0.933	-5.5	136	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2021 11\05\11052102.D
Acq On : 5 Nov 2021 00:16
Sample : CCV S19110521 1000pg
Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
Operator: TZ
Inst : MS19

Quant Time: Nov 05 07:42:52 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev Area%	Dev(min)
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(#) = Out of Range

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

Data File : I:\MS19\DATA\2021 11\05\11052102.D
 Acq On : 5 Nov 2021 00:16
 Sample : CCV S19110521 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

TZ 11/5/21

Quant Time: Nov 05 07:42:52 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev (Min)
1) Bromochloromethane (IS1)	9.61	130	18119	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.56	114	91653	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.90	54	19993	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.39	65	38093	947.507	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	94.75%
33) Toluene-d8 (SS2)	14.00	98	101859	994.907	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	99.49%
45) Bromofluorobenzene (SS3)	17.42	174	29210	1088.832	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	108.88%

Target Compounds

						Qvalue
2) Dichlorodifluoromethan...	4.30	85	54633	918.315	pg	100
3) Chloromethane	4.52	52	12567	910.192	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	42710	742.060	pg	100
5) Vinyl Chloride	4.81	62	49598	783.417	pg	100
6) 1,3-Butadiene	5.00	54	34186	1042.733	pg	97
7) Bromomethane	5.32	94	17053	921.878	pg	99
8) Chloroethane	5.55	64	16200	1037.507	pg	100
9) Acrolein	6.12	56	26026	2205.821	pg	100
10) Acetone	6.26	58	88364	5314.972	pg	98
11) Trichlorofluoromethane	6.46	101	38243	986.117	pg	100
12) 1,1-Dichloroethene	7.19	96	24033	1134.827	pg	99
13) Methylene Chloride	7.32	84	27261	1047.991	pg	97
14) Trichlorotrifluoroethane	7.64	151	20619	1123.266	pg	100
15) trans-1,2-Dichloroethene	8.36	96	25489	1161.255	pg	99
16) 1,1-Dichloroethane	8.57	63	49950	1127.240	pg	100
17) Methyl tert-Butyl Ether	8.64	73	76546	1183.791	pg	99
18) cis-1,2-Dichloroethene	9.45	96	26488	1097.783	pg	99
19) Chloroform	9.74	83	47064	1024.549	pg	100
21) 1,2-Dichloroethane	10.50	62	38803	1068.331	pg	99
22) 1,1,1-Trichloroethane	10.76	97	39710	1035.704	pg	100
23) Benzene	11.22	78	106787	1008.167	pg	100
24) Carbon Tetrachloride	11.37	117	31478	1015.860	pg	100
26) 1,2-Dichloropropane	12.03	63	28587	1049.597	pg	98
27) Bromodichloromethane	12.21	83	36308	985.524	pg	100
28) Trichloroethene	12.27	130	24432	1040.245	pg	100
29) 1,4-Dioxane	12.24	88	20646	1009.421	pg	96
30) cis-1,3-Dichloropropene	13.11	75	40182	1104.927	pg	100
31) trans-1,3-Dichloropropene	13.62	75	34175	1070.380	pg	99
32) 1,1,2-Trichloroethane	13.80	83	22296	1016.339	pg	99
34) Toluene	14.10	91	104576	1015.796	pg	99
35) Dibromochloromethane	14.51	129	24682	1059.426	pg	99
36) 1,2-Dibromoethane	14.77	107	26147	1088.816	pg	100
37) Tetrachloroethene	15.25	166	22797	1081.298	pg	97
39) Chlorobenzene	15.95	112	65641	1037.711	pg	100
40) Ethylbenzene	16.33	91	112192	1028.443	pg	99
41) m,p-Xylene	16.51	91	179695	2073.021	pg	100
42) Styrene	16.87	104	60789	983.796	pg	99
43) o-Xylene	16.98	106	42410	993.342	pg	99
44) 1,1,2,2-Tetrachloroethane	16.95	83	46191	1061.668	pg	100
46) 1,3,5-Trimethylbenzene	18.25	105	93305	948.413	pg	100
47) 1,2,4-Trimethylbenzene	18.64	105	92931	912.225	pg	100
48) 1,3-Dichlorobenzene	18.79	146	50311	1062.339	pg	100
49) 1,4-Dichlorobenzene	18.86	146	50425	1033.490	pg	100
50) 1,2-Dichlorobenzene	19.18	146	49608	1067.024	pg	100
51) 1,2-Dibromo-3-chloropr...	19.60	157	33114	2172.559	pg	93
52) 1,2,4-Trichlorobenzene	20.81	182	56535	2181.310	pg	98
53) Naphthalene	20.92	128	99986	974.527	pg	100

Data File : I:\MS19\DATA\2021 11\05\11052102.D
 Acq On : 5 Nov 2021 00:16
 Sample : CCV S19110521 1000pg
 Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
 Operator: TZ
 Inst : MS19

Quant Time: Nov 05 07:42:52 2021
 Quant Method : I:\MS19\METHODS\S19102621.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 27 10:48:57 2021
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

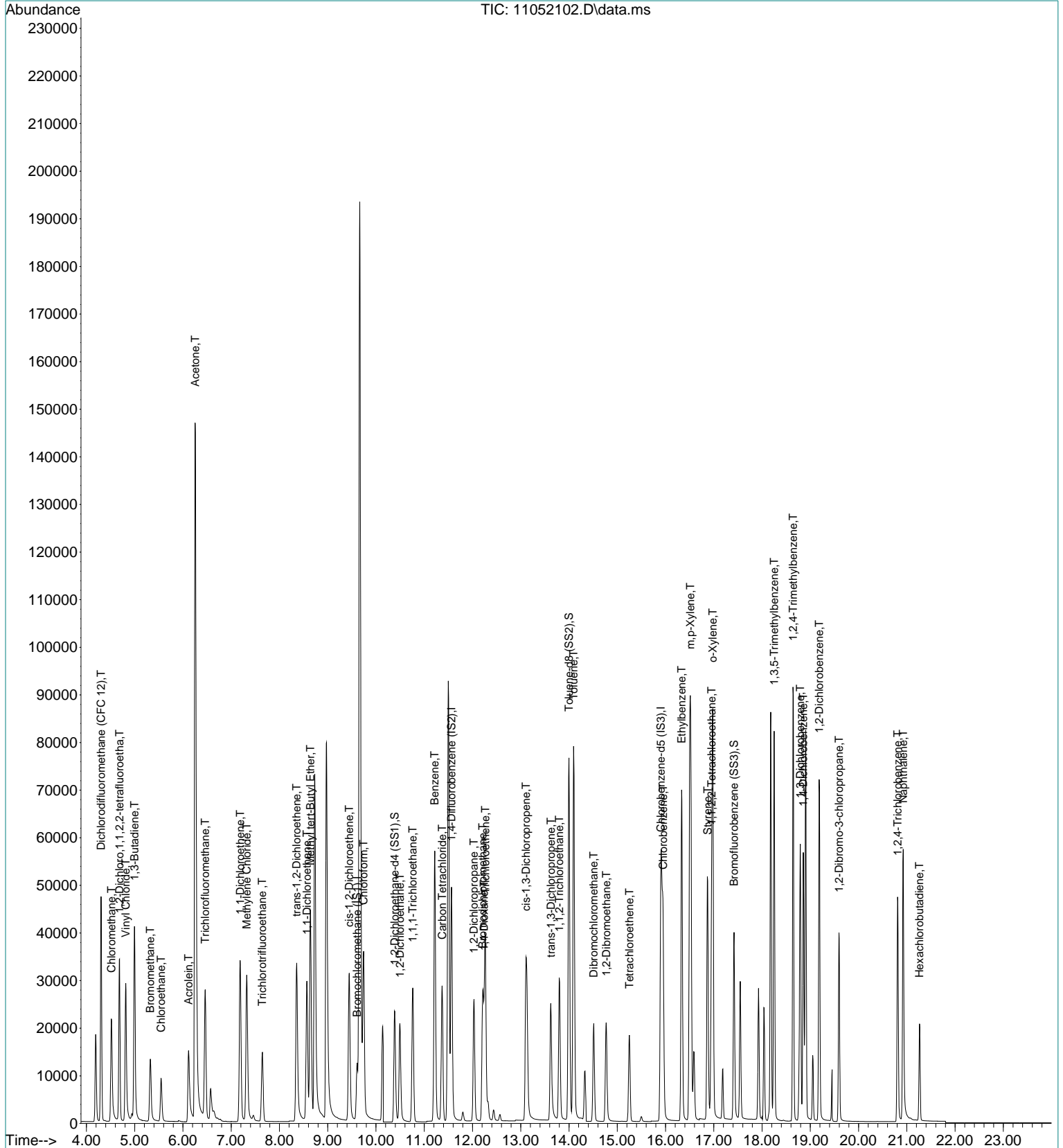
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.26	225	19208	1086.602	pg	100

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

Data File : I:\MS19\DATA\2021 11\05\11052102.D
Acq On : 5 Nov 2021 00:16
Sample : CCV S19110521 1000pg
Misc : S34-10062101/S34-10252104 (11/24)

Vial: 16
Operator: TZ
Inst : MS19

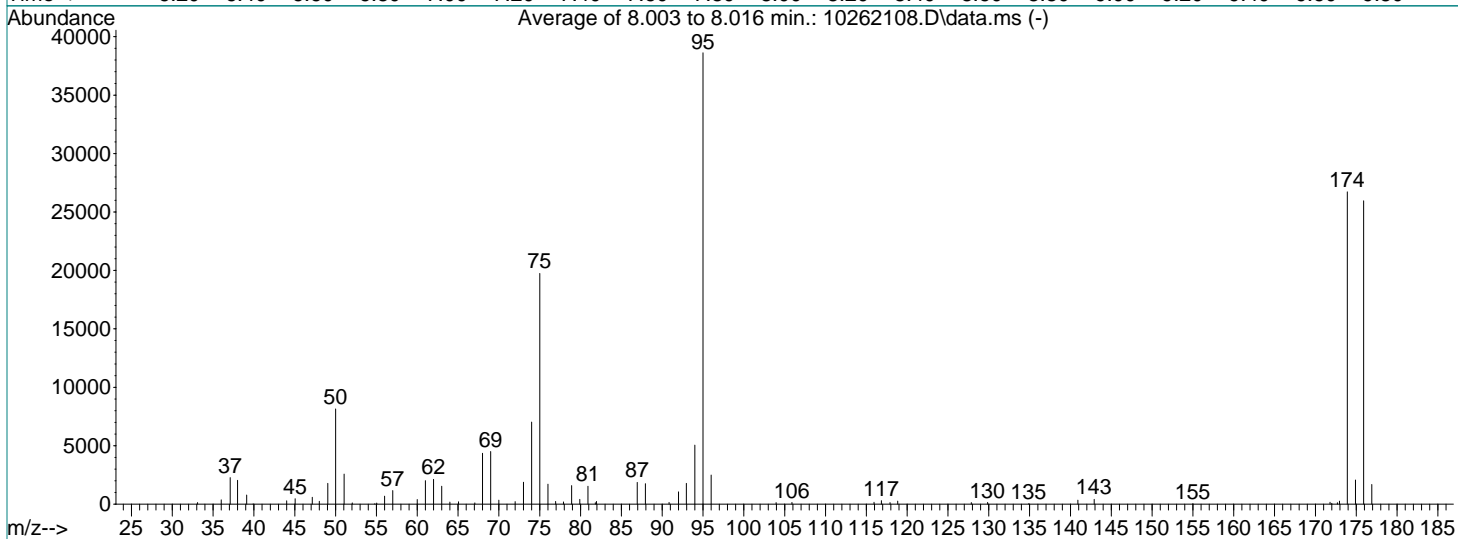
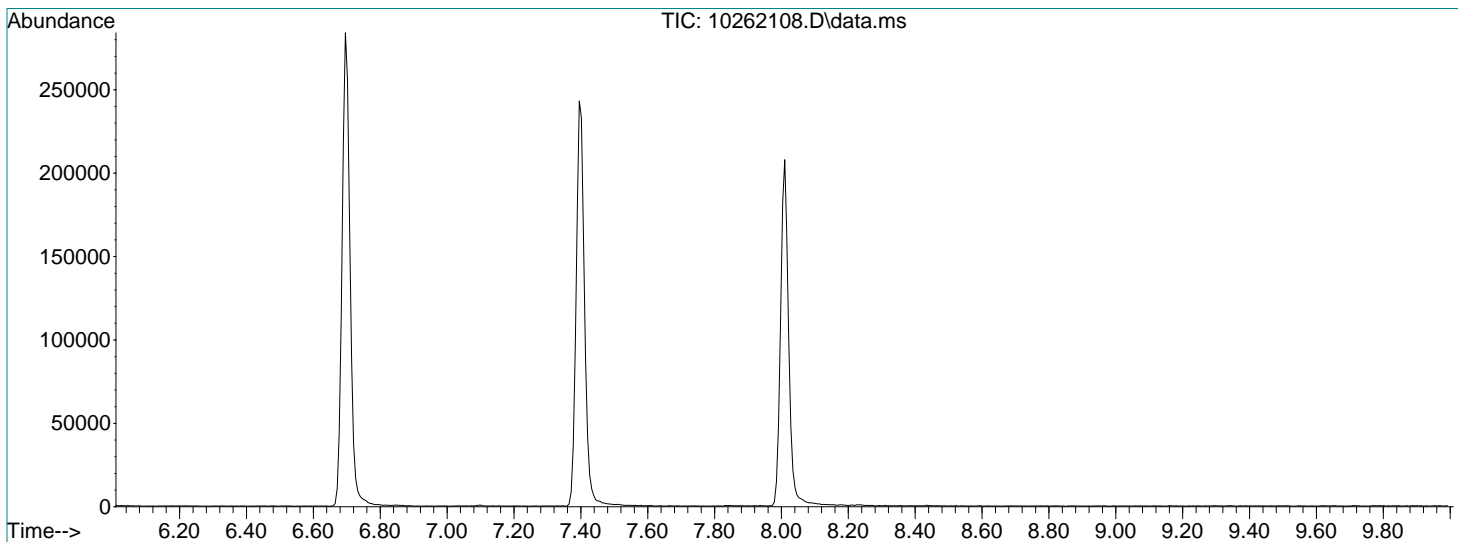
Quant Time: Nov 05 07:42:52 2021
Quant Method : I:\MS19\METHODS\S19102621.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Oct 27 10:48:57 2021
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data Path : I:\MS19\DATA\2021 10\26\
 Data File : 10262108.D
 Acq On : 26 Oct 2021 16:38
 Operator : TZ
 Sample : BFB S19102621
 Misc : S34-10062101
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19102621.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Oct 27 10:48:57 2021



AutoFind: Scans 638, 639, 640; Background Corrected with Scan 632

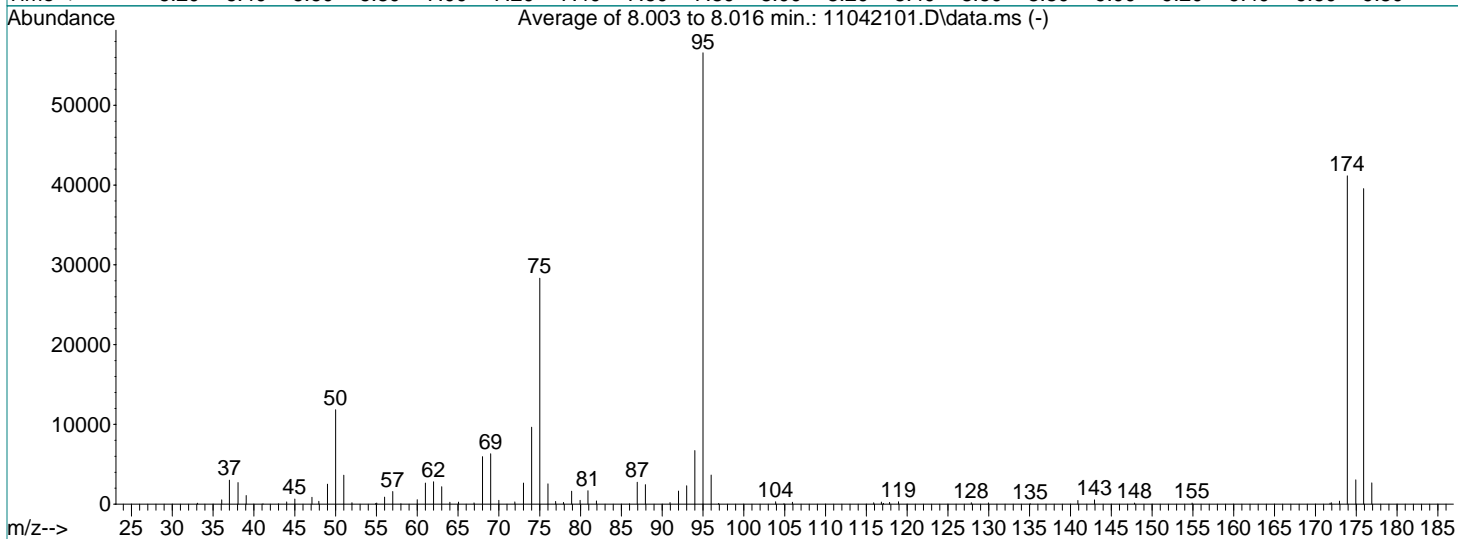
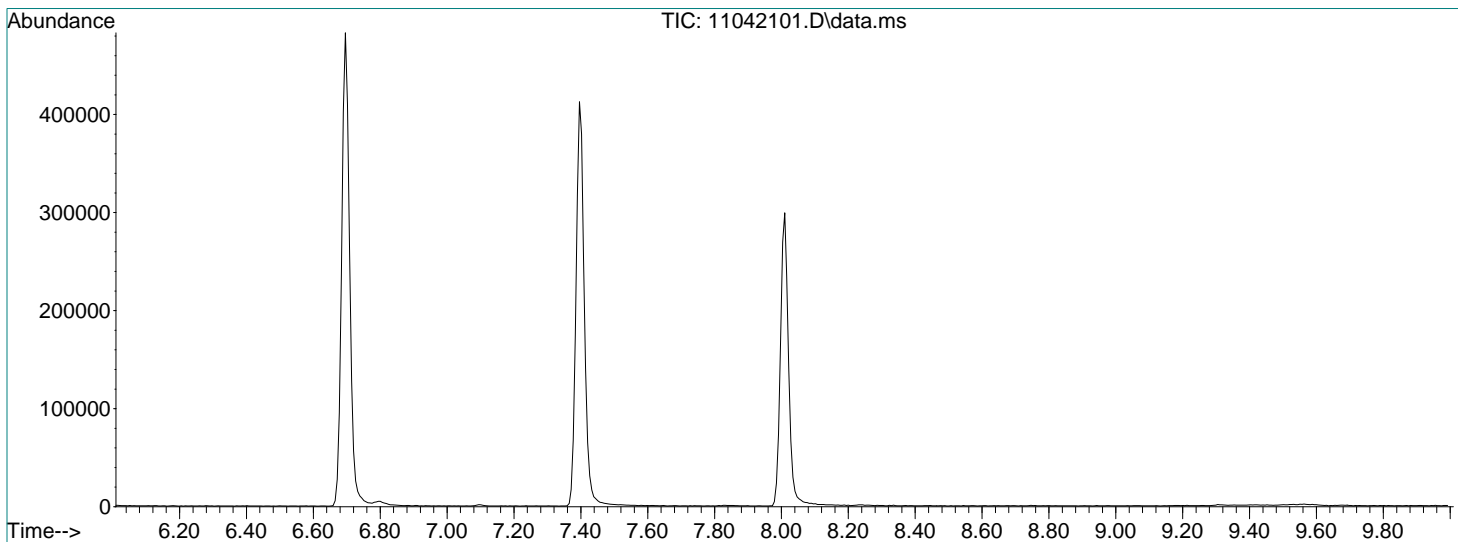
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.1	8141	PASS
75	95	30	66	51.1	19747	PASS
95	95	100	100	100.0	38621	PASS
96	95	5	9	6.5	2495	PASS
173	174	0.00	2	1.0	262	PASS
174	95	50	120	69.2	26723	PASS
175	174	4	9	7.7	2066	PASS
176	174	93	101	97.1	25952	PASS
177	176	5	9	6.5	1691	PASS

TZ 10/27/21

Data Path : I:\MS19\DATA\2021 11\04\
 Data File : 11042101.D
 Acq On : 4 Nov 2021 6:11
 Operator : TZ
 Sample : BFB S19110421
 Misc : S34-10062101
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19102621.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Oct 27 10:48:57 2021



AutoFind: Scans 638, 639, 640; Background Corrected with Scan 632

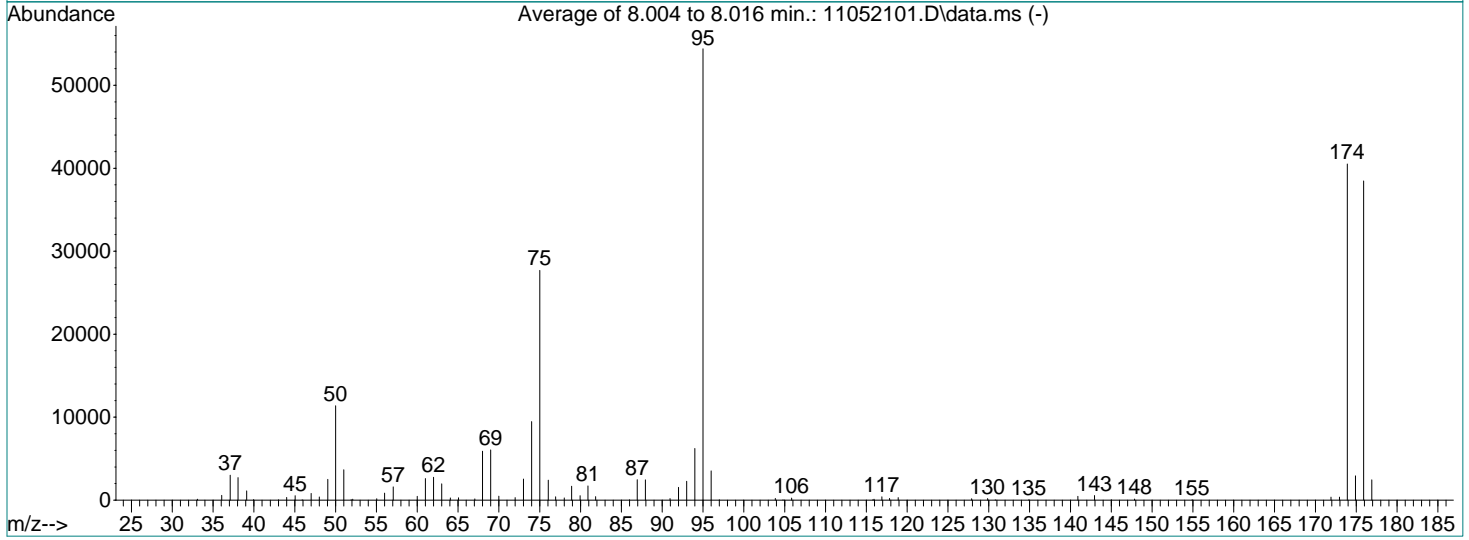
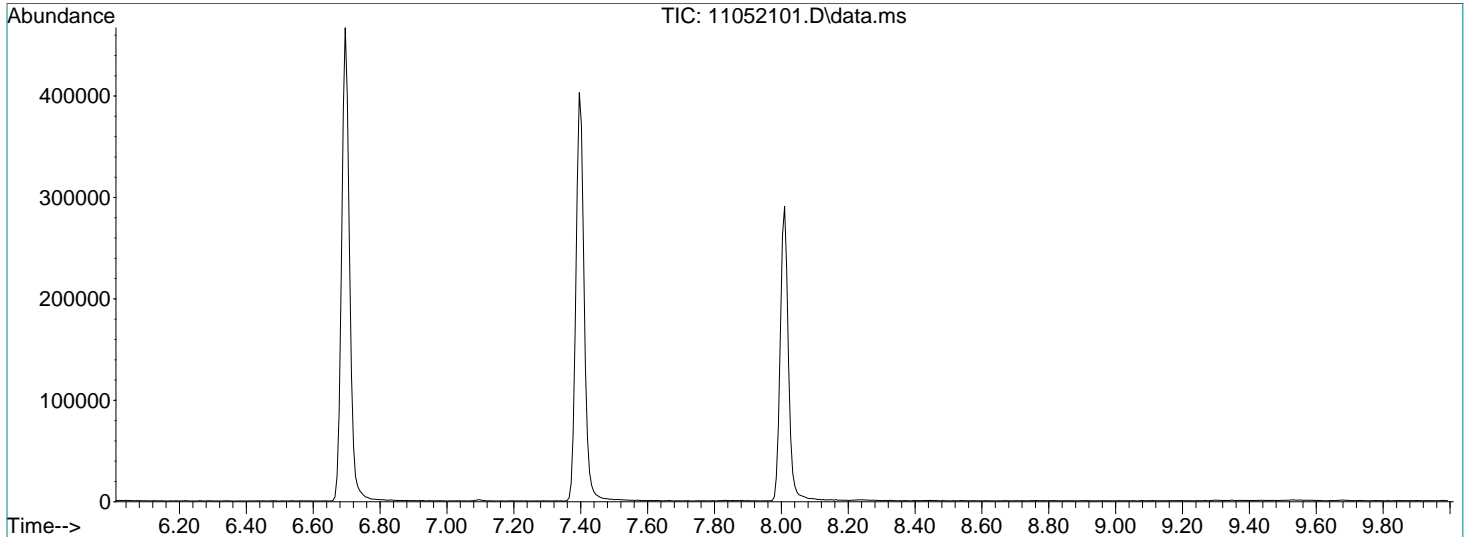
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.9	11830	PASS
75	95	30	66	50.1	28331	PASS
95	95	100	100	100.0	56579	PASS
96	95	5	9	6.5	3658	PASS
173	174	0.00	2	0.9	378	PASS
174	95	50	120	72.7	41160	PASS
175	174	4	9	7.4	3055	PASS
176	174	93	101	96.1	39563	PASS
177	176	5	9	6.8	2672	PASS

TZ 11/4/21

Data Path : I:\MS19\DATA\2021 11\05\
 Data File : 11052101.D
 Acq On : 4 Nov 2021 23:54
 Operator : TZ
 Sample : BFB S19110521
 Misc : S34-10062101
 ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19102621.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Oct 27 10:48:57 2021



AutoFind: Scans 638, 639, 640; Background Corrected with Scan 632

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.9	11381	PASS
75	95	30	66	50.9	27699	PASS
95	95	100	100	100.0	54392	PASS
96	95	5	9	6.5	3539	PASS
173	174	0.00	2	0.9	370	PASS
174	95	50	120	74.5	40517	PASS
175	174	4	9	7.2	2934	PASS
176	174	93	101	94.9	38461	PASS
177	176	5	9	6.4	2454	PASS

TZ 11/5/21

Injection Log

Directory: J:\MS19\DATA\2021_10\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/26/21 12:01	10262101.D	Blank	S34-10062101	TZ	1	
2	10/26/21 12:32	10262102.D	100pg Check (4ng can)	S34-10062101/S34-10262103 (11/25)	TZ	13	
3	10/26/21 13:44	10262103.D	Blank	S34-10062101	TZ	1	
4	10/26/21 14:15	10262104.D	5000pg S19102521 ICAL Std.	S34-10062101/S34-10052102 (11/4)	TZ	11	
5	10/26/21 15:14	10262105.D	BFB check	S34-10062101	TZ	1	
6	10/26/21 15:36	10262106.D	Blank	S34-10062101	TZ	1	
7	10/26/21 16:08	10262107.D	Blank	S34-10062101	TZ	1	
8	10/26/21 16:38	10262108.D	BFB S19102621	S34-10062101	TZ	1	passed
9	10/26/21 16:59	10262109.D	20pg S19102621 ICAL Std.	S34-10062101/S34-10252106 (11/24)	TZ	9	
10	10/26/21 17:31	10262110.D	50pg S19102621 ICAL Std.	S34-10062101/S34-10252106 (11/24)	TZ	9	
11	10/26/21 18:02	10262111.D	100pg S19102621 ICAL Std.	S34-10062101/S34-10262103 (11/25)	TZ	13	rerun
12	10/26/21 18:33	10262112.D	500pg S19102621 ICAL Std.	S34-10062101/S34-10252104 (11/24)	TZ	10	
13	10/26/21 19:05	10262113.D	1000pg S19102621 ICAL Std.	S34-10062101/S34-10252104 (11/24)	TZ	10	
14	10/26/21 19:05	10262113a.D	1000pg S19102621 ICAL Std.	S34-10062101/S34-10252104 (11/24)	TZ	10	
15	10/26/21 19:36	10262114.D	5000pg S19102621 ICAL Std.	S34-10062101/S34-10252102 (11/24)	TZ	11	
16	10/26/21 20:08	10262115.D	Blank	S34-10062101	TZ	1	
17	10/26/21 20:39	10262116.D	10000pg S19102621 ICAL Std.	S34-10062101/S34-10252102 (11/24)	TZ	11	
18	10/26/21 21:10	10262117.D	Blank	S34-10062101	TZ	1	
19	10/26/21 21:42	10262118.D	25000pg S19102621 ICAL Std.	S34-10062101/S34-10252102 (11/24)	TZ	11	IS's failed
20	10/26/21 22:14	10262119.D	Blank	S34-10062101	TZ	1	
21	10/26/21 22:45	10262120.D	1000pg S19102621 ICV Std.	S34-10062101/S34-10182102 (11/17)	TZ	1	not using
22	10/26/21 23:17	10262121.D	1000pg S19102621 ICV Std.	S34-10062101/S34-10252109 (11/24)	TZ	12	not using
23	10/27/21 9:11	10262122.D	100pg S19102621 ICAL Std.	S34-10062101/S34-10272101 (11/26)	TZ	9	
24	10/27/21 10:39	10262123.D	Blank	S34-10062101	TZ	1	
25	10/27/21 11:10	10262124.D	1000pg S19102621 ICV Std.	S34-10062101/S34-10182102 (11/17)	TZ	1	passed
26	10/27/21 11:42	10262125.D	1000pg S19102621 ICV Std.	S34-10062101/S34-10182102 (11/17)	TZ	1	not using
S19102621.M ranges from 20pg->10k pg except: 1,3-butadiene, 1,4-dioxane, cis-1,3-Dichloropropene,							
trans-1,3-Dichloropropene and ethylbenzene: 50pg->10k pg, m,p-xylene: 100pg->20k pg,							
styrene, o-xylene, 1,3,5-Trimethylbenzene, 1,2,4-Trimethylbenzene and naphthalene: 100pg->10k pg							
RSD>30% for 1,2,4-trichlorobenzene							
The laboratory requirements for percent error were not met on the mid-point for 1,3-butadiene of the initial calibration.							

Injection Log

Directory: I:\MS19\DATA\2021_11\04\

TZ 11/5/21

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/4/21 6:11	11042101.D	BFB S19110421	S34-10062101	TZ	1	passed
2	11/4/21 6:32	11042102.D	CCV S19110421 1000pg	S34-10062101/S34-10252104 (11/24)	TZ	16	passed
3	11/4/21 7:04	11042103.D	Blank	S34-10062101	TZ	1	
4	11/4/21 7:35	11042104.D	MB S19110421 1000mL	S34-10062101_AS01329	TZ	1	passed
5	11/4/21 8:06	11042105.D	LCS S19110421 1000pg	S34-10062101/S34-10182102 (11/17)	TZ	1	passed
6	11/4/21 8:37	11042106.D	LCSD S19110421 1000pg	S34-10062101/S34-10182102 (11/17)	TZ	1	passed
7	11/4/21 9:09	11042107.D	Blank	S34-10062101	TZ	1	
8	11/4/21 10:50	11042108.D	P2105732-009 (1000mL)	S34-10062101	TZ	2	
9	11/4/21 11:21	11042109.D	P2105732-010 (1000mL)	S34-10062101	TZ	3	
10	11/4/21 11:52	11042110.D	P2105732-011 (1000mL)	S34-10062101	TZ	12	
11	11/4/21 12:24	11042111.D	P2105732-012 (1000mL)	S34-10062101	TZ	13	
12	11/4/21 12:55	11042112.D	P2105506-006dil (100mL)	S34-10062101	TZ	14	
13	11/4/21 13:26	11042113.D	P2105732-010dil (100mL)	S34-10062101	TZ	3	
14	11/4/21 13:58	11042114.D	P2105732-011dil (100mL)	S34-10062101	TZ	12	
15	11/4/21 14:29	11042115.D	P2105732-012dil (100mL)	S34-10062101	TZ	13	
16	11/4/21 15:01	11042116.D	P2105732-009dup (1000mL)	S34-10062101	TZ	2	passed
17	11/4/21 15:51	11042117.D	P2105503-001 (1000mL)	S34-10062101	TZ	8	
18	11/4/21 17:03	11042118.D	P2105503-004 (1000mL)	S34-10062101	TZ	10	
19	11/4/21 17:34	11042119.D	P2105503-003 (500mL)	S34-10062101	TZ	9	over diluted
20	11/4/21 18:06	11042120.D	P2105503-005 (500mL)	S34-10062101	TZ	11	over diluted
21	11/4/21 18:37	11042121.D	Blank	S34-10062101	TZ	1	
22	11/4/21 19:09	11042122.D	P2105519-001 (1000mL)	S34-10062101	TZ	4	
23	11/4/21 19:41	11042123.D	P2105519-002 (1000mL)	S34-10062101	TZ	5	
24	11/4/21 20:12	11042124.D	P2105519-003 (1000mL)	S34-10062101	TZ	6	
25	11/4/21 20:44	11042125.D	P2105519-004 (1000mL)	S34-10062101	TZ	7	
26	11/4/21 21:16	11042126.D	P2105519-008 (1000mL)	S34-10062101	TZ	2	
27	11/4/21 21:48	11042127.D	P2105519-009 (1000mL)	S34-10062101	TZ	3	
28	11/4/21 22:20	11042128.D	P2105519-005 (1000mL)	S34-10062101	TZ	8	
29	11/4/21 22:52	11042129.D	P2105519-006 (100mL)	S34-10062101	TZ	12	over diluted
30	11/4/21 23:23	11042130.D	P2105519-007 (100mL)	S34-10062101	TZ	13	over diluted
CCV out low for CFC-114 - NT for SIM							

Injection Log

TZ 11/8/21

Directory: I:\MS19\DATA\2021_11\05\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	11/5/21 23:54	11052101.D	BFB S19110521	S34-10062101	TZ	1	passed
2	11/5/21 0:16	11052102.D	CCV S19110521 1000pg	S34-10062101/S34-10252104 (11/24)	TZ	16	passed
3	11/5/21 0:47	11052103.D	CCV T19110521 1000pg	S34-10062101/S34-10212101 (11/20)	TZ	16	passed
4	11/5/21 1:19	11052104.D	Blank	S34-10062101	TZ	1	
5	11/5/21 1:51	11052105.D	MB S19110521 1000mL	S34-10062101_AS01329	TZ	1	passed
6	11/5/21 2:22	11052106.D	LCS S19110521 1000pg	S34-10062101/S34-10182102 (11/17)	TZ	1	passed
7	11/5/21 2:54	11052107.D	LCSD S19110521 1000pg	S34-10062101/S34-10182102 (11/17)	TZ	1	passed
8	11/5/21 3:26	11052108.D	Blank	S34-10062101	TZ	1	
9	11/5/21 9:23	11052109.D	P2105503-003 (1000mL) pf2	S34-10062101	TZ	13	
10	11/5/21 9:55	11052110.D	P2105503-005 (1000mL) pf2	S34-10062101	TZ	11	
11	11/5/21 10:26	11052111.D	P2105503-003dil (50mL) pf2	S34-10062101	TZ	13	
12	11/5/21 11:08	11052112.D	P2105519-006 (1000mL)	S34-10062101	TZ	12	
13	11/5/21 11:40	11052113.D	P2105519-007 (1000mL)	S34-10062101	TZ	5	
14	11/5/21 12:43	11052114.D	Blank	S34-10062101	TZ	1	
15	11/5/21 13:15	11052115.D	P2105519-010 (1000mL)	S34-10062101	TZ	2	
16	11/5/21 13:46	11052116.D	P2105519-011 (1000mL)	S34-10062101	TZ	3	
17	11/5/21 14:18	11052117.D	P2105519-012 (1000mL)	S34-10062101	TZ	4	
18	11/5/21 14:53	11052118.D	P2105519-013 (1000mL)	S34-10062101	TZ	5	
19	11/5/21 15:25	11052119.D	P2105519-014 (1000mL)	S34-10062101	TZ	6	
20	11/5/21 15:57	11052120.D	P2105519-015 (1000mL)	S34-10062101	TZ	7	
21	11/5/21 16:45	11052121.D	Blank	S34-10062101	TZ	1	
22	11/5/21 17:16	11052122.D	P2105814-001 (1000mL)	S34-10062101	TZ	3	
23	11/5/21 17:47	11052123.D	P2105814-001dil (100mL)	S34-10062101	TZ	3	not needed
24	11/5/21 18:19	11052124.D	P2105814-002 (1000mL)	S34-10062101	TZ	4	
25	11/5/21 18:50	11052125.D	P2105814-002dil (100mL)	S34-10062101	TZ	4	not needed
26	11/5/21 19:21	11052126.D	P2105814-003 (1000mL)	S34-10062101	TZ	5	
27	11/5/21 19:53	11052127.D	P2105814-003dil (100mL)	S34-10062101	TZ	5	not needed
28	11/5/21 20:24	11052128.D	P2105814-004 (1000mL)	S34-10062101	TZ	6	
29	11/5/21 20:56	11052129.D	P2105814-004dil (100mL)	S34-10062101	TZ	6	not needed
CCV out low for CFC-114 - NT for SIM							

Appendix D
Data Validation Report

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FPM Remediations, Inc.
Data Usability Summary Report
Makah VI Investigation
Contract No. W912-DW-21-F-5000

FPM Project No. 1085-20-03:04
ALS Environmental SDG # P2105519

Laboratory: ALS Environmental (ALS)
Sample Matrix: Air
Number of Samples: 15
Analytical Protocol: Per method requirements/project-specific QAPP
Data Reviewer: Connie van Hoesel
Sample Date: October 18, 2021

LIST OF DATA VERIFICATION SAMPLES

This verification report pertains to the following environmental samples and corresponding QC samples:

Lab Sample ID	Client Sample ID	Sample Date	EPA TO15	Data Validation Stage
P2105519-001	18CA04	10/18/21	X	S2BVM
P2105519-002	18CA05	10/18/21	X	S2BVM
P2105519-003	18CA06	10/18/21	X	S2BVM
P2105519-004	18OA02	10/18/21	X	S2BVM
P2105519-005	18IA04	10/18/21	X	S2BVM
P2105519-006	18IA05	10/18/21	X	S2BVM
P2105519-007	18IA06	10/18/21	X	S2BVM
P2105519-008	16CA04	10/18/21	X	S2BVM
P2105519-009	16CA05	10/18/21	X	S2BVM
P2105519-010	16IA05D	10/18/21	X	S2BVM
P2105519-011	16CA06	10/18/21	X	S2BVM
P2105519-012	16OA02	10/18/21	X	S2BVM
P2105519-013	16IA04	10/18/21	X	S2BVM
P2105519-014	16IA05	10/18/21	X	S2BVM
P2105519-015	16IA06	10/18/21	X	S2BVM

Notes:
Refer to attached chain-of-custodies for detailed sampling information.

DELIVERABLES

The report consisted of the following major sections: sample delivery group (SDG) narrative, reporting limit definitions, chain-of-custody, analytical results based on analytical batch, data package summary forms, including calibration summaries, method blank summaries, laboratory control sample summaries, matrix spike/matrix spike duplicate summaries, performance checks, surrogate and internal standard recoveries, etc., as applicable.

ANALYTICAL METHODS

The analytical test methods and QA/QC requirements used for the groundwater sample analyses were per method requirements: Volatile Organic Compounds (VOCs) by EPA Method TO15 (Target Compound List [TCL]) Selective Ion Monitoring (SIM) and Air-Phase Petroleum Hydrocarbons (APH: C5-C8, C9-C12, and C9-C10) by Method MA DEP, Revision 1, December 2009.

VERIFICATION GUIDANCE

The analytical work was performed by ALS in accordance with the DOD QSM, Version 5.3, and QC requirements of the respective analytical methods and of the project-specific QAPP. The data usability analysis was based on the reviewer's professional judgment and on an assessment of how this data would fare with respect to the National Functional Guidelines for Organic Superfund Methods Data Review (January 2017), DOD General Data Validation Guidelines (November 2019), and the criteria as listed in the project-specific QAPP.

QA/QC CRITERIA

The following QA/QC criteria were reviewed for the VOC and APH analyses, as applicable:

- Method limits of detection and quantitation (LOD, LOQ)
- Holding times
- GC/MS tune performance
- Initial and Continuing calibration summaries
- Method blanks
- Field duplicate results
- Matrix spike/matrix spike duplicate (MS/MSD) analysis
- Surrogate spike recoveries
- Internal standard areas counts and retention times
- Laboratory control samples (LCS)
- Results reported between LOD and LOQ (J-flag)
- Sample storage and preservation
- Data system printouts
- Qualitative and quantitative compound identification
- Chain-of-custody (COC)
- Case narrative and deliverables compliance

The items listed above were in compliance with DOD QSM, Version 5.1 and project-specific QAPP criteria and protocols with exceptions discussed in the text below. The data have been verified according to the procedures outlined above and qualified accordingly.

GENERAL NOTES:

BLANKS

Whenever blanks, including method, ambient, equipment, and trip, contained low levels of contaminants (between LOD and LOQ), the laboratory qualified the subject results with a “J” flag. Since no qualification of associated field samples are required for blank concentrations less than half the LOQ, no further action was taken in such instances.

REPORTING LIMIT

Results identified as detected but the quantified amount was below the LOQ, were qualified “J” by the laboratory, indicating that the result is estimated. The qualifier is appropriate and is retained for data usability purposes.

ALIPHATIC PETROLEUM HYDROCARBONS (APHs)

- There were no quality control exceedances for the APH analysis.

VOLATILE ORGANIC COMPOUNDS (VOCs)

- Field duplicate samples, which are collected at the same location and at the same time using identical collection, handling, and analytical procedures, are used to assess precision of the sample collection process. The UFP QAPP requires qualification of data for field duplicates criterion if the duplicate samples contain detected compounds with concentrations above 5x the reporting limits (RL's) and the relative percent differences (RPD's) between the duplicate sample results exceed RPD control limits (20% for water samples). If either the parent or the duplicate sample is less than 5x the RL, then the difference between the parent and duplicate sample must be less than 2x the RL. "J" flags for detects and "UJ" flags for non-detects are required per the QAPP for any exceedances. For these purposes the RL is considered equal to the LOQ.

Corrective Action: The following table summarizes QC exceedances of the relative percent differences (RPDs) (or total differences, as appropriate) of field duplicate sample sets 16IA05/16IA05D (non-detect results are not listed):

Normal sample ID	Field duplicate sample ID	Analyte	Normal Result (µg/m3)	Field Dup Result (µg/m3)	LOQ	RPD or ±difference	Flag Applied	Rationale
16IA05	16IA05D	Benzene	0.22	0.22	0.11, 0.10	0	None	Total difference < 2xLOQ
16IA05	16IA05D	Toluene	0.88	0.92	0.15, 0.14	0.04	None	Total diff. < 2xLOQ
16IA05	16IA05D	m,p-Xylenes	0.25	0.27	0.15, 0.14	0.02	None	Total diff. < 2xLOQ
16IA05	16IA05D	Naphthalene	0.15 U	0.27	0.15, 0.14	0.12	None	Total diff. < 2xLOQ

For parent/field duplicate sample set 16IA05/16IA05D, no flags were applied to the results since the total differences were within control limits.

DATA USABILITY RESULTS: COMPLETENESS

Method	Total Analytes	No. of Rejected analytes	% Completeness
MA APH Rev 1, Dec. 2009	15*3=45	0	100
TO-15 SIM VOCs	15*6=90	0	100

APHs

Based on the evaluation of all information in the analytical data groups, the results of all the samples for APHs are usable with the data validation qualifiers as noted. Using the validation approach as presented above, the results for all samples in this analytical batch are 100% usable. The data package is 100% complete, i.e., no sample results were rejected.

VOCs

Based on the evaluation of all information in the analytical data groups, the results of all the samples for VOCs are usable with the data validation qualifiers as noted. Using the validation approach as presented above, the results for all samples in this analytical batch are 100% usable. The data package is 100% complete, i.e., no sample results were rejected.

DATA USABILITY RESULTS: SUMMARY OF QUALIFIED ANALYTICAL DATA

Field Sample ID	Lab Sample ID	Analyte	Qualification	Reason for Qualification
<i>SDG #P2105519</i>				
No flags deemed required				

USABILITY SUMMARY

All data in SDG #P2105519 are usable, which can be used with qualifications as noted in the data review.

Signed: Concordia van Hoesel

Date: 11/15/2021

ATTACHMENTS

- Laboratory's Case Narrative
- Chain-of-Custody
- Qualified final data verification results on annotated laboratory results sheets

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: FPM Remediations, Inc.
 Project ID: MAKAH VI Investigation / 1085-20-03:04

Service Request: P2105519

Date Received: 10/21/2021
 Time Received: 10:00

MA-APH 1.0 - MA VOC PH Can
 TO-15 - VOC SIM

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)		
18CA04	P2105519-001	Air	10/18/2021	07:45	SC00074	0.32	3.97	X	X
18CA05	P2105519-002	Air	10/18/2021	07:50	SC01811	0.14	3.77	X	X
18CA06	P2105519-003	Air	10/18/2021	07:55	SSC00557	0.11	3.85	X	X
18OA02	P2105519-004	Air	10/18/2021	07:40	SC01923	-0.83	3.92	X	X
18IA04	P2105519-005	Air	10/18/2021	08:00	AS01007	-0.45	3.89	X	X
18IA05	P2105519-006	Air	10/18/2021	08:02	SSC00554	-0.90	3.99	X	X
18IA06	P2105519-007	Air	10/18/2021	08:04	SSC00180	-0.36	4.08	X	X
16CA04	P2105519-008	Air	10/18/2021	08:10	SC02097	0.20	3.72	X	X
16CA05	P2105519-009	Air	10/18/2021	08:15	SSC00154	0.21	3.97	X	X
16IA05D	P2105519-010	Air	10/18/2021	08:24	SC00861	-1.03	3.89	X	X
16CA06	P2105519-011	Air	10/18/2021	08:20	AS01290	0.37	3.76	X	X
16OA02	P2105519-012	Air	10/18/2021	08:05	SC00783	-0.30	3.87	X	X
16IA04	P2105519-013	Air	10/18/2021	08:22	SC02337	-0.76	5.05	X	X
16IA05	P2105519-014	Air	10/18/2021	08:24	SC02319	-1.82	3.95	X	X
16IA06	P2105519-015	Air	10/18/2021	08:26	SC00051	-0.54	3.89	X	X



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Client: FPM Remediations, Inc.
Project: MAKAH VI Investigation / 1085-20-03:04

Service Request No: P2105519
New York Lab ID: 11221

CASE NARRATIVE

The samples were received intact under chain of custody on October 21, 2021 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Air-Phase Petroleum Hydrocarbons (APH) Analysis

The samples were also analyzed for total aliphatic and aromatic gasoline range hydrocarbons by gas chromatography/mass spectrometry according to the Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH), Massachusetts Department of Environmental Protection, Revision 1, December, 2009. This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP accreditation.

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present. Any internal/tuning standards and target APH analytes eluting in the hydrocarbon ranges are also subtracted. Additionally, C₉-C₁₀ Aromatic Hydrocarbons are excluded from the C₉-C₁₂ Aliphatic Hydrocarbon range.

Volatile Organic Compound Analysis

The samples were analyzed in SIM mode for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.3 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161

Air - Chain of Custody Record & Analytical Service Request

P2105519

Requested Turnaround Time in Business Days (Surcharges) please circle 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) <u>10 Day-Standard</u>	ALS Project No.
--	-----------------

Company Name & Address (Reporting Information) OF JV 181 Kemwood Ave, Orinda, NY 13421				Project Name MAKAH VI Investigation				ALS Contact Hayden Ackers		Analysis Method	Comments e.g. Actual Preservative or specific instructions								
Project Manager Niels van Hoesel				Project Number 1085-20-03:04				P.O. # / Billing Information See above											
Phone 315-336-7721		Fax —		Sampler (Print & Sign) Niels van Hoesel <i>[Signature]</i>				TO-15 BTX + Groups (as specified)											
Email Address for Result Reporting N.VANHOESEL@FPM-REMEDIATIONS.COM				Client Sample ID				Laboratory ID Number				Date Collected							
Laboratory ID Number		Date Collected		Time Collected		Canister ID (Bar code # - AC, SC, etc.)		Flow Controller ID (Bar code # - FC #)		Canister Start Pressure "Hg		Canister End Pressure "Hg/psig		Sample Volume					
1BCA04		1		10/18/21		745		SC00074		SFC00271		-29.97		-2.5		6L		X	
1BCA05		2		10/18/21		750		SC01811		SFC0028		-29.72		-2.0		6L		X	
18CA06		3		10/18/21		755		SSC00557		SFC00483		-30.01		-3.0		6L		X	
18OA02		4		10/18/21		740		SC01923		SFC00194		-29.96		-2.5		6L		X	
18IA04		5		10/18/21		800		AS01007		SFC00560		-29.94		-3.8		6L		X	
18IA05		6		10/18/21		802		SSC00554		SFC00039		-29.93		-3.8		6L		X	
18IA06		7		10/18/21		804		SSC00180		SFC00221		-29.94		-2.7		6L		X	
16CA04		8		10/18/21		810		SC02097		SFC00457		-29.97		-3.2		6L		X	
16CA05		9		10/18/21		815		SSC00154		SFC00033		-30.00		-3.2		6L		X	
16IA05D		10		10/18/21		824		SC000861		SFC00030		-29.94		-4.5		6L		X	
16CA06		11		10/18/21		820		AS01290		SFC00336		-29.96		-1.8		6L		X	
16OA02		12		10/18/21		805		SC00783		SFC00491		-29.99		-2.8		6L		X	
16IA04		13		10/18/21		822		SC02337		SFC00481		-29.98		-3.7		6L		X	
16IA05		14		10/18/21		824		SC02319		SFC00024		-29.99		-5.7		6L		X	
Report Tier Levels - please select										Project Requirements (MRLs, QAPP)									
Tier I - Results (Default if not specified) _____				Tier III (Results + QC & Calibration Summaries)				EDD required <u>(Yes)</u> / No				Chain of Custody Seal: (Circle)							
Tier II (Results + QC Summaries) _____				Tier IV (Data Validation Package) 10% Surcharge <u>X</u>				Type: <u>ERP/MS</u> Units: _____				INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>							
Relinquished by: (Signature) <i>[Signature]</i>				Date: <u>10/19/21</u>		Time: <u>12:00</u>		Received by: (Signature) <i>[Signature]</i>				Date: <u>10/21/21</u>		Time: <u>1000</u>					
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)				Date:		Time:		Cooler / Blank Temperature _____ °C			



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
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 Phone (805) 526-7161

P2105519

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

Company Name & Address (Reporting Information) OFJV 181 Kenwood Ave, Orinda, NY 13421				Project Name MAKAH VI Investigation				ALS Contact		Comments e.g. Actual Preservative or specific instructions
				Project Number 1085-20-03:04				Analysis Method		
Project Manager Niels van Hoesel				P.O. # / Billing Information See above.				TO-15 BTEXT groups (as emailed)		
Phone 315-336-7721		Fax —		Sampler (Print & Sign) NIELS VAN HOESEL						
Email Address for Result Reporting N.VANHOESEL@FPM-REMEDIATIONS.COM										
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure *Hg	Canister End Pressure *Hg/psig	Sample Volume		
16 IA 06	K	10/18/21	826	SL00651	SFC00222	-30.07	-2.0	6L	X	
Report Tier Levels - please select Tier I - Results (Default if not specified) _____ Tier III (Results + QC & Calibration Summaries) _____ Tier II (Results + QC Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge <u>A</u>									Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature)			Date: 10/19/21 Time: 12:00		EDD required <u>Yes</u> / No Type: ERPIAS Units: _____		Chain of Custody Seal: (Circle) INTACT <input checked="" type="radio"/> BROKEN <input type="radio"/> ABSENT <input type="radio"/>			
Relinquished by: (Signature) _____			Date: _____ Time: _____		Received by: (Signature)		Date: 10/21/21 Time: 1000		Cooler / Blank Temperature _____ °C	
Relinquished by: (Signature) _____			Date: _____ Time: _____		Received by: (Signature) _____		Date: _____ Time: _____			

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: 18CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-001

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00074

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/3/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.32 Final Pressure (psig): 3.97

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: 18CA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-002

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01811

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/3/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.14 Final Pressure (psig): 3.77

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₃ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	18	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client:	FPM Remediations, Inc.	
Client Sample ID:	18CA06	ALS Project ID: P2105519
Client Project ID:	MAKAH VI Investigation / 1085-20-03:04	ALS Sample ID: P2105519-003
Test Code:	Massachusetts APH, Revision 1, December 2009	Date Collected: 10/18/21
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received: 10/21/21
Analyst:	Wida Ang	Date Analyzed: 11/3/21
Sample Type:	6.0 L Silonite Canister	Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:		
Container ID:	SSC00557	
	Initial Pressure (psig): 0.11	Final Pressure (psig): 3.85

Container Dilution Factor: 1.25

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	14	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client:	FPM Remediations, Inc.	ALS Project ID: P2105519
Client Sample ID:	180A02	ALS Sample ID: P2105519-004
Client Project ID:	MAKAH VI Investigation / 1085-20-03:04	
Test Code:	Massachusetts APH, Revision 1, December 2009	Date Collected: 10/18/21
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received: 10/21/21
Analyst:	Wida Ang	Date Analyzed: 11/3/21
Sample Type:	6.0 L Summa Canister	Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:		
Container ID:	SC01923	

Initial Pressure (psig): -0.83 Final Pressure (psig): 3.92

Container Dilution Factor: 1.34

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-005

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: AS01007

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/3/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.45 Final Pressure (psig): 3.89

Container Dilution Factor: 1.30

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	14	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-006

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00554

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.90 Final Pressure (psig): 3.99

Container Dilution Factor: 1.35

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₃ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₃-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-007

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00180

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.36 Final Pressure (psig): 4.08

Container Dilution Factor: 1.31

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND =,Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-008

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC02097

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.20 Final Pressure (psig): 3.72

Container Dilution Factor: 1.24

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.
¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.
²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.
³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.
 ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
 MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client:	FPM Remediations, Inc.	ALS Project ID: P2105519
Client Sample ID:	16CA05	ALS Sample ID: P2105519-009
Client Project ID:	MAKAH VI Investigation / 1085-20-03:04	
Test Code:	Massachusetts APH, Revision 1, December 2009	Date Collected: 10/18/21
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received: 10/21/21
Analyst:	Wida Ang	Date Analyzed: 11/4/21
Sample Type:	6.0 L Silonite Canister	Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:		
Container ID:	SSC00154	

Initial Pressure (psig): 0.21 Final Pressure (psig): 3.97

Container Dilution Factor: 1.25

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	25	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA05D
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-010

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00861

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.03 Final Pressure (psig): 3.89

Container Dilution Factor: 1.36

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	27	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.4	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-011

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: AS01290

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 3.76

Container Dilution Factor: 1.22

Compound	Result µg/m³	MRL µg/m³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	24	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	12	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.1	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16OA02
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-012

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00783

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.30 Final Pressure (psig): 3.87

Container Dilution Factor: 1.29

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₃ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.2	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client:	FPM Remediations, Inc.	
Client Sample ID:	16IA04	ALS Project ID: P2105519
Client Project ID:	MAKAH VI Investigation / 1085-20-03:04	ALS Sample ID: P2105519-013
Test Code:	Massachusetts APH, Revision 1, December 2009	Date Collected: 10/18/21
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received: 10/21/21
Analyst:	Wida Ang	Date Analyzed: 11/4/21
Sample Type:	6.0 L Summa Canister	Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:		
Container ID:	SC02337	
	Initial Pressure (psig): -0.76	Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	28	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	14	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

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Client: FPM Remediations, Inc.

Client Sample ID: 16IA05

Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519

ALS Sample ID: P2105519-014

Test Code: Massachusetts APH, Revision 1, December 2009

Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16

Analyst: Wida Ang

Sample Type: 6.0 L Summa Canister

Test Notes:

Container ID: SC02319

Date Collected: 10/18/21

Date Received: 10/21/21

Date Analyzed: 11/4/21

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.82 Final Pressure (psig): 3.95

Container Dilution Factor: 1.45

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	29	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	15	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.6	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-015

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00051

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.54 Final Pressure (psig): 3.89

Container Dilution Factor: 1.31

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	26	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	13	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	3.3	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: Method Blank
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-MB

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/3/21
 Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₃ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	20	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	10	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	2.5	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₃-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: Method Blank
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-MB

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 11/3/21
Volume(s) Analyzed: 1.00 Liter(s)

Compound	Result µg/m ³	MRL µg/m ³	Data Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	20	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	10	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	2.5	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

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Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-DLCS

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/3/21
 Volume(s) Analyzed: 0.125 Liter(s)

Compound	Spike Amount		Result		% Recovery		ALS	RPD	RPD	Data
	LCS / DLCS		LCS	DLCS	LCS	DLCS	Acceptance			
	µg/m³		µg/m³	µg/m³	LCS	DLCS	Limits	Limit	Qualifier	
C5 - C8 Aliphatic Hydrocarbons	206	185	175	90	85	70-130	6	30		
C9 - C12 Aliphatic Hydrocarbons	208	215	207	103	100	70-130	3	30		
C9 - C10 Aromatic Hydrocarbons	414	398	385	96	93	70-130	3	30		

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: FPM Remediations, Inc.
Client Sample ID: Duplicate Lab Control Sample
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P211103-DLCS

Test Code: Massachusetts APH, Revision 1, December 2009
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sample Type: 6.0 L Summa Canister
Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 0.125 Liter(s)

Compound	Spike Amount		Result			ALS			Data Qualifier
	LCS / DLCS	LCS	DLCS	% Recovery		Acceptance	RPD	RPD	
	µg/m ³	µg/m ³	µg/m ³	LCS	DLCS	Limits	Limit	Limit	
C5 - C8 Aliphatic Hydrocarbons	206	204	194	99	94	70-130	5	30	
C9 - C12 Aliphatic Hydrocarbons	208	224	220	108	106	70-130	2	30	
C9 - C10 Aromatic Hydrocarbons	414	393	391	95	94	70-130	1	30	

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

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Client:	FPM Remediations, Inc.	ALS Project ID: P2105519
Client Sample ID:	16IA04	ALS Sample ID: P2105519-013DUP
Client Project ID:	MAKAH VI Investigation / 1085-20-03:04	
Test Code:	Massachusetts APH, Revision 1, December 2009	Date Collected: 10/18/21
Instrument ID:	Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16	Date Received: 10/21/21
Analyst:	Wida Ang	Date Analyzed: 11/4/21
Sample Type:	6.0 L Summa Canister	Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:		
Container ID:	SC02337	

Initial Pressure (psig): -0.76 Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

Compound	Sample Result µg/m ³	Duplicate Sample Result µg/m ³	Average µg/m ³	% RPD	RPD Limit	Data
						Qualifier
C ₅ - C ₈ Aliphatic Hydrocarbons ^{1,2}	ND	ND	-	-	30	
C ₉ - C ₁₂ Aliphatic Hydrocarbons ^{1,3}	ND	ND	-	-	30	
C ₉ - C ₁₀ Aromatic Hydrocarbons	ND	ND	-	-	30	

Significant non-petroleum related peaks (i.e. halogenated, oxygenated, terpenes, etc.) are subtracted from the hydrocarbon range areas when present.

¹Hydrocarbon Range data from total ion chromatogram excluding any internal/tuning standards eluting in that range.

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target APH analytes eluting in that range.

³C₉-C₁₂ Aliphatic Hydrocarbons exclude concentration of Target APH Analytes eluting in that range and concentration of C₉-C₁₀ Aromatic Hydrocarbons.

ND = Compound was analyzed for, but not detected.

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Client: FPM Remediations, Inc.
Client Sample ID: 18CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-001

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00074

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.32 Final Pressure (psig): 3.97

Container Dilution Factor: 1.24

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.093	0.067	0.029	
108-88-3	Toluene	0.44	0.12	0.12	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	0.14	0.12	0.031	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 18CA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-002

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01811

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.14 Final Pressure (psig): 3.77

Container Dilution Factor: 1.24

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.093	0.069	0.029	
108-88-3	Toluene	0.75	0.12	0.20	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	0.16	0.12	0.037	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 18CA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-003

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00557

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/4/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.11 Final Pressure (psig): 3.85

Container Dilution Factor: 1.25

CAS #	Compound	Result	MRL	Result	MRL	Data Qualifier
		µg/m ³	µg/m ³	ppbV	ppbV	
71-43-2	Benzene	0.20	0.094	0.062	0.029	
108-88-3	Toluene	0.30	0.13	0.079	0.033	
100-41-4	Ethylbenzene	ND	0.13	ND	0.029	
179601-23-1	m,p-Xylenes	0.17	0.13	0.038	0.029	
95-47-6	o-Xylene	ND	0.13	ND	0.029	
91-20-3	Naphthalene	0.13	0.13	0.024	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 18OA02
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-004

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC01923

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.83 Final Pressure (psig): 3.92

Container Dilution Factor: 1.34

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.20	0.10	0.061	0.031	
108-88-3	Toluene	0.22	0.13	0.057	0.036	
100-41-4	Ethylbenzene	ND	0.13	ND	0.031	
179601-23-1	m,p-Xylenes	ND	0.13	ND	0.031	
95-47-6	o-Xylene	ND	0.13	ND	0.031	
91-20-3	Naphthalene	ND	0.13	ND	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-005

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: AS01007

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.45 Final Pressure (psig): 3.89

Container Dilution Factor: 1.30

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.098	0.069	0.031	
108-88-3	Toluene	1.3	0.13	0.35	0.035	
100-41-4	Ethylbenzene	0.18	0.13	0.041	0.030	
179601-23-1	m,p-Xylenes	0.47	0.13	0.11	0.030	
95-47-6	o-Xylene	0.19	0.13	0.043	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 181A05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-006

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavaia
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00554

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.90 Final Pressure (psig): 3.99

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.10	0.069	0.032	
108-88-3	Toluene	1.2	0.14	0.32	0.036	
100-41-4	Ethylbenzene	0.25	0.14	0.058	0.031	
179601-23-1	m,p-Xylenes	0.56	0.14	0.13	0.031	
95-47-6	o-Xylene	0.21	0.14	0.047	0.031	
91-20-3	Naphthalene	ND	0.14	ND	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 18IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-007

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00180

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/5/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.36 Final Pressure (psig): 4.08

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.23	0.098	0.072	0.031	
108-88-3	Toluene	1.4	0.13	0.37	0.035	
100-41-4	Ethylbenzene	0.21	0.13	0.048	0.030	
179601-23-1	m,p-Xylenes	0.57	0.13	0.13	0.030	
95-47-6	o-Xylene	0.22	0.13	0.050	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-008

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC02097

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.20 Final Pressure (psig): 3.72

Container Dilution Factor: 1.24

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.093	0.070	0.029	
108-88-3	Toluene	0.27	0.12	0.071	0.033	
100-41-4	Ethylbenzene	ND	0.12	ND	0.029	
179601-23-1	m,p-Xylenes	ND	0.12	ND	0.029	
95-47-6	o-Xylene	ND	0.12	ND	0.029	
91-20-3	Naphthalene	ND	0.12	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-009

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: SSC00154

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/4/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.21 Final Pressure (psig): 3.97

Container Dilution Factor: 1.25

CAS #	Compound	Result	MRL	Result	MRL	Data Qualifier
		µg/m ³	µg/m ³	ppbV	ppbV	
71-43-2	Benzene	0.20	0.094	0.064	0.029	
108-88-3	Toluene	0.22	0.13	0.059	0.033	
100-41-4	Ethylbenzene	ND	0.13	ND	0.029	
179601-23-1	m,p-Xylenes	ND	0.13	ND	0.029	
95-47-6	o-Xylene	ND	0.13	ND	0.029	
91-20-3	Naphthalene	ND	0.13	ND	0.024	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA04
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-013

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC02337

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/5/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.76 Final Pressure (psig): 5.05

Container Dilution Factor: 1.42

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.11	0.065	0.033	
108-88-3	Toluene	0.95	0.14	0.25	0.038	
100-41-4	Ethylbenzene	ND	0.14	ND	0.033	
179601-23-1	m,p-Xylenes	0.27	0.14	0.062	0.033	
95-47-6	o-Xylene	ND	0.14	ND	0.033	
91-20-3	Naphthalene	ND	0.14	ND	0.027	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16OA02
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-012

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00783

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.30 Final Pressure (psig): 3.87

Container Dilution Factor: 1.29

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.21	0.097	0.066	0.030	
108-88-3	Toluene	0.28	0.13	0.075	0.034	
100-41-4	Ethylbenzene	ND	0.13	ND	0.030	
179601-23-1	m,p-Xylenes	0.17	0.13	0.040	0.030	
95-47-6	o-Xylene	ND	0.13	ND	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16CA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-011

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Silonite Canister
Test Notes:
Container ID: AS01290

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/5/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 3.76

Container Dilution Factor: 1.22

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.16	0.092	0.051	0.029	
108-88-3	Toluene	0.16	0.12	0.043	0.032	
100-41-4	Ethylbenzene	ND	0.12	ND	0.028	
179601-23-1	m,p-Xylenes	ND	0.12	ND	0.028	
95-47-6	o-Xylene	ND	0.12	ND	0.028	
91-20-3	Naphthalene	ND	0.12	ND	0.023	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA05D
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-010

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00861

Date Collected: 10/18/21
 Date Received: 10/21/21
 Date Analyzed: 11/5/21
 Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.03 Final Pressure (psig): 3.89

Container Dilution Factor: 1.36

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.10	0.069	0.032	
108-88-3	Toluene	0.92	0.14	0.24	0.036	
100-41-4	Ethylbenzene	ND	0.14	ND	0.031	
179601-23-1	m,p-Xylenes	0.27	0.14	0.063	0.031	
95-47-6	o-Xylene	ND	0.14	ND	0.031	
91-20-3	Naphthalene	0.27	0.14	0.052	0.026	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA05
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-014

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC02319

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/5/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -1.82 Final Pressure (psig): 3.95

Container Dilution Factor: 1.45

CAS #	Compound	Result µg/m ³	MRL µg/m ³	Result ppbV	MRL ppbV	Data Qualifier
71-43-2	Benzene	0.22	0.11	0.068	0.034	
108-88-3	Toluene	0.88	0.15	0.23	0.038	
100-41-4	Ethylbenzene	ND	0.15	ND	0.033	
179601-23-1	m,p-Xylenes	0.25	0.15	0.058	0.033	
95-47-6	o-Xylene	ND	0.15	ND	0.033	
91-20-3	Naphthalene	ND	0.15	ND	0.028	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

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Client: FPM Remediations, Inc.
Client Sample ID: 16IA06
Client Project ID: MAKAH VI Investigation / 1085-20-03:04

ALS Project ID: P2105519
 ALS Sample ID: P2105519-015

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
Analyst: Topacio Zavala
Sample Type: 6.0 L Summa Canister
Test Notes:
Container ID: SC00051

Date Collected: 10/18/21
Date Received: 10/21/21
Date Analyzed: 11/5/21
Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.54 Final Pressure (psig): 3.89

Container Dilution Factor: 1.31

CAS #	Compound	Result <small>µg/m³</small>	MRL <small>µg/m³</small>	Result <small>ppbV</small>	MRL <small>ppbV</small>	Data Qualifier
71-43-2	Benzene	0.22	0.098	0.070	0.031	
108-88-3	Toluene	1.0	0.13	0.27	0.035	
100-41-4	Ethylbenzene	ND	0.13	ND	0.030	
179601-23-1	m,p-Xylenes	0.28	0.13	0.064	0.030	
95-47-6	o-Xylene	ND	0.13	ND	0.030	
91-20-3	Naphthalene	ND	0.13	ND	0.025	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.