

Final Off Depot Air Sparge/
Soil Vapor Extraction
System
Annual Operations
Report, Year 12
(August 2022 through July 2023)

Defense Depot Memphis, Tennessee

July 2024

Final Off Depot Air Sparge/ Soil Vapor Extraction System
Annual Operations Report, Year 12 (August 2022 through July 2023)
Dunn Field - Defense Depot Memphis, Tennessee

Prepared for:



U.S. Army Corps of Engineers
Mobile District
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Acronyms and Abbreviations

acfm	actual cubic feet per minute
AS/SVE	air sparging and soil vapor extraction
AWS	air/water separator
bgs	below ground surface
BRAC	Base Realignment and Closure
cDCE	cis 1,2-dichloroethene
CVOC	chlorinated volatile organic compound
DDMT	Defense Depot Memphis, Tennessee
DQE	data quality evaluation
DQI	data quality indicator
DQO	data quality objective
EPA	U.S. Environmental Protection Agency
IAQ	Intermediate Aquifer
HDPE	High Density Polyethylene
IRACR	Interim Remedial Action Completion Report
lb	pound
lb/hr	pounds per hour
LTM	long-term monitoring
MAQ	Memphis Aquifer
MCL	maximum contaminant level
MLGW	Memphis Light, Gas and Water
MW	monitoring well
NPL	National Priorities List
O&M	operations and maintenance
PID	photoionization detector
PLC	programmable logic controller
ppbv	parts per billion by volume
ppm	parts per million
QAPP	Quality Assurance Project Plan
QC	quality control
RA	remedial action
RL	reporting limit
ROD	Record of Decision
scfm	standard cubic feet per minute
SCHD	Shelby County Health Department
SVE	soil vapor extraction
TC	target concentration
TCE	trichloroethene
TDEC	Tennessee Department of Environment and Conservation
TeCA	1,1,2,2-tetrachloroethane
Trinity	Trinity Analysis & Development Corp.
VMP	vapor monitoring point
VOC	volatile organic compound
µg/L	micrograms per liter
%	percent

1. Introduction

This report summarizes the operations and maintenance (O&M) activities and the results of system monitoring for Year 12 operations at the Off Depot air sparging and soil vapor extraction (AS/SVE) system at the former Defense Depot Memphis, Tennessee (DDMT). The AS/SVE system addresses the Off Depot groundwater plume west of Dunn Field (“the site”). The report was prepared under Contract W91278-16-D-0054, Delivery Order W9127820F0137 to the U.S. Army Corps of Engineers, Mobile District. The Year 12 report covers operations from 01 August 2022 through 31 July 2023 and provides a summary of system shutdown activities that were completed in August 2023.

Responses to U.S. Environmental Protection Agency (EPA) Region 4 comments and the Tennessee Department of Environment and Conservation (TDEC) approval letter are provided in [Appendix A](#).

1.1 Site Description

DDMT, located in southeastern Memphis, originated as a military facility in the early 1940s for receipt, warehousing, and distribution of supplies to military services and some civil agencies. The property consists of approximately 632 acres in two adjacent areas: the Main Installation and Dunn Field. Storage and distribution of material ended in September 1997, when the facility was closed under Base Realignment and Closure (BRAC).

DDMT was added to the National Priorities List (NPL) in 1992; the EPA Identification Number is TN4210020570. Responsibility for environmental restoration at DDMT transferred from the Defense Logistics Agency to the Department of the Army in December 2010. The regulatory oversight agencies are EPA Region 4 and TDEC.

The geologic units at DDMT are (from youngest to oldest): loess, including surface soil; fluvial deposits; Jackson Formation/upper Claiborne Group; and Memphis Sand. The uppermost aquifer is the unconfined Fluvial Deposits Aquifer, consisting of saturated sands and gravelly sands in the lower portion of the deposits. The base of the Fluvial Deposits Aquifer is controlled by the surface of the uppermost clay in the Upper Claiborne. The Jackson/Upper Claiborne forms the upper confining unit for the Memphis Aquifer (MAQ) on a regional basis and separates the Fluvial Deposits Aquifer from the MAQ at DDMT. The Intermediate Aquifer (IAQ) is locally developed in the Upper Claiborne sands. Where the clay is thin or absent, a hydraulic connection or ‘window’ is created between the Fluvial Deposits Aquifer and the IAQ, and potentially, the MAQ. The MAQ is a regional deep, confined aquifer and is the primary source of water for the City of Memphis. The Allen Well Field, which is operated by Memphis Light, Gas & Water (MLGW), is located approximately 2 miles west of Dunn Field.

1.2 Off Depot Remedial Action

The Off Depot remedial action (RA) includes the following components:

- An AS/SVE system installed across the core of the plume near the down-gradient end.
- Monitored natural attenuation and long-term groundwater monitoring to document remedy performance, as indicated by changes in chlorinated volatile organic compound (CVOC) concentrations and/or changes in the lateral or vertical extent of the CVOC plume.
- Institutional controls to prevent access to contaminated groundwater.

RA construction and Year One operations are described in the *Off Depot Groundwater Interim Remedial Action Completion Report, Revision 1* (Off Depot IRACR) (HDR, 2011a), which was approved by EPA and TDEC in November 2011.

1.3 AS/SVE System Description

AS/SVE was conducted near the leading edge of the groundwater plume west of Dunn Field to volatilize CVOCs and prevent further plume migration. The AS/SVE system was designed to intercept the majority of the Off Depot CVOC plume and to reduce individual CVOC concentrations below the treatment goal of 50 micrograms per liter ($\mu\text{g/L}$). AS/SVE operations began 21 December 2009. The AS/SVE system consists of 95 AS wells (including five additional AS wells installed in September 2020), 12 SVE wells, 10 pairs of vapor monitoring points (VMPs), and control buildings for the AS compressor, SVE blowers, and system controls. The system layout is shown on [Figure 1](#).

AS/SVE operations were incorporated into the Shelby County Health Department (SCHD) Permit #01030-01P issued in 2007 for the fluvial soil vapor extraction system on Dunn Field. Permit conditions included maintaining volatile organic compound (VOC) emissions below 5.71 pounds per hour (lb/hr) as documented in an annual emissions report. In May 2016, SCHD cancelled the permit and exempted the remediation system based on emissions consistently below the *de minimis* limit of 0.1 lb/hr.

The AS system is powered by a Kaeser CSD 100 rotary screw air compressor; air filters minimize oil particles in the air stream from the compressor. The other AS components are the receiving tank, refrigerated dryer, pressure regulator and relief valve, solenoid panel and sparge manifold, and 95 AS wells. The AS wells were installed at the base of the fluvial aquifer at depths of 82 to 115 feet below ground surface (bgs). Individual solenoid valves are used to set operating periods for each AS well.

75 of the AS wells were in use during Year 12, with approximately one-third of them operating at any one time for a total of approximately 12 hours each day (pulsed operation) during periods of full system operation (roughly every other month). Pulsed operation was selected to decrease the required system injection flow capacity, optimize air distribution by limiting the formation of permanent air channels, and limit groundwater flow around the AS well network due to reduction in permeability caused by air injection. [Section 1.4.1](#) includes a description of system operation during standby or limited-operation months when the majority of the AS wells were not operated.

The SVE system consists of two Kaeser rotary blowers (Model 420C/53P) installed in parallel (Blower 2 was taken off line in December 2022 due a seized motor). The blowers are connected to 12 SVE wells with 30-foot screens beginning at depths of 35 to 45 feet bgs. The SVE wells were installed on roughly 50-foot centers to capture the vapors from the AS wells; the maximum separation between an AS well and the nearest SVE well is approximately 60 feet. System operations were designed for the vapor extraction rate to be at least 1.5 times the air injection rate.

The AS wells and SVE wells are connected via buried piping to two equipment buildings: one housing the compressor for the AS wells and the other housing two blowers for the SVE wells. The AS/SVE system is operated through programmable logic controllers (PLCs) in the AS and SVE control buildings. The AS PLC operates the solenoids to direct air to the individual AS wells for the programmed daily schedule, to monitor operations, and to trigger alarms or shutdowns as necessary. The AS compressor has a separate controller to monitor operations and trigger alarms or shutdowns as necessary. The SVE PLC monitors blower operations and sends alarm notifications or shuts down the system if necessary.

Extracted vapor from the individual wells combine in a single 6-inch header at the piping manifold outside the SVE building; the SVE wells can be adjusted at the manifold to balance individual flow rates. The vapor stream passes through the air/water separator (AWS) to remove entrained vapor and debris from the air stream. No other treatment is performed prior to discharge.

VMPs were installed to monitor the radius of influence of the SVE wells and the CVOC concentrations in the vadose zone. There are ten pairs of nested VMPs with 5-foot screens located 20 to 60 feet from the

nearest SVE well; the deep ('A') VMPs are screened at an average depth of 64 feet bgs and the shallow ('B') VMPs are screened at an average depth of 49 feet bgs.

Condensate from SVE operations is collected in a 160-gallon AWS tank and then transferred from the AWS to a 505-gallon polyethylene tank outside the SVE building. Once the exterior tank nears capacity, water is pumped to a trailer-mounted transfer tank and transferred to a storage tank on Dunn Field for analysis prior to discharge. Information on the handling, characterization, and discharge of the water at Dunn Field during the period covered in this report will be provided in the Annual Long-Term Monitoring Report – 2023 that is currently in preparation.

1.4 Previous Operations and Monitoring Results

This section primarily summarizes the results of AS/SVE operations in prior operating years (Year One through Year 11). Year 12 operations are reported in [Section 2](#), [Section 3](#), and [Section 4](#).

1.4.1 System Operations and Monitoring

AS/SVE operations were described for Year One in the Off Depot IRACR and for later years in annual operations reports. The most recent annual report, *Off Depot AS/SVE System Annual Operations Report, Year 11, Revision 1* (Trinity, 2023) includes a description of the addition of AS wells 91-95 to the system.

System start-up and modifications to address noise issues were completed in May 2010. The AS/SVE system was then operated with both blowers for all 12 SVE wells and one-third of the original 90 AS wells operating at all times. The AS wells were operated in three groupings (A: AS-1, AS-4, AS-7...; B: AS-2, AS-5, AS-8...; and C: AS-3, AS-6, AS-9...). Each AS group was operated for four hours before the system switched to the next group.

Groundwater monitoring results in September 2010 indicated the plume was partially diverted around the southern edge of the AS/SVE system, possibly due to decreased permeability from the air injection. Since that time, operations have been varied to restore the groundwater flow in the treatment area so that the contaminant plume would pass through the AS wells.

Year Five operations began in January 2014, but were halted in February 2014 due to extensive equipment damage from a lightning-related power surge. System repairs were completed, and operations resumed in March 2015. Year Five operations continued through December 2015. Starting in March 2015, the AS/SVE system was alternated between full and standby operation on a roughly 4-week interval.

Year Six operations took place from 01 January 2016 to 30 April 2017. The AS/SVE system was generally operated in stand-by mode until 06 May 2016 while a new task order was put in place. The system was alternated between full and standby operations, as in Year Five, from May 2016 through April 2017. Year Seven continued uninterrupted from May 2017 through April 2018. The system operated in standby mode to 06 August 2018 as contract actions for Year Eight and Year Nine were finalized. Year Eight operations were conducted from 01 May 2018 through 31 July 2019. Year Nine operations took place from 01 August 2019 through 31 July 2020. Year Ten operations occurred from 01 August 2020 through 26 July 2021 and included the addition of five new AS wells (AS-91 through -95) south of MW-159 (Trinity 2022). The five new AS wells began operation in October 2020 to address the continued high trichloroethene (TCE) concentration at MW-159. During years eight, nine, and ten, the system generally alternated between full and standby operation (as planned) on a roughly 4-week interval, except for relatively short periods of downtime related to system maintenance, equipment failure, or loss of power.

Year 11 operations occurred from 27 July 2021 through 31 July 2022. Beginning on 28 December 2021 and continuing through the remainder of the Year 11 reporting period, AS wells 91-95 continued to operate during the standby months while all other air sparge wells were shut off. The air compressor and

blowers continued to operate during this period. This activity was conducted as a test to determine if continued operation of these five AS wells would more quickly reduce TCE concentrations at MW-159 (the only remaining monitoring well with TCE concentrations in excess of the 50 µg/L treatment goal for individual CVOCs). As discussed in the Year 11 Annual Operations Report (Trinity, 2023), the continued operation of AS wells 91-95 successfully reduced TCE concentrations at MW-159 to below the 50 µg/L treatment goal in December 2021 and TCE concentrations have remained below 50 µg/L since that date.

Beginning in July 2022, AS wells 01 – 42 (except AS-09, 18, and 33 that are permanently off) were operated for approximately one week during the middle of each standby month to prevent plume migration beyond the SVE wells. As discussed in the Year 11 Annual Operations Report (Trinity, 2023), it is possible that the continued operation of AS wells 91-95 had caused a portion of the plume to migrate downgradient of the SVE wells resulting in an increased TCE concentration (6.3 µg/L) in April 2022 in down-gradient well MW-246. The operation of AS wells 01 – 42 (except AS-09, 18, and 33 that are permanently off) for approximately one week during the middle of each standby month successfully reduced the TCE concentration at MW-246 to 1.6 in August 2022, well below the target concentration (TC) of 5.0 µg/L.

1.4.2 System Monitoring and Mass Removal

Average total VOC concentrations in the system effluent decreased from 1,240 parts per billion by volume (ppbv) at start-up in December 2009 to 31.8 ppbv in February 2012. Average total VOC concentrations gradually increased to 73 ppbv in June 2021 but have decreased since that time to an average of 56.5 ppbv at the end of Year 12.

VOC emission rates decreased from 0.025 lb/hr at startup to 0.001 lb/hr in September 2010. The emission rate has generally been at or below 0.001 lb/hr since that time. The AS/SVE emissions have never exceeded the *de minimus* standard of 0.1 lb/hr for the SCHD operating permit.

The AS/SVE system uptime percentage (%) and the mass removal in pounds during the first 11 years of operations are shown below. The system uptime determination did not include the period required for equipment repair (February 2014 to March 2015) in Year Five or the periods in standby mode in Year Six (January to May 2016) and Year Eight (1 May 2018 to 6 August 2018). The cumulative mass of VOCs removed through July 2021 was 92.9 lb (see footnote 1 below).

Period	System Uptime	VOC Removal (pounds)
Year One (2010)	97%	70.5
Year Two (2011)	94%	4.1
Year Three (2012)	97%	2.3
Year Four (2013)	91%	2.9
Year Five (January 2014-December 2015)	93%	2.0
Year Six (January 2016-April 2017)	93%	1.7
Year Seven (May 2017-April 2018)	89%	1.7
Year Eight (May 2018-July 2019)	87%	2.0
Year Nine (August 2019-July 2020)	74%	2.0
Year Ten (August 2020-July 2021)	94%	2.0
Year Eleven (August 2021-July 2022)	90%	1.8

Cumulative Mass Removed through Year 11: 92.9 lb¹

¹Cumulative mass removed is calculated from the quarterly mass removal estimates provided in Table 6 and differs slightly from the sum of the VOC removal values displayed above due to rounding functions in Table 6.

1.4.3 Groundwater Monitoring

Long-term monitoring (LTM) results are used to assess the overall effectiveness of the AS/SVE system. The treatment goal for the AS/SVE system is to reduce groundwater concentrations down-gradient of the AS/SVE well network to below 50 µg/L for individual CVOCs. The goal was met in the five performance monitoring wells (MW-241, -243, -245, -246, -247) immediately down-gradient of the AS/SVE well network in June 2010. From October 2012 to December 2021, MW-159 was the only LTM well in the AS/SVE area with CVOc concentrations above the treatment goal of 50 µg/L for individual CVOcs. As of December 2021, MW-159 is also below the treatment goal as discussed in [Section 4.2](#).

1.5 Scope of Work

O&M activities have been performed for the AS/SVE system since system startup in December 2009. The goals for O&M are to:

- Maintain system operations through regular field inspections, maintenance, and repairs; and
- Monitor system effectiveness through air injection and vapor extraction flow rates, vacuum measurements, photoionization detector (PID) measurements, and laboratory analysis of system effluent samples.

O&M activities follow procedures described in the *Dunn Field Off Depot Groundwater Air Sparge and Soil Vapor Extraction System Operations and Maintenance Manual* (AS/SVE O&M Manual) (HDR, 2011b). System monitoring is performed in accordance with the *Dunn Field Off Depot Groundwater Remedial Action Work Plan, Revision 2* (HDR, 2009).

Year 12 AS/SVE operations included the following activities:

- AS well optimization, including operating select AS wells during limited operation months when the majority of AS wells were not operating.
- Weekly system inspections with measurements of operating conditions, operational adjustments and equipment maintenance checks.
- Bi-weekly readings (every other week) at AS wells, SVE wells and system effluent for flow rate and vacuum pressures when the AS manifold was open and monthly readings when the AS manifold was closed.
- Bi-monthly (every other month) PID measurements at SVE wells and system effluent when the AS manifold was open.
- Bi-monthly (every other month) PID and vacuum measurements at VMPs.
- Quarterly collection of system effluent samples for laboratory analysis of VOCs.
- General equipment repair and modifications.
- Condensate transportation and disposal on an as-needed basis.
- Preparation of an annual operations report summarizing system operations and monitoring results with data quality evaluation, and recommendations for future operations.

2. System Operations

The AS wells are operated in three groups of 22 to 25 AS wells with 69 AS wells operated 4 hours each per day (full-time) and 6 AS wells operated 2 hours each per day (half-time); the remaining 20 AS wells are closed ([Figure 1](#)). The three groups of AS wells that are operated 4 hours each per day are programmed such that while one group is operating, the other two groups are off. Operation is sequenced so that when one group shuts off, the next group immediately turns on. As each group operates for 4 hours per day, the total AS well operation sums to 12 hours per day. Five additional AS wells (AS-91 – 95) were installed south of MW-159 and began operation in October 2020 to address the trichloroethene (TCE) concentrations above the treatment goal at MW-159.

During full operation, the AS well network is operated for a total of 12 hours per day to remove VOCs from groundwater and the SVE wells are operated 24 hours per day to remove soil vapor with VOCs from the vadose zone. During limited operations in the alternate months up to December 2021, the AS manifold was closed except for brief periods during site inspections, and the SVE wells were operated 12 hours per day. Beginning on 28 December 2021 and continuing through much of the remainder of the Year 11 and Year 12 operating periods, AS wells 91-95 continued to operate during limited operation months while all other air sparge wells were shut off. The air compressor and blowers continued to operate during this period. This activity was conducted to determine if continued operation of wells AS91-95 would more quickly reduce TCE concentrations at MW-159 (the only remaining monitoring well at the time with TCE concentrations in excess of the 50 µg/L treatment goal).

Beginning in July 2022, AS wells 01 – 42 (except AS-09, 18, and 33 that are permanently off) were operated for approximately one week during the middle of most limited operation months to prevent plume migration beyond the SVE wells. This action was taken when TCE in MW-246 exceeded the TC in April 2022. The TC exceedance may have been associated with the continued operation of AS wells 91-95 during limited operation months, causing a portion of the plume to migrate downgradient of the SVE wells. The operation of these additional AS wells was effective at reducing TCE concentrations below the TC at MW-246.

2.1 System Performance

The periods of operation in Year 12 totaled 306 days with 1,791 system operation hours (the system is considered to be operating when the AS manifold is open, at least some AS wells are operating, and a blower is operating). The AS/SVE system was down for periods of time in Year 12 due to routine and non-routine system maintenance, repairs, power failures, and weather-related events as described in [Sections 2.3.1](#) and [2.3.2](#). System downtime totaled 1121 hours. AS/SVE system uptime was approximately 61 percent.

2.2 System Flow Rates and Vacuums

Weekly measurements consisted of pressure and air temperature at the AS compressor and air flow rates at the manifold, and vacuum and air temperature for each blower and the system effluent. Operating hours for each blower and the compressor were also recorded.

Flow rates and pressure/vacuum at the operating AS wells, SVE wells and the effluent were recorded biweekly during full operation. SVE system effluent flow rates were measured by an inline mass flow meter and flow rates at individual wells were measured by vane-type meters at the well manifold. Vacuum measurements were collected using a digital manometer. Operating conditions were recorded on standardized forms and maintained in the project files. Remote system monitoring was used to augment the site visits, although not all parameters were available remotely.

AS injection rates, listed on [Table 1](#), ranged from 42 to 213 standard cubic feet per minute (scfm) and averaged 117 scfm. Air extraction rates and vacuum measurements at SVE wells and system effluent are also shown on [Table 1](#). During Year 12, the system was operated with all 12 SVE wells until January 2023 when a vehicle struck and damaged the flow meter and influent connection at SVE 12 ([Attachment 1](#)). Afterwards, SVE 12 was shut off for the remainder of Year 12. Average flow rates at individual SVE wells were 21 to 101 actual cubic feet per minute (acfm). Combined flow from all SVE wells during full operations averaged 469 scfm at 9.7 inches of mercury. Both blowers operated alternately in 24-hour blocks during Year 12 until the Blower 2 motor seized in December 2022. Afterwards, Blower 1 was operated continuously.

Per the AS/SVE O&M Manual (HDR, 2011b), the design combined flow rate with both blowers in operation was 675 scfm or 1.5 times the target injection rate of 450 scfm. Based on the average AS injection rate of 117 scfm and the average combined SVE flow rate of 469 scfm, the SVE system extracted approximately 4.0 times the injection rate during Year 12. The increased ratio (above the design rate) of air extraction vs. injection is attributable to compressor flow rates that have always been lower than the design injection rate. A summary of average AS injection rates reported in the annual operations reports is provided below. Although the annual operating reports prior to Year 11 do not identify reasons for the lower injection rates, the system has proven itself to be effective at reducing groundwater concentrations to below the 50 µg/L treatment goal for individual CVOCs in all monitoring wells (see Section 4.2 for additional discussion).

Period	Average AS Injection Rate	Annual Report Reference
Year One (2010)	285	HDR, 2011a
Year Two (2011)	300	HDR, 2012
Year Three (2012)	268	HDR, 2013
Year Four (2013)	193	HDR, 2014
Year Five (January 2014-December 2015)	180	HDR, 2016
Year Six (January 2016-April 2017)	152	HDR, 2018a
Year Seven (May 2017-April 2018)	148	HDR, 2018b
Year Eight (May 2018-July 2019)	160	Trinity, 2020
Year Nine (August 2019-July 2020)	161	Trinity, 2021
Year Ten (August 2020-July 2021)	123	Trinity, 2022
Year Eleven (August 2021-July 2022)	116	Trinity, 2023
Year Twelve (August 2022-July 2023)	117	This Document

2.3 System Maintenance

System inspections were performed weekly and included checking SVE blower v-belts and oil levels, automatic drains in the AS compressor and refrigerated dryer, and air intake filters for the AS building. Semi-annual and annual equipment maintenance was conducted by the AS/SVE equipment manufacturer as described below. Field notes are recorded on maintenance and inspection forms. General housekeeping at the AS and SVE buildings and equipment compound was performed as needed. Semiannual and annual maintenance reports are included in [Appendix B](#).

2.3.1 Routine System Maintenance

Routine system inspections were performed weekly; system operations were also checked remotely through the system computer's internet connection. Semiannual and annual preventative maintenance, performed by the equipment manufacturer (Kaeser), includes checking the AS compressor and SVE blower

oil levels and adding or replacing oil as needed, checking and cleaning air filter mats in the compressor control panel, cleaning the compressor and dryer heat exchange radiators, checking tension on blower v-belts, and other tasks per the equipment operating manuals. Routine Year 12 preventive maintenance activities are summarized below.

- On 10 November 2022, Kaeser performed annual preventative maintenance on the AS compressor, drains, and AWS, resulting in approximately 7.25 hours of system downtime.
- On 08 December 2022, Kaeser performed annual preventative maintenance on the SVE blowers, resulting in approximately 1.25 hours of system downtime.
- On 19 January 2023, Kaeser performed annual preventative maintenance on the dryer, resulting in approximately 0.75 hours of system downtime.
- On 28 June 2023, Kaeser performed semi-annual preventative maintenance on Blower 1, AS compressor, dryer, drains, and air/water separator, resulting in approximately 2.75 hours of system downtime.

2.3.2 Non-Routine System Maintenance and Repairs

Non-routine maintenance activities are required when alerts, faults, and other out-of-cycle repairs are required as identified during the routine inspections or system notifications. Non-routine Year 12 system maintenance and repairs are summarized below. In addition, periods when the system was shut down to prevent excessive condensate water generation and to accommodate the October 2022 and April 2023 LTM sampling events are also documented below for purposes of calculating total system downtime. System shutdown to control condensate water generation occurred frequently from November 2022 to July 2023 as Memphis experienced unusually wet weather that resulted in unusually high quantities of condensate water.

- On 11 August 2022 at 8:07 am, AWS transfer pump ceased operation, causing the AS/SVE system to shut down. Issue was corrected (pump impellor not functioning) and system was restarted on 15 August 2022 at 12:21 pm. System was down for 100.2 hrs.
- On 09 September 2022 at 2:56 pm, Blower 1 stopped due to Low Voltage/Phase Alarm, shutting down the AS/SVE system. Restarted system 11 September 2022 at 2:14 p.m. AS/SVE system downtime was 47.3 hours.
- On 03 November 2022, 350 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 05 November 2022, system shut down due to power failure. System was restarted on 08 November resulting in approximately 72 hours of system downtime.
- On 17 November 2022, 500 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 05 December 2022, 550 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 06 December 2022, Blower 2 failed and was subsequently diagnosed to have a seized motor. Blower 2 was taken off-line and the system continued to operate for the remainder of Year 12 with Blower 1. This activity did not result in any system downtime.
- On 29 December 2022, 550 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.

- On 04 January 2023, 500 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 18 January 2023, it was discovered that an automobile had driven into west side of the AS/SVE compound destroying the western fence, gate, and the SVE-12 manifold connection. Both the AS and SVE buildings sustained minor damage. Memphis police were contacted and prepared crash report #WC2301613 ([Attachment 1](#)). SVE-12 was temporarily capped at the manifold, debris was cleaned up, and photographs were taken. This activity did not result in any system downtime.
- On 19 January 2023, the AWS sight glass (cracked) and drain valve (non-functioning) were replaced. This activity did not result in any system downtime.
- On 20 January 2023, 700 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 24 January 2023 at 7:45 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 26 February at 1:20 pm resulting in 28.75 hours of downtime. Also on 24 January 2023, the section of fence and gate damaged by the vehicle strike were replaced.
- On 29 January 2023 at 7:45 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 30 January at 1:30 pm resulting in 17.75 hours of downtime.
- On 30 January 2023 at 2:58 pm, system was shut down to control condensate formation during a freezing rain event. System was restarted on 06 February at 11:28 am resulting in 160.5 hours of downtime.
- On 07 February 2023, 680 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 15 February 2023 at 9:19 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 17 February at 10:43 am resulting in 36.4 hours of downtime.
- On 22 February 2023 at 10:15 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 23 February at 1:23 pm resulting in 15.1 hours of downtime. Also on 22 February 2023, 550 gallons of condensate water were transferred to Dunn Field.
- On 24 February 2023 at 6:46 am, system was shut down to control condensate formation during a heavy rain event. System was restarted on 28 February at 12:00 pm resulting in 101.25 hours of downtime.
- On 02 March 2023 at 6:10 am, system was shut down to control condensate formation during a heavy rain event. System was restarted on 05 March at 3:11 pm resulting in 71 hours of downtime.
- On 08 March 2023 at 7:34 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 13 March at 10:53 pm resulting in 123.3 hours of downtime.

- On 16 March 2023 at 9:58 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 18 March at 9:48 am resulting in 35.8 hours of downtime.
- On 21 March 2023 at 9:21 am, system was shut down to control condensate formation during a heavy rain event. System was restarted on 22 March at 11:27 am resulting in 26.1 hours of downtime.
- On 23 March 2023, 750 gallons of condensate water were transferred to Dunn Field. Also on 23 March 2023, repairs to the AS and SVE buildings required as a result of the January 2023 vehicle strike were completed. These activities did not result in any system downtime.
- On 24 March 2023 at 5:16 pm, system was shut down to control condensate formation during a heavy rain event. System was restarted on 27 March at 7:06 am resulting in 61.8 hours of downtime.
- On 04 April 2023, 650 gallons of condensate water were transferred to Dunn Field. Also on 04 April 2023, the temporary cap on the SVE-12 standpipe was replaced with a more permanent, threaded cap. These activities did not result in any system downtime.
- On 05 April 2023 at 6:38 pm, system was shut down to accommodate LTM sampling. System was restarted on 09 April at 10:21 am resulting in 87.75 hours of downtime.
- On 20 April 2023, 670 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 21 April 2023 at 6:07 am system was shut down to control condensate formation during a heavy rain event. System was restarted on 24 April at 9:13 am resulting in 75.1 hours of downtime.
- On 06 June 2023, 950 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 23 June 2023, 750 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 30 June 2023, 750 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 14 July 2023 at 1:00 pm system was shut down to control condensate formation during a heavy rain event. System was restarted on 17 July 2023 at 2:08 pm resulting in 49.1 hours of downtime.
- On 18 July 2023, 750 gallons of condensate water were transferred to Dunn Field. This activity did not result in any system downtime.
- On 18 July 2023 the compressor motor-end failed. The compressor was shut down and did not operate for the remainder of Year 12. The compressor was repaired in August 2023. Although the compressor was not operational after 18 July 2023, Blower 1 continued to operate intermittently until 27 July 2023 when it was shutdown to prevent excessive condensate generation. Because the system was not considered to be “operating” after the 18 July compressor failure, the time between 18 July and midnight 31 July 2023 was considered as downtime when calculating system performance.

2.3.3 System Shutdown

AS/SVE operations formally ended at midnight 31 July 2023; however, as noted above, the compressor had failed on 18 July 2023 resulting in the inability to perform sparging as of that date and Blower 1 was last operated as part of system operations on 27 July 2023 when it was shut down to control excessive condensate generation.

On 01 August 2023, all systems were shut off at their respective breakers and the AS manifold was closed. System “mothballing” occurred on 24 August 2023. The compressor was run and the AWS tank and AS condensate tanks were drained out. The sump was inspected and checked for function. The compressor was shut off and main power switched off. Water was drained from any low points in pipes. The AS manifold was confirmed closed and the compressor set up to vent to the exterior so that no sparging will occur during minimal monthly compressor operation. Blower 1 was inspected, cycled, then switched off. The SVE manifold was closed and the SVE blower was set up to run on a standard load (-1.5 inches mercury vacuum at the blower, -5 inches mercury at the tank) and pull from/vent to the atmosphere. All SVE wells were closed at the valves. The AWS and condensate tank was emptied, drained to its lowest point, and piping was drained to prevent freezing. The SVE transfer pump was drained, inspected, and cycled with food-grade oil to prevent rust buildup. Approximately 780 gallons of condensate water were transferred from the AS/SVE to Dunn Field. The laptop computer and internet router were removed.

3. System Monitoring

AS/SVE system monitoring consisted of vacuum measurements at VMPs; PID readings at the system effluent, SVE wells and VMPs; and laboratory analysis of vapor samples from the system effluent. PID readings at the SVE well manifold and the system effluent were collected bi-monthly (during months of full AS/SVE operation; e.g. when the AS manifold is open). PID readings and vacuum measurements at VMPs were also collected bi-monthly. Effluent vapor samples were collected quarterly during full operation. System monitoring was performed during full operation in August, October, and December 2022, and February, April, and June 2023.

3.1 Vacuum Measurements

Vacuum measurements were collected at VMPs by connecting a digital manometer to a quick-connect fitting in the sealed cap of each VMP well casing. Vacuum measurements ranged from 0 to 54.5 inches of water and the average at each VMP was 2.3 to 29.7 inches of water. Measurements are shown on [Table 2](#). The measurements indicate that a partial vacuum was created throughout the treatment area by the SVE wells, and therefore vapor-phase contamination generated during sparging was being captured by the SVE wells.

Charts showing the trend in vacuum readings at VMPs since start-up tests in October 2009 are provided in [Appendix C-1](#). Vacuum measurements at VMPs have generally ranged from 4 to 40 inches of water since operations began in December 2009. Two blowers were often operated in 2010 when the AS manifold was open, resulting in slightly higher vacuum measurements during that period.

3.2 PID Measurements

Total VOC concentrations were monitored through field measurements at individual SVE wells, system effluent, and VMPs with a PID. Whole air samples were collected from sampling ports at each monitoring point by directly filling a dedicated Tedlar® sample bag using an air sampling pump. The sample bag was then attached to a calibrated PID and the maximum PID reading for each bag was recorded. PID readings were made for at least three sample bags at each location; the PID was re-calibrated and additional readings were made if the initial readings were not consistent.

PID measurements from SVE wells and system effluent are provided in [Table 3](#). Total VOC concentrations ranged from 0.0 to 5.3 parts per million (ppm) at the SVE wells during Year 12, and from 0.0 ppm to 0.8 ppm in the system effluent. Consistent with historical trends, water in the SVE air line prevented several readings at SVE-10. SVE-11 was also affected by the presence of water during some of the Year 12 monitoring events. The valve for SVE-12 was damaged by a vehicle strike in January 2023 and the well was not usable after that time. It should be noted that operation and performance of the SVE wells are not impacted despite water being present in the air lines.

Charts showing the trend in PID measurements at SVE wells and the system effluent since start-up tests in November 2009 are provided in [Appendix C-2](#). PID measurements at SVE wells have ranged from 0.0 to 32.9 ppm and were at the higher end of the range in 2012. At that time, two wells, SVE-08 and -12, were closed to increase vapor extraction at SVE wells near the operating AS wells; the PID measurements decreased after the wells were re-opened later in 2012.

The VMPs were purged of at least three tubing volumes using the sampling pump prior to filling the first sample bag. The VMP PID measurements are provided in [Table 4](#). PID measurements were 0.0 ppm for approximately 74 percent of the measurements and were below 1 ppm in 98 percent of the measurements. The maximum PID reading in Year 12 was 1.5 ppm at VMP-2A and VMP-5A during the 16

August 2022 monitoring event. Charts showing the trend in PID measurements at VMPs since start-up tests in October 2009 are provided in [Appendix C-3](#).

3.3 Vapor Samples

System effluent samples for laboratory analysis were collected in 6-liter Summa canisters without a flow regulator (consistent with all sampling events beginning in Year 2). The Summa canisters were shipped from the laboratory with negative pressure; thus, a sampling pump was not required. For each sampling event, the field technician first confirmed via the canister vacuum gauge that the canister has an initial vacuum in the range of -30 to -25 inches mercury. The technician then connected the canister via laboratory-supplied Teflon tubing to the effluent sampling port and opened the canister valve part-way to control the rate of flow into the canister. With one exception discussed below for the December 2022 sampling event, the canister was allowed to fill over a period of approximately five minutes, until the canister vacuum gauge read -5 inches mercury.

Vapor samples were collected on 27 October 2022, 09 December 2022, 13 February 2023, 14 April 2023, and 26 June 2023. All samples were submitted for laboratory analysis of VOCs by EPA Method TO-15.

An additional sample was collected during the Year 12 operating period because the December 2022 sample arrived at the laboratory with a higher vacuum than usual (-11.31 psig). The higher vacuum required a higher dilution than usual to pressurize the canister to the level required for analysis. This analysis was run at a dilution of 5.51 (by comparison, the dilution level for the previous sampling event was 1.50, with the canister at -2.26 psig upon receipt at the lab). The dilution resulted in limits of quantitation, limits of detection, and method detection limits that were higher than for the previous event. Regardless, the analytical results from the December sampling event are reasonably consistent with historical results and therefore have been included in this report.

The complete tabulated analytical results are presented in [Appendix D, Table D-1](#); the complete laboratory analytical reports are provided in [Appendix E](#) (electronic copy only). [Table 5](#) provides the analytical results for the primary CVOCs historically detected at Dunn Field and for other VOCs detected in one or more samples. The totals for primary CVOCs and for total VOCs (primary CVOCs and other VOCs) are also listed.

Total primary CVOCs in the system effluent ranged from 31.7 ppbv (February 2023) to 57.3 ppbv (June 2023) during Year 12. The primary CVOCs detected at the highest concentrations were TCE and cis-1,2-dichloroethene (cDCE). TCE concentrations ranged from 15 to 20 ppbv and cDCE ranged from 9.8 to 26 ppbv (28 ppbv in the duplicate sample for June 2023). During Year 12, TCE was 35 to 47 percent of the total primary CVOc concentration and cDCE was 31 to 45 percent.

Total VOCs in system effluent ranged from 36.1 ppbv (February 2023) to 123.6 ppbv (October 2022, with 127.8 ppbv detected in the associated field duplicate). Consistent with prior reporting practices, total VOC concentrations exclude acetone (3.2 ppb in June 2023), ethyl acetate (maximum estimated concentration of 15 ppbv in the October 2022 field duplicate) and ethanol (detected at estimated concentrations in all samples). As documented in prior annual monitoring reports, acetone is a common laboratory contaminant, ethyl acetate is a common indoor air contaminant due to its presence in cleaning agents and disinfectants but is not believed to have been used in the AS/SVE equipment buildings, and ethanol is a common ingredient in hand and laboratory sanitizing products.

Numerous anomalous non-site related VOCs were detected in the October 2022 sample and associated field duplicate sample. These included n-hexane (26 ppbv), m,p-xylenes (11 ppbv), n-heptane (7.9 ppbv), cyclohexane (7.3 ppbv), o-xylene (5.7 ppbv), 1,2,4 trimethylbenzene (3.2 ppbv), ethylbenzene (1.9 ppbv), toluene (1.8 ppbv), n-octane (1.7 ppbv), and 1,3,5 trimethylbenzene (1.3 ppbv). None of these are contaminants of concern at the site; however, the effluent PID reading collected the same day was

elevated at 0.8 ppmv versus an average of 0.04 ppmv for the remainder of the Year 12 effluent PID measurements. The elevated effluent PID measurement supports the presence of the higher total VOC measurement; therefore, the anomalous VOC detections were retained in the total VOC count. System effluent concentration trends from PID measurements and analytical results are shown on [Figure 2](#).

3.4 Data Quality Evaluation

Analytical results for AS/SVE effluent vapor samples collected in Year 12 were reviewed based on guidelines in the Quality Assurance Project Plan (QAPP). The complete analytical results for field and quality control (QC) samples, including data quality evaluation (DQE) flags, are presented in [Appendix D, Table D-1](#).

Overall, the VOC data from the vapor samples met project data quality objectives and were determined to be sufficient to support the evaluation of AS/SVE system performance. The data quality review reports for Year 12 samples are provided in [Appendix F](#).

3.5 Mass Removal Estimate

The VOC mass removed by the AS/SVE system is estimated from the average total VOC concentrations in the effluent sample (based on TCE), system operating hours, and flow rates. The molar mass of TCE is used as a surrogate for all VOCs to simplify the calculation. System operating hours are based on operation of the AS compressor and the SVE blowers and assumes 12 hours per day during “full” operation when the majority of the AS wells are sparging and four hours per day when only AS-91 through AS-95 are operating (AS-91 – 95 are programmed within the same group and turn on and off at the same time for a total of four hours per day). During the one-week period in the middle of each limited operation month when AS-01 through 42 (except for AS-09, 18, and 33 that are permanently off) were operating in addition to AS-91 – 95, operating hours were calculated at 12 per day as AS-01 – 42 are programmed across three different groups that turn on and off at different times each day, totaling 12 hours of system operation each day. Operating hours for the SVE blower without the AS compressor are not included in the mass removal estimate. The mass emission calculations are summarized on [Table 6](#).

The average estimated VOC emission rate in the effluent was 0.0007 lb/hr during Year 12. The emissions remained well below the SCHD *de minimis* standard of 0.1 lb/hr. The AS/SVE system removed approximately 2.1 lbs of VOCs in Year 12 and 95.1 lbs of VOCs since startup ([Table 6](#)).

4. Conclusions and Recommendations

4.1 System Operations

The AS/SVE system is generally limited to full operations in alternate 4-week periods in order to maintain northerly groundwater flow in the treatment area. Beginning on 28 December 2021 and continuing through the entire Year 12 reporting period, AS wells 91-95 continued to operate during limited operation months while all other air sparge wells were shut off. The air compressor and blowers continued to operate during this period.

AS wells 01 – 42 (except for AS-09, 18 and 33 that are permanently off) were operated for approximately one week during the middle of most limited operation month to prevent plume migration beyond the SVE wells.

System downtime was experienced during periods identified in [Section 2.3.1](#) and [Section 2.3.2](#). The AS/SVE system uptime was approximately 61 percent during Year 12. System uptime was significantly impacted by unusually wet weather in Memphis from November 2022 through July 2023. This resulted in numerous system shutdowns to control the volume of condensate water generated. Approximately 72 percent of total system downtime during Year 12 is attributable to heavy rainfall events.

The SVE system extracted approximately 4.0 times the AS injection rate during Year 12. Vacuum measurements at VMPs indicated vapor capture throughout the AS/SVE treatment area. The majority of the PID measurements taken at the SVE wells were below 1 ppmv except for elevated readings in October 2022 at SVE-07 (2.7 ppmv) and SVE-09 (5.3 ppmv). Measurements were not recorded on three occasions at SVE-10 and twice at SVE-11 due to water in the piping, and three times at SVE-12 after the well was damaged by a vehicle strike). All Year 12 effluent PID measurements were below 1 ppmv ([Table 3](#)). Similarly, 98 percent of the PID readings taken at the VMPs were below 1 ppm ([Table 4](#)). As noted in [Table 5](#), total VOC concentrations in effluent vapor samples ranged from 36.1 ppbv to 123.6 ppbv. The estimated average VOC emission rate in the effluent was 0.0007 lb/hr during Year 12, well below the SCHD *de minimis* standard. Approximately 95.1 lbs of VOCs have been removed since startup in 2009.

The total VOCs in the effluent have been below 100 ppbv (0.1 ppm) since September 2010, with the exception of the October 2022 sample. The total VOCs (and total CVOCs) in the effluent have had a slight increasing trend from 2012 to 2021 with total VOCs increasing from 28 ppbv in February 2012 to approximately 67.5 ppbv in July 2022 ([Figure 2](#)). However, beginning in Year 11, quarterly sample averages were the lowest since the first quarter of Year 5 ([Table 6](#)) and this downward trend continued through Year 12. The July 2023 total VOC concentration of 65.6 ppbv is approximately 5.3 percent of the concentration at startup in December 2009 (1,240 ppbv).

Period	System Uptime	VOC Removal (pounds)
Year One (2010)	97%	70.5
Year Two (2011)	94%	4.1
Year Three (2012)	97%	2.3
Year Four (2013)	91%	2.9
Year Five (January 2014-December 2015)	93%	2.0
Year Six (January 2016-April 2017)	93%	1.7
Year Seven (May 2017-April 2018)	89%	1.7
Year Eight (May 2018-July 2019)	87%	2.0
Year Nine (August 2019-July 2020)	74%	2.0
Year Ten (August 2020-July 2021)	94%	2.0
Year Eleven (August 2021-July 2022)	90%	1.8
Year Twelve (August 2022-July 2023)	61%	2.1
Cumulative Mass Removed through Year 12:		95.1

4.2 System Effectiveness

CVOC concentrations in groundwater, as provided in LTM reports, are considered the most useful measure of AS/SVE remedy effectiveness. The AS/SVE system was installed to intercept the majority of the Off Depot CVOC plume and to reduce individual CVOC concentrations below 50 µg/L. Operations were to continue until the up-gradient concentrations from the Dunn Field plume no longer exceeded 50 µg/L for individual CVOCs. The *Dunn Field Record of Decision Amendment* (e2M, 2009) states that "Groundwater modeling results indicate that the AS-SVE system in combination with natural attenuation processes will reduce groundwater concentrations to MCLs in accordance with the RAOs within a reasonable period of time." The initial estimated period of AS/SVE system operations was 5 years, which ended in December 2014. The system continued to operate since that time due to individual TCE concentrations above the 50 µg/L treatment goal in monitoring well MW-159. As indicated in [Table 7](#), the overall trend of TCE concentrations at MW-159 has been downward since October 2014 and concentrations have been below 50 µg/L since December 2021. Because there have been no individual CVOC concentrations above 50 µg/L since December 2021, the AS/SVE system was shut down at the end of the Year 12 operating period.

There are 22 Fluvial Deposits Aquifer LTM wells in the immediate vicinity of the AS/SVE system. Following damage to the AS/SVE system in 2014, CVOC concentrations at six of these wells increased above MCLs or TCs from the Dunn Field ROD. In April 2022, TCE concentrations exceeded an MCL or TC in only two of these wells, MW-159 and MW-246. Groundwater elevation contours and the April 2023 analytical results for TCE at LTM wells in the general area of the AS/SVE system are shown on [Figure 3](#). Concentrations of 1,1,2,2-tetrachloroethane (TeCA) and TCE, the CVOCs most commonly detected above the MCLs or TCs in the Off Depot area, are shown in [Table 7](#) for October 2014 through June 2023. A time-trend plot for TeCA and TCE concentrations in MW-159 is provided as [Figure 4](#).

The recent concentration trends are summarized below:

- The TCE concentration at MW-159 has been below the treatment goal for AS/SVE operations of 50 µg/L since December 2021. During the Year 12 operating period, TCE concentrations ranged from 35.2 µg/L (August 2022) to 23.9 µg/L (April 2023). TCE concentrations remain above the MCL/TC of 5.0 µg/L for TCE. TeCA concentrations at MW-159 ranged from 1.3 µg/L (August, October, February 2022) to 1.0 µg/L (June 2023). All concentrations were below the TC of 2.2 µg/L for TeCA.
- TCE and TeCA concentrations at up-gradient well MW-150 have remained below the MCL and TC since October 2017. The April 2023 TCE result was 2.8 µg/L and the April 2023 TeCA result was 0.7 µg/L.
- The TCE concentration at up-gradient well MW-54 decreased below the MCL/TC of 5 µg/L in April 2021; the April 2023 result was 2.5 µg/L. TeCA concentrations decreased below the TC of 2.2 µg/L in October 2015; the April 2023 result was an estimated concentration of 0.2 µg/L.
- The TCE concentration in down-gradient well MW-246 decreased below the MCL/TC in April 2019 and has remained below the MCL/TC since that time with the exception of one anomalous concentration of 6.3 µg/L in April 2022. The April 2023 concentrations was 3.5 µg/L. TeCA concentrations have been below the TC since October 2019. The April 2023 concentration was estimated at 0.8 µg/L.
- The April 2022 MCL/TC exceedance for TCE in MW-246 may have been associated with the continued operation of AS wells 91-95 during limited operation months. It is believed that the continuous operation of these AS wells caused a portion of the plume to migrate

downgradient of the SVE wells. To prevent further migration, AS wells 01 – 42 (except for AS wells 09, 18, and 33 that are permanently off) were operated for approximately one week in the middle of most limited operation months during Year 12.

- TCE and TeCA concentrations at the other two wells (MW-165 and MW-243), located immediately down-gradient of the treatment area, decreased after AS/SVE operations resumed in March 2015 and have remained below the respective TCs.

4.3 Recommendations

The AS/SVE system was shut down at the end of the Year 12 operating period and no additional air sparging or soil vapor extraction is proposed at this time. However, the Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and briefly operate the compressor and Blower 1 to maintain the equipment. Since December 2021, Dunn Field's LTM wells in the AS/SVE area have consistently had CVOC concentrations below the treatment goal of 50 µg/L.

Semi-annual LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014). As part of the reporting process, the LTM data will be analyzed to establish whether the 50 µg/L treatment goal continues to be met consistently at each well in accordance with EPA's guidance on evaluating the completion of groundwater restoration remedial efforts (USEPA 2014). If an exceedance of the 50 µg/L treatment goal is identified at any well, then subsequent sample results, with a minimum of four consecutive sampling events, will be evaluated to determine if the exceedance represents a one-time event or a long-term trend. If data indicate that treatment goal exceedances represent a sustained trend, then the Army will consider reinitiating active groundwater treatment.

5. References

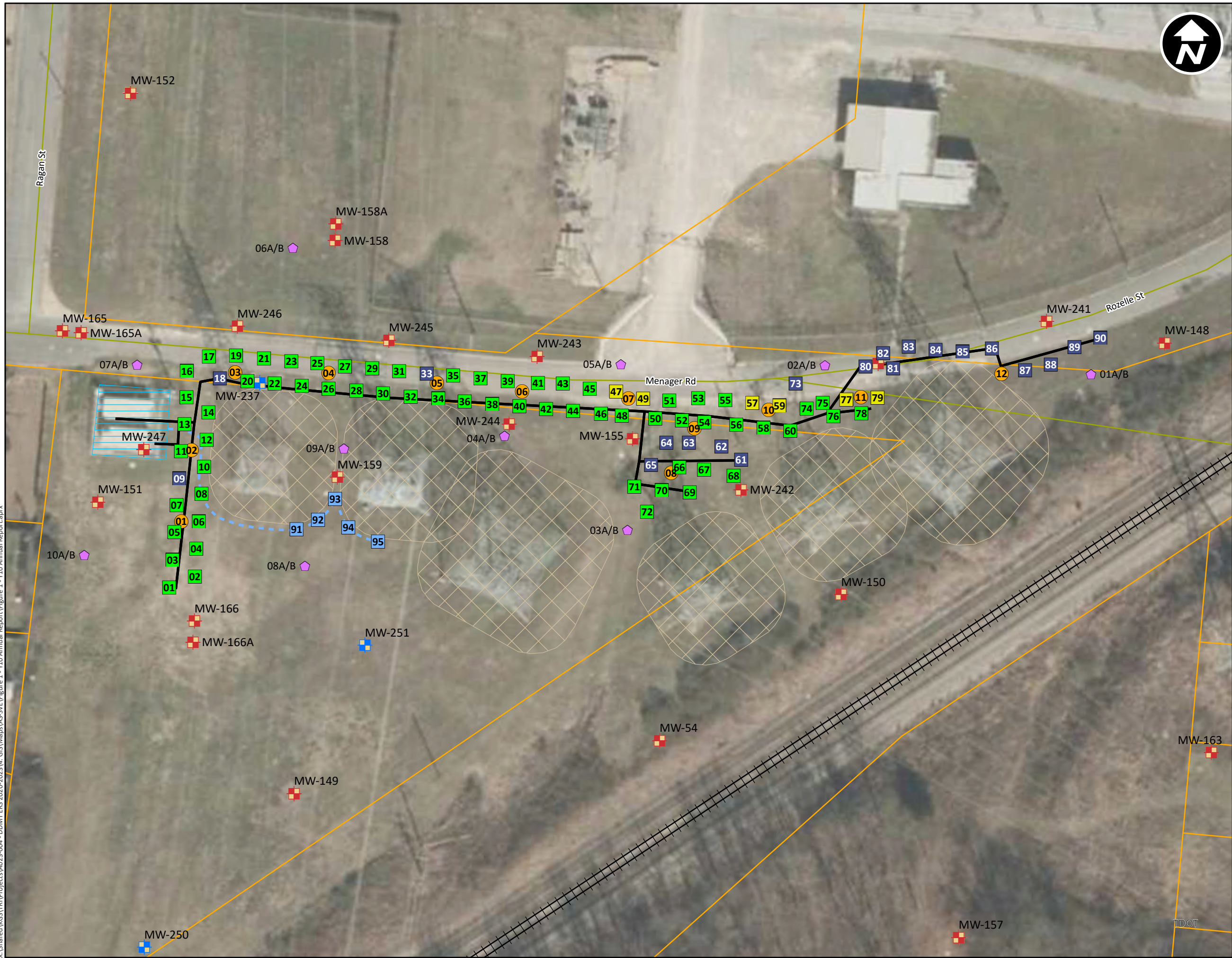
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Figures

X:\Shared\KGS\TR\Projects\A023-004 - DDMT ERS 2020-2023\4. GIS\Maps\AS-SVE\Figure 1 - Y10 Annual Report.aprx



- Air Sparge Location (full-time)
- Air Sparge Location (half-time)
- Air Sparge Location (closed)
- Air Sparge Location (installed 9/2020)
- Soil Vapor Extraction Location
- Vapor Monitoring Point
- Monitoring Well - Fluvial Aquifer
- Monitoring Well - Intermediate Aquifer
- Conveyance Line
- Conveyance Line (installed 9/2020)
- Parcel Boundary
- Railroad
- MLGW Transmission Tower with 20 foot No Construction Buffer
- AS/SVE System Enclosure

Notes:

Sources:

U.S. Census Bureau TIGER
<http://mapgis.memphistn.gov/arcgis/services>

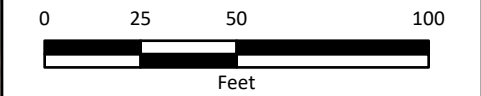


Figure 1
AS/SVE
System Layout

Trinity Analysis & Development Corp.

Off Depot AS/SVE System
Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee



Contract: W91278-16-D-0054 / W9127820F0137

Scale: AS SHOWN

Date: 9/7/2021

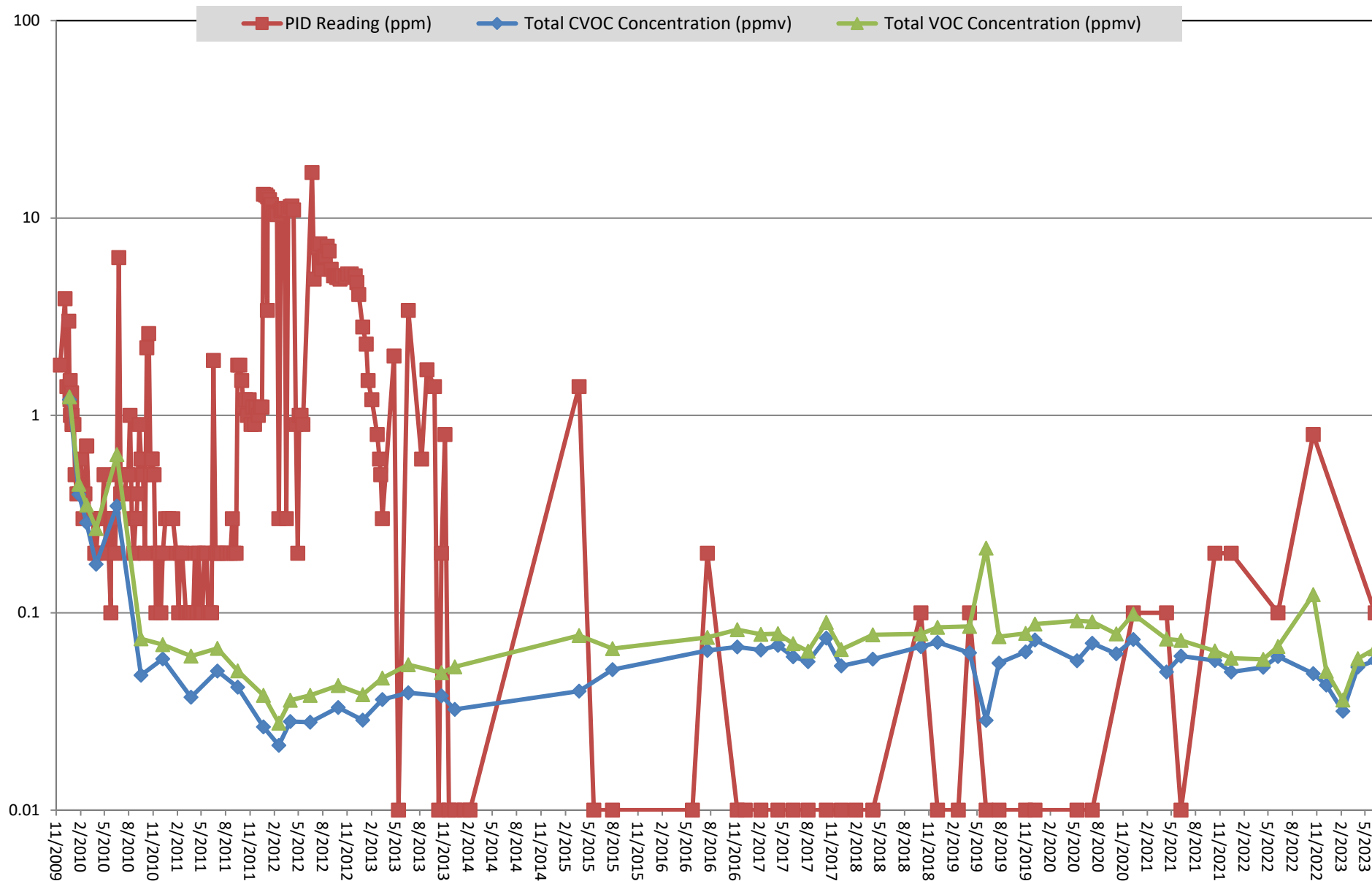


Figure 2
Effluent Concentration Trend - Analytical Results and Field PID Measurements
Off Depot AS/SVE Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee

Document Path: W:\TLM\S37\mxd\09_DF_FAQ_TCE_Apr23.mxd

- Notes:
1. Color-coded well symbols are based on the April 2023 LTM event.
 2. Groundwater contours are from the April 2023 LTM event.
 3. The target concentration and the MCL for TCE are both 5 µg/L.

TCE Range (µg/L)	
Well Symbol (µg/L)	
● 0-5	■ 5-10
● 5-10	■ 10-50
● 10-50	■ 50-100
● 50-100	
● >100	

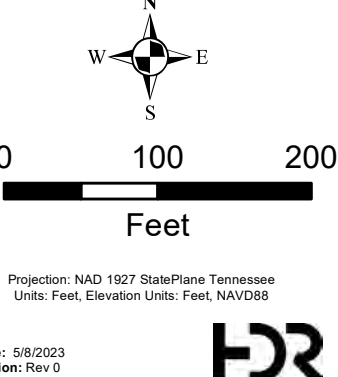
Legend

- Potentiometric surface of the Fluvial Aquifer 1-ft. contour
- Potentiometric surface of the Fluvial Aquifer 5-ft. contour
- Potentiometric surface extrapolation
- ▲ Groundwater Flow Direction
- Original Dunn Field Boundary
- Railroad
- Fence
- ▨ Air Sparge System
- ▬ Roads
- ▬ Buildings

Figure3
Dunn Field Fluvial Deposits Aquifer
TCE Concentrations, April 2023

Long-Term Monitoring
Data Report - April 2023

Defense Depot
Memphis, Tennessee



Projection: NAD 1983 StatePlane Tennessee
Units: Feet, Elevation Units: Feet, NAD83
Date: 5/6/2023
Edition: Rev 2



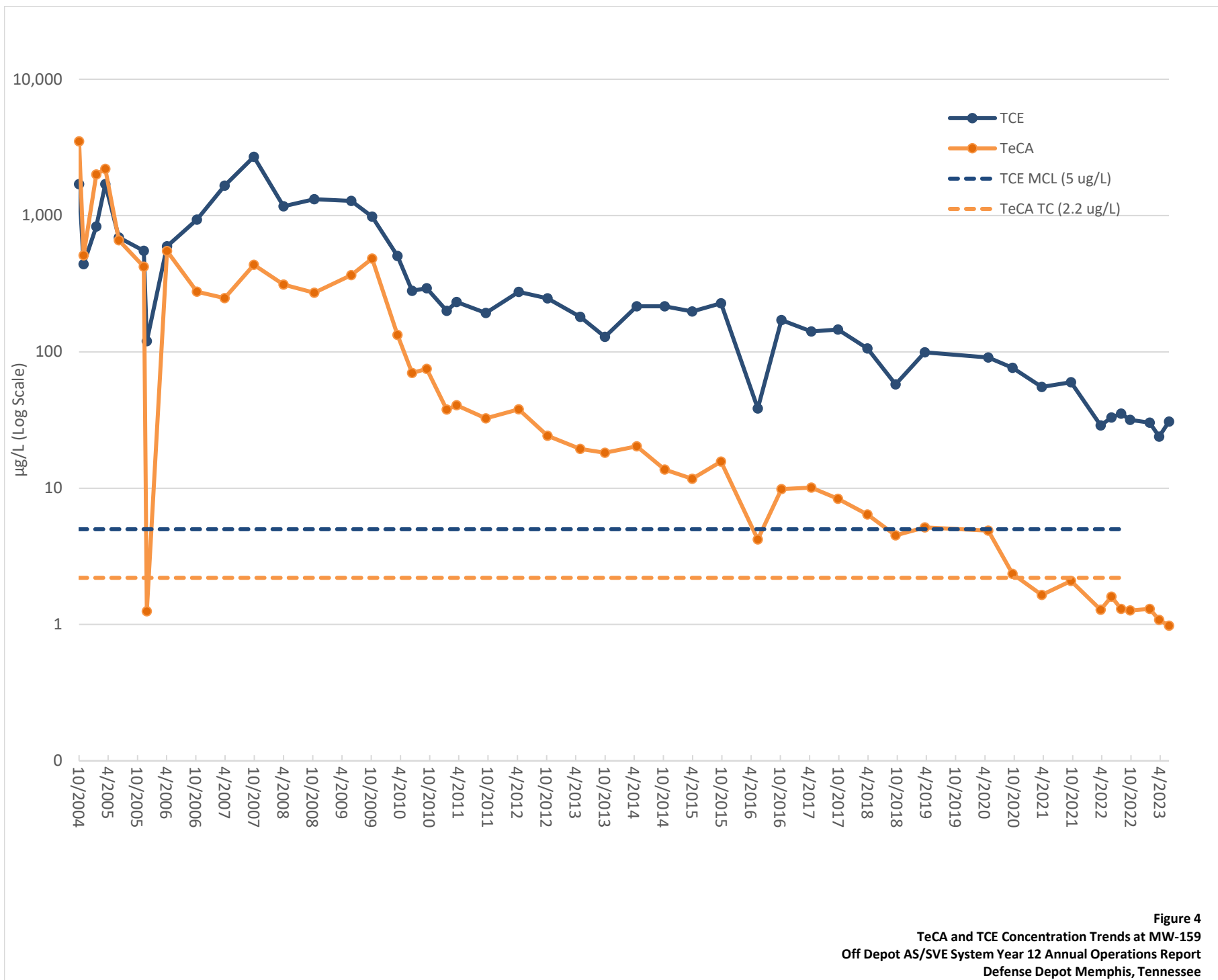


Figure 4
TeCA and TCE Concentration Trends at MW-159
Off Depot AS/SVE System Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee

Tables

Table 1
Flow Rate and Vacuum Readings at SVE Wells and Effluent
Off Depot AS/SVE Year 12 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

Date	Number of Blowers in Operation	AS Compressor	SVE Effluent		SVE-01		SVE-02		SVE-03		SVE-04		SVE-05		SVE-06		SVE-07		SVE-08		SVE-09		SVE-10		SVE-11		SVE-12	
		Flow rate (scfm)	Flow rate (scfm)	Vacuum (in. Hg.)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)	Flow rate (acfm)	Vacuum (in. H ₂ O)
8/2/2022	1	123	550	9.5	60	90.5	35	41.5	100	87.4	50	55.4	50	81.3	70	58.6	25	82.1	100	77.2	30	78.9	25	75.4	100	55.6	20	23.3
8/16/2022	1	119	560	9.4	70	86.6	45	42.4	100	84.3	50	53	50	78.8	70	56.5	20	79.6	100	74.7	30	75.9	10	71.6	100	53.5	20	22.1
9/6/2022	1	70	520	9.5	70	86.9	40	45.8	90	85.9	50	56.3	50	79.6	70	59.4	20	80.4	100	76.4	30	77.3	NA-1	72.7	90	56.5	20	24.8
9/20/2022	1	96	530	9.4	60	85.6	40	43.4	20	83.7	50	54.1	50	77.5	80	57	20	79.3	100	74.5	30	76.6	NA-1	71.5	100	53.9	20	22.9
10/4/2022	1	136	560	9.8	80	87.6	45	43.2	100	85.8	60	53.6	50	79.1	80	57.4	25	79	100	75.9	30	76.1	NA-1	73.6	80	53.4	25	22.2
10/18/2022	1	157	550	9.3	80	83.7	45	41	100	83.4	60	52.9	50	76.1	80	54.3	25	75.9	100	73.2	35	72.8	20	71.7	100	51.7	20	20.9
11/2/2022	1	144	CD	CD	80	89.5	35	39.2	100	86.9	50	53.6	50	79	80	55.6	25	76.4	100	77.8	30	72.8	10	75.6	100	52.7	20	20.7
11/15/2022	1	107	CD	CD	70	89.5	45	37.6	100	88	50	54.2	50	80.6	70	56.6	25	78.1	100	78.6	35	71.8	20	76.8	100	54.2	25	22.8
12/13/2022	1	213	CD	CD	80	82.6	70	46.4	100	81.4	50	49.8	50	74.9	80	51.7	20	72.2	100	71.9	35	65.9	20	70.8	100	48.4	25	21.9
12/27/2022	1	140	460	9.7	70	85.3	70	47.4	100	83.2	60	52.5	50	76.8	80	55.1	20	72.5	110	71.8	45	71.3	15	70.9	100	50.3	30	25.1
1/10/2023	1	66	450	9.7	70	88.4	70	51	90	86.6	50	55.3	50	80.1	70	58.4	25	78.1	100	75.9	40	76.7	20	73.9	100	54.8	25	25.6
1/23/2023	1	69	440	10.1	70	88.8	75	52.9	90	87.3	50	58.4	50	81.7	70	61.9	25	82.3	100	77.6	40	77.7	20	12.8	100	54.4	NA	NA
2/7/2023	1	169	460	9.2	80	85.3	75	49.9	90	85.6	50	54.5	50	79.7	80	57.9	20	79.3	100	75.7	35	78.1	25	10.3	100	53.5	NA	NA
2/21/2023	1	138	450	9.4	80	85.5	75	53.1	80	84.6	50	57.9	50	79.4	70	59.6	25	77.8	100	75.7	40	74.8	45	3.8	100	53.7	NA	NA
3/14/2023	1	95	470	9.1	80	80.8	75	47.3	80	81	60	51.7	50	75.9	80	55.4	25	75.7	100	72.5	35	74.7	70	3.6	100	51.2	NA	NA
3/22/2023	1	114	470	9.1	80	78.8	80	41.6	100	79.2	50	46.2	50	73.9	80	52.3	25	78.9	100	73.2	30	76.5	50	3	100	49.4	NA	NA
4/4/2023	1	137	440	9.7	80	94.3	75	57.4	90	93.9	50	60.7	50	88.4	70	65.6	25	86.1	100	88.4	30	92.7	40	3.9	100	60.7	NA	NA
4/18/2023	1	142	440	10	70	93.7	70	55.5	90	92.5	50	58.8	50	87.4	80	64.8	20	85.3	90	89.7	30	92.6	40	5.3	100	61.9	NA	NA
5/9/2023	1	42	430	10	70	98.7	70	58.3	90	97.6	50	61.5	40	92.8	70	68.4	20	87.6	100	91.3	30	96.8	40	8.2	100	65.6	NA	NA
5/23/2023	1	89	430	10.3	70	101.6	70	56.8	100	98.5	50	56.5	50	92.3	80	63.7	10	80.1	100	92.8	30	95.9	40	14.7	100	63.7	NA	NA
6/6/2023	1	132	410	10.7	70	106.4	60	51.8	100	102.4	30	50.1	50	94.6	60	59.9	10	71	100	99.8	30	100.5	40	10.7	100	64.5	NA	NA
6/21/2023	1	105	390	10.8	80	111.3	40	46.4	110	106.5	20	44.1	50	97.6	60	53.8	10	71.2	110	102.7	25	99.2	30	53.6	100	66.8	NA	NA
7/11/2023	1	95	370	10	80	119.5	25	41.2	110	113.9	20	36.3	60	100.9	50	49.6	10	70.1	110	109.8	25	95.8	35	28.9	110	68.6	NA	NA
Average Flow Rate/Vacuum		117	469	9.7	74	91	58	47	93	90	48	53	50	83	73	58	21	78	101	82	33	81	31	42	99	56	23	23

Notes
scfm: standard cubic feet per minute
acfm: actual cubic feet per minute
in. Hg.: inches of mercury
in. H₂O: inches of water
NR No reading due to water in gauge; needle fluctuating
* needle fluctuates; repeatedly hesitates at value shown

Table 2
Vacuum Readings at VMPs
Off Depot AS/SVE Year 12 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	Date	8/16/2022	10/18/2022	12/6/2022	2/7/2023	4/4/2023	6/6/2023	
Number of Blowers in Operation		1	1	1	1	1	1	AVERAGE
Air Sparge Manifold Open		Yes	Yes	Yes	Yes	Yes	Yes	per well
VMP-1A		1.4	0	1.4	2.5	8.3	0.5	2.4
VMP-1B		12.3	3.3	0.0	8.5	1.8	12.5	6.4
VMP-2A		12.2	8.7	7.9	13.2	12.7	17.4	12.0
VMP-2B		14.7	13.6	8.1	12.0	18.1	14.1	13.4
VMP-3A		3.1	0	0	6.7	2.6	1.1	2.3
VMP-3B		18.9	14.8	0	16.7	21	19.2	15.1
VMP-4A		20.6	10.7	0.6	19.8	30.4	13.9	16.0
VMP-4B		24.1	4.7	1.1	14.6	25.8	19.9	15.0
VMP-5A		15.4	8.7	11.0	7.7	19.4	19.6	13.6
VMP-5B		22.6	20.2	13.4	20.1	24.5	25.6	21.1
VMP-6A		10.3	22.2	14	21.2	24.7	9.7	17.0
VMP-6B		25.2	23.3	14.4	22	25.2	29.6	23.3
VMP-7A		18.8	27.8	0.0	6.6	26.5	0.0	13.3
VMP-7B		11.8	22.7	1.3	0	11.7	23.8	11.9
VMP-8A		13.4	19.4	9.6	23.1	26.8	14	17.7
VMP-8B		24.6	22.8	12.1	21.9	29.3	30.0	23.5
VMP-9A		24.9	24.5	0.8	25.9	31.6	23.1	21.8
VMP-9B		28.2	27.9	0.8	25.3	32.3	35.8	25.1
VMP-10A		11.0	16.6	9.2	19.2	29.4	28.3	19.0
VMP-10B		27	26.4	11.8	23.5	54.5	34.9	29.7

Notes:

- 1) Vacuum measurements made with a digital manometer; units are in inches of water.
- 2) Measurements of zero indicate no vacuum present, possibly due to presence of water within the screened interval

Table 3
PID Measurements at SVE Wells and Effluent
Off Depot AS/SVE Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee

Date	Number of Blowers in Operation	Air Sparge Manifold Open	SVE-01	SVE-02	SVE-03	SVE-04	SVE-05	SVE-06	SVE-07	SVE-08	SVE-09	SVE-10	SVE-11	SVE-12	Effluent
8/16/2022	1	Yes	0.1	0.1	0.1	0.1	0.6	0.1	0.1	0.4	0.1	NM1	0.1	0.0	0.1
10/18/2022	1	Yes	0.0	0.0	0.0	0.0	0.4	0.0	2.9	0.6	5.3	NM1	0.7	0.0	0.8
12/6/2022	1	Yes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NM1	0.0	0.0	0.0
2/7/2023	1	Yes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NM1	NM2	0.0
4/4/2023	1	Yes	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	NM1	NM2	0.0
6/6/2023	1	Yes	1.0	0.0	0.6	0.7	0.5	0.0	0.1	0.8	0.4	0.7	0.2	NM2	0.1

Notes:

- 1) PID measurements made with a MiniRae 2000 (10.6 electron volt lamp); units are in parts per million by volume (ppmv).
- Yes: Sparge system was operating during measurements.
- NM1: No measurement due to water in piping.
- NM2: No measurement. Well damaged from vehicle strike.

Table 4
PID Measurements at VMPs
Off Depot AS/SVE Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee

	Date	8/16/2022	10/18/2022	12/6/2022	2/7/2023	4/4/2023	6/6/2023
Number of Blowers in Operation		1	1	1	1	1	1
Air Sparge Manifold Open		Yes	Yes	Yes	Yes	Yes	Yes
VMP-1A		0.3	NM	NM	NM	NM	0.5
VMP-1B		0.3	0.0	NM	0.0	0.2	0.3
VMP-2A		1.5	0.0	0.0	0.0	0.8	0.6
VMP-2B		0.5	0.0	0.0	0.0	0.3	1.4
VMP-3A		NM	NM	NM	NM	NM	NM
VMP-3B		0.5	0.0	NM	0.0	0.4	1.2
VMP-4A		0.6	0.0	0.0	0.0	NM	0.5
VMP-4B		0.5	0.0	0.0	0.0	0.5	0.9
VMP-5A		1.5	0.0	0.0	0.1	0.7	NM
VMP-5B		0.3	0.0	0.0	0.0	0	0.1
VMP-6A		NM	0.0	0.0	0.0	0.4	NM
VMP-6B		0.1	0.0	0.6	0.0	0	0
VMP-7A		0.7	0.0	0.0	0.0	0.2	0.9
VMP-7B		1.1	0.0	NM	NM	NM	1.3
VMP-8A		0.2	0.0	NM	0.0	0.07	NM
VMP-8B		0.4	0.0	0.00	0.0	0.1	0.6
VMP-9A		0.7	0.0	NM	0.0	0.5	1.2
VMP-9B		0.1	0.0	0.0	0.0	0	0.2
VMP-10A		NM	0.0	0.0	0.0	NM	NM
VMP-10B		0.1	0.0	0.0	0.0	0.0	0.2

Notes:

PID measurements made with a MiniRae 2000 (10.6 electron volt lamp);

units are in parts per million by volume (ppmv).

NM: No measurement; water in line

Table 5
Analytical Results Summary - SVE Effluent
Off Depot AS/SVE Year 12 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

SampleID Lab ID Date	October 2022 Sample		December 2022 Sample		February 2023 Sample		April 2023 Sample		June 2023 Sample	
	ODSVE-EFF-Y12Q1	ODSVE-DUP1-Y12Q1	ODSVE-EFF-Y12Q2	EFF-Y12Q2-SUB	ODSVE-EFF-Y12Q3	ODSVE-EFF-Y12Q4	ODSVE-EFF-Y12Q4	ODSVE-DUP1-Y12Q4		
	P2204669-001 10/18/2022	P2204669-002 10/18/2022	P2205493-001 12/6/2022	P2300537-001 2/7/2023	P2301551-001 4/4/2023	P2302616-001 6/8/2023	P2302616-001 6/8/2023	P2302616-002 6/8/2023		
Primary CVOCs	Units									
1,1,2,2-Tetrachloroethane	ppbv	0.037 U	0.043 U	0.24 J	0.21	0.21	0.2	0.21		
1,1,2-Trichloroethane	ppbv	0.047 U	0.055 U	0.17 U	0.033 J	0.047 U	0.026 J	0.04 U		
1,1-Dichloroethene	ppbv	0.38	0.36	0.29 J	0.24	0.45	0.37	0.39		
1,2-Dichloroethane	ppbv	0.063 U	0.074 U	0.23 U	0.053 U	0.063 U	0.057 U	0.054 U		
Carbon Tetrachloride	ppbv	0.33	0.33	0.31 J	0.28	0.52	0.49	0.5		
Chloroform	ppbv	7.6	7.6	5.8	4	7.4	7.5	8.1		
cis-1,2-Dichloroethene	ppbv	21	20	16	9.8	21	26	28		
Methylene Chloride	ppbv	0.13 U	0.16 U	0.49 U	0.11 U	0.13 U	0.12 U	0.11 U		
Tetrachloroethene	ppbv	1.2	1.2	1.6	1.7	1.8	2	2.2		
trans-1,2-Dichloroethene	ppbv	0.59	0.6	0.38 J	0.36	0.67	0.57	0.61		
Trichloroethene	ppbv	18	18	17	15	21	20	20		
Vinyl Chloride	ppbv	0.13 J	0.13 J	0.37 U	0.034 J	0.1 U	0.11 J	0.12 J		
Total Primary CVOCs	ppbv	49.2	48.2	41.6	31.7	53.1	57.3	60.1		
Other VOCs										
1,1,1-Trichloroethane	ppbv	0.18	0.17	0.17 J	0.11 J	0.25	0.16	0.16		
1,1,2-Trichlorotrifluoroethane	ppbv	1.9	1.8	1.2	1.4	3	3.9	4.2		
1,1-Dichloroethane	ppbv	0.18 J	0.19 J	0.13 J	0.11 J	0.26	0.22	0.22		
1,2,4-Trichlorobenzene	ppbv	0.065 U	0.075 U	0.24 U	0.054 U	0.065 U	0.058 U	0.055 U		
1,2,4-Trimethylbenzene	ppbv	3.2	3.4	0.18 U	0.023 J	0.049 U	0.044 U	0.042 U		
1,3,5-Trimethylbenzene	ppbv	1.3	1.4	0.19 U	0.041 J	0.052 U	0.023 J	0.026 J		
1,3-Butadiene	ppbv	0.22 U	0.25 U	0.8 U	0.18 U	0.22 U	0.2 U	0.19 U		
1,2-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U		
1,3-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U		
1,4-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U		
1,4-Dioxane	ppbv	0.067 U	0.078 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U		
1,2-Dichloro-1,1,2,2-tetrafluoroeth.	ppbv	0.069 U	0.08 U	0.25 U	0.058 U	0.069 U	0.062 U	0.015 J		
2-Butanone	ppbv	0.67	0.31 J+	0.62 U	0.14 U	0.24 J	0.49	0.25 J		
2-Hexanone	ppbv	0.077 U	0.09 U	0.28 U	0.065 U	0.077 U	0.077 J	0.066 U		
2-Propanol	ppbv	0.36 J	5.3 J	1.4 U	0.32 U	0.31 J	0.3 J	0.27 J		
4-Ethyltoluene	ppbv	0.68	0.72	0.36 U	0.023 J	0.098 U	0.088 U	0.083 U		
4-Methyl-2-pentanone	ppbv	0.077 U	0.09 U	0.28 U	0.065 U	0.077 U	0.069 U	0.066 U		
Acetone	ppbv	1.6 U	1.9 U	6 U	1.4 UJ	1.7 U	3.2 *	1.5 J *		
Acetonitrile	ppbv	0.29 U	0.33 U	1.1 U	0.24 U	0.29 U	0.26 U	0.24 U		
Acrolein	ppbv	0.74 J	0.27 UJ	0.84 U	0.19 U	0.23 U	0.37 J	0.41 J		
alpha-Pinene	ppbv	0.046 U	0.053 U	0.17 U	0.038 U	0.046 U	0.041 U	0.039 U		
Benzene	ppbv	0.24	0.32	0.29 U	0.13 J	0.08 U	0.057 J	0.046 J		
Bromodichloromethane	ppbv	0.038 U	0.044 U	0.14 U	0.032 U	0.038 U	0.034 U	0.032 U		
Bromomethane	ppbv	0.045 J	0.077 U	0.24 U	0.055 U	0.066 U	0.059 U	0.031 J		
Carbon Disulfide	ppbv	0.22 J	0.11 J	0.58 U	0.11 J	0.16 U	0.93 J	0.27 J		
Chlorobenzene	ppbv	0.052 U	0.061 U	0.19 U	0.044 U	0.052 U	0.047 U	0.044 U		
Chloroethane	ppbv	0.097 U	0.11 U	0.36 U	0.081 U	0.097 U	0.087 U	0.082 U		
Chloromethane	ppbv	0.23 U	0.27 U	0.85 U	0.2 U	0.23 U	0.21 U	0.2 U		
Cyclohexane	ppbv	7.3	7.2	2.3	0.41	0.14 U	0.075 J	0.067 J		
Dibromochloromethane	ppbv	0.03 U	0.035 U	0.11 U	0.025 U	0.03 U	0.027 U	0.026 U		
Dichlorodifluoromethane	ppbv	0.61	0.57	0.58 J	0.47	0.83	0.62	0.64		
d-Limonene	ppbv	0.83 U	0.52 U	0.31 U	0.07 U	0.084 U	0.075 U	0.071 U		
Ethanol	ppbv	1.2 J *	6.1 J *	9.1 J *	0.51 J *	7.6 *	2.9 J *	0.88 J *		
Ethyl Acetate	ppbv	0.26 UJ	15 J *	3.9 *	0.31 J *	1 *	0.3 J *	0.2 J *		
Ethylbenzene	ppbv	1.9	2	0.22 U	0.03 J	0.059 U	0.053 U	0.05 U		
Hexachlorobutadiene	ppbv	0.044 UJ	0.051 UJ	0.16 U	0.037 U	0.044 UJ	0.039 U	0.037 U		
Cumene	ppbv	0.27	0.29	0.19 U	0.044 U	0.052 U	0.047 U	0.044 U		
m,p-Xylenes	ppbv	11	11	0.42 U	0.14 J	0.11 U	0.1 U	0.097 U		
Methyl tert-Butyl Ether	ppbv	0.067 U	0.078 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U		
Naphthalene	ppbv	0.089 U	0.047 J	0.33 U	0.075 U	0.089 U	0.08 U	0.076 U		
n-Butyl Acetate	ppbv	0.066 U	0.077 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U		
n-Heptane	ppbv	7.9	7.7	0.27 J	0.17 J	0.11 U	0.04 J	0.036 J		
n-Hexane	ppbv	26	25	2.2	0.25	0.13 U	0.046 J	0.11 U		
n-Nonane	ppbv	0.16	0.17 J	0.34 U	0.077 U	0.092 U	0.082 U	0.078 U		
n-Octane	ppbv	1.7	1.7	0.37 U	0.04 J	0.1 U	0.09 U	0.085 U		
o-Xylene	ppbv	5.7	5.9	0.1 J	0.18	0.059 U	0.036 J	0.031 J		
Propene	ppbv	0.35 UJ	1.2 J	1 U	0.23 U	0.28 U	0.25 U	0.24 U		
Styrene	ppbv	0.11 U	0.077 J	0.4 U	0.092 U	0.11 U	0.098 U	0.093 U		
Tetrahydrofuran	ppbv	0.1 U	0.12 U	0.37 U	0.085 U	0.1 U	0.046 J	0.03 J		
Toluene	ppbv	1.8	2.4	0.32 J	0.57	0.23	0.081 J	0.061 J		
Trichlorofluoromethane	ppbv	0.29	0.3	0.26 J	0.22	0.33	0.28	0.3		
Vinyl Acetate	ppbv	NF	NF	UJ	0.97 UJ	1.2 U	0.56 J	1.1 J		
Total VOCs		123.6	127.8	49.1	36.1	58.5	65.6	68.3		

Non-detect compounds were not included in the total primary CVOC and total VOC calculations.

* Indicates an anomalous detection of a compound not associated with the site. Possible cross-contamination during sample collection or laboratory process. Result was not included in total VOC calculation.

CVOCs = chlorinated VOCs

ppbv = parts per billion by volume

VOC = volatile organic compound

DQE Flags:

NF: Not found

U: Analyte not detected above Reporting Limit

J: Estimated

J+: Estimated with a possible high bias (the target compound was recovered above the upper control limit in the associated laboratory spike samples)

NF: Compound was searched for, but not found

Table 6
Mass Removal Calculations
Off Depot AS/SVE Year 12 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

Period	Start Date	End Date	Hours Operating Between Dates	Average Flow rate (scfm)	Laboratory Total VOC Effluent Concentration (ppbv)	Average Effluent VOC Concentration (ppbv)	Effluent Emission Rate (lb/hr)	Estimated VOC Mass Removal During Period (lbs)	Cumulative Mass Removed From Fluvial Subsurface (lbs)
Year 1	11/12/2009	12/11/2009	92	977	1240	1240	0.025	2.3	2.3
	12/11/2009	1/25/2010	1074	1054	447	844	0.018	19.9	22.2
	1/25/2010	2/23/2010	665	926	351	399	0.008	5.1	27.3
	2/23/2010	3/31/2010	890	916	267	309	0.006	5.2	32.5
	3/31/2010	6/17/2010	1854	1119	633	450	0.010	19.4	51.9
	6/17/2010	9/16/2010	1958	1114	73.8	353	0.008	16.0	68.0
	9/16/2010	12/7/2010	1695	1006	68.9	71.4	0.001	2.5	70.5
Year 2	12/7/2010	3/24/2011	872	965	60.4	64.7	0.001	1.1	71.6
	3/24/2011	6/17/2011	783	974	66.0	63.2	0.001	1.0	72.6
	6/17/2011	9/16/2011	1042	958	50.8	58.4	0.001	1.2	73.8
	9/16/2011	12/22/2011	1148	724	38.2	44.5	0.0007	0.8	74.6
Year 3	12/22/2011	2/16/2012	759	719	27.6	32.9	0.0005	0.4	75.0
	2/16/2012	3/31/2012	437	660	36.0	31.8	0.0004	0.2	75.2
	3/31/2012	6/30/2012	969	834	38.1	37.1	0.0006	0.6	75.8
	6/30/2012	9/30/2012	1124	612	42.8	40.5	0.0005	0.6	76.4
	9/30/2012	12/31/2012	1061	628	38.5	40.7	0.0005	0.6	76.9
Year 4	12/31/2012	3/31/2013	1070	628	46.7	42.6	0.0006	0.6	77.5
	3/31/2013	6/30/2013	1070	760	54.5	50.6	0.0008	0.9	78.4
	6/30/2013	9/30/2013	730	662	49.2	51.9	0.0007	0.5	78.9
	9/30/2013	12/31/2013	1104	763	53.2	51.2	0.0008	0.9	79.8
Year 5	12/31/2013	3/30/2014	465	810	-	53.2	0.0009	0.4	80.2
	3/6/2015	6/30/2015	525	615	86.2	86.2	0.0011	0.6	80.8
	6/30/2015	9/30/2015	667	555	65.9	76.1	0.0009	0.6	81.4
	9/30/2015	12/31/2015	507	566	72.2	69.1	0.0008	0.4	81.8
Year 6	12/31/2015	7/31/2016	518	565	75.1	73.7	0.0009	0.4	82.3
	7/31/2016	11/30/2016	540	574	82.4	78.8	0.0009	0.5	82.8
	11/30/2016	2/28/2017	442	598	77.7	80.1	0.0010	0.4	83.2
	2/28/2017	5/5/2017	292	595	78.3	78.0	0.0010	0.3	83.5
Year 7	5/5/2017	7/31/2017	349	582	69.8	74.1	0.0009	0.3	83.8
	7/31/2017	10/31/2017	555	558	89.4	79.6	0.0009	0.5	84.3
	10/31/2017	1/31/2018	329	584	65.2	77.3	0.0009	0.3	84.6
	1/31/2018	4/30/2018	715	574	77.3	71.3	0.0009	0.6	85.2
Year 8	8/6/2018	10/31/2018	692	560	78.2	77.8	0.0009	0.6	85.8
	10/31/2018	1/31/2019	386	583	81.0	79.6	0.0010	0.4	86.2
	1/31/2019	4/30/2019	585	547	85.2	83.1	0.0009	0.6	86.8
	4/30/2019	7/30/2019	505	510	75.7	80.5	0.0009	0.4	87.2
Year 9	7/30/2019	10/31/2019	335	518	78.6	77.2	0.0008	0.3	87.5
	10/31/2019	1/28/2020	653	522	87.7	83.2	0.0009	0.6	88.1
	1/28/2020	5/13/2020	914	511	91.0	89.4	0.0010	0.9	88.9
	5/13/2020	8/4/2020	264	490	89.1	90.1	0.0009	0.2	89.2
Year 10	8/4/2020	11/3/2020	564	474	78.2	83.6	0.0008	0.5	89.7
	11/3/2020	1/29/2021	402	515	100.0	89.1	0.0010	0.4	90.0
	1/29/2021	4/27/2021	686	546	73.6	86.8	0.0010	0.7	90.7
	4/27/2021	7/27/2021	547	520	72.4	73.0	0.0008	0.4	91.1
Year 11	7/27/2021	11/2/2021	831	529	63.3	67.9	0.0007	0.6	91.8
	11/2/2021	2/1/2022	428	577	58.8	61.1	0.0007	0.3	92.1
	2/1/2022	4/26/2022	599	577	58.1	58.5	0.0007	0.4	92.5
	4/26/2022	7/30/2022	647	534	67.5	62.8	0.0007	0.5	92.9
Year 12	7/30/2022	11/2/2023	946	545	123.6	95.6	0.0011	1.0	94.0
	11/2/2023	1/30/2023	497	450	49.1	86.4	0.0008	0.4	94.4
	1/30/2023	5/9/2023	889	451	47.3 *	48.9	0.0005	0.4	94.8
	5/9/2023	7/18/2023	580	400	65.6	56.5	0.0005	0.3	95.1

Notes:

lbs pounds
lb/hr pounds per hour
ppbv parts per billion by volume
scfm standard cubic feet per minute

Constants:

Mass of TCE: 131.4 lb/lb-mol
Molar Vol Air 379 ft³/lb-mol (@ 60° F)

* Value is an average of February and April 2023 sample results as reported on Table 5

Table 7
Adjacent LTM Wells Exceeding TC or MCL
Off Depot AS/SVE Year 12 Annual Operations Report
Defense Depot Memphis, Tennessee

1,1,2,2-Tetrachloroethane (TeCA) Concentration (µg/L)						
Date	TC: 2.2 µg/L			MCL: NA		
	MW-54	MW-150	MW-159	MW-165	MW-243	MW-246
Oct 2014	2.5	0.8	13.7	0.7	2.6	9.6
Apr 2015	2.2	1.8	11.7	0.4	1.7	5.4
Oct 2015	1.1	3.1	15.7	0.5	1.3	3.3
Apr 2016	<0.5	<0.5	4.2	0.2 J	1.3	0.4 J
Oct 2016	<0.5	<0.5	9.9	<0.5	1.2	4.3
Apr 2017	0.4	0.2	10.1	<0.5	1.7	4.8
Oct 2017	–	2.6	8.4	<0.5	–	3.6
Apr 2018	0.5	1.0	6.4	<0.5	1.3	3.8
Oct 2018	–	<0.5	4.5	<0.5	–	3.1
Apr 2019	0.6	<0.5	5.2	<0.5	1.6	2.8
Oct 2019	–	–	3.3	–	–	0.7 J
May 2020	1.4	<0.8	4.9	<0.8	0.4 J	1.2
Oct 2020	–	–	2.4	–	–	0.3 J
Apr 2021	0.7 J	<0.8	1.7	<0.8	0.7 J	1.3
Oct 2021	<0.4	–	2.1	–	–	2.0
Dec 2021	–	–	1.7	–	–	–
Apr 2022	<0.2	<0.2	1.3	<0.2	0.6	1.3
Jun 2022	–	–	1.6	–	–	–
Aug 2022	–	–	1.3	–	–	1.6
Oct 2022	–	–	1.3	–	–	1.7
Feb 2023	–	–	1.3	–	–	–
Apr 2023	0.2 J	0.7	1.1	<0.2	0.6	0.8 J+
Jun 2023	–	–	1.0	–	–	–

Trichloroethene (TCE) Concentration (µg/L)						
Date	TC: 5 µg/L			MCL: 5 µg/L		
	MW-54	MW-150	MW-159	MW-165	MW-243	MW-246
Oct 2014	10.0	2.3	216	6.3	5.0	28.5
Apr 2015	10.4	7.4	198	6.2	1.7	1.0
Oct 2015	5.3	9.5	227	3.6	1.5	0.7
Apr 2016	<1.0	<1.0	38.4	1.9	2.6	3.6
Oct 2016	<1.0	<1.0	171	1.1	2.4	0.4 J
Apr 2017	1.7	0.9	141	1.2	3.2	0.8
Oct 2017	–	7.7	146	1.0	–	0.6
Apr 2018	2.6	3.1	106	0.9 J	3.4	1.7
Oct 2018	–	<1.0	57.7	1.0	–	10.7
Apr 2019	3.6	0.6 J	99.3	0.9 J	2.6	2.4
Oct 2019	–	–	93.8	–	–	2.8
May 2020	5.5	<1.0	91.0	0.5 J	1.2	<1.0
Oct 2020	–	–	76.4	–	–	1.0 J
Apr 2021	4.2	0.7 J	55.3	0.7 J	1.8	2.3
Oct 2021	4.3	–	59.9	–	–	2.1
Dec 2021	–	–	48.7	–	–	–
Apr 2022	1.6	1.4	28.8	<0.2	3.6	6.3
Jun 2022	–	–	33.0	–	–	–
Aug 2022	–	–	35.2	–	–	3.3
Oct 2022	–	–	31.7	–	–	2.6
Feb 2023	–	–	30.2	–	–	–
Apr 2023	2.5	2.8	23.9	0.4 J	2.3	3.5
Jun 2023	–	–	30.8	–	–	–

Notes:

MCL : Maximum Contaminant Level

TC : Target Concentration

NA : not applicable

µg/L : micrograms per liter

< : compound undetected at the specified quantitation limit

– : no sample collected

1) Results above MCL or TC shown in **red**

2) Results above TC shown in **bold red**

Appendices

Appendix A Responses to EPA and TDEC Comments and Approval Letters



REGION 4

ATLANTA, GA 30303

12/18/2023

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (EPA/USEPA) has completed its review of the Off Depot Air Sparge/Soil Vapor Extraction System (AS/SVE), Annual Operations Report, Year 12 (August 2022 through July 2023), Revision 0 (Report), submitted by the United States Army (Lead Agency/USARMY) in November 2023 for the Defense Depot Memphis, Tennessee (DDMT).

The Report should be revised to emphasize the significance of shutting down the AS/SVE, signifying the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration. Similarly, it is crucial to incorporate a discussion on the necessity for continued groundwater monitoring, with a specific focus on the potential impact of shutting down the AS/SVE system on groundwater quality and contaminant rebound. This should encompass a comprehensive analysis of the projected impact to groundwater as the SVE system were deactivated, considering factors such as evaporation and dissolution of trapped contaminants over time.

In summary, the revised report should incorporate the *EPA Guidance*¹ recommended approach to fully address the transition to the attainment phase, the need for ongoing groundwater monitoring, and the potential impact of shutting down the AS/SVE system on groundwater quality and contaminant rebound.

The comments below were created to convey regulatory concerns about the current version of the Report.

¹ *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well, Office of Solid Waste and Emergency Response (OSWER) 9283.1-44, August 2014*

GENERAL COMMENT

The Report should discuss that shutting down the AS/SVE system signifies the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration per *EPA guidance*. The Report discusses that the individual chlorinated volatile organic compound (CVOC) concentrations at long-term monitoring (LTM) wells in the AS/SVE area have been below the treatment goal of 50 micrograms per liter (µg/L) set forth in the 2009 Record of Decision (ROD) Amendment and that LTM sampling will continue; however, no discussion of attainment monitoring to assess rebound is presented. Per the cited EPA guidance, groundwater monitoring should continue after the remediation monitoring phase is completed to verify that cleanup levels for each contaminant of concern (COC) continue to remain at or below the cleanup level in the future.

Please revise the Report to describe the significance of shutting down the AS/SVE system as the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration requirements and processes per EPA guidance.

SPECIFIC COMMENT

Section 2.3.2, Non-Routine System Maintenance and Repairs, Page 2-3: The first bullet states the system was down from 8:07 am on August 14, 2022, to 12:21 pm on August 15, 2022, which is approximately 28 hours; however, the text states the system was shut down for 100.2 hours. Please revise the text to correct this discrepancy.

The USEPA appreciates the USARMY for its efforts to further investigate the DDMT ecological conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Bentkowski, USEPA, R4
Kevin Koporec, USEPA, R

**Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12,
Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 18 December 2023**

GENERAL COMMENT

The Report should discuss that shutting down the AS/SVE system signifies the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration per EPA guidance. The Report discusses that the individual chlorinated volatile organic compound (CVOC) concentrations at long-term monitoring (LTM) wells in the AS/SVE area have been below the treatment goal of 50 micrograms per liter (µg/L) set forth in the 2009 Record of Decision (ROD) Amendment and that LTM sampling will continue; however, no discussion of attainment monitoring to assess rebound is presented. Per the cited EPA guidance, groundwater monitoring should continue after the remediation monitoring phase is completed to verify that cleanup levels for each contaminant of concern (COC) continue to remain at or below the cleanup level in the future.

Please revise the Report to describe the significance of shutting down the AS/SVE system as the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration requirements and processes per EPA guidance.

Response:

The AS/SVE system was shut down because individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. The remediation phase, as described in EPA's guidance document "*Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well*", is still underway as groundwater cleanup levels for all COCs set forth in the ROD have not yet been achieved.

The purpose of the Year 12 Off Depot AS/SVE Annual Operations Report is to summarize the operations and maintenance activities and the results of system monitoring for Year 12 operations. Army suggests that discussion of attainment monitoring and how it will be confirmed is best provided in the annual LTM reports.

Section 4.3 of the report was revised as follows:

"Individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. Consequently, the AS/SVE system was shut down at the end of the Year 12 operating period. No additional air sparging or soil vapor extraction is proposed at this time. The Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and to energize the compressor and Blower 1 for brief periods of time in an effort to maintain the equipment.

LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014)."

SPECIFIC COMMENT

- 1. Section 2.3.2, Non-Routine System Maintenance and Repairs, Page 2-3:** The first bullet states the system was down from 8:07 am on August 14, 2022, to 12:21 pm on August 15, 2022, which is approximately 28 hours; however, the text states the system was shut down for 100.2 hours. Please revise the text to correct this discrepancy.

**Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12,
Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 18 December 2023**

Response: The August 14, 2022 date was incorrect. The correct date was August 11, 2023.
The report text was revised accordingly. No other changes were required to the text or tables.



REGION 4

ATLANTA, GA 30303

3/12/2024

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (EPA/USEPA) review of the Response to EPA Comments on the Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12, Revision 0, November 2023, and the Red-Line Strikeout Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12, (August 2022 through July 2023) Revision 1, Defense Depot Memphis, Tennessee, February 2024 (Red-Line).

Evaluation of the Response to General Comment: The response does not address the comment. The comment requested that the Report describe the significance of shutting down the air sparge/soil vapor extraction (AS/SVE) system as the completion of the remediation phase and the beginning of the attainment phase as related to the operation of the AS/SVE system per EPA guidance *"Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well."*

The response states that the remediation phase per EPA's guidance is still underway as groundwater cleanup levels for all contaminants of concern (COCs) set forth in the groundwater record of decision (ROD) have not yet been achieved; however, while this is true per the groundwater ROD, the remediation phase of the AS/SVE system operation has been completed, as the individual chlorinated volatile organic compound (CVOC) concentrations at long term monitoring (LTM) wells in the AS/SVE area have been below the ROD treatment goal of 50 micrograms per liter (µg/L) since December 2021, which is consistent with EPA guidance for remediation phase attainment.

To address this discrepancy, it is requested to revise the response to reflect that the decision on transitioning to the attainment phase for the AS/SVE system will be informed by ongoing long-term monitoring (LTM) sampling results. This adjustment will ensure clarity on whether the

system has met EPA's criteria for entering the attainment phase or if there are indications of rebound necessitating the restart of AS/SVE operations.

The USEPA appreciates the USARMY for its efforts to further investigate the DDMT ecological conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Benthowski, USEPA, R4
Kevin Koporec, USEPA, R

**Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12,
Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 18 December 2023 and 12 March 2024**

GENERAL COMMENT

The Report should discuss that shutting down the AS/SVE system signifies the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration per EPA guidance. The Report discusses that the individual chlorinated volatile organic compound (CVOC) concentrations at long-term monitoring (LTM) wells in the AS/SVE area have been below the treatment goal of 50 micrograms per liter (µg/L) set forth in the 2009 Record of Decision (ROD) Amendment and that LTM sampling will continue; however, no discussion of attainment monitoring to assess rebound is presented. Per the cited EPA guidance, groundwater monitoring should continue after the remediation monitoring phase is completed to verify that cleanup levels for each contaminant of concern (COC) continue to remain at or below the cleanup level in the future.

Please revise the Report to describe the significance of shutting down the AS/SVE system as the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration requirements and processes per EPA guidance.

Response:

The AS/SVE system was shut down because individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. The remediation phase, as described in EPA's guidance document "*Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well*", is still underway as groundwater cleanup levels for all COCs set forth in the ROD have not yet been achieved.

The purpose of the Year 12 Off Depot AS/SVE Annual Operations Report is to summarize the operations and maintenance activities and the results of system monitoring for Year 12 operations. Army suggests that discussion of attainment monitoring and how it will be confirmed is best provided in the annual LTM reports.

Section 4.3 of the report was revised as follows:

"Individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. Consequently, the AS/SVE system was shut down at the end of the Year 12 operating period. No additional air sparging or soil vapor extraction is proposed at this time. The Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and to energize the compressor and Blower 1 for brief periods of time in an effort to maintain the equipment.

LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014)."

EPA Follow-up Comment

The response does not address the comment. The comment requested that the Report describe the significance of shutting down the air sparge/soil vapor extraction (AS/SVE) system as the completion of the remediation phase and the beginning of the attainment phase as related to the operation of the AS/SVE system per EPA guidance "*Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well*."

**Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12,
Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 18 December 2023 and 12 March 2024**

The response states that the remediation phase per EPA's guidance is still underway as groundwater cleanup levels for all contaminants of concern (COCs) set forth in the groundwater record of decision (ROD) have not yet been achieved; however, while this is true per the groundwater ROD, the remediation phase of the AS/SVE system operation has been completed, as the individual chlorinated volatile organic compound (CVOC) concentrations at long term monitoring (LTM) wells in the AS/SVE area have been below the ROD treatment goal of 50 micrograms per liter (µg/L) since December 2021, which is consistent with EPA guidance for remediation phase attainment.

To address this discrepancy, it is requested to revise the response to reflect that the decision on transitioning to the attainment phase for the AS/SVE system will be informed by ongoing long-term monitoring (LTM) sampling results. This adjustment will ensure clarity on whether the system has met EPA's criteria for entering the attainment phase or if there are indications of rebound necessitating the restart of AS/SVE operations.

Response to EPA Follow-up Comment

Section 4.3 of the report was revised as follows:

“Individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. Consequently, the AS/SVE system was shut down at the end of the Year 12 operating period, concluding the remediation phase. No additional air sparging or soil vapor extraction is proposed at this time. The Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and to energize the compressor and Blower 1 for brief periods of time in an effort to maintain the equipment.

The attainment phase, consisting of LTM sampling, will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014) to ensure the criteria for remaining in the attainment phase is being met (that is, individual CVOC concentrations remain below 50 µg/L). If attainment phase criteria is not being met, remediation phase activities will be initiated.”

EPA Second Follow-up Comment

The United States Environmental Protection Agency (USEPA) completed its review of the Draft Final [Revision 1] Off Depot Air Sparge/Soil Vapor Extraction System (AS/SVE) Annual Operations Report, Year 12, submitted by the United States Army (USARMY/Lead Agency) in April 2024 for the Defense Depot of Memphis, Tennessee (DDMT). The AS/SVE system targets the Off Depot groundwater plume of Dunn Field (Operable Unit 1/the site). In general, the EPA concurs that the USARMY has addressed most of the concerns raised during the reviews up to Draft Final, except for the need for additional data to allow regulators to properly evaluate the conditions for moving to the attainment phase in considering the recent exceedances observed at the Operable Unit 1 area.

Currently, the conditions at certain wells at the site areas do not achieve the record of decision requirements for remedial phase standards. While the estimated time of operation for the active remedy was 5 years, the system should continue to operate until the influent (upgradient) concentrations from the site plume do not exceed 50 ppb (50 µg/L) for individual Chlorinated Volatile Organic Compounds (CVOCs). Since 2012, some wells have exceeded 50 µg/L for an individual CVOCs, which is the active remedy action level for Operable Unit 1 to prevent human exposure to contaminated groundwater. Given the present exceedances in the site region, the EPA will seek the most recent data to evaluate whether the site plume concentration trends remain below the action

**Responses to Comments from
U.S. Environmental Protection Agency (EPA) Region 4 on:
Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12,
Revision 0, November 2023
Defense Depot Memphis, Tennessee
Comments Received: 18 December 2023 and 12 March 2024**

levels. As a result, to transition from the remedial phase to the attainment phase, the EPA requires the Lead Agency to present new data verifying that CVOC concentrations have remained below the 50 µg/L action level. This should include at least one year of data with four consecutive sampling events demonstrating consistent concentrations below the action level following any exceedances. Furthermore, if it is determined that the Lead Agency can move further into the attainment phase for Operable Unit 1, the EPA will evaluate whether the attainment phase standards are met or whether active remediation efforts must be restarted.

According to the site Record of Decision, "The chemicals that exceeded those criteria and require remedial action for the protection of human health are identified as COCs [contaminants of concern]. Since multiple chlorinated solvents were detected in groundwater at the site and in the immediate downgradient area, targeting to meet the MCLs may not be adequately protective of a potentially exposed receptor due to the possibility of cumulative toxicity at the MCLs exceeding the upper-bound limit of the acceptable risk or HI. Thus, upon completion of the remedial actions, the residual risks will not exceed these target levels at the points of compliance throughout the plume(s). The individual concentration of each COC within these plumes will be different from contaminated area to area; however, they will not exceed MCL or nonzero MCLG levels and combined concentration levels will not exceed a cumulative upper bound target risk of 1 in 10,000 (I X10 4) and HI of 1.0 within the plumes." According to EPA guidelines¹, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

Generally, the COCs in groundwater and their target remediation targets, which are based on cumulative target risk levels of 1 in a million (10⁻⁶) and 1 in 10,000 (10⁻⁴) with recommended concentration levels in the remediation goal might be changed dependent on the number of carcinogens at each sample location. However, in summary, the fundamental aim of ground water remediation is to achieve target risk levels, while ensuring compliance with the applicable environmental regulations, such as CERCLA² and if applicable, any RCRA³ requirements. Meeting relevant and appropriate federal and state standards, including maximum contaminant levels and applicable or relevant and appropriate requirements, is essential to the effectiveness and appropriateness of the selected ground water remedial actions.

Overall, by undertaking a thorough examination of the new data, the Lead Agency should provide the EPA with the necessary proof that the remedial efforts were effective in lowering CVOC levels at the site to acceptable levels before moving from the remedial phase to the attainment phase.

Therefore, for clarity, and compliance, the EPA request that Section 4.3 Recommendations be revise as follow:

The AS/SVE system was shut down at the end of the Year 12 operating period, and no additional air sparging or soil vapor extraction is proposed at this time. However, the Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and briefly operate the compressor and Blower 1 to maintain the equipment. Since December 2021, Dunn Field's long-term monitoring (LTM) wells in the AS/SVE area have consistently had CVOC concentrations below the treatment goal of 50 µg/L.

This indicates that the previous AS/SVE efforts have been, for the most part, effective in reducing contaminant levels in the ground water to the desired target except for few noted exceedances. As a result, for Dunn Field, the EPA requires that the Lead Agency present new data to verify that concentrations of specific chlorinated volatile organic compounds (CVOCs) stay below the 50 µg/L action level. This should comprise at least one year of data, with four consecutive sampling events following identified exceedances. As part of the reporting process, the LTM data will be analyzed to establish whether the action level criteria have been met consistently on

**Responses to Comments from
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each individual wells, in accordance with the EPA's guidance⁴ on evaluating the completion of groundwater restoration remedial efforts. In the event of transitioning to the attainment phase, if the attainment criteria are not maintained, the active remedial phase activities should be reinitiated.

¹ GROUNDWATER REMEDY COMPLETION STRATEGY - MOVING FORWARD WITH THE END IN MIND, OSWER 9200.2-144 (epa.gov)

² Comprehensive Environmental Response, Compensation, and Liability Act

³ Resource Conservation and Recovery Act

⁴ According to EPA guidelines, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

Response to Second EPA Follow-up Comment

Section 4.3 of the report was revised as follows:

"The AS/SVE system was shut down at the end of the Year 12 operating period and no additional air sparging or soil vapor extraction is proposed at this time. However, the Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and briefly operate the compressor and Blower 1 to maintain the equipment. Since December 2021, Dunn Field's LTM wells in the AS/SVE area have consistently had CVOC concentrations below the treatment goal of 50 µg/L.

Semi-annual LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well (USEPA 2014)*. As part of the reporting process, the LTM data will be analyzed to establish whether the 50 µg/L treatment goal continues to be met consistently at each well in accordance with EPA's guidance on evaluating the completion of groundwater restoration remedial efforts (USEPA 2014). If an exceedance of the 50 µg/L treatment goal is identified at any well, then subsequent sample results, representing at least one year of data with a minimum of four consecutive sampling events, will be evaluated to determine if the exceedance represents a one-time event or a long-term trend. If data indicate that treatment goal exceedances represent a sustained trend, then the Army will consider reinitiating active groundwater treatment."

SPECIFIC COMMENT

- 1. Section 2.3.2, Non-Routine System Maintenance and Repairs, Page 2-3:** The first bullet states the system was down from 8:07 am on August 14, 2022, to 12:21 pm on August 15, 2022, which is approximately 28 hours; however, the text states the system was shut down for 100.2 hours. Please revise the text to correct this discrepancy.

Response: The August 14, 2022 date was incorrect. The correct date was August 11, 2023. The report text was revised accordingly. No other changes were required to the text or tables.



REGION 4

ATLANTA, GA 30303

May 1, 2024

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (USEPA) completed its review of the Draft Final [Revision 1] Off Depot Air Sparge/Soil Vapor Extraction System (AS/SVE) Annual Operations Report, Year 12, submitted by the United States Army (USARMY/Lead Agency) in April 2024 for the Defense Depot of Memphis, Tennessee (DDMT). The AS/SVE system targets the Off Depot groundwater plume of Dunn Field (Operable Unit 1/the site). In general, the EPA concurs that the USARMY has addressed most of the concerns raised during the reviews up to Draft Final, except for the need for additional data to allow regulators to properly evaluate the conditions for moving to the attainment phase in considering the recent exceedances observed at the Operable Unit 1 area.

Currently, the conditions at certain wells at the site areas do not achieve the record of decision requirements for remedial phase standards. While the estimated time of operation for the active remedy was 5 years, the system should continue to operate until the influent (upgradient) concentrations from the site plume do not exceed 50 ppb (50 µg/L) for individual Chlorinated Volatile Organic Compounds (CVOCs). Since 2012, some wells have exceeded 50 µg/L for an individual CVOCs, which is the active remedy action level for Operable Unit 1 to prevent human exposure to contaminated groundwater. Given the present exceedances in the site region, the EPA will seek the most recent data to evaluate whether the site plume concentration trends remain below the action levels. As a result, to transition from the remedial phase to the attainment phase, the EPA requires the Lead Agency to present new data verifying that CVOc concentrations have remained below the 50 µg/L action level. This should include at least one year of data with four consecutive sampling events demonstrating consistent concentrations below the action level following any exceedances. Furthermore, if it is determined that the Lead Agency can move further into the attainment phase for Operable Unit 1, the EPA will evaluate whether the attainment phase standards are met or whether active remediation efforts must be restarted.

According to the site Record of Decision, *“The chemicals that exceeded those criteria and require remedial action for the protection of human health are identified as COCs [contaminants of concern]. Since multiple chlorinated solvents were detected in groundwater at the site and in the immediate downgradient area, targeting to meet the MCLs may not be adequately protective of a potentially exposed receptor due to the possibility of cumulative toxicity at the MCLs exceeding the upper-bound limit of the acceptable risk or HI. Thus, upon completion of the remedial actions, the residual risks will not exceed these target levels at the points of compliance throughout the plume(s). The individual concentration of each COC within these plumes will be different from contaminated area to area; however, they will not exceed MCL or nonzero MCLG levels and combined concentration levels will not exceed a cumulative upper bound target risk of 1 in 10,000 (1×10^{-4}) and HI of 1.0 within the plumes.”* According to EPA guidelines¹, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

Generally, the COCs in groundwater and their target remediation targets, which are based on cumulative target risk levels of 1 in a million (10^{-6}) and 1 in 10,000 (10^{-4}) with recommended concentration levels in the remediation goal might be changed dependent on the number of carcinogens at each sample location. However, in summary, the fundamental aim of ground water remediation is to achieve target risk levels, while ensuring compliance with the applicable environmental regulations, such as CERCLA² and if applicable, any RCRA³ requirements. Meeting relevant and appropriate federal and state standards, including maximum contaminant levels and applicable or relevant and appropriate requirements, is essential to the effectiveness and appropriateness of the selected ground water remedial actions.

Overall, by undertaking a thorough examination of the new data, the Lead Agency should provide the EPA with the necessary proof that the remedial efforts were effective in lowering CVOC levels at the site to acceptable levels before moving from the remedial phase to the attainment phase.

Therefore, for clarity, and compliance, the EPA request that Section 4.3 Recommendations be revise as follow:

The AS/SVE system was shut down at the end of the Year 12 operating period, and no additional air sparging or soil vapor extraction is proposed at this time. However, the Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and briefly operate the compressor and Blower 1 to maintain the equipment. Since December 2021, Dunn Field's long-

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² Comprehensive Environmental Response, Compensation, and Liability Act

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term monitoring (LTM) wells in the AS/SVE area have consistently had CVOC concentrations below the treatment goal of 50 µg/L.

This indicates that the previous AS/SVE efforts have been, for the most part, effective in reducing contaminant levels in the ground water to the desired target except for few noted exceedances. As a result, for Dunn Field, the EPA requires that the Lead Agency present new data to verify that concentrations of specific chlorinated volatile organic compounds (CVOCs) stay below the 50 µg/L action level. This should comprise at least one year of data, with four consecutive sampling events following identified exceedances. As part of the reporting process, the LTM data will be analyzed to establish whether the action level criteria have been met consistently on each individual wells, in accordance with the EPA's guidance⁴ on evaluating the completion of groundwater restoration remedial efforts. In the event of transitioning to the attainment phase, if the attainment criteria are not maintained, the active remedial phase activities should be reinitiated.

The USEPA commends the USARMY for its efforts on further investigating the DDMT environmental conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Benthowski, USEPA, R4
Kevin Koporec, USEPA, R4

⁴ According to EPA guidelines, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

**Responses to Comments from
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GENERAL COMMENT

The Report should discuss that shutting down the AS/SVE system signifies the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration per EPA guidance. The Report discusses that the individual chlorinated volatile organic compound (CVOC) concentrations at long-term monitoring (LTM) wells in the AS/SVE area have been below the treatment goal of 50 micrograms per liter (µg/L) set forth in the 2009 Record of Decision (ROD) Amendment and that LTM sampling will continue; however, no discussion of attainment monitoring to assess rebound is presented. Per the cited EPA guidance, groundwater monitoring should continue after the remediation monitoring phase is completed to verify that cleanup levels for each contaminant of concern (COC) continue to remain at or below the cleanup level in the future.

Please revise the Report to describe the significance of shutting down the AS/SVE system as the completion of the remediation phase and the beginning of the attainment phase of groundwater restoration requirements and processes per EPA guidance.

Response:

The AS/SVE system was shut down because individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. The remediation phase, as described in EPA's guidance document *"Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well"*, is still underway as groundwater cleanup levels for all COCs set forth in the ROD have not yet been achieved.

The purpose of the Year 12 Off Depot AS/SVE Annual Operations Report is to summarize the operations and maintenance activities and the results of system monitoring for Year 12 operations. Army suggests that discussion of attainment monitoring and how it will be confirmed is best provided in the annual LTM reports.

Section 4.3 of the report was revised as follows:

"Individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. Consequently, the AS/SVE system was shut down at the end of the Year 12 operating period. No additional air sparging or soil vapor extraction is proposed at this time. The Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and to energize the compressor and Blower 1 for brief periods of time in an effort to maintain the equipment.

LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014)."

EPA Follow-up Comment

The response does not address the comment. The comment requested that the Report describe the significance of shutting down the air sparge/soil vapor extraction (AS/SVE) system as the completion of the remediation phase and the beginning of the attainment phase as related to the operation of the AS/SVE system per EPA guidance *"Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well."*

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The response states that the remediation phase per EPA's guidance is still underway as groundwater cleanup levels for all contaminants of concern (COCs) set forth in the groundwater record of decision (ROD) have not yet been achieved; however, while this is true per the groundwater ROD, the remediation phase of the AS/SVE system operation has been completed, as the individual chlorinated volatile organic compound (CVOC) concentrations at long term monitoring (LTM) wells in the AS/SVE area have been below the ROD treatment goal of 50 micrograms per liter (µg/L) since December 2021, which is consistent with EPA guidance for remediation phase attainment.

To address this discrepancy, it is requested to revise the response to reflect that the decision on transitioning to the attainment phase for the AS/SVE system will be informed by ongoing long-term monitoring (LTM) sampling results. This adjustment will ensure clarity on whether the system has met EPA's criteria for entering the attainment phase or if there are indications of rebound necessitating the restart of AS/SVE operations.

Response to EPA Follow-up Comment

Section 4.3 of the report was revised as follows:

“Individual CVOC concentrations at LTM wells in the AS/SVE area have been below the treatment goal of 50 µg/L since December 2021. Consequently, the AS/SVE system was shut down at the end of the Year 12 operating period, concluding the remediation phase. No additional air sparging or soil vapor extraction is proposed at this time. The Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and to energize the compressor and Blower 1 for brief periods of time in an effort to maintain the equipment.

The attainment phase, consisting of LTM sampling, will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document *Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well* (USEPA 2014) to ensure the criteria for remaining in the attainment phase is being met (that is, individual CVOC concentrations remain below 50 µg/L). If attainment phase criteria is not being met, remediation phase activities will be initiated.”

EPA Second Follow-up Comment

The United States Environmental Protection Agency (USEPA) completed its review of the Draft Final [Revision 1] Off Depot Air Sparge/Soil Vapor Extraction System (AS/SVE) Annual Operations Report, Year 12, submitted by the United States Army (USARMY/Lead Agency) in April 2024 for the Defense Depot of Memphis, Tennessee (DDMT). The AS/SVE system targets the Off Depot groundwater plume of Dunn Field (Operable Unit 1/the site). In general, the EPA concurs that the USARMY has addressed most of the concerns raised during the reviews up to Draft Final, except for the need for additional data to allow regulators to properly evaluate the conditions for moving to the attainment phase in considering the recent exceedances observed at the Operable Unit 1 area.

Currently, the conditions at certain wells at the site areas do not achieve the record of decision requirements for remedial phase standards. While the estimated time of operation for the active remedy was 5 years, the system should continue to operate until the influent (upgradient) concentrations from the site plume do not exceed 50 ppb (50 µg/L) for individual Chlorinated Volatile Organic Compounds (CVOCs). Since 2012, some wells have exceeded 50 µg/L for an individual CVOCs, which is the active remedy action level for Operable Unit 1 to prevent human exposure to contaminated groundwater. Given the present exceedances in the site region, the EPA will seek the most recent data to evaluate whether the site plume concentration trends remain below the action

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levels. As a result, to transition from the remedial phase to the attainment phase, the EPA requires the Lead Agency to present new data verifying that CVOC concentrations have remained below the 50 µg/L action level. This should include at least one year of data with four consecutive sampling events demonstrating consistent concentrations below the action level following any exceedances. Furthermore, if it is determined that the Lead Agency can move further into the attainment phase for Operable Unit 1, the EPA will evaluate whether the attainment phase standards are met or whether active remediation efforts must be restarted.

According to the site Record of Decision, "The chemicals that exceeded those criteria and require remedial action for the protection of human health are identified as COCs [contaminants of concern]. Since multiple chlorinated solvents were detected in groundwater at the site and in the immediate downgradient area, targeting to meet the MCLs may not be adequately protective of a potentially exposed receptor due to the possibility of cumulative toxicity at the MCLs exceeding the upper-bound limit of the acceptable risk or HI. Thus, upon completion of the remedial actions, the residual risks will not exceed these target levels at the points of compliance throughout the plume(s). The individual concentration of each COC within these plumes will be different from contaminated area to area; however, they will not exceed MCL or nonzero MCLG levels and combined concentration levels will not exceed a cumulative upper bound target risk of 1 in 10,000 (I X10 4) and HI of 1.0 within the plumes." According to EPA guidelines¹, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

Generally, the COCs in groundwater and their target remediation targets, which are based on cumulative target risk levels of 1 in a million (10⁻⁶) and 1 in 10,000 (10⁻⁴) with recommended concentration levels in the remediation goal might be changed dependent on the number of carcinogens at each sample location. However, in summary, the fundamental aim of ground water remediation is to achieve target risk levels, while ensuring compliance with the applicable environmental regulations, such as CERCLA² and if applicable, any RCRA³ requirements. Meeting relevant and appropriate federal and state standards, including maximum contaminant levels and applicable or relevant and appropriate requirements, is essential to the effectiveness and appropriateness of the selected ground water remedial actions.

Overall, by undertaking a thorough examination of the new data, the Lead Agency should provide the EPA with the necessary proof that the remedial efforts were effective in lowering CVOC levels at the site to acceptable levels before moving from the remedial phase to the attainment phase.

Therefore, for clarity, and compliance, the EPA request that Section 4.3 Recommendations be revise as follow:

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each individual wells, in accordance with the EPA's guidance⁴ on evaluating the completion of groundwater restoration remedial efforts. In the event of transitioning to the attainment phase, if the attainment criteria are not maintained, the active remedial phase activities should be reinitiated.

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⁴ According to EPA guidelines, groundwater restoration actions are considered complete when monitoring data shows that the groundwater meets and will continue to meet cleanup levels for all COCs in the future, as specified in the decision document.

Response to EPA Second Follow-up Comment

OSWER 9283.1-44 ***Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well*** dated August 2014, provides guidance on ***Sample Frequency and Duration Considerations***. It does not in any way designate or restrict the duration over which data is collected. The data the Army has collected over time has demonstrated that annual and semi-annual sampling frequency is appropriate for the site, such that four consecutive sampling events may stretch over two to four years, depending on the well. Army requests EPA provide the specific reference for demanding four consecutive sampling events be conducted over a one year for proof of completion of the remediation monitoring phase. The guidance cited in the EPA comment is silent on sample frequency and duration.

Section 4.3 of the report was revised as follows:

“The AS/SVE system was shut down at the end of the Year 12 operating period and no additional air sparging or soil vapor extraction is proposed at this time. However, the Army will conduct periodic site visits to inspect the integrity of the AS/SVE structures and briefly operate the compressor and Blower 1 to maintain the equipment. Since December 2021, Dunn Field's LTM wells in the AS/SVE area have consistently had CVOC concentrations below the treatment goal of 50 µg/L.

Semi-annual LTM sampling will continue in accordance with the Dunn Field ROD Amendment (e2M, 2009). The LTM data will be evaluated as part of the annual LTM reporting and in accordance with EPA's guidance document ***Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well (USEPA 2014)***. As part of the reporting process, the LTM data will be analyzed to establish whether the 50 µg/L treatment goal continues to be met consistently at each well in accordance with EPA's guidance on evaluating the completion of groundwater restoration remedial efforts (USEPA 2014). If an exceedance of the 50 µg/L treatment goal is identified at any well, then subsequent sample results, with a minimum of four consecutive sampling events, will be evaluated to determine if the exceedance represents a one-time event or a long-term trend. If data indicate that treatment goal exceedances represent a sustained trend, then the Army will consider reinitiating active groundwater treatment.”

SPECIFIC COMMENT

- 1. Section 2.3.2, Non-Routine System Maintenance and Repairs, Page 2-3:** The first bullet states the system was down from 8:07 am on August 14, 2022, to 12:21 pm on August 15, 2022, which is approximately 28 hours; however, the text states the system was shut down for 100.2 hours. Please revise the text to correct this discrepancy.

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Response: The August 14, 2022 date was incorrect. The correct date was August 11, 2023. The report text was revised accordingly. No other changes were required to the text or tables.



REGION 4

ATLANTA, GA 30303

7/9/2024

Mr. James Foster
Base Realignment and Closure Division (ACSIM-ODB)
2530 Crystal Drive (Taylor Building), Room 5000
Arlington, VA 22202-3940

Dear Mr. Foster,

The United States Environmental Protection Agency (EPA/USEPA) concurs with the United States Army's (lead agency/USARMY) recommendations presented in the Air Sparging/Soil Vapor Extraction (AS/SVE) System Annual Operations Report, Year 12 for the Operable Unit 1 (OU-1), Dunn Field, Defense Depot in Memphis, Tennessee (DDMT). For clarity and consistency, the EPA requests that an updated version be shared with all parties as the Off Depot Air Sparge/Soil Vapor Extraction System Annual Operations Report, Year 12, Final. There are no additional modifications requested.

The AS/SVE system was strategically installed at the downgradient end of the Off Depot Chlorinated Volatile Organic Compounds (CVOCs) plume's core to intercept the majority of the contamination and reduce individual CVOC concentrations to 50 micrograms per liter ($\mu\text{g/L}$) or less. The system's effectiveness has been demonstrated by sustained reductions in CVOC concentrations since its implementation. Since April 2012, only one Long-Term Monitoring (LTM) well near the AS/SVE system (monitoring well MW-159) has exceeded the 50 $\mu\text{g/L}$ objective, specifically for trichloroethylene (TCE). To address this, additional Air Sparging wells were installed upgradient of MW-159 in October 2020, resulting in TCE concentrations at MW-159 dropping below 50 $\mu\text{g/L}$ by December 2021 and reaching approximately 30 $\mu\text{g/L}$ in April and June 2022 samples.

The EPA concurs with the lead agency's proposal to continue investigating remaining contamination and maintain semi-annual LMT sampling before considering alternative post-shutdown monitoring approaches. This ongoing monitoring program should continue to track plume concentrations, detect potential contaminant migration, assess progress towards Remedial Action Objectives (RAOs), and compare post-shutdown trends to historical data, with emphasis on potential contaminant rebound. Once the site transitions to the attainment phase, the Monitored Natural Attenuation (MNA) and LMT program should continue until groundwater

RAOs are met, unless site conditions change significantly, or remedial strategy optimization is required. This approach ensures consistent tracking of contaminant levels, natural attenuation processes, and progress towards cleanup goals while maintaining adaptability to evolving site conditions or improved remediation techniques. A comprehensive optimization plan should be presented to regulatory agencies for approval, including justifications for changes, impact assessments on detecting site condition changes, cost-benefit analyses of modifications, and contingency measures for unexpected results. This strategy maintains protection of human health and the environment while potentially reducing long-term monitoring costs, striking a balance between thorough oversight and resource efficiency in the site's remediation process.

Generally, achieving Unlimited Use and Unrestricted Exposure¹ (UU/UE) is often the ultimate goal of CERCLA site remediation. It means the site is safe for residential use, which is typically the most stringent standard. For DDMT, statutory Five-Year Reviews (FYR) will remain a federal requirement because hazardous substances, pollutants, or contaminants continue to exceed the levels that allow for UU/UE.² To achieve UU/UE status, the site must pose no unacceptable risks to human health or the environment under any future land use scenario.³ Similarly, institutional controls should remain in place for most of OU-1 to prevent residential use of most of the property and to restrict groundwater use until contaminant levels are reduced to allow UU/UE.

In addition, the EPA also agrees with the lead agency that the equipment should be inspected on a regular basis to ensure that it is still in good condition for future use. A rapid response plan for system reactivation should be developed, considering previous performance data and the potential need for immediate action if contaminant levels rise. Although, given the past impact of weather on system operations, the EPA believe that strategies should also be reevaluated to mitigate the effects of heavy rainfall events on potential system reactivation and use scenarios.

For OU-1, as part of the next phase for active remediation, the lead agency, in collaboration with supporting agencies, is thoroughly evaluating the potential redeployment of the Soil Vapor Extraction system and the execution of soil removal. The plan aims to address persistent contamination in areas where contaminant concentrations continue to exceed regulatory and risk base limits, demonstrating a commitment to comprehensive site cleanup and environmental restoration.

The EPA believes that keeping open lines of communication with regulatory agencies is critical throughout this process. This includes sharing ongoing monitoring results, discussing long-term VOC concentration trends, and keeping them updated on system shutdown decisions. Such transparency will ensure that all parties are in agreement on the site's progress and any necessary changes.

¹ UU/UE indicates that a contaminated site has been cleaned up to a level that allows for any type of land use without restrictions on human exposure.

² FYRs will be conducted every five years until the site receives UU/UE approval, with the next review due on January 23, 2028.

³ When a site reaches UU/UE, there are no need for institutional controls, engineering controls, or long-term monitoring and maintenance.

The USEPA appreciates the USARMY for its efforts to further investigate the DDMT ecological conditions. If you have any questions about this letter, please contact me via email at martinez-torres.fernando@epa.gov or at 404-695- 4991.

Sincerely,

Fernando Martinez Torres
Remedial Project Manager
Department of Defense Section
Superfund & Emergency Management Division
United States Environmental Protection Agency

cc: Jamie A. Woods, TDEC
William Millar, CALIBRE
Ben Bentkowski, USEPA, R4
Kevin Koporec, USEPA, R4



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Remediation
Memphis Environmental Field Office
8383 Wolf Lake Drive
Bartlett, TN 38133-4119

January 9, 2024

James C. Foster
BRAC Program Manager
Headquarters Department of the Army,
Assistant Chief of Staff for
Installation Management (DAIM-ODB)
Army Pentagon,
2530 Crystal Drive,
Arlington, VA 22202-3934

Subject: Off Depot AS/SVE Annual Operations Repot, Year 12
Defense Depot Memphis, Tennessee
TDoR ID # 79-736
TN4210020570

Mr. Foster,

TDEC-DoR has reviewed the **Off-Depot AS/SVE Annual Operations Report, Year 12 (Rev 0)** and has no comments regarding the document's contents. If there are questions regarding the approval, please contact me at (901) 371-3041 or at jamie.woods@tn.gov.

Regards,

A handwritten signature in blue ink, appearing to read "JAWood", with a long horizontal flourish extending to the right.

Jamie A. Woods, P.G.
Project Manager
Division of Remediation
Memphis Environmental Field Office

cc: Bill Millar (CALIBRE)
T. Holmes (HDR Inc)
F. Martinez-Torres (EPA-PM)

TDEC DOR: file # 79-736

Appendix B Semiannual and Annual Maintenance Reports

SERVICE ORDER**73141519** Page1/12

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper *	Order	S352- See contract notes
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Thursday, 11/10/22 / 12:00 AM		(877)882-8376
Service techn.	Branden Spaniol Branch Service Technician, MEM		

Attachments[Add attachment](#)**Maintenance (periodical)**

Contract No: Maintenance Agreement- Sign
Service Agreement 'Maintenance'

Major pm CSD100, KCF100, Filters, and Tank

Quote: 86650973

Oil from Branch Stock

Scheduled for 11/10 per Denise Cooper- LB 11/7/22

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
Disposal	As consumed	0020	1	As consumed		☐ Customer ☒ Technician ☐ Waste contractor		
Set up time				Wrap up time				
Date	Duration	Service technician		Date	Duration	Service technician		
Start of work		End of work	Breaks	Date / Weekday		Service technician		
9:00 AM		4:15 PM	0 Min	Thursday, 11/10/22		Branden Spaniol		
Additional work(not included in contract)			Duration	to Oper	Description			

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1 1/2% interest per month (annual rate 18%).

SERVICE ORDER

73141519 Page2/12



Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Any outstanding deficiencies?

☐ Yes ☒ No

Work accepted.

Confirmed work and material of work plan.

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signature

Kaeser Field
Service PN

Digitally signed by
Kaeser Field Service PN
Date: 2022.11.10
15:58:26 -06'00'

Customer's
signature

Electronically signed by Denise R Cooper
Date: 20221110 - 16:01:34 - UTC-06:00
Digital Signature created with StepOver PDF Plugin 8-9-482

☐ Signature unavailable

Remark:

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Kaeser Compressors, Inc. P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

Oper. 0020 **Maintain screw compressor - package B** 3.0
Type CSD 100 125 psi 460/60 US **1010027438**
Material No. 100818.1 **Year** **2009**
Serial No. 1234 **EMR** **3498678**

Previous service hours 62,752 h **Current service hours** 67,291 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Check motor-aiend coupling	ok
☒ -Change filter mat(s) in compressor/control cabinet/SFC cabinet	ok
☒ -Change air filter	ok
☒ -Check oil filter and change if necessary	ok
☒ -Check cooler and clean if necessary/check fan blades and guarding	ok
☐ -Maintain condensate drain	na
☒ -Check electrical cables and cable inlets	ok
☐ -Tighten mains terminals and check for oxidation	na
☐ -Check shutdown function when separator air outlet temp. too high	na
☐ -Check overcurrent relays and motor protection switches	na
☒ -Check door and guard interlocks and emergency stop function	ok
☒ -Check oil and change if necessary	ok
☒ -Check oil separator cartridge difference pressure 0 psi/bar,	ok
change as needed	
☒ Check fan motor bearings ☒ Re-greased	ok
☒ Check compressor motor bearings ☒ Re-greased	ok
☐ -Check nominal pressure shutdown function,	na
shutdown at psi/bar	na
☐ -Check shutdown function when aiend discharge temp. too high	na
☒ -Check control voltage: L1 125 V	ok
☒ -Check power consumption: Line U1 138 A V1 137 A W1 139 A	ok
☐ -Check pressure relief valve(s)	na
☒ -Check aiend discharge temperature 186 °F/°C	ok
☒ -Test run, check conditions: start, idle, load and shut-down	ok
☒ -Check oil level, for leaks (compr.air./oil/water), idling press.	ok
☒ -Register service: stick label/service manual/controller	ok
Total h 67291 Load h 35899 Ambient temp. 70 °F/°C	ok
Oil type m460 Control mode dual	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na

Work to be done	Comment
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Upon arrival contacted with the customer and gained access to the control room. LOTO unit and drained all the oil and changed the air and oil filters. Replaced the separator filter and did maintenance on the vent valve. Replaced the oil in the unit and ran the unit ran satisfactory. Unit has transitioned to modulation so will no longer need 400905.0 but instead will need 400706.0. Customer also has a broken separator gage and would like it replaced when possible.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>
M-460 Semi-Synthetic Oil \$/(5	ANM460-5	3			1001
vent valve maintenance kit	400706.0	1			1002

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>
Oil filter 16bar	6.3465.0	1		0	☐ Tech. ☐ Customer
Filter mat 112x112x10	6.3572.0	2		0	☐ Tech. ☐ Customer
KIT oil separator cartridge Ø28l	6.3623.0	1		0	☐ Tech. ☐ Customer
KIT air filter cartridge Ø420x13l	4E0302.0	1		0	☐ Tech. ☐ Customer
KIT mainten. vent auxiliary valv	400905.0	2		1	☒ Tech. ☐ Customer
Oil Analysis Kit (red)	ANKCPIND2BR	1		0	☐ Tech. ☐ Customer
					☐ Tech. ☐ Customer

Oper. 0040 **Maintain refrigeration dryer** 2.0
Type Refrig. dryer TE 141 460/3/60 **1010027441**
Material No. 1.8039.00010 **Year** **2009**
Serial No. 1343 **EMR** **3575706**

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☐ -Ensure safe working conditions as described in the manual	
☐ -Check for condensate in air network	
☐ -Clean refrigerant condenser and straighten laminations	
☐ -Maintain condensate drain	
☐ -Repair any damage to the refrigerant circuit thermal insulation	
☐ -Check fan motor, blades and guarding	
☐ -Check electrical cables and cable inlets	
☐ -Check cut-out pressure: high psi/bar low psi/bar	
☐ -Check compressed air temp.: Inlet °F/°C Outlet °F/°C	
☐ -Check dew point: ☐ blue ☐ green ☐ red °F/°C	
Refilled/disposed refrigerant quantity: / kg/lb	
Refrigerant type and total quantity*: / kg/lb	
☐ -Check refrigerant circuit for leaks	
☐ -Check setting and function of the compressed air bypass/diversion	
☐ -Test run	
☐ -Register service: stick label/service manual	
Refrigerant type Ambient temperature °F/°C	
Existing safety deficiencies? ☐ No ☐ Yes:	
Cause(s):	
Arising danger:	
Safety deficiency rectified? ☐ Yes ☐ No; reason:	
>>>> Equipment not released for use!	
Rectified deficiencies:	
☐ Tasks fully completed	
☐ Follow-up assignment necessary for:	
☐ Follow-up order issued for:	
☐ Supply spares:	
☐	
Additional comments:	
No work on this unit.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

☐ Tech
☐ Customer

SERVICE ORDER**73141519** Page 7 / 12**KAESER COMPRESSORS**

Oper. 0050 **Maintain oil-water sep. - package A** 0.5
Type KCF-100 Condensate Treatment System 1010027442
Material No. ANKCF100 Year 2009
Serial No. 10900584 EMR 3486488

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Empty oil catcher	ok
☒ -Check activated carbon filter and prefilter, change if necessary	ok
☒ -Change expansion chamber filter	ok
☒ -Check settling tank for contamination and clean if necessary	ok
☒ -Check oil drain and clean if necessary	ok
☒ -Check water drain, clean if necessary	ok
☒ -Check for leaks in hoses, connections and air receiver	ok
☐ -Check heating (option)	na
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Once at the unit pulled out filter and drained it. Cleaned the unit and replaced the filter. Returned the unit back to service.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

Replacement Filter Set - KCF100 ANKCF100CAR` 1

0

☐ Tech
☐ Customer

☐ Tech
☐ Customer

SERVICE ORDER**73141519** Page 8 / 12**KAESER COMPRESSORS**

Oper. 0070 **Maintain compr. air filter - package B** 1.0
Type Oil Removal KOR-485.2 w/ AMD1550 1010027443
Material No. USKOR485.2 Year 2009
Serial No. * EMR 3742806

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Change filter element(s)	ok
☒ -Clean filter housing and control bores in the filter head	ok
☒ -Maintain condensate drain	ok
☐ -Check pressure differential indicator (option)	na
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	ok
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Once at the unit took housing off and cleaned the unit. Replaced the filter and rebuilt the 1550 drain and returned to service.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>
Std 485 KOR Element (RED)	USOR-485	1		0	☐ Tech. ☐ Customer
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech. ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech. ☐ Customer

Oper. 0080 **Maintain filter - package A** 1.0
Type Separator - KFS-485.2 AMD 1550 1010027604
Material No. USKFS485.2 **Year**
Serial No. **** **EMR** 6348333

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Check filter element(s)	ok
☒ -Check / maintain condensate drain	ok
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	ok
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Once at the unit took housing off and cleaned the unit. Replaced the filter and rebuilt the 1550 drain and returned to service.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech ☐ Customer
Std 485 KFS Element	USFS-485	1		0	☐ Tech ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech ☐ Customer ☐ Tech ☐ Customer

Oper. 0100	Maintain compr. air receiver - package B		0.5
Type	200 Gal Tank w/ AMD 6550		1010027633
Material No.	9.9999.9	Year	2009
Serial No.	1251	EMR	4403267

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Visually check air receiver exterior condition	ok
☒ -Maintain condensate drain	ok
☒ -Check pressure indicator	ok
☒ -Check pressure relief valve(s) for visible damage/contamination	ok
☒ -Check for leaks	ok
☒ -Register service: stick label/service manual	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>>> Equipment not released for use!	
Rectified deficiencies:	
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Once at the unit rebuilt the amd 6550 and returned to service.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

KIT maintenance AMD 6550	US50180	1	0	☐ Tech ☐ Customer ☐ Tech ☐ Customer

SERVICE ORDER**73141519** Page 11 / 12 **KAESER COMPRESSORS**

Oper. 0120 **Maintain compr. air filter - package B** 1.0
Type Particulate KPF-485.2 w/ AMD1550 **1010027635**
Material No. USKPF485.2 Year **2009**
Serial No. * EMR **3742805**

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	ok
☒ -Change filter element(s)	ok
☒ -Clean filter housing and control bores in the filter head	ok
☒ -Maintain condensate drain	ok
☐ -Check pressure differential indicator (option)	na
☐ -Check optional shutdown function, only with user's permission	na
☒ -Check for leaks	ok
☒ -Register service: stick label/service manual/controller	ok
Existing safety deficiencies? ☐ No ☐ Yes:	na
Cause(s):	na
Arising danger:	na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	na
>>>> Equipment not released for use!	na
Rectified deficiencies:	na
☒ Tasks fully completed	ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Once at the unit took housing off and cleaned the unit. Replaced the filter and rebuilt the 1550 drain and returned to service.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
Std 485 KPF Element	USPF-485	1		0	☐ Tech. ☐ Customer
O-ring, BUNA 5.734 ID	US3098816	1		0	☐ Tech. ☐ Customer
KIT maintenance AMD 1550	AN55800	1		0	☐ Tech. ☐ Customer ☐ Tech. ☐ Customer

SERVICE ORDER

KAESER COMPRESSORS

Equipment at customer location 10049408 Trinity Analysis and Development, Memphis

Registered machines

- Please enter or correct missing or incorrect years of manufacture, material numbers or serial numbers
- As far as air receivers, ZK, filters and dryers are concerned, please complete information applicable to the condensate drain (if not yet registered) -**ED**= ECO-Drain, **FV**= Float valve, **SV**= Solenoid valve
- If the customer has more than one compressed air station in different locations at the same address, please enter the exact location of each station (e.g. paint shop, number 1 works) etc.

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

Non-registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
							+ -

SERVICE ORDER**73283946** Page1/12**KAESER**
COMPRESSORS*Built for a lifetime.*

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper *	Order	21-MSA-0029 - see contract notes
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Wednesday, 6/28/23 / 12:00 AM		(877)882-8376
Service techn.	Terry Linkous		

Attachments[Add attachment](#)**Maintenance (periodical)**

Contract No: Maintenance Agreement- Sign
Service Agreement 'Maintenance'

Minor - CSD 100
Quote 86823556

Scheduled for 06/28 with Denise Cooper - LF 06/09/2023

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
Disposal	as cosumed	0010	1	as consumed		☐ Customer ☒ Technician ☐ Waste contractor		
Set up time				Wrap up time				
Date	Duration	Service technician		Date	Duration	Service technician		
			+ -				+ -	
Start of work	End of work	Breaks	Date / Weekday			Service technician		
10:00 AM	12:45 PM	0 Min	Wednesday, 6/28/23			Terry Linkous		
Additional work(not included in contract)		Duration	to Oper	Description				

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SERVICE ORDER

73283946 Page2/12



Built for a lifetime.™

Shorten service interval due to environment or operating conditions?

☒ No ☐ Yes

Work performed acc. to work plan.

Work accepted.

Any outstanding deficiencies?

☐ Yes ☒ No

Confirmed work and material of work plan.

E-mail service manager(for confirmation)

richard.montgomery@kaeser.com

Customer e-mail(for confirmation)

denise.cooper@hdrinc.com

Service
technician's
signature

**Kaeser Field
Service PN**

Digitally signed by
Kaeser Field Service PN
Date: 2023.06.28
12:45:51 -05'00'

Customer's
signature

Electronically signed by Denise Cooper
Date: 2023/06/28 - 12:45:51 PM
Digital Signature created with: StepOver PDF Plugin 6.9-482

☐ Signature unavailable

Remark:

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Kaeser Compressors, Inc. P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

SERVICE ORDER

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KAESER COMPRESSORS

Oper. 0010 **Maintain screw compressor - package A** 1.5
Type CSD 100 125 psi 460/60 US **1010586850**
Material No. 100818.1 **Year** **2009**
Serial No. 1234 **EMR** **3498678**

Previous service hours 67,291 h **Current service hours** 72,707 h

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Isolated and LOTO
☒ -Check motor-aiarend coupling	Inspected, Lamination beginning to separate from the hub.
☒ -Change filter mat(s) in compressor/control cabinet/SFC cabinet	Changed
☒ -Change air filter	Changed
☒ -Check oil filter and change if necessary	Changed
☒ -Check cooler and clean if necessary/check fan blades and guarding	Ok
☐ -Maintain condensate drain	Na
☒ -Check electrical cables and cable inlets	Ok
☒ -Tighten mains terminals and check for oxidation	Ok
☐ -Check shutdown function when separator air outlet temp. too high	Na
☒ -Check overcurrent relays and motor protection switches	Ok
☒ -Check door and guard interlocks and emergency stop function	OK
☒ -Check oil and change if necessary	Added (CS)
☒ -Check oil separator cartridge difference pressure 0 psi/bar,	Inspected
change as needed	
☒ Check fan motor bearings ☒ Re-greased	Ok
☒ Check compressor motor bearings ☒ Re-greased	Greased
☒ -Check nominal pressure shutdown function,	
shutdown at 125 psi/bar	Ok
☒ -Check shutdown function when aiarend discharge temp. too high	Ok
☒ -Check control voltage: L1 128 V	Ok
☒ -Check power consumption: Line U1 124 A V1 124 A W1 124 A	Ok
☒ -Check pressure relief valve(s)	Ok
☒ -Check aiarend discharge temperature 175 °F/°C	Ok
☒ -Test run, check conditions: start, idle, load and shut-down	Ok
☒ -Check oil level, for leaks (compr.air./oil/water), idling press.	Ok
☒ -Register service: stick label/service manual/controller	Ok
Total h 72707 Load h 40661 Ambient temp. 80 °F/°C	Ok
Oil type M460 Control mode dual	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na

Work to be done	Comment
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed PKG A service on this unit changing the oil filter, air filter and the filter mats. Topped off the oil (CS) greased motor bearings and verified operation to be satisfactory. The drive coupling is showing some wear at the joints, the lamination is beginning to come back.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance	Material No.	Pc	Serial No.	Return	Returned by
Filter mat 112x112x10	6.3572.0	2		0	☐ Tech. ☐ Customer
Oil filter 16bar	6.3465.0	1		0	☐ Tech. ☐ Customer
KIT air filter cartridge Ø420x13!	4E0302.0	1		0	☐ Tech. ☐ Customer
Oil Analysis Kit (red)	ANKCPIND2BR	1		0	☐ Tech. ☐ Customer

SERVICE ORDER**73283946** Page 5 / 12**KAESER COMPRESSORS**

Oper. 0020 **Maintain compr. air receiver - package A** 0.0
Type 200 Gal Tank w/ AMD 6550 **1010586953**
Material No. 9.9999.9 Year 2009
Serial No. 1251 EMR 4403267

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Visually check air receiver exterior condition	Ok
☒ -Maintain condensate drain	Ok
☒ -Check pressure indicator	OK
☒ -Check pressure relief valve(s) for visible damage - contamination	Ok
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this receiver, no issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

☐ Tech.
☐ Customer

Oper. 0030 **Maintain refrigeration dryer** 0.0
 Type Refrig. dryer TE 141 460/3/60 1010586851
 Material No. 1.8039.00010 Year 2009
 Serial No. 1343 EMR 3575706

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Check for condensate in air network	Ok
☒ -Clean refrigerant condenser and straighten laminations	OK
☒ -Check condensate drain	Ok
☒ -Repair any damage to the refrigerant circuit thermal insulation	Ok
☒ -Check fan motor, blades and guarding	OK
☒ -Check electrical cables and cable inlets	Ok
☐ -Check safety shutdown, switch-point °F/°C psi/bar	Na
☐ -Check compressed air temp.: Inlet °F/°C Outlet °F/°C	Na
☒ -Check dew point: ☐ blue ☒ green ☐ red °F/°C	Ok
☒ -Check refrigerant circuit for leaks	Ok
Refilled/disposed refrigerant quantity: / kg/lb	Na
Refrigerant type and total quantity*: / kg/lb	Na
☐ -Check setting and function of the compressed air bypass/diversion	Na
☒ -Test run	Ok
☒ -Register service: stick label/service manual/controller	Ok
Refrigerant type R134a Ambient temperature 80 °F/°C	OK
Existing safety deficiencies? ☒ No ☐ Yes:	OK
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection, no issues found.	

<u>Consumed material</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Stock</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

- ☐ Tech.
- ☐ Customer

Oper. 0040 **Maintain oil-water sep. - package A** 0.0
 Type KCF-100 Condensate Treatment System 1010586852
 Material No. ANKCF100 Year 2009
 Serial No. 10900584 EMR 3486488

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☐ -Empty oil catcher	Na
☒ -Check activated carbon filter and prefilter, change if necessary	Ok
☒ -Change expansion chamber filter	Ok
☒ -Check settling tank for contamination and clean if necessary	Ok
☐ -Check oil drain and clean if necessary	Na
☒ -Check water drain, clean if necessary	Ok
☒ -Check for leaks in hoses, connections and air receiver	Ok
☐ -Check heating (option)	Na
☐ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>> Equipment not released for use!	na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this KCF, no issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

C Tech.
 C Customer

Oper. 0050 **Maintain compr. air filter - package A** 0.0
Type Oil Removal KOR-485.2 w/ AMD1550 1010586853
Material No. USKOR485.2 **Year** 2009
Serial No. * **EMR** 3742806

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Change filter element(s)	Inspected
☒ -Clean filter housing and control bores in the filter head	Ok
☒ -Maintain condensate drain	Ok
☒ -Check pressure differential indicator (option)	Ok
☐ -Check optional shutdown function, only with user's permission	Na
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this filter, no issues found.	

Consumed material Material No. Pc Serial No. Part ID/batch Stock

Material delivered in advance Material No. Pc Serial No. Return Returned by

C Tech
 C Customer

SERVICE ORDER**73283946** Page 10 / 12 **KAESER COMPRESSORS**

Oper. 0060 **Maintain compr. air filter - package A** 0.0
Type Particulate KPF-485.2 w/ AMD1550 **1010586970**
Material No. USKPF485.2 **Year** 2009
Serial No. * **EMR** 3742805

Work to be done	Comment
>Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Change filter element(s)	Inspected
☒ -Clean filter housing and control bores in the filter head	Ok
☒ -Maintain condensate drain	inspected
☒ -Check pressure differential indicator (option)	Ok
☐ -Check optional shutdown function, only with user's permission	Na
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	Na
☐ Follow-up order issued for:	Na
☐ Supply spares:	Na
☐	
Additional comments:	
Completed inspection of this filter, no issues found.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

☐ Tech
☐ Customer

SERVICE ORDER**73283946** Page 11 / 12 **KAESER COMPRESSORS**

Oper.0080 **Maintain filter - package B** 0.0
Type Separator - KFS-485.2 AMD 1550 1010586924
Material No. USKFS485.2 Year
Serial No. **** EMR 6348333

Work to be done	Comment
☐ >Tasks to be completed and current condition recorded: OK	
☒ -Ensure safe working conditions as described in the manual	Ok
☒ -Change filter element(s)	Inspected
☒ -Clean filter housing and control bores in the filter head	Ok
☒ -Check/maintain condensate drain	Inspected
☐ -Check optional shutdown function, only with user's permission	Na
☒ -Check for leaks	Ok
☒ -Register service: stick label/service manual/controller	Ok
Existing safety deficiencies? ☒ No ☐ Yes:	Ok
Cause(s):	Na
Arising danger:	Na
Safety deficiency rectified? ☐ Yes ☐ No; reason:	Na
>>>>> Equipment not released for use!	Na
Rectified deficiencies:	
☒ Tasks fully completed	Ok
☐ Follow-up assignment necessary for:	na
☐ Follow-up order issued for:	na
☐ Supply spares:	na
☐	
Additional comments:	
Completed inspection of this filter, no issues found.	

Consumed material **Material No.** **Pc** **Serial No.** **Part ID/batch** **Stock**

Material delivered in advance **Material No.** **Pc** **Serial No.** **Return** **Returned by**

☐ Tech.
☐ Customer

SERVICE ORDER

KAESER COMPRESSORS

Equipment at customer location 10049408 Trinity Analysis and Development, Memphis

Registered machines

- Please enter or correct missing or incorrect years of manufacture, material numbers or serial numbers
- As far as air receivers, ZK, filters and dryers are concerned, please complete information applicable to the condensate drain (if not yet registered) -**ED**= ECO-Drain,**FV**= Float valve,**SV**= Solenoid valve
- If the customer has more than one compressed air station in different locations at the same address, please enter the exact location of each station (e.g. paint shop, number 1 works) etc.

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	41588	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	2144292	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	20150824	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	1055	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	1025	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

Non-registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
							+ -

SERVICE ORDER**73400961** Page1/5**KAESER**
COMPRESSORS*Built for a lifetime.™*

Location	Trinity Analysis and Development	Customer	Trinity Analysis and Development
10049408	1605 Menager Rd		1605 Menager Rd
	Memphis TN 38106-7012		Memphis TN 38106-7012
Responsible	Ms. Denise Cooper *	Order	Trinity 21-MSA-0029, Task Order 05.
	901-268-2478	Pers.in charge	Richard Montgomery
Start (approx.)	Wednesday, 8/16/23 / 12:00 AM		(877)882-8376
Service techn.	Terry Linkous		

Attachments**Repair Service**

CSD 100 - Replace Drive Coupling

Scheduled for 1st AM 08/16 with Denise Cooper - LF 08/09/2023

NOTE TO TECH: Use coupling from van stock

EM Larissa - Possible lost package - JH 08/15

Label all returned goods!

Reason for return	Returned goods	to oper.	Pc	Material No.	Serial No.	Returned by		
						☐ Customer ☐ Technician ☐ Waste contractor		
Set up time				Wrap up time				
Date	Duration	Service technician		Date	Duration	Service technician		
Start of work	End of work	Breaks	Date / Weekday			Service technician		
8:00 AM	12:15 PM	0 Min	Wednesday, 8/16/23			Terry Linkous		

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1 1/2% interest per month (annual rate 18%).

Kaeser Compressors, Inc. P.O. Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

Work performed acc. to work plan.
Any outstanding deficiencies?

☐ Yes ☒ No

Work accepted.
Confirmed work and material of work plan.

E-mail service manager(for confirmation)
richard.montgomery@kaeser.com

Customer e-mail(for confirmation)
denise.cooper@hdrinc.com

Service
technician's
signature

**Kaeser Field
Service PN**

Digitally signed by
Kaeser Field Service PN
Date: 2023.08.16
12:09:46 -05'00'

Customer's
signat.

Electronically signed by Denise Cooper
Date: 2023/08/16 - 12:12:28 -04:00
Digital Signature created with StepOver PDF Plugin 8-9-482

☐ Signature unavailable

Remark:

Minimum charge for any invoice is \$50.00. Invoiced goods remain the property of Kaeser Compressors, Inc. until payment is received. No returns without authorization. Approved returns must be shipped pre-paid and are subject to restocking charges up to 25%. Past due accounts subject to 1 1/2% interest per month (annual rate 18%)

Kaeser Compressors, Inc., P.O.Box 946, Fredericksburg, VA 22404, Phone: (540)-898-5500 Fax: (540)-898-5520 www.kaeser.com
A Company with Certified Quality and Environmental Management Systems ISO 9001-2015 and 14001-2015

Oper. 6520 Repair rotary screw compressor**Type** CSD 100 125 psi 460/60 US**Material No.** 100818.1 **Year** 2009**Serial No.** 1234 **EMR** 3498678**Previous service hours**

72,707 h

Current service hours

73,147 h

Work to be done

Comment

☐	>Tasks to be completed and current condition recorded: OK	
☒	-Ensure safe working conditions as described in the manual	Ok
☒	-Fault-finding, note and carry out repair (after first obtaining authorization, if needed)	Replace drive couplant/repair safety covers
	1 Mat-no. 2 Code-gr. 3 Obj-part 4 Fault 5 Cause 6 Manuf.	
	1 2 3 4 5 6	
	1 2 3 4 5 6	
	1 2 3 4 5 6	
☒	-Check cooler; check fan blades and guarding	Ok
☒	-Check oil separator cartridge: diff. pressure 0 psi	Ok
☒	-Check control voltage: L1 128 V	OK
☒	-Check power consumption: Line U1 124 A V1 126 A W1 128 A	Ok
☒	-Check door and guard interlocks and emergency stop function	Ok
☒	-Check airend discharge temperature 175 °F	OK
☒	-Test run, check conditions: start, idle, load and shut-down	Ok
☒	-Check oil level	OK
☒	-Register service: stick label/service manual/controller	Ok
	Total h 73147 Load h 40921 Ambient temp. 80 °F	Ok
	Oil type M460 Control mode Dual	Ok
	Existing safety deficiencies? ☒ No Yes:	OK
	Cause(s):	Na
	Arising danger:	Na
	Safety deficiency rectified? Yes No; reason:	Na
	>>>>> Equipment not released for use!	Na
	Rectified deficiencies:	
☒	Tasks fully completed	Ok
☐	Follow-up assignment necessary for:	Na
☐	Follow-up order issued for:	Na
☐	Supply spares:	Na
☐		

Additional comments:

Upon arrival coordinated with POC to open the facility to gain access to the compressor container. Once set up found the drive coupling failed in such a manor that it melted then hardened back together half way rotated. Once all of the bolts were removed, had to cut the remain halves of the coupling off in order to remove from the hubs. The safety

Work to be done	Comment
guards were damaged from the coupling pieces that had blown out. Repair the covers, had to replace all of the mounting bolts due to them either beings sheared off or bent beyond use also had to repair the threads of the receiving side of the mounting bolts. Installed new coupling, found one of the bolt holes on the hub cross threaded. Repaired threads as best as possible then installed the new mounting bolt. Cleaned up all of the debris from the compressor cabinet and the surrounding area, wiped down the interior and exterior of the compressor then test ran. Checked all running conditions, unit operations appears to be satisfactory.	

<u>Consumed material</u>	<u>Materia No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Part ID/batch</u>	<u>Store</u>

<u>Material delivered in advance</u>	<u>Material No.</u>	<u>Pc</u>	<u>Serial No.</u>	<u>Return</u>	<u>Returned by</u>

Drive Coupling, CSDX	AN53246E0	1		0	☐ Tech. ☐ Customer ☐ Tech. ☐ Customer

KAESER COMPRESSORS

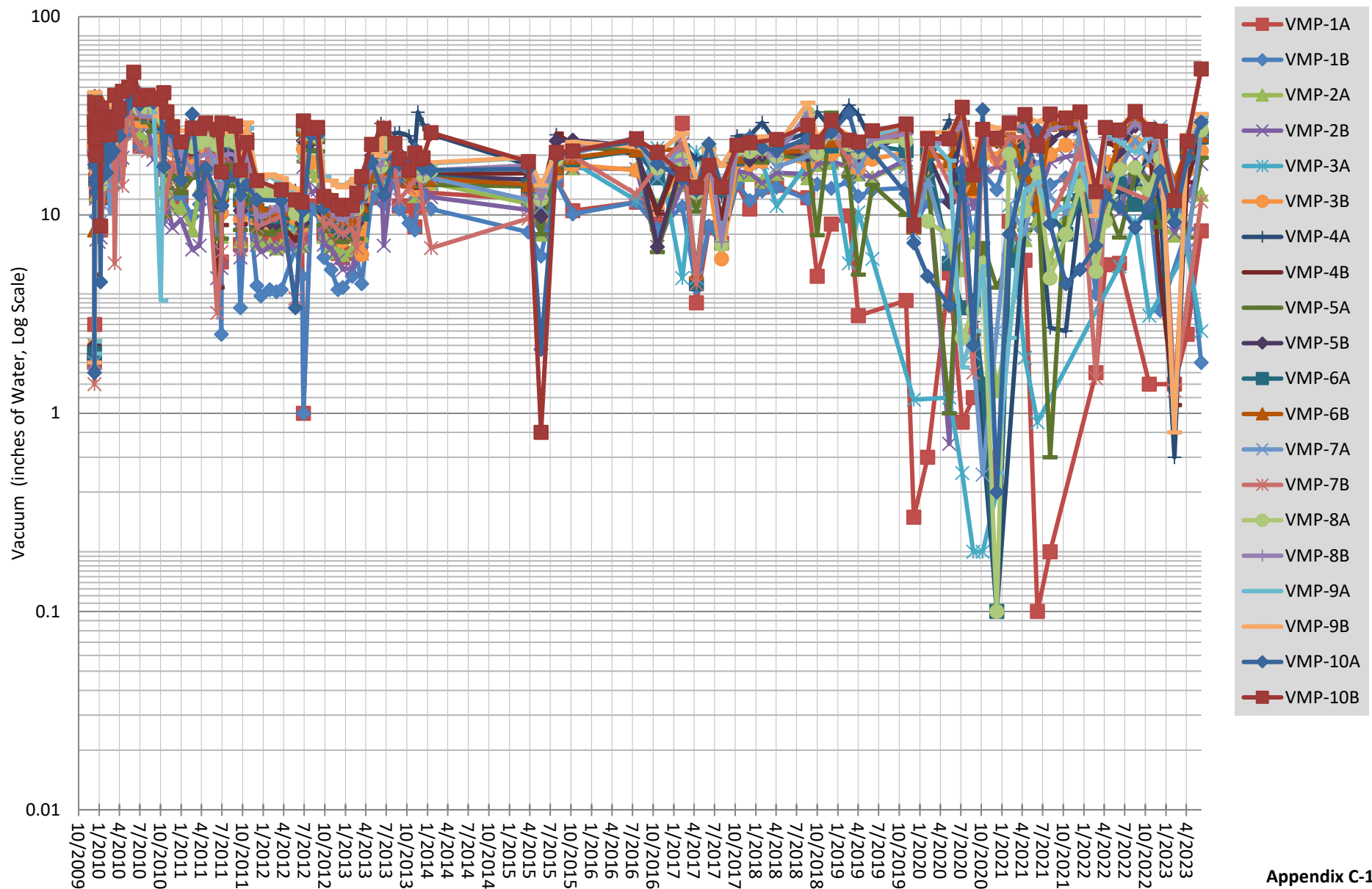
Registered machines

Type	S. Hr.	Year	Material No.	Serial No.		Station	
Refrig. dryer TE 141 460/3/60		2009	1.8039.00010	1343	reg.		-
CSD 100 125 psi 460/60 US		2009	100818.1	1234	reg.		-
200 Gal Tank w/ AMD 6550		2009	9.9999.9	1251	reg.		-
KCF-100 Condensate Treatment System		2009	ANKCF100	10900584	-----		-
Separator - KFS-485.2 AMD 1550		2018	USKFS485.2	****	-----		-
Oil Removal KOR-485.2 w/ AMD1550		2009	USKOR485.2	*	-----		-
Particulate KPF-485.2 w/ AMD1550		2009	USKPF485.2	*	-----		-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2140	reg.	BLOWER #1	-
EB 420 C VAC 40,0 hp 2.460 rpm		2009	EBC	2138	reg.	BLOWER #2	-

[illegible]

Appendix C Trend Charts for Vacuum and PID Measurements

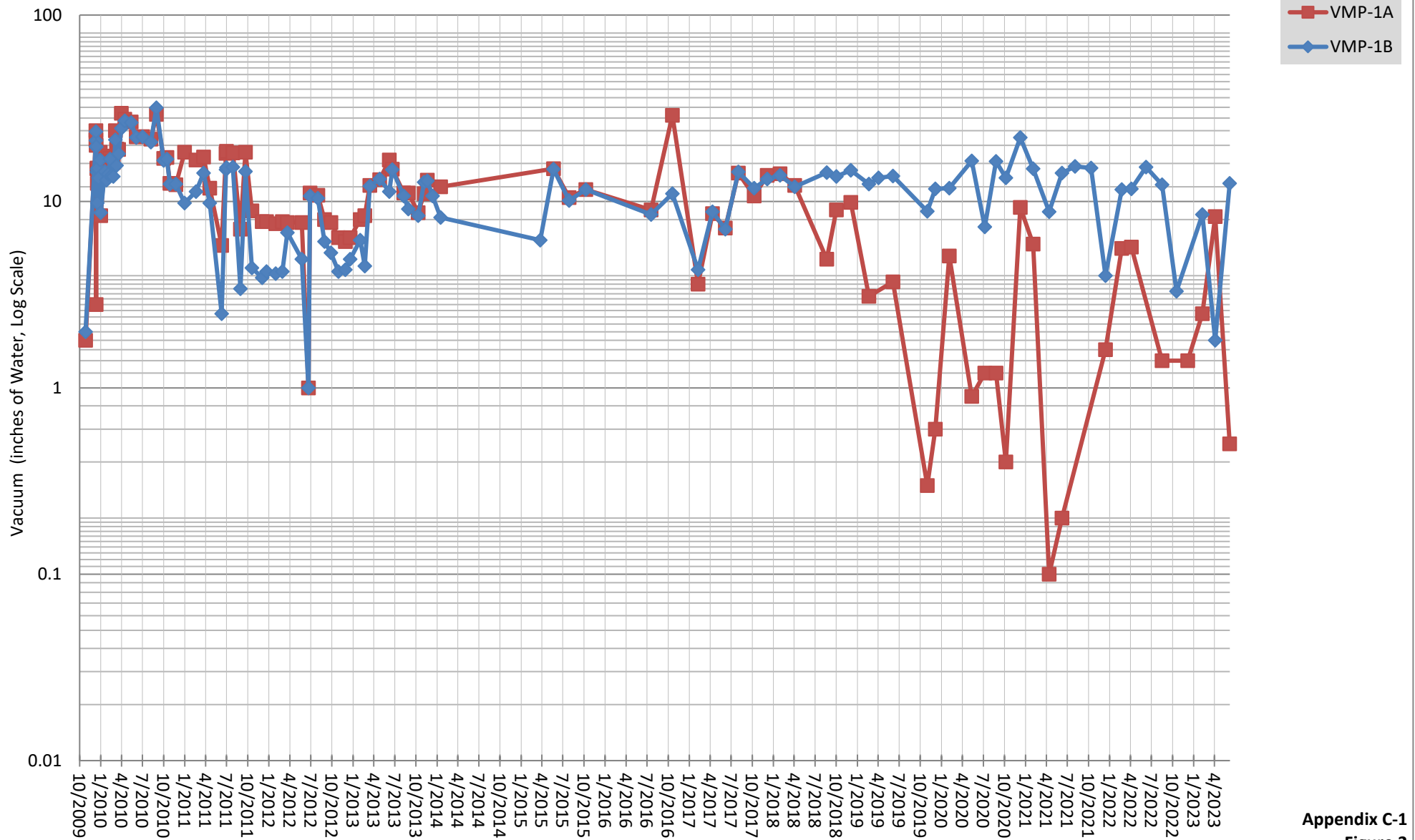
Appendix C-1 VMP Trends – Vacuum Readings



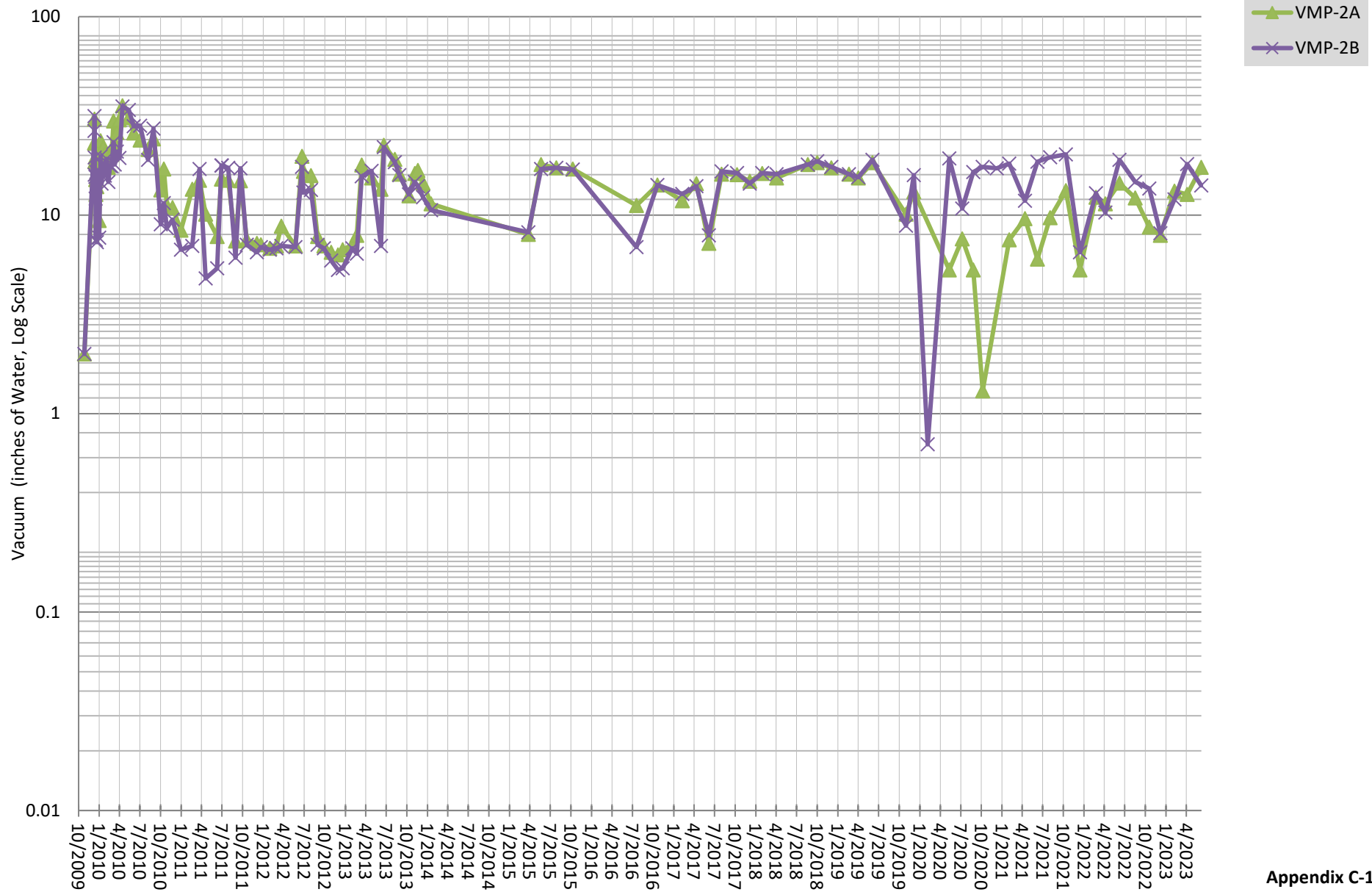
Appendix C-1

Figure 1

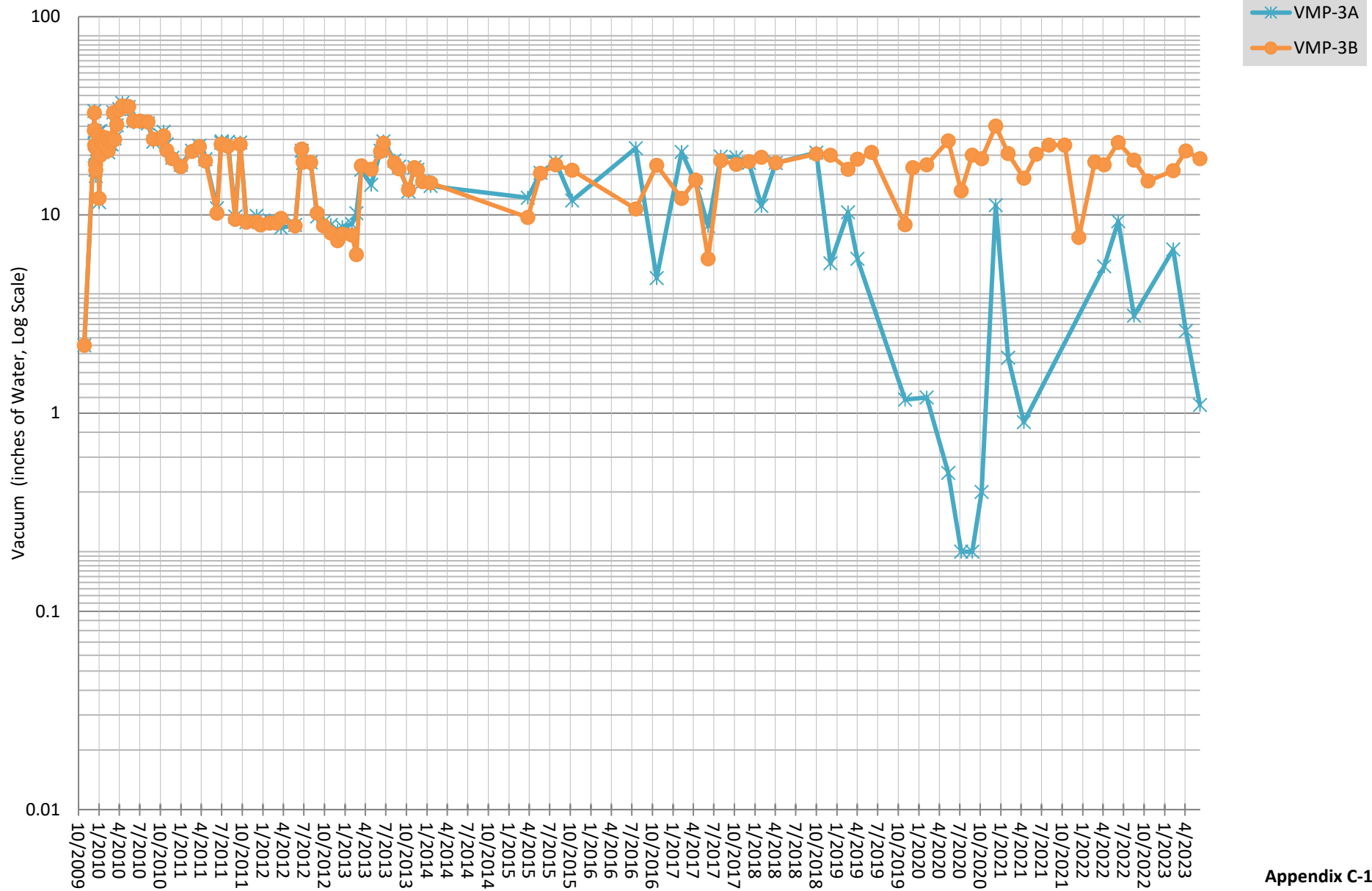
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



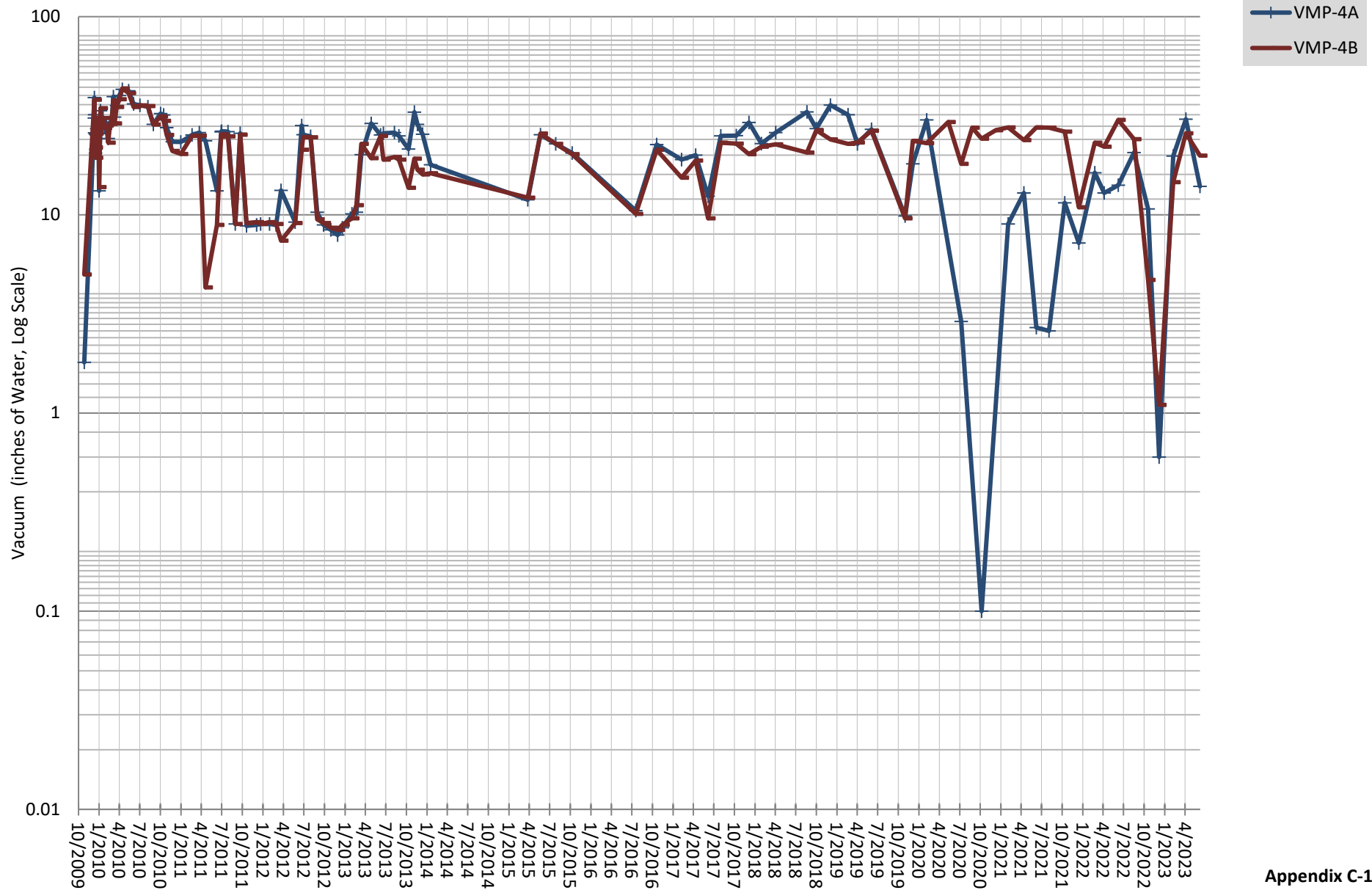
Appendix C-1
Figure 2
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



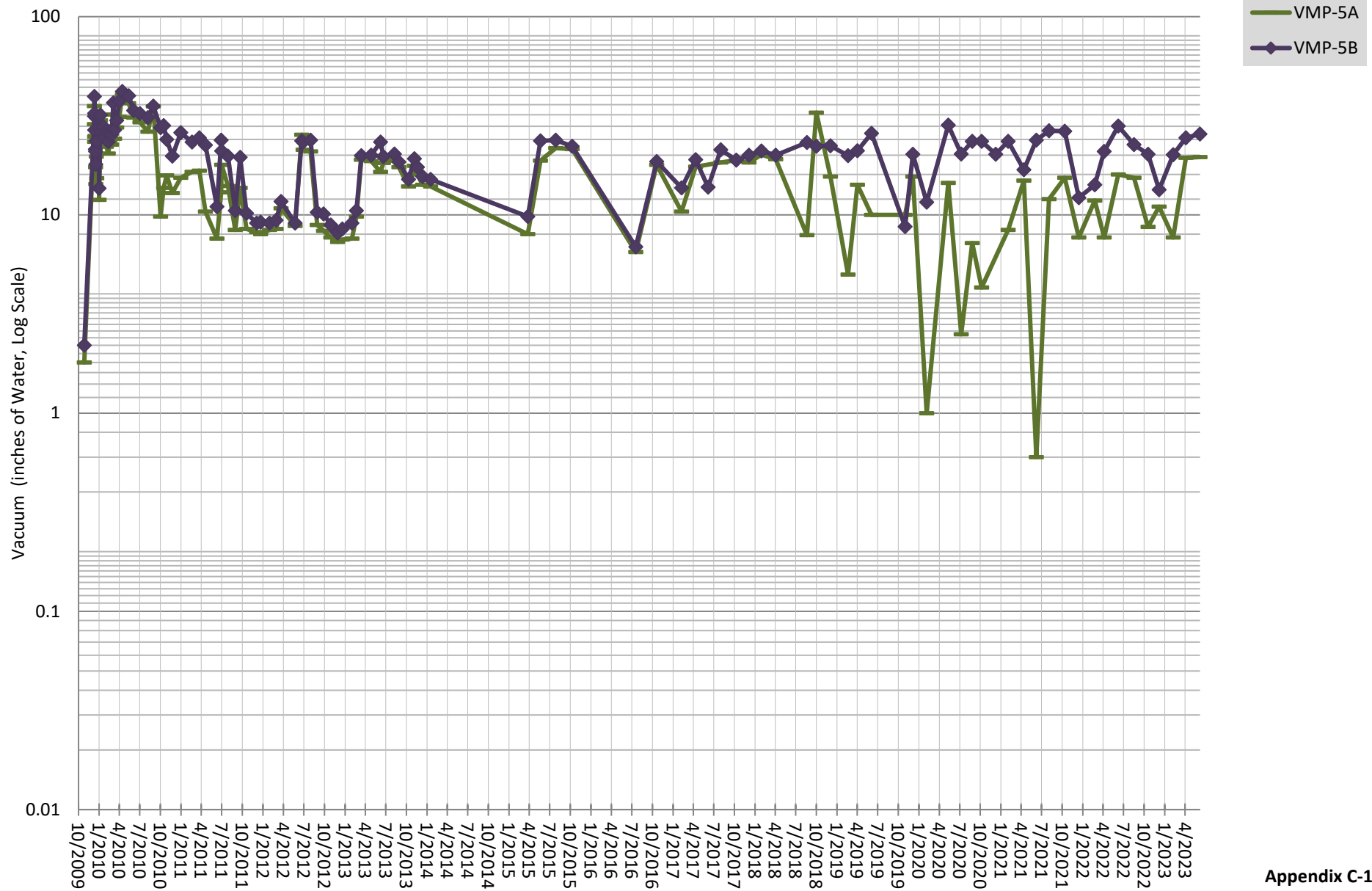
Appendix C-1
 Figure 3
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



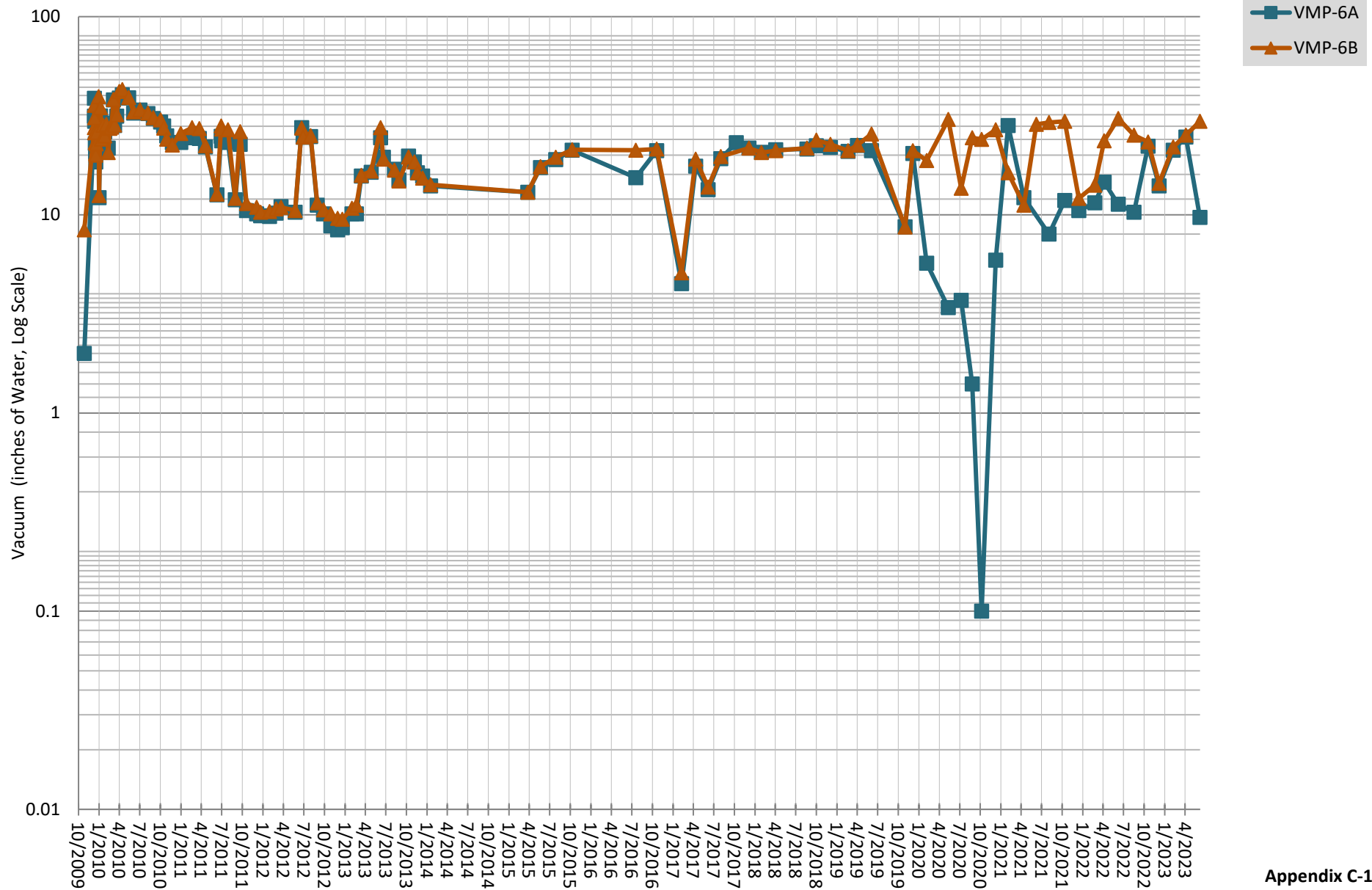
Appendix C-1
Figure 4
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



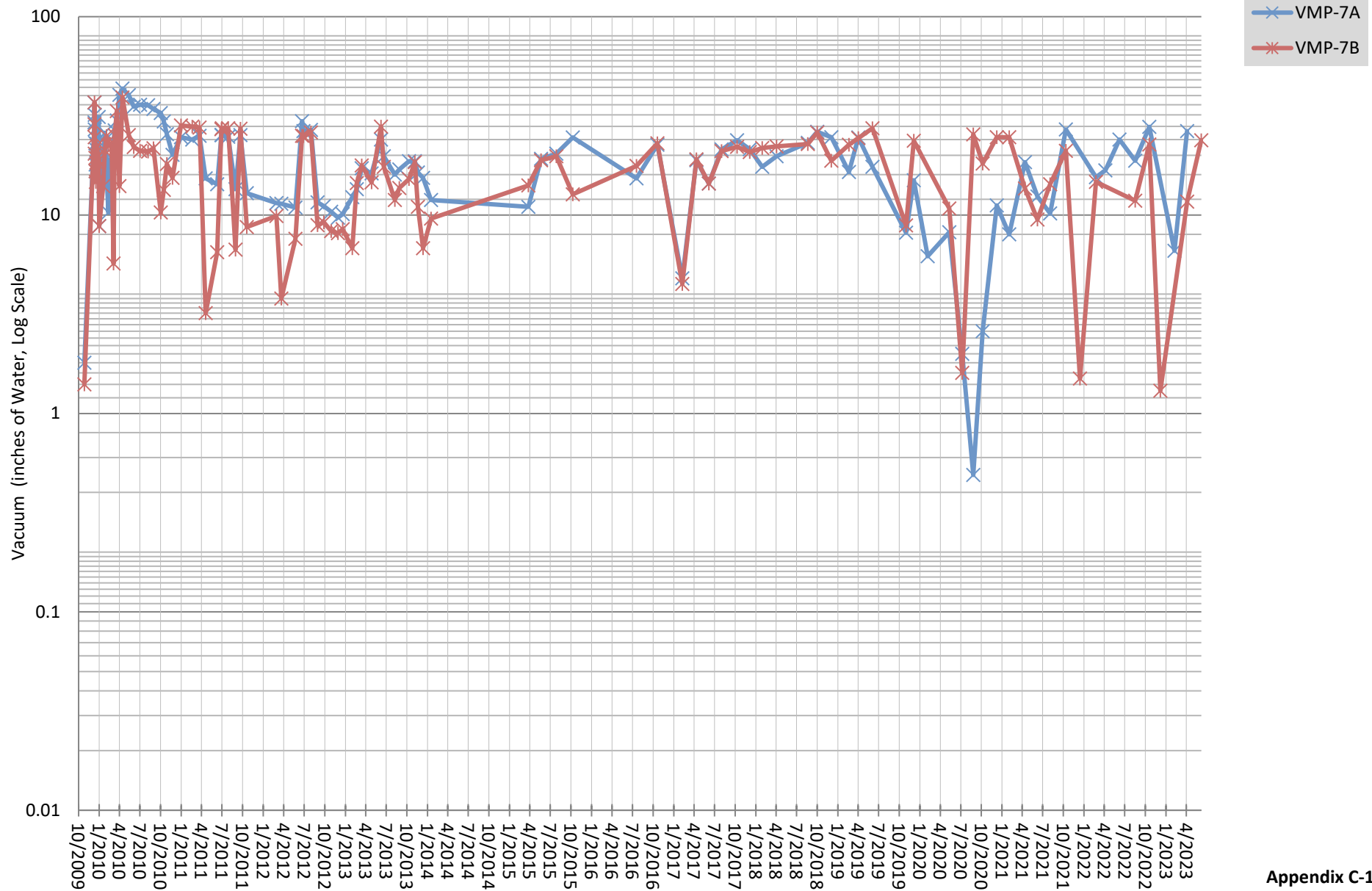
Appendix C-1
 Figure 5
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



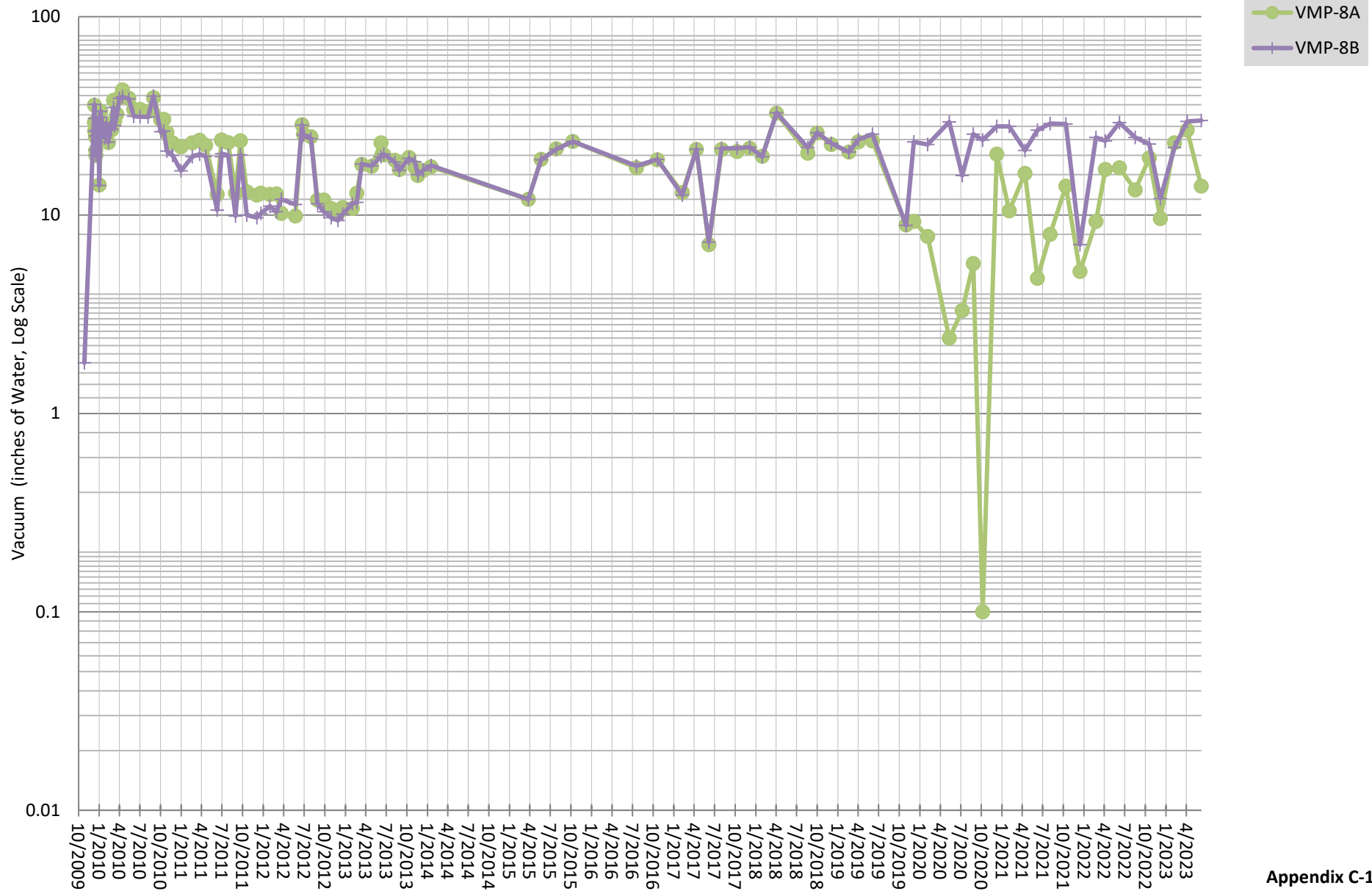
Appendix C-1
Figure 6
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



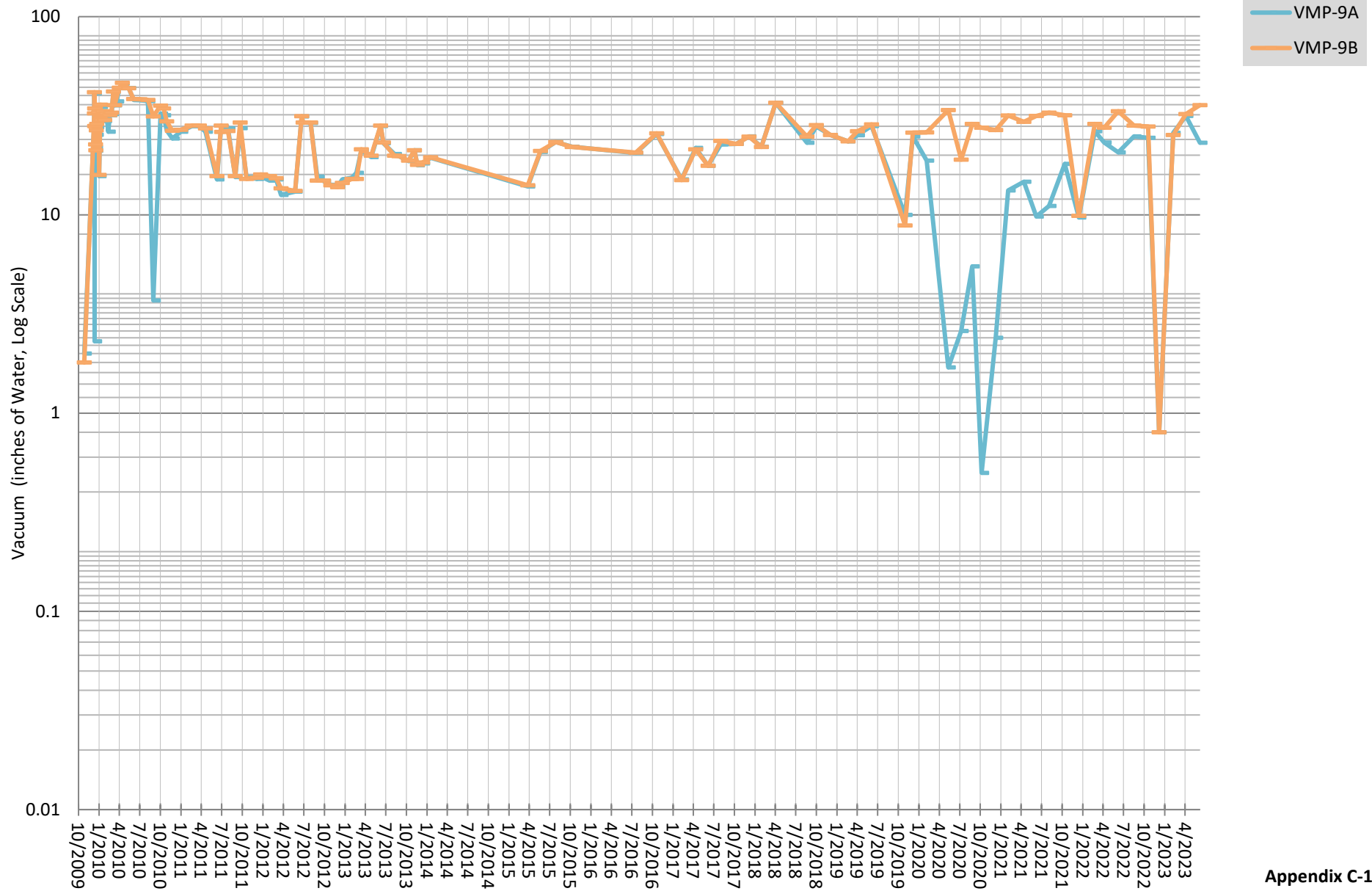
Appendix C-1
 Figure 7
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



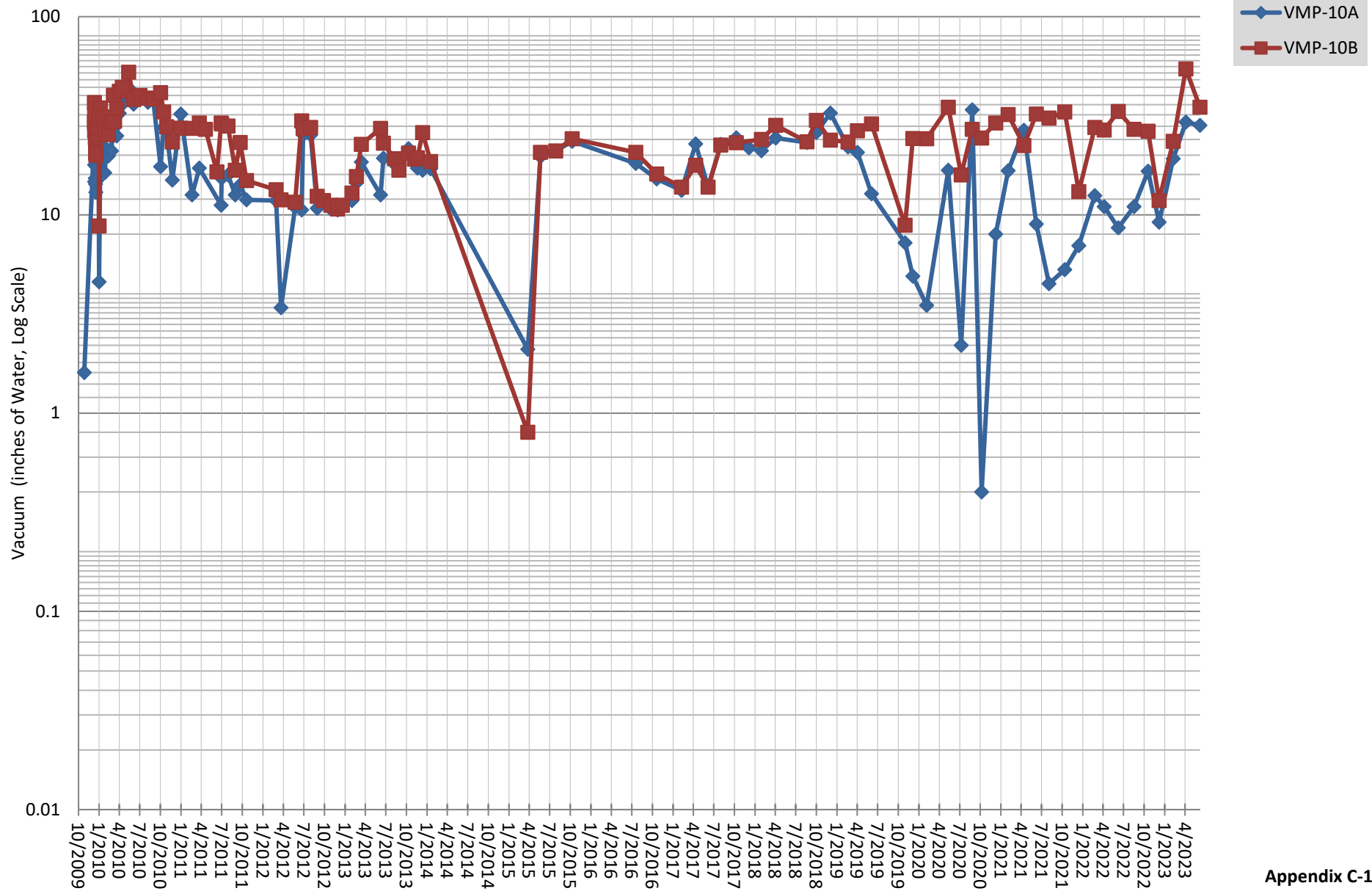
Appendix C-1
 Figure 8
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



Appendix C-1
 Figure 9
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee

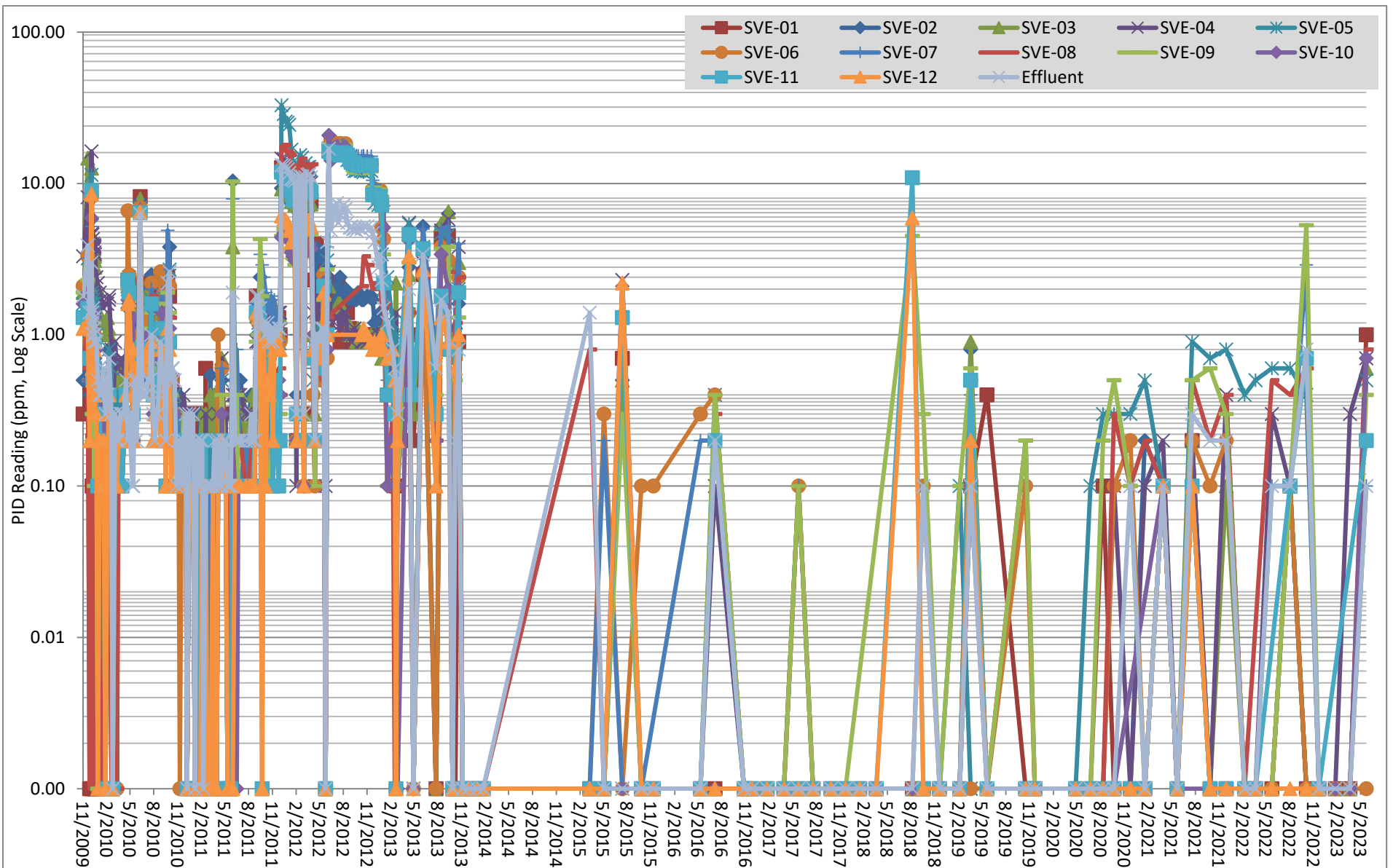


Appendix C-1
 Figure 10
 VMP Trends - Vacuum Readings
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



Appendix C-1
Figure 11
VMP Trends - Vacuum Readings
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee

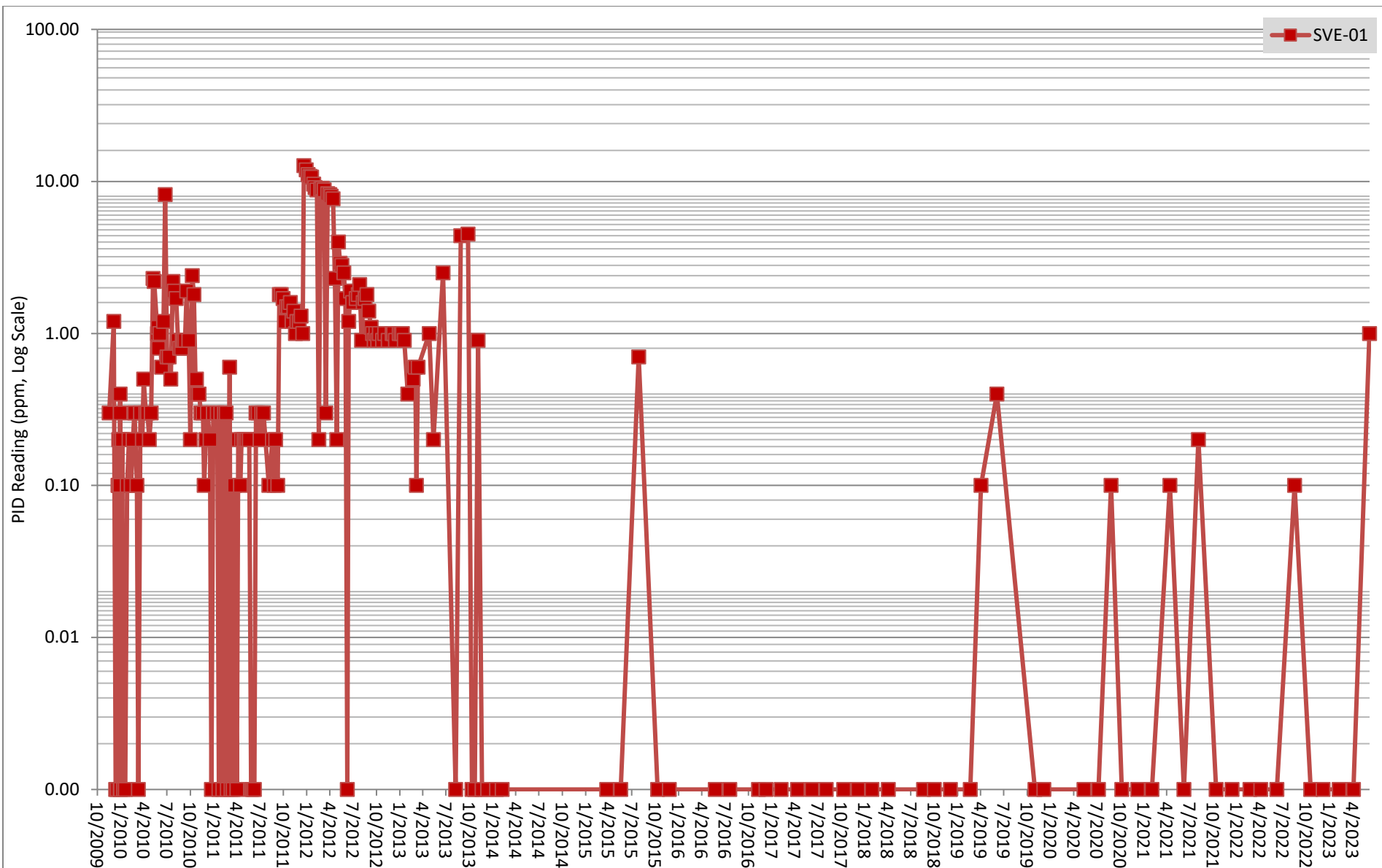
Appendix C-2 SVE Wells and Effluent Concentration Trends – Field PID Measurements



Appendix C-2

Figure 1

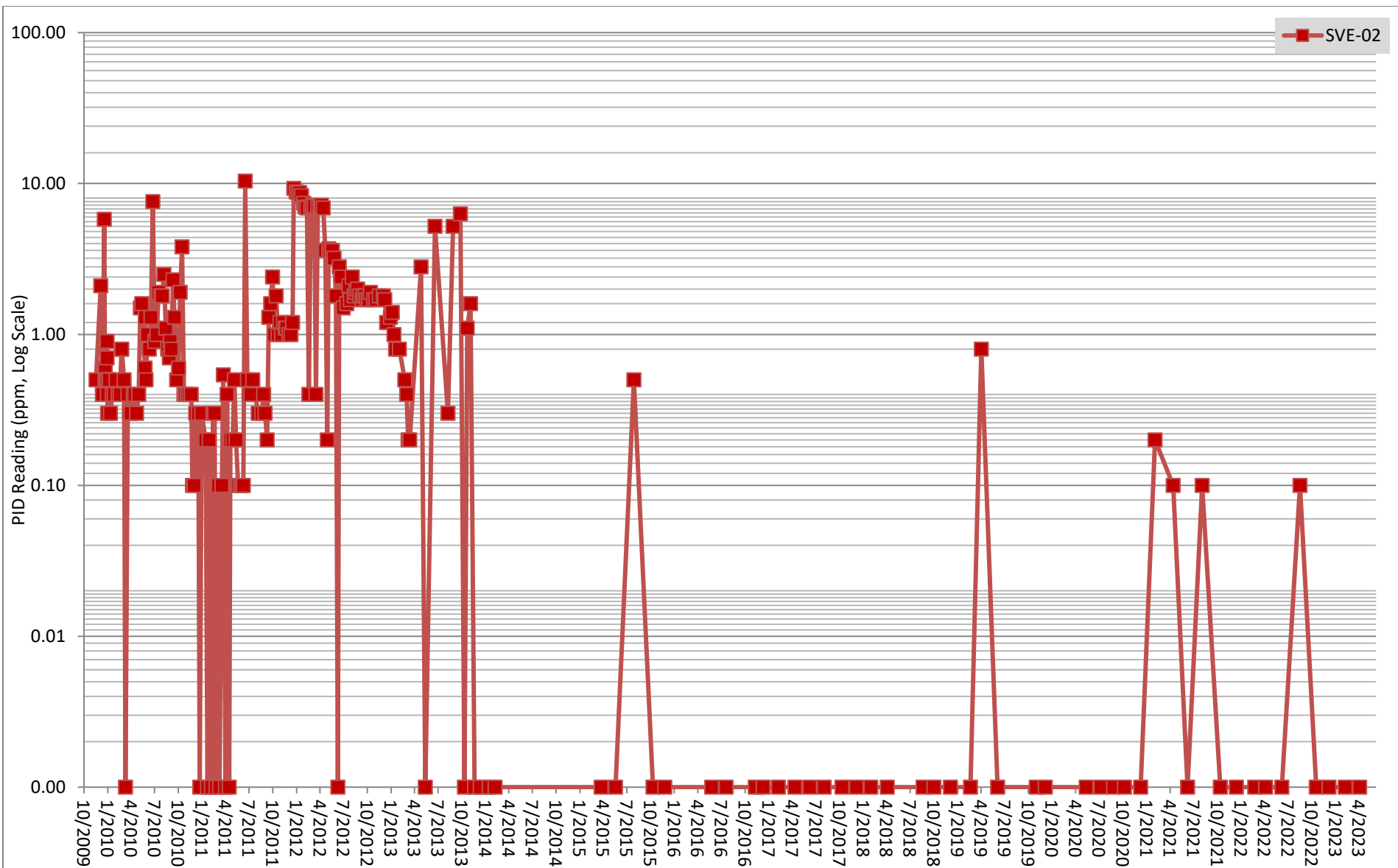
SVE Wells and Effluent Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 2

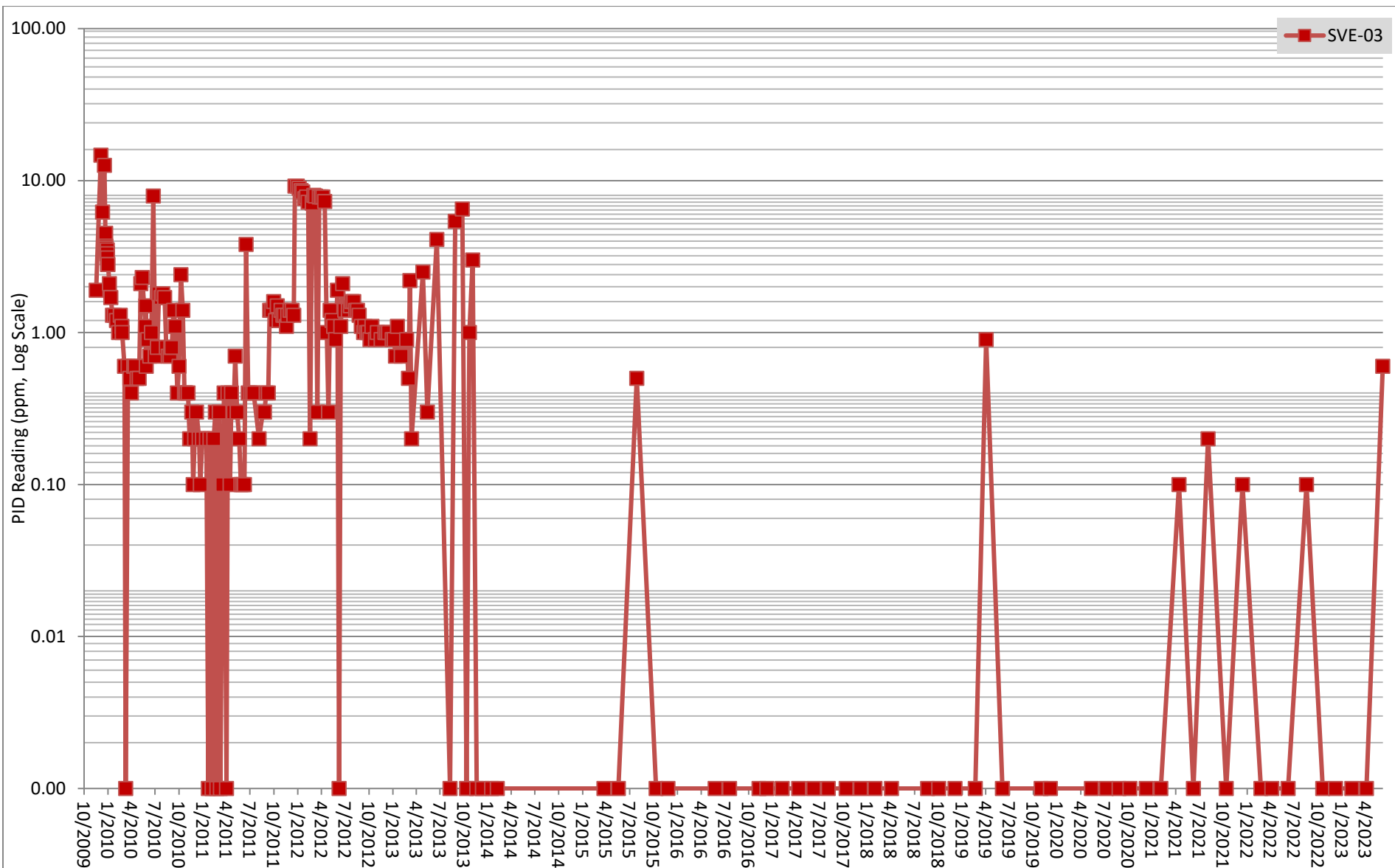
SVE Well #1 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 3

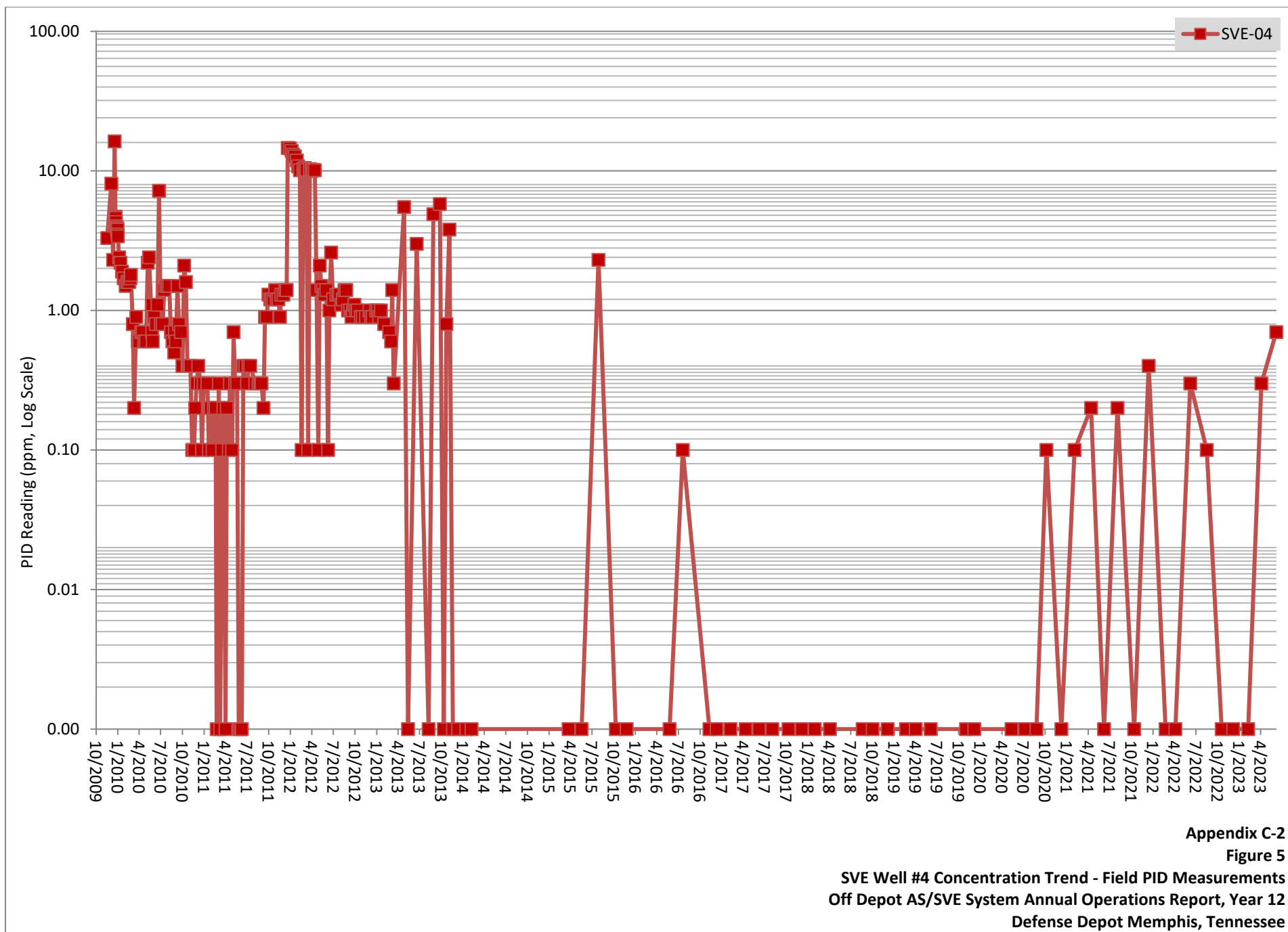
SVE Well #2 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 4

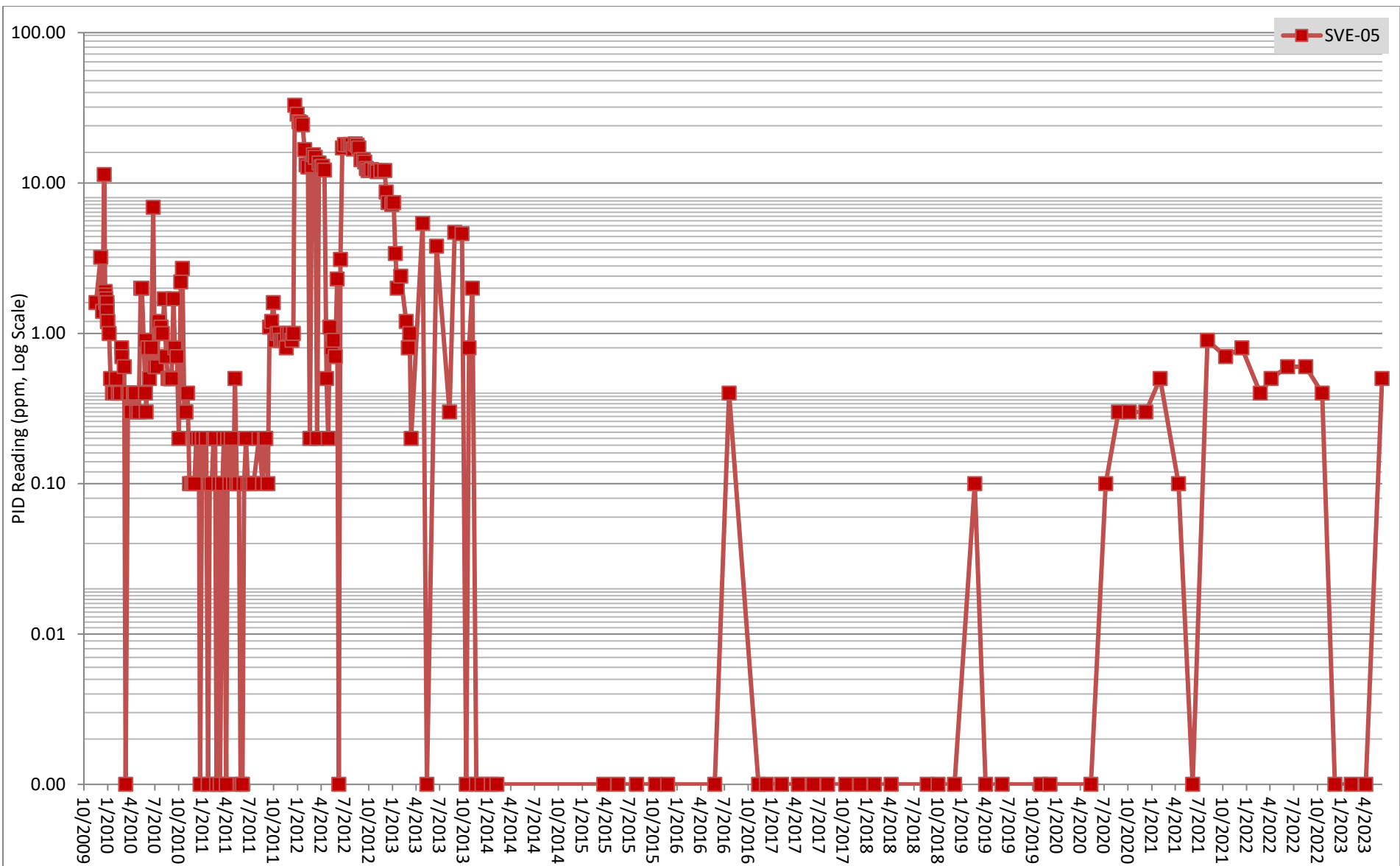
SVE Well # 3 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 5

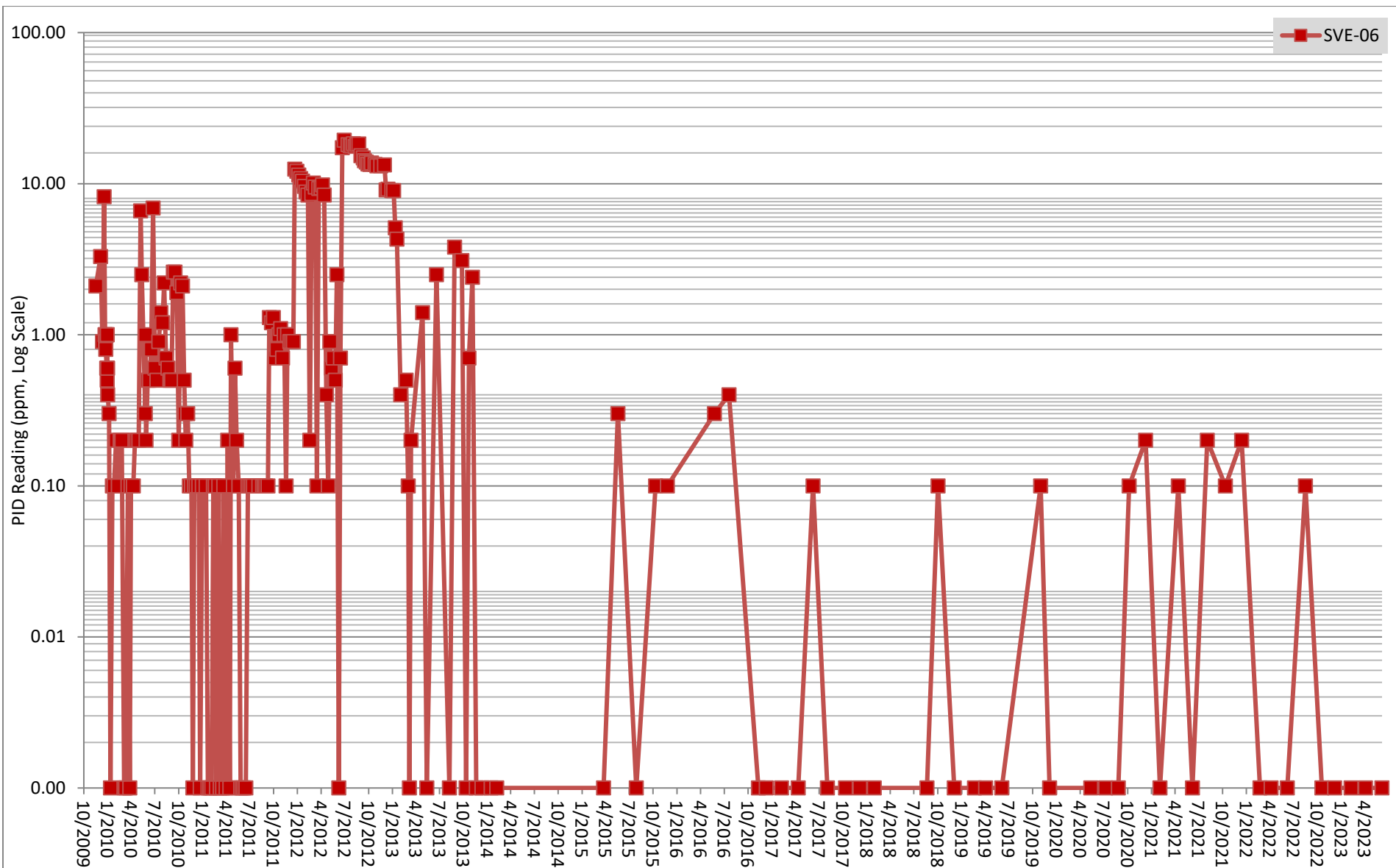
SVE Well #4 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 6

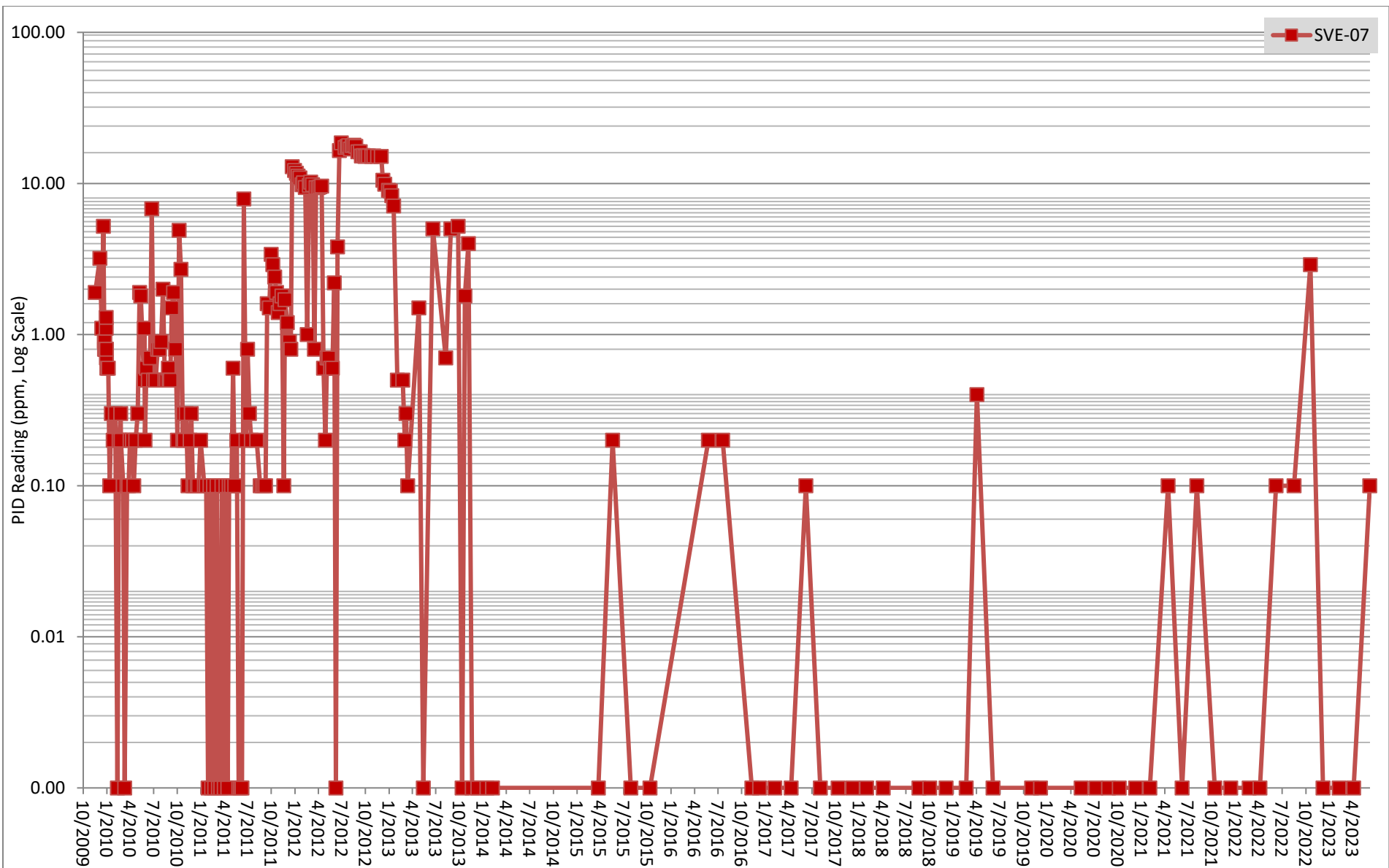
SVE Well #5 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 7

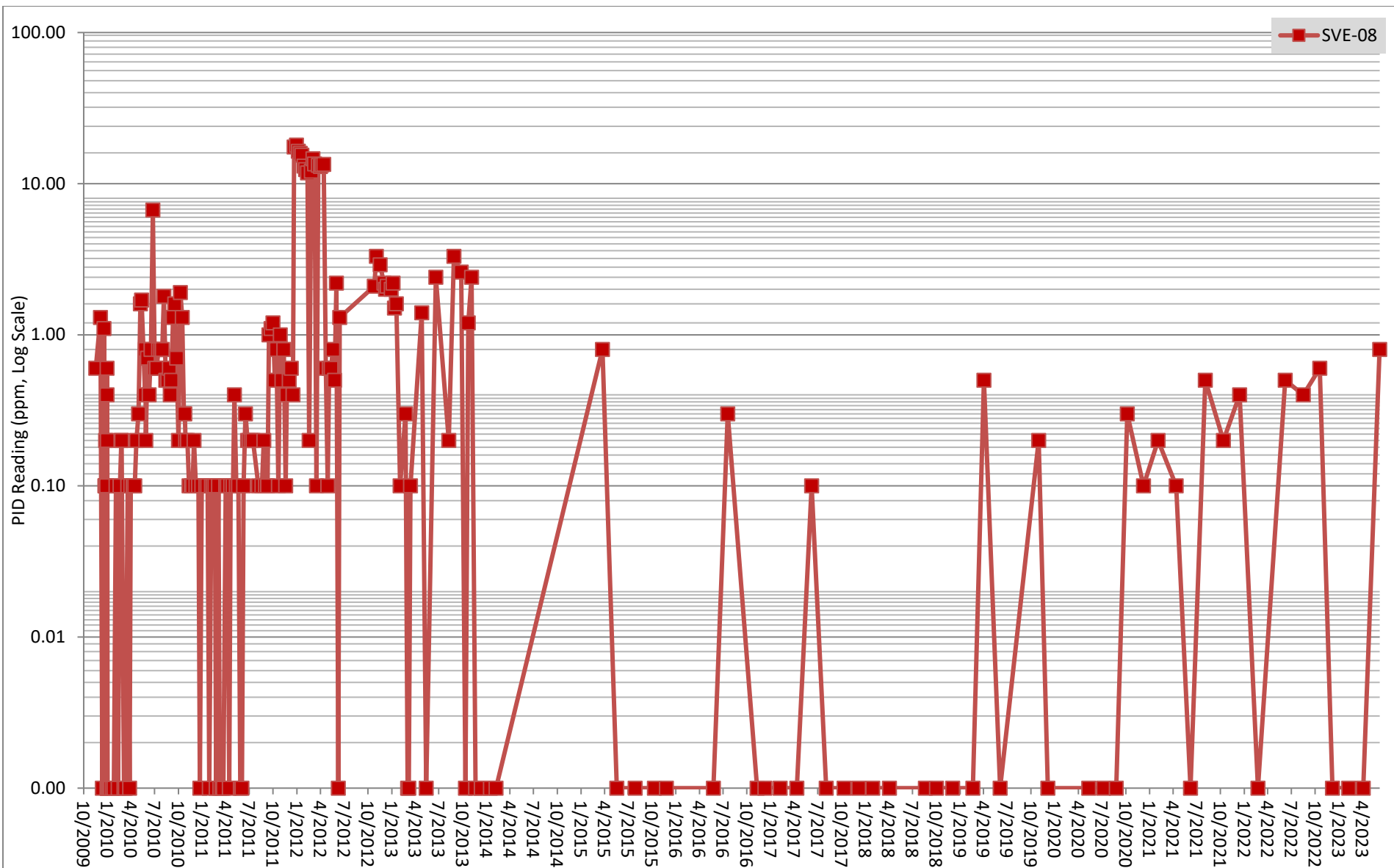
SVE Well #6 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 8

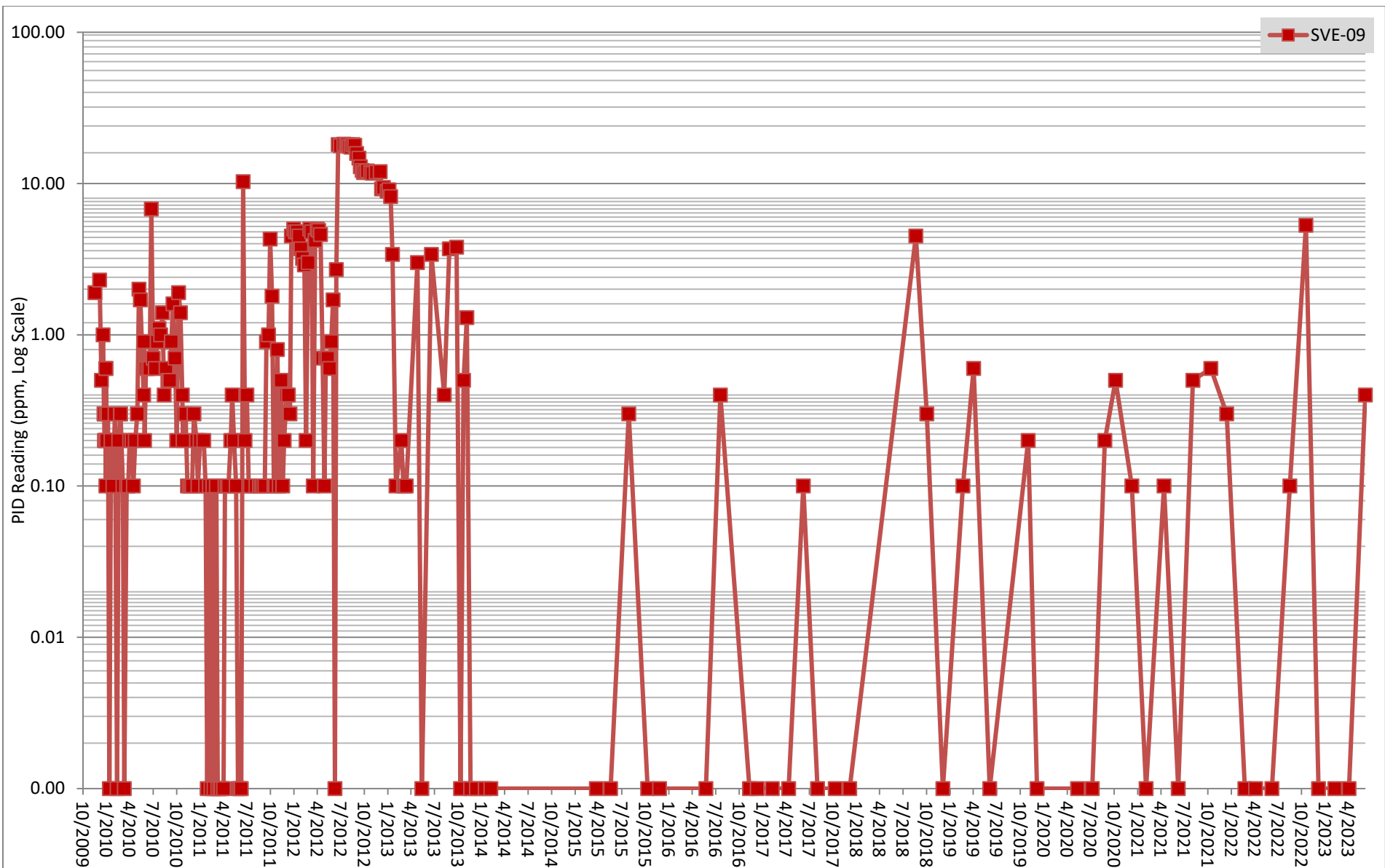
SVE Well #7 Concentration Trend - Field PID Measurements
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



Appendix C-2

Figure 9

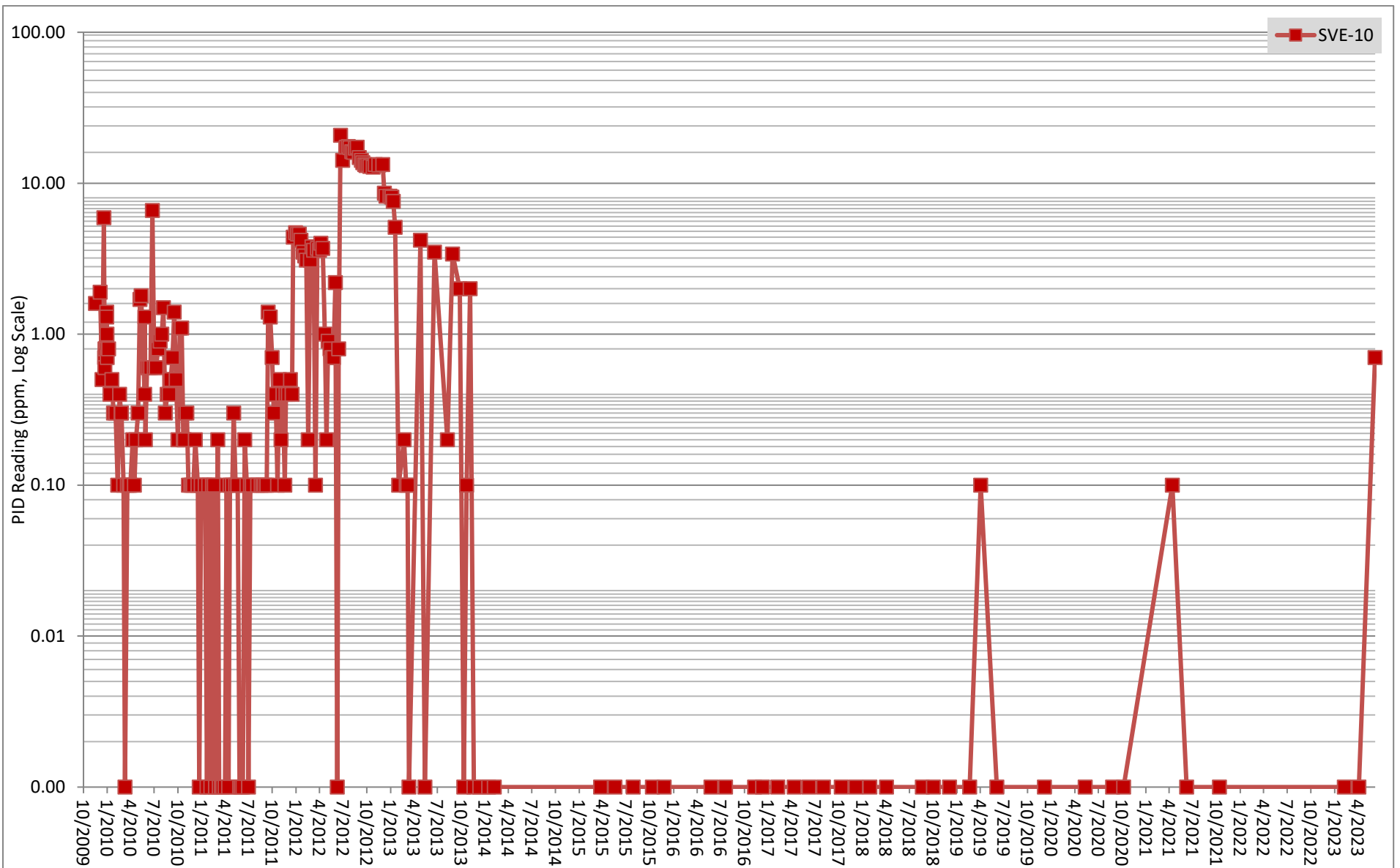
SVE Well #8 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 10

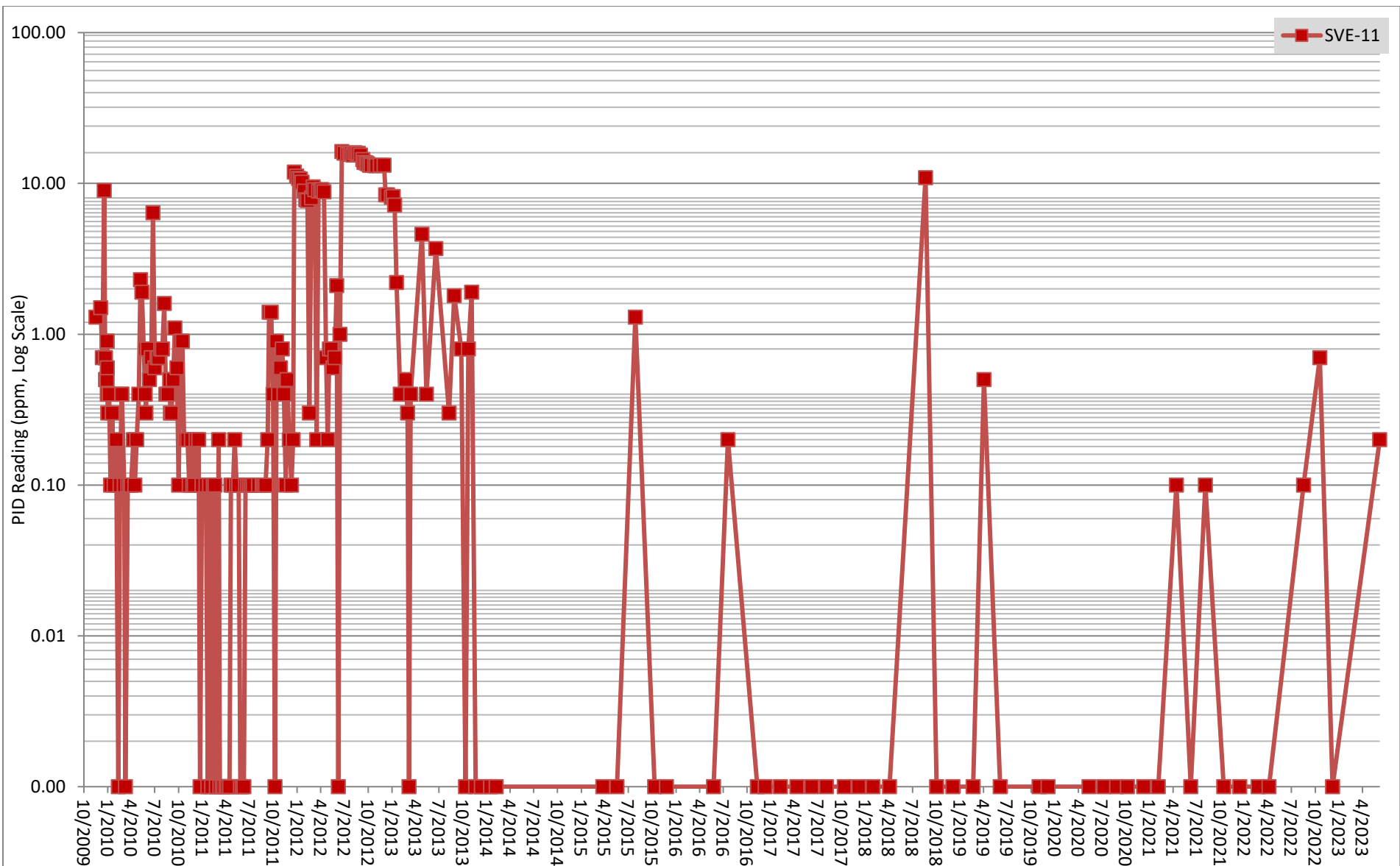
SVE Well #9 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 11

SVE Well #10 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



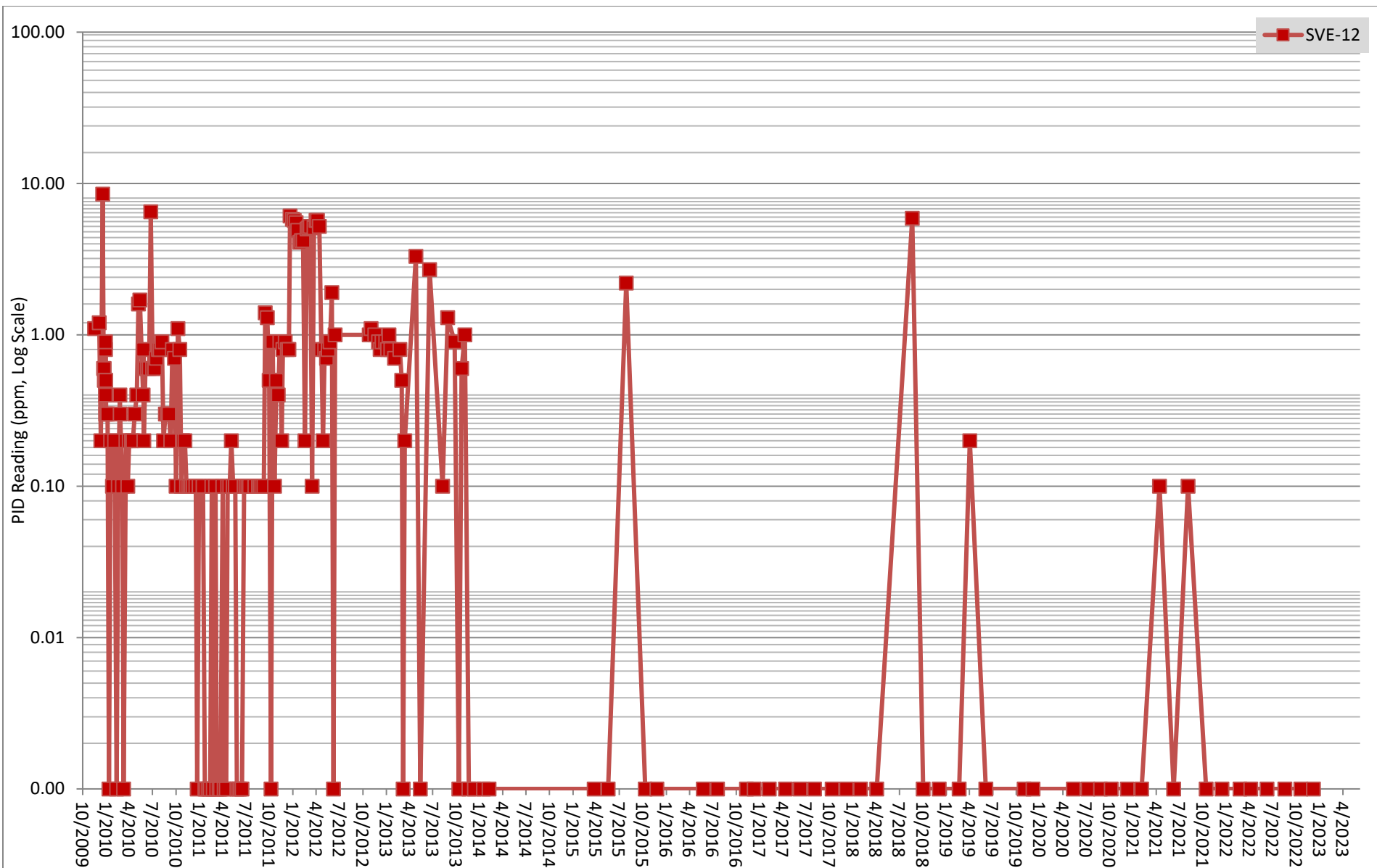
Appendix C-2

Figure 12

SVE Well #11 Concentration Trend - Field PID Measurements

Off Depot AS/SVE System Annual Operations Report, Year 12

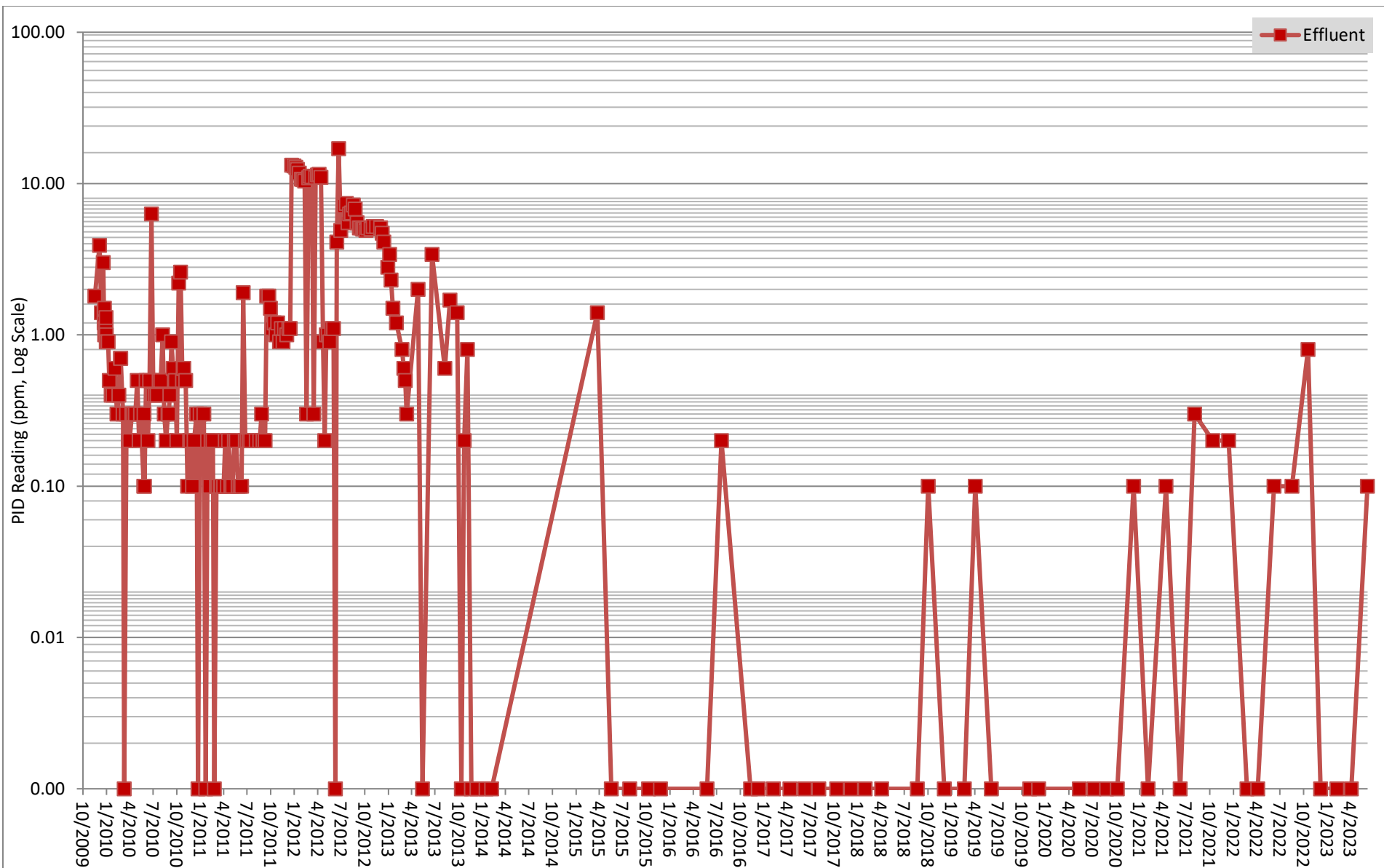
Defense Depot Memphis, Tennessee



Appendix C-2

Figure 13

SVE Well #12 Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee

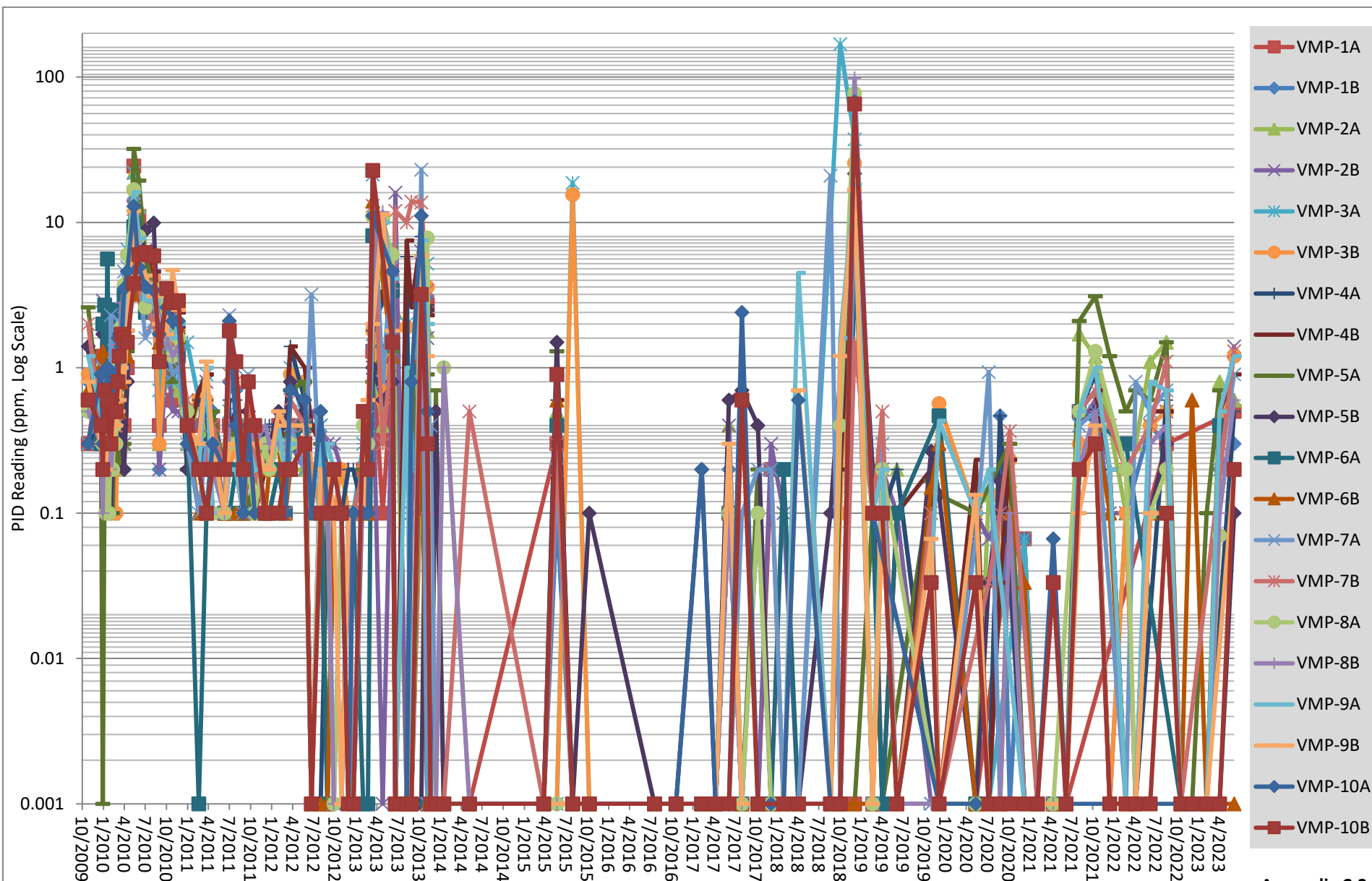


Appendix C-2

Figure 14

SVE Effluent Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee

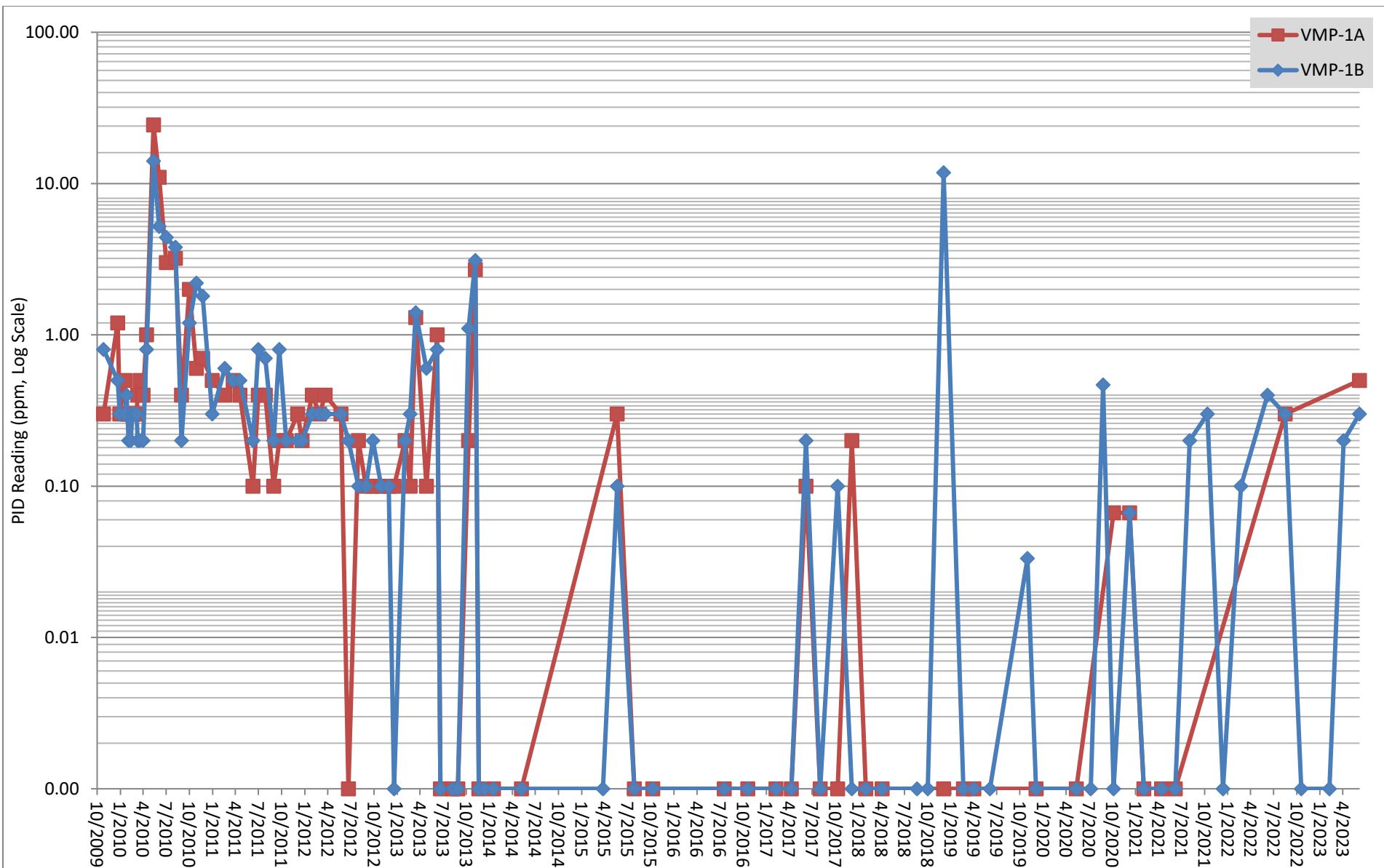
Appendix C-3 VMP Concentration Trends – Field PID Measurements



Appendix C-3

Figure 1

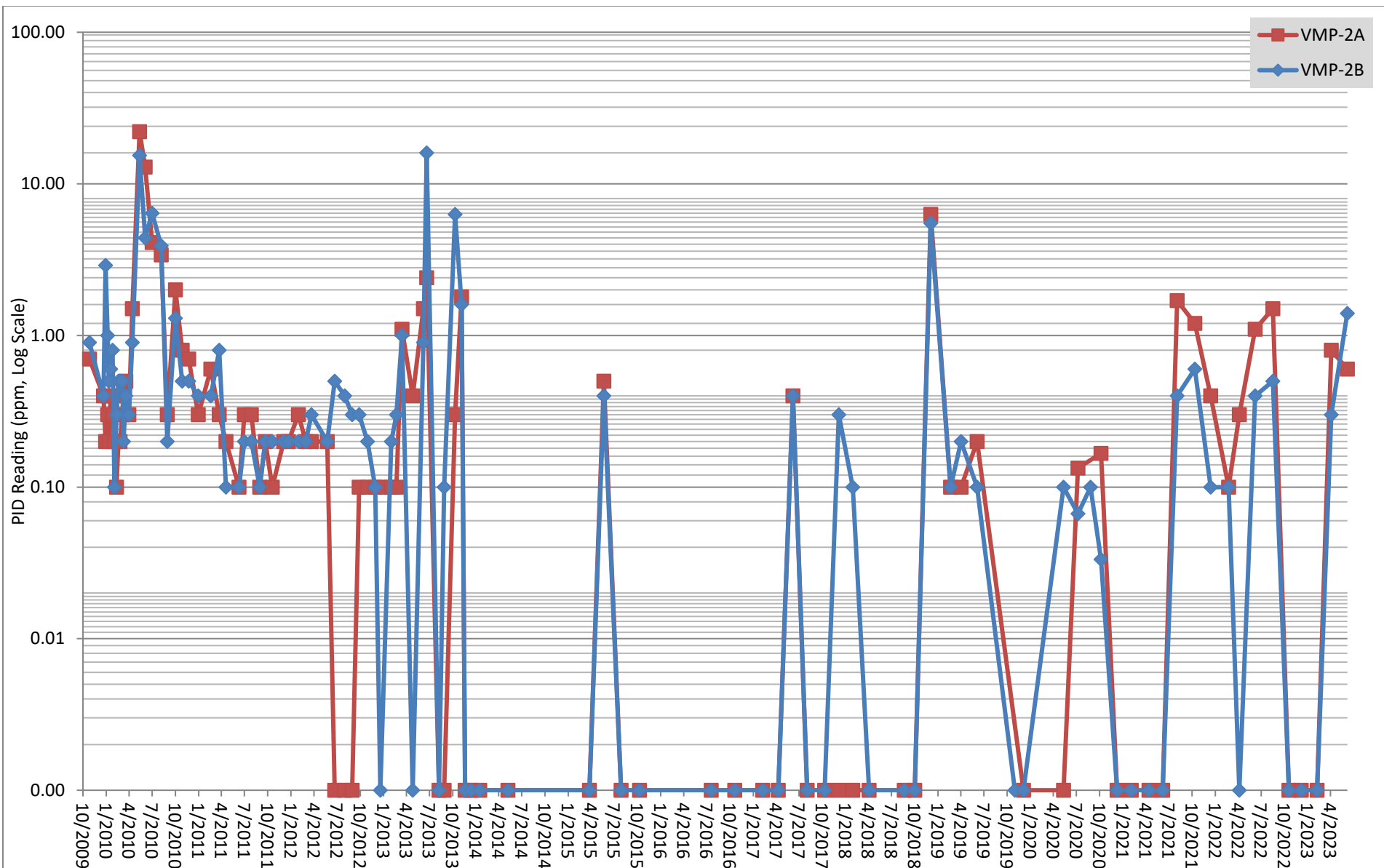
VMP Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 2

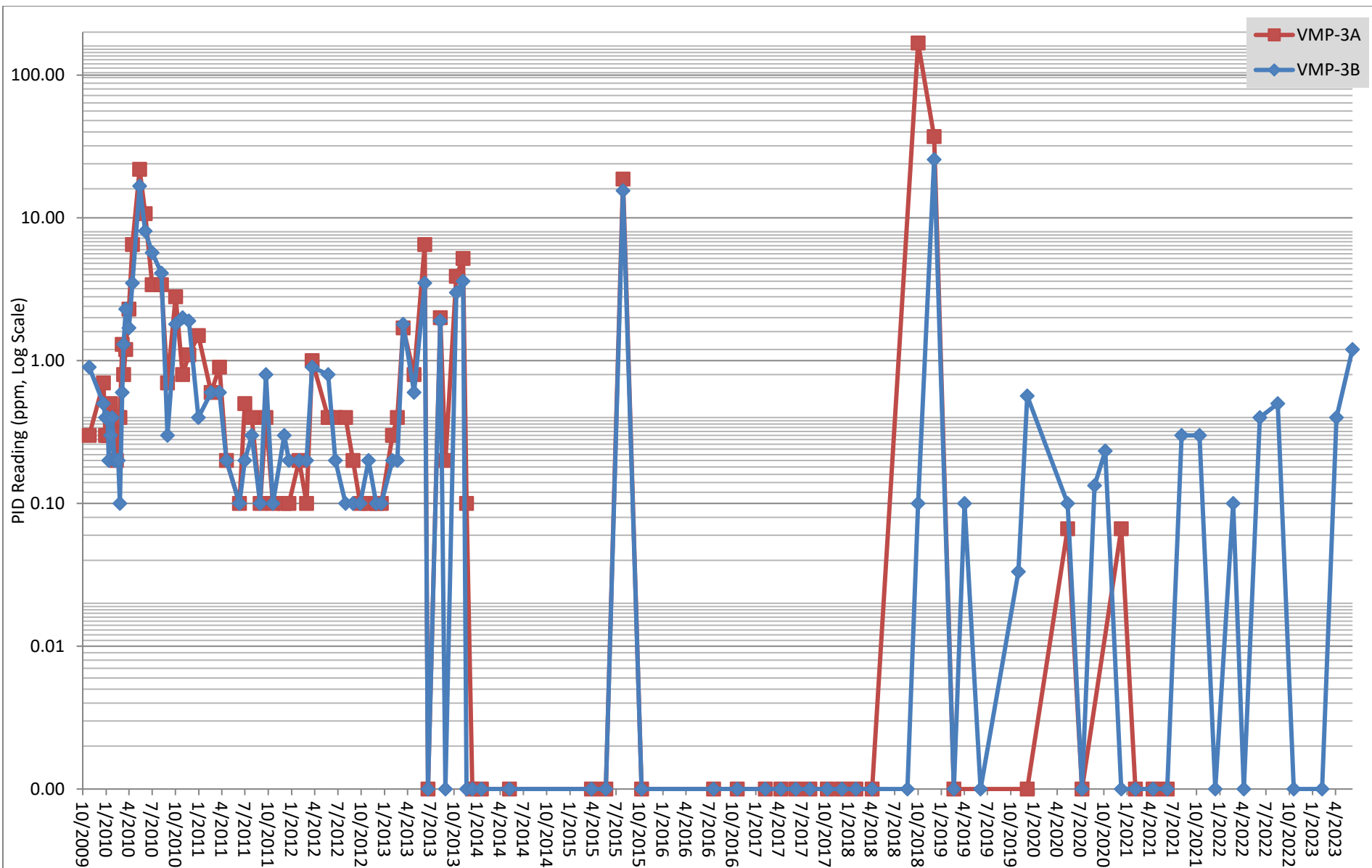
VMP-1A/B Concentration Trend - Field PID Measurements
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



Appendix C-3

Figure 3

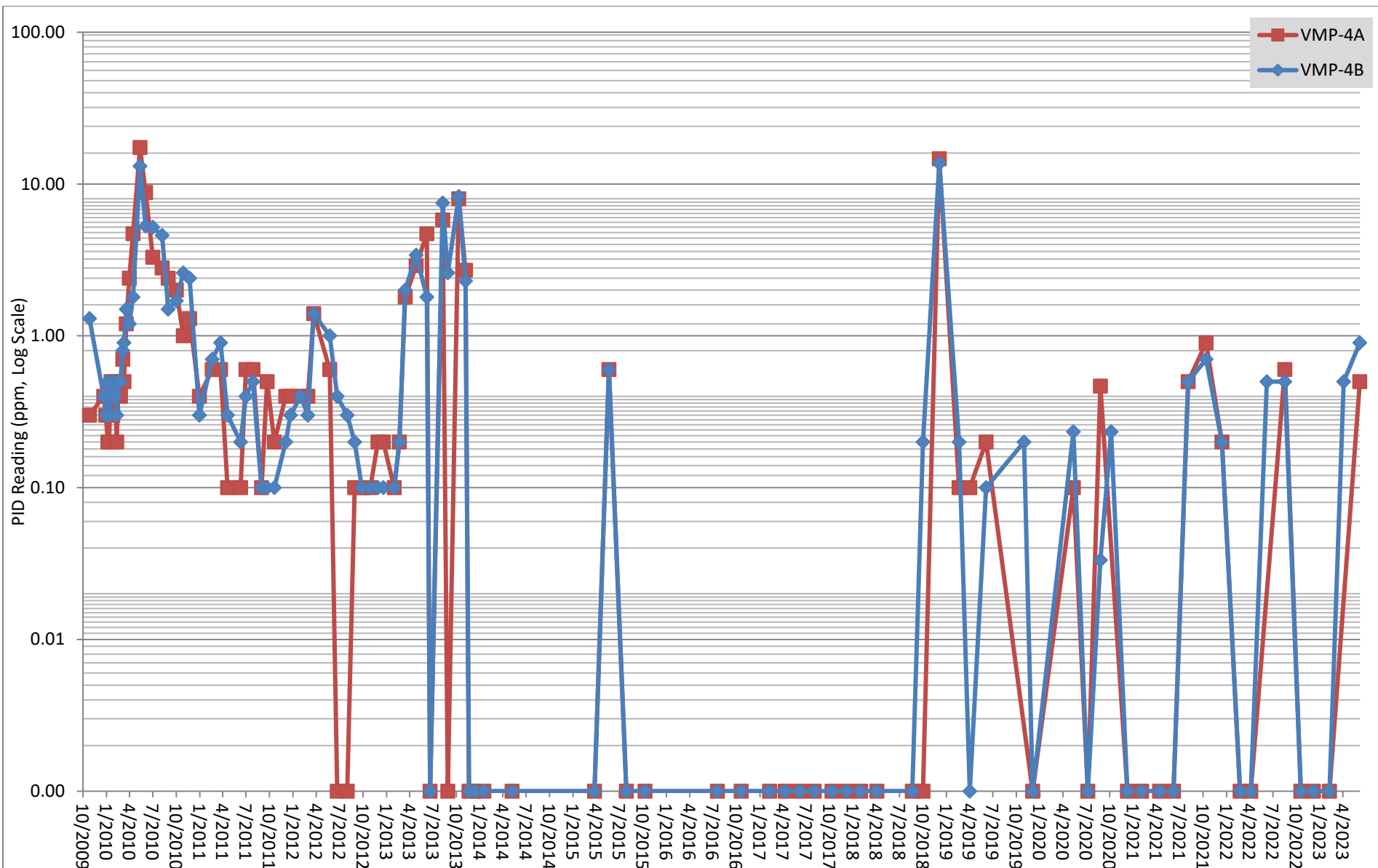
VMP-2A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 4

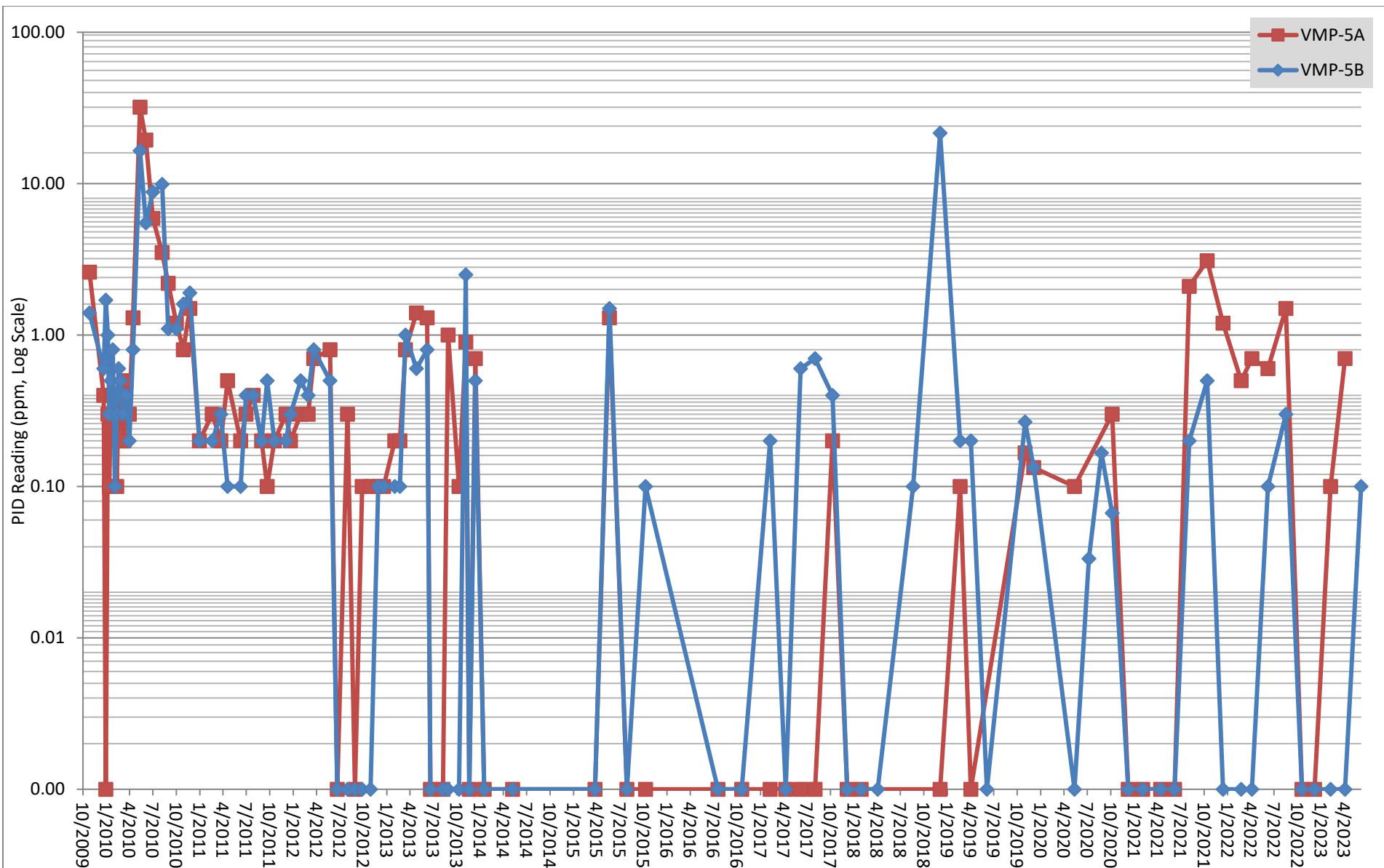
VMP-3A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 5

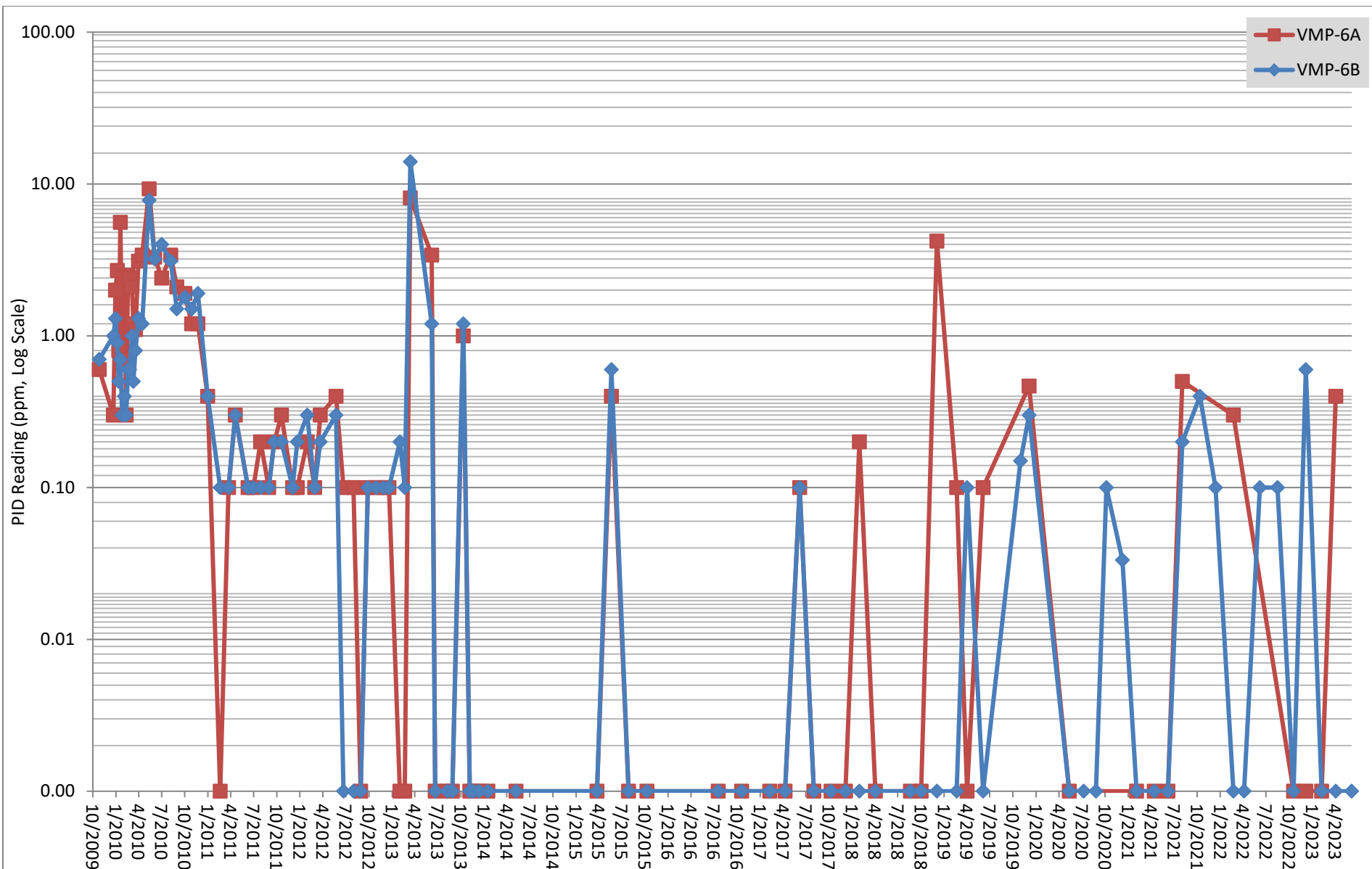
VMP-4A/B Concentration Trend - Field PID Measurements
 Off Depot AS/SVE System Annual Operations Report, Year 12
 Defense Depot Memphis, Tennessee



Appendix C-3

Figure 6

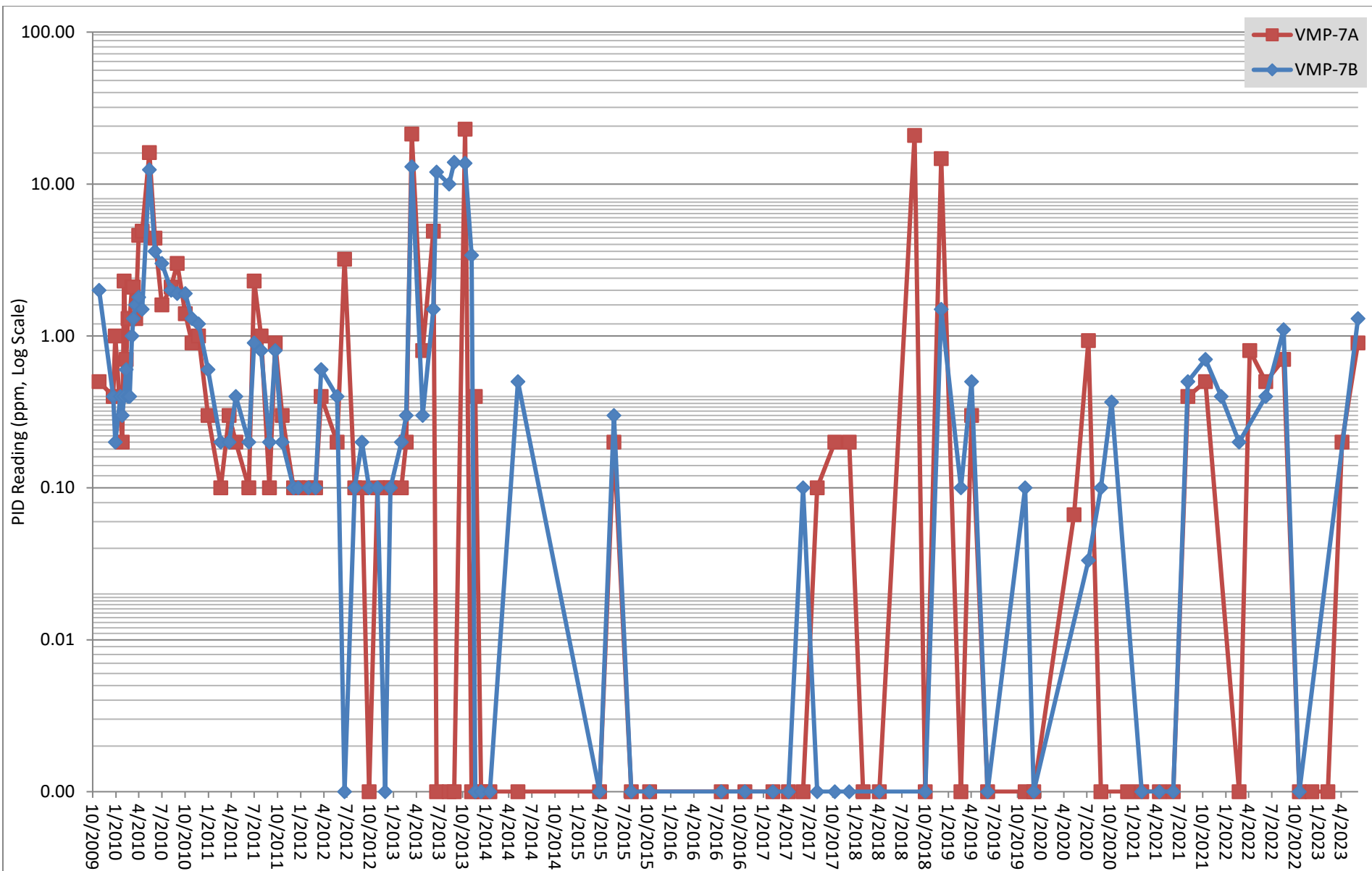
VMP-5A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 7

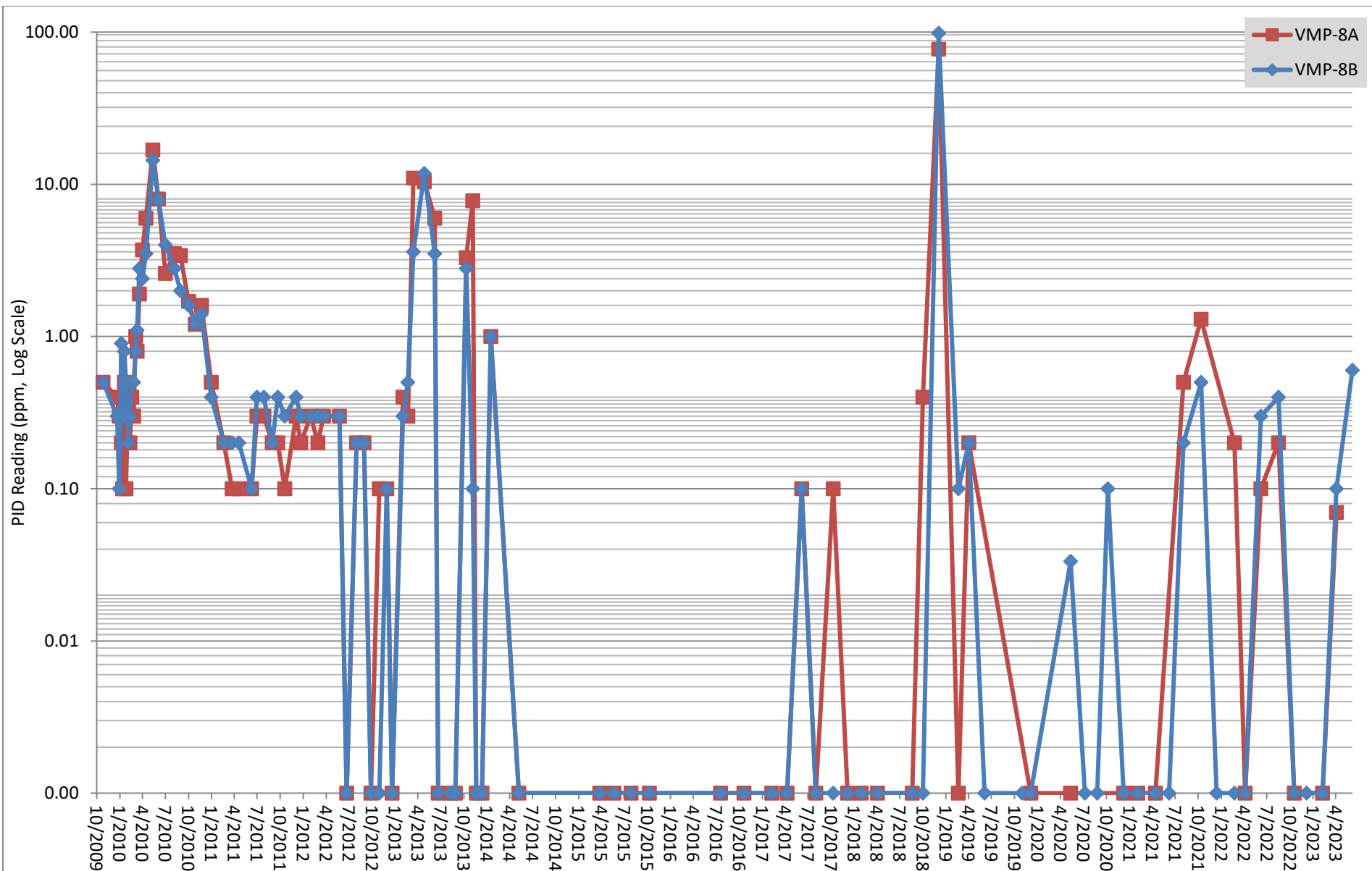
VMP-6A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 8

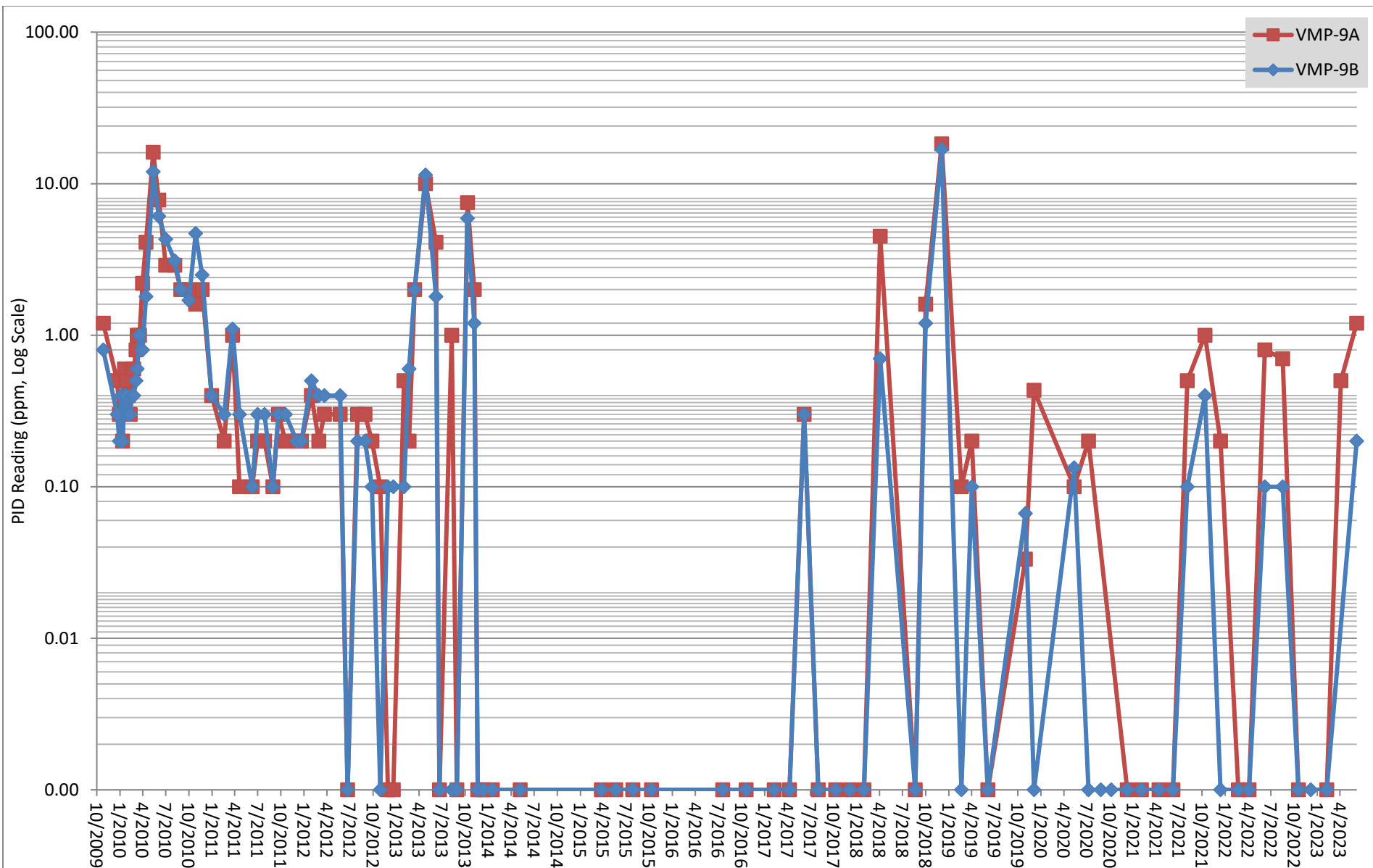
VMP-7A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 9

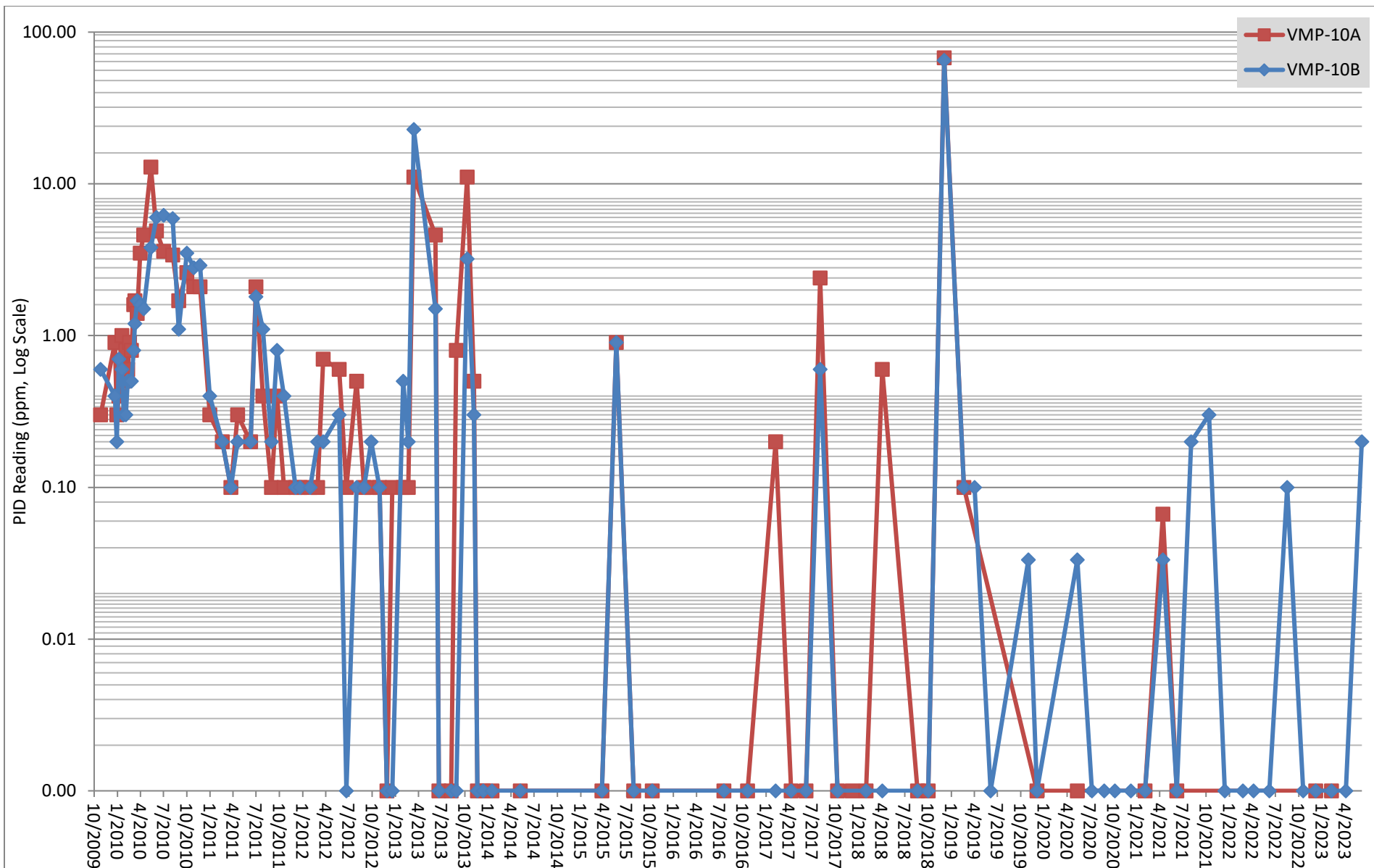
VMP-8A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 10

VMP-9A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee



Appendix C-3

Figure 11

VMP-10A/B Concentration Trend - Field PID Measurements
Off Depot AS/SVE System Annual Operations Report, Year 12
Defense Depot Memphis, Tennessee

Appendix D Results of Laboratory Analyses

Table D-1
Analytical Results - SVE Effluent
Off Depot AS/SVE Year 12 Annual Operations Report
Dunn Field - Defense Depot Memphis, Tennessee

	Sample ID	ODSVE-EFF-Y12Q1	ODSVE-DUP1-Y12Q1	ODSVE-EFF-Y12Q2	EFF-Y12Q2-SUB	ODSVE-EFF-Y12Q3	ODSVE-EFF-Y12Q4	ODSVE-DUP1-Y12Q4
	Date	18-Oct-22	18-Oct-22	6-Dec-22	7-Feb-23	4-Apr-23	8-Jun-23	8-Jun-23
	Lab ID	P2204669-001	P2204669-002	P2205493-001	P2300537-001	P2301551-001	P2302616-001	P2302616-002
Analyte	Units							
1,1,1-Trichloroethane	ppbv	0.18	0.17	0.17 J	0.11 J	0.25	0.16	0.16
1,1,2,2-Tetrachloroethane	ppbv	0.037 U	0.043 U	0.24 J	0.21	0.21	0.2	0.21
1,1,2-Trichloroethane	ppbv	0.047 U	0.055 U	0.17 U	0.033 J	0.047 U	0.026 J	0.04 U
1,1,2-Trichlorotrifluoroethane	ppbv	1.9	1.8	1.2	1.4	3	3.9	4.2
1,1-Dichloroethane	ppbv	0.18 J	0.19 J	0.13 J	0.11 J	0.26	0.22	0.22
1,1-Dichloroethene	ppbv	0.38	0.36	0.29 J	0.24	0.45	0.37	0.39
1,2,4-Trichlorobenzene	ppbv	0.065 U	0.075 U	0.24 U	0.054 U	0.065 U	0.058 U	0.055 U
1,2,4-Trimethylbenzene	ppbv	3.2	3.4	0.18 U	0.023 J	0.049 U	0.044 U	0.042 U
1,2-Dibromo 3-Chloropropane	ppbv	0.05 U	0.058 U	0.18 U	0.042 U	0.05 U	0.045 U	0.042 U
1,2-Dibromoethane	ppbv	0.033 U	0.039 U	0.12 U	0.028 U	0.033 U	0.03 U	0.028 U
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ppbv	0.069 U	0.08 U	0.25 U	0.058 U	0.069 U	0.062 U	0.015 J
1,2-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U
1,2-Dichloroethane	ppbv	0.063 U	0.074 U	0.23 U	0.053 U	0.063 U	0.057 U	0.054 U
1,2-Dichloropropane	ppbv	0.055 U	0.064 U	0.2 U	0.046 U	0.056 U	0.05 U	0.047 U
1,3,5-Trimethylbenzene	ppbv	1.3	1.4	0.19 U	0.041 J	0.052 U	0.023 J	0.026 J
1,3-Butadiene	ppbv	0.22 U	0.25 U	0.8 U	0.18 U	0.22 U	0.2 U	0.19 U
1,3-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U
1,4-Dichlorobenzene	ppbv	0.042 U	0.05 U	0.16 U	0.036 U	0.043 U	0.038 U	0.036 U
1,4-Dioxane	ppbv	0.067 U	0.078 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U
2-Butanone (MEK)	ppbv	0.67	0.31 J+	0.62 U	0.14 U	0.24 J	0.49	0.25 J
2-Hexanone	ppbv	0.077 U	0.09 U	0.28 U	0.065 U	0.077 U	0.077 J	0.066 U
2-Propanol (Isopropyl Alcohol)	ppbv	0.36 J	5.3 J	1.4 U	0.32 U	0.31 J	0.3 J	0.27 J
3-Chloro-1-propene (Allyl Chloride)	ppbv	0.082 U	0.095 U	0.3 U	0.068 U	0.082 U	0.073 U	0.07 U
4-Ethyltoluene	ppbv	0.68	0.72	0.36 U	0.023 J	0.098 U	0.088 U	0.083 U
4-Methyl-2-pentanone	ppbv	0.077 U	0.09 U	0.28 U	0.065 U	0.077 U	0.069 U	0.066 U
Acetone	ppbv	1.6 U	1.9 U	6 U	1.4 UJ	1.7 U	3.2	1.5 J
Acetonitrile	ppbv	0.29 U	0.33 U	1.1 U	0.24 U	0.29 U	0.26 U	0.24 U
Acrolein	ppbv	0.74 J	0.27 UJ	0.84 U	0.19 U	0.23 U	0.37 J	0.41 J
Acrylonitrile	ppbv	0.23 U	0.27 U	0.84 U	0.19 U	0.23 U	0.21 U	0.19 U
alpha-Pinene	ppbv	0.046 U	0.053 U	0.17 U	0.038 U	0.046 U	0.041 U	0.039 U
Benzene	ppbv	0.24	0.32	0.29 U	0.13 J	0.08 U	0.057 J	0.046 J
Benzyl Chloride	ppbv	0.099 U	0.11 U	0.36 U	0.083 U	0.099 U	0.089 U	0.084 U
Bromodichloromethane	ppbv	0.038 U	0.044 U	0.14 U	0.032 U	0.038 U	0.034 U	0.032 U
Bromodichloromethane	ppbv	0.046 U	0.054 U	0.17 U	0.039 U	0.047 U	0.042 U	0.04 U
Bromomethane	ppbv	0.045 J	0.077 U	0.24 U	0.055 U	0.066 U	0.059 U	0.031 J
Carbon Disulfide	ppbv	0.22 J	0.11 J	0.58 U	0.11 J	0.16 U	0.93 J	0.27 J
Carbon Tetrachloride	ppbv	0.33	0.33	0.31 J	0.28	0.52	0.49	0.5
Chlorobenzene	ppbv	0.052 U	0.061 U	0.19 U	0.044 U	0.052 U	0.047 U	0.044 U
Chloroethane	ppbv	0.097 U	0.11 U	0.36 U	0.081 U	0.097 U	0.087 U	0.082 U
Chloroform	ppbv	7.6	7.6	5.8	4	7.4	7.5	8.1
Chloromethane	ppbv	0.23 U	0.27 U	0.85 U	0.2 U	0.23 U	0.21 U	0.2 U
cis-1,2-Dichloroethene	ppbv	21	20	16	9.8	21	26	28
cis-1,3-Dichloropropene	ppbv	0.11 U	0.12 U	0.39 U	0.089 U	0.11 U	0.095 U	0.09 U
Cumene	ppbv	0.27	0.29	0.19 U	0.044 U	0.052 U	0.047 U	0.044 U
Cyclohexane	ppbv	7.3	7.2	2.3	0.41	0.14 U	0.075 J	0.067 J
Dibromochloromethane	ppbv	0.03 U	0.035 U	0.11 U	0.025 U	0.03 U	0.027 U	0.026 U
Dichlorodifluoromethane (CFC 12)	ppbv	0.61	0.57	0.58 J	0.47	0.83	0.62	0.64
Dichloromethane (Methylene Chloride)	ppbv	0.13 U	0.16 U	0.49 U	0.11 U	0.13 U	0.12 U	0.11 U
d-Limonene	ppbv	0.083 U	0.052 U	0.31 U	0.07 U	0.084 U	0.075 U	0.071 U
Ethanol	ppbv	1.2 J+	6.1 J+	9.1 J	0.51 J	7.6	2.9 J	0.88 J
Ethyl Acetate	ppbv	0.26 UJ	15 J	3.9	0.31 J	1	0.3 J	0.2 J
Ethylbenzene	ppbv	1.9	2	0.22 U	0.03 J	0.059 U	0.053 U	0.05 U
Hexachlorobutadiene	ppbv	0.044 UJ	0.051 UJ	0.16 U	0.037 U	0.044 UJ	0.039 U	0.037 U
Hexane	ppbv	26	25	2.2	0.25	0.13 U	0.046 J	0.11 U
m,p-Xylenes	ppbv	11	11	0.42 U	0.14 J	0.11 U	0.1 U	0.097 U
Methyl Methacrylate	ppbv	0.23 U	0.27 U	0.83 U	0.19 U	0.23 U	0.2 U	0.19 U
Methyl tert-Butyl Ether	ppbv	0.067 U	0.078 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U
Naphthalene	ppbv	0.089 U	0.047 J	0.33 U	0.075 U	0.089 U	0.08 U	0.076 U
n-Butyl Acetate	ppbv	0.066 U	0.077 U	0.24 U	0.056 U	0.067 U	0.06 U	0.057 U
n-Heptane	ppbv	7.9	7.7	0.27 J	0.14 J	0.11 U	0.04 J	0.036 J
n-Nonane	ppbv	0.16	0.17 J	0.34 U	0.077 U	0.092 U	0.082 U	0.078 U
n-Octane	ppbv	1.7	1.7	0.37 U	0.04 J	0.1 U	0.09 U	0.085 U
n-Propylbenzene	ppbv	0.38	0.4	0.19 U	0.044 U	0.052 U	0.047 U	0.044 U
o-Xylene	ppbv	5.7	5.9	0.1 J	0.18	0.059 U	0.036 J	0.031 J
Propene	ppbv	0.35 UJ	1.2 J	1 U	0.23 U	0.28 U	0.25 U	0.24 U
Styrene	ppbv	0.11 U	0.077 J	0.4 U	0.092 U	0.11 U	0.098 U	0.093 U
Tetrachloroethene	ppbv	1.2	1.2	1.6	1.7	1.8	2	2.2
Tetrahydrofuran (THF)	ppbv	0.1 U	0.12 U	0.37 U	0.085 U	0.1 U	0.046 J	0.03 J
Toluene	ppbv	1.8	2.4	0.32 J	0.57	0.23	0.081 J	0.061 J
trans-1,2-Dichloroethene	ppbv	0.59	0.6	0.38 J	0.36	0.67	0.57	0.61
trans-1,3-Dichloropropene	ppbv	0.1 U	0.12 U	0.38 U	0.086 U	0.1 U	0.092 U	0.087 U
Trichloroethene	ppbv	18	18	17	15	21	20	20
Trichlorofluoromethane	ppbv	0.29	0.3	0.26 J	0.22	0.33	0.28	0.3
Vinyl Acetate	ppbv	NF	NF	UJ	0.97 UJ	1.2 U	0.56 J	1.1 J
Vinyl Chloride	ppbv	0.13 J	0.13 J	0.37 U	0.034 J	0.1 U	0.11 J	0.12 J

Notes:

ppbv: part per billion volume

DQE Flags:

U: Analyte not detected above reporting limit

J: Estimated

J+: Estimated with a possible high bias (the target compound was recovered above the upper control limit in the associated laboratory spike samples)

NF: Compound was searched for, but not found

Appendix E Laboratory Analytical Reports



LABORATORY REPORT

October 31, 2022

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / IOA023

Dear Larry:

Enclosed are the results of the samples submitted to our laboratory on October 19, 2022. For your reference, these analyses have been assigned our service request number P2204669.

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.

ALS | Environmental


By Sue Anderson at 1:06 pm, Oct 31, 2022

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / IOA023

Service Request No: P2204669

CASE NARRATIVE

The samples were received intact under chain of custody on October 19, 2022 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.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds and Vinyl Acetate as a tentatively identified compound 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 analyte Vinyl Acetate could not be reported for this data set as a target analyte, due to a vendor anomaly found in the new standard being used. Once the issue has been resolved subsequent reports will include the compound in question as a target analyte.

The upper control criterion was exceeded for Chloromethane in the Continuing Calibration Verification (CCV) analyzed on October 26, 2022. Since the apparent problem equates to a potential high bias and the field samples analyzed in this sequence did not contain the analyte in question, the data quality has not been affected. No corrective action was required.

The spike recovery of Ethanol for the Laboratory Control Samples (LCS/DLCS) analyzed on October 26, 2022 was outside the laboratory generated control criterion. The recovery error equates to a potential high bias. However, the LCS spike recovery was within the method criteria; therefore, the data quality is not significantly affected. No further corrective action was taken. The data has been qualified accordingly.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 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.



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	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / IOA023

Service Request: P2204669

Date Received: 10/19/2022
Time Received: 10:19

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y12QI	P2204669-001	Air	10/18/2022	12:25	AC02164	-2.26	3.91	X
ODSVE-DUP1-Y12QI	P2204669-002	Air	10/18/2022	12:25	AC02053	-4.11	3.78	X



Air - Chain of Custody Record & Analytical Service Request

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

Page 1 of 1

P2204669

Company Name & Address (Reporting Information) Trinity Analysis and Development Corp 1002 Egin Parkway Shallmar FL 32511		Project Manager Larry Pannell		Phone 508-280-9948		Fax 508-366-7445		Email Address for Result Reporting Lpannell@konnings.com		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		ALS Project No. P2101463	
Project Name DPT Memphis										ALS Contact:			
Project Number 10A 023										Analysis Method			
P.O. # / Billing Information 8975													
Sampler (Print & Sign) Elizabeth Goernemann													
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	Comments e.g. Actual Preservative or specific instructions S / P				
QDSVE-EFF-Y12Q1		10-18-22	1225	AC02164	none	29	-5	60L					
QDSVE-DUP1-Y12Q1		10-18-22	1225	AC02053	none	30	0	60L					
Report Tier Levels - please select Tier I - Results (Default if not specified) _____ Tier II (Results + QC Summaries) _____ Tier III (Results + QC & Calibration Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____										Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT		Project Requirements (MRLs, QAPP)	
Relinquished by: (Signature) Elizabeth Goernemann										Received by: (Signature) FEDEX		Date: 10-18-22 Time: 1405	
Relinquished by: (Signature)										Received by: (Signature)		Date: 10-19-22 Time: 1019	
												Cooler / Blank Temperature °C	

Sample Acceptance Check Form

by: KYLE.WOODIN

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02164

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.26

Final Pressure (psig): 3.91

Container Dilution Factor: 1.50

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.35	0.45	0.28	0.11	J
75-71-8	Dichlorodifluoromethane (CFC 12)	0.61	0.16	0.097	0.026	
74-87-3	Chloromethane	0.23	0.37	0.23	0.062	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.069	0.12	0.069	0.018	U
75-01-4	Vinyl Chloride	0.13	0.31	0.10	0.033	J
106-99-0	1,3-Butadiene	0.22	0.35	0.22	0.060	U
74-83-9	Bromomethane	0.045	0.20	0.066	0.029	J
75-00-3	Chloroethane	0.097	0.29	0.097	0.038	U
64-17-5	Ethanol	1.2	4.0	0.67	0.29	J
75-05-8	Acetonitrile	0.29	0.89	0.29	0.12	U
107-02-8	Acrolein	0.74	0.65	0.23	0.098	
67-64-1	Acetone	1.6	3.3	1.6	0.76	U
75-69-4	Trichlorofluoromethane	0.29	0.14	0.043	0.022	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.36	0.61	0.38	0.13	J
107-13-1	Acrylonitrile	0.23	0.69	0.23	0.076	U
75-35-4	1,1-Dichloroethene	0.38	0.20	0.064	0.028	
75-09-2	Methylene Chloride	0.13	0.22	0.13	0.065	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.082	0.25	0.082	0.035	U
76-13-1	Trichlorotrifluoroethane	1.9	0.11	0.033	0.015	
75-15-0	Carbon Disulfide	0.22	0.53	0.16	0.077	J
156-60-5	trans-1,2-Dichloroethene	0.59	0.20	0.064	0.028	
75-34-3	1,1-Dichloroethane	0.18	0.20	0.063	0.029	J
1634-04-4	Methyl tert-Butyl Ether	0.067	0.22	0.067	0.026	U
78-93-3	2-Butanone (MEK)	0.67	0.51	0.17	0.056	
156-59-2	cis-1,2-Dichloroethene	21	0.20	0.064	0.028	

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02164

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.26

Final Pressure (psig): 3.91

Container Dilution Factor: 1.50

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	0.26	0.87	0.26	0.12	U
110-54-3	n-Hexane	26	0.23	0.13	0.047	
67-66-3	Chloroform	7.6	0.17	0.052	0.022	
109-99-9	Tetrahydrofuran (THF)	0.10	0.51	0.10	0.034	U
107-06-2	1,2-Dichloroethane	0.063	0.20	0.063	0.022	U
71-55-6	1,1,1-Trichloroethane	0.18	0.14	0.044	0.018	
71-43-2	Benzene	0.24	0.23	0.080	0.036	
56-23-5	Carbon Tetrachloride	0.33	0.12	0.038	0.018	
110-82-7	Cyclohexane	7.3	0.48	0.14	0.065	
78-87-5	1,2-Dichloropropane	0.055	0.16	0.055	0.021	U
75-27-4	Bromodichloromethane	0.038	0.12	0.038	0.017	U
79-01-6	Trichloroethene	18	0.15	0.045	0.020	
123-91-1	1,4-Dioxane	0.067	0.22	0.067	0.026	U
80-62-6	Methyl Methacrylate	0.23	0.40	0.23	0.070	U
142-82-5	n-Heptane	7.9	0.19	0.11	0.031	
10061-01-5	cis-1,3-Dichloropropene	0.11	0.17	0.11	0.027	U
108-10-1	4-Methyl-2-pentanone	0.077	0.40	0.077	0.027	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.17	0.10	0.036	U
79-00-5	1,1,2-Trichloroethane	0.047	0.14	0.047	0.015	U
108-88-3	Toluene	1.8	0.21	0.068	0.026	
591-78-6	2-Hexanone	0.077	0.40	0.077	0.024	U
124-48-1	Dibromochloromethane	0.030	0.093	0.030	0.012	U
106-93-4	1,2-Dibromoethane	0.033	0.10	0.033	0.012	U
123-86-4	n-Butyl Acetate	0.066	0.35	0.066	0.023	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02164

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.26

Final Pressure (psig): 3.91

Container Dilution Factor: 1.50

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	1.7	0.17	0.10	0.039	
127-18-4	Tetrachloroethene	1.2	0.12	0.038	0.015	
108-90-7	Chlorobenzene	0.052	0.17	0.052	0.023	U
100-41-4	Ethylbenzene	1.9	0.18	0.059	0.026	
179601-23-1	m,p-Xylenes	11	0.38	0.11	0.048	
75-25-2	Bromoform	0.046	0.075	0.046	0.016	U
100-42-5	Styrene	0.11	0.18	0.11	0.030	U
95-47-6	o-Xylene	5.7	0.18	0.059	0.027	
111-84-2	n-Nonane	0.16	0.15	0.092	0.025	
79-34-5	1,1,2,2-Tetrachloroethane	0.037	0.11	0.037	0.016	U
98-82-8	Cumene	0.27	0.16	0.052	0.024	
80-56-8	alpha-Pinene	0.046	0.15	0.046	0.022	U
103-65-1	n-Propylbenzene	0.38	0.16	0.052	0.024	
622-96-8	4-Ethyltoluene	0.68	0.16	0.098	0.026	
108-67-8	1,3,5-Trimethylbenzene	1.3	0.16	0.052	0.024	
95-63-6	1,2,4-Trimethylbenzene	3.2	0.16	0.049	0.023	
100-44-7	Benzyl Chloride	0.099	0.32	0.099	0.035	U
541-73-1	1,3-Dichlorobenzene	0.042	0.13	0.042	0.020	U
106-46-7	1,4-Dichlorobenzene	0.042	0.13	0.042	0.020	U
95-50-1	1,2-Dichlorobenzene	0.042	0.13	0.042	0.020	U
5989-27-5	d-Limonene	0.083	0.13	0.083	0.030	U
96-12-8	1,2-Dibromo-3-chloropropane	0.050	0.16	0.050	0.016	U
120-82-1	1,2,4-Trichlorobenzene	0.065	0.22	0.065	0.026	U
91-20-3	Naphthalene	0.089	0.15	0.089	0.037	U
87-68-3	Hexachlorobutadiene	0.044	0.073	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 4 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-001

Tentatively Identified Compounds

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02164

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.26 Final Pressure (psig): 3.91

Container Dilution Factor: 1.50

GC/MS Retention Time	Compound Identification	Concentration ppbV	Data Qualifier
	Vinyl Acetate	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02053

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.11

Final Pressure (psig): 3.78

Container Dilution Factor: 1.75

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	1.2	0.53	0.33	0.13	
75-71-8	Dichlorodifluoromethane (CFC 12)	0.57	0.19	0.11	0.031	
74-87-3	Chloromethane	0.27	0.43	0.27	0.073	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.080	0.14	0.080	0.021	U
75-01-4	Vinyl Chloride	0.13	0.36	0.12	0.039	J
106-99-0	1,3-Butadiene	0.25	0.41	0.25	0.070	U
74-83-9	Bromomethane	0.077	0.23	0.077	0.033	U
75-00-3	Chloroethane	0.11	0.34	0.11	0.044	U
64-17-5	Ethanol	6.1	4.6	0.78	0.34	
75-05-8	Acetonitrile	0.33	1.0	0.33	0.14	U
107-02-8	Acrolein	0.27	0.76	0.27	0.11	U
67-64-1	Acetone	1.9	3.8	1.9	0.88	U
75-69-4	Trichlorofluoromethane	0.30	0.16	0.050	0.025	
67-63-0	2-Propanol (Isopropyl Alcohol)	5.3	0.71	0.44	0.16	
107-13-1	Acrylonitrile	0.27	0.81	0.27	0.089	U
75-35-4	1,1-Dichloroethene	0.36	0.24	0.075	0.033	
75-09-2	Methylene Chloride	0.16	0.26	0.16	0.076	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.095	0.30	0.095	0.040	U
76-13-1	Trichlorotrifluoroethane	1.8	0.12	0.039	0.017	
75-15-0	Carbon Disulfide	0.11	0.62	0.19	0.090	J
156-60-5	trans-1,2-Dichloroethene	0.60	0.23	0.075	0.033	
75-34-3	1,1-Dichloroethane	0.19	0.23	0.074	0.034	J
1634-04-4	Methyl tert-Butyl Ether	0.078	0.26	0.078	0.031	U
78-93-3	2-Butanone (MEK)	0.31	0.59	0.20	0.065	J
156-59-2	cis-1,2-Dichloroethene	20	0.23	0.075	0.033	

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02053

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.11

Final Pressure (psig): 3.78

Container Dilution Factor: 1.75

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	15	1.0	0.30	0.14	
110-54-3	n-Hexane	25	0.26	0.15	0.055	
67-66-3	Chloroform	7.6	0.19	0.061	0.025	
109-99-9	Tetrahydrofuran (THF)	0.12	0.59	0.12	0.040	U
107-06-2	1,2-Dichloroethane	0.074	0.23	0.074	0.026	U
71-55-6	1,1,1-Trichloroethane	0.17	0.17	0.051	0.021	
71-43-2	Benzene	0.32	0.27	0.093	0.042	
56-23-5	Carbon Tetrachloride	0.33	0.14	0.045	0.021	
110-82-7	Cyclohexane	7.2	0.56	0.17	0.076	
78-87-5	1,2-Dichloropropane	0.064	0.19	0.064	0.025	U
75-27-4	Bromodichloromethane	0.044	0.14	0.044	0.020	U
79-01-6	Trichloroethene	18	0.17	0.052	0.023	
123-91-1	1,4-Dioxane	0.078	0.25	0.078	0.031	U
80-62-6	Methyl Methacrylate	0.27	0.47	0.27	0.081	U
142-82-5	n-Heptane	7.7	0.23	0.13	0.036	
10061-01-5	cis-1,3-Dichloropropene	0.12	0.19	0.12	0.032	U
108-10-1	4-Methyl-2-pentanone	0.090	0.47	0.090	0.031	U
10061-02-6	trans-1,3-Dichloropropene	0.12	0.20	0.12	0.042	U
79-00-5	1,1,2-Trichloroethane	0.055	0.17	0.055	0.017	U
108-88-3	Toluene	2.4	0.24	0.079	0.030	
591-78-6	2-Hexanone	0.090	0.47	0.090	0.028	U
124-48-1	Dibromochloromethane	0.035	0.11	0.035	0.014	U
106-93-4	1,2-Dibromoethane	0.039	0.12	0.039	0.014	U
123-86-4	n-Butyl Acetate	0.077	0.41	0.077	0.027	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02053

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.11

Final Pressure (psig): 3.78

Container Dilution Factor: 1.75

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	1.7	0.20	0.12	0.045	
127-18-4	Tetrachloroethene	1.2	0.13	0.044	0.018	
108-90-7	Chlorobenzene	0.061	0.20	0.061	0.027	U
100-41-4	Ethylbenzene	2.0	0.21	0.069	0.030	
179601-23-1	m,p-Xylenes	11	0.44	0.13	0.056	
75-25-2	Bromoform	0.054	0.088	0.054	0.019	U
100-42-5	Styrene	0.077	0.21	0.13	0.035	J
95-47-6	o-Xylene	5.9	0.21	0.069	0.031	
111-84-2	n-Nonane	0.17	0.17	0.11	0.030	J
79-34-5	1,1,2,2-Tetrachloroethane	0.043	0.13	0.043	0.019	U
98-82-8	Cumene	0.29	0.19	0.061	0.027	
80-56-8	alpha-Pinene	0.053	0.17	0.053	0.026	U
103-65-1	n-Propylbenzene	0.40	0.19	0.061	0.027	
622-96-8	4-Ethyltoluene	0.72	0.19	0.11	0.030	
108-67-8	1,3,5-Trimethylbenzene	1.4	0.19	0.061	0.027	
95-63-6	1,2,4-Trimethylbenzene	3.4	0.19	0.057	0.026	
100-44-7	Benzyl Chloride	0.11	0.37	0.11	0.041	U
541-73-1	1,3-Dichlorobenzene	0.050	0.15	0.050	0.023	U
106-46-7	1,4-Dichlorobenzene	0.050	0.15	0.050	0.024	U
95-50-1	1,2-Dichlorobenzene	0.050	0.15	0.050	0.023	U
5989-27-5	d-Limonene	0.052	0.16	0.097	0.035	J
96-12-8	1,2-Dibromo-3-chloropropane	0.058	0.18	0.058	0.018	U
120-82-1	1,2,4-Trichlorobenzene	0.075	0.26	0.075	0.031	U
91-20-3	Naphthalene	0.047	0.17	0.10	0.043	J
87-68-3	Hexachlorobutadiene	0.051	0.085	0.051	0.018	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12QI

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P2204669-002

Tentatively Identified Compounds

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02053

Date Collected: 10/18/22

Date Received: 10/19/22

Date Analyzed: 10/27/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -4.11 Final Pressure (psig): 3.78

Container Dilution Factor: 1.75

GC/MS Retention Time	Compound Identification	Concentration ppbV	Data Qualifier
	Vinyl Acetate	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 4 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-MB

Tentatively Identified Compounds

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration ppbV	Data Qualifier
	Vinyl Acetate	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 10/18/22
Date(s) Received: 10/19/22
Date(s) Analyzed: 10/26 - 10/27/22

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P221026-MB	116	87	82	70-130	
Lab Control Sample	P221026-LCS	116	84	83	70-130	
Duplicate Lab Control Sample	P221026-DLCS	120	84	80	70-130	
ODSVE-EFF-Y12QI	P2204669-001	116	81	79	70-130	
ODSVE-DUP1-Y12QI	P2204669-002	113	84	81	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 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS	LCS	DLCS	LCS	DLCS	Acceptance			
		ppbV	ppbV	ppbV			Limits		Limit	Qualifier
115-07-1	Propene	123	118	122	96	99	57-136	3	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.9	40.5	41.5	94	97	59-128	3	25	
74-87-3	Chloromethane	99.8	108	112	108	112	59-132	4	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.5	23.7	25.4	80	86	63-121	7	25	
75-01-4	Vinyl Chloride	79.8	72.2	74.0	90	93	64-127	3	25	
106-99-0	1,3-Butadiene	95.9	89.5	93.6	93	98	66-134	5	25	
74-83-9	Bromomethane	53.1	46.4	47.6	87	90	63-134	3	25	
75-00-3	Chloroethane	78.9	73.2	74.1	93	94	63-127	1	25	
64-17-5	Ethanol	375	473	492	126	131	59-125	4	25	L
75-05-8	Acetonitrile	108	122	126	113	117	63-132	3	25	
107-02-8	Acrolein	169	174	181	103	107	62-126	4	25	
67-64-1	Acetone	446	417	430	93	96	58-128	3	25	
75-69-4	Trichlorofluoromethane	37.4	34.0	34.6	91	93	62-126	2	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	168	182	190	108	113	52-125	5	25	
107-13-1	Acrylonitrile	190	201	208	106	109	71-137	3	25	
75-35-4	1,1-Dichloroethene	54.5	50.7	51.7	93	95	61-133	2	25	
75-09-2	Methylene Chloride	61.0	53.8	55.8	88	91	62-115	3	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	68.4	70.0	72.4	102	106	71-131	4	25	
76-13-1	Trichlorotrifluoroethane	28.2	22.7	23.2	80	82	66-126	2	25	
75-15-0	Carbon Disulfide	137	117	122	85	89	57-134	5	25	
156-60-5	trans-1,2-Dichloroethene	54.5	55.2	57.1	101	105	67-124	4	25	
75-34-3	1,1-Dichloroethane	53.4	53.4	54.8	100	103	68-126	3	25	
1634-04-4	Methyl tert-Butyl Ether	59.4	57.6	59.0	97	99	66-126	2	25	
78-93-3	2-Butanone (MEK)	142	134	138	94	97	67-130	3	25	
156-59-2	cis-1,2-Dichloroethene	54.0	55.7	56.9	103	105	70-121	2	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.

L = Laboratory control sample recovery outside the specified limits, results may be biased low.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
141-78-6	Ethyl Acetate	238	166	173	70	73	65-128	4	25	
110-54-3	n-Hexane	60.2	60.2	63.9	100	106	63-120	6	25	
67-66-3	Chloroform	43.4	42.5	43.4	98	100	68-123	2	25	
109-99-9	Tetrahydrofuran (THF)	140	130	136	93	97	64-123	4	25	
107-06-2	1,2-Dichloroethane	53.4	55.0	57.4	103	107	65-128	4	25	
71-55-6	1,1,1-Trichloroethane	38.5	36.4	36.2	95	94	68-125	1	25	
71-43-2	Benzene	67.6	64.6	64.0	96	95	69-119	1	25	
56-23-5	Carbon Tetrachloride	32.8	29.6	29.4	90	90	68-132	0	25	
110-82-7	Cyclohexane	123	111	112	90	91	70-117	1	25	
78-87-5	1,2-Dichloropropane	45.9	45.5	45.2	99	98	69-123	1	25	
75-27-4	Bromodichloromethane	32.3	33.3	33.0	103	102	72-128	1	25	
79-01-6	Trichloroethene	39.5	34.0	34.9	86	88	71-123	2	25	
123-91-1	1,4-Dioxane	58.9	54.2	54.8	92	93	71-122	1	25	
80-62-6	Methyl Methacrylate	104	97.5	97.9	94	94	70-128	0	25	
142-82-5	n-Heptane	51.8	47.2	49.3	91	95	69-123	4	25	
10061-01-5	cis-1,3-Dichloropropene	47.6	48.1	47.8	101	100	70-128	1	25	
108-10-1	4-Methyl-2-pentanone	105	111	115	106	110	67-130	4	25	
10061-02-6	trans-1,3-Dichloropropene	45.4	48.3	48.7	106	107	75-133	0.9	25	
79-00-5	1,1,2-Trichloroethane	38.9	35.3	36.0	91	93	73-119	2	25	
108-88-3	Toluene	56.3	42.8	42.5	76	75	66-119	1	25	
591-78-6	2-Hexanone	104	98.6	98.7	95	95	62-128	0	25	
124-48-1	Dibromochloromethane	25.4	19.1	19.0	75	75	70-130	0	25	
106-93-4	1,2-Dibromoethane	27.1	20.7	20.5	76	76	74-122	0	25	
123-86-4	n-Butyl Acetate	86.3	83.2	83.3	96	97	65-134	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 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

ALS Sample ID: P221026-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 10/26/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	45.8	39.4	38.7	86	84	69-121	2	25	
127-18-4	Tetrachloroethene	31.3	22.3	22.0	71	70	66-124	1	25	
108-90-7	Chlorobenzene	46.1	34.2	33.4	74	72	70-119	3	25	
100-41-4	Ethylbenzene	48.4	37.9	37.6	78	78	70-124	0	25	
179601-23-1	m,p-Xylenes	96.7	76.2	76.4	79	79	61-134	0	25	
75-25-2	Bromoform	20.7	15.3	15.1	74	73	66-139	1	25	
100-42-5	Styrene	49.8	39.4	39.5	79	79	73-127	0	25	
95-47-6	o-Xylene	48.8	38.3	38.3	78	78	67-125	0	25	
111-84-2	n-Nonane	40.4	38.4	38.1	95	94	63-128	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.9	24.4	24.3	79	79	65-127	0	25	
98-82-8	Cumene	43.1	32.7	32.4	76	75	68-124	1	25	
80-56-8	alpha-Pinene	39.1	29.5	28.9	75	74	62-136	1	25	
103-65-1	n-Propylbenzene	43.6	33.6	33.5	77	77	69-123	0	25	
622-96-8	4-Ethyltoluene	44.0	34.0	33.3	77	76	67-129	1	25	
108-67-8	1,3,5-Trimethylbenzene	42.7	33.0	32.8	77	77	67-130	0	25	
95-63-6	1,2,4-Trimethylbenzene	42.3	33.5	33.1	79	78	66-132	1	25	
100-44-7	Benzyl Chloride	81.2	76.5	75.1	94	92	50-147	2	25	
541-73-1	1,3-Dichlorobenzene	34.9	27.0	26.7	77	77	65-130	0	25	
106-46-7	1,4-Dichlorobenzene	35.3	28.4	28.1	80	80	60-131	0	25	
95-50-1	1,2-Dichlorobenzene	35.3	26.7	26.0	76	74	63-129	3	25	
5989-27-5	d-Limonene	37.7	33.5	33.2	89	88	65-136	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	43.1	33.3	32.9	77	76	73-133	1	25	
120-82-1	1,2,4-Trichlorobenzene	55.5	51.0	50.3	92	91	55-142	1	25	
91-20-3	Naphthalene	41.2	44.2	43.6	107	106	57-138	0.9	25	
87-68-3	Hexachlorobutadiene	19.7	13.7	13.5	70	69	56-138	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: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 10262233.D
Date Analyzed: 10/26/22
Time Analyzed: 22:40

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P221026-LCS	10262234.D	23:17
Duplicate Lab Control Sample	P221026-DLCS	10262235.D	23:54
ODSVE-EFF-Y12QI	P2204669-001	10262248.D	10:56
ODSVE-DUP1-Y12QI	P2204669-002	10262249.D	11:33

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / IOA023

ALS Project ID: P2204669

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 10262231.D
Date Analyzed: 10/26/22
Time Analyzed: 21:24

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	123482		7.34		531700	9.39
Upper Limit	172875		7.67		744380	9.72
Lower Limit	74089		7.01		319020	9.06

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA	#	RT	#	AREA	#
01	Method Blank	115617		7.33		511433	9.38
02	Lab Control Sample	123554		7.37		534238	9.41
03	Duplicate Lab Control Sample	123366		7.37		547463	9.41
04	ODSVE-EFF-Y12QI	123440		7.34		541476	9.39
05	ODSVE-DUP1-Y12QI	122018		7.34		546271	9.40
06							
07							
08							
09							
10							
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.

Data File : I:\MS13\DATA\2022_10\26\10262248.D
 Acq On : 27 Oct 2022 10:56
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209

Vial: 2
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 11:24:10 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	123440	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	541476	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	144618	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	282146	14.575	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	116.64%
57) Toluene-d8 (SS2)	12.50	98	632073	10.082	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.64%
73) Bromofluorobenzene (SS3)	16.86	174	221336	9.922	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	79.36%

Target Compounds

						Qvalue
2) Propene	3.40	42	5497	0.406	ng	# 53
3) Dichlorodifluoromethan...	3.46	85	54352	2.006	ng	99
4) Chloromethane	3.62	50	550	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	d	
6) Vinyl Chloride	3.79	62	3751	0.225	ng	94
7) 1,3-Butadiene	0.00	54	0	N.D.	d	
8) Bromomethane	4.13	94	1234	0.116	ng	84
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.40	45	13403	1.562	ng	94
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.64	56	7901	1.132	ng	97
13) Acetone	0.00	58	0	N.D.	d	
14) Trichlorofluoromethane	4.87	101	26444	1.076	ng	95
15) 2-Propanol (Isopropanol)	4.96	45	16752	0.584	ng	# 54
16) Acrylonitrile	0.00	53	0	N.D.	d	
17) 1,1-Dichloroethene	5.39	96	10372	1.005	ng	# 81
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	0.00	84	0	N.D.	d	
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d	
21) Trichlorotrifluoroethane	5.71	151	104729	9.520	ng	91
22) Carbon Disulfide	5.73	76	18935	0.447	ng	48
23) trans-1,2-Dichloroethene	6.26	61	25495	1.565	ng	85
24) 1,1-Dichloroethane	6.44	63	9057	0.477	ng	97
25) Methyl tert-Butyl Ether	6.51	73	447	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.	d	
27) 2-Butanone (MEK)	6.78	72	8664	1.326	ng	# 85
28) cis-1,2-Dichloroethene	7.18	61	824040	54.314	ng	88
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	0.00	61	0	N.D.	d	
31) n-Hexane	7.43	57	953643	60.672	ng	96
32) Chloroform	7.47	83	516343	24.853	ng	99
34) Tetrahydrofuran (THF)	7.90	72	141	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.	d	
38) 1,1,1-Trichloroethane	8.50	97	13600	0.645	ng	96
39) Isopropyl Acetate	9.52	61	151	No Calib		#
40) 1-Butanol	8.98	56	3322	No Calib		#
41) Benzene	9.00	78	20550	0.505	ng	100
42) Carbon Tetrachloride	9.17	117	25377	1.369	ng	96
43) Cyclohexane	9.33	84	247525	16.821	ng	87
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.	d	
45) 1,2-Dichloropropane	9.93	63	158	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.	d	
47) Trichloroethene	10.23	130	765723	63.887	ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2022_10\26\10262248.D
 Acq On : 27 Oct 2022 10:56
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209

Vial: 2
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 11:24:10 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	208446	21.547	ng	92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.41	58	368	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	d	
58) Toluene	12.63	91	263054	4.586	ng	98
59) 2-Hexanone	0.00	43	0	N.D.	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	13.97	57	54397	5.205	ng	85
64) Tetrachloroethene	14.09	166	98007	5.522	ng	95
65) Chlorobenzene	0.00	112	0	N.D.	d	
66) Ethylbenzene	15.45	91	367881	5.536	ng	99
67) m- & p-Xylenes	15.68	91	1711894	31.074	ng	98
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.14	104	634	N.D.		
70) o-Xylene	16.28	91	905005	16.604	ng	98
71) n-Nonane	16.64	43	13841	0.574	ng	86
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d	
74) Cumene	17.06	105	59230	0.879	ng	98
75) alpha-Pinene	17.59	93	1045	N.D.		
76) n-Propylbenzene	17.75	91	98520	1.244	ng	95
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	142167	2.236	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	254164	4.361	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	610081	10.564	ng	90
83) n-Decane	17.17	58	823	No Calib	#	
84) Benzyl Chloride	18.78	91	644	N.D.		
85) 1,3-Dichlorobenzene	18.87	146	296	N.D.		
86) 1,4-Dichlorobenzene	18.87	146	296	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.	d	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	1954	0.063	ng	91
91) d-Limonene	0.00	68	0	N.D.	d	
92) 1,2-Dibromo-3-Chloropr...	19.80	157	141	N.D.		
93) n-Undecane	18.23	58	3510	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.44	180	184	N.D.		
95) Naphthalene	21.55	128	2508	0.053	ng	# 39
96) n-Dodecane	19.11	58	500	No Calib	#	
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	15.56	55	28303	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	0.00	91	0	N.D.	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:\MS13\DATA\2022_10\26\10262248.D
Acq On : 27 Oct 2022 10:56
Sample : P2204669-001 (1000mL)
Misc : S35-08172209

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Oct 27 11:24:10 2022

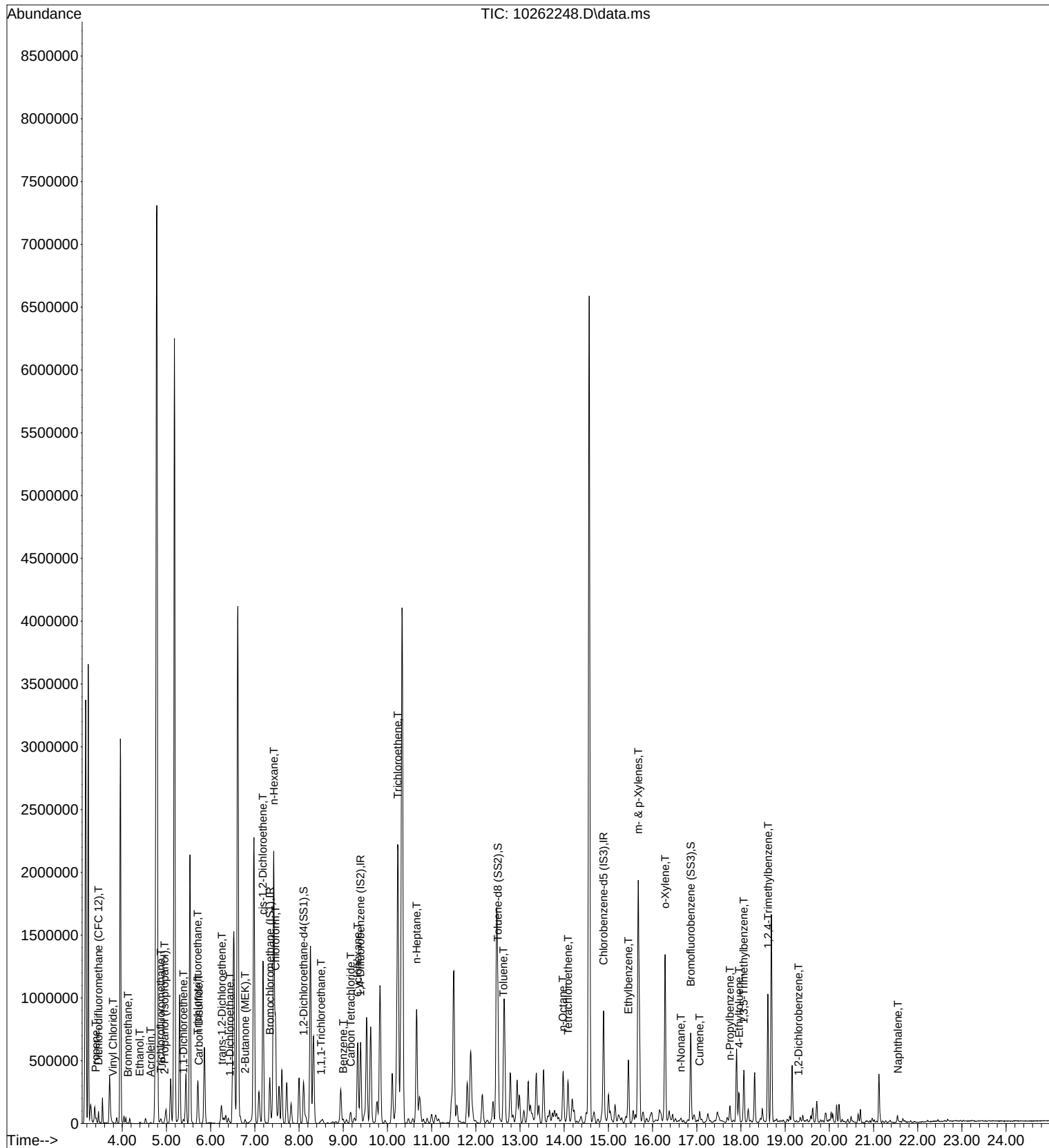
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2022_10\26\10262248.D
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TZ 10/27/22

Quant Time: Oct 27 11:24:10 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
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 DataAcq Meth:T015B.M

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37) 1,4-Difluorobenzene (IS2)	9.39	114	541476	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	144618	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	282146	14.575	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	116.64%	
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Spiked Amount	12.500	Range 70 - 130	Recovery	=	80.64%	
73) Bromofluorobenzene (SS3)	16.86	174	221336	9.922	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	79.36%	

Target Compounds

						Qvalue
2) Propene	3.40	42	5497	0.406	ng	# 53
3) Dichlorodifluoromethan...	3.46	85	54352	2.006	ng	99
6) Vinyl Chloride	3.79	62	3751	0.225	ng	94
8) Bromomethane	4.13	94	1234	0.116	ng	84
10) Ethanol	4.40	45	13403	1.562	ng	94
12) Acrolein	4.64	56	7901	1.132	ng	97
14) Trichlorofluoromethane	4.87	101	26444	1.076	ng	95
15) 2-Propanol (Isopropanol)	4.96	45	16752	0.584	ng	# 54
17) 1,1-Dichloroethene	5.39	96	10372	1.005	ng	# 81
21) Trichlorotrifluoroethane	5.71	151	104729	9.520	ng	91
22) Carbon Disulfide	5.73	76	18935	0.447	ng	48
23) trans-1,2-Dichloroethene	6.26	61	25495	1.565	ng	85
24) 1,1-Dichloroethane	6.44	63	9057	0.477	ng	97
27) 2-Butanone (MEK)	6.78	72	8664	1.326	ng	# 85
28) cis-1,2-Dichloroethene	7.18	61	824040	54.314	ng	88
31) n-Hexane	7.43	57	953643	60.672	ng	96
32) Chloroform	7.47	83	516343	24.853	ng	99
38) 1,1,1-Trichloroethane	8.50	97	13600	0.645	ng	96
41) Benzene	9.00	78	20550	0.505	ng	100
42) Carbon Tetrachloride	9.17	117	25377	1.369	ng	96
43) Cyclohexane	9.33	84	247525	16.821	ng	87
47) Trichloroethene	10.23	130	765723	63.887	ng	98
51) n-Heptane	10.66	71	208446	21.547	ng	92
58) Toluene	12.63	91	263054	4.586	ng	98
63) n-Octane	13.97	57	54397	5.205	ng	85
64) Tetrachloroethene	14.09	166	98007	5.522	ng	95
66) Ethylbenzene	15.45	91	367881	5.536	ng	99
67) m- & p-Xylenes	15.68	91	1711894	31.074	ng	98
70) o-Xylene	16.28	91	905005	16.604	ng	98
71) n-Nonane	16.64	43	13841	0.574	ng	86
74) Cumene	17.06	105	59230	0.879	ng	98
76) n-Propylbenzene	17.75	91	98520	1.244	ng	95
78) 4-Ethyltoluene	17.96	105	142167	2.236	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	254164	4.361	ng	99
82) 1,2,4-Trimethylbenzene	18.61	105	610081	10.564	ng	90
90) 1,2-Dichlorobenzene	19.30	146	1954	0.063	ng	91
95) Naphthalene	21.55	128	2508	0.053	ng	# 39

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

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Misc : S35-08172209

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Oct 27 11:24:10 2022

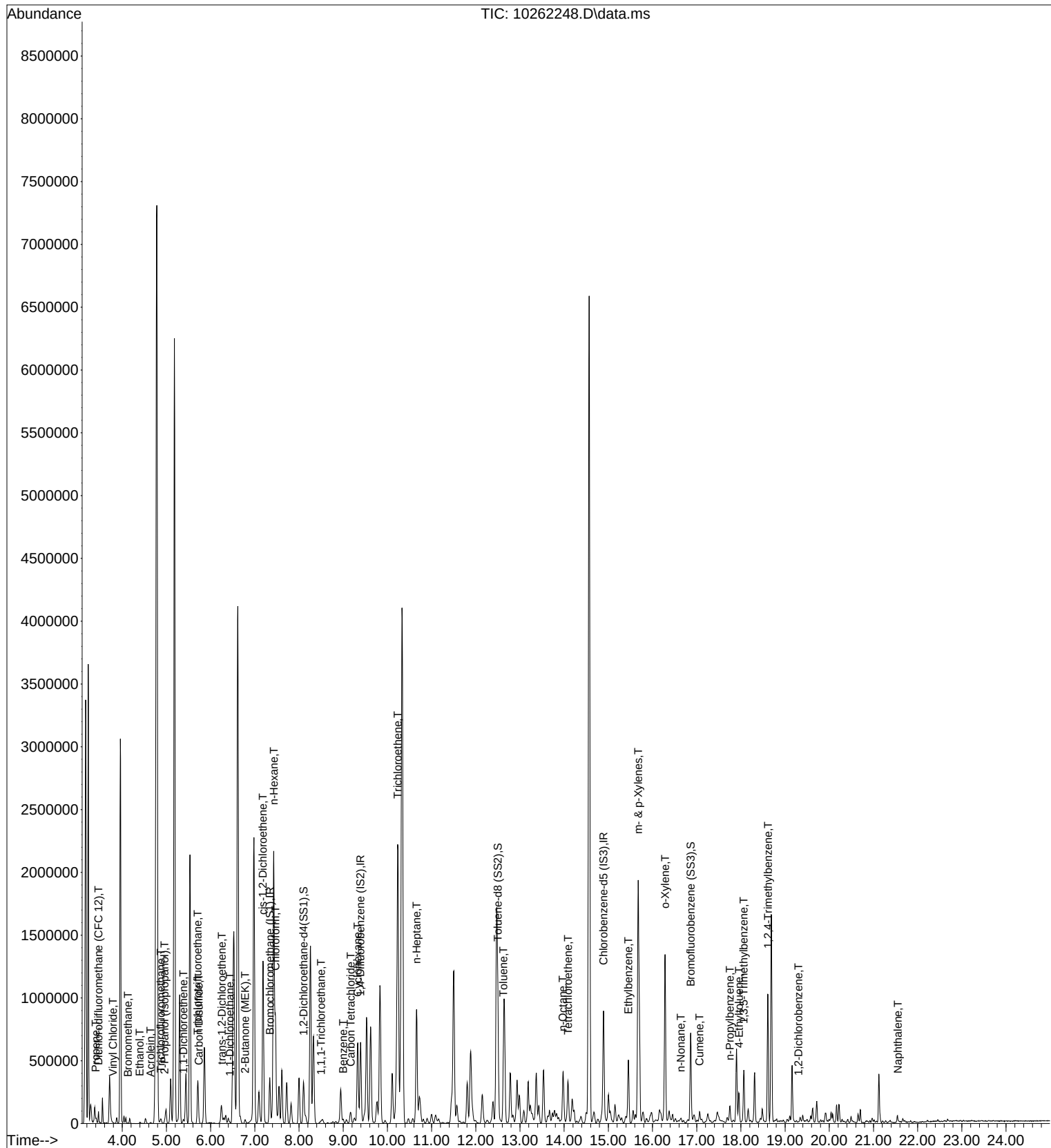
Quant Method : I:\MS13\METHODS\R13091922.M

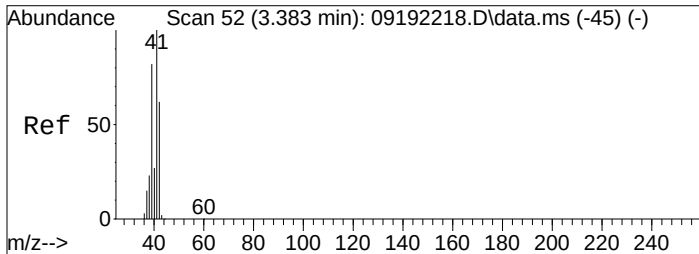
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

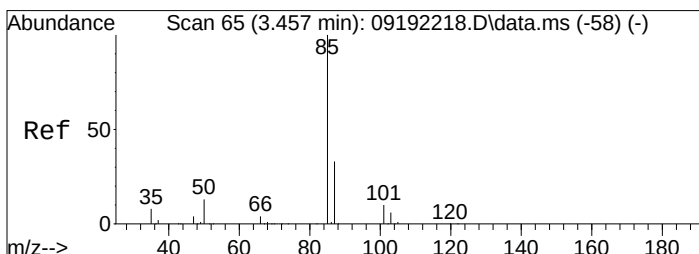
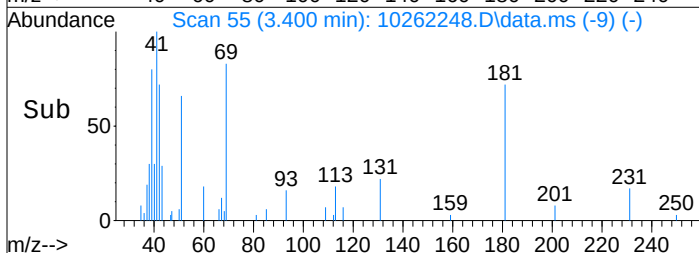
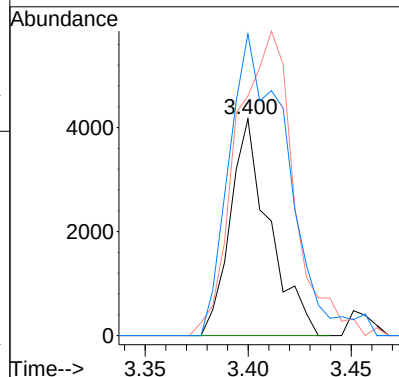
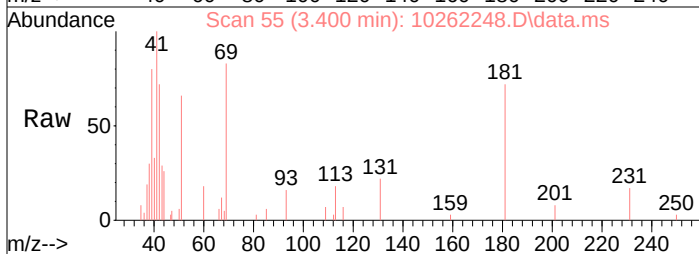
DataAcq Meth:T015B.M





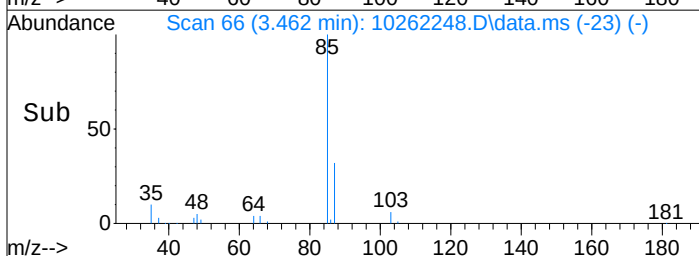
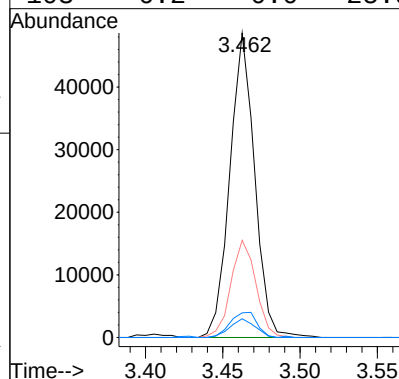
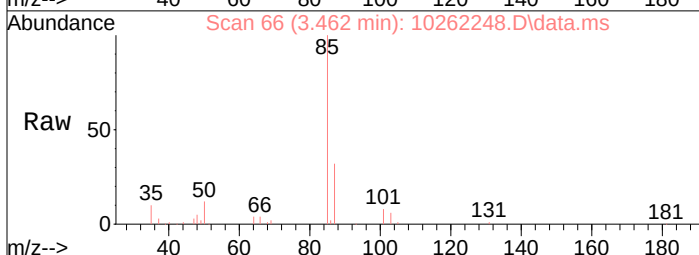
#2
 Propene
 Concen: 0.41 ng
 RT: 3.40 min Scan# 55
 Delta R.T. 0.012 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

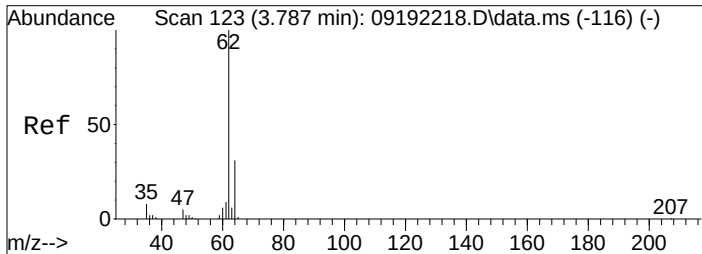
Tgt Ion: 42 Resp: 5497
 Ion Ratio Lower Upper
 42 100
 39 208.3 113.5 153.5#
 41 206.4 142.1 182.1#



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.01 ng
 RT: 3.46 min Scan# 66
 Delta R.T. -0.006 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

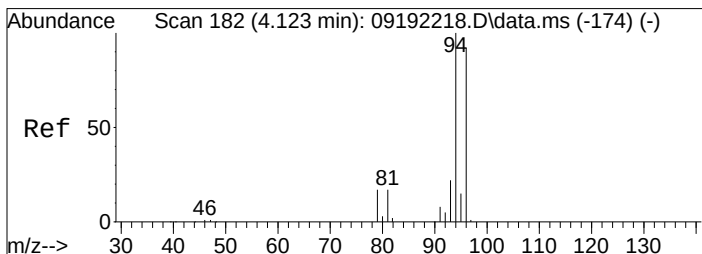
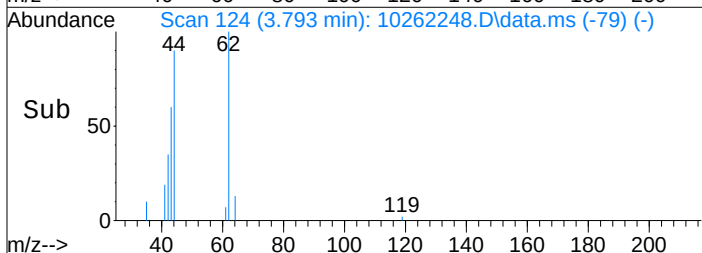
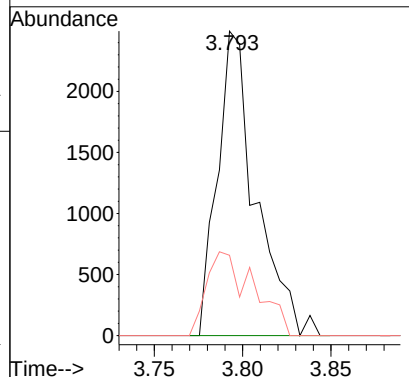
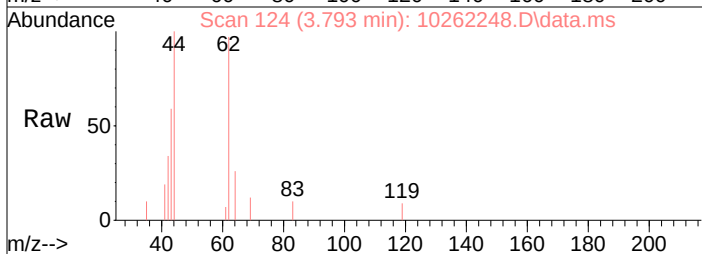
Tgt Ion: 85 Resp: 54352
 Ion Ratio Lower Upper
 85 100
 87 32.2 12.8 52.8
 101 9.1 0.0 30.0
 103 6.2 0.0 25.9





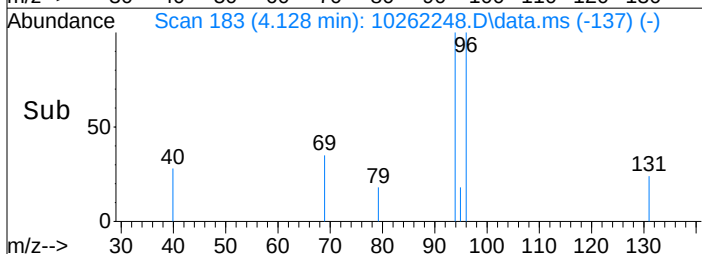
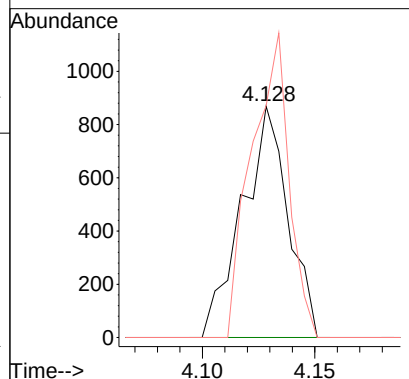
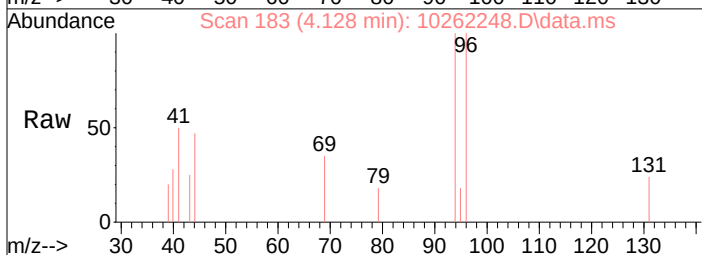
#6
 Vinyl Chloride
 Concen: 0.23 ng
 RT: 3.79 min Scan# 124
 Delta R.T. 0.006 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

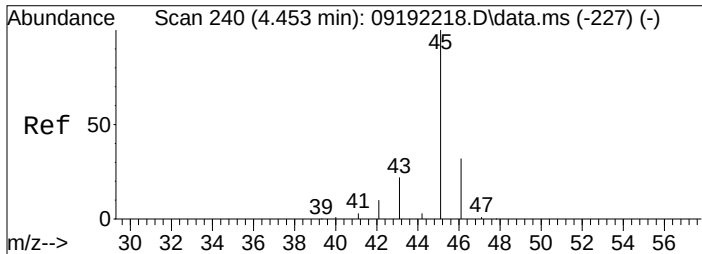
Tgt Ion: 62 Resp: 3751
 Ion Ratio Lower Upper
 62 100
 64 34.0 10.8 50.8



#8
 Bromomethane
 Concen: 0.12 ng
 RT: 4.13 min Scan# 183
 Delta R.T. 0.012 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

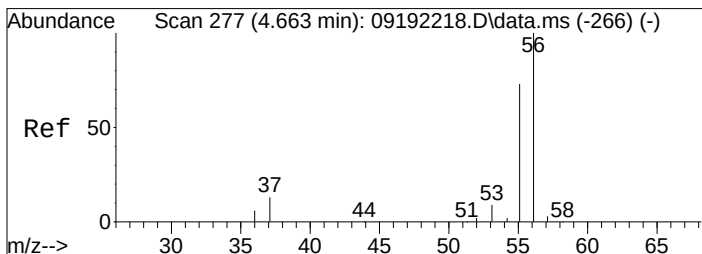
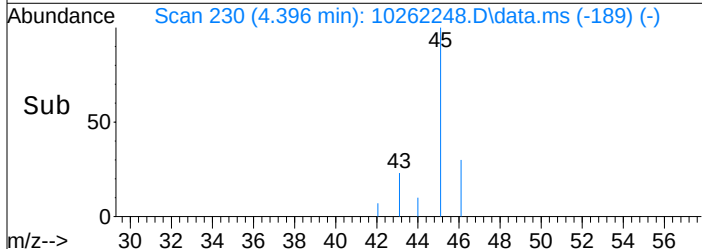
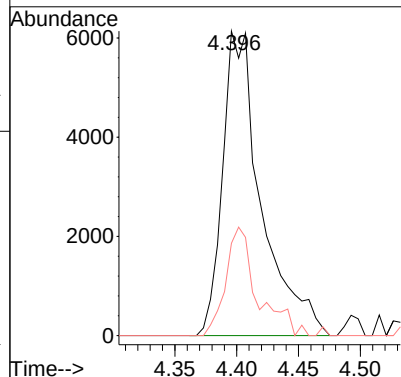
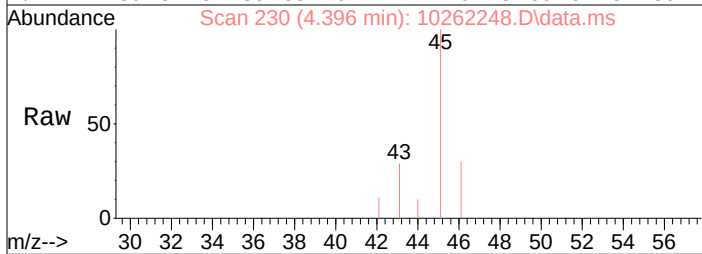
Tgt Ion: 94 Resp: 1234
 Ion Ratio Lower Upper
 94 100
 96 107.2 71.9 111.9





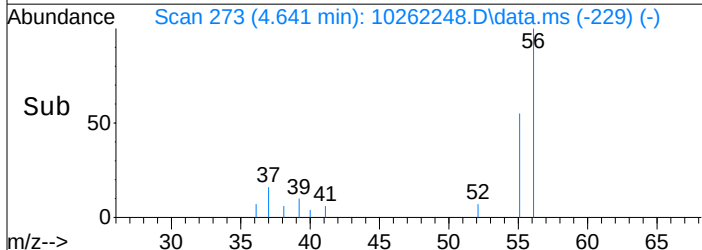
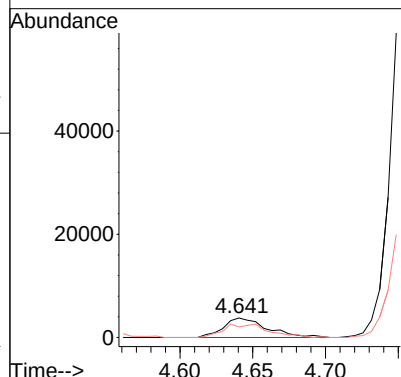
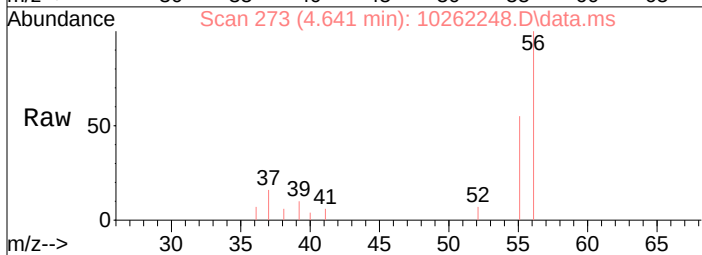
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Ethanol
Concen: 1.56 ng
RT: 4.40 min Scan# 230
Delta R.T. -0.017 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

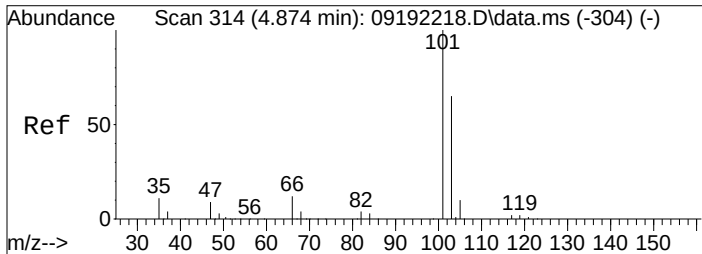
Tgt Ion: 45 Resp: 13403
Ion Ratio Lower Upper
45 100
46 29.0 12.2 52.2



#12
Acrolein
Concen: 1.13 ng
RT: 4.64 min Scan# 273
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

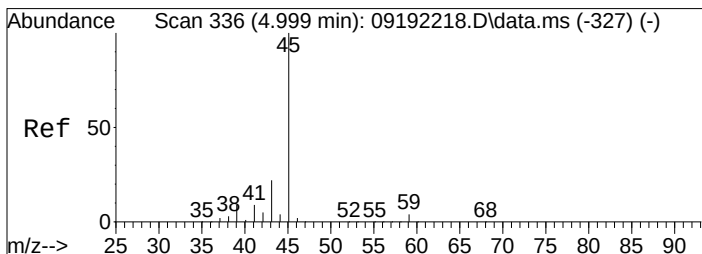
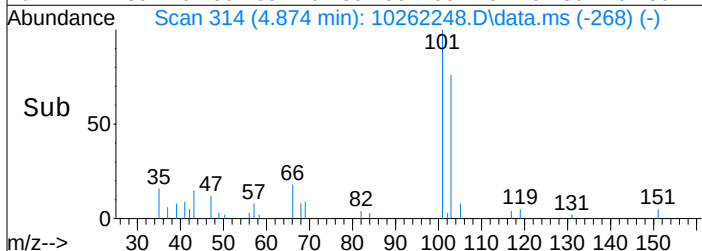
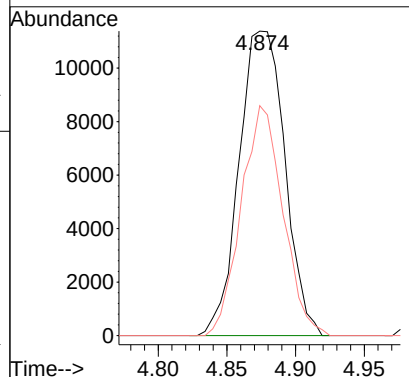
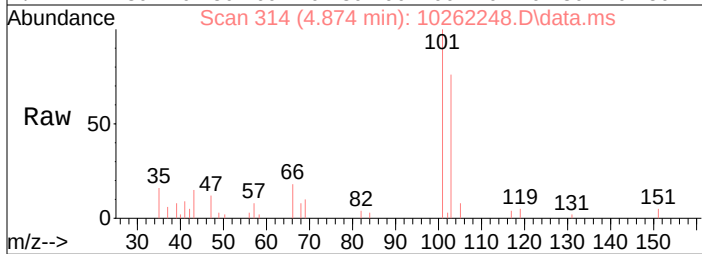
Tgt Ion: 56 Resp: 7901
Ion Ratio Lower Upper
56 100
55 71.1 53.5 93.5





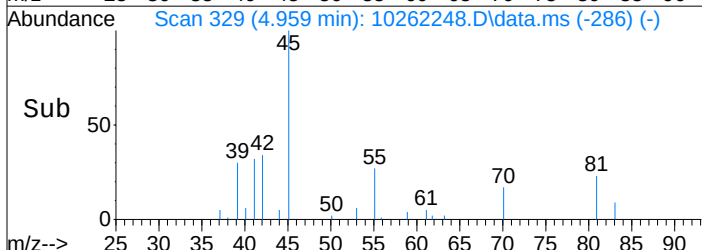
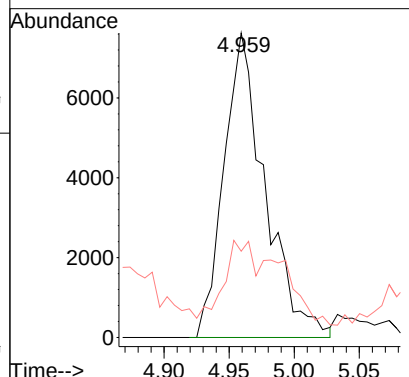
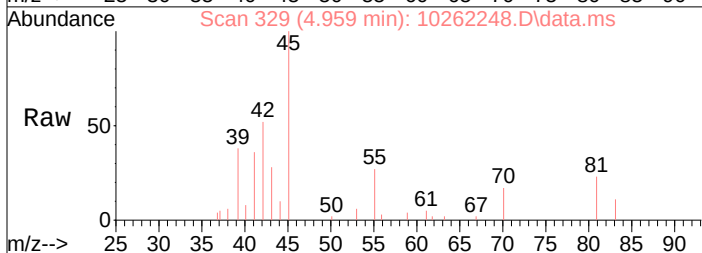
#14
 Trichlorofluoromethane
 Concen: 1.08 ng
 RT: 4.87 min Scan# 314
 Delta R.T. 0.012 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

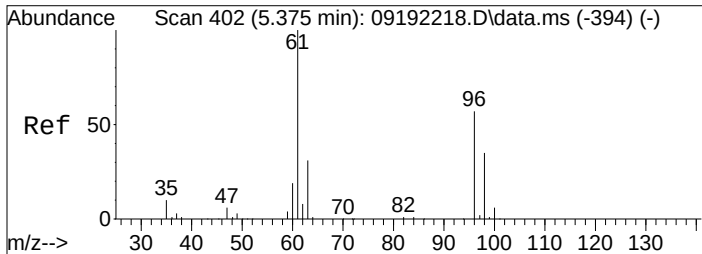
Tgt Ion:	101	Resp:	26444
Ion Ratio	Lower	Upper	
101	100		
103	68.7	44.8	84.8



#15
 2-Propanol (Isopropanol)
 Concen: 0.58 ng
 RT: 4.96 min Scan# 329
 Delta R.T. -0.006 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

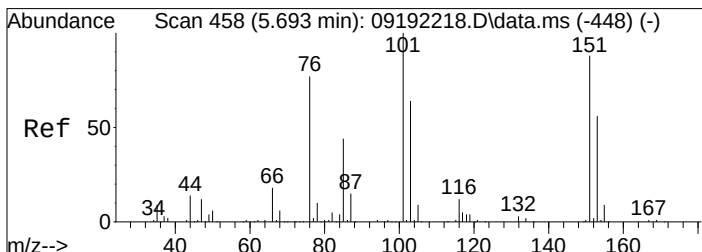
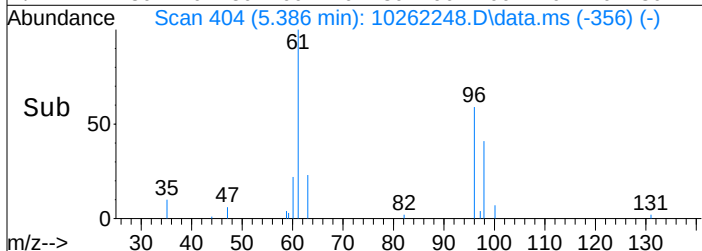
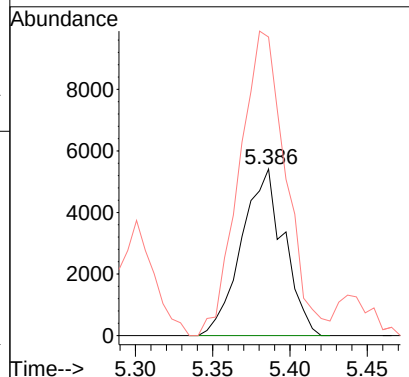
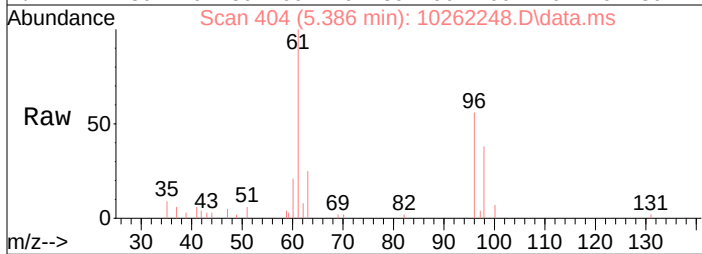
Tgt Ion:	45	Resp:	16752
Ion Ratio	Lower	Upper	
45	100		
43	0.0	1.7	41.7#





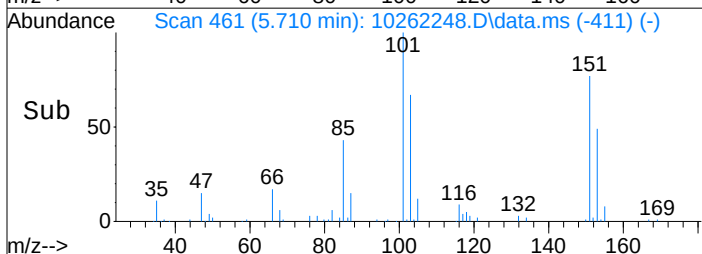
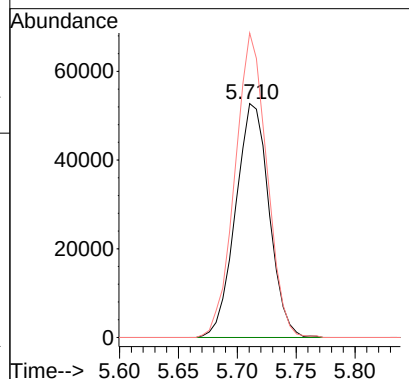
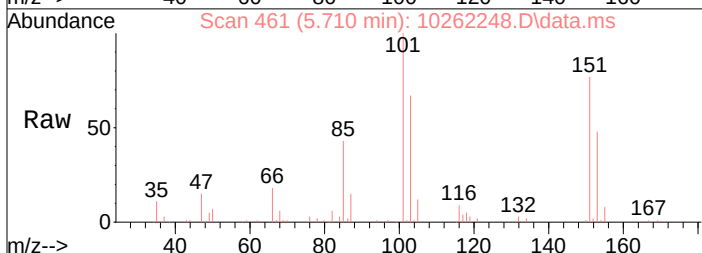
#17
 1,1-Dichloroethene
 Concen: 1.01 ng
 RT: 5.39 min Scan# 404
 Delta R.T. 0.023 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

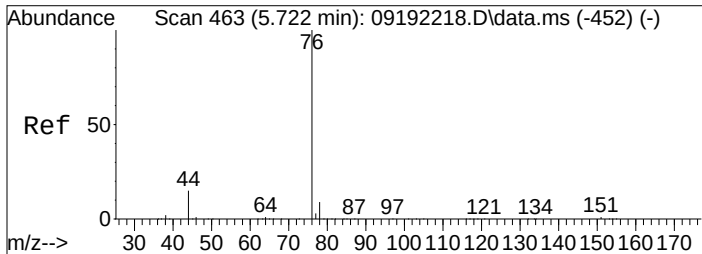
Tgt Ion:	96	Resp:	10372
Ion Ratio	Lower	Upper	
96	100		
61	200.5	154.6	194.6#



#21
 Trichlorotrifluoroethane
 Concen: 9.52 ng
 RT: 5.71 min Scan# 461
 Delta R.T. 0.034 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

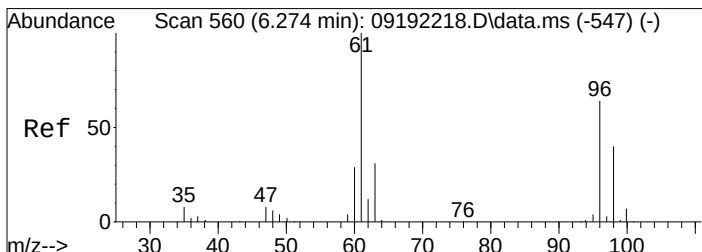
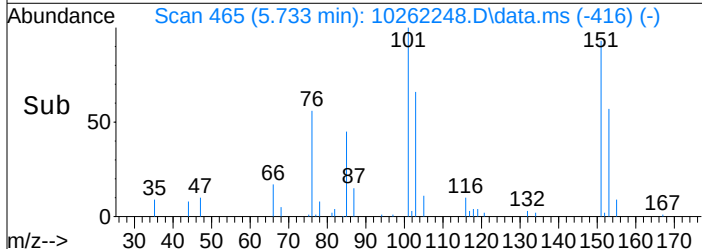
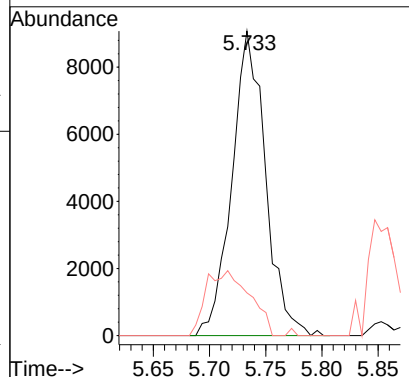
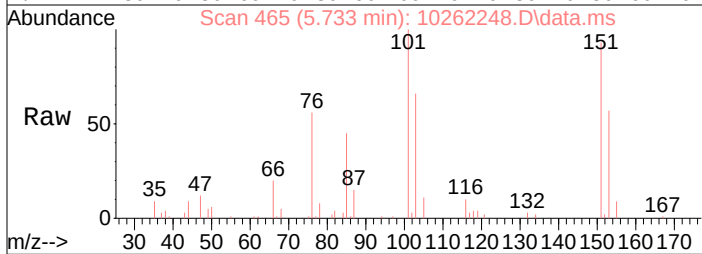
Tgt Ion:	151	Resp:	104729
Ion Ratio	Lower	Upper	
151	100		
101	124.1	94.2	134.2





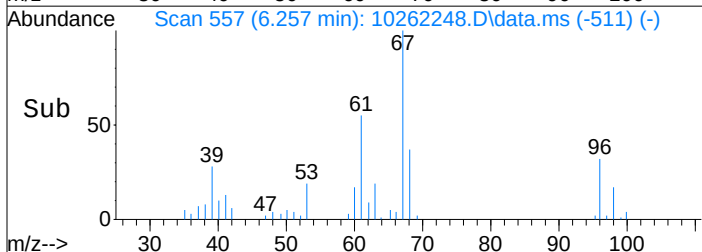
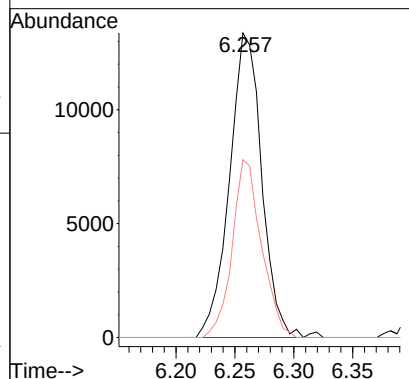
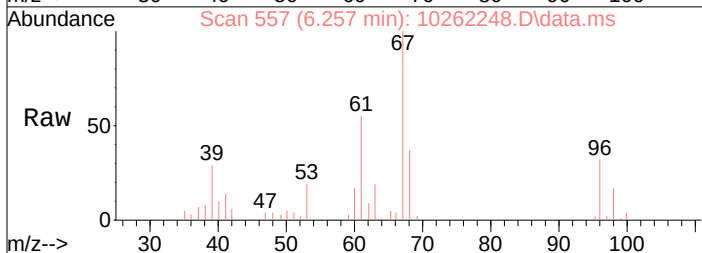
#22
Carbon Disulfide
Concen: 0.45 ng
RT: 5.73 min Scan# 465
Delta R.T. 0.029 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

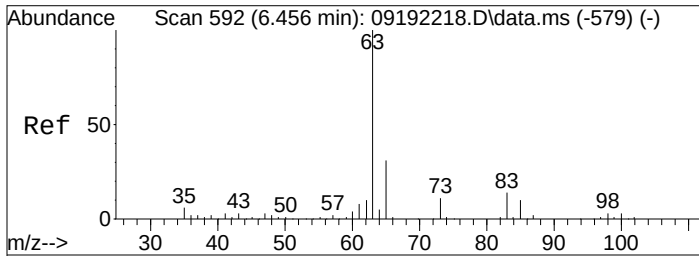
Tgt Ion: 76 Resp: 18935
Ion Ratio Lower Upper
76 100
78 27.7 0.0 28.9



#23
trans-1,2-Dichloroethene
Concen: 1.56 ng
RT: 6.26 min Scan# 557
Delta R.T. 0.012 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

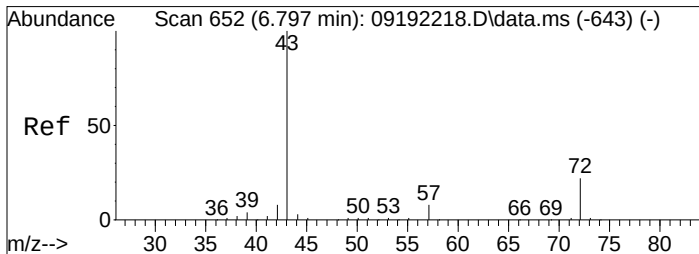
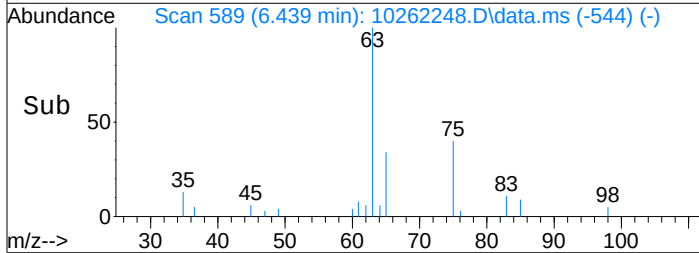
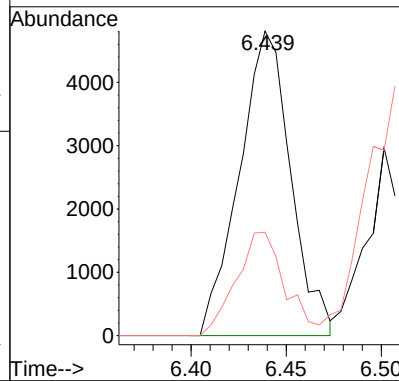
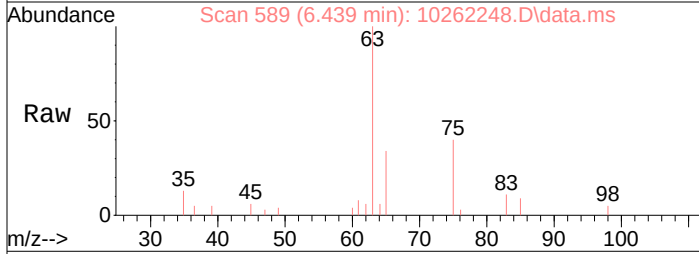
Tgt Ion: 61 Resp: 25495
Ion Ratio Lower Upper
61 100
96 52.9 44.5 84.5





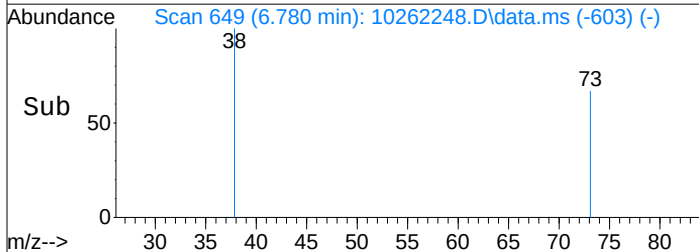
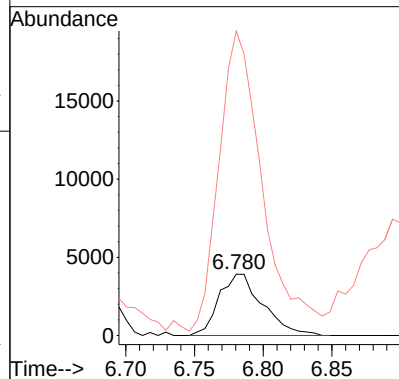
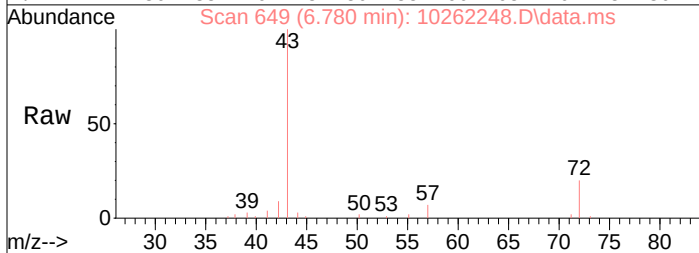
#24
 1,1-Dichloroethane
 Concen: 0.48 ng
 RT: 6.44 min Scan# 589
 Delta R.T. 0.006 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

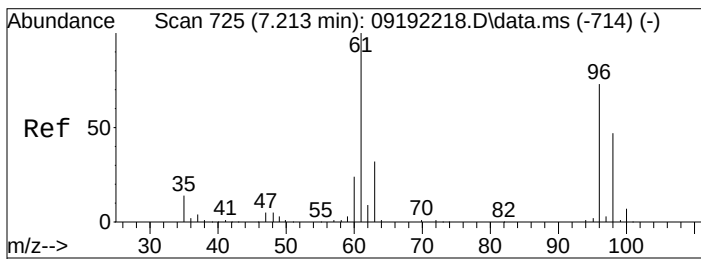
Tgt Ion: 63 Resp: 9057
 Ion Ratio Lower Upper
 63 100
 65 32.3 10.7 50.7



#27
 2-Butanone (MEK)
 Concen: 1.33 ng
 RT: 6.78 min Scan# 649
 Delta R.T. 0.012 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

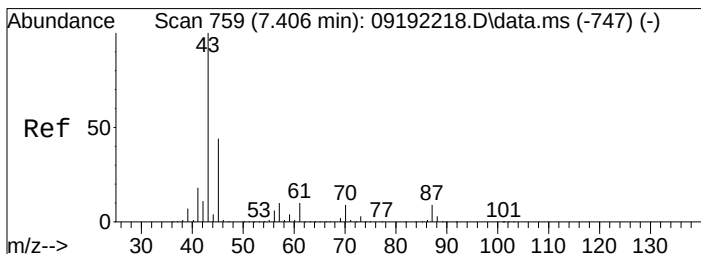
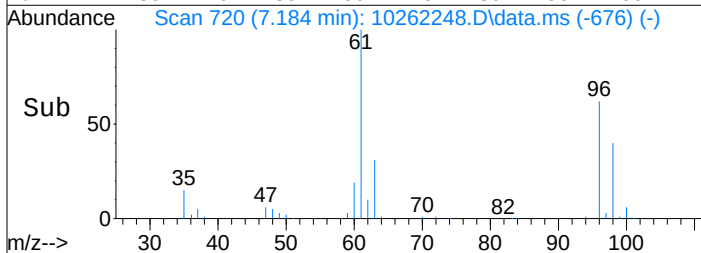
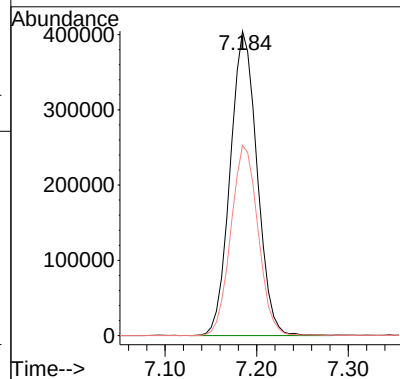
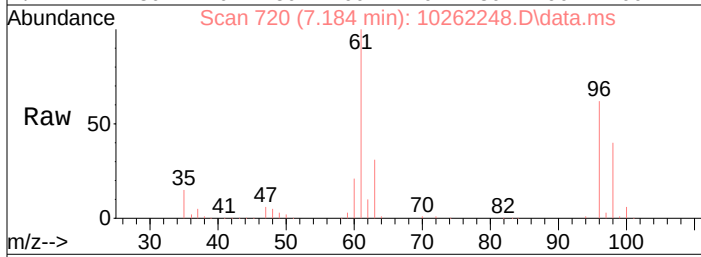
Tgt Ion: 72 Resp: 8664
 Ion Ratio Lower Upper
 72 100
 43 482.7 424.6 464.6#





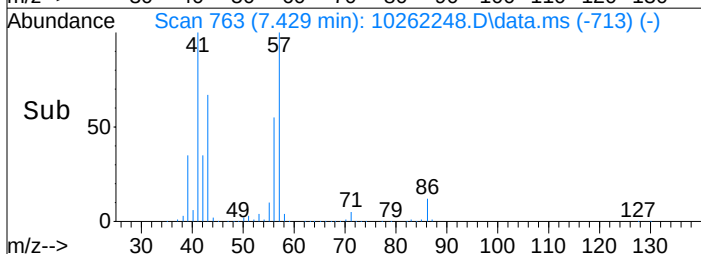
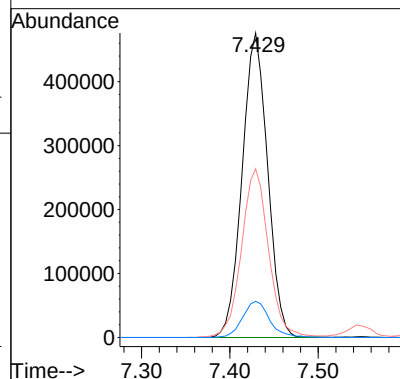
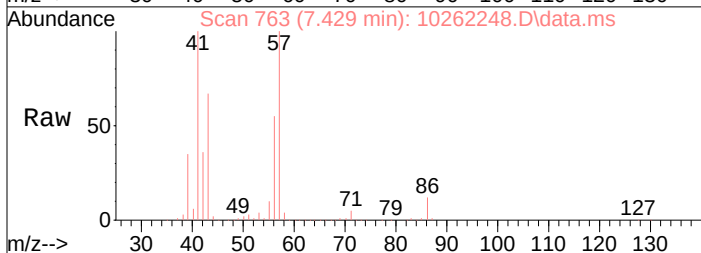
#28
 cis-1,2-Dichloroethene
 Concen: 54.31 ng
 RT: 7.18 min Scan# 720
 Delta R.T. 0.000 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

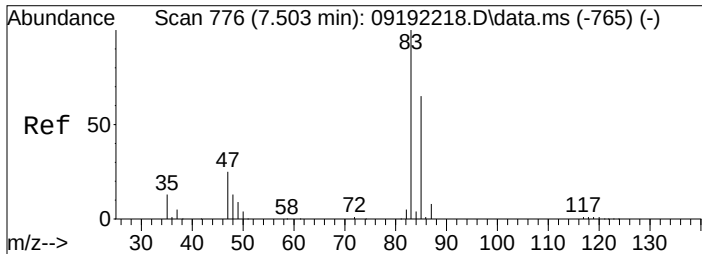
Tgt Ion: 61 Resp: 824040
 Ion Ratio Lower Upper
 61 100
 96 63.5 53.2 93.2



#31
 n-Hexane
 Concen: 60.67 ng
 RT: 7.43 min Scan# 763
 Delta R.T. 0.034 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

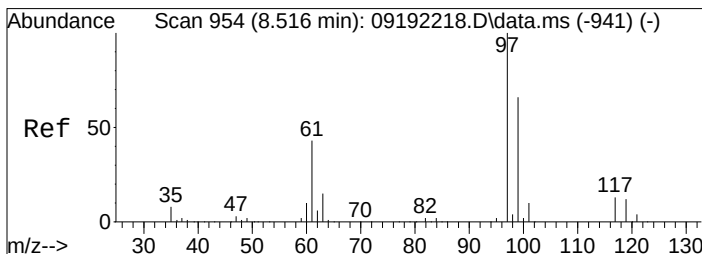
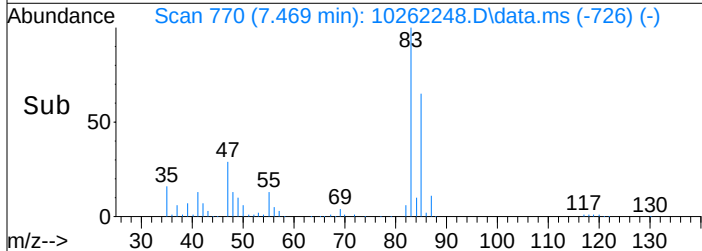
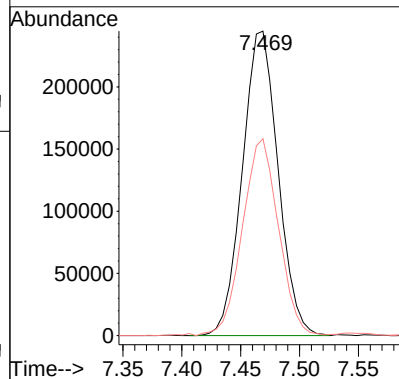
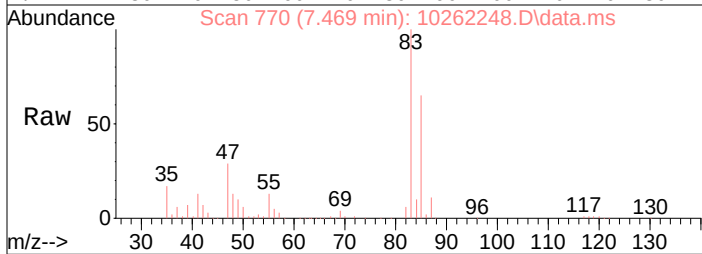
Tgt Ion: 57 Resp: 953643
 Ion Ratio Lower Upper
 57 100
 56 59.1 44.6 67.0
 86 12.6 11.3 16.9





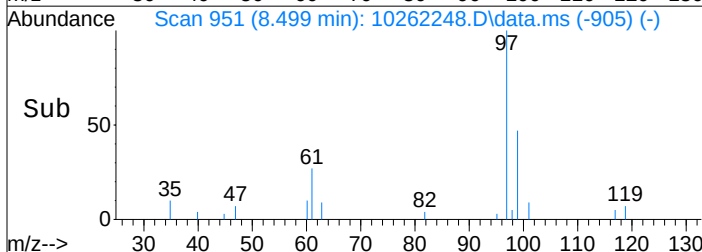
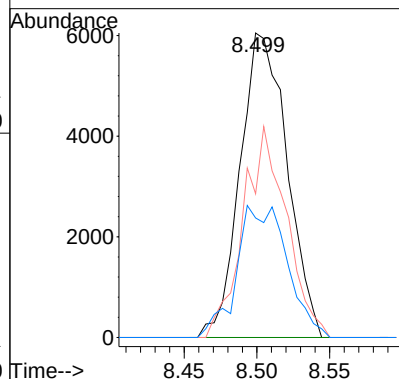
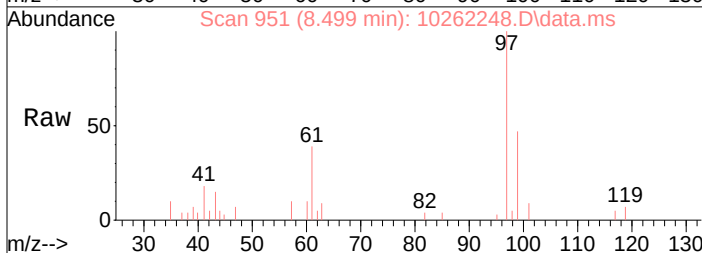
#32
Chloroform
Concen: 24.85 ng
RT: 7.47 min Scan# 770
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

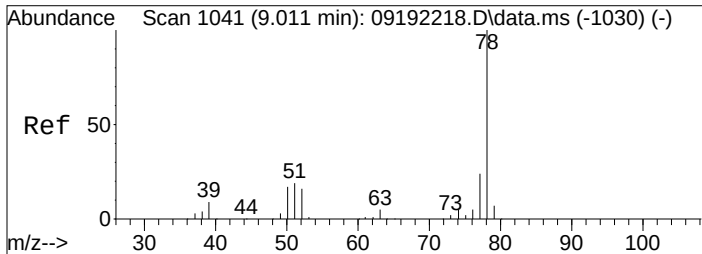
Tgt Ion: 83 Resp: 516343
Ion Ratio Lower Upper
83 100
85 65.5 44.9 84.9



#38
1,1,1-Trichloroethane
Concen: 0.65 ng
RT: 8.50 min Scan# 951
Delta R.T. 0.012 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

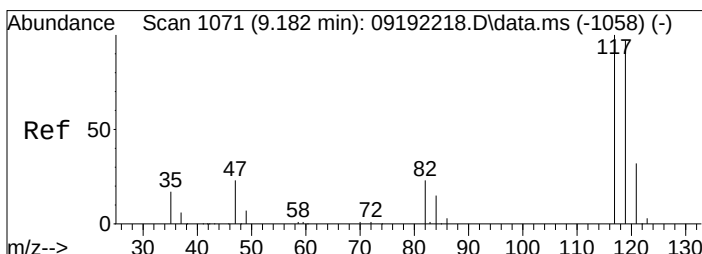
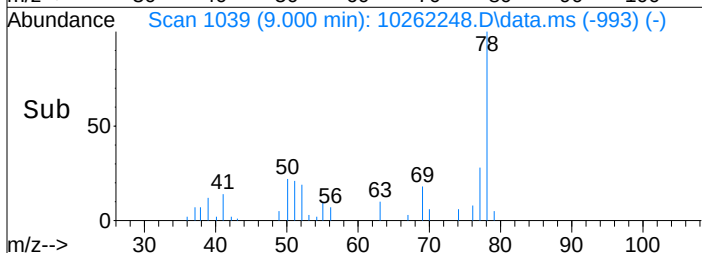
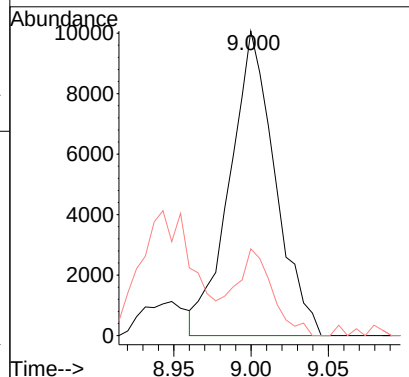
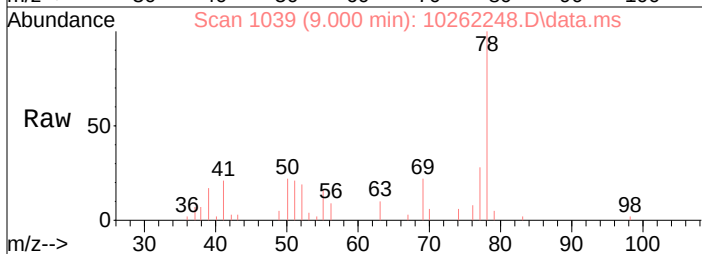
Tgt Ion: 97 Resp: 13600
Ion Ratio Lower Upper
97 100
99 63.7 45.7 85.7
61 46.4 22.8 62.8





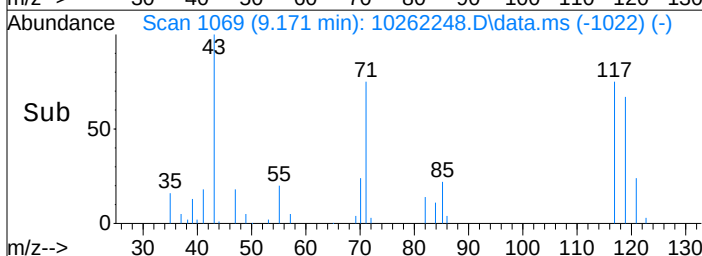
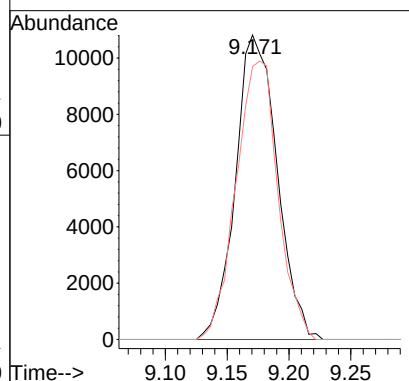
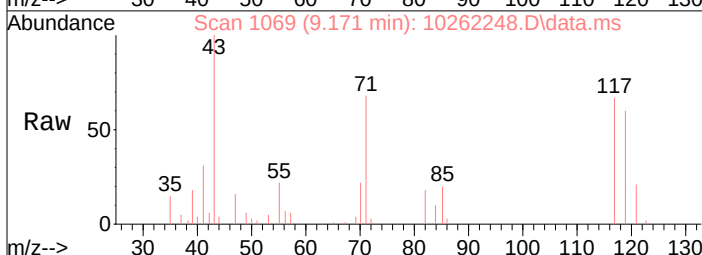
#41
Benzene
Concen: 0.51 ng
RT: 9.00 min Scan# 1039
Delta R.T. 0.012 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

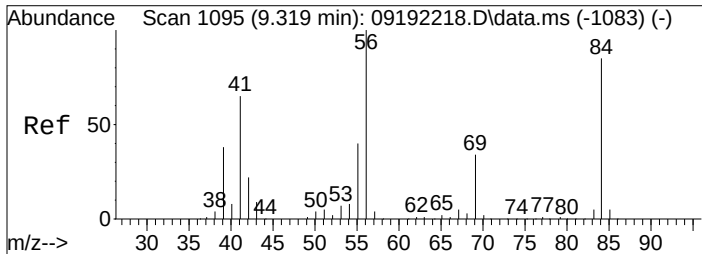
Tgt Ion	Ratio	Resp	Lower	Upper
78	100	20550		
77	23.8		3.7	43.7



#42
Carbon Tetrachloride
Concen: 1.37 ng
RT: 9.17 min Scan# 1069
Delta R.T. 0.017 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

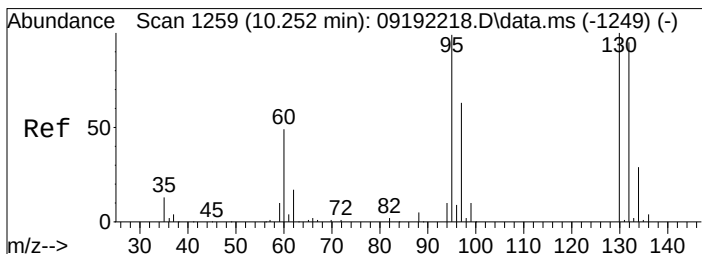
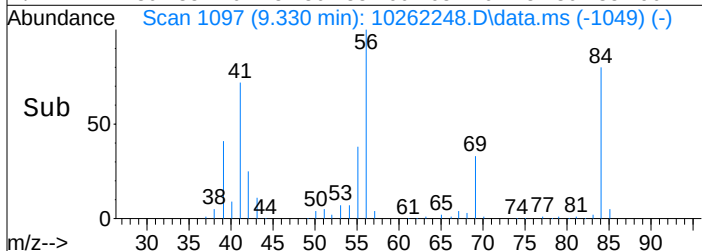
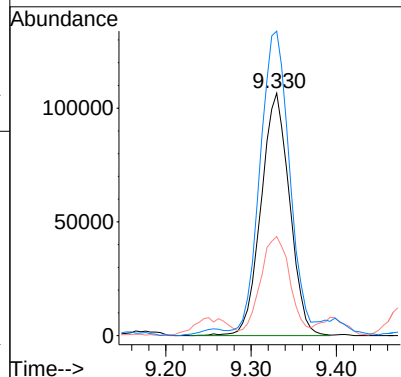
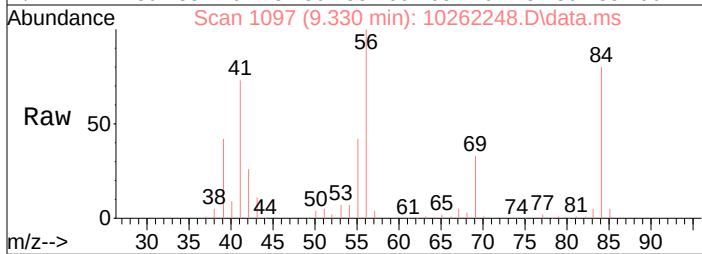
Tgt Ion	Ratio	Resp	Lower	Upper
117	100	25377		
119	92.3		76.6	116.6





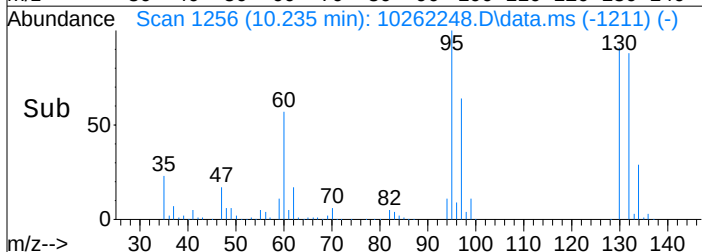
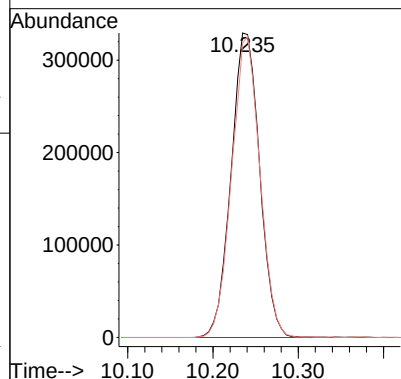
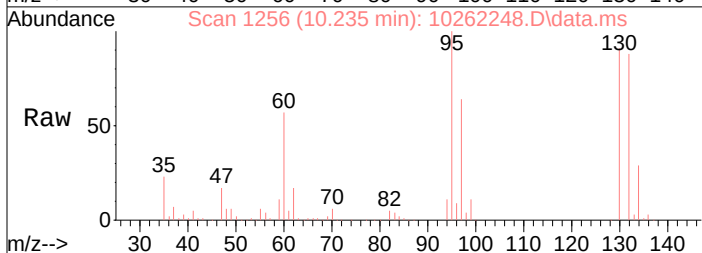
#43
Cyclohexane
Concen: 16.82 ng
RT: 9.33 min Scan# 1097
Delta R.T. 0.023 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

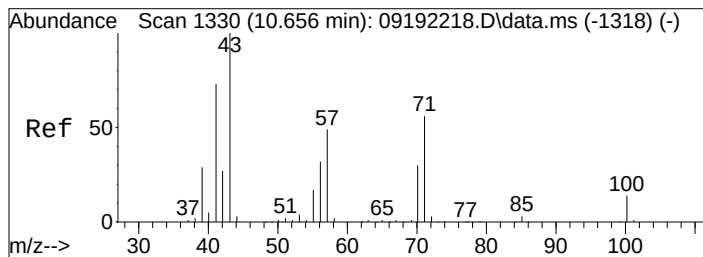
Tgt Ion: 84 Resp: 247525
Ion Ratio Lower Upper
84 100
69 38.6 20.7 60.7
56 135.7 98.3 138.3



#47
Trichloroethene
Concen: 63.89 ng
RT: 10.23 min Scan# 1256
Delta R.T. 0.006 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

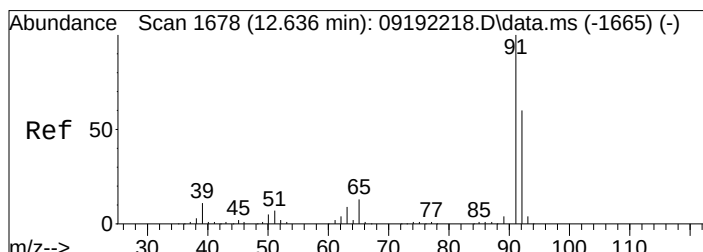
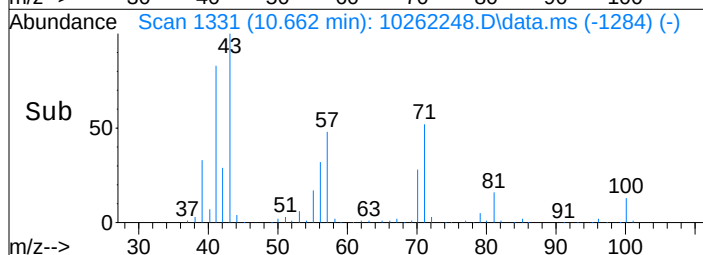
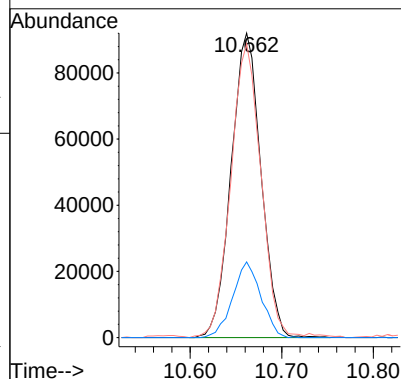
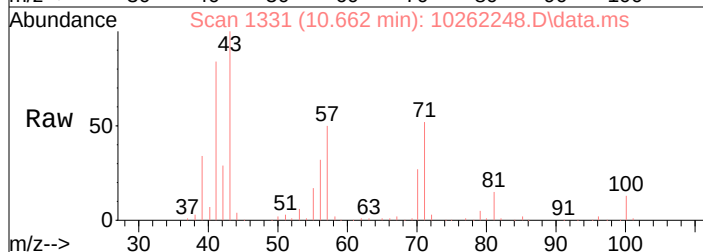
Tgt Ion: 130 Resp: 765723
Ion Ratio Lower Upper
130 100
132 97.5 75.3 115.3





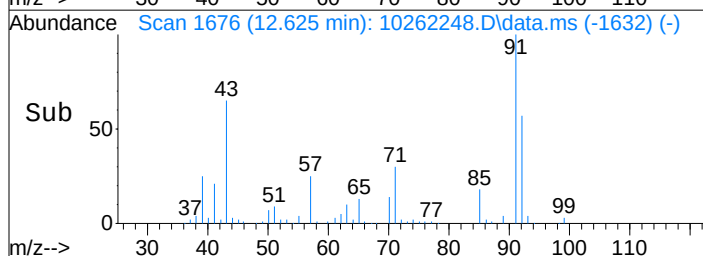
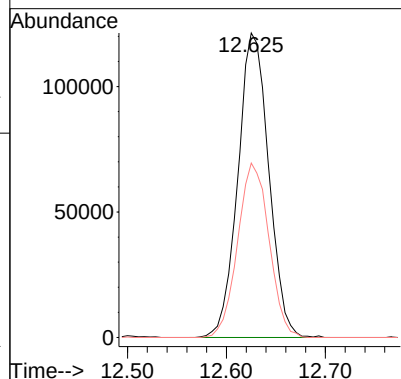
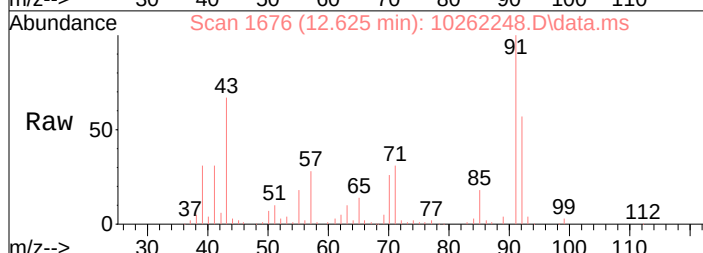
#51
n-Heptane
Concen: 21.55 ng
RT: 10.66 min Scan# 1331
Delta R.T. 0.017 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

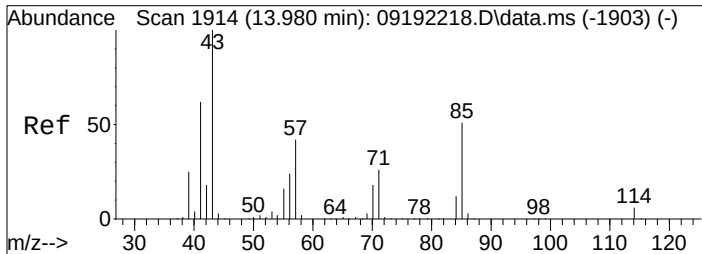
Tgt Ion	Ratio	Lower	Upper
71	100		
57	97.3	68.7	108.7
100	23.5	5.0	45.0



#58
Toluene
Concen: 4.59 ng
RT: 12.63 min Scan# 1676
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

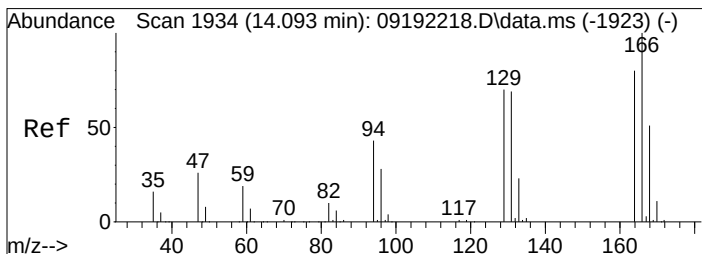
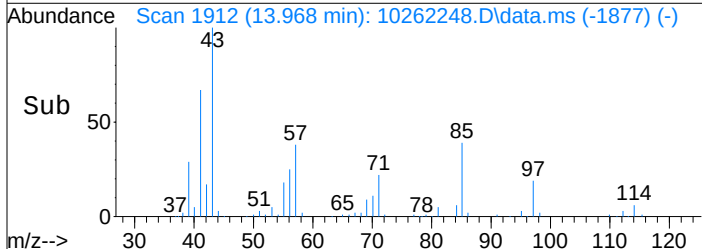
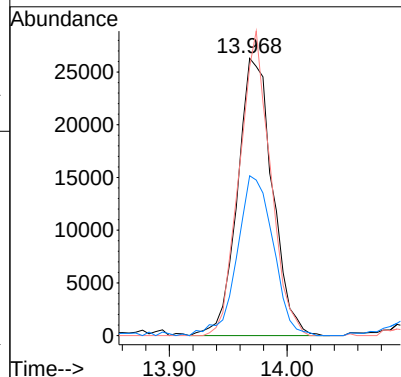
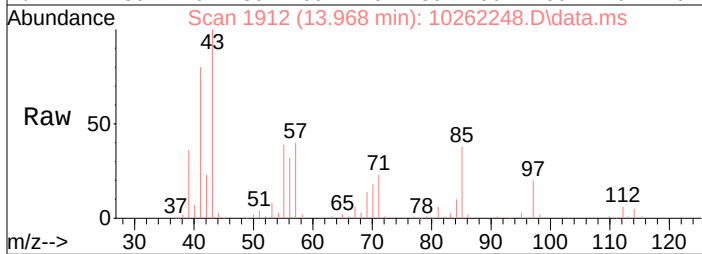
Tgt Ion	Ratio	Lower	Upper
91	100		
92	58.2	39.7	79.7





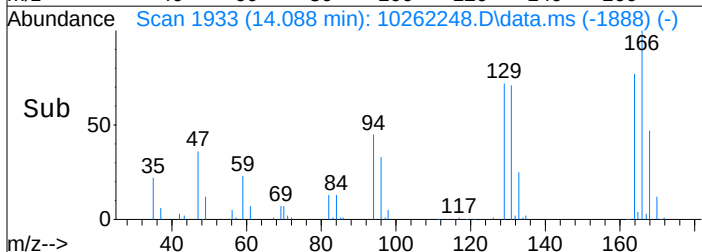
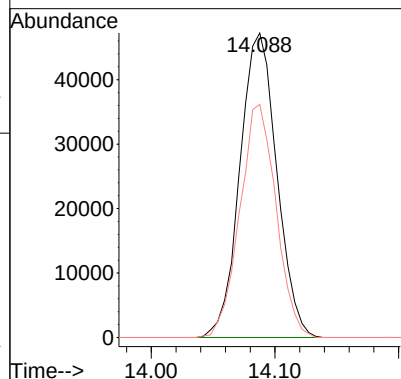
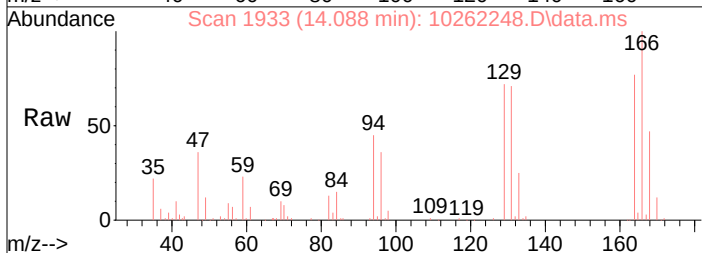
#63
n-Octane
Concen: 5.20 ng
RT: 13.97 min Scan# 1912
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

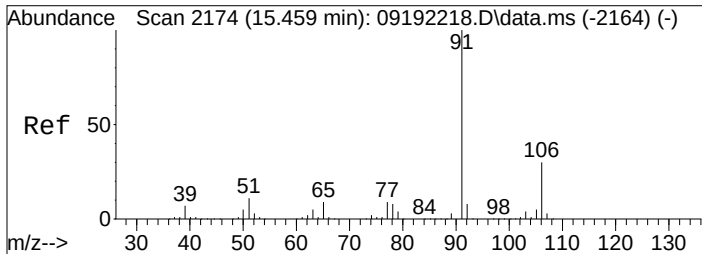
Tgt Ion:	57	Resp:	54397
Ion Ratio		Lower	Upper
57	100		
85	97.3	97.0	145.4
71	59.2	48.8	73.2



#64
Tetrachloroethene
Concen: 5.52 ng
RT: 14.09 min Scan# 1933
Delta R.T. 0.006 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

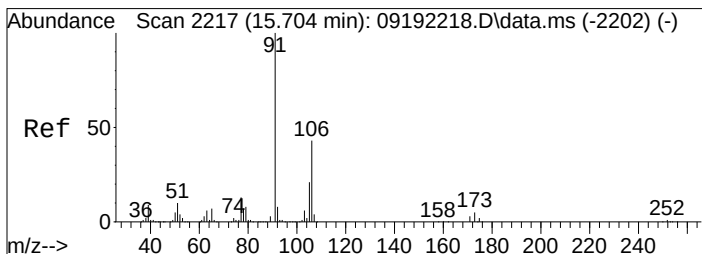
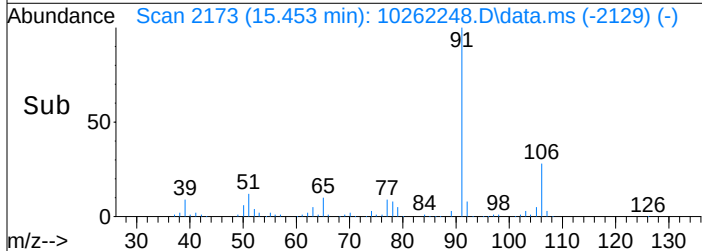
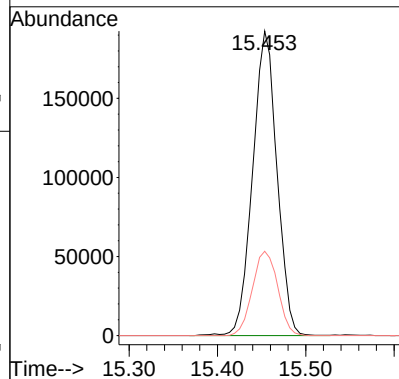
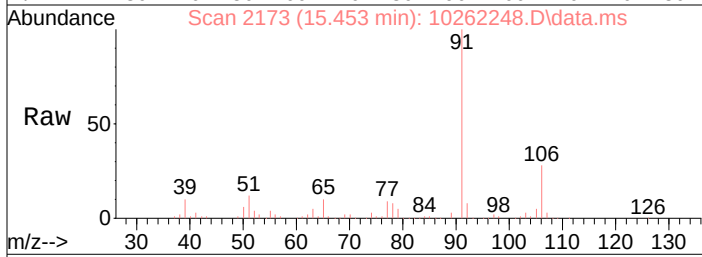
Tgt Ion:	166	Resp:	98007
Ion Ratio		Lower	Upper
166	100		
164	75.3	59.7	99.7





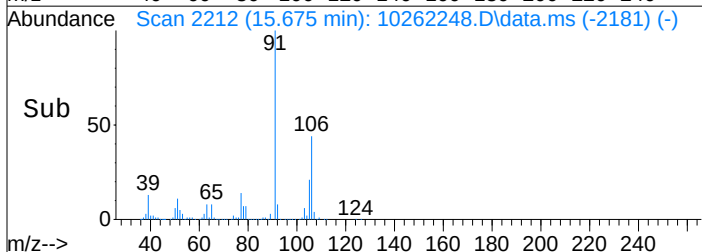
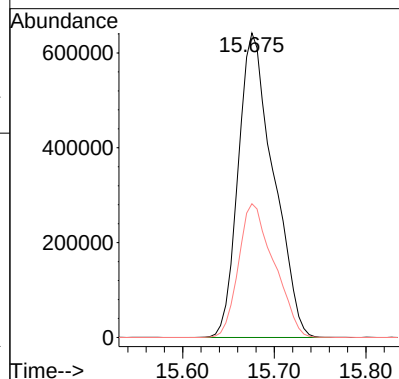
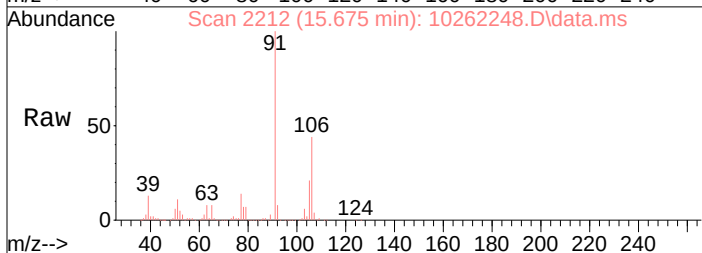
#66
Ethylbenzene
Concen: 5.54 ng
RT: 15.45 min Scan# 2173
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

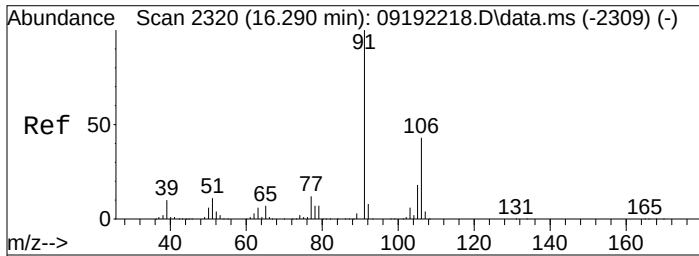
Tgt Ion	91	106	Resp	367881	Lower	Upper
Ion Ratio	100	28.8				
		9.5				49.5



#67
m- & p-Xylenes
Concen: 31.07 ng
RT: 15.68 min Scan# 2212
Delta R.T. -0.023 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

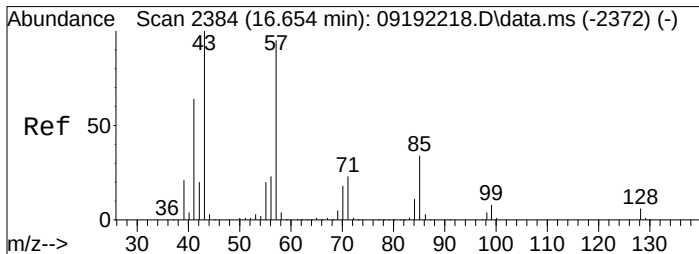
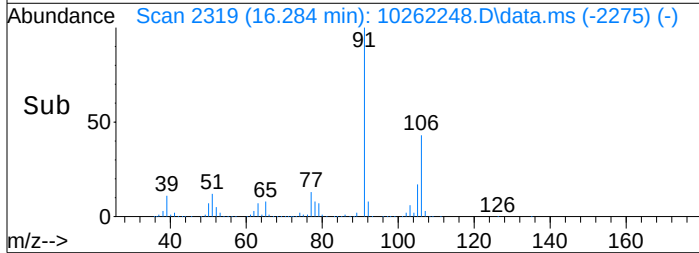
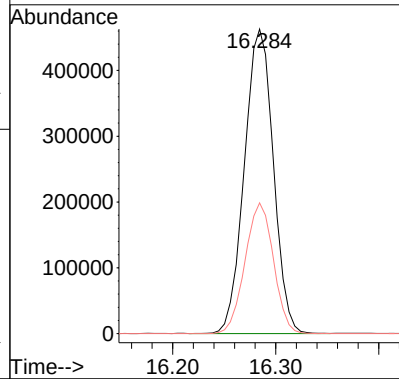
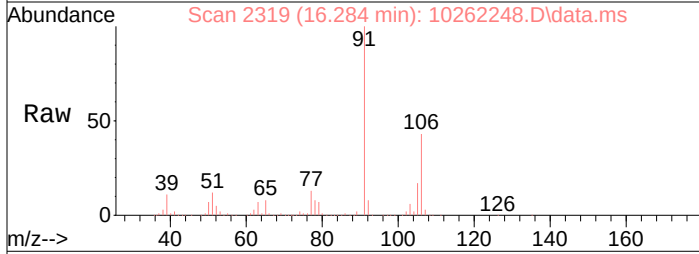
Tgt Ion	91	106	Resp	1711894	Lower	Upper
Ion Ratio	100	44.5				
		23.4				63.4





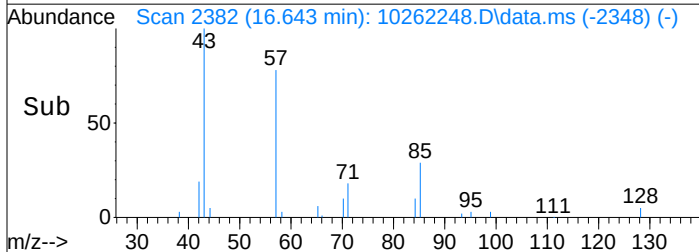
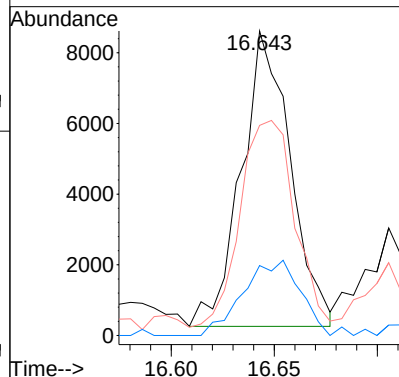
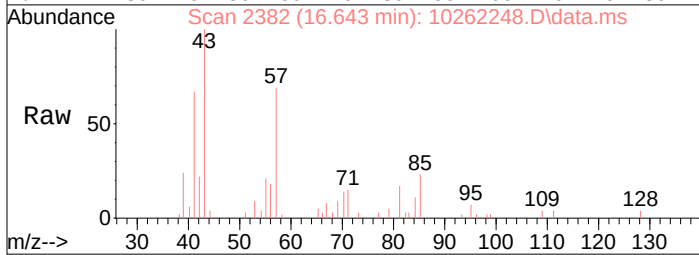
#70
o-Xylene
Concen: 16.60 ng
RT: 16.28 min Scan# 2319
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

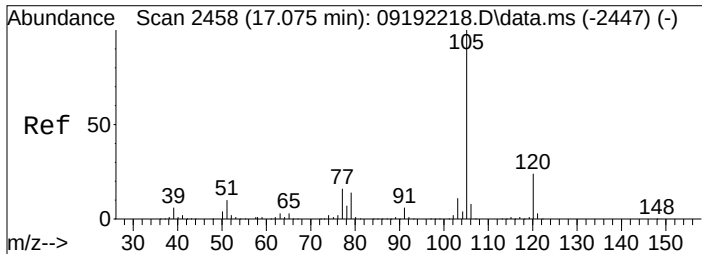
Tgt Ion: 91 Resp: 905005
Ion Ratio Lower Upper
91 100
106 42.1 23.2 63.2



#71
n-Nonane
Concen: 0.57 ng
RT: 16.64 min Scan# 2382
Delta R.T. -0.006 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

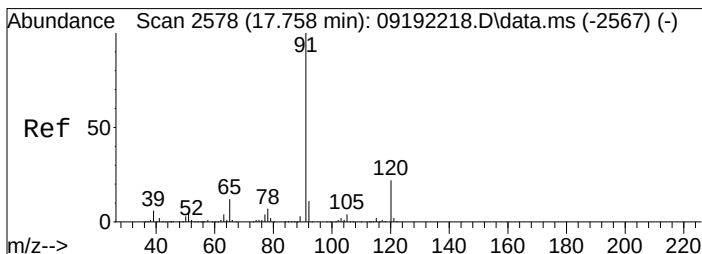
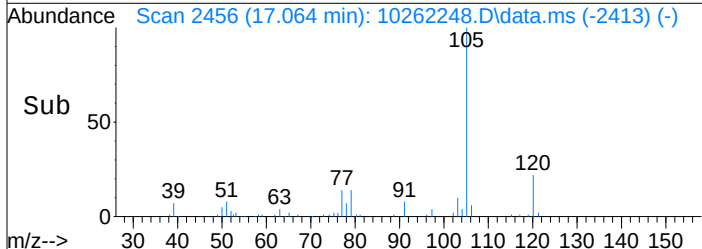
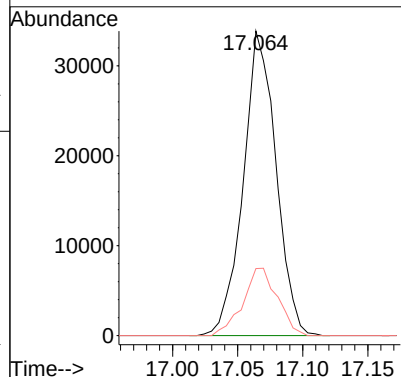
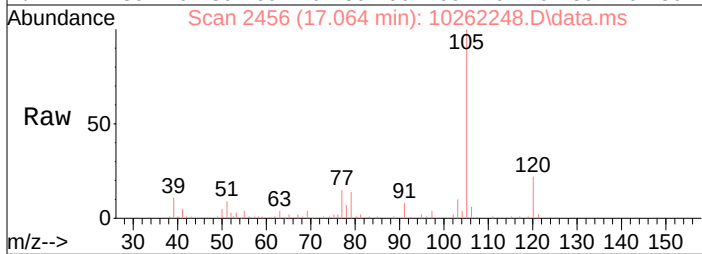
Tgt Ion: 43 Resp: 13841
Ion Ratio Lower Upper
43 100
57 79.3 75.4 115.4
85 30.1 13.7 53.7





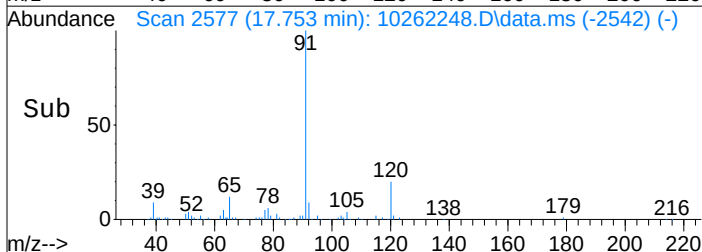
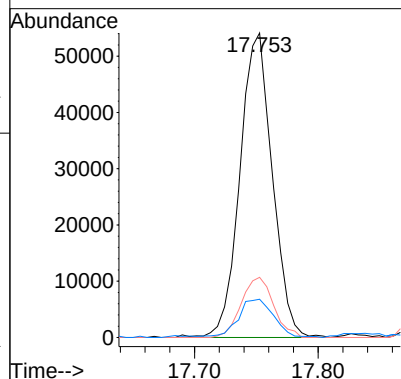
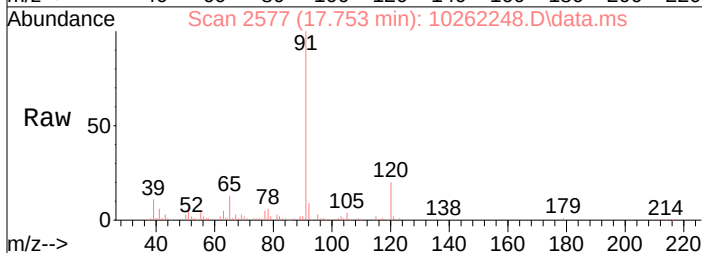
#74
Cumene
Concen: 0.88 ng
RT: 17.06 min Scan# 2456
Delta R.T. -0.006 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

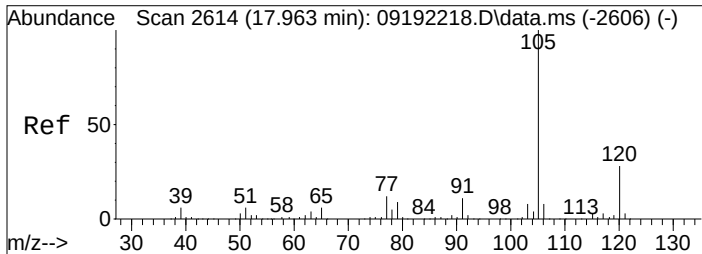
Tgt Ion	105	Resp	59230
Ion Ratio	100	Lower	Upper
105	100		
120	23.3	4.1	44.1



#76
n-Propylbenzene
Concen: 1.24 ng
RT: 17.75 min Scan# 2577
Delta R.T. 0.000 min
Lab File: 10262248.D
Acq: 27 Oct 2022 10:56

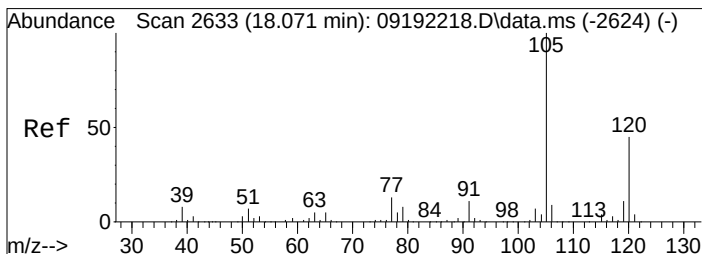
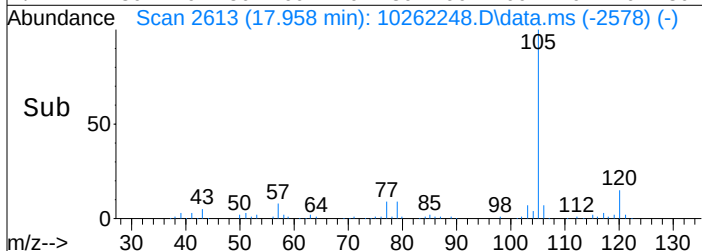
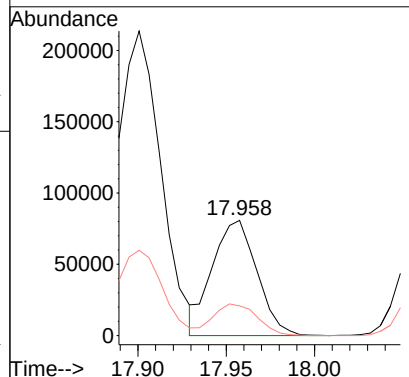
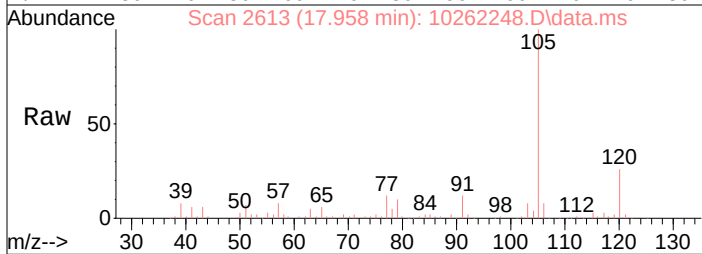
Tgt Ion	91	Resp	98520
Ion Ratio <td>100</td> <td>Lower</td> <td>Upper</td>	100	Lower	Upper
91	100		
120	19.7	2.1	42.1
65	13.9	0.0	31.9





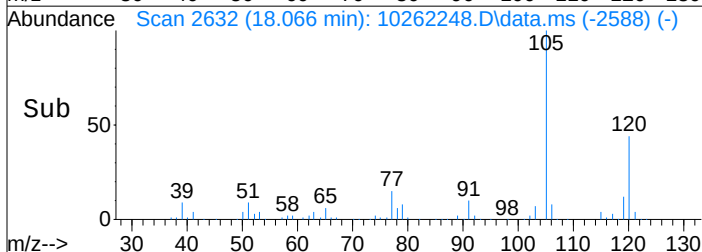
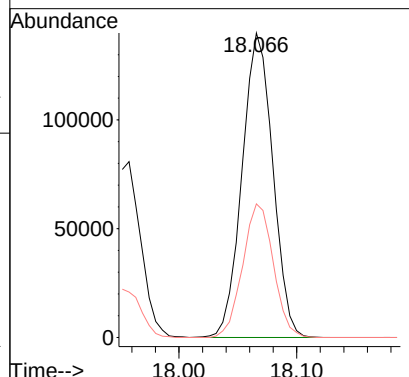
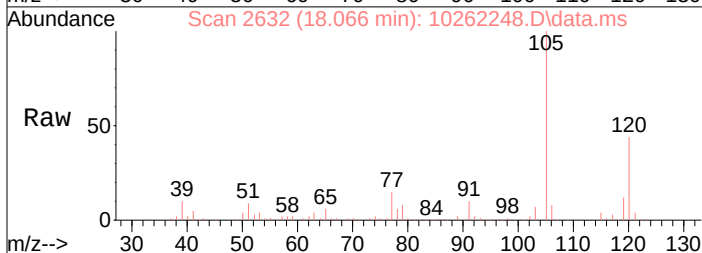
#78
 4-Ethyltoluene
 Concen: 2.24 ng
 RT: 17.96 min Scan# 2613
 Delta R.T. 0.000 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

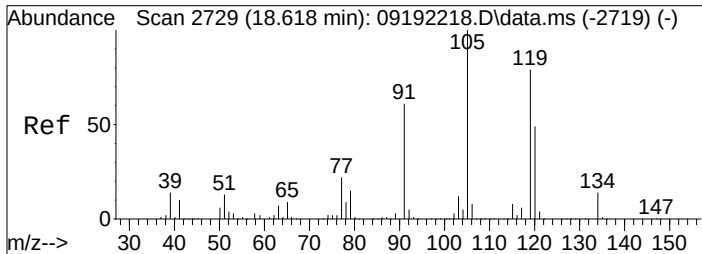
Tgt Ion	105	120	Resp	142167
Ion Ratio	100	27.7	Lower	Upper



#79
 1,3,5-Trimethylbenzene
 Concen: 4.36 ng
 RT: 18.07 min Scan# 2632
 Delta R.T. 0.000 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

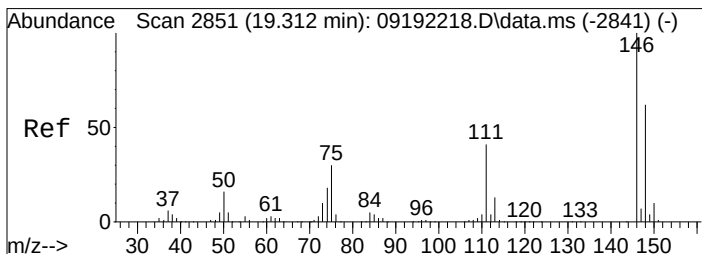
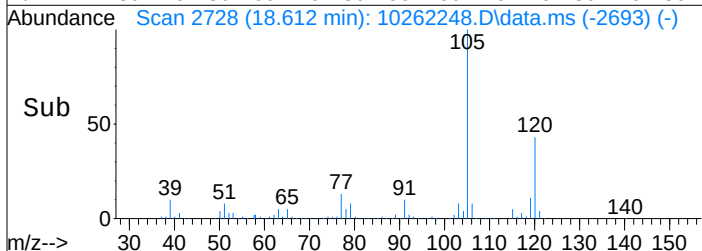
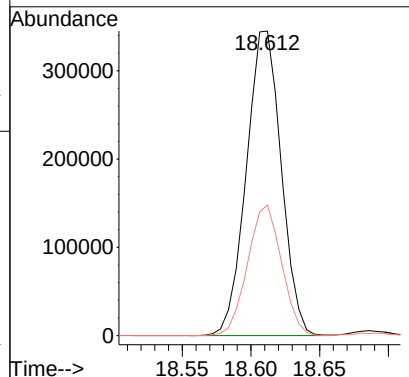
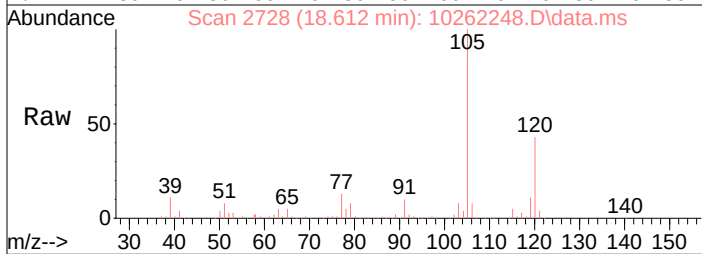
Tgt Ion	105	120	Resp	254164
Ion Ratio	100	43.8	Lower	Upper





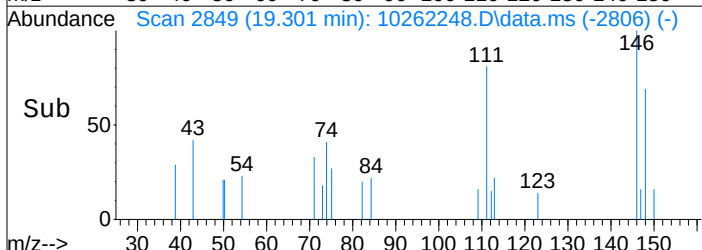
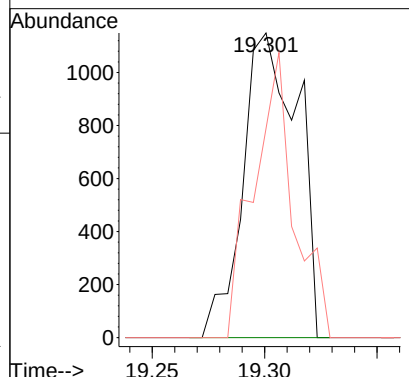
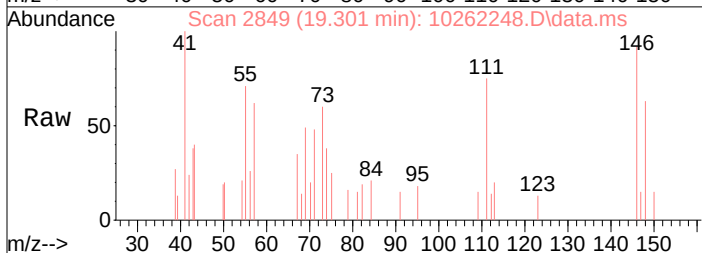
#82
 1,2,4-Trimethylbenzene
 Concen: 10.56 ng
 RT: 18.61 min Scan# 2728
 Delta R.T. 0.000 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

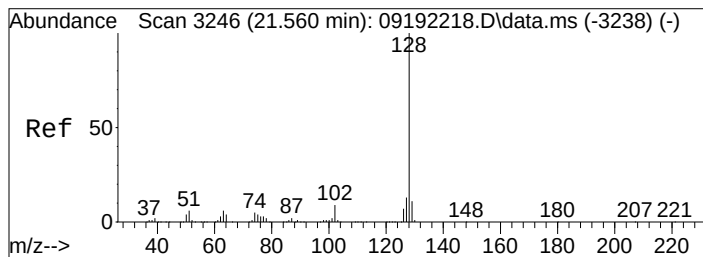
Tgt Ion:	105	Resp:	610081
Ion Ratio	Lower	Upper	
105	100		
120	41.7	28.6	68.6



#90
 1,2-Dichlorobenzene
 Concen: 0.06 ng
 RT: 19.30 min Scan# 2849
 Delta R.T. -0.006 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

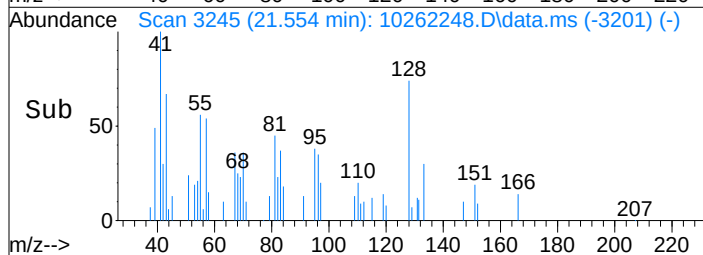
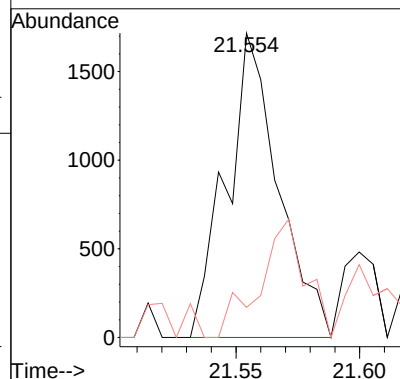
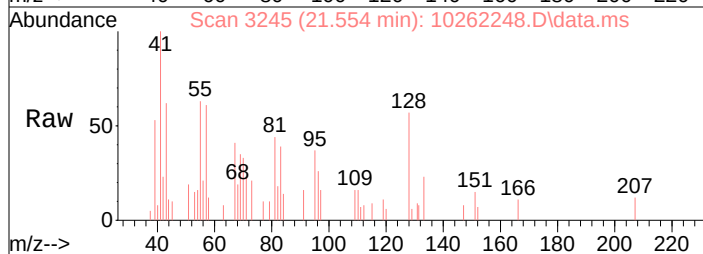
Tgt Ion:	146	Resp:	1954
Ion Ratio	Lower	Upper	
146	100		
148	68.9	41.9	81.9





#95
 Naphthalene
 Concen: 0.05 ng
 RT: 21.55 min Scan# 3245
 Delta R.T. 0.000 min
 Lab File: 10262248.D
 Acq: 27 Oct 2022 10:56

Tgt Ion:128 Resp: 2508
 Ion Ratio Lower Upper
 128 100
 129 34.1 0.0 30.9#



Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262248.D
 Acq On : 27 Oct 2022 10:56
 Operator : TZ
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209
 ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

Signal : TIC: 10262248.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.554	75	82	87	rBV	203921	243375	1.42%	0.132%
2	3.713	102	110	130	rVV2	373187	737931	4.29%	0.400%
3	3.878	133	139	146	rVV2	43889	68048	0.40%	0.037%
4	3.958	146	153	162	rVV	3061725	4908560	28.55%	2.658%
5	4.037	162	167	171	rVV	58029	89140	0.52%	0.048%
6	4.083	171	175	182	rVV	44774	66069	0.38%	0.036%
7	4.168	185	190	198	rVB2	38853	52909	0.31%	0.029%
8	4.401	224	231	241	rBV	11077	24654	0.14%	0.013%
9	4.527	246	253	261	rBV	39804	80138	0.47%	0.043%
10	4.646	267	274	282	rVB3	7579	16373	0.10%	0.009%
11	4.783	282	298	309	rBV	7310505	17193989	100.00%	9.312%
12	4.874	309	314	322	rVV3	37229	85155	0.50%	0.046%
13	4.993	322	335	343	rVV2	112298	255118	1.48%	0.138%
14	5.096	343	353	359	rVV	356258	702693	4.09%	0.381%
15	5.181	359	368	376	rVV	6251249	11441475	66.54%	6.197%
16	5.301	378	389	398	rVV	1025330	1895105	11.02%	1.026%
17	5.380	398	403	407	rVV2	30916	61777	0.36%	0.033%
18	5.443	407	414	421	rVV	397916	747183	4.35%	0.405%
19	5.534	421	430	447	rVB	2139099	3902654	22.70%	2.114%
20	5.710	451	461	473	rBV2	341465	683576	3.98%	0.370%
21	5.858	473	487	499	rBV2	606060	1266449	7.37%	0.686%
22	6.006	509	513	521	rVB	6880	14382	0.08%	0.008%
23	6.245	543	555	561	rBV2	141302	341017	1.98%	0.185%
24	6.302	561	565	567	rVV2	32108	49458	0.29%	0.027%
25	6.342	567	572	577	rVB2	56918	106166	0.62%	0.057%
26	6.399	577	582	592	rVB3	38911	77756	0.45%	0.042%
27	6.524	592	604	612	rBV3	1523526	4242866	24.68%	2.298%
28	6.615	612	620	629	rVB	4063484	8565872	49.82%	4.639%
29	6.780	643	649	657	rBV	29877	61388	0.36%	0.033%
30	6.980	660	684	696	rVV	2276289	5071809	29.50%	2.747%
31	7.093	696	704	712	rVV2	250558	581188	3.38%	0.315%
32	7.184	712	720	739	rVV	1293424	2691520	15.65%	1.458%
33	7.338	739	747	753	rVV	365265	759483	4.42%	0.411%
34	7.429	753	763	777	rVV2	2168405	6280499	36.53%	3.401%
35	7.549	778	784	789	rVV	296124	608503	3.54%	0.330%
36	7.611	789	795	804	rVB	423291	886984	5.16%	0.480%
37	7.725	804	815	823	rBV	323284	714565	4.16%	0.387%
38	7.822	823	832	842	rVB2	158973	347604	2.02%	0.188%
39	8.004	854	864	873	rBV	361828	780017	4.54%	0.422%
40	8.101	873	881	898	rVV	332836	863221	5.02%	0.468%

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262248.D
 Acq On : 27 Oct 2022 10:56
 Operator : TZ
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209
 ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

41	8.260	898	909	915	rVV	1413395	3227474	18.77%	1.748%
42	8.328	915	921	934	rVV	694539	1615725	9.40%	0.875%
43	8.533	938	957	966	rBV7	32187	133731	0.78%	0.072%
44	8.647	971	977	984	rBV3	6985	14752	0.09%	0.008%
45	8.767	992	998	1004	rBV5	12946	27637	0.16%	0.015%
46	8.840	1004	1011	1016	rVV6	13794	31756	0.18%	0.017%
47	8.943	1016	1029	1036	rVV3	270478	650982	3.79%	0.353%
48	9.000	1037	1039	1046	rVV2	33353	50758	0.30%	0.027%
49	9.068	1046	1051	1059	rVV4	29521	67317	0.39%	0.036%
50	9.165	1060	1068	1077	rVV4	88588	233072	1.36%	0.126%
51	9.256	1077	1084	1088	rVV4	42521	108317	0.63%	0.059%
52	9.330	1088	1097	1103	rVV	642315	1550611	9.02%	0.840%
53	9.393	1103	1108	1117	rVV	646099	1411856	8.21%	0.765%
54	9.529	1117	1132	1140	rVV	845558	2159326	12.56%	1.169%
55	9.620	1140	1148	1160	rVV3	770188	1926330	11.20%	1.043%
56	9.768	1163	1174	1178	rVV4	172610	462131	2.69%	0.250%
57	9.831	1178	1185	1199	rVV	1098932	2690925	15.65%	1.457%
58	9.950	1201	1206	1214	rVB3	25157	54253	0.32%	0.029%
59	10.110	1222	1234	1242	rBV	400092	980468	5.70%	0.531%
60	10.235	1242	1256	1263	rVV2	2220706	6166516	35.86%	3.340%
61	10.332	1263	1273	1290	rVB	4104569	11369815	66.13%	6.158%
62	10.474	1290	1298	1307	rVB4	36510	91709	0.53%	0.050%
63	10.576	1307	1316	1321	rBV5	38708	91408	0.53%	0.050%
64	10.662	1321	1331	1338	rVV2	902178	2125689	12.36%	1.151%
65	10.724	1338	1342	1353	rVV3	206145	583992	3.40%	0.316%
66	10.815	1353	1358	1365	rVB4	33467	70712	0.41%	0.038%
67	10.901	1365	1373	1382	rBV3	39437	95902	0.56%	0.052%
68	11.003	1382	1391	1399	rBV4	68854	175020	1.02%	0.095%
69	11.094	1399	1407	1414	rBV3	62423	170038	0.99%	0.092%
70	11.157	1414	1418	1428	rVB5	34705	79046	0.46%	0.043%
71	11.248	1428	1434	1445	rVB8	7766	22141	0.13%	0.012%
72	11.362	1447	1454	1459	rBV5	7625	20450	0.12%	0.011%
73	11.504	1461	1479	1486	rBV	1209540	3443249	20.03%	1.865%
74	11.572	1486	1491	1499	rVB2	132834	298752	1.74%	0.162%
75	11.640	1499	1503	1510	rVB7	16958	39113	0.23%	0.021%
76	11.720	1510	1517	1522	rVB5	10977	24001	0.14%	0.013%
77	11.806	1522	1532	1538	rBV2	324637	765445	4.45%	0.415%
78	11.885	1538	1546	1561	rVB3	553202	1624698	9.45%	0.880%
79	12.147	1581	1592	1605	rBV5	229266	623370	3.63%	0.338%
80	12.261	1605	1612	1621	rVB7	23931	68442	0.40%	0.037%
81	12.392	1621	1635	1640	rBV2	169879	437579	2.54%	0.237%
82	12.477	1640	1650	1668	rVB4	1706926	5365063	31.20%	2.906%
83	12.642	1668	1679	1690	rVB3	984378	2660354	15.47%	1.441%
84	12.779	1694	1703	1711	rBV	392559	925036	5.38%	0.501%
85	12.841	1711	1714	1720	rVB3	51686	94866	0.55%	0.051%

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262248.D
 Acq On : 27 Oct 2022 10:56
 Operator : TZ
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209
 ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

86	12.932	1720	1730	1735	rBV	330355	776908	4.52%	0.421%
87	12.984	1735	1739	1749	rVB3	218909	487070	2.83%	0.264%
88	13.086	1749	1757	1765	rBV3	97461	232966	1.35%	0.126%
89	13.188	1765	1775	1780	rBV	325196	751014	4.37%	0.407%
90	13.234	1780	1783	1797	rVB5	114212	319057	1.86%	0.173%
91	13.371	1797	1807	1813	rBV2	372734	834386	4.85%	0.452%
92	13.427	1813	1817	1826	rVB2	139588	282775	1.64%	0.153%
93	13.536	1826	1836	1846	rBV	422615	969063	5.64%	0.525%
94	13.627	1846	1852	1854	rBV2	47770	77591	0.45%	0.042%
95	13.667	1855	1859	1865	rVB3	81989	151827	0.88%	0.082%
96	13.735	1865	1871	1875	rBV4	59221	116988	0.68%	0.063%
97	13.780	1875	1879	1884	rBV4	49163	80365	0.47%	0.044%
98	13.826	1884	1887	1892	rVB3	42522	69047	0.40%	0.037%
99	13.871	1893	1895	1901	rVB3	30454	44422	0.26%	0.024%
100	13.980	1901	1914	1923	rVB3	397612	941527	5.48%	0.510%
101	14.088	1923	1933	1941	rBV3	322209	717576	4.17%	0.389%
102	14.184	1941	1950	1955	rBV2	177484	436858	2.54%	0.237%
103	14.287	1964	1968	1973	rVB4	12959	21921	0.13%	0.012%
104	14.378	1973	1984	1996	rVB9	54632	167833	0.98%	0.091%
105	14.497	1996	2005	2008	rBV3	84501	182662	1.06%	0.099%
106	14.566	2008	2017	2027	rVV	6581609	14563726	84.70%	7.888%
107	14.674	2027	2036	2045	rVB6	87834	252766	1.47%	0.137%
108	14.765	2045	2052	2059	rBV7	31758	80304	0.47%	0.043%
109	14.890	2059	2074	2086	rBV	888462	2052145	11.94%	1.111%
110	15.004	2086	2094	2099	rVV2	220207	504137	2.93%	0.273%
111	15.044	2099	2101	2112	rVV4	88295	171594	1.00%	0.093%
112	15.152	2112	2120	2127	rVV3	140076	311516	1.81%	0.169%
113	15.237	2127	2135	2143	rVV7	59211	194049	1.13%	0.105%
114	15.300	2143	2146	2154	rVB4	41860	80391	0.47%	0.044%
115	15.397	2154	2163	2166	rBV6	52578	127791	0.74%	0.069%
116	15.453	2166	2173	2182	rVB	502884	1022486	5.95%	0.554%
117	15.562	2182	2192	2197	rBV3	100251	232757	1.35%	0.126%
118	15.613	2197	2201	2204	rVV2	62162	114788	0.67%	0.062%
119	15.675	2204	2212	2224	rVV	1927007	5166144	30.05%	2.798%
120	15.784	2224	2231	2239	rVB5	81940	217427	1.26%	0.118%
121	15.869	2239	2246	2252	rBV6	30215	71363	0.42%	0.039%
122	15.977	2252	2265	2273	rVB7	77582	263004	1.53%	0.142%
123	16.068	2273	2281	2290	rBV7	17198	68031	0.40%	0.037%
124	16.159	2290	2297	2308	rVV7	96522	331536	1.93%	0.180%
125	16.284	2308	2319	2327	rVV	1333510	2722125	15.83%	1.474%
126	16.375	2327	2335	2343	rVV4	84796	223572	1.30%	0.121%
127	16.455	2344	2349	2354	rVV3	59148	114153	0.66%	0.062%
128	16.518	2354	2360	2365	rVB6	25550	48871	0.28%	0.026%
129	16.643	2375	2382	2388	rVB3	29729	68359	0.40%	0.037%

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262248.D
 Acq On : 27 Oct 2022 10:56
 Operator : TZ
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209
 ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

130	16.706	2388	2393	2399	rVB5	20015	39295	0.23%	0.021%
131	16.802	2402	2410	2413	rBV5	24525	57965	0.34%	0.031%
132	16.865	2413	2421	2429	rVV	700888	1345255	7.82%	0.729%
133	16.939	2429	2434	2442	rVB5	56839	140457	0.82%	0.076%
134	17.013	2442	2447	2450	rBV5	13840	23721	0.14%	0.013%
135	17.064	2450	2456	2462	rBV	75515	141907	0.83%	0.077%
136	17.252	2473	2489	2497	rBV3	68774	204241	1.19%	0.111%
137	17.309	2497	2499	2506	rVB5	15109	21028	0.12%	0.011%
138	17.406	2510	2516	2519	rBV6	13216	24897	0.14%	0.013%
139	17.468	2519	2527	2539	rVV8	71471	218065	1.27%	0.118%
140	17.690	2559	2566	2571	rBV4	41151	92503	0.54%	0.050%
141	17.753	2571	2577	2586	rVV	131309	270884	1.58%	0.147%
142	17.827	2586	2590	2595	rVV8	18955	40702	0.24%	0.022%
143	17.901	2595	2603	2608	rVV	585776	1087068	6.32%	0.589%
144	17.952	2608	2612	2620	rVV	234548	427294	2.49%	0.231%
145	18.066	2620	2632	2641	rVV	415906	800085	4.65%	0.433%
146	18.162	2641	2649	2655	rVV3	103959	208730	1.21%	0.113%
147	18.219	2655	2659	2664	rVB4	15652	25722	0.15%	0.014%
148	18.310	2666	2675	2688	rVB	397971	744762	4.33%	0.403%
149	18.441	2690	2698	2701	rBV5	31616	66643	0.39%	0.036%
150	18.481	2701	2705	2717	rVV2	103508	197356	1.15%	0.107%
151	18.606	2720	2727	2734	rVV	1015649	1825439	10.62%	0.989%
152	18.686	2734	2741	2750	rVB	1651271	3093919	17.99%	1.676%
153	18.811	2759	2763	2767	rVB4	22156	32208	0.19%	0.017%
154	18.908	2775	2780	2784	rBV7	9261	15830	0.09%	0.009%
155	18.953	2784	2788	2794	rVB6	15016	29834	0.17%	0.016%
156	19.045	2798	2804	2809	rBV2	25883	53723	0.31%	0.029%
157	19.107	2809	2815	2818	rVV3	43573	71584	0.42%	0.039%
158	19.158	2818	2824	2836	rVB	449963	792103	4.61%	0.429%
159	19.261	2837	2842	2845	rVB4	11728	17412	0.10%	0.009%
160	19.340	2848	2856	2861	rBV3	37172	68422	0.40%	0.037%
161	19.397	2861	2866	2873	rVB	47512	72298	0.42%	0.039%
162	19.494	2880	2883	2888	rVB4	19579	31970	0.19%	0.017%
163	19.579	2894	2898	2901	rVV2	47010	76527	0.45%	0.041%
164	19.625	2901	2906	2913	rVB3	109740	198918	1.16%	0.108%
165	19.716	2913	2922	2929	rVB2	167267	299999	1.74%	0.162%
166	19.807	2934	2938	2942	rBV7	18105	29091	0.17%	0.016%
167	19.853	2942	2946	2951	rVB6	13485	22895	0.13%	0.012%
168	19.915	2951	2957	2963	rBV3	72590	167814	0.98%	0.091%
169	19.995	2967	2971	2974	rVV4	18401	27623	0.16%	0.015%
170	20.040	2974	2979	2982	rVV2	74043	120519	0.70%	0.065%
171	20.075	2982	2985	2994	rVB	67266	96677	0.56%	0.052%
172	20.166	2994	3001	3006	rBV2	139656	224976	1.31%	0.122%
173	20.217	3006	3010	3018	rVB3	139367	251997	1.47%	0.136%

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262248.D
 Acq On : 27 Oct 2022 10:56
 Operator : TZ
 Sample : P2204669-001 (1000mL)
 Misc : S35-08172209
 ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

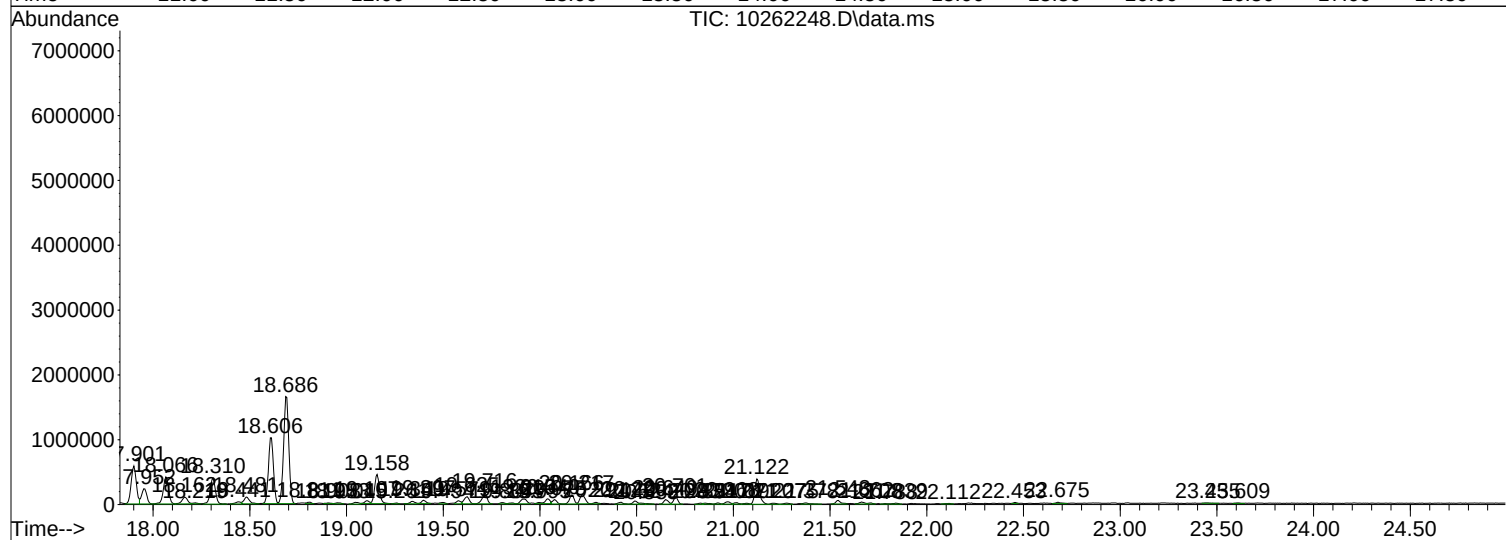
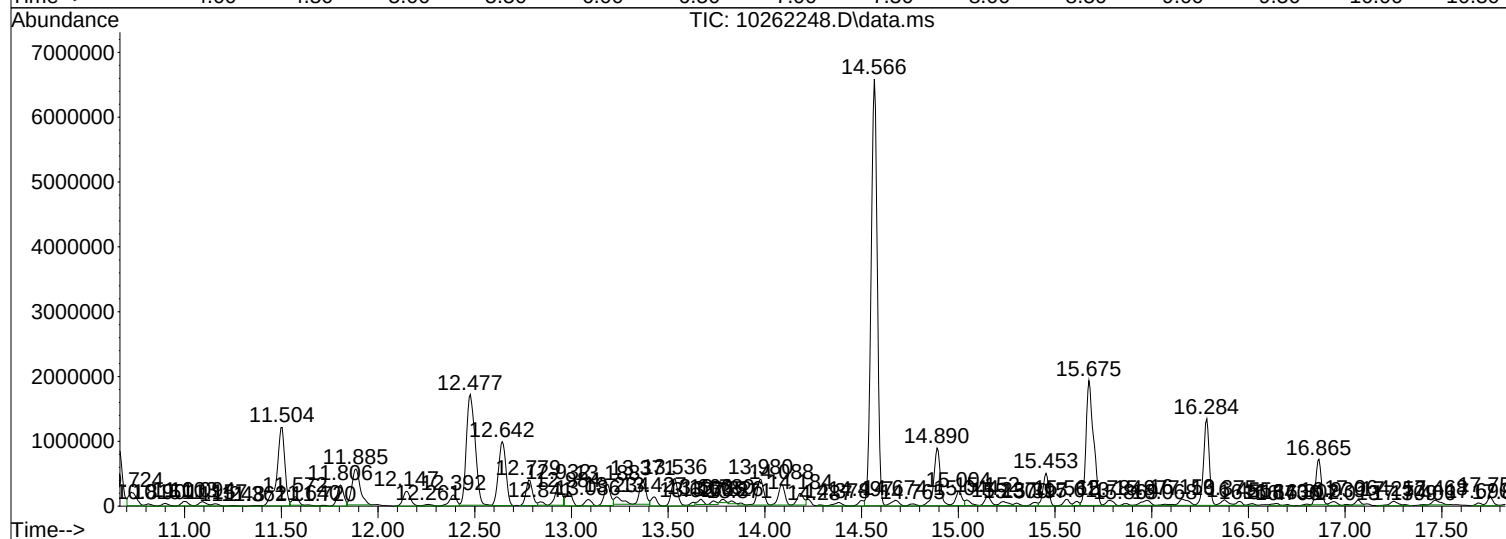
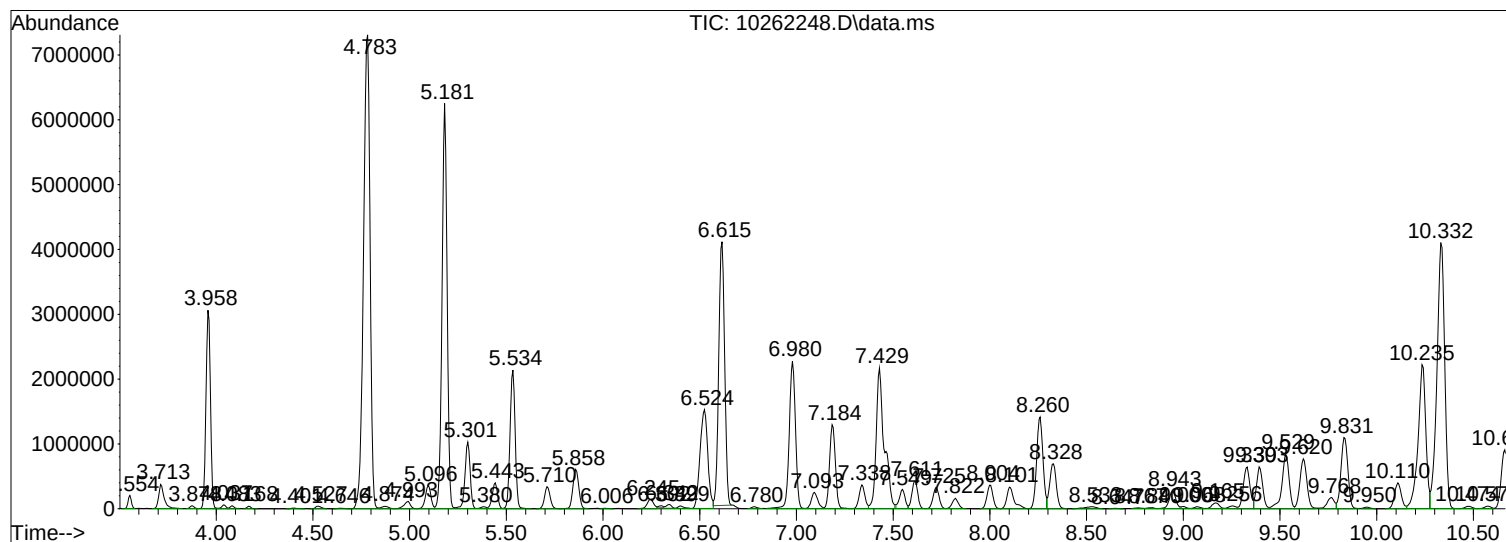
174	20.291	3018	3023	3027	rBV2	21735	31948	0.19%	0.017%
175	20.422	3040	3046	3052	rVB5	26546	47560	0.28%	0.026%
176	20.490	3052	3058	3062	rVV2	47771	76573	0.45%	0.041%
177	20.524	3062	3064	3068	rVV5	14775	22759	0.13%	0.012%
178	20.553	3068	3069	3076	rVV7	8249	13141	0.08%	0.007%
179	20.649	3080	3086	3091	rBV2	69912	118459	0.69%	0.064%
180	20.701	3091	3095	3102	rVV	103543	161237	0.94%	0.087%
181	20.832	3112	3118	3120	rBV5	17383	31535	0.18%	0.017%
182	20.854	3120	3122	3129	rVV5	15021	28789	0.17%	0.016%
183	20.917	3129	3133	3137	rVV5	17340	25549	0.15%	0.014%
184	20.968	3137	3142	3147	rVV4	35694	69818	0.41%	0.038%
185	21.019	3147	3151	3155	rVV6	22218	36890	0.21%	0.020%
186	21.071	3155	3160	3163	rVV6	12271	22976	0.13%	0.012%
187	21.122	3163	3169	3179	rVB2	389904	673776	3.92%	0.365%
188	21.207	3179	3184	3190	rBV6	15450	31194	0.18%	0.017%
189	21.275	3190	3196	3202	rVB7	16875	33112	0.19%	0.018%
190	21.378	3209	3214	3228	rVB7	19057	47123	0.27%	0.026%
191	21.543	3236	3243	3251	rBV4	55655	99828	0.58%	0.054%
192	21.662	3258	3264	3269	rBV7	28181	54771	0.32%	0.030%
193	21.708	3269	3272	3277	rVB7	13244	19477	0.11%	0.011%
194	21.788	3281	3286	3290	rBV7	6967	13042	0.08%	0.007%
195	21.839	3291	3295	3301	rVB6	14027	21153	0.12%	0.011%
196	22.112	3336	3343	3348	rBV10	7150	16634	0.10%	0.009%
197	22.453	3400	3403	3407	rBV4	14101	17864	0.10%	0.010%
198	22.675	3437	3442	3451	rBV7	19342	38662	0.22%	0.021%
199	23.455	3573	3579	3589	rBV9	5415	13738	0.08%	0.007%
200	23.609	3601	3606	3612	rBV7	6604	13023	0.08%	0.007%

Sum of corrected areas: 184642376

Data Path : I:\MS13\DATA\2022_10\26\
Data File : 10262248.D
Acq On : 27 Oct 2022 10:56
Operator : TZ
Sample : P2204669-001 (1000mL)
Misc : S35-08172209
ALS Vial : 2 Sample Multiplier: 1

Quant Method : I:\MS13\METHODS\R13091922.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS13\DATA\2022_10\26\
Data File : 10262248.D
Acq On : 27 Oct 2022 10:566
Operator : TZZ
Sample : P2204669-001 (1000mL)
Misc : S35-081722099
ALS Vial : 2 Sample Multiplier: 11

Quant Method : I:\MS13\METHODS\R13091922.MM
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

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

No Library Search Compounds Detected

TZ 10/27/22

Data File : I:\MS13\DATA\2022_10\26\10262249.D
 Acq On : 27 Oct 2022 11:33
 Sample : P2204669-002 (1000mL)
 Misc : S35-08172209

Vial: 3
 Operator: TZ
 Inst : MS13

Tz 10/27/22

Quant Time: Oct 27 12:07:59 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	122018	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.40	114	546271	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	141024	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	272807	14.257	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	114.08%	
57) Toluene-d8 (SS2)	12.50	98	638668	10.447	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	83.60%	
73) Bromofluorobenzene (SS3)	16.86	174	220104	10.118	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	80.96%	

Target Compounds

						Qvalue
2) Propene	3.41	42	15353	1.146	ng	# 72
3) Dichlorodifluoromethan...	3.48	85	43507	1.624	ng	99
4) Chloromethane	3.63	50	511	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.	d	
6) Vinyl Chloride	3.80	62	3191	0.194	ng	90
7) 1,3-Butadiene	3.88	54	358	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.41	45	56071	6.613	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	0.00	58	0	N.D.	d	
14) Trichlorofluoromethane	4.88	101	23025	0.948	ng	100
15) 2-Propanol (Isopropanol)	4.96	45	210678	7.425	ng	95
16) Acrylonitrile	0.00	53	0	N.D.	d	
17) 1,1-Dichloroethene	5.38	96	8398	0.823	ng	# 75
18) 2-Methyl-2-Propanol (t...	5.45	59	752	N.D.		
19) Methylene Chloride	5.47	84	977	0.089	ng	# 62
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d	
21) Trichlorotrifluoroethane	5.71	151	86641	7.968	ng	91
22) Carbon Disulfide	5.74	76	8290	0.198	ng	# 1
23) trans-1,2-Dichloroethene	6.26	61	22038	1.368	ng	84
24) 1,1-Dichloroethane	6.43	63	8032	0.428	ng	95
25) Methyl tert-Butyl Ether	6.52	73	634	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.	d	
27) 2-Butanone (MEK)	6.78	72	3386	0.524	ng	# 78
28) cis-1,2-Dichloroethene	7.18	61	685430	45.705	ng	89
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.39	61	123966	30.840	ng	100
31) n-Hexane	7.43	57	794176	51.116	ng	95
32) Chloroform	7.47	83	438016	21.329	ng	100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.21	62	737	N.D.		
38) 1,1,1-Trichloroethane	8.50	97	11553	0.543	ng	94
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.99	56	3187	No Calib	#	
41) Benzene	9.01	78	23907	0.582	ng	99
42) Carbon Tetrachloride	9.18	117	22010	1.177	ng	93
43) Cyclohexane	9.33	84	211302	14.234	ng	95
44) tert-Amyl Methyl Ether	9.69	73	1393	N.D.		
45) 1,2-Dichloropropane	9.96	63	217	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.	d	
47) Trichloroethene	10.24	130	654006	54.087	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2022_10\26\10262249.D
 Acq On : 27 Oct 2022 11:33
 Sample : P2204669-002 (1000mL)
 Misc : S35-08172209

Vial: 3
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 12:07:59 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	175733	18.006	ng	92
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.41	58	218	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	d	
58) Toluene	12.63	91	293717	5.251	ng	98
59) 2-Hexanone	0.00	43	0	N.D.	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	13.97	57	46524	4.565	ng	# 84
64) Tetrachloroethene	14.08	166	81318	4.698	ng	99
65) Chlorobenzene	0.00	112	0	N.D.	d	
66) Ethylbenzene	15.45	91	313601	4.839	ng	100
67) m- & p-Xylenes	15.68	91	1477283	27.499	ng	99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.15	104	6805	0.188	ng	91
70) o-Xylene	16.28	91	774757	14.577	ng	97
71) n-Nonane	16.65	43	12073	0.514	ng	96
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d	
74) Cumene	17.07	105	53232	0.810	ng	97
75) alpha-Pinene	17.59	93	2668	0.081	ng	# 62
76) n-Propylbenzene	17.75	91	85764	1.111	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	124662	2.011	ng	97
79) 1,3,5-Trimethylbenzene	18.07	105	216089	3.802	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	540344	9.595	ng	91
83) n-Decane	17.26	58	208	No Calib	#	
84) Benzyl Chloride	18.77	91	530	N.D.		
85) 1,3-Dichlorobenzene	18.87	146	849	N.D.		
86) 1,4-Dichlorobenzene	18.87	146	849	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.	d	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.	d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	19.36	68	2930	0.167	ng	83
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	18.23	58	675	No Calib	#	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	21.55	128	6515	0.141	ng	79
96) n-Dodecane	19.11	58	253	No Calib	#	
97) Hexachlorobutadiene	21.99	225	107	N.D.		
98) Cyclohexanone	15.56	55	21279	No Calib	#	
99) tert-Butylbenzene	0.00	119	0	N.D.	d	
100) n-Butylbenzene	0.00	91	0	N.D.	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:\MS13\DATA\2022_10\26\10262249.D
Acq On : 27 Oct 2022 11:33
Sample : P2204669-002 (1000mL)
Misc : S35-08172209

Vial: 3
Operator: TZ
Inst : MS13

Quant Time: Oct 27 12:07:59 2022

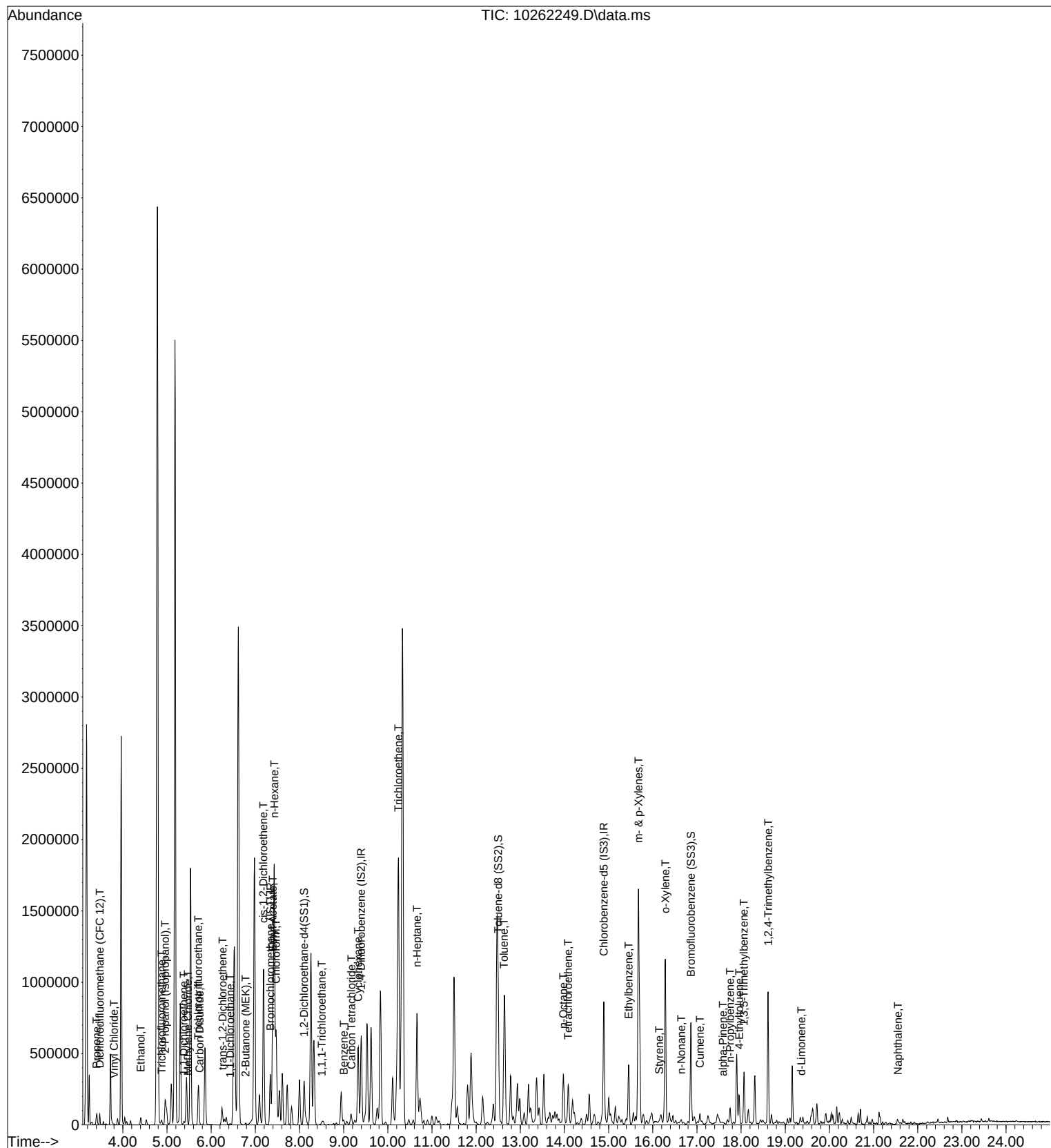
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2022_10\26\10262249.D
 Acq On : 27 Oct 2022 11:33
 Sample : P2204669-002 (1000mL)
 Misc : S35-08172209

Vial: 3
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 12:07:59 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	122018	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.40	114	546271	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	141024	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	272807	14.257	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	114.08%
57) Toluene-d8 (SS2)	12.50	98	638668	10.447	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.60%
73) Bromofluorobenzene (SS3)	16.86	174	220104	10.118	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.96%

Target Compounds

						Qvalue
2) Propene	3.41	42	15353	1.146	ng	# 72
3) Dichlorodifluoromethan...	3.48	85	43507	1.624	ng	99
6) Vinyl Chloride	3.80	62	3191	0.194	ng	90
10) Ethanol	4.41	45	56071	6.613	ng	99
14) Trichlorofluoromethane	4.88	101	23025	0.948	ng	100
15) 2-Propanol (Isopropanol)	4.96	45	210678	7.425	ng	95
17) 1,1-Dichloroethene	5.38	96	8398	0.823	ng	# 75
19) Methylene Chloride	5.47	84	977	0.089	ng	# 62
21) Trichlorotrifluoroethane	5.71	151	86641	7.968	ng	91
22) Carbon Disulfide	5.74	76	8290	0.198	ng	# 1
23) trans-1,2-Dichloroethene	6.26	61	22038	1.368	ng	84
24) 1,1-Dichloroethane	6.43	63	8032	0.428	ng	95
27) 2-Butanone (MEK)	6.78	72	3386	0.524	ng	# 78
28) cis-1,2-Dichloroethene	7.18	61	685430	45.705	ng	89
30) Ethyl Acetate	7.39	61	123966	30.840	ng	100
31) n-Hexane	7.43	57	794176	51.116	ng	95
32) Chloroform	7.47	83	438016	21.329	ng	100
38) 1,1,1-Trichloroethane	8.50	97	11553	0.543	ng	94
41) Benzene	9.01	78	23907	0.582	ng	99
42) Carbon Tetrachloride	9.18	117	22010	1.177	ng	93
43) Cyclohexane	9.33	84	211302	14.234	ng	95
47) Trichloroethene	10.24	130	654006	54.087	ng	99
51) n-Heptane	10.66	71	175733	18.006	ng	92
58) Toluene	12.63	91	293717	5.251	ng	98
63) n-Octane	13.97	57	46524	4.565	ng	# 84
64) Tetrachloroethene	14.08	166	81318	4.698	ng	99
66) Ethylbenzene	15.45	91	313601	4.839	ng	100
67) m- & p-Xylenes	15.68	91	1477283	27.499	ng	99
69) Styrene	16.15	104	6805	0.188	ng	91
70) o-Xylene	16.28	91	774757	14.577	ng	97
71) n-Nonane	16.65	43	12073	0.514	ng	96
74) Cumene	17.07	105	53232	0.810	ng	97
75) alpha-Pinene	17.59	93	2668	0.081	ng	# 62
76) n-Propylbenzene	17.75	91	85764	1.111	ng	98
78) 4-Ethyltoluene	17.96	105	124662	2.011	ng	97
79) 1,3,5-Trimethylbenzene	18.07	105	216089	3.802	ng	99
82) 1,2,4-Trimethylbenzene	18.61	105	540344	9.595	ng	91
91) d-Limonene	19.36	68	2930	0.167	ng	83
95) Naphthalene	21.55	128	6515	0.141	ng	79

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

Data File : I:\MS13\DATA\2022_10\26\10262249.D
Acq On : 27 Oct 2022 11:33
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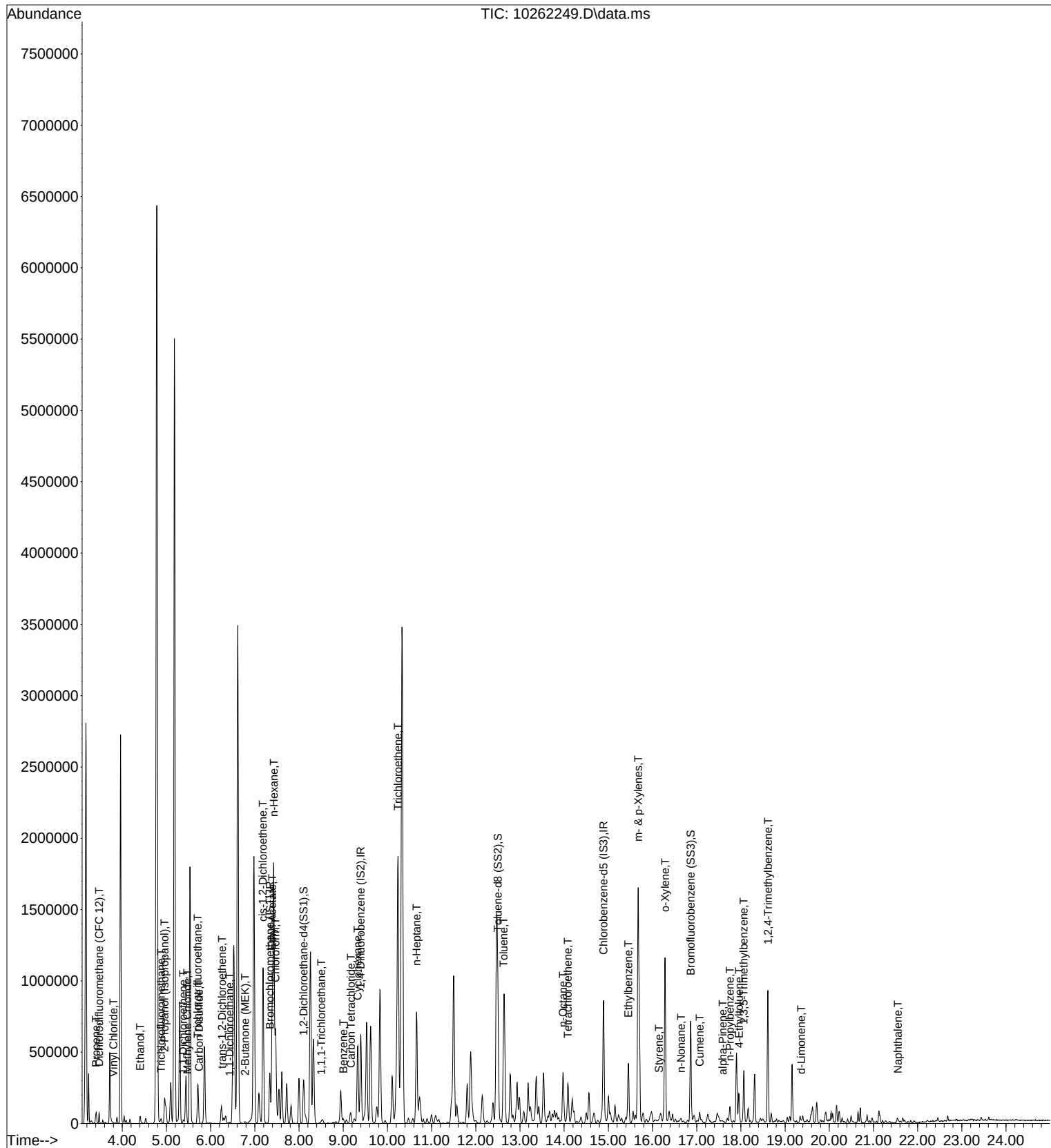
Quant Method : I:\MS13\METHODS\R13091922.M

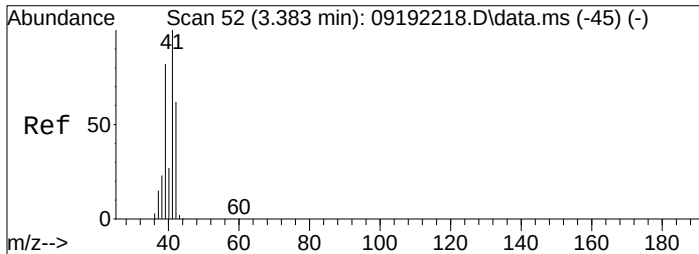
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

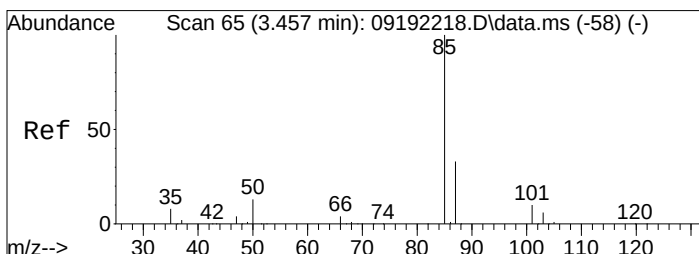
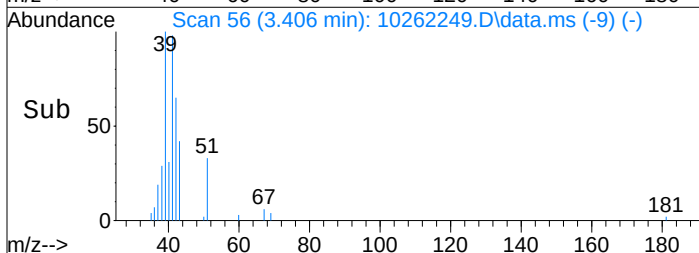
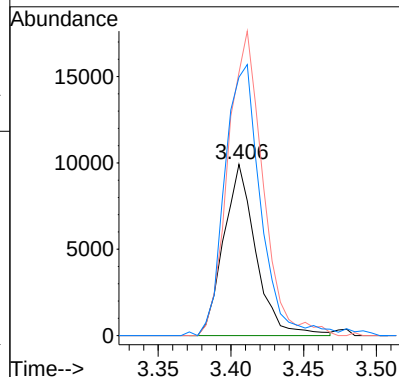
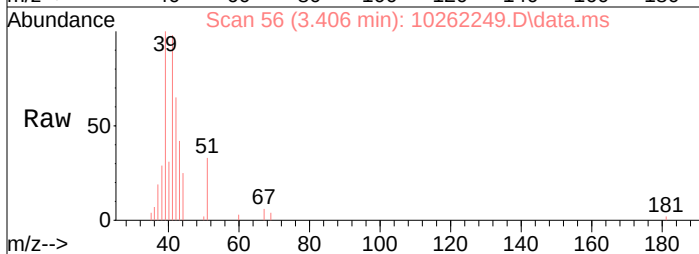
DataAcq Meth:T015B.M





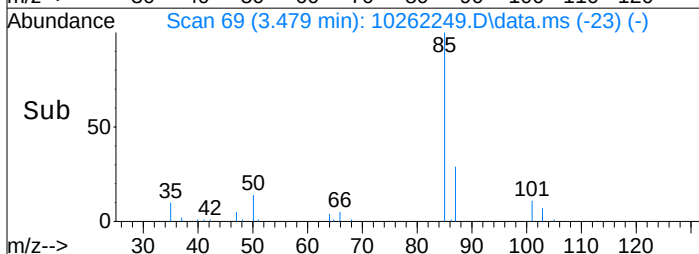
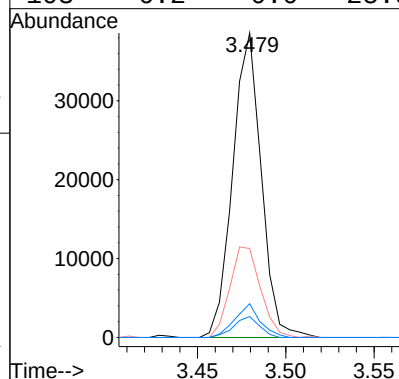
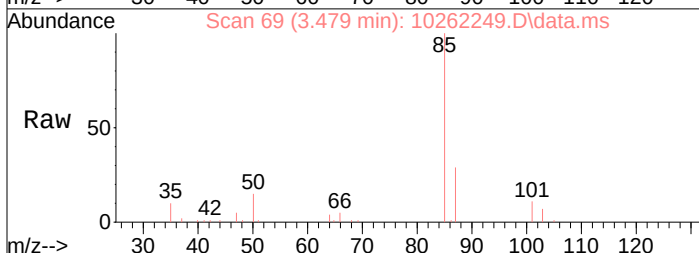
#2
 Propene
 Concen: 1.15 ng
 RT: 3.41 min Scan# 56
 Delta R.T. 0.017 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

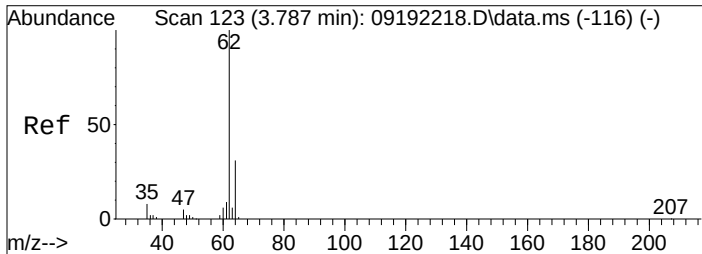
Tgt Ion: 42 Resp: 15353
 Ion Ratio Lower Upper
 42 100
 39 192.1 113.5 153.5#
 41 176.0 142.1 182.1



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 1.62 ng
 RT: 3.48 min Scan# 69
 Delta R.T. 0.011 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

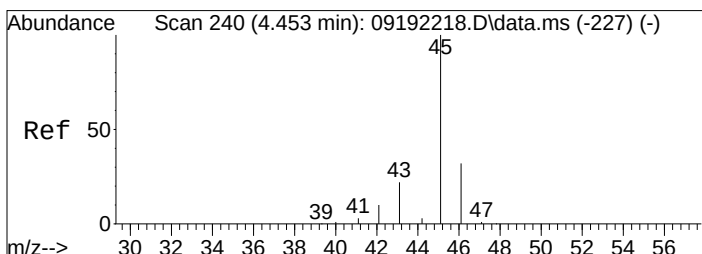
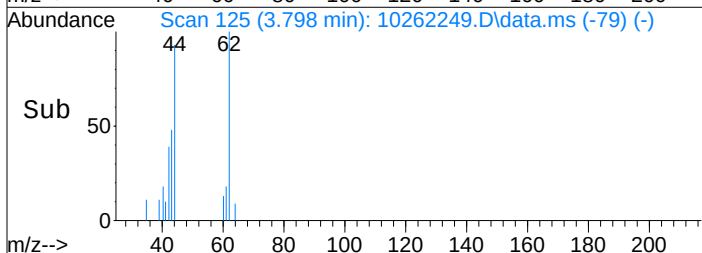
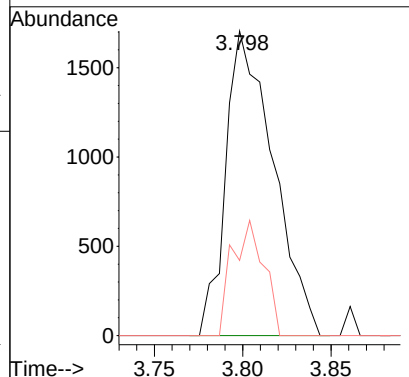
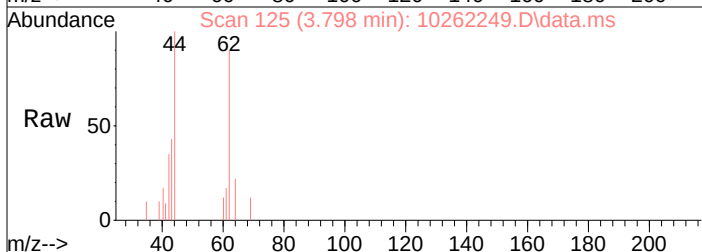
Tgt Ion: 85 Resp: 43507
 Ion Ratio Lower Upper
 85 100
 87 32.1 12.8 52.8
 101 9.8 0.0 30.0
 103 6.2 0.0 25.9





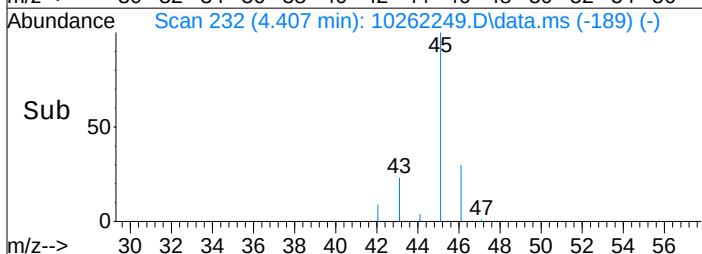
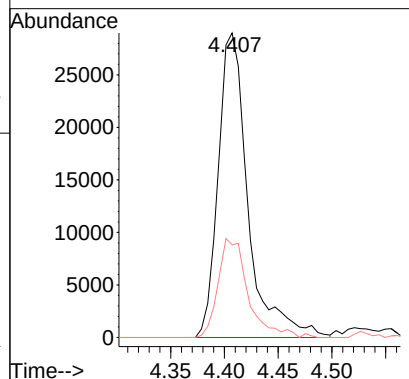
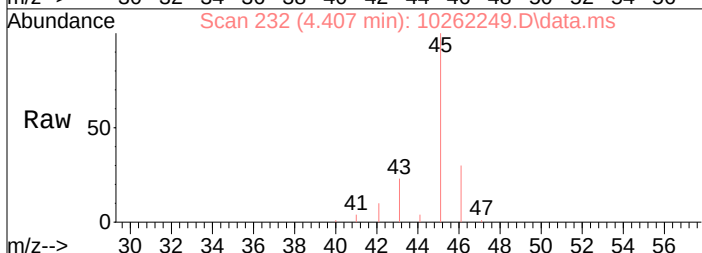
#6
 Vinyl Chloride
 Concen: 0.19 ng
 RT: 3.80 min Scan# 125
 Delta R.T. 0.012 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

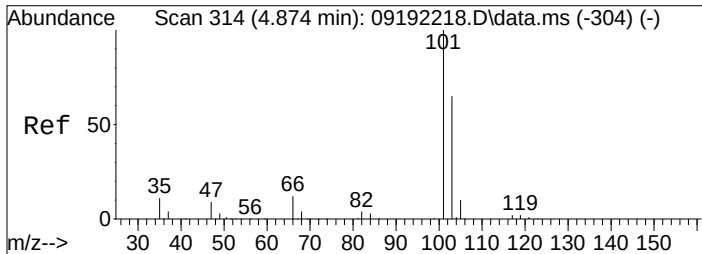
Tgt Ion: 62 Resp: 3191
 Ion Ratio Lower Upper
 62 100
 64 25.1 10.8 50.8



#10
 Ethanol
 Concen: 6.61 ng
 RT: 4.41 min Scan# 232
 Delta R.T. -0.006 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

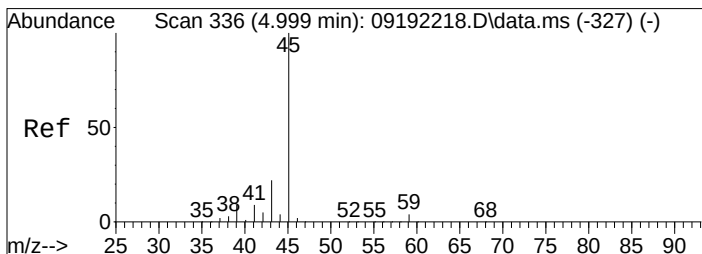
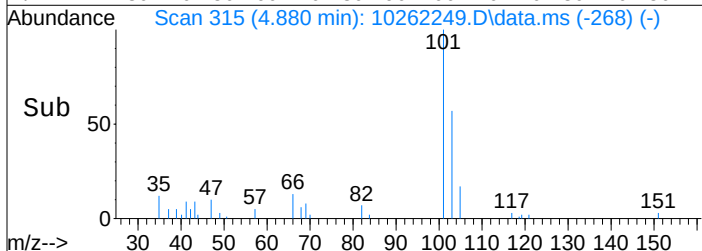
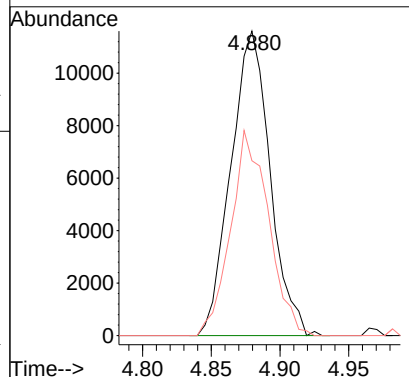
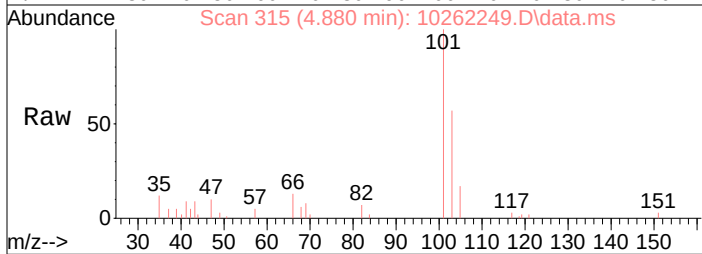
Tgt Ion: 45 Resp: 56071
 Ion Ratio Lower Upper
 45 100
 46 32.6 12.2 52.2





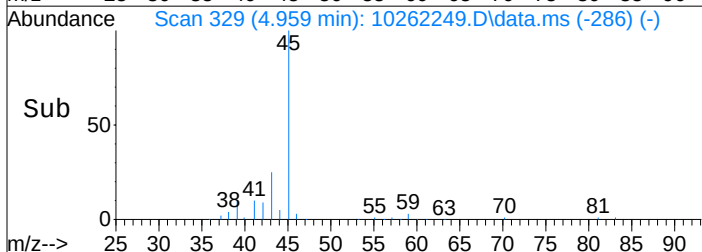
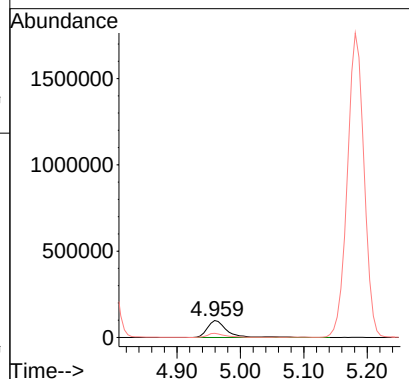
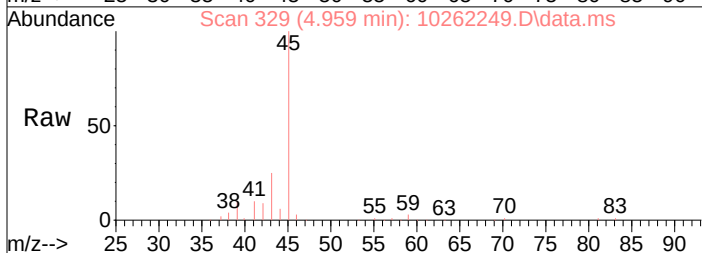
#14
 Trichlorofluoromethane
 Concen: 0.95 ng
 RT: 4.88 min Scan# 315
 Delta R.T. 0.017 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

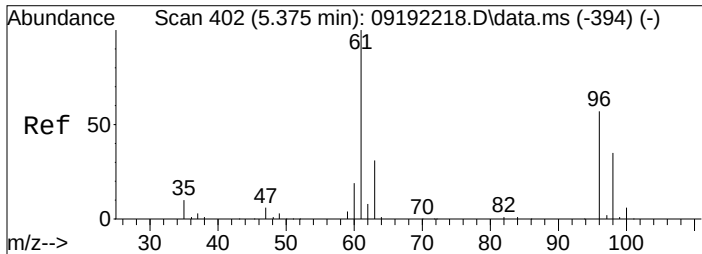
Tgt Ion:	101	Resp:	23025
Ion Ratio	Lower	Upper	
101	100		
103	65.1	44.8	84.8



#15
 2-Propanol (Isopropanol)
 Concen: 7.42 ng
 RT: 4.96 min Scan# 329
 Delta R.T. -0.006 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

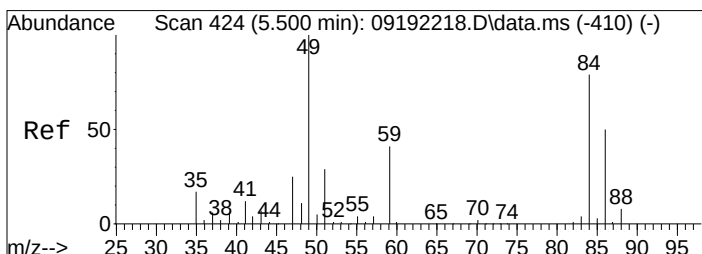
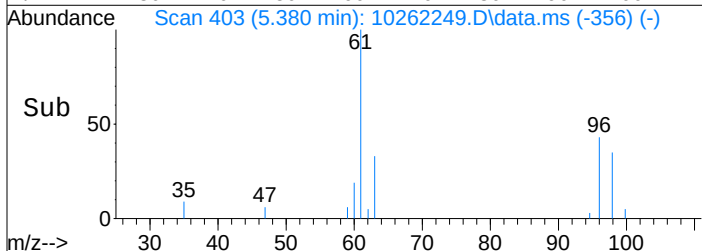
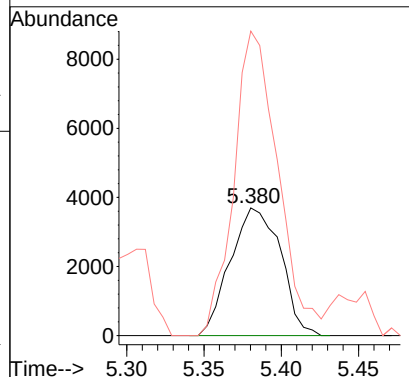
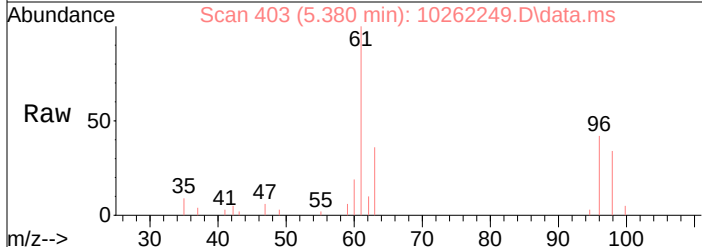
Tgt Ion:	45	Resp:	210678
Ion Ratio	Lower	Upper	
45	100		
43	24.0	1.7	41.7





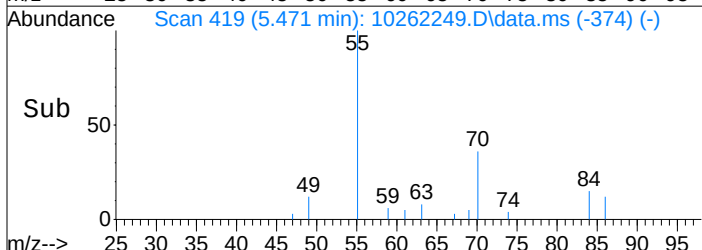
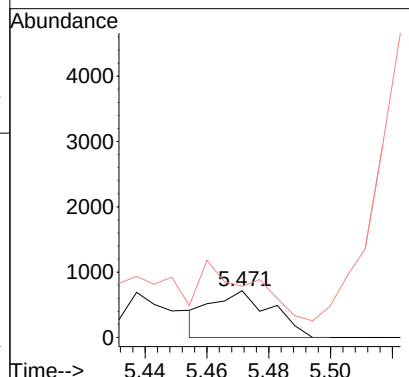
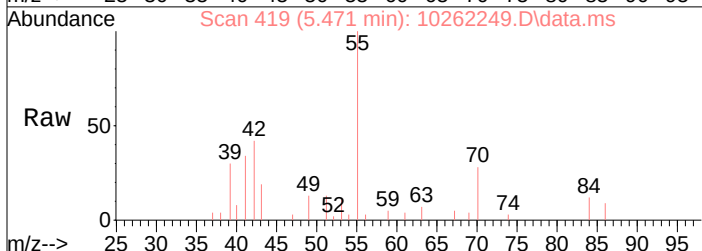
#17
 1,1-Dichloroethene
 Concen: 0.82 ng
 RT: 5.38 min Scan# 403
 Delta R.T. 0.017 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

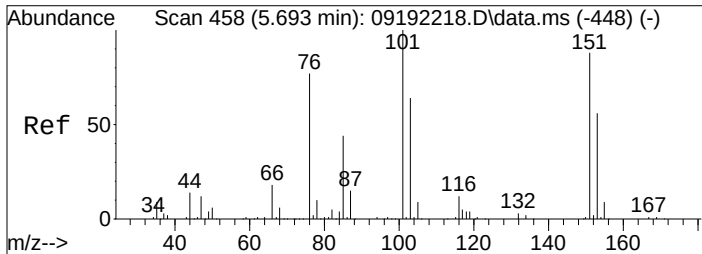
Tgt Ion: 96 Resp: 8398
 Ion Ratio Lower Upper
 96 100
 61 208.8 154.6 194.6#



#19
 Methylene Chloride
 Concen: 0.09 ng
 RT: 5.47 min Scan# 419
 Delta R.T. 0.006 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

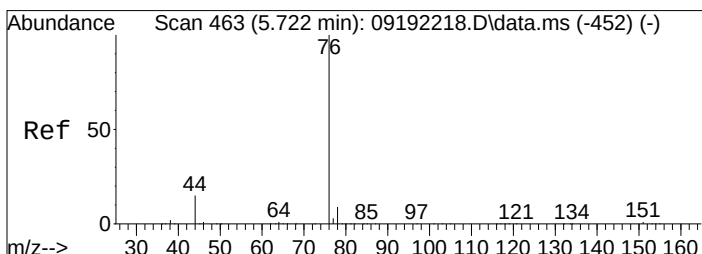
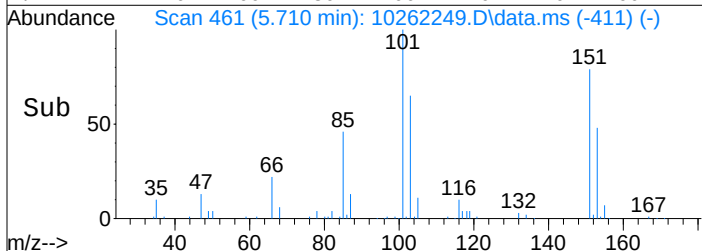
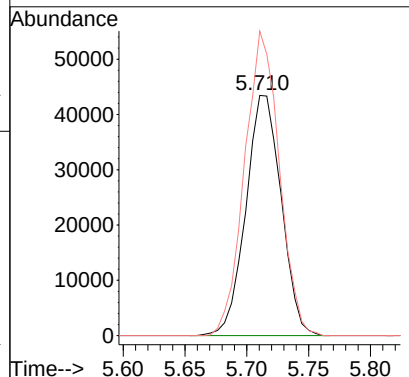
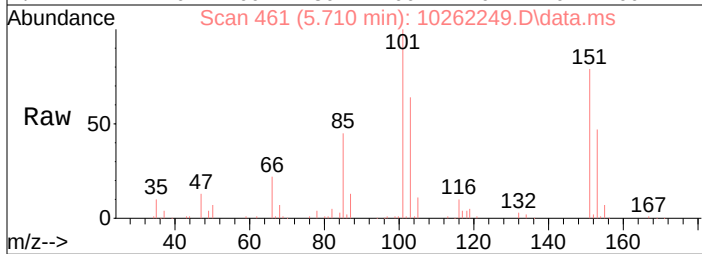
Tgt Ion: 84 Resp: 977
 Ion Ratio Lower Upper
 84 100
 49 170.7 102.4 152.4#





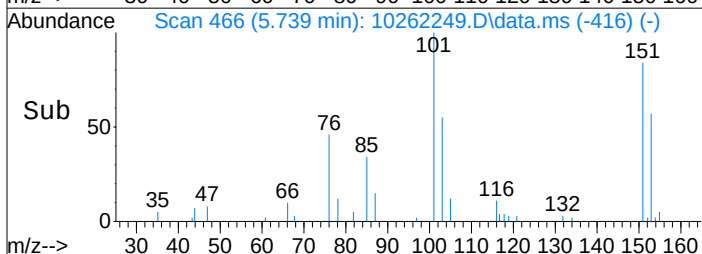
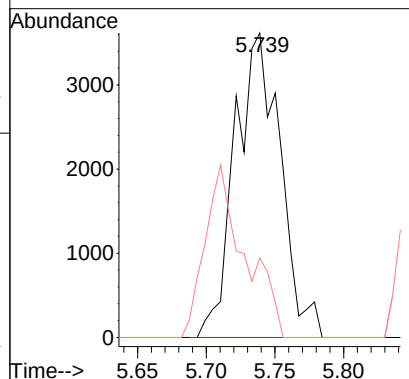
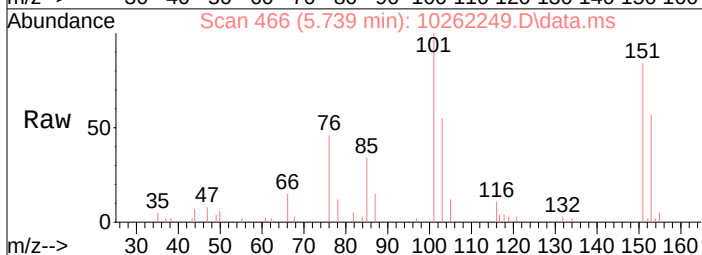
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 Trichlorotrifluoroethane
 Concen: 7.97 ng
 RT: 5.71 min Scan# 461
 Delta R.T. 0.034 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

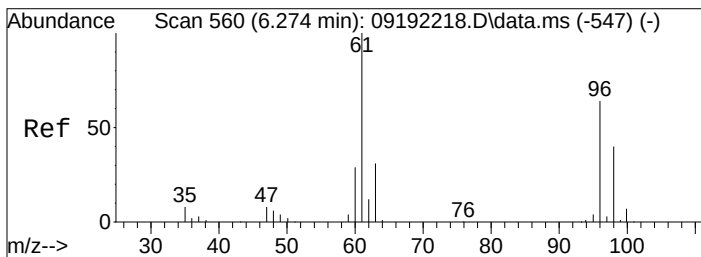
Tgt Ion	151	Resp	86641
Ion Ratio	Lower	Upper	
151	100		
101	124.4	94.2	134.2



#22
 Carbon Disulfide
 Concen: 0.20 ng
 RT: 5.74 min Scan# 466
 Delta R.T. 0.034 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

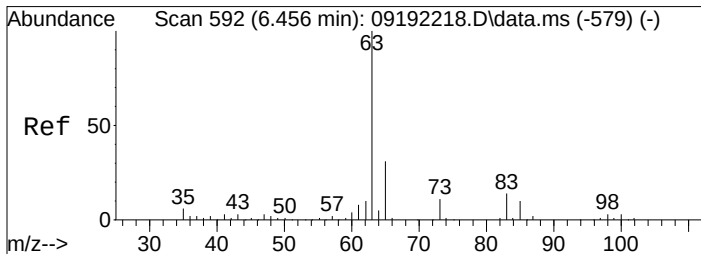
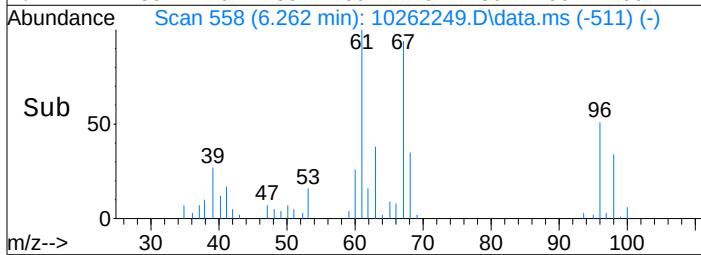
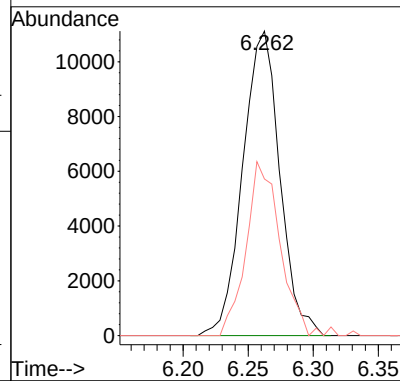
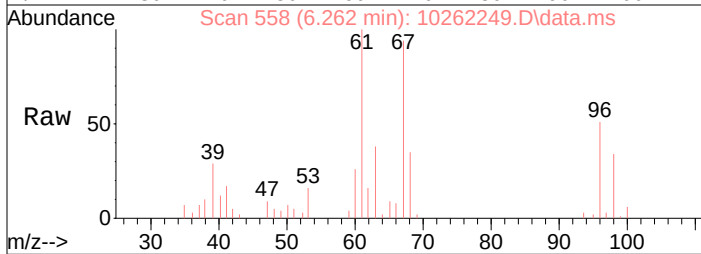
Tgt Ion	76	Resp	8290
Ion Ratio	Lower	Upper	
76	100		
78	49.7	0.0	28.9#





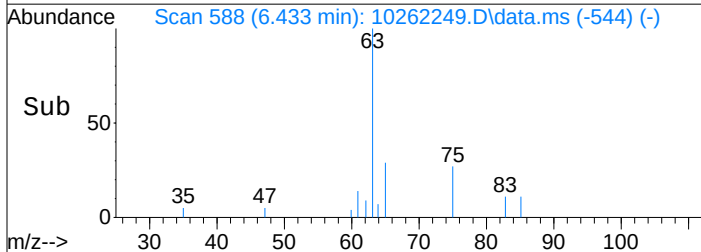
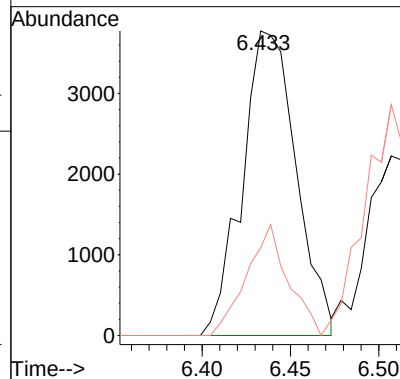
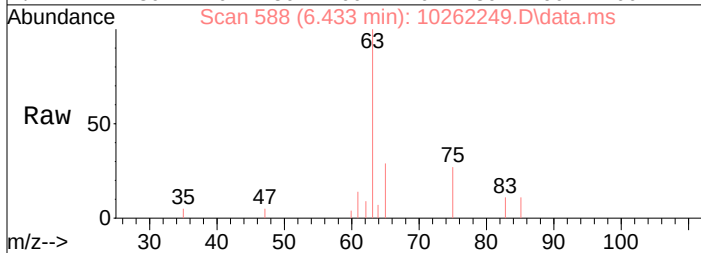
#23
trans-1,2-Dichloroethene
Concen: 1.37 ng
RT: 6.26 min Scan# 558
Delta R.T. 0.017 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

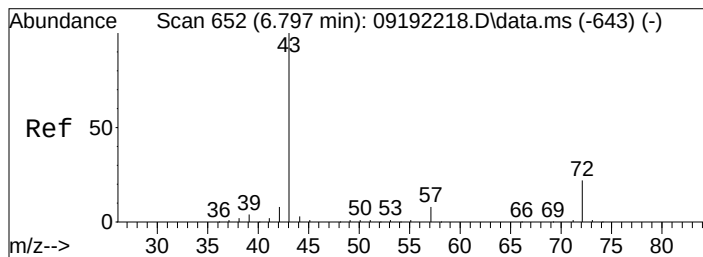
Tgt Ion: 61 Resp: 22038
Ion Ratio Lower Upper
61 100
96 52.2 44.5 84.5



#24
1,1-Dichloroethane
Concen: 0.43 ng
RT: 6.43 min Scan# 588
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

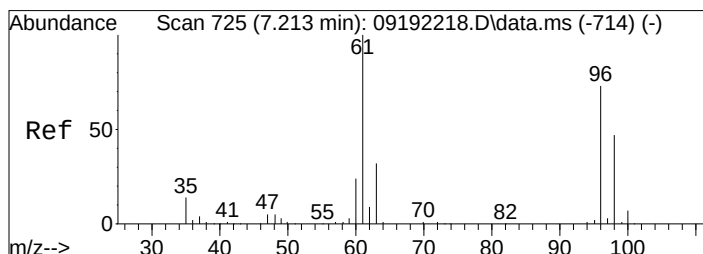
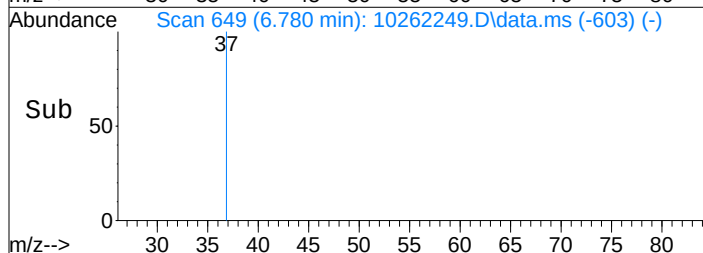
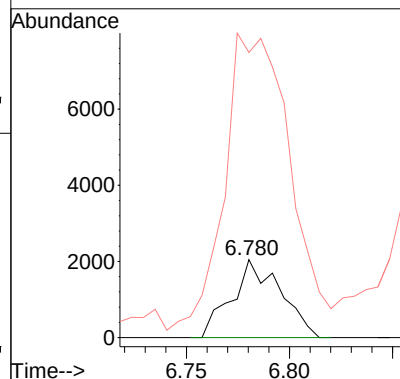
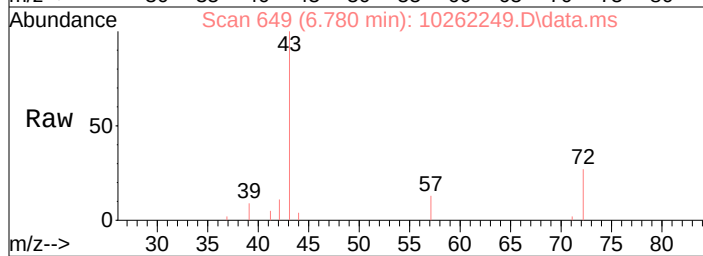
Tgt Ion: 63 Resp: 8032
Ion Ratio Lower Upper
63 100
65 28.0 10.7 50.7





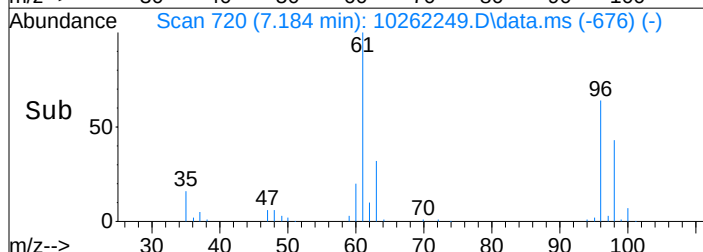
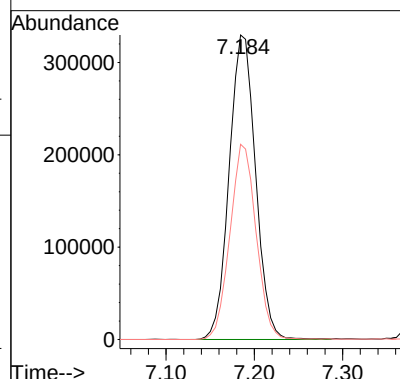
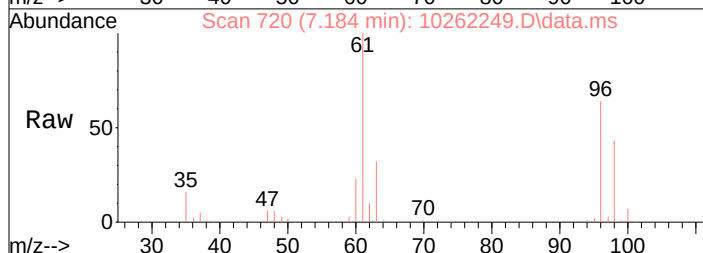
#27
2-Butanone (MEK)
Concen: 0.52 ng
RT: 6.78 min Scan# 649
Delta R.T. 0.012 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

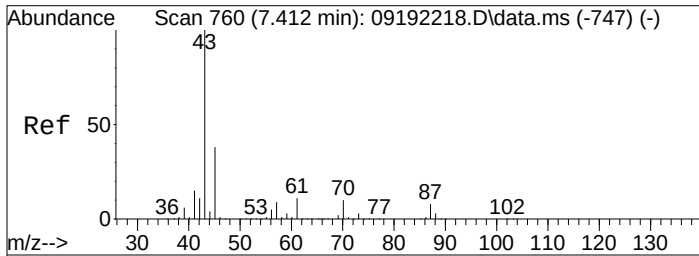
Tgt Ion: 72 Resp: 3386
Ion Ratio Lower Upper
72 100
43 501.4 424.6 464.6#



#28
cis-1,2-Dichloroethene
Concen: 45.70 ng
RT: 7.18 min Scan# 720
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

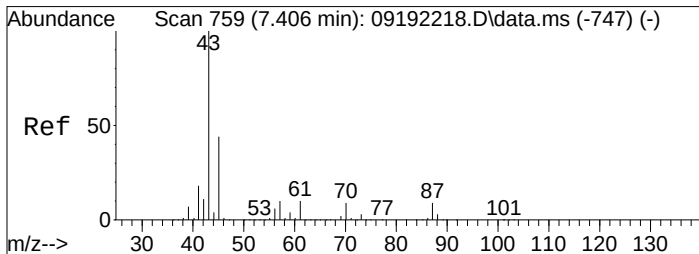
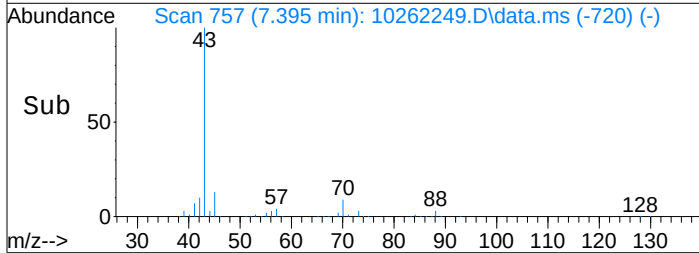
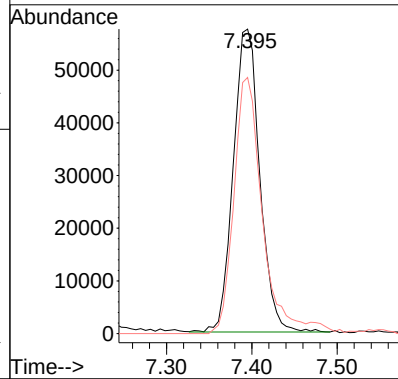
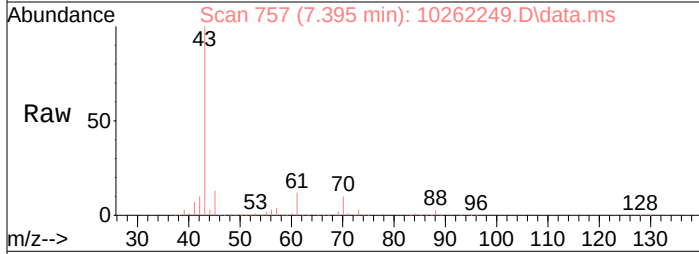
Tgt Ion: 61 Resp: 685430
Ion Ratio Lower Upper
61 100
96 63.7 53.2 93.2





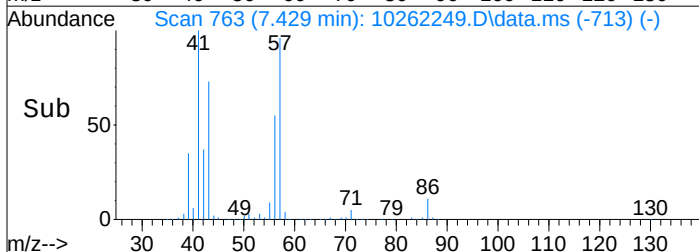
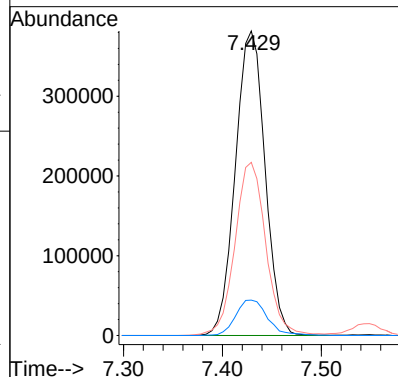
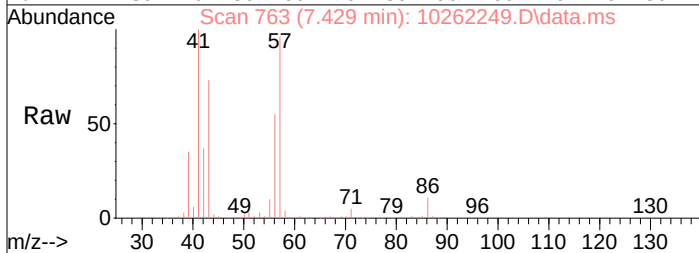
#30
Ethyl Acetate
Concen: 30.84 ng
RT: 7.39 min Scan# 757
Delta R.T. 0.011 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

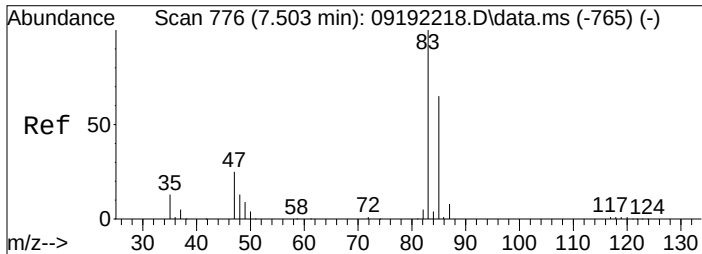
Tgt Ion	Ratio	Resp	Lower	Upper
61	100	123966		
70	92.0	71.5	111.5	



#31
n-Hexane
Concen: 51.12 ng
RT: 7.43 min Scan# 763
Delta R.T. 0.034 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

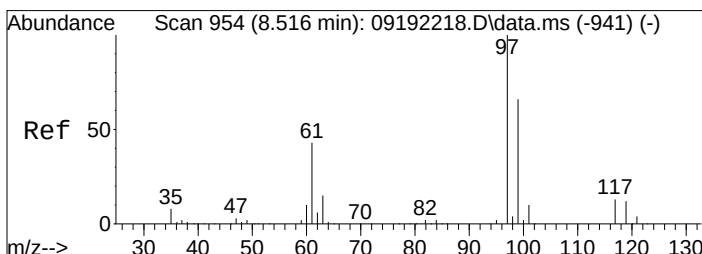
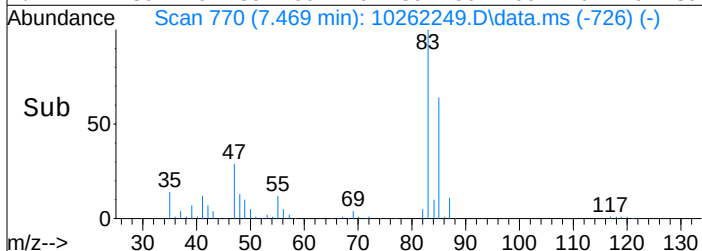
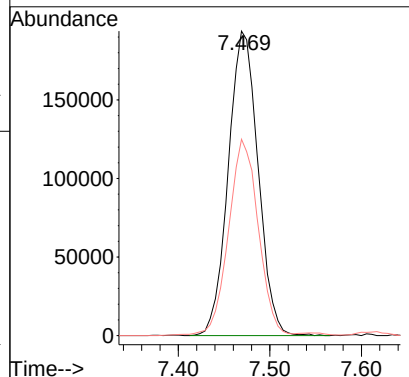
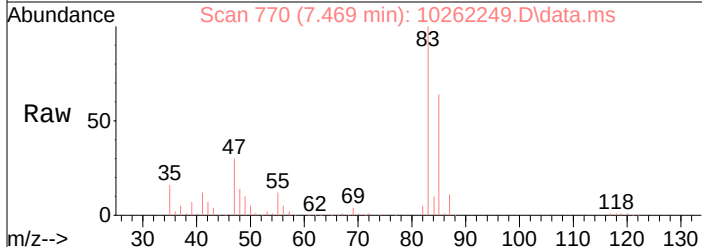
Tgt Ion	Ratio	Resp	Lower	Upper
57	100	794176		
56	59.4	44.6	67.0	
86	12.5	11.3	16.9	





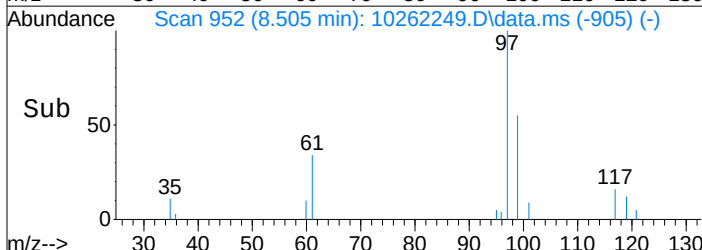
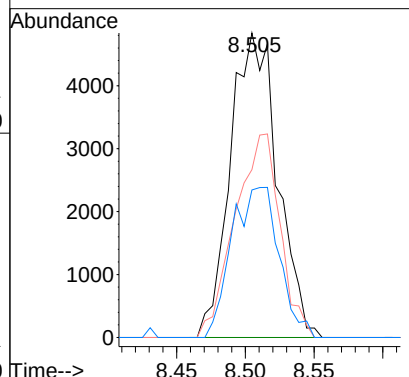
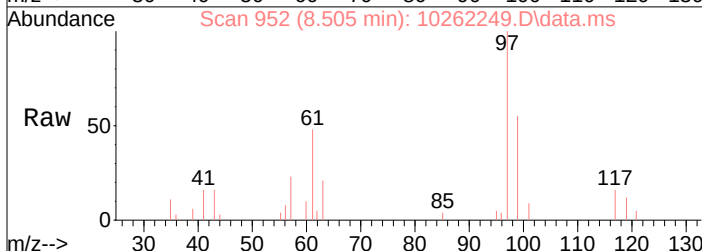
#32
 Chloroform
 Concen: 21.33 ng
 RT: 7.47 min Scan# 770
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

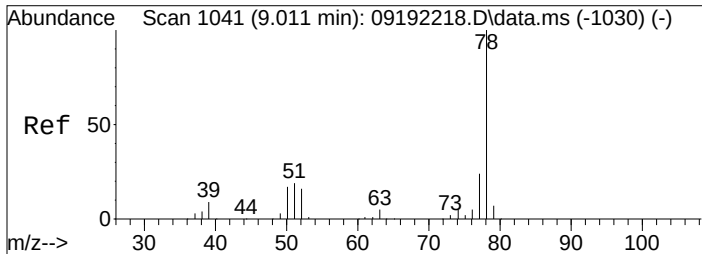
Tgt Ion	83	Resp	438016
Ion Ratio	100	Lower	Upper
85	64.6	44.9	84.9



#38
 1,1,1-Trichloroethane
 Concen: 0.54 ng
 RT: 8.50 min Scan# 952
 Delta R.T. 0.017 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

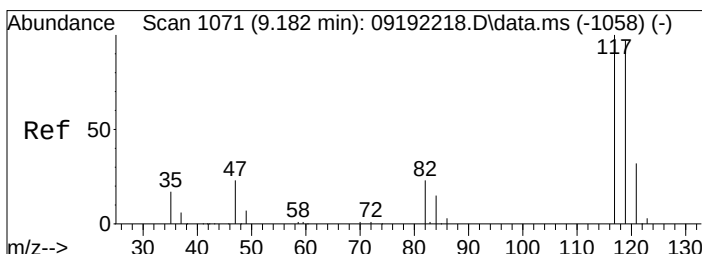
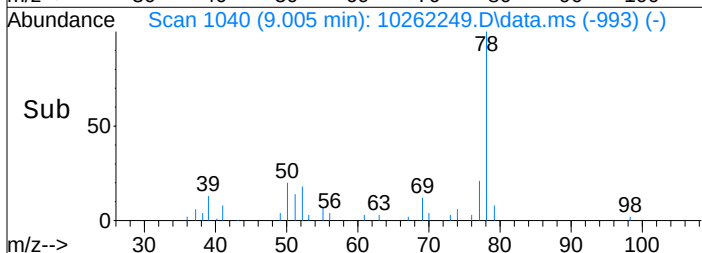
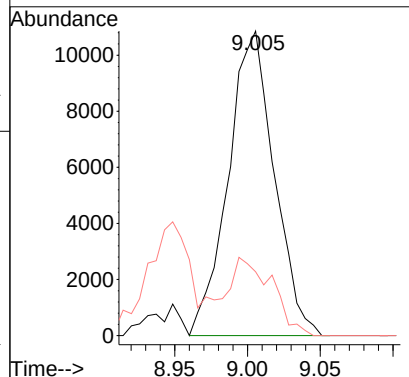
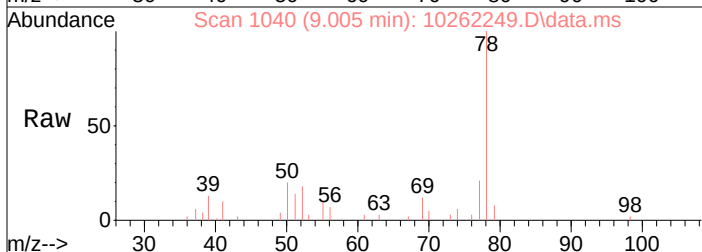
Tgt Ion	97	Resp	11553
Ion Ratio	100	Lower	Upper
99	63.9	45.7	85.7
61	49.6	22.8	62.8





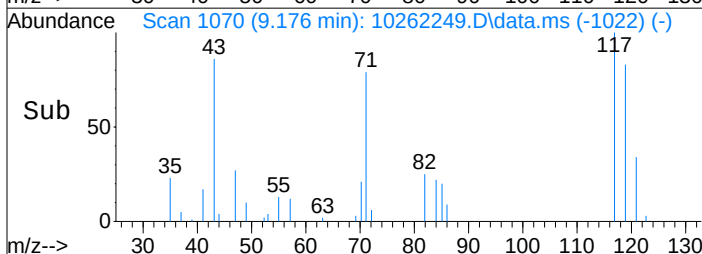
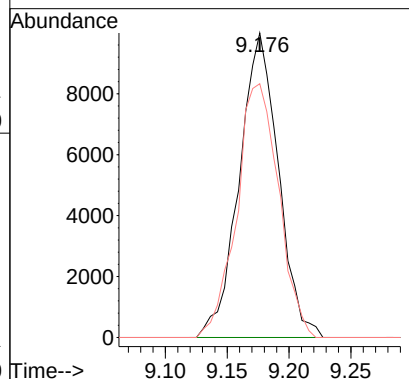
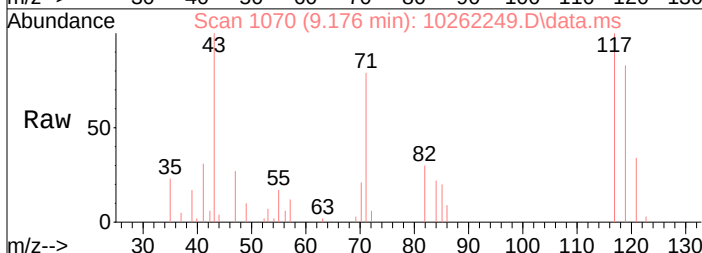
#41
Benzene
Concen: 0.58 ng
RT: 9.01 min Scan# 1040
Delta R.T. 0.017 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

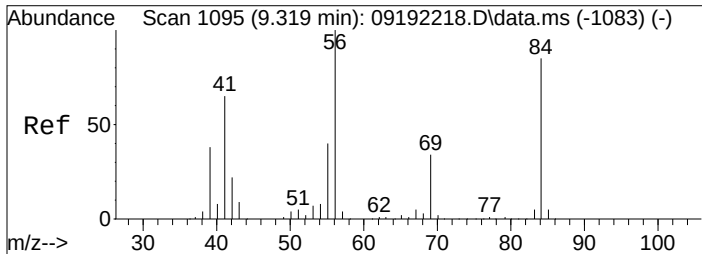
Tgt Ion: 78 Resp: 23907
Ion Ratio Lower Upper
78 100
77 24.2 3.7 43.7



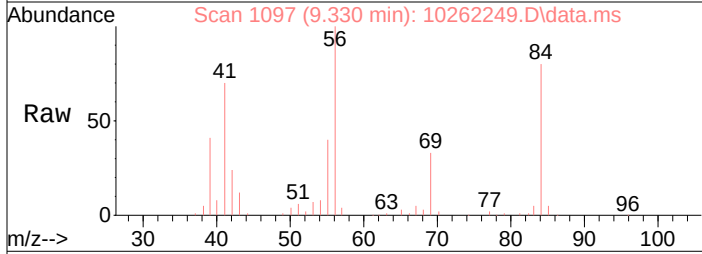
#42
Carbon Tetrachloride
Concen: 1.18 ng
RT: 9.18 min Scan# 1070
Delta R.T. 0.023 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

Tgt Ion: 117 Resp: 22010
Ion Ratio Lower Upper
117 100
119 89.4 76.6 116.6

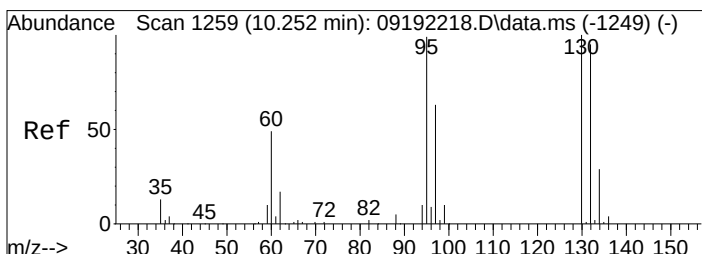
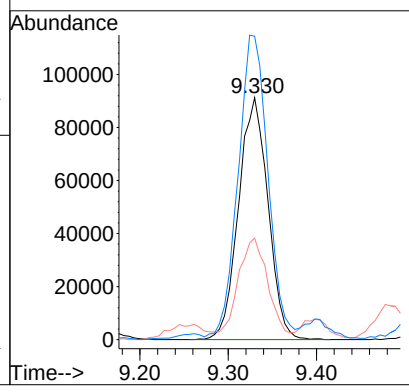
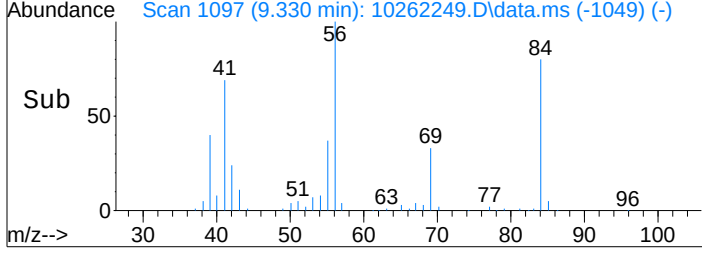




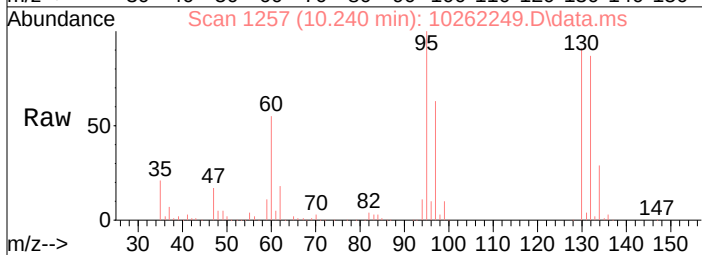
#43
 Cyclohexane
 Concen: 14.23 ng
 RT: 9.33 min Scan# 1097
 Delta R.T. 0.023 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33



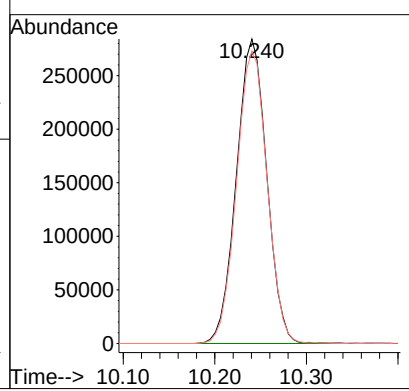
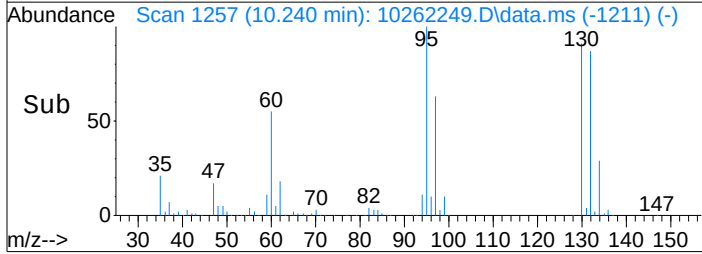
Tgt Ion:	84	Resp:	211302
Ion Ratio		Lower	Upper
84	100		
69	39.3	20.7	60.7
56	125.1	98.3	138.3

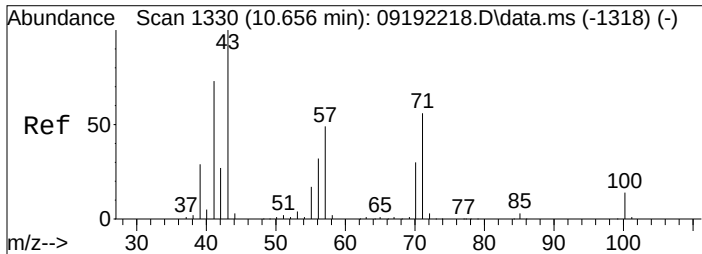


#47
 Trichloroethene
 Concen: 54.09 ng
 RT: 10.24 min Scan# 1257
 Delta R.T. 0.011 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33



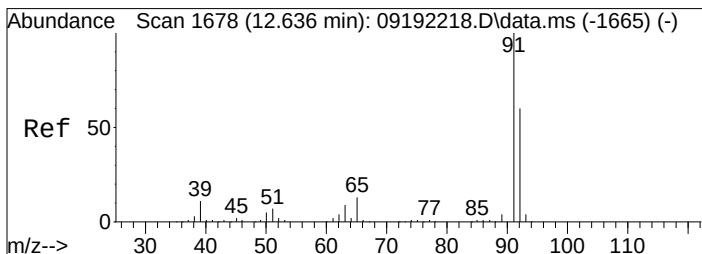
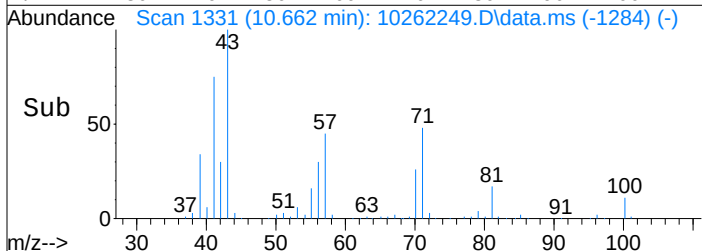
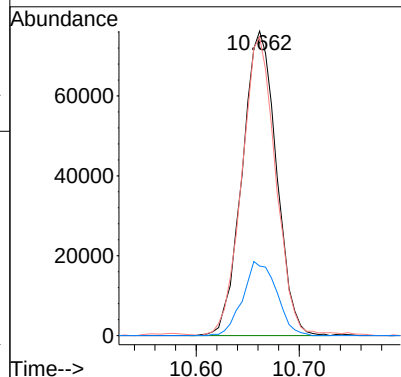
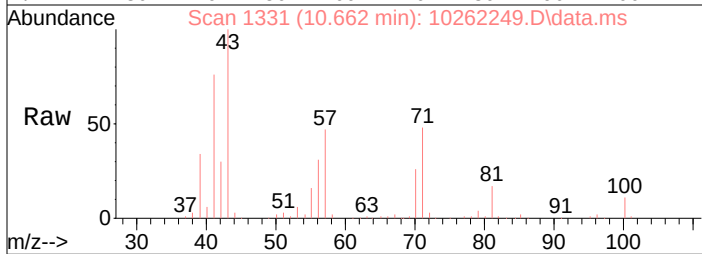
Tgt Ion:	130	Resp:	654006
Ion Ratio		Lower	Upper
130	100		
132	96.7	75.3	115.3





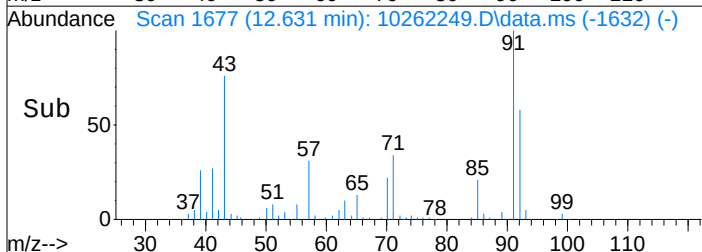
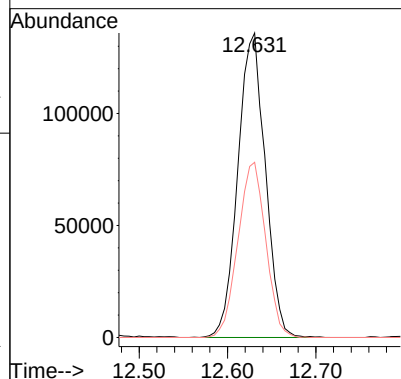
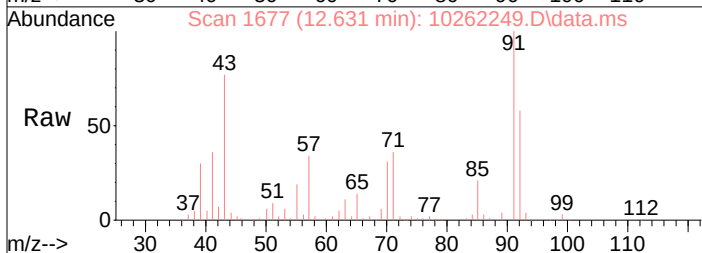
#51
n-Heptane
Concen: 18.01 ng
RT: 10.66 min Scan# 1331
Delta R.T. 0.017 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

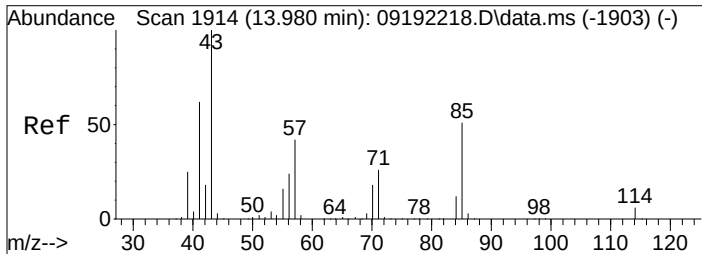
Tgt Ion:	71	Resp:	175733
Ion Ratio		Lower	Upper
71	100		
57	97.6	68.7	108.7
100	24.0	5.0	45.0



#58
Toluene
Concen: 5.25 ng
RT: 12.63 min Scan# 1677
Delta R.T. 0.006 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

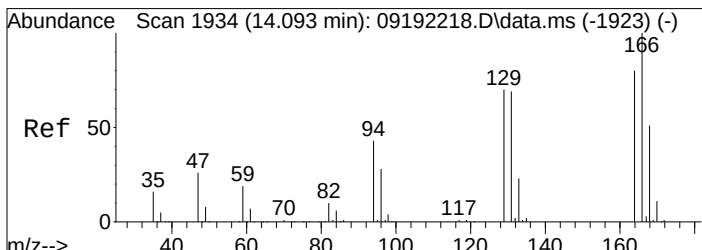
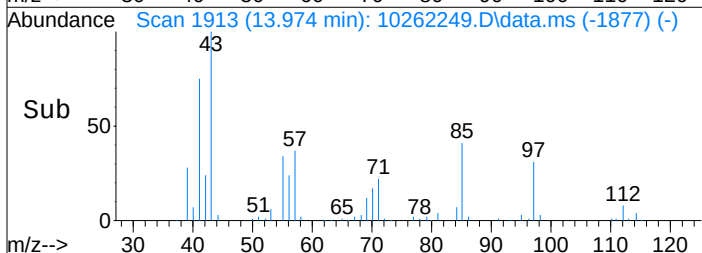
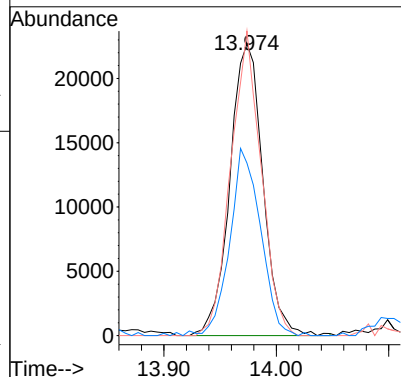
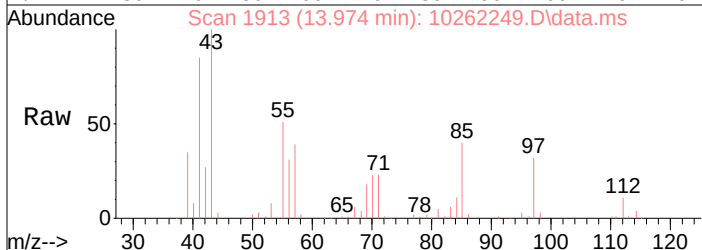
Tgt Ion:	91	Resp:	293717
Ion Ratio		Lower	Upper
91	100		
92	58.3	39.7	79.7





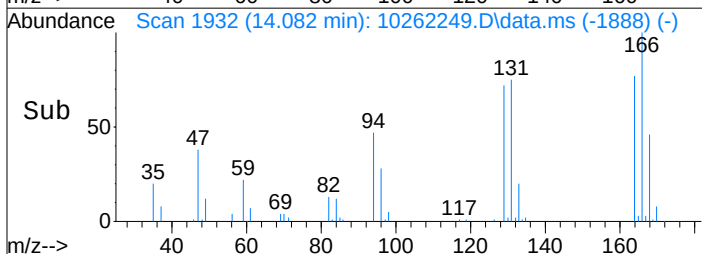
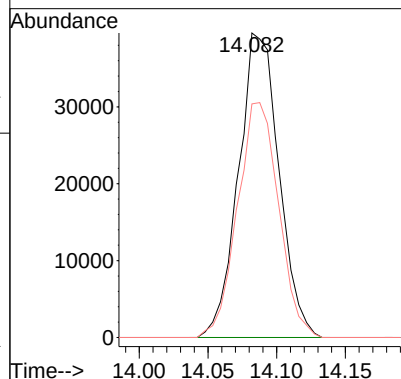
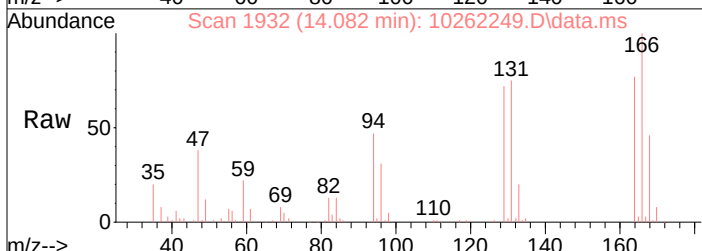
#63
n-Octane
Concen: 4.56 ng
RT: 13.97 min Scan# 1913
Delta R.T. 0.006 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

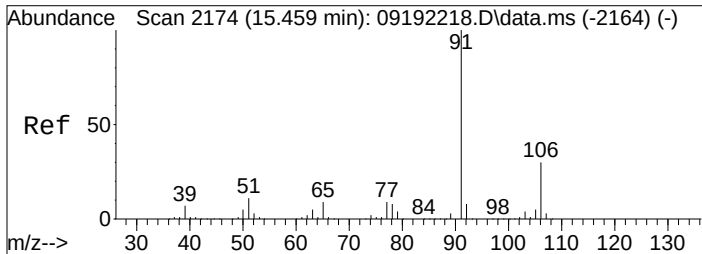
Tgt Ion:	57	Resp:	46524
Ion Ratio		Lower	Upper
57	100		
85	95.7	97.0	145.4#
71	59.8	48.8	73.2



#64
Tetrachloroethene
Concen: 4.70 ng
RT: 14.08 min Scan# 1932
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

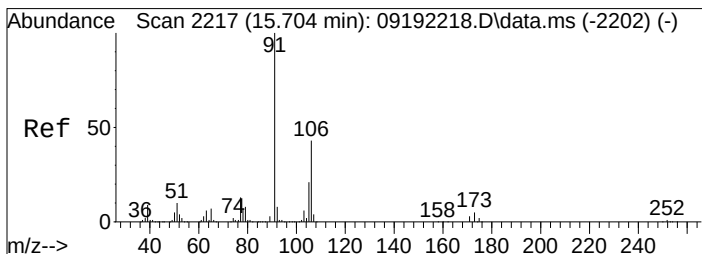
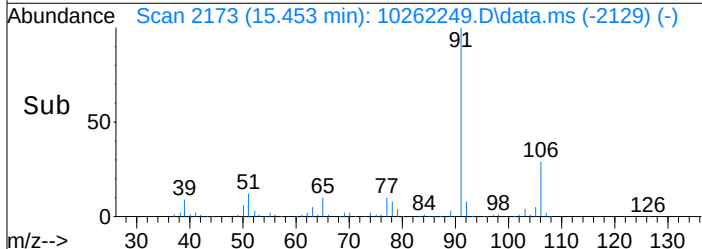
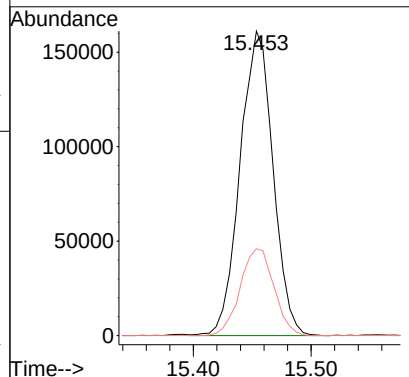
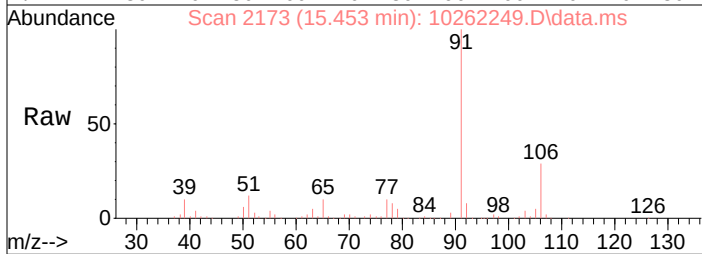
Tgt Ion:	166	Resp:	81318
Ion Ratio		Lower	Upper
166	100		
164	78.4	59.7	99.7





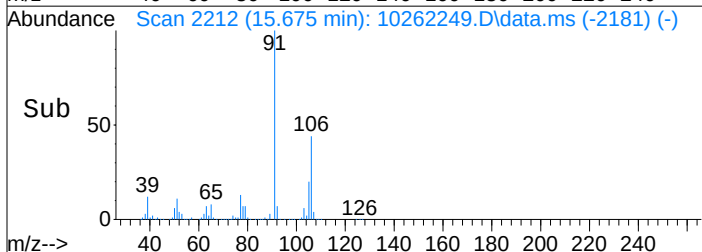
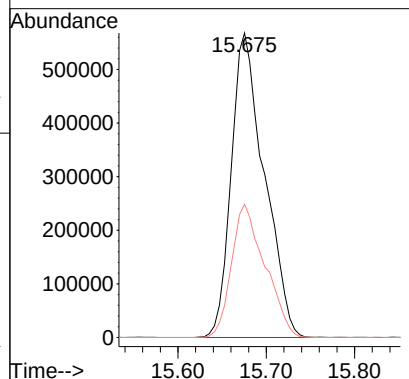
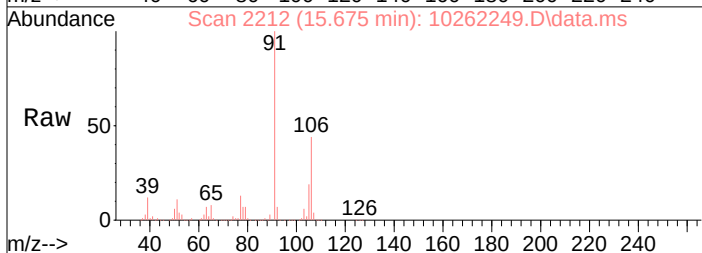
#66
Ethylbenzene
Concen: 4.84 ng
RT: 15.45 min Scan# 2173
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

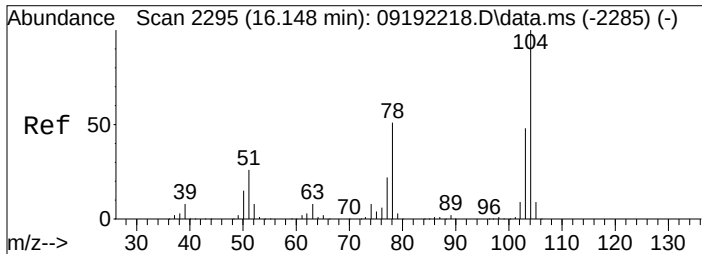
Tgt Ion:	91	Resp:	313601
Ion Ratio	Lower	Upper	
91	100		
106	29.3	9.5	49.5



#67
m- & p-Xylenes
Concen: 27.50 ng
RT: 15.68 min Scan# 2212
Delta R.T. -0.023 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

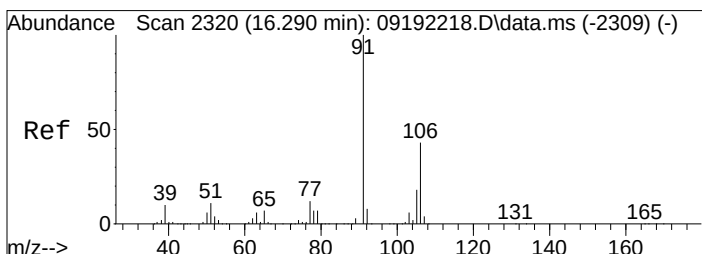
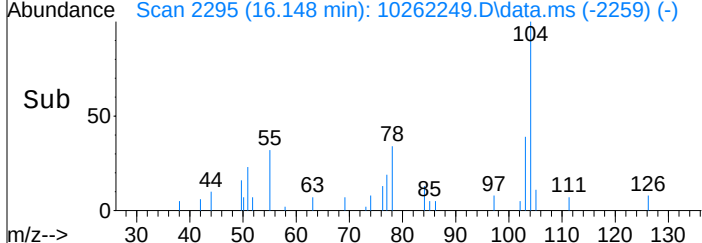
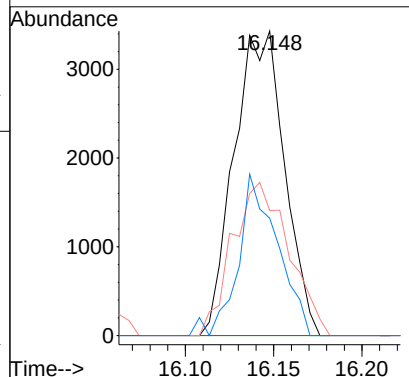
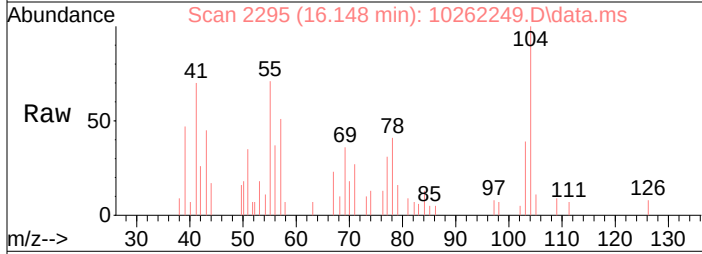
Tgt Ion:	91	Resp:	1477283
Ion Ratio	Lower	Upper	
91	100		
106	44.2	23.4	63.4





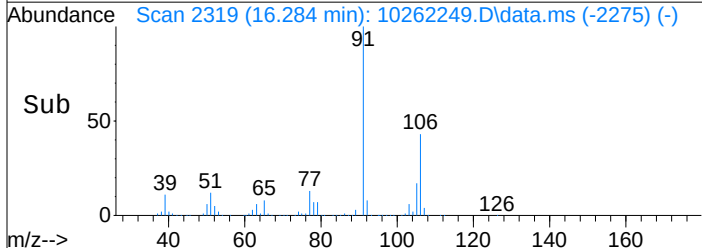
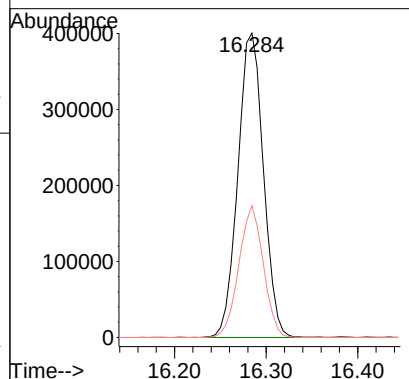
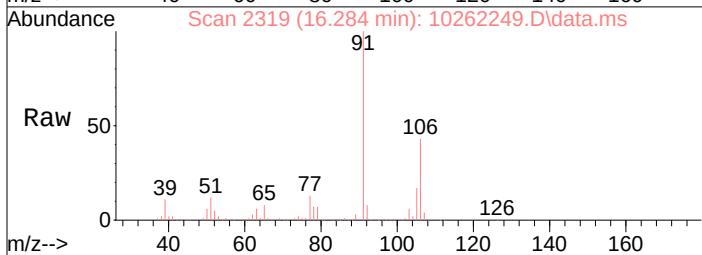
#69
Styrene
Concen: 0.19 ng
RT: 16.15 min Scan# 2295
Delta R.T. 0.006 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

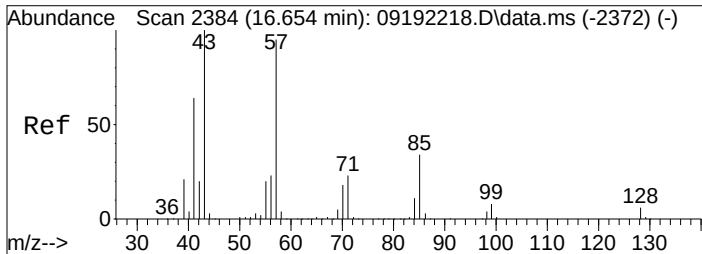
Tgt Ion:	104	Resp:	6805
Ion Ratio		Lower	Upper
104	100		
78	56.3	30.9	70.9
103	41.2	28.0	68.0



#70
o-Xylene
Concen: 14.58 ng
RT: 16.28 min Scan# 2319
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

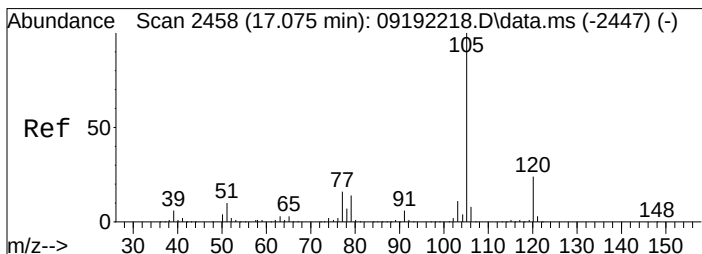
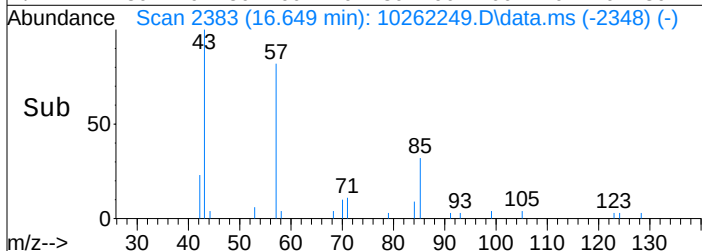
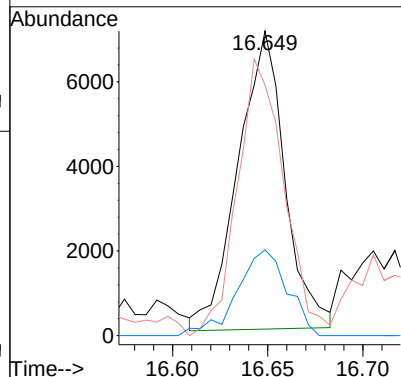
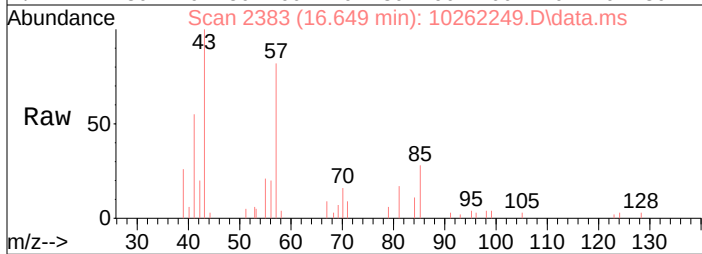
Tgt Ion:	91	Resp:	774757
Ion Ratio		Lower	Upper
91	100		
106	41.5	23.2	63.2





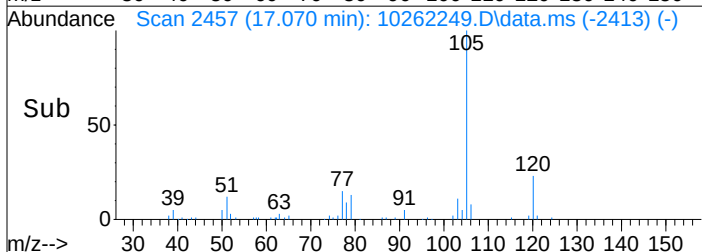
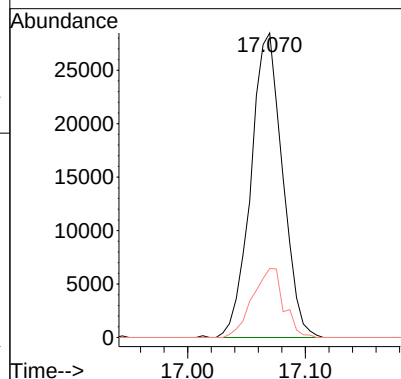
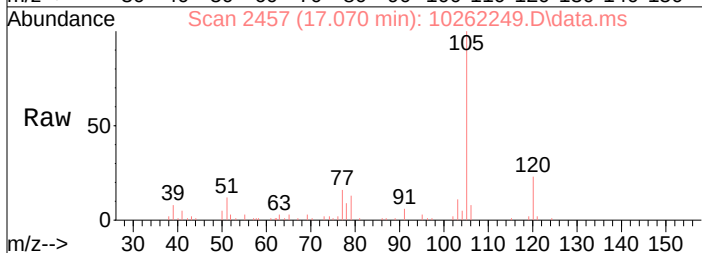
#71
n-Nonane
Concen: 0.51 ng
RT: 16.65 min Scan# 2383
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

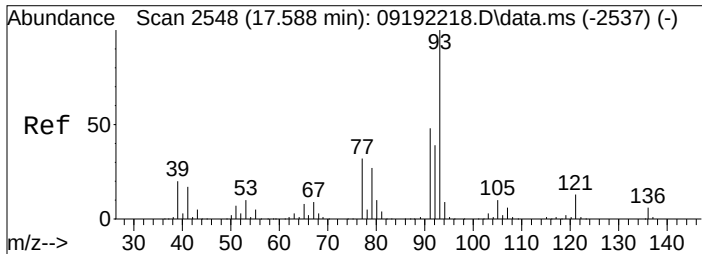
Tgt Ion:	43	Resp:	12073
Ion Ratio		Lower	Upper
43	100		
57	92.3	75.4	115.4
85	30.9	13.7	53.7



#74
Cumene
Concen: 0.81 ng
RT: 17.07 min Scan# 2457
Delta R.T. 0.000 min
Lab File: 10262249.D
Acq: 27 Oct 2022 11:33

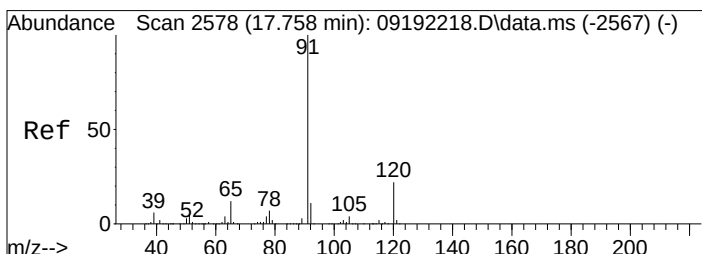
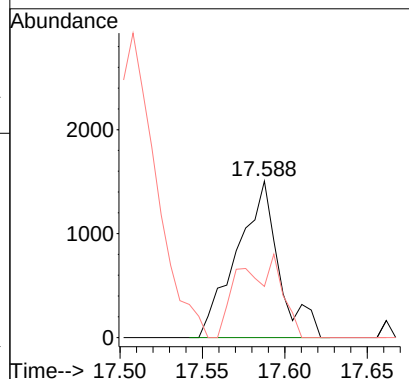
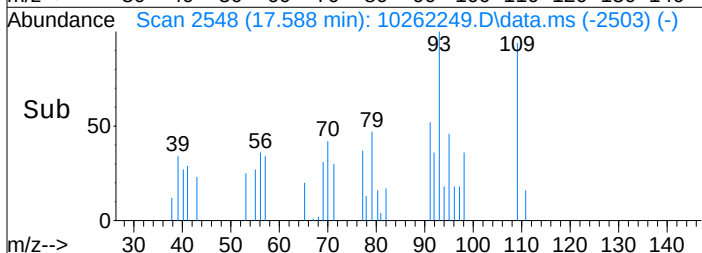
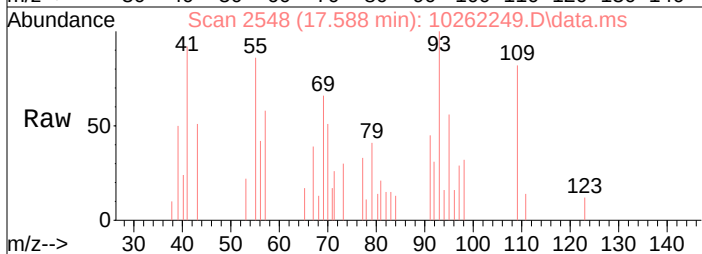
Tgt Ion:	105	Resp:	53232
Ion Ratio		Lower	Upper
105	100		
120	22.5	4.1	44.1





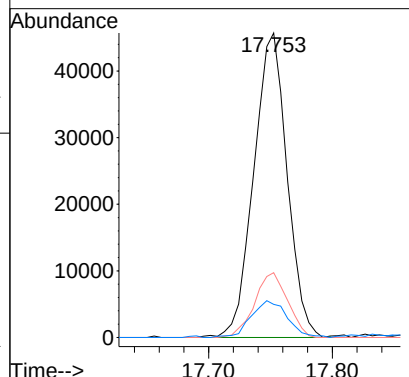
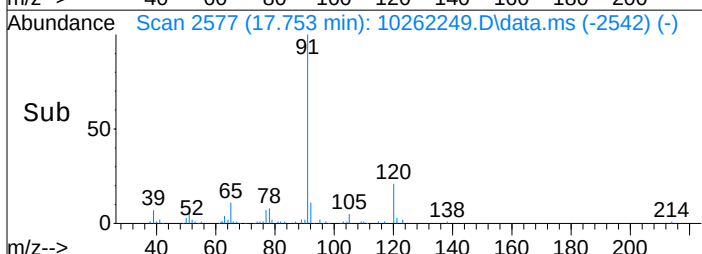
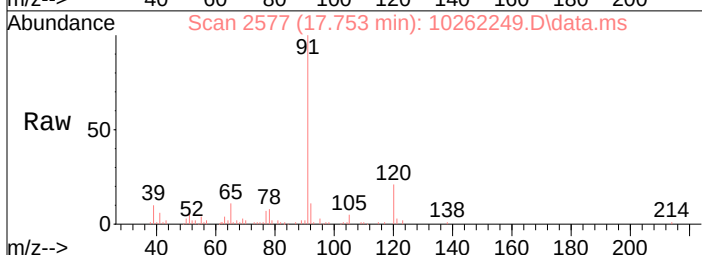
#75
 alpha-Pinene
 Concen: 0.08 ng
 RT: 17.59 min Scan# 2548
 Delta R.T. 0.006 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

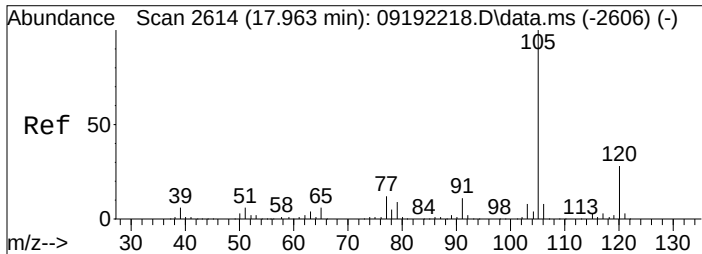
Tgt Ion:	93	Resp:	2668
Ion Ratio	Lower	Upper	
93	100		
77	52.9	11.8	51.8#



#76
 n-Propylbenzene
 Concen: 1.11 ng
 RT: 17.75 min Scan# 2577
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

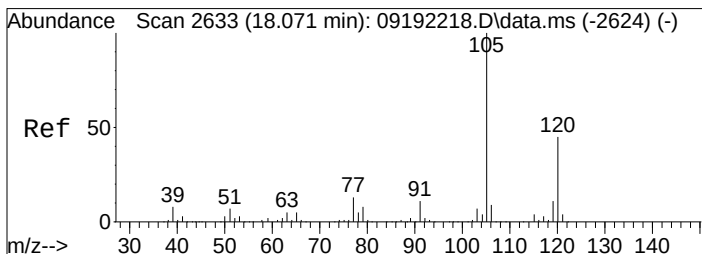
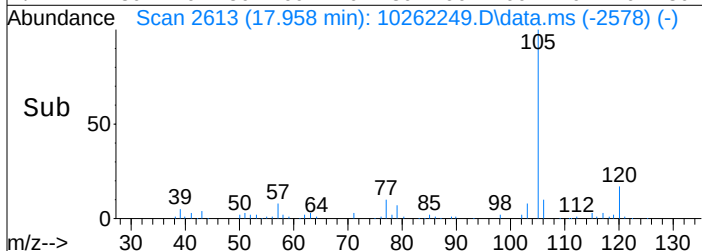
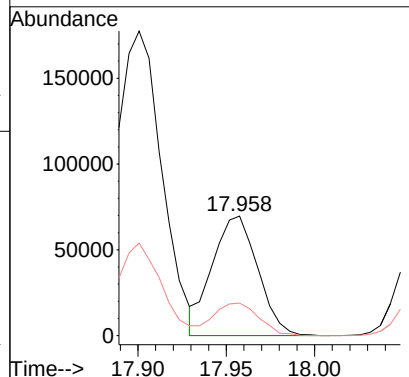
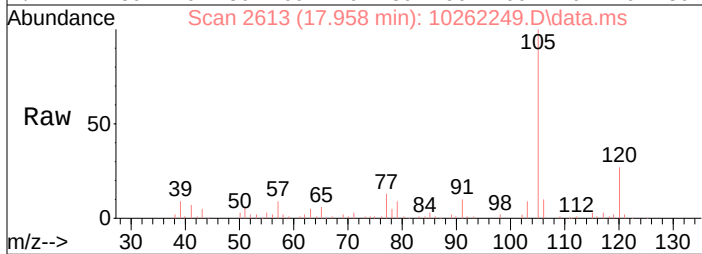
Tgt Ion:	91	Resp:	85764
Ion Ratio	Lower	Upper	
91	100		
120	21.1	2.1	42.1
65	13.1	0.0	31.9





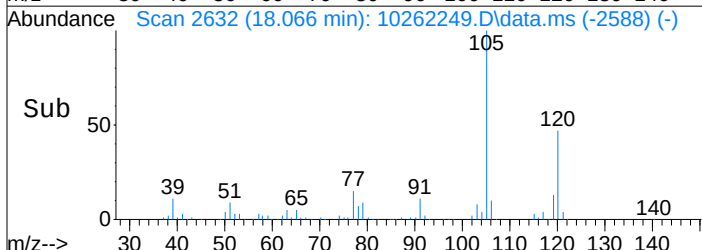
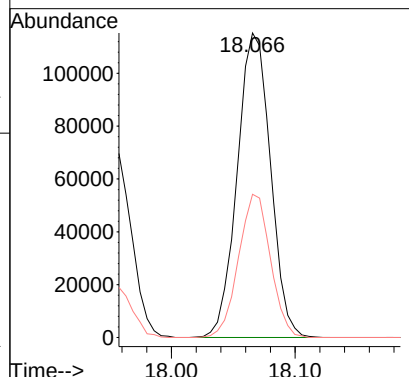
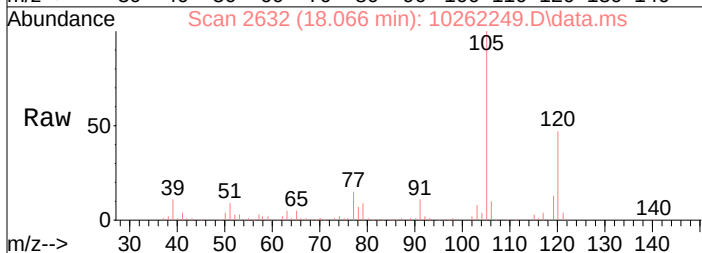
#78
 4-Ethyltoluene
 Concen: 2.01 ng
 RT: 17.96 min Scan# 2613
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

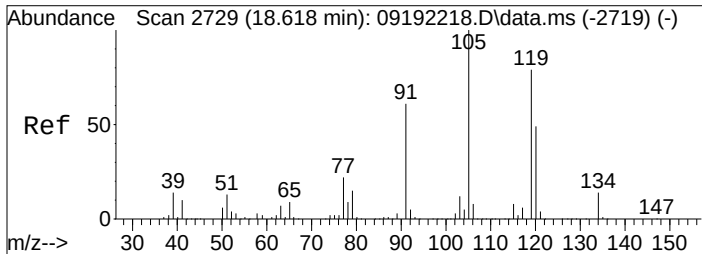
Tgt Ion:	105	Resp:	124662
Ion Ratio	Lower	Upper	
105	100		
120	26.3	7.9	47.9



#79
 1,3,5-Trimethylbenzene
 Concen: 3.80 ng
 RT: 18.07 min Scan# 2632
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

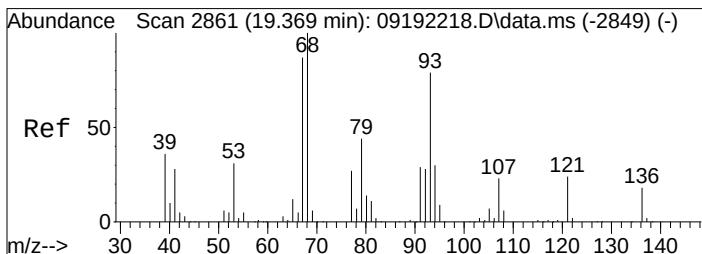
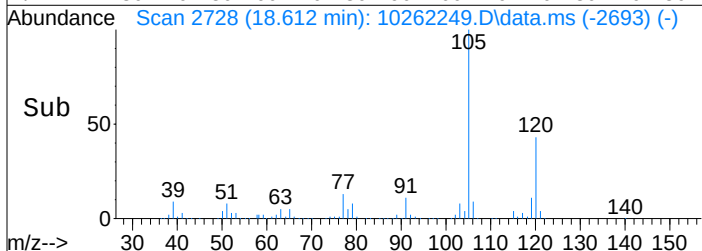
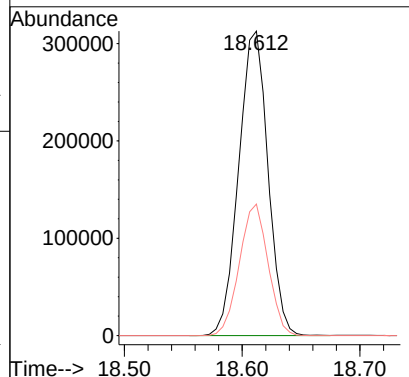
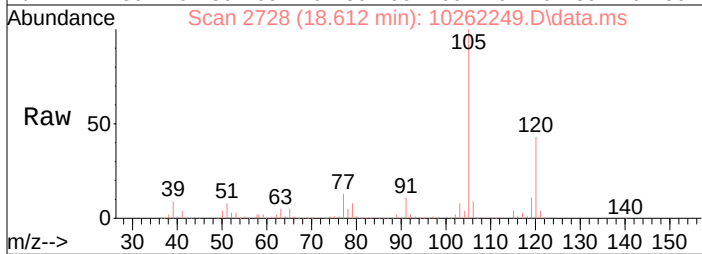
Tgt Ion:	105	Resp:	216089
Ion Ratio	Lower	Upper	
105	100		
120	45.2	24.5	64.5





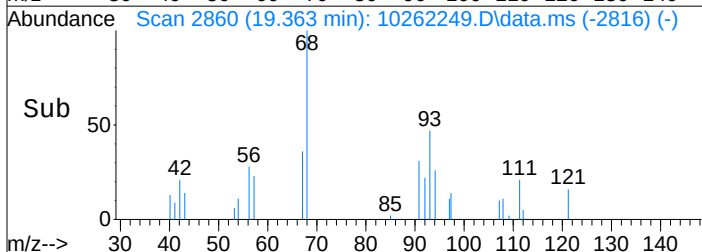
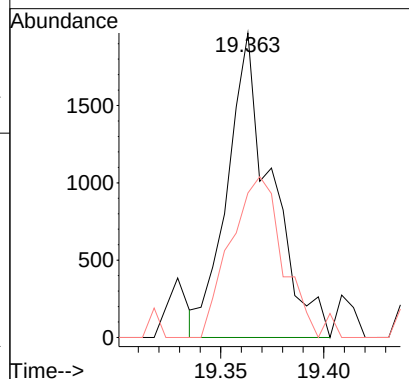
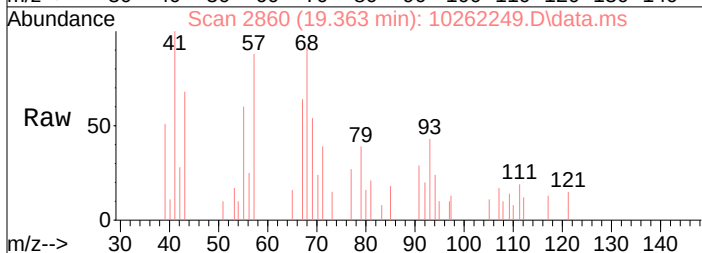
#82
 1,2,4-Trimethylbenzene
 Concen: 9.60 ng
 RT: 18.61 min Scan# 2728
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

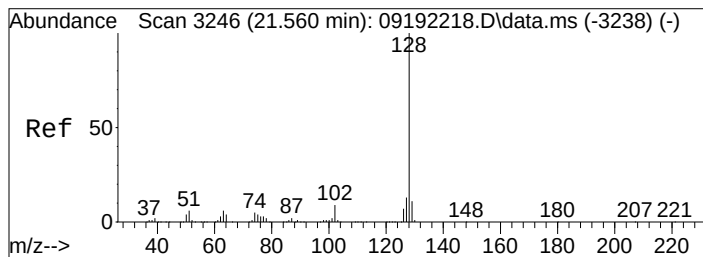
Tgt Ion:	105	Resp:	540344
Ion Ratio	Lower	Upper	
105	100		
120	42.3	28.6	68.6



#91
 d-Limonene
 Concen: 0.17 ng
 RT: 19.36 min Scan# 2860
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

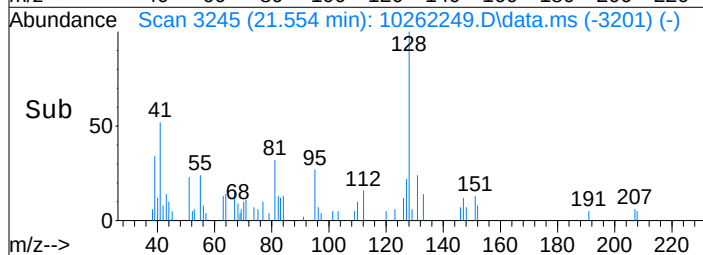
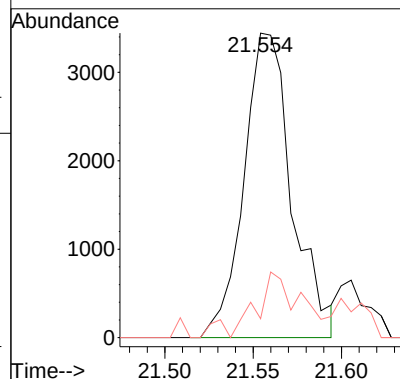
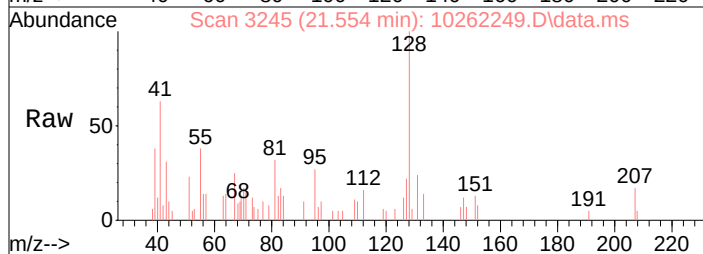
Tgt Ion:	68	Resp:	2930
Ion Ratio	Lower	Upper	
68	100		
93	64.1	58.7	98.7





#95
 Naphthalene
 Concen: 0.14 ng
 RT: 21.55 min Scan# 3245
 Delta R.T. 0.000 min
 Lab File: 10262249.D
 Acq: 27 Oct 2022 11:33

Tgt Ion:128 Resp: 6515
 Ion Ratio Lower Upper
 128 100
 129 19.0 0.0 30.9



Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262249.D
 Acq On : 27 Oct 2022 11:33
 Operator : TZ
 Sample : P2204669-002 (1000mL)
 Misc : S35-08172209
 ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Signal : TIC: 10262249.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.559	77	83	88	rBV	22549	25789	0.18%	0.025%
2	3.616	88	93	101	rVB4	7125	14713	0.10%	0.014%
3	3.719	105	111	134	rVV	497063	712262	5.03%	0.691%
4	3.884	134	140	147	rVV	42772	67249	0.48%	0.065%
5	3.963	147	154	164	rVV	2725601	4079985	28.83%	3.960%
6	4.043	164	168	172	rVV	50592	72851	0.51%	0.071%
7	4.088	172	176	186	rVV3	23423	42844	0.30%	0.042%
8	4.174	186	191	198	rVB	28379	41306	0.29%	0.040%
9	4.407	225	232	247	rBV	50352	101118	0.71%	0.098%
10	4.532	247	254	263	rBV3	34973	69718	0.49%	0.068%
11	4.783	281	298	310	rBV	6437858	14150135	100.00%	13.735%
12	4.880	310	315	323	rVV2	33630	70992	0.50%	0.069%
13	4.959	323	329	342	rVV3	176059	516368	3.65%	0.501%
14	5.096	342	353	359	rVV	287108	580955	4.11%	0.564%
15	5.181	359	368	377	rVV	5502473	10073425	71.19%	9.778%
16	5.301	377	389	398	rVV	852771	1578548	11.16%	1.532%
17	5.380	398	403	407	rVV2	24857	51366	0.36%	0.050%
18	5.443	407	414	421	rVV	333518	629057	4.45%	0.611%
19	5.534	421	430	445	rVB	1800060	3267713	23.09%	3.172%
20	5.710	451	461	471	rBV	275312	557529	3.94%	0.541%
21	5.858	475	487	502	rBV	538610	1090160	7.70%	1.058%
22	6.245	542	555	561	rBV2	120477	274678	1.94%	0.267%
23	6.297	561	564	568	rVV3	39256	75092	0.53%	0.073%
24	6.342	568	572	579	rVB3	51624	100591	0.71%	0.098%
25	6.524	592	604	612	rBV3	1246005	3477661	24.58%	3.376%
26	6.615	612	620	635	rVB	3491204	7411897	52.38%	7.195%
27	6.780	642	649	655	rBV2	12277	24211	0.17%	0.024%
28	6.979	658	684	695	rBV	1871335	4190471	29.61%	4.068%
29	7.093	695	704	713	rBV	206143	470039	3.32%	0.456%
30	7.184	713	720	734	rVB	1089881	2225683	15.73%	2.160%
31	7.338	738	747	751	rBV	353820	715750	5.06%	0.695%
32	7.429	751	763	768	rBV2	1681040	4811144	34.00%	4.670%
33	7.549	778	784	789	rVB	205150	386807	2.73%	0.375%
34	7.611	789	795	804	rVB	361184	747468	5.28%	0.726%
35	7.725	804	815	823	rBV	277760	603517	4.27%	0.586%
36	7.822	823	832	840	rVB2	126176	271932	1.92%	0.264%
37	7.998	853	863	873	rBV	317097	658291	4.65%	0.639%
38	8.106	873	882	898	rVV2	308187	796277	5.63%	0.773%
39	8.260	898	909	915	rVV	1204648	2728468	19.28%	2.648%
40	8.328	915	921	937	rVB2	592118	1362171	9.63%	1.322%

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262249.D
 Acq On : 27 Oct 2022 11:33
 Operator : TZ
 Sample : P2204669-002 (1000mL)
 Misc : S35-08172209
 ALS Vial : 3 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

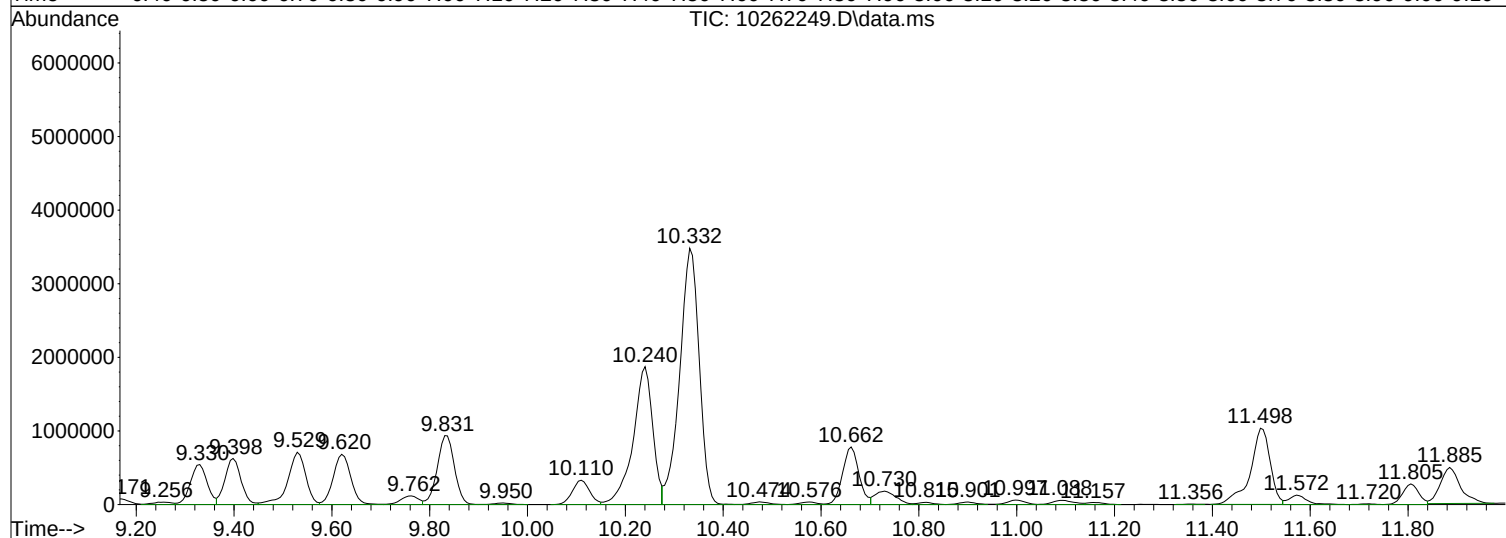
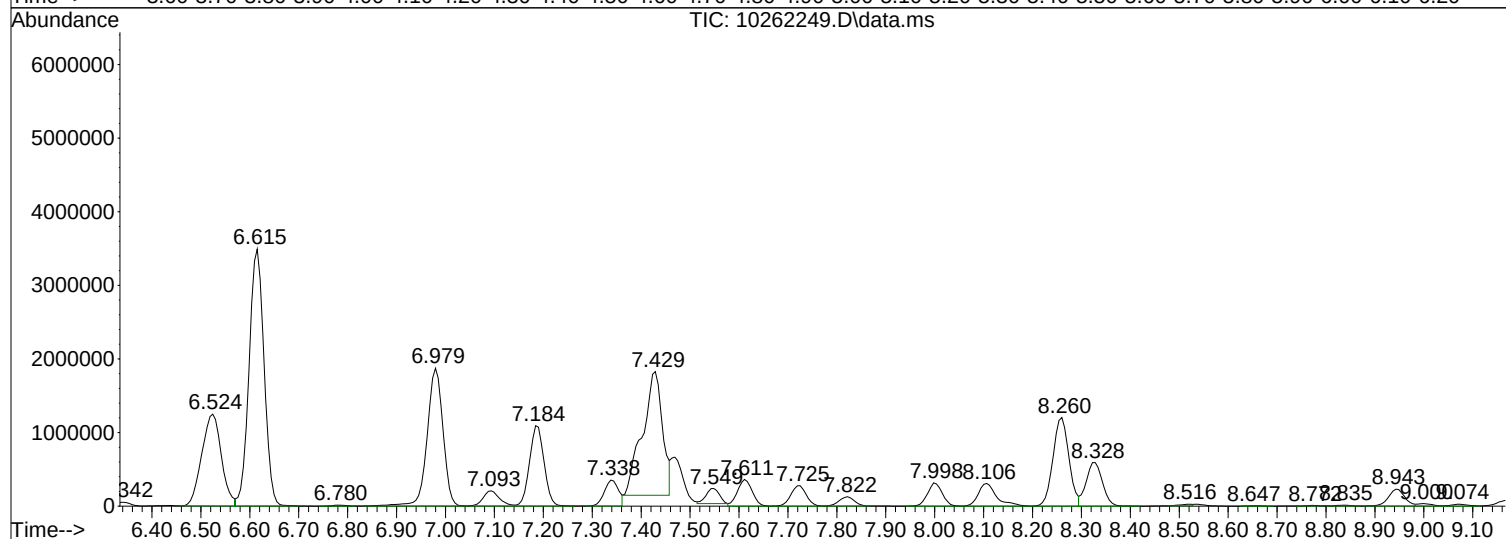
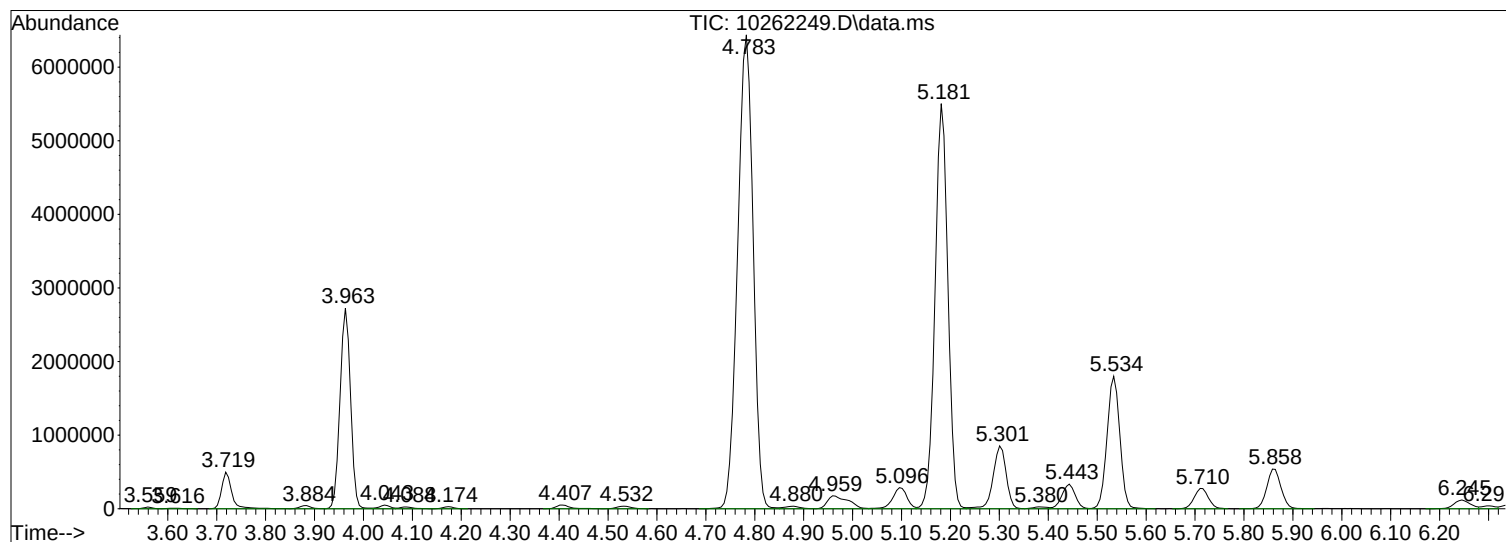
41	8.516	947	954	956	rBV4	22263	43189	0.31%	0.042%
42	8.647	973	977	985	rBV4	4607	10043	0.07%	0.010%
43	8.772	993	999	1002	rBV3	8838	13651	0.10%	0.013%
44	8.835	1004	1010	1016	rVV2	12654	25959	0.18%	0.025%
45	8.943	1017	1029	1036	rVV	229038	533154	3.77%	0.518%
46	9.000	1036	1039	1046	rVV3	33675	65674	0.46%	0.064%
47	9.074	1046	1052	1059	rVV3	24631	54954	0.39%	0.053%
48	9.171	1059	1069	1076	rVV6	75082	192932	1.36%	0.187%
49	9.256	1076	1084	1088	rVV3	31153	85406	0.60%	0.083%
50	9.330	1088	1097	1103	rVV2	543618	1299712	9.19%	1.262%
51	9.398	1103	1109	1118	rVV	625374	1415185	10.00%	1.374%
52	9.529	1118	1132	1140	rVV	710433	1798550	12.71%	1.746%
53	9.620	1140	1148	1163	rVV3	682523	1689692	11.94%	1.640%
54	9.762	1163	1173	1177	rVV3	117206	296430	2.09%	0.288%
55	9.831	1177	1185	1197	rVV	936835	2272503	16.06%	2.206%
56	9.950	1197	1206	1215	rVB3	20966	48583	0.34%	0.047%
57	10.110	1223	1234	1241	rBV2	329249	810807	5.73%	0.787%
58	10.240	1241	1257	1263	rVV2	1873292	5245583	37.07%	5.092%
59	10.332	1263	1273	1289	rVV	3480797	9617855	67.97%	9.336%
60	10.474	1289	1298	1308	rVV2	37173	86605	0.61%	0.084%
61	10.576	1308	1316	1321	rVV4	34586	79981	0.57%	0.078%
62	10.662	1321	1331	1338	rVV	782788	1834531	12.96%	1.781%
63	10.730	1338	1343	1353	rVV5	183371	533282	3.77%	0.518%
64	10.815	1353	1358	1365	rVV5	30941	62528	0.44%	0.061%
65	10.901	1365	1373	1380	rVV4	33631	79316	0.56%	0.077%
66	10.997	1383	1390	1398	rVV2	61315	149517	1.06%	0.145%
67	11.088	1398	1406	1415	rVV4	56227	170992	1.21%	0.166%
68	11.157	1415	1418	1428	rVB4	27277	61017	0.43%	0.059%
69	11.356	1447	1453	1458	rBV5	7004	15798	0.11%	0.015%
70	11.498	1460	1478	1486	rVV	1035063	2929225	20.70%	2.843%
71	11.572	1486	1491	1510	rVB3	127887	319625	2.26%	0.310%
72	11.720	1510	1517	1522	rBV4	9319	18556	0.13%	0.018%
73	11.805	1522	1532	1538	rBV	279531	644193	4.55%	0.625%
74	11.885	1538	1546	1562	rVB4	488450	1389549	9.82%	1.349%

Sum of corrected areas: 103020808

Data Path : I:\MS13\DATA\2022_10\26\
Data File : 10262249.D
Acq On : 27 Oct 2022 11:33
Operator : TZ
Sample : P2204669-002 (1000mL)
Misc : S35-08172209
ALS Vial : 3 Sample Multiplier: 1

Quant Method : I:\MS13\METHODS\R13091922.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS13\DATA\2022_10\26\
Data File : 10262249.D
Acq On : 27 Oct 2022 11:333
Operator : TZZ
Sample : P2204669-002 (1000mL)
Misc : S35-081722099
ALS Vial : 3 Sample Multiplier: 11

Quant Method : I:\MS13\METHODS\R13091922.MM
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

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

No Library Search Compounds Detected

TZ 10/27/22

Data File : I:\MS13\DATA\2022_10\26\10262233.D
 Acq On : 26 Oct 2022 22:40
 Sample : MB2 R13102622 1000mL
 Misc : S35-08172209_AC01387

Vial: 2
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 07:30:55 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	115617	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.38	114	511433	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	126332	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.09	65	263899	14.555	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	116.40%	
57) Toluene-d8 (SS2)	12.49	98	592289	10.815	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	86.48%	
73) Bromofluorobenzene (SS3)	16.86	174	199590	10.242	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	81.92%	

Target Compounds

						Qvalue
2) Propene	3.45	42	426	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.42	45	891	0.111	ng	# 57
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.78	58	1185	0.168	ng	# 69
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.99	45	611	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.74	76	2598	0.066	ng	# 75
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.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.11	62	155	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	0.00	78	0	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.38	84	242	N.D.		
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...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2022_10\26\10262233.D
 Acq On : 26 Oct 2022 22:40
 Sample : MB2 R13102622 1000mL
 Misc : S35-08172209_AC01387

Vial: 2
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:55 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.61	91	146	N.D.		
59) 2-Hexanone	13.04	43	153	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.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	15.69	91	181	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.06	105	237	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.78	91	1206	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	151	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	142	N.D.		
95) Naphthalene	21.58	128	509	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	19.72	91	172	N.D.		
101) 1,1,1,2-Tetrachloroethane	14.93	131	187	N.D.		

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

Data File : I:\MS13\DATA\2022_10\26\10262233.D
Acq On : 26 Oct 2022 22:40
Sample : MB2 R13102622 1000mL
Misc : S35-08172209_AC01387

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Oct 27 07:30:55 2022

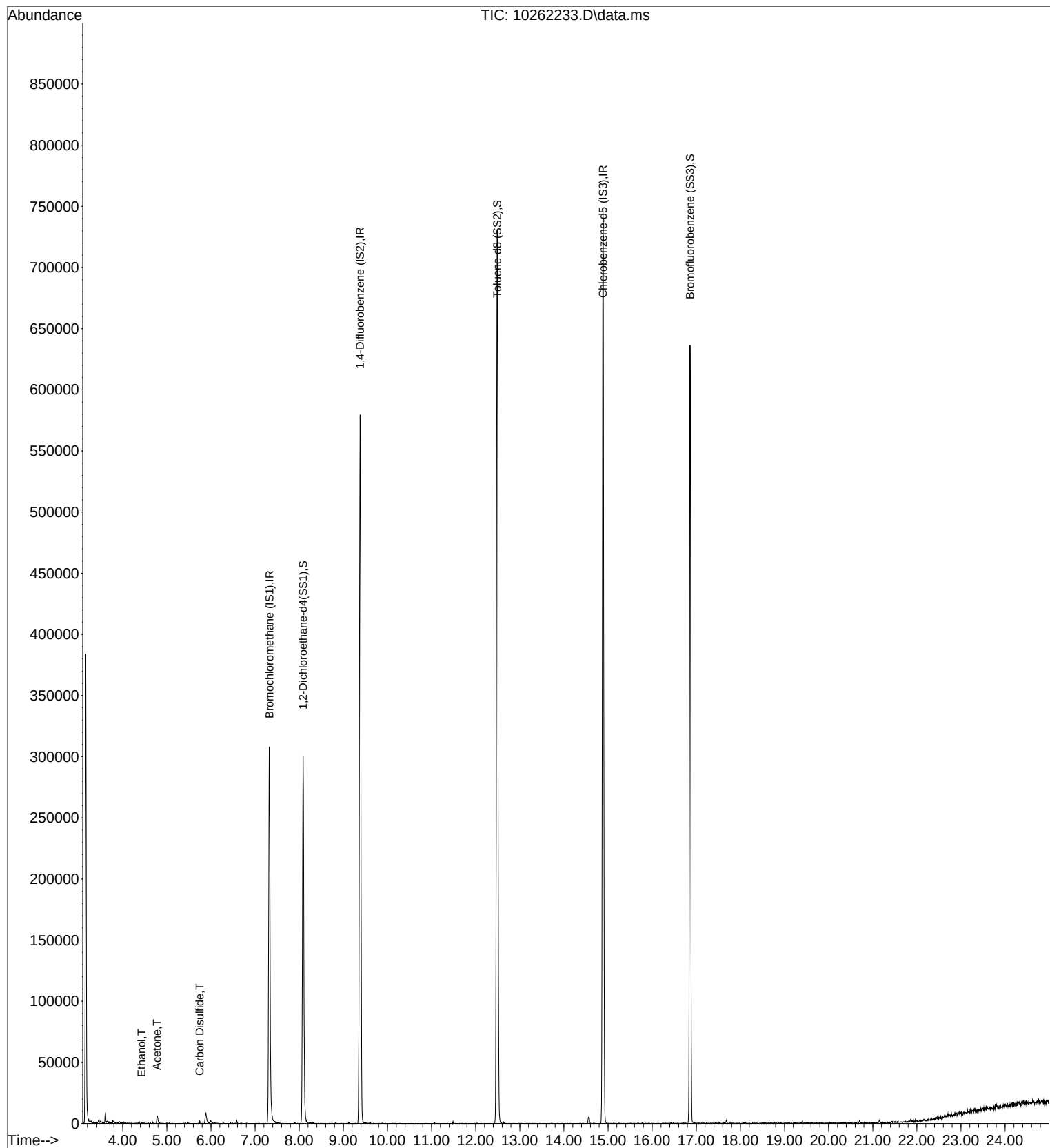
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2022_10\26\10262234.D
 Acq On : 26 Oct 2022 23:17
 Sample : LCS2 R13102622 25ng
 Misc : S35-08172209/S35-10192202 (11/18)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:57 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	123554	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.41	114	534238	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	134611	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.12	65	280663	14.485	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	115.92%
57) Toluene-d8 (SS2)	12.50	98	612291	10.492	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.92%
73) Bromofluorobenzene (SS3)	16.86	174	214526	10.332	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.64%

Target Compounds

						Qvalue
2) Propene	3.38	42	343588	25.331	ng	98
3) Dichlorodifluoromethan...	3.46	85	678283	25.007	ng	98
4) Chloromethane	3.60	50	399466	27.829	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	267029	20.692	ng	98
6) Vinyl Chloride	3.79	62	384121	23.063	ng	98
7) 1,3-Butadiene	3.91	54	323032	24.732	ng	95
8) Bromomethane	4.13	94	240010	22.490	ng	97
9) Chloroethane	4.27	64	179256	24.120	ng	95
10) Ethanol	4.45	45	955667	111.305	ng	99
11) Acetonitrile	4.58	41	517570	25.595	ng	99
12) Acrolein	4.66	56	347869	49.784	ng	99
13) Acetone	4.77	58	933480	123.909	ng	# 87
14) Trichlorofluoromethane	4.87	101	588151	23.907	ng	99
15) 2-Propanol (Isopropanol)	5.00	45	1604494	55.844	ng	99
16) Acrylonitrile	5.14	53	710348	54.460	ng	99
17) 1,1-Dichloroethene	5.37	96	259370	25.110	ng	# 82
18) 2-Methyl-2-Propanol (t...	5.47	59	1517959	57.158	ng	97
19) Methylene Chloride	5.49	84	259534	23.352	ng	83
20) 3-Chloro-1-propene (Al...	5.57	41	445190	27.396	ng	90
21) Trichlorotrifluoroethane	5.69	151	239175	21.722	ng	91
22) Carbon Disulfide	5.72	76	1929670	45.542	ng	98
23) trans-1,2-Dichloroethene	6.27	61	446252	27.359	ng	93
24) 1,1-Dichloroethane	6.46	63	513013	26.982	ng	98
25) Methyl tert-Butyl Ether	6.48	73	881308	25.934	ng	97
26) Vinyl Acetate	6.58	86	209875	110.428	ng	# 54
27) 2-Butanone (MEK)	6.79	72	323773	49.489	ng	# 81
28) cis-1,2-Dichloroethene	7.21	61	419130	27.600	ng	88
29) Diisopropyl Ether	7.40	87	397752	47.249	ng	# 77
30) Ethyl Acetate	7.41	61	304565	74.826	ng	92
31) n-Hexane	7.40	57	417055	26.509	ng	99
32) Chloroform	7.50	83	539539	25.946	ng	99
34) Tetrahydrofuran (THF)	7.87	72	315260	47.874	ng	# 89
35) Ethyl tert-Butyl Ether	7.94	87	643093	49.341	ng	# 88
36) 1,2-Dichloroethane	8.24	62	498080	27.835	ng	99
38) 1,1,1-Trichloroethane	8.51	97	516281	24.834	ng	95
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	9.01	78	1035216	25.790	ng	98
42) Carbon Tetrachloride	9.17	117	426121	23.304	ng	99
43) Cyclohexane	9.31	84	691936	47.659	ng	90
44) tert-Amyl Methyl Ether	9.69	73	1675624	52.576	ng	96
45) 1,2-Dichloropropane	9.96	63	248111	26.291	ng	96
46) Bromodichloromethane	10.17	83	442871	27.884	ng	97
47) Trichloroethene	10.25	130	270154	22.845	ng	97
48) 1,4-Dioxane	10.22	88	208955	24.409	ng	84
49) 2,2,4-Trimethylpentane...	10.32	57	1066760	26.825	ng	93
50) Methyl Methacrylate	10.50	100	204169	49.911	ng	89

Data File : I:\MS13\DATA\2022_10\26\10262234.D
 Acq On : 26 Oct 2022 23:17
 Sample : LCS2 R13102622 25ng
 Misc : S35-08172209/S35-10192202 (11/18)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:57 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

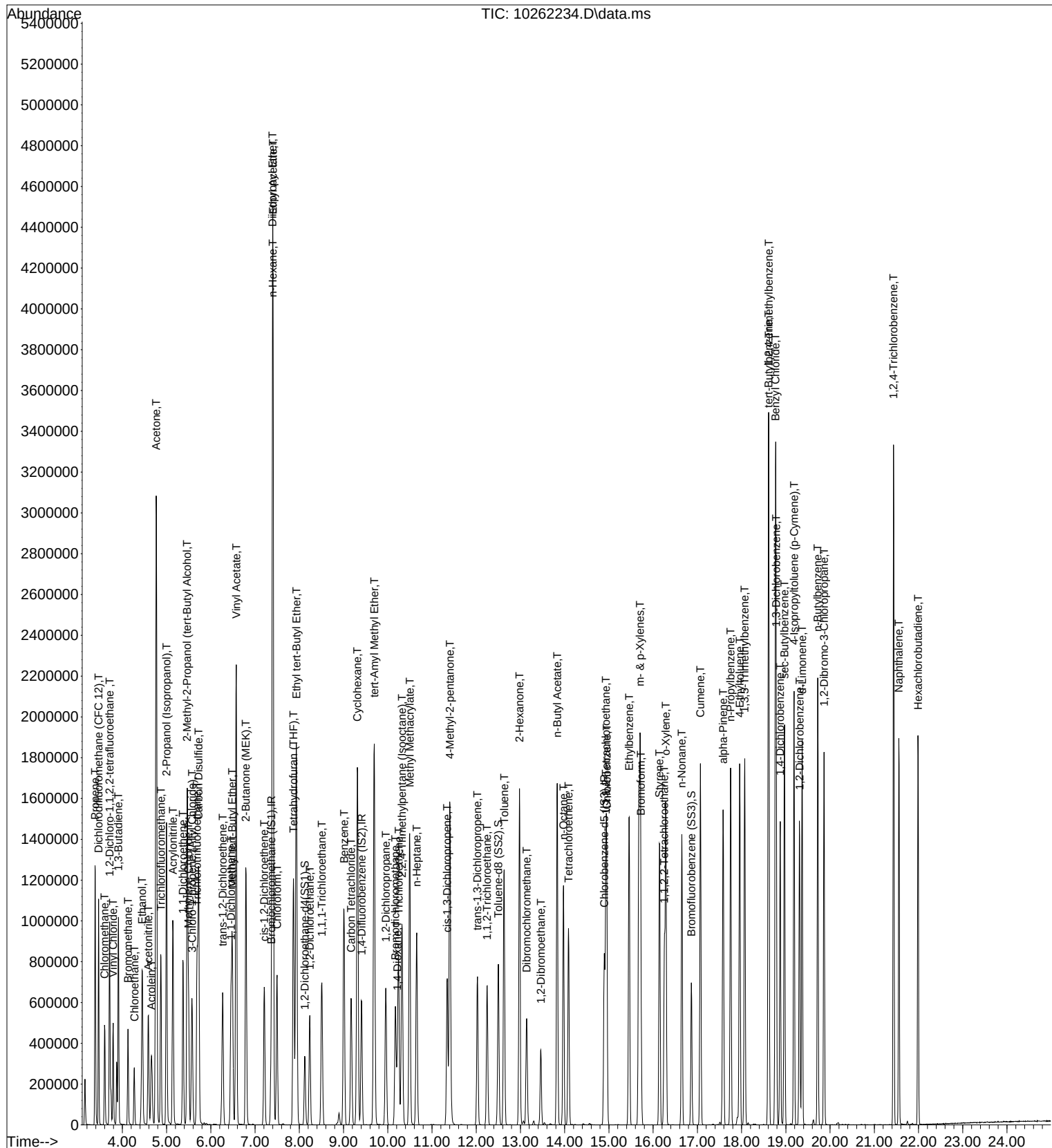
DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	230524	24.152	ng	91
52) cis-1,3-Dichloropropene	11.34	75	452410	27.303	ng	100
53) 4-Methyl-2-pentanone	11.41	58	479069	57.079	ng	84
54) trans-1,3-Dichloropropene	12.03	75	442702	27.380	ng	99
55) 1,1,2-Trichloroethane	12.24	97	250671	24.065	ng	95
58) Toluene	12.63	91	1074793	20.131	ng	97
59) 2-Hexanone	12.98	43	1333128	50.454	ng	97
60) Dibromochloromethane	13.14	129	347992	20.321	ng	96
61) 1,2-Dibromoethane	13.46	107	301321	19.913	ng	97
62) n-Butyl Acetate	13.83	43	1455620	49.370	ng	95
63) n-Octane	13.97	57	223527	22.978	ng	91
64) Tetrachloroethene	14.09	166	312359	18.907	ng	98
65) Chlorobenzene	14.95	112	678496	19.653	ng	99
66) Ethylbenzene	15.46	91	1273398	20.586	ng	98
67) m- & p-Xylenes	15.70	91	2119381	41.331	ng	100
68) Bromoform	15.72	173	303896	19.750	ng	94
69) Styrene	16.14	104	724396	20.986	ng	99
70) o-Xylene	16.28	91	1054592	20.787	ng	98
71) n-Nonane	16.65	43	564787	25.185	ng	91
72) 1,1,2,2-Tetrachloroethane	16.25	83	449708	20.943	ng	100
74) Cumene	17.07	105	1260197	20.095	ng	98
75) alpha-Pinene	17.58	93	648587	20.548	ng	93
76) n-Propylbenzene	17.75	91	1520252	20.623	ng	97
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	1235830	20.884	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	1099953	20.276	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	1104942	20.556	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	1973670	49.469	ng	96
85) 1,3-Dichlorobenzene	18.78	146	591874	20.305	ng	100
86) 1,4-Dichlorobenzene	18.87	146	594872	21.364	ng	99
87) sec-Butylbenzene	18.97	105	1377486	20.058	ng	98
88) 4-Isopropyltoluene (p-...	19.19	119	1200967	19.705	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	580577	20.028	ng	98
91) d-Limonene	19.37	68	391388	23.306	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.86	157	444034	40.176	ng	# 74
93) n-Undecane	18.25	58	145	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	909084	47.315	ng	98
95) Naphthalene	21.55	128	1276932	28.982	ng	100
96) n-Dodecane	19.19	58	32325	No Calib	#	
97) Hexachlorobutadiene	21.99	225	339841	18.301	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	1010293	19.335	ng	99
100) n-Butylbenzene	19.72	91	1165025	21.987	ng	99
101) 1,1,1,2-Tetrachloroethane	14.93	131	278751	19.070	ng	98

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Oct 27 07:30:57 2022



Data File : I:\MS13\DATA\2022_10\26\10262235.D
 Acq On : 26 Oct 2022 23:54
 Sample : LCSD2 R13102622 25ng
 Misc : S35-08172209/S35-10192202 (11/18)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 07:30:59 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	123366	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.41	114	547463	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.89	54	138851	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.12	65	290507	15.016	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	120.16%
57) Toluene-d8 (SS2)	12.50	98	629039	10.450	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.60%
73) Bromofluorobenzene (SS3)	16.86	174	214850	10.031	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	80.24%

Target Compounds

						Qvalue
2) Propene	3.39	42	355934	26.281	ng	97
3) Dichlorodifluoromethan...	3.46	85	693940	25.623	ng	99
4) Chloromethane	3.60	50	413802	28.871	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	286041	22.199	ng	100
6) Vinyl Chloride	3.79	62	393081	23.637	ng	98
7) 1,3-Butadiene	3.91	54	337563	25.884	ng	95
8) Bromomethane	4.13	94	246026	23.089	ng	99
9) Chloroethane	4.27	64	181387	24.444	ng	96
10) Ethanol	4.45	45	992493	115.770	ng	100
11) Acetonitrile	4.59	41	534427	26.469	ng	99
12) Acrolein	4.66	56	360911	51.730	ng	99
13) Acetone	4.77	58	960754	127.724	ng	# 85
14) Trichlorofluoromethane	4.87	101	596166	24.270	ng	100
15) 2-Propanol (Isopropanol)	5.00	45	1670558	58.232	ng	98
16) Acrylonitrile	5.15	53	734808	56.421	ng	98
17) 1,1-Dichloroethene	5.37	96	264267	25.623	ng	# 81
18) 2-Methyl-2-Propanol (t...	5.47	59	1601229	60.386	ng	97
19) Methylene Chloride	5.49	84	269017	24.242	ng	82
20) 3-Chloro-1-propene (Al...	5.57	41	459159	28.299	ng	89
21) Trichlorotrifluoroethane	5.69	151	244071	22.200	ng	88
22) Carbon Disulfide	5.73	76	2001791	47.316	ng	98
23) trans-1,2-Dichloroethene	6.27	61	460408	28.270	ng	93
24) 1,1-Dichloroethane	6.46	63	526243	27.720	ng	98
25) Methyl tert-Butyl Ether	6.48	73	901115	26.557	ng	98
26) Vinyl Acetate	6.58	86	213803	112.667	ng	# 51
27) 2-Butanone (MEK)	6.80	72	331336	50.723	ng	# 78
28) cis-1,2-Dichloroethene	7.21	61	427486	28.193	ng	90
29) Diisopropyl Ether	7.40	87	411122	48.912	ng	# 77
30) Ethyl Acetate	7.41	61	315801	77.705	ng	93
31) n-Hexane	7.40	57	442254	28.154	ng	98
32) Chloroform	7.50	83	550011	26.489	ng	100
34) Tetrahydrofuran (THF)	7.87	72	330048	50.196	ng	# 88
35) Ethyl tert-Butyl Ether	7.94	87	659253	50.658	ng	# 88
36) 1,2-Dichloroethane	8.24	62	518376	29.013	ng	100
38) 1,1,1-Trichloroethane	8.51	97	525057	24.646	ng	96
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.91	56	6646	No Calib	#	
41) Benzene	9.01	78	1051288	25.557	ng	99
42) Carbon Tetrachloride	9.17	117	432947	23.105	ng	99
43) Cyclohexane	9.31	84	716510	48.160	ng	91
44) tert-Amyl Methyl Ether	9.69	73	1715886	52.539	ng	95
45) 1,2-Dichloropropane	9.96	63	252573	26.117	ng	97
46) Bromodichloromethane	10.17	83	449072	27.591	ng	97
47) Trichloroethene	10.25	130	283948	23.432	ng	99
48) 1,4-Dioxane	10.22	88	216341	24.661	ng	84
49) 2,2,4-Trimethylpentane...	10.32	57	1099299	26.976	ng	92
50) Methyl Methacrylate	10.50	100	210036	50.105	ng	# 88

Data File : I:\MS13\DATA\2022_10\26\10262235.D
 Acq On : 26 Oct 2022 23:54
 Sample : LCSD2 R13102622 25ng
 Misc : S35-08172209/S35-10192202 (11/18)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:59 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

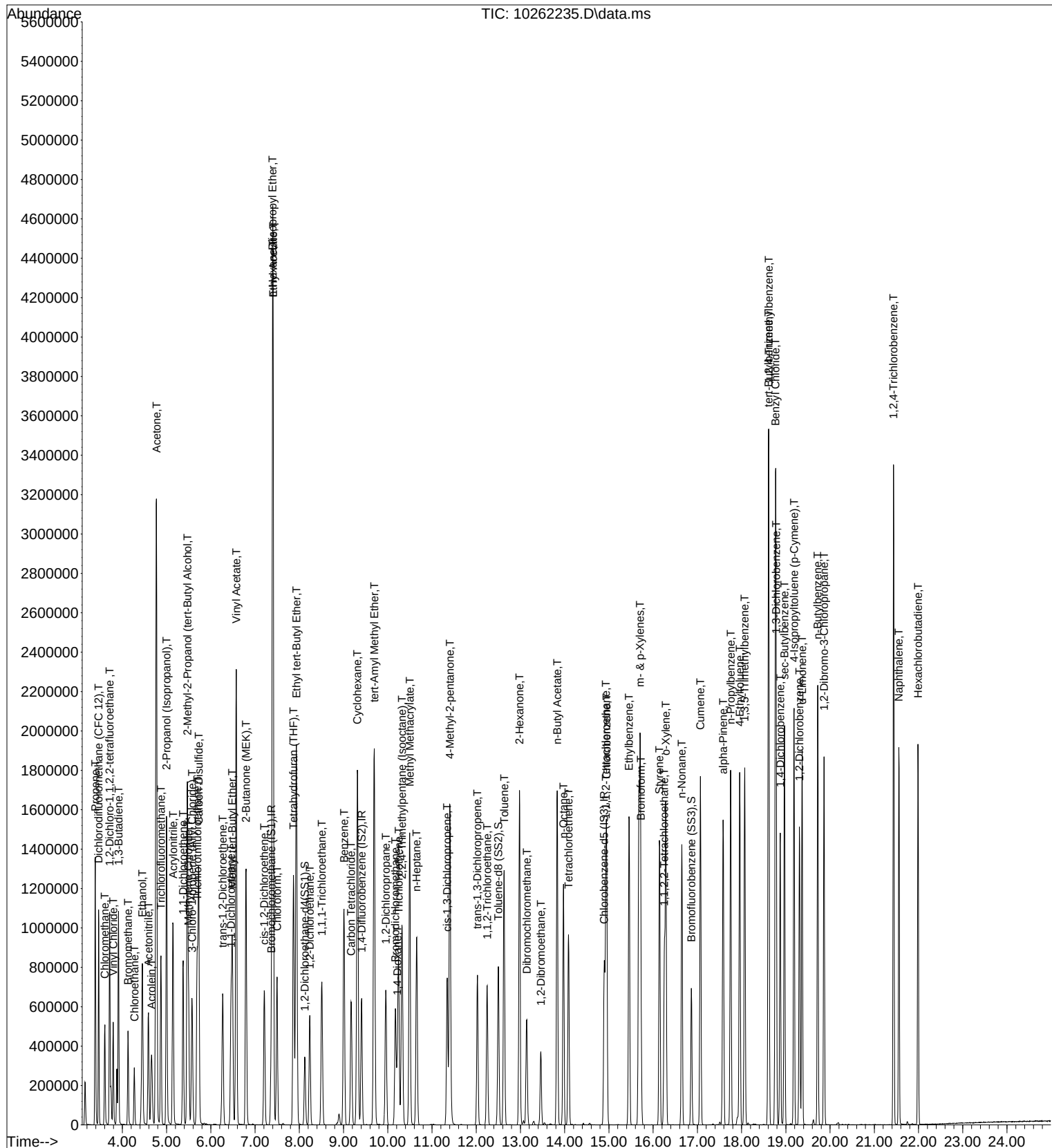
DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	246664	25.219	ng	94
52) cis-1,3-Dichloropropene	11.34	75	460514	27.121	ng	100
53) 4-Methyl-2-pentanone	11.41	58	504788	58.690	ng	87
54) trans-1,3-Dichloropropene	12.03	75	457339	27.602	ng	99
55) 1,1,2-Trichloroethane	12.25	97	261738	24.520	ng	98
58) Toluene	12.63	91	1101887	20.008	ng	97
59) 2-Hexanone	12.98	43	1376990	50.522	ng	98
60) Dibromochloromethane	13.14	129	357630	20.246	ng	96
61) 1,2-Dibromoethane	13.46	107	306818	19.657	ng	98
62) n-Butyl Acetate	13.83	43	1504543	49.471	ng	95
63) n-Octane	13.97	57	226535	22.576	ng	93
64) Tetrachloroethene	14.09	166	316960	18.600	ng	97
65) Chlorobenzene	14.95	112	685086	19.238	ng	98
66) Ethylbenzene	15.45	91	1302868	20.420	ng	99
67) m- & p-Xylenes	15.70	91	2194140	41.482	ng	99
68) Bromoform	15.72	173	308828	19.457	ng	94
69) Styrene	16.14	104	748275	21.016	ng	98
70) o-Xylene	16.28	91	1086436	20.761	ng	98
71) n-Nonane	16.65	43	578181	24.995	ng	92
72) 1,1,2,2-Tetrachloroethane	16.25	83	460944	20.810	ng	100
74) Cumene	17.07	105	1286177	19.883	ng	98
75) alpha-Pinene	17.58	93	654954	20.116	ng	92
76) n-Propylbenzene	17.75	91	1566355	20.600	ng	97
77) 3-Ethyltoluene	17.20	105	335	No Calib	#	
78) 4-Ethyltoluene	17.96	105	1249672	20.473	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	1128144	20.160	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.20	105	335	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1125930	20.306	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	1998668	48.566	ng	96
85) 1,3-Dichlorobenzene	18.78	146	602682	20.045	ng	100
86) 1,4-Dichlorobenzene	18.87	146	605526	21.082	ng	99
87) sec-Butylbenzene	18.97	105	1410524	19.912	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	1232561	19.606	ng	97
89) 1,2,3-Trimethylbenzene	17.20	105	335	No Calib	#	
90) 1,2-Dichlorobenzene	19.31	146	584573	19.550	ng	96
91) d-Limonene	19.37	68	400550	23.123	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.86	157	452410	39.684	ng	# 74
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	925007	46.674	ng	98
95) Naphthalene	21.55	128	1297309	28.545	ng	100
96) n-Dodecane	19.19	58	29664	No Calib	#	
97) Hexachlorobutadiene	21.99	225	345290	18.027	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	1031693	19.142	ng	99
100) n-Butylbenzene	19.72	91	1188546	21.746	ng	99
101) 1,1,1,2-Tetrachloroethane	14.93	131	282920	18.764	ng	97

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Oct 27 07:30:59 2022



T2 9/20/22

Method Path : I:\MS13\METHODS\
 Method File : R13091922.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Mon Sep 19 21:20:24 2022
 Response Via : Initial Calibration

Calibration Files

0:1 =091922213.D 0.2 =091922214.D 0.5 =091922215.D 1.0 =091922216.D 5.0 =091922217.D 25 =091922218.D 50 =091922219.D
 100 =091922220.D

Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1) IR Bromochloromethane...	-----ISTD-----									
2) T Propene	1.675	1.369	1.350	1.278	1.351	1.248	1.313	1.395	1.372	9.59
3) T Dichlorodifluo...	2.554	2.839	2.768	2.874	2.778	2.763	2.676	2.701	2.744	3.66
4) T Chloromethane	1.887	1.620	1.577	1.692	1.288	1.529	1.245		1.548	14.47
5) T 1,2-Dichloro-1...	1.263	1.416	1.311	1.303	1.292	1.344	1.250	1.266	1.306	4.12
6) T Vinyl Chloride	1.628	1.724	1.758	1.667	1.663	1.681	1.707	1.652	1.685	2.51
7) T 1,3-Butadiene	1.358	1.178	1.337	1.318	1.284	1.342	1.352	1.402	1.321	5.08
8) T Bromomethane	1.234	0.997	1.143	1.077	1.049	1.050	1.029	1.058	1.080	6.95
9) T Chloroethane	0.935	0.797	0.758	0.750	0.684	0.701	0.682	0.709	0.752	11.17
10) T Ethanol	0.912	0.945	0.891	0.876	0.853	0.814	0.808	0.850	0.869	5.42
11) T Acetonitrile	2.418	1.804	1.908	2.062	2.081	2.005	1.987	2.101	2.046	8.78
12) T Acrolein	0.860	0.730	0.696	0.664	0.674	0.679	0.663	0.688	0.707	9.24
13) T Acetone	0.910	0.838	0.737	0.761	0.710	0.714	0.698	0.730	0.762	9.71
14) T Trichlorofluor...	2.818	2.551	2.407	2.551	2.393	2.409	2.364	2.420	2.489	6.05
15) T 2-Propanol (Is...	3.416	3.138	3.009	2.999	2.634	2.795	2.605	2.658	2.907	9.83
16) T Acrylonitrile	1.410	1.107	1.331	1.303	1.329	1.333	1.339	1.406	1.320	7.13
17) T 1,1-Dichloroet...	1.058	0.942	1.058	1.095	1.040	1.063	1.029	1.075	1.045	4.42
18) T 2-Methyl-2-Pro...	3.270	3.168	3.189	3.243	2.664	2.869	2.088		2.927	14.77
19) T Methylene Chlo...	1.254	1.142	1.227	1.137	1.028	1.068	1.047	1.093	1.124	7.31
20) T 3-Chloro-1-pro...	1.674	1.547	1.641	1.661	1.576	1.668	1.648	1.737	1.644	3.60
21) T Trichlorotrifl...	1.264	1.192	1.135	1.124	1.064	1.073	1.022	1.038	1.114	7.41
22) T Carbon Disulfide	5.477	4.487	4.276	4.174	3.860	3.976	3.941	4.102	4.287	12.16
23) T trans-1,2-Dich...	1.677	1.603	1.700	1.591	1.609	1.660	1.652	1.710	1.650	2.73
24) T 1,1-Dichloroet...	2.067	1.961	2.009	1.908	1.857	1.869	1.826	1.891	1.924	4.28
25) T Methyl tert-Bu...	3.351	3.440	3.943	3.651	3.438	3.526	3.237	2.918	3.438	8.70
26) T Vinyl Acetate	0.193	0.157	0.196	0.197	0.196	0.202	0.199	0.199	0.192	7.55
27) T 2-Butanone (MEK)	0.694	0.685	0.651	0.696	0.649	0.642	0.634	0.644	0.662	3.81
28) T cis-1,2-Dichlo...	1.601	1.415	1.501	1.554	1.509	1.570	1.543	1.598	1.536	3.99
29) T Diisopropyl Ether	0.873	0.977	0.842	0.863	0.819	0.826	0.799	0.813	0.852	6.64
30) T Ethyl Acetate	0.419	0.401	0.417	0.413	0.398	0.415	0.408	0.424	0.412	2.18
31) T n-Hexane	1.465	1.665	1.699	1.570	1.555	1.596	1.563	1.621	1.592	4.53
32) T Chloroform	2.225	2.144	2.110	2.026	2.004	2.116	2.069	2.138	2.104	3.35
33) S 1,2-Dichloroet...	1.971	1.901	1.913	1.952	1.963	2.023	1.978	1.981	1.960	1.99
34) T Tetrahydrofura...	0.891	0.714	0.620	0.635	0.613	0.622	0.612	0.623	0.666	14.51
35) T Ethyl tert-But...	1.413	1.313	1.252	1.350	1.265	1.324	1.300	1.334	1.319	3.82
36) T 1,2-Dichloroet...	1.712	1.908	1.878	1.798	1.760	1.818	1.787	1.822	1.810	3.44
37) IR 1,4-Difluorobenzen...	-----ISTD-----									
38) T 1,1,1-Trichlor...	0.508	0.505	0.513	0.499	0.475	0.478	0.460	0.453	0.486	4.73

[illegible]

92)	T	1,2-Dibromo-3-...	1.043	1.047	0.989	1.004	1.053	1.039	1.007	1.030	1.026	2.28
93)	T	n-Undecane								0.000	0.000	-1.00
94)	T	1,2,4-Trichlor...	1.733	1.902	1.606	1.750	1.914	1.801	1.756	1.810	1.784	5.53
95)	T	Naphthalene	3.953	4.118	3.522	4.086	4.490	4.153	4.087	4.324	4.091	6.92
96)	T	n-Dodecane								0.000	0.000	-1.00
97)	T	Hexachlorobuta...	1.880	1.878	1.665	1.705	1.741	1.679	1.602	1.644	1.724	6.02
98)	T	Cyclohexanone								0.000	0.000	-1.00
99)	T	tert-Butylbenzene	5.307	4.959	5.069	4.960	4.682	4.742	4.507	4.590	4.852	5.54
100)	T	n-Butylbenzene	4.757	4.978	4.883	4.949	4.958	4.983	4.859	4.999	4.920	1.68
101)	T	1,1,1,2-Tetrac...	1.500	1.314	1.434	1.393	1.333	1.329	1.274	1.283	1.357	5.78

 (#) = Out of Range

Dilution Factors:		1		5		25		50		250		1000		Working STD Conc. (ng/L):				
		Source Std. mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	2ng/L	1ng/L	200ng/L	40ng/L	20ng/L	1ng/L	4	4	20	20	200
Compounds			Primary Working Standards											Injection (L):				
														ICAL Points:				
Propene	1.05	1050	210	420	210	420	210	420	210	420	210	420	1.05	0.105	0.210	0.525	0.25	200
Dichlorodifluoromethane	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	0.25	200
Chloromethane	1.03	1030	206	412	206	412	206	412	206	412	206	412	1.03	0.103	0.206	0.515	0.25	200
Freon-114	1.04	1040	208	416	208	416	208	416	208	416	208	416	1.04	0.104	0.208	0.520	0.25	200
Vinyl Chloride	1.01	1010	202	404	202	404	202	404	202	404	202	404	1.01	0.101	0.202	0.505	0.25	200
1,3-Butadiene	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	0.25	200
Bromomethane	1.02	1020	204	408	204	408	204	408	204	408	204	408	1.02	0.102	0.204	0.510	0.25	200
Chloroethane	1.03	1030	206	412	206	412	206	412	206	412	206	412	1.03	0.103	0.206	0.515	0.25	200
Ethanol	3.45	3450	690	1380	690	1380	690	1380	690	1380	690	1380	3.45	0.345	0.690	1.725	86.25	172.5
Acetonitrile	0.91	910	182	364	182	364	182	364	182	364	182	364	0.91	0.091	0.182	0.455	45.5	91
Acrolein	1.93	1930	386	772	386	772	386	772	386	772	386	772	1.93	0.193	0.386	0.965	96.5	193
Acetone	5.27	5270	1054	2108	1054	2108	1054	2108	1054	2108	1054	2108	5.27	0.527	1.054	2.635	263.5	527
Trichlorofluoromethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	1.04	0.104	0.208	0.520	52.0	104
Isopropanol	2.05	2050	410	820	410	820	410	820	410	820	410	820	2.05	0.205	0.410	1.025	102.5	205
Acrylonitrile	2.05	2050	410	820	410	820	410	820	410	820	410	820	2.05	0.205	0.410	1.025	102.5	205
1,1-Dichloroethene	1.08	1080	216	432	216	432	216	432	216	432	216	432	1.08	0.108	0.216	0.540	54.0	108
tert-Butanol	2.11	2110	422	844	422	844	422	844	422	844	422	844	2.11	0.211	0.422	1.055	105.5	211
Methylene Chloride	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106
n-Butyl Chloride	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106
1,1,1-Trichloroethane	1.08	1080	216	432	216	432	216	432	216	432	216	432	1.08	0.108	0.216	0.540	54.0	108
Carbon Disulfide	2.13	2130	426	852	426	852	426	852	426	852	426	852	2.13	0.213	0.426	1.065	106.5	213
Trans-1,2-Dichloroethene	1.08	1080	216	432	216	432	216	432	216	432	216	432	1.08	0.108	0.216	0.540	54.0	108
1,1-Dichloroethane	1.07	1070	214	428	214	428	214	428	214	428	214	428	1.07	0.107	0.214	0.535	53.5	107
Methyl tert-Butyl Ether	1.07	1070	214	428	214	428	214	428	214	428	214	428	1.07	0.107	0.214	0.535	53.5	107
Vinyl Acetate	2.80	2800	560	1120	560	1120	560	1120	560	1120	560	1120	2.80	0.280	0.560	1.400	140.0	280
2-Butanone	2.09	2090	418	836	418	836	418	836	418	836	418	836	2.09	0.209	0.418	1.045	104.5	209
cis-1,2-Dichloroethene	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106
Diisopropyl Ether	2.12	2120	424	848	424	848	424	848	424	848	424	848	2.12	0.212	0.424	1.060	106.0	212
Ethyl Acetate	4.22	4220	844	1688	844	1688	844	1688	844	1688	844	1688	4.22	0.422	0.844	2.110	211.0	422
n-Hexane	1.05	1050	210	420	210	420	210	420	210	420	210	420	1.05	0.105	0.210	0.525	52.5	105
Chloroform	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106
Tetrahydrofuran	2.04	2040	408	816	408	816	408	816	408	816	408	816	2.04	0.204	0.408	1.020	102.0	204
Ethyl tert-Butyl Ether	2.12	2120	424	848	424	848	424	848	424	848	424	848	2.12	0.212	0.424	1.060	106.0	212
1,2-Dichloroethane	1.08	1080	216	432	216	432	216	432	216	432	216	432	1.08	0.108	0.216	0.540	54.0	108
1,1,1-Trichloroethane	1.05	1050	210	420	210	420	210	420	210	420	210	420	1.05	0.105	0.210	0.525	52.5	105
Benzene	1.07	1070	214	428	214	428	214	428	214	428	214	428	1.07	0.107	0.214	0.535	53.5	107
Carbon Tetrachloride	1.04	1040	208	416	208	416	208	416	208	416	208	416	1.04	0.104	0.208	0.520	52.0	104
Cyclohexane	2.10	2100	420	840	420	840	420	840	420	840	420	840	2.10	0.210	0.420	1.050	105.0	210
tert-Amyl Methyl Ether	2.12	2120	424	848	424	848	424	848	424	848	424	848	2.12	0.212	0.424	1.060	106.0	212
1,2-Dichloropropane	1.05	1050	210	420	210	420	210	420	210	420	210	420	1.05	0.105	0.210	0.525	52.5	105
Bromodichloromethane	1.07	1070	214	428	214	428	214	428	214	428	214	428	1.07	0.107	0.214	0.535	53.5	107
Trichloroethene	1.05	1050	210	420	210	420	210	420	210	420	210	420	1.05	0.105	0.210	0.525	52.5	105
1,4-Dioxane	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106
Isocane	1.08	1080	216	432	216	432	216	432	216	432	216	432	1.08	0.108	0.216	0.540	54.0	108
Methyl Methacrylate	2.12	2120	424	848	424	848	424	848	424	848	424	848	2.12	0.212	0.424	1.060	106.0	212
n-Heptane	1.06	1060	212	424	212	424	212	424	212	424	212	424	1.06	0.106	0.212	0.530	53.0	106

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S35-09162201 4ng/L Std. ID: S35-09082201 20ng/L Std. ID: S35-09082202				40ng/L Std. ID: 200ng/L Std. ID: S35-09082201 1000ng/L Std. ID:									
Dilution Factors:				Working STD Conc.(ng/L):									
		1		5	25	50	250	1000					
Compounds	Source Std. mg/mL ³	1000ng/L		Primary Working Standards									
		200ng/L	40ng/L	20ng/L	4ng/L	1ng/L							
cis-1,3-Dichloropropene	1.08	1080	216	43.2	43.2	21.6	4.32	1.08					
4-Methyl-2-pentanone	2.15	2150	430	86.0	86.0	43.0	8.60	2.15					
trans-1,3-Dichloropropene	1.02	1020	204	40.8	40.8	20.4	4.08	1.02					
1,1,2-Trichloroethane	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
Toluene	1.05	1050	210	42.0	42.0	21.0	4.20	1.05					
2-Hexanone	2.12	2120	424	84.8	84.8	42.4	8.48	2.12					
Dibromochloromethane	1.08	1080	216	43.2	43.2	21.6	4.32	1.08					
1,2-Dibromoethane	1.04	1040	208	41.6	41.6	20.8	4.16	1.04					
n-Butyl Acetate	2.05	2050	410	82.0	82.0	41.0	8.20	2.05					
n-Octane	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
Tetrachloroethene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
Chlorobenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
Ethylbenzene	1.05	1050	210	42.0	42.0	21.0	4.20	1.05					
m-&p-Xylene	2.10	2100	420	84.0	84.0	42.0	8.40	2.10					
Bromoform	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
Styrene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
o-Xylene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
n-Nonane	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
1,1,2,2-Tetrachloroethane	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
p-Cumene	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
Alpha-Pinene	1.09	1090	218	43.6	43.6	21.8	4.36	1.09					
n-Propylbenzene	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
4-Ethyltoluene	1.09	1090	218	43.6	43.6	21.8	4.36	1.09					
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	42.0	21.0	4.20	1.05					
Benzyl Chloride	2.12	2120	424	84.8	84.8	42.4	8.48	2.12					
1,3-Dichlorobenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
1,4-Dichlorobenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
sec-Butylbenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
p-Isopropyltoluene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
1,2-Dichlorobenzene	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
d-Limonene	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
1,2-Dibromo-3-chloropropane	2.10	2100	420	84.0	84.0	42.0	8.40	2.10					
1,2,4-Trichlorobenzene	2.09	2090	418	83.6	83.6	41.8	8.36	2.09					
Naphthalene	1.10	1100	220	44.0	44.0	22.0	4.40	1.10					
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
tert-Butylbenzene	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					
n-Butylbenzene	1.07	1070	214	42.8	42.8	21.4	4.28	1.07					
1,1,1,1,2-Tetrachloroethane	1.06	1060	212	42.4	42.4	21.2	4.24	1.06					

Method : I:\MS13\METHODS\R13091922.M (RTE Integrator)
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Mon Sep 19 21:20:24 2022
Response via : Initial Calibration

Tue 9/20/22

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2022_09\19\091922213.D
2	0.2	0	13	I:\MS13\DATA\2022_09\19\091922214.D
3	0.5	1	13	I:\MS13\DATA\2022_09\19\091922215.D
4	1.0	1	13	I:\MS13\DATA\2022_09\19\091922216.D
5	5.0	5	13	I:\MS13\DATA\2022_09\19\091922217.D
6	25	26	13	I:\MS13\DATA\2022_09\19\091922218.D
7	50	53	13	I:\MS13\DATA\2022_09\19\091922219.D
8	100	105	13	I:\MS13\DATA\2022_09\19\091922220.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Sep 19 21:19 2022	Sep 19 21:18 2022	19 Sep 2022 12:52
2	0.2	Sep 19 21:11 2022	Sep 19 21:11 2022	19 Sep 2022 13:30
3	0.5	Sep 19 21:12 2022	Sep 19 21:12 2022	19 Sep 2022 14:07
4	1.0	Sep 19 21:13 2022	Sep 19 21:13 2022	19 Sep 2022 14:45
5	5.0	Sep 19 21:14 2022	Sep 19 21:14 2022	19 Sep 2022 15:21
6	25	Sep 19 21:20 2022	Sep 19 21:15 2022	19 Sep 2022 15:58
7	50	Sep 19 21:16 2022	Sep 19 21:16 2022	19 Sep 2022 16:35
8	100	Sep 19 21:17 2022	Sep 19 21:16 2022	19 Sep 2022 17:13

R13091922.M Tue Sep 20 09:28:52 2022

Data File : I:\MS13\DATA\2022_09\19\09192213.D
 Acq On : 19 Sep 2022 12:52
 Sample : 0.1ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:18:26 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	155057	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.39	114	671649	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.89	54	136409	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.09	65	305694	12.335	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.64%
57) Toluene-d8 (SS2)	12.49	98	748325	11.998	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.00%
73) Bromofluorobenzene (SS3)	16.86	174	263987	14.179	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	113.44%

Target Compounds

						Qvalue
2) Propene	3.44	42	2182	0.127	ng	91
3) Dichlorodifluoromethan...	3.51	85	3358	0.093	ng	# 78
4) Chloromethane	3.64	50	2411m	0.129	ng	
5) 1,2-Dichloro-1,1,2,2-t...	3.75	135	1630	0.098	ng	75
6) Vinyl Chloride	3.83	62	2040	0.092	ng	95
7) 1,3-Butadiene	3.95	54	1786	0.113	ng	# 75
8) Bromomethane	4.16	94	1561	0.112	ng	92
9) Chloroethane	4.30	64	1194	0.135	ng	75
10) Ethanol	4.42	45	3903	0.355	ng	95
11) Acetonitrile	4.57	41	2730	0.109	ng	91
12) Acrolein	4.67	56	2058	0.228	ng	89
13) Acetone	4.77	58	5946	0.631	ng	99
14) Trichlorofluoromethane	4.89	101	3635	0.113	ng	83
15) 2-Propanol (Isopropanol)	4.99	45	8687	0.252	ng	100
16) Acrylonitrile	5.12	53	3585	0.212	ng	86
17) 1,1-Dichloroethene	5.39	96	1418	0.104	ng	# 67
18) 2-Methyl-2-Propanol (t...	5.47	59	8560	0.238	ng	97
19) Methylene Chloride	5.48	84	1649	0.114	ng	89
20) 3-Chloro-1-propene (Al...	5.57	41	2201	0.105	ng	88
21) Trichlorotrifluoroethane	5.70	151	1694	0.123	ng	92
22) Carbon Disulfide	5.74	76	14472	0.256	ng	97
23) trans-1,2-Dichloroethene	6.25	61	2246	0.101	ng	91
24) 1,1-Dichloroethane	6.43	63	2744	0.109	ng	79
25) Methyl tert-Butyl Ether	6.51	73	4448	0.095	ng	91
26) Vinyl Acetate	6.55	86	671	0.270	ng	# 83
27) 2-Butanone (MEK)	6.79	72	1798	0.209	ng	# 82
28) cis-1,2-Dichloroethene	7.17	61	2105	0.103	ng	90
29) Diisopropyl Ether	7.41	87	2297	0.210	ng	# 91
30) Ethyl Acetate	7.41	61	2194	0.399	ng	93
31) n-Hexane	7.39	57	1908	0.093	ng	# 78
32) Chloroform	7.45	83	2925	0.105	ng	92
34) Tetrahydrofuran (THF)	7.88	72	2254	0.273	ng	# 80
35) Ethyl tert-Butyl Ether	7.94	87	3715	0.216	ng	# 89
36) 1,2-Dichloroethane	8.21	62	2294	0.095	ng	87
38) 1,1,1-Trichloroethane	8.48	97	2865	0.109	ng	87
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.99	78	5619	0.105	ng	98
42) Carbon Tetrachloride	9.15	117	2636	0.113	ng	100
43) Cyclohexane	9.31	84	3850	0.201	ng	94
44) tert-Amyl Methyl Ether	9.70	73	8365	0.200	ng	86
45) 1,2-Dichloropropane	9.94	63	1285	0.102	ng	94
46) Bromodichloromethane	10.16	83	1771	0.083	ng	# 74
47) Trichloroethene	10.23	130	1667	0.107	ng	97
48) 1,4-Dioxane	10.23	88	1405	0.136	ng	93
49) 2,2,4-Trimethylpentane...	10.31	57	5958	0.111	ng	97
50) Methyl Methacrylate	10.50	100	918	0.173	ng	# 51

Data File : I:\MS13\DATA\2022_09\19\09192213.D
 Acq On : 19 Sep 2022 12:52
 Sample : 0.1ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
 Operator: TZ
 Inst : MS13

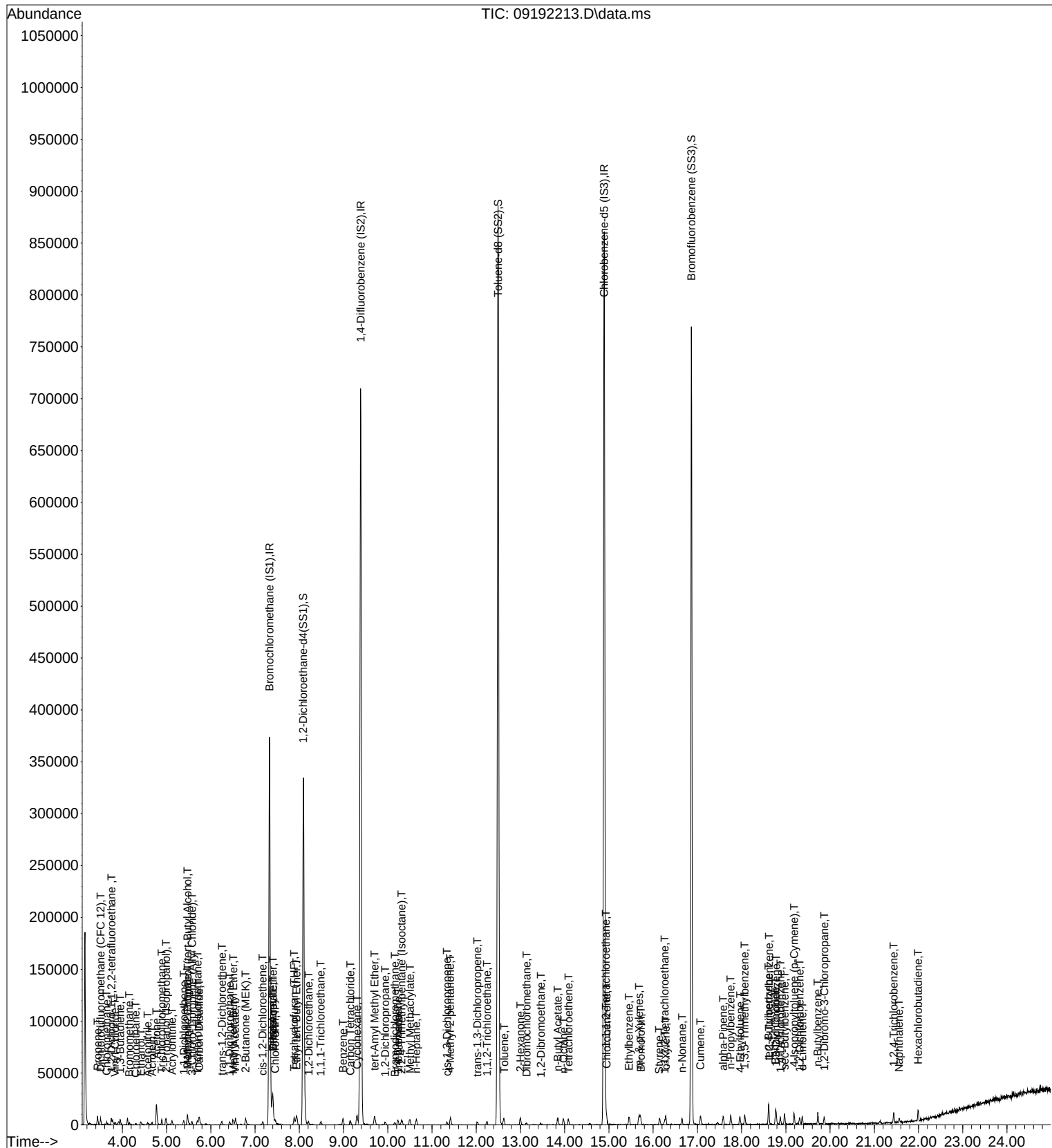
Quant Time: Sep 19 21:18:26 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	1563	0.132	ng	# 54
52) cis-1,3-Dichloropropene	11.34	75	2352	0.105	ng	82
53) 4-Methyl-2-pentanone	11.41	58	2138	0.189	ng	96
54) trans-1,3-Dichloropropene	12.03	75	1830	0.082	ng	96
55) 1,1,2-Trichloroethane	12.24	97	1402	0.105	ng	95
58) Toluene	12.63	91	6252	0.107	ng	99
59) 2-Hexanone	13.00	43	5587	0.195	ng	92
60) Dibromochloromethane	13.14	129	1741	0.094	ng	97
61) 1,2-Dibromoethane	13.46	107	1637	0.097	ng	92
62) n-Butyl Acetate	13.84	43	5912	0.185	ng	92
63) n-Octane	13.97	57	1061	0.094	ng	# 72
64) Tetrachloroethene	14.09	166	1718	0.098	ng	96
65) Chlorobenzene	14.95	112	4015	0.104	ng	96
66) Ethylbenzene	15.45	91	6800	0.099	ng	98
67) m- & p-Xylenes	15.68	91	10980	0.193	ng	96
68) Bromoform	15.72	173	1689	0.104	ng	95
69) Styrene	16.14	104	3766	0.096	ng	93
70) o-Xylene	16.28	91	5359	0.094	ng	92
71) n-Nonane	16.65	43	2110	0.079	ng	# 78
72) 1,1,2,2-Tetrachloroethane	16.26	83	2723	0.113	ng	89
74) Cumene	17.07	105	7069	0.106	ng	100
75) alpha-Pinene	17.58	93	3970	0.113	ng	82
76) n-Propylbenzene	17.75	91	7934	0.097	ng	97
77) 3-Ethyltoluene	17.07	105	7069	No Calib		
78) 4-Ethyltoluene	17.97	105	6456	0.098	ng	97
79) 1,3,5-Trimethylbenzene	18.07	105	6353	0.108	ng	97
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.07	105	7069	No Calib		
82) 1,2,4-Trimethylbenzene	18.62	105	5648	0.097	ng	82
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	8290	0.172	ng	98
85) 1,3-Dichlorobenzene	18.78	146	3233	0.098	ng	100
86) 1,4-Dichlorobenzene	18.88	146	2904	0.087	ng	84
87) sec-Butylbenzene	18.98	105	7392	0.097	ng	98
88) 4-Isopropyltoluene (p-...	19.19	119	6554	0.098	ng	89
89) 1,2,3-Trimethylbenzene	17.07	105	7069	No Calib		
90) 1,2-Dichlorobenzene	19.31	146	3238	0.099	ng	98
91) d-Limonene	19.37	68	1649	0.085	ng	93
92) 1,2-Dibromo-3-Chloropr...	19.87	157	2390	0.194	ng	93
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.44	180	3953	0.168	ng	89
95) Naphthalene	21.56	128	4745	0.073	ng	89
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	2175	0.117	ng	91
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	6139	0.112	ng	# 79
100) n-Butylbenzene	19.72	91	5554	0.090	ng	97
101) 1,1,1,2-Tetrachloroethane	14.93	131	1735	0.113	ng	# 85

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

Vial: 13
Operator: TZ
Inst : MS13

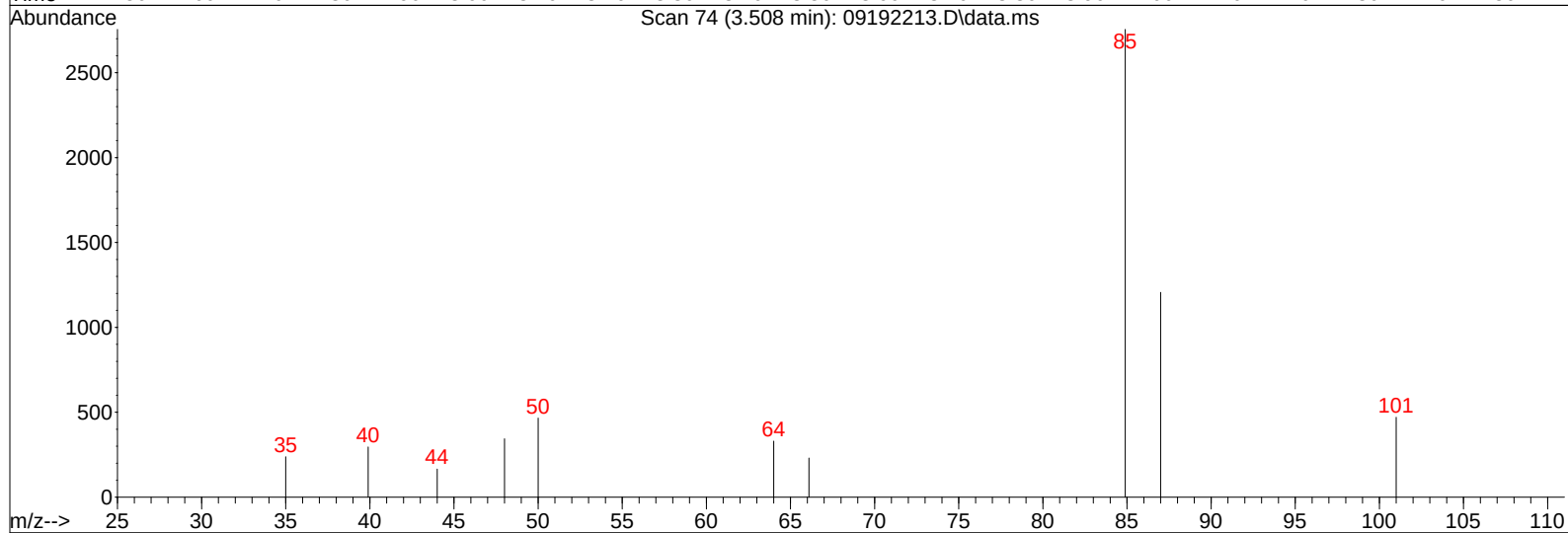
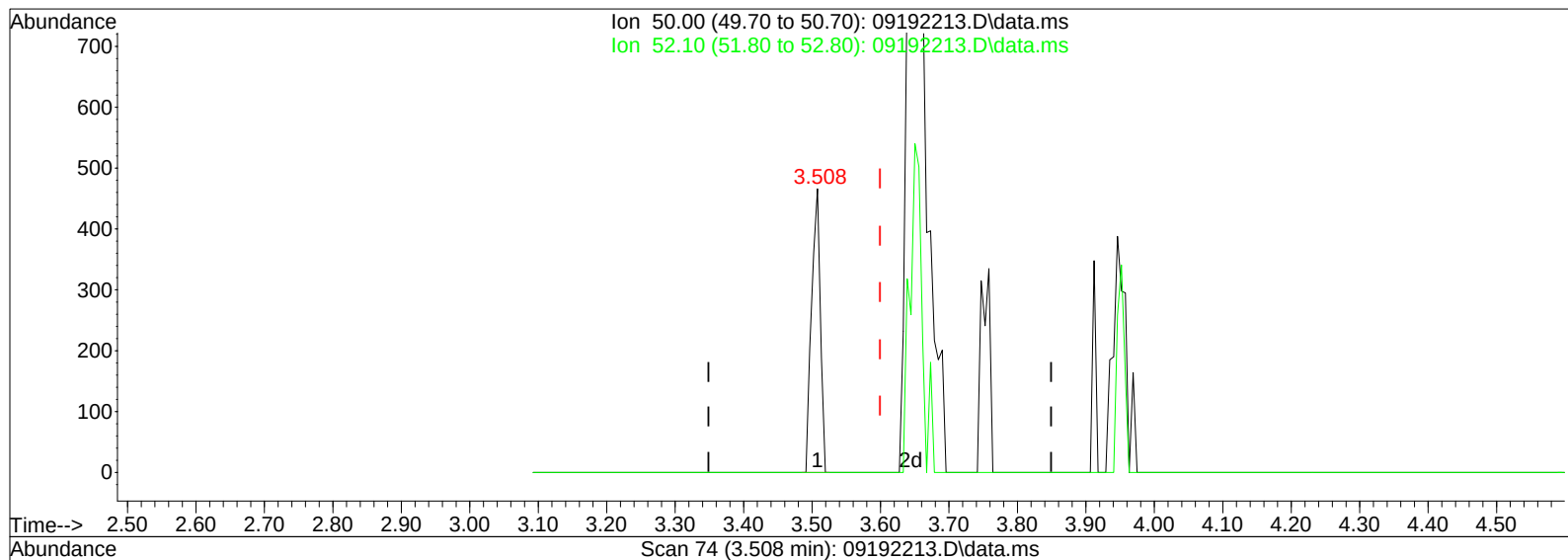
Quant Time: Sep 19 21:18:26 2022



Data File : I:\MS13\DATA\2022_09\19\09192213.D
Acq On : 19 Sep 2022 12:52
Sample : 0.1ng R13091922 ICAL Std.
Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:10:12 2022
Quant Method : I:\MS13\METHODS\R13091922.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Mon Sep 19 21:08:19 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 09192213.D\data.ms

(4) Chloromethane (T)

3.508min (-0.091) 0.02ng

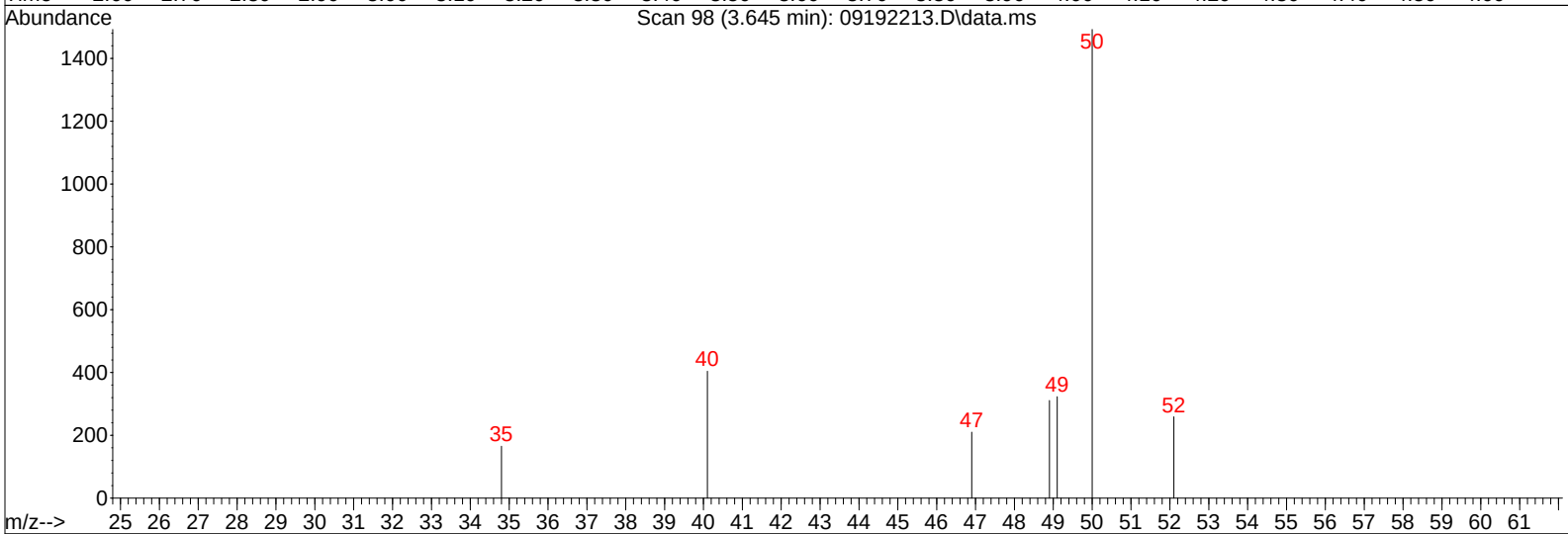
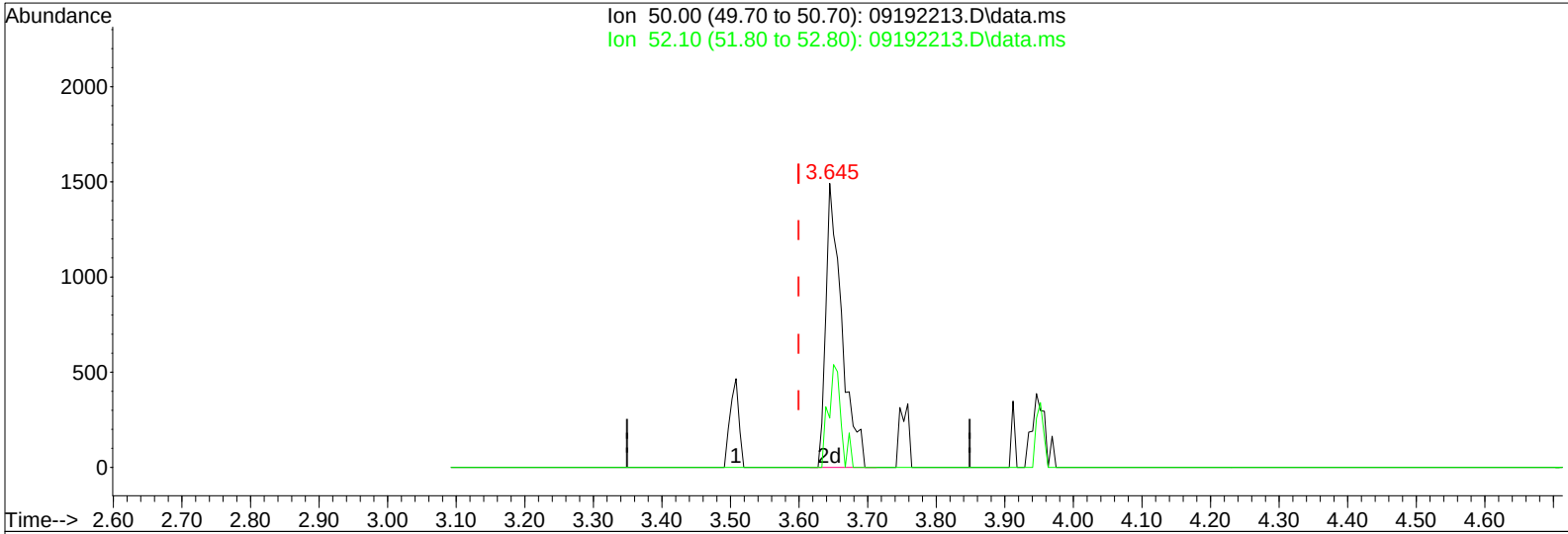
response 416

Ion	Exp%	Act%
50.00	100	100
52.10	33.30	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2022_09\19\09192213.D
Acq On : 19 Sep 2022 12:52
Sample : 0.1ng R13091922 ICAL Std.
Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:10:12 2022
Quant Method : I:\MS13\METHODS\R13091922.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Mon Sep 19 21:08:19 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 09192213.D\data.ms

(4) Chloromethane (T)

3.645min (+0.046) 0.13ng m

response 2411

MP

Ion	Exp%	Act%

50.00	100	100

52.10	33.30	28.54

0.00	0.00	0.00

0.00	0.00	0.00

DA 9/23/22

TZ 9/20/22

Data File : I:\MS13\DATA\2022_09\19\09192214.D
 Acq On : 19 Sep 2022 13:30
 Sample : 0.2ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:11:47 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	153728	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.39	114	657304	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.89	54	133837	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.09	65	292202	11.892	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.12%
57) Toluene-d8 (SS2)	12.49	98	729987	11.929	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.44%
73) Bromofluorobenzene (SS3)	16.86	174	260466	14.259	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	114.08%

Target Compounds

						Qvalue
2) Propene	3.43	42	3535	0.208	ng	97
3) Dichlorodifluoromethan...	3.50	85	7402	0.207	ng	98
4) Chloromethane	3.64	50	4105	0.221	ng	93
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	3621	0.220	ng	67
6) Vinyl Chloride	3.83	62	4284	0.194	ng	99
7) 1,3-Butadiene	3.94	54	3071	0.196	ng	# 68
8) Bromomethane	4.16	94	2501	0.182	ng	87
9) Chloroethane	4.29	64	2018	0.229	ng	81
10) Ethanol	4.40	45	8018	0.735	ng	91
11) Acetonitrile	4.56	41	4038	0.162	ng	76
12) Acrolein	4.66	56	3467	0.387	ng	94
13) Acetone	4.77	58	10867	1.163	ng	93
14) Trichlorofluoromethane	4.89	101	6526	0.205	ng	95
15) 2-Propanol (Isopropanol)	4.97	45	15825	0.462	ng	99
16) Acrylonitrile	5.11	53	5580	0.333	ng	95
17) 1,1-Dichloroethene	5.38	96	2502	0.186	ng	90
18) 2-Methyl-2-Propanol (t...	5.46	59	16444	0.461	ng	95
19) Methylene Chloride	5.47	84	2977	0.207	ng	92
20) 3-Chloro-1-propene (Al...	5.57	41	4033	0.193	ng	98
21) Trichlorotrifluoroethane	5.69	151	3167	0.232	ng	98
22) Carbon Disulfide	5.73	76	23510	0.420	ng	97
23) trans-1,2-Dichloroethene	6.25	61	4259	0.193	ng	99
24) 1,1-Dichloroethane	6.42	63	5161	0.207	ng	89
25) Methyl tert-Butyl Ether	6.50	73	9054	0.194	ng	96
26) Vinyl Acetate	6.55	86	1081	0.439	ng	# 51
27) 2-Butanone (MEK)	6.79	72	3523	0.413	ng	# 90
28) cis-1,2-Dichloroethene	7.17	61	3688	0.182	ng	81
29) Diisopropyl Ether	7.39	87	5095	0.471	ng	# 64
30) Ethyl Acetate	7.39	61	4158	0.762	ng	98
31) n-Hexane	7.41	57	4300	0.211	ng	94
32) Chloroform	7.45	83	5590	0.203	ng	91
34) Tetrahydrofuran (THF)	7.87	72	3584	0.437	ng	92
35) Ethyl tert-Butyl Ether	7.93	87	6845	0.402	ng	98
36) 1,2-Dichloroethane	8.21	62	5068	0.212	ng	92
38) 1,1,1-Trichloroethane	8.48	97	5579	0.217	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	8.99	78	11375	0.217	ng	96
42) Carbon Tetrachloride	9.16	117	4607	0.201	ng	97
43) Cyclohexane	9.31	84	8119	0.434	ng	91
44) tert-Amyl Methyl Ether	9.70	73	16620	0.406	ng	98
45) 1,2-Dichloropropane	9.94	63	2474	0.201	ng	98
46) Bromodichloromethane	10.16	83	4048	0.193	ng	97
47) Trichloroethene	10.22	130	2960	0.195	ng	87
48) 1,4-Dioxane	10.21	88	2234	0.222	ng	100
49) 2,2,4-Trimethylpentane...	10.31	57	10662	0.203	ng	99
50) Methyl Methacrylate	10.50	100	2282	0.438	ng	94

Data File : I:\MS13\DATA\2022_09\19\09192214.D
 Acq On : 19 Sep 2022 13:30
 Sample : 0.2ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09162201 (10/8)

Vial: 13
 Operator: TZ
 Inst : MS13

Quant Time: Sep 19 21:11:47 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

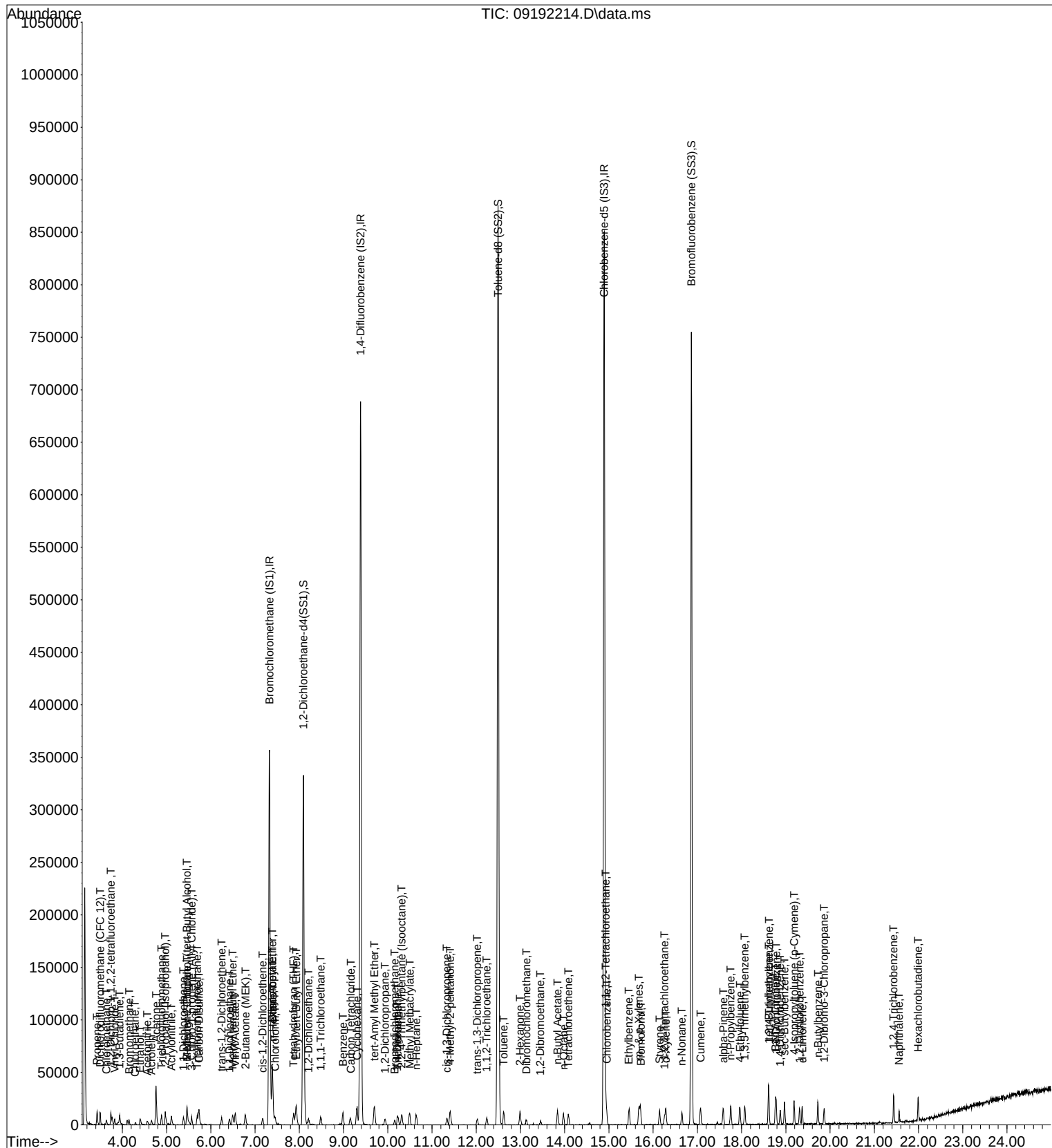
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	2338	0.202	ng	82
52) cis-1,3-Dichloropropene	11.33	75	4448	0.203	ng	96
53) 4-Methyl-2-pentanone	11.41	58	4186	0.378	ng	94
54) trans-1,3-Dichloropropene	12.02	75	3720	0.169	ng	85
55) 1,1,2-Trichloroethane	12.24	97	2762	0.211	ng	93
58) Toluene	12.62	91	11247	0.197	ng	99
59) 2-Hexanone	12.99	43	10907	0.388	ng	98
60) Dibromochloromethane	13.14	129	3667	0.202	ng	94
61) 1,2-Dibromoethane	13.45	107	3236	0.195	ng	94
62) n-Butyl Acetate	13.84	43	12146	0.387	ng	92
63) n-Octane	13.98	57	1804	0.162	ng	# 77
64) Tetrachloroethene	14.08	166	3637	0.212	ng	98
65) Chlorobenzene	14.95	112	7724	0.205	ng	96
66) Ethylbenzene	15.45	91	13358	0.199	ng	100
67) m- & p-Xylenes	15.68	91	22200	0.397	ng	99
68) Bromoform	15.72	173	3095	0.194	ng	94
69) Styrene	16.15	104	7449	0.193	ng	97
70) o-Xylene	16.28	91	11527	0.207	ng	95
71) n-Nonane	16.65	43	4440	0.170	ng	91
72) 1,1,2,2-Tetrachloroethane	16.26	83	4333	0.184	ng	88
74) Cumene	17.08	105	13806	0.211	ng	98
75) alpha-Pinene	17.59	93	7131	0.206	ng	90
76) n-Propylbenzene	17.75	91	16169	0.202	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.96	105	12852	0.198	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	11755	0.204	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.08	105	13806	No Calib		
82) 1,2,4-Trimethylbenzene	18.62	105	11373	0.199	ng	99
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	15964	0.337	ng	98
85) 1,3-Dichlorobenzene	18.78	146	6205	0.192	ng	99
86) 1,4-Dichlorobenzene	18.87	146	6506	0.199	ng	95
87) sec-Butylbenzene	18.97	105	14384	0.193	ng	97
88) 4-Isopropyltoluene (p-...	19.19	119	13489	0.206	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.31	146	6521	0.203	ng	93
91) d-Limonene	19.37	68	3621	0.191	ng	95
92) 1,2-Dibromo-3-Chloropr...	19.86	157	4707	0.390	ng	96
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	8513	0.369	ng	98
95) Naphthalene	21.56	128	9699	0.153	ng	98
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	4262	0.233	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	11256	0.209	ng	99
100) n-Butylbenzene	19.73	91	11405	0.188	ng	98
101) 1,1,1,2-Tetrachloroethane	14.92	131	2982	0.197	ng	87

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

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:11:47 2022



Data File : I:\MS13\DATA\2022_09\19\09192215.D
 Acq On : 19 Sep 2022 14:07
 Sample : 0.5ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:12:44 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.33	130	150249	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.39	114	633354	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.89	54	130650	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.09	65	287427	11.969	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.76%
57) Toluene-d8 (SS2)	12.49	98	716601	11.996	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.00%
73) Bromofluorobenzene (SS3)	16.87	174	252932	14.185	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	113.44%

Target Compounds

						Qvalue
2) Propene	3.42	42	8516	0.512	ng	96
3) Dichlorodifluoromethan...	3.50	85	17631	0.505	ng	97
4) Chloromethane	3.63	50	9761	0.538	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	8196	0.510	ng	88
6) Vinyl Chloride	3.82	62	10673	0.495	ng	100
7) 1,3-Butadiene	3.93	54	8519	0.557	ng	95
8) Bromomethane	4.15	94	7005	0.521	ng	93
9) Chloroethane	4.29	64	4694	0.546	ng	92
10) Ethanol	4.40	45	18476	1.734	ng	94
11) Acetonitrile	4.56	41	10434	0.429	ng	97
12) Acrolein	4.65	56	8072	0.922	ng	91
13) Acetone	4.76	58	23351	2.556	ng	99
14) Trichlorofluoromethane	4.89	101	15043	0.483	ng	99
15) 2-Propanol (Isopropanol)	4.95	45	37067	1.108	ng	91
16) Acrylonitrile	5.11	53	16394	1.000	ng	99
17) 1,1-Dichloroethene	5.37	96	6864	0.521	ng	93
18) 2-Methyl-2-Propanol (t...	5.45	59	40441	1.161	ng	95
19) Methylene Chloride	5.46	84	7814	0.556	ng	96
20) 3-Chloro-1-propene (Al...	5.57	41	10452	0.512	ng	96
21) Trichlorotrifluoroethane	5.69	151	7365	0.552	ng	99
22) Carbon Disulfide	5.73	76	54739	1.001	ng	96
23) trans-1,2-Dichloroethene	6.25	61	11032	0.513	ng	98
24) 1,1-Dichloroethane	6.42	63	12917	0.531	ng	97
25) Methyl tert-Butyl Ether	6.49	73	25357	0.557	ng	97
26) Vinyl Acetate	6.55	86	3292	1.367	ng	# 86
27) 2-Butanone (MEK)	6.79	72	8180	0.982	ng	99
28) cis-1,2-Dichloroethene	7.18	61	9564	0.482	ng	97
29) Diisopropyl Ether	7.39	87	10724	1.014	ng	# 93
30) Ethyl Acetate	7.38	61	10568	1.982	ng	99
31) n-Hexane	7.41	57	10720	0.538	ng	93
32) Chloroform	7.45	83	13440	0.499	ng	94
34) Tetrahydrofuran (THF)	7.86	72	7605	0.950	ng	95
35) Ethyl tert-Butyl Ether	7.92	87	15949	0.958	ng	96
36) 1,2-Dichloroethane	8.21	62	12189	0.521	ng	99
38) 1,1,1-Trichloroethane	8.49	97	13653	0.550	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	8.99	78	25813	0.512	ng	98
42) Carbon Tetrachloride	9.15	117	11861	0.538	ng	96
43) Cyclohexane	9.31	84	19404	1.075	ng	96
44) tert-Amyl Methyl Ether	9.69	73	41424	1.050	ng	99
45) 1,2-Dichloropropane	9.94	63	6584	0.556	ng	92
46) Bromodichloromethane	10.16	83	10430	0.517	ng	98
47) Trichloroethene	10.22	130	7703	0.527	ng	98
48) 1,4-Dioxane	10.23	88	4880	0.502	ng	91
49) 2,2,4-Trimethylpentane...	10.32	57	25756	0.509	ng	98
50) Methyl Methacrylate	10.50	100	5125	1.022	ng	93

Data File : I:\MS13\DATA\2022_09\19\09192215.D
 Acq On : 19 Sep 2022 14:07
 Sample : 0.5ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

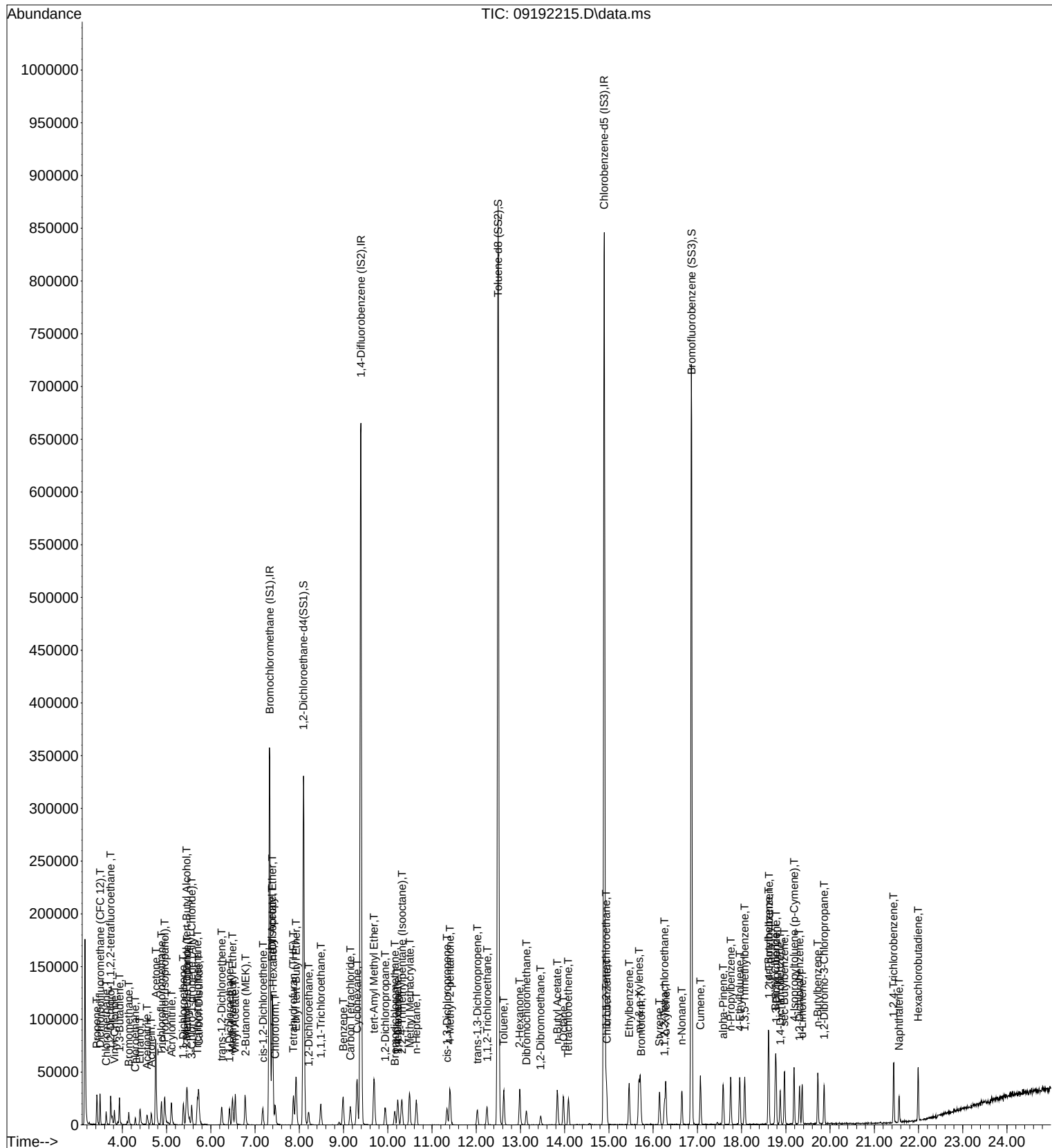
Quant Time: Sep 19 21:12:44 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	6452	0.577	ng	95
52) cis-1,3-Dichloropropene	11.34	75	10985	0.520	ng	98
53) 4-Methyl-2-pentanone	11.41	58	11139	1.045	ng	98
54) trans-1,3-Dichloropropene	12.03	75	9885	0.467	ng	99
55) 1,1,2-Trichloroethane	12.25	97	6977	0.552	ng	98
58) Toluene	12.62	91	27844	0.500	ng	99
59) 2-Hexanone	12.98	43	27302	0.994	ng	99
60) Dibromochloromethane	13.14	129	9138	0.516	ng	97
61) 1,2-Dibromoethane	13.46	107	7806	0.482	ng	100
62) n-Butyl Acetate	13.83	43	28953	0.946	ng	97
63) n-Octane	13.97	57	5155	0.474	ng	91
64) Tetrachloroethene	14.08	166	9112	0.543	ng	97
65) Chlorobenzene	14.95	112	18621	0.505	ng	98
66) Ethylbenzene	15.46	91	31633	0.482	ng	98
67) m- & p-Xylenes	15.68	91	51999	0.952	ng	97
68) Bromoform	15.73	173	7922	0.510	ng	99
69) Styrene	16.14	104	17931	0.476	ng	94
70) o-Xylene	16.28	91	26907	0.495	ng	99
71) n-Nonane	16.65	43	12125	0.476	ng	100
72) 1,1,2,2-Tetrachloroethane	16.26	83	10970	0.476	ng	97
74) Cumene	17.07	105	33573	0.525	ng	99
75) alpha-Pinene	17.58	93	16402	0.485	ng	95
76) n-Propylbenzene	17.75	91	38816	0.496	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.96	105	32435	0.513	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	28324	0.504	ng	91
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.62	105	28147	0.505	ng	93
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	40170	0.869	ng	97
85) 1,3-Dichlorobenzene	18.78	146	15900	0.503	ng	94
86) 1,4-Dichlorobenzene	18.87	146	14174	0.444	ng	98
87) sec-Butylbenzene	18.96	105	36217	0.498	ng	98
88) 4-Isopropyltoluene (p-...	19.19	119	31433	0.491	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.31	146	15446	0.493	ng	99
91) d-Limonene	19.37	68	8764	0.473	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.86	157	10852	0.921	ng	96
93) n-Undecane	0.00	58	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	21.43	180	17541	0.780	ng	98
95) Naphthalene	21.56	128	20244	0.327	ng	98
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	9224	0.516	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	28082	0.533	ng	99
100) n-Butylbenzene	19.72	91	27306	0.461	ng	97
101) 1,1,1,2-Tetrachloroethane	14.94	131	7941	0.539	ng	98

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

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:12:44 2022



Data File : I:\MS13\DATA\2022_09\19\09192216.D
 Acq On : 19 Sep 2022 14:45
 Sample : 1.0ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:13:33 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	147529	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.39	114	633130	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.90	54	129073	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	288041	12.216	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.76%
57) Toluene-d8 (SS2)	12.49	98	706655	11.974	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.76%
73) Bromofluorobenzene (SS3)	16.86	174	249931	14.187	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	113.52%

Target Compounds

						Qvalue
2) Propene	3.42	42	15833	0.970	ng	98
3) Dichlorodifluoromethan...	3.49	85	35961	1.049	ng	98
4) Chloromethane	3.63	50	20569	1.154	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	3.73	135	15991	1.013	ng	91
6) Vinyl Chloride	3.82	62	19866	0.939	ng	90
7) 1,3-Butadiene	3.93	54	16489	1.098	ng	97
8) Bromomethane	4.14	94	12970	0.982	ng	100
9) Chloroethane	4.28	64	9123	1.080	ng	93
10) Ethanol	4.40	45	35688	3.411	ng	99
11) Acetonitrile	4.56	41	22150	0.928	ng	94
12) Acrolein	4.65	56	15135	1.762	ng	98
13) Acetone	4.75	58	47303	5.274	ng	94
14) Trichlorofluoromethane	4.88	101	31314	1.025	ng	96
15) 2-Propanol (Isopropanol)	4.95	45	72561	2.208	ng	99
16) Acrylonitrile	5.11	53	31526	1.959	ng	99
17) 1,1-Dichloroethene	5.37	96	13953	1.079	ng	98
18) 2-Methyl-2-Propanol (t...	5.44	59	80766	2.362	ng	99
19) Methylene Chloride	5.46	84	14227	1.030	ng	93
20) 3-Chloro-1-propene (Al...	5.56	41	20783	1.037	ng	98
21) Trichlorotrifluoroethane	5.70	151	14322	1.093	ng	93
22) Carbon Disulfide	5.72	76	104927	1.954	ng	99
23) trans-1,2-Dichloroethene	6.24	61	20281	0.960	ng	99
24) 1,1-Dichloroethane	6.42	63	24098	1.008	ng	98
25) Methyl tert-Butyl Ether	6.49	73	46101	1.032	ng	98
26) Vinyl Acetate	6.56	86	6518	2.757	ng	# 90
27) 2-Butanone (MEK)	6.77	72	17160	2.098	ng	# 90
28) cis-1,2-Dichloroethene	7.18	61	19441	0.998	ng	100
29) Diisopropyl Ether	7.39	87	21600	2.080	ng	# 89
30) Ethyl Acetate	7.39	61	20585	3.931	ng	97
31) n-Hexane	7.40	57	19453	0.993	ng	97
32) Chloroform	7.47	83	25350	0.958	ng	98
34) Tetrahydrofuran (THF)	7.87	72	15278	1.943	ng	98
35) Ethyl tert-Butyl Ether	7.93	87	33773	2.066	ng	96
36) 1,2-Dichloroethane	8.22	62	22919	0.998	ng	97
38) 1,1,1-Trichloroethane	8.49	97	26547	1.070	ng	97
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	8.99	78	51329	1.018	ng	98
42) Carbon Tetrachloride	9.16	117	22300	1.012	ng	99
43) Cyclohexane	9.31	84	36797	2.040	ng	95
44) tert-Amyl Methyl Ether	9.68	73	81009	2.054	ng	98
45) 1,2-Dichloropropane	9.95	63	11553	0.976	ng	99
46) Bromodichloromethane	10.16	83	20798	1.032	ng	97
47) Trichloroethene	10.23	130	15115	1.034	ng	98
48) 1,4-Dioxane	10.22	88	11082	1.141	ng	96
49) 2,2,4-Trimethylpentane...	10.32	57	50314	0.995	ng	98
50) Methyl Methacrylate	10.49	100	10697	2.133	ng	97

Data File : I:\MS13\DATA\2022_09\19\09192216.D
 Acq On : 19 Sep 2022 14:45
 Sample : 1.0ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

Quant Time: Sep 19 21:13:33 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

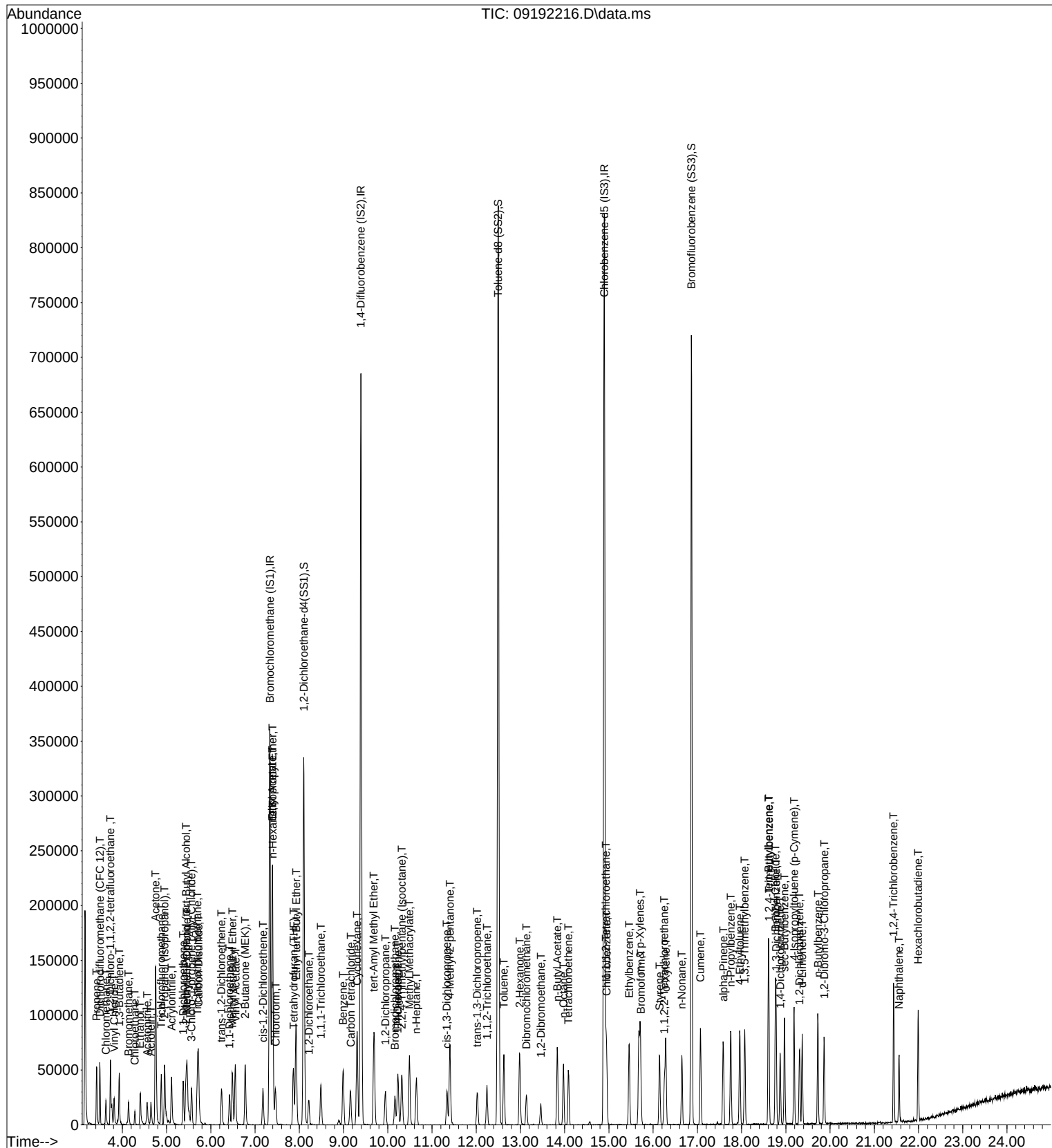
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	11634	1.041	ng	95
52) cis-1,3-Dichloropropene	11.33	75	20480	0.969	ng	99
53) 4-Methyl-2-pentanone	11.41	58	20929	1.964	ng	94
54) trans-1,3-Dichloropropene	12.02	75	20637	0.975	ng	96
55) 1,1,2-Trichloroethane	12.24	97	13713	1.085	ng	95
58) Toluene	12.62	91	54862	0.996	ng	98
59) 2-Hexanone	12.98	43	54172	1.997	ng	97
60) Dibromochloromethane	13.14	129	17857	1.020	ng	98
61) 1,2-Dibromoethane	13.46	107	15342	0.958	ng	98
62) n-Butyl Acetate	13.83	43	59874	1.979	ng	95
63) n-Octane	13.97	57	10844	1.010	ng	97
64) Tetrachloroethene	14.08	166	17016	1.027	ng	90
65) Chlorobenzene	14.95	112	34964	0.960	ng	100
66) Ethylbenzene	15.46	91	62207	0.960	ng	98
67) m- & p-Xylenes	15.70	91	106294	1.971	ng	99
68) Bromoform	15.72	173	16325	1.063	ng	100
69) Styrene	16.15	104	33548	0.901	ng	96
70) o-Xylene	16.28	91	51145	0.953	ng	96
71) n-Nonane	16.65	43	23410	0.931	ng	99
72) 1,1,2,2-Tetrachloroethane	16.25	83	21850	0.961	ng	98
74) Cumene	17.07	105	64084	1.014	ng	100
75) alpha-Pinene	17.59	93	32427	0.971	ng	97
76) n-Propylbenzene	17.76	91	77701	1.005	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.96	105	62238	0.996	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	54123	0.976	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.62	105	55159	1.002	ng	97
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	18.77	91	81016	1.774	ng	99
85) 1,3-Dichlorobenzene	18.78	146	30754	0.985	ng	99
86) 1,4-Dichlorobenzene	18.87	146	29298	0.929	ng	97
87) sec-Butylbenzene	18.97	105	70139	0.976	ng	98
88) 4-Isopropyltoluene (p-...	19.19	119	60650	0.959	ng	96
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.31	146	30188	0.976	ng	99
91) d-Limonene	19.37	68	16987	0.928	ng	95
92) 1,2-Dibromo-3-Chloropr...	19.87	157	21776	1.871	ng	96
93) n-Undecane	0.00	58	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	21.43	180	37776	1.699	ng	95
95) Naphthalene	21.56	128	46416	0.758	ng	98
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	18665	1.058	ng	97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	54290	1.043	ng	98
100) n-Butylbenzene	19.73	91	54678	0.934	ng	98
101) 1,1,1,2-Tetrachloroethane	14.93	131	15244	1.047	ng	99

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

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:13:33 2022



Data File : I:\MS13\DATA\2022_09\19\09192217.D
 Acq On : 19 Sep 2022 15:21
 Sample : 5.0ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

T2 9/20/22

Quant Time: Sep 19 21:14:19 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.35	130	150112	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.40	114	640078	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.90	54	132649	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	294634	12.280	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	98.24%	
57) Toluene-d8 (SS2)	12.50	98	713346	11.762	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	94.08%	
73) Bromofluorobenzene (SS3)	16.86	174	255147	14.093	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	112.72%	

Target Compounds

						Qvalue
2) Propene	3.40	42	85191	5.127	ng	93
3) Dichlorodifluoromethan...	3.48	85	176827	5.071	ng	98
4) Chloromethane	3.61	50	79679	4.392	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	80674	5.020	ng	99
6) Vinyl Chloride	3.80	62	100846	4.685	ng	98
7) 1,3-Butadiene	3.91	54	81705	5.347	ng	96
8) Bromomethane	4.13	94	64272	4.783	ng	97
9) Chloroethane	4.26	64	42294	4.922	ng	97
10) Ethanol	4.42	45	176697	16.599	ng	99
11) Acetonitrile	4.57	41	113711	4.682	ng	100
12) Acrolein	4.65	56	78153	8.940	ng	98
13) Acetone	4.75	58	224590	24.608	ng	98
14) Trichlorofluoromethane	4.87	101	149406	4.804	ng	99
15) 2-Propanol (Isopropanol)	4.98	45	324203	9.696	ng	96
16) Acrylonitrile	5.12	53	163601	9.993	ng	98
17) 1,1-Dichloroethene	5.37	96	67468	5.130	ng	99
18) 2-Methyl-2-Propanol (t...	5.45	59	337486	9.699	ng	99
19) Methylene Chloride	5.48	84	65409	4.656	ng	100
20) 3-Chloro-1-propene (Al...	5.56	41	100328	4.921	ng	98
21) Trichlorotrifluoroethane	5.69	151	68968	5.174	ng	100
22) Carbon Disulfide	5.72	76	493681	9.034	ng	99
23) trans-1,2-Dichloroethene	6.25	61	104343	4.854	ng	100
24) 1,1-Dichloroethane	6.44	63	119314	4.906	ng	100
25) Methyl tert-Butyl Ether	6.48	73	220906	4.859	ng	99
26) Vinyl Acetate	6.56	86	32897	13.678	ng	# 95
27) 2-Butanone (MEK)	6.78	72	81456	9.786	ng	95
28) cis-1,2-Dichloroethene	7.20	61	96032	4.843	ng	98
29) Diisopropyl Ether	7.39	87	104262	9.869	ng	# 94
30) Ethyl Acetate	7.40	61	100922	18.943	ng	97
31) n-Hexane	7.40	57	98062	4.921	ng	100
32) Chloroform	7.48	83	127519	4.735	ng	97
34) Tetrahydrofuran (THF)	7.87	72	75043	9.379	ng	98
35) Ethyl tert-Butyl Ether	7.93	87	161024	9.682	ng	100
36) 1,2-Dichloroethane	8.23	62	114135	4.885	ng	98
38) 1,1,1-Trichloroethane	8.50	97	127605	5.088	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	9.00	78	248949	4.885	ng	100
42) Carbon Tetrachloride	9.16	117	114251	5.128	ng	97
43) Cyclohexane	9.31	84	178312	9.779	ng	98
44) tert-Amyl Methyl Ether	9.69	73	398195	9.986	ng	99
45) 1,2-Dichloropropane	9.95	63	55853	4.668	ng	100
46) Bromodichloromethane	10.17	83	104330	5.119	ng	98
47) Trichloroethene	10.25	130	73611	4.980	ng	100
48) 1,4-Dioxane	10.22	88	53399	5.440	ng	99
49) 2,2,4-Trimethylpentane...	10.32	57	248324	4.859	ng	99
50) Methyl Methacrylate	10.49	100	53111	10.475	ng	98

Data File : I:\MS13\DATA\2022_09\19\09192217.D
 Acq On : 19 Sep 2022 15:21
 Sample : 5.0ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
 Operator: TZ
 Inst : MS13

Quant Time: Sep 19 21:14:19 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	56297	4.983	ng	97
52) cis-1,3-Dichloropropene	11.34	75	105238	4.925	ng	99
53) 4-Methyl-2-pentanone	11.40	58	110272	10.237	ng	99
54) trans-1,3-Dichloropropene	12.03	75	105938	4.952	ng	96
55) 1,1,2-Trichloroethane	12.24	97	64060	5.016	ng	100
58) Toluene	12.63	91	267822	4.733	ng	100
59) 2-Hexanone	12.98	43	279771	10.035	ng	99
60) Dibromochloromethane	13.14	129	91969	5.110	ng	99
61) 1,2-Dibromoethane	13.46	107	76720	4.661	ng	99
62) n-Butyl Acetate	13.83	43	303741	9.770	ng	99
63) n-Octane	13.97	57	50795	4.605	ng	95
64) Tetrachloroethene	14.09	166	85343	5.011	ng	98
65) Chlorobenzene	14.95	112	173924	4.647	ng	99
66) Ethylbenzene	15.46	91	314823	4.727	ng	99
67) m- & p-Xylenes	15.70	91	527549	9.517	ng	100
68) Bromoform	15.73	173	81872	5.187	ng	99
69) Styrene	16.15	104	182651	4.773	ng	99
70) o-Xylene	16.28	91	256173	4.644	ng	97
71) n-Nonane	16.65	43	119570	4.625	ng	99
72) 1,1,2,2-Tetrachloroethane	16.25	83	109129	4.668	ng	100
74) Cumene	17.07	105	321612	4.951	ng	100
75) alpha-Pinene	17.59	93	168604	4.914	ng	99
76) n-Propylbenzene	17.75	91	384566	4.838	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.96	105	316667	4.929	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	271339	4.760	ng	96
80) alpha-Methylstyrene	17.06	118	635	No Calib	#	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.61	105	278193	4.917	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	18.77	91	442129	9.418	ng	99
85) 1,3-Dichlorobenzene	18.78	146	157029	4.895	ng	98
86) 1,4-Dichlorobenzene	18.87	146	149625	4.616	ng	98
87) sec-Butylbenzene	18.97	105	352135	4.766	ng	99
88) 4-Isopropyltoluene (p-...	19.19	119	316589	4.871	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.31	146	151158	4.756	ng	99
91) d-Limonene	19.37	68	88539	4.708	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.86	157	117286	9.804	ng	99
93) n-Undecane	0.00	58	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	21.43	180	212296	9.293	ng	99
95) Naphthalene	21.56	128	262049	4.165	ng	99
96) n-Dodecane	0.00	58	0	N.D.	d	
97) Hexachlorobutadiene	21.99	225	97922	5.399	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	263356	4.923	ng	100
100) n-Butylbenzene	19.72	91	281456	4.676	ng	99
101) 1,1,1,2-Tetrachloroethane	14.93	131	74969	5.009	ng	99

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

Data File : I:\MS13\DATA\2022_09\19\09192217.D
Acq On : 19 Sep 2022 15:21
Sample : 5.0ng R13091922 ICAL Std.
Misc : S35-08172209/S35-09082202 (10/8)

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:14:19 2022

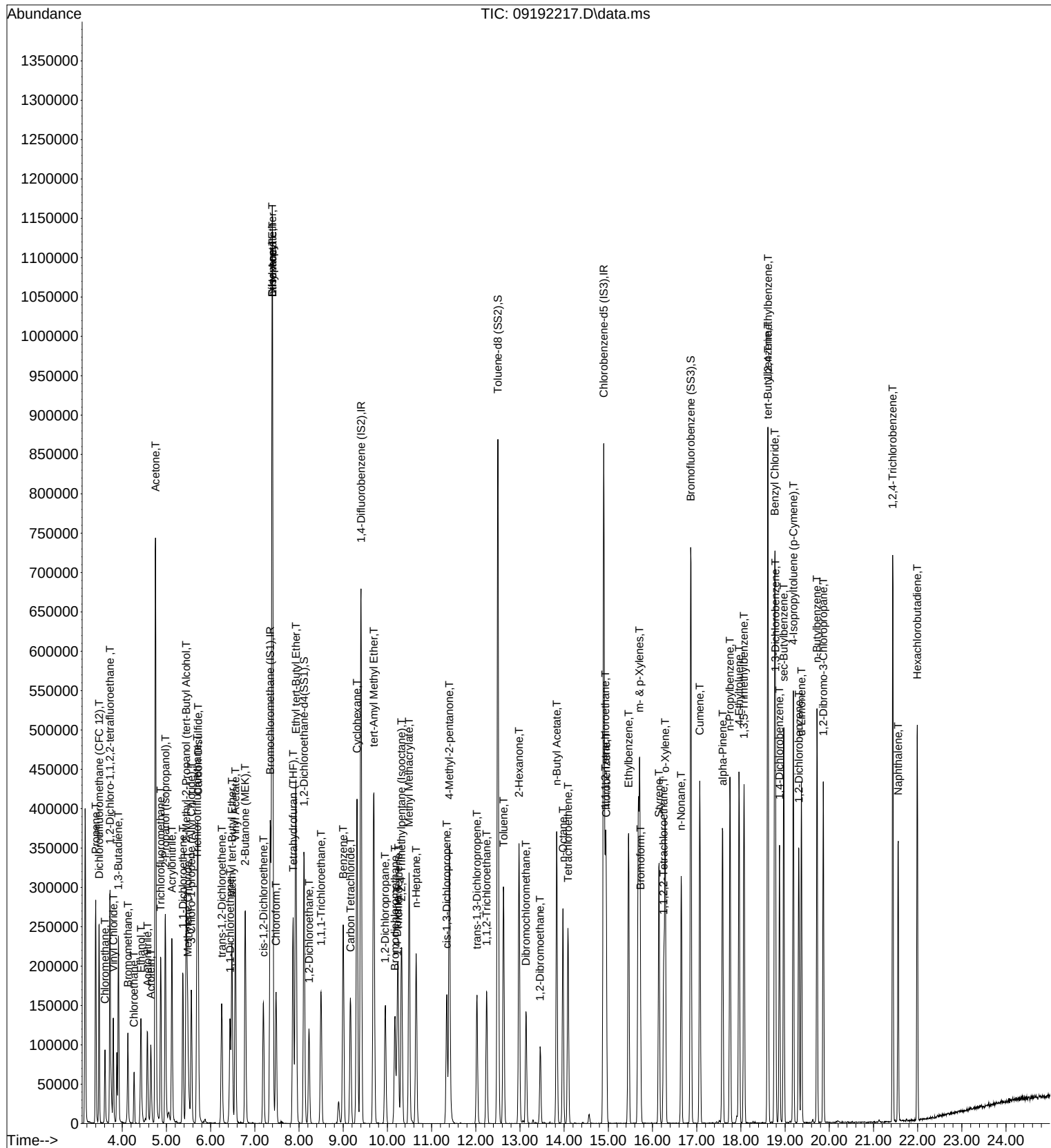
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2022_09\19\09192218.D
 Acq On : 19 Sep 2022 15:58
 Sample : 25ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:20:38 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:20:24 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	148470	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	650779	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	135207	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	300306	12.898	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	103.20%
57) Toluene-d8 (SS2)	12.51	98	728783	12.434	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.44%
73) Bromofluorobenzene (SS3)	16.87	174	260097	12.471	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.76%

Target Compounds

						Qvalue
2) Propene	3.38	42	389073	23.871	ng	100
3) Dichlorodifluoromethan...	3.46	85	869616	26.681	ng	100
4) Chloromethane	3.60	50	467750	27.117	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	415108	26.769	ng	100
6) Vinyl Chloride	3.79	62	504143	25.190	ng	100
7) 1,3-Butadiene	3.91	54	422545	26.922	ng	100
8) Bromomethane	4.12	94	318147	24.809	ng	100
9) Chloroethane	4.27	64	214299	23.996	ng	100
10) Ethanol	4.45	45	834283	80.861	ng	100
11) Acetonitrile	4.59	41	541878	22.300	ng	100
12) Acrolein	4.66	56	389388	46.374	ng	100
13) Acetone	4.77	58	1117265	123.416	ng	100
14) Trichlorofluoromethane	4.87	101	743964	25.166	ng	100
15) 2-Propanol (Isopropanol)	5.00	45	1701303	49.277	ng	100
16) Acrylonitrile	5.15	53	811335	51.764	ng	100
17) 1,1-Dichloroethene	5.37	96	340801	27.457	ng	100
18) 2-Methyl-2-Propanol (t...	5.47	59	1797257	56.318	ng	100
19) Methylene Chloride	5.50	84	336116	25.167	ng	100
20) 3-Chloro-1-propene (Al...	5.57	41	524967	26.884	ng	100
21) Trichlorotrifluoroethane	5.69	151	344084	26.006	ng	100
22) Carbon Disulfide	5.72	76	2514437	49.384	ng	100
23) trans-1,2-Dichloroethene	6.27	61	532246	27.155	ng	100
24) 1,1-Dichloroethane	6.46	63	593687	25.985	ng	100
25) Methyl tert-Butyl Ether	6.49	73	1120387	27.436	ng	100
26) Vinyl Acetate	6.58	86	167820	73.482	ng	100
27) 2-Butanone (MEK)	6.80	72	398424	50.680	ng	100
28) cis-1,2-Dichloroethene	7.21	61	494058	27.075	ng	100
29) Diisopropyl Ether	7.40	87	520098	51.414	ng	100
30) Ethyl Acetate	7.41	61	519912	106.297	ng	100
31) n-Hexane	7.41	57	497593	26.321	ng	100
32) Chloroform	7.50	83	666095	26.656	ng	100
34) Tetrahydrofuran (THF)	7.87	72	377076	47.651	ng	100
35) Ethyl tert-Butyl Ether	7.94	87	833222	53.200	ng	100
36) 1,2-Dichloroethane	8.24	62	582939	27.110	ng	100
38) 1,1,1-Trichloroethane	8.52	97	653460	25.804	ng	100
39) Isopropyl Acetate	9.41	61	24011	No Calib		
40) 1-Butanol	8.91	56	14659	No Calib		
41) Benzene	9.01	78	1269436	25.961	ng	100
42) Carbon Tetrachloride	9.18	117	564486	25.342	ng	100
43) Cyclohexane	9.32	84	904949	51.169	ng	100
44) tert-Amyl Methyl Ether	9.70	73	2059345	53.045	ng	100
45) 1,2-Dichloropropane	9.96	63	294452	25.614	ng	100
46) Bromodichloromethane	10.18	83	546454	28.244	ng	100
47) Trichloroethene	10.25	130	375543	26.070	ng	100
48) 1,4-Dioxane	10.22	88	265793	25.488	ng	100
49) 2,2,4-Trimethylpentane...	10.33	57	1286403	26.556	ng	100
50) Methyl Methacrylate	10.50	100	271572	54.499	ng	100

Data File : I:\MS13\DATA\2022_09\19\09192218.D
 Acq On : 19 Sep 2022 15:58
 Sample : 25ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Sep 19 21:20:38 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:20:24 2022

Response via : Initial Calibration

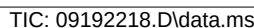
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	298472	25.671	ng	100
52) cis-1,3-Dichloropropene	11.35	75	538282	26.668	ng	100
53) 4-Methyl-2-pentanone	11.41	58	565848	55.345	ng	100
54) trans-1,3-Dichloropropene	12.03	75	515103	26.153	ng	100
55) 1,1,2-Trichloroethane	12.25	97	330875	26.076	ng	100
58) Toluene	12.64	91	1360749	25.374	ng	100
59) 2-Hexanone	12.98	43	1407101	53.019	ng	100
60) Dibromochloromethane	13.15	129	477459	27.759	ng	100
61) 1,2-Dibromoethane	13.47	107	385617	25.371	ng	100
62) n-Butyl Acetate	13.84	43	1496826	50.544	ng	100
63) n-Octane	13.98	57	266699	27.295	ng	100
64) Tetrachloroethene	14.09	166	437152	26.344	ng	100
65) Chlorobenzene	14.96	112	885828	25.546	ng	100
66) Ethylbenzene	15.46	91	1609952	25.913	ng	100
67) m- & p-Xylenes	15.70	91	2662913	51.701	ng	100
68) Bromoform	15.73	173	415999	26.916	ng	100
69) Styrene	16.15	104	914586	26.380	ng	100
70) o-Xylene	16.29	91	1337187	26.241	ng	100
71) n-Nonane	16.65	43	616293	27.361	ng	100
72) 1,1,2,2-Tetrachloroethane	16.26	83	553164	25.647	ng	100
74) Cumene	17.08	105	1660520	26.362	ng	100
75) alpha-Pinene	17.59	93	841084	26.529	ng	100
76) n-Propylbenzene	17.76	91	1943215	26.245	ng	100
77) 3-Ethyltoluene	17.08	105	1660520	No Calib		
78) 4-Ethyltoluene	17.96	105	1617214	27.208	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	1427853	26.204	ng	100
80) alpha-Methylstyrene	17.07	118	2749	No Calib	#	
81) 2-Ethyltoluene	17.08	105	1660520	No Calib		
82) 1,2,4-Trimethylbenzene	18.62	105	1412993	26.170	ng	100
83) n-Decane	17.08	58	14912	No Calib		
84) Benzyl Chloride	18.77	91	2131733	53.195	ng	100
85) 1,3-Dichlorobenzene	18.79	146	743774	25.404	ng	100
86) 1,4-Dichlorobenzene	18.87	146	711462	25.438	ng	100
87) sec-Butylbenzene	18.97	105	1845507	26.755	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	1625010	26.545	ng	100
89) 1,2,3-Trimethylbenzene	17.08	105	1660520	No Calib		
90) 1,2-Dichlorobenzene	19.31	146	751966	25.826	ng	100
91) d-Limonene	19.37	68	463476	27.477	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.87	157	589823	53.132	ng	100
93) n-Undecane	18.08	58	22327	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1017910	52.746	ng	100
95) Naphthalene	21.56	128	1235283	27.913	ng	100
96) n-Dodecane	18.97	58	10423	No Calib	#	
97) Hexachlorobutadiene	21.99	225	481325	25.806	ng	100
98) Cyclohexanone	15.48	55	189	No Calib		
99) tert-Butylbenzene	18.61	119	1359204	25.898	ng	100
100) n-Butylbenzene	19.72	91	1441699	27.088	ng	100
101) 1,1,1,2-Tetrachloroethane	14.93	131	380889	25.942	ng	100

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:20:38 2022



Data File : I:\MS13\DATA\2022_09\19\09192219.D
 Acq On : 19 Sep 2022 16:35
 Sample : 50ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:16:02 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	155182	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	683366	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	142948	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.14	65	306955	12.376	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.04%
57) Toluene-d8 (SS2)	12.51	98	760247	11.632	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.04%
73) Bromofluorobenzene (SS3)	16.88	174	273196	14.003	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	112.00%

Target Compounds

						Qvalue
2) Propene	3.38	42	855912	49.828	ng	98
3) Dichlorodifluoromethan...	3.46	85	1760904	48.851	ng	99
4) Chloromethane	3.60	50	796219	42.459	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	806674	48.559	ng	99
6) Vinyl Chloride	3.79	62	1069978	48.086	ng	99
7) 1,3-Butadiene	3.92	54	889370	56.299	ng	95
8) Bromomethane	4.13	94	651477	46.894	ng	98
9) Chloroethane	4.28	64	436001	49.086	ng	100
10) Ethanol	4.47	45	1729940	157.201	ng	100
11) Acetonitrile	4.60	41	1122295	44.701	ng	100
12) Acrolein	4.67	56	794363	87.897	ng	99
13) Acetone	4.78	58	2283280	241.999	ng	98
14) Trichlorofluoromethane	4.88	101	1525926	47.462	ng	98
15) 2-Propanol (Isopropanol)	5.02	45	3314748	95.900	ng	99
16) Acrylonitrile	5.16	53	1704050	100.684	ng	99
17) 1,1-Dichloroethene	5.39	96	690085	50.753	ng	98
18) 2-Methyl-2-Propanol (t...	5.48	59	2734822	76.026	ng	100
19) Methylene Chloride	5.51	84	688674	47.417	ng	100
20) 3-Chloro-1-propene (Al...	5.59	41	1084264	51.440	ng	99
21) Trichlorotrifluoroethane	5.70	151	685060	49.719	ng	99
22) Carbon Disulfide	5.73	76	5211141	92.244	ng	99
23) trans-1,2-Dichloroethene	6.28	61	1107479	49.832	ng	99
24) 1,1-Dichloroethane	6.47	63	1213098	48.254	ng	100
25) Methyl tert-Butyl Ether	6.50	73	2149655	45.737	ng	100
26) Vinyl Acetate	6.59	86	345023	138.766	ng	# 95
27) 2-Butanone (MEK)	6.81	72	822513	95.585	ng	99
28) cis-1,2-Dichloroethene	7.22	61	1015336	49.527	ng	99
29) Diisopropyl Ether	7.41	87	1051841	96.308	ng	# 93
30) Ethyl Acetate	7.42	61	1067540	193.826	ng	100
31) n-Hexane	7.41	57	1018463	49.443	ng	100
32) Chloroform	7.51	83	1361065	48.890	ng	100
34) Tetrahydrofuran (THF)	7.88	72	774387	93.619	ng	99
35) Ethyl tert-Butyl Ether	7.95	87	1710521	99.494	ng	99
36) 1,2-Dichloroethane	8.25	62	1197764	49.593	ng	100
38) 1,1,1-Trichloroethane	8.52	97	1320320	49.313	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	9.02	78	2614971	48.061	ng	100
42) Carbon Tetrachloride	9.18	117	1157851	48.673	ng	99
43) Cyclohexane	9.32	84	1835073	94.264	ng	100
44) tert-Amyl Methyl Ether	9.71	73	4261021	100.086	ng	99
45) 1,2-Dichloropropane	9.97	63	608255	47.621	ng	99
46) Bromodichloromethane	10.18	83	1112913	51.148	ng	100
47) Trichloroethene	10.26	130	757717	48.013	ng	100
48) 1,4-Dioxane	10.23	88	546345	52.136	ng	99
49) 2,2,4-Trimethylpentane...	10.33	57	2631083	48.220	ng	99
50) Methyl Methacrylate	10.51	100	554326	102.405	ng	98

Data File : I:\MS13\DATA\2022_09\19\09192219.D
 Acq On : 19 Sep 2022 16:35
 Sample : 50ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

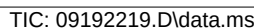
Quant Time: Sep 19 21:16:02 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:08:19 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	610418	50.605	ng	99
52) cis-1,3-Dichloropropene	11.36	75	1117026	48.965	ng	99
53) 4-Methyl-2-pentanone	11.42	58	1167855	101.548	ng	99
54) trans-1,3-Dichloropropene	12.04	75	1071072	46.899	ng	98
55) 1,1,2-Trichloroethane	12.26	97	673451	49.387	ng	99
58) Toluene	12.64	91	2806526	46.020	ng	100
59) 2-Hexanone	13.00	43	2932186	97.592	ng	100
60) Dibromochloromethane	13.15	129	978960	50.476	ng	99
61) 1,2-Dibromoethane	13.47	107	798073	44.996	ng	100
62) n-Butyl Acetate	13.84	43	3138731	93.686	ng	99
63) n-Octane	13.98	57	546966	46.014	ng	100
64) Tetrachloroethene	14.09	166	883545	48.136	ng	100
65) Chlorobenzene	14.96	112	1810406	44.891	ng	100
66) Ethylbenzene	15.46	91	3337000	46.494	ng	100
67) m- & p-Xylenes	15.71	91	5508409	92.211	ng	100
68) Bromoform	15.73	173	867378	50.996	ng	99
69) Styrene	16.15	104	1897445	46.010	ng	100
70) o-Xylene	16.30	91	2753347	46.319	ng	99
71) n-Nonane	16.65	43	1269127	45.553	ng	99
72) 1,1,2,2-Tetrachloroethane	16.26	83	1147042	45.533	ng	99
74) Cumene	17.08	105	3419710	48.854	ng	100
75) alpha-Pinene	17.59	93	1687213	45.635	ng	99
76) n-Propylbenzene	17.76	91	4052885	47.313	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.96	105	3326075	48.037	ng	100
79) 1,3,5-Trimethylbenzene	18.08	105	2920034	47.532	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.62	105	2907663	47.691	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	18.78	91	4489349	88.742	ng	99
85) 1,3-Dichlorobenzene	18.79	146	1520881	43.997	ng	99
86) 1,4-Dichlorobenzene	18.88	146	1464854	41.937	ng	100
87) sec-Butylbenzene	18.98	105	3779077	47.463	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	3343309	47.735	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.31	146	1558345	45.499	ng	99
91) d-Limonene	19.37	68	970416	47.879	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.87	157	1208921	93.769	ng	99
93) n-Undecane	0.00	58	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	21.44	180	2098172	85.224	ng	99
95) Naphthalene	21.56	128	2570397	37.911	ng	99
96) n-Dodecane	0.00	58	0	N.D.	d	
97) Hexachlorobutadiene	21.99	225	970779	49.668	ng	96
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	18.62	119	2731726	47.391	ng	100
100) n-Butylbenzene	19.73	91	2972550	45.827	ng	100
101) 1,1,1,2-Tetrachloroethane	14.94	131	772264	47.878	ng	100

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:16:02 2022



Data File : I:\MS13\DATA\2022_09\19\09192220.D
 Acq On : 19 Sep 2022 17:13
 Sample : 100ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 9/20/22

Quant Time: Sep 19 21:16:58 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.39	130	153833	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.43	114	695301	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.91	54	143568	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.15	65	304739	12.394	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.12%
57) Toluene-d8 (SS2)	12.52	98	770263	11.734	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.84%
73) Bromofluorobenzene (SS3)	16.88	174	274651	14.017	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	112.16%

Target Compounds

						Qvalue
2) Propene	3.39	42	1802107	105.832	ng	98
3) Dichlorodifluoromethan...	3.47	85	3523162	98.596	ng	99
4) Chloromethane	3.60	50	987012	53.095	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	1620205	98.387	ng	99
6) Vinyl Chloride	3.80	62	2053222	93.083	ng	99
7) 1,3-Butadiene	3.93	54	1829001	116.796	ng	90
8) Bromomethane	4.15	94	1327808	96.415	ng	98
9) Chloroethane	4.29	64	898468	102.039	ng	100
10) Ethanol	4.49	45	3607327	330.674	ng	100
11) Acetonitrile	4.62	41	2352434	94.519	ng	100
12) Acrolein	4.69	56	1634610	182.457	ng	99
13) Acetone	4.80	58	4734463	506.193	ng	98
14) Trichlorofluoromethane	4.89	101	3096720	97.165	ng	99
15) 2-Propanol (Isopropanol)	5.04	45	6706828	195.739	ng	99
16) Acrylonitrile	5.18	53	3546570	211.388	ng	99
17) 1,1-Dichloroethene	5.40	96	1428969	106.016	ng	98
18) 2-Methyl-2-Propanol (t...	5.51	59	2603745	73.017	ng	98
19) Methylene Chloride	5.52	84	1426253	99.063	ng	99
20) 3-Chloro-1-propene (Al...	5.60	41	2266360	108.464	ng	99
21) Trichlorotrifluoroethane	5.71	151	1380088	101.039	ng	99
22) Carbon Disulfide	5.74	76	10753559	192.021	ng	99
23) trans-1,2-Dichloroethene	6.29	61	2273136	103.179	ng	99
24) 1,1-Dichloroethane	6.48	63	2490114	99.919	ng	100
25) Methyl tert-Butyl Ether	6.51	73	3843067	82.485	ng	100
26) Vinyl Acetate	6.60	86	686396	278.485	ng	# 88
27) 2-Butanone (MEK)	6.83	72	1657047	194.256	ng	97
28) cis-1,2-Dichloroethene	7.24	61	2085185	102.605	ng	99
29) Diisopropyl Ether	7.42	87	2121876	195.986	ng	# 87
30) Ethyl Acetate	7.44	61	2201487	403.215	ng	99
31) n-Hexane	7.42	57	2094554	102.576	ng	100
32) Chloroform	7.53	83	2788820	101.054	ng	100
34) Tetrahydrofuran (THF)	7.90	72	1564966	190.854	ng	97
35) Ethyl tert-Butyl Ether	7.96	87	3479235	204.148	ng	97
36) 1,2-Dichloroethane	8.26	62	2421953	101.159	ng	100
38) 1,1,1-Trichloroethane	8.53	97	2646289	97.141	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.	d	
40) 1-Butanol	0.00	56	0	N.D.	d	
41) Benzene	9.03	78	5427062	98.032	ng	100
42) Carbon Tetrachloride	9.19	117	2330927	96.304	ng	99
43) Cyclohexane	9.34	84	3687437	186.165	ng	98
44) tert-Amyl Methyl Ether	9.72	73	8783486	202.772	ng	99
45) 1,2-Dichloropropane	9.98	63	1254442	96.525	ng	99
46) Bromodichloromethane	10.19	83	2279401	102.961	ng	99
47) Trichloroethene	10.27	130	1539414	95.871	ng	100
48) 1,4-Dioxane	10.25	88	1115699	104.640	ng	98
49) 2,2,4-Trimethylpentane...	10.34	57	5483059	98.764	ng	100
50) Methyl Methacrylate	10.52	100	1129615	205.101	ng	96

Data File : I:\MS13\DATA\2022_09\19\09192220.D
 Acq On : 19 Sep 2022 17:13
 Sample : 100ng R13091922 ICAL Std.
 Misc : S35-08172209/S35-09082201 (10/8)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Sep 19 21:16:58 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:08:19 2022

Response via : Initial Calibration

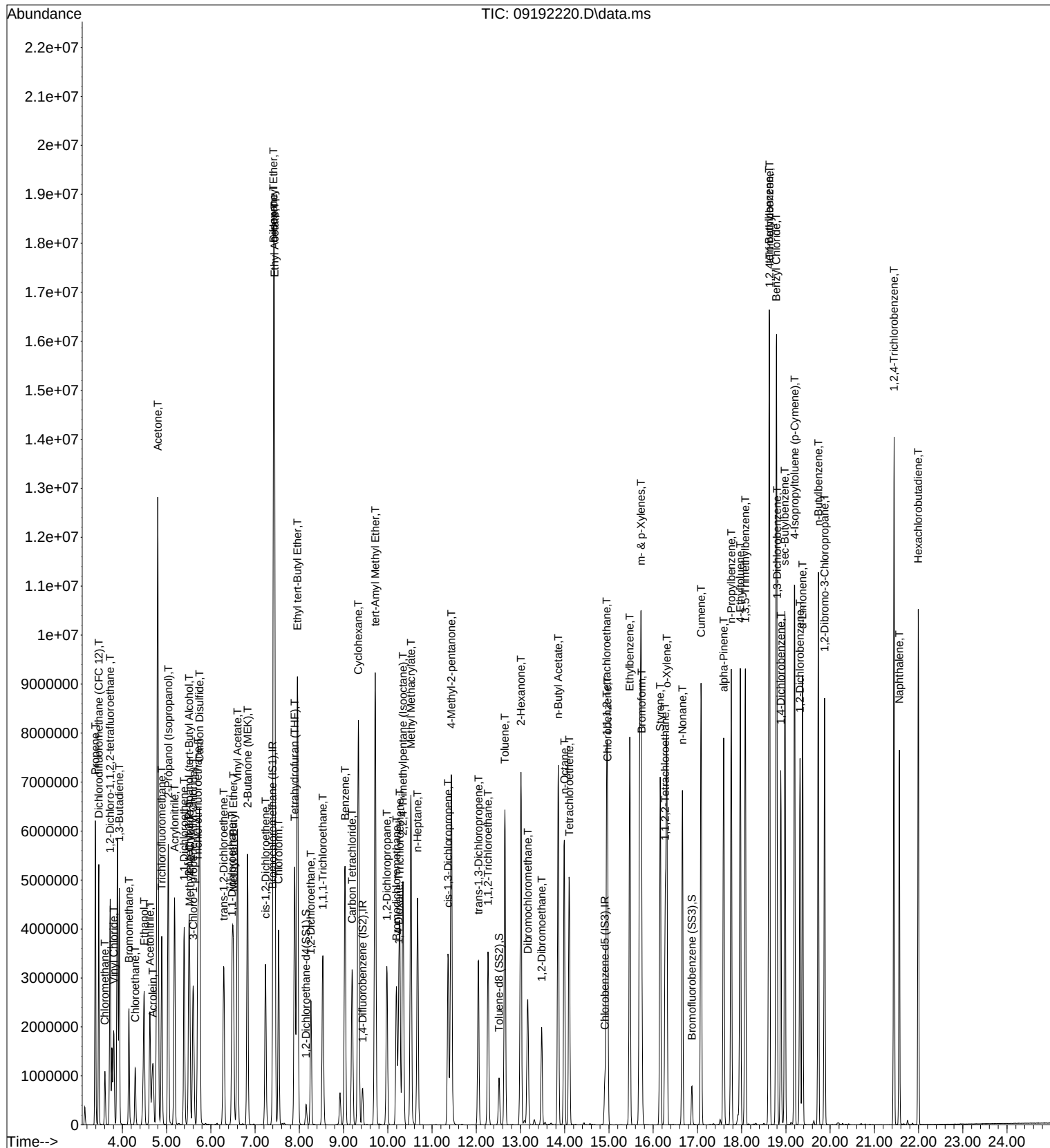
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.67	71	1244283	101.384	ng	97
52) cis-1,3-Dichloropropene	11.36	75	2324384	100.141	ng	100
53) 4-Methyl-2-pentanone	11.44	58	2426570	207.374	ng	98
54) trans-1,3-Dichloropropene	12.05	75	2190300	94.261	ng	99
55) 1,1,2-Trichloroethane	12.27	97	1369962	98.741	ng	98
58) Toluene	12.65	91	5783996	94.434	ng	99
59) 2-Hexanone	13.01	43	6116454	202.696	ng	100
60) Dibromochloromethane	13.17	129	2001132	102.735	ng	99
61) 1,2-Dibromoethane	13.48	107	1645241	92.359	ng	100
62) n-Butyl Acetate	13.85	43	6573733	195.368	ng	99
63) n-Octane	13.99	57	1126970	94.399	ng	99
64) Tetrachloroethene	14.10	166	1808833	98.120	ng	100
65) Chlorobenzene	14.97	112	3710004	91.597	ng	100
66) Ethylbenzene	15.47	91	6867975	95.278	ng	100
67) m- & p-Xylenes	15.72	91	11371346	189.535	ng	99
68) Bromoform	15.74	173	1772052	103.735	ng	99
69) Styrene	16.16	104	3937443	95.065	ng	100
70) o-Xylene	16.31	91	5704408	95.549	ng	99
71) n-Nonane	16.66	43	2656293	94.932	ng	99
72) 1,1,2,2-Tetrachloroethane	16.27	83	2374152	93.838	ng	100
74) Cumene	17.08	105	7017124	99.813	ng	99
75) alpha-Pinene	17.59	93	3529988	95.064	ng	99
76) n-Propylbenzene	17.76	91	8384201	97.454	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.	d	
78) 4-Ethyltoluene	17.97	105	6892445	99.115	ng	99
79) 1,3,5-Trimethylbenzene	18.08	105	6025162	97.653	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.	d	
81) 2-Ethyltoluene	0.00	105	0	N.D.	d	
82) 1,2,4-Trimethylbenzene	18.63	105	5928206	96.814	ng	100
83) n-Decane	0.00	58	0	N.D.	d	
84) Benzyl Chloride	18.78	91	9398483	184.980	ng	99
85) 1,3-Dichlorobenzene	18.80	146	3103670	89.396	ng	99
86) 1,4-Dichlorobenzene	18.89	146	3060603	87.244	ng	99
87) sec-Butylbenzene	18.98	105	7803338	97.582	ng	100
88) 4-Isopropyltoluene (p-...	19.20	119	6864625	97.589	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.	d	
90) 1,2-Dichlorobenzene	19.32	146	3211469	93.360	ng	100
91) d-Limonene	19.37	68	2004097	98.452	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.88	157	2483730	191.817	ng	98
93) n-Undecane	0.00	58	0	N.D.	d	
94) 1,2,4-Trichlorobenzene	21.45	180	4345472	175.744	ng	99
95) Naphthalene	21.57	128	5462613	80.221	ng	99
96) n-Dodecane	0.00	58	0	N.D.	d	
97) Hexachlorobutadiene	21.99	225	2002088	101.990	ng	97
98) Cyclohexanone	0.00	55	0	N.D.	d	
99) tert-Butylbenzene	18.62	119	5588200	96.527	ng	100
100) n-Butylbenzene	19.73	91	6143494	94.304	ng	100
101) 1,1,1,2-Tetrachloroethane	14.95	131	1562364	96.444	ng	100

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Sep 19 21:16:58 2022



Data File : I:\MS13\DATA\2022_09\19\09192222.D
 Acq On : 19 Sep 2022 18:28
 Sample : 25ng R13091922 ICV Std.
 Misc : S35-08172209/S35-09072203 (10/7)

Vial: 1
 Operator: TZ
 Inst : MS13

Tz 9/20/22

Quant Time: Sep 20 11:14:02 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Mon Sep 19 21:20:24 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	159343	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.42	114	689946	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.90	54	140072	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	308743	12.355	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.88%
57) Toluene-d8 (SS2)	12.51	98	771692	12.708	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.68%
73) Bromofluorobenzene (SS3)	16.87	174	270497	12.519	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.16%

Target Compounds

						Qvalue
2) Propene	3.39	42	408816	23.370	ng	99
3) Dichlorodifluoromethan...	3.47	85	884783	25.294	ng	99
4) Chloromethane	3.60	50	486989	24.671	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	414279	24.892	ng	100
6) Vinyl Chloride	3.79	62	526466	24.510	ng	99
7) 1,3-Butadiene	3.91	54	435597	25.860	ng	99
8) Bromomethane	4.13	94	343143	24.932	ng	100
9) Chloroethane	4.27	64	226319	23.613	ng	100
10) Ethanol	4.45	45	1125417	101.635	ng	100
11) Acetonitrile	4.59	41	583145	22.361	ng	99
12) Acrolein	4.66	56	430178	47.736	ng	99
13) Acetone	4.77	58	1174482	120.884	ng	97
14) Trichlorofluoromethane	4.87	101	765200	24.118	ng	99
15) 2-Propanol (Isopropanol)	5.00	45	1867841	50.409	ng	99
16) Acrylonitrile	5.15	53	868860	51.651	ng	98
17) 1,1-Dichloroethene	5.37	96	357146	26.810	ng	100
18) 2-Methyl-2-Propanol (t...	5.47	59	1925765	51.606	ng	99
19) Methylene Chloride	5.50	84	347608	24.252	ng	100
20) 3-Chloro-1-propene (Al...	5.57	41	504610	24.078	ng	99
21) Trichlorotrifluoroethane	5.69	151	355952	25.067	ng	99
22) Carbon Disulfide	5.73	76	2564604	46.932	ng	99
23) trans-1,2-Dichloroethene	6.27	61	550522	26.171	ng	99
24) 1,1-Dichloroethane	6.46	63	631185	25.741	ng	99
25) Methyl tert-Butyl Ether	6.49	73	1127378	25.723	ng	100
26) Vinyl Acetate	6.58	86	280659	114.505	ng	# 96
27) 2-Butanone (MEK)	6.80	72	420056	49.785	ng	97
28) cis-1,2-Dichloroethene	7.21	61	509835	26.033	ng	100
29) Diisopropyl Ether	7.40	87	538302	49.583	ng	# 64
30) Ethyl Acetate	7.41	61	377149	71.848	ng	99
31) n-Hexane	7.41	57	513836	25.325	ng	99
32) Chloroform	7.50	83	684517	25.524	ng	99
34) Tetrahydrofuran (THF)	7.87	72	412851	48.612	ng	99
35) Ethyl tert-Butyl Ether	7.94	87	860418	51.188	ng	100
36) 1,2-Dichloroethane	8.24	62	594866	25.777	ng	100
38) 1,1,1-Trichloroethane	8.52	97	672062	25.032	ng	100
39) Isopropyl Acetate	9.42	61	23961	No Calib		
40) 1-Butanol	8.91	56	7891	No Calib	#	
41) Benzene	9.02	78	1349418	26.030	ng	100
42) Carbon Tetrachloride	9.18	117	571891	24.217	ng	98
43) Cyclohexane	9.32	84	938486	50.053	ng	100
44) tert-Amyl Methyl Ether	9.70	73	2126873	51.674	ng	99
45) 1,2-Dichloropropane	9.96	63	311341	25.546	ng	99
46) Bromodichloromethane	10.18	83	552884	26.954	ng	99
47) Trichloroethene	10.25	130	396022	25.931	ng	98
48) 1,4-Dioxane	10.22	88	278584	25.198	ng	99
49) 2,2,4-Trimethylpentane...	10.33	57	1291311	25.144	ng	100
50) Methyl Methacrylate	10.50	100	281234	53.235	ng	100

Data File : I:\MS13\DATA\2022_09\19\09192222.D
 Acq On : 19 Sep 2022 18:28
 Sample : 25ng R13091922 ICV Std.
 Misc : S35-08172209/S35-09072203 (10/7)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Sep 20 11:14:02 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Mon Sep 19 21:20:24 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	301511	24.460	ng	99
52) cis-1,3-Dichloropropene	11.35	75	569246	26.601	ng	100
53) 4-Methyl-2-pentanone	11.41	58	588842	54.324	ng	100
54) trans-1,3-Dichloropropene	12.03	75	541126	25.914	ng	98
55) 1,1,2-Trichloroethane	12.26	97	341411	25.379	ng	99
58) Toluene	12.64	91	1429366	25.728	ng	100
59) 2-Hexanone	12.98	43	1496071	54.413	ng	100
60) Dibromochloromethane	13.15	129	475967	26.711	ng	99
61) 1,2-Dibromoethane	13.47	107	401831	25.520	ng	100
62) n-Butyl Acetate	13.84	43	1648627	53.737	ng	99
63) n-Octane	13.98	57	271029	26.774	ng	100
64) Tetrachloroethene	14.09	166	452169	26.303	ng	100
65) Chlorobenzene	14.96	112	916203	25.504	ng	99
66) Ethylbenzene	15.46	91	1685875	26.192	ng	99
67) m- & p-Xylenes	15.71	91	2817356	52.800	ng	99
68) Bromoform	15.73	173	429478	26.823	ng	100
69) Styrene	16.15	104	969321	26.987	ng	99
70) o-Xylene	16.29	91	1391747	26.363	ng	100
71) n-Nonane	16.65	43	635005	27.212	ng	98
72) 1,1,2,2-Tetrachloroethane	16.26	83	584559	26.161	ng	99
74) Cumene	17.08	105	1718877	26.341	ng	99
75) alpha-Pinene	17.59	93	889152	27.071	ng	100
76) n-Propylbenzene	17.76	91	2027019	26.426	ng	100
77) 3-Ethyltoluene	17.08	105	1718877	No Calib		
78) 4-Ethyltoluene	17.96	105	1657738	26.921	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	1486072	26.325	ng	99
80) alpha-Methylstyrene	17.08	118	3064	No Calib	#	
81) 2-Ethyltoluene	17.08	105	1718877	No Calib		
82) 1,2,4-Trimethylbenzene	18.62	105	1505982	26.924	ng	100
83) n-Decane	17.07	58	14047	No Calib	#	
84) Benzyl Chloride	18.77	91	2400275	57.816	ng	100
85) 1,3-Dichlorobenzene	18.79	146	799966	26.374	ng	99
86) 1,4-Dichlorobenzene	18.88	146	791879	27.330	ng	99
87) sec-Butylbenzene	18.97	105	1884178	26.367	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	1673255	26.384	ng	100
89) 1,2,3-Trimethylbenzene	17.08	105	1718877	No Calib		
90) 1,2-Dichlorobenzene	19.31	146	790356	26.201	ng	99
91) d-Limonene	19.37	68	503607	28.819	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.87	157	626237	54.453	ng	99
93) n-Undecane	18.08	58	26390	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	1165072	58.275	ng	100
95) Naphthalene	21.56	128	1433172	31.259	ng	99
96) n-Dodecane	18.97	58	9729	No Calib	#	
97) Hexachlorobutadiene	21.99	225	514231	26.613	ng	97
98) Cyclohexanone	15.45	55	148	No Calib	#	
99) tert-Butylbenzene	18.61	119	1409006	25.914	ng	99
100) n-Butylbenzene	19.72	91	1527367	27.701	ng	100
101) 1,1,1,2-Tetrachloroethane	14.94	131	382843	25.170	ng	100

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

Data File : I:\MS13\DATA\2022_09\19\09192222.D
Acq On : 19 Sep 2022 18:28
Sample : 25ng R13091922 ICV Std.
Misc : S35-08172209/S35-09072203 (10/7)

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Sep 20 11:14:02 2022

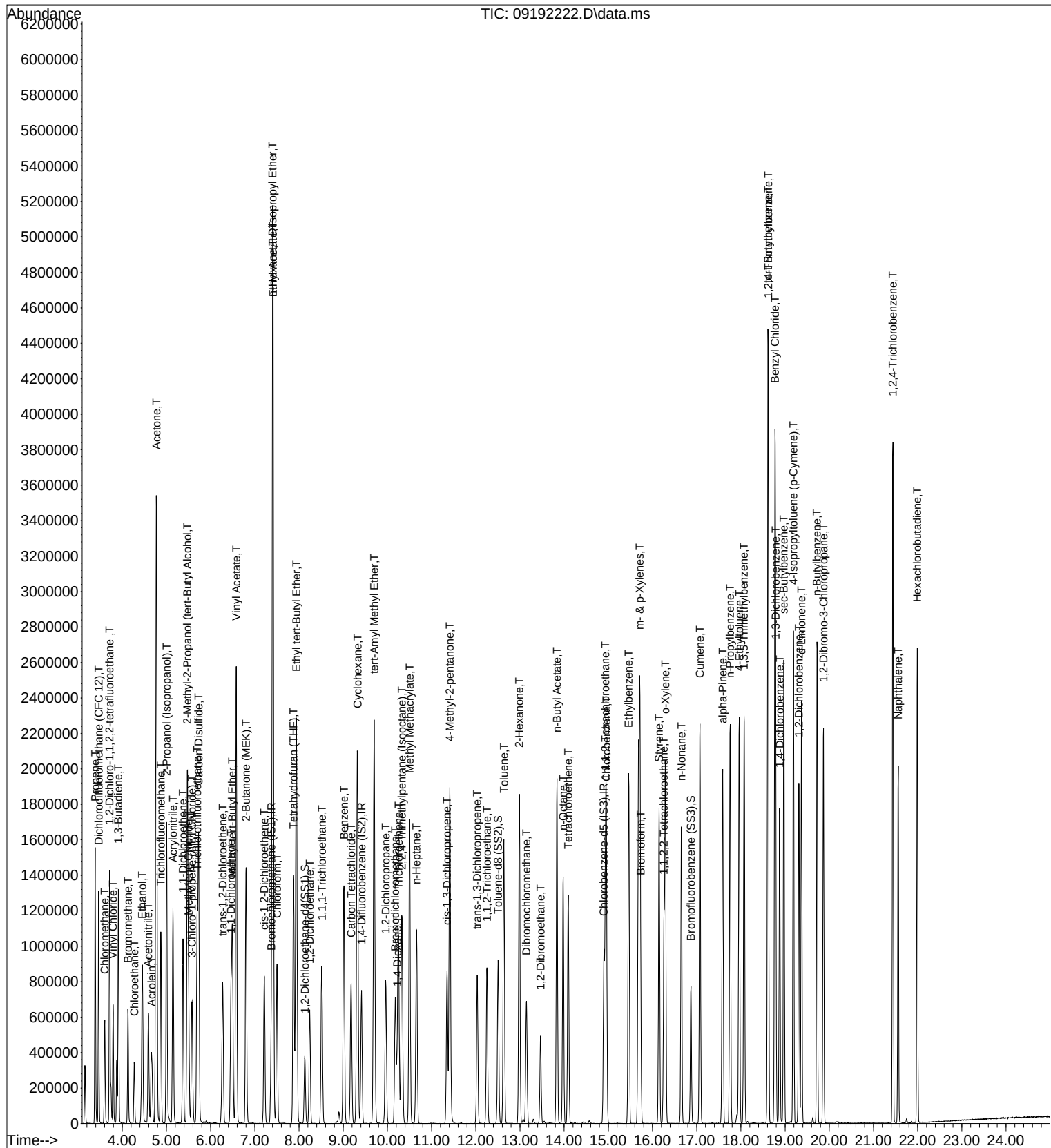
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Mon Sep 19 21:20:24 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



ALS Environmental

T2 9/20/22

LCS Acceptance Criteria

25ng R13091922 ICV Std.

	RT
Bromochloromethane (IS1)	7.37
1,4-Difluorobenzene (IS2)	9.42
Chlorobenzene-d5 (IS3)	14.90

Datafile: 09192222.D
Instrument: MS-13
Date: 9/19/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	23.370	26.5	88	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	25.294	26.5	95	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	24.671	25.8	96	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	24.892	25.8	96	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	24.510	25.5	96	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	25.860	26.5	98	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	24.932	25.8	97	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	23.613	26.0	91	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	101.635	88.3	115	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	22.361	22.8	98	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	47.736	48.5	98	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	120.884	133	91	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	24.118	26.3	92	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	50.409	51.5	98	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	51.651	51.5	100	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	26.810	27.0	99	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	51.606	53.3	97	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	24.252	26.5	92	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	24.078	26.8	90	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	25.067	27.0	93	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	46.932	53.3	88	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	26.171	27.0	97	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	25.741	27.0	95	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	25.723	26.8	96	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	114.505	70.5	162	56-137	FAIL	70-130	FAIL	56-139	FAIL
78-93-3	2-Butanone	49.785	52.3	95	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	26.033	26.8	97	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	49.583	52.5	94	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	71.848	107	67	59-161	ok	70-130	FAIL	65-128	ok
110-54-3	n-Hexane	25.325	26.5	96	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	25.524	26.5	96	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	48.612	51.5	94	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	51.188	53.5	96	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	25.777	27.0	95	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	25.032	26.3	95	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	26.030	27.0	96	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	24.217	25.8	94	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	50.053	52.8	95	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	51.674	53.5	97	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	25.546	26.5	96	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	26.954	27.0	100	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	25.931	26.5	98	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	25.198	26.5	95	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	25.144	27.0	93	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	53.235	53.3	100	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	24.460	26.5	92	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	26.601	27.0	99	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	54.324	54.0	101	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

25ng R13091922 ICV Std.

	RT
Bromochloromethane (IS1)	7.37
1,4-Difluorobenzene (IS2)	9.42
Chlorobenzene-d5 (IS3)	14.90

Datafile: 09192222.D
Instrument: MS-13
Date: 9/19/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	25.914	25.8	100	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	25.379	26.5	96	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	25.728	26.5	97	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	54.413	53.3	102	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	26.711	27.0	99	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	25.520	26.0	98	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	53.737	51.3	105	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	26.774	26.8	100	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	26.303	26.5	99	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	25.504	26.5	96	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	26.192	26.3	100	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	52.800	52.5	101	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	26.823	26.8	100	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	26.987	26.5	102	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	26.363	26.5	99	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	27.212	26.5	103	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	26.161	26.5	99	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	26.341	26.5	99	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	27.071	27.3	99	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	26.426	26.8	99	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	26.921	27.0	100	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	26.325	26.3	100	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	26.924	26.0	104	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	57.816	52.5	110	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	26.374	26.3	100	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	27.330	26.5	103	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	26.367	26.3	100	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	26.384	26.3	100	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	26.201	26.5	99	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	28.819	26.3	110	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	54.453	52.0	105	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	58.275	51.5	113	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	31.259	27.0	116	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	26.613	26.3	101	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	25.914	26.3	99	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	27.701	26.3	105	70-131	ok	70-130	ok	66-130	ok

ALS Environmental

LCS Acceptance Criteria

T2 9/20/22

5.0ng R13091922 ICV Std.

	RT
Bromochloromethane (IS1)	7.35
1,4-Difluorobenzene (IS2)	9.40
Chlorobenzene-d5 (IS3)	14.90

Datafile: 09202211.D
Instrument: MS-13
Date: 9/20/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	4.694	5.30	89	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	5.728	5.30	108	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	5.955	5.15	116	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	5.622	5.15	109	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	5.496	5.10	108	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	5.509	5.30	104	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	5.276	5.15	102	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	5.163	5.20	99	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	21.225	17.7	120	57-117	FAIL	70-130	ok	59-125	ok
75-05-8	Acetonitrile	4.735	4.55	104	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	10.308	9.70	106	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	25.666	26.5	97	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	5.470	5.25	104	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	11.586	10.3	112	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	10.581	10.3	103	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	5.813	5.40	108	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	12.382	10.7	116	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	5.238	5.30	99	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	5.085	5.35	95	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	5.481	5.40	102	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	10.066	10.7	94	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	5.639	5.40	104	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	5.494	5.40	102	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	5.748	5.35	107	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	24.496	14.1	174	56-137	FAIL	70-130	FAIL	56-139	FAIL
78-93-3	2-Butanone	10.669	10.5	102	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	5.576	5.35	104	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	10.488	10.5	100	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	15.128	21.4	71	59-161	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	5.446	5.30	103	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	5.584	5.30	105	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	10.316	10.3	100	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	10.921	10.7	102	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	5.755	5.40	107	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	5.681	5.25	108	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	5.682	5.40	105	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	5.431	5.15	105	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	11.090	10.6	105	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	11.406	10.7	107	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	5.349	5.30	101	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	6.005	5.40	111	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	5.602	5.30	106	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	5.358	5.30	101	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	5.459	5.40	101	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	10.973	10.7	103	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	5.207	5.30	98	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	5.720	5.40	106	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	11.607	10.8	107	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

5.0ng R13091922 ICV Std.

	RT
Bromochloromethane (IS1)	7.35
1,4-Difluorobenzene (IS2)	9.40
Chlorobenzene-d5 (IS3)	14.90

Datafile: 09202211.D
Instrument: MS-13
Date: 9/20/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	5.524	5.15	107	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	5.583	5.30	105	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	5.478	5.30	103	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	11.402	10.7	107	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	5.771	5.40	107	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	5.436	5.20	105	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	11.228	10.3	109	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	5.517	5.35	103	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	5.672	5.30	107	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	5.460	5.30	103	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	5.541	5.25	106	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	11.347	10.5	108	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	5.577	5.35	104	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	5.597	5.30	106	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	5.656	5.30	107	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	5.741	5.30	108	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	5.592	5.30	106	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	5.651	5.30	107	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	5.678	5.45	104	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	5.691	5.35	106	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	5.728	5.40	106	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	5.613	5.25	107	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	5.794	5.20	111	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	11.575	10.5	110	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	5.680	5.25	108	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	5.697	5.30	107	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	5.560	5.25	106	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	5.671	5.25	108	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	5.626	5.30	106	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	5.984	5.25	114	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	11.368	10.4	109	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	11.903	10.3	116	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	6.091	5.40	113	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	5.693	5.25	108	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	5.570	5.25	106	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	5.845	5.25	111	70-131	ok	70-130	ok	66-130	ok

Data File : I:\MS13\DATA\2022_10\26\10262231.D
 Acq On : 26 Oct 2022 21:24
 Sample : CCV2 R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 07:30:53 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:T015B.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	IR Bromochloromethane (IS1)	1.000	1.000	0.0	82	0.00
2	T Propene	1.372	1.432	-4.4	87	0.00
3	T Dichlorodifluoromethane (CF	2.744	2.939	-7.1	87	0.00
4	T Chloromethane	1.452	1.917	-32.0#	122	0.00
5	T 1,2-Dichloro-1,1,2,2-tetra	1.306	1.166	10.7	74	0.00
6	T Vinyl Chloride	1.685	1.742	-3.4	86	0.00
7	T 1,3-Butadiene	1.321	1.382	-4.6	89	0.00
8	T Bromomethane	1.080	1.065	1.4	83	0.00
9	T Chloroethane	0.752	0.795	-5.7	96	0.00
10	T Ethanol	0.869	1.052	-21.1	101	0.00
11	T Acetonitrile	2.046	2.592	-26.7	102	0.00
12	T Acrolein	0.707	0.796	-12.6	97	0.00
13	T Acetone	0.762	0.812	-6.6	94	0.00
14	T Trichlorofluoromethane	2.489	2.562	-2.9	88	0.00
15	T 2-Propanol (Isopropanol)	2.907	3.638	-25.1	114	0.00
16	T Acrylonitrile	1.320	1.577	-19.5	98	0.00
17	T 1,1-Dichloroethene	1.045	1.085	-3.8	86	0.00
18	T 2-Methyl-2-Propanol (tert-B	2.687	3.805	-41.6#	117	0.00
19	T Methylene Chloride	1.124	1.100	2.1	88	0.00
20	T 3-Chloro-1-propene (Allyl C	1.644	2.071	-26.0	108	0.00
21	T Trichlorotrifluoroethane	1.114	1.028	7.7	79	0.00
22	T Carbon Disulfide	4.287	4.256	0.7	91	0.00
23	T trans-1,2-Dichloroethene	1.650	1.934	-17.2	99	0.00
24	T 1,1-Dichloroethane	1.924	2.156	-12.1	95	0.00
25	T Methyl tert-Butyl Ether	3.438	3.849	-12.0	92	0.00
26	T Vinyl Acetate	0.192	0.210	-9.4	88	0.00
27	T 2-Butanone (MEK)	0.662	0.686	-3.6	87	0.00
28	T cis-1,2-Dichloroethene	1.536	1.830	-19.1	100	0.00
29	T Diisopropyl Ether	0.852	0.879	-3.2	88	0.00
30	T Ethyl Acetate	0.412	0.483	-17.2	100	0.00
31	T n-Hexane	1.592	1.832	-15.1	97	0.00
32	T Chloroform	2.104	2.255	-7.2	93	0.00
33	S 1,2-Dichloroethane-d4(SS1)	1.960	2.279	-16.3	96	0.00
34	T Tetrahydrofuran (THF)	0.666	0.686	-3.0	92	0.00
35	T Ethyl tert-Butyl Ether	1.319	1.368	-3.7	89	0.00
36	T 1,2-Dichloroethane	1.810	2.102	-16.1	98	0.00
37	IR 1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	83	0.00
38	T 1,1,1-Trichloroethane	0.486	0.510	-4.9	89	0.00
39	T Isopropyl Acetate	0.000	0.000	0.0	0#	-9.50#
40	T 1-Butanol	0.000	0.000	0.0	108	-0.08
41	T Benzene	0.939	0.976	-3.9	89	0.00
42	T Carbon Tetrachloride	0.428	0.450	-5.1	87	0.00
43	T Cyclohexane	0.340	0.349	-2.6	87	0.00
44	T tert-Amyl Methyl Ether	0.746	0.823	-10.3	93	0.00
45	T 1,2-Dichloropropane	0.221	0.253	-14.5	101	0.00
46	T Bromodichloromethane	0.372	0.428	-15.1	93	0.00
47	T Trichloroethene	0.277	0.274	1.1	83	0.00
48	T 1,4-Dioxane	0.200	0.197	1.5	83	0.00
49	T 2,2,4-Trimethylpentane (Iso	0.930	1.053	-13.2	97	0.00
50	T Methyl Methacrylate	0.096	0.102	-6.2	86	0.00
51	T n-Heptane	0.223	0.238	-6.7	95	0.00
52	T cis-1,3-Dichloropropene	0.388	0.438	-12.9	96	0.00
53	T 4-Methyl-2-pentanone	0.196	0.231	-17.9	96	0.00
54	T trans-1,3-Dichloropropene	0.378	0.446	-18.0	91	0.00
55	T 1,1,2-Trichloroethane	0.244	0.251	-2.9	88	0.01

Data File : I:\MS13\DATA\2022_10\26\10262231.D
 Acq On : 26 Oct 2022 21:24
 Sample : CCV2 R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:53 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:TO15B.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	102	0.00
57	S Toluene-d8 (SS2)	5.419	4.598	15.2	87	0.00
58	T Toluene	4.958	4.105	17.2	87	0.00
59	T 2-Hexanone	2.454	2.557	-4.2	105	0.00
60	T Dibromochloromethane	1.590	1.323	16.8	84	0.00
61	T 1,2-Dibromoethane	1.405	1.187	15.5	87	0.00
62	T n-Butyl Acetate	2.738	2.880	-5.2	105	0.00
63	T n-Octane	0.903	0.887	1.8	101	0.00
64	T Tetrachloroethene	1.534	1.191	22.4	80	0.00
65	T Chlorobenzene	3.206	2.636	17.8	87	0.00
66	T Ethylbenzene	5.744	4.825	16.0	87	0.00
67	T m- & p-Xylenes	4.762	4.070	14.5	88	0.00
68	T Bromoform	1.429	1.164	18.5	82	0.00
69	T Styrene	3.205	2.893	9.7	91	0.00
70	T o-Xylene	4.711	4.025	14.6	90	0.00
71	T n-Nonane	2.082	2.169	-4.2	104	0.00
72	T 1,1,2,2-Tetrachloroethane	1.994	1.707	14.4	90	0.00
73	S Bromofluorobenzene (SS3)	1.928	1.568	18.7	83	0.00
74	T Cumene	5.823	4.762	18.2	86	0.00
75	T alpha-Pinene	2.931	2.452	16.3	86	0.00
76	T n-Propylbenzene	6.845	5.928	13.4	89	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	0#	-17.20#
78	T 4-Ethyltoluene	5.495	4.699	14.5	87	0.00
79	T 1,3,5-Trimethylbenzene	5.038	4.205	16.5	89	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.20#
81	T 2-Ethyltoluene	0.000	0.000	0.0	0#	-17.20#
82	T 1,2,4-Trimethylbenzene	4.992	4.267	14.5	87	0.00
83	T n-Decane	0.000	0.000	0.0	0#	-17.21#
84	T Benzyl Chloride	3.705	3.814	-2.9	99	0.00
85	T 1,3-Dichlorobenzene	2.707	2.277	15.9	83	0.00
86	T 1,4-Dichlorobenzene	2.586	2.318	10.4	89	0.00
87	T sec-Butylbenzene	6.377	5.435	14.8	88	0.00
88	T 4-Isopropyltoluene (p-Cymen	5.660	4.686	17.2	85	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	0#	-17.20#
90	T 1,2-Dichlorobenzene	2.692	2.211	17.9	85	0.00
91	T d-Limonene	1.559	1.476	5.3	96	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.026	0.857	16.5	83	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	-18.21#
94	T 1,2,4-Trichlorobenzene	1.784	1.859	-4.2	99	0.00
95	T Naphthalene	4.091	5.170	-26.4	117	0.00
96	T n-Dodecane	0.000	0.000	0.0	441#	0.09
97	T Hexachlorobutadiene	1.724	1.377	20.1	81	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	-15.57#
99	T tert-Butylbenzene	4.852	3.935	18.9	86	0.00
100	T n-Butylbenzene	4.920	4.523	8.1	93	0.00
101	T 1,1,1,2-Tetrachloroethane	1.357	1.100	18.9	84	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2022_10\26\10262231.D
 Acq On : 26 Oct 2022 21:24
 Sample : CCV2 R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

Tz 10/27/22

Quant Time: Oct 27 07:30:53 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	123482	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	531700	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	135156	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	281456	14.535	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	116.24%	
57) Toluene-d8 (SS2)	12.49	98	621438	10.606	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	84.88%	
73) Bromofluorobenzene (SS3)	16.86	174	211951	10.167	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	81.36%	

Target Compounds

						Qvalue
2) Propene	3.39	42	74286	5.480	ng	95
3) Dichlorodifluoromethan...	3.47	85	153887	5.677	ng	98
4) Chloromethane	3.60	50	97540	6.799	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	59909	4.645	ng	99
6) Vinyl Chloride	3.79	62	86905	5.221	ng	97
7) 1,3-Butadiene	3.91	54	72380	5.545	ng	93
8) Bromomethane	4.12	94	53640	5.029	ng	100
9) Chloroethane	4.26	64	40470	5.449	ng	98
10) Ethanol	4.41	45	179234	20.887	ng	100
11) Acetonitrile	4.56	41	116520	5.766	ng	100
12) Acrolein	4.64	56	75914	10.871	ng	98
13) Acetone	4.74	58	211238	28.056	ng	# 88
14) Trichlorofluoromethane	4.86	101	131613	5.353	ng	99
15) 2-Propanol (Isopropanol)	4.96	45	368404	12.830	ng	96
16) Acrylonitrile	5.11	53	159722	12.252	ng	100
17) 1,1-Dichloroethene	5.36	96	57889	5.608	ng	# 82
18) 2-Methyl-2-Propanol (t...	5.44	59	396536	14.940	ng	97
19) Methylene Chloride	5.47	84	57588	5.185	ng	79
20) 3-Chloro-1-propene (Al...	5.56	41	108438	6.677	ng	89
21) Trichlorotrifluoroethane	5.68	151	54817	4.981	ng	90
22) Carbon Disulfide	5.70	76	447753	10.573	ng	99
23) trans-1,2-Dichloroethene	6.24	61	103164	6.329	ng	90
24) 1,1-Dichloroethane	6.43	63	113934	5.996	ng	98
25) Methyl tert-Butyl Ether	6.47	73	203444	5.990	ng	95
26) Vinyl Acetate	6.55	86	28994	15.264	ng	# 58
27) 2-Butanone (MEK)	6.77	72	70843	10.835	ng	# 78
28) cis-1,2-Dichloroethene	7.18	61	95833	6.314	ng	88
29) Diisopropyl Ether	7.38	87	92059	10.942	ng	# 39
30) Ethyl Acetate	7.38	61	100582	24.726	ng	89
31) n-Hexane	7.39	57	94989	6.041	ng	97
32) Chloroform	7.47	83	118083	5.682	ng	100
34) Tetrahydrofuran (THF)	7.85	72	69139	10.505	ng	# 88
35) Ethyl tert-Butyl Ether	7.92	87	143266	10.998	ng	89
36) 1,2-Dichloroethane	8.21	62	112127	6.270	ng	100
38) 1,1,1-Trichloroethane	8.49	97	113867	5.503	ng	96
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.90	56	2890	No Calib		
41) Benzene	8.99	78	222008	5.557	ng	97
42) Carbon Tetrachloride	9.16	117	99617	5.474	ng	98
43) Cyclohexane	9.31	84	155901	10.789	ng	91
44) tert-Amyl Methyl Ether	9.68	73	371055	11.698	ng	95
45) 1,2-Dichloropropane	9.95	63	56474	6.013	ng	94
46) Bromodichloromethane	10.16	83	97435	6.164	ng	96
47) Trichloroethene	10.23	130	61268	5.206	ng	97
48) 1,4-Dioxane	10.20	88	44449	5.217	ng	81
49) 2,2,4-Trimethylpentane...	10.31	57	241948	6.113	ng	92
50) Methyl Methacrylate	10.49	100	45900	11.274	ng	# 87

Data File : I:\MS13\DATA\2022_10\26\10262231.D
 Acq On : 26 Oct 2022 21:24
 Sample : CCV2 R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 07:30:53 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	53732	5.656	ng	96
52) cis-1,3-Dichloropropene	11.34	75	100514	6.095	ng	96
53) 4-Methyl-2-pentanone	11.40	58	105764	12.661	ng	85
54) trans-1,3-Dichloropropene	12.02	75	96742	6.012	ng	98
55) 1,1,2-Trichloroethane	12.24	97	56508	5.451	ng	96
58) Toluene	12.62	91	233016	4.347	ng	99
59) 2-Hexanone	12.97	43	293068	11.047	ng	98
60) Dibromochloromethane	13.13	129	77219	4.491	ng	97
61) 1,2-Dibromoethane	13.46	107	66744	4.393	ng	92
62) n-Butyl Acetate	13.83	43	319191	10.782	ng	95
63) n-Octane	13.96	57	51304	5.253	ng	88
64) Tetrachloroethene	14.08	166	68246	4.114	ng	99
65) Chlorobenzene	14.95	112	151046	4.358	ng	97
66) Ethylbenzene	15.45	91	273906	4.410	ng	99
67) m- & p-Xylenes	15.70	91	462081	8.975	ng	99
68) Bromoform	15.72	173	67355	4.360	ng	91
69) Styrene	16.14	104	165798	4.784	ng	100
70) o-Xylene	16.28	91	230634	4.528	ng	99
71) n-Nonane	16.65	43	124282	5.520	ng	91
72) 1,1,2,2-Tetrachloroethane	16.25	83	97806	4.536	ng	98
74) Cumene	17.07	105	275483	4.375	ng	99
75) alpha-Pinene	17.58	93	144480	4.559	ng	93
76) n-Propylbenzene	17.75	91	342911	4.633	ng	97
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	276919	4.661	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	240963	4.424	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	242227	4.488	ng	96
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.76	91	437089	10.911	ng	96
85) 1,3-Dichlorobenzene	18.78	146	130469	4.458	ng	98
86) 1,4-Dichlorobenzene	18.87	146	132810	4.750	ng	99
87) sec-Butylbenzene	18.96	105	311456	4.517	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	268560	4.389	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	127899	4.394	ng	98
91) d-Limonene	19.36	68	85376	5.063	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	97316	8.770	ng	# 70
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	210102	10.891	ng	98
95) Naphthalene	21.55	128	307469	6.950	ng	100
96) n-Dodecane	19.19	58	8759	No Calib	#	
97) Hexachlorobutadiene	21.99	225	78913	4.233	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	225504	4.298	ng	98
100) n-Butylbenzene	19.72	91	261659	4.918	ng	98
101) 1,1,1,2-Tetrachloroethane	14.92	131	63059	4.297	ng	99

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

Data File : I:\MS13\DATA\2022_10\26\10262231.D
Acq On : 26 Oct 2022 21:24
Sample : CCV2 R13102622 5.0ng
Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Oct 27 07:30:53 2022

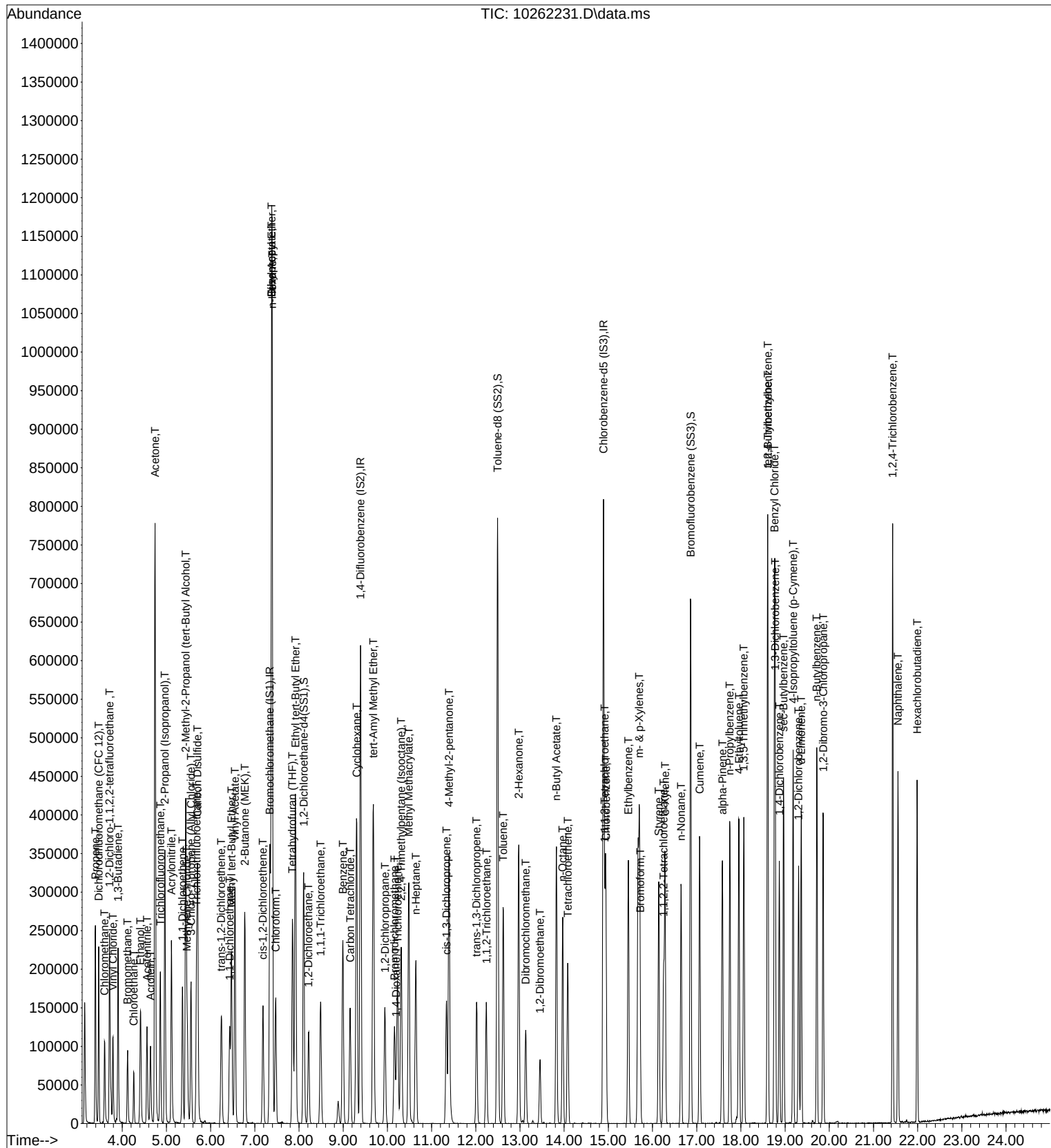
Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2022_10\26\10262252.D
 Acq On : 27 Oct 2022 13:26
 Sample : CCV2end R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 13:50:03 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:T015B.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	84	0.00
2 T	Propene	1.372	1.470	-7.1	91	0.00
3 T	Dichlorodifluoromethane (CF	2.744	2.875	-4.8	87	0.00
4 T	Chloromethane	1.452	1.871	-28.9	122	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.306	1.154	11.6	75	0.00
6 T	Vinyl Chloride	1.685	1.708	-1.4	86	0.00
7 T	1,3-Butadiene	1.321	1.344	-1.7	88	0.00
8 T	Bromomethane	1.080	1.065	1.4	85	0.00
9 T	Chloroethane	0.752	0.748	0.5	92	0.00
10 T	Ethanol	0.869	1.044	-20.1	103	0.00
11 T	Acetonitrile	2.046	2.553	-24.8	103	0.00
12 T	Acrolein	0.707	0.792	-12.0	99	0.00
13 T	Acetone	0.762	0.810	-6.3	96	0.00
14 T	Trichlorofluoromethane	2.489	2.437	2.1	85	0.00
15 T	2-Propanol (Isopropanol)	2.907	3.676	-26.5	117	0.00
16 T	Acrylonitrile	1.320	1.572	-19.1	99	0.00
17 T	1,1-Dichloroethene	1.045	1.050	-0.5	85	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.687	3.763	-40.0#	118	0.00
19 T	Methylene Chloride	1.124	1.083	3.6	88	0.00
20 T	3-Chloro-1-propene (Allyl C	1.644	2.035	-23.8	108	0.00
21 T	Trichlorotrifluoroethane	1.114	0.982	11.8	77	0.00
22 T	Carbon Disulfide	4.287	4.159	3.0	90	0.00
23 T	trans-1,2-Dichloroethene	1.650	1.933	-17.2	101	0.00
24 T	1,1-Dichloroethane	1.924	2.154	-12.0	97	0.00
25 T	Methyl tert-Butyl Ether	3.438	3.881	-12.9	95	0.00
26 T	Vinyl Acetate	0.192	0.213	-10.9	91	0.00
27 T	2-Butanone (MEK)	0.662	0.700	-5.7	90	0.01
28 T	cis-1,2-Dichloroethene	1.536	1.791	-16.6	100	0.00
29 T	Diisopropyl Ether	0.852	0.855	-0.4	88	0.00
30 T	Ethyl Acetate	0.412	0.473	-14.8	100	0.01
31 T	n-Hexane	1.592	1.830	-14.9	99	0.00
32 T	Chloroform	2.104	2.270	-7.9	95	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.960	2.287	-16.7	98	0.00
34 T	Tetrahydrofuran (THF)	0.666	0.672	-0.9	92	0.00
35 T	Ethyl tert-Butyl Ether	1.319	1.342	-1.7	89	0.00
36 T	1,2-Dichloroethane	1.810	2.033	-12.3	97	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	86	0.00
38 T	1,1,1-Trichloroethane	0.486	0.501	-3.1	91	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	-9.50#
40 T	1-Butanol	0.000	0.000	0.0	128	-0.09
41 T	Benzene	0.939	0.965	-2.8	91	0.00
42 T	Carbon Tetrachloride	0.428	0.429	-0.2	86	0.00
43 T	Cyclohexane	0.340	0.347	-2.1	90	0.00
44 T	tert-Amyl Methyl Ether	0.746	0.792	-6.2	93	0.00
45 T	1,2-Dichloropropane	0.221	0.237	-7.2	98	0.00
46 T	Bromodichloromethane	0.372	0.409	-9.9	92	0.00
47 T	Trichloroethene	0.277	0.265	4.3	83	0.00
48 T	1,4-Dioxane	0.200	0.200	0.0	87	0.00
49 T	2,2,4-Trimethylpentane (Iso	0.930	1.058	-13.8	101	0.00
50 T	Methyl Methacrylate	0.096	0.097	-1.0	85	0.00
51 T	n-Heptane	0.223	0.230	-3.1	95	0.00
52 T	cis-1,3-Dichloropropene	0.388	0.418	-7.7	94	0.00
53 T	4-Methyl-2-pentanone	0.196	0.222	-13.3	95	0.00
54 T	trans-1,3-Dichloropropene	0.378	0.448	-18.5	95	0.00
55 T	1,1,2-Trichloroethane	0.244	0.240	1.6	87	0.01

Data File : I:\MS13\DATA\2022_10\26\10262252.D
 Acq On : 27 Oct 2022 13:26
 Sample : CCV2end R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 13:50:03 2022
 Quant Method : I:\MS13\METHODS\R13091922.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Wed Oct 26 08:29:23 2022
 Response via : Initial Calibration
 DataAcq Meth:TO15B.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	106	0.00
57	S Toluene-d8 (SS2)	5.419	4.522	16.6	89	0.00
58	T Toluene	4.958	4.061	18.1	89	0.00
59	T 2-Hexanone	2.454	2.470	-0.7	105	0.00
60	T Dibromochloromethane	1.590	1.233	22.5	81	0.00
61	T 1,2-Dibromoethane	1.405	1.145	18.5	87	0.00
62	T n-Butyl Acetate	2.738	2.756	-0.7	105	0.00
63	T n-Octane	0.903	0.840	7.0	99	0.00
64	T Tetrachloroethene	1.534	1.139	25.7	80	0.00
65	T Chlorobenzene	3.206	2.583	19.4	88	0.00
66	T Ethylbenzene	5.744	4.767	17.0	89	0.00
67	T m- & p-Xylenes	4.762	3.957	16.9	89	0.00
68	T Bromoform	1.429	1.094	23.4	80	0.00
69	T Styrene	3.205	2.691	16.0	88	0.00
70	T o-Xylene	4.711	3.935	16.5	92	0.00
71	T n-Nonane	2.082	2.139	-2.7	107	0.00
72	T 1,1,2,2-Tetrachloroethane	1.994	1.682	15.6	92	0.00
73	S Bromofluorobenzene (SS3)	1.928	1.568	18.7	86	0.00
74	T Cumene	5.823	4.646	20.2	87	0.00
75	T alpha-Pinene	2.931	2.388	18.5	87	0.00
76	T n-Propylbenzene	6.845	5.755	15.9	90	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	0#	-17.20#
78	T 4-Ethyltoluene	5.495	4.580	16.7	89	0.00
79	T 1,3,5-Trimethylbenzene	5.038	3.982	21.0	87	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.20#
81	T 2-Ethyltoluene	0.000	0.000	0.0	0#	-17.20#
82	T 1,2,4-Trimethylbenzene	4.992	4.170	16.5	88	0.00
83	T n-Decane	0.000	0.000	0.0	0#	-17.21#
84	T Benzyl Chloride	3.705	3.651	1.5	98	0.00
85	T 1,3-Dichlorobenzene	2.707	2.188	19.2	83	0.00
86	T 1,4-Dichlorobenzene	2.586	2.232	13.7	89	0.00
87	T sec-Butylbenzene	6.377	5.166	19.0	87	0.00
88	T 4-Isopropyltoluene (p-Cymen	5.660	4.505	20.4	85	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	0#	-17.20#
90	T 1,2-Dichlorobenzene	2.692	2.141	20.5	85	0.00
91	T d-Limonene	1.559	1.449	7.1	98	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.026	0.808	21.2	81	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	-18.21#
94	T 1,2,4-Trichlorobenzene	1.784	1.777	0.4	98	0.00
95	T Naphthalene	4.091	4.874	-19.1	115	0.00
96	T n-Dodecane	0.000	0.000	0.0	395#	0.08
97	T Hexachlorobutadiene	1.724	1.273	26.2	77	0.00
98	T Cyclohexanone	0.000	0.000	0.0	0#	-15.57#
99	T tert-Butylbenzene	4.852	3.775	22.2	85	0.00
100	T n-Butylbenzene	4.920	4.367	11.2	93	0.00
101	T 1,1,1,2-Tetrachloroethane	1.357	1.048	22.8	83	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2022_10\26\10262252.D
 Acq On : 27 Oct 2022 13:26
 Sample : CCV2end R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 10/27/22

Quant Time: Oct 27 13:50:03 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	125892	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.40	114	548816	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.89	54	140487	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	287860	14.581	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	116.64%	
57) Toluene-d8 (SS2)	12.49	98	635313	10.432	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	83.44%	
73) Bromofluorobenzene (SS3)	16.86	174	220322	10.167	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	81.36%	

Target Compounds

						Qvalue
2) Propene	3.39	42	77745	5.625	ng	93
3) Dichlorodifluoromethan...	3.47	85	153461	5.553	ng	97
4) Chloromethane	3.60	50	97021	6.633	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	60453	4.598	ng	98
6) Vinyl Chloride	3.79	62	86891	5.120	ng	99
7) 1,3-Butadiene	3.91	54	71745	5.391	ng	90
8) Bromomethane	4.12	94	54725	5.033	ng	99
9) Chloroethane	4.26	64	38820	5.126	ng	99
10) Ethanol	4.42	45	181290	20.722	ng	99
11) Acetonitrile	4.56	41	117013	5.679	ng	97
12) Acrolein	4.64	56	77011	10.817	ng	97
13) Acetone	4.74	58	214835	27.987	ng	# 87
14) Trichlorofluoromethane	4.86	101	127619	5.091	ng	98
15) 2-Propanol (Isopropanol)	4.97	45	379474	12.962	ng	99
16) Acrylonitrile	5.12	53	162279	12.210	ng	99
17) 1,1-Dichloroethene	5.37	96	57105	5.426	ng	# 79
18) 2-Methyl-2-Propanol (t...	5.44	59	399836	14.776	ng	97
19) Methylene Chloride	5.47	84	57811	5.105	ng	82
20) 3-Chloro-1-propene (Al...	5.56	41	108609	6.560	ng	88
21) Trichlorotrifluoroethane	5.68	151	53427	4.762	ng	86
22) Carbon Disulfide	5.71	76	446127	10.333	ng	99
23) trans-1,2-Dichloroethene	6.25	61	105129	6.326	ng	90
24) 1,1-Dichloroethane	6.43	63	116066	5.991	ng	100
25) Methyl tert-Butyl Ether	6.47	73	209110	6.039	ng	98
26) Vinyl Acetate	6.56	86	30011	15.497	ng	# 64
27) 2-Butanone (MEK)	6.78	72	73687	11.054	ng	# 80
28) cis-1,2-Dichloroethene	7.18	61	95587	6.178	ng	89
29) Diisopropyl Ether	7.38	87	91299	10.644	ng	# 33
30) Ethyl Acetate	7.40	61	100428	24.215	ng	93
31) n-Hexane	7.40	57	96760	6.036	ng	98
32) Chloroform	7.47	83	121152	5.718	ng	98
34) Tetrahydrofuran (THF)	7.85	72	68986	10.281	ng	# 87
35) Ethyl tert-Butyl Ether	7.92	87	143224	10.785	ng	# 86
36) 1,2-Dichloroethane	8.22	62	110545	6.063	ng	99
38) 1,1,1-Trichloroethane	8.49	97	115497	5.408	ng	94
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	8.90	56	3409	No Calib		
41) Benzene	8.99	78	226703	5.498	ng	98
42) Carbon Tetrachloride	9.16	117	98055	5.220	ng	99
43) Cyclohexane	9.31	84	159976	10.726	ng	91
44) tert-Amyl Methyl Ether	9.68	73	368436	11.253	ng	94
45) 1,2-Dichloropropane	9.94	63	54658	5.638	ng	100
46) Bromodichloromethane	10.17	83	96039	5.886	ng	97
47) Trichloroethene	10.23	130	61157	5.034	ng	99
48) 1,4-Dioxane	10.21	88	46579	5.297	ng	88
49) 2,2,4-Trimethylpentane...	10.31	57	250835	6.140	ng	95
50) Methyl Methacrylate	10.49	100	45168	10.748	ng	# 88

Data File : I:\MS13\DATA\2022_10\26\10262252.D
 Acq On : 27 Oct 2022 13:26
 Sample : CCV2end R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Oct 27 13:50:03 2022

Quant Method : I:\MS13\METHODS\R13091922.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Oct 26 08:29:23 2022

Response via : Initial Calibration

DataAcq Meth:T015B.M

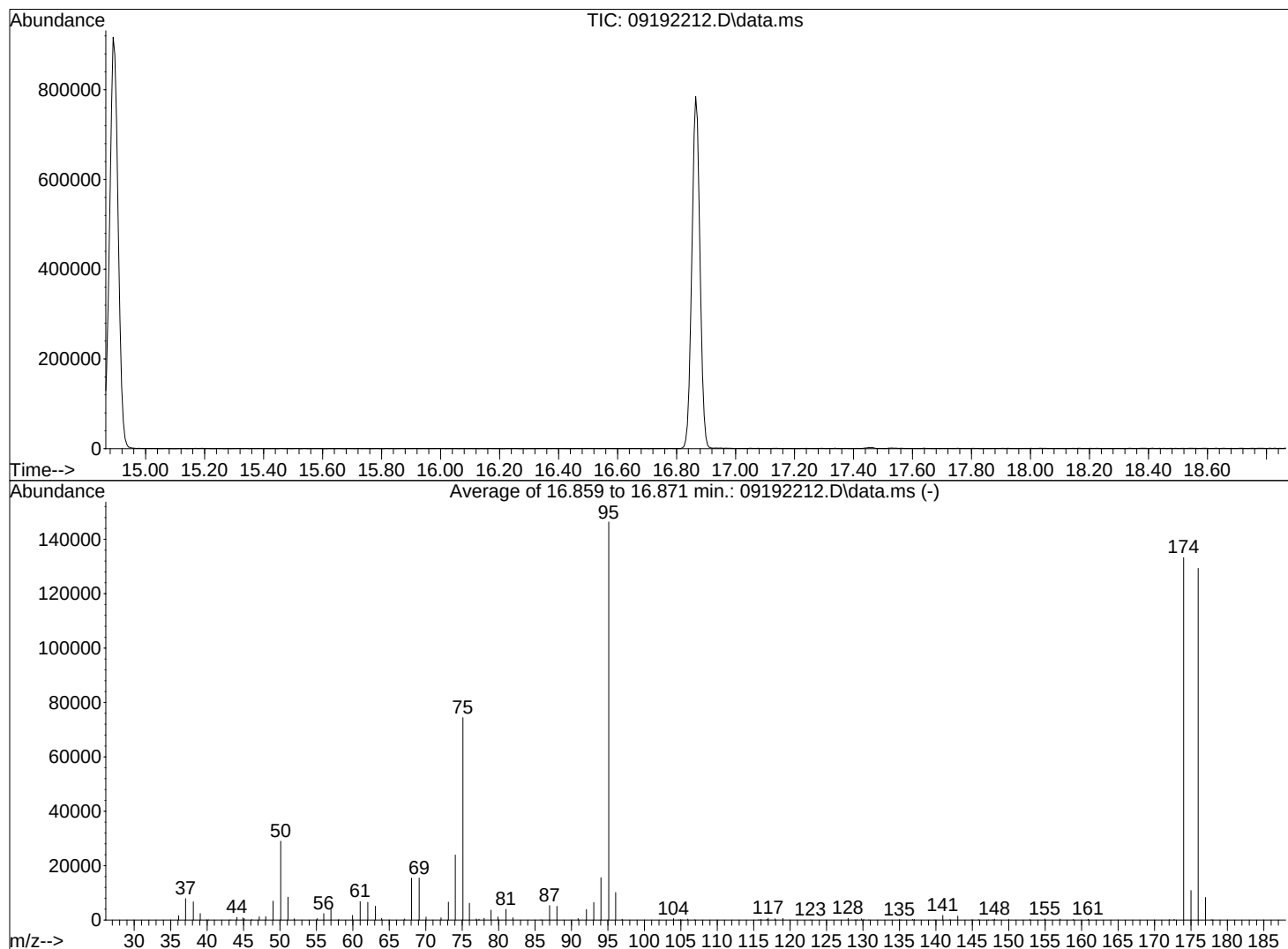
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	53619	5.469	ng	95
52) cis-1,3-Dichloropropene	11.33	75	99071	5.820	ng	100
53) 4-Methyl-2-pentanone	11.40	58	104673	12.140	ng	80
54) trans-1,3-Dichloropropene	12.02	75	100388	6.044	ng	100
55) 1,1,2-Trichloroethane	12.24	97	55755	5.210	ng	92
58) Toluene	12.63	91	239632	4.301	ng	96
59) 2-Hexanone	12.97	43	294252	10.671	ng	98
60) Dibromochloromethane	13.13	129	74827	4.187	ng	98
61) 1,2-Dibromoethane	13.45	107	66888	4.235	ng	97
62) n-Butyl Acetate	13.83	43	317536	10.319	ng	95
63) n-Octane	13.97	57	50522	4.976	ng	92
64) Tetrachloroethene	14.09	166	67865	3.936	ng	97
65) Chlorobenzene	14.95	112	153876	4.271	ng	100
66) Ethylbenzene	15.45	91	281264	4.357	ng	99
67) m- & p-Xylenes	15.70	91	466974	8.726	ng	100
68) Bromoform	15.72	173	65752	4.094	ng	94
69) Styrene	16.14	104	160267	4.449	ng	97
70) o-Xylene	16.28	91	234411	4.427	ng	97
71) n-Nonane	16.64	43	127421	5.444	ng	92
72) 1,1,2,2-Tetrachloroethane	16.25	83	100169	4.470	ng	98
74) Cumene	17.07	105	279338	4.268	ng	99
75) alpha-Pinene	17.58	93	146269	4.440	ng	94
76) n-Propylbenzene	17.75	91	346014	4.498	ng	97
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	280566	4.543	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	237190	4.189	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	246036	4.386	ng	99
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.76	91	434990	10.447	ng	96
85) 1,3-Dichlorobenzene	18.78	146	130309	4.284	ng	98
86) 1,4-Dichlorobenzene	18.87	146	132946	4.575	ng	99
87) sec-Butylbenzene	18.96	105	307748	4.294	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	268352	4.219	ng	96
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	128762	4.256	ng	98
91) d-Limonene	19.36	68	87126	4.971	ng	94
92) 1,2-Dibromo-3-Chloropr...	19.86	157	95405	8.271	ng	# 72
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	208747	10.410	ng	97
95) Naphthalene	21.55	128	301292	6.552	ng	99
96) n-Dodecane	19.18	58	7844	No Calib	#	
97) Hexachlorobutadiene	21.99	225	75840	3.913	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.61	119	224890	4.124	ng	98
100) n-Butylbenzene	19.72	91	262558	4.748	ng	98
101) 1,1,1,2-Tetrachloroethane	14.92	131	62420	4.092	ng	99

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

Data Path : I:\MS13\DATA\2022_09\19\
Data File : 09192212.D
Acq On : 19 Sep 2022 12:15
Operator : TZ
Sample : T0-15 BFB Std.
Misc : S35-08172209
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13091922.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Mon Sep 19 21:20:24 2022



AutoFind: Scans 2420, 2421, 2422; Background Corrected with Scan 2411

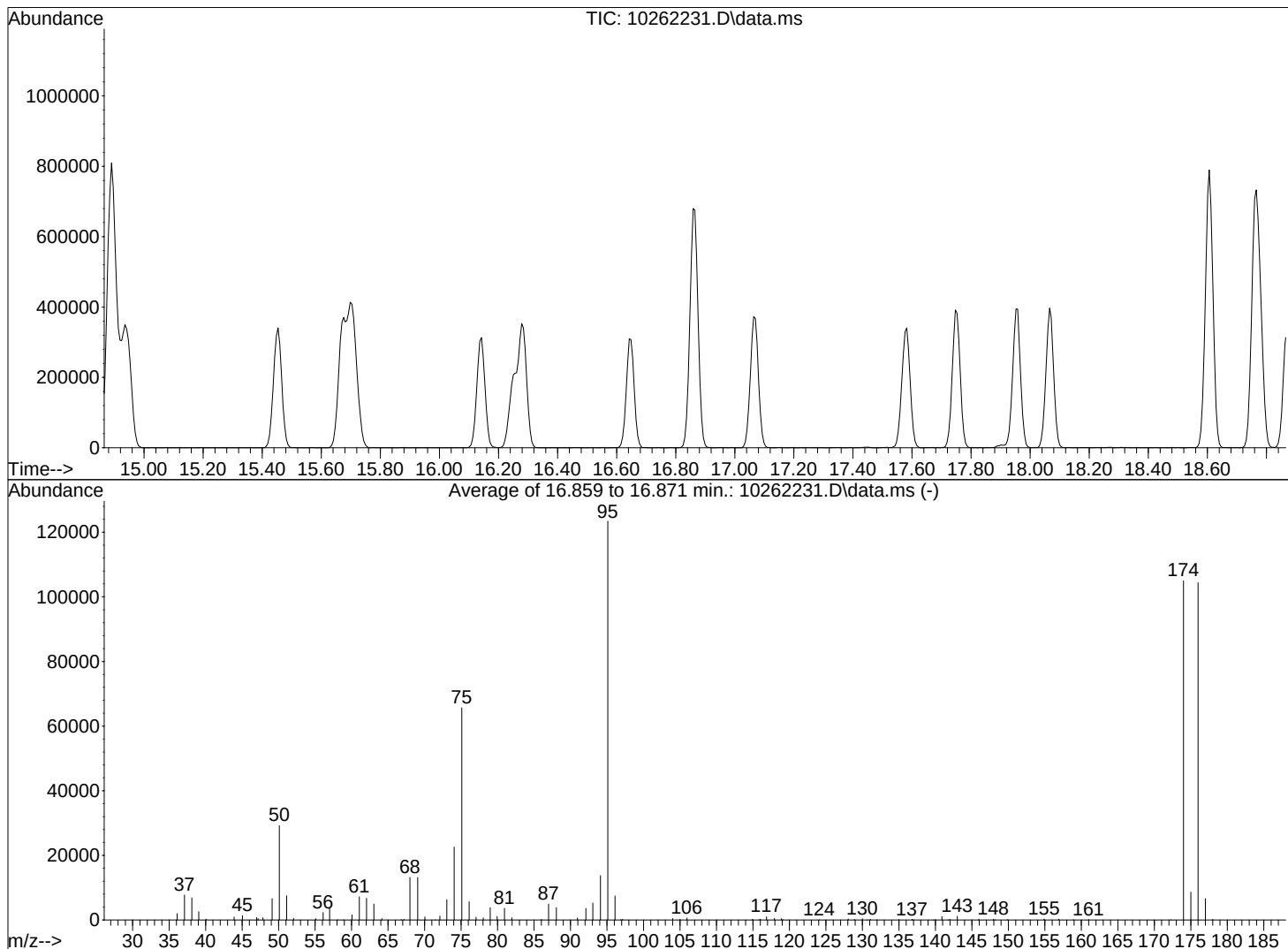
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.8	29027	PASS
75	95	30	66	50.8	74408	PASS
95	95	100	100	100.0	146368	PASS
96	95	5	9	6.9	10125	PASS
173	174	0.00	2	0.2	274	PASS
174	95	50	120	91.0	133219	PASS
175	174	4	9	8.1	10845	PASS
176	174	93	101	97.1	129301	PASS
177	176	5	9	6.4	8299	PASS

TZ 9/20/22

Data Path : I:\MS13\DATA\2022_10\26\
 Data File : 10262231.D
 Acq On : 26 Oct 2022 21:24
 Operator : TZ
 Sample : CCV2 R13102622 5.0ng
 Misc : S35-08172209/S35-10172203 (11/16)
 ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13091922.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Wed Oct 26 08:29:23 2022



AutoFind: Scans 2420, 2421, 2422; Background Corrected with Scan 2411

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	23.7	29192	PASS
75	95	30	66	53.2	65659	PASS
95	95	100	100	100.0	123424	PASS
96	95	5	9	6.0	7459	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	85.0	104963	PASS
175	174	4	9	8.2	8622	PASS
176	174	93	101	99.5	104395	PASS
177	176	5	9	6.3	6610	PASS

TZ 10/27/22

Injection Log

Directory: J:\MS13\DATA\2022_09\19\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	9/19/22 12:15	09192212.D	TO-15 BFB Std.	S35-08172209	TZ	1	passed
2	9/19/22 12:52	09192213.D	0.1ng R13091922 ICAL Std.	S35-08172209/S35-09162201 (10/8)	TZ	13	R13091922.M
3	9/19/22 13:30	09192214.D	0.2ng R13091922 ICAL Std.	S35-08172209/S35-09162201 (10/8)	TZ	13	
4	9/19/22 14:07	09192215.D	0.5ng R13091922 ICAL Std.	S35-08172209/S35-09082202 (10/8)	TZ	14	
5	9/19/22 14:45	09192216.D	1.0ng R13091922 ICAL Std.	S35-08172209/S35-09082202 (10/8)	TZ	14	
6	9/19/22 15:21	09192217.D	5.0ng R13091922 ICAL Std.	S35-08172209/S35-09082202 (10/8)	TZ	14	
7	9/19/22 15:58	09192218.D	25ng R13091922 ICAL Std.	S35-08172209/S35-09082201 (10/8)	TZ	15	
8	9/19/22 16:35	09192219.D	50ng R13091922 ICAL Std.	S35-08172209/S35-09082201 (10/8)	TZ	15	
9	9/19/22 17:13	09192220.D	100ng R13091922 ICAL Std.	S35-08172209/S35-09082201 (10/8)	TZ	15	
10	9/19/22 17:50	09192221.D	Blank	S35-08172209	TZ	1	
11	9/19/22 18:28	09192222.D	25ng R13091922 ICV Std.	S35-08172209/S35-09072203 (10/7)	TZ	1	passed
12	9/19/22 19:06	09192223.D	25ng R13091922 ICV Std.	S35-08172209/S35-09072203 (10/7)	TZ	1	not used
R13091922.M ranges from 0.1ng->100ng except: chloromethane: 0.1ng-50ng and TBA: 0.2ng-100ng							
Ethyl Acetate in 25ng ICV bias low due to standard problem; ICV at 5.0ng passed at 71% recovery							

Injection Log

Directory: I:\MS13\DATA\2022_10\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/26/22 21:24	10262231.D	CCV2 R13102622 5.0ng	S35-08172209/S35-10172203 (11/16)	TZ	1	Passed
2	10/26/22 22:02	10262232.D	CCV2 C13102622 5.0ng	S35-08172209/S35-10262204 (11/25)	TZ	16	Passed
3	10/26/22 22:40	10262233.D	MB2 R13102622 1000mL	S35-08172209_AC01387	TZ	2	Passed
4	10/26/22 23:17	10262234.D	LCS2 R13102622 25ng	S35-08172209/S35-10192202 (11/18)	TZ	1	Passed
5	10/26/22 23:54	10262235.D	LCSD2 R13102622 25ng	S35-08172209/S35-10192202 (11/18)	TZ	1	Passed
6	10/27/22 0:31	10262236.D	P2204610-001 (1000mL)	S35-08172209	TZ	7	
7	10/27/22 1:07	10262237.D	P2204610-002 (1000mL)	S35-08172209	TZ	8	
8	10/27/22 1:44	10262238.D	P2204610-003 (1000mL)	S35-08172209	TZ	9	
9	10/27/22 2:21	10262239.D	P2204610-004 (1000mL)	S35-08172209	TZ	10	
10	10/27/22 2:57	10262240.D	P2204610-005 (1000mL)	S35-08172209	TZ	11	
11	10/27/22 3:34	10262241.D	P2204702-001 (300mL)	S35-08172209	TZ	13	
12	10/27/22 4:11	10262242.D	P2204702-002 (160mL)	S35-08172209	TZ	14	
13	10/27/22 4:48	10262243.D	P2204702-003 (1000mL)	S35-08172209	TZ	15	
14	10/27/22 8:08	10262244.D	P2204702-002 (230mL)	S35-08172209	TZ	14	
15	10/27/22 8:44	10262245.D	P2204702-004 (300mL)	S35-08172209	TZ	13	
16	10/27/22 9:21	10262246.D	P2204610-002dil (200mL)	S35-08172209	TZ	8	
17	10/27/22 9:58	10262247.D	P2204610-003dil (200mL)	S35-08172209	TZ	9	
18	10/27/22 10:56	10262248.D	P2204669-001 (1000mL)	S35-08172209	TZ	2	
19	10/27/22 11:33	10262249.D	P2204669-002 (1000mL)	S35-08172209	TZ	3	
20	10/27/22 12:10	10262250.D	P2204658-001 (1000mL)	S35-08172209	TZ	4	
21	10/27/22 12:48	10262251.D	P2204658-002 (1000mL)	S35-08172209	TZ	5	
22	10/27/22 13:26	10262252.D	CCV2end R13102622 5.0ng	S35-08172209/S35-10172203 (11/16)	TZ	1	Passed
23	10/27/22 14:03	10262253.D	P2204743-001 (1000mL)	S35-08172209	TZ	6	
24	10/27/22 14:40	10262254.D	P2204743-002 (1000mL)	S35-08172209	TZ	7	
25	10/27/22 15:17	10262255.D	P2204743-003 (1000mL)	S35-08172209	TZ	8	
26	10/27/22 16:16	10262256.D	P2204743-004 (1000mL)	S35-08172209	TZ	9	
27	10/27/22 16:53	10262257.D	P2204743-005 (1000mL)	S35-08172209	TZ	10	

CCV : chloromethane out high

LCS : ethanol out high, w/in 130% ; and out high in LCSD

WA 10/28/22

[illegible]

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-03

Cycles: 30

Batch: 30036

Batch Started By: on 10/4/22 0416
Finished Cleaning By: ALESAICHERRE on 10/6/22 0512

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum		Final Vacuum		Comments
				Vacuum	Date/Time	Vacuum	Date/Time	
AC02353	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0846
AC02250	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0845
AC02431	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/17/22 0910
AC01868	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0845
AC02415	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0841
AC02375	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0845
AC02107	10/4/22	10/5/22	Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE		ms21-10/05/22
AC02164	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0841
AC02283	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0846
AC02504	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0841
AC02053	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0841
AC02275	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0846
AC02143	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0846
AC02101	10/4/22		Pass w/ Conditions	-14.3	10/6/22 0512	ALESAICHERRE	-14.0	10/14/22 0845

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

* QC Canister

Data Path : I:\MS21\DATA\2022_10\05\
 Data File : 10052205.D
 Acq On : 5 Oct 2022 14:01
 Operator : KM
 Sample : 100522_AC02107_30036
 Misc : LL + TICS (Sig #1); S35-08242214 (Sig #2)
 ALS Vial : 1 Sample Multiplier: 1

APL 10/6/22

Quant Time: Oct 06 04:17:04 2022
 Quant Method : I:\MS21\Methods\F21081622.M
 Quant Title : EPA TO-15
 QLast Update : Wed Aug 17 15:07:25 2022
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.740	130	73405	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.906	114	176854	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.787	54	37278	1000.00	pg	0.00

System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.555	65	113163	1003.79	pg	0.00
Spiked Amount 1000.000			Recovery	=	100.38%	
57) Toluene-d8 (SS2)	12.707	98	189657	855.56	pg	0.00
Spiked Amount 1000.000			Recovery	=	85.56%	
74) Bromofluorobenzene (SS3)	16.233	174	66521	743.58	pg	0.00
Spiked Amount 1000.000			Recovery	=	74.36%	

Target	Compounds					Qvalue
2]	* Propene	3.682	42	576	9.372 pg	# 38
3]	* Dichlorodifluoromethane	3.729	85	587	4.651 pg	# 98
4]	* Chloromethane	3.861	50	166	4.629 pg	# 40
7]	* 1,3-Butadiene	4.157	54	34	1.163 pg	# 8
10]	* Ethanol	4.606	45	19324	454.652 pg	# 99
11]	* Acetonitrile	4.778	41	2531	17.907 pg	# 98
12]	* Acrolein	4.890	56	1117	29.671 pg	# 97
13]	* Acetone	5.014	58	39248	673.083 pg	# 93
14]	* Trichlorofluoromethane	5.138	101	3676	21.290 pg	# 99
15]	* 2-Propanol (Isopropa...	5.213	45	10619	76.290 pg	# 69
16]	* Acrylonitrile	5.362	53	187	2.341 pg	# 77
18]	tert-Butanol	5.764	59	1360	11.534 pg	# 67
19]	* Methylene Chloride	5.749	84	6339	72.400 pg	# 99
21]	* Trichlorotrifluoroet...	5.997	151	707	8.432 pg	# 99
22]	* Carbon Disulfide	6.026	76	16708	50.071 pg	# 99
26]	* Vinyl Acetate	6.898	86	1450	124.171 pg	# 16
27]	* 2-Butanone (MEK)	7.174	72	10627	247.804 pg	# 90
30]	* Ethyl Acetate	7.838	61	6482	275.015 pg	# 97
31]	* n-Hexane	7.825	57	1308	16.112 pg	# 81
32]	* Chloroform	7.877	83	883	5.788 pg	# 97
34]	* Tetrahydrofuran	8.359	71	235	8.005 pg	# 81
36]	* 1,2-Dichloroethane	8.671	62	184	1.750 pg	# 42
38]	* 1,1,1-Trichloroethane	8.977	97	166	1.756 pg	# 98
39]	* Benzene	9.495	78	7288	41.902 pg	# 97
42]	* Carbon Tetrachloride	9.672	117	1773	22.690 pg	# 100
43]	* Cyclohexane	9.823	84	193	3.752 pg	# 92
45]	* 1,2-Dichloropropane	10.416	63	57	1.030 pg	# 27
46]	* Bromodichloromethane	10.626	83	248	2.985 pg	# 55
47]	* Trichloroethene	10.706	130	191	3.006 pg	# 91
48]	* 1,4-Dioxane	10.764	88	199	4.163 pg	# 69
49]	Isooctane	10.786	56	945	14.768 pg	# 68
50]	* Methyl Methacrylate	10.952	69	93	2.064 pg	# 36
51]	* n-Heptane	11.090	71	366	8.765 pg	# 95
53]	* 4-Methyl-2-pentanone	11.804	58	1309	34.679 pg	# 99
54]	* trans-1,3-Dichloropr...	12.323	75	74	1.337 pg	# 41
58]	* Toluene	12.816	91	12707	47.982 pg	# 98
59]	* 2-Hexanone	13.184	58	398	7.892 pg	# 99
60]	* Dibromochloromethane	13.271	129	101	1.444 pg	# 93
62]	* n-Butyl Acetate	13.923	56	163	4.338 pg	# 100
63]	* n-Octane	14.005	85	226	6.056 pg	# 92
64]	* Tetrachloroethene	14.114	166	322	3.989 pg	# 98
65]	* Chlorobenzene	14.832	112	126	0.704 pg	# 42
66]	* Ethylbenzene	15.220	91	1389	7.013 pg	# 100
67]	* m- & p-Xylenes	15.387	91	2833	18.154 pg	# 99

Data Path : I:\MS21\DATA\2022_10\05\
 Data File : 10052205.D
 Acq On : 5 Oct 2022 14:01
 Operator : KM
 Sample : 100522_AC02107_30036
 Misc : LL + TICS (Sig #1); S35-08242214 (Sig #2)
 ALS Vial : 1 Sample Multiplier: 1

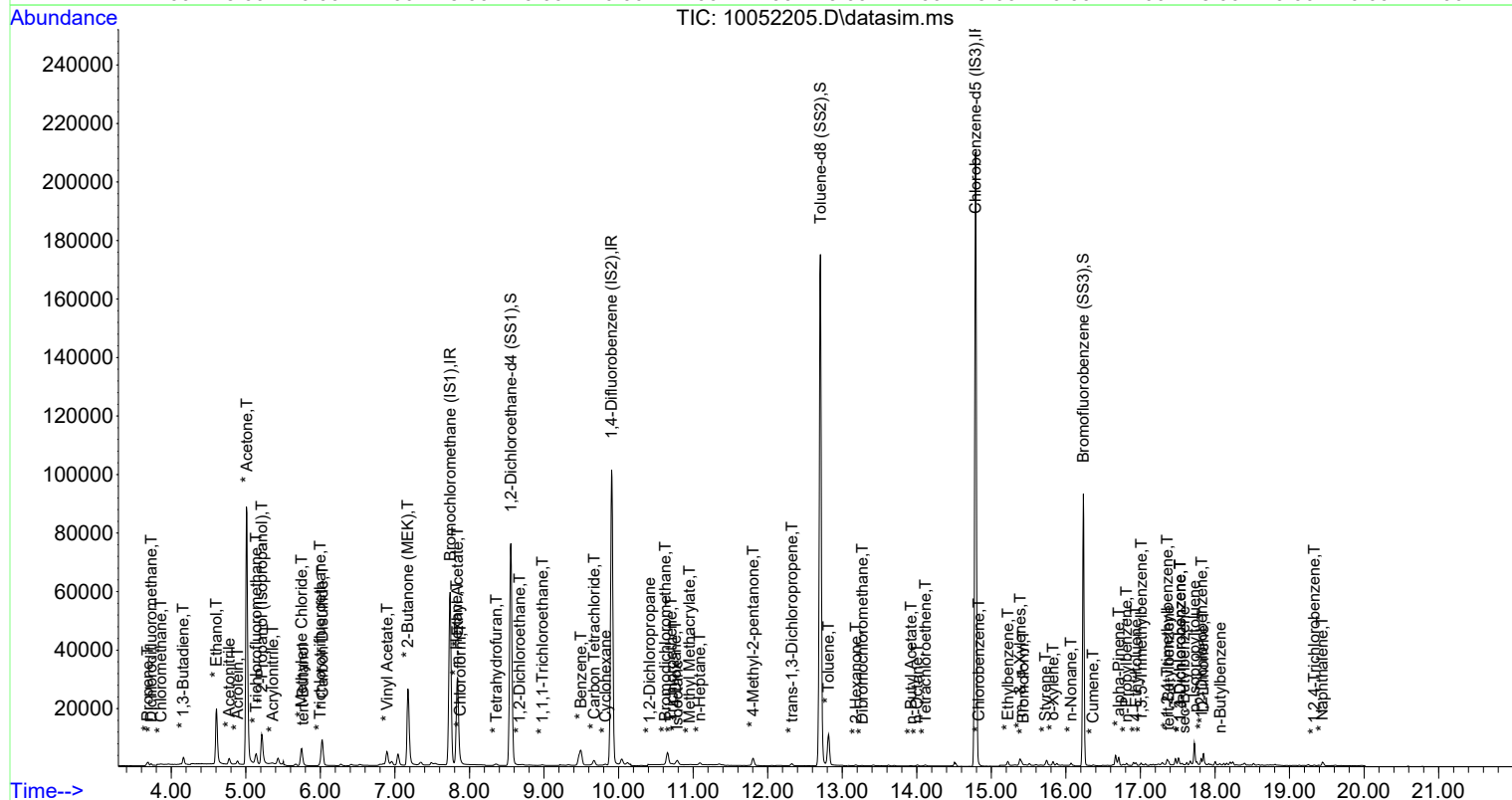
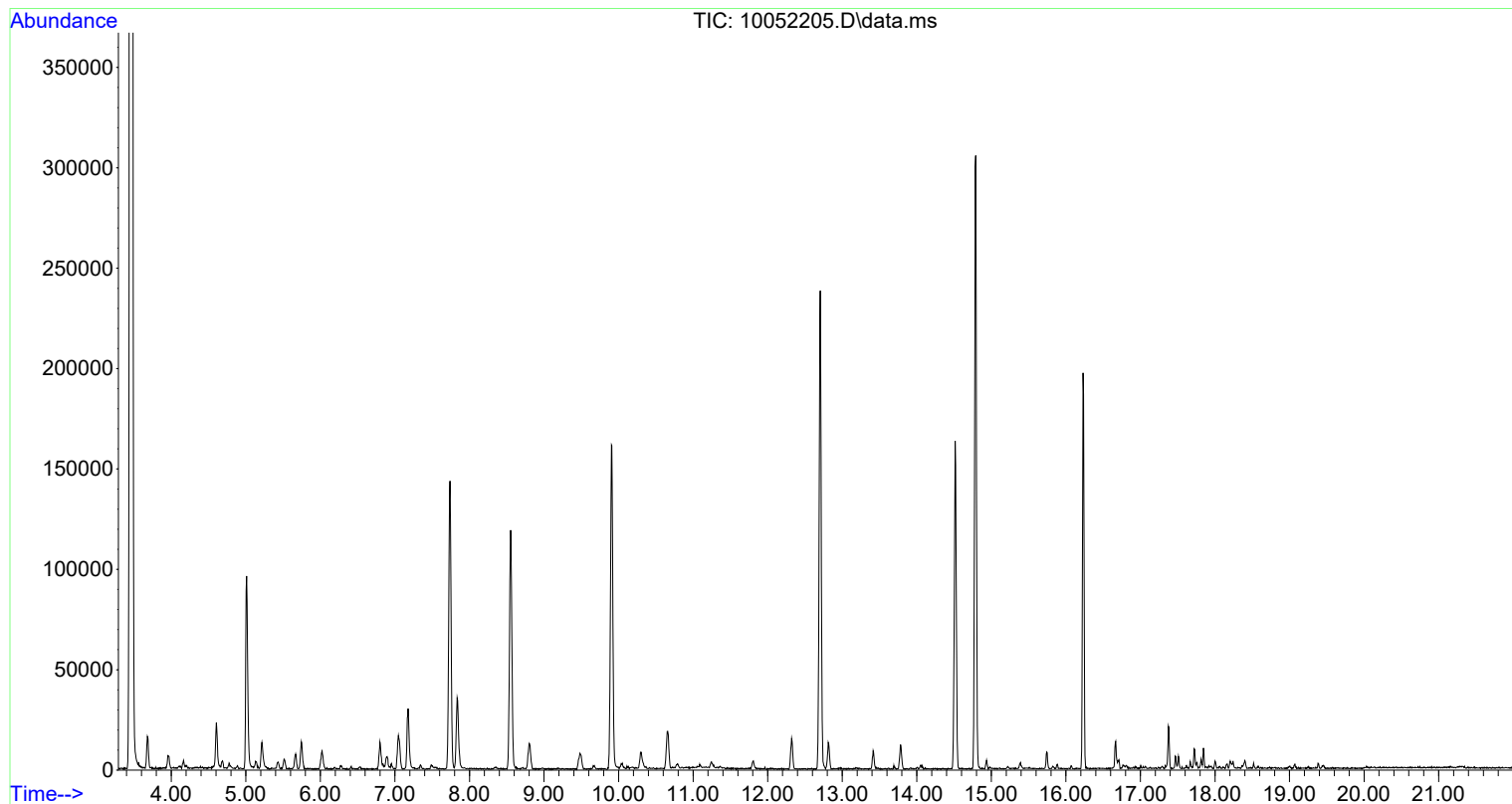
Quant Time: Oct 06 04:17:04 2022
 Quant Method : I:\MS21\Methods\F21081622.M
 Quant Title : EPA T0-15
 QLast Update : Wed Aug 17 15:07:25 2022
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
68]	* Bromoform	15.429	173	112	2.183	pg	97
70]	* Styrene	15.727	104	459	4.339	pg	91
71]	* o-Xylene	15.828	91	1153	7.475	pg	99
72]	* n-Nonane	16.067	57	499	9.372	pg	100
75]	* Cumene	16.363	105	219	1.009	pg	92
76]	* alpha-Pinene	16.710	93	1876	19.962	pg	90
77]	* n-Propylbenzene	16.812	91	544	2.249	pg	99
79]	* 4-Ethyltoluene	16.943	105	499	2.856	pg	92
80]	* 1,3,5-Trimethylbenzene	17.011	105	391	2.558	pg	100
83]	tert-Butylbenzene	17.378	134	485	14.287	pg	# 1
84]	* 1,2,4-Trimethylbenzene	17.357	105	1409	9.599	pg	89
86]	* 1,3-Dichlorobenzene	17.535	146	248	1.729	pg	96
87]	* 1,4-Dichlorobenzene	17.535	146	252	1.863	pg	95
89]	sec-Butylbenzene	17.589	105	82	0.375	pg	# 57
91]	p-Isopropyltoluene	17.724	119	5029	29.742	pg	99
92]	* 1,2-Dichlorobenzene	17.821	146	96	0.684	pg	96
93]	* D-Limonene	17.843	68	1693	34.903	pg	83
94]	n-Butylbenzene	18.070	134	132	3.232	pg	# 62
97]	* 1,2,4-Trichlorobenzene	19.331	180	114	1.446	pg	87
98]	* Naphthalene	19.439	128	1342	7.917	pg	95

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

Data Path : I:\MS21\DATA\2022_10\05\
Data File : 10052205.D
Acq On : 5 Oct 2022 14:01
Operator : KM
Sample : 100522_AC02107_30036
Misc : LL + TICS (Sig #1); S35-08242214 (Sig #2)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Oct 06 04:17:04 2022
Quant Method : I:\MS21\Methods\F21081622.M
Quant Title : EPA TO-15
QLast Update : Wed Aug 17 15:07:25 2022
Response via : Initial Calibration





LABORATORY REPORT

December 20, 2022

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the sample submitted to our laboratory on December 7, 2022. For your reference, this analysis has been assigned our service request number P2205493.

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.

ALS | Environmental


By Sue Anderson at 2:55 pm, Dec 20, 2022

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2205493

CASE NARRATIVE

The sample was received intact under chain of custody on December 7, 2022 and was 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 sample at the time of sample receipt.

The sample was analyzed for volatile organic compounds and Vinyl Acetate as a tentatively identified compound 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.

Due to a vendor anomaly found in the new standard being used vinyl acetate has been reported as a tentatively identified compound. Once the issue has been resolved subsequent reports will include the compound in question.

Manual integrations were performed on the following sample(s) and analyte(s). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P2205493-001	Propene

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 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.



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	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2205493

Date Received: 12/7/2022
Time Received: 09:40

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y12Q2	P2205493-001	Air	12/6/2022	13:31	AS01501	-11.31	3.97	X



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ALS Environmental **Sample Acceptance Check Form**

Client: Trinity Analysis & Development Corp. Work order: P2205493
 Project: DDMT Memphis / 10A023
 Sample(s) received on: 12/7/22 Date opened: 12/7/22 by: ADDAVID

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.

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

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2205493-001.01	6.0 L Silonite Can					

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	1.0	1.7	1.0	0.42	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.58	0.59	0.36	0.097	J
74-87-3	Chloromethane	0.85	1.4	0.85	0.23	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.25	0.43	0.25	0.066	U
75-01-4	Vinyl Chloride	0.37	1.1	0.37	0.12	U
106-99-0	1,3-Butadiene	0.80	1.3	0.80	0.22	U
74-83-9	Bromomethane	0.24	0.72	0.24	0.11	U
75-00-3	Chloroethane	0.36	1.1	0.36	0.14	U
64-17-5	Ethanol	9.1	15	2.5	1.1	J
75-05-8	Acetonitrile	1.1	3.3	1.1	0.43	U
107-02-8	Acrolein	0.84	2.4	0.84	0.36	U
67-64-1	Acetone	6.0	12	6.0	2.8	U
75-69-4	Trichlorofluoromethane	0.26	0.51	0.16	0.079	J
67-63-0	2-Propanol (Isopropyl Alcohol)	1.4	2.2	1.4	0.49	U
107-13-1	Acrylonitrile	0.84	2.5	0.84	0.28	U
75-35-4	1,1-Dichloroethene	0.29	0.75	0.24	0.10	J
75-09-2	Methylene Chloride	0.49	0.83	0.49	0.24	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.30	0.93	0.30	0.13	U
76-13-1	Trichlorotrifluoroethane	1.2	0.39	0.12	0.055	U
75-15-0	Carbon Disulfide	0.58	1.9	0.58	0.28	U
156-60-5	trans-1,2-Dichloroethene	0.38	0.74	0.24	0.10	J
75-34-3	1,1-Dichloroethane	0.13	0.72	0.23	0.11	J
1634-04-4	Methyl tert-Butyl Ether	0.24	0.81	0.24	0.096	U
78-93-3	2-Butanone (MEK)	0.62	1.9	0.62	0.21	U
156-59-2	cis-1,2-Dichloroethene	16	0.72	0.24	0.10	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	3.9	3.2	0.95	0.43	
110-54-3	n-Hexane	2.2	0.83	0.48	0.17	
67-66-3	Chloroform	5.8	0.61	0.19	0.080	
109-99-9	Tetrahydrofuran (THF)	0.37	1.9	0.37	0.13	U
107-06-2	1,2-Dichloroethane	0.23	0.72	0.23	0.080	U
71-55-6	1,1,1-Trichloroethane	0.17	0.53	0.16	0.067	J
71-43-2	Benzene	0.29	0.86	0.29	0.13	U
56-23-5	Carbon Tetrachloride	0.31	0.44	0.14	0.065	J
110-82-7	Cyclohexane	2.3	1.8	0.53	0.24	
78-87-5	1,2-Dichloropropane	0.20	0.60	0.20	0.079	U
75-27-4	Bromodichloromethane	0.14	0.44	0.14	0.063	U
79-01-6	Trichloroethene	17	0.53	0.16	0.074	
123-91-1	1,4-Dioxane	0.24	0.80	0.24	0.096	U
80-62-6	Methyl Methacrylate	0.83	1.5	0.83	0.26	U
142-82-5	n-Heptane	0.27	0.71	0.42	0.11	J
10061-01-5	cis-1,3-Dichloropropene	0.39	0.61	0.39	0.10	U
108-10-1	4-Methyl-2-pentanone	0.28	1.5	0.28	0.098	U
10061-02-6	trans-1,3-Dichloropropene	0.38	0.62	0.38	0.13	U
79-00-5	1,1,2-Trichloroethane	0.17	0.53	0.17	0.055	U
108-88-3	Toluene	0.32	0.76	0.25	0.095	J
591-78-6	2-Hexanone	0.28	1.5	0.28	0.089	U
124-48-1	Dibromochloromethane	0.11	0.34	0.11	0.045	U
106-93-4	1,2-Dibromoethane	0.12	0.37	0.12	0.044	U
123-86-4	n-Butyl Acetate	0.24	1.3	0.24	0.085	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.37	0.63	0.37	0.14	U
127-18-4	Tetrachloroethene	1.6	0.42	0.14	0.056	
108-90-7	Chlorobenzene	0.19	0.62	0.19	0.085	U
100-41-4	Ethylbenzene	0.22	0.66	0.22	0.095	U
179601-23-1	m,p-Xylenes	0.42	1.4	0.42	0.18	U
75-25-2	Bromoform	0.17	0.28	0.17	0.059	U
100-42-5	Styrene	0.40	0.65	0.40	0.11	U
95-47-6	o-Xylene	0.10	0.66	0.22	0.098	J
111-84-2	n-Nonane	0.34	0.55	0.34	0.094	U
79-34-5	1,1,2,2-Tetrachloroethane	0.24	0.42	0.14	0.059	J
98-82-8	Cumene	0.19	0.58	0.19	0.086	U
80-56-8	alpha-Pinene	0.17	0.53	0.17	0.081	U
103-65-1	n-Propylbenzene	0.19	0.59	0.19	0.086	U
622-96-8	4-Ethyltoluene	0.36	0.59	0.36	0.095	U
108-67-8	1,3,5-Trimethylbenzene	0.19	0.58	0.19	0.086	U
95-63-6	1,2,4-Trimethylbenzene	0.18	0.58	0.18	0.083	U
100-44-7	Benzyl Chloride	0.36	1.2	0.36	0.13	U
541-73-1	1,3-Dichlorobenzene	0.16	0.48	0.16	0.073	U
106-46-7	1,4-Dichlorobenzene	0.16	0.48	0.16	0.075	U
95-50-1	1,2-Dichlorobenzene	0.16	0.49	0.16	0.072	U
5989-27-5	d-Limonene	0.31	0.49	0.31	0.11	U
96-12-8	1,2-Dibromo-3-chloropropane	0.18	0.57	0.18	0.057	U
120-82-1	1,2,4-Trichlorobenzene	0.24	0.82	0.24	0.097	U
91-20-3	Naphthalene	0.33	0.55	0.33	0.14	U
87-68-3	Hexachlorobutadiene	0.16	0.27	0.16	0.057	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 4 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001

Tentatively Identified Compounds

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31 Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

GC/MS Retention Time	Compound Identification	Concentration ppbV	Data Qualifier
	Vinyl Acetate	NF	

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-MB

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-MB

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-MB

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.097	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.21	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.090	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 4 of 4

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-MB

Tentatively Identified Compounds

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes: T

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

GC/MS Retention Time	Compound Identification	Concentration ppbV	Data Qualifier
4.27	Sulfur Dioxide	>1.3	!
	Vinyl Acetate	NF	

T = Analyte is a tentatively identified compound, result is estimated.

! = Previous studies have shown that EPA Method TO-15 is not an appropriate method for quantifying Sulfur Dioxide. The TIC result for this compound is reported as "greater than" since the numeric value is probably biased low.

NF = Compound was searched for, but not found.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 12/6/22
Date(s) Received: 12/7/22
Date(s) Analyzed: 12/9/22

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P221209-MB	97	103	95	70-130	
Lab Control Sample	P221209-LCS	103	95	100	70-130	
Duplicate Lab Control Sample	P221209-DLCS	108	93	106	70-130	
ODSVE-EFF-Y12Q2	P2205493-001	97	101	110	70-130	
ODSVE-EFF-Y12Q2	P2205493-001DUP	101	95	106	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 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-DLCS

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	123	133	117	108	95	57-136	13	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.9	41.0	42.7	96	100	59-128	4	25	
74-87-3	Chloromethane	99.8	108	101	108	101	59-132	7	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	29.5	27.0	30.3	92	103	63-121	11	25	
75-01-4	Vinyl Chloride	79.8	74.2	73.6	93	92	64-127	1	25	
106-99-0	1,3-Butadiene	95.9	102	93.8	106	98	66-134	8	25	
74-83-9	Bromomethane	53.1	51.8	49.4	98	93	63-134	5	25	
75-00-3	Chloroethane	78.9	78.6	72.9	100	92	63-127	8	25	
64-17-5	Ethanol	375	470	422	125	113	59-125	10	25	
75-05-8	Acetonitrile	108	111	96.2	103	89	63-132	15	25	
107-02-8	Acrolein	169	182	167	108	99	62-126	9	25	
67-64-1	Acetone	446	433	384	97	86	58-128	12	25	
75-69-4	Trichlorofluoromethane	37.4	36.3	38.7	97	103	62-126	6	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	168	189	173	113	103	52-125	9	25	
107-13-1	Acrylonitrile	190	195	176	103	93	71-137	10	25	
75-35-4	1,1-Dichloroethene	54.5	54.9	52.0	101	95	61-133	6	25	
75-09-2	Methylene Chloride	61.0	56.6	51.7	93	85	62-115	9	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	68.4	71.3	62.9	104	92	71-131	12	25	
76-13-1	Trichlorotrifluoroethane	28.2	26.9	28.2	95	100	66-126	5	25	
75-15-0	Carbon Disulfide	137	126	114	92	83	57-134	10	25	
156-60-5	trans-1,2-Dichloroethene	54.5	58.3	56.3	107	103	67-124	4	25	
75-34-3	1,1-Dichloroethane	53.4	51.9	49.4	97	93	68-126	4	25	
1634-04-4	Methyl tert-Butyl Ether	59.4	67.4	66.7	113	112	66-126	0.9	25	
78-93-3	2-Butanone (MEK)	142	158	142	111	100	67-130	10	25	
156-59-2	cis-1,2-Dichloroethene	54.0	56.4	54.3	104	101	70-121	3	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 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-DLCS

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
141-78-6	Ethyl Acetate	238	181	160	76	67	65-128	13	25	
110-54-3	n-Hexane	60.2	65.6	59.4	109	99	63-120	10	25	
67-66-3	Chloroform	43.4	42.0	41.6	97	96	68-123	1	25	
109-99-9	Tetrahydrofuran (THF)	140	150	136	107	97	64-123	10	25	
107-06-2	1,2-Dichloroethane	53.4	54.7	56.6	102	106	65-128	4	25	
71-55-6	1,1,1-Trichloroethane	38.5	38.4	40.7	100	106	68-125	6	25	
71-43-2	Benzene	67.6	66.3	61.3	98	91	69-119	7	25	
56-23-5	Carbon Tetrachloride	32.8	32.4	35.5	99	108	68-132	9	25	
110-82-7	Cyclohexane	123	130	121	106	98	70-117	8	25	
78-87-5	1,2-Dichloropropane	45.9	44.7	40.9	97	89	69-123	9	25	
75-27-4	Bromodichloromethane	32.3	32.4	32.5	100	101	72-128	1	25	
79-01-6	Trichloroethene	39.5	41.1	41.3	104	105	71-123	1	25	
123-91-1	1,4-Dioxane	58.9	59.9	57.0	102	97	71-122	5	25	
80-62-6	Methyl Methacrylate	104	110	105	106	101	70-128	5	25	
142-82-5	n-Heptane	51.8	54.0	49.6	104	96	69-123	8	25	
10061-01-5	cis-1,3-Dichloropropene	47.6	55.4	52.8	116	111	70-128	4	25	
108-10-1	4-Methyl-2-pentanone	105	123	112	117	107	67-130	9	25	
10061-02-6	trans-1,3-Dichloropropene	45.4	48.3	47.6	106	105	75-133	0.9	25	
79-00-5	1,1,2-Trichloroethane	38.9	39.1	37.1	101	95	73-119	6	25	
108-88-3	Toluene	56.3	53.6	50.5	95	90	66-119	5	25	
591-78-6	2-Hexanone	104	122	109	117	105	62-128	11	25	
124-48-1	Dibromochloromethane	25.4	25.0	25.4	98	100	70-130	2	25	
106-93-4	1,2-Dibromoethane	27.1	27.6	26.4	102	97	74-122	5	25	
123-86-4	n-Butyl Acetate	86.3	108	96.1	125	111	65-134	12	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 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P221209-DLCS

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 12/9/22

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	45.8	49.5	45.9	108	100	69-121	8	25	
127-18-4	Tetrachloroethene	31.3	31.0	32.3	99	103	66-124	4	25	
108-90-7	Chlorobenzene	46.1	43.5	42.0	94	91	70-119	3	25	
100-41-4	Ethylbenzene	48.4	52.1	49.8	108	103	70-124	5	25	
179601-23-1	m,p-Xylenes	96.7	102	98.7	105	102	61-134	3	25	
75-25-2	Bromoform	20.7	21.9	22.8	106	110	66-139	4	25	
100-42-5	Styrene	49.8	55.0	51.6	110	104	73-127	6	25	
95-47-6	o-Xylene	48.8	53.2	51.0	109	105	67-125	4	25	
111-84-2	n-Nonane	40.4	46.3	41.5	115	103	63-128	11	25	
79-34-5	1,1,2,2-Tetrachloroethane	30.9	30.2	26.8	98	87	65-127	12	25	
98-82-8	Cumene	43.1	45.0	43.3	104	100	68-124	4	25	
80-56-8	alpha-Pinene	39.1	44.1	42.0	113	107	62-136	5	25	
103-65-1	n-Propylbenzene	43.6	46.3	43.5	106	100	69-123	6	25	
622-96-8	4-Ethyltoluene	44.0	49.1	46.9	112	107	67-129	5	25	
108-67-8	1,3,5-Trimethylbenzene	42.7	46.6	45.3	109	106	67-130	3	25	
95-63-6	1,2,4-Trimethylbenzene	42.3	46.8	48.7	111	115	66-132	4	25	
100-44-7	Benzyl Chloride	81.2	81.2	86.9	100	107	50-147	7	25	
541-73-1	1,3-Dichlorobenzene	34.9	34.9	37.4	100	107	65-130	7	25	
106-46-7	1,4-Dichlorobenzene	35.3	34.0	36.8	96	104	60-131	8	25	
95-50-1	1,2-Dichlorobenzene	35.3	36.3	37.6	103	107	63-129	4	25	
5989-27-5	d-Limonene	37.7	36.7	36.1	97	96	65-136	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	43.1	43.8	49.5	102	115	73-133	12	25	
120-82-1	1,2,4-Trichlorobenzene	55.5	56.3	64.6	101	116	55-142	14	25	
91-20-3	Naphthalene	41.2	39.2	45.3	95	110	57-138	15	25	
87-68-3	Hexachlorobutadiene	19.7	19.1	22.0	97	112	56-138	14	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 DUPLICATE SUMMARY RESULTS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001DUP

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

Compound	Duplicate		Average	% RPD	RPD Limit	Data Qualifier
	Sample Result	Sample Result				
	ppbV	ppbV	ppbV			
Propene	ND	ND	-	-	25	
Dichlorodifluoromethane (CFC 12)	0.582	0.633	0.6075	8	25	
Chloromethane	ND	ND	-	-	25	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	ND	-	-	25	
Vinyl Chloride	ND	ND	-	-	25	
1,3-Butadiene	ND	ND	-	-	25	
Bromomethane	ND	ND	-	-	25	
Chloroethane	ND	ND	-	-	25	
Ethanol	9.08	6.74	7.91	30	25	J, R1
Acetonitrile	ND	ND	-	-	25	
Acrolein	ND	ND	-	-	25	
Acetone	ND	ND	-	-	25	
Trichlorofluoromethane	0.258	0.267	0.2625	3	25	J
2-Propanol (Isopropyl Alcohol)	ND	ND	-	-	25	
Acrylonitrile	ND	ND	-	-	25	
1,1-Dichloroethene	0.289	0.300	0.2945	4	25	J
Methylene Chloride	ND	ND	-	-	25	
3-Chloro-1-propene (Allyl Chloride)	ND	ND	-	-	25	
Trichlorotrifluoroethane	1.23	1.28	1.255	4	25	
Carbon Disulfide	ND	ND	-	-	25	
trans-1,2-Dichloroethene	0.377	0.361	0.369	4	25	J
1,1-Dichloroethane	0.127	0.128	0.1275	0.8	25	J
Methyl tert-Butyl Ether	ND	ND	-	-	25	
2-Butanone (MEK)	ND	ND	-	-	25	
cis-1,2-Dichloroethene	16.5	16.7	16.6	1	25	

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

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

R1 = Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001DUP

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

Compound	Sample Result ppbV	Duplicate		Average ppbV	% RPD	RPD Limit	Data Qualifier
		Sample Result	Sample Result				
Ethyl Acetate	3.91	3.91	3.91	3.91	0	25	
n-Hexane	2.20	2.20	2.20	2.2	0	25	
Chloroform	5.78	5.82	5.8	5.8	0.7	25	
Tetrahydrofuran (THF)	ND	ND	-	-	-	25	
1,2-Dichloroethane	ND	ND	-	-	-	25	
1,1,1-Trichloroethane	0.167	0.169	0.168	1	25	J	
Benzene	ND	ND	-	-	-	25	
Carbon Tetrachloride	0.309	0.317	0.313	3	25	J	
Cyclohexane	2.27	2.20	2.235	3	25		
1,2-Dichloropropane	ND	ND	-	-	-	25	
Bromodichloromethane	ND	ND	-	-	-	25	
Trichloroethene	17.5	17.7	17.6	1	25		
1,4-Dioxane	ND	ND	-	-	-	25	
Methyl Methacrylate	ND	ND	-	-	-	25	
n-Heptane	0.270	0.278	0.274	3	25	J	
cis-1,3-Dichloropropene	ND	ND	-	-	-	25	
4-Methyl-2-pentanone	ND	ND	-	-	-	25	
trans-1,3-Dichloropropene	ND	ND	-	-	-	25	
1,1,2-Trichloroethane	ND	ND	-	-	-	25	
Toluene	0.322	0.312	0.317	3	25	J	
2-Hexanone	ND	ND	-	-	-	25	
Dibromochloromethane	ND	ND	-	-	-	25	
1,2-Dibromoethane	ND	ND	-	-	-	25	
n-Butyl Acetate	ND	ND	-	-	-	25	

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

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

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q2

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

ALS Sample ID: P2205493-001DUP

Test Code: EPA TO-15

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

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01501

Date Collected: 12/6/22

Date Received: 12/7/22

Date Analyzed: 12/9/22

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -11.31

Final Pressure (psig): 3.97

Container Dilution Factor: 5.51

Compound	Sample Result ppbV	Duplicate Sample Result ppbV	Average ppbV	% RPD	RPD Limit	Data Qualifier
n-Octane	ND	ND	-	-	25	
Tetrachloroethene	1.62	1.53	1.575	6	25	
Chlorobenzene	ND	ND	-	-	25	
Ethylbenzene	ND	ND	-	-	25	
m,p-Xylenes	ND	ND	-	-	25	
Bromoform	ND	ND	-	-	25	
Styrene	ND	ND	-	-	25	
o-Xylene	0.102	ND	-	-	25	
n-Nonane	ND	ND	-	-	25	
1,1,2,2-Tetrachloroethane	0.238	0.222	0.23	7	25	J
Cumene	ND	ND	-	-	25	
alpha-Pinene	ND	ND	-	-	25	
n-Propylbenzene	ND	ND	-	-	25	
4-Ethyltoluene	ND	ND	-	-	25	
1,3,5-Trimethylbenzene	ND	ND	-	-	25	
1,2,4-Trimethylbenzene	ND	ND	-	-	25	
Benzyl Chloride	ND	ND	-	-	25	
1,3-Dichlorobenzene	ND	ND	-	-	25	
1,4-Dichlorobenzene	ND	ND	-	-	25	
1,2-Dichlorobenzene	ND	ND	-	-	25	
d-Limonene	ND	ND	-	-	25	
1,2-Dibromo-3-chloropropane	ND	ND	-	-	25	
1,2,4-Trichlorobenzene	ND	ND	-	-	25	
Naphthalene	ND	ND	-	-	25	
Hexachlorobutadiene	ND	ND	-	-	25	

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 12092205.D
Date Analyzed: 12/9/22
Time Analyzed: 06:04

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P221209-LCS	12092209.D	08:19
Duplicate Lab Control Sample	P221209-DLCS	12092210.D	08:53
ODSVE-EFF-Y12Q2	P2205493-001	12092225.D	17:55
ODSVE-EFF-Y12Q2 (Lab Duplicate)	P2205493-001DUP	12092226.D	18:29

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2205493

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:
Lab File ID: 12092204.D
Date Analyzed: 12/9/22
Time Analyzed: 04:34

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	153545	11.30	689194	13.42	158453	17.72
Upper Limit	214963	11.63	964872	13.75	221834	18.05
Lower Limit	92127	10.97	413516	13.09	95072	17.39

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA	#	RT	#	AREA	#
01	Method Blank	145211	11.29	655509	13.42	155364	17.72
02	Lab Control Sample	134339	11.31	615942	13.43	161888	17.73
03	Duplicate Lab Control Sample	130476	11.32	590078	13.43	154881	17.73
04	ODSVE-EFF-Y12Q2	171685	11.29	750799	13.42	183971	17.72
05	ODSVE-EFF-Y12Q2 (Lab Duplicate)	142531	11.29	626610	13.42	161224	17.72
06							
07							
08							
09							
10							
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.

Data File : I:\MS16\DATA\2022_12\09\12092225.D
 Acq On : 9 Dec 2022 17:55
 Sample : P2205493-001 (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

CG 12/12/22

Quant Time: Dec 12 09:34:47 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	171685	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.42	114	750799	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	183971	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	292726	12.104	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.80%	
57) Toluene-d8 (SS2)	15.87	98	806170	12.646	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.20%	
73) Bromofluorobenzene (SS3)	19.10	174	286385	13.807	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	110.48%	

Target Compounds

						Qvalue
2) Propene	4.20	42	3248m	0.101	ng	
3) Dichlorodifluoromethan...	4.34	85	15585	0.522	ng	98
4) Chloromethane	4.64	50	317	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	601	N.D.		
6) Vinyl Chloride	5.07	62	803	N.D.		
7) 1,3-Butadiene	5.42	54	133	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.46	45	56824	3.105	ng	99
11) Acetonitrile	6.71	41	121	N.D.		
12) Acrolein	6.95	56	65	N.D.		
13) Acetone	0.00	58	0	N.D.	d	
14) Trichlorofluoromethane	7.39	101	7024	0.263	ng	99
15) 2-Propanol (Isopropanol)	7.61	45	140	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.	d	
17) 1,1-Dichloroethene	8.36	96	2715	0.208	ng	94
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	8.57	84	419	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d	
21) Trichlorotrifluoroethane	9.00	151	22118	1.712	ng	95
22) Carbon Disulfide	8.85	76	3198	0.062	ng	# 75
23) trans-1,2-Dichloroethene	9.85	61	5960	0.271	ng	98
24) 1,1-Dichloroethane	10.10	63	2662	0.093	ng	72
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)	10.66	72	115	N.D.		
28) cis-1,2-Dichloroethene	11.11	61	261739	11.844	ng	100
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	11.44	61	19143	2.555	ng	91
31) n-Hexane	11.41	57	48273	1.404	ng	# 93
32) Chloroform	11.46	83	129072	5.119	ng	98
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.27	62	205	N.D.		
38) 1,1,1-Trichloroethane	12.55	97	3747	0.165	ng	94
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.58	56	2467	No Calib	#	
41) Benzene	13.03	78	3472	0.066	ng	96
42) Carbon Tetrachloride	13.19	117	7082	0.353	ng	98
43) Cyclohexane	13.32	84	29509	1.419	ng	97
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.	d	
47) Trichloroethene	14.12	130	258504	17.018	ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	14.19	57	759898	9.431	ng	98
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS16\DATA\2022_12\09\12092225.D
 Acq On : 9 Dec 2022 17:55
 Sample : P2205493-001 (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 12 09:34:47 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

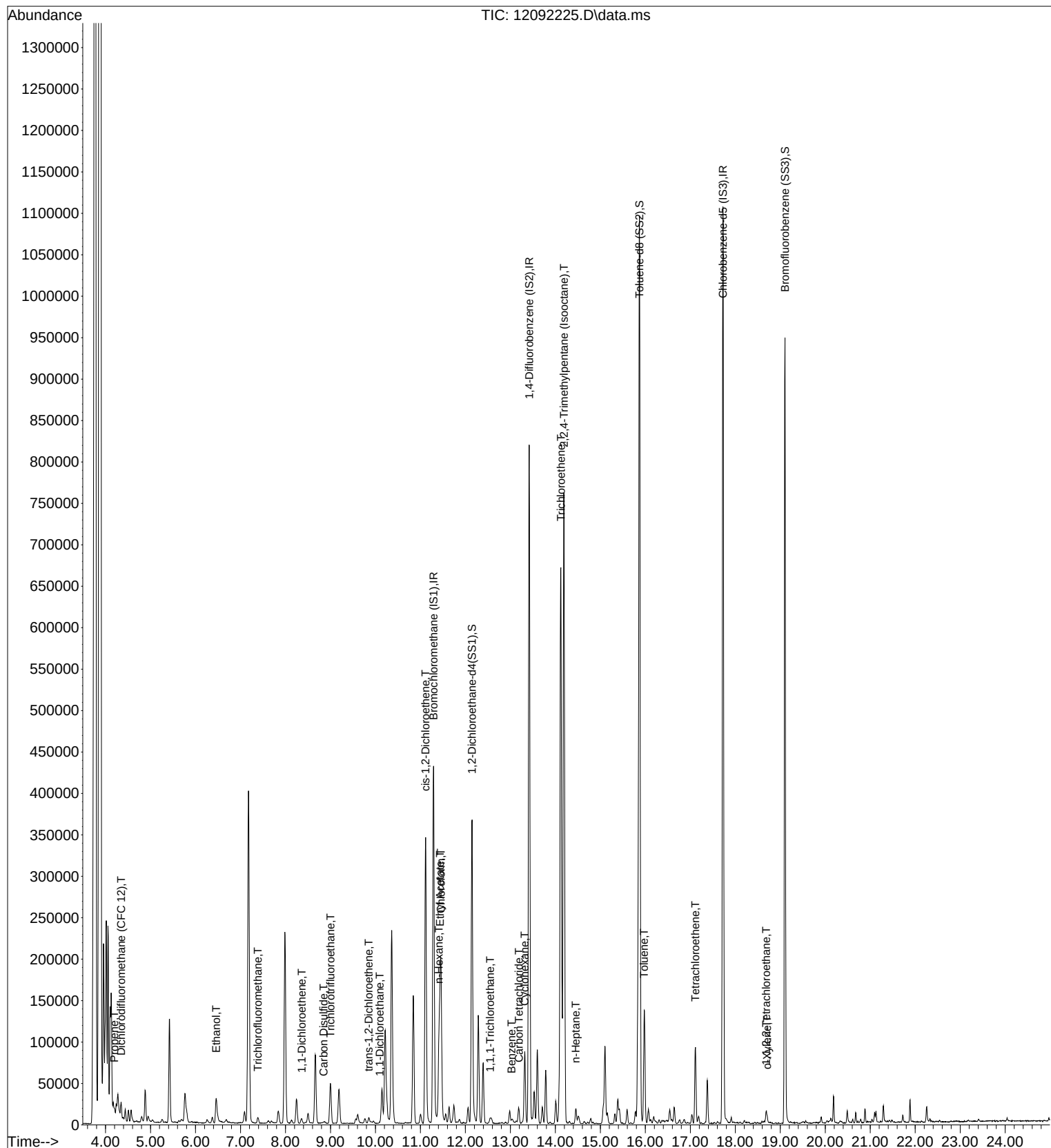
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.45	71	2887	0.201	ng	# 85
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.69	97	468	N.D.		
58) Toluene	15.97	91	12534	0.220	ng	99
59) 2-Hexanone	16.12	43	1933	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.87	43	1221	N.D.		
63) n-Octane	17.03	57	287	N.D.		
64) Tetrachloroethene	17.11	166	31458	1.989	ng	99
65) Chlorobenzene	17.80	112	188	N.D.		
66) Ethylbenzene	18.13	91	836	N.D.		
67) m- & p-Xylenes	18.30	91	1825	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.62	104	272	N.D.		
70) o-Xylene	18.71	91	3982	0.080	ng	90
71) n-Nonane	18.91	43	452	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.69	83	7243	0.297	ng	98
74) Cumene	19.24	105	179	N.D.		
75) alpha-Pinene	19.58	93	192	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.81	105	194	N.D.		
79) 1,3,5-Trimethylbenzene	19.87	105	760	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.24	105	642	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	20.61	119	574	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.73	68	428	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	277	N.D.		
95) Naphthalene	22.35	128	980	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.21	55	1351	No Calib	#	
99) tert-Butylbenzene	20.18	119	516	N.D.		
100) n-Butylbenzene	0.00	91	0	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\2022_12\09\12092225.D
Acq On : 9 Dec 2022 17:55
Sample : P2205493-001 (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 12 09:34:47 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Dec 01 09:30:33 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2022_12\09\12092225.D
 Acq On : 9 Dec 2022 17:55
 Sample : P2205493-001 (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

CG 12/12/22

Quant Time: Dec 12 09:34:47 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	171685	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.42	114	750799	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	183971	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	292726	12.104	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.80%	
57) Toluene-d8 (SS2)	15.87	98	806170	12.646	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.20%	
73) Bromofluorobenzene (SS3)	19.10	174	286385	13.807	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	110.48%	

Target Compounds

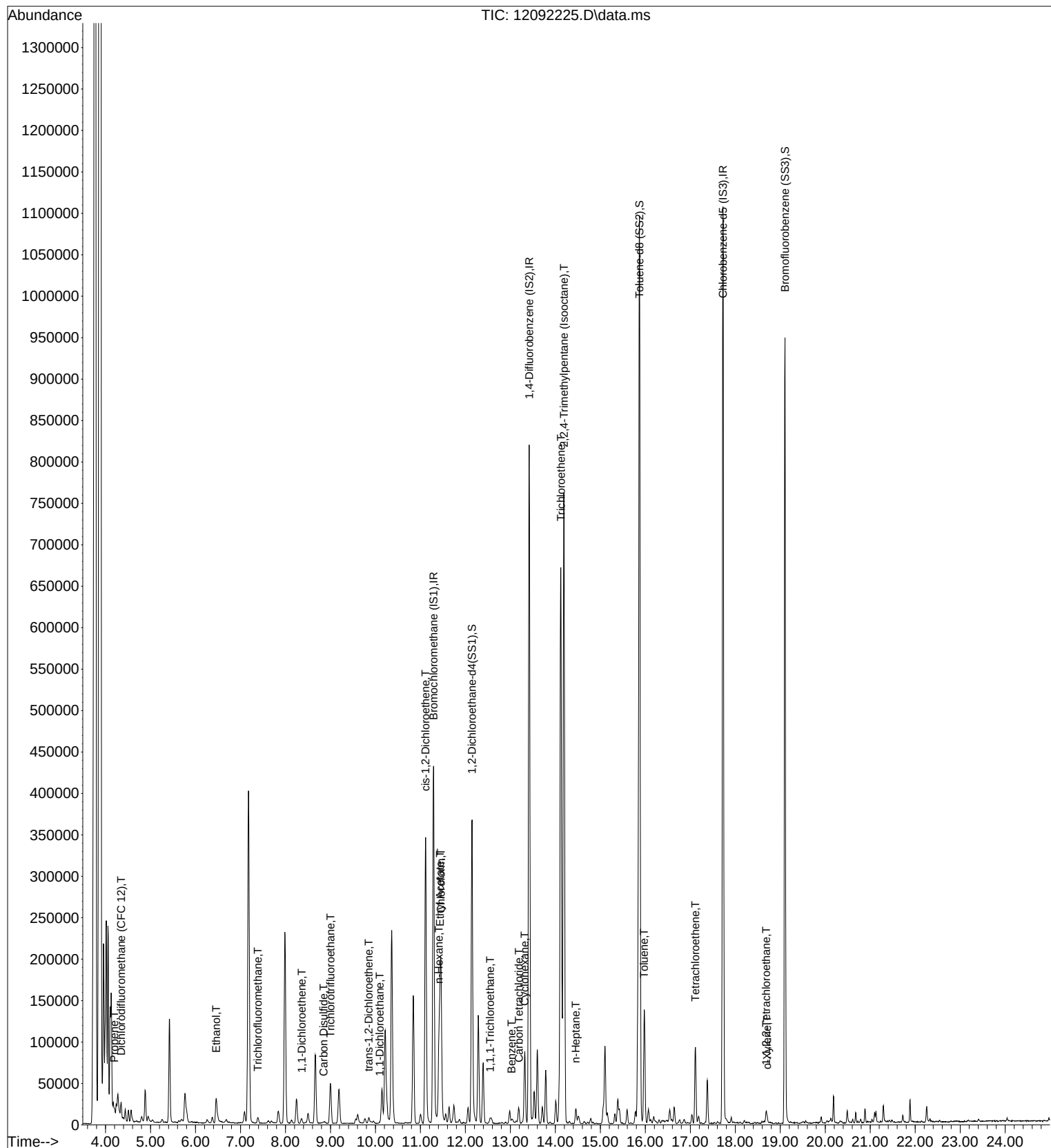
						Qvalue
2) Propene	4.20	42	3248m	0.101	ng	
3) Dichlorodifluoromethan...	4.34	85	15585	0.522	ng	98
10) Ethanol	6.46	45	56824	3.105	ng	99
14) Trichlorofluoromethane	7.39	101	7024	0.263	ng	99
17) 1,1-Dichloroethene	8.36	96	2715	0.208	ng	94
21) Trichlorotrifluoroethane	9.00	151	22118	1.712	ng	95
22) Carbon Disulfide	8.85	76	3198	0.062	ng	# 75
23) trans-1,2-Dichloroethene	9.85	61	5960	0.271	ng	98
24) 1,1-Dichloroethane	10.10	63	2662	0.093	ng	72
28) cis-1,2-Dichloroethene	11.11	61	261739	11.844	ng	100
30) Ethyl Acetate	11.44	61	19143	2.555	ng	91
31) n-Hexane	11.41	57	48273	1.404	ng	# 93
32) Chloroform	11.46	83	129072	5.119	ng	98
38) 1,1,1-Trichloroethane	12.55	97	3747	0.165	ng	94
41) Benzene	13.03	78	3472	0.066	ng	96
42) Carbon Tetrachloride	13.19	117	7082	0.353	ng	98
43) Cyclohexane	13.32	84	29509	1.419	ng	97
47) Trichloroethene	14.12	130	258504	17.018	ng	98
49) 2,2,4-Trimethylpentane...	14.19	57	759898	9.431	ng	98
51) n-Heptane	14.45	71	2887	0.201	ng	# 85
58) Toluene	15.97	91	12534	0.220	ng	99
64) Tetrachloroethene	17.11	166	31458	1.989	ng	99
70) o-Xylene	18.71	91	3982	0.080	ng	90
72) 1,1,2,2-Tetrachloroethane	18.69	83	7243	0.297	ng	98

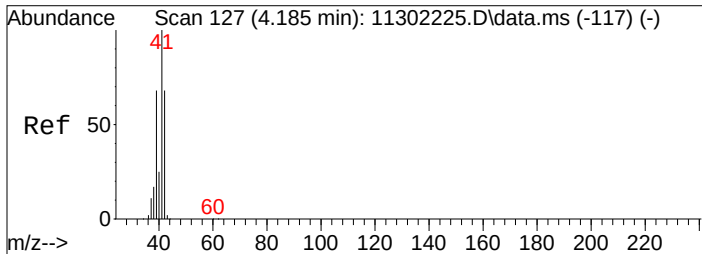
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS16\DATA\2022_12\09\12092225.D
Acq On : 9 Dec 2022 17:55
Sample : P2205493-001 (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

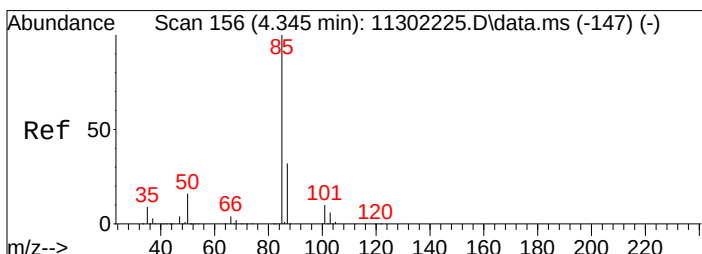
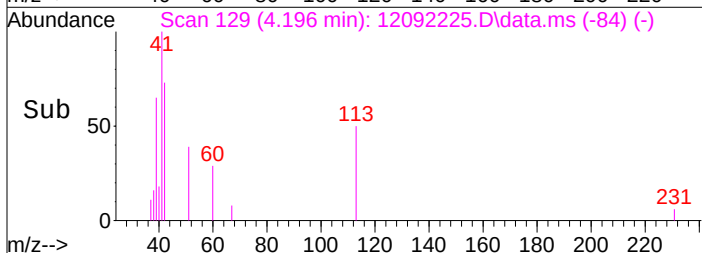
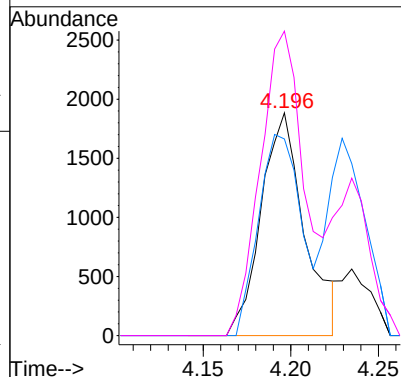
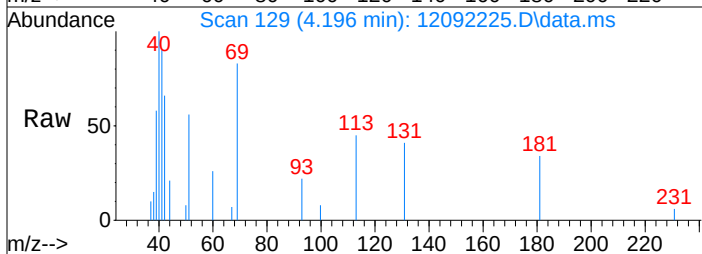
Quant Time: Dec 12 09:34:47 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Dec 01 09:30:33 2022
Response via : Initial Calibration
DataAcq Meth:T015.M





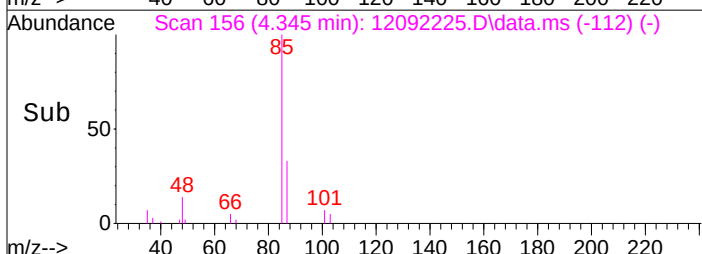
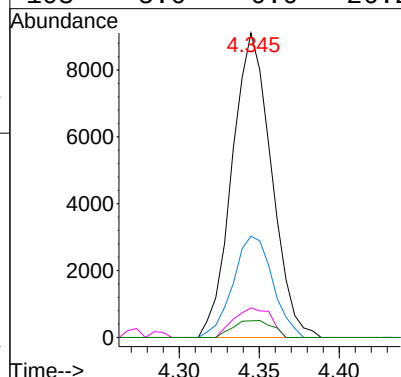
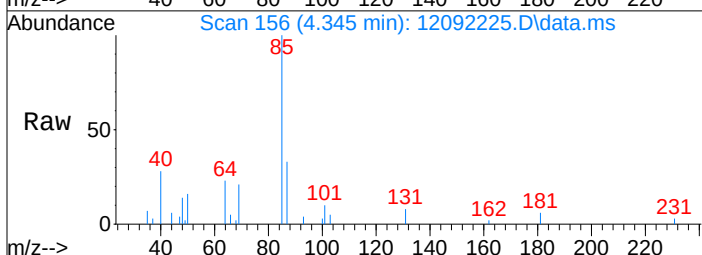
#2
Propene
Concen: 0.10 ng m
RT: 4.20 min Scan# 129
Delta R.T. -0.005 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

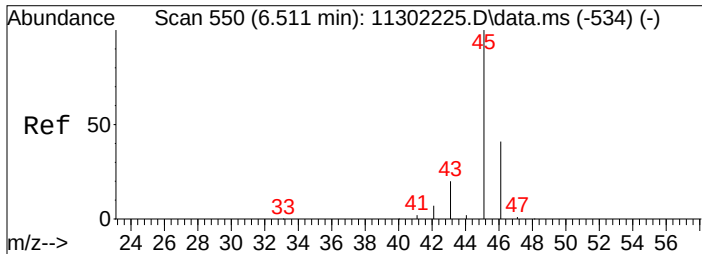
Tgt Ion: 42	Resp: 3248		
Ion Ratio	Lower	Upper	
42	100		
39	88.7	80.4	120.4
41	139.2	126.9	166.9



#3
Dichlorodifluoromethane (CFC 12)
Concen: 0.52 ng
RT: 4.34 min Scan# 156
Delta R.T. -0.011 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

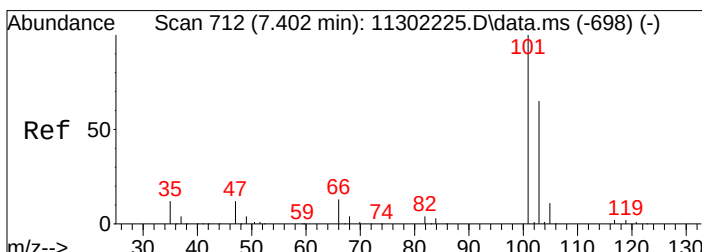
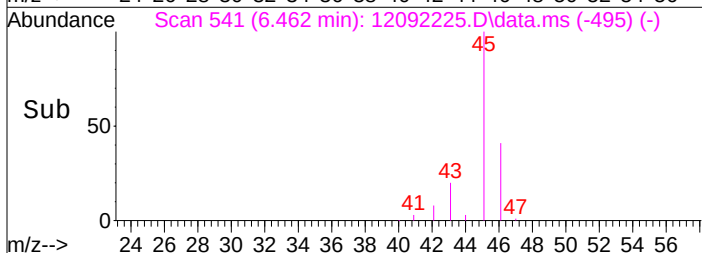
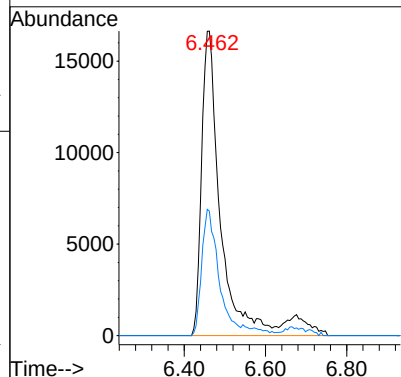
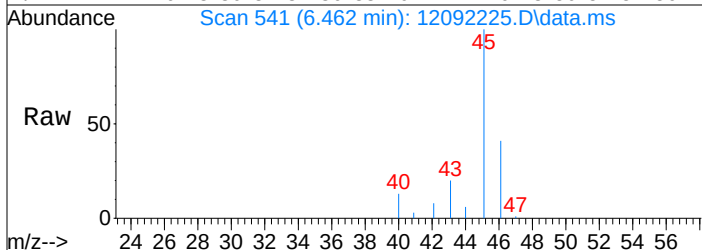
Tgt Ion: 85	Resp: 15585		
Ion Ratio	Lower	Upper	
85	100		
87	33.5	12.2	52.2
101	9.1	0.0	29.7
103	5.6	0.0	26.2





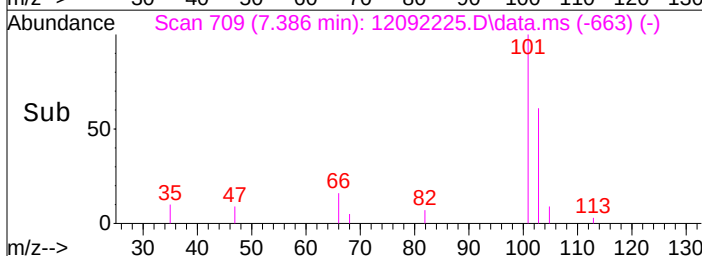
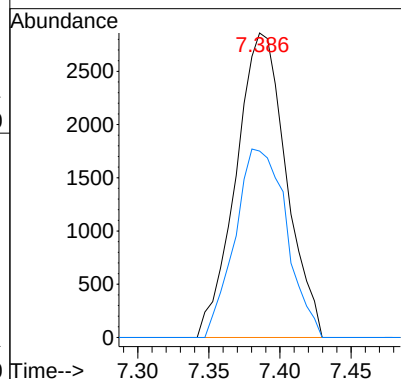
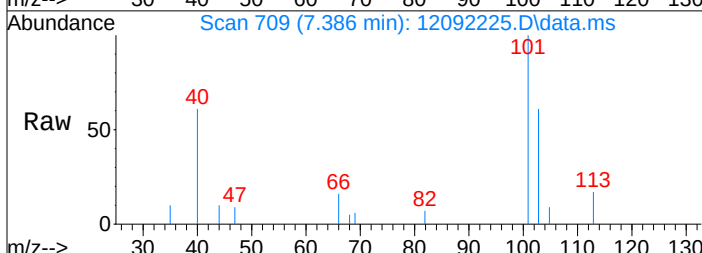
#10
Ethanol
Concen: 3.10 ng
RT: 6.46 min Scan# 541
Delta R.T. 0.006 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

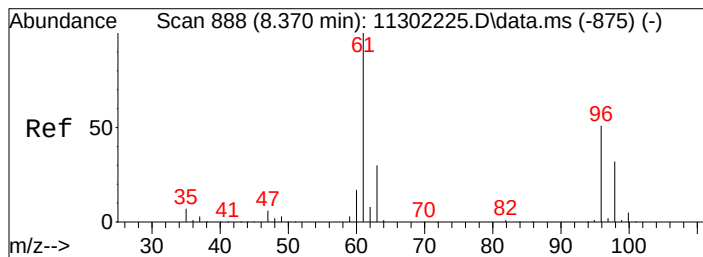
Tgt Ion: 45 Resp: 56824
Ion Ratio Lower Upper
45 100
46 41.5 20.9 60.9



#14
Trichlorofluoromethane
Concen: 0.26 ng
RT: 7.39 min Scan# 709
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

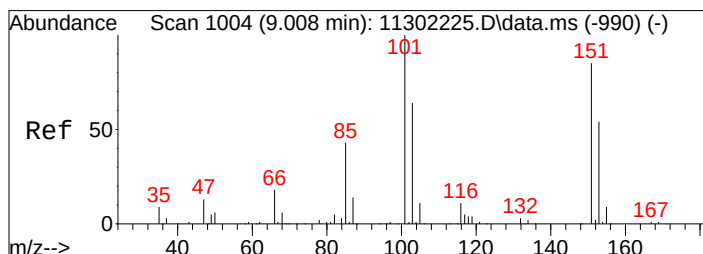
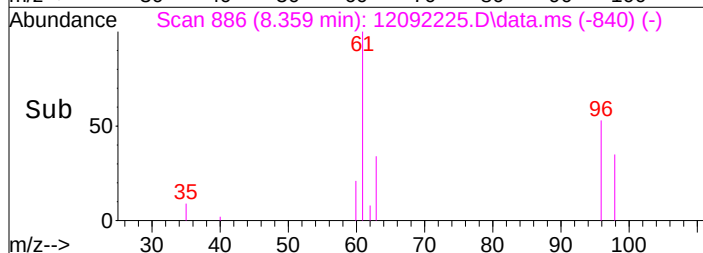
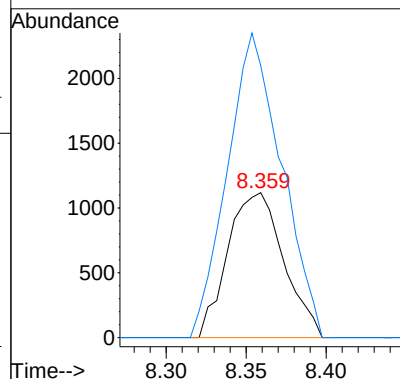
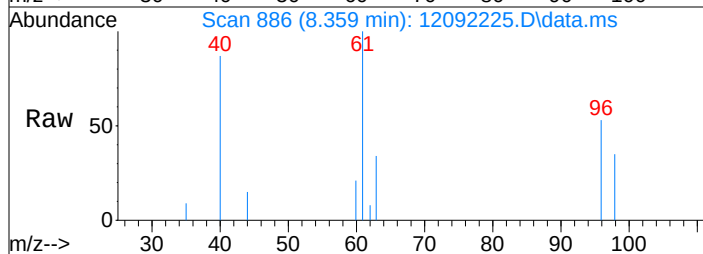
Tgt Ion: 101 Resp: 7024
Ion Ratio Lower Upper
101 100
103 63.4 44.5 84.5





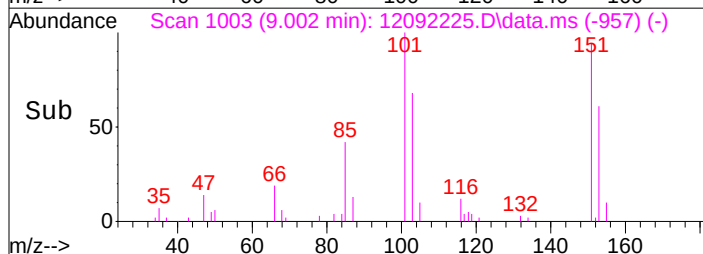
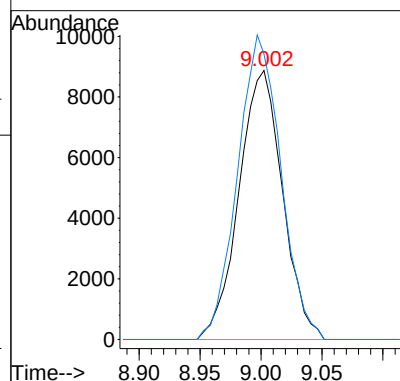
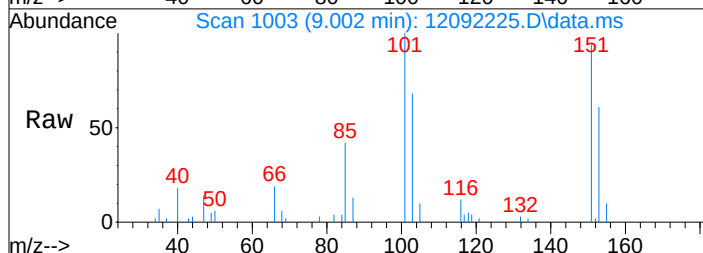
#17
1,1-Dichloroethene
Concen: 0.21 ng
RT: 8.36 min Scan# 886
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

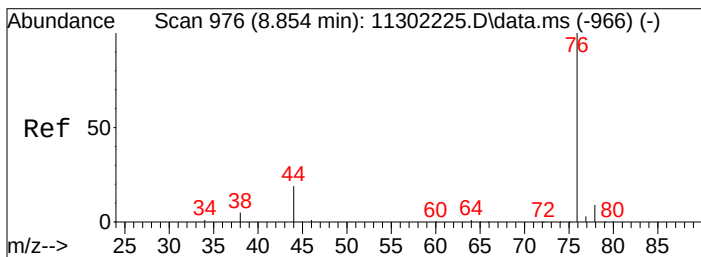
Tgt Ion: 96 Resp: 2715
Ion Ratio Lower Upper
96 100
61 204.5 176.2 216.2



#21
Trichlorotrifluoroethane
Concen: 1.71 ng
RT: 9.00 min Scan# 1003
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

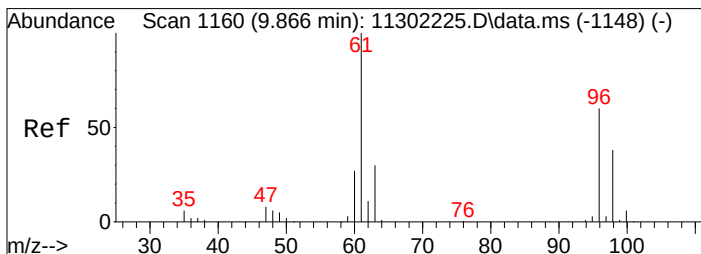
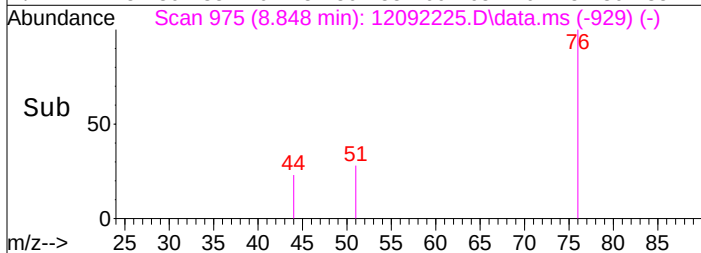
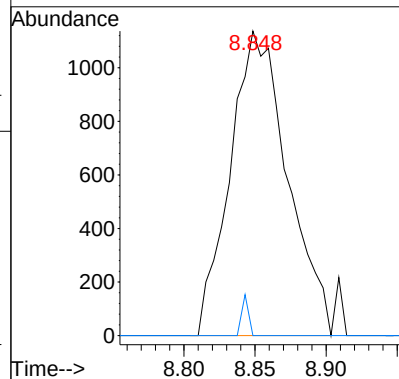
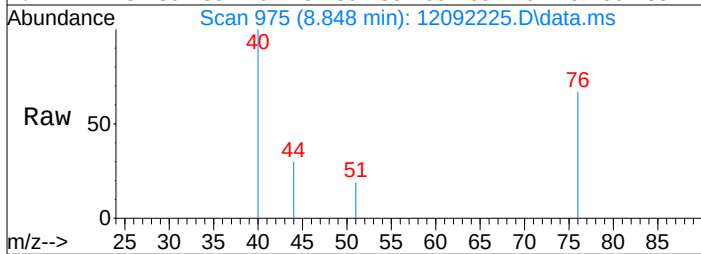
Tgt Ion: 151 Resp: 22118
Ion Ratio Lower Upper
151 100
101 112.4 98.3 138.3





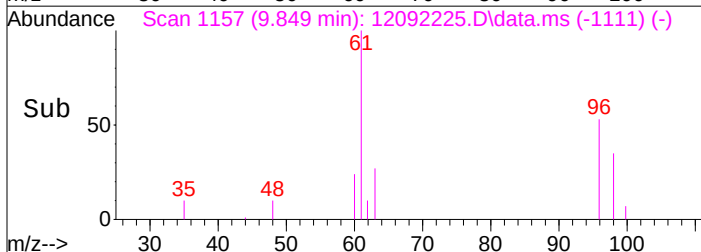
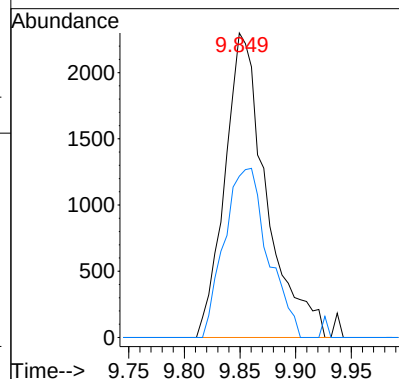
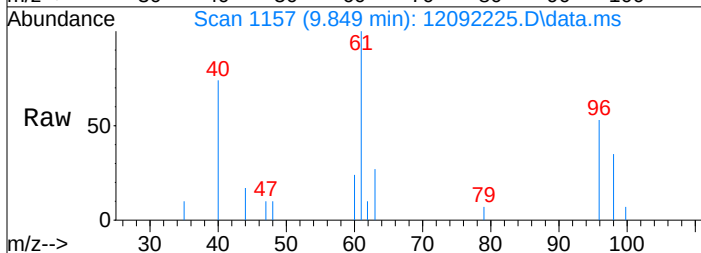
#22
Carbon Disulfide
Concen: 0.06 ng
RT: 8.85 min Scan# 975
Delta R.T. 0.006 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

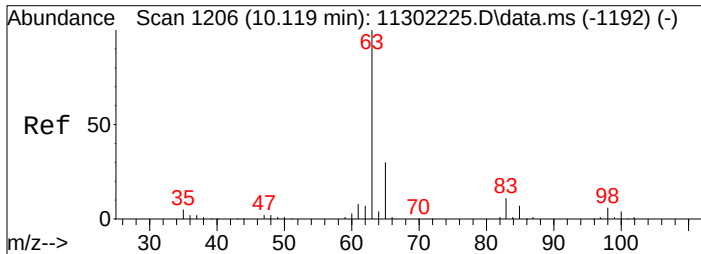
Tgt Ion: 76 Resp: 3198
Ion Ratio Lower Upper
76 100
78 0.0 0.0 29.1



#23
trans-1,2-Dichloroethene
Concen: 0.27 ng
RT: 9.85 min Scan# 1157
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

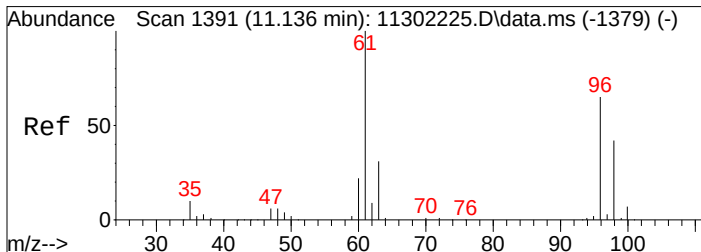
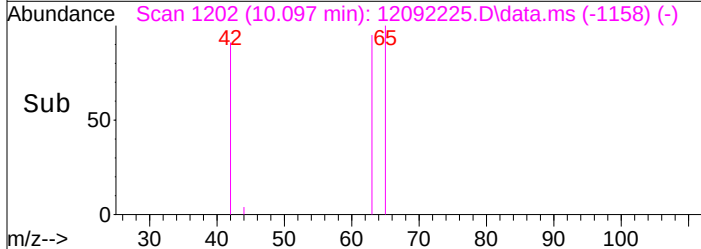
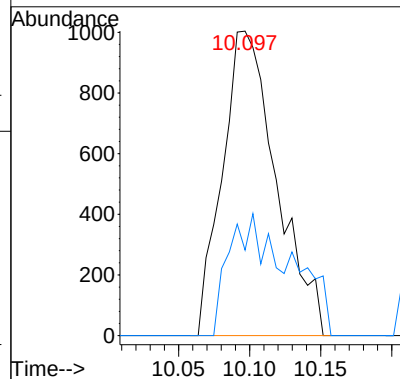
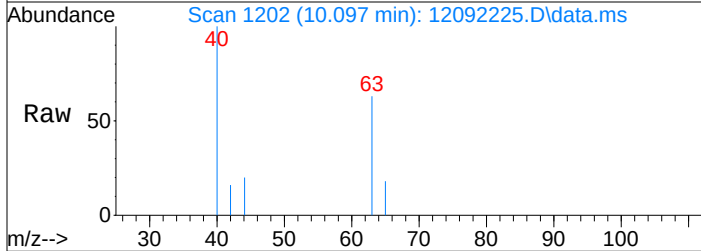
Tgt Ion: 61 Resp: 5960
Ion Ratio Lower Upper
61 100
96 58.2 39.9 79.9





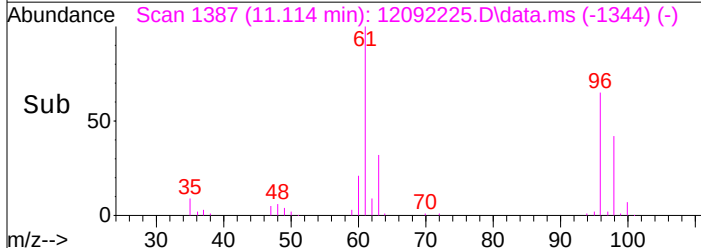
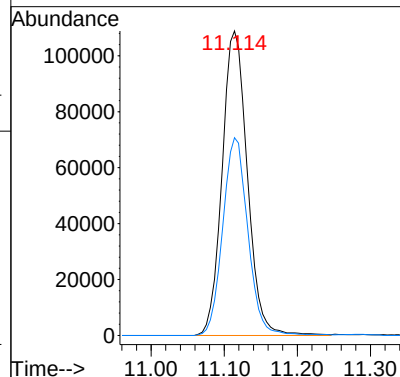
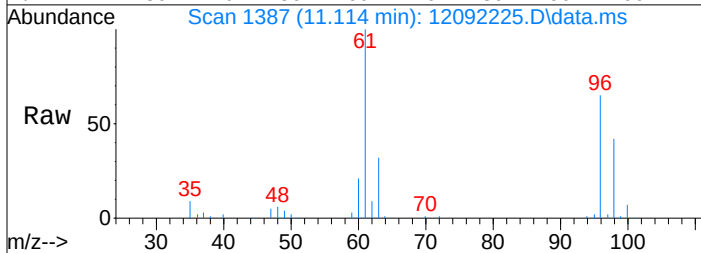
#24
1,1-Dichloroethane
Concen: 0.09 ng
RT: 10.10 min Scan# 1202
Delta R.T. -0.005 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

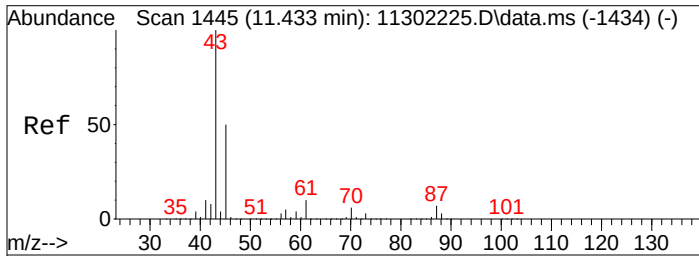
Tgt Ion: 63 Resp: 2662
Ion Ratio Lower Upper
63 100
65 45.2 10.0 50.0



#28
cis-1,2-Dichloroethene
Concen: 11.84 ng
RT: 11.11 min Scan# 1387
Delta R.T. -0.011 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

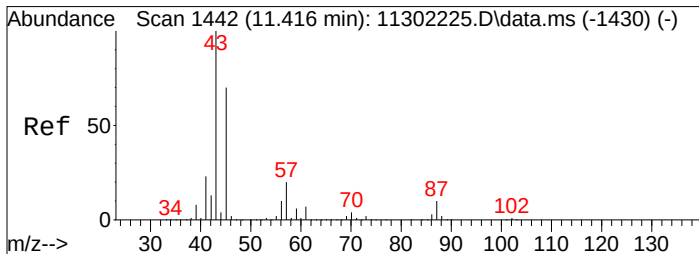
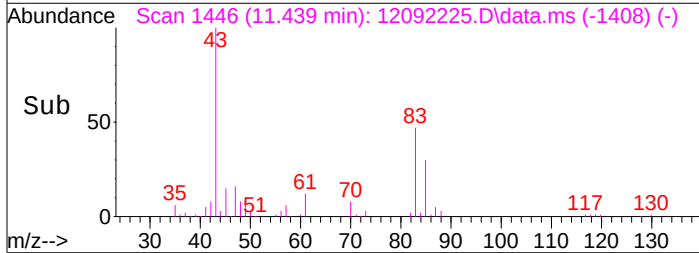
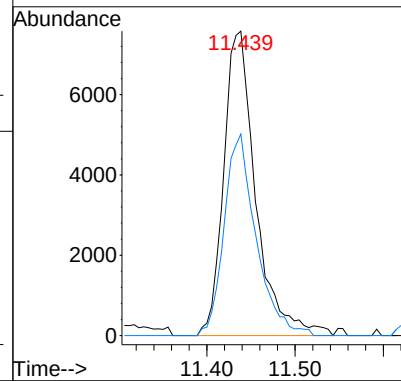
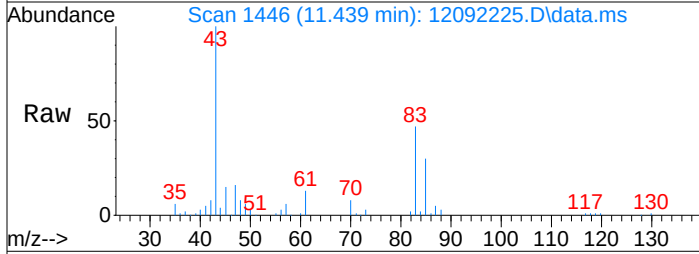
Tgt Ion: 61 Resp: 261739
Ion Ratio Lower Upper
61 100
96 64.7 44.9 84.9





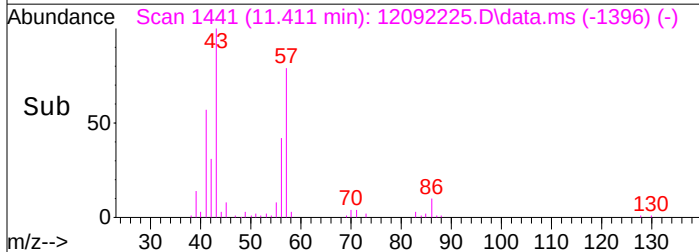
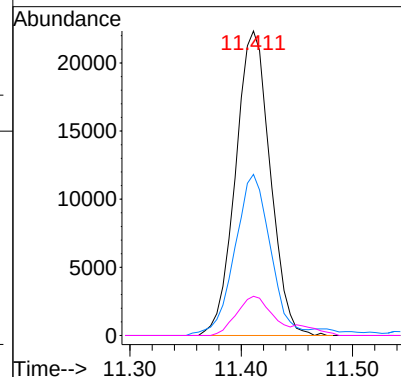
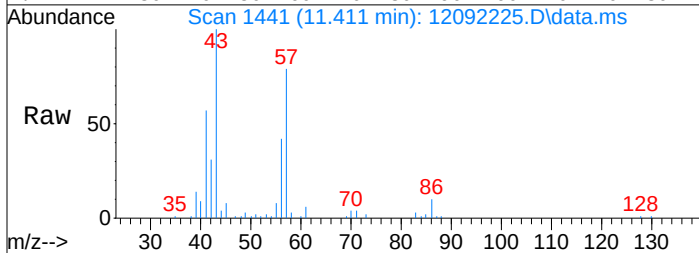
#30
Ethyl Acetate
Concen: 2.56 ng
RT: 11.44 min Scan# 1446
Delta R.T. 0.011 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

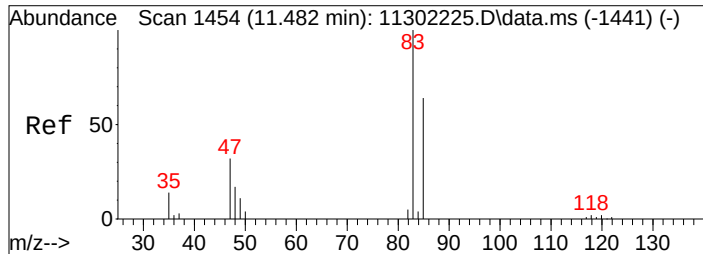
Tgt Ion: 61 Resp: 19143
Ion Ratio Lower Upper
61 100
70 66.0 39.4 79.4



#31
n-Hexane
Concen: 1.40 ng
RT: 11.41 min Scan# 1441
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

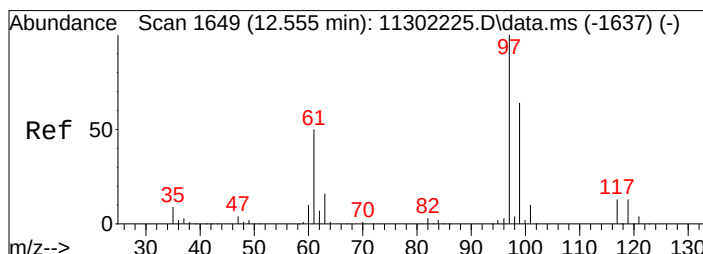
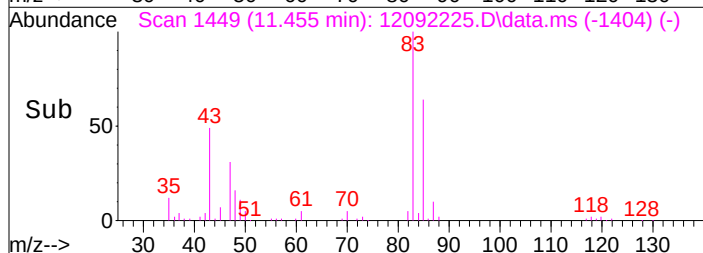
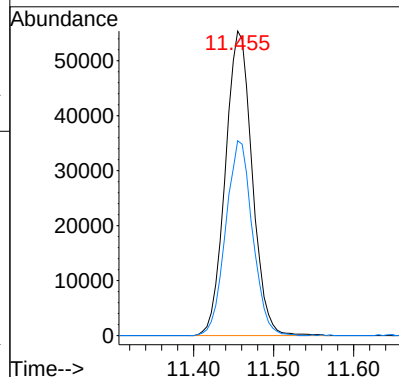
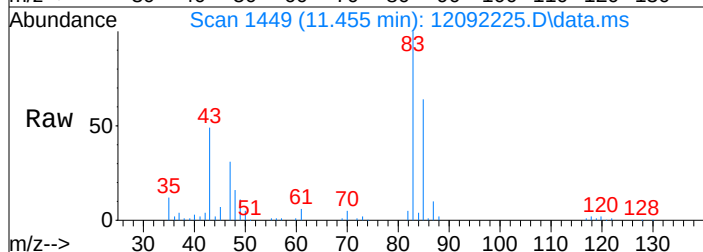
Tgt Ion: 57 Resp: 48273
Ion Ratio Lower Upper
57 100
56 54.5 39.5 59.3
86 15.6 10.2 15.4#





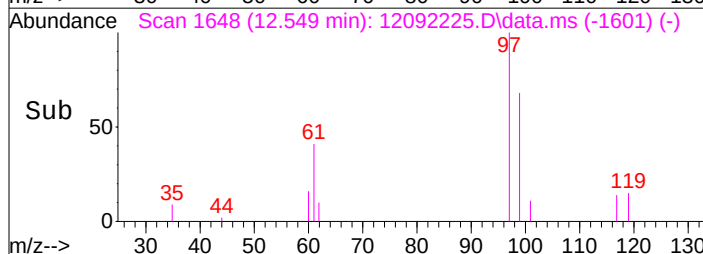
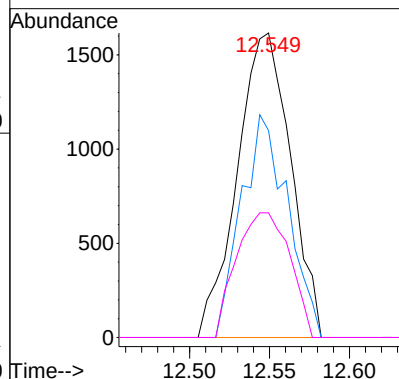
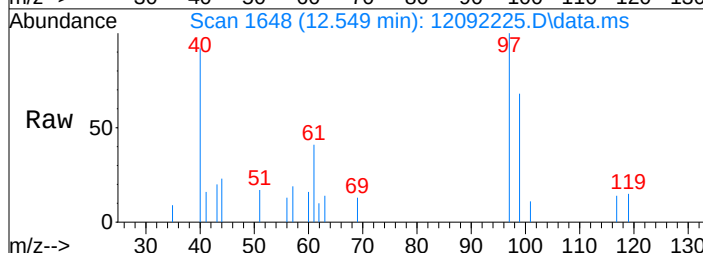
#32
Chloroform
Concen: 5.12 ng
RT: 11.46 min Scan# 1449
Delta R.T. -0.005 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

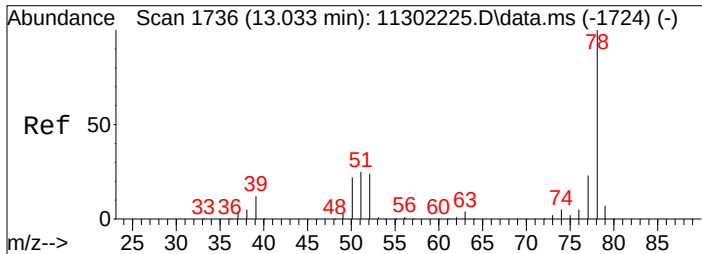
Tgt Ion: 83 Resp: 129072
Ion Ratio Lower Upper
83 100
85 63.9 45.4 85.4



#38
1,1,1-Trichloroethane
Concen: 0.16 ng
RT: 12.55 min Scan# 1648
Delta R.T. 0.006 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

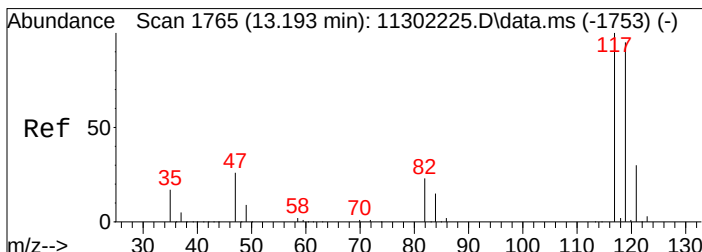
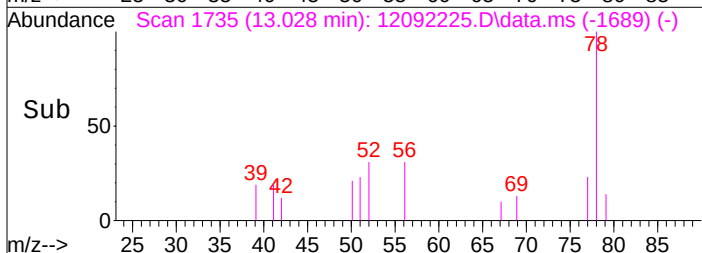
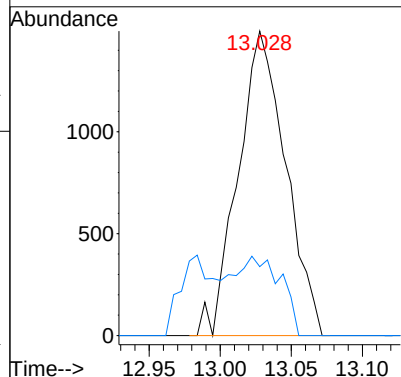
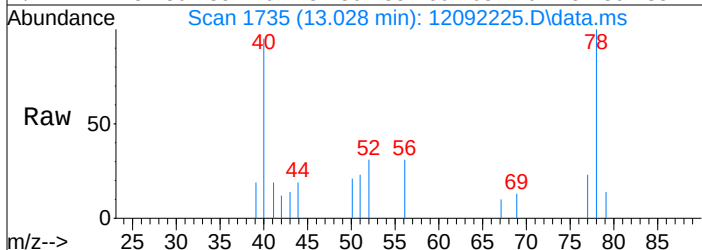
Tgt Ion: 97 Resp: 3747
Ion Ratio Lower Upper
97 100
99 63.5 44.1 84.1
61 41.2 30.1 70.1





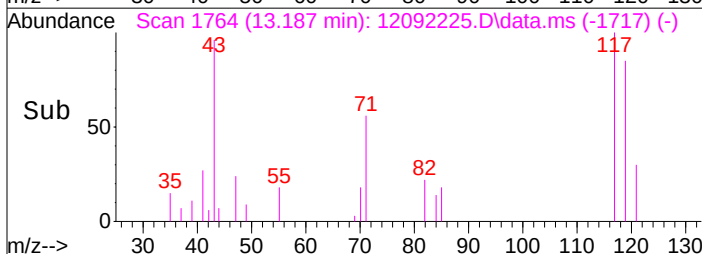
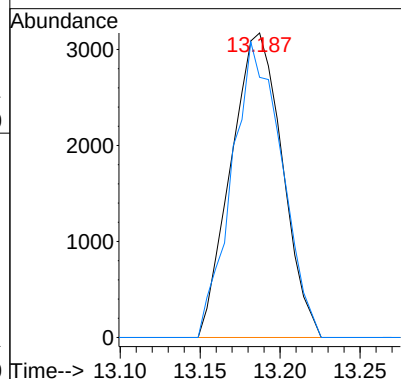
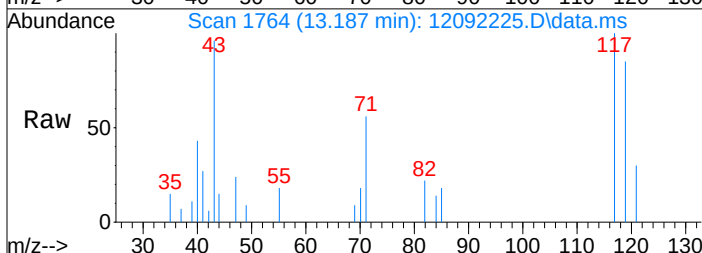
#41
Benzene
Concen: 0.07 ng
RT: 13.03 min Scan# 1735
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

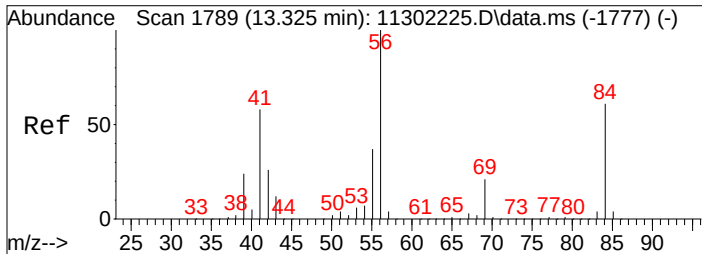
Tgt Ion:	78	Resp:	3472
Ion Ratio	Lower	Upper	
78	100		
77	20.7	2.7	42.7



#42
Carbon Tetrachloride
Concen: 0.35 ng
RT: 13.19 min Scan# 1764
Delta R.T. 0.006 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

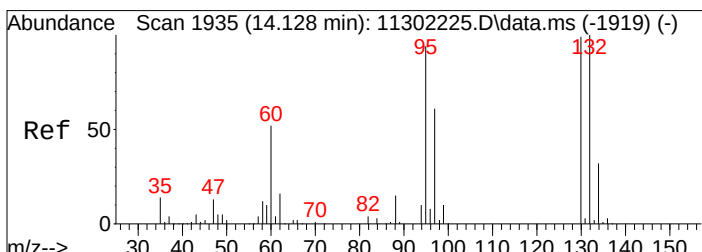
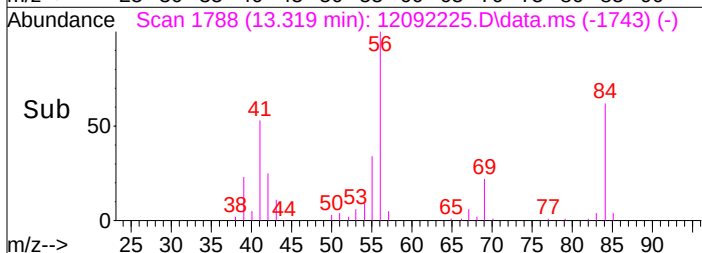
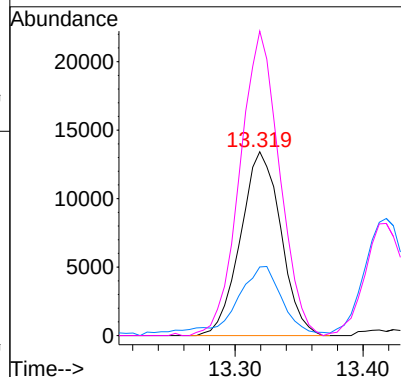
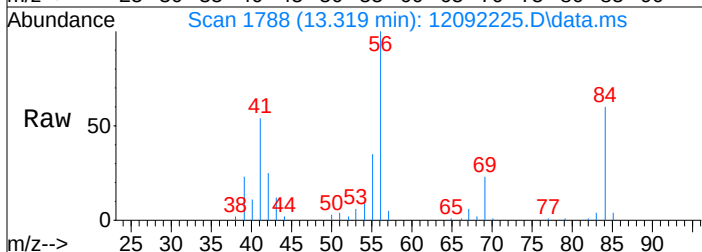
Tgt Ion:	117	Resp:	7082
Ion Ratio	Lower	Upper	
117	100		
119	94.3	76.1	116.1





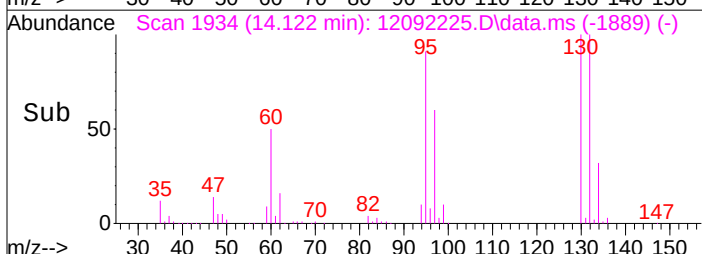
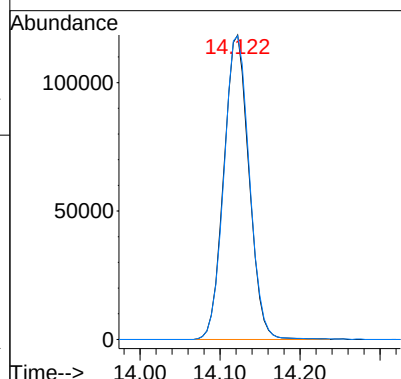
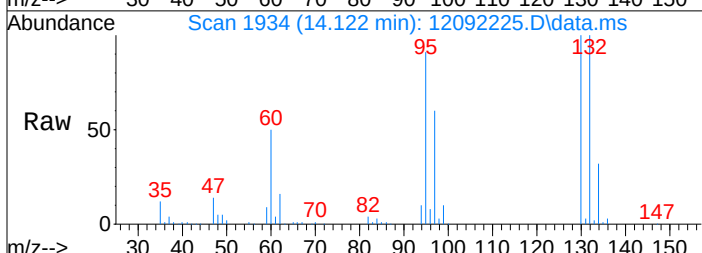
#43
Cyclohexane
Concen: 1.42 ng
RT: 13.32 min Scan# 1788
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

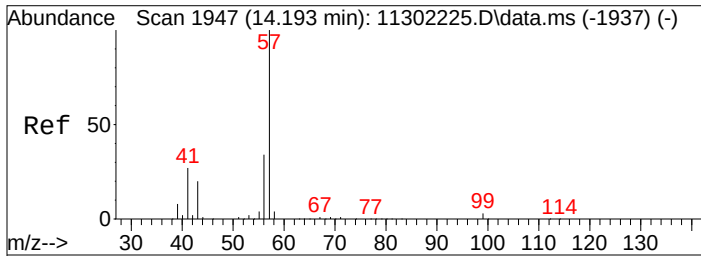
Tgt Ion:	84	Resp:	29509
Ion Ratio	Lower	Upper	
84	100		
69	44.4	14.6	54.6
56	162.4	143.0	183.0



#47
Trichloroethene
Concen: 17.02 ng
RT: 14.12 min Scan# 1934
Delta R.T. -0.005 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

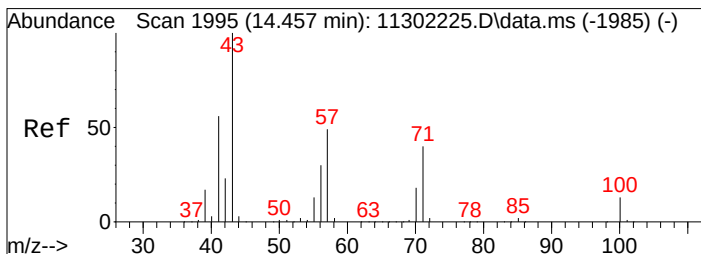
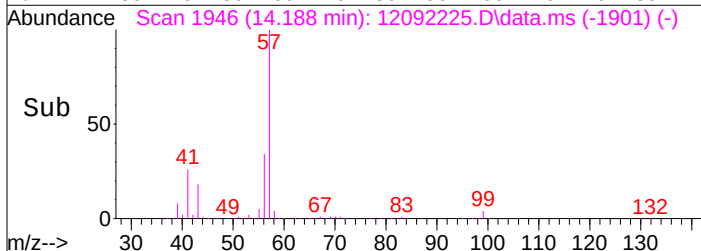
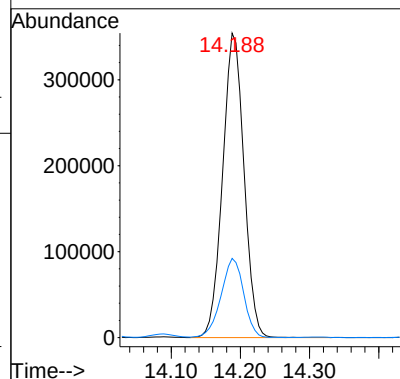
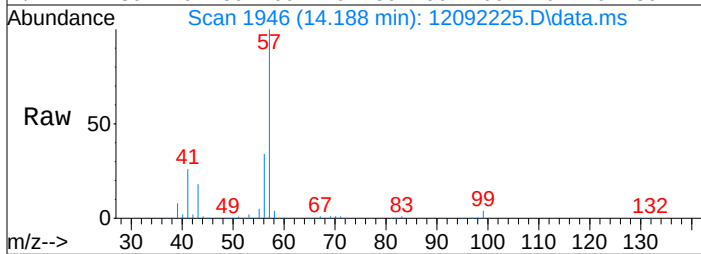
Tgt Ion:	130	Resp:	258504
Ion Ratio	Lower	Upper	
130	100		
132	100.8	79.3	119.3





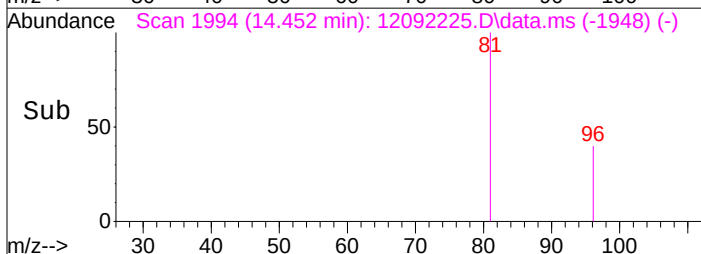
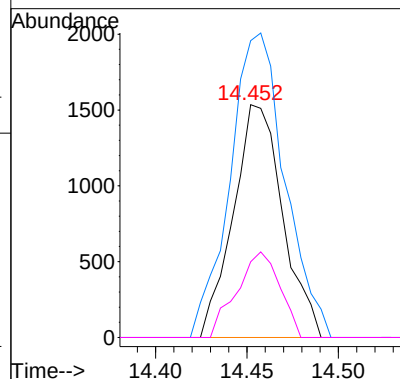
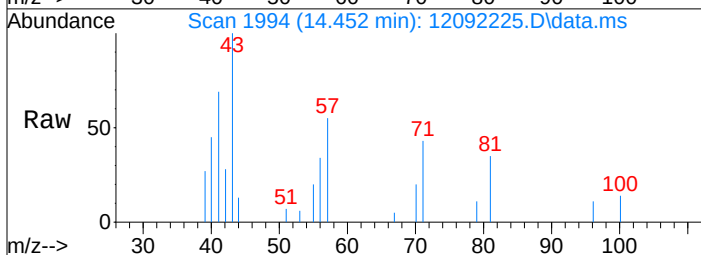
#49
2,2,4-Trimethylpentane (Isooctane)
Concen: 9.43 ng
RT: 14.19 min Scan# 1946
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

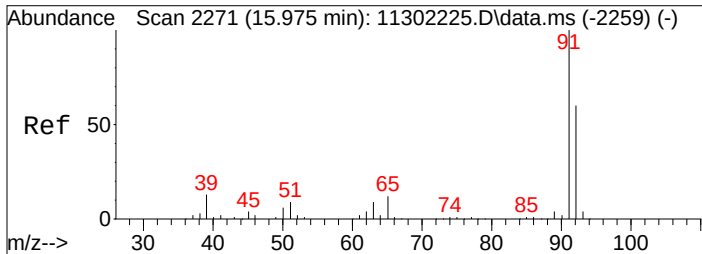
Tgt Ion: 57 Resp: 759898
Ion Ratio Lower Upper
57 100
41 27.6 6.6 46.6



#51
n-Heptane
Concen: 0.20 ng
RT: 14.45 min Scan# 1994
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

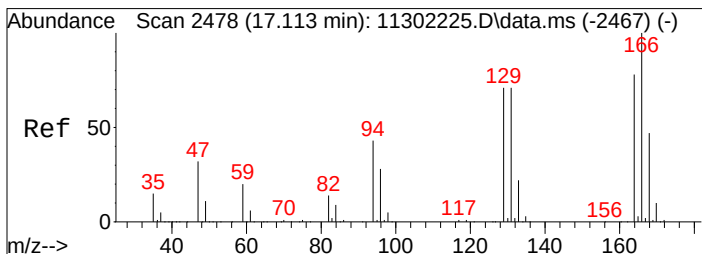
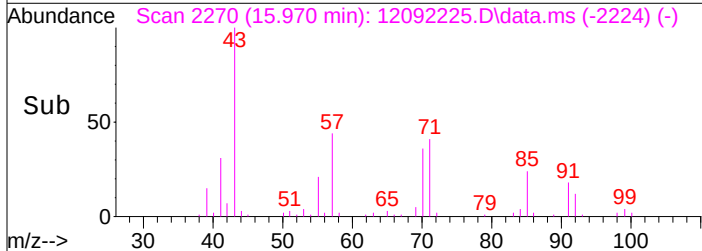
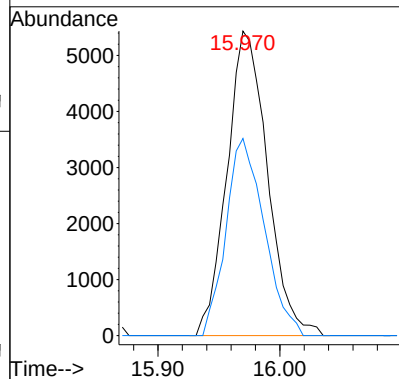
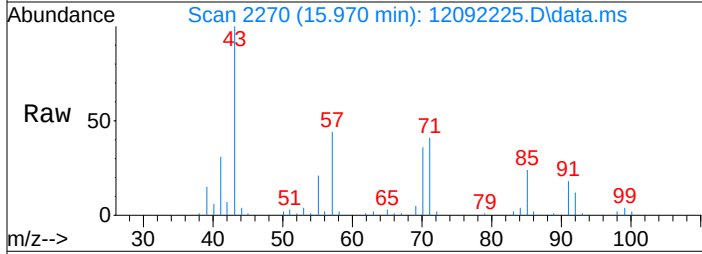
Tgt Ion: 71 Resp: 2887
Ion Ratio Lower Upper
71 100
57 145.4 104.3 144.3#
100 32.1 13.1 53.1





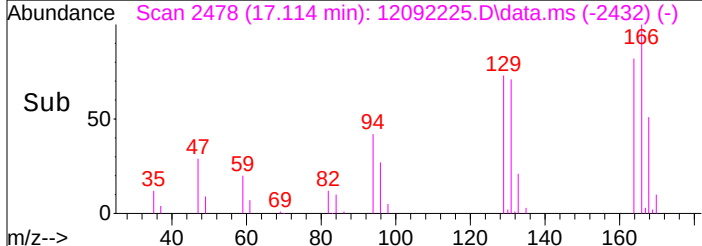
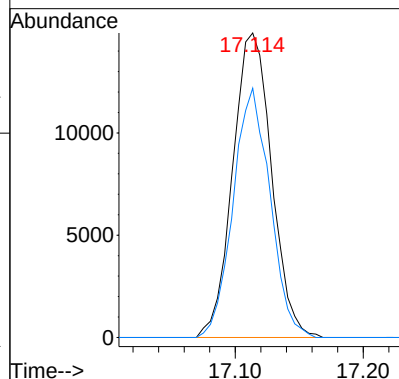
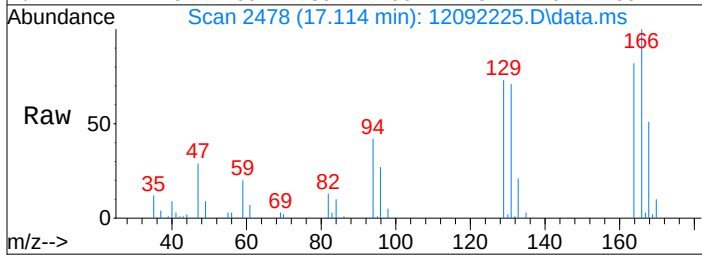
#58
Toluene
Concen: 0.22 ng
RT: 15.97 min Scan# 2270
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

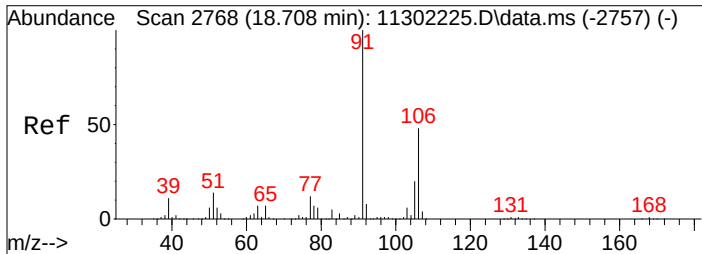
Tgt Ion:	91	Resp:	12534
Ion Ratio		Lower	Upper
91	100		
92	61.1	40.3	80.3



#64
Tetrachloroethene
Concen: 1.99 ng
RT: 17.11 min Scan# 2478
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

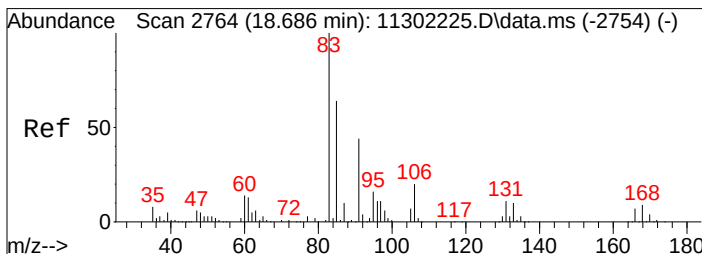
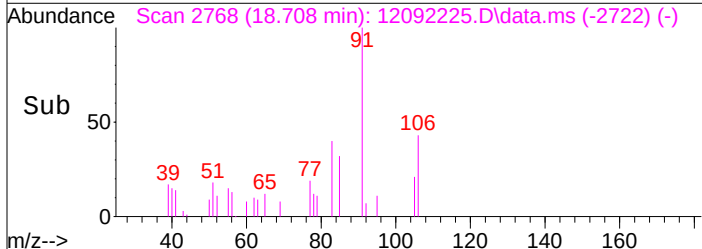
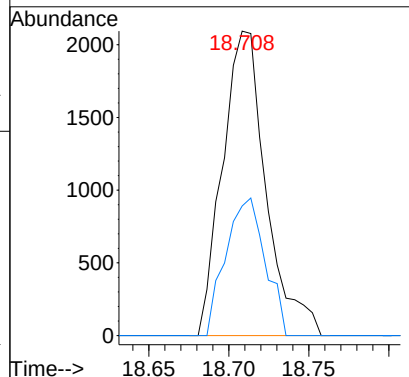
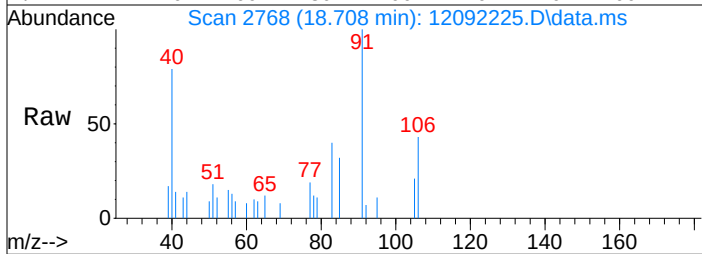
Tgt Ion:	166	Resp:	31458
Ion Ratio		Lower	Upper
166	100		
164	77.8	59.0	99.0





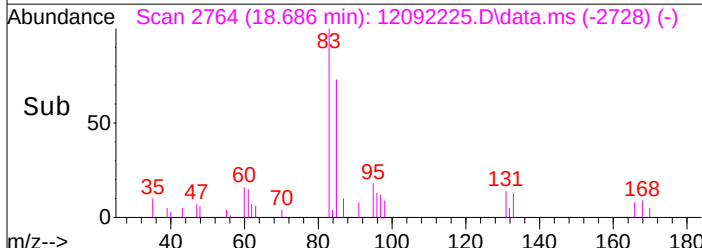
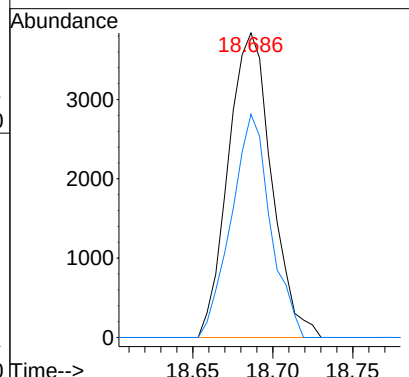
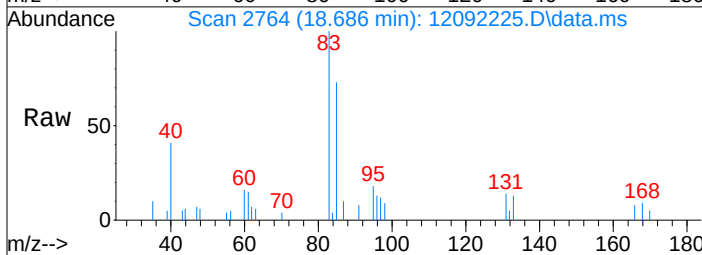
#70
o-Xylene
Concen: 0.08 ng
RT: 18.71 min Scan# 2768
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

Tgt Ion: 91 Resp: 3982
Ion Ratio Lower Upper
91 100
106 40.8 27.6 67.6



#72
1,1,2,2-Tetrachloroethane
Concen: 0.30 ng
RT: 18.69 min Scan# 2764
Delta R.T. 0.000 min
Lab File: 12092225.D
Acq: 9 Dec 2022 17:55

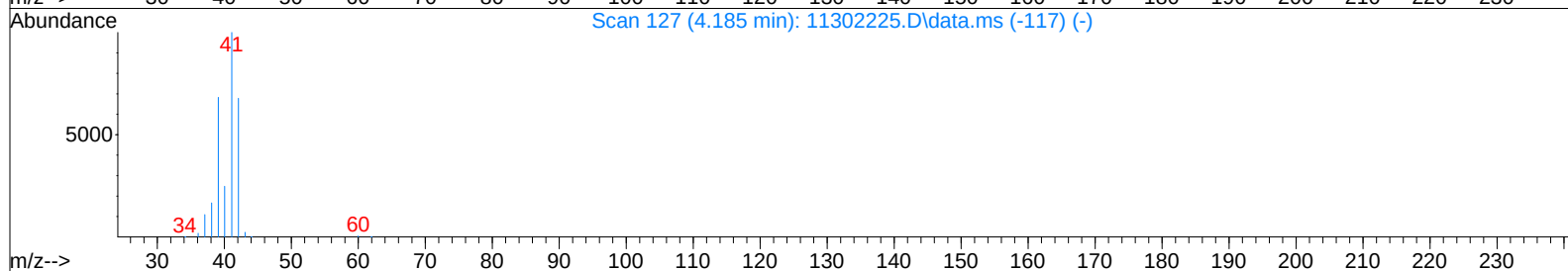
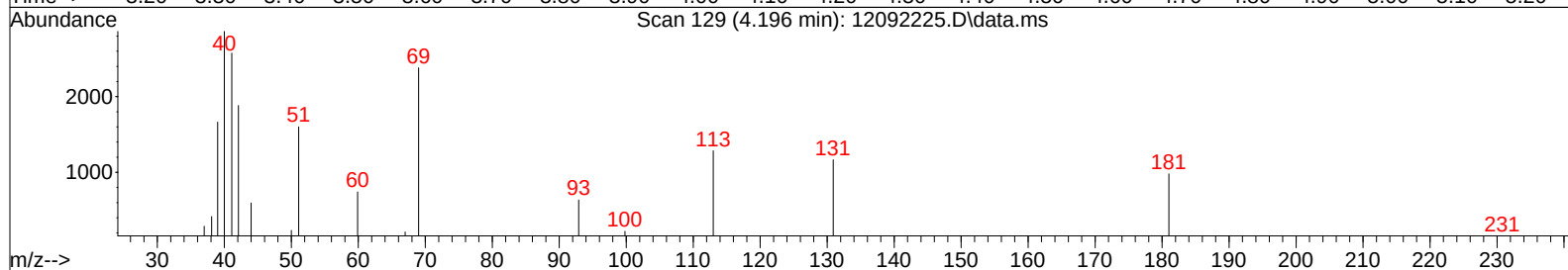
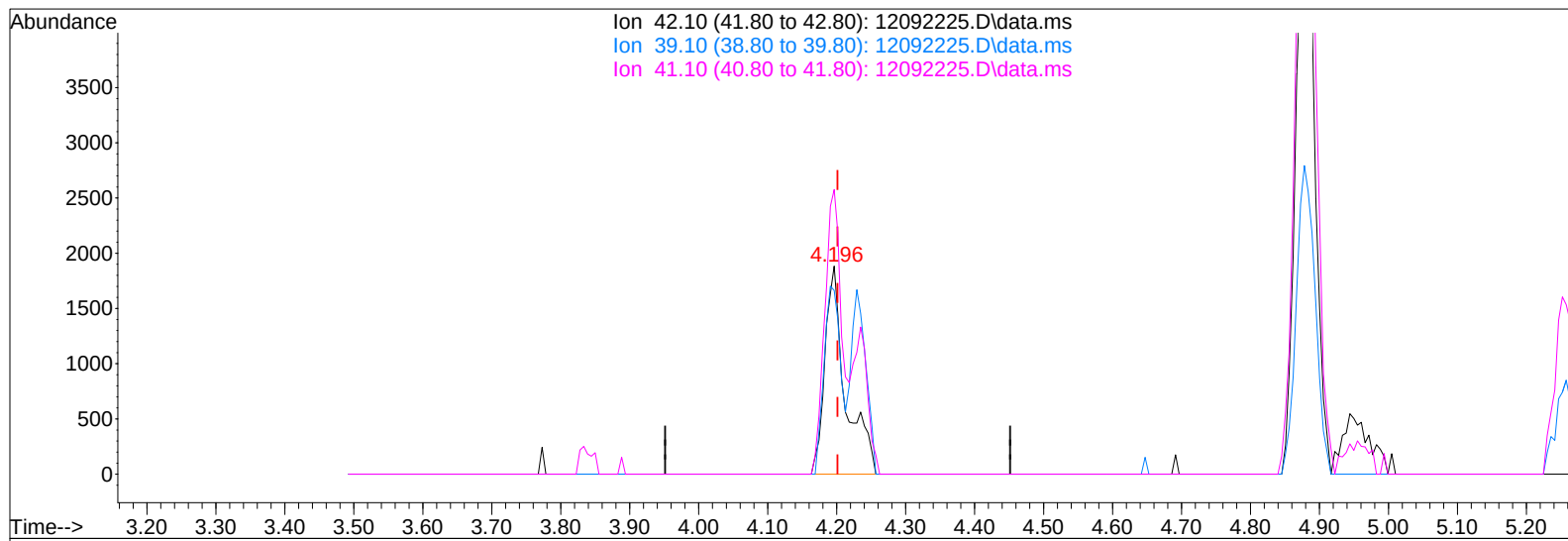
Tgt Ion: 83 Resp: 7243
Ion Ratio Lower Upper
83 100
85 66.2 44.5 84.5



Data File : I:\MS16\DATA\2022_12\09\12092225.D
Acq On : 9 Dec 2022 17:55
Sample : P2205493-001 (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 10 07:06:09 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 09:30:33 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12092225.D\data.ms

(2) Propene (T)

4.196min (-0.005) 0.12ng

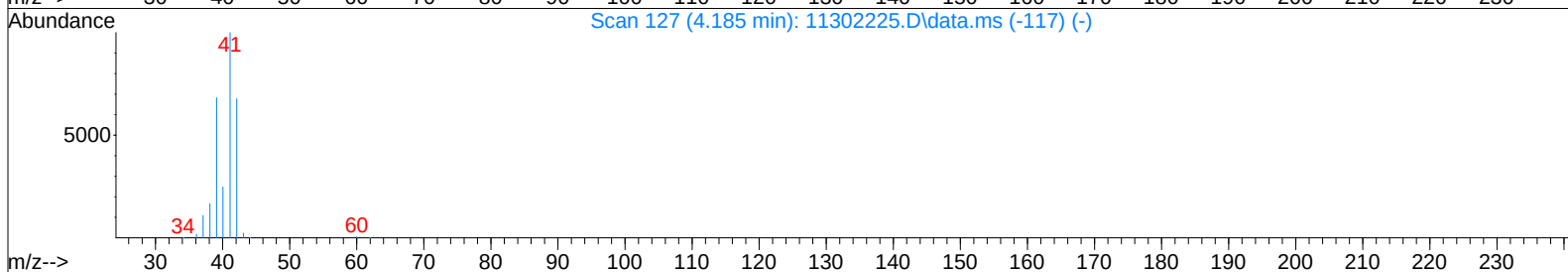
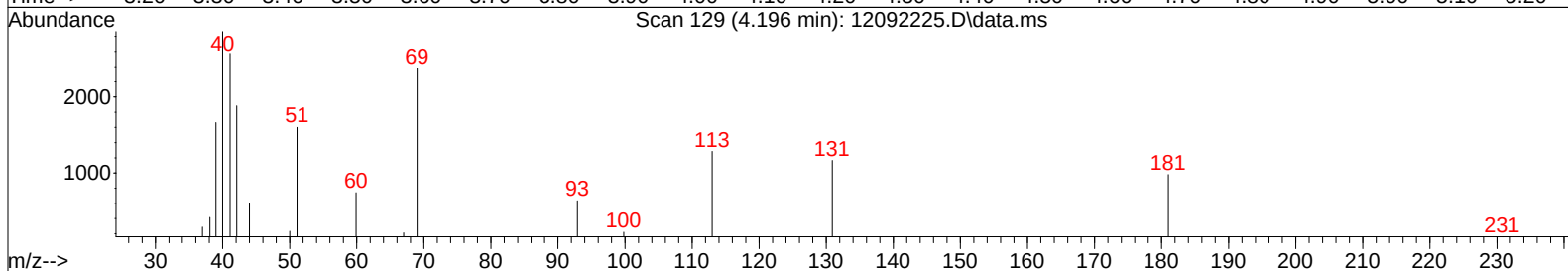
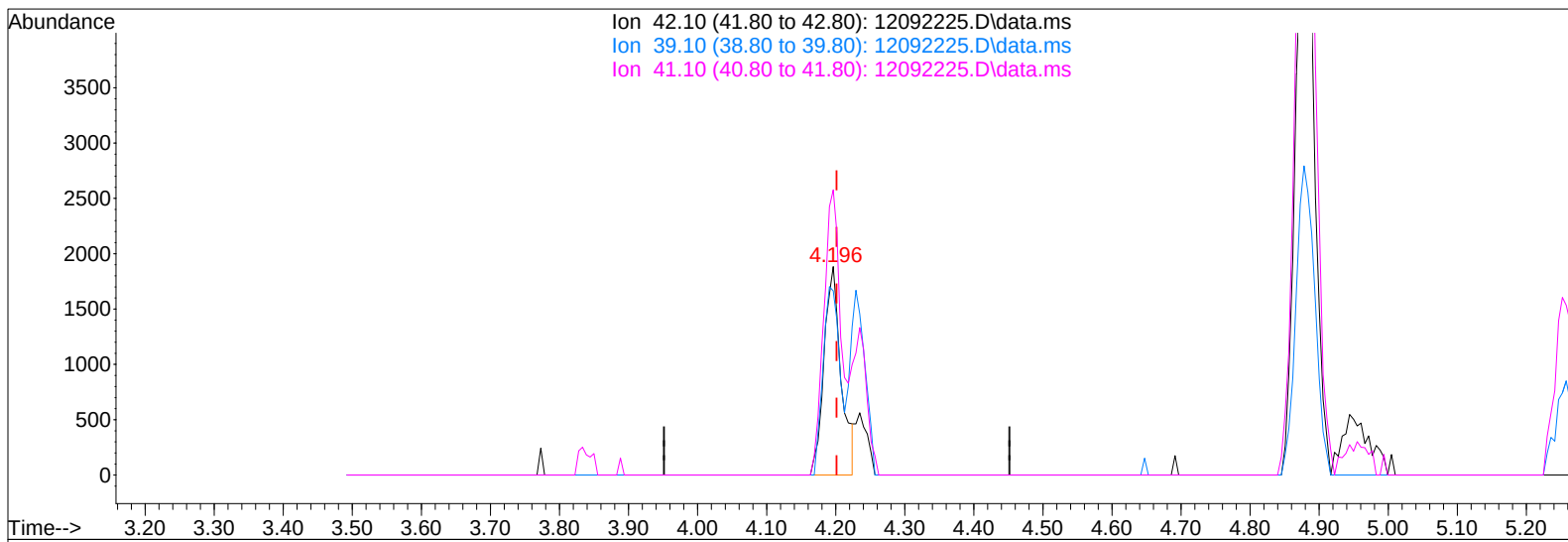
response 3918

Ion	Exp%	Act%
42.10	100	100
39.10	100.40	73.51#
41.10	146.90	115.42#
0.00	0.00	0.00

Data File : I:\MS16\DATA\2022_12\09\12092225.D
Acq On : 9 Dec 2022 17:55
Sample : P2205493-001 (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 10 07:06:09 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Dec 01 09:30:33 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 12092225.D\data.ms

(2) Propene (T)

4.196min (-0.005) 0.10ng m

response 3248

IPC

Ion	Exp%	Act%

42.10	100	100

39.10	100.40	88.67

41.10	146.90	139.22

0.00	0.00	0.00

CG 12/12/22

LH 12/13/22

Data Path : I:\MS16\DATA\2022_12\09\
 Data File : 12092225.D
 Acq On : 9 Dec 2022 17:55
 Operator : CG/WA
 Sample : P2205493-001 (1000mL)
 Misc : S35-11092201
 ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS16\METHODS\R16113022.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Signal : TIC: 12092225.D\data.ms

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.053	100	103	108	rVB	203221	263833	25.68%	3.515%
2	4.103	108	112	113	rVV	110094	132929	12.94%	1.771%
3	4.125	114	116	122	rVB2	136011	174827	17.02%	2.329%
4	4.169	122	124	133	rVB6	12747	22752	2.21%	0.303%
5	4.235	133	136	138	rBV3	10818	12931	1.26%	0.172%
6	4.273	139	143	152	rVV3	23923	48033	4.68%	0.640%
7	4.345	152	156	161	rVB	19491	31393	3.06%	0.418%
8	4.438	167	173	179	rVB3	14340	24879	2.42%	0.331%
9	4.510	181	186	191	rVV2	13730	23164	2.25%	0.309%
10	4.565	191	196	208	rVB	14606	32634	3.18%	0.435%
11	4.801	232	239	245	rBV6	6592	14606	1.42%	0.195%
12	4.878	245	253	261	rVV3	38056	78505	7.64%	1.046%
13	4.944	261	265	277	rVB4	6308	14668	1.43%	0.195%
14	5.423	343	352	367	rBV	124701	253469	24.67%	3.377%
15	5.764	407	414	430	rVB2	34729	107398	10.45%	1.431%
16	6.253	496	503	517	rVB3	3960	10056	0.98%	0.134%
17	6.374	517	525	533	rVB3	6950	15041	1.46%	0.200%
18	6.462	533	541	556	rBV	29458	86851	8.45%	1.157%
19	7.089	644	655	661	rBV2	13636	31620	3.08%	0.421%
20	7.177	661	671	687	rVB	400158	971872	94.61%	12.948%
21	7.386	701	709	717	rVB3	6982	16987	1.65%	0.226%
22	7.842	783	792	800	rVB2	14525	36159	3.52%	0.482%
23	7.985	805	818	834	rBV	230820	555631	54.09%	7.402%
24	8.244	856	865	875	rVB2	29087	69346	6.75%	0.924%
25	8.359	878	886	893	rVB3	5583	13532	1.32%	0.180%
26	8.502	903	912	922	rVB	11460	26117	2.54%	0.348%
27	8.662	931	941	952	rBV	82619	201172	19.58%	2.680%
28	8.997	993	1002	1013	rVB2	48222	120529	11.73%	1.606%
29	9.189	1027	1037	1051	rVB	40690	106997	10.42%	1.425%
30	9.563	1099	1105	1108	rBV3	5481	11657	1.13%	0.155%
31	9.607	1108	1113	1123	rVB	10286	24021	2.34%	0.320%
32	9.761	1132	1141	1151	rBV4	5214	13418	1.31%	0.179%
33	9.855	1151	1158	1165	rBV2	6434	14750	1.44%	0.197%
34	10.146	1195	1211	1216	rBV	41592	102708	10.00%	1.368%
35	10.218	1216	1224	1239	rVV2	112412	340991	33.19%	4.543%
36	10.361	1241	1250	1269	rVB	232770	562703	54.78%	7.497%
37	10.839	1327	1337	1349	rVB	154400	357221	34.77%	4.759%
38	11.004	1358	1367	1377	rVB3	11142	27083	2.64%	0.361%
39	11.114	1377	1387	1405	rBV	345262	819787	79.80%	10.922%
40	11.290	1408	1419	1432	rBV	429977	1027279	100.00%	13.686%

Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092225.D
Acq On : 9 Dec 2022 17:55
Operator : CG/WA
Sample : P2205493-001 (1000mL)
Misc : S35-11092201
ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.15
Stop Thrs : 0.05

Filtering: 5
Min Area: 10000 Area counts
Max Peaks: 200
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS16\METHODS\R16113022.M
Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

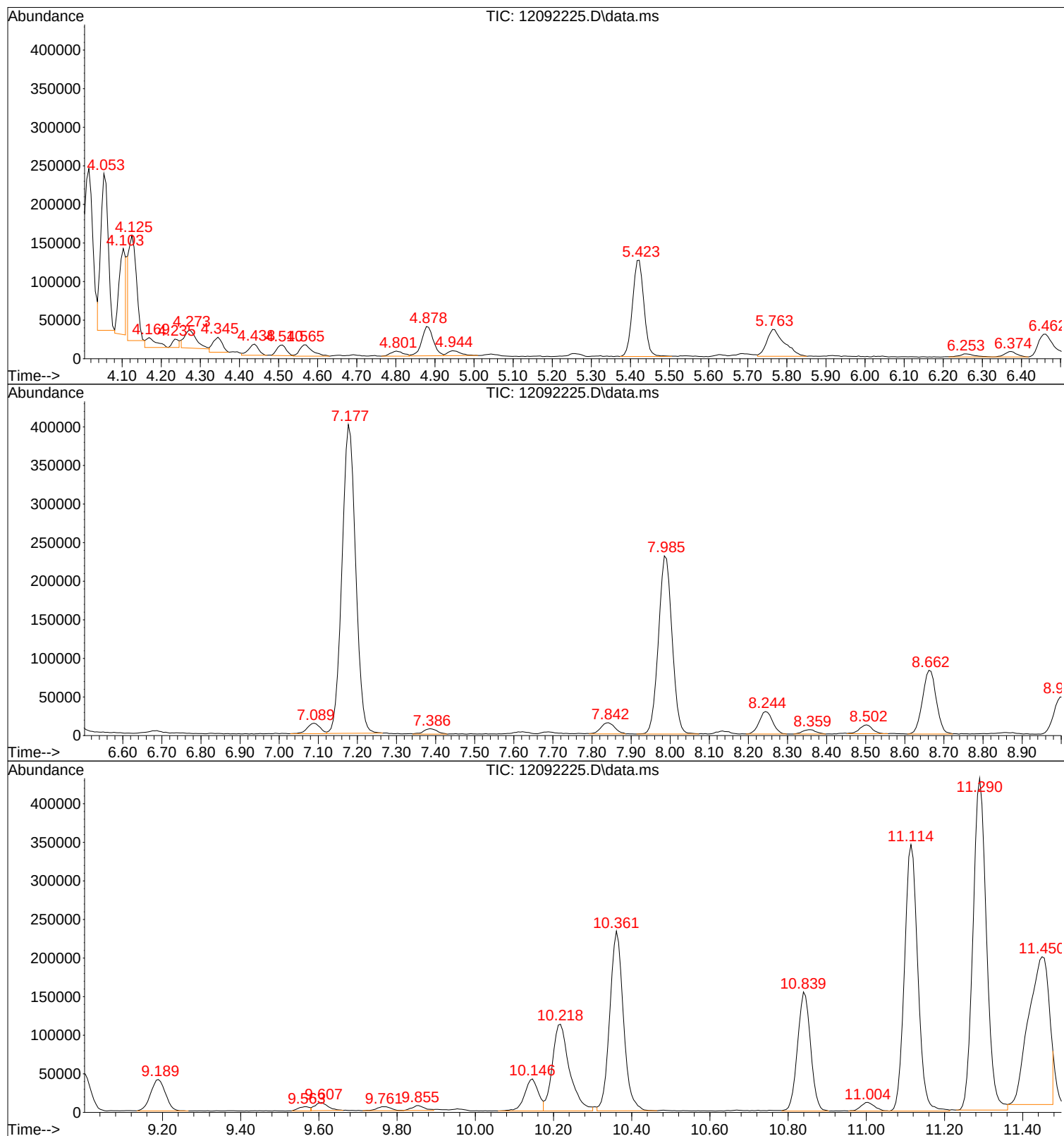
41	11.450	1432	1448	1453	rbV3	191572	706506	68.77%	9.412%

Sum of corrected areas: 7506055

Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092225.D
Acq On : 9 Dec 2022 17:55
Operator : CG/WA
Sample : P2205493-001 (1000mL)
Misc : S35-11092201
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092225.D
Acq On : 9 Dec 2022 17:555
Operator : CG/WAA
Sample : P2205493-001 (1000mL)
Misc : S35-110922011
ALS Vial : 11 Sample Multiplier: 11

Quant Method : I:\MS16\METHODS\R16113022.MM
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

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

No Library Search Compounds Detected

CG 12/15/22

Data File : I:\MS16\DATA\2022_12\09\12092205.D
 Acq On : 9 Dec 2022 6:04
 Sample : MB R16120922_1000mL
 Misc : S35-11092201_AS01319

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

12/9/22

Quant Time: Dec 09 07:09:05 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	145211	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.42	114	655509	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	155364	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	248869	12.167	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.36%	
57) Toluene-d8 (SS2)	15.87	98	693303	12.878	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	103.04%	
73) Bromofluorobenzene (SS3)	19.10	174	207715	11.859	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	94.88%	

Target Compounds

						Qvalue
2) Propene	4.23	42	166	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.52	45	2000	0.129	ng	86
11) Acetonitrile	6.78	41	1323	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	7.24	58	721	0.056	ng	# 18
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	7.95	53	359	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	0.00	84	0	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	8.88	76	2002	N.D.		
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.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.02	78	633	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.	d	
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...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS16\DATA\2022_12\09\12092205.D
 Acq On : 9 Dec 2022 6:04
 Sample : MB R16120922_1000mL
 Misc : S35-11092201_AS01319

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 09 07:09:05 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

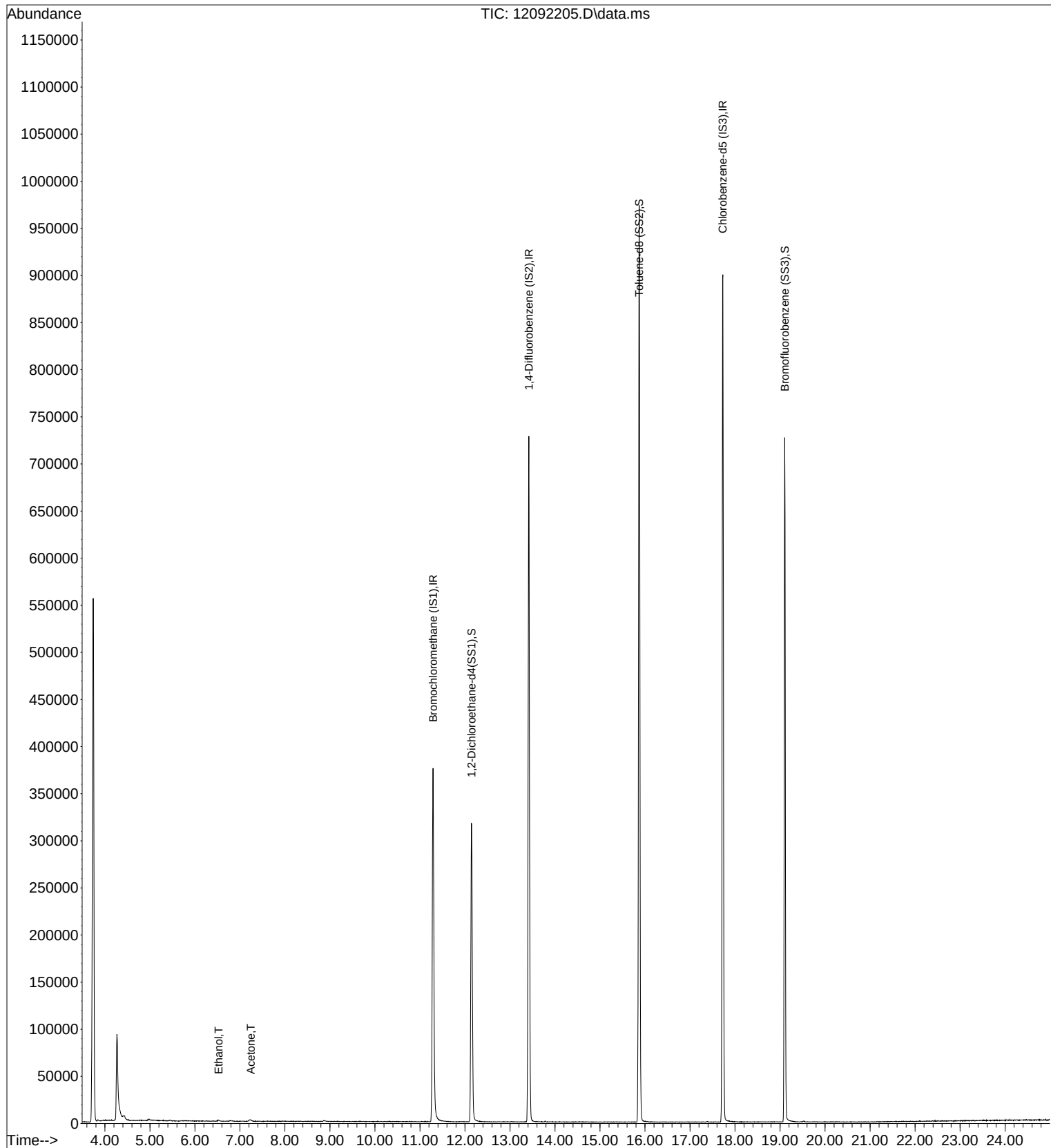
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	15.97	91	114	N.D.		
59) 2-Hexanone	0.00	43	0	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.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	17.12	166	169	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	0.00	91	0	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	22.38	128	247	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	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\2022_12\09\12092205.D
Acq On : 9 Dec 2022 6:04
Sample : MB R16120922_1000mL
Misc : S35-11092201_AS01319

Vial: 2
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 09 07:09:05 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 09:30:33 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092205.D
Acq On : 9 Dec 2022 6:04
Operator : CG/WA
Sample : MB R16120922_1000mL
Misc : S35-11092201_AS01319
ALS Vial : 2 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
Smoothing : OFF
Sampling : 1
Start Thrs: 0.15
Stop Thrs : 0.05

Filtering: 5
Min Area: 10000 Area counts
Max Peaks: 200
Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : I:\MS16\METHODS\R16113022.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Signal : TIC: 12092205.D\data.ms

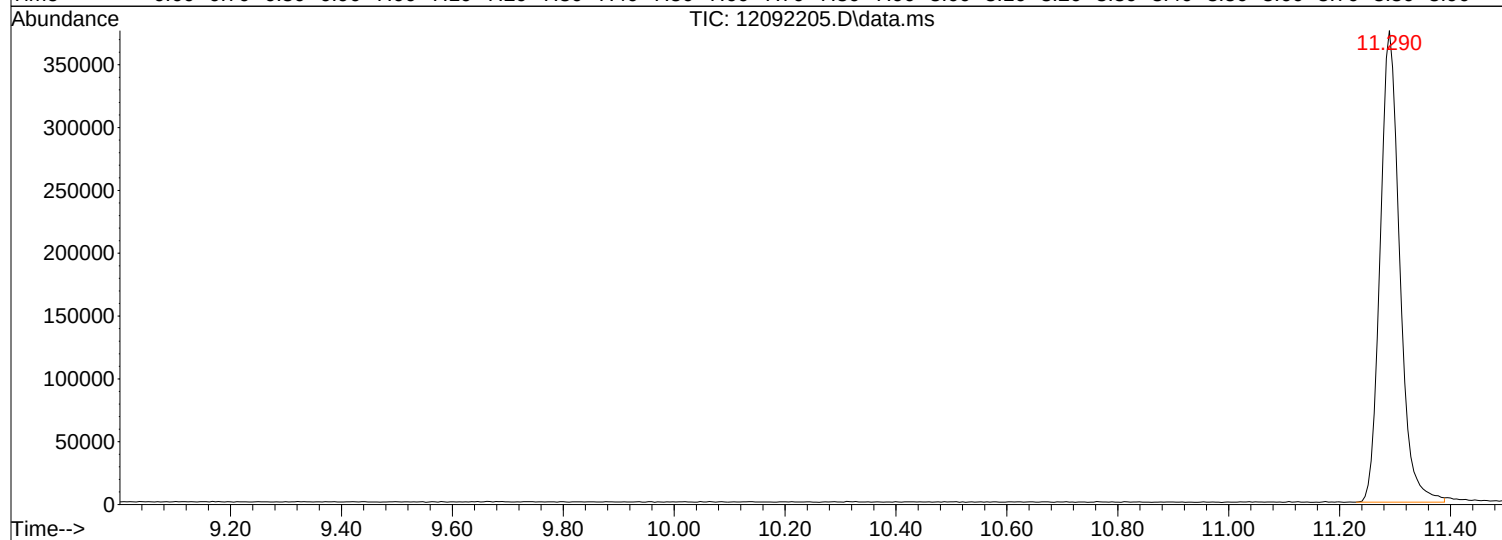
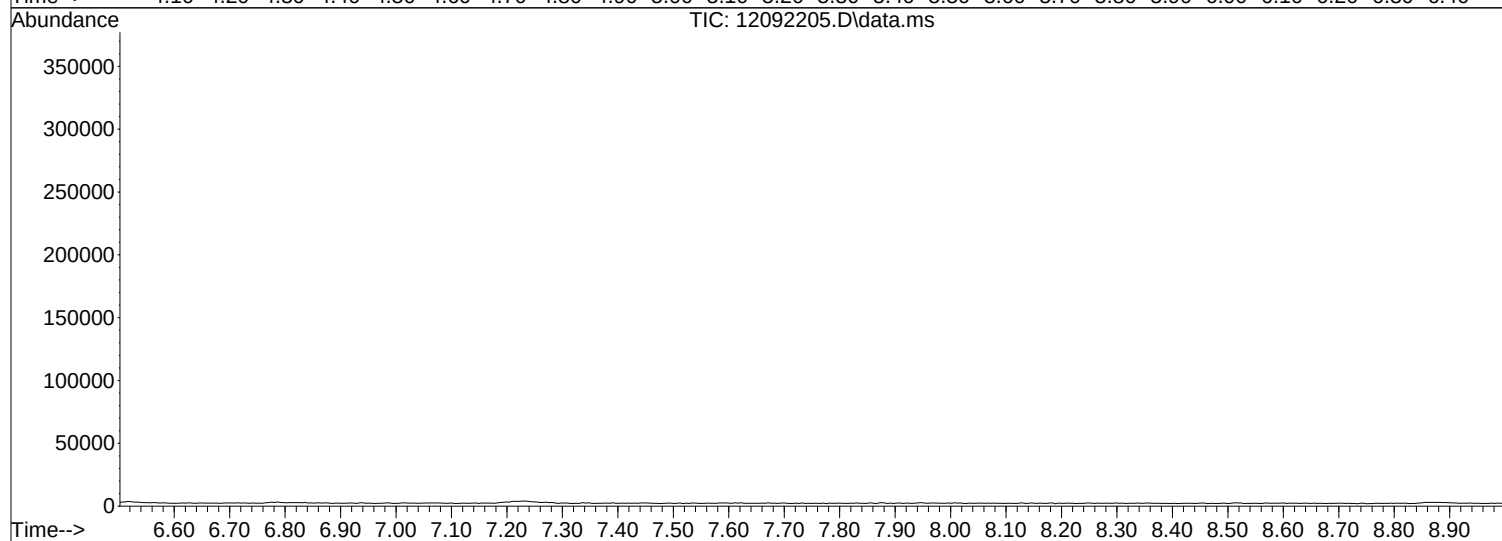
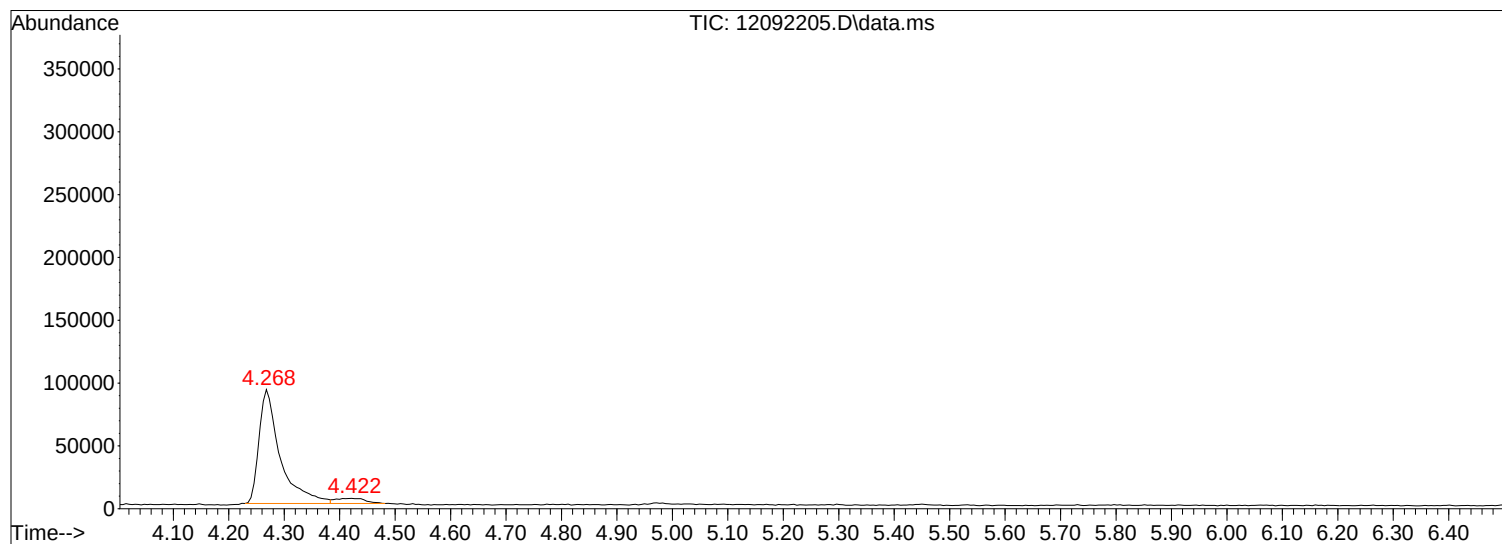
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.268	135	142	163	rBV	90572	240747	26.26%	20.524%
2	4.422	163	170	181	rVB4	4111	15337	1.67%	1.308%
3	11.290	1408	1419	1437	rBV	375283	916902	100.00%	78.168%

Sum of corrected areas: 1172986

Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092205.D
Acq On : 9 Dec 2022 6:04
Operator : CG/WA
Sample : MB R16120922_1000mL
Misc : S35-11092201_AS01319
ALS Vial : 2 Sample Multiplier: 1

Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092205.D
Acq On : 9 Dec 2022 6:04
Operator : CG/WA
Sample : MB R16120922_1000mL
Misc : S35-11092201_AS01319
ALS Vial : 2 Sample Multiplier: 1

Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

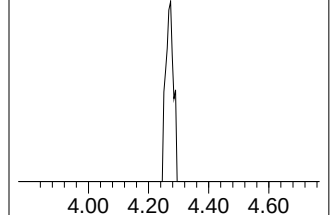
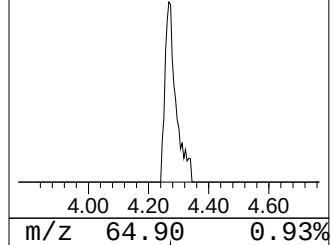
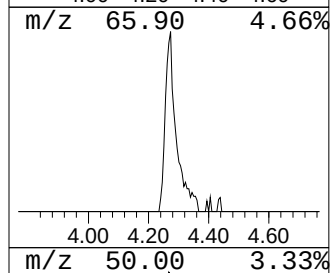
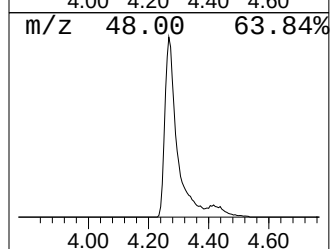
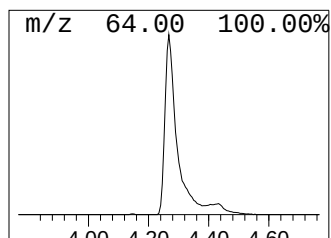
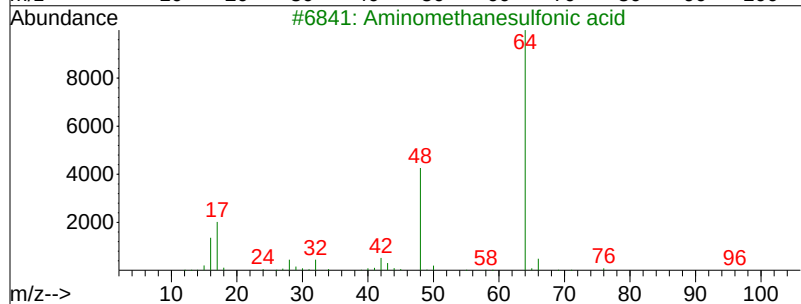
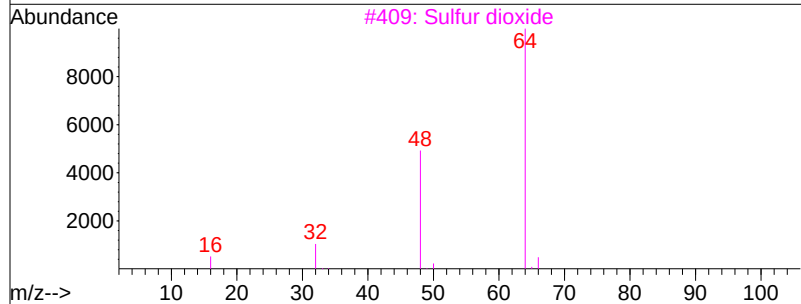
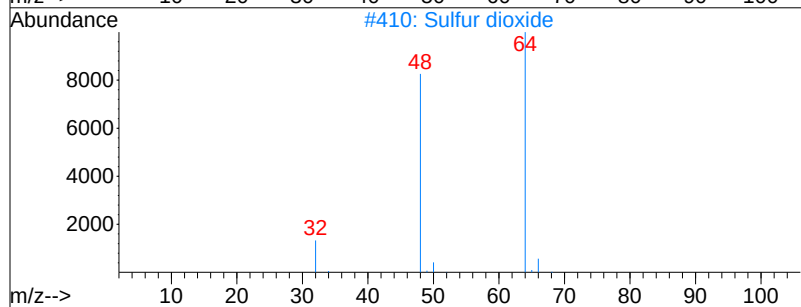
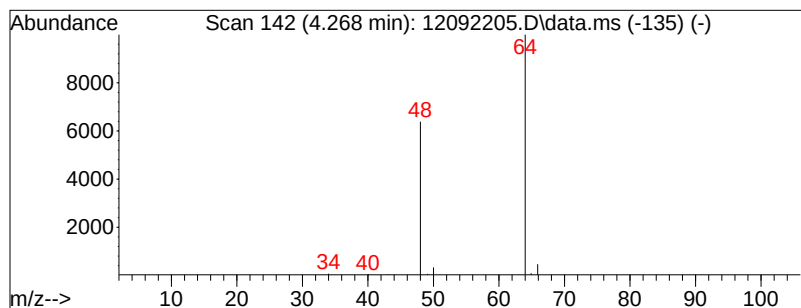
TIC Library : L:\DATABASE\NIST17\NIST17.L

TIC Integration Parameters: LSCINT.P

Peak Number 1 Sulfur dioxide Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
4.268	3.28 ng	240747	Bromochloromethane (IS1)	11.290

Hit#	of	Tentative ID	MW	MolForm	CAS#	Qual
1	5	Sulfur dioxide	64	O2S	007446-09-5	90
2		Sulfur dioxide	64	O2S	007446-09-5	90
3		Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	83
4		L-Alanine, 3-sulfo-	169	C3H7NO5S	000498-40-8	64
5		Aminomethanesulfonic acid	111	CH5NO3S	013881-91-9	9



Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092205.D
Acq On : 9 Dec 2022 6:04
Operator : CG/WA
Sample : MB R16120922_1000mL
Misc : S35-11092201_AS01319
ALS Vial : 2 Sample Multiplier: 1

Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--			
					#	RT	Resp	Conc
Sulfur dioxide	4.268	3.3	ng	240747	1	11.290	916902	12.5

CG 12/15/22

Data File : I:\MS16\DATA\2022_12\09\12092209.D

Vial: 2

Acq On : 9 Dec 2022 8:19

Operator: CG/WA

Sample : LCS R16120922_25ng

Inst : GCMS-16

Misc : S35-11092201/S35-12062202 (1/5)

CG 12/9/22

Quant Time: Dec 09 08:45:16 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.31	130	134339	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	13.43	114	615942	12.500	ng	0.01
56) Chlorobenzene-d5 (IS3)	17.73	54	161888	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.16	65	244774	12.935	ng	0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	103.44%	
57) Toluene-d8 (SS2)	15.87	98	668023	11.909	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	95.28%	
73) Bromofluorobenzene (SS3)	19.10	174	229021	12.548	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.40%	

Target Compounds

						Qvalue
2) Propene	4.18	42	720062	28.605	ng	100
3) Dichlorodifluoromethan...	4.34	85	590752	25.301	ng	100
4) Chloromethane	4.64	50	699096	27.988	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	302595	23.564	ng	100
6) Vinyl Chloride	5.07	62	491412	23.692	ng	99
7) 1,3-Butadiene	5.33	54	540734	28.202	ng	98
8) Bromomethane	5.78	94	237634	25.149	ng	100
9) Chloroethane	6.12	64	238577	25.929	ng	100
10) Ethanol	6.51	45	1584493	110.639	ng	100
11) Acetonitrile	6.76	41	855588	23.183	ng	99
12) Acrolein	6.95	56	521686	52.150	ng	99
13) Acetone	7.15	58	1543357	128.438	ng	94
14) Trichlorofluoromethane	7.40	101	533142	25.470	ng	99
15) 2-Propanol (Isopropanol)	7.66	45	2169695	57.911	ng	100
16) Acrylonitrile	7.92	53	1175325	52.965	ng	100
17) 1,1-Dichloroethene	8.37	96	278117	27.215	ng	96
18) 2-Methyl-2-Propanol (t...	8.53	59	1799297	65.597	ng	100
19) Methylene Chloride	8.60	84	274168	24.564	ng	92
20) 3-Chloro-1-propene (Al...	8.75	41	628377	27.868	ng	97
21) Trichlorotrifluoroethane	9.01	151	260643	25.776	ng	100
22) Carbon Disulfide	8.85	76	1964946	48.848	ng	100
23) trans-1,2-Dichloroethene	9.87	61	497835	28.880	ng	98
24) 1,1-Dichloroethane	10.12	63	588863	26.249	ng	99
25) Methyl tert-Butyl Ether	10.21	73	880616	30.350	ng	100
26) Vinyl Acetate	10.37	86	314297	154.246	ng	# 88
27) 2-Butanone (MEK)	10.61	72	401884	58.332	ng	# 89
28) cis-1,2-Dichloroethene	11.14	61	483074	27.938	ng	98
29) Diisopropyl Ether	11.43	87	588265	55.426	ng	# 72
30) Ethyl Acetate	11.43	61	476935	81.368	ng	100
31) n-Hexane	11.42	57	777224	28.888	ng	99
32) Chloroform	11.48	83	505695	25.632	ng	100
34) Tetrahydrofuran (THF)	11.88	72	372565	55.402	ng	94
35) Ethyl tert-Butyl Ether	12.02	87	752795	58.936	ng	97
36) 1,2-Dichloroethane	12.27	62	475658	27.668	ng	100
38) 1,1,1-Trichloroethane	12.55	97	489683	26.212	ng	100
39) Isopropyl Acetate	13.67	61	1094	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	1137374	26.453	ng	100
42) Carbon Tetrachloride	13.19	117	419495	25.491	ng	100
43) Cyclohexane	13.32	84	950471	55.714	ng	97
44) tert-Amyl Methyl Ether	13.67	73	1736573	58.215	ng	98
45) 1,2-Dichloropropane	13.88	63	348721	25.797	ng	100
46) Bromodichloromethane	14.07	83	418502	27.142	ng	100
47) Trichloroethene	14.13	130	344123	27.614	ng	99
48) 1,4-Dioxane	14.10	88	236188	26.980	ng	99
49) 2,2,4-Trimethylpentane...	14.19	57	1839932	27.834	ng	99
50) Methyl Methacrylate	14.33	100	278128	56.455	ng	97

Data File : I:\MS16\DATA\2022_12\09\12092209.D
 Acq On : 9 Dec 2022 8:19
 Sample : LCS R16120922_25ng
 Misc : S35-11092201/S35-12062202 (1/5)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 09 08:45:16 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	326585	27.659	ng	97
52) cis-1,3-Dichloropropene	14.99	75	489172	31.398	ng	100
53) 4-Methyl-2-pentanone	15.02	58	807204	62.915	ng	98
54) trans-1,3-Dichloropropene	15.51	75	442332	27.380	ng	100
55) 1,1,2-Trichloroethane	15.68	97	292581	26.647	ng	99
58) Toluene	15.98	91	1268626	25.248	ng	100
59) 2-Hexanone	16.21	43	2207381	62.404	ng	99
60) Dibromochloromethane	16.38	129	380557	26.656	ng	100
61) 1,2-Dibromoethane	16.64	107	339687	26.519	ng	100
62) n-Butyl Acetate	16.85	43	2513324	64.281	ng	99
63) n-Octane	16.98	57	405260	28.879	ng	97
64) Tetrachloroethene	17.12	166	365973	26.294	ng	100
65) Chlorobenzene	17.77	112	917972	25.011	ng	100
66) Ethylbenzene	18.12	91	1544144	28.267	ng	100
67) m- & p-Xylenes	18.28	91	2444198	55.233	ng	100
68) Bromoform	18.35	173	328341	28.235	ng	100
69) Styrene	18.61	104	953383	29.235	ng	100
70) o-Xylene	18.71	91	1269530	28.862	ng	100
71) n-Nonane	18.90	43	1096370	30.328	ng	99
72) 1,1,2,2-Tetrachloroethane	18.69	83	554928	25.876	ng	100
74) Cumene	19.23	105	1626717	27.650	ng	99
75) alpha-Pinene	19.58	93	820479	30.697	ng	99
76) n-Propylbenzene	19.68	91	1987763	28.421	ng	100
77) 3-Ethyltoluene	20.34	105	465	No Calib	#	
78) 4-Ethyltoluene	19.80	105	1636916	30.170	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	1370076	28.601	ng	100
80) alpha-Methylstyrene	20.46	118	6093	No Calib	#	
81) 2-Ethyltoluene	20.34	105	465	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	1386543	28.720	ng	99
83) n-Decane	20.23	58	71546	No Calib		
84) Benzyl Chloride	20.35	91	2032290	52.517	ng	100
85) 1,3-Dichlorobenzene	20.36	146	778974	26.196	ng	100
86) 1,4-Dichlorobenzene	20.42	146	773273	25.518	ng	100
87) sec-Butylbenzene	20.47	105	1692293	25.834	ng	98
88) 4-Isopropyltoluene (p-...	20.61	119	1592170	27.331	ng	99
89) 1,2,3-Trimethylbenzene	20.34	105	465	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	786565	27.282	ng	100
91) d-Limonene	20.73	68	517502	25.524	ng	97
92) 1,2-Dibromo-3-Chloropr...	21.10	157	586853	52.951	ng	99
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	1208332	52.241	ng	100
95) Naphthalene	22.34	128	1776827	25.660	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	365552	25.461	ng	100
98) Cyclohexanone	18.20	55	138	No Calib	#	
99) tert-Butylbenzene	20.23	119	1420323	28.290	ng	100
100) n-Butylbenzene	20.97	91	1385043	26.805	ng	99
101) 1,1,1,2-Tetrachloroethane	17.75	131	343305	25.274	ng	100

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

Data File : I:\MS16\DATA\2022_12\09\12092209.D
Acq On : 9 Dec 2022 8:19
Sample : LCS R16120922_25ng
Misc : S35-11092201/S35-12062202 (1/5)

Data File : I:\MS16\DATA\2022_12\09\12092210.D

Vial: 2

Acq On : 9 Dec 2022 8:53

Operator: CG/WA

Sample : LCSD R16120922_25ng

Inst : GCMS-16

Misc : S35-11092201/S35-12062202 (1/5)

CG 12/9/22

Quant Time: Dec 09 09:35:33 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	130476	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	13.43	114	590078	12.500	ng	0.01
56) Chlorobenzene-d5 (IS3)	17.73	54	154881	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.16	65	250438	13.626	ng	0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	109.04%	
57) Toluene-d8 (SS2)	15.88	98	626895	11.681	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	93.44%	
73) Bromofluorobenzene (SS3)	19.10	174	230628	13.208	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	105.68%	

Target Compounds

						Qvalue
2) Propene	4.19	42	612798	25.065	ng	100
3) Dichlorodifluoromethan...	4.36	85	598469	26.390	ng	100
4) Chloromethane	4.65	50	632663	26.079	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	330174	26.473	ng	99
6) Vinyl Chloride	5.08	62	473663	23.512	ng	100
7) 1,3-Butadiene	5.35	54	483079	25.941	ng	99
8) Bromomethane	5.79	94	220177	23.991	ng	99
9) Chloroethane	6.13	64	214836	24.040	ng	99
10) Ethanol	6.52	45	1380969	99.283	ng	100
11) Acetonitrile	6.76	41	723564	20.186	ng	99
12) Acrolein	6.95	56	463491	47.704	ng	99
13) Acetone	7.17	58	1330153	113.972	ng	94
14) Trichlorofluoromethane	7.41	101	552200	27.162	ng	100
15) 2-Propanol (Isopropanol)	7.67	45	1931452	53.079	ng	99
16) Acrylonitrile	7.93	53	1025962	47.603	ng	100
17) 1,1-Dichloroethene	8.38	96	255813	25.774	ng	92
18) 2-Methyl-2-Propanol (t...	8.54	59	1725474	64.768	ng	98
19) Methylene Chloride	8.60	84	243280	22.442	ng	91
20) 3-Chloro-1-propene (Al...	8.76	41	538316	24.581	ng	99
21) Trichlorotrifluoroethane	9.01	151	265452	27.028	ng	91
22) Carbon Disulfide	8.86	76	1729247	44.261	ng	100
23) trans-1,2-Dichloroethene	9.87	61	466692	27.875	ng	97
24) 1,1-Dichloroethane	10.12	63	544306	24.981	ng	99
25) Methyl tert-Butyl Ether	10.22	73	846843	30.050	ng	99
26) Vinyl Acetate	10.38	86	275222	139.068	ng	97
27) 2-Butanone (MEK)	10.62	72	350582	52.393	ng	# 93
28) cis-1,2-Dichloroethene	11.14	61	451423	26.880	ng	97
29) Diisopropyl Ether	11.43	87	531796	51.589	ng	# 58
30) Ethyl Acetate	11.44	61	410065	72.031	ng	96
31) n-Hexane	11.42	57	683885	26.172	ng	99
32) Chloroform	11.48	83	486315	25.379	ng	100
34) Tetrahydrofuran (THF)	11.88	72	326431	49.979	ng	98
35) Ethyl tert-Butyl Ether	12.02	87	707871	57.060	ng	99
36) 1,2-Dichloroethane	12.28	62	478124	28.634	ng	100
38) 1,1,1-Trichloroethane	12.55	97	496540	27.744	ng	99
39) Isopropyl Acetate	13.67	61	910	No Calib	#	
40) 1-Butanol	12.65	56	111	No Calib	#	
41) Benzene	13.04	78	1007445	24.458	ng	100
42) Carbon Tetrachloride	13.20	117	439472	27.875	ng	100
43) Cyclohexane	13.32	84	850354	52.030	ng	97
44) tert-Amyl Methyl Ether	13.67	73	1588118	55.572	ng	97
45) 1,2-Dichloropropane	13.89	63	305926	23.623	ng	100
46) Bromodichloromethane	14.07	83	402105	27.222	ng	99
47) Trichloroethene	14.13	130	330724	27.702	ng	99
48) 1,4-Dioxane	14.10	88	215169	25.656	ng	98
49) 2,2,4-Trimethylpentane...	14.19	57	1653404	26.108	ng	99
50) Methyl Methacrylate	14.33	100	252802	53.563	ng	92

Data File : I:\MS16\DATA\2022_12\09\12092210.D
 Acq On : 9 Dec 2022 8:53
 Sample : LCSD R16120922_25ng
 Misc : S35-11092201/S35-12062202 (1/5)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 09 09:35:33 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	287340	25.402	ng	96
52) cis-1,3-Dichloropropene	14.99	75	447112	29.956	ng	100
53) 4-Methyl-2-pentanone	15.02	58	707050	57.524	ng	99
54) trans-1,3-Dichloropropene	15.51	75	417908	27.002	ng	100
55) 1,1,2-Trichloroethane	15.68	97	266388	25.325	ng	98
58) Toluene	15.98	91	1142483	23.767	ng	100
59) 2-Hexanone	16.22	43	1894806	55.991	ng	100
60) Dibromochloromethane	16.38	129	369576	27.058	ng	100
61) 1,2-Dibromoethane	16.63	107	310769	25.359	ng	100
62) n-Butyl Acetate	16.85	43	2134878	57.072	ng	99
63) n-Octane	16.98	57	359424	26.771	ng	98
64) Tetrachloroethene	17.12	166	364143	27.346	ng	100
65) Chlorobenzene	17.77	112	848532	24.165	ng	100
66) Ethylbenzene	18.12	91	1411400	27.006	ng	100
67) m- & p-Xylenes	18.28	91	2267947	53.568	ng	98
68) Bromoform	18.35	173	328039	29.485	ng	100
69) Styrene	18.61	104	856267	27.445	ng	98
70) o-Xylene	18.71	91	1163792	27.655	ng	99
71) n-Nonane	18.90	43	941860	27.232	ng	98
72) 1,1,2,2-Tetrachloroethane	18.69	83	471059	22.959	ng	100
74) Cumene	19.23	105	1496343	26.585	ng	99
75) alpha-Pinene	19.58	93	747167	29.219	ng	97
76) n-Propylbenzene	19.68	91	1787204	26.710	ng	98
77) 3-Ethyltoluene	20.35	105	622	No Calib		
78) 4-Ethyltoluene	19.80	105	1494284	28.787	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	1276691	27.857	ng	99
80) alpha-Methylstyrene	20.47	118	5997	No Calib	#	
81) 2-Ethyltoluene	20.35	105	657	No Calib		
82) 1,2,4-Trimethylbenzene	20.23	105	1381656	29.913	ng	99
83) n-Decane	20.23	58	66878	No Calib		
84) Benzyl Chloride	20.35	91	2081662	56.226	ng	100
85) 1,3-Dichlorobenzene	20.36	146	800228	28.129	ng	100
86) 1,4-Dichlorobenzene	20.42	146	800679	27.618	ng	100
87) sec-Butylbenzene	20.47	105	1719137	27.431	ng	98
88) 4-Isopropyltoluene (p-...	20.61	119	1628994	29.229	ng	99
89) 1,2,3-Trimethylbenzene	20.35	105	657	No Calib		
90) 1,2-Dichlorobenzene	20.72	146	778638	28.229	ng	100
91) d-Limonene	20.73	68	487803	25.148	ng	94
92) 1,2-Dibromo-3-Chloropr...	21.10	157	634150	59.808	ng	98
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	1326905	59.963	ng	100
95) Naphthalene	22.34	128	1966394	29.683	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	403057	29.344	ng	100
98) Cyclohexanone	18.28	55	2472	No Calib	#	
99) tert-Butylbenzene	20.23	119	1415519	29.470	ng	100
100) n-Butylbenzene	20.97	91	1448148	29.294	ng	99
101) 1,1,1,2-Tetrachloroethane	17.75	131	333069	25.629	ng	99

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

Data File : I:\MS16\DATA\2022_12\09\12092210.D
Acq On : 9 Dec 2022 8:53
Sample : LCSD R16120922_25ng
Misc : S35-11092201/S35-12062202 (1/5)

Vial: 2
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 09 09:35:33 2022

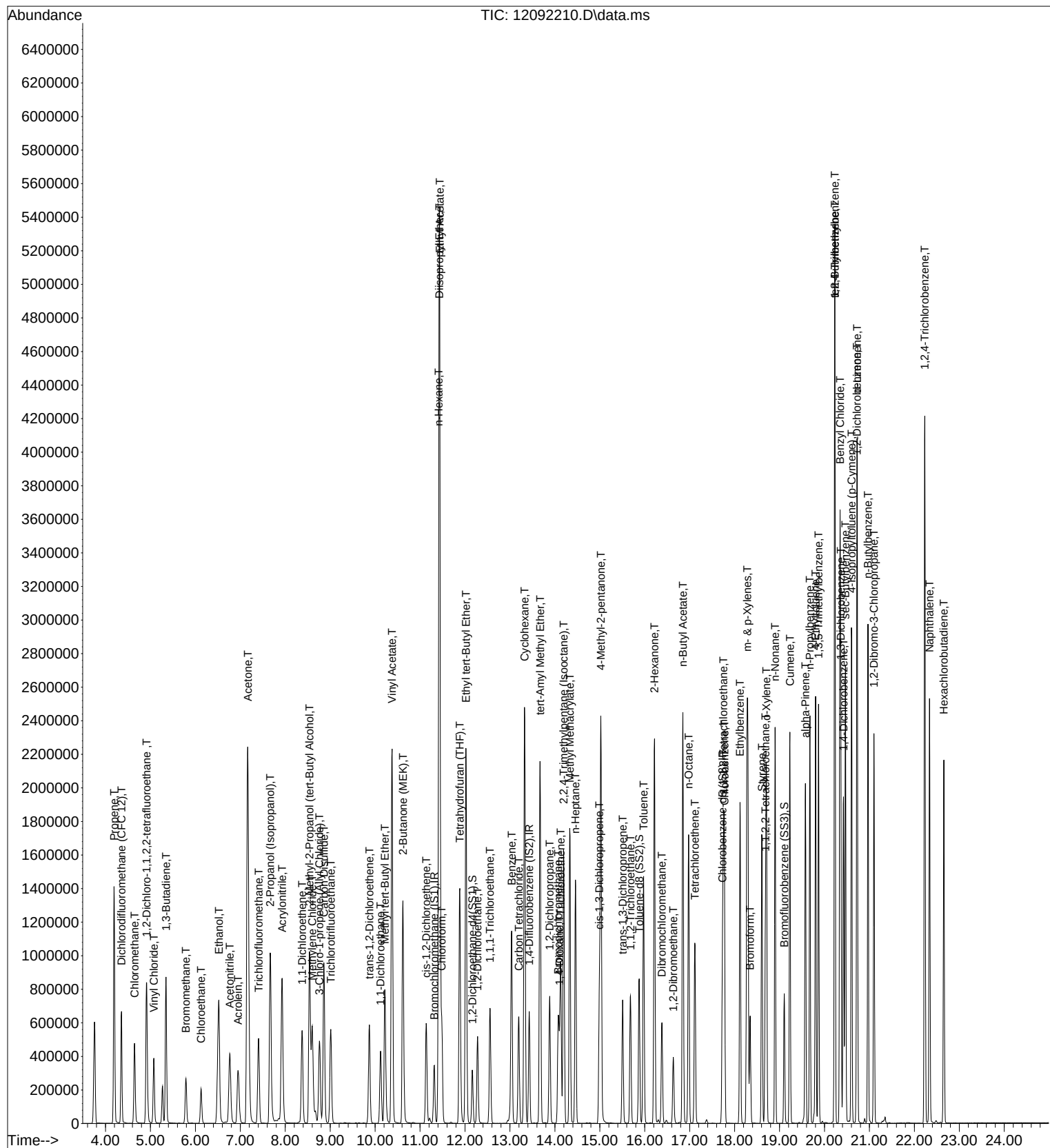
Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M



Data File : I:\MS16\DATA\2022_12\09\12092226.D
 Acq On : 9 Dec 2022 18:29
 Sample : P2205493-001dup (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

CG 12/12/22

Quant Time: Dec 12 09:38:57 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	142531	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.42	114	626610	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	161224	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	254207	12.661	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.28%
57) Toluene-d8 (SS2)	15.87	98	666379	11.928	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.44%
73) Bromofluorobenzene (SS3)	19.10	174	240504	13.231	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	105.84%

Target Compounds

						Qvalue
2) Propene	4.20	42	2469	0.092	ng	89
3) Dichlorodifluoromethan...	4.36	85	14077	0.568	ng	99
4) Chloromethane	4.66	50	249	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	4.92	135	325	N.D.		
6) Vinyl Chloride	5.08	62	697	N.D.		
7) 1,3-Butadiene	5.43	54	206	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	6.47	45	35003	2.304	ng	91
11) Acetonitrile	6.70	41	57	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	0.00	58	0	N.D.	d	
14) Trichlorofluoromethane	7.39	101	6051	0.272	ng	99
15) 2-Propanol (Isopropanol)	7.61	45	54	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.	d	
17) 1,1-Dichloroethene	8.35	96	2342	0.216	ng	97
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	8.57	84	124	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d	
21) Trichlorotrifluoroethane	9.00	151	19145	1.784	ng	90
22) Carbon Disulfide	8.85	76	2633	0.062	ng	# 75
23) trans-1,2-Dichloroethene	9.85	61	4762	0.260	ng	97
24) 1,1-Dichloroethane	10.10	63	2237	0.094	ng	91
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)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	11.11	61	220149	12.000	ng	98
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	11.44	61	15912	2.559	ng	96
31) n-Hexane	11.41	57	40186	1.408	ng	94
32) Chloroform	11.45	83	107989	5.159	ng	100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	12.29	62	291	N.D.		
38) 1,1,1-Trichloroethane	12.55	97	3178	0.167	ng	94
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	12.58	56	2015	No Calib	#	
41) Benzene	13.03	78	2642	0.060	ng	95
42) Carbon Tetrachloride	13.18	117	6053	0.362	ng	99
43) Cyclohexane	13.32	84	23813	1.372	ng	98
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.	d	
47) Trichloroethene	14.12	130	218708	17.252	ng	98
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	14.19	57	645086	9.592	ng	96
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS16\DATA\2022_12\09\12092226.D
 Acq On : 9 Dec 2022 18:29
 Sample : P2205493-001dup (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 12 09:38:57 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	2490	0.207	ng	88
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	15.68	97	147	N.D.		
58) Toluene	15.98	91	10676	0.213	ng	96
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	16.89	43	800	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	17.11	166	26067	1.881	ng	99
65) Chlorobenzene	17.72	112	169	N.D.		
66) Ethylbenzene	18.13	91	581	N.D.		
67) m- & p-Xylenes	18.31	91	1372	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	18.63	104	114	N.D.		
70) o-Xylene	18.71	91	3265	0.075	ng	92
71) n-Nonane	18.91	43	100	N.D.		
72) 1,1,2,2-Tetrachloroethane	18.69	83	5903	0.276	ng	98
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.81	105	109	N.D.		
79) 1,3,5-Trimethylbenzene	19.87	105	513	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.24	105	356	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	20.60	119	475	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	20.73	68	137	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	103	N.D.		
95) Naphthalene	22.36	128	554	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	18.20	55	1144	No Calib	#	
99) tert-Butylbenzene	20.19	119	480	N.D.		
100) n-Butylbenzene	0.00	91	0	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\2022_12\09\12092226.D
Acq On : 9 Dec 2022 18:29
Sample : P2205493-001dup (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 12 09:38:57 2022

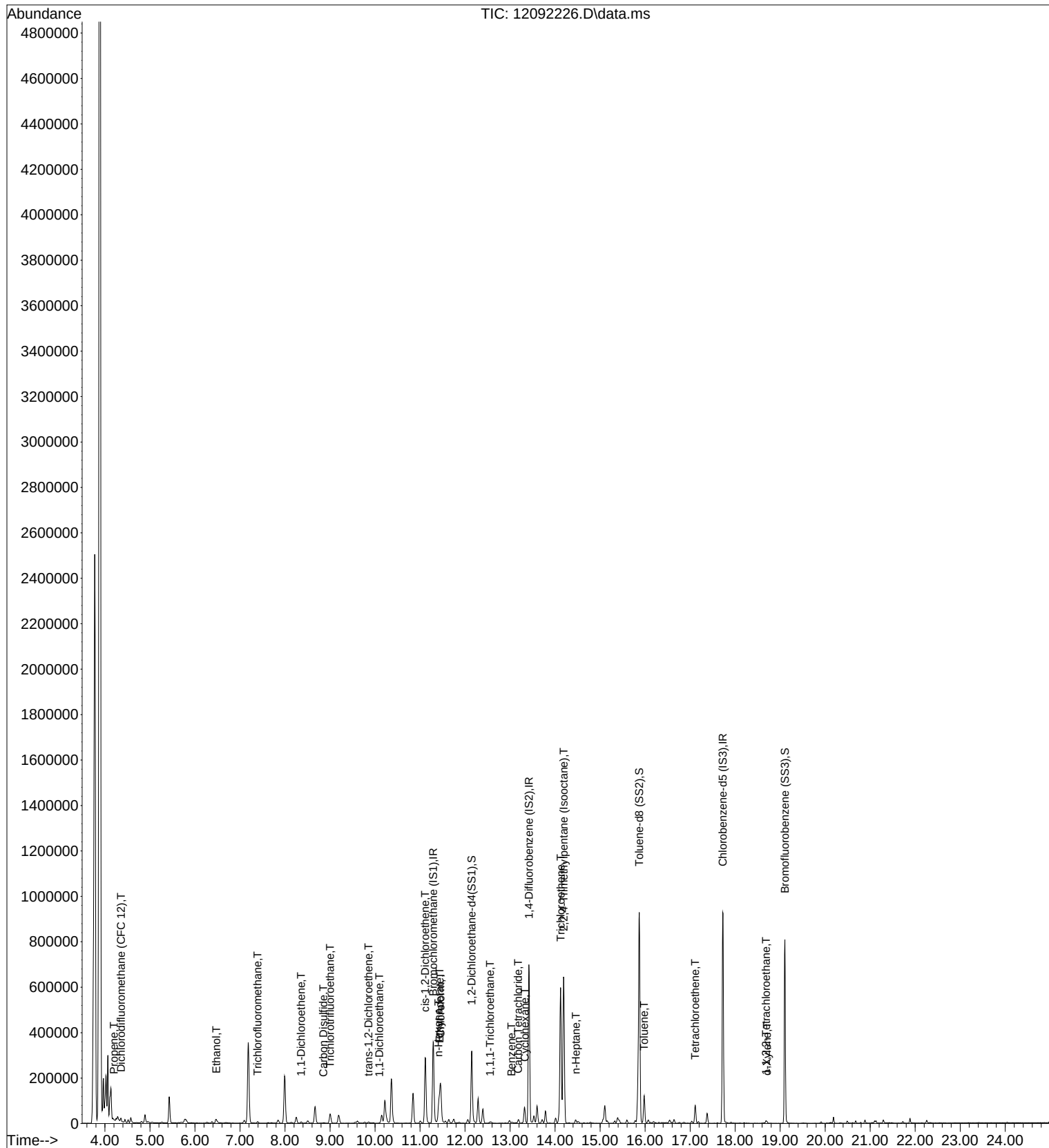
Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2022_12\09\12092226.D
 Acq On : 9 Dec 2022 18:29
 Sample : P2205493-001dup (1000mL)
 Misc : S35-11092201

Vial: 11
 Operator: CG/WA
 Inst : GCMS-16

CG 12/12/22

Quant Time: Dec 12 09:38:57 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	142531	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.42	114	626610	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	161224	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	254207	12.661	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	101.28%	
57) Toluene-d8 (SS2)	15.87	98	666379	11.928	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	95.44%	
73) Bromofluorobenzene (SS3)	19.10	174	240504	13.231	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	105.84%	

Target Compounds

						Qvalue
2) Propene	4.20	42	2469	0.092	ng	89
3) Dichlorodifluoromethan...	4.36	85	14077	0.568	ng	99
10) Ethanol	6.47	45	35003	2.304	ng	91
14) Trichlorofluoromethane	7.39	101	6051	0.272	ng	99
17) 1,1-Dichloroethene	8.35	96	2342	0.216	ng	97
21) Trichlorotrifluoroethane	9.00	151	19145	1.784	ng	90
22) Carbon Disulfide	8.85	76	2633	0.062	ng	# 75
23) trans-1,2-Dichloroethene	9.85	61	4762	0.260	ng	97
24) 1,1-Dichloroethane	10.10	63	2237	0.094	ng	91
28) cis-1,2-Dichloroethene	11.11	61	220149	12.000	ng	98
30) Ethyl Acetate	11.44	61	15912	2.559	ng	96
31) n-Hexane	11.41	57	40186	1.408	ng	94
32) Chloroform	11.45	83	107989	5.159	ng	100
38) 1,1,1-Trichloroethane	12.55	97	3178	0.167	ng	94
41) Benzene	13.03	78	2642	0.060	ng	95
42) Carbon Tetrachloride	13.18	117	6053	0.362	ng	99
43) Cyclohexane	13.32	84	23813	1.372	ng	98
47) Trichloroethene	14.12	130	218708	17.252	ng	98
49) 2,2,4-Trimethylpentane...	14.19	57	645086	9.592	ng	96
51) n-Heptane	14.46	71	2490	0.207	ng	88
58) Toluene	15.98	91	10676	0.213	ng	96
64) Tetrachloroethene	17.11	166	26067	1.881	ng	99
70) o-Xylene	18.71	91	3265	0.075	ng	92
72) 1,1,2,2-Tetrachloroethane	18.69	83	5903	0.276	ng	98

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

Data File : I:\MS16\DATA\2022_12\09\12092226.D
Acq On : 9 Dec 2022 18:29
Sample : P2205493-001dup (1000mL)
Misc : S35-11092201

Vial: 11
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 12 09:38:57 2022

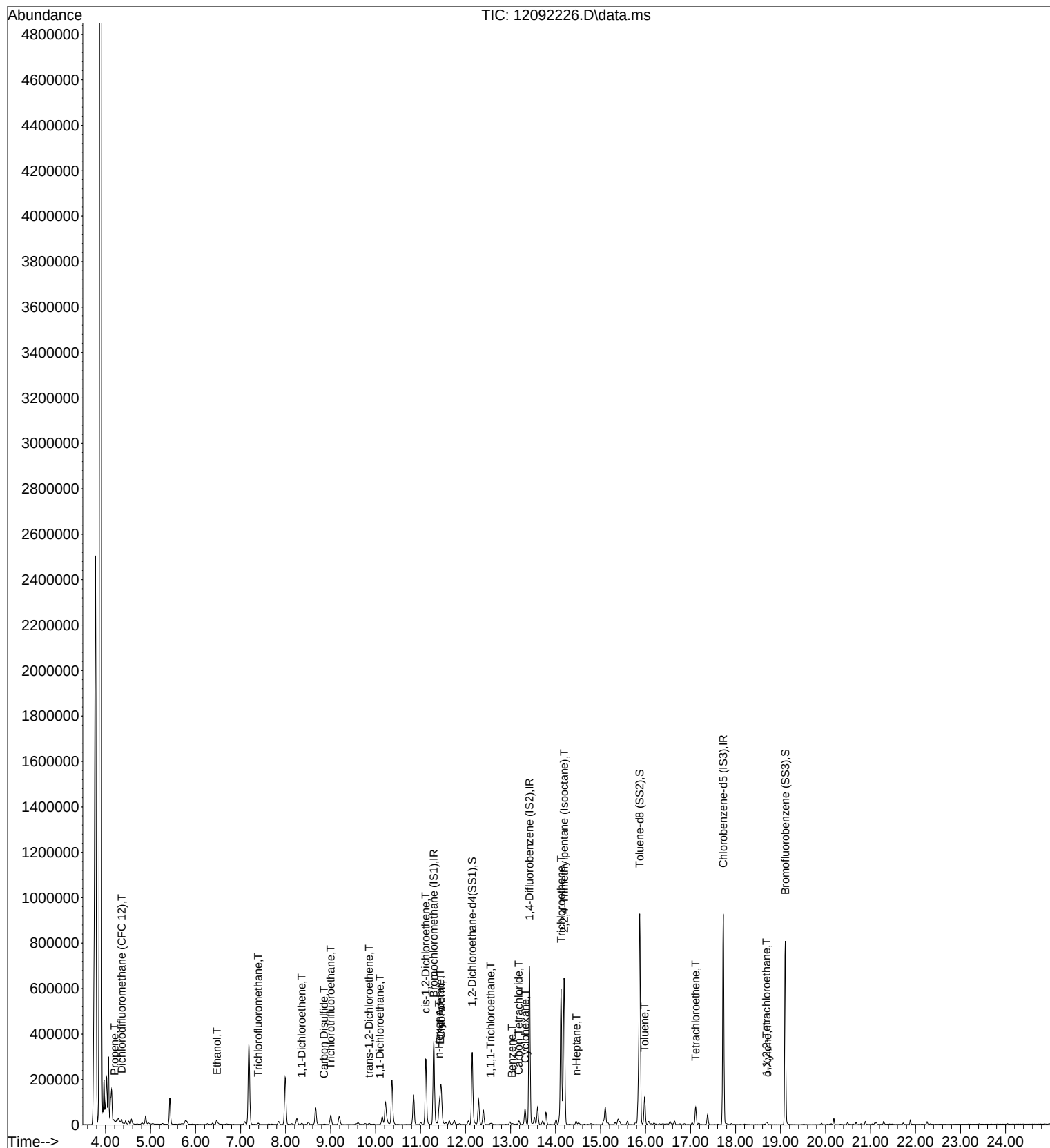
Quant Method : I:\MS16\METHODS\R16113022.M

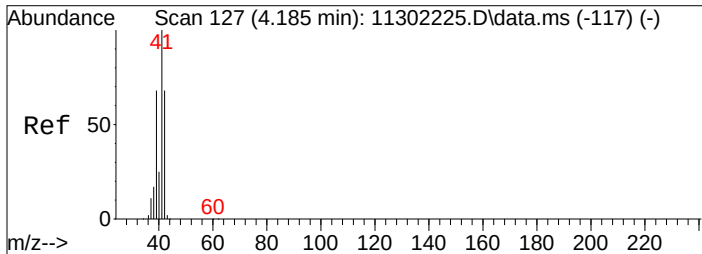
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

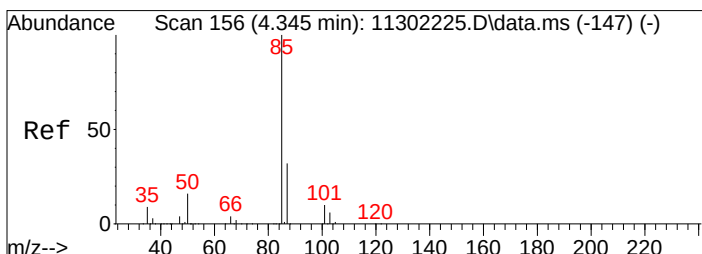
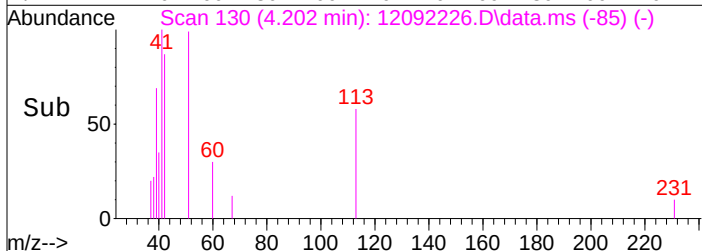
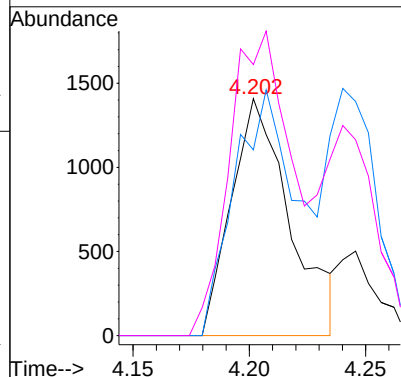
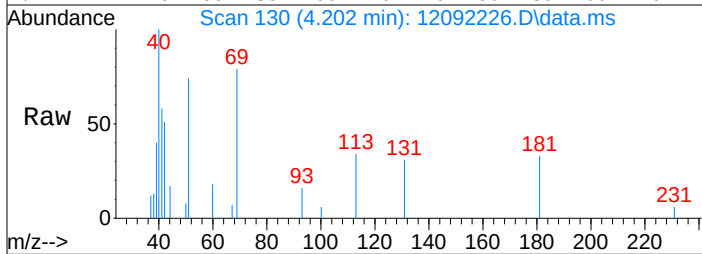
DataAcq Meth:T015.M





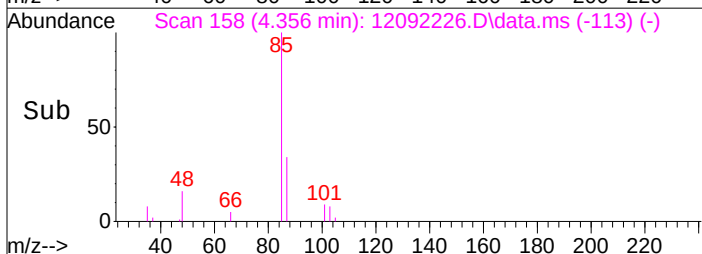
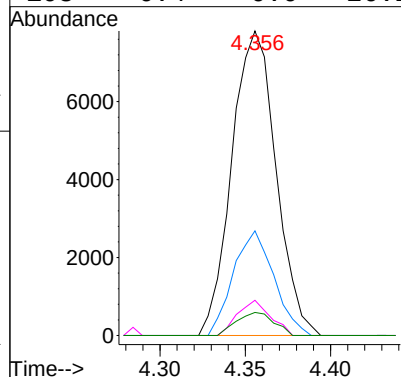
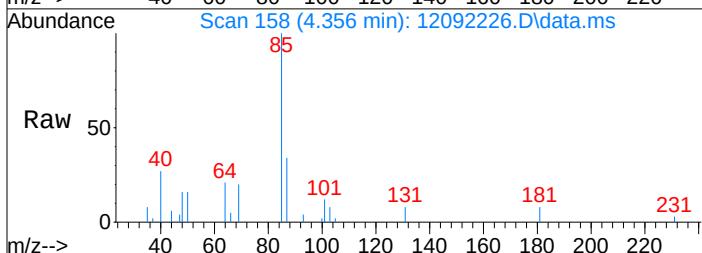
#2
 Propene
 Concen: 0.09 ng
 RT: 4.20 min Scan# 130
 Delta R.T. 0.000 min
 Lab File: 12092226.D
 Acq: 9 Dec 2022 18:29

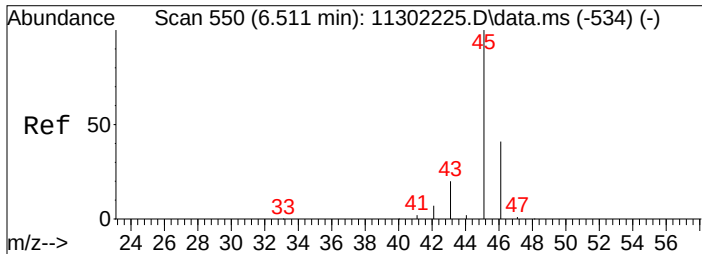
Tgt Ion: 42	Resp: 2469
Ion Ratio	Lower Upper
42	100
39	110.9 80.4 120.4
41	131.7 126.9 166.9



#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 0.57 ng
 RT: 4.36 min Scan# 158
 Delta R.T. 0.000 min
 Lab File: 12092226.D
 Acq: 9 Dec 2022 18:29

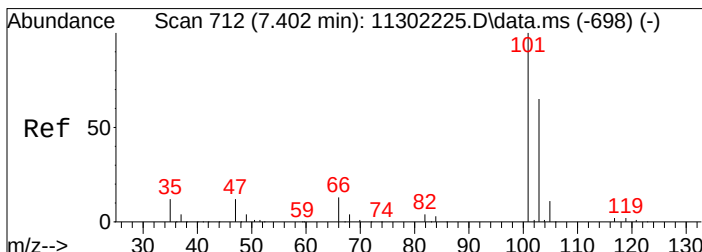
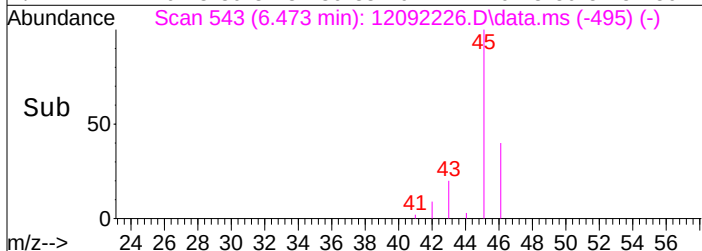
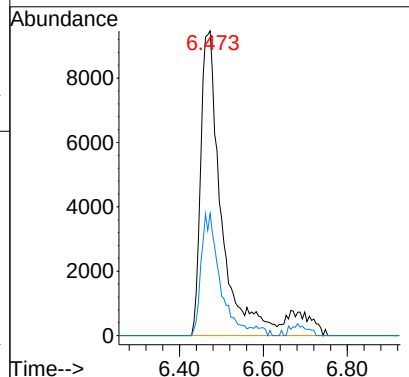
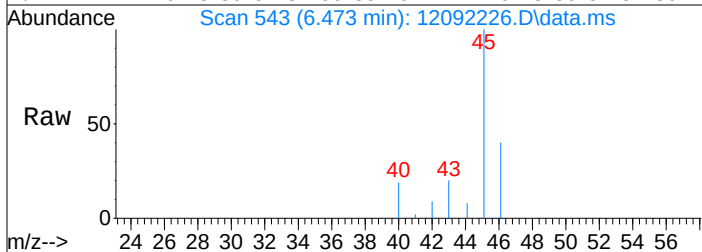
Tgt Ion: 85	Resp: 14077
Ion Ratio	Lower Upper
85	100
87	31.6 12.2 52.2
101	8.6 0.0 29.7
103	6.4 0.0 26.2





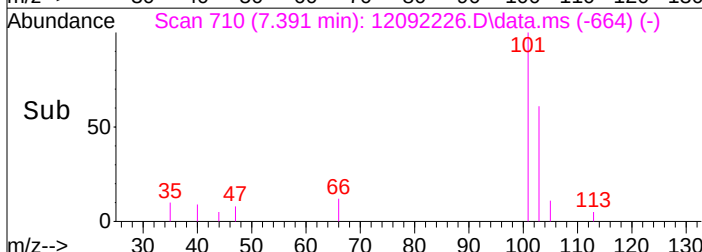
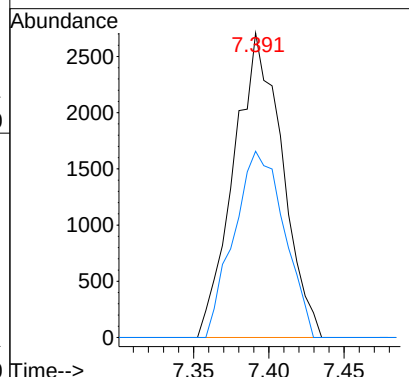
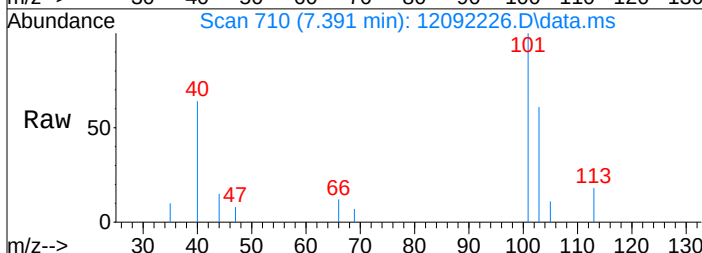
#10
Ethanol
Concen: 2.30 ng
RT: 6.47 min Scan# 543
Delta R.T. 0.017 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

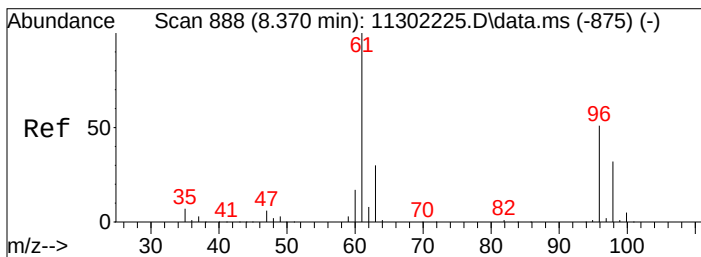
Tgt Ion: 45 Resp: 35003
Ion Ratio Lower Upper
45 100
46 35.1 20.9 60.9



#14
Trichlorofluoromethane
Concen: 0.27 ng
RT: 7.39 min Scan# 710
Delta R.T. 0.006 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

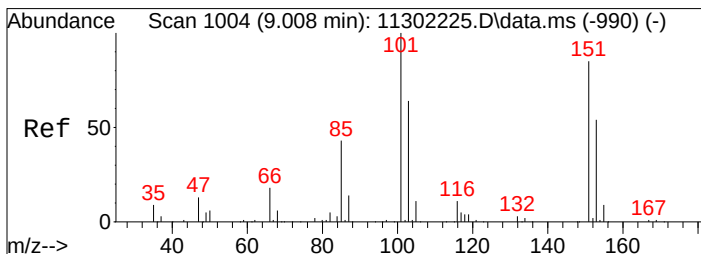
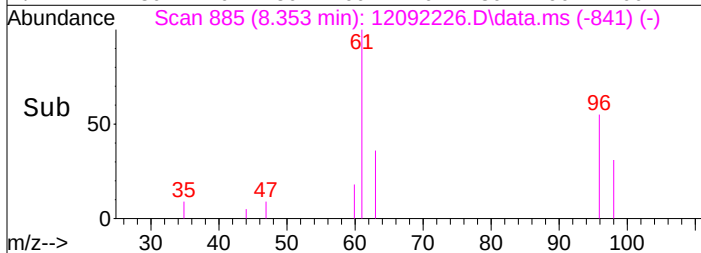
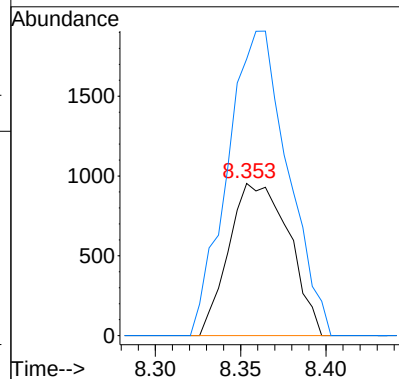
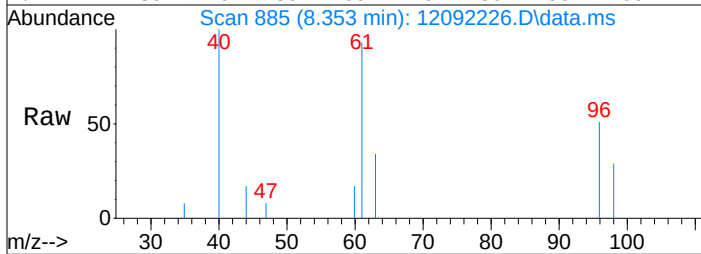
Tgt Ion: 101 Resp: 6051
Ion Ratio Lower Upper
101 100
103 63.6 44.5 84.5





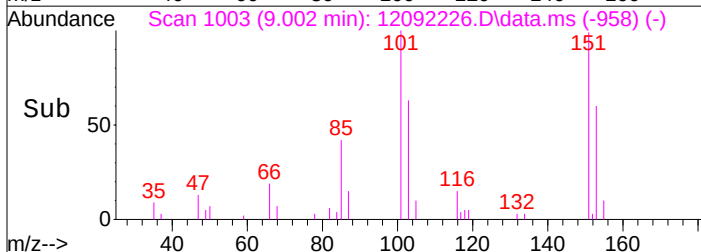
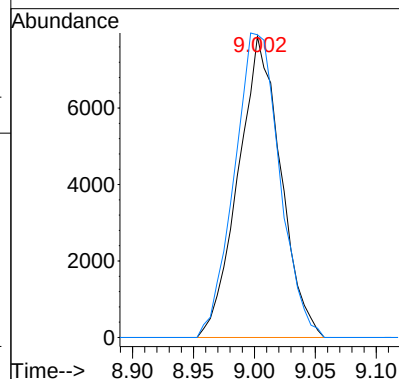
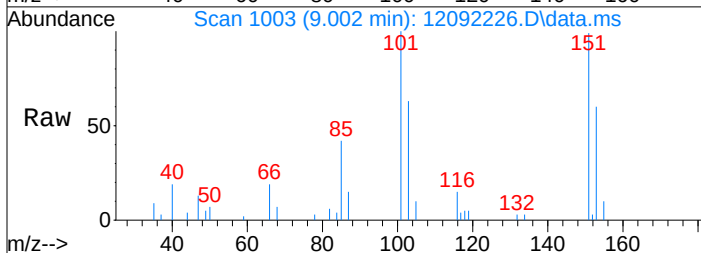
#17
1,1-Dichloroethene
Concen: 0.22 ng
RT: 8.35 min Scan# 885
Delta R.T. -0.005 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

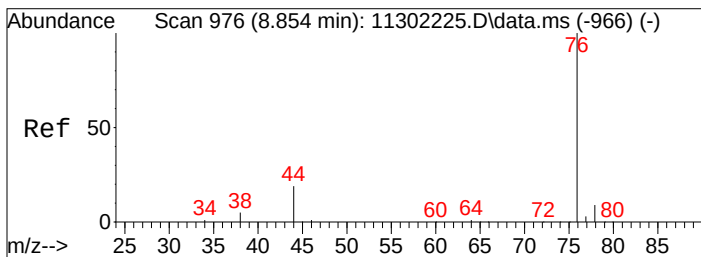
Tgt Ion: 96 Resp: 2342
Ion Ratio Lower Upper
96 100
61 201.2 176.2 216.2



#21
Trichlorotrifluoroethane
Concen: 1.78 ng
RT: 9.00 min Scan# 1003
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

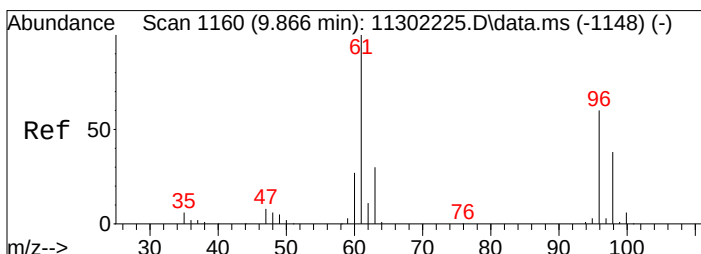
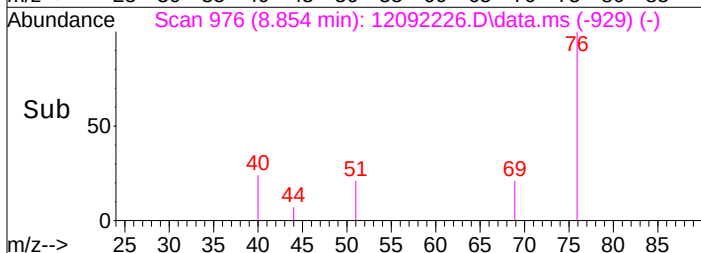
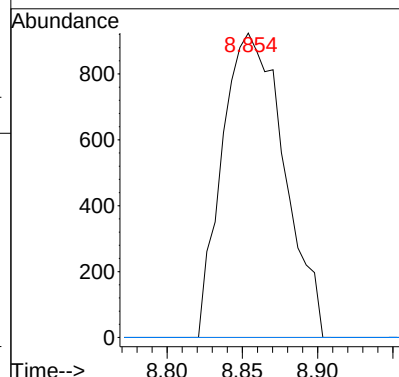
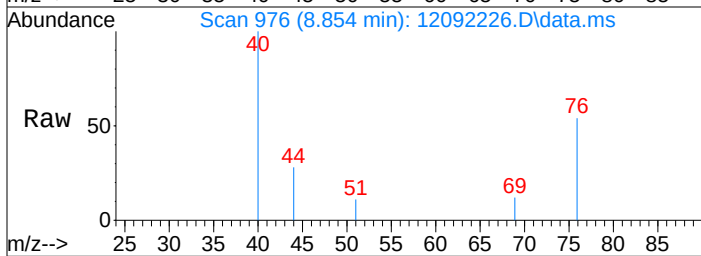
Tgt Ion: 151 Resp: 19145
Ion Ratio Lower Upper
151 100
101 107.7 98.3 138.3





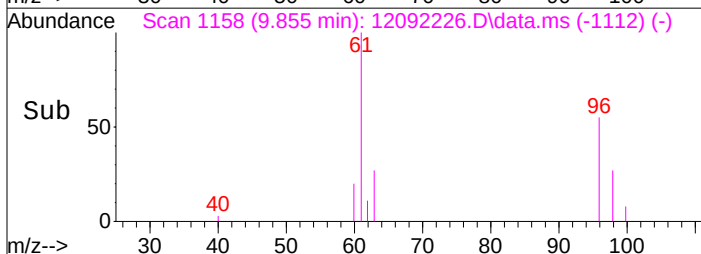
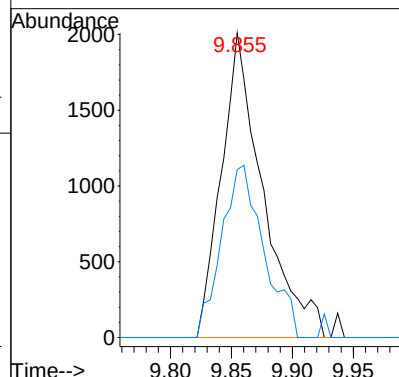
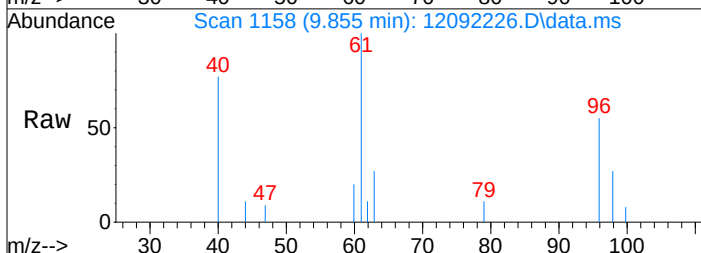
#22
Carbon Disulfide
Concen: 0.06 ng
RT: 8.85 min Scan# 976
Delta R.T. 0.011 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

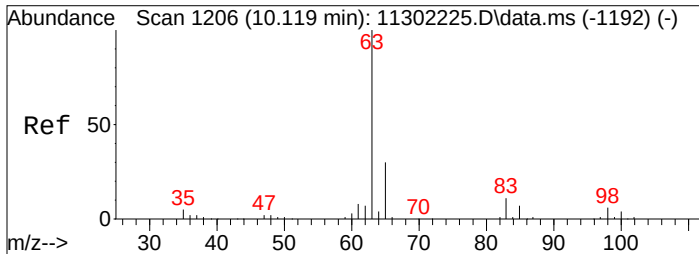
Tgt Ion: 76 Resp: 2633
Ion Ratio Lower Upper
76 100
78 0.0 0.0 29.1



#23
trans-1,2-Dichloroethene
Concen: 0.26 ng
RT: 9.85 min Scan# 1158
Delta R.T. 0.006 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

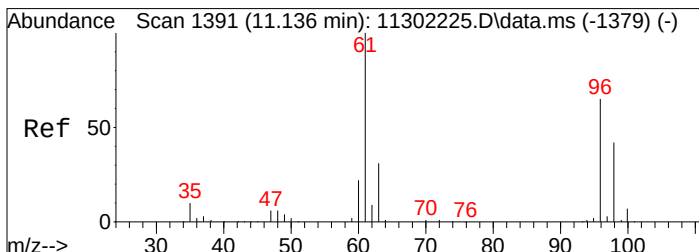
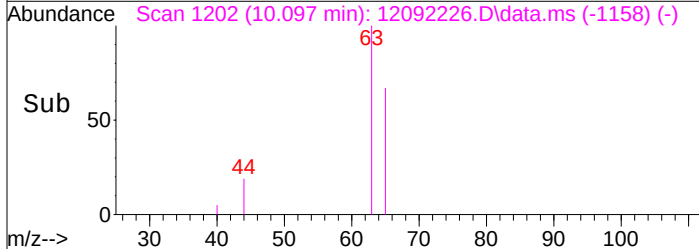
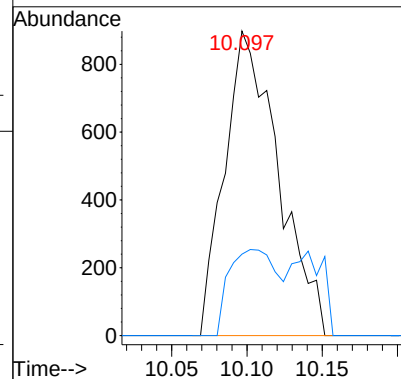
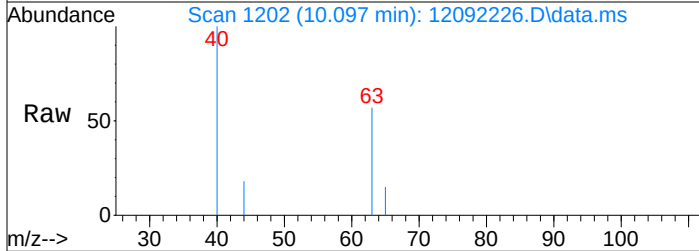
Tgt Ion: 61 Resp: 4762
Ion Ratio Lower Upper
61 100
96 57.5 39.9 79.9





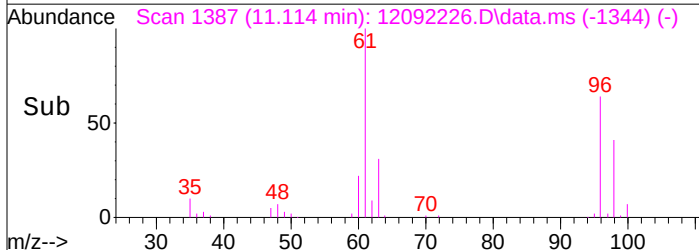
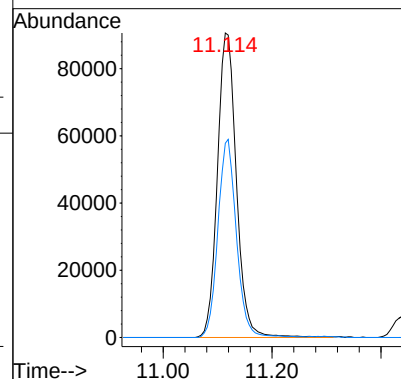
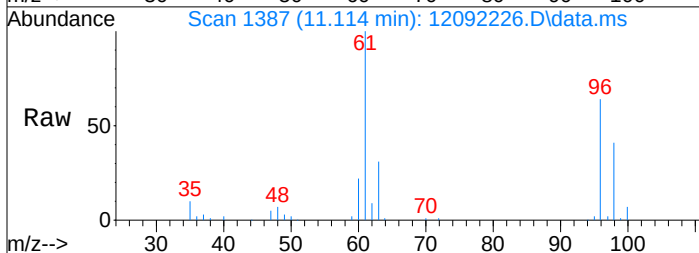
#24
1,1-Dichloroethane
Concen: 0.09 ng
RT: 10.10 min Scan# 1202
Delta R.T. -0.005 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

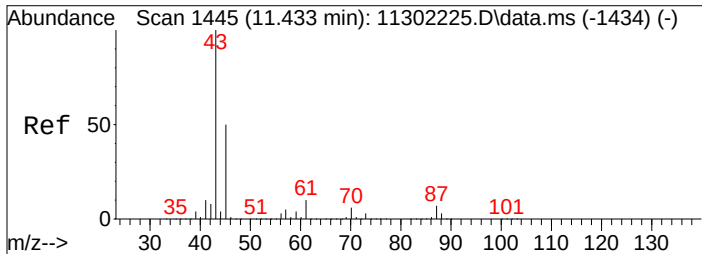
Tgt Ion: 63 Resp: 2237
Ion Ratio Lower Upper
63 100
65 25.3 10.0 50.0



#28
cis-1,2-Dichloroethene
Concen: 12.00 ng
RT: 11.11 min Scan# 1387
Delta R.T. -0.011 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

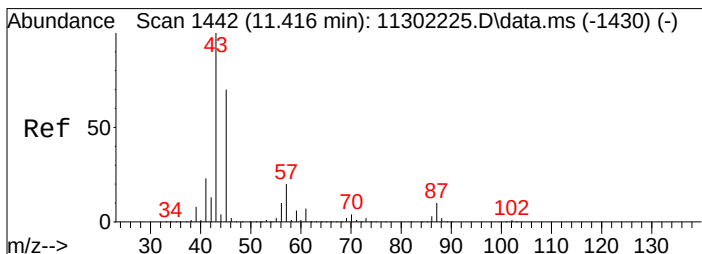
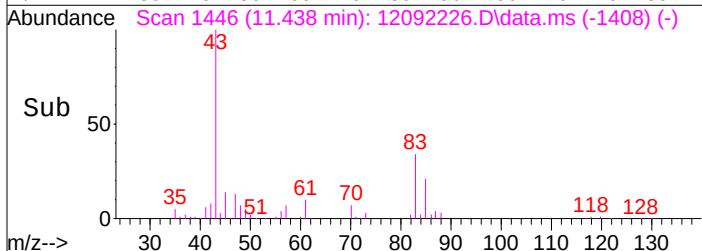
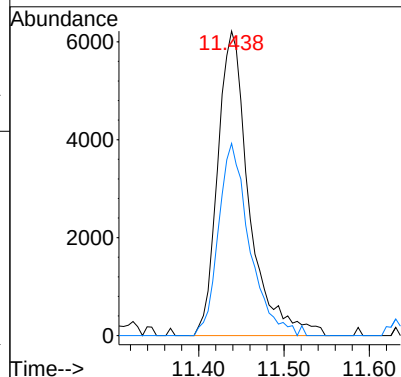
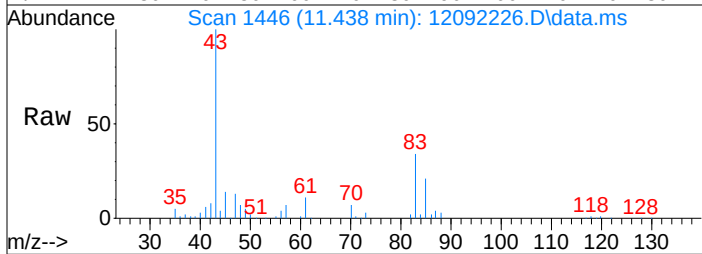
Tgt Ion: 61 Resp: 220149
Ion Ratio Lower Upper
61 100
96 63.2 44.9 84.9





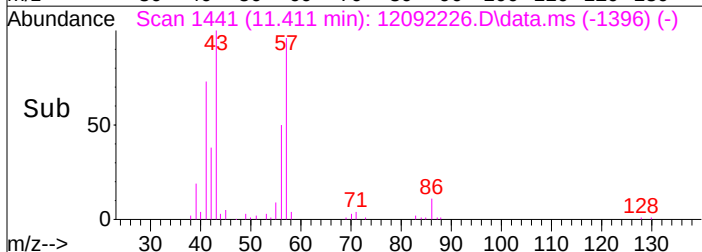
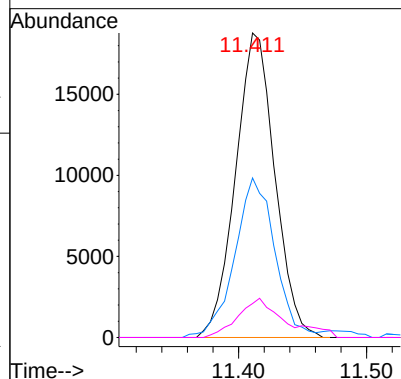
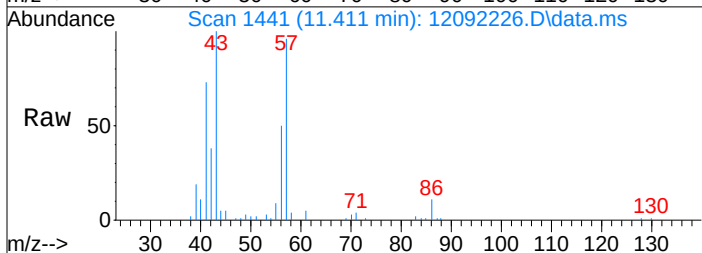
#30
Ethyl Acetate
Concen: 2.56 ng
RT: 11.44 min Scan# 1446
Delta R.T. 0.011 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

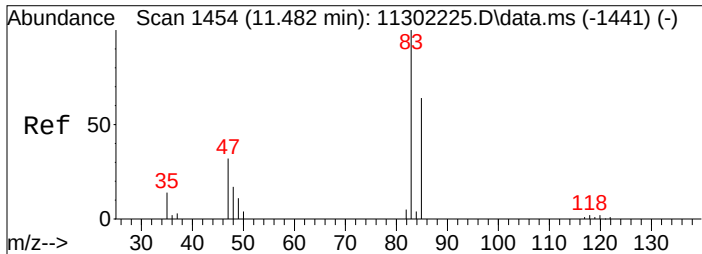
Tgt Ion: 61 Resp: 15912
Ion Ratio Lower Upper
61 100
70 62.5 39.4 79.4



#31
n-Hexane
Concen: 1.41 ng
RT: 11.41 min Scan# 1441
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

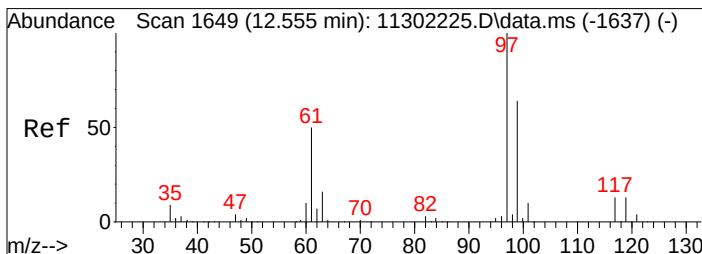
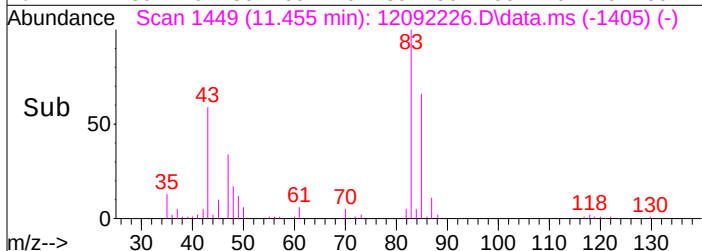
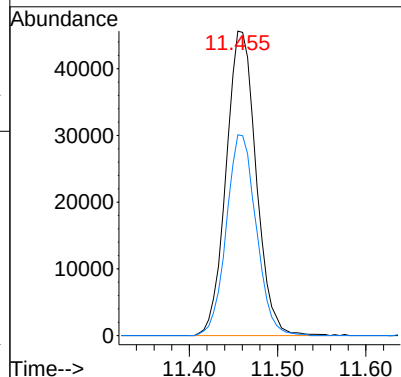
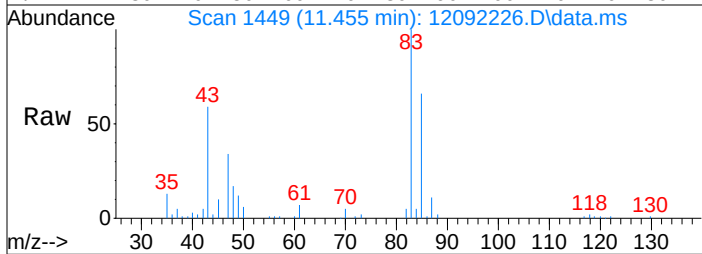
Tgt Ion: 57 Resp: 40186
Ion Ratio Lower Upper
57 100
56 53.4 39.5 59.3
86 15.3 10.2 15.4





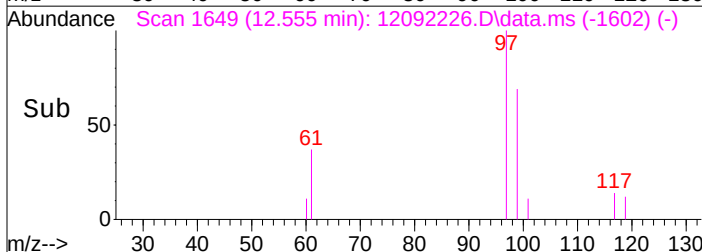
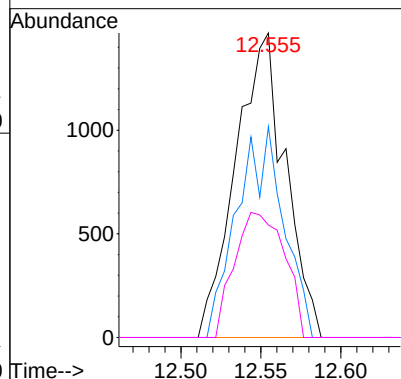
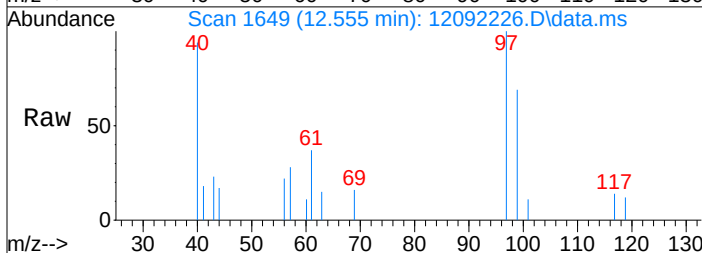
#32
Chloroform
Concen: 5.16 ng
RT: 11.45 min Scan# 1449
Delta R.T. -0.005 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

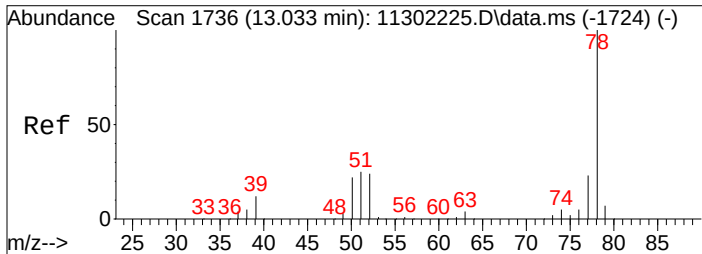
Tgt Ion: 83 Resp: 107989
Ion Ratio Lower Upper
83 100
85 65.4 45.4 85.4



#38
1,1,1-Trichloroethane
Concen: 0.17 ng
RT: 12.55 min Scan# 1649
Delta R.T. 0.011 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

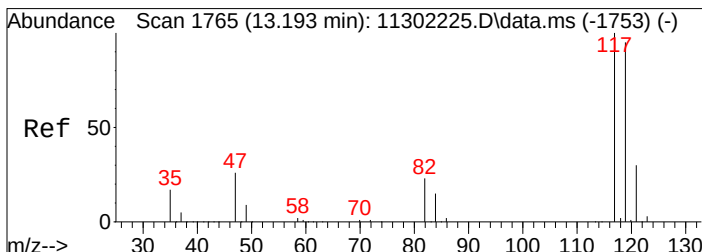
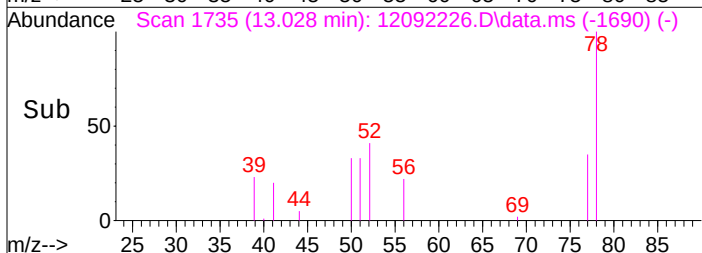
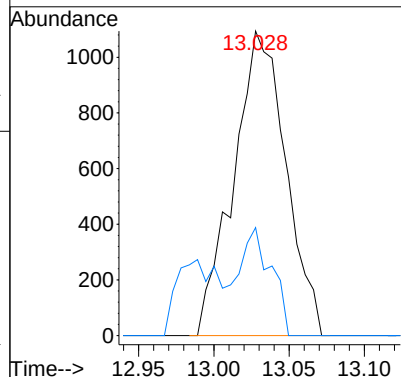
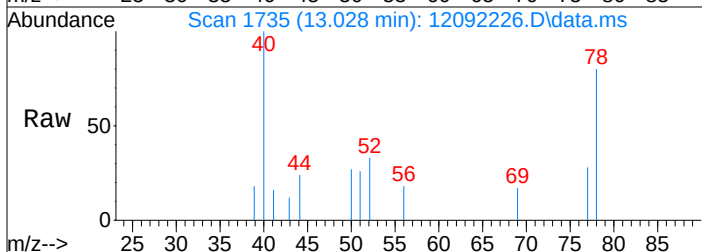
Tgt Ion: 97 Resp: 3178
Ion Ratio Lower Upper
97 100
99 64.6 44.1 84.1
61 41.5 30.1 70.1





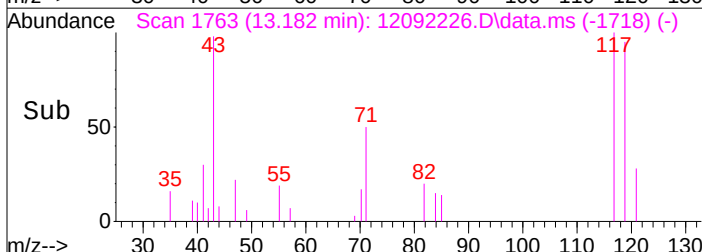
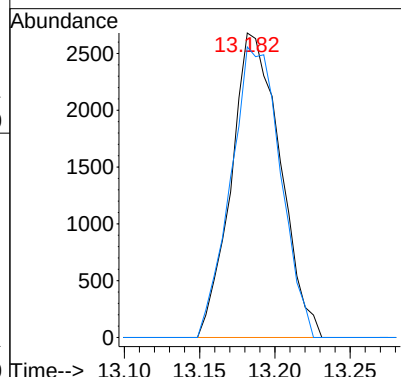
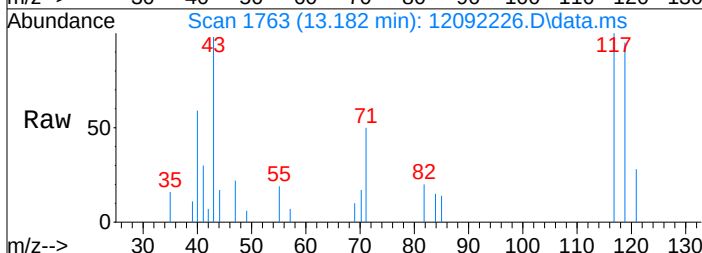
#41
Benzene
Concen: 0.06 ng
RT: 13.03 min Scan# 1735
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

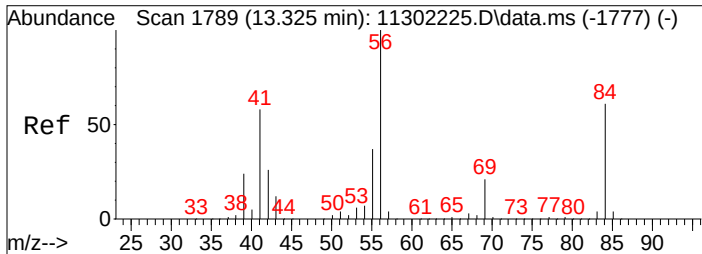
Tgt Ion: 78 Resp: 2642
Ion Ratio Lower Upper
78 100
77 20.3 2.7 42.7



#42
Carbon Tetrachloride
Concen: 0.36 ng
RT: 13.18 min Scan# 1763
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

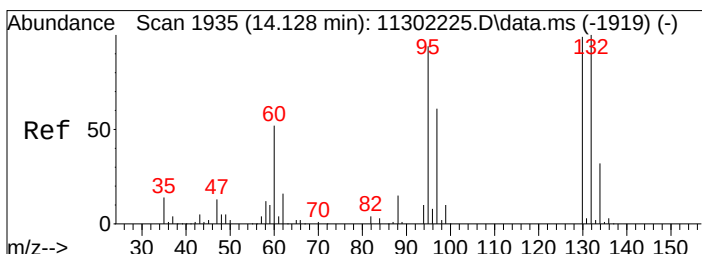
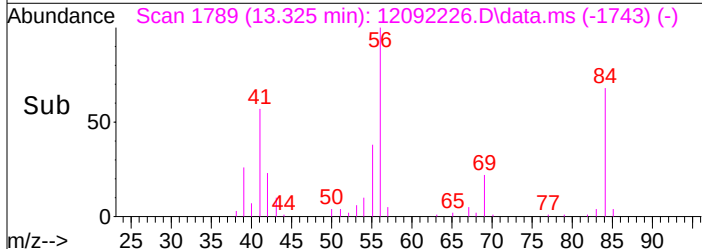
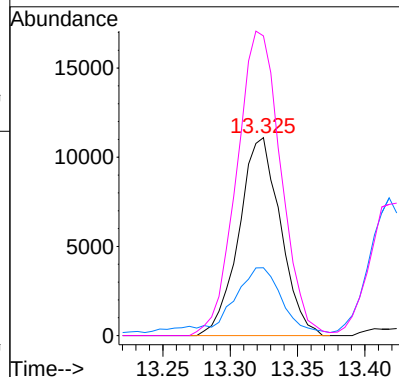
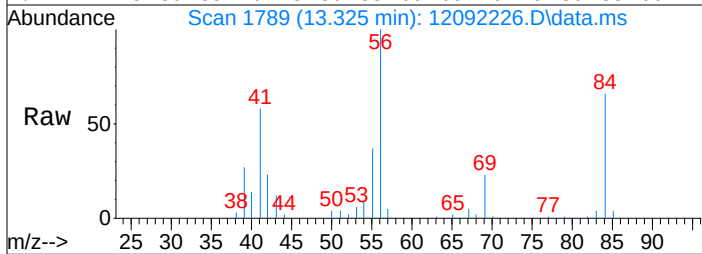
Tgt Ion: 117 Resp: 6053
Ion Ratio Lower Upper
117 100
119 96.8 76.1 116.1





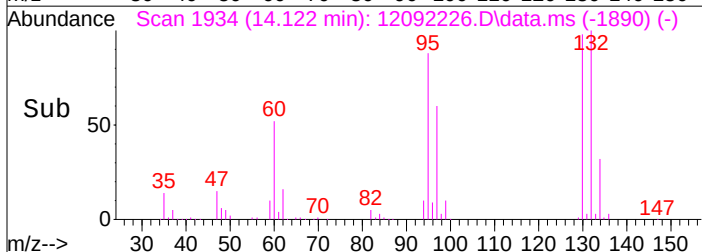
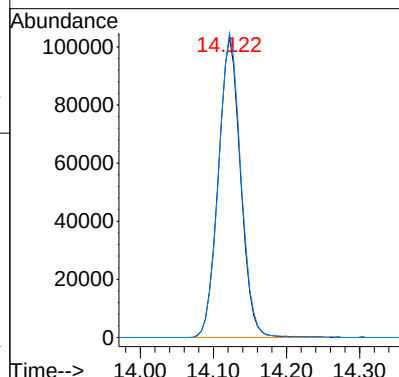
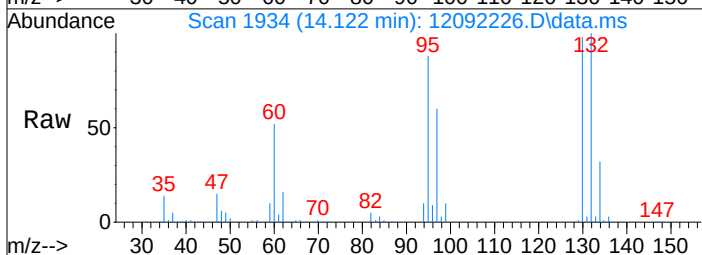
#43
Cyclohexane
Concen: 1.37 ng
RT: 13.32 min Scan# 1789
Delta R.T. 0.006 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

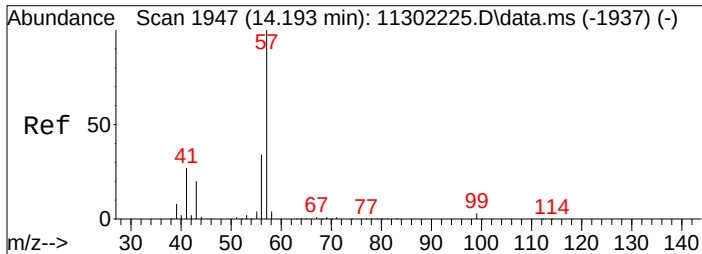
Tgt Ion:	84	Resp:	23813
Ion Ratio		Lower	Upper
84	100		
69	39.9	14.6	54.6
56	163.5	143.0	183.0



#47
Trichloroethene
Concen: 17.25 ng
RT: 14.12 min Scan# 1934
Delta R.T. -0.005 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

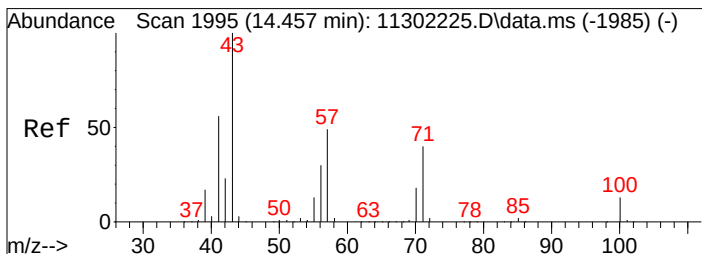
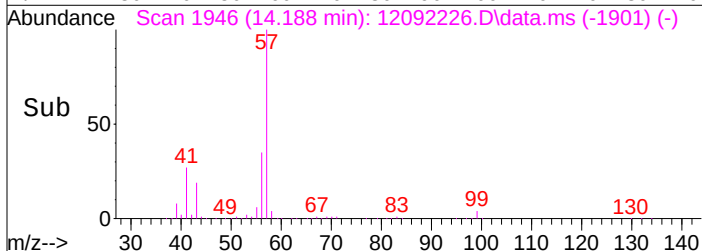
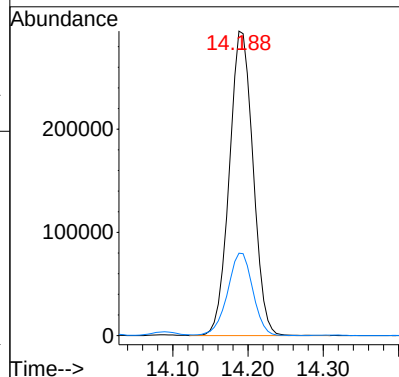
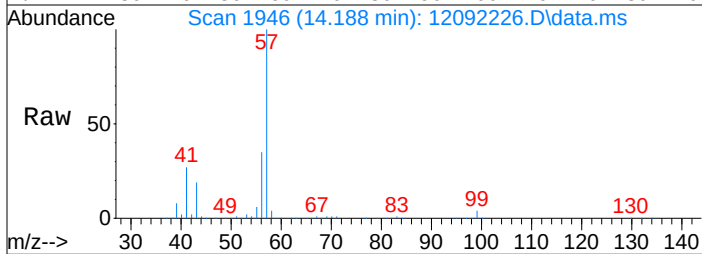
Tgt Ion:	130	Resp:	218708
Ion Ratio		Lower	Upper
130	100		
132	101.6	79.3	119.3





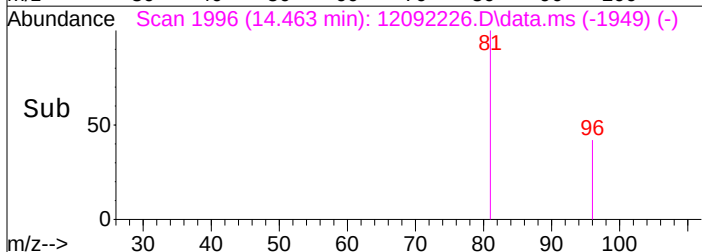
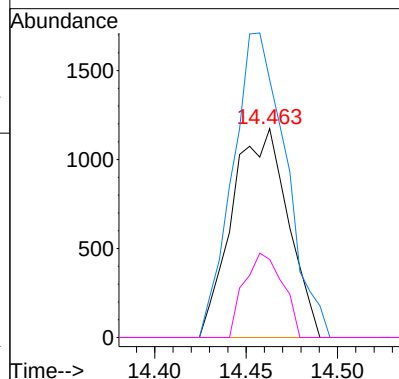
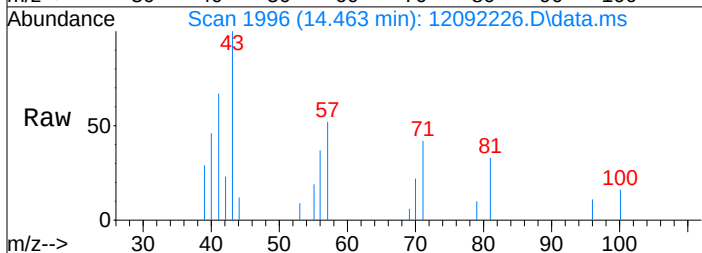
#49
 2,2,4-Trimethylpentane (Isooctane)
 Concen: 9.59 ng
 RT: 14.19 min Scan# 1946
 Delta R.T. 0.000 min
 Lab File: 12092226.D
 Acq: 9 Dec 2022 18:29

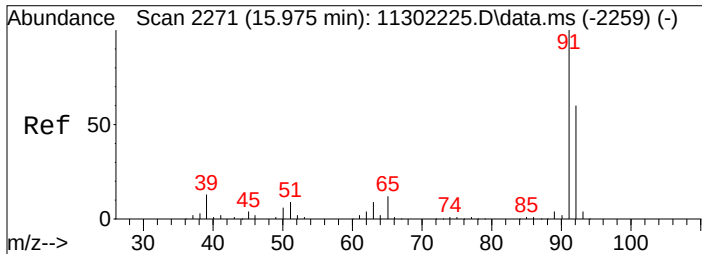
Tgt Ion:	57	Resp:	645086
Ion Ratio	Lower	Upper	
57	100		
41	28.9	6.6	46.6



#51
 n-Heptane
 Concen: 0.21 ng
 RT: 14.46 min Scan# 1996
 Delta R.T. 0.011 min
 Lab File: 12092226.D
 Acq: 9 Dec 2022 18:29

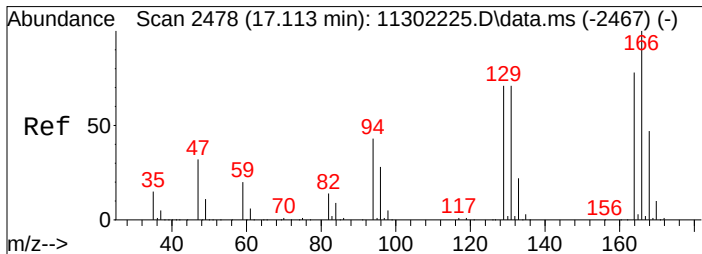
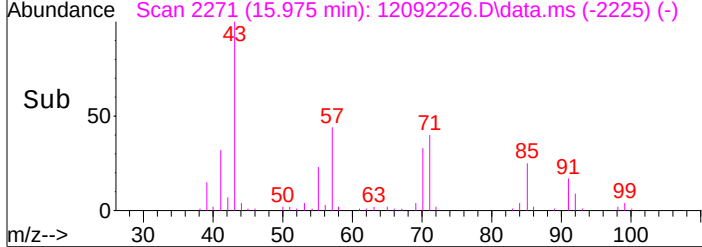
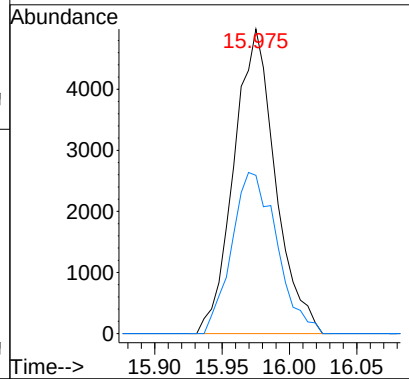
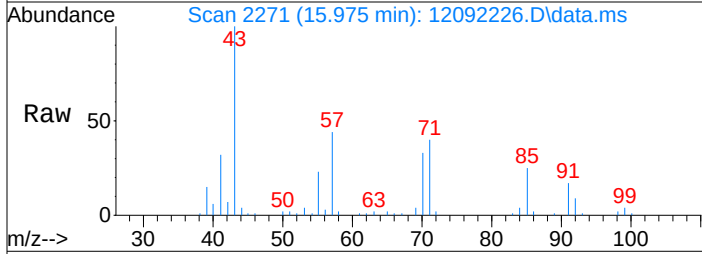
Tgt Ion:	71	Resp:	2490
Ion Ratio	Lower	Upper	
71	100		
57	138.9	104.3	144.3
100	28.0	13.1	53.1





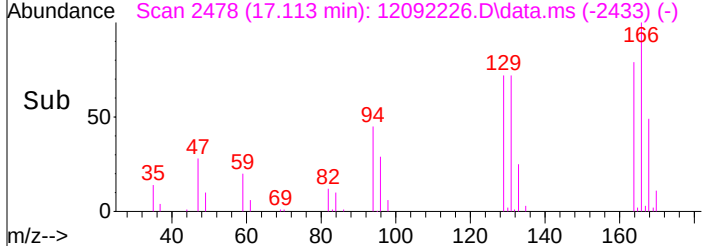
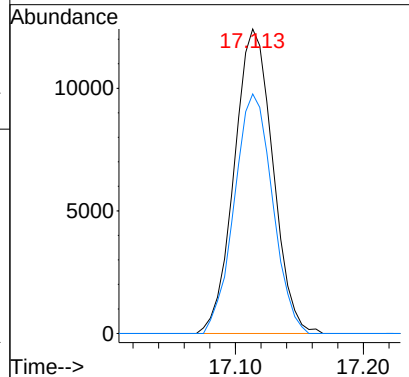
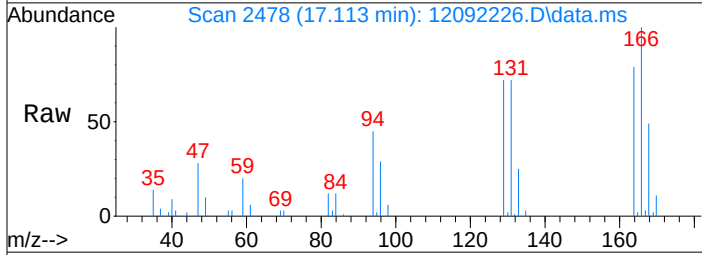
#58
Toluene
Concen: 0.21 ng
RT: 15.98 min Scan# 2271
Delta R.T. 0.006 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

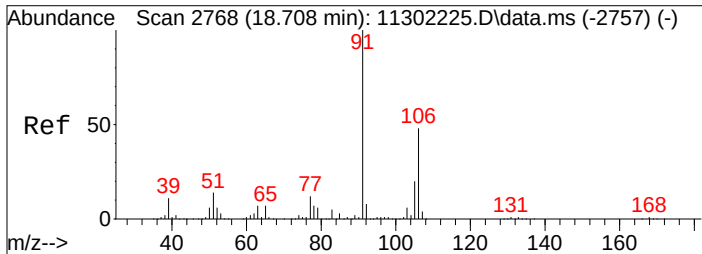
Tgt Ion: 91 Resp: 10676
Ion Ratio Lower Upper
91 100
92 57.4 40.3 80.3



#64
Tetrachloroethene
Concen: 1.88 ng
RT: 17.11 min Scan# 2478
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

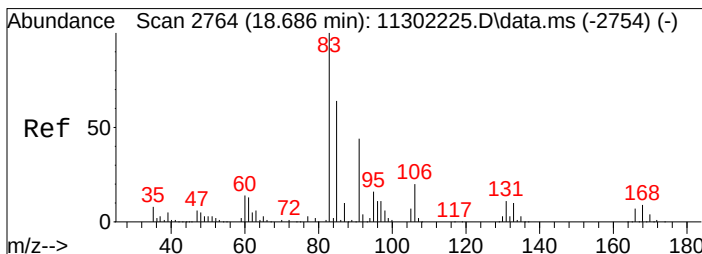
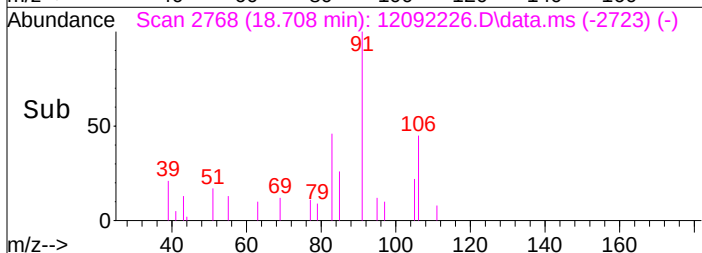
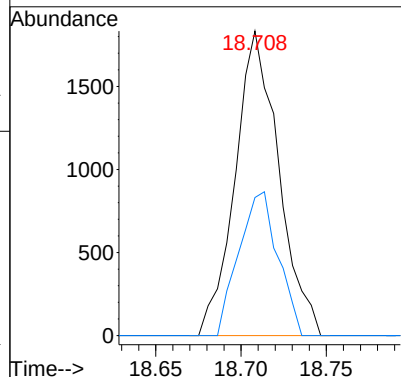
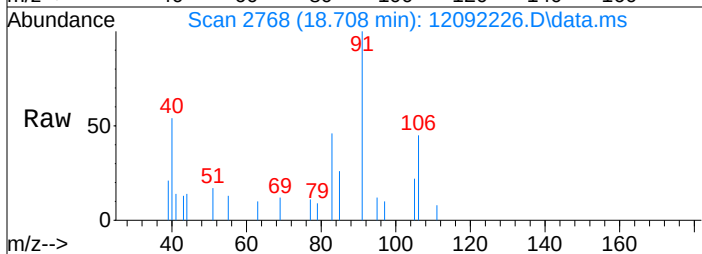
Tgt Ion: 166 Resp: 26067
Ion Ratio Lower Upper
166 100
164 78.0 59.0 99.0





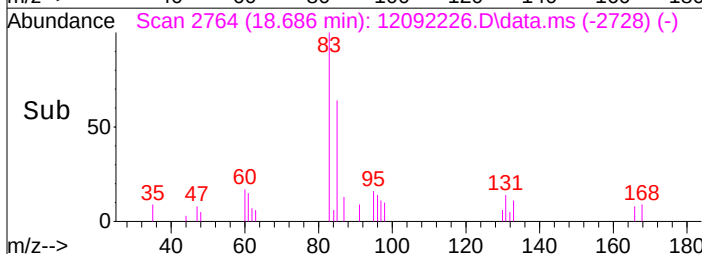
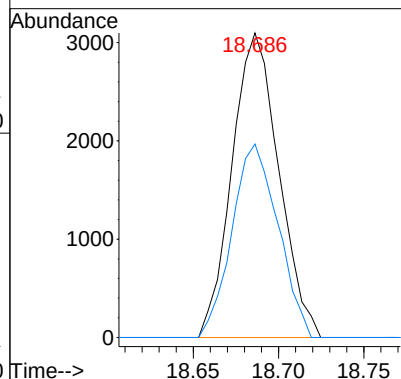
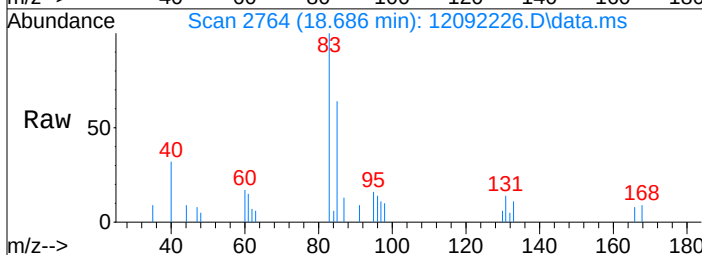
#70
o-Xylene
Concen: 0.07 ng
RT: 18.71 min Scan# 2768
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

Tgt Ion: 91 Resp: 3265
Ion Ratio Lower Upper
91 100
106 42.3 27.6 67.6



#72
1,1,2,2-Tetrachloroethane
Concen: 0.28 ng
RT: 18.69 min Scan# 2764
Delta R.T. 0.000 min
Lab File: 12092226.D
Acq: 9 Dec 2022 18:29

Tgt Ion: 83 Resp: 5903
Ion Ratio Lower Upper
83 100
85 62.5 44.5 84.5



Data Path : I:\MS16\DATA\2022_12\09\
 Data File : 12092226.D
 Acq On : 9 Dec 2022 18:29
 Operator : CG/WA
 Sample : P2205493-001dup (1000mL)
 Misc : S35-11092201
 ALS Vial : 11 Sample Multiplier: 1

Integration Parameters: LSCINT.P

Integrator: RTE
 Smoothing : OFF
 Sampling : 1
 Start Thrs: 0.15
 Stop Thrs : 0.05

Filtering: 5
 Min Area: 10000 Area counts
 Max Peaks: 200
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
 Peak separation: 5

Method : I:\MS16\METHODS\R16113022.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

Signal : TIC: 12092226.D\data.ms

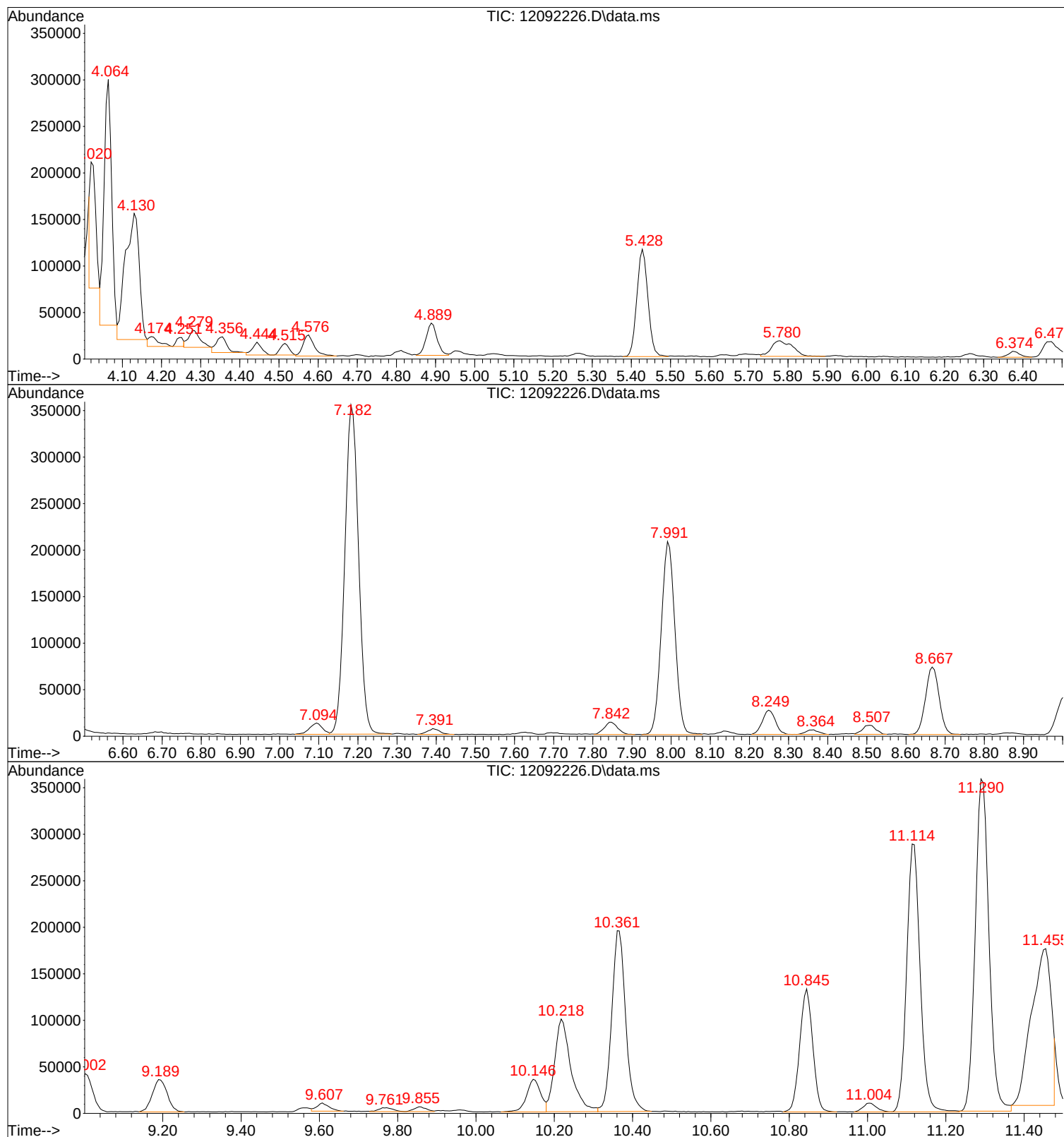
peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.020	96	97	101	rVB2	135436	127163	14.58%	1.901%
2	4.064	101	105	109	rVB	264087	347440	39.82%	5.194%
3	4.130	109	117	123	rVB4	135429	329976	37.82%	4.932%
4	4.174	123	125	135	rVB8	10553	18639	2.14%	0.279%
5	4.251	135	139	140	rBV3	9561	11833	1.36%	0.177%
6	4.279	140	144	153	rVB2	18103	36881	4.23%	0.551%
7	4.356	153	158	169	rVB	16835	31145	3.57%	0.466%
8	4.444	169	174	181	rVB6	13875	22541	2.58%	0.337%
9	4.515	181	187	192	rBV2	12539	19506	2.24%	0.292%
10	4.576	192	198	211	rVB	22694	45456	5.21%	0.679%
11	4.889	248	255	263	rVV	34781	67436	7.73%	1.008%
12	5.428	344	353	365	rBV	115449	228003	26.13%	3.408%
13	5.780	408	417	438	rVB2	16739	62842	7.20%	0.939%
14	6.374	518	525	534	rBV2	6400	12801	1.47%	0.191%
15	6.473	534	543	558	rBV2	16636	50387	5.78%	0.753%
16	7.094	646	656	662	rBV	12100	27735	3.18%	0.415%
17	7.182	662	672	691	rVB	353638	861968	98.80%	12.885%
18	7.391	703	710	720	rVB	6283	13062	1.50%	0.195%
19	7.842	785	792	804	rVB2	13223	31707	3.63%	0.474%
20	7.991	807	819	835	rBV	207638	502448	57.59%	7.511%
21	8.249	858	866	879	rVB2	26143	60638	6.95%	0.906%
22	8.364	879	887	894	rVB3	4968	11446	1.31%	0.171%
23	8.507	906	913	921	rVB2	9729	23161	2.65%	0.346%
24	8.667	931	942	955	rBV	72547	175201	20.08%	2.619%
25	9.002	994	1003	1013	rVB2	40929	101551	11.64%	1.518%
26	9.189	1028	1037	1049	rVB	34797	91350	10.47%	1.366%
27	9.607	1108	1113	1123	rVB2	8895	18692	2.14%	0.279%
28	9.761	1135	1141	1151	rVB5	4200	10803	1.24%	0.161%
29	9.855	1151	1158	1165	rBV3	5265	11624	1.33%	0.174%
30	10.146	1196	1211	1217	rBV	35071	88084	10.10%	1.317%
31	10.218	1217	1224	1241	rVV2	99586	288031	33.01%	4.305%
32	10.361	1241	1250	1266	rVB	194300	478570	54.85%	7.154%
33	10.845	1327	1338	1352	rBV	132241	303339	34.77%	4.534%
34	11.004	1360	1367	1377	rBV3	9464	22353	2.56%	0.334%
35	11.114	1377	1387	1409	rBV	287869	688511	78.92%	10.292%
36	11.290	1409	1419	1433	rBV	356989	872429	100.00%	13.041%
37	11.455	1433	1449	1453	rBV4	168441	595094	68.21%	8.895%

Sum of corrected areas: 6689846

Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092226.D
Acq On : 9 Dec 2022 18:29
Operator : CG/WA
Sample : P2205493-001dup (1000mL)
Misc : S35-11092201
ALS Vial : 11 Sample Multiplier: 1

Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

TIC Library : L:\DATABASE\NIST17\NIST17.L
TIC Integration Parameters: LSCINT.P



Data Path : I:\MS16\DATA\2022_12\09\
Data File : 12092226.D
Acq On : 9 Dec 2022 18:299
Operator : CG/WAA
Sample : P2205493-001dup (1000mL)
Misc : S35-110922011
ALS Vial : 11 Sample Multiplier: 11

Quant Method : I:\MS16\METHODS\R16113022.MM
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS))

TIC Library : L:\DATABASE\NIST17\NIST17.LL
TIC Integration Parameters: LSCINT.PP

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

No Library Search Compounds Detected

CG 12/15/22

Method Path : I:\MS16\METHODS\
Method File : R16113022.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Thu Dec 01 09:30:33 2022
Response Via : Initial Calibration

CG 12/1/22

Calibration Files

0.1 =11302220.D 0.2 =11302221.D 0.5 =11302222.D 1.0 =11302223.D 5.0 =11302224.D 25 =11302225.D 50 =11302226.D
100 =11302228.D

Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD

1) IR Bromochloromethane...					ISTD					
2) T Propene	2.036	2.032	2.054	1.992	2.675	2.518	2.616	2.814	2.342	14.75
3) T Dichlorodifluo...	2.165	2.132	2.394	2.196	2.091	2.194	2.114	2.095	2.173	4.54
4) T Chloromethane	2.627	2.588	2.798	2.677	2.173	2.526	2.055	1.148	2.324	23.17
5) T 1,2-Dichloro-1...	1.141	1.239	1.289	1.173	1.148	1.194	1.204	1.170	1.195	4.14
6) T Vinyl Chloride	1.810	1.825	2.092	2.006	1.911	1.974	1.956	1.867	1.930	4.97
7) T 1,3-Butadiene	1.614	1.523	1.718	1.739	1.804	1.980	1.987	1.907	1.784	9.44
8) T Bromomethane	0.833	0.822	0.917	0.928	0.869	0.896	0.905	0.862	0.879	4.43
9) T Chloroethane	0.770	0.830	0.929	0.912	0.869	0.849	0.863	0.827	0.856	5.86
10) T Ethanol	1.429	1.316	1.399	1.329	1.304	1.343	1.305	1.236	1.333	4.49
11) T Acetonitrile	3.677	3.510	3.698	3.475	3.469	3.404	3.153	3.087	3.434	6.39
12) T Acrolein	0.824	0.821	0.959	0.956	0.972	1.012	0.956	0.946	0.931	7.49
13) T Acetone	1.244	1.133	1.175	1.099	1.066	1.120	1.050	1.057	1.118	5.92
14) T Trichlorofluor...	1.861	1.988	2.016	1.995	1.916	1.956	1.932	1.917	1.948	2.63
15) T 2-Propanol (Is...	3.571	3.536	4.083	3.921	3.077	3.859	3.204	2.639	3.486	13.97
16) T Acrylonitrile	1.940	1.879	2.106	2.030	2.101	2.234	2.120	2.108	2.065	5.43
17) T 1,1-Dichloroet...	0.861	0.869	0.939	0.948	0.966	1.020	0.996	1.007	0.951	6.31
18) T 2-Methyl-2-Pro...	2.560	2.568	2.882	2.942	2.579	3.344	2.466	1.076	2.552	25.97
19) T Methylene Chlo...	1.077	1.047	1.097	1.076	1.009	1.023	0.986	0.992	1.039	4.07
20) T 3-Chloro-1-pro...	1.785	1.865	2.024	2.095	2.171	2.408	2.194	2.242	2.098	9.69
21) T Trichlorotrifl...	0.816	0.977	1.035	0.966	0.915	0.953	0.929	0.937	0.941	6.63
22) T Carbon Disulfide	3.941	3.697	3.817	3.689	3.598	3.729	3.669	3.803	3.743	2.86
23) T trans-1,2-Dich...	1.228	1.426	1.613	1.595	1.675	1.779	1.747	1.768	1.604	11.93
24) T 1,1-Dichloroet...	2.152	2.046	2.187	2.127	2.050	2.094	2.022	2.021	2.087	3.00
25) T Methyl tert-Bu...	2.360	2.390	2.551	2.586	2.904	3.237	3.172	2.399	2.700	13.20
26) T Vinyl Acetate		0.028	0.135	0.166	0.209	0.263	0.261	0.265	0.190	46.25
27) T 2-Butanone (MEK)	0.319	0.498	0.660	0.670	0.706	0.775	0.754	0.745	0.641	24.38
28) T cis-1,2-Dichlo...	1.393	1.461	1.620	1.596	1.612	1.753	1.721	1.715	1.609	7.92
29) T Diisopropyl Ether	0.857	0.790	0.999	0.957	1.002	1.131	1.133	1.031	0.988	12.16
30) T Ethyl Acetate	0.412	0.448	0.545	0.538	0.570	0.652	0.643	0.556	0.545	15.29
31) T n-Hexane	2.093	2.180	2.443	2.464	2.622	2.924	2.768	2.533	2.503	11.09
32) T Chloroform	1.842	1.822	1.934	1.827	1.792	1.859	1.823	1.788	1.836	2.50
33) S 1,2-Dichloroet...	1.784	1.789	1.797	1.786	1.753	1.781	1.716	1.680	1.761	2.38
34) T Tetrahydrofura...	0.528	0.578	0.588	0.603	0.644	0.700	0.687	0.678	0.626	9.75
35) T Ethyl tert-But...	0.827	0.972	1.092	1.141	1.227	1.379	1.403	1.467	1.189	18.82
36) T 1,2-Dichloroet...	1.515	1.507	1.702	1.603	1.588	1.665	1.617	1.601	1.600	4.14
(NT)										

37) IR 1,4-Difluorobenzen...					ISTD					
38) T 1,1,1-Trichlor...	0.348	0.377	0.398	0.379	0.372	0.388	0.389	0.381	0.379	3.99
39) T Isopropyl Acetate									0.000	-1.00
40) T 1-Butanol									0.000	-1.00
41) T Benzene	0.895	0.831	0.848	0.843	0.863	0.907	0.890	0.903	0.873	3.42
42) T Carbon Tetrach...	0.319	0.311	0.334	0.325	0.324	0.350	0.353	0.356	0.334	5.10

Method Path : I:\MS16\METHODS\
Method File : R16113022.M

Title		EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)														ISTD													
43)	T	Cyclohexane	0.284	0.287	0.320	0.332	0.364	0.394	0.391	0.398	0.346	13.63																	
44)	T	tert-Amyl Meth...	0.480	0.493	0.549	0.542	0.608	0.697	0.720	0.754	0.605	17.54																	
45)	T	1,2-Dichloropr...	0.275	0.261	0.289	0.269	0.264	0.282	0.277	0.277	0.274	3.35																	
46)	T	Bromodichlorom...	0.274	0.294	0.322	0.311	0.311	0.328	0.330	0.334	0.313	6.55																	
47)	T	Trichloroethene	0.206	0.220	0.258	0.248	0.256	0.275	0.278	0.282	0.253	10.91																	
48)	T	1,4-Dioxane			0.150	0.152	0.172	0.195	0.196	0.201	0.178	12.81																	
49)	T	2,2,4-Trimethy...	1.208	1.197	1.348	1.314	1.375	1.467	1.430	1.393	1.342	7.29																	
50)	T	Methyl Methacr...			0.072	0.086	0.099	0.114	0.114	0.115	0.100	17.94																	
51)	T	n-Heptane	0.189	0.190	0.233	0.237	0.251	0.275	0.270	0.272	0.240	14.54																	
52)	T	cis-1,3-Dichlo...	0.194	0.231	0.280	0.297	0.341	0.393	0.392	0.401	0.316	24.88																	
53)	T	4-Methyl-2-pen...	0.161	0.178	0.245	0.249	0.286	0.328	0.321	0.316	0.260	24.71																	
54)	T	trans-1,3-Dich...			0.242	0.255	0.315	0.377	0.381	0.396	0.328	20.58																	
55)	T	1,1,2-Trichlor...	0.187	0.198	0.233	0.224	0.226	0.237	0.234	0.243	0.223	8.84																	
Chlorobenzene-d5 (.....ISTD.....)																													
56)	IR	Chlorobenzene-d5	4.390	4.387	4.425	4.419	4.368	4.191	4.281	4.190	4.331	2.25																	
57)	S	Toluene-d8 (SS2)	3.718	3.652	3.958	3.770	3.851	3.955	4.063	4.071	3.880	4.05																	
58)	T	Toluene	1.946	1.796	2.521	2.805	3.144	3.405	3.295	2.938	2.731	22.00																	
59)	T	2-Hexanone	0.935	0.989	1.153	1.088	1.088	1.153	1.205	1.207	1.102	8.95																	
60)	T	Dibromochlorom...	0.706	0.877	1.005	1.014	1.014	1.074	1.117	1.106	0.989	13.85																	
61)	T	1,2-Dibromoethane	1.950	2.091	2.635	2.874	3.502	3.893	3.791	3.416	3.019	24.80																	
62)	T	n-Butyl Acetate	0.795	0.849	1.065	1.084	1.177	1.237	1.251	1.210	1.084	16.19																	
63)	T	n-Octane	0.908	1.021	1.127	1.064	1.039	1.104	1.162	1.173	1.075	8.10																	
64)	T	Tetrachloroethene	2.829	2.664	2.909	2.747	2.721	2.839	2.960	3.003	2.834	4.20																	
65)	T	Chlorobenzene	3.485	3.325	3.842	3.891	4.408	4.764	4.951	5.078	4.218	16.01																	
66)	T	Ethylbenzene	2.669	2.714	3.189	3.252	3.577	3.818	4.005	4.111	3.417	16.20																	
67)	T	m- & p-Xylenes	0.701	0.739	0.880	0.862	0.918	0.990	1.038	1.055	0.898	14.53																	
68)	T	Bromoform	1.537	1.941	2.123	2.686	3.017	3.123	3.200	2.518	25.94																		
69)	T	Styrene	2.519	2.700	3.119	3.181	3.592	3.888	4.023	4.148	3.396	18.00																	
70)	T	o-Xylene	2.113	2.184	2.708	2.809	3.209	3.322	3.154	2.832	2.791	16.17																	
71)	T	n-Nonane	1.522	1.530	1.651	1.612	1.637	1.734	1.751	1.810	1.656	6.25																	
72)	T	1,1,2,2-Tetrac...	1.362	1.352	1.377	1.367	1.420	1.416	1.474	1.504	1.409	3.95																	
73)	S	Bromofluoroben...	3.953	3.789	4.166	4.246	4.605	5.060	5.216	5.307	4.543	13.04																	
74)	T	Cumene	1.539	1.506	1.643	1.762	2.235	2.474	2.618	2.734	2.064	24.62																	
75)	T	alpha-Pinene	4.094	4.227	4.924	5.111	5.736	6.243	6.410	6.459	5.400	17.65																	
76)	T	n-Propylbenzene									0.000	-1.00																	
77)	T	3-Ethyltoluene	2.828	3.029	3.594	3.905	4.553	5.065	5.240	5.300	4.189	23.65																	
78)	T	4-Ethyltoluene	2.808	2.852	3.411	3.460	3.908	4.249	4.412	4.490	3.699	18.09																	
79)	T	1,3,5-Trimethy...									0.000	-1.00																	
80)	T	alpha-Methylst...									0.000	-1.00																	
81)	T	2-Ethyltoluene									0.000	-1.00																	
82)	T	1,2,4-Trimethy...	2.424	2.483	3.218	3.444	4.013	4.678	4.941	4.621	3.728	26.52																	
83)	T	n-Decane									0.000	-1.00																	
84)	T	Benzyl Chloride			1.746	1.923	2.651	3.643	4.062	3.903	2.988	34.16																	
85)	T	1,3-Dichlorobe...	1.813	1.931	2.181	2.140	2.365	2.608	2.737	2.595	2.296	14.64																	
86)	T	1,4-Dichlorobe...	2.102	1.894	2.167	2.197	2.346	2.597	2.697	2.719	2.340	12.95																	
87)	T	sec-Butylbenzene	3.502	3.742	4.637	4.768	5.528	6.024	6.219	6.044	5.058	20.99																	
88)	T	4-Isopropyltol...	2.996	3.188	3.929	4.254	4.939	5.508	5.693	5.478	4.498	23.70																	
89)	T	1,2,3-Trimethy...									0.000	-1.00																	
90)	T	1,2-Dichlorobe...	1.799	1.800	2.147	2.116	2.335	2.534	2.643	2.435	2.226	14.27																	
91)	T	d-Limonene			1.067	1.192	1.550	1.828	1.950	1.806	1.565	23.25																	
92)	T	1,2-Dibromo-3-...	0.620	0.674	0.770	0.780	0.909	1.003	1.060	1.030	0.856	19.66																	
93)	T	n-Undecane									0.000	-1.00																	
94)	T	1,2,4-Trichlor...			1.272	1.386	1.683	2.019	2.220	2.136	1.786	22.39																	

Method Path : I:\MS16\METHODS\
Method File : R16113022.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

95)	T	Naphthalene	3.429	3.797	5.095	6.113	6.753	6.892	5.347	27.87
96)	T	n-Dodecane							0.000	-1.00
97)	T	Hexachlorobuta...	0.862	1.025	1.022	1.038	1.077	1.172	1.295	14.98
98)	T	Cyclohexanone							0.000	-1.00
99)	T	tert-Butylbenzene	2.929	2.800	3.405	3.625	4.146	4.760	4.911	20.86
100)	T	n-Butylbenzene	2.388	2.735	3.526	3.659	4.447	4.923	5.148	26.96
101)	T	1,1,1,2-Tetrac...	1.059	0.984	1.081	0.993	1.002	1.056	1.117	4.83

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

CG 12/2/22

1ng/L Std. ID: S35-11292205
4ng/L Std. ID: S35-11292201
200ng/L Std. ID: S35-11292203

40ng/L Std. ID: S35-11292201
200ng/L Std. ID: S35-11292201
1000ng/L Std. ID: S35-11292203

Dilution Factors:															Working STD Conc.(ng/L):	
		1		5		25		50		250		1000		Injection (L):	ICAL Points:	
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	2ng/L	1ng/L	0.5ng	0.25ng	0.125ng	0.0625ng	0.03125ng	0.015625ng		
Propene	1.05	1050	210	42.0	21.0	4.20	2.10	0.420	0.210	0.0420	0.0210	0.00420	0.00210	0.000420		
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Chloromethane	1.03	1030	206	41.2	20.6	4.12	2.06	0.412	0.206	0.0412	0.0206	0.00412	0.00206	0.000412		
Freon-114	1.04	1040	208	41.6	20.8	4.16	2.08	0.416	0.208	0.0416	0.0208	0.00416	0.00208	0.000416		
Vinyl Chloride	1.01	1010	202	40.4	20.2	4.04	2.02	0.404	0.202	0.0404	0.0202	0.00404	0.00202	0.000404		
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Bromomethane	1.02	1020	204	40.8	20.4	4.08	2.04	0.408	0.204	0.0408	0.0204	0.00408	0.00204	0.000408		
Chloroethane	1.03	1030	206	41.2	20.6	4.12	2.06	0.412	0.206	0.0412	0.0206	0.00412	0.00206	0.000412		
Ethanol	3.45	3450	690	138.0	69.0	13.80	6.90	1.380	0.690	0.1380	0.0690	0.01380	0.00690	0.001380		
Acetonitrile	0.91	910	182	36.4	18.2	3.64	1.82	0.364	0.182	0.0364	0.0182	0.00364	0.00182	0.000364		
Acrolein	1.93	1930	386	77.2	38.6	7.72	3.86	0.772	0.386	0.0772	0.0386	0.00772	0.00386	0.000772		
Acetone	5.27	5270	1054	210.8	105.4	21.08	10.54	2.108	1.054	0.2108	0.1054	0.02108	0.01054	0.002108		
Trichlorofluoromethane	1.04	1040	208	41.6	20.8	4.16	2.08	0.416	0.208	0.0416	0.0208	0.00416	0.00208	0.000416		
Isopropanol	2.05	2050	410	82.0	41.0	8.20	2.05	0.820	0.410	0.0820	0.0410	0.00820	0.00410	0.000820		
Acrylonitrile	2.05	2050	410	82.0	41.0	8.20	2.05	0.820	0.410	0.0820	0.0410	0.00820	0.00410	0.000820		
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	2.16	0.432	0.216	0.0432	0.0216	0.00432	0.00216	0.000432		
tert-Butanol	2.11	2110	422	84.4	42.2	8.44	2.11	0.844	0.422	0.0844	0.0422	0.00844	0.00422	0.000844		
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Allyl Chloride	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	2.16	0.432	0.216	0.0432	0.0216	0.00432	0.00216	0.000432		
Carbon Disulfide	2.13	2130	426	85.2	42.6	8.52	2.13	0.852	0.426	0.0852	0.0426	0.00852	0.00426	0.000852		
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	2.16	0.432	0.216	0.0432	0.0216	0.00432	0.00216	0.000432		
1,1-Dichloroethane	1.07	1070	214	42.8	21.4	4.28	2.14	0.428	0.214	0.0428	0.0214	0.00428	0.00214	0.000428		
Methyl tert-Butyl Ether	1.07	1070	214	42.8	21.4	4.28	2.14	0.428	0.214	0.0428	0.0214	0.00428	0.00214	0.000428		
Vinyl Acetate	2.80	2800	560	112.0	56.0	11.20	2.80	0.560	0.280	0.0560	0.0280	0.00560	0.00280	0.000560		
2-Butanone	2.09	2090	418	83.6	41.8	8.36	2.09	0.836	0.418	0.0836	0.0418	0.00836	0.00418	0.000836		
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12	0.848	0.424	0.0848	0.0424	0.00848	0.00424	0.000848		
Ethyl Acetate	4.22	4220	844	168.8	84.4	16.88	4.22	0.844	0.422	0.0844	0.0422	0.00844	0.00422	0.000844		
n-Hexane	1.05	1050	210	42.0	21.0	4.20	2.10	0.420	0.210	0.0420	0.0210	0.00420	0.00210	0.000420		
Chloroform	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Tetrahydrofuran	2.04	2040	408	81.6	40.8	8.16	2.04	0.816	0.408	0.0816	0.0408	0.00816	0.00408	0.000816		
Ethyl tert-Butyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12	0.848	0.424	0.0848	0.0424	0.00848	0.00424	0.000848		
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	2.16	0.432	0.216	0.0432	0.0216	0.00432	0.00216	0.000432		
1,1,1-Trichloroethane	1.05	1050	210	42.0	21.0	4.20	2.10	0.420	0.210	0.0420	0.0210	0.00420	0.00210	0.000420		
Benzene	1.07	1070	214	42.8	21.4	4.28	2.14	0.428	0.214	0.0428	0.0214	0.00428	0.00214	0.000428		
Carbon Tetrachloride	1.04	1040	208	41.6	20.8	4.16	2.08	0.416	0.208	0.0416	0.0208	0.00416	0.00208	0.000416		
Cyclohexane	2.10	2100	420	84.0	42.0	8.40	2.10	0.840	0.420	0.0840	0.0420	0.00840	0.00420	0.000840		
tert-Amyl Methyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12	0.848	0.424	0.0848	0.0424	0.00848	0.00424	0.000848		
1,2-Dichloropropane	1.05	1050	210	42.0	21.0	4.20	2.10	0.420	0.210	0.0420	0.0210	0.00420	0.00210	0.000420		
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	2.14	0.428	0.214	0.0428	0.0214	0.00428	0.00214	0.000428		
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	2.10	0.420	0.210	0.0420	0.0210	0.00420	0.00210	0.000420		
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		
Isooctane	1.08	1080	216	43.2	21.6	4.32	2.16	0.432	0.216	0.0432	0.0216	0.00432	0.00216	0.000432		
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12	0.848	0.424	0.0848	0.0424	0.00848	0.00424	0.000848		
n-Heptane	1.06	1060	212	42.4	21.2	4.24	2.12	0.424	0.212	0.0424	0.0212	0.00424	0.00212	0.000424		

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S35-11292205 4ng/L Std. ID: S35-11292203 20ng/L Std. ID: S35-11292203										40ng/L Std. ID: S35-11292201 200ng/L Std. ID: S35-11292201 1000ng/L Std. ID: S35-11292203									
Dilution Factors:		1		5		25		50		250		1000		Working STD Conc.(ng/L):					
Compounds	Source Std. mg/m ³	1000ng/L		200ng/L		40ng/L		20ng/L		4ng/L		200ng/L		Injection (L):					
		1000ng/L		200ng/L		40ng/L		20ng/L		4ng/L		200ng/L		ICAL Points:					
cis-1,3-Dichloropropene	1.08	1080	216	432	216	432	216	432	216	432	216	432	216	0.108	0.216	0.430	0.215	0.102	0.106
4-Methyl-2-pentanone	2.15	2150	430	860	430	860	430	860	430	860	430	860	215	0.108	0.216	0.430	0.215	0.102	0.106
trans-1,3-Dichloropropene	1.02	1020	204	408	204	408	204	408	204	408	204	408	102	0.102	0.204	0.408	0.202	0.102	0.106
1,1,2-Trichloroethane	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
Toluene	1.05	1050	210	420	210	420	210	420	210	420	210	420	105	0.105	0.210	0.420	0.210	0.105	0.105
2-Hexanone	2.12	2120	424	848	424	848	424	848	424	848	424	848	212	0.212	0.424	0.848	0.424	0.212	0.212
Dibromochloromethane	1.08	1080	216	432	216	432	216	432	216	432	216	432	108	0.108	0.216	0.432	0.216	0.108	0.108
1,2-Dibromoethane	1.04	1040	208	416	208	416	208	416	208	416	208	416	104	0.104	0.208	0.416	0.208	0.104	0.104
n-Butyl Acetate	2.05	2050	410	820	410	820	410	820	410	820	410	820	205	0.205	0.410	0.820	0.410	0.205	0.205
n-Octane	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
Tetrachloroethene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
Chlorobenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
Ethylbenzene	1.05	1050	210	420	210	420	210	420	210	420	210	420	105	0.105	0.210	0.420	0.210	0.105	0.105
m-&p-Xylene	2.10	2100	420	840	420	840	420	840	420	840	420	840	210	0.210	0.420	0.840	0.420	0.210	0.210
Bromoform	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
Styrene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
o-Xylene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
n-Nonane	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
1,1,2,2-Tetrachloroethane	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
o-Cumene	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
alpha-Pinene	1.09	1090	218	436	218	436	218	436	218	436	218	436	109	0.109	0.218	0.436	0.218	0.109	0.109
n-Propylbenzene	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
4-Ethyltoluene	1.09	1090	218	436	218	436	218	436	218	436	218	436	109	0.109	0.218	0.436	0.218	0.109	0.109
1,3,5-Trimethylbenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
1,2,4-Trimethylbenzene	1.05	1050	210	420	210	420	210	420	210	420	210	420	105	0.105	0.210	0.420	0.210	0.105	0.105
Benzyl Chloride	2.12	2120	424	848	424	848	424	848	424	848	424	848	212	0.212	0.424	0.848	0.424	0.212	0.212
1,3-Dichlorobenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
1,4-Dichlorobenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
sec-Butylbenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
p-Isopropyltoluene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
1,2-Dichlorobenzene	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
d-Limonene	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
1,2-Dibromo-3-chloropropane	2.10	2100	420	840	420	840	420	840	420	840	420	840	210	0.210	0.420	0.840	0.420	0.210	0.210
1,2,4-Trichlorobenzene	2.09	2090	418	836	418	836	418	836	418	836	418	836	209	0.209	0.418	0.836	0.418	0.209	0.209
Naphthalene	1.10	1100	220	440	220	440	220	440	220	440	220	440	110	0.110	0.220	0.440	0.220	0.110	0.110
Hexachloro-1,3-butadiene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
tert-Butylbenzene	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106
n-Butylbenzene	1.07	1070	214	428	214	428	214	428	214	428	214	428	107	0.107	0.214	0.428	0.214	0.107	0.107
1,1,1,2-Tetrachloroethane	1.06	1060	212	424	212	424	212	424	212	424	212	424	106	0.106	0.212	0.424	0.212	0.106	0.106

Method : I:\MS16\METHODS\R16113022.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration

CG 12/1/22

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS16\DATA\2022_11\30\11302220.D
2	0.2	0	13	I:\MS16\DATA\2022_11\30\11302221.D
3	0.5	1	13	I:\MS16\DATA\2022_11\30\11302222.D
4	1.0	1	13	I:\MS16\DATA\2022_11\30\11302223.D
5	5.0	5	13	I:\MS16\DATA\2022_11\30\11302224.D
6	25	26	13	I:\MS16\DATA\2022_11\30\11302225.D
7	50	53	13	I:\MS16\DATA\2022_11\30\11302226.D
8	100	105	13	I:\MS16\DATA\2022_11\30\11302228.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Dec 01 08:09 2022	Dec 01 08:07 2022	30 Nov 2022 23:14
2	0.2	Dec 01 09:09 2022	Dec 01 09:00 2022	30 Nov 2022 23:48
3	0.5	Dec 01 08:10 2022	Dec 01 08:07 2022	1 Dec 2022 00:22
4	1.0	Dec 01 09:30 2022	Dec 01 09:26 2022	1 Dec 2022 00:56
5	5.0	Dec 01 08:10 2022	Dec 01 08:08 2022	1 Dec 2022 1:30
6	25	Dec 01 08:11 2022	Dec 01 08:08 2022	1 Dec 2022 2:04
7	50	Dec 01 08:11 2022	Dec 01 08:08 2022	1 Dec 2022 2:38
8	100	Dec 01 08:11 2022	Dec 01 08:08 2022	1 Dec 2022 3:46

R16113022.M

Thu Dec 01 09:57:13 2022

WA

Data File : I:\MS16\DATA\2022_11\30\11302220.D
 Acq On : 30 Nov 2022 23:14
 Sample : 0.1ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:17 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	135829	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	13.42	114	617461	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.72	54	151891	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.14	65	242321	12.665	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.28%
57) Toluene-d8 (SS2)	15.87	98	666842	12.670	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.36%
73) Bromofluorobenzene (SS3)	19.10	174	206911	12.083	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.64%

Target Compounds

						Qvalue
2) Propene	4.22	42	2323	0.091	ng	95
3) Dichlorodifluoromethan...	4.37	85	2494	0.106	ng	# 90
4) Chloromethane	4.66	50	2940	0.116	ng	92
5) 1,2-Dichloro-1,1,2,2-t...	4.92	135	1290	0.099	ng	100
6) Vinyl Chloride	5.09	62	1986	0.095	ng	78
7) 1,3-Butadiene	5.36	54	1859	0.096	ng	90
8) Bromomethane	5.79	94	923	0.097	ng	89
9) Chloroethane	6.13	64	862	0.093	ng	67
10) Ethanol	6.49	45	5358	0.374	ng	94
11) Acetonitrile	6.75	41	3636	0.097	ng	# 28
12) Acrolein	6.97	56	1729	0.171	ng	97
13) Acetone	7.18	58	7124	0.586	ng	100
14) Trichlorofluoromethane	7.40	101	2103	0.099	ng	89
15) 2-Propanol (Isopropanol)	7.72	45	7955	0.210	ng	87
16) Acrylonitrile	7.92	53	4321	0.193	ng	93
17) 1,1-Dichloroethene	8.37	96	1010	0.098	ng	89
18) 2-Methyl-2-Propanol (t...	8.61	59	5869	0.212	ng	# 81
19) Methylene Chloride	8.57	84	1241	0.110	ng	97
20) 3-Chloro-1-propene (Al...	8.75	41	2056	0.090	ng	88
21) Trichlorotrifluoroethane	9.00	151	958	0.094	ng	# 82
22) Carbon Disulfide	8.86	76	9122	0.224	ng	92
23) trans-1,2-Dichloroethene	9.85	61	1441	0.083	ng	97
24) 1,1-Dichloroethane	10.10	63	2502	0.110	ng	95
25) Methyl tert-Butyl Ether	10.26	73	2744	0.094	ng	81
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	10.66	72	725	0.104	ng	# 1
28) cis-1,2-Dichloroethene	11.12	61	1604	0.092	ng	93
29) Diisopropyl Ether	11.44	87	1975	0.184	ng	# 82
30) Ethyl Acetate	11.45	61	1891	0.319	ng	77
31) n-Hexane	11.41	57	2388	0.088	ng	# 91
32) Chloroform	11.46	83	2122	0.106	ng	87
34) Tetrahydrofuran (THF)	11.93	72	1171	0.172	ng	# 76
35) Ethyl tert-Butyl Ether	12.04	87	1904	0.147	ng	# 80
36) 1,2-Dichloroethane	12.27	62	1778	0.102	ng	100
38) 1,1,1-Trichloroethane	12.54	97	1804	0.096	ng	91
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	4735	0.110	ng	93
42) Carbon Tetrachloride	13.19	117	1638	0.099	ng	96
43) Cyclohexane	13.31	84	2946	0.172	ng	97
44) tert-Amyl Methyl Ether	13.69	73	5033	0.168	ng	87
45) 1,2-Dichloropropane	13.89	63	1425	0.105	ng	88
46) Bromodichloromethane	14.07	83	1448	0.094	ng	99
47) Trichloroethene	14.14	130	1067	0.085	ng	88
48) 1,4-Dioxane	14.14	88	338	N.D.		
49) 2,2,4-Trimethylpentane...	14.19	57	6448	0.097	ng	91
50) Methyl Methacrylate	14.35	100	411	0.083	ng	# 55

Data File : I:\MS16\DATA\2022_11\30\11302220.D
 Acq On : 30 Nov 2022 23:14
 Sample : 0.1ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:18:17 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	991	0.084	ng	90
52) cis-1,3-Dichloropropene	15.01	75	1034	0.066	ng #	43
53) 4-Methyl-2-pentanone	15.05	58	1713	0.133	ng #	52
54) trans-1,3-Dichloropropene	15.54	75	433	N.D.		
55) 1,1,2-Trichloroethane	15.68	97	981	0.089	ng	95
58) Toluene	15.98	91	4744	0.101	ng	98
59) 2-Hexanone	16.26	43	5012	0.151	ng	72
60) Dibromochloromethane	16.39	129	1227	0.092	ng	87
61) 1,2-Dibromoethane	16.64	107	892	0.074	ng	85
62) n-Butyl Acetate	16.87	43	4858	0.132	ng	85
63) n-Octane	16.98	57	1033	0.078	ng	91
64) Tetrachloroethene	17.12	166	1169	0.090	ng	94
65) Chlorobenzene	17.77	112	3644	0.106	ng	96
66) Ethylbenzene	18.13	91	4447	0.087	ng	97
67) m- & p-Xylenes	18.28	91	6810	0.164	ng	95
68) Bromoform	18.35	173	911	0.083	ng	98
69) Styrene	18.62	104	1868	0.061	ng	84
70) o-Xylene	18.71	91	3245	0.079	ng	93
71) n-Nonane	18.90	43	2722	0.080	ng	87
72) 1,1,2,2-Tetrachloroethane	18.69	83	1960	0.097	ng	99
74) Cumene	19.23	105	5139	0.093	ng	97
75) alpha-Pinene	19.58	93	2039	0.081	ng	94
76) n-Propylbenzene	19.68	91	5323	0.081	ng	95
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.81	105	3746	0.074	ng	98
79) 1,3,5-Trimethylbenzene	19.87	105	3617	0.080	ng	88
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.24	105	3093	0.068	ng	97
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	20.35	91	2997	0.083	ng	87
85) 1,3-Dichlorobenzene	20.37	146	2335	0.084	ng	97
86) 1,4-Dichlorobenzene	20.43	146	2708	0.095	ng	95
87) sec-Butylbenzene	20.47	105	4511	0.073	ng	90
88) 4-Isopropyltoluene (p-...	20.61	119	3859	0.071	ng	96
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	20.73	146	2339	0.086	ng	93
91) d-Limonene	20.73	68	1128	0.059	ng	84
92) 1,2-Dibromo-3-Chloropr...	21.11	157	1582	0.152	ng #	64
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.24	180	2392	0.110	ng #	94
95) Naphthalene	22.35	128	2626	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	1110	0.082	ng	96
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.23	119	3773	0.080	ng	94
100) n-Butylbenzene	20.97	91	3105	0.064	ng	91
101) 1,1,1,2-Tetrachloroethane	17.75	131	1364	0.107	ng	93

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

Vial: 13
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:17 2022

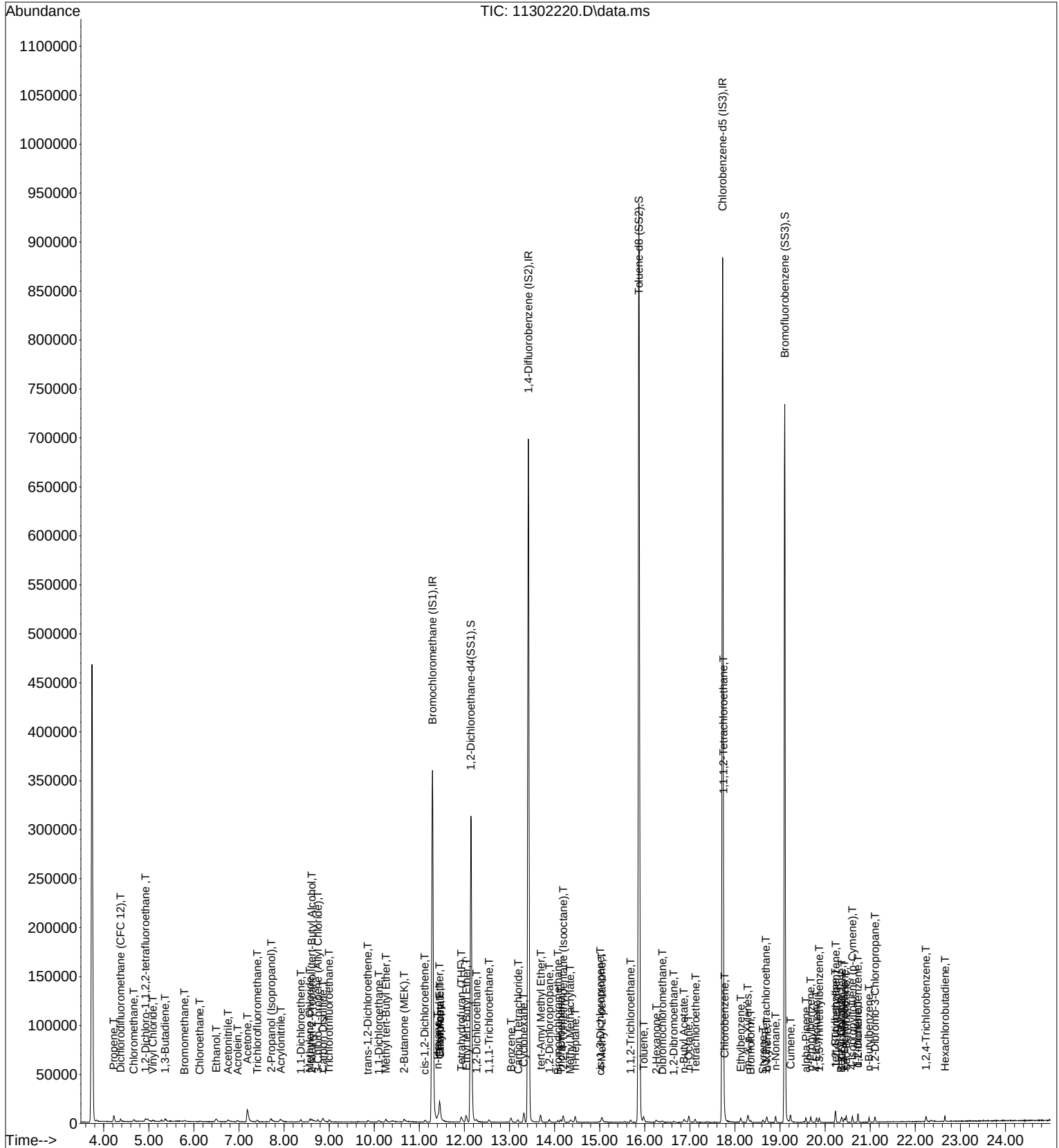
Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2022_11\30\11302221.D
 Acq On : 30 Nov 2022 23:48
 Sample : 0.2ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 09:00:43 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	134399	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	13.42	114	612246	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.72	54	150832	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.14	65	240447	12.701	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.60%
57) Toluene-d8 (SS2)	15.87	98	661679	12.660	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.28%
73) Bromofluorobenzene (SS3)	19.10	174	203973	11.995	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.92%

Target Compounds

						Qvalue
2) Propene	4.22	42	4589	0.182	ng	94
3) Dichlorodifluoromethan...	4.37	85	4859	0.208	ng	96
4) Chloromethane	4.66	50	5733	0.229	ng	96
5) 1,2-Dichloro-1,1,2,2-t...	4.92	135	2771	0.216	ng	96
6) Vinyl Chloride	5.09	62	3964	0.191	ng	95
7) 1,3-Butadiene	5.36	54	3472	0.181	ng	93
8) Bromomethane	5.79	94	1804	0.191	ng	99
9) Chloroethane	6.13	64	1839	0.200	ng	85
10) Ethanol	6.47	45	9764m	0.688	ng	
11) Acetonitrile	6.75	41	6868	0.186	ng	# 68
12) Acrolein	6.96	56	3408	0.341	ng	96
13) Acetone	7.17	58	12844	1.068	ng	96
14) Trichlorofluoromethane	7.40	101	4446	0.212	ng	94
15) 2-Propanol (Isopropanol)	7.69	45	15586	0.416	ng	79
16) Acrylonitrile	7.91	53	8285	0.373	ng	99
17) 1,1-Dichloroethene	8.38	96	2019	0.197	ng	88
18) 2-Methyl-2-Propanol (t...	8.60	59	11654	0.425	ng	85
19) Methylene Chloride	8.58	84	2386	0.214	ng	98
20) 3-Chloro-1-propene (Al...	8.75	41	4252	0.188	ng	91
21) Trichlorotrifluoroethane	9.01	151	2269	0.224	ng	99
22) Carbon Disulfide	8.86	76	16932	0.421	ng	95
23) trans-1,2-Dichloroethene	9.87	61	3312	0.192	ng	90
24) 1,1-Dichloroethane	10.10	63	4707	0.210	ng	92
25) Methyl tert-Butyl Ether	10.26	73	5500	0.189	ng	94
26) Vinyl Acetate	10.38	86	170	0.083	ng	# 1
27) 2-Butanone (MEK)	10.65	72	2240	0.325	ng	# 43
28) cis-1,2-Dichloroethene	11.13	61	3330	0.192	ng	99
29) Diisopropyl Ether	11.44	87	3601	0.339	ng	# 67
30) Ethyl Acetate	11.44	61	4065	0.693	ng	93
31) n-Hexane	11.42	57	4923	0.183	ng	94
32) Chloroform	11.46	83	4152	0.210	ng	99
34) Tetrahydrofuran (THF)	11.92	72	2537	0.377	ng	98
35) Ethyl tert-Butyl Ether	12.03	87	4433	0.347	ng	97
36) 1,2-Dichloroethane	12.27	62	3501	0.204	ng	95
38) 1,1,1-Trichloroethane	12.55	97	3878	0.209	ng	98
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	8714	0.204	ng	100
42) Carbon Tetrachloride	13.19	117	3171	0.194	ng	98
43) Cyclohexane	13.32	84	5898	0.348	ng	99
44) tert-Amyl Methyl Ether	13.69	73	10244	0.345	ng	91
45) 1,2-Dichloropropane	13.88	63	2689	0.200	ng	93
46) Bromodichloromethane	14.07	83	3080	0.201	ng	97
47) Trichloroethene	14.13	130	2266	0.183	ng	99
48) 1,4-Dioxane	14.14	88	1124	0.129	ng	# 27
49) 2,2,4-Trimethylpentane...	14.19	57	12664	0.193	ng	91
50) Methyl Methacrylate	14.34	100	1112	0.227	ng	92

Data File : I:\MS16\DATA\2022_11\30\11302221.D
 Acq On : 30 Nov 2022 23:48
 Sample : 0.2ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
 Operator: CG
 Inst : GCMS-16

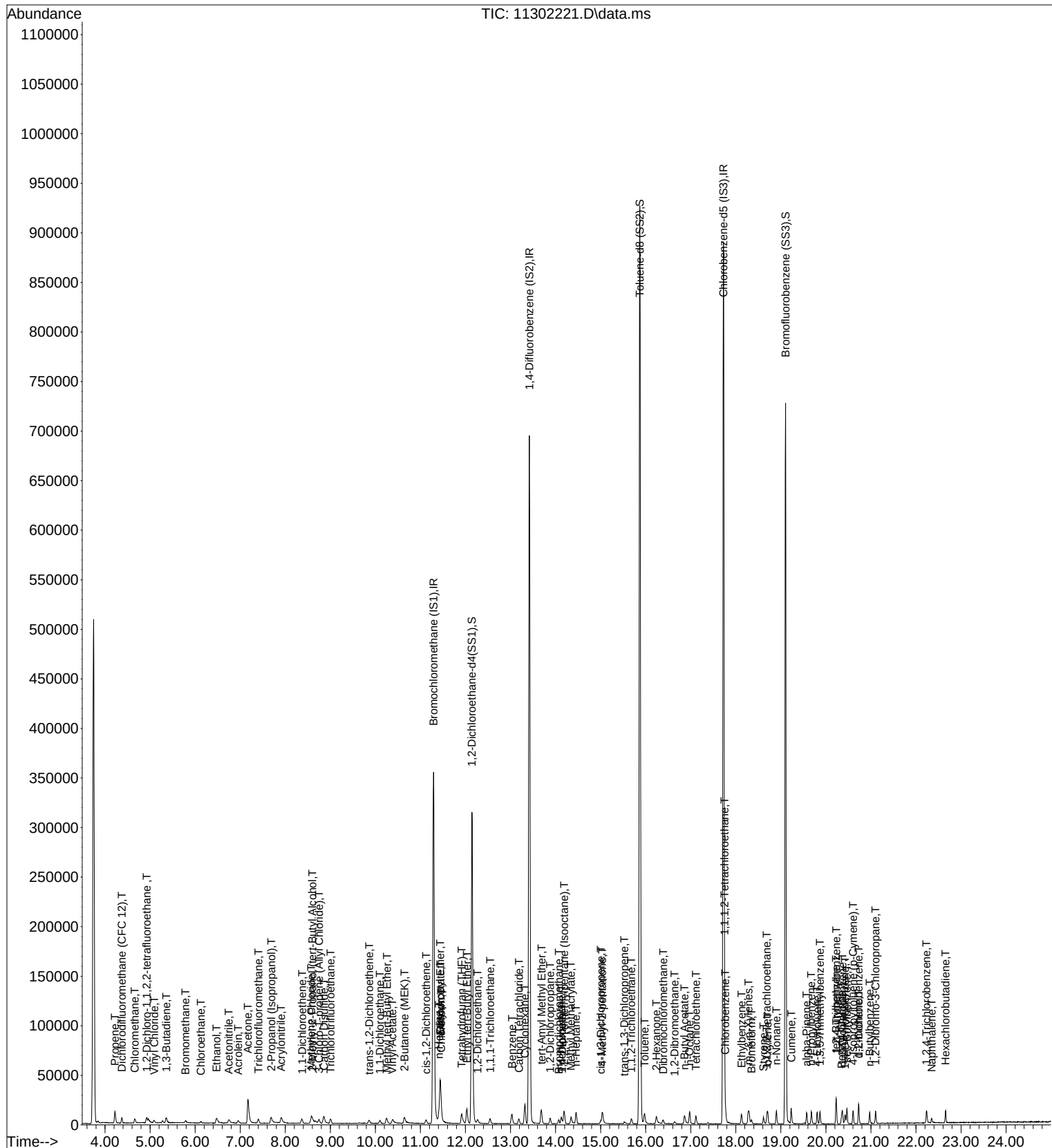
Quant Time: Dec 01 09:00:43 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.45	71	1968	0.168	ng	96
52) cis-1,3-Dichloropropene	15.00	75	2444	0.158	ng	92
53) 4-Methyl-2-pentanone	15.03	58	3746	0.294	ng #	67
54) trans-1,3-Dichloropropene	15.52	75	1739	0.108	ng	83
55) 1,1,2-Trichloroethane	15.68	97	2061	0.189	ng	85
58) Toluene	15.98	91	9253	0.198	ng	98
59) 2-Hexanone	16.24	43	9187	0.279	ng	92
60) Dibromochloromethane	16.39	129	2577	0.194	ng	97
61) 1,2-Dibromoethane	16.64	107	2201	0.184	ng	96
62) n-Butyl Acetate	16.86	43	10344	0.284	ng	94
63) n-Octane	16.98	57	2192	0.168	ng	92
64) Tetrachloroethene	17.12	166	2613	0.201	ng	98
65) Chlorobenzene	17.77	112	6816	0.199	ng	97
66) Ethylbenzene	18.13	91	8426	0.166	ng	99
67) m- & p-Xylenes	18.28	91	13755	0.334	ng	94
68) Bromoform	18.35	173	1907	0.176	ng	98
69) Styrene	18.61	104	3931	0.129	ng	97
70) o-Xylene	18.71	91	6907	0.169	ng	97
71) n-Nonane	18.90	43	5586	0.166	ng	91
72) 1,1,2,2-Tetrachloroethane	18.69	83	3914	0.196	ng	95
74) Cumene	19.23	105	9784	0.178	ng	95
75) alpha-Pinene	19.57	93	3962	0.159	ng	92
76) n-Propylbenzene	19.68	91	10914	0.167	ng	96
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.81	105	7968	0.158	ng	95
79) 1,3,5-Trimethylbenzene	19.87	105	7295	0.163	ng	94
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.23	105	6292	0.140	ng	96
83) n-Decane	20.23	58	345	No Calib	#	
84) Benzyl Chloride	20.35	91	6767	0.188	ng	93
85) 1,3-Dichlorobenzene	20.37	146	4939	0.178	ng	92
86) 1,4-Dichlorobenzene	20.42	146	4846	0.172	ng	96
87) sec-Butylbenzene	20.47	105	9572	0.157	ng	94
88) 4-Isopropyltoluene (p-...	20.61	119	8155	0.150	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	20.73	146	4649	0.173	ng	98
91) d-Limonene	20.73	68	2142	0.113	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.10	157	3416	0.331	ng #	80
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	5325	0.247	ng	96
95) Naphthalene	22.35	128	5777	0.090	ng	89
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	2621	0.196	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.23	119	7163	0.153	ng	97
100) n-Butylbenzene	20.97	91	7062	0.147	ng	96
101) 1,1,1,2-Tetrachloroethane	17.75	131	2516	0.199	ng	97

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

Vial: 13
Operator: CG
Inst : GCMS-16

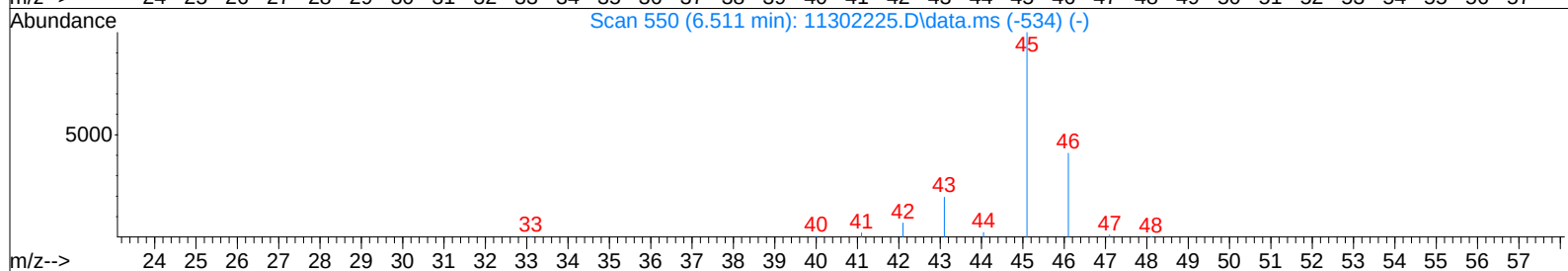
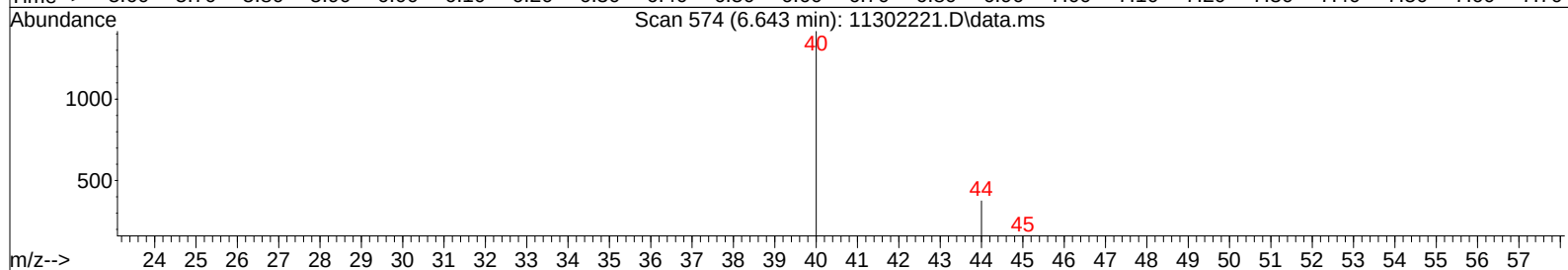
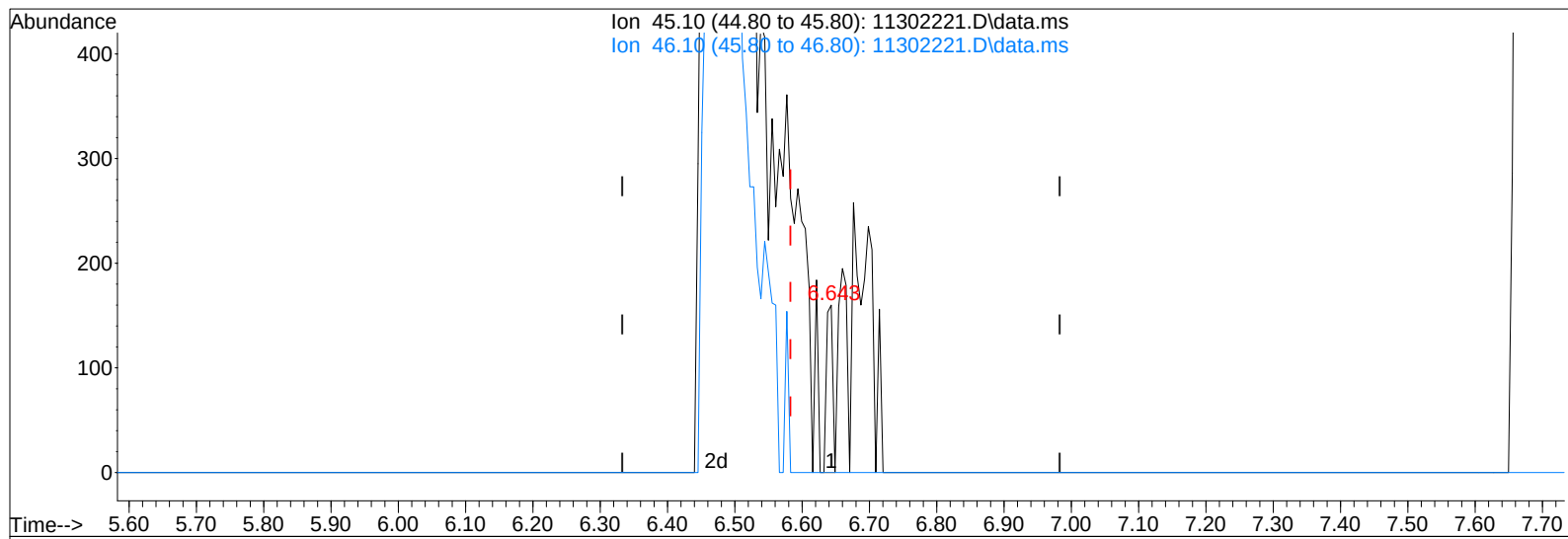
Quant Time: Dec 01 09:00:43 2022



Data File : I:\MS16\DATA\2022_11\30\11302221.D
Acq On : 30 Nov 2022 23:48
Sample : 0.2ng R16113022 ICAL Std
Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:24 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 11302221.D\data.ms

(10) Ethanol (T)

6.643min (+0.061) 0.01ng

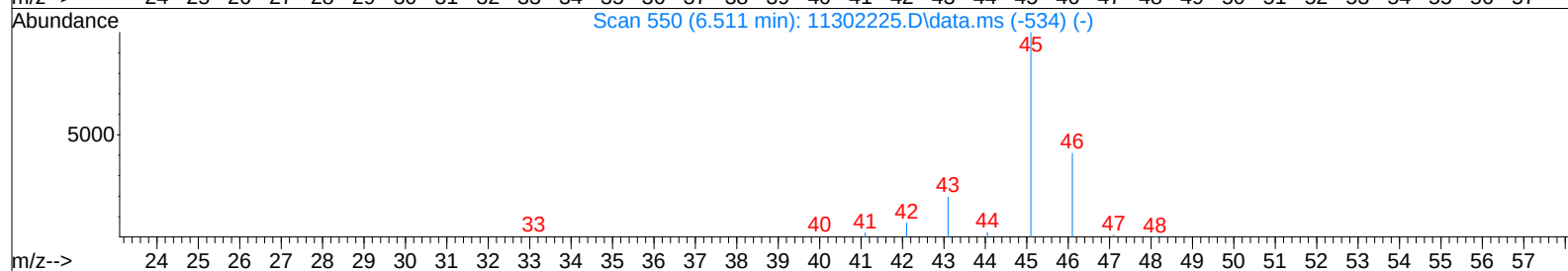
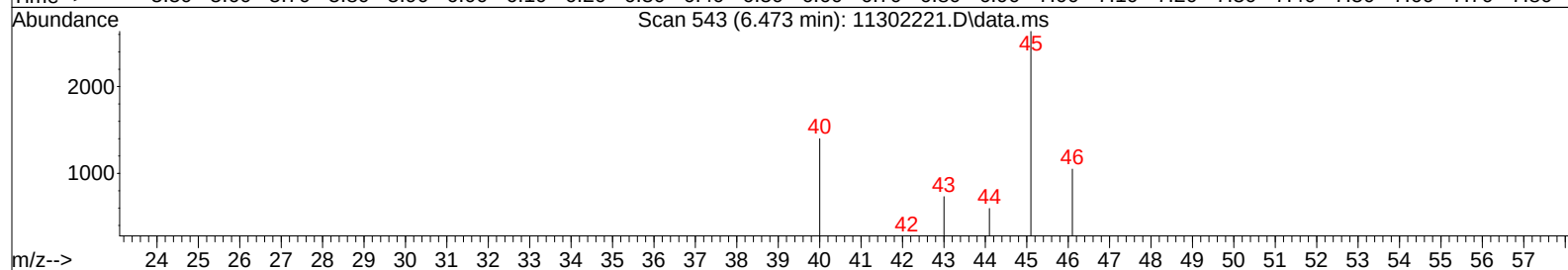
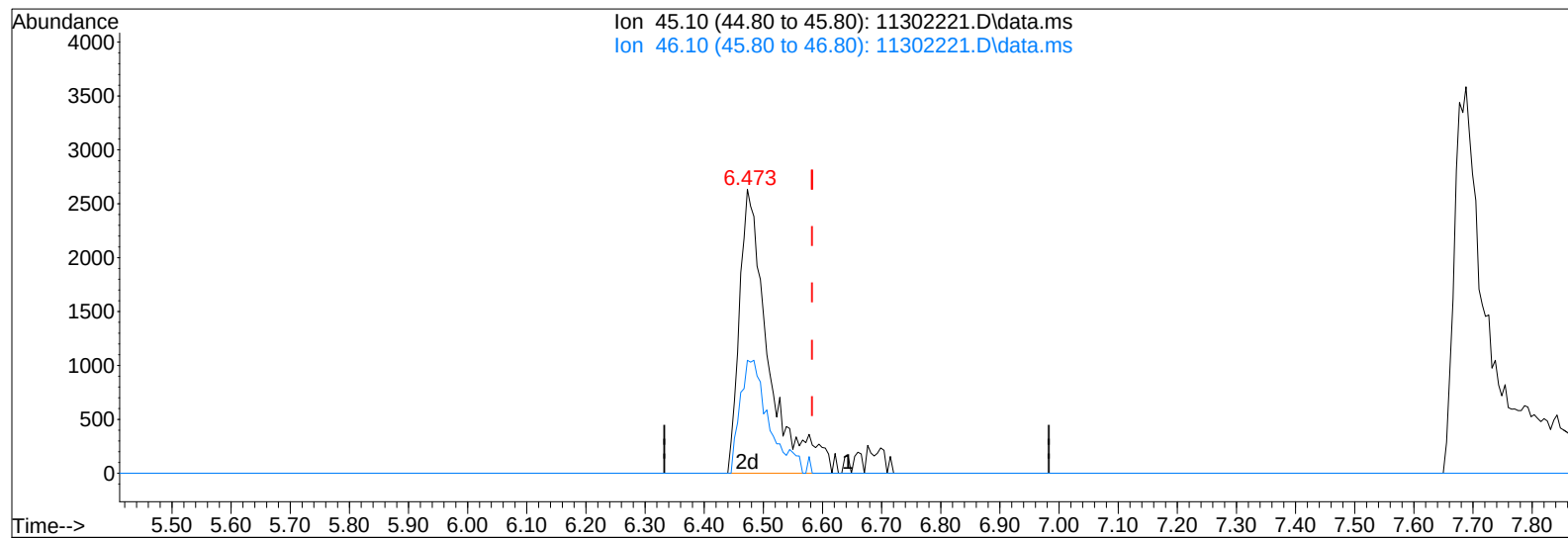
response 103

Ion	Exp%	Act%
45.10	100	100
46.10	40.90	49.51
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2022_11\30\11302221.D
Acq On : 30 Nov 2022 23:48
Sample : 0.2ng R16113022 ICAL Std
Misc : S35-11092201/S35-11292205 (12/29)

Vial: 13
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:24 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 11302221.D\data.ms

(10) Ethanol (T)

6.473min (-0.110) 0.69ng m

WP

response 9764

Ion Exp% Act%

CG 12/1/22

TZ 12/2/22

45.10 100 100

46.10 40.90 36.79

0.00 0.00 0.00

0.00 0.00 0.00

Data File : I:\MS16\DATA\2022_11\30\11302222.D
 Acq On : 1 Dec 2022 00:22
 Sample : 0.5ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:29 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.30	130	131808	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	13.42	114	600876	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.72	54	148562	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	236858	12.757	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	102.08%	
57) Toluene-d8 (SS2)	15.87	98	657396	12.770	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	102.16%	
73) Bromofluorobenzene (SS3)	19.10	174	204615	12.216	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.76%	

Target Compounds

						Qvalue
2) Propene	4.21	42	11370	0.460	ng	98
3) Dichlorodifluoromethan...	4.37	85	13380	0.584	ng	99
4) Chloromethane	4.65	50	15195	0.620	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.92	135	7070	0.561	ng	97
6) Vinyl Chloride	5.08	62	11139	0.547	ng	94
7) 1,3-Butadiene	5.35	54	9604	0.511	ng	93
8) Bromomethane	5.79	94	4932	0.532	ng	100
9) Chloroethane	6.13	64	5044	0.559	ng	99
10) Ethanol	6.47	45	25448	1.828	ng	95
11) Acetonitrile	6.74	41	17742	0.490	ng	# 70
12) Acrolein	6.95	56	9755	0.994	ng	100
13) Acetone	7.15	58	32641	2.769	ng	98
14) Trichlorofluoromethane	7.40	101	11056	0.538	ng	98
15) 2-Propanol (Isopropanol)	7.65	45	44132	1.201	ng	84
16) Acrylonitrile	7.90	53	22762	1.045	ng	98
17) 1,1-Dichloroethene	8.36	96	5349	0.533	ng	88
18) 2-Methyl-2-Propanol (t...	8.57	59	32066	1.192	ng	88
19) Methylene Chloride	8.57	84	6133	0.560	ng	98
20) 3-Chloro-1-propene (Al...	8.75	41	11311	0.511	ng	97
21) Trichlorotrifluoroethane	9.01	151	5892	0.594	ng	98
22) Carbon Disulfide	8.85	76	42868	1.086	ng	99
23) trans-1,2-Dichloroethene	9.85	61	9183	0.543	ng	99
24) 1,1-Dichloroethane	10.10	63	12338	0.561	ng	100
25) Methyl tert-Butyl Ether	10.23	73	14390	0.505	ng	96
26) Vinyl Acetate	10.37	86	1990	0.995	ng	# 54
27) 2-Butanone (MEK)	10.63	72	7278	1.077	ng	98
28) cis-1,2-Dichloroethene	11.12	61	9054	0.534	ng	100
29) Diisopropyl Ether	11.43	87	11171	1.073	ng	# 96
30) Ethyl Acetate	11.43	61	12134	2.110	ng	95
31) n-Hexane	11.41	57	13522	0.512	ng	97
32) Chloroform	11.46	83	10806	0.558	ng	100
34) Tetrahydrofuran (THF)	11.89	72	6319	0.958	ng	95
35) Ethyl tert-Butyl Ether	12.03	87	12208	0.974	ng	96
36) 1,2-Dichloroethane	12.27	62	9691	0.575	ng	96
38) 1,1,1-Trichloroethane	12.54	97	10052	0.552	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	21817	0.520	ng	99
42) Carbon Tetrachloride	13.18	117	8361	0.521	ng	99
43) Cyclohexane	13.32	84	16175	0.972	ng	99
44) tert-Amyl Methyl Ether	13.68	73	27953	0.961	ng	93
45) 1,2-Dichloropropane	13.87	63	7303	0.554	ng	98
46) Bromodichloromethane	14.07	83	8279	0.550	ng	100
47) Trichloroethene	14.13	130	6514	0.536	ng	97
48) 1,4-Dioxane	14.12	88	3822	0.448	ng	96
49) 2,2,4-Trimethylpentane...	14.19	57	34997	0.543	ng	94
50) Methyl Methacrylate	14.33	100	3663	0.762	ng	# 77

Data File : I:\MS16\DATA\2022_11\30\11302222.D
 Acq On : 1 Dec 2022 00:22
 Sample : 0.5ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

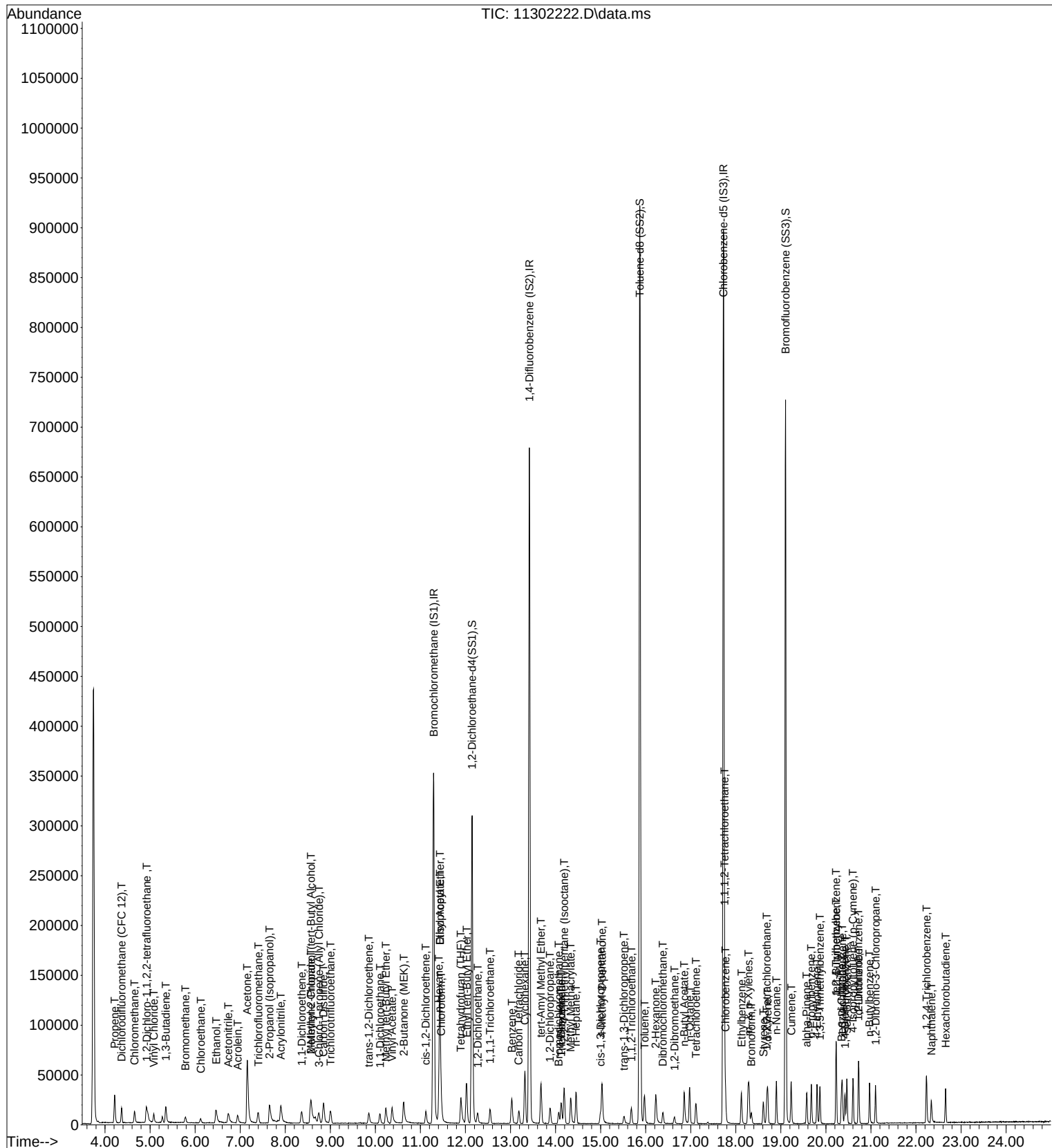
Quant Time: Dec 01 08:18:29 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.45	71	5927	0.515	ng	98
52) cis-1,3-Dichloropropene	15.00	75	7281	0.479	ng	97
53) 4-Methyl-2-pentanone	15.03	58	12647	1.010	ng	91
54) trans-1,3-Dichloropropene	15.52	75	5945	0.377	ng	97
55) 1,1,2-Trichloroethane	15.68	97	5947	0.555	ng	98
58) Toluene	15.98	91	24696	0.536	ng	100
59) 2-Hexanone	16.22	43	31755	0.978	ng	90
60) Dibromochloromethane	16.38	129	7400	0.565	ng	100
61) 1,2-Dibromoethane	16.64	107	6212	0.528	ng	100
62) n-Butyl Acetate	16.86	43	32099	0.895	ng	97
63) n-Octane	16.98	57	6773	0.526	ng	97
64) Tetrachloroethene	17.12	166	7098	0.556	ng	100
65) Chlorobenzene	17.77	112	18325	0.544	ng	98
66) Ethylbenzene	18.13	91	23973	0.478	ng	100
67) m- & p-Xylenes	18.28	91	39802	0.980	ng	98
68) Bromoform	18.35	173	5596	0.524	ng	100
69) Styrene	18.61	104	12225	0.409	ng	97
70) o-Xylene	18.71	91	19644	0.487	ng	99
71) n-Nonane	18.90	43	17055	0.514	ng	92
72) 1,1,2,2-Tetrachloroethane	18.69	83	10398	0.528	ng	99
74) Cumene	19.23	105	26489	0.491	ng	100
75) alpha-Pinene	19.57	93	10642	0.434	ng	90
76) n-Propylbenzene	19.68	91	31306	0.488	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.80	105	23280	0.468	ng	100
79) 1,3,5-Trimethylbenzene	19.87	105	21488	0.489	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.23	105	20077	0.453	ng	99
83) n-Decane	20.23	58	864	No Calib	#	
84) Benzyl Chloride	20.35	91	22001	0.620	ng	96
85) 1,3-Dichlorobenzene	20.36	146	13736	0.503	ng	99
86) 1,4-Dichlorobenzene	20.42	146	13647	0.491	ng	98
87) sec-Butylbenzene	20.47	105	29208	0.486	ng	95
88) 4-Isopropyltoluene (p-...	20.60	119	24748	0.463	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	20.72	146	13649	0.516	ng	99
91) d-Limonene	20.73	68	6785	0.365	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.11	157	9607	0.945	ng	# 81
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	15801	0.744	ng	98
95) Naphthalene	22.34	128	22414	0.353	ng	96
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	6437	0.489	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.23	119	21447	0.466	ng	99
100) n-Butylbenzene	20.97	91	22423	0.473	ng	95
101) 1,1,1,2-Tetrachloroethane	17.75	131	6808	0.546	ng	98

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

Vial: 14
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:29 2022



Data File : I:\MS16\DATA\2022_11\30\11302223.D
 Acq On : 1 Dec 2022 00:56
 Sample : 1.0ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 09:26:36 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.29	130	134431	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	13.42	114	617930	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	17.72	54	151293	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	240117	12.680	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.44%
57) Toluene-d8 (SS2)	15.87	98	668489	12.752	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	102.00%
73) Bromofluorobenzene (SS3)	19.10	174	206839	12.126	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.04%

Target Compounds

						Qvalue
2) Propene	4.20	42	22489	0.893	ng	98
3) Dichlorodifluoromethan...	4.36	85	25033	1.071	ng	100
4) Chloromethane	4.64	50	29658	1.187	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	13118	1.021	ng	98
6) Vinyl Chloride	5.07	62	21786	1.050	ng	99
7) 1,3-Butadiene	5.33	54	19819	1.033	ng	95
8) Bromomethane	5.77	94	10185	1.077	ng	98
9) Chloroethane	6.11	64	10106	1.098	ng	99
10) Ethanol	6.46	45	49305m	3.473	ng	
11) Acetonitrile	6.73	41	34005	0.921	ng	90
12) Acrolein	6.93	56	19840	1.982	ng	98
13) Acetone	7.14	58	62284	5.180	ng	98
14) Trichlorofluoromethane	7.39	101	22312	1.065	ng	99
15) 2-Propanol (Isopropanol)	7.64	45	86443	2.306	ng	84
16) Acrylonitrile	7.89	53	44750	2.015	ng	99
17) 1,1-Dichloroethene	8.36	96	11016	1.077	ng	98
18) 2-Methyl-2-Propanol (t...	8.53	59	66764	2.433	ng	91
19) Methylene Chloride	8.57	84	12269	1.099	ng	98
20) 3-Chloro-1-propene (Al...	8.74	41	23883	1.058	ng	96
21) Trichlorotrifluoroethane	9.00	151	11215	1.108	ng	98
22) Carbon Disulfide	8.84	76	84509	2.099	ng	100
23) trans-1,2-Dichloroethene	9.85	61	18527	1.074	ng	99
24) 1,1-Dichloroethane	10.10	63	24479	1.090	ng	98
25) Methyl tert-Butyl Ether	10.22	73	29761	1.025	ng	98
26) Vinyl Acetate	10.37	86	5003	2.454	ng	# 83
27) 2-Butanone (MEK)	10.61	72	15051	2.183	ng	# 94
28) cis-1,2-Dichloroethene	11.12	61	18195	1.052	ng	98
29) Diisopropyl Ether	11.42	87	21822	2.055	ng	# 86
30) Ethyl Acetate	11.43	61	24406	4.161	ng	99
31) n-Hexane	11.41	57	27828	1.034	ng	97
32) Chloroform	11.46	83	20823	1.055	ng	100
34) Tetrahydrofuran (THF)	11.89	72	13224	1.965	ng	93
35) Ethyl tert-Butyl Ether	12.02	87	26017	2.035	ng	98
36) 1,2-Dichloroethane	12.27	62	18618	1.082	ng	99
38) 1,1,1-Trichloroethane	12.54	97	19677	1.050	ng	99
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	44567	1.033	ng	100
42) Carbon Tetrachloride	13.18	117	16718	1.013	ng	98
43) Cyclohexane	13.32	84	34452	2.013	ng	100
44) tert-Amyl Methyl Ether	13.67	73	56853	1.900	ng	94
45) 1,2-Dichloropropane	13.88	63	13987	1.031	ng	99
46) Bromodichloromethane	14.07	83	16464	1.064	ng	98
47) Trichloroethene	14.13	130	12877	1.030	ng	96
48) 1,4-Dioxane	14.12	88	7984	0.909	ng	100
49) 2,2,4-Trimethylpentane...	14.19	57	70144	1.058	ng	96
50) Methyl Methacrylate	14.33	100	8985	1.818	ng	97

Data File : I:\MS16\DATA\2022_11\30\11302223.D
 Acq On : 1 Dec 2022 00:56
 Sample : 1.0ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

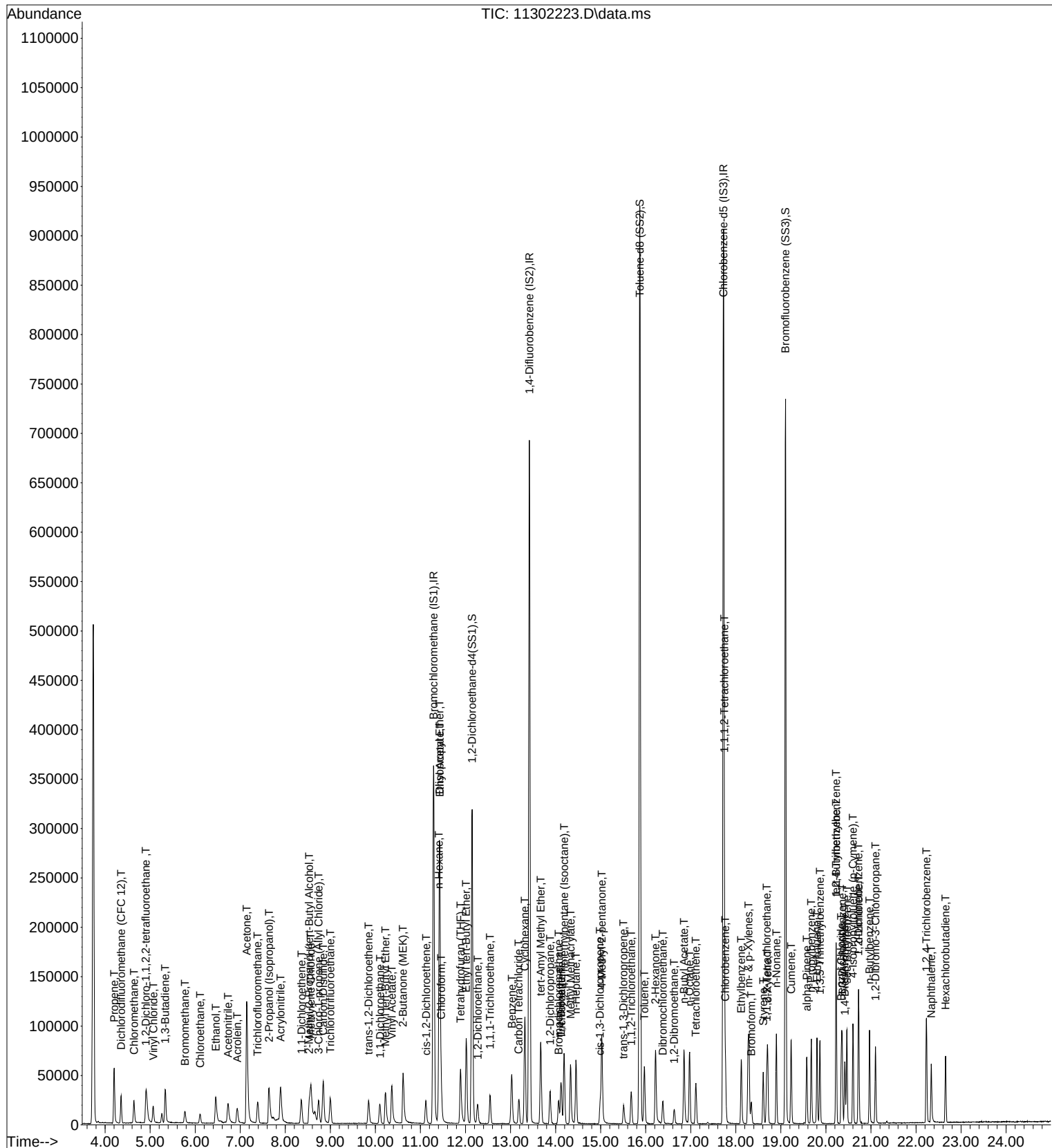
Quant Time: Dec 01 09:26:36 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.45	71	12435	1.050	ng	97
52) cis-1,3-Dichloropropene	14.99	75	15881	1.016	ng	98
53) 4-Methyl-2-pentanone	15.02	58	26413	2.052	ng	91
54) trans-1,3-Dichloropropene	15.51	75	12836	0.792	ng	98
55) 1,1,2-Trichloroethane	15.68	97	11738	1.066	ng	99
58) Toluene	15.97	91	47910	1.020	ng	100
59) 2-Hexanone	16.22	43	71976	2.177	ng	94
60) Dibromochloromethane	16.38	129	14220	1.066	ng	100
61) 1,2-Dibromoethane	16.63	107	12765	1.066	ng	99
62) n-Butyl Acetate	16.85	43	71301	1.951	ng	98
63) n-Octane	16.98	57	14039	1.070	ng	96
64) Tetrachloroethene	17.11	166	13648	1.049	ng	100
65) Chlorobenzene	17.77	112	35244	1.027	ng	100
66) Ethylbenzene	18.12	91	49443	0.968	ng	99
67) m- & p-Xylenes	18.28	91	82664	1.999	ng	99
68) Bromoform	18.35	173	11169	1.028	ng	100
69) Styrene	18.61	104	27231	0.894	ng	98
70) o-Xylene	18.71	91	40809	0.993	ng	99
71) n-Nonane	18.90	43	36041	1.067	ng	94
72) 1,1,2,2-Tetrachloroethane	18.69	83	20687	1.032	ng	99
74) Cumene	19.23	105	54984	1.000	ng	99
75) alpha-Pinene	19.58	93	23241	0.930	ng	90
76) n-Propylbenzene	19.68	91	66185	1.013	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	19.80	105	51512	1.016	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	44389	0.992	ng	100
80) alpha-Methylstyrene	20.47	118	258	No Calib	#	
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	20.23	105	43773	0.970	ng	99
83) n-Decane	20.23	58	2837	No Calib	#	
84) Benzyl Chloride	20.34	91	49330	1.364	ng	98
85) 1,3-Dichlorobenzene	20.36	146	27450	0.988	ng	99
86) 1,4-Dichlorobenzene	20.42	146	28185	0.995	ng	98
87) sec-Butylbenzene	20.47	105	61174	0.999	ng	97
88) 4-Isopropyltoluene (p-...	20.60	119	54579	1.003	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	20.72	146	27409	1.017	ng	99
91) d-Limonene	20.73	68	15442	0.815	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.10	157	19834	1.915	ng	# 85
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	35050	1.621	ng	99
95) Naphthalene	22.34	128	50549	0.781	ng	99
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	13318	0.993	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	20.23	119	46507	0.991	ng	100
100) n-Butylbenzene	20.97	91	47383	0.981	ng	98
101) 1,1,1,2-Tetrachloroethane	17.75	131	12746	1.004	ng	95

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

Vial: 14
Operator: CG
Inst : GCMS-16

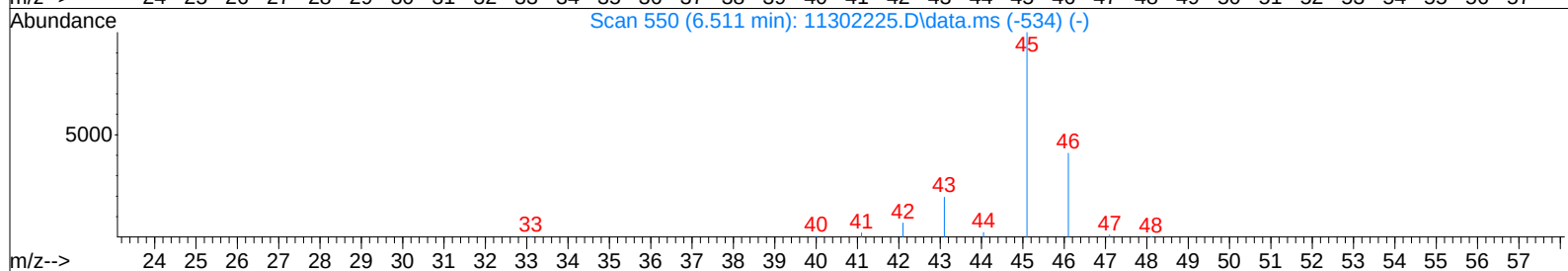
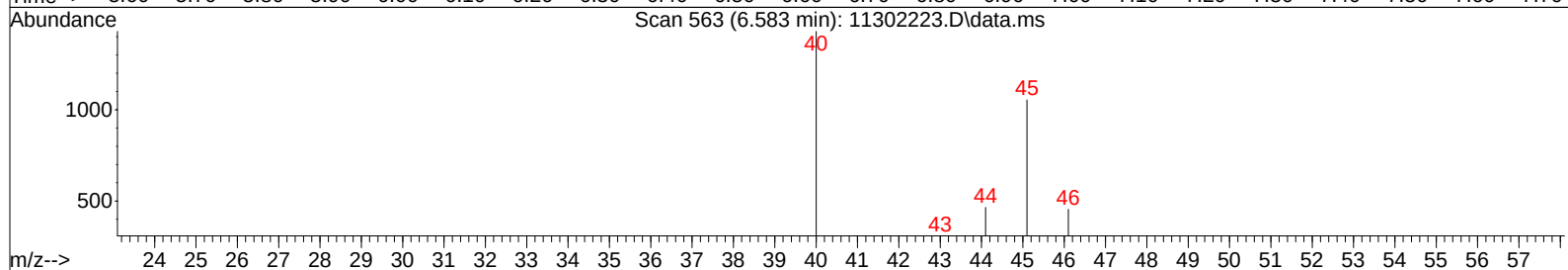
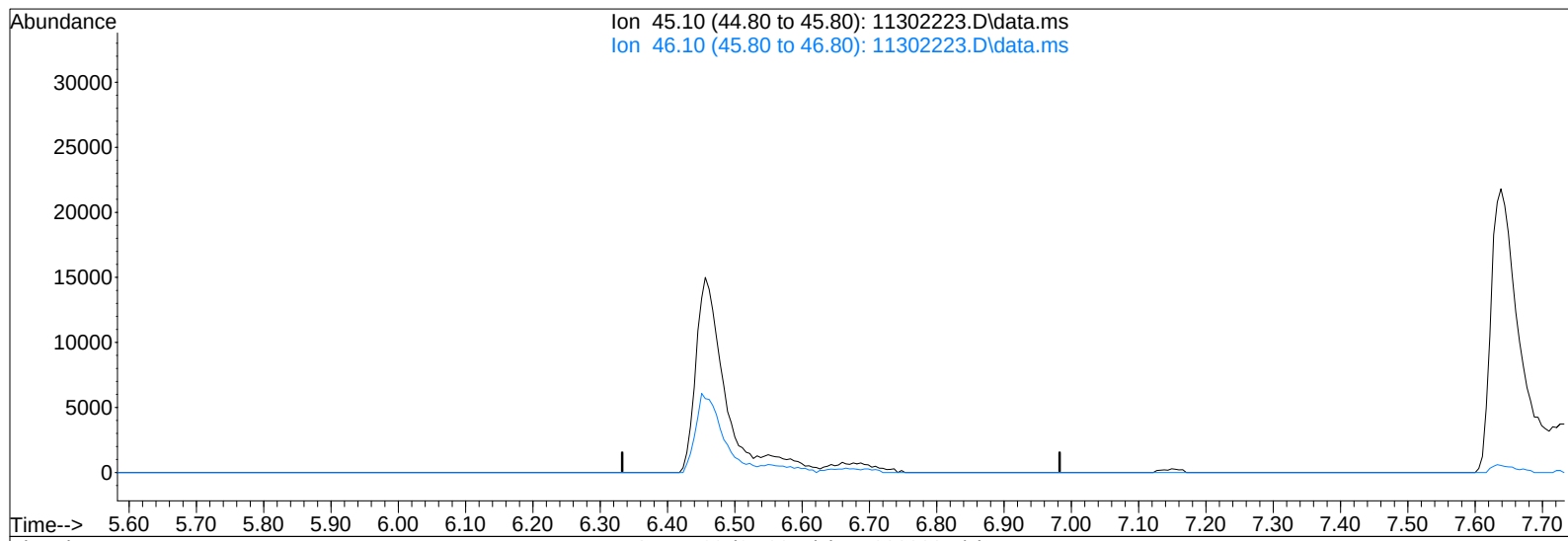
Quant Time: Dec 01 09:26:36 2022



Data File : I:\MS16\DATA\2022_11\30\11302223.D
Acq On : 1 Dec 2022 00:56
Sample : 1.0ng R16113022 ICAL Std
Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:35 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 11302223.D\data.ms

(10) Ethanol (T)

6.583min (-6.583) 0.00ng

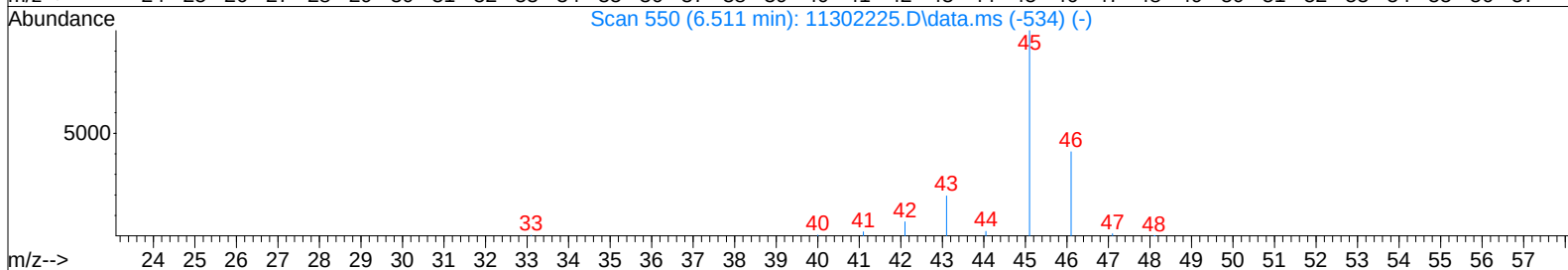
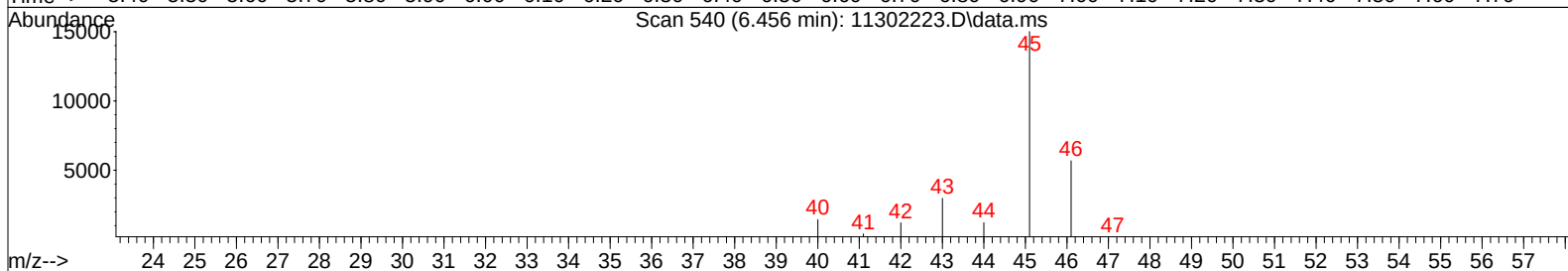
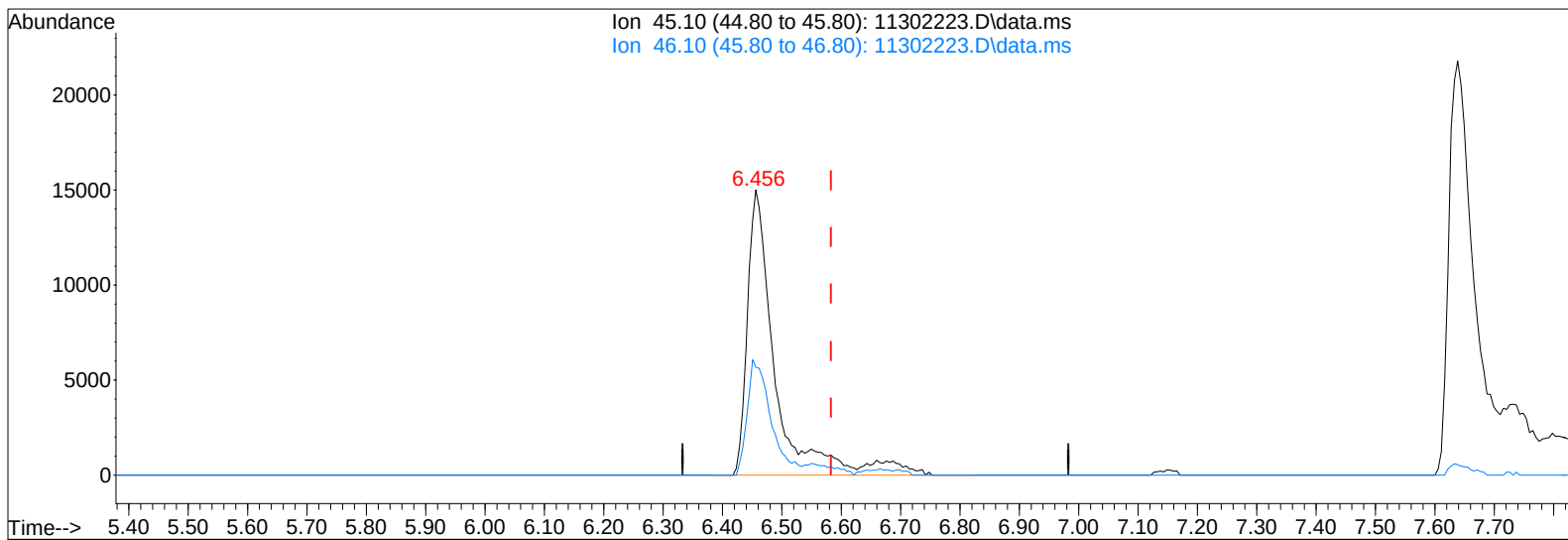
response 0

Ion	Exp%	Act%
45.10	100	0.00
46.10	40.90	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS16\DATA\2022_11\30\11302223.D
Acq On : 1 Dec 2022 00:56
Sample : 1.0ng R16113022 ICAL Std
Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:35 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 11302223.D\data.ms

(10) Ethanol (T)

6.456min (-0.127) 3.47ng m

MP

response 49305

Ion	Exp%	Act%

45.10	100	100

46.10	40.90	40.97

0.00	0.00	0.00

0.00	0.00	0.00

CG 12/1/22

Tz 12/2/22

Data File : I:\MS16\DATA\2022_11\30\11302224.D
 Acq On : 1 Dec 2022 1:30
 Sample : 5.0ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:41 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.30	130	140993	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	13.42	114	636914	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	17.72	54	158962	12.500	ng	-0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	247152	12.444	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	99.52%	
57) Toluene-d8 (SS2)	15.87	98	694293	12.605	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.80%	
73) Bromofluorobenzene (SS3)	19.10	174	225753	12.597	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.80%	

Target Compounds

						Qvalue
2) Propene	4.18	42	158429	5.997	ng	98
3) Dichlorodifluoromethan...	4.34	85	125001	5.101	ng	100
4) Chloromethane	4.63	50	126245	4.816	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.90	135	67351	4.997	ng	99
6) Vinyl Chloride	5.06	62	108849	5.000	ng	100
7) 1,3-Butadiene	5.33	54	107827	5.358	ng	98
8) Bromomethane	5.77	94	50002	5.042	ng	100
9) Chloroethane	6.11	64	50486	5.228	ng	98
10) Ethanol	6.47	45	253810	17.045	ng	100
11) Acetonitrile	6.73	41	178031	4.596	ng	98
12) Acrolein	6.93	56	105833	10.080	ng	100
13) Acetone	7.14	58	316865	25.125	ng	98
14) Trichlorofluoromethane	7.39	101	112392	5.116	ng	99
15) 2-Propanol (Isopropanol)	7.64	45	356223	9.059	ng	93
16) Acrylonitrile	7.90	53	242924	10.430	ng	100
17) 1,1-Dichloroethene	8.36	96	58820	5.484	ng	100
18) 2-Methyl-2-Propanol (t...	8.52	59	307266	10.675	ng	95
19) Methylene Chloride	8.57	84	60306	5.148	ng	100
20) 3-Chloro-1-propene (Al...	8.74	41	129803	5.485	ng	99
21) Trichlorotrifluoroethane	9.00	151	55706	5.249	ng	99
22) Carbon Disulfide	8.84	76	432215	10.238	ng	100
23) trans-1,2-Dichloroethene	9.85	61	102050	5.641	ng	98
24) 1,1-Dichloroethane	10.11	63	123729	5.255	ng	99
25) Methyl tert-Butyl Ether	10.21	73	175243	5.755	ng	100
26) Vinyl Acetate	10.37	86	33008	15.435	ng	# 97
27) 2-Butanone (MEK)	10.61	72	83256	11.514	ng	96
28) cis-1,2-Dichloroethene	11.13	61	96371	5.310	ng	100
29) Diisopropyl Ether	11.42	87	119786	10.753	ng	# 93
30) Ethyl Acetate	11.43	61	135579	22.039	ng	98
31) n-Hexane	11.41	57	155287	5.499	ng	99
32) Chloroform	11.47	83	107121	5.173	ng	100
34) Tetrahydrofuran (THF)	11.88	72	74142	10.505	ng	98
35) Ethyl tert-Butyl Ether	12.02	87	146737	10.946	ng	99
36) 1,2-Dichloroethane	12.27	62	96703	5.359	ng	99
38) 1,1,1-Trichloroethane	12.55	97	99568	5.154	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	235178	5.290	ng	100
42) Carbon Tetrachloride	13.19	117	85736	5.039	ng	100
43) Cyclohexane	13.32	84	194671	11.036	ng	100
44) tert-Amyl Methyl Ether	13.67	73	328173	10.640	ng	97
45) 1,2-Dichloropropane	13.88	63	70654	5.055	ng	98
46) Bromodichloromethane	14.07	83	84690	5.312	ng	100
47) Trichloroethene	14.12	130	68520	5.318	ng	99
48) 1,4-Dioxane	14.10	88	46528	5.140	ng	99
49) 2,2,4-Trimethylpentane...	14.19	57	378348	5.535	ng	99
50) Methyl Methacrylate	14.33	100	53655	10.532	ng	98

Data File : I:\MS16\DATA\2022_11\30\11302224.D
 Acq On : 1 Dec 2022 1:30
 Sample : 5.0ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:18:41 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

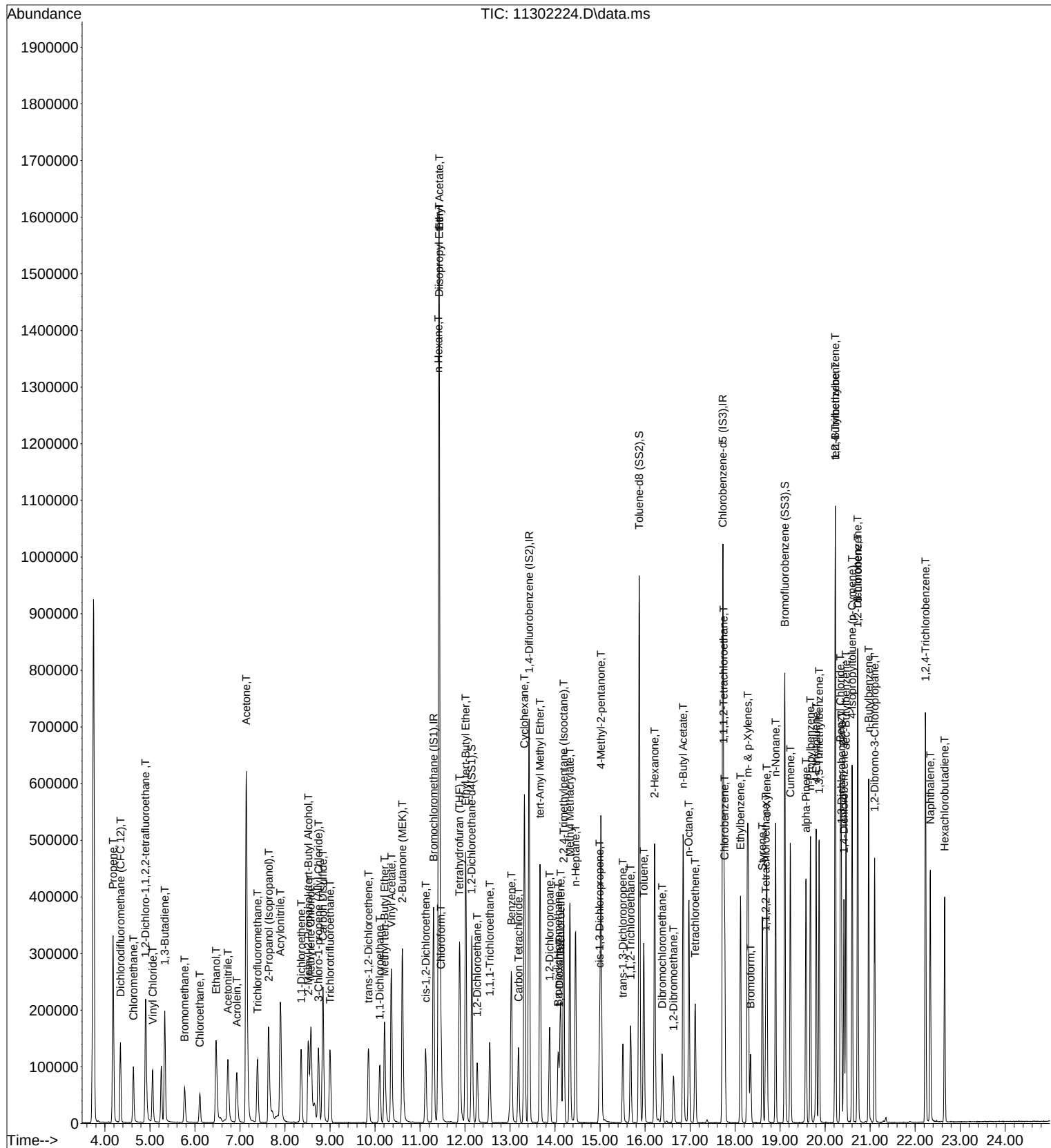
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	67757	5.550	ng	100
52) cis-1,3-Dichloropropene	14.99	75	93757	5.820	ng	100
53) 4-Methyl-2-pentanone	15.02	58	156693	11.811	ng	95
54) trans-1,3-Dichloropropene	15.51	75	81970	4.907	ng	99
55) 1,1,2-Trichloroethane	15.68	97	60910	5.365	ng	100
58) Toluene	15.97	91	257096	5.211	ng	99
59) 2-Hexanone	16.21	43	423860	12.203	ng	97
60) Dibromochloromethane	16.38	129	74734	5.331	ng	99
61) 1,2-Dibromoethane	16.63	107	67040	5.330	ng	99
62) n-Butyl Acetate	16.84	43	456445	11.889	ng	98
63) n-Octane	16.97	57	80073	5.811	ng	98
64) Tetrachloroethene	17.11	166	70005	5.122	ng	100
65) Chlorobenzene	17.77	112	183377	5.088	ng	100
66) Ethylbenzene	18.12	91	294304	5.487	ng	99
67) m- & p-Xylenes	18.28	91	477692	10.993	ng	98
68) Bromoform	18.35	173	62490	5.473	ng	100
69) Styrene	18.60	104	181067	5.655	ng	100
70) o-Xylene	18.70	91	242104	5.605	ng	99
71) n-Nonane	18.90	43	216269	6.093	ng	97
72) 1,1,2,2-Tetrachloroethane	18.68	83	110314	5.239	ng	99
74) Cumene	19.23	105	313324	5.424	ng	99
75) alpha-Pinene	19.58	93	154877	5.901	ng	94
76) n-Propylbenzene	19.68	91	390247	5.682	ng	100
77) 3-Ethyltoluene	20.35	105	690	No Calib	#	
78) 4-Ethyltoluene	19.80	105	315572	5.923	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	263391	5.600	ng	99
80) alpha-Methylstyrene	20.47	118	1605	No Calib	#	
81) 2-Ethyltoluene	20.35	105	690	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	267938	5.652	ng	99
83) n-Decane	20.23	58	15780	No Calib		
84) Benzyl Chloride	20.34	91	357362	9.405	ng	100
85) 1,3-Dichlorobenzene	20.36	146	159394	5.459	ng	99
86) 1,4-Dichlorobenzene	20.42	146	158121	5.314	ng	99
87) sec-Butylbenzene	20.46	105	372617	5.793	ng	100
88) 4-Isopropyltoluene (p-...	20.60	119	332871	5.819	ng	99
89) 1,2,3-Trimethylbenzene	20.35	105	690	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	158849	5.611	ng	100
91) d-Limonene	20.73	68	105451	5.297	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.10	157	121405	11.156	ng	94
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	223691	9.849	ng	100
95) Naphthalene	22.34	128	356380	5.241	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	72594	5.149	ng	99
98) Cyclohexanone	18.28	55	563	No Calib	#	
99) tert-Butylbenzene	20.23	119	279444	5.668	ng	100
100) n-Butylbenzene	20.97	91	302583	5.964	ng	99
101) 1,1,1,2-Tetrachloroethane	17.75	131	67504	5.061	ng	99

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

Data File : I:\MS16\DATA\2022_11\30\11302224.D
Acq On : 1 Dec 2022 1:30
Sample : 5.0ng R16113022 ICAL Std
Misc : S35-11092201/S35-11292203 (12/29)

Vial: 14
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:41 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2022_11\30\11302225.D
 Acq On : 1 Dec 2022 2:04
 Sample : 25ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:47 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.31	130	148042	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.43	114	674721	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.73	54	178082	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.16	65	263698	12.645	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.20%
57) Toluene-d8 (SS2)	15.88	98	746261	12.094	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.72%
73) Bromofluorobenzene (SS3)	19.10	174	252223	12.563	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.48%

Target Compounds

						Qvalue
2) Propene	4.19	42	782922	28.224	ng	100
3) Dichlorodifluoromethan...	4.34	85	688685	26.765	ng	100
4) Chloromethane	4.64	50	770287	27.984	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	367766	25.988	ng	100
6) Vinyl Chloride	5.07	62	590345	25.827	ng	100
7) 1,3-Butadiene	5.34	54	621431	29.411	ng	100
8) Bromomethane	5.79	94	270687	25.996	ng	100
9) Chloroethane	6.12	64	258867	25.530	ng	100
10) Ethanol	6.51	45	1372118	87.761	ng	100
11) Acetonitrile	6.76	41	917300	22.555	ng	100
12) Acrolein	6.95	56	579301	52.549	ng	100
13) Acetone	7.16	58	1748143	132.014	ng	100
14) Trichlorofluoromethane	7.40	101	602349	26.113	ng	100
15) 2-Propanol (Isopropanol)	7.66	45	2343054	56.750	ng	100
16) Acrylonitrile	7.92	53	1356634	55.476	ng	100
17) 1,1-Dichloroethene	8.37	96	326214	28.967	ng	100
18) 2-Methyl-2-Propanol (t...	8.53	59	2089647	69.145	ng	100
19) Methylene Chloride	8.60	84	321223	26.116	ng	100
20) 3-Chloro-1-propene (Al...	8.75	41	755639	30.410	ng	100
21) Trichlorotrifluoroethane	9.01	151	304645	27.338	ng	100
22) Carbon Disulfide	8.85	76	2352103	53.060	ng	100
23) trans-1,2-Dichloroethene	9.87	61	568953	29.951	ng	100
24) 1,1-Dichloroethane	10.12	63	663497	26.838	ng	100
25) Methyl tert-Butyl Ether	10.21	73	1025366	32.067	ng	100
26) Vinyl Acetate	10.37	86	218080	97.120	ng	100
27) 2-Butanone (MEK)	10.61	72	479775	63.192	ng	100
28) cis-1,2-Dichloroethene	11.14	61	550191	28.874	ng	100
29) Diisopropyl Ether	11.43	87	710005	60.704	ng	100
30) Ethyl Acetate	11.43	61	814186	126.048	ng	100
31) n-Hexane	11.42	57	909075	30.661	ng	100
32) Chloroform	11.48	83	583393	26.833	ng	100
34) Tetrahydrofuran (THF)	11.88	72	422779	57.050	ng	100
35) Ethyl tert-Butyl Ether	12.02	87	865812	61.510	ng	100
36) 1,2-Dichloroethane	12.27	62	532261	28.094	ng	100
38) 1,1,1-Trichloroethane	12.55	97	550408	26.897	ng	100
39) Isopropyl Acetate	13.67	61	1189	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	1309983	27.815	ng	100
42) Carbon Tetrachloride	13.19	117	490898	27.232	ng	100
43) Cyclohexane	13.32	84	1115232	59.680	ng	100
44) tert-Amyl Methyl Ether	13.67	73	1993107	60.997	ng	100
45) 1,2-Dichloropropane	13.88	63	399597	26.987	ng	100
46) Bromodichloromethane	14.07	83	473831	28.055	ng	100
47) Trichloroethene	14.13	130	389568	28.539	ng	100
48) 1,4-Dioxane	14.10	88	278253	29.016	ng	100
49) 2,2,4-Trimethylpentane...	14.19	57	2137282	29.517	ng	100
50) Methyl Methacrylate	14.33	100	325283	60.275	ng	100

Data File : I:\MS16\DATA\2022_11\30\11302225.D
 Acq On : 1 Dec 2022 2:04
 Sample : 25ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:18:47 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

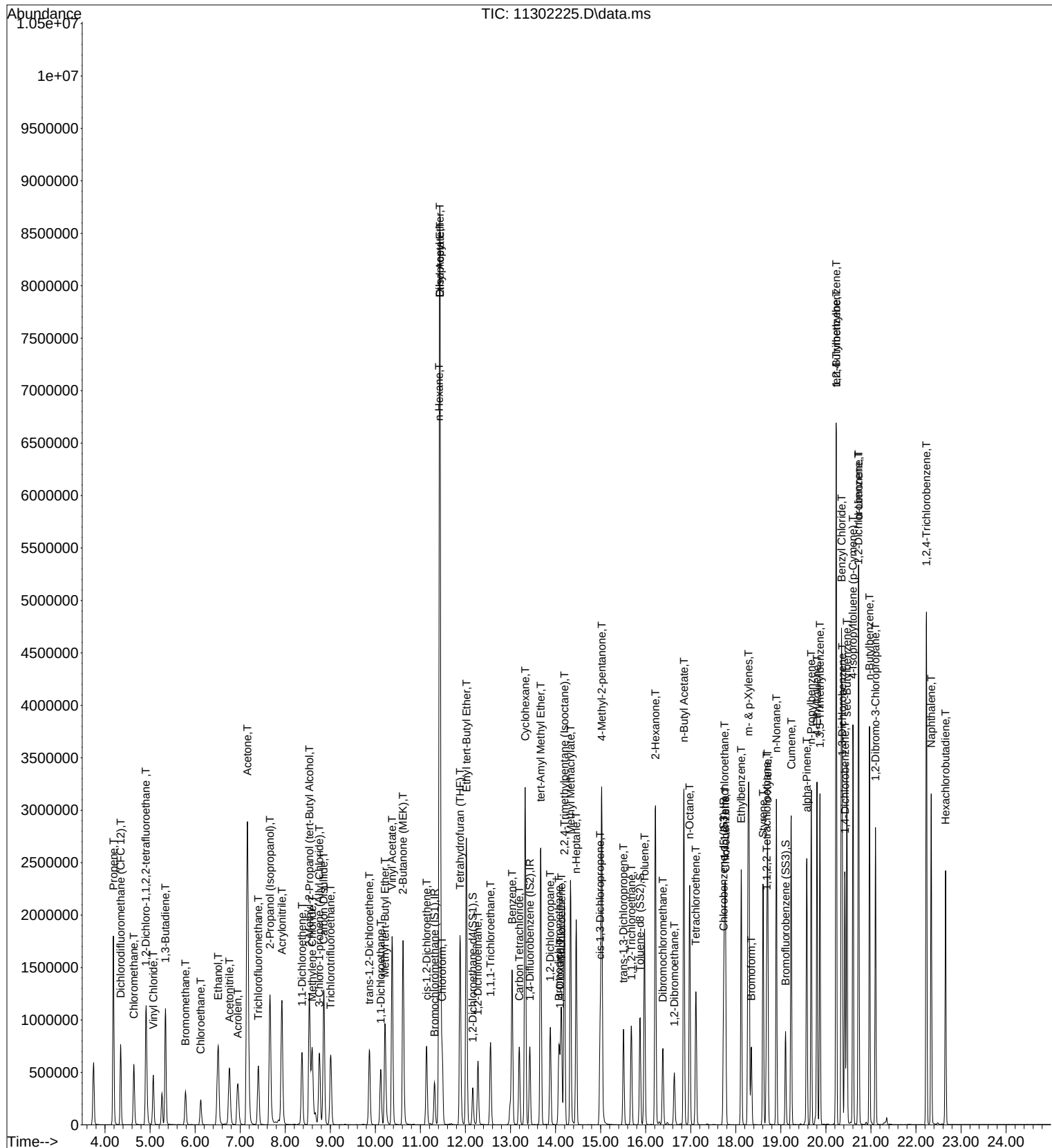
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	393719	30.441	ng	100
52) cis-1,3-Dichloropropene	14.99	75	573007	33.576	ng	100
53) 4-Methyl-2-pentanone	15.02	58	951138	67.678	ng	100
54) trans-1,3-Dichloropropene	15.51	75	519480	29.354	ng	100
55) 1,1,2-Trichloroethane	15.68	97	339050	28.191	ng	100
58) Toluene	15.98	91	1479190	26.762	ng	100
59) 2-Hexanone	16.22	43	2571242	66.080	ng	100
60) Dibromochloromethane	16.38	129	443700	28.252	ng	100
61) 1,2-Dibromoethane	16.64	107	397806	28.232	ng	100
62) n-Butyl Acetate	16.85	43	2842632	66.092	ng	100
63) n-Octane	16.98	57	471483	30.543	ng	100
64) Tetrachloroethene	17.11	166	416943	27.232	ng	100
65) Chlorobenzene	17.77	112	1071635	26.542	ng	100
66) Ethylbenzene	18.12	91	1781515	29.647	ng	100
67) m- & p-Xylenes	18.28	91	2855526	58.660	ng	100
68) Bromoform	18.35	173	377382	29.501	ng	100
69) Styrene	18.60	104	1138886	31.748	ng	100
70) o-Xylene	18.71	91	1467895	30.337	ng	100
71) n-Nonane	18.90	43	1254084	31.536	ng	100
72) 1,1,2,2-Tetrachloroethane	18.69	83	654783	27.756	ng	100
74) Cumene	19.23	105	1928321	29.796	ng	100
75) alpha-Pinene	19.58	93	960308	32.661	ng	100
76) n-Propylbenzene	19.68	91	2379304	30.926	ng	100
77) 3-Ethyltoluene	20.35	105	807	No Calib		
78) 4-Ethyltoluene	19.80	105	1966502	32.949	ng	100
79) 1,3,5-Trimethylbenzene	19.87	105	1604279	30.444	ng	100
80) alpha-Methylstyrene	20.47	118	7638	No Calib		
81) 2-Ethyltoluene	20.35	105	807	No Calib		
82) 1,2,4-Trimethylbenzene	20.23	105	1749440	32.941	ng	100
83) n-Decane	20.23	58	95803	No Calib		
84) Benzyl Chloride	20.35	91	2750942	64.623	ng	100
85) 1,3-Dichlorobenzene	20.36	146	984496	30.097	ng	100
86) 1,4-Dichlorobenzene	20.42	146	980279	29.407	ng	100
87) sec-Butylbenzene	20.47	105	2274186	31.560	ng	100
88) 4-Isopropyltoluene (p-...	20.60	119	2079420	32.450	ng	100
89) 1,2,3-Trimethylbenzene	20.35	105	807	No Calib		
90) 1,2-Dichlorobenzene	20.72	146	965556	30.445	ng	100
91) d-Limonene	20.73	68	696597	31.233	ng	100
92) 1,2-Dibromo-3-Chloropr...	21.10	157	749973	61.516	ng	100
93) n-Undecane	21.34	58	259	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.23	180	1502927	59.069	ng	100
95) Naphthalene	22.34	128	2394904	31.441	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	442336	28.008	ng	100
98) Cyclohexanone	18.19	55	108	No Calib	#	
99) tert-Butylbenzene	20.23	119	1797068	32.539	ng	100
100) n-Butylbenzene	20.97	91	1876088	33.006	ng	100
101) 1,1,1,2-Tetrachloroethane	17.75	131	398667	26.680	ng	100

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

Vial: 15
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:47 2022



Data File : I:\MS16\DATA\2022_11\30\11302226.D
 Acq On : 1 Dec 2022 2:38
 Sample : 50ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:53 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	169048	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.43	114	764656	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.73	54	193374	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.16	65	290157	12.185	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.44%
57) Toluene-d8 (SS2)	15.88	98	827916	12.356	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.88%
73) Bromofluorobenzene (SS3)	19.10	174	285094	13.077	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	104.64%

Target Compounds

						Qvalue
2) Propene	4.18	42	1857666	58.646	ng	100
3) Dichlorodifluoromethan...	4.34	85	1514928	51.560	ng	100
4) Chloromethane	4.64	50	1431338	45.538	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	846707	52.397	ng	99
6) Vinyl Chloride	5.07	62	1335907	51.182	ng	100
7) 1,3-Butadiene	5.34	54	1424223	59.030	ng	99
8) Bromomethane	5.79	94	624376	52.511	ng	100
9) Chloroethane	6.12	64	600884	51.896	ng	100
10) Ethanol	6.53	45	3044174	170.512	ng	100
11) Acetonitrile	6.77	41	1940547	41.785	ng	99
12) Acrolein	6.95	56	1248423	99.174	ng	100
13) Acetone	7.17	58	3742379	247.495	ng	91
14) Trichlorofluoromethane	7.40	101	1358450	51.574	ng	100
15) 2-Propanol (Isopropanol)	7.67	45	4443262	94.245	ng	99
16) Acrylonitrile	7.94	53	2939851	105.280	ng	99
17) 1,1-Dichloroethene	8.37	96	727195	56.550	ng	99
18) 2-Methyl-2-Propanol (t...	8.55	59	3519275	101.980	ng	98
19) Methylene Chloride	8.60	84	706870	50.329	ng	94
20) 3-Chloro-1-propene (Al...	8.76	41	1572843	55.432	ng	98
21) Trichlorotrifluoroethane	9.01	151	678601	53.330	ng	99
22) Carbon Disulfide	8.86	76	5283830	104.384	ng	100
23) trans-1,2-Dichloroethene	9.87	61	1276106	58.830	ng	100
24) 1,1-Dichloroethane	10.12	63	1462946	51.822	ng	100
25) Methyl tert-Butyl Ether	10.22	73	2295040	62.856	ng	99
26) Vinyl Acetate	10.38	86	494069	192.687	ng	# 90
27) 2-Butanone (MEK)	10.62	72	1066050	122.964	ng	# 92
28) cis-1,2-Dichloroethene	11.14	61	1233708	56.700	ng	100
29) Diisopropyl Ether	11.43	87	1623842	121.583	ng	# 71
30) Ethyl Acetate	11.44	61	1834110	248.663	ng	96
31) n-Hexane	11.42	57	1964985	58.040	ng	99
32) Chloroform	11.49	83	1306722	52.634	ng	99
34) Tetrahydrofuran (THF)	11.88	72	947417	111.959	ng	# 93
35) Ethyl tert-Butyl Ether	12.02	87	2010588	125.090	ng	98
36) 1,2-Dichloroethane	12.28	62	1180534	54.569	ng	100
38) 1,1,1-Trichloroethane	12.55	97	1248844	53.850	ng	99
39) Isopropyl Acetate	13.68	61	2292	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.04	78	2913335	54.583	ng	100
42) Carbon Tetrachloride	13.20	117	1122570	54.950	ng	100
43) Cyclohexane	13.32	84	2513352	118.679	ng	98
44) tert-Amyl Methyl Ether	13.67	73	4670622	126.128	ng	97
45) 1,2-Dichloropropane	13.89	63	890072	53.041	ng	100
46) Bromodichloromethane	14.08	83	1079824	56.416	ng	100
47) Trichloroethene	14.13	130	892551	57.697	ng	100
48) 1,4-Dioxane	14.10	88	635071	58.436	ng	99
49) 2,2,4-Trimethylpentane...	14.19	57	4724813	57.577	ng	98
50) Methyl Methacrylate	14.34	100	740415	121.062	ng	99

Data File : I:\MS16\DATA\2022_11\30\11302226.D
 Acq On : 1 Dec 2022 2:38
 Sample : 50ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:18:53 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

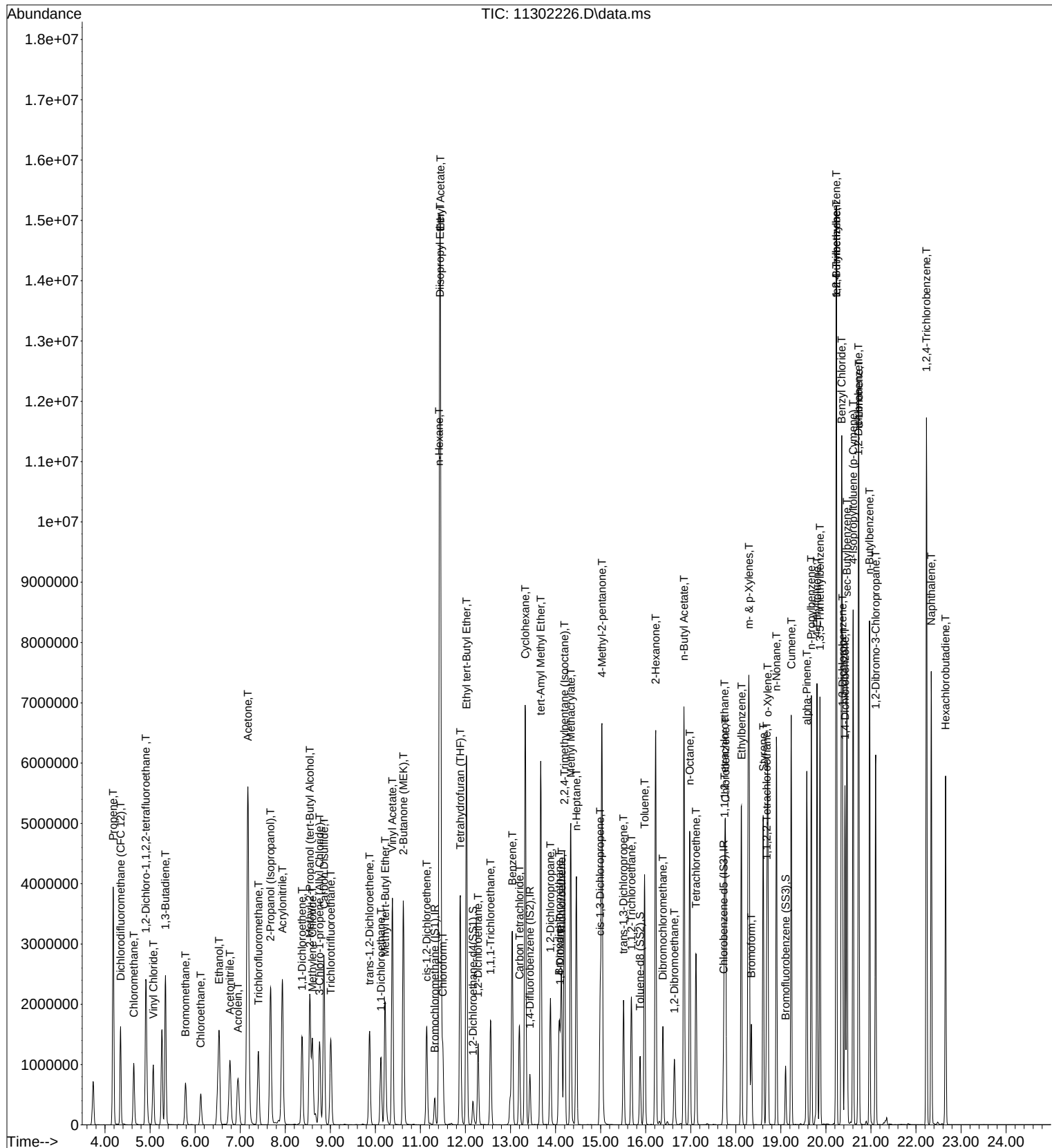
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	875261	59.714	ng	98
52) cis-1,3-Dichloropropene	14.99	75	1295076	66.962	ng	100
53) 4-Methyl-2-pentanone	15.03	58	2107638	132.329	ng	93
54) trans-1,3-Dichloropropene	15.51	75	1190037	59.336	ng	100
55) 1,1,2-Trichloroethane	15.68	97	757177	55.552	ng	100
58) Toluene	15.98	91	3299322	54.972	ng	100
59) 2-Hexanone	16.22	43	5402922	127.873	ng	97
60) Dibromochloromethane	16.38	129	1006883	59.042	ng	100
61) 1,2-Dibromoethane	16.64	107	898226	58.705	ng	100
62) n-Butyl Acetate	16.85	43	6011841	128.724	ng	97
63) n-Octane	16.98	57	1035646	61.784	ng	99
64) Tetrachloroethene	17.12	166	953064	57.325	ng	99
65) Chlorobenzene	17.77	112	2426945	55.357	ng	100
66) Ethylbenzene	18.13	91	4021061	61.624	ng	100
67) m- & p-Xylenes	18.29	91	6504876	123.059	ng	99
68) Bromoform	18.35	173	859019	61.841	ng	100
69) Styrene	18.61	104	2560872	65.742	ng	99
70) o-Xylene	18.71	91	3298837	62.786	ng	100
71) n-Nonane	18.90	43	2586191	59.891	ng	95
72) 1,1,2,2-Tetrachloroethane	18.69	83	1436032	56.059	ng	100
74) Cumene	19.23	105	4316821	61.428	ng	100
75) alpha-Pinene	19.58	93	2207520	69.143	ng	99
76) n-Propylbenzene	19.68	91	5304885	63.500	ng	100
77) 3-Ethyltoluene	20.35	105	1083	No Calib	#	
78) 4-Ethyltoluene	19.80	105	4417868	68.168	ng	100
79) 1,3,5-Trimethylbenzene	19.87	105	3617560	63.221	ng	99
80) alpha-Methylstyrene	20.47	118	16319	No Calib	#	
81) 2-Ethyltoluene	20.35	105	1083	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	4013184	69.590	ng	98
83) n-Decane	20.23	58	204390	No Calib		
84) Benzyl Chloride	20.35	91	6660592	144.093	ng	99
85) 1,3-Dichlorobenzene	20.37	146	2244197	63.182	ng	99
86) 1,4-Dichlorobenzene	20.42	146	2211290	61.091	ng	99
87) sec-Butylbenzene	20.47	105	5099088	65.166	ng	100
88) 4-Isopropyltoluene (p-...	20.61	119	4667586	67.078	ng	100
89) 1,2,3-Trimethylbenzene	20.35	105	1083	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	2187545	63.522	ng	99
91) d-Limonene	20.73	68	1613943	66.642	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.11	157	1722467	130.111	ng	96
93) n-Undecane	21.35	58	471	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.23	180	3588495	129.884	ng	99
95) Naphthalene	22.34	128	5746043	69.471	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	1061928	61.922	ng	100
98) Cyclohexanone	18.20	55	855	No Calib	#	
99) tert-Butylbenzene	20.23	119	4026353	67.139	ng	99
100) n-Butylbenzene	20.97	91	4260388	69.026	ng	100
101) 1,1,1,2-Tetrachloroethane	17.75	131	901193	55.542	ng	100

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

Vial: 15
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:53 2022



Data File : I:\MS16\DATA\2022_11\30\11302228.D
 Acq On : 1 Dec 2022 3:46
 Sample : 100ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

CG 12/1/22

Quant Time: Dec 01 08:18:59 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.33	130	174691	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	13.43	114	796644	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.73	54	210647	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.18	65	293406	11.923	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	95.36%	
57) Toluene-d8 (SS2)	15.88	98	882707	12.093	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.72%	
73) Bromofluorobenzene (SS3)	19.11	174	316900	13.344	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	106.72%	

Target Compounds

						Qvalue
2) Propene	4.21	42	4129164	126.145	ng	100
3) Dichlorodifluoromethan...	4.37	85	3103433	102.212	ng	100
4) Chloromethane	4.66	50	1652990	50.891	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.93	135	1699943	101.801	ng	99
6) Vinyl Chloride	5.09	62	2634757	97.684	ng	100
7) 1,3-Butadiene	5.36	54	2825683	113.333	ng	99
8) Bromomethane	5.81	94	1228912	100.015	ng	100
9) Chloroethane	6.14	64	1190368	99.487	ng	100
10) Ethanol	6.58	45	5959907	323.046	ng	100
11) Acetonitrile	6.81	41	3926711	81.821	ng	99
12) Acrolein	6.98	56	2552572	196.224	ng	100
13) Acetone	7.20	58	7785234	498.229	ng	87
14) Trichlorofluoromethane	7.42	101	2786367	102.368	ng	99
15) 2-Propanol (Isopropanol)	7.71	45	7561389	155.202	ng	99
16) Acrylonitrile	7.97	53	6040660	209.336	ng	99
17) 1,1-Dichloroethene	8.39	96	1520641	114.432	ng	100
18) 2-Methyl-2-Propanol (t...	8.57	59	3174685	89.023	ng	99
19) Methylene Chloride	8.62	84	1469443	101.245	ng	93
20) 3-Chloro-1-propene (Al...	8.78	41	3320815	113.256	ng	97
21) Trichlorotrifluoroethane	9.02	151	1414349	107.560	ng	99
22) Carbon Disulfide	8.87	76	11321469	216.436	ng	100
23) trans-1,2-Dichloroethene	9.88	61	2667969	119.023	ng	100
24) 1,1-Dichloroethane	10.14	63	3022204	103.597	ng	100
25) Methyl tert-Butyl Ether	10.23	73	3587238	95.073	ng	98
26) Vinyl Acetate	10.39	86	1036876	391.320	ng	# 76
27) 2-Butanone (MEK)	10.64	72	2175363	242.813	ng	# 81
28) cis-1,2-Dichloroethene	11.15	61	2540990	113.009	ng	99
29) Diisopropyl Ether	11.44	87	3054713	221.330	ng	# 32
30) Ethyl Acetate	11.47	61	3277158	429.955	ng	87
31) n-Hexane	11.42	57	3716966	106.242	ng	99
32) Chloroform	11.52	83	2649255	103.263	ng	99
34) Tetrahydrofuran (THF)	11.89	72	1932131	220.951	ng	# 84
35) Ethyl tert-Butyl Ether	12.03	87	4345278	261.611	ng	93
36) 1,2-Dichloroethane	12.29	62	2416895	108.110	ng	100
38) 1,1,1-Trichloroethane	12.57	97	2552920	105.662	ng	99
39) Isopropyl Acetate	13.68	61	4972	No Calib	#	
40) 1-Butanol	12.64	56	177	No Calib	#	
41) Benzene	13.04	78	6157015	110.723	ng	100
42) Carbon Tetrachloride	13.20	117	2359288	110.850	ng	100
43) Cyclohexane	13.34	84	5328693	241.514	ng	94
44) tert-Amyl Methyl Ether	13.68	73	10184238	263.978	ng	93
45) 1,2-Dichloropropane	13.90	63	1850543	105.849	ng	100
46) Bromodichloromethane	14.08	83	2275444	114.108	ng	100
47) Trichloroethene	14.14	130	1887743	117.128	ng	100
48) 1,4-Dioxane	14.11	88	1356938	119.846	ng	96
49) 2,2,4-Trimethylpentane...	14.20	57	9590368	112.177	ng	96
50) Methyl Methacrylate	14.35	100	1554121	243.904	ng	99

Data File : I:\MS16\DATA\2022_11\30\11302228.D
 Acq On : 1 Dec 2022 3:46
 Sample : 100ng R16113022 ICAL Std
 Misc : S35-11092201/S35-11292201 (12/29)

Vial: 15
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:18:59 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

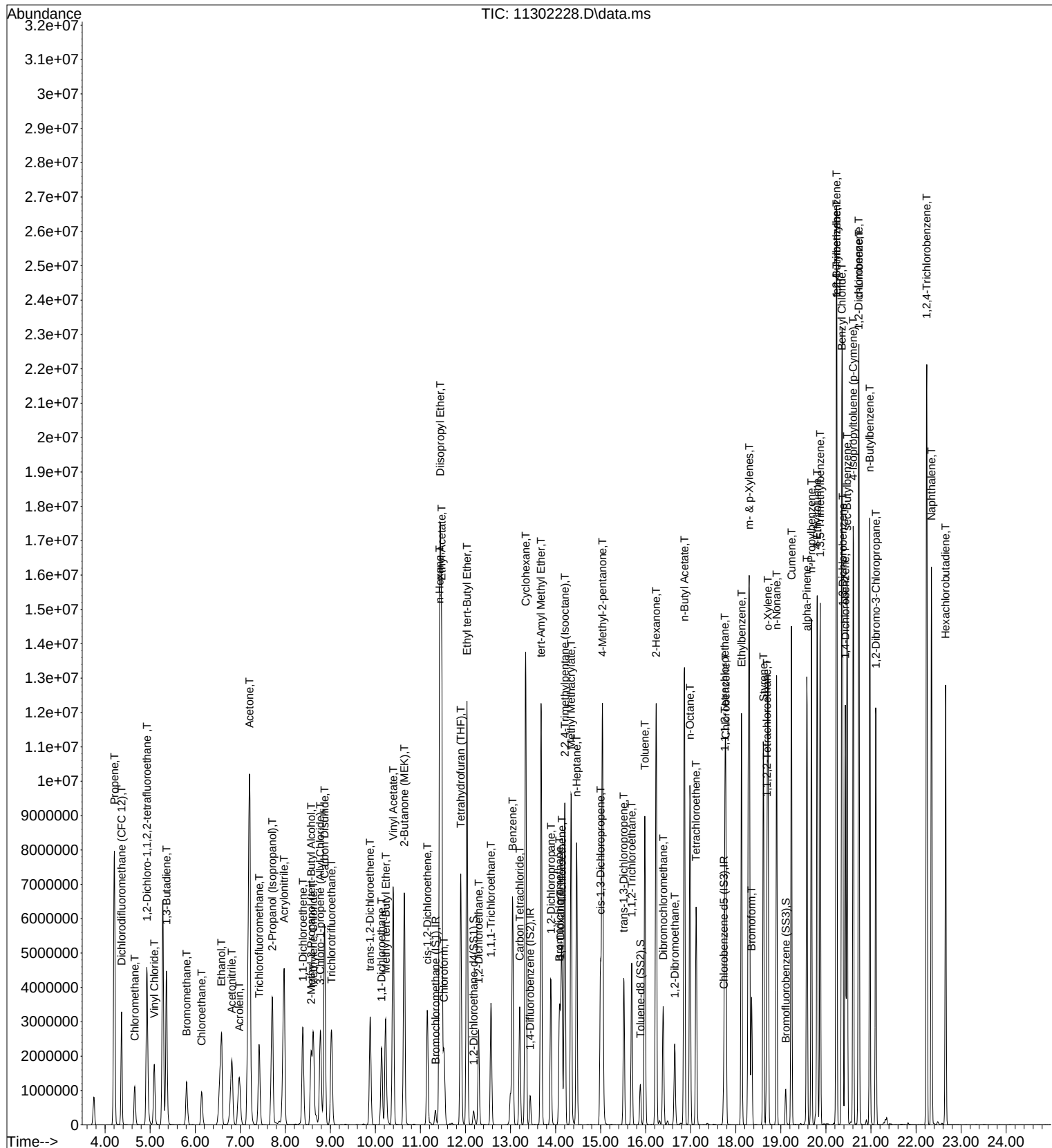
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.47	71	1839144	120.435	ng	96
52) cis-1,3-Dichloropropene	15.00	75	2758590	136.905	ng	100
53) 4-Methyl-2-pentanone	15.04	58	4333972	261.185	ng	83
54) trans-1,3-Dichloropropene	15.51	75	2572867	123.134	ng	100
55) 1,1,2-Trichloroethane	15.69	97	1643818	115.760	ng	99
58) Toluene	15.98	91	7202847	110.171	ng	100
59) 2-Hexanone	16.23	43	10497909	228.085	ng	91
60) Dibromochloromethane	16.39	129	2197240	118.279	ng	99
61) 1,2-Dibromoethane	16.65	107	1938429	116.302	ng	100
62) n-Butyl Acetate	16.86	43	11800771	231.956	ng	93
63) n-Octane	16.98	57	2182406	119.521	ng	96
64) Tetrachloroethene	17.12	166	2094589	115.654	ng	100
65) Chlorobenzene	17.78	112	5363905	112.315	ng	100
66) Ethylbenzene	18.13	91	8984915	126.405	ng	99
67) m- & p-Xylenes	18.30	91	14548430	252.659	ng	97
68) Bromoform	18.35	173	1902282	125.717	ng	100
69) Styrene	18.61	104	5715563	134.696	ng	99
70) o-Xylene	18.71	91	7410011	129.468	ng	98
71) n-Nonane	18.91	43	5059324	107.556	ng	87
72) 1,1,2,2-Tetrachloroethane	18.69	83	3232373	115.837	ng	100
74) Cumene	19.24	105	9569260	125.004	ng	100
75) alpha-Pinene	19.58	93	5021422	144.381	ng	100
76) n-Propylbenzene	19.68	91	11646060	127.973	ng	99
77) 3-Ethyltoluene	20.35	105	669	No Calib	#	
78) 4-Ethyltoluene	19.81	105	9734871	137.893	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	8020687	128.677	ng	97
80) alpha-Methylstyrene	20.47	118	35478	No Calib	#	
81) 2-Ethyltoluene	20.35	105	669	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.24	105	8175700	130.145	ng	94
83) n-Decane	20.24	58	365739	No Calib		
84) Benzyl Chloride	20.35	91	13943733	276.919	ng	98
85) 1,3-Dichlorobenzene	20.37	146	4634971	119.791	ng	99
86) 1,4-Dichlorobenzene	20.43	146	4856578	123.169	ng	99
87) sec-Butylbenzene	20.47	105	10796134	126.660	ng	99
88) 4-Isopropyltoluene (p-...	20.61	119	9785396	129.095	ng	98
89) 1,2,3-Trimethylbenzene	20.35	105	669	No Calib	#	
90) 1,2-Dichlorobenzene	20.73	146	4390630	117.040	ng	100
91) d-Limonene	20.73	68	3255819	123.414	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.11	157	3643299	252.640	ng	90
93) n-Undecane	21.41	58	209	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.24	180	7522367	249.943	ng	98
95) Naphthalene	22.34	128	12776157	141.800	ng	99
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	2462081	131.794	ng	100
98) Cyclohexanone	18.21	55	1385	No Calib	#	
99) tert-Butylbenzene	20.24	119	7925141	121.315	ng	98
100) n-Butylbenzene	20.97	91	9181492	136.559	ng	99
101) 1,1,1,2-Tetrachloroethane	17.76	131	1995725	112.914	ng	100

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

Vial: 15
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:18:59 2022



ALS Environmental

LCS Acceptance Criteria

CG 12/1/22

ICV R16113022_25ng

	RT
Bromochloromethane (IS1)	11.32
1,4-Difluorobenzene (IS2)	13.43
Chlorobenzene-d5 (IS3)	17.73

Datafile: 11302230.D
Instrument: MS-16
Date: 12/1/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	23.926	26.5	90	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	25.191	26.5	95	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	24.659	25.8	96	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	24.862	25.8	96	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	25.842	25.5	101	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	27.290	26.5	103	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	25.514	25.8	99	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	25.980	26.0	100	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	94.835	88.3	107	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	19.840	22.8	87	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	49.522	48.5	102	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	113.524	133	85	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	23.551	26.3	90	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	49.692	51.5	96	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	48.416	51.5	94	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	27.975	27.0	104	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	61.891	53.3	116	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	25.215	26.5	95	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	24.506	26.8	91	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	25.599	27.0	95	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	49.539	53.3	93	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	27.940	27.0	103	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	26.140	27.0	97	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	30.446	26.8	114	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	152.332	70.5	216	56-137	FAIL	70-130	FAIL	56-139	FAIL
78-93-3	2-Butanone	59.596	52.3	114	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	27.050	26.8	101	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	53.096	52.5	101	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	75.133	107	70	59-161	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	25.864	26.5	98	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	24.784	26.5	94	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	56.661	51.5	110	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	57.501	53.5	107	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	25.077	27.0	93	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	25.286	26.3	96	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	27.354	27.0	101	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	23.994	25.8	93	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	56.851	52.8	108	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	58.382	53.5	109	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	25.929	26.5	98	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	26.567	27.0	98	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	27.460	26.5	104	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	28.326	26.5	107	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	26.184	27.0	97	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	56.608	53.3	106	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	28.376	26.5	107	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	31.973	27.0	118	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	60.062	54.0	111	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

ICV R16113022_25ng

	RT
Bromochloromethane (IS1)	11.32
1,4-Difluorobenzene (IS2)	13.43
Chlorobenzene-d5 (IS3)	17.73

Datafile: 11302230.D
Instrument: MS-16
Date: 12/1/2022

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	27.748	25.8	108	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	26.926	26.5	102	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	28.246	26.5	107	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	61.573	53.3	116	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	28.181	27.0	104	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	29.534	26.0	114	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	63.715	51.3	124	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	29.902	26.8	112	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	28.665	26.5	108	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	27.283	26.5	103	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	31.153	26.3	118	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	59.793	52.5	114	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	29.604	26.8	110	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	31.971	26.5	121	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	30.702	26.5	116	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	28.929	26.5	109	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	28.586	26.5	108	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	29.743	26.5	112	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	33.270	27.3	122	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	30.771	26.8	115	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	32.414	27.0	120	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	30.513	26.3	116	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	32.181	26.0	124	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	63.444	52.5	121	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	29.493	26.3	112	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	28.965	26.5	109	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	30.639	26.3	116	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	30.943	26.3	118	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	29.427	26.5	111	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	30.302	26.3	115	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	59.165	52.0	114	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	57.659	51.5	112	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	30.406	27.0	113	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	27.140	26.3	103	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	31.289	26.3	119	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	32.423	26.3	123	70-131	ok	70-130	ok	66-130	ok

Data File : I:\MS16\DATA\2022_11\30\11302230.D

Vial: 9

Acq On : 1 Dec 2022 4:54

Operator: CG

Sample : ICV R16113022_25ng

Inst : GCMS-16

CG 12/1/22

Misc : S35-11092201/S35-11152203 (12/15)

Quant Time: Dec 01 08:19:04 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 08:11:29 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.32	130	216282	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	13.43	114	971066	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.73	54	228496	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.16	65	354421	11.633	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	93.04%
57) Toluene-d8 (SS2)	15.88	98	1057727	13.359	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	106.88%
73) Bromofluorobenzene (SS3)	19.10	174	348196	13.516	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	108.16%

Target Compounds

						Qvalue
2) Propene	4.19	42	969628	23.926	ng	98
3) Dichlorodifluoromethan...	4.35	85	946959	25.191	ng	100
4) Chloromethane	4.64	50	991627	24.659	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	514000	24.862	ng	100
6) Vinyl Chloride	5.07	62	862958	25.842	ng	100
7) 1,3-Butadiene	5.35	54	842417	27.290	ng	98
8) Bromomethane	5.79	94	388136	25.514	ng	100
9) Chloroethane	6.13	64	384859	25.980	ng	100
10) Ethanol	6.52	45	2166182	94.835	ng	100
11) Acetonitrile	6.76	41	1178851	19.840	ng	99
12) Acrolein	6.95	56	797586	49.522	ng	99
13) Acetone	7.16	58	2196241	113.524	ng	# 85
14) Trichlorofluoromethane	7.40	101	793658	23.551	ng	100
15) 2-Propanol (Isopropanol)	7.67	45	2997385	49.692	ng	99
16) Acrylonitrile	7.92	53	1729734	48.416	ng	99
17) 1,1-Dichloroethene	8.37	96	460251	27.975	ng	95
18) 2-Methyl-2-Propanol (t...	8.54	59	2732619	61.891	ng	96
19) Methylene Chloride	8.60	84	453101	25.215	ng	86
20) 3-Chloro-1-propene (Al...	8.76	41	889615	24.506	ng	95
21) Trichlorotrifluoroethane	9.01	151	416755	25.599	ng	99
22) Carbon Disulfide	8.86	76	3208263	49.539	ng	100
23) trans-1,2-Dichloroethene	9.87	61	775392	27.940	ng	98
24) 1,1-Dichloroethane	10.12	63	944124	26.140	ng	100
25) Methyl tert-Butyl Ether	10.22	73	1422281	30.446	ng	97
26) Vinyl Acetate	10.38	86	499729	152.332	ng	# 69
27) 2-Butanone (MEK)	10.61	72	661037	59.596	ng	# 77
28) cis-1,2-Dichloroethene	11.14	61	753015	27.050	ng	98
29) Diisopropyl Ether	11.43	87	907277	53.096	ng	# 42
30) Ethyl Acetate	11.44	61	709015	75.133	ng	95
31) n-Hexane	11.42	57	1120290	25.864	ng	99
32) Chloroform	11.48	83	787213	24.784	ng	100
34) Tetrahydrofuran (THF)	11.88	72	613447	56.661	ng	# 84
35) Ethyl tert-Butyl Ether	12.02	87	1182456	57.501	ng	95
36) 1,2-Dichloroethane	12.28	62	694086	25.077	ng	100
38) 1,1,1-Trichloroethane	12.55	97	744711	25.286	ng	99
39) Isopropyl Acetate	13.67	61	1588	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.04	78	1854125	27.354	ng	100
42) Carbon Tetrachloride	13.19	117	622498	23.994	ng	100
43) Cyclohexane	13.32	84	1528970	56.851	ng	94
44) tert-Amyl Methyl Ether	13.67	73	2745514	58.382	ng	95
45) 1,2-Dichloropropane	13.89	63	552561	25.929	ng	100
46) Bromodichloromethane	14.07	83	645762	26.567	ng	100
47) Trichloroethene	14.13	130	539466	27.460	ng	100
48) 1,4-Dioxane	14.10	88	390940	28.326	ng	95
49) 2,2,4-Trimethylpentane...	14.19	57	2728640	26.184	ng	96
50) Methyl Methacrylate	14.33	100	439670	56.608	ng	99

Data File : I:\MS16\DATA\2022_11\30\11302230.D
 Acq On : 1 Dec 2022 4:54
 Sample : ICV R16113022_25ng
 Misc : S35-11092201/S35-11152203 (12/15)

Vial: 9
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 01 08:19:04 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 08:11:29 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

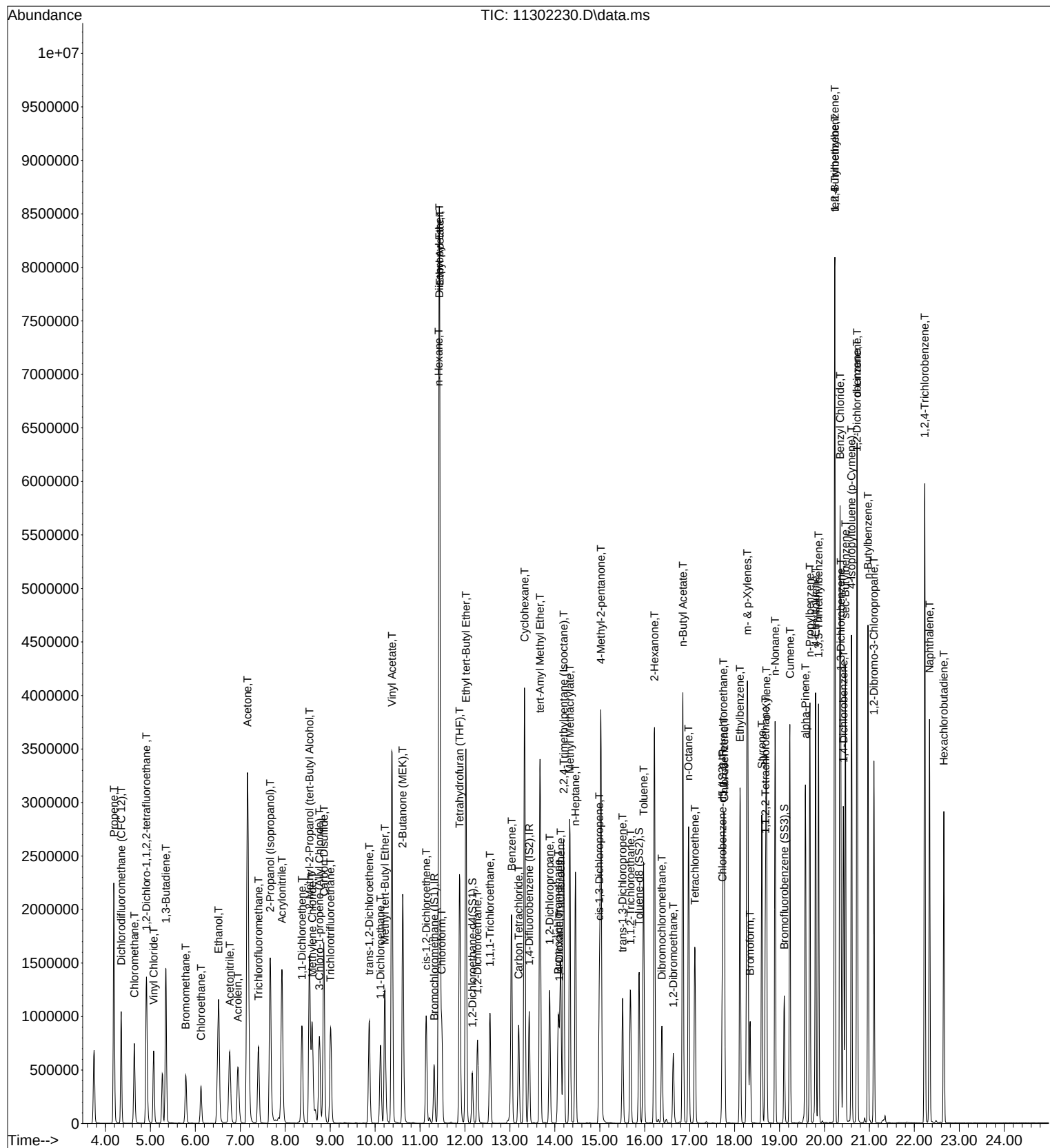
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	528205	28.376	ng	94
52) cis-1,3-Dichloropropene	14.99	75	785291	31.973	ng	100
53) 4-Methyl-2-pentanone	15.02	58	1214856	60.062	ng	90
54) trans-1,3-Dichloropropene	15.51	75	706740	27.748	ng	100
55) 1,1,2-Trichloroethane	15.68	97	466064	26.926	ng	100
58) Toluene	15.98	91	2003163	28.246	ng	100
59) 2-Hexanone	16.22	43	3074118	61.573	ng	95
60) Dibromochloromethane	16.38	129	567882	28.181	ng	100
61) 1,2-Dibromoethane	16.64	107	533961	29.534	ng	100
62) n-Butyl Acetate	16.85	43	3516182	63.715	ng	96
63) n-Octane	16.98	57	592268	29.902	ng	95
64) Tetrachloroethene	17.12	166	563126	28.665	ng	99
65) Chlorobenzene	17.77	112	1413384	27.283	ng	100
66) Ethylbenzene	18.12	91	2401981	31.153	ng	100
67) m- & p-Xylenes	18.28	91	3734682	59.793	ng	100
68) Bromoform	18.35	173	485915	29.604	ng	100
69) Styrene	18.60	104	1471590	31.971	ng	100
70) o-Xylene	18.71	91	1906085	30.702	ng	99
71) n-Nonane	18.90	43	1476103	28.929	ng	95
72) 1,1,2,2-Tetrachloroethane	18.69	83	865264	28.586	ng	100
74) Cumene	19.23	105	2469800	29.743	ng	100
75) alpha-Pinene	19.58	93	1255160	33.270	ng	100
76) n-Propylbenzene	19.68	91	3037587	30.771	ng	100
77) 3-Ethyltoluene	20.35	105	644	No Calib	#	
78) 4-Ethyltoluene	19.80	105	2482264	32.414	ng	100
79) 1,3,5-Trimethylbenzene	19.87	105	2063116	30.513	ng	99
80) alpha-Methylstyrene	20.47	118	8795	No Calib	#	
81) 2-Ethyltoluene	20.35	105	644	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	2192902	32.181	ng	100
83) n-Decane	20.23	58	116221	No Calib		
84) Benzyl Chloride	20.35	91	3465286	63.444	ng	100
85) 1,3-Dichlorobenzene	20.36	146	1237848	29.493	ng	100
86) 1,4-Dichlorobenzene	20.42	146	1238846	28.965	ng	100
87) sec-Butylbenzene	20.47	105	2832898	30.639	ng	100
88) 4-Isopropyltoluene (p-...	20.60	119	2544223	30.943	ng	100
89) 1,2,3-Trimethylbenzene	20.35	105	644	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	1197451	29.427	ng	99
91) d-Limonene	20.73	68	867138	30.302	ng	98
92) 1,2-Dibromo-3-Chloropr...	21.10	157	925515	59.165	ng	97
93) n-Undecane	21.34	58	295	No Calib	#	
94) 1,2,4-Trichlorobenzene	22.23	180	1882358	57.659	ng	100
95) Naphthalene	22.34	128	2971699	30.406	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	549966	27.140	ng	100
98) Cyclohexanone	18.18	55	971	No Calib	#	
99) tert-Butylbenzene	20.23	119	2217220	31.289	ng	100
100) n-Butylbenzene	20.97	91	2364651	32.423	ng	100
101) 1,1,1,2-Tetrachloroethane	17.75	131	511458	26.677	ng	99

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

Data File : I:\MS16\DATA\2022_11\30\11302230.D
Acq On : 1 Dec 2022 4:54
Sample : ICV R16113022_25ng
Misc : S35-11092201/S35-11152203 (12/15)

Vial: 9
Operator: CG
Inst : GCMS-16

Quant Time: Dec 01 08:19:04 2022
Quant Method : I:\MS16\METHODS\R16113022.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Dec 01 08:11:29 2022
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS16\DATA\2022_12\09\12092204.D
 Acq On : 9 Dec 2022 4:34
 Sample : CCV R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 09 05:23:07 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:TO15.M

12/9/22

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	109	0.01
2 T	Propene	2.342	2.117	9.6	86	-0.01
3 T	Dichlorodifluoromethane (CF	2.173	2.292	-5.5	119	0.00
4 T	Chloromethane	2.324	2.759	-18.7	138	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.195	1.235	-3.3	117	0.00
6 T	Vinyl Chloride	1.930	2.036	-5.5	116	0.00
7 T	1,3-Butadiene	1.784	1.860	-4.3	112	0.00
8 T	Bromomethane	0.879	0.885	-0.7	111	0.00
9 T	Chloroethane	0.856	0.887	-3.6	111	0.00
10 T	Ethanol	1.333	1.354	-1.6	113	0.02
11 T	Acetonitrile	3.434	3.416	0.5	107	0.00
12 T	Acrolein	0.931	0.982	-5.5	110	0.00
13 T	Acetone	1.118	1.081	3.3	110	0.00
14 T	Trichlorofluoromethane	1.948	1.945	0.2	111	0.00
15 T	2-Propanol (Isopropanol)	3.486	4.287	-23.0	152	0.00
16 T	Acrylonitrile	2.065	2.071	-0.3	107	0.01
17 T	1,1-Dichloroethene	0.951	0.967	-1.7	109	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.552	3.340	-30.9#	141	-0.02
19 T	Methylene Chloride	1.039	0.983	5.4	106	0.01
20 T	3-Chloro-1-propene (Allyl C	2.098	2.118	-1.0	106	0.00
21 T	Trichlorotrifluoroethane	0.941	0.941	0.0	112	0.00
22 T	Carbon Disulfide	3.743	3.501	6.5	106	0.00
23 T	trans-1,2-Dichloroethene	1.604	1.692	-5.5	110	0.00
24 T	1,1-Dichloroethane	2.087	2.016	3.4	107	0.00
25 T	Methyl tert-Butyl Ether	2.700	3.042	-12.7	114	-0.01
26 T	Vinyl Acetate	0.190	0.227	-19.5	118	0.00
27 T	2-Butanone (MEK)	0.641	0.697	-8.7	107	0.00
28 T	cis-1,2-Dichloroethene	1.609	1.658	-3.0	112	0.00
29 T	Diisopropyl Ether	0.988	0.999	-1.1	109	0.00
30 T	Ethyl Acetate	0.545	0.561	-2.9	107	0.00
31 T	n-Hexane	2.503	2.623	-4.8	109	0.00
32 T	Chloroform	1.836	1.778	3.2	108	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.761	1.714	2.7	106	0.00
34 T	Tetrahydrofuran (THF)	0.626	0.642	-2.6	108	-0.01
35 T	Ethyl tert-Butyl Ether	1.189	1.244	-4.6	110	0.00
36 T	1,2-Dichloroethane	1.600	1.579	1.3	108	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	108	0.00
38 T	1,1,1-Trichloroethane	0.379	0.377	0.5	110	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	-13.68#
40 T	1-Butanol	0.000	0.000	0.0	0#	-12.64#
41 T	Benzene	0.873	0.851	2.5	107	0.00
42 T	Carbon Tetrachloride	0.334	0.342	-2.4	114	0.01
43 T	Cyclohexane	0.346	0.367	-6.1	109	0.00
44 T	tert-Amyl Methyl Ether	0.605	0.617	-2.0	110	0.00
45 T	1,2-Dichloropropane	0.274	0.268	2.2	110	0.00
46 T	Bromodichloromethane	0.313	0.312	0.3	109	0.00
47 T	Trichloroethene	0.253	0.263	-4.0	111	0.00
48 T	1,4-Dioxane	0.178	0.180	-1.1	113	-0.02
49 T	2,2,4-Trimethylpentane (Iso	1.342	1.407	-4.8	111	0.00
50 T	Methyl Methacrylate	0.100	0.103	-3.0	112	0.00
51 T	n-Heptane	0.240	0.252	-5.0	109	0.00
52 T	cis-1,3-Dichloropropene	0.316	0.348	-10.1	111	0.00
53 T	4-Methyl-2-pentanone	0.260	0.292	-12.3	110	0.00
54 T	trans-1,3-Dichloropropene	0.328	0.317	3.4	109	0.00
55 T	1,1,2-Trichloroethane	0.223	0.225	-0.9	108	0.00

Data File : I:\MS16\DATA\2022_12\09\12092204.D
 Acq On : 9 Dec 2022 4:34
 Sample : CCV R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 09 05:23:07 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	100	0.00
57	S Toluene-d8 (SS2)	4.331	4.603	-6.3	105	0.00
58	T Toluene	3.880	4.141	-6.7	107	0.00
59	T 2-Hexanone	2.731	3.455	-26.5	110	0.00
60	T Dibromochloromethane	1.102	1.235	-12.1	113	0.00
61	T 1,2-Dibromoethane	0.989	1.124	-13.7	111	0.00
62	T n-Butyl Acetate	3.019	3.464	-14.7	99	0.00
63	T n-Octane	1.084	1.153	-6.4	98	0.00
64	T Tetrachloroethene	1.075	1.099	-2.2	105	0.00
65	T Chlorobenzene	2.834	2.974	-4.9	109	0.00
66	T Ethylbenzene	4.218	4.844	-14.8	110	0.00
67	T m- & p-Xylenes	3.417	3.870	-13.3	108	0.00
68	T Bromoform	0.898	1.024	-14.0	111	0.00
69	T Styrene	2.518	2.902	-15.3	108	0.00
70	T o-Xylene	3.396	3.929	-15.7	109	0.00
71	T n-Nonane	2.791	3.454	-23.8	107	0.00
72	T 1,1,2,2-Tetrachloroethane	1.656	1.748	-5.6	106	0.00
73	S Bromofluorobenzene (SS3)	1.409	1.482	-5.2	104	0.00
74	T Cumene	4.543	5.071	-11.6	110	0.00
75	T alpha-Pinene	2.064	2.393	-15.9	107	0.00
76	T n-Propylbenzene	5.400	6.167	-14.2	107	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	52	0.04
78	T 4-Ethyltoluene	4.189	4.946	-18.1	108	0.00
79	T 1,3,5-Trimethylbenzene	3.699	4.211	-13.8	107	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	82	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	52	0.04
82	T 1,2,4-Trimethylbenzene	3.728	4.369	-17.2	109	0.00
83	T n-Decane	0.000	0.000	0.0	106	0.00
84	T Benzyl Chloride	2.988	2.681	10.3	101	0.00
85	T 1,3-Dichlorobenzene	2.296	2.541	-10.7	107	0.00
86	T 1,4-Dichlorobenzene	2.340	2.533	-8.2	108	0.00
87	T sec-Butylbenzene	5.058	5.934	-17.3	107	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.498	5.414	-20.4	109	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	52	0.04
90	T 1,2-Dichlorobenzene	2.226	2.512	-12.8	107	0.00
91	T d-Limonene	1.565	1.607	-2.7	103	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.856	0.977	-14.1	107	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	-21.41#
94	T 1,2,4-Trichlorobenzene	1.786	1.785	0.1	106	0.00
95	T Naphthalene	5.347	5.089	4.8	100	0.00
96	T n-Dodecane	0.000	0.000	0.0	0#	-22.59#
97	T Hexachlorobutadiene	1.109	1.177	-6.1	109	0.00
98	T Cyclohexanone	0.000	0.000	0.0	102	0.08
99	T tert-Butylbenzene	3.877	4.554	-17.5	109	0.00
100	T n-Butylbenzene	3.990	4.743	-18.9	106	0.00
101	T 1,1,1,2-Tetrachloroethane	1.049	1.100	-4.9	110	0.00

(#) = Out of Range

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

Data File : I:\MS16\DATA\2022_12\09\12092204.D
 Acq On : 9 Dec 2022 4:34
 Sample : CCV R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG
 Inst : GCMS-16

12/9/22

Quant Time: Dec 09 05:23:07 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.30	130	153545	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	13.42	114	689194	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	158453	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	263128	12.166	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	97.36%	
57) Toluene-d8 (SS2)	15.87	98	729399	13.285	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	106.24%	
73) Bromofluorobenzene (SS3)	19.10	174	234827	13.145	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	105.20%	

Target Compounds

						Qvalue
2) Propene	4.19	42	136543	4.746	ng	100
3) Dichlorodifluoromethan...	4.35	85	149184	5.590	ng	100
4) Chloromethane	4.64	50	174564	6.115	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.91	135	78899	5.376	ng	99
6) Vinyl Chloride	5.06	62	126295	5.327	ng	100
7) 1,3-Butadiene	5.33	54	121117	5.527	ng	100
8) Bromomethane	5.77	94	55433	5.133	ng	99
9) Chloroethane	6.11	64	56088	5.333	ng	100
10) Ethanol	6.47	45	286820	17.522	ng	100
11) Acetonitrile	6.73	41	190904	4.526	ng	99
12) Acrolein	6.93	56	116460	10.186	ng	99
13) Acetone	7.14	58	350004	25.484	ng	99
14) Trichlorofluoromethane	7.39	101	124224	5.192	ng	99
15) 2-Propanol (Isopropanol)	7.63	45	539732	12.604	ng	97
16) Acrylonitrile	7.90	53	260807	10.283	ng	99
17) 1,1-Dichloroethene	8.36	96	64110	5.489	ng	99
18) 2-Methyl-2-Propanol (t...	8.51	59	432825	13.806	ng	99
19) Methylene Chloride	8.58	84	64015	5.018	ng	98
20) 3-Chloro-1-propene (Al...	8.74	41	137858	5.349	ng	99
21) Trichlorotrifluoroethane	9.00	151	62387	5.398	ng	99
22) Carbon Disulfide	8.85	76	457942	9.960	ng	100
23) trans-1,2-Dichloroethene	9.85	61	112218	5.696	ng	99
24) 1,1-Dichloroethane	10.11	63	132477	5.167	ng	100
25) Methyl tert-Butyl Ether	10.21	73	199931	6.029	ng	100
26) Vinyl Acetate	10.36	86	39030	16.759	ng	# 96
27) 2-Butanone (MEK)	10.61	72	89467	11.362	ng	100
28) cis-1,2-Dichloroethene	11.12	61	107972	5.463	ng	100
29) Diisopropyl Ether	11.42	87	130130	10.727	ng	98
30) Ethyl Acetate	11.43	61	145407	21.704	ng	98
31) n-Hexane	11.41	57	169185	5.502	ng	99
32) Chloroform	11.47	83	115775	5.134	ng	99
34) Tetrahydrofuran (THF)	11.88	72	80411	10.462	ng	99
35) Ethyl tert-Butyl Ether	12.02	87	162025	11.098	ng	99
36) 1,2-Dichloroethane	12.27	62	104743	5.330	ng	99
38) 1,1,1-Trichloroethane	12.55	97	109259	5.227	ng	100
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	250933	5.216	ng	100
42) Carbon Tetrachloride	13.19	117	98105	5.328	ng	100
43) Cyclohexane	13.32	84	212227	11.118	ng	100
44) tert-Amyl Methyl Ether	13.67	73	360499	10.801	ng	98
45) 1,2-Dichloropropane	13.88	63	77443	5.120	ng	100
46) Bromodichloromethane	14.07	83	92044	5.335	ng	99
47) Trichloroethene	14.13	130	76190	5.464	ng	100
48) 1,4-Dioxane	14.10	88	52498	5.360	ng	99
49) 2,2,4-Trimethylpentane...	14.19	57	418874	5.663	ng	100
50) Methyl Methacrylate	14.33	100	59974	10.880	ng	98

Data File : I:\MS16\DATA\2022_12\09\12092204.D
 Acq On : 9 Dec 2022 4:34
 Sample : CCV R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG
 Inst : GCMS-16

Quant Time: Dec 09 05:23:07 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

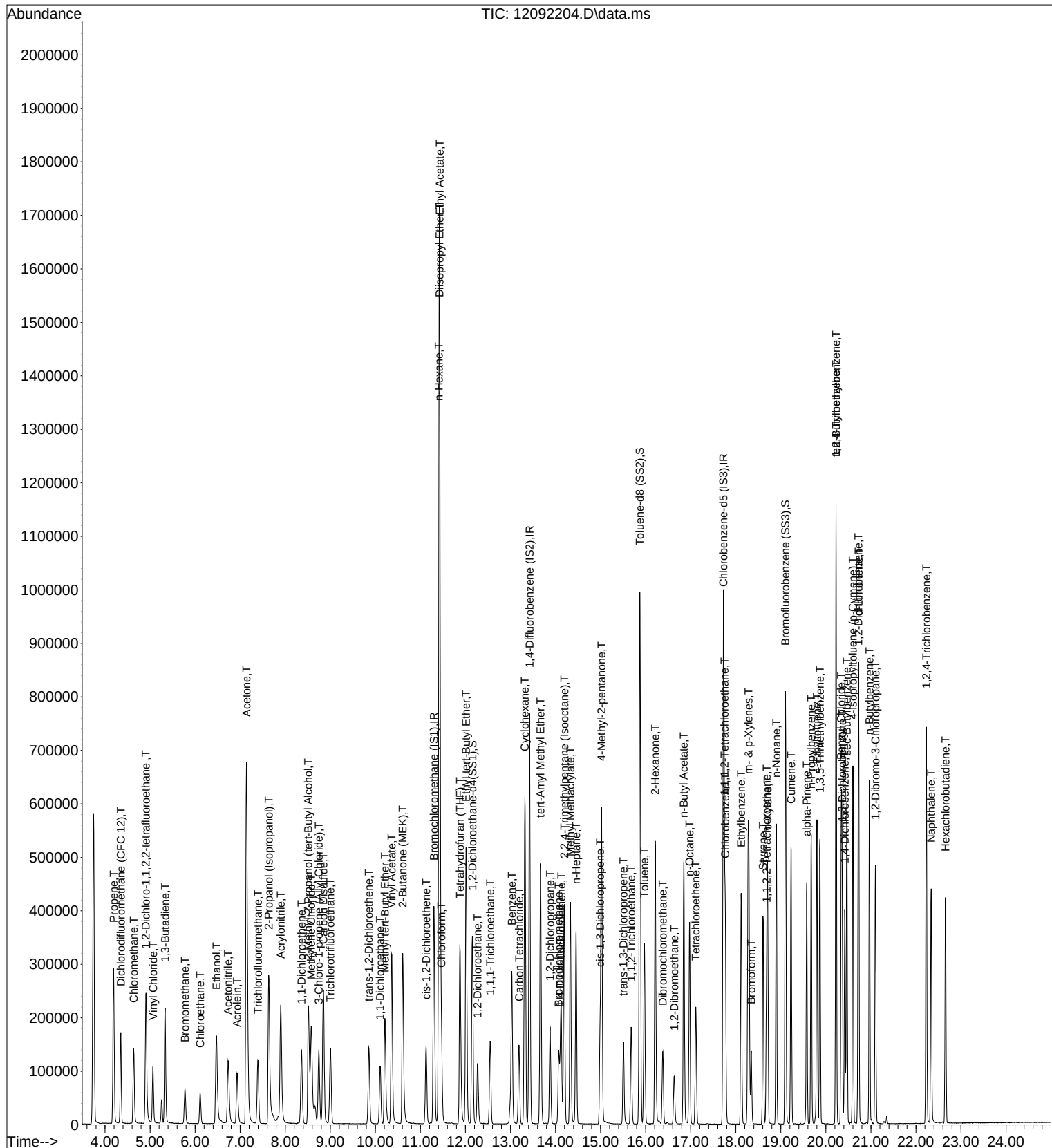
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.46	71	73671	5.576	ng	99
52) cis-1,3-Dichloropropene	14.99	75	103715	5.949	ng	100
53) 4-Methyl-2-pentanone	15.02	58	172936	12.046	ng	98
54) trans-1,3-Dichloropropene	15.51	75	89119	4.930	ng	99
55) 1,1,2-Trichloroethane	15.68	97	65708	5.348	ng	99
58) Toluene	15.97	91	275563	5.603	ng	100
59) 2-Hexanone	16.21	43	464196	13.408	ng	98
60) Dibromochloromethane	16.38	129	84565	6.052	ng	100
61) 1,2-Dibromoethane	16.63	107	74086	5.909	ng	99
62) n-Butyl Acetate	16.84	43	450065	11.760	ng	99
63) n-Octane	16.98	57	78162	5.691	ng	97
64) Tetrachloroethene	17.11	166	73825	5.419	ng	100
65) Chlorobenzene	17.77	112	199826	5.562	ng	100
66) Ethylbenzene	18.12	91	322391	6.030	ng	100
67) m- & p-Xylenes	18.28	91	515057	11.891	ng	100
68) Bromoform	18.35	173	69412	6.098	ng	99
69) Styrene	18.60	104	194991	6.109	ng	100
70) o-Xylene	18.71	91	263939	6.131	ng	100
71) n-Nonane	18.90	43	232076	6.559	ng	98
72) 1,1,2,2-Tetrachloroethane	18.69	83	117412	5.594	ng	99
74) Cumene	19.23	105	343902	5.972	ng	99
75) alpha-Pinene	19.58	93	165310	6.319	ng	98
76) n-Propylbenzene	19.68	91	418205	6.109	ng	99
77) 3-Ethyltoluene	20.40	105	357	No Calib	#	
78) 4-Ethyltoluene	19.80	105	341719	6.435	ng	99
79) 1,3,5-Trimethylbenzene	19.87	105	282879	6.033	ng	99
80) alpha-Methylstyrene	20.46	118	1323	No Calib	#	
81) 2-Ethyltoluene	20.40	105	357	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	290745	6.153	ng	99
83) n-Decane	20.23	58	16672	No Calib		
84) Benzyl Chloride	20.34	91	360236	9.511	ng	99
85) 1,3-Dichlorobenzene	20.36	146	170726	5.866	ng	99
86) 1,4-Dichlorobenzene	20.42	146	170201	5.738	ng	99
87) sec-Butylbenzene	20.47	105	398638	6.217	ng	99
88) 4-Isopropyltoluene (p-...	20.60	119	363740	6.379	ng	99
89) 1,2,3-Trimethylbenzene	20.40	105	357	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	170360	6.037	ng	100
91) d-Limonene	20.73	68	108969	5.491	ng	99
92) 1,2-Dibromo-3-Chloropr...	21.10	157	130031	11.987	ng	97
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	236487	10.446	ng	100
95) Naphthalene	22.34	128	354779	5.235	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	79076	5.627	ng	100
98) Cyclohexanone	18.28	55	572	No Calib	#	
99) tert-Butylbenzene	20.23	119	305942	6.226	ng	99
100) n-Butylbenzene	20.97	91	321675	6.360	ng	100
101) 1,1,1,2-Tetrachloroethane	17.75	131	73930	5.561	ng	99

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

Vial: 2
Operator: CG
Inst : GCMS-16

Quant Time: Dec 09 05:23:07 2022



Data File : I:\MS16\DATA\2022_12\09\12092227.D
 Acq On : 9 Dec 2022 19:03
 Sample : CCV End R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 10 07:06:14 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

12/10/22

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	90	0.01
2 T	Propene	2.342	2.004	14.4	67	-0.02
3 T	Dichlorodifluoromethane (CF	2.173	2.390	-10.0	103	-0.01
4 T	Chloromethane	2.324	2.690	-15.7	111	-0.01
5 T	1,2-Dichloro-1,1,2,2-tetra	1.195	1.312	-9.8	103	0.00
6 T	Vinyl Chloride	1.930	1.942	-0.6	91	-0.02
7 T	1,3-Butadiene	1.784	1.841	-3.2	92	-0.01
8 T	Bromomethane	0.879	0.855	2.7	88	0.00
9 T	Chloroethane	0.856	0.797	6.9	82	0.00
10 T	Ethanol	1.333	1.276	4.3	88	0.01
11 T	Acetonitrile	3.434	3.080	10.3	80	0.00
12 T	Acrolein	0.931	0.938	-0.8	87	0.00
13 T	Acetone	1.118	1.025	8.3	86	0.00
14 T	Trichlorofluoromethane	1.948	2.139	-9.8	100	0.00
15 T	2-Propanol (Isopropanol)	3.486	4.262	-22.3	125	0.00
16 T	Acrylonitrile	2.065	2.063	0.1	88	0.00
17 T	1,1-Dichloroethene	0.951	0.945	0.6	88	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.552	3.490	-36.8#	122	-0.02
19 T	Methylene Chloride	1.039	0.927	10.8	83	0.00
20 T	3-Chloro-1-propene (Allyl C	2.098	2.171	-3.5	90	0.00
21 T	Trichlorotrifluoroethane	0.941	1.008	-7.1	99	0.00
22 T	Carbon Disulfide	3.743	3.339	10.8	83	0.00
23 T	trans-1,2-Dichloroethene	1.604	1.673	-4.3	90	0.00
24 T	1,1-Dichloroethane	2.087	1.965	5.8	86	0.00
25 T	Methyl tert-Butyl Ether	2.700	3.033	-12.3	94	-0.02
26 T	Vinyl Acetate	0.190	0.214	-12.6	92	0.00
27 T	2-Butanone (MEK)	0.641	0.642	-0.2	82	-0.01
28 T	cis-1,2-Dichloroethene	1.609	1.628	-1.2	91	0.00
29 T	Diisopropyl Ether	0.988	0.956	3.2	86	0.00
30 T	Ethyl Acetate	0.545	0.522	4.2	82	0.00
31 T	n-Hexane	2.503	2.504	-0.0	86	0.00
32 T	Chloroform	1.836	1.786	2.7	90	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.761	1.873	-6.4	96	0.00
34 T	Tetrahydrofuran (THF)	0.626	0.584	6.7	81	-0.01
35 T	Ethyl tert-Butyl Ether	1.189	1.251	-5.2	92	0.00
36 T	1,2-Dichloroethane	1.600	1.704	-6.5	96	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	88	0.00
38 T	1,1,1-Trichloroethane	0.379	0.409	-7.9	97	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	0#	0.00
40 T	1-Butanol	0.000	0.000	0.0	0#	-12.64#
41 T	Benzene	0.873	0.791	9.4	81	0.00
42 T	Carbon Tetrachloride	0.334	0.385	-15.3	105	0.00
43 T	Cyclohexane	0.346	0.343	0.9	83	0.00
44 T	tert-Amyl Methyl Ether	0.605	0.624	-3.1	91	0.00
45 T	1,2-Dichloropropane	0.274	0.249	9.1	84	0.00
46 T	Bromodichloromethane	0.313	0.320	-2.2	91	0.00
47 T	Trichloroethene	0.253	0.264	-4.3	91	0.00
48 T	1,4-Dioxane	0.178	0.167	6.2	86	-0.02
49 T	2,2,4-Trimethylpentane (Iso	1.342	1.369	-2.0	88	0.00
50 T	Methyl Methacrylate	0.100	0.100	0.0	89	0.00
51 T	n-Heptane	0.240	0.232	3.3	82	0.00
52 T	cis-1,3-Dichloropropene	0.316	0.330	-4.4	86	0.00
53 T	4-Methyl-2-pentanone	0.260	0.281	-8.1	87	0.00
54 T	trans-1,3-Dichloropropene	0.328	0.316	3.7	89	0.00
55 T	1,1,2-Trichloroethane	0.223	0.215	3.6	84	0.00

Data File : I:\MS16\DATA\2022_12\09\12092227.D
 Acq On : 9 Dec 2022 19:03
 Sample : CCV End R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 10 07:06:14 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	94	0.00
57	S Toluene-d8 (SS2)	4.331	3.949	8.8	85	0.00
58	T Toluene	3.880	3.430	11.6	83	0.00
59	T 2-Hexanone	2.731	2.887	-5.7	86	0.00
60	T Dibromochloromethane	1.102	1.137	-3.2	98	0.00
61	T 1,2-Dibromoethane	0.989	0.962	2.7	89	0.00
62	T n-Butyl Acetate	3.019	3.269	-8.3	87	0.00
63	T n-Octane	1.084	1.111	-2.5	88	0.00
64	T Tetrachloroethene	1.075	1.089	-1.3	98	0.00
65	T Chlorobenzene	2.834	2.563	9.6	88	0.00
66	T Ethylbenzene	4.218	4.147	1.7	88	0.00
67	T m- & p-Xylenes	3.417	3.300	3.4	86	0.00
68	T Bromoform	0.898	0.962	-7.1	98	0.00
69	T Styrene	2.518	2.471	1.9	86	0.00
70	T o-Xylene	3.396	3.441	-1.3	90	0.00
71	T n-Nonane	2.791	2.953	-5.8	86	0.00
72	T 1,1,2,2-Tetrachloroethane	1.656	1.422	14.1	81	0.00
73	S Bromofluorobenzene (SS3)	1.409	1.494	-6.0	98	0.00
74	T Cumene	4.543	4.398	3.2	89	0.00
75	T alpha-Pinene	2.064	2.133	-3.3	89	0.00
76	T n-Propylbenzene	5.400	5.315	1.6	87	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	65	-0.01
78	T 4-Ethyltoluene	4.189	4.295	-2.5	88	0.00
79	T 1,3,5-Trimethylbenzene	3.699	3.675	0.6	88	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	75	0.00
81	T 2-Ethyltoluene	0.000	0.000	0.0	65	-0.01
82	T 1,2,4-Trimethylbenzene	3.728	3.869	-3.8	90	0.00
83	T n-Decane	0.000	0.000	0.0	81	0.00
84	T Benzyl Chloride	2.988	2.518	15.7	89	0.00
85	T 1,3-Dichlorobenzene	2.296	2.300	-0.2	91	0.00
86	T 1,4-Dichlorobenzene	2.340	2.278	2.6	91	0.00
87	T sec-Butylbenzene	5.058	5.135	-1.5	87	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.498	4.863	-8.1	92	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	65	-0.01
90	T 1,2-Dichlorobenzene	2.226	2.273	-2.1	91	0.00
91	T d-Limonene	1.565	1.353	13.5	82	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.856	0.896	-4.7	92	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	-21.41#
94	T 1,2,4-Trichlorobenzene	1.786	1.674	6.3	93	0.00
95	T Naphthalene	5.347	4.610	13.8	85	0.00
96	T n-Dodecane	0.000	0.000	0.0	0#	-22.59#
97	T Hexachlorobutadiene	1.109	1.122	-1.2	97	0.00
98	T Cyclohexanone	0.000	0.000	0.0	83	0.07
99	T tert-Butylbenzene	3.877	4.097	-5.7	92	0.00
100	T n-Butylbenzene	3.990	4.140	-3.8	87	0.00
101	T 1,1,1,2-Tetrachloroethane	1.049	1.014	3.3	95	0.00

(#) = Out of Range

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

Data File : I:\MS16\DATA\2022_12\09\12092227.D
 Acq On : 9 Dec 2022 19:03
 Sample : CCV End R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 10 07:06:14 2022

Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

12/10/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	11.30	130	126728	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	13.42	114	563228	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	17.72	54	148791	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	12.15	65	237342	13.295	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	106.40%	
57) Toluene-d8 (SS2)	15.87	98	587636	11.398	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	91.20%	
73) Bromofluorobenzene (SS3)	19.10	174	222277	13.250	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	106.00%	

Target Compounds

						Qvalue
2) Propene	4.19	42	106679	4.492	ng	100
3) Dichlorodifluoromethan...	4.34	85	128424	5.830	ng	100
4) Chloromethane	4.63	50	140445	5.960	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	4.90	135	69166	5.710	ng	99
6) Vinyl Chloride	5.05	62	99414	5.081	ng	99
7) 1,3-Butadiene	5.32	54	98930	5.470	ng	98
8) Bromomethane	5.77	94	44187	4.957	ng	100
9) Chloroethane	6.11	64	41612	4.794	ng	100
10) Ethanol	6.47	45	223131	16.516	ng	100
11) Acetonitrile	6.73	41	142095	4.081	ng	93
12) Acrolein	6.93	56	91761	9.724	ng	96
13) Acetone	7.14	58	273890	24.162	ng	94
14) Trichlorofluoromethane	7.39	101	112743	5.710	ng	99
15) 2-Propanol (Isopropanol)	7.63	45	442889	12.531	ng	96
16) Acrylonitrile	7.90	53	214330	10.239	ng	100
17) 1,1-Dichloroethene	8.35	96	51743	5.367	ng	91
18) 2-Methyl-2-Propanol (t...	8.51	59	373255	14.425	ng	99
19) Methylene Chloride	8.57	84	49794	4.729	ng	86
20) 3-Chloro-1-propene (Al...	8.74	41	116631	5.483	ng	98
21) Trichlorotrifluoroethane	9.00	151	55206	5.787	ng	91
22) Carbon Disulfide	8.84	76	360552	9.502	ng	100
23) trans-1,2-Dichloroethene	9.85	61	91589	5.632	ng	97
24) 1,1-Dichloroethane	10.10	63	106590	5.037	ng	98
25) Methyl tert-Butyl Ether	10.21	73	164489	6.009	ng	100
26) Vinyl Acetate	10.36	86	30409	15.820	ng	# 87
27) 2-Butanone (MEK)	10.60	72	68026	10.467	ng	# 90
28) cis-1,2-Dichloroethene	11.13	61	87487	5.364	ng	98
29) Diisopropyl Ether	11.42	87	102790	10.266	ng	96
30) Ethyl Acetate	11.42	61	111761	20.212	ng	99
31) n-Hexane	11.41	57	133254	5.250	ng	98
32) Chloroform	11.47	83	95978	5.157	ng	100
34) Tetrahydrofuran (THF)	11.88	72	60356	9.514	ng	94
35) Ethyl tert-Butyl Ether	12.01	87	134402	11.154	ng	98
36) 1,2-Dichloroethane	12.27	62	93292	5.752	ng	99
38) 1,1,1-Trichloroethane	12.55	97	96718	5.662	ng	99
39) Isopropyl Acetate	13.67	61	104	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	13.03	78	190660	4.849	ng	100
42) Carbon Tetrachloride	13.19	117	90267	5.998	ng	99
43) Cyclohexane	13.32	84	162318	10.405	ng	96
44) tert-Amyl Methyl Ether	13.67	73	297984	10.924	ng	95
45) 1,2-Dichloropropane	13.88	63	59013	4.774	ng	100
46) Bromodichloromethane	14.07	83	77136	5.471	ng	99
47) Trichloroethene	14.12	130	62519	5.486	ng	98
48) 1,4-Dioxane	14.10	88	39972	4.993	ng	96
49) 2,2,4-Trimethylpentane...	14.19	57	333173	5.512	ng	98
50) Methyl Methacrylate	14.33	100	47852	10.622	ng	91

Data File : I:\MS16\DATA\2022_12\09\12092227.D
 Acq On : 9 Dec 2022 19:03
 Sample : CCV End R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)

Vial: 2
 Operator: CG/WA
 Inst : GCMS-16

Quant Time: Dec 10 07:06:14 2022
 Quant Method : I:\MS16\METHODS\R16113022.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Thu Dec 01 09:30:33 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	14.45	71	55503	5.141	ng	93
52) cis-1,3-Dichloropropene	14.99	75	80188	5.629	ng	99
53) 4-Methyl-2-pentanone	15.02	58	136095	11.600	ng	96
54) trans-1,3-Dichloropropene	15.51	75	72581	4.913	ng	100
55) 1,1,2-Trichloroethane	15.68	97	51283	5.108	ng	96
58) Toluene	15.97	91	214319	4.641	ng	99
59) 2-Hexanone	16.21	43	364283	11.205	ng	98
60) Dibromochloromethane	16.38	129	73071	5.569	ng	99
61) 1,2-Dibromoethane	16.63	107	59526	5.056	ng	99
62) n-Butyl Acetate	16.84	43	398891	11.100	ng	99
63) n-Octane	16.97	57	70748	5.485	ng	94
64) Tetrachloroethene	17.11	166	68672	5.368	ng	100
65) Chlorobenzene	17.77	112	161714	4.794	ng	99
66) Ethylbenzene	18.12	91	259174	5.162	ng	100
67) m- & p-Xylenes	18.28	91	412456	10.141	ng	99
68) Bromoform	18.35	173	61293	5.735	ng	100
69) Styrene	18.60	104	155895	5.201	ng	98
70) o-Xylene	18.70	91	217087	5.370	ng	98
71) n-Nonane	18.90	43	186309	5.607	ng	98
72) 1,1,2,2-Tetrachloroethane	18.68	83	89712	4.552	ng	100
74) Cumene	19.23	105	280098	5.180	ng	99
75) alpha-Pinene	19.57	93	138354	5.632	ng	96
76) n-Propylbenzene	19.67	91	338458	5.265	ng	98
77) 3-Ethyltoluene	20.34	105	447	No Calib	#	
78) 4-Ethyltoluene	19.80	105	278627	5.587	ng	98
79) 1,3,5-Trimethylbenzene	19.86	105	231842	5.266	ng	98
80) alpha-Methylstyrene	20.46	118	1209	No Calib	#	
81) 2-Ethyltoluene	20.34	105	447	No Calib	#	
82) 1,2,4-Trimethylbenzene	20.23	105	241766	5.449	ng	98
83) n-Decane	20.23	58	12857	No Calib		
84) Benzyl Chloride	20.34	91	317652	8.931	ng	99
85) 1,3-Dichlorobenzene	20.36	146	145094	5.309	ng	99
86) 1,4-Dichlorobenzene	20.42	146	143704	5.160	ng	100
87) sec-Butylbenzene	20.46	105	323975	5.381	ng	98
88) 4-Isopropyltoluene (p-...	20.60	119	306788	5.730	ng	99
89) 1,2,3-Trimethylbenzene	20.34	105	447	No Calib	#	
90) 1,2-Dichlorobenzene	20.72	146	144719	5.462	ng	100
91) d-Limonene	20.73	68	86136	4.622	ng	93
92) 1,2-Dibromo-3-Chloropr...	21.10	157	111925	10.988	ng	98
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	22.23	180	208236	9.795	ng	100
95) Naphthalene	22.34	128	301816	4.742	ng	100
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	22.66	225	70762	5.363	ng	98
98) Cyclohexanone	18.28	55	465	No Calib	#	
99) tert-Butylbenzene	20.23	119	258441	5.601	ng	99
100) n-Butylbenzene	20.97	91	263648	5.552	ng	98
101) 1,1,1,2-Tetrachloroethane	17.75	131	63971	5.124	ng	98

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

Vial: 2
Operator: CG/WA
Inst : GCMS-16

Quant Time: Dec 10 07:06:14 2022

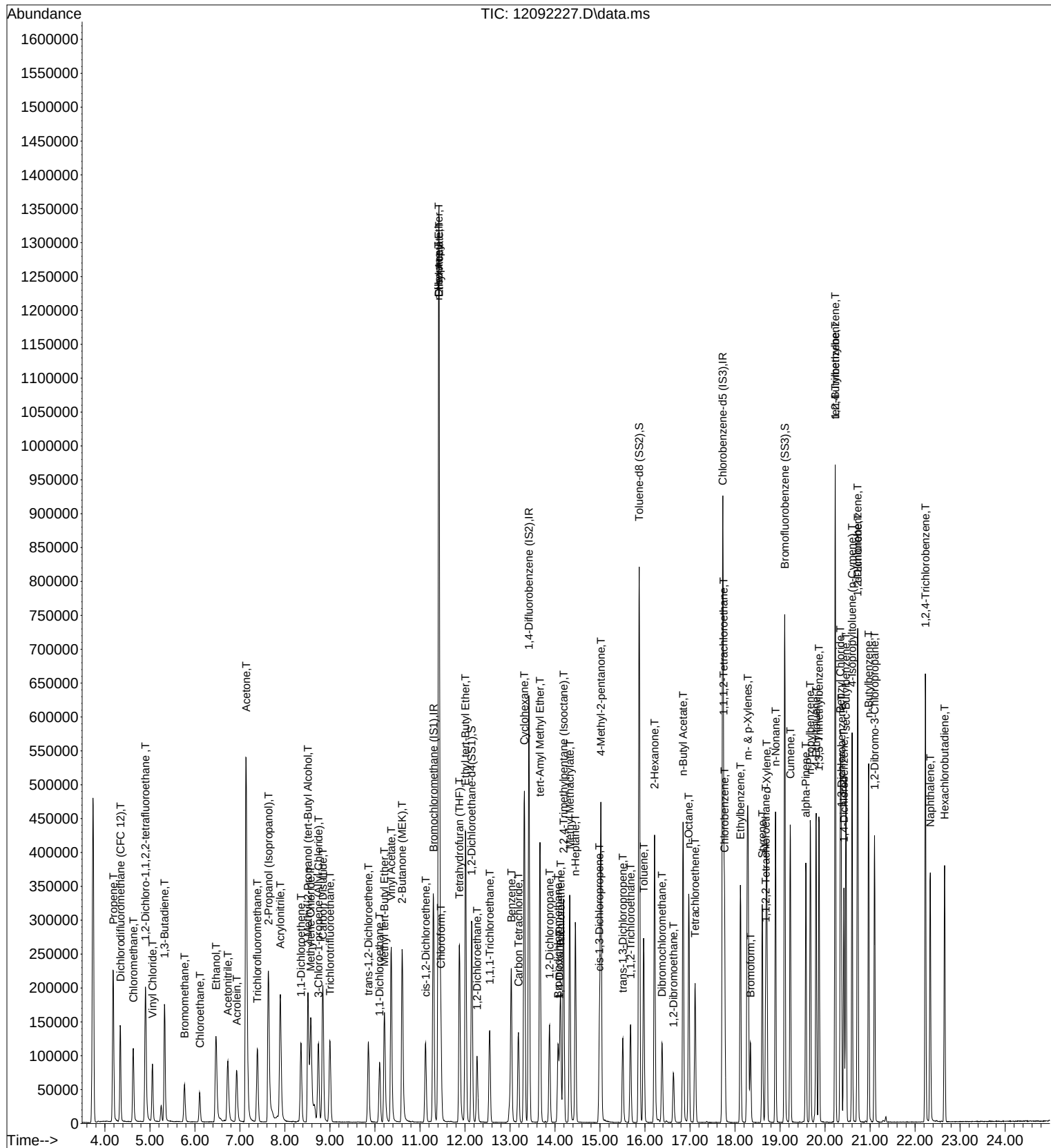
Quant Method : I:\MS16\METHODS\R16113022.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Dec 01 09:30:33 2022

Response via : Initial Calibration

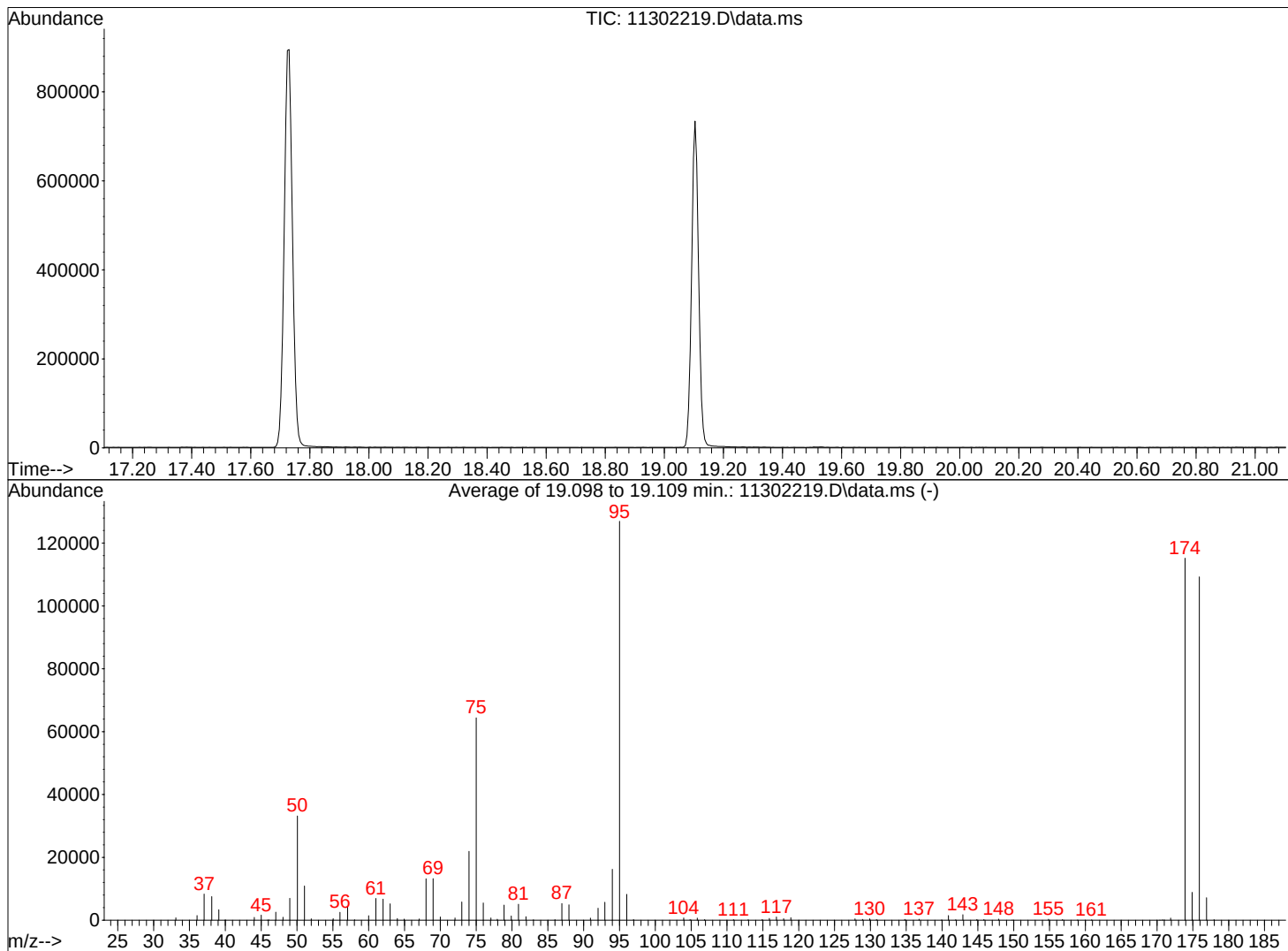
DataAcq Meth:T015.M



Data Path : I:\MS16\DATA\2022_11\30\
Data File : 11302219.D
Acq On : 30 Nov 2022 22:40
Operator : CG
Sample : BFB Tune
Misc : S35-11092201
ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16112922.M
Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
Last Update : Wed Nov 30 08:09:26 2022



AutoFind: Scans 2839, 2840, 2841; Background Corrected with Scan 2831

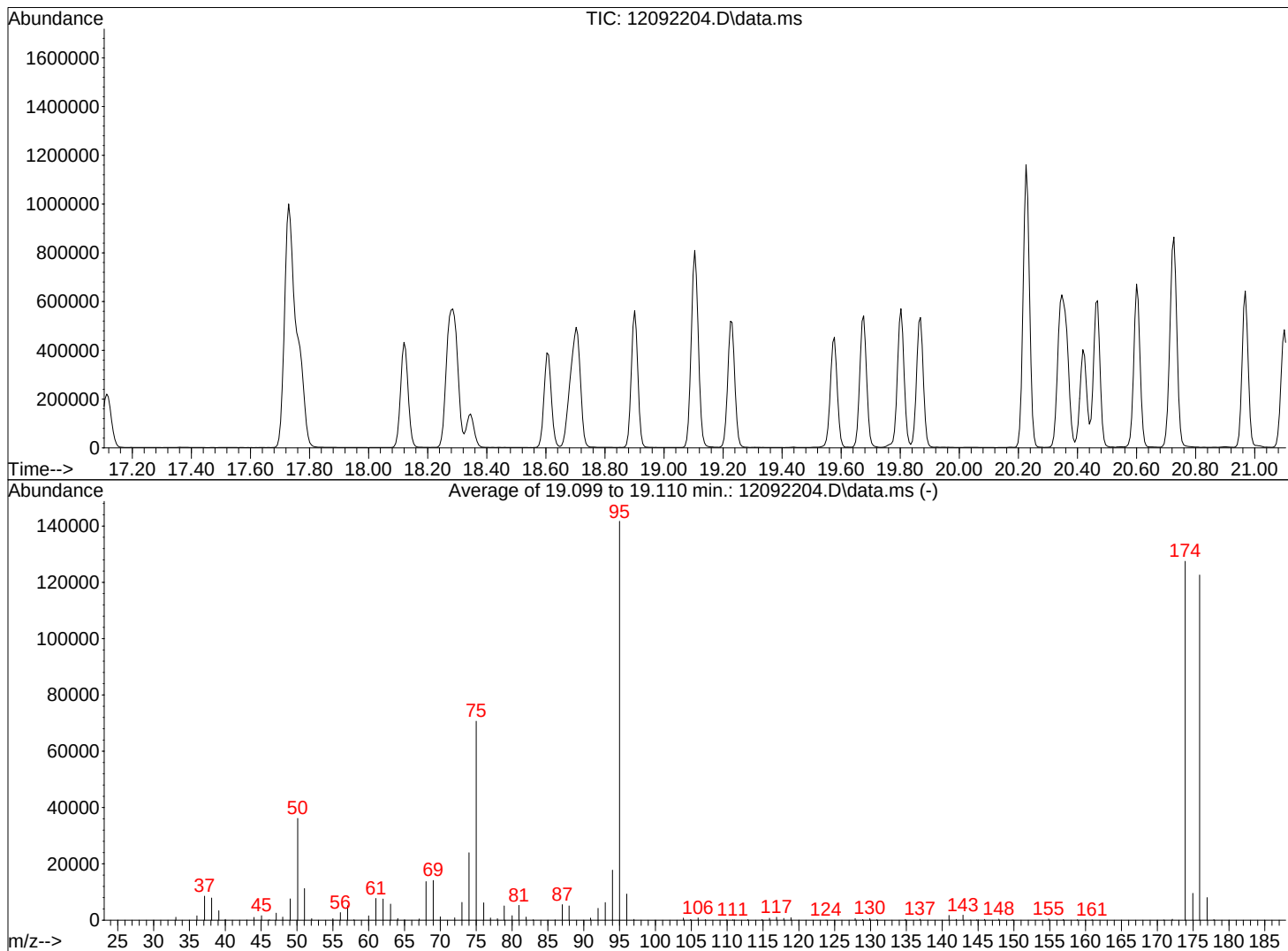
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	26.1	33149	PASS
75	95	30	66	50.7	64395	PASS
95	95	100	100	100.0	126944	PASS
96	95	5	9	6.5	8254	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.7	115200	PASS
175	174	4	9	7.7	8891	PASS
176	174	93	101	94.8	109251	PASS
177	176	5	9	6.6	7158	PASS

CG 12/1/22

Data Path : I:\MS16\DATA\2022_12\09\
 Data File : 12092204.D
 Acq On : 9 Dec 2022 4:34
 Operator : CG
 Sample : CCV R16120922_5ng
 Misc : S35-11092201/S35-11212202 (12/21)
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS16\METHODS\R16113022.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Dec 01 09:30:33 2022



AutoFind: Scans 2839, 2840, 2841; Background Corrected with Scan 2832

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	25.5	36173	PASS
75	95	30	66	49.9	70672	PASS
95	95	100	100	100.0	141717	PASS
96	95	5	9	6.5	9279	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	89.9	127459	PASS
175	174	4	9	7.5	9547	PASS
176	174	93	101	96.2	122627	PASS
177	176	5	9	6.5	7999	PASS

12/9/22

Injection Log

Directory: J:\MS16\DATA\2022_11\30\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
20	11/30/22 22:40	11302219.D	BFB Tune	S35-11092201	CG	2	Passed
21	11/30/22 23:14	11302220.D	0.1ng R16113022 ICAL Std	S35-11092201/S35-11292205 (12/29)	CG	13	R16113022.M
22	11/30/22 23:48	11302221.D	0.2ng R16113022 ICAL Std	S35-11092201/S35-11292205 (12/29)	CG	13	
23	12/1/22 0:22	11302222.D	0.5ng R16113022 ICAL Std	S35-11092201/S35-11292203 (12/29)	CG	14	
24	12/1/22 0:56	11302223.D	1.0ng R16113022 ICAL Std	S35-11092201/S35-11292203 (12/29)	CG	14	
25	12/1/22 1:30	11302224.D	5.0ng R16113022 ICAL Std	S35-11092201/S35-11292203 (12/29)	CG	14	
26	12/1/22 2:04	11302225.D	25ng R16113022 ICAL Std	S35-11092201/S35-11292201 (12/29)	CG	15	
27	12/1/22 2:38	11302226.D	50ng R16113022 ICAL Std	S35-11092201/S35-11292201 (12/29)	CG	15	
28	12/1/22 3:12	11302227.D	Blank	S35-11092201	CG	2	
29	12/1/22 3:46	11302228.D	100ng R16113022 ICAL Std	S35-11092201/S35-11292201 (12/29)	CG	15	
30	12/1/22 4:20	11302229.D	Blank	S35-11092201	CG	2	
31	12/1/22 4:54	11302230.D	ICV R16113022_25ng	S35-11092201/S35-11152203 (12/15)	CG	9	passed
32	12/1/22 5:28	11302231.D	ICV R16113022_25ng	S35-11092201/S35-11212206 (12/21)	CG	2	not used
33	12/1/22 6:02	11302232.D	Blank	S35-11092201	CG	2	
R16113022.M: Good for low level compounds, ranges 0.1ng-->100ng; except styrene 0.2ng-->100ng; 1,4-dioxane, methyl methacrylate,							
trans-1,3-dichloropropene, benzyl chloride, d-limonene, 1,2,4-trichlorobenzene, naphthalene 0.5ng-->100ng							
##							
##					CG 12/1/22		
##							

Injection Log

Directory: I:\MS16\DATA\2022_12\09\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	12/9/22 2:53	12092201.D	System	S35-11092201/S35-11212202 (12/21)	CG	2	
2	12/9/22 3:26	12092202.D	CCV C16120922_25ng	S35-11092201/S35-12062202 (1/5)	CG	15	Passed
3	12/9/22 4:00	12092203.D	Blank	S35-11092201	CG	2	
4	12/9/22 4:34	12092204.D	CCV R16120922_5ng	S35-11092201/S35-11212202 (12/21)	CG	2	Passed
5	12/9/22 6:04	12092205.D	MB R16120922_1000mL	S35-11092201_AS01319	CG/WA	2	Passed
6	12/9/22 6:38	12092206.D	P2205435-003 (1000mL)	S35-11092201	CG/WA	7	
7	12/9/22 7:12	12092207.D	P2205440-008 (250mL)	S35-11092201	CG/WA	14	
8	12/9/22 7:45	12092208.D	P2205440-009 (400mL)	S35-11092201	CG/WA	15	
9	12/9/22 8:19	12092209.D	LCS R16120922_25ng	S35-11092201/S35-12062202 (1/5)	CG/WA	2	Passed
10	12/9/22 8:53	12092210.D	LCSD R16120922_25ng	S35-11092201/S35-12062202 (1/5)	CG/WA	2	Passed
11	12/9/22 9:36	12092211.D	P2205440-010 (400mL)	S35-11092201	CG/WA	3	
12	12/9/22 10:10	12092212.D	P2205440-011 (400mL)	S35-11092201	CG/WA	4	
13	12/9/22 10:44	12092213.D	P2205427-005 (2.0mL)	S35-11092201	CG/WA	1	
14	12/9/22 11:18	12092214.D	P2205427-006 (1.0mL)	S35-11092201	CG/WA	1	
15	12/9/22 11:53	12092215.D	P2205427-005dil (1.0mL)	S35-11092201	CG/WA	1	
16	12/9/22 12:27	12092216.D	P2205427-007 (0.8mL)	S35-11092201	CG/WA	1	
17	12/9/22 13:01	12092217.D	P2205427-002 (400mL)	S35-11092201	CG/WA	6	
18	12/9/22 13:35	12092218.D	P2205427-003 (400mL)	S35-11092201	CG/WA	7	
19	12/9/22 14:10	12092219.D	P2205427-008dil (0.1mL)	S35-11092201	CG/WA	1	
20	12/9/22 14:44	12092220.D	P2205427-008 (0.2mL)	S35-11092201	CG/WA	1	
21	12/9/22 15:25	12092221.D	P2205427-004 (400mL)	S35-11092201	CG/WA	8	
22	12/9/22 16:14	12092222.D	System	S35-11092201/S35-11212202 (12/21)	CG/WA	2	
23	12/9/22 16:48	12092223.D	P2205427-001 (400mL)	S35-11092201	CG/WA	6	
24	12/9/22 17:21	12092224.D	P2205429-001 (1000mL)	S35-11092201	CG/WA	3	
25	12/9/22 17:55	12092225.D	P2205493-001 (1000mL)	S35-11092201	CG/WA	11	
26	12/9/22 18:29	12092226.D	P2205493-001dup (1000mL)	S35-11092201	CG/WA	11	Passed
27	12/9/22 19:03	12092227.D	CCV End R16120922_5ng	S35-11092201/S35-11212202 (12/21)	CG/WA	2	Passed
28	12/9/22 19:37	12092228.D	P2205465-001 (1000mL)	S35-11092201	CG/WA	4	
29	12/9/22 20:11	12092229.D	P2205465-002 (1000mL)	S35-11092201	CG/WA	5	
30	12/9/22 20:45	12092230.D	P2205465-003 (1000mL)	S35-11092201	CG/WA	7	
31	12/9/22 21:19	12092231.D	P2205465-004 (1000mL)	S35-11092201	CG/WA	9	
32	12/9/22 21:53	12092232.D	P2205465-005 (1000mL)	S35-11092201	CG/WA	10	
	CCV, CCVend : TBA out high						
	LCS : ethanol out high, within method 12/10/22						

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-05

Cycles: 30

Batch: 30284

Batch Started By: on 11/17/22 0342

Finished Cleaning By: ALESAICHERRE on 11/21/22 0636

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AS01254	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0851		
AC02315	11/17/22	11/18/22	Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE				ms21-11/18/22
AC01851	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0224		
AC02258	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0851		
AS01632	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0851		
AC02362	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	11/29/22 0851		
AC02337	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/1/22 0850		
AS00977	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	11/29/22 0851		
AS01501	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/1/22 1233		
AC02464	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	11/29/22 0851		
AC02409	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0224		
AS00947	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0854		
AS00903	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0854		
AC02186	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0854		
AS00845	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/8/22 0851		
AS01432	11/17/22		Pass w/ Conditions	-14.3	11/21/22 0636	ALESAICHERRE	-14.0	12/1/22 0850		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

*** QC Canister**

Data Path : I:\MS21\DATA\2022_11\18\
 Data File : 11182208.D
 Acq On : 18 Nov 2022 20:29
 Operator : KM
 Sample : 111822_AC02315_30284
 Misc : SIM + TICS (Sig #1); S35-10142203 (Sig #2)
 ALS Vial : 4 Sample Multiplier: 1

APL 11/21/22

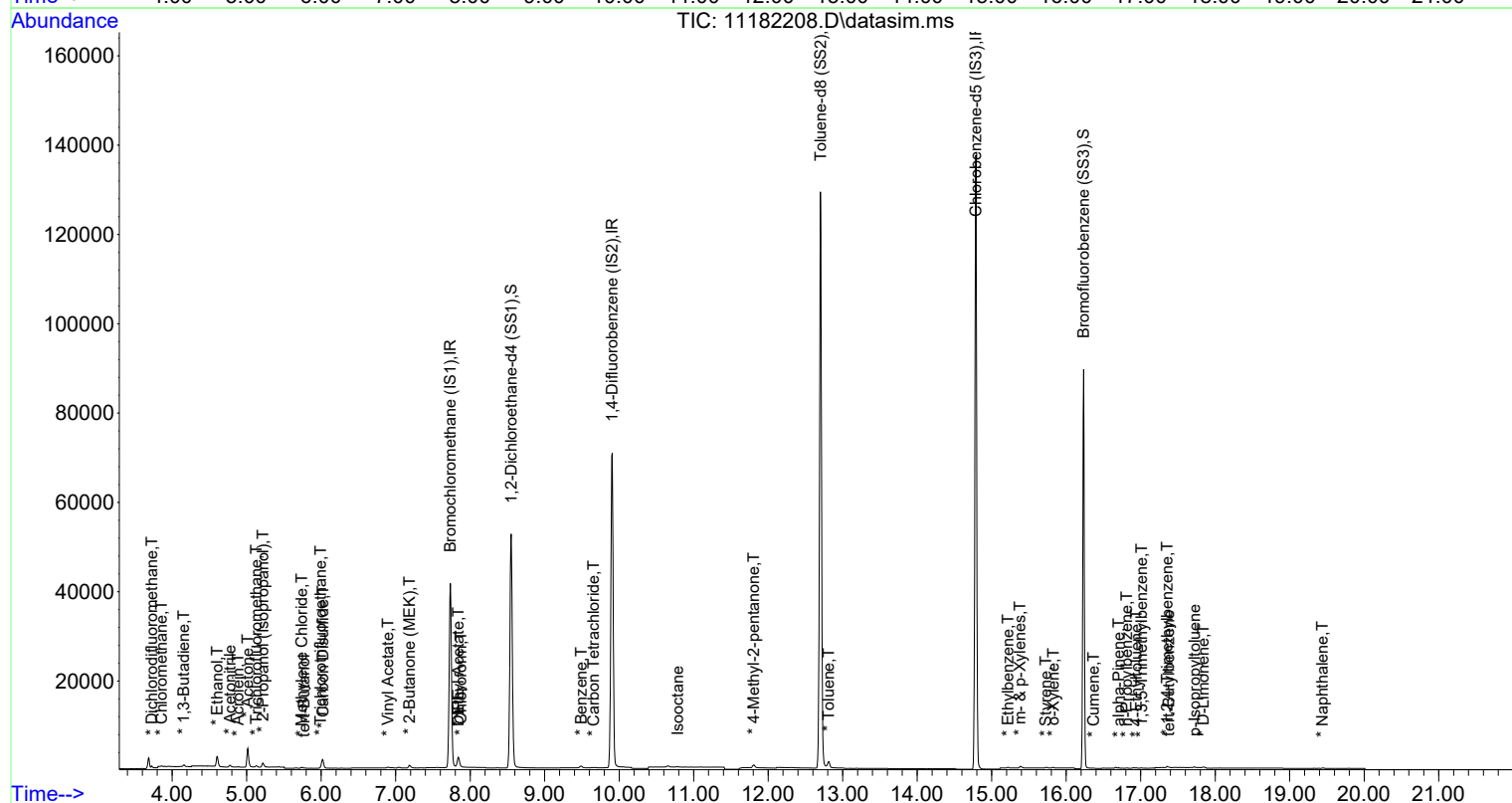
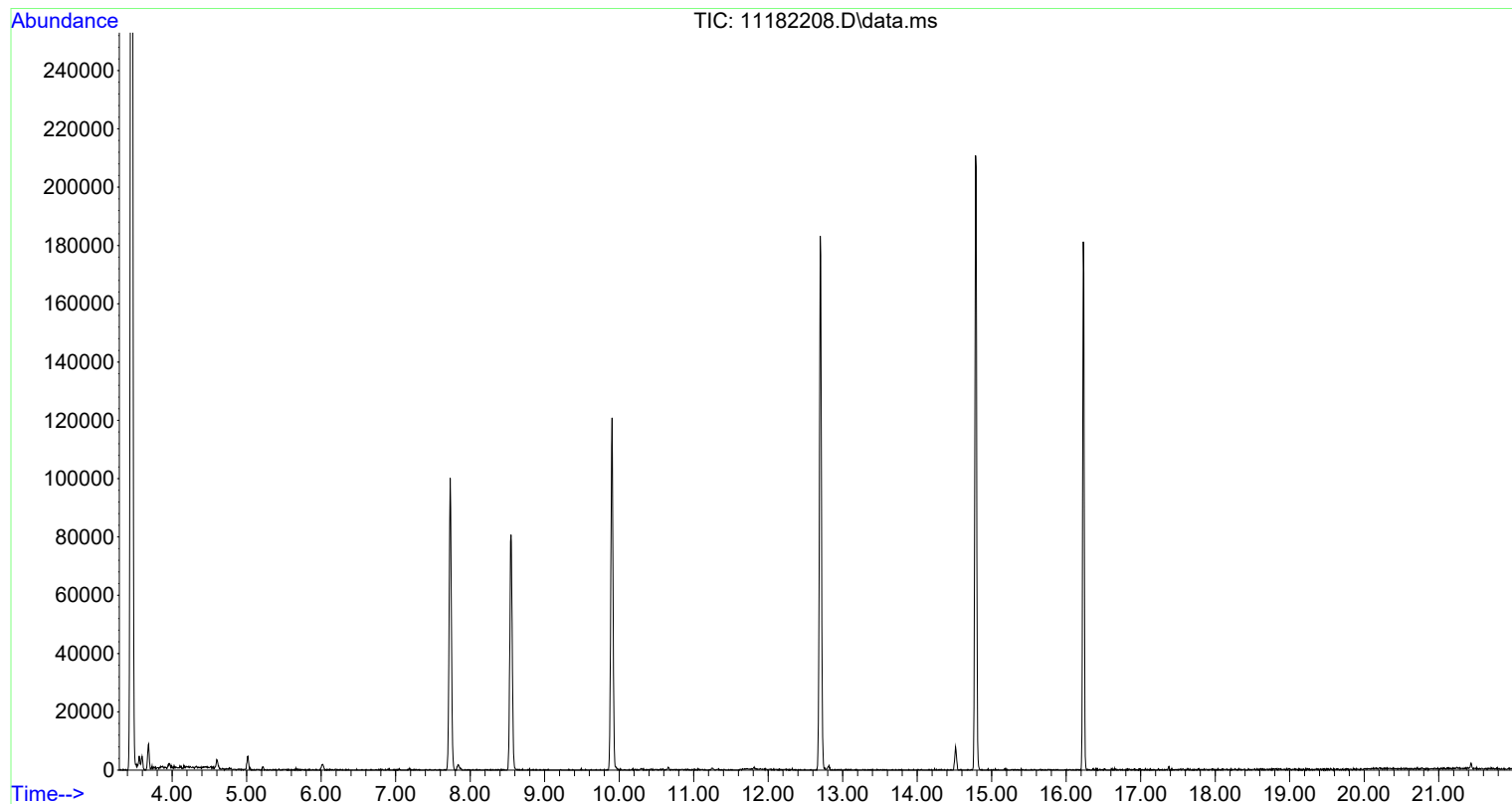
Quant Time: Nov 21 04:33:58 2022
 Quant Method : I:\MS21\Methods\F21103122.M
 Quant Title : EPA T0-15
 QLast Update : Tue Nov 01 07:50:09 2022
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.734	130	51107	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.906	114	125092	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.787	54	22905	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.550	65	79596	1006.24	pg	0.00
Spiked Amount 1000.000			Recovery	=	100.62%	
57) Toluene-d8 (SS2)	12.702	98	139074	983.68	pg	0.00
Spiked Amount 1000.000			Recovery	=	98.37%	
74) Bromofluorobenzene (SS3)	16.233	174	64555	995.23	pg	0.00
Spiked Amount 1000.000			Recovery	=	99.52%	
Target Compounds						Qvalue
3] * Dichlorodifluoromethane	3.725	85	447	5.150	pg	96
4] * Chloromethane	3.856	50	132	5.536	pg	# 88
7] * 1,3-Butadiene	4.152	54	6	0.317	pg	# 6
10] * Ethanol	4.606	45	2579	111.481	pg	98
11] * Acetonitrile	4.778	41	599	8.369	pg	100
12] * Acrolein	4.884	56	83	5.701	pg	88
13] * Acetone	5.014	58	1561	53.348	pg	96
14] * Trichlorofluoromethane	5.132	101	330	2.624	pg	100
15] * 2-Propanol (Isopropa...	5.219	45	946	18.056	pg	90
18] tert-Butanol	5.773	59	92	1.749	pg	# 40
19] * Methylene Chloride	5.739	84	216	3.972	pg	97
21] * Trichlorotrifluoroet...	5.992	151	81	1.269	pg	# 18
22] * Carbon Disulfide	6.021	76	3796	19.634	pg	98
26] * Vinyl Acetate	6.898	86	60	14.059	pg	# 9
27] * 2-Butanone (MEK)	7.184	72	270	14.264	pg	100
29] DIPE	7.838	45	508	6.332	pg	# 41
30] * Ethyl Acetate	7.838	61	510	46.199	pg	98
32] * Chloroform	7.877	83	58	0.566	pg	# 17
39] * Benzene	9.490	78	440	4.541	pg	93
42] * Carbon Tetrachloride	9.656	117	90	1.418	pg	95
49] Isooctane	10.786	56	61	1.737	pg	# 70
53] * 4-Methyl-2-pentanone	11.804	58	346	21.947	pg	92
58] * Toluene	12.810	91	1491	9.351	pg	98
66] * Ethylbenzene	15.220	91	192	2.151	pg	97
67] * m- & p-Xylenes	15.381	91	476	6.628	pg	97
70] * Styrene	15.727	104	110	2.501	pg	94
71] * o-Xylene	15.828	91	146	2.135	pg	94
75] * Cumene	16.368	105	57	0.523	pg	# 48
76] * alpha-Pinene	16.705	93	72	1.682	pg	# 19
77] * n-Propylbenzene	16.812	91	64	0.585	pg	# 52
79] * 4-Ethyltoluene	16.943	105	71	0.912	pg	# 44
80] * 1,3,5-Trimethylbenzene	17.011	105	52	0.727	pg	# 27
83] tert-Butylbenzene	17.379	134	68	4.406	pg	# 1
84] * 1,2,4-Trimethylbenzene	17.357	105	164	2.538	pg	96
91] p-Isopropyltoluene	17.724	119	97	1.254	pg	# 49
93] * D-Limonene	17.843	68	68	3.402	pg	90
98] * Naphthalene	19.439	128	131	2.284	pg	# 67

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

Data Path : I:\MS21\DATA\2022_11\18\
 Data File : 11182208.D
 Acq On : 18 Nov 2022 20:29
 Operator : KM
 Sample : 111822_AC02315_30284
 Misc : SIM + TICS (Sig #1); S35-10142203 (Sig #2)
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 21 04:33:58 2022
 Quant Method : I:\MS21\Methods\F21103122.M
 Quant Title : EPA T0-15
 QLast Update : Tue Nov 01 07:50:09 2022
 Response via : Initial Calibration





LABORATORY REPORT

February 22, 2023

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the sample submitted to our laboratory on February 8, 2023. For your reference, this analysis has been assigned our service request number P2300537.

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.

ALS | Environmental

5:35 pm, Feb 22, 2023

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2300537

CASE NARRATIVE

The sample was received intact under chain of custody on February 8, 2023 and was 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 sample at the time of sample receipt.

Volatile Organic Compound Analysis

The sample was analyzed 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 minimum criterion for Acetone was not met in the Continuing Calibration Verification (CCV) analyzed on February 13, 2022. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verified that instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question and the compound was not detected in the field sample, the data quality has not been significantly affected. This procedure is a quantitative confirmation of non-detect results at or below the MRL. No further corrective action was necessary.

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 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.



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	CA016272019-10
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2300537

Date Received: 2/8/2023
Time Received: 09:24

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
EFF-Y12Q2-SUB	P2300537-001	Air	2/7/2023	16:30	AC02236	0.01	3.84	X



Air - Chain of Custody Record & Analytical Service Request

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

Page 1 of 1
P2300537

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

ALS Project No.

12101963

Company Name & Address (Reporting Information)

Trinity Analysis + Development Corp
1002 Eglon Parkway Shalimar FL 352579

Project Name

DPMT Memphis

Project Number

10A023

ALS Contact:

Analysis Method

Project Manager

Larry Pannell

P.O. # / Billing Information

8975

Phone

508-280-9948

Fax

508-366-7445

Email Address for Result Reporting

L.Pannell@kewang.com

Sampler (Print & Sign)

Elizabeth Goernemann Elizabeth Goernemann

Comments
e.g. Actual
Preservative or
specific instructions

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	T6-15		
EFF-Y12Q2-SUB	<u>U</u>	<u>2-7-2023</u>	<u>1630</u>	<u>AC02236</u>	<u>none</u>	<u>30</u>	<u>0</u>	<u>6L</u>			

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____

Tier III (Results + QC & Calibration Summaries) _____

EDD required Yes / No

Chain of Custody Seal: (Circle)

Project Requirements (MRLs, QAPP)

Tier II (Results + QC Summaries) _____

Tier IV (Data Validation Package) 10% Surcharge _____

Type: _____ Units: _____

INTACT BROKEN ABSENT

Relinquished by: (Signature)

Elizabeth Goernemann

Date:

2-7-23

Time:

1700

Received by: (Signature)

Date:

2-8-23

Time:

0342

Relinquished by: (Signature)

Received by: (Signature)

Date:

2-8-23

Time:

0324

Cooler / Blank Temperature _____ °C

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: EFF-Y12Q2-SUB

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P2300537-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02236

Date Collected: 2/7/23

Date Received: 2/8/23

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.01

Final Pressure (psig): 3.84

Container Dilution Factor: 1.26

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.23	0.38	0.23	0.095	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.47	0.14	0.082	0.022	
74-87-3	Chloromethane	0.20	0.31	0.20	0.052	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.058	0.097	0.058	0.015	U
75-01-4	Vinyl Chloride	0.034	0.26	0.084	0.028	J
106-99-0	1,3-Butadiene	0.18	0.30	0.18	0.050	U
74-83-9	Bromomethane	0.055	0.17	0.055	0.024	U
75-00-3	Chloroethane	0.081	0.24	0.081	0.032	U
64-17-5	Ethanol	0.51	3.3	0.56	0.25	J
75-05-8	Acetonitrile	0.24	0.75	0.24	0.098	U
107-02-8	Acrolein	0.19	0.55	0.19	0.082	U
67-64-1	Acetone	1.4	2.8	1.4	0.64	U, V
75-69-4	Trichlorofluoromethane	0.22	0.12	0.036	0.018	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.32	0.51	0.32	0.11	U
107-13-1	Acrylonitrile	0.19	0.58	0.19	0.064	U
75-35-4	1,1-Dichloroethene	0.24	0.17	0.054	0.024	
75-09-2	Methylene Chloride	0.11	0.19	0.11	0.054	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.068	0.21	0.068	0.029	U
76-13-1	Trichlorotrifluoroethane	1.4	0.089	0.028	0.013	
75-15-0	Carbon Disulfide	0.11	0.45	0.13	0.065	J
156-60-5	trans-1,2-Dichloroethene	0.36	0.17	0.054	0.024	
75-34-3	1,1-Dichloroethane	0.11	0.17	0.053	0.024	J
1634-04-4	Methyl tert-Butyl Ether	0.056	0.19	0.056	0.022	U
108-05-4	Vinyl Acetate	0.97	1.8	0.97	0.43	U
78-93-3	2-Butanone (MEK)	0.14	0.43	0.14	0.047	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: EFF-Y12Q2-SUB

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P2300537-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02236

Date Collected: 2/7/23

Date Received: 2/8/23

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.01

Final Pressure (psig): 3.84

Container Dilution Factor: 1.26

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	9.8	0.17	0.054	0.024	
141-78-6	Ethyl Acetate	0.31	0.73	0.22	0.098	J
110-54-3	n-Hexane	0.25	0.19	0.11	0.039	
67-66-3	Chloroform	4.0	0.14	0.044	0.018	
109-99-9	Tetrahydrofuran (THF)	0.085	0.43	0.085	0.029	U
107-06-2	1,2-Dichloroethane	0.053	0.17	0.053	0.018	U
71-55-6	1,1,1-Trichloroethane	0.11	0.12	0.037	0.015	J
71-43-2	Benzene	0.13	0.20	0.067	0.030	J
56-23-5	Carbon Tetrachloride	0.28	0.10	0.032	0.015	
110-82-7	Cyclohexane	0.41	0.40	0.12	0.055	
78-87-5	1,2-Dichloropropane	0.046	0.14	0.046	0.018	U
75-27-4	Bromodichloromethane	0.032	0.10	0.032	0.014	U
79-01-6	Trichloroethene	15	0.12	0.038	0.017	
123-91-1	1,4-Dioxane	0.056	0.18	0.056	0.022	U
80-62-6	Methyl Methacrylate	0.19	0.34	0.19	0.058	U
142-82-5	n-Heptane	0.14	0.16	0.095	0.026	J
10061-01-5	cis-1,3-Dichloropropene	0.089	0.14	0.089	0.023	U
108-10-1	4-Methyl-2-pentanone	0.065	0.34	0.065	0.022	U
10061-02-6	trans-1,3-Dichloropropene	0.086	0.14	0.086	0.031	U
79-00-5	1,1,2-Trichloroethane	0.033	0.12	0.039	0.012	J
108-88-3	Toluene	0.57	0.17	0.057	0.022	
591-78-6	2-Hexanone	0.065	0.34	0.065	0.020	U
124-48-1	Dibromochloromethane	0.025	0.078	0.025	0.010	U
106-93-4	1,2-Dibromoethane	0.028	0.085	0.028	0.010	U
123-86-4	n-Butyl Acetate	0.056	0.29	0.056	0.019	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: EFF-Y12Q2-SUB

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P2300537-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Container ID: AC02236

Date Collected: 2/7/23

Date Received: 2/8/23

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): 0.01

Final Pressure (psig): 3.84

Container Dilution Factor: 1.26

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.040	0.14	0.084	0.032	J
127-18-4	Tetrachloroethene	1.7	0.097	0.032	0.013	
108-90-7	Chlorobenzene	0.044	0.14	0.044	0.019	U
100-41-4	Ethylbenzene	0.030	0.15	0.049	0.022	J
179601-23-1	m,p-Xylenes	0.14	0.32	0.096	0.041	J
75-25-2	Bromoform	0.039	0.063	0.039	0.013	U
100-42-5	Styrene	0.092	0.15	0.092	0.025	U
95-47-6	o-Xylene	0.18	0.15	0.049	0.022	
111-84-2	n-Nonane	0.077	0.12	0.077	0.021	U
79-34-5	1,1,2,2-Tetrachloroethane	0.21	0.095	0.031	0.014	
98-82-8	Cumene	0.044	0.13	0.044	0.020	U
80-56-8	alpha-Pinene	0.038	0.23	0.038	0.019	U
103-65-1	n-Propylbenzene	0.044	0.14	0.044	0.020	U
622-96-8	4-Ethyltoluene	0.023	0.14	0.082	0.022	J
108-67-8	1,3,5-Trimethylbenzene	0.041	0.13	0.044	0.020	J
95-63-6	1,2,4-Trimethylbenzene	0.023	0.13	0.041	0.019	J
100-44-7	Benzyl Chloride	0.083	0.49	0.083	0.029	U
541-73-1	1,3-Dichlorobenzene	0.036	0.11	0.036	0.017	U
106-46-7	1,4-Dichlorobenzene	0.036	0.11	0.036	0.017	U
95-50-1	1,2-Dichlorobenzene	0.036	0.11	0.036	0.017	U
5989-27-5	d-Limonene	0.070	0.23	0.070	0.025	U
96-12-8	1,2-Dibromo-3-chloropropane	0.042	0.13	0.042	0.013	U
120-82-1	1,2,4-Trichlorobenzene	0.054	0.19	0.054	0.022	U
91-20-3	Naphthalene	0.075	0.13	0.075	0.031	U
87-68-3	Hexachlorobutadiene	0.037	0.061	0.037	0.013	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.30	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.077	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.19	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U, V
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.41	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.46	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.35	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.34	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

V = The continuing calibration verification standard was outside (biased low) the specified limits for this compound.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.095	0.029	0.012	U
71-43-2	Benzene	0.053	0.16	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.080	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.32	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.079	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.097	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.14	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.11	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.095	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.062	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.23	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.11	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.077	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.11	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.050	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.099	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.076	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.18	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.39	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.087	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.087	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.088	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.18	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.10	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.099	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.049	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Simon Cao
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 2/7/23
Date(s) Received: 2/8/23
Date(s) Analyzed: 2/13/23

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P230213-MB	87	111	119	70-130	
Lab Control Sample	P230213-LCS	87	110	119	70-130	
Duplicate Lab Control Sample	P230213-DLCS	88	111	121	70-130	
EFF-Y12Q2-SUB	P2300537-001	87	110	120	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 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	123	112	110	91	89	57-136	2	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.9	35.3	34.9	82	81	59-128	1	25	
74-87-3	Chloromethane	102	78.1	76.8	77	75	59-132	3	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	30.6	26.3	25.8	86	84	63-121	2	25	
75-01-4	Vinyl Chloride	82.2	59.4	58.0	72	71	64-127	1	25	
106-99-0	1,3-Butadiene	95.0	95.2	94.6	100	100	66-134	0	25	
74-83-9	Bromomethane	54.1	49.7	49.3	92	91	63-134	1	25	
75-00-3	Chloroethane	80.4	65.6	64.1	82	80	63-127	2	25	
64-17-5	Ethanol	584	515	511	88	88	59-125	0	25	
75-05-8	Acetonitrile	128	97.0	96.1	76	75	63-132	1	25	
107-02-8	Acrolein	192	144	142	75	74	62-126	1	25	
67-64-1	Acetone	447	315	310	70	69	58-128	1	25	
75-69-4	Trichlorofluoromethane	37.4	34.3	33.9	92	91	62-126	1	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	168	133	132	79	79	52-125	0	25	
107-13-1	Acrylonitrile	193	145	144	75	75	71-137	0	25	
75-35-4	1,1-Dichloroethene	51.5	47.0	46.9	91	91	61-133	0	25	
75-09-2	Methylene Chloride	58.7	50.4	49.8	86	85	62-115	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	67.8	52.3	52.5	77	77	71-131	0	25	
76-13-1	Trichlorotrifluoroethane	27.4	24.0	23.8	88	87	66-126	1	25	
75-15-0	Carbon Disulfide	138	132	131	96	95	57-134	1	25	
156-60-5	trans-1,2-Dichloroethene	54.5	43.4	42.9	80	79	67-124	1	25	
75-34-3	1,1-Dichloroethane	53.4	42.9	42.5	80	80	68-126	0	25	
1634-04-4	Methyl tert-Butyl Ether	59.9	46.2	46.0	77	77	66-126	0	25	
108-05-4	Vinyl Acetate	313	284	280	91	89	56-139	2	25	
78-93-3	2-Butanone (MEK)	140	114	114	81	81	67-130	0	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 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	54.0	42.2	41.7	78	77	70-121	1	25	
141-78-6	Ethyl Acetate	110	81.2	79.9	74	73	65-128	1	25	
110-54-3	n-Hexane	60.2	46.2	45.8	77	76	63-120	1	25	
67-66-3	Chloroform	44.2	34.7	34.4	79	78	68-123	1	25	
109-99-9	Tetrahydrofuran (THF)	136	108	106	79	78	64-123	1	25	
107-06-2	1,2-Dichloroethane	50.4	42.8	42.2	85	84	65-128	1	25	
71-55-6	1,1,1-Trichloroethane	38.5	35.8	35.7	93	93	68-125	0	25	
71-43-2	Benzene	63.9	61.3	60.9	96	95	69-119	1	25	
56-23-5	Carbon Tetrachloride	33.4	36.6	36.2	110	108	68-132	2	25	
110-82-7	Cyclohexane	124	109	109	88	88	70-117	0	25	
78-87-5	1,2-Dichloropropane	46.3	41.3	41.1	89	89	69-123	0	25	
75-27-4	Bromodichloromethane	32.3	30.4	30.3	94	94	72-128	0	25	
79-01-6	Trichloroethene	39.5	37.7	37.2	95	94	71-123	1	25	
123-91-1	1,4-Dioxane	58.9	57.2	57.1	97	97	71-122	0	25	
80-62-6	Methyl Methacrylate	105	101	101	96	96	70-128	0	25	
142-82-5	n-Heptane	52.2	47.8	47.5	92	91	69-123	1	25	
10061-01-5	cis-1,3-Dichloropropene	46.7	52.8	52.4	113	112	70-128	0.9	25	
108-10-1	4-Methyl-2-pentanone	104	89.7	89.3	86	86	67-130	0	25	
10061-02-6	trans-1,3-Dichloropropene	43.2	45.6	45.3	106	105	75-133	0.9	25	
79-00-5	1,1,2-Trichloroethane	39.6	35.5	35.3	90	89	73-119	1	25	
108-88-3	Toluene	56.8	55.0	54.7	97	96	66-119	1	25	
591-78-6	2-Hexanone	104	116	116	112	112	62-128	0	25	
124-48-1	Dibromochloromethane	25.1	28.5	28.3	114	113	70-130	0.9	25	
106-93-4	1,2-Dibromoethane	26.6	26.8	26.5	101	100	74-122	1	25	
123-86-4	n-Butyl Acetate	89.3	102	102	114	114	65-134	0	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 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

ALS Sample ID: P230213-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9

Analyst: Simon Cao

Sampling Media: 6.0 L Summa Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 2/13/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	45.4	41.8	41.5	92	91	69-121	1	25	
127-18-4	Tetrachloroethene	31.6	35.4	35.1	112	111	66-124	0.9	25	
108-90-7	Chlorobenzene	46.9	46.7	46.6	100	99	70-119	1	25	
100-41-4	Ethylbenzene	50.2	48.8	48.8	97	97	70-124	0	25	
179601-23-1	m,p-Xylenes	99.0	98.1	98.0	99	99	61-134	0	25	
75-25-2	Bromoform	21.1	26.6	26.5	126	126	66-139	0	25	
100-42-5	Styrene	50.3	52.8	52.9	105	105	73-127	0	25	
95-47-6	o-Xylene	49.7	48.8	48.8	98	98	67-125	0	25	
111-84-2	n-Nonane	40.8	44.0	43.9	108	108	63-128	0	25	
79-34-5	1,1,2,2-Tetrachloroethane	31.5	31.0	31.0	98	98	65-127	0	25	
98-82-8	Cumene	43.1	44.7	44.7	104	104	68-124	0	25	
80-56-8	alpha-Pinene	38.8	38.4	38.5	99	99	62-136	0	25	
103-65-1	n-Propylbenzene	43.1	43.0	43.2	100	100	69-123	0	25	
622-96-8	4-Ethyltoluene	44.4	46.5	46.2	105	104	67-129	1	25	
108-67-8	1,3,5-Trimethylbenzene	44.0	45.5	45.5	103	103	67-130	0	25	
95-63-6	1,2,4-Trimethylbenzene	43.1	45.8	46.0	106	107	66-132	0.9	25	
100-44-7	Benzyl Chloride	82.7	96.7	97.4	117	118	50-147	0.9	25	
541-73-1	1,3-Dichlorobenzene	35.6	39.2	39.3	110	110	65-130	0	25	
106-46-7	1,4-Dichlorobenzene	35.6	38.8	39.0	109	110	60-131	0.9	25	
95-50-1	1,2-Dichlorobenzene	35.3	39.0	38.9	110	110	63-129	0	25	
5989-27-5	d-Limonene	37.3	38.6	38.9	103	104	65-136	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	43.1	52.1	52.1	121	121	73-133	0	25	
120-82-1	1,2,4-Trichlorobenzene	59.3	67.3	67.4	113	114	55-142	0.9	25	
91-20-3	Naphthalene	42.0	44.9	45.4	107	108	57-138	0.9	25	
87-68-3	Hexachlorobutadiene	20.4	21.8	21.9	107	107	56-138	0	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: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Simon Cao
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 02132306.D
Date Analyzed: 2/13/23
Time Analyzed: 10:20

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P230213-LCS	02132307.D	10:52
Duplicate Lab Control Sample	P230213-DLCS	02132308.D	11:25
EFF-Y12Q2-SUB	P2300537-001	02132319.D	17:59

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2300537

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9
Analyst: Simon Cao
Sampling Media: 6.0 L Summa Canister(s)
Test Notes:

Lab File ID: 02132304.D
Date Analyzed: 2/13/23
Time Analyzed: 09:17

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	243210		7.24		1074612	9.29
Upper Limit	340494		7.57		1504457	9.62
Lower Limit	145926		6.91		644767	8.96

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA	#	RT	#	AREA	#
01	Method Blank	223513		7.20		987596	9.26
02	Lab Control Sample	234439		7.24		1030128	9.29
03	Duplicate Lab Control Sample	234851		7.24		1029211	9.29
04	EFF-Y12Q2-SUB	211596		7.20		924969	9.27
05							
06							
07							
08							
09							
10							
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.

Data File : I:\MS09\DATA\2023_02\13\02132319.D
 Acq On : 13 Feb 2023 17:59
 Sample : P2300537-001 (1000mL)
 Misc : S35-12302204

Vial: 12
 Operator: SC
 Inst : MS09

Quant Time: Feb 14 08:53:07 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

 2/14/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	211596	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.27	114	924969	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	214478	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.97	65	402171	10.935	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	87.52%
57) Toluene-d8 (SS2)	12.39	98	1070236	13.688	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	109.52%
73) Bromofluorobenzene (SS3)	16.79	174	409325	14.972	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	119.76%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	3.32	85	89478	1.838	ng	97
4) Chloromethane	3.48	50	1590	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	1562	0.068	ng	87
6) Vinyl Chloride	3.67	62	2857	0.069	ng	# 6
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	3.98	94	112	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.27	45	17966	0.758	ng	96
11) Acetonitrile	4.38	41	240	N.D.		
12) Acrolein	4.53	56	1337	0.069	ng	96
13) Acetone	4.64	58	17196	0.803	ng	# 1
14) Trichlorofluoromethane	4.73	101	40645	0.972	ng	96
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.	d	
16) Acrylonitrile	4.93	53	448	N.D.		
17) 1,1-Dichloroethene	5.23	96	15468	0.752	ng	97
18) 2-Methyl-2-Propanol (t...	5.23	59	980	N.D.		
19) Methylene Chloride	5.32	84	1577	0.068	ng	92
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.	d	
21) Trichlorotrifluoroethane	5.54	151	192045	8.786	ng	92
22) Carbon Disulfide	5.58	76	19623	0.268	ng	# 9
23) trans-1,2-Dichloroethene	6.11	61	45576	1.139	ng	100
24) 1,1-Dichloroethane	6.29	63	16443	0.358	ng	100
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)	0.00	72	0	N.D.	d	
28) cis-1,2-Dichloroethene	7.04	61	1193161	30.809	ng	100
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	7.27	61	10375	0.884	ng	# 59
31) n-Hexane	7.27	57	34066	0.698	ng	98
32) Chloroform	7.32	83	694957	15.510	ng	99
34) Tetrahydrofuran (THF)	7.78	72	107	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.08	62	1156	N.D.		
38) 1,1,1-Trichloroethane	8.37	97	16699	0.468	ng	97
39) Isopropyl Acetate	9.27	61	29417	No Calib	#	
40) 1-Butanol	8.81	56	3973	No Calib	#	
41) Benzene	8.87	78	26832	0.339	ng	98
42) Carbon Tetrachloride	9.04	117	41286	1.404	ng	98
43) Cyclohexane	9.19	84	34280	1.106	ng	89
44) tert-Amyl Methyl Ether	9.59	73	107	N.D.		
45) 1,2-Dichloropropane	9.82	63	271	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.	d	
47) Trichloroethene	10.11	130	1432141	66.071	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS09\DATA\2023_02\13\02132319.D
 Acq On : 13 Feb 2023 17:59
 Sample : P2300537-001 (1000mL)
 Misc : S35-12302204

Vial: 12
 Operator: SC
 Inst : MS09

Quant Time: Feb 14 08:53:07 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

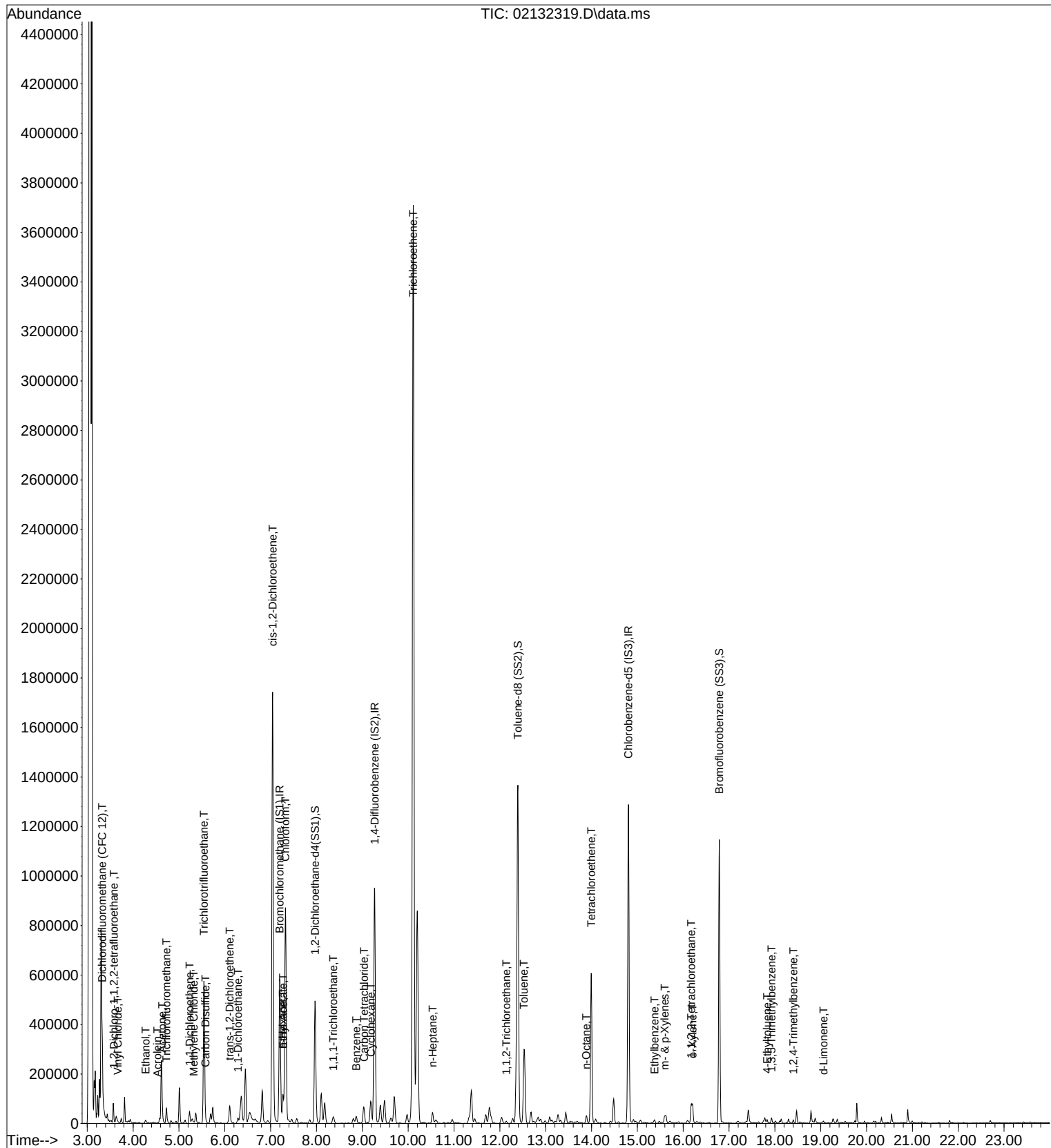
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	9418	0.462	ng	94
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.33	58	381	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	12.14	97	3020	0.145	ng	82
58) Toluene	12.52	91	132481	1.702	ng	96
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.76	43	1852	N.D.		
63) n-Octane	13.89	57	3163	0.150	ng	91
64) Tetrachloroethene	13.99	166	212854	9.228	ng	100
65) Chlorobenzene	14.86	112	540	N.D.		
66) Ethylbenzene	15.37	91	9301	0.103	ng	99
67) m- & p-Xylenes	15.60	91	35079	0.482	ng	96
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.08	104	528	N.D.		
70) o-Xylene	16.20	91	44992	0.627	ng	99
71) n-Nonane	16.58	43	1900	N.D.		
72) 1,1,2,2-Tetrachloroethane	16.17	83	40667	1.148	ng	99
74) Cumene	17.00	105	1896	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.64	91	2301	N.D.		
77) 3-Ethyltoluene	17.00	105	1896	No Calib		
78) 4-Ethyltoluene	17.83	105	7315	0.088	ng	98
79) 1,3,5-Trimethylbenzene	17.93	105	11751	0.161	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	1896	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	6592	0.089	ng	86
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	141	N.D.		
85) 1,3-Dichlorobenzene	18.55	146	464	N.D.		
86) 1,4-Dichlorobenzene	18.63	146	764	N.D.		
87) sec-Butylbenzene	18.72	105	786	N.D.		
88) 4-Isopropyltoluene (p-...	18.90	119	2979	N.D.		
89) 1,2,3-Trimethylbenzene	17.00	105	1896	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	347	N.D.		
91) d-Limonene	19.06	68	1528	0.053	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.43	157	237	N.D.		
93) n-Undecane	18.02	58	105	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	863	N.D.		
95) Naphthalene	20.92	128	3888	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.27	225	574	N.D.		
98) Cyclohexanone	15.22	55	1783	No Calib	#	
99) tert-Butylbenzene	18.40	119	1121	N.D.		
100) n-Butylbenzene	19.36	91	2178	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:\MS09\DATA\2023_02\13\02132319.D
Acq On : 13 Feb 2023 17:59
Sample : P2300537-001 (1000mL)
Misc : S35-12302204

Vial: 12
Operator: SC
Inst : MS09

Quant Time: Feb 14 08:53:07 2023
Quant Method : I:\MS09\METHODS\R9111622.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Wed Jan 11 08:47:39 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS09\DATA\2023_02\13\02132319.D
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Quant Time: Feb 14 08:53:07 2023

 2/14/23

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	211596	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.27	114	924969	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	214478	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.97	65	402171	10.935	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	87.52%
57) Toluene-d8 (SS2)	12.39	98	1070236	13.688	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	109.52%
73) Bromofluorobenzene (SS3)	16.79	174	409325	14.972	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	119.76%

Target Compounds

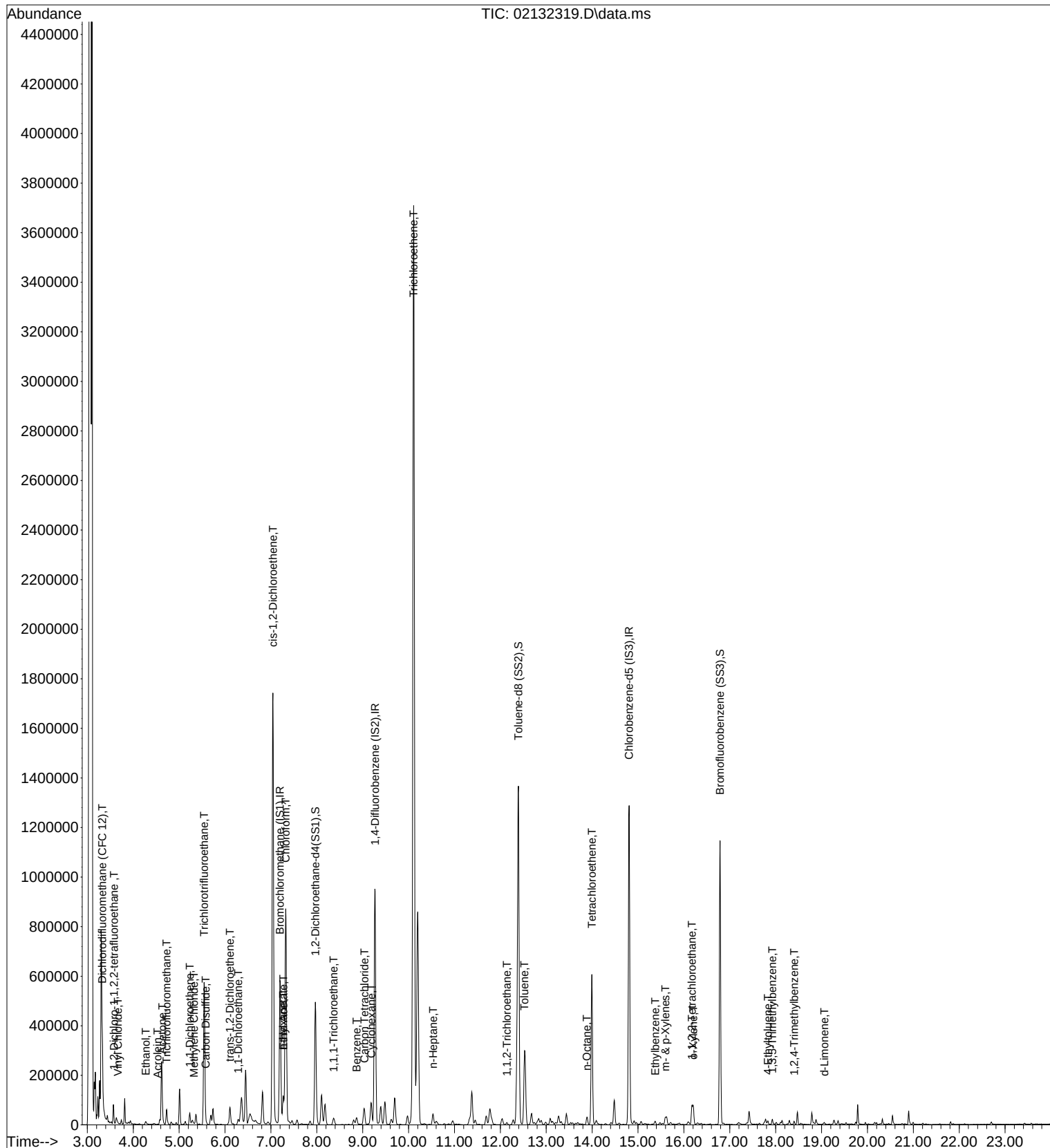
						Qvalue
3) Dichlorodifluoromethan...	3.32	85	89478	1.838	ng	97
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	1562	0.068	ng	87
6) Vinyl Chloride	3.67	62	2857	0.069	ng	# 6
10) Ethanol	4.27	45	17966	0.758	ng	96
12) Acrolein	4.53	56	1337	0.069	ng	96
13) Acetone	4.64	58	17196	0.803	ng	# 1
14) Trichlorofluoromethane	4.73	101	40645	0.972	ng	96
17) 1,1-Dichloroethene	5.23	96	15468	0.752	ng	97
19) Methylene Chloride	5.32	84	1577	0.068	ng	92
21) Trichlorotrifluoroethane	5.54	151	192045	8.786	ng	92
22) Carbon Disulfide	5.58	76	19623	0.268	ng	# 9
23) trans-1,2-Dichloroethene	6.11	61	45576	1.139	ng	100
24) 1,1-Dichloroethane	6.29	63	16443	0.358	ng	100
28) cis-1,2-Dichloroethene	7.04	61	1193161	30.809	ng	100
30) Ethyl Acetate	7.27	61	10375	0.884	ng	# 59
31) n-Hexane	7.27	57	34066	0.698	ng	98
32) Chloroform	7.32	83	694957	15.510	ng	99
38) 1,1,1-Trichloroethane	8.37	97	16699	0.468	ng	97
41) Benzene	8.87	78	26832	0.339	ng	98
42) Carbon Tetrachloride	9.04	117	41286	1.404	ng	98
43) Cyclohexane	9.19	84	34280	1.106	ng	89
47) Trichloroethene	10.11	130	1432141	66.071	ng	99
51) n-Heptane	10.54	71	9418	0.462	ng	94
55) 1,1,2-Trichloroethane	12.14	97	3020	0.145	ng	82
58) Toluene	12.52	91	132481	1.702	ng	96
63) n-Octane	13.89	57	3163	0.150	ng	91
64) Tetrachloroethene	13.99	166	212854	9.228	ng	100
66) Ethylbenzene	15.37	91	9301	0.103	ng	99
67) m- & p-Xylenes	15.60	91	35079	0.482	ng	96
70) o-Xylene	16.20	91	44992	0.627	ng	99
72) 1,1,2,2-Tetrachloroethane	16.17	83	40667	1.148	ng	99
78) 4-Ethyltoluene	17.83	105	7315	0.088	ng	98
79) 1,3,5-Trimethylbenzene	17.93	105	11751	0.161	ng	98
82) 1,2,4-Trimethylbenzene	18.41	105	6592	0.089	ng	86
91) d-Limonene	19.06	68	1528	0.053	ng	96

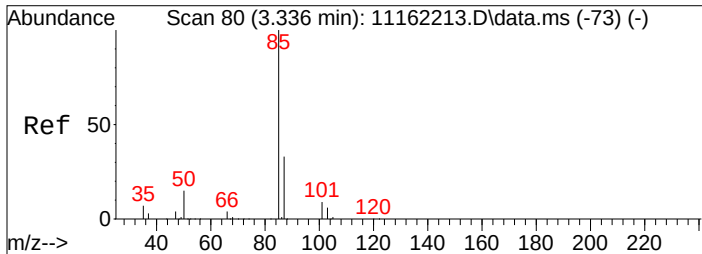
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS09\DATA\2023_02\13\02132319.D
Acq On : 13 Feb 2023 17:59
Sample : P2300537-001 (1000mL)
Misc : S35-12302204

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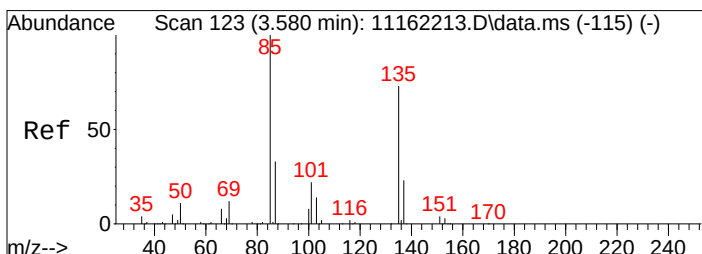
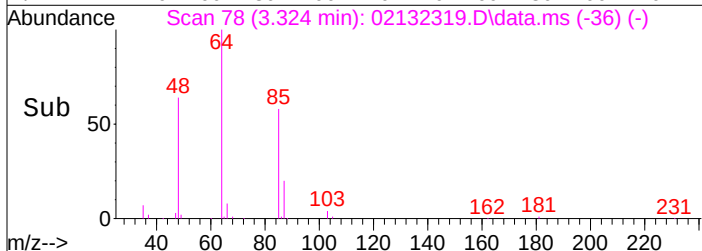
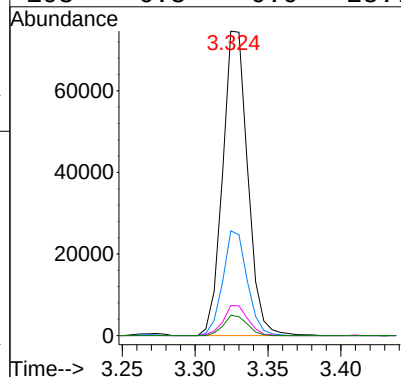
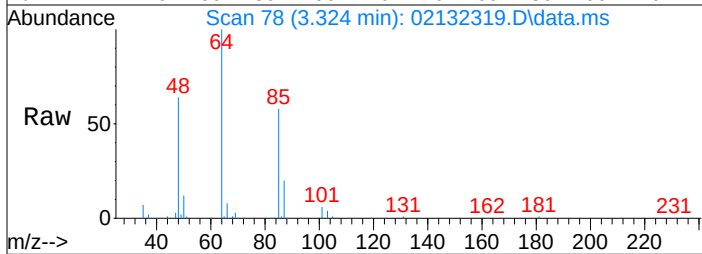
Quant Time: Feb 14 08:53:07 2023
Quant Method : I:\MS09\METHODS\R9111622.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Jan 11 08:47:39 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M





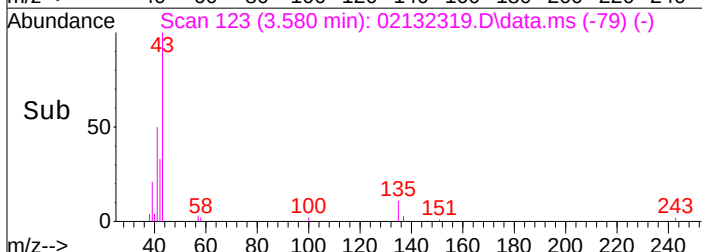
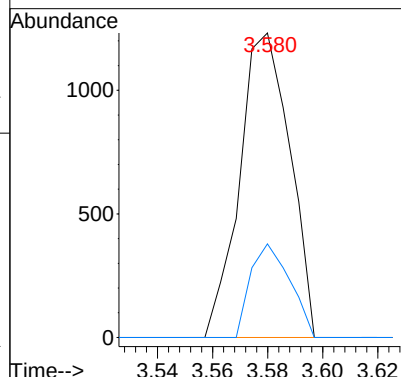
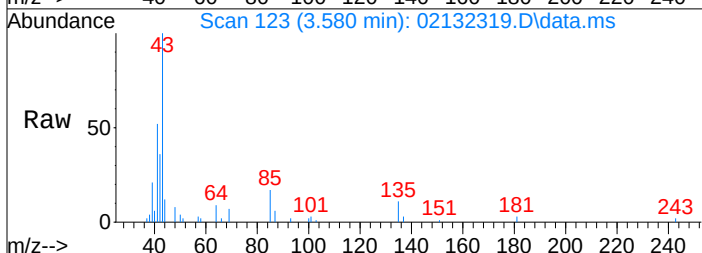
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 1.84 ng
 RT: 3.32 min Scan# 78
 Delta R.T. -0.011 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

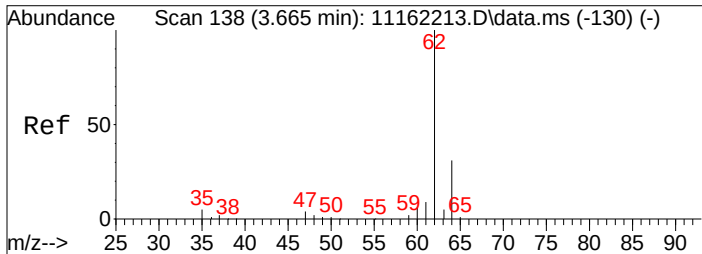
Tgt Ion:	85	Resp:	89478
Ion Ratio		Lower	Upper
85	100		
87	33.4	11.5	51.5
101	9.8	0.0	28.7
103	6.3	0.0	25.7



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.07 ng
 RT: 3.58 min Scan# 123
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

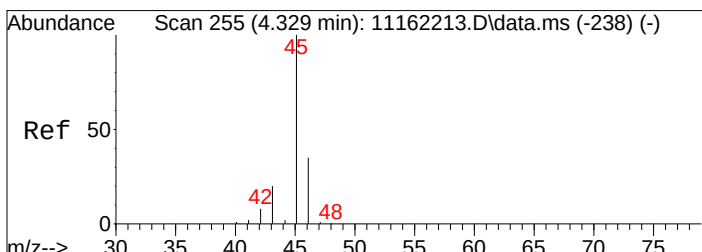
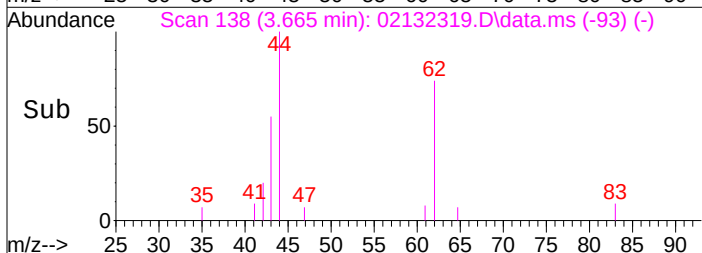
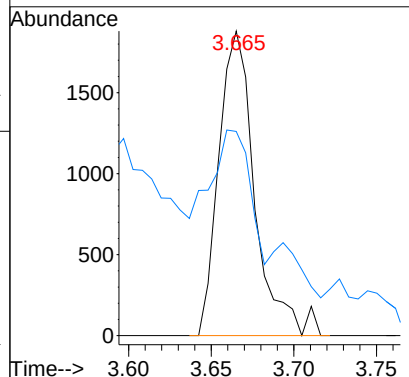
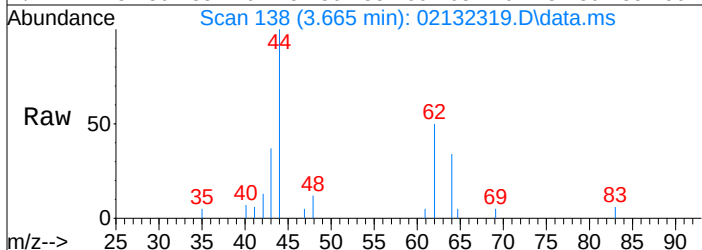
Tgt Ion:	135	Resp:	1562
Ion Ratio		Lower	Upper
135	100		
137	24.1	11.5	51.5





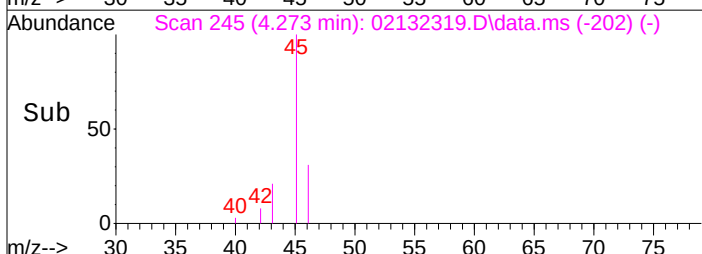
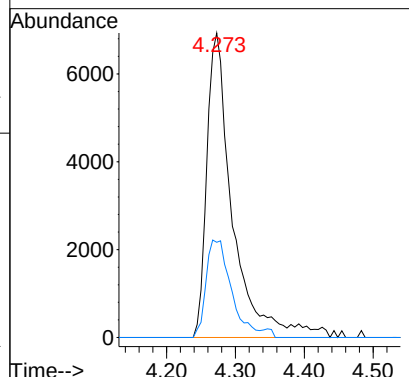
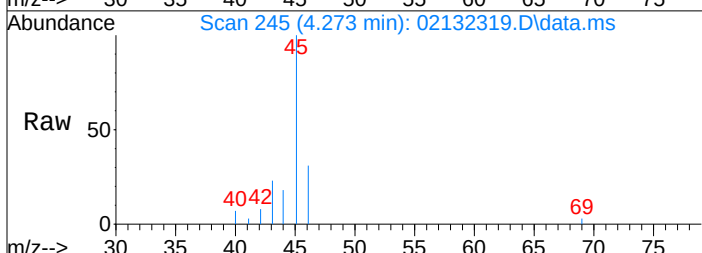
#6
 Vinyl Chloride
 Concen: 0.07 ng
 RT: 3.67 min Scan# 138
 Delta R.T. 0.006 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

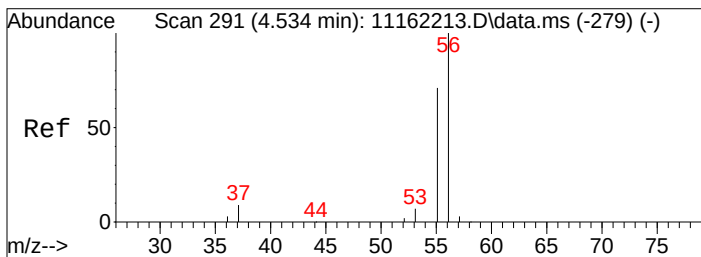
Tgt Ion:	62	Resp:	2857
Ion Ratio	Lower	Upper	
62	100		
64	82.3	10.7	50.7#



#10
 Ethanol
 Concen: 0.76 ng
 RT: 4.27 min Scan# 245
 Delta R.T. -0.006 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

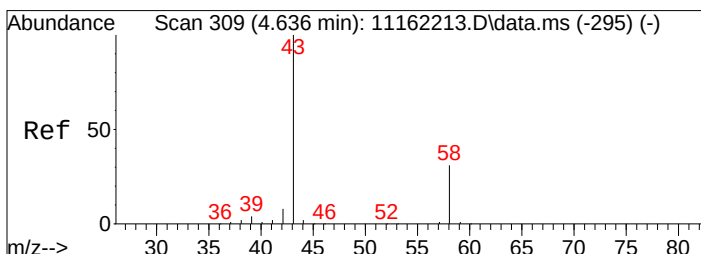
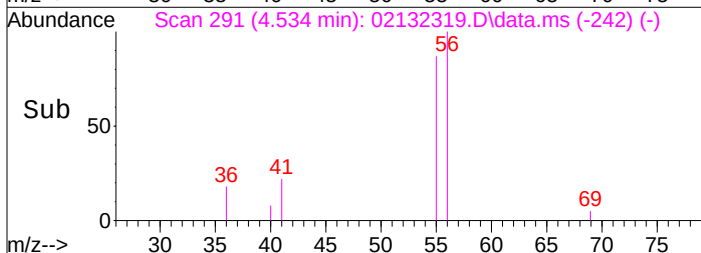
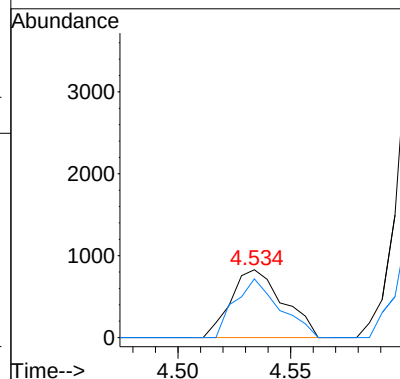
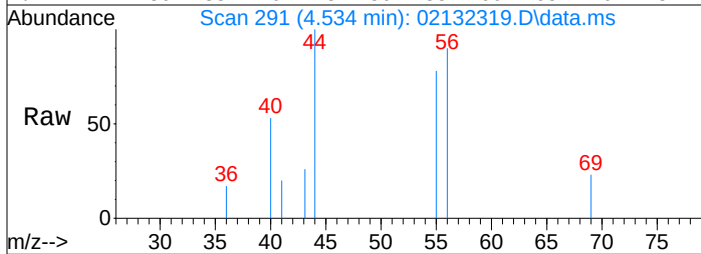
Tgt Ion:	45	Resp:	17966
Ion Ratio	Lower	Upper	
45	100		
46	32.2	14.6	54.6





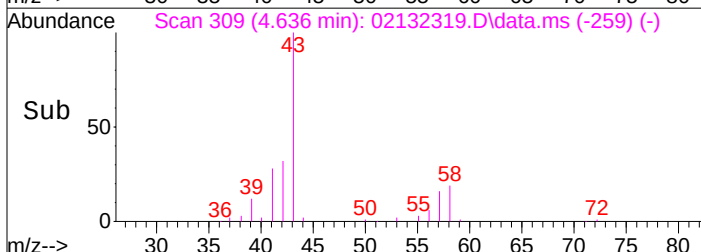
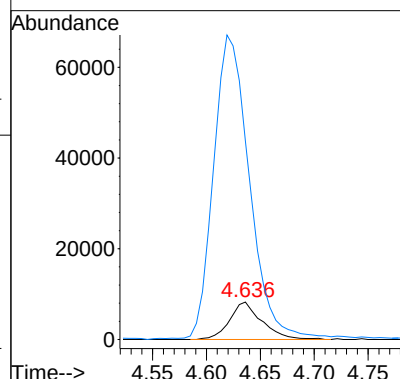
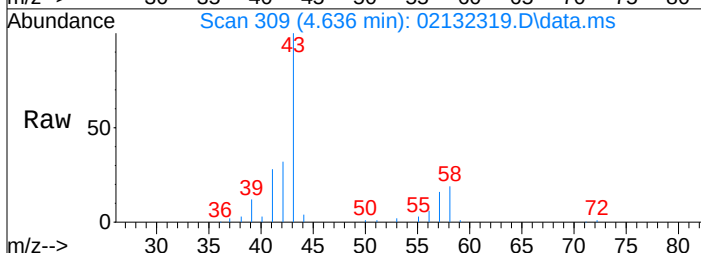
#12
Acrolein
Concen: 0.07 ng
RT: 4.53 min Scan# 291
Delta R.T. 0.028 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

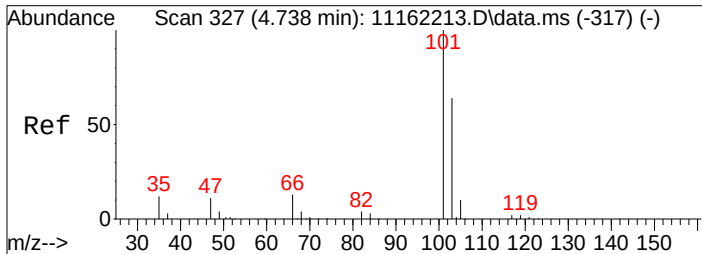
Tgt Ion: 56 Resp: 1337
Ion Ratio Lower Upper
56 100
55 74.2 50.8 90.8



#13
Acetone
Concen: 0.80 ng
RT: 4.64 min Scan# 309
Delta R.T. 0.034 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

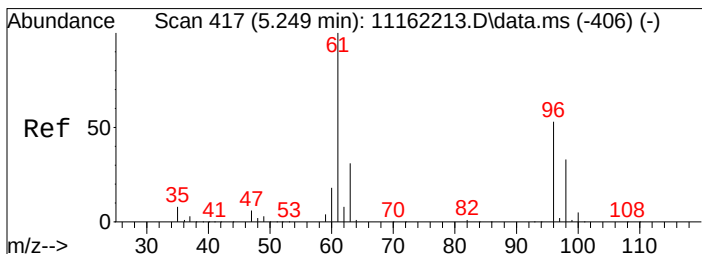
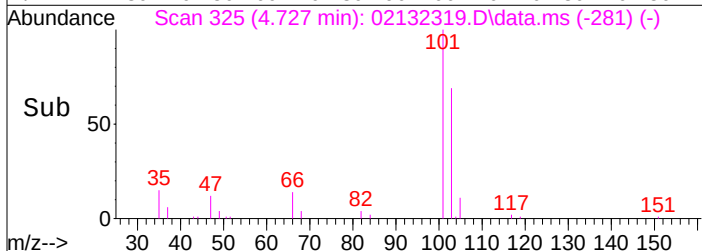
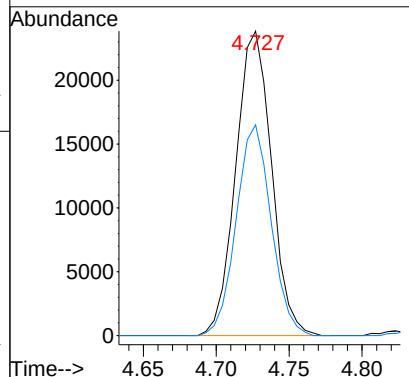
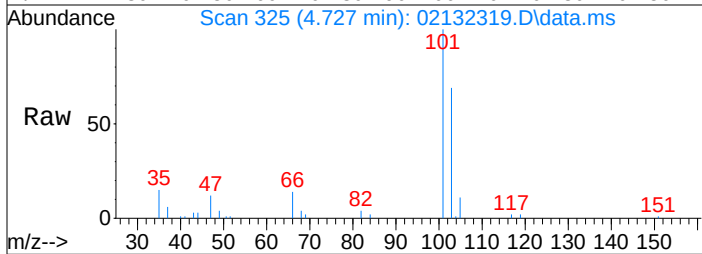
Tgt Ion: 58 Resp: 17196
Ion Ratio Lower Upper
58 100
43 923.4 304.9 364.9#





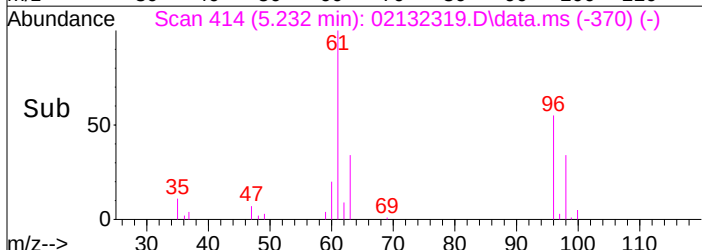
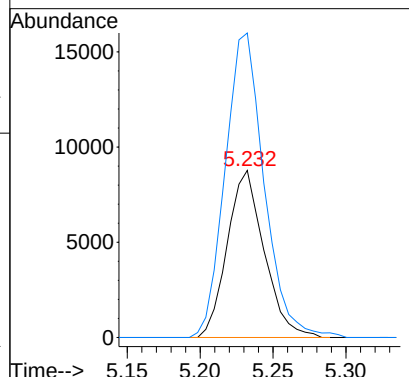
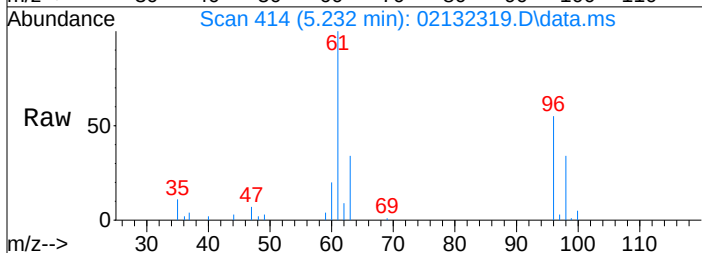
#14
 Trichlorofluoromethane
 Concen: 0.97 ng
 RT: 4.73 min Scan# 325
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

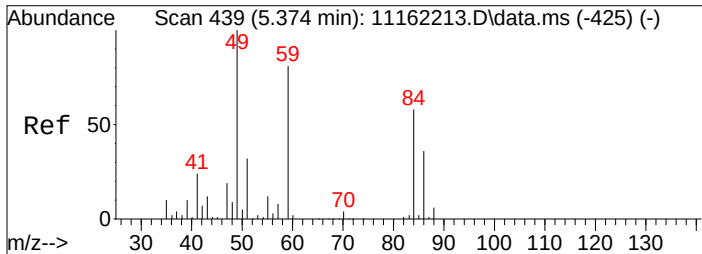
Tgt Ion:	101	Resp:	40645
Ion Ratio	Lower	Upper	
101	100		
103	67.6	44.2	84.2



#17
 1,1-Dichloroethene
 Concen: 0.75 ng
 RT: 5.23 min Scan# 414
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

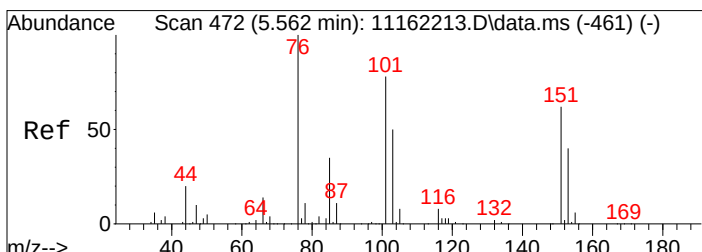
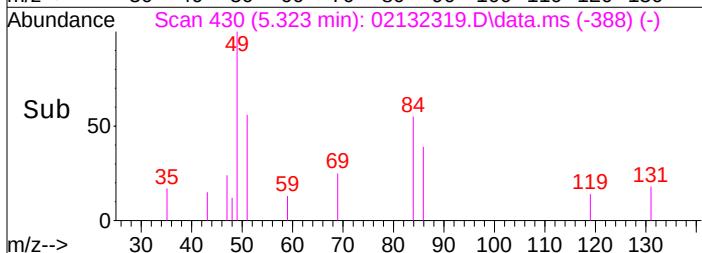
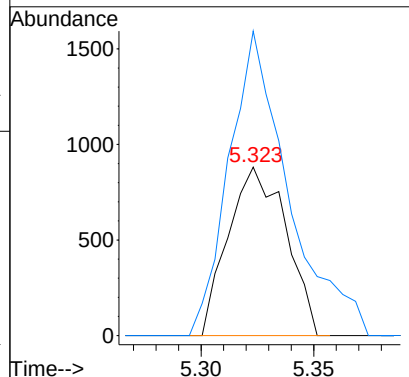
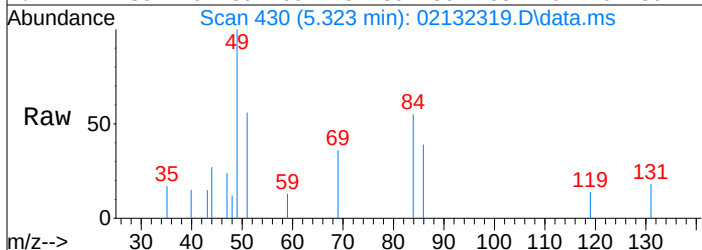
Tgt Ion:	96	Resp:	15468
Ion Ratio	Lower	Upper	
96	100		
61	192.6	176.8	216.8





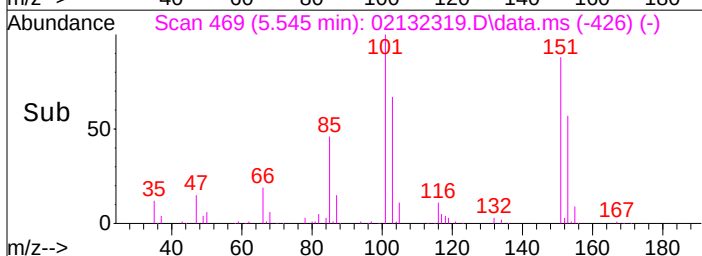
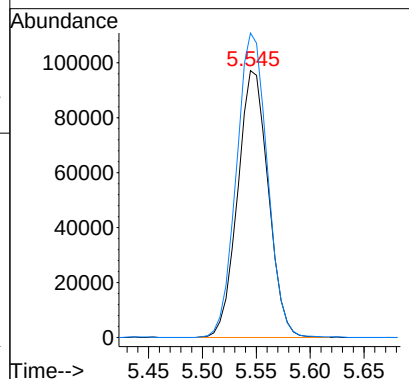
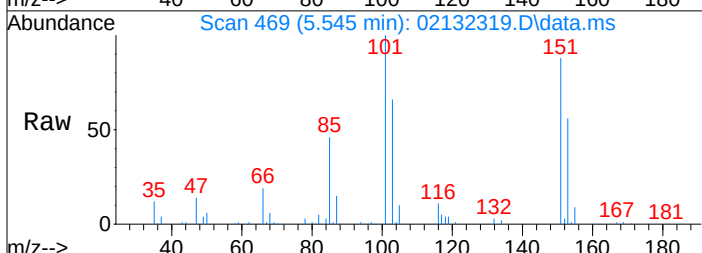
#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.32 min Scan# 430
Delta R.T. -0.011 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

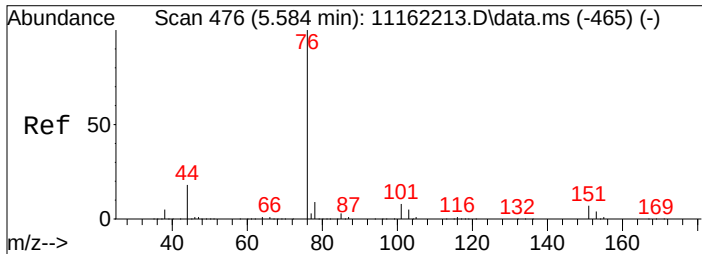
Tgt Ion:	84	Resp:	1577
Ion Ratio	Lower	Upper	
84	100		
49	185.8	149.3	199.3



#21
Trichlorotrifluoroethane
Concen: 8.79 ng
RT: 5.54 min Scan# 469
Delta R.T. -0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

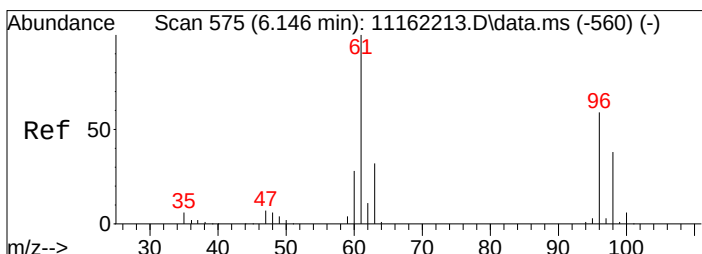
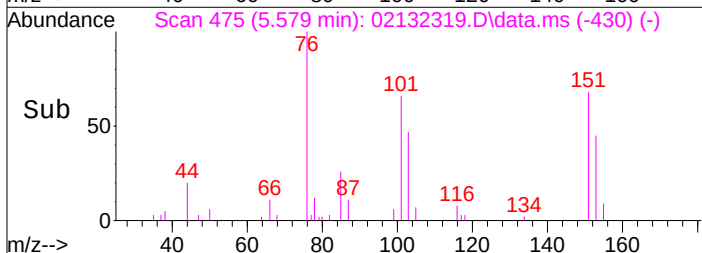
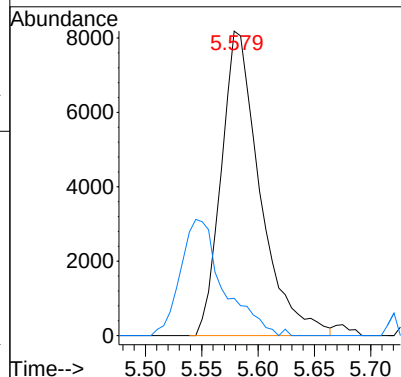
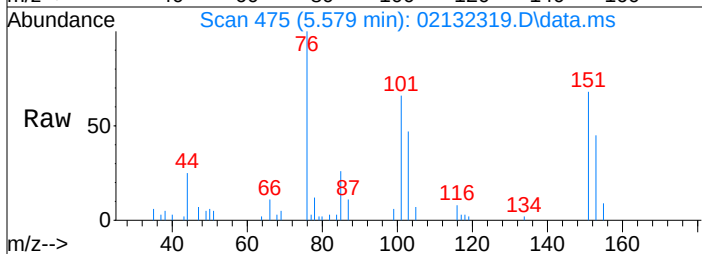
Tgt Ion:	151	Resp:	192045
Ion Ratio	Lower	Upper	
151	100		
101	115.5	104.1	144.1





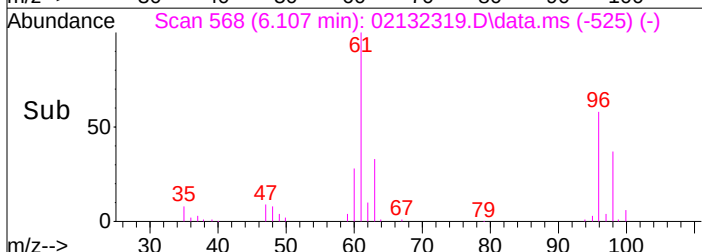
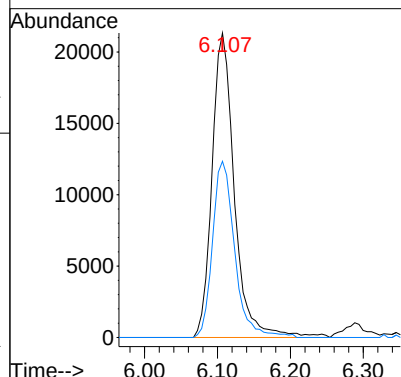
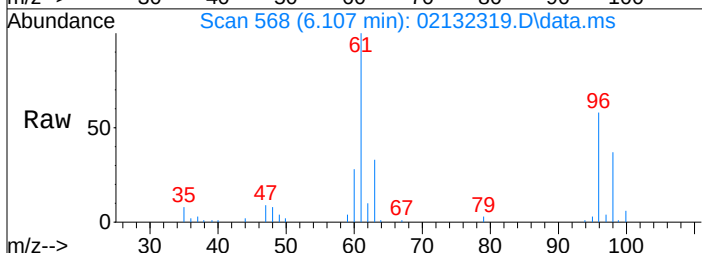
#22
Carbon Disulfide
Concen: 0.27 ng
RT: 5.58 min Scan# 475
Delta R.T. 0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

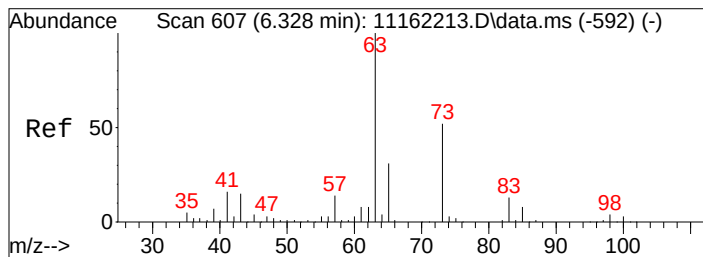
Tgt Ion: 76 Resp: 19623
Ion Ratio Lower Upper
76 100
78 42.2 0.0 29.2#



#23
trans-1,2-Dichloroethene
Concen: 1.14 ng
RT: 6.11 min Scan# 568
Delta R.T. -0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

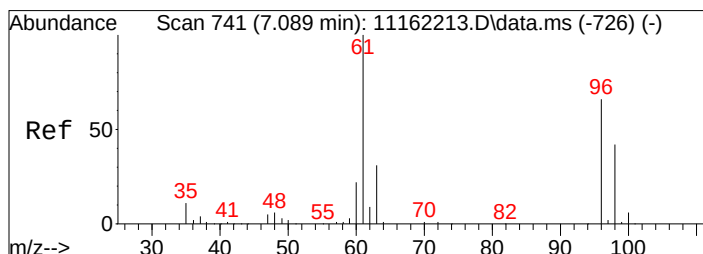
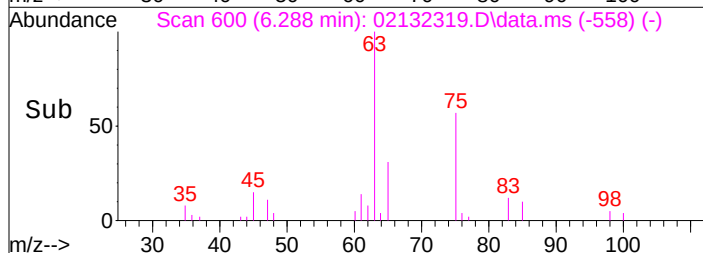
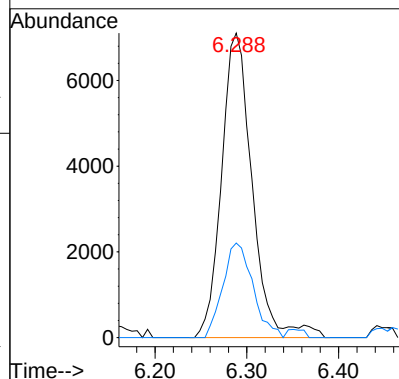
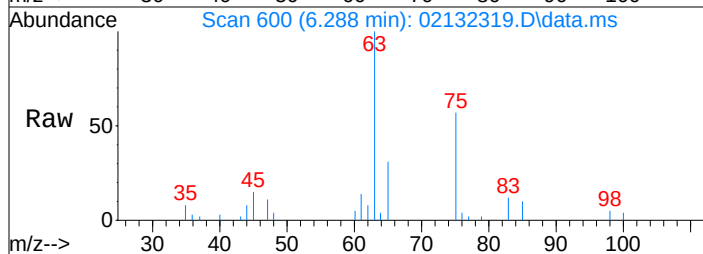
Tgt Ion: 61 Resp: 45576
Ion Ratio Lower Upper
61 100
96 57.3 37.6 77.6





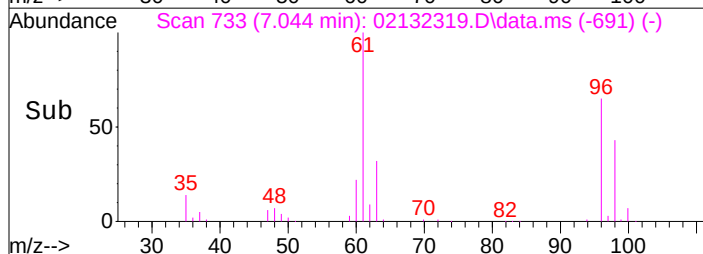
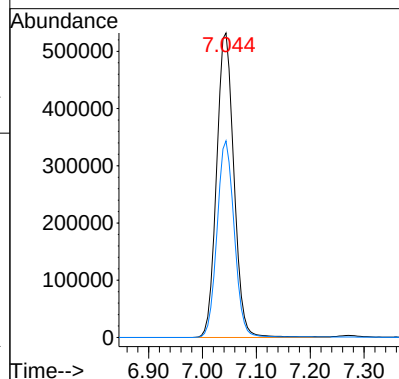
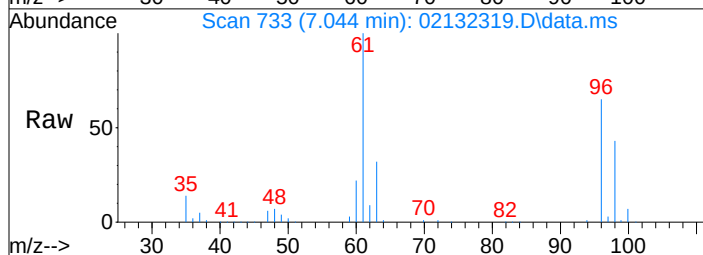
#24
 1,1-Dichloroethane
 Concen: 0.36 ng
 RT: 6.29 min Scan# 600
 Delta R.T. -0.011 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

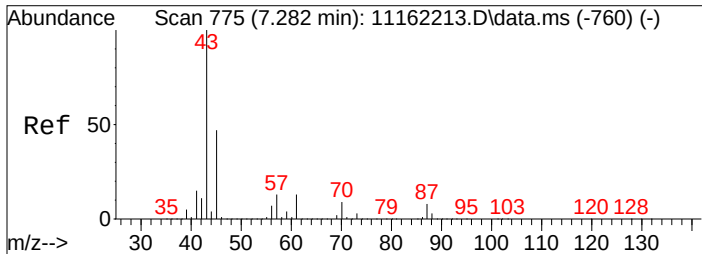
Tgt Ion: 63 Resp: 16443
 Ion Ratio Lower Upper
 63 100
 65 30.5 10.4 50.4



#28
 cis-1,2-Dichloroethene
 Concen: 30.81 ng
 RT: 7.04 min Scan# 733
 Delta R.T. -0.011 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

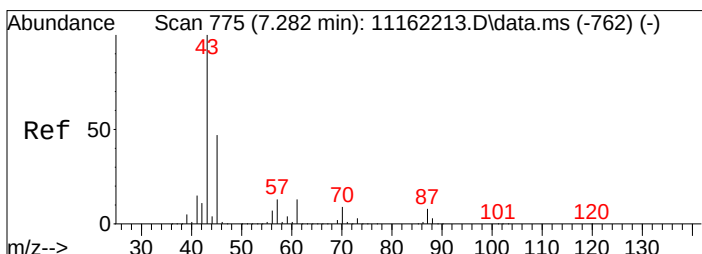
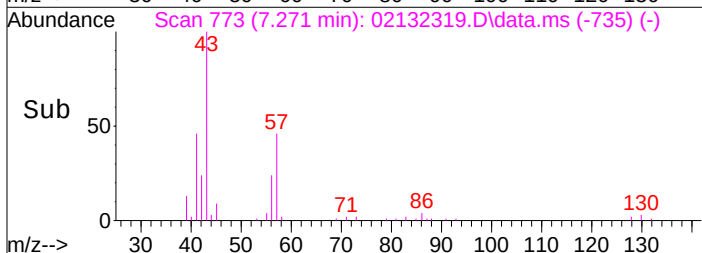
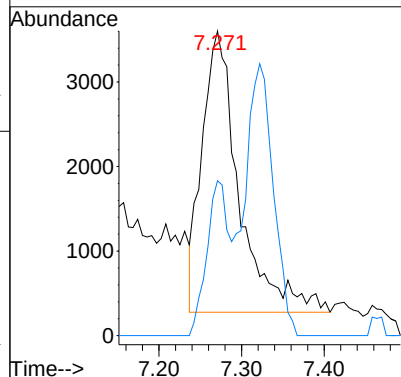
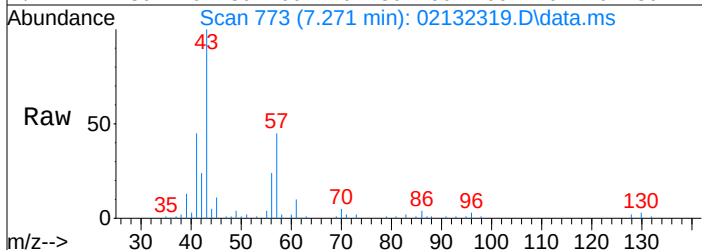
Tgt Ion: 61 Resp: 1193161
 Ion Ratio Lower Upper
 61 100
 96 64.4 44.3 84.3





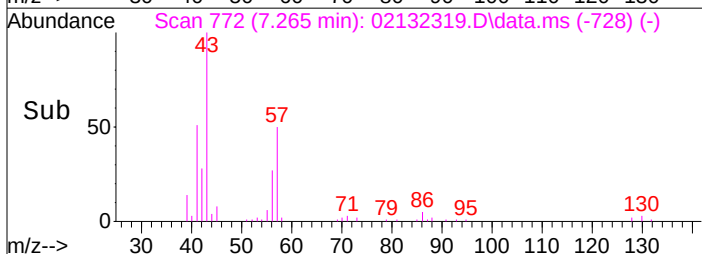
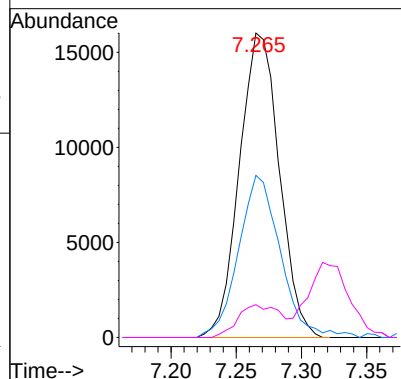
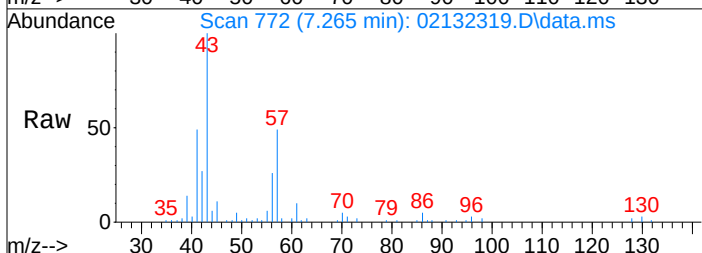
#30
Ethyl Acetate
Concen: 0.88 ng
RT: 7.27 min Scan# 773
Delta R.T. 0.017 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

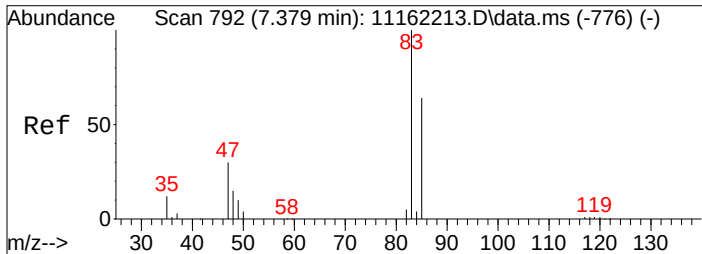
Tgt Ion: 61 Resp: 10375
Ion Ratio Lower Upper
61 100
70 32.6 45.3 85.3#



#31
n-Hexane
Concen: 0.70 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

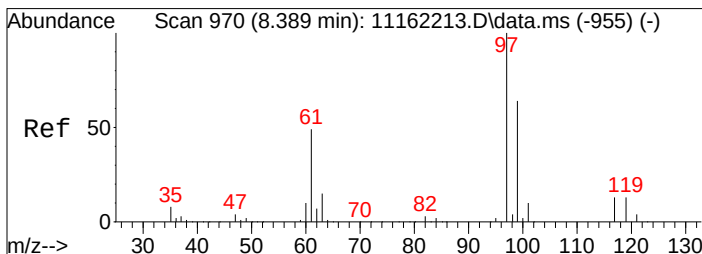
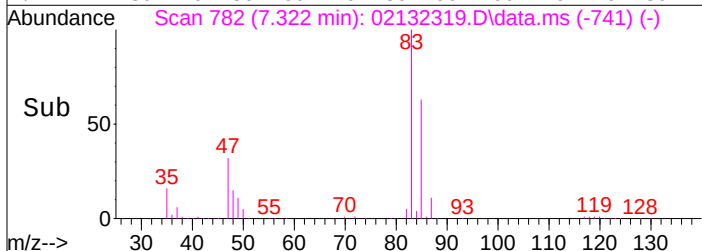
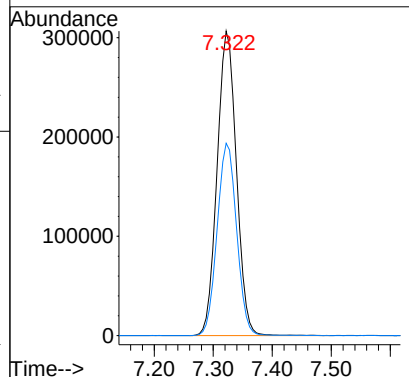
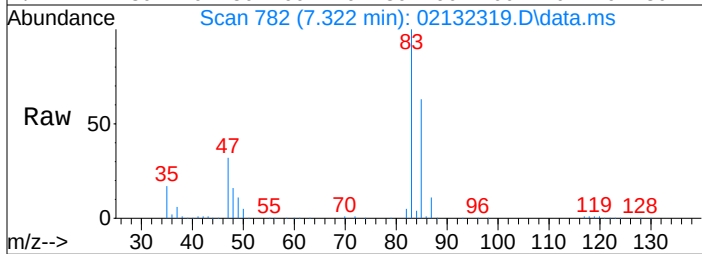
Tgt Ion: 57 Resp: 34066
Ion Ratio Lower Upper
57 100
56 55.9 43.5 65.3
86 11.3 8.4 12.6





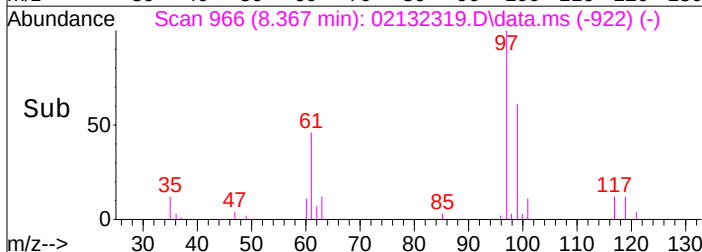
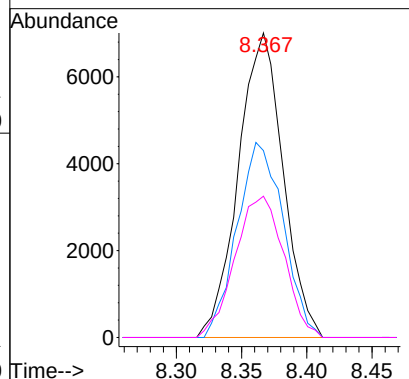
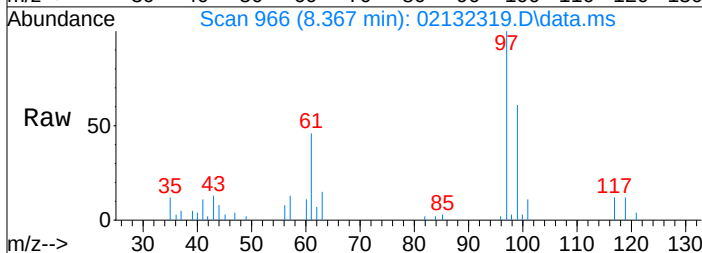
#32
 Chloroform
 Concen: 15.51 ng
 RT: 7.32 min Scan# 782
 Delta R.T. -0.017 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

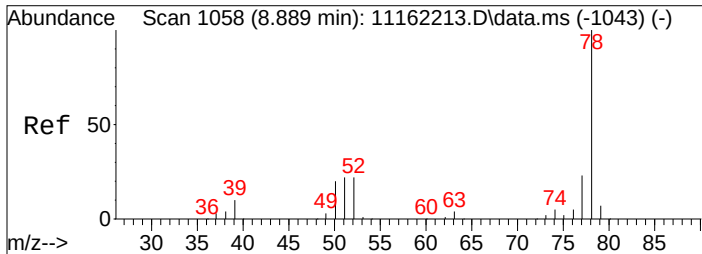
Tgt Ion:	83	Resp:	694957
Ion Ratio		Lower	Upper
83	100		
85	63.9	42.9	82.9



#38
 1,1,1-Trichloroethane
 Concen: 0.47 ng
 RT: 8.37 min Scan# 966
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

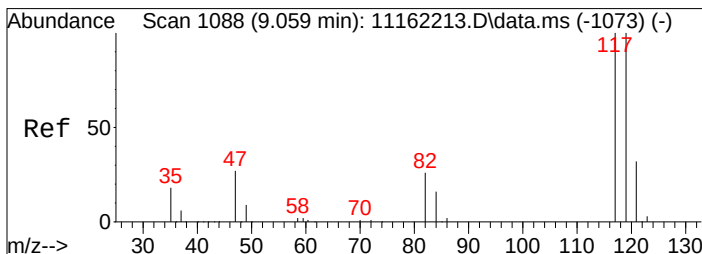
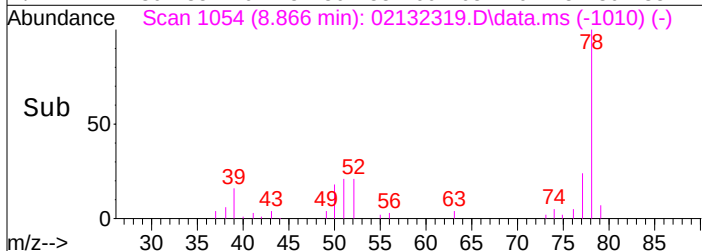
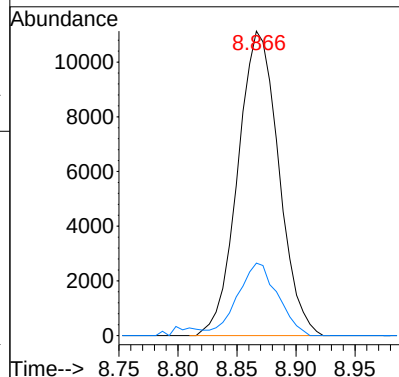
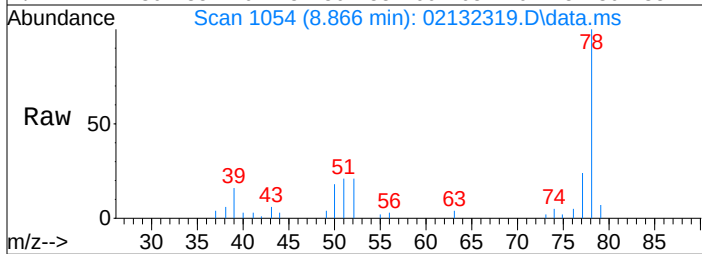
Tgt Ion:	97	Resp:	16699
Ion Ratio		Lower	Upper
97	100		
99	66.2	45.7	85.7
61	50.6	26.4	66.4





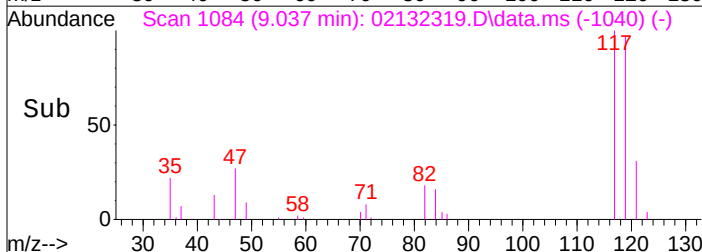
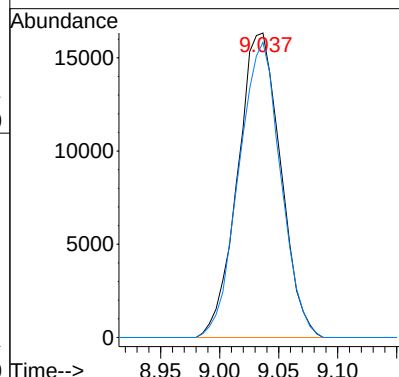
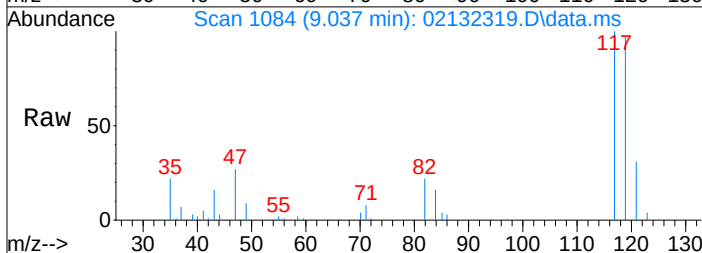
#41
Benzene
Concen: 0.34 ng
RT: 8.87 min Scan# 1054
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

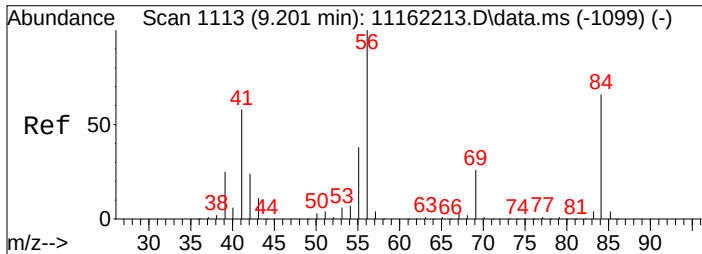
Tgt Ion: 78 Resp: 26832
Ion Ratio Lower Upper
78 100
77 23.1 4.2 44.2



#42
Carbon Tetrachloride
Concen: 1.40 ng
RT: 9.04 min Scan# 1084
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

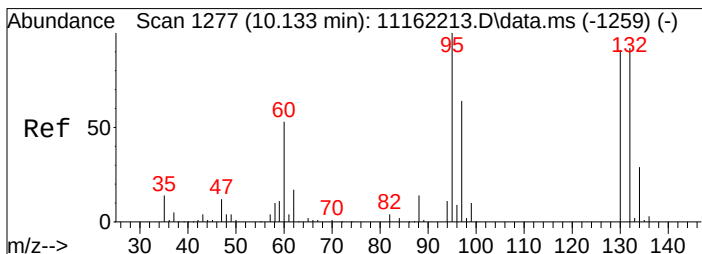
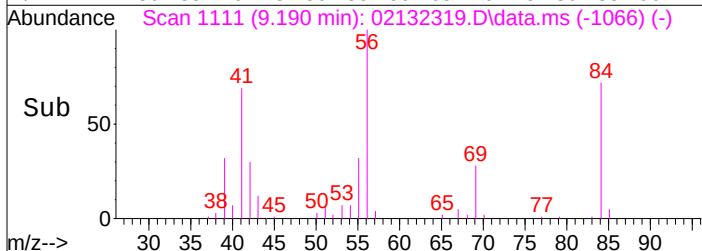
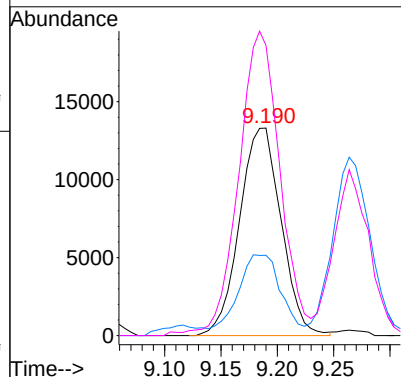
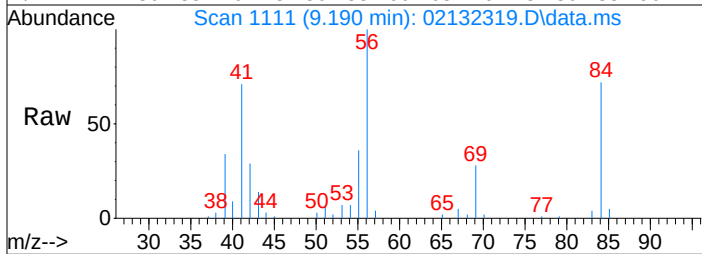
Tgt Ion: 117 Resp: 41286
Ion Ratio Lower Upper
117 100
119 94.6 76.9 116.9





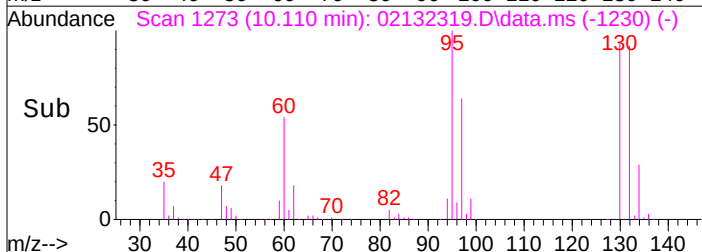
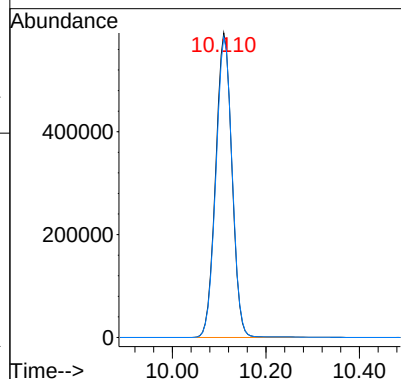
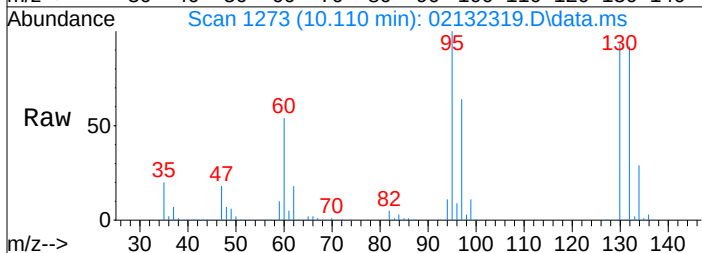
#43
Cyclohexane
Concen: 1.11 ng
RT: 9.19 min Scan# 1111
Delta R.T. 0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

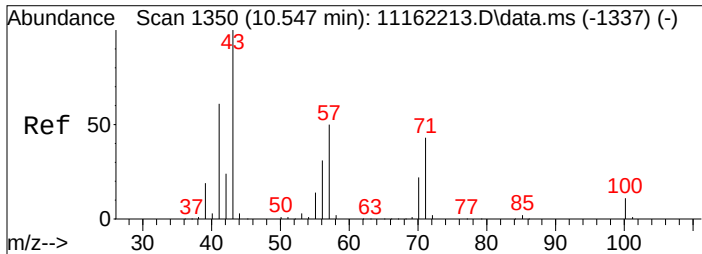
Tgt Ion: 84	Resp: 34280
Ion Ratio	Lower Upper
84	100
69	39.0 18.9 58.9
56	145.6 143.4 183.4



#47
Trichloroethene
Concen: 66.07 ng
RT: 10.11 min Scan# 1273
Delta R.T. -0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

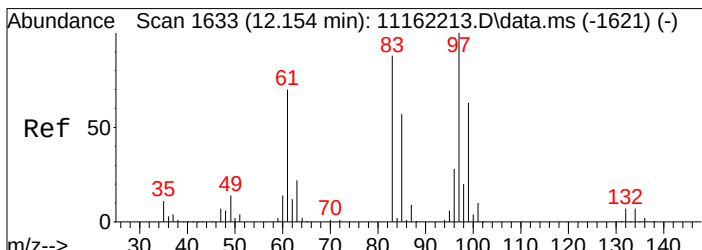
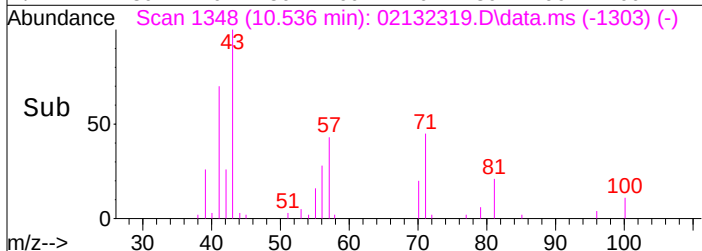
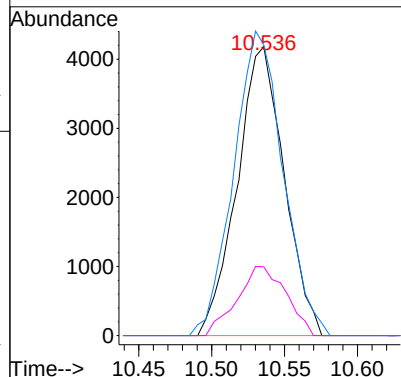
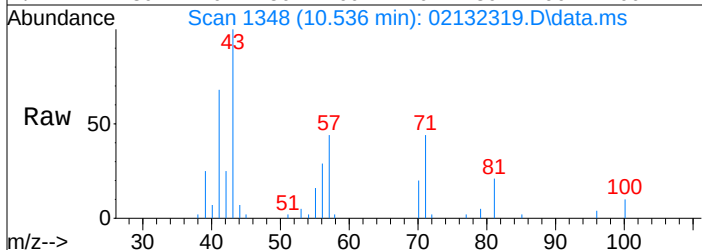
Tgt Ion: 130	Resp: 1432141
Ion Ratio	Lower Upper
130	100
132	98.7 79.4 119.4





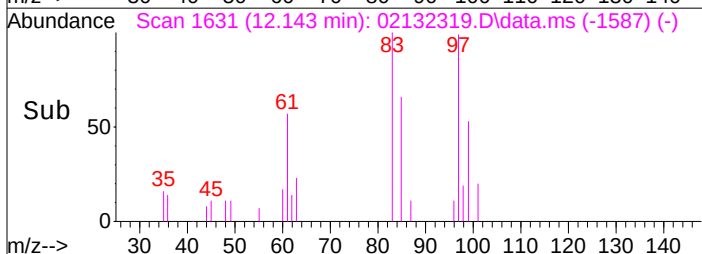
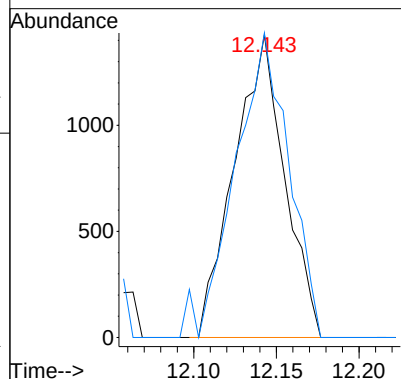
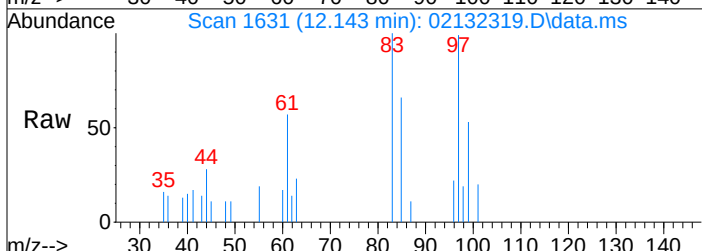
#51
n-Heptane
Concen: 0.46 ng
RT: 10.54 min Scan# 1348
Delta R.T. 0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

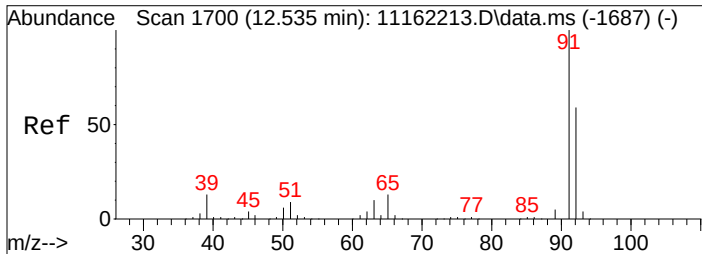
Tgt Ion: 71 Resp: 9418
Ion Ratio Lower Upper
71 100
57 110.3 97.0 137.0
100 24.7 2.9 42.9



#55
1,1,2-Trichloroethane
Concen: 0.15 ng
RT: 12.14 min Scan# 1631
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

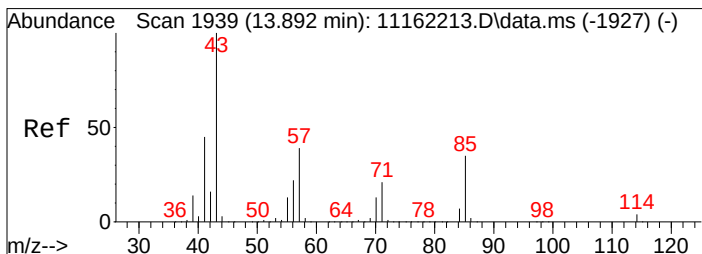
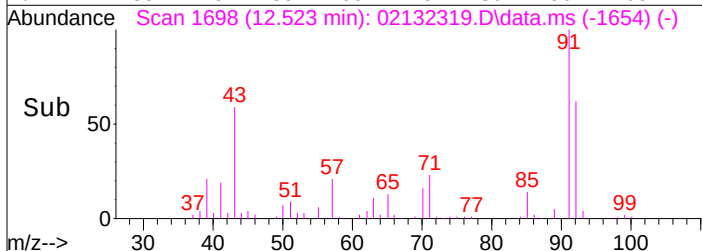
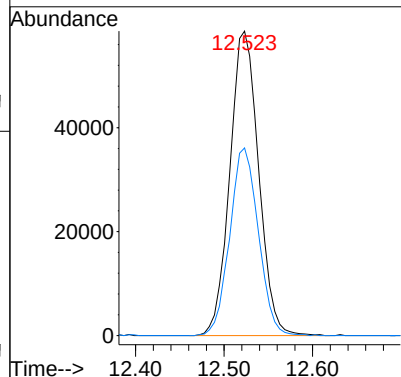
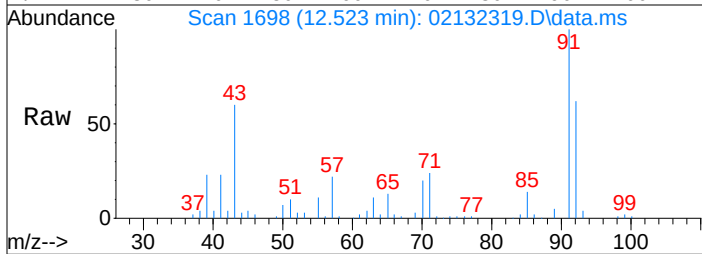
Tgt Ion: 97 Resp: 3020
Ion Ratio Lower Upper
97 100
83 107.5 70.4 110.4





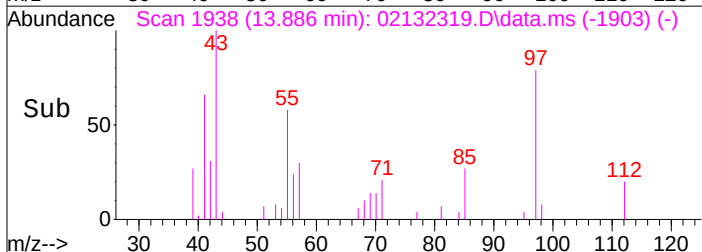
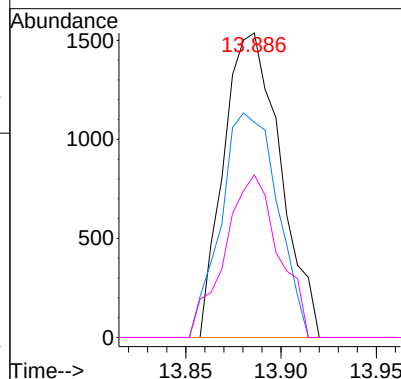
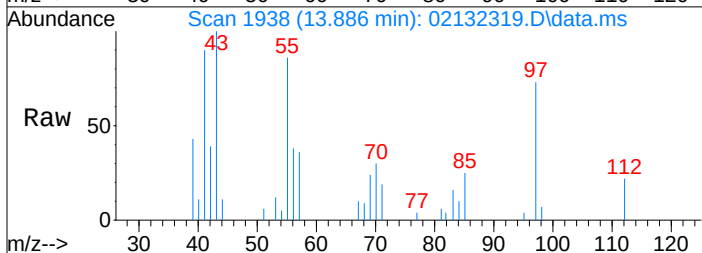
#58
Toluene
Concen: 1.70 ng
RT: 12.52 min Scan# 1698
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

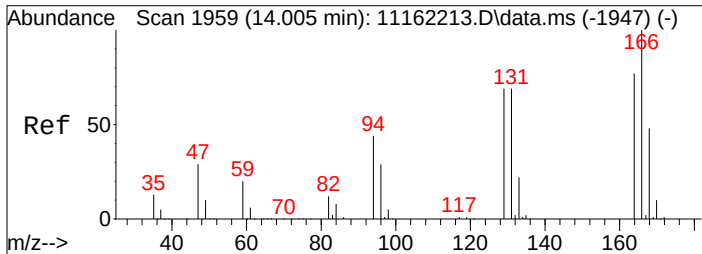
Tgt Ion: 91 Resp: 132481
Ion Ratio Lower Upper
91 100
92 61.3 38.6 78.6



#63
n-Octane
Concen: 0.15 ng
RT: 13.89 min Scan# 1938
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

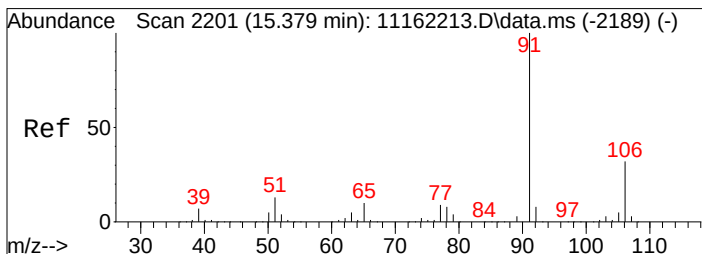
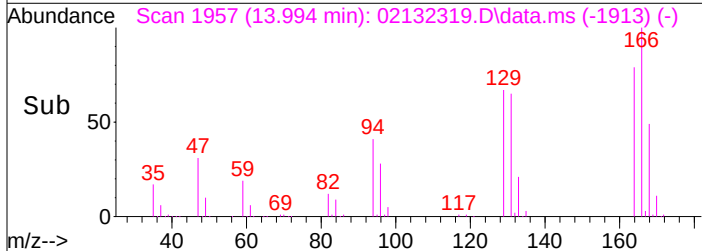
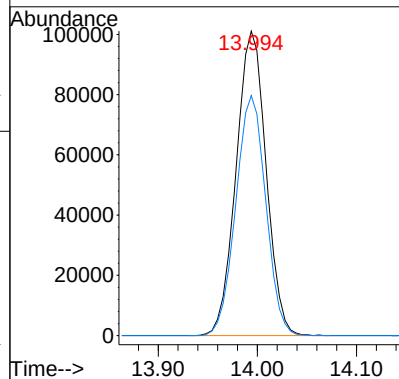
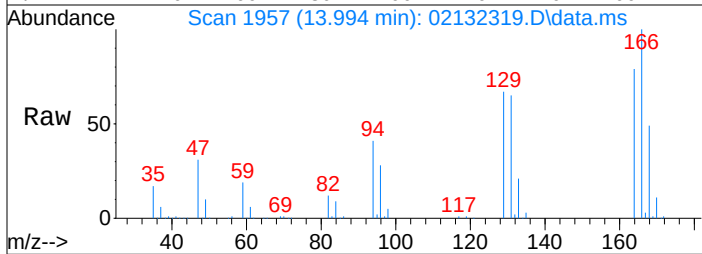
Tgt Ion: 57 Resp: 3163
Ion Ratio Lower Upper
57 100
85 73.9 69.0 103.6
71 51.0 41.2 61.8





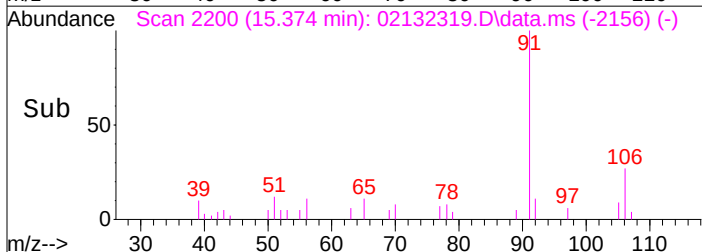
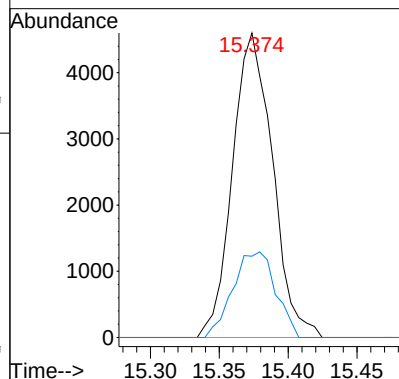
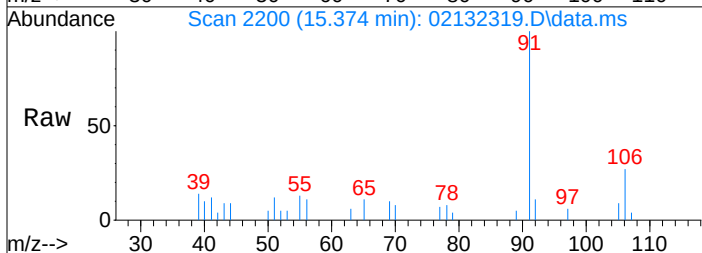
#64
 Tetrachloroethene
 Concen: 9.23 ng
 RT: 13.99 min Scan# 1957
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

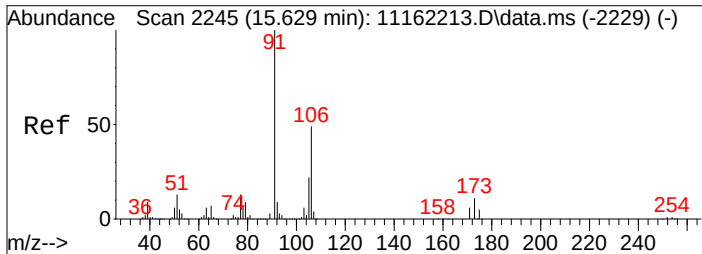
Tgt Ion: 166 Resp: 212854
 Ion Ratio Lower Upper
 166 100
 164 78.7 58.7 98.7



#66
 Ethylbenzene
 Concen: 0.10 ng
 RT: 15.37 min Scan# 2200
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

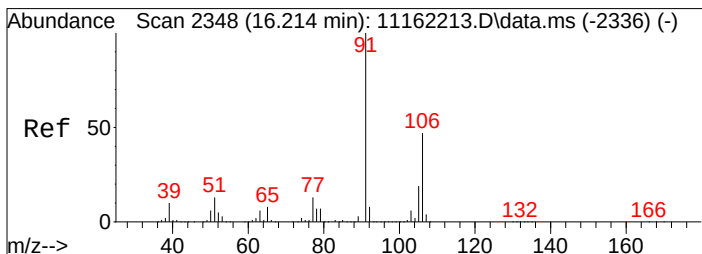
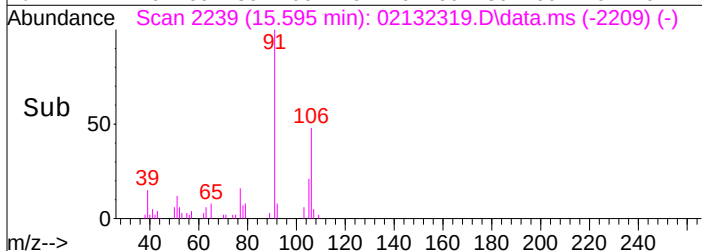
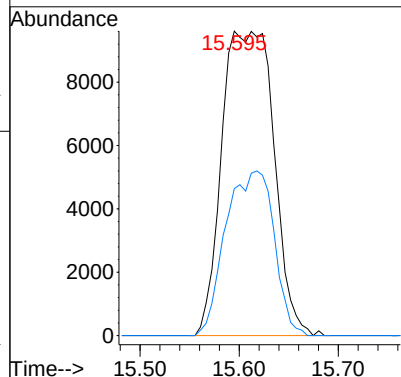
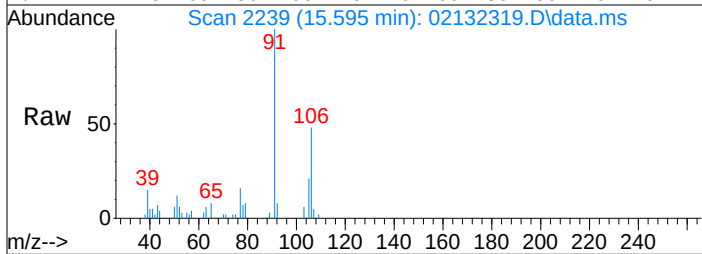
Tgt Ion: 91 Resp: 9301
 Ion Ratio Lower Upper
 91 100
 106 30.0 10.7 50.7





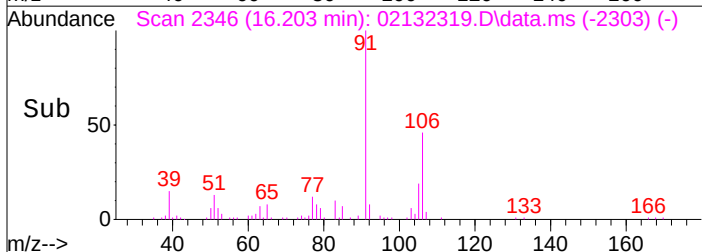
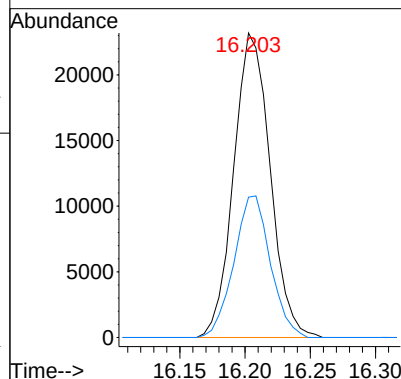
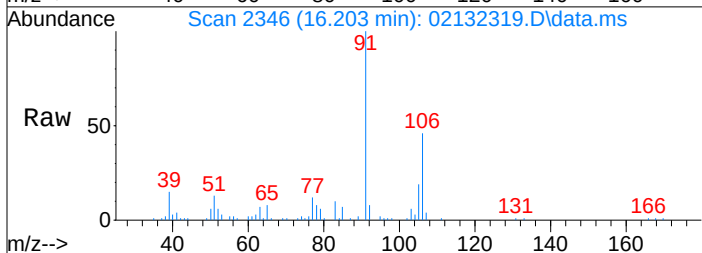
#67
m- & p-Xylenes
Concen: 0.48 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.028 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

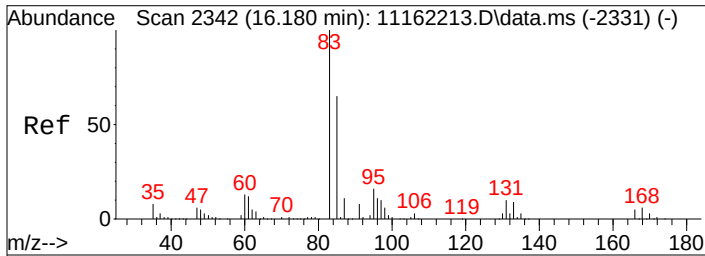
Tgt Ion: 91 Resp: 35079
Ion Ratio Lower Upper
91 100
106 50.2 27.3 67.3



#70
o-Xylene
Concen: 0.63 ng
RT: 16.20 min Scan# 2346
Delta R.T. -0.006 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

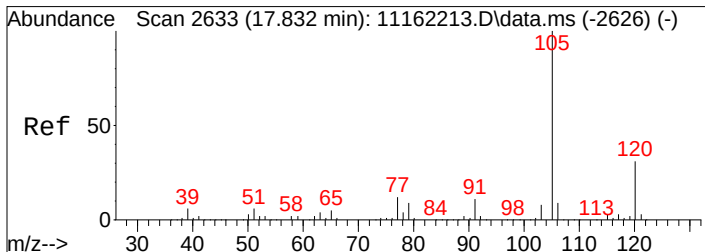
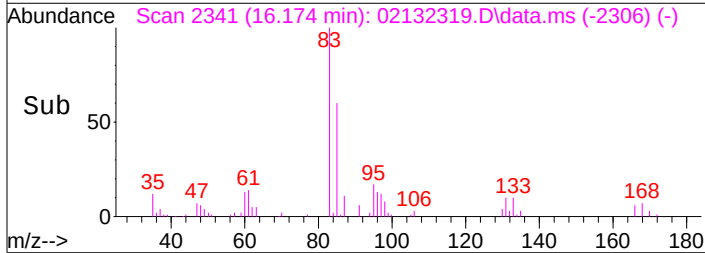
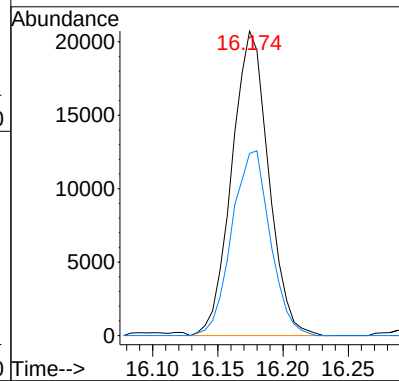
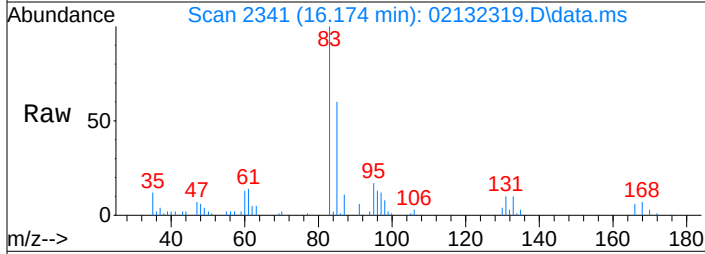
Tgt Ion: 91 Resp: 44992
Ion Ratio Lower Upper
91 100
106 46.5 27.1 67.1





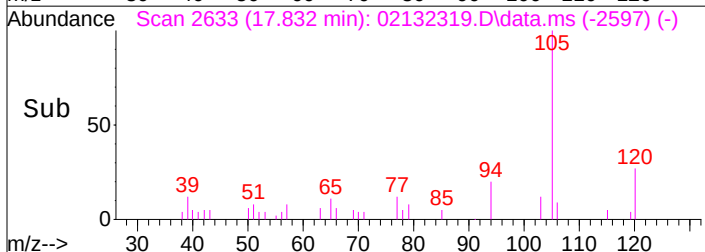
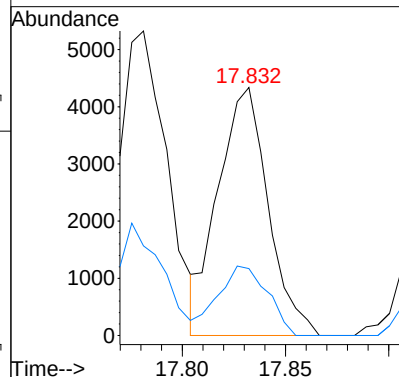
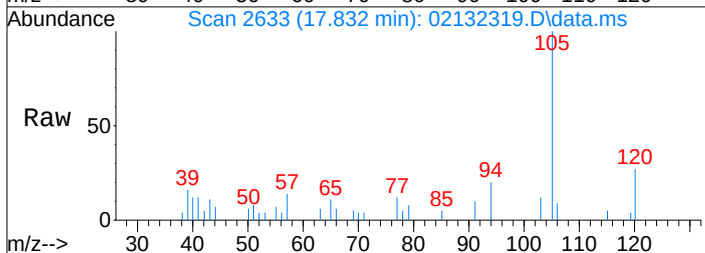
#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.15 ng
 RT: 16.17 min Scan# 2341
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

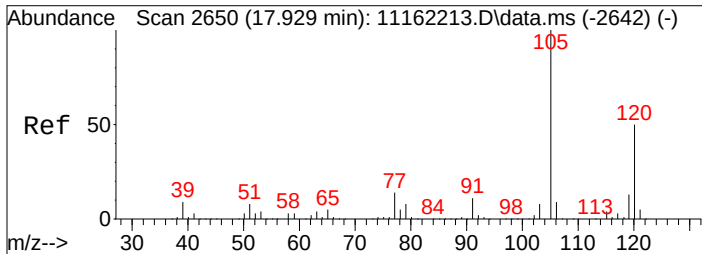
Tgt Ion: 83 Resp: 40667
 Ion Ratio Lower Upper
 83 100
 85 63.4 44.1 84.1



#78
 4-Ethyltoluene
 Concen: 0.09 ng
 RT: 17.83 min Scan# 2633
 Delta R.T. 0.006 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

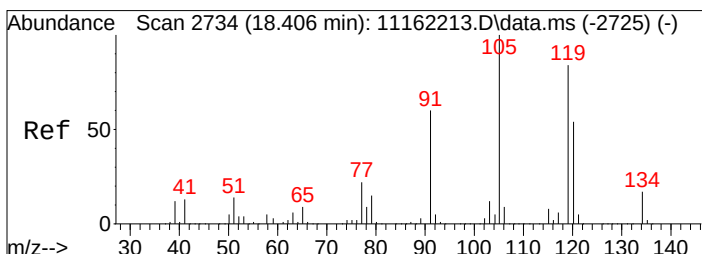
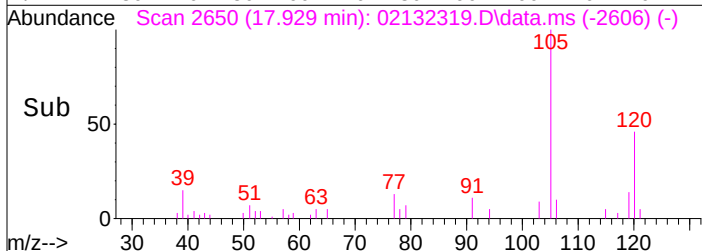
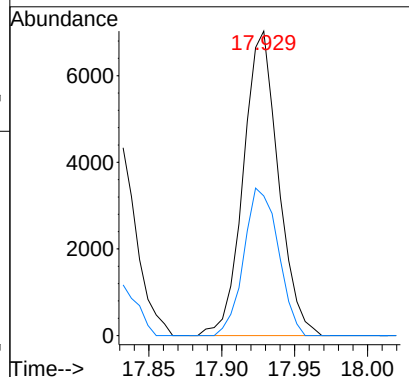
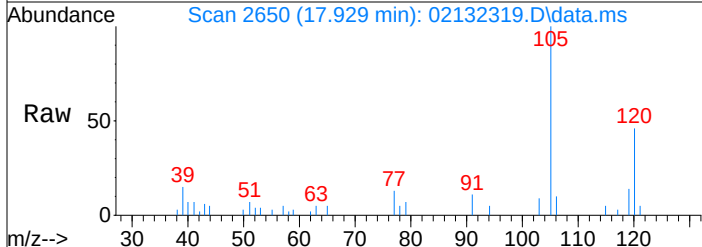
Tgt Ion: 105 Resp: 7315
 Ion Ratio Lower Upper
 105 100
 120 28.0 9.3 49.3





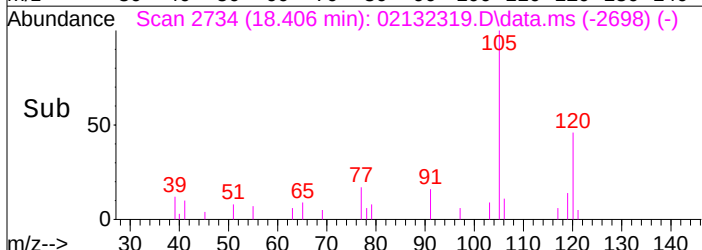
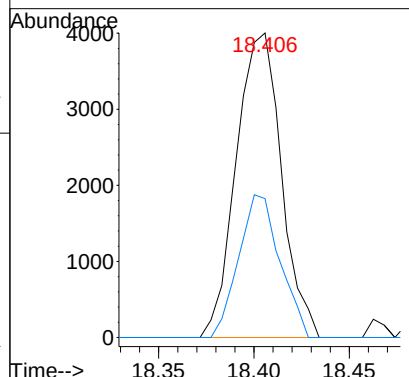
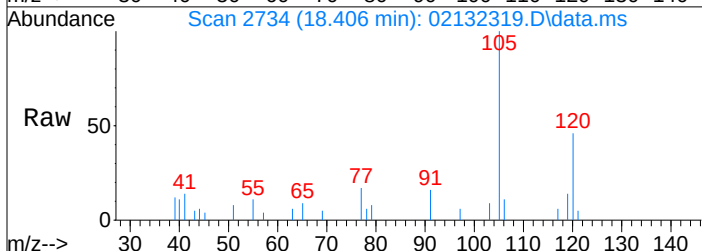
#79
 1,3,5-Trimethylbenzene
 Concen: 0.16 ng
 RT: 17.93 min Scan# 2650
 Delta R.T. -0.000 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

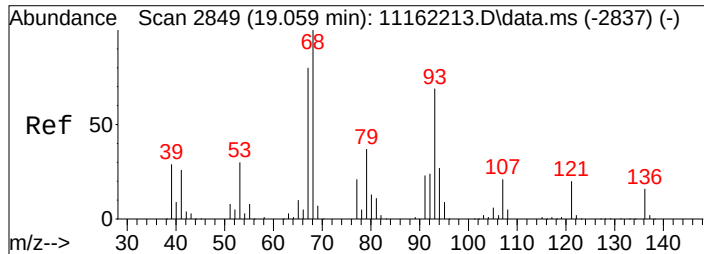
Tgt Ion:	105	Resp:	11751
Ion Ratio	Lower	Upper	
105	100		
120	47.6	29.3	69.3



#82
 1,2,4-Trimethylbenzene
 Concen: 0.09 ng
 RT: 18.41 min Scan# 2734
 Delta R.T. 0.006 min
 Lab File: 02132319.D
 Acq: 13 Feb 2023 17:59

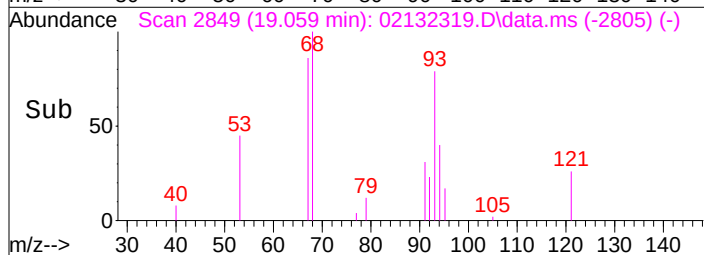
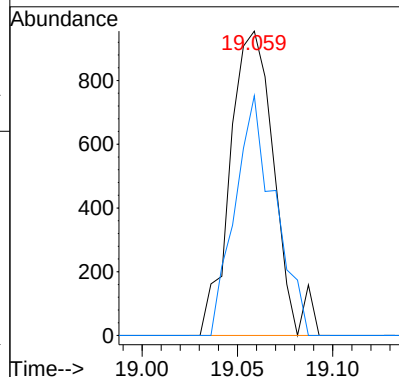
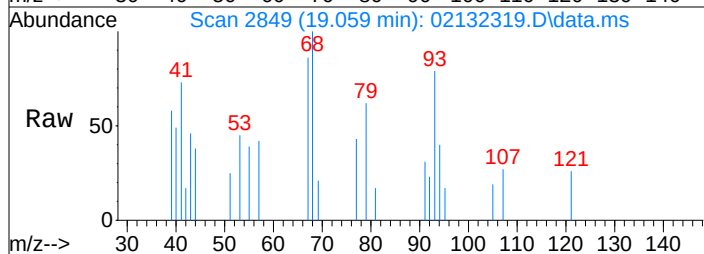
Tgt Ion:	105	Resp:	6592
Ion Ratio	Lower	Upper	
105	100		
120	42.8	33.0	73.0





#91
d-Limonene
Concen: 0.05 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.000 min
Lab File: 02132319.D
Acq: 13 Feb 2023 17:59

Tgt Ion: 68 Resp: 1528
Ion Ratio Lower Upper
68 100
93 71.1 48.1 88.1



Data File : I:\MS09\DATA\2023_02\13\02132306.D
 Acq On : 13 Feb 2023 10:20
 Sample : MB R9021323_1000mL
 Misc : S35-12302204

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 10:44:04 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

 2/13/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	223513	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.26	114	987596	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.80	54	220887	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.96	65	420155	10.815	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.56%
57) Toluene-d8 (SS2)	12.39	98	1121569	13.929	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.44%
73) Bromofluorobenzene (SS3)	16.79	174	420710	14.942	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	119.52%

Target Compounds

						Qvalue
2) Propene	3.30	42	1094	N.D.		
3) Dichlorodifluoromethan...	3.30	85	383	N.D.		
4) Chloromethane	3.49	50	518	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.31	45	3173	0.127	ng	79
11) Acetonitrile	4.49	41	1264	N.D.		
12) Acrolein	4.54	56	585	N.D.		
13) Acetone	4.64	58	7646	0.338	ng	# 43
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.90	45	1832	N.D.		
16) Acrylonitrile	5.01	53	58	N.D.		
17) 1,1-Dichloroethene	5.25	96	167	N.D.		
18) 2-Methyl-2-Propanol (t...	5.33	59	64	N.D.		
19) Methylene Chloride	5.33	84	377	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.60	76	3444	N.D.		
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.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	7.97	62	110	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	30257	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.86	78	1117	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.26	84	633	N.D.		
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...	10.20	57	201	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS09\DATA\2023_02\13\02132306.D
 Acq On : 13 Feb 2023 10:20
 Sample : MB R9021323_1000mL
 Misc : S35-12302204

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 10:44:04 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.52	91	771	N.D.		
59) 2-Hexanone	0.00	43	0	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.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	14.86	112	338	N.D.		
66) Ethylbenzene	15.38	91	1584	N.D.		
67) m- & p-Xylenes	15.62	91	1867	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.21	91	761	N.D.		
71) n-Nonane	16.58	43	253	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	16.99	105	957	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.67	91	7417	0.067 ng	#	69
77) 3-Ethyltoluene	16.99	105	957	No Calib	#	
78) 4-Ethyltoluene	17.84	105	1267	N.D.		
79) 1,3,5-Trimethylbenzene	17.93	105	825	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	16.99	105	957	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.41	105	894	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.55	91	375	N.D.		
85) 1,3-Dichlorobenzene	18.57	146	561	N.D.		
86) 1,4-Dichlorobenzene	18.64	146	840	N.D.		
87) sec-Butylbenzene	18.72	105	1085	N.D.		
88) 4-Isopropyltoluene (p-...	18.91	119	1710	N.D.		
89) 1,2,3-Trimethylbenzene	16.99	105	957	No Calib	#	
90) 1,2-Dichlorobenzene	19.01	146	529	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.50	157	114	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.82	180	3021	0.086 ng	#	95
95) Naphthalene	20.94	128	3872	N.D.		
96) n-Dodecane	19.08	58	400	No Calib	#	
97) Hexachlorobutadiene	21.28	225	862	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	964	N.D.		
100) n-Butylbenzene	19.37	91	1103	N.D.		
101) 1,1,1,2-Tetrachloroethane	14.84	131	926	N.D.		

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

Data File : I:\MS09\DATA\2023_02\13\02132306.D
Acq On : 13 Feb 2023 10:20
Sample : MB R9021323_1000mL
Misc : S35-12302204

Vial: 2
Operator: SC
Inst : MS09

Quant Time: Feb 13 10:44:04 2023

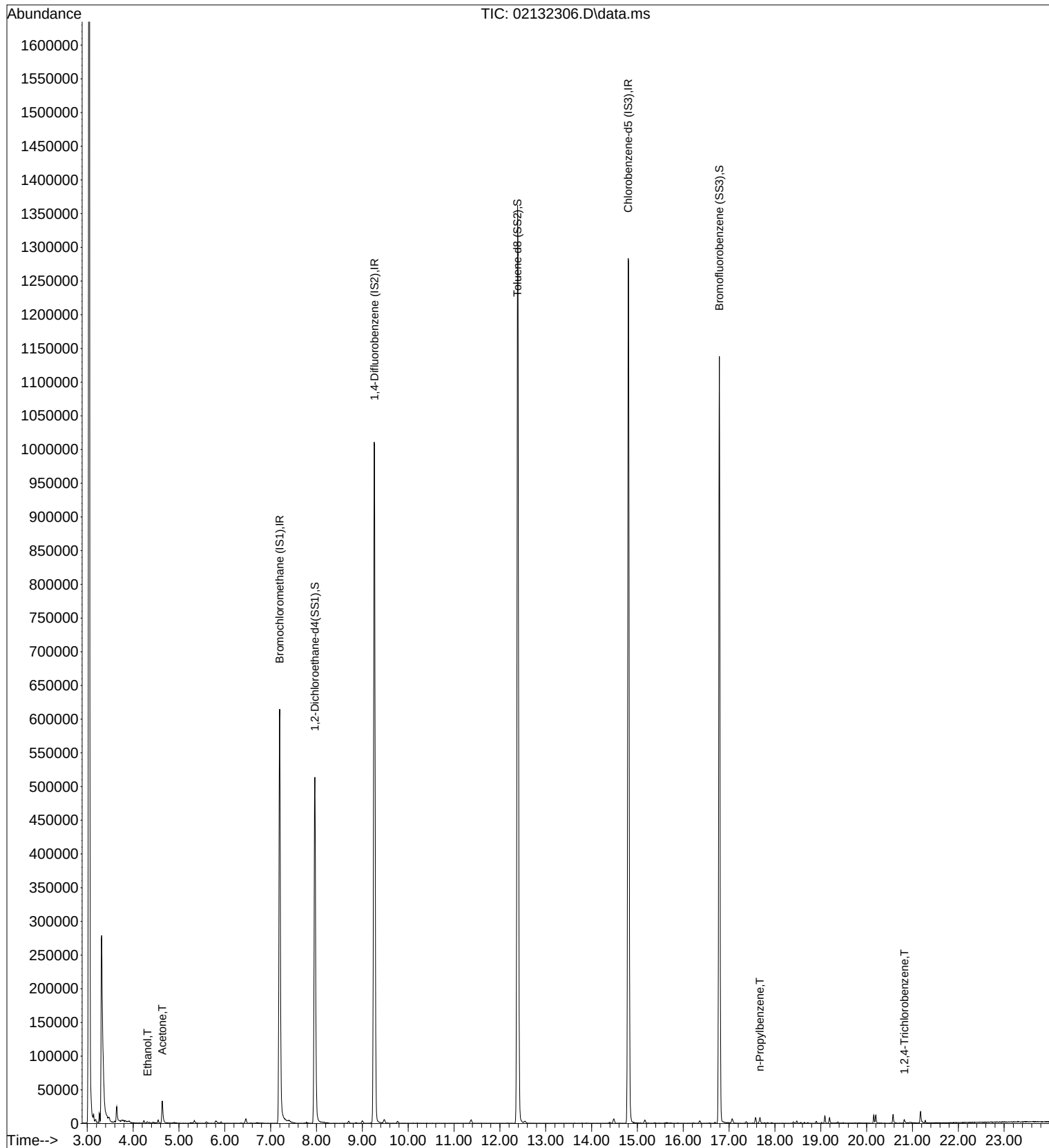
Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS09\DATA\2023_02\13\02132307.D
 Acq On : 13 Feb 2023 10:52
 Sample : LCS R9021323_25ng
 Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 11:19:21 2023

 2/13/23

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	234439	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.29	114	1030128	12.500	ng	0.01
56) Chlorobenzene-d5 (IS3)	14.81	54	234763	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	445235	10.927	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	87.44%
57) Toluene-d8 (SS2)	12.40	98	1171643	13.690	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	109.52%
73) Bromofluorobenzene (SS3)	16.79	174	446416	14.918	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	119.36%

Target Compounds

						Qvalue
2) Propene	3.24	42	1012169	24.139	ng	95
3) Dichlorodifluoromethan...	3.32	85	1177757	21.839	ng	96
4) Chloromethane	3.47	50	1049168	20.148	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	588126	22.965	ng	100
6) Vinyl Chloride	3.65	62	864591	18.981	ng	98
7) 1,3-Butadiene	3.77	54	602286	26.326	ng	# 79
8) Bromomethane	3.99	94	484142	24.115	ng	99
9) Chloroethane	4.13	64	401917	21.616	ng	99
10) Ethanol	4.34	45	3182026	121.234	ng	100
11) Acetonitrile	4.45	41	1536840	20.350	ng	99
12) Acrolein	4.53	56	892498	41.311	ng	96
13) Acetone	4.63	58	2218206	93.496	ng	# 68
14) Trichlorofluoromethane	4.73	101	1115340	24.072	ng	97
15) 2-Propanol (Isopropanol)	4.87	45	3602732	40.738	ng	96
16) Acrylonitrile	5.01	53	1790583	39.221	ng	100
17) 1,1-Dichloroethene	5.24	96	530627	23.297	ng	99
18) 2-Methyl-2-Propanol (t...	5.35	59	2894700	37.617	ng	93
19) Methylene Chloride	5.36	84	561895	21.878	ng	96
20) 3-Chloro-1-propene (Al...	5.45	41	1108646	20.440	ng	99
21) Trichlorotrifluoroethane	5.56	151	557549	23.022	ng	91
22) Carbon Disulfide	5.58	76	4156145	51.231	ng	99
23) trans-1,2-Dichloroethene	6.14	61	953631	21.518	ng	98
24) 1,1-Dichloroethane	6.32	63	1105909	21.712	ng	98
25) Methyl tert-Butyl Ether	6.35	73	1634091	20.795	ng	99
26) Vinyl Acetate	6.44	86	608548	124.893	ng	# 96
27) 2-Butanone (MEK)	6.66	72	730412	42.178	ng	# 86
28) cis-1,2-Dichloroethene	7.08	61	897337	20.913	ng	100
29) Diisopropyl Ether	7.27	87	893143	41.923	ng	# 32
30) Ethyl Acetate	7.28	61	475348	36.559	ng	92
31) n-Hexane	7.28	57	1099474	20.327	ng	97
32) Chloroform	7.37	83	1052375	21.199	ng	99
34) Tetrahydrofuran (THF)	7.73	72	661295	39.702	ng	# 82
35) Ethyl tert-Butyl Ether	7.80	87	1283447	42.138	ng	# 83
36) 1,2-Dichloroethane	8.11	62	917060	21.623	ng	97
38) 1,1,1-Trichloroethane	8.38	97	971615	24.438	ng	99
39) Isopropyl Acetate	9.20	61	3025	No Calib	#	
40) 1-Butanol	8.81	56	8643	No Calib	#	
41) Benzene	8.88	78	2152410	24.453	ng	99
42) Carbon Tetrachloride	9.05	117	941946	28.753	ng	98
43) Cyclohexane	9.20	84	1623755	47.052	ng	88
44) tert-Amyl Methyl Ether	9.57	73	3005137	47.753	ng	93
45) 1,2-Dichloropropane	9.84	63	620722	23.824	ng	99
46) Bromodichloromethane	10.06	83	871683	25.489	ng	98
47) Trichloroethene	10.13	130	611572	25.334	ng	98
48) 1,4-Dioxane	10.09	88	467698	25.770	ng	87
49) 2,2,4-Trimethylpentane...	10.21	57	2650101	22.207	ng	86
50) Methyl Methacrylate	10.38	100	436554	51.925	ng	94

Data File : I:\MS09\DATA\2023_02\13\02132307.D
 Acq On : 13 Feb 2023 10:52
 Sample : LCS R9021323_25ng
 Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 11:19:21 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

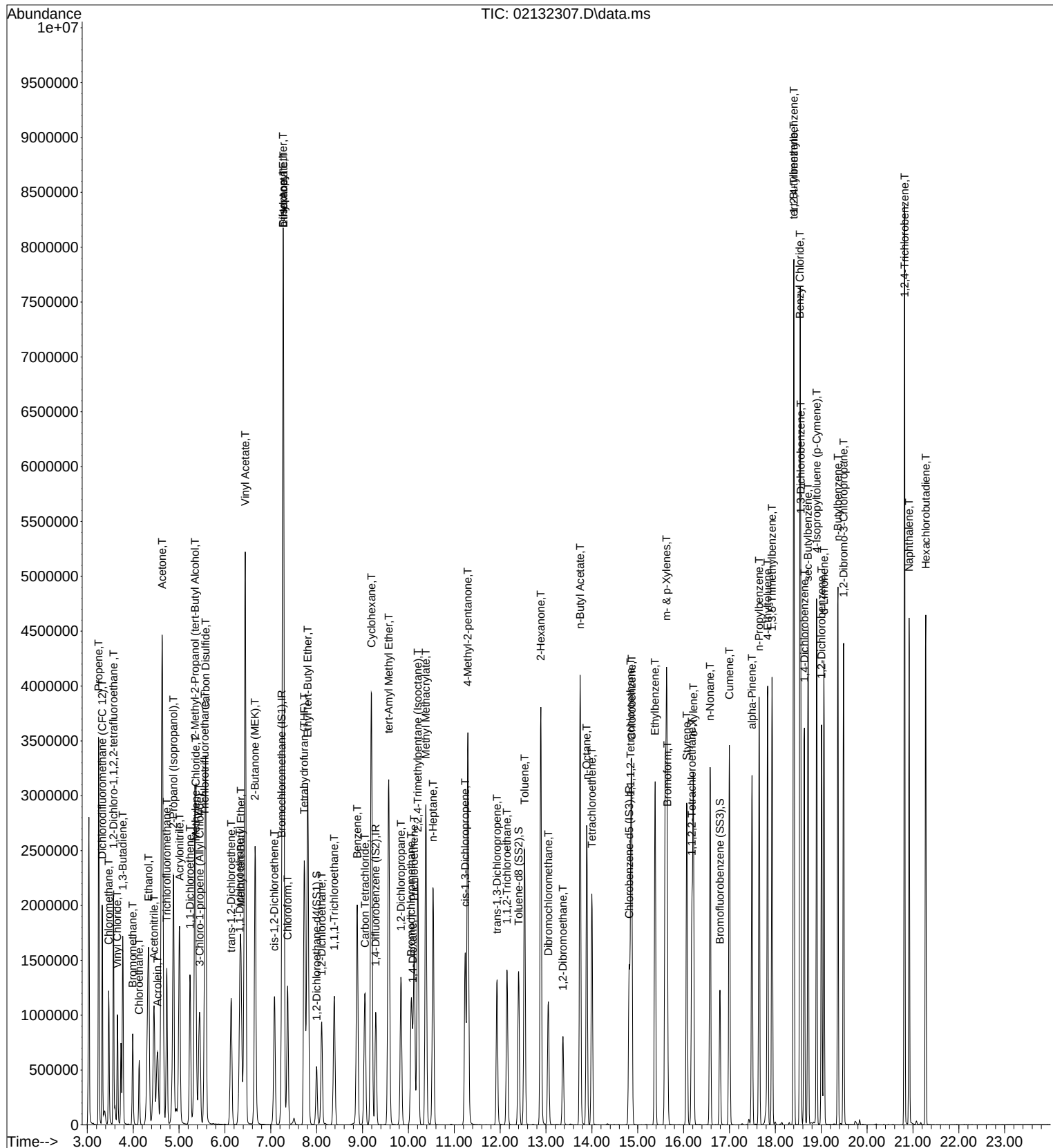
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	555589	24.494	ng	92
52) cis-1,3-Dichloropropene	11.24	75	1061570	29.936	ng	99
53) 4-Methyl-2-pentanone	11.30	58	1203951	45.925	ng	74
54) trans-1,3-Dichloropropene	11.93	75	861307	25.893	ng	99
55) 1,1,2-Trichloroethane	12.15	97	560856	24.203	ng	98
58) Toluene	12.53	91	2206770	25.904	ng	96
59) 2-Hexanone	12.89	43	3618669	59.486	ng	89
60) Dibromochloromethane	13.05	129	754266	30.307	ng	98
61) 1,2-Dibromoethane	13.37	107	665281	25.729	ng	100
62) n-Butyl Acetate	13.74	43	4032431	60.297	ng	92
63) n-Octane	13.89	57	561443	24.387	ng	92
64) Tetrachloroethene	14.00	166	758140	30.028	ng	100
65) Chlorobenzene	14.87	112	1543987	26.868	ng	99
66) Ethylbenzene	15.38	91	2604175	26.474	ng	98
67) m- & p-Xylenes	15.63	91	4237006	53.227	ng	99
68) Bromoform	15.65	173	756883	34.321	ng	95
69) Styrene	16.07	104	1622792	28.105	ng	98
70) o-Xylene	16.21	91	2082494	26.507	ng	99
71) n-Nonane	16.58	43	1620138	28.823	ng	88
72) 1,1,2,2-Tetrachloroethane	16.18	83	1031403	26.590	ng	100
74) Cumene	17.00	105	2603449	27.477	ng	99
75) alpha-Pinene	17.49	93	1318978	26.757	ng	100
76) n-Propylbenzene	17.64	91	3108261	26.395	ng	96
77) 3-Ethyltoluene	17.00	105	2603449	No Calib		
78) 4-Ethyltoluene	17.83	105	2600045	28.551	ng	99
79) 1,3,5-Trimethylbenzene	17.93	105	2231361	27.956	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	2603449	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	2271337	28.154	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	3703261	62.562	ng	98
85) 1,3-Dichlorobenzene	18.55	146	1387570	29.440	ng	97
86) 1,4-Dichlorobenzene	18.63	146	1388200	29.114	ng	98
87) sec-Butylbenzene	18.71	105	2901401	27.292	ng	100
88) 4-Isopropyltoluene (p-...	18.90	119	2448700	25.728	ng	97
89) 1,2,3-Trimethylbenzene	17.00	105	2603449	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1344775	29.263	ng	97
91) d-Limonene	19.06	68	856131	26.887	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.49	157	1089981	62.890	ng	90
93) n-Undecane	18.10	58	317	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	2339661	62.413	ng	99
95) Naphthalene	20.92	128	2822314	29.390	ng	100
96) n-Dodecane	19.06	58	7773	No Calib	#	
97) Hexachlorobutadiene	21.28	225	770583	29.012	ng	97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.40	119	2086903	26.097	ng	100
100) n-Butylbenzene	19.37	91	2362323	27.177	ng	96
101) 1,1,1,2-Tetrachloroethane	14.85	131	606623	27.881	ng	98

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

Data File : I:\MS09\DATA\2023_02\13\02132307.D
 Acq On : 13 Feb 2023 10:52
 Sample : LCS R9021323_25ng
 Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 11:19:21 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M



Data File : I:\MS09\DATA\2023_02\13\02132308.D
 Acq On : 13 Feb 2023 11:25
 Sample : LCSD R9021323_25ng
 Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 12:04:58 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

 2/13/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	234851	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.29	114	1029211	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	233807	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	449928	11.022	ng	0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.16%
57) Toluene-d8 (SS2)	12.40	98	1174039	13.774	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	110.16%
73) Bromofluorobenzene (SS3)	16.79	174	449859	15.094	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	120.72%

Target Compounds

						Qvalue
2) Propene	3.26	42	991852	23.613	ng	95
3) Dichlorodifluoromethan...	3.33	85	1164001	21.546	ng	97
4) Chloromethane	3.47	50	1034188	19.825	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	579025	22.570	ng	99
6) Vinyl Chloride	3.67	62	844800	18.514	ng	99
7) 1,3-Butadiene	3.78	54	599226	26.146	ng	# 79
8) Bromomethane	3.99	94	481252	23.929	ng	100
9) Chloroethane	4.14	64	393836	21.144	ng	98
10) Ethanol	4.34	45	3161567	120.243	ng	100
11) Acetonitrile	4.46	41	1525584	20.165	ng	98
12) Acrolein	4.53	56	881104	40.712	ng	95
13) Acetone	4.64	58	2188761	92.093	ng	# 67
14) Trichlorofluoromethane	4.74	101	1103913	23.784	ng	97
15) 2-Propanol (Isopropanol)	4.88	45	3580219	40.412	ng	96
16) Acrylonitrile	5.01	53	1784216	39.013	ng	100
17) 1,1-Dichloroethene	5.24	96	530023	23.230	ng	98
18) 2-Methyl-2-Propanol (t...	5.35	59	2881378	37.379	ng	93
19) Methylene Chloride	5.37	84	555867	21.606	ng	96
20) 3-Chloro-1-propene (Al...	5.45	41	1116323	20.545	ng	99
21) Trichlorotrifluoroethane	5.56	151	551891	22.748	ng	91
22) Carbon Disulfide	5.58	76	4128766	50.804	ng	99
23) trans-1,2-Dichloroethene	6.14	61	944626	21.277	ng	98
24) 1,1-Dichloroethane	6.33	63	1095770	21.475	ng	98
25) Methyl tert-Butyl Ether	6.35	73	1631706	20.728	ng	99
26) Vinyl Acetate	6.45	86	601360	123.201	ng	# 95
27) 2-Butanone (MEK)	6.66	72	730219	42.093	ng	# 87
28) cis-1,2-Dichloroethene	7.08	61	887688	20.652	ng	99
29) Diisopropyl Ether	7.27	87	883030	41.375	ng	# 33
30) Ethyl Acetate	7.28	61	468640	35.980	ng	92
31) n-Hexane	7.28	57	1092268	20.158	ng	97
32) Chloroform	7.37	83	1045099	21.015	ng	99
34) Tetrahydrofuran (THF)	7.74	72	650250	38.970	ng	# 81
35) Ethyl tert-Butyl Ether	7.81	87	1272956	41.720	ng	# 83
36) 1,2-Dichloroethane	8.11	62	906820	21.344	ng	97
38) 1,1,1-Trichloroethane	8.38	97	966686	24.336	ng	99
39) Isopropyl Acetate	9.20	61	3084	No Calib	#	
40) 1-Butanol	8.81	56	9019	No Calib	#	
41) Benzene	8.88	78	2137067	24.301	ng	99
42) Carbon Tetrachloride	9.05	117	932438	28.488	ng	98
43) Cyclohexane	9.20	84	1610262	46.703	ng	88
44) tert-Amyl Methyl Ether	9.57	73	2986673	47.502	ng	93
45) 1,2-Dichloropropane	9.84	63	617605	23.725	ng	98
46) Bromodichloromethane	10.06	83	866189	25.351	ng	99
47) Trichloroethene	10.13	130	602606	24.985	ng	99
48) 1,4-Dioxane	10.09	88	466274	25.714	ng	87
49) 2,2,4-Trimethylpentane...	10.21	57	2632631	22.080	ng	86
50) Methyl Methacrylate	10.38	100	433884	51.653	ng	94

Data File : I:\MS09\DATA\2023_02\13\02132308.D
 Acq On : 13 Feb 2023 11:25
 Sample : LCSD R9021323_25ng
 Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 12:04:58 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

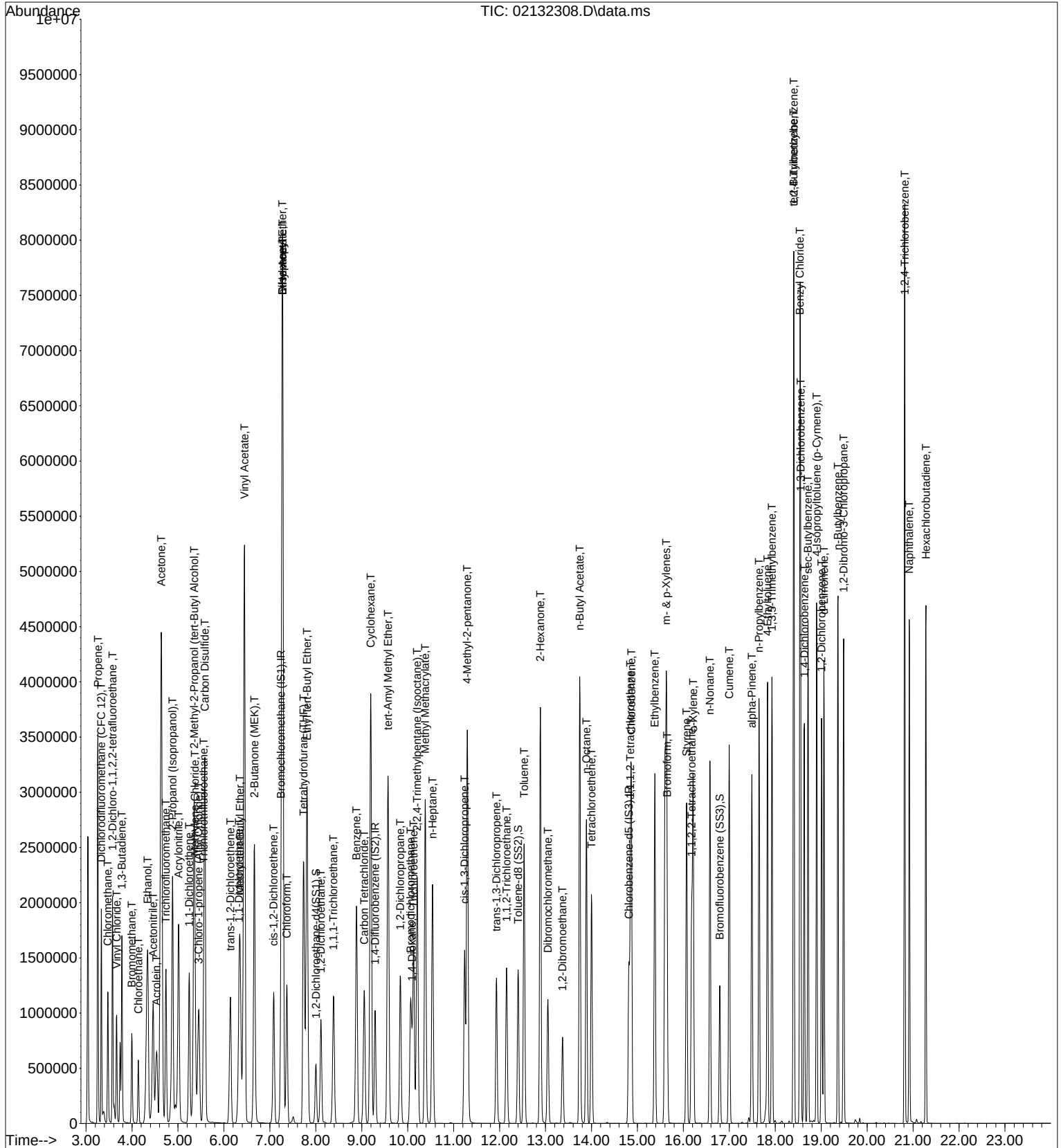
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	551000	24.313	ng	92
52) cis-1,3-Dichloropropene	11.24	75	1053240	29.728	ng	99
53) 4-Methyl-2-pentanone	11.30	58	1198291	45.750	ng	74
54) trans-1,3-Dichloropropene	11.93	75	854247	25.703	ng	98
55) 1,1,2-Trichloroethane	12.15	97	557378	24.075	ng	97
58) Toluene	12.53	91	2186966	25.776	ng	96
59) 2-Hexanone	12.89	43	3612709	59.631	ng	89
60) Dibromochloromethane	13.05	129	746701	30.125	ng	97
61) 1,2-Dibromoethane	13.37	107	654687	25.422	ng	100
62) n-Butyl Acetate	13.74	43	4033017	60.552	ng	92
63) n-Octane	13.89	57	555639	24.234	ng	92
64) Tetrachloroethene	14.00	166	747508	29.728	ng	99
65) Chlorobenzene	14.87	112	1533926	26.802	ng	99
66) Ethylbenzene	15.38	91	2592079	26.459	ng	98
67) m- & p-Xylenes	15.63	91	4215105	53.168	ng	99
68) Bromoform	15.65	173	751346	34.209	ng	95
69) Styrene	16.07	104	1617013	28.119	ng	98
70) o-Xylene	16.21	91	2074337	26.511	ng	100
71) n-Nonane	16.58	43	1610766	28.774	ng	88
72) 1,1,2,2-Tetrachloroethane	16.18	83	1027657	26.602	ng	100
74) Cumene	17.00	105	2590669	27.454	ng	99
75) alpha-Pinene	17.49	93	1315942	26.805	ng	99
76) n-Propylbenzene	17.64	91	3110035	26.518	ng	96
77) 3-Ethyltoluene	17.00	105	2590669	No Calib		
78) 4-Ethyltoluene	17.83	105	2576024	28.402	ng	98
79) 1,3,5-Trimethylbenzene	17.93	105	2222184	27.955	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	2590669	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	2270177	28.254	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	3713813	62.997	ng	97
85) 1,3-Dichlorobenzene	18.55	146	1387395	29.557	ng	97
86) 1,4-Dichlorobenzene	18.63	146	1390094	29.273	ng	97
87) sec-Butylbenzene	18.71	105	2891900	27.314	ng	100
88) 4-Isopropyltoluene (p-...	18.90	119	2433915	25.677	ng	97
89) 1,2,3-Trimethylbenzene	17.00	105	2590669	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1338040	29.235	ng	97
91) d-Limonene	19.06	68	858641	27.076	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.49	157	1086988	62.974	ng	90
93) n-Undecane	18.10	58	211	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	2335220	62.549	ng	99
95) Naphthalene	20.92	128	2842399	29.720	ng	100
96) n-Dodecane	19.06	58	7498	No Calib	#	
97) Hexachlorobutadiene	21.28	225	771053	29.148	ng	97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.40	119	2074208	26.045	ng	100
100) n-Butylbenzene	19.37	91	2357407	27.231	ng	96
101) 1,1,1,2-Tetrachloroethane	14.85	131	600178	27.698	ng	98

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

Data File : I:\MS09\DATA\2023_02\13\02132308.D
Acq On : 13 Feb 2023 11:25
Sample : LCSD R9021323_25ng
Misc : S35-12302204/S35-03062304 (3/8)

Vial: 2
Operator: SC
Inst : MS09

Quant Time: Feb 13 12:04:58 2023
Quant Method : I:\MS09\METHODS\R9111622.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Wed Jan 11 08:47:39 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



Method Path : I:\MS09\METHODS\
 Method File : R9111622.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Nov 17 07:45:06 2022
 Response Via : Initial Calibration

 11/17/22

Calibration Files

0.1 =11162208.D 0.2 =11162209.D 0.5 =11162210.D 1.0 =11162211.D 5.0 =11162212.D 25 =11162213.D
 100 =11162215.D

	Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene	2.169	2.172	2.516	2.044	2.246	2.265	2.634	1.839	2.236	11.22
3) T	Dichlorodifluo...	3.149	2.909	3.574	2.938	2.619	2.839	2.861	2.115	2.875	14.48
4) T	Chloromethane	3.204	3.000	3.569	2.925	2.465	2.810	2.704	1.535	2.777	21.64
5) T	1,2-Dichloro-1...	1.590	1.338	1.638	1.366	1.208	1.307	1.314	1.161	1.365	12.31
6) T	Vinyl Chloride	2.453	2.361	3.024	2.531	2.308	2.512	2.484	1.756	2.429	14.32
7) T	1,3-Butadiene	1.843	1.193	1.321	1.165	1.009	1.089	0.989	1.149	1.220	22.37
8) T	Bromomethane	1.246	1.030	1.284	1.032	0.870	1.076	1.137	0.890	1.070	13.97
9) T	Chloroethane	1.023	0.970	1.221	0.995	0.897	1.004	1.009	0.812	0.991	11.80
10) T	Ethanol	1.845	1.416	1.719	1.426	1.117	1.250	1.231	1.192	1.399	18.63
11) T	Acetonitrile		4.753	4.805	4.002	3.536	3.893	3.888	3.311	4.027	14.06
12) T	Acrolein	1.316	1.194	1.494	1.259	1.005	1.026	0.964	0.959	1.152	16.96
13) T	Acetone	1.472	1.422	1.603	1.313	1.083	1.205	1.094	0.927	1.265	18.03
14) T	Trichlorofluor...	2.905	2.548	2.916	2.461	2.201	2.348	2.285	2.100	2.470	12.35
15) T	2-Propanol (Is...	5.494	5.262	6.404	5.258	3.909	4.759	3.915	2.722	4.715	24.47
16) T	Acrylonitrile	2.376	2.489	3.152	2.568	2.257	2.375	2.317	1.940	2.434	14.17
17) T	1,1-Dichloroet...	1.493	1.174	1.424	1.244	1.056	1.128	1.098	1.100	1.214	13.31
18) T	2-Methyl-2-Pro...	4.363	4.245	5.238	4.344	3.850	4.482	4.274	2.028	4.103	22.52
19) T	Methylene Chlo...	1.654	1.357	1.577	1.324	1.180	1.345	1.353	1.164	1.369	12.50
20) T	3-Chloro-1-pro...		3.075	3.909	3.234	2.938	2.585	2.435	2.067	2.892	20.80
21) T	Trichlorotrifl...	1.281	1.356	1.556	1.287	1.139	1.301	1.359	1.051	1.291	11.71
22) T	Carbon Disulfide	5.340	4.129	4.917	4.212	3.763	4.325	4.135	3.783	4.326	12.59
23) T	trans-1,2-Dich...	2.300	2.373	2.930	2.357	2.181	2.438	2.474	1.851	2.363	12.78
24) T	1,1-Dichloroet...	2.929	2.722	3.332	2.777	2.442	2.703	2.684	2.136	2.716	12.76
25) T	Methyl tert-Bu...	4.195	4.199	5.120	4.141	3.824	4.296	4.420	3.322	4.190	12.16
26) T	Vinyl Acetate			0.275	0.236	0.231	0.283	0.300	0.234	0.260	11.49
27) T	2-Butanone (MEK)	0.898	0.909	1.082	0.911	0.841	0.969	1.009	0.766	0.923	10.61
28) T	cis-1,2-Dichlo...	2.353	2.283	2.820	2.316	2.101	2.328	2.332	1.769	2.288	12.76
29) T	Diisopropyl Ether	1.272	1.158	1.361	1.122	1.029	1.198	1.174	0.772	1.136	15.57
30) T	Ethyl Acetate	0.651	0.699	0.860	0.700	0.672	0.793	0.737	0.433	0.693	18.06
31) T	n-Hexane	3.199	3.145	3.608	2.969	2.737	3.102	2.767	1.545	2.884	21.03
32) T	Chloroform	2.815	2.704	3.265	2.640	2.372	2.655	2.688	2.038	2.647	13.26
33) S	1,2-Dichloroet...	1.925	2.218	2.221	2.118	2.269	2.297	2.461	1.870	2.173	9.01
34) T	Tetrahydrofura...	0.912	0.909	1.053	0.874	0.791	0.910	0.943	0.713	0.888	11.42
35) T	Ethyl tert-But...	1.676	1.591	1.952	1.568	1.461	1.681	1.750	1.312	1.624	11.80
36) T	1,2-Dichloroet...	2.309	2.312	2.822	2.310	2.071	2.289	2.292	1.687	2.261	13.88
37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.555	0.482	0.575	0.489	0.424	0.468	0.439	0.428	0.482	11.72
39) T	Isopropyl Acetate									0.000	-1.00
40) T	1-Butanol									0.000	-1.00
41) T	Benzene	1.277	1.080	1.285	1.084	0.917	1.014	0.955	0.933	1.068	13.60
42) T	Carbon Tetrach...	0.438	0.379	0.476	0.401	0.350	0.394	0.374	0.368	0.398	10.33
43) T	Cyclohexane	0.493	0.417	0.502	0.418	0.360	0.407	0.385	0.369	0.419	12.70
44) T	tert-Amyl Meth...	0.861	0.721	0.896	0.763	0.682	0.770	0.727	0.686	0.764	10.25
45) T	1,2-Dichloropr...	0.372	0.313	0.376	0.321	0.276	0.305	0.286	0.279	0.316	12.38
46) T	Bromodichlorom...	0.469	0.394	0.488	0.419	0.366	0.413	0.391	0.380	0.415	10.39
47) T	Trichloroethene	0.341	0.282	0.346	0.290	0.252	0.284	0.274	0.275	0.293	11.34
48) T	1,4-Dioxane	0.220	0.202	0.257	0.222	0.196	0.228	0.219	0.217	0.220	8.37
49) T	2,2,4-Trimethy...	1.771	1.437	1.755	1.499	1.271	1.384	1.275	1.193	1.448	15.04
50) T	Methyl Methacr...	0.100	0.089	0.117	0.101	0.092	0.109	0.105	0.104	0.102	8.72
51) T	n-Heptane	0.306	0.274	0.336	0.282	0.239	0.265	0.252	0.247	0.275	11.85
52) T	cis-1,3-Dichlo...	0.460	0.394	0.502	0.432	0.386	0.442	0.417	0.409	0.430	8.79
53) T	4-Methyl-2-pen...	0.345	0.295	0.374	0.326	0.289	0.329	0.306	0.281	0.318	9.94
54) T	trans-1,3-Dich...	0.370	0.360	0.460	0.410	0.374	0.437	0.414	0.404	0.404	8.59

55)	T	1,1,2-Trichlor...	0.316	0.275	0.334	0.288	0.245	0.274	0.260	0.256	0.281	10.84
56)	IR	Chlorobenzene-d5 (...	-----ISTD-----									
57)	S	Toluene-d8 (SS2)	4.715	4.596	4.530	4.473	4.431	4.502	4.547	4.660	4.557	2.10
58)	T	Toluene	5.550	4.640	5.368	4.509	3.767	4.251	4.104	4.099	4.536	13.90
59)	T	2-Hexanone	3.751	3.320	3.789	3.269	2.853	3.347	2.989	2.595	3.239	12.84
60)	T	Dibromochlorom...	1.528	1.209	1.522	1.281	1.124	1.323	1.288	1.325	1.325	10.56
61)	T	1,2-Dibromoethane	1.528	1.295	1.622	1.400	1.178	1.347	1.308	1.336	1.377	10.16
62)	T	n-Butyl Acetate	4.112	3.493	4.100	3.548	3.144	3.789	3.383	2.917	3.561	11.97
63)	T	n-Octane	1.456	1.250	1.491	1.238	1.035	1.160	1.104	1.072	1.226	13.92
64)	T	Tetrachloroethene	1.664	1.315	1.576	1.290	1.098	1.273	1.250	1.288	1.344	13.70
65)	T	Chlorobenzene	3.795	2.993	3.551	2.905	2.516	2.950	2.890	2.879	3.060	13.42
66)	T	Ethylbenzene	6.193	5.312	6.295	5.184	4.396	5.017	4.810	4.694	5.238	13.06
67)	T	m- & p-Xylenes	5.107	4.291	5.004	4.172	3.552	4.149	3.954	3.680	4.238	13.29
68)	T	Bromoform	1.273	1.022	1.241	1.082	0.997	1.266	1.256	1.256	1.174	10.15
69)	T	Styrene	3.404	2.994	3.500	3.015	2.603	3.083	3.007	2.990	3.074	8.98
70)	T	o-Xylene	5.036	4.139	5.000	4.125	3.514	4.012	3.867	3.772	4.183	13.24
71)	T	n-Nonane	3.712	3.163	3.656	3.123	2.598	2.839	2.576	2.276	2.993	17.27
72)	T	1,1,2,2-Tetrac...	2.375	2.029	2.396	2.061	1.751	2.010	1.950	1.950	2.065	10.60
73)	S	Bromofluoroben...	1.630	1.593	1.551	1.525	1.537	1.587	1.625	1.698	1.593	3.59
74)	T	Cumene	6.105	5.034	5.967	4.971	4.268	4.868	4.657	4.489	5.045	13.14
75)	T	alpha-Pinene	3.068	2.569	3.019	2.575	2.240	2.577	2.500	2.450	2.625	10.72
76)	T	n-Propylbenzene	7.704	6.196	7.401	6.254	5.308	6.103	5.786	5.408	6.270	13.84
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	5.924	4.667	5.648	4.809	4.028	4.776	4.626	4.312	4.849	13.15
79)	T	1,3,5-Trimethy...	5.107	4.233	4.988	4.157	3.592	4.163	3.976	3.783	4.250	12.65
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	5.063	4.263	5.085	4.250	3.721	4.423	4.051	3.509	4.296	13.17
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			3.094	2.773	2.827	3.831	3.509	2.877	3.152	13.58
85)	T	1,3-Dichlorobe...	2.914	2.492	2.890	2.400	2.103	2.607	2.467	2.203	2.510	11.58
86)	T	1,4-Dichlorobe...	3.103	2.475	2.845	2.367	2.052	2.550	2.480	2.439	2.539	12.43
87)	T	sec-Butylbenzene	6.913	5.592	6.761	5.572	4.794	5.567	5.247	4.838	5.660	14.01
88)	T	4-Isopropyltol...	6.385	5.145	5.973	4.896	4.246	4.931	4.661	4.305	5.068	14.98
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	2.910	2.343	2.779	2.354	2.030	2.441	2.373	2.346	2.447	11.29
91)	T	d-Limonene	1.867	1.674	1.971	1.680	1.459	1.729	1.649	1.534	1.695	9.74
92)	T	1,2-Dibromo-3-...	0.956	0.846	1.011	0.853	0.798	0.997	0.973	0.949	0.923	8.59
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	2.214	1.891	2.196	1.874	1.691	2.225	2.090	1.787	1.996	10.56
95)	T	Naphthalene	5.392	4.651	5.613	4.873	4.389	5.609	5.404	4.976	5.113	8.97
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	1.681	1.334	1.594	1.320	1.161	1.431	1.413	1.381	1.414	11.47
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	5.065	4.381	5.128	4.258	3.652	4.239	3.906	3.434	4.258	14.30
100)	T	n-Butylbenzene	5.484	4.559	5.439	4.524	3.954	4.672	4.397	3.998	4.628	12.42
101)	T	1,1,1,2-Tetrac...	1.351	1.097	1.342	1.118	0.984	1.141	1.117	1.117	1.158	10.85

(#) = Out of Range

R9111622.M Thu Nov 17 10:52:55 2022

Primary Source Standards Concentrations (Working & Initial Calibration)

11/17/22

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S35-11152210

200ng/L Std. ID: S35-11152208

20ng/L Std. ID: S35-11152209

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
									4	4	20	20	20	200	200	200
								Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
								ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Propene	1.05	1050	210	42.0	21.0	4.20	1.05		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Chloromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Freon-114	1.04	1040	208	41.6	20.8	4.16	1.04		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
Vinyl Chloride	1.01	1010	202	40.4	20.2	4.04	1.01		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Chloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.345	0.690	1.725	3.45	17.25	86.25	172.5	345
Ethanol	3.45	3450	690	138.0	69.0	13.80	3.45		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
Acetonitrile	0.91	910	182	36.4	18.2	3.64	0.91		0.193	0.386	0.965	1.93	9.65	48.25	96.5	193
Acrolein	1.93	1930	386	77.2	38.6	7.72	1.93		0.527	1.054	2.635	5.27	26.35	131.75	263.5	527
Acetone	5.27	5270	1054	210.8	105.4	21.08	5.27		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Trichlorofluoromethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Isopropanol	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Acrylonitrile	2.05	2050	410	82.0	41.0	8.20	2.05		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
tert-Butanol	2.11	2110	422	84.4	42.2	8.44	2.11		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Allyl Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.213	0.426	1.065	2.13	10.65	53.25	106.5	213
Carbon Disulfide	2.13	2130	426	85.2	42.6	8.52	2.13		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,1-Dichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Methyl tert-Butyl Ether	1.07	1070	214	42.8	21.4	4.28	1.07		0.280	0.560	1.400	2.80	14.00	70.00	140.0	280
Vinyl Acetate	2.80	2800	560	112.0	56.0	11.20	2.80		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
2-Butanone	2.09	2090	418	83.6	41.8	8.36	2.09		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.422	0.844	2.110	4.22	21.10	105.50	211.0	422
Ethyl Acetate	4.22	4220	844	168.8	84.4	16.88	4.22		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chloroform	1.06	1060	212	42.4	21.2	4.24	1.06		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
Tetrahydrofuran	2.04	2040	408	81.6	40.8	8.16	2.04		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Ethyl tert-Butyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,1,1-Trichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Benzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Carbon Tetrachloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
Cyclohexane	2.10	2100	420	84.0	42.0	8.40	2.10		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
tert-Amyl Methyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,2-Dichloropropane	1.05	1050	210	42.0	21.0	4.20	1.05		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	1.06		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Isooctane	1.08	1080	216	43.2	21.6	4.32	1.08		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Heptane	1.06	1060	212	42.4	21.2	4.24	1.06									

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S35-11152210

200ng/L Std. ID: S35-11152208

20ng/L Std. ID: S35-11152209

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
									4	4	20	20	20	200	200	200
								Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
								ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
cis-1,3-Dichloropropene	1.08	1080	216	43.2	21.6	4.32	1.08		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
4-Methyl-2-pentanone	2.15	2150	430	86.0	43.0	8.60	2.15		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
trans-1,3-Dichloropropene	1.02	1020	204	40.8	20.4	4.08	1.02		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2-Trichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Toluene	1.05	1050	210	42.0	21.0	4.20	1.05		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
2-Hexanone	2.12	2120	424	84.8	42.4	8.48	2.12		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Dibromochloromethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
n-Butyl Acetate	2.05	2050	410	82.0	41.0	8.20	2.05		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Octane	1.07	1070	214	42.8	21.4	4.28	1.07		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrachloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Ethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
m-&p-Xylene	2.10	2100	420	84.0	42.0	8.40	2.10		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Bromoform	1.07	1070	214	42.8	21.4	4.28	1.07		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Nonane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Cumene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
alpha-Pinene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
n-Propylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
4-Ethyltoluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzyl Chloride	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,3-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
sec-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
d-Limonene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,2-Dibromo-3-chloropropane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
1,2,4-Trichlorobenzene	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Naphthalene	1.10	1100	220	44.0	22.0	4.40	1.10		0.110	0.220	0.550	1.10	5.50	27.50	55.0	110
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
tert-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,1,1,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Method : I:\MS09\METHODS\R9111622.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Nov 17 07:45:06 2022
 Response via : Initial Calibration

 **11/17/22**

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS09\DATA\2022_11\16\11162208.D
2	0.2	0	13	I:\MS09\DATA\2022_11\16\11162209.D
3	0.5	1	13	I:\MS09\DATA\2022_11\16\11162210.D
4	1.0	1	13	I:\MS09\DATA\2022_11\16\11162211.D
5	5.0	5	13	I:\MS09\DATA\2022_11\16\11162212.D
6	25	26	13	I:\MS09\DATA\2022_11\16\11162213.D
7	50	53	13	I:\MS09\DATA\2022_11\16\11162214.D
8	100	105	13	I:\MS09\DATA\2022_11\16\11162215.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Nov 17 07:43 2022	Nov 16 16:47 2022	16 Nov 2022 13:36
2	0.2	Nov 17 07:43 2022	Nov 16 16:46 2022	16 Nov 2022 14:08
3	0.5	Nov 17 07:43 2022	Nov 16 16:45 2022	16 Nov 2022 14:40
4	1.0	Nov 17 07:44 2022	Nov 16 16:43 2022	16 Nov 2022 15:12
5	5.0	Nov 17 07:44 2022	Nov 16 16:41 2022	16 Nov 2022 15:44
6	25	Nov 17 07:44 2022	Nov 16 16:40 2022	16 Nov 2022 16:16
7	50	Nov 17 07:44 2022	Nov 16 17:09 2022	16 Nov 2022 16:48
8	100	Nov 17 07:44 2022	Nov 17 07:39 2022	16 Nov 2022 17:20

R9111622.M

Thu Nov 17 10:53:48 2022

Data File : I:\MS09\DATA\2022_11\16\11162208.D
 Acq On : 16 Nov 2022 13:36
 Sample : 0.1ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152210 (12/15)

Vial: 13
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:47:59 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/16/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	164856	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	736430	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	175396	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.96	65	317381	13.523	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	108.16%
57) Toluene-d8 (SS2)	12.39	98	827042	11.112	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.88%
73) Bromofluorobenzene (SS3)	16.79	174	285840	8.894	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	71.12%

Target Compounds

						Qvalue
2) Propene	3.30	42	3004	0.180	ng	94
3) Dichlorodifluoromethan...	3.37	85	4402	0.142	ng	96
4) Chloromethane	3.52	50	4352	0.267	ng	94
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	2181	0.138	ng	89
6) Vinyl Chloride	3.71	62	3268	0.180	ng	89
7) 1,3-Butadiene	3.82	54	2576	0.205	ng	# 84
8) Bromomethane	4.02	94	1676	0.146	ng	98
9) Chloroethane	4.16	64	1389	0.177	ng	97
10) Ethanol	4.28	45	8396	0.776	ng	91
11) Acetonitrile	4.44	41	8326	0.302	ng	77
12) Acrolein	4.53	56	3349	0.441	ng	99
13) Acetone	4.63	58	10232	1.154	ng	# 84
14) Trichlorofluoromethane	4.75	101	3984	0.132	ng	98
15) 2-Propanol (Isopropanol)	4.86	45	14854	0.453	ng	67
16) Acrylonitrile	4.99	53	6425	0.427	ng	94
17) 1,1-Dichloroethene	5.26	96	2126	0.166	ng	97
18) 2-Methyl-2-Propanol (t...	5.39	59	12142	0.398	ng	90
19) Methylene Chloride	5.34	84	2312	0.174	ng	97
20) 3-Chloro-1-propene (Al...	5.39	41	2581	0.099	ng	# 49
21) Trichlorotrifluoroethane	5.57	151	1825	0.134	ng	89
22) Carbon Disulfide	5.60	76	15000	0.339	ng	93
23) trans-1,2-Dichloroethene	6.12	61	3276	0.176	ng	100
24) 1,1-Dichloroethane	6.29	63	4133	0.182	ng	99
25) Methyl tert-Butyl Ether	6.37	73	5920	0.147	ng	97
26) Vinyl Acetate	6.44	86	564	0.267	ng	# 1
27) 2-Butanone (MEK)	6.66	72	2476	0.328	ng	# 91
28) cis-1,2-Dichloroethene	7.05	61	3290	0.178	ng	98
29) Diisopropyl Ether	7.27	87	3556	0.340	ng	# 94
30) Ethyl Acetate	7.27	61	3625	0.719	ng	95
31) n-Hexane	7.28	57	4430	0.217	ng	# 98
32) Chloroform	7.32	83	3936	0.153	ng	99
34) Tetrahydrofuran (THF)	7.76	72	2453	0.335	ng	# 83
35) Ethyl tert-Butyl Ether	7.80	87	4686	0.303	ng	96
36) 1,2-Dichloroethane	8.08	62	3289	0.155	ng	100
38) 1,1,1-Trichloroethane	8.36	97	3431	0.131	ng	99
39) Isopropyl Acetate	9.26	61	22745	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.86	78	8048	0.157	ng	98
42) Carbon Tetrachloride	9.03	117	2686	0.117	ng	99
43) Cyclohexane	9.18	84	6105	0.319	ng	100
44) tert-Amyl Methyl Ether	9.58	73	10758	0.279	ng	95
45) 1,2-Dichloropropane	9.83	63	2304	0.188	ng	95
46) Bromodichloromethane	10.04	83	2959	0.143	ng	95
47) Trichloroethene	10.10	130	2108	0.129	ng	98
48) 1,4-Dioxane	10.13	88	1377	0.136	ng	89
49) 2,2,4-Trimethylpentane...	10.20	57	11270	0.217	ng	97
50) Methyl Methacrylate	10.39	100	1251	0.254	ng	# 80

Data File : I:\MS09\DATA\2022_11\16\11162208.D
 Acq On : 16 Nov 2022 13:36
 Sample : 0.1ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152210 (12/15)

Vial: 13
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:47:59 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

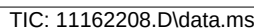
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.53	71	1912	0.166	ng	93
52) cis-1,3-Dichloropropene	11.23	75	2924	0.147	ng	96
53) 4-Methyl-2-pentanone	11.30	58	4375	0.402	ng	82
54) trans-1,3-Dichloropropene	11.93	75	2224	0.115	ng	93
55) 1,1,2-Trichloroethane	12.14	97	1976	0.145	ng	90
58) Toluene	12.52	91	8177	0.125	ng	98
59) 2-Hexanone	12.90	43	11158	0.308	ng	95
60) Dibromochloromethane	13.03	129	2316	0.110	ng	98
61) 1,2-Dibromoethane	13.36	107	2230	0.117	ng	100
62) n-Butyl Acetate	13.76	43	11829	0.298	ng	98
63) n-Octane	13.88	57	2186	0.181	ng	97
64) Tetrachloroethene	13.99	166	2475	0.118	ng	95
65) Chlorobenzene	14.86	112	5645	0.128	ng	96
66) Ethylbenzene	15.37	91	9124	0.122	ng	99
67) m- & p-Xylenes	15.62	91	15050	0.244	ng	100
68) Bromoform	15.64	173	1912	0.104	ng	88
69) Styrene	16.07	104	5063	0.120	ng	99
70) o-Xylene	16.21	91	7491	0.123	ng	100
71) n-Nonane	16.57	43	5521	0.172	ng	96
72) 1,1,2,2-Tetrachloroethane	16.19	83	3533	0.138	ng	99
74) Cumene	16.99	105	9166	0.122	ng	98
75) alpha-Pinene	17.49	93	4692	0.129	ng	91
76) n-Propylbenzene	17.65	91	11567	0.129	ng	98
77) 3-Ethyltoluene	16.99	105	9166	No Calib		
78) 4-Ethyltoluene	17.83	105	9061	0.129	ng	98
79) 1,3,5-Trimethylbenzene	17.93	105	7596	0.122	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	16.99	105	9166	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	7460	0.117	ng	98
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	7956	0.189	ng	94
85) 1,3-Dichlorobenzene	18.55	146	4334	0.112	ng	97
86) 1,4-Dichlorobenzene	18.63	146	4616	0.120	ng	97
87) sec-Butylbenzene	18.71	105	10282	0.124	ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	9497	0.128	ng	98
89) 1,2,3-Trimethylbenzene	16.99	105	9166	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	4369	0.115	ng	93
91) d-Limonene	19.06	68	2803	0.139	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.49	157	2817	0.200	ng	# 74
93) n-Undecane	17.93	58	104	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	6493	0.241	ng	99
95) Naphthalene	20.92	128	8322	0.122	ng	92
96) n-Dodecane	18.90	58	313	No Calib	#	
97) Hexachlorobutadiene	21.28	225	2500	0.120	ng	97
98) Cyclohexanone	15.18	55	115	No Calib	#	
99) tert-Butylbenzene	18.39	119	7533	0.119	ng	98
100) n-Butylbenzene	19.37	91	8233	0.125	ng	96
101) 1,1,1,2-Tetrachloroethane	14.84	131	2010	0.113	ng	97

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

Vial: 13
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:47:59 2022



Data File : I:\MS09\DATA\2022_11\16\11162209.D
 Acq On : 16 Nov 2022 14:08
 Sample : 0.2ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152210 (12/15)

Vial: 13
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:46:42 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/16/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	144396	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	743200	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	181377	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.97	65	320294	15.580	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	124.64%
57) Toluene-d8 (SS2)	12.39	98	833689	10.832	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.64%
73) Bromofluorobenzene (SS3)	16.79	174	288971	8.695	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	69.60%#

Target Compounds

						Qvalue
2) Propene	3.30	42	5269	0.361	ng	95
3) Dichlorodifluoromethan...	3.37	85	7123	0.262	ng	97
4) Chloromethane	3.52	50	7139	0.500	ng	96
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	3216	0.232	ng	99
6) Vinyl Chloride	3.70	62	5510	0.347	ng	97
7) 1,3-Butadiene	3.81	54	2922	0.265	ng	93
8) Bromomethane	4.02	94	2428	0.242	ng	99
9) Chloroethane	4.16	64	2309	0.336	ng	93
10) Ethanol	4.28	45	11284	1.191	ng	92
11) Acetonitrile	4.44	41	9993	0.414	ng	90
12) Acrolein	4.53	56	5323	0.801	ng	90
13) Acetone	4.62	58	17309	2.229	ng	88
14) Trichlorofluoromethane	4.75	101	6122	0.232	ng	95
15) 2-Propanol (Isopropanol)	4.83	45	24921	0.868	ng	81
16) Acrylonitrile	4.99	53	11788	0.895	ng	95
17) 1,1-Dichloroethene	5.25	96	2929	0.262	ng	98
18) 2-Methyl-2-Propanol (t...	5.38	59	20695	0.774	ng	94
19) Methylene Chloride	5.34	84	3324	0.286	ng	99
20) 3-Chloro-1-propene (Al...	5.44	41	7531	0.331	ng	86
21) Trichlorotrifluoroethane	5.56	151	3384	0.284	ng	95
22) Carbon Disulfide	5.60	76	20319	0.524	ng	96
23) trans-1,2-Dichloroethene	6.12	61	5920	0.363	ng	100
24) 1,1-Dichloroethane	6.29	63	6730	0.339	ng	100
25) Methyl tert-Butyl Ether	6.37	73	10381	0.294	ng	99
26) Vinyl Acetate	6.43	86	1201	0.650	ng	# 53
27) 2-Butanone (MEK)	6.66	72	4389	0.664	ng	98
28) cis-1,2-Dichloroethene	7.05	61	5592	0.345	ng	99
29) Diisopropyl Ether	7.27	87	5673	0.620	ng	# 77
30) Ethyl Acetate	7.27	61	6817	1.543	ng	98
31) n-Hexane	7.27	57	7629	0.426	ng	99
32) Chloroform	7.33	83	6621	0.294	ng	99
34) Tetrahydrofuran (THF)	7.75	72	4282	0.668	ng	# 92
35) Ethyl tert-Butyl Ether	7.80	87	7794	0.576	ng	98
36) 1,2-Dichloroethane	8.08	62	5769	0.311	ng	100
38) 1,1,1-Trichloroethane	8.36	97	6018	0.228	ng	98
39) Isopropyl Acetate	9.26	61	23160	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.87	78	13746	0.266	ng	98
42) Carbon Tetrachloride	9.03	117	4683	0.202	ng	99
43) Cyclohexane	9.18	84	10410	0.540	ng	99
44) tert-Amyl Methyl Ether	9.57	73	18183	0.467	ng	94
45) 1,2-Dichloropropane	9.83	63	3903	0.315	ng	98
46) Bromodichloromethane	10.04	83	5009	0.239	ng	97
47) Trichloroethene	10.11	130	3516	0.212	ng	99
48) 1,4-Dioxane	10.12	88	2548	0.250	ng	95
49) 2,2,4-Trimethylpentane...	10.20	57	18453	0.351	ng	96
50) Methyl Methacrylate	10.38	100	2246	0.452	ng	# 84

Data File : I:\MS09\DATA\2022_11\16\11162209.D
 Acq On : 16 Nov 2022 14:08
 Sample : 0.2ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152210 (12/15)

Vial: 13
 Operator: SC
 Inst : MS09

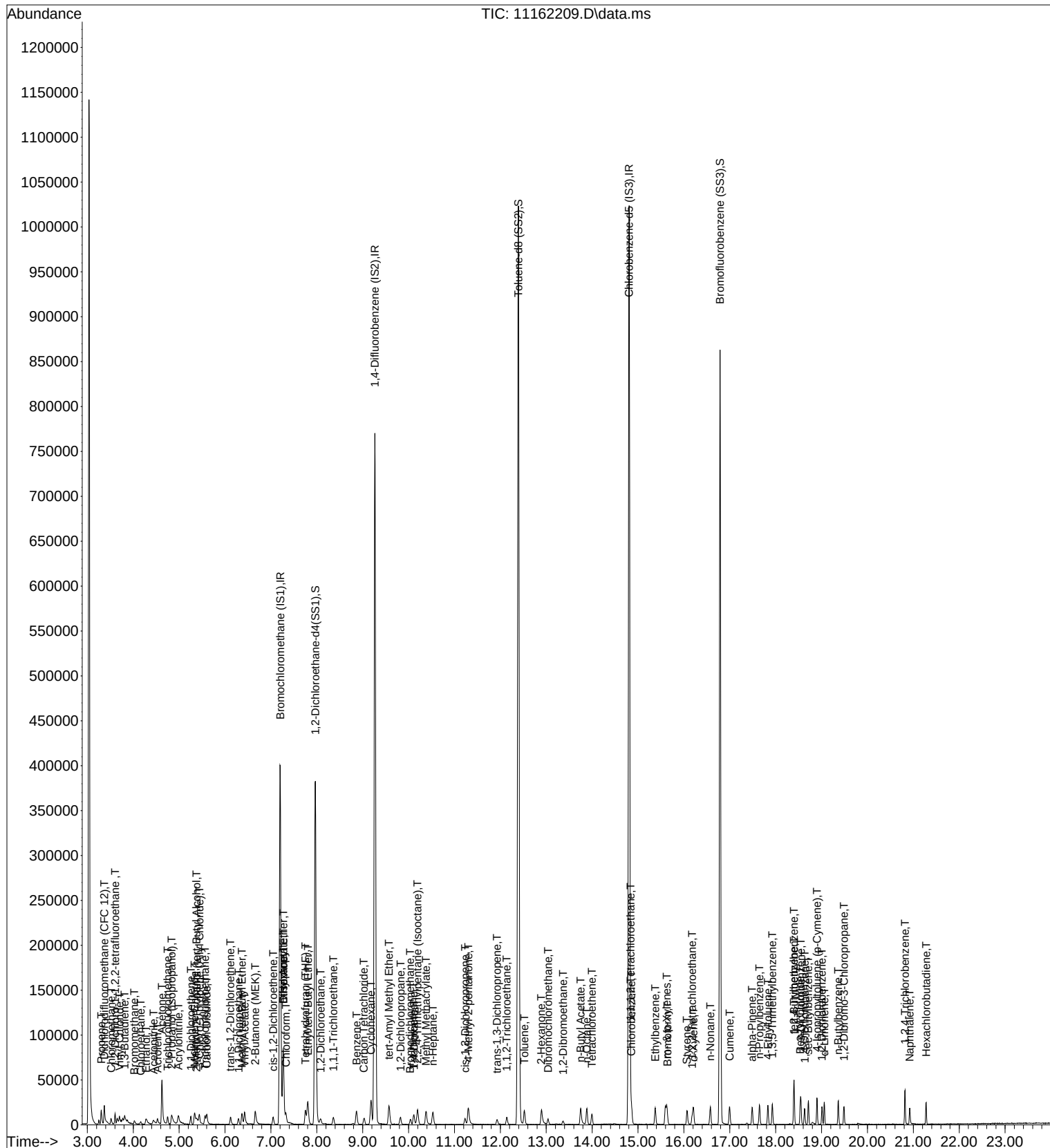
Quant Time: Nov 16 16:46:42 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.53	71	3451	0.297	ng	97
52) cis-1,3-Dichloropropene	11.23	75	5057	0.252	ng	97
53) 4-Methyl-2-pentanone	11.30	58	7533	0.686	ng	84
54) trans-1,3-Dichloropropene	11.93	75	4361	0.223	ng	94
55) 1,1,2-Trichloroethane	12.14	97	3462	0.253	ng	99
58) Toluene	12.52	91	14138	0.209	ng	97
59) 2-Hexanone	12.89	43	20427	0.544	ng	93
60) Dibromochloromethane	13.04	129	3790	0.173	ng	94
61) 1,2-Dibromoethane	13.37	107	3908	0.198	ng	99
62) n-Butyl Acetate	13.75	43	20781	0.507	ng	96
63) n-Octane	13.88	57	3883	0.310	ng	98
64) Tetrachloroethene	13.99	166	4045	0.187	ng	100
65) Chlorobenzene	14.86	112	9208	0.201	ng	99
66) Ethylbenzene	15.37	91	16187	0.209	ng	98
67) m- & p-Xylenes	15.62	91	26149	0.410	ng	98
68) Bromoform	15.64	173	3173	0.168	ng	93
69) Styrene	16.07	104	9210	0.211	ng	98
70) o-Xylene	16.21	91	12733	0.202	ng	99
71) n-Nonane	16.58	43	9731	0.294	ng	93
72) 1,1,2,2-Tetrachloroethane	16.18	83	6241	0.235	ng	98
74) Cumene	17.00	105	15632	0.201	ng	97
75) alpha-Pinene	17.49	93	8127	0.216	ng	96
76) n-Propylbenzene	17.64	91	19241	0.207	ng	99
77) 3-Ethyltoluene	17.00	105	15632	No Calib		
78) 4-Ethyltoluene	17.83	105	14763	0.203	ng	99
79) 1,3,5-Trimethylbenzene	17.93	105	13021	0.202	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	15632	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	12991	0.197	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	14445	0.332	ng	95
85) 1,3-Dichlorobenzene	18.55	146	7667	0.192	ng	98
86) 1,4-Dichlorobenzene	18.63	146	7612	0.192	ng	98
87) sec-Butylbenzene	18.71	105	17201	0.200	ng	98
88) 4-Isopropyltoluene (p-...	18.90	119	15826	0.206	ng	100
89) 1,2,3-Trimethylbenzene	17.00	105	15632	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	7275	0.185	ng	98
91) d-Limonene	19.06	68	5198	0.250	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.49	157	5155	0.355	ng	# 81
93) n-Undecane	17.92	58	309	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	11469	0.412	ng	98
95) Naphthalene	20.92	128	14847	0.210	ng	95
96) n-Dodecane	18.90	58	429	No Calib	#	
97) Hexachlorobutadiene	21.28	225	4105	0.190	ng	100
98) Cyclohexanone	15.19	55	109	No Calib	#	
99) tert-Butylbenzene	18.40	119	13477	0.206	ng	96
100) n-Butylbenzene	19.37	91	14158	0.207	ng	97
101) 1,1,1,2-Tetrachloroethane	14.84	131	3375	0.183	ng	98

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

Vial: 13
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:46:42 2022



Data File : I:\MS09\DATA\2022_11\16\11162210.D
 Acq On : 16 Nov 2022 14:40
 Sample : 0.5ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:45:27 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/16/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	144934	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	734427	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	181354	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.97	65	321893	15.600	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	124.80%
57) Toluene-d8 (SS2)	12.39	98	821469	10.674	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.36%
73) Bromofluorobenzene (SS3)	16.79	174	281284	8.465	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	67.68%#

Target Compounds

						Qvalue
2) Propene	3.28	42	15313	1.045	ng	98
3) Dichlorodifluoromethan...	3.35	85	21963	0.804	ng	99
4) Chloromethane	3.50	50	21311	1.486	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	9875	0.708	ng	99
6) Vinyl Chloride	3.68	62	17706	1.112	ng	98
7) 1,3-Butadiene	3.80	54	8115	0.734	ng	# 87
8) Bromomethane	4.01	94	7590	0.753	ng	100
9) Chloroethane	4.15	64	7291	1.058	ng	97
10) Ethanol	4.27	45	34387	3.617	ng	96
11) Acetonitrile	4.43	41	25348	1.046	ng	100
12) Acrolein	4.52	56	16714	2.505	ng	96
13) Acetone	4.61	58	48983	6.285	ng	89
14) Trichlorofluoromethane	4.74	101	17579	0.664	ng	98
15) 2-Propanol (Isopropanol)	4.82	45	76105	2.640	ng	84
16) Acrylonitrile	4.98	53	37460	2.833	ng	99
17) 1,1-Dichloroethene	5.24	96	8914	0.794	ng	98
18) 2-Methyl-2-Propanol (t...	5.30	59	64078	2.386	ng	93
19) Methylene Chloride	5.33	84	9693	0.832	ng	98
20) 3-Chloro-1-propene (Al...	5.43	41	24024	1.052	ng	88
21) Trichlorotrifluoroethane	5.56	151	9740	0.815	ng	97
22) Carbon Disulfide	5.59	76	60723	1.559	ng	99
23) trans-1,2-Dichloroethene	6.11	61	18343	1.120	ng	98
24) 1,1-Dichloroethane	6.29	63	20671	1.038	ng	100
25) Methyl tert-Butyl Ether	6.36	73	31760	0.897	ng	100
26) Vinyl Acetate	6.42	86	4459	2.404	ng	# 86
27) 2-Butanone (MEK)	6.65	72	13116	1.978	ng	# 88
28) cis-1,2-Dichloroethene	7.05	61	17328	1.065	ng	100
29) Diisopropyl Ether	7.26	87	16731	1.822	ng	# 71
30) Ethyl Acetate	7.26	61	21050	4.746	ng	98
31) n-Hexane	7.27	57	21960	1.223	ng	100
32) Chloroform	7.33	83	20062	0.886	ng	100
34) Tetrahydrofuran (THF)	7.74	72	12453	1.937	ng	95
35) Ethyl tert-Butyl Ether	7.79	87	23989	1.765	ng	99
36) 1,2-Dichloroethane	8.08	62	17668	0.949	ng	100
38) 1,1,1-Trichloroethane	8.36	97	17743	0.679	ng	99
39) Isopropyl Acetate	9.26	61	23388	No Calib	#	
40) 1-Butanol	8.87	56	389	No Calib	#	
41) Benzene	8.87	78	40383	0.791	ng	99
42) Carbon Tetrachloride	9.03	117	14535	0.635	ng	99
43) Cyclohexane	9.18	84	30960	1.625	ng	99
44) tert-Amyl Methyl Ether	9.56	73	55822	1.450	ng	96
45) 1,2-Dichloropropane	9.82	63	11589	0.947	ng	99
46) Bromodichloromethane	10.04	83	15349	0.742	ng	100
47) Trichloroethene	10.11	130	10682	0.653	ng	99
48) 1,4-Dioxane	10.10	88	8017	0.795	ng	95
49) 2,2,4-Trimethylpentane...	10.20	57	55681	1.073	ng	98
50) Methyl Methacrylate	10.38	100	7296	1.486	ng	95

Data File : I:\MS09\DATA\2022_11\16\11162210.D
 Acq On : 16 Nov 2022 14:40
 Sample : 0.5ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

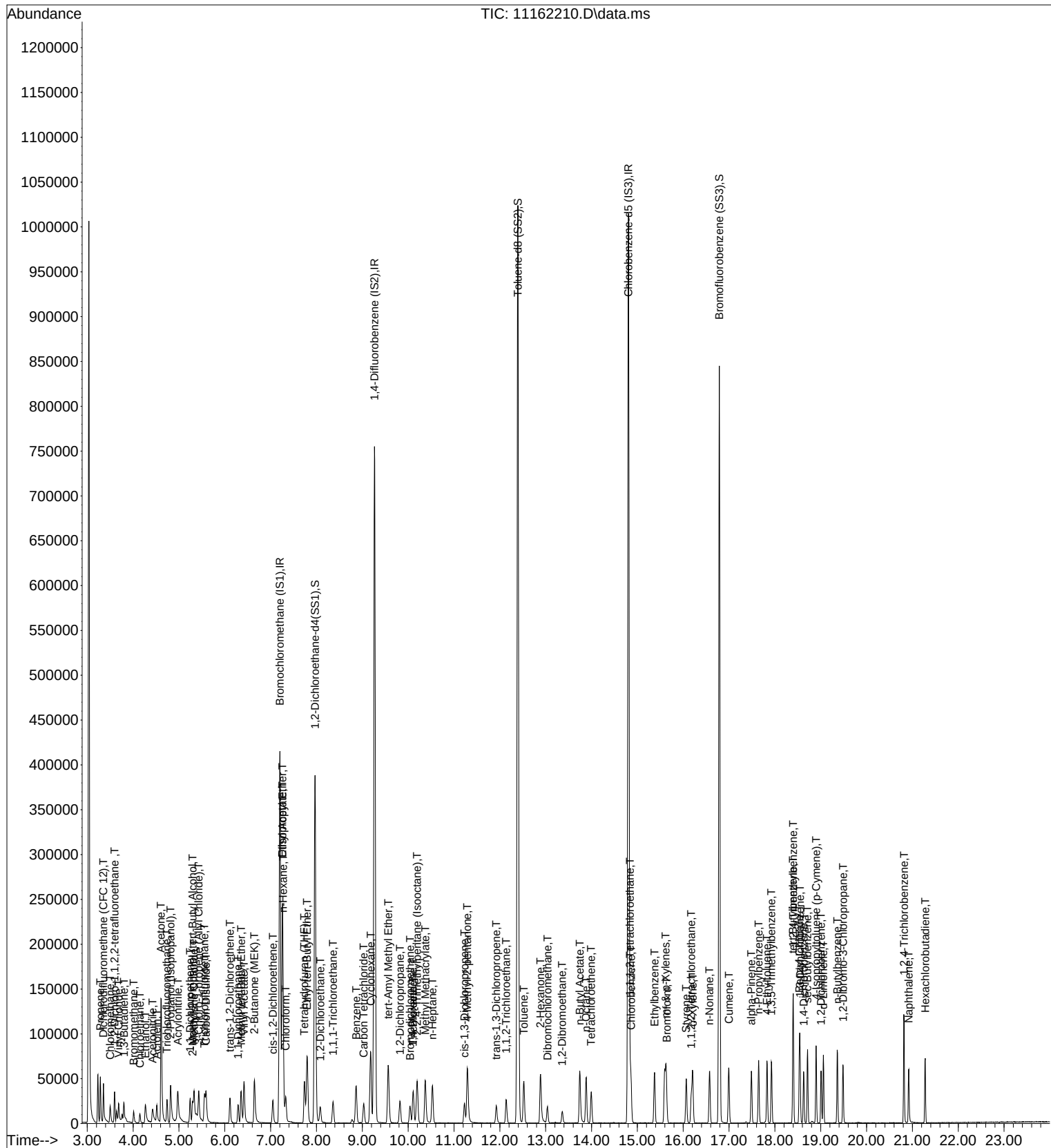
Quant Time: Nov 16 16:45:27 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.53	71	10468	0.911	ng	99
52) cis-1,3-Dichloropropene	11.23	75	15932	0.802	ng	100
53) 4-Methyl-2-pentanone	11.29	58	23630	2.178	ng	91
54) trans-1,3-Dichloropropene	11.92	75	13794	0.714	ng	100
55) 1,1,2-Trichloroethane	12.14	97	10400	0.768	ng	99
58) Toluene	12.52	91	40891	0.605	ng	100
59) 2-Hexanone	12.89	43	58275	1.553	ng	95
60) Dibromochloromethane	13.04	129	11923	0.546	ng	99
61) 1,2-Dibromoethane	13.36	107	12237	0.619	ng	99
62) n-Butyl Acetate	13.74	43	60976	1.487	ng	98
63) n-Octane	13.88	57	11576	0.926	ng	97
64) Tetrachloroethene	13.99	166	12118	0.560	ng	100
65) Chlorobenzene	14.86	112	27302	0.597	ng	99
66) Ethylbenzene	15.37	91	47949	0.619	ng	99
67) m- & p-Xylenes	15.62	91	76230	1.196	ng	100
68) Bromoform	15.64	173	9635	0.509	ng	97
69) Styrene	16.07	104	26910	0.618	ng	99
70) o-Xylene	16.21	91	38446	0.611	ng	100
71) n-Nonane	16.57	43	28109	0.849	ng	97
72) 1,1,2,2-Tetrachloroethane	16.17	83	18423	0.694	ng	99
74) Cumene	17.00	105	46318	0.595	ng	100
75) alpha-Pinene	17.49	93	23874	0.634	ng	96
76) n-Propylbenzene	17.65	91	57450	0.619	ng	99
77) 3-Ethyltoluene	17.00	105	46318	No Calib		
78) 4-Ethyltoluene	17.83	105	44662	0.613	ng	99
79) 1,3,5-Trimethylbenzene	17.92	105	38357	0.595	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	46318	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	38729	0.588	ng	99
83) n-Decane	17.00	58	333	No Calib	#	
84) Benzyl Chloride	18.54	91	47583	1.095	ng	96
85) 1,3-Dichlorobenzene	18.55	146	22223	0.557	ng	98
86) 1,4-Dichlorobenzene	18.63	146	21875	0.551	ng	98
87) sec-Butylbenzene	18.71	105	51990	0.605	ng	98
88) 4-Isopropyltoluene (p-...	18.90	119	45931	0.598	ng	98
89) 1,2,3-Trimethylbenzene	17.00	105	46318	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	21568	0.549	ng	100
91) d-Limonene	19.06	68	15298	0.736	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	15402	1.059	ng	# 84
93) n-Undecane	17.93	58	1159	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	33287	1.195	ng	99
95) Naphthalene	20.92	128	44789	0.635	ng	97
96) n-Dodecane	18.89	58	1594	No Calib	#	
97) Hexachlorobutadiene	21.28	225	12254	0.567	ng	99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	39430	0.604	ng	98
100) n-Butylbenzene	19.36	91	42216	0.618	ng	97
101) 1,1,1,2-Tetrachloroethane	14.84	131	10319	0.559	ng	99

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

Vial: 14
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:45:27 2022



Data File : I:\MS09\DATA\2022_11\16\11162211.D
 Acq On : 16 Nov 2022 15:12
 Sample : 1.0ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:43:56 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

11/16/22

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	150993	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.27	114	731952	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	184448	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.97	65	319874	14.880	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	119.04%
57) Toluene-d8 (SS2)	12.39	98	824972	10.540	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	84.32%
73) Bromofluorobenzene (SS3)	16.79	174	281371	8.326	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	66.64%#

Target Compounds

						Qvalue
2) Propene	3.28	42	25929	1.698	ng	100
3) Dichlorodifluoromethan...	3.35	85	37616	1.323	ng	99
4) Chloromethane	3.49	50	36387	2.435	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	17165	1.182	ng	99
6) Vinyl Chloride	3.68	62	30883	1.862	ng	98
7) 1,3-Butadiene	3.79	54	14916	1.295	ng	94
8) Bromomethane	4.01	94	12711	1.210	ng	100
9) Chloroethane	4.14	64	12384	1.724	ng	99
10) Ethanol	4.27	45	59435	6.001	ng	96
11) Acetonitrile	4.43	41	43986	1.743	ng	98
12) Acrolein	4.51	56	29349	4.222	ng	100
13) Acetone	4.61	58	83595	10.295	ng	90
14) Trichlorofluoromethane	4.74	101	30918	1.121	ng	100
15) 2-Propanol (Isopropanol)	4.82	45	130204	4.335	ng	89
16) Acrylonitrile	4.98	53	63586	4.615	ng	100
17) 1,1-Dichloroethene	5.24	96	16223	1.387	ng	97
18) 2-Methyl-2-Propanol (t...	5.29	59	110712	3.958	ng	94
19) Methylene Chloride	5.33	84	16956	1.397	ng	97
20) 3-Chloro-1-propene (Al...	5.43	41	41412	1.741	ng	88
21) Trichlorotrifluoroethane	5.56	151	16795	1.350	ng	99
22) Carbon Disulfide	5.58	76	108376	2.671	ng	98
23) trans-1,2-Dichloroethene	6.11	61	30745	1.802	ng	100
24) 1,1-Dichloroethane	6.29	63	35895	1.730	ng	98
25) Methyl tert-Butyl Ether	6.35	73	53519	1.451	ng	100
26) Vinyl Acetate	6.42	86	7974	4.126	ng	# 88
27) 2-Butanone (MEK)	6.64	72	23005	3.329	ng	95
28) cis-1,2-Dichloroethene	7.05	61	29655	1.750	ng	99
29) Diisopropyl Ether	7.26	87	28738	3.004	ng	# 70
30) Ethyl Acetate	7.26	61	35665	7.719	ng	99
31) n-Hexane	7.27	57	37663	2.013	ng	99
32) Chloroform	7.33	83	33803	1.433	ng	100
34) Tetrahydrofuran (THF)	7.73	72	21546	3.216	ng	95
35) Ethyl tert-Butyl Ether	7.79	87	40156	2.836	ng	96
36) 1,2-Dichloroethane	8.08	62	30133	1.554	ng	99
38) 1,1,1-Trichloroethane	8.37	97	30066	1.154	ng	99
39) Isopropyl Acetate	9.27	61	23250	No Calib	#	
40) 1-Butanol	8.86	56	578	No Calib	#	
41) Benzene	8.87	78	67948	1.335	ng	98
42) Carbon Tetrachloride	9.03	117	24416	1.069	ng	100
43) Cyclohexane	9.18	84	51394	2.706	ng	98
44) tert-Amyl Methyl Ether	9.56	73	94764	2.470	ng	96
45) 1,2-Dichloropropane	9.82	63	19767	1.621	ng	98
46) Bromodichloromethane	10.04	83	26225	1.273	ng	100
47) Trichloroethene	10.11	130	17826	1.094	ng	100
48) 1,4-Dioxane	10.10	88	13786	1.372	ng	98
49) 2,2,4-Trimethylpentane...	10.20	57	94783	1.833	ng	98
50) Methyl Methacrylate	10.37	100	12531	2.562	ng	93

Data File : I:\MS09\DATA\2022_11\16\11162211.D
 Acq On : 16 Nov 2022 15:12
 Sample : 1.0ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

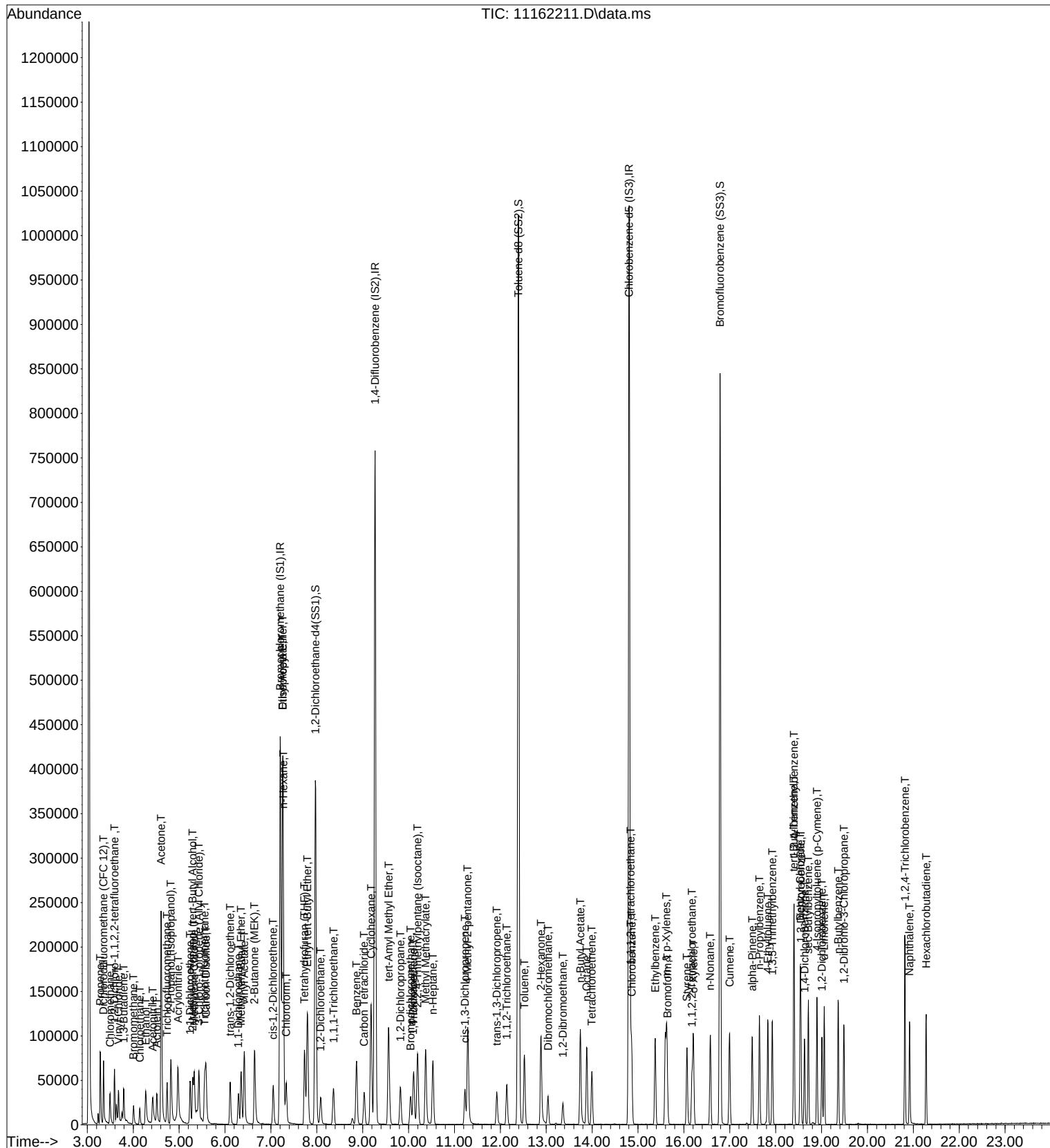
Quant Time: Nov 16 16:43:56 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.53	71	17524	1.530	ng	99
52) cis-1,3-Dichloropropene	11.23	75	27339	1.381	ng	98
53) 4-Methyl-2-pentanone	11.29	58	40998	3.791	ng	90
54) trans-1,3-Dichloropropene	11.92	75	24494	1.272	ng	100
55) 1,1,2-Trichloroethane	12.14	97	17893	1.326	ng	100
58) Toluene	12.52	91	69867	1.016	ng	98
59) 2-Hexanone	12.89	43	102249	2.680	ng	95
60) Dibromochloromethane	13.04	129	20422	0.919	ng	100
61) 1,2-Dibromoethane	13.36	107	21480	1.068	ng	98
62) n-Butyl Acetate	13.74	43	107323	2.573	ng	98
63) n-Octane	13.88	57	19547	1.537	ng	97
64) Tetrachloroethene	13.99	166	20184	0.917	ng	99
65) Chlorobenzene	14.86	112	45437	0.977	ng	99
66) Ethylbenzene	15.37	91	80312	1.019	ng	99
67) m- & p-Xylenes	15.62	91	129268	1.995	ng	98
68) Bromoform	15.64	173	17078	0.887	ng	98
69) Styrene	16.07	104	47163	1.065	ng	99
70) o-Xylene	16.21	91	64519	1.008	ng	100
71) n-Nonane	16.57	43	48848	1.451	ng	95
72) 1,1,2,2-Tetrachloroethane	16.17	83	32236	1.193	ng	100
74) Cumene	17.00	105	78482	0.992	ng	100
75) alpha-Pinene	17.49	93	41412	1.081	ng	99
76) n-Propylbenzene	17.64	91	98745	1.045	ng	99
77) 3-Ethyltoluene	17.00	105	78482	No Calib		
78) 4-Ethyltoluene	17.83	105	77353	1.044	ng	98
79) 1,3,5-Trimethylbenzene	17.93	105	65017	0.992	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	78482	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	65851	0.984	ng	99
83) n-Decane	16.98	58	780	No Calib	#	
84) Benzyl Chloride	18.54	91	86740	1.963	ng	96
85) 1,3-Dichlorobenzene	18.55	146	37540	0.926	ng	100
86) 1,4-Dichlorobenzene	18.63	146	37015	0.916	ng	99
87) sec-Butylbenzene	18.71	105	87148	0.997	ng	98
88) 4-Isopropyltoluene (p-...	18.90	119	76573	0.980	ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	78482	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	37172	0.931	ng	99
91) d-Limonene	19.06	68	26519	1.254	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	26417	1.786	ng	# 84
93) n-Undecane	17.93	58	1761	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	57800	2.040	ng	98
95) Naphthalene	20.92	128	79093	1.103	ng	98
96) n-Dodecane	18.89	58	2548	No Calib	#	
97) Hexachlorobutadiene	21.28	225	20645	0.939	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	66597	1.003	ng	99
100) n-Butylbenzene	19.36	91	71422	1.028	ng	99
101) 1,1,1,2-Tetrachloroethane	14.84	131	17492	0.932	ng	98

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

Vial: 14
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:43:56 2022



Data File : I:\MS09\DATA\2022_11\16\11162212.D
 Acq On : 16 Nov 2022 15:44
 Sample : 5.0ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:41:55 2022

 11/16/22

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.22	130	143526	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.28	114	738402	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	188144	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	7.98	65	325708	15.940	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	127.52%
57) Toluene-d8 (SS2)	12.40	98	833658	10.442	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.52%
73) Bromofluorobenzene (SS3)	16.79	174	289226	8.390	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	67.12%#

Target Compounds

						Qvalue
2) Propene	3.26	42	135400	9.327	ng	99
3) Dichlorodifluoromethan...	3.34	85	159369	5.895	ng	99
4) Chloromethane	3.47	50	145769	10.263	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	72108	5.223	ng	99
6) Vinyl Chloride	3.66	62	133802	8.488	ng	100
7) 1,3-Butadiene	3.78	54	61405	5.609	ng	96
8) Bromomethane	3.99	94	50953	5.103	ng	100
9) Chloroethane	4.13	64	53043	7.770	ng	100
10) Ethanol	4.28	45	221169	23.493	ng	100
11) Acetonitrile	4.43	41	184711	7.698	ng	99
12) Acrolein	4.51	56	111390	16.857	ng	100
13) Acetone	4.61	58	327698	42.457	ng	90
14) Trichlorofluoromethane	4.73	101	131416	5.011	ng	99
15) 2-Propanol (Isopropanol)	4.83	45	460090	16.116	ng	96
16) Acrylonitrile	4.98	53	265593	20.281	ng	99
17) 1,1-Dichloroethene	5.23	96	65456	5.887	ng	97
18) 2-Methyl-2-Propanol (t...	5.31	59	466378	17.539	ng	97
19) Methylene Chloride	5.34	84	71834	6.227	ng	97
20) 3-Chloro-1-propene (Al...	5.43	41	178800	7.909	ng	88
21) Trichlorotrifluoroethane	5.56	151	70642	5.972	ng	99
22) Carbon Disulfide	5.57	76	460156	11.930	ng	100
23) trans-1,2-Dichloroethene	6.12	61	135223	8.336	ng	99
24) 1,1-Dichloroethane	6.30	63	150039	7.608	ng	100
25) Methyl tert-Butyl Ether	6.34	73	234917	6.699	ng	99
26) Vinyl Acetate	6.42	86	37176	20.238	ng	# 91
27) 2-Butanone (MEK)	6.65	72	100932	15.367	ng	# 92
28) cis-1,2-Dichloroethene	7.06	61	127864	7.938	ng	98
29) Diisopropyl Ether	7.26	87	125264	13.775	ng	# 69
30) Ethyl Acetate	7.26	61	162797	37.065	ng	98
31) n-Hexane	7.27	57	164976	9.276	ng	98
32) Chloroform	7.34	83	144334	6.439	ng	99
34) Tetrahydrofuran (THF)	7.73	72	92690	14.556	ng	96
35) Ethyl tert-Butyl Ether	7.79	87	177853	13.213	ng	96
36) 1,2-Dichloroethane	8.09	62	128398	6.965	ng	100
38) 1,1,1-Trichloroethane	8.37	97	131363	5.000	ng	99
39) Isopropyl Acetate	9.18	61	184	No Calib	#	
40) 1-Butanol	8.81	56	5446	No Calib		
41) Benzene	8.87	78	289685	5.643	ng	100
42) Carbon Tetrachloride	9.04	117	107650	4.674	ng	100
43) Cyclohexane	9.18	84	223095	11.643	ng	99
44) tert-Amyl Methyl Ether	9.56	73	427312	11.042	ng	98
45) 1,2-Dichloropropane	9.83	63	85740	6.971	ng	99
46) Bromodichloromethane	10.05	83	115669	5.565	ng	100
47) Trichloroethene	10.12	130	78131	4.752	ng	99
48) 1,4-Dioxane	10.09	88	61336	6.049	ng	98
49) 2,2,4-Trimethylpentane...	10.20	57	405445	7.771	ng	99
50) Methyl Methacrylate	10.37	100	57594	11.671	ng	98

Data File : I:\MS09\DATA\2022_11\16\11162212.D
 Acq On : 16 Nov 2022 15:44
 Sample : 5.0ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152209 (12/15)

Vial: 14
 Operator: SC
 Inst : MS09

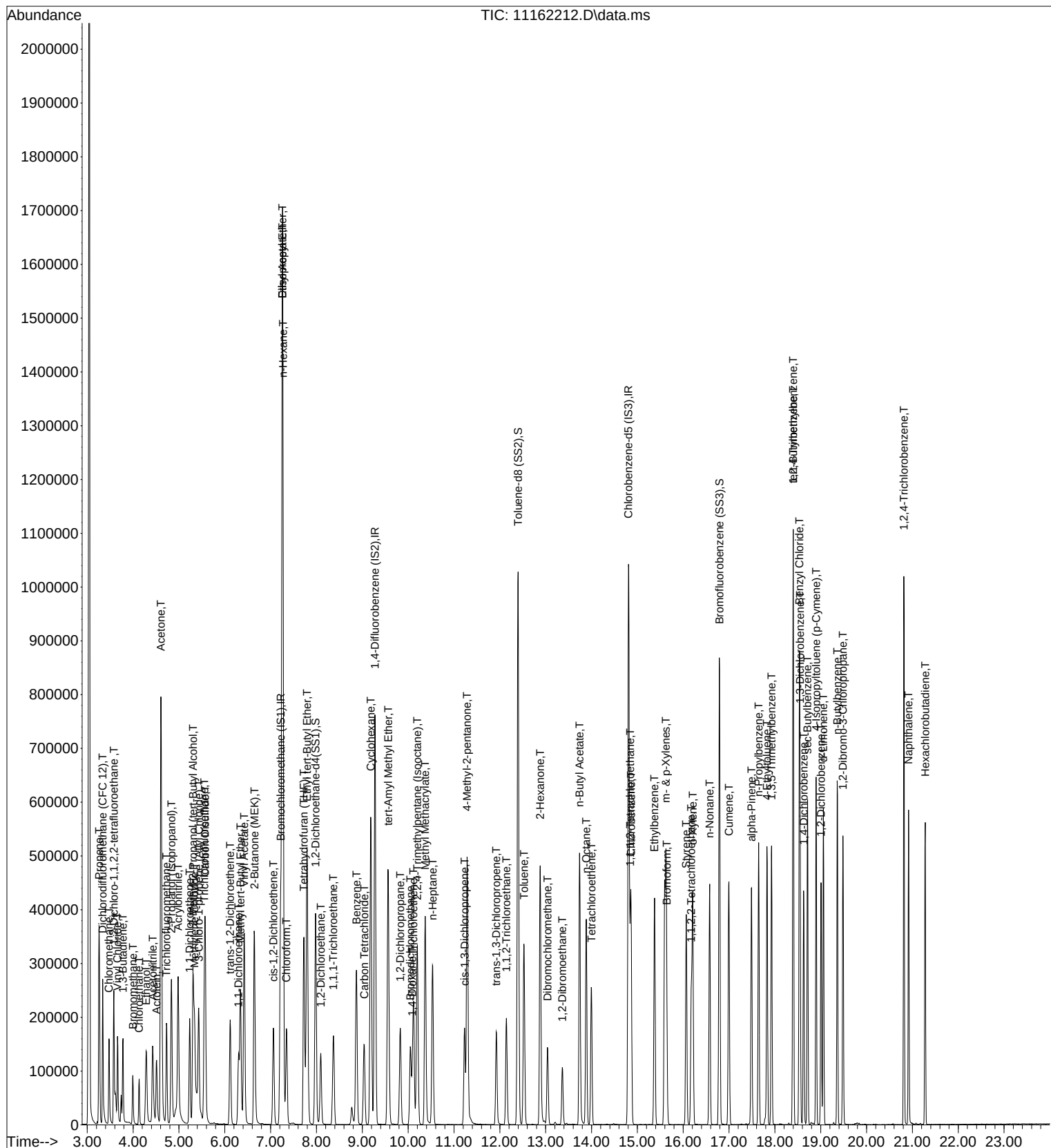
Quant Time: Nov 16 16:41:55 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	74931	6.486	ng	100
52) cis-1,3-Dichloropropene	11.23	75	123281	6.172	ng	100
53) 4-Methyl-2-pentanone	11.29	58	183274	16.801	ng	94
54) trans-1,3-Dichloropropene	11.92	75	112625	5.796	ng	100
55) 1,1,2-Trichloroethane	12.14	97	76856	5.644	ng	100
58) Toluene	12.53	91	297631	4.244	ng	99
59) 2-Hexanone	12.88	43	455150	11.694	ng	96
60) Dibromochloromethane	13.04	129	91389	4.032	ng	99
61) 1,2-Dibromoethane	13.36	107	92197	4.492	ng	100
62) n-Butyl Acetate	13.74	43	485048	11.399	ng	98
63) n-Octane	13.89	57	83310	6.421	ng	99
64) Tetrachloroethene	14.00	166	87596	3.904	ng	100
65) Chlorobenzene	14.86	112	200686	4.231	ng	100
66) Ethylbenzene	15.37	91	347379	4.322	ng	99
67) m- & p-Xylenes	15.62	91	561293	8.491	ng	99
68) Bromoform	15.64	173	80272	4.088	ng	100
69) Styrene	16.07	104	207622	4.595	ng	100
70) o-Xylene	16.21	91	280291	4.291	ng	99
71) n-Nonane	16.58	43	207285	6.037	ng	97
72) 1,1,2,2-Tetrachloroethane	16.17	83	139662	5.068	ng	100
74) Cumene	17.00	105	343712	4.259	ng	99
75) alpha-Pinene	17.49	93	183712	4.702	ng	98
76) n-Propylbenzene	17.65	91	427415	4.436	ng	99
77) 3-Ethyltoluene	17.00	105	343712	No Calib		
78) 4-Ethyltoluene	17.83	105	330433	4.371	ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	286568	4.288	ng	99
80) alpha-Methylstyrene	16.99	118	532	No Calib	#	
81) 2-Ethyltoluene	17.00	105	343712	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	294002	4.305	ng	100
83) n-Decane	17.00	58	3381	No Calib		
84) Benzyl Chloride	18.54	91	451094	10.009	ng	97
85) 1,3-Dichlorobenzene	18.55	146	167769	4.056	ng	99
86) 1,4-Dichlorobenzene	18.63	146	163698	3.971	ng	100
87) sec-Butylbenzene	18.71	105	382399	4.288	ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	338723	4.251	ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	343712	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	163429	4.012	ng	100
91) d-Limonene	19.06	68	117513	5.447	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.48	157	126141	8.363	ng	90
93) n-Undecane	17.92	58	7581	No Calib		
94) 1,2,4-Trichlorobenzene	20.81	180	266010	9.206	ng	99
95) Naphthalene	20.92	128	363332	4.966	ng	99
96) n-Dodecane	18.90	58	9470	No Calib	#	
97) Hexachlorobutadiene	21.28	225	92595	4.131	ng	100
98) Cyclohexanone	15.17	55	305	No Calib	#	
99) tert-Butylbenzene	18.40	119	291304	4.301	ng	98
100) n-Butylbenzene	19.36	91	318385	4.491	ng	99
101) 1,1,1,2-Tetrachloroethane	14.85	131	78480	4.098	ng	99

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

Vial: 14
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:41:55 2022



Data File : I:\MS09\DATA\2022_11\16\11162213.D
 Acq On : 16 Nov 2022 16:16
 Sample : 25ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:40:21 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:40:09 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/16/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.25	130	141414	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.30	114	736255	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	185679	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	324883	16.137	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	129.12%
57) Toluene-d8 (SS2)	12.40	98	835936	10.609	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	84.88%
73) Bromofluorobenzene (SS3)	16.79	174	294695	8.662	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	69.28%#

Target Compounds

						Qvalue
2) Propene	3.26	42	672523	47.020	ng	100
3) Dichlorodifluoromethan...	3.34	85	851101	31.950	ng	100
4) Chloromethane	3.47	50	818711	58.505	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	384587	28.272	ng	100
6) Vinyl Chloride	3.67	62	717484	46.194	ng	100
7) 1,3-Butadiene	3.78	54	326628	30.279	ng	100
8) Bromomethane	4.00	94	310309	31.541	ng	100
9) Chloroethane	4.14	64	292429	43.477	ng	100
10) Ethanol	4.33	45	1219910	131.519	ng	100
11) Acetonitrile	4.46	41	1001989	42.385	ng	100
12) Acrolein	4.53	56	559813	85.983	ng	100
13) Acetone	4.64	58	1796599	236.248	ng	100
14) Trichlorofluoromethane	4.74	101	690645	26.730	ng	100
15) 2-Propanol (Isopropanol)	4.88	45	2759351	98.098	ng	100
16) Acrylonitrile	5.02	53	1376962	106.716	ng	100
17) 1,1-Dichloroethene	5.25	96	344527	31.449	ng	100
18) 2-Methyl-2-Propanol (t...	5.35	59	2674413	102.076	ng	100
19) Methylene Chloride	5.37	84	403187	35.474	ng	100
20) 3-Chloro-1-propene (Al...	5.45	41	774988	34.792	ng	100
21) Trichlorotrifluoroethane	5.56	151	397309	34.091	ng	100
22) Carbon Disulfide	5.58	76	2605599	68.560	ng	100
23) trans-1,2-Dichloroethene	6.15	61	744831	46.602	ng	100
24) 1,1-Dichloroethane	6.33	63	817973	42.097	ng	100
25) Methyl tert-Butyl Ether	6.36	73	1300147	37.628	ng	100
26) Vinyl Acetate	6.45	86	224287	123.923	ng	100
27) 2-Butanone (MEK)	6.67	72	572718	88.498	ng	100
28) cis-1,2-Dichloroethene	7.09	61	697950	43.978	ng	100
29) Diisopropyl Ether	7.27	87	718439	80.186	ng	100
30) Ethyl Acetate	7.28	61	947043	218.841	ng	100
31) n-Hexane	7.28	57	921280	52.576	ng	100
32) Chloroform	7.38	83	795847	36.034	ng	100
34) Tetrahydrofuran (THF)	7.74	72	524965	83.674	ng	100
35) Ethyl tert-Butyl Ether	7.81	87	1007943	76.000	ng	100
36) 1,2-Dichloroethane	8.12	62	699100	38.487	ng	100
38) 1,1,1-Trichloroethane	8.39	97	723782	27.629	ng	100
39) Isopropyl Acetate	9.20	61	2285	No Calib	#	
40) 1-Butanol	8.80	56	28607	No Calib		
41) Benzene	8.89	78	1597495	31.212	ng	100
42) Carbon Tetrachloride	9.06	117	603050	26.260	ng	100
43) Cyclohexane	9.20	84	1258049	65.849	ng	100
44) tert-Amyl Methyl Ether	9.58	73	2405211	62.335	ng	100
45) 1,2-Dichloropropane	9.84	63	472042	38.492	ng	100
46) Bromodichloromethane	10.06	83	650710	31.396	ng	100
47) Trichloroethene	10.13	130	439417	26.803	ng	100
48) 1,4-Dioxane	10.10	88	355829	35.196	ng	100
49) 2,2,4-Trimethylpentane...	10.21	57	2200994	42.311	ng	100
50) Methyl Methacrylate	10.39	100	338893	68.872	ng	100

Data File : I:\MS09\DATA\2022_11\16\11162213.D
 Acq On : 16 Nov 2022 16:16
 Sample : 25ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 16:40:21 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:40:09 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.55	71	413841	35.926	ng	100
52) cis-1,3-Dichloropropene	11.25	75	702453	35.271	ng	100
53) 4-Methyl-2-pentanone	11.30	58	1042229	95.820	ng	100
54) trans-1,3-Dichloropropene	11.93	75	655789	33.847	ng	100
55) 1,1,2-Trichloroethane	12.15	97	427777	31.506	ng	100
58) Toluene	12.53	91	1657383	23.947	ng	100
59) 2-Hexanone	12.89	43	2635329	68.609	ng	100
60) Dibromochloromethane	13.05	129	530807	23.730	ng	100
61) 1,2-Dibromoethane	13.37	107	520391	25.693	ng	100
62) n-Butyl Acetate	13.74	43	2884868	68.696	ng	100
63) n-Octane	13.89	57	461025	36.004	ng	100
64) Tetrachloroethene	14.01	166	501044	22.624	ng	100
65) Chlorobenzene	14.87	112	1161221	24.807	ng	100
66) Ethylbenzene	15.38	91	1956293	24.660	ng	100
67) m- & p-Xylenes	15.63	91	3235642	49.597	ng	100
68) Bromoform	15.65	173	503204	25.965	ng	100
69) Styrene	16.07	104	1213480	27.212	ng	100
70) o-Xylene	16.21	91	1579369	24.500	ng	100
71) n-Nonane	16.58	43	1117414	32.975	ng	100
72) 1,1,2,2-Tetrachloroethane	16.18	83	791340	29.097	ng	100
74) Cumene	17.00	105	1934239	24.284	ng	100
75) alpha-Pinene	17.49	93	1043183	27.054	ng	100
76) n-Propylbenzene	17.65	91	2425050	25.505	ng	100
77) 3-Ethyltoluene	17.00	105	1934239	No Calib		
78) 4-Ethyltoluene	17.83	105	1933371	25.915	ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	1638566	24.843	ng	100
80) alpha-Methylstyrene	17.00	118	3323	No Calib	#	
81) 2-Ethyltoluene	17.00	105	1934239	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	1724525	25.588	ng	100
83) n-Decane	17.00	58	18684	No Calib		
84) Benzyl Chloride	18.54	91	3015887	67.807	ng	100
85) 1,3-Dichlorobenzene	18.55	146	1026112	25.136	ng	100
86) 1,4-Dichlorobenzene	18.63	146	1003752	24.672	ng	100
87) sec-Butylbenzene	18.71	105	2191457	24.899	ng	100
88) 4-Isopropyltoluene (p-...	18.90	119	1940915	24.685	ng	100
89) 1,2,3-Trimethylbenzene	17.00	105	1934239	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	969873	24.126	ng	100
91) d-Limonene	19.06	68	687022	32.271	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	777665	52.240	ng	100
93) n-Undecane	17.93	58	42774	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	1726725	60.549	ng	100
95) Naphthalene	20.92	128	2291167	31.731	ng	100
96) n-Dodecane	18.90	58	55252	No Calib	#	
97) Hexachlorobutadiene	21.28	225	563252	25.462	ng	100
98) Cyclohexanone	15.18	55	372	No Calib	#	
99) tert-Butylbenzene	18.40	119	1668615	24.965	ng	100
100) n-Butylbenzene	19.37	91	1856615	26.539	ng	100
101) 1,1,1,2-Tetrachloroethane	14.85	131	448990	23.758	ng	100

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

Data File : I:\MS09\DATA\2022_11\16\11162213.D
Acq On : 16 Nov 2022 16:16
Sample : 25ng T0-15 ICAL STD
Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
Operator: SC
Inst : MS09

Quant Time: Nov 16 16:40:21 2022

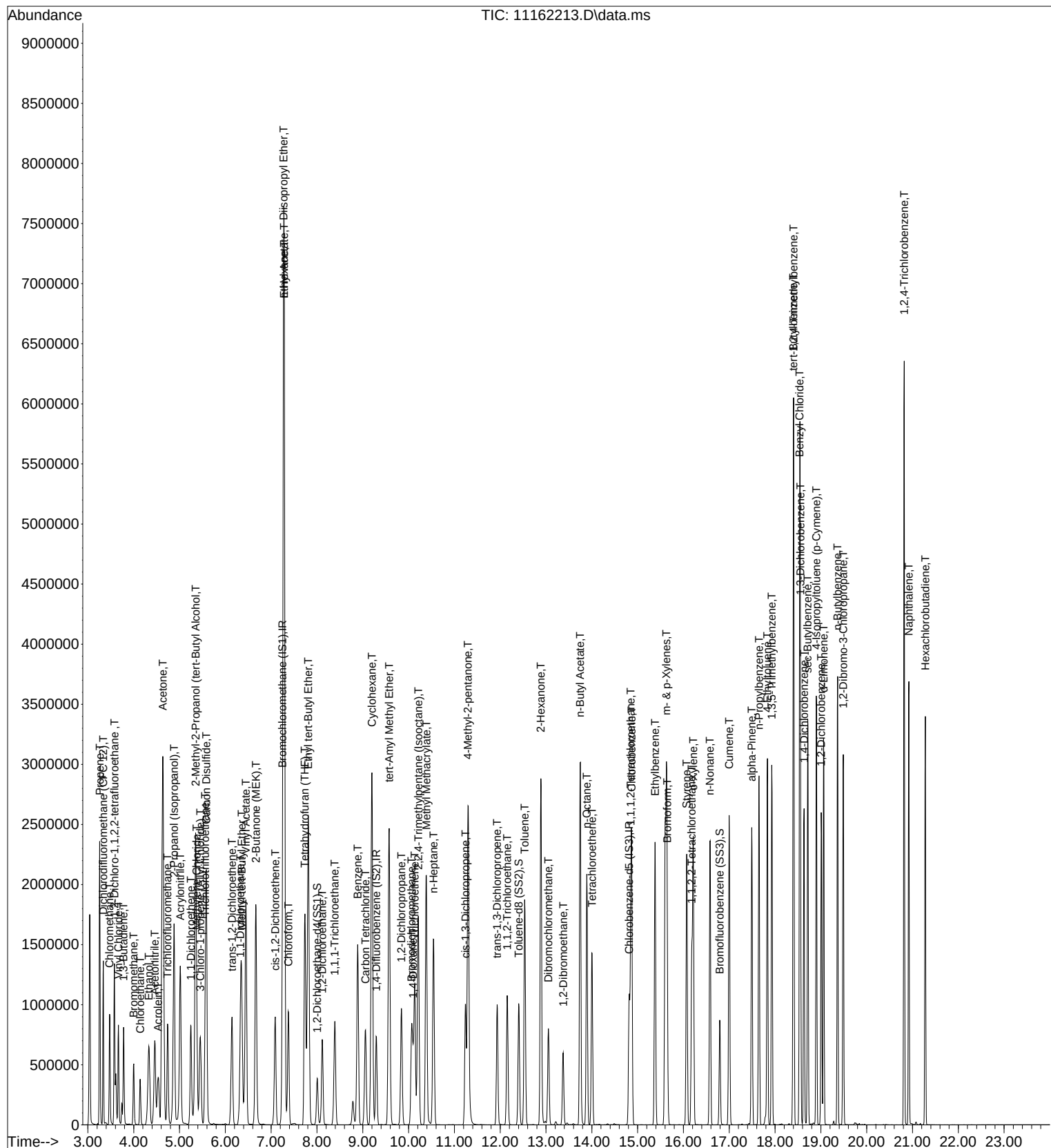
Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Nov 16 16:40:09 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS09\DATA\2022_11\16\11162214.D
 Acq On : 16 Nov 2022 16:48
 Sample : 50ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

Quant Time: Nov 16 17:09:57 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/16/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.26	130	133289	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	9.30	114	758786	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.82	54	187336	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.01	65	328089	17.290	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	138.32%#
57) Toluene-d8 (SS2)	12.41	98	851808	10.715	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.76%
73) Bromofluorobenzene (SS3)	16.79	174	304410	8.868	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	70.96%

Target Compounds

						Qvalue
2) Propene	3.26	42	1474585	109.382	ng	99
3) Dichlorodifluoromethan...	3.34	85	1616730	64.392	ng	100
4) Chloromethane	3.48	50	1484943	112.582	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	728811	56.842	ng	100
6) Vinyl Chloride	3.67	62	1337418	91.356	ng	100
7) 1,3-Butadiene	3.78	54	559180	54.998	ng	99
8) Bromomethane	4.00	94	618198	66.667	ng	100
9) Chloroethane	4.15	64	554168	87.413	ng	99
10) Ethanol	4.35	45	2263537	258.908	ng	100
11) Acetonitrile	4.48	41	1886434	84.661	ng	100
12) Acrolein	4.55	56	991751	161.611	ng	100
13) Acetone	4.65	58	3075011	429.004	ng	92
14) Trichlorofluoromethane	4.74	101	1266838	52.019	ng	100
15) 2-Propanol (Isopropanol)	4.90	45	4279017	161.396	ng	100
16) Acrylonitrile	5.03	53	2532530	208.239	ng	100
17) 1,1-Dichloroethene	5.26	96	632336	61.240	ng	98
18) 2-Methyl-2-Propanol (t...	5.37	59	4807607	194.681	ng	99
19) Methylene Chloride	5.39	84	764658	71.380	ng	96
20) 3-Chloro-1-propene (Al...	5.47	41	1376281	65.552	ng	98
21) Trichlorotrifluoroethane	5.57	151	782639	71.248	ng	99
22) Carbon Disulfide	5.59	76	4695597	131.085	ng	100
23) trans-1,2-Dichloroethene	6.15	61	1424780	94.578	ng	98
24) 1,1-Dichloroethane	6.34	63	1531307	83.613	ng	100
25) Methyl tert-Butyl Ether	6.36	73	2521736	77.431	ng	99
26) Vinyl Acetate	6.46	86	447855	262.532	ng	# 83
27) 2-Butanone (MEK)	6.68	72	1124800	184.403	ng	# 89
28) cis-1,2-Dichloroethene	7.10	61	1318062	88.115	ng	98
29) Diisopropyl Ether	7.28	87	1327047	157.141	ng	# 70
30) Ethyl Acetate	7.30	61	1657820	406.438	ng	96
31) n-Hexane	7.29	57	1549073	93.792	ng	99
32) Chloroform	7.39	83	1518944	72.967	ng	100
34) Tetrahydrofuran (THF)	7.75	72	1025961	173.495	ng	94
35) Ethyl tert-Butyl Ether	7.82	87	1978142	158.246	ng	96
36) 1,2-Dichloroethane	8.13	62	1319568	77.074	ng	100
38) 1,1,1-Trichloroethane	8.40	97	1397980	51.780	ng	99
39) Isopropyl Acetate	9.21	61	4082	No Calib	#	
40) 1-Butanol	8.80	56	56182	No Calib		
41) Benzene	8.89	78	3100771	58.784	ng	100
42) Carbon Tetrachloride	9.07	117	1180750	49.889	ng	100
43) Cyclohexane	9.21	84	2452427	124.554	ng	97
44) tert-Amyl Methyl Ether	9.58	73	4680500	117.701	ng	98
45) 1,2-Dichloropropane	9.85	63	911977	72.158	ng	100
46) Bromodichloromethane	10.08	83	1270249	59.468	ng	100
47) Trichloroethene	10.14	130	873038	51.670	ng	99
48) 1,4-Dioxane	10.10	88	703599	67.528	ng	98
49) 2,2,4-Trimethylpentane...	10.22	57	4180681	77.981	ng	98
50) Methyl Methacrylate	10.39	100	673163	132.742	ng	98

Data File : I:\MS09\DATA\2022_11\16\11162214.D
 Acq On : 16 Nov 2022 16:48
 Sample : 50ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

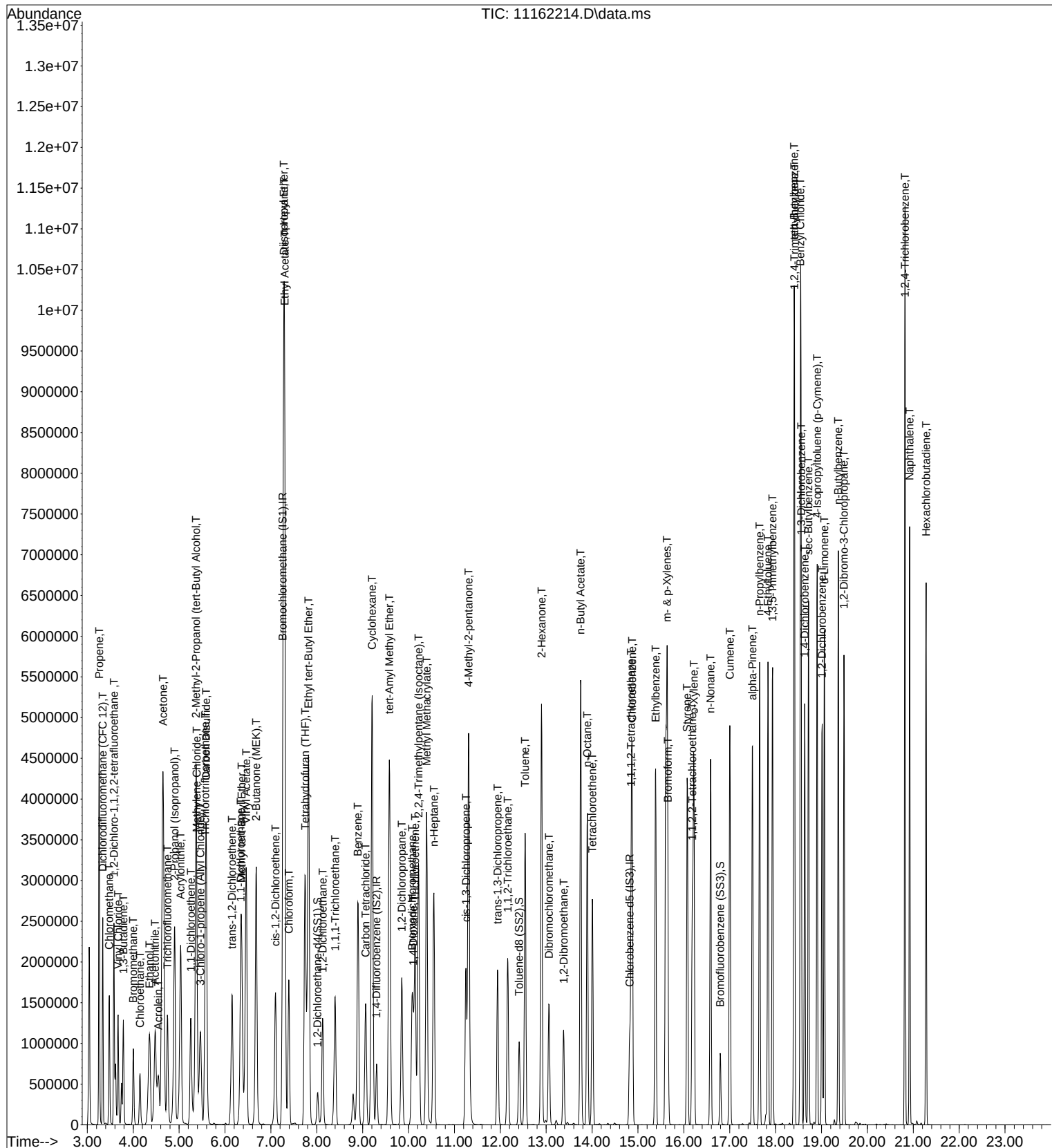
Quant Time: Nov 16 17:09:57 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.55	71	809517	68.188	ng	98
52) cis-1,3-Dichloropropene	11.25	75	1367623	66.631	ng	100
53) 4-Methyl-2-pentanone	11.31	58	1997907	178.228	ng	93
54) trans-1,3-Dichloropropene	11.94	75	1282625	64.233	ng	100
55) 1,1,2-Trichloroethane	12.16	97	838018	59.888	ng	100
58) Toluene	12.54	91	3228942	46.241	ng	100
59) 2-Hexanone	12.90	43	4747570	122.507	ng	96
60) Dibromochloromethane	13.06	129	1042319	46.186	ng	99
61) 1,2-Dibromoethane	13.38	107	1019475	49.889	ng	100
62) n-Butyl Acetate	13.75	43	5196121	122.638	ng	97
63) n-Octane	13.90	57	885149	68.515	ng	98
64) Tetrachloroethene	14.01	166	992903	44.437	ng	99
65) Chlorobenzene	14.87	112	2295307	48.600	ng	100
66) Ethylbenzene	15.39	91	3784329	47.281	ng	99
67) m- & p-Xylenes	15.63	91	6221463	94.521	ng	99
68) Bromoform	15.65	173	1007290	51.515	ng	100
69) Styrene	16.07	104	2388512	53.088	ng	100
70) o-Xylene	16.22	91	3071663	47.229	ng	99
71) n-Nonane	16.58	43	2045773	59.837	ng	96
72) 1,1,2,2-Tetrachloroethane	16.19	83	1549003	56.453	ng	100
74) Cumene	17.00	105	3734044	46.465	ng	99
75) alpha-Pinene	17.50	93	2041965	52.488	ng	99
76) n-Propylbenzene	17.65	91	4639586	48.365	ng	99
77) 3-Ethyltoluene	17.00	105	3734044	No Calib		
78) 4-Ethyltoluene	17.83	105	3778120	50.194	ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	3158138	47.459	ng	99
80) alpha-Methylstyrene	17.00	118	5848	No Calib	#	
81) 2-Ethyltoluene	17.00	105	3734044	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	3187296	46.874	ng	99
83) n-Decane	17.00	58	36444	No Calib		
84) Benzyl Chloride	18.54	91	5574333	124.221	ng	98
85) 1,3-Dichlorobenzene	18.56	146	1959820	47.583	ng	100
86) 1,4-Dichlorobenzene	18.63	146	1970024	47.995	ng	99
87) sec-Butylbenzene	18.72	105	4167709	46.935	ng	99
88) 4-Isopropyltoluene (p-...	18.91	119	3702421	46.671	ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	3734044	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1902991	46.918	ng	99
91) d-Limonene	19.06	68	1322427	61.568	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	1531355	101.959	ng	94
93) n-Undecane	17.93	58	81558	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	3273852	113.784	ng	100
95) Naphthalene	20.92	128	4454308	61.143	ng	99
96) n-Dodecane	18.91	58	99724	No Calib	#	
97) Hexachlorobutadiene	21.28	225	1122056	50.274	ng	100
98) Cyclohexanone	15.18	55	1250	No Calib	#	
99) tert-Butylbenzene	18.41	119	3102833	46.012	ng	99
100) n-Butylbenzene	19.37	91	3525686	49.952	ng	99
101) 1,1,1,2-Tetrachloroethane	14.85	131	887284	46.534	ng	99

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

Vial: 15
Operator: SC
Inst : MS09

Quant Time: Nov 16 17:09:57 2022



Data File : I:\MS09\DATA\2022_11\16\11162215.D
 Acq On : 16 Nov 2022 17:20
 Sample : 100ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

Quant Time: Nov 17 07:39:05 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

 11/17/22

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.27	130	173715	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.32	114	764235	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.82	54	181973	12.500	ng	0.01

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.03	65	324858	13.135	ng	0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	105.12%
57) Toluene-d8 (SS2)	12.42	98	848070	10.983	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	87.84%
73) Bromofluorobenzene (SS3)	16.80	174	309064	9.269	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	74.16%

Target Compounds

						Qvalue
2) Propene	3.26	42	2683845	152.754	ng	98
3) Dichlorodifluoromethan...	3.34	85	3116249	95.232	ng	99
4) Chloromethane	3.48	50	2197829	127.852	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	1678464	100.443	ng	99
6) Vinyl Chloride	3.68	62	2465400	129.215	ng	99
7) 1,3-Butadiene	3.80	54	1693051	127.767	ng	91
8) Bromomethane	4.01	94	1261213	104.358	ng	100
9) Chloroethane	4.15	64	1162004	140.638	ng	99
10) Ethanol	4.38	45	5713999	501.482	ng	100
11) Acetonitrile	4.50	41	4187100	144.183	ng	98
12) Acrolein	4.56	56	2570968	321.457	ng	99
13) Acetone	4.67	58	6788448	726.678	ng	# 76
14) Trichlorofluoromethane	4.76	101	3035757	95.646	ng	100
15) 2-Propanol (Isopropanol)	4.93	45	7754293	224.413	ng	99
16) Acrylonitrile	5.06	53	5526270	348.655	ng	99
17) 1,1-Dichloroethene	5.27	96	1650850	122.674	ng	92
18) 2-Methyl-2-Propanol (t...	5.39	59	5945962	184.746	ng	99
19) Methylene Chloride	5.40	84	1714660	122.813	ng	87
20) 3-Chloro-1-propene (Al...	5.48	41	3044514	111.264	ng	94
21) Trichlorotrifluoroethane	5.58	151	1576878	110.146	ng	96
22) Carbon Disulfide	5.60	76	11197813	239.857	ng	99
23) trans-1,2-Dichloroethene	6.17	61	2778484	141.516	ng	96
24) 1,1-Dichloroethane	6.36	63	3176653	133.088	ng	99
25) Methyl tert-Butyl Ether	6.37	73	4940345	116.393	ng	99
26) Vinyl Acetate	6.48	86	909949	409.279	ng	# 55
27) 2-Butanone (MEK)	6.70	72	2225801	279.986	ng	# 73
28) cis-1,2-Dichloroethene	7.11	61	2605281	133.636	ng	95
29) Diisopropyl Ether	7.29	87	2275590	206.755	ng	# 42
30) Ethyl Acetate	7.32	61	2540878	477.966	ng	89
31) n-Hexane	7.29	57	2253888	104.709	ng	# 98
32) Chloroform	7.41	83	3001515	110.632	ng	99
34) Tetrahydrofuran (THF)	7.76	72	2020557	262.171	ng	# 84
35) Ethyl tert-Butyl Ether	7.83	87	3866166	237.309	ng	# 87
36) 1,2-Dichloroethane	8.14	62	2531792	113.465	ng	100
38) 1,1,1-Trichloroethane	8.41	97	2749514	101.113	ng	98
39) Isopropyl Acetate	9.21	61	7566	No Calib	#	
40) 1-Butanol	8.82	56	108839	No Calib	#	
41) Benzene	8.91	78	6104337	114.901	ng	99
42) Carbon Tetrachloride	9.08	117	2340624	98.191	ng	99
43) Cyclohexane	9.21	84	4732641	238.647	ng	90
44) tert-Amyl Methyl Ether	9.59	73	8897423	222.149	ng	94
45) 1,2-Dichloropropane	9.87	63	1791713	140.754	ng	100
46) Bromodichloromethane	10.09	83	2484348	115.478	ng	100
47) Trichloroethene	10.16	130	1763594	103.633	ng	99
48) 1,4-Dioxane	10.12	88	1406707	134.046	ng	95
49) 2,2,4-Trimethylpentane...	10.23	57	7874391	145.831	ng	96
50) Methyl Methacrylate	10.41	100	1343390	263.015	ng	93

Data File : I:\MS09\DATA\2022_11\16\11162215.D
 Acq On : 16 Nov 2022 17:20
 Sample : 100ng TO-15 ICAL STD
 Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
 Operator: SC
 Inst : MS09

Quant Time: Nov 17 07:39:05 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Nov 16 16:41:45 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.56	71	1603361	134.093	ng	96
52) cis-1,3-Dichloropropene	11.26	75	2701869	130.697	ng	99
53) 4-Methyl-2-pentanone	11.33	58	3694583	327.233	ng	84
54) trans-1,3-Dichloropropene	11.95	75	2521327	125.367	ng	99
55) 1,1,2-Trichloroethane	12.17	97	1660049	117.787	ng	100
58) Toluene	12.55	91	6266340	92.383	ng	99
59) 2-Hexanone	12.92	43	8007384	212.714	ng	90
60) Dibromochloromethane	13.07	129	2082475	94.995	ng	99
61) 1,2-Dibromoethane	13.39	107	2022869	101.908	ng	100
62) n-Butyl Acetate	13.76	43	8705988	211.534	ng	92
63) n-Octane	13.90	57	1669409	133.028	ng	94
64) Tetrachloroethene	14.02	166	1987756	91.584	ng	99
65) Chlorobenzene	14.88	112	4442515	96.836	ng	99
66) Ethylbenzene	15.39	91	7175484	92.293	ng	98
67) m- & p-Xylenes	15.64	91	11249096	175.941	ng	98
68) Bromoform	15.66	173	1956283	102.997	ng	99
69) Styrene	16.08	104	4613751	105.570	ng	99
70) o-Xylene	16.23	91	5820341	92.129	ng	98
71) n-Nonane	16.59	43	3512664	105.771	ng	89
72) 1,1,2,2-Tetrachloroethane	16.19	83	3009355	112.907	ng	100
74) Cumene	17.01	105	6992149	89.573	ng	97
75) alpha-Pinene	17.50	93	3886931	102.857	ng	99
76) n-Propylbenzene	17.66	91	8423694	90.400	ng	97
77) 3-Ethyltoluene	17.01	105	6992149	No Calib		
78) 4-Ethyltoluene	17.84	105	6842642	93.587	ng	97
79) 1,3,5-Trimethylbenzene	17.94	105	5837472	90.307	ng	97
80) alpha-Methylstyrene	17.01	118	10985	No Calib	#	
81) 2-Ethyltoluene	17.01	105	6992149	No Calib		
82) 1,2,4-Trimethylbenzene	18.42	105	5364101	81.213	ng	99
83) n-Decane	17.01	58	67719	No Calib		
84) Benzyl Chloride	18.55	91	8877902	203.669	ng	94
85) 1,3-Dichlorobenzene	18.56	146	3399020	84.959	ng	99
86) 1,4-Dichlorobenzene	18.64	146	3763344	94.386	ng	99
87) sec-Butylbenzene	18.72	105	7465597	86.551	ng	97
88) 4-Isopropyltoluene (p-...	18.91	119	6643365	86.211	ng	97
89) 1,2,3-Trimethylbenzene	17.01	105	6992149	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	3653844	92.740	ng	99
91) d-Limonene	19.06	68	2389968	114.548	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.50	157	2900162	198.787	ng	86
93) n-Undecane	17.93	58	144437	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	5436640	194.522	ng	99
95) Naphthalene	20.93	128	7967669	112.592	ng	97
96) n-Dodecane	18.91	58	168613	No Calib	#	
97) Hexachlorobutadiene	21.28	225	2130774	98.284	ng	99
98) Cyclohexanone	15.19	55	1447	No Calib	#	
99) tert-Butylbenzene	18.41	119	5298958	80.894	ng	98
100) n-Butylbenzene	19.37	91	6227180	90.826	ng	97
101) 1,1,1,2-Tetrachloroethane	14.86	131	1724347	93.100	ng	100

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

Data File : I:\MS09\DATA\2022_11\16\11162215.D
Acq On : 16 Nov 2022 17:20
Sample : 100ng TO-15 ICAL STD
Misc : S35-11152201/S35-11152208 (12/15)

Vial: 15
Operator: SC
Inst : MS09

Quant Time: Nov 17 07:39:05 2022

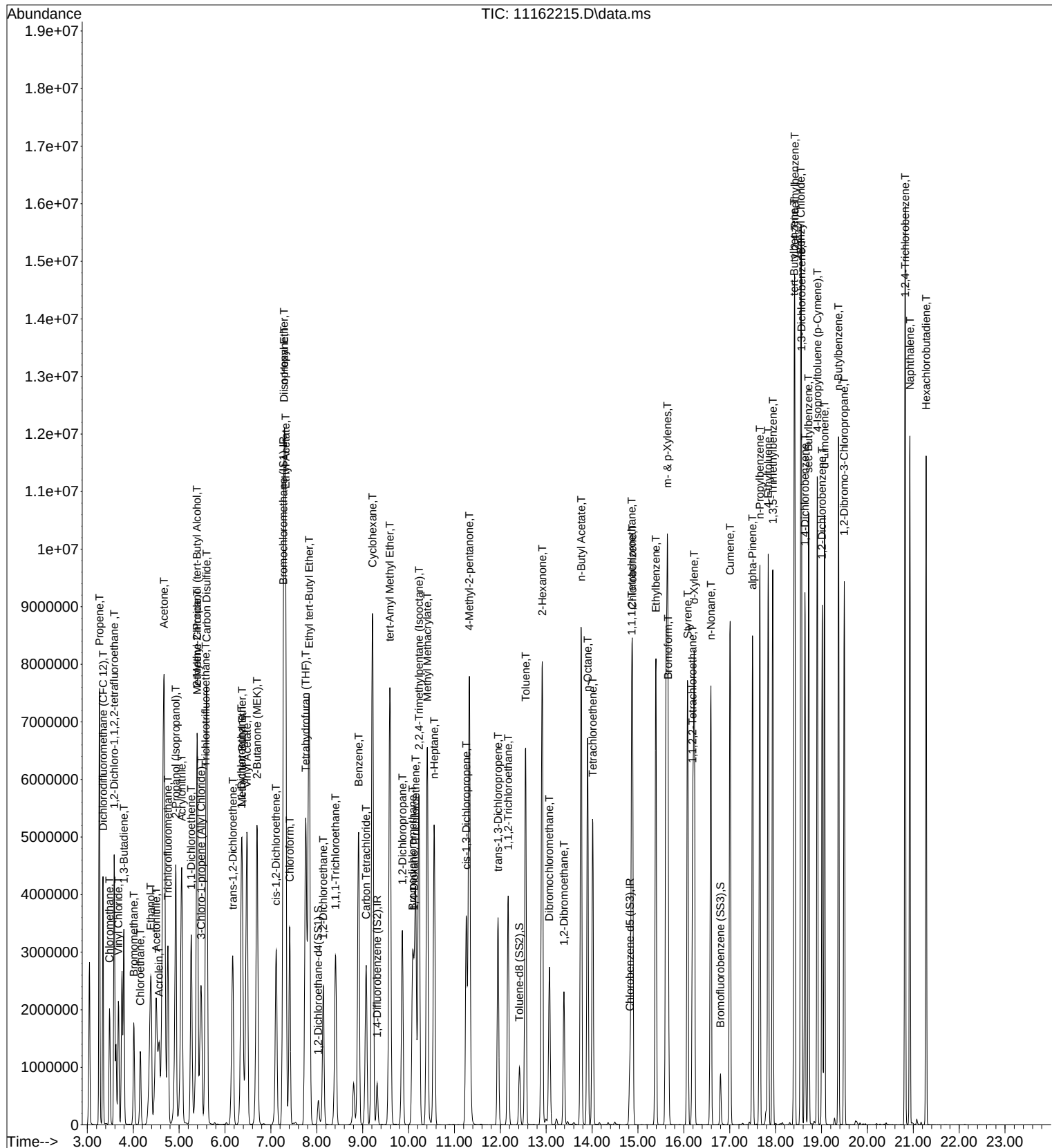
Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Nov 16 16:41:45 2022

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS09\DATA\2022_11\16\11162217.D
 Acq On : 16 Nov 2022 18:24
 Sample : 25ng T0-15 ICV STD
 Misc : S35-11152201/S35-11152205 (12/15)

Vial: 16
 Operator: SC
 Inst : MS09

Quant Time: Nov 17 07:54:22 2022

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

 11/17/22

QLast Update : Thu Nov 17 07:45:06 2022

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	156411	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	762080	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	178143	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	321886	11.840	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	94.72%	
57) Toluene-d8 (SS2)	12.40	98	844724	13.008	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	104.08%	
73) Bromofluorobenzene (SS3)	16.79	174	305995	13.475	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	107.84%	

Target Compounds

						Qvalue
2) Propene	3.25	42	604715	21.617	ng	100
3) Dichlorodifluoromethan...	3.32	85	856777	23.813	ng	100
4) Chloromethane	3.47	50	783486	22.551	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	411020	24.056	ng	100
6) Vinyl Chloride	3.65	62	717092	23.597	ng	100
7) 1,3-Butadiene	3.77	54	341645	22.383	ng	99
8) Bromomethane	3.99	94	332608	24.832	ng	100
9) Chloroethane	4.13	64	296006	23.862	ng	99
10) Ethanol	4.32	45	1493362	85.280	ng	100
11) Acetonitrile	4.45	41	934430	18.545	ng	100
12) Acrolein	4.53	56	575772	39.946	ng	99
13) Acetone	4.63	58	1761213	111.266	ng	94
14) Trichlorofluoromethane	4.73	101	726989	23.518	ng	100
15) 2-Propanol (Isopropanol)	4.87	45	2732992	46.320	ng	100
16) Acrylonitrile	5.01	53	1318832	43.299	ng	100
17) 1,1-Dichloroethene	5.24	96	370539	24.384	ng	95
18) 2-Methyl-2-Propanol (t...	5.35	59	2579709	50.248	ng	97
19) Methylene Chloride	5.36	84	417523	24.367	ng	91
20) 3-Chloro-1-propene (Al...	5.44	41	717583	19.830	ng	98
21) Trichlorotrifluoroethane	5.56	151	415612	25.722	ng	97
22) Carbon Disulfide	5.58	76	2651924	48.996	ng	100
23) trans-1,2-Dichloroethene	6.14	61	723789	24.479	ng	97
24) 1,1-Dichloroethane	6.32	63	832253	24.490	ng	100
25) Methyl tert-Butyl Ether	6.35	73	1277066	24.359	ng	98
26) Vinyl Acetate	6.44	86	374381	115.165	ng	# 71
27) 2-Butanone (MEK)	6.66	72	572340	49.537	ng	# 86
28) cis-1,2-Dichloroethene	7.08	61	685941	23.961	ng	97
29) Diisopropyl Ether	7.27	87	713230	50.179	ng	# 54
30) Ethyl Acetate	7.28	61	642416	74.056	ng	98
31) n-Hexane	7.28	57	881660	24.432	ng	100
32) Chloroform	7.37	83	808507	24.411	ng	100
34) Tetrahydrofuran (THF)	7.73	72	544582	49.005	ng	# 92
35) Ethyl tert-Butyl Ether	7.80	87	1011742	49.789	ng	94
36) 1,2-Dichloroethane	8.11	62	688931	24.347	ng	100
38) 1,1,1-Trichloroethane	8.38	97	739488	25.142	ng	99
39) Isopropyl Acetate	9.20	61	2068	No Calib	#	
40) 1-Butanol	8.80	56	13451	No Calib	#	
41) Benzene	8.88	78	1637981	25.154	ng	100
42) Carbon Tetrachloride	9.05	117	589846	24.338	ng	100
43) Cyclohexane	9.20	84	1264773	49.541	ng	95
44) tert-Amyl Methyl Ether	9.57	73	2386435	51.259	ng	97
45) 1,2-Dichloropropane	9.84	63	468119	24.286	ng	99
46) Bromodichloromethane	10.06	83	660219	26.096	ng	100
47) Trichloroethene	10.13	130	463778	25.969	ng	100
48) 1,4-Dioxane	10.09	88	358202	26.678	ng	96
49) 2,2,4-Trimethylpentane...	10.21	57	2077542	23.532	ng	98
50) Methyl Methacrylate	10.38	100	345652	55.574	ng	95

Data File : I:\MS09\DATA\2022_11\16\11162217.D
 Acq On : 16 Nov 2022 18:24
 Sample : 25ng T0-15 ICV STD
 Misc : S35-11152201/S35-11152205 (12/15)

Vial: 16
 Operator: SC
 Inst : MS09

Quant Time: Nov 17 07:54:22 2022
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Thu Nov 17 07:45:06 2022
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	406856	24.246	ng	96
52) cis-1,3-Dichloropropene	11.24	75	702922	26.795	ng	100
53) 4-Methyl-2-pentanone	11.30	58	988404	50.965	ng	96
54) trans-1,3-Dichloropropene	11.93	75	651442	26.472	ng	100
55) 1,1,2-Trichloroethane	12.15	97	435331	25.394	ng	100
58) Toluene	12.53	91	1686998	26.097	ng	100
59) 2-Hexanone	12.89	43	2413074	52.275	ng	98
60) Dibromochloromethane	13.05	129	530063	28.067	ng	100
61) 1,2-Dibromoethane	13.37	107	523073	26.658	ng	100
62) n-Butyl Acetate	13.74	43	2701607	53.236	ng	98
63) n-Octane	13.89	57	438287	25.089	ng	97
64) Tetrachloroethene	14.00	166	525728	27.441	ng	99
65) Chlorobenzene	14.87	112	1177570	27.004	ng	100
66) Ethylbenzene	15.38	91	1980873	26.538	ng	100
67) m- & p-Xylenes	15.63	91	3273838	54.199	ng	99
68) Bromoform	15.65	173	515721	30.818	ng	100
69) Styrene	16.07	104	1214250	27.713	ng	99
70) o-Xylene	16.21	91	1597973	26.804	ng	99
71) n-Nonane	16.58	43	1035575	24.279	ng	97
72) 1,1,2,2-Tetrachloroethane	16.18	83	793079	26.945	ng	100
74) Cumene	17.00	105	1934972	26.913	ng	99
75) alpha-Pinene	17.49	93	1028560	27.498	ng	99
76) n-Propylbenzene	17.65	91	2391841	26.767	ng	99
77) 3-Ethyltoluene	17.00	105	1934972	No Calib		
78) 4-Ethyltoluene	17.83	105	1900725	27.505	ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	1643988	27.144	ng	99
80) alpha-Methylstyrene	17.00	118	3334	No Calib	#	
81) 2-Ethyltoluene	17.00	105	1934972	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	1723588	28.155	ng	100
83) n-Decane	17.00	58	17578	No Calib		
84) Benzyl Chloride	18.54	91	2996339	66.708	ng	99
85) 1,3-Dichlorobenzene	18.55	146	1055472	29.512	ng	100
86) 1,4-Dichlorobenzene	18.63	146	1030503	28.482	ng	100
87) sec-Butylbenzene	18.71	105	2156797	26.736	ng	100
88) 4-Isopropyltoluene (p-...	18.90	119	1908170	26.421	ng	100
89) 1,2,3-Trimethylbenzene	17.00	105	1934972	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	979177	28.079	ng	100
91) d-Limonene	19.06	68	662516	27.420	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	785635	59.737	ng	95
93) n-Undecane	17.93	58	40727	No Calib		
94) 1,2,4-Trichlorobenzene	20.82	180	1668439	58.653	ng	100
95) Naphthalene	20.92	128	2147967	29.476	ng	100
96) n-Dodecane	18.90	58	52122	No Calib	#	
97) Hexachlorobutadiene	21.28	225	562605	27.914	ng	100
98) Cyclohexanone	15.16	55	187	No Calib	#	
99) tert-Butylbenzene	18.40	119	1677965	27.653	ng	100
100) n-Butylbenzene	19.37	91	1807602	27.404	ng	100
101) 1,1,1,2-Tetrachloroethane	14.85	131	456803	27.669	ng	99

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

[illegible]

ALS Environmental

LCS Acceptance Criteria

25ng TO-15 ICV STD

Bromochloromethane (IS1)
1,4-Difluorobenzene (IS2)
Chlorobenzene-d5 (IS3)

RT
7.24
9.29
14.81

Datafile: 11162217.D
Instrument: MS-09
Date: #####

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	21.617	26.5	82	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	23.813	26.5	90	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	22.551	25.8	87	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	24.056	25.8	93	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	23.597	25.5	93	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	22.383	26.5	84	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	24.832	25.8	96	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	23.862	26.0	92	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	85.280	88.3	97	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	18.545	22.8	81	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	39.946	48.5	82	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	111.266	133	84	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	23.518	26.3	89	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	46.320	51.5	90	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	43.299	51.5	84	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	24.384	27.0	90	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	50.248	53.3	94	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	24.367	26.5	92	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	19.830	26.8	74	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	25.722	27.0	95	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	48.996	53.3	92	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	24.479	27.0	91	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	24.490	27.0	91	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	24.359	26.8	91	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	115.165	70.5	163	56-137	FAIL	70-130	FAIL	56-139	FAIL
78-93-3	2-Butanone	49.537	52.3	95	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	23.961	26.8	89	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	50.179	52.5	96	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	74.056	107	69	59-161	ok	70-130	FAIL	65-128	ok
110-54-3	n-Hexane	24.432	26.5	92	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	24.411	26.5	92	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	49.005	51.5	95	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	49.789	53.5	93	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	24.347	27.0	90	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	25.142	26.3	96	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	25.154	27.0	93	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	24.338	25.8	94	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	49.541	52.8	94	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	51.259	53.5	96	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	24.286	26.5	92	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	26.096	27.0	97	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	25.969	26.5	98	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	26.678	26.5	101	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	23.532	27.0	87	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	55.574	53.3	104	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	24.246	26.5	91	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	26.795	27.0	99	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	50.965	54.0	94	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

25ng TO-15 ICV STD

	RT
Bromochloromethane (IS1)	7.24
1,4-Difluorobenzene (IS2)	9.29
Chlorobenzene-d5 (IS3)	14.81

Datafile: 11162217.D
Instrument: MS-09
Date: #####

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	26.472	25.8	103	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	25.394	26.5	96	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	26.097	26.5	98	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	52.275	53.3	98	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	28.067	27.0	104	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	26.658	26.0	103	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	53.236	51.3	104	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	25.089	26.8	94	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	27.441	26.5	104	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	27.004	26.5	102	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	26.538	26.3	101	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	54.199	52.5	103	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	30.818	26.8	115	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	27.713	26.5	105	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	26.804	26.5	101	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	24.279	26.5	92	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	26.945	26.5	102	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	26.913	26.5	102	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	27.498	27.3	101	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	26.767	26.8	100	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	27.505	27.0	102	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	27.144	26.3	103	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	28.155	26.0	108	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	66.708	52.5	127	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	29.512	26.3	112	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	28.482	26.5	107	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	26.736	26.3	102	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	26.421	26.3	100	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	28.079	26.5	106	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	27.420	26.3	104	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	59.737	52.0	115	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	58.653	51.5	114	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	29.476	27.0	109	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	27.914	26.3	106	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	27.653	26.3	105	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	27.404	26.3	104	70-131	ok	70-130	ok	66-130	ok

Data File : I:\MS09\DATA\2023_02\13\02132304.D

Vial: 2

Acq On : 13 Feb 2023 9:17

Operator: SC

Sample : CCV R9021323_25ng

Inst : MS09

Misc : S35-12302204/S35-02022303 (3/4)

Quant Time: Feb 13 09:49:41 2023

2/13/23

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	172	0.03
2 T	Propene	2.236	2.018	9.7	153	-0.01
3 T	Dichlorodifluoromethane (CF	2.875	2.355	18.1	143	0.00
4 T	Chloromethane	2.777	2.089	24.8	128	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.365	1.203	11.9	158	0.00
6 T	Vinyl Chloride	2.429	1.778	26.8	122	0.00
7 T	1,3-Butadiene	1.220	1.203	1.4	190	0.00
8 T	Bromomethane	1.070	0.974	9.0	156	0.00
9 T	Chloroethane	0.991	0.805	18.8	138	0.00
10 T	Ethanol	1.399	1.307	6.6	180	0.05
11 T	Acetonitrile	4.027	3.426	14.9	151	0.04
12 T	Acrolein	1.152	0.858	25.5	144	0.03
13 T	Acetone	1.265	0.884	30.1#	126	0.03
14 T	Trichlorofluoromethane	2.470	2.292	7.2	168	0.01
15 T	2-Propanol (Isopropanol)	4.715	3.591	23.8	130	0.05
16 T	Acrylonitrile	2.434	1.815	25.4	131	0.03
17 T	1,1-Dichloroethene	1.214	1.064	12.4	162	0.01
18 T	2-Methyl-2-Propanol (tert-B	4.103	3.045	25.8	117	0.05
19 T	Methylene Chloride	1.369	1.117	18.4	143	0.03
20 T	3-Chloro-1-propene (Allyl C	2.892	2.424	16.2	161	0.03
21 T	Trichlorotrifluoroethane	1.291	1.119	13.3	148	0.01
22 T	Carbon Disulfide	4.326	4.150	4.1	165	0.01
23 T	trans-1,2-Dichloroethene	2.363	1.862	21.2	131	0.03
24 T	1,1-Dichloroethane	2.716	2.173	20.0	138	0.03
25 T	Methyl tert-Butyl Ether	4.190	3.174	24.2	127	0.01
26 T	Vinyl Acetate	0.260	0.214	17.7	130	0.03
27 T	2-Butanone (MEK)	0.923	0.745	19.3	132	0.03
28 T	cis-1,2-Dichloroethene	2.288	1.789	21.8	132	0.03
29 T	Diisopropyl Ether	1.136	0.899	20.9	129	0.02
30 T	Ethyl Acetate	0.693	0.558	19.5	121	0.02
31 T	n-Hexane	2.884	2.186	24.2	121	0.01
32 T	Chloroform	2.647	2.103	20.6	136	0.03
33 S	1,2-Dichloroethane-d4(SS1)	2.173	1.915	11.9	143	0.03
34 T	Tetrahydrofuran (THF)	0.888	0.697	21.5	132	0.01
35 T	Ethyl tert-Butyl Ether	1.624	1.277	21.4	131	0.01
36 T	1,2-Dichloroethane	2.261	1.778	21.4	134	0.02
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	146	0.02
38 T	1,1,1-Trichloroethane	0.482	0.442	8.3	138	0.02
39 T	Isopropyl Acetate	0.000	0.000	0.0	142	0.02
40 T	1-Butanol	0.000	0.000	0.0	122	0.02
41 T	Benzene	1.068	0.955	10.6	137	0.02
42 T	Carbon Tetrachloride	0.398	0.410	-3.0	152	0.02
43 T	Cyclohexane	0.419	0.367	12.4	132	0.01
44 T	tert-Amyl Methyl Ether	0.764	0.673	11.9	128	0.01
45 T	1,2-Dichloropropane	0.316	0.280	11.4	134	0.02
46 T	Bromodichloromethane	0.415	0.384	7.5	136	0.02
47 T	Trichloroethene	0.293	0.275	6.1	141	0.02
48 T	1,4-Dioxane	0.220	0.205	6.8	131	0.00
49 T	2,2,4-Trimethylpentane (Iso	1.448	1.202	17.0	127	0.01
50 T	Methyl Methacrylate	0.102	0.098	3.9	132	0.01
51 T	n-Heptane	0.275	0.247	10.2	136	0.01
52 T	cis-1,3-Dichloropropene	0.430	0.426	0.9	141	0.01
53 T	4-Methyl-2-pentanone	0.318	0.267	16.0	119	0.01
54 T	trans-1,3-Dichloropropene	0.404	0.422	-4.5	141	0.01
55 T	1,1,2-Trichloroethane	0.281	0.250	11.0	133	0.00

Data File : I:\MS09\DATA\2023_02\13\02132304.D

Vial: 2

Acq On : 13 Feb 2023 9:17

Operator: SC

Sample : CCV R9021323_25ng

Inst : MS09

Misc : S35-12302204/S35-02022303 (3/4)

Quant Time: Feb 13 09:49:41 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.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)
56 IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	129	0.00
57 S	Toluene-d8 (SS2)	4.557	5.078	-11.4	146	0.01
58 T	Toluene	4.536	4.458	1.7	136	0.01
59 T	2-Hexanone	3.239	3.646	-12.6	141	0.01
60 T	Dibromochloromethane	1.325	1.510	-14.0	148	0.01
61 T	1,2-Dibromoethane	1.377	1.366	0.8	131	0.00
62 T	n-Butyl Acetate	3.561	4.152	-16.6	142	0.00
63 T	n-Octane	1.226	1.125	8.2	126	0.00
64 T	Tetrachloroethene	1.344	1.517	-12.9	154	0.00
65 T	Chlorobenzene	3.060	3.082	-0.7	135	0.00
66 T	Ethylbenzene	5.238	5.250	-0.2	135	0.00
67 T	m- & p-Xylenes	4.238	4.282	-1.0	134	0.00
68 T	Bromoform	1.174	1.495	-27.3	153	0.00
69 T	Styrene	3.074	3.281	-6.7	138	0.00
70 T	o-Xylene	4.183	4.196	-0.3	135	0.00
71 T	n-Nonane	2.993	3.291	-10.0	150	0.00
72 T	1,1,2,2-Tetrachloroethane	2.065	2.043	1.1	132	0.00
73 S	Bromofluorobenzene (SS3)	1.593	1.921	-20.6	157	0.00
74 T	Cumene	5.045	5.333	-5.7	142	0.00
75 T	alpha-Pinene	2.625	2.664	-1.5	134	0.00
76 T	n-Propylbenzene	6.270	6.334	-1.0	134	0.00
77 T	3-Ethyltoluene	0.000	0.000	0.0	142	0.00
78 T	4-Ethyltoluene	4.849	5.138	-6.0	139	0.00
79 T	1,3,5-Trimethylbenzene	4.250	4.496	-5.8	140	0.00
80 T	alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.10#
81 T	2-Ethyltoluene	0.000	0.000	0.0	142	0.00
82 T	1,2,4-Trimethylbenzene	4.296	4.654	-8.3	136	0.00
83 T	n-Decane	0.000	0.000	0.0	0#	-17.10#
84 T	Benzyl Chloride	3.152	3.697	-17.3	125	0.00
85 T	1,3-Dichlorobenzene	2.510	2.801	-11.6	139	0.00
86 T	1,4-Dichlorobenzene	2.539	2.821	-11.1	143	0.00
87 T	sec-Butylbenzene	5.660	5.972	-5.5	139	0.00
88 T	4-Isopropyltoluene (p-Cymen	5.068	5.080	-0.2	133	0.00
89 T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	142	0.00
90 T	1,2-Dichlorobenzene	2.447	2.709	-10.7	144	0.00
91 T	d-Limonene	1.695	1.847	-9.0	138	0.00
92 T	1,2-Dibromo-3-Chloropropane	0.923	1.120	-21.3	145	0.00
93 T	n-Undecane	0.000	0.000	0.0	1#	0.08
94 T	1,2,4-Trichlorobenzene	1.996	2.536	-27.1	148	0.00
95 T	Naphthalene	5.113	5.908	-15.5	136	0.00
96 T	n-Dodecane	0.000	0.000	0.0	15#	0.05
97 T	Hexachlorobutadiene	1.414	1.674	-18.4	151	0.00
98 T	Cyclohexanone	0.000	0.000	0.0	65	0.00
99 T	tert-Butylbenzene	4.258	4.243	0.4	130	0.00
100 T	n-Butylbenzene	4.628	4.865	-5.1	135	0.00
101 T	1,1,1,2-Tetrachloroethane	1.158	1.217	-5.1	138	0.00

(#) = Out of Range

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

Data File : I:\MS09\DATA\2023_02\13\02132304.D
 Acq On : 13 Feb 2023 9:17
 Sample : CCV R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 13 09:49:41 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

 2/13/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	243210	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.29	114	1074612	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	240343	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	465637	11.015	ng	0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	88.16%
57) Toluene-d8 (SS2)	12.40	98	1220429	13.929	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.44%
73) Bromofluorobenzene (SS3)	16.79	174	461742	15.071	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	120.56%

Target Compounds

						Qvalue
2) Propene	3.25	42	1030435	23.689	ng	95
3) Dichlorodifluoromethan...	3.33	85	1214013	21.700	ng	97
4) Chloromethane	3.47	50	1046792	19.377	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	608348	22.898	ng	99
6) Vinyl Chloride	3.66	62	873650	18.488	ng	98
7) 1,3-Butadiene	3.78	54	620066	26.126	ng	# 78
8) Bromomethane	3.99	94	483068	23.193	ng	99
9) Chloroethane	4.14	64	403253	20.906	ng	98
10) Ethanol	4.33	45	2193832	80.570	ng	100
11) Acetonitrile	4.46	41	1516359	19.354	ng	99
12) Acrolein	4.53	56	805723	35.949	ng	95
13) Acetone	4.64	58	2266761	92.097	ng	# 69
14) Trichlorofluoromethane	4.74	101	1159541	24.124	ng	97
15) 2-Propanol (Isopropanol)	4.88	45	3580581	39.027	ng	96
16) Acrylonitrile	5.01	53	1809780	38.212	ng	100
17) 1,1-Dichloroethene	5.24	96	558941	23.655	ng	98
18) 2-Methyl-2-Propanol (t...	5.35	59	3125209	39.148	ng	93
19) Methylene Chloride	5.36	84	575805	21.611	ng	96
20) 3-Chloro-1-propene (Al...	5.45	41	1249911	22.213	ng	100
21) Trichlorotrifluoroethane	5.56	151	588003	23.404	ng	90
22) Carbon Disulfide	5.58	76	4299451	51.086	ng	99
23) trans-1,2-Dichloroethene	6.14	61	978307	21.279	ng	98
24) 1,1-Dichloroethane	6.33	63	1131074	21.405	ng	98
25) Methyl tert-Butyl Ether	6.35	73	1651983	20.265	ng	99
26) Vinyl Acetate	6.45	86	291811	57.729	ng	# 95
27) 2-Butanone (MEK)	6.66	72	757497	42.164	ng	# 87
28) cis-1,2-Dichloroethene	7.08	61	922474	20.723	ng	99
29) Diisopropyl Ether	7.27	87	927117	41.948	ng	# 95
30) Ethyl Acetate	7.28	61	1144644	84.859	ng	94
31) n-Hexane	7.28	57	1116379	19.895	ng	97
32) Chloroform	7.37	83	1084428	21.057	ng	98
34) Tetrahydrofuran (THF)	7.73	72	691225	40.002	ng	# 82
35) Ethyl tert-Butyl Ether	7.80	87	1317334	41.691	ng	# 83
36) 1,2-Dichloroethane	8.11	62	934076	21.230	ng	96
38) 1,1,1-Trichloroethane	8.38	97	997179	24.043	ng	99
39) Isopropyl Acetate	9.20	61	3240	No Calib	#	
40) 1-Butanol	8.80	56	34808	No Calib	#	
41) Benzene	8.88	78	2195450	23.910	ng	99
42) Carbon Tetrachloride	9.05	117	916988	26.833	ng	98
43) Cyclohexane	9.20	84	1656181	46.005	ng	# 88
44) tert-Amyl Methyl Ether	9.57	73	3067132	46.720	ng	93
45) 1,2-Dichloropropane	9.84	63	631997	23.252	ng	99
46) Bromodichloromethane	10.06	83	884006	24.779	ng	99
47) Trichloroethene	10.13	130	621448	24.678	ng	98
48) 1,4-Dioxane	10.09	88	467161	24.674	ng	87
49) 2,2,4-Trimethylpentane...	10.21	57	2790588	22.416	ng	86
50) Methyl Methacrylate	10.38	100	447568	51.031	ng	94

Data File : I:\MS09\DATA\2023_02\13\02132304.D
 Acq On : 13 Feb 2023 9:17
 Sample : CCV R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

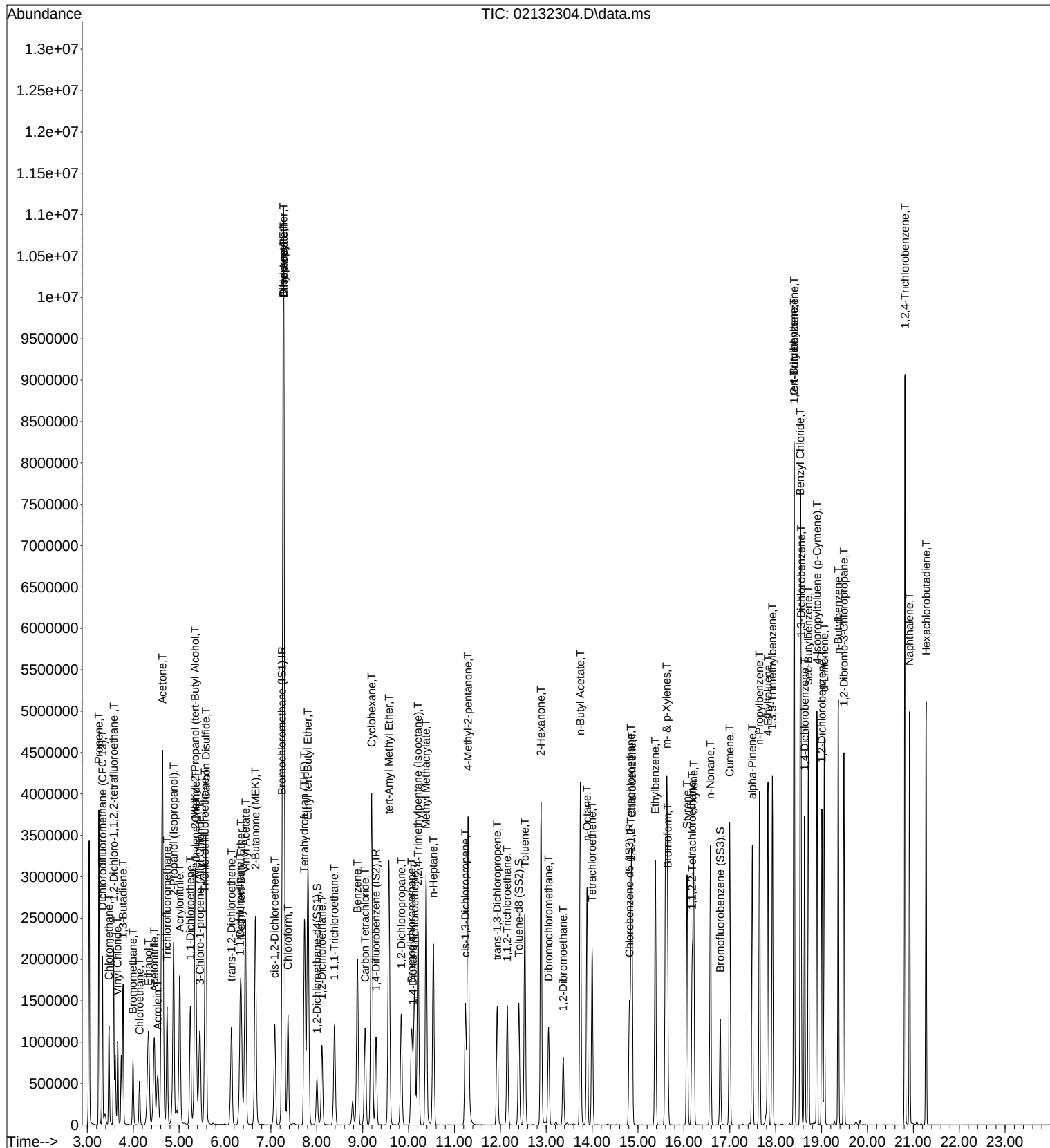
Quant Time: Feb 13 09:49:41 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	563738	23.824	ng	92
52) cis-1,3-Dichloropropene	11.24	75	988849	26.731	ng	100
53) 4-Methyl-2-pentanone	11.30	58	1235516	45.178	ng	73
54) trans-1,3-Dichloropropene	11.93	75	924632	26.646	ng	99
55) 1,1,2-Trichloroethane	12.15	97	570599	23.604	ng	97
58) Toluene	12.53	91	2250224	25.801	ng	96
59) 2-Hexanone	12.89	43	3715681	59.663	ng	89
60) Dibromochloromethane	13.05	129	783857	30.764	ng	96
61) 1,2-Dibromoethane	13.37	107	682799	25.793	ng	99
62) n-Butyl Acetate	13.74	43	4091732	59.763	ng	92
63) n-Octane	13.89	57	578664	24.552	ng	91
64) Tetrachloroethene	14.00	166	772779	29.898	ng	99
65) Chlorobenzene	14.87	112	1570526	26.695	ng	99
66) Ethylbenzene	15.38	91	2649628	26.311	ng	98
67) m- & p-Xylenes	15.62	91	4322714	53.043	ng	99
68) Bromoform	15.65	173	768907	34.057	ng	96
69) Styrene	16.07	104	1671807	28.282	ng	98
70) o-Xylene	16.21	91	2137784	26.579	ng	99
71) n-Nonane	16.58	43	1676704	29.137	ng	88
72) 1,1,2,2-Tetrachloroethane	16.18	83	1041185	26.219	ng	100
74) Cumene	17.00	105	2742890	28.277	ng	100
75) alpha-Pinene	17.49	93	1395670	27.656	ng	100
76) n-Propylbenzene	17.65	91	3257823	27.023	ng	96
77) 3-Ethyltoluene	17.00	105	2742890	No Calib		
78) 4-Ethyltoluene	17.83	105	2692175	28.876	ng	99
79) 1,3,5-Trimethylbenzene	17.93	105	2290828	28.035	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	2742890	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	2349218	28.443	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	3767165	62.164	ng	98
85) 1,3-Dichlorobenzene	18.55	146	1427052	29.575	ng	96
86) 1,4-Dichlorobenzene	18.63	146	1437177	29.442	ng	97
87) sec-Butylbenzene	18.71	105	3043051	27.960	ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	2588252	26.563	ng	97
89) 1,2,3-Trimethylbenzene	17.00	105	2742890	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1393546	29.620	ng	97
91) d-Limonene	19.06	68	950095	29.145	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.49	157	1130962	63.740	ng	90
93) n-Undecane	18.12	58	313	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	2547486	66.379	ng	99
95) Naphthalene	20.92	128	3123798	31.774	ng	100
96) n-Dodecane	19.06	58	8047	No Calib	#	
97) Hexachlorobutadiene	21.28	225	852778	31.361	ng	98
98) Cyclohexanone	15.26	55	240	No Calib	#	
99) tert-Butylbenzene	18.40	119	2161912	26.408	ng	100
100) n-Butylbenzene	19.37	91	2502471	28.120	ng	96
101) 1,1,1,2-Tetrachloroethane	14.85	131	620238	27.845	ng	97

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

Vial: 2
Operator: SC
Inst : MS09

Quant Time: Feb 13 09:49:41 2023



Data File : I:\MS09\DATA\2023_02\13\02132330.D
 Acq On : 13 Feb 2023 23:51
 Sample : CCV END R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 14 08:35:36 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

 2/14/23

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.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	IR Bromochloromethane (IS1)	1.000	1.000	0.0	154	0.03
2	T Propene	2.236	2.007	10.2	136	0.00
3	T Dichlorodifluoromethane (CF	2.875	2.379	17.3	129	0.00
4	T Chloromethane	2.777	2.126	23.4	116	0.00
5	T 1,2-Dichloro-1,1,2,2-tetra	1.365	1.181	13.5	139	0.00
6	T Vinyl Chloride	2.429	1.773	27.0	108	0.00
7	T 1,3-Butadiene	1.220	1.217	0.2	171	0.00
8	T Bromomethane	1.070	0.972	9.2	139	0.00
9	T Chloroethane	0.991	0.812	18.1	124	0.00
10	T Ethanol	1.399	1.312	6.2	161	0.05
11	T Acetonitrile	4.027	3.501	13.1	138	0.03
12	T Acrolein	1.152	0.868	24.7	130	0.03
13	T Acetone	1.265	0.897	29.1	114	0.03
14	T Trichlorofluoromethane	2.470	2.280	7.7	149	0.01
15	T 2-Propanol (Isopropanol)	4.715	3.750	20.5	121	0.05
16	T Acrylonitrile	2.434	1.835	24.6	119	0.03
17	T 1,1-Dichloroethene	1.214	1.048	13.7	143	0.01
18	T 2-Methyl-2-Propanol (tert-B	4.103	3.118	24.0	107	0.04
19	T Methylene Chloride	1.369	1.121	18.1	128	0.03
20	T 3-Chloro-1-propene (Allyl C	2.892	2.498	13.6	148	0.02
21	T Trichlorotrifluoroethane	1.291	1.092	15.4	129	0.01
22	T Carbon Disulfide	4.326	4.138	4.3	147	0.01
23	T trans-1,2-Dichloroethene	2.363	1.881	20.4	118	0.03
24	T 1,1-Dichloroethane	2.716	2.195	19.2	125	0.03
25	T Methyl tert-Butyl Ether	4.190	3.302	21.2	118	0.01
26	T Vinyl Acetate	0.260	0.211	18.8	114	0.03
27	T 2-Butanone (MEK)	0.923	0.742	19.6	118	0.02
28	T cis-1,2-Dichloroethene	2.288	1.817	20.6	120	0.03
29	T Diisopropyl Ether	1.136	0.886	22.0	113	0.02
30	T Ethyl Acetate	0.693	0.553	20.2	107	0.02
31	T n-Hexane	2.884	2.187	24.2	108	0.01
32	T Chloroform	2.647	2.107	20.4	122	0.03
33	S 1,2-Dichloroethane-d4(SS1)	2.173	1.967	9.5	131	0.02
34	T Tetrahydrofuran (THF)	0.888	0.698	21.4	118	0.01
35	T Ethyl tert-Butyl Ether	1.624	1.293	20.4	118	0.01
36	T 1,2-Dichloroethane	2.261	1.796	20.6	120	0.02
37	IR 1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	130	0.02
38	T 1,1,1-Trichloroethane	0.482	0.441	8.5	123	0.02
39	T Isopropyl Acetate	0.000	0.000	0.0	115	0.01
40	T 1-Butanol	0.000	0.000	0.0	106	0.02
41	T Benzene	1.068	0.954	10.7	123	0.02
42	T Carbon Tetrachloride	0.398	0.407	-2.3	135	0.02
43	T Cyclohexane	0.419	0.368	12.2	118	0.01
44	T tert-Amyl Methyl Ether	0.764	0.691	9.6	117	0.01
45	T 1,2-Dichloropropane	0.316	0.282	10.8	120	0.01
46	T Bromodichloromethane	0.415	0.384	7.5	121	0.02
47	T Trichloroethene	0.293	0.273	6.8	125	0.02
48	T 1,4-Dioxane	0.220	0.205	6.8	117	0.00
49	T 2,2,4-Trimethylpentane (Iso	1.448	1.214	16.2	114	0.01
50	T Methyl Methacrylate	0.102	0.097	4.9	117	0.01
51	T n-Heptane	0.275	0.249	9.5	123	0.01
52	T cis-1,3-Dichloropropene	0.430	0.432	-0.5	127	0.01
53	T 4-Methyl-2-pentanone	0.318	0.273	14.2	108	0.01
54	T trans-1,3-Dichloropropene	0.404	0.426	-5.4	127	0.01
55	T 1,1,2-Trichloroethane	0.281	0.254	9.6	121	0.00

Data File : I:\MS09\DATA\2023_02\13\02132330.D
 Acq On : 13 Feb 2023 23:51
 Sample : CCV END R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 14 08:35:36 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	123	0.00
57	S Toluene-d8 (SS2)	4.557	4.907	-7.7	134	0.01
58	T Toluene	4.536	4.217	7.0	122	0.01
59	T 2-Hexanone	3.239	3.509	-8.3	129	0.01
60	T Dibromochloromethane	1.325	1.415	-6.8	131	0.01
61	T 1,2-Dibromoethane	1.377	1.288	6.5	117	0.00
62	T n-Butyl Acetate	3.561	4.033	-13.3	131	0.00
63	T n-Octane	1.226	1.084	11.6	115	0.00
64	T Tetrachloroethene	1.344	1.400	-4.2	135	0.00
65	T Chlorobenzene	3.060	2.883	5.8	120	0.00
66	T Ethylbenzene	5.238	4.947	5.6	121	0.00
67	T m- & p-Xylenes	4.238	4.061	4.2	120	0.00
68	T Bromoform	1.174	1.369	-16.6	133	0.00
69	T Styrene	3.074	3.087	-0.4	123	0.00
70	T o-Xylene	4.183	3.968	5.1	122	0.00
71	T n-Nonane	2.993	3.196	-6.8	138	0.00
72	T 1,1,2,2-Tetrachloroethane	2.065	1.932	6.4	118	0.00
73	S Bromofluorobenzene (SS3)	1.593	1.876	-17.8	145	0.00
74	T Cumene	5.045	5.010	0.7	127	0.00
75	T alpha-Pinene	2.625	2.587	1.4	123	0.00
76	T n-Propylbenzene	6.270	6.023	3.9	121	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	127	0.00
78	T 4-Ethyltoluene	4.849	4.856	-0.1	125	0.00
79	T 1,3,5-Trimethylbenzene	4.250	4.245	0.1	125	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.10#
81	T 2-Ethyltoluene	0.000	0.000	0.0	127	0.00
82	T 1,2,4-Trimethylbenzene	4.296	4.406	-2.6	122	0.00
83	T n-Decane	0.000	0.000	0.0	0#	-17.10#
84	T Benzyl Chloride	3.152	3.487	-10.6	112	0.00
85	T 1,3-Dichlorobenzene	2.510	2.602	-3.7	123	0.00
86	T 1,4-Dichlorobenzene	2.539	2.629	-3.5	127	0.00
87	T sec-Butylbenzene	5.660	5.650	0.2	125	0.00
88	T 4-Isopropyltoluene (p-Cymen	5.068	4.788	5.5	119	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	127	0.00
90	T 1,2-Dichlorobenzene	2.447	2.538	-3.7	128	0.00
91	T d-Limonene	1.695	1.767	-4.2	126	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.923	1.041	-12.8	128	0.00
93	T n-Undecane	0.000	0.000	0.0	0#	0.07
94	T 1,2,4-Trichlorobenzene	1.996	2.346	-17.5	130	0.00
95	T Naphthalene	5.113	5.544	-8.4	122	0.00
96	T n-Dodecane	0.000	0.000	0.0	13#	0.05
97	T Hexachlorobutadiene	1.414	1.545	-9.3	133	0.00
98	T Cyclohexanone	0.000	0.000	0.0	47#	0.00
99	T tert-Butylbenzene	4.258	3.983	6.5	116	0.00
100	T n-Butylbenzene	4.628	4.624	0.1	122	0.00
101	T 1,1,1,2-Tetrachloroethane	1.158	1.131	2.3	122	0.00

(#) = Out of Range

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

Data File : I:\MS09\DATA\2023_02\13\02132330.D
 Acq On : 13 Feb 2023 23:51
 Sample : CCV END R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

Quant Time: Feb 14 08:35:36 2023

Quant Method : I:\MS09\METHODS\R9111622.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

 2/14/23

QLast Update : Wed Jan 11 08:47:39 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	217091	12.500	ng	0.03
37) 1,4-Difluorobenzene (IS2)	9.29	114	959684	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	228263	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.00	65	427026	11.317	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	90.56%
57) Toluene-d8 (SS2)	12.40	98	1120064	13.460	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	107.68%
73) Bromofluorobenzene (SS3)	16.79	174	428117	14.713	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	117.68%

Target Compounds

						Qvalue
2) Propene	3.26	42	914797	23.561	ng	95
3) Dichlorodifluoromethan...	3.34	85	1095027	21.928	ng	97
4) Chloromethane	3.47	50	950837	19.718	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	533177	22.483	ng	99
6) Vinyl Chloride	3.67	62	777472	18.433	ng	99
7) 1,3-Butadiene	3.78	54	560146	26.441	ng	# 78
8) Bromomethane	3.99	94	430484	23.156	ng	99
9) Chloroethane	4.14	64	363025	21.085	ng	98
10) Ethanol	4.32	45	1964777	80.839	ng	100
11) Acetonitrile	4.45	41	1383341	19.781	ng	99
12) Acrolein	4.53	56	727338	36.356	ng	95
13) Acetone	4.64	58	2053130	93.453	ng	# 67
14) Trichlorofluoromethane	4.74	101	1029543	23.996	ng	97
15) 2-Propanol (Isopropanol)	4.87	45	3337599	40.756	ng	96
16) Acrylonitrile	5.01	53	1633230	38.633	ng	100
17) 1,1-Dichloroethene	5.24	96	491273	23.293	ng	99
18) 2-Methyl-2-Propanol (t...	5.34	59	2856251	40.084	ng	93
19) Methylene Chloride	5.36	84	515714	21.685	ng	95
20) 3-Chloro-1-propene (Al...	5.45	41	1149508	22.887	ng	99
21) Trichlorotrifluoroethane	5.56	151	511903	22.826	ng	92
22) Carbon Disulfide	5.58	76	3826927	50.942	ng	99
23) trans-1,2-Dichloroethene	6.14	61	881802	21.487	ng	99
24) 1,1-Dichloroethane	6.33	63	1019875	21.623	ng	98
25) Methyl tert-Butyl Ether	6.35	73	1533922	21.080	ng	99
26) Vinyl Acetate	6.45	86	255978	56.733	ng	# 87
27) 2-Butanone (MEK)	6.66	72	673188	41.980	ng	# 84
28) cis-1,2-Dichloroethene	7.08	61	836021	21.041	ng	100
29) Diisopropyl Ether	7.27	87	815125	41.318	ng	# 88
30) Ethyl Acetate	7.28	61	1013531	84.179	ng	94
31) n-Hexane	7.28	57	996963	19.905	ng	98
32) Chloroform	7.37	83	969905	21.099	ng	99
34) Tetrahydrofuran (THF)	7.73	72	618666	40.110	ng	# 80
35) Ethyl tert-Butyl Ether	7.80	87	1190228	42.200	ng	# 85
36) 1,2-Dichloroethane	8.11	62	842153	21.443	ng	97
38) 1,1,1-Trichloroethane	8.38	97	889749	24.022	ng	99
39) Isopropyl Acetate	9.19	61	2628	No Calib	#	
40) 1-Butanol	8.79	56	30290	No Calib	#	
41) Benzene	8.88	78	1959907	23.901	ng	99
42) Carbon Tetrachloride	9.05	117	811517	26.590	ng	98
43) Cyclohexane	9.20	84	1481589	46.084	ng	89
44) tert-Amyl Methyl Ether	9.57	73	2813233	47.985	ng	93
45) 1,2-Dichloropropane	9.84	63	567726	23.389	ng	99
46) Bromodichloromethane	10.06	83	788802	24.758	ng	99
47) Trichloroethene	10.13	130	549920	24.453	ng	98
48) 1,4-Dioxane	10.09	88	417033	24.665	ng	88
49) 2,2,4-Trimethylpentane...	10.21	57	2515619	22.627	ng	85
50) Methyl Methacrylate	10.38	100	395488	50.493	ng	96

Data File : I:\MS09\DATA\2023_02\13\02132330.D
 Acq On : 13 Feb 2023 23:51
 Sample : CCV END R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)

Vial: 2
 Operator: SC
 Inst : MS09

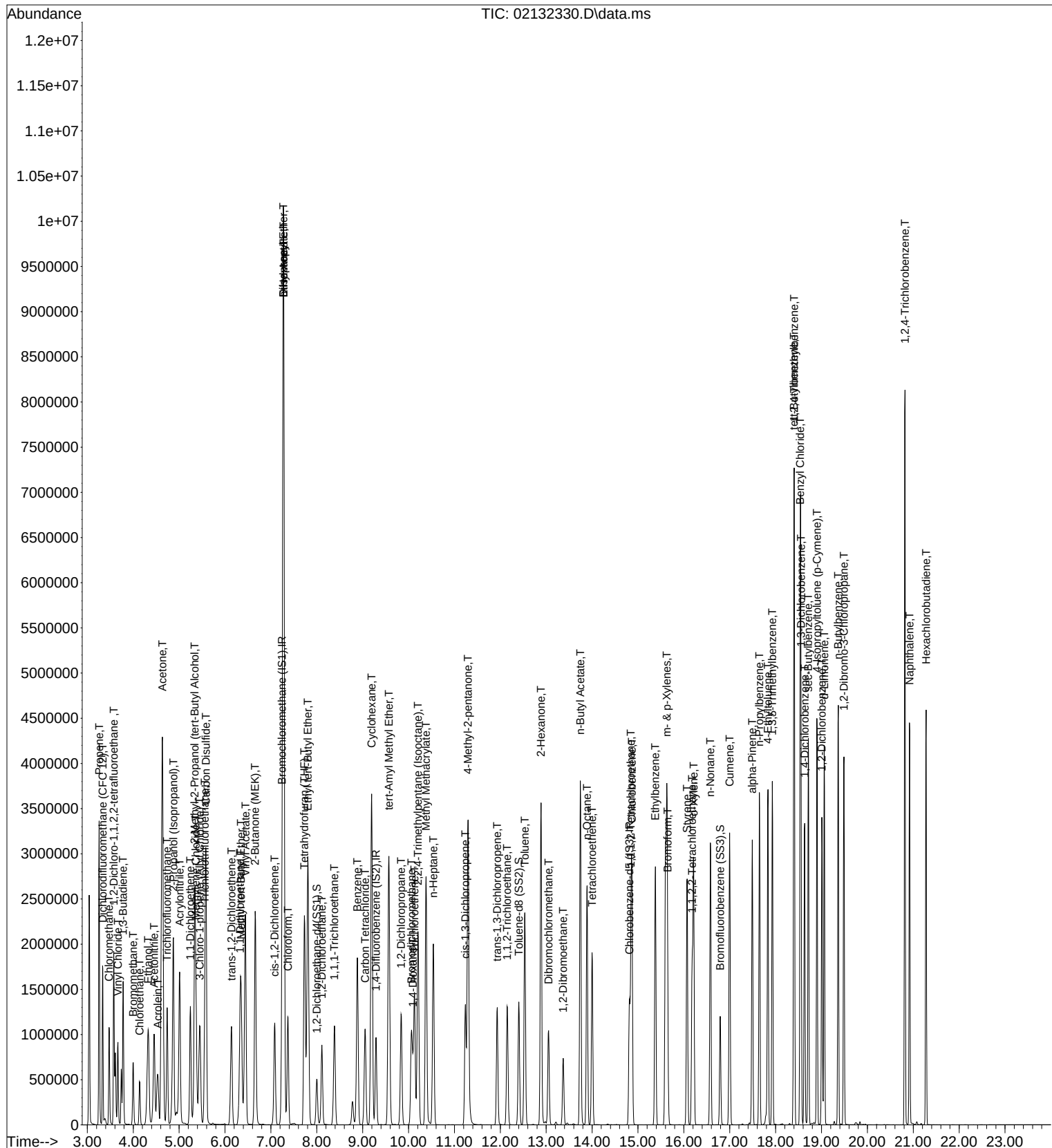
Quant Time: Feb 14 08:35:36 2023
 Quant Method : I:\MS09\METHODS\R9111622.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Wed Jan 11 08:47:39 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.54	71	507511	24.017	ng	93
52) cis-1,3-Dichloropropene	11.24	75	894979	27.091	ng	99
53) 4-Methyl-2-pentanone	11.30	58	1125618	46.089	ng	# 73
54) trans-1,3-Dichloropropene	11.93	75	834386	26.925	ng	98
55) 1,1,2-Trichloroethane	12.15	97	517720	23.982	ng	97
58) Toluene	12.53	91	2021321	24.403	ng	96
59) 2-Hexanone	12.89	43	3396056	57.416	ng	88
60) Dibromochloromethane	13.05	129	697455	28.822	ng	97
61) 1,2-Dibromoethane	13.37	107	611450	24.320	ng	100
62) n-Butyl Acetate	13.74	43	3774158	58.042	ng	92
63) n-Octane	13.89	57	529336	23.648	ng	92
64) Tetrachloroethene	14.00	166	677634	27.604	ng	100
65) Chlorobenzene	14.87	112	1395036	24.967	ng	98
66) Ethylbenzene	15.38	91	2371233	24.792	ng	98
67) m- & p-Xylenes	15.63	91	3893442	50.304	ng	100
68) Bromoform	15.65	173	668663	31.184	ng	95
69) Styrene	16.07	104	1493883	26.609	ng	98
70) o-Xylene	16.21	91	1920304	25.139	ng	99
71) n-Nonane	16.58	43	1546720	28.301	ng	87
72) 1,1,2,2-Tetrachloroethane	16.18	83	934952	24.790	ng	100
74) Cumene	17.00	105	2447226	26.564	ng	100
75) alpha-Pinene	17.49	93	1287430	26.861	ng	100
76) n-Propylbenzene	17.64	91	2941954	25.694	ng	97
77) 3-Ethyltoluene	17.00	105	2447226	No Calib		
78) 4-Ethyltoluene	17.83	105	2416431	27.290	ng	99
79) 1,3,5-Trimethylbenzene	17.93	105	2054417	26.472	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	2447226	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	2111925	26.923	ng	99
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	3374868	58.638	ng	98
85) 1,3-Dichlorobenzene	18.55	146	1259020	27.474	ng	97
86) 1,4-Dichlorobenzene	18.63	146	1272286	27.443	ng	97
87) sec-Butylbenzene	18.71	105	2734162	26.452	ng	100
88) 4-Isopropyltoluene (p-...	18.90	119	2317162	25.039	ng	97
89) 1,2,3-Trimethylbenzene	17.00	105	2447226	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1239957	27.750	ng	97
91) d-Limonene	19.06	68	862905	27.871	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.49	157	998429	59.248	ng	88
93) n-Undecane	18.10	58	139	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	2238007	61.401	ng	99
95) Naphthalene	20.92	128	2784316	29.819	ng	100
96) n-Dodecane	19.06	58	7256	No Calib	#	
97) Hexachlorobutadiene	21.28	225	747764	28.955	ng	98
98) Cyclohexanone	15.27	55	175	No Calib	#	
99) tert-Butylbenzene	18.40	119	1927401	24.789	ng	100
100) n-Butylbenzene	19.37	91	2258979	26.728	ng	97
101) 1,1,1,2-Tetrachloroethane	14.85	131	547499	25.881	ng	98

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

Vial: 2
Operator: SC
Inst : MS09

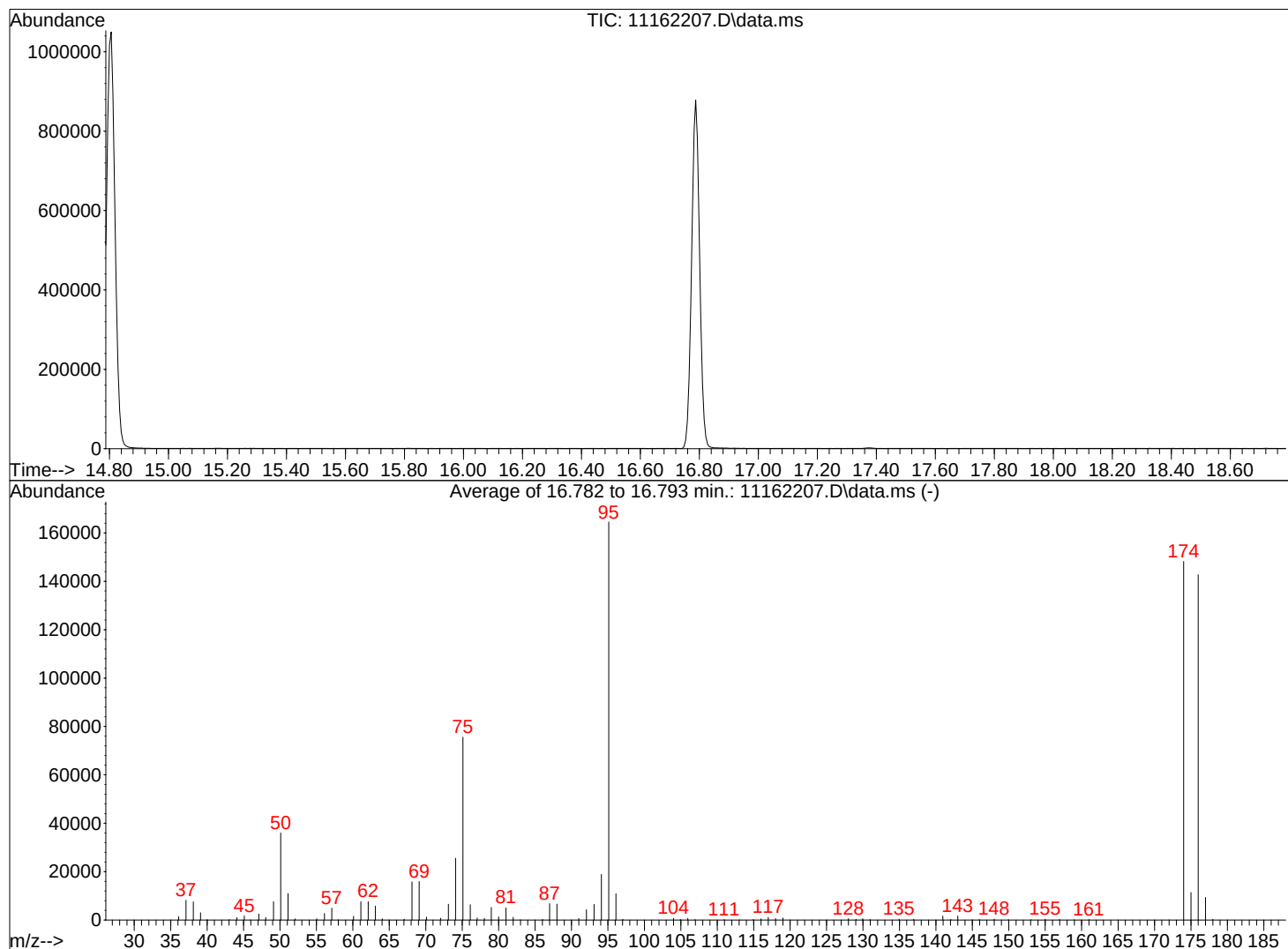
Quant Time: Feb 14 08:35:36 2023



Data Path : I:\MS09\DATA\2022_11\16\
 Data File : 11162207.D
 Acq On : 16 Nov 2022 13:04
 Operator : SC
 Sample : 12.5ng T0-15 BFB STD
 Misc : S35-11152201
 ALS Vial : 2 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9111622.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Wed Nov 16 16:41:45 2022



AutoFind: Scans 2448, 2449, 2450; Background Corrected with Scan 2439

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.9	35968	PASS
75	95	30	66	45.9	75581	PASS
95	95	100	100	100.0	164544	PASS
96	95	5	9	6.6	10824	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	90.1	148224	PASS
175	174	4	9	7.7	11388	PASS
176	174	93	101	96.3	142741	PASS
177	176	5	9	6.5	9340	PASS

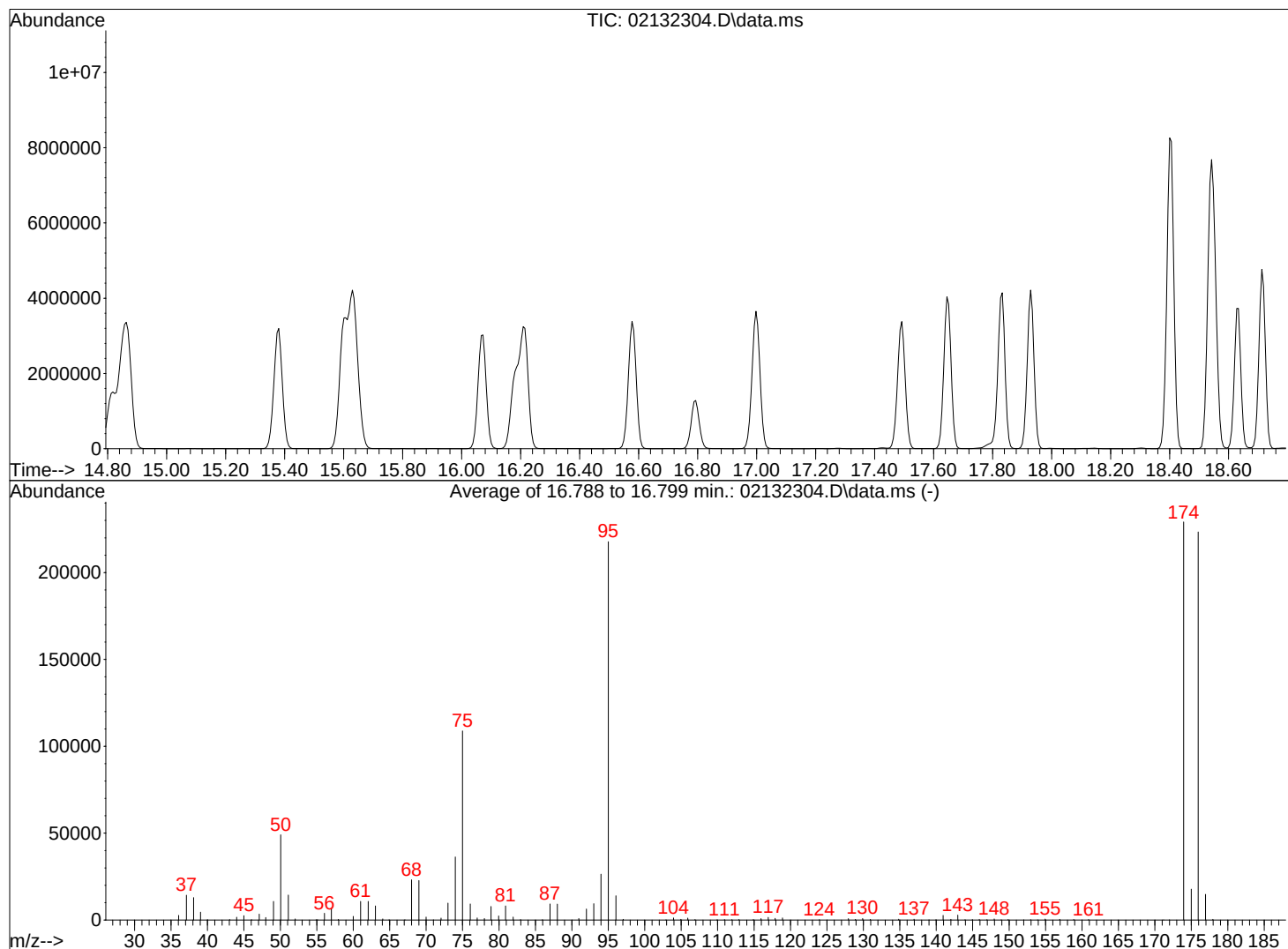
11/16/22

Data Path : I:\MS09\DATA\2023_02\13\
 Data File : 02132304.D
 Acq On : 13 Feb 2023 9:17
 Operator : SC
 Sample : CCV R9021323_25ng
 Misc : S35-12302204/S35-02022303 (3/4)
 ALS Vial : 2 Sample Multiplier: 1

 2/13/23

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9111622.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Wed Jan 11 08:47:39 2023



AutoFind: Scans 2449, 2450, 2451; Background Corrected with Scan 2440

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	22.5	49035	PASS
75	95	30	66	50.0	108837	PASS
95	95	100	100	100.0	217813	PASS
96	95	5	9	6.4	13981	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	105.2	229141	PASS
175	174	4	9	7.8	17824	PASS
176	174	93	101	97.5	223403	PASS
177	176	5	9	6.6	14758	PASS

Injection Log

Directory: J:\MS09\DATA\2022_11\16\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
7	11/16/22 13:04	11162207.D	12.5ng TO-15 BFB STD	S35-11152201	SC	2	pass
8	11/16/22 13:36	11162208.D	0.1ng TO-15 ICAL STD	S35-11152201/S35-11152210 (12/15)	SC	13	
9	11/16/22 14:08	11162209.D	0.2ng TO-15 ICAL STD	S35-11152201/S35-11152210 (12/15)	SC	13	
10	11/16/22 14:40	11162210.D	0.5ng TO-15 ICAL STD	S35-11152201/S35-11152209 (12/15)	SC	14	
11	11/16/22 15:12	11162211.D	1.0ng TO-15 ICAL STD	S35-11152201/S35-11152209 (12/15)	SC	14	
12	11/16/22 15:44	11162212.D	5.0ng TO-15 ICAL STD	S35-11152201/S35-11152209 (12/15)	SC	14	
13	11/16/22 16:16	11162213.D	25ng TO-15 ICAL STD	S35-11152201/S35-11152208 (12/15)	SC	15	
14	11/16/22 16:48	11162214.D	50ng TO-15 ICAL STD	S35-11152201/S35-11152208 (12/15)	SC	15	
15	11/16/22 17:20	11162215.D	100ng TO-15 ICAL STD	S35-11152201/S35-11152208 (12/15)	SC	15	
16	11/16/22 17:52	11162216.D	Blank	S35-11152201	SC	2	
17	11/16/22 18:24	11162217.D	25ng TO-15 ICV STD	S35-11152201/S35-11152205 (12/15)	SC	16	pass
18	11/16/22 18:56	11162218.D	25ng TO-15 ICV STD	S35-11152201/S35-10172205 (11/16)	SC	2	not used

 11/18/22

Injection Log

Directory: I:\MS09\DATA\2023_02\13\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	2/13/23 9:17	02132304.D	CCV R9021323_25ng	S35-12302204/S35-02022303 (3/4)	SC	2	pass
2	2/13/23 9:48	02132305.D	CCV C9021323_25ng	S35-12302204/S35-02032304 (3/5)	SC	3	pass
3	2/13/23 10:20	02132306.D	MB R9021323_1000mL	S35-12302204	SC	2	pass
4	2/13/23 10:52	02132307.D	LCS R9021323_25ng	S35-12302204/S35-03062304 (3/8)	SC	2	pass
5	2/13/23 11:25	02132308.D	LCSD R9021323_25ng	S35-12302204/S35-03062304 (3/8)	SC	2	pass
6	2/13/23 12:23	02132309.D	P2300605-001 (1000mL)	S35-12302204	SC	5	
7	2/13/23 12:55	02132310.D	P2300605-002 (1000mL)	S35-12302204	SC	6	
8	2/13/23 13:27	02132311.D	P2300605-003 (1000mL)	S35-12302204	SC	7	
9	2/13/23 13:59	02132312.D	P2300591-001 (400mL)	S35-12302204	SC	8	
10	2/13/23 14:32	02132313.D	P2300595-001 (400mL)	S35-12302204	SC	9	
11	2/13/23 15:04	02132314.D	P2300595-002 (400mL)	S35-12302204	SC	10	
12	2/13/23 15:36	02132315.D	P2300587-001 (1000mL)	S35-12302204	SC	11	
13	2/13/23 16:07	02132316.D	P2300587-001dup (1000mL)	S35-12302204	SC	11	pass
14	2/13/23 16:55	02132317.D	P2300595-001Dil (40mL)	S35-12302204	SC	9	
15	2/13/23 17:27	02132318.D	P2300595-002Dil (40mL)	S35-12302204	SC	10	
16	2/13/23 17:59	02132319.D	P2300537-001 (1000mL)	S35-12302204	SC	12	
17	2/13/23 18:31	02132320.D	P2300578-001 (1000mL)	S35-12302204	SC	13	
18	2/13/23 19:03	02132321.D	P2300578-002 (1000mL)	S35-12302204	SC	14	
19	2/13/23 19:35	02132322.D	P2300578-003 (1000mL)	S35-12302204	SC	15	
20	2/13/23 20:07	02132323.D	P2300578-004 (1000mL)	S35-12302204	SC	16	
21	2/13/23 20:39	02132324.D	P2300578-005 (1000mL)	S35-12302204	SC	5	
22	2/13/23 21:11	02132325.D	RL R9021323_0.5ng	S35-12302204/S35-01312304 (3/2)	SC	4	pass
23	2/13/23 21:43	02132326.D	P2300580-001 (1000mL)	S35-12302204	SC	6	
24	2/13/23 22:15	02132327.D	P2300580-002 (1000mL)	S35-12302204	SC	7	
25	2/13/23 22:47	02132328.D	P2300580-003 (1000mL)	S35-12302204	SC	8	
26	2/13/23 23:19	02132329.D	P2300580-004 (1000mL)	S35-12302204	SC	11	
27	2/13/23 23:51	02132330.D	CCV END R9021323_25ng	S35-12302204/S35-02022303 (3/4)	SC	2	pass
28	2/14/23 8:58	02132331.D	P2300580-005 (1000mL)	S35-12302204	SC	9	
							 2/14/23

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-05

Cycles: 30

Batch: 30516

Batch Started By: on 1/20/23 0331

Finished Cleaning By: on 1/20/23 0332

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AS01175	1/20/23	1/23/23	Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		MS21_01232324
AS00202	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AS01512	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC02236	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC02268	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC01890	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AS00654	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC02311	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AS00608	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/31/23 0833		
AS01266	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC02103	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	2/1/23 0301		
AC02344	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/30/23 0904		
AC01049	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/30/23 0904		
AC02340	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/30/23 0904		
AS01761	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/30/23 0904		
AC02365	1/20/23		Pass w/ Conditions	-14.3	1/20/23 0332		-14.0	1/30/23 0904		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

*** QC Canister**

Data Path : I:\MS21\DATA\2023_01\23\
 Data File : 01232324.D
 Acq On : 24 Jan 2023 00:59
 Operator : WA \ RVT
 Sample : 012323_AS01175_30516
 Misc : LL+TICS (Sig #1); S35-01122310 (Sig #2)
 ALS Vial : 205 Sample Multiplier: 1

RVT 1/24/23

Quant Time: Jan 24 07:14:13 2023
 Quant Method : I:\MS21\Methods\F21011723.M
 Quant Title : EPA T0-15
 QLast Update : Wed Jan 18 06:49:07 2023
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.728	130	52947	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.896	114	221744	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.776	54	28730	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.540	65	74924	923.05	pg	0.00
Spiked Amount 1000.000			Recovery	=	92.30%	
57) Toluene-d8 (SS2)	12.692	98	221107	1088.91	pg	0.00
Spiked Amount 1000.000			Recovery	=	108.89%	
74) Bromofluorobenzene (SS3)	16.228	174	89187	1112.74	pg	0.00
Spiked Amount 1000.000			Recovery	=	111.27%	

Target	Compounds					Qvalue
2]	* Propene	3.665	42	286	8.34 pg	# 1
3]	* Dichlorodifluoromethane	3.720	85	863	9.60 pg	99
4]	* Chloromethane	3.851	50	349	8.45 pg	98
7]	* 1,3-Butadiene	4.142	54	7	0.21 pg	# 1
10]	* Ethanol	4.596	45	2481	131.43 pg	99
11]	* Acetonitrile	4.763	41	5841	85.96 pg	95
12]	* Acrolein	4.878	56	291	10.73 pg	94
13]	* Acetone	5.002	58	5795	158.71 pg	87
14]	* Trichlorofluoromethane	5.126	101	676	5.89 pg	99
15]	* 2-Propanol (Isopropa...	5.207	45	2521	77.54 pg	# 87
16]	* Acrylonitrile	5.350	53	132	2.60 pg	98
18]	tert-Butanol	5.759	59	438	8.99 pg	# 78
19]	* Methylene Chloride	5.735	84	1865	33.57 pg	100
21]	* Trichlorotrifluoroet...	5.987	151	333	5.72 pg	99
22]	* Carbon Disulfide	6.012	76	2725	14.48 pg	100
26]	* Vinyl Acetate	6.888	86	119	29.46 pg	# 2
27]	* 2-Butanone (MEK)	7.174	72	899	26.65 pg	88
29]	DIPE	7.831	45	730	5.83 pg	# 82
30]	* Ethyl Acetate	7.831	61	860	85.08 pg	94
31]	* n-Hexane	7.812	57	140	1.91 pg	# 72
32]	* Chloroform	7.864	83	1582	16.45 pg	99
34]	* Tetrahydrofuran	8.349	71	83	2.86 pg	85
39]	* Benzene	9.485	78	1168	5.92 pg	100
41]	1-Butanol	9.464	56	386	414.21 pg	# 45
42]	* Carbon Tetrachloride	9.662	117	127	5.06 pg	91
43]	* Cyclohexane	9.813	84	70	0.91 pg	94
46]	* Bromodichloromethane	10.619	83	881	21.36 pg	99
47]	* Trichloroethene	10.692	130	2488	36.64 pg	97
48]	* 1,4-Dioxane	10.757	88	85	1.61 pg	95
49]	Isooctane	10.771	56	155	2.37 pg	69
51]	* n-Heptane	11.076	71	104	1.79 pg	# 39
53]	* 4-Methyl-2-pentanone	11.798	58	356	8.96 pg	99
58]	* Toluene	12.805	91	2438	11.68 pg	100
59]	* 2-Hexanone	13.173	58	122	3.04 pg	# 48
60]	* Dibromochloromethane	13.255	129	824	43.18 pg	99
62]	* n-Butyl Acetate	13.907	56	258	18.40 pg	100
63]	* n-Octane	14.000	85	78	1.70 pg	96
64]	* Tetrachloroethene	14.104	166	124	2.00 pg	100
65]	* Chlorobenzene	14.827	112	104	0.73 pg	# 42
66]	* Ethylbenzene	15.214	91	616	2.73 pg	# 83
67]	* m- & p-Xylenes	15.381	91	1473	8.30 pg	96
68]	* Bromoform	15.423	173	544	40.12 pg	98
70]	* Styrene	15.721	104	487	4.03 pg	100
71]	* o-Xylene	15.822	91	483	2.63 pg	98

Data Path : I:\MS21\DATA\2023_01\23\
 Data File : 01232324.D
 Acq On : 24 Jan 2023 00:59
 Operator : WA \ RVT
 Sample : 012323_AS01175_30516
 Misc : LL+TICS (Sig #1); S35-01122310 (Sig #2)
 ALS Vial : 205 Sample Multiplier: 1

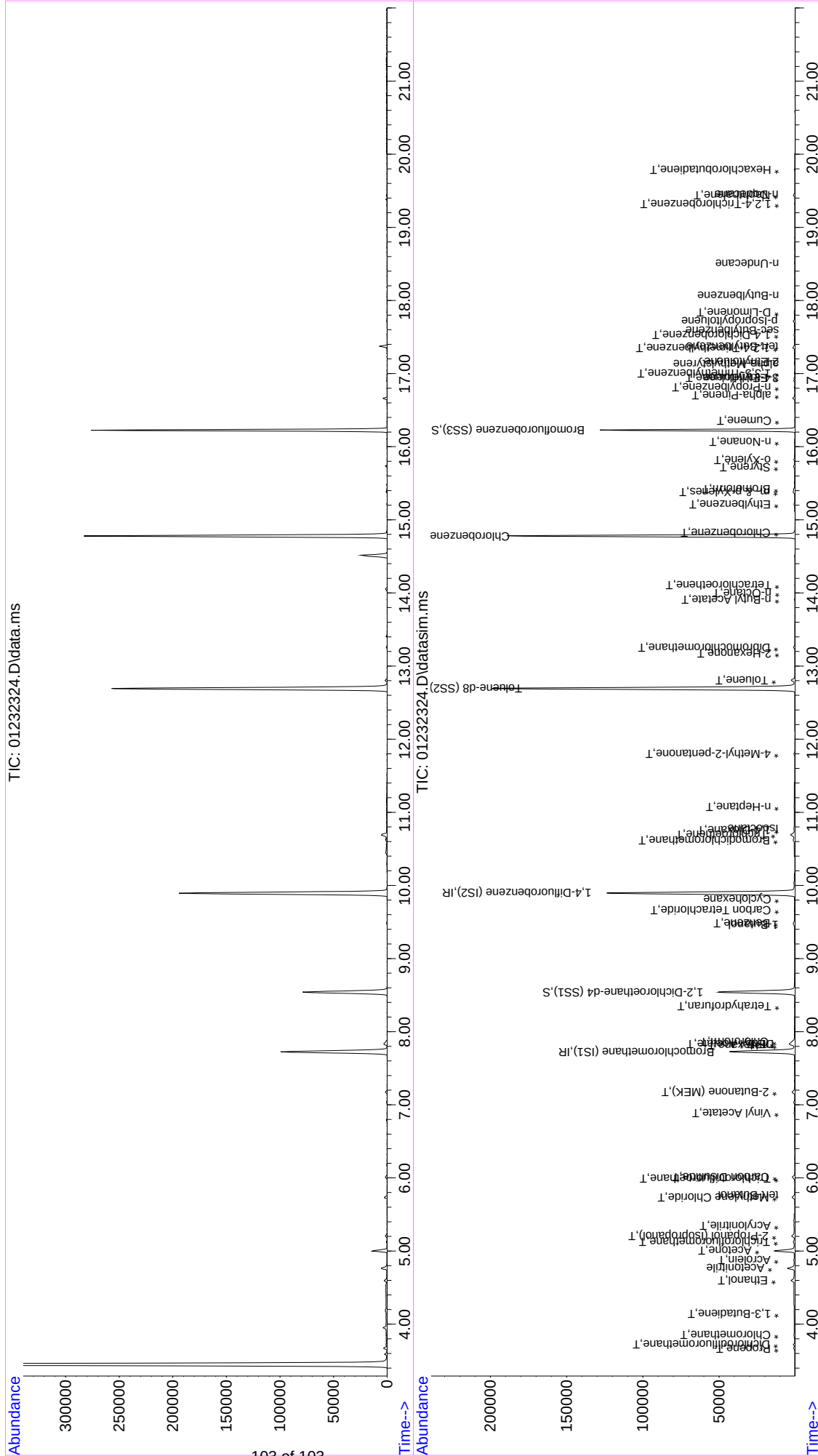
Quant Time: Jan 24 07:14:13 2023
 Quant Method : I:\MS21\Methods\F21011723.M
 Quant Title : EPA T0-15
 QLast Update : Wed Jan 18 06:49:07 2023
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
72]	* n-Nonane	16.067	57	81	1.26	pg	# 28
75]	* Cumene	16.358	105	114	0.46	pg	# 48
76]	* alpha-Pinene	16.700	93	98	0.88	pg	93
77]	* n-Propylbenzene	16.812	91	269	0.97	pg	97
78]	3-Ethyltoluene	16.938	105	319	1.41	pg	100
79]	* 4-Ethyltoluene	16.938	105	319	1.45	pg	100
80]	* 1,3,5-Trimethylbenzene	17.001	105	172	0.88	pg	99
81]	alpha-Methylstyrene	17.132	118	389	211.86	pg	# 34
82]	2-Ethyltoluene	17.161	105	144	142.02	pg	# 100
83]	tert-Butylbenzene	17.373	134	217	4.55	pg	# 1
84]	* 1,2,4-Trimethylbenzene	17.352	105	768	3.87	pg	89
87]	* 1,4-Dichlorobenzene	17.530	146	296	2.48	pg	99
89]	sec-Butylbenzene	17.584	105	59	0.21	pg	# 56
91]	p-Isopropyltoluene	17.719	119	540	2.28	pg	97
93]	* D-Limonene	17.837	68	96	2.77	pg	# 78
94]	n-Butylbenzene	18.065	134	79	1.39	pg	76
96]	n-Undecane	18.508	85	92	135.68	pg	# 57
97]	* 1,2,4-Trichlorobenzene	19.323	180	152	1.86	pg	94
98]	* Naphthalene	19.436	128	1008	5.69	pg	98
99]	n-Dodecane	19.450	85	95	79.44	pg	# 100
100]	* Hexachlorobutadiene	19.789	225	270	3.56	pg	98

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

Data Path : I:\MS21\DATA\2023_01\23\
Data File : 01232324.D
Acq On : 24 Jan 2023 00:59
Operator : WA \ RVT
Sample : 012323_AS01175_30516
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Quant Method : I:\MS21\Methods\F21011723.M
Quant Title : EPA T0-15
QLast Update : Wed Jan 18 06:49:07 2023
Response via : Initial Calibration





LABORATORY REPORT

April 21, 2023

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the sample submitted to our laboratory on April 5, 2023. For your reference, this analysis has been assigned our service request number P2301551.

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.

ALS | Environmental


By Sue Anderson at 8:57 am, Apr 21, 2023

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2301551

CASE NARRATIVE

The sample was received intact under chain of custody on April 5, 2023 and was 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 sample at the time of sample receipt.

Volatile Organic Compound Analysis

The sample was analyzed 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 minimum criterion for Hexachlorobutadiene was not met in the Continuing Calibration Verification (CCV) and in the Duplicate Laboratory Control Sample (DLCS) analyzed on April 13, 2023. In accordance with ALS Environmental standard operating procedures, a Method Reporting Limit (MRL) check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verified that instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question and the compound was not detected in the field sample, the data quality has not been significantly affected. This procedure is a quantitative confirmation of non-detect results at or below the MRL. The data has been flagged accordingly. No further corrective action was necessary.

The container was cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 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.



CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	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)	https://internet.deq.louisiana.gov/portal/divisions/lalap/accredited-laboratories	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	2022028
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	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	4068-011
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	T104704413-22-13
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA016272022-14
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2301551

Date Received: 4/5/2023
Time Received: 09:30

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y12Q3	P2301551-001	Air	4/4/2023	11:55	AS01706	-2.45	3.77	X



Air - Chain of Custody Record & Analytical Service Request

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

Page 1 of 1

P2301551

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

ALS Project No.
12101963

Company Name & Address (Reporting Information) Trinity Analysis & Development Corp 1002 Egin Parkway Shalimar FL 352579				Project Name PDMT Memphis				ALS Contact:		Analysis Method	Comments e.g. Actual Preservative or specific instructions	
Project Manager Larry Pannell				Project Number 10A023								
Phone 508-280-9948				Fax 508-366-7445								
Email Address for Result Reporting lpannell@comcast.com				P.O. # / Billing Information 8975								
Sampler (Print & Sign) Elizabeth Gaernemann Elizabeth Gaernemann												
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				
OSUE EFF-Y1203	①	4-4-23	1155	AS01706	none	28	0	6L				
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 _____								Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT		Project Requirements (MRLs, QAPP)		
Relinquished by: (Signature) Elizabeth Gaernemann				Date: 4-4-23		Time: 1525		Received by: (Signature) S			Date: 4-5-23	Time: 0730
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)		Date:	Time:	Cooler / Blank Temperature ____ °C

ALS Environmental Sample Acceptance Check Form

Client: Trinity Analysis & Development Corp. Work order: P2301551
 Project: DDMT Memphis / 10A023
 Sample(s) received on: 4/5/23 Date opened: 4/5/23 by: ADAVID

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?	☒	☐	☐
2	Did sample containers arrive in good condition?	☒	☐	☐
3	Were chain-of-custody papers used and filled out?	☒	☐	☐
4	Did sample container labels and/or tags agree with custody papers?	☒	☐	☐
5	Was sample volume received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper temperature (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were custody seals on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? <u>Box sealing.</u> Sealing Lid?	☒	☐	☐
	Were signature and date included?	☒	☐	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate preservation , according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are pH preserved?	☐	☐	☒
	Were VOA vials checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	☐	☐	☒
10	Tubes: Are the tubes capped and intact?	☐	☐	☒
11	Badges: Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2301551-001.01	6.0 L Silonite Can					

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P2301551-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01706

Date Collected: 4/4/23

Date Received: 4/5/23

Date Analyzed: 4/14/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.45

Final Pressure (psig): 3.77

Container Dilution Factor: 1.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.28	0.47	0.28	0.11	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.83	0.16	0.098	0.027	
74-87-3	Chloromethane	0.23	0.38	0.23	0.063	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.069	0.11	0.069	0.018	U
75-01-4	Vinyl Chloride	0.10	0.30	0.10	0.034	U
106-99-0	1,3-Butadiene	0.22	0.36	0.22	0.060	U
74-83-9	Bromomethane	0.066	0.20	0.066	0.029	U
75-00-3	Chloroethane	0.097	0.30	0.097	0.038	U
64-17-5	Ethanol	7.6	4.0	0.67	0.30	
75-05-8	Acetonitrile	0.29	0.90	0.29	0.12	U
107-02-8	Acrolein	0.23	0.66	0.23	0.099	U
67-64-1	Acetone	1.7	3.4	1.7	0.76	U
75-69-4	Trichlorofluoromethane	0.33	0.14	0.043	0.022	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.31	0.63	0.38	0.14	J
107-13-1	Acrylonitrile	0.23	0.71	0.23	0.077	U
75-35-4	1,1-Dichloroethene	0.45	0.21	0.065	0.028	
75-09-2	Methylene Chloride	0.13	0.23	0.13	0.065	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.082	0.26	0.082	0.035	U
76-13-1	Trichlorotrifluoroethane	3.0	0.11	0.034	0.015	
75-15-0	Carbon Disulfide	0.16	0.52	0.16	0.078	U
156-60-5	trans-1,2-Dichloroethene	0.67	0.21	0.065	0.028	
75-34-3	1,1-Dichloroethane	0.26	0.20	0.063	0.029	
1634-04-4	Methyl tert-Butyl Ether	0.067	0.23	0.067	0.026	U
108-05-4	Vinyl Acetate	1.2	2.1	1.2	0.51	U
78-93-3	2-Butanone (MEK)	0.24	0.53	0.17	0.056	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.
LOQ = Limit of Quantitation - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P2301551-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01706

Date Collected: 4/4/23

Date Received: 4/5/23

Date Analyzed: 4/14/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.45

Final Pressure (psig): 3.77

Container Dilution Factor: 1.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	21	0.20	0.065	0.029	
141-78-6	Ethyl Acetate	1.0	0.88	0.26	0.12	
110-54-3	n-Hexane	0.13	0.23	0.13	0.047	U
67-66-3	Chloroform	7.4	0.16	0.053	0.022	
109-99-9	Tetrahydrofuran (THF)	0.10	0.51	0.10	0.034	U
107-06-2	1,2-Dichloroethane	0.063	0.20	0.063	0.022	U
71-55-6	1,1,1-Trichloroethane	0.25	0.15	0.044	0.018	
71-43-2	Benzene	0.080	0.26	0.080	0.036	U
56-23-5	Carbon Tetrachloride	0.52	0.12	0.038	0.018	
110-82-7	Cyclohexane	0.14	0.46	0.14	0.066	U
78-87-5	1,2-Dichloropropane	0.056	0.17	0.056	0.022	U
75-27-4	Bromodichloromethane	0.038	0.12	0.038	0.017	U
79-01-6	Trichloroethene	21	0.15	0.045	0.020	
123-91-1	1,4-Dioxane	0.067	0.22	0.067	0.026	U
80-62-6	Methyl Methacrylate	0.23	0.41	0.23	0.070	U
142-82-5	n-Heptane	0.11	0.20	0.11	0.031	U
10061-01-5	cis-1,3-Dichloropropene	0.11	0.18	0.11	0.028	U
108-10-1	4-Methyl-2-pentanone	0.077	0.41	0.077	0.027	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.17	0.10	0.037	U
79-00-5	1,1,2-Trichloroethane	0.047	0.15	0.047	0.015	U
108-88-3	Toluene	0.23	0.21	0.068	0.026	
591-78-6	2-Hexanone	0.077	0.41	0.077	0.024	U
124-48-1	Dibromochloromethane	0.030	0.096	0.030	0.012	U
106-93-4	1,2-Dibromoethane	0.033	0.10	0.033	0.012	U
123-86-4	n-Butyl Acetate	0.067	0.32	0.067	0.023	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q3

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P2301551-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01706

Date Collected: 4/4/23

Date Received: 4/5/23

Date Analyzed: 4/14/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -2.45

Final Pressure (psig): 3.77

Container Dilution Factor: 1.51

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.10	0.17	0.10	0.039	U
127-18-4	Tetrachloroethene	1.8	0.12	0.038	0.015	
108-90-7	Chlorobenzene	0.052	0.17	0.052	0.023	U
100-41-4	Ethylbenzene	0.059	0.18	0.059	0.026	U
179601-23-1	m,p-Xylenes	0.11	0.38	0.11	0.049	U
75-25-2	Bromoform	0.047	0.079	0.047	0.016	U
100-42-5	Styrene	0.11	0.19	0.11	0.031	U
95-47-6	o-Xylene	0.059	0.18	0.059	0.027	U
111-84-2	n-Nonane	0.092	0.15	0.092	0.026	U
79-34-5	1,1,2,2-Tetrachloroethane	0.21	0.12	0.037	0.016	
98-82-8	Cumene	0.052	0.17	0.052	0.024	U
80-56-8	alpha-Pinene	0.046	0.30	0.046	0.022	U
103-65-1	n-Propylbenzene	0.052	0.17	0.052	0.024	U
622-96-8	4-Ethyltoluene	0.098	0.17	0.098	0.026	U
108-67-8	1,3,5-Trimethylbenzene	0.052	0.16	0.052	0.024	U
95-63-6	1,2,4-Trimethylbenzene	0.049	0.16	0.049	0.023	U
100-44-7	Benzyl Chloride	0.099	0.61	0.099	0.035	U
541-73-1	1,3-Dichlorobenzene	0.043	0.13	0.043	0.020	U
106-46-7	1,4-Dichlorobenzene	0.043	0.13	0.043	0.021	U
95-50-1	1,2-Dichlorobenzene	0.043	0.14	0.043	0.020	U
5989-27-5	d-Limonene	0.084	0.30	0.084	0.030	U
96-12-8	1,2-Dibromo-3-chloropropane	0.050	0.17	0.050	0.016	U
120-82-1	1,2,4-Trichlorobenzene	0.065	0.22	0.065	0.026	U
91-20-3	Naphthalene	0.089	0.16	0.089	0.037	U
87-68-3	Hexachlorobutadiene	0.044	0.075	0.044	0.016	U

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.31	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.074	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.20	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.42	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.47	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.34	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.14	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.35	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.097	0.029	0.012	U
71-43-2	Benzene	0.053	0.17	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.083	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.31	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.081	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.099	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.15	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.12	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.097	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.063	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.21	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/13/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.12	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.078	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.12	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.052	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.10	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.077	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.20	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.41	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.088	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.088	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.090	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.20	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.11	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.10	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.050	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 4/4/23
Date(s) Received: 4/5/23
Date(s) Analyzed: 4/13 - 4/14/23

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P230413-MB	118	86	76	70-130	
Lab Control Sample	P230413-LCS	115	86	77	70-130	
Duplicate Lab Control Sample	P230413-DLCS	117	87	77	70-130	
ODSVE-EFF-Y12Q3	P2301551-001	117	85	75	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 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/14/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	123	135	139	110	113	57-136	3	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.9	46.0	46.6	107	109	59-128	2	25	
74-87-3	Chloromethane	102	115	119	113	117	59-132	3	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	30.6	28.1	27.7	92	91	63-121	1	25	
75-01-4	Vinyl Chloride	82.2	83.2	84.9	101	103	64-127	2	25	
106-99-0	1,3-Butadiene	95.0	101	105	106	111	66-134	5	25	
74-83-9	Bromomethane	54.1	53.7	55.0	99	102	63-134	3	25	
75-00-3	Chloroethane	80.4	83.9	87.5	104	109	63-127	5	25	
64-17-5	Ethanol	584	615	631	105	108	59-125	3	25	
75-05-8	Acetonitrile	128	129	134	101	105	63-132	4	25	
107-02-8	Acrolein	192	207	214	108	111	62-126	3	25	
67-64-1	Acetone	447	470	486	105	109	58-128	4	25	
75-69-4	Trichlorofluoromethane	37.4	39.6	40.0	106	107	62-126	0.9	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	168	203	209	121	124	52-125	2	25	
107-13-1	Acrylonitrile	193	217	222	112	115	71-137	3	25	
75-35-4	1,1-Dichloroethene	51.5	54.0	55.4	105	108	61-133	3	25	
75-09-2	Methylene Chloride	58.7	62.0	63.5	106	108	62-115	2	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	67.8	72.5	74.4	107	110	71-131	3	25	
76-13-1	Trichlorotrifluoroethane	27.4	26.3	26.6	96	97	66-126	1	25	
75-15-0	Carbon Disulfide	138	133	136	96	99	57-134	3	25	
156-60-5	trans-1,2-Dichloroethene	54.5	61.3	62.7	112	115	67-124	3	25	
75-34-3	1,1-Dichloroethane	53.4	57.6	58.8	108	110	68-126	2	25	
1634-04-4	Methyl tert-Butyl Ether	59.9	63.5	64.7	106	108	66-126	2	25	
108-05-4	Vinyl Acetate	313	364	374	116	119	56-139	3	25	
78-93-3	2-Butanone (MEK)	140	155	159	111	114	67-130	3	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 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/14/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	54.0	59.0	60.1	109	111	70-121	2	25	
141-78-6	Ethyl Acetate	110	110	115	100	105	65-128	5	25	
110-54-3	n-Hexane	60.2	66.0	67.5	110	112	63-120	2	25	
67-66-3	Chloroform	44.2	46.6	47.2	105	107	68-123	2	25	
109-99-9	Tetrahydrofuran (THF)	136	139	142	102	104	64-123	2	25	
107-06-2	1,2-Dichloroethane	50.4	63.6	64.5	126	128	65-128	2	25	
71-55-6	1,1,1-Trichloroethane	38.5	42.3	42.1	110	109	68-125	0.9	25	
71-43-2	Benzene	63.9	70.1	71.0	110	111	69-119	0.9	25	
56-23-5	Carbon Tetrachloride	33.4	38.2	38.1	114	114	68-132	0	25	
110-82-7	Cyclohexane	124	126	127	102	102	70-117	0	25	
78-87-5	1,2-Dichloropropane	46.3	49.7	50.4	107	109	69-123	2	25	
75-27-4	Bromodichloromethane	32.3	35.6	35.7	110	111	72-128	0.9	25	
79-01-6	Trichloroethene	39.5	38.5	38.9	97	98	71-123	1	25	
123-91-1	1,4-Dioxane	58.9	64.0	64.9	109	110	71-122	0.9	25	
80-62-6	Methyl Methacrylate	105	107	107	102	102	70-128	0	25	
142-82-5	n-Heptane	52.2	56.0	56.4	107	108	69-123	0.9	25	
10061-01-5	cis-1,3-Dichloropropene	46.7	56.9	57.7	122	124	70-128	2	25	
108-10-1	4-Methyl-2-pentanone	104	127	127	122	122	67-130	0	25	
10061-02-6	trans-1,3-Dichloropropene	43.2	49.1	49.4	114	114	75-133	0	25	
79-00-5	1,1,2-Trichloroethane	39.6	40.1	40.1	101	101	73-119	0	25	
108-88-3	Toluene	56.8	47.2	47.4	83	83	66-119	0	25	
591-78-6	2-Hexanone	104	117	118	113	113	62-128	0	25	
124-48-1	Dibromochloromethane	25.1	22.4	22.2	89	88	70-130	1	25	
106-93-4	1,2-Dibromoethane	26.6	23.9	23.8	90	89	74-122	1	25	
123-86-4	n-Butyl Acetate	89.3	99.5	100	111	112	65-134	0.9	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 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

ALS Sample ID: P230413-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 4/14/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		DOD		Acceptance	RPD	RPD	Data
		LCS / DLCS	LCS	DLCS	% Recovery					
		ppbV	ppbV	ppbV	LCS	DLCS	Limits		Limit	Qualifier
111-65-9	n-Octane	45.4	42.5	42.9	94	94	69-121	0	25	
127-18-4	Tetrachloroethene	31.6	25.3	25.3	80	80	66-124	0	25	
108-90-7	Chlorobenzene	46.9	39.0	38.9	83	83	70-119	0	25	
100-41-4	Ethylbenzene	50.2	40.9	40.9	81	81	70-124	0	25	
179601-23-1	m,p-Xylenes	99.0	82.1	81.9	83	83	61-134	0	25	
75-25-2	Bromoform	21.1	18.6	18.4	88	87	66-139	1	25	
100-42-5	Styrene	50.3	44.8	44.6	89	89	73-127	0	25	
95-47-6	o-Xylene	49.7	42.9	42.5	86	86	67-125	0	25	
111-84-2	n-Nonane	40.8	43.7	43.9	107	108	63-128	0.9	25	
79-34-5	1,1,2,2-Tetrachloroethane	31.5	29.5	29.6	94	94	65-127	0	25	
98-82-8	Cumene	43.1	37.4	36.7	87	85	68-124	2	25	
80-56-8	alpha-Pinene	38.8	36.1	32.9	93	85	62-136	9	25	
103-65-1	n-Propylbenzene	43.1	38.8	38.5	90	89	69-123	1	25	
622-96-8	4-Ethyltoluene	44.4	39.0	38.7	88	87	67-129	1	25	
108-67-8	1,3,5-Trimethylbenzene	44.0	38.1	36.8	87	84	67-130	4	25	
95-63-6	1,2,4-Trimethylbenzene	43.1	38.4	37.7	89	87	66-132	2	25	
100-44-7	Benzyl Chloride	82.7	81.6	80.1	99	97	50-147	2	25	
541-73-1	1,3-Dichlorobenzene	35.6	29.3	29.1	82	82	65-130	0	25	
106-46-7	1,4-Dichlorobenzene	35.6	28.5	28.3	80	79	60-131	1	25	
95-50-1	1,2-Dichlorobenzene	35.3	29.5	28.8	84	82	63-129	2	25	
5989-27-5	d-Limonene	37.3	38.2	34.6	102	93	65-136	9	25	
96-12-8	1,2-Dibromo-3-chloropropane	43.1	37.4	34.6	87	80	73-133	8	25	
120-82-1	1,2,4-Trichlorobenzene	59.3	48.3	41.9	81	71	55-142	13	25	
91-20-3	Naphthalene	42.0	39.2	31.5	93	75	57-138	21	25	
87-68-3	Hexachlorobutadiene	20.4	14.3	11.3	70	55	56-138	24	25	L

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.

L = Laboratory control sample recovery outside the specified limits, results may be biased low.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 04132303.D
Date Analyzed: 4/13/23
Time Analyzed: 22:33

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P230413-LCS	04132315.D	08:26
Duplicate Lab Control Sample	P230413-DLCS	04132317.D	10:00
ODSVE-EFF-Y12Q3	P2301551-001	04132319.D	11:34

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2301551

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Topacio Zavala
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 04132301.D
Date Analyzed: 4/13/23
Time Analyzed: 21:20

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	175188		7.34		785847	9.39
Upper Limit	245263		7.67		1100186	9.72
Lower Limit	105113		7.01		471508	9.06

Client Sample ID		IS1 (BCM)	IS2 (DFB)	IS3 (CBZ)
01	Method Blank	165889	7.31	753827
02	Lab Control Sample	177212	7.34	777785
03	Duplicate Lab Control Sample	177157	7.34	785553
04	ODSVE-EFF-Y12Q3	182720	7.32	810364
05				
06				
07				
08				
09				
10				
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.

T2 4/14/23

Data File : I:\MS13\DATA\2023_04\13\04132319.D
 Acq On : 14 Apr 2023 11:34
 Sample : P2301551-001 (1000mL)
 Misc : S37-04102301

Vial: 6
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 12:53:33 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	182720	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.37	114	810364	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	169751	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	354370	14.614	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	116.88%
57) Toluene-d8 (SS2)	12.48	98	930884	10.663	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.28%
73) Bromofluorobenzene (SS3)	16.85	174	301627	9.433	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	75.44%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	3.46	85	91172	2.724	ng	99
4) Chloromethane	3.60	50	1141	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	1367	0.081	ng	93
6) Vinyl Chloride	3.80	62	3209	0.144	ng	95
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	4.26	64	206	N.D.		
10) Ethanol	4.38	45	123616	9.526	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.65	56	4238	0.395	ng	96
13) Acetone	0.00	58	0	N.D.	d	
14) Trichlorofluoromethane	4.85	101	36826	1.222	ng	99
15) 2-Propanol (Isopropanol)	4.94	45	22426	0.502	ng	84
16) Acrylonitrile	5.06	53	62	N.D.		
17) 1,1-Dichloroethene	5.36	96	18400	1.189	ng	# 84
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	5.45	84	1137	0.070	ng	# 61
20) 3-Chloro-1-propene (Al...	5.55	41	111	N.D.		
21) Trichlorotrifluoroethane	5.67	151	240376	15.173	ng	91
22) Carbon Disulfide	5.70	76	26063	0.405	ng	# 18
23) trans-1,2-Dichloroethene	6.23	61	41920	1.769	ng	90
24) 1,1-Dichloroethane	6.40	63	19778	0.684	ng	99
25) Methyl tert-Butyl Ether	6.50	73	239	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.	d	
27) 2-Butanone (MEK)	6.76	72	4598	0.468	ng	# 79
28) cis-1,2-Dichloroethene	7.16	61	1269683	54.401	ng	90
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	7.37	61	16028	2.479	ng	# 47
31) n-Hexane	7.38	57	7737	0.311	ng	# 45
32) Chloroform	7.43	83	702362	23.859	ng	100
34) Tetrahydrofuran (THF)	7.86	72	366	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.19	62	922	N.D.		
38) 1,1,1-Trichloroethane	8.47	97	24060	0.897	ng	97
39) Isopropyl Acetate	9.37	61	26296	No Calib		
40) 1-Butanol	8.90	56	5725	No Calib	#	
41) Benzene	8.97	78	10428	0.165	ng	96
42) Carbon Tetrachloride	9.14	117	51707	2.185	ng	100
43) Cyclohexane	9.29	84	7159	0.310	ng	96
44) tert-Amyl Methyl Ether	9.67	73	748	N.D.		
45) 1,2-Dichloropropane	9.93	63	1154	0.073	ng	86
46) Bromodichloromethane	10.14	83	1605	0.069	ng	98
47) Trichloroethene	10.21	130	1398347	75.715	ng	99
48) 1,4-Dioxane	10.21	88	383	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2023_04\13\04132319.D
 Acq On : 14 Apr 2023 11:34
 Sample : P2301551-001 (1000mL)
 Misc : S37-04102301

Vial: 6
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 12:53:33 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

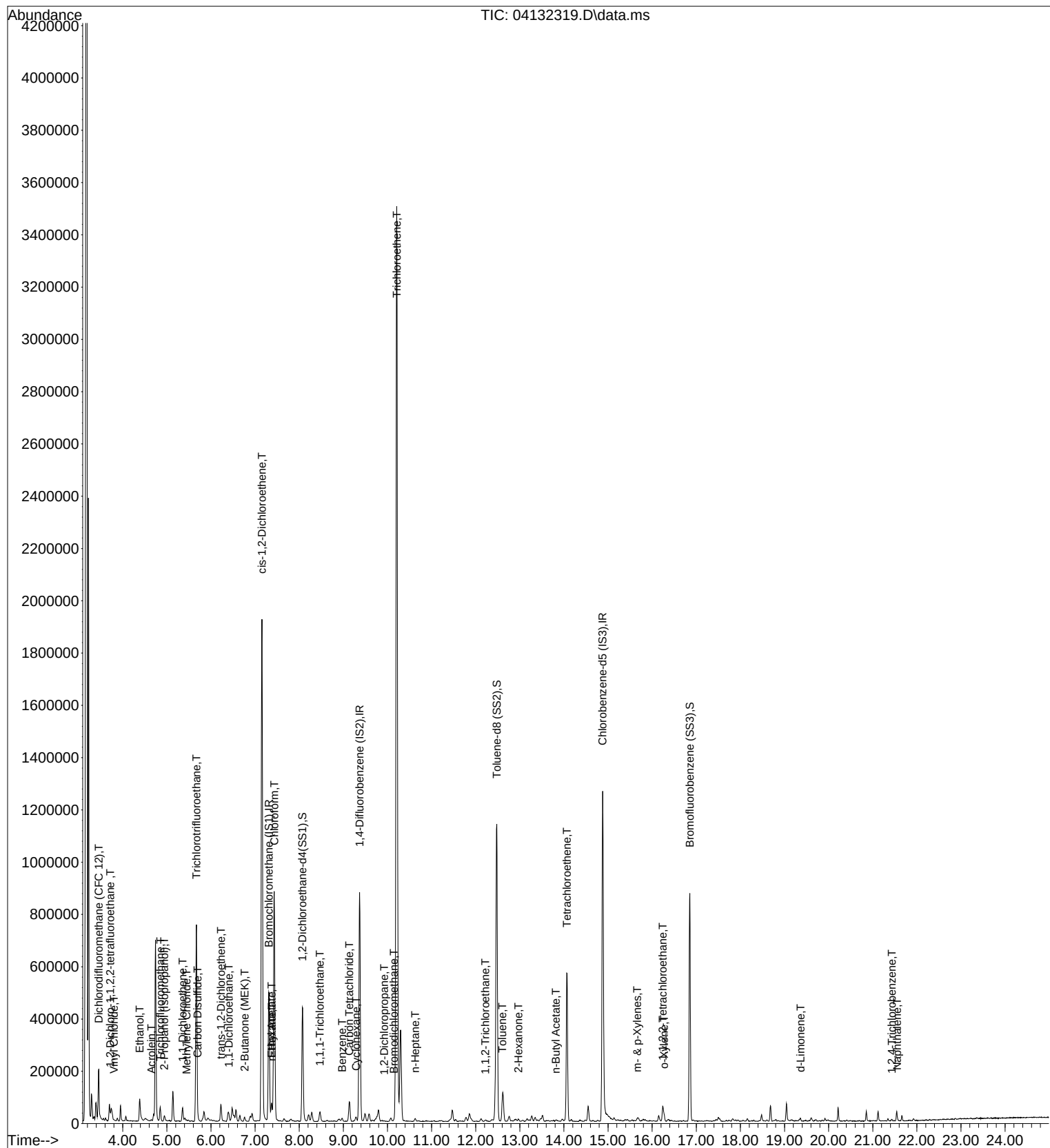
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	2686	0.176	ng	87
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.40	58	147	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	12.22	97	2385	0.146	ng	98
58) Toluene	12.60	91	47892	0.576	ng	97
59) 2-Hexanone	12.97	43	5680	0.141	ng	# 62
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.82	43	5621	0.122	ng	83
63) n-Octane	0.00	57	0	N.D.	d	
64) Tetrachloroethene	14.07	166	202428	8.007	ng	99
65) Chlorobenzene	14.93	112	703	N.D.		
66) Ethylbenzene	15.44	91	3920	N.D.		
67) m- & p-Xylenes	15.66	91	10373	0.130	ng	97
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.12	104	577	N.D.		
70) o-Xylene	16.27	91	15027	0.197	ng	99
71) n-Nonane	16.64	43	1635	N.D.		
72) 1,1,2,2-Tetrachloroethane	16.24	83	31170	0.946	ng	98
74) Cumene	17.06	105	694	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.74	91	1273	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	2326	N.D.		
79) 1,3,5-Trimethylbenzene	18.05	105	2633	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	2265	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.76	91	1830	N.D.		
85) 1,3-Dichlorobenzene	18.77	146	793	N.D.		
86) 1,4-Dichlorobenzene	18.86	146	860	N.D.		
87) sec-Butylbenzene	18.96	105	751	N.D.		
88) 4-Isopropyltoluene (p-...	19.18	119	2304	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	560	N.D.		
91) d-Limonene	19.36	68	2553	0.097	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.85	157	471	N.D.		
93) n-Undecane	18.23	58	569	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	2494	0.071	ng	99
95) Naphthalene	21.55	128	6084	0.072	ng	96
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	575	N.D.		
98) Cyclohexanone	15.70	55	617	No Calib	#	
99) tert-Butylbenzene	18.59	119	691	N.D.		
100) n-Butylbenzene	19.71	91	1602	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:\MS13\DATA\2023_04\13\04132319.D
Acq On : 14 Apr 2023 11:34
Sample : P2301551-001 (1000mL)
Misc : S37-04102301

Vial: 6
Operator: TZ
Inst : MS13

Quant Time: Apr 14 12:53:33 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Feb 23 07:57:30 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_04\13\04132319.D
 Acq On : 14 Apr 2023 11:34
 Sample : P2301551-001 (1000mL)
 Misc : S37-04102301

Vial: 6
 Operator: TZ
 Inst : MS13

TZ 4/14/23

Quant Time: Apr 14 12:53:33 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	182720	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.37	114	810364	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	169751	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	354370	14.614	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	116.88%
57) Toluene-d8 (SS2)	12.48	98	930884	10.663	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	85.28%
73) Bromofluorobenzene (SS3)	16.85	174	301627	9.433	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	75.44%

Target Compounds

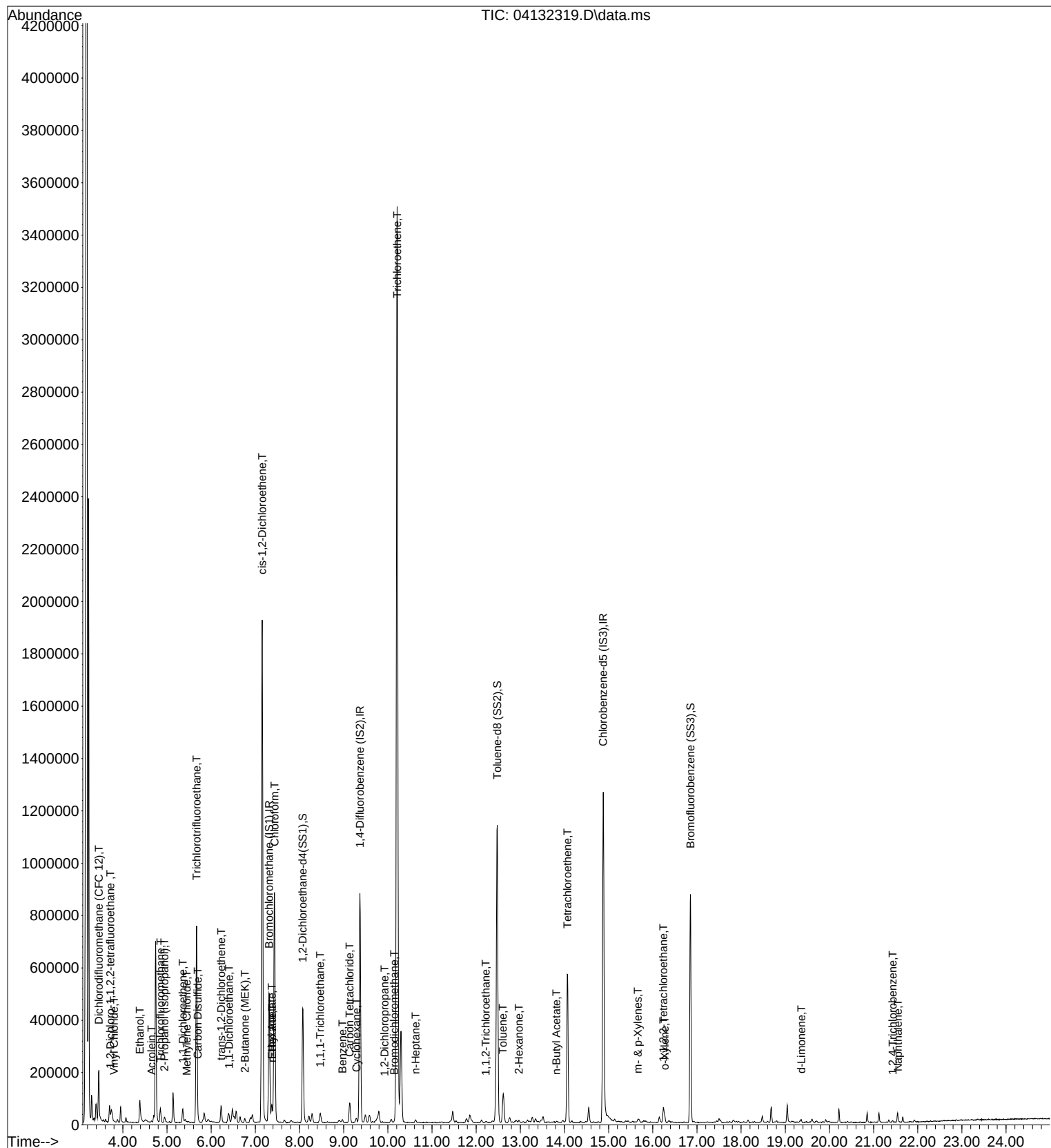
						Qvalue
3) Dichlorodifluoromethan...	3.46	85	91172	2.724	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	1367	0.081	ng	93
6) Vinyl Chloride	3.80	62	3209	0.144	ng	95
10) Ethanol	4.38	45	123616	9.526	ng	99
12) Acrolein	4.65	56	4238	0.395	ng	96
14) Trichlorofluoromethane	4.85	101	36826	1.222	ng	99
15) 2-Propanol (Isopropanol)	4.94	45	22426	0.502	ng	84
17) 1,1-Dichloroethene	5.36	96	18400	1.189	ng	# 84
19) Methylene Chloride	5.45	84	1137	0.070	ng	# 61
21) Trichlorotrifluoroethane	5.67	151	240376	15.173	ng	91
22) Carbon Disulfide	5.70	76	26063	0.405	ng	# 18
23) trans-1,2-Dichloroethene	6.23	61	41920	1.769	ng	90
24) 1,1-Dichloroethane	6.40	63	19778	0.684	ng	99
27) 2-Butanone (MEK)	6.76	72	4598	0.468	ng	# 79
28) cis-1,2-Dichloroethene	7.16	61	1269683	54.401	ng	90
30) Ethyl Acetate	7.37	61	16028	2.479	ng	# 47
31) n-Hexane	7.38	57	7737	0.311	ng	# 45
32) Chloroform	7.43	83	702362	23.859	ng	100
38) 1,1,1-Trichloroethane	8.47	97	24060	0.897	ng	97
41) Benzene	8.97	78	10428	0.165	ng	96
42) Carbon Tetrachloride	9.14	117	51707	2.185	ng	100
43) Cyclohexane	9.29	84	7159	0.310	ng	96
45) 1,2-Dichloropropane	9.93	63	1154	0.073	ng	86
46) Bromodichloromethane	10.14	83	1605	0.069	ng	98
47) Trichloroethene	10.21	130	1398347	75.715	ng	99
51) n-Heptane	10.63	71	2686	0.176	ng	87
55) 1,1,2-Trichloroethane	12.22	97	2385	0.146	ng	98
58) Toluene	12.60	91	47892	0.576	ng	97
59) 2-Hexanone	12.97	43	5680	0.141	ng	# 62
62) n-Butyl Acetate	13.82	43	5621	0.122	ng	83
64) Tetrachloroethene	14.07	166	202428	8.007	ng	99
67) m- & p-Xylenes	15.66	91	10373	0.130	ng	97
70) o-Xylene	16.27	91	15027	0.197	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	31170	0.946	ng	98
91) d-Limonene	19.36	68	2553	0.097	ng	97
94) 1,2,4-Trichlorobenzene	21.43	180	2494	0.071	ng	99
95) Naphthalene	21.55	128	6084	0.072	ng	96

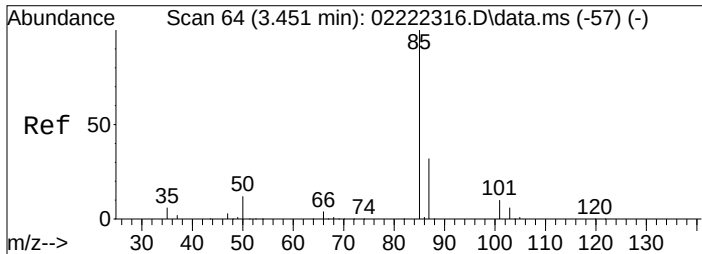
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS13\DATA\2023_04\13\04132319.D
Acq On : 14 Apr 2023 11:34
Sample : P2301551-001 (1000mL)
Misc : S37-04102301

Vial: 6
Operator: TZ
Inst : MS13

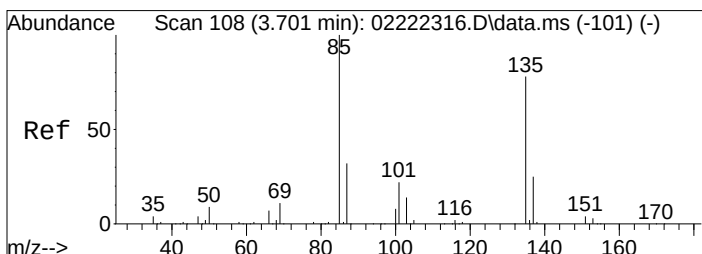
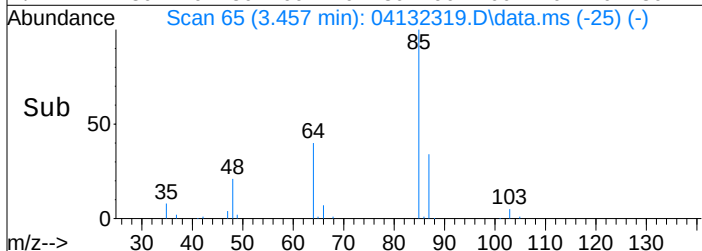
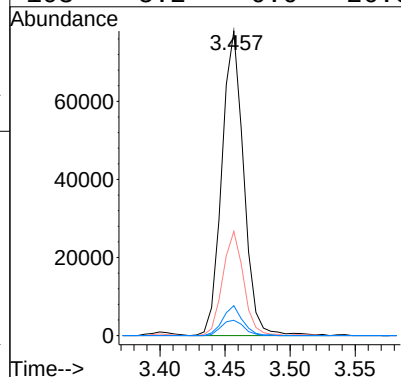
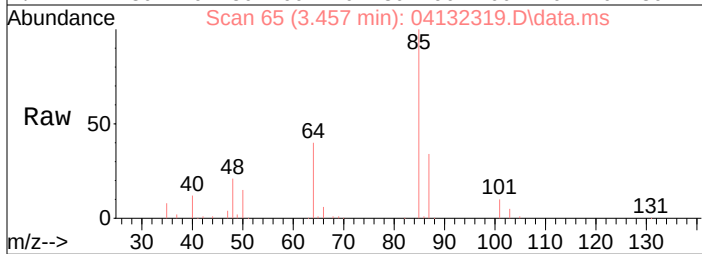
Quant Time: Apr 14 12:53:33 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Feb 23 07:57:30 2023
Response via : Initial Calibration
DataAcq Meth:T015.M





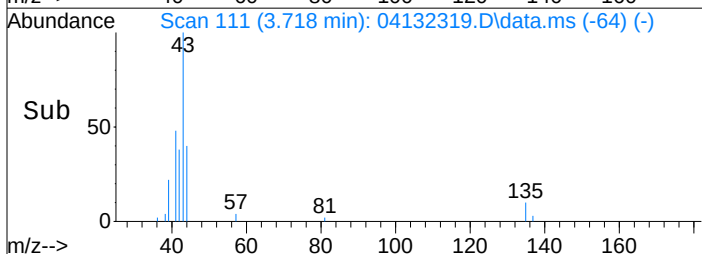
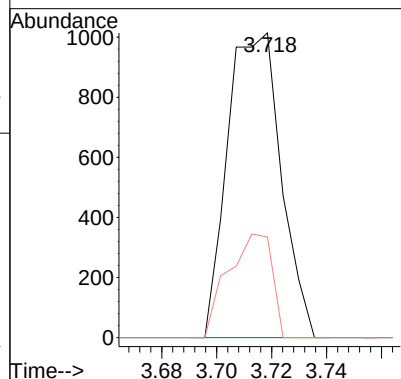
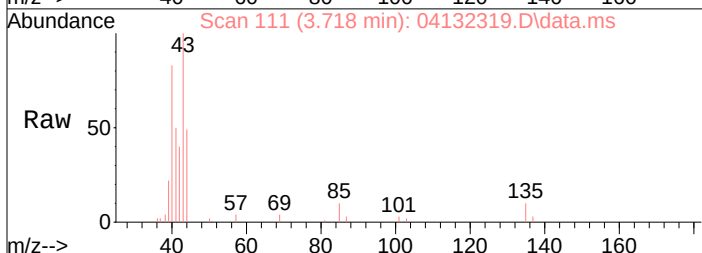
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.72 ng
 RT: 3.46 min Scan# 65
 Delta R.T. -0.021 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

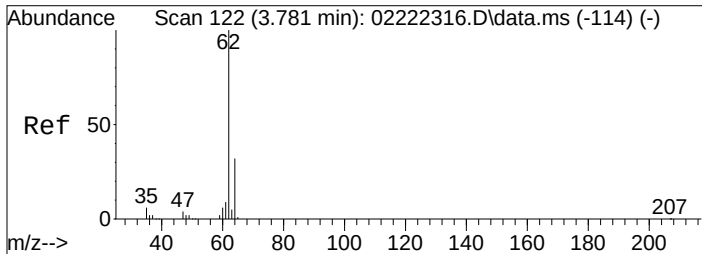
Tgt Ion:	85	Resp:	91172
Ion Ratio	Lower	Upper	
85	100		
87	32.6	12.4	52.4
101	9.0	0.0	29.4
103	5.2	0.0	26.0



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.08 ng
 RT: 3.72 min Scan# 111
 Delta R.T. 0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

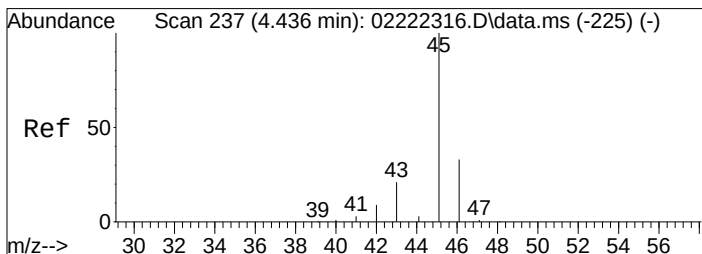
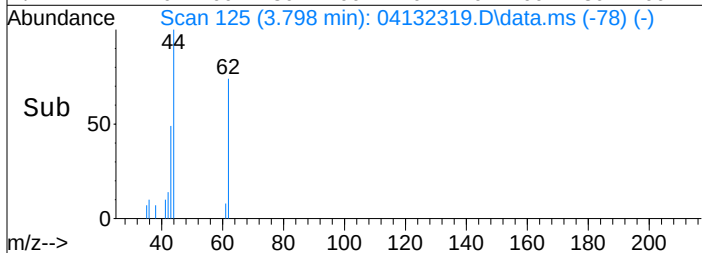
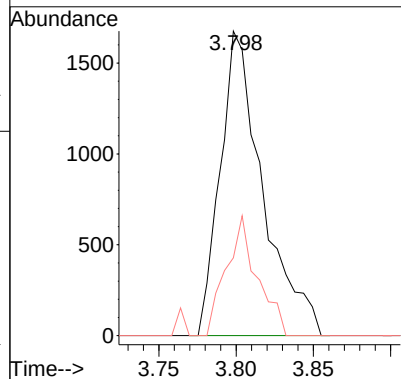
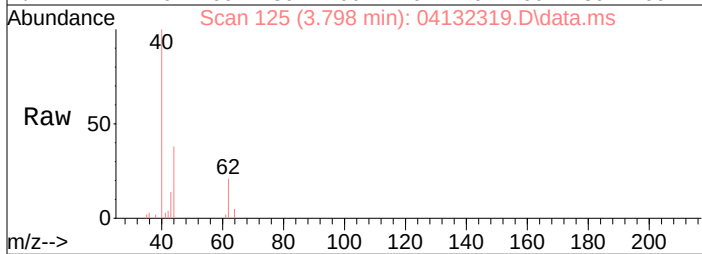
Tgt Ion:	135	Resp:	1367
Ion Ratio	Lower	Upper	
135	100		
137	28.1	12.2	52.2





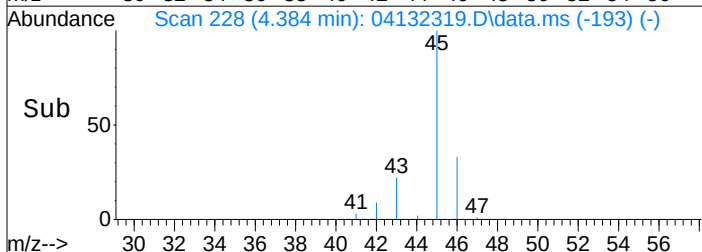
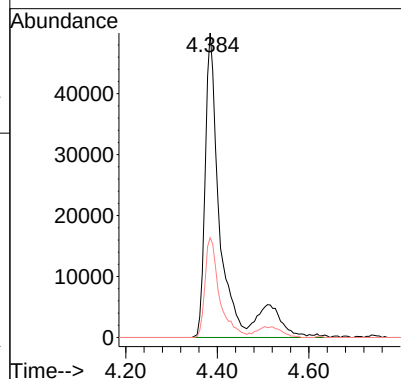
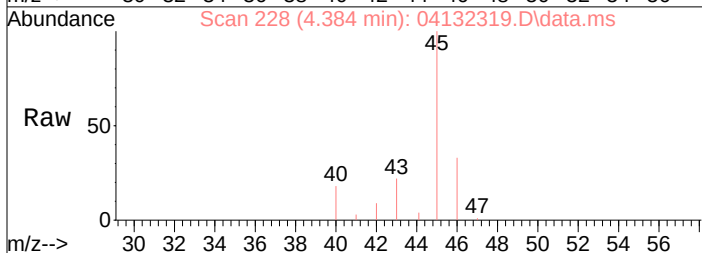
#6
 Vinyl Chloride
 Concen: 0.14 ng
 RT: 3.80 min Scan# 125
 Delta R.T. 0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

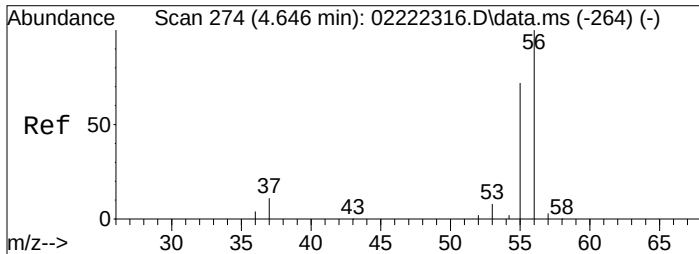
Tgt Ion: 62 Resp: 3209
 Ion Ratio Lower Upper
 62 100
 64 28.8 11.8 51.8



#10
 Ethanol
 Concen: 9.53 ng
 RT: 4.38 min Scan# 228
 Delta R.T. -0.051 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

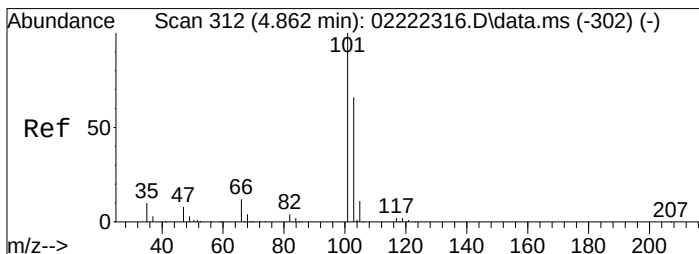
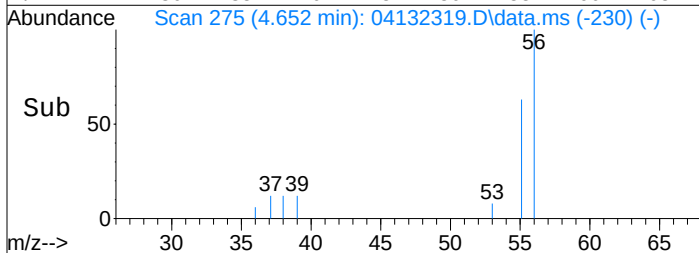
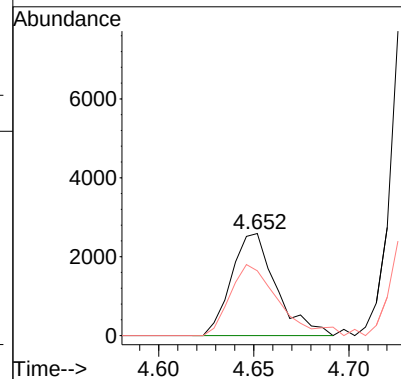
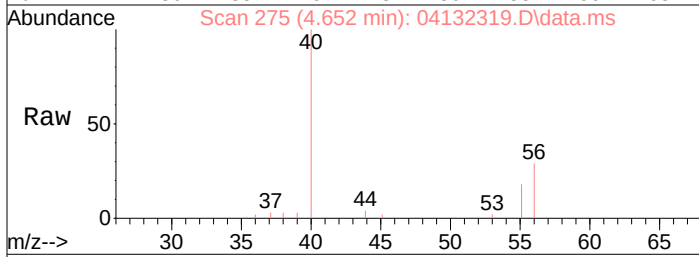
Tgt Ion: 45 Resp: 123616
 Ion Ratio Lower Upper
 45 100
 46 34.5 13.8 53.8





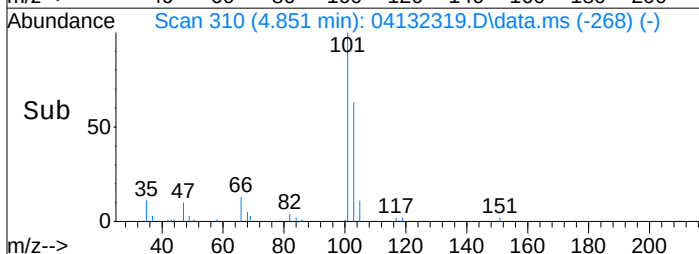
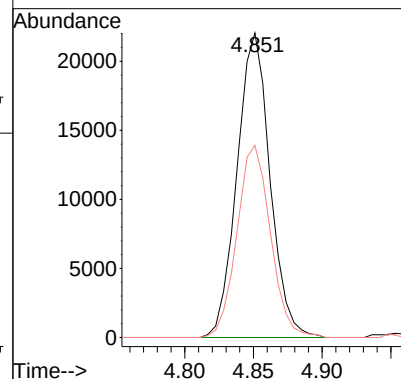
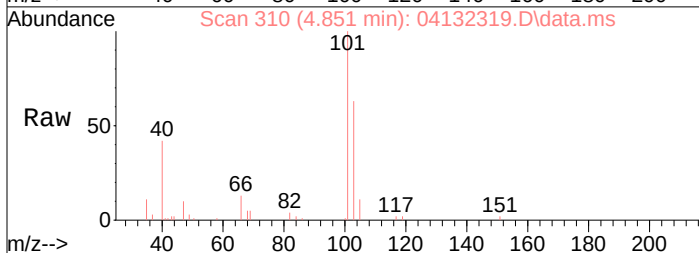
#12
Acrolein
Concen: 0.39 ng
RT: 4.65 min Scan# 275
Delta R.T. 0.006 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

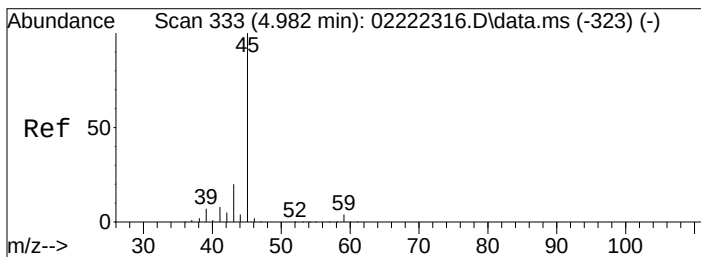
Tgt Ion: 56 Resp: 4238
Ion Ratio Lower Upper
56 100
55 74.3 50.9 90.9



#14
Trichlorofluoromethane
Concen: 1.22 ng
RT: 4.85 min Scan# 310
Delta R.T. -0.011 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

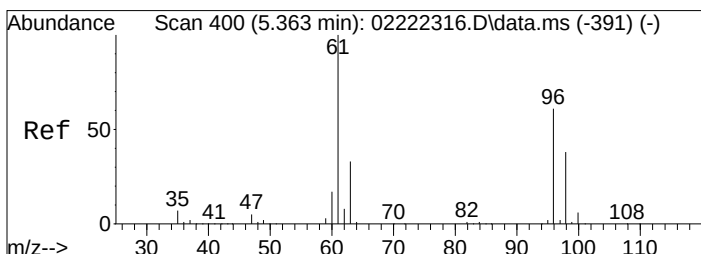
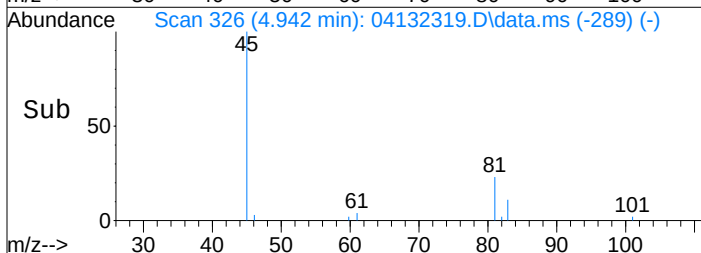
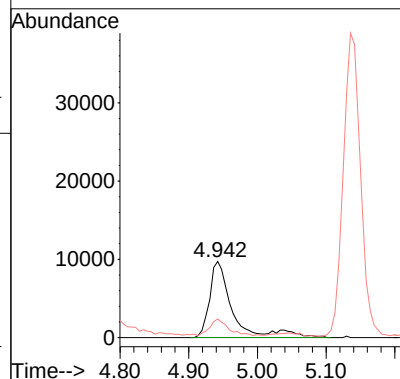
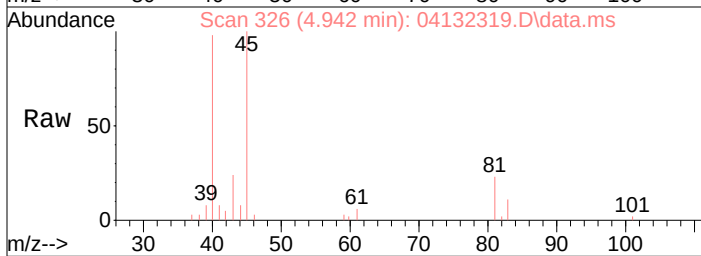
Tgt Ion: 101 Resp: 36826
Ion Ratio Lower Upper
101 100
103 64.2 45.2 85.2





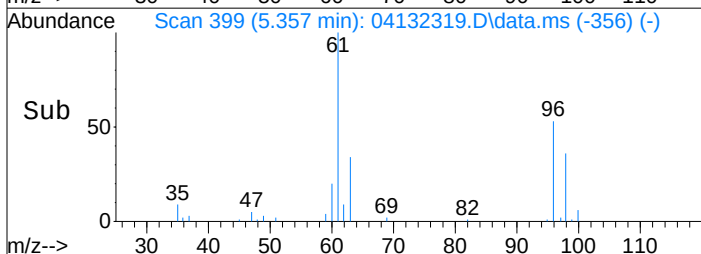
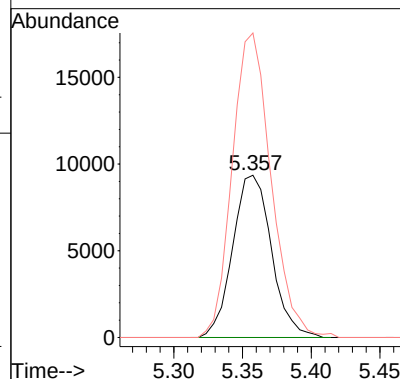
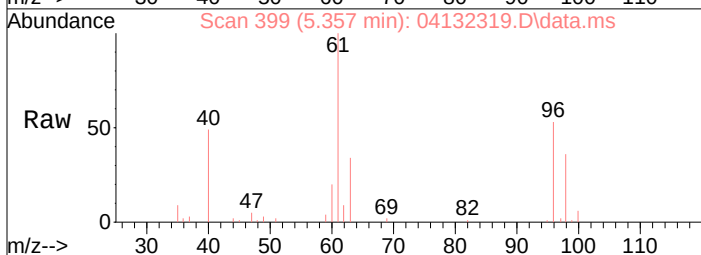
#15
 2-Propanol (Isopropanol)
 Concen: 0.50 ng
 RT: 4.94 min Scan# 326
 Delta R.T. -0.040 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

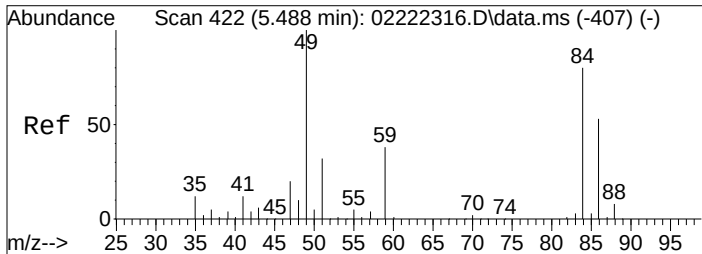
Tgt Ion: 45 Resp: 22426
 Ion Ratio Lower Upper
 45 100
 43 26.9 0.0 39.7



#17
 1,1-Dichloroethene
 Concen: 1.19 ng
 RT: 5.36 min Scan# 399
 Delta R.T. -0.006 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

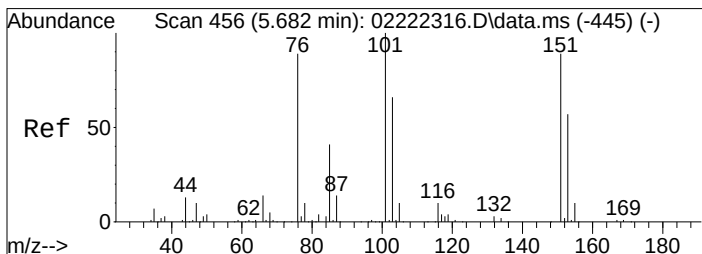
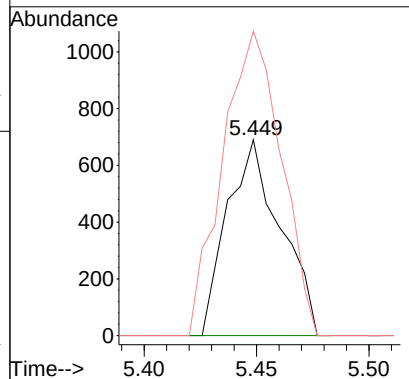
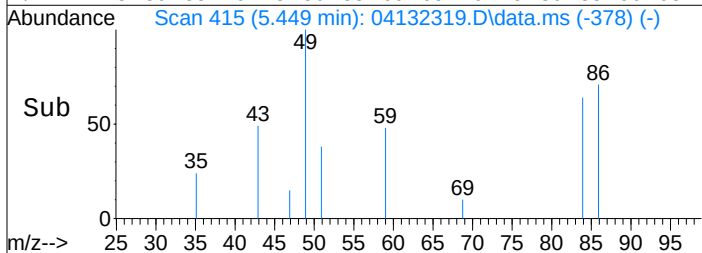
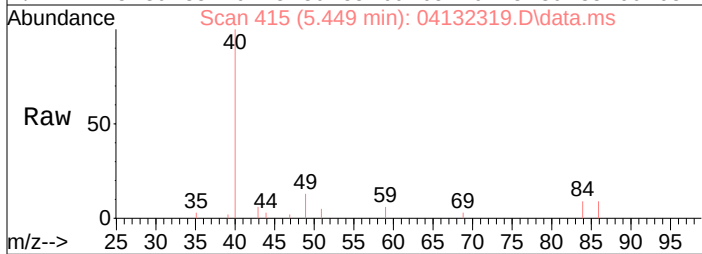
Tgt Ion: 96 Resp: 18400
 Ion Ratio Lower Upper
 96 100
 61 187.3 145.7 185.7#





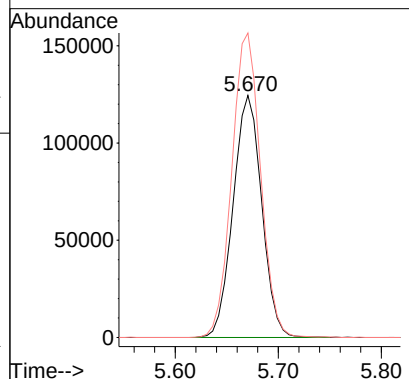
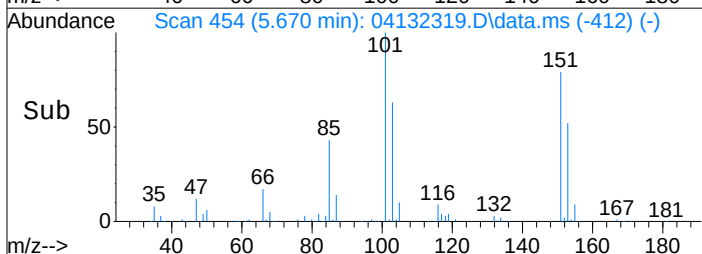
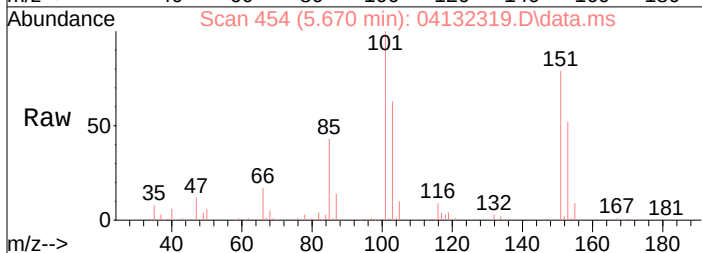
#19
Methylene Chloride
Concen: 0.07 ng
RT: 5.45 min Scan# 415
Delta R.T. -0.040 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

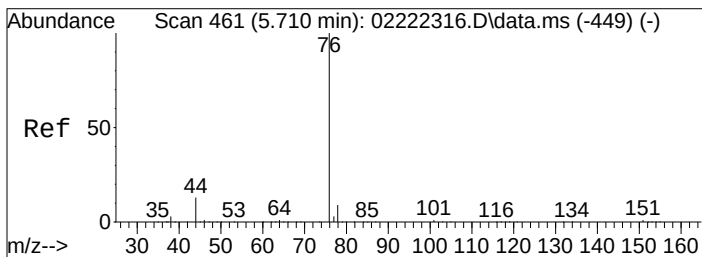
Tgt Ion	84	Resp	1137
Ion Ratio	84	100	
Lower	49	171.4	101.3
Upper			151.3#



#21
Trichlorotrifluoroethane
Concen: 15.17 ng
RT: 5.67 min Scan# 454
Delta R.T. -0.011 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

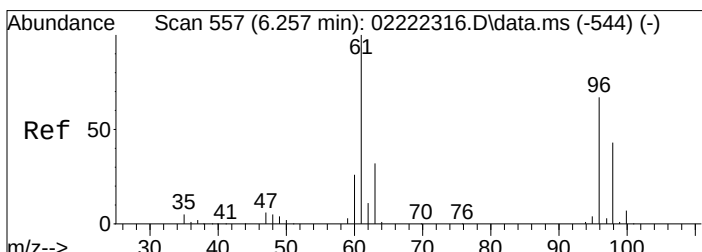
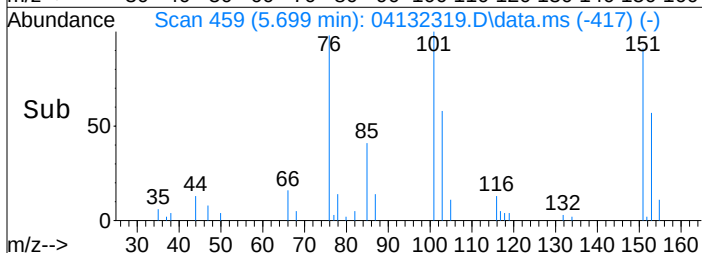
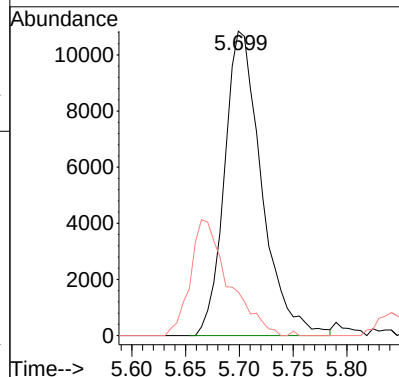
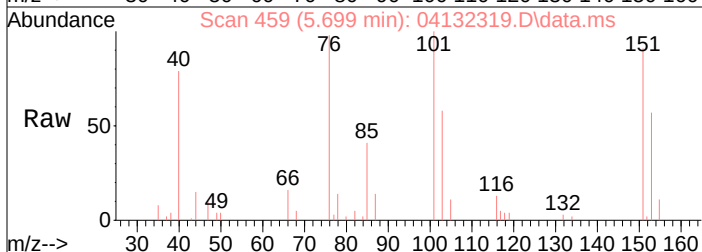
Tgt Ion	151	Resp	240376
Ion Ratio	151	100	
Lower	101	126.3	96.3
Upper			136.3





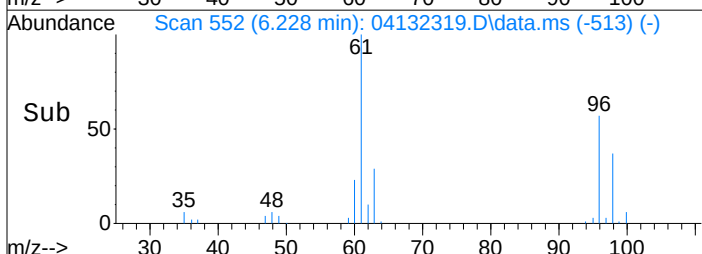
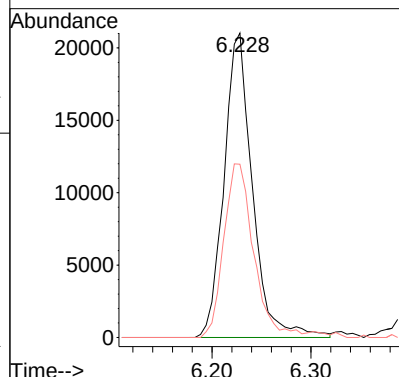
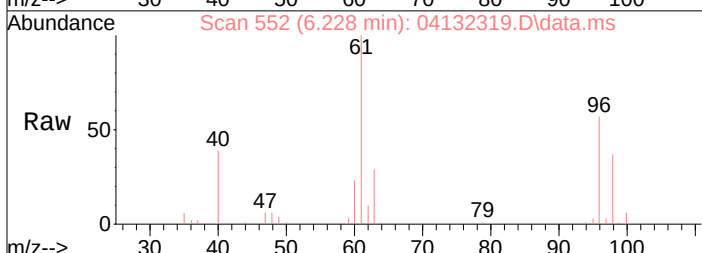
#22
Carbon Disulfide
Concen: 0.41 ng
RT: 5.70 min Scan# 459
Delta R.T. -0.011 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

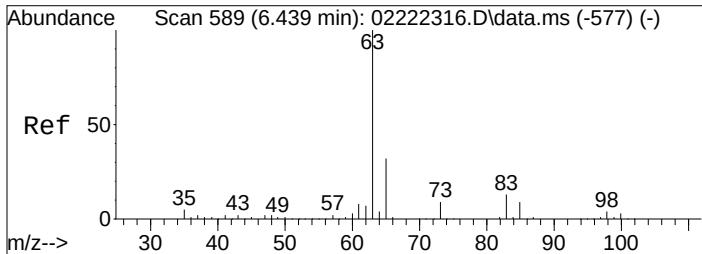
Tgt Ion: 76 Resp: 26063
Ion Ratio Lower Upper
76 100
78 39.3 0.0 29.3#



#23
trans-1,2-Dichloroethene
Concen: 1.77 ng
RT: 6.23 min Scan# 552
Delta R.T. -0.028 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

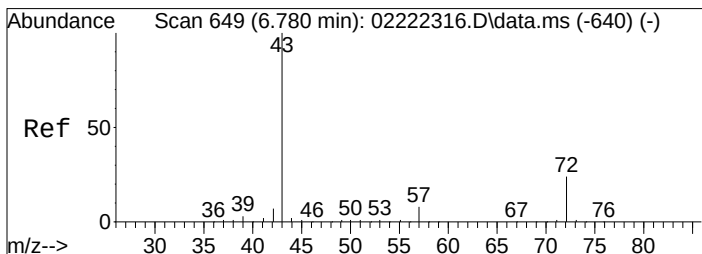
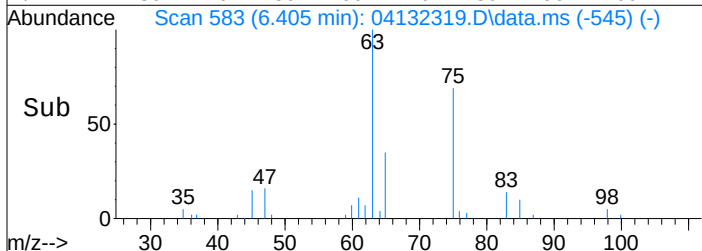
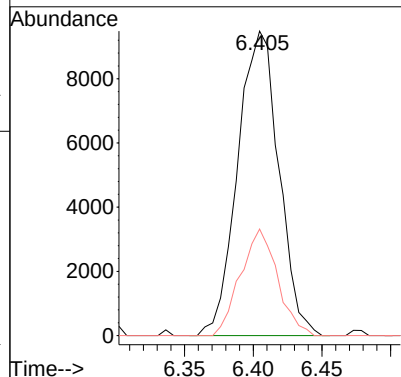
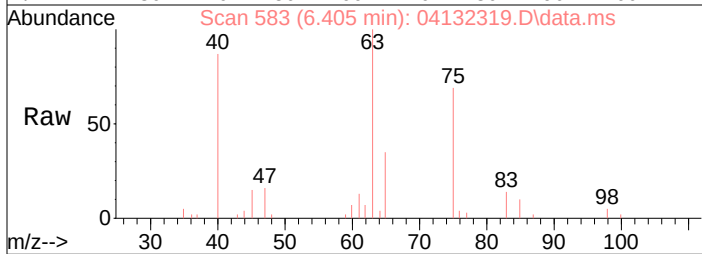
Tgt Ion: 61 Resp: 41920
Ion Ratio Lower Upper
61 100
96 60.0 47.7 87.7





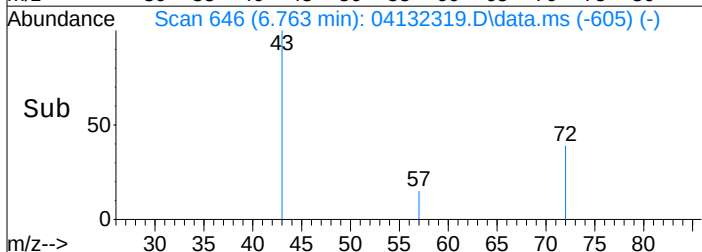
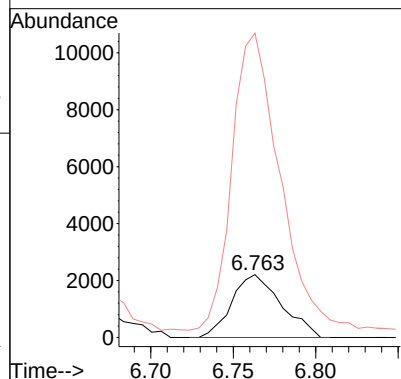
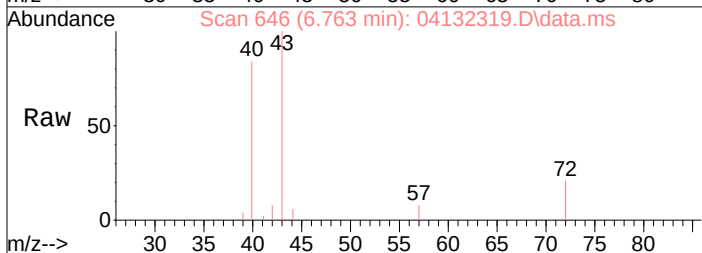
#24
 1,1-Dichloroethane
 Concen: 0.68 ng
 RT: 6.40 min Scan# 583
 Delta R.T. -0.034 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

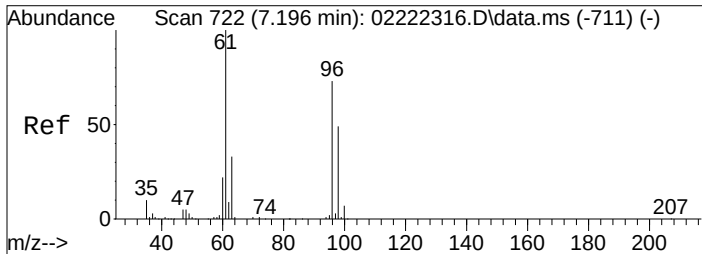
Tgt Ion: 63 Resp: 19778
 Ion Ratio Lower Upper
 63 100
 65 31.5 12.0 52.0



#27
 2-Butanone (MEK)
 Concen: 0.47 ng
 RT: 6.76 min Scan# 646
 Delta R.T. -0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

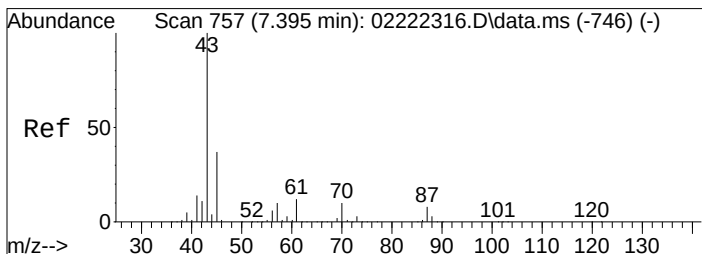
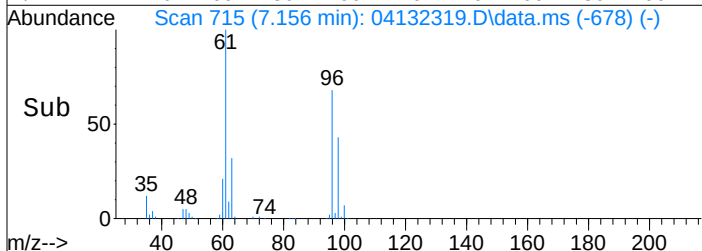
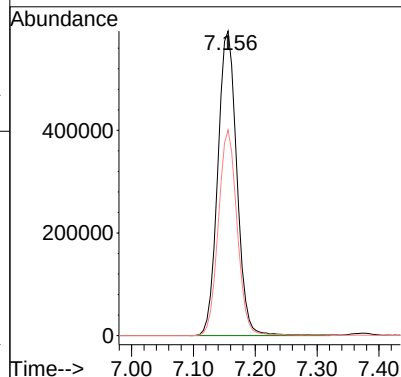
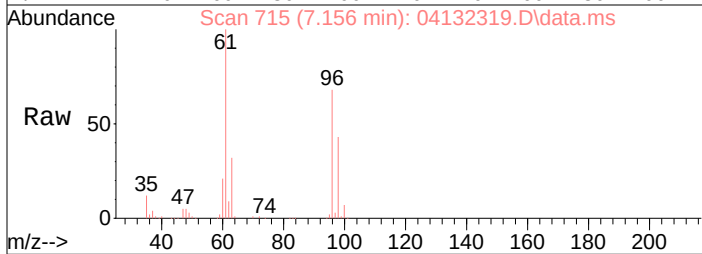
Tgt Ion: 72 Resp: 4598
 Ion Ratio Lower Upper
 72 100
 43 472.3 400.5 440.5#





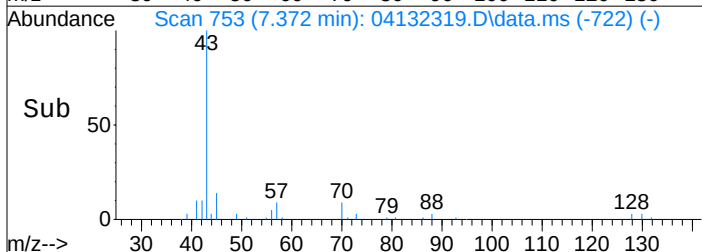
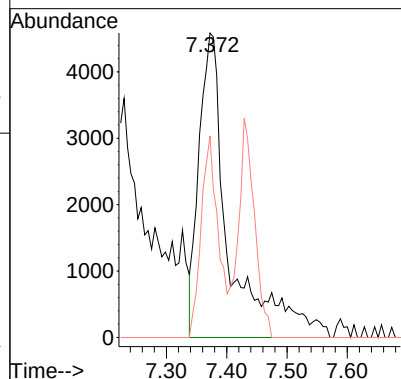
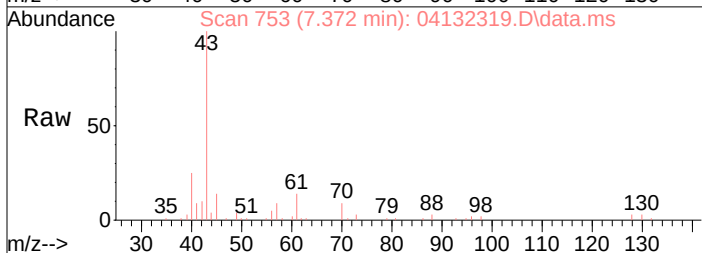
#28
 cis-1,2-Dichloroethene
 Concen: 54.40 ng
 RT: 7.16 min Scan# 715
 Delta R.T. -0.040 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

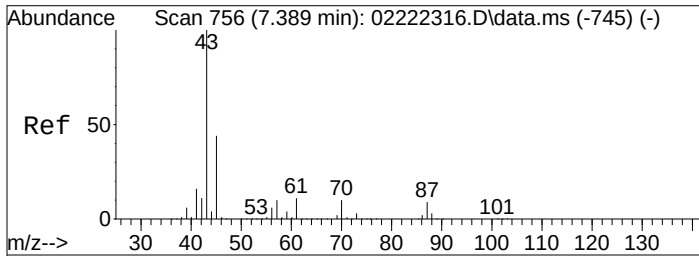
Tgt Ion: 61 Resp: 1269683
 Ion Ratio Lower Upper
 61 100
 96 66.4 54.5 94.5



#30
 Ethyl Acetate
 Concen: 2.48 ng
 RT: 7.37 min Scan# 753
 Delta R.T. -0.023 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

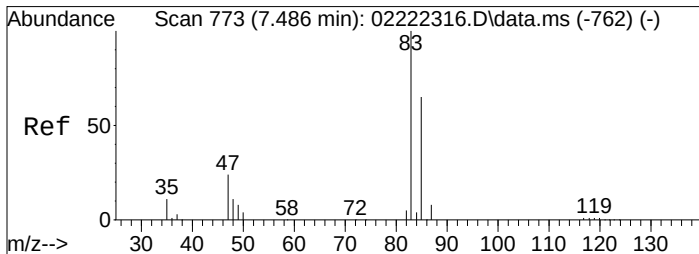
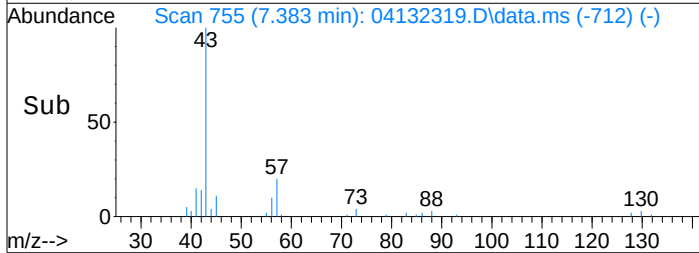
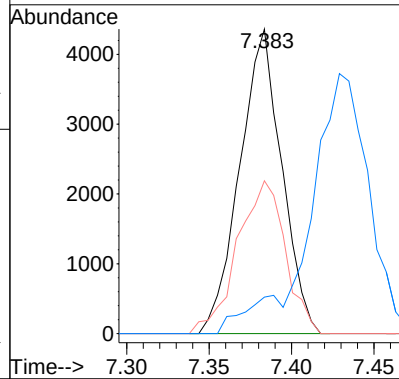
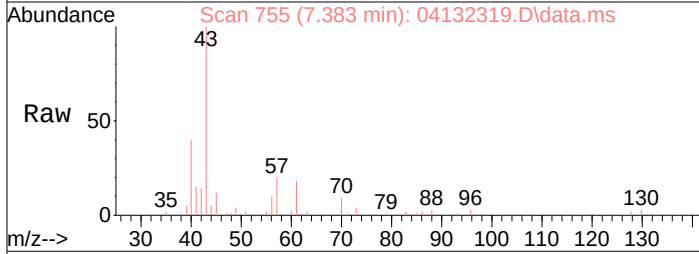
Tgt Ion: 61 Resp: 16028
 Ion Ratio Lower Upper
 61 100
 70 36.8 65.6 105.6#





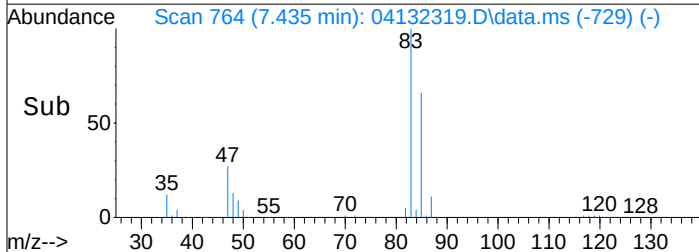
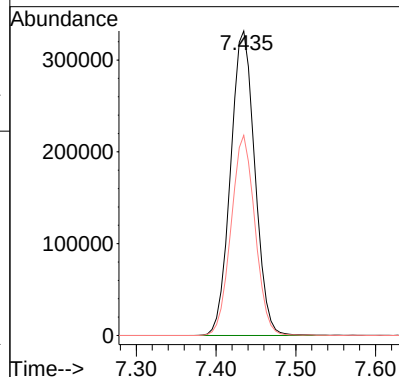
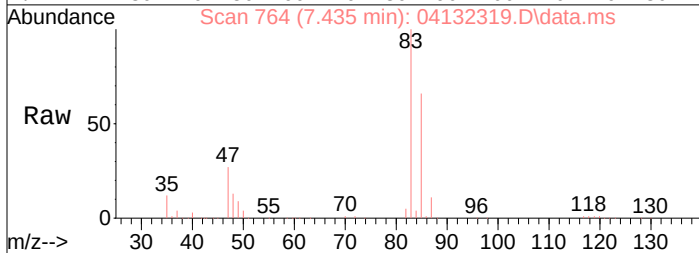
#31
n-Hexane
Concen: 0.31 ng
RT: 7.38 min Scan# 755
Delta R.T. -0.006 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

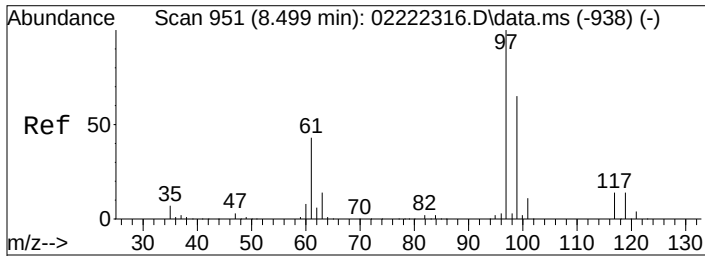
Tgt Ion: 57 Resp: 7737
Ion Ratio Lower Upper
57 100
56 56.9 44.0 66.0
86 119.2 11.5 17.3#



#32
Chloroform
Concen: 23.86 ng
RT: 7.43 min Scan# 764
Delta R.T. -0.051 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

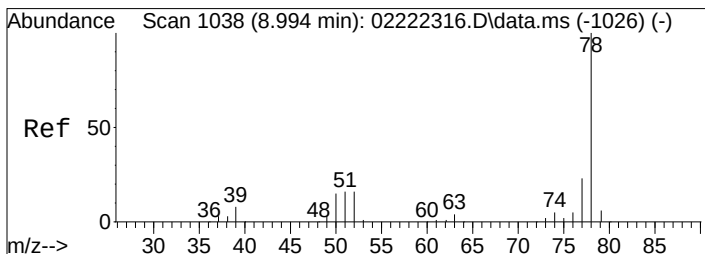
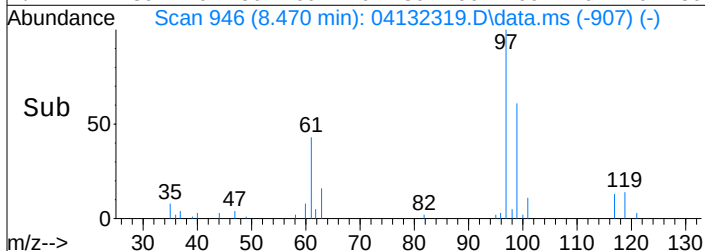
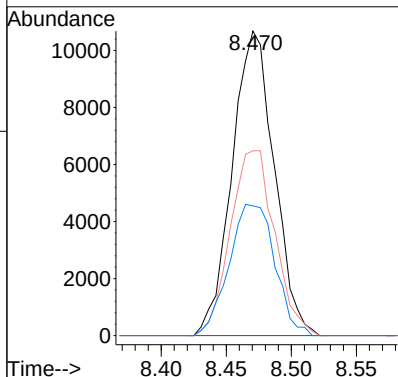
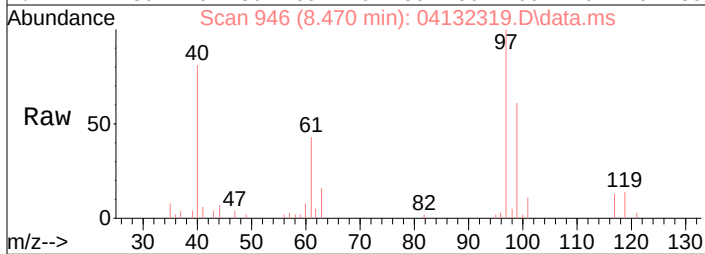
Tgt Ion: 83 Resp: 702362
Ion Ratio Lower Upper
83 100
85 64.9 45.0 85.0





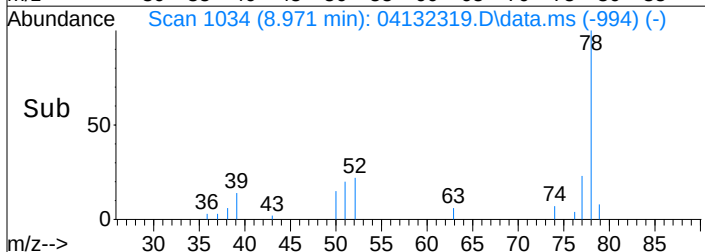
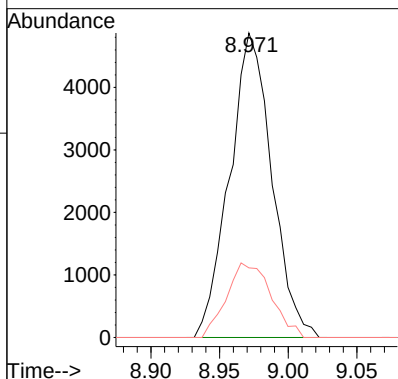
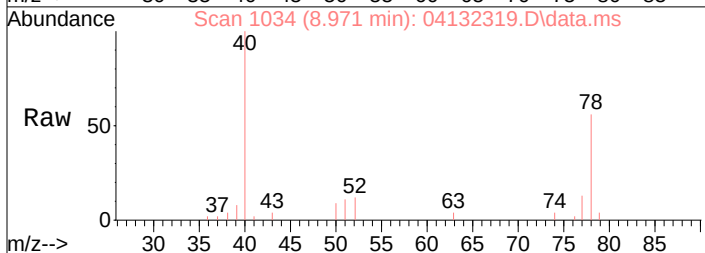
#38
 1,1,1-Trichloroethane
 Concen: 0.90 ng
 RT: 8.47 min Scan# 946
 Delta R.T. -0.028 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

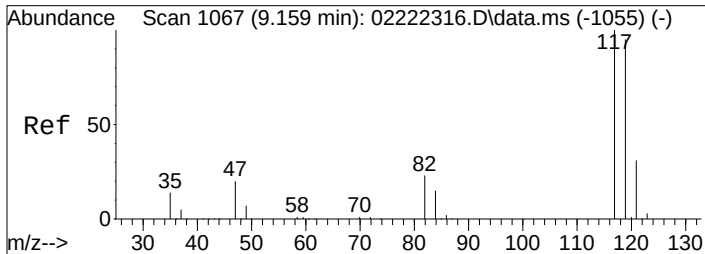
Tgt Ion:	97	Resp:	24060
Ion Ratio		Lower	Upper
97	100		
99	64.1	44.9	84.9
61	46.9	23.5	63.5



#41
 Benzene
 Concen: 0.17 ng
 RT: 8.97 min Scan# 1034
 Delta R.T. -0.023 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

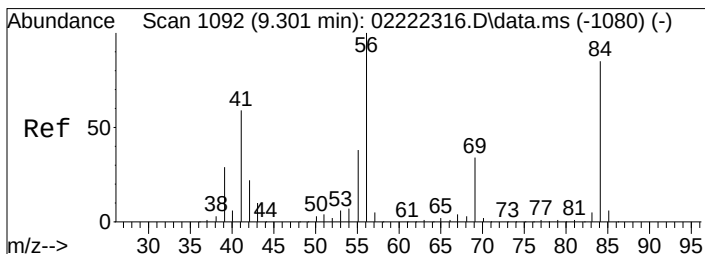
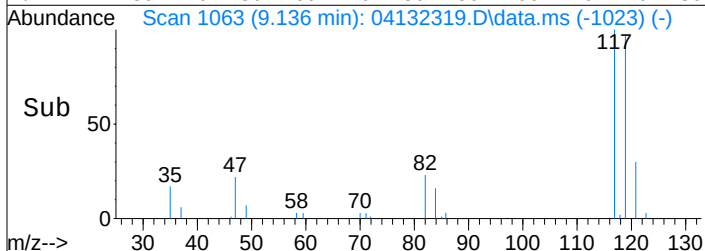
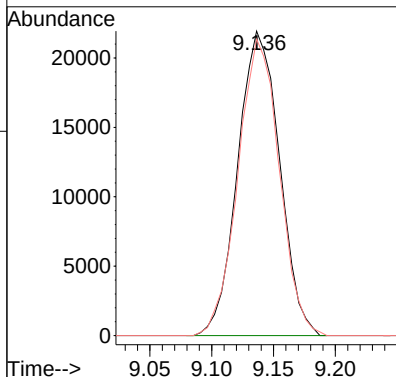
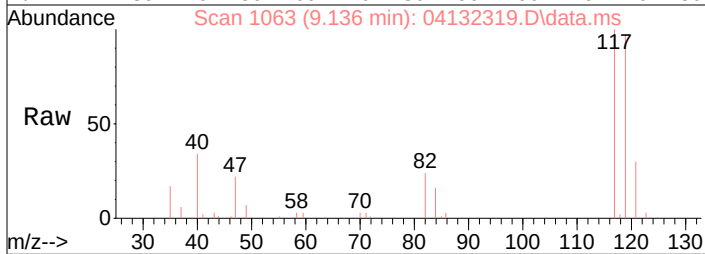
Tgt Ion:	78	Resp:	10428
Ion Ratio		Lower	Upper
78	100		
77	25.6	3.7	43.7





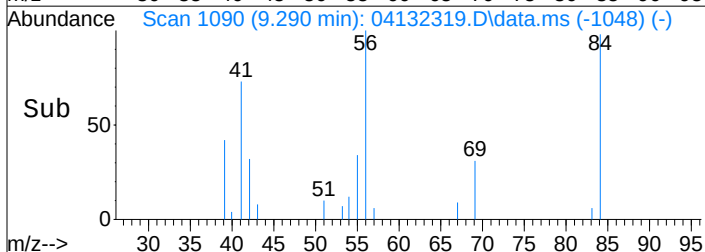
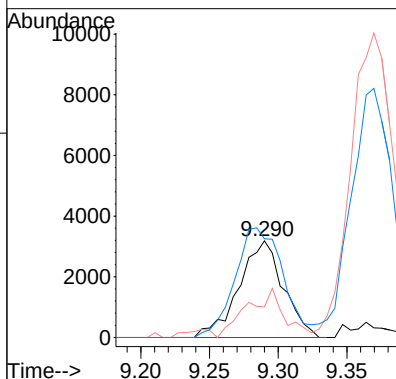
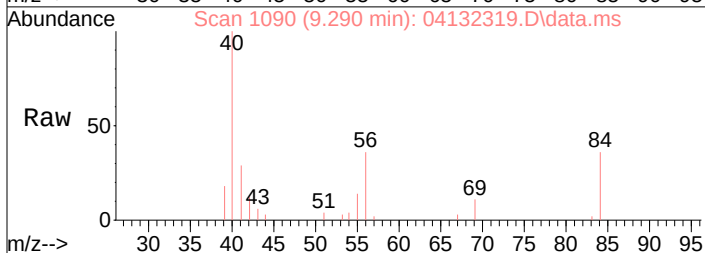
#42
Carbon Tetrachloride
Concen: 2.19 ng
RT: 9.14 min Scan# 1063
Delta R.T. -0.023 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

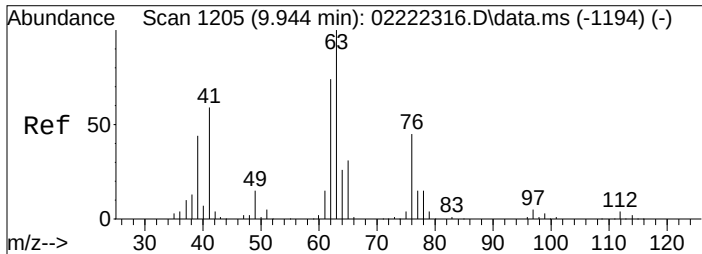
Tgt Ion: 117 Resp: 51707
Ion Ratio Lower Upper
117 100
119 96.2 75.7 115.7



#43
Cyclohexane
Concen: 0.31 ng
RT: 9.29 min Scan# 1090
Delta R.T. -0.011 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

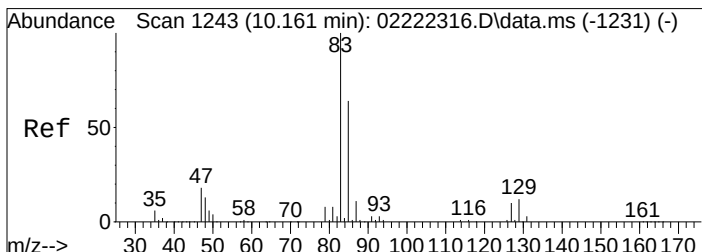
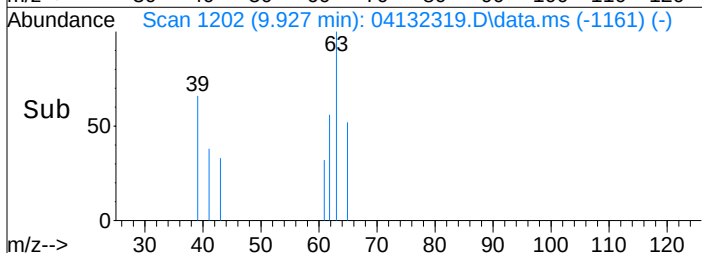
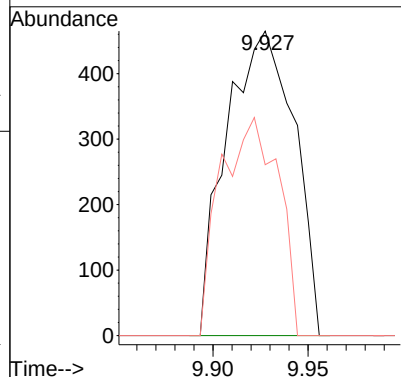
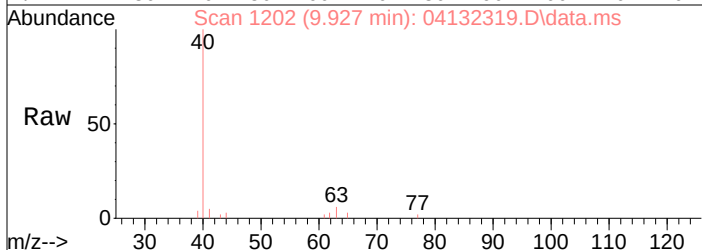
Tgt Ion: 84 Resp: 7159
Ion Ratio Lower Upper
84 100
69 42.4 20.0 60.0
56 123.1 98.5 138.5





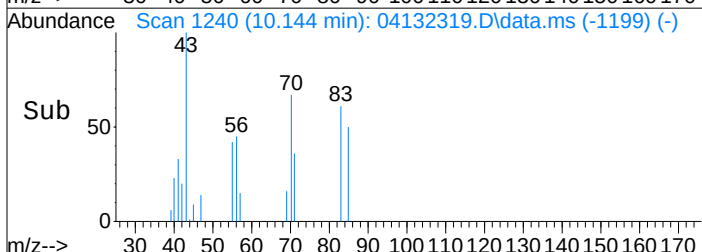
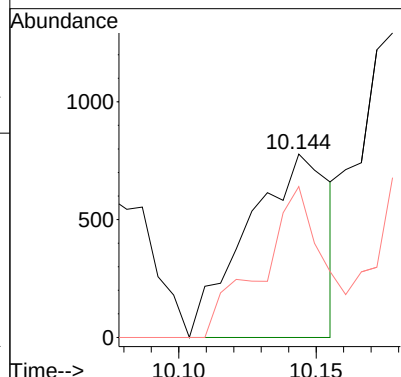
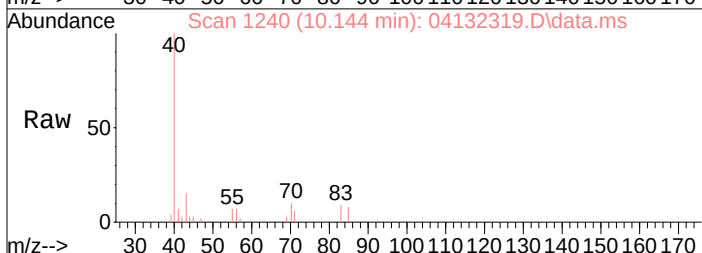
#45
 1,2-Dichloropropane
 Concen: 0.07 ng
 RT: 9.93 min Scan# 1202
 Delta R.T. -0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

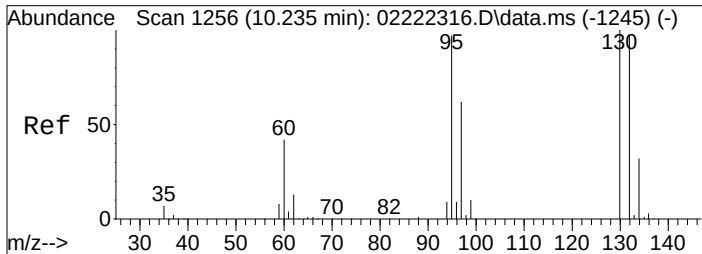
Tgt Ion	63	Resp	1154
Ion Ratio	Lower	Upper	
63	100		
62	61.0	52.6	92.6



#46
 Bromodichloromethane
 Concen: 0.07 ng
 RT: 10.14 min Scan# 1240
 Delta R.T. -0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

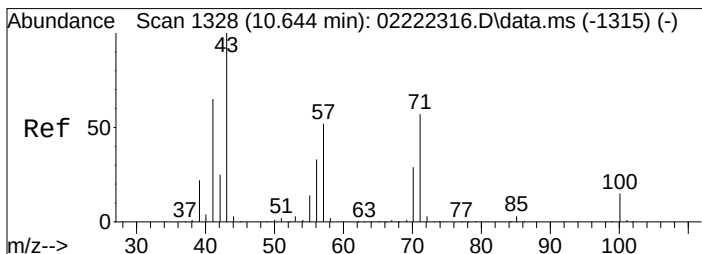
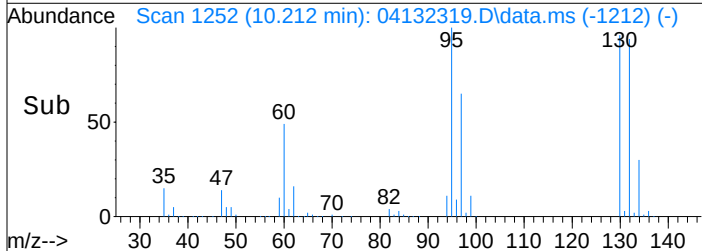
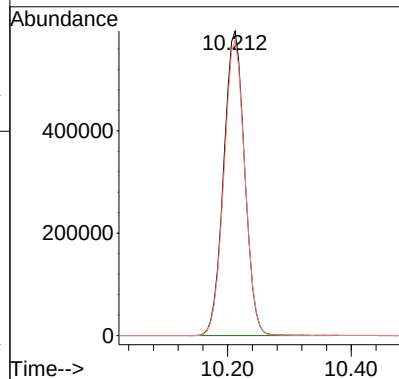
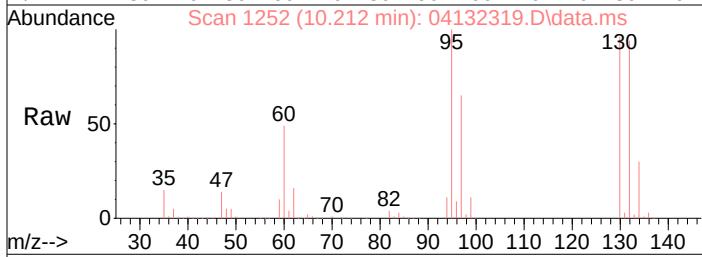
Tgt Ion	83	Resp	1605
Ion Ratio	Lower	Upper	
83	100		
85	62.6	44.0	84.0





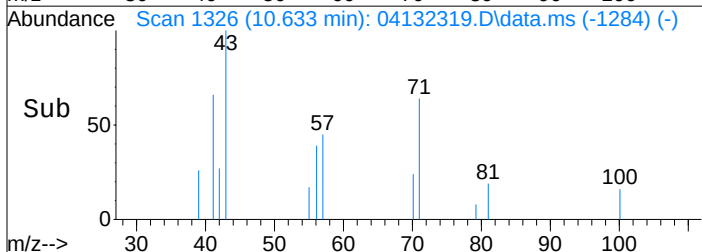
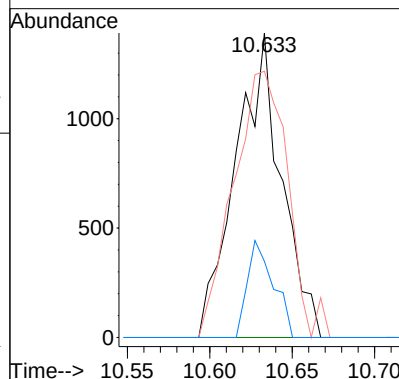
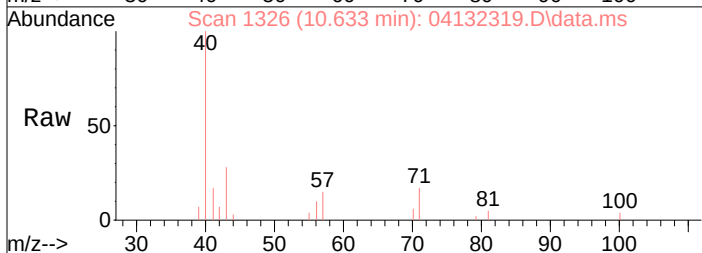
#47
 Trichloroethene
 Concen: 75.72 ng
 RT: 10.21 min Scan# 1252
 Delta R.T. -0.023 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

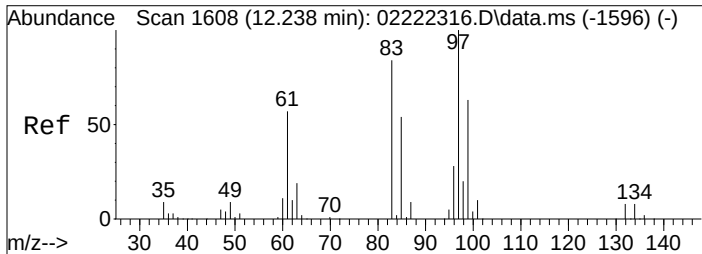
Tgt Ion: 130 Resp: 1398347
 Ion Ratio Lower Upper
 130 100
 132 96.9 76.3 116.3



#51
 n-Heptane
 Concen: 0.18 ng
 RT: 10.63 min Scan# 1326
 Delta R.T. -0.011 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

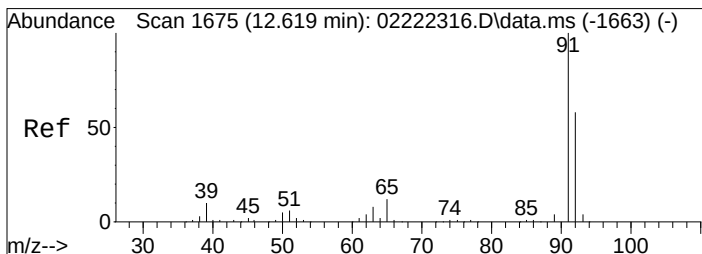
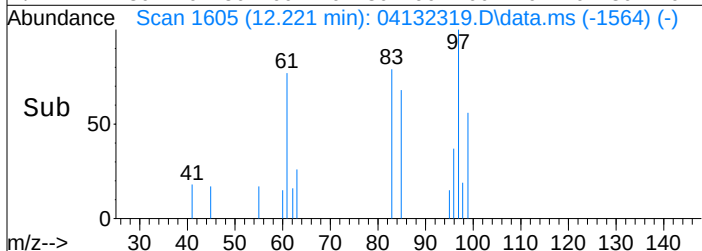
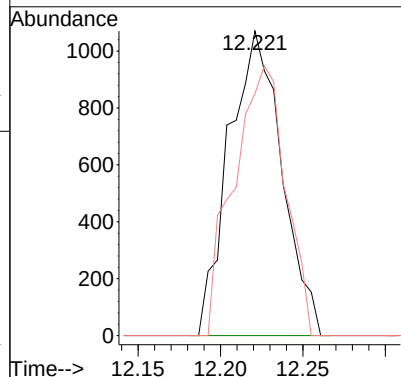
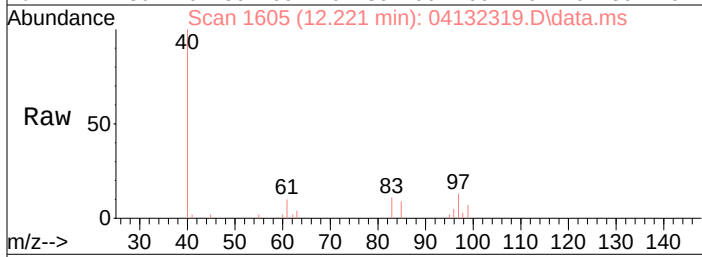
Tgt Ion: 71 Resp: 2686
 Ion Ratio Lower Upper
 71 100
 57 103.5 71.7 111.7
 100 18.2 5.8 45.8





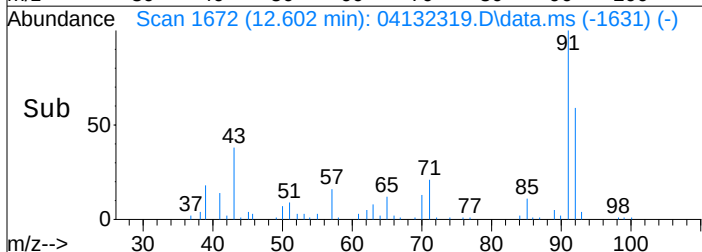
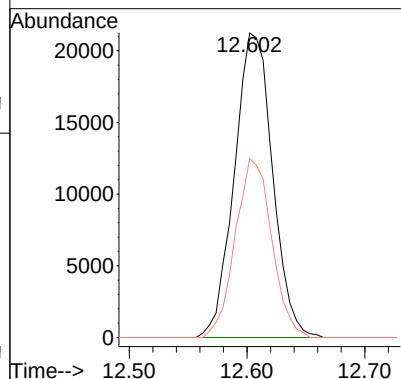
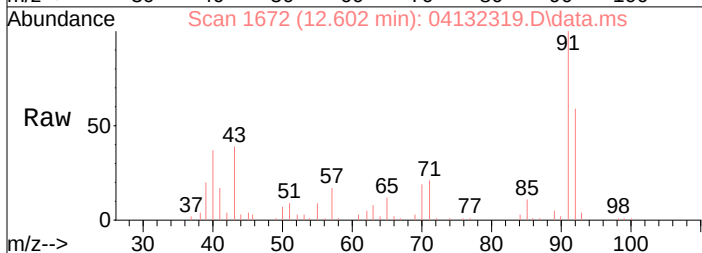
#55
 1,1,2-Trichloroethane
 Concen: 0.15 ng
 RT: 12.22 min Scan# 1605
 Delta R.T. -0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

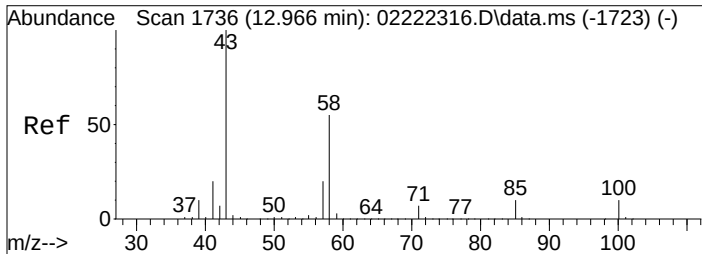
Tgt Ion: 97 Resp: 2385
 Ion Ratio Lower Upper
 97 100
 83 87.1 65.0 105.0



#58
 Toluene
 Concen: 0.58 ng
 RT: 12.60 min Scan# 1672
 Delta R.T. -0.017 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

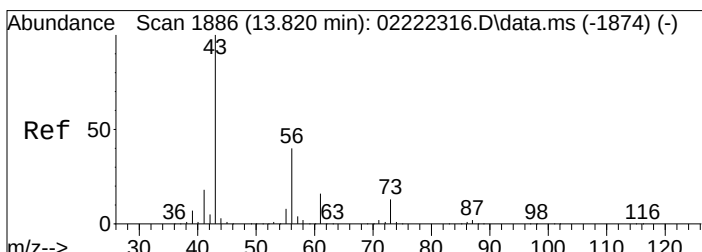
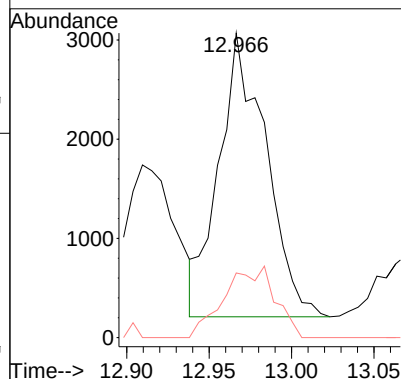
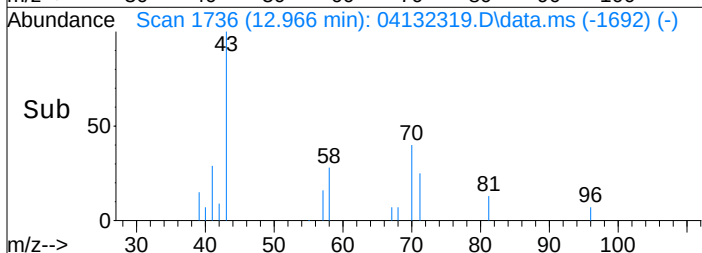
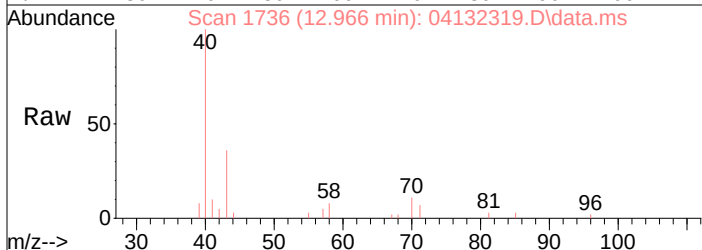
Tgt Ion: 91 Resp: 47892
 Ion Ratio Lower Upper
 91 100
 92 56.1 38.0 78.0





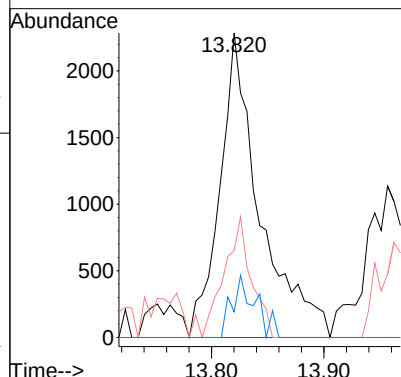
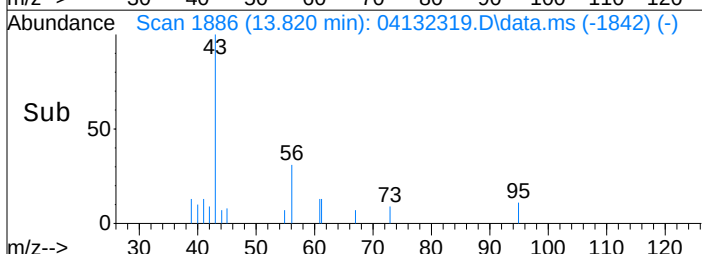
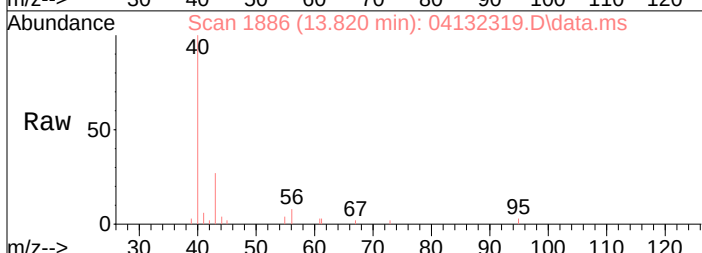
#59
2-Hexanone
Concen: 0.14 ng
RT: 12.97 min Scan# 1736
Delta R.T. 0.000 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

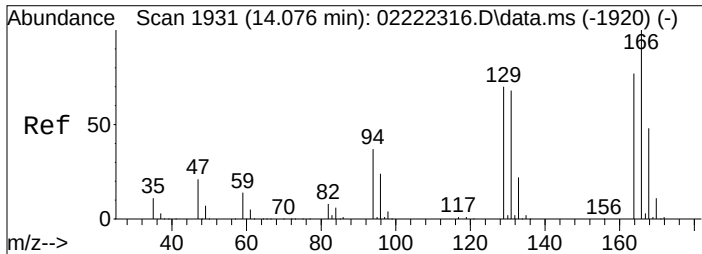
Tgt Ion: 43 Resp: 5680
Ion Ratio Lower Upper
43 100
58 27.0 34.5 74.5#



#62
n-Butyl Acetate
Concen: 0.12 ng
RT: 13.82 min Scan# 1886
Delta R.T. 0.000 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

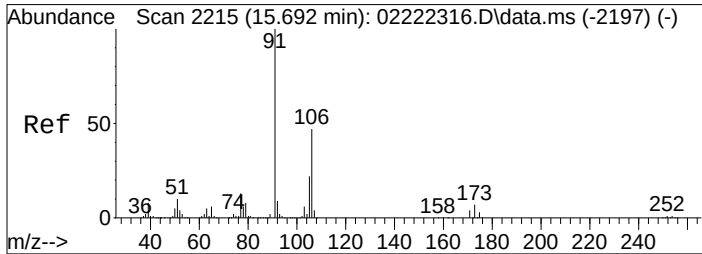
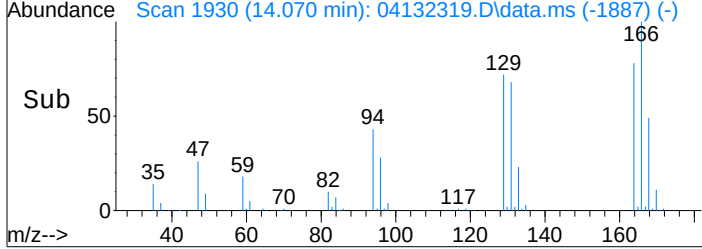
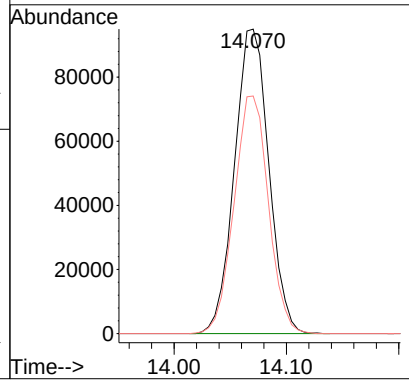
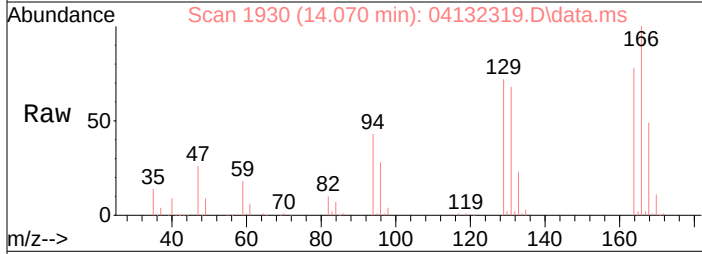
Tgt Ion: 43 Resp: 5621
Ion Ratio Lower Upper
43 100
56 26.9 20.0 60.0
73 12.0 0.0 33.2





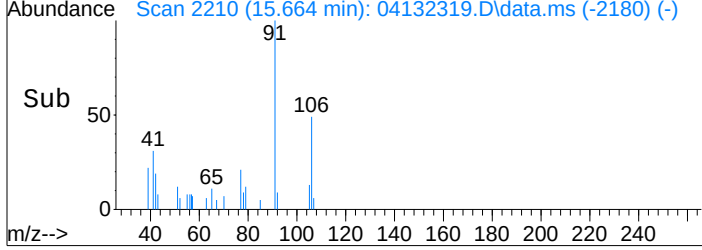
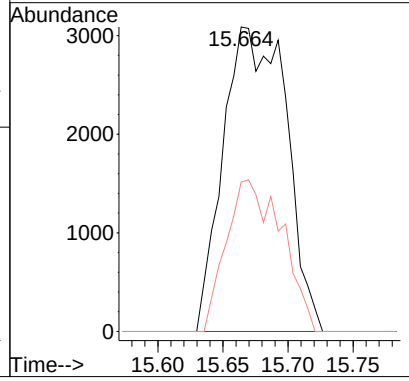
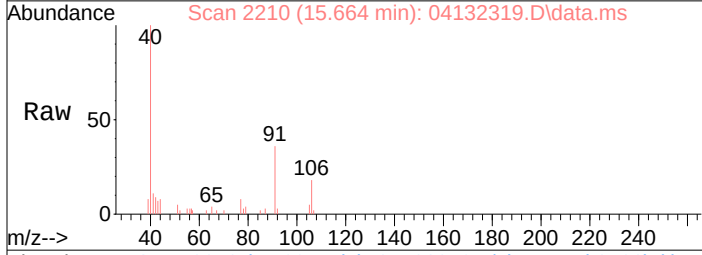
#64
 Tetrachloroethene
 Concen: 8.01 ng
 RT: 14.07 min Scan# 1930
 Delta R.T. -0.006 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

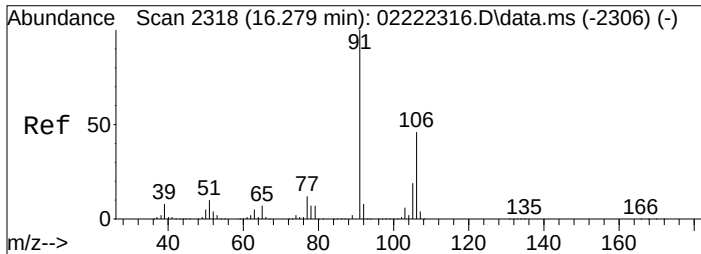
Tgt Ion	166	Resp	202428
Ion Ratio	Lower	Upper	
166	100		
164	78.1	57.3	97.3



#67
 m- & p-Xylenes
 Concen: 0.13 ng
 RT: 15.66 min Scan# 2210
 Delta R.T. -0.028 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

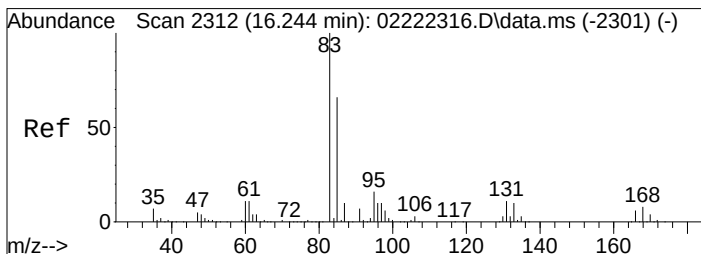
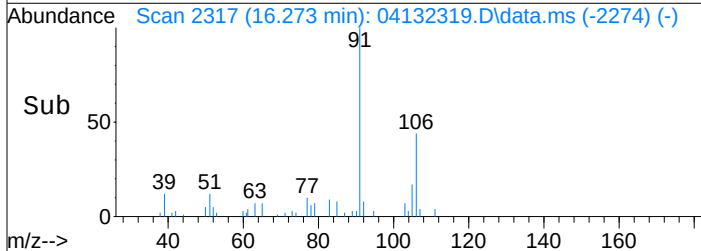
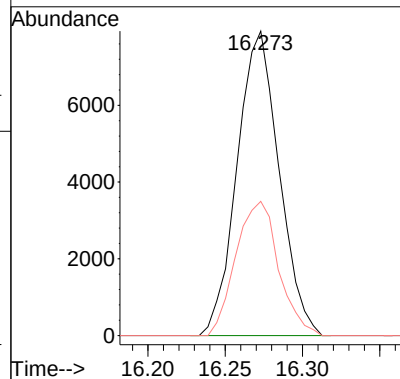
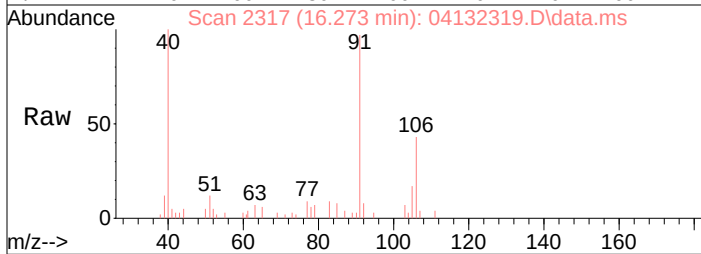
Tgt Ion	91	Resp	10373
Ion Ratio	Lower	Upper	
91	100		
106	44.0	26.2	66.2





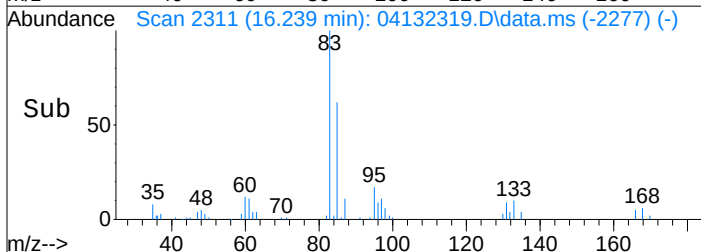
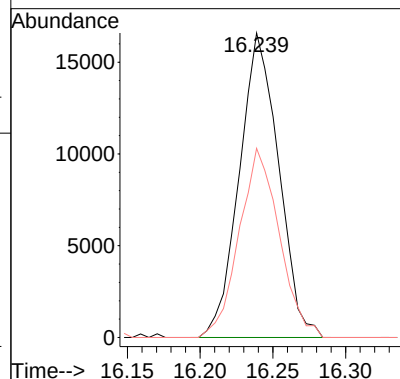
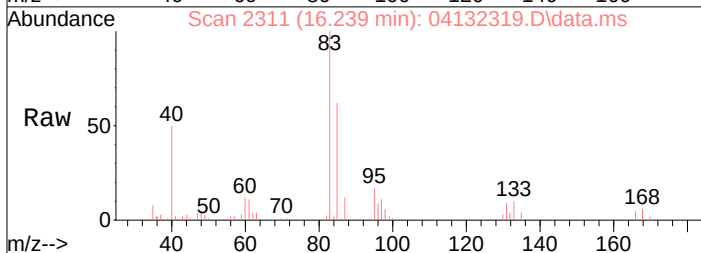
#70
o-Xylene
Concen: 0.20 ng
RT: 16.27 min Scan# 2317
Delta R.T. -0.006 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

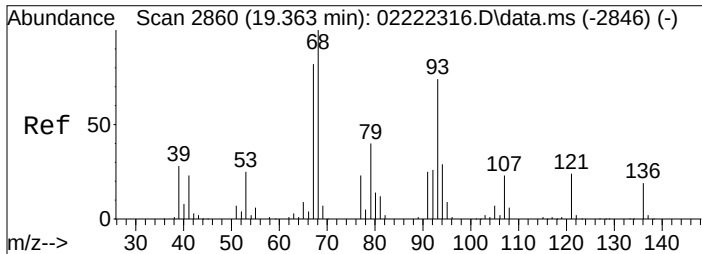
Tgt Ion: 91 Resp: 15027
Ion Ratio Lower Upper
91 100
106 44.9 25.4 65.4



#72
1,1,2,2-Tetrachloroethane
Concen: 0.95 ng
RT: 16.24 min Scan# 2311
Delta R.T. -0.006 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

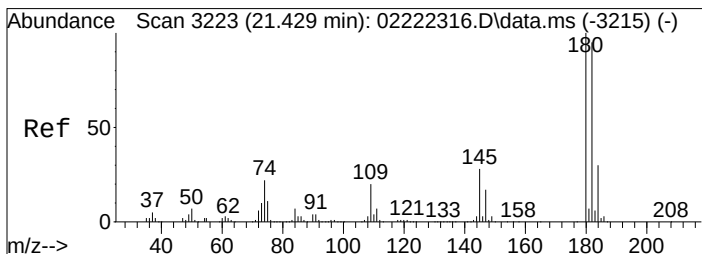
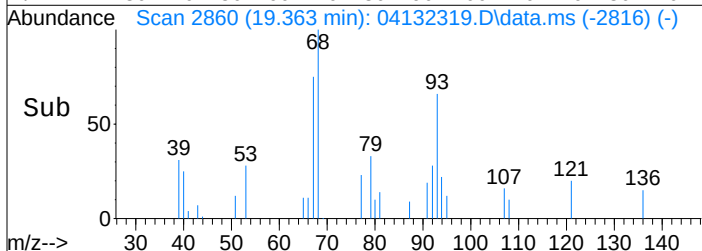
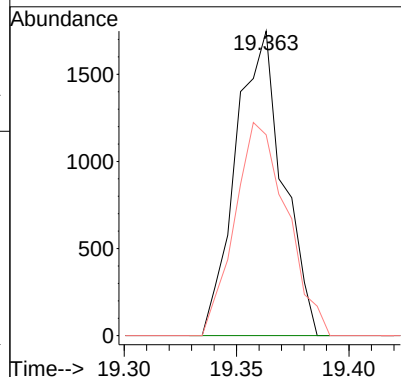
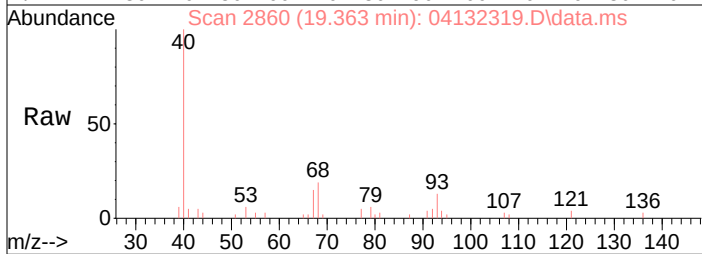
Tgt Ion: 83 Resp: 31170
Ion Ratio Lower Upper
83 100
85 63.5 45.2 85.2





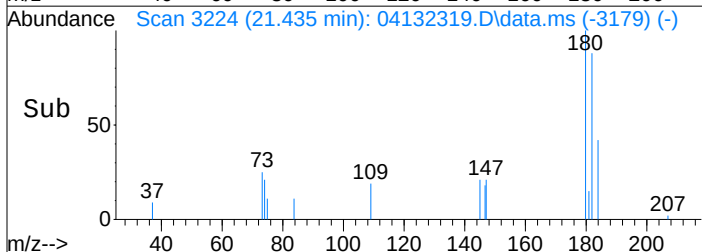
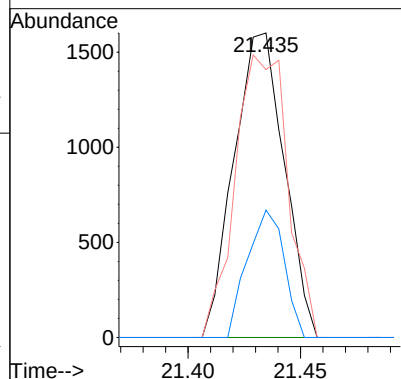
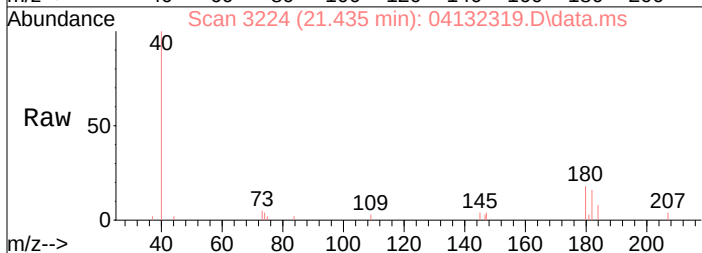
#91
d-Limonene
Concen: 0.10 ng
RT: 19.36 min Scan# 2860
Delta R.T. 0.000 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

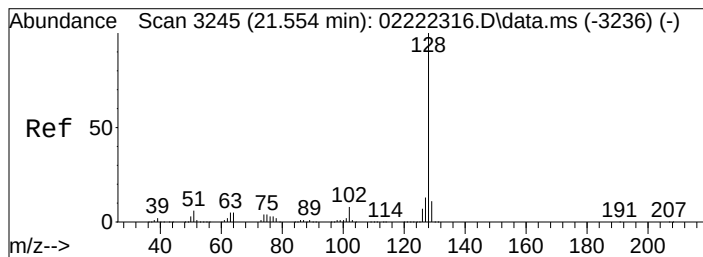
Tgt Ion:	68	Resp:	2553
Ion Ratio		Lower	Upper
68	100		
93	77.5	54.8	94.8



#94
1,2,4-Trichlorobenzene
Concen: 0.07 ng
RT: 21.43 min Scan# 3224
Delta R.T. 0.006 min
Lab File: 04132319.D
Acq: 14 Apr 2023 11:34

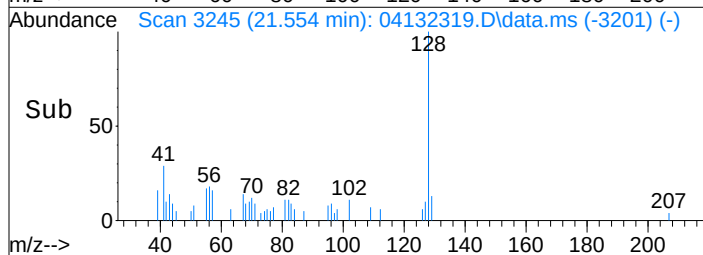
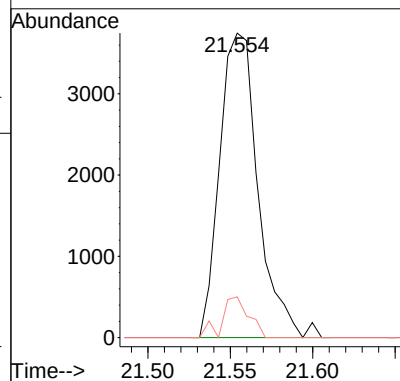
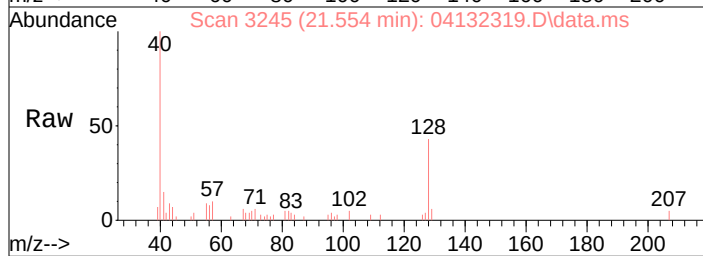
Tgt Ion:	180	Resp:	2494
Ion Ratio		Lower	Upper
180	100		
182	97.1	76.6	115.0
184	30.7	24.4	36.6





#95
 Naphthalene
 Concen: 0.07 ng
 RT: 21.55 min Scan# 3245
 Delta R.T. 0.000 min
 Lab File: 04132319.D
 Acq: 14 Apr 2023 11:34

Tgt Ion:128 Resp: 6084
 Ion Ratio Lower Upper
 128 100
 129 9.4 0.0 30.9



Data File : I:\MS13\DATA\2023_04\13\04132303.D
 Acq On : 13 Apr 2023 22:33
 Sample : MB R13041323 1000mL
 Misc : S37-04102301_AS01837

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 07:15:43 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	165889	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.36	114	753827	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	153702	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	325120	14.768	ng	-0.05
Spiked Amount	12.500	Range	70 - 130	Recovery	=	118.16%
57) Toluene-d8 (SS2)	12.47	98	850274	10.757	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.08%
73) Bromofluorobenzene (SS3)	16.85	174	274960	9.497	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	76.00%

Target Compounds

						Qvalue
2) Propene	3.42	42	580	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.41	45	2287	0.194	ng	88
11) Acetonitrile	4.60	41	1377	N.D.		
12) Acrolein	4.66	56	55	N.D.		
13) Acetone	4.77	58	3096	0.308	ng	96
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.98	45	2649	0.065	ng	90
16) Acrylonitrile	5.12	53	574	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.45	84	218	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.72	76	5152	0.088	ng	96
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.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	7.88	72	357	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.36	61	23308	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.96	78	611	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.36	84	568	N.D.		
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...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2023_04\13\04132303.D
 Acq On : 13 Apr 2023 22:33
 Sample : MB R13041323 1000mL
 Misc : S37-04102301_AS01837

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 07:15:43 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

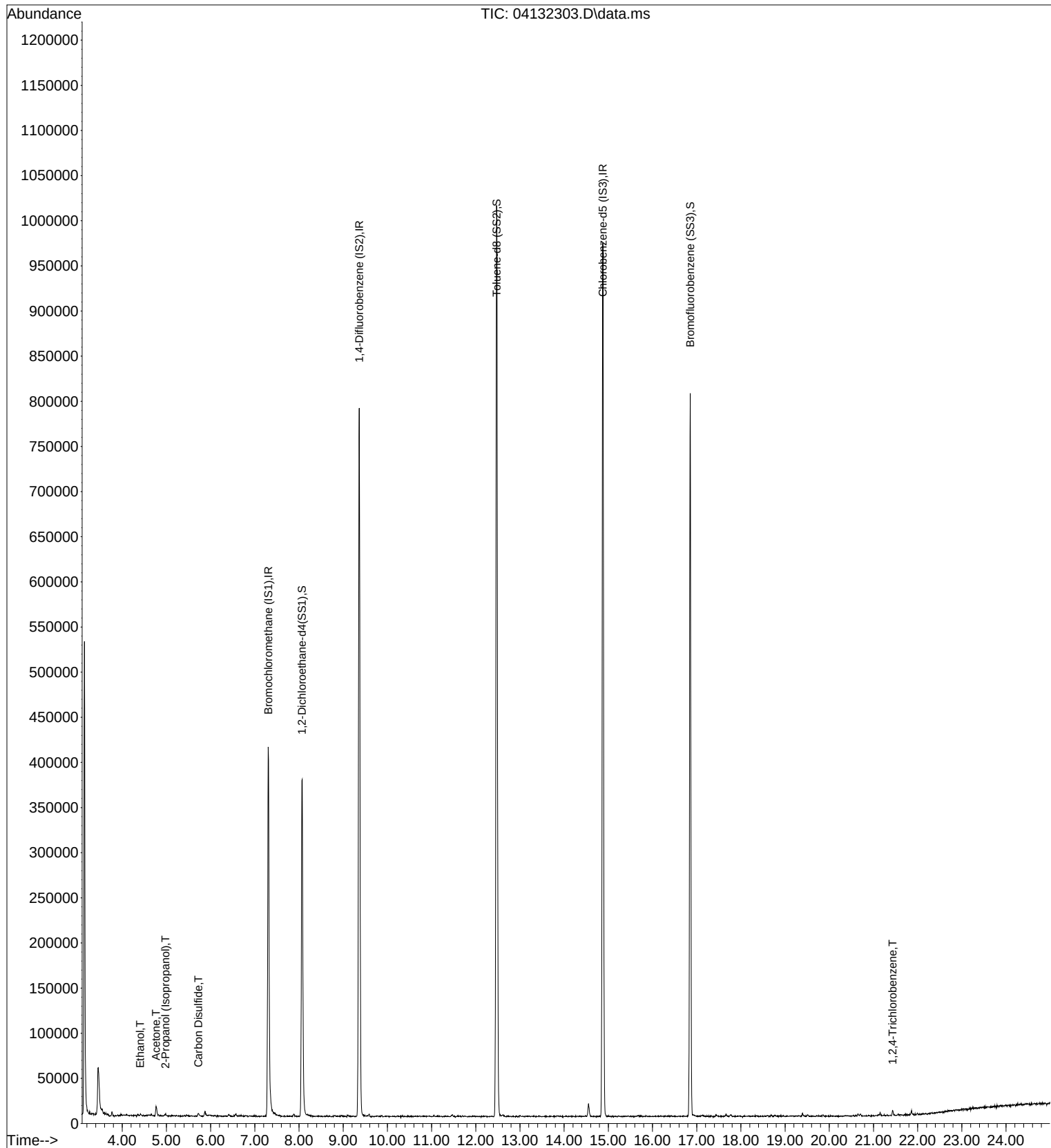
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.60	91	1568	N.D.		
59) 2-Hexanone	13.01	43	937	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.85	43	813	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	14.93	112	261	N.D.		
66) Ethylbenzene	15.44	91	473	N.D.		
67) m- & p-Xylenes	15.68	91	1606	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.14	104	125	N.D.		
70) o-Xylene	16.27	91	453	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.06	105	314	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.77	91	2289	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	335	N.D.		
79) 1,3,5-Trimethylbenzene	18.08	105	416	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.59	105	552	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	1181	N.D.		
85) 1,3-Dichlorobenzene	18.77	146	471	N.D.		
86) 1,4-Dichlorobenzene	18.87	146	422	N.D.		
87) sec-Butylbenzene	18.96	105	382	N.D.		
88) 4-Isopropyltoluene (p-...	19.18	119	541	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	337	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.86	157	554	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	2686	0.085 ng		93
95) Naphthalene	21.56	128	2463	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.98	225	381	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.60	119	283	N.D.		
100) n-Butylbenzene	19.71	91	606	N.D.		
101) 1,1,1,2-Tetrachloroethane	14.91	131	340	N.D.		

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

Data File : I:\MS13\DATA\2023_04\13\04132303.D
Acq On : 13 Apr 2023 22:33
Sample : MB R13041323 1000mL
Misc : S37-04102301_AS01837

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Apr 14 07:15:43 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Feb 23 07:57:30 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_04\13\04132315.D
 Acq On : 14 Apr 2023 8:26
 Sample : LCS R13041323 25ng
 Misc : S37-04102301/S35-03162301 (4/15)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 08:48:53 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

TZ 4/14/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	177212	12.500	ng	-0.01
37) 1,4-Difluorobenzene (IS2)	9.39	114	777785	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	160689	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	338979	14.414	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	115.28%
57) Toluene-d8 (SS2)	12.48	98	889465	10.763	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.08%
73) Bromofluorobenzene (SS3)	16.86	174	292020	9.648	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	77.20%

Target Compounds

						Qvalue
2) Propene	3.37	42	513446	28.969	ng	99
3) Dichlorodifluoromethan...	3.45	85	921936	28.403	ng	99
4) Chloromethane	3.59	50	692744	29.596	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	402177	24.541	ng	100
6) Vinyl Chloride	3.78	62	575780	26.563	ng	99
7) 1,3-Butadiene	3.90	54	456721	27.813	ng	93
8) Bromomethane	4.12	94	378316	26.045	ng	100
9) Chloroethane	4.26	64	283536	27.655	ng	100
10) Ethanol	4.43	45	1820865	144.677	ng	100
11) Acetonitrile	4.57	41	886170	27.100	ng	99
12) Acrolein	4.63	56	618143	59.389	ng	99
13) Acetone	4.74	58	1499353	139.585	ng	# 84
14) Trichlorofluoromethane	4.86	101	811702	27.778	ng	99
15) 2-Propanol (Isopropanol)	4.98	45	2702825	62.329	ng	99
16) Acrylonitrile	5.12	53	1205278	58.820	ng	99
17) 1,1-Dichloroethene	5.35	96	401181	26.735	ng	86
18) 2-Methyl-2-Propanol (t...	5.44	59	2542569	59.958	ng	97
19) Methylene Chloride	5.47	84	423639	26.903	ng	84
20) 3-Chloro-1-propene (Al...	5.55	41	713369	28.371	ng	91
21) Trichlorotrifluoroethane	5.68	151	386730	25.170	ng	93
22) Carbon Disulfide	5.70	76	3231611	51.827	ng	100
23) trans-1,2-Dichloroethene	6.25	61	697855	30.364	ng	92
24) 1,1-Dichloroethane	6.43	63	816795	29.146	ng	99
25) Methyl tert-Butyl Ether	6.46	73	1405945	28.624	ng	98
26) Vinyl Acetate	6.55	86	465402	160.230	ng	# 53
27) 2-Butanone (MEK)	6.77	72	545807	57.239	ng	# 72
28) cis-1,2-Dichloroethene	7.18	61	661818	29.238	ng	91
29) Diisopropyl Ether	7.37	87	630730	53.254	ng	# 51
30) Ethyl Acetate	7.38	61	311951	49.751	ng	96
31) n-Hexane	7.38	57	701130	29.051	ng	98
32) Chloroform	7.47	83	810996	28.406	ng	100
34) Tetrahydrofuran (THF)	7.84	72	501901	51.250	ng	# 85
35) Ethyl tert-Butyl Ether	7.91	87	1010024	55.832	ng	# 89
36) 1,2-Dichloroethane	8.21	62	695644	32.169	ng	99
38) 1,1,1-Trichloroethane	8.49	97	741845	28.816	ng	98
39) Isopropyl Acetate	9.39	61	25045	No Calib		
40) 1-Butanol	8.90	56	3144	No Calib	#	
41) Benzene	8.99	78	1692284	27.968	ng	99
42) Carbon Tetrachloride	9.15	117	682423	30.049	ng	100
43) Cyclohexane	9.30	84	1205246	54.335	ng	92
44) tert-Amyl Methyl Ether	9.67	73	2581017	58.818	ng	95
45) 1,2-Dichloropropane	9.94	63	438542	28.728	ng	99
46) Bromodichloromethane	10.15	83	666558	29.792	ng	99
47) Trichloroethene	10.23	130	458250	25.852	ng	100
48) 1,4-Dioxane	10.19	88	351313	28.802	ng	92
49) 2,2,4-Trimethylpentane...	10.30	57	1805760	29.349	ng	96
50) Methyl Methacrylate	10.47	100	340787	54.771	ng	# 86

Data File : I:\MS13\DATA\2023_04\13\04132315.D
 Acq On : 14 Apr 2023 8:26
 Sample : LCS R13041323 25ng
 Misc : S37-04102301/S35-03162301 (4/15)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 08:48:53 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	420066	28.690	ng	95
52) cis-1,3-Dichloropropene	11.33	75	800469	32.268	ng	100
53) 4-Methyl-2-pentanone	11.38	58	845960	64.852	ng	87
54) trans-1,3-Dichloropropene	12.01	75	669863	27.878	ng	100
55) 1,1,2-Trichloroethane	12.23	97	427750	27.313	ng	98
58) Toluene	12.61	91	1747685	22.215	ng	100
59) 2-Hexanone	12.96	43	2279108	59.642	ng	93
60) Dibromochloromethane	13.13	129	551517	23.888	ng	99
61) 1,2-Dibromoethane	13.44	107	502629	22.950	ng	99
62) n-Butyl Acetate	13.81	43	2566170	59.075	ng	94
63) n-Octane	13.96	57	384234	24.838	ng	93
64) Tetrachloroethene	14.08	166	512076	21.396	ng	100
65) Chlorobenzene	14.94	112	1164542	22.442	ng	100
66) Ethylbenzene	15.45	91	2083900	22.204	ng	98
67) m- & p-Xylenes	15.69	91	3365077	44.550	ng	98
68) Bromoform	15.72	173	500766	24.007	ng	100
69) Styrene	16.14	104	1237988	23.836	ng	98
70) o-Xylene	16.28	91	1683519	23.308	ng	98
71) n-Nonane	16.64	43	1001352	28.651	ng	90
72) 1,1,2,2-Tetrachloroethane	16.24	83	788765	25.280	ng	100
74) Cumene	17.06	105	2016347	22.953	ng	99
75) alpha-Pinene	17.58	93	1019892	25.164	ng	97
76) n-Propylbenzene	17.74	91	2511484	23.848	ng	97
77) 3-Ethyltoluene	17.35	105	284	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2020575	23.978	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1742802	23.388	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	284	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1733835	23.596	ng	99
83) n-Decane	17.06	58	16922	No Calib		
84) Benzyl Chloride	18.76	91	3138712	52.793	ng	97
85) 1,3-Dichlorobenzene	18.78	146	979576	22.040	ng	100
86) 1,4-Dichlorobenzene	18.86	146	985893	21.418	ng	100
87) sec-Butylbenzene	18.96	105	2271041	23.431	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	1948205	22.869	ng	98
89) 1,2,3-Trimethylbenzene	17.35	105	284	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	974743	22.159	ng	100
91) d-Limonene	19.36	68	661370	26.617	ng	95
92) 1,2-Dibromo-3-Chloropr...	19.86	157	751689	45.129	ng	81
93) n-Undecane	18.26	58	154	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1483358	44.836	ng	100
95) Naphthalene	21.55	128	2043390	25.655	ng	100
96) n-Dodecane	19.18	58	63331	No Calib		
97) Hexachlorobutadiene	21.99	225	487895	19.020	ng	100
98) Cyclohexanone	15.67	55	2286	No Calib		
99) tert-Butylbenzene	18.60	119	1581256	22.922	ng	99
100) n-Butylbenzene	19.72	91	1895317	25.152	ng	98
101) 1,1,1,2-Tetrachloroethane	14.92	131	452299	23.124	ng	100

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

[illegible]

Data File : I:\MS13\DATA\2023_04\13\04132317.D
 Acq On : 14 Apr 2023 10:00
 Sample : LCSD R130341323 25ng
 Misc : S37-04102301/S35-03162301 (4/15)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 4/14/23

Quant Time: Apr 14 11:39:17 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	177157	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.39	114	785553	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	162962	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	344255	14.643	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	117.12%
57) Toluene-d8 (SS2)	12.48	98	905614	10.806	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	86.48%
73) Bromofluorobenzene (SS3)	16.85	174	295134	9.615	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	76.88%

Target Compounds

						Qvalue
2) Propene	3.37	42	530592	29.946	ng	99
3) Dichlorodifluoromethan...	3.45	85	934444	28.798	ng	99
4) Chloromethane	3.59	50	719319	30.740	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	395841	24.162	ng	100
6) Vinyl Chloride	3.78	62	587477	27.111	ng	99
7) 1,3-Butadiene	3.89	54	478649	29.157	ng	92
8) Bromomethane	4.11	94	387403	26.679	ng	99
9) Chloroethane	4.25	64	295664	28.847	ng	99
10) Ethanol	4.42	45	1869434	148.582	ng	100
11) Acetonitrile	4.56	41	915646	28.010	ng	99
12) Acrolein	4.63	56	637807	61.297	ng	100
13) Acetone	4.74	58	1549177	144.269	ng	# 85
14) Trichlorofluoromethane	4.85	101	819648	28.058	ng	99
15) 2-Propanol (Isopropanol)	4.96	45	2782734	64.192	ng	99
16) Acrylonitrile	5.11	53	1234580	60.269	ng	99
17) 1,1-Dichloroethene	5.35	96	411932	27.460	ng	86
18) 2-Methyl-2-Propanol (t...	5.44	59	2615436	61.696	ng	98
19) Methylene Chloride	5.47	84	433950	27.567	ng	83
20) 3-Chloro-1-propene (Al...	5.55	41	731206	29.090	ng	91
21) Trichlorotrifluoroethane	5.67	151	391786	25.507	ng	91
22) Carbon Disulfide	5.70	76	3308917	53.083	ng	100
23) trans-1,2-Dichloroethene	6.24	61	713580	31.058	ng	92
24) 1,1-Dichloroethane	6.43	63	832684	29.722	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1430785	29.138	ng	98
26) Vinyl Acetate	6.55	86	478202	164.688	ng	# 51
27) 2-Butanone (MEK)	6.76	72	558673	58.607	ng	# 70
28) cis-1,2-Dichloroethene	7.18	61	673818	29.777	ng	92
29) Diisopropyl Ether	7.37	87	643852	54.379	ng	# 52
30) Ethyl Acetate	7.38	61	323752	51.649	ng	96
31) n-Hexane	7.38	57	717014	29.719	ng	98
32) Chloroform	7.47	83	822294	28.810	ng	100
34) Tetrahydrofuran (THF)	7.84	72	511729	52.269	ng	# 84
35) Ethyl tert-Butyl Ether	7.91	87	1008309	55.755	ng	# 87
36) 1,2-Dichloroethane	8.21	62	705449	32.632	ng	100
38) 1,1,1-Trichloroethane	8.48	97	745933	28.688	ng	97
41) Benzene	8.98	78	1730838	28.323	ng	100
42) Carbon Tetrachloride	9.15	117	686332	29.922	ng	100
43) Cyclohexane	9.30	84	1225299	54.693	ng	91
44) tert-Amyl Methyl Ether	9.67	73	2519246	56.843	ng	95
45) 1,2-Dichloropropane	9.93	63	448507	29.090	ng	100
46) Bromodichloromethane	10.15	83	675234	29.882	ng	99
47) Trichloroethene	10.22	130	468184	26.151	ng	100
48) 1,4-Dioxane	10.19	88	359840	29.209	ng	93
49) 2,2,4-Trimethylpentane...	10.30	57	1716014	27.614	ng	96
50) Methyl Methacrylate	10.47	100	344678	54.849	ng	# 84
51) n-Heptane	10.63	71	426982	28.874	ng	95
52) cis-1,3-Dichloropropene	11.32	75	820405	32.745	ng	100

Data File : I:\MS13\DATA\2023_04\13\04132317.D
 Acq On : 14 Apr 2023 10:00
 Sample : LCSD R130341323 25ng
 Misc : S37-04102301/S35-03162301 (4/15)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 11:39:17 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

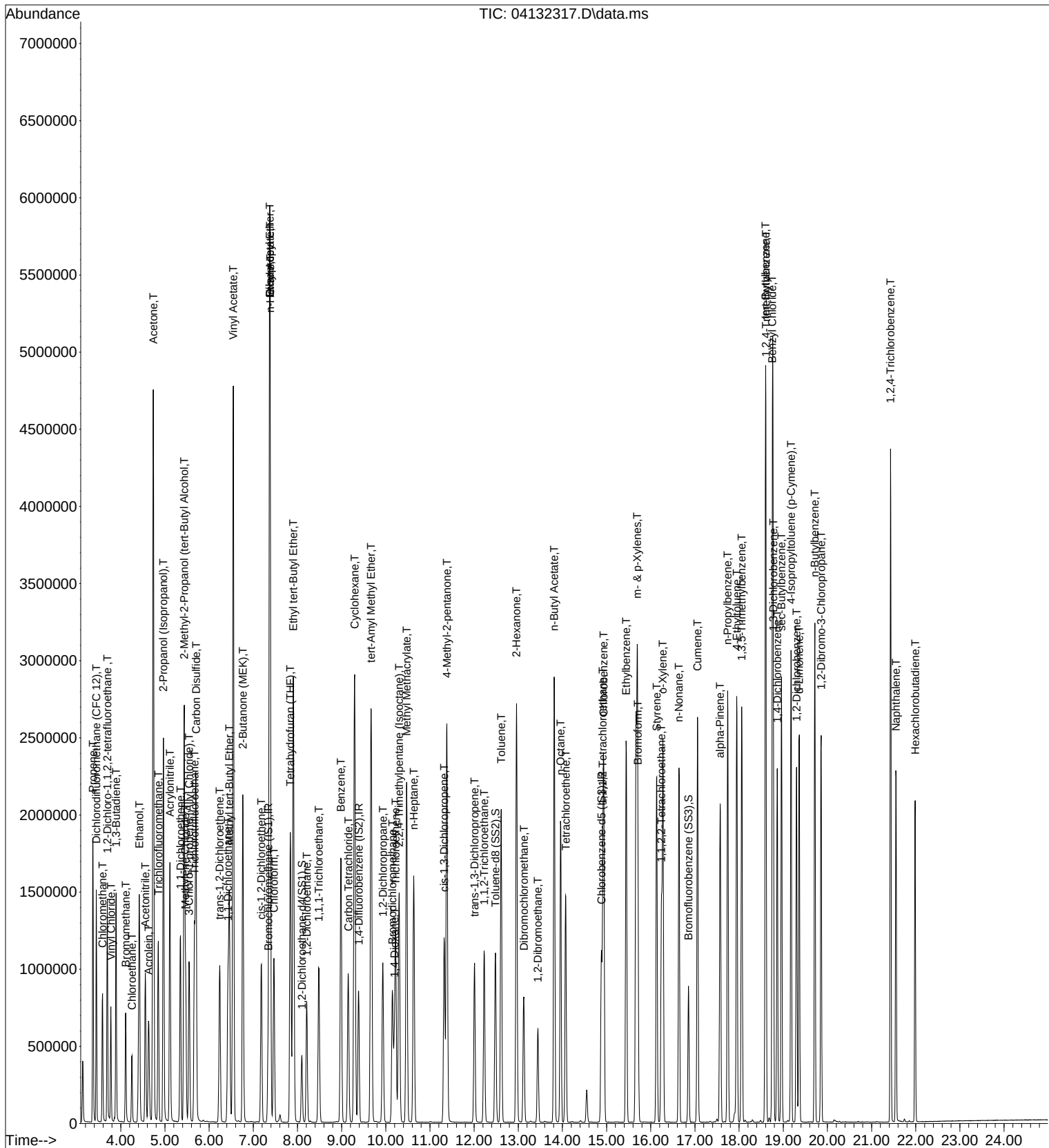
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) 4-Methyl-2-pentanone	11.38	58	858000	65.124	ng	86
54) trans-1,3-Dichloropropene	12.01	75	680571	28.044	ng	99
55) 1,1,2-Trichloroethane	12.23	97	432552	27.347	ng	97
58) Toluene	12.61	91	1779638	22.306	ng	100
59) 2-Hexanone	12.96	43	2342274	60.440	ng	93
60) Dibromochloromethane	13.13	129	552979	23.617	ng	99
61) 1,2-Dibromoethane	13.44	107	507965	22.870	ng	99
62) n-Butyl Acetate	13.81	43	2621554	59.508	ng	94
63) n-Octane	13.96	57	392855	25.041	ng	92
64) Tetrachloroethene	14.08	166	520423	21.442	ng	100
65) Chlorobenzene	14.94	112	1178397	22.392	ng	99
66) Ethylbenzene	15.44	91	2112388	22.194	ng	98
67) m- & p-Xylenes	15.69	91	3406852	44.474	ng	98
68) Bromoform	15.71	173	503686	23.811	ng	99
69) Styrene	16.14	104	1250711	23.745	ng	98
70) o-Xylene	16.27	91	1690630	23.080	ng	98
71) n-Nonane	16.64	43	1020561	28.793	ng	90
72) 1,1,2,2-Tetrachloroethane	16.24	83	803560	25.395	ng	99
74) Cumene	17.06	105	2005878	22.516	ng	99
75) alpha-Pinene	17.57	93	942515	22.930	ng	96
76) n-Propylbenzene	17.74	91	2527843	23.669	ng	97
78) 4-Ethyltoluene	17.95	105	2031727	23.774	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1707106	22.589	ng	98
82) 1,2,4-Trimethylbenzene	18.61	105	1726290	23.166	ng	97
84) Benzyl Chloride	18.75	91	3124080	51.814	ng	97
85) 1,3-Dichlorobenzene	18.78	146	985614	21.867	ng	100
86) 1,4-Dichlorobenzene	18.86	146	991906	21.248	ng	100
87) sec-Butylbenzene	18.96	105	2069913	21.058	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	1847991	21.390	ng	98
90) 1,2-Dichlorobenzene	19.30	146	965120	21.634	ng	100
91) d-Limonene	19.36	68	607568	24.111	ng	95
92) 1,2-Dibromo-3-Chloropr...	19.86	157	706363	41.816	ng	81
94) 1,2,4-Trichlorobenzene	21.43	180	1303994	38.865	ng	100
95) Naphthalene	21.55	128	1664243	20.603	ng	100
97) Hexachlorobutadiene	21.99	225	392535	15.089	ng	99
99) tert-Butylbenzene	18.60	119	1379179	19.714	ng	98
100) n-Butylbenzene	19.72	91	1823128	23.856	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	441622	22.263	ng	100

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

Data File : I:\MS13\DATA\2023_04\13\04132317.D
Acq On : 14 Apr 2023 10:00
Sample : LCSD R130341323 25ng
Misc : S37-04102301/S35-03162301 (4/15)

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Apr 14 11:39:17 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Thu Feb 23 07:57:30 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Method Path : I:\MS13\METHODS\
 Method File : R13022223.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Feb 23 07:57:30 2023
 Response Via : Initial Calibration

T2 2/23/23

Calibration Files

0.1 =02222311.D 0.2 =02222312.D 0.5 =02222313.D 1.0 =02222314.D 5.0 =02222315.D 25 =02222316.D 50 =02222317.D
 100 =02222318.D

	Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene		1.453	1.409	1.264	1.178	1.159	1.089	1.200	1.250	10.75
3) T	Dichlorodifluo...	2.292	2.324	2.425	2.407	2.273	2.281	2.178	2.137	2.290	4.35
4) T	Chloromethane	1.822	1.796	1.828	1.797	1.606	1.672	1.522	1.165	1.651	13.70
5) T	1,2-Dichloro-1...	1.120	1.070	1.230	1.234	1.180	1.191	1.118	1.104	1.156	5.30
6) T	Vinyl Chloride	1.708	1.455	1.596	1.582	1.514	1.527	1.464	1.386	1.529	6.53
7) T	1,3-Butadiene	1.201	1.216	1.275	1.190	1.117	1.136	1.090	1.042	1.158	6.52
8) T	Bromomethane	0.979	1.031	1.066	1.083	1.026	1.036	0.993	0.982	1.025	3.73
9) T	Chloroethane	0.740	0.679	0.752	0.781	0.728	0.722	0.696	0.688	0.723	4.77
10) T	Ethanol		1.109	0.951	0.939	0.831	0.843	0.786	0.755	0.888	13.68
11) T	Acetonitrile		2.808	2.438	2.380	2.159	2.168	2.101	2.092	2.307	11.23
12) T	Acrolein	0.773	0.725	0.791	0.732	0.721	0.737	0.703	0.691	0.734	4.56
13) T	Acetone	0.927	0.857	0.799	0.773	0.732	0.708	0.654	0.611	0.758	13.73
14) T	Trichlorofluor...	2.030	2.102	2.162	2.120	2.037	2.057	1.995	1.986	2.061	3.01
15) T	2-Propanol (Is...		3.932	3.415	3.160	2.884	2.908	2.748	2.364	3.059	16.52
16) T	Acrylonitrile	1.609	1.462	1.496	1.464	1.418	1.421	1.360	1.333	1.445	5.93
17) T	1,1-Dichloroet...	0.982	1.098	1.110	1.112	1.044	1.061	1.034	1.027	1.058	4.33
18) T	2-Methyl-2-Pro...	2.989	2.981	3.127	3.057	2.923	2.996	2.866		2.991	2.83
19) T	Methylene Chlo...	1.161	1.177	1.210	1.147	1.083	1.083	1.041	0.984	1.111	6.84
20) T	3-Chloro-1-pro...	1.873	1.816	1.847	1.884	1.715	1.722	1.672	1.660	1.774	5.16
21) T	Trichlorotrifl...	1.156	1.047	1.139	1.084	1.061	1.076	1.052	1.055	1.084	3.81
22) T	Carbon Disulfide	5.510	4.990	4.656	4.356	4.031	4.029	3.877	3.736	4.398	13.95
23) T	trans-1,2-Dich...	1.499	1.646	1.684	1.625	1.618	1.646	1.620	1.631	1.621	3.32
24) T	1,1-Dichloroet...	2.063	2.025	2.083	2.046	1.931	1.935	1.877	1.854	1.977	4.47
25) T	Methyl tert-Bu...	3.636	3.465	3.612	3.518	3.368	3.441	3.347	3.330	3.465	3.38
26) T	Vinyl Acetate	0.195	0.207	0.203	0.210	0.206	0.211	0.206	0.202	0.205	2.55
27) T	2-Butanone (MEK)	0.666	0.666	0.688	0.680	0.680	0.688	0.661	0.651	0.673	2.00
28) T	cis-1,2-Dichlo...	1.680	1.574	1.723	1.576	1.542	1.579	1.547	1.552	1.597	4.21
29) T	Diisopropyl Ether	0.969	0.916	0.894	0.873	0.828	0.795	0.731	0.677	0.835	11.70
30) T	Ethyl Acetate	0.464	0.456	0.502	0.483	0.458	0.428	0.389	0.359	0.442	10.85
31) T	n-Hexane	1.937	1.916	1.866	1.873	1.707	1.573	1.429	1.318	1.702	13.97
32) T	Chloroform	2.063	2.040	2.083	2.071	1.945	1.993	1.953	1.964	2.014	2.81
33) S	1,2-Dichloroet...	1.637	1.657	1.635	1.634	1.660	1.658	1.662	1.728	1.659	1.84
34) T	Tetrahydrofura...	0.839	0.710	0.710	0.676	0.654	0.662	0.643	0.632	0.691	9.62
35) T	Ethyl tert-But...	1.278	1.302	1.338	1.295	1.271	1.278	1.236	1.210	1.276	3.08
36) T	1,2-Dichloroet...	1.458	1.544	1.522	1.534	1.531	1.558	1.520	1.537	1.525	1.95
37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.433	0.417	0.443	0.426	0.408	0.413	0.396	0.374	0.414	5.22

39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.112	1.009	0.981	1.005	0.951	0.956	0.915	0.851	0.972	7.84
42)	T	Carbon Tetrach...	0.358	0.374	0.379	0.375	0.363	0.372	0.358	0.340	0.365	3.52
43)	T	Cyclohexane	0.377	0.389	0.385	0.369	0.351	0.350	0.330	0.300	0.356	8.46
44)	T	tert-Amyl Meth...	0.727	0.710	0.744	0.739	0.709	0.715	0.678	0.620	0.705	5.68
45)	T	1,2-Dichloropr...	0.263	0.252	0.271	0.256	0.238	0.239	0.228	0.215	0.245	7.69
46)	T	Bromodichlorom...	0.383	0.387	0.359	0.360	0.352	0.361	0.347	0.328	0.360	5.25
47)	T	Trichloroethene	0.296	0.295	0.303	0.290	0.279	0.284	0.275	0.257	0.285	5.10
48)	T	1,4-Dioxane	0.210	0.210	0.197	0.195	0.188	0.198	0.191	0.178	0.196	5.46
49)	T	2,2,4-Trimethy...	1.069	1.051	1.075	1.036	0.974	0.949	0.903	0.854	0.989	8.31
50)	T	Methyl Methacr...	0.102	0.102	0.100	0.103	0.099	0.103	0.099	0.091	0.100	4.03
51)	T	n-Heptane	0.264	0.249	0.238	0.240	0.232	0.232	0.221	0.206	0.235	7.37
52)	T	cis-1,3-Dichlo...	0.396	0.397	0.425	0.405	0.397	0.407	0.392	0.370	0.399	3.92
53)	T	4-Methyl-2-pen...	0.228	0.215	0.216	0.216	0.208	0.213	0.200	0.181	0.210	6.69
54)	T	trans-1,3-Dich...	0.369	0.382	0.383	0.402	0.390	0.403	0.391	0.369	0.386	3.34
55)	T	1,1,2-Trichlor...	0.249	0.279	0.264	0.263	0.246	0.249	0.240	0.225	0.252	6.59
56)	IR	Chlorobenzene-d5 (... -----ISTD-----										
57)	S	Toluene-d8 (SS2)	6.392	6.334	6.370	6.376	6.319	6.463	6.540	6.633	6.428	1.70
58)	T	Toluene	7.493	6.312	6.181	6.100	5.780	5.914	5.715	5.462	6.120	10.11
59)	T	2-Hexanone	3.517	3.090	2.971	2.888	2.812	3.008	2.852	2.643	2.973	8.70
60)	T	Dibromochlorom...	1.721	1.767	1.813	1.799	1.762	1.868	1.833	1.804	1.796	2.54
61)	T	1,2-Dibromoethane	1.689	1.771	1.686	1.702	1.651	1.745	1.715	1.671	1.704	2.30
62)	T	n-Butyl Acetate	4.087	3.443	3.366	3.333	3.196	3.405	3.233	2.970	3.379	9.57
63)	T	n-Octane	1.313	1.318	1.308	1.232	1.140	1.160	1.116	1.041	1.203	8.70
64)	T	Tetrachloroethene	1.837	1.866	2.032	1.924	1.814	1.860	1.806	1.755	1.862	4.56
65)	T	Chlorobenzene	4.535	4.234	4.144	4.104	3.839	3.981	3.833	3.624	4.037	7.00
66)	T	Ethylbenzene	9.912	8.025	7.126	6.959	6.655	6.849	6.607	6.274	7.301	16.08
67)	T	m- & p-Xylenes	7.948	6.357	5.797	5.731	5.424	5.541	5.287	4.922	5.876	15.92
68)	T	Bromoform	1.609	1.513	1.604	1.618	1.606	1.732	1.692	1.607	1.623	4.02
69)	T	Styrene	4.292	3.827	3.941	4.044	3.988	4.227	4.093	3.911	4.040	3.93
70)	T	o-Xylene	6.510	6.025	5.691	5.613	5.349	5.467	5.289	5.005	5.619	8.36
71)	T	n-Nonane	2.881	2.923	2.882	2.820	2.657	2.685	2.541	2.362	2.719	7.20
72)	T	1,1,2,2-Tetrac...	2.499	2.401	2.500	2.441	2.414	2.483	2.400	2.279	2.427	3.01
73)	S	Bromofluoroben...	2.270	2.254	2.304	2.333	2.347	2.390	2.442	2.495	2.354	3.56
74)	T	Cumene	7.685	6.853	7.080	6.941	6.602	6.775	6.555	6.177	6.833	6.46
75)	T	alpha-Pinene	3.061	3.169	3.333	3.333	3.167	3.211	3.045	2.903	3.153	4.66
76)	T	n-Propylbenzene	9.226	8.443	8.397	8.258	7.898	8.143	7.833	7.340	8.192	6.72
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	6.970	6.659	6.639	6.803	6.342	6.622	6.367	6.039	6.555	4.47
79)	T	1,3,5-Trimethy...	6.572	5.868	5.885	5.810	5.590	5.775	5.569	5.305	5.797	6.36
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	6.344	5.865	5.809	5.869	5.597	5.776	5.463	5.005	5.716	6.73
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride	5.068	4.413	4.296	4.556	4.665	5.005	4.732	4.264	4.625	6.54
85)	T	1,3-Dichlorobe...	4.333	3.530	3.410	3.462	3.330	3.419	3.241	2.934	3.457	11.53
86)	T	1,4-Dichlorobe...	4.886	3.594	3.317	3.375	3.303	3.494	3.408	3.269	3.581	15.03
87)	T	sec-Butylbenzene	8.011	7.700	7.899	7.750	7.347	7.550	7.262	6.800	7.540	5.22
88)	T	4-Isopropyltol...	7.429	6.549	6.741	6.683	6.415	6.678	6.470	6.050	6.627	5.90
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	4.036	3.436	3.395	3.353	3.277	3.401	3.308	3.167	3.422	7.67
91)	T	d-Limonene	1.929	1.871	1.894	1.938	1.957	2.069	1.972	1.833	1.933	3.70

92)	T	1,2-Dibromo-3-...	1.515	1.193	1.189	1.222	1.292	1.371	1.336	1.248	1.296	8.51
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	2.937	2.354	2.464	2.490	2.728	2.652	2.391	2.574		8.14
95)	T	Naphthalene	6.916	5.040	5.584	5.753	6.776	6.843	6.460	6.196		11.87
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	2.620	2.172	1.921	1.999	1.890	1.859	1.813	1.689	1.995	14.46
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	6.091	5.462	5.715	5.674	5.387	5.246	4.900	4.456	5.366	9.48
100)	T	n-Butylbenzene	6.648	5.796	5.918	5.844	5.731	5.943	5.710	5.305	5.862	6.39
101)	T	1,1,1,2-Tetrac...	1.556	1.465	1.617	1.563	1.500	1.544	1.495	1.431	1.522	3.93

 (#) = Out of Range

R13022223.M Thu Feb 23 08:53:55 2023

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S35-02222302

200ng/L Std. ID: S35-02162304

20ng/L Std. ID: S35-02222301

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
	1	5	25	50	250	1000			4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chloromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Freon-114	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Vinyl Chloride	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Chloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Ethanol	3.45	3450	690	138.0	69.0	13.80	3.45		0.345	0.690	1.725	3.45	17.25	86.25	172.5	345
Acetonitrile	0.91	910	182	36.4	18.2	3.64	0.91		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
Acrolein	1.93	1930	386	77.2	38.6	7.72	1.93		0.193	0.386	0.965	1.93	9.65	48.25	96.5	193
Acetone	5.27	5270	1054	210.8	105.4	21.08	5.27		0.527	1.054	2.635	5.27	26.35	131.75	263.5	527
Trichlorofluoromethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Isopropanol	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Acrylonitrile	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
tert-Butanol	2.11	2110	422	84.4	42.2	8.44	2.11		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Allyl Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Carbon Disulfide	2.13	2130	426	85.2	42.6	8.52	2.13		0.213	0.426	1.065	2.13	10.65	53.25	106.5	213
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1-Dichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Methyl tert-Butyl Ether	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Vinyl Acetate	2.80	2800	560	112.0	56.0	11.20	2.80		0.280	0.560	1.400	2.80	14.00	70.00	140.0	280
2-Butanone	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Ethyl Acetate	4.22	4220	844	168.8	84.4	16.88	4.22		0.422	0.844	2.110	4.22	21.10	105.50	211.0	422
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Chloroform	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrahydrofuran	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
Ethyl tert-Butyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1,1-Trichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Carbon Tetrachloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Cyclohexane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
tert-Amyl Methyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloropropane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Isooctane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
n-Heptane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S35-02222302

200ng/L Std. ID: S35-02162304

20ng/L Std. ID: S35-02222301

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
									4	4	20	20	20	200	200	200
								Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
								ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Compounds	Source Std. mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
cis-1,3-Dichloropropene	1.08	1080	216	43.2	21.6	4.32	1.08		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
4-Methyl-2-pentanone	2.15	2150	430	86.0	43.0	8.60	2.15		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
trans-1,3-Dichloropropene	1.02	1020	204	40.8	20.4	4.08	1.02		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2-Trichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Toluene	1.05	1050	210	42.0	21.0	4.20	1.05		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
2-Hexanone	2.12	2120	424	84.8	42.4	8.48	2.12		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Dibromochloromethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
n-Butyl Acetate	2.05	2050	410	82.0	41.0	8.20	2.05		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
n-Octane	1.07	1070	214	42.8	21.4	4.28	1.07		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrachloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Ethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
m-&p-Xylene	2.10	2100	420	84.0	42.0	8.40	2.10		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Bromoform	1.07	1070	214	42.8	21.4	4.28	1.07		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Nonane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Cumene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
alpha-Pinene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
n-Propylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
4-Ethyltoluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzyl Chloride	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,3-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
sec-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
d-Limonene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,2-Dibromo-3-chloropropane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
1,2,4-Trichlorobenzene	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Naphthalene	1.10	1100	220	44.0	22.0	4.40	1.10		0.110	0.220	0.550	1.10	5.50	27.50	55.0	110
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
tert-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,1,1,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Method : I:\MS13\METHODS\R13022223.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration

Tz 2/23/23

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2023_02\22\02222311.D
2	0.2	0	13	I:\MS13\DATA\2023_02\22\02222312.D
3	0.5	1	13	I:\MS13\DATA\2023_02\22\02222313.D
4	1.0	1	13	I:\MS13\DATA\2023_02\22\02222314.D
5	5.0	5	13	I:\MS13\DATA\2023_02\22\02222315.D
6	25	26	13	I:\MS13\DATA\2023_02\22\02222316.D
7	50	53	13	I:\MS13\DATA\2023_02\22\02222317.D
8	100	105	13	I:\MS13\DATA\2023_02\22\02222318.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Feb 23 07:48 2023	Feb 23 07:47 2023	22 Feb 2023 15:07
2	0.2	Feb 23 07:42 2023	Feb 23 07:42 2023	22 Feb 2023 15:44
3	0.5	Feb 23 07:42 2023	Feb 23 07:42 2023	22 Feb 2023 16:21
4	1.0	Feb 23 07:44 2023	Feb 23 07:42 2023	22 Feb 2023 16:58
5	5.0	Feb 23 07:44 2023	Feb 23 07:42 2023	22 Feb 2023 17:35
6	25	Feb 23 07:57 2023	Feb 23 07:42 2023	22 Feb 2023 18:11
7	50	Feb 23 07:44 2023	Feb 23 07:42 2023	22 Feb 2023 18:47
8	100	Feb 23 07:44 2023	Feb 23 07:42 2023	22 Feb 2023 19:23

R13022223.M

Thu Feb 23 08:54:40 2023

Data File : I:\MS13\DATA\2023_02\22\02222311.D
 Acq On : 22 Feb 2023 15:07
 Sample : 0.1ng R1302223 ICAL Std.
 Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:47:07 2023

Quant Method : I:\MS13\METHODS\R1302223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	202988	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.37	114	874682	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	155806	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	332306	12.352	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	98.80%	
57) Toluene-d8 (SS2)	12.48	98	995902	13.570	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	108.56%	
73) Bromofluorobenzene (SS3)	16.85	174	353663	15.200	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	121.60%	

Target Compounds

						Qvalue
2) Propene	3.43	42	3131	0.128	ng	95
3) Dichlorodifluoromethan...	3.50	85	3945	0.107	ng	99
4) Chloromethane	3.64	50	3047m	0.082	ng	
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	1891	0.107	ng	92
6) Vinyl Chloride	3.83	62	2802	0.102	ng	90
7) 1,3-Butadiene	3.95	54	2067	0.090	ng	87
8) Bromomethane	4.15	94	1622	0.090	ng	92
9) Chloroethane	4.30	64	1238	0.082	ng	68
10) Ethanol	4.41	45	8331	0.410	ng	93
11) Acetonitrile	4.58	41	5643	0.105	ng	# 1
12) Acrolein	4.66	56	2422	0.160	ng	94
13) Acetone	4.77	58	7931	0.506	ng	93
14) Trichlorofluoromethane	4.89	101	3428	0.107	ng	100
15) 2-Propanol (Isopropanol)	4.97	45	16899	0.247	ng	83
16) Acrylonitrile	5.11	53	5358	0.177	ng	99
17) 1,1-Dichloroethene	5.37	96	1722	0.093	ng	91
18) 2-Methyl-2-Propanol (t...	5.47	59	10242	0.194	ng	88
19) Methylene Chloride	5.45	84	1998	0.097	ng	93
20) 3-Chloro-1-propene (Al...	5.56	41	3224	0.085	ng	87
21) Trichlorotrifluoroethane	5.69	151	2027	0.124	ng	97
22) Carbon Disulfide	5.73	76	19058	0.228	ng	98
23) trans-1,2-Dichloroethene	6.25	61	2629	0.085	ng	100
24) 1,1-Dichloroethane	6.42	63	3584	0.095	ng	91
25) Methyl tert-Butyl Ether	6.49	73	6317	0.107	ng	96
26) Vinyl Acetate	6.55	86	885	0.242	ng	# 41
27) 2-Butanone (MEK)	6.78	72	2260	0.168	ng	# 42
28) cis-1,2-Dichloroethene	7.16	61	2892	0.097	ng	99
29) Diisopropyl Ether	7.38	87	3336	0.230	ng	# 97
30) Ethyl Acetate	7.38	61	3181	0.354	ng	97
31) n-Hexane	7.39	57	3302	0.097	ng	# 91
32) Chloroform	7.43	83	3551	0.104	ng	95
34) Tetrahydrofuran (THF)	7.87	72	2780	0.207	ng	# 81
35) Ethyl tert-Butyl Ether	7.92	87	4400	0.202	ng	95
36) 1,2-Dichloroethane	8.19	62	2557	0.099	ng	90
38) 1,1,1-Trichloroethane	8.46	97	3180	0.117	ng	96
39) Isopropyl Acetate	9.37	61	23977	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.97	78	8324	0.110	ng	100
42) Carbon Tetrachloride	9.14	117	2608	0.111	ng	100
43) Cyclohexane	9.29	84	5546	0.200	ng	93
44) tert-Amyl Methyl Ether	9.69	73	10789	0.201	ng	96
45) 1,2-Dichloropropane	9.92	63	1933	0.090	ng	98
46) Bromodichloromethane	10.14	83	2865	0.112	ng	93
47) Trichloroethene	10.21	130	2172	0.112	ng	96
48) 1,4-Dioxane	10.23	88	1560	0.102	ng	81
49) 2,2,4-Trimethylpentane...	10.30	57	8076	0.093	ng	99
50) Methyl Methacrylate	10.48	100	1509	0.220	ng	91

Data File : I:\MS13\DATA\2023_02\22\02222311.D
 Acq On : 22 Feb 2023 15:07
 Sample : 0.1ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
 Operator: TZ
 Inst : MS13

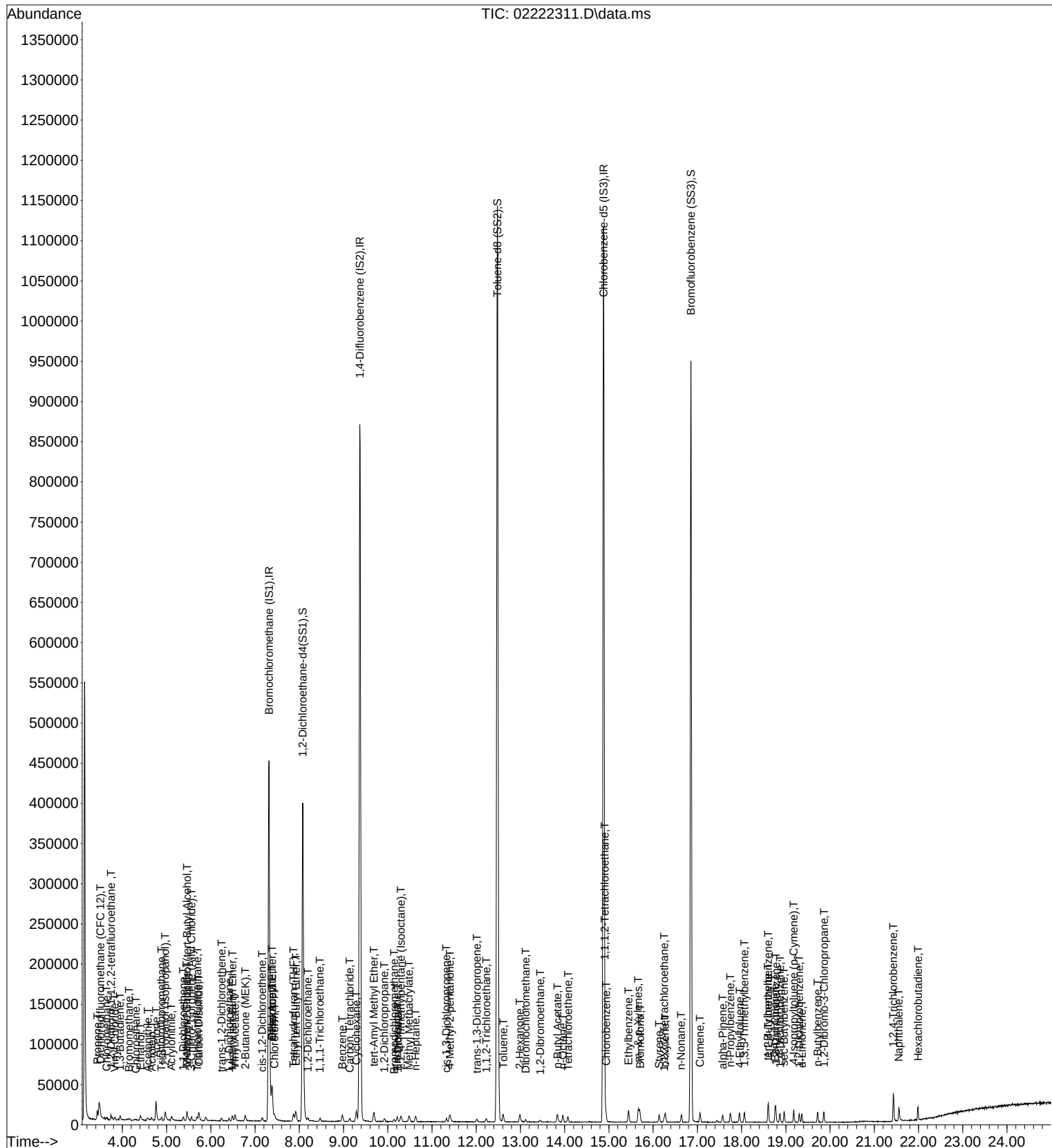
Quant Time: Feb 23 07:47:07 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:41:41 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	1961	0.101	ng	93
52) cis-1,3-Dichloropropene	11.32	75	2993	0.099	ng	75
53) 4-Methyl-2-pentanone	11.41	58	3433	0.188	ng	86
54) trans-1,3-Dichloropropene	12.02	75	2634	0.094	ng	95
55) 1,1,2-Trichloroethane	12.23	97	1849	0.101	ng	90
58) Toluene	12.61	91	9807	0.141	ng	94
59) 2-Hexanone	12.98	43	9294	0.220	ng	98
60) Dibromochloromethane	13.12	129	2317	0.123	ng	98
61) 1,2-Dibromoethane	13.44	107	2189	0.115	ng	96
62) n-Butyl Acetate	13.84	43	10444	0.214	ng	94
63) n-Octane	13.96	57	1751	0.108	ng	93
64) Tetrachloroethene	14.08	166	2427	0.130	ng	79
65) Chlorobenzene	14.94	112	5992	0.134	ng	94
66) Ethylbenzene	15.44	91	12972	0.165	ng	96
67) m- & p-Xylenes	15.66	91	20803	0.345	ng	99
68) Bromoform	15.71	173	2146	0.137	ng	91
69) Styrene	16.14	104	5671	0.132	ng	99
70) o-Xylene	16.27	91	8601	0.141	ng	99
71) n-Nonane	16.63	43	3806	0.094	ng	99
72) 1,1,2,2-Tetrachloroethane	16.25	83	3302	0.108	ng	95
74) Cumene	17.06	105	10249	0.139	ng	94
75) alpha-Pinene	17.58	93	4159	0.119	ng	79
76) n-Propylbenzene	17.74	91	12305	0.136	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	9469	0.138	ng	97
79) 1,3,5-Trimethylbenzene	18.07	105	8683	0.149	ng	94
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	8303	0.143	ng	96
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	13391	0.280	ng	93
85) 1,3-Dichlorobenzene	18.78	146	5725	0.174	ng	97
86) 1,4-Dichlorobenzene	18.87	146	6455	0.192	ng	93
87) sec-Butylbenzene	18.96	105	10585	0.132	ng	96
88) 4-Isopropyltoluene (p-...	19.18	119	9816	0.149	ng	96
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	5383	0.164	ng	99
91) d-Limonene	19.36	68	2573	0.113	ng	93
92) 1,2-Dibromo-3-Chloropr...	19.86	157	3966	0.339	ng	83
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	13981	0.671	ng	98
95) Naphthalene	21.55	128	20694	0.361	ng	95
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	3461	0.227	ng	94
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	8047	0.148	ng	98
100) n-Butylbenzene	19.72	91	8867	0.143	ng #	92
101) 1,1,1,2-Tetrachloroethane	14.91	131	2056	0.132	ng	97

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

Vial: 13
Operator: TZ
Inst : MS13

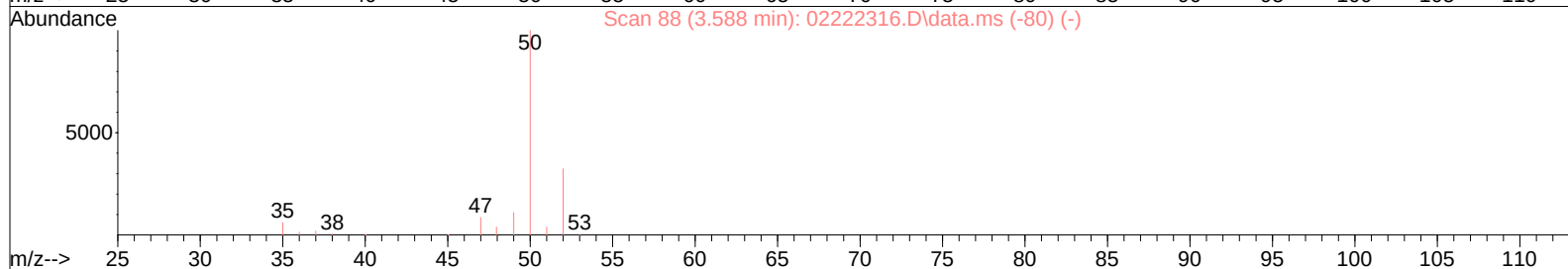
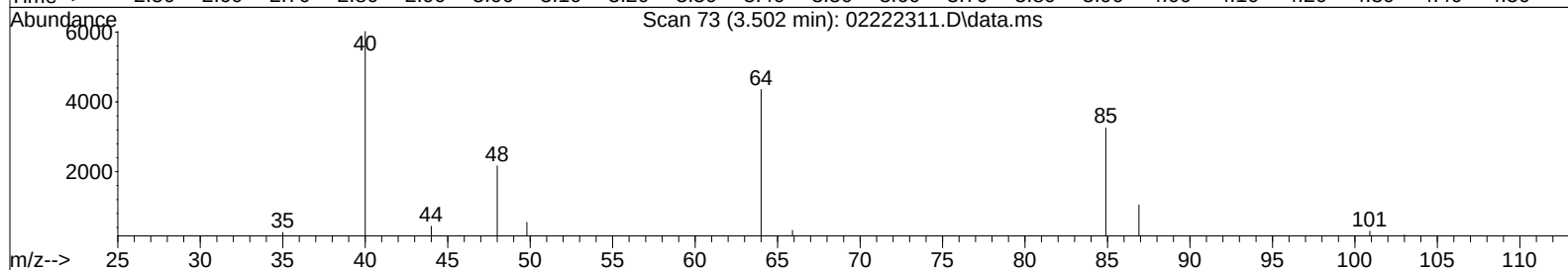
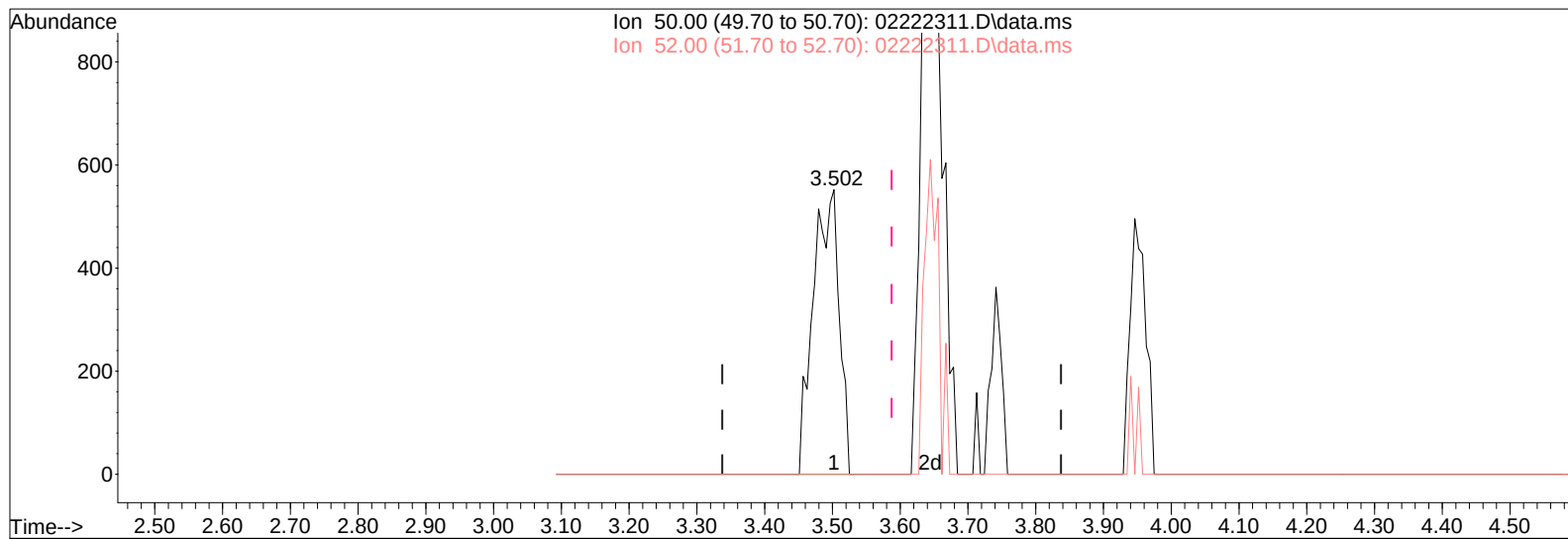
Quant Time: Feb 23 07:47:07 2023



Data File : I:\MS13\DATA\2023_02\22\02222311.D
Acq On : 22 Feb 2023 15:07
Sample : 0.1ng R13022223 ICAL Std.
Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:06 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Feb 23 07:41:41 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 02222311.D\data.ms

(4) Chloromethane (T)

3.502min (-0.085) 0.04ng

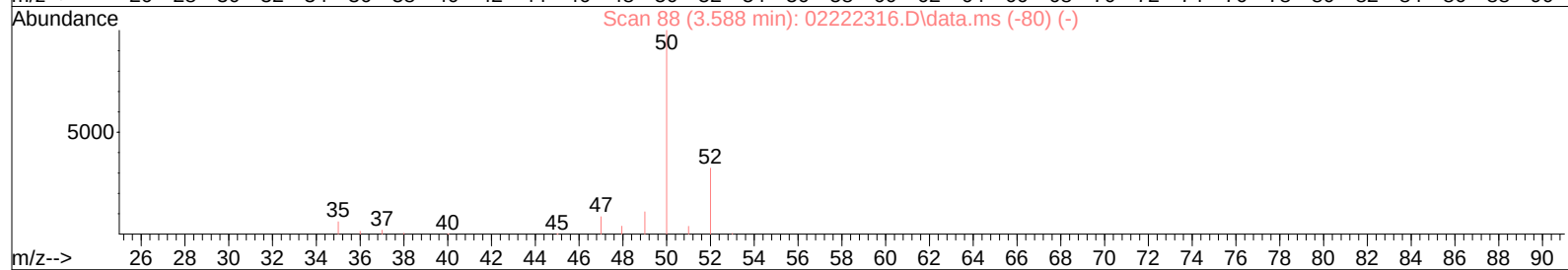
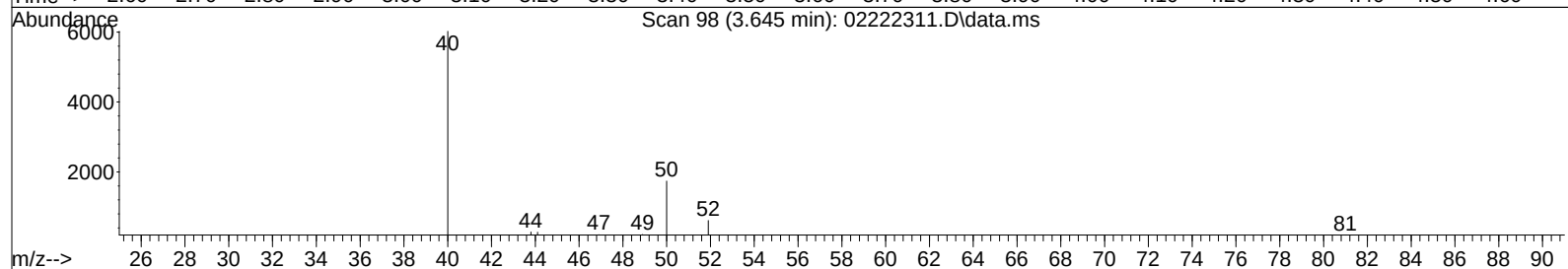
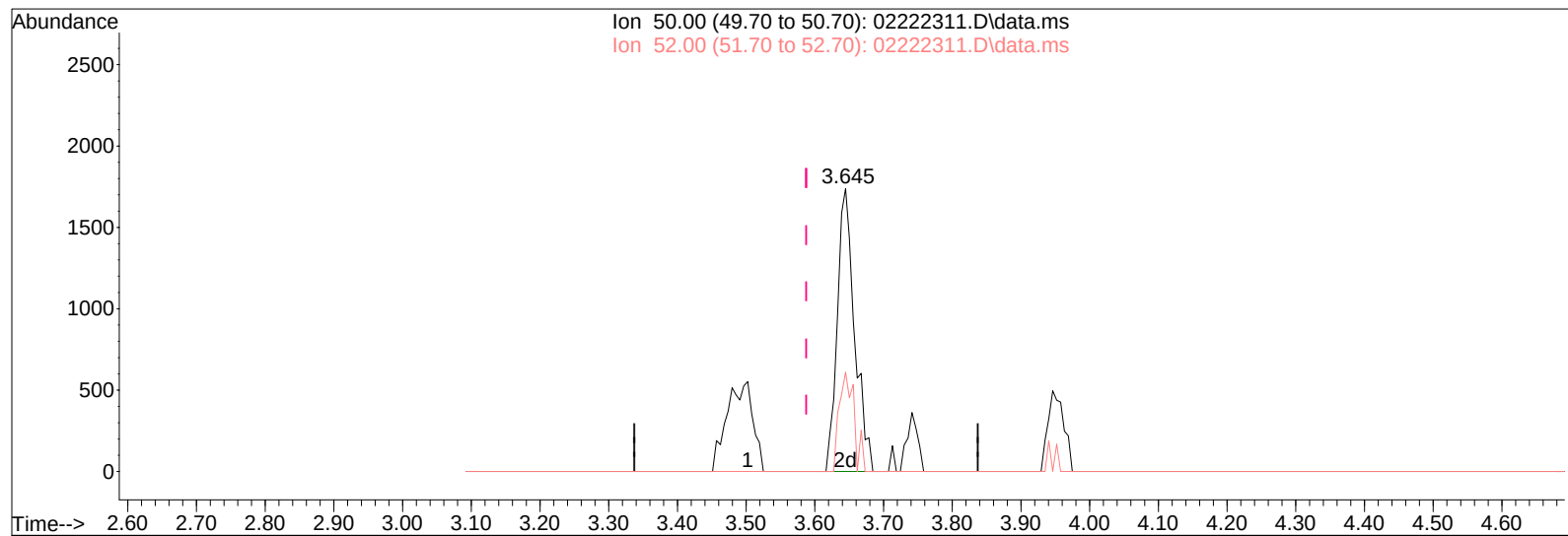
response 1461

Ion	Exp%	Act%
50.00	100	100
52.00	33.00	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2023_02\22\02222311.D
Acq On : 22 Feb 2023 15:07
Sample : 0.1ng R13022223 ICAL Std.
Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:06 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
QLast Update : Thu Feb 23 07:41:41 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



TIC: 02222311.D\data.ms

(4) Chloromethane (T)

3.645min (+0.057) 0.08ng m

response 3047

Ion	Exp%	Act%
50.00	100	100
52.00	33.00	27.34
0.00	0.00	0.00
0.00	0.00	0.00

MP

TZ 2/23/23

CG 3/2/23

Data File : I:\MS13\DATA\2023_02\22\02222312.D
 Acq On : 22 Feb 2023 15:44
 Sample : 0.2ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 2/23/23

Quant Time: Feb 23 07:42:07 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	196637	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.37	114	859289	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	153573	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	325889	12.505	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.08%
57) Toluene-d8 (SS2)	12.48	98	972771	13.447	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	107.60%
73) Bromofluorobenzene (SS3)	16.85	174	346185	15.095	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	120.72%

Target Compounds

						Qvalue
2) Propene	3.43	42	4799	0.202	ng	93
3) Dichlorodifluoromethan...	3.50	85	7750	0.217	ng	98
4) Chloromethane	3.64	50	5821	0.162	ng	93
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	3501	0.205	ng	97
6) Vinyl Chloride	3.82	62	4623	0.173	ng	97
7) 1,3-Butadiene	3.94	54	4054	0.183	ng	# 80
8) Bromomethane	4.15	94	3308	0.189	ng	96
9) Chloroethane	4.29	64	2201	0.151	ng	97
10) Ethanol	4.40	45	12033	0.611	ng	95
11) Acetonitrile	4.56	41	8038	0.154	ng	# 1
12) Acrolein	4.66	56	4404	0.300	ng	98
13) Acetone	4.75	58	14202	0.936	ng	99
14) Trichlorofluoromethane	4.88	101	6878	0.221	ng	100
15) 2-Propanol (Isopropanol)	4.95	45	25361	0.383	ng	93
16) Acrylonitrile	5.10	53	9430	0.321	ng	95
17) 1,1-Dichloroethene	5.38	96	3730	0.208	ng	99
18) 2-Methyl-2-Propanol (t...	5.46	59	19788	0.386	ng	93
19) Methylene Chloride	5.45	84	3925	0.197	ng	98
20) 3-Chloro-1-propene (Al...	5.56	41	6057	0.165	ng	90
21) Trichlorotrifluoroethane	5.68	151	3558	0.224	ng	97
22) Carbon Disulfide	5.73	76	33438	0.413	ng	99
23) trans-1,2-Dichloroethene	6.24	61	5592	0.187	ng	95
24) 1,1-Dichloroethane	6.42	63	6816	0.187	ng	91
25) Methyl tert-Butyl Ether	6.48	73	11666	0.203	ng	94
26) Vinyl Acetate	6.54	86	1823	0.515	ng	# 91
27) 2-Butanone (MEK)	6.76	72	4382	0.337	ng	# 79
28) cis-1,2-Dichloroethene	7.16	61	5250	0.182	ng	98
29) Diisopropyl Ether	7.38	87	6112	0.436	ng	99
30) Ethyl Acetate	7.38	61	6051	0.696	ng	99
31) n-Hexane	7.39	57	6331	0.191	ng	99
32) Chloroform	7.43	83	6802	0.206	ng	99
34) Tetrahydrofuran (THF)	7.86	72	4558	0.351	ng	# 80
35) Ethyl tert-Butyl Ether	7.91	87	8684	0.412	ng	99
36) 1,2-Dichloroethane	8.19	62	5245	0.210	ng	95
38) 1,1,1-Trichloroethane	8.47	97	6024	0.225	ng	99
39) Isopropyl Acetate	9.37	61	23206	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.98	78	14838	0.200	ng	99
42) Carbon Tetrachloride	9.14	117	5343	0.232	ng	98
43) Cyclohexane	9.28	84	11227	0.411	ng	99
44) tert-Amyl Methyl Ether	9.68	73	20689	0.393	ng	96
45) 1,2-Dichloropropane	9.92	63	3640	0.172	ng	98
46) Bromodichloromethane	10.14	83	5692	0.226	ng	91
47) Trichloroethene	10.21	130	4264	0.224	ng	98
48) 1,4-Dioxane	10.21	88	3058	0.204	ng	92
49) 2,2,4-Trimethylpentane...	10.30	57	15601	0.183	ng	96
50) Methyl Methacrylate	10.48	100	2987	0.443	ng	98

Data File : I:\MS13\DATA\2023_02\22\02222312.D
 Acq On : 22 Feb 2023 15:44
 Sample : 0.2ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222302 (3/18)

Vial: 13
 Operator: TZ
 Inst : MS13

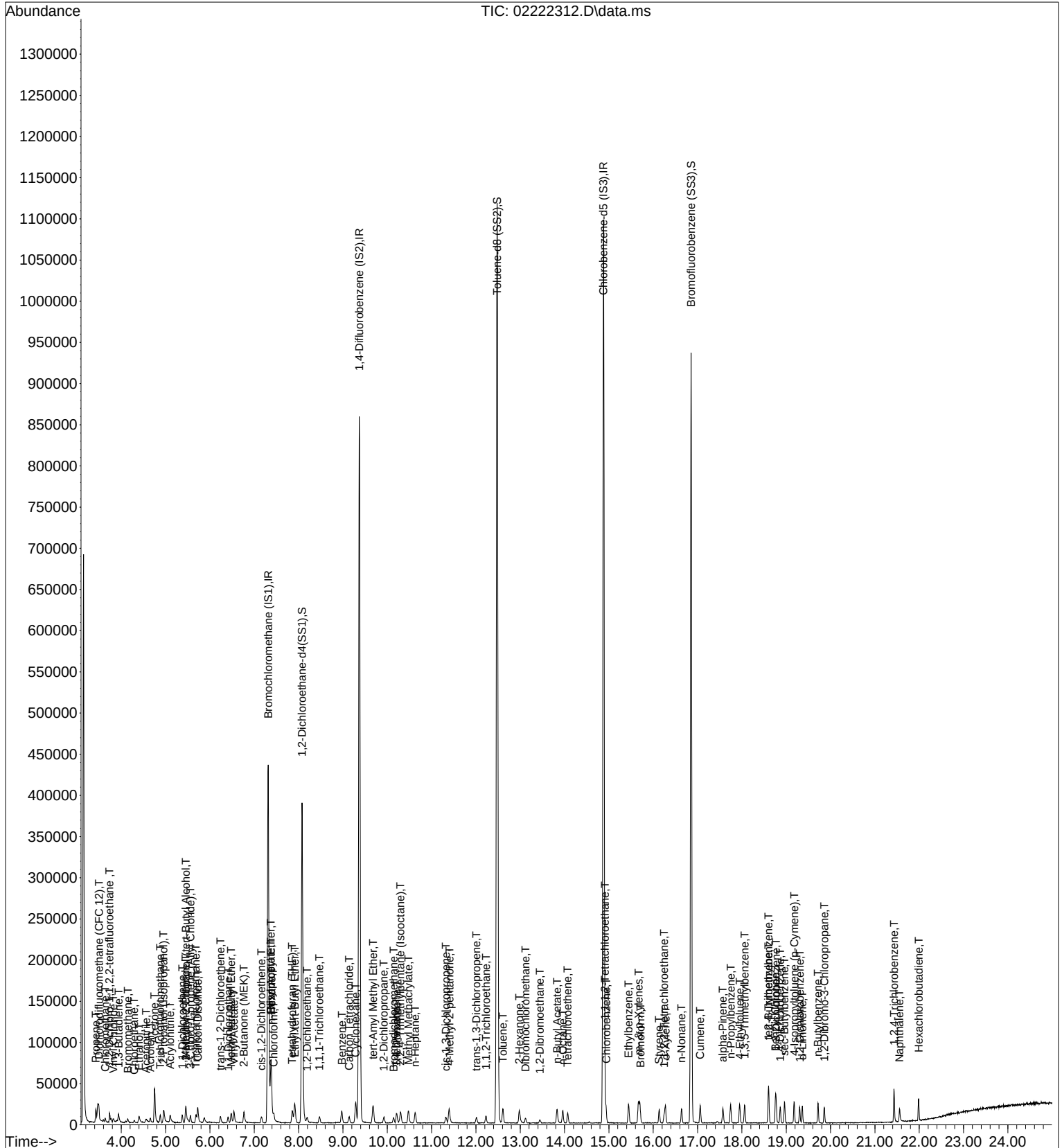
Quant Time: Feb 23 07:42:07 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:41:41 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	3622	0.191	ng	97
52) cis-1,3-Dichloropropene	11.32	75	5897	0.199	ng	96
53) 4-Methyl-2-pentanone	11.41	58	6348	0.353	ng	95
54) trans-1,3-Dichloropropene	12.01	75	5360	0.195	ng	96
55) 1,1,2-Trichloroethane	12.23	97	4064	0.225	ng	92
58) Toluene	12.61	91	16285	0.237	ng	97
59) 2-Hexanone	12.98	43	16098	0.387	ng	95
60) Dibromochloromethane	13.12	129	4690	0.253	ng	96
61) 1,2-Dibromoethane	13.44	107	4526	0.240	ng	86
62) n-Butyl Acetate	13.83	43	17342	0.360	ng	97
63) n-Octane	13.96	57	3464	0.216	ng	96
64) Tetrachloroethene	14.07	166	4861	0.264	ng	96
65) Chlorobenzene	14.94	112	11028	0.250	ng	95
66) Ethylbenzene	15.44	91	20704	0.268	ng	99
67) m- & p-Xylenes	15.67	91	32803	0.551	ng	98
68) Bromoform	15.72	173	3978	0.257	ng	92
69) Styrene	16.13	104	9967	0.236	ng	97
70) o-Xylene	16.28	91	15693	0.262	ng	100
71) n-Nonane	16.64	43	7612	0.191	ng	93
72) 1,1,2,2-Tetrachloroethane	16.24	83	6254	0.207	ng	95
74) Cumene	17.06	105	18018	0.248	ng	97
75) alpha-Pinene	17.57	93	8488	0.246	ng	94
76) n-Propylbenzene	17.75	91	22199	0.249	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	17834	0.264	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	15284	0.266	ng	96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	15131	0.264	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	22989	0.488	ng	98
85) 1,3-Dichlorobenzene	18.77	146	9193	0.283	ng	98
86) 1,4-Dichlorobenzene	18.86	146	9361	0.283	ng	94
87) sec-Butylbenzene	18.96	105	20056	0.254	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	17058	0.263	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	9035	0.279	ng	99
91) d-Limonene	19.36	68	4919	0.219	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.86	157	6158	0.534	ng	85
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	15084	0.735	ng	98
95) Naphthalene	21.55	128	18692	0.331	ng	98
96) n-Dodecane	19.19	58	143	No Calib	#	
97) Hexachlorobutadiene	21.99	225	5656	0.377	ng	95
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.60	119	14226	0.265	ng	99
100) n-Butylbenzene	19.72	91	15238	0.250	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	3817	0.248	ng	92

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

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:07 2023



Data File : I:\MS13\DATA\2023_02\22\02222313.D
 Acq On : 22 Feb 2023 16:21
 Sample : 0.5ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

T2 2/23/23

Quant Time: Feb 23 07:42:09 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	197296	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.37	114	865931	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.88	54	153054	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	322562	12.336	ng	-0.03
Spiked Amount	12.500	Range 70 - 130	Recovery	=	98.72%	
57) Toluene-d8 (SS2)	12.48	98	975006	13.524	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	108.16%	
73) Bromofluorobenzene (SS3)	16.85	174	352604	15.427	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	123.44%	

Target Compounds

						Qvalue
2) Propene	3.41	42	11673	0.491	ng	98
3) Dichlorodifluoromethan...	3.49	85	20288	0.565	ng	100
4) Chloromethane	3.62	50	14861	0.412	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	10098	0.589	ng	98
6) Vinyl Chloride	3.81	62	12720	0.476	ng	97
7) 1,3-Butadiene	3.92	54	10663	0.478	ng	91
8) Bromomethane	4.13	94	8584	0.490	ng	98
9) Chloroethane	4.28	64	6110	0.418	ng	98
10) Ethanol	4.39	45	25881	1.310	ng	99
11) Acetonitrile	4.55	41	17509	0.335	ng	96
12) Acrolein	4.64	56	12048	0.817	ng	94
13) Acetone	4.74	58	33246	2.183	ng	99
14) Trichlorofluoromethane	4.87	101	17747	0.568	ng	100
15) 2-Propanol (Isopropanol)	4.94	45	55241	0.831	ng	92
16) Acrylonitrile	5.10	53	24201	0.821	ng	98
17) 1,1-Dichloroethene	5.37	96	9460	0.525	ng	97
18) 2-Methyl-2-Propanol (t...	5.44	59	52066	1.012	ng	98
19) Methylene Chloride	5.45	84	10118	0.505	ng	98
20) 3-Chloro-1-propene (Al...	5.56	41	15453	0.419	ng	96
21) Trichlorotrifluoroethane	5.68	151	9706	0.610	ng	99
22) Carbon Disulfide	5.72	76	78271	0.964	ng	100
23) trans-1,2-Dichloroethene	6.23	61	14356	0.477	ng	99
24) 1,1-Dichloroethane	6.40	63	17592	0.482	ng	100
25) Methyl tert-Butyl Ether	6.47	73	30504	0.529	ng	97
26) Vinyl Acetate	6.54	86	4482	1.263	ng	# 81
27) 2-Butanone (MEK)	6.76	72	11355	0.870	ng	# 89
28) cis-1,2-Dichloroethene	7.16	61	14415	0.498	ng	100
29) Diisopropyl Ether	7.37	87	14957	1.063	ng	# 92
30) Ethyl Acetate	7.37	61	16709	1.915	ng	95
31) n-Hexane	7.39	57	15459	0.465	ng	100
32) Chloroform	7.44	83	17425	0.526	ng	98
34) Tetrahydrofuran (THF)	7.84	72	11428	0.877	ng	# 87
35) Ethyl tert-Butyl Ether	7.91	87	22379	1.057	ng	98
36) 1,2-Dichloroethane	8.19	62	12970	0.517	ng	97
38) 1,1,1-Trichloroethane	8.47	97	16099	0.596	ng	98
39) Isopropyl Acetate	9.37	61	23631	No Calib		
40) 1-Butanol	8.95	56	116	No Calib	#	
41) Benzene	8.97	78	36364	0.485	ng	98
42) Carbon Tetrachloride	9.14	117	13646	0.589	ng	97
43) Cyclohexane	9.29	84	28000	1.018	ng	98
44) tert-Amyl Methyl Ether	9.67	73	54617	1.029	ng	98
45) 1,2-Dichloropropane	9.92	63	9874	0.464	ng	97
46) Bromodichloromethane	10.14	83	13302	0.524	ng	96
47) Trichloroethene	10.22	130	11006	0.573	ng	96
48) 1,4-Dioxane	10.20	88	7250	0.480	ng	98
49) 2,2,4-Trimethylpentane...	10.30	57	40216	0.468	ng	98
50) Methyl Methacrylate	10.47	100	7371	1.084	ng	96

Data File : I:\MS13\DATA\2023_02\22\02222313.D
 Acq On : 22 Feb 2023 16:21
 Sample : 0.5ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:42:09 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

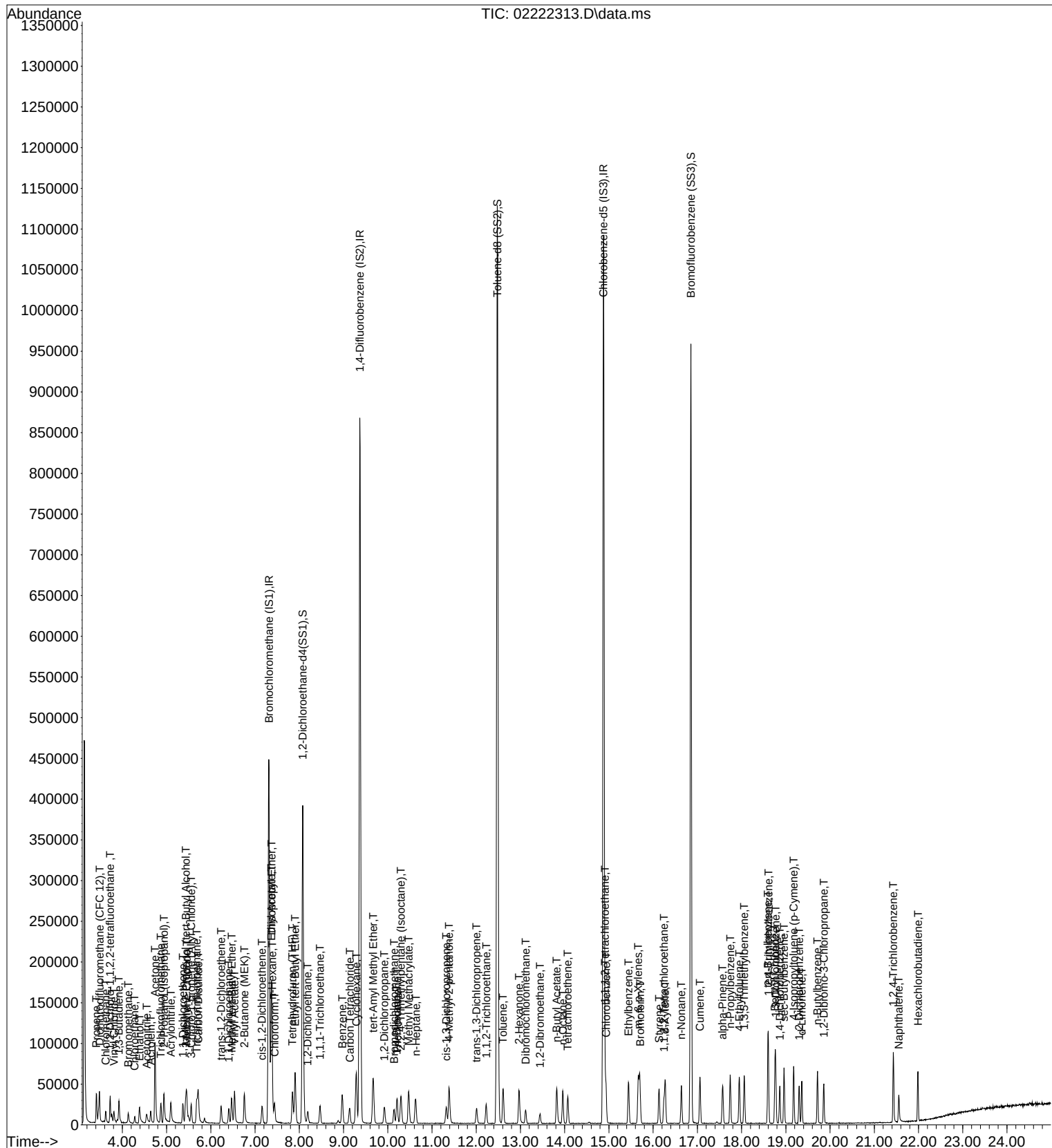
DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	8747	0.457	ng	96
52) cis-1,3-Dichloropropene	11.32	75	15905	0.532	ng	100
53) 4-Methyl-2-pentanone	11.38	58	16116	0.890	ng	94
54) trans-1,3-Dichloropropene	12.00	75	13540	0.488	ng	95
55) 1,1,2-Trichloroethane	12.23	97	9696	0.533	ng	96
58) Toluene	12.60	91	39736	0.581	ng	97
59) 2-Hexanone	12.97	43	38563	0.931	ng	97
60) Dibromochloromethane	13.12	129	11990	0.650	ng	99
61) 1,2-Dibromoethane	13.44	107	10738	0.572	ng	99
62) n-Butyl Acetate	13.82	43	42250	0.881	ng	99
63) n-Octane	13.96	57	8568	0.536	ng	95
64) Tetrachloroethene	14.07	166	13187	0.717	ng	96
65) Chlorobenzene	14.94	112	26893	0.612	ng	97
66) Ethylbenzene	15.44	91	45806	0.594	ng	100
67) m- & p-Xylenes	15.66	91	74528	1.257	ng	100
68) Bromoform	15.71	173	10508	0.682	ng	96
69) Styrene	16.14	104	25573	0.607	ng	99
70) o-Xylene	16.27	91	36933	0.618	ng	98
71) n-Nonane	16.64	43	18702	0.470	ng	98
72) 1,1,2,2-Tetrachloroethane	16.24	83	16226	0.539	ng	98
74) Cumene	17.06	105	46380	0.642	ng	98
75) alpha-Pinene	17.57	93	22243	0.647	ng	95
76) n-Propylbenzene	17.74	91	55005	0.619	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	44306	0.659	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	38190	0.666	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.61	105	37344	0.653	ng	99
83) n-Decane	17.06	58	400	No Calib	#	
84) Benzyl Chloride	18.75	91	55758	1.187	ng	98
85) 1,3-Dichlorobenzene	18.77	146	22130	0.684	ng	100
86) 1,4-Dichlorobenzene	18.86	146	21523	0.653	ng	99
87) sec-Butylbenzene	18.96	105	51260	0.652	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	43745	0.678	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	22241	0.690	ng	97
91) d-Limonene	19.36	68	12409	0.554	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.86	157	15282	1.329	ng	92
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	30117	1.472	ng	98
95) Naphthalene	21.55	128	33943	0.603	ng	98
96) n-Dodecane	19.18	58	1264	No Calib	#	
97) Hexachlorobutadiene	21.99	225	12469	0.833	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	37088	0.693	ng	99
100) n-Butylbenzene	19.72	91	38765	0.638	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	10495	0.685	ng	96

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

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:09 2023



Data File : I:\MS13\DATA\2023_02\22\02222314.D
 Acq On : 22 Feb 2023 16:58
 Sample : 1.0ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

T2 2/23/23

Quant Time: Feb 23 07:42:10 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	194376	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.38	114	845104	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.88	54	149605	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	317545	12.327	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.64%
57) Toluene-d8 (SS2)	12.48	98	953895	13.536	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	108.32%
73) Bromofluorobenzene (SS3)	16.85	174	349014	15.622	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	124.96%

Target Compounds

						Qvalue
2) Propene	3.40	42	20631	0.881	ng	99
3) Dichlorodifluoromethan...	3.47	85	39670	1.121	ng	98
4) Chloromethane	3.61	50	28774	0.809	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	19955	1.181	ng	100
6) Vinyl Chloride	3.80	62	24847	0.943	ng	97
7) 1,3-Butadiene	3.91	54	19616	0.893	ng	93
8) Bromomethane	4.12	94	17181	0.995	ng	99
9) Chloroethane	4.26	64	12504	0.869	ng	96
10) Ethanol	4.39	45	50397	2.590	ng	99
11) Acetonitrile	4.54	41	33680	0.655	ng	96
12) Acrolein	4.63	56	21975	1.513	ng	92
13) Acetone	4.73	58	63383	4.224	ng	98
14) Trichlorofluoromethane	4.86	101	34292	1.114	ng	99
15) 2-Propanol (Isopropanol)	4.94	45	100726	1.539	ng	92
16) Acrylonitrile	5.10	53	46663	1.607	ng	99
17) 1,1-Dichloroethene	5.36	96	18667	1.051	ng	96
18) 2-Methyl-2-Propanol (t...	5.42	59	100286	1.979	ng	98
19) Methylene Chloride	5.45	84	18913	0.958	ng	99
20) 3-Chloro-1-propene (Al...	5.55	41	31048	0.855	ng	92
21) Trichlorotrifluoroethane	5.68	151	18210	1.161	ng	98
22) Carbon Disulfide	5.70	76	144284	1.805	ng	99
23) trans-1,2-Dichloroethene	6.22	61	27289	0.921	ng	100
24) 1,1-Dichloroethane	6.40	63	34045	0.947	ng	98
25) Methyl tert-Butyl Ether	6.47	73	58535	1.031	ng	99
26) Vinyl Acetate	6.54	86	9161	2.620	ng	# 95
27) 2-Butanone (MEK)	6.75	72	22114	1.720	ng	# 90
28) cis-1,2-Dichloroethene	7.16	61	25981	0.911	ng	100
29) Diisopropyl Ether	7.37	87	28765	2.074	ng	95
30) Ethyl Acetate	7.37	61	31690	3.686	ng	96
31) n-Hexane	7.38	57	30586	0.935	ng	97
32) Chloroform	7.44	83	34130	1.046	ng	98
34) Tetrahydrofuran (THF)	7.84	72	21445	1.671	ng	# 89
35) Ethyl tert-Butyl Ether	7.90	87	42698	2.047	ng	96
36) 1,2-Dichloroethane	8.19	62	25767	1.043	ng	99
38) 1,1,1-Trichloroethane	8.46	97	30235	1.147	ng	99
39) Isopropyl Acetate	9.37	61	22865	No Calib		
40) 1-Butanol	8.93	56	349	No Calib	#	
41) Benzene	8.97	78	72705	0.995	ng	100
42) Carbon Tetrachloride	9.13	117	26392	1.167	ng	99
43) Cyclohexane	9.28	84	52452	1.955	ng	97
44) tert-Amyl Methyl Ether	9.67	73	105882	2.043	ng	99
45) 1,2-Dichloropropane	9.93	63	18204	0.876	ng	98
46) Bromodichloromethane	10.14	83	26038	1.052	ng	100
47) Trichloroethene	10.21	130	20608	1.099	ng	99
48) 1,4-Dioxane	10.20	88	13971	0.947	ng	97
49) 2,2,4-Trimethylpentane...	10.30	57	75673	0.902	ng	98
50) Methyl Methacrylate	10.47	100	14759	2.224	ng	97

Data File : I:\MS13\DATA\2023_02\22\02222314.D
 Acq On : 22 Feb 2023 16:58
 Sample : 1.0ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

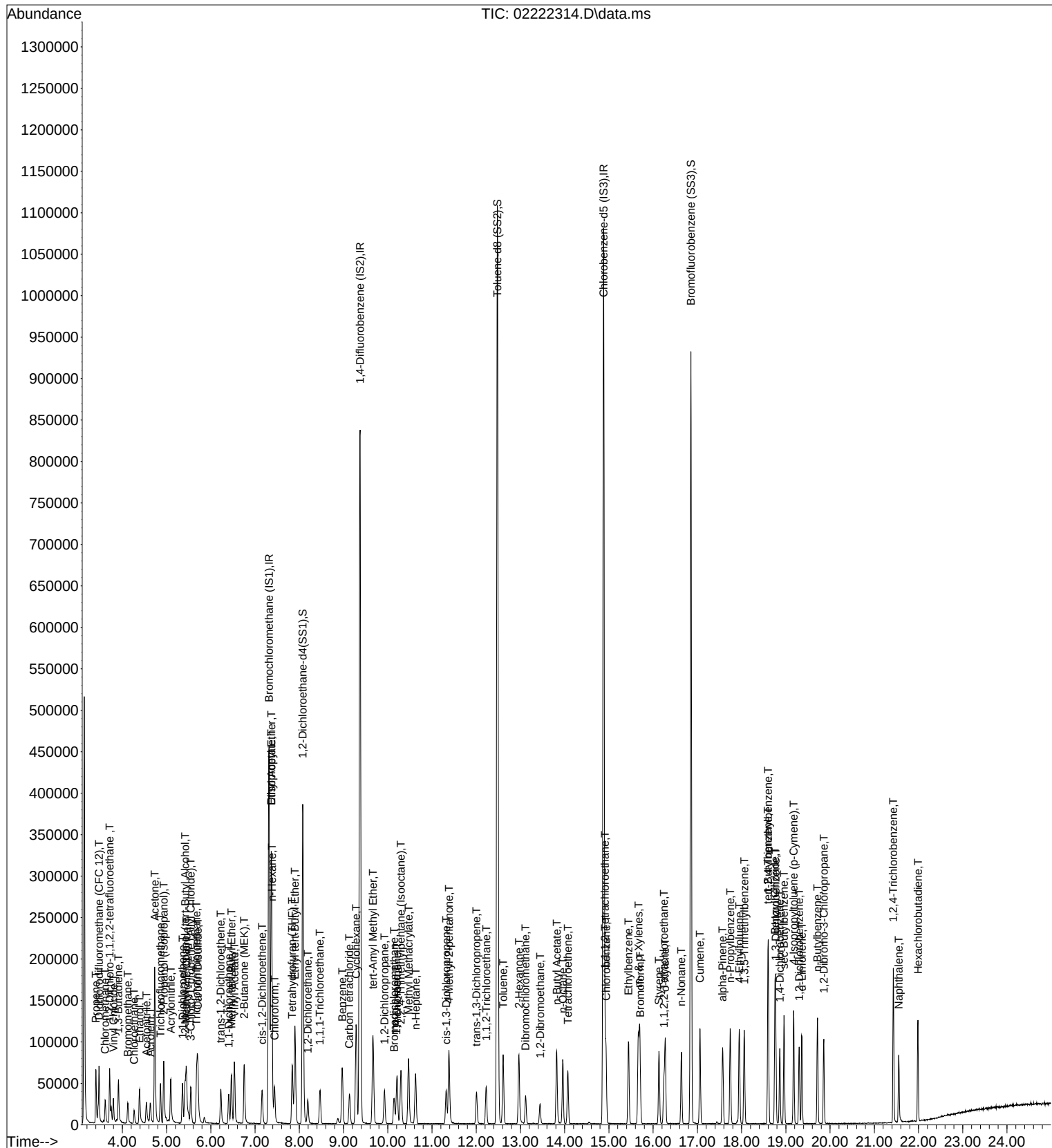
Quant Time: Feb 23 07:42:10 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:41:41 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	17173	0.919	ng	98
52) cis-1,3-Dichloropropene	11.32	75	29597	1.014	ng	100
53) 4-Methyl-2-pentanone	11.38	58	31368	1.775	ng	98
54) trans-1,3-Dichloropropene	12.00	75	27738	1.024	ng	98
55) 1,1,2-Trichloroethane	12.23	97	18814	1.059	ng	99
58) Toluene	12.61	91	76661	1.146	ng	99
59) 2-Hexanone	12.97	43	73271	1.809	ng	100
60) Dibromochloromethane	13.11	129	23256	1.290	ng	97
61) 1,2-Dibromoethane	13.44	107	21179	1.155	ng	99
62) n-Butyl Acetate	13.82	43	81774	1.745	ng	99
63) n-Octane	13.96	57	15780	1.011	ng	98
64) Tetrachloroethene	14.07	166	24407	1.358	ng	99
65) Chlorobenzene	14.94	112	52062	1.213	ng	99
66) Ethylbenzene	15.44	91	87454	1.161	ng	100
67) m- & p-Xylenes	15.67	91	144046	2.485	ng	100
68) Bromoform	15.71	173	20721	1.376	ng	99
69) Styrene	16.13	104	51299	1.246	ng	99
70) o-Xylene	16.27	91	71204	1.219	ng	99
71) n-Nonane	16.64	43	35770	0.920	ng	97
72) 1,1,2,2-Tetrachloroethane	16.24	83	30963	1.053	ng	97
74) Cumene	17.06	105	88894	1.258	ng	98
75) alpha-Pinene	17.57	93	43487	1.295	ng	98
76) n-Propylbenzene	17.74	91	105751	1.218	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	88747	1.350	ng	97
79) 1,3,5-Trimethylbenzene	18.06	105	73709	1.314	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	73751	1.319	ng	99
83) n-Decane	17.06	58	867	No Calib	#	
84) Benzyl Chloride	18.75	91	115608	2.518	ng	99
85) 1,3-Dichlorobenzene	18.77	146	43924	1.388	ng	100
86) 1,4-Dichlorobenzene	18.86	146	42822	1.330	ng	100
87) sec-Butylbenzene	18.96	105	98318	1.279	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	84790	1.344	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	42944	1.362	ng	99
91) d-Limonene	19.36	68	24823	1.135	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.86	157	30711	2.732	ng	94
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	61624	3.081	ng	99
95) Naphthalene	21.55	128	73520	1.337	ng	98
96) n-Dodecane	19.18	58	2420	No Calib	#	
97) Hexachlorobutadiene	21.99	225	25365	1.734	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	71978	1.376	ng	100
100) n-Butylbenzene	19.72	91	74844	1.261	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	19833	1.324	ng	99

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

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:10 2023



Data File : I:\MS13\DATA\2023_02\22\02222315.D
 Acq On : 22 Feb 2023 17:35
 Sample : 5.0ng R1302223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

TZ 2/23/23

Quant Time: Feb 23 07:42:12 2023

Quant Method : I:\MS13\METHODS\R1302223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	196894	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.39	114	865078	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	153959	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.09	65	326845	12.525	ng	-0.02
Spiked Amount	12.500	Range 70 - 130	Recovery	=	100.24%	
57) Toluene-d8 (SS2)	12.48	98	972936	13.416	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	107.36%	
73) Bromofluorobenzene (SS3)	16.86	174	361375	15.718	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	125.76%	

Target Compounds

						Qvalue
2) Propene	3.39	42	97454	4.106	ng	99
3) Dichlorodifluoromethan...	3.47	85	189755	5.295	ng	100
4) Chloromethane	3.60	50	130289	3.617	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	96653	5.648	ng	99
6) Vinyl Chloride	3.79	62	120396	4.512	ng	99
7) 1,3-Butadiene	3.91	54	93285	4.194	ng	98
8) Bromomethane	4.12	94	82442	4.715	ng	99
9) Chloroethane	4.26	64	59056	4.050	ng	98
10) Ethanol	4.41	45	225879	11.460	ng	100
11) Acetonitrile	4.56	41	154722	2.969	ng	100
12) Acrolein	4.63	56	109644	7.453	ng	100
13) Acetone	4.74	58	303843	19.992	ng	97
14) Trichlorofluoromethane	4.86	101	166814	5.349	ng	98
15) 2-Propanol (Isopropanol)	4.96	45	465642	7.022	ng	96
16) Acrylonitrile	5.11	53	228923	7.785	ng	100
17) 1,1-Dichloroethene	5.36	96	88832	4.939	ng	98
18) 2-Methyl-2-Propanol (t...	5.43	59	485775	9.463	ng	100
19) Methylene Chloride	5.47	84	90443	4.523	ng	100
20) 3-Chloro-1-propene (Al...	5.55	41	143143	3.891	ng	98
21) Trichlorotrifluoroethane	5.68	151	90245	5.680	ng	100
22) Carbon Disulfide	5.70	76	676216	8.349	ng	99
23) trans-1,2-Dichloroethene	6.24	61	137650	4.587	ng	98
24) 1,1-Dichloroethane	6.42	63	162746	4.469	ng	100
25) Methyl tert-Butyl Ether	6.47	73	283833	4.934	ng	98
26) Vinyl Acetate	6.55	86	45358	12.807	ng	98
27) 2-Butanone (MEK)	6.76	72	111868	8.590	ng	99
28) cis-1,2-Dichloroethene	7.18	61	128737	4.458	ng	100
29) Diisopropyl Ether	7.37	87	138251	9.842	ng	97
30) Ethyl Acetate	7.38	61	152174	17.472	ng	98
31) n-Hexane	7.39	57	141170	4.259	ng	99
32) Chloroform	7.46	83	162369	4.911	ng	99
34) Tetrahydrofuran (THF)	7.84	72	105070	8.082	ng	99
35) Ethyl tert-Butyl Ether	7.91	87	212291	10.048	ng	99
36) 1,2-Dichloroethane	8.21	62	130204	5.203	ng	100
38) 1,1,1-Trichloroethane	8.48	97	148229	5.492	ng	100
39) Isopropyl Acetate	9.39	61	24233	No Calib		
40) 1-Butanol	8.89	56	4295	No Calib		
41) Benzene	8.98	78	351983	4.704	ng	100
42) Carbon Tetrachloride	9.15	117	130786	5.652	ng	99
43) Cyclohexane	9.30	84	254835	9.278	ng	99
44) tert-Amyl Methyl Ether	9.67	73	520180	9.805	ng	99
45) 1,2-Dichloropropane	9.93	63	86331	4.057	ng	100
46) Bromodichloromethane	10.15	83	130457	5.149	ng	99
47) Trichloroethene	10.22	130	101284	5.276	ng	100
48) 1,4-Dioxane	10.19	88	68981	4.568	ng	100
49) 2,2,4-Trimethylpentane...	10.30	57	363938	4.238	ng	100
50) Methyl Methacrylate	10.47	100	72911	10.732	ng	98

Data File : I:\MS13\DATA\2023_02\22\02222315.D
 Acq On : 22 Feb 2023 17:35
 Sample : 5.0ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:42:12 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:41:41 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

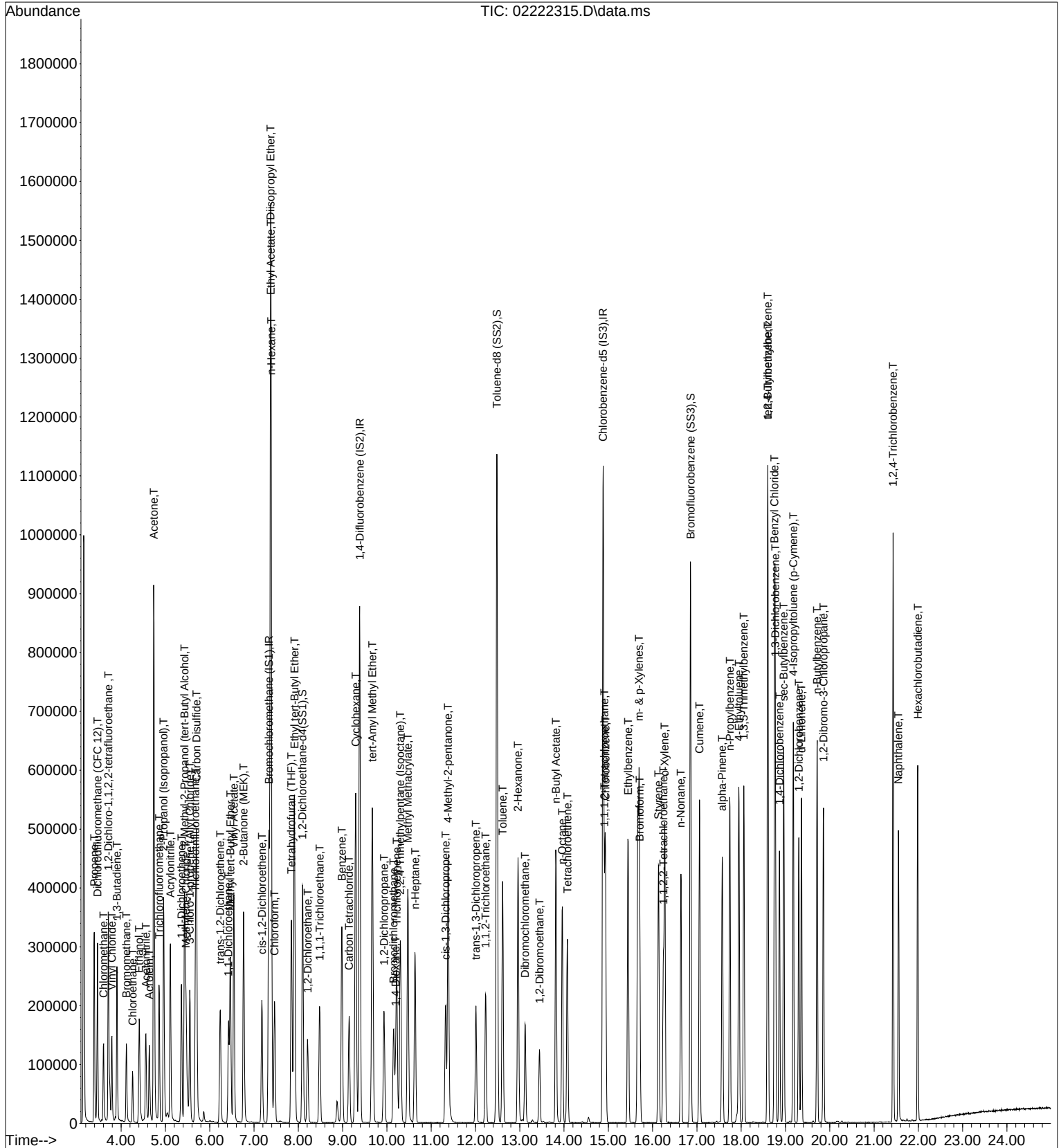
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	85147	4.450	ng	99
52) cis-1,3-Dichloropropene	11.33	75	148223	4.960	ng	100
53) 4-Methyl-2-pentanone	11.38	58	154486	8.539	ng	98
54) trans-1,3-Dichloropropene	12.01	75	137516	4.957	ng	100
55) 1,1,2-Trichloroethane	12.23	97	90133	4.957	ng	99
58) Toluene	12.61	91	373776	5.432	ng	100
59) 2-Hexanone	12.96	43	367090	8.807	ng	100
60) Dibromochloromethane	13.12	129	117185	6.317	ng	99
61) 1,2-Dibromoethane	13.44	107	105751	5.605	ng	99
62) n-Butyl Acetate	13.81	43	403520	8.366	ng	100
63) n-Octane	13.96	57	75125	4.676	ng	99
64) Tetrachloroethene	14.08	166	118413	6.403	ng	100
65) Chlorobenzene	14.94	112	250581	5.672	ng	99
66) Ethylbenzene	15.45	91	430348	5.552	ng	99
67) m- & p-Xylenes	15.69	91	701452	11.760	ng	99
68) Bromoform	15.71	173	105827	6.829	ng	100
69) Styrene	16.13	104	260316	6.143	ng	100
70) o-Xylene	16.27	91	349169	5.808	ng	99
71) n-Nonane	16.64	43	173469	4.336	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	157584	5.208	ng	99
74) Cumene	17.06	105	435022	5.983	ng	100
75) alpha-Pinene	17.57	93	212603	6.152	ng	99
76) n-Propylbenzene	17.74	91	520443	5.826	ng	100
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	425730	6.292	ng	100
79) 1,3,5-Trimethylbenzene	18.06	105	364899	6.323	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	361919	6.289	ng	98
83) n-Decane	17.06	58	3500	No Calib		
84) Benzyl Chloride	18.75	91	609021	12.889	ng	100
85) 1,3-Dichlorobenzene	18.77	146	217375	6.677	ng	100
86) 1,4-Dichlorobenzene	18.86	146	215644	6.507	ng	100
87) sec-Butylbenzene	18.96	105	479577	6.060	ng	100
88) 4-Isopropyltoluene (p-...	19.18	119	418732	6.448	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	215951	6.656	ng	100
91) d-Limonene	19.36	68	128923	5.727	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.86	157	167105	14.444	ng	99
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	320445	15.567	ng	99
95) Naphthalene	21.55	128	389723	6.887	ng	100
96) n-Dodecane	19.18	58	12499	No Calib	#	
97) Hexachlorobutadiene	21.99	225	123386	8.198	ng	99
98) Cyclohexanone	15.66	55	409	No Calib	#	
99) tert-Butylbenzene	18.60	119	351649	6.533	ng	100
100) n-Butylbenzene	19.72	91	377617	6.183	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	97940	6.354	ng	99

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

Data File : I:\MS13\DATA\2023_02\22\02222315.D
Acq On : 22 Feb 2023 17:35
Sample : 5.0ng R13022223 ICAL Std.
Misc : S35-01202301/S35-02222301 (3/18)

Vial: 14
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:12 2023
Quant Method : I:\MS13\METHODS\R13022223.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Thu Feb 23 07:41:41 2023
Response via : Initial Calibration
DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_02\22\02222316.D
 Acq On : 22 Feb 2023 18:11
 Sample : 25ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 2/23/23

Quant Time: Feb 23 07:42:14 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.36	130	196118	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.40	114	869429	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	151692	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	325087	12.507	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.08%
57) Toluene-d8 (SS2)	12.49	98	980325	13.720	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	109.76%
73) Bromofluorobenzene (SS3)	16.86	174	362583	16.006	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	128.08%

Target Compounds

						Qvalue
2) Propene	3.37	42	477371	20.194	ng	100
3) Dichlorodifluoromethan...	3.45	85	948192	26.565	ng	100
4) Chloromethane	3.59	50	675548	18.826	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	486004	28.514	ng	100
6) Vinyl Chloride	3.78	62	605029	22.764	ng	100
7) 1,3-Butadiene	3.90	54	472175	21.313	ng	100
8) Bromomethane	4.12	94	414409	23.792	ng	100
9) Chloroethane	4.26	64	291602	20.075	ng	100
10) Ethanol	4.44	45	1141250	58.128	ng	100
11) Acetonitrile	4.58	41	773895	14.910	ng	100
12) Acrolein	4.65	56	558174	38.093	ng	100
13) Acetone	4.75	58	1463979	96.707	ng	100
14) Trichlorofluoromethane	4.86	101	839191	27.016	ng	100
15) 2-Propanol (Isopropanol)	4.98	45	2338481	35.405	ng	99
16) Acrylonitrile	5.13	53	1142281	38.999	ng	100
17) 1,1-Dichloroethene	5.36	96	449585	25.095	ng	100
18) 2-Methyl-2-Propanol (t...	5.45	59	2479355	48.490	ng	100
19) Methylene Chloride	5.49	84	450253	22.604	ng	100
20) 3-Chloro-1-propene (Al...	5.56	41	715918	19.536	ng	100
21) Trichlorotrifluoroethane	5.68	151	455983	28.814	ng	100
22) Carbon Disulfide	5.71	76	3366280	41.729	ng	100
23) trans-1,2-Dichloroethene	6.26	61	697156	23.326	ng	100
24) 1,1-Dichloroethane	6.44	63	811994	22.387	ng	100
25) Methyl tert-Butyl Ether	6.47	73	1444098	25.203	ng	100
26) Vinyl Acetate	6.56	86	231644	65.663	ng	100
27) 2-Butanone (MEK)	6.78	72	563872	43.468	ng	100
28) cis-1,2-Dichloroethene	7.20	61	656379	22.818	ng	100
29) Diisopropyl Ether	7.38	87	661314	47.267	ng	100
30) Ethyl Acetate	7.39	61	709023	81.728	ng	100
31) n-Hexane	7.39	57	647919	19.623	ng	100
32) Chloroform	7.49	83	828690	25.165	ng	100
34) Tetrahydrofuran (THF)	7.85	72	529978	40.930	ng	100
35) Ethyl tert-Butyl Ether	7.92	87	1062604	50.493	ng	100
36) 1,2-Dichloroethane	8.23	62	659844	26.470	ng	100
38) 1,1,1-Trichloroethane	8.50	97	753957	27.796	ng	100
39) Isopropyl Acetate	9.39	61	23997	No Calib		
40) 1-Butanol	8.89	56	23666	No Calib		
41) Benzene	8.99	78	1778544	23.649	ng	100
42) Carbon Tetrachloride	9.16	117	673507	28.959	ng	100
43) Cyclohexane	9.30	84	1277540	46.278	ng	100
44) tert-Amyl Methyl Ether	9.68	73	2636106	49.441	ng	100
45) 1,2-Dichloropropane	9.94	63	435927	20.382	ng	100
46) Bromodichloromethane	10.16	83	671421	26.367	ng	100
47) Trichloroethene	10.23	130	519021	26.903	ng	100
48) 1,4-Dioxane	10.20	88	365397	24.076	ng	100
49) 2,2,4-Trimethylpentane...	10.31	57	1781627	20.641	ng	100
50) Methyl Methacrylate	10.49	100	381374	55.852	ng	100

Data File : I:\MS13\DATA\2023_02\22\02222316.D
 Acq On : 22 Feb 2023 18:11
 Sample : 25ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:42:14 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	427635	22.238	ng	100
52) cis-1,3-Dichloropropene	11.33	75	764284	25.445	ng	100
53) 4-Methyl-2-pentanone	11.39	58	796869	43.828	ng	100
54) trans-1,3-Dichloropropene	12.02	75	714101	25.614	ng	100
55) 1,1,2-Trichloroethane	12.24	97	458135	25.070	ng	100
58) Toluene	12.62	91	1883948	27.786	ng	100
59) 2-Hexanone	12.97	43	1934416	47.103	ng	100
60) Dibromochloromethane	13.13	129	612003	33.482	ng	100
61) 1,2-Dibromoethane	13.45	107	550571	29.616	ng	100
62) n-Butyl Acetate	13.82	43	2117995	44.566	ng	100
63) n-Octane	13.96	57	376501	23.783	ng	100
64) Tetrachloroethene	14.08	166	598090	32.826	ng	100
65) Chlorobenzene	14.94	112	1280190	29.411	ng	100
66) Ethylbenzene	15.45	91	2181775	28.570	ng	100
67) m- & p-Xylenes	15.69	91	3530445	60.071	ng	100
68) Bromoform	15.72	173	562177	36.819	ng	100
69) Styrene	16.14	104	1359499	32.560	ng	100
70) o-Xylene	16.28	91	1758224	29.682	ng	100
71) n-Nonane	16.64	43	863621	21.910	ng	100
72) 1,1,2,2-Tetrachloroethane	16.24	83	798343	26.781	ng	100
74) Cumene	17.06	105	2199170	30.700	ng	100
75) alpha-Pinene	17.58	93	1061716	31.181	ng	100
76) n-Propylbenzene	17.75	91	2643269	30.034	ng	100
77) 3-Ethyltoluene	17.35	105	678	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2189837	32.847	ng	100
79) 1,3,5-Trimethylbenzene	18.06	105	1857117	32.662	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	678	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1839996	32.451	ng	100
83) n-Decane	17.06	58	16831	No Calib		
84) Benzyl Chloride	18.76	91	3218974	69.142	ng	100
85) 1,3-Dichlorobenzene	18.78	146	1099584	34.278	ng	100
86) 1,4-Dichlorobenzene	18.87	146	1123763	34.416	ng	100
87) sec-Butylbenzene	18.96	105	2428004	31.140	ng	100
88) 4-Isopropyltoluene (p-...	19.18	119	2147600	33.563	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	678	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1104109	34.539	ng	100
91) d-Limonene	19.36	68	671497	30.274	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.86	157	873269	76.610	ng	100
93) n-Undecane	18.27	58	126	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1729586	85.277	ng	100
95) Naphthalene	21.55	128	2261205	40.557	ng	100
96) n-Dodecane	19.18	58	67141	No Calib	#	
97) Hexachlorobutadiene	21.99	225	597928	40.322	ng	100
98) Cyclohexanone	15.69	55	2409	No Calib		
99) tert-Butylbenzene	18.60	119	1686946	31.807	ng	100
100) n-Butylbenzene	19.72	91	1929324	32.060	ng	100
101) 1,1,1,2-Tetrachloroethane	14.92	131	496552	32.696	ng	100

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

Data File : I:\MS13\DATA\2023_02\22\02222316.D
Acq On : 22 Feb 2023 18:11
Sample : 25ng R13022223 ICAL Std.
Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:14 2023

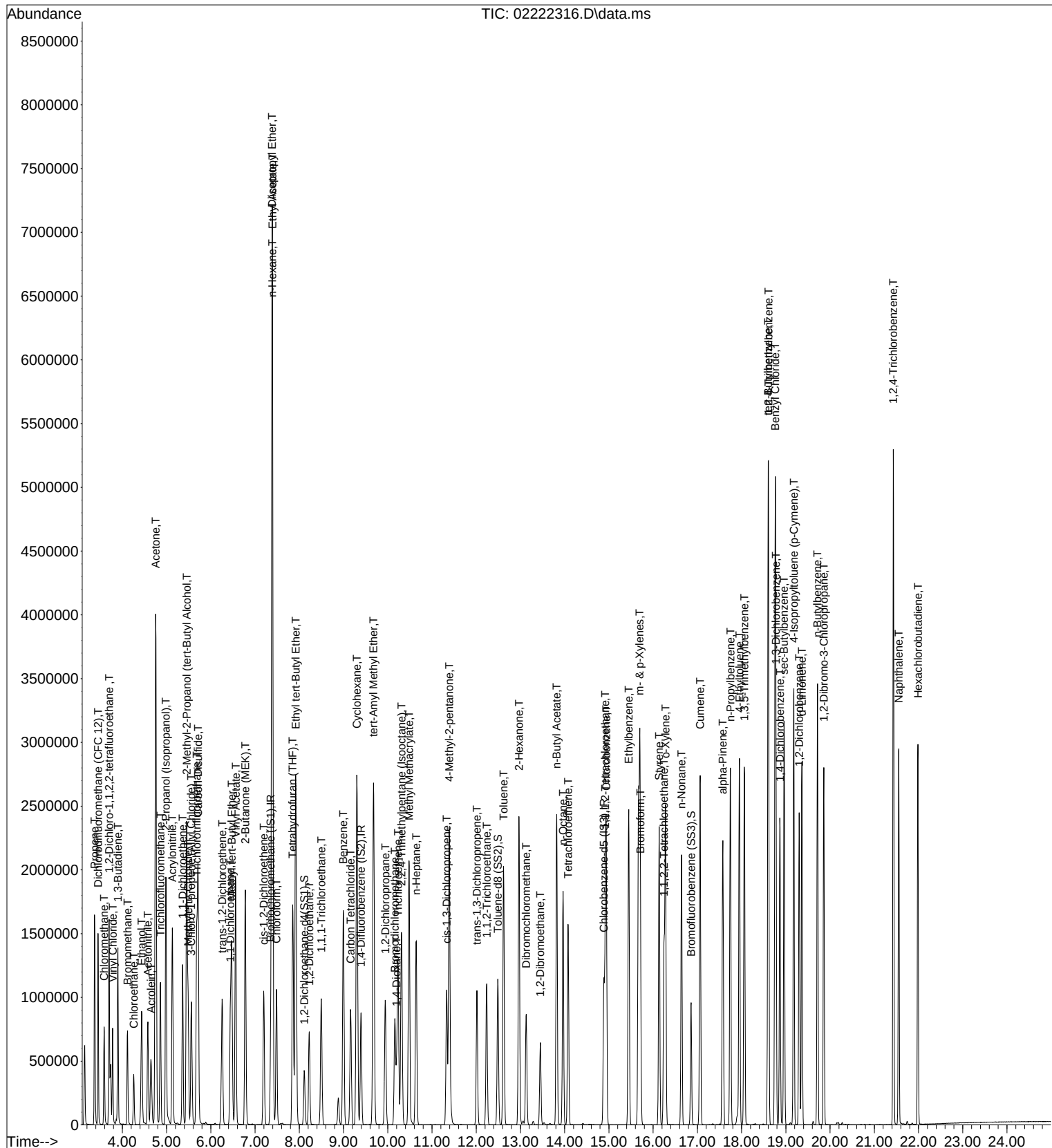
Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_02\22\02222321.D
 Acq On : 22 Feb 2023 21:10
 Sample : 25ng R13022223 ICV Std.
 Misc : S35-01202301/S35-02062302 (3/8)

Vial: 1
 Operator: TZ
 Inst : MS13

Tz 2/23/23

Quant Time: Feb 23 08:08:13 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.35	130	220775	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.40	114	967607	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	155159	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.12	65	340247	11.613	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	92.88%
57) Toluene-d8 (SS2)	12.49	98	1064943	13.346	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	106.80%
73) Bromofluorobenzene (SS3)	16.86	174	398905	13.649	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	109.20%

Target Compounds

						Qvalue
2) Propene	3.38	42	461231	20.888	ng	99
3) Dichlorodifluoromethan...	3.46	85	988475	24.444	ng	100
4) Chloromethane	3.59	50	684995	23.490	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	521783	25.557	ng	99
6) Vinyl Chloride	3.79	62	604224	22.375	ng	99
7) 1,3-Butadiene	3.90	54	423487	20.700	ng	96
8) Bromomethane	4.12	94	443948	24.533	ng	99
9) Chloroethane	4.26	64	301713	23.621	ng	99
10) Ethanol	4.45	45	1664014	106.126	ng	99
11) Acetonitrile	4.58	41	776235	19.054	ng	100
12) Acrolein	4.65	56	632453	48.774	ng	99
13) Acetone	4.76	58	1470596	109.894	ng	97
14) Trichlorofluoromethane	4.86	101	876430	24.075	ng	100
15) 2-Propanol (Isopropanol)	4.99	45	2420935	44.812	ng	100
16) Acrylonitrile	5.14	53	1158058	45.364	ng	100
17) 1,1-Dichloroethene	5.36	96	472008	25.249	ng	95
18) 2-Methyl-2-Propanol (t...	5.47	59	2533580	47.957	ng	99
19) Methylene Chloride	5.49	84	472927	24.107	ng	94
20) 3-Chloro-1-propene (Al...	5.56	41	640886	20.459	ng	96
21) Trichlorotrifluoroethane	5.68	151	495306	25.875	ng	97
22) Carbon Disulfide	5.72	76	3521804	45.336	ng	100
23) trans-1,2-Dichloroethene	6.26	61	721229	25.189	ng	97
24) 1,1-Dichloroethane	6.44	63	834811	23.911	ng	100
25) Methyl tert-Butyl Ether	6.48	73	1517692	24.802	ng	99
26) Vinyl Acetate	6.57	86	521718	144.176	ng	# 83
27) 2-Butanone (MEK)	6.79	72	583581	49.125	ng	# 92
28) cis-1,2-Dichloroethene	7.20	61	669422	23.738	ng	96
29) Diisopropyl Ether	7.39	87	712983	48.321	ng	# 22
30) Ethyl Acetate	7.40	61	316025	40.456	ng	95
31) n-Hexane	7.39	57	689138	22.920	ng	99
32) Chloroform	7.49	83	866431	24.359	ng	100
34) Tetrahydrofuran (THF)	7.86	72	540110	44.269	ng	95
35) Ethyl tert-Butyl Ether	7.92	87	1133627	50.300	ng	95
36) 1,2-Dichloroethane	8.23	62	683170	25.358	ng	100
38) 1,1,1-Trichloroethane	8.50	97	802261	25.049	ng	99
39) Isopropyl Acetate	9.39	61	25303	No Calib		
40) 1-Butanol	8.91	56	3419	No Calib	#	
41) Benzene	9.00	78	1873597	24.890	ng	100
42) Carbon Tetrachloride	9.16	117	760309	26.911	ng	99
43) Cyclohexane	9.31	84	1360426	49.300	ng	98
44) tert-Amyl Methyl Ether	9.68	73	2773714	50.809	ng	98
45) 1,2-Dichloropropane	9.94	63	456354	24.030	ng	100
46) Bromodichloromethane	10.16	83	707596	25.422	ng	99
47) Trichloroethene	10.23	130	574511	26.052	ng	99
48) 1,4-Dioxane	10.21	88	402034	26.494	ng	97
49) 2,2,4-Trimethylpentane...	10.31	57	1820129	23.779	ng	99
50) Methyl Methacrylate	10.49	100	408266	52.744	ng	95

Data File : I:\MS13\DATA\2023_02\22\02222321.D
 Acq On : 22 Feb 2023 21:10
 Sample : 25ng R13022223 ICV Std.
 Misc : S35-01202301/S35-02062302 (3/8)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 08:08:13 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	451986	24.814	ng	97
52) cis-1,3-Dichloropropene	11.33	75	876018	28.386	ng	100
53) 4-Methyl-2-pentanone	11.40	58	819409	50.493	ng	96
54) trans-1,3-Dichloropropene	12.02	75	711813	23.812	ng	100
55) 1,1,2-Trichloroethane	12.24	97	492781	25.293	ng	98
58) Toluene	12.62	91	2019661	26.587	ng	100
59) 2-Hexanone	12.97	43	1933183	52.392	ng	98
60) Dibromochloromethane	13.13	129	653503	29.314	ng	100
61) 1,2-Dibromoethane	13.45	107	585092	27.667	ng	100
62) n-Butyl Acetate	13.82	43	2154260	51.360	ng	98
63) n-Octane	13.96	57	382478	25.605	ng	97
64) Tetrachloroethene	14.08	166	664426	28.752	ng	99
65) Chlorobenzene	14.94	112	1390541	27.753	ng	100
66) Ethylbenzene	15.45	91	2331441	25.727	ng	99
67) m- & p-Xylenes	15.69	91	3763861	51.605	ng	99
68) Bromoform	15.72	173	632952	31.426	ng	100
69) Styrene	16.14	104	1434647	28.607	ng	100
70) o-Xylene	16.28	91	1870717	26.823	ng	99
71) n-Nonane	16.64	43	851480	25.231	ng	97
72) 1,1,2,2-Tetrachloroethane	16.24	83	851029	28.247	ng	100
74) Cumene	17.06	105	2331478	27.487	ng	99
75) alpha-Pinene	17.58	93	1125929	28.770	ng	99
76) n-Propylbenzene	17.75	91	2754929	27.092	ng	99
77) 3-Ethyltoluene	17.34	105	808	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2324976	28.574	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	2012208	27.966	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	808	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1976115	27.852	ng	99
83) n-Decane	17.06	58	16606	No Calib		
84) Benzyl Chloride	18.76	91	3477770	60.581	ng	99
85) 1,3-Dichlorobenzene	18.78	146	1196507	27.880	ng	99
86) 1,4-Dichlorobenzene	18.87	146	1221762	27.488	ng	100
87) sec-Butylbenzene	18.96	105	2564696	27.404	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2283366	27.758	ng	99
89) 1,2,3-Trimethylbenzene	17.34	105	808	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1213247	28.564	ng	100
91) d-Limonene	19.36	68	628470	26.195	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	964258	59.954	ng	94
93) n-Undecane	18.26	58	115	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1974162	61.798	ng	100
95) Naphthalene	21.55	128	2597899	33.779	ng	100
96) n-Dodecane	19.17	58	63718	No Calib		
97) Hexachlorobutadiene	21.99	225	684132	27.620	ng	99
98) Cyclohexanone	15.67	55	2442	No Calib		
99) tert-Butylbenzene	18.60	119	1863827	27.982	ng	100
100) n-Butylbenzene	19.72	91	2002288	27.518	ng	99
101) 1,1,1,2-Tetrachloroethane	14.92	131	544704	28.840	ng	100

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Feb 23 08:08:13 2023

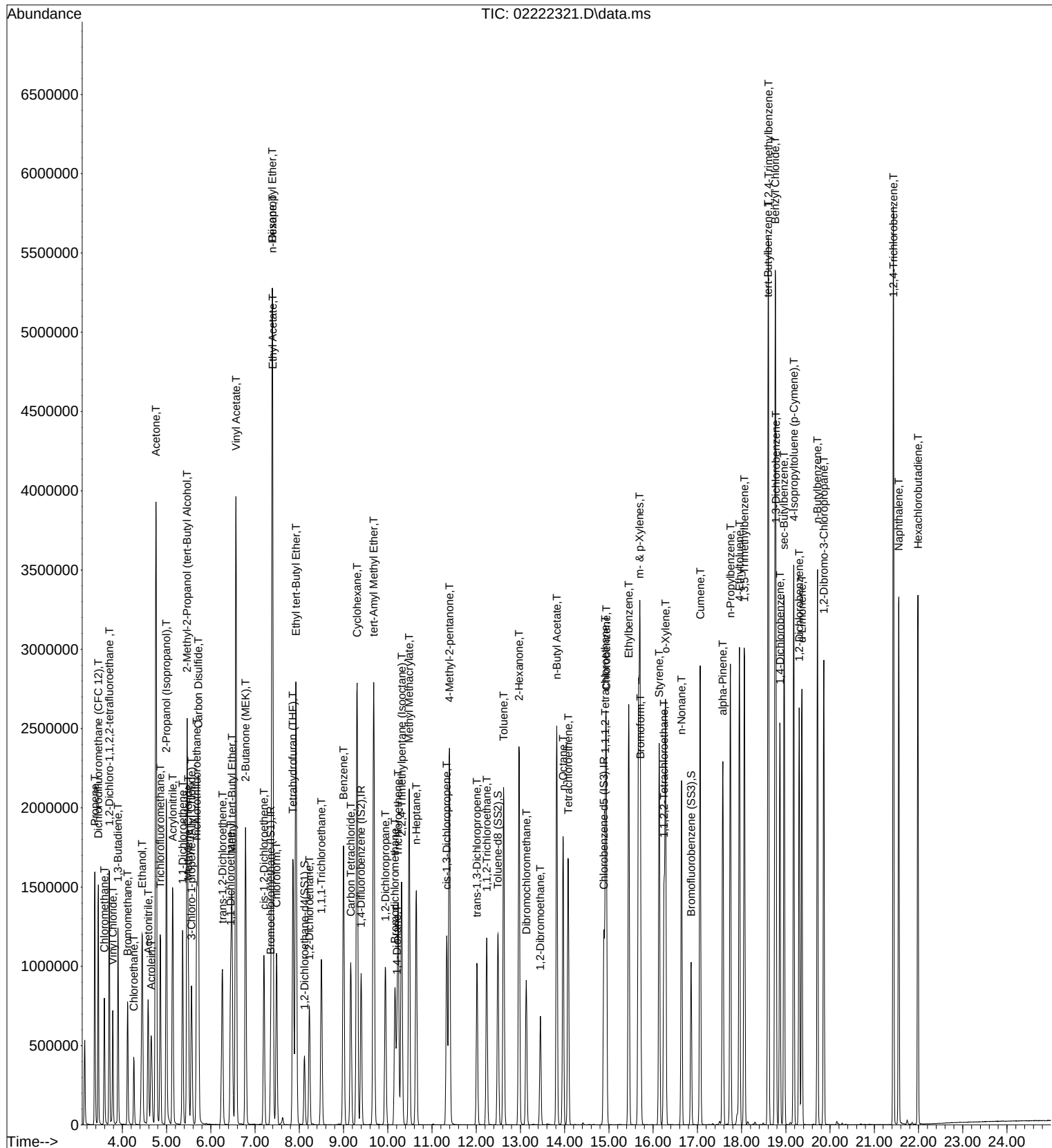
Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_02\22\02222317.D
 Acq On : 22 Feb 2023 18:47
 Sample : 50ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

Tz 2/23/23

Quant Time: Feb 23 07:42:16 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	202839	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	9.40	114	915507	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	157912	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.12	65	337099	12.540	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.32%
57) Toluene-d8 (SS2)	12.49	98	1032687	13.883	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	111.04%
73) Bromofluorobenzene (SS3)	16.86	174	385685	16.355	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	130.88%#

Target Compounds

						Qvalue
2) Propene	3.38	42	927485	37.934	ng	99
3) Dichlorodifluoromethan...	3.46	85	1873343	50.746	ng	100
4) Chloromethane	3.59	50	1272251	34.280	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	943586	53.526	ng	100
6) Vinyl Chloride	3.79	62	1199336	43.630	ng	99
7) 1,3-Butadiene	3.91	54	937568	40.917	ng	99
8) Bromomethane	4.12	94	821384	45.595	ng	99
9) Chloroethane	4.27	64	581863	38.731	ng	100
10) Ethanol	4.46	45	2201107	108.396	ng	99
11) Acetonitrile	4.59	41	1550919	28.890	ng	100
12) Acrolein	4.67	56	1100527	72.617	ng	96
13) Acetone	4.77	58	2796942	178.637	ng	99
14) Trichlorofluoromethane	4.87	101	1683410	52.399	ng	99
15) 2-Propanol (Isopropanol)	5.00	45	4571231	66.916	ng	99
16) Acrylonitrile	5.15	53	2261780	74.661	ng	100
17) 1,1-Dichloroethene	5.37	96	906240	48.908	ng	99
18) 2-Methyl-2-Propanol (t...	5.47	59	4906479	92.778	ng	100
19) Methylene Chloride	5.50	84	894897	43.438	ng	99
20) 3-Chloro-1-propene (Al...	5.57	41	1437913	37.937	ng	100
21) Trichlorotrifluoroethane	5.69	151	922168	56.342	ng	99
22) Carbon Disulfide	5.72	76	6700529	80.309	ng	100
23) trans-1,2-Dichloroethene	6.27	61	1419725	45.929	ng	100
24) 1,1-Dichloroethane	6.46	63	1629941	43.449	ng	100
25) Methyl tert-Butyl Ether	6.48	73	2906070	49.038	ng	100
26) Vinyl Acetate	6.58	86	467527	128.136	ng	97
27) 2-Butanone (MEK)	6.80	72	1120443	83.511	ng	100
28) cis-1,2-Dichloroethene	7.21	61	1330732	44.729	ng	100
29) Diisopropyl Ether	7.39	87	1257882	86.927	ng	98
30) Ethyl Acetate	7.41	61	1330890	148.327	ng	99
31) n-Hexane	7.39	57	1217225	35.643	ng	100
32) Chloroform	7.50	83	1679433	49.309	ng	100
34) Tetrahydrofuran (THF)	7.86	72	1063693	79.426	ng	99
35) Ethyl tert-Butyl Ether	7.93	87	2126761	97.710	ng	100
36) 1,2-Dichloroethane	8.24	62	1332121	51.667	ng	100
38) 1,1,1-Trichloroethane	8.50	97	1523378	53.336	ng	100
39) Isopropyl Acetate	9.40	61	25619	No Calib		
40) 1-Butanol	8.89	56	48921	No Calib		
41) Benzene	9.01	78	3587019	45.296	ng	100
42) Carbon Tetrachloride	9.17	117	1363000	55.656	ng	99
43) Cyclohexane	9.31	84	2540044	87.379	ng	100
44) tert-Amyl Methyl Ether	9.69	73	5264315	93.765	ng	100
45) 1,2-Dichloropropane	9.95	63	878038	38.988	ng	100
46) Bromodichloromethane	10.17	83	1360023	50.721	ng	100
47) Trichloroethene	10.24	130	1057693	52.066	ng	100
48) 1,4-Dioxane	10.21	88	741182	46.378	ng	100
49) 2,2,4-Trimethylpentane...	10.32	57	3572956	39.310	ng	100
50) Methyl Methacrylate	10.49	100	765478	106.462	ng	100

Data File : I:\MS13\DATA\2023_02\22\02222317.D
 Acq On : 22 Feb 2023 18:47
 Sample : 50ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:42:16 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	858735	42.408	ng	99
52) cis-1,3-Dichloropropene	11.34	75	1552003	49.070	ng	100
53) 4-Methyl-2-pentanone	11.40	58	1575341	82.283	ng	99
54) trans-1,3-Dichloropropene	12.02	75	1460655	49.756	ng	100
55) 1,1,2-Trichloroethane	12.24	97	929948	48.328	ng	100
58) Toluene	12.62	91	3790355	53.701	ng	100
59) 2-Hexanone	12.98	43	3819365	89.338	ng	100
60) Dibromochloromethane	13.14	129	1250681	65.728	ng	100
61) 1,2-Dibromoethane	13.46	107	1126619	58.215	ng	99
62) n-Butyl Acetate	13.83	43	4185706	84.605	ng	100
63) n-Octane	13.97	57	754207	45.765	ng	100
64) Tetrachloroethene	14.08	166	1209479	63.768	ng	99
65) Chlorobenzene	14.95	112	2566110	56.631	ng	100
66) Ethylbenzene	15.45	91	4381745	55.119	ng	100
67) m- & p-Xylenes	15.70	91	7012827	114.624	ng	100
68) Bromoform	15.72	173	1143390	71.935	ng	100
69) Styrene	16.14	104	2740162	63.042	ng	100
70) o-Xylene	16.28	91	3541110	57.426	ng	100
71) n-Nonane	16.64	43	1701154	41.459	ng	99
72) 1,1,2,2-Tetrachloroethane	16.25	83	1607035	51.786	ng	100
74) Cumene	17.06	105	4430122	59.407	ng	100
75) alpha-Pinene	17.58	93	2096214	59.137	ng	100
76) n-Propylbenzene	17.75	91	5293743	57.780	ng	100
77) 3-Ethyltoluene	17.35	105	1660	No Calib	#	
78) 4-Ethyltoluene	17.95	105	4383711	63.164	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	3728630	62.995	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	1660	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	3623017	61.380	ng	100
83) n-Decane	17.06	58	32558	No Calib		
84) Benzyl Chloride	18.77	91	6336466	130.744	ng	100
85) 1,3-Dichlorobenzene	18.78	146	2169730	64.974	ng	100
86) 1,4-Dichlorobenzene	18.87	146	2281884	67.131	ng	100
87) sec-Butylbenzene	18.96	105	4861966	59.899	ng	100
88) 4-Isopropyltoluene (p-...	19.18	119	4332091	65.036	ng	99
89) 1,2,3-Trimethylbenzene	17.35	105	1660	No Calib	#	
90) 1,2-Dichlorobenzene	19.31	146	2235912	67.190	ng	100
91) d-Limonene	19.36	68	1332757	57.719	ng	99
92) 1,2-Dibromo-3-Chloropr...	19.86	157	1772203	149.347	ng	99
93) n-Undecane	18.25	58	794	No Calib		
94) 1,2,4-Trichlorobenzene	21.43	180	3501327	165.832	ng	100
95) Naphthalene	21.55	128	4754492	81.917	ng	100
96) n-Dodecane	19.18	58	129792	No Calib	#	
97) Hexachlorobutadiene	21.99	225	1213959	78.639	ng	100
98) Cyclohexanone	15.70	55	2831	No Calib	#	
99) tert-Butylbenzene	18.61	119	3281022	59.427	ng	99
100) n-Butylbenzene	19.72	91	3859077	61.601	ng	100
101) 1,1,1,2-Tetrachloroethane	14.92	131	1000959	63.312	ng	100

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

Data File : I:\MS13\DATA\2023_02\22\02222317.D
Acq On : 22 Feb 2023 18:47
Sample : 50ng R13022223 ICAL Std.
Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:16 2023

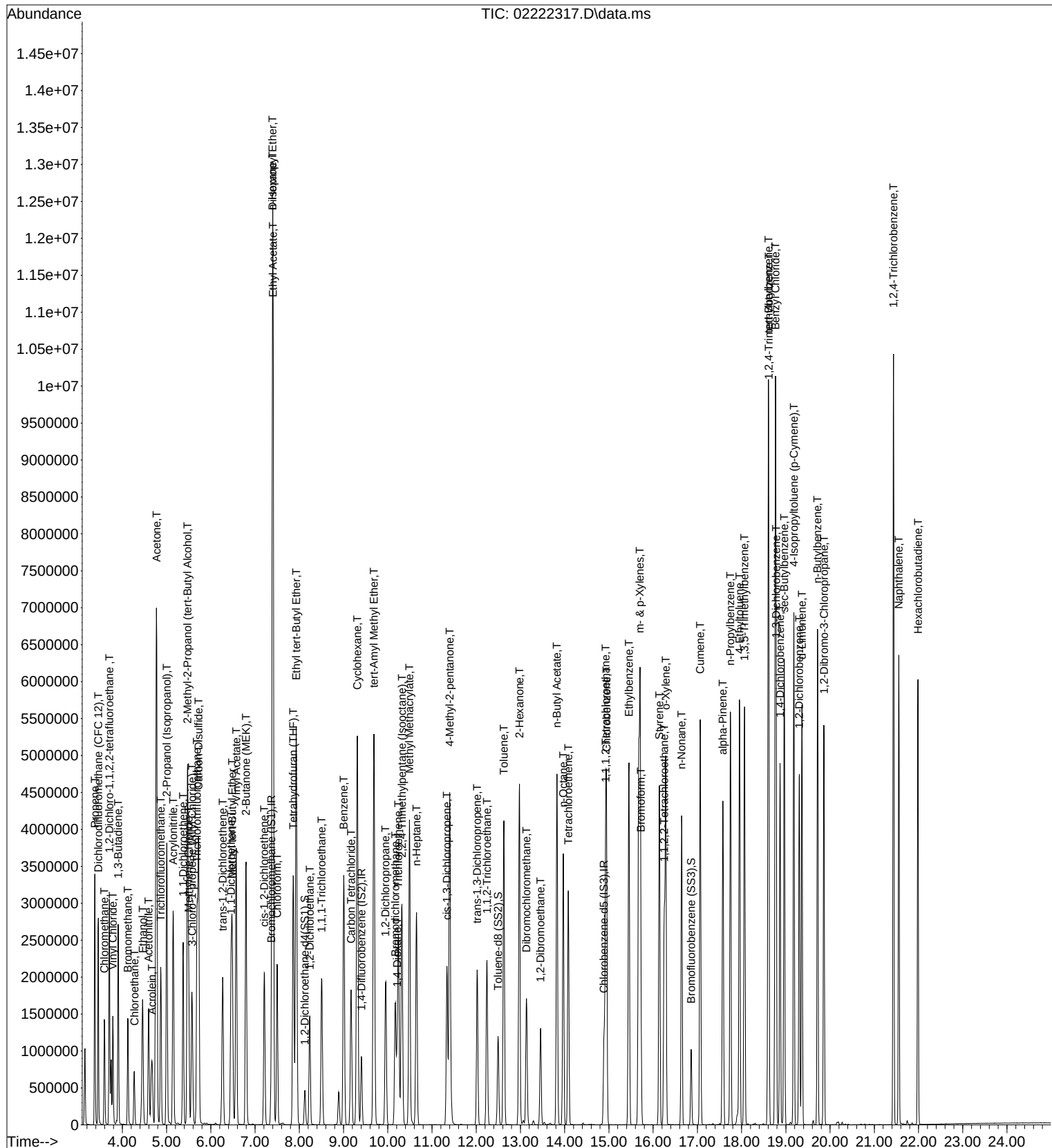
Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M



Data File : I:\MS13\DATA\2023_02\22\02222318.D
 Acq On : 22 Feb 2023 19:23
 Sample : 100ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 2/23/23

Quant Time: Feb 23 07:42:18 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.38	130	203449	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.42	114	981984	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.89	54	164417	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	351595	13.040	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	104.32%
57) Toluene-d8 (SS2)	12.50	98	1090579	14.082	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	112.64%
73) Bromofluorobenzene (SS3)	16.86	174	410261	16.709	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	133.68%#

Target Compounds

						Qvalue
2) Propene	3.38	42	2050902	83.631	ng	99
3) Dichlorodifluoromethan...	3.46	85	3686554	99.564	ng	100
4) Chloromethane	3.59	50	1953251	52.472	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	1868758	105.689	ng	100
6) Vinyl Chloride	3.79	62	2278913	82.655	ng	100
7) 1,3-Butadiene	3.91	54	1797910	78.228	ng	99
8) Bromomethane	4.13	94	1630875	90.259	ng	100
9) Chloroethane	4.27	64	1152978	76.516	ng	100
10) Ethanol	4.48	45	4238011	208.080	ng	99
11) Acetonitrile	4.61	41	3099150	57.558	ng	100
12) Acrolein	4.68	56	2169553	142.727	ng	95
13) Acetone	4.78	58	5239404	333.631	ng	99
14) Trichlorofluoromethane	4.87	101	3361852	104.330	ng	100
15) 2-Propanol (Isopropanol)	5.02	45	7888393	115.127	ng	99
16) Acrylonitrile	5.16	53	4448590	146.408	ng	100
17) 1,1-Dichloroethene	5.38	96	1804813	97.110	ng	99
18) 2-Methyl-2-Propanol (t...	5.49	59	9461558	178.375	ng	100
19) Methylene Chloride	5.51	84	1698315	82.188	ng	99
20) 3-Chloro-1-propene (Al...	5.58	41	2864159	75.340	ng	98
21) Trichlorotrifluoroethane	5.69	151	1853843	112.926	ng	99
22) Carbon Disulfide	5.73	76	12953405	154.786	ng	99
23) trans-1,2-Dichloroethene	6.27	61	2866639	92.459	ng	100
24) 1,1-Dichloroethane	6.46	63	3228509	85.804	ng	100
25) Methyl tert-Butyl Ether	6.49	73	5798693	97.555	ng	99
26) Vinyl Acetate	6.59	86	919818	251.340	ng	# 92
27) 2-Butanone (MEK)	6.81	72	2216161	164.684	ng	97
28) cis-1,2-Dichloroethene	7.22	61	2676784	89.703	ng	99
29) Diisopropyl Ether	7.40	87	2335493	160.912	ng	# 96
30) Ethyl Acetate	7.42	61	2464259	273.816	ng	99
31) n-Hexane	7.40	57	2252139	65.749	ng	100
32) Chloroform	7.51	83	3388436	99.189	ng	100
34) Tetrahydrofuran (THF)	7.87	72	2098824	156.250	ng	98
35) Ethyl tert-Butyl Ether	7.94	87	4174148	191.199	ng	98
36) 1,2-Dichloroethane	8.24	62	2701152	104.452	ng	99
38) 1,1,1-Trichloroethane	8.52	97	3086599	100.751	ng	99
39) Isopropyl Acetate	9.42	61	26811	No Calib		
40) 1-Butanol	8.90	56	101282	No Calib		
41) Benzene	9.02	78	7151518	84.194	ng	100
42) Carbon Tetrachloride	9.18	117	2777464	105.737	ng	99
43) Cyclohexane	9.32	84	4955772	158.941	ng	99
44) tert-Amyl Methyl Ether	9.69	73	10324756	171.449	ng	100
45) 1,2-Dichloropropane	9.96	63	1771826	73.349	ng	100
46) Bromodichloromethane	10.18	83	2755873	95.821	ng	100
47) Trichloroethene	10.25	130	2120130	97.300	ng	100
48) 1,4-Dioxane	10.22	88	1485748	86.675	ng	98
49) 2,2,4-Trimethylpentane...	10.33	57	7245157	74.316	ng	100
50) Methyl Methacrylate	10.50	100	1515038	196.446	ng	99

Data File : I:\MS13\DATA\2023_02\22\02222318.D
 Acq On : 22 Feb 2023 19:23
 Sample : 100ng R13022223 ICAL Std.
 Misc : S35-01202301/S35-02162304 (3/18)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Feb 23 07:42:18 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.66	71	1718167	79.107	ng	99
52) cis-1,3-Dichloropropene	11.34	75	3136459	92.453	ng	100
53) 4-Methyl-2-pentanone	11.41	58	3058808	148.952	ng	98
54) trans-1,3-Dichloropropene	12.03	75	2959407	93.985	ng	99
55) 1,1,2-Trichloroethane	12.25	97	1872929	90.744	ng	99
58) Toluene	12.63	91	7543896	102.651	ng	100
59) 2-Hexanone	12.99	43	7370179	165.573	ng	100
60) Dibromochloromethane	13.14	129	2562678	129.350	ng	100
61) 1,2-Dibromoethane	13.46	107	2285535	113.426	ng	100
62) n-Butyl Acetate	13.84	43	8007110	155.443	ng	99
63) n-Octane	13.97	57	1464759	85.365	ng	98
64) Tetrachloroethene	14.09	166	2446286	123.873	ng	99
65) Chlorobenzene	14.95	112	5052211	107.084	ng	100
66) Ethylbenzene	15.46	91	8664642	104.683	ng	100
67) m- & p-Xylenes	15.70	91	13596605	213.443	ng	100
68) Bromoform	15.73	173	2261760	136.666	ng	100
69) Styrene	16.15	104	5452714	120.486	ng	99
70) o-Xylene	16.29	91	6978242	108.689	ng	100
71) n-Nonane	16.65	43	3293425	77.088	ng	98
72) 1,1,2,2-Tetrachloroethane	16.26	83	3177840	98.352	ng	100
74) Cumene	17.07	105	8694138	111.974	ng	100
75) alpha-Pinene	17.58	93	4162593	112.786	ng	100
76) n-Propylbenzene	17.75	91	10329761	108.287	ng	99
77) 3-Ethyltoluene	17.35	105	1988	No Calib	#	
78) 4-Ethyltoluene	17.96	105	8658799	119.826	ng	100
79) 1,3,5-Trimethylbenzene	18.07	105	7396937	120.027	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	1988	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.62	105	6913004	112.485	ng	99
83) n-Decane	17.06	58	62021	No Calib		
84) Benzyl Chloride	18.77	91	11890817	235.643	ng	100
85) 1,3-Dichlorobenzene	18.79	146	4091346	117.671	ng	100
86) 1,4-Dichlorobenzene	18.87	146	4557404	128.770	ng	100
87) sec-Butylbenzene	18.97	105	9480932	112.184	ng	100
88) 4-Isopropyltoluene (p-...	19.19	119	8435853	121.634	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	1988	No Calib	#	
90) 1,2-Dichlorobenzene	19.31	146	4457027	128.636	ng	100
91) d-Limonene	19.37	68	2579957	107.312	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	3446254	278.932	ng	99
93) n-Undecane	18.26	58	1368	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	6572813	298.989	ng	100
95) Naphthalene	21.56	128	9346593	154.665	ng	100
96) n-Dodecane	19.18	58	229729	No Calib	#	
97) Hexachlorobutadiene	21.99	225	2355455	146.548	ng	100
98) Cyclohexanone	15.71	55	8903	No Calib		
99) tert-Butylbenzene	18.61	119	6212299	108.067	ng	99
100) n-Butylbenzene	19.72	91	7466214	114.466	ng	100
101) 1,1,1,2-Tetrachloroethane	14.93	131	1995252	121.210	ng	100

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Feb 23 07:42:18 2023

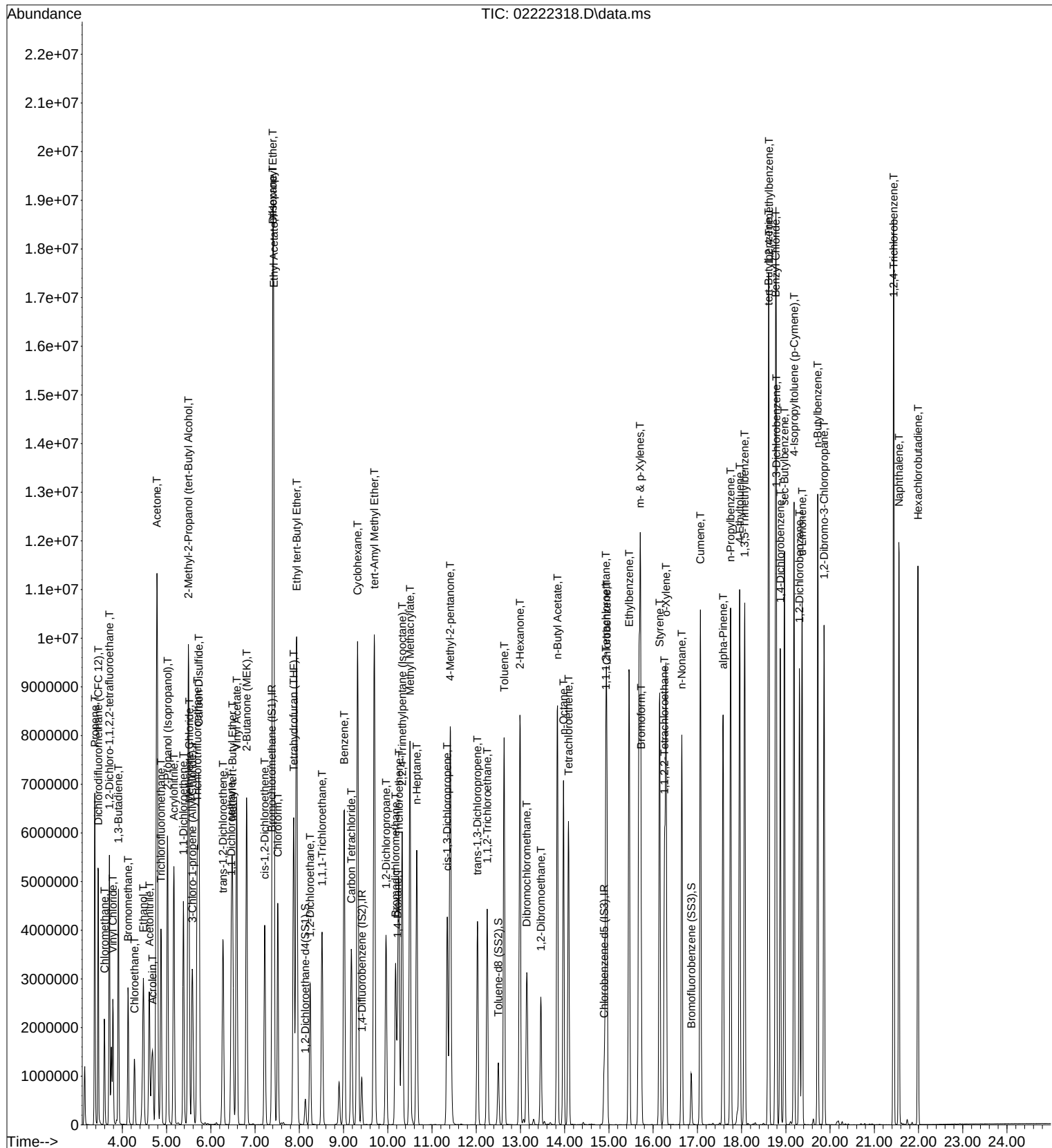
Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:41:41 2023

Response via : Initial Calibration

DataAcq Meth:T015.M



ALS Environmental

LCS Acceptance Criteria

TE 2/23/23

25ng R13022223 ICV Std.

	RT
Bromochloromethane (IS1)	7.35
1,4-Difluorobenzene (IS2)	9.40
Chlorobenzene-d5 (IS3)	14.88

Datafile: 02222321.D
Instrument: MS-13
Date: 2/22/2023

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	20.888	26.5	79	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	24.444	26.5	92	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	23.490	26.3	89	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	25.557	26.8	95	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	22.375	26.3	85	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	20.700	26.3	79	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	24.533	26.3	93	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	23.621	26.5	89	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	106.126	138	77	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	19.054	26.8	71	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	48.774	55.0	89	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	109.894	133	83	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	24.075	26.3	92	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	44.812	51.8	87	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	45.364	52.3	87	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	25.249	25.5	99	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	47.957	51.0	94	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	24.107	25.5	95	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	20.459	26.5	77	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	25.875	26.3	98	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	45.336	53.8	84	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	25.189	27.0	93	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	23.911	27.0	89	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	24.802	27.0	92	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	144.176	138	104	56-137	ok	70-130	ok	56-139	ok
78-93-3	2-Butanone	49.125	51.8	95	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	23.738	26.8	89	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	48.321	53.3	91	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	40.456	49.8	81	59-161	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	22.920	26.5	86	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	24.359	27.0	90	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	44.269	50.3	88	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	50.300	53.3	94	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	25.358	25.5	99	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	25.049	26.3	95	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	24.890	25.5	98	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	26.911	26.3	102	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	49.300	53.3	92	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	50.809	53.3	95	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	24.030	26.8	90	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	25.422	27.0	94	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	26.052	26.5	98	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	26.494	26.5	100	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	23.779	26.8	89	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	52.744	53.5	99	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	24.814	26.8	93	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	28.386	26.5	107	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	50.493	53.3	95	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

25ng R13022223 ICV Std.

	RT
Bromochloromethane (IS1)	7.35
1,4-Difluorobenzene (IS2)	9.40
Chlorobenzene-d5 (IS3)	14.88

Datafile: 02222321.D
Instrument: MS-13
Date: 2/22/2023

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	23.812	24.5	97	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	25.293	27.0	94	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	26.587	26.8	99	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	52.392	53.3	98	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	29.314	26.8	109	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	27.667	25.5	108	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	51.360	53.0	97	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	25.605	26.5	97	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	28.752	26.8	107	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	27.753	27.0	103	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	25.727	27.3	94	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	51.605	53.8	96	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	31.426	27.3	115	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	28.607	26.8	107	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	26.823	27.0	99	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	25.231	26.8	94	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	28.247	27.0	105	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	27.487	26.5	104	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	28.770	27.0	107	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	27.092	26.5	102	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	28.574	27.3	105	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	27.966	27.0	104	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	27.852	26.5	105	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	60.581	53.5	113	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	27.880	26.8	104	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	27.488	26.8	103	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	27.404	26.3	104	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	27.758	26.3	106	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	28.564	26.5	108	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	26.195	26.0	101	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	59.954	52.0	115	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	61.798	55.0	112	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	33.779	27.5	123	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	27.620	27.3	101	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	27.982	26.5	106	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	27.518	26.0	106	70-131	ok	70-130	ok	66-130	ok

Data File : I:\MS13\DATA\2023_04\13\04132301.D
 Acq On : 13 Apr 2023 21:20
 Sample : CCV R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 4/14/23

Quant Time: Apr 14 07:15:40 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	89	-0.02
2 T	Propene	1.250	1.411	-12.9	109	0.00
3 T	Dichlorodifluoromethane (CF	2.290	2.460	-7.4	96	-0.03
4 T	Chloromethane	1.651	1.867	-13.1	100	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.156	1.073	7.2	80	0.00
6 T	Vinyl Chloride	1.529	1.576	-3.1	92	0.00
7 T	1,3-Butadiene	1.158	1.224	-5.7	96	0.00
8 T	Bromomethane	1.025	1.033	-0.8	89	0.00
9 T	Chloroethane	0.723	0.778	-7.6	96	0.00
10 T	Ethanol	0.888	0.986	-11.0	104	-0.02
11 T	Acetonitrile	2.307	2.669	-15.7	110	-0.02
12 T	Acrolein	0.734	0.821	-11.9	99	-0.02
13 T	Acetone	0.758	0.811	-7.0	102	-0.02
14 T	Trichlorofluoromethane	2.061	2.217	-7.6	96	-0.01
15 T	2-Propanol (Isopropanol)	3.059	3.522	-15.1	108	-0.02
16 T	Acrylonitrile	1.445	1.648	-14.0	104	-0.02
17 T	1,1-Dichloroethene	1.058	1.071	-1.2	90	-0.01
18 T	2-Methyl-2-Propanol (tert-B	2.991	3.400	-13.7	101	-0.02
19 T	Methylene Chloride	1.111	1.134	-2.1	94	-0.02
20 T	3-Chloro-1-propene (Allyl C	1.774	2.089	-17.8	108	-0.01
21 T	Trichlorotrifluoroethane	1.084	1.031	4.9	86	-0.01
22 T	Carbon Disulfide	4.398	4.285	2.6	95	-0.01
23 T	trans-1,2-Dichloroethene	1.621	1.834	-13.1	100	-0.02
24 T	1,1-Dichloroethane	1.977	2.139	-8.2	99	-0.01
25 T	Methyl tert-Butyl Ether	3.465	3.723	-7.4	97	-0.02
26 T	Vinyl Acetate	0.205	0.217	-5.9	92	-0.02
27 T	2-Butanone (MEK)	0.673	0.745	-10.7	97	-0.02
28 T	cis-1,2-Dichloroethene	1.597	1.766	-10.6	100	-0.01
29 T	Diisopropyl Ether	0.835	0.831	0.5	93	-0.01
30 T	Ethyl Acetate	0.442	0.492	-11.3	103	-0.02
31 T	n-Hexane	1.702	1.827	-7.3	104	0.00
32 T	Chloroform	2.014	2.157	-7.1	97	-0.02
33 S	1,2-Dichloroethane-d4(SS1)	1.659	1.957	-18.0	105	-0.01
34 T	Tetrahydrofuran (THF)	0.691	0.713	-3.2	96	-0.01
35 T	Ethyl tert-Butyl Ether	1.276	1.341	-5.1	94	-0.01
36 T	1,2-Dichloroethane	1.525	1.796	-17.8	103	-0.02
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	90	-0.01
38 T	1,1,1-Trichloroethane	0.414	0.440	-6.3	96	-0.01
39 T	Isopropyl Acetate	0.000	0.000	0.0	106	0.00
40 T	1-Butanol	0.000	0.000	0.0	91	-0.01
41 T	Benzene	0.972	0.991	-2.0	94	-0.01
42 T	Carbon Tetrachloride	0.365	0.384	-5.2	93	-0.01
43 T	Cyclohexane	0.356	0.358	-0.6	92	0.00
44 T	tert-Amyl Methyl Ether	0.705	0.758	-7.5	96	0.00
45 T	1,2-Dichloropropane	0.245	0.260	-6.1	98	-0.01
46 T	Bromodichloromethane	0.360	0.385	-6.9	96	-0.01
47 T	Trichloroethene	0.285	0.274	3.9	87	-0.01
48 T	1,4-Dioxane	0.196	0.208	-6.1	95	-0.01
49 T	2,2,4-Trimethylpentane (Iso	0.989	1.026	-3.7	98	0.00
50 T	Methyl Methacrylate	0.100	0.101	-1.0	88	-0.01
51 T	n-Heptane	0.235	0.246	-4.7	96	-0.01
52 T	cis-1,3-Dichloropropene	0.399	0.431	-8.0	96	-0.01
53 T	4-Methyl-2-pentanone	0.210	0.245	-16.7	104	0.00
54 T	trans-1,3-Dichloropropene	0.386	0.435	-12.7	98	0.00
55 T	1,1,2-Trichloroethane	0.252	0.250	0.8	91	0.00

Data File : I:\MS13\DATA\2023_04\13\04132301.D
 Acq On : 13 Apr 2023 21:20
 Sample : CCV R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 07:15:40 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	108	0.00
57	S Toluene-d8 (SS2)	6.428	5.506	14.3	92	0.00
58	T Toluene	6.120	5.012	18.1	92	0.00
59	T 2-Hexanone	2.973	3.194	-7.4	115	0.00
60	T Dibromochloromethane	1.796	1.545	14.0	89	0.00
61	T 1,2-Dibromoethane	1.704	1.459	14.4	90	0.00
62	T n-Butyl Acetate	3.379	3.617	-7.0	115	0.00
63	T n-Octane	1.203	1.098	8.7	102	0.00
64	T Tetrachloroethene	1.862	1.438	22.8	84	0.00
65	T Chlorobenzene	4.037	3.289	18.5	89	0.00
66	T Ethylbenzene	7.301	5.875	19.5	93	0.00
67	T m- & p-Xylenes	5.876	4.768	18.9	93	0.00
68	T Bromoform	1.623	1.374	15.3	86	0.00
69	T Styrene	4.040	3.495	13.5	89	0.00
70	T o-Xylene	5.619	4.751	15.4	94	0.00
71	T n-Nonane	2.719	2.839	-4.4	114	0.00
72	T 1,1,2,2-Tetrachloroethane	2.427	2.196	9.5	96	0.00
73	S Bromofluorobenzene (SS3)	2.354	1.851	21.4	84	0.00
74	T Cumene	6.833	5.691	16.7	91	0.00
75	T alpha-Pinene	3.153	2.688	14.7	90	0.00
76	T n-Propylbenzene	8.192	7.136	12.9	95	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	67	0.00
78	T 4-Ethyltoluene	6.555	5.574	15.0	91	0.00
79	T 1,3,5-Trimethylbenzene	5.797	4.820	16.9	90	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.19#
81	T 2-Ethyltoluene	0.000	0.000	0.0	67	0.00
82	T 1,2,4-Trimethylbenzene	5.716	4.888	14.5	91	0.00
83	T n-Decane	0.000	0.000	0.0	102	0.00
84	T Benzyl Chloride	4.625	4.399	4.9	95	0.00
85	T 1,3-Dichlorobenzene	3.457	2.773	19.8	88	0.00
86	T 1,4-Dichlorobenzene	3.581	2.809	21.6	87	0.00
87	T sec-Butylbenzene	7.540	6.180	18.0	88	0.00
88	T 4-Isopropyltoluene (p-Cymen	6.627	5.417	18.3	88	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	67	0.00
90	T 1,2-Dichlorobenzene	3.422	2.732	20.2	87	0.00
91	T d-Limonene	1.933	1.819	5.9	95	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.296	1.046	19.3	83	0.00
93	T n-Undecane	0.000	0.000	0.0	138	0.00
94	T 1,2,4-Trichlorobenzene	2.574	1.933	24.9	77	0.00
95	T Naphthalene	6.196	4.654	24.9	74	0.00
96	T n-Dodecane	0.000	0.000	0.0	88	0.00
97	T Hexachlorobutadiene	1.995	1.221	38.8#	71	0.00
98	T Cyclohexanone	0.000	0.000	0.0	56	-0.03
99	T tert-Butylbenzene	5.366	4.087	23.8	84	0.00
100	T n-Butylbenzene	5.862	5.268	10.1	96	0.00
101	T 1,1,1,2-Tetrachloroethane	1.522	1.266	16.8	89	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2023_04\13\04132301.D
 Acq On : 13 Apr 2023 21:20
 Sample : CCV R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 14 07:15:40 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	175188	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.39	114	785847	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	163944	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	342895	14.749	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	118.00%	
57) Toluene-d8 (SS2)	12.48	98	902594	10.705	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	85.68%	
73) Bromofluorobenzene (SS3)	16.85	174	303466	9.827	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	78.64%	

Target Compounds

						Qvalue
2) Propene	3.37	42	518980	29.620	ng	99
3) Dichlorodifluoromethan...	3.45	85	913776	28.477	ng	100
4) Chloromethane	3.59	50	673749	29.117	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	391155	24.144	ng	99
6) Vinyl Chloride	3.78	62	557875	26.034	ng	99
7) 1,3-Butadiene	3.90	54	454751	28.013	ng	92
8) Bromomethane	4.11	94	369233	25.714	ng	99
9) Chloroethane	4.25	64	280880	27.712	ng	98
10) Ethanol	4.41	45	1191291	95.748	ng	100
11) Acetonitrile	4.56	41	850936	26.324	ng	99
12) Acrolein	4.63	56	555207	53.959	ng	99
13) Acetone	4.74	58	1497628	141.036	ng	# 86
14) Trichlorofluoromethane	4.85	101	807784	27.963	ng	99
15) 2-Propanol (Isopropanol)	4.96	45	2529779	59.012	ng	99
16) Acrylonitrile	5.11	53	1183569	58.428	ng	99
17) 1,1-Dichloroethene	5.35	96	405185	27.314	ng	86
18) 2-Methyl-2-Propanol (t...	5.43	59	2513232	59.951	ng	97
19) Methylene Chloride	5.47	84	421347	27.067	ng	84
20) 3-Chloro-1-propene (Al...	5.55	41	775740	31.208	ng	92
21) Trichlorotrifluoroethane	5.67	151	390217	25.690	ng	93
22) Carbon Disulfide	5.70	76	3198234	51.884	ng	99
23) trans-1,2-Dichloroethene	6.24	61	693918	30.542	ng	92
24) 1,1-Dichloroethane	6.43	63	801756	28.940	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1395846	28.746	ng	98
26) Vinyl Acetate	6.55	86	213110	74.218	ng	# 56
27) 2-Butanone (MEK)	6.76	72	545862	57.906	ng	# 73
28) cis-1,2-Dichloroethene	7.18	61	655769	29.305	ng	92
29) Diisopropyl Ether	7.37	87	616941	52.692	ng	# 55
30) Ethyl Acetate	7.38	61	726874	117.264	ng	94
31) n-Hexane	7.38	57	672101	28.170	ng	98
32) Chloroform	7.47	83	801075	28.382	ng	100
34) Tetrahydrofuran (THF)	7.84	72	509684	52.646	ng	# 86
35) Ethyl tert-Butyl Ether	7.91	87	996448	55.718	ng	# 88
36) 1,2-Dichloroethane	8.21	62	679763	31.797	ng	99
38) 1,1,1-Trichloroethane	8.49	97	726889	27.945	ng	97
39) Isopropyl Acetate	9.39	61	25441	No Calib		
40) 1-Butanol	8.87	56	21647	No Calib	#	
41) Benzene	8.98	78	1665745	27.247	ng	100
42) Carbon Tetrachloride	9.15	117	628333	27.383	ng	99
43) Cyclohexane	9.30	84	1181029	52.697	ng	93
44) tert-Amyl Methyl Ether	9.67	73	2524545	56.941	ng	95
45) 1,2-Dichloropropane	9.93	63	429286	27.833	ng	100
46) Bromodichloromethane	10.15	83	647551	28.646	ng	99
47) Trichloroethene	10.22	130	451995	25.237	ng	99
48) 1,4-Dioxane	10.19	88	347126	28.167	ng	93
49) 2,2,4-Trimethylpentane...	10.30	57	1741167	28.009	ng	95
50) Methyl Methacrylate	10.47	100	336305	53.496	ng	# 85

Data File : I:\MS13\DATA\2023_04\13\04132301.D
 Acq On : 13 Apr 2023 21:20
 Sample : CCV R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

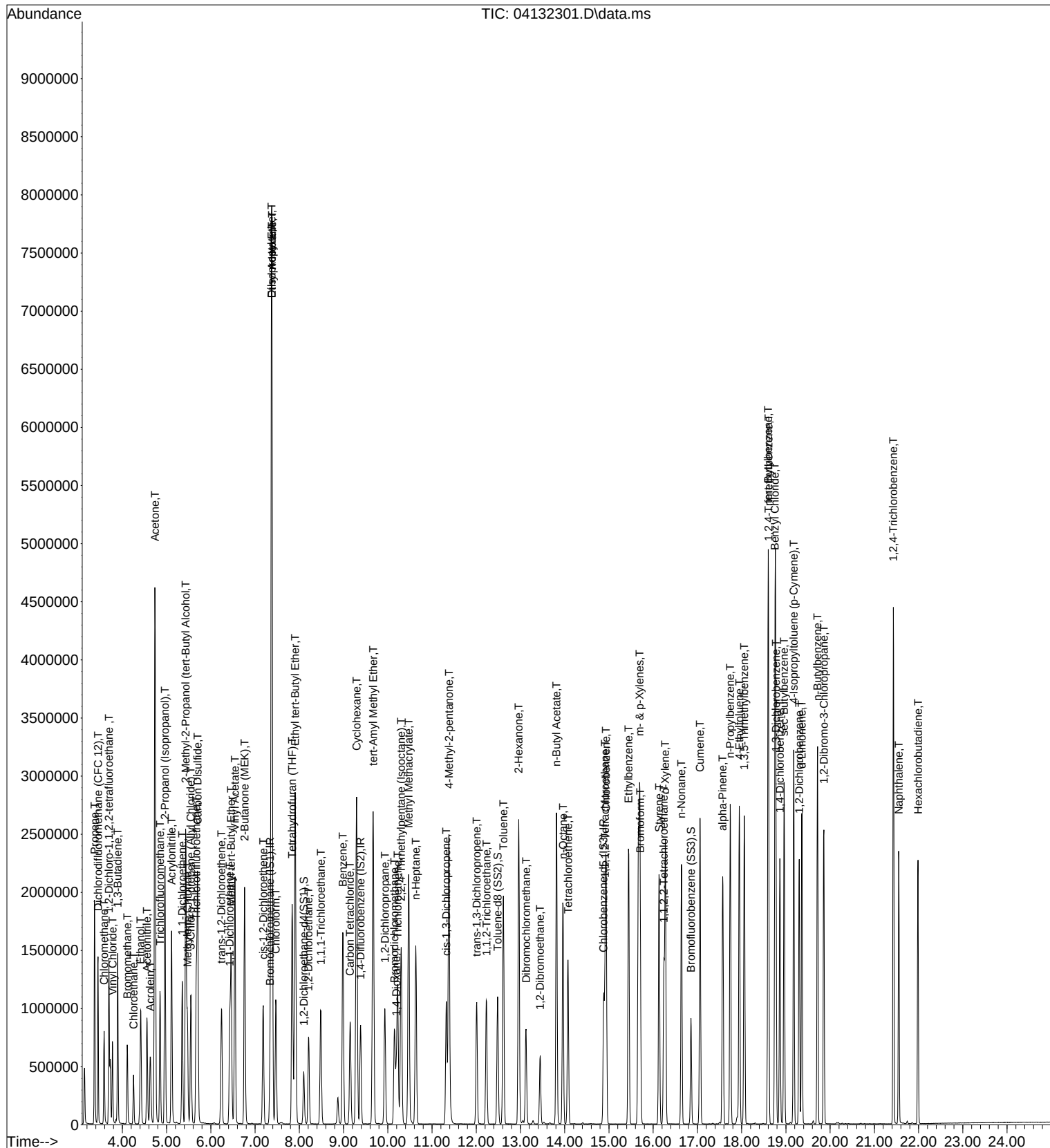
Quant Time: Apr 14 07:15:40 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	410392	27.741	ng	96
52) cis-1,3-Dichloropropene	11.32	75	731110	29.170	ng	100
53) 4-Methyl-2-pentanone	11.38	58	827103	62.756	ng	87
54) trans-1,3-Dichloropropene	12.01	75	697037	28.711	ng	99
55) 1,1,2-Trichloroethane	12.23	97	417094	26.360	ng	96
58) Toluene	12.61	91	1725579	21.499	ng	100
59) 2-Hexanone	12.96	43	2220038	56.942	ng	93
60) Dibromochloromethane	13.13	129	547252	23.232	ng	100
61) 1,2-Dibromoethane	13.44	107	497397	22.260	ng	100
62) n-Butyl Acetate	13.81	43	2431526	54.864	ng	94
63) n-Octane	13.96	57	385277	24.411	ng	92
64) Tetrachloroethene	14.08	166	499788	20.468	ng	99
65) Chlorobenzene	14.94	112	1143023	21.590	ng	100
66) Ethylbenzene	15.44	91	2022566	21.123	ng	98
67) m- & p-Xylenes	15.69	91	3283199	42.603	ng	98
68) Bromoform	15.71	173	482105	22.654	ng	100
69) Styrene	16.14	104	1214661	22.923	ng	98
70) o-Xylene	16.27	91	1651344	22.409	ng	97
71) n-Nonane	16.64	43	986737	27.672	ng	90
72) 1,1,2,2-Tetrachloroethane	16.24	83	763179	23.974	ng	100
74) Cumene	17.06	105	1996510	22.276	ng	99
75) alpha-Pinene	17.57	93	960846	23.236	ng	96
76) n-Propylbenzene	17.74	91	2503449	23.300	ng	97
77) 3-Ethyltoluene	17.34	105	457	No Calib	#	
78) 4-Ethyltoluene	17.95	105	1992311	23.173	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1675168	22.034	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	457	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1682936	22.449	ng	98
83) n-Decane	17.06	58	17171	No Calib		
84) Benzyl Chloride	18.75	91	3057581	50.407	ng	97
85) 1,3-Dichlorobenzene	18.78	146	963617	21.251	ng	100
86) 1,4-Dichlorobenzene	18.86	146	976391	20.790	ng	99
87) sec-Butylbenzene	18.96	105	2148004	21.721	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	1882759	21.662	ng	98
89) 1,2,3-Trimethylbenzene	17.34	105	457	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	958463	21.357	ng	99
91) d-Limonene	19.36	68	638239	25.177	ng	94
92) 1,2-Dibromo-3-Chloropr...	19.86	157	720496	42.398	ng	81
93) n-Undecane	18.27	58	174	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1324623	39.243	ng	100
95) Naphthalene	21.55	128	1678500	20.655	ng	100
96) n-Dodecane	19.18	58	59218	No Calib		
97) Hexachlorobutadiene	21.99	225	424405	16.216	ng	99
98) Cyclohexanone	15.66	55	1347	No Calib	#	
99) tert-Butylbenzene	18.60	119	1420619	20.185	ng	98
100) n-Butylbenzene	19.72	91	1848198	24.040	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	439917	22.044	ng	99

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Apr 14 07:15:40 2023



Data File : I:\MS13\DATA\2023_04\13\04132331.D
 Acq On : 14 Apr 2023 19:11
 Sample : CCVend R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

T2 4/17/23

Quant Time: Apr 16 19:11:05 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	90	-0.02
2 T	Propene	1.250	1.400	-12.0	109	0.00
3 T	Dichlorodifluoromethane (CF	2.290	2.413	-5.4	95	-0.03
4 T	Chloromethane	1.651	1.881	-13.9	101	-0.03
5 T	1,2-Dichloro-1,1,2,2-tetra	1.156	1.053	8.9	80	0.00
6 T	Vinyl Chloride	1.529	1.563	-2.2	92	0.00
7 T	1,3-Butadiene	1.158	1.228	-6.0	97	0.00
8 T	Bromomethane	1.025	1.022	0.3	89	0.00
9 T	Chloroethane	0.723	0.775	-7.2	97	0.00
10 T	Ethanol	0.888	0.996	-12.2	106	-0.02
11 T	Acetonitrile	2.307	2.710	-17.5	113	-0.02
12 T	Acrolein	0.734	0.816	-11.2	100	-0.02
13 T	Acetone	0.758	0.810	-6.9	103	-0.02
14 T	Trichlorofluoromethane	2.061	2.173	-5.4	95	-0.01
15 T	2-Propanol (Isopropanol)	3.059	3.530	-15.4	109	-0.02
16 T	Acrylonitrile	1.445	1.646	-13.9	104	-0.02
17 T	1,1-Dichloroethene	1.058	1.058	0.0	90	-0.01
18 T	2-Methyl-2-Propanol (tert-B	2.991	3.405	-13.8	102	-0.02
19 T	Methylene Chloride	1.111	1.122	-1.0	93	-0.02
20 T	3-Chloro-1-propene (Allyl C	1.774	2.111	-19.0	110	-0.01
21 T	Trichlorotrifluoroethane	1.084	1.016	6.3	85	-0.01
22 T	Carbon Disulfide	4.398	4.255	3.3	95	-0.01
23 T	trans-1,2-Dichloroethene	1.621	1.831	-13.0	100	-0.02
24 T	1,1-Dichloroethane	1.977	2.142	-8.3	100	-0.01
25 T	Methyl tert-Butyl Ether	3.465	3.677	-6.1	96	-0.02
26 T	Vinyl Acetate	0.205	0.214	-4.4	91	-0.02
27 T	2-Butanone (MEK)	0.673	0.740	-10.0	97	-0.02
28 T	cis-1,2-Dichloroethene	1.597	1.757	-10.0	100	-0.01
29 T	Diisopropyl Ether	0.835	0.822	1.6	93	-0.02
30 T	Ethyl Acetate	0.442	0.492	-11.3	103	-0.02
31 T	n-Hexane	1.702	1.830	-7.5	105	0.00
32 T	Chloroform	2.014	2.140	-6.3	97	-0.02
33 S	1,2-Dichloroethane-d4(SS1)	1.659	1.956	-17.9	106	-0.01
34 T	Tetrahydrofuran (THF)	0.691	0.709	-2.6	97	-0.01
35 T	Ethyl tert-Butyl Ether	1.276	1.334	-4.5	94	-0.01
36 T	1,2-Dichloroethane	1.525	1.783	-16.9	103	-0.02
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	90	-0.01
38 T	1,1,1-Trichloroethane	0.414	0.442	-6.8	96	-0.02
39 T	Isopropyl Acetate	0.000	0.000	0.0	103	-0.01
40 T	1-Butanol	0.000	0.000	0.0	94	-0.01
41 T	Benzene	0.972	1.000	-2.9	94	-0.01
42 T	Carbon Tetrachloride	0.365	0.389	-6.6	94	-0.01
43 T	Cyclohexane	0.356	0.360	-1.1	92	0.00
44 T	tert-Amyl Methyl Ether	0.705	0.775	-9.9	97	0.00
45 T	1,2-Dichloropropane	0.245	0.264	-7.8	99	-0.01
46 T	Bromodichloromethane	0.360	0.386	-7.2	96	-0.01
47 T	Trichloroethene	0.285	0.274	3.9	86	-0.01
48 T	1,4-Dioxane	0.196	0.208	-6.1	94	-0.01
49 T	2,2,4-Trimethylpentane (Iso	0.989	1.083	-9.5	102	0.00
50 T	Methyl Methacrylate	0.100	0.102	-2.0	89	-0.01
51 T	n-Heptane	0.235	0.247	-5.1	95	-0.01
52 T	cis-1,3-Dichloropropene	0.399	0.430	-7.8	95	-0.01
53 T	4-Methyl-2-pentanone	0.210	0.248	-18.1	104	0.00
54 T	trans-1,3-Dichloropropene	0.386	0.436	-13.0	97	0.00
55 T	1,1,2-Trichloroethane	0.252	0.252	0.0	91	-0.01

Data File : I:\MS13\DATA\2023_04\13\04132331.D
 Acq On : 14 Apr 2023 19:11
 Sample : CCVend R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 16 19:11:05 2023
 Quant Method : I:\MS13\METHODS\R13022223.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Thu Feb 23 07:57:30 2023
 Response via : Initial Calibration
 DataAcq Meth:T015.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	111	0.00
57	S Toluene-d8 (SS2)	6.428	5.354	16.7	92	0.00
58	T Toluene	6.120	4.872	20.4	91	0.00
59	T 2-Hexanone	2.973	3.133	-5.4	115	0.00
60	T Dibromochloromethane	1.796	1.503	16.3	89	0.00
61	T 1,2-Dibromoethane	1.704	1.414	17.0	90	0.00
62	T n-Butyl Acetate	3.379	3.536	-4.6	115	0.00
63	T n-Octane	1.203	1.083	10.0	103	0.00
64	T Tetrachloroethene	1.862	1.396	25.0	83	0.00
65	T Chlorobenzene	4.037	3.164	21.6	88	0.00
66	T Ethylbenzene	7.301	5.706	21.8	92	0.00
67	T m- & p-Xylenes	5.876	4.620	21.4	92	0.00
68	T Bromoform	1.623	1.321	18.6	84	0.00
69	T Styrene	4.040	3.385	16.2	89	0.00
70	T o-Xylene	5.619	4.579	18.5	93	0.00
71	T n-Nonane	2.719	2.779	-2.2	115	0.00
72	T 1,1,2,2-Tetrachloroethane	2.427	2.125	12.4	95	0.00
73	S Bromofluorobenzene (SS3)	2.354	1.830	22.3	85	0.00
74	T Cumene	6.833	5.522	19.2	90	0.00
75	T alpha-Pinene	3.153	2.699	14.4	93	0.00
76	T n-Propylbenzene	8.192	6.925	15.5	94	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	64	0.00
78	T 4-Ethyltoluene	6.555	5.381	17.9	90	0.00
79	T 1,3,5-Trimethylbenzene	5.797	4.668	19.5	90	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.19#
81	T 2-Ethyltoluene	0.000	0.000	0.0	64	0.00
82	T 1,2,4-Trimethylbenzene	5.716	4.730	17.2	91	0.00
83	T n-Decane	0.000	0.000	0.0	98	0.00
84	T Benzyl Chloride	4.625	4.279	7.5	95	0.00
85	T 1,3-Dichlorobenzene	3.457	2.652	23.3	86	0.00
86	T 1,4-Dichlorobenzene	3.581	2.717	24.1	86	0.00
87	T sec-Butylbenzene	7.540	6.177	18.1	91	0.00
88	T 4-Isopropyltoluene (p-Cymen	6.627	5.347	19.3	89	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	64	0.00
90	T 1,2-Dichlorobenzene	3.422	2.644	22.7	86	0.00
91	T d-Limonene	1.933	1.811	6.3	97	0.00
92	T 1,2-Dibromo-3-Chloropropane	1.296	1.036	20.1	84	0.00
93	T n-Undecane	0.000	0.000	0.0	527#	-0.03
94	T 1,2,4-Trichlorobenzene	2.574	2.035	20.9	83	0.00
95	T Naphthalene	6.196	5.250	15.3	86	0.00
96	T n-Dodecane	0.000	0.000	0.0	96	0.00
97	T Hexachlorobutadiene	1.995	1.290	35.3#	77	0.00
98	T Cyclohexanone	0.000	0.000	0.0	68	-0.02
99	T tert-Butylbenzene	5.366	4.175	22.2	88	0.00
100	T n-Butylbenzene	5.862	5.178	11.7	96	0.00
101	T 1,1,1,2-Tetrachloroethane	1.522	1.234	18.9	88	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2023_04\13\04132331.D

Vial: 1

Acq On : 14 Apr 2023 19:11

Operator: TZ

Sample : CCVend R13041323 25ng

Inst : MS13

Misc : S37-04102301/S35-03242305 (4/23)

Quant Time: Apr 16 19:11:05 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	176791	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.39	114	779905	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.88	54	168010	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	345887	14.743	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	117.92%
57) Toluene-d8 (SS2)	12.48	98	899460	10.410	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.28%
73) Bromofluorobenzene (SS3)	16.85	174	307416	9.714	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	77.68%

Target Compounds

						Qvalue
2) Propene	3.37	42	519781	29.397	ng	99
3) Dichlorodifluoromethan...	3.45	85	904370	27.929	ng	99
4) Chloromethane	3.59	50	684871	29.329	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	387108	23.678	ng	99
6) Vinyl Chloride	3.78	62	558127	25.810	ng	100
7) 1,3-Butadiene	3.90	54	460274	28.096	ng	92
8) Bromomethane	4.11	94	368618	25.438	ng	100
9) Chloroethane	4.25	64	282370	27.607	ng	100
10) Ethanol	4.42	45	1215337	96.795	ng	99
11) Acetonitrile	4.56	41	871966	26.730	ng	99
12) Acrolein	4.63	56	557011	53.643	ng	99
13) Acetone	4.74	58	1508853	140.804	ng	# 85
14) Trichlorofluoromethane	4.85	101	799216	27.416	ng	100
15) 2-Propanol (Isopropanol)	4.96	45	2558491	59.141	ng	98
16) Acrylonitrile	5.11	53	1193243	58.372	ng	99
17) 1,1-Dichloroethene	5.35	96	404072	26.992	ng	86
18) 2-Methyl-2-Propanol (t...	5.44	59	2540097	60.043	ng	97
19) Methylene Chloride	5.47	84	420478	26.766	ng	83
20) 3-Chloro-1-propene (Al...	5.55	41	791026	31.535	ng	91
21) Trichlorotrifluoroethane	5.67	151	387915	25.307	ng	92
22) Carbon Disulfide	5.70	76	3204812	51.520	ng	99
23) trans-1,2-Dichloroethene	6.24	61	699342	30.501	ng	92
24) 1,1-Dichloroethane	6.43	63	810331	28.984	ng	99
25) Methyl tert-Butyl Ether	6.46	73	1391318	28.393	ng	98
26) Vinyl Acetate	6.55	86	211600	73.024	ng	# 52
27) 2-Butanone (MEK)	6.76	72	546844	57.485	ng	# 73
28) cis-1,2-Dichloroethene	7.18	61	658647	29.167	ng	91
29) Diisopropyl Ether	7.37	87	616380	52.167	ng	# 52
30) Ethyl Acetate	7.38	61	733559	117.269	ng	92
31) n-Hexane	7.38	57	679371	28.217	ng	98
32) Chloroform	7.47	83	802144	28.162	ng	99
34) Tetrahydrofuran (THF)	7.84	72	511715	52.376	ng	# 84
35) Ethyl tert-Butyl Ether	7.91	87	999993	55.409	ng	# 88
36) 1,2-Dichloroethane	8.21	62	680945	31.564	ng	100
38) 1,1,1-Trichloroethane	8.48	97	724160	28.052	ng	98
39) Isopropyl Acetate	9.38	61	24723	No Calib		
40) 1-Butanol	8.87	56	22226	No Calib	#	
41) Benzene	8.98	78	1669381	27.515	ng	100
42) Carbon Tetrachloride	9.15	117	631360	27.725	ng	100
43) Cyclohexane	9.30	84	1178600	52.990	ng	92
44) tert-Amyl Methyl Ether	9.67	73	2562506	58.238	ng	95
45) 1,2-Dichloropropane	9.93	63	431924	28.217	ng	99
46) Bromodichloromethane	10.15	83	643725	28.693	ng	99
47) Trichloroethene	10.22	130	448045	25.207	ng	100
48) 1,4-Dioxane	10.19	88	343970	28.123	ng	92
49) 2,2,4-Trimethylpentane...	10.30	57	1824285	29.569	ng	95
50) Methyl Methacrylate	10.47	100	337764	54.138	ng	# 86

Data File : I:\MS13\DATA\2023_04\13\04132331.D
 Acq On : 14 Apr 2023 19:11
 Sample : CCVend R13041323 25ng
 Misc : S37-04102301/S35-03242305 (4/23)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Apr 16 19:11:05 2023

Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

DataAcq Meth:T015.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	408197	27.803	ng	95
52) cis-1,3-Dichloropropene	11.32	75	723953	29.105	ng	100
53) 4-Methyl-2-pentanone	11.38	58	830783	63.515	ng	87
54) trans-1,3-Dichloropropene	12.01	75	693022	28.763	ng	100
55) 1,1,2-Trichloroethane	12.23	97	415880	26.483	ng	97
58) Toluene	12.61	91	1718905	20.897	ng	100
59) 2-Hexanone	12.96	43	2232186	55.868	ng	93
60) Dibromochloromethane	13.13	129	545328	22.590	ng	100
61) 1,2-Dibromoethane	13.44	107	493998	21.573	ng	100
62) n-Butyl Acetate	13.81	43	2435639	53.627	ng	94
63) n-Octane	13.96	57	389367	24.073	ng	91
64) Tetrachloroethene	14.08	166	497237	19.871	ng	100
65) Chlorobenzene	14.94	112	1127079	20.774	ng	100
66) Ethylbenzene	15.44	91	2013050	20.515	ng	98
67) m- & p-Xylenes	15.69	91	3260029	41.278	ng	98
68) Bromoform	15.71	173	474918	21.776	ng	100
69) Styrene	16.14	104	1205709	22.203	ng	98
70) o-Xylene	16.27	91	1630990	21.597	ng	98
71) n-Nonane	16.64	43	989870	27.088	ng	90
72) 1,1,2,2-Tetrachloroethane	16.24	83	756850	23.200	ng	100
74) Cumene	17.06	105	1985249	21.615	ng	99
75) alpha-Pinene	17.57	93	988370	23.323	ng	96
76) n-Propylbenzene	17.74	91	2489987	22.614	ng	97
77) 3-Ethyltoluene	17.34	105	431	No Calib	#	
78) 4-Ethyltoluene	17.95	105	1971010	22.371	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1662591	21.339	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	431	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1668732	21.720	ng	98
83) n-Decane	17.06	58	16527	No Calib		
84) Benzyl Chloride	18.75	91	3048132	49.035	ng	97
85) 1,3-Dichlorobenzene	18.78	146	944454	20.324	ng	100
86) 1,4-Dichlorobenzene	18.86	146	967660	20.106	ng	99
87) sec-Butylbenzene	18.96	105	2199993	21.709	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	1904379	21.380	ng	98
89) 1,2,3-Trimethylbenzene	17.34	105	431	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	950565	20.668	ng	99
91) d-Limonene	19.36	68	651159	25.065	ng	95
92) 1,2-Dibromo-3-Chloropr...	19.86	157	731264	41.990	ng	80
93) n-Undecane	18.24	58	664	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1428870	41.307	ng	100
95) Naphthalene	21.55	128	1940511	23.301	ng	100
96) n-Dodecane	19.18	58	64450	No Calib		
97) Hexachlorobutadiene	21.99	225	459355	17.127	ng	99
98) Cyclohexanone	15.68	55	1644	No Calib	#	
99) tert-Butylbenzene	18.60	119	1487154	20.619	ng	99
100) n-Butylbenzene	19.72	91	1861578	23.628	ng	98
101) 1,1,1,2-Tetrachloroethane	14.91	131	439365	21.484	ng	100

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Apr 16 19:11:05 2023

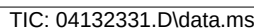
Quant Method : I:\MS13\METHODS\R13022223.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Thu Feb 23 07:57:30 2023

Response via : Initial Calibration

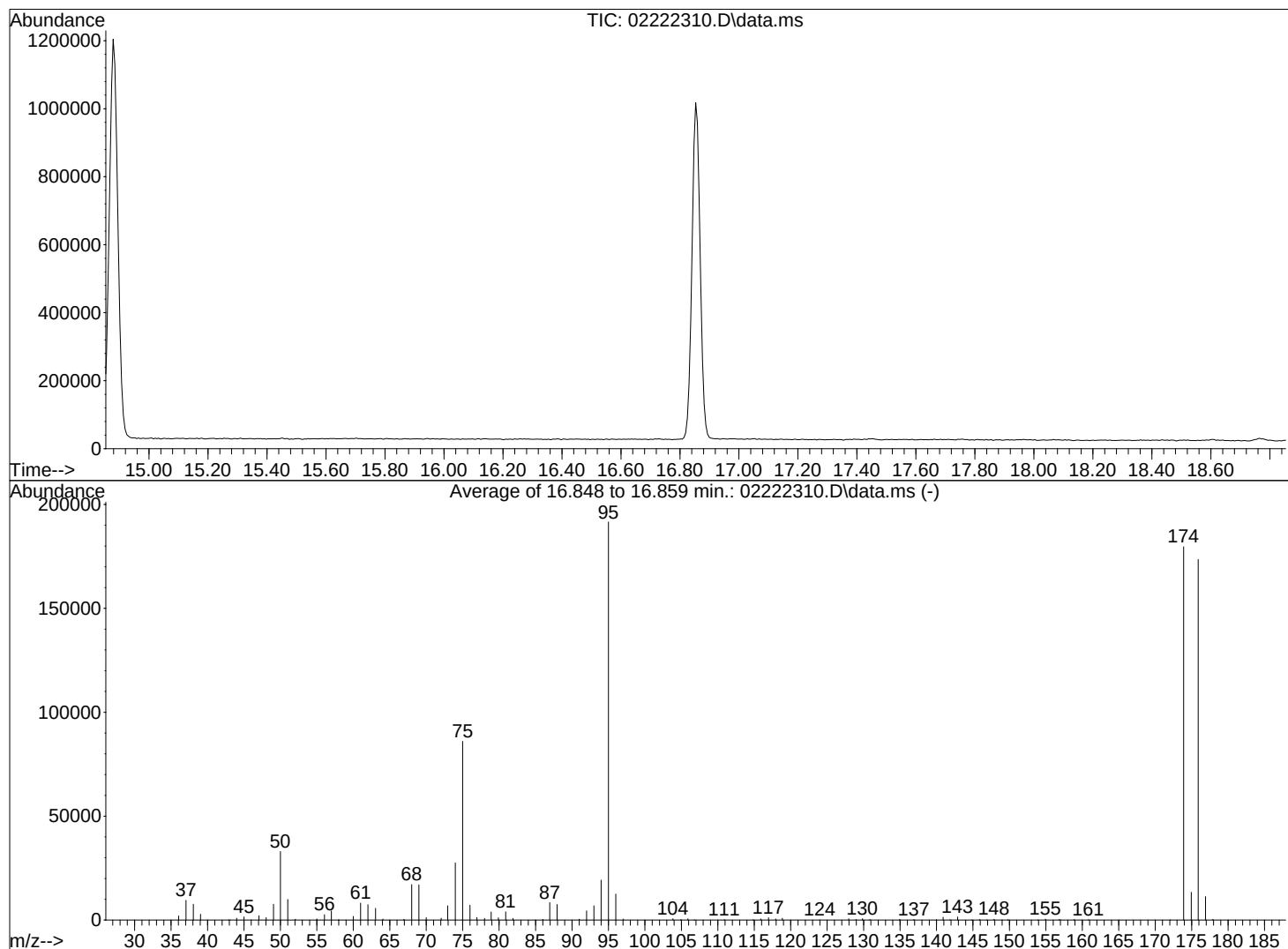
DataAcq Meth:T015.M



Data Path : I:\MS13\DATA\2023_02\22\
 Data File : 02222310.D
 Acq On : 22 Feb 2023 14:30
 Operator : TZ
 Sample : BFB R13022223
 Misc : S35-01202301
 ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13022223.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Thu Feb 23 07:44:44 2023



AutoFind: Scans 2418, 2419, 2420; Background Corrected with Scan 2410

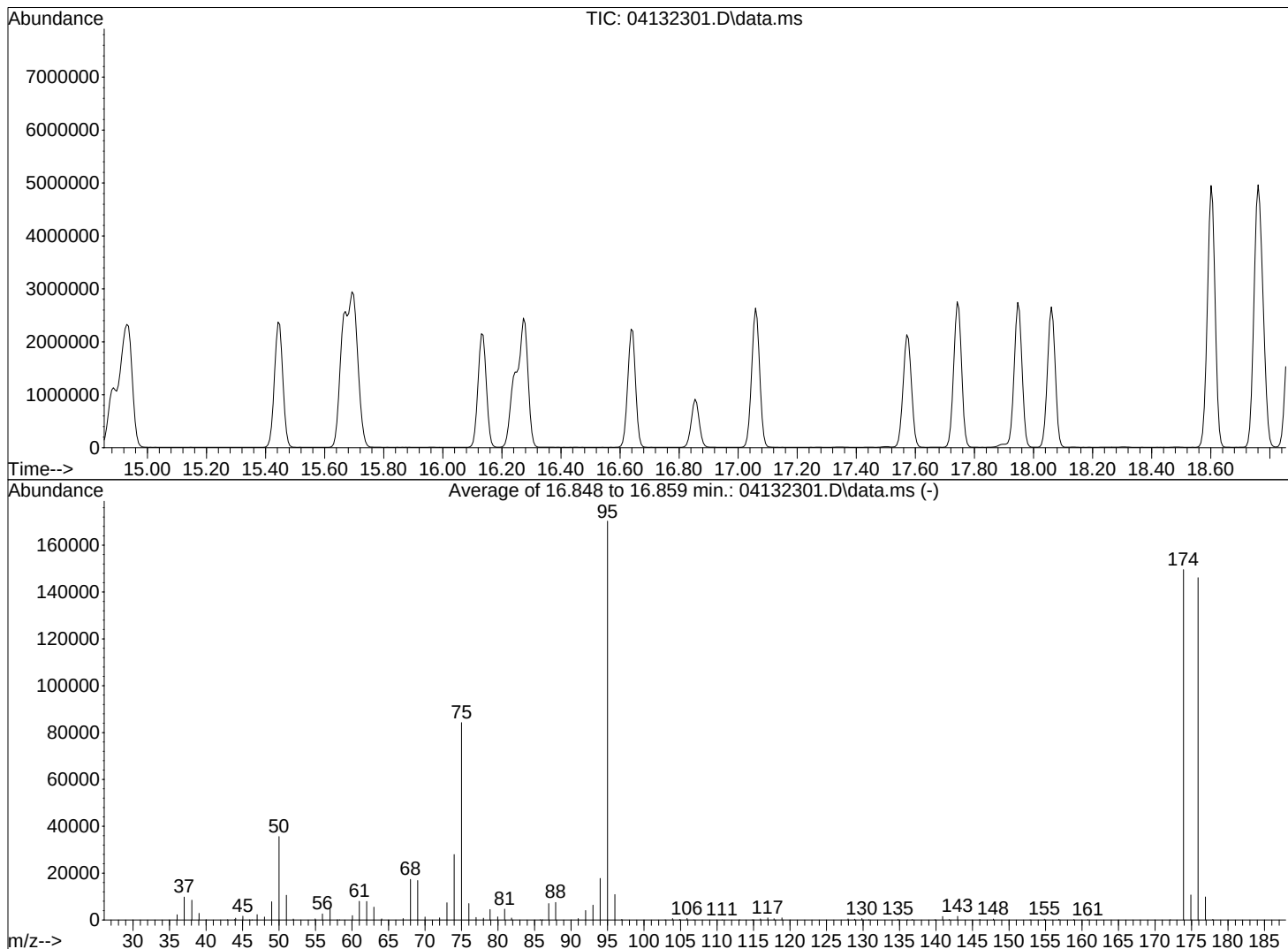
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.2	33005	PASS
75	95	30	66	44.9	85988	PASS
95	95	100	100	100.0	191595	PASS
96	95	5	9	6.5	12490	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	93.8	179627	PASS
175	174	4	9	7.4	13359	PASS
176	174	93	101	96.6	173504	PASS
177	176	5	9	6.5	11293	PASS

TZ 2/23/23

Data Path : I:\MS13\DATA\2023_04\13\
Data File : 04132301.D
Acq On : 13 Apr 2023 21:20
Operator : TZ
Sample : CCV R13041323 25ng
Misc : S37-04102301/S35-03242305 (4/23)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13022223.M
Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
Last Update : Thu Feb 23 07:57:30 2023



AutoFind: Scans 2418, 2419, 2420; Background Corrected with Scan 2410

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.9	35587	PASS
75	95	30	66	49.5	84248	PASS
95	95	100	100	100.0	170261	PASS
96	95	5	9	6.4	10891	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	87.8	149547	PASS
175	174	4	9	7.2	10693	PASS
176	174	93	101	97.7	146107	PASS
177	176	5	9	6.7	9846	PASS

TZ 4/14/23

Injection Log

Directory: J:\MS13\DATA\2023_02\22\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	2/22/23 14:30	02222310.D	BFB R13022223	S35-01202301	TZ	1	passed
2	2/22/23 15:07	02222311.D	0.1ng R13022223 ICAL Std.	S35-01202301/S35-02222302 (3/18)	TZ	13	R13022223.M
3	2/22/23 15:44	02222312.D	0.2ng R13022223 ICAL Std.	S35-01202301/S35-02222302 (3/18)	TZ	13	
4	2/22/23 16:21	02222313.D	0.5ng R13022223 ICAL Std.	S35-01202301/S35-02222301 (3/18)	TZ	14	
5	2/22/23 16:58	02222314.D	1.0ng R13022223 ICAL Std.	S35-01202301/S35-02222301 (3/18)	TZ	14	
6	2/22/23 17:35	02222315.D	5.0ng R13022223 ICAL Std.	S35-01202301/S35-02222301 (3/18)	TZ	14	
7	2/22/23 18:11	02222316.D	25ng R13022223 ICAL Std.	S35-01202301/S35-02162304 (3/18)	TZ	15	
8	2/22/23 18:47	02222317.D	50ng R13022223 ICAL Std.	S35-01202301/S35-02162304 (3/18)	TZ	15	
9	2/22/23 19:23	02222318.D	100ng R13022223 ICAL Std.	S35-01202301/S35-02162304 (3/18)	TZ	15	
10	2/22/23 19:58	02222319.D	Blank	S35-01202301	TZ	1	
11	2/22/23 20:34	02222320.D	5.0ng R13022223 ICV Std.	S35-01202301/S35-02062302 (3/8)	TZ	1	not used
12	2/22/23 21:10	02222321.D	25ng R13022223 ICV Std.	S35-01202301/S35-02062302 (3/8)	TZ	1	passed
13	2/22/23 21:46	02222322.D	Blank	S35-01202301	TZ	1	
R13022223.M ranges from 0.1ng->100ng except: Propene, Acetonitrile, Naphthalene: 0.2ng->100ng, Ethanol: 1ng->500ng, IPA: 0.4ng->200ng,							
TBA: 0.2ng->100ng, and 1,2,4-Trichlorobenzene: 0.4ng->200ng							

Injection Log

T2 4/17/23

Directory: I:\MS13\DATA\2023_04\13\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/13/23 21:20	04132301.D	CCV R13041323 25ng	S37-04102301/S35-03242305 (4/23)	TZ	1	passed
2	4/13/23 21:56	04132302.D	CCV C13041323 5.0ng	S37-04102301/S35-03242303 (4/23)	TZ	16	not used
3	4/13/23 22:33	04132303.D	MB R13041323 1000mL	S37-04102301_AS01837	TZ	1	passed
4	4/13/23 23:09	04132304.D	xLCS R130341323 25ng	S37-04102301/S35-04032308 (5/2)	TZ	1	not reporting
5	4/13/23 23:45	04132305.D	xLCSD R130341323 25ng	S37-04102301/S35-04032308 (5/2)	TZ	1	not reporting
6	4/14/23 0:22	04132306.D	P2301613-001 (1000mL)	S37-04102301	TZ	7	
7	4/14/23 0:59	04132307.D	P2301613-002 (1000mL)	S37-04102301	TZ	8	
8	4/14/23 1:36	04132308.D	P2301613-003 (1000mL)	S37-04102301	TZ	11	
9	4/14/23 2:12	04132309.D	P2301613-004 (1000mL)	S37-04102301	TZ	12	
10	4/14/23 2:48	04132310.D	P2301613-005 (1000mL)	S37-04102301	TZ	13	
11	4/14/23 3:24	04132311.D	P2301613-005dup (1000mL)	S37-04102301	TZ	13	passed
12	4/14/23 4:00	04132312.D	P2301670-001 (100mL)	S37-04102301	TZ	14	surr-2,3 out
13	4/14/23 4:36	04132313.D	P2301670-002 (25mL)	S37-04102301	TZ	15	
14	4/14/23 7:50	04132314.D	RL R13041323 0.5ng	S37-04102301/S37-03312302 (4/23)	TZ	15	passed
15	4/14/23 8:26	04132315.D	LCS R13041323 25ng	S37-04102301/S35-03162301 (4/15)	TZ	1	passed
16	4/14/23 9:24	04132316.D	AS00974_30930	S37-04102301	TZ	2	
17	4/14/23 10:00	04132317.D	LCSD R130341323 25ng	S37-04102301/S35-03162301 (4/15)	TZ	1	passed
18	4/14/23 10:36	04132318.D	P2301670-002 (40mL)	S37-04102301	TZ	15	surr-2,3 out
19	4/14/23 11:34	04132319.D	P2301551-001 (1000mL)	S37-04102301	TZ	6	
20	4/14/23 12:10	04132320.D	P2301581-001 (1000mL)	S37-04102301	TZ	7	
21	4/14/23 12:47	04132321.D	P2301581-002 (1000mL)	S37-04102301	TZ	8	
22	4/14/23 13:24	04132322.D	P2301549-001 (1000mL)	S37-04102301	TZ	2	
23	4/14/23 14:01	04132323.D	P2301549-002 (1000mL)	S37-04102301	TZ	3	
24	4/14/23 14:38	04132324.D	P2301549-003 (1000mL)	S37-04102301	TZ	4	
25	4/14/23 15:15	04132325.D	P2301549-004 (1000mL)	S37-04102301	TZ	5	
26	4/14/23 16:07	04132326.D	P2301614-001 (1000mL)	S37-04102301	TZ	9	
27	4/14/23 16:44	04132327.D	P2301614-002 (1000mL)	S37-04102301	TZ	10	
28	4/14/23 17:21	04132328.D	P2301614-003 (1000mL)	S37-04102301	TZ	11	
29	4/14/23 17:57	04132329.D	P2301614-004 (1000mL)	S37-04102301	TZ	12	
30	4/14/23 18:34	04132330.D	P2301614-005 (1000mL)	S37-04102301	TZ	13	
31	4/14/23 19:11	04132331.D	CCVend R13041323 25ng	S37-04102301/S35-03242305 (4/23)	TZ	1	passed
CCV/CCVend: Hexachlorobutadiene out low - RL passed LCS: 1,2-DCA out high, within method (DoD passed) LCSD: 1,2-DCA out high, Hexachlorobutadiene out low in DoD, within method for both							

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-09

Cycles: 30

Batch: 30824

Batch Started By: on 3/28/23 0923

Finished Cleaning By: ALESAICHERRE on 3/29/23 0806

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AS01035	3/28/23	3/28/23	Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE				ms21-03/28/23
AS00584	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	4/7/23 1043		
AS00138	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	4/7/23 0913		
AS01706	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	3/31/23 0909		
AS00696	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	4/7/23 0913		
AS01560	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	5.0	4/7/23 0911		
AS01783	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	4/3/23 1209		
AS00796	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0806	ALESAICHERRE	-14.0	3/31/23 0905		
AS01695	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0807	ALESAICHERRE	-14.0	4/7/23 0913		
AS00601	3/28/23		Pass w/ Conditions	-14.3	3/29/23 0807	ALESAICHERRE	-14.0	4/7/23 0913		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

* QC Canister

Data Path : I:\MS21\DATA\2023_03\28\
 Data File : 03282307.D
 Acq On : 28 Mar 2023 16:00
 Operator : KM
 Sample : 032823_AS01035_30824
 Misc : LL + TICS (Sig #1); S35-02272301 (Sig #2)
 ALS Vial : 3 Sample Multiplier: 1

APL 3/29/23

Quant Time: Mar 29 06:21:09 2023
 Quant Method : I:\MS21\Methods\F21011723.M
 Quant Title : EPA TO-15
 QLast Update : Wed Jan 18 06:49:07 2023
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.734	130	50975	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.901	114	177281	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.781	54	29015	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.545	65	83290	1065.81	pg	0.00
Spiked Amount 1000.000			Recovery	=	106.58%	
57) Toluene-d8 (SS2)	12.697	98	167032	814.52	pg	0.00
Spiked Amount 1000.000			Recovery	=	81.45%	
74) Bromofluorobenzene (SS3)	16.228	174	67210	830.31	pg	0.00
Spiked Amount 1000.000			Recovery	=	83.03%	

Target	Compounds					Qvalue
2]	* Propene	3.682	42	213	6.454 pg	# 28
3]	* Dichlorodifluoromethane	3.729	85	183	2.115 pg	# 77
4]	* Chloromethane	3.856	50	191	4.806 pg	# 89
7]	* 1,3-Butadiene	4.157	54	22	0.693 pg	# 5
9]	* Chloroethane	4.497	64	60	2.174 pg	# 42
10]	* Ethanol	4.606	45	903	49.686 pg	# 96
11]	* Acetonitrile	4.773	41	206	3.149 pg	# 96
12]	* Acrolein	4.884	56	269	10.304 pg	# 98
13]	* Acetone	5.014	58	2796	79.539 pg	# 97
14]	* Trichlorofluoromethane	5.132	101	121	1.096 pg	# 99
15]	* 2-Propanol (Isopropa...	5.207	45	699	22.330 pg	# 78
16]	* Acrylonitrile	5.356	53	56	1.147 pg	# 8
18]	tert-Butanol	5.759	59	186	3.964 pg	# 60
19]	* Methylene Chloride	5.744	84	139	2.599 pg	# 97
22]	* Carbon Disulfide	6.016	76	3285	18.129 pg	# 99
26]	* Vinyl Acetate	6.892	86	222	57.079 pg	# 1
27]	* 2-Butanone (MEK)	7.179	72	315	9.699 pg	# 77
28]	* cis-1,2-Dichloroethene	7.572	96	171	3.029 pg	# 96
29]	DIPE	7.838	45	56	0.464 pg	# 36
30]	* Ethyl Acetate	7.838	61	88	9.042 pg	# 86
31]	* n-Hexane	7.818	57	80	1.132 pg	# 53
32]	* Chloroform	7.876	83	199	2.149 pg	# 99
34]	* Tetrahydrofuran	8.344	71	51	1.827 pg	# 42
39]	* Benzene	9.489	78	577	3.657 pg	# 99
46]	* Bromodichloromethane	10.619	83	129	3.912 pg	# 99
47]	* Trichloroethene	10.698	130	987	18.182 pg	# 95
48]	* 1,4-Dioxane	10.764	88	120	2.847 pg	# 78
50]	* Methyl Methacrylate	10.952	69	84	3.968 pg	# 32
51]	* n-Heptane	11.090	71	53	1.138 pg	# 39
53]	* 4-Methyl-2-pentanone	11.798	58	334	10.512 pg	# 95
58]	* Toluene	12.810	91	602	2.855 pg	# 100
59]	* 2-Hexanone	13.173	58	58	1.432 pg	# 48
60]	* Dibromochloromethane	13.260	129	209	10.843 pg	# 96
65]	* Chlorobenzene	14.832	112	86	0.597 pg	# 42
66]	* Ethylbenzene	15.214	91	112	0.491 pg	# 42
67]	* m- & p-Xylenes	15.387	91	243	1.356 pg	# 96
68]	* Bromoform	15.423	173	79	5.768 pg	# 26
70]	* Styrene	15.727	104	67	0.550 pg	# 29
71]	* o-Xylene	15.822	91	102	0.549 pg	# 29
75]	* Cumene	16.363	105	59	0.236 pg	# 48
77]	* n-Propylbenzene	16.807	91	58	0.208 pg	# 51
83]	tert-Butylbenzene	17.373	134	105	2.182 pg	# 1
84]	* 1,2,4-Trimethylbenzene	17.357	105	78	0.389 pg	# 23
91]	p-Isopropyltoluene	17.718	119	99	0.414 pg	# 48

Data Path : I:\MS21\DATA\2023_03\28\
Data File : 03282307.D
Acq On : 28 Mar 2023 16:00
Operator : KM
Sample : 032823_AS01035_30824
Misc : LL + TICS (Sig #1); S35-02272301 (Sig #2)
ALS Vial : 3 Sample Multiplier: 1

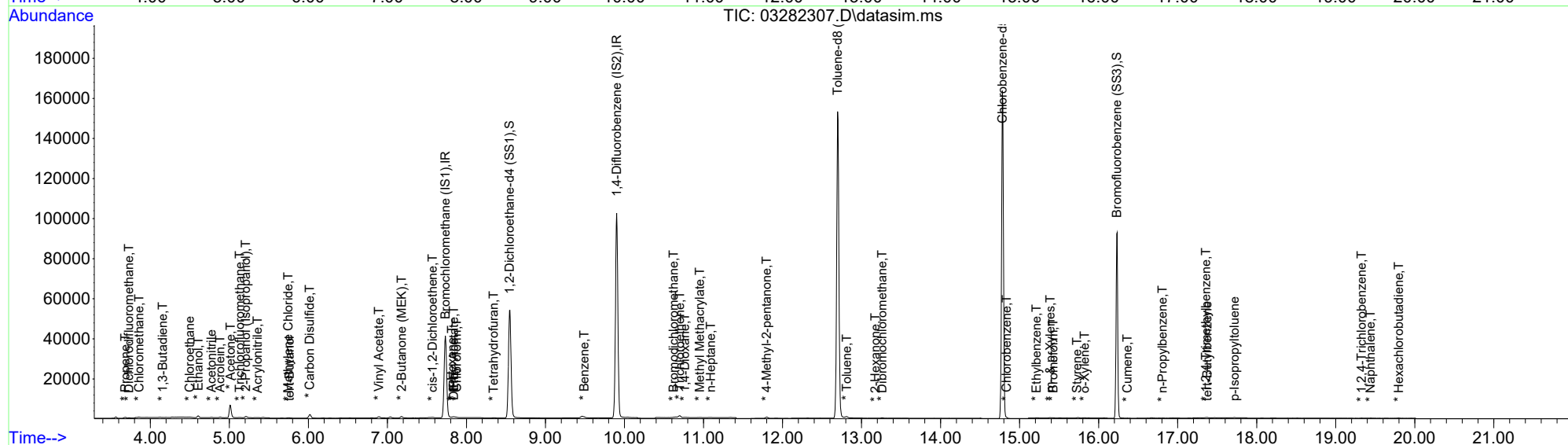
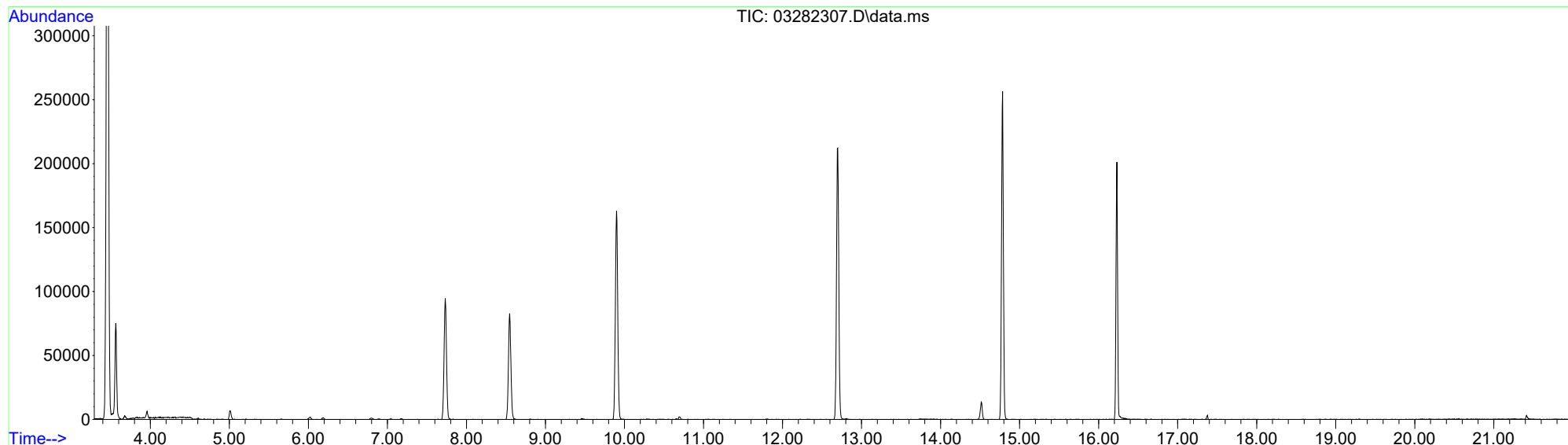
Quant Time: Mar 29 06:21:09 2023
Quant Method : I:\MS21\Methods\F21011723.M
Quant Title : EPA T0-15
QLast Update : Wed Jan 18 06:49:07 2023
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
97]	* 1,2,4-Trichlorobenzene	19.326	180	51	0.618	pg	87
98]	* Naphthalene	19.439	128	115	0.642	pg	# 68
100]	* Hexachlorobutadiene	19.797	225	103	1.344	pg	# 41

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

Data Path : I:\MS21\DATA\2023_03\28\
Data File : 03282307.D
Acq On : 28 Mar 2023 16:00
Operator : KM
Sample : 032823_AS01035_30824
Misc : LL + TICS (Sig #1); S35-02272301 (Sig #2)
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 06:21:09 2023
Quant Method : I:\MS21\Methods\F21011723.M
Quant Title : EPA TO-15
QLast Update : wed Jan 18 06:49:07 2023
Response via : Initial Calibration





LABORATORY REPORT

June 29, 2023

Larry Pannell, PG, PMP
KOMAN Government Solutions, LLC
293 Boston Post Road West, Suite 100
Marlborough, MA 01752

RE: DDMT Memphis / 10A023

Dear Larry:

Enclosed are the results of the samples submitted to our laboratory on June 9, 2023. For your reference, these analyses have been assigned our service request number P2302616.

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.

ALS | Environmental

By Sue Anderson at 5:26 pm, Jun 29, 2023

Sue Anderson
Project Manager



Client: KOMAN Government Solutions, LLC
Project: DDMT Memphis / 10A023

Service Request No: P2302616

CASE NARRATIVE

The samples were received intact under chain of custody on June 9, 2023 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.

Volatile Organic Compound Analysis

The samples were analyzed 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.

Manual integrations were performed on the following sample(s) and analyte(s). Refer to the raw data for additional information.

Sample Identification(s)	Analyte(s)
P2302616-001	Ethyl Acetate
P2302616-002	Acetone

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 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.



CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	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)	https://internet.deq.louisiana.gov/portal/divisions/lalap/accredited-laboratories	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	2022028
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	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	4068-011
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	T104704413-22-13
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA016272022-14
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: KOMAN Government Solutions, LLC
Project ID: DDMT Memphis / 10A023

Service Request: P2302616

Date Received: 6/9/2023
Time Received: 09:25

TO-15 - VOC Cans

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	
ODSVE-EFF-Y12Q4	P2302616-001	Air	6/8/2023	08:45	AS01012	-0.15	5.00	X
ODSVE-DUP1-Y12Q4	P2302616-002	Air	6/8/2023	08:30	AS01289	-0.17	3.95	X



Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

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

P2302616

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

ALS Project No.

12101463

Company Name & Address (Reporting Information) Trinity Analysis and Development Corp. 1002 Elgin Parkway Shalmar, FL 32579				Project Name DDMT Memphis				ALS Contact:		Comments e.g. Actual Preservative or specific instructions
				Project Number 10A023				Analysis Method		
Project Manager Larry Pannell				P.O. # / Billing Information 8975				TO-15		
Phone 508-280-9948		Fax 508-366-7445								
Email Address for Result Reporting lpannell@komangs.com				Sampler (Print & Sign) <i>Clayton Moki</i>						
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		
ODSVE-EFF-Y12Q4		6/8/2023	845	AS01012	-	-30	0	6L	X	
ODSVE-DUP1-Y12Q4		6/8/2023	830	AS01289	-	-30	0	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 Yes / No _____ Chain of Custody Seal: (Circle) _____ Tier II (Results + QC Summaries) _____ Tier IV (Data Validation Package) 10% Surcharge _____ Type: _____ Units: _____ INTACT BROKEN ABSENT										
Relinquished by: (Signature) <i>[Signature]</i>		Date: 6-8-23	Time: 1557	Received by: (Signature) FED EX				Date:	Time:	Cooler / Blank Temperature _____ °C
Relinquished by: (Signature) FED EX		Date:	Time:	Received by: (Signature) <i>[Signature]</i>				Date: 6-9-23	Time: 0925	

ALS Environmental Sample Acceptance Check Form

Client: Trinity Analysis & Development Corp. Work order: P2302616
 Project: DDMT Memphis / 10A023
 Sample(s) received on: 6/9/23 Date opened: 6/9/23 by: ANTHONY.VASQUE

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?	☒	☐	☐
2 Did sample containers arrive in good condition?	☒	☐	☐
3 Were chain-of-custody papers used and filled out?	☒	☐	☐
4 Did sample container labels and/or tags agree with custody papers?	☒	☐	☐
5 Was sample volume received adequate for analysis?	☒	☐	☐
6 Are samples within specified holding times?	☒	☐	☐
7 Was proper temperature (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8 Were custody seals on outside of cooler/Box/Container?	☒	☐	☐
Location of seal(s)? <u>Bottom of box</u> Sealing Lid?	☒	☐	☐
Were signature and date included?	☒	☐	☐
Were seals intact?	☒	☐	☐
9 Do containers have appropriate preservation , according to method/SOP or Client specified information?	☐	☐	☒
Is there a client indication that the submitted samples are pH preserved?	☐	☐	☒
Were VOA vials checked for presence/absence of air bubbles?	☐	☐	☒
Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it?	☐	☐	☒
10 Tubes: Are the tubes capped and intact?	☐	☐	☒
11 Badges: Are the badges properly capped and intact?	☐	☐	☒
Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2302616-001.01	6.0 L Silonite Can					
P2302616-002.01	6.0 L Silonite Can					

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01012

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15

Final Pressure (psig): 5.00

Container Dilution Factor: 1.35

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.25	0.42	0.25	0.10	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.62	0.14	0.087	0.024	
74-87-3	Chloromethane	0.21	0.34	0.21	0.056	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.062	0.10	0.062	0.016	U
75-01-4	Vinyl Chloride	0.11	0.27	0.090	0.030	J
106-99-0	1,3-Butadiene	0.20	0.32	0.20	0.054	U
74-83-9	Bromomethane	0.059	0.18	0.059	0.026	U
75-00-3	Chloroethane	0.087	0.27	0.087	0.034	U
64-17-5	Ethanol	2.9	3.6	0.60	0.27	J
75-05-8	Acetonitrile	0.26	0.80	0.26	0.10	U
107-02-8	Acrolein	0.37	0.59	0.21	0.088	J
67-64-1	Acetone	3.2	3.0	1.5	0.68	
75-69-4	Trichlorofluoromethane	0.28	0.12	0.038	0.019	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.30	0.56	0.34	0.12	J
107-13-1	Acrylonitrile	0.21	0.64	0.21	0.068	U
75-35-4	1,1-Dichloroethene	0.37	0.18	0.058	0.025	
75-09-2	Methylene Chloride	0.12	0.21	0.12	0.058	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.073	0.23	0.073	0.031	U
76-13-1	Trichlorotrifluoroethane	3.9	0.095	0.030	0.013	
75-15-0	Carbon Disulfide	0.93	0.46	0.14	0.069	
156-60-5	trans-1,2-Dichloroethene	0.57	0.18	0.058	0.025	
75-34-3	1,1-Dichloroethane	0.22	0.18	0.057	0.026	
1634-04-4	Methyl tert-Butyl Ether	0.060	0.20	0.060	0.024	U
108-05-4	Vinyl Acetate	0.56	1.9	1.0	0.46	J
78-93-3	2-Butanone (MEK)	0.49	0.48	0.15	0.050	

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01012

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15

Final Pressure (psig): 5.00

Container Dilution Factor: 1.35

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	26	0.18	0.058	0.026	
141-78-6	Ethyl Acetate	0.30	0.79	0.23	0.10	J
110-54-3	n-Hexane	0.046	0.20	0.12	0.042	J
67-66-3	Chloroform	7.5	0.15	0.047	0.020	
109-99-9	Tetrahydrofuran (THF)	0.046	0.46	0.092	0.031	J
107-06-2	1,2-Dichloroethane	0.057	0.18	0.057	0.020	U
71-55-6	1,1,1-Trichloroethane	0.16	0.13	0.040	0.016	
71-43-2	Benzene	0.057	0.23	0.072	0.033	J
56-23-5	Carbon Tetrachloride	0.49	0.11	0.034	0.016	
110-82-7	Cyclohexane	0.075	0.41	0.13	0.059	J
78-87-5	1,2-Dichloropropane	0.050	0.15	0.050	0.019	U
75-27-4	Bromodichloromethane	0.034	0.11	0.034	0.016	U
79-01-6	Trichloroethene	20	0.13	0.040	0.018	
123-91-1	1,4-Dioxane	0.060	0.20	0.060	0.024	U
80-62-6	Methyl Methacrylate	0.20	0.36	0.20	0.063	U
142-82-5	n-Heptane	0.040	0.17	0.10	0.028	J
10061-01-5	cis-1,3-Dichloropropene	0.095	0.16	0.095	0.025	U
108-10-1	4-Methyl-2-pentanone	0.069	0.36	0.069	0.024	U
10061-02-6	trans-1,3-Dichloropropene	0.092	0.15	0.092	0.033	U
79-00-5	1,1,2-Trichloroethane	0.026	0.13	0.042	0.013	J
108-88-3	Toluene	0.081	0.19	0.061	0.023	J
591-78-6	2-Hexanone	0.077	0.36	0.069	0.022	J
124-48-1	Dibromochloromethane	0.027	0.086	0.027	0.011	U
106-93-4	1,2-Dibromoethane	0.030	0.091	0.030	0.011	U
123-86-4	n-Butyl Acetate	0.060	0.28	0.060	0.021	U

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-EFF-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-001

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01012

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.15

Final Pressure (psig): 5.00

Container Dilution Factor: 1.35

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.090	0.16	0.090	0.035	U
127-18-4	Tetrachloroethene	2.0	0.11	0.034	0.014	
108-90-7	Chlorobenzene	0.047	0.16	0.047	0.021	U
100-41-4	Ethylbenzene	0.053	0.16	0.053	0.023	U
179601-23-1	m,p-Xylenes	0.10	0.34	0.10	0.044	U
75-25-2	Bromoform	0.042	0.071	0.042	0.014	U
100-42-5	Styrene	0.098	0.17	0.098	0.027	U
95-47-6	o-Xylene	0.036	0.16	0.053	0.024	J
111-84-2	n-Nonane	0.082	0.14	0.082	0.023	U
79-34-5	1,1,2,2-Tetrachloroethane	0.20	0.10	0.033	0.015	
98-82-8	Cumene	0.047	0.15	0.047	0.021	U
80-56-8	alpha-Pinene	0.041	0.27	0.041	0.020	U
103-65-1	n-Propylbenzene	0.047	0.15	0.047	0.021	U
622-96-8	4-Ethyltoluene	0.088	0.15	0.088	0.023	U
108-67-8	1,3,5-Trimethylbenzene	0.023	0.15	0.047	0.021	J
95-63-6	1,2,4-Trimethylbenzene	0.044	0.15	0.044	0.020	U
100-44-7	Benzyl Chloride	0.089	0.55	0.089	0.031	U
541-73-1	1,3-Dichlorobenzene	0.038	0.12	0.038	0.018	U
106-46-7	1,4-Dichlorobenzene	0.038	0.12	0.038	0.018	U
95-50-1	1,2-Dichlorobenzene	0.038	0.12	0.038	0.018	U
5989-27-5	d-Limonene	0.075	0.27	0.075	0.027	U
96-12-8	1,2-Dibromo-3-chloropropane	0.045	0.15	0.045	0.014	U
120-82-1	1,2,4-Trichlorobenzene	0.058	0.20	0.058	0.024	U
91-20-3	Naphthalene	0.080	0.14	0.080	0.033	U
87-68-3	Hexachlorobutadiene	0.039	0.067	0.039	0.014	U

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01289

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.17

Final Pressure (psig): 3.95

Container Dilution Factor: 1.28

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.24	0.39	0.24	0.097	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.64	0.14	0.083	0.023	
74-87-3	Chloromethane	0.20	0.32	0.20	0.053	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.015	0.095	0.059	0.015	J
75-01-4	Vinyl Chloride	0.12	0.26	0.085	0.029	J
106-99-0	1,3-Butadiene	0.19	0.31	0.19	0.051	U
74-83-9	Bromomethane	0.031	0.17	0.056	0.024	J
75-00-3	Chloroethane	0.082	0.25	0.082	0.032	U
64-17-5	Ethanol	0.88	3.4	0.57	0.25	J
75-05-8	Acetonitrile	0.24	0.76	0.24	0.099	U
107-02-8	Acrolein	0.41	0.56	0.20	0.084	J
67-64-1	Acetone	1.5	2.8	1.4	0.65	J
75-69-4	Trichlorofluoromethane	0.30	0.12	0.036	0.018	
67-63-0	2-Propanol (Isopropyl Alcohol)	0.27	0.53	0.32	0.11	J
107-13-1	Acrylonitrile	0.19	0.60	0.19	0.065	U
75-35-4	1,1-Dichloroethene	0.39	0.17	0.055	0.024	
75-09-2	Methylene Chloride	0.11	0.20	0.11	0.055	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.070	0.22	0.070	0.029	U
76-13-1	Trichlorotrifluoroethane	4.2	0.090	0.028	0.013	
75-15-0	Carbon Disulfide	0.27	0.44	0.14	0.066	J
156-60-5	trans-1,2-Dichloroethene	0.61	0.17	0.055	0.024	
75-34-3	1,1-Dichloroethane	0.22	0.17	0.054	0.025	
1634-04-4	Methyl tert-Butyl Ether	0.057	0.19	0.057	0.022	U
108-05-4	Vinyl Acetate	1.1	1.8	0.98	0.44	J
78-93-3	2-Butanone (MEK)	0.25	0.45	0.14	0.048	J

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01289

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.17

Final Pressure (psig): 3.95

Container Dilution Factor: 1.28

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	28	0.17	0.055	0.024	
141-78-6	Ethyl Acetate	0.20	0.75	0.22	0.099	J
110-54-3	n-Hexane	0.11	0.19	0.11	0.040	U
67-66-3	Chloroform	8.1	0.14	0.045	0.019	
109-99-9	Tetrahydrofuran (THF)	0.030	0.43	0.087	0.029	J
107-06-2	1,2-Dichloroethane	0.054	0.17	0.054	0.019	U
71-55-6	1,1,1-Trichloroethane	0.16	0.12	0.038	0.015	
71-43-2	Benzene	0.046	0.22	0.068	0.031	J
56-23-5	Carbon Tetrachloride	0.50	0.11	0.033	0.015	
110-82-7	Cyclohexane	0.067	0.39	0.12	0.056	J
78-87-5	1,2-Dichloropropane	0.047	0.15	0.047	0.018	U
75-27-4	Bromodichloromethane	0.032	0.10	0.032	0.015	U
79-01-6	Trichloroethene	20	0.13	0.038	0.017	
123-91-1	1,4-Dioxane	0.057	0.19	0.057	0.022	U
80-62-6	Methyl Methacrylate	0.19	0.34	0.19	0.059	U
142-82-5	n-Heptane	0.036	0.17	0.097	0.027	J
10061-01-5	cis-1,3-Dichloropropene	0.090	0.15	0.090	0.023	U
108-10-1	4-Methyl-2-pentanone	0.066	0.34	0.066	0.023	U
10061-02-6	trans-1,3-Dichloropropene	0.087	0.14	0.087	0.031	U
79-00-5	1,1,2-Trichloroethane	0.040	0.12	0.040	0.013	U
108-88-3	Toluene	0.061	0.18	0.058	0.022	J
591-78-6	2-Hexanone	0.066	0.34	0.066	0.021	U
124-48-1	Dibromochloromethane	0.026	0.081	0.026	0.011	U
106-93-4	1,2-Dibromoethane	0.028	0.087	0.028	0.010	U
123-86-4	n-Butyl Acetate	0.057	0.27	0.057	0.020	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: ODSVE-DUP1-Y12Q4

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P2302616-002

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Topacio Zavala

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Container ID: AS01289

Date Collected: 6/8/23

Date Received: 6/9/23

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Initial Pressure (psig): -0.17

Final Pressure (psig): 3.95

Container Dilution Factor: 1.28

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.085	0.15	0.085	0.033	U
127-18-4	Tetrachloroethene	2.2	0.10	0.032	0.013	
108-90-7	Chlorobenzene	0.044	0.15	0.044	0.020	U
100-41-4	Ethylbenzene	0.050	0.16	0.050	0.022	U
179601-23-1	m,p-Xylenes	0.097	0.32	0.097	0.041	U
75-25-2	Bromoform	0.040	0.067	0.040	0.014	U
100-42-5	Styrene	0.093	0.16	0.093	0.026	U
95-47-6	o-Xylene	0.031	0.16	0.050	0.023	J
111-84-2	n-Nonane	0.078	0.13	0.078	0.022	U
79-34-5	1,1,2,2-Tetrachloroethane	0.21	0.099	0.032	0.014	
98-82-8	Cumene	0.044	0.14	0.044	0.020	U
80-56-8	alpha-Pinene	0.039	0.25	0.039	0.019	U
103-65-1	n-Propylbenzene	0.044	0.14	0.044	0.020	U
622-96-8	4-Ethyltoluene	0.083	0.14	0.083	0.022	U
108-67-8	1,3,5-Trimethylbenzene	0.026	0.14	0.044	0.020	J
95-63-6	1,2,4-Trimethylbenzene	0.042	0.14	0.042	0.019	U
100-44-7	Benzyl Chloride	0.084	0.52	0.084	0.030	U
541-73-1	1,3-Dichlorobenzene	0.036	0.11	0.036	0.017	U
106-46-7	1,4-Dichlorobenzene	0.036	0.11	0.036	0.017	U
95-50-1	1,2-Dichlorobenzene	0.036	0.12	0.036	0.017	U
5989-27-5	d-Limonene	0.071	0.25	0.071	0.025	U
96-12-8	1,2-Dibromo-3-chloropropane	0.042	0.15	0.042	0.013	U
120-82-1	1,2,4-Trichlorobenzene	0.055	0.19	0.055	0.022	U
91-20-3	Naphthalene	0.076	0.13	0.076	0.032	U
87-68-3	Hexachlorobutadiene	0.037	0.064	0.037	0.013	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
115-07-1	Propene	0.19	0.31	0.19	0.076	U
75-71-8	Dichlorodifluoromethane (CFC 12)	0.065	0.11	0.065	0.018	U
74-87-3	Chloromethane	0.16	0.25	0.16	0.042	U
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	0.046	0.074	0.046	0.012	U
75-01-4	Vinyl Chloride	0.067	0.20	0.067	0.022	U
106-99-0	1,3-Butadiene	0.14	0.24	0.14	0.040	U
74-83-9	Bromomethane	0.044	0.13	0.044	0.019	U
75-00-3	Chloroethane	0.064	0.20	0.064	0.025	U
64-17-5	Ethanol	0.45	2.7	0.45	0.20	U
75-05-8	Acetonitrile	0.19	0.60	0.19	0.077	U
107-02-8	Acrolein	0.15	0.44	0.15	0.065	U
67-64-1	Acetone	1.1	2.2	1.1	0.51	U
75-69-4	Trichlorofluoromethane	0.028	0.093	0.028	0.014	U
67-63-0	2-Propanol (Isopropyl Alcohol)	0.25	0.42	0.25	0.090	U
107-13-1	Acrylonitrile	0.15	0.47	0.15	0.051	U
75-35-4	1,1-Dichloroethene	0.043	0.14	0.043	0.019	U
75-09-2	Methylene Chloride	0.089	0.15	0.089	0.043	U
107-05-1	3-Chloro-1-propene (Allyl Chloride)	0.054	0.17	0.054	0.023	U
76-13-1	Trichlorotrifluoroethane	0.022	0.070	0.022	0.0099	U
75-15-0	Carbon Disulfide	0.11	0.34	0.11	0.051	U
156-60-5	trans-1,2-Dichloroethene	0.043	0.14	0.043	0.019	U
75-34-3	1,1-Dichloroethane	0.042	0.13	0.042	0.019	U
1634-04-4	Methyl tert-Butyl Ether	0.044	0.15	0.044	0.017	U
108-05-4	Vinyl Acetate	0.77	1.4	0.77	0.34	U
78-93-3	2-Butanone (MEK)	0.11	0.35	0.11	0.037	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	0.043	0.13	0.043	0.019	U
141-78-6	Ethyl Acetate	0.17	0.58	0.17	0.078	U
110-54-3	n-Hexane	0.088	0.15	0.088	0.031	U
67-66-3	Chloroform	0.035	0.11	0.035	0.015	U
109-99-9	Tetrahydrofuran (THF)	0.068	0.34	0.068	0.023	U
107-06-2	1,2-Dichloroethane	0.042	0.13	0.042	0.015	U
71-55-6	1,1,1-Trichloroethane	0.029	0.097	0.029	0.012	U
71-43-2	Benzene	0.053	0.17	0.053	0.024	U
56-23-5	Carbon Tetrachloride	0.025	0.083	0.025	0.012	U
110-82-7	Cyclohexane	0.096	0.31	0.096	0.044	U
78-87-5	1,2-Dichloropropane	0.037	0.11	0.037	0.014	U
75-27-4	Bromodichloromethane	0.025	0.081	0.025	0.011	U
79-01-6	Trichloroethene	0.030	0.099	0.030	0.013	U
123-91-1	1,4-Dioxane	0.044	0.15	0.044	0.017	U
80-62-6	Methyl Methacrylate	0.15	0.27	0.15	0.046	U
142-82-5	n-Heptane	0.076	0.13	0.076	0.021	U
10061-01-5	cis-1,3-Dichloropropene	0.071	0.12	0.071	0.018	U
108-10-1	4-Methyl-2-pentanone	0.051	0.27	0.051	0.018	U
10061-02-6	trans-1,3-Dichloropropene	0.068	0.11	0.068	0.024	U
79-00-5	1,1,2-Trichloroethane	0.031	0.097	0.031	0.0099	U
108-88-3	Toluene	0.045	0.14	0.045	0.017	U
591-78-6	2-Hexanone	0.051	0.27	0.051	0.016	U
124-48-1	Dibromochloromethane	0.020	0.063	0.020	0.0082	U
106-93-4	1,2-Dibromoethane	0.022	0.068	0.022	0.0081	U
123-86-4	n-Butyl Acetate	0.044	0.21	0.044	0.015	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

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

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Method Blank

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-MB

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result ppbV	LOQ ppbV	LOD ppbV	MDL ppbV	Data Qualifier
111-65-9	n-Octane	0.066	0.12	0.066	0.026	U
127-18-4	Tetrachloroethene	0.025	0.078	0.025	0.010	U
108-90-7	Chlorobenzene	0.035	0.12	0.035	0.015	U
100-41-4	Ethylbenzene	0.039	0.12	0.039	0.017	U
179601-23-1	m,p-Xylenes	0.076	0.25	0.076	0.032	U
75-25-2	Bromoform	0.031	0.052	0.031	0.011	U
100-42-5	Styrene	0.073	0.12	0.073	0.020	U
95-47-6	o-Xylene	0.039	0.12	0.039	0.018	U
111-84-2	n-Nonane	0.061	0.10	0.061	0.017	U
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.077	0.025	0.011	U
98-82-8	Cumene	0.035	0.11	0.035	0.016	U
80-56-8	alpha-Pinene	0.031	0.20	0.031	0.015	U
103-65-1	n-Propylbenzene	0.035	0.11	0.035	0.016	U
622-96-8	4-Ethyltoluene	0.065	0.11	0.065	0.017	U
108-67-8	1,3,5-Trimethylbenzene	0.035	0.11	0.035	0.016	U
95-63-6	1,2,4-Trimethylbenzene	0.033	0.11	0.033	0.015	U
100-44-7	Benzyl Chloride	0.066	0.41	0.066	0.023	U
541-73-1	1,3-Dichlorobenzene	0.028	0.088	0.028	0.013	U
106-46-7	1,4-Dichlorobenzene	0.028	0.088	0.028	0.014	U
95-50-1	1,2-Dichlorobenzene	0.028	0.090	0.028	0.013	U
5989-27-5	d-Limonene	0.056	0.20	0.056	0.020	U
96-12-8	1,2-Dibromo-3-chloropropane	0.033	0.11	0.033	0.010	U
120-82-1	1,2,4-Trichlorobenzene	0.043	0.15	0.043	0.018	U
91-20-3	Naphthalene	0.059	0.10	0.059	0.025	U
87-68-3	Hexachlorobutadiene	0.029	0.050	0.029	0.010	U

U = Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

LOQ = Limit of Quantitation - 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: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Date(s) Collected: 6/8/23
Date(s) Received: 6/9/23
Date(s) Analyzed: 6/26/23

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		Percent Recovered	Percent Recovered	Percent Recovered		
Method Blank	P230626-MB	99	99	97	70-130	
Lab Control Sample	P230626-LCS	98	101	100	70-130	
Duplicate Lab Control Sample	P230626-DLCS	97	99	101	70-130	
ODSVE-EFF-Y12Q4	P2302616-001	96	100	100	70-130	
ODSVE-DUP1-Y12Q4	P2302616-002	99	99	100	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 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
115-07-1	Propene	123	114	111	93	90	57-136	3	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	42.9	38.5	37.4	90	87	59-128	3	25	
74-87-3	Chloromethane	102	102	99.5	100	98	59-132	2	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	30.6	26.3	26.5	86	87	63-121	1	25	
75-01-4	Vinyl Chloride	82.2	76.5	74.7	93	91	64-127	2	25	
106-99-0	1,3-Butadiene	95.0	92.9	91.5	98	96	66-134	2	25	
74-83-9	Bromomethane	54.1	52.2	51.2	96	95	63-134	1	25	
75-00-3	Chloroethane	80.4	78.7	76.3	98	95	63-127	3	25	
64-17-5	Ethanol	584	532	522	91	89	59-125	2	25	
75-05-8	Acetonitrile	128	113	110	88	86	63-132	2	25	
107-02-8	Acrolein	192	198	194	103	101	62-126	2	25	
67-64-1	Acetone	447	421	411	94	92	58-128	2	25	
75-69-4	Trichlorofluoromethane	37.4	32.8	31.9	88	85	62-126	3	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	168	171	167	102	99	52-125	3	25	
107-13-1	Acrylonitrile	193	192	189	99	98	71-137	1	25	
75-35-4	1,1-Dichloroethene	51.5	51.7	50.4	100	98	61-133	2	25	
75-09-2	Methylene Chloride	58.7	57.2	56.3	97	96	62-115	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	67.8	64.2	62.3	95	92	71-131	3	25	
76-13-1	Trichlorotrifluoroethane	27.4	25.3	24.3	92	89	66-126	3	25	
75-15-0	Carbon Disulfide	138	126	123	91	89	57-134	2	25	
156-60-5	trans-1,2-Dichloroethene	54.5	56.3	54.5	103	100	67-124	3	25	
75-34-3	1,1-Dichloroethane	53.4	51.5	49.8	96	93	68-126	3	25	
1634-04-4	Methyl tert-Butyl Ether	59.9	59.9	57.8	100	96	66-126	4	25	
108-05-4	Vinyl Acetate	313	373	368	119	118	56-139	0.8	25	
78-93-3	2-Butanone (MEK)	140	145	141	104	101	67-130	3	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 2 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
156-59-2	cis-1,2-Dichloroethene	54.0	53.1	52.1	98	96	70-121	2	25	
141-78-6	Ethyl Acetate	110	98.4	96.5	89	88	65-128	1	25	
110-54-3	n-Hexane	60.2	60.3	58.2	100	97	63-120	3	25	
67-66-3	Chloroform	44.2	40.3	39.2	91	89	68-123	2	25	
109-99-9	Tetrahydrofuran (THF)	136	125	123	92	90	64-123	2	25	
107-06-2	1,2-Dichloroethane	50.4	48.7	47.8	97	95	65-128	2	25	
71-55-6	1,1,1-Trichloroethane	38.5	34.8	34.4	90	89	68-125	1	25	
71-43-2	Benzene	63.9	64.0	63.6	100	100	69-119	0	25	
56-23-5	Carbon Tetrachloride	33.4	32.2	32.0	96	96	68-132	0	25	
110-82-7	Cyclohexane	124	121	120	98	97	70-117	1	25	
78-87-5	1,2-Dichloropropane	46.3	45.3	44.9	98	97	69-123	1	25	
75-27-4	Bromodichloromethane	32.3	30.3	29.9	94	93	72-128	1	25	
79-01-6	Trichloroethene	39.5	35.9	35.6	91	90	71-123	1	25	
123-91-1	1,4-Dioxane	58.9	56.9	57.0	97	97	71-122	0	25	
80-62-6	Methyl Methacrylate	105	103	103	98	98	70-128	0	25	
142-82-5	n-Heptane	52.2	53.3	53.1	102	102	69-123	0	25	
10061-01-5	cis-1,3-Dichloropropene	46.7	51.2	50.5	110	108	70-128	2	25	
108-10-1	4-Methyl-2-pentanone	104	111	112	107	108	67-130	0.9	25	
10061-02-6	trans-1,3-Dichloropropene	43.2	42.1	41.6	97	96	75-133	1	25	
79-00-5	1,1,2-Trichloroethane	39.6	36.2	35.9	91	91	73-119	0	25	
108-88-3	Toluene	56.8	52.6	51.7	93	91	66-119	2	25	
591-78-6	2-Hexanone	104	105	104	101	100	62-128	1	25	
124-48-1	Dibromochloromethane	25.1	23.2	22.8	92	91	70-130	1	25	
106-93-4	1,2-Dibromoethane	26.6	24.7	24.2	93	91	74-122	2	25	
123-86-4	n-Butyl Acetate	89.3	92.7	91.2	104	102	65-134	2	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 3 of 3

Client: KOMAN Government Solutions, LLC

Client Sample ID: Duplicate Lab Control Sample

Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

ALS Sample ID: P230626-DLCS

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13

Analyst: Wida Ang

Sampling Media: 6.0 L Silonite Canister

Test Notes:

Date Collected: NA

Date Received: NA

Date Analyzed: 6/26/23

Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount	Result		% Recovery		DOD	RPD	RPD	Data
		LCS / DLCS ppbV	LCS ppbV	DLCS ppbV	LCS	DLCS	Acceptance Limits			
111-65-9	n-Octane	45.4	45.5	44.8	100	99	69-121	1	25	
127-18-4	Tetrachloroethene	31.6	28.1	27.3	89	86	66-124	3	25	
108-90-7	Chlorobenzene	46.9	41.1	40.3	88	86	70-119	2	25	
100-41-4	Ethylbenzene	50.2	47.5	46.9	95	93	70-124	2	25	
179601-23-1	m,p-Xylenes	99.0	93.3	92.2	94	93	61-134	1	25	
75-25-2	Bromoform	21.1	19.5	19.2	92	91	66-139	1	25	
100-42-5	Styrene	50.3	49.5	49.3	98	98	73-127	0	25	
95-47-6	o-Xylene	49.7	47.5	46.7	96	94	67-125	2	25	
111-84-2	n-Nonane	40.8	42.9	42.2	105	103	63-128	2	25	
79-34-5	1,1,2,2-Tetrachloroethane	31.5	30.2	29.9	96	95	65-127	1	25	
98-82-8	Cumene	43.1	40.8	40.1	95	93	68-124	2	25	
80-56-8	alpha-Pinene	38.8	40.5	38.8	104	100	62-136	4	25	
103-65-1	n-Propylbenzene	43.1	41.3	40.8	96	95	69-123	1	25	
622-96-8	4-Ethyltoluene	44.4	42.7	41.9	96	94	67-129	2	25	
108-67-8	1,3,5-Trimethylbenzene	44.0	42.2	41.8	96	95	67-130	1	25	
95-63-6	1,2,4-Trimethylbenzene	43.1	42.2	41.5	98	96	66-132	2	25	
100-44-7	Benzyl Chloride	82.7	80.5	79.5	97	96	50-147	1	25	
541-73-1	1,3-Dichlorobenzene	35.6	30.1	29.6	85	83	65-130	2	25	
106-46-7	1,4-Dichlorobenzene	35.6	29.2	28.6	82	80	60-131	2	25	
95-50-1	1,2-Dichlorobenzene	35.3	31.2	30.6	88	87	63-129	1	25	
5989-27-5	d-Limonene	37.3	40.5	40.0	109	107	65-136	2	25	
96-12-8	1,2-Dibromo-3-chloropropane	43.1	40.9	40.4	95	94	73-133	1	25	
120-82-1	1,2,4-Trichlorobenzene	59.3	48.5	46.6	82	79	55-142	4	25	
91-20-3	Naphthalene	42.0	34.7	32.4	83	77	57-138	8	25	
87-68-3	Hexachlorobutadiene	20.4	17.1	15.9	84	78	56-138	7	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: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

Method Blank Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 06262303.D
Date Analyzed: 6/26/23
Time Analyzed: 06:53

Client Sample ID	ALS Sample ID	Lab File ID	Time Analyzed
Lab Control Sample	P230626-LCS	06262304.D	07:29
Duplicate Lab Control Sample	P230626-DLCS	06262305.D	08:05
ODSVE-EFF-Y12Q4	P2302616-001	06262308.D	10:47
ODSVE-DUP1-Y12Q4	P2302616-002	06262309.D	11:24

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: KOMAN Government Solutions, LLC
Client Project ID: DDMT Memphis / 10A023

ALS Project ID: P2302616

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5975Binert/6890N/MS13
Analyst: Wida Ang
Sampling Media: 6.0 L Silonite Canister(s)
Test Notes:

Lab File ID: 06262301.D
Date Analyzed: 6/26/23
Time Analyzed: 05:03

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA	#	RT	#	AREA	#
24 Hour Standard	227662	7.34	1009466	9.39	214042	14.88
Upper Limit	318727	7.67	1413252	9.72	299659	15.21
Lower Limit	136597	7.01	605680	9.06	128425	14.55

Client Sample ID						
01	Method Blank	222638	7.30	990660	9.36	212522 14.87
02	Lab Control Sample	227819	7.34	1001742	9.39	212559 14.88
03	Duplicate Lab Control Sample	235000	7.34	1016939	9.39	217456 14.88
04	ODSVE-EFF-Y12Q4	233444	7.32	1011462	9.37	216411 14.87
05	ODSVE-DUP1-Y12Q4	217082	7.31	957326	9.37	205876 14.87
06						
07						
08						
09						
10						
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.

Data File : I:\MS13\DATA\2023_06\26\06262308.D
 Acq On : 26 Jun 2023 10:47
 Sample : P2302616-001 (1000mL)
 Misc : S37-04102301

Vial: 2
 Operator: TZ
 Inst : MS13

Tz 6/26/23

Quant Time: Jun 26 14:43:10 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	233444	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.37	114	1011462	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	216411	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	428876	12.044	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.32%
57) Toluene-d8 (SS2)	12.47	98	1153237	12.474	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.76%
73) Bromofluorobenzene (SS3)	16.85	174	491881	12.498	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.00%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	3.46	85	99083	2.283	ng	99
4) Chloromethane	3.60	50	1359	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	1645	0.083	ng	91
6) Vinyl Chloride	3.80	62	5452	0.214	ng	98
7) 1,3-Butadiene	3.87	54	167	N.D.		
8) Bromomethane	4.11	94	468	N.D.		
9) Chloroethane	4.25	64	237	N.D.		
10) Ethanol	4.38	45	61385	4.079	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.65	56	7365	0.627	ng	91
13) Acetone	4.74	58	72432	5.620	ng	# 77
14) Trichlorofluoromethane	4.85	101	47051	1.166	ng	100
15) 2-Propanol (Isopropanol)	4.94	45	29252	0.548	ng	99
16) Acrylonitrile	5.11	53	454	N.D.		
17) 1,1-Dichloroethene	5.35	96	19365	1.078	ng	92
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	5.44	84	2091	0.110	ng	90
20) 3-Chloro-1-propene (Al...	5.54	41	186	N.D.		
21) Trichlorotrifluoroethane	5.66	151	424682	21.984	ng	99
22) Carbon Disulfide	5.69	76	156926	2.146	ng	80
23) trans-1,2-Dichloroethene	6.22	61	45923	1.676	ng	96
24) 1,1-Dichloroethane	6.40	63	21996	0.648	ng	100
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
26) Vinyl Acetate	6.52	86	4652	1.469	ng	# 61
27) 2-Butanone (MEK)	6.76	72	11943	1.078	ng	92
28) cis-1,2-Dichloroethene	7.15	61	2056369	76.390	ng	98
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	7.37	61	6213m	0.808	ng	
31) n-Hexane	7.37	57	3455	0.120	ng	# 97
32) Chloroform	7.43	83	1005064	27.232	ng	100
34) Tetrahydrofuran (THF)	7.87	72	1199	0.101	ng	# 68
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.17	62	1478	N.D.		
38) 1,1,1-Trichloroethane	8.47	97	22068	0.627	ng	100
39) Isopropyl Acetate	9.37	61	31747	No Calib		
40) 1-Butanol	8.87	56	43066	No Calib	#	
41) Benzene	8.97	78	9762	0.135	ng	100
42) Carbon Tetrachloride	9.14	117	70251	2.261	ng	99
43) Cyclohexane	9.28	84	4911	0.191	ng	95
44) tert-Amyl Methyl Ether	9.67	73	2168	N.D.		
45) 1,2-Dichloropropane	9.92	63	486	N.D.		
46) Bromodichloromethane	10.14	83	1630	0.056	ng	76
47) Trichloroethene	10.21	130	1716697	77.598	ng	100
48) 1,4-Dioxane	0.00	88	0	N.D.	d	
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2023_06\26\06262308.D
 Acq On : 26 Jun 2023 10:47
 Sample : P2302616-001 (1000mL)
 Misc : S37-04102301

Vial: 2
 Operator: TZ
 Inst : MS13

Quant Time: Jun 26 14:43:10 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	2019	0.122	ng	# 78
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.40	58	882	0.058	ng	# 13
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	12.22	97	2015	0.106	ng	91
58) Toluene	12.61	91	17852	0.226	ng	100
59) 2-Hexanone	12.97	43	9771	0.235	ng	# 61
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	13.44	107	118	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.	d	
63) n-Octane	13.95	57	1647	0.108	ng	# 70
64) Tetrachloroethene	14.06	166	254721	9.863	ng	100
65) Chlorobenzene	14.92	112	798	N.D.		
66) Ethylbenzene	15.45	91	3054	N.D.		
67) m- & p-Xylenes	15.66	91	7915	0.107	ng	94
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.13	104	905	N.D.		
70) o-Xylene	16.27	91	8509	0.117	ng	98
71) n-Nonane	16.63	43	1999	0.057	ng	87
72) 1,1,2,2-Tetrachloroethane	16.24	83	32848	0.999	ng	96
74) Cumene	17.06	105	901	N.D.		
75) alpha-Pinene	17.56	93	145	N.D.		
76) n-Propylbenzene	17.73	91	1989	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.94	105	2575	N.D.		
79) 1,3,5-Trimethylbenzene	18.06	105	6116	0.082	ng	96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	3329	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	1690	N.D.		
85) 1,3-Dichlorobenzene	18.78	146	729	N.D.		
86) 1,4-Dichlorobenzene	18.86	146	1270	N.D.		
87) sec-Butylbenzene	18.96	105	884	N.D.		
88) 4-Isopropyltoluene (p-...	19.18	119	1913	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.31	146	395	N.D.		
91) d-Limonene	19.36	68	1221	0.050	ng	91
92) 1,2-Dibromo-3-Chloropr...	19.86	157	337	N.D.		
93) n-Undecane	18.22	58	1510	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	2605	0.078	ng	95
95) Naphthalene	21.55	128	8633	0.110	ng	96
96) n-Dodecane	19.13	58	147	No Calib	#	
97) Hexachlorobutadiene	21.99	225	1057	N.D.		
98) Cyclohexanone	15.65	55	1363	No Calib	#	
99) tert-Butylbenzene	18.60	119	1259	N.D.		
100) n-Butylbenzene	19.71	91	2596	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:\MS13\DATA\2023_06\26\06262308.D
Acq On : 26 Jun 2023 10:47
Sample : P2302616-001 (1000mL)
Misc : S37-04102301

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:43:10 2023

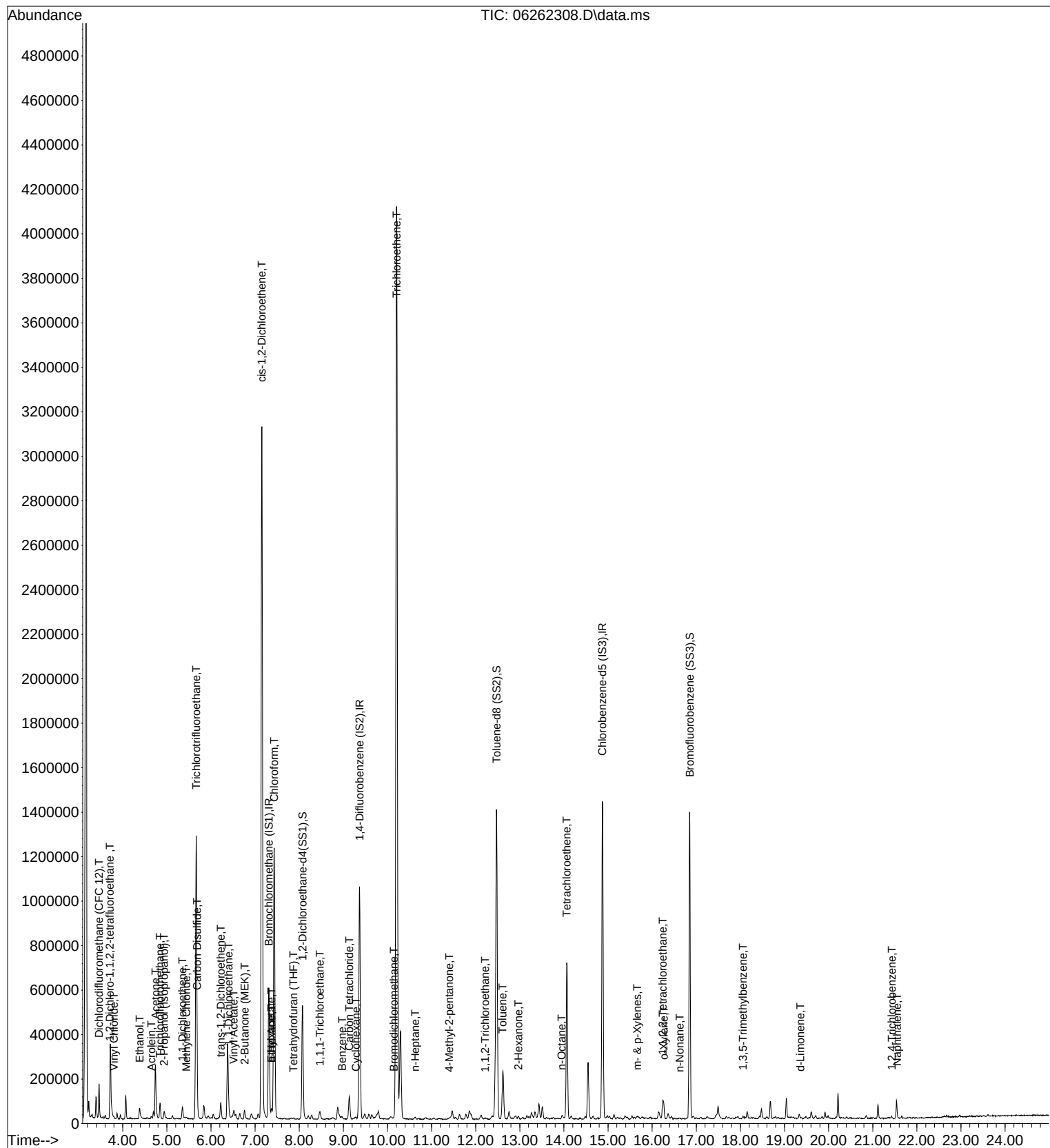
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



T2 6/26/23

Data File : I:\MS13\DATA\2023_06\26\06262308.D
 Acq On : 26 Jun 2023 10:47
 Sample : P2302616-001 (1000mL)
 Misc : S37-04102301

Vial: 2
 Operator: TZ
 Inst : MS13

Quant Time: Jun 26 14:43:10 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	233444	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.37	114	1011462	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	216411	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	428876	12.044	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.32%
57) Toluene-d8 (SS2)	12.47	98	1153237	12.474	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.76%
73) Bromofluorobenzene (SS3)	16.85	174	491881	12.498	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.00%

Target Compounds

						Qvalue
3) Dichlorodifluoromethan...	3.46	85	99083	2.283	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	1645	0.083	ng	91
6) Vinyl Chloride	3.80	62	5452	0.214	ng	98
10) Ethanol	4.38	45	61385	4.079	ng	99
12) Acrolein	4.65	56	7365	0.627	ng	91
13) Acetone	4.74	58	72432	5.620	ng	# 77
14) Trichlorofluoromethane	4.85	101	47051	1.166	ng	100
15) 2-Propanol (Isopropanol)	4.94	45	29252	0.548	ng	99
17) 1,1-Dichloroethene	5.35	96	19365	1.078	ng	92
19) Methylene Chloride	5.44	84	2091	0.110	ng	90
21) Trichlorotrifluoroethane	5.66	151	424682	21.984	ng	99
22) Carbon Disulfide	5.69	76	156926	2.146	ng	80
23) trans-1,2-Dichloroethene	6.22	61	45923	1.676	ng	96
24) 1,1-Dichloroethane	6.40	63	21996	0.648	ng	100
26) Vinyl Acetate	6.52	86	4652	1.469	ng	# 61
27) 2-Butanone (MEK)	6.76	72	11943	1.078	ng	92
28) cis-1,2-Dichloroethene	7.15	61	2056369	76.390	ng	98
30) Ethyl Acetate	7.37	61	6213m	0.808	ng	
31) n-Hexane	7.37	57	3455	0.120	ng	# 97
32) Chloroform	7.43	83	1005064	27.232	ng	100
34) Tetrahydrofuran (THF)	7.87	72	1199	0.101	ng	# 68
38) 1,1,1-Trichloroethane	8.47	97	22068	0.627	ng	100
41) Benzene	8.97	78	9762	0.135	ng	100
42) Carbon Tetrachloride	9.14	117	70251	2.261	ng	99
43) Cyclohexane	9.28	84	4911	0.191	ng	95
46) Bromodichloromethane	10.14	83	1630	0.056	ng	76
47) Trichloroethene	10.21	130	1716697	77.598	ng	100
51) n-Heptane	10.63	71	2019	0.122	ng	# 78
53) 4-Methyl-2-pentanone	11.40	58	882	0.058	ng	# 13
55) 1,1,2-Trichloroethane	12.22	97	2015	0.106	ng	91
58) Toluene	12.61	91	17852	0.226	ng	100
59) 2-Hexanone	12.97	43	9771	0.235	ng	# 61
63) n-Octane	13.95	57	1647	0.108	ng	# 70
64) Tetrachloroethene	14.06	166	254721	9.863	ng	100
67) m- & p-Xylenes	15.66	91	7915	0.107	ng	94
70) o-Xylene	16.27	91	8509	0.117	ng	98
71) n-Nonane	16.63	43	1999	0.057	ng	87
72) 1,1,2,2-Tetrachloroethane	16.24	83	32848	0.999	ng	96
79) 1,3,5-Trimethylbenzene	18.06	105	6116	0.082	ng	96
91) d-Limonene	19.36	68	1221	0.050	ng	91
94) 1,2,4-Trichlorobenzene	21.43	180	2605	0.078	ng	95
95) Naphthalene	21.55	128	8633	0.110	ng	96

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

Data File : I:\MS13\DATA\2023_06\26\06262308.D
Acq On : 26 Jun 2023 10:47
Sample : P2302616-001 (1000mL)
Misc : S37-04102301

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:43:10 2023

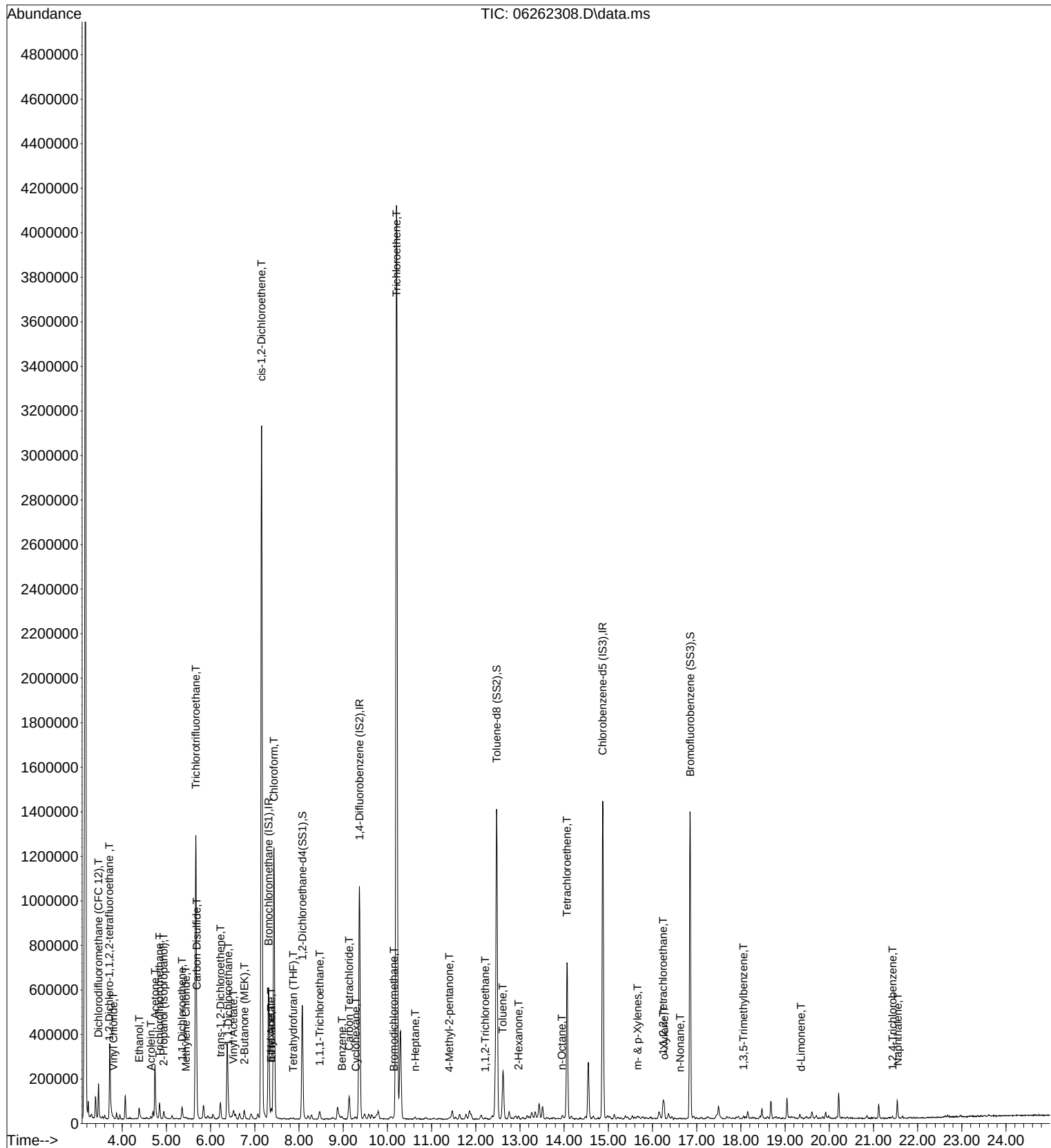
Quant Method : I:\MS13\METHODS\R13062323.M

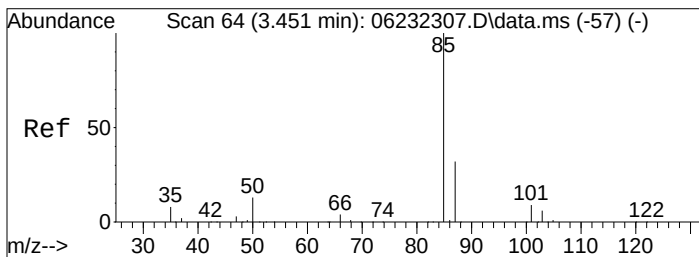
Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

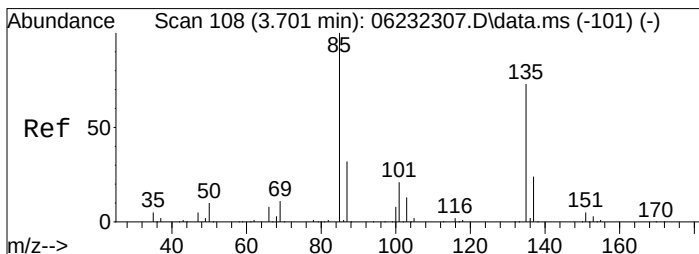
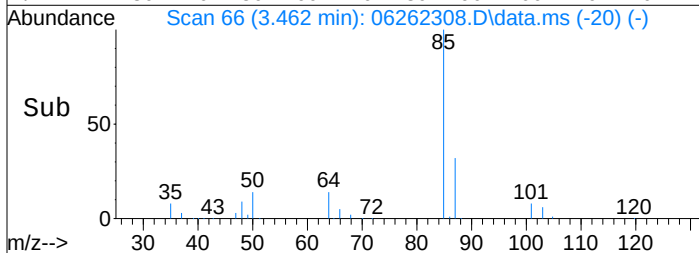
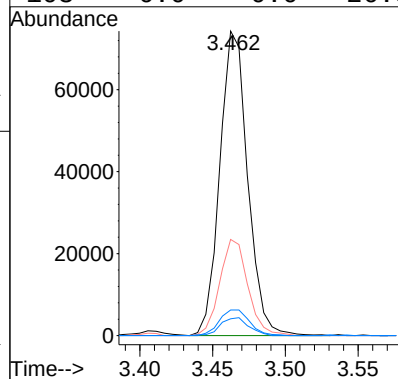
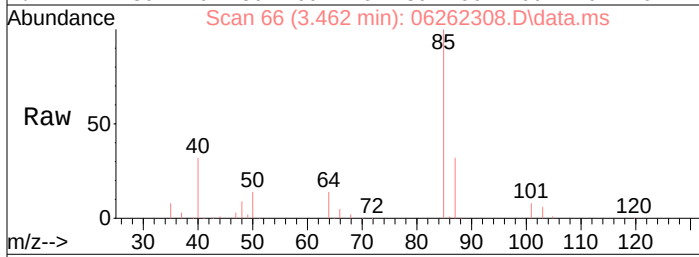
DataAcq Meth:T015B.M





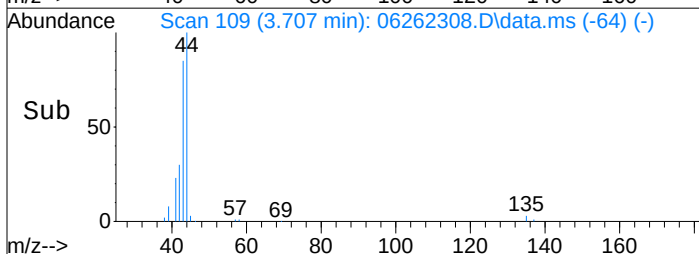
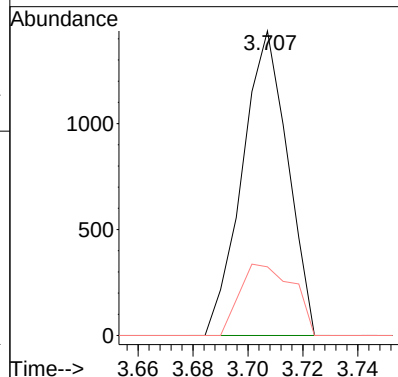
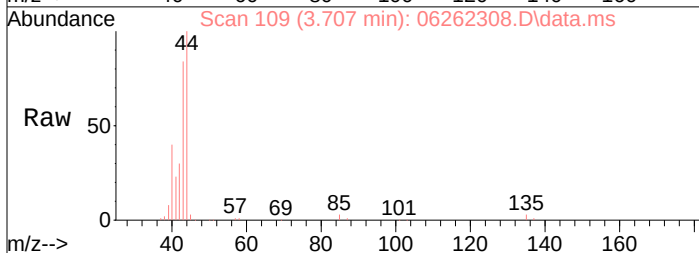
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.28 ng
 RT: 3.46 min Scan# 66
 Delta R.T. 0.011 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

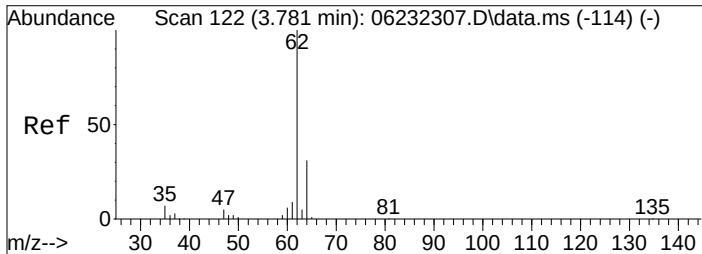
Tgt Ion: 85 Resp: 99083
 Ion Ratio Lower Upper
 85 100
 87 31.8 12.4 52.4
 101 9.2 0.0 29.5
 103 6.0 0.0 26.3



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.08 ng
 RT: 3.71 min Scan# 109
 Delta R.T. 0.006 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

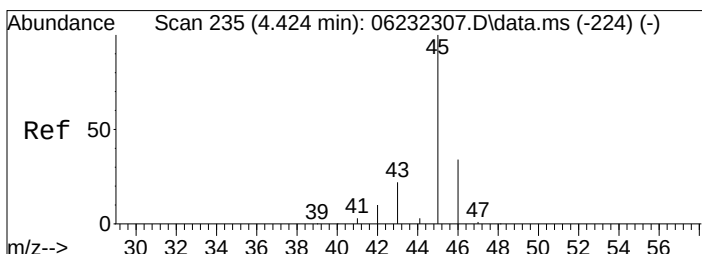
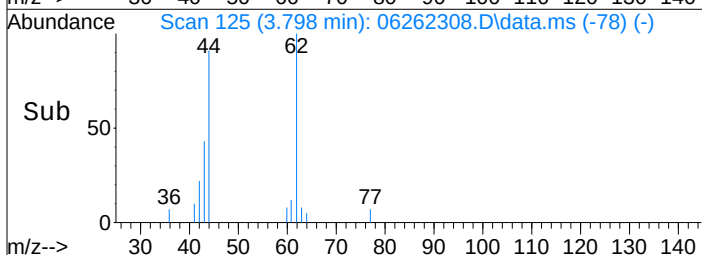
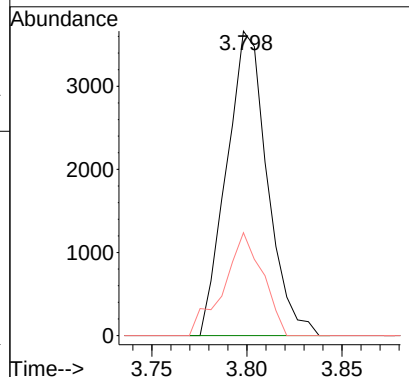
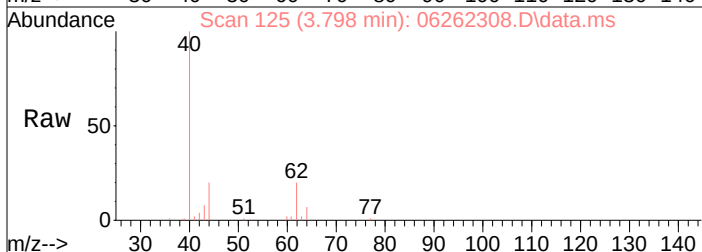
Tgt Ion: 135 Resp: 1645
 Ion Ratio Lower Upper
 135 100
 137 27.5 12.3 52.3





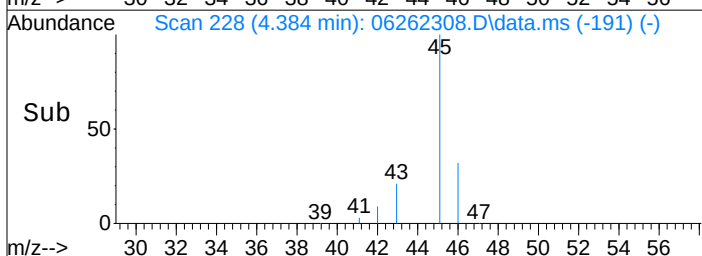
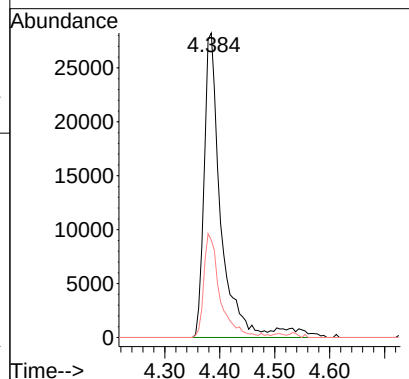
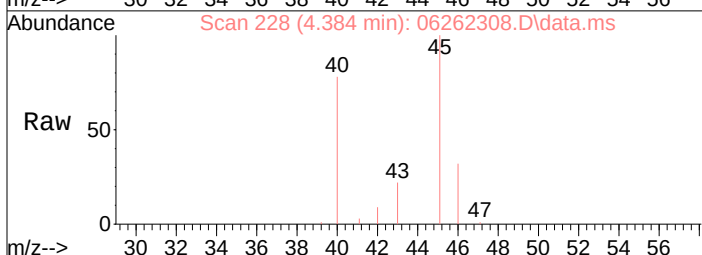
#6
 Vinyl Chloride
 Concen: 0.21 ng
 RT: 3.80 min Scan# 125
 Delta R.T. 0.017 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

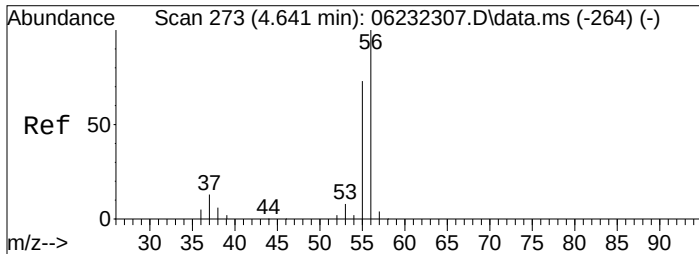
Tgt Ion:	62	Resp:	5452
Ion Ratio	Lower	Upper	
62	100		
64	32.4	11.5	51.5



#10
 Ethanol
 Concen: 4.08 ng
 RT: 4.38 min Scan# 228
 Delta R.T. -0.040 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

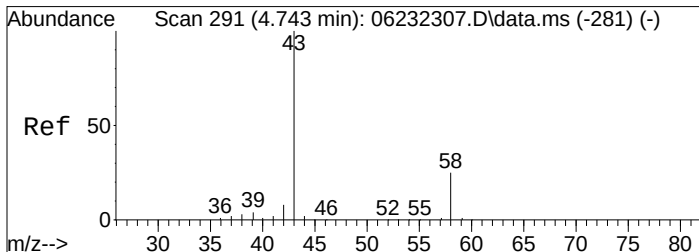
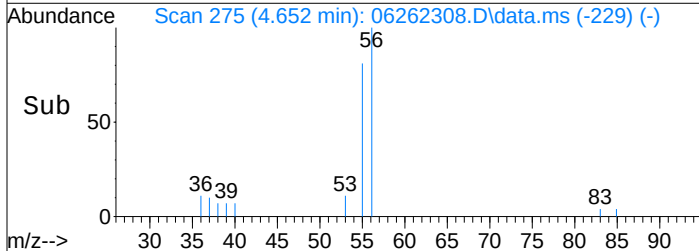
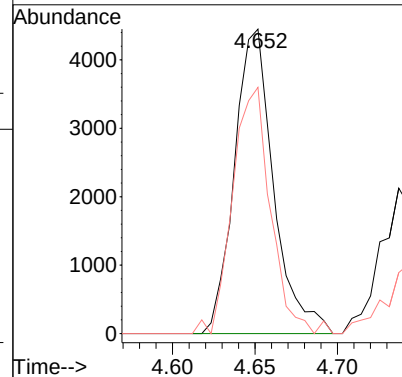
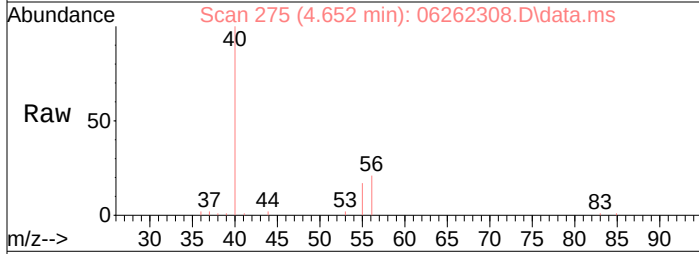
Tgt Ion:	45	Resp:	61385
Ion Ratio	Lower	Upper	
45	100		
46	33.9	13.1	53.1





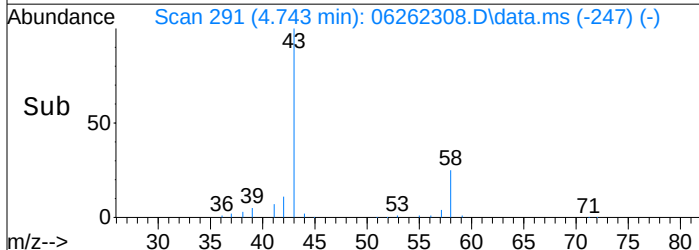
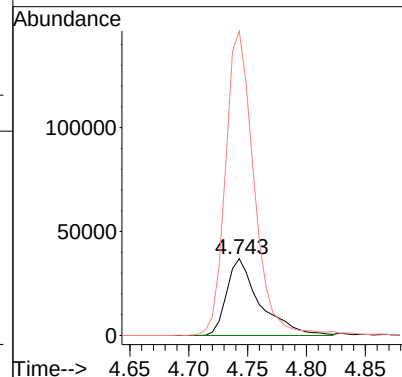
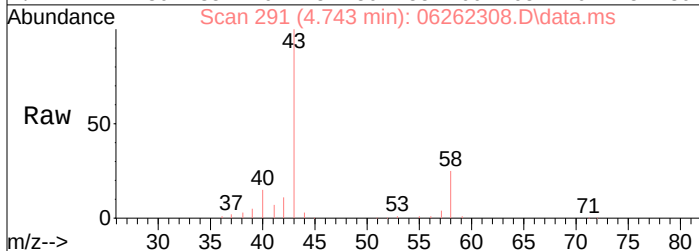
#12
Acrolein
Concen: 0.63 ng
RT: 4.65 min Scan# 275
Delta R.T. 0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

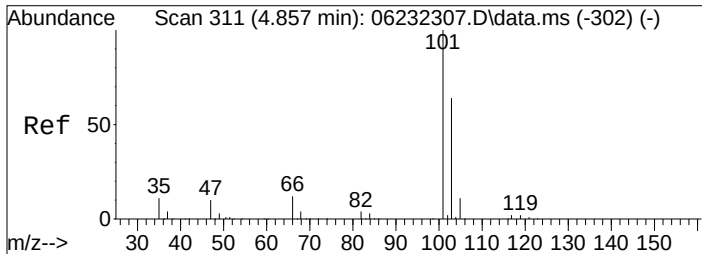
Tgt Ion: 56 Resp: 7365
Ion Ratio Lower Upper
56 100
55 78.4 51.3 91.3



#13
Acetone
Concen: 5.62 ng
RT: 4.74 min Scan# 291
Delta R.T. -0.000 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

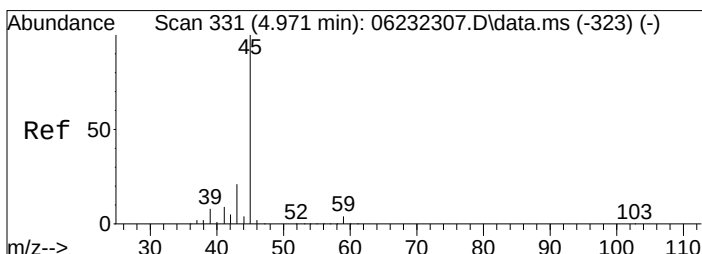
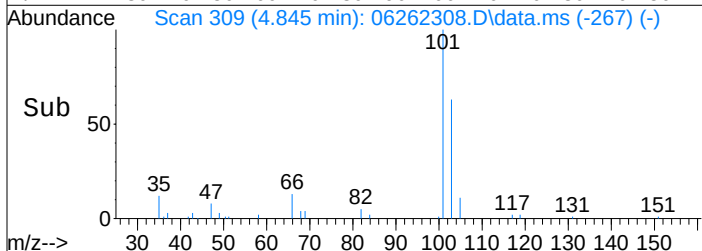
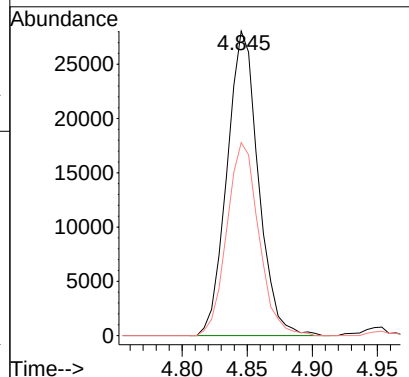
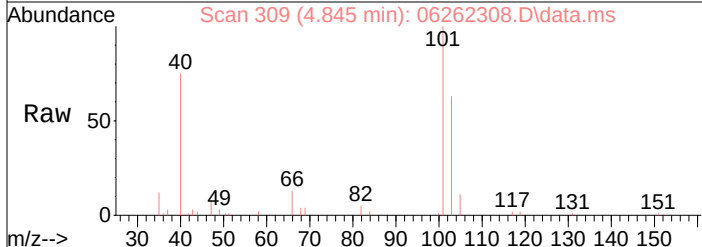
Tgt Ion: 58 Resp: 72432
Ion Ratio Lower Upper
58 100
43 344.1 368.8 428.8#





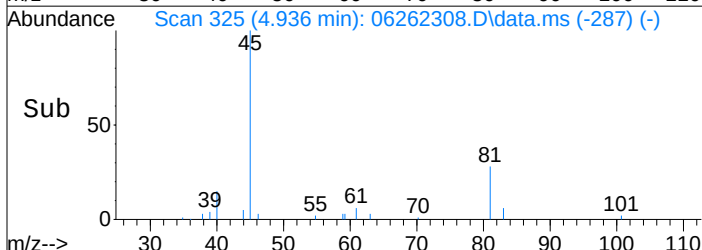
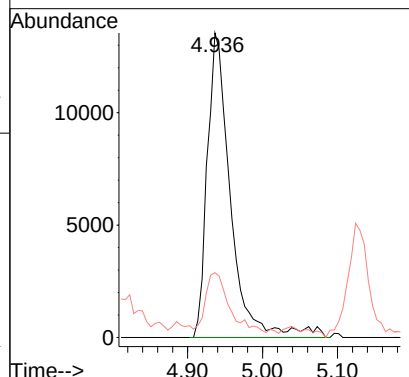
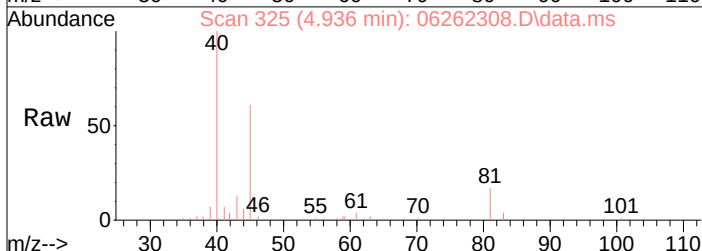
#14
 Trichlorofluoromethane
 Concen: 1.17 ng
 RT: 4.85 min Scan# 309
 Delta R.T. -0.011 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

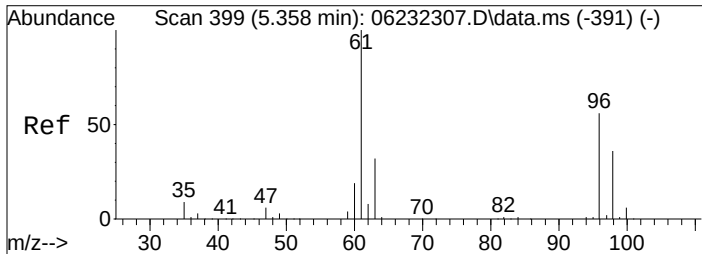
Tgt Ion:	101	Resp:	47051
Ion Ratio	Lower	Upper	
101	100		
103	64.5	44.7	84.7



#15
 2-Propanol (Isopropanol)
 Concen: 0.55 ng
 RT: 4.94 min Scan# 325
 Delta R.T. -0.034 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

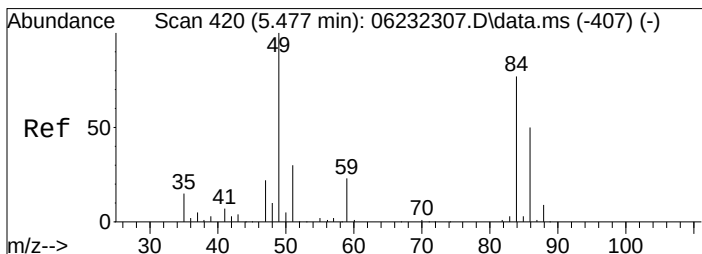
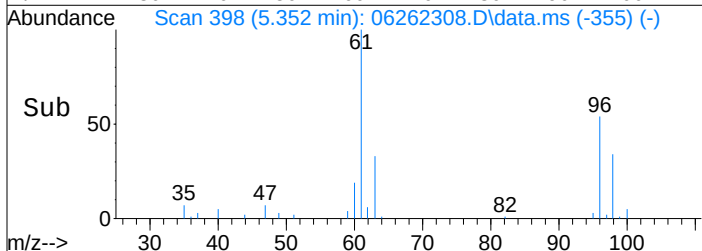
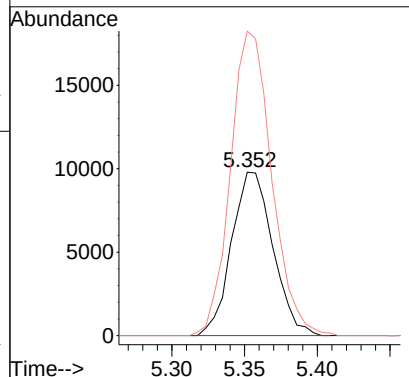
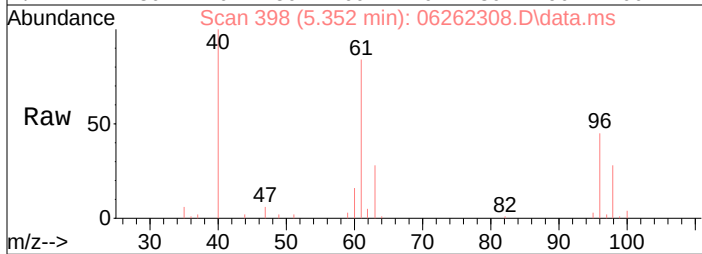
Tgt Ion:	45	Resp:	29252
Ion Ratio	Lower	Upper	
45	100		
43	21.0	1.3	41.3





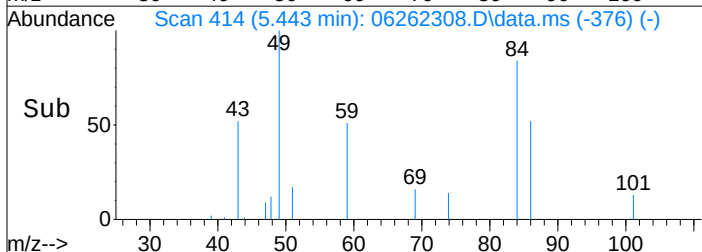
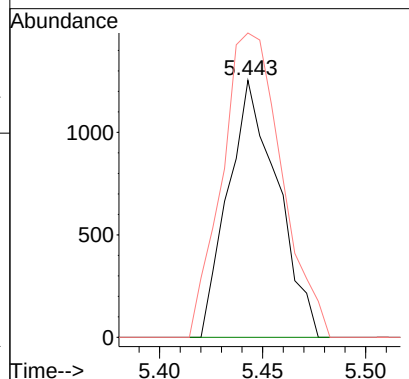
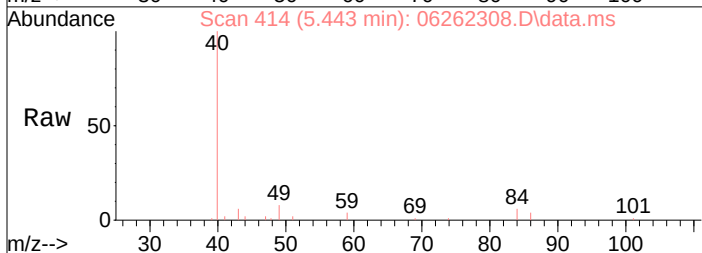
#17
 1,1-Dichloroethene
 Concen: 1.08 ng
 RT: 5.35 min Scan# 398
 Delta R.T. -0.006 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

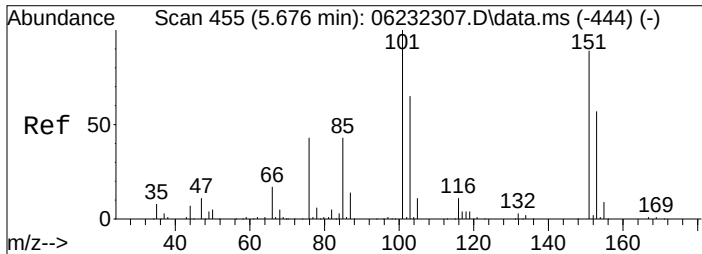
Tgt Ion:	96	Resp:	19365
Ion Ratio	Lower	Upper	
96	100		
61	186.0	155.0	195.0



#19
 Methylene Chloride
 Concen: 0.11 ng
 RT: 5.44 min Scan# 414
 Delta R.T. -0.034 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

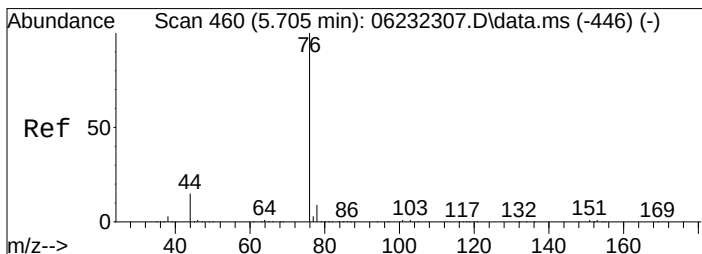
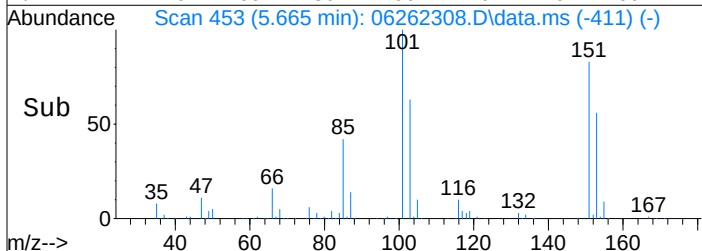
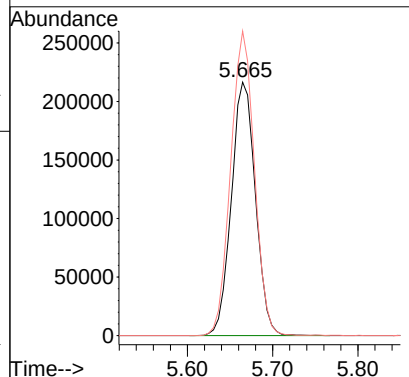
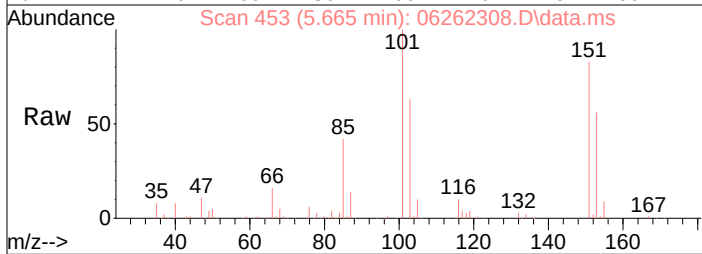
Tgt Ion:	84	Resp:	2091
Ion Ratio	Lower	Upper	
84	100		
49	143.5	107.0	157.0





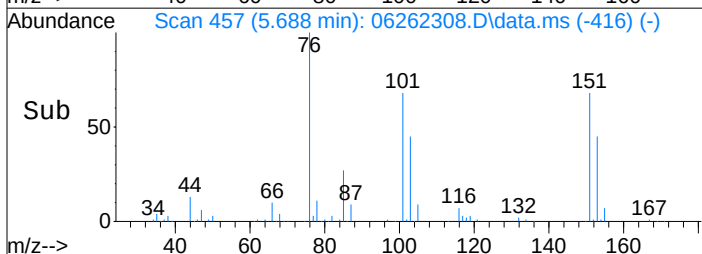
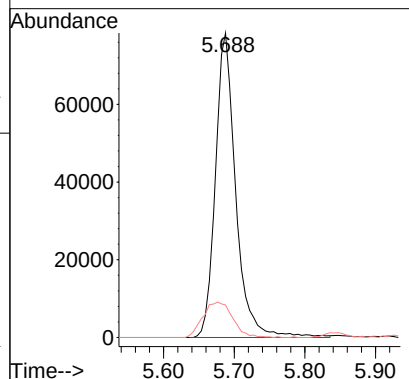
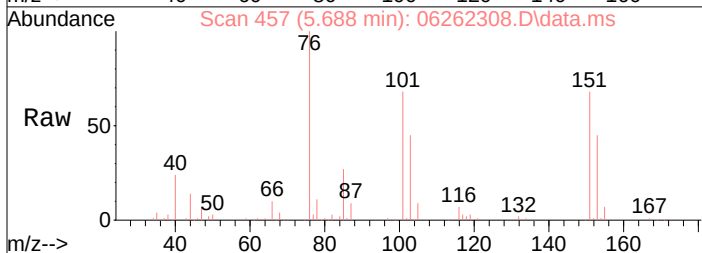
#21
 Trichlorotrifluoroethane
 Concen: 21.98 ng
 RT: 5.66 min Scan# 453
 Delta R.T. -0.011 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

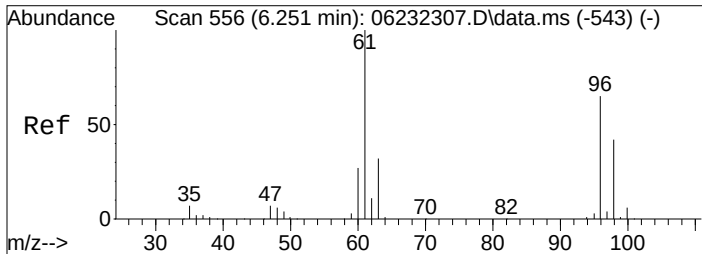
Tgt Ion	151	Resp	424682
Ion Ratio	Lower	Upper	
151	100		
101	118.4	96.8	136.8



#22
 Carbon Disulfide
 Concen: 2.15 ng
 RT: 5.69 min Scan# 457
 Delta R.T. -0.017 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

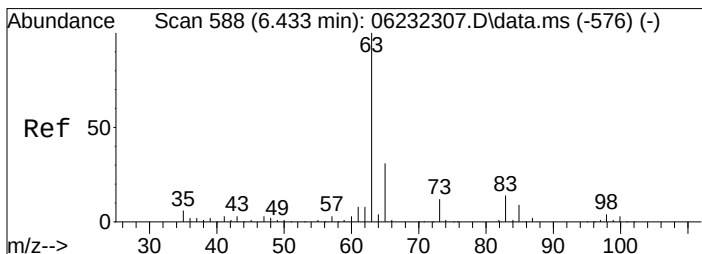
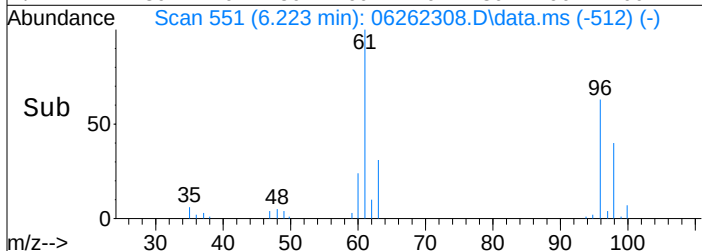
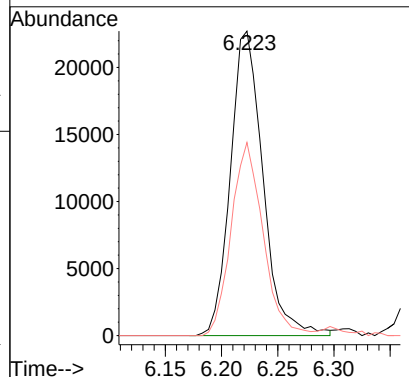
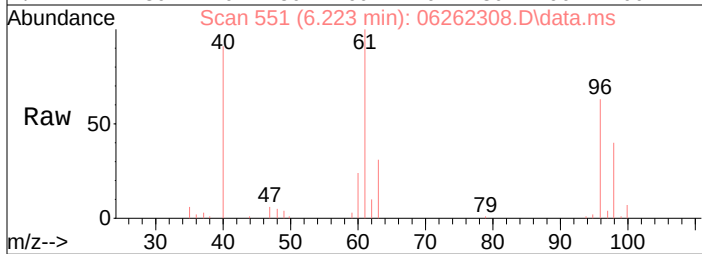
Tgt Ion	76	Resp	156926
Ion Ratio	Lower	Upper	
76	100		
78	16.9	0.0	29.5





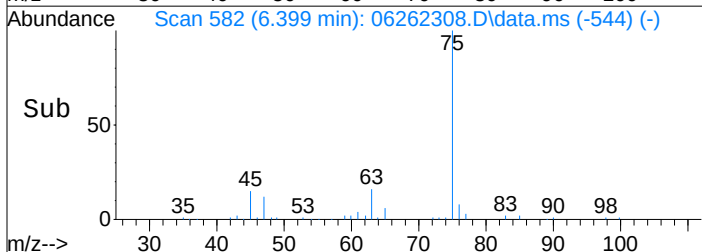
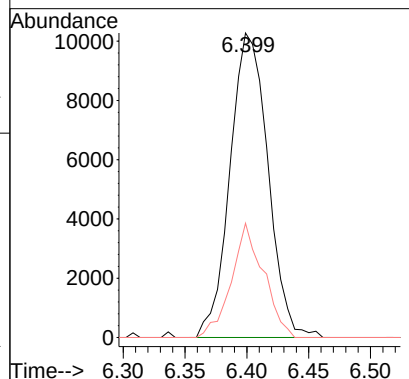
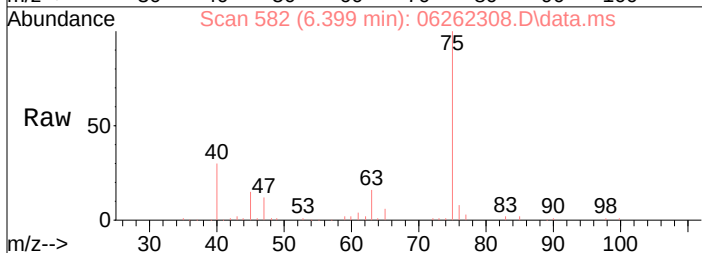
#23
trans-1,2-Dichloroethene
Concen: 1.68 ng
RT: 6.22 min Scan# 551
Delta R.T. -0.029 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

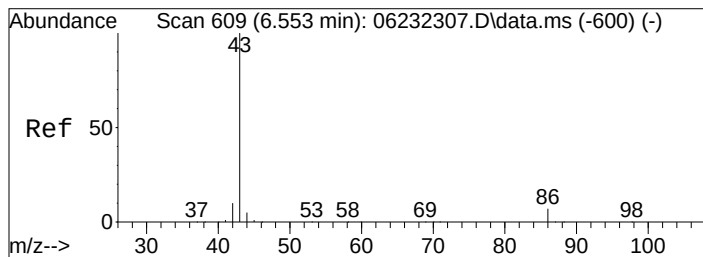
Tgt Ion:	61	Resp:	45923
Ion Ratio	Lower	Upper	
61	100		
96	62.0	45.3	85.3



#24
1,1-Dichloroethane
Concen: 0.65 ng
RT: 6.40 min Scan# 582
Delta R.T. -0.034 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

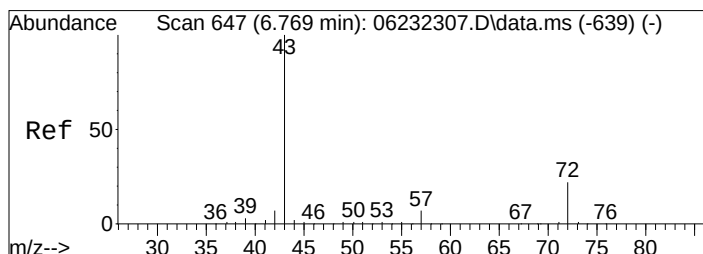
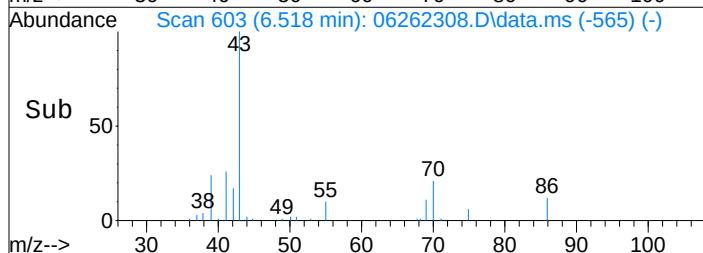
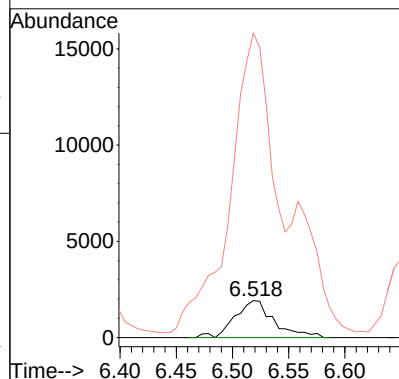
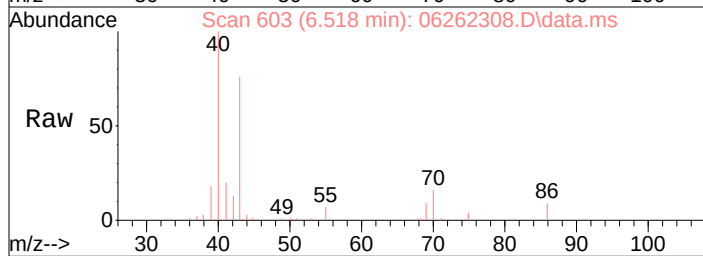
Tgt Ion:	63	Resp:	21996
Ion Ratio	Lower	Upper	
63	100		
65	31.8	11.8	51.8





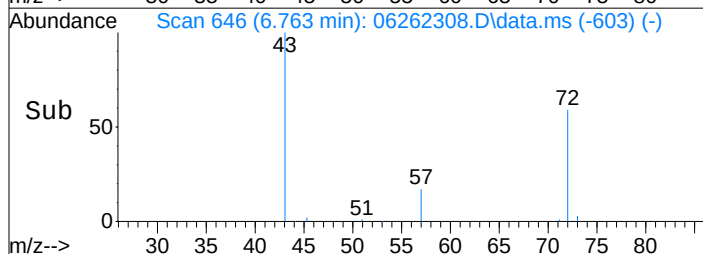
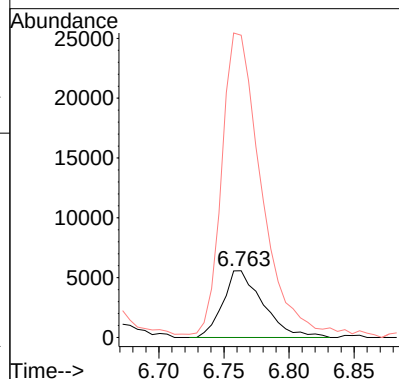
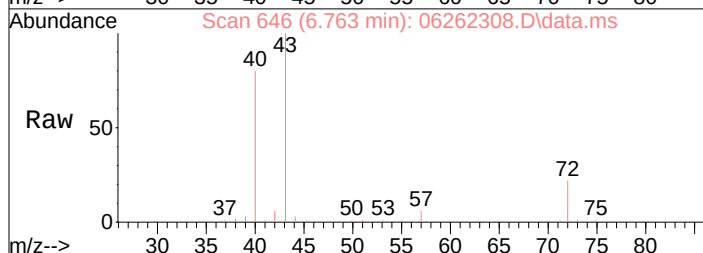
#26
 Vinyl Acetate
 Concen: 1.47 ng
 RT: 6.52 min Scan# 603
 Delta R.T. -0.034 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

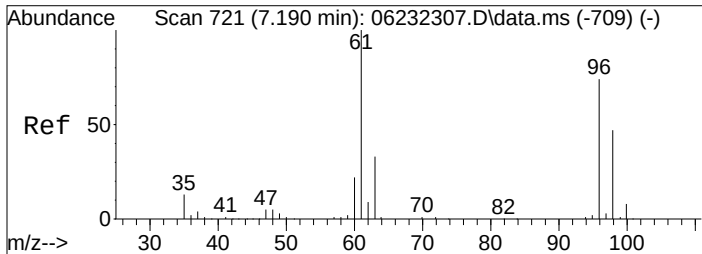
Tgt Ion	86	Resp	4652
Ion Ratio	86	100	
	43	1147.4	1347.9 1387.9#



#27
 2-Butanone (MEK)
 Concen: 1.08 ng
 RT: 6.76 min Scan# 646
 Delta R.T. -0.006 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

Tgt Ion	72	Resp	11943
Ion Ratio	72	100	
	43	460.8	421.3 461.3

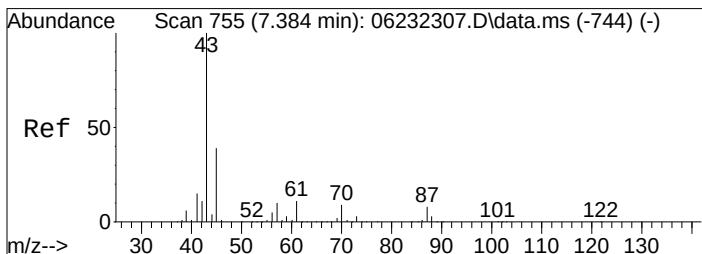
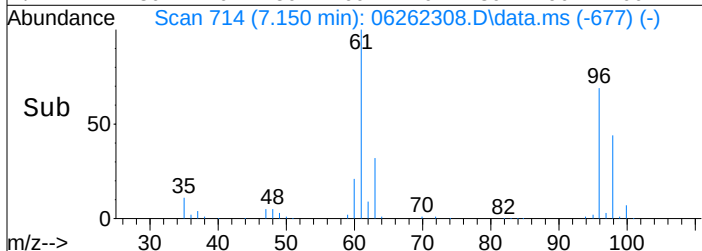
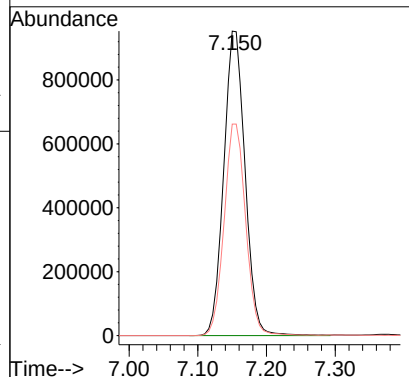
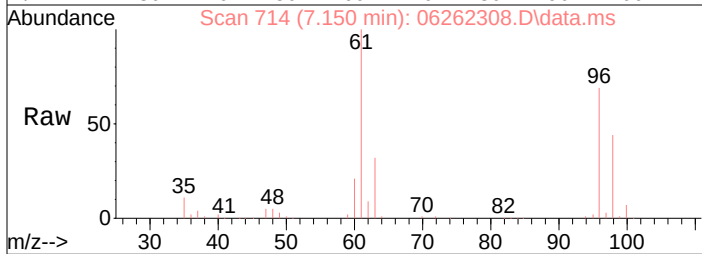




#28
 cis-1,2-Dichloroethene
 Concen: 76.39 ng
 RT: 7.15 min Scan# 714
 Delta R.T. -0.040 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

Tgt Ion: 61 Resp: 2056369

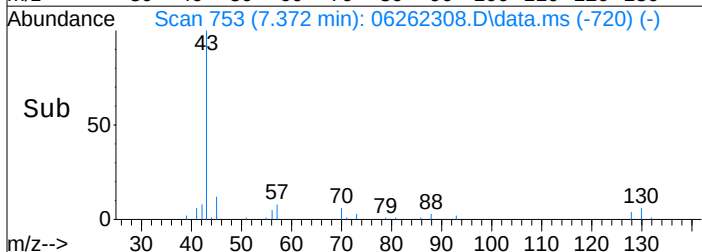
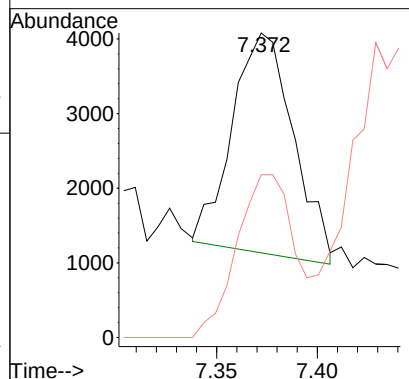
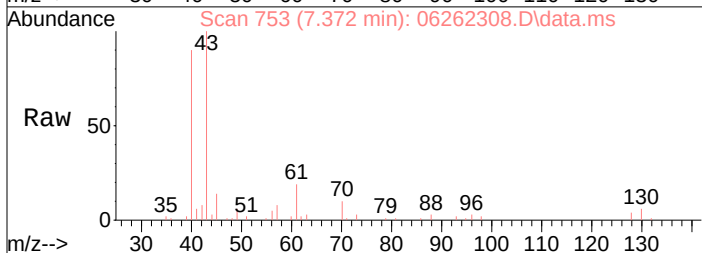
Ion	Ratio	Lower	Upper
61	100		
96	70.3	52.0	92.0

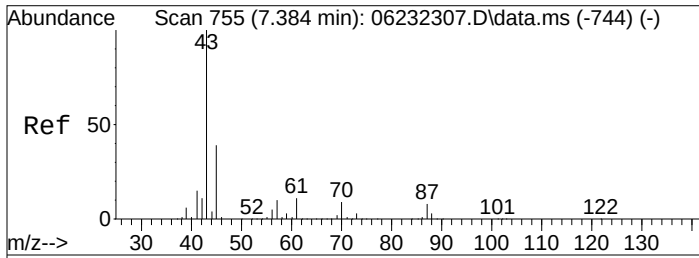


#30
 Ethyl Acetate
 Concen: 0.81 ng m
 RT: 7.37 min Scan# 753
 Delta R.T. -0.011 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

Tgt Ion: 61 Resp: 6213

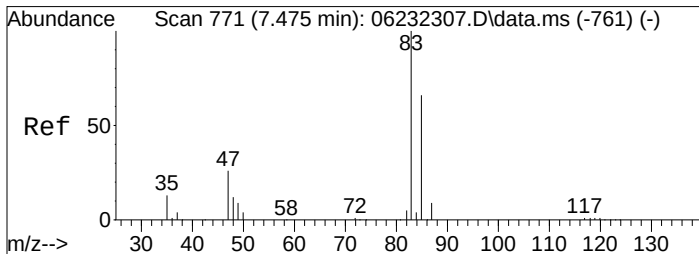
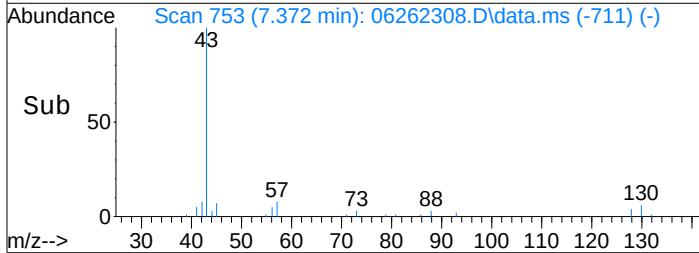
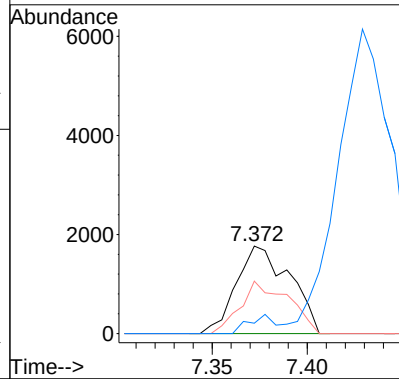
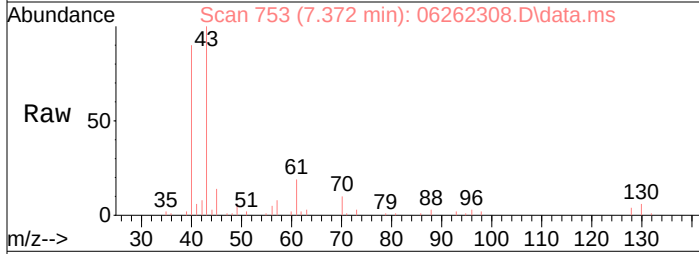
Ion	Ratio	Lower	Upper
61	100		
70	69.2	63.1	103.1





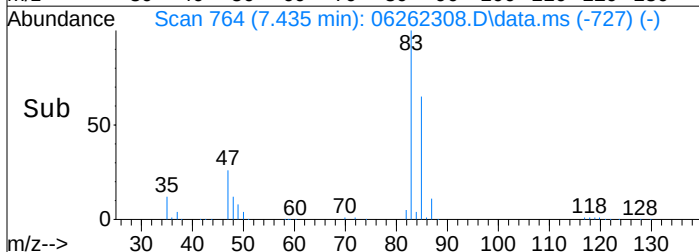
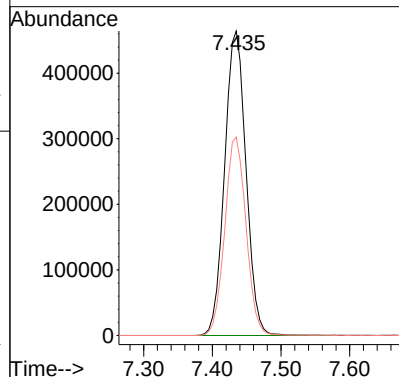
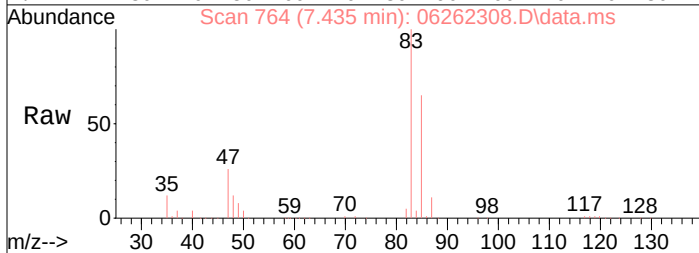
#31
n-Hexane
Concen: 0.12 ng
RT: 7.37 min Scan# 753
Delta R.T. -0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

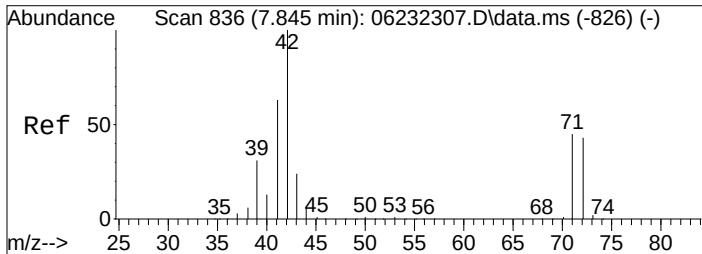
Tgt Ion: 57 Resp: 3455
Ion Ratio Lower Upper
57 100
56 53.7 43.8 65.6
86 10.1 11.3 16.9#



#32
Chloroform
Concen: 27.23 ng
RT: 7.43 min Scan# 764
Delta R.T. -0.040 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

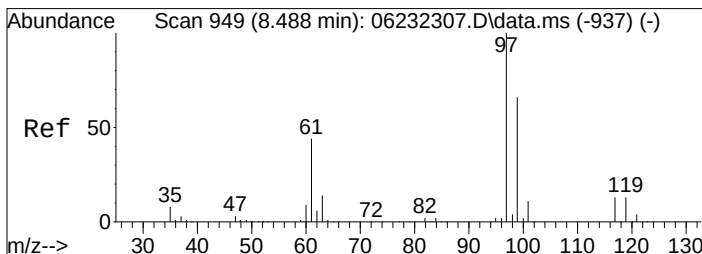
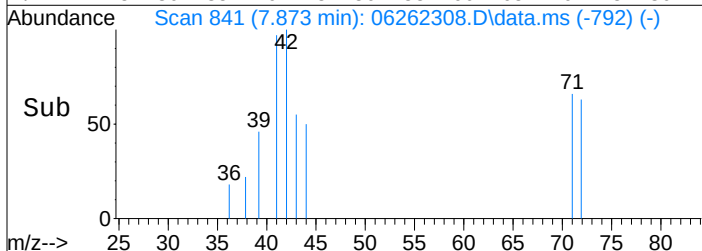
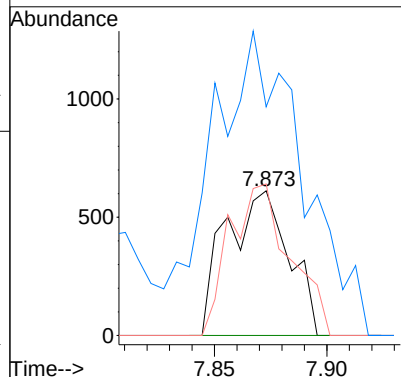
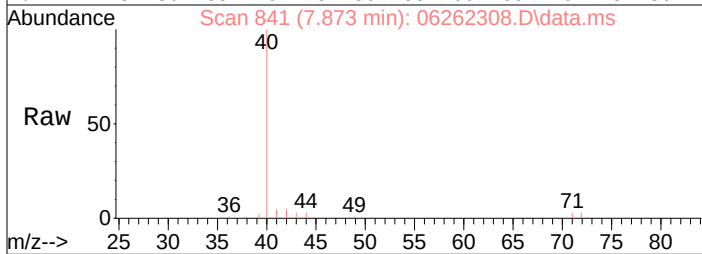
Tgt Ion: 83 Resp: 1005064
Ion Ratio Lower Upper
83 100
85 64.8 45.2 85.2





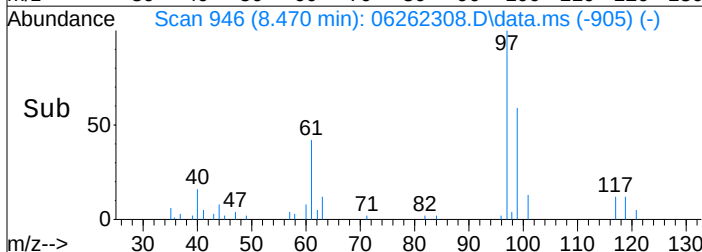
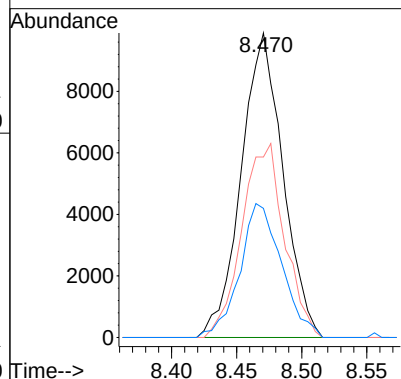
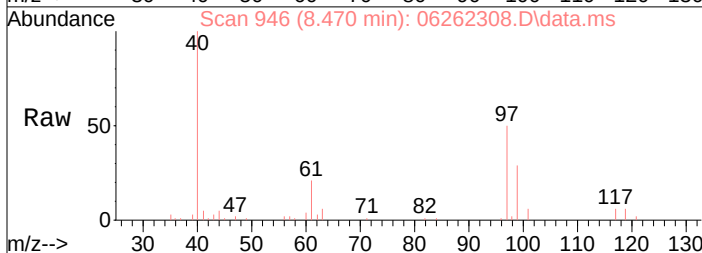
#34
Tetrahydrofuran (THF)
Concen: 0.10 ng
RT: 7.87 min Scan# 841
Delta R.T. 0.028 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

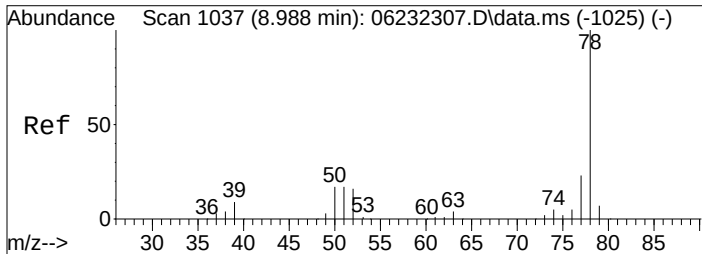
Tgt Ion:	72	Resp:	1199
Ion Ratio	Lower	Upper	
72	100		
71	99.5	80.9	120.9
42	300.0	205.0	245.0#



#38
1,1,1-Trichloroethane
Concen: 0.63 ng
RT: 8.47 min Scan# 946
Delta R.T. -0.017 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

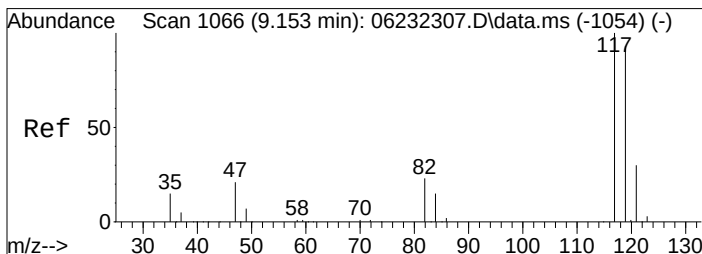
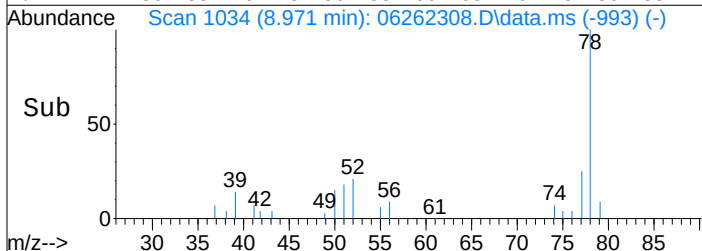
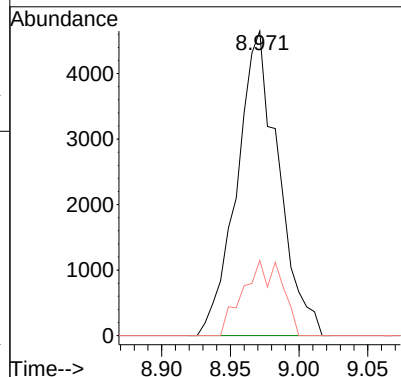
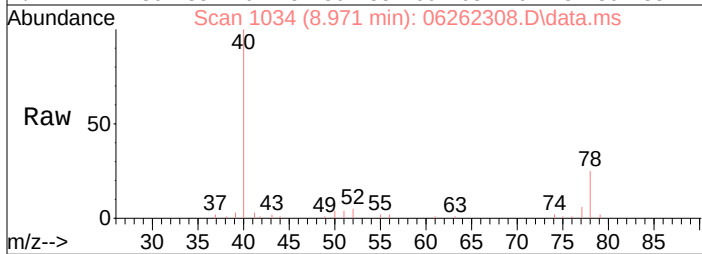
Tgt Ion:	97	Resp:	22068
Ion Ratio	Lower	Upper	
97	100		
99	65.0	44.6	84.6
61	44.1	24.0	64.0





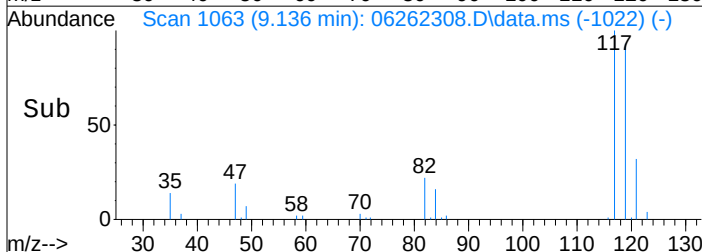
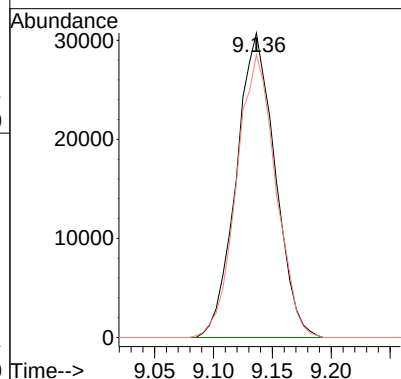
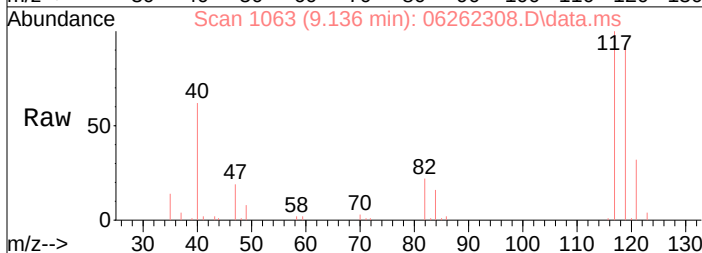
#41
Benzene
Concen: 0.13 ng
RT: 8.97 min Scan# 1034
Delta R.T. -0.017 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

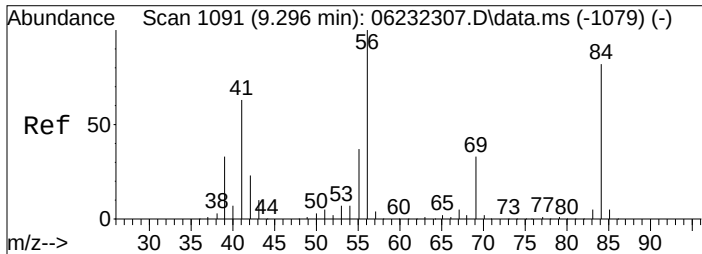
Tgt Ion	Ratio	Lower	Upper
78	100		
77	23.1	3.3	43.3



#42
Carbon Tetrachloride
Concen: 2.26 ng
RT: 9.14 min Scan# 1063
Delta R.T. -0.017 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

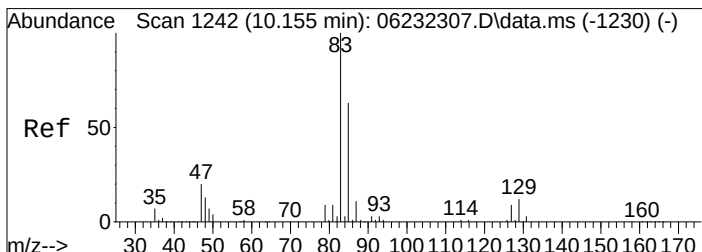
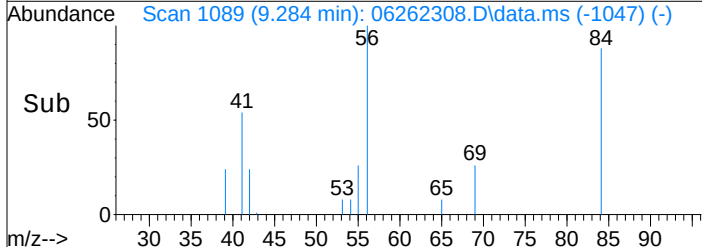
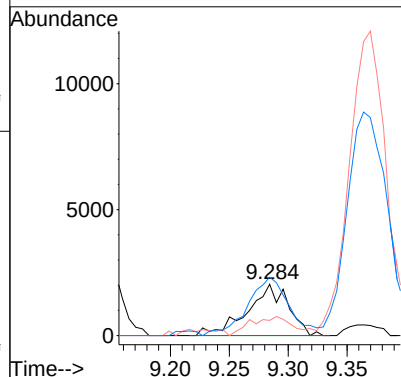
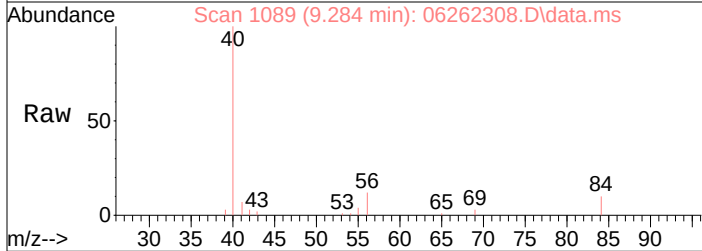
Tgt Ion	Ratio	Lower	Upper
117	100		
119	94.2	75.2	115.2





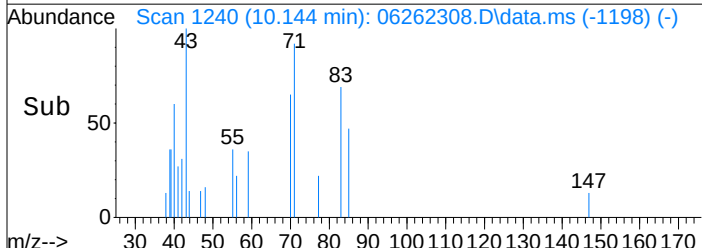
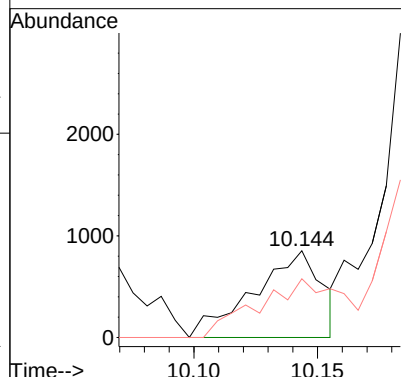
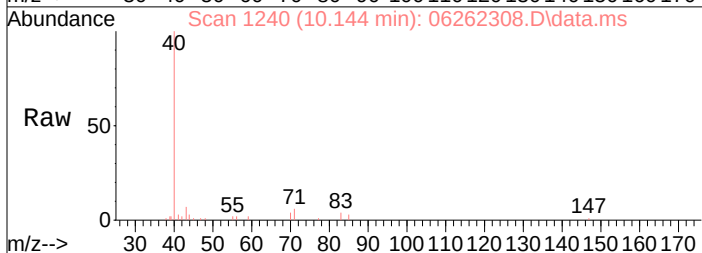
#43
Cyclohexane
Concen: 0.19 ng
RT: 9.28 min Scan# 1089
Delta R.T. -0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

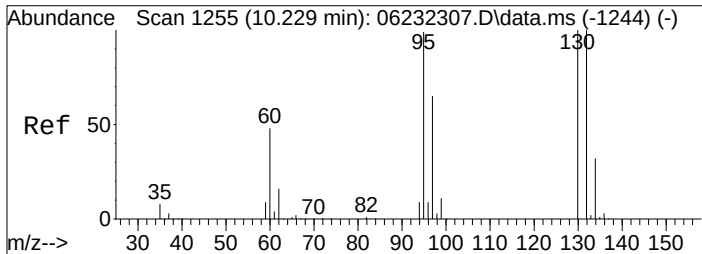
Tgt Ion: 84 Resp: 4911
Ion Ratio Lower Upper
84 100
69 36.4 19.8 59.8
56 115.0 100.0 140.0



#46
Bromodichloromethane
Concen: 0.06 ng
RT: 10.14 min Scan# 1240
Delta R.T. -0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

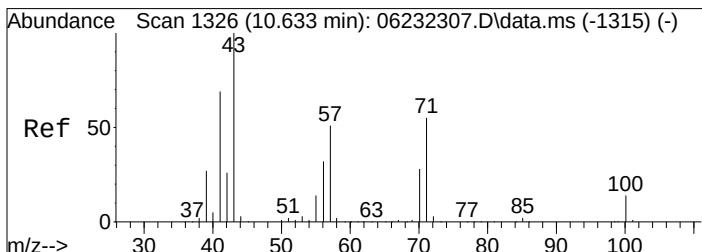
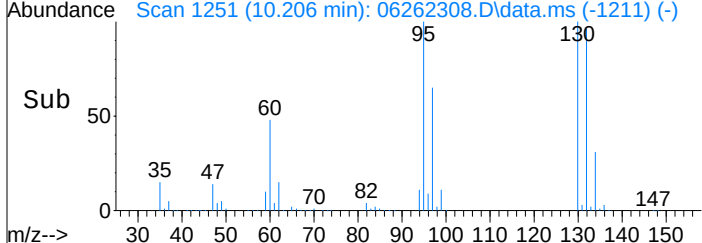
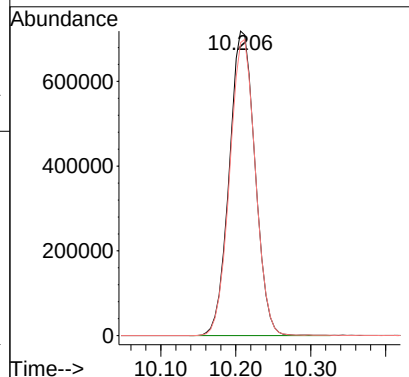
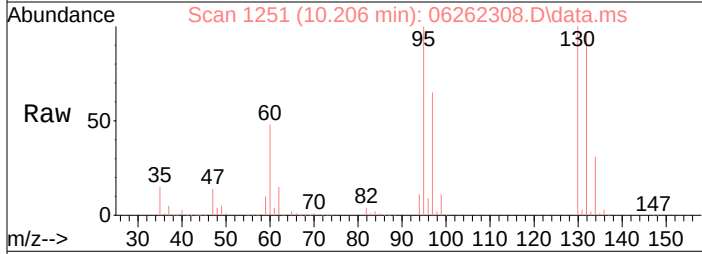
Tgt Ion: 83 Resp: 1630
Ion Ratio Lower Upper
83 100
85 83.8 45.1 85.1





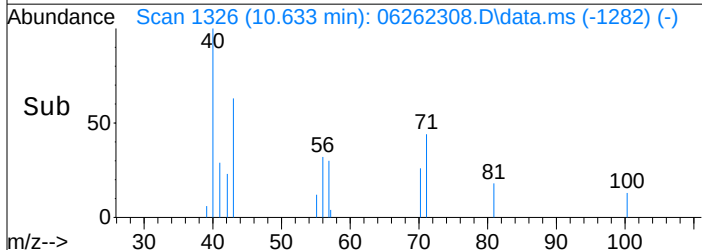
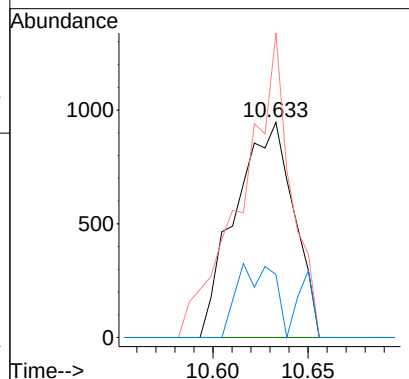
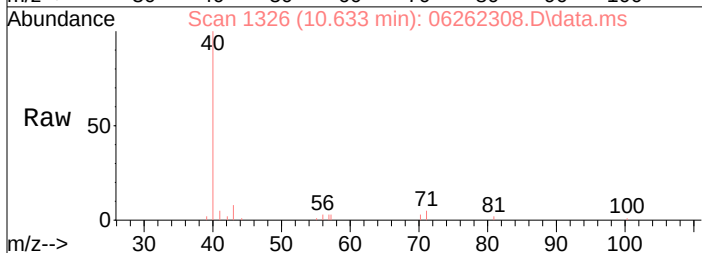
#47
 Trichloroethene
 Concen: 77.60 ng
 RT: 10.21 min Scan# 1251
 Delta R.T. -0.023 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

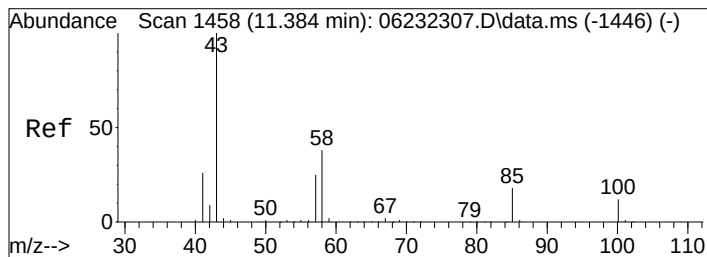
Tgt Ion:	130	Resp:	1716697
Ion Ratio	Lower	Upper	
130	100		
132	97.0	77.3	117.3



#51
 n-Heptane
 Concen: 0.12 ng
 RT: 10.63 min Scan# 1326
 Delta R.T. -0.000 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

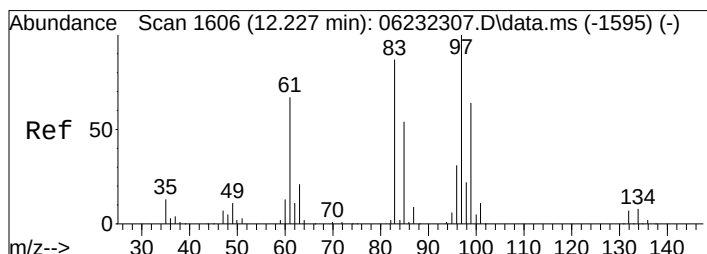
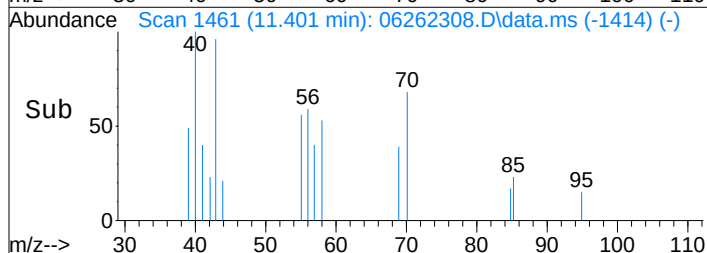
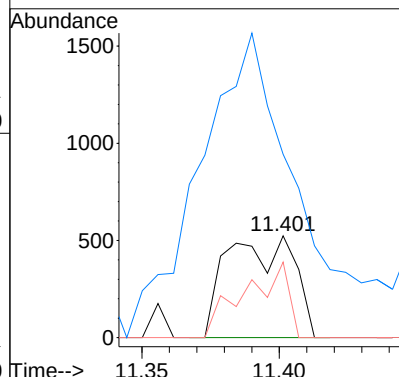
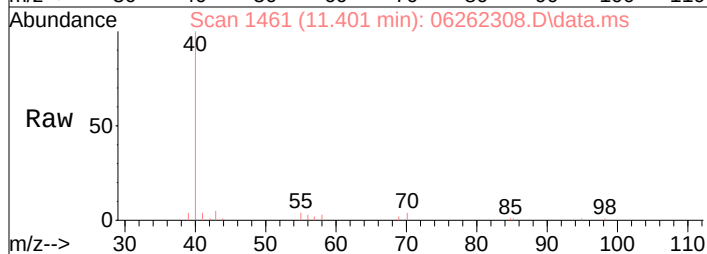
Tgt Ion:	71	Resp:	2019
Ion Ratio	Lower	Upper	
71	100		
57	117.1	71.5	111.5#
100	21.9	5.2	45.2





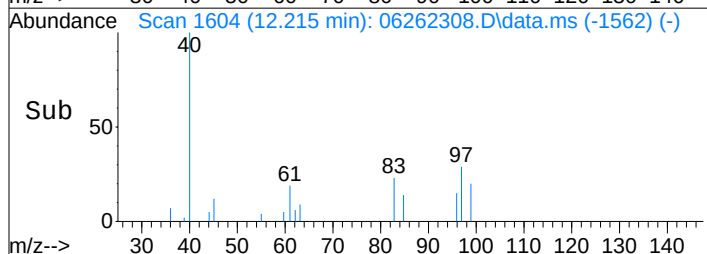
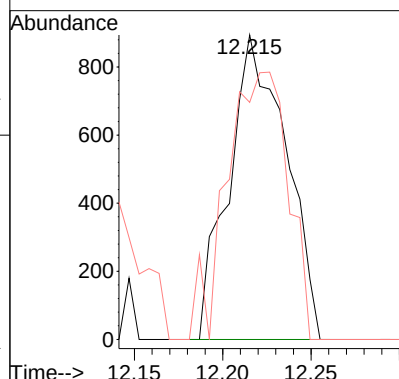
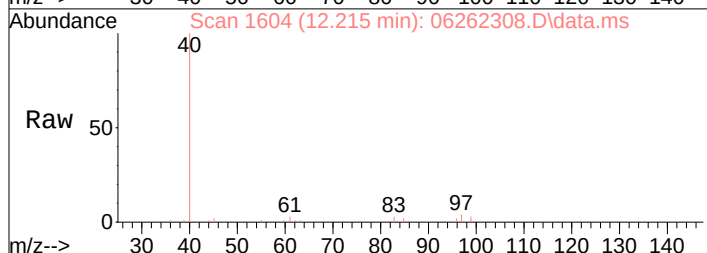
#53
 4-Methyl-2-pentanone
 Concen: 0.06 ng
 RT: 11.40 min Scan# 1461
 Delta R.T. 0.017 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

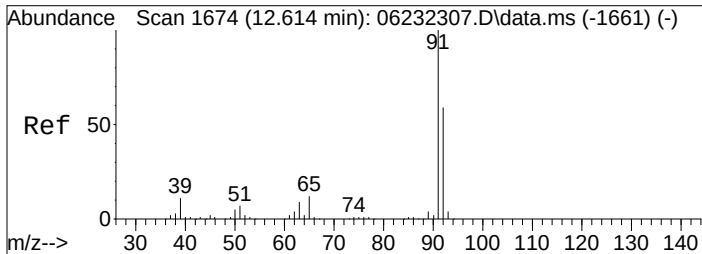
Tgt Ion: 58 Resp: 882
 Ion Ratio Lower Upper
 58 100
 85 49.2 38.5 57.7
 43 450.0 211.7 317.5#



#55
 1,1,2-Trichloroethane
 Concen: 0.11 ng
 RT: 12.22 min Scan# 1604
 Delta R.T. -0.011 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

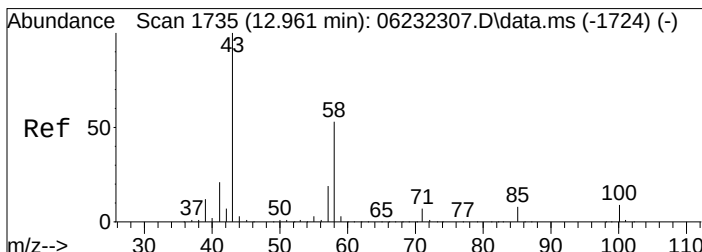
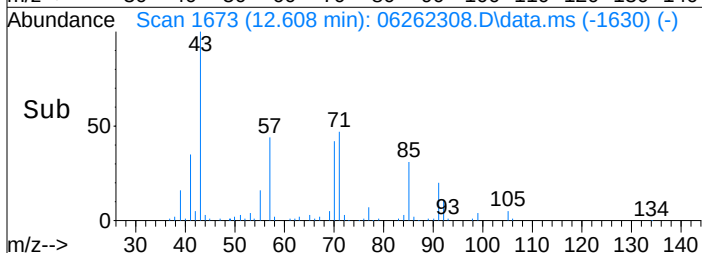
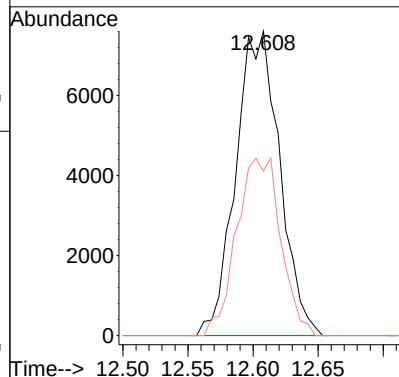
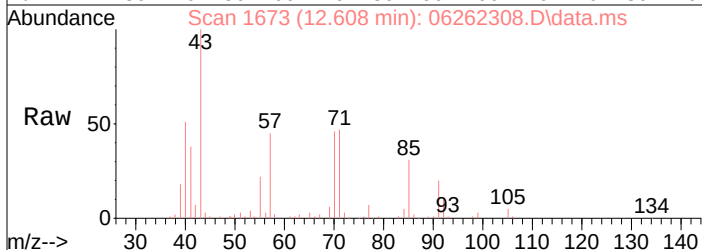
Tgt Ion: 97 Resp: 2015
 Ion Ratio Lower Upper
 97 100
 83 94.4 66.2 106.2





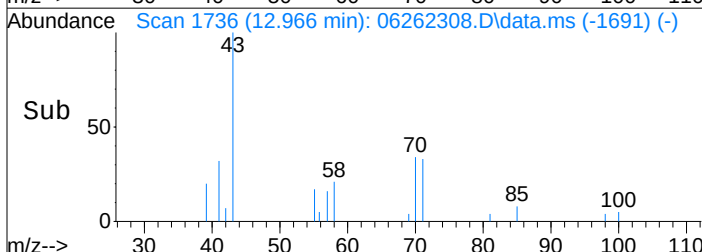
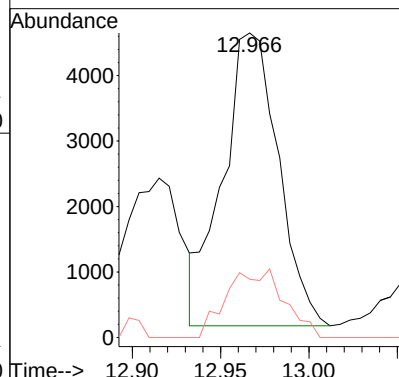
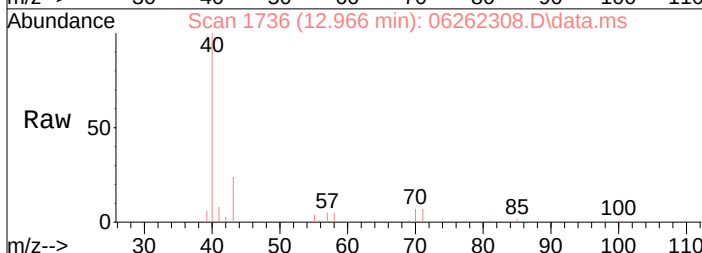
#58
Toluene
Concen: 0.23 ng
RT: 12.61 min Scan# 1673
Delta R.T. -0.006 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

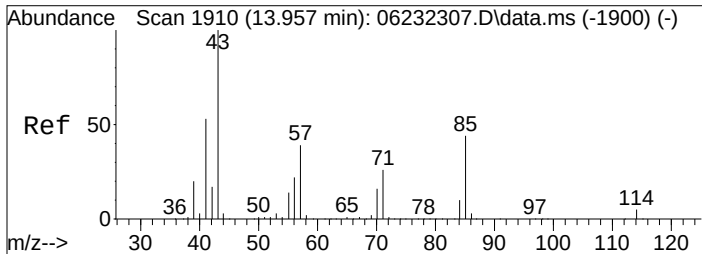
Tgt Ion: 91 Resp: 17852
Ion Ratio Lower Upper
91 100
92 58.7 38.8 78.8



#59
2-Hexanone
Concen: 0.24 ng
RT: 12.97 min Scan# 1736
Delta R.T. 0.006 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

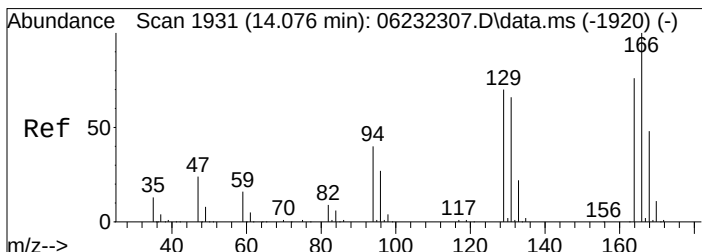
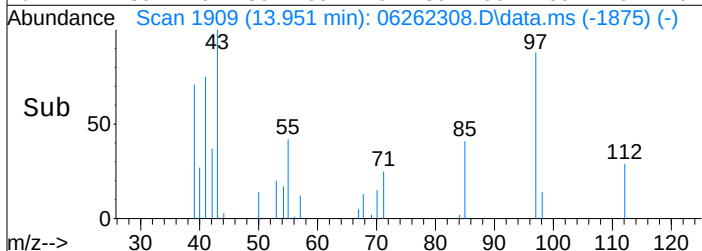
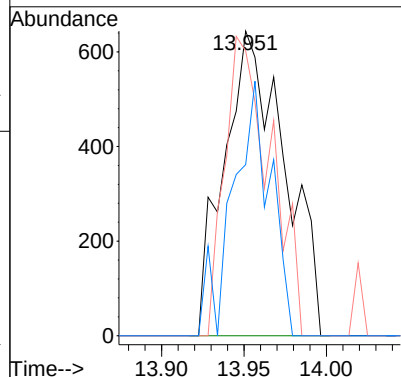
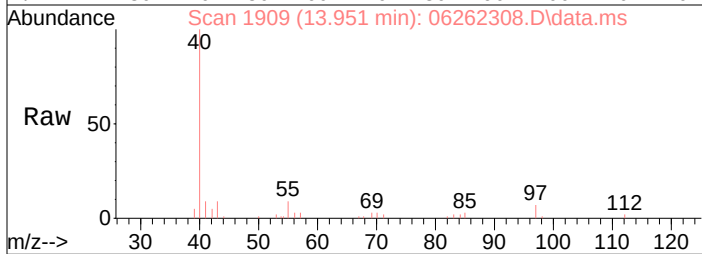
Tgt Ion: 43 Resp: 9771
Ion Ratio Lower Upper
43 100
58 24.0 31.2 71.2#





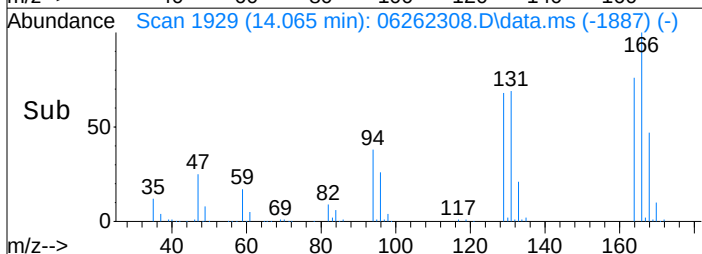
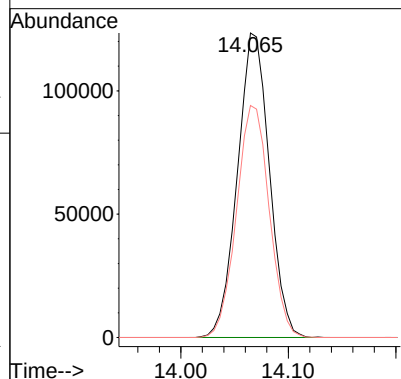
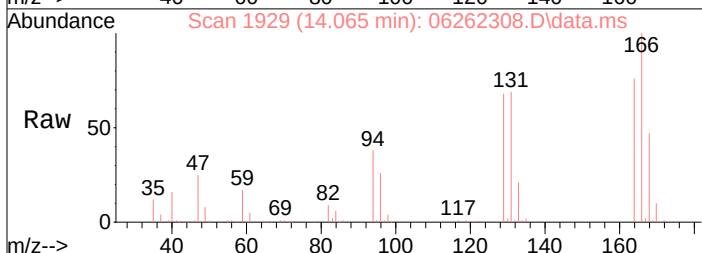
#63
n-Octane
Concen: 0.11 ng
RT: 13.95 min Scan# 1909
Delta R.T. -0.006 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

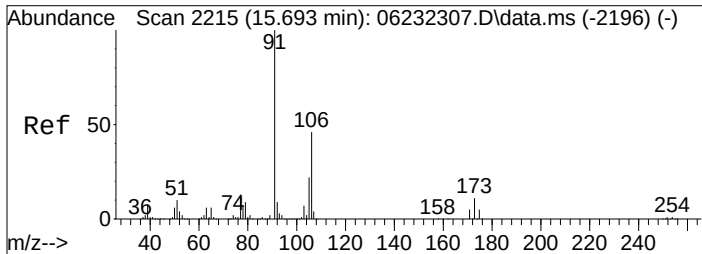
Tgt Ion:	57	Resp:	1647
Ion Ratio	Lower	Upper	
57	100		
85	74.7	91.8	137.6#
71	52.2	52.5	78.7#



#64
Tetrachloroethene
Concen: 9.86 ng
RT: 14.06 min Scan# 1929
Delta R.T. -0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

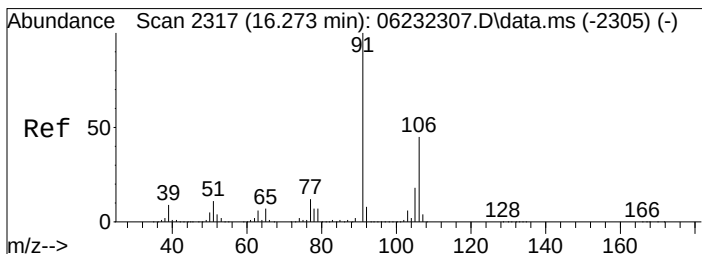
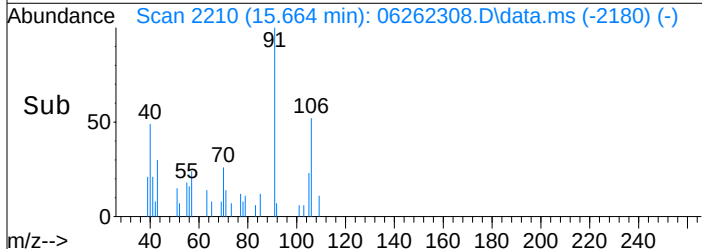
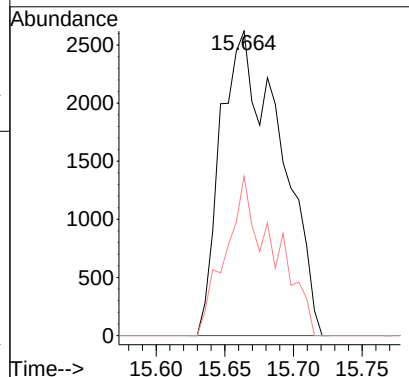
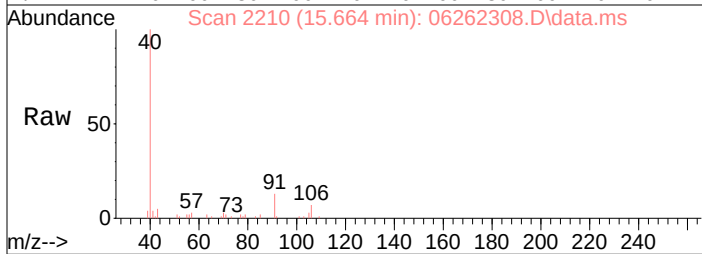
Tgt Ion:	166	Resp:	254721
Ion Ratio	Lower	Upper	
166	100		
164	78.1	58.1	98.1





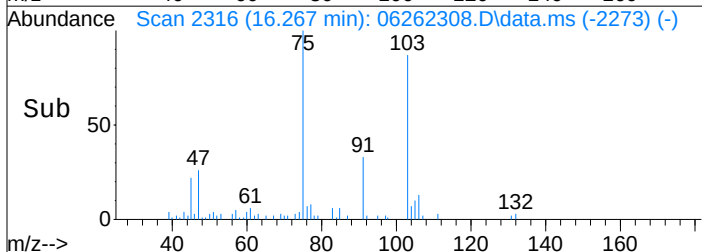
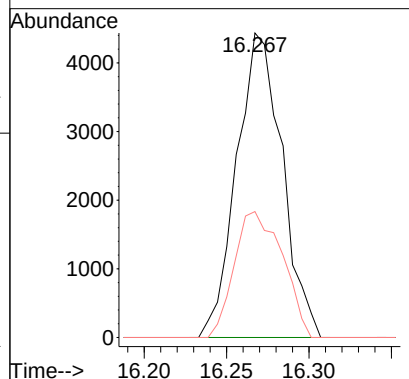
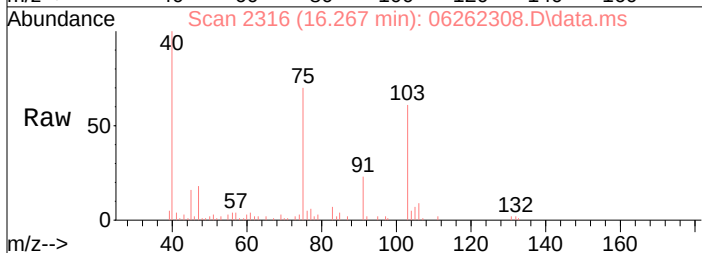
#67
 m- & p-Xylenes
 Concen: 0.11 ng
 RT: 15.66 min Scan# 2210
 Delta R.T. -0.029 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

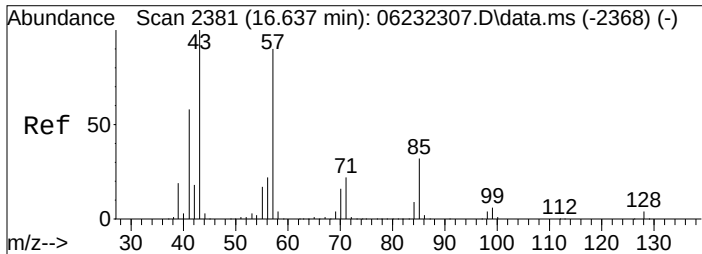
Tgt Ion:	91	Resp:	7915
Ion Ratio	Lower	Upper	
91	100		
106	42.1	26.3	66.3



#70
 o-Xylene
 Concen: 0.12 ng
 RT: 16.27 min Scan# 2316
 Delta R.T. -0.006 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

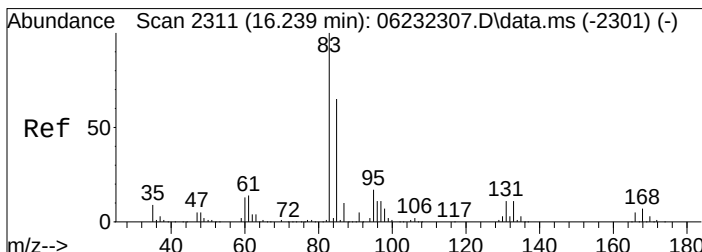
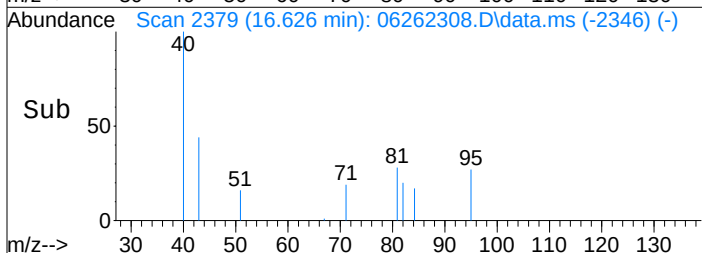
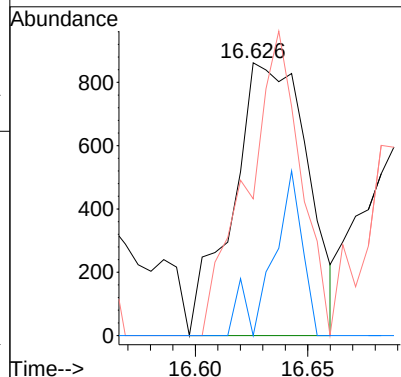
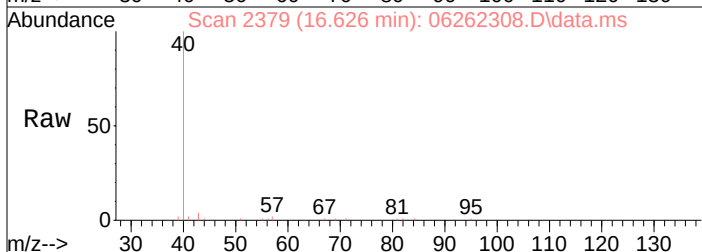
Tgt Ion:	91	Resp:	8509
Ion Ratio	Lower	Upper	
91	100		
106	43.9	25.0	65.0





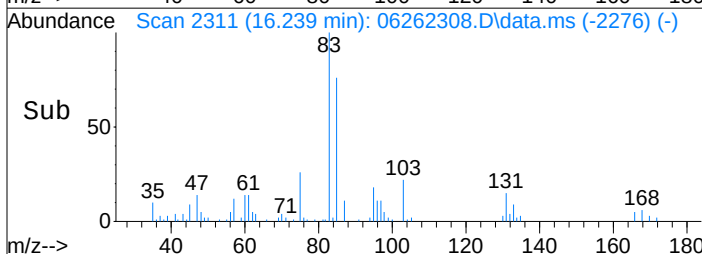
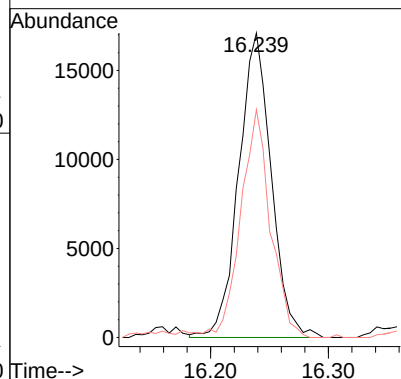
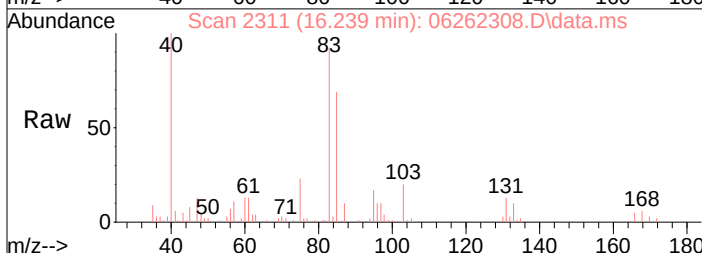
#71
n-Nonane
Concen: 0.06 ng
RT: 16.63 min Scan# 2379
Delta R.T. -0.011 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

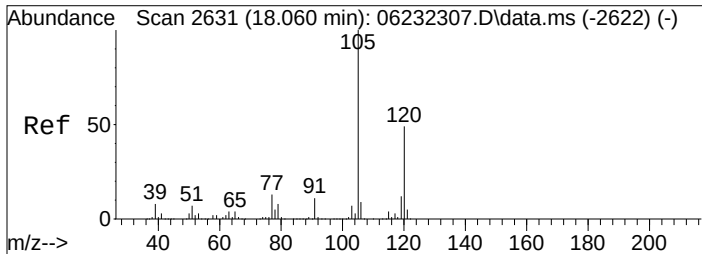
Tgt Ion:	43	Resp:	1999
Ion Ratio		Lower	Upper
43	100		
57	79.4	70.7	110.7
85	24.4	12.8	52.8



#72
1,1,2,2-Tetrachloroethane
Concen: 1.00 ng
RT: 16.24 min Scan# 2311
Delta R.T. -0.000 min
Lab File: 06262308.D
Acq: 26 Jun 2023 10:47

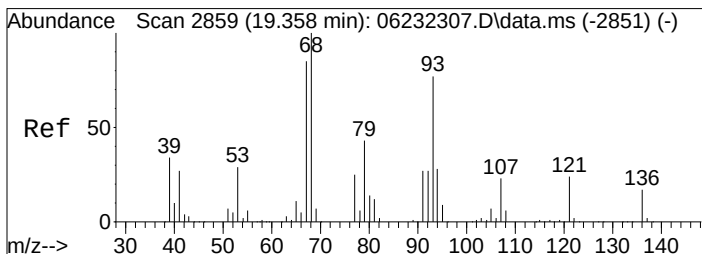
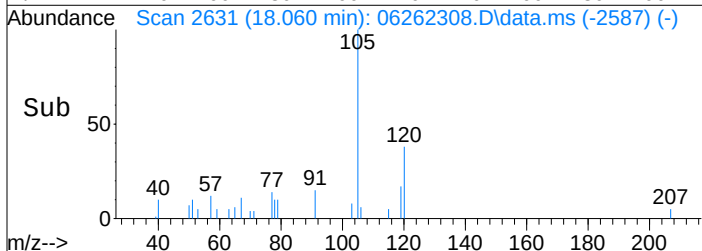
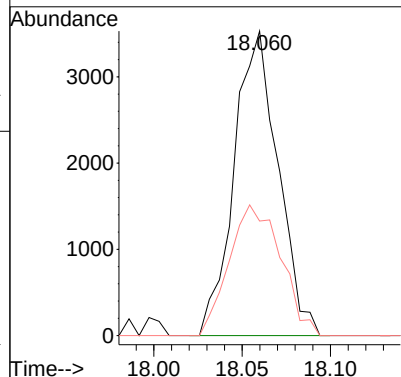
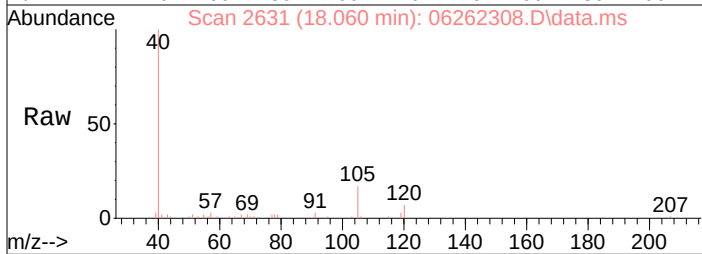
Tgt Ion:	83	Resp:	32848
Ion Ratio		Lower	Upper
83	100		
85	68.5	45.4	85.4





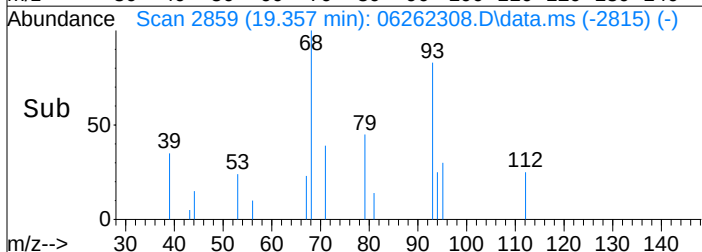
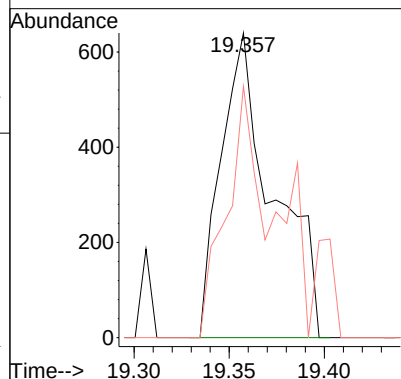
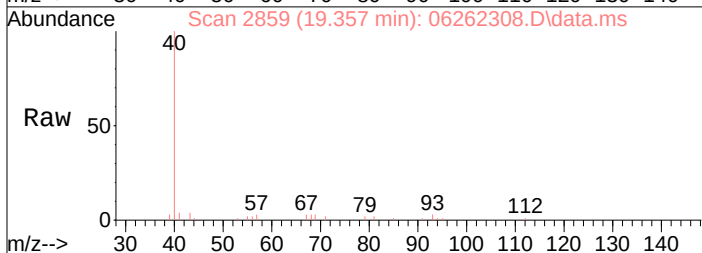
#79
 1,3,5-Trimethylbenzene
 Concen: 0.08 ng
 RT: 18.06 min Scan# 2631
 Delta R.T. -0.000 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

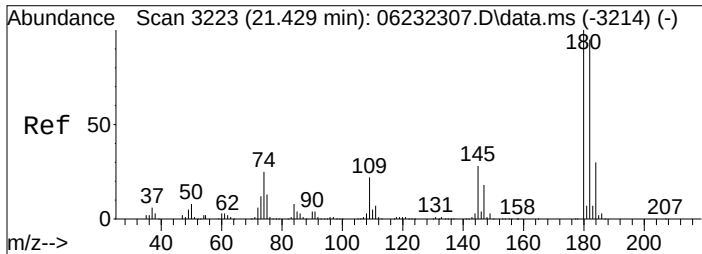
Tgt Ion:	105	Resp:	6116
Ion Ratio	Lower	Upper	
105	100		
120	50.6	28.0	68.0



#91
 d-Limonene
 Concen: 0.05 ng
 RT: 19.36 min Scan# 2859
 Delta R.T. -0.000 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

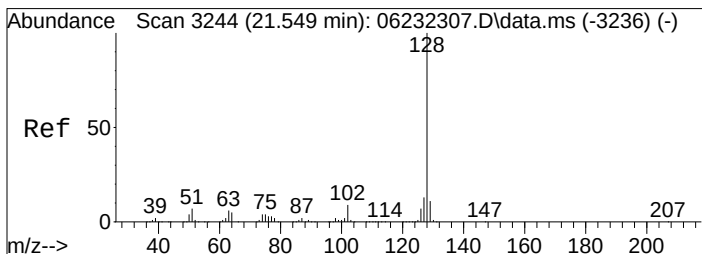
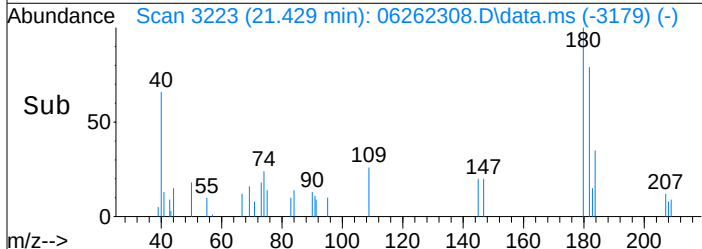
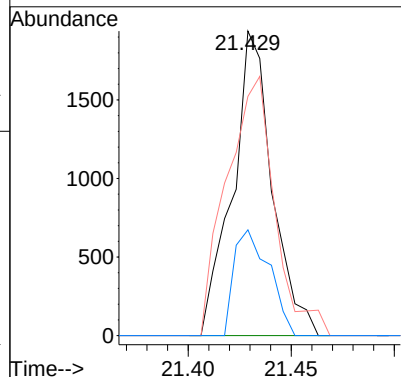
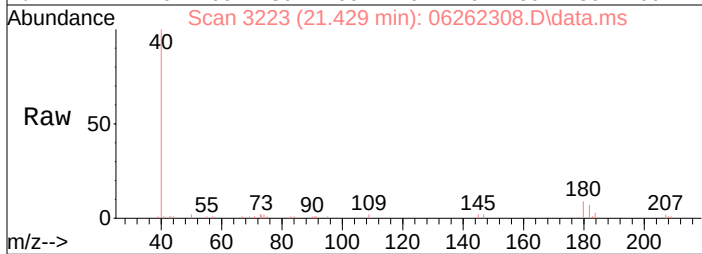
Tgt Ion:	68	Resp:	1221
Ion Ratio	Lower	Upper	
68	100		
93	85.7	58.0	98.0





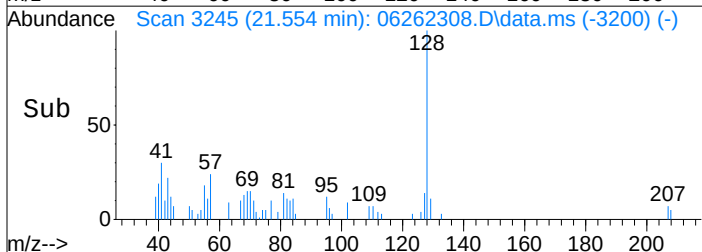
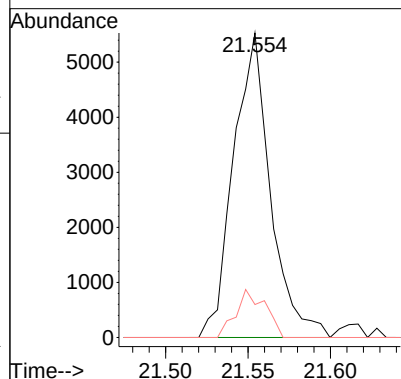
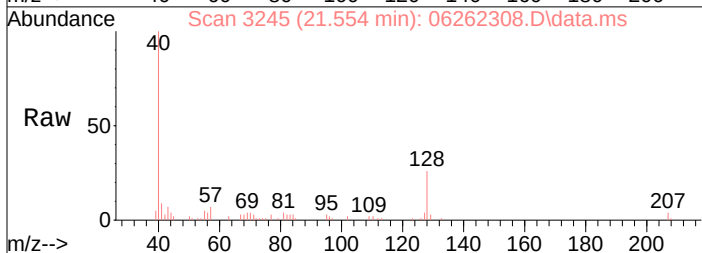
#94
 1,2,4-Trichlorobenzene
 Concen: 0.08 ng
 RT: 21.43 min Scan# 3223
 Delta R.T. -0.000 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

Tgt Ion:	180	Resp:	2605
Ion Ratio	Lower	Upper	
180	100		
182	102.6	76.7	115.1
184	30.7	24.6	36.8



#95
 Naphthalene
 Concen: 0.11 ng
 RT: 21.55 min Scan# 3245
 Delta R.T. 0.006 min
 Lab File: 06262308.D
 Acq: 26 Jun 2023 10:47

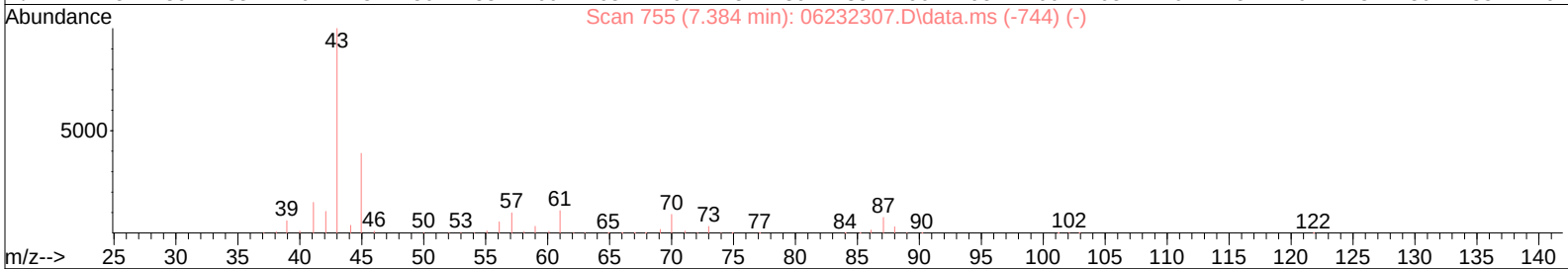
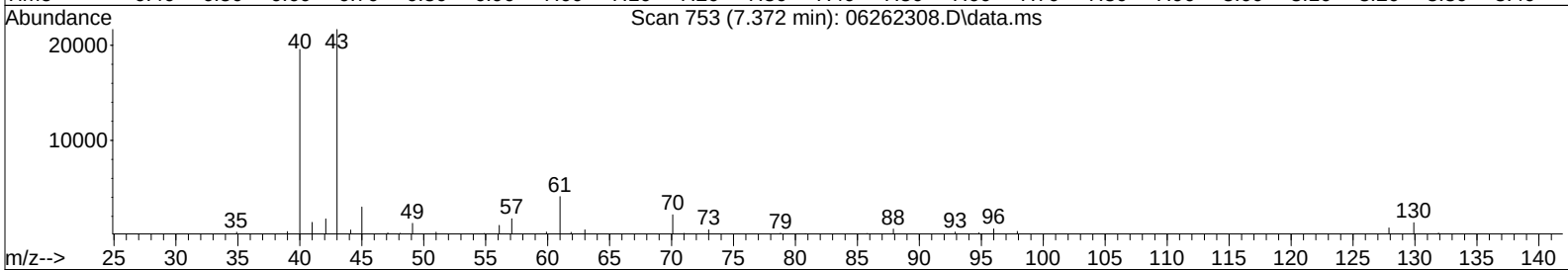
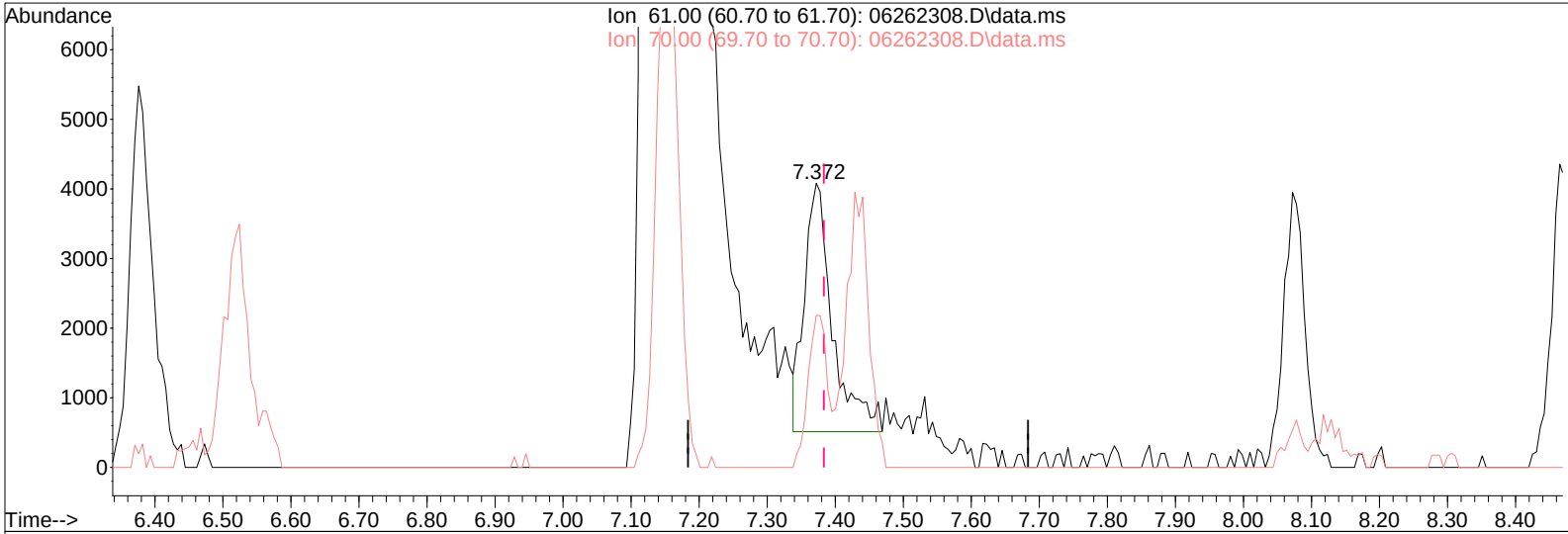
Tgt Ion:	128	Resp:	8633
Ion Ratio	Lower	Upper	
128	100		
129	12.5	0.0	30.9



Data File : I:\MS13\DATA\2023_06\26\06262308.D
Acq On : 26 Jun 2023 10:47
Sample : P2302616-001 (1000mL)
Misc : S37-04102301

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:40:15 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 15:42:57 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06262308.D\data.ms

(30) Ethyl Acetate (T)

7.372min (-0.011) 1.33ng

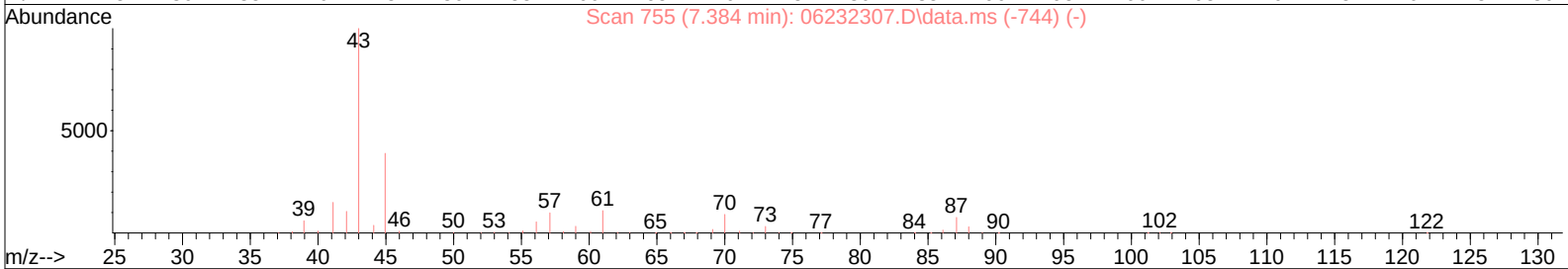
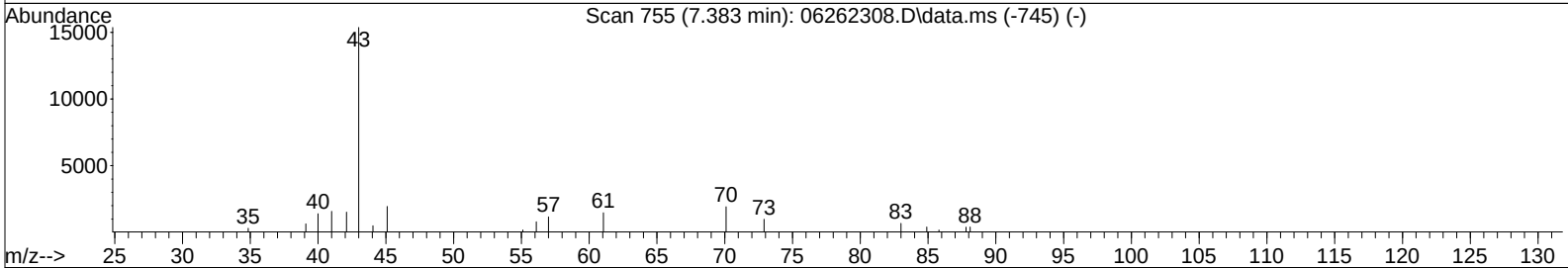
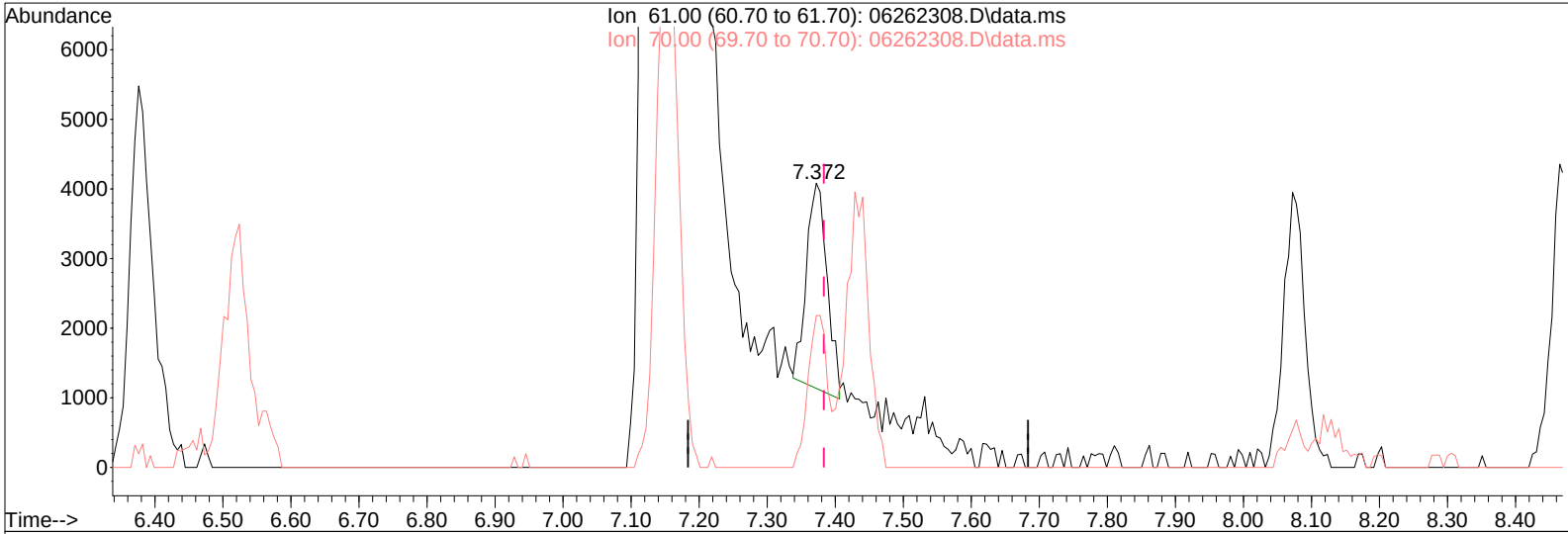
response 10233

Ion	Exp%	Act%
61.00	100	100
70.00	83.10	42.03#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2023_06\26\06262308.D
Acq On : 26 Jun 2023 10:47
Sample : P2302616-001 (1000mL)
Misc : S37-04102301

Vial: 2
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:40:15 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 15:42:57 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06262308.D\data.ms

(30) Ethyl Acetate (T)

7.372min (-0.011) 0.81ng m

response 6213

Ion	Exp%	Act%
61.00	100	100
70.00	83.10	69.23
0.00	0.00	0.00
0.00	0.00	0.00

BLC

TZ 6/26/23

LH 6/27/23

Data File : I:\MS13\DATA\2023_06\26\06262309.D
 Acq On : 26 Jun 2023 11:24
 Sample : P2302616-002 (1000mL)
 Misc : S37-04102301

Vial: 3
 Operator: TZ
 Inst : MS13

TZ 6/26/23

Quant Time: Jun 26 14:51:08 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	217082	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.37	114	957326	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	205876	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	410675	12.402	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.20%
57) Toluene-d8 (SS2)	12.47	98	1090889	12.403	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.20%
73) Bromofluorobenzene (SS3)	16.85	174	468482	12.513	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.08%

Target Compounds

						Qvalue
2) Propene	0.00	42	0	N.D.	d	
3) Dichlorodifluoromethan...	3.46	85	99652	2.469	ng	98
4) Chloromethane	3.59	50	1021	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	1543	0.084	ng	88
6) Vinyl Chloride	3.79	62	5635	0.238	ng	99
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	4.11	94	1462	0.093	ng	85
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.38	45	18029	1.288	ng	99
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.65	56	8108	0.742	ng	96
13) Acetone	4.74	58	33803m	2.821	ng	
14) Trichlorofluoromethane	4.85	101	49222	1.312	ng	99
15) 2-Propanol (Isopropanol)	4.93	45	25336	0.510	ng	82
16) Acrylonitrile	5.13	53	159	N.D.		
17) 1,1-Dichloroethene	5.35	96	20352	1.218	ng	97
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d	
19) Methylene Chloride	5.44	84	2055	0.116	ng	95
20) 3-Chloro-1-propene (Al...	5.47	41	307	N.D.		
21) Trichlorotrifluoroethane	5.67	151	448316	24.956	ng	99
22) Carbon Disulfide	5.69	76	44386	0.653	ng	# 18
23) trans-1,2-Dichloroethene	6.22	61	47963	1.883	ng	96
24) 1,1-Dichloroethane	6.40	63	22076	0.699	ng	99
25) Methyl tert-Butyl Ether	6.37	73	1100	N.D.		
26) Vinyl Acetate	6.51	86	8905	3.023	ng	# 27
27) 2-Butanone (MEK)	6.76	72	5962	0.579	ng	96
28) cis-1,2-Dichloroethene	7.15	61	2142699	85.596	ng	98
29) Diisopropyl Ether	0.00	87	0	N.D.	d	
30) Ethyl Acetate	7.37	61	4003	0.560	ng	# 70
31) n-Hexane	7.38	57	2812	0.105	ng	# 1
32) Chloroform	7.43	83	1057644	30.817	ng	99
34) Tetrahydrofuran (THF)	7.87	72	759	0.069	ng	# 73
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.19	62	1425	N.D.		
38) 1,1,1-Trichloroethane	8.48	97	22558	0.677	ng	98
39) Isopropyl Acetate	9.36	61	30081	No Calib		
40) 1-Butanol	8.89	56	8111	No Calib	#	
41) Benzene	8.97	78	7919	0.116	ng	96
42) Carbon Tetrachloride	9.14	117	72102	2.452	ng	98
43) Cyclohexane	9.28	84	4410	0.181	ng	98
44) tert-Amyl Methyl Ether	9.64	73	1890	N.D.		
45) 1,2-Dichloropropane	9.93	63	196	N.D.		
46) Bromodichloromethane	10.15	83	398	N.D.		
47) Trichloroethene	10.21	130	1793368	85.648	ng	99
48) 1,4-Dioxane	10.21	88	399	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d	
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2023_06\26\06262309.D
 Acq On : 26 Jun 2023 11:24
 Sample : P2302616-002 (1000mL)
 Misc : S37-04102301

Vial: 3
 Operator: TZ
 Inst : MS13

Quant Time: Jun 26 14:51:08 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.62	71	1806	0.115	ng	89
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	d	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	d	
58) Toluene	12.61	91	13569	0.180	ng	99
59) 2-Hexanone	0.00	43	0	N.D.	d	
60) Dibromochloromethane	13.10	129	112	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.81	43	750	N.D.		
63) n-Octane	0.00	57	0	N.D.	d	
64) Tetrachloroethene	14.06	166	283627	11.544	ng	100
65) Chlorobenzene	14.94	112	1177	N.D.		
66) Ethylbenzene	15.44	91	1676	N.D.		
67) m- & p-Xylenes	15.66	91	4915	0.070	ng	95
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	16.14	104	402	N.D.		
70) o-Xylene	16.27	91	7327	0.106	ng	94
71) n-Nonane	16.63	43	1608	N.D.		
72) 1,1,2,2-Tetrachloroethane	16.24	83	35426	1.132	ng	98
74) Cumene	17.06	105	625	N.D.		
75) alpha-Pinene	17.58	93	381	N.D.		
76) n-Propylbenzene	17.75	91	1641	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.94	105	1784	N.D.		
79) 1,3,5-Trimethylbenzene	18.06	105	7115	0.100	ng	94
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	2703	N.D.		
83) n-Decane	17.12	58	123	No Calib	#	
84) Benzyl Chloride	18.75	91	884	N.D.		
85) 1,3-Dichlorobenzene	18.77	146	518	N.D.		
86) 1,4-Dichlorobenzene	18.86	146	576	N.D.		
87) sec-Butylbenzene	18.95	105	597	N.D.		
88) 4-Isopropyltoluene (p-...	19.17	119	1796	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	428	N.D.		
91) d-Limonene	19.35	68	585	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.86	157	267	N.D.		
93) n-Undecane	18.23	58	2303	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1729	0.055	ng	96
95) Naphthalene	21.55	128	7772	0.104	ng	98
96) n-Dodecane	19.16	58	142	No Calib	#	
97) Hexachlorobutadiene	21.99	225	825	N.D.		
98) Cyclohexanone	15.59	55	566	No Calib	#	
99) tert-Butylbenzene	18.60	119	714	N.D.		
100) n-Butylbenzene	19.71	91	2271	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:\MS13\DATA\2023_06\26\06262309.D
Acq On : 26 Jun 2023 11:24
Sample : P2302616-002 (1000mL)
Misc : S37-04102301

Vial: 3
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:51:08 2023

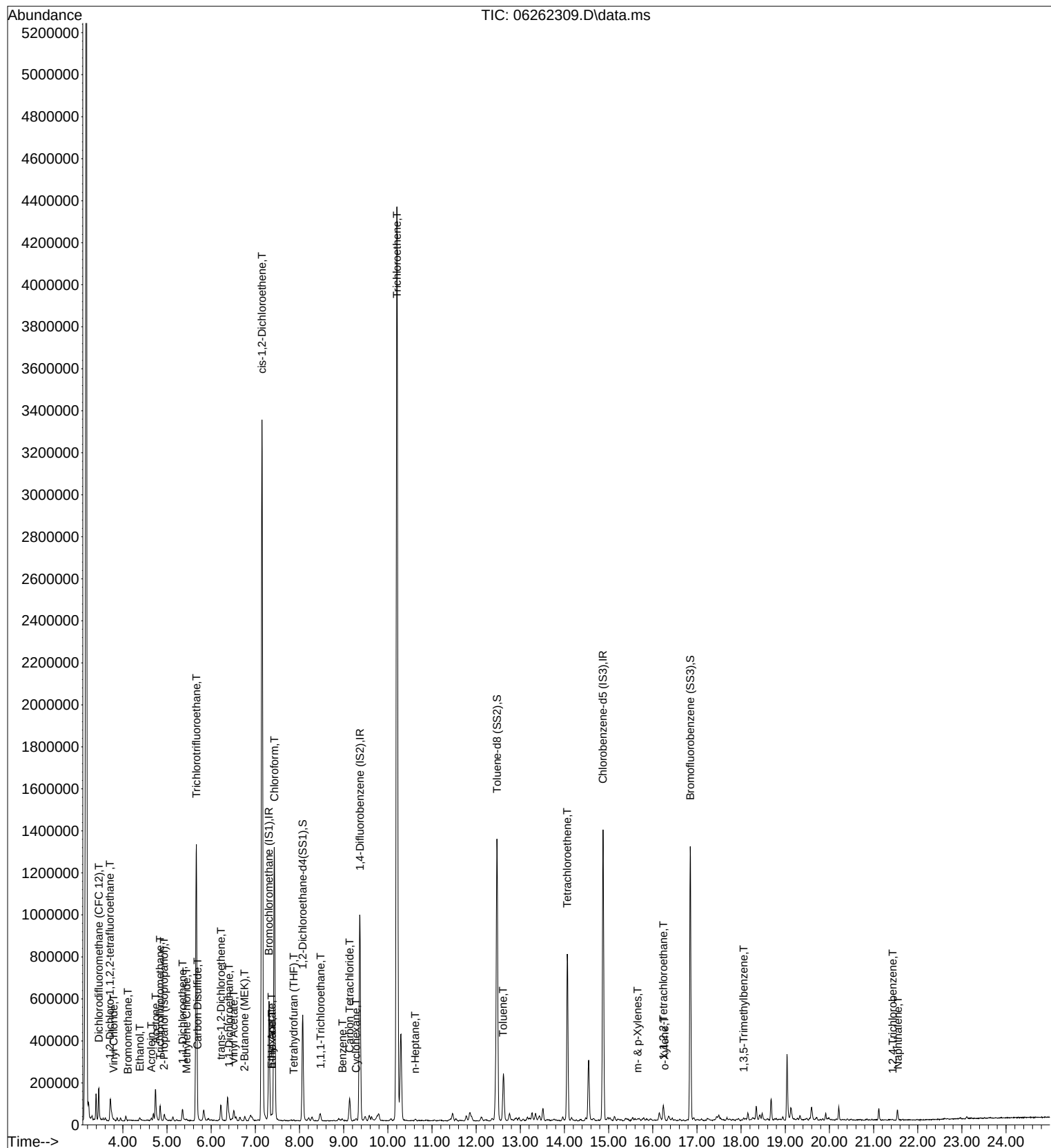
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\26\06262309.D
 Acq On : 26 Jun 2023 11:24
 Sample : P2302616-002 (1000mL)
 Misc : S37-04102301

Vial: 3
 Operator: TZ
 Inst : MS13

TZ 6/26/23

Quant Time: Jun 26 14:51:08 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	217082	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.37	114	957326	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	205876	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	410675	12.402	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.20%
57) Toluene-d8 (SS2)	12.47	98	1090889	12.403	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.20%
73) Bromofluorobenzene (SS3)	16.85	174	468482	12.513	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.08%

Target Compounds

						Qvalue
3) Dichlorodifluoromethan...	3.46	85	99652	2.469	ng	98
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	1543	0.084	ng	88
6) Vinyl Chloride	3.79	62	5635	0.238	ng	99
8) Bromomethane	4.11	94	1462	0.093	ng	85
10) Ethanol	4.38	45	18029	1.288	ng	99
12) Acrolein	4.65	56	8108	0.742	ng	96
13) Acetone	4.74	58	33803m	2.821	ng	
14) Trichlorofluoromethane	4.85	101	49222	1.312	ng	99
15) 2-Propanol (Isopropanol)	4.93	45	25336	0.510	ng	82
17) 1,1-Dichloroethene	5.35	96	20352	1.218	ng	97
19) Methylene Chloride	5.44	84	2055	0.116	ng	95
21) Trichlorotrifluoroethane	5.67	151	448316	24.956	ng	99
22) Carbon Disulfide	5.69	76	44386	0.653	ng	# 18
23) trans-1,2-Dichloroethene	6.22	61	47963	1.883	ng	96
24) 1,1-Dichloroethane	6.40	63	22076	0.699	ng	99
26) Vinyl Acetate	6.51	86	8905	3.023	ng	# 27
27) 2-Butanone (MEK)	6.76	72	5962	0.579	ng	96
28) cis-1,2-Dichloroethene	7.15	61	2142699	85.596	ng	98
30) Ethyl Acetate	7.37	61	4003	0.560	ng	# 70
31) n-Hexane	7.38	57	2812	0.105	ng	# 1
32) Chloroform	7.43	83	1057644	30.817	ng	99
34) Tetrahydrofuran (THF)	7.87	72	759	0.069	ng	# 73
38) 1,1,1-Trichloroethane	8.48	97	22558	0.677	ng	98
41) Benzene	8.97	78	7919	0.116	ng	96
42) Carbon Tetrachloride	9.14	117	72102	2.452	ng	98
43) Cyclohexane	9.28	84	4410	0.181	ng	98
47) Trichloroethene	10.21	130	1793368	85.648	ng	99
51) n-Heptane	10.62	71	1806	0.115	ng	89
58) Toluene	12.61	91	13569	0.180	ng	99
64) Tetrachloroethene	14.06	166	283627	11.544	ng	100
67) m- & p-Xylenes	15.66	91	4915	0.070	ng	95
70) o-Xylene	16.27	91	7327	0.106	ng	94
72) 1,1,2,2-Tetrachloroethane	16.24	83	35426	1.132	ng	98
79) 1,3,5-Trimethylbenzene	18.06	105	7115	0.100	ng	94
94) 1,2,4-Trichlorobenzene	21.43	180	1729	0.055	ng	96
95) Naphthalene	21.55	128	7772	0.104	ng	98

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

Data File : I:\MS13\DATA\2023_06\26\06262309.D
Acq On : 26 Jun 2023 11:24
Sample : P2302616-002 (1000mL)
Misc : S37-04102301

Vial: 3
Operator: TZ
Inst : MS13

Quant Time: Jun 26 14:51:08 2023

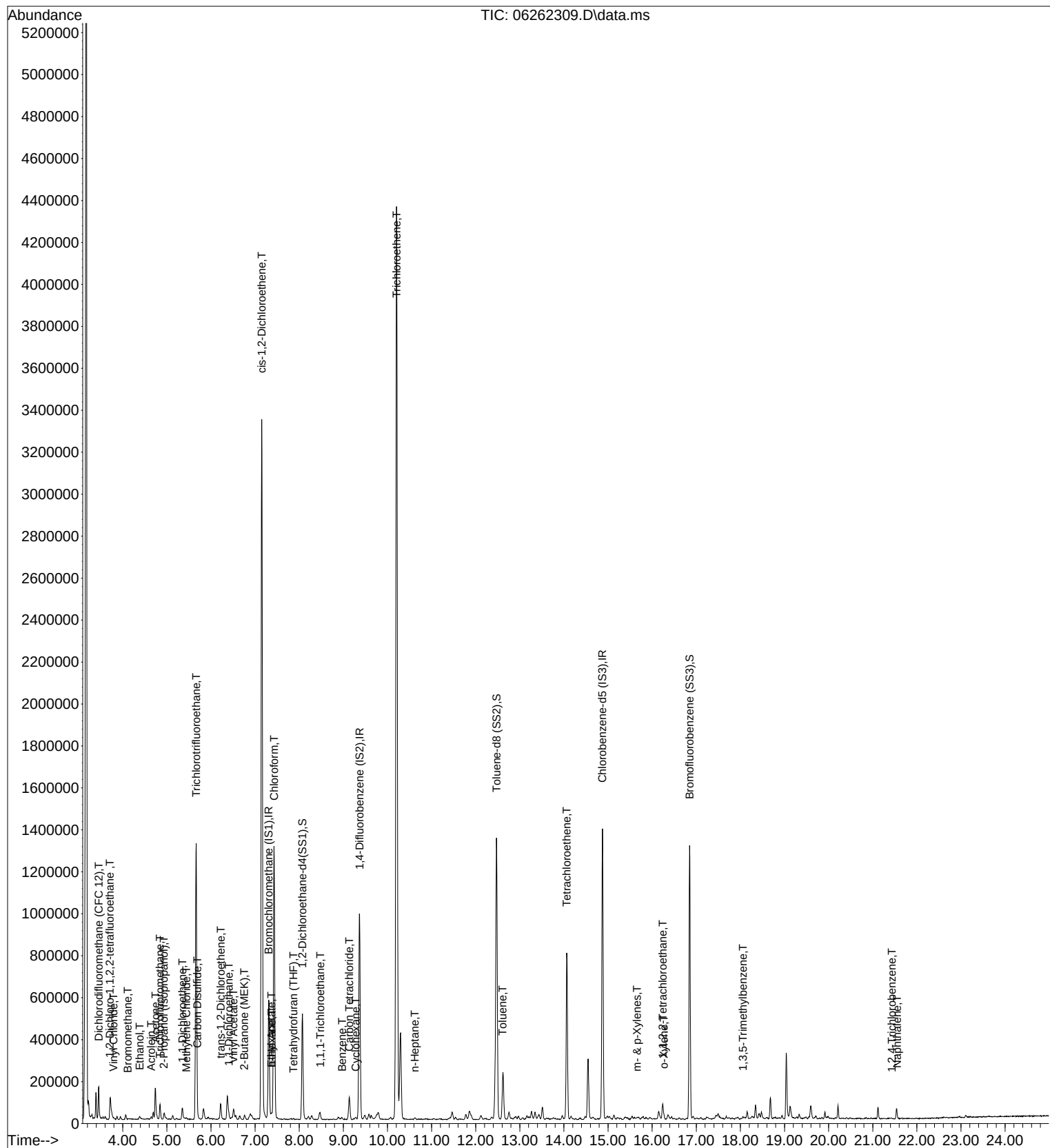
Quant Method : I:\MS13\METHODS\R13062323.M

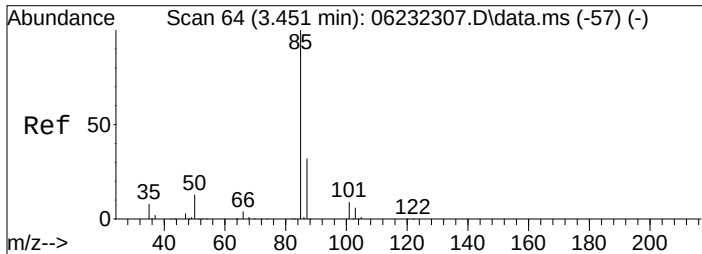
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

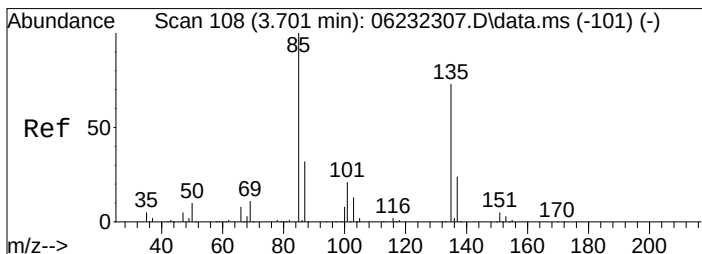
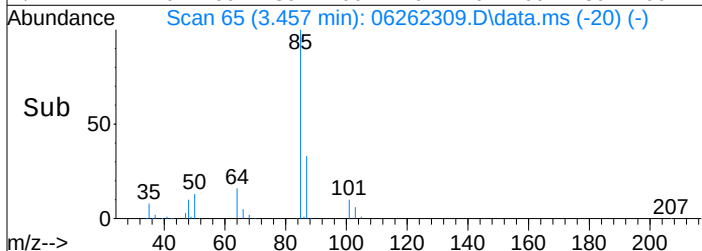
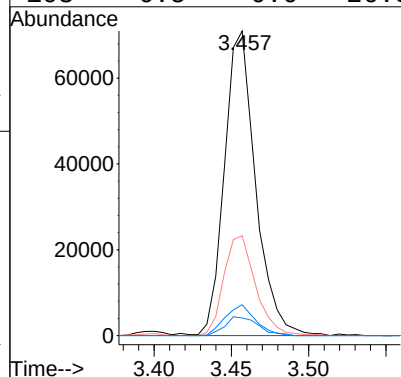
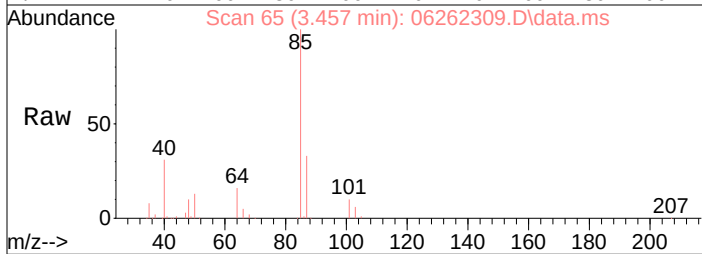
DataAcq Meth:T015B.M





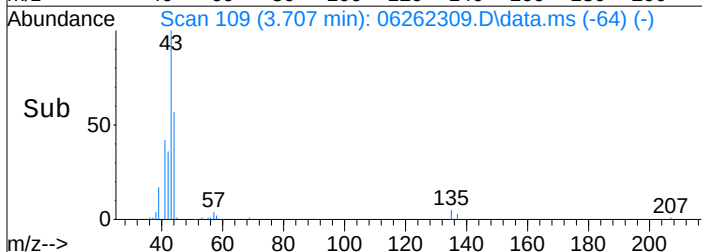
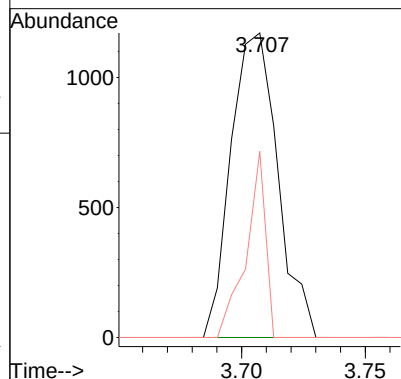
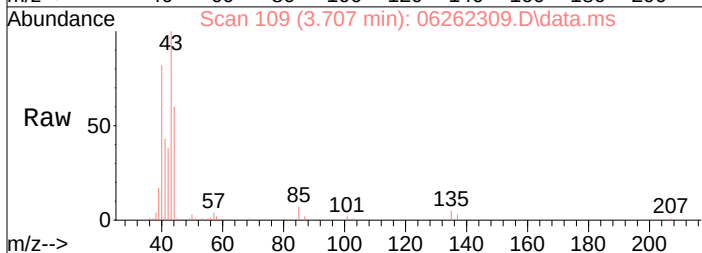
#3
 Dichlorodifluoromethane (CFC 12)
 Concen: 2.47 ng
 RT: 3.46 min Scan# 65
 Delta R.T. 0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

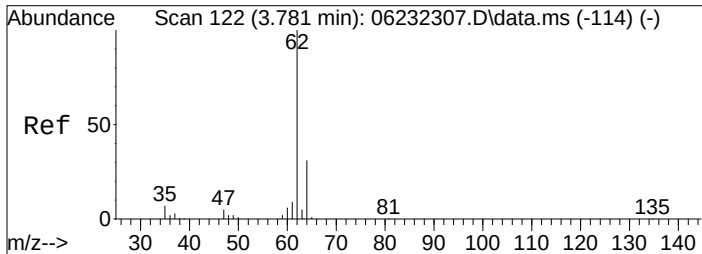
Tgt Ion:	85	Resp:	99652
Ion Ratio		Lower	Upper
85	100		
87	33.6	12.4	52.4
101	9.9	0.0	29.5
103	6.5	0.0	26.3



#5
 1,2-Dichloro-1,1,2,2-tetrafluoroethane
 Concen: 0.08 ng
 RT: 3.71 min Scan# 109
 Delta R.T. 0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

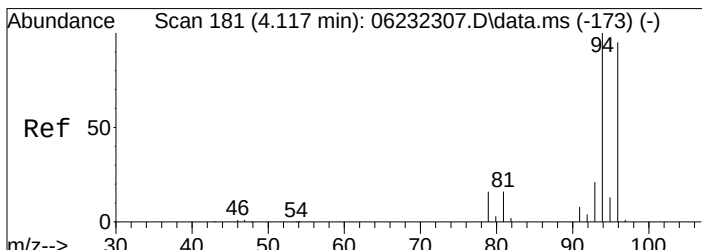
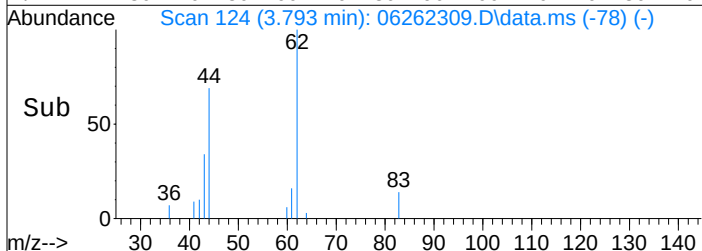
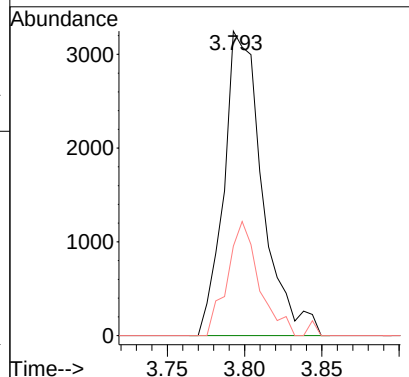
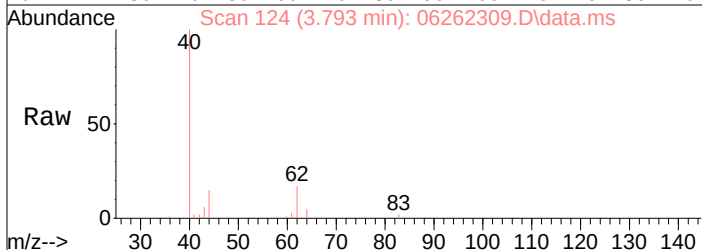
Tgt Ion:	135	Resp:	1543
Ion Ratio		Lower	Upper
135	100		
137	25.3	12.3	52.3





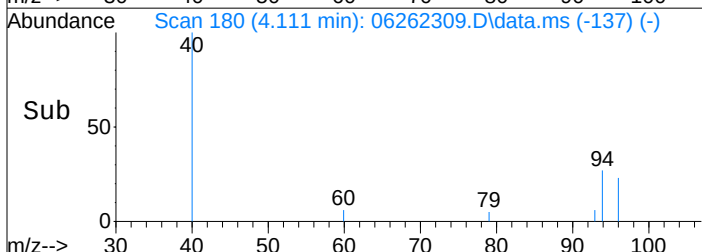
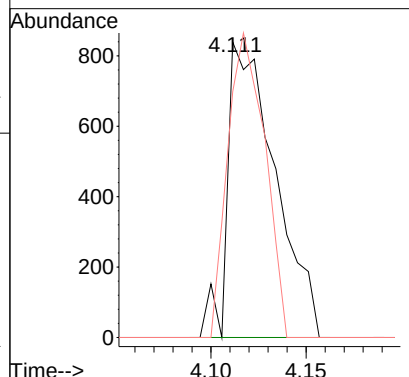
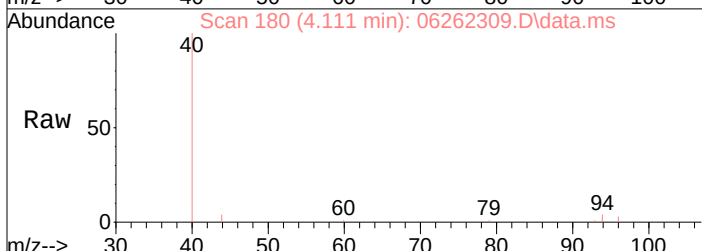
#6
 Vinyl Chloride
 Concen: 0.24 ng
 RT: 3.79 min Scan# 124
 Delta R.T. 0.012 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

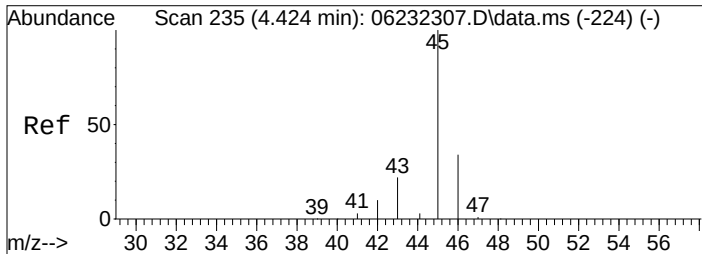
Tgt Ion:	62	Resp:	5635
Ion Ratio	Lower	Upper	
62	100		
64	30.8	11.5	51.5



#8
 Bromomethane
 Concen: 0.09 ng
 RT: 4.11 min Scan# 180
 Delta R.T. -0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

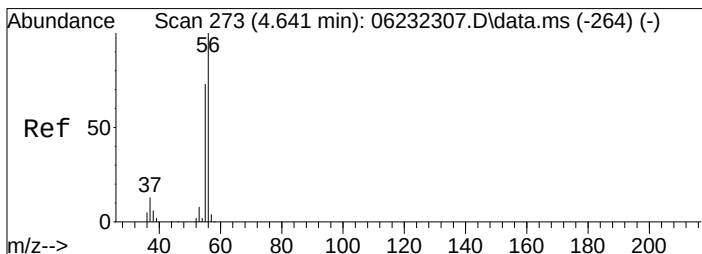
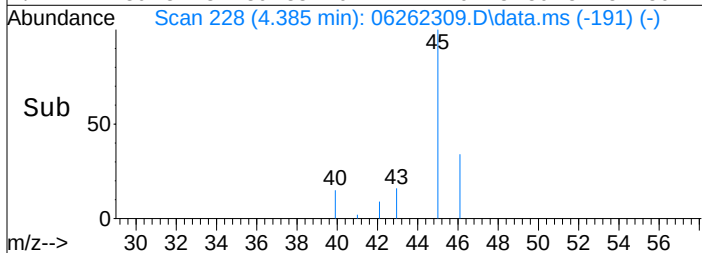
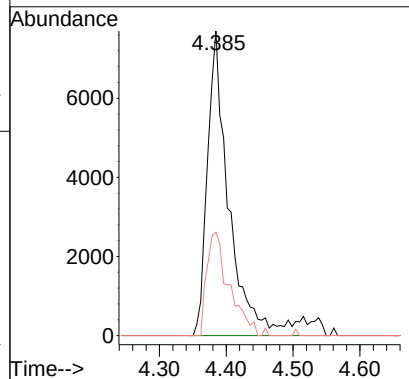
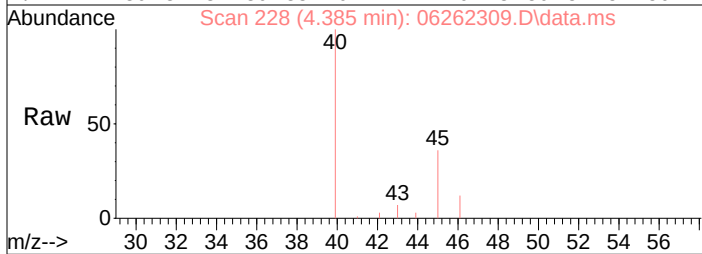
Tgt Ion:	94	Resp:	1462
Ion Ratio	Lower	Upper	
94	100		
96	80.4	74.8	114.8





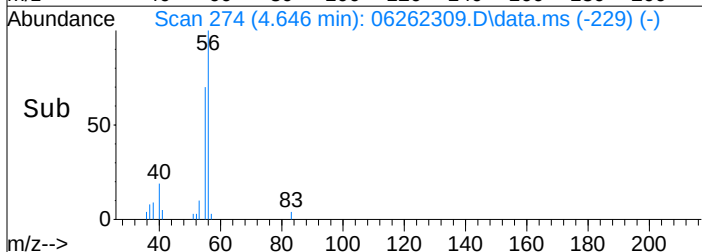
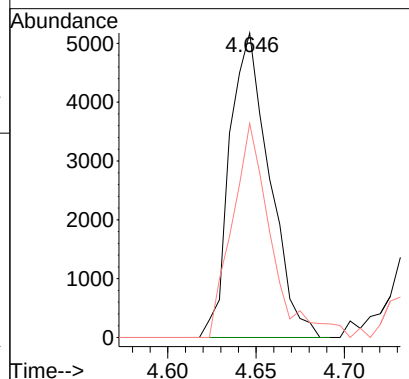
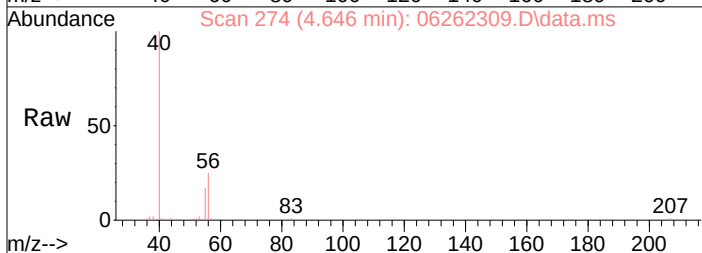
#10
 Ethanol
 Concen: 1.29 ng
 RT: 4.38 min Scan# 228
 Delta R.T. -0.040 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

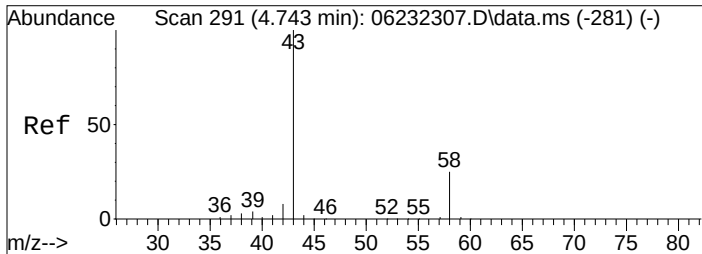
Tgt Ion:	45	Resp:	18029
Ion Ratio		Lower	Upper
45	100		
46	33.6	13.1	53.1



#12
 Acrolein
 Concen: 0.74 ng
 RT: 4.65 min Scan# 274
 Delta R.T. 0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

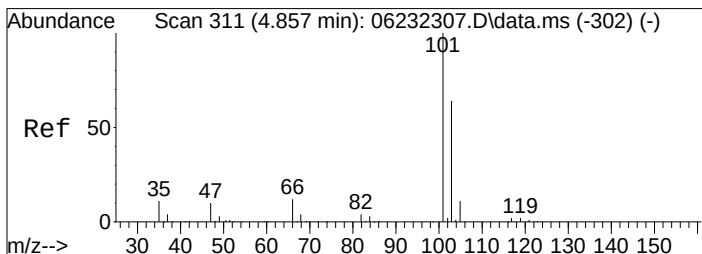
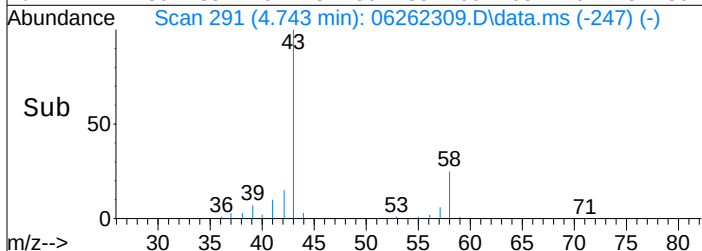
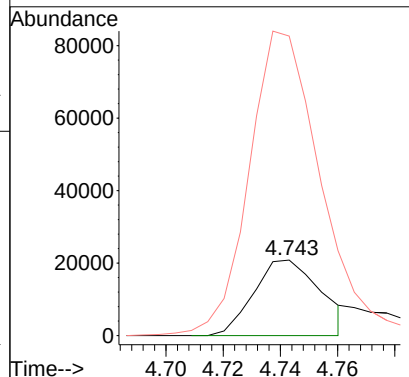
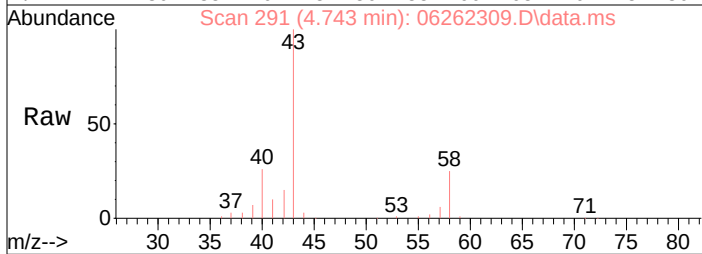
Tgt Ion:	56	Resp:	8108
Ion Ratio		Lower	Upper
56	100		
55	68.1	51.3	91.3





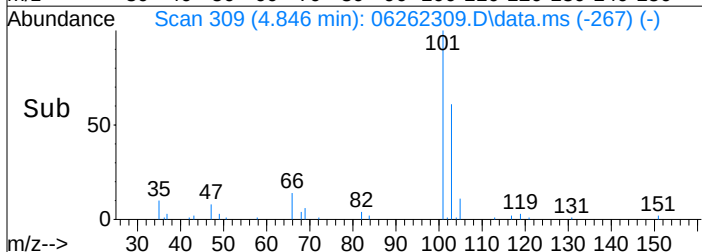
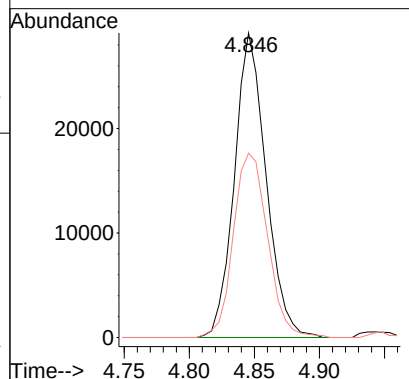
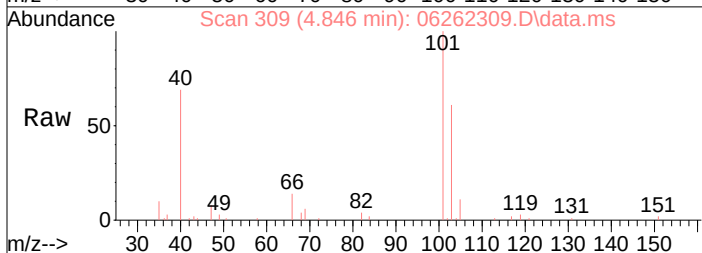
#13
 Acetone
 Concen: 2.82 ng m
 RT: 4.74 min Scan# 291
 Delta R.T. 0.000 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

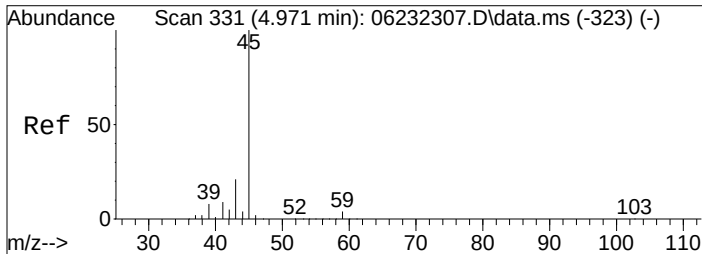
Tgt Ion	Ratio	Lower	Upper
58	100		
43	449.5	368.8	428.8#



#14
 Trichlorofluoromethane
 Concen: 1.31 ng
 RT: 4.85 min Scan# 309
 Delta R.T. -0.011 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

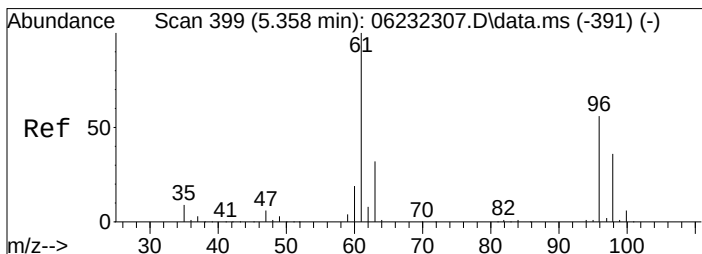
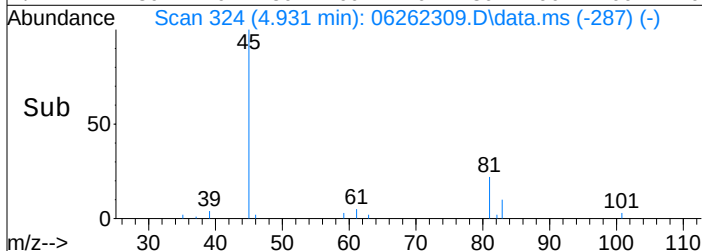
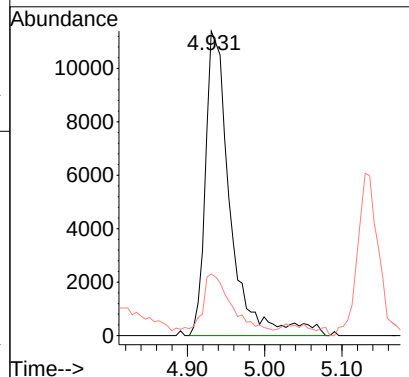
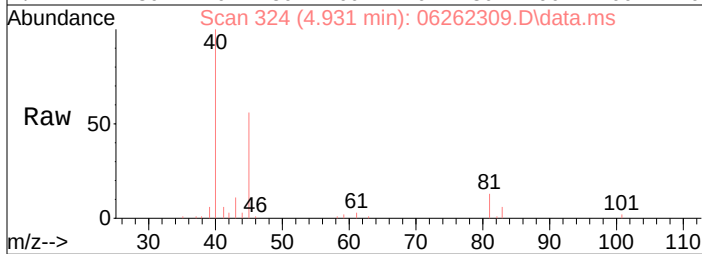
Tgt Ion	Ratio	Lower	Upper
101	100		
103	65.5	44.7	84.7





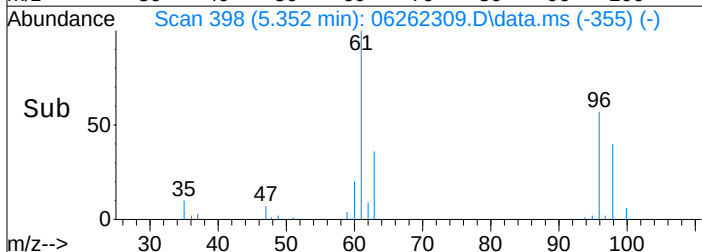
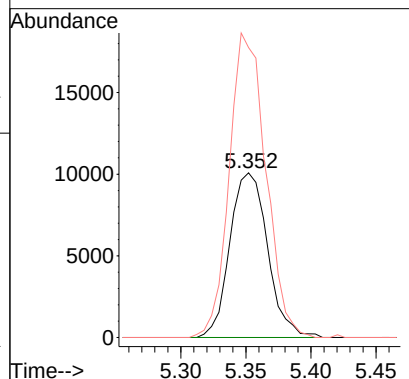
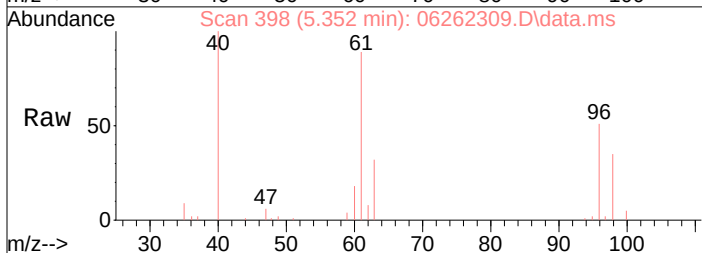
#15
 2-Propanol (Isopropanol)
 Concen: 0.51 ng
 RT: 4.93 min Scan# 324
 Delta R.T. -0.040 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

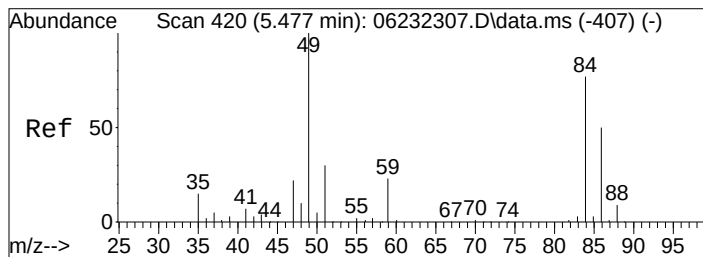
Tgt Ion: 45 Resp: 25336
 Ion Ratio Lower Upper
 45 100
 43 29.9 1.3 41.3



#17
 1,1-Dichloroethene
 Concen: 1.22 ng
 RT: 5.35 min Scan# 398
 Delta R.T. -0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

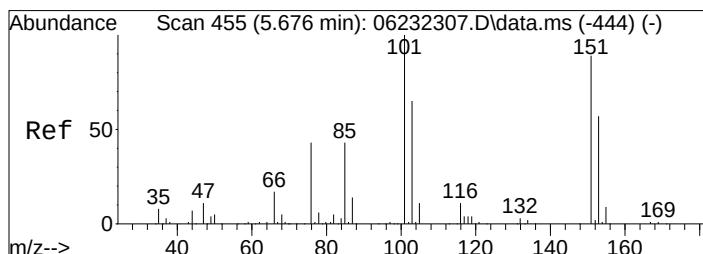
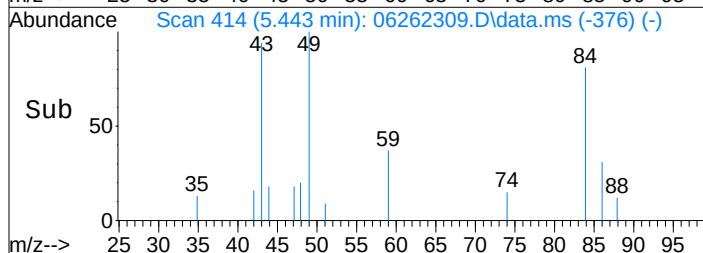
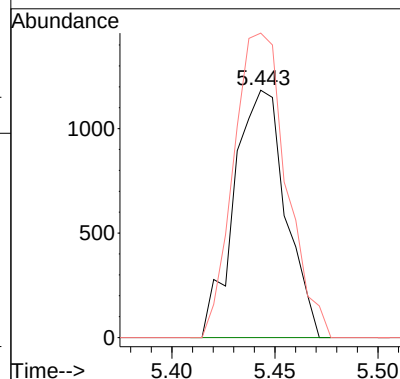
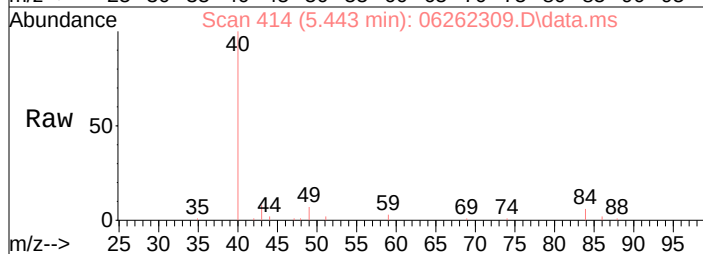
Tgt Ion: 96 Resp: 20352
 Ion Ratio Lower Upper
 96 100
 61 179.0 155.0 195.0





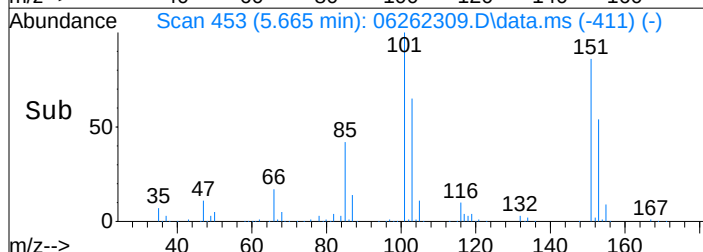
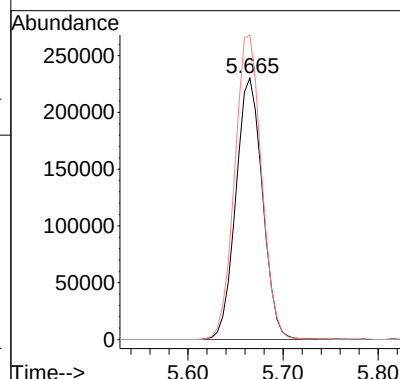
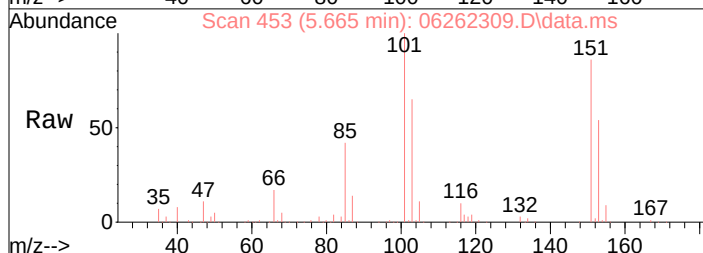
#19
Methylene Chloride
Concen: 0.12 ng
RT: 5.44 min Scan# 414
Delta R.T. -0.034 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

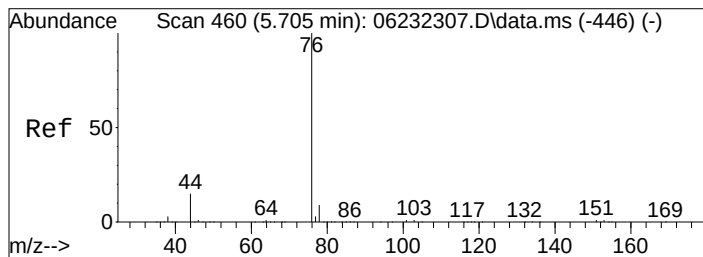
Tgt Ion: 84 Resp: 2055
Ion Ratio Lower Upper
84 100
49 126.4 107.0 157.0



#21
Trichlorotrifluoroethane
Concen: 24.96 ng
RT: 5.67 min Scan# 453
Delta R.T. -0.011 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

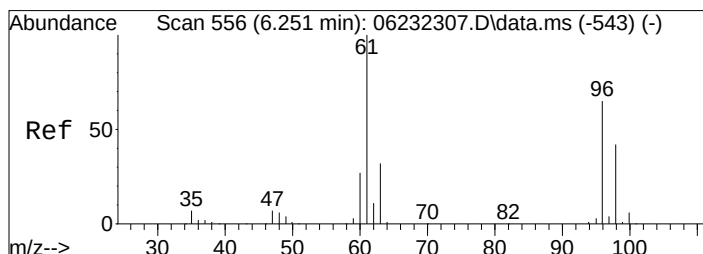
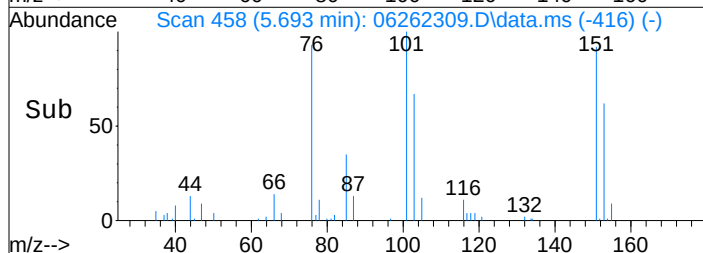
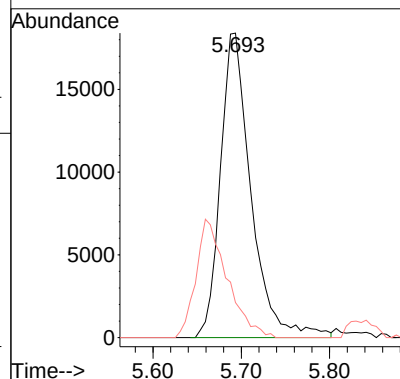
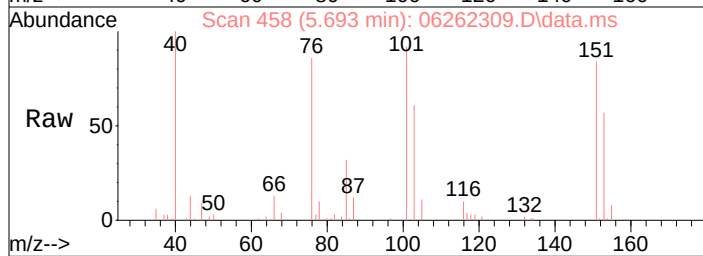
Tgt Ion: 151 Resp: 448316
Ion Ratio Lower Upper
151 100
101 117.6 96.8 136.8





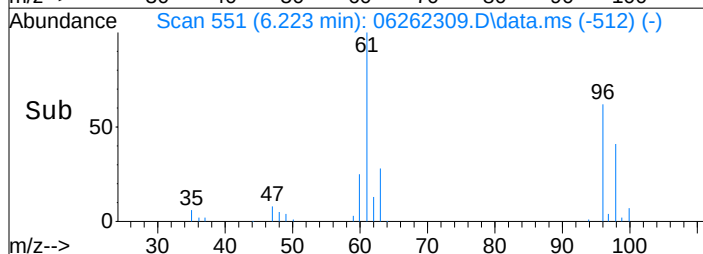
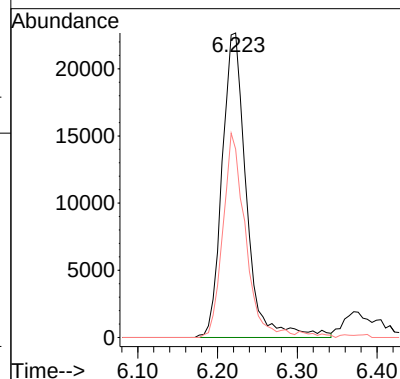
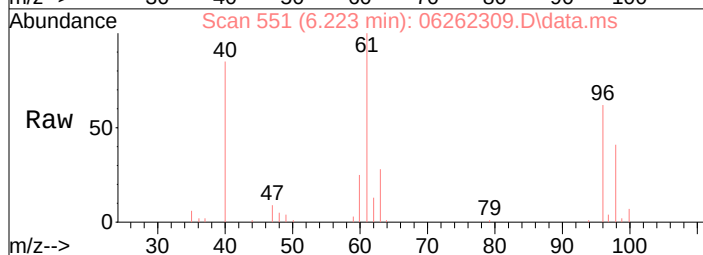
#22
Carbon Disulfide
Concen: 0.65 ng
RT: 5.69 min Scan# 458
Delta R.T. -0.011 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

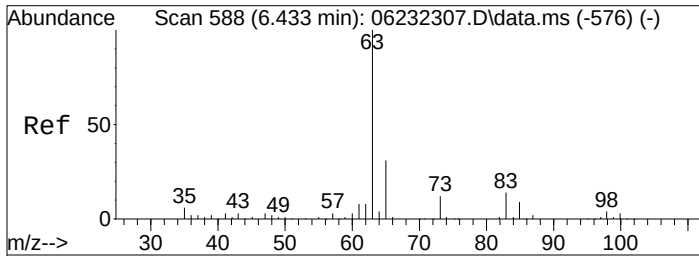
Tgt Ion: 76 Resp: 44386
Ion Ratio Lower Upper
76 100
78 39.5 0.0 29.5#



#23
trans-1,2-Dichloroethene
Concen: 1.88 ng
RT: 6.22 min Scan# 551
Delta R.T. -0.028 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

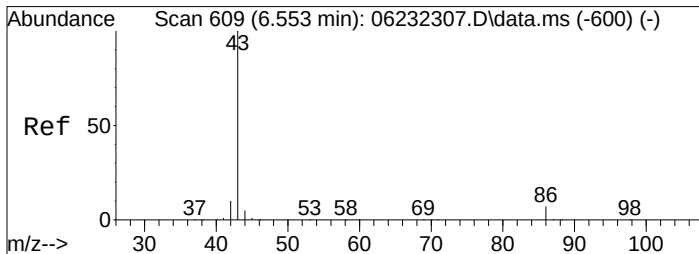
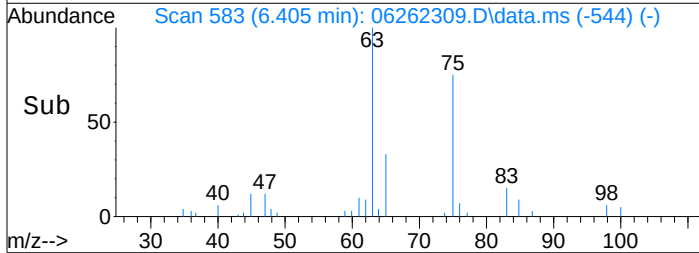
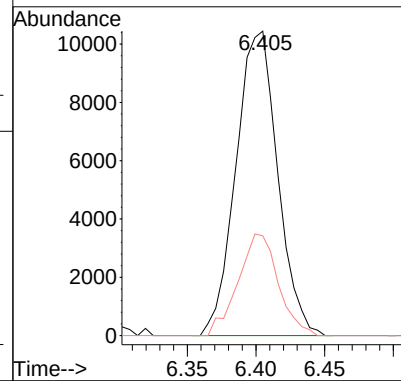
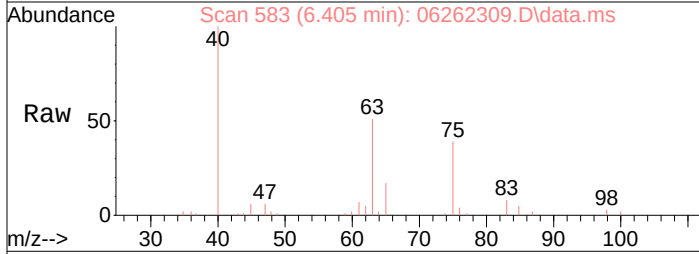
Tgt Ion: 61 Resp: 47963
Ion Ratio Lower Upper
61 100
96 62.0 45.3 85.3





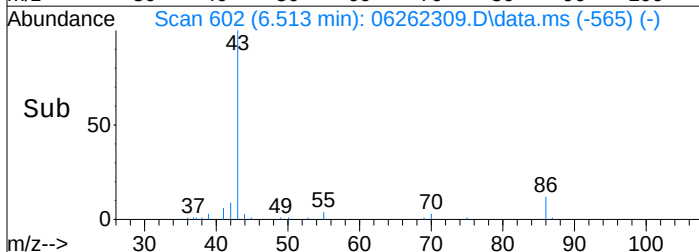
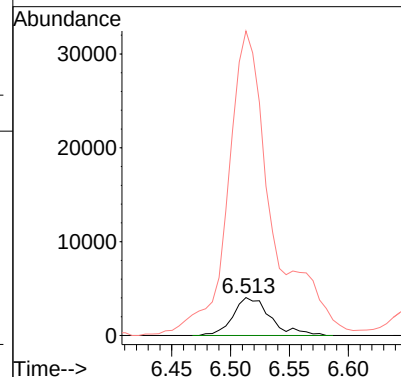
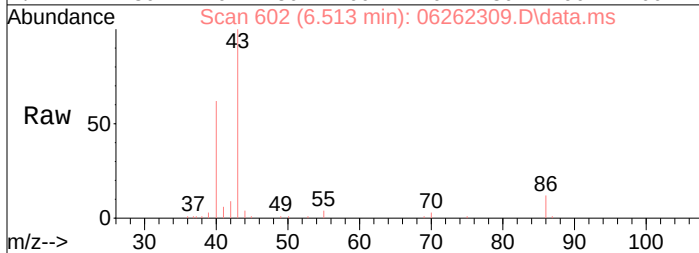
#24
1,1-Dichloroethane
Concen: 0.70 ng
RT: 6.40 min Scan# 583
Delta R.T. -0.028 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

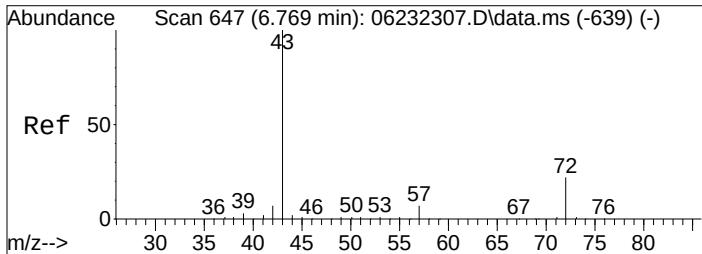
Tgt Ion: 63 Resp: 22076
Ion Ratio Lower Upper
63 100
65 32.2 11.8 51.8



#26
Vinyl Acetate
Concen: 3.02 ng
RT: 6.51 min Scan# 602
Delta R.T. -0.040 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

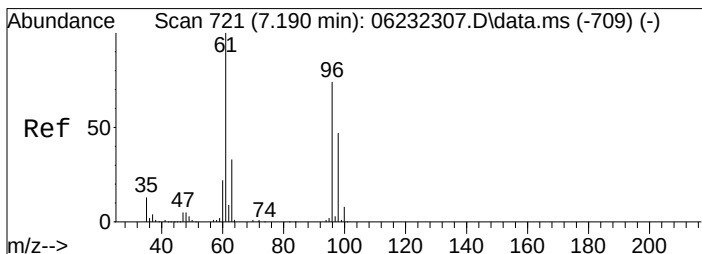
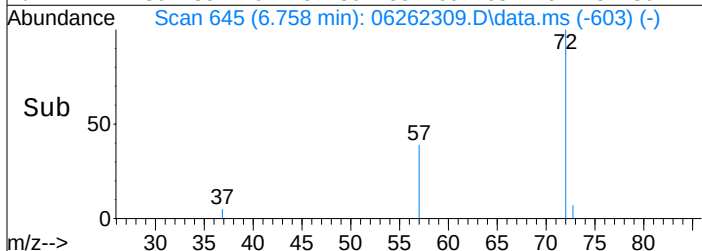
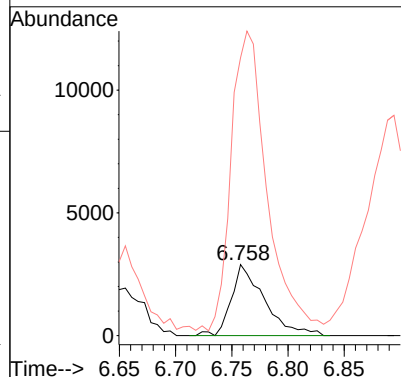
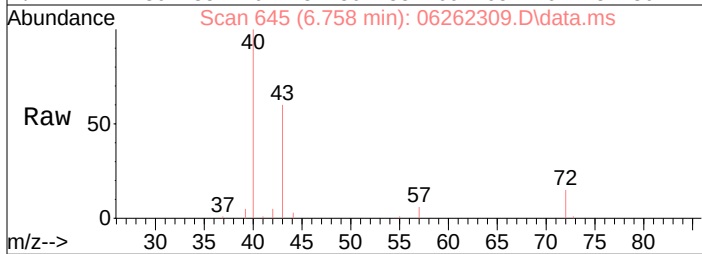
Tgt Ion: 86 Resp: 8905
Ion Ratio Lower Upper
86 100
43 962.6 1347.9 1387.9#





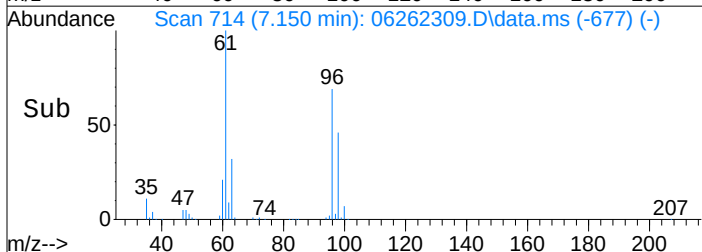
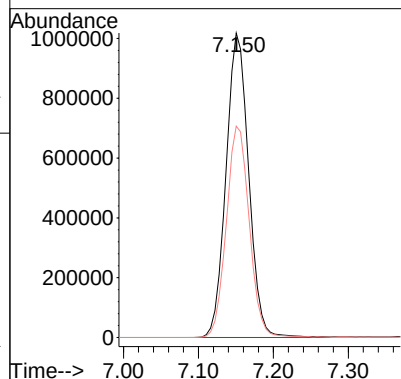
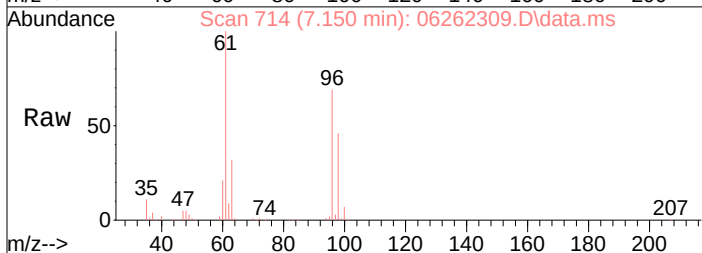
#27
2-Butanone (MEK)
Concen: 0.58 ng
RT: 6.76 min Scan# 645
Delta R.T. -0.011 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

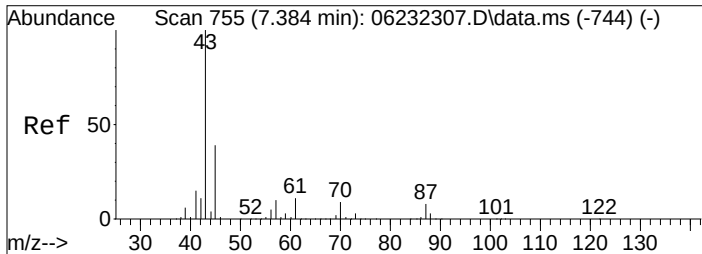
Tgt Ion	Ratio	Lower	Upper
72	100		
43	451.1	421.3	461.3



#28
cis-1,2-Dichloroethene
Concen: 85.60 ng
RT: 7.15 min Scan# 714
Delta R.T. -0.040 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

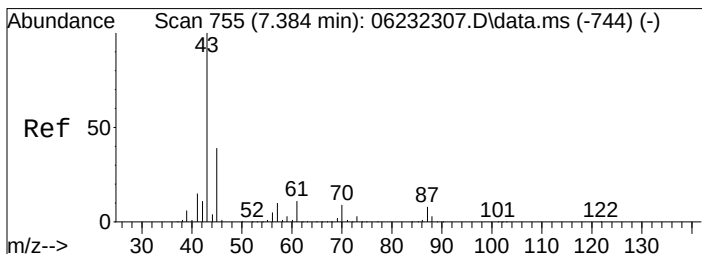
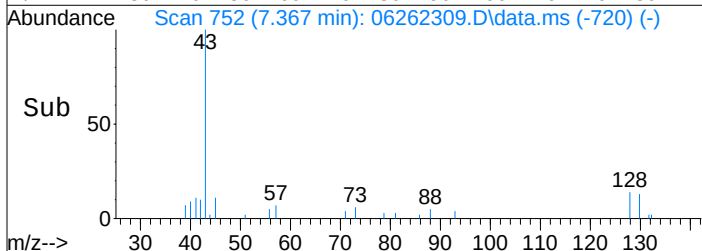
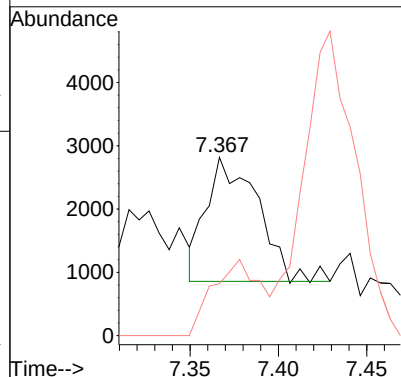
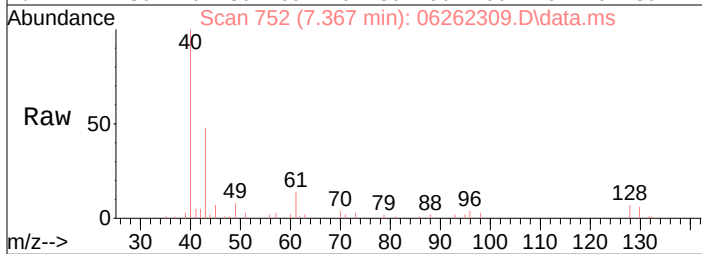
Tgt Ion	Ratio	Lower	Upper
61	100		
96	70.4	52.0	92.0





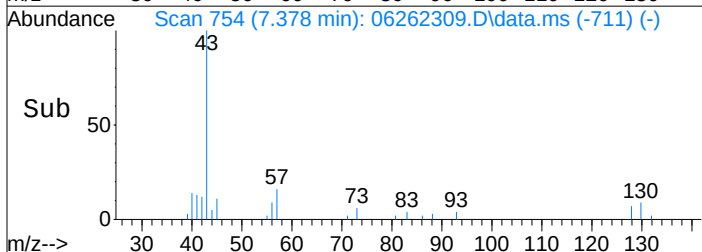
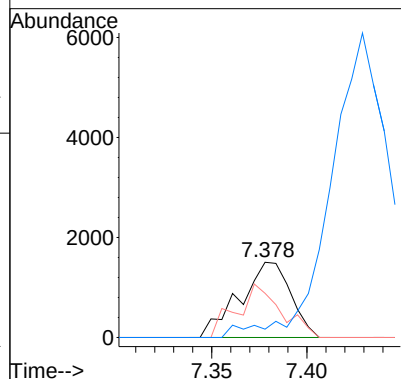
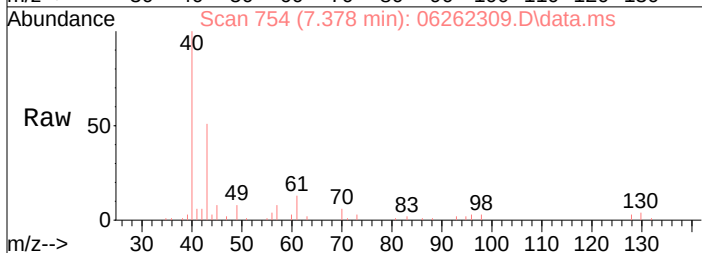
#30
Ethyl Acetate
Concen: 0.56 ng
RT: 7.37 min Scan# 752
Delta R.T. -0.017 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

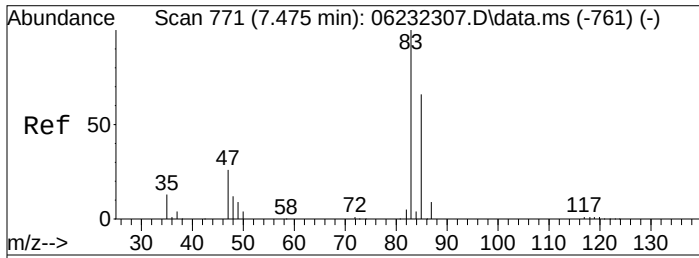
Tgt Ion: 61 Resp: 4003
Ion Ratio Lower Upper
61 100
70 56.0 63.1 103.1#



#31
n-Hexane
Concen: 0.10 ng
RT: 7.38 min Scan# 754
Delta R.T. -0.006 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

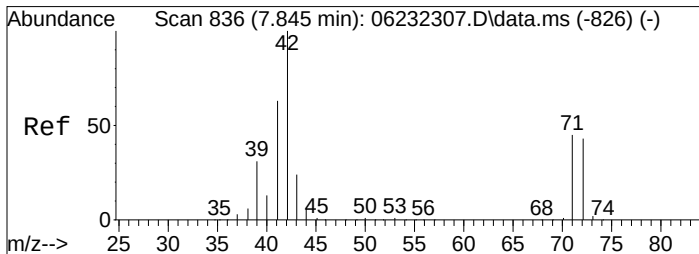
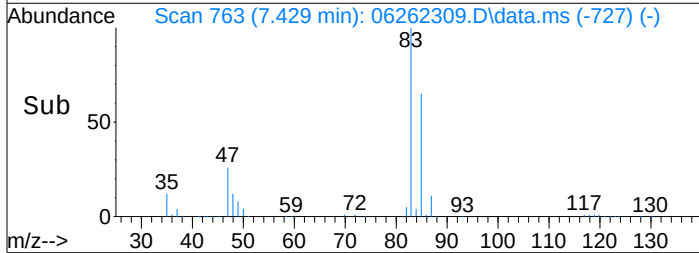
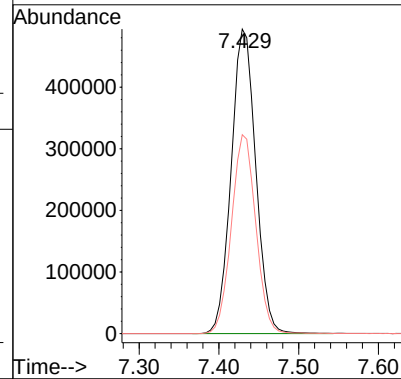
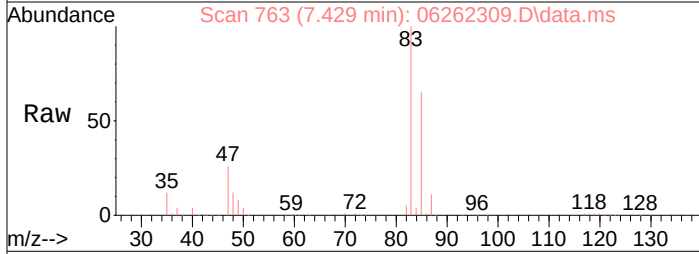
Tgt Ion: 57 Resp: 2812
Ion Ratio Lower Upper
57 100
56 61.7 43.8 65.6
86 456.5 11.3 16.9#





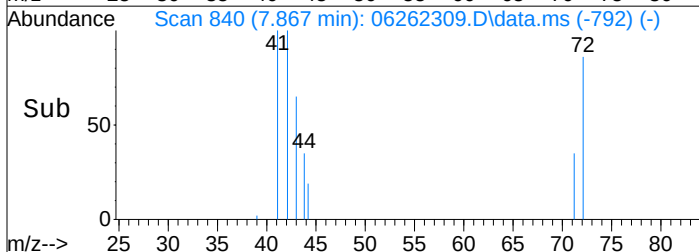
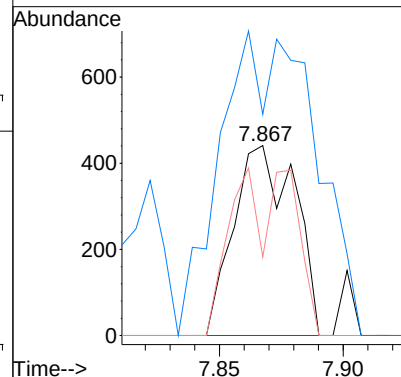
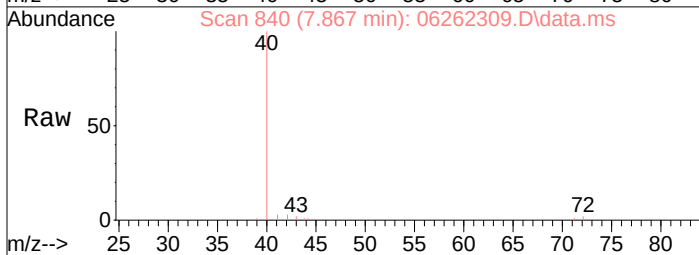
#32
Chloroform
Concen: 30.82 ng
RT: 7.43 min Scan# 763
Delta R.T. -0.045 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

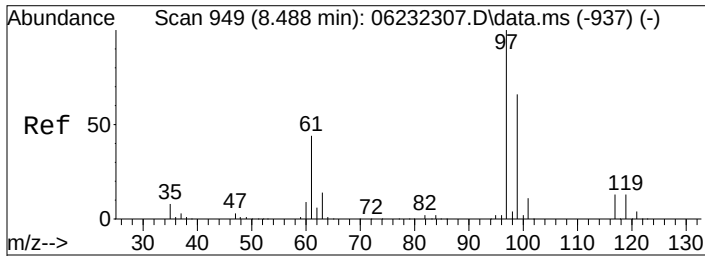
Tgt Ion: 83 Resp: 1057644
Ion Ratio Lower Upper
83 100
85 64.8 45.2 85.2



#34
Tetrahydrofuran (THF)
Concen: 0.07 ng
RT: 7.87 min Scan# 840
Delta R.T. 0.023 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

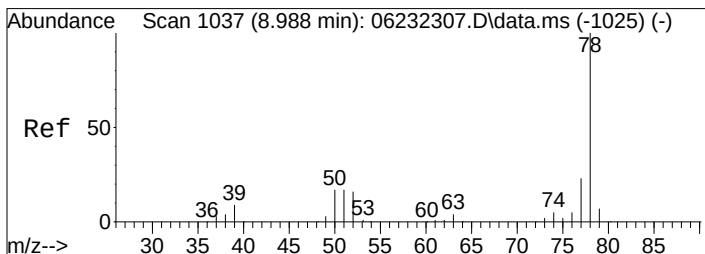
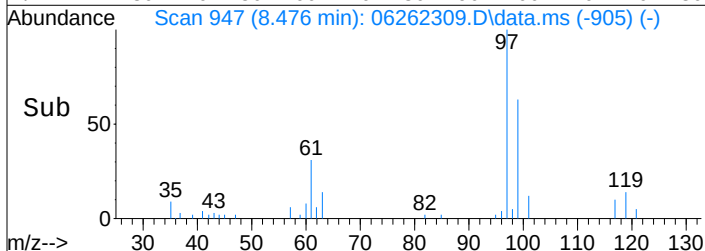
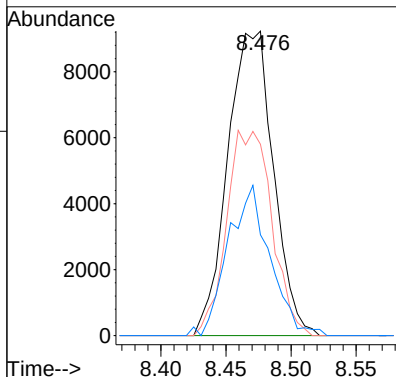
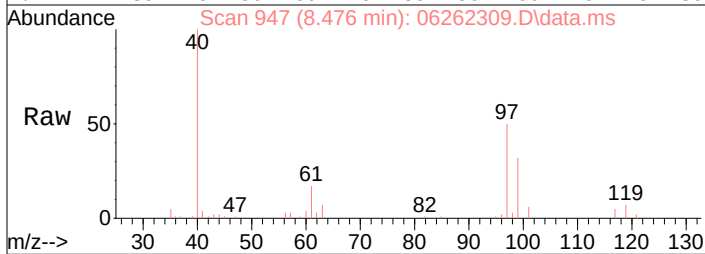
Tgt Ion: 72 Resp: 759
Ion Ratio Lower Upper
72 100
71 47.3 80.9 120.9#
42 248.9 205.0 245.0#





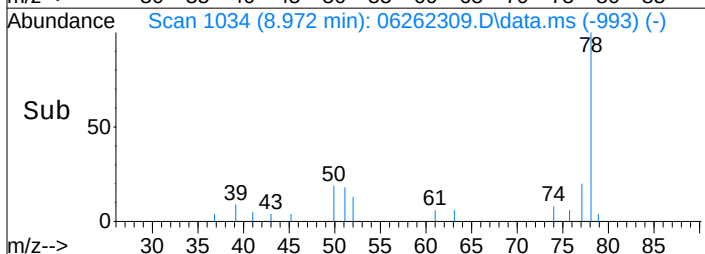
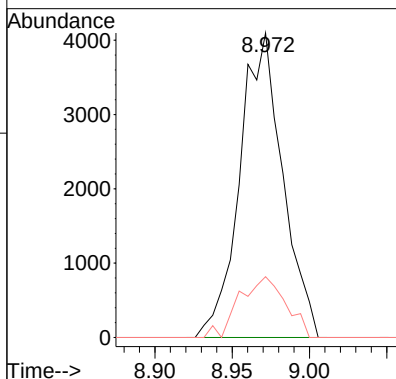
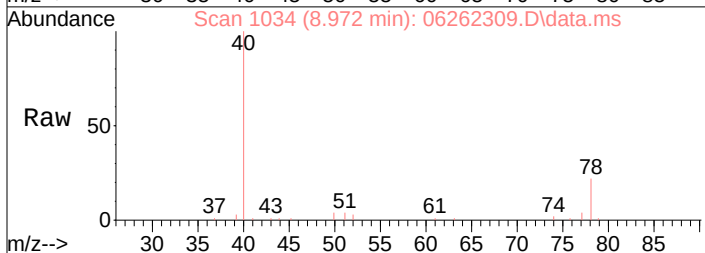
#38
 1,1,1-Trichloroethane
 Concen: 0.68 ng
 RT: 8.48 min Scan# 947
 Delta R.T. -0.011 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

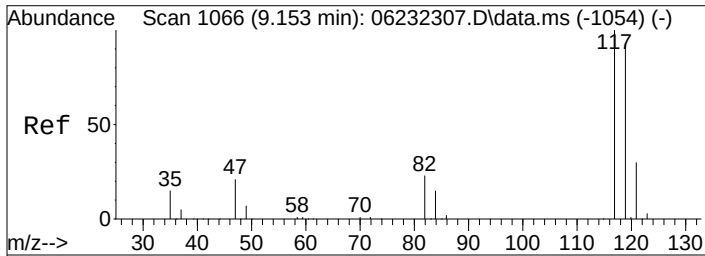
Tgt Ion:	97	Resp:	22558
Ion Ratio	Lower	Upper	
97	100		
99	66.6	44.6	84.6
61	45.2	24.0	64.0



#41
 Benzene
 Concen: 0.12 ng
 RT: 8.97 min Scan# 1034
 Delta R.T. -0.017 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

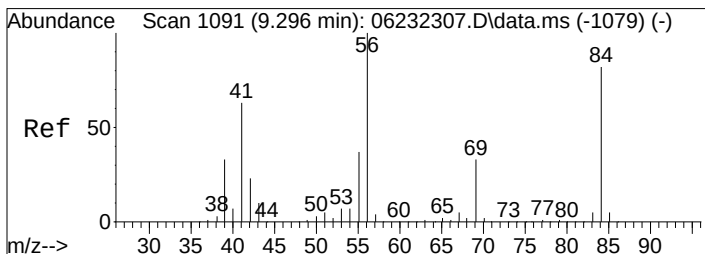
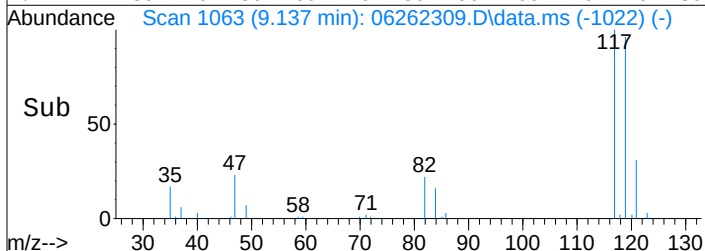
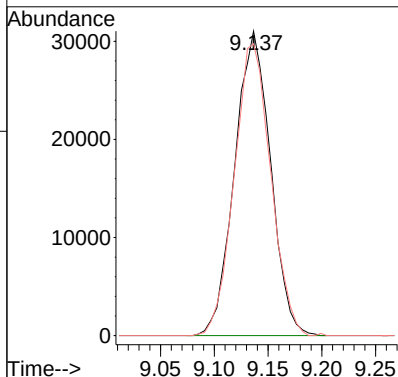
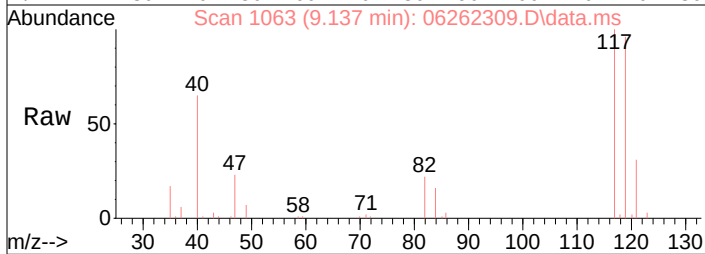
Tgt Ion:	78	Resp:	7919
Ion Ratio	Lower	Upper	
78	100		
77	21.5	3.3	43.3





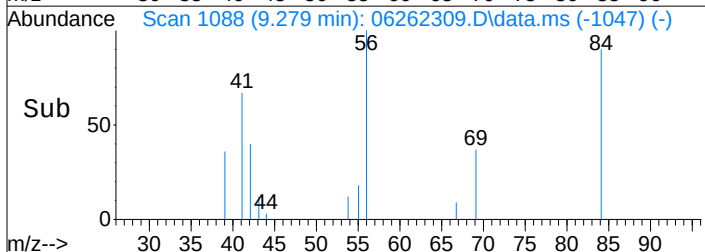
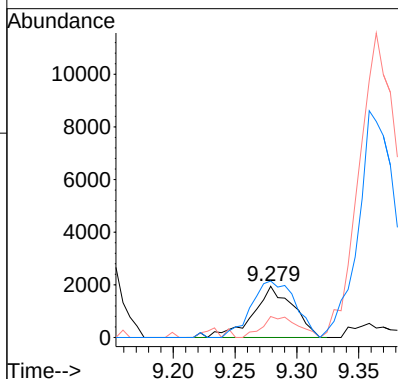
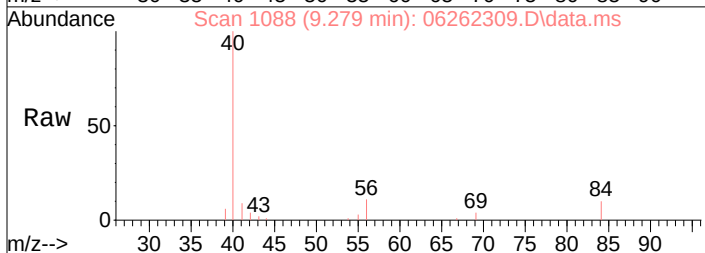
#42
Carbon Tetrachloride
Concen: 2.45 ng
RT: 9.14 min Scan# 1063
Delta R.T. -0.017 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

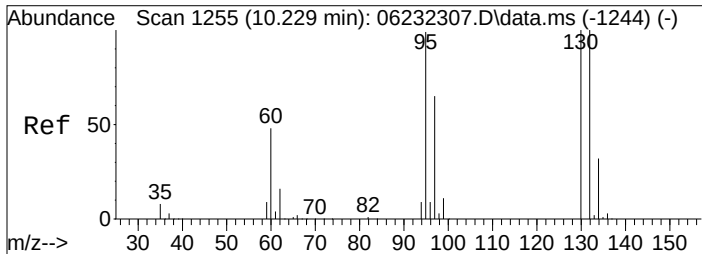
Tgt Ion: 117 Resp: 72102
Ion Ratio Lower Upper
117 100
119 97.5 75.2 115.2



#43
Cyclohexane
Concen: 0.18 ng
RT: 9.28 min Scan# 1088
Delta R.T. -0.017 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

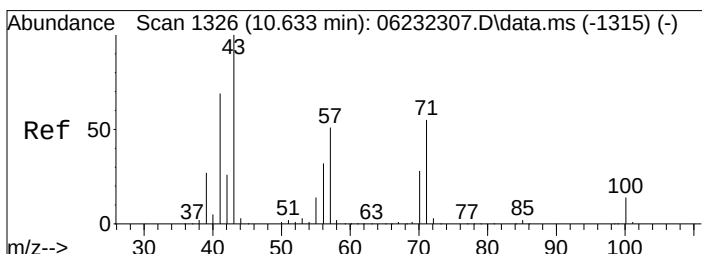
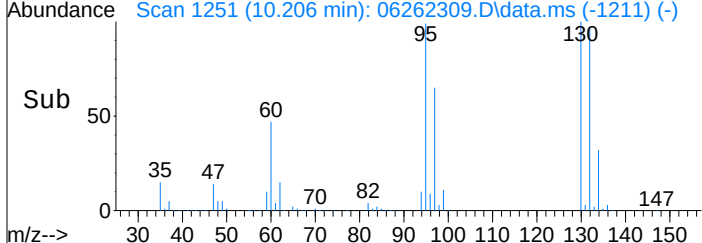
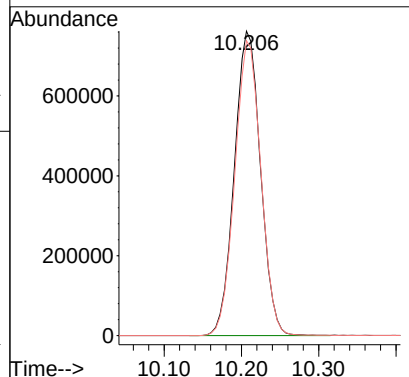
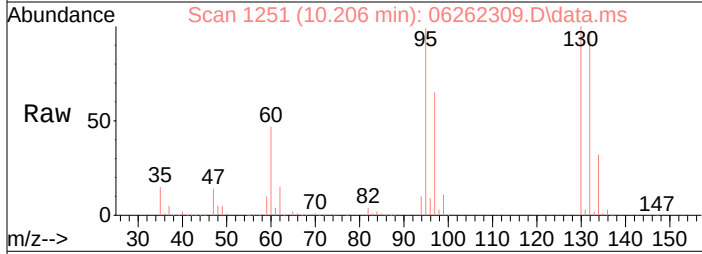
Tgt Ion: 84 Resp: 4410
Ion Ratio Lower Upper
84 100
69 36.2 19.8 59.8
56 120.2 100.0 140.0





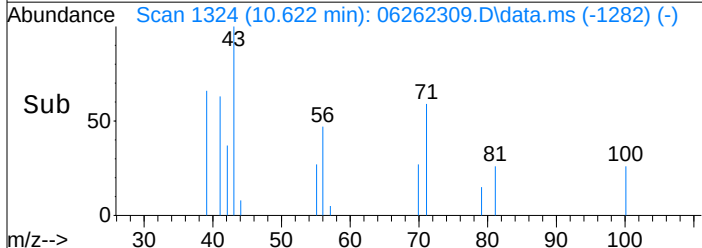
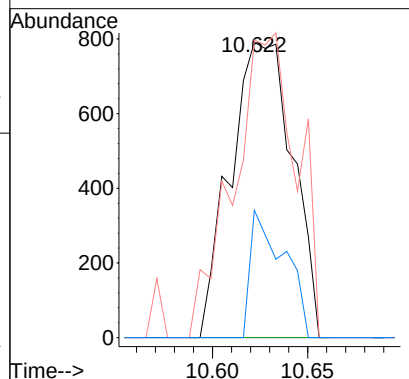
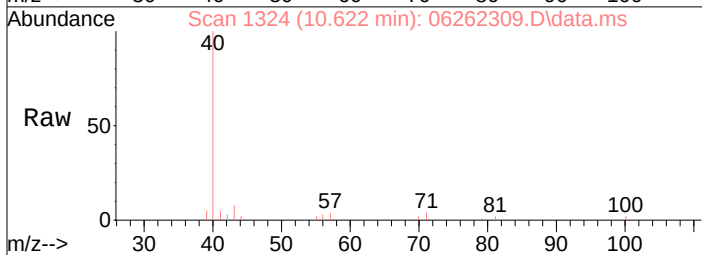
#47
 Trichloroethene
 Concen: 85.65 ng
 RT: 10.21 min Scan# 1251
 Delta R.T. -0.023 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

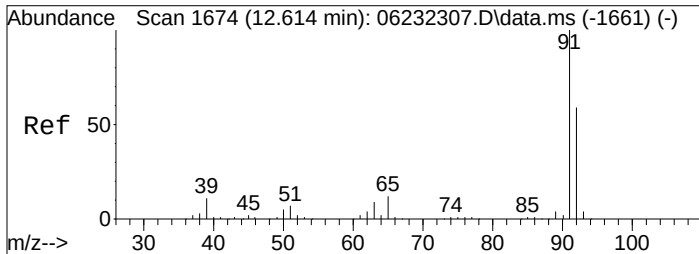
Tgt Ion: 130 Resp: 1793368
 Ion Ratio Lower Upper
 130 100
 132 96.6 77.3 117.3



#51
 n-Heptane
 Concen: 0.12 ng
 RT: 10.62 min Scan# 1324
 Delta R.T. -0.011 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

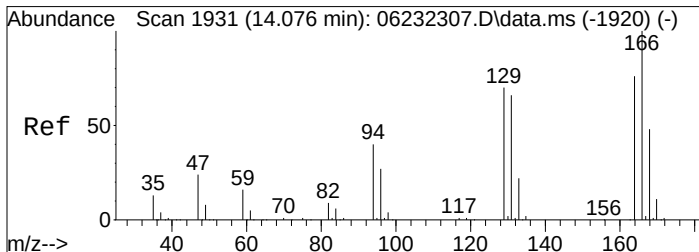
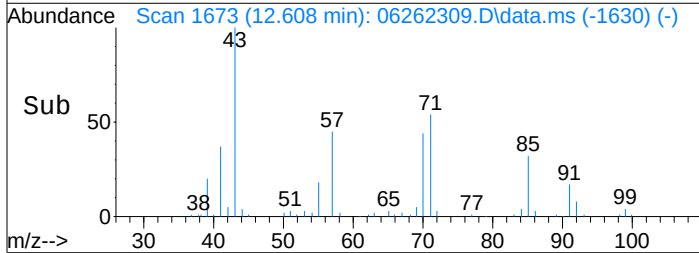
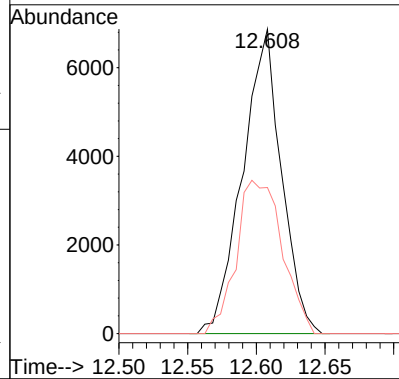
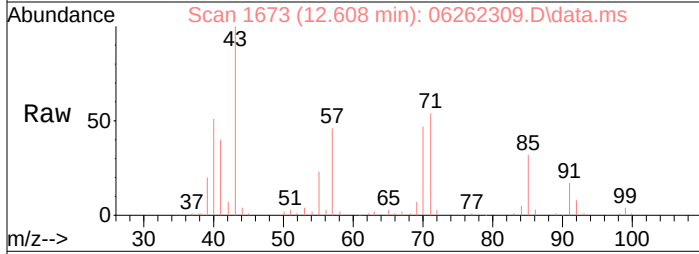
Tgt Ion: 71 Resp: 1806
 Ion Ratio Lower Upper
 71 100
 57 104.3 71.5 111.5
 100 23.4 5.2 45.2





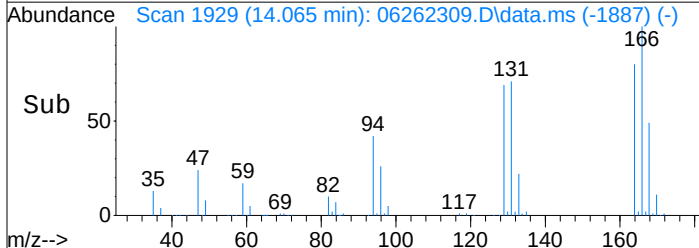
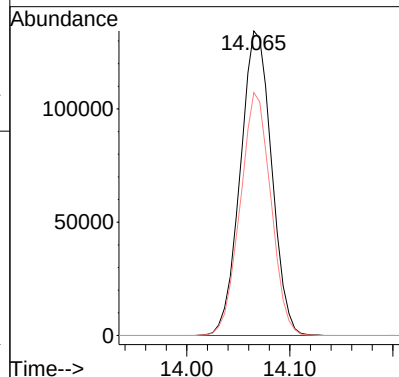
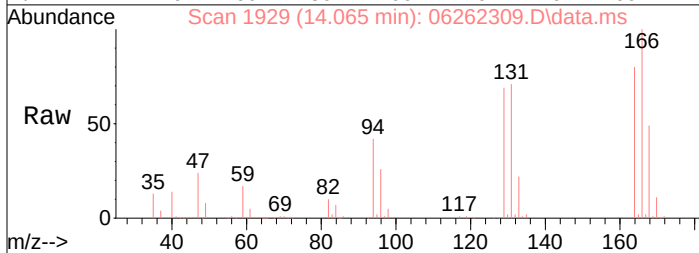
#58
Toluene
Concen: 0.18 ng
RT: 12.61 min Scan# 1673
Delta R.T. -0.006 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

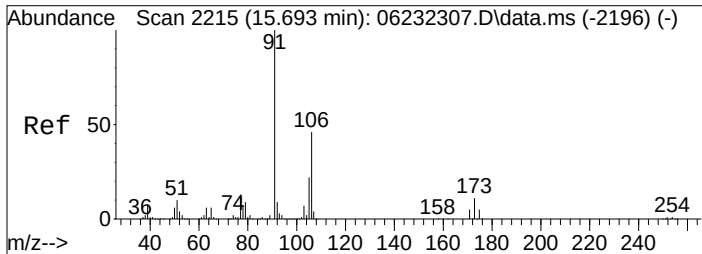
Tgt Ion: 91 Resp: 13569
Ion Ratio Lower Upper
91 100
92 59.3 38.8 78.8



#64
Tetrachloroethene
Concen: 11.54 ng
RT: 14.06 min Scan# 1929
Delta R.T. -0.011 min
Lab File: 06262309.D
Acq: 26 Jun 2023 11:24

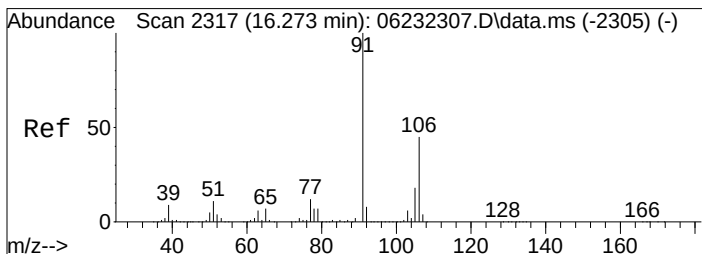
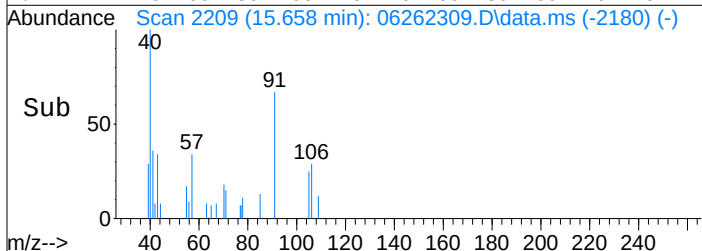
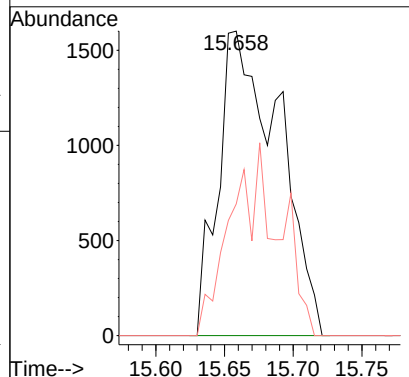
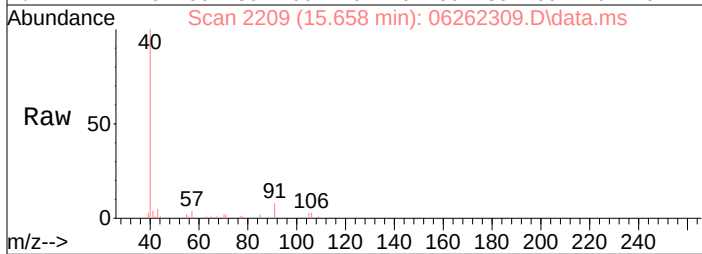
Tgt Ion: 166 Resp: 283627
Ion Ratio Lower Upper
166 100
164 78.1 58.1 98.1





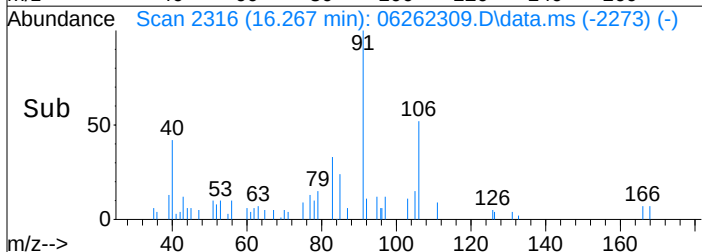
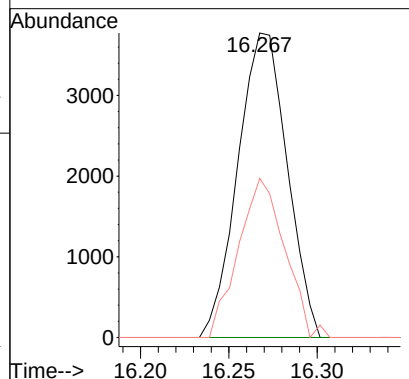
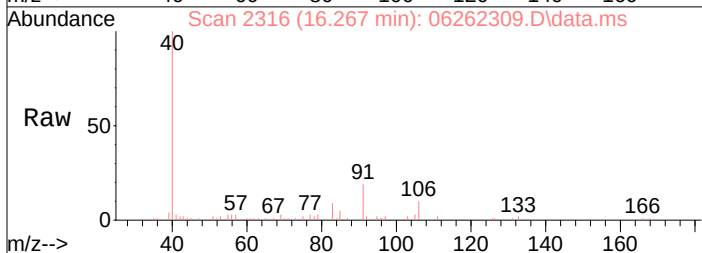
#67
 m- & p-Xylenes
 Concen: 0.07 ng
 RT: 15.66 min Scan# 2209
 Delta R.T. -0.034 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

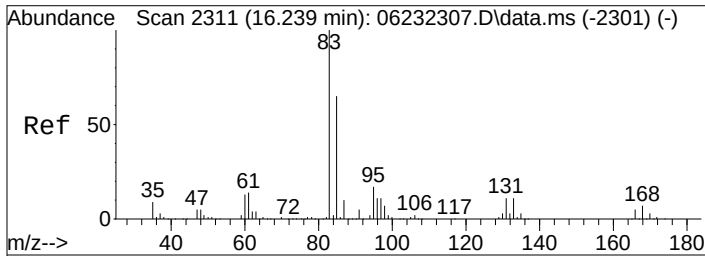
Tgt Ion:	91	Resp:	4915
Ion Ratio	Lower	Upper	
91	100		
106	49.8	26.3	66.3



#70
 o-Xylene
 Concen: 0.11 ng
 RT: 16.27 min Scan# 2316
 Delta R.T. -0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

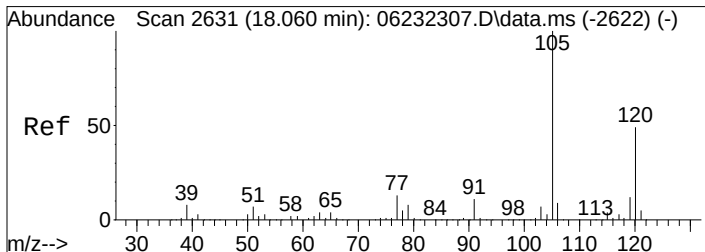
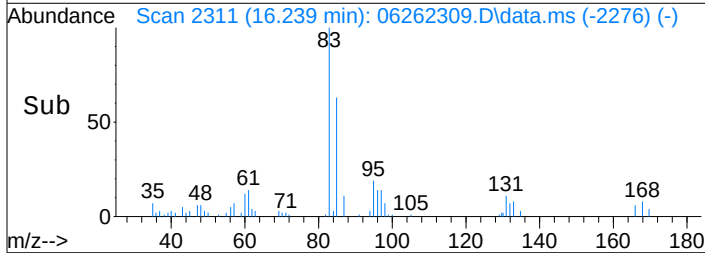
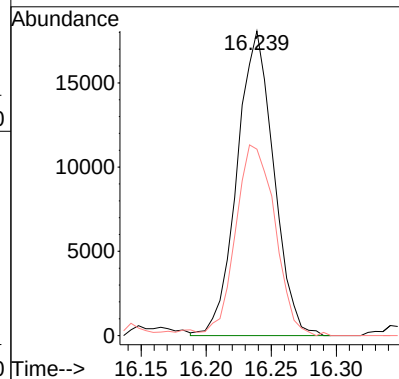
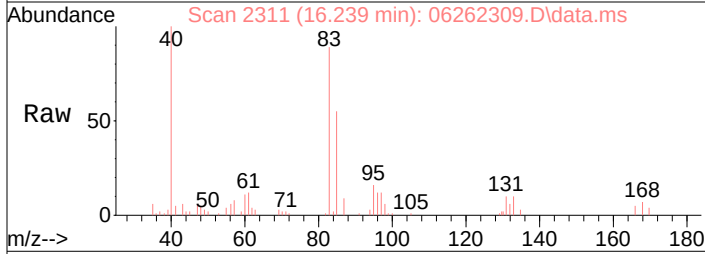
Tgt Ion:	91	Resp:	7327
Ion Ratio	Lower	Upper	
91	100		
106	49.1	25.0	65.0





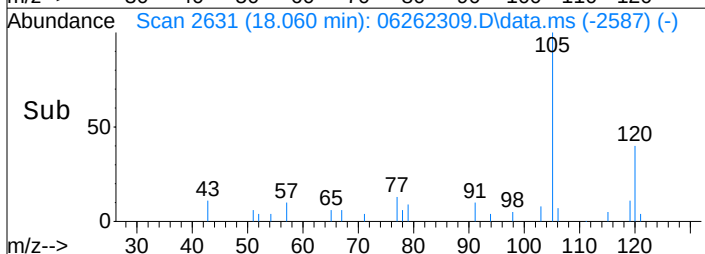
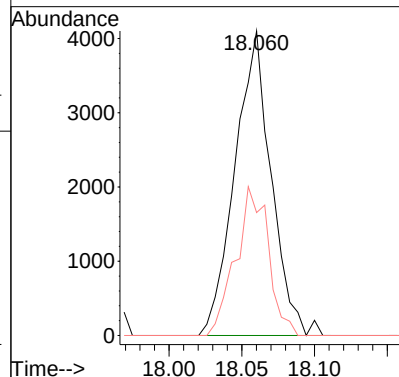
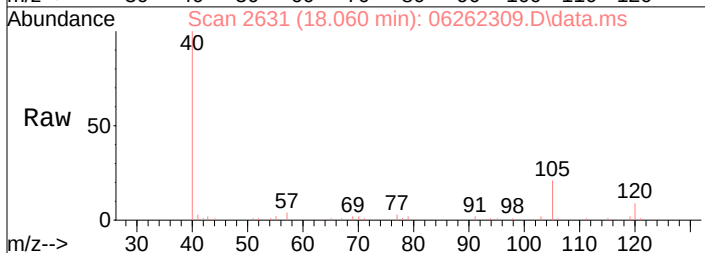
#72
 1,1,2,2-Tetrachloroethane
 Concen: 1.13 ng
 RT: 16.24 min Scan# 2311
 Delta R.T. 0.000 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

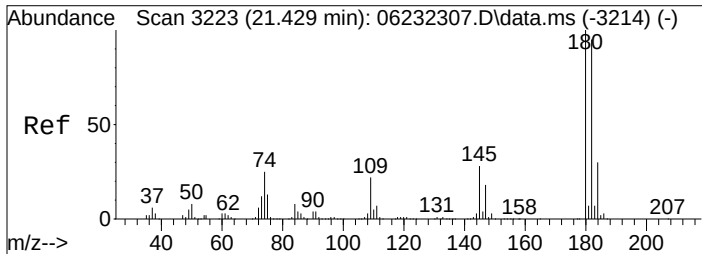
Tgt Ion: 83 Resp: 35426
 Ion Ratio Lower Upper
 83 100
 85 67.1 45.4 85.4



#79
 1,3,5-Trimethylbenzene
 Concen: 0.10 ng
 RT: 18.06 min Scan# 2631
 Delta R.T. 0.000 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

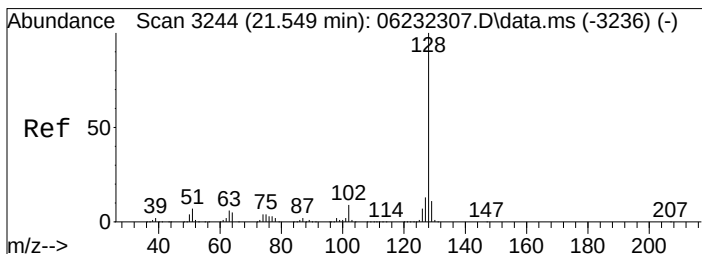
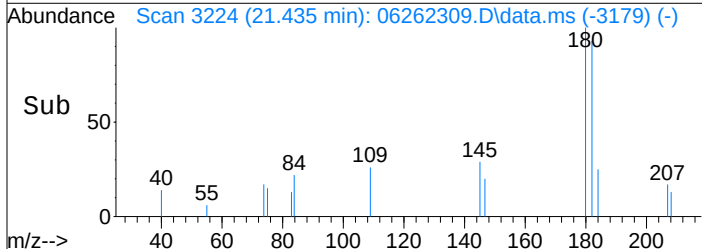
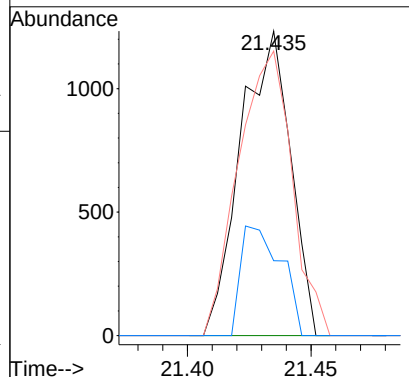
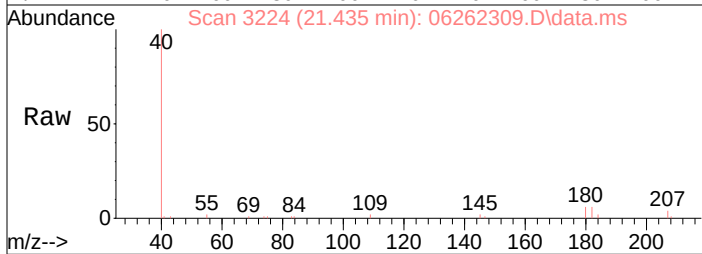
Tgt Ion: 105 Resp: 7115
 Ion Ratio Lower Upper
 105 100
 120 43.9 28.0 68.0





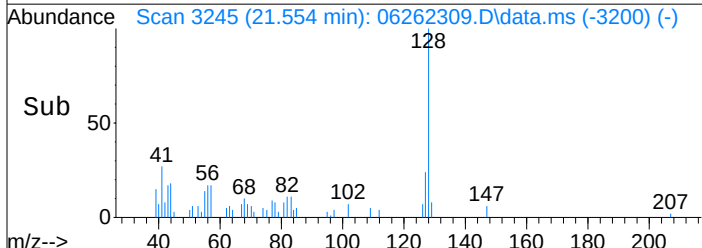
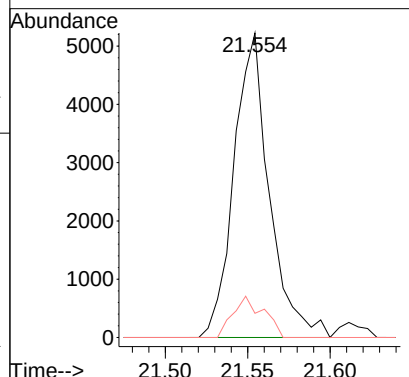
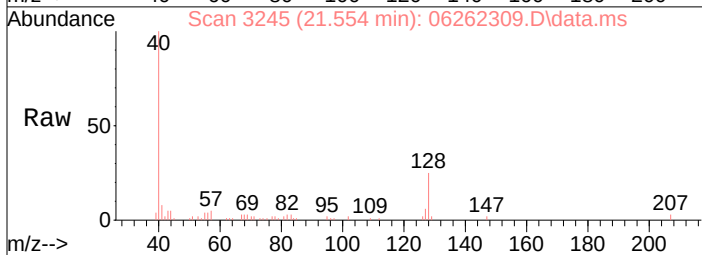
#94
 1,2,4-Trichlorobenzene
 Concen: 0.05 ng
 RT: 21.43 min Scan# 3224
 Delta R.T. 0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

Tgt Ion:	180	Resp:	1729
Ion Ratio	Lower	Upper	
180	100		
182	100.5	76.7	115.1
184	29.1	24.6	36.8



#95
 Naphthalene
 Concen: 0.10 ng
 RT: 21.55 min Scan# 3245
 Delta R.T. 0.006 min
 Lab File: 06262309.D
 Acq: 26 Jun 2023 11:24

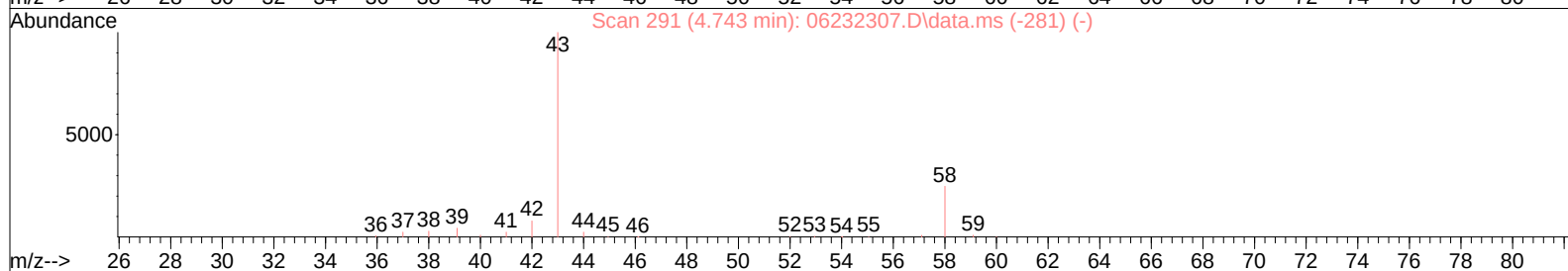
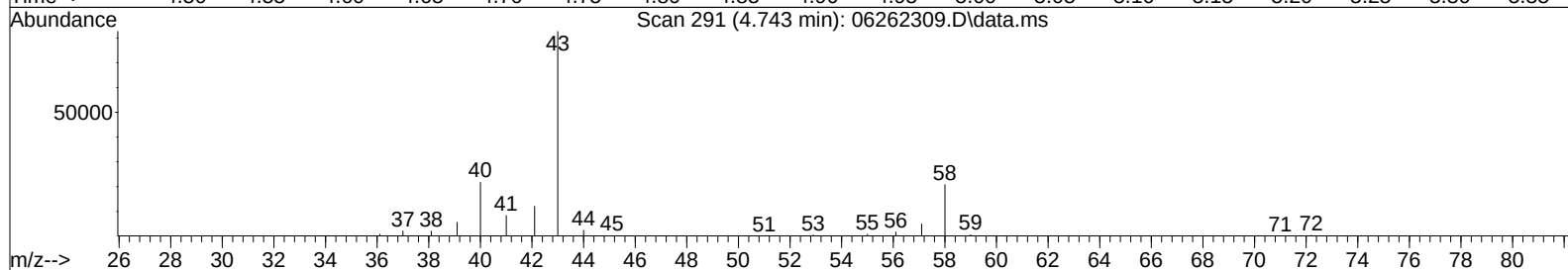
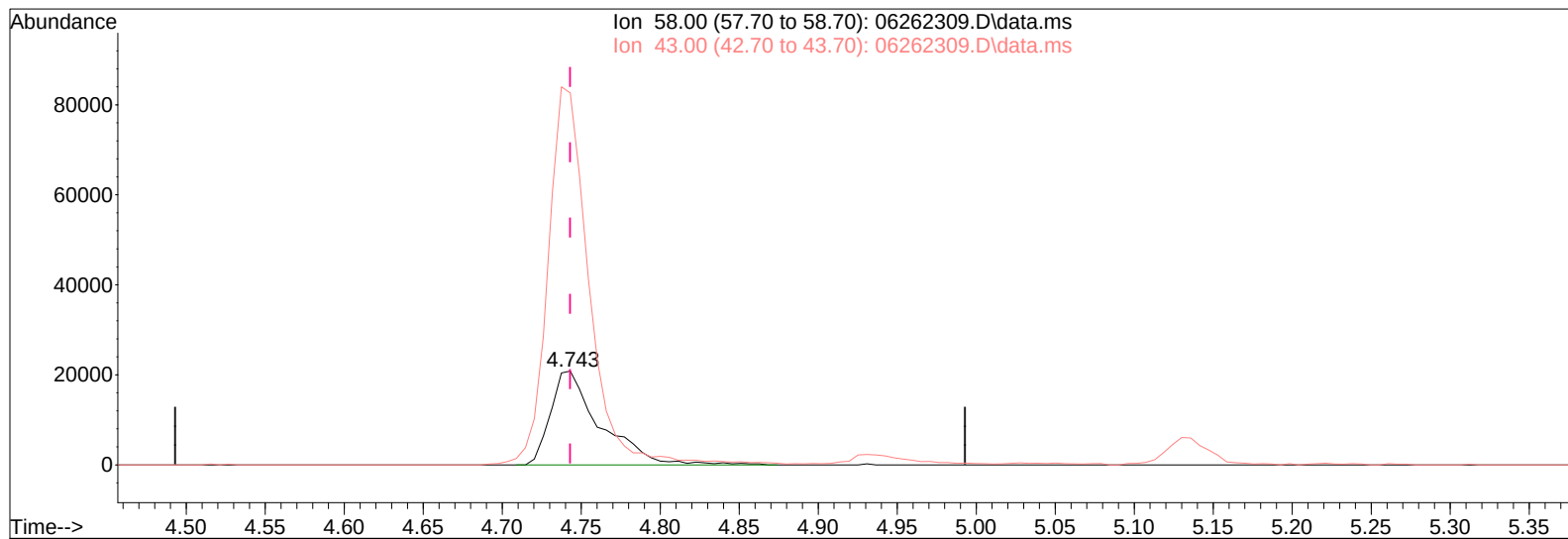
Tgt Ion:	128	Resp:	7772
Ion Ratio	Lower	Upper	
128	100		
129	11.7	0.0	30.9



Data File : I:\MS13\DATA\2023_06\26\06262309.D
Acq On : 26 Jun 2023 11:24
Sample : P2302616-002 (1000mL)
Misc : S37-04102301

Vial: 3
Operator: TZ
Inst : MS13

Quant Time: Jun 26 12:59:43 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 15:42:57 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06262309.D\data.ms

(13) Acetone (T)

4.743min (+0.000) 3.82ng

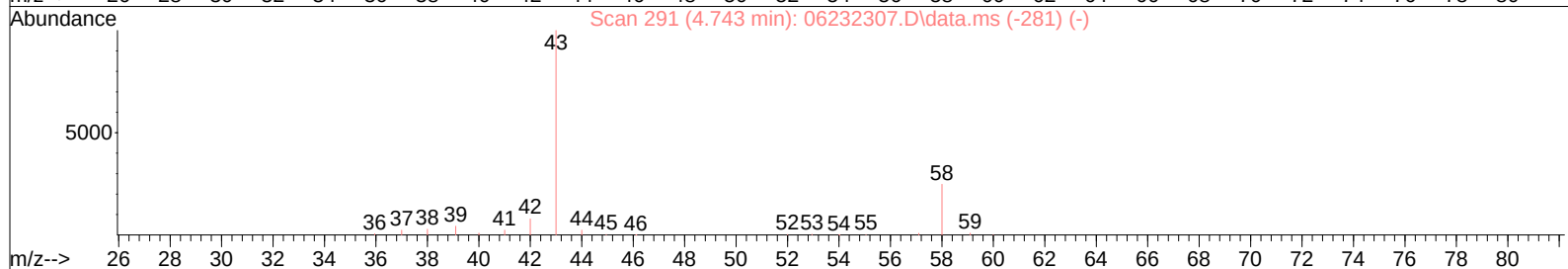
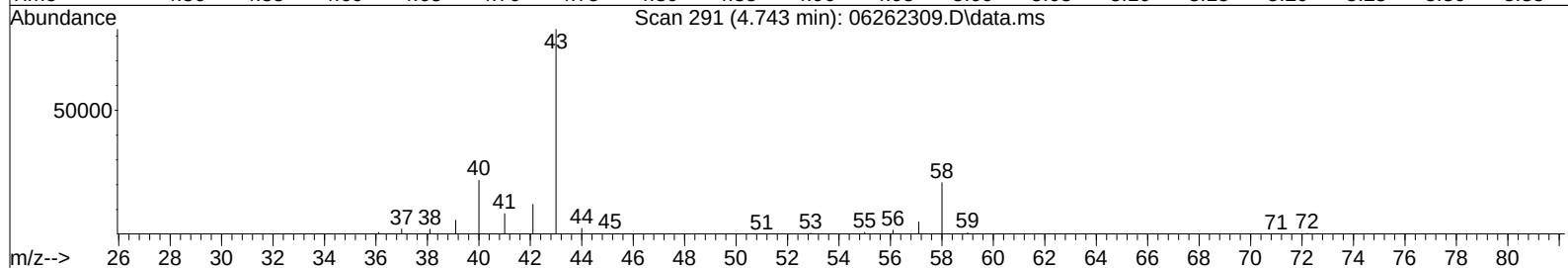
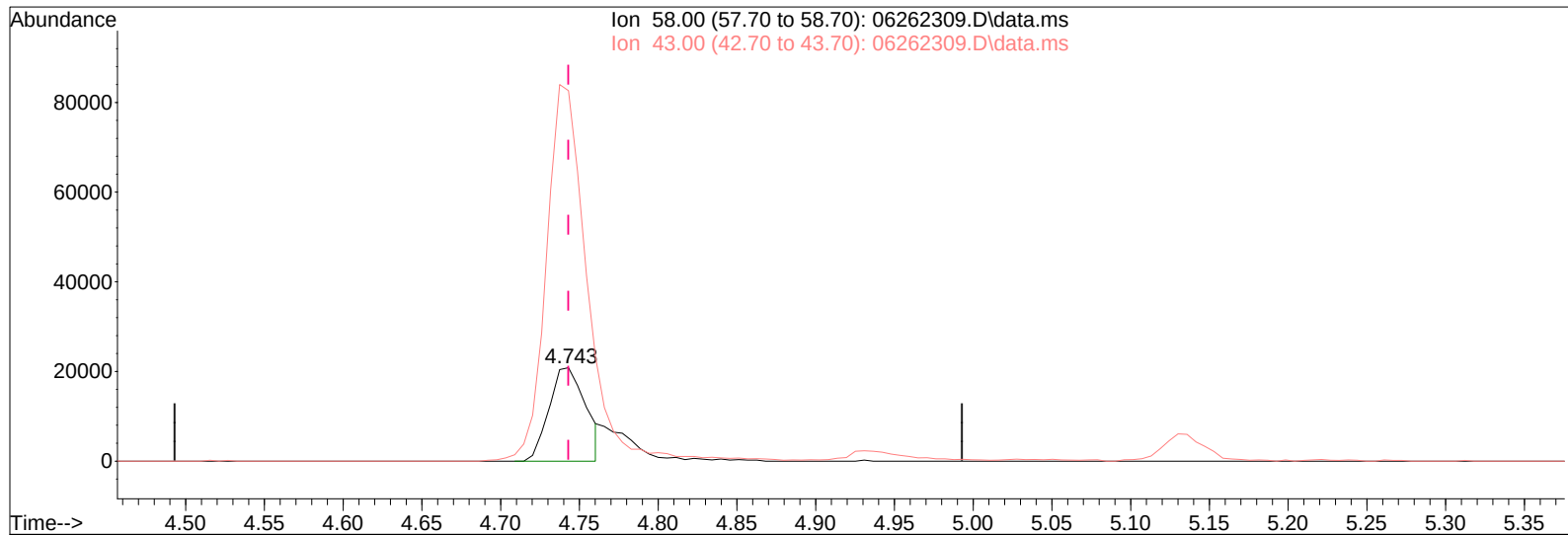
response 45767

Ion	Exp%	Act%
58.00	100	100
43.00	398.80	331.99#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2023_06\26\06262309.D
Acq On : 26 Jun 2023 11:24
Sample : P2302616-002 (1000mL)
Misc : S37-04102301

Vial: 3
Operator: TZ
Inst : MS13

Quant Time: Jun 26 12:59:43 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 15:42:57 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06262309.D\data.ms

(13) Acetone (T)

4.743min (+0.000) 2.82ng m

response 33803

Ion	Exp%	Act%

58.00	100	100

43.00	398.80	449.49#

0.00	0.00	0.00

0.00	0.00	0.00

IPC

TZ 6/26/23

LH 6/27/23

Data File : I:\MS13\DATA\2023_06\26\06262303.D
 Acq On : 26 Jun 2023 6:53
 Sample : MB R13062623 1000mL
 Misc : S37-04102301_AC01837

Vial: 1
 Operator: WA
 Inst : MS13

Tz 6/26/23

Quant Time: Jun 26 07:48:59 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.30	130	222638	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.36	114	990660	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	212522	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	422072	12.428	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.44%
57) Toluene-d8 (SS2)	12.47	98	1127969	12.424	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.36%
73) Bromofluorobenzene (SS3)	16.85	174	468126	12.112	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.88%

Target Compounds

						Qvalue
2) Propene	3.43	42	627	N.D.		
3) Dichlorodifluoromethan...	3.44	85	171	N.D.		
4) Chloromethane	3.49	50	199	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.42	45	3023	0.211	ng	87
11) Acetonitrile	4.59	41	1384	N.D.		
12) Acrolein	4.67	56	235	N.D.		
13) Acetone	4.77	58	3010	0.245	ng	89
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.98	45	3958	0.078	ng	94
16) Acrylonitrile	5.14	53	389	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.45	84	405	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.72	76	6470	0.093	ng	90
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.		
27) 2-Butanone (MEK)	6.67	72	113	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	7.88	72	397	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.36	61	28959	No Calib		
40) 1-Butanol	8.94	56	151	No Calib	#	
41) Benzene	8.95	78	645	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.35	84	1183	N.D.		
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	10.19	130	175	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS13\DATA\2023_06\26\06262303.D
 Acq On : 26 Jun 2023 6:53
 Sample : MB R13062623 1000mL
 Misc : S37-04102301_AC01837

Vial: 1
 Operator: WA
 Inst : MS13

Quant Time: Jun 26 07:48:59 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.60	91	942	N.D.		
59) 2-Hexanone	12.99	43	1519	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.85	43	951	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	0.00	166	0	N.D.		
65) Chlorobenzene	14.93	112	241	N.D.		
66) Ethylbenzene	15.45	91	485	N.D.		
67) m- & p-Xylenes	15.66	91	1050	N.D.		
68) Bromoform	15.70	173	420	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	16.27	91	244	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	16.24	83	138	N.D.		
74) Cumene	17.06	105	258	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	17.78	91	2713	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.96	105	493	N.D.		
79) 1,3,5-Trimethylbenzene	18.07	105	480	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	1039	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.77	91	1213	N.D.		
85) 1,3-Dichlorobenzene	18.78	146	364	N.D.		
86) 1,4-Dichlorobenzene	18.86	146	468	N.D.		
87) sec-Butylbenzene	18.96	105	519	N.D.		
88) 4-Isopropyltoluene (p-...	19.19	119	548	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	387	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	19.85	157	488	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	2814	0.086 ng		92
95) Naphthalene	21.55	128	5721	0.074 ng		86
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.99	225	600	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.60	119	479	N.D.		
100) n-Butylbenzene	19.73	91	538	N.D.		
101) 1,1,1,2-Tetrachloroethane	14.91	131	461	N.D.		

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

Data File : I:\MS13\DATA\2023_06\26\06262303.D
Acq On : 26 Jun 2023 6:53
Sample : MB R13062623 1000mL
Misc : S37-04102301_AC01837

Vial: 1
Operator: WA
Inst : MS13

Quant Time: Jun 26 07:48:59 2023

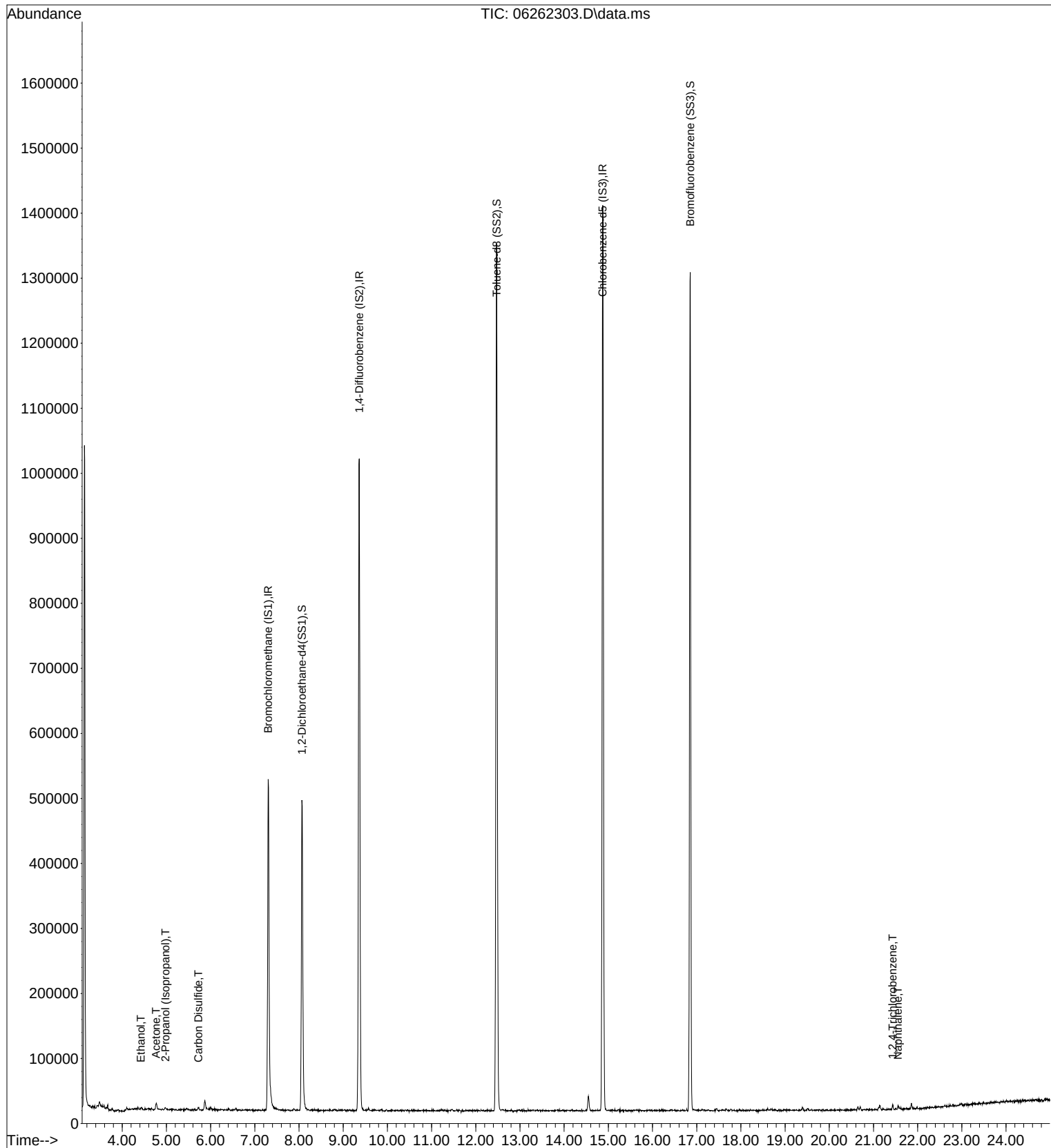
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\26\06262304.D

Vial: 1

Acq On : 26 Jun 2023 7:29

Operator: WA

Sample : LCS R13062623 25ng

Inst : MS13

T2 6/26/23

Misc : S37-04102301/S37-06132303 (7/13)

Quant Time: Jun 26 07:52:33 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	227819	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	1001742	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	212559	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	427400	12.299	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.40%
57) Toluene-d8 (SS2)	12.48	98	1141209	12.567	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.56%
73) Bromofluorobenzene (SS3)	16.85	174	483571	12.509	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.08%

Target Compounds

						Qvalue
2) Propene	3.37	42	507756	24.495	ng	99
3) Dichlorodifluoromethan...	3.45	85	1006513	23.767	ng	100
4) Chloromethane	3.59	50	700170	26.377	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	445219	23.001	ng	100
6) Vinyl Chloride	3.78	62	606597	24.420	ng	99
7) 1,3-Butadiene	3.90	54	489100	25.685	ng	99
8) Bromomethane	4.12	94	417989	25.318	ng	100
9) Chloroethane	4.25	64	304158	25.960	ng	99
10) Ethanol	4.42	45	1838227	125.158	ng	100
11) Acetonitrile	4.56	41	863599	23.722	ng	100
12) Acrolein	4.63	56	649183	56.642	ng	99
13) Acetone	4.74	58	1572144	125.003	ng	99
14) Trichlorofluoromethane	4.85	101	905715	23.001	ng	100
15) 2-Propanol (Isopropanol)	4.97	45	2743913	52.638	ng	98
16) Acrylonitrile	5.12	53	1220373	52.025	ng	100
17) 1,1-Dichloroethene	5.35	96	449159	25.611	ng	99
18) 2-Methyl-2-Propanol (t...	5.44	59	2715595	54.887	ng	99
19) Methylene Chloride	5.47	84	460545	24.837	ng	97
20) 3-Chloro-1-propene (Al...	5.55	41	706780	25.092	ng	98
21) Trichlorotrifluoroethane	5.67	151	456041	24.190	ng	98
22) Carbon Disulfide	5.70	76	3491910	48.934	ng	100
23) trans-1,2-Dichloroethene	6.25	61	745820	27.896	ng	98
24) 1,1-Dichloroethane	6.43	63	862761	26.032	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1552017	26.985	ng	98
26) Vinyl Acetate	6.55	86	507910	164.319	ng	# 87
27) 2-Butanone (MEK)	6.77	72	576088	53.275	ng	95
28) cis-1,2-Dichloroethene	7.18	61	690823	26.296	ng	99
29) Diisopropyl Ether	7.37	87	703480	50.297	ng	# 32
30) Ethyl Acetate	7.38	61	332450	44.289	ng	99
31) n-Hexane	7.38	57	748613	26.569	ng	99
32) Chloroform	7.47	83	885055	24.573	ng	99
34) Tetrahydrofuran (THF)	7.84	72	533221	46.036	ng	97
35) Ethyl tert-Butyl Ether	7.91	87	1117102	51.882	ng	97
36) 1,2-Dichloroethane	8.21	62	746648	24.622	ng	99
38) 1,1,1-Trichloroethane	8.49	97	827170	23.737	ng	99
39) Isopropyl Acetate	9.38	61	29879	No Calib		
40) 1-Butanol	8.90	56	1315	No Calib	#	
41) Benzene	8.99	78	1828799	25.530	ng	99
42) Carbon Tetrachloride	9.15	117	778581	25.300	ng	99
43) Cyclohexane	9.30	84	1323658	51.974	ng	97
44) tert-Amyl Methyl Ether	9.67	73	2829820	53.420	ng	99
45) 1,2-Dichloropropane	9.93	63	461033	26.177	ng	99
46) Bromodichloromethane	10.16	83	731661	25.334	ng	99
47) Trichloroethene	10.22	130	527764	24.088	ng	99
48) 1,4-Dioxane	10.19	88	383742	25.599	ng	98
49) 2,2,4-Trimethylpentane...	10.30	57	1892669	26.667	ng	98
50) Methyl Methacrylate	10.47	100	376064	52.890	ng	99

Data File : I:\MS13\DATA\2023_06\26\06262304.D
 Acq On : 26 Jun 2023 7:29
 Sample : LCS R13062623 25ng
 Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
 Operator: WA
 Inst : MS13

Quant Time: Jun 26 07:52:33 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	446675	27.279	ng	98
52) cis-1,3-Dichloropropene	11.32	75	858054	29.039	ng	100
53) 4-Methyl-2-pentanone	11.38	58	856904	56.913	ng	98
54) trans-1,3-Dichloropropene	12.01	75	683747	23.902	ng	99
55) 1,1,2-Trichloroethane	12.23	97	464556	24.670	ng	99
58) Toluene	12.61	91	1922988	24.747	ng	99
59) 2-Hexanone	12.96	43	2194508	53.817	ng	99
60) Dibromochloromethane	13.12	129	625262	24.646	ng	99
61) 1,2-Dibromoethane	13.44	107	540664	23.682	ng	100
62) n-Butyl Acetate	13.81	43	2458989	55.037	ng	100
63) n-Octane	13.96	57	397994	26.575	ng	99
64) Tetrachloroethene	14.07	166	604354	23.825	ng	100
65) Chlorobenzene	14.94	112	1282331	23.663	ng	100
66) Ethylbenzene	15.44	91	2275093	25.801	ng	100
67) m- & p-Xylenes	15.69	91	3672356	50.637	ng	99
68) Bromoform	15.71	173	583099	25.151	ng	99
69) Styrene	16.13	104	1299029	26.338	ng	99
70) o-Xylene	16.27	91	1834289	25.783	ng	99
71) n-Nonane	16.64	43	974055	28.113	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	836079	25.878	ng	100
74) Cumene	17.06	105	2237496	25.044	ng	100
75) alpha-Pinene	17.57	93	1146910	28.198	ng	99
76) n-Propylbenzene	17.74	91	2685757	25.367	ng	99
77) 3-Ethyltoluene	17.35	105	489	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2198309	26.206	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1909839	25.936	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	489	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1909206	25.919	ng	100
83) n-Decane	17.06	58	18616	No Calib		
84) Benzyl Chloride	18.75	91	3079114	52.093	ng	99
85) 1,3-Dichlorobenzene	18.77	146	1028104	22.622	ng	100
86) 1,4-Dichlorobenzene	18.86	146	991591	21.904	ng	99
87) sec-Butylbenzene	18.96	105	2489540	26.262	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2167432	26.079	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	489	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1052581	23.405	ng	100
91) d-Limonene	19.36	68	670250	28.204	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.86	157	837091	49.400	ng	100
93) n-Undecane	18.23	58	361	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1471534	44.945	ng	99
95) Naphthalene	21.55	128	1749923	22.710	ng	100
96) n-Dodecane	19.18	58	67349	No Calib		
97) Hexachlorobutadiene	21.99	225	596910	22.749	ng	100
98) Cyclohexanone	15.67	55	1559	No Calib	#	
99) tert-Butylbenzene	18.60	119	1810232	26.577	ng	100
100) n-Butylbenzene	19.72	91	1959117	26.240	ng	99
101) 1,1,1,2-Tetrachloroethane	14.92	131	521445	24.722	ng	99

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

Data File : I:\MS13\DATA\2023_06\26\06262304.D
Acq On : 26 Jun 2023 7:29
Sample : LCS R13062623 25ng
Misc : S37-04102301/S37-06132303 (7/13)

Data File : I:\MS13\DATA\2023_06\26\06262305.D
 Acq On : 26 Jun 2023 8:05
 Sample : LCSD R13062623 25ng
 Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
 Operator: WA
 Inst : MS13

Tz 6/26/23

Quant Time: Jun 26 11:31:26 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	235000	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	1016939	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	217456	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	432275	12.059	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.48%
57) Toluene-d8 (SS2)	12.48	98	1153859	12.421	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	99.36%
73) Bromofluorobenzene (SS3)	16.85	174	497808	12.588	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.72%

Target Compounds

						Qvalue
2) Propene	3.38	42	511742	23.933	ng	99
3) Dichlorodifluoromethan...	3.45	85	1008989	23.097	ng	100
4) Chloromethane	3.59	50	703073	25.677	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	462638	23.171	ng	99
6) Vinyl Chloride	3.78	62	611187	23.853	ng	98
7) 1,3-Butadiene	3.90	54	496877	25.296	ng	98
8) Bromomethane	4.12	94	422982	24.838	ng	99
9) Chloroethane	4.26	64	304212	25.171	ng	100
10) Ethanol	4.42	45	1860194	122.783	ng	100
11) Acetonitrile	4.56	41	865821	23.057	ng	100
12) Acrolein	4.63	56	656883	55.562	ng	96
13) Acetone	4.74	58	1581282	121.888	ng	99
14) Trichlorofluoromethane	4.85	101	910274	22.410	ng	99
15) 2-Propanol (Isopropanol)	4.97	45	2751189	51.164	ng	98
16) Acrylonitrile	5.11	53	1236965	51.120	ng	99
17) 1,1-Dichloroethene	5.35	96	451338	24.948	ng	99
18) 2-Methyl-2-Propanol (t...	5.44	59	2732584	53.542	ng	99
19) Methylene Chloride	5.47	84	467520	24.442	ng	99
20) 3-Chloro-1-propene (Al...	5.55	41	708442	24.383	ng	98
21) Trichlorotrifluoroethane	5.67	151	452563	23.272	ng	97
22) Carbon Disulfide	5.70	76	3522963	47.861	ng	99
23) trans-1,2-Dichloroethene	6.25	61	745032	27.015	ng	99
24) 1,1-Dichloroethane	6.43	63	860304	25.165	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1545462	26.050	ng	99
26) Vinyl Acetate	6.55	86	516099	161.866	ng	# 87
27) 2-Butanone (MEK)	6.77	72	581015	52.088	ng	95
28) cis-1,2-Dichloroethene	7.18	61	699448	25.811	ng	98
29) Diisopropyl Ether	7.37	87	714819	49.546	ng	# 31
30) Ethyl Acetate	7.38	61	336334	43.437	ng	99
31) n-Hexane	7.38	57	744726	25.623	ng	99
32) Chloroform	7.47	83	889030	23.929	ng	100
34) Tetrahydrofuran (THF)	7.84	72	540188	45.212	ng	96
35) Ethyl tert-Butyl Ether	7.91	87	1126713	50.730	ng	97
36) 1,2-Dichloroethane	8.21	62	756326	24.179	ng	99
38) 1,1,1-Trichloroethane	8.48	97	830028	23.463	ng	99
39) Isopropyl Acetate	9.38	61	30475	No Calib		
40) 1-Butanol	8.91	56	1623	No Calib	#	
41) Benzene	8.99	78	1845420	25.377	ng	99
42) Carbon Tetrachloride	9.15	117	785290	25.136	ng	99
43) Cyclohexane	9.30	84	1332562	51.541	ng	97
44) tert-Amyl Methyl Ether	9.67	73	2846804	52.937	ng	99
45) 1,2-Dichloropropane	9.93	63	464007	25.953	ng	99
46) Bromodichloromethane	10.15	83	733724	25.026	ng	98
47) Trichloroethene	10.22	130	531862	23.912	ng	100
48) 1,4-Dioxane	10.19	88	390356	25.651	ng	99
49) 2,2,4-Trimethylpentane...	10.30	57	1903468	26.418	ng	98
50) Methyl Methacrylate	10.47	100	381231	52.815	ng	99

Data File : I:\MS13\DATA\2023_06\26\06262305.D
 Acq On : 26 Jun 2023 8:05
 Sample : LCSD R13062623 25ng
 Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
 Operator: WA
 Inst : MS13

Quant Time: Jun 26 11:31:26 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	451860	27.183	ng	99
52) cis-1,3-Dichloropropene	11.32	75	859477	28.652	ng	100
53) 4-Methyl-2-pentanone	11.38	58	875097	57.253	ng	99
54) trans-1,3-Dichloropropene	12.00	75	685454	23.603	ng	98
55) 1,1,2-Trichloroethane	12.23	97	468330	24.499	ng	99
58) Toluene	12.61	91	1934888	24.339	ng	99
59) 2-Hexanone	12.96	43	2220187	53.220	ng	99
60) Dibromochloromethane	13.13	129	630012	24.274	ng	99
61) 1,2-Dibromoethane	13.44	107	543675	23.277	ng	100
62) n-Butyl Acetate	13.81	43	2475572	54.160	ng	99
63) n-Octane	13.96	57	400455	26.137	ng	98
64) Tetrachloroethene	14.08	166	600273	23.131	ng	99
65) Chlorobenzene	14.94	112	1284745	23.173	ng	100
66) Ethylbenzene	15.44	91	2294230	25.432	ng	100
67) m- & p-Xylenes	15.69	91	3711357	50.022	ng	99
68) Bromoform	15.71	173	588713	24.821	ng	100
69) Styrene	16.13	104	1323324	26.226	ng	100
70) o-Xylene	16.27	91	1843947	25.335	ng	100
71) n-Nonane	16.64	43	980012	27.648	ng	98
72) 1,1,2,2-Tetrachloroethane	16.24	83	848713	25.678	ng	99
74) Cumene	17.06	105	2250402	24.621	ng	100
75) alpha-Pinene	17.57	93	1123479	27.000	ng	100
76) n-Propylbenzene	17.74	91	2716907	25.083	ng	99
77) 3-Ethyltoluene	17.34	105	476	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2208875	25.739	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1933940	25.672	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	476	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1921925	25.504	ng	100
83) n-Decane	17.06	58	18388	No Calib		
84) Benzyl Chloride	18.75	91	3110836	51.445	ng	99
85) 1,3-Dichlorobenzene	18.77	146	1034850	22.258	ng	99
86) 1,4-Dichlorobenzene	18.86	146	993517	21.452	ng	100
87) sec-Butylbenzene	18.96	105	2477871	25.550	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2177804	25.614	ng	99
89) 1,2,3-Trimethylbenzene	17.34	105	476	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1056544	22.964	ng	99
91) d-Limonene	19.36	68	676469	27.825	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.86	157	845279	48.760	ng	99
93) n-Undecane	18.23	58	209	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1448176	43.235	ng	100
95) Naphthalene	21.55	128	1671408	21.202	ng	99
96) n-Dodecane	19.18	58	48874	No Calib		
97) Hexachlorobutadiene	21.99	225	567438	21.139	ng	99
98) Cyclohexanone	15.70	55	1056	No Calib	#	
99) tert-Butylbenzene	18.60	119	1785685	25.626	ng	100
100) n-Butylbenzene	19.71	91	1974159	25.846	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	526330	24.392	ng	99

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

Data File : I:\MS13\DATA\2023_06\26\06262305.D
Acq On : 26 Jun 2023 8:05
Sample : LCSD R13062623 25ng
Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
Operator: WA
Inst : MS13

Quant Time: Jun 26 11:31:26 2023

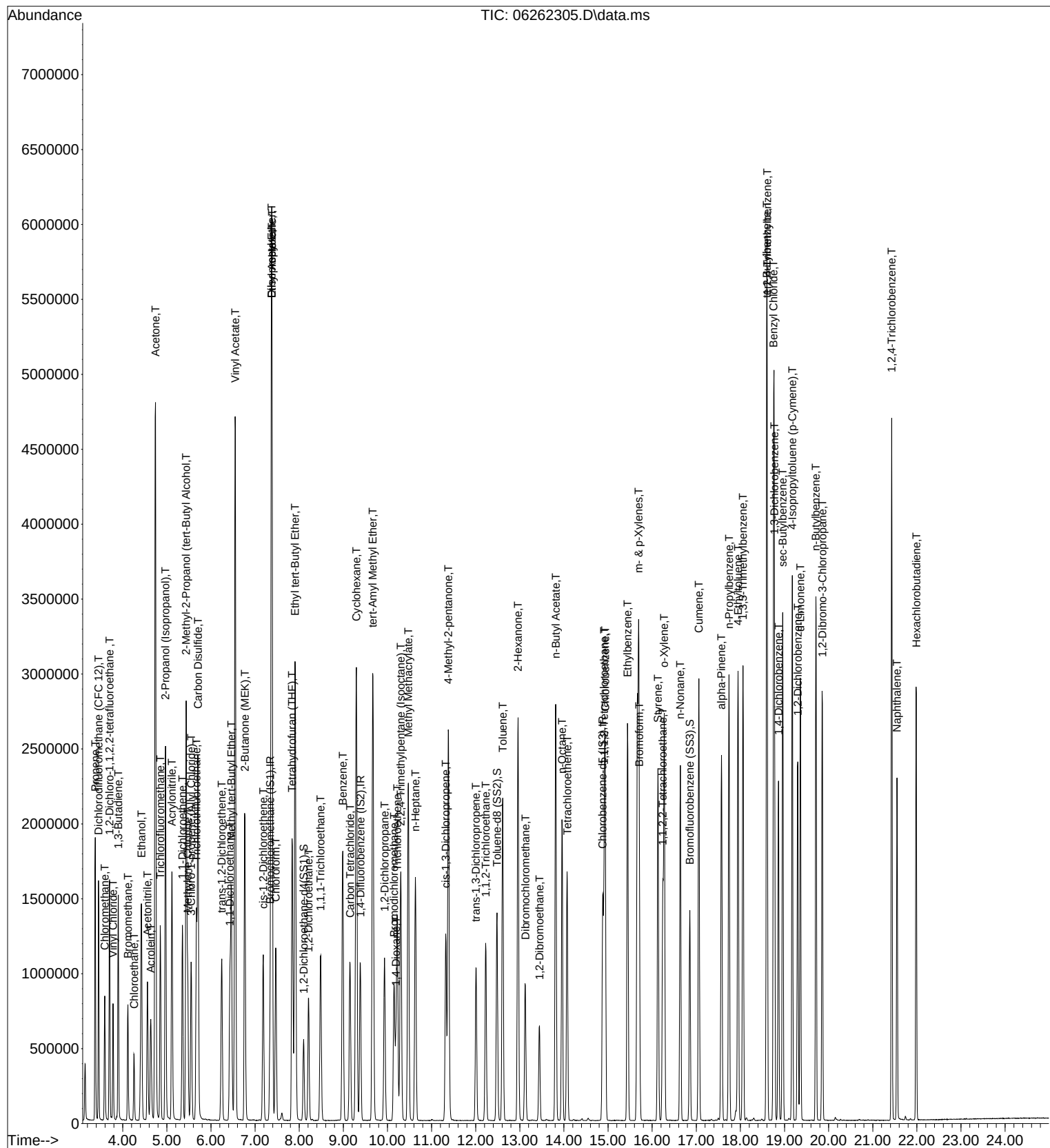
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



Method Path : I:\MS13\METHODS\
 Method File : R13062323.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Fri Jun 23 15:42:57 2023
 Response Via : Initial Calibration

Tz 6/26/23

Calibration Files

0.1 =06232302.D 0.2 =06232303.D 0.5 =06232304.D 1.0 =06232305.D 5.0 =06232306.D 25 =06232307.D 50 =06232308.D
 100 =06232309.D

Compound		0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD

1) IR	Bromochloromethane...	-----ISTD-----									
2) T	Propene	1.250	1.207	1.126	1.061	1.084	1.102	1.097	1.172	1.137	5.80
3) T	Dichlorodifluo...	2.267	2.442	2.508	2.352	2.283	2.343	2.252	2.141	2.324	4.94
4) T	Chloromethane	1.625	1.490	1.614	1.494	1.358	1.532	1.444	1.095	1.456	11.67
5) T	1,2-Dichloro-1...	1.178	0.987	1.171	1.054	1.030	1.050	1.043	0.984	1.062	7.01
6) T	Vinyl Chloride	1.331	1.472	1.346	1.310	1.340	1.374	1.371	1.359	1.363	3.59
7) T	1,3-Butadiene	1.123	0.990	1.078	0.988	0.985	1.051	1.063	1.080	1.045	4.95
8) T	Bromomethane	0.948	0.855	0.905	0.897	0.887	0.934	0.920	0.900	0.906	3.18
9) T	Chloroethane	0.608	0.617	0.697	0.646	0.620	0.660	0.657	0.639	0.643	4.48
10) T	Ethanol	0.883	0.838	0.841	0.790	0.771	0.784	0.777	0.764	0.806	5.28
11) T	Acetonitrile			2.015	1.902	1.942	2.001	2.057	2.068	1.997	3.25
12) T	Acrolein	0.526	0.540	0.685	0.610	0.644	0.681	0.676	0.667	0.629	10.20
13) T	Acetone	0.776	0.751	0.682	0.668	0.661	0.680	0.666	0.637	0.690	6.96
14) T	Trichlorofluor...	2.046	2.311	2.400	2.180	2.089	2.164	2.084	2.009	2.161	6.25
15) T	2-Propanol (Is...	3.322	3.063	2.934	2.732	2.694	2.811	2.807	2.518	2.860	8.62
16) T	Acrylonitrile	1.370	1.180	1.264	1.252	1.246	1.325	1.334	1.326	1.287	4.82
17) T	1,1-Dichloroet...	0.945	0.974	1.010	0.905	0.956	0.982	0.975	0.952	0.962	3.21
18) T	2-Methyl-2-Pro...	2.560	2.623	2.727	2.581	2.645	2.949	2.917		2.715	5.84
19) T	Methylene Chlo...	1.054	1.100	1.054	0.985	0.984	1.009	0.990	0.964	1.017	4.61
20) T	3-Chloro-1-pro...	1.511	1.466	1.606	1.448	1.488	1.617	1.621	1.607	1.545	4.80
21) T	Trichlorotrifl...	1.092	1.106	1.045	1.025	1.017	1.024	1.004	0.961	1.034	4.51
22) T	Carbon Disulfide	4.749	3.874	4.082	3.764	3.689	3.783	3.744	3.638	3.915	9.27
23) T	trans-1,2-Dich...	1.234	1.366	1.475	1.453	1.491	1.578	1.581	1.558	1.467	8.10
24) T	1,1-Dichloroet...	1.878	1.792	1.913	1.739	1.763	1.850	1.832	1.780	1.818	3.30
25) T	Methyl tert-Bu...	3.082	2.921	3.153	3.056	3.177	3.323	3.295	3.238	3.156	4.24
26) T	Vinyl Acetate	0.124	0.168	0.169	0.161	0.178	0.189	0.187	0.180	0.170	12.26
27) T	2-Butanone (MEK)	0.437	0.567	0.648	0.582	0.605	0.644	0.639	0.625	0.593	11.76
28) T	cis-1,2-Dichlo...	1.432	1.349	1.429	1.381	1.432	1.520	1.499	1.489	1.441	4.09
29) T	Diisopropyl Ether	0.791	0.784	0.781	0.780	0.768	0.782	0.751	0.702	0.767	3.78
30) T	Ethyl Acetate	0.405	0.360	0.445	0.412	0.425	0.427	0.417	0.403	0.412	6.03
31) T	n-Hexane	1.403	1.645	1.698	1.584	1.532	1.560	1.510	1.436	1.546	6.40
32) T	Chloroform	1.901	2.088	2.067	1.961	1.914	1.999	1.959	1.920	1.976	3.55
33) S	1,2-Dichloroet...	1.876	1.904	1.931	1.869	1.914	1.922	1.919	1.920	1.907	1.18
34) T	Tetrahydrofura...	0.767	0.651	0.663	0.582	0.592	0.613	0.614	0.603	0.636	9.39
35) T	Ethyl tert-But...	1.061	1.115	1.279	1.158	1.186	1.242	1.222	1.188	1.181	5.94
36) T	1,2-Dichloroet...	1.818	1.679	1.686	1.635	1.591	1.669	1.630	1.601	1.664	4.30
37) IR	1,4-Difluorobenzen...	-----ISTD-----									
38) T	1,1,1-Trichlor...	0.460	0.417	0.467	0.449	0.428	0.437	0.419	0.402	0.435	5.20

39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	0.963	0.955	0.904	0.843	0.865	0.893	0.874	0.853	0.894	5.01
42)	T	Carbon Tetrach...	0.375	0.375	0.389	0.404	0.387	0.400	0.379	0.362	0.384	3.62
43)	T	Cyclohexane	0.312	0.312	0.330	0.317	0.316	0.329	0.320	0.306	0.318	2.59
44)	T	tert-Amyl Meth...	0.629	0.651	0.657	0.651	0.656	0.698	0.685	0.662	0.661	3.23
45)	T	1,2-Dichloropr...	0.224	0.228	0.216	0.217	0.214	0.224	0.219	0.217	0.220	2.12
46)	T	Bromodichlorom...	0.384	0.348	0.372	0.360	0.350	0.365	0.359	0.345	0.360	3.63
47)	T	Trichloroethene	0.303	0.295	0.276	0.264	0.263	0.271	0.262	0.253	0.273	6.29
48)	T	1,4-Dioxane	0.190	0.197	0.183	0.178	0.189	0.191	0.188	0.181	0.187	3.25
49)	T	2,2,4-Trimethy...	0.882	0.848	0.921	0.875	0.867	0.911	0.903	0.879	0.886	2.74
50)	T	Methyl Methacr...	0.078	0.098	0.081	0.085	0.090	0.095	0.093	0.089	0.089	7.85
51)	T	n-Heptane	0.169	0.186	0.224	0.211	0.206	0.218	0.213	0.208	0.204	8.86
52)	T	cis-1,3-Dichlo...	0.400	0.350	0.345	0.341	0.364	0.390	0.384	0.375	0.369	6.02
53)	T	4-Methyl-2-pen...	0.141	0.171	0.202	0.185	0.199	0.207	0.202	0.197	0.188	11.89
54)	T	trans-1,3-Dich...	0.281	0.340	0.347	0.338	0.368	0.403	0.394	0.385	0.357	11.07
55)	T	1,1,2-Trichlor...	0.253	0.235	0.235	0.243	0.232	0.234	0.227	0.221	0.235	4.12
56)	IR	Chlorobenzene-d5 (... -----ISTD-----										
57)	S	Toluene-d8 (SS2)	5.304	5.402	5.318	5.288	5.355	5.311	5.378	5.365	5.340	0.76
58)	T	Toluene	4.806	4.790	4.553	4.511	4.466	4.588	4.516	4.328	4.570	3.51
59)	T	2-Hexanone	2.218	2.260	2.298	2.313	2.470	2.575	2.561	2.488	2.398	5.89
60)	T	Dibromochlorom...	1.559	1.450	1.505	1.430	1.516	1.536	1.492	1.447	1.492	3.08
61)	T	1,2-Dibromoethane	1.346	1.377	1.300	1.308	1.336	1.386	1.368	1.318	1.343	2.42
62)	T	n-Butyl Acetate	2.396	2.423	2.426	2.520	2.734	2.875	2.871	2.774	2.627	7.89
63)	T	n-Octane	0.814	0.839	0.908	0.883	0.895	0.922	0.909	0.876	0.881	4.20
64)	T	Tetrachloroethene	1.748	1.594	1.482	1.419	1.437	1.467	1.426	1.360	1.492	8.27
65)	T	Chlorobenzene	3.522	3.401	3.193	3.143	3.077	3.155	3.077	2.927	3.187	5.96
66)	T	Ethylbenzene	5.051	4.953	5.301	4.993	5.229	5.470	5.348	5.139	5.186	3.52
67)	T	m- & p-Xylenes	4.309	3.988	4.282	4.192	4.333	4.470	4.379	4.167	4.265	3.47
68)	T	Bromoform	1.486	1.283	1.372	1.303	1.344	1.426	1.380	1.313	1.363	4.99
69)	T	Styrene	2.315	2.443	2.700	2.808	3.086	3.365	3.304	3.184	2.900	13.63
70)	T	o-Xylene	3.800	4.180	4.198	4.154	4.265	4.409	4.325	4.139	4.184	4.31
71)	T	n-Nonane	1.824	1.826	1.909	1.997	2.111	2.241	2.234	2.158	2.038	8.47
72)	T	1,1,2,2-Tetrac...	1.870	1.889	1.951	1.855	1.889	1.957	1.932	1.856	1.900	2.17
73)	S	Bromofluoroben...	2.238	2.276	2.262	2.265	2.305	2.280	2.276	2.285	2.273	0.86
74)	T	Cumene	5.272	5.263	5.209	5.222	5.244	5.451	5.319	5.051	5.254	2.13
75)	T	alpha-Pinene	2.307	2.091	2.233	2.279	2.548	2.650	2.638	2.390	2.392	8.48
76)	T	n-Propylbenzene	5.802	5.863	6.271	6.240	6.369	6.603	6.477	6.187	6.226	4.46
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	4.743	4.549	4.748	4.937	5.049	5.292	5.199	4.949	4.933	5.03
79)	T	1,3,5-Trimethy...	4.181	3.931	4.263	4.220	4.485	4.662	4.557	4.342	4.330	5.41
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	3.750	4.021	4.309	4.347	4.543	4.750	4.615	4.319	4.332	7.49
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride	2.867	2.976	2.930	3.100	3.627	4.209	4.184	3.916	3.476	16.54
85)	T	1,3-Dichlorobe...	2.727	2.655	2.766	2.613	2.631	2.789	2.694	2.505	2.673	3.45
86)	T	1,4-Dichlorobe...	2.704	2.628	2.512	2.567	2.587	2.843	2.791	2.666	2.662	4.24
87)	T	sec-Butylbenzene	4.732	5.285	5.688	5.431	5.914	6.040	5.974	5.532	5.575	7.79
88)	T	4-Isopropyltol...	4.105	4.356	4.923	4.825	5.172	5.428	5.310	4.982	4.887	9.35
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	2.782	2.770	2.609	2.513	2.571	2.731	2.651	2.532	2.645	4.01
91)	T	d-Limonene	1.054	1.092	1.248	1.369	1.538	1.655	1.669	1.556	1.398	17.51

92)	T	1,2-Dibromo-3-...	1.066	0.891	0.933	0.928	1.001	1.085	1.069	0.999	0.996	7.38
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	2.083	1.624	1.668	1.624	1.834	2.257	2.262	2.051	1.925	14.15
95)	T	Naphthalene			3.203	3.104	3.944	5.594	5.944	5.400	4.531	27.96
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	1.825	1.803	1.611	1.452	1.511	1.445	1.479	1.217	1.543	12.99
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	3.696	3.724	4.179	3.982	4.314	4.307	4.241	3.601	4.006	7.38
100)	T	n-Butylbenzene	3.644	4.081	4.149	4.237	4.624	4.946	4.860	4.584	4.391	10.03
101)	T	1,1,1,2-Tetrac...	1.202	1.334	1.270	1.226	1.238	1.263	1.234	1.158	1.240	4.16

 (#) = Out of Range

R13062323.M Mon Jun 26 07:43:15 2023

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:

40ng/L Std. ID:

4ng/L Std. ID: S37-06222303

200ng/L Std. ID: S37-06222301

20ng/L Std. ID: S37-06222302

1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
									4	4	20	20	20	200	200	200
									0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
	Source Std.	1	5	25	50	250	1000	Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m ³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chloromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Freon-114	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Vinyl Chloride	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Chloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Ethanol	3.45	3450	690	138.0	69.0	13.80	3.45		0.345	0.690	1.725	3.45	17.25	86.25	172.5	345
Acetonitrile	0.91	910	182	36.4	18.2	3.64	0.91		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
Acrolein	1.93	1930	386	77.2	38.6	7.72	1.93		0.193	0.386	0.965	1.93	9.65	48.25	96.5	193
Acetone	5.27	5270	1054	210.8	105.4	21.08	5.27		0.527	1.054	2.635	5.27	26.35	131.75	263.5	527
Trichlorofluoromethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Isopropanol	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Acrylonitrile	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
tert-Butanol	2.11	2110	422	84.4	42.2	8.44	2.11		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Allyl Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Carbon Disulfide	2.13	2130	426	85.2	42.6	8.52	2.13		0.213	0.426	1.065	2.13	10.65	53.25	106.5	213
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1-Dichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Methyl tert-Butyl Ether	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Vinyl Acetate	2.80	2800	560	112.0	56.0	11.20	2.80		0.280	0.560	1.400	2.80	14.00	70.00	140.0	280
2-Butanone	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Ethyl Acetate	4.22	4220	844	168.8	84.4	16.88	4.22		0.422	0.844	2.110	4.22	21.10	105.50	211.0	422
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Chloroform	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrahydrofuran	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
Ethyl tert-Butyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1,1-Trichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Carbon Tetrachloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Cyclohexane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
tert-Amyl Methyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloropropane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Isooctane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
n-Heptane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID:
 4ng/L Std. ID: S37-06222303
 20ng/L Std. ID: S37-06222302

40ng/L Std. ID:
 200ng/L Std. ID: S37-06222301
 1000ng/L Std. ID:

Dilution Factors:								Working STD Conc.(ng/L):								
									4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
4-Methyl-2-pentanone	2.15	2150	430	86.0	43.0	8.60	2.15		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
trans-1,3-Dichloropropene	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
1,1,2-Trichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Toluene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
2-Hexanone	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Dibromochloromethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
n-Butyl Acetate	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
n-Octane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Tetrachloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Ethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
m-&p-Xylene	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
Bromoform	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Nonane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Cumene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
alpha-Pinene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
n-Propylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
4-Ethyltoluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzyl Chloride	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,3-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
sec-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07	0.107	0.214	0.535	1.07	5.35	26.75	53.5	107	
d-Limonene	1.07	1070	214	42.8	21.4	4.28	1.07	0.107	0.214	0.535	1.07	5.35	26.75	53.5	107	
1,2-Dibromo-3-chloropropane	2.10	2100	420	84.0	42.0	8.40	2.10	0.210	0.420	1.050	2.10	10.50	52.50	105.0	210	
1,2,4-Trichlorobenzene	2.09	2090	418	83.6	41.8	8.36	2.09	0.209	0.418	1.045	2.09	10.45	52.25	104.5	209	
Naphthalene	1.10	1100	220	44.0	22.0	4.40	1.10	0.110	0.220	0.550	1.10	5.50	27.50	55.0	110	
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.212	0.530	1.06	5.30	26.50	53.0	106	
tert-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.212	0.530	1.06	5.30	26.50	53.0	106	
n-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07	0.107	0.214	0.535	1.07	5.35	26.75	53.5	107	
1,1,1,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06	0.106	0.212	0.530	1.06	5.30	26.50	53.0	106	

Method : I:\MS13\METHODS\R13062323.M (RTE Integrator)
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration

Tz 6/26/23

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS13\DATA\2023_06\23\06232302.D
2	0.2	0	13	I:\MS13\DATA\2023_06\23\06232303.D
3	0.5	1	13	I:\MS13\DATA\2023_06\23\06232304.D
4	1.0	1	13	I:\MS13\DATA\2023_06\23\06232305.D
5	5.0	5	13	I:\MS13\DATA\2023_06\23\06232306.D
6	25	26	13	I:\MS13\DATA\2023_06\23\06232307.D
7	50	53	13	I:\MS13\DATA\2023_06\23\06232308.D
8	100	105	13	I:\MS13\DATA\2023_06\23\06232309.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Jun 23 11:05 2023	Jun 23 11:03 2023	23 Jun 2023 3:58
2	0.2	Jun 23 11:05 2023	Jun 23 11:04 2023	23 Jun 2023 4:34
3	0.5	Jun 23 09:04 2023	Jun 23 09:01 2023	23 Jun 2023 5:10
4	1.0	Jun 23 09:04 2023	Jun 23 09:01 2023	23 Jun 2023 5:47
5	5.0	Jun 23 09:05 2023	Jun 23 09:01 2023	23 Jun 2023 6:23
6	25	Jun 23 11:07 2023	Jun 23 09:01 2023	23 Jun 2023 6:59
7	50	Jun 23 09:05 2023	Jun 23 09:01 2023	23 Jun 2023 7:35
8	100	Jun 23 09:05 2023	Jun 23 09:01 2023	23 Jun 2023 8:12

R13062323.M

Mon Jun 26 07:43:32 2023

Data File : I:\MS13\DATA\2023_06\23\06232302.D
 Acq On : 23 Jun 2023 3:58
 Sample : 0.1ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 11:03:14 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	191138	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.36	114	806943	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	170427	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	358587	14.137	ng	-0.04
Spiked Amount	12.500	Range	70 - 130	Recovery	=	113.12%
57) Toluene-d8 (SS2)	12.47	98	903945	10.314	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.48%
73) Bromofluorobenzene (SS3)	16.85	174	381338	11.879	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.04%

Target Compounds

						Qvalue
2) Propene	3.43	42	2007	0.105	ng	97
3) Dichlorodifluoromethan...	3.50	85	3675	0.105	ng	# 93
4) Chloromethane	3.64	50	2560	0.101	ng	87
5) 1,2-Dichloro-1,1,2,2-t...	3.73	135	1874	0.106	ng	85
6) Vinyl Chloride	3.83	62	2056	0.088	ng	98
7) 1,3-Butadiene	3.95	54	1821	0.103	ng	94
8) Bromomethane	4.16	94	1479	0.094	ng	99
9) Chloroethane	4.28	64	958	0.087	ng	97
10) Ethanol	4.40	45	4657	0.343	ng	82
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.65	56	1552	0.138	ng	97
13) Acetone	4.75	58	6256	0.540	ng	99
14) Trichlorofluoromethane	4.88	101	3254	0.103	ng	98
15) 2-Propanol (Isopropanol)	4.96	45	10413	0.223	ng	84
16) Acrylonitrile	5.11	53	4295	0.194	ng	96
17) 1,1-Dichloroethene	5.37	96	1561	0.096	ng	98
18) 2-Methyl-2-Propanol (t...	5.45	59	8261	0.181	ng	96
19) Methylene Chloride	5.45	84	1708	0.101	ng	# 78
20) 3-Chloro-1-propene (Al...	5.56	41	2449m	0.090	ng	
21) Trichlorotrifluoroethane	5.69	151	1803	0.109	ng	92
22) Carbon Disulfide	5.72	76	15466	0.230	ng	97
23) trans-1,2-Dichloroethene	6.23	61	2038	0.082	ng	92
24) 1,1-Dichloroethane	6.40	63	3073	0.102	ng	99
25) Methyl tert-Butyl Ether	6.48	73	5043	0.095	ng	99
26) Vinyl Acetate	6.53	86	531	0.169	ng	# 46
27) 2-Butanone (MEK)	6.77	72	1397	0.136	ng	# 31
28) cis-1,2-Dichloroethene	7.17	61	2321	0.095	ng	98
29) Diisopropyl Ether	7.38	87	2564	0.201	ng	# 87
30) Ethyl Acetate	7.39	61	2616	0.387	ng	99
31) n-Hexane	7.38	57	2253	0.087	ng	# 88
32) Chloroform	7.43	83	3082	0.100	ng	98
34) Tetrahydrofuran (THF)	7.87	72	2391	0.226	ng	93
35) Ethyl tert-Butyl Ether	7.91	87	3438	0.176	ng	90
36) 1,2-Dichloroethane	8.20	62	3003	0.129	ng	92
38) 1,1,1-Trichloroethane	8.46	97	3120	0.117	ng	95
39) Isopropyl Acetate	9.36	61	24671	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.97	78	6650	0.106	ng	97
42) Carbon Tetrachloride	9.14	117	2521	0.107	ng	99
43) Cyclohexane	9.28	84	4228	0.184	ng	98
44) tert-Amyl Methyl Ether	9.67	73	8608	0.189	ng	93
45) 1,2-Dichloropropane	9.93	63	1515	0.096	ng	96
46) Bromodichloromethane	10.14	83	2652	0.114	ng	86
47) Trichloroethene	10.20	130	2054	0.112	ng	96
48) 1,4-Dioxane	10.22	88	1298	0.103	ng	83
49) 2,2,4-Trimethylpentane...	10.30	57	6146	0.096	ng	97
50) Methyl Methacrylate	10.47	100	1067	0.165	ng	99

Data File : I:\MS13\DATA\2023_06\23\06232302.D
 Acq On : 23 Jun 2023 3:58
 Sample : 0.1ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

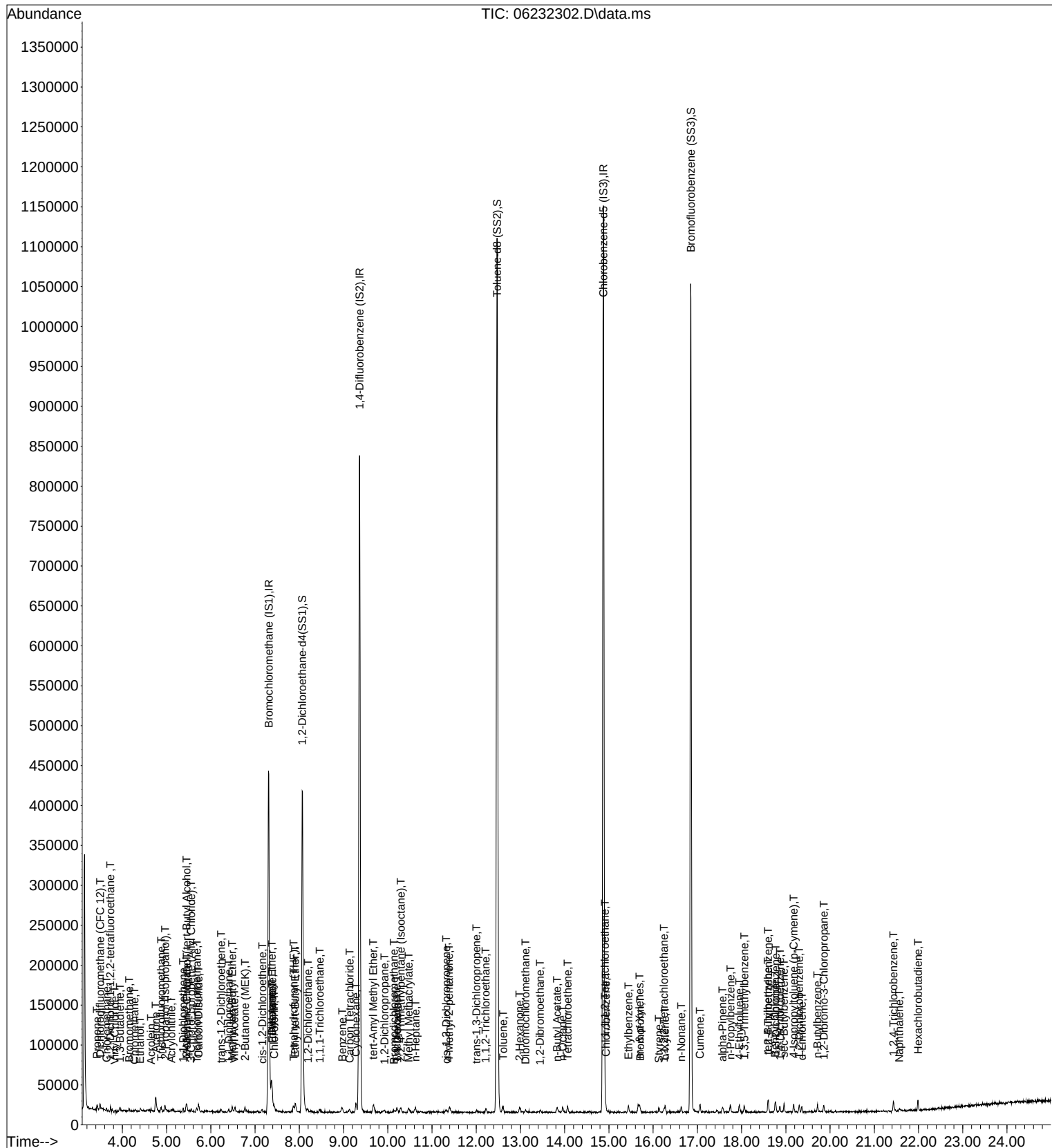
Quant Time: Jun 23 11:03:14 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	1157	0.076	ng	87
52) cis-1,3-Dichloropropene	11.32	75	2791	0.108	ng	79
53) 4-Methyl-2-pentanone	11.38	58	1951	0.144	ng	# 64
54) trans-1,3-Dichloropropene	12.00	75	1848	0.074	ng	90
55) 1,1,2-Trichloroethane	12.22	97	1729	0.106	ng	96
58) Toluene	12.61	91	6880	0.082	ng	99
59) 2-Hexanone	12.98	43	6412	0.158	ng	98
60) Dibromochloromethane	13.11	129	2296	0.094	ng	97
61) 1,2-Dibromoethane	13.44	107	1909	0.082	ng	98
62) n-Butyl Acetate	13.83	43	6698	0.145	ng	92
63) n-Octane	13.95	57	1188	0.072	ng	90
64) Tetrachloroethene	14.06	166	2526	0.100	ng	91
65) Chlorobenzene	14.93	112	5090	0.092	ng	99
66) Ethylbenzene	15.44	91	7231	0.073	ng	99
67) m- & p-Xylenes	15.69	91	12338	0.154	ng	98
68) Bromoform	15.70	173	2168	0.098	ng	82
69) Styrene	16.13	104	3345	0.061	ng	94
70) o-Xylene	16.27	91	5492	0.072	ng	98
71) n-Nonane	16.64	43	2636	0.071	ng	91
72) 1,1,2,2-Tetrachloroethane	16.24	83	2703	0.082	ng	99
74) Cumene	17.06	105	7691	0.083	ng	98
75) alpha-Pinene	17.56	93	3429	0.080	ng	97
76) n-Propylbenzene	17.75	91	8464	0.076	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	7049	0.079	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	6042	0.076	ng	92
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	5368	0.069	ng	100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	8288	0.131	ng	96
85) 1,3-Dichlorobenzene	18.77	146	3941	0.084	ng	91
86) 1,4-Dichlorobenzene	18.87	146	3908	0.080	ng	92
87) sec-Butylbenzene	18.96	105	6839	0.067	ng	91
88) 4-Isopropyltoluene (p-...	19.18	119	5932	0.066	ng	92
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	4058	0.087	ng	97
91) d-Limonene	19.36	68	1538	0.058	ng	86
92) 1,2-Dibromo-3-Chloropr...	19.86	157	3051	0.173	ng	89
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	5937	0.169	ng	97
95) Naphthalene	21.57	128	5581	0.066	ng	77
96) n-Dodecane	19.17	58	245	No Calib	#	
97) Hexachlorobutadiene	21.99	225	2638	0.097	ng	90
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	5341	0.073	ng	99
100) n-Butylbenzene	19.72	91	5316	0.067	ng	95
101) 1,1,1,2-Tetrachloroethane	14.91	131	1737	0.084	ng	88

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

Vial: 13
Operator: TZ
Inst : MS13

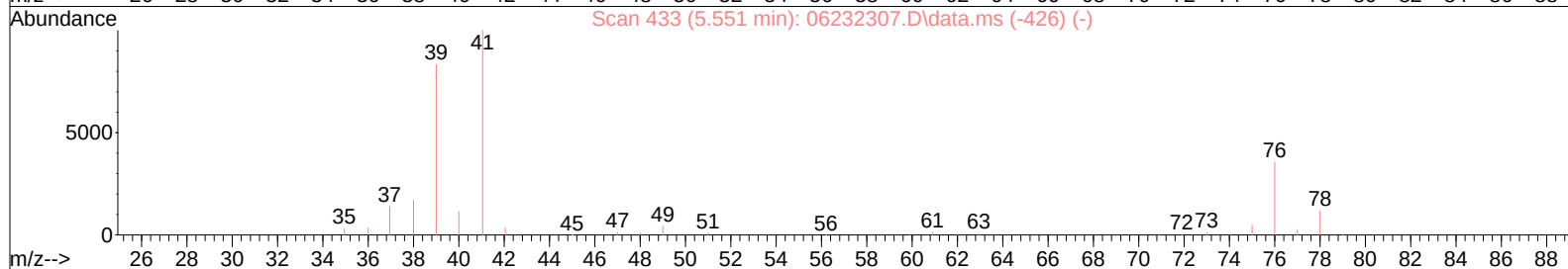
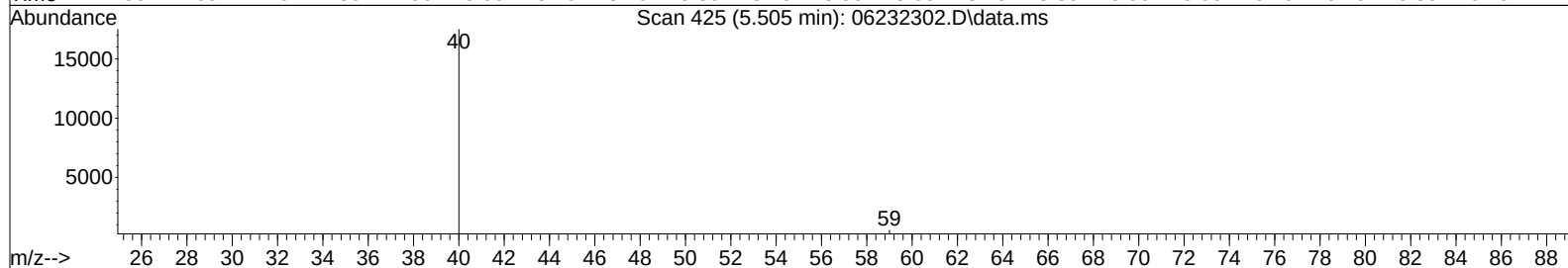
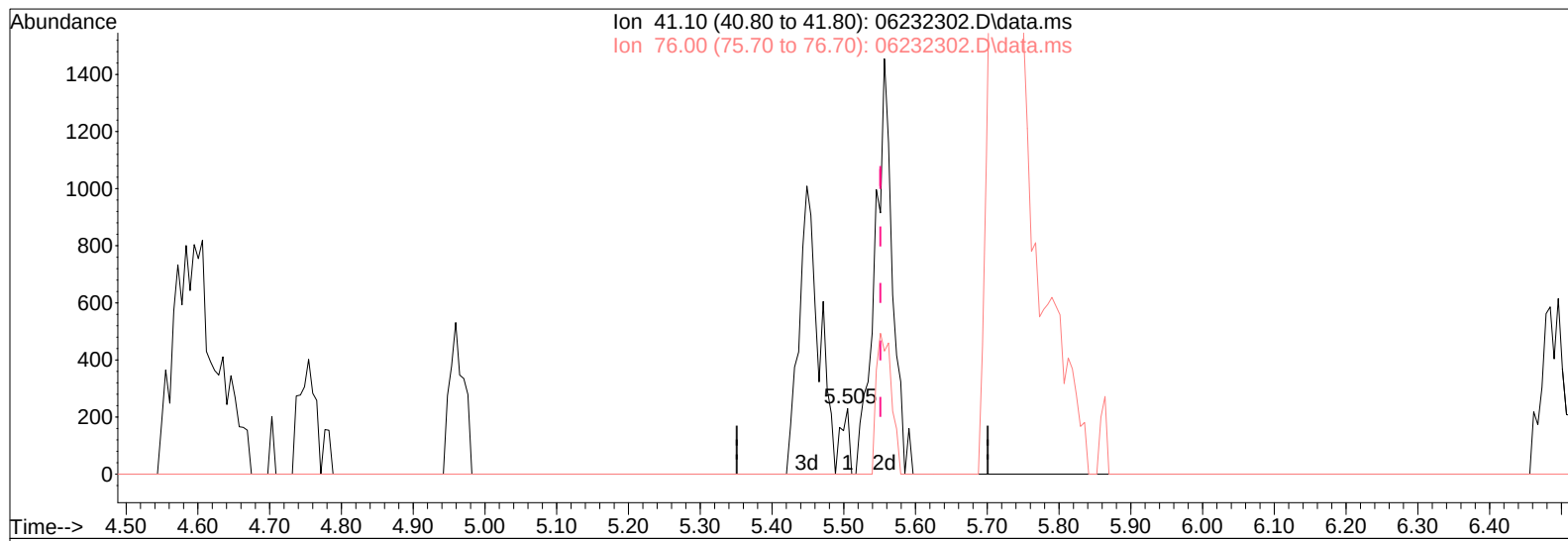
Quant Time: Jun 23 11:03:14 2023



Data File : I:\MS13\DATA\2023_06\23\06232302.D
Acq On : 23 Jun 2023 3:58
Sample : 0.1ng R13062323 ICAL Std.
Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:44 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 09:01:26 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06232302.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.505min (-0.046) 0.01ng

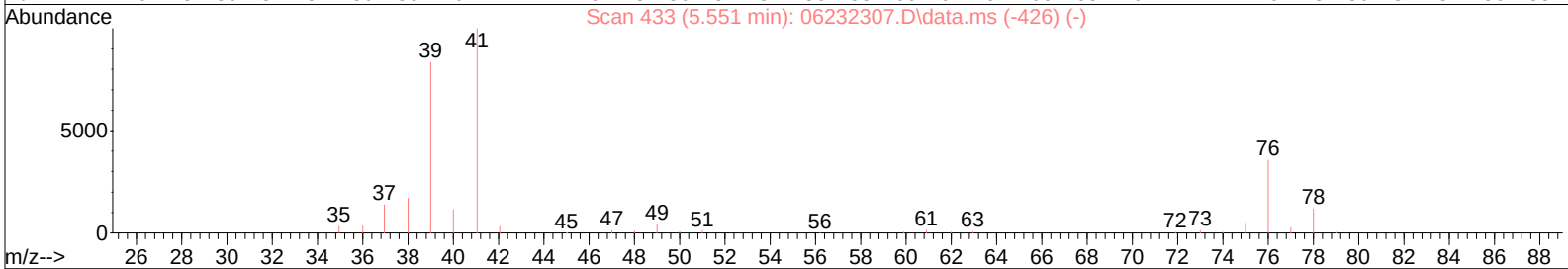
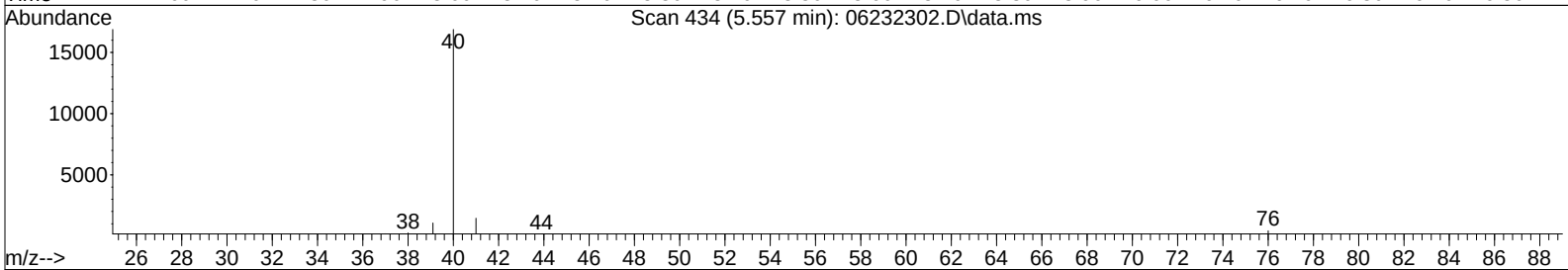
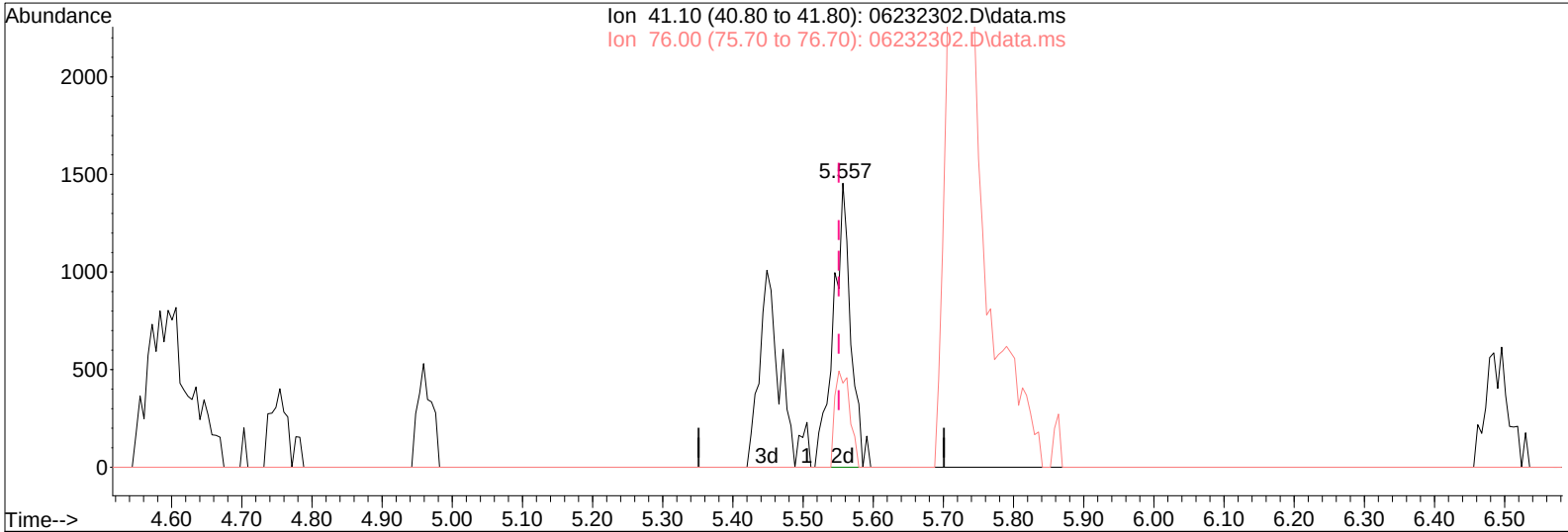
response 186

Ion	Exp%	Act%
41.10	100	100
76.00	34.90	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS13\DATA\2023_06\23\06232302.D
Acq On : 23 Jun 2023 3:58
Sample : 0.1ng R13062323 ICAL Std.
Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:44 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 09:01:26 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



TIC: 06232302.D\data.ms

(20) 3-Chloro-1-propene (Allyl Chloride) (T)

5.557min (+0.006) 0.09ng m

response 2449

Ion	Exp%	Act%

41.10	100	100

76.00	34.90	29.64

0.00	0.00	0.00

0.00	0.00	0.00

MP

TZ 6/23/23

CG 6/28/23

Data File : I:\MS13\DATA\2023_06\23\06232303.D
 Acq On : 23 Jun 2023 4:34
 Sample : 0.2ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 11:04:33 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	186100	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.36	114	794660	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	166023	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	354341	14.348	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	114.80%
57) Toluene-d8 (SS2)	12.47	98	896893	10.505	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	84.00%
73) Bromofluorobenzene (SS3)	16.85	174	377807	12.081	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.64%

Target Compounds

						Qvalue
2) Propene	3.43	42	3774	0.203	ng	93
3) Dichlorodifluoromethan...	3.50	85	7706	0.226	ng	98
4) Chloromethane	3.63	50	4569	0.186	ng	97
5) 1,2-Dichloro-1,1,2,2-t...	3.74	135	3055	0.178	ng	94
6) Vinyl Chloride	3.82	62	4428	0.195	ng	99
7) 1,3-Butadiene	3.93	54	3126	0.181	ng	# 87
8) Bromomethane	4.15	94	2597	0.170	ng	87
9) Chloroethane	4.29	64	1891	0.176	ng	96
10) Ethanol	4.40	45	8606	0.651	ng	97
11) Acetonitrile	0.00	41	0	N.D.	d	
12) Acrolein	4.65	56	3103	0.284	ng	98
13) Acetone	4.74	58	11792	1.045	ng	94
14) Trichlorofluoromethane	4.87	101	7156	0.233	ng	88
15) 2-Propanol (Isopropanol)	4.95	45	18698	0.411	ng	90
16) Acrylonitrile	5.10	53	7201	0.335	ng	94
17) 1,1-Dichloroethene	5.37	96	3132	0.199	ng	94
18) 2-Methyl-2-Propanol (t...	5.44	59	16482	0.370	ng	97
19) Methylene Chloride	5.45	84	3473	0.210	ng	94
20) 3-Chloro-1-propene (Al...	5.56	41	4627	0.175	ng	99
21) Trichlorotrifluoroethane	5.68	151	3556	0.220	ng	89
22) Carbon Disulfide	5.72	76	24567	0.375	ng	99
23) trans-1,2-Dichloroethene	6.23	61	4393	0.182	ng	97
24) 1,1-Dichloroethane	6.41	63	5710	0.194	ng	96
25) Methyl tert-Butyl Ether	6.47	73	9306	0.180	ng	96
26) Vinyl Acetate	6.54	86	1398	0.458	ng	# 89
27) 2-Butanone (MEK)	6.76	72	3526	0.352	ng	# 89
28) cis-1,2-Dichloroethene	7.16	61	4258	0.179	ng	95
29) Diisopropyl Ether	7.37	87	4948	0.398	ng	# 90
30) Ethyl Acetate	7.37	61	4529	0.688	ng	83
31) n-Hexane	7.39	57	5142	0.203	ng	# 96
32) Chloroform	7.43	83	6591	0.220	ng	96
34) Tetrahydrofuran (THF)	7.85	72	3955	0.385	ng	# 92
35) Ethyl tert-Butyl Ether	7.90	87	7039	0.371	ng	96
36) 1,2-Dichloroethane	8.19	62	5400	0.238	ng	99
38) 1,1,1-Trichloroethane	8.46	97	5566	0.212	ng	98
39) Isopropyl Acetate	9.36	61	25044	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.97	78	12996	0.210	ng	99
42) Carbon Tetrachloride	9.13	117	4964	0.214	ng	89
43) Cyclohexane	9.28	84	8339	0.368	ng	99
44) tert-Amyl Methyl Ether	9.67	73	17543	0.391	ng	97
45) 1,2-Dichloropropane	9.92	63	3039	0.195	ng	93
46) Bromodichloromethane	10.15	83	4738	0.207	ng	92
47) Trichloroethene	10.21	130	3933	0.217	ng	100
48) 1,4-Dioxane	10.21	88	2654	0.213	ng	95
49) 2,2,4-Trimethylpentane...	10.30	57	11639	0.185	ng	95
50) Methyl Methacrylate	10.47	100	2631	0.414	ng	# 69

Data File : I:\MS13\DATA\2023_06\23\06232303.D
 Acq On : 23 Jun 2023 4:34
 Sample : 0.2ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

Quant Time: Jun 23 11:04:33 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

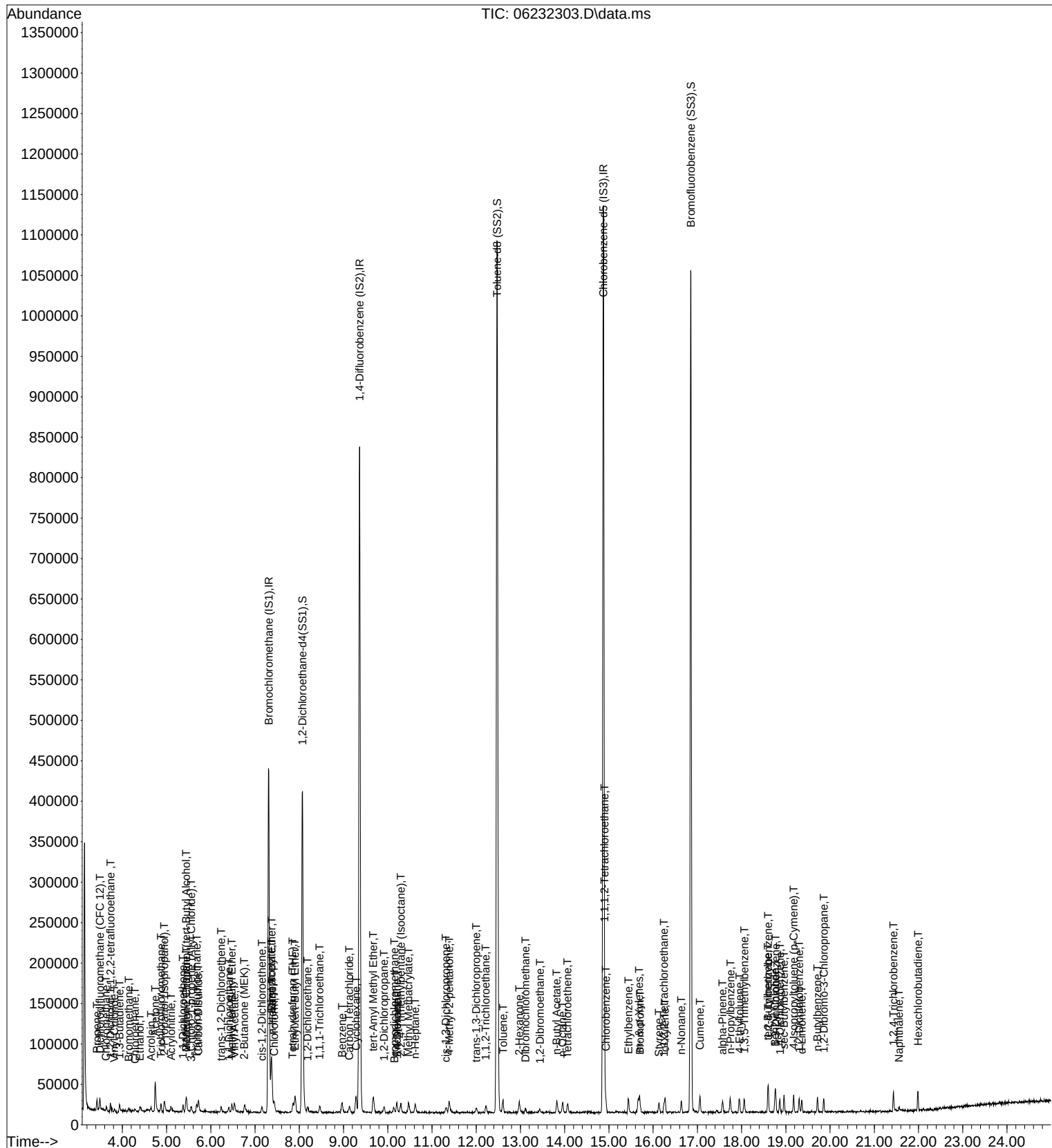
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.62	71	2506	0.168	ng	82
52) cis-1,3-Dichloropropene	11.31	75	4806	0.190	ng	98
53) 4-Methyl-2-pentanone	11.39	58	4669	0.350	ng	88
54) trans-1,3-Dichloropropene	12.00	75	4412	0.180	ng	96
55) 1,1,2-Trichloroethane	12.22	97	3162	0.198	ng	100
58) Toluene	12.61	91	13359	0.164	ng	94
59) 2-Hexanone	12.97	43	12730	0.322	ng	91
60) Dibromochloromethane	13.11	129	4159	0.174	ng	99
61) 1,2-Dibromoethane	13.44	107	3804	0.168	ng	94
62) n-Butyl Acetate	13.82	43	13193	0.294	ng	97
63) n-Octane	13.95	57	2385	0.149	ng	93
64) Tetrachloroethene	14.06	166	4489	0.182	ng	94
65) Chlorobenzene	14.93	112	9575	0.179	ng	97
66) Ethylbenzene	15.44	91	13816	0.142	ng	100
67) m- & p-Xylenes	15.68	91	22249	0.285	ng	98
68) Bromoform	15.70	173	3647	0.169	ng	98
69) Styrene	16.13	104	6878	0.128	ng	96
70) o-Xylene	16.27	91	11771	0.158	ng	95
71) n-Nonane	16.64	43	5142	0.142	ng	98
72) 1,1,2,2-Tetrachloroethane	16.24	83	5320	0.165	ng	100
74) Cumene	17.06	105	14959	0.165	ng	99
75) alpha-Pinene	17.57	93	6053	0.145	ng	90
76) n-Propylbenzene	17.75	91	16664	0.153	ng	96
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	13172	0.151	ng	96
79) 1,3,5-Trimethylbenzene	18.06	105	11070	0.144	ng	95
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	11216	0.148	ng	94
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	16757	0.273	ng	99
85) 1,3-Dichlorobenzene	18.77	146	7475	0.163	ng	96
86) 1,4-Dichlorobenzene	18.87	146	7401	0.156	ng	100
87) sec-Butylbenzene	18.96	105	14882	0.149	ng	96
88) 4-Isopropyltoluene (p-...	19.18	119	12265	0.139	ng	97
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	7873	0.173	ng	94
91) d-Limonene	19.36	68	3103	0.121	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	4970	0.289	ng	86
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	9018	0.264	ng	95
95) Naphthalene	21.56	128	7381	0.090	ng	83
96) n-Dodecane	19.19	58	181	No Calib	#	
97) Hexachlorobutadiene	21.99	225	5078	0.192	ng	95
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	10487	0.147	ng	93
100) n-Butylbenzene	19.72	91	11599	0.149	ng	90
101) 1,1,1,2-Tetrachloroethane	14.90	131	3755	0.186	ng	# 87

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

Data File : I:\MS13\DATA\2023_06\23\06232303.D
 Acq On : 23 Jun 2023 4:34
 Sample : 0.2ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222303 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

Quant Time: Jun 23 11:04:33 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M



Data File : I:\MS13\DATA\2023_06\23\06232304.D
 Acq On : 23 Jun 2023 5:10
 Sample : 0.5ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 09:01:47 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.30	130	184584	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	9.36	114	801149	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	169082	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.07	65	356405	14.550	ng	-0.04
Spiked Amount	12.500	Range 70 - 130	Recovery	=	116.40%	
57) Toluene-d8 (SS2)	12.47	98	899137	10.340	ng	-0.01
Spiked Amount	12.500	Range 70 - 130	Recovery	=	82.72%	
73) Bromofluorobenzene (SS3)	16.85	174	382543	12.011	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.08%	

Target Compounds

						Qvalue
2) Propene	3.41	42	8727	0.473	ng	93
3) Dichlorodifluoromethan...	3.48	85	19632	0.581	ng	98
4) Chloromethane	3.62	50	12274	0.503	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	8990	0.527	ng	99
6) Vinyl Chloride	3.80	62	10035	0.444	ng	97
7) 1,3-Butadiene	3.92	54	8440	0.493	ng	97
8) Bromomethane	4.13	94	6814	0.450	ng	90
9) Chloroethane	4.28	64	5297	0.496	ng	95
10) Ethanol	4.38	45	21414	1.633	ng	98
11) Acetonitrile	4.54	41	13538	0.397	ng	# 1
12) Acrolein	4.63	56	9768	0.901	ng	95
13) Acetone	4.73	58	26529	2.371	ng	92
14) Trichlorofluoromethane	4.87	101	18432	0.606	ng	97
15) 2-Propanol (Isopropanol)	4.94	45	44402	0.983	ng	88
16) Acrylonitrile	5.08	53	19133	0.896	ng	97
17) 1,1-Dichloroethene	5.36	96	8050	0.515	ng	100
18) 2-Methyl-2-Propanol (t...	5.42	59	42487	0.962	ng	94
19) Methylene Chloride	5.45	84	8247	0.503	ng	96
20) 3-Chloro-1-propene (Al...	5.55	41	12568	0.480	ng	95
21) Trichlorotrifluoroethane	5.67	151	8336	0.521	ng	94
22) Carbon Disulfide	5.71	76	64194	0.988	ng	97
23) trans-1,2-Dichloroethene	6.23	61	11760	0.491	ng	95
24) 1,1-Dichloroethane	6.40	63	15113	0.518	ng	98
25) Methyl tert-Butyl Ether	6.47	73	24906	0.487	ng	97
26) Vinyl Acetate	6.52	86	3501	1.157	ng	# 94
27) 2-Butanone (MEK)	6.75	72	9997	1.007	ng	95
28) cis-1,2-Dichloroethene	7.15	61	11183	0.474	ng	99
29) Diisopropyl Ether	7.37	87	12220	0.991	ng	# 95
30) Ethyl Acetate	7.36	61	13876	2.125	ng	99
31) n-Hexane	7.38	57	13164	0.524	ng	97
32) Chloroform	7.43	83	16181	0.544	ng	98
34) Tetrahydrofuran (THF)	7.84	72	9980	0.978	ng	96
35) Ethyl tert-Butyl Ether	7.90	87	20027	1.063	ng	92
36) 1,2-Dichloroethane	8.18	62	13448	0.597	ng	97
38) 1,1,1-Trichloroethane	8.46	97	15697	0.592	ng	99
39) Isopropyl Acetate	9.36	61	25051	No Calib		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.97	78	30993	0.497	ng	98
42) Carbon Tetrachloride	9.14	117	12969	0.554	ng	93
43) Cyclohexane	9.28	84	22219	0.972	ng	97
44) tert-Amyl Methyl Ether	9.66	73	44663	0.988	ng	97
45) 1,2-Dichloropropane	9.92	63	7271	0.462	ng	93
46) Bromodichloromethane	10.13	83	12761	0.554	ng	96
47) Trichloroethene	10.20	130	9294	0.509	ng	95
48) 1,4-Dioxane	10.20	88	6204	0.494	ng	97
49) 2,2,4-Trimethylpentane...	10.29	57	31866	0.503	ng	99
50) Methyl Methacrylate	10.47	100	5496	0.858	ng	97

Data File : I:\MS13\DATA\2023_06\23\06232304.D
 Acq On : 23 Jun 2023 5:10
 Sample : 0.5ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

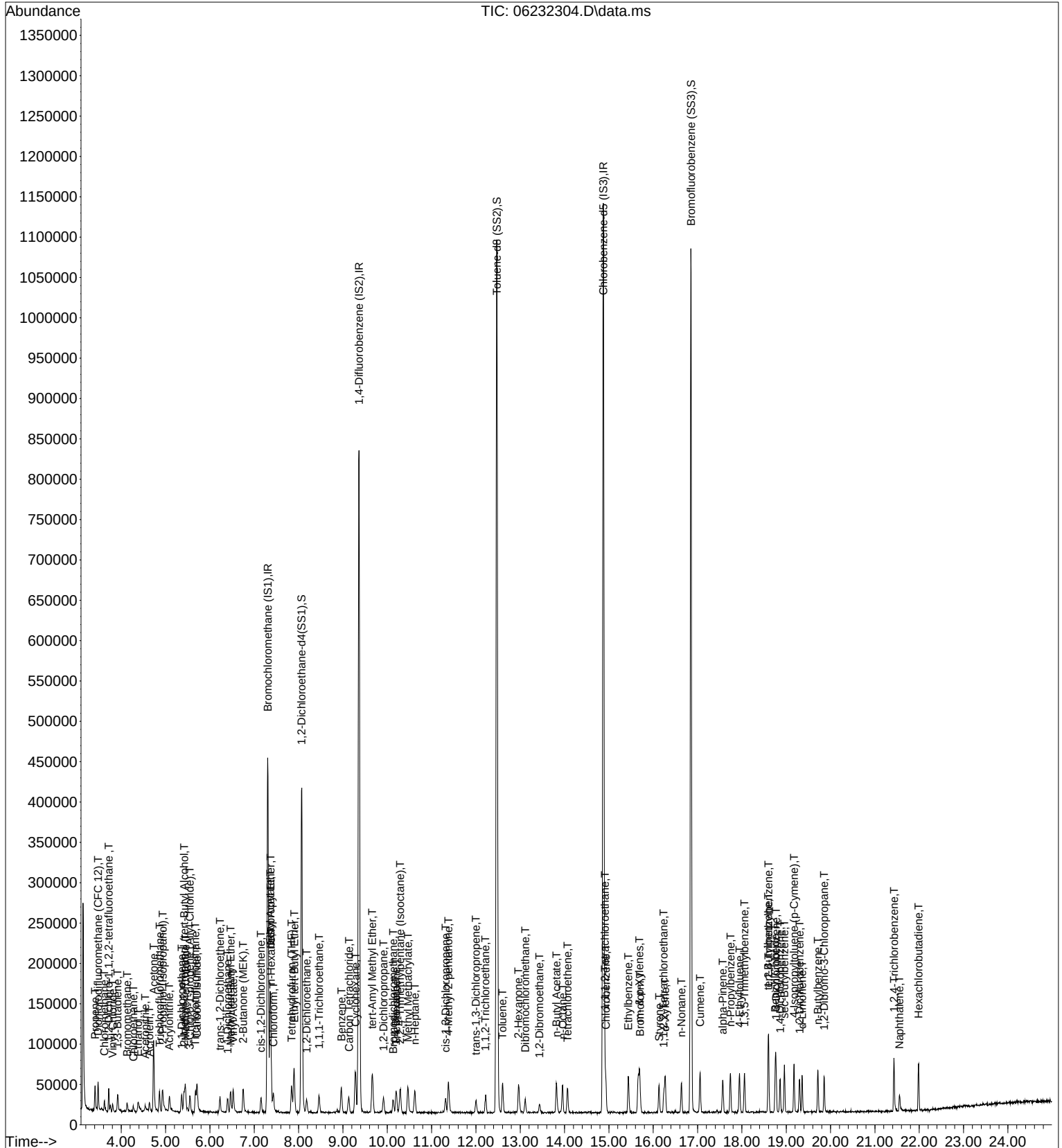
Quant Time: Jun 23 09:01:47 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.62	71	7621	0.505	ng	94
52) cis-1,3-Dichloropropene	11.32	75	11950	0.468	ng	95
53) 4-Methyl-2-pentanone	11.38	58	13945	1.038	ng	92
54) trans-1,3-Dichloropropene	12.00	75	11343	0.458	ng	97
55) 1,1,2-Trichloroethane	12.22	97	7978	0.495	ng	99
58) Toluene	12.60	91	32336	0.391	ng	99
59) 2-Hexanone	12.96	43	32944	0.819	ng	99
60) Dibromochloromethane	13.11	129	10990	0.452	ng	96
61) 1,2-Dibromoethane	13.43	107	9147	0.397	ng	99
62) n-Butyl Acetate	13.81	43	33637	0.736	ng	97
63) n-Octane	13.96	57	6573	0.404	ng	96
64) Tetrachloroethene	14.06	166	10622	0.422	ng	95
65) Chlorobenzene	14.93	112	22892	0.419	ng	95
66) Ethylbenzene	15.44	91	37643	0.381	ng	98
67) m- & p-Xylenes	15.69	91	60812	0.765	ng	100
68) Bromoform	15.70	173	9929	0.452	ng	96
69) Styrene	16.14	104	19359	0.354	ng	96
70) o-Xylene	16.27	91	30093	0.396	ng	99
71) n-Nonane	16.64	43	13684	0.372	ng	99
72) 1,1,2,2-Tetrachloroethane	16.23	83	13984	0.426	ng	98
74) Cumene	17.06	105	37694	0.408	ng	100
75) alpha-Pinene	17.57	93	16458	0.386	ng	91
76) n-Propylbenzene	17.74	91	45378	0.410	ng	97
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	35000	0.395	ng	98
79) 1,3,5-Trimethylbenzene	18.06	105	30565	0.390	ng	96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	30601	0.396	ng	99
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.75	91	42008	0.672	ng	100
85) 1,3-Dichlorobenzene	18.77	146	19833	0.424	ng	99
86) 1,4-Dichlorobenzene	18.86	146	18011	0.372	ng	98
87) sec-Butylbenzene	18.96	105	40780	0.400	ng	98
88) 4-Isopropyltoluene (p-...	19.18	119	35291	0.394	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	18883	0.408	ng	93
91) d-Limonene	19.36	68	9030	0.345	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.85	157	13250	0.756	ng	94
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	23578	0.677	ng	96
95) Naphthalene	21.55	128	23831	0.284	ng	97
96) n-Dodecane	19.16	58	181	No Calib	#	
97) Hexachlorobutadiene	21.98	225	11552	0.428	ng	97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	29963	0.413	ng	97
100) n-Butylbenzene	19.72	91	30025	0.379	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	9103	0.442	ng	99

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

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:47 2023



Data File : I:\MS13\DATA\2023_06\23\06232305.D
 Acq On : 23 Jun 2023 5:47
 Sample : 1.0ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 09:01:50 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.31	130	189696	12.500	ng	-0.03
37) 1,4-Difluorobenzene (IS2)	9.37	114	807211	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	170614	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	354501	14.082	ng	-0.03
Spiked Amount	12.500	Range	70 - 130	Recovery	=	112.64%
57) Toluene-d8 (SS2)	12.47	98	902291	10.283	ng	-0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	82.24%
73) Bromofluorobenzene (SS3)	16.85	174	386415	12.024	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.16%

Target Compounds

						Qvalue
2) Propene	3.41	42	16905	0.891	ng	99
3) Dichlorodifluoromethan...	3.48	85	37833	1.089	ng	98
4) Chloromethane	3.62	50	23357	0.932	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	16635	0.948	ng	99
6) Vinyl Chloride	3.80	62	20085	0.866	ng	99
7) 1,3-Butadiene	3.92	54	15887	0.904	ng	99
8) Bromomethane	4.13	94	13888	0.893	ng	99
9) Chloroethane	4.27	64	10097	0.920	ng	97
10) Ethanol	4.38	45	41358	3.070	ng	100
11) Acetonitrile	4.54	41	26265	0.750	ng	# 70
12) Acrolein	4.64	56	17866	1.604	ng	92
13) Acetone	4.73	58	53405	4.645	ng	92
14) Trichlorofluoromethane	4.86	101	34412	1.100	ng	100
15) 2-Propanol (Isopropanol)	4.93	45	84998	1.831	ng	91
16) Acrylonitrile	5.09	53	38962	1.776	ng	98
17) 1,1-Dichloroethene	5.36	96	14825	0.923	ng	97
18) 2-Methyl-2-Propanol (t...	5.40	59	82648	1.821	ng	95
19) Methylene Chloride	5.45	84	15847	0.940	ng	99
20) 3-Chloro-1-propene (Al...	5.55	41	23292	0.865	ng	96
21) Trichlorotrifluoroethane	5.68	151	16800	1.021	ng	95
22) Carbon Disulfide	5.70	76	121661	1.823	ng	100
23) trans-1,2-Dichloroethene	6.23	61	23815	0.968	ng	99
24) 1,1-Dichloroethane	6.41	63	28240	0.941	ng	100
25) Methyl tert-Butyl Ether	6.46	73	49620	0.944	ng	100
26) Vinyl Acetate	6.52	86	6858	2.206	ng	# 93
27) 2-Butanone (MEK)	6.75	72	18451	1.808	ng	95
28) cis-1,2-Dichloroethene	7.16	61	22217	0.917	ng	98
29) Diisopropyl Ether	7.37	87	25106	1.980	ng	# 92
30) Ethyl Acetate	7.36	61	26405	3.934	ng	97
31) n-Hexane	7.38	57	25241	0.977	ng	99
32) Chloroform	7.44	83	31546	1.032	ng	98
34) Tetrahydrofuran (THF)	7.84	72	18011	1.718	ng	94
35) Ethyl tert-Butyl Ether	7.90	87	37263	1.924	ng	100
36) 1,2-Dichloroethane	8.19	62	26805	1.158	ng	100
38) 1,1,1-Trichloroethane	8.46	97	30459	1.140	ng	95
39) Isopropyl Acetate	9.36	61	24432	No Calib		
40) 1-Butanol	8.92	56	125	No Calib	#	
41) Benzene	8.97	78	58269	0.928	ng	100
42) Carbon Tetrachloride	9.14	117	27137	1.151	ng	98
43) Cyclohexane	9.29	84	43015	1.869	ng	97
44) tert-Amyl Methyl Ether	9.66	73	89073	1.956	ng	97
45) 1,2-Dichloropropane	9.92	63	14699	0.928	ng	99
46) Bromodichloromethane	10.14	83	24872	1.071	ng	98
47) Trichloroethene	10.21	130	17929	0.975	ng	96
48) 1,4-Dioxane	10.19	88	12193	0.963	ng	95
49) 2,2,4-Trimethylpentane...	10.29	57	61032	0.956	ng	98
50) Methyl Methacrylate	10.46	100	11600	1.796	ng	99

Data File : I:\MS13\DATA\2023_06\23\06232305.D
 Acq On : 23 Jun 2023 5:47
 Sample : 1.0ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

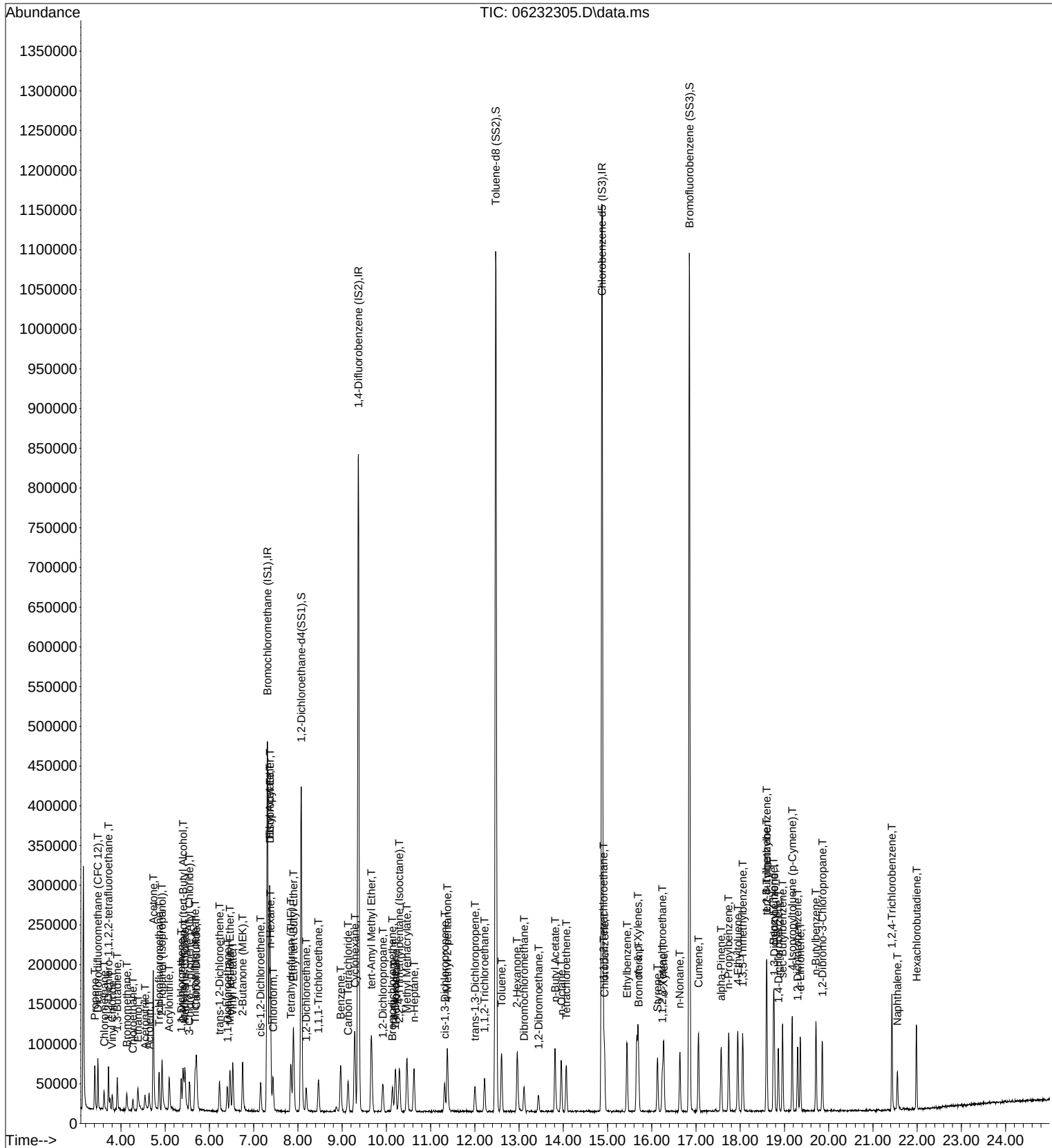
Quant Time: Jun 23 09:01:50 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	14424	0.949	ng	98
52) cis-1,3-Dichloropropene	11.32	75	23750	0.923	ng	100
53) 4-Methyl-2-pentanone	11.38	58	25728	1.900	ng	94
54) trans-1,3-Dichloropropene	12.00	75	22284	0.894	ng	97
55) 1,1,2-Trichloroethane	12.22	97	16663	1.025	ng	90
58) Toluene	12.60	91	64646	0.774	ng	97
59) 2-Hexanone	12.96	43	66927	1.650	ng	100
60) Dibromochloromethane	13.11	129	21086	0.860	ng	97
61) 1,2-Dibromoethane	13.44	107	18568	0.798	ng	97
62) n-Butyl Acetate	13.81	43	70522	1.529	ng	99
63) n-Octane	13.96	57	12889	0.785	ng	99
64) Tetrachloroethene	14.07	166	20530	0.808	ng	96
65) Chlorobenzene	14.93	112	45473	0.825	ng	98
66) Ethylbenzene	15.44	91	71562	0.718	ng	100
67) m- & p-Xylenes	15.69	91	120144	1.498	ng	98
68) Bromoform	15.70	173	19035	0.859	ng	96
69) Styrene	16.13	104	40632	0.737	ng	98
70) o-Xylene	16.27	91	60099	0.784	ng	97
71) n-Nonane	16.63	43	28890	0.779	ng	98
72) 1,1,2,2-Tetrachloroethane	16.24	83	26844	0.810	ng	96
74) Cumene	17.06	105	76269	0.818	ng	99
75) alpha-Pinene	17.57	93	33904	0.788	ng	96
76) n-Propylbenzene	17.74	91	91133	0.815	ng	98
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	73445	0.821	ng	95
79) 1,3,5-Trimethylbenzene	18.05	105	61062	0.772	ng	98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	62294	0.798	ng	100
83) n-Decane	17.06	58	294	No Calib	#	
84) Benzyl Chloride	18.75	91	89697	1.421	ng	100
85) 1,3-Dichlorobenzene	18.77	146	37806	0.801	ng	99
86) 1,4-Dichlorobenzene	18.86	146	37142	0.760	ng	98
87) sec-Butylbenzene	18.96	105	78583	0.764	ng	97
88) 4-Isopropyltoluene (p-...	19.18	119	69803	0.772	ng	98
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.29	146	36694	0.786	ng	97
91) d-Limonene	19.36	68	19987	0.758	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.86	157	26595	1.504	ng	98
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	46334	1.319	ng	100
95) Naphthalene	21.55	128	46597	0.551	ng	98
96) n-Dodecane	19.16	58	1848	No Calib	#	
97) Hexachlorobutadiene	21.99	225	21004	0.771	ng	100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.59	119	57614	0.787	ng	98
100) n-Butylbenzene	19.71	91	61881	0.773	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	17732	0.854	ng	98

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

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:50 2023



Data File : I:\MS13\DATA\2023_06\23\06232306.D
 Acq On : 23 Jun 2023 6:23
 Sample : 5.0ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 09:01:52 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.32	130	191129	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	9.37	114	827415	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.87	54	173096	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.08	65	365754	14.420	ng	-0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	115.36%
57) Toluene-d8 (SS2)	12.48	98	926946	10.413	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.28%
73) Bromofluorobenzene (SS3)	16.85	174	399033	12.239	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.92%

Target Compounds

						Qvalue
2) Propene	3.38	42	87050	4.554	ng	100
3) Dichlorodifluoromethan...	3.46	85	185037	5.286	ng	99
4) Chloromethane	3.59	50	106922	4.235	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	81870	4.632	ng	100
6) Vinyl Chloride	3.78	62	103465	4.426	ng	100
7) 1,3-Butadiene	3.90	54	79819	4.507	ng	98
8) Bromomethane	4.11	94	69205	4.418	ng	98
9) Chloroethane	4.25	64	48810	4.414	ng	98
10) Ethanol	4.38	45	203365	14.982	ng	98
11) Acetonitrile	4.54	41	135079	3.830	ng	95
12) Acrolein	4.62	56	95091	8.471	ng	99
13) Acetone	4.72	58	266181	22.976	ng	99
14) Trichlorofluoromethane	4.85	101	166080	5.270	ng	98
15) 2-Propanol (Isopropanol)	4.94	45	422251	9.028	ng	97
16) Acrylonitrile	5.09	53	195246	8.835	ng	100
17) 1,1-Dichloroethene	5.35	96	78931	4.877	ng	99
18) 2-Methyl-2-Propanol (t...	5.41	59	426636	9.328	ng	98
19) Methylene Chloride	5.45	84	79714	4.694	ng	98
20) 3-Chloro-1-propene (Al...	5.54	41	120596	4.447	ng	100
21) Trichlorotrifluoroethane	5.67	151	84008	5.069	ng	95
22) Carbon Disulfide	5.69	76	600771	8.933	ng	100
23) trans-1,2-Dichloroethene	6.22	61	123120	4.967	ng	100
24) 1,1-Dichloroethane	6.41	63	144187	4.770	ng	99
25) Methyl tert-Butyl Ether	6.45	73	259913	4.906	ng	99
26) Vinyl Acetate	6.53	86	38010	12.133	ng	# 96
27) 2-Butanone (MEK)	6.75	72	96653	9.398	ng	100
28) cis-1,2-Dichloroethene	7.16	61	116051	4.754	ng	100
29) Diisopropyl Ether	7.36	87	124503	9.747	ng	97
30) Ethyl Acetate	7.36	61	137171	20.284	ng	98
31) n-Hexane	7.38	57	122968	4.724	ng	99
32) Chloroform	7.45	83	155139	5.038	ng	99
34) Tetrahydrofuran (THF)	7.83	72	92346	8.743	ng	94
35) Ethyl tert-Butyl Ether	7.90	87	192146	9.848	ng	98
36) 1,2-Dichloroethane	8.19	62	131367	5.632	ng	99
38) 1,1,1-Trichloroethane	8.46	97	148864	5.436	ng	99
39) Isopropyl Acetate	9.37	61	26964	No Calib		
40) 1-Butanol	8.89	56	4265	No Calib	#	
41) Benzene	8.97	78	306485	4.761	ng	99
42) Carbon Tetrachloride	9.14	117	133319	5.518	ng	99
43) Cyclohexane	9.28	84	219581	9.305	ng	99
44) tert-Amyl Methyl Ether	9.66	73	459933	9.853	ng	99
45) 1,2-Dichloropropane	9.93	63	74505	4.588	ng	99
46) Bromodichloromethane	10.14	83	123896	5.205	ng	100
47) Trichloroethene	10.21	130	91448	4.850	ng	98
48) 1,4-Dioxane	10.18	88	66162	5.099	ng	98
49) 2,2,4-Trimethylpentane...	10.29	57	310032	4.737	ng	99
50) Methyl Methacrylate	10.47	100	63457	9.587	ng	99

Data File : I:\MS13\DATA\2023_06\23\06232306.D
 Acq On : 23 Jun 2023 6:23
 Sample : 5.0ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
 Operator: TZ
 Inst : MS13

Quant Time: Jun 23 09:01:52 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

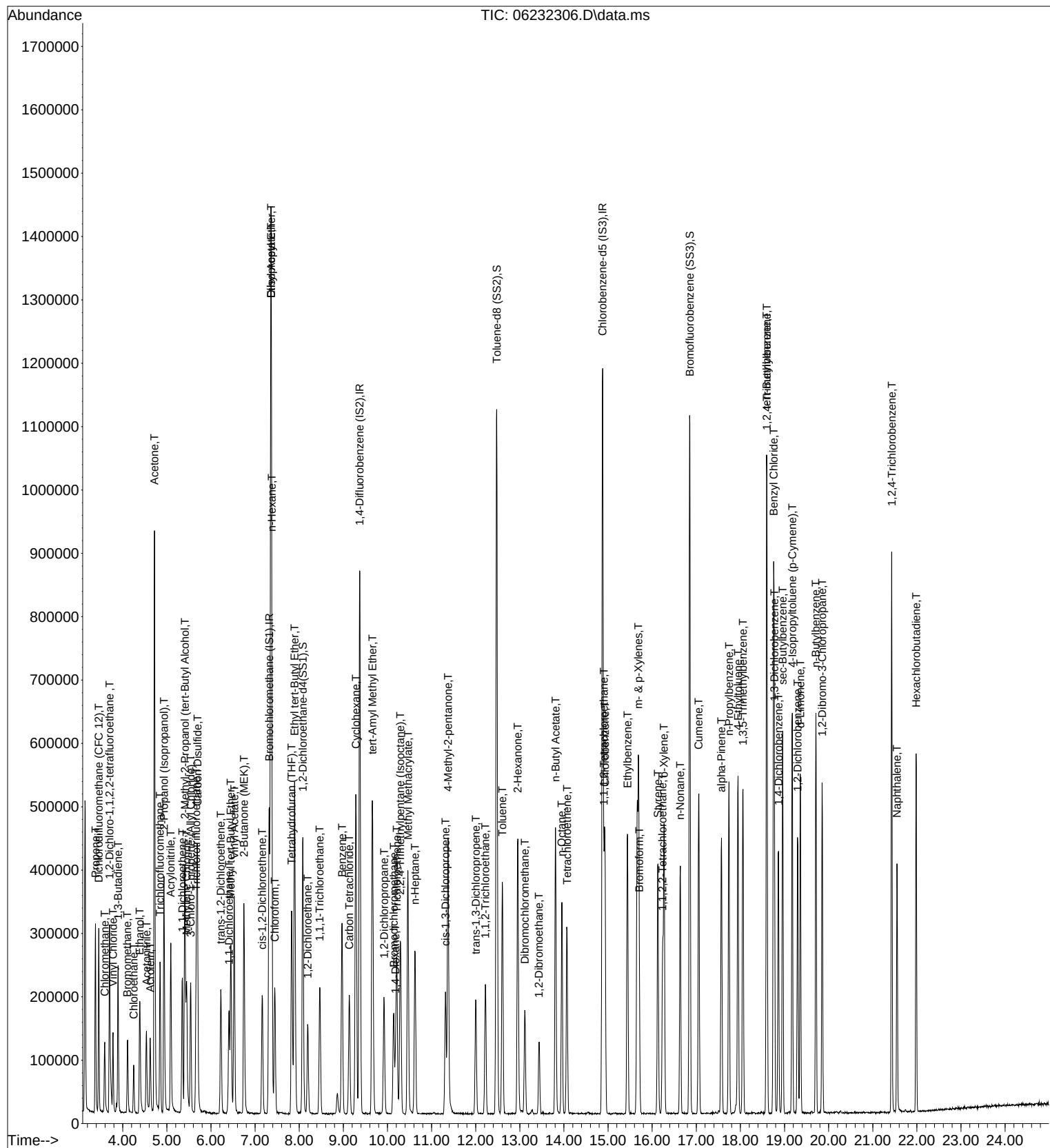
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.62	71	72353	4.645	ng	98
52) cis-1,3-Dichloropropene	11.32	75	130071	4.929	ng	100
53) 4-Methyl-2-pentanone	11.37	58	141468	10.195	ng	99
54) trans-1,3-Dichloropropene	12.00	75	124166	4.858	ng	99
55) 1,1,2-Trichloroethane	12.22	97	81472	4.890	ng	96
58) Toluene	12.60	91	324690	3.831	ng	100
59) 2-Hexanone	12.96	43	362611	8.809	ng	100
60) Dibromochloromethane	13.11	129	113395	4.559	ng	98
61) 1,2-Dibromoethane	13.43	107	96221	4.078	ng	99
62) n-Butyl Acetate	13.81	43	388035	8.293	ng	99
63) n-Octane	13.95	57	66283	3.978	ng	100
64) Tetrachloroethene	14.07	166	105500	4.092	ng	98
65) Chlorobenzene	14.93	112	225861	4.041	ng	100
66) Ethylbenzene	15.44	91	380144	3.760	ng	100
67) m- & p-Xylenes	15.69	91	629952	7.742	ng	100
68) Bromoform	15.71	173	99536	4.430	ng	99
69) Styrene	16.13	104	226460	4.048	ng	99
70) o-Xylene	16.27	91	313030	4.023	ng	100
71) n-Nonane	16.64	43	154937	4.115	ng	99
72) 1,1,2,2-Tetrachloroethane	16.23	83	138630	4.125	ng	99
74) Cumene	17.05	105	388521	4.106	ng	98
75) alpha-Pinene	17.57	93	192298	4.404	ng	99
76) n-Propylbenzene	17.74	91	471828	4.159	ng	99
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	17.95	105	381022	4.197	ng	99
79) 1,3,5-Trimethylbenzene	18.05	105	329194	4.101	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	18.60	105	330295	4.173	ng	99
83) n-Decane	17.05	58	2220	No Calib	#	
84) Benzyl Chloride	18.75	91	532370	8.313	ng	99
85) 1,3-Dichlorobenzene	18.77	146	193098	4.033	ng	100
86) 1,4-Dichlorobenzene	18.86	146	189864	3.829	ng	99
87) sec-Butylbenzene	18.96	105	434051	4.157	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	379594	4.136	ng	100
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	19.30	146	190459	4.019	ng	99
91) d-Limonene	19.36	68	113911	4.256	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.85	157	145607	8.115	ng	98
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	21.43	180	265342	7.445	ng	100
95) Naphthalene	21.55	128	300362	3.501	ng	100
96) n-Dodecane	19.17	58	11201	No Calib		
97) Hexachlorobutadiene	21.98	225	110864	4.012	ng	98
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.60	119	316624	4.261	ng	99
100) n-Butylbenzene	19.71	91	342581	4.220	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	90826	4.311	ng	100

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

Data File : I:\MS13\DATA\2023_06\23\06232306.D
Acq On : 23 Jun 2023 6:23
Sample : 5.0ng R13062323 ICAL Std.
Misc : S37-04102301/S37-06222302 (7/22)

Vial: 13
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:52 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 09:01:26 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\23\06232307.D
 Acq On : 23 Jun 2023 6:59
 Sample : 25ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
 Operator: TZ
 Inst : MS13

Tz 6/23/23

Quant Time: Jun 23 09:01:53 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 09:01:26 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	196182	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	863115	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	182797	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	377016	14.481	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	115.84%	
57) Toluene-d8 (SS2)	12.48	98	970757	10.326	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	82.64%	
73) Bromofluorobenzene (SS3)	16.85	174	416741	12.103	ng	0.00
Spiked Amount	12.500	Range 70 - 130	Recovery	=	96.80%	

Target Compounds

						Qvalue
2) Propene	3.38	42	453810	23.129	ng	100
3) Dichlorodifluoromethan...	3.45	85	974674	27.125	ng	100
4) Chloromethane	3.59	50	619177	23.895	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	428396	23.613	ng	100
6) Vinyl Chloride	3.78	62	544567	22.694	ng	100
7) 1,3-Butadiene	3.90	54	437277	24.054	ng	100
8) Bromomethane	4.12	94	373784	23.245	ng	100
9) Chloroethane	4.26	64	266540	23.483	ng	100
10) Ethanol	4.42	45	1060864	76.140	ng	100
11) Acetonitrile	4.57	41	714503	19.738	ng	100
12) Acrolein	4.64	56	515945	44.777	ng	100
13) Acetone	4.74	58	1405448	118.191	ng	100
14) Trichlorofluoromethane	4.86	101	883133	27.300	ng	100
15) 2-Propanol (Isopropanol)	4.97	45	2260852	47.095	ng	100
16) Acrylonitrile	5.12	53	1065684	46.979	ng	100
17) 1,1-Dichloroethene	5.36	96	416068	25.046	ng	100
18) 2-Methyl-2-Propanol (t...	5.44	59	2441107	51.999	ng	100
19) Methylene Chloride	5.48	84	419666	24.074	ng	100
20) 3-Chloro-1-propene (Al...	5.55	41	672629	24.164	ng	100
21) Trichlorotrifluoroethane	5.68	151	434076	25.519	ng	100
22) Carbon Disulfide	5.70	76	3161688	45.803	ng	100
23) trans-1,2-Dichloroethene	6.25	61	668614	26.279	ng	100
24) 1,1-Dichloroethane	6.43	63	776782	25.038	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1395199	25.658	ng	100
26) Vinyl Acetate	6.55	86	208146	64.732	ng	100
27) 2-Butanone (MEK)	6.77	72	528296	50.046	ng	100
28) cis-1,2-Dichloroethene	7.19	61	632286	25.232	ng	100
29) Diisopropyl Ether	7.37	87	650443	49.608	ng	100
30) Ethyl Acetate	7.38	61	706514	101.782	ng	100
31) n-Hexane	7.38	57	642847	24.061	ng	100
32) Chloroform	7.47	83	831204	26.298	ng	100
34) Tetrahydrofuran (THF)	7.84	72	490780	45.268	ng	100
35) Ethyl tert-Butyl Ether	7.91	87	1033099	51.585	ng	100
36) 1,2-Dichloroethane	8.21	62	707201	29.541	ng	100
38) 1,1,1-Trichloroethane	8.49	97	791503	27.705	ng	100
39) Isopropyl Acetate	9.39	61	26669	No Calib		
40) 1-Butanol	8.88	56	19234	No Calib		
41) Benzene	8.99	78	1650041	24.574	ng	100
42) Carbon Tetrachloride	9.15	117	717679	28.477	ng	100
43) Cyclohexane	9.30	84	1191074	48.388	ng	100
44) tert-Amyl Methyl Ether	9.67	73	2553260	52.433	ng	100
45) 1,2-Dichloropropane	9.94	63	405528	23.939	ng	100
46) Bromodichloromethane	10.16	83	673938	27.144	ng	100
47) Trichloroethene	10.23	130	490638	24.943	ng	100
48) 1,4-Dioxane	10.19	88	349622	25.830	ng	100
49) 2,2,4-Trimethylpentane...	10.30	57	1697657	24.864	ng	100
50) Methyl Methacrylate	10.47	100	348497	50.473	ng	100

Data File : I:\MS13\DATA\2023_06\23\06232307.D
 Acq On : 23 Jun 2023 6:59
 Sample : 25ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Jun 23 09:01:53 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 09:01:26 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	398591	24.532	ng	100
52) cis-1,3-Dichloropropene	11.33	75	726673	26.397	ng	100
53) 4-Methyl-2-pentanone	11.38	58	767038	52.988	ng	100
54) trans-1,3-Dichloropropene	12.01	75	709628	26.613	ng	100
55) 1,1,2-Trichloroethane	12.23	97	428630	24.664	ng	100
58) Toluene	12.61	91	1761328	19.681	ng	100
59) 2-Hexanone	12.96	43	1996003	45.916	ng	100
60) Dibromochloromethane	13.13	129	606523	23.093	ng	100
61) 1,2-Dibromoethane	13.44	107	527045	21.154	ng	100
62) n-Butyl Acetate	13.81	43	2154841	43.606	ng	100
63) n-Octane	13.96	57	360624	20.492	ng	100
64) Tetrachloroethene	14.08	166	568558	20.883	ng	100
65) Chlorobenzene	14.94	112	1222603	20.712	ng	100
66) Ethylbenzene	15.44	91	2099714	19.667	ng	100
67) m- & p-Xylenes	15.69	91	3431583	39.936	ng	100
68) Bromoform	15.71	173	557893	23.511	ng	100
69) Styrene	16.14	104	1304083	22.072	ng	100
70) o-Xylene	16.27	91	1708611	20.795	ng	100
71) n-Nonane	16.64	43	868469	21.843	ng	100
72) 1,1,2,2-Tetrachloroethane	16.24	83	758494	21.370	ng	100
74) Cumene	17.06	105	2132363	21.338	ng	100
75) alpha-Pinene	17.57	93	1055994	22.903	ng	100
76) n-Propylbenzene	17.74	91	2582968	21.561	ng	100
77) 3-Ethyltoluene	17.34	105	272	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2108892	21.999	ng	100
79) 1,3,5-Trimethylbenzene	18.06	105	1806654	21.312	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	272	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1823506	21.815	ng	100
83) n-Decane	17.06	58	15166	No Calib		
84) Benzyl Chloride	18.75	91	3262025	48.231	ng	100
85) 1,3-Dichlorobenzene	18.77	146	1080996	21.380	ng	100
86) 1,4-Dichlorobenzene	18.86	146	1101672	21.039	ng	100
87) sec-Butylbenzene	18.96	105	2340771	21.229	ng	100
88) 4-Isopropyltoluene (p-...	19.18	119	2103589	21.706	ng	100
89) 1,2,3-Trimethylbenzene	17.34	105	272	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1068304	21.349	ng	100
91) d-Limonene	19.36	68	647366	22.903	ng	100
92) 1,2-Dibromo-3-Chloropr...	19.86	157	833030	43.964	ng	100
93) n-Undecane	18.23	58	398	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1724617	45.824	ng	100
95) Naphthalene	21.55	128	2249547	24.827	ng	100
96) n-Dodecane	19.17	58	53199	No Calib		
97) Hexachlorobutadiene	21.99	225	560043	19.192	ng	100
98) Cyclohexanone	15.68	55	1168	No Calib	#	
99) tert-Butylbenzene	18.60	119	1669260	21.271	ng	100
100) n-Butylbenzene	19.72	91	1934758	22.570	ng	100
101) 1,1,1,2-Tetrachloroethane	14.91	131	489280	21.989	ng	100

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

Data File : I:\MS13\DATA\2023_06\23\06232307.D
Acq On : 23 Jun 2023 6:59
Sample : 25ng R13062323 ICAL Std.
Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:53 2023

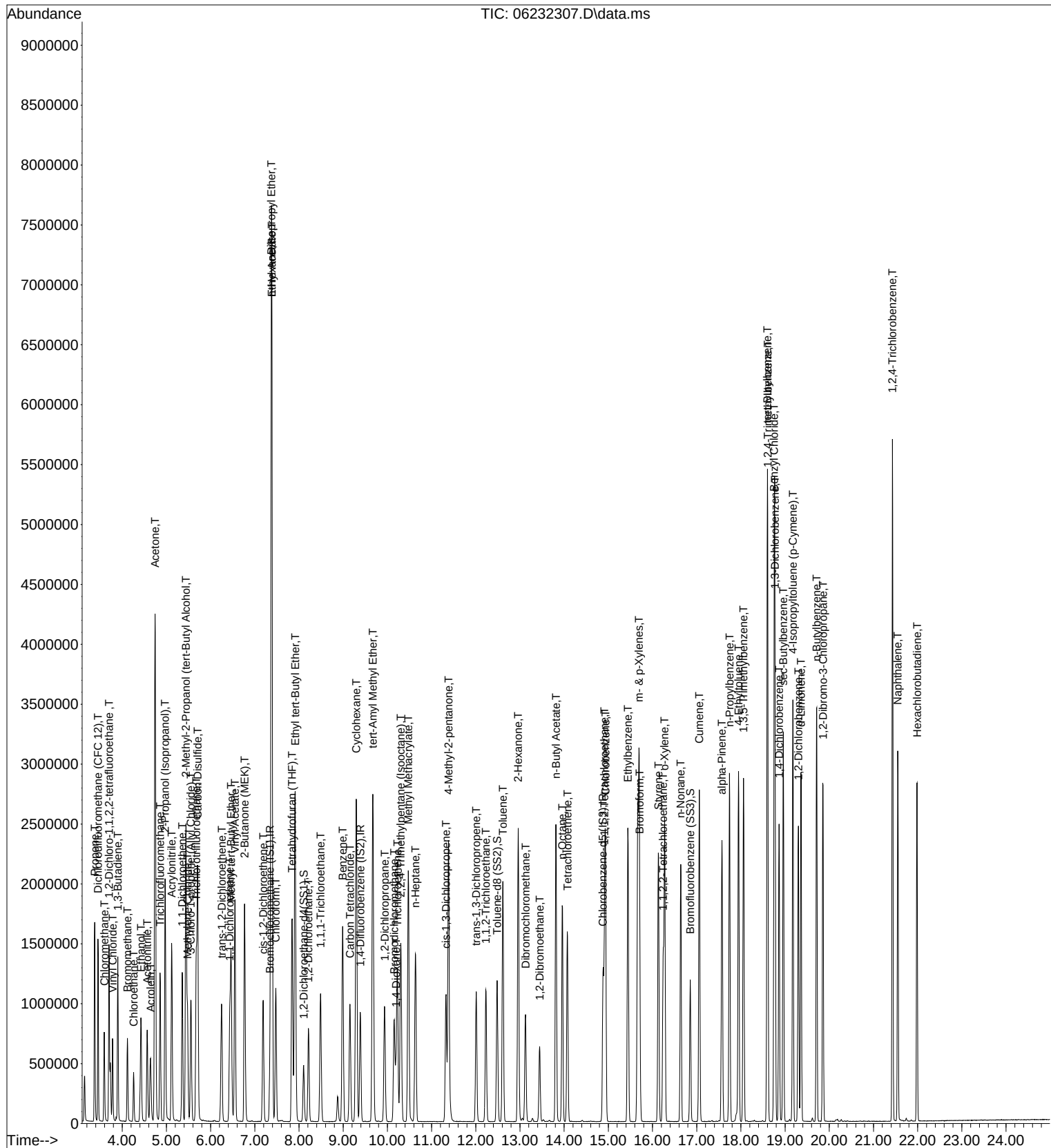
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 09:01:26 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\23\06232312.D
 Acq On : 23 Jun 2023 10:01
 Sample : 25ng R13062323 ICV Std.
 Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 6/26/23

Quant Time: Jun 26 07:26:57 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	225200	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	976743	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	205967	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	420023	12.227	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.84%
57) Toluene-d8 (SS2)	12.48	98	1120325	12.732	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.84%
73) Bromofluorobenzene (SS3)	16.85	174	474272	12.662	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.28%

Target Compounds

						Qvalue
2) Propene	3.38	42	508926	24.837	ng	99
3) Dichlorodifluoromethan...	3.45	85	1017593	24.308	ng	100
4) Chloromethane	3.59	50	700956	26.713	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	453751	23.714	ng	99
6) Vinyl Chloride	3.78	62	609120	24.807	ng	100
7) 1,3-Butadiene	3.90	54	488373	25.945	ng	99
8) Bromomethane	4.12	94	421734	25.842	ng	99
9) Chloroethane	4.25	64	304106	26.257	ng	100
10) Ethanol	4.42	45	1831065	126.120	ng	99
11) Acetonitrile	4.56	41	864483	24.023	ng	98
12) Acrolein	4.63	56	659016	58.169	ng	99
13) Acetone	4.74	58	1572554	126.490	ng	98
14) Trichlorofluoromethane	4.85	101	916470	23.545	ng	100
15) 2-Propanol (Isopropanol)	4.97	45	2723279	52.849	ng	98
16) Acrylonitrile	5.12	53	1231662	53.116	ng	99
17) 1,1-Dichloroethene	5.35	96	454756	26.231	ng	99
18) 2-Methyl-2-Propanol (t...	5.44	59	2710542	55.422	ng	99
19) Methylene Chloride	5.47	84	462509	25.233	ng	98
20) 3-Chloro-1-propene (Al...	5.55	41	701771	25.204	ng	98
21) Trichlorotrifluoroethane	5.67	151	465281	24.967	ng	100
22) Carbon Disulfide	5.70	76	3517488	49.866	ng	100
23) trans-1,2-Dichloroethene	6.25	61	745848	28.222	ng	99
24) 1,1-Dichloroethane	6.43	63	865603	26.422	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1539924	27.086	ng	99
26) Vinyl Acetate	6.55	86	519609	170.059	ng	# 92
27) 2-Butanone (MEK)	6.77	72	577461	54.023	ng	96
28) cis-1,2-Dichloroethene	7.18	61	694397	26.740	ng	100
29) Diisopropyl Ether	7.37	87	714766	51.698	ng	# 30
30) Ethyl Acetate	7.38	61	334778	45.118	ng	98
31) n-Hexane	7.38	57	743148	26.682	ng	99
32) Chloroform	7.47	83	895814	25.161	ng	99
34) Tetrahydrofuran (THF)	7.84	72	538352	47.019	ng	98
35) Ethyl tert-Butyl Ether	7.91	87	1123013	52.764	ng	98
36) 1,2-Dichloroethane	8.21	62	755187	25.193	ng	100
38) 1,1,1-Trichloroethane	8.49	97	838473	24.677	ng	100
39) Isopropyl Acetate	9.39	61	30032	No Calib		
40) 1-Butanol	8.90	56	1148	No Calib	#	
41) Benzene	8.99	78	1845320	26.420	ng	99
42) Carbon Tetrachloride	9.15	117	794511	26.478	ng	98
43) Cyclohexane	9.30	84	1330185	53.567	ng	98
44) tert-Amyl Methyl Ether	9.67	73	2803706	54.281	ng	100
45) 1,2-Dichloropropane	9.93	63	460799	26.834	ng	99
46) Bromodichloromethane	10.15	83	735551	26.120	ng	98
47) Trichloroethene	10.22	130	536354	25.106	ng	99
48) 1,4-Dioxane	10.20	88	389352	26.638	ng	100
49) 2,2,4-Trimethylpentane...	10.30	57	1885179	27.241	ng	98
50) Methyl Methacrylate	10.47	100	380486	54.881	ng	99

Data File : I:\MS13\DATA\2023_06\23\06232312.D
 Acq On : 23 Jun 2023 10:01
 Sample : 25ng R13062323 ICV Std.
 Misc : S37-04102301/S37-06132303 (7/13)

Vial: 1
 Operator: TZ
 Inst : MS13

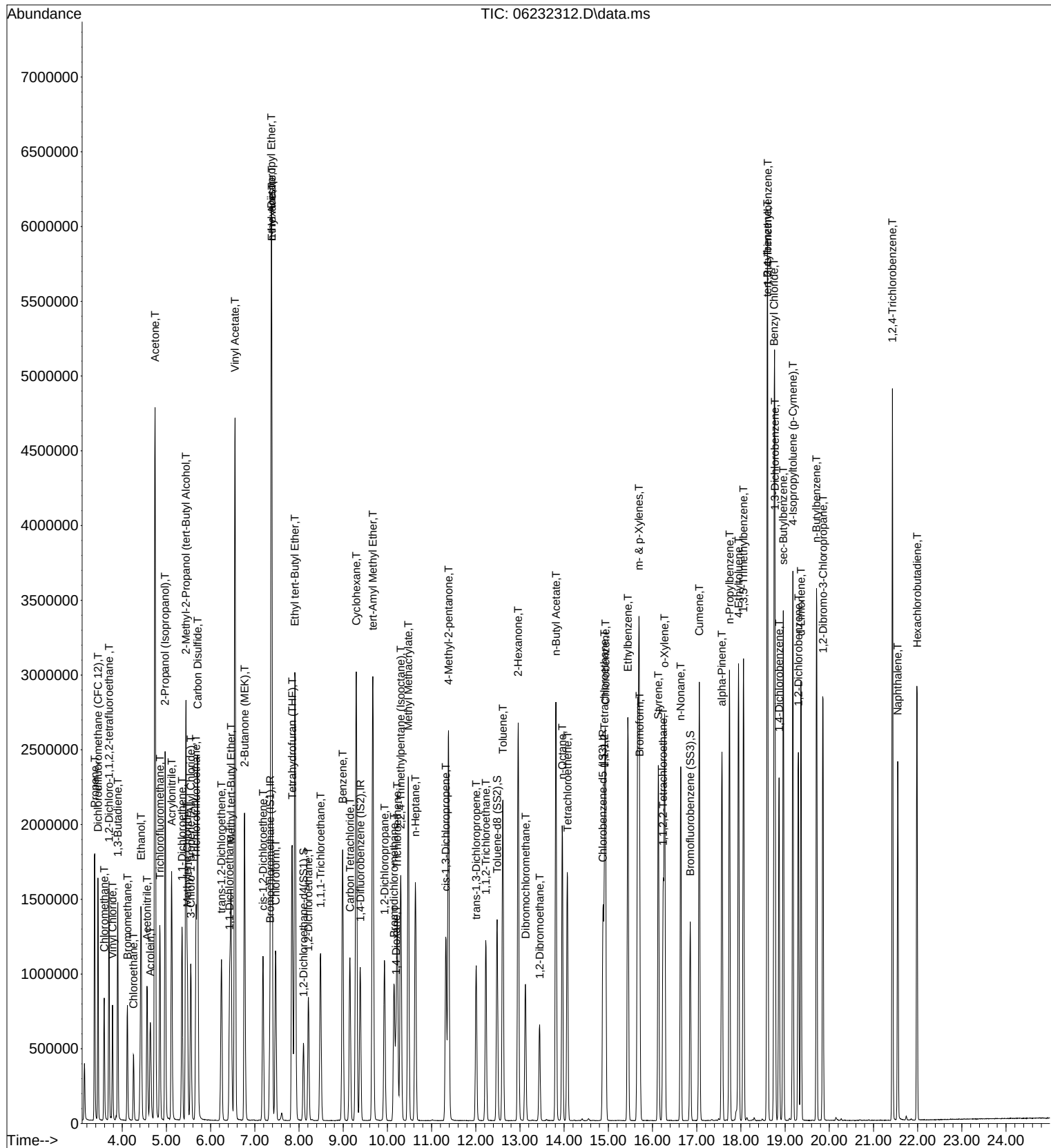
Quant Time: Jun 26 07:26:57 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	450475	28.215	ng	100
52) cis-1,3-Dichloropropene	11.32	75	859475	29.831	ng	99
53) 4-Methyl-2-pentanone	11.38	58	868607	59.167	ng	99
54) trans-1,3-Dichloropropene	12.01	75	695784	24.945	ng	100
55) 1,1,2-Trichloroethane	12.23	97	470106	25.604	ng	100
58) Toluene	12.61	91	1941176	25.780	ng	99
59) 2-Hexanone	12.96	43	2211651	55.973	ng	99
60) Dibromochloromethane	13.13	129	634592	25.814	ng	100
61) 1,2-Dibromoethane	13.44	107	544571	24.616	ng	99
62) n-Butyl Acetate	13.81	43	2463616	56.905	ng	100
63) n-Octane	13.96	57	396780	27.342	ng	99
64) Tetrachloroethene	14.08	166	609534	24.798	ng	100
65) Chlorobenzene	14.94	112	1306201	24.875	ng	99
66) Ethylbenzene	15.44	91	2296326	26.875	ng	100
67) m- & p-Xylenes	15.69	91	3720425	52.942	ng	100
68) Bromoform	15.71	173	596102	26.535	ng	99
69) Styrene	16.13	104	1334842	27.930	ng	99
70) o-Xylene	16.27	91	1849073	26.822	ng	100
71) n-Nonane	16.64	43	972320	28.961	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	849450	27.134	ng	99
74) Cumene	17.06	105	2258436	26.088	ng	100
75) alpha-Pinene	17.57	93	1120143	28.421	ng	99
76) n-Propylbenzene	17.74	91	2728299	26.593	ng	99
77) 3-Ethyltoluene	17.33	105	900	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2233796	27.481	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1949344	27.320	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.33	105	900	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1937794	27.149	ng	100
83) n-Decane	17.06	58	16755	No Calib		
84) Benzyl Chloride	18.75	91	3179967	55.521	ng	99
85) 1,3-Dichlorobenzene	18.77	146	1063826	24.158	ng	100
86) 1,4-Dichlorobenzene	18.86	146	1024379	23.352	ng	100
87) sec-Butylbenzene	18.96	105	2499124	27.207	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2188534	27.176	ng	100
89) 1,2,3-Trimethylbenzene	17.33	105	900	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1073288	24.629	ng	99
91) d-Limonene	19.36	68	672296	29.196	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	853511	51.981	ng	99
93) n-Undecane	18.23	58	138	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1504318	47.416	ng	100
95) Naphthalene	21.55	128	1746895	23.396	ng	100
96) n-Dodecane	19.16	58	51030	No Calib		
97) Hexachlorobutadiene	21.99	225	571476	22.477	ng	100
98) Cyclohexanone	15.66	55	1646	No Calib	#	
99) tert-Butylbenzene	18.60	119	1788779	27.102	ng	100
100) n-Butylbenzene	19.71	91	1999005	27.631	ng	99
101) 1,1,1,2-Tetrachloroethane	14.91	131	530267	25.945	ng	99

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

Vial: 1
Operator: TZ
Inst : MS13

Quant Time: Jun 26 07:26:57 2023



Data File : I:\MS13\DATA\2023_06\23\06232308.D

Vial: 15

Acq On : 23 Jun 2023 7:35

Operator: TZ

Sample : 50ng R13062323 ICAL Std.

Inst : MS13

TZ 6/23/23

Misc : S37-04102301/S37-06222301 (7/22)

Quant Time: Jun 23 09:01:55 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 09:01:26 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.36	130	208016	12.500	ng	0.01
37) 1,4-Difluorobenzene (IS2)	9.39	114	925571	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	193610	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	399133	14.459	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	115.68%
57) Toluene-d8 (SS2)	12.49	98	1041157	10.457	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.68%
73) Bromofluorobenzene (SS3)	16.86	174	440637	12.083	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	96.64%

Target Compounds

						Qvalue
2) Propene	3.37	42	958654	46.079	ng	100
3) Dichlorodifluoromethan...	3.45	85	1986001	52.125	ng	100
4) Chloromethane	3.59	50	1237394	45.036	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	902758	46.929	ng	100
6) Vinyl Chloride	3.78	62	1152014	45.276	ng	99
7) 1,3-Butadiene	3.90	54	937280	48.625	ng	99
8) Bromomethane	4.12	94	780894	45.800	ng	99
9) Chloroethane	4.26	64	563145	46.793	ng	100
10) Ethanol	4.44	45	2231441	151.044	ng	99
11) Acetonitrile	4.58	41	1557308	40.572	ng	99
12) Acrolein	4.65	56	1086318	88.914	ng	96
13) Acetone	4.75	58	2919392	231.540	ng	100
14) Trichlorofluoromethane	4.86	101	1803749	52.586	ng	100
15) 2-Propanol (Isopropanol)	4.99	45	4788752	94.079	ng	98
16) Acrylonitrile	5.13	53	2275089	94.588	ng	100
17) 1,1-Dichloroethene	5.36	96	876401	49.756	ng	100
18) 2-Methyl-2-Propanol (t...	5.45	59	5121747	102.894	ng	100
19) Methylene Chloride	5.48	84	872782	47.218	ng	98
20) 3-Chloro-1-propene (Al...	5.56	41	1429624	48.438	ng	99
21) Trichlorotrifluoroethane	5.68	151	902409	50.034	ng	100
22) Carbon Disulfide	5.71	76	6636291	90.669	ng	100
23) trans-1,2-Dichloroethene	6.26	61	1420477	52.654	ng	99
24) 1,1-Dichloroethane	6.44	63	1630969	49.580	ng	100
25) Methyl tert-Butyl Ether	6.47	73	2933932	50.886	ng	100
26) Vinyl Acetate	6.56	86	435866	127.839	ng	# 95
27) 2-Butanone (MEK)	6.78	72	1112084	99.355	ng	98
28) cis-1,2-Dichloroethene	7.20	61	1322106	49.758	ng	100
29) Diisopropyl Ether	7.38	87	1324928	95.302	ng	96
30) Ethyl Acetate	7.39	61	1464287	198.947	ng	99
31) n-Hexane	7.39	57	1318860	46.555	ng	99
32) Chloroform	7.49	83	1727698	51.552	ng	100
34) Tetrahydrofuran (THF)	7.85	72	1042499	90.687	ng	99
35) Ethyl tert-Butyl Ether	7.92	87	2155190	101.492	ng	99
36) 1,2-Dichloroethane	8.23	62	1464970	57.712	ng	100
38) 1,1,1-Trichloroethane	8.49	97	1629794	53.199	ng	100
39) Isopropyl Acetate	9.39	61	27922	No Calib		
40) 1-Butanol	8.88	56	45478	No Calib	#	
41) Benzene	8.99	78	3464126	48.110	ng	100
42) Carbon Tetrachloride	9.16	117	1459629	54.009	ng	99
43) Cyclohexane	9.30	84	2488301	94.267	ng	99
44) tert-Amyl Methyl Ether	9.68	73	5375888	102.949	ng	99
45) 1,2-Dichloropropane	9.94	63	852331	46.919	ng	99
46) Bromodichloromethane	10.16	83	1420499	53.353	ng	99
47) Trichloroethene	10.23	130	1018477	48.282	ng	100
48) 1,4-Dioxane	10.20	88	739081	50.918	ng	99
49) 2,2,4-Trimethylpentane...	10.31	57	3611067	49.319	ng	99
50) Methyl Methacrylate	10.48	100	733341	99.043	ng	99

Data File : I:\MS13\DATA\2023_06\23\06232308.D
 Acq On : 23 Jun 2023 7:35
 Sample : 50ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
 Operator: TZ
 Inst : MS13

Quant Time: Jun 23 09:01:55 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.64	71	835696	47.963	ng	99
52) cis-1,3-Dichloropropene	11.33	75	1537268	52.075	ng	100
53) 4-Methyl-2-pentanone	11.40	58	1607123	103.531	ng	98
54) trans-1,3-Dichloropropene	12.02	75	1487613	52.025	ng	99
55) 1,1,2-Trichloroethane	12.23	97	889874	47.749	ng	99
58) Toluene	12.62	91	3671949	38.738	ng	100
59) 2-Hexanone	12.97	43	4205227	91.334	ng	100
60) Dibromochloromethane	13.13	129	1247911	44.860	ng	98
61) 1,2-Dibromoethane	13.45	107	1102211	41.769	ng	100
62) n-Butyl Acetate	13.82	43	4558535	87.096	ng	100
63) n-Octane	13.96	57	752935	40.395	ng	99
64) Tetrachloroethene	14.08	166	1171008	40.609	ng	100
65) Chlorobenzene	14.94	112	2525835	40.399	ng	99
66) Ethylbenzene	15.45	91	4349065	38.460	ng	99
67) m- & p-Xylenes	15.69	91	7120890	78.242	ng	100
68) Bromoform	15.72	173	1143465	45.498	ng	99
69) Styrene	16.14	104	2711908	43.336	ng	100
70) o-Xylene	16.28	91	3550182	40.795	ng	100
71) n-Nonane	16.64	43	1834218	43.557	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	1585973	42.187	ng	100
74) Cumene	17.06	105	4407687	41.644	ng	100
75) alpha-Pinene	17.58	93	2226983	45.603	ng	100
76) n-Propylbenzene	17.75	91	5367154	42.299	ng	100
77) 3-Ethyltoluene	17.34	105	1891	No Calib	#	
78) 4-Ethyltoluene	17.95	105	4388631	43.224	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	3740779	41.664	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	1891	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	3752341	42.383	ng	100
83) n-Decane	17.06	58	26991	No Calib		
84) Benzyl Chloride	18.76	91	6869126	95.893	ng	99
85) 1,3-Dichlorobenzene	18.78	146	2211620	41.299	ng	100
86) 1,4-Dichlorobenzene	18.87	146	2290821	41.304	ng	100
87) sec-Butylbenzene	18.96	105	4903966	41.992	ng	100
88) 4-Isopropyltoluene (p-...	19.18	119	4358678	42.464	ng	100
89) 1,2,3-Trimethylbenzene	17.34	105	1891	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	2196924	41.451	ng	100
91) d-Limonene	19.36	68	1383104	46.199	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	1739107	86.657	ng	100
93) n-Undecane	18.23	58	1056	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	3660663	91.834	ng	100
95) Naphthalene	21.55	128	5063865	52.766	ng	100
96) n-Dodecane	19.18	58	119662	No Calib		
97) Hexachlorobutadiene	21.99	225	1214379	39.291	ng	100
98) Cyclohexanone	15.70	55	4889	No Calib	#	
99) tert-Butylbenzene	18.60	119	3481151	41.883	ng	100
100) n-Butylbenzene	19.72	91	4027564	44.360	ng	99
101) 1,1,1,2-Tetrachloroethane	14.92	131	1013249	42.994	ng	99

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:55 2023

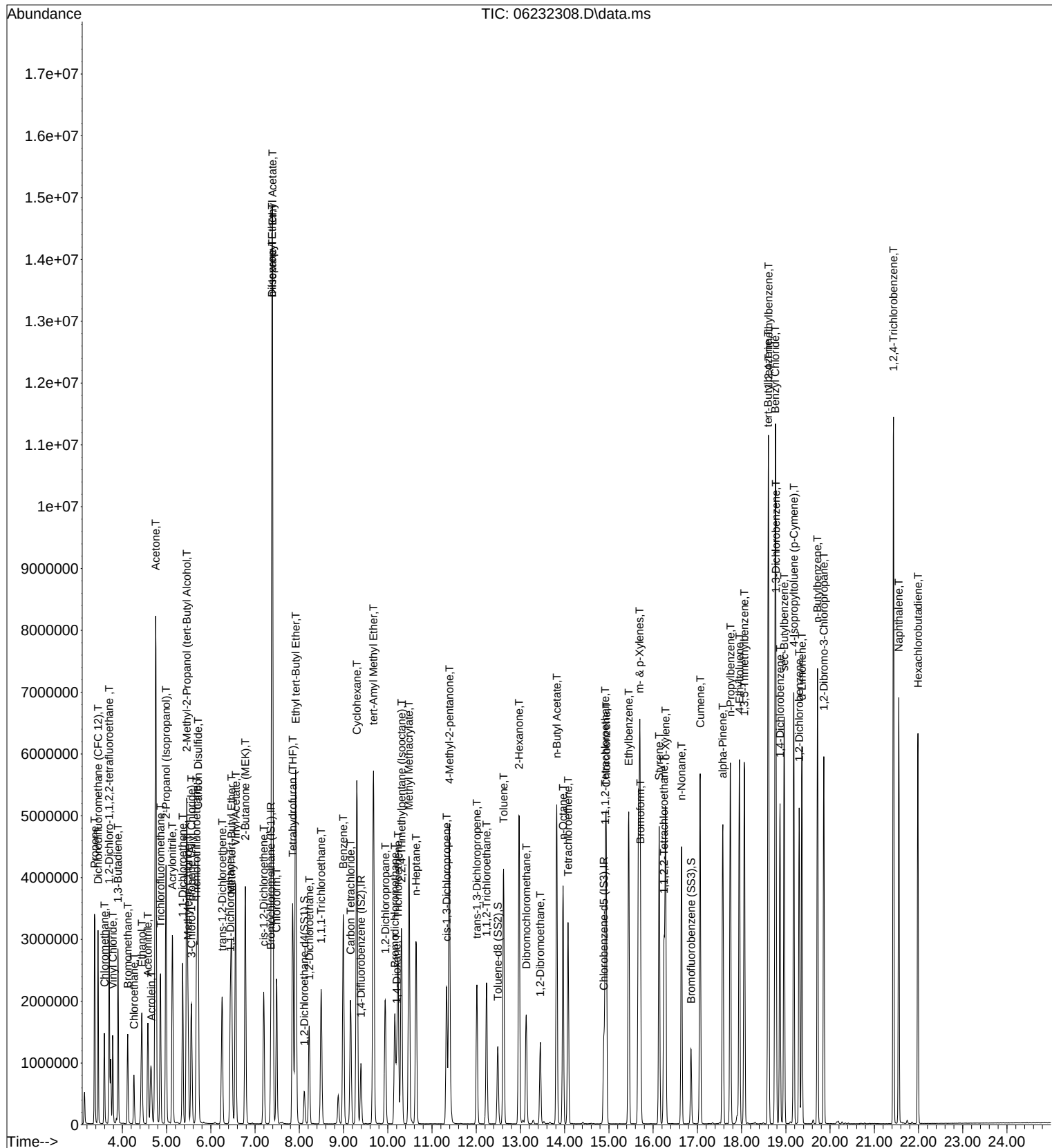
Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA T0-15 per SOP V0A-T015 (CASS T0-15/GC-MS)

QLast Update : Fri Jun 23 09:01:26 2023

Response via : Initial Calibration

DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\23\06232309.D
 Acq On : 23 Jun 2023 8:12
 Sample : 100ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
 Operator: TZ
 Inst : MS13

TZ 6/23/23

Quant Time: Jun 23 09:01:58 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.37	130	218788	12.500	ng	0.02
37) 1,4-Difluorobenzene (IS2)	9.40	114	987764	12.500	ng	0.02
56) Chlorobenzene-d5 (IS3)	14.88	54	208400	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.13	65	419996	14.465	ng	0.02
Spiked Amount	12.500	Range	70 - 130	Recovery	=	115.76%
57) Toluene-d8 (SS2)	12.49	98	1118073	10.432	ng	0.01
Spiked Amount	12.500	Range	70 - 130	Recovery	=	83.44%
73) Bromofluorobenzene (SS3)	16.86	174	476147	12.130	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	97.04%

Target Compounds

						Qvalue
2) Propene	3.39	42	2153710	98.424	ng	100
3) Dichlorodifluoromethan...	3.46	85	3973117	99.145	ng	100
4) Chloromethane	3.60	50	1973473	68.290	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.72	135	1791125	88.527	ng	100
6) Vinyl Chloride	3.80	62	2401786	89.747	ng	99
7) 1,3-Butadiene	3.92	54	2002844	98.789	ng	96
8) Bromomethane	4.13	94	1606489	89.582	ng	99
9) Chloroethane	4.28	64	1152237	91.028	ng	99
10) Ethanol	4.46	45	4611630	296.788	ng	100
11) Acetonitrile	4.60	41	3294531	81.606	ng	98
12) Acrolein	4.67	56	2254056	175.409	ng	99
13) Acetone	4.78	58	5876032	443.088	ng	91
14) Trichlorofluoromethane	4.87	101	3657310	101.375	ng	100
15) 2-Propanol (Isopropanol)	5.01	45	9035705	168.773	ng	98
16) Acrylonitrile	5.16	53	4757133	188.042	ng	100
17) 1,1-Dichloroethene	5.38	96	1799436	97.129	ng	99
18) 2-Methyl-2-Propanol (t...	5.48	59	8867411	169.372	ng	100
19) Methylene Chloride	5.50	84	1788625	92.002	ng	98
20) 3-Chloro-1-propene (Al...	5.58	41	2981151	96.033	ng	99
21) Trichlorotrifluoroethane	5.69	151	1817161	95.793	ng	99
22) Carbon Disulfide	5.73	76	13563709	176.192	ng	100
23) trans-1,2-Dichloroethene	6.27	61	2944763	103.781	ng	99
24) 1,1-Dichloroethane	6.46	63	3334108	96.363	ng	100
25) Methyl tert-Butyl Ether	6.48	73	6064269	100.001	ng	100
26) Vinyl Acetate	6.58	86	883234	246.298	ng	# 88
27) 2-Butanone (MEK)	6.80	72	2284980	194.092	ng	96
28) cis-1,2-Dichloroethene	7.21	61	2762777	98.859	ng	99
29) Diisopropyl Ether	7.40	87	2605974	178.218	ng	# 89
30) Ethyl Acetate	7.42	61	2973105	384.056	ng	98
31) n-Hexane	7.40	57	2639218	88.575	ng	100
32) Chloroform	7.51	83	3561650	101.043	ng	100
34) Tetrahydrofuran (THF)	7.87	72	2152244	178.006	ng	97
35) Ethyl tert-Butyl Ether	7.94	87	4410048	197.453	ng	98
36) 1,2-Dichloroethane	8.24	62	3026978	113.376	ng	100
38) 1,1,1-Trichloroethane	8.51	97	3331420	101.895	ng	100
39) Isopropyl Acetate	9.40	61	30766	No Calib		
40) 1-Butanol	8.90	56	98961	No Calib	#	
41) Benzene	9.01	78	7208297	93.807	ng	100
42) Carbon Tetrachloride	9.17	117	2973514	103.097	ng	99
43) Cyclohexane	9.31	84	5082225	180.413	ng	98
44) tert-Amyl Methyl Ether	9.69	73	11092937	199.055	ng	99
45) 1,2-Dichloropropane	9.96	63	1798199	92.754	ng	100
46) Bromodichloromethane	10.17	83	2920719	102.792	ng	99
47) Trichloroethene	10.25	130	2100280	93.298	ng	99
48) 1,4-Dioxane	10.21	88	1516814	97.919	ng	100
49) 2,2,4-Trimethylpentane...	10.32	57	7502973	96.021	ng	99
50) Methyl Methacrylate	10.50	100	1499263	189.737	ng	98

Data File : I:\MS13\DATA\2023_06\23\06232309.D
 Acq On : 23 Jun 2023 8:12
 Sample : 100ng R13062323 ICAL Std.
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 15
 Operator: TZ
 Inst : MS13

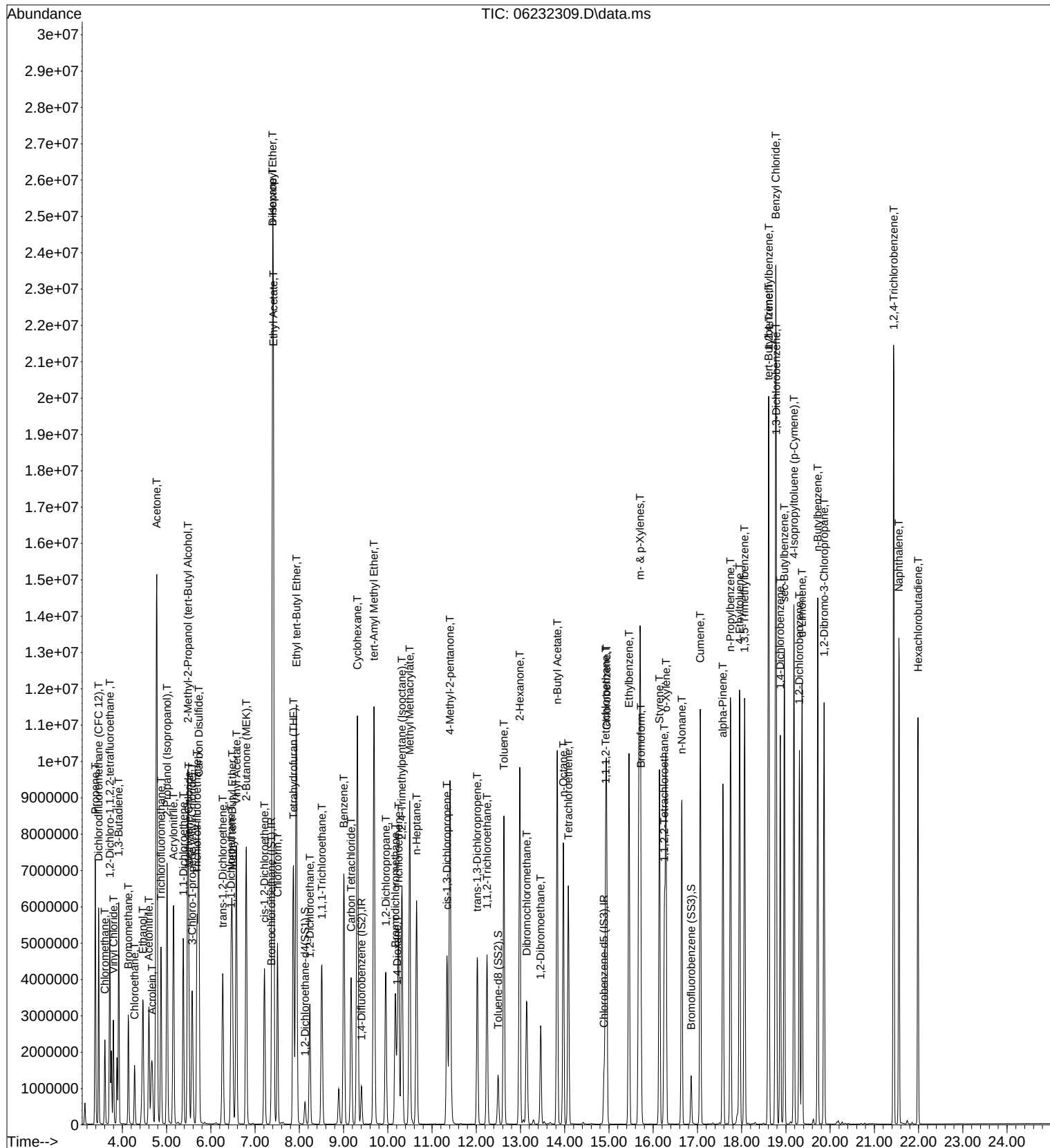
Quant Time: Jun 23 09:01:58 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 09:01:26 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.65	71	1738093	93.474	ng	99
52) cis-1,3-Dichloropropene	11.34	75	3204142	101.707	ng	100
53) 4-Methyl-2-pentanone	11.41	58	3339435	201.582	ng	98
54) trans-1,3-Dichloropropene	12.02	75	3100999	101.621	ng	100
55) 1,1,2-Trichloroethane	12.24	97	1850945	93.064	ng	99
58) Toluene	12.63	91	7576145	74.254	ng	99
59) 2-Hexanone	12.98	43	8792491	177.413	ng	100
60) Dibromochloromethane	13.14	129	2605519	87.015	ng	99
61) 1,2-Dibromoethane	13.46	107	2285550	80.465	ng	100
62) n-Butyl Acetate	13.83	43	9479773	168.268	ng	100
63) n-Octane	13.97	57	1563031	77.906	ng	100
64) Tetrachloroethene	14.08	166	2403524	77.436	ng	100
65) Chlorobenzene	14.95	112	5173128	76.869	ng	99
66) Ethylbenzene	15.45	91	8995737	73.907	ng	100
67) m- & p-Xylenes	15.70	91	14590434	148.938	ng	99
68) Bromoform	15.72	173	2342067	86.576	ng	99
69) Styrene	16.14	104	5626415	83.529	ng	100
70) o-Xylene	16.29	91	7315035	78.091	ng	100
71) n-Nonane	16.65	43	3813694	84.136	ng	99
72) 1,1,2,2-Tetrachloroethane	16.25	83	3279497	81.044	ng	99
74) Cumene	17.06	105	9011221	79.096	ng	100
75) alpha-Pinene	17.58	93	4342923	82.621	ng	100
76) n-Propylbenzene	17.75	91	11036965	80.810	ng	99
77) 3-Ethyltoluene	17.34	105	3429	No Calib	#	
78) 4-Ethyltoluene	17.95	105	8993032	82.288	ng	99
79) 1,3,5-Trimethylbenzene	18.07	105	7673921	79.405	ng	100
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.34	105	3429	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	7560903	79.340	ng	98
83) n-Decane	17.06	58	61472	No Calib		
84) Benzyl Chloride	18.77	91	13839440	179.487	ng	99
85) 1,3-Dichlorobenzene	18.78	146	4426547	76.794	ng	100
86) 1,4-Dichlorobenzene	18.87	146	4710680	78.907	ng	99
87) sec-Butylbenzene	18.96	105	9777205	77.780	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	8804819	79.692	ng	100
89) 1,2,3-Trimethylbenzene	17.34	105	3429	No Calib	#	
90) 1,2-Dichlorobenzene	19.31	146	4516045	79.161	ng	100
91) d-Limonene	19.36	68	2776091	86.148	ng	97
92) 1,2-Dibromo-3-Chloropr...	19.86	157	3496991	161.883	ng	99
93) n-Undecane	18.23	58	3671	No Calib		
94) 1,2,4-Trichlorobenzene	21.44	180	7146098	166.549	ng	100
95) Naphthalene	21.55	128	9903245	95.870	ng	100
96) n-Dodecane	19.19	58	234657	No Calib		
97) Hexachlorobutadiene	21.99	225	2151170	64.661	ng	100
98) Cyclohexanone	15.68	55	4712	No Calib	#	
99) tert-Butylbenzene	18.61	119	6363361	71.127	ng	99
100) n-Butylbenzene	19.72	91	8176999	83.670	ng	100
101) 1,1,1,2-Tetrachloroethane	14.92	131	2045930	80.651	ng	100

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

Vial: 15
Operator: TZ
Inst : MS13

Quant Time: Jun 23 09:01:58 2023



ALS Environmental

LCS Acceptance Criteria

T2 6/26/23

25ng R13062323 ICV Std.

	RT
Bromochloromethane (IS1)	7.34
1,4-Difluorobenzene (IS2)	9.39
Chlorobenzene-d5 (IS3)	14.88

Datafile: 06232312.D
Instrument: MS-13
Date: 6/23/2023

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
115-07-1	Propene	24.837	26.5	94	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	24.308	26.5	92	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	26.713	26.3	102	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	23.714	26.8	88	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	24.807	26.3	94	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	25.945	26.3	99	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	25.842	26.3	98	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	26.257	26.5	99	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	126.120	138	91	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	24.023	26.8	90	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	58.169	55.0	106	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	126.490	133	95	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	23.545	26.3	90	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	52.849	51.8	102	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	53.116	52.3	102	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	26.231	25.5	103	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	55.422	51.0	109	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	25.233	25.5	99	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	25.204	26.5	95	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	24.967	26.3	95	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	49.866	53.8	93	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	28.222	27.0	105	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	26.422	27.0	98	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	27.086	27.0	100	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	170.059	138	123	56-137	ok	70-130	ok	56-139	ok
78-93-3	2-Butanone	54.023	51.8	104	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	26.740	26.8	100	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	51.698	53.3	97	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	45.118	49.8	91	59-161	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	26.682	26.5	101	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	25.161	27.0	93	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	47.019	50.3	93	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	52.764	53.3	99	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	25.193	25.5	99	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	24.677	26.3	94	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	26.420	25.5	104	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	26.478	26.3	101	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	53.567	53.3	101	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	54.281	53.3	102	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	26.834	26.8	100	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	26.120	27.0	97	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	25.106	26.5	95	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	26.638	26.5	101	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	27.241	26.8	102	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	54.881	53.5	103	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	28.215	26.8	105	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	29.831	26.5	113	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	59.167	53.3	111	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

25ng R13062323 ICV Std.

	RT
Bromochloromethane (IS1)	7.34
1,4-Difluorobenzene (IS2)	9.39
Chlorobenzene-d5 (IS3)	14.88

Datafile: 06232312.D
Instrument: MS-13
Date: 6/23/2023

CAS No	Analyte	Amount	Spike	%	ALS		70-130		DOD	
		Found	Amount	REC	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail	LCS Limits	Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	24.945	24.5	102	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	25.604	27.0	95	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	25.780	26.8	96	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	55.973	53.3	105	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	25.814	26.8	96	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	24.616	25.5	97	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	56.905	53.0	107	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	27.342	26.5	103	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	24.798	26.8	93	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	24.875	27.0	92	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	26.875	27.3	98	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	52.942	53.8	98	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	26.535	27.3	97	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	27.930	26.8	104	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	26.822	27.0	99	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	28.961	26.8	108	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	27.134	27.0	100	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	26.088	26.5	98	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	28.421	27.0	105	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	26.593	26.5	100	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	27.481	27.3	101	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	27.320	27.0	101	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	27.149	26.5	102	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	55.521	53.5	104	73-145	ok	70-130	ok	50-147	ok
541-73-1	1,3-Dichlorobenzene	24.158	26.8	90	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	23.352	26.8	87	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	27.207	26.3	103	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	27.176	26.3	103	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	24.629	26.5	93	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	29.196	26.0	112	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	51.981	52.0	100	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	47.416	55.0	86	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	23.396	27.5	85	62-156	ok	70-130	ok	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	22.477	27.3	82	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	27.102	26.5	102	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	27.631	26.0	106	70-131	ok	70-130	ok	66-130	ok

Data File : I:\MS13\DATA\2023_06\26\06262301.D

Vial: 1

Acq On : 26 Jun 2023 5:03

Operator: WA

Sample : CCV R13062623_25ng

Inst : MS13

T₂ 6/26/23

Misc : S37-04102301/S37-06222301 (7/22)

Quant Time: Jun 26 06:23:09 2023

Quant Method : I:\MS13\METHODS\R13062323.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Fri Jun 23 15:42:57 2023

Response via : Initial Calibration

DataAcq Meth:TO15B.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	116	0.00
2 T	Propene	1.137	1.119	1.6	118	0.00
3 T	Dichlorodifluoromethane (CF	2.324	2.144	7.7	106	0.00
4 T	Chloromethane	1.456	1.515	-4.1	115	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.062	0.975	8.2	108	0.00
6 T	Vinyl Chloride	1.363	1.332	2.3	112	0.00
7 T	1,3-Butadiene	1.045	1.051	-0.6	116	0.00
8 T	Bromomethane	0.906	0.919	-1.4	114	0.00
9 T	Chloroethane	0.643	0.666	-3.6	117	0.00
10 T	Ethanol	0.806	0.793	1.6	117	0.00
11 T	Acetonitrile	1.997	2.091	-4.7	121	0.00
12 T	Acrolein	0.629	0.693	-10.2	118	0.00
13 T	Acetone	0.690	0.684	0.9	117	0.00
14 T	Trichlorofluoromethane	2.161	1.966	9.0	105	0.00
15 T	2-Propanol (Isopropanol)	2.860	2.871	-0.4	119	0.00
16 T	Acrylonitrile	1.287	1.349	-4.8	118	0.00
17 T	1,1-Dichloroethene	0.962	0.965	-0.3	114	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.715	2.923	-7.7	115	0.00
19 T	Methylene Chloride	1.017	0.990	2.7	114	0.00
20 T	3-Chloro-1-propene (Allyl C	1.545	1.673	-8.3	120	0.00
21 T	Trichlorotrifluoroethane	1.034	0.970	6.2	110	0.00
22 T	Carbon Disulfide	3.915	3.736	4.6	115	0.00
23 T	trans-1,2-Dichloroethene	1.467	1.569	-7.0	115	0.00
24 T	1,1-Dichloroethane	1.818	1.836	-1.0	115	0.00
25 T	Methyl tert-Butyl Ether	3.156	3.253	-3.1	114	0.00
26 T	Vinyl Acetate	0.170	0.185	-8.8	113	0.00
27 T	2-Butanone (MEK)	0.593	0.634	-6.9	114	0.00
28 T	cis-1,2-Dichloroethene	1.441	1.505	-4.4	115	0.00
29 T	Diisopropyl Ether	0.767	0.760	0.9	113	0.00
30 T	Ethyl Acetate	0.412	0.433	-5.1	118	0.00
31 T	n-Hexane	1.546	1.565	-1.2	116	0.00
32 T	Chloroform	1.976	1.892	4.3	110	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.907	1.879	1.5	113	0.00
34 T	Tetrahydrofuran (THF)	0.636	0.613	3.6	116	0.00
35 T	Ethyl tert-Butyl Ether	1.181	1.211	-2.5	113	0.00
36 T	1,2-Dichloroethane	1.664	1.570	5.6	109	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	117	0.00
38 T	1,1,1-Trichloroethane	0.435	0.398	8.5	107	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	118	0.00
40 T	1-Butanol	0.000	0.000	0.0	130	0.00
41 T	Benzene	0.894	0.879	1.7	115	0.00
42 T	Carbon Tetrachloride	0.384	0.355	7.6	104	0.00
43 T	Cyclohexane	0.318	0.321	-0.9	114	0.00
44 T	tert-Amyl Methyl Ether	0.661	0.685	-3.6	115	0.00
45 T	1,2-Dichloropropane	0.220	0.224	-1.8	117	0.00
46 T	Bromodichloromethane	0.360	0.344	4.4	110	0.00
47 T	Trichloroethene	0.273	0.255	6.6	110	0.00
48 T	1,4-Dioxane	0.187	0.184	1.6	113	0.00
49 T	2,2,4-Trimethylpentane (Iso	0.886	0.910	-2.7	117	0.00
50 T	Methyl Methacrylate	0.089	0.093	-4.5	114	0.00
51 T	n-Heptane	0.204	0.214	-4.9	115	0.00
52 T	cis-1,3-Dichloropropene	0.369	0.379	-2.7	114	0.00
53 T	4-Methyl-2-pentanone	0.188	0.206	-9.6	117	0.00
54 T	trans-1,3-Dichloropropene	0.357	0.382	-7.0	111	0.00
55 T	1,1,2-Trichloroethane	0.235	0.224	4.7	112	0.00

Data File : I:\MS13\DATA\2023_06\26\06262301.D
 Acq On : 26 Jun 2023 5:03
 Sample : CCV R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: WA
 Inst : MS13

Quant Time: Jun 26 06:23:09 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	117	0.00
57	S Toluene-d8 (SS2)	5.340	5.417	-1.4	119	0.00
58	T Toluene	4.570	4.418	3.3	113	0.00
59	T 2-Hexanone	2.398	2.527	-5.4	115	0.00
60	T Dibromochloromethane	1.492	1.412	5.4	108	0.00
61	T 1,2-Dibromoethane	1.343	1.307	2.7	110	0.00
62	T n-Butyl Acetate	2.627	2.844	-8.3	116	0.00
63	T n-Octane	0.881	0.917	-4.1	116	0.00
64	T Tetrachloroethene	1.492	1.354	9.2	108	0.00
65	T Chlorobenzene	3.187	2.974	6.7	110	0.00
66	T Ethylbenzene	5.186	5.177	0.2	111	0.00
67	T m- & p-Xylenes	4.265	4.234	0.7	111	0.00
68	T Bromoform	1.363	1.292	5.2	106	0.00
69	T Styrene	2.900	3.160	-9.0	110	0.00
70	T o-Xylene	4.184	4.169	0.4	111	0.00
71	T n-Nonane	2.038	2.207	-8.3	115	0.00
72	T 1,1,2,2-Tetrachloroethane	1.900	1.871	1.5	112	0.00
73	S Bromofluorobenzene (SS3)	2.273	2.290	-0.7	118	0.00
74	T Cumene	5.254	5.091	3.1	109	0.00
75	T alpha-Pinene	2.392	2.508	-4.8	111	0.00
76	T n-Propylbenzene	6.226	6.214	0.2	110	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	278#	0.00
78	T 4-Ethyltoluene	4.933	4.972	-0.8	110	0.00
79	T 1,3,5-Trimethylbenzene	4.330	4.346	-0.4	109	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.19#
81	T 2-Ethyltoluene	0.000	0.000	0.0	278#	0.00
82	T 1,2,4-Trimethylbenzene	4.332	4.424	-2.1	109	0.00
83	T n-Decane	0.000	0.000	0.0	123	0.00
84	T Benzyl Chloride	3.476	3.882	-11.7	108	0.00
85	T 1,3-Dichlorobenzene	2.673	2.557	4.3	107	0.00
86	T 1,4-Dichlorobenzene	2.662	2.603	2.2	107	0.00
87	T sec-Butylbenzene	5.575	5.600	-0.4	109	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.887	4.998	-2.3	108	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	278#	0.00
90	T 1,2-Dichlorobenzene	2.645	2.494	5.7	107	0.00
91	T d-Limonene	1.398	1.581	-13.1	112	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.996	0.984	1.2	106	0.00
93	T n-Undecane	0.000	0.000	0.0	161	0.01
94	T 1,2,4-Trichlorobenzene	1.925	2.009	-4.4	104	0.00
95	T Naphthalene	4.531	4.880	-7.7	102	0.00
96	T n-Dodecane	0.000	0.000	0.0	134	0.00
97	T Hexachlorobutadiene	1.543	1.271	17.6	103	0.00
98	T Cyclohexanone	0.000	0.000	0.0	250#	0.00
99	T tert-Butylbenzene	4.006	3.882	3.1	106	0.00
100	T n-Butylbenzene	4.391	4.616	-5.1	109	0.00
101	T 1,1,1,2-Tetrachloroethane	1.240	1.172	5.5	109	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2023_06\26\06262301.D
 Acq On : 26 Jun 2023 5:03
 Sample : CCV R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: WA
 Inst : MS13

T2 6/26/23

Quant Time: Jun 26 06:23:09 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	227662	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	1009466	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	214042	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.10	65	427762	12.318	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.56%
57) Toluene-d8 (SS2)	12.48	98	1159526	12.681	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	101.44%
73) Bromofluorobenzene (SS3)	16.85	174	490171	12.592	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	100.72%

Target Compounds

						Qvalue
2) Propene	3.38	42	534989	25.827	ng	98
3) Dichlorodifluoromethan...	3.45	85	1034763	24.451	ng	100
4) Chloromethane	3.59	50	710284	26.776	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.70	135	461589	23.863	ng	99
6) Vinyl Chloride	3.78	62	612517	24.676	ng	99
7) 1,3-Butadiene	3.90	54	507034	26.645	ng	99
8) Bromomethane	4.12	94	426678	25.862	ng	100
9) Chloroethane	4.26	64	312205	26.665	ng	99
10) Ethanol	4.42	45	1246365	84.919	ng	99
11) Acetonitrile	4.56	41	866315	23.813	ng	100
12) Acrolein	4.63	56	608806	53.156	ng	99
13) Acetone	4.74	58	1641728	130.626	ng	97
14) Trichlorofluoromethane	4.86	101	931047	23.661	ng	99
15) 2-Propanol (Isopropanol)	4.96	45	2679562	51.439	ng	98
16) Acrylonitrile	5.12	53	1259407	53.726	ng	100
17) 1,1-Dichloroethene	5.36	96	474700	27.086	ng	99
18) 2-Methyl-2-Propanol (t...	5.44	59	2807913	56.792	ng	99
19) Methylene Chloride	5.47	84	477911	25.791	ng	96
20) 3-Chloro-1-propene (Al...	5.55	41	807384	28.684	ng	97
21) Trichlorotrifluoroethane	5.68	151	477075	25.323	ng	97
22) Carbon Disulfide	5.70	76	3623327	50.811	ng	100
23) trans-1,2-Dichloroethene	6.25	61	771373	28.872	ng	99
24) 1,1-Dichloroethane	6.43	63	894542	27.010	ng	100
25) Methyl tert-Butyl Ether	6.46	73	1584638	27.571	ng	98
26) Vinyl Acetate	6.55	86	235768	76.328	ng	# 91
27) 2-Butanone (MEK)	6.77	72	603306	55.830	ng	95
28) cis-1,2-Dichloroethene	7.18	61	726363	27.668	ng	99
29) Diisopropyl Ether	7.37	87	733367	52.470	ng	# 92
30) Ethyl Acetate	7.38	61	832803	111.022	ng	99
31) n-Hexane	7.38	57	748417	26.580	ng	99
32) Chloroform	7.47	83	913281	25.374	ng	100
34) Tetrahydrofuran (THF)	7.84	72	569475	49.200	ng	97
35) Ethyl tert-Butyl Ether	7.91	87	1168607	54.312	ng	97
36) 1,2-Dichloroethane	8.21	62	771966	25.474	ng	100
38) 1,1,1-Trichloroethane	8.49	97	843011	24.006	ng	100
39) Isopropyl Acetate	9.39	61	31602	No Calib		
40) 1-Butanol	8.87	56	25018	No Calib	#	
41) Benzene	8.99	78	1898601	26.301	ng	99
42) Carbon Tetrachloride	9.15	117	745066	24.025	ng	99
43) Cyclohexane	9.30	84	1359704	52.981	ng	98
44) tert-Amyl Methyl Ether	9.67	73	2932426	54.933	ng	99
45) 1,2-Dichloropropane	9.93	63	475040	26.766	ng	99
46) Bromodichloromethane	10.15	83	742995	25.529	ng	99
47) Trichloroethene	10.22	130	541108	24.508	ng	100
48) 1,4-Dioxane	10.19	88	394163	26.093	ng	99
49) 2,2,4-Trimethylpentane...	10.30	57	1983790	27.737	ng	97
50) Methyl Methacrylate	10.47	100	397864	55.528	ng	99

Data File : I:\MS13\DATA\2023_06\26\06262301.D
 Acq On : 26 Jun 2023 5:03
 Sample : CCV R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: WA
 Inst : MS13

Quant Time: Jun 26 06:23:09 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

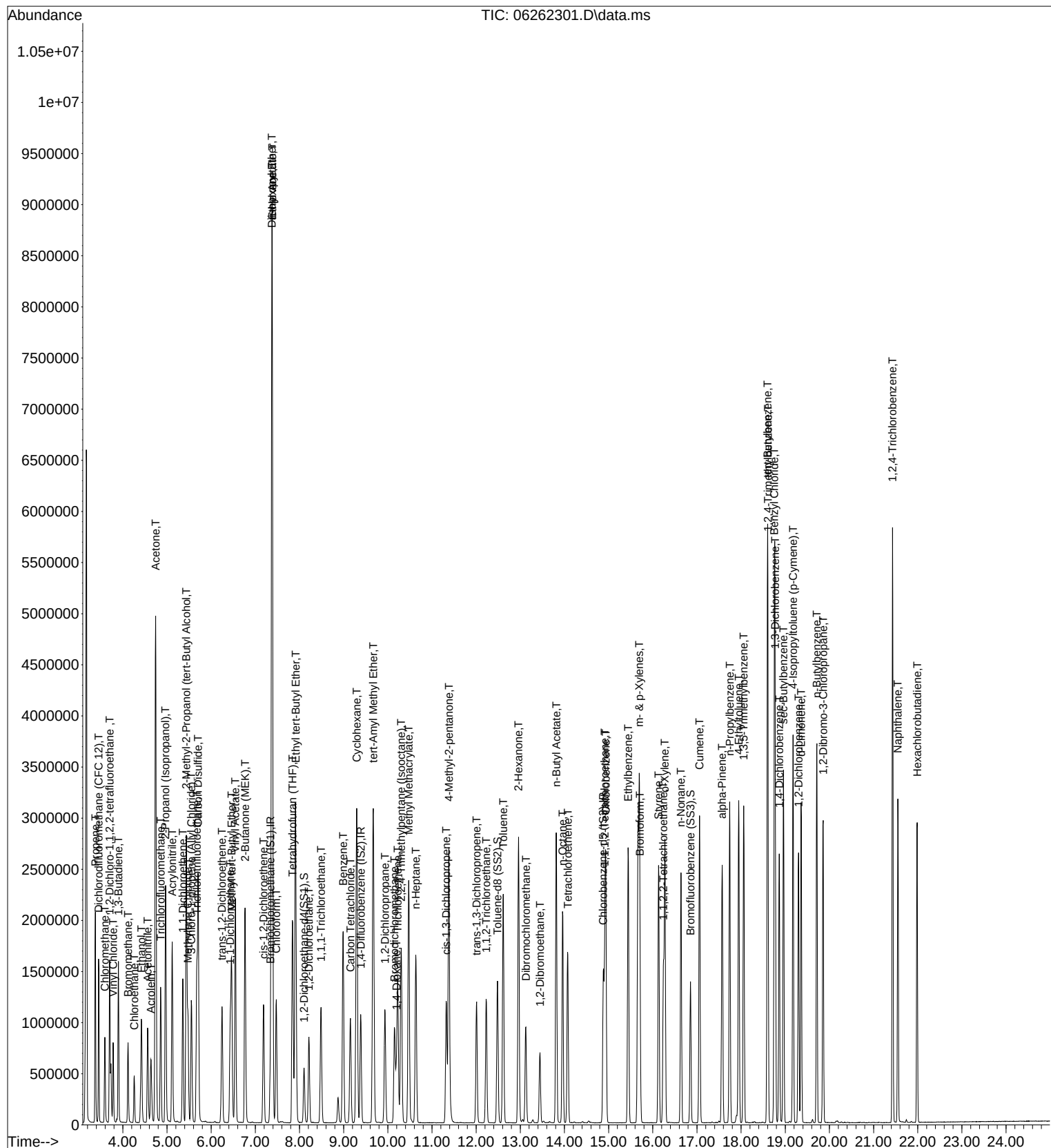
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	457958	27.754	ng	99
52) cis-1,3-Dichloropropene	11.32	75	827208	27.781	ng	100
53) 4-Methyl-2-pentanone	11.38	58	894849	58.979	ng	99
54) trans-1,3-Dichloropropene	12.01	75	787009	27.301	ng	99
55) 1,1,2-Trichloroethane	12.23	97	479243	25.255	ng	100
58) Toluene	12.61	91	1985684	25.377	ng	100
59) 2-Hexanone	12.96	43	2293427	55.853	ng	99
60) Dibromochloromethane	13.13	129	653036	25.562	ng	99
61) 1,2-Dibromoethane	13.44	107	582032	25.317	ng	99
62) n-Butyl Acetate	13.81	43	2496017	55.478	ng	100
63) n-Octane	13.96	57	419892	27.843	ng	97
64) Tetrachloroethene	14.08	166	614456	24.055	ng	100
65) Chlorobenzene	14.94	112	1349435	24.728	ng	99
66) Ethylbenzene	15.44	91	2326855	26.205	ng	100
67) m- & p-Xylenes	15.69	91	3805907	52.115	ng	99
68) Bromoform	15.71	173	591610	25.341	ng	100
69) Styrene	16.13	104	1433928	28.871	ng	99
70) o-Xylene	16.27	91	1891720	26.406	ng	100
71) n-Nonane	16.64	43	1001265	28.698	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	848856	26.092	ng	100
74) Cumene	17.06	105	2331855	25.919	ng	100
75) alpha-Pinene	17.57	93	1170134	28.570	ng	99
76) n-Propylbenzene	17.74	91	2846129	26.695	ng	99
77) 3-Ethyltoluene	17.35	105	756	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2320025	27.465	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1971969	26.594	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	756	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1988605	26.810	ng	99
83) n-Decane	17.05	58	18714	No Calib		
84) Benzyl Chloride	18.75	91	3523172	59.193	ng	99
85) 1,3-Dichlorobenzene	18.77	146	1160217	25.353	ng	100
86) 1,4-Dichlorobenzene	18.86	146	1181043	25.908	ng	100
87) sec-Butylbenzene	18.96	105	2541305	26.622	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2267960	27.099	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	756	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1142314	25.224	ng	100
91) d-Limonene	19.36	68	724363	30.270	ng	96
92) 1,2-Dibromo-3-Chloropr...	19.86	157	884578	51.841	ng	100
93) n-Undecane	18.24	58	639	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1797448	54.518	ng	100
95) Naphthalene	21.55	128	2298117	29.617	ng	100
96) n-Dodecane	19.18	58	71107	No Calib		
97) Hexachlorobutadiene	21.99	225	576793	21.830	ng	100
98) Cyclohexanone	15.68	55	2920	No Calib	#	
99) tert-Butylbenzene	18.60	119	1761575	25.683	ng	99
100) n-Butylbenzene	19.72	91	2114174	28.121	ng	100
101) 1,1,1,2-Tetrachloroethane	14.91	131	531904	25.043	ng	99

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

Data File : I:\MS13\DATA\2023_06\26\06262301.D
Acq On : 26 Jun 2023 5:03
Sample : CCV R13062623_25ng
Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
Operator: WA
Inst : MS13

Quant Time: Jun 26 06:23:09 2023
Quant Method : I:\MS13\METHODS\R13062323.M
Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
QLast Update : Fri Jun 23 15:42:57 2023
Response via : Initial Calibration
DataAcq Meth:T015B.M



Data File : I:\MS13\DATA\2023_06\26\06262325.D
 Acq On : 26 Jun 2023 21:51
 Sample : CCVend R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 6/27/23

Quant Time: Jun 27 06:55:35 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.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 IR	Bromochloromethane (IS1)	1.000	1.000	0.0	109	0.00
2 T	Propene	1.137	1.037	8.8	102	0.00
3 T	Dichlorodifluoromethane (CF	2.324	2.135	8.1	99	0.00
4 T	Chloromethane	1.456	1.427	2.0	101	0.00
5 T	1,2-Dichloro-1,1,2,2-tetra	1.062	0.954	10.2	99	0.00
6 T	Vinyl Chloride	1.363	1.283	5.9	101	0.00
7 T	1,3-Butadiene	1.045	0.992	5.1	102	0.00
8 T	Bromomethane	0.906	0.741	18.2	86	0.00
9 T	Chloroethane	0.643	0.610	5.1	100	0.00
10 T	Ethanol	0.806	0.727	9.8	101	0.00
11 T	Acetonitrile	1.997	1.908	4.5	103	0.00
12 T	Acrolein	0.629	0.634	-0.8	101	0.00
13 T	Acetone	0.690	0.636	7.8	102	0.00
14 T	Trichlorofluoromethane	2.161	1.972	8.7	99	0.00
15 T	2-Propanol (Isopropanol)	2.860	2.659	7.0	103	0.00
16 T	Acrylonitrile	1.287	1.255	2.5	103	0.00
17 T	1,1-Dichloroethene	0.962	0.916	4.8	101	0.00
18 T	2-Methyl-2-Propanol (tert-B	2.715	2.780	-2.4	102	0.00
19 T	Methylene Chloride	1.017	0.938	7.8	101	0.00
20 T	3-Chloro-1-propene (Allyl C	1.545	1.514	2.0	102	0.00
21 T	Trichlorotrifluoroethane	1.034	0.936	9.5	99	0.00
22 T	Carbon Disulfide	3.915	3.544	9.5	102	0.00
23 T	trans-1,2-Dichloroethene	1.467	1.470	-0.2	101	0.00
24 T	1,1-Dichloroethane	1.818	1.725	5.1	101	0.00
25 T	Methyl tert-Butyl Ether	3.156	3.091	2.1	101	0.00
26 T	Vinyl Acetate	0.170	0.176	-3.5	101	0.00
27 T	2-Butanone (MEK)	0.593	0.599	-1.0	101	0.00
28 T	cis-1,2-Dichloroethene	1.441	1.417	1.7	101	0.00
29 T	Diisopropyl Ether	0.767	0.721	6.0	100	0.00
30 T	Ethyl Acetate	0.412	0.400	2.9	102	0.00
31 T	n-Hexane	1.546	1.462	5.4	102	0.00
32 T	Chloroform	1.976	1.852	6.3	101	0.00
33 S	1,2-Dichloroethane-d4(SS1)	1.907	1.885	1.2	106	0.00
34 T	Tetrahydrofuran (THF)	0.636	0.573	9.9	101	0.00
35 T	Ethyl tert-Butyl Ether	1.181	1.158	1.9	101	0.00
36 T	1,2-Dichloroethane	1.664	1.554	6.6	101	0.00
37 IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	106	0.00
38 T	1,1,1-Trichloroethane	0.435	0.407	6.4	99	0.00
39 T	Isopropyl Acetate	0.000	0.000	0.0	108	0.00
40 T	1-Butanol	0.000	0.000	0.0	112	0.00
41 T	Benzene	0.894	0.852	4.7	101	0.00
42 T	Carbon Tetrachloride	0.384	0.369	3.9	98	0.00
43 T	Cyclohexane	0.318	0.312	1.9	100	0.00
44 T	tert-Amyl Methyl Ether	0.661	0.668	-1.1	101	0.00
45 T	1,2-Dichloropropane	0.220	0.213	3.2	101	0.00
46 T	Bromodichloromethane	0.360	0.346	3.9	100	0.00
47 T	Trichloroethene	0.273	0.251	8.1	98	0.00
48 T	1,4-Dioxane	0.187	0.184	1.6	102	0.00
49 T	2,2,4-Trimethylpentane (Iso	0.886	0.869	1.9	101	0.00
50 T	Methyl Methacrylate	0.089	0.090	-1.1	100	0.00
51 T	n-Heptane	0.204	0.207	-1.5	100	0.00
52 T	cis-1,3-Dichloropropene	0.369	0.374	-1.4	101	0.00
53 T	4-Methyl-2-pentanone	0.188	0.199	-5.9	102	0.00
54 T	trans-1,3-Dichloropropene	0.357	0.381	-6.7	100	0.00
55 T	1,1,2-Trichloroethane	0.235	0.222	5.5	100	0.00

Data File : I:\MS13\DATA\2023_06\26\06262325.D
 Acq On : 26 Jun 2023 21:51
 Sample : CCVend R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: TZ
 Inst : MS13

Quant Time: Jun 27 06:55:35 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:TO15B.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)
56	IR Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	111	0.00
57	S Toluene-d8 (SS2)	5.340	5.124	4.0	107	0.00
58	T Toluene	4.570	4.156	9.1	100	0.00
59	T 2-Hexanone	2.398	2.361	1.5	102	0.00
60	T Dibromochloromethane	1.492	1.376	7.8	99	0.00
61	T 1,2-Dibromoethane	1.343	1.242	7.5	99	0.00
62	T n-Butyl Acetate	2.627	2.638	-0.4	102	0.00
63	T n-Octane	0.881	0.835	5.2	100	0.00
64	T Tetrachloroethene	1.492	1.304	12.6	98	0.00
65	T Chlorobenzene	3.187	2.826	11.3	99	0.00
66	T Ethylbenzene	5.186	4.924	5.1	100	0.00
67	T m- & p-Xylenes	4.265	4.028	5.6	100	0.00
68	T Bromoform	1.363	1.268	7.0	98	0.00
69	T Styrene	2.900	3.004	-3.6	99	0.00
70	T o-Xylene	4.184	3.974	5.0	100	0.00
71	T n-Nonane	2.038	2.062	-1.2	102	0.00
72	T 1,1,2,2-Tetrachloroethane	1.900	1.774	6.6	100	0.00
73	S Bromofluorobenzene (SS3)	2.273	2.368	-4.2	115	0.00
74	T Cumene	5.254	4.906	6.6	100	0.00
75	T alpha-Pinene	2.392	2.402	-0.4	100	0.00
76	T n-Propylbenzene	6.226	5.947	4.5	100	0.00
77	T 3-Ethyltoluene	0.000	0.000	0.0	79	0.01
78	T 4-Ethyltoluene	4.933	4.752	3.7	99	0.00
79	T 1,3,5-Trimethylbenzene	4.330	4.159	3.9	99	0.00
80	T alpha-Methylstyrene	0.000	0.000	0.0	0#	-17.19#
81	T 2-Ethyltoluene	0.000	0.000	0.0	79	0.01
82	T 1,2,4-Trimethylbenzene	4.332	4.253	1.8	99	0.00
83	T n-Decane	0.000	0.000	0.0	100	0.00
84	T Benzyl Chloride	3.476	3.811	-9.6	100	0.00
85	T 1,3-Dichlorobenzene	2.673	2.470	7.6	98	0.00
86	T 1,4-Dichlorobenzene	2.662	2.528	5.0	99	0.00
87	T sec-Butylbenzene	5.575	5.476	1.8	100	0.00
88	T 4-Isopropyltoluene (p-Cymen	4.887	4.862	0.5	99	0.00
89	T 1,2,3-Trimethylbenzene	0.000	0.000	0.0	79	0.01
90	T 1,2-Dichlorobenzene	2.645	2.435	7.9	99	0.00
91	T d-Limonene	1.398	1.510	-8.0	101	0.00
92	T 1,2-Dibromo-3-Chloropropane	0.996	0.978	1.8	100	0.00
93	T n-Undecane	0.000	0.000	0.0	116	0.00
94	T 1,2,4-Trichlorobenzene	1.925	2.060	-7.0	101	0.00
95	T Naphthalene	4.531	5.256	-16.0	104	0.00
96	T n-Dodecane	0.000	0.000	0.0	106	0.00
97	T Hexachlorobutadiene	1.543	1.314	14.8	101	0.00
98	T Cyclohexanone	0.000	0.000	0.0	93	0.00
99	T tert-Butylbenzene	4.006	3.840	4.1	99	0.00
100	T n-Butylbenzene	4.391	4.488	-2.2	101	0.00
101	T 1,1,1,2-Tetrachloroethane	1.240	1.136	8.4	100	0.00

(#) = Out of Range

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

Data File : I:\MS13\DATA\2023_06\26\06262325.D
 Acq On : 26 Jun 2023 21:51
 Sample : CCVend R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: TZ
 Inst : MS13

TZ 6/27/23

Quant Time: Jun 27 06:55:35 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.34	130	212913	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.39	114	912863	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.88	54	202485	12.500	ng	0.00

System Monitoring Compounds

33) 1,2-Dichloroethane-d4(...)	8.11	65	401308	12.357	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	98.88%
57) Toluene-d8 (SS2)	12.48	98	1037596	11.995	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	95.92%
73) Bromofluorobenzene (SS3)	16.85	174	479441	13.020	ng	0.00
Spiked Amount	12.500	Range	70 - 130	Recovery	=	104.16%

Target Compounds

						Qvalue
2) Propene	3.38	42	463809	23.941	ng	100
3) Dichlorodifluoromethan...	3.46	85	963468	24.343	ng	100
4) Chloromethane	3.60	50	626021	25.234	ng	99
5) 1,2-Dichloro-1,1,2,2-t...	3.71	135	422491	23.355	ng	100
6) Vinyl Chloride	3.79	62	551971	23.777	ng	100
7) 1,3-Butadiene	3.90	54	447913	25.169	ng	99
8) Bromomethane	4.12	94	321655	20.847	ng	99
9) Chloroethane	4.26	64	267599	24.438	ng	99
10) Ethanol	4.42	45	1068409	77.837	ng	100
11) Acetonitrile	4.57	41	739175	21.726	ng	99
12) Acrolein	4.64	56	520774	48.619	ng	100
13) Acetone	4.75	58	1427103	121.415	ng	99
14) Trichlorofluoromethane	4.86	101	873194	23.728	ng	100
15) 2-Propanol (Isopropanol)	4.97	45	2321147	47.645	ng	99
16) Acrylonitrile	5.12	53	1095499	49.971	ng	99
17) 1,1-Dichloroethene	5.36	96	421267	25.702	ng	99
18) 2-Methyl-2-Propanol (t...	5.44	59	2497386	54.010	ng	100
19) Methylene Chloride	5.48	84	423224	24.422	ng	99
20) 3-Chloro-1-propene (Al...	5.56	41	683452	25.963	ng	100
21) Trichlorotrifluoroethane	5.68	151	430368	24.426	ng	99
22) Carbon Disulfide	5.70	76	3214410	48.199	ng	100
23) trans-1,2-Dichloroethene	6.25	61	675859	27.049	ng	100
24) 1,1-Dichloroethane	6.43	63	785785	25.370	ng	100
25) Methyl tert-Butyl Ether	6.47	73	1408158	26.198	ng	99
26) Vinyl Acetate	6.55	86	210130	72.741	ng	97
27) 2-Butanone (MEK)	6.77	72	532877	52.729	ng	98
28) cis-1,2-Dichloroethene	7.19	61	639549	26.049	ng	99
29) Diisopropyl Ether	7.37	87	650623	49.774	ng	# 95
30) Ethyl Acetate	7.38	61	719103	102.505	ng	100
31) n-Hexane	7.39	57	653598	24.821	ng	100
32) Chloroform	7.47	83	836046	24.837	ng	99
34) Tetrahydrofuran (THF)	7.84	72	497567	45.965	ng	99
35) Ethyl tert-Butyl Ether	7.91	87	1045201	51.942	ng	99
36) 1,2-Dichloroethane	8.21	62	714536	25.212	ng	100
38) 1,1,1-Trichloroethane	8.49	97	779711	24.553	ng	100
39) Isopropyl Acetate	9.39	61	28881	No Calib		
40) 1-Butanol	8.88	56	21483	No Calib	#	
41) Benzene	8.99	78	1664908	25.505	ng	100
42) Carbon Tetrachloride	9.15	117	700877	24.992	ng	99
43) Cyclohexane	9.30	84	1195240	51.501	ng	99
44) tert-Amyl Methyl Ether	9.67	73	2583807	53.524	ng	100
45) 1,2-Dichloropropane	9.94	63	409171	25.495	ng	99
46) Bromodichloromethane	10.16	83	676477	25.704	ng	99
47) Trichloroethene	10.23	130	482002	24.141	ng	100
48) 1,4-Dioxane	10.19	88	355145	25.998	ng	99
49) 2,2,4-Trimethylpentane...	10.30	57	1714368	26.506	ng	100
50) Methyl Methacrylate	10.47	100	349513	53.942	ng	99

Data File : I:\MS13\DATA\2023_06\26\06262325.D
 Acq On : 26 Jun 2023 21:51
 Sample : CCVend R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)

Vial: 1
 Operator: TZ
 Inst : MS13

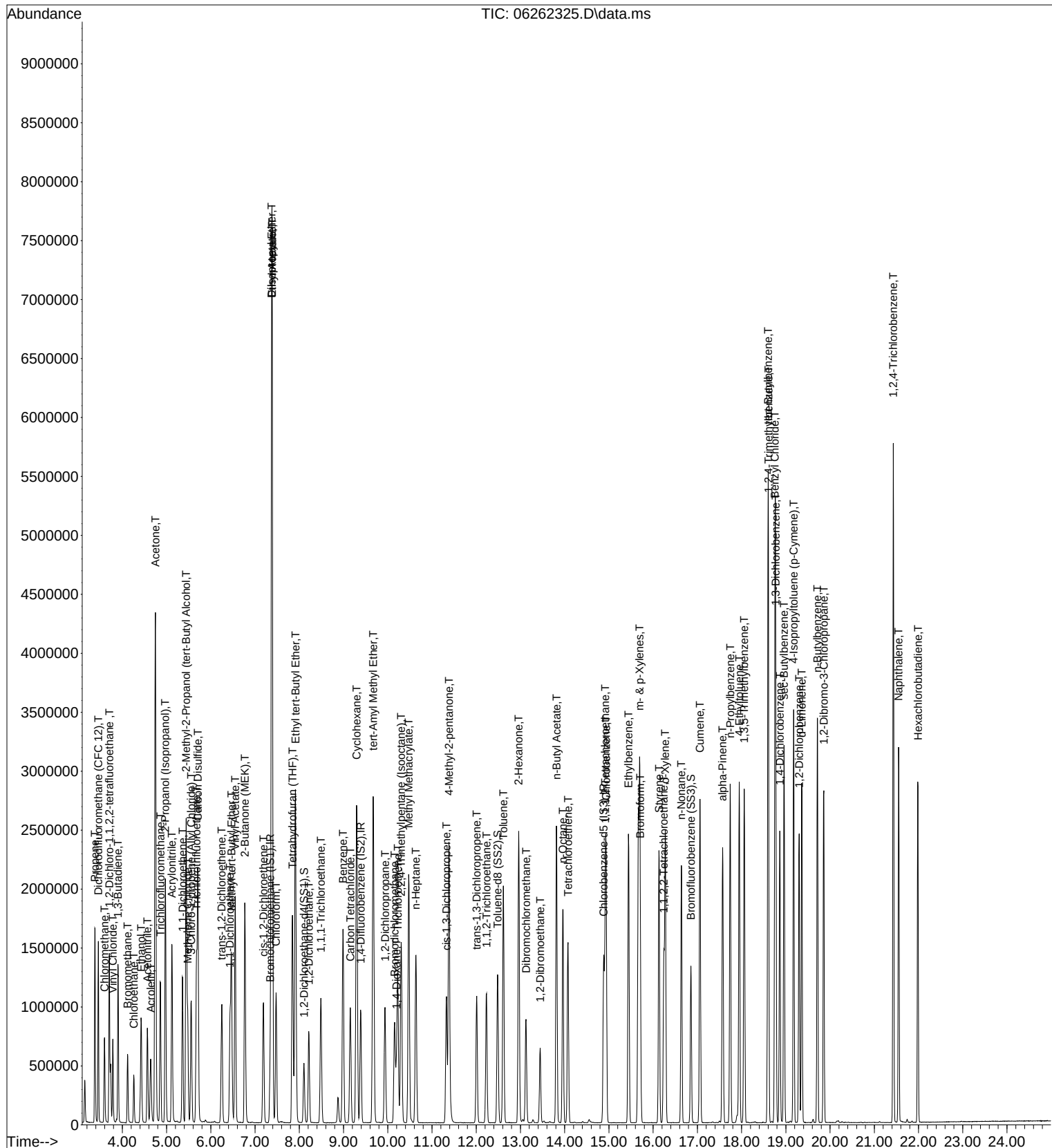
Quant Time: Jun 27 06:55:35 2023
 Quant Method : I:\MS13\METHODS\R13062323.M
 Quant Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 QLast Update : Fri Jun 23 15:42:57 2023
 Response via : Initial Calibration
 DataAcq Meth:T015B.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	10.63	71	400110	26.814	ng	99
52) cis-1,3-Dichloropropene	11.33	75	736928	27.368	ng	100
53) 4-Methyl-2-pentanone	11.38	58	781049	56.926	ng	99
54) trans-1,3-Dichloropropene	12.01	75	709128	27.203	ng	99
55) 1,1,2-Trichloroethane	12.23	97	429438	25.026	ng	99
58) Toluene	12.61	91	1767183	23.873	ng	100
59) 2-Hexanone	12.96	43	2027330	52.191	ng	100
60) Dibromochloromethane	13.13	129	601796	24.901	ng	100
61) 1,2-Dibromoethane	13.44	107	523098	24.052	ng	100
62) n-Butyl Acetate	13.81	43	2190323	51.463	ng	100
63) n-Octane	13.96	57	361804	25.361	ng	99
64) Tetrachloroethene	14.08	166	559830	23.168	ng	100
65) Chlorobenzene	14.94	112	1213239	23.502	ng	100
66) Ethylbenzene	15.44	91	2093790	24.926	ng	100
67) m- & p-Xylenes	15.69	91	3425928	49.589	ng	99
68) Bromoform	15.71	173	549475	24.880	ng	100
69) Styrene	16.14	104	1289728	27.450	ng	100
70) o-Xylene	16.27	91	1706033	25.173	ng	100
71) n-Nonane	16.64	43	885145	26.818	ng	99
72) 1,1,2,2-Tetrachloroethane	16.24	83	761361	24.738	ng	100
74) Cumene	17.06	105	2125924	24.979	ng	100
75) alpha-Pinene	17.57	93	1060131	27.361	ng	100
76) n-Propylbenzene	17.74	91	2576937	25.550	ng	100
77) 3-Ethyltoluene	17.35	105	214	No Calib	#	
78) 4-Ethyltoluene	17.95	105	2097722	26.251	ng	99
79) 1,3,5-Trimethylbenzene	18.06	105	1785467	25.454	ng	99
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.35	105	214	No Calib	#	
82) 1,2,4-Trimethylbenzene	18.61	105	1808286	25.771	ng	99
83) n-Decane	17.06	58	15133	No Calib		
84) Benzyl Chloride	18.75	91	3272196	58.114	ng	99
85) 1,3-Dichlorobenzene	18.77	146	1060479	24.496	ng	99
86) 1,4-Dichlorobenzene	18.86	146	1085293	25.166	ng	99
87) sec-Butylbenzene	18.96	105	2350492	26.029	ng	99
88) 4-Isopropyltoluene (p-...	19.18	119	2087232	26.363	ng	100
89) 1,2,3-Trimethylbenzene	17.35	105	214	No Calib	#	
90) 1,2-Dichlorobenzene	19.30	146	1054943	24.624	ng	100
91) d-Limonene	19.36	68	654355	28.905	ng	98
92) 1,2-Dibromo-3-Chloropr...	19.86	157	831415	51.507	ng	99
93) n-Undecane	18.23	58	461	No Calib	#	
94) 1,2,4-Trichlorobenzene	21.43	180	1743166	55.890	ng	100
95) Naphthalene	21.55	128	2341301	31.896	ng	100
96) n-Dodecane	19.18	58	56359	No Calib		
97) Hexachlorobutadiene	21.99	225	563979	22.564	ng	100
98) Cyclohexanone	15.69	55	1092	No Calib	#	
99) tert-Butylbenzene	18.60	119	1648254	25.403	ng	100
100) n-Butylbenzene	19.72	91	1944866	27.345	ng	100
101) 1,1,1,2-Tetrachloroethane	14.92	131	487462	24.261	ng	99

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

Vial: 1
Operator: TZ
Inst : MS13

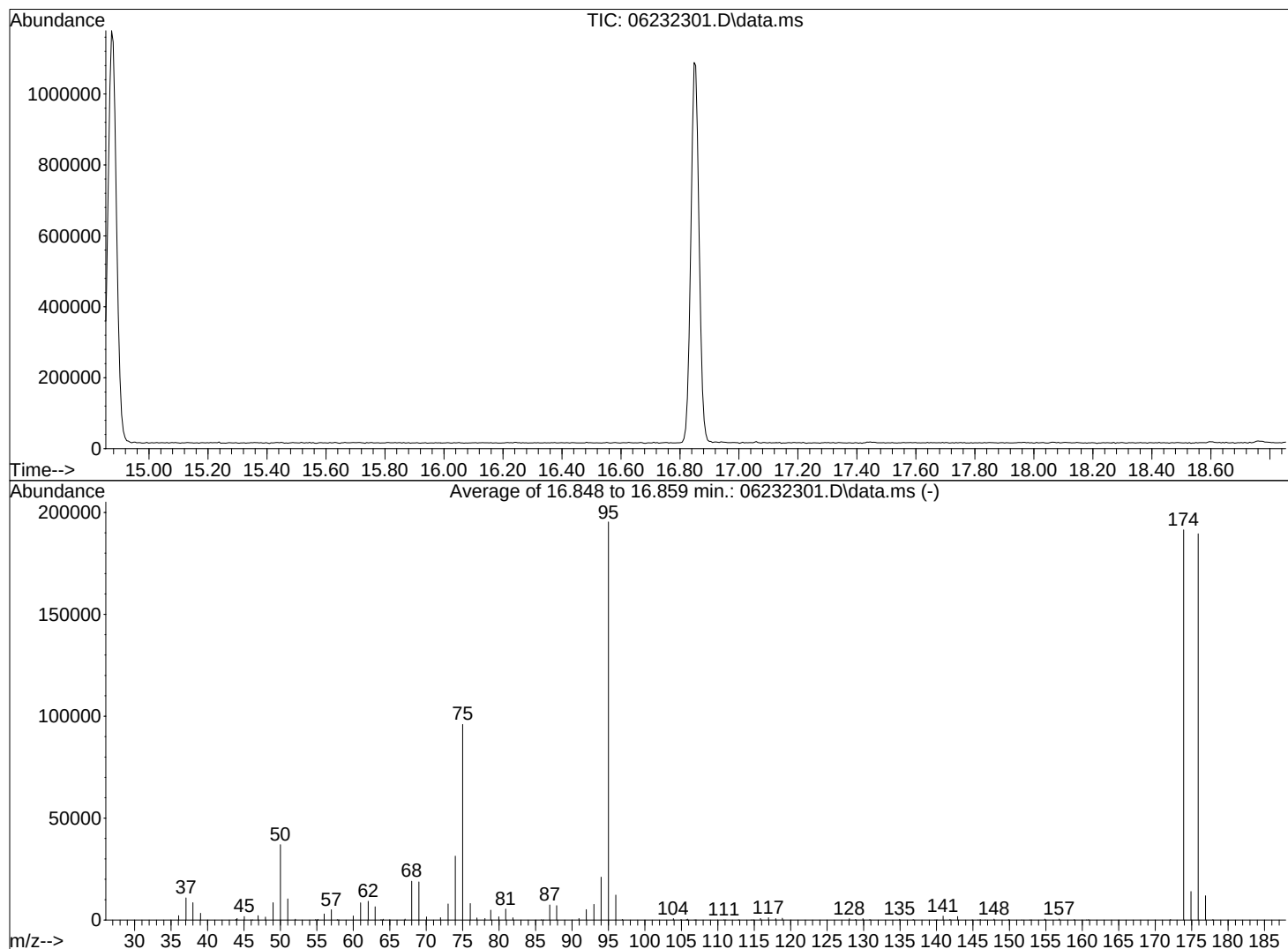
Quant Time: Jun 27 06:55:35 2023



Data Path : I:\MS13\DATA\2023_06\23\
 Data File : 06232301.D
 Acq On : 23 Jun 2023 3:21
 Operator : TZ
 Sample : T015 BFB Std.
 Misc : S37-04102301
 ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13062323.M
 Title : EPA T0-15 per SOP VOA-T015 (CASS T0-15/GC-MS)
 Last Update : Fri Jun 23 09:06:49 2023



AutoFind: Scans 2418, 2419, 2420; Background Corrected with Scan 2409

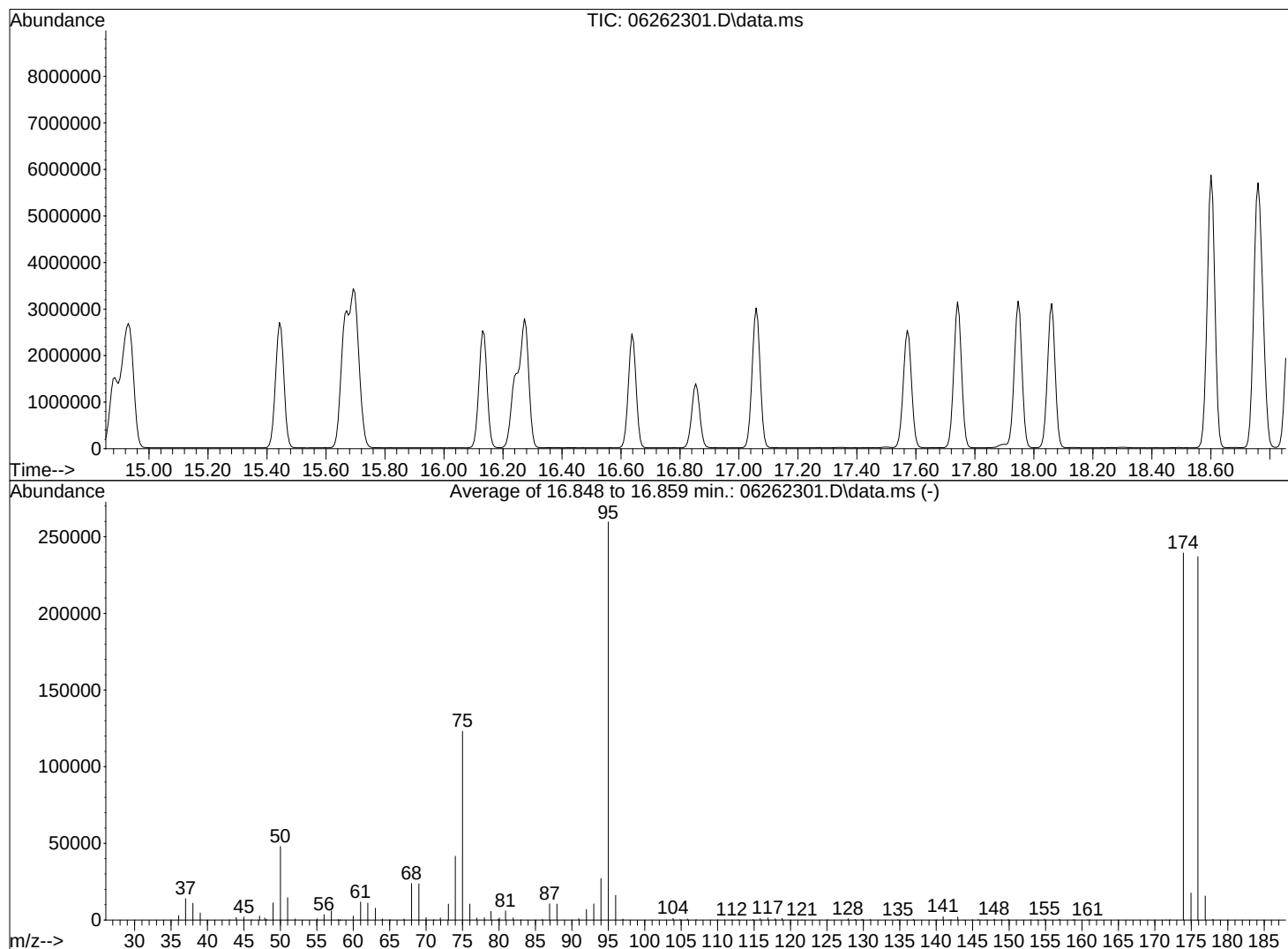
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.9	36960	PASS
75	95	30	66	49.1	95968	PASS
95	95	100	100	100.0	195328	PASS
96	95	5	9	6.3	12295	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	98.0	191467	PASS
175	174	4	9	7.3	13985	PASS
176	174	93	101	99.0	189547	PASS
177	176	5	9	6.3	11929	PASS

TZ 6/23/23

Data Path : I:\MS13\DATA\2023_06\26\
 Data File : 06262301.D
 Acq On : 26 Jun 2023 5:03
 Operator : WA
 Sample : CCV R13062623_25ng
 Misc : S37-04102301/S37-06222301 (7/22)
 ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS13\METHODS\R13062323.M
 Title : EPA TO-15 per SOP VOA-T015 (CASS TO-15/GC-MS)
 Last Update : Fri Jun 23 15:42:57 2023



AutoFind: Scans 2418, 2419, 2420; Background Corrected with Scan 2409

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.5	47920	PASS
75	95	30	66	47.4	123027	PASS
95	95	100	100	100.0	259627	PASS
96	95	5	9	6.2	16103	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	92.2	239424	PASS
175	174	4	9	7.3	17589	PASS
176	174	93	101	99.0	236971	PASS
177	176	5	9	6.6	15632	PASS

TZ 6/26/23

Injection Log

Directory: J:\MS13\DATA\2023_06\23\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	6/23/23 3:21	06232301.D	TO15 BFB Std.	S37-04102301	TZ	1	passed
2	6/23/23 3:58	06232302.D	0.1ng R13062323 ICAL Std.	S37-04102301/S37-06222303 (7/22)	TZ	13	R13062323.M
3	6/23/23 4:34	06232303.D	0.2ng R13062323 ICAL Std.	S37-04102301/S37-06222303 (7/22)	TZ	13	
4	6/23/23 5:10	06232304.D	0.5ng R13062323 ICAL Std.	S37-04102301/S37-06222302 (7/22)	TZ	13	
5	6/23/23 5:47	06232305.D	1.0ng R13062323 ICAL Std.	S37-04102301/S37-06222302 (7/22)	TZ	13	
6	6/23/23 6:23	06232306.D	5.0ng R13062323 ICAL Std.	S37-04102301/S37-06222302 (7/22)	TZ	13	
7	6/23/23 6:59	06232307.D	25ng R13062323 ICAL Std.	S37-04102301/S37-06222301 (7/22)	TZ	15	
8	6/23/23 7:35	06232308.D	50ng R13062323 ICAL Std.	S37-04102301/S37-06222301 (7/22)	TZ	15	
9	6/23/23 8:12	06232309.D	100ng R13062323 ICAL Std.	S37-04102301/S37-06222301 (7/22)	TZ	15	
10	6/23/23 8:48	06232310.D	Blank	S37-04102301	TZ	1	
11	6/23/23 9:24	06232311.D	5.0ng R13062323 ICV Std.	S37-04102301/S37-06132303 (7/13)	TZ	1	not used
12	6/23/23 10:01	06232312.D	25ng R13062323 ICV Std.	S37-04102301/S37-06132303 (7/13)	TZ	1	passed
R13062323.M ranges from 0.1ng->100ng except for Acetonitrile:0.5ng->100ng, TBA: 0.2ng->100ng, and Naphthalene: 0.5ng->100ng							

Injection Log

T2 6/27/23

Directory: I:\MS13\DATA\2023_06\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	6/26/23 5:03	06262301.D	CCV R13062623_25ng	S37-04102301/S37-06222301 (7/22)	WA	1	passed
2	6/26/23 5:39	06262302.D	CCV C13062623_5ng	S37-04102301/S37-06022304 (7/2)	WA	16	passed
3	6/26/23 6:53	06262303.D	MB R13062623 1000mL	S37-04102301_AC01837	WA	1	passed
4	6/26/23 7:29	06262304.D	LCS R13062623 25ng	S37-04102301/S37-06132303 (7/13)	WA	1	passed
5	6/26/23 8:05	06262305.D	LCSD R13062623 25ng	S37-04102301/S37-06132303 (7/13)	WA	1	passed
6	6/26/23 8:42	06262306.D	Blank	S37-04102301	WA	1	
7	6/26/23 9:19	06262307.D	P2302761-006 (1000mL)	S37-04102301	WA	11	
8	6/26/23 10:47	06262308.D	P2302616-001 (1000mL)	S37-04102301	TZ	2	
9	6/26/23 11:24	06262309.D	P2302616-002 (1000mL)	S37-04102301	TZ	3	
10	6/26/23 12:01	06262310.D	P2302719-001 (400mL)	S37-04102301	TZ	4	
11	6/26/23 12:37	06262311.D	P2302719-002 (400mL)	S37-04102301	TZ	5	
12	6/26/23 13:14	06262312.D	P2302724-001 (400mL)	S37-04102301	TZ	6	
13	6/26/23 13:51	06262313.D	P2302724-002 (400mL)	S37-04102301	TZ	7	
14	6/26/23 14:28	06262314.D	P2302724-003 (400mL)	S37-04102301	TZ	8	
15	6/26/23 15:05	06262315.D	P2302724-001dil (40mL)	S37-04102301	TZ	6	
16	6/26/23 16:14	06262316.D	P2302623-002 (1000mL)	S37-04102301	TZ	2	
17	6/26/23 16:51	06262317.D	P2302623-005 (1000mL)	S37-04102301	TZ	3	
18	6/26/23 17:27	06262318.D	P2302623-009 (1000mL)	S37-04102301	TZ	4	
19	6/26/23 18:05	06262319.D	P2302819-001 (1000mL)	S37-04102301	TZ	5	
20	6/26/23 18:41	06262320.D	P2302819-002 (1000mL)	S37-04102301	TZ	6	
21	6/26/23 19:19	06262321.D	P2302819-003 (1000mL)	S37-04102301	TZ	7	
22	6/26/23 19:56	06262322.D	P2302819-004 (1000mL)	S37-04102301	TZ	8	
23	6/26/23 20:34	06262323.D	P2302819-005 (1000mL)	S37-04102301	TZ	9	
24	6/26/23 21:13	06262324.D	P2302819-005dup (1000mL)	S37-04102301	TZ	9	passed
25	6/26/23 21:51	06262325.D	CCVend R13062623_25ng	S37-04102301/S37-06222301 (7/22)	TZ	1	passed
26	6/26/23 22:29	06262326.D	RL R13062623_0.5ng	S37-04102301/S37-06222302 (7/22)	TZ	15	
27	6/26/23 23:06	06262327.D	P2302655-004 (50mL)	S37-04102301	TZ	10	screen
28	6/26/23 23:44	06262328.D	P2301964-008 0.3ng Extra Cmpds LOD (Set 1)	S37-04102301/S37-06022305 (7/2)	TZ	14	
29	6/27/23 0:21	06262329.D	P2301964-010 0.5ng Extra Cmpds LOQ Verificati	S37-04102301/S37-06022305 (7/2)	TZ	14	
30	6/27/23 0:59	06262330.D	AC00794	S37-04102301	TZ	11	QC can failed
31	6/27/23 1:37	06262331.D	AC02290	S37-04102301	TZ	12	QC can passed
32	6/27/23 2:14	06262332.D	AC01171	S37-04102301	TZ	13	QC can failed
33	6/27/23 2:52	06262333.D	System	S37-04102301/S37-06222301 (7/22)	TZ	1	

SIMIVALLEY QC Certification

Conditioner: P-Conditioner-05

Cycles: 30

Batch: 31128

Batch Started By: on 5/26/23 0347

Finished Cleaning By: ALESAICHERRE on 5/31/23 0758

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AS01106	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	5/31/23 0818		
AS01762	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	5/30/23 0122		
AC02400	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/2/23 0856		GC13_053023
AS01247	5/26/23	5/30/23	Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/1/23 1050		ms21-05/30/23
AS00976	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	5/30/23 0122		
AS01396	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	5/31/23 0818		
AS01583	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	6/5/23 0246		
AS01758	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	5/31/23 0818		
AC01205	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/2/23 0856		
AS01012	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/2/23 1032		
AC02266	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/2/23 0856		
AS01543	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	5/31/23 0818		
AS01607	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-8.0	6/5/23 0246		
AS01115	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	5/30/23 0122		
AS00823	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	5/30/23 0122		
AC02481	5/26/23		Pass w/ Conditions	-14.3	5/31/23 0758	ALESAICHERRE	-14.0	6/1/23 0907		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

*** QC Canister**

Data Path : I:\MS21\DATA\2023_05\30\
 Data File : 05302308.D
 Acq On : 30 May 2023 16:58
 Operator : MC
 Sample : 053023_AS01247_31128
 Misc : SIM + TICS (Sig #1); S37-05092304 (Sig #2)
 ALS Vial : 4 Sample Multiplier: 1

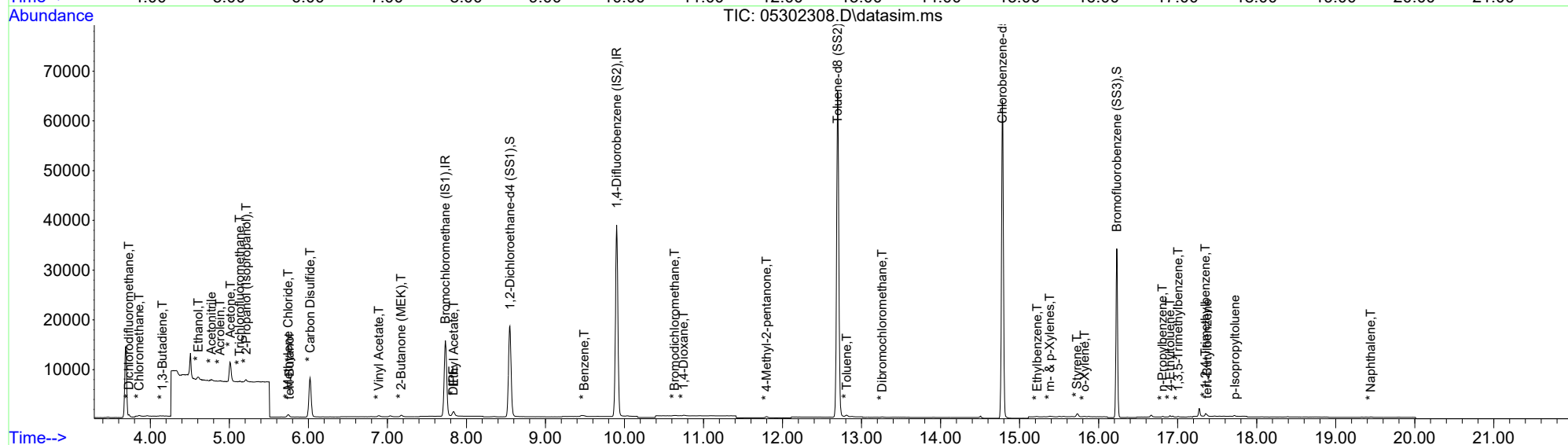
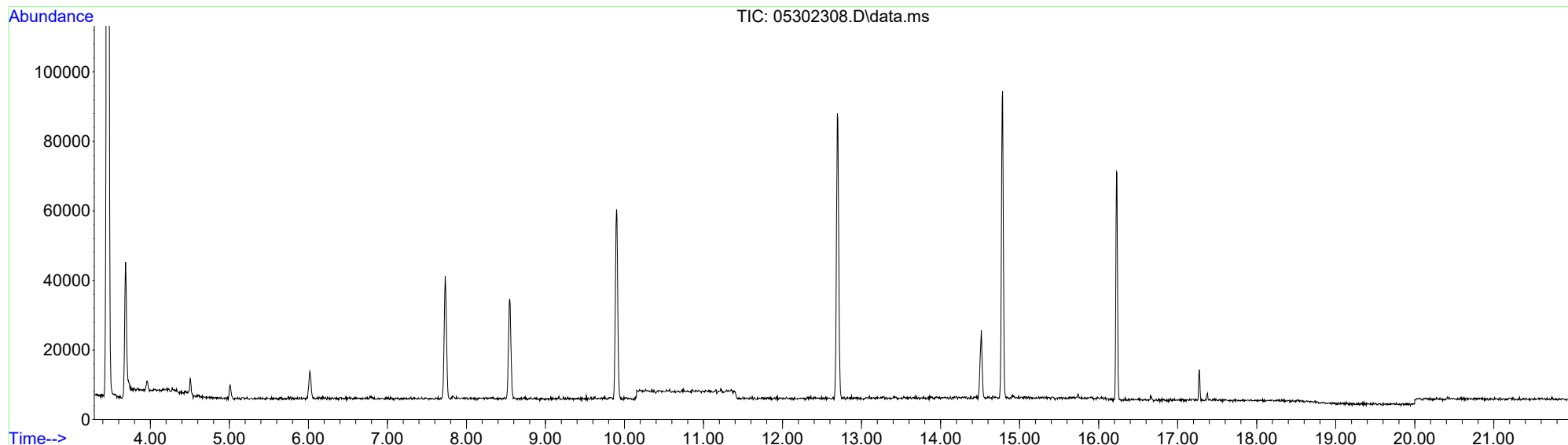
APL 5/31/23

Quant Time: May 31 06:13:14 2023
 Quant Method : I:\MS21\Methods\F21052223.M
 Quant Title : EPA TO-15
 QLast Update : Tue May 23 09:49:07 2023
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.734	130	18618	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.901	114	67969	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.781	54	11776	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.550	65	27143	997.28	pg	0.00
Spiked Amount 1000.000			Recovery	=	99.73%	
57) Toluene-d8 (SS2)	12.697	98	72225	979.11	pg	0.00
Spiked Amount 1000.000			Recovery	=	97.91%	
74) Bromofluorobenzene (SS3)	16.228	174	23670	867.92	pg	0.00
Spiked Amount 1000.000			Recovery	=	86.79%	
Target Compounds						Qvalue
3] * Dichlorodifluoromethane	3.729	85	424	7.490	pg	100
4] * Chloromethane	3.861	50	174	7.444	pg	99
7] * 1,3-Butadiene	4.152	54	12	0.585	pg	# 1
10] * Ethanol	4.606	45	610	49.764	pg	100
11] * Acetonitrile	4.773	41	317	12.304	pg	# 62
12] * Acrolein	4.884	56	109	12.709	pg	90
13] * Acetone	5.014	58	1806	173.174	pg	82
14] * Trichlorofluoromethane	5.132	101	92	2.889	pg	94
15] * 2-Propanol (Isopropa...	5.213	45	691	25.148	pg	97
18] tert-Butanol	5.759	59	116	4.163	pg	# 56
19] * Methylene Chloride	5.744	84	511	29.789	pg	99
22] * Carbon Disulfide	6.021	76	14843	231.871	pg	98
26] * Vinyl Acetate	6.893	86	61	23.216	pg	# 53
27] * 2-Butanone (MEK)	7.174	72	135	14.381	pg	90
29] DIPE	7.831	45	201	4.985	pg	# 43
30] * Ethyl Acetate	7.838	61	224	43.827	pg	89
39] * Benzene	9.490	78	200	3.877	pg	97
46] * Bromodichloromethane	10.633	83	90	4.090	pg	# 18
48] * 1,4-Dioxane	10.749	88	112	8.408	pg	97
53] * 4-Methyl-2-pentanone	11.798	58	122	11.553	pg	# 33
58] * Toluene	12.810	91	314	5.105	pg	97
60] * Dibromochloromethane	13.260	129	80	5.290	pg	99
66] * Ethylbenzene	15.220	91	73	1.080	pg	# 43
67] * m- & p-Xylenes	15.381	91	184	3.499	pg	99
70] * Styrene	15.727	104	387	10.405	pg	100
71] * o-Xylene	15.822	91	64	1.205	pg	# 30
77] * n-Propylbenzene	16.807	91	130	1.595	pg	# 32
79] * 4-Ethyltoluene	16.904	105	230	3.702	pg	97
80] * 1,3,5-Trimethylbenzene	17.006	105	80	1.446	pg	# 28
83] tert-Butylbenzene	17.373	134	108	8.783	pg	# 1
84] * 1,2,4-Trimethylbenzene	17.352	105	402	7.285	pg	88
91] p-Isopropyltoluene	17.724	119	96	1.611	pg	# 49
98] * Naphthalene	19.444	128	78	2.361	pg	# 68

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

Quant Time: May 31 06:13:14 2023
Quant Method : I:\MS21\Methods\F21052223.M
Quant Title : EPA T0-15
QLast Update : Tue May 23 09:49:07 2023
Response via : Initial Calibration



SIMIVALLEY QC Certification

Conditioner: P-Conditioner-14

Cycles: 30

Batch: 31144

Batch Started By: on 6/1/23 0837

Finished Cleaning By: ALESAICHERRE on 6/2/23 0707

Container IDs	Cleaned Date	QC Date Analyzed	QC Results	Initial Vacuum			Final Vacuum			Comments
				Vacuum	Date/Time	User	Vacuum	Date/Time	User	
AC02335	6/1/23	6/1/23	Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/6/23 0324		ms21-06/01/23
AS01289	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 1032		
AS01424	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AS01608	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AS01576	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AC02524	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AC02143	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AS00970	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0856		
AC01235	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0857		
AC01909	6/1/23		Pass w/ Conditions	-14.3	6/2/23 0707	ALESAICHERRE	-14.0	6/2/23 0857		

Passed For: TO-15 (75 Comp 0.1 ug/m3 + TICs)

Exceptions:

COMPONENTID	Date / Time	MODULE	USER	COMMENTS

Batch Comment:

* QC Canister

Data Path : I:\MS21\DATA\2023_06\01\
 Data File : 06012305.D
 Acq On : 1 Jun 2023 17:34
 Operator : MC
 Sample : 060123_AC02335_31144
 Misc : SIM + TICS (Sig #1); S37-05092304 (Sig #2)
 ALS Vial : 1 Sample Multiplier: 1

APL 6/2/23

Quant Time: Jun 02 05:51:34 2023
 Quant Method : I:\MS21\Methods\F21052223.M
 Quant Title : EPA T0-15
 QLast Update : Tue May 23 09:49:07 2023
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Bromochloromethane (IS1)	7.727	130	17957	1000.00	pg	0.00
37) 1,4-Difluorobenzene (IS2)	9.896	114	64177	1000.00	pg	0.00
56) Chlorobenzene-d5 (IS3)	14.781	54	10985	1000.00	pg	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4 ...	8.545	65	25612	975.66	pg	0.00
Spiked Amount 1000.000			Recovery	=	97.57%	
57) Toluene-d8 (SS2)	12.696	98	66931	972.67	pg	0.00
Spiked Amount 1000.000			Recovery	=	97.27%	
74) Bromofluorobenzene (SS3)	16.228	174	22082	867.99	pg	0.00
Spiked Amount 1000.000			Recovery	=	86.80%	

Target Compounds						Qvalue
3] * Dichlorodifluoromethane	3.724	85	603	11.045	pg	95
4] * Chloromethane	3.851	50	727	32.249	pg	100
5] * 1,2-Dichloro-1,1,2,2...	3.941	85	78	2.087	pg	# 42
7] * 1,3-Butadiene	4.147	54	42	2.122	pg	# 1
8] * Bromomethane	4.362	94	88	3.640	pg	82
9] * Chloroethane	4.497	64	129	8.652	pg	# 84
10] * Ethanol	4.596	45	3060	258.823	pg	100
11] * Acetonitrile	4.762	41	239	9.618	pg	# 85
12] * Acrolein	4.877	56	418	50.530	pg	100
13] * Acetone	5.002	58	6681	664.209	pg	77
14] * Trichlorofluoromethane	5.126	101	147	4.785	pg	93
15] * 2-Propanol (Isopropa...	5.200	45	889	33.545	pg	94
16] * Acrylonitrile	5.349	53	52	3.353	pg	# 8
18] tert-Butanol	5.739	59	369	13.729	pg	# 77
19] * Methylene Chloride	5.734	84	169	10.215	pg	98
22] * Carbon Disulfide	6.011	76	1380	22.351	pg	100
26] * Vinyl Acetate	6.887	86	374	147.583	pg	# 26
27] * 2-Butanone (MEK)	7.169	72	716	79.078	pg	91
29] DIPE	7.838	45	171	4.397	pg	# 43
30] * Ethyl Acetate	7.831	61	117	23.735	pg	90
31] * n-Hexane	7.812	57	64	3.369	pg	# 53
32] * Chloroform	7.863	83	78	2.781	pg	98
34] * Tetrahydrofuran	8.339	71	102	13.518	pg	97
39] * Benzene	9.484	78	242	4.968	pg	98
42] * Carbon Tetrachloride	9.661	117	51	3.322	pg	# 2
46] * Bromodichloromethane	10.619	83	121	5.823	pg	97
48] * 1,4-Dioxane	10.749	88	114	9.064	pg	91
49] Isooctane	10.713	56	66	3.558	pg	# 45
53] * 4-Methyl-2-pentanone	11.787	58	192	19.256	pg	95
58] * Toluene	12.810	91	348	6.065	pg	100
59] * 2-Hexanone	13.168	58	224	18.376	pg	98
60] * Dibromochloromethane	13.260	129	93	6.592	pg	94
64] * Tetrachloroethene	14.108	166	181	10.262	pg	99
65] * Chlorobenzene	14.826	112	65	1.573	pg	# 42
66] * Ethylbenzene	15.214	91	114	1.807	pg	# 43
67] * m- & p-Xylenes	15.381	91	313	6.382	pg	88
70] * Styrene	15.721	104	76	2.190	pg	# 29
71] * o-Xylene	15.822	91	83	1.676	pg	# 30
73] * 1,1,2,2-Tetrachloroe...	15.798	83	51	1.813	pg	# 18
75] * Cumene	16.363	105	123	1.904	pg	# 48
77] * n-Propylbenzene	16.811	91	127	1.670	pg	# 53
79] * 4-Ethyltoluene	16.938	105	67	1.156	pg	# 45
80] * 1,3,5-Trimethylbenzene	17.006	105	97	1.880	pg	# 28
83] tert-Butylbenzene	17.373	134	124	10.811	pg	# 1

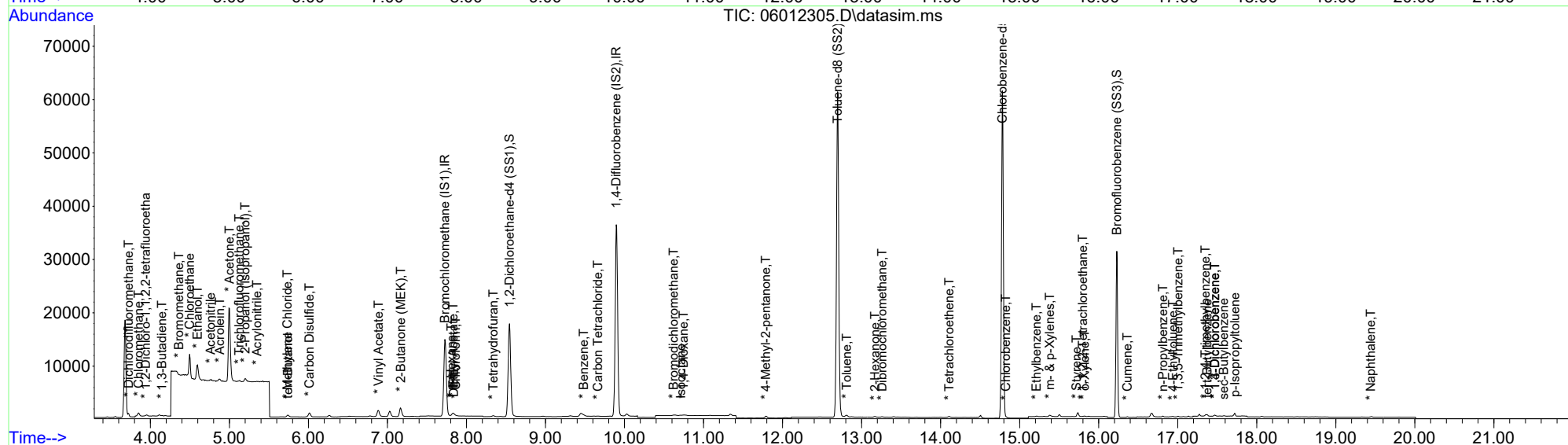
Data Path : I:\MS21\DATA\2023_06\01\
 Data File : 06012305.D
 Acq On : 1 Jun 2023 17:34
 Operator : MC
 Sample : 060123_AC02335_31144
 Misc : SIM + TICS (Sig #1); S37-05092304 (Sig #2)
 ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 05:51:34 2023
 Quant Method : I:\MS21\Methods\F21052223.M
 Quant Title : EPA T0-15
 QLast Update : Tue May 23 09:49:07 2023
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
84]	* 1,2,4-Trimethylbenzene	17.351	105	134	2.603	pg	99
86]	* 1,3-Dichlorobenzene	17.470	146	98	3.119	pg	97
87]	* 1,4-Dichlorobenzene	17.470	146	98	3.313	pg	98
89]	sec-Butylbenzene	17.583	105	75	1.084	pg	# 57
91]	p-Isopropyltoluene	17.724	119	385	6.926	pg	98
98]	* Naphthalene	19.444	128	99	3.213	pg	# 68

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

Chromatogram plot showing Abundance vs Time (min). The y-axis ranges from 0 to 100,000. The x-axis ranges from 0 to 21.00 minutes. The plot shows several sharp peaks, with the highest peak at approximately 3.5 minutes reaching an abundance of over 100,000. Other significant peaks are labeled at 7.8, 8.5, 9.9, 12.7, 14.5, 14.8, and 16.2 minutes.



Appendix F Data Quality Evaluation

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y12Q1
Project/Task Number: 10349180-3.3
Sample Data Package: P2204669
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 18 October 2022
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y12Q1	P2204669-001	X
ODSVE-DUP1-Y12Q1	P2204669-002	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The samples were collected in 6-liter Summa canisters using a T-fitting for collection of the sample and the field duplicate (replicate) at the same time. (The COC noted samples were collected in 60-liter Summas. This was incorrect.) The samples were received in good condition. The canisters' initial field pressures (vacuums) of -29 inches and -30 inches mercury were within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met. No qualification was required.

SECOND SOURCE STANDARDS

Ethanol in the LCSD (used as the ICV) had a percent difference (%D) of +31%: ethanol was detected in both samples and has been qualified as estimated (J). Hexachlorobutadiene had a %D of -31%; this analyte was qualified as non-detect estimated (UJ) in both samples.

CONTINUING CALIBRATIONS

Chloromethane had a %D of +32%; this analyte was not detected in the samples, and no qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least 10 times as high in the sample, with no qualification was required, except as shown in the table below.

Analyte	Detection in canister blank	Sample	Detection in sample (ng)	Qualifier
Ethanol	0.455 ng	ODSVE-EFF-Y12Q1	1.562 ng (>LOD)	J+
d-Limonene	0.035 ng	ODSVE-DUP1-Y12Q1	0.167 ng (<LOD)	ND
2-Butanone (MEK)	0.247 ng		0.524 ng (>LOD)	J+

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

Ethanol recoveries at 126% and 131% were above the lab's control limits of 59-125%. Ethanol was detected in both samples and qualified as estimated with a possible high bias (J+).

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was not run on this sample. No qualification was required.

X. FIELD DUPLICATES

Sample ODSVE-DUP1-Y12Q1 was collected as a field duplicate (FD) of sample ODSVE-EFF-Y12Q1. Results had relative percent differences (RPDs) within the 30% control limit except as noted in the table below.

Parent / FD	Analyte	Concentrations (ppbv)	RPD	Qualifier
ODSVE-EFF-Y12Q1 ODSVE-DUP1-Y12Q1	2-Propanol	0.36J / 5.3	175%	J / J
	Acrolein	0.74 / ND	--	J / UJ
	Ethanol	1.2J / 6.1	134%	J / J
	Ethanol acetate	ND / 15	--	UJ / J
	Propene	ND / 1.2	--	UJ / J

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for the project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y12Q2
Project/Task Number: 10349180-3.3
Sample Data Package: P2205493
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 06 December 2022
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y12Q2	P2205493-001	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. (The COC incorrectly noted the sample was collected in a 60-liter Summa.) The sample was received in good condition. The canister's initial field pressure (vacuums) of -26 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

The lab noted that the canister's vacuum level upon arrival was -11.31 psig, a higher vacuum than usual. The lab and client decided to run the analysis, knowing that the higher vacuum would require a higher dilution than usual to pressurize the canister to the level required for analysis. This analysis was run at a dilution of 5.51; the dilution level for the previous sampling event was 1.50, with the canister at -2.26 psig upon receipt at the lab. The LOQs, LODs, and MDLs were higher than they were for the previous event.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met for all analytes except vinyl acetate, with an RSD of 46%. Vinyl acetate results have been qualified as non-detect estimated (UJ).

SECOND SOURCE STANDARDS

Vinyl acetate in the ICV had a percent difference (%D) of -54%. This analyte was qualified as non-detect estimated (UJ).

CONTINUING CALIBRATIONS

t-Butanol had a %D above 30%, but this was not a target (reported) analyte. No qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least 10 times as high in the sample, and no qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was run on this sample. All RPDs were within 20%, or the difference between the sample and duplicate result was less than the LOQ. No qualification was required.

X. FIELD DUPLICATES

A field duplicate was not collected. No qualification was required.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were approximately four times the levels in the previous sampling event, due to the dilution required as discussed in Section I.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y12Q2-SUB
Project/Task Number: 10349180-3.3
Sample Data Package: P2300537
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 07 February 2023
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
EFF-Y12Q2-SUB	P2300537-001	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. The sample was received in good condition. The canister's initial field pressure (vacuum) of -30 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met for all analytes. No qualification was required.

SECOND SOURCE STANDARDS

Vinyl acetate in the ICV had a percent difference (%D) of +163%. This analyte was qualified as non-detect estimated (UJ).

CONTINUING CALIBRATIONS

Acetone had a %D above 30%, at -30.1%. Acetone in the sample was qualified as non-detect estimated (UJ).

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least five times as high in the sample, and no qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

No lab duplicate analysis was run on this sample. No qualification was required.

X. FIELD DUPLICATES

A field duplicate was not collected. No qualification was required.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for this project. No qualification was required.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y12Q3
Project/Task Number: 10349180-3.3
Sample Data Package: P2301551
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 04 April 2023
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y12Q3	P2301551-001	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The sample was collected in a 6-liter Summa canister. The sample was received in good condition. The canister's initial field pressure (vacuum) of -28 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met for all analytes. No qualification was required.

SECOND SOURCE STANDARDS

All analytes in the ICV had a percent difference (%D) of less than 30%. No qualification was required.

CONTINUING CALIBRATIONS

Hexachlorobutadiene had a %D above 30%, at -31.5%, and has been qualified as non-detect estimated (UJ).

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least 10 times as high in the sample, and no qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was not run on this sample. No qualification was required.

X. FIELD DUPLICATES

A field duplicate was not collected. No qualification was required.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for this project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

DATA QUALITY REVIEW REPORT

VOLATILES IN AIR by USEPA Method TO-15

Project: DDMT Memphis ODSVE – Y12Q4
Project/Task Number: 10349180-3.3
Sample Data Package: P2302616
Laboratory: ALS Environmental, Simi Valley, California
Sample Matrix: Soil Gas
Sampling Dates: 08 June 2023
Validation Guidelines: Project Quality Assurance Project Plan (QAPP) (*Remedial Action Operations and Long Term Monitoring Quality Assurance Project Plan, Defense Depot Memphis, Tennessee, Revision 1* [HDR, November 2014]) United States Environmental Protection Agency (USEPA) *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, 2nd edition (1999) Method TO-15, and professional judgment
Validation Level: Stage 2BVM
Data Reviewer: Lynn K. Lutz, HDR

Sample ID	ALS ID	TO-15 VOCs
ODSVE-EFF-Y12Q4	P2302616-001	X
ODSVE-DUP1-Y12Q4	P2302616-002	X

SUMMARY

All laboratory data were acceptable with qualification.

I. SAMPLE RECEIPT / CHAIN OF CUSTODY

The samples were collected in 6-liter Summa canisters. The samples were received in good condition. The canisters' initial field pressure (vacuum) of -30 inches mercury was within the acceptable vacuum of -25 or greater inches mercury. The chain of custody (COC) was filled out and signed. No qualification was required.

II. SAMPLES ANALYZED

All planned samples were collected and analyzed. No qualification was required.

III. HOLDING TIMES

The holding time criterion of 30 days was met. No qualification was required.

IV. GC/MS TUNING

GC/MS BFB tuning criteria were met. Sample analyses were begun within 24 hours of the BFB analysis. No qualification was required.

V. INSTRUMENT CALIBRATION

INITIAL CALIBRATIONS

Initial calibration criterion of relative standard deviation (RSD) less than 30% was met for all analytes. No qualification was required.

SECOND SOURCE STANDARDS

All analytes in the ICV had a percent difference (%D) of less than 30%. No qualification was required.

CONTINUING CALIBRATIONS

All analytes in the CCVs had a percent difference (%D) of less than 30%. No qualification was required.

VI. BLANKS

METHOD BLANKS

Target analytes were not detected in the method blank. No qualification was required.

CANISTER BATCH CERTIFICATION BLANKS

Several target analytes were detected in the batch certification blank but were either non-detect or at least 10 times as high in the sample, and no qualification was required.

VII. LABORATORY CONTROL SAMPLES (LCS) AND LCS DUPLICATE (LCSD)

All recoveries and relative percent differences (RPDs) were within control limits. No qualification was required.

VIII. SURROGATES

Surrogate recoveries were within control limits. No qualification was required.

IX. LABORATORY DUPLICATES

A lab duplicate analysis was not run on this sample. No qualification was required.

X. FIELD DUPLICATES

A field duplicate was collected. Carbon disulfide results had an RPD of 110%, and this analyte has been qualified as estimated (J) in both samples.

XI. INTERNAL STANDARDS (ISTD)

The ISTD criterion of area responses within 40% of the CCV was met for all samples. No qualification was required.

XII. LIMITS OF QUANTITATION (LOQs), LIMITS OF DETECTION (LODs) AND DETECTION LIMITS (DLs)

LOQs, LODs and DLs were appropriate for this project.

XIII. SAMPLE RESULTS / TRANSCRIPTION VERIFICATION

Transcription between the data packages and the EDDs was verified. Results between the DL and LOQ have been qualified as estimated (J).

Attachment 1 January 2023 Vehicle Strike

Crash Report

Memphis Police Department

Report # WC2301613

Crash Date/Time

01/18/2023 (Time Unknown)

Location

1605 Menager Rd, 20 Feet East of Ragan St

Notified: 01/18/2023 10:00 AM**Totals:** 1 Vehicles, 1 Person(s) Involved, 0 Killed, 0 Injured**Arrived:** 01/18/2023 10:30 AM**Type:** Property damage (over \$ threshold)**Investigation Complete:** No**Hit and Run:** Yes - Hit and Run (unsolved)**Involved School Bus:** No**Police Pursuit:** No**City/County:** Memphis, TN**Area:** Urban**District:** 723**Add. Designation:** Business**Trafficway/Land:** Private property or private road**Latitude/Longitude:** 35.09743 / -90.00943**Rail Crossing ID:****Photos Taken By:****Report Approved:** 01/18/2023 1:31 PM**Approved By:** Walter L. Williams**Collision with fixed object:** Building**Any Other Harmful Events?:** No**Manner of Collision:** Not collision w/motor vehicle**Relation To Junction:** Other location**Type of Intersection:** Not at intersection**Relation To Roadway :** Parking lot/private property**Hwy Constr./Maint. Zone:** None**Construction Type:** None**Workers Present:** No**Construction Location:** None**Light Conditions:** Unknown**Weather Conditions:** No adverse conditions**CAD Number:** Yes: P230180974Reporting Officer

J Snizek

Officer Type

Reporting

Rank

Officer

Badge #

11704

Car #

773

Vehicle #1Color:Total Occupancy: 1

Unknown (hit and run only): Unknown (hit and run only)

(Including Driver)

Hit & Run Vehicle: Driver and Vehicle Left Scene**Presence:** Unknown**Going/Facing:** W. on 1605 Menager Rd**Speed Limit:****License Tag:** TN (expires ??/??)**VIN:****Weight:** Unknown**Damage Extent:** Unknown**Damage Amount:** Unknown**Damaged Areas:** Unknown**Rollover:** No**Fire:** No**First Impact:** Unknown**Towed/Driven:** Driven away**Towed To:****Special Use:** Unknown**Emergency Use:** No**Trailer:****Insurance Co.:** Unknown**Policy #:****Effective Date:****Expiration Date:****Seq. of Events:** 1. Collision: Building**Collision with fixed object:** Building**Alignment:** Straight**Profile:** Level**Vehicle Defects:** Unknown**Driver/Vehicle Maneuver:** Unknown**Trafficway Hazards:** No apparent hazards**Traffic Control Device:** No control**Control Device Functioning:** Not applicable**Roadway Route Signing:** Other: Private property**Underriding/Overriding:** No underride or override**Bus Usage:** Not Applicable**Insurance Type:** Unknown**Traffic Flow:** Other**Number of Travel Lanes:** Other: Private property**Access Control:** No control**Roadway Surface Type:** Dirt**Roadway Surface Conditions:** Unknown**Vehicle Operation Type:** In Transport

Driver (vehicle #1)

Name: Unknown Unknown
Address: Unknown
Unknown, Unknown

Sex:
Race:
DOB: Age:
Email:

Phone #:
Cell #:
Work #:

Driver's License:
DL Class:
Seating Position: Front seat - left side
Safety Equipment: Unknown if restraint used
Air Bag: Unknown
Injury:
Ejected: Not ejected
Ejection Path: Not ejected/not applicable
Trapped: Not trapped
Transported By: Not transported
Transported To:

Driver Actions: Careless/erratic driving
Driver Distractions: Unknown
Driver Condition: Unknown
Alcohol usage determined by: Not reported
Alcohol Test: None given
Drug Test: None given
Drug usage determined by: Not reported
Drivers License Endorsements: Unknown
Drivers License Restrictions: Unknown
Alcohol Usage: Unknown
Drug Usage: Unknown

Written Statement:

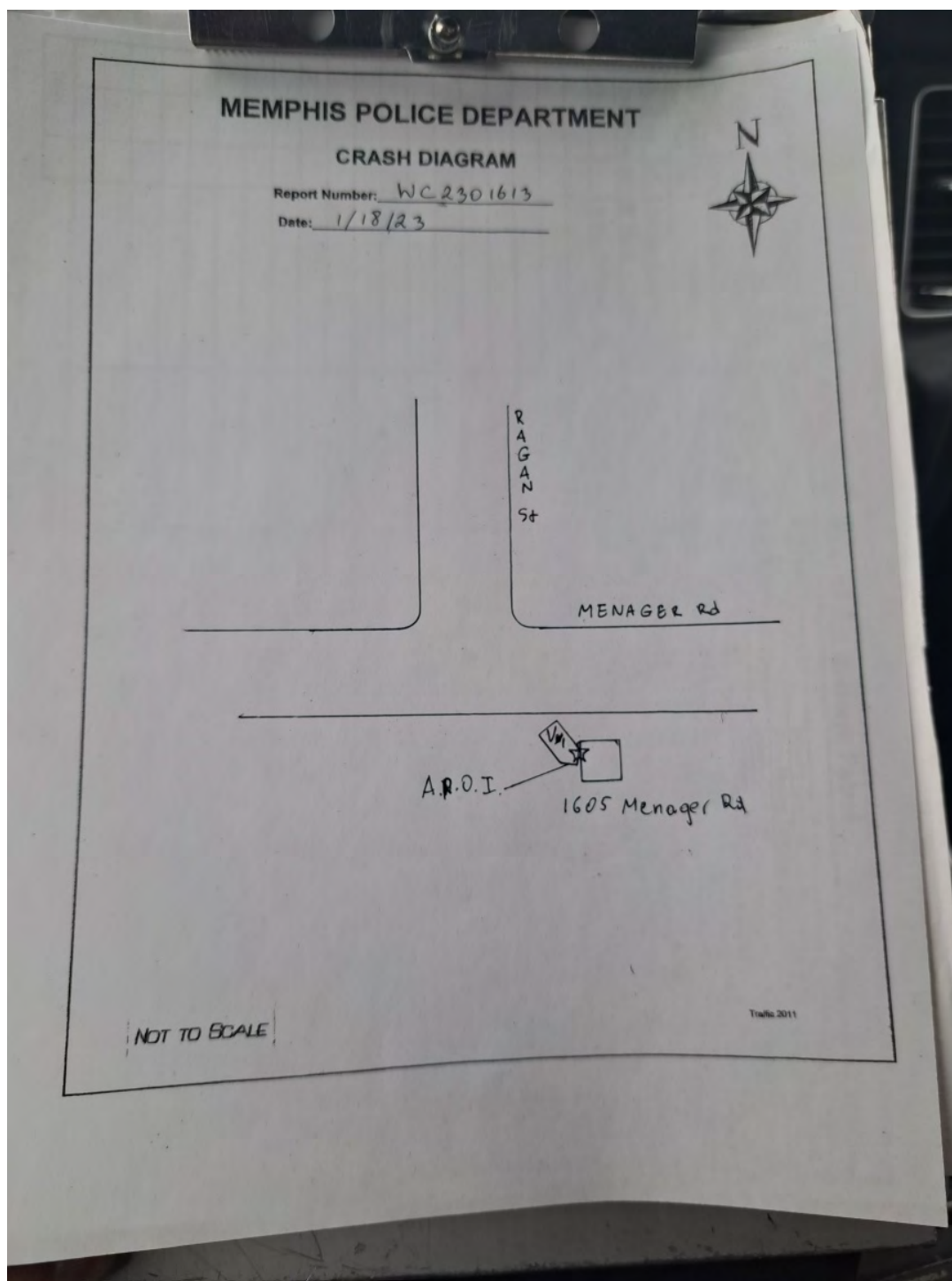
No owner data.

Passengers (vehicle #1)

No passengers.

Damaged Properties

<i>Item:</i> Building	<i>Property Type:</i> Individual/Company/Oth	<i>Damage:</i> Over \$400
<i>Owner:</i> Dep Of Army Superfund	<i>Sex:</i>	<i>Phone #:</i>
<i>Address:</i> 2241 Truitt St	<i>Race:</i>	<i>Drv. Lic.#:</i>
Memphis, TN 38114	<i>DOB:</i>	
	<i>Email:</i> email	

DiagramNarrative

CAD P230180974

On 01/18/2023 at 10:30 hours, Officer J Sniezek (11704) responded to a crash at 1605 Menager Rd .

Compl Denise Cooper employee for Dep of Army Superfund Inviromental, advised that she had showed up at this site today to get her weekly reading of inviromental water supply cleanup, and had found that someone had ran into the building with the car damaging it. Vehicle responsible was no longer on the scene, only vehicle parts were laying all around.

Compl advised that last time she was at this site was on 01.10.23 so it is unknown when the accident had happened.

RTCC camera is located down the street at Manager and Rayner.

January 2023 Vehicle Strike Damage and Subsequent Repairs



Fence and Gate Damage



Fence and Gate Repaired



Building Damage



After Repair

January 2023 Vehicle Strike Damage and Subsequent Repairs



SVE-12 Standpipe and Valve Bank Cover Damage



EW-12 Standpipe Permanent Cap



Valve Bank Cover after Repair