

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL032519\  
 Data File : VL033452.D  
 Acq On : 26 Mar 2019 1:27  
 Operator : SY/AP  
 Sample : K1991-04  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA-2

Manual Integrations  
 APPROVED

MMDadoda  
 4/1/2019 1:23:09 AM

Quant Time: Mar 27 02:08:59 2019  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL032519AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Mar 27 02:08:59 2019  
 QLast Update : Tue Mar 26 16:00:50 2019  
 Response via : Initial Calibration

| Internal Standards      | R.T.  | QIon | Response | Conc  | Units | Dev(Min) |
|-------------------------|-------|------|----------|-------|-------|----------|
| 1) Bromochloromethane   | 5.76  | 49   | 644542   | 10.00 | ppbv  | 0.00     |
| 33) 1,4-Difluorobenzene | 7.29  | 114  | 1468481  | 10.00 | ppbv  | 0.00     |
| 55) Chlorobenzene-d5    | 12.24 | 117  | 1551110  | 10.00 | ppbv  | 0.00     |

| System Monitoring Compounds |        |       |          |          |      |         |
|-----------------------------|--------|-------|----------|----------|------|---------|
| 68) 1-Bromo-4-Fluorobenzene | 14.58  | 95    | 1223018  | 10.06    | ppbv | 0.00    |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 100.60% |

| Target Compounds               | R.T. | QIon | Response | Conc    | Units  | Ovalue |
|--------------------------------|------|------|----------|---------|--------|--------|
| 2) Dichlorodifluoromethane     | 3.07 | 85   | 29648    | 0.315   | ppbv   | 96     |
| 3) Chlorodifluoromethane       | 3.02 | 51   | 20586m   | 0.277   | ppbv   |        |
| 4) Chloromethane               | 3.17 | 50   | 25329    | 0.645   | ppbv   | 96     |
| 9) Propene                     | 3.05 | 41   | 18459    | 0.592   | ppbv # | 73     |
| 10) Heptane                    | 8.25 | 43   | 15087m   | 0.181   | ppbv   |        |
| 11) Trichlorofluoromethane     | 4.00 | 101  | 28527    | 0.246   | ppbv   | 97     |
| 12) 1,1,2-Trichlorotrifluoroet | 4.55 | 101  | 5950     | 0.076   | ppbv   | 96     |
| 13) Ethanol                    | 3.66 | 45   | 3461437  | 429.251 | ppbv   | 65     |
| 15) Acetone                    | 3.89 | 43   | 2086261  | 26.920  | ppbv   | 100    |
| 17) tert-Butyl alcohol         | 4.37 | 59   | 12091m   | 0.849   | ppbv   |        |
| 19) Isopropyl Alcohol          | 4.04 | 45   | 112619   | 2.297   | ppbv # | 1      |
| 20) Methylene Chloride         | 4.41 | 84   | 65504    | 1.991   | ppbv   | 97     |
| 25) Ethyl Acetate              | 5.77 | 43   | 107187   | 0.745   | ppbv # | 95     |
| 26) Hexane                     | 5.78 | 57   | 88686    | 1.387   | ppbv # | 60     |
| 27) Carbon Disulfide           | 4.62 | 76   | 15336    | 0.202   | ppbv # | 68     |
| 29) Chloroform                 | 5.85 | 83   | 22600    | 0.206   | ppbv   | 100    |
| 34) 2-Butanone                 | 5.33 | 43   | 109017   | 1.236   | ppbv   | 100    |
| 35) Carbon Tetrachloride       | 7.12 | 117  | 7219m    | 0.069   | ppbv   |        |
| 36) Benzene                    | 7.00 | 78   | 18837    | 0.153   | ppbv # | 79     |
| 38) Trichloroethene            | 7.95 | 130  | 2627m    | 0.057   | ppbv   |        |
| 41) Tetrahydrofuran            | 6.15 | 42   | 22986m   | 0.474   | ppbv   |        |
| 53) Toluene                    | 9.94 | 91   | 358016   | 2.500   | ppbv   | 100    |

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

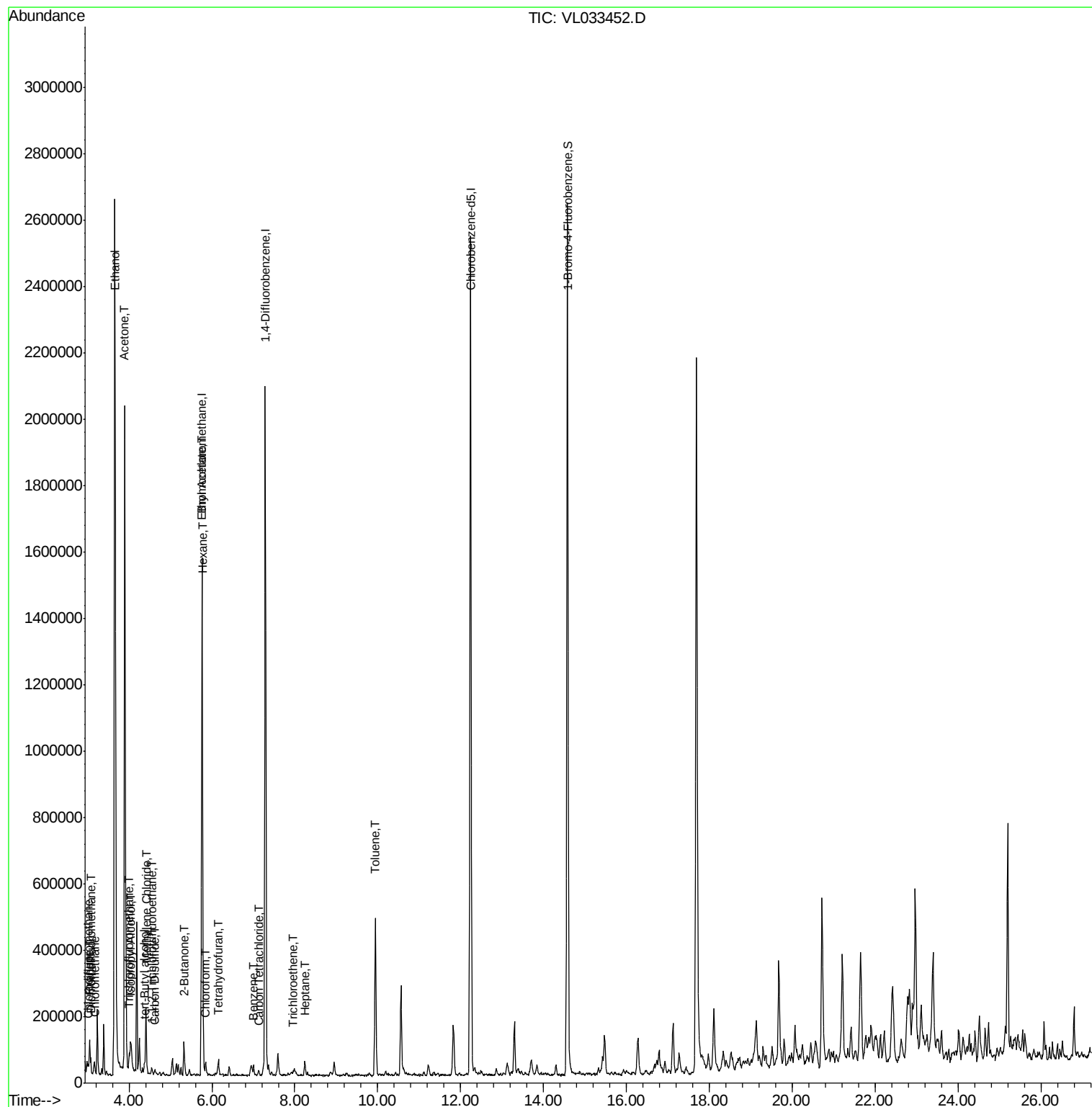
Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL032519\  
Data File : VL033452.D  
Acq On : 26 Mar 2019 1:27  
Operator : SY/AP  
Sample : K1991-04  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

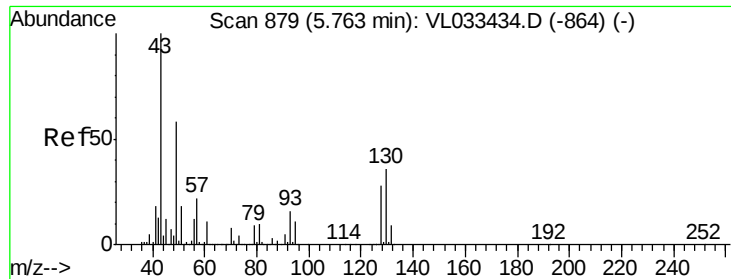
Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-2

Manual Integrations  
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4/1/2019 1:23:09 AM

Quant Time: Mar 27 02:08:59 2019  
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL032519AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Mar  
QLast Update : Tue Mar 26 16:00:50 2019  
Response via : Initial Calibration





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.76 min Scan# 878

Delta R.T. -0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Instrument :

MSVOA\_L

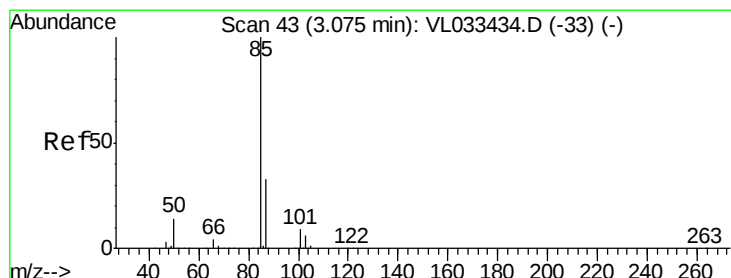
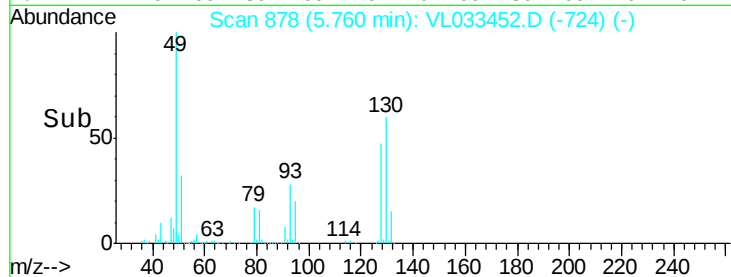
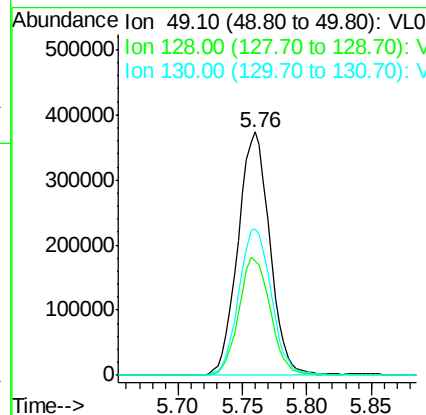
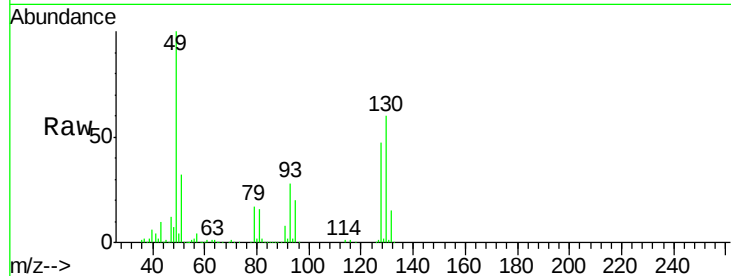
ClientSampled :

IA-2

Tot Ion: 49 Resp: 644542  
 Ion Ratio Lower Upper  
 49 100  
 128 48.1 24.0 72.0  
 130 61.7 31.2 93.6

Manual Integrations  
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#2

Dichlorodifluoromethane

Concen: 0.315 ppbv

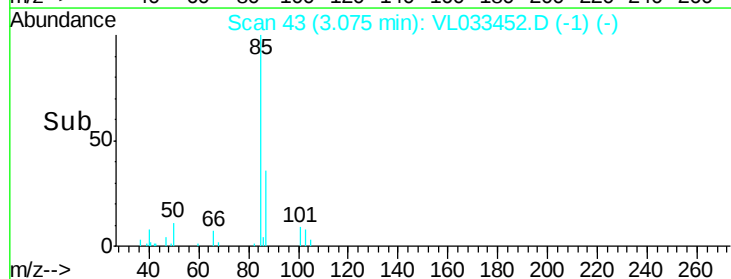
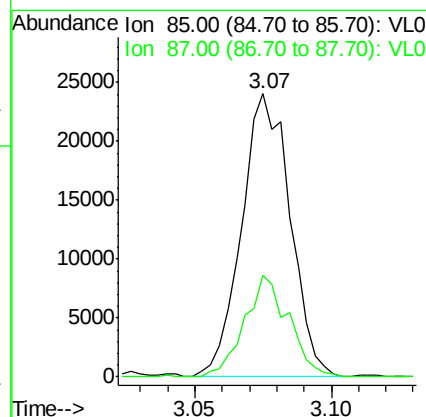
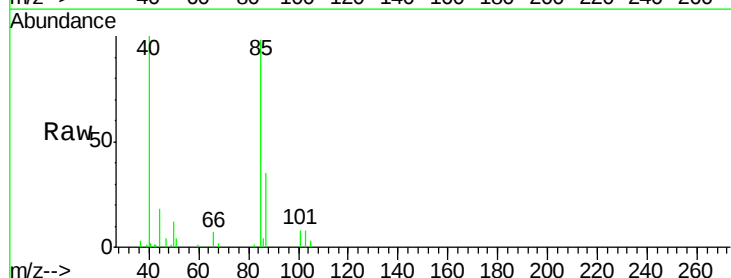
RT: 3.07 min Scan# 43

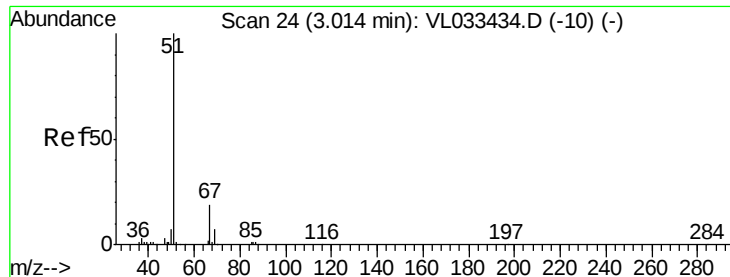
Delta R.T. -0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Tgt Ion: 85 Resp: 29648  
 Ion Ratio Lower Upper  
 85 100  
 87 35.7 26.7 40.1





#3

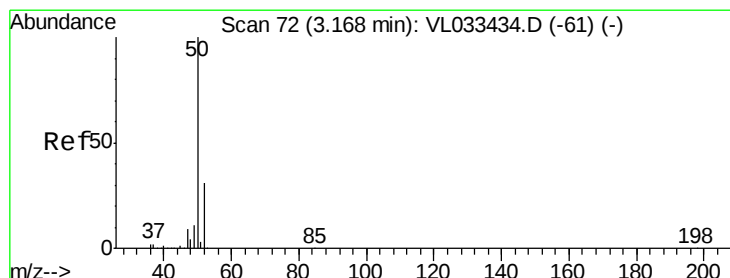
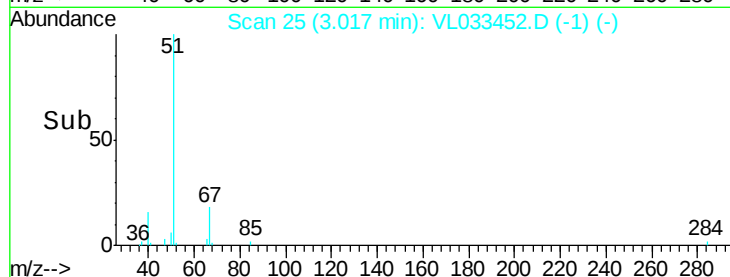
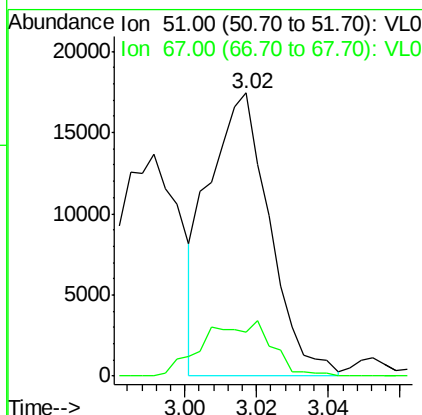
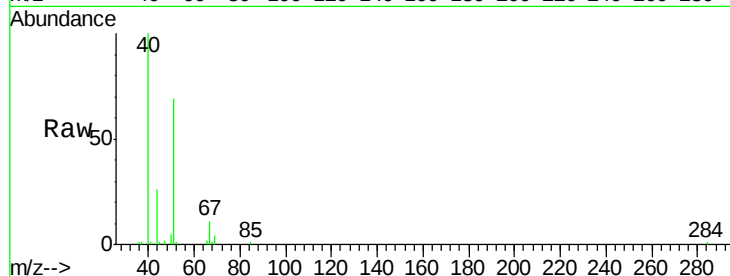
Chlorodifluoromethane  
 Concen: 0.277 ppbv  
 RT: 3.02 min Scan# 25  
 Delta R.T. 0.00 min  
 Lab File: VL033452.D  
 Acq: 26 Mar 2019 1:27

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA-2

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 51      | 100   |       |       |
| 67      | 21.9  | 15.7  | 23.5  |

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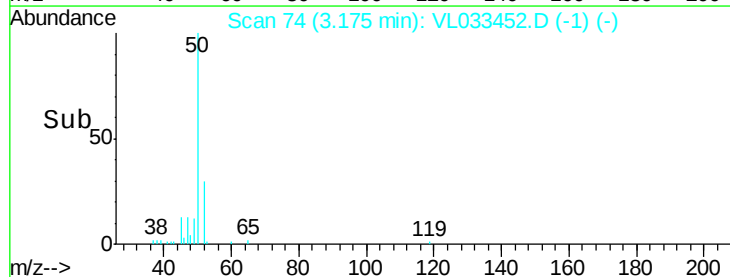
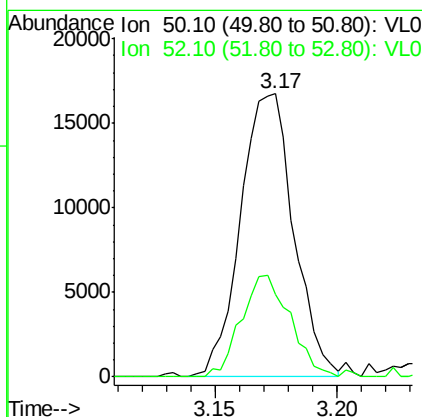
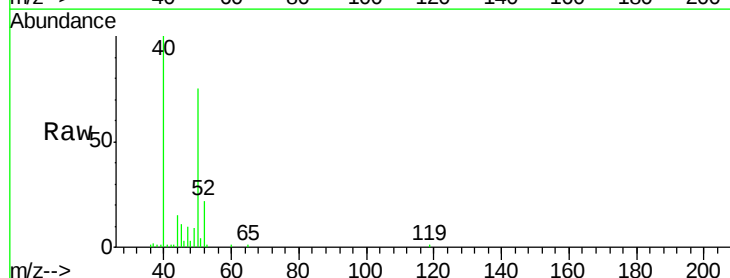
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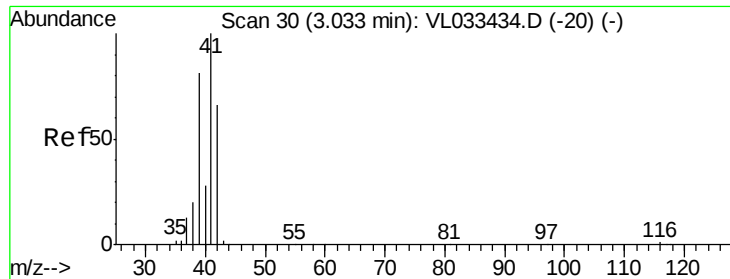


#4

Chloromethane  
 Concen: 0.645 ppbv  
 RT: 3.17 min Scan# 74  
 Delta R.T. 0.01 min  
 Lab File: VL033452.D  
 Acq: 26 Mar 2019 1:27

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 50      | 100   |       |       |
| 52      | 29.1  | 25.0  | 37.6  |





#9

Propene

Concen: 0.592 ppbv

RT: 3.05 min Scan# 35

Delta R.T. 0.02 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Instrument :

MSVOA\_L

ClientSampleId :

IA-2

Tot Ion: 41 Resp: 18459

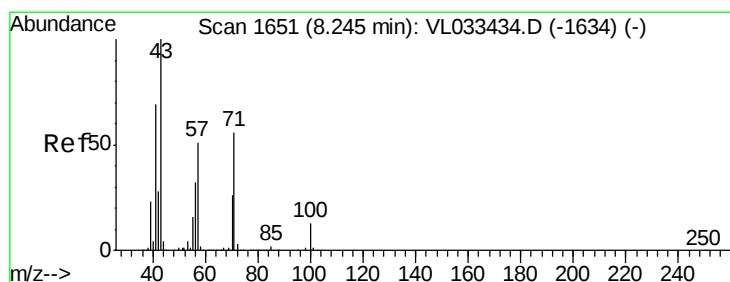
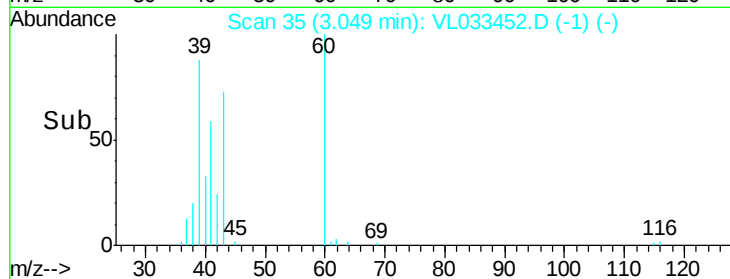
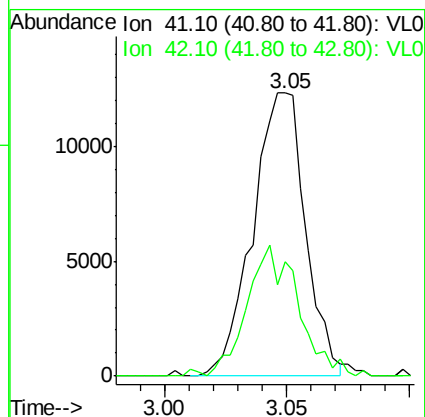
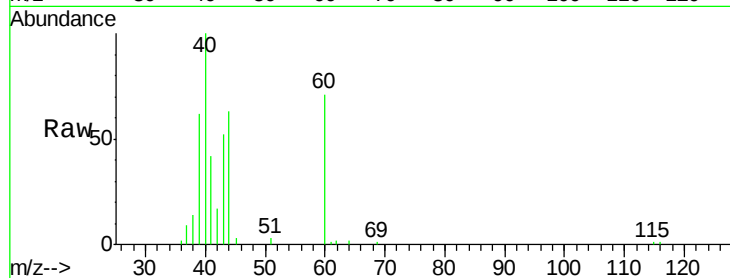
Ion Ratio Lower Upper

41 100

42 45.5 53.9 80.9#

Manual Integrations  
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#10

Heptane

Concen: 0.181 ppbv m

RT: 8.25 min Scan# 1651

Delta R.T. -0.00 min

Lab File: VL033452.D

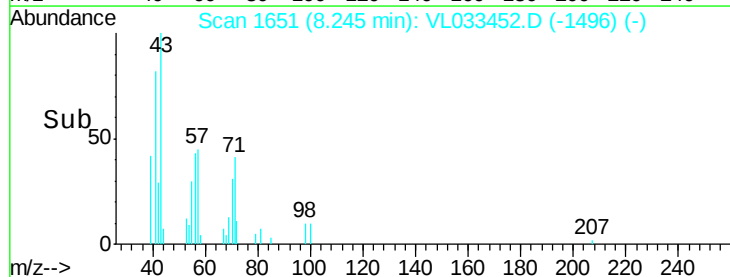
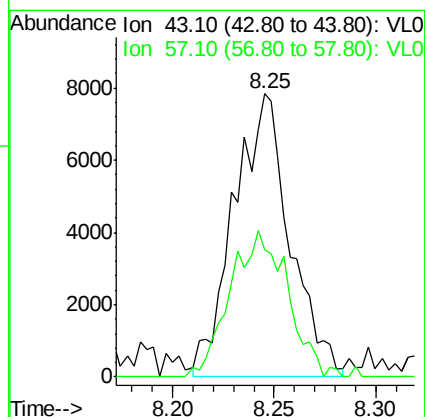
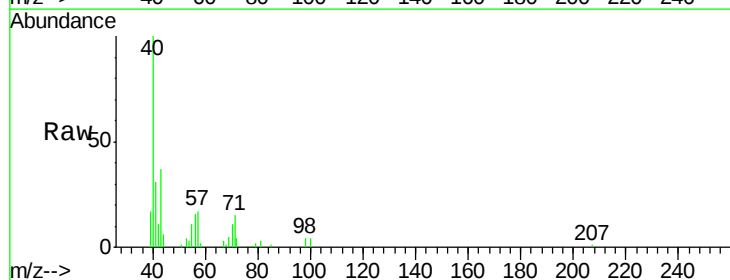
Acq: 26 Mar 2019 1:27

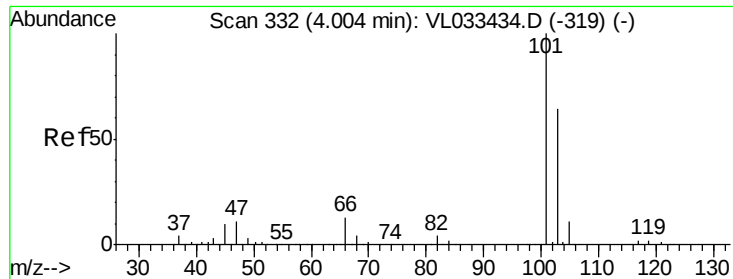
Tgt Ion: 43 Resp: 15087

Ion Ratio Lower Upper

43 100

57 53.3 40.6 60.8





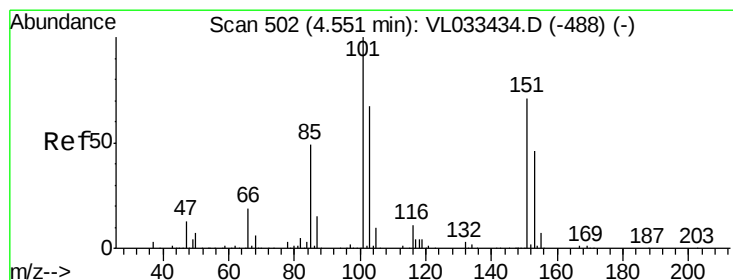
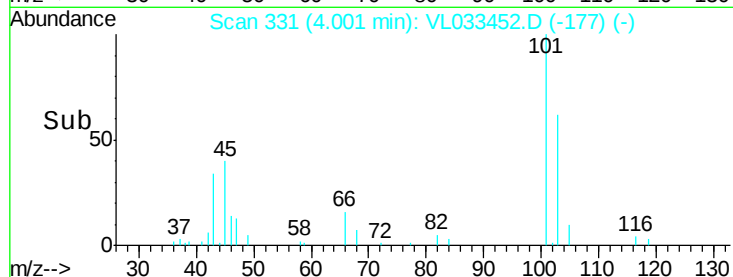
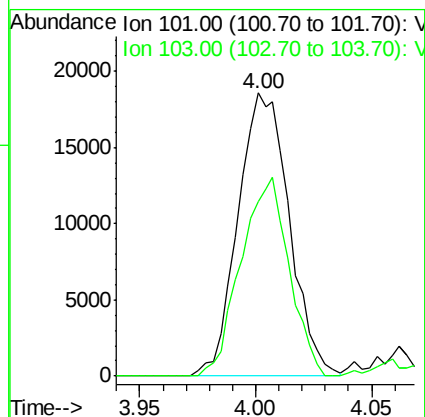
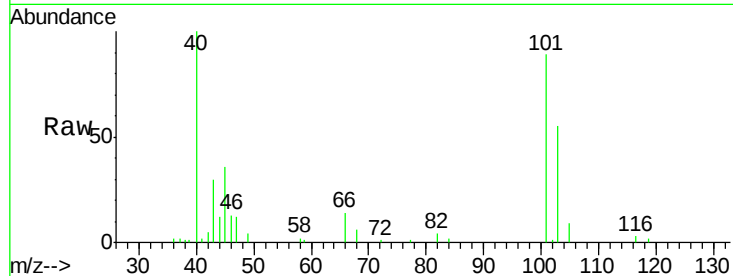
#11  
 Trichlorofluoromethane  
 Concen: 0.246 ppbv  
 RT: 4.00 min Scan# 331  
 Delta R.T. -0.00 min  
 Lab File: VL033452.D  
 Acq: 26 Mar 2019 1:27

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 IA-2

Tot Ion:101 Resp: 28527  
 Ion Ratio Lower Upper  
 101 100  
 103 61.6 51.3 76.9

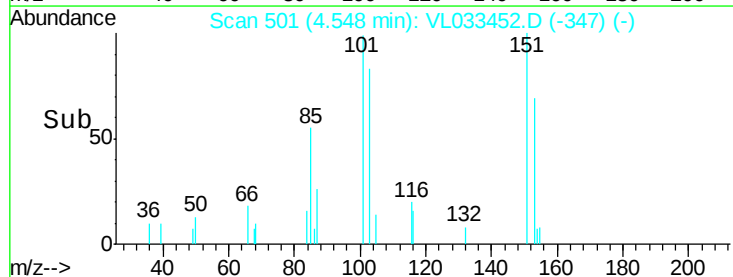
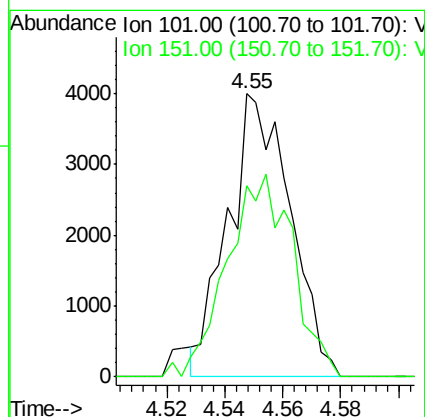
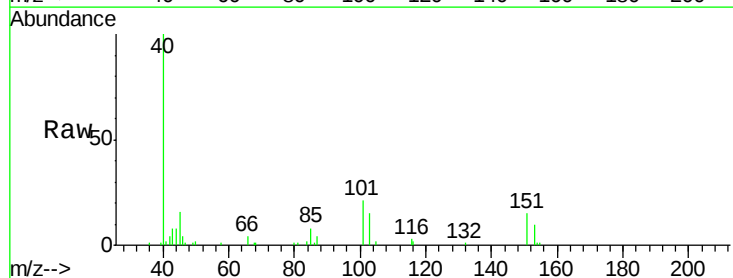
Manual Integrations  
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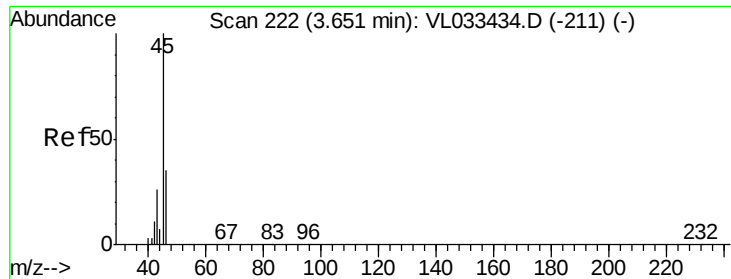
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#12  
 1,1,2-Trichlorotrifluoroethane  
 Concen: 0.076 ppbv  
 RT: 4.55 min Scan# 501  
 Delta R.T. -0.00 min  
 Lab File: VL033452.D  
 Acq: 26 Mar 2019 1:27

Tgt Ion:101 Resp: 5950  
 Ion Ratio Lower Upper  
 101 100  
 151 75.7 57.7 86.5





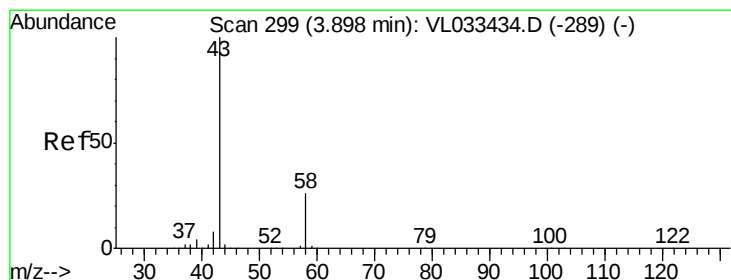
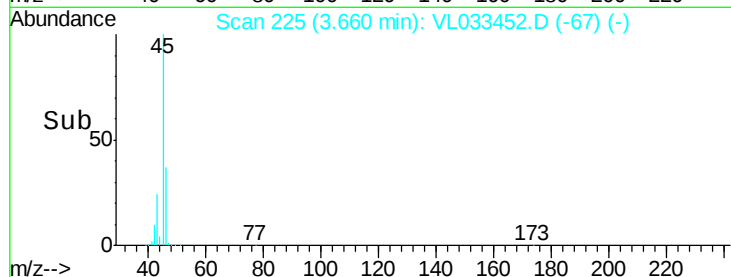
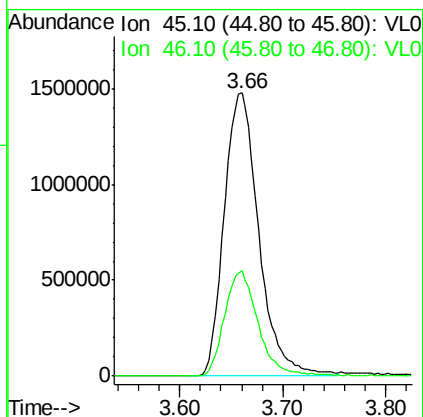
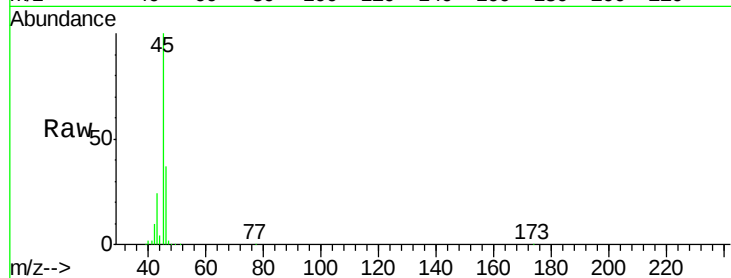
#13  
Ethanol  
Concen: 429.251 ppbv  
RT: 3.66 min Scan# 225  
Delta R.T. 0.01 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-2

Tot Ion: 45 Resp: 3461437  
Ion Ratio Lower Upper  
45 100  
46 36.1 25.4 101.8

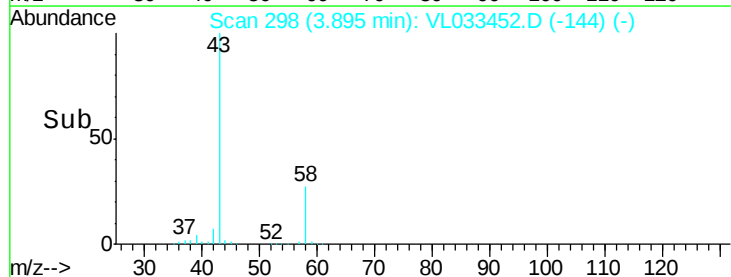
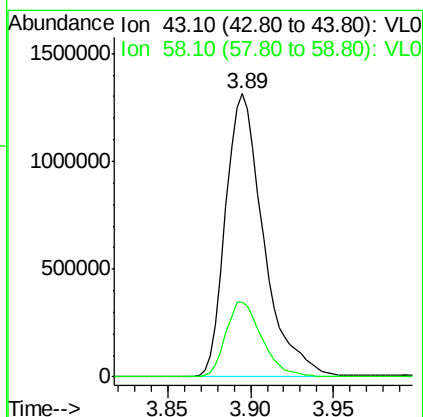
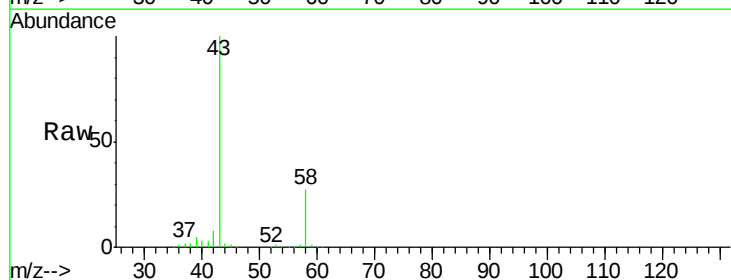
Manual Integrations  
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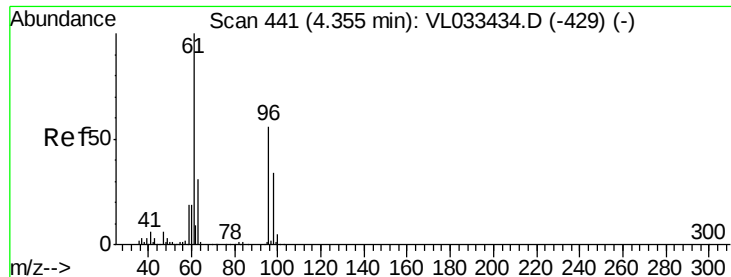
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4/1/2019 1:23:09 AM



#15  
Acetone  
Concen: 26.920 ppbv  
RT: 3.89 min Scan# 298  
Delta R.T. -0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Tgt Ion: 43 Resp: 2086261  
Ion Ratio Lower Upper  
43 100  
58 25.6 20.5 30.7





#17

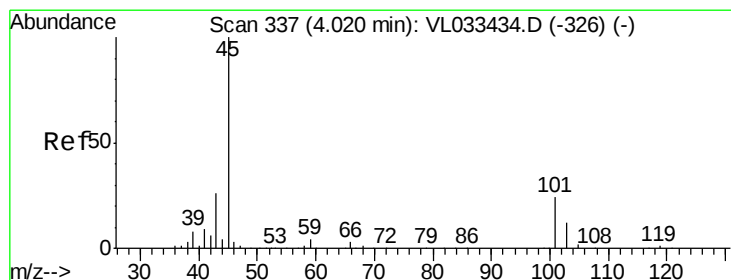
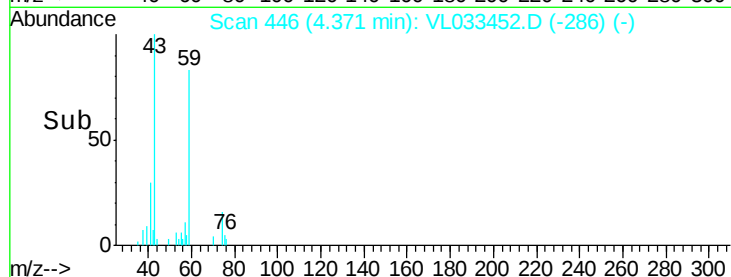
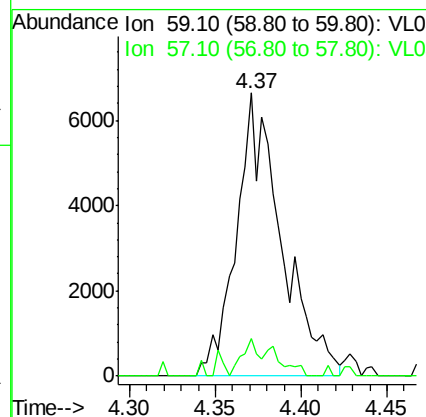
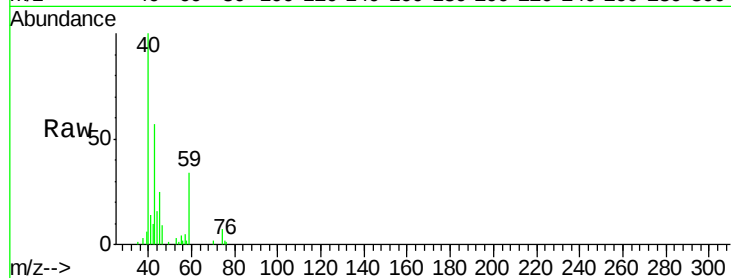
tert-Butyl alcohol  
Concen: 0.849 ppbv  
RT: 4.37 min Scan# 446  
Delta R.T. 0.02 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-2

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 59      | 100   |       |       |
| 57      | 0.0   | 7.8   | 11.8# |

Manual Integrations  
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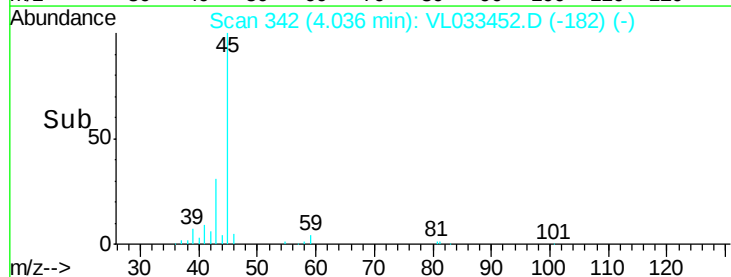
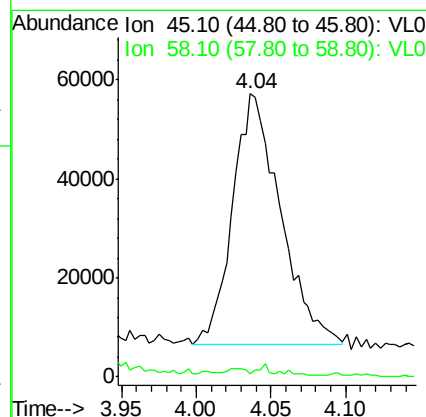
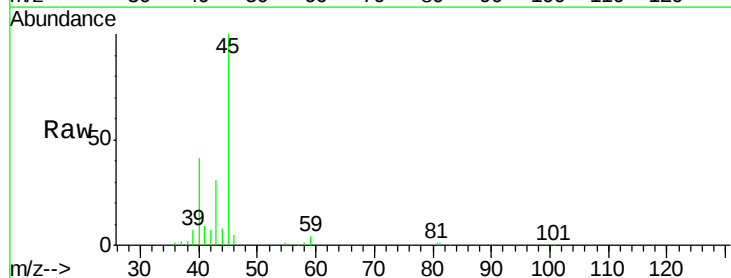
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4/1/2019 1:23:09 AM

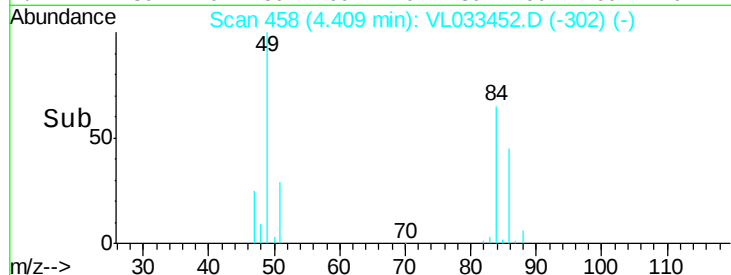
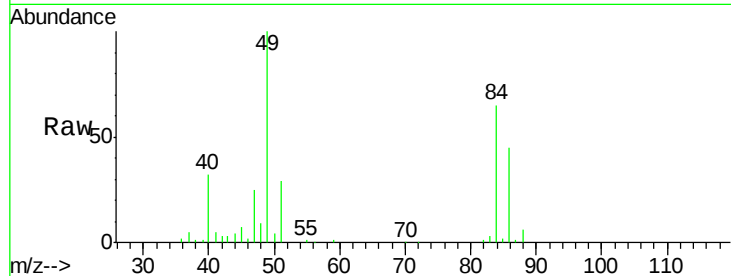
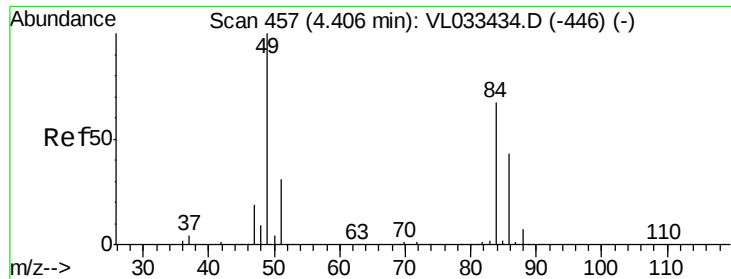


#19

Isopropyl Alcohol  
Concen: 2.297 ppbv  
RT: 4.04 min Scan# 342  
Delta R.T. 0.02 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 45      | 100   |       |       |
| 58      | 474.9 | 1.4   | 2.2#  |





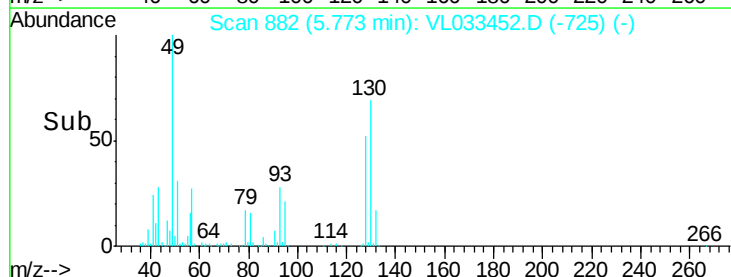
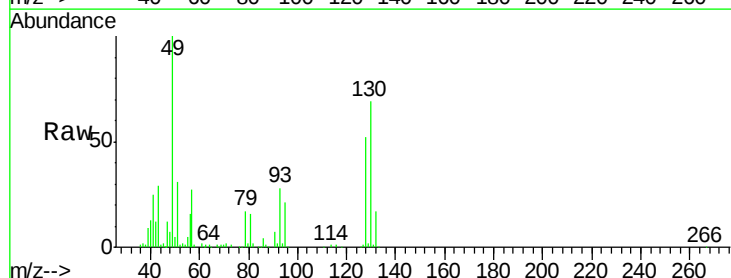
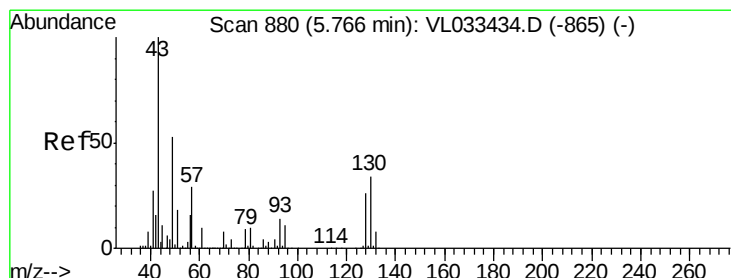
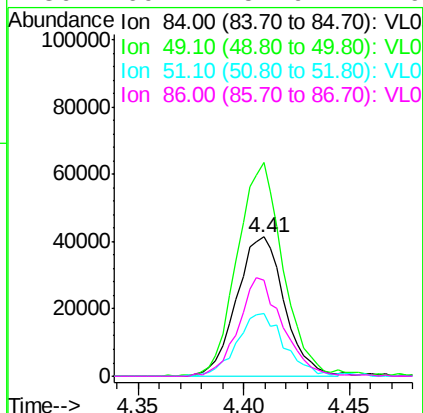
#20  
Methylene Chloride  
Concen: 1.991 ppbv  
RT: 4.41 min Scan# 458  
Delta R.T. 0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

|          |       |       |       |
|----------|-------|-------|-------|
| Tot Ion: | 84    | Resp: | 65504 |
| Ion      | Ratio | Lower | Upper |
| 84       | 100   |       |       |
| 49       | 152.6 | 120.0 | 180.0 |
| 51       | 43.9  | 36.7  | 55.1  |
| 86       | 69.2  | 51.9  | 77.9  |

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-2

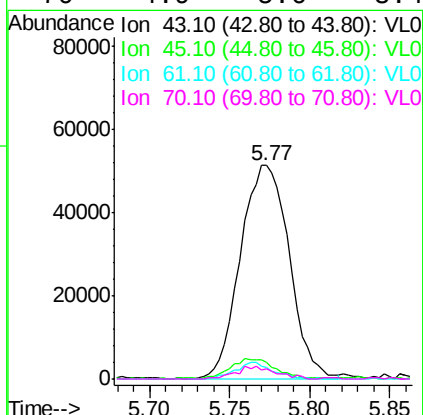
Manual Integrations  
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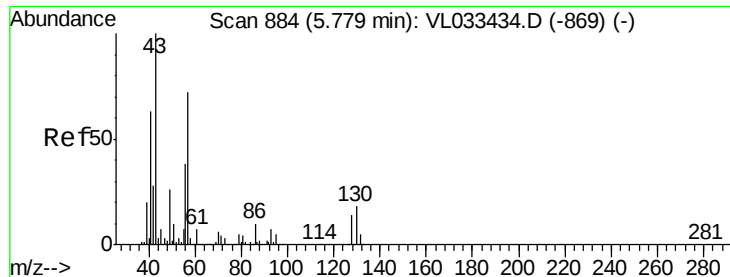
MMDadoda  
4/1/2019 1:23:09 AM



#25  
Ethyl Acetate  
Concen: 0.745 ppbv  
RT: 5.77 min Scan# 882  
Delta R.T. 0.01 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

|          |       |       |        |
|----------|-------|-------|--------|
| Tgt Ion: | 43    | Resp: | 107187 |
| Ion      | Ratio | Lower | Upper  |
| 43       | 100   |       |        |
| 45       | 9.6   | 7.8   | 11.6   |
| 61       | 6.0   | 7.3   | 10.9#  |
| 70       | 4.9   | 5.6   | 8.4#   |





#26

Hexane

Concen: 1.387 ppbv

RT: 5.78 min Scan# 883

Delta R.T. -0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Instrument :

MSVOA\_L

ClientSampleId :

IA-2

Tot Ion: 57 Resp: 88686

Ion Ratio Lower Upper

57 100

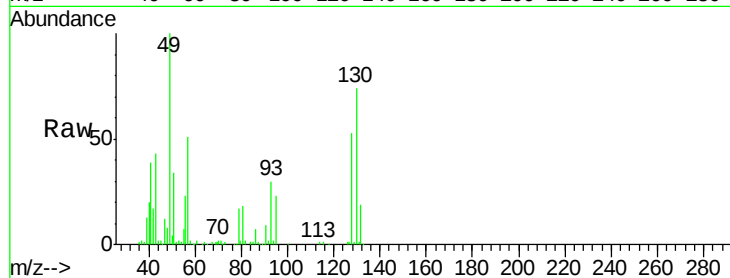
41 89.1 70.7 106.1

43 121.8 182.6 274.0#

56 52.3 42.0 63.0

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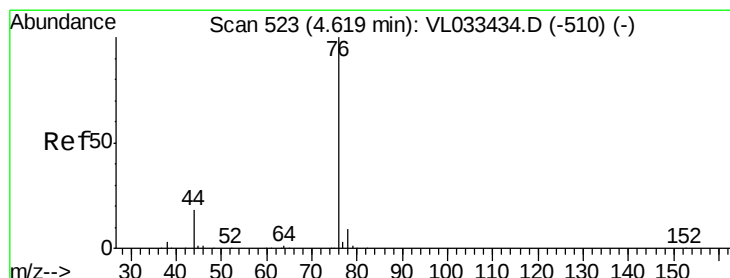
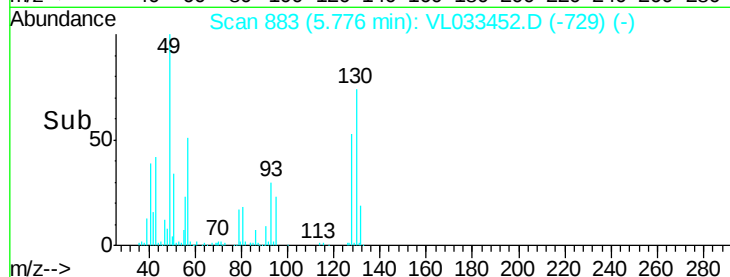
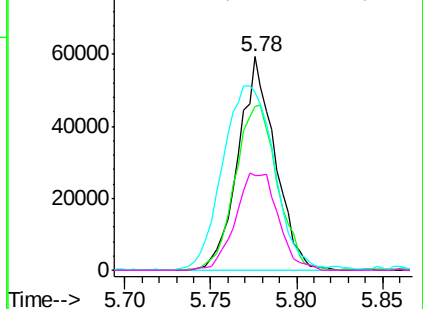


Abundance Ion 57.10 (56.80 to 57.80): VL0

Ion 41.10 (40.80 to 41.80): VL0

Ion 43.10 (42.80 to 43.80): VL0

Ion 56.10 (55.80 to 56.80): VL0



#27

Carbon Disulfide

Concen: 0.202 ppbv

RT: 4.62 min Scan# 524

Delta R.T. 0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

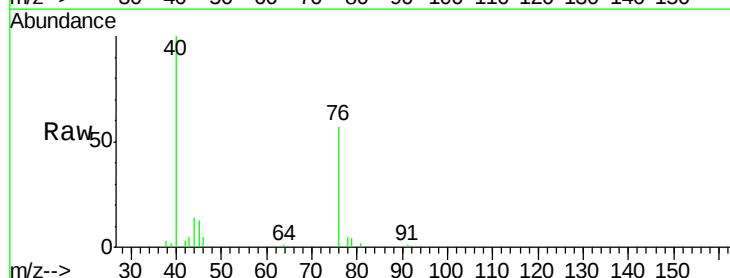
Tgt Ion: 76 Resp: 15336

Ion Ratio Lower Upper

76 100

44 39.1 14.8 22.2#

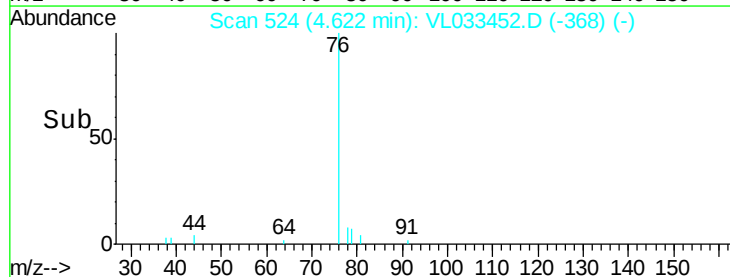
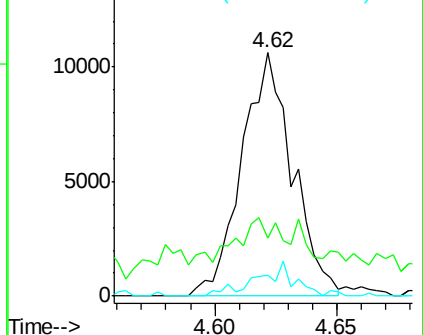
78 10.7 7.6 11.4

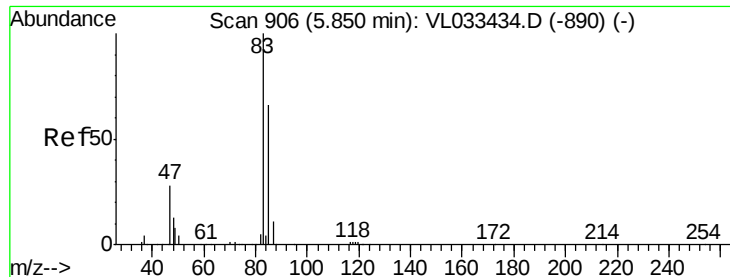


Abundance Ion 76.00 (75.70 to 76.70): VL0

Ion 44.10 (43.80 to 44.80): VL0

Ion 78.00 (77.70 to 78.70): VL0





#29

Chloroform

Concen: 0.206 ppbv

RT: 5.85 min Scan# 905

Delta R.T. -0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Instrument :

MSVOA\_L

ClientSampled :

IA-2

Tot Ion: 83 Resp: 22600

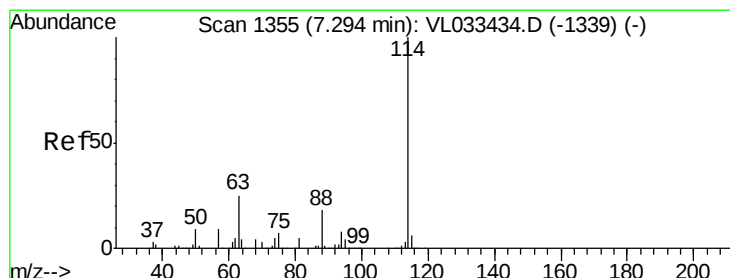
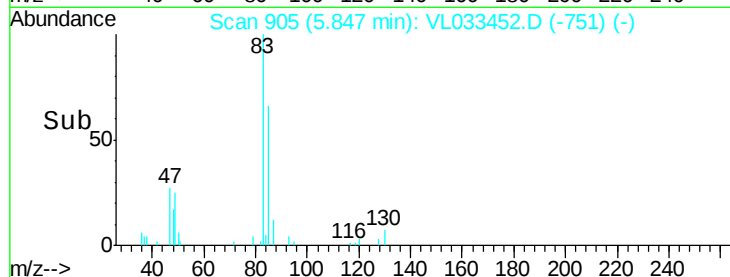
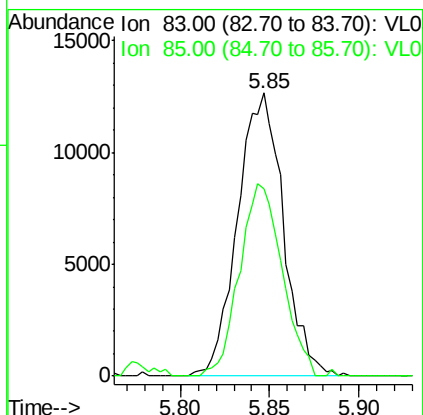
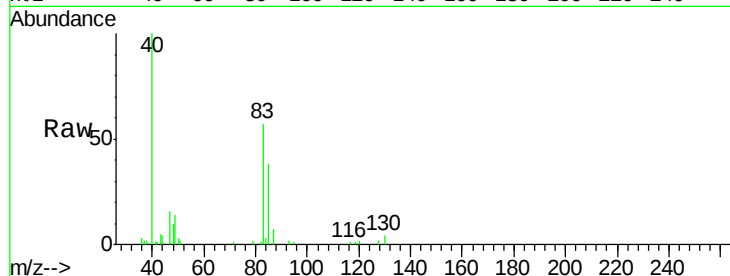
Ion Ratio Lower Upper

83 100

85 66.2 52.6 79.0

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#33

1,4-Difluorobenzene

Concen: 10.000 ppbv

RT: 7.29 min Scan# 1353

Delta R.T. -0.01 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

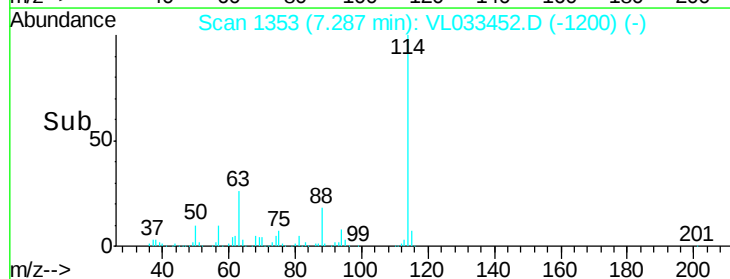
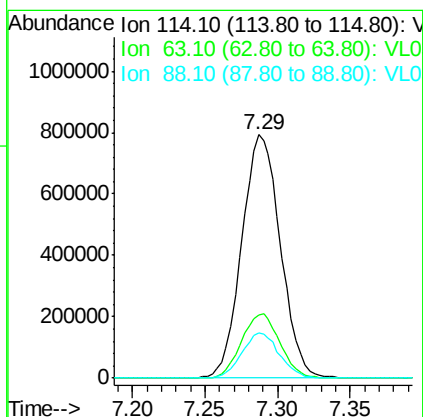
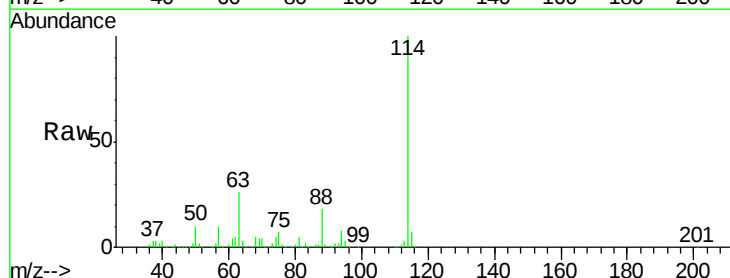
Tgt Ion: 114 Resp: 1468481

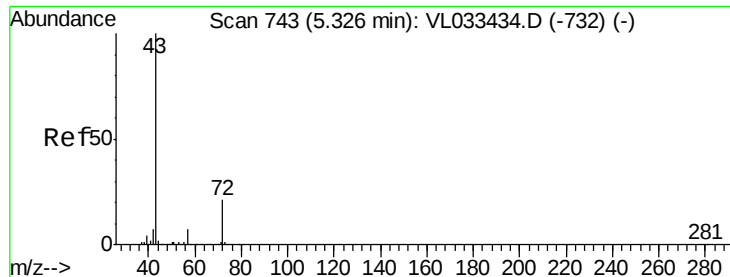
Ion Ratio Lower Upper

114 100

63 26.6 21.5 32.3

88 17.9 14.5 21.7





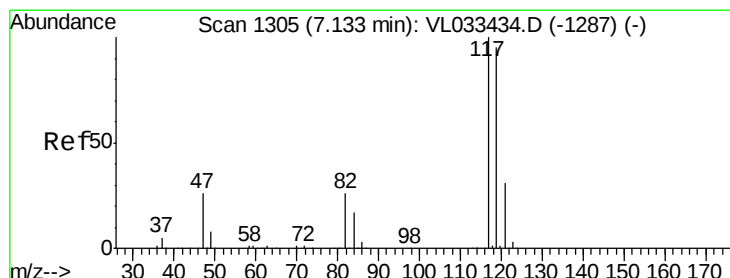
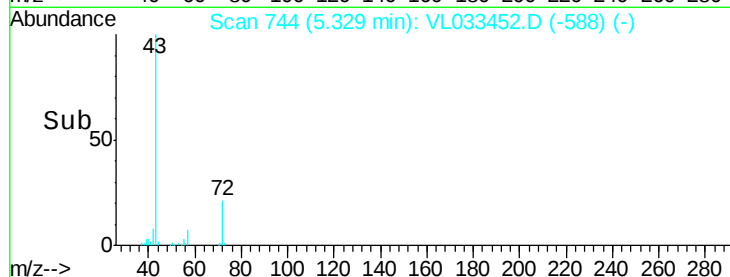
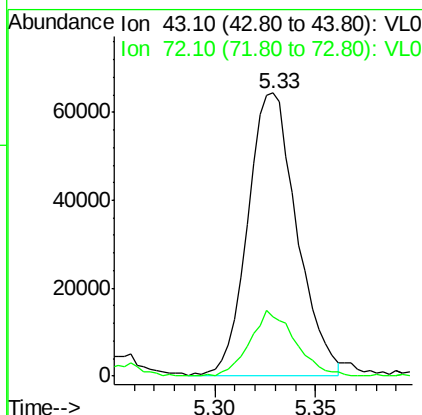
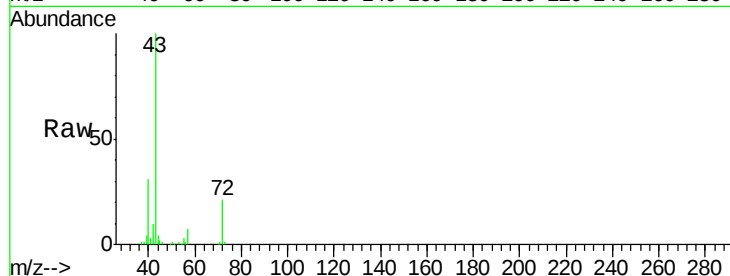
#34  
2-Butanone  
Concen: 1.236 ppbv  
RT: 5.33 min Scan# 744  
Delta R.T. 0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-2

Tot Ion: 43 Resp: 109017  
Ion Ratio Lower Upper  
43 100  
72 21.7 17.4 26.2

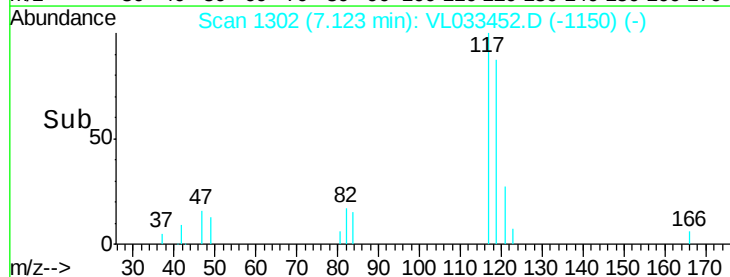
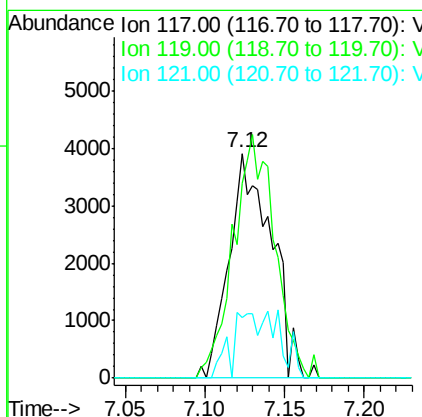
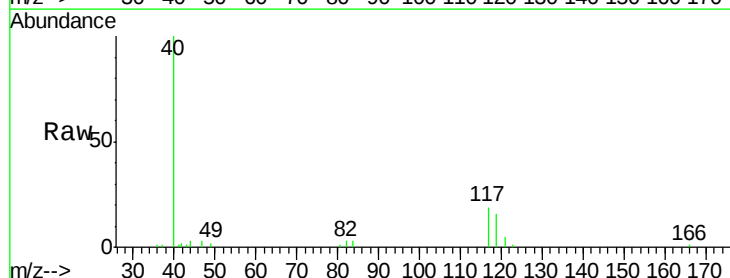
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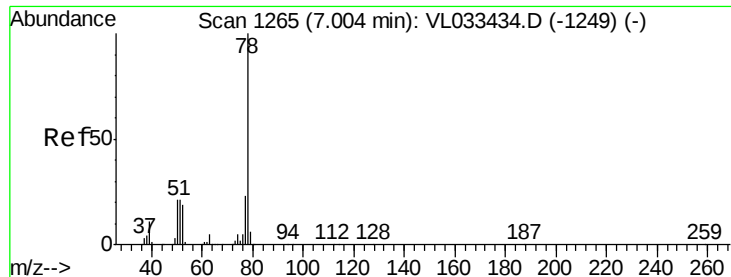
MMDadoda  
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#35  
Carbon Tetrachloride  
Concen: 0.069 ppbv m  
RT: 7.12 min Scan# 1302  
Delta R.T. -0.01 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Tgt Ion: 117 Resp: 7219  
Ion Ratio Lower Upper  
117 100  
119 86.8 75.8 113.8  
121 26.7 24.7 37.1





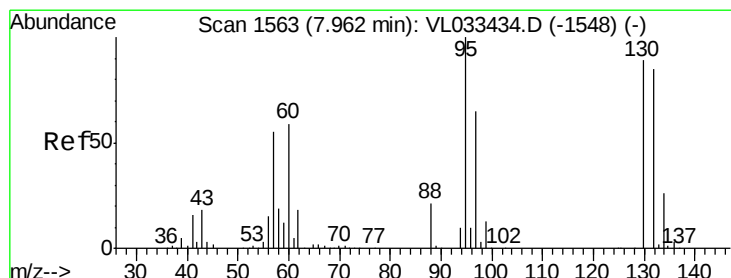
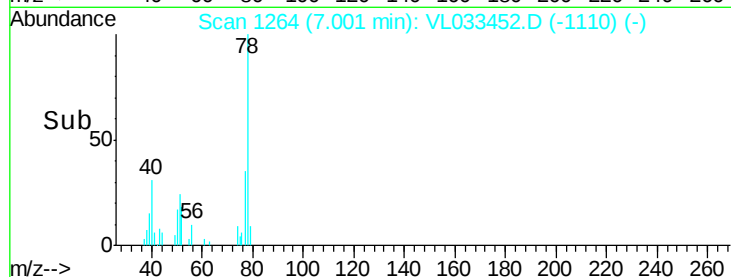
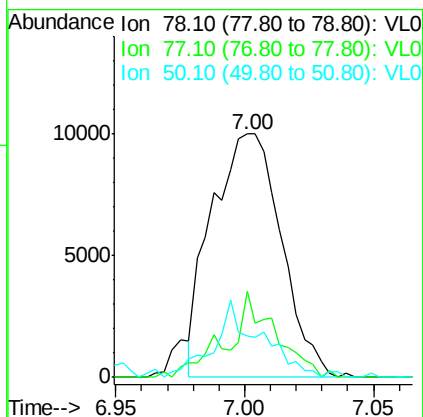
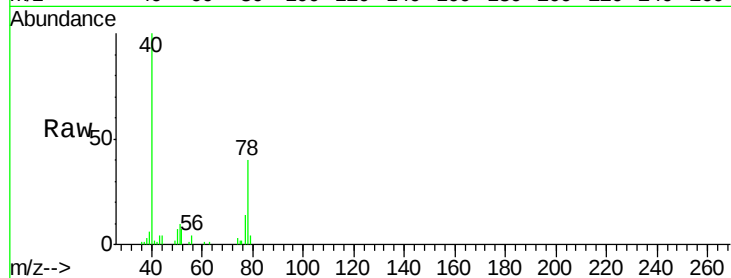
#36  
Benzene  
Concen: 0.153 ppbv  
RT: 7.00 min Scan# 1264  
Delta R.T. -0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Instrument :  
MSVOA\_L  
ClientSampleId :  
IA-2

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 78      | 100   |       |       |
| 77      | 35.9  | 18.1  | 27.1# |
| 50      | 14.9  | 16.7  | 25.1# |

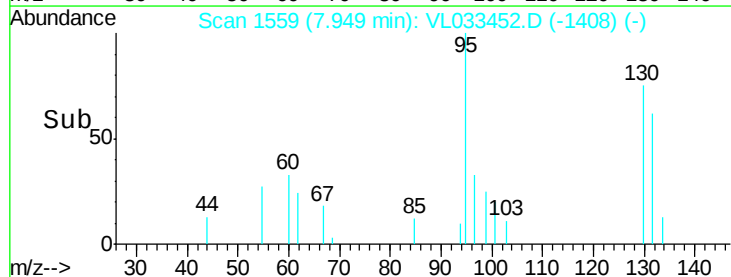
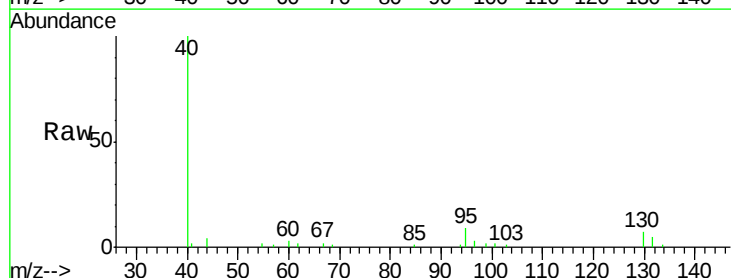
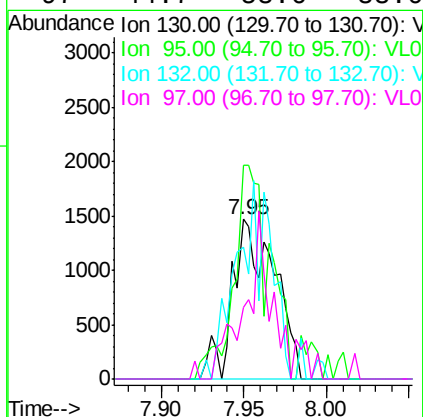
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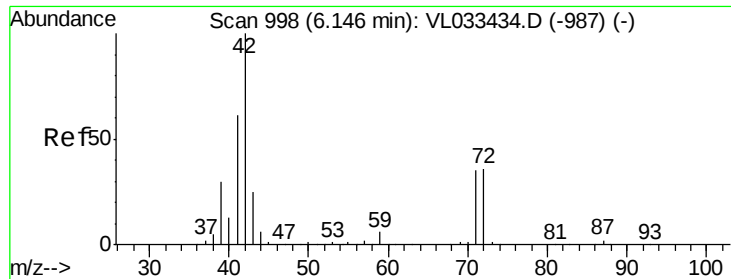
MMDadoda  
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#38  
Trichloroethene  
Concen: 0.057 ppbv m  
RT: 7.95 min Scan# 1559  
Delta R.T. -0.01 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 130     | 100   |       |       |
| 95      | 134.0 | 89.8  | 134.8 |
| 132     | 82.5  | 76.6  | 115.0 |
| 97      | 44.7  | 58.6  | 88.0# |





#41

Tetrahydrofuran

Concen: 0.474 ppbv m

RT: 6.15 min Scan# 1000

Delta R.T. 0.01 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

Instrument :

MSVOA\_L

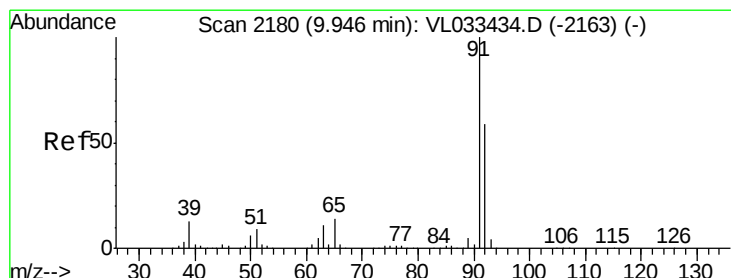
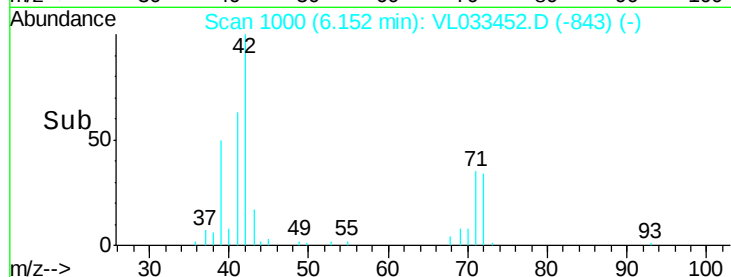
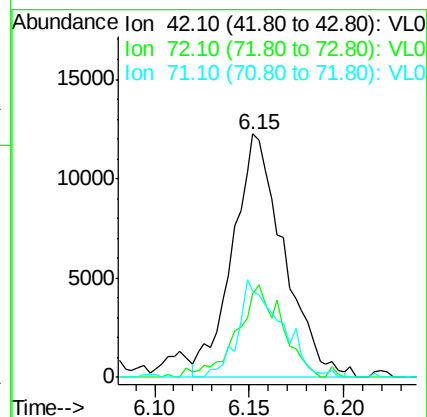
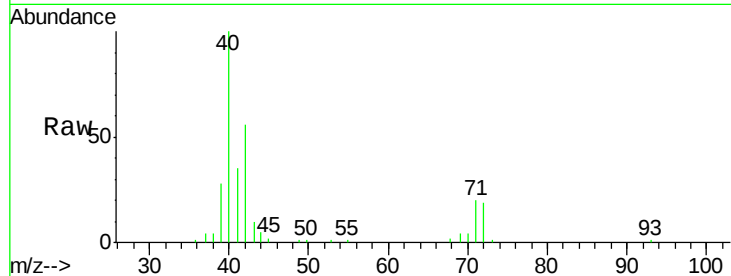
ClientSampleId :

IA-2

|          |       |       |       |
|----------|-------|-------|-------|
| Tot Ion: | 42    | Resp: | 22986 |
| Ion      | Ratio | Lower | Upper |
| 42       | 100   |       |       |
| 72       | 34.3  | 30.2  | 45.2  |
| 71       | 33.5  | 29.4  | 44.2  |

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#53

Toluene

Concen: 2.500 ppbv

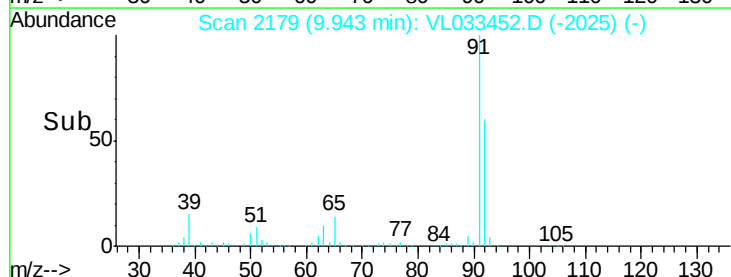
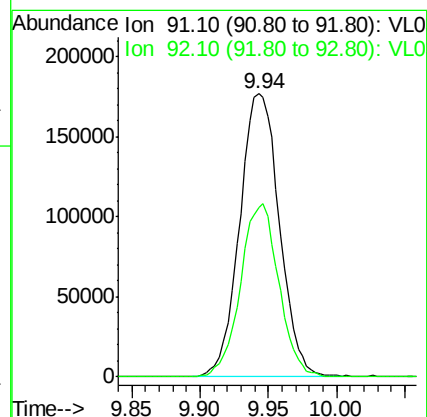
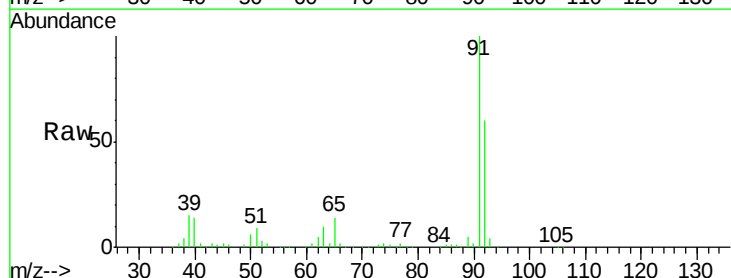
RT: 9.94 min Scan# 2179

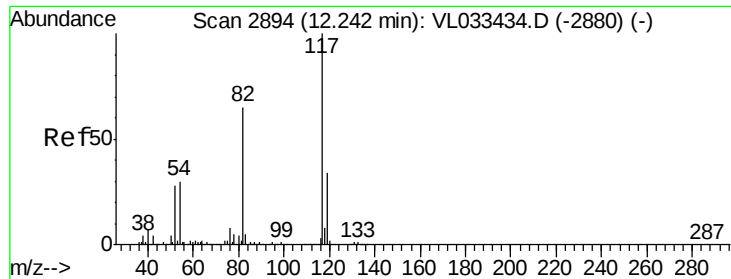
Delta R.T. -0.00 min

Lab File: VL033452.D

Acq: 26 Mar 2019 1:27

|          |       |       |        |
|----------|-------|-------|--------|
| Tgt Ion: | 91    | Resp: | 358016 |
| Ion      | Ratio | Lower | Upper  |
| 91       | 100   |       |        |
| 92       | 59.0  | 47.4  | 71.0   |





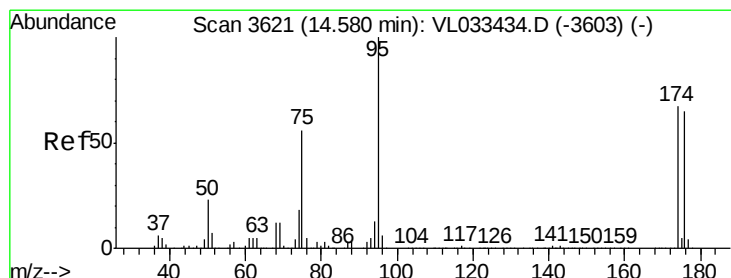
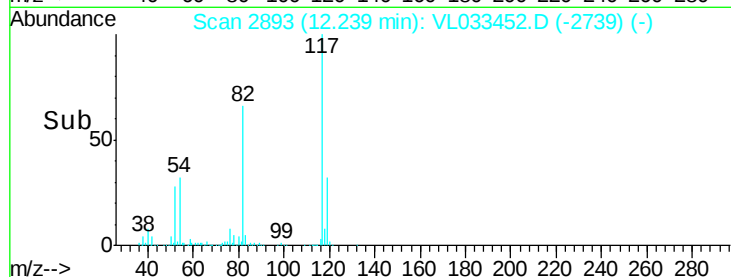
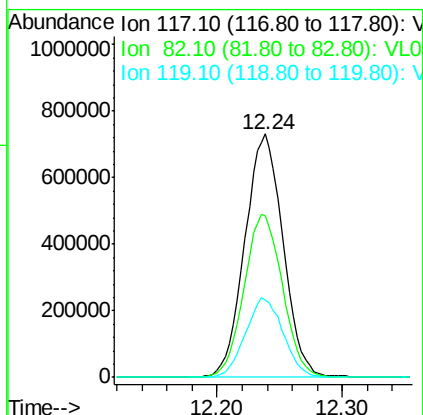
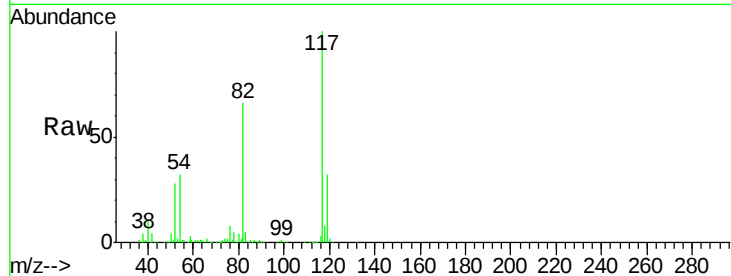
#55  
Chlorobenzene-d5  
Concen: 10.000 ppbv  
RT: 12.24 min Scan# 2893  
Delta R.T. -0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

Instrument :  
MSVOA\_L  
ClientSampled :  
IA-2

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 117     | 100   |       |       |
| 82      | 67.4  | 51.5  | 77.3  |
| 119     | 32.4  | 25.5  | 38.3  |

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#68  
1-Bromo-4-Fluorobenzene  
Concen: 10.058 ppbv  
RT: 14.58 min Scan# 3620  
Delta R.T. -0.00 min  
Lab File: VL033452.D  
Acq: 26 Mar 2019 1:27

| Tgt Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 95      | 100   |       |       |
| 174     | 66.2  | 52.9  | 79.3  |
| 175     | 4.6   | 3.8   | 5.6   |

