

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL120720\  
 Data File : VL036089.D  
 Acq On : 8 Dec 2020 7:02  
 Operator : SY/AP  
 Sample : L4948-06  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA-3B

Manual Integrations  
 APPROVED

MMDadoda  
 12/11/2020 5:45:28 PM

Quant Time: Dec 08 21:35:21 2020  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL120720AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Mon Dec 0  
 QLast Update : Mon Dec 07 16:56:49 2020  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.68  | 49   | 1106427  | 10.00 | ppbv  | 0.00     |
| 33) 1,4-Difluorobenzene | 7.19  | 114  | 2527086  | 10.00 | ppbv  | 0.00     |
| 55) Chlorobenzene-d5    | 12.11 | 117  | 2271476  | 10.00 | ppbv  | 0.00     |

System Monitoring Compounds

|                             |        |       |          |          |      |         |
|-----------------------------|--------|-------|----------|----------|------|---------|
| 68) 1-Bromo-4-Fluorobenzene | 14.44  | 95    | 1951536  | 10.82    | ppbv | 0.00    |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 108.20% |

| Target Compounds           | R.T.  | QIon | Response | Conc    | Units  | Ovalue |
|----------------------------|-------|------|----------|---------|--------|--------|
| 2) Dichlorodifluoromethane | 3.05  | 85   | 38235    | 0.297   | ppbv   | 99     |
| 3) Chlorodifluoromethane   | 2.99  | 51   | 59394m   | 0.470   | ppbv   |        |
| 4) Chloromethane           | 3.14  | 50   | 35974m   | 0.580   | ppbv   |        |
| 9) Propene                 | 3.02  | 41   | 220258m  | 3.483   | ppbv   |        |
| 10) Heptane                | 8.14  | 43   | 301037   | 1.864   | ppbv   | 100    |
| 11) Trichlorofluoromethane | 3.95  | 101  | 62783    | 0.414   | ppbv   | 95     |
| 13) Ethanol                | 3.61  | 45   | 1057202  | 121.271 | ppbv   | 85     |
| 15) Acetone                | 3.85  | 43   | 1896042  | 14.259  | ppbv   | 94     |
| 20) Methylene Chloride     | 4.36  | 84   | 58260m   | 1.069   | ppbv   |        |
| 26) Hexane                 | 5.70  | 57   | 575515   | 4.814   | ppbv # | 42     |
| 30) Cyclohexane            | 7.15  | 84   | 673975   | 7.674   | ppbv   | 98     |
| 34) 2-Butanone             | 5.26  | 43   | 101078m  | 0.603   | ppbv   |        |
| 35) Carbon Tetrachloride   | 7.04  | 117  | 11277m   | 0.077   | ppbv   |        |
| 36) Benzene                | 6.91  | 78   | 102529   | 0.479   | ppbv   | 95     |
| 44) 2,2,4-Trimethylpentane | 7.89  | 57   | 219373   | 0.566   | ppbv # | 66     |
| 52) Tetrachloroethene      | 11.25 | 164  | 5402m    | 0.070   | ppbv   |        |
| 53) Toluene                | 9.82  | 91   | 1180902  | 4.910   | ppbv   | 98     |
| 58) Ethyl Benzene          | 12.73 | 91   | 628487   | 2.019   | ppbv   | 100    |
| 59) m/p-Xylene             | 12.99 | 91   | 2487332  | 9.487   | ppbv   | 97     |
| 60) o-Xylene               | 13.72 | 91   | 964816   | 3.906   | ppbv   | 97     |
| 72) 4-Ethyltoluene         | 15.86 | 105  | 68354m   | 0.255   | ppbv   |        |
| 73) 1,3,5-Trimethylbenzene | 16.02 | 105  | 57051m   | 0.223   | ppbv   |        |
| 74) 1,2,4-Trimethylbenzene | 16.79 | 105  | 219154m  | 0.854   | ppbv   |        |
| 79) Naphthalene            | 22.24 | 128  | 52487m   | 0.403   | ppbv   |        |

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

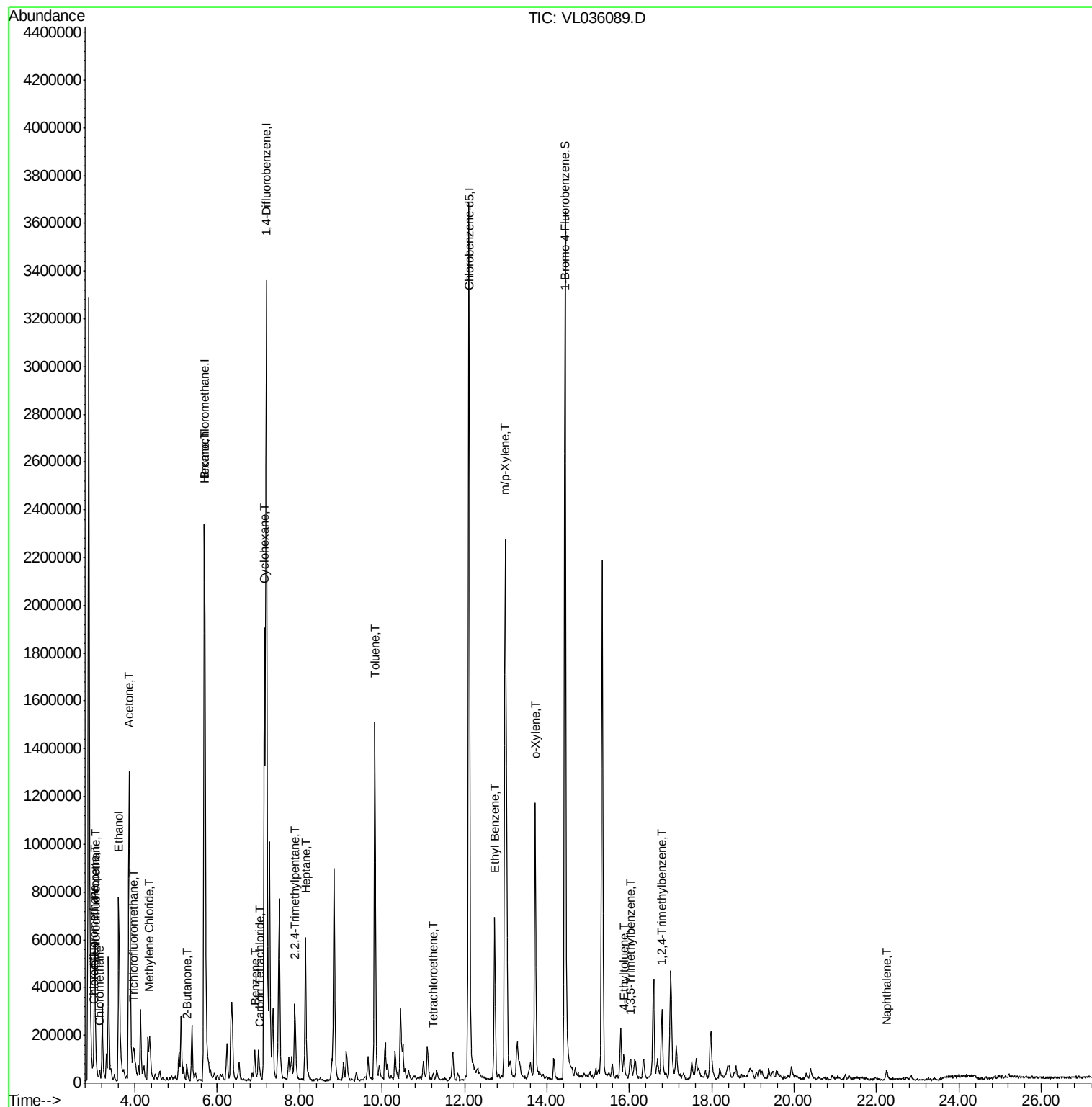
Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL120720\  
Data File : VL036089.D  
Acq On : 8 Dec 2020 7:02  
Operator : SY/AP  
Sample : L4948-06  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

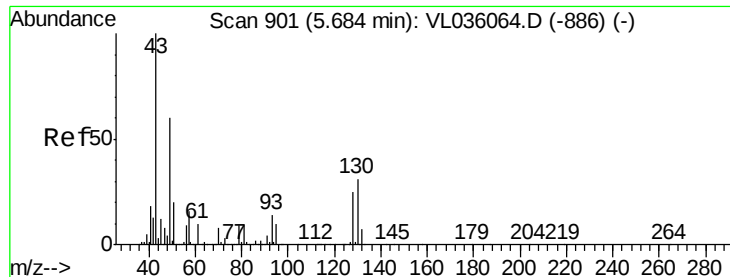
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-3B

Manual Integrations  
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Quant Time: Dec 08 21:35:21 2020  
Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL120720AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Mon Dec  
QLast Update : Mon Dec 07 16:56:49 2020  
Response via : Initial Calibration





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.68 min Scan# 900

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampled :

IA-3B

Tot Ion: 49 Resp: 1106427

Ion Ratio Lower Upper

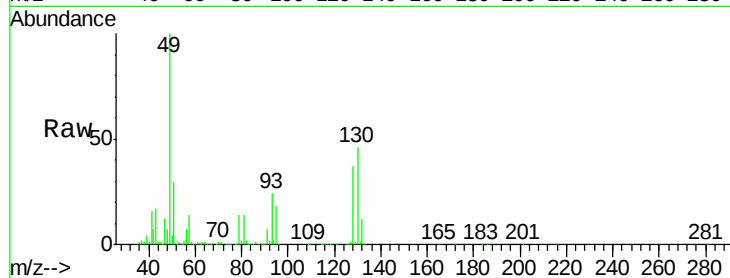
49 100

128 39.4 21.1 63.1

130 50.3 27.1 81.3

Manual Integrations  
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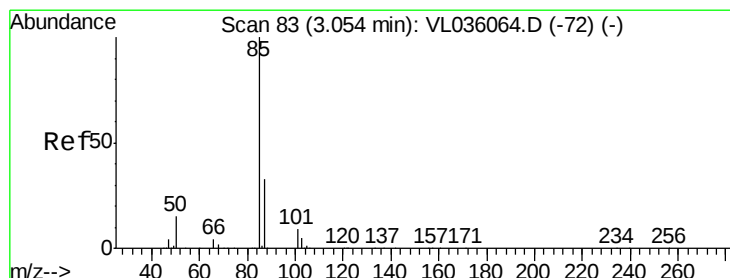
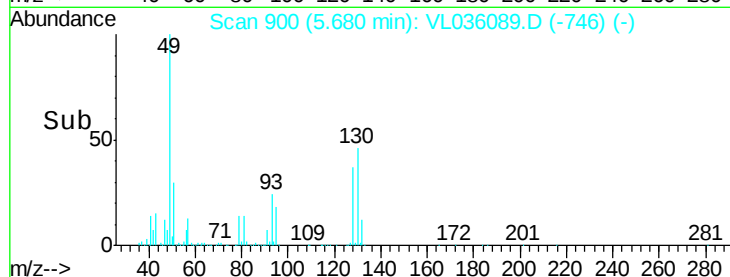
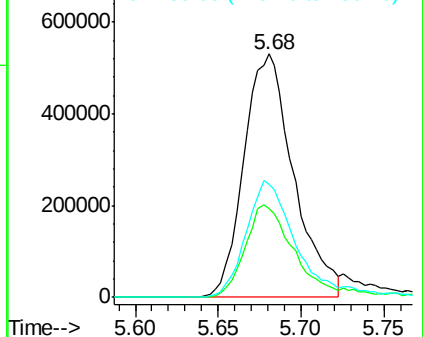
MMDadoda  
12/11/2020 5:45:28 PM



Abundance Ion 49.10 (48.80 to 49.80): VL0

Ion 128.00 (127.70 to 128.70): VL0

Ion 130.00 (129.70 to 130.70): VL0



#2

Dichlorodifluoromethane

Concen: 0.297 ppbv

RT: 3.05 min Scan# 81

Delta R.T. -0.01 min

Lab File: VL036089.D

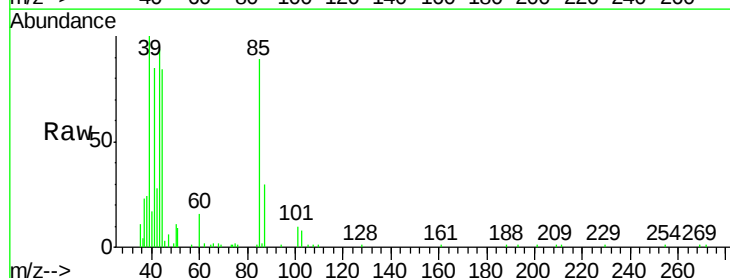
Acq: 8 Dec 2020 7:02

Tgt Ion: 85 Resp: 38235

Ion Ratio Lower Upper

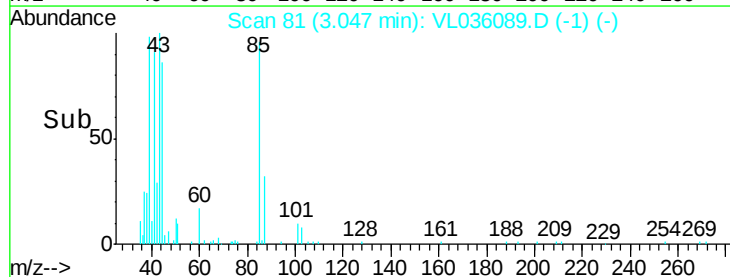
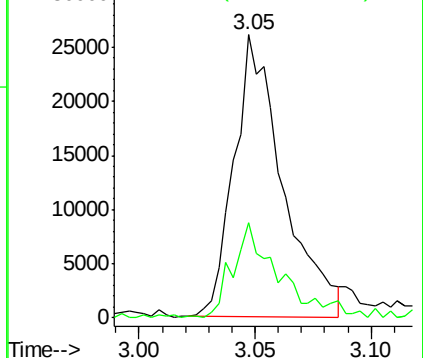
85 100

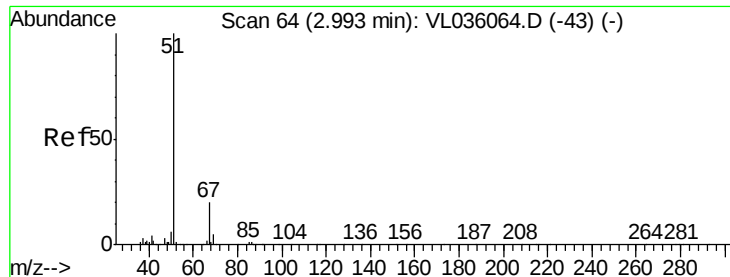
87 33.5 26.5 39.7



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0





#3

Chlorodifluoromethane

Concen: 0.470 ppbv m

RT: 2.99 min Scan# 63

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampled :

IA-3B

Tot Ion: 51 Resp: 59394

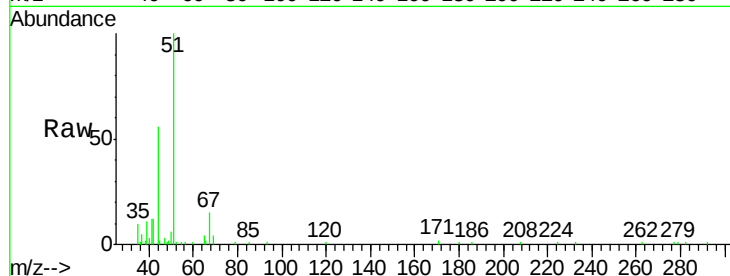
Ion Ratio Lower Upper

51 100

67 0.8 14.3 21.5#

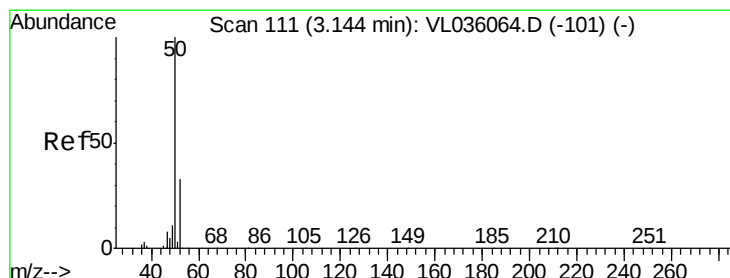
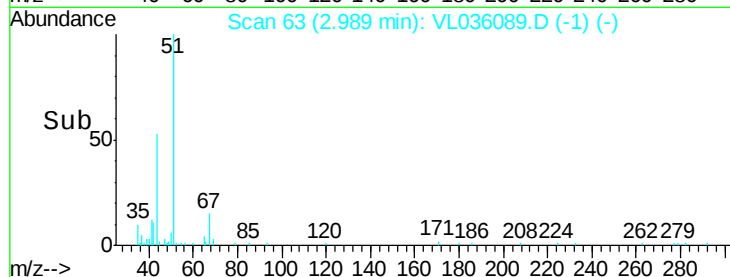
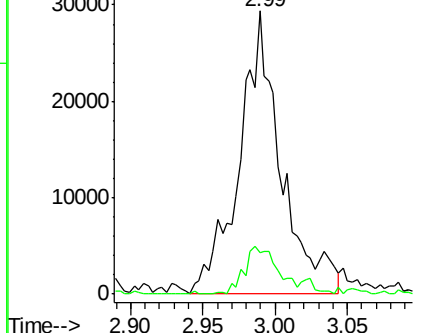
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Abundance Ion 51.00 (50.70 to 51.70): VL0

Ion 67.00 (66.70 to 67.70): VL0



#4

Chloromethane

Concen: 0.580 ppbv m

RT: 3.14 min Scan# 111

Delta R.T. -0.00 min

Lab File: VL036089.D

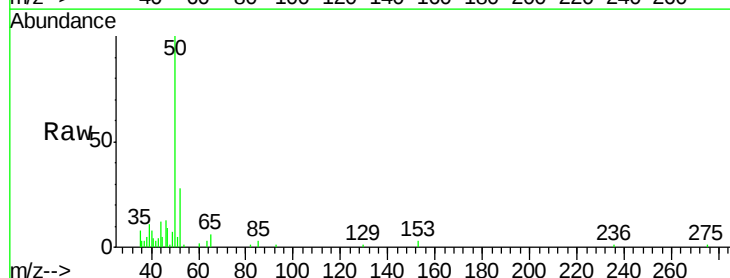
Acq: 8 Dec 2020 7:02

Tgt Ion: 50 Resp: 35974

Ion Ratio Lower Upper

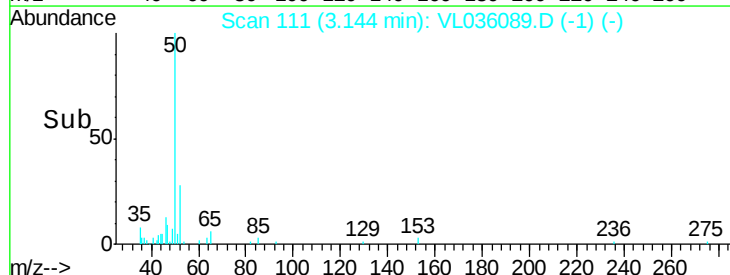
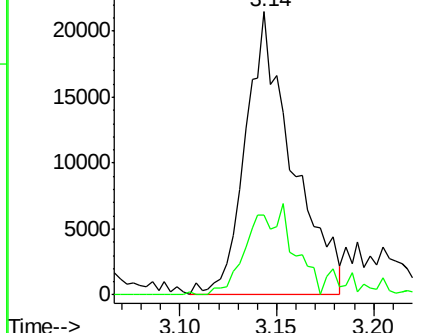
50 100

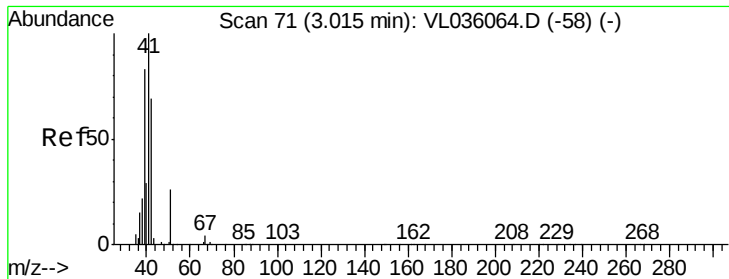
52 28.1 26.1 39.1



Abundance Ion 50.10 (49.80 to 50.80): VL0

Ion 52.10 (51.80 to 52.80): VL0





#9

Propene

Concen: 3.483 ppbv m

RT: 3.02 min Scan# 72

Delta R.T. 0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampleId :

IA-3B

Tot Ion: 41 Resp: 220258

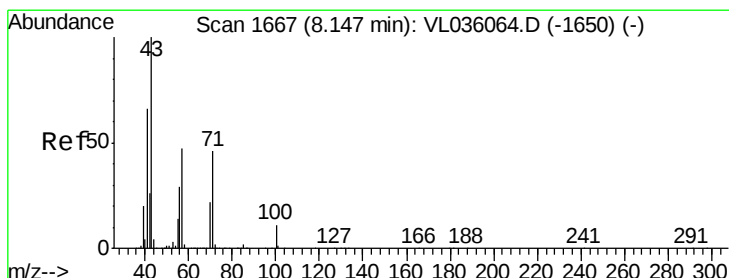
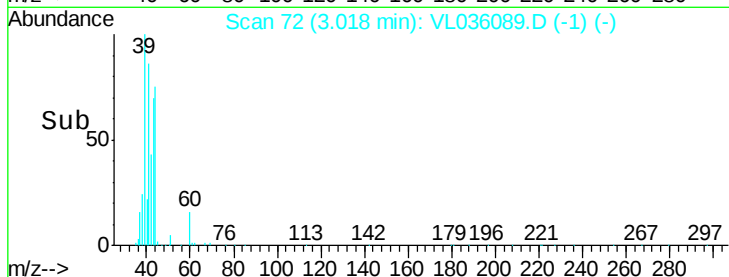
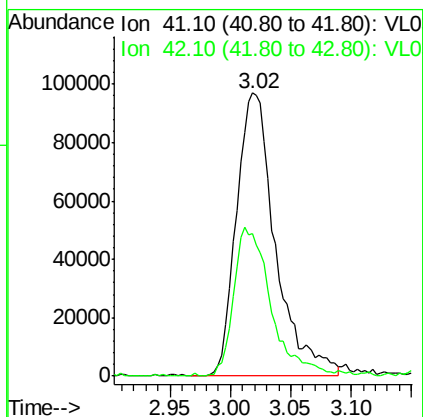
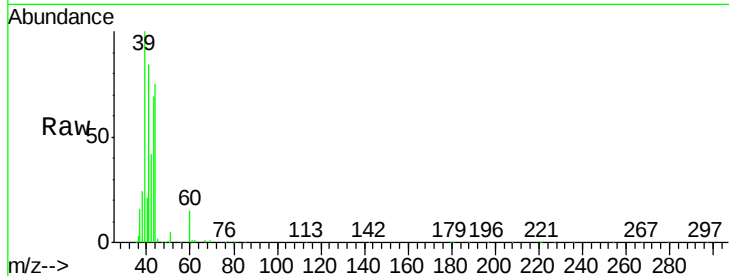
Ion Ratio Lower Upper

41 100

42 32.2 57.0 85.6#

Manual Integrations  
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#10

Heptane

Concen: 1.864 ppbv

RT: 8.14 min Scan# 1665

Delta R.T. -0.01 min

Lab File: VL036089.D

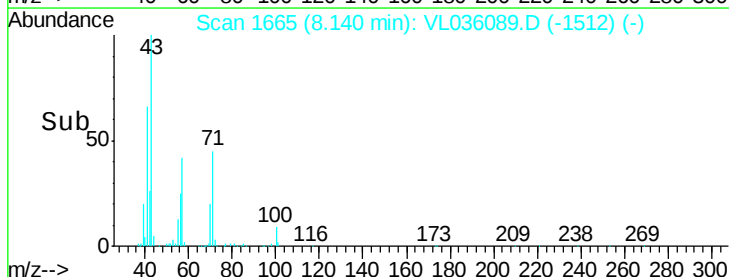
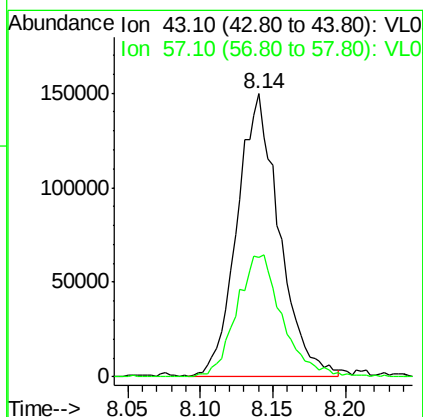
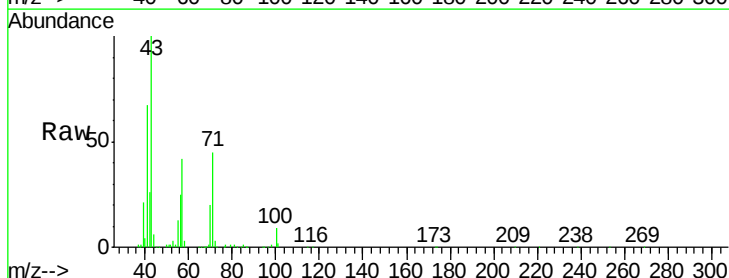
Acq: 8 Dec 2020 7:02

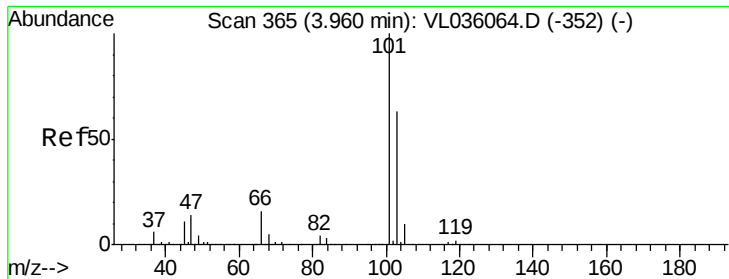
Tgt Ion: 43 Resp: 301037

Ion Ratio Lower Upper

43 100

57 47.4 37.9 56.9





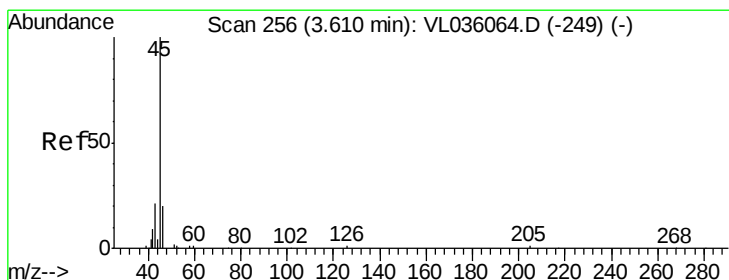
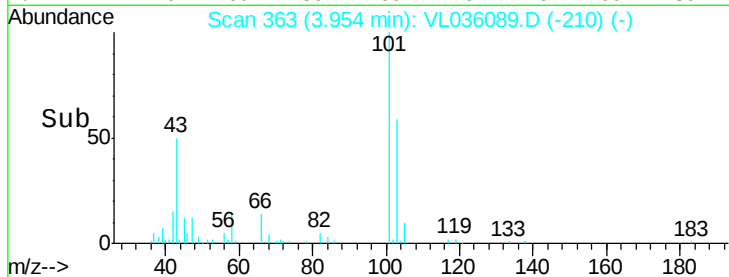
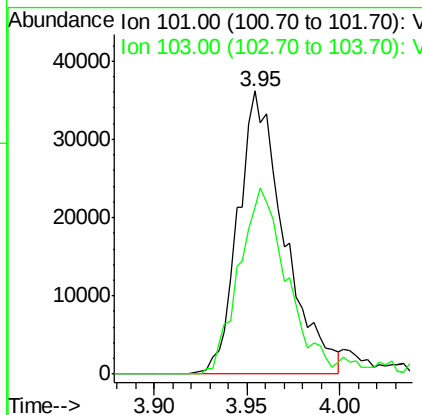
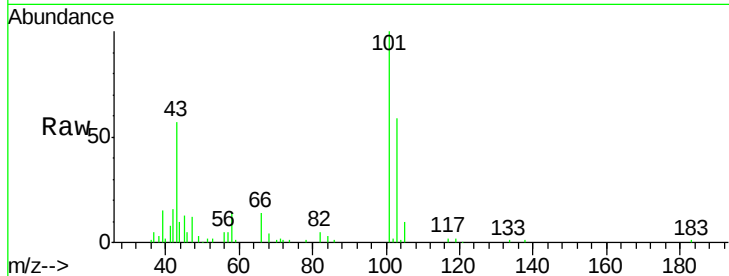
#11  
 Trichlorofluoromethane  
 Concen: 0.414 ppbv  
 RT: 3.95 min Scan# 363  
 Delta R.T. -0.01 min  
 Lab File: VL036089.D  
 Acq: 8 Dec 2020 7:02

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA-3B

Tot Ion:101 Resp: 62783  
 Ion Ratio Lower Upper  
 101 100  
 103 59.0 50.3 75.5

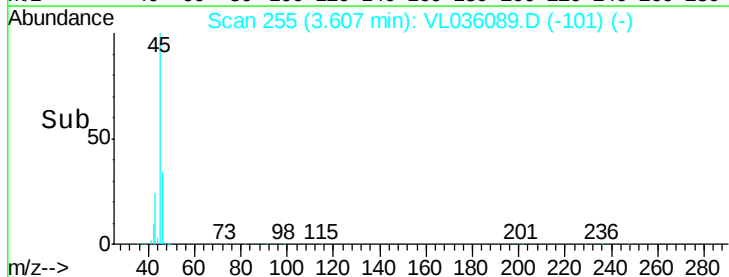
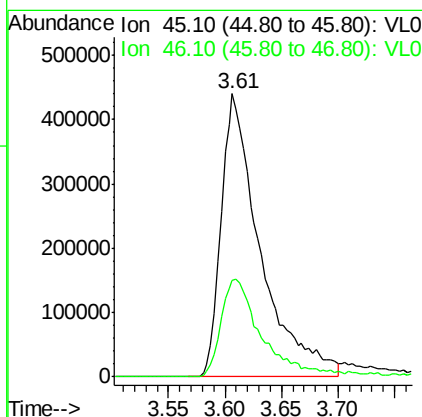
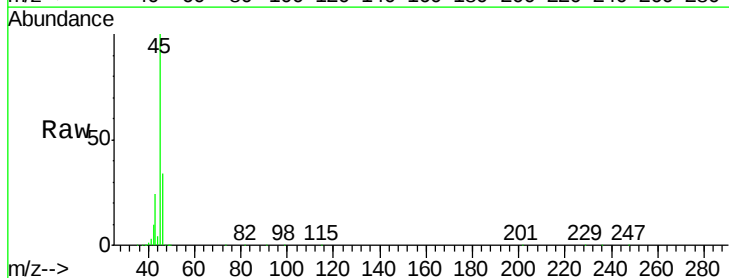
Manual Integrations  
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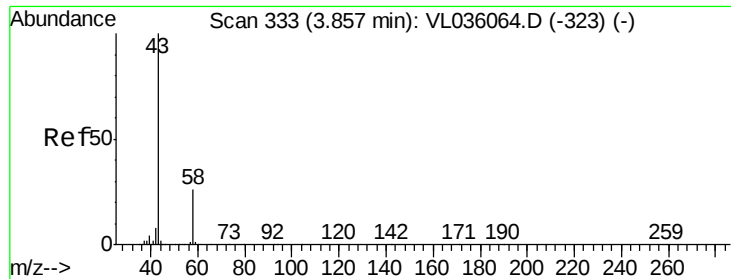
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#13  
 Ethanol  
 Concen: 121.271 ppbv  
 RT: 3.61 min Scan# 255  
 Delta R.T. -0.00 min  
 Lab File: VL036089.D  
 Acq: 8 Dec 2020 7:02

Tgt Ion: 45 Resp: 1057202  
 Ion Ratio Lower Upper  
 45 100  
 46 37.5 19.0 75.8





#15

Acetone

Concen: 14.259 ppbv

RT: 3.85 min Scan# 332

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampleID :

IA-3B

Tot Ion: 43 Resp: 1896042

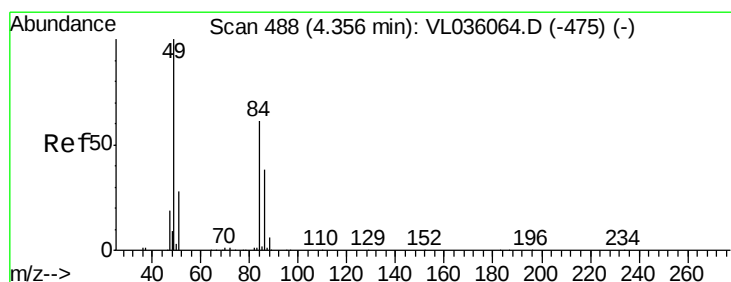
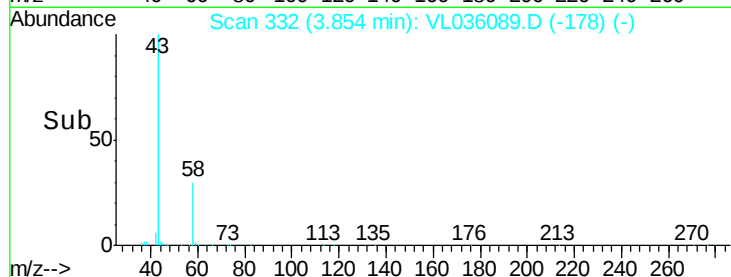
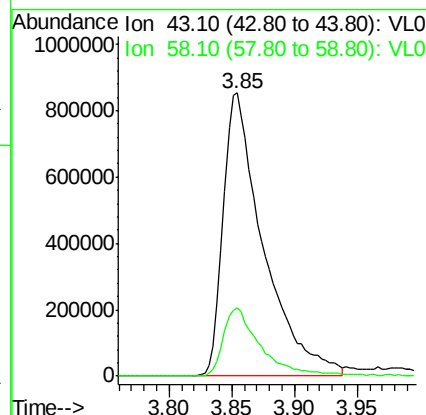
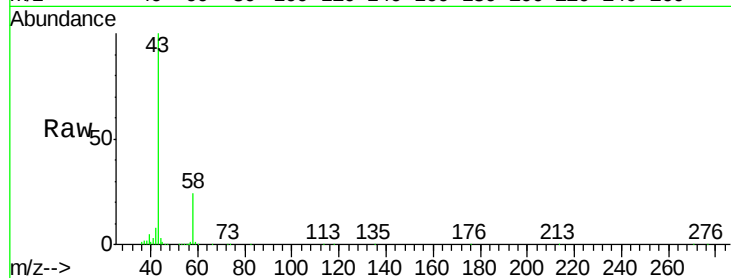
Ion Ratio Lower Upper

43 100

58 23.2 20.9 31.3

Manual Integrations  
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#20

Methylene Chloride

Concen: 1.069 ppbv m

RT: 4.36 min Scan# 488

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Tgt Ion: 84 Resp: 58260

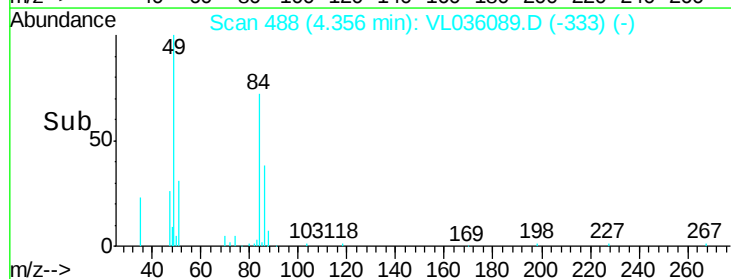
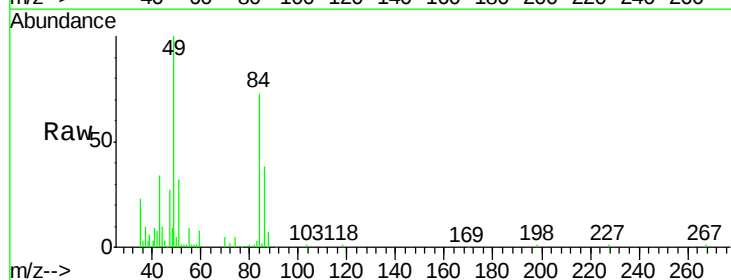
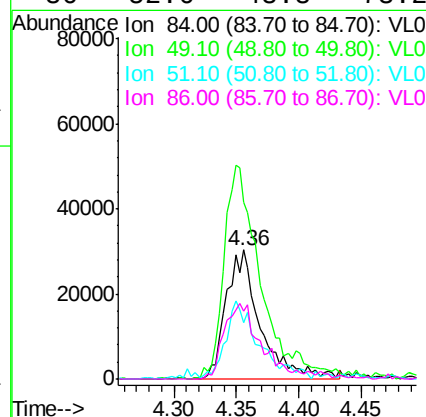
Ion Ratio Lower Upper

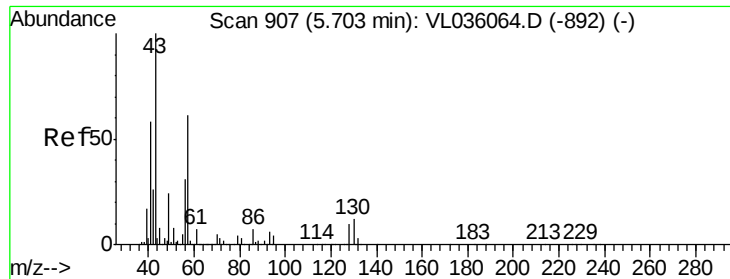
84 100

49 137.2 133.0 199.4

51 43.7 38.9 58.3

86 52.6 48.8 73.2





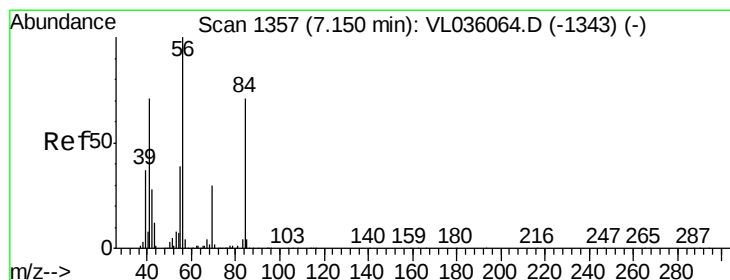
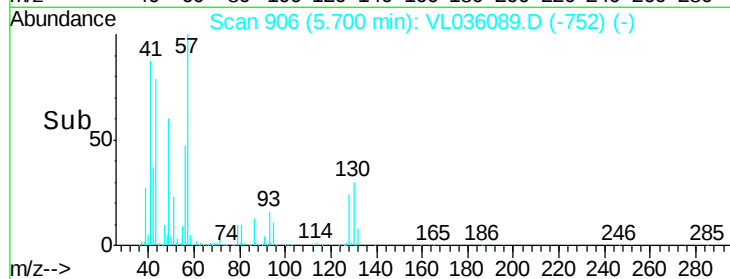
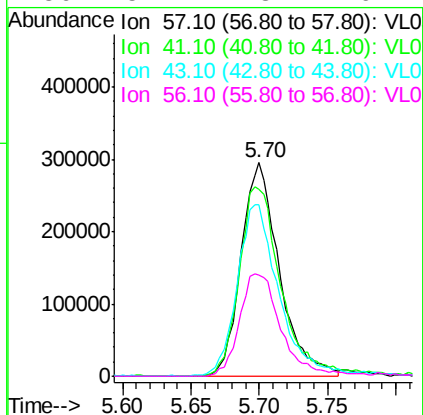
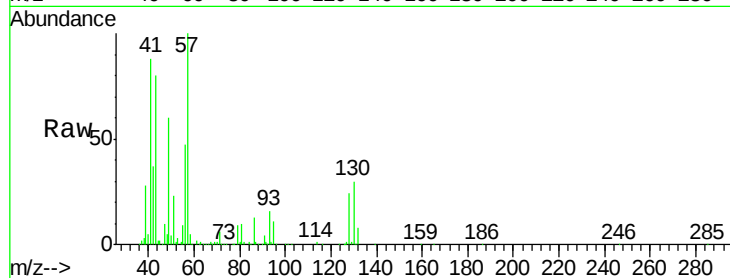
#26  
Hexane  
Concen: 4.814 ppbv  
RT: 5.70 min Scan# 906  
Delta R.T. -0.00 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-3B

| Tot Ion | 57    | Resp  | 575515 |
|---------|-------|-------|--------|
| Ion     | Ratio | Lower | Upper  |
| 57      | 100   |       |        |
| 41      | 98.5  | 82.9  | 124.3  |
| 43      | 89.1  | 199.9 | 299.9# |
| 56      | 52.1  | 43.1  | 64.7   |

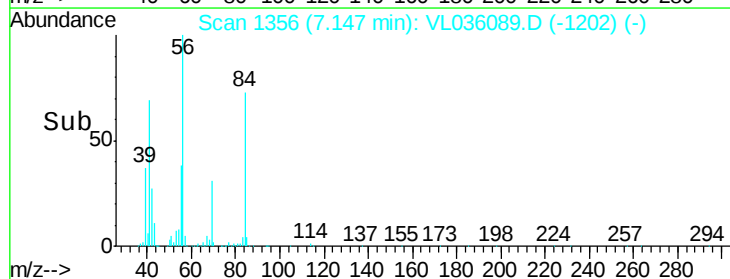
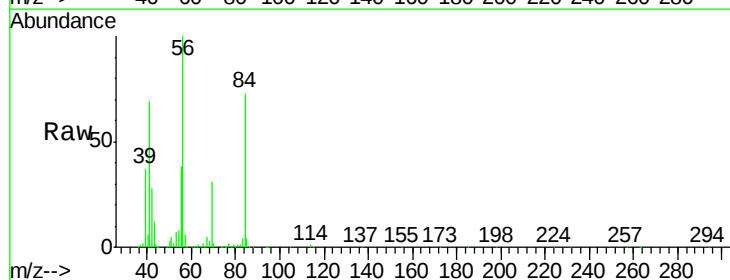
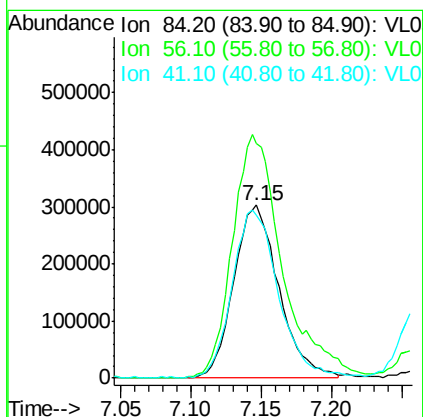
Manual Integrations  
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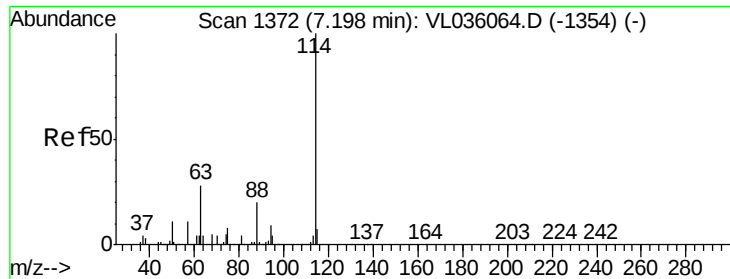
MMDadoda  
12/11/2020 5:45:28 PM



#30  
Cyclohexane  
Concen: 7.674 ppbv  
RT: 7.15 min Scan# 1356  
Delta R.T. -0.00 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

| Tgt Ion | 84    | Resp  | 673975 |
|---------|-------|-------|--------|
| Ion     | Ratio | Lower | Upper  |
| 84      | 100   |       |        |
| 56      | 157.1 | 128.0 | 192.0  |
| 41      | 99.8  | 81.3  | 121.9  |





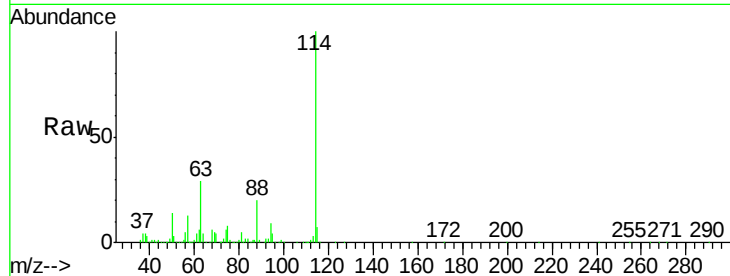
#33  
 1,4-Difluorobenzene  
 Concen: 10.000 ppbv  
 RT: 7.19 min Scan# 1369  
 Delta R.T. -0.01 min  
 Lab File: VL036089.D  
 Acq: 8 Dec 2020 7:02

Instrument :  
 MSVOA\_L  
 ClientSampled :  
 IA-3B

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 114     | 100   |       |       |
| 63      | 31.1  | 23.6  | 35.4  |
| 88      | 20.5  | 15.8  | 23.6  |

Manual Integrations  
 APPROVED

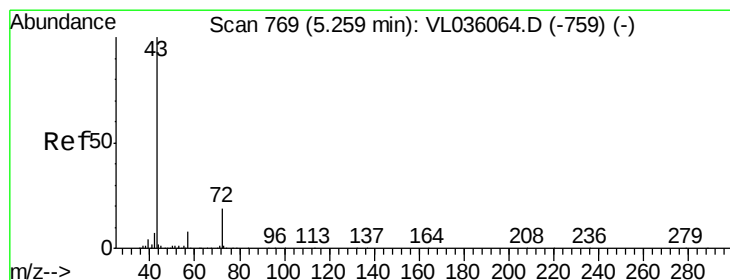
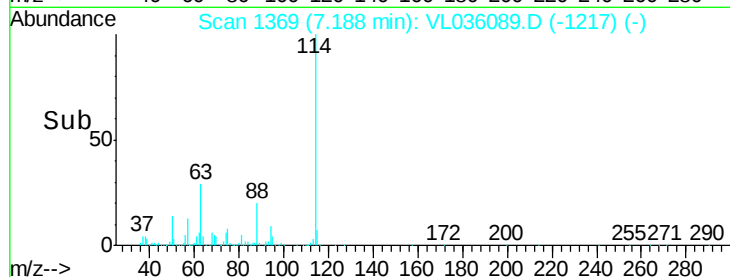
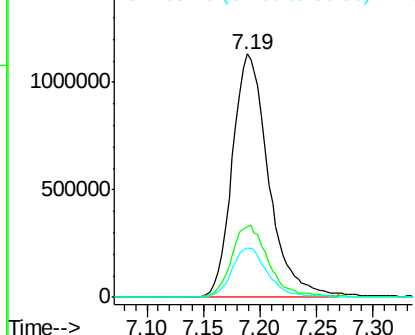
MMDadoda  
 12/11/2020 5:45:28 PM



Abundance Ion 114.10 (113.80 to 114.80): VL036064.D (-1354) (-)

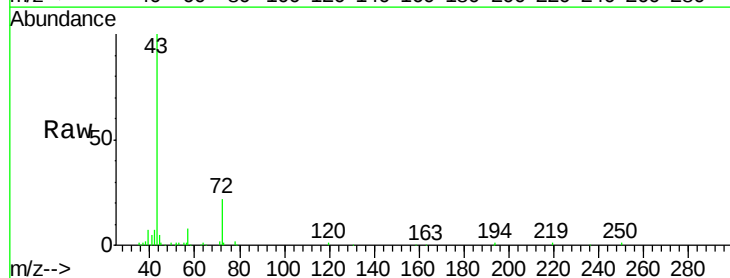
Ion 63.10 (62.80 to 63.80): VL036064.D (-1354) (-)

Ion 88.10 (87.80 to 88.80): VL036064.D (-1354) (-)



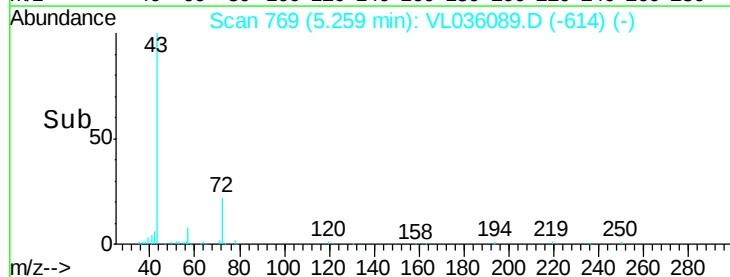
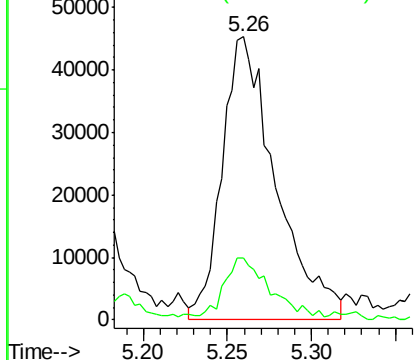
#34  
 2-Butanone  
 Concen: 0.603 ppbv m  
 RT: 5.26 min Scan# 769  
 Delta R.T. -0.00 min  
 Lab File: VL036089.D  
 Acq: 8 Dec 2020 7:02

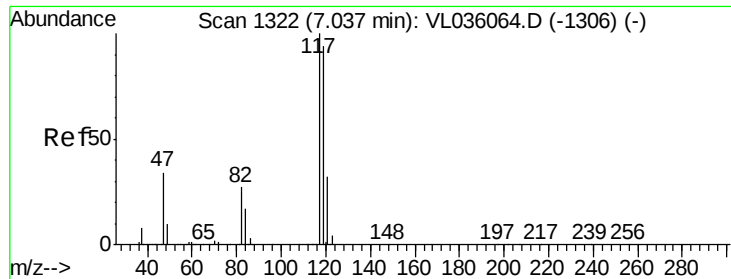
| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 43      | 100   |       |       |
| 72      | 21.2  | 16.5  | 24.7  |



Abundance Ion 43.10 (42.80 to 43.80): VL036064.D (-759) (-)

Ion 72.10 (71.80 to 72.80): VL036064.D (-759) (-)





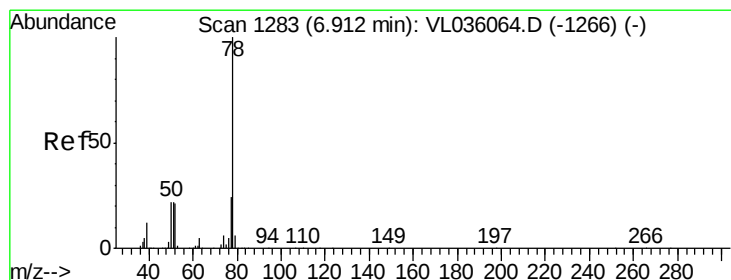
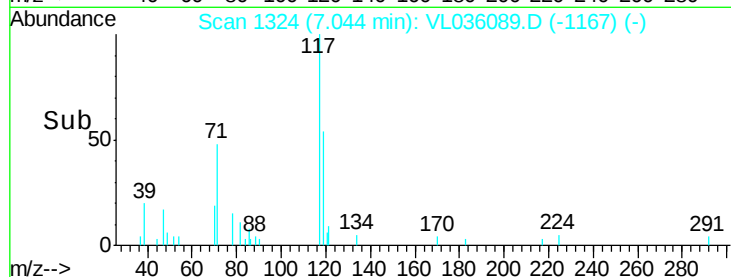
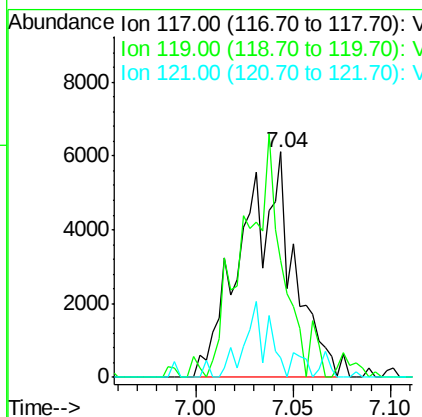
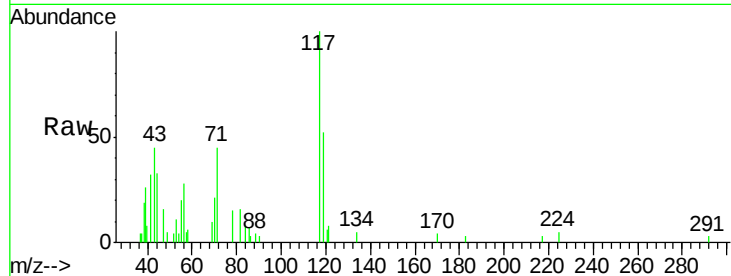
#35  
Carbon Tetrachloride  
Concen: 0.077 ppbv m  
RT: 7.04 min Scan# 1324  
Delta R.T. 0.01 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-3B

| Tot Ion | Ratio | Lower | Upper  |
|---------|-------|-------|--------|
| 117     | 100   |       |        |
| 119     | 51.6  | 75.1  | 112.7# |
| 121     | 8.5   | 25.6  | 38.4#  |

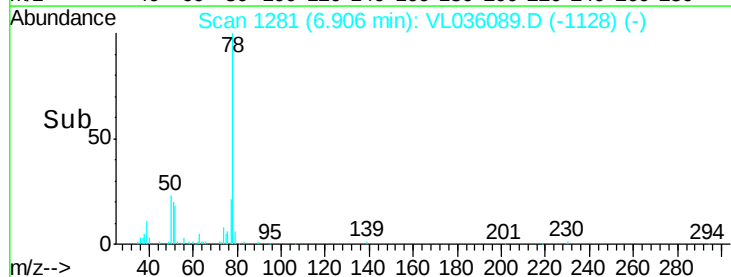
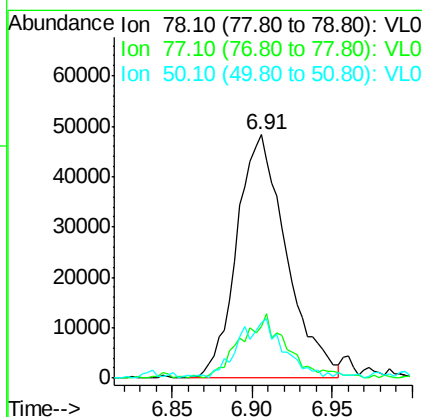
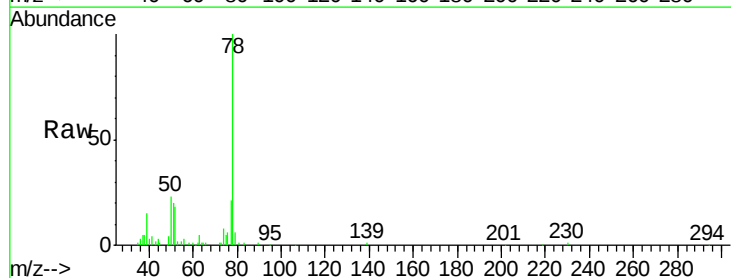
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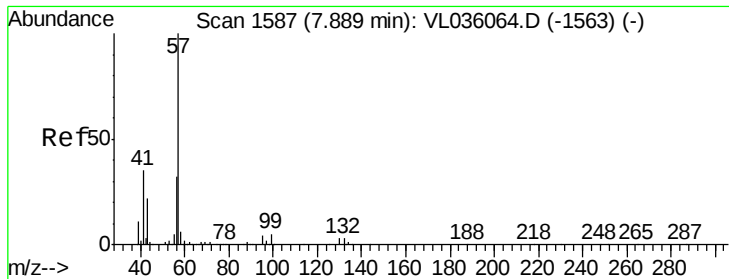
MMDadoda  
12/11/2020 5:45:28 PM



#36  
Benzene  
Concen: 0.479 ppbv  
RT: 6.91 min Scan# 1281  
Delta R.T. -0.01 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 78      | 100   |       |       |
| 77      | 20.7  | 19.4  | 29.2  |
| 50      | 21.5  | 17.8  | 26.8  |





#44

2,2,4-Trimethylpentane

Concen: 0.566 ppbv

RT: 7.89 min Scan# 1586

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

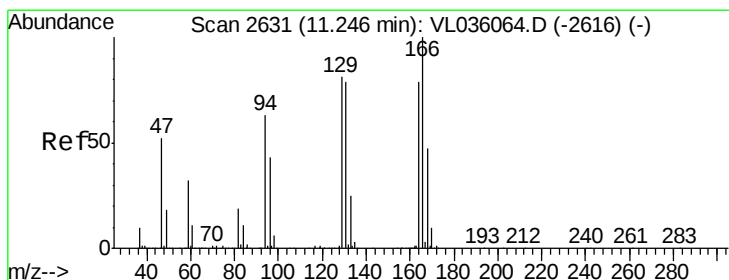
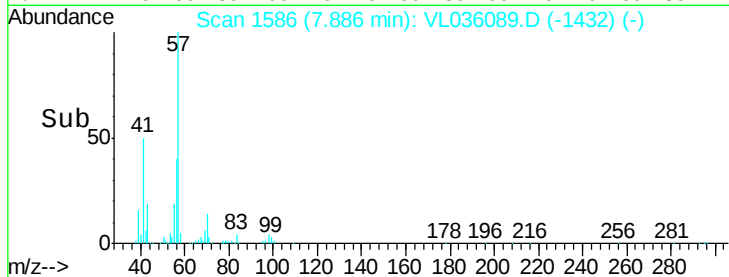
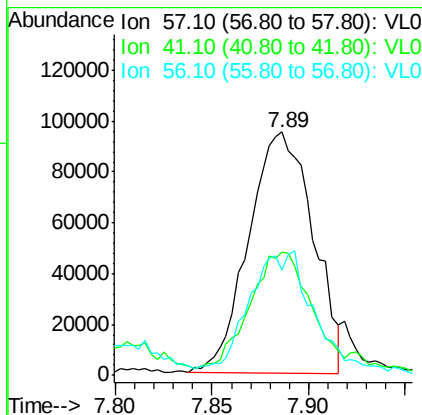
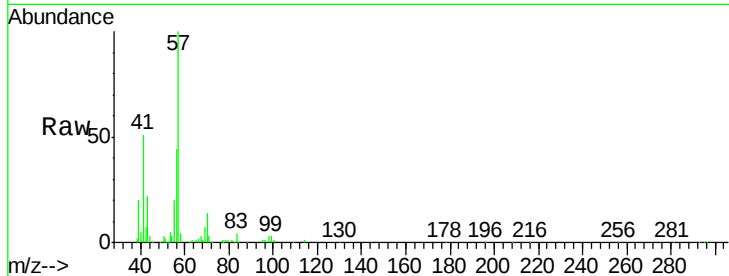
ClientSampled :

IA-3B

|           |      |       |        |
|-----------|------|-------|--------|
| Tot Ion:  | 57   | Resp: | 219373 |
| Ion Ratio |      | Lower | Upper  |
| 57        | 100  |       |        |
| 41        | 53.6 | 28.9  | 43.3#  |
| 56        | 53.6 | 25.3  | 37.9#  |

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12/11/2020 5:45:28 PM



#52

Tetrachloroethene

Concen: 0.070 ppbv m

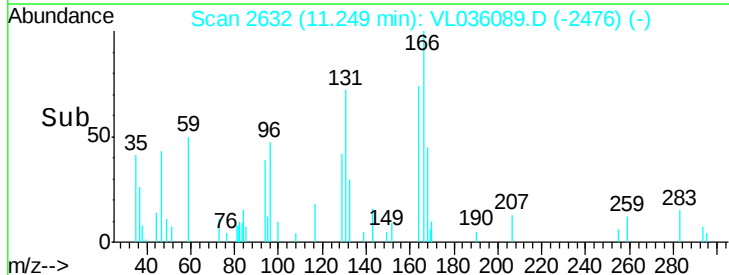
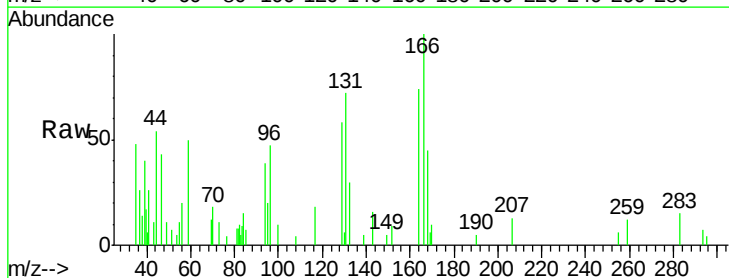
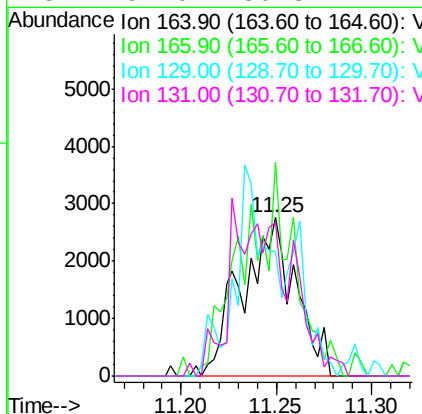
RT: 11.25 min Scan# 2632

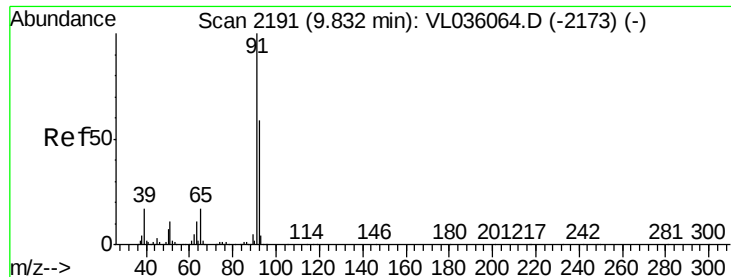
Delta R.T. 0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

|           |       |       |        |
|-----------|-------|-------|--------|
| Tgt Ion:  | 164   | Resp: | 5402   |
| Ion Ratio |       | Lower | Upper  |
| 164       | 100   |       |        |
| 166       | 134.8 | 101.9 | 152.9  |
| 129       | 78.4  | 82.1  | 123.1# |
| 131       | 97.0  | 80.8  | 121.2  |





#53

Toluene

Concen: 4.910 ppbv

RT: 9.82 min Scan# 2188

Delta R.T. -0.01 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampleId :

IA-3B

Tot Ion: 91 Resp: 1180902

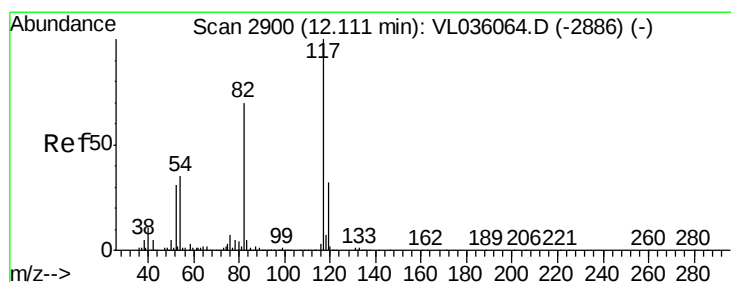
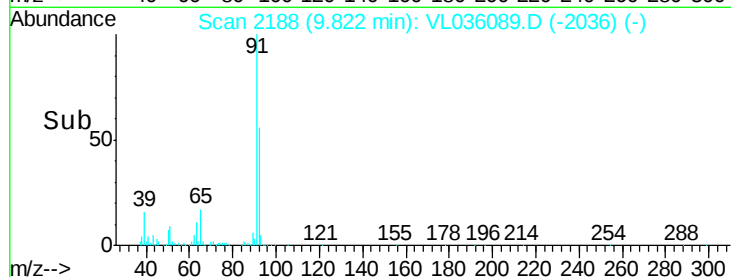
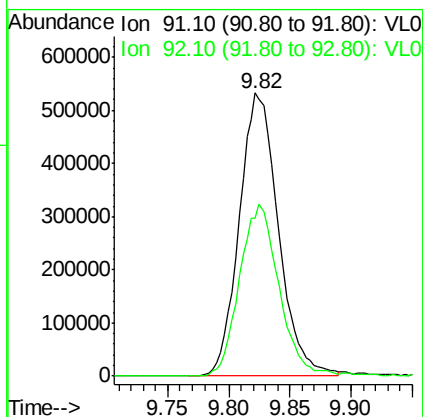
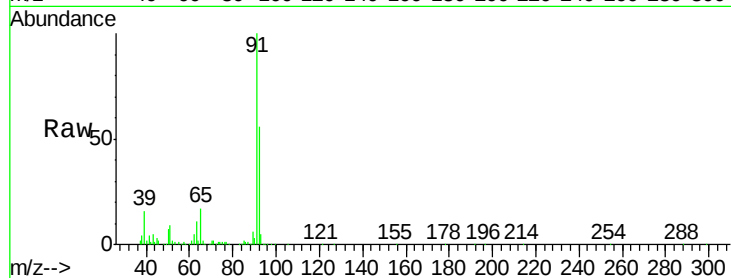
Ion Ratio Lower Upper

91 100

92 61.9 48.2 72.2

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#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.11 min Scan# 2899

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

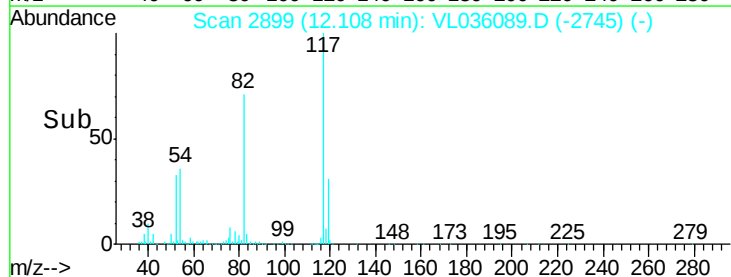
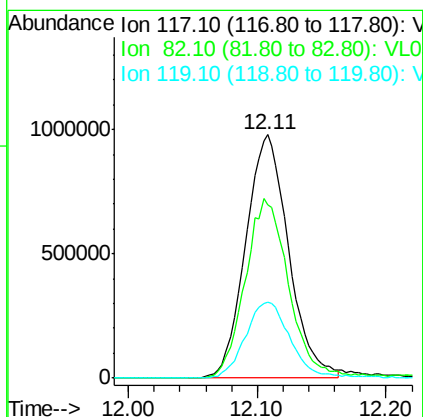
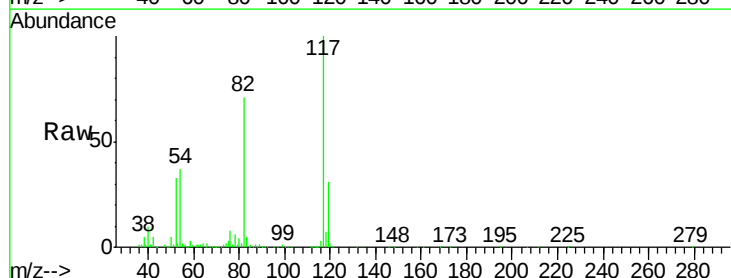
Tgt Ion: 117 Resp: 2271476

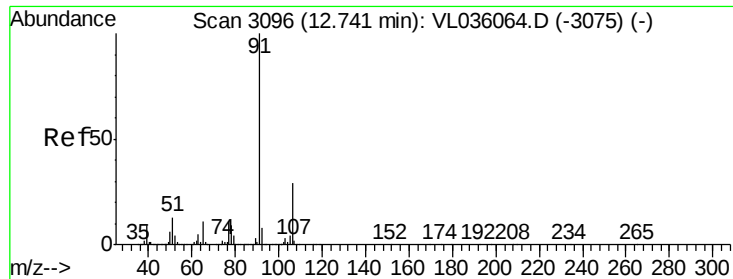
Ion Ratio Lower Upper

117 100

82 77.2 0.0 0.0#

119 33.1 0.0 0.0#





#58

Ethyl Benzene

Concen: 2.019 ppbv

RT: 12.73 min Scan# 3093

Delta R.T. -0.01 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

ClientSampleId :

IA-3B

Tot Ion: 91 Resp: 628487

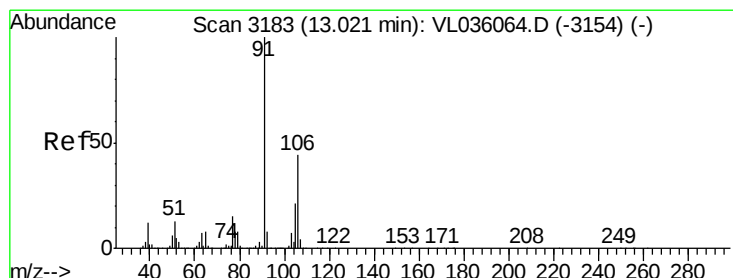
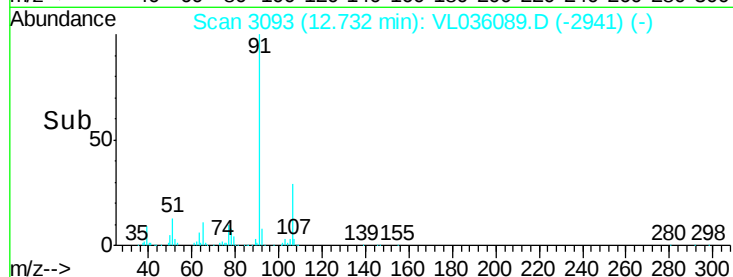
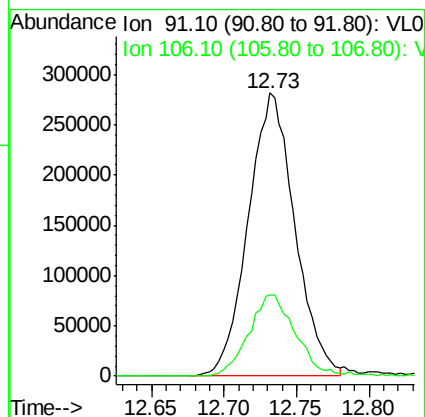
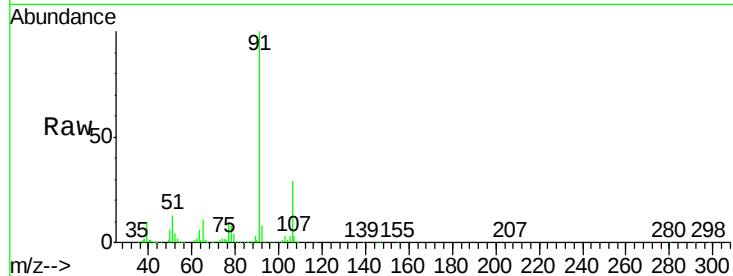
Ion Ratio Lower Upper

91 100

106 28.9 23.0 34.4

Manual Integrations  
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12/11/2020 5:45:28 PM



#59

m/p-Xylene

Concen: 9.487 ppbv

RT: 12.99 min Scan# 3173

Delta R.T. -0.03 min

Lab File: VL036089.D

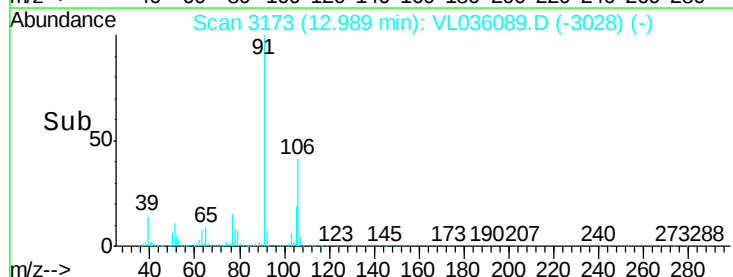
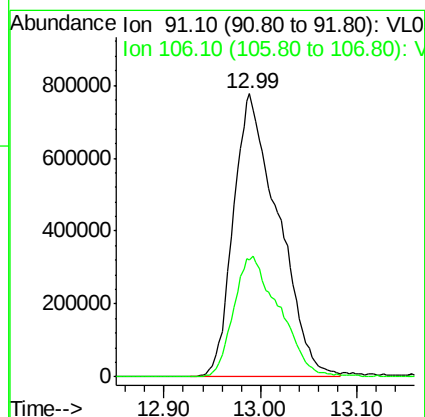
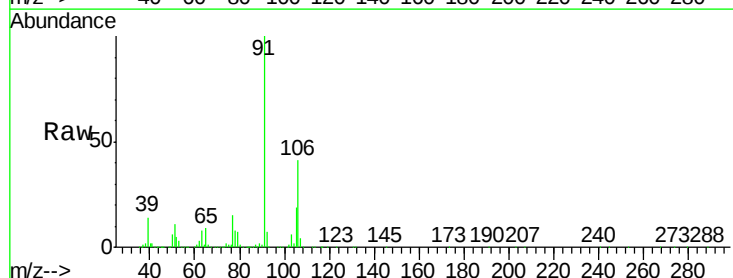
Acq: 8 Dec 2020 7:02

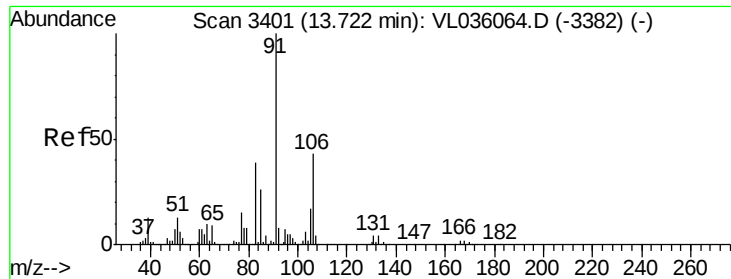
Tgt Ion: 91 Resp: 2487332

Ion Ratio Lower Upper

91 100

106 44.0 33.6 50.4





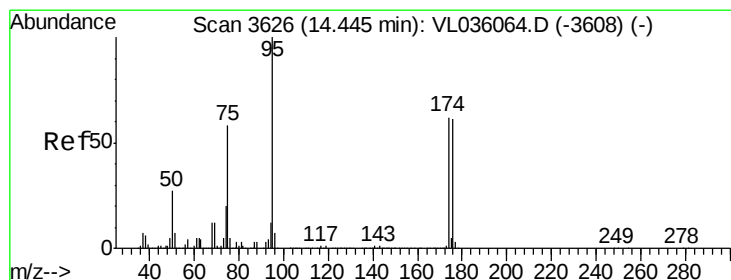
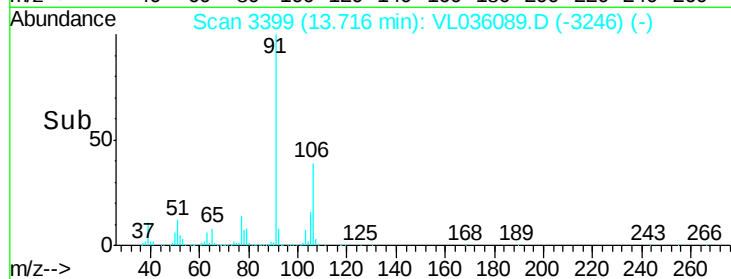
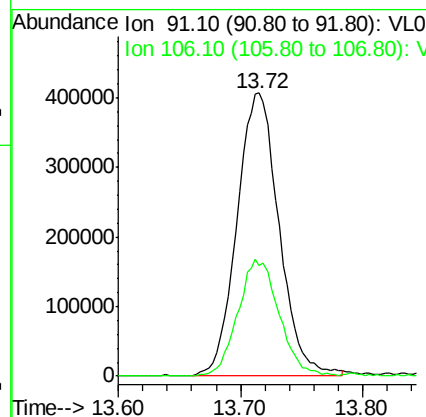
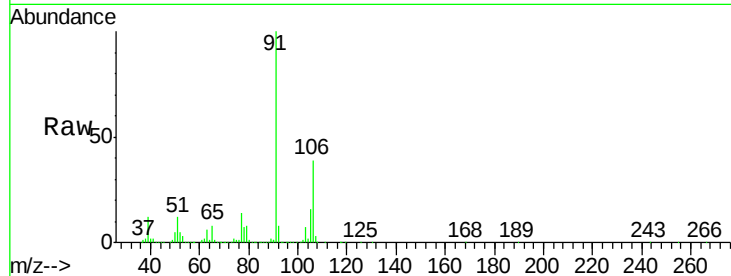
#60  
o-Xylene  
Concen: 3.906 ppbv  
RT: 13.72 min Scan# 3399  
Delta R.T. -0.01 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-3B

Tot Ion: 91 Resp: 964816  
Ion Ratio Lower Upper  
91 100  
106 41.0 21.6 64.6

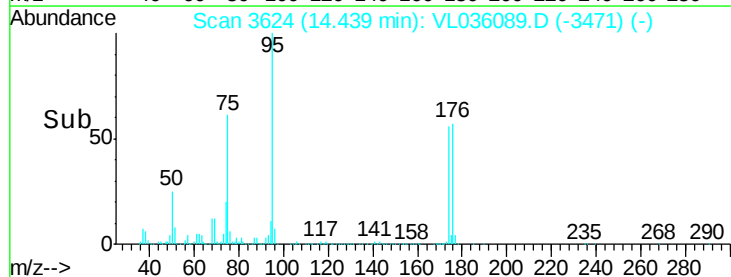
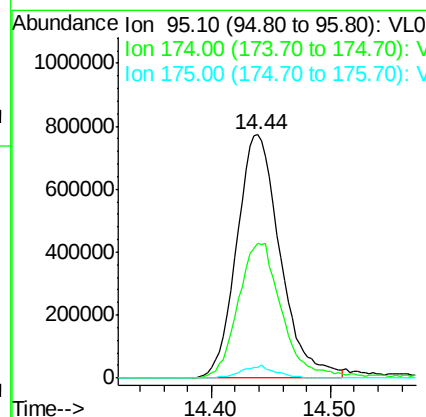
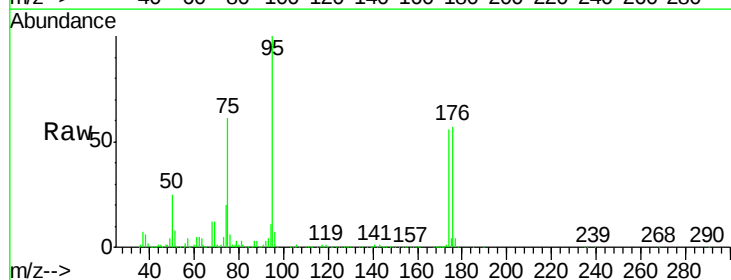
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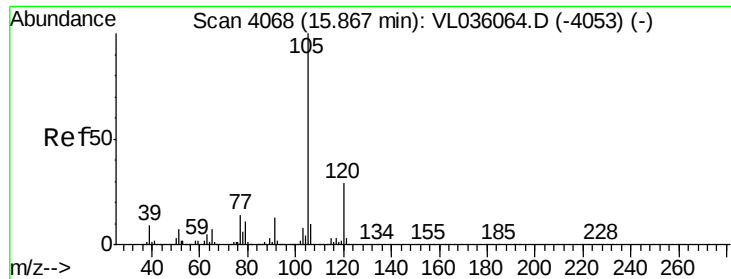
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12/11/2020 5:45:28 PM



#68  
1-Bromo-4-Fluorobenzene  
Concen: 10.820 ppbv  
RT: 14.44 min Scan# 3624  
Delta R.T. -0.01 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

Tgt Ion: 95 Resp: 1951536  
Ion Ratio Lower Upper  
95 100  
174 57.9 50.7 76.1  
175 4.3 4.0 6.0





#72

4-Ethyltoluene

Concen: 0.255 ppbv m

RT: 15.86 min Scan# 4067

Delta R.T. -0.00 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

Instrument :

MSVOA\_L

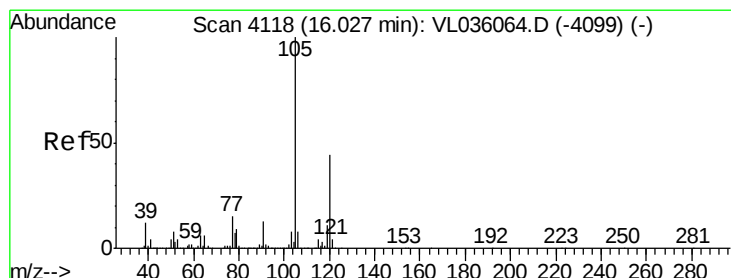
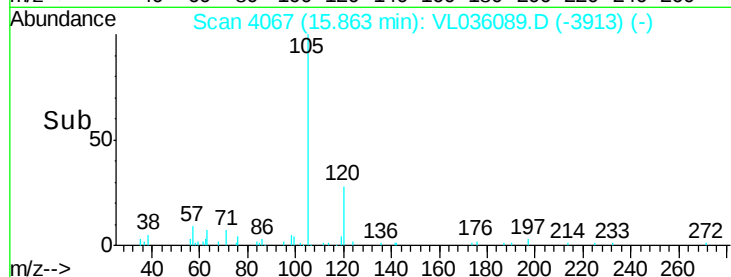
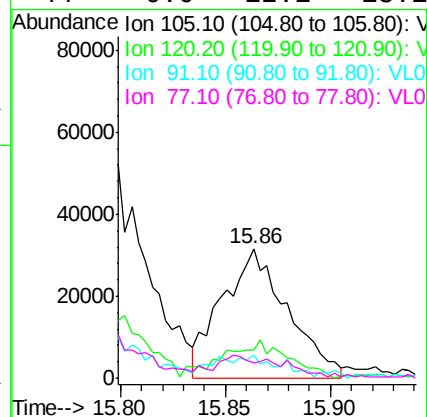
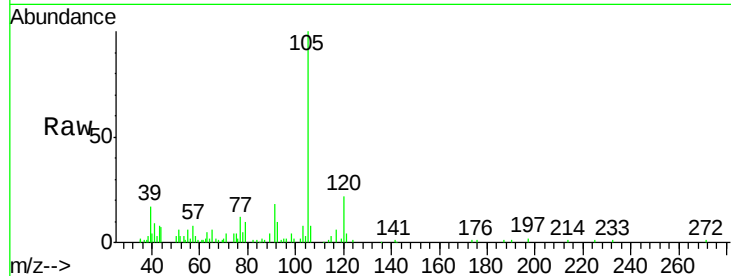
ClientSampled :

IA-3B

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 105     | 100   |       |       |
| 120     | 26.6  | 23.6  | 35.4  |
| 91      | 15.6  | 11.4  | 17.0  |
| 77      | 0.0   | 12.1  | 18.1# |

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#73

1,3,5-Trimethylbenzene

Concen: 0.223 ppbv m

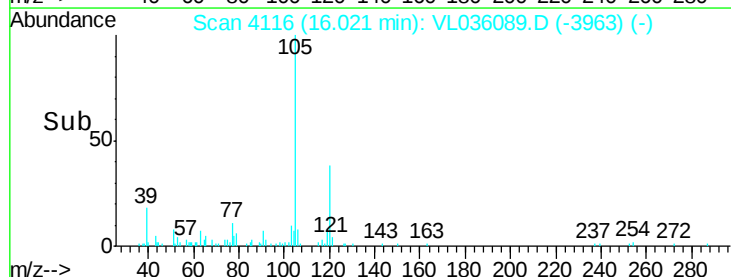
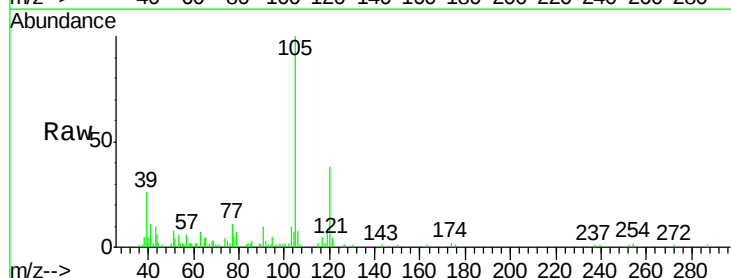
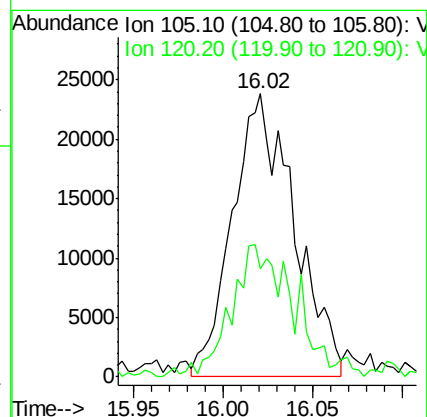
RT: 16.02 min Scan# 4116

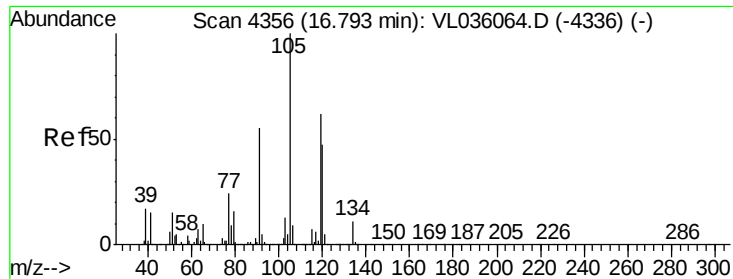
Delta R.T. -0.01 min

Lab File: VL036089.D

Acq: 8 Dec 2020 7:02

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 105     | 100   |       |       |
| 120     | 38.0  | 35.4  | 53.2  |





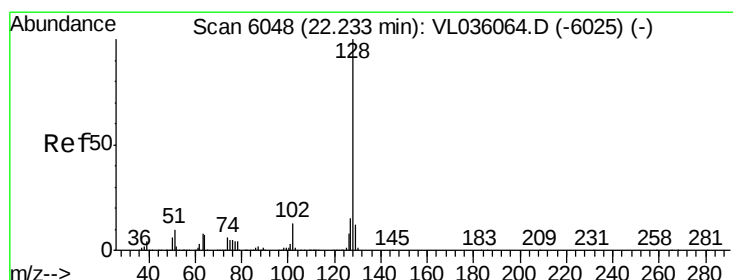
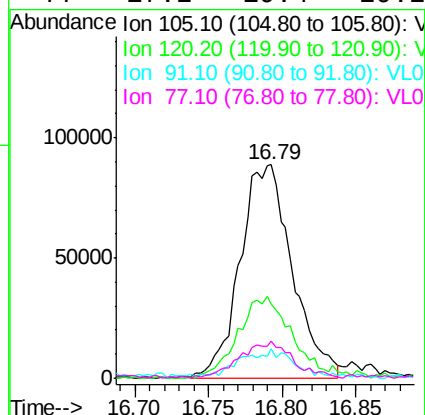
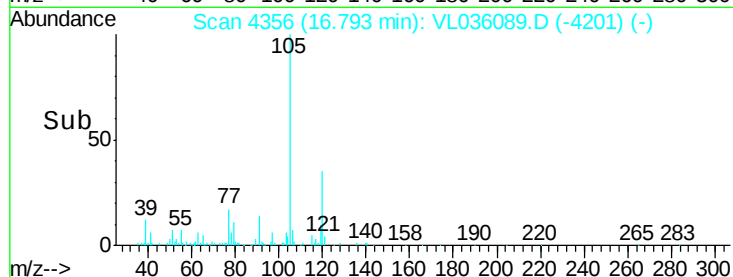
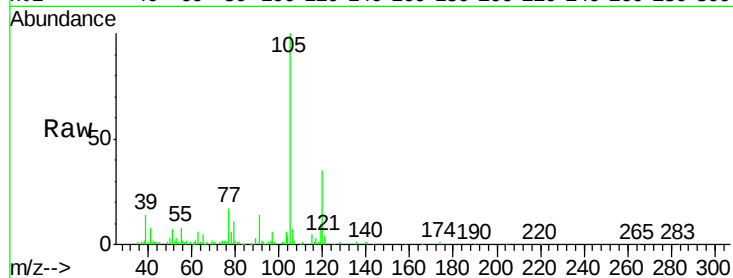
#74  
1,2,4-Trimethylbenzene  
Concen: 0.854 ppbv m  
RT: 16.79 min Scan# 4356  
Delta R.T. -0.00 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-3B

| Tot Ion | Ratio | Resp   | Lower | Upper |
|---------|-------|--------|-------|-------|
| 105     | 100   | 219154 |       |       |
| 120     | 34.7  | 37.4   | 56.0# |       |
| 91      | 14.0  | 45.6   | 68.4# |       |
| 77      | 17.2  | 19.4   | 29.2# |       |

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#79  
Naphthalene  
Concen: 0.403 ppbv m  
RT: 22.24 min Scan# 6050  
Delta R.T. 0.01 min  
Lab File: VL036089.D  
Acq: 8 Dec 2020 7:02

| Tgt Ion | Ratio | Resp  | Lower | Upper |
|---------|-------|-------|-------|-------|
| 128     | 100   | 52487 |       |       |
| 127     | 13.5  | 11.7  | 17.5  |       |
| 129     | 9.6   | 9.3   | 13.9  |       |

