

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL032719\  
 Data File : VL033475.D  
 Acq On : 27 Mar 2019 19:26  
 Operator : SY/AP  
 Sample : K2042-12  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :

Quant Time: Mar 28 07:29:33 2019  
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL032519AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Tue Mar 26 16:00:50 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   | 5.75  | 49   | 713011   | 10.00 | ppbv  | 0.00     |
| 33) 1,4-Difluorobenzene | 7.28  | 114  | 1681290  | 10.00 | ppbv  | -0.01    |
| 55) Chlorobenzene-d5    | 12.23 | 117  | 1673495  | 10.00 | ppbv  | 0.00     |

|                             |        |       |          |          |      |        |
|-----------------------------|--------|-------|----------|----------|------|--------|
| System Monitoring Compounds |        |       |          |          |      |        |
| 68) 1-Bromo-4-Fluorobenzene | 14.57  | 95    | 1304533  | 9.94     | ppbv | 0.00   |
| Spiked Amount               | 10.000 | Range | 65 - 135 | Recovery | =    | 99.40% |

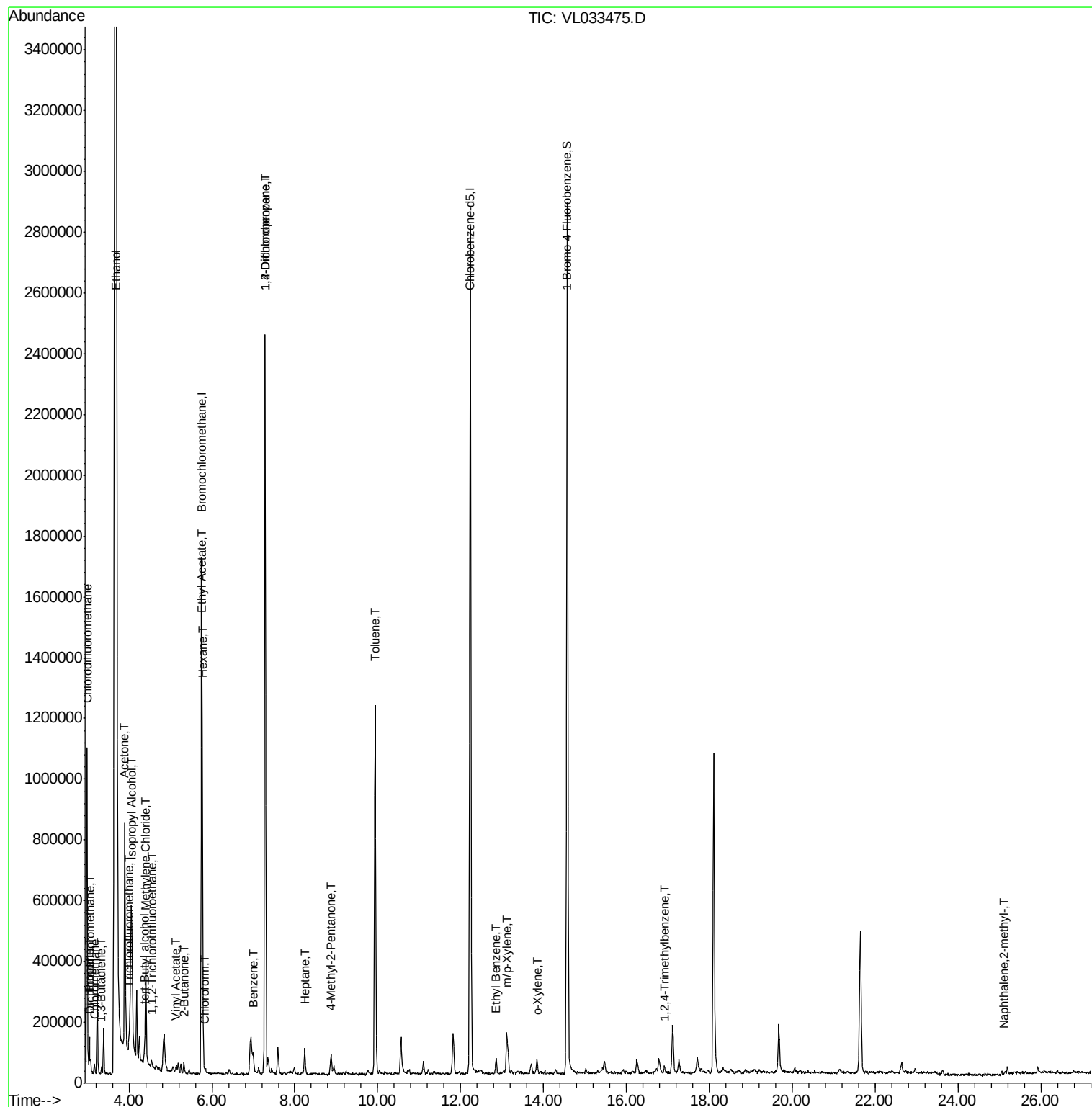
| Target Compounds               | R.T.  | QIon | Response | Conc     | Units  | Ovalue |
|--------------------------------|-------|------|----------|----------|--------|--------|
| 2) Dichlorodifluoromethane     | 3.07  | 85   | 29696    | 0.286    | ppbv   | 94     |
| 3) Chlorodifluoromethane       | 2.98  | 51   | 637759   | 7.769    | ppbv # | 59     |
| 4) Chloromethane               | 3.17  | 50   | 24679    | 0.568    | ppbv   | 91     |
| 9) Propene                     | 3.04  | 41   | 23355    | 0.677    | ppbv   | 85     |
| 10) Heptane                    | 8.24  | 43   | 29371    | 0.319    | ppbv   | 97     |
| 11) Trichlorofluoromethane     | 4.00  | 101  | 32503    | 0.254    | ppbv   | 92     |
| 12) 1,1,2-Trichlorotrifluoroet | 4.54  | 101  | 3023     | 0.035    | ppbv # | 14     |
| 13) Ethanol                    | 3.68  | 45   | 12500342 | 1401.304 | ppbv   | 66     |
| 15) Acetone                    | 3.89  | 43   | 734413   | 8.566    | ppbv   | 97     |
| 16) 1,3-Butadiene              | 3.34  | 39   | 4576     | 0.135    | ppbv # | 31     |
| 17) tert-Butyl alcohol         | 4.36  | 59   | 7032     | 0.446    | ppbv # | 73     |
| 19) Isopropyl Alcohol          | 4.05  | 45   | 470677   | 8.680    | ppbv # | 92     |
| 20) Methylene Chloride         | 4.40  | 84   | 112341   | 3.087    | ppbv   | 93     |
| 23) Vinyl Acetate              | 5.14  | 43   | 12624    | 0.103    | ppbv # | 84     |
| 25) Ethyl Acetate              | 5.77  | 43   | 104943   | 0.660    | ppbv # | 89     |
| 26) Hexane                     | 5.78  | 57   | 109442   | 1.547    | ppbv # | 48     |
| 29) Chloroform                 | 5.84  | 83   | 3445     | 0.028    | ppbv   | 87     |
| 34) 2-Butanone                 | 5.33  | 43   | 35924    | 0.356    | ppbv   | 99     |
| 36) Benzene                    | 7.00  | 78   | 33622    | 0.238    | ppbv # | 89     |
| 39) 1,2-Dichloropropane        | 7.28  | 63   | 445344   | 8.059    | ppbv # | 24     |
| 50) 4-Methyl-2-Pentanone       | 8.87  | 43   | 48188    | 0.326    | ppbv   | 96     |
| 53) Toluene                    | 9.94  | 91   | 900408   | 5.493    | ppbv   | 99     |
| 58) Ethyl Benzene              | 12.86 | 91   | 38308    | 0.171    | ppbv   | 97     |
| 59) m/p-Xylene                 | 13.12 | 91   | 141624   | 0.709    | ppbv # | 100    |
| 60) o-Xylene                   | 13.84 | 91   | 32538    | 0.169    | ppbv   | 95     |
| 74) 1,2,4-Trimethylbenzene     | 16.92 | 105  | 12632    | 0.057    | ppbv # | 56     |
| 80) Naphthalene,2-methyl-      | 25.11 | 142  | 1667     | 0.026    | ppbv # | 86     |

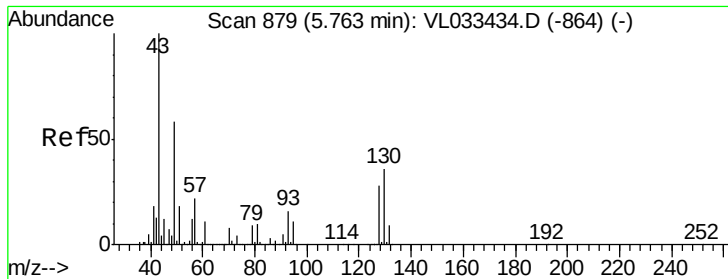
(#) = qualifier out of range (m) = manual integration (+) = signals summed

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QLast Update : Tue Mar 26 16:00:50 2019  
Response via : Initial Calibration





#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.75 min Scan# 876

Delta R.T. -0.01 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Instrument :  
MSVOA\_L  
ClientSampleId :

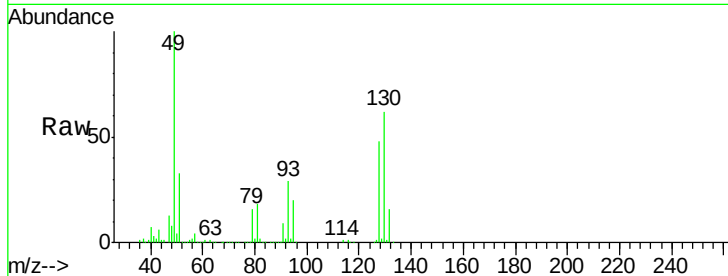
Tot Ion: 49 Resp: 713011

Ion Ratio Lower Upper

49 100

128 49.0 24.0 72.0

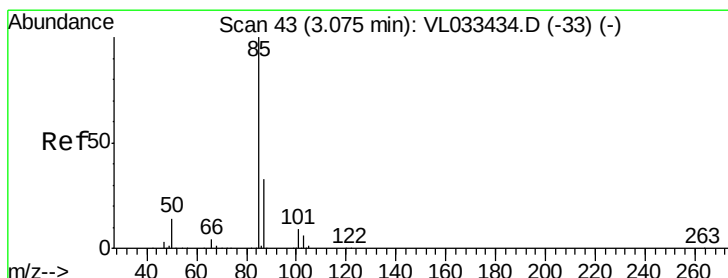
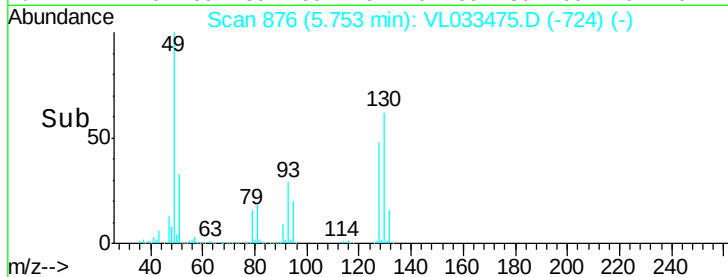
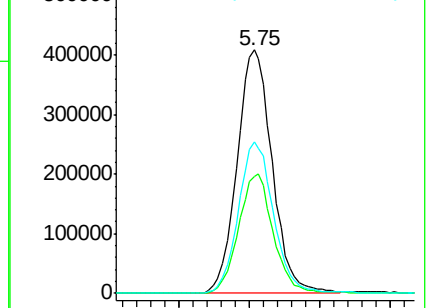
130 62.7 31.2 93.6



Abundance Ion 49.10 (48.80 to 49.80): VL0

Ion 128.00 (127.70 to 128.70): V

Ion 130.00 (129.70 to 130.70): V



#2

Dichlorodifluoromethane

Concen: 0.286 ppbv

RT: 3.07 min Scan# 42

Delta R.T. -0.00 min

Lab File: VL033475.D

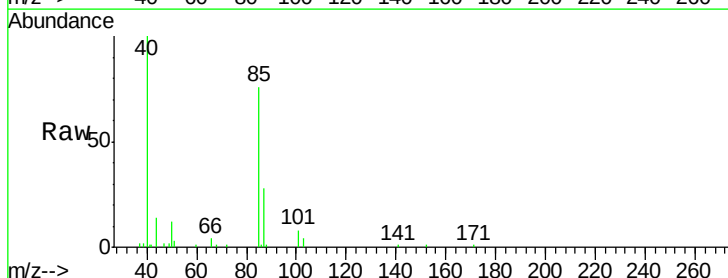
Acq: 27 Mar 2019 19:26

Tgt Ion: 85 Resp: 29696

Ion Ratio Lower Upper

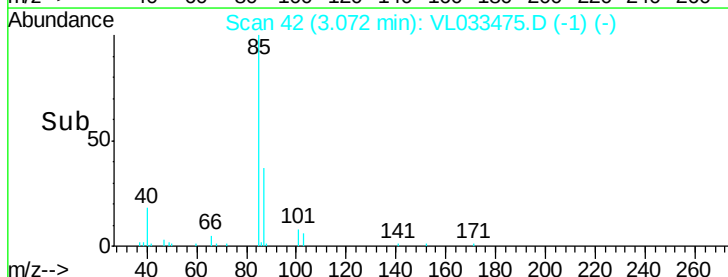
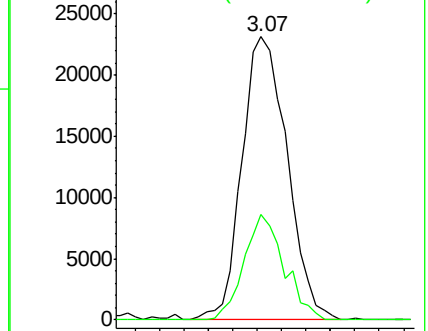
85 100

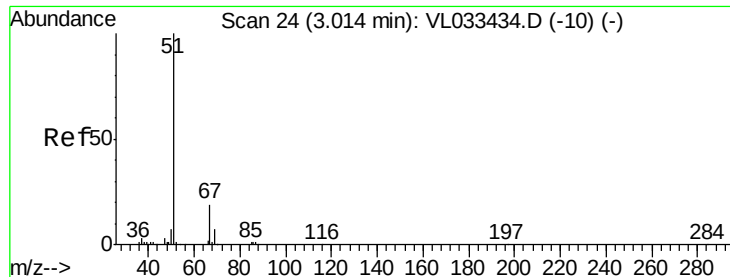
87 37.0 26.7 40.1



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0

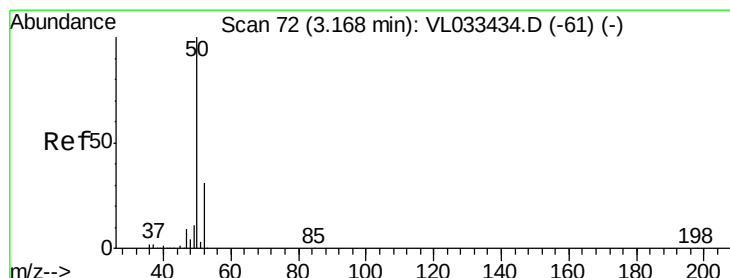
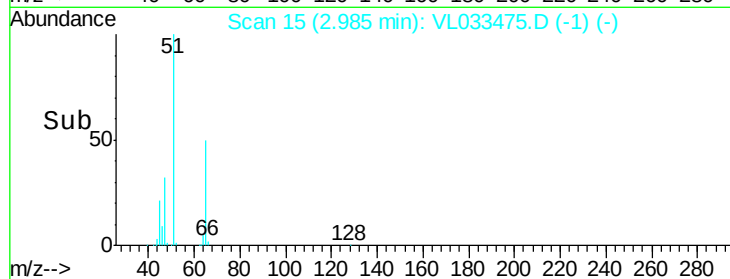
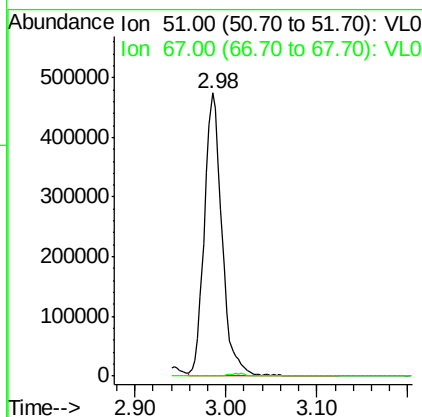
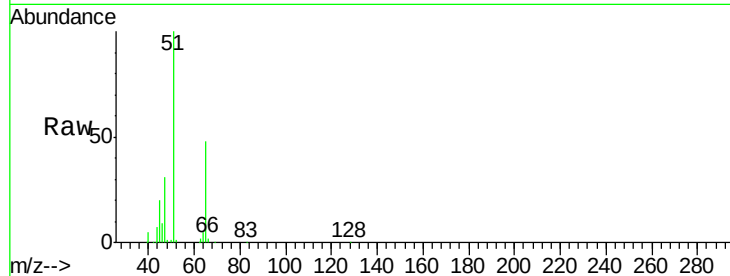




#3  
 Chlorodifluoromethane  
 Concen: 7.769 ppbv  
 RT: 2.98 min Scan# 15  
 Delta R.T. -0.03 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

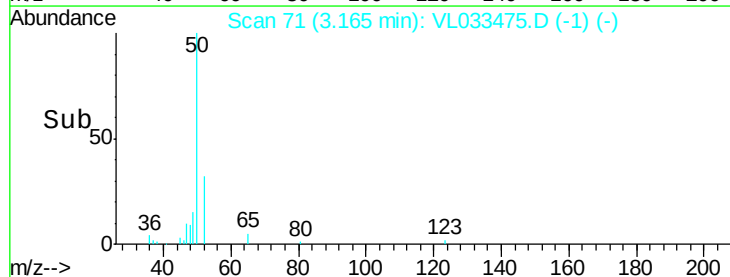
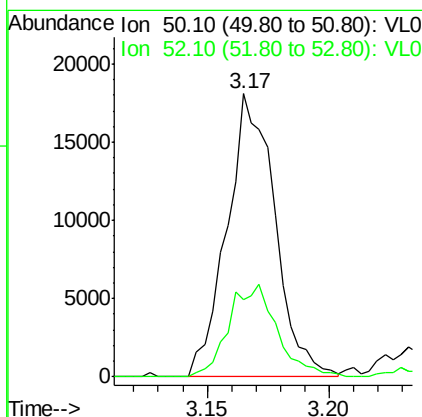
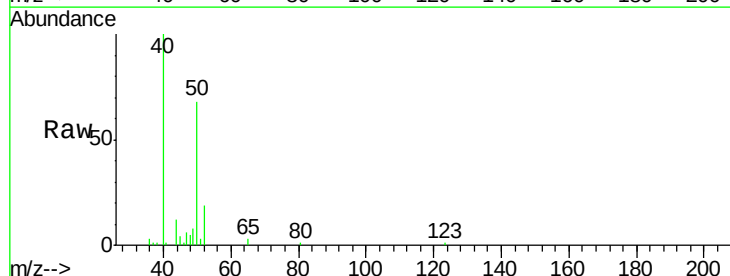
Instrument :  
 MSVOA\_L  
 ClientSampleId :

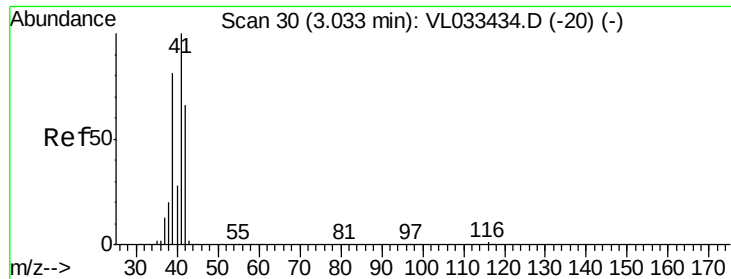
Tot Ion: 51 Resp: 637759  
 Ion Ratio Lower Upper  
 51 100  
 67 0.9 15.7 23.5#



#4  
 Chloromethane  
 Concen: 0.568 ppbv  
 RT: 3.17 min Scan# 71  
 Delta R.T. -0.00 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

Tgt Ion: 50 Resp: 24679  
 Ion Ratio Lower Upper  
 50 100  
 52 26.2 25.0 37.6





#9

Propene

Concen: 0.677 ppbv

RT: 3.04 min Scan# 33

Delta R.T. 0.01 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Instrument :

MSVOA\_L

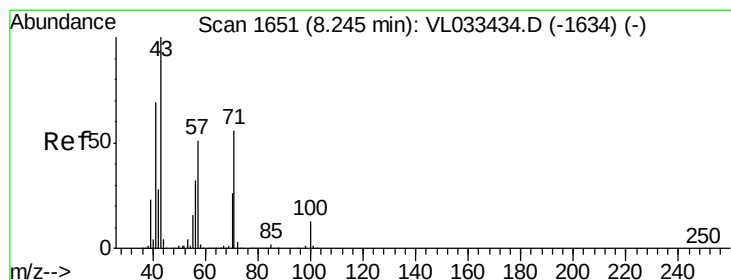
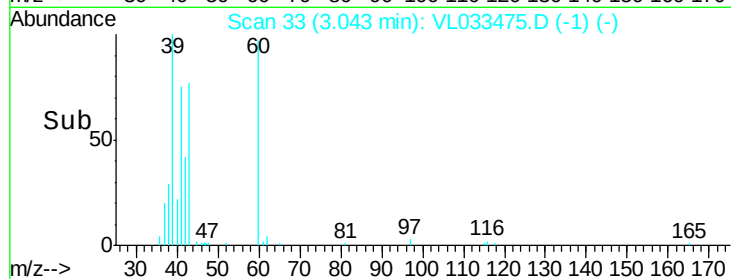
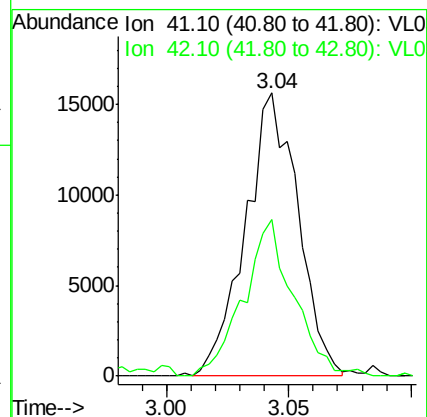
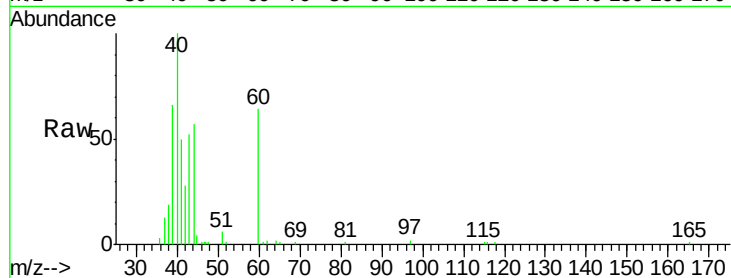
ClientSampleId :

Tot Ion: 41 Resp: 23355

Ion Ratio Lower Upper

41 100

42 55.3 53.9 80.9



#10

Heptane

Concen: 0.319 ppbv

RT: 8.24 min Scan# 1650

Delta R.T. -0.00 min

Lab File: VL033475.D

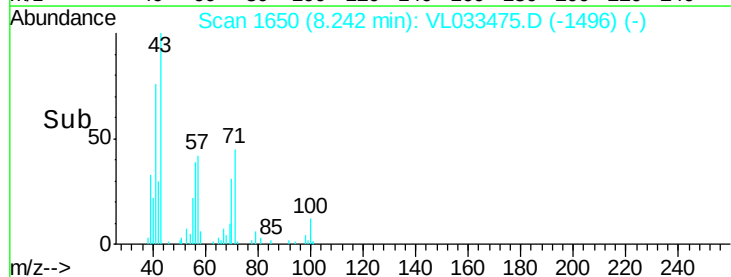
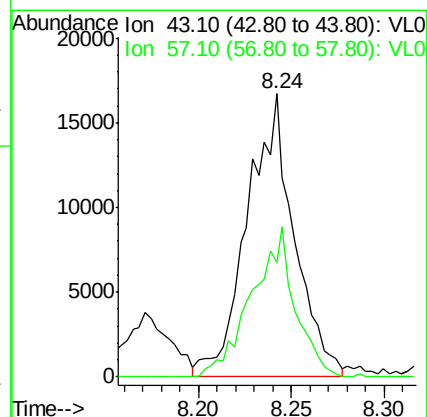
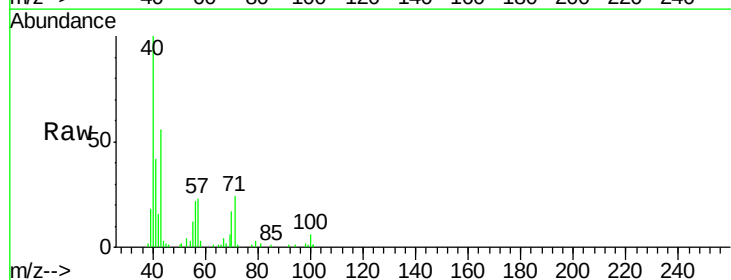
Acq: 27 Mar 2019 19:26

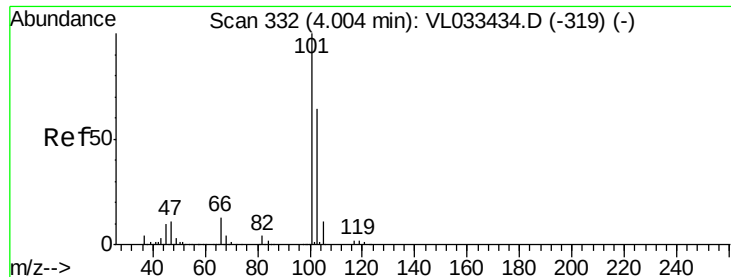
Tgt Ion: 43 Resp: 29371

Ion Ratio Lower Upper

43 100

57 48.8 40.6 60.8

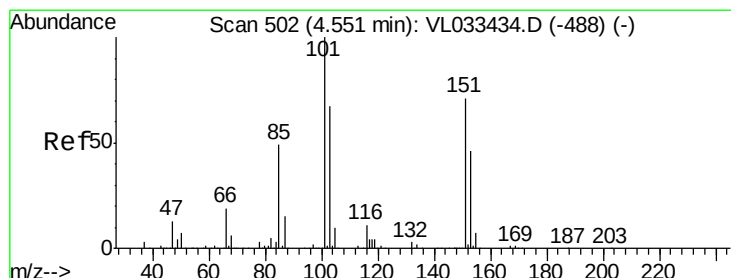
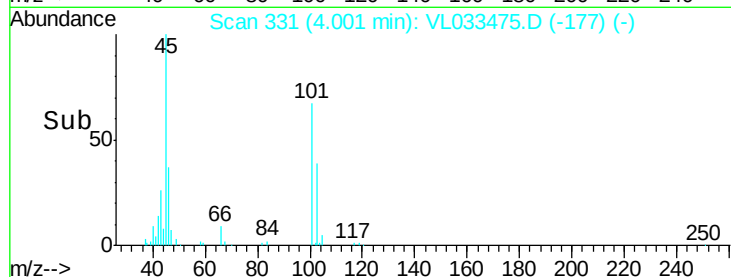
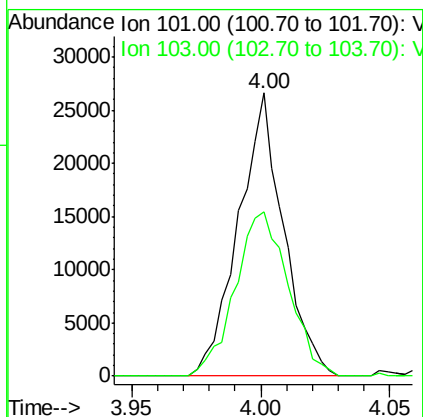
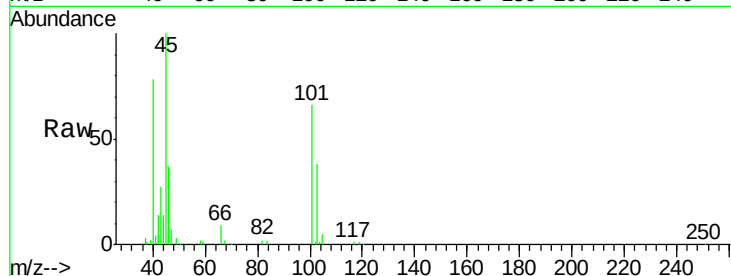




#11  
 Trichlorofluoromethane  
 Concen: 0.254 ppbv  
 RT: 4.00 min Scan# 331  
 Delta R.T. -0.00 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

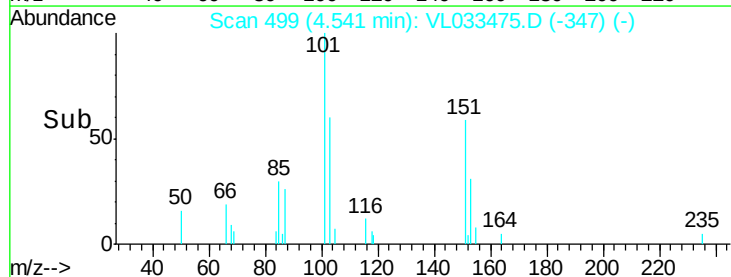
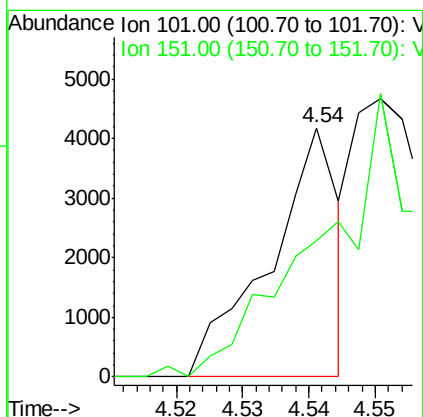
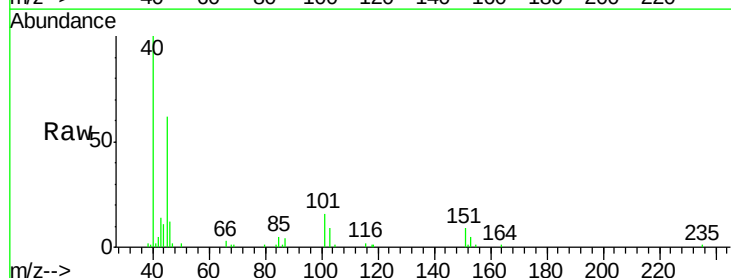
Instrument :  
 MSVOA\_L  
 ClientSampleId :

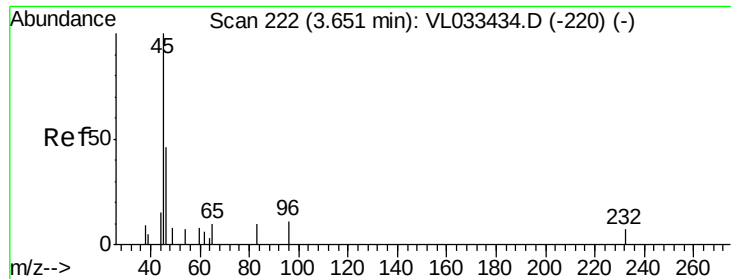
Tot Ion:101 Resp: 32503  
 Ion Ratio Lower Upper  
 101 100  
 103 57.8 51.3 76.9



#12  
 1,1,2-Trichlorotrifluoroethane  
 Concen: 0.035 ppbv  
 RT: 4.54 min Scan# 499  
 Delta R.T. -0.01 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

Tgt Ion:101 Resp: 3023  
 Ion Ratio Lower Upper  
 101 100  
 151 0.0 57.7 86.5#

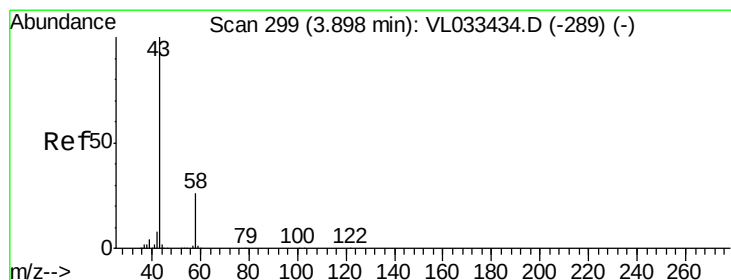
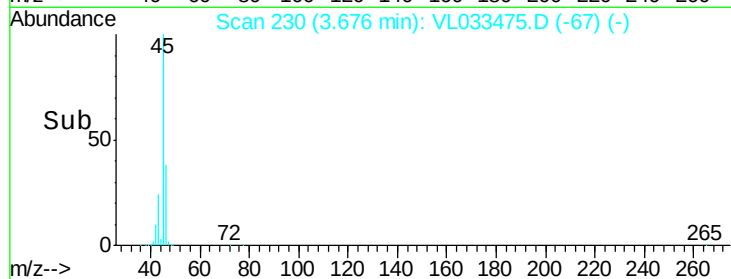
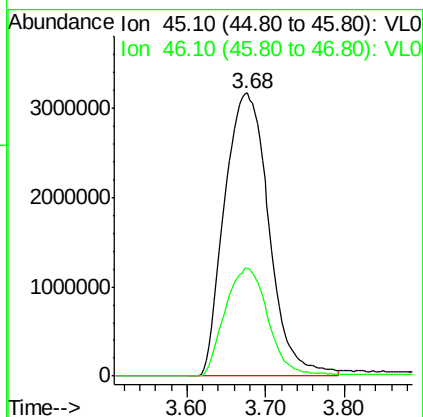
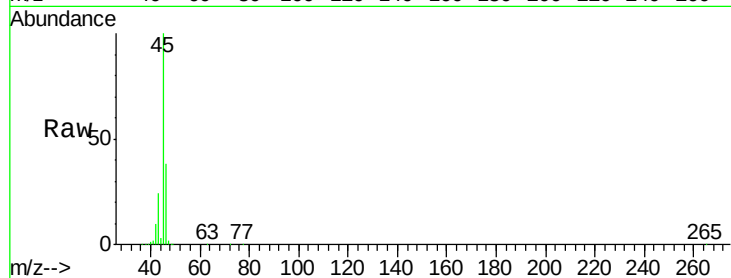




#13  
Ethanol  
Concen: 1401.304 ppbv  
RT: 3.68 min Scan# 230  
Delta R.T. 0.03 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

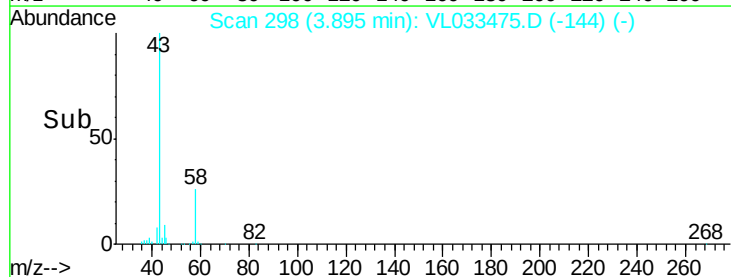
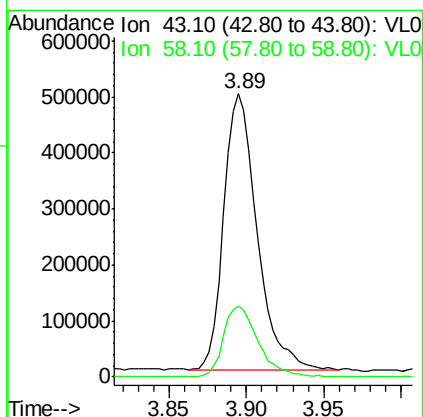
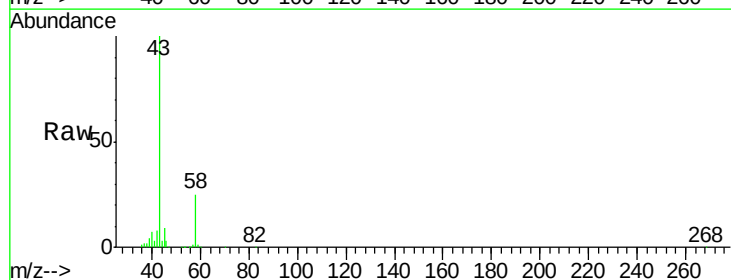
Instrument :  
MSVOA\_L  
ClientSampleId :

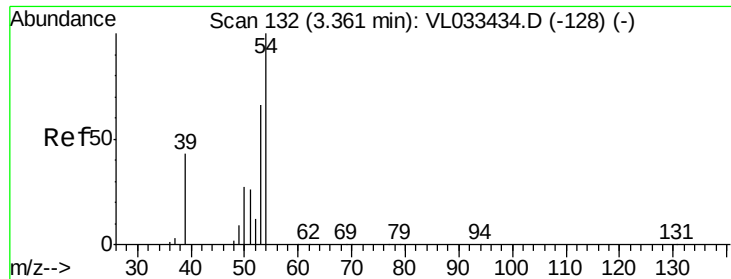
Tot Ion: 45 Resp:12500342  
Ion Ratio Lower Upper  
45 100  
46 37.4 25.4 101.8



#15  
Acetone  
Concen: 8.566 ppbv  
RT: 3.89 min Scan# 298  
Delta R.T. -0.00 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 43 Resp: 734413  
Ion Ratio Lower Upper  
43 100  
58 27.0 20.5 30.7

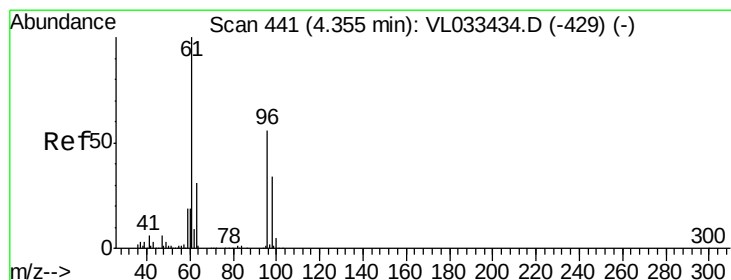
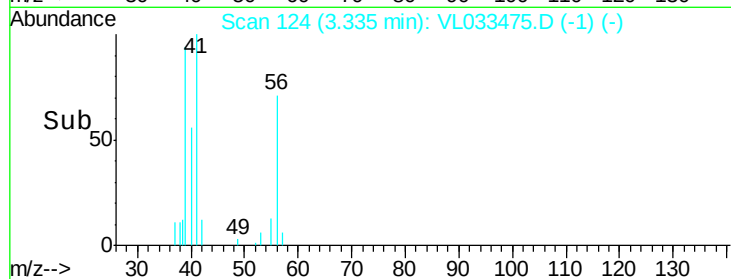
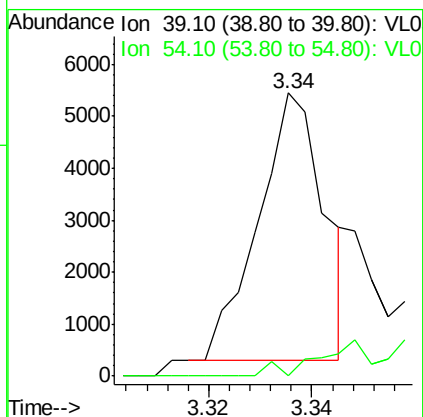
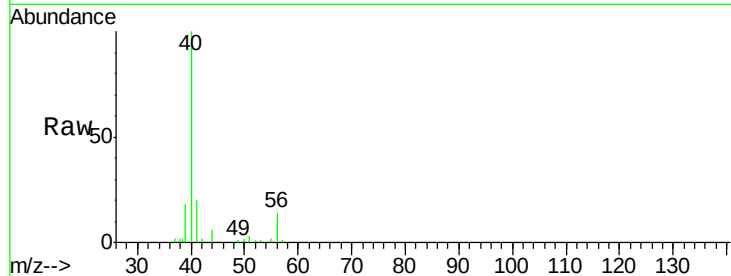




#16  
1,3-Butadiene  
Concen: 0.135 ppbv  
RT: 3.34 min Scan# 124  
Delta R.T. -0.03 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

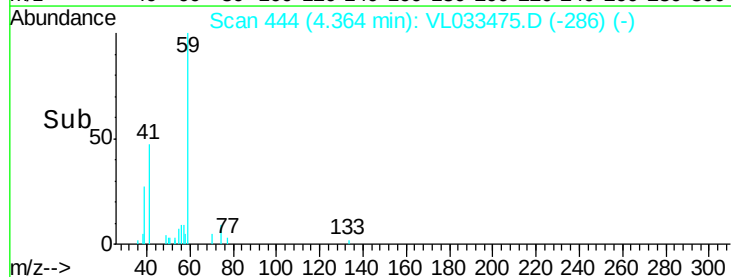
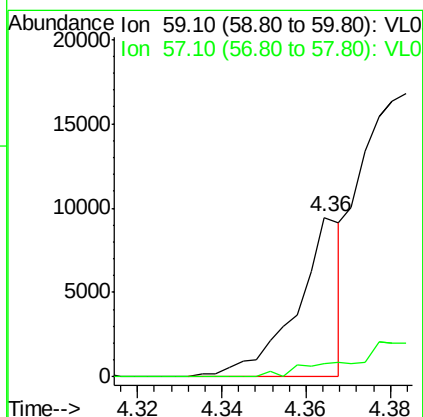
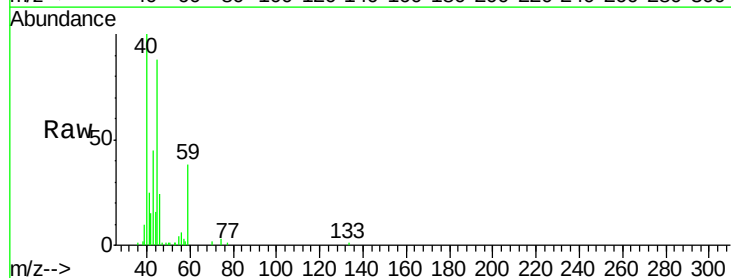
Instrument :  
MSVOA\_L  
ClientSampleId :

Tot Ion: 39 Resp: 4576  
Ion Ratio Lower Upper  
39 100  
54 22.8 69.4 104.2#

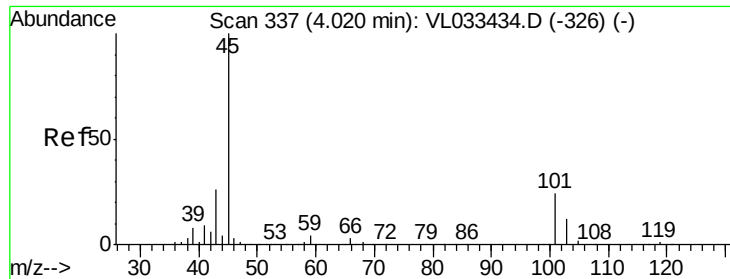


#17  
tert-Butyl alcohol  
Concen: 0.446 ppbv  
RT: 4.36 min Scan# 444  
Delta R.T. 0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 59 Resp: 7032  
Ion Ratio Lower Upper  
59 100  
57 0.0 7.8 11.8#







#19

Isopropyl Alcohol

Concen: 8.680 ppbv

RT: 4.05 min Scan# 347

Delta R.T. 0.03 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Instrument :

MSVOA\_L

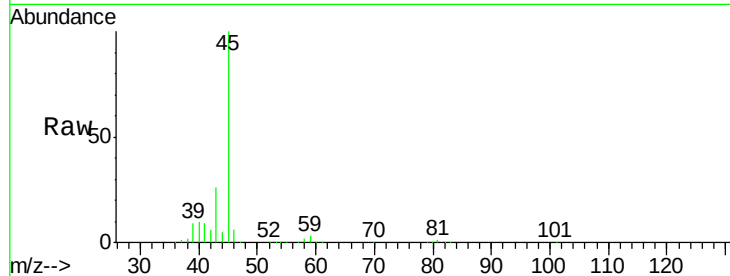
ClientSampleId :

Tot Ion: 45 Resp: 470677

Ion Ratio Lower Upper

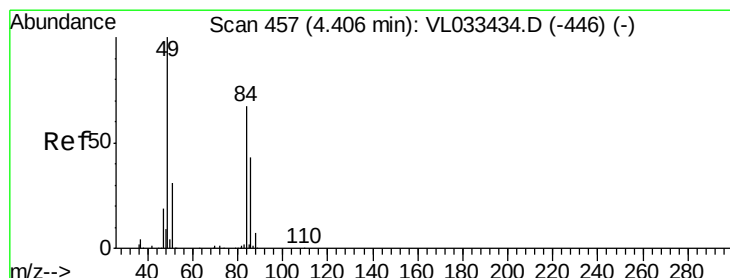
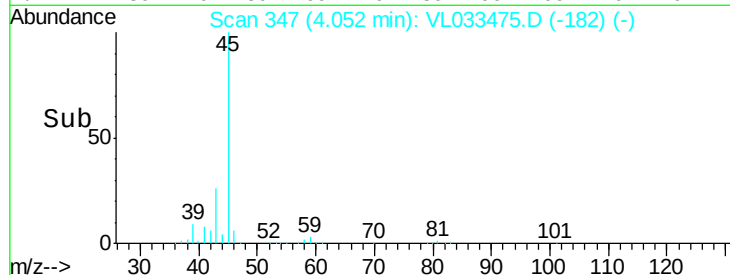
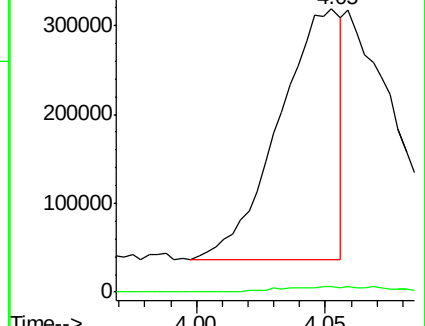
45 100

58 4.6 1.4 2.2#



Abundance Ion 45.10 (44.80 to 45.80): VL0

Ion 58.10 (57.80 to 58.80): VL0



#20

Methylene Chloride

Concen: 3.087 ppbv

RT: 4.40 min Scan# 456

Delta R.T. -0.00 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Tgt Ion: 84 Resp: 112341

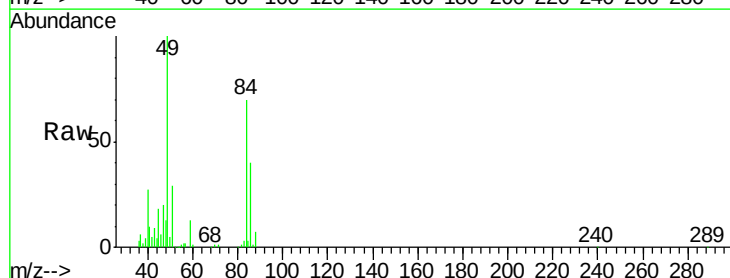
Ion Ratio Lower Upper

84 100

49 142.0 120.0 180.0

51 40.6 36.7 55.1

86 57.4 51.9 77.9

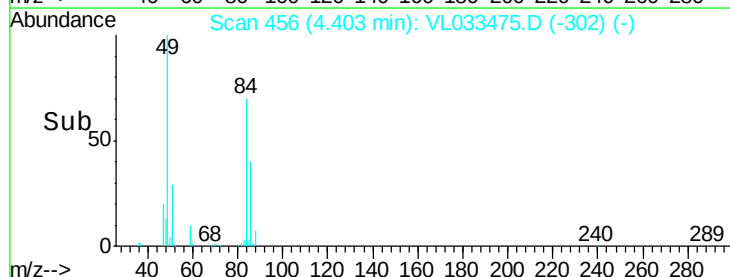
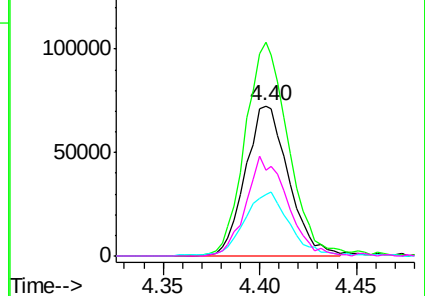


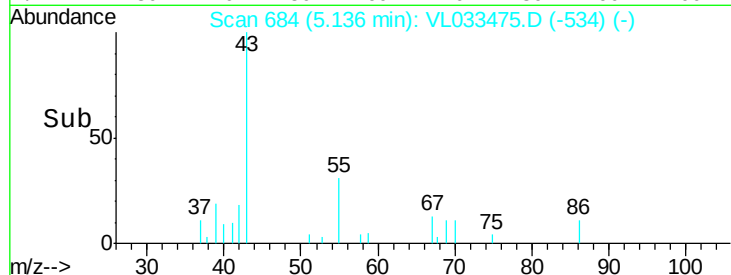
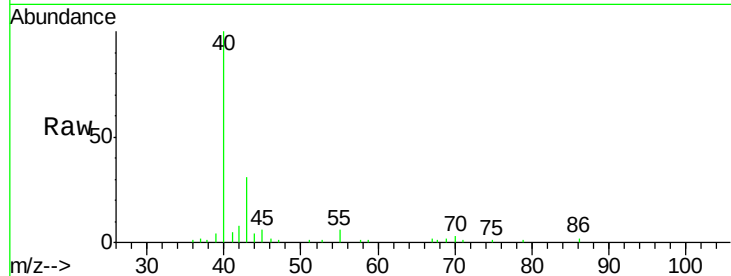
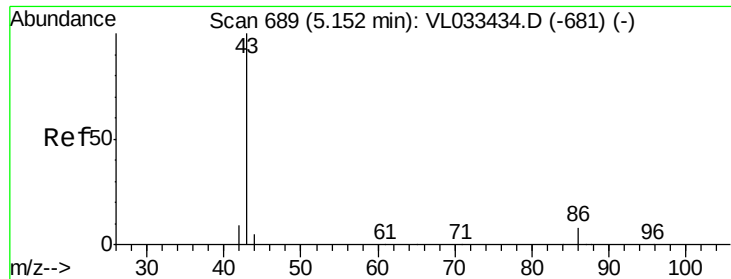
Abundance Ion 84.00 (83.70 to 84.70): VL0

Ion 49.10 (48.80 to 49.80): VL0

Ion 51.10 (50.80 to 51.80): VL0

Ion 86.00 (85.70 to 86.70): VL0





#23

Vinyl Acetate

Concen: 0.103 ppbv

RT: 5.14 min Scan# 684

Delta R.T. -0.02 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Instrument :

MSVOA\_L

ClientSampled :

Tot Ion: 43 Resp: 12624

Ion Ratio Lower Upper

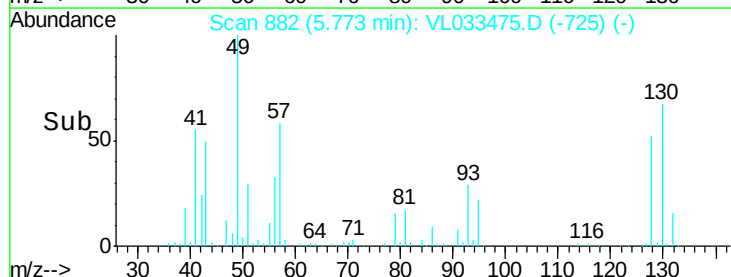
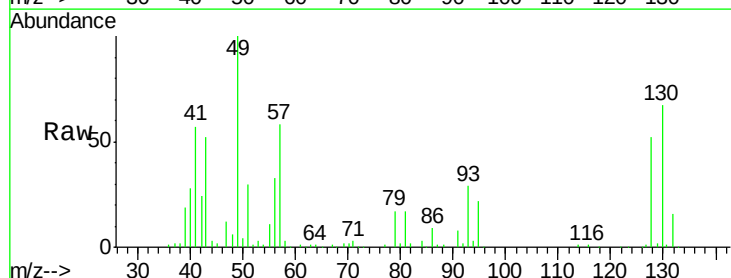
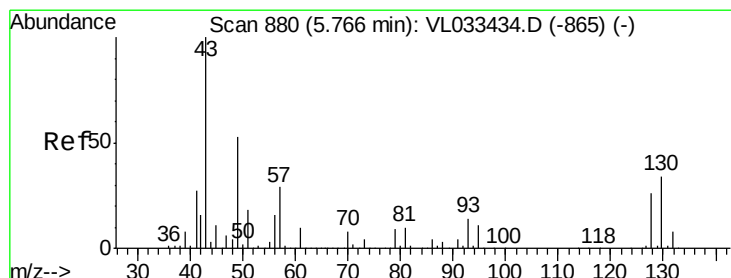
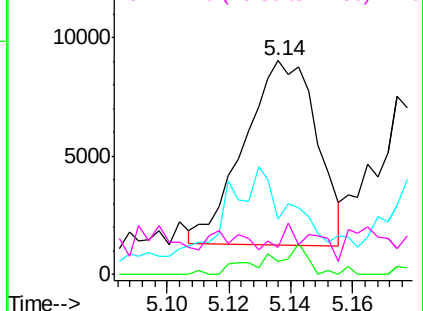
43 100

86 9.0 5.6 8.4#

42 19.0 8.0 12.0#

44 9.8 3.9 5.9#

Abundance Ion 43.10 (42.80 to 43.80): VL0  
Ion 86.10 (85.80 to 86.80): VL0  
Ion 42.10 (41.80 to 42.80): VL0  
Ion 44.10 (43.80 to 44.80): VL0



#25

Ethyl Acetate

Concen: 0.660 ppbv

RT: 5.77 min Scan# 882

Delta R.T. 0.01 min

Lab File: VL033475.D

Acq: 27 Mar 2019 19:26

Tgt Ion: 43 Resp: 104943

Ion Ratio Lower Upper

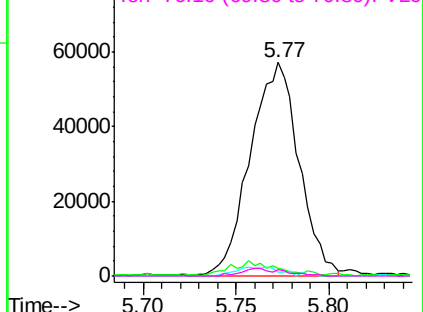
43 100

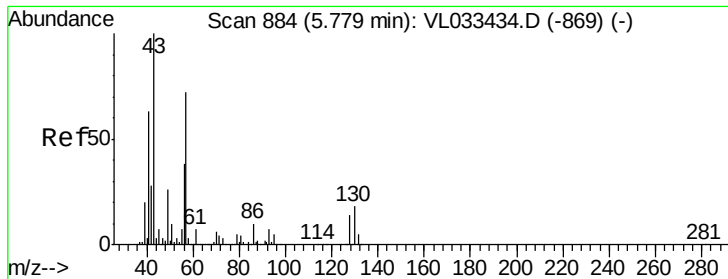
45 6.3 7.8 11.6#

61 4.0 7.3 10.9#

70 3.1 5.6 8.4#

Abundance Ion 43.10 (42.80 to 43.80): VL0  
Ion 45.10 (44.80 to 45.80): VL0  
Ion 61.10 (60.80 to 61.80): VL0  
Ion 70.10 (69.80 to 70.80): VL0

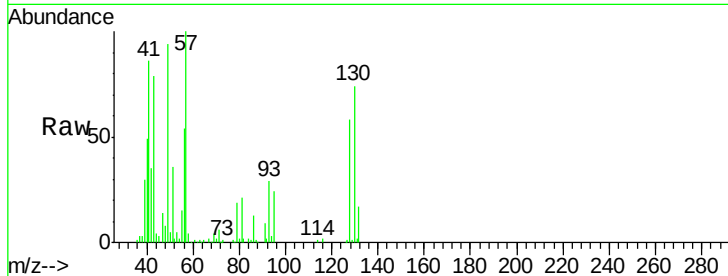




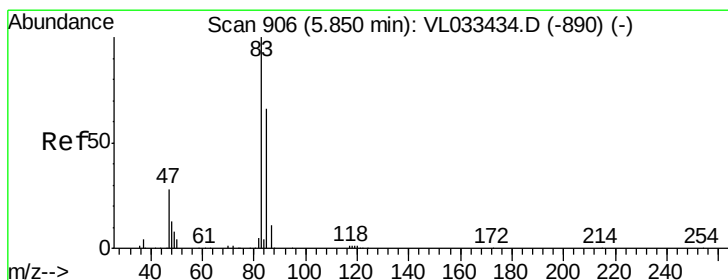
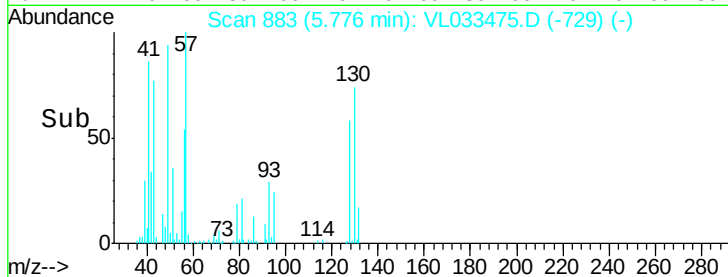
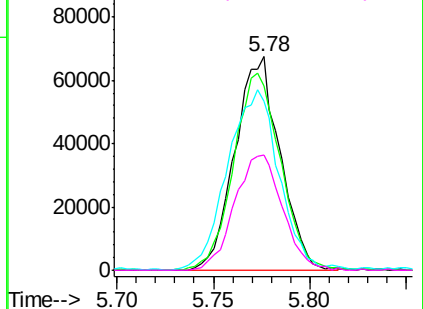
#26  
Hexane  
Concen: 1.547 ppbv  
RT: 5.78 min Scan# 883  
Delta R.T. -0.00 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Instrument :  
MSVOA\_L  
ClientSampleId :

Tot Ion: 57 Resp: 109442  
Ion Ratio Lower Upper  
57 100  
41 96.6 70.7 106.1  
43 97.2 182.6 274.0#  
56 57.3 42.0 63.0

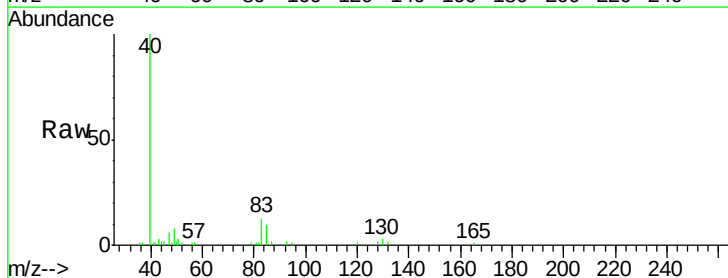


Abundance Ion 57.10 (56.80 to 57.80): VL0  
Ion 41.10 (40.80 to 41.80): VL0  
Ion 43.10 (42.80 to 43.80): VL0  
Ion 56.10 (55.80 to 56.80): VL0

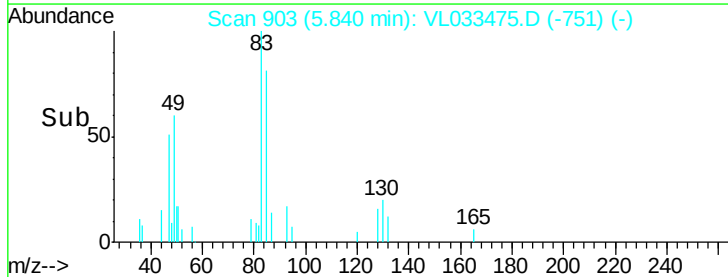
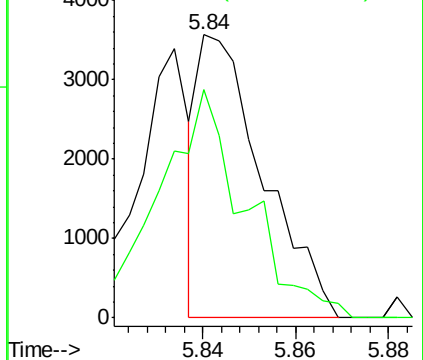


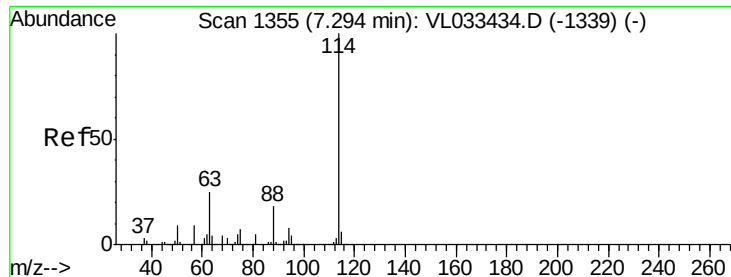
#29  
Chloroform  
Concen: 0.028 ppbv  
RT: 5.84 min Scan# 903  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 83 Resp: 3445  
Ion Ratio Lower Upper  
83 100  
85 75.7 52.6 79.0



Abundance Ion 83.00 (82.70 to 83.70): VL0  
Ion 85.00 (84.70 to 85.70): VL0

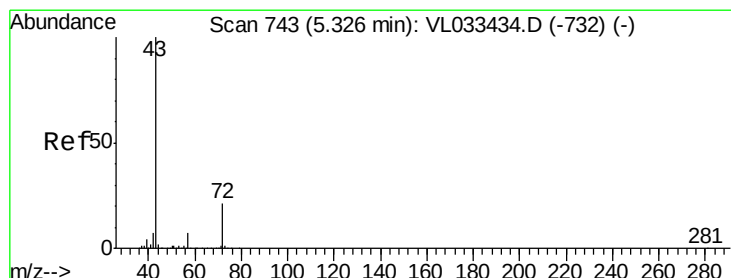
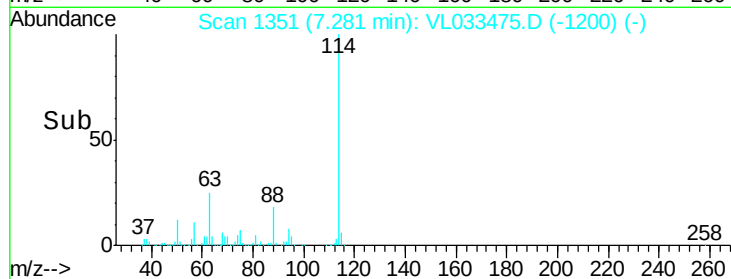
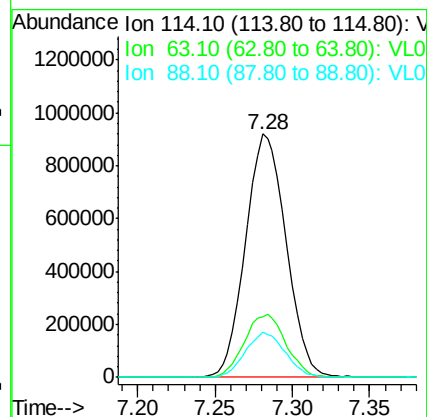
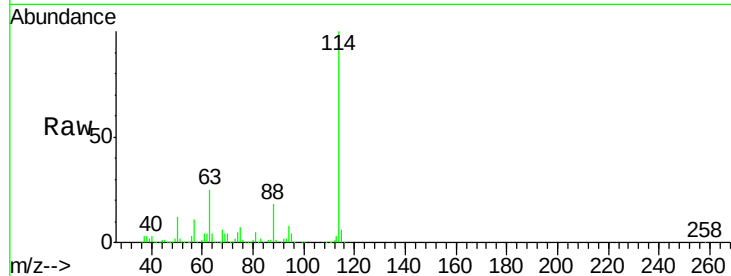




#33  
 1,4-Difluorobenzene  
 Concen: 10.000 ppbv  
 RT: 7.28 min Scan# 1351  
 Delta R.T. -0.01 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

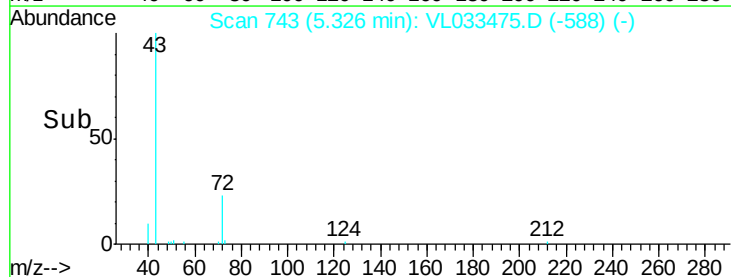
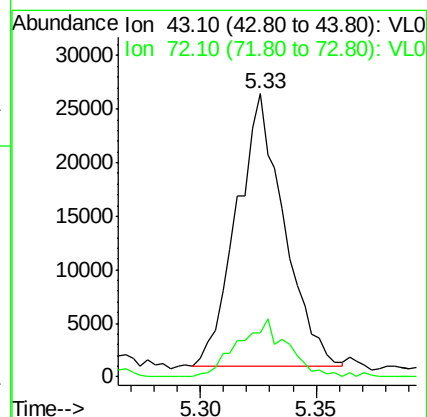
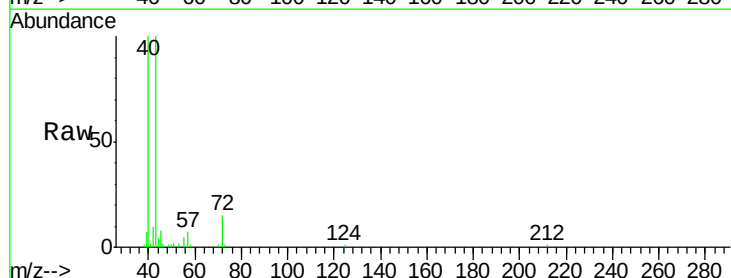
Instrument :  
 MSVOA\_L  
 ClientSampleId :

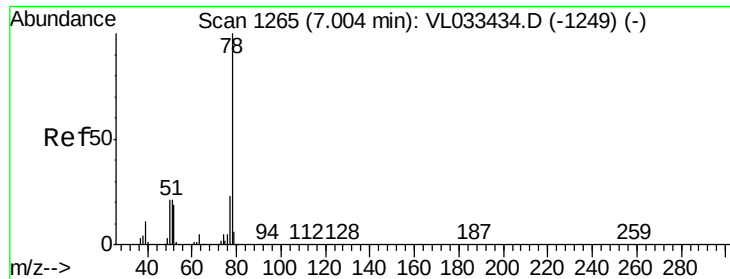
Tot Ion:114 Resp: 1681290  
 Ion Ratio Lower Upper  
 114 100  
 63 26.6 21.5 32.3  
 88 18.1 14.5 21.7



#34  
 2-Butanone  
 Concen: 0.356 ppbv  
 RT: 5.33 min Scan# 743  
 Delta R.T. -0.00 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

Tgt Ion: 43 Resp: 35924  
 Ion Ratio Lower Upper  
 43 100  
 72 22.4 17.4 26.2

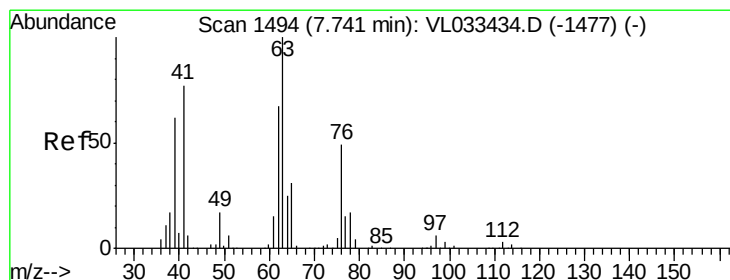
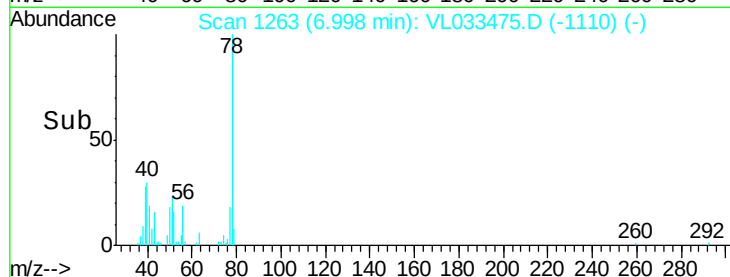
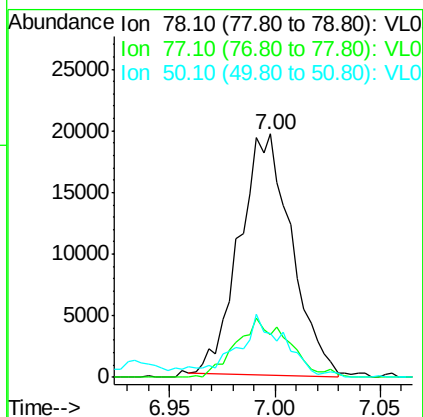
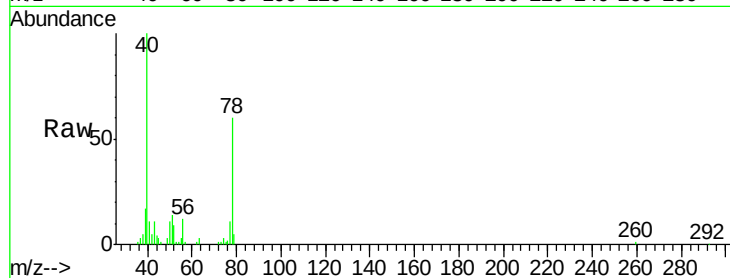




#36  
Benzene  
Concen: 0.238 ppbv  
RT: 7.00 min Scan# 1263  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

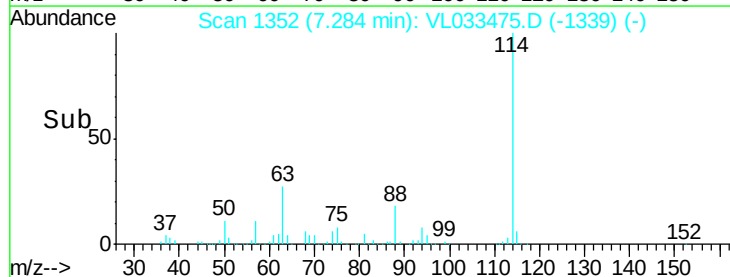
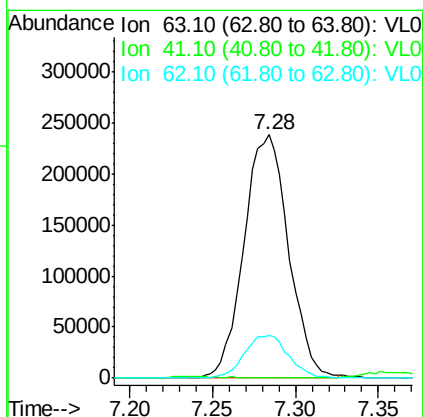
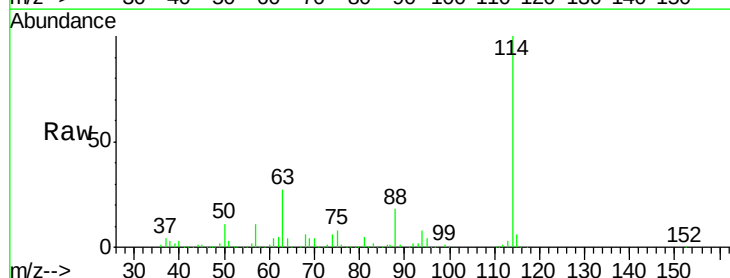
Instrument :  
MSVOA\_L  
ClientSampled :

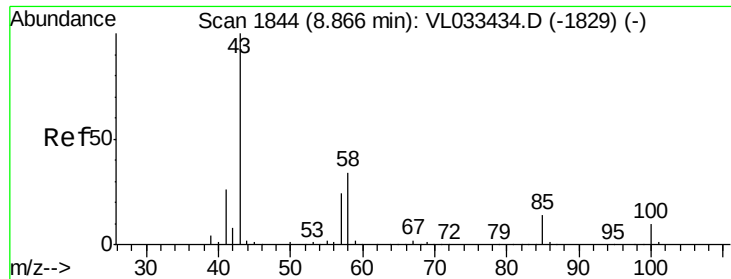
Tot Ion: 78 Resp: 33622  
Ion Ratio Lower Upper  
78 100  
77 16.9 18.1 27.1#  
50 16.5 16.7 25.1#



#39  
1,2-Dichloropropane  
Concen: 8.059 ppbv  
RT: 7.28 min Scan# 1352  
Delta R.T. -0.46 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 63 Resp: 445344  
Ion Ratio Lower Upper  
63 100  
41 0.2 61.2 91.8#  
62 17.3 54.0 81.0#

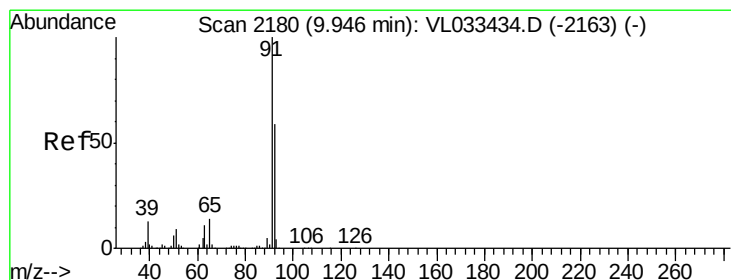
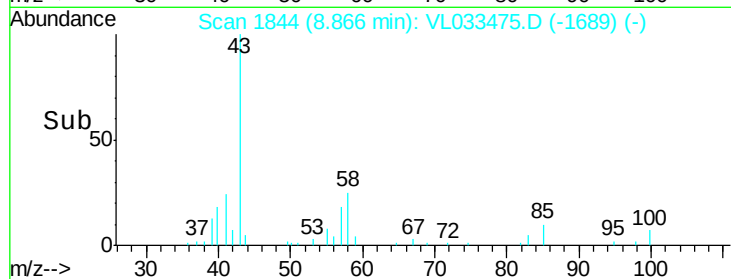
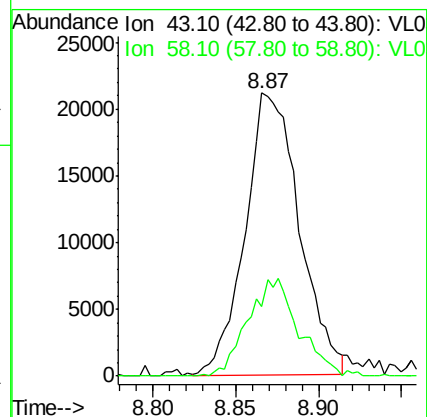
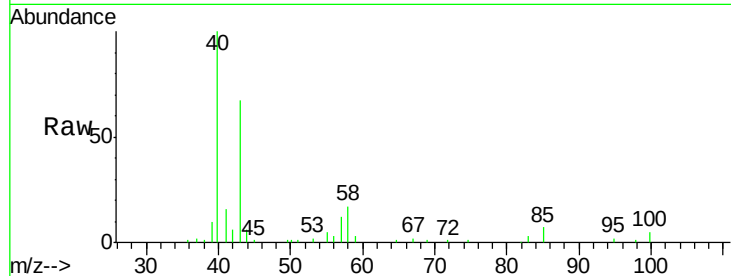




#50  
4-Methyl-2-Pentanone  
Concen: 0.326 ppbv  
RT: 8.87 min Scan# 1844  
Delta R.T. -0.00 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

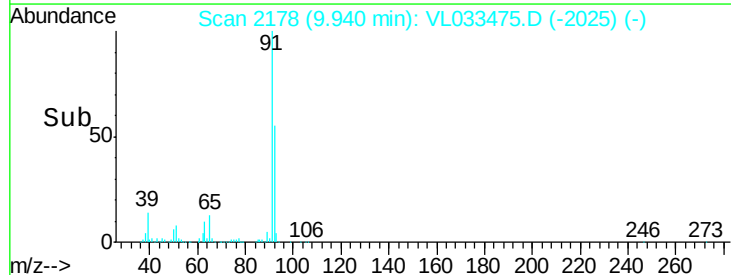
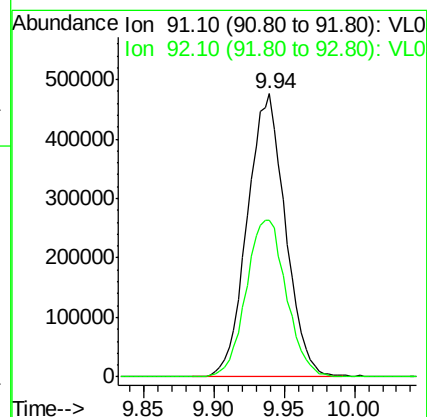
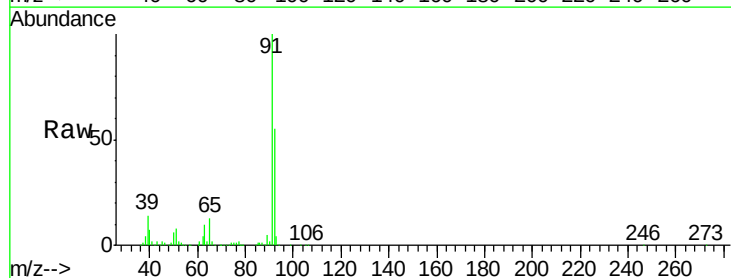
Instrument :  
MSVOA\_L  
ClientSampleId :

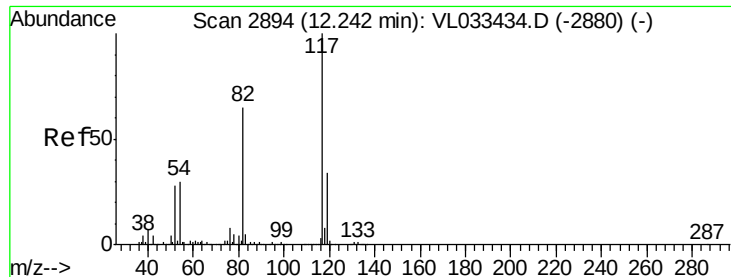
Tot Ion: 43 Resp: 48188  
Ion Ratio Lower Upper  
43 100  
58 32.5 28.0 42.0



#53  
Toluene  
Concen: 5.493 ppbv  
RT: 9.94 min Scan# 2178  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 91 Resp: 900408  
Ion Ratio Lower Upper  
91 100  
92 58.6 47.4 71.0

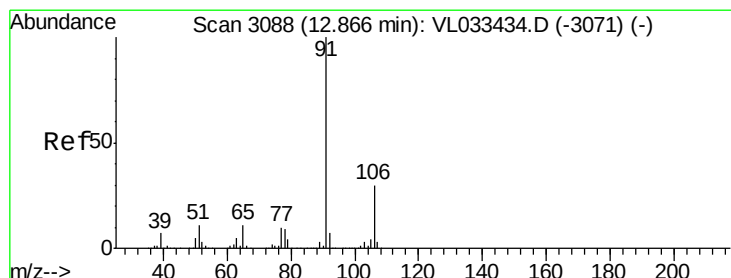
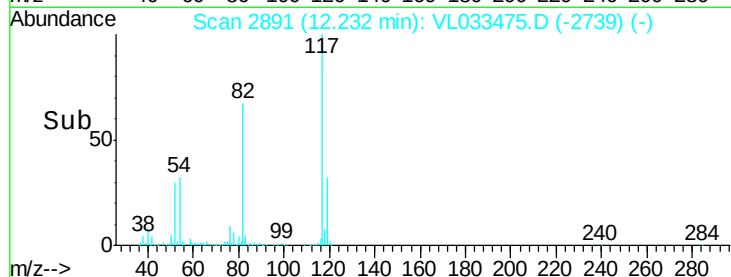
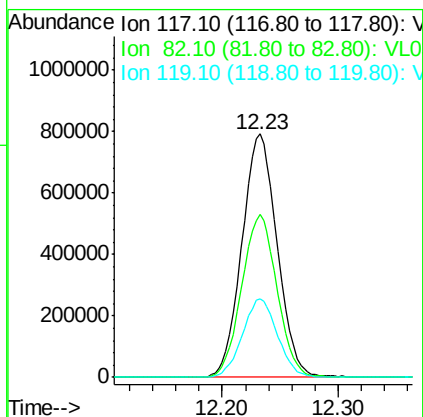
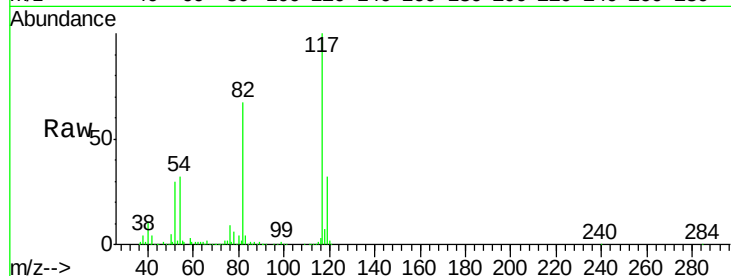




#55  
Chlorobenzene-d5  
Concen: 10.000 ppbv  
RT: 12.23 min Scan# 2891  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

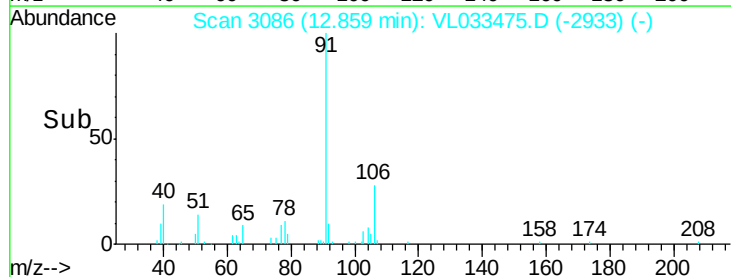
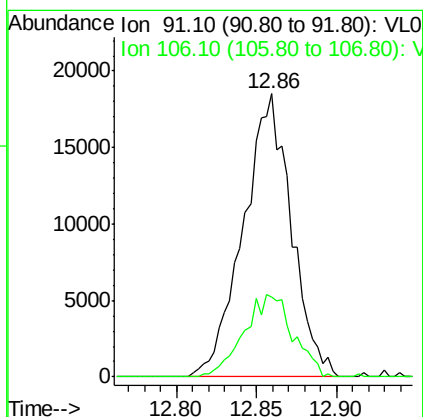
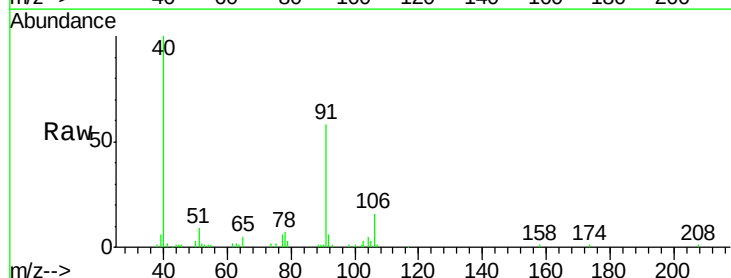
Instrument :  
MSVOA\_L  
ClientSampleId :

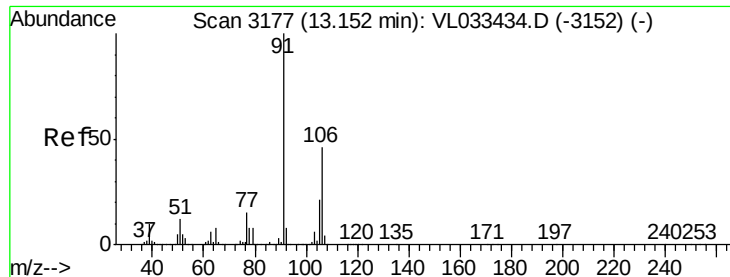
Tot Ion:117 Resp: 1673495  
Ion Ratio Lower Upper  
117 100  
82 67.2 51.5 77.3  
119 32.3 25.5 38.3



#58  
Ethyl Benzene  
Concen: 0.171 ppbv  
RT: 12.86 min Scan# 3086  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 91 Resp: 38308  
Ion Ratio Lower Upper  
91 100  
106 28.0 23.8 35.6

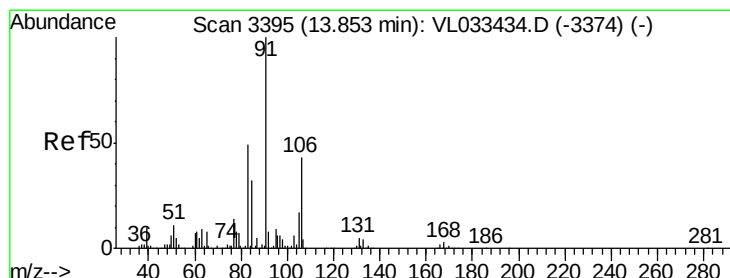
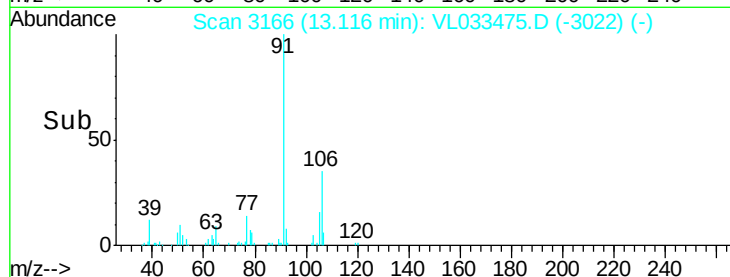
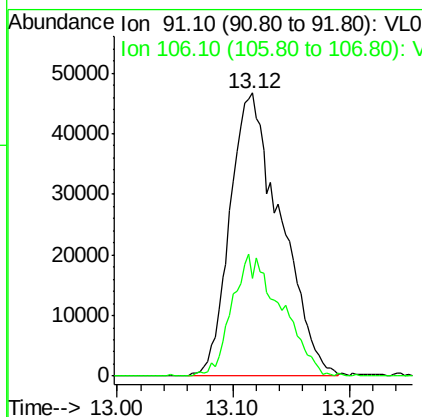
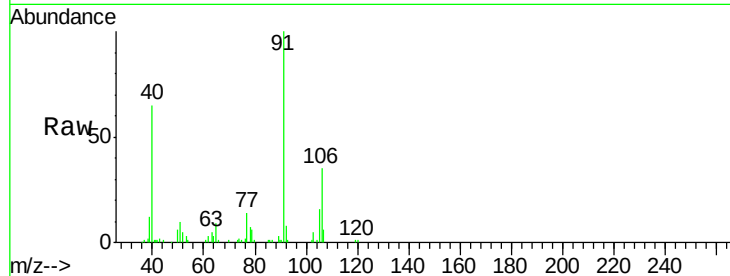




#59  
m/p-Xylene  
Concen: 0.709 ppbv  
RT: 13.12 min Scan# 3166  
Delta R.T. -0.04 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

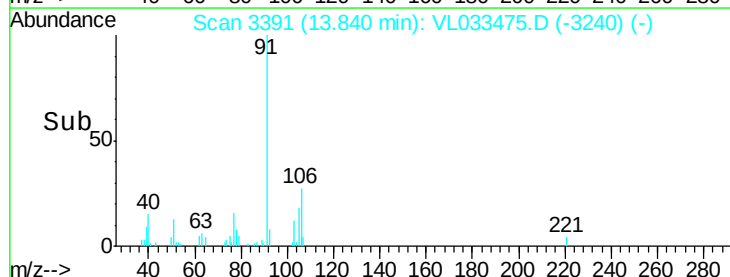
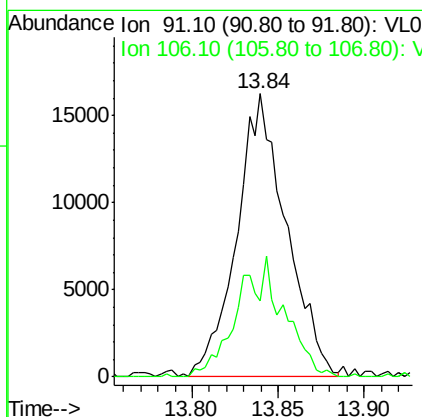
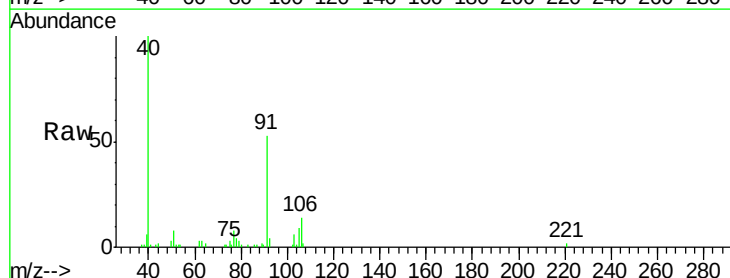
Instrument :  
MSVOA\_L  
ClientSampleId :

Tot Ion: 91 Resp: 141624  
Ion Ratio Lower Upper  
91 100  
106 41.8 0.0 0.0#

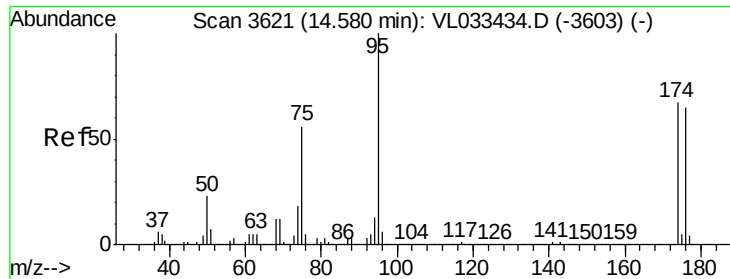


#60  
o-Xylene  
Concen: 0.169 ppbv  
RT: 13.84 min Scan# 3391  
Delta R.T. -0.01 min  
Lab File: VL033475.D  
Acq: 27 Mar 2019 19:26

Tgt Ion: 91 Resp: 32538  
Ion Ratio Lower Upper  
91 100  
106 40.0 21.4 64.3



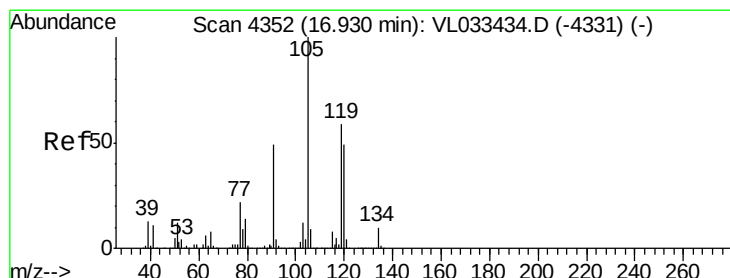
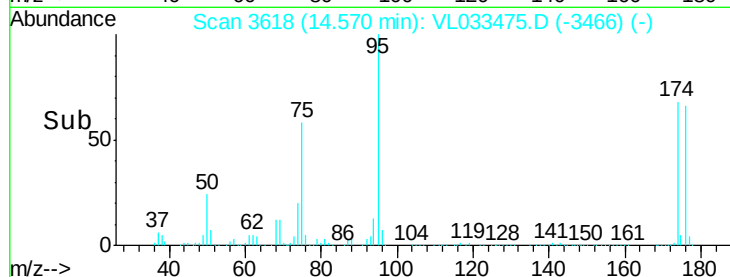
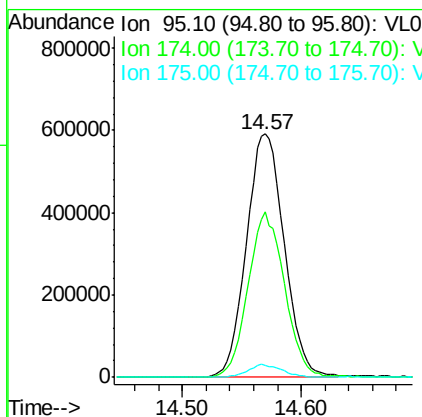
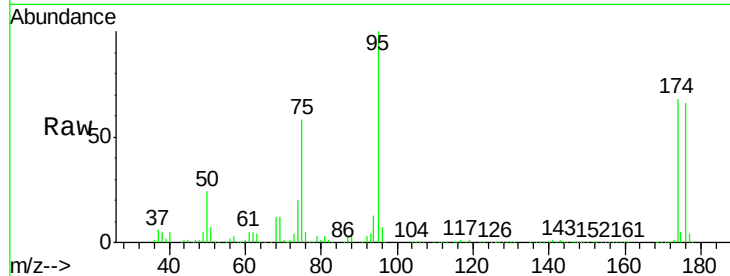




#68  
 1-Bromo-4-Fluorobenzene  
 Concen: 9.943 ppbv  
 RT: 14.57 min Scan# 3618  
 Delta R.T. -0.01 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

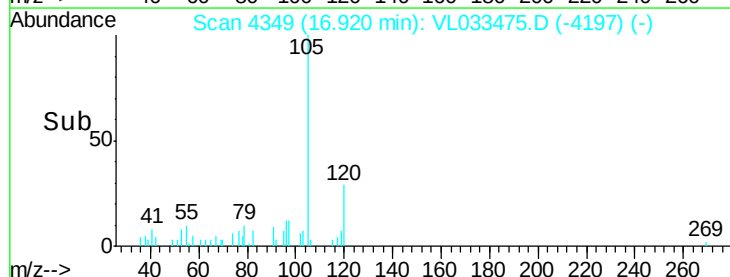
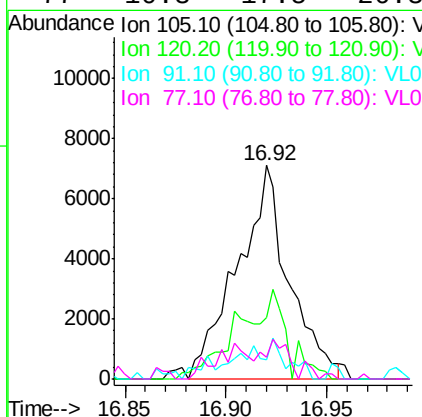
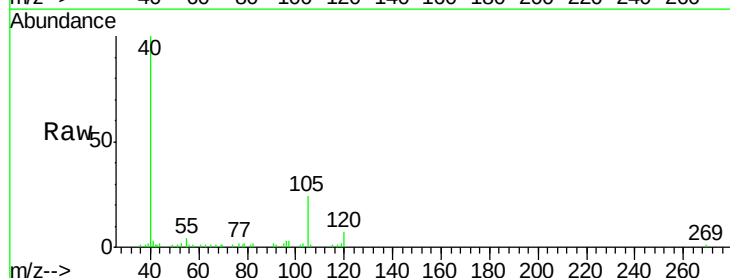
Instrument :  
 MSVOA\_L  
 ClientSampleId :

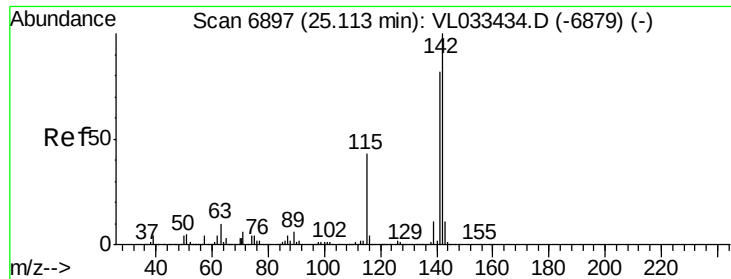
Tot Ion: 95 Resp: 1304533  
 Ion Ratio Lower Upper  
 95 100  
 174 65.5 52.9 79.3  
 175 4.9 3.8 5.6



#74  
 1,2,4-Trimethylbenzene  
 Concen: 0.057 ppbv  
 RT: 16.92 min Scan# 4349  
 Delta R.T. -0.01 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

Tgt Ion: 105 Resp: 12632  
 Ion Ratio Lower Upper  
 105 100  
 120 28.6 39.0 58.6#  
 91 3.8 40.0 60.0#  
 77 10.3 17.5 26.3#





#80  
 Naphthalene, 2-methyl-  
 Concen: 0.026 ppbv  
 RT: 25.11 min Scan# 6896  
 Delta R.T. -0.00 min  
 Lab File: VL033475.D  
 Acq: 27 Mar 2019 19:26

Instrument :  
 MSVOA\_L  
 ClientSampleId :

| Tot Ion | Ratio | Lower | Upper |
|---------|-------|-------|-------|
| 142     | 100   |       |       |
| 141     | 101.9 | 66.6  | 99.8# |
| 115     | 43.9  | 34.4  | 51.6  |

