

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL110921\
 Data File : VL037999.D
 Acq On : 10 Nov 2021 4:00
 Operator : SY/AP
 Sample : M4597-02
 Misc : 400mL/MSVOA L
 ALS Vial : 1 Sample Multiplier: 1

Instrument :
 MSVOA_L
 ClientSampleId :

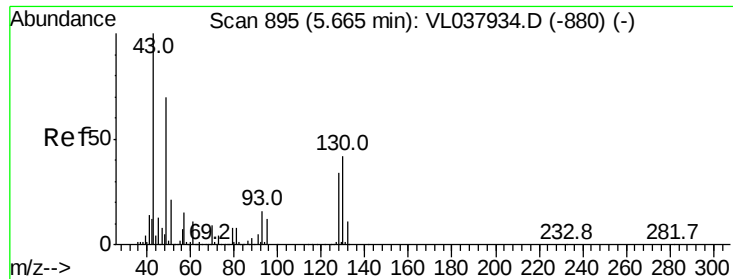
Quant Time: Nov 10 04:51:18 2021
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL110121AIR.M
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA_L Tue Nov 02 05:54:07 2021
 QLast Update : Tue Nov 02 05:54:07 2021
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	5.67	49	1253480	10.00	ppbv	0.00
33) 1,4-Difluorobenzene	7.18	114	3707901	10.00	ppbv	0.00
55) Chlorobenzene-d5	12.09	117	3107150	10.00	ppbv	0.00

System Monitoring Compounds						
68) 1-Bromo-4-Fluorobenzene	14.41	95	2196097	9.72	ppbv	0.00
Spiked Amount	10.000	Range	65 - 135	Recovery	=	97.20%

Target Compounds	R.T.	QIon	Response	Conc	Units	Ovalue
2) Dichlorodifluoromethane	3.05	85	56423	0.319	ppbv	96
3) Chlorodifluoromethane	3.00	51	1975211	8.465	ppbv	95
4) Chloromethane	3.15	50	37022	0.417	ppbv	91
7) Chloroethane	3.56	64	1334	0.043	ppbv #	85
9) Propene	3.21	41	587561	7.023	ppbv	99
10) Heptane	8.12	43	7893	0.041	ppbv #	28
11) Trichlorofluoromethane	3.95	101	19407	0.110	ppbv	99
12) 1,1,2-Trichlorotrifluoroet	4.49	101	5401	0.039	ppbv #	1
13) Ethanol	3.61	45	207472	24.581	ppbv	96
15) Acetone	3.86	43	720609	6.957	ppbv #	69
16) 1,3-Butadiene	3.31	39	9668	0.118	ppbv	94
17) tert-Butyl alcohol	4.30	59	23005	0.214	ppbv #	71
19) Isopropyl Alcohol	3.98	45	123441	1.864	ppbv #	88
20) Methylene Chloride	4.35	84	164881	2.900	ppbv	96
22) trans-1,2-Dichloroethene	4.89	96	1253206	19.989	ppbv	98
23) Vinyl Acetate	5.06	43	121407	0.778	ppbv #	1
24) 1,1-Dichloroethane	5.06	63	6949	0.054	ppbv #	88
25) Ethyl Acetate	5.69	43	205158	0.667	ppbv #	85
26) Hexane	5.69	57	125659	0.862	ppbv #	40
34) 2-Butanone	5.25	43	504858	3.674	ppbv	99
35) Carbon Tetrachloride	7.02	117	7410	0.033	ppbv #	77
36) Benzene	6.89	78	35215	0.117	ppbv	96
38) Trichloroethene	7.83	130	65138	0.520	ppbv #	81
39) 1,2-Dichloropropane	7.18	63	879513	7.741	ppbv #	28
44) 2,2,4-Trimethylpentane	7.87	57	23689	0.046	ppbv #	42
52) Tetrachloroethene	11.22	164	10636	0.093	ppbv	95
53) Toluene	9.81	91	318712	0.985	ppbv	99
58) Ethyl Benzene	12.71	91	31877	0.084	ppbv	90
59) m/p-Xylene	13.00	91	47725	0.141	ppbv #	30
60) o-Xylene	13.69	91	119043	0.374	ppbv	96
61) Styrene	13.53	104	58674	0.401	ppbv #	88
66) Benzyl Chloride	17.19	91	1141	0.055	ppbv #	92
71) 2-Chlorotoluene	15.31	91	949178	3.005	ppbv #	41

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



#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.67 Instrument:

Delta R.T. MSVOA_1

Lab File:

Acq: 10 Nov 2021 4:00

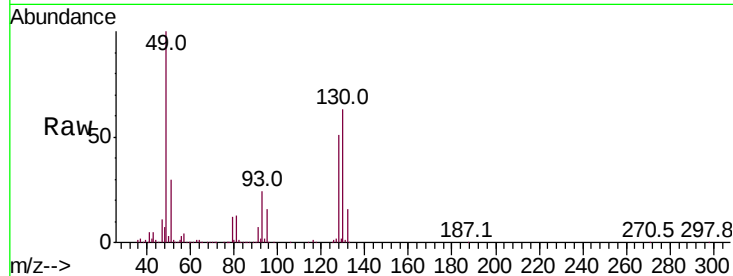
Tot Ion: 49 Resp: 1253480

Ion Ratio Lower Upper

49 100

128 56.6 27.0 81.0

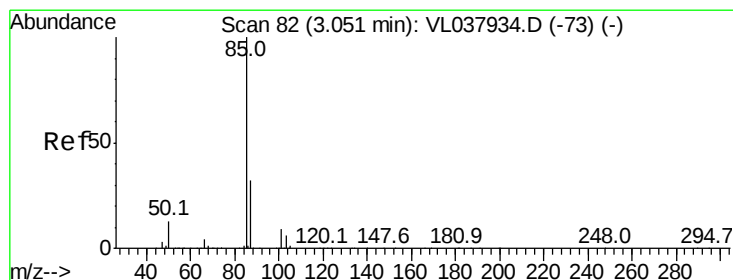
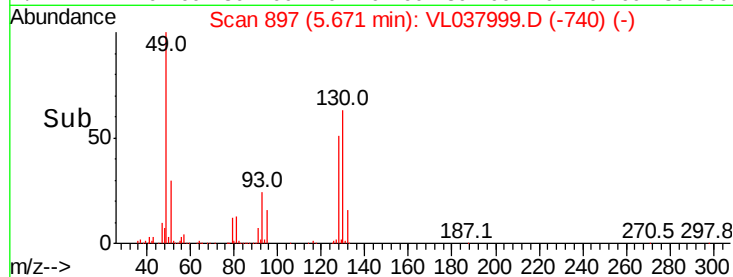
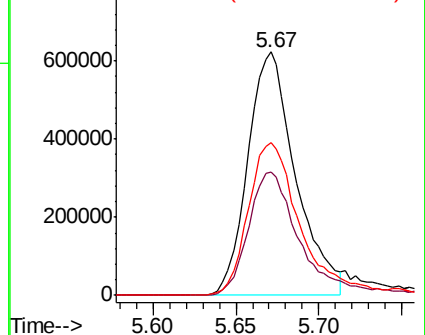
130 70.9 33.4 100.2



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: 0.319 ppbv

RT: 3.05 min Scan# 83

Delta R.T. 0.00 min

Lab File: VL037999.D

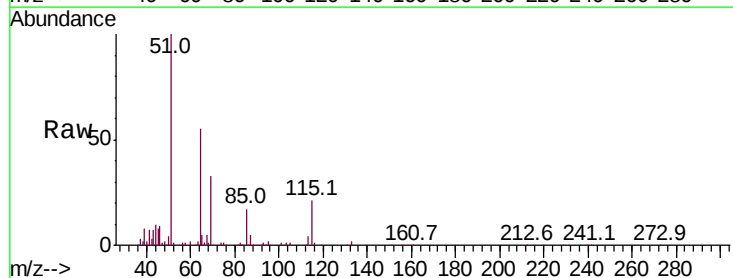
Acq: 10 Nov 2021 4:00

Tgt Ion: 85 Resp: 56423

Ion Ratio Lower Upper

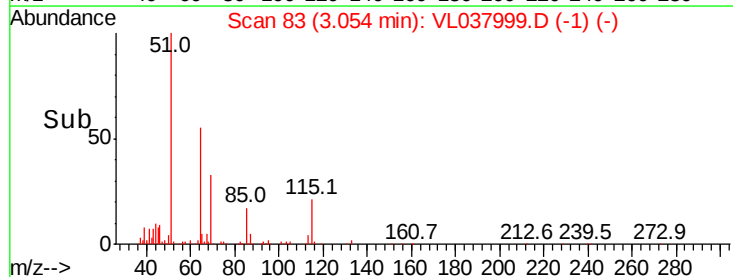
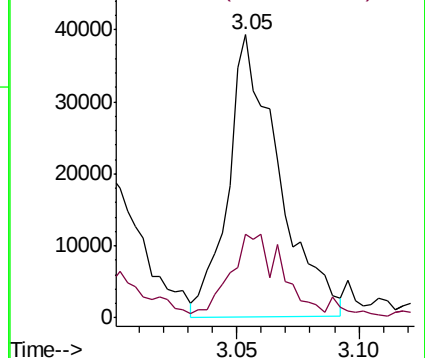
85 100

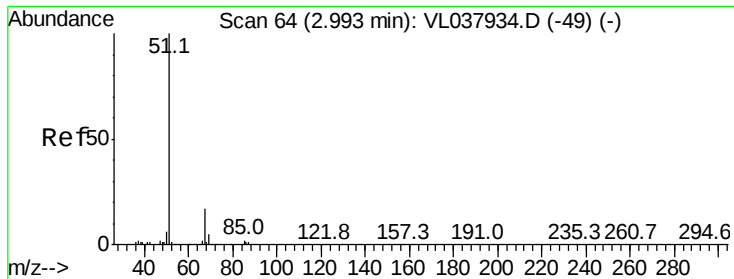
87 29.4 25.3 37.9



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0





#3

Chlorodifluoromethane

Concen: 8.465 ppbv

RT: 3.00 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

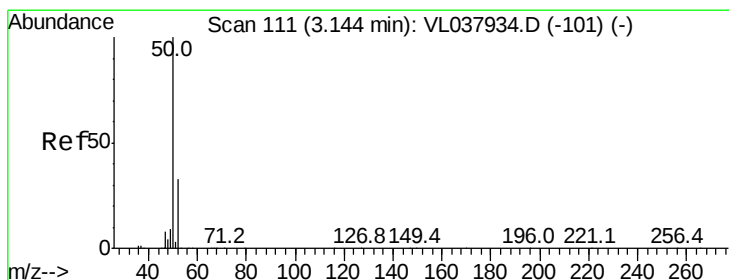
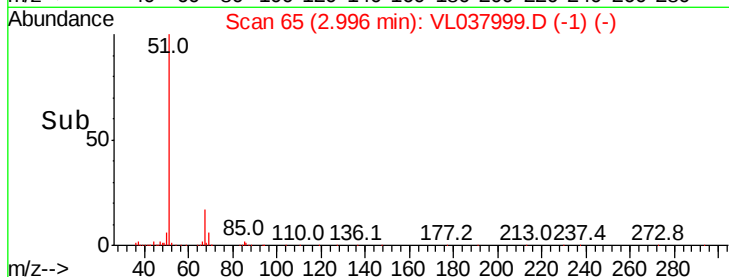
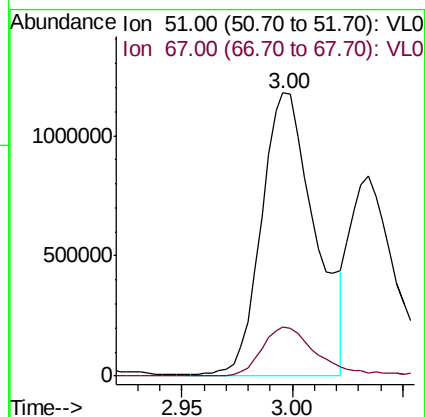
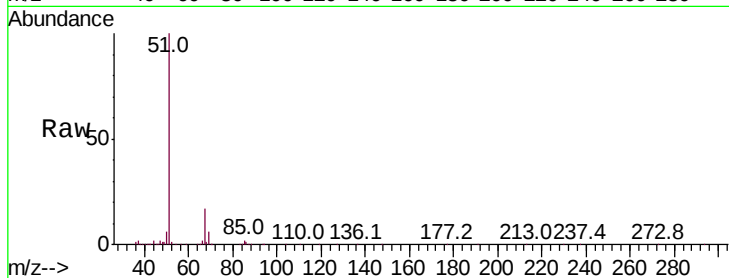
Acq: 10 Nov 2021 4:00

Tot Ion: 51 Resp: 1975211

Ion Ratio Lower Upper

51 100

67 19.0 13.4 20.0



#4

Chloromethane

Concen: 0.417 ppbv

RT: 3.15 min Scan# 113

Delta R.T. 0.01 min

Lab File: VL037999.D

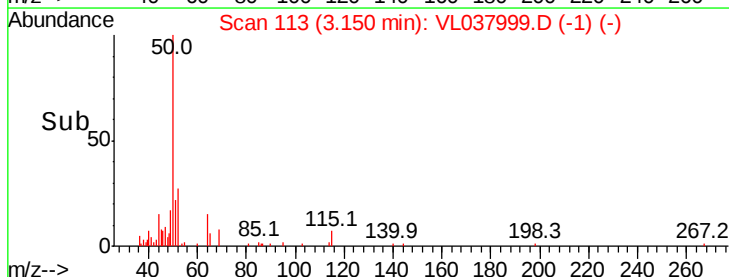
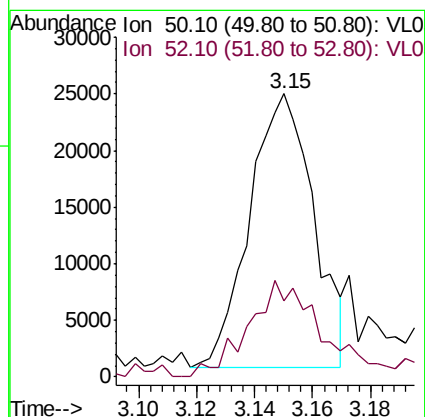
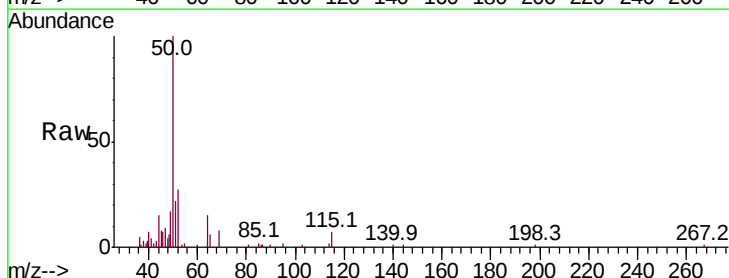
Acq: 10 Nov 2021 4:00

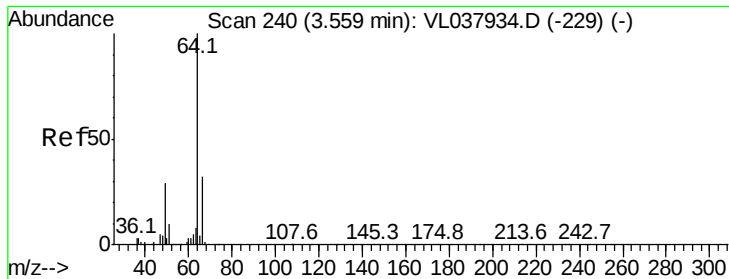
Tgt Ion: 50 Resp: 37022

Ion Ratio Lower Upper

50 100

52 27.9 26.3 39.5





#7

Chloroethane

Concen: 0.043 ppbv

RT: 3.56 Instrument:

Delta R.T. MSVOA_1

Lab File:

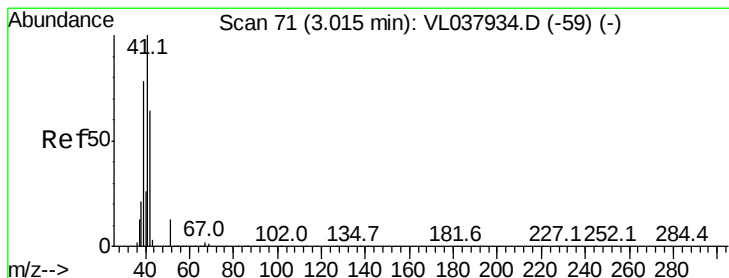
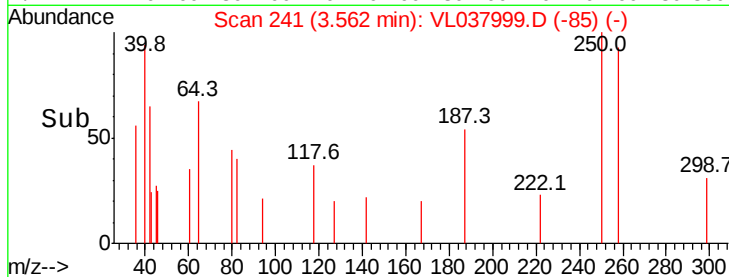
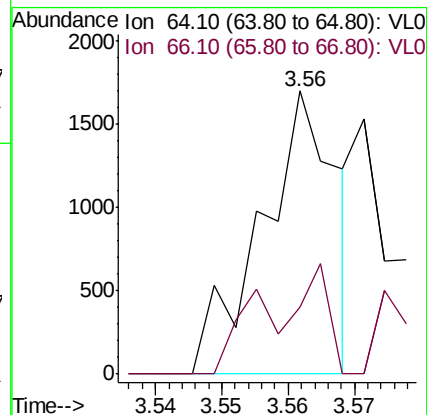
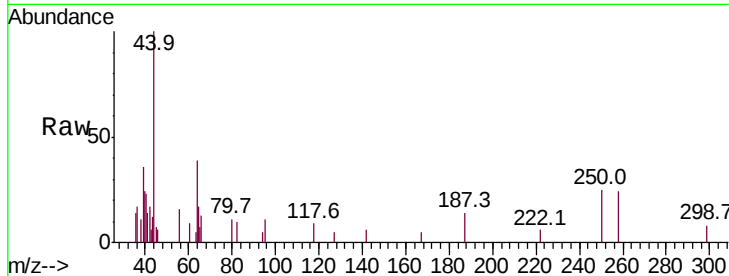
Acq: 10 Nov 2021 4:00

Tot Ion: 64 Resp: 1334

Ion Ratio Lower Upper

64 100

66 23.5 25.5 38.3#



#9

Propene

Concen: 7.023 ppbv

RT: 3.21 min Scan# 132

Delta R.T. 0.20 min

Lab File: VL037999.D

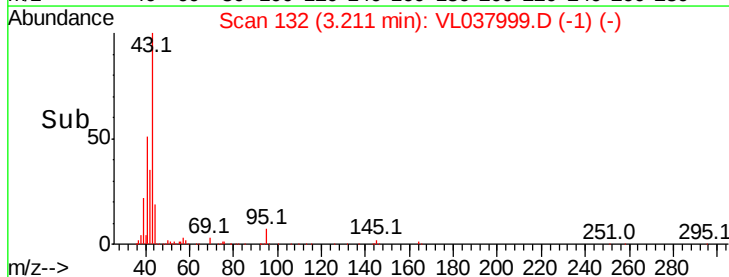
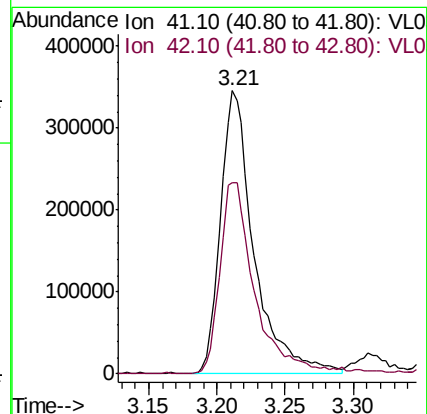
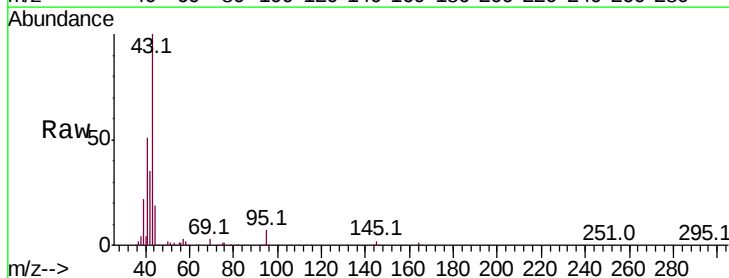
Acq: 10 Nov 2021 4:00

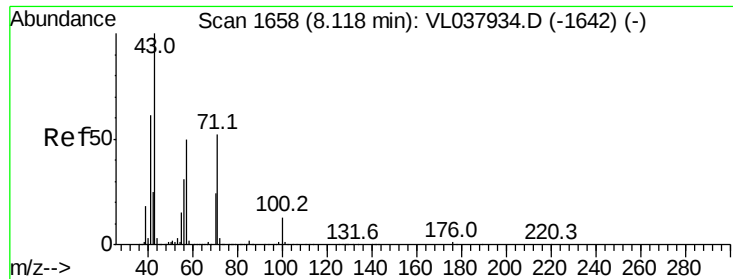
Tgt Ion: 41 Resp: 587561

Ion Ratio Lower Upper

41 100

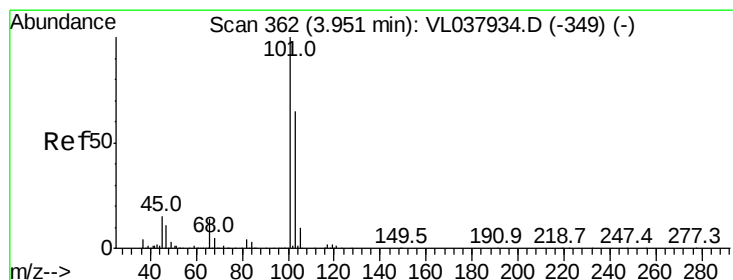
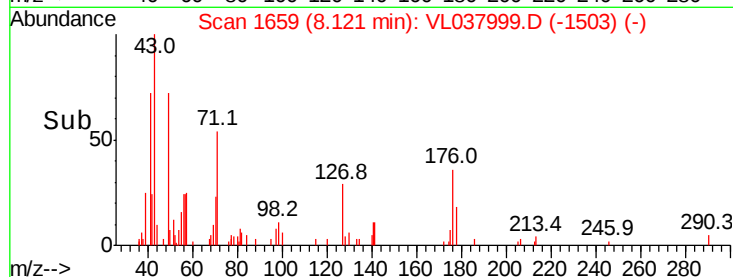
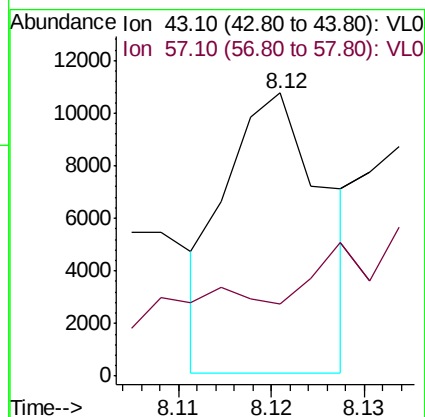
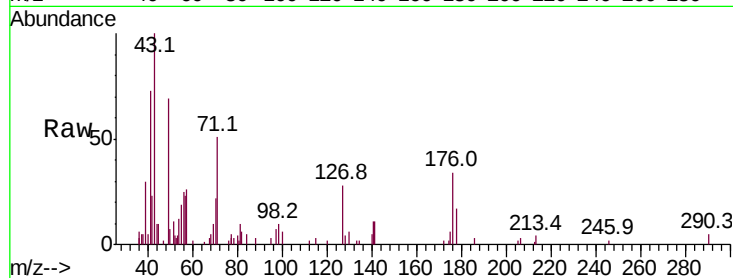
42 71.5 57.6 86.4





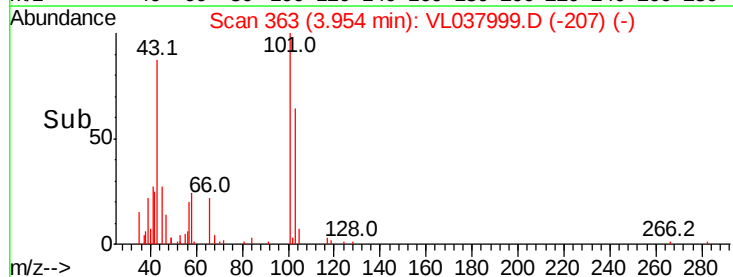
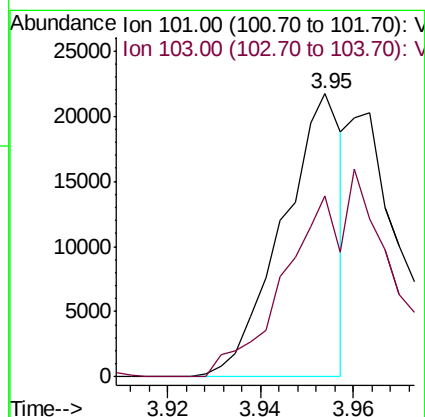
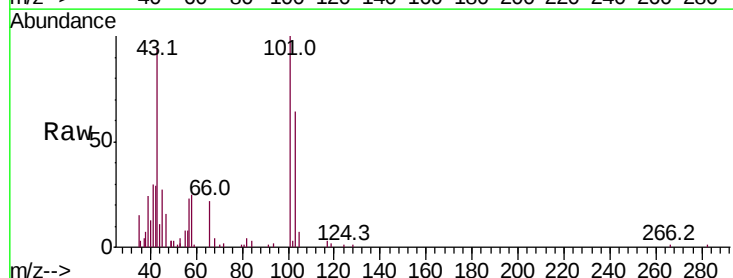
#10
 Heptane
 Concen: 0.041 ppbv
 RT: 8.12
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 10 Nov 2021 4:00

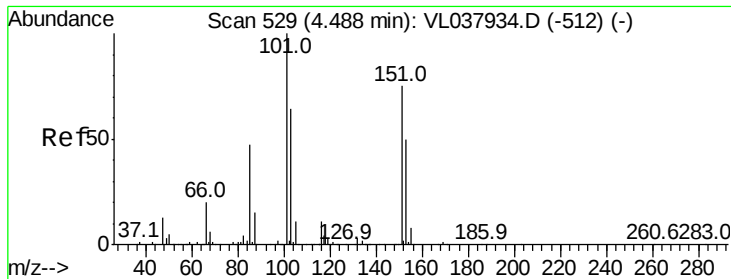
Tot Ion: 43 Resp: 7893
 Ion Ratio Lower Upper
 43 100
 57 0.0 39.8 59.8#



#11
 Trichlorofluoromethane
 Concen: 0.110 ppbv
 RT: 3.95 min Scan# 363
 Delta R.T.: 0.00 min
 Lab File: VL037999.D
 Acq: 10 Nov 2021 4:00

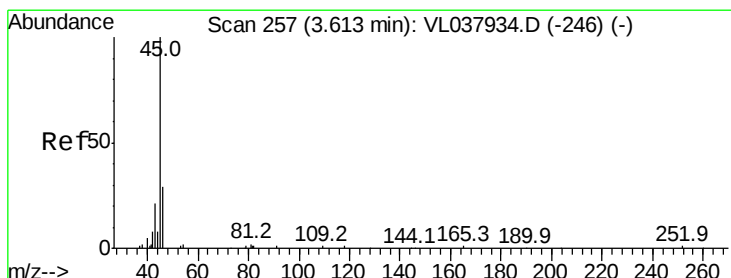
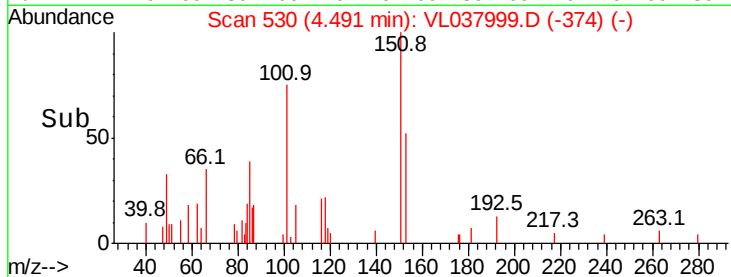
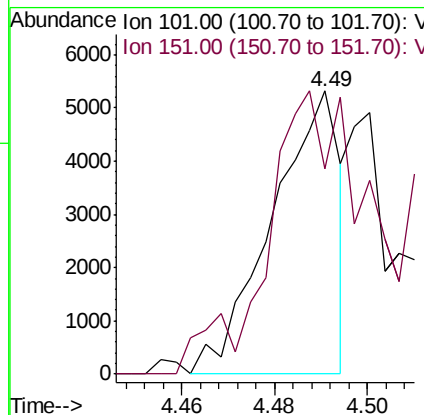
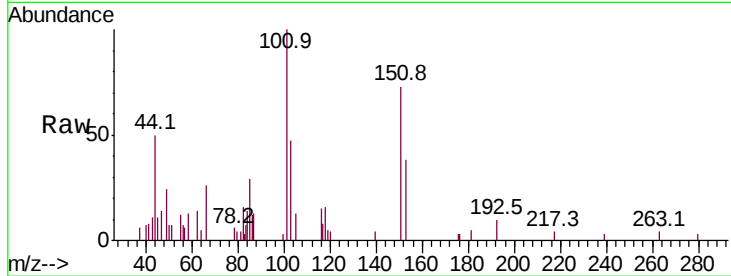
Tgt Ion: 101 Resp: 19407
 Ion Ratio Lower Upper
 101 100
 103 63.9 52.0 78.0





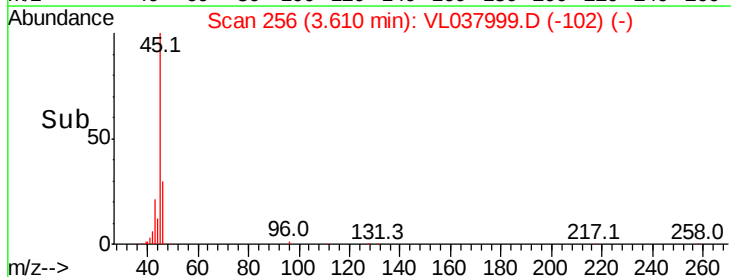
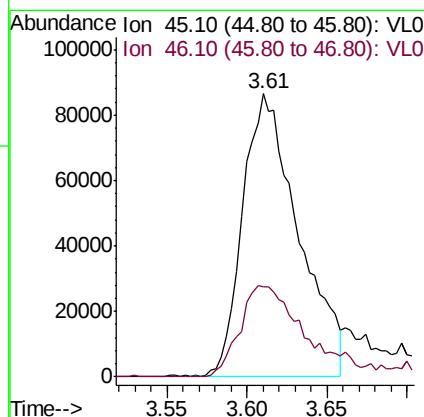
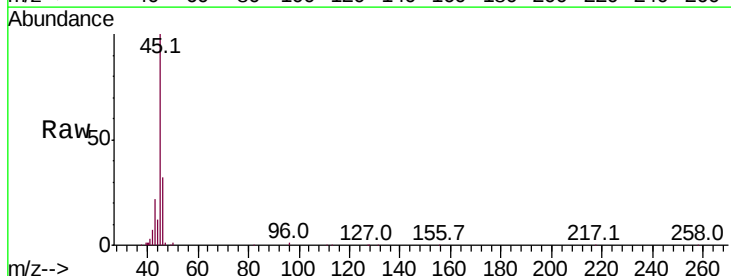
#12
 1,1,2-Trichlorotrifluoroethane
 Concen: 0.039 ppbv
 RT: 4.49
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 10 Nov 2021 4:00

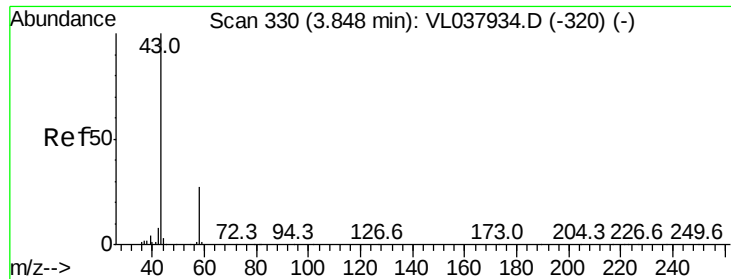
Tot Ion: 101 Resp: 5401
 Ion Ratio Lower Upper
 101 100
 151 180.4 61.8 92.8#



#13
 Ethanol
 Concen: 24.581 ppbv
 RT: 3.61 min Scan# 256
 Delta R.T.: -0.00 min
 Lab File: VL037999.D
 Acq: 10 Nov 2021 4:00

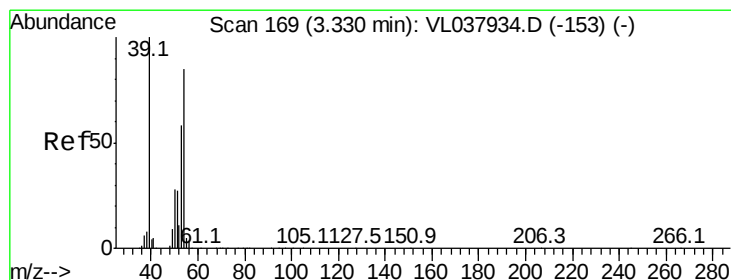
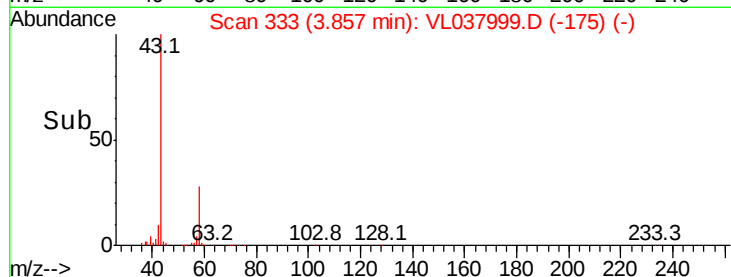
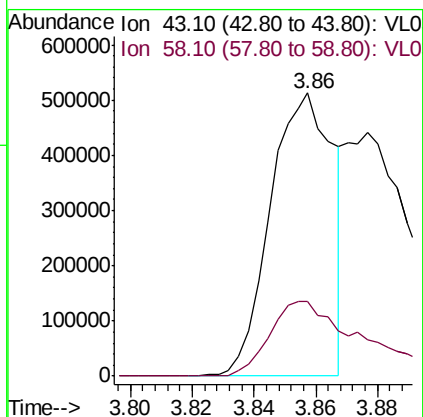
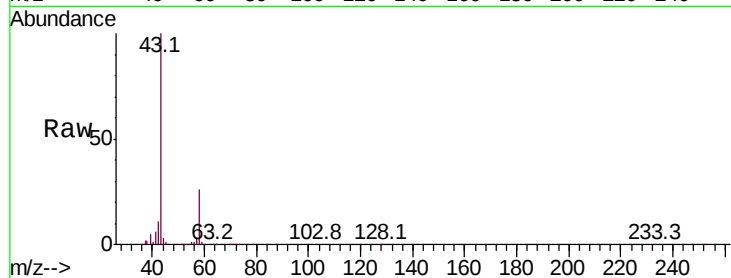
Tgt Ion: 45 Resp: 207472
 Ion Ratio Lower Upper
 45 100
 46 40.8 17.4 69.8





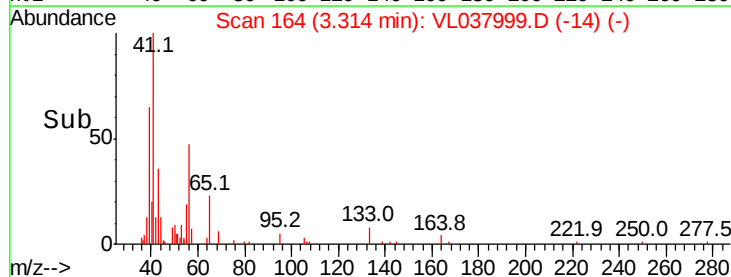
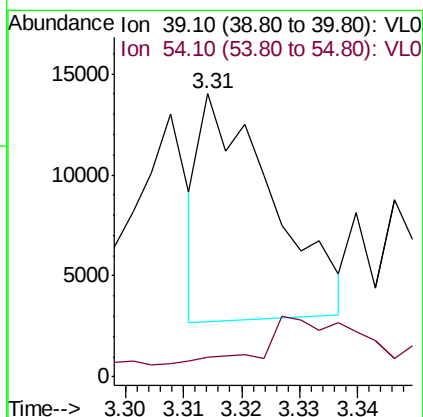
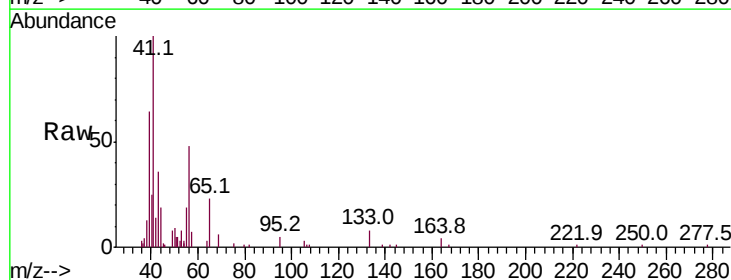
#15
Acetone
Concen: 6.957 ppbv
RT: 3.86
Delta R.T. MSVOA_L
Lab File: ClientSampleId :
Acq: 10 Nov 2021 4:00

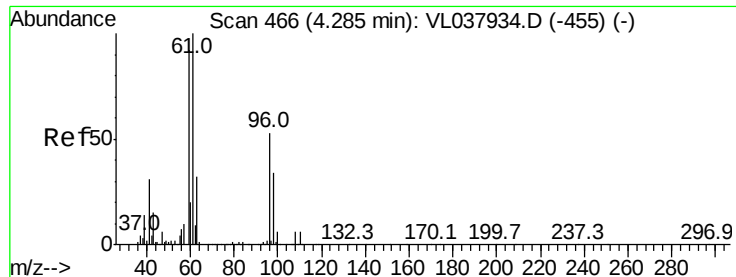
Tot Ion: 43 Resp: 720609
Ion Ratio Lower Upper
43 100
58 45.4 23.3 34.9#



#16
1,3-Butadiene
Concen: 0.118 ppbv
RT: 3.31 min Scan# 164
Delta R.T. -0.02 min
Lab File: VL037999.D
Acq: 10 Nov 2021 4:00

Tgt Ion: 39 Resp: 9668
Ion Ratio Lower Upper
39 100
54 72.7 62.6 93.8





#17

tert-Butyl alcohol

Concen: 0.214 ppbv

RT: 4.30

Delta R.T. MSVOA_L

Lab File: ClientSampleId :

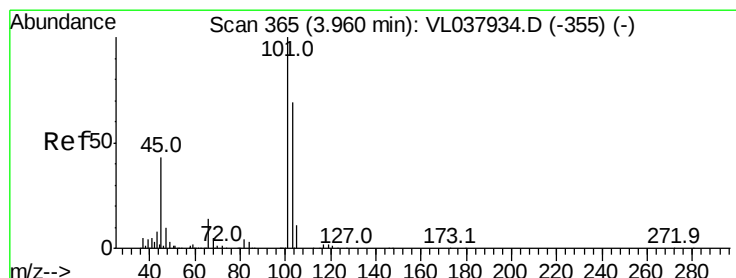
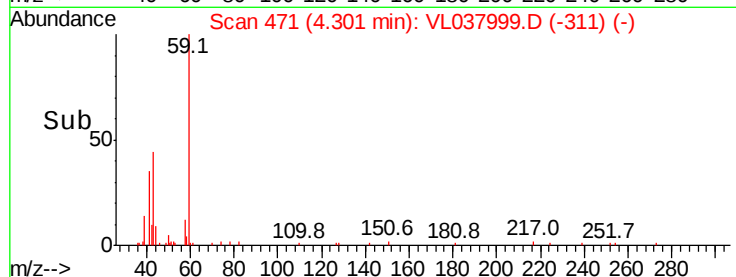
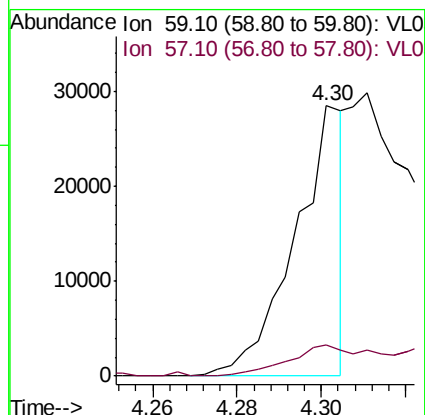
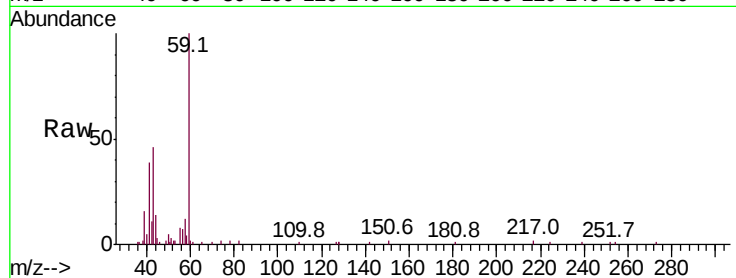
Acq: 10 Nov 2021 4:00

Tot Ion: 59 Resp: 23005

Ion Ratio Lower Upper

59 100

57 0.0 8.9 13.3#



#19

Isopropyl Alcohol

Concen: 1.864 ppbv

RT: 3.98 min Scan# 370

Delta R.T. 0.02 min

Lab File: VL037999.D

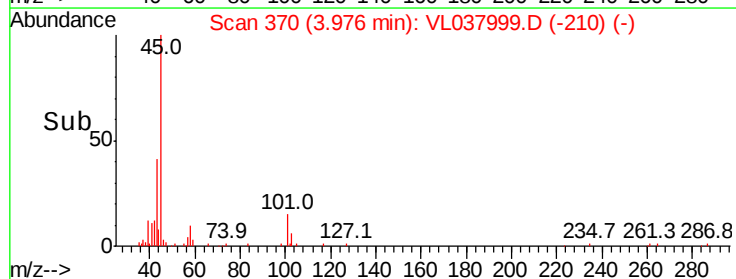
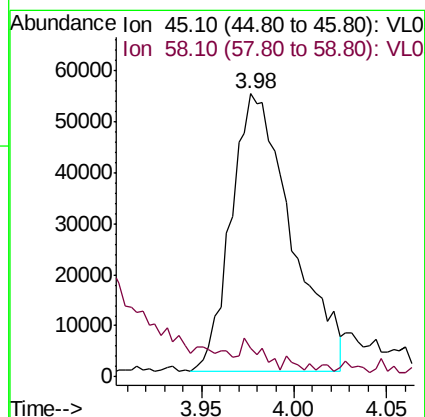
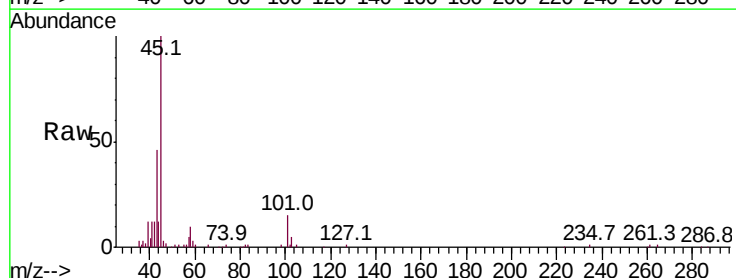
Acq: 10 Nov 2021 4:00

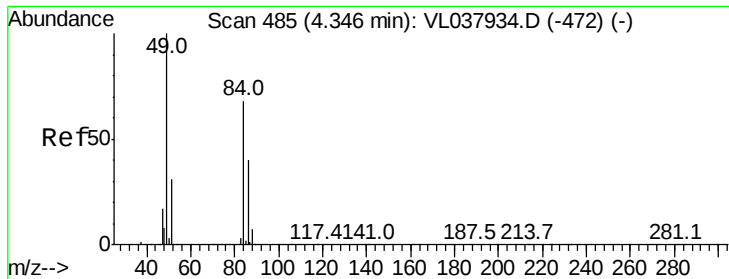
Tgt Ion: 45 Resp: 123441

Ion Ratio Lower Upper

45 100

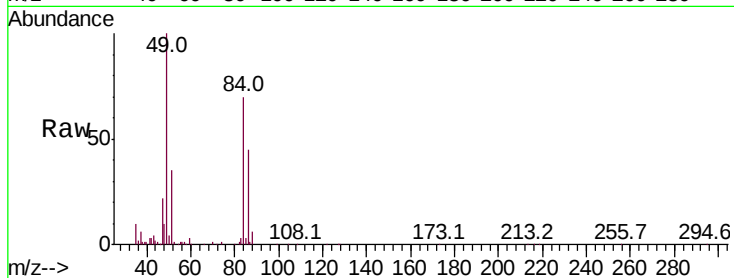
58 8.9 4.0 6.0#



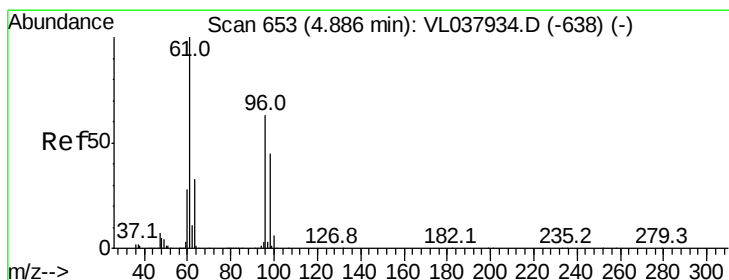
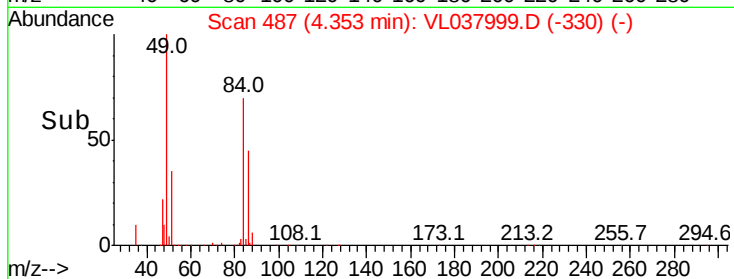
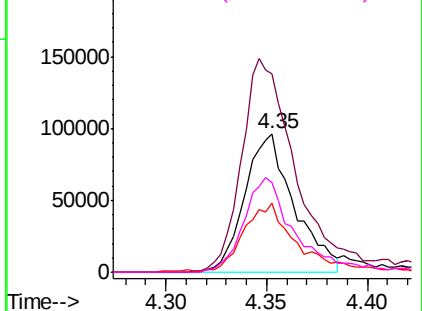


#20
Methvlene Chloride
Concen: 2.900 ppbv
RT: 4.35
Instrument: MSVOA_1
Delta R.T.:
Lab File: ClientSampleId :
Acq: 10 Nov 2021 4:00

Tot Ion:	84	Resp:	164881
Ion	Ratio	Lower	Upper
84	100		
49	143.3	117.5	176.3
51	48.7	35.9	53.9
86	64.1	47.3	70.9

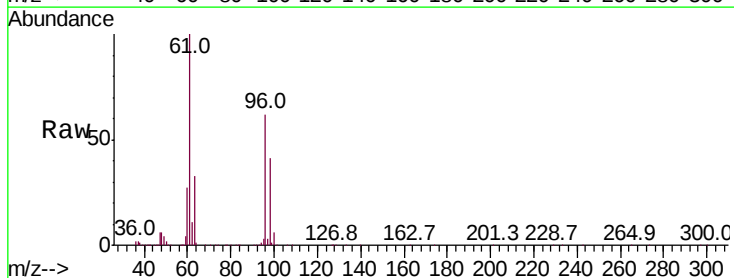


Abundance Ion 84.00 (83.70 to 84.70): VL0
Ion 49.10 (48.80 to 49.80): VL0
Ion 51.10 (50.80 to 51.80): VL0
Ion 86.00 (85.70 to 86.70): VL0

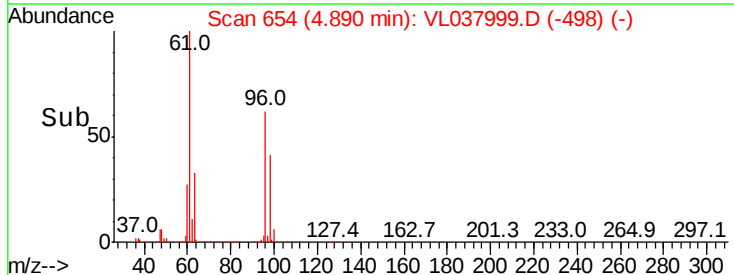
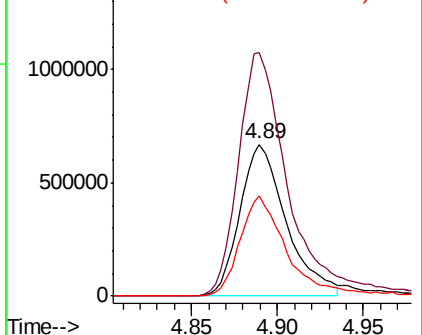


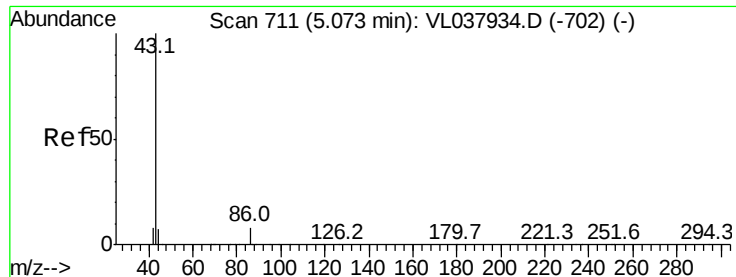
#22
trans-1,2-Dichloroethene
Concen: 19.989 ppbv
RT: 4.89 min Scan# 654
Delta R.T. 0.00 min
Lab File: VL037999.D
Acq: 10 Nov 2021 4:00

Tgt Ion:	96	Resp:	1253206
Ion	Ratio	Lower	Upper
96	100		
61	160.3	127.8	191.6
98	66.3	56.9	85.3



Abundance Ion 96.00 (95.70 to 96.70): VL0
Ion 61.10 (60.80 to 61.80): VL0
Ion 98.00 (97.70 to 98.70): VL0





#23

Vinyl Acetate

Concen: 0.778 ppbv

RT: 5.06 Instrument:

Delta R.T. MSVOA_L

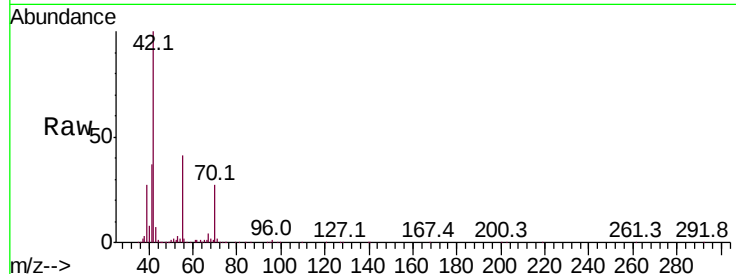
Lab File: ClientSampleId:

Acq: 10 Nov 2021 4:00

Tot Ion: 43 Resp: 121407

Ion Ratio Lower Upper

43	100		
86	4.1	5.5	8.3#
42	1412.2	7.4	11.2#
44	4.5	4.7	7.1#

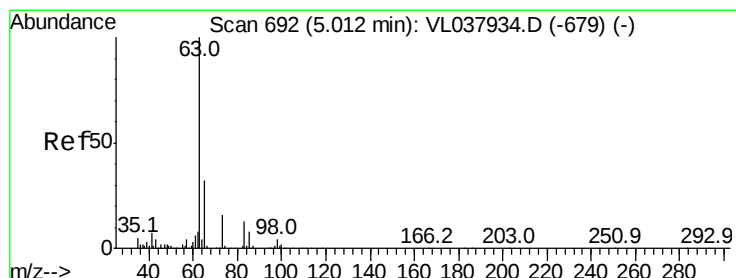
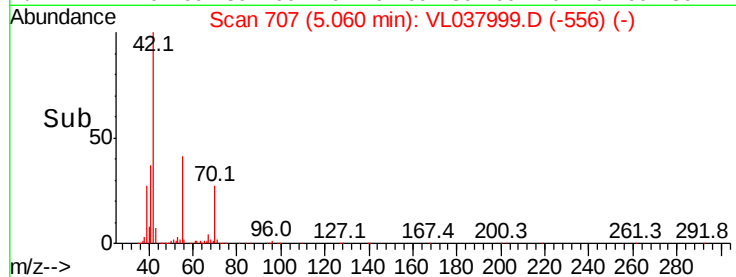
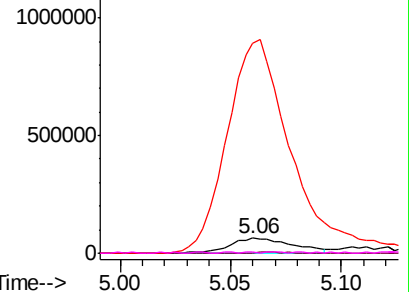


Abundance Ion 43.10 (42.80 to 43.80): VL0

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



#24

1,1-Dichloroethane

Concen: 0.054 ppbv

RT: 5.06 min Scan# 708

Delta R.T. 0.05 min

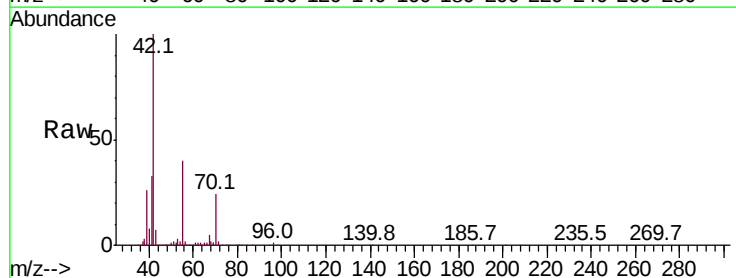
Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

Tgt Ion: 63 Resp: 6949

Ion Ratio Lower Upper

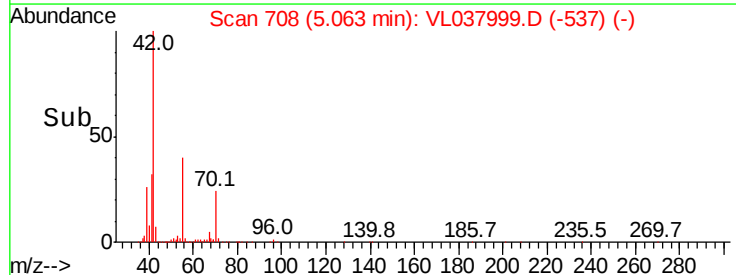
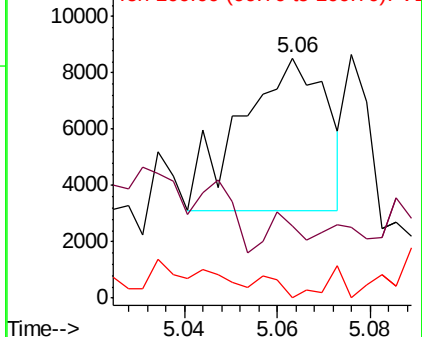
63	100		
98	0.0	2.3	6.9#
100	0.0	1.2	3.6#

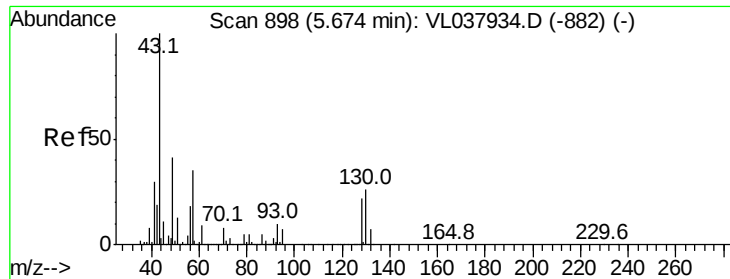


Abundance Ion 63.10 (62.80 to 63.80): VL0

Ion 98.00 (97.70 to 98.70): VL0

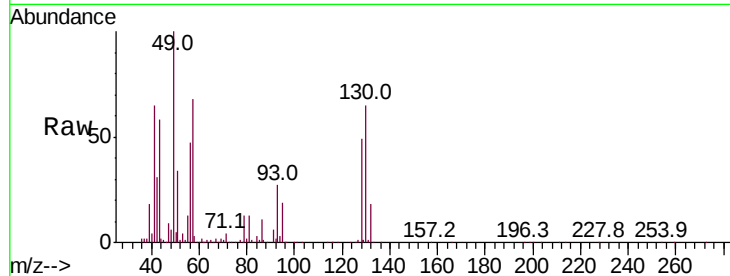
Ion 100.00 (99.70 to 100.70): VL0





#25
Ethyl Acetate
Concen: 0.667 ppbv
RT: 5.69 min
Instrument: MSVOA_1
Delta R.T.:
Lab File: ClientSampleId:
Acq: 10 Nov 2021 4:00

Tot Ion:	43	Resp:	205158
Ion	Ratio	Lower	Upper
43	100		
45	3.1	8.1	12.1#
61	5.5	8.1	12.1#
70	3.0	5.8	8.6#



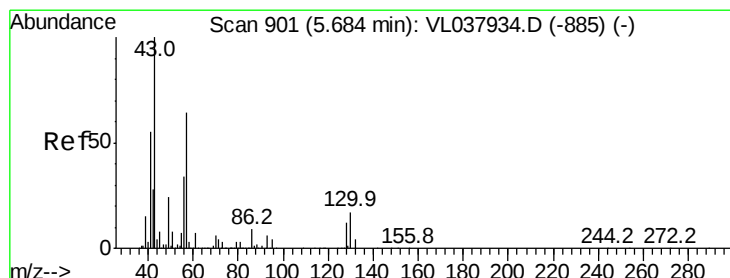
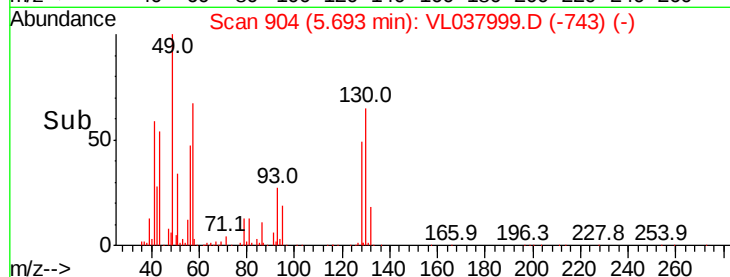
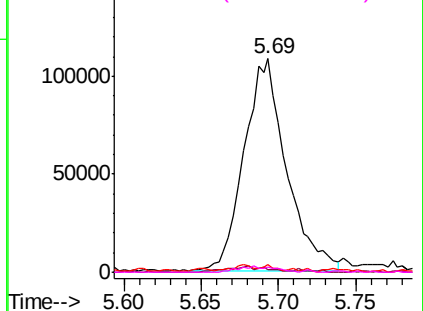
Abundance

Ion 43.10 (42.80 to 43.80): VL0

Ion 45.10 (44.80 to 45.80): VL0

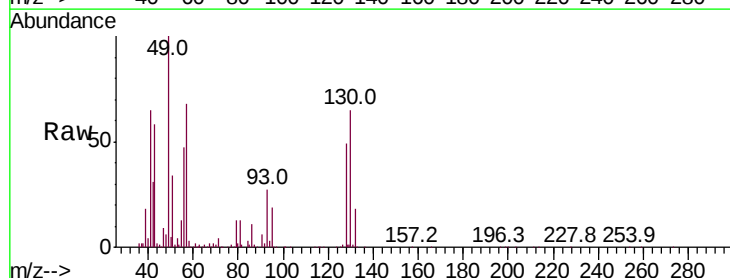
Ion 61.10 (60.80 to 61.80): VL0

Ion 70.10 (69.80 to 70.80): VL0



#26
Hexane
Concen: 0.862 ppbv
RT: 5.69 min Scan# 904
Delta R.T.: 0.01 min
Lab File: VL037999.D
Acq: 10 Nov 2021 4:00

Tgt Ion:	57	Resp:	125659
Ion	Ratio	Lower	Upper
57	100		
41	197.0	71.0	106.6#
43	171.6	173.0	259.6#
56	123.4	43.6	65.4#



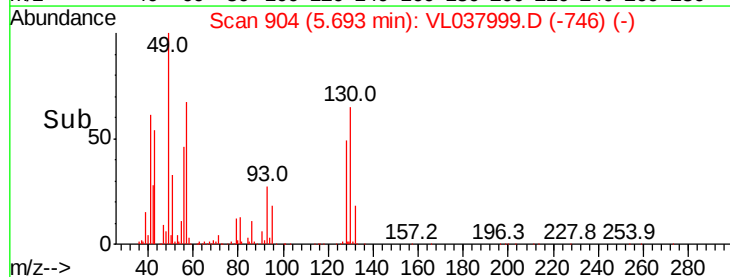
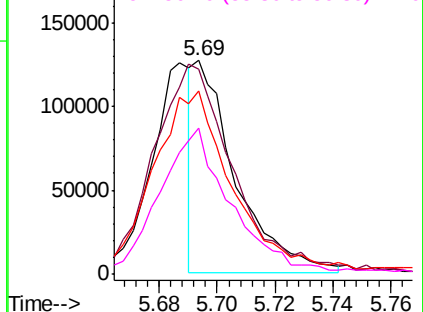
Abundance

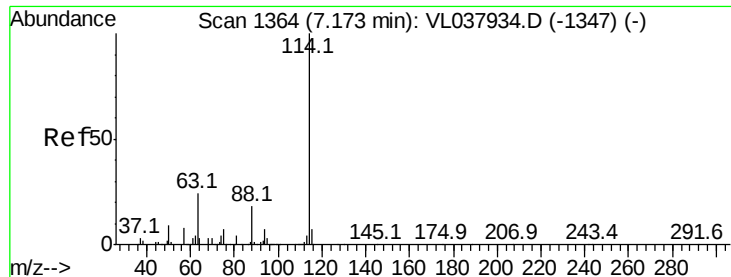
Ion 57.10 (56.80 to 57.80): VL0

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





#33

1,4-Difluorobenzene

Concen: 10.000 ppbv

RT: 7.18 min

Instrument: MSVOA_1

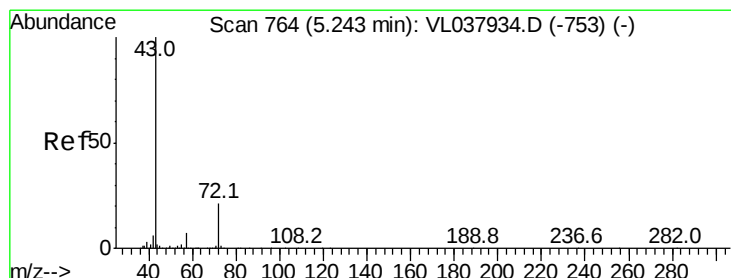
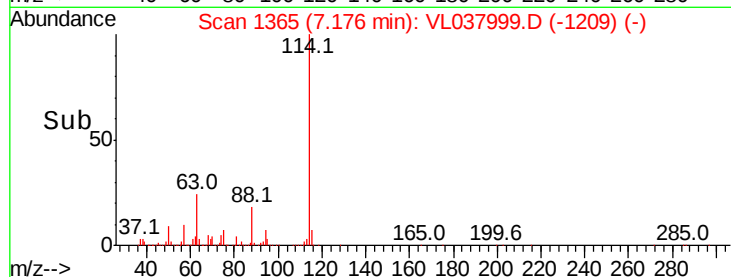
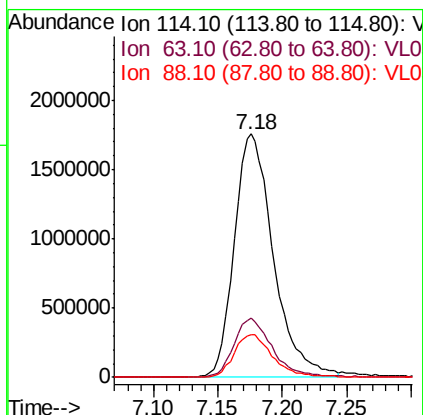
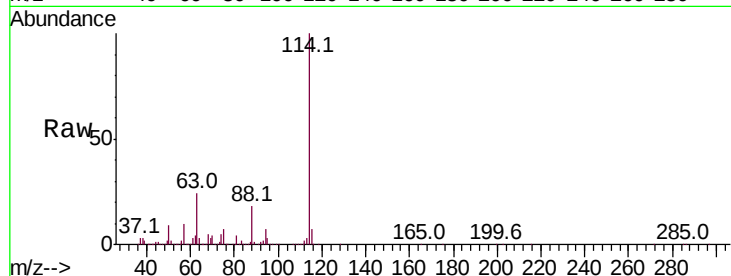
Delta R.T. 0.01 min

Lab File: ClientSampleId :

Acq: 10 Nov 2021 4:00

Tot Ion:114 Resp: 3707901

Ion	Ratio	Lower	Upper
114	100		
63	24.2	19.4	29.0
88	17.8	14.2	21.4



#34

2-Butanone

Concen: 3.674 ppbv

RT: 5.25 min Scan# 766

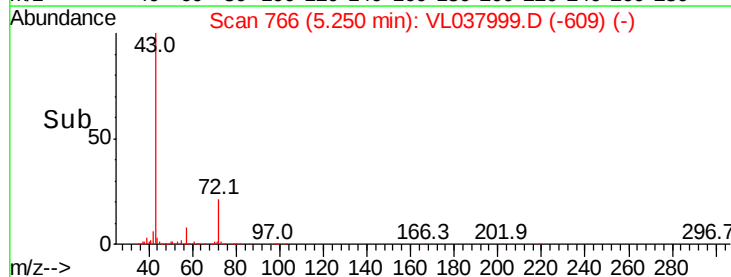
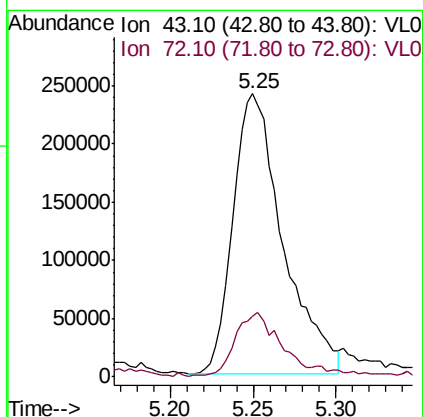
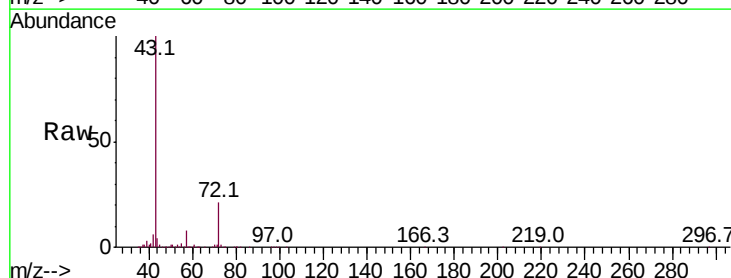
Delta R.T. 0.01 min

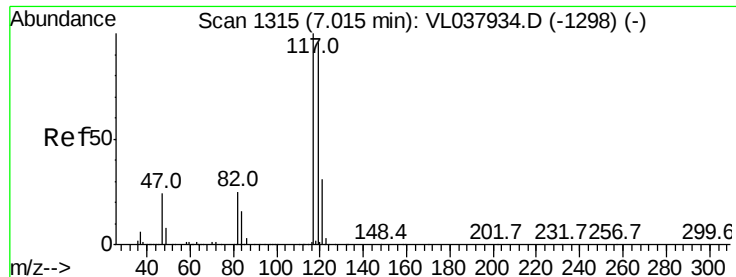
Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

Tgt Ion: 43 Resp: 504858

Ion	Ratio	Lower	Upper
43	100		
72	22.4	18.3	27.5





#35

Carbon Tetrachloride

Concen: 0.033 ppbv

RT: 7.02 Instrument:

Delta R.T. MSVOA_1

Lab File: ClientSampleId:

Acq: 10 Nov 2021 4:00

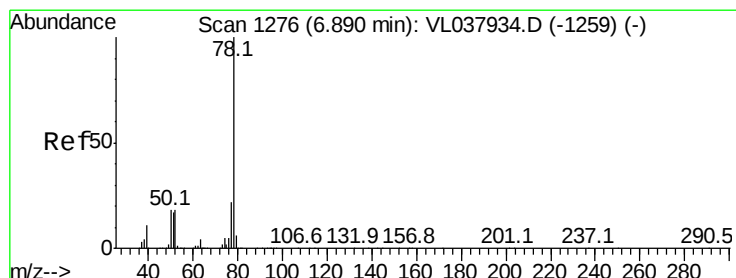
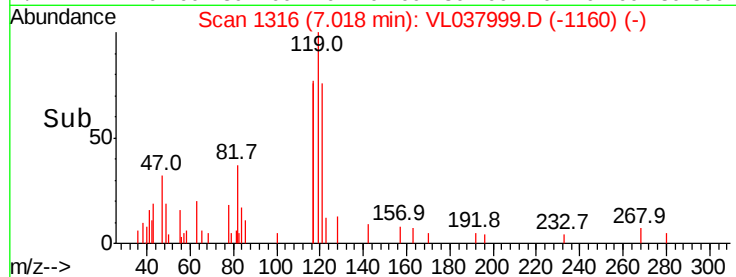
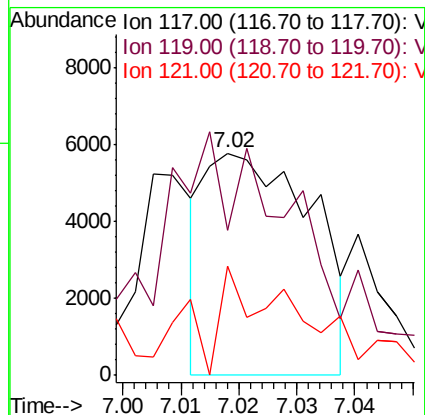
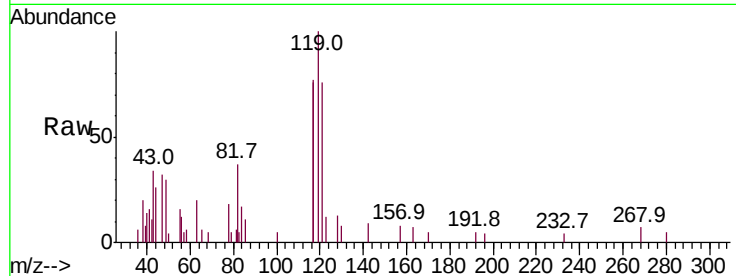
Tot Ion:117 Resp: 7410

Ion Ratio Lower Upper

117 100

119 70.7 76.6 114.8#

121 40.8 25.1 37.7#



#36

Benzene

Concen: 0.117 ppbv

RT: 6.89 min Scan# 1276

Delta R.T. -0.00 min

Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

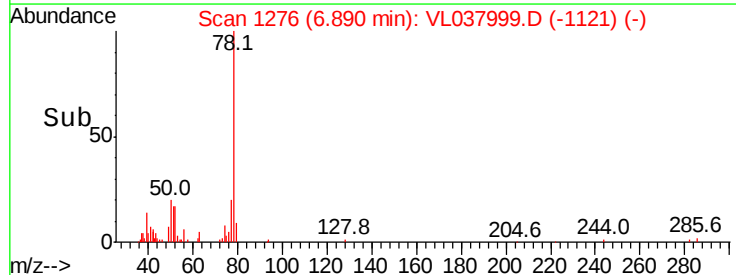
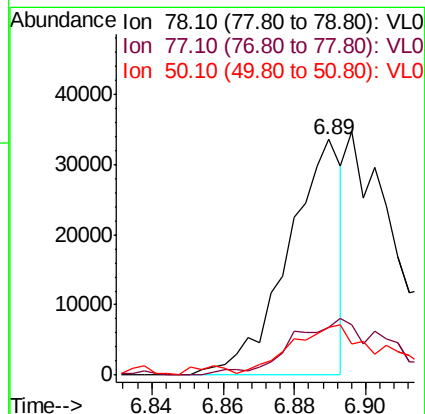
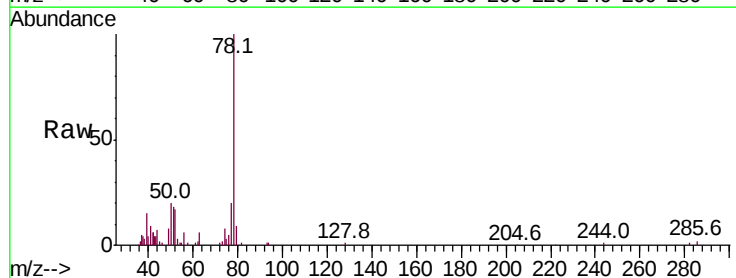
Tgt Ion: 78 Resp: 35215

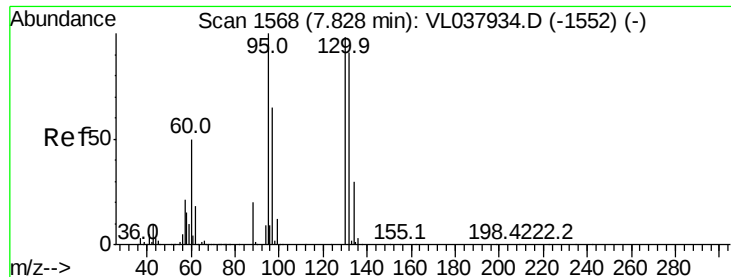
Ion Ratio Lower Upper

78 100

77 20.3 17.9 26.9

50 16.7 14.4 21.6





#38

Trichloroethene

Concen: 0.520 ppbv

RT: 7.83

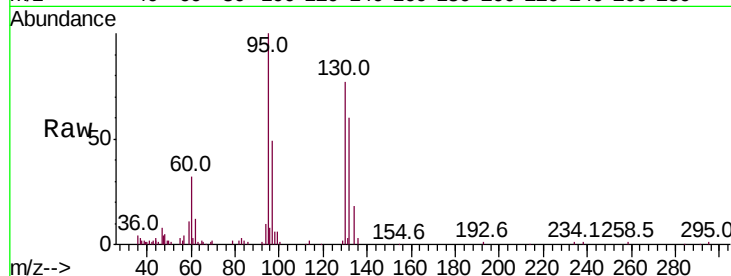
Instrument: MSVOA_1

Delta R.T.

Lab File: ClientSampleId :

Acq: 10 Nov 2021 4:00

Tot Ion	Ratio	Lower	Upper
130	100		
95	126.3	81.8	122.8#
132	71.5	74.2	111.2#
97	59.5	53.4	80.2



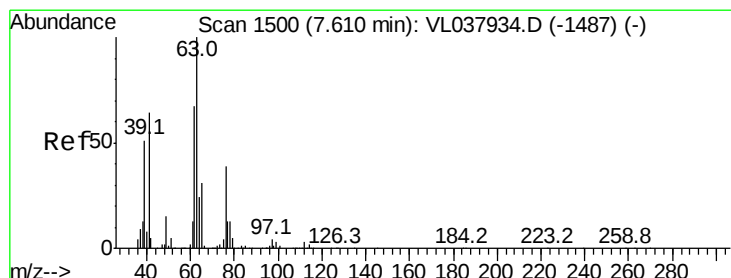
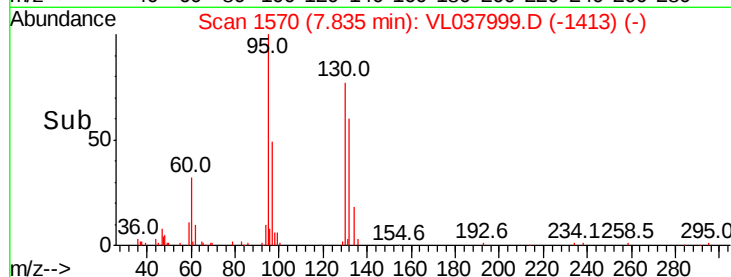
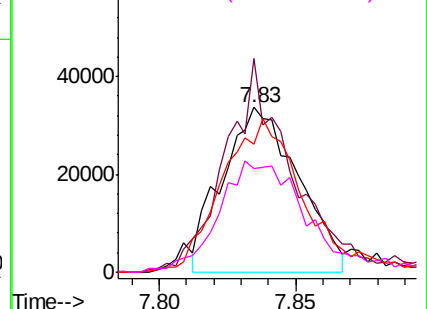
Abundance

Ion 130.00 (129.70 to 130.70): V

Ion 95.00 (94.70 to 95.70): VL0

Ion 132.00 (131.70 to 132.70): V

Ion 97.00 (96.70 to 97.70): VL0



#39

1,2-Dichloropropane

Concen: 7.741 ppbv

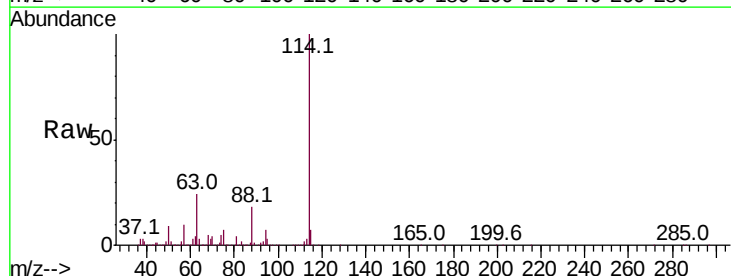
RT: 7.18 min Scan# 1365

Delta R.T. -0.43 min

Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

Tgt Ion	Ratio	Lower	Upper
63	100		
41	0.0	51.6	77.4#
62	17.5	53.5	80.3#

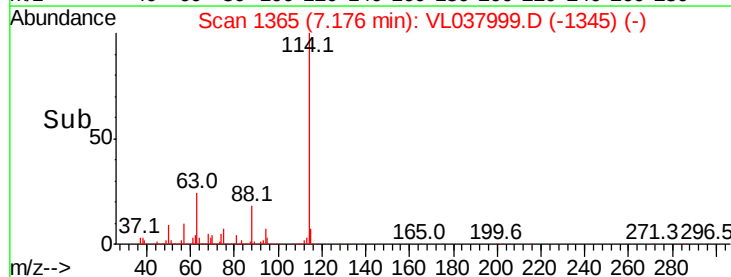
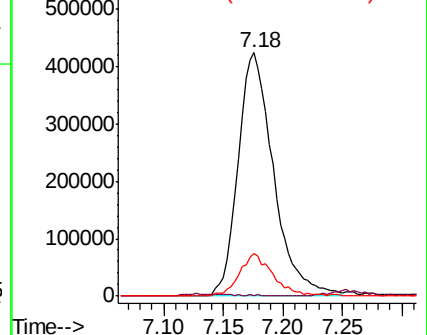


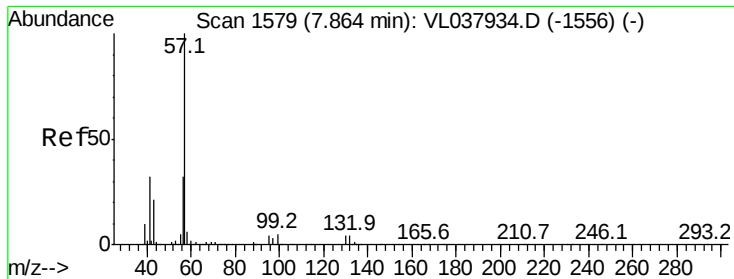
Abundance

Ion 63.10 (62.80 to 63.80): VL0

Ion 41.10 (40.80 to 41.80): VL0

Ion 62.10 (61.80 to 62.80): VL0





#44

2,2,4-Trimethylpentane

Concen: 0.046 ppbv

RT: 7.87 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

Acq: 10 Nov 2021 4:00

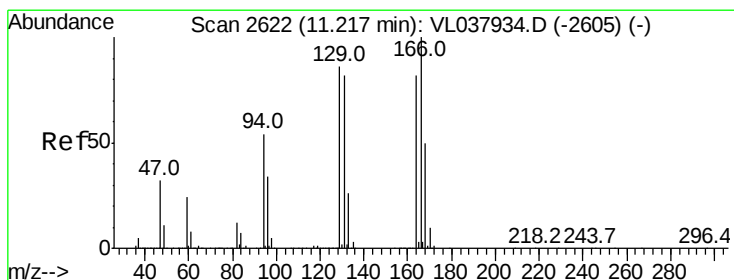
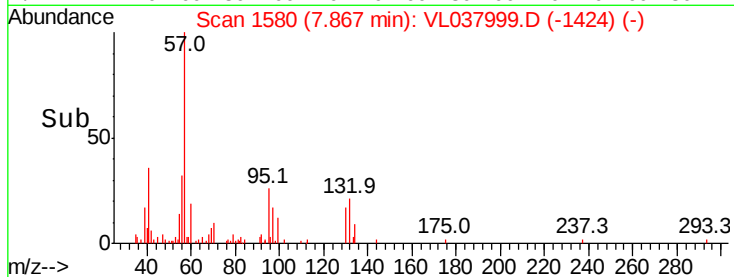
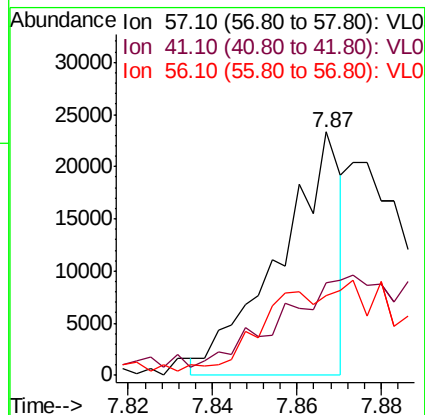
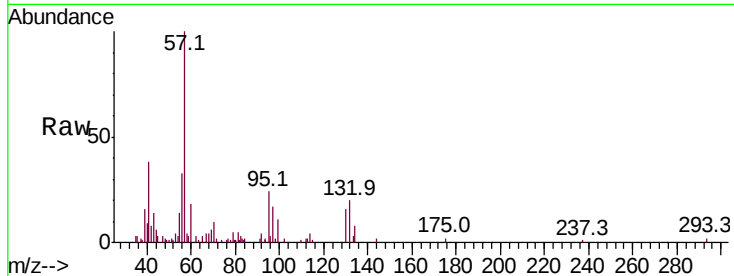
Tot Ion: 57 Resp: 23689

Ion Ratio Lower Upper

57 100

41 0.0 25.8 38.8#

56 0.0 25.9 38.9#



#52

Tetrachloroethene

Concen: 0.093 ppbv

RT: 11.22 min Scan# 2622

Delta R.T. -0.00 min

Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

Tgt Ion: 164 Resp: 10636

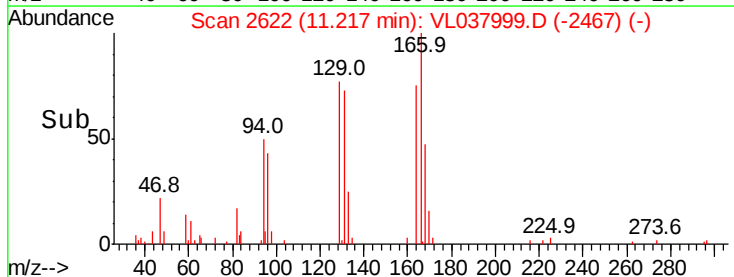
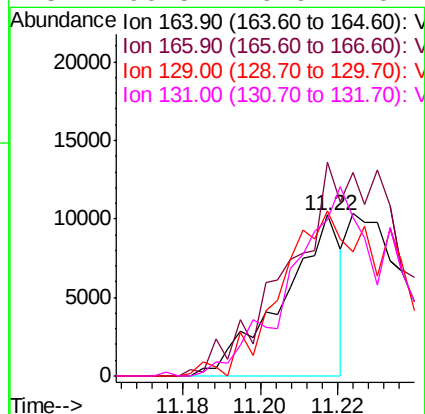
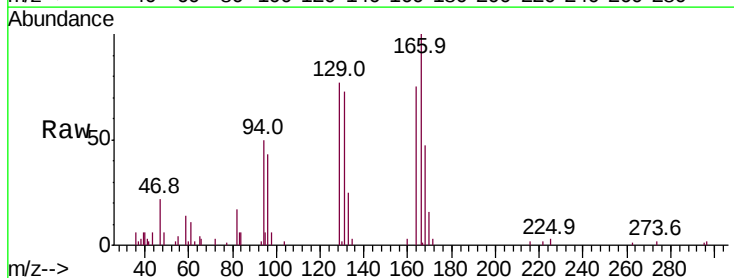
Ion Ratio Lower Upper

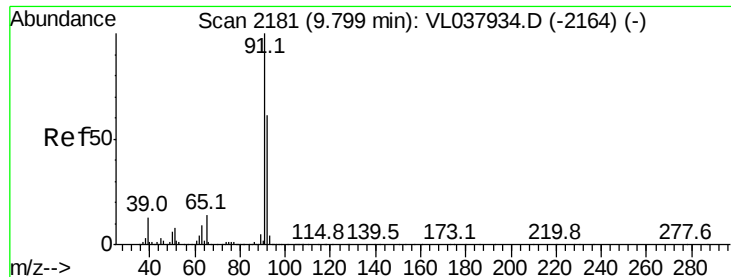
164 100

166 128.8 97.6 146.4

129 100.4 84.2 126.2

131 96.5 79.6 119.4





#53

Toluene

Concen: 0.985 ppbv

RT: 9.81 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

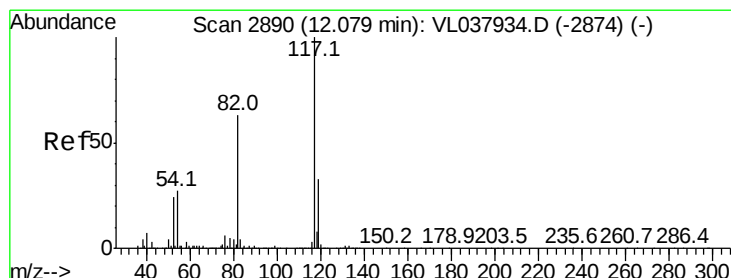
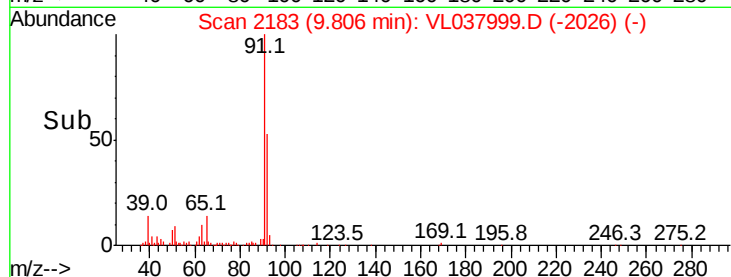
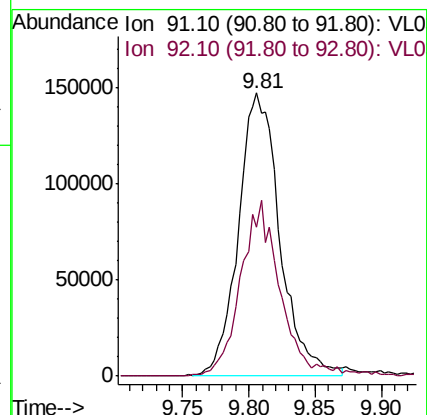
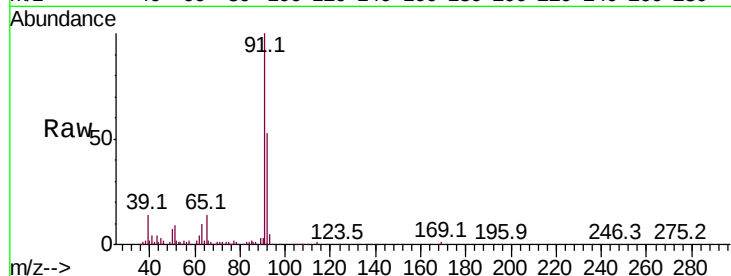
Acq: 10 Nov 2021 4:00

Tot Ion: 91 Resp: 318712

Ion Ratio Lower Upper

91 100

92 59.8 48.2 72.4



#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.09 min Scan# 2892

Delta R.T. 0.01 min

Lab File: VL037999.D

Acq: 10 Nov 2021 4:00

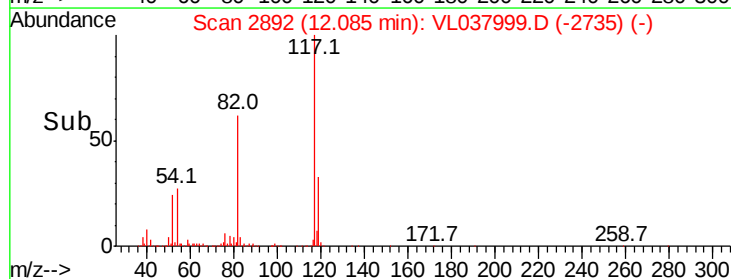
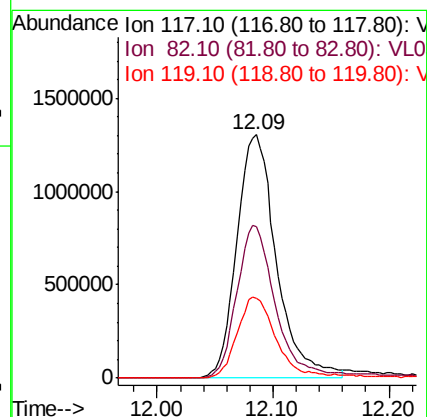
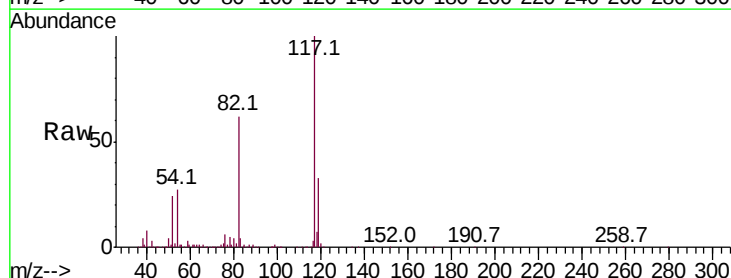
Tgt Ion: 117 Resp: 3107150

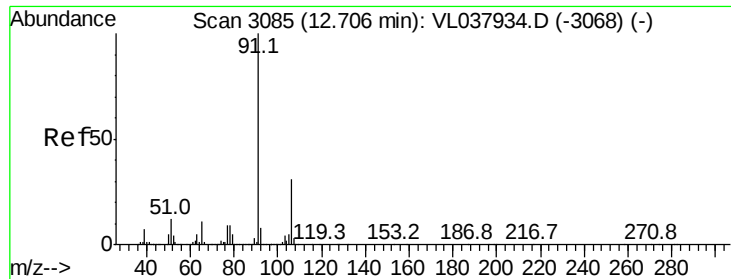
Ion Ratio Lower Upper

117 100

82 64.9 51.0 76.6

119 33.9 26.9 40.3





#58

Ethyl Benzene

Concen: 0.084 ppbv

RT: 12.71

Delta R.T. MSVOA_L

Lab File:

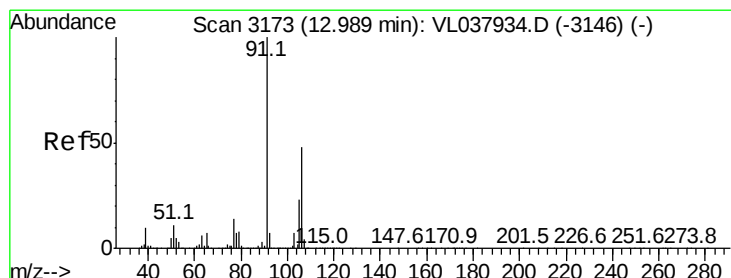
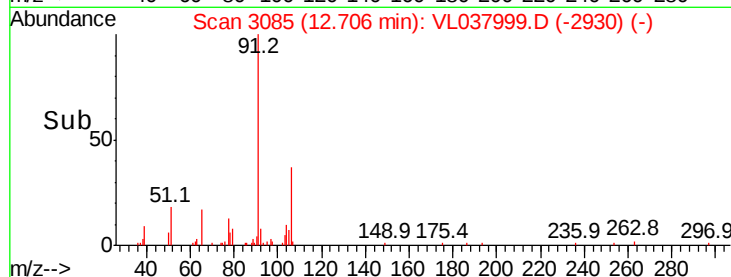
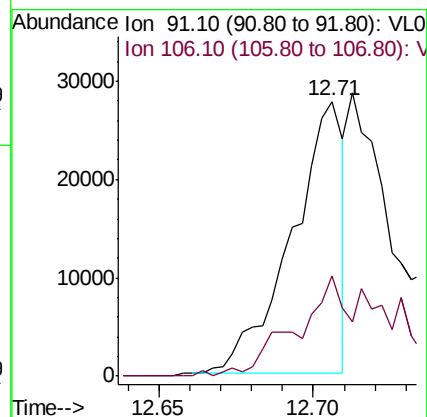
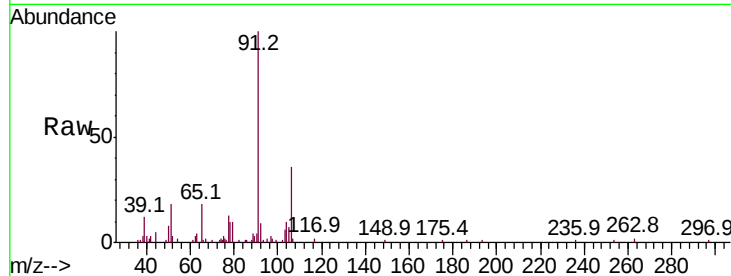
Acq: 10 Nov 2021 4:00

Tot Ion: 91 Resp: 31877

Ion Ratio Lower Upper

91 100

106 36.7 25.1 37.7



#59

m/p-Xylene

Concen: 0.141 ppbv

RT: 13.00 min Scan# 3175

Delta R.T. 0.01 min

Lab File: VL037999.D

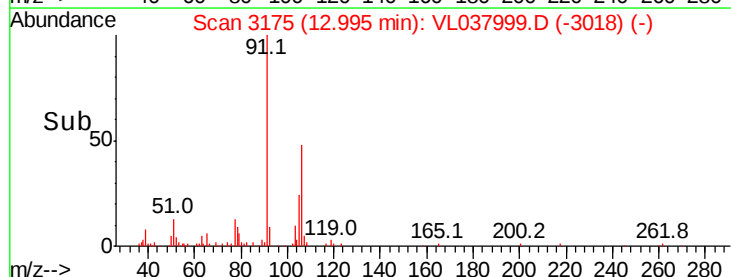
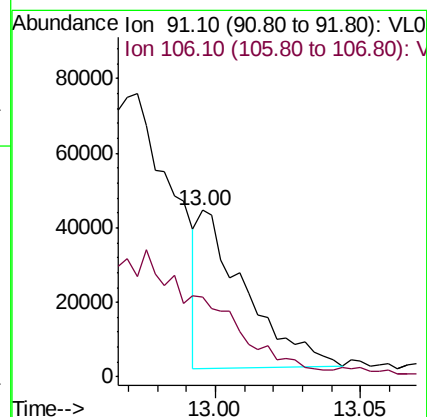
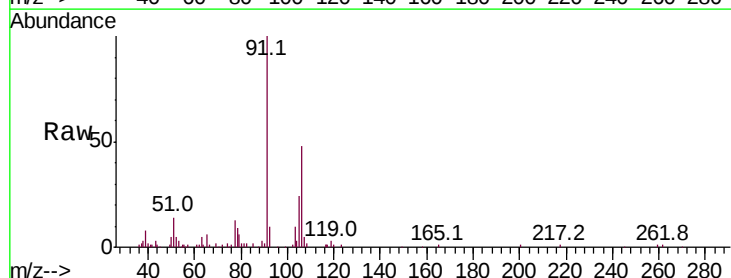
Acq: 10 Nov 2021 4:00

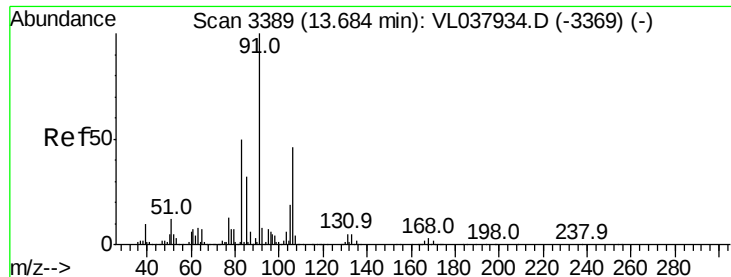
Tgt Ion: 91 Resp: 47725

Ion Ratio Lower Upper

91 100

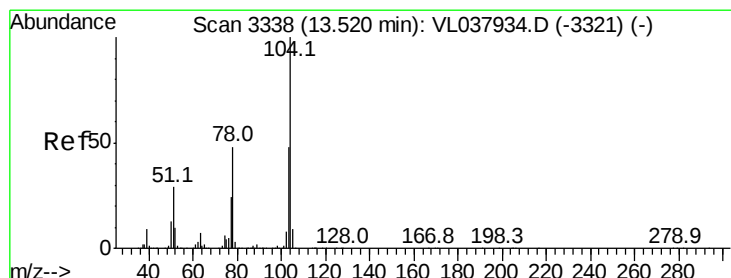
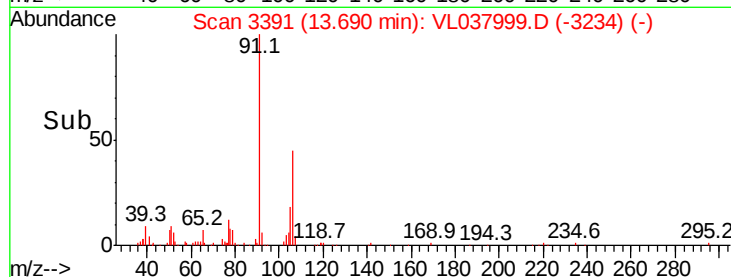
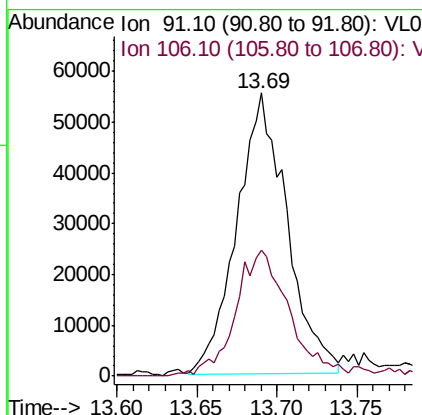
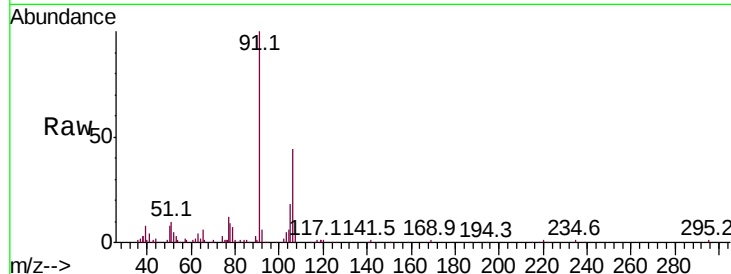
106 0.0 37.1 55.7#





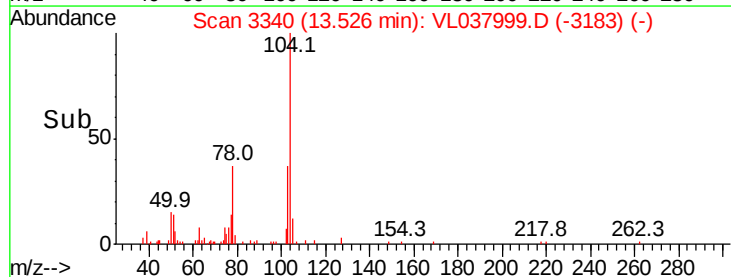
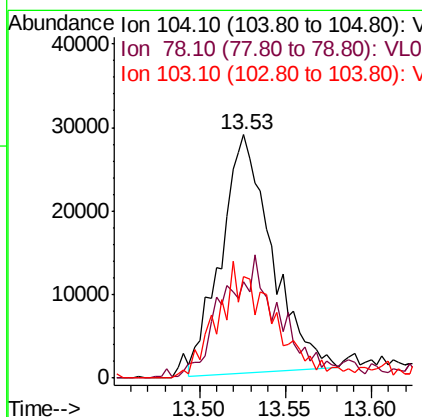
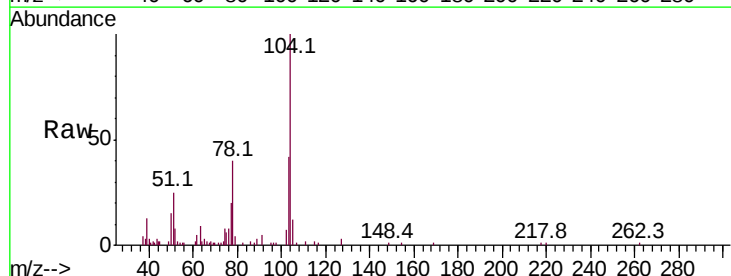
#60
o-Xylene
Concen: 0.374 ppbv
RT: 13.69
Delta R.T. MSVOA_L
Lab File: ClientSampleId :
Acq: 10 Nov 2021 4:00

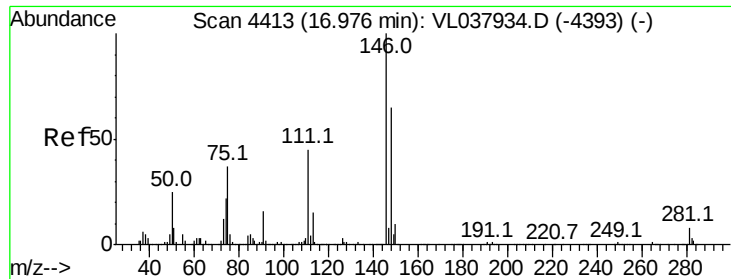
Tot Ion: 91 Resp: 119043
Ion Ratio Lower Upper
91 100
106 50.0 23.5 70.6



#61
Styrene
Concen: 0.401 ppbv
RT: 13.53 min Scan# 3340
Delta R.T. 0.01 min
Lab File: VL037999.D
Acq: 10 Nov 2021 4:00

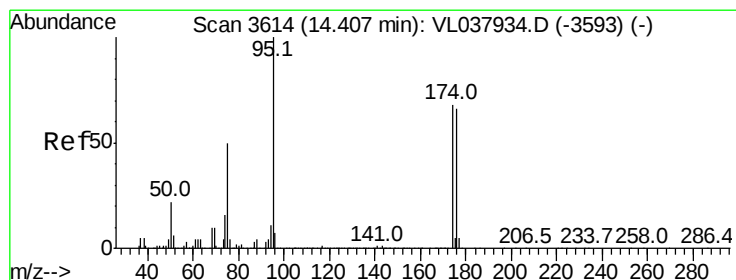
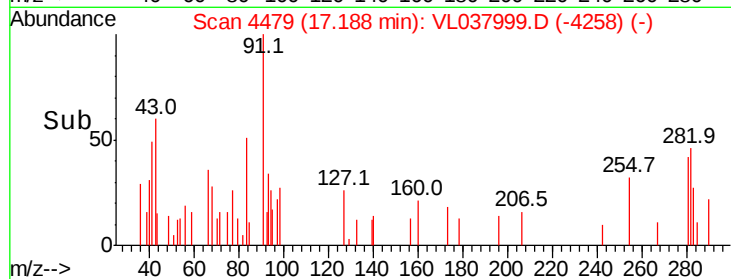
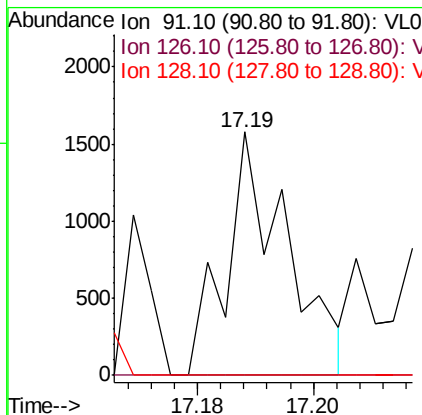
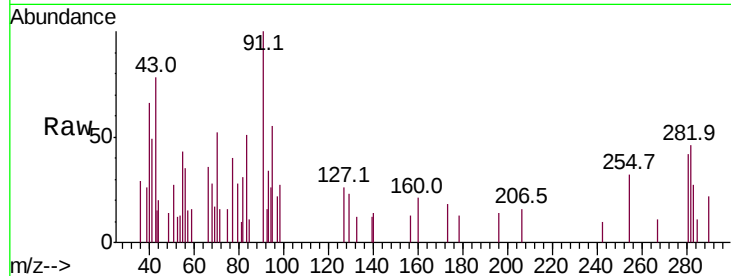
Tgt Ion: 104 Resp: 58674
Ion Ratio Lower Upper
104 100
78 61.8 39.3 58.9#
103 52.7 39.6 59.4





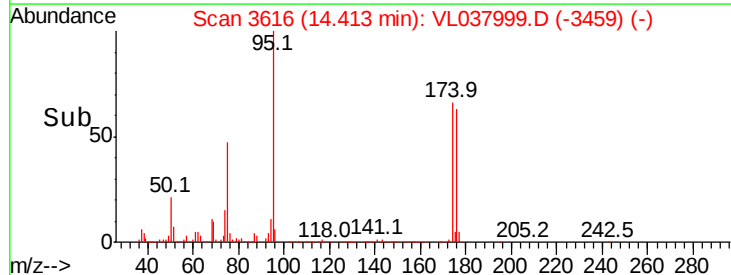
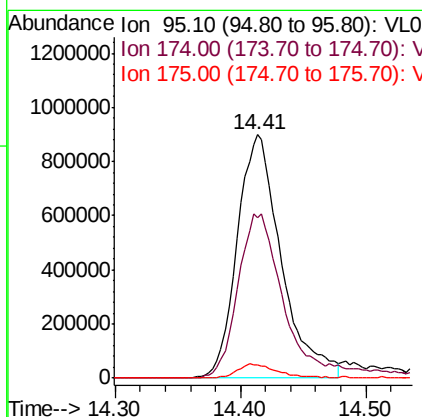
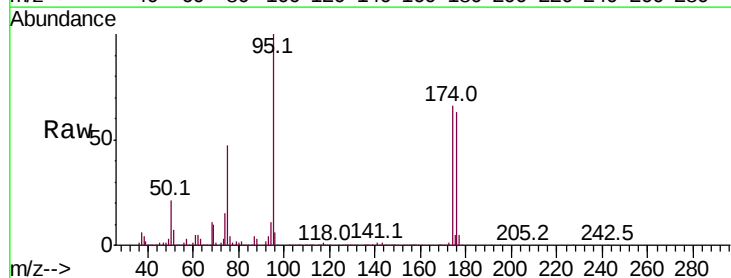
#66
Benzvl Chloride
Concen: 0.055 ppbv
RT: 17.19
Instrument: MSVOA_1
Delta R.T.:
Lab File: ClientSampleId:
Acq: 10 Nov 2021 4:00

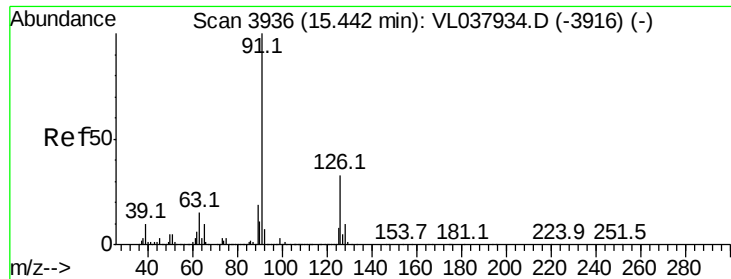
Tot Ion	91	Resp	1141
Ion Ratio	Lower	Upper	
91	100		
126	15.6	13.8	20.6
128	0.0	5.1	7.7#



#68
1-Bromo-4-Fluorobenzene
Concen: 9.723 ppbv
RT: 14.41 min Scan# 3616
Delta R.T. 0.01 min
Lab File: VL037999.D
Acq: 10 Nov 2021 4:00

Tgt Ion	95	Resp	2196097
Ion Ratio	Lower	Upper	
95	100		
174	75.3	58.3	87.5
175	5.6	4.6	6.8





#71
 2-Chlorotoluene
 Concen: 3.005 ppbv
 RT: 15.31
 Delta R.T: MSVOA_L
 Lab File: ClientSampleId :
 Acq: 10 Nov 2021 4:00

Tot Ion	Ratio	Lower	Upper
91	100		
126	0.0	13.3	53.3#

