

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL042721\
 Data File : VL036859.D
 Acq On : 27 Apr 2021 15:54
 Operator : SY/AP
 Sample : M2172-02
 Misc : 400mL/MSVOA L
 ALS Vial : 1 Sample Multiplier: 1

Instrument :
 MSVOA_L
 ClientSampleId :

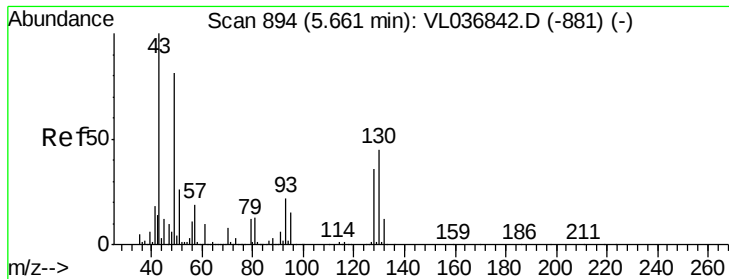
Quant Time: Apr 28 05:24:36 2021
 Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL042721AIR.M
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA_LTue Apr 27 16:56:35 2021
 QLast Update : Tue Apr 27 16:56:35 2021
 Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	5.67	49	1314435	10.00	ppbv	0.01
33) 1,4-Difluorobenzene	7.18	114	3168903	10.00	ppbv	0.00
55) Chlorobenzene-d5	12.09	117	2788295	10.00	ppbv	0.00

System Monitoring Compounds						
68) 1-Bromo-4-Fluorobenzene	14.42	95	2195916	9.81	ppbv	0.01
Spiked Amount	10.000	Range	65 - 135	Recovery	=	98.10%

Target Compounds	R.T.	QIon	Response	Conc	Units	Ovalue
2) Dichlorodifluoromethane	3.05	85	41069	0.198	ppbv	94
3) Chlorodifluoromethane	2.99	51	103863	0.434	ppbv #	83
4) Chloromethane	3.15	50	36379	0.462	ppbv	95
5) Vinyl Chloride	3.26	62	7822	0.099	ppbv #	74
9) Propene	3.02	41	74462	1.021	ppbv	89
10) Heptane	8.13	43	5784	0.032	ppbv #	29
11) Trichlorofluoromethane	3.96	101	49099	0.266	ppbv	86
13) Ethanol	3.62	45	66320	7.128	ppbv	82
15) Acetone	3.86	43	660046	5.328	ppbv	99
16) 1,3-Butadiene	3.31	39	68144	0.860	ppbv #	20
18) 1,1-Dichloroethene	4.30	96	1959	0.036	ppbv #	68
19) Isopropyl Alcohol	3.99	45	31461	0.513	ppbv #	89
20) Methylene Chloride	4.35	84	435777	7.356	ppbv	97
22) trans-1,2-Dichloroethene	4.89	96	7247	0.134	ppbv	88
23) Vinyl Acetate	5.07	43	22421	0.133	ppbv #	69
24) 1,1-Dichloroethane	5.02	63	9283	0.078	ppbv #	93
25) Ethyl Acetate	5.69	43	345446	1.142	ppbv #	79
26) Hexane	5.69	57	462986	3.270	ppbv #	44
29) Chloroform	5.75	83	109773	0.497	ppbv	89
30) Cyclohexane	7.14	84	3888	0.035	ppbv #	1
31) cis-1,2-Dichloroethene	5.55	61	1168916	9.198	ppbv	98
34) 2-Butanone	5.25	43	635431	4.578	ppbv	98
35) Carbon Tetrachloride	7.02	117	15866	0.074	ppbv #	67
36) Benzene	6.90	78	48809	0.183	ppbv #	92
39) 1,2-Dichloropropane	7.18	63	837297	7.828	ppbv #	24
41) Tetrahydrofuran	6.07	42	22437	0.370	ppbv #	48
44) 2,2,4-Trimethylpentane	7.87	57	72158	0.158	ppbv #	66
52) Tetrachloroethene	11.22	164	30403	0.334	ppbv #	83
53) Toluene	9.82	91	241063	0.863	ppbv	96
58) Ethyl Benzene	12.72	91	14085	0.040	ppbv	93
59) m/p-Xylene	13.00	91	11077	0.035	ppbv #	31
60) o-Xylene	13.70	91	33879	0.111	ppbv	91

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



#1

Bromochloromethane

Concen: 10.000 ppbv

RT: 5.67 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

Acq: 27 Apr 2021 15:54

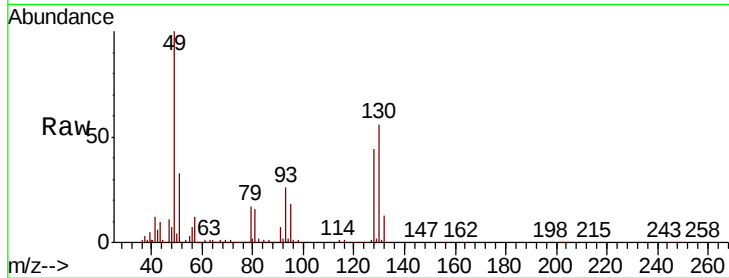
Tot Ion: 49 Resp: 1314435

Ion Ratio Lower Upper

49 100

128 47.3 24.4 73.2

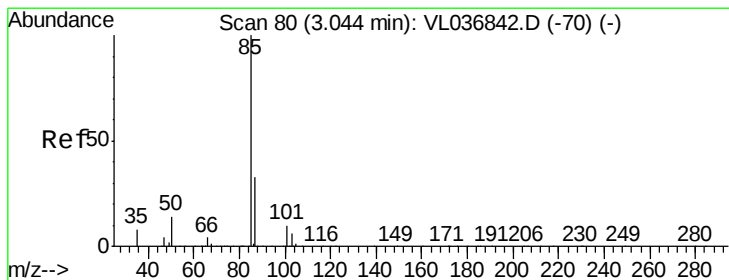
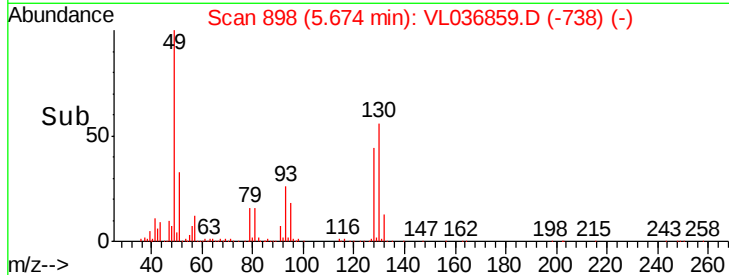
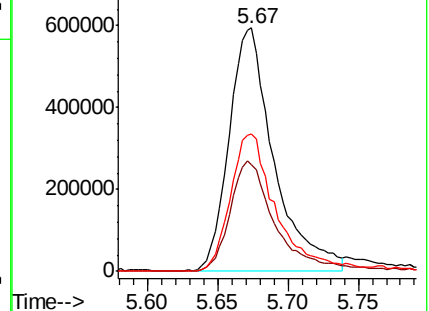
130 60.3 30.3 90.8



Abundance Ion 49.10 (48.80 to 49.80): VL0

Ion 128.00 (127.70 to 128.70): VL0

Ion 130.00 (129.70 to 130.70): VL0



#2

Dichlorodifluoromethane

Concen: 0.198 ppbv

RT: 3.05 min Scan# 82

Delta R.T. 0.01 min

Lab File: VL036859.D

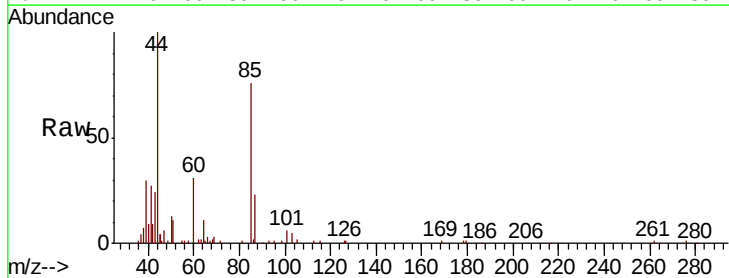
Acq: 27 Apr 2021 15:54

Tgt Ion: 85 Resp: 41069

Ion Ratio Lower Upper

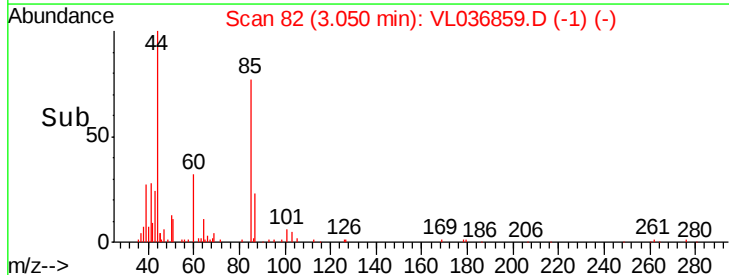
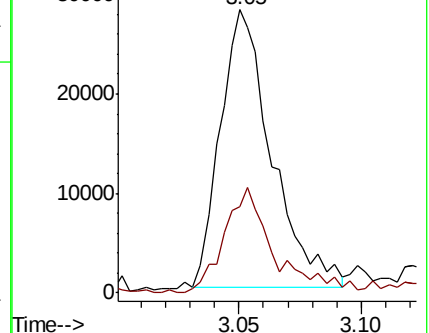
85 100

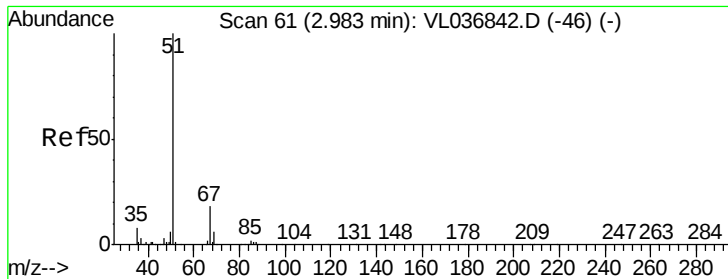
87 29.6 26.2 39.2



Abundance Ion 85.00 (84.70 to 85.70): VL0

Ion 87.00 (86.70 to 87.70): VL0





#3

Chlorodifluoromethane

Concen: 0.434 ppbv

RT: 2.99 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

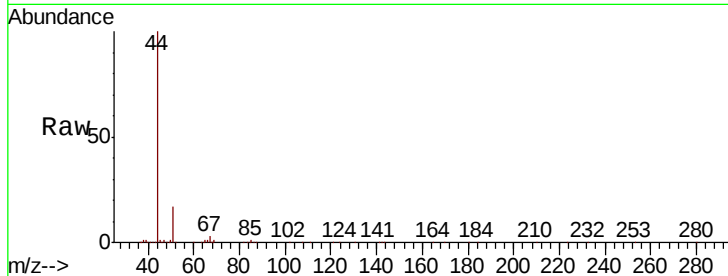
Acq: 27 Apr 2021 15:54

Tot Ion: 51 Resp: 103863

Ion Ratio Lower Upper

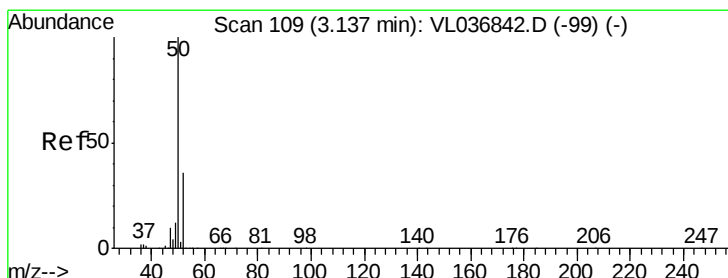
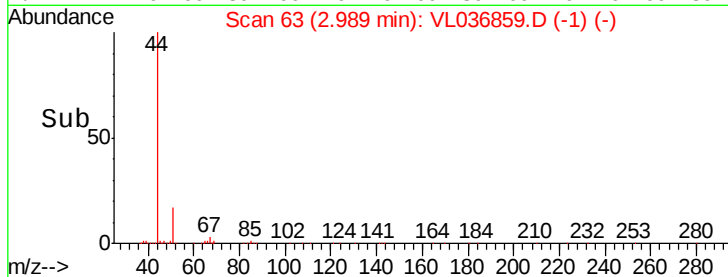
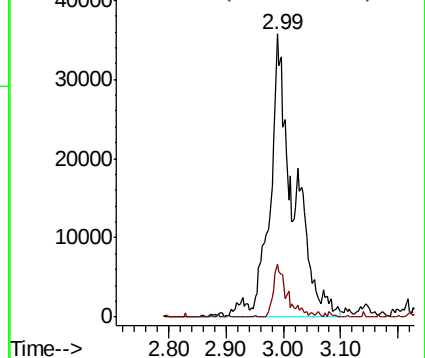
51 100

67 10.9 14.8 22.2#



Abundance Ion 51.00 (50.70 to 51.70): VL0

Ion 67.00 (66.70 to 67.70): VL0



#4

Chloromethane

Concen: 0.462 ppbv

RT: 3.15 min Scan# 112

Delta R.T. 0.01 min

Lab File: VL036859.D

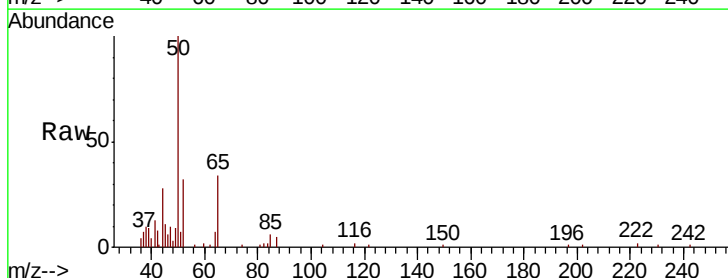
Acq: 27 Apr 2021 15:54

Tgt Ion: 50 Resp: 36379

Ion Ratio Lower Upper

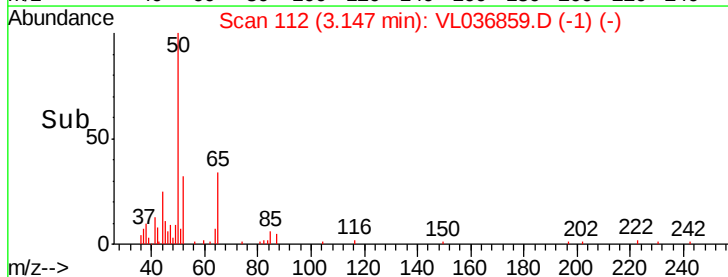
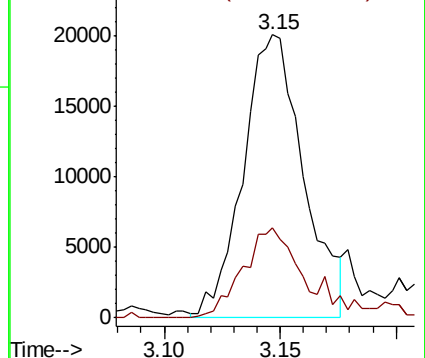
50 100

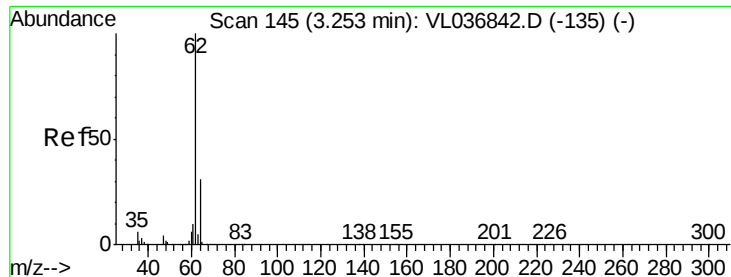
52 32.5 28.5 42.7



Abundance Ion 50.10 (49.80 to 50.80): VL0

Ion 52.10 (51.80 to 52.80): VL0





#5

Vinyl Chloride

Concen: 0.099 ppbv

RT: 3.26 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

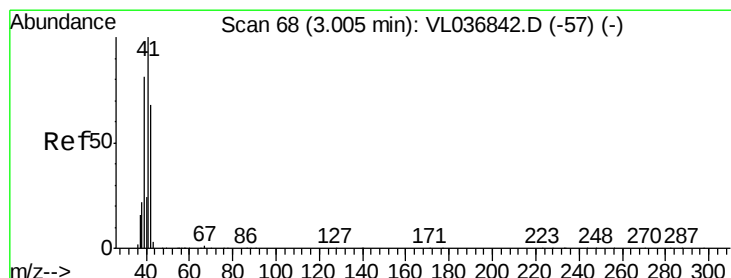
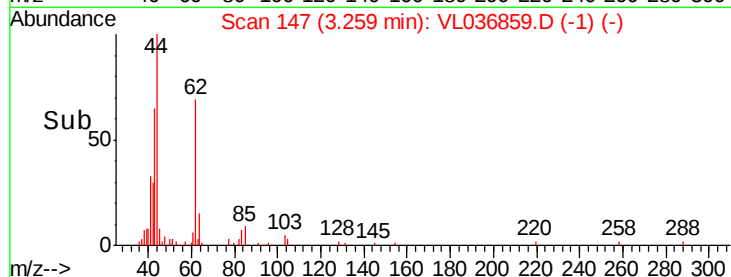
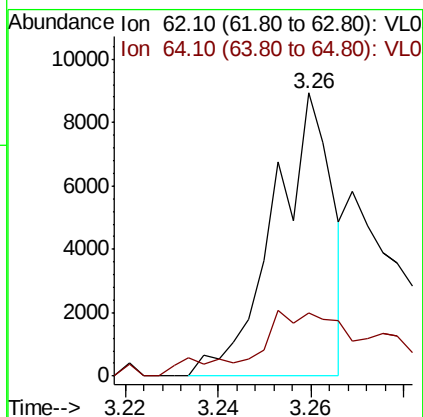
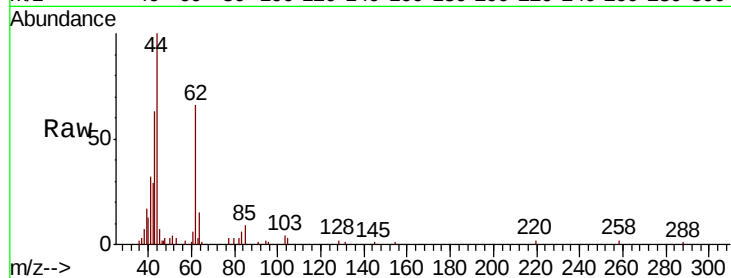
Acq: 27 Apr 2021 15:54

Tot Ion: 62 Resp: 7822

Ion Ratio Lower Upper

62 100

64 17.1 25.0 37.4#



#9

Propene

Concen: 1.021 ppbv

RT: 3.02 min Scan# 74

Delta R.T. 0.02 min

Lab File: VL036859.D

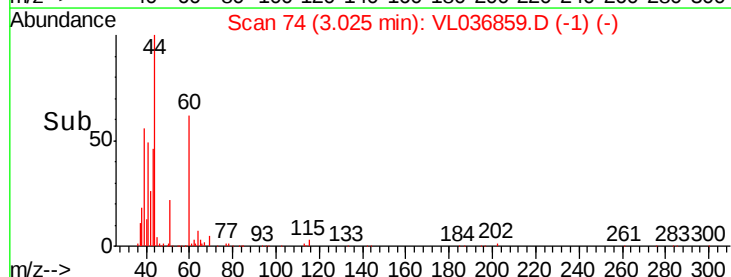
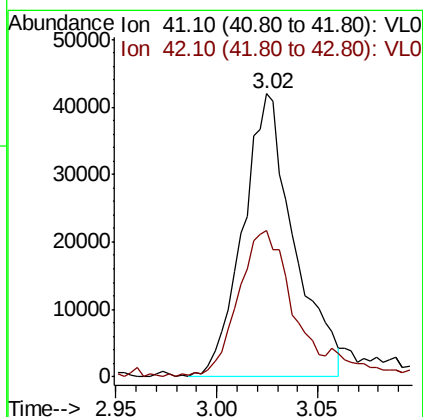
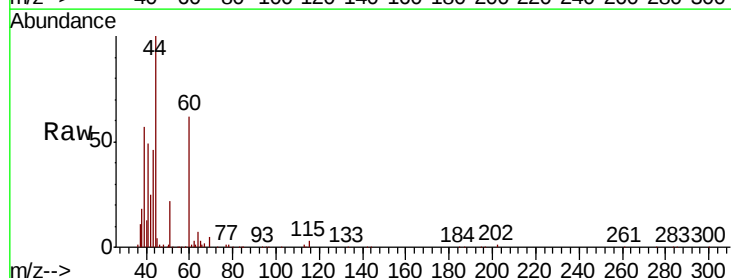
Acq: 27 Apr 2021 15:54

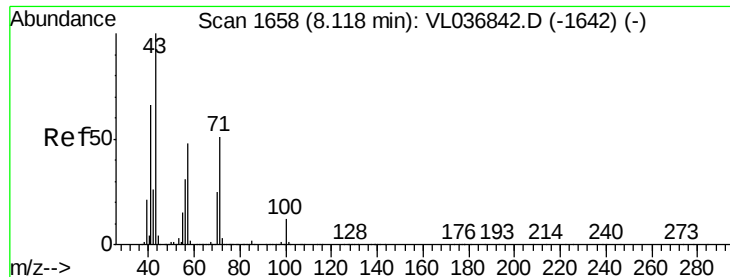
Tgt Ion: 41 Resp: 74462

Ion Ratio Lower Upper

41 100

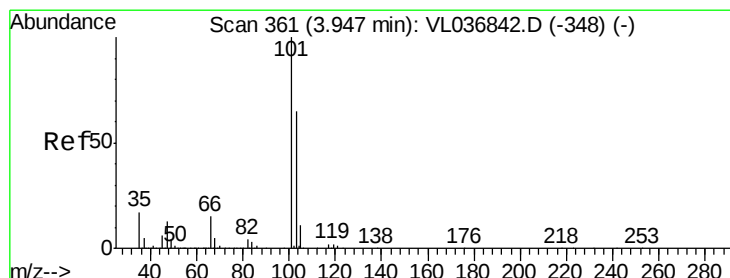
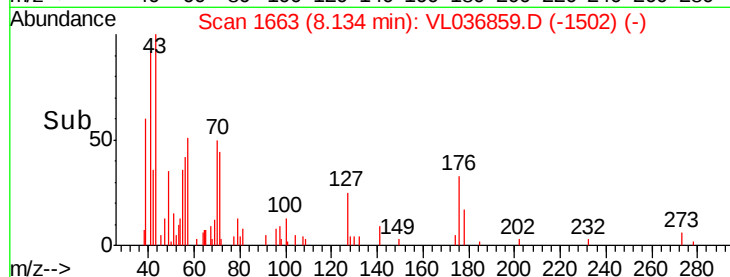
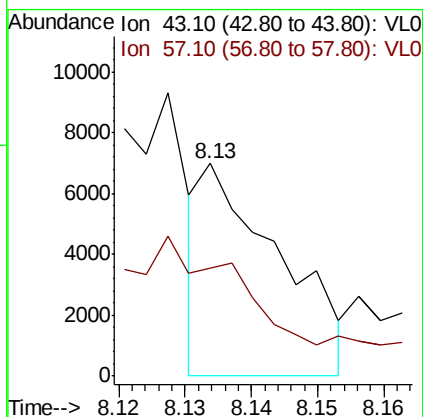
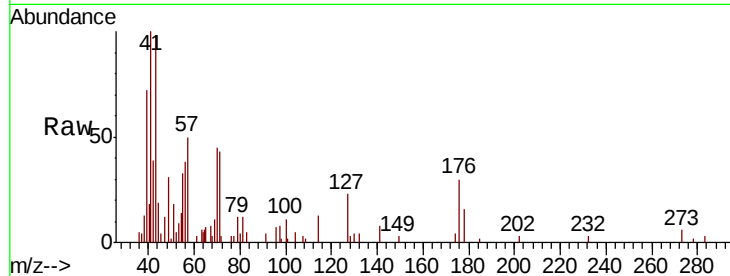
42 61.2 56.0 84.0





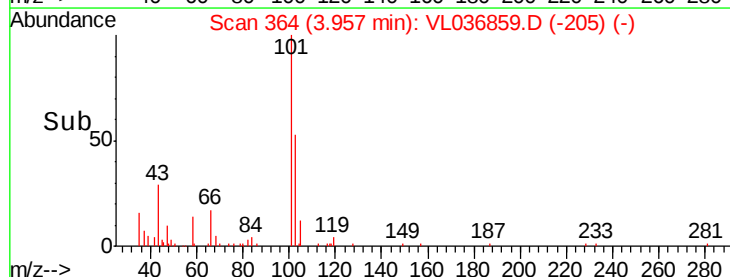
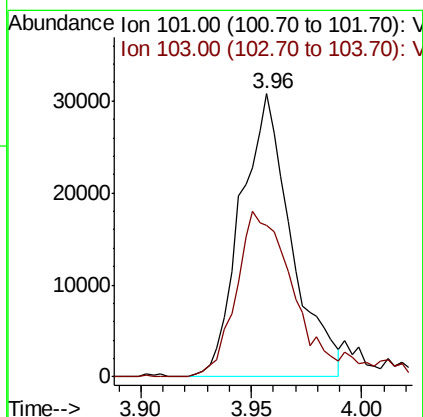
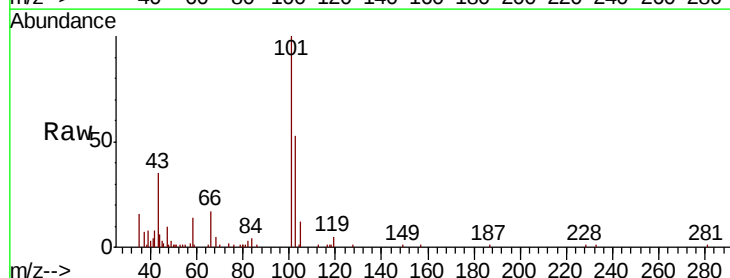
#10
 Heptane
 Concen: 0.032 ppbv
 RT: 8.13
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 27 Apr 2021 15:54

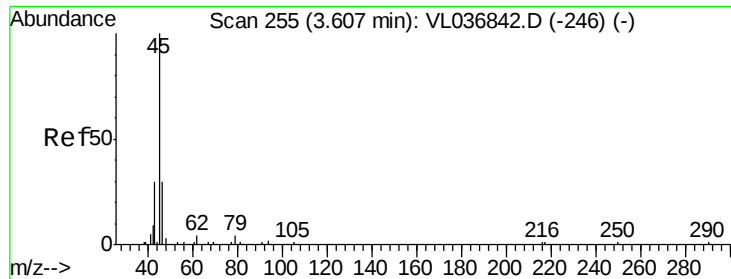
Tot Ion: 43 Resp: 5784
 Ion Ratio Lower Upper
 43 100
 57 0.0 38.8 58.2#



#11
 Trichlorofluoromethane
 Concen: 0.266 ppbv
 RT: 3.96 min Scan# 364
 Delta R.T.: 0.01 min
 Lab File: VL036859.D
 Acq: 27 Apr 2021 15:54

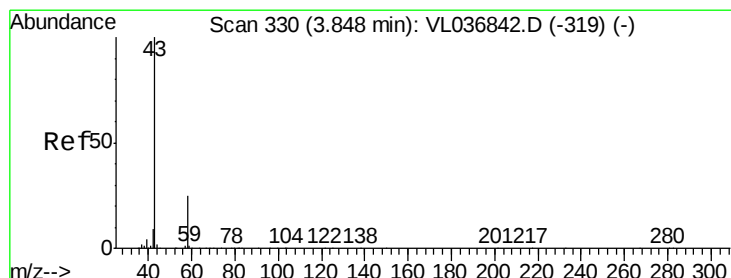
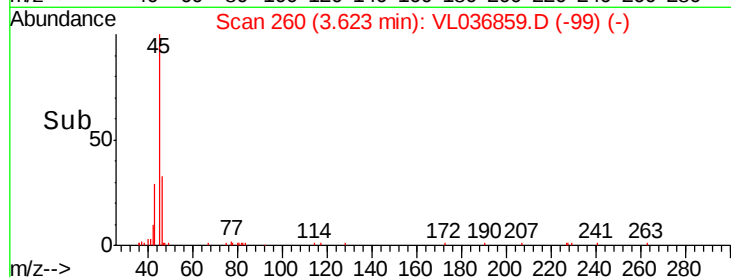
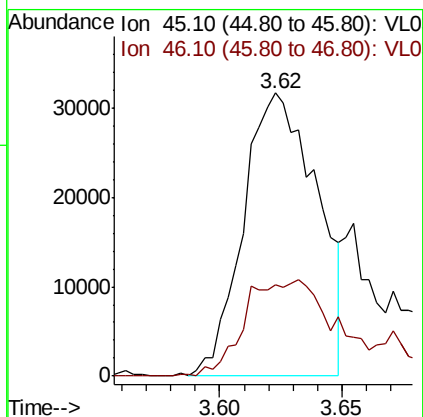
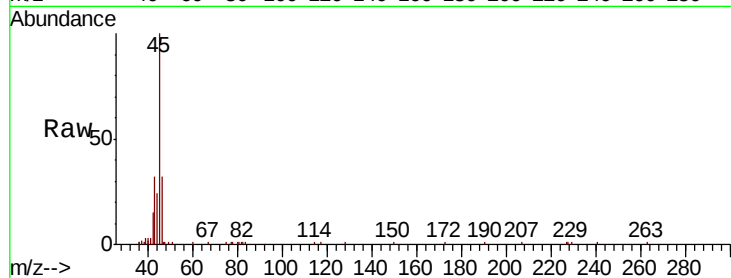
Tgt Ion:101 Resp: 49099
 Ion Ratio Lower Upper
 101 100
 103 53.3 51.6 77.4





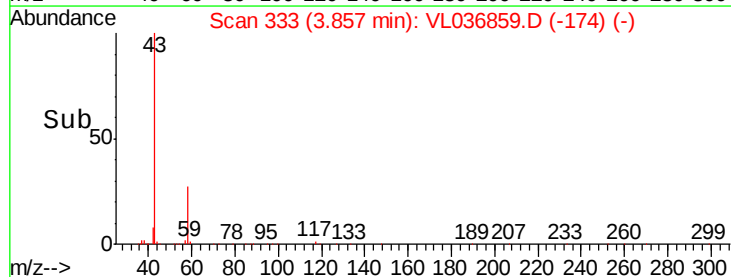
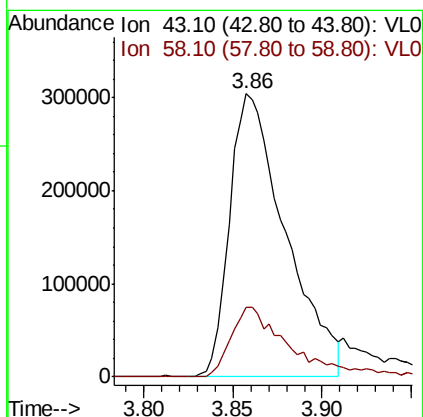
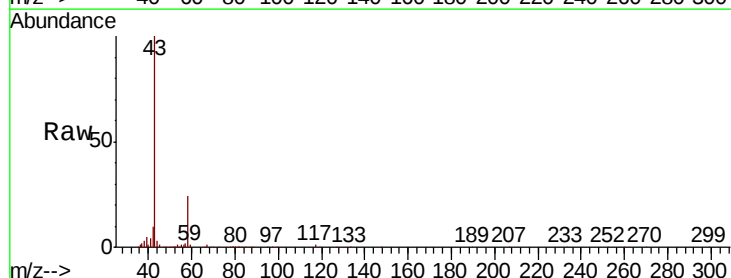
#13
Ethanol
Concen: 7.128 ppbv
RT: 3.62
Delta R.T. MSVOA_L
Lab File: ClientSampleId :
Acq: 27 Apr 2021 15:54

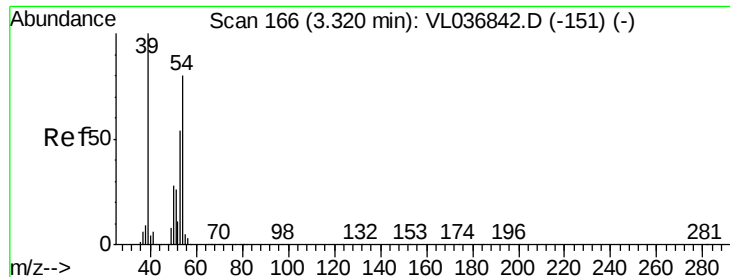
Tot Ion: 45 Resp: 66320
Ion Ratio Lower Upper
45 100
46 53.6 16.8 67.4



#15
Acetone
Concen: 5.328 ppbv
RT: 3.86 min Scan# 333
Delta R.T. 0.01 min
Lab File: VL036859.D
Acq: 27 Apr 2021 15:54

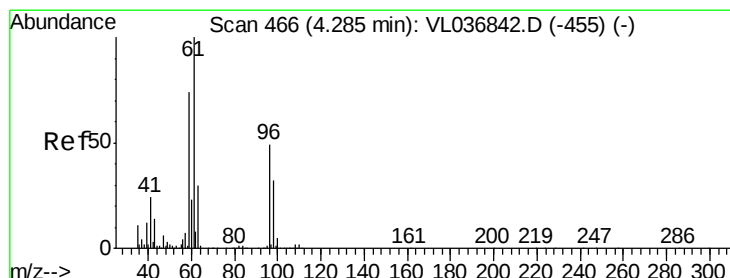
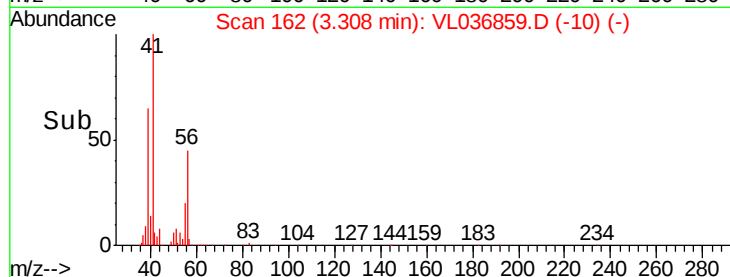
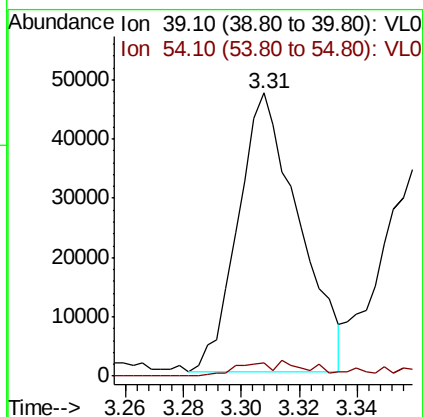
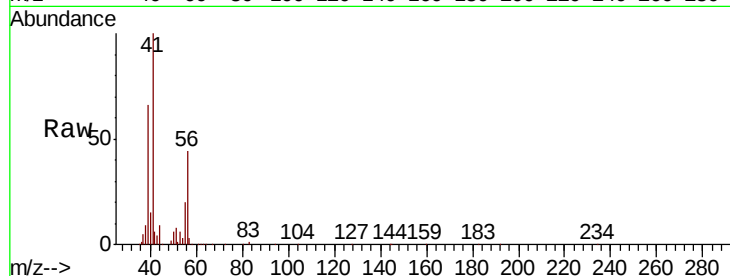
Tgt Ion: 43 Resp: 660046
Ion Ratio Lower Upper
43 100
58 26.7 21.7 32.5





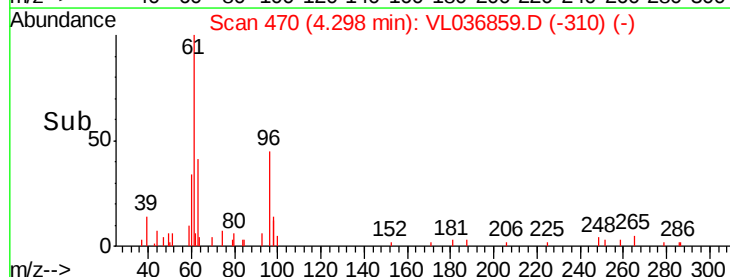
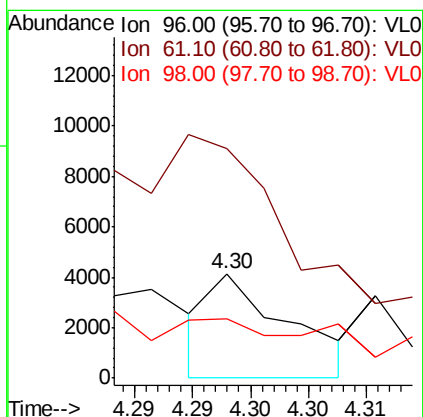
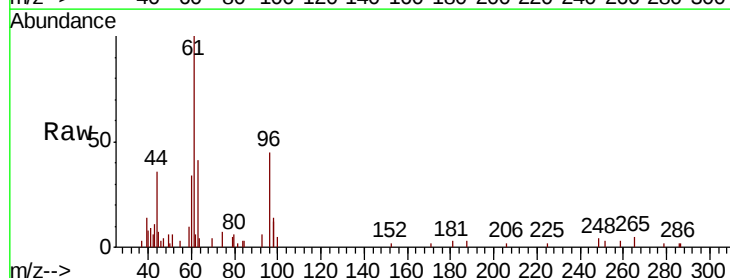
#16
 1,3-Butadiene
 Concen: 0.860 ppbv
 RT: 3.31
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 27 Apr 2021 15:54

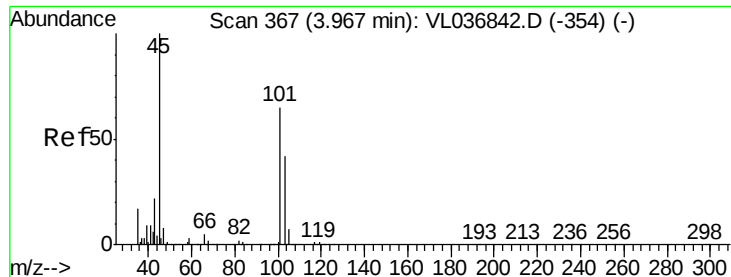
Tot Ion: 39 Resp: 68144
 Ion Ratio Lower Upper
 39 100
 54 6.7 59.6 89.4#



#18
 1,1-Dichloroethene
 Concen: 0.036 ppbv
 RT: 4.30 min Scan# 470
 Delta R.T. 0.01 min
 Lab File: VL036859.D
 Acq: 27 Apr 2021 15:54

Tgt Ion: 96 Resp: 1959
 Ion Ratio Lower Upper
 96 100
 61 174.0 162.2 243.2
 98 7.7 51.8 77.6#





#19

Isopropyl Alcohol

Concen: 0.513 ppbv

RT: 3.99 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

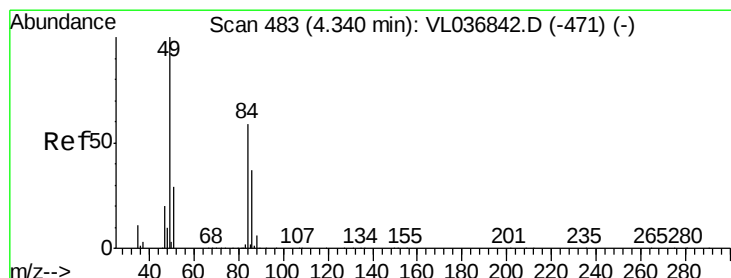
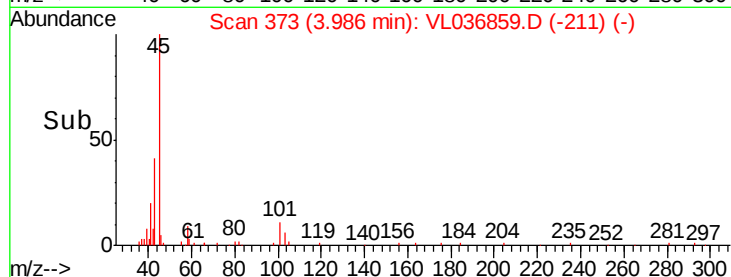
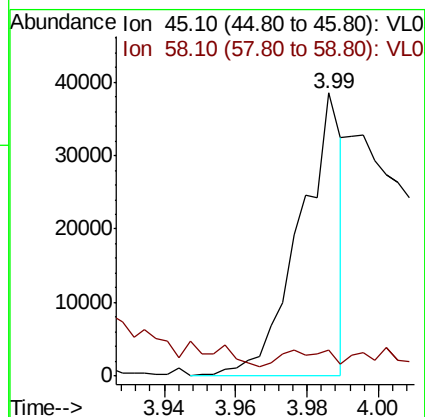
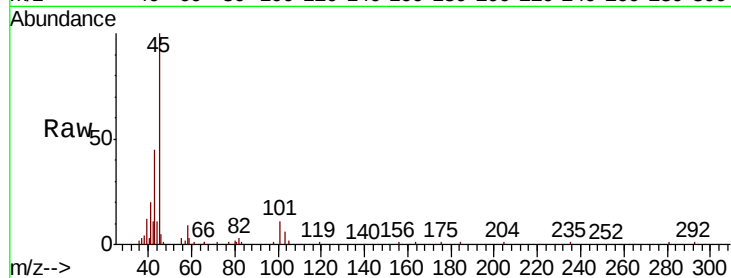
Acq: 27 Apr 2021 15:54

Tot Ion: 45 Resp: 31461

Ion Ratio Lower Upper

45 100

58 0.0 2.8 4.2#



#20

Methylene Chloride

Concen: 7.356 ppbv

RT: 4.35 min Scan# 486

Delta R.T. 0.01 min

Lab File: VL036859.D

Acq: 27 Apr 2021 15:54

Tgt Ion: 84 Resp: 435777

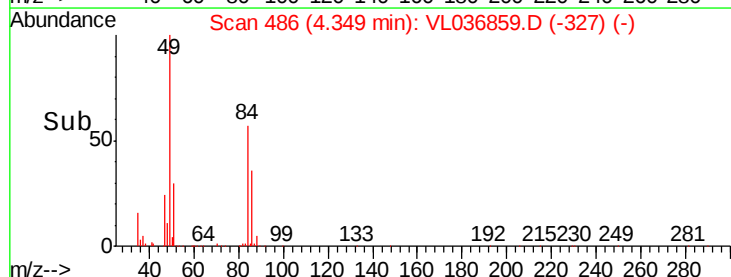
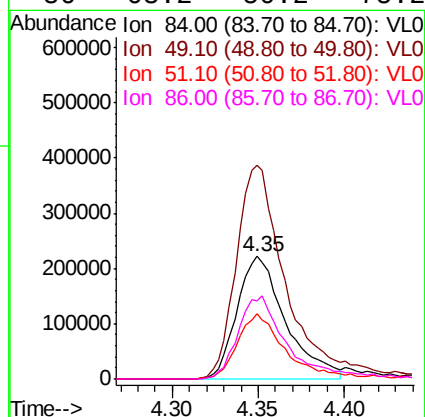
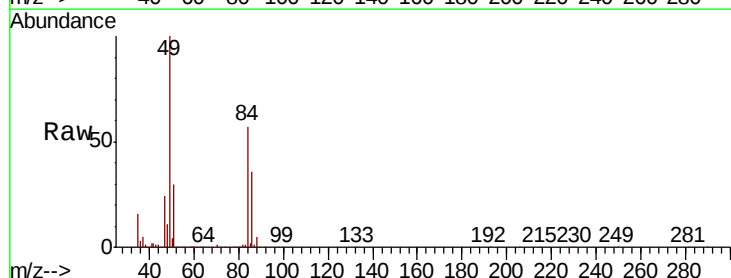
Ion Ratio Lower Upper

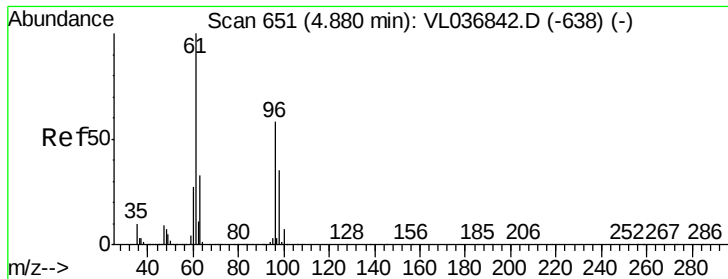
84 100

49 173.8 135.4 203.0

51 52.7 39.3 58.9

86 63.2 50.2 75.2





#22

trans-1,2-Dichloroethene

Concen: 0.134 ppbv

RT: 4.89 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

Acq: 27 Apr 2021 15:54

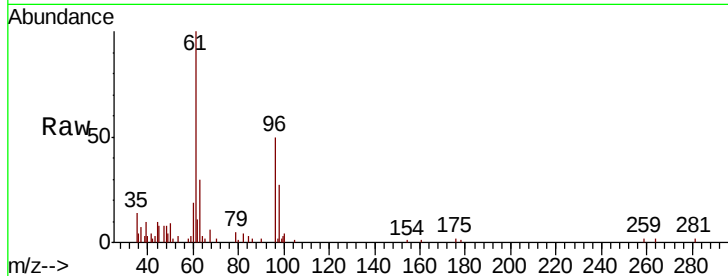
Tot Ion: 96 Resp: 7247

Ion Ratio Lower Upper

96 100

61 192.0 138.6 207.8

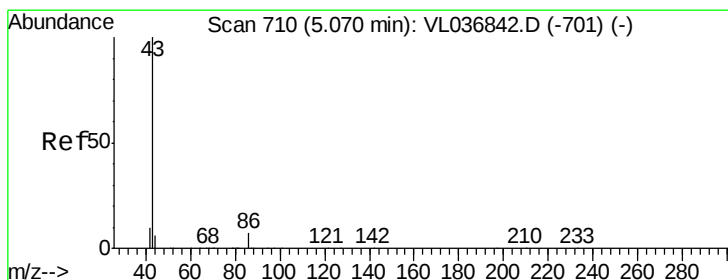
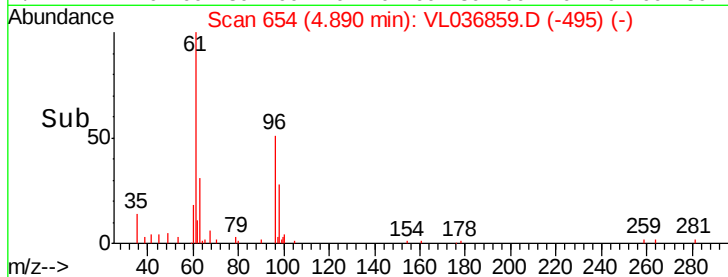
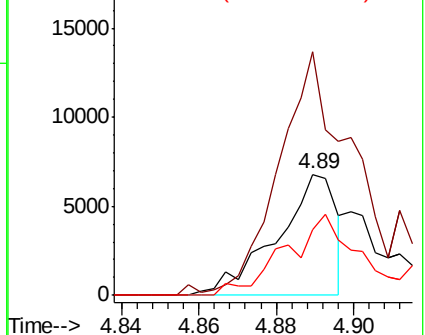
98 54.6 48.1 72.1



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: 0.133 ppbv

RT: 5.07 min Scan# 711

Delta R.T. 0.00 min

Lab File: VL036859.D

Acq: 27 Apr 2021 15:54

Tgt Ion: 43 Resp: 22421

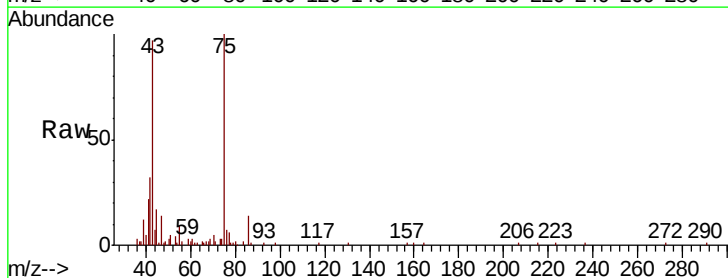
Ion Ratio Lower Upper

43 100

86 15.8 5.3 7.9#

42 26.5 8.7 13.1#

44 0.0 3.9 5.9#

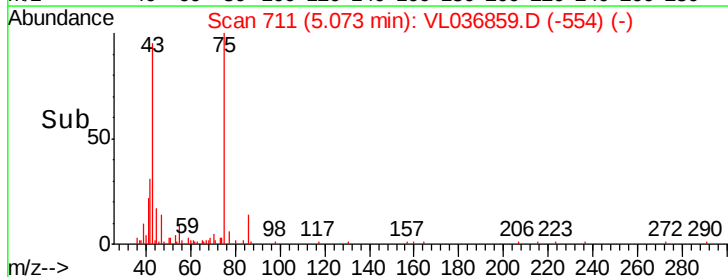
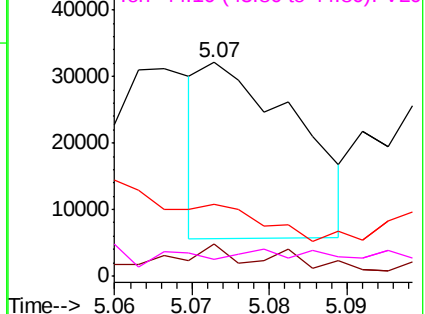


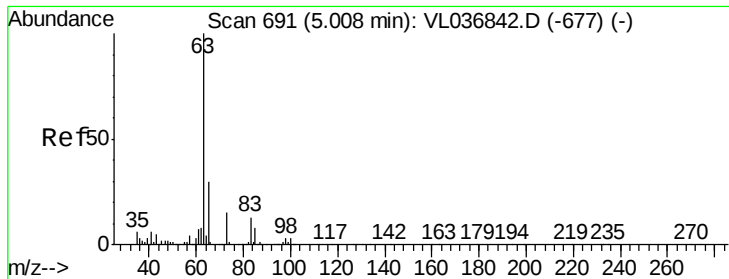
Abundance Ion 43.10 (42.80 to 43.80): VL0

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





#24

1,1-Dichloroethane

Concen: 0.078 ppbv

RT: 5.02 Instrument:

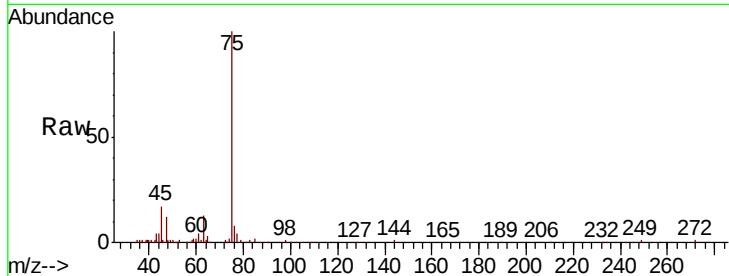
Delta R.T. MSVOA_L

Lab File: ClientSampleId:

Acq: 27 Apr 2021 15:54

Tot Ion: 63 Resp: 9283

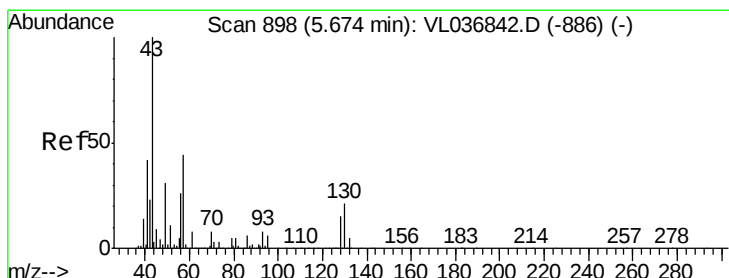
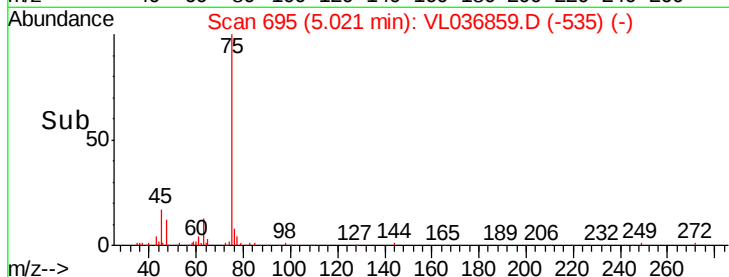
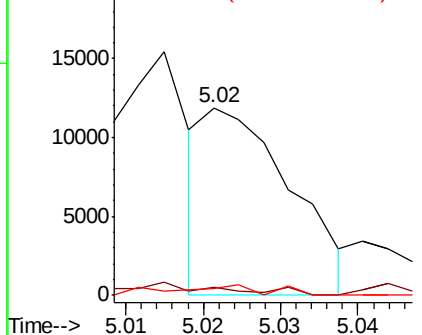
Ion	Ratio	Lower	Upper
63	100		
98	5.9	1.7	5.1#
100	4.5	1.3	3.8#



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: 1.142 ppbv

RT: 5.69 min Scan# 903

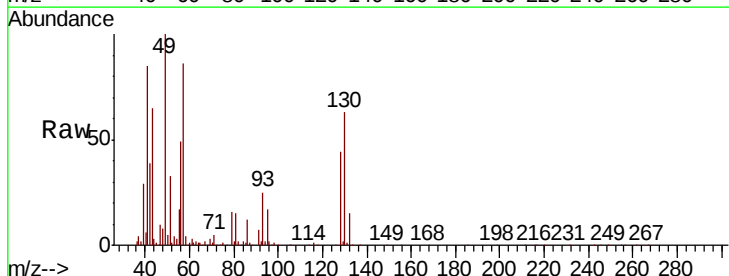
Delta R.T. 0.02 min

Lab File: VL036859.D

Acq: 27 Apr 2021 15:54

Tgt Ion: 43 Resp: 345446

Ion	Ratio	Lower	Upper
43	100		
45	1.7	7.8	11.8#
61	0.0	7.4	11.0#
70	2.3	5.4	8.0#

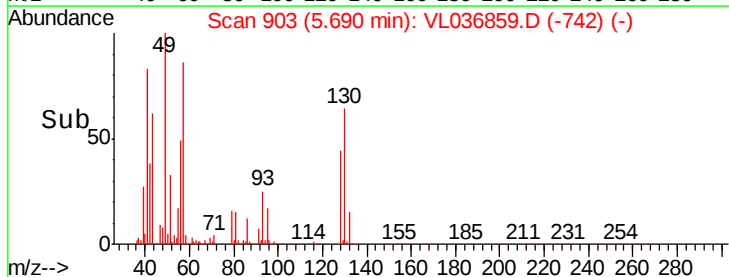
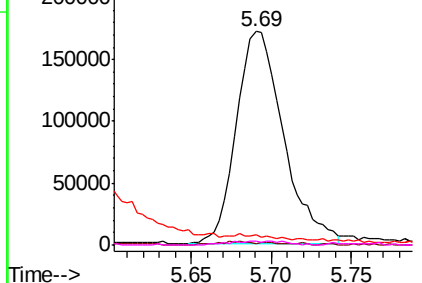


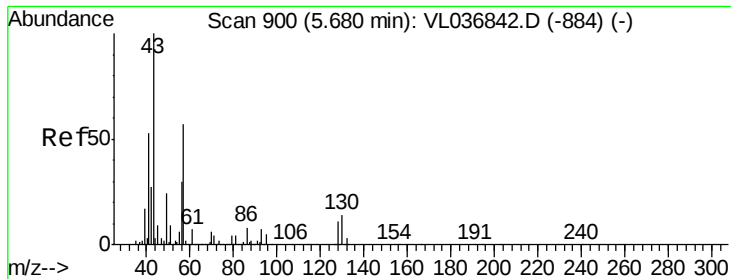
Abundance Ion 43.10 (42.80 to 43.80): VL0

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: 3.270 ppbv

RT: 5.69 Instrument:

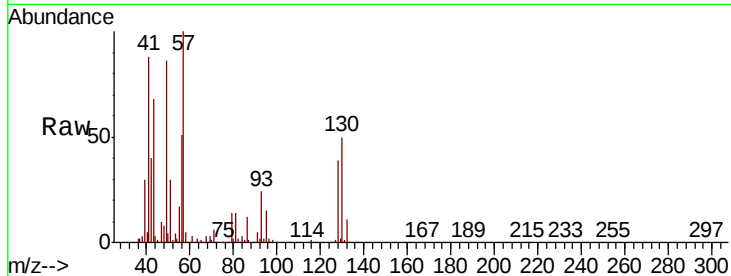
Delta R.T. MSVOA_L

Lab File: ClientSampleId:

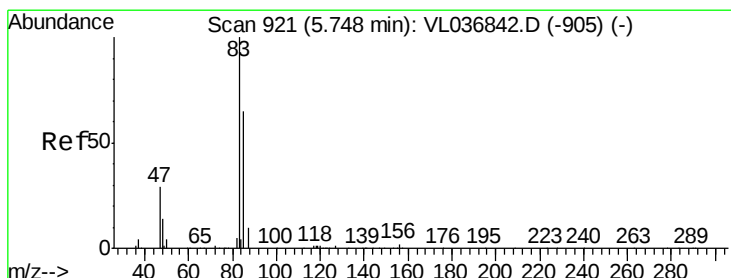
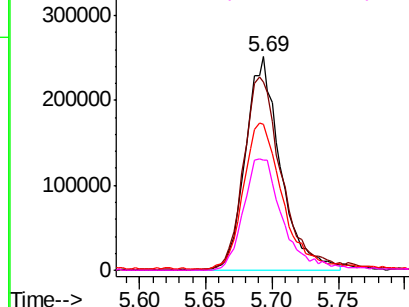
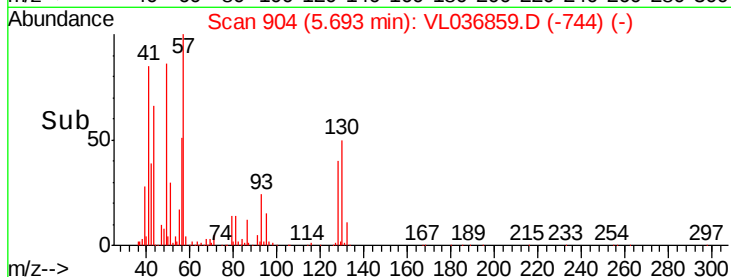
Acq: 27 Apr 2021 15:54

Tot Ion: 57 Resp: 462986

Ion	Ratio	Lower	Upper
57	100		
41	101.0	77.7	116.5
43	77.6	180.5	270.7#
56	59.8	44.6	66.8



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: 0.497 ppbv

RT: 5.75 min Scan# 922

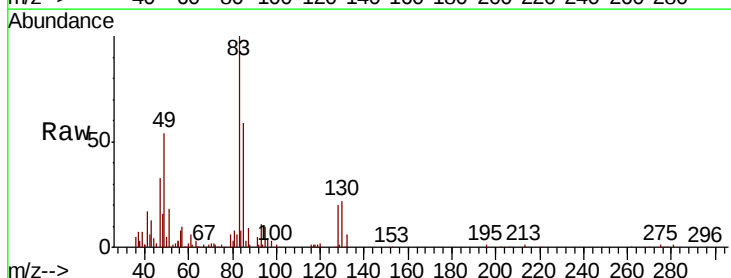
Delta R.T. 0.00 min

Lab File: VL036859.D

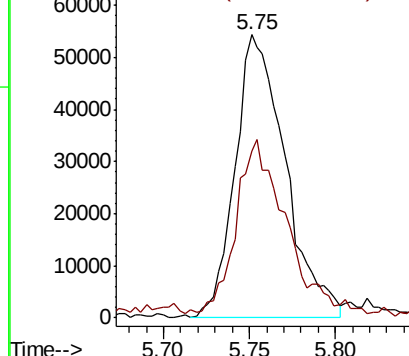
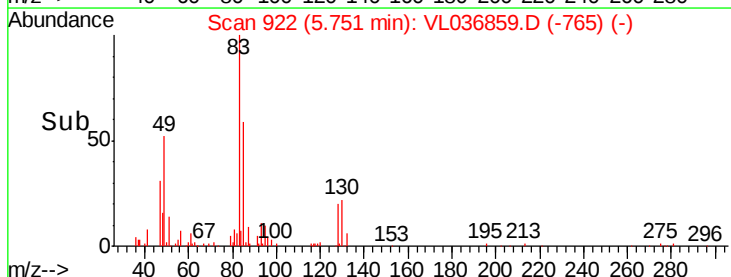
Acq: 27 Apr 2021 15:54

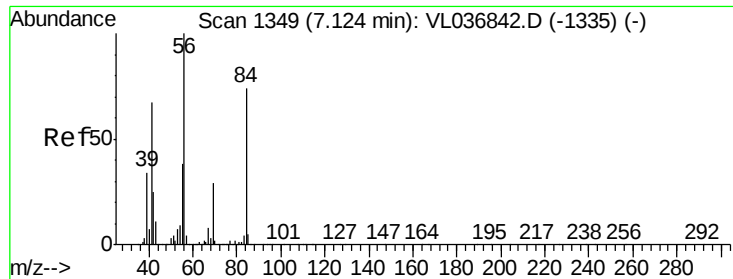
Tgt Ion: 83 Resp: 109773

Ion	Ratio	Lower	Upper
83	100		
85	56.5	52.2	78.4



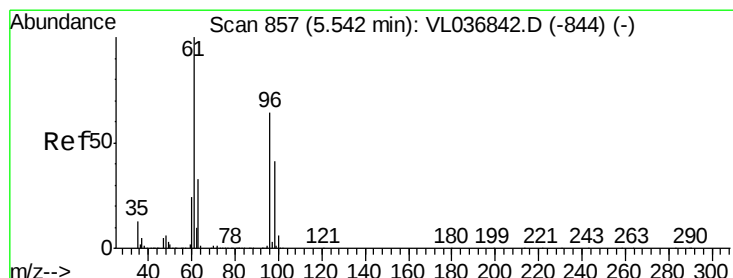
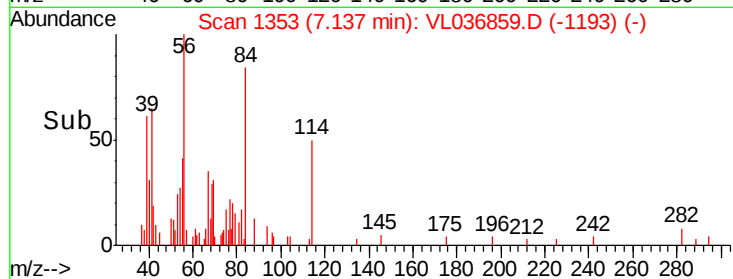
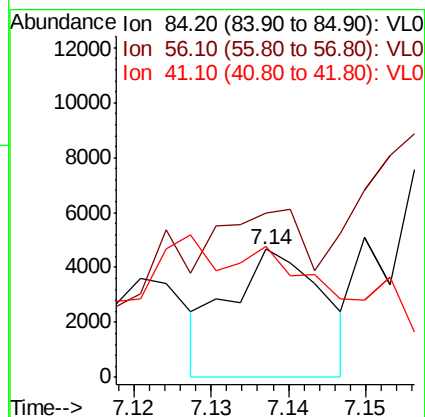
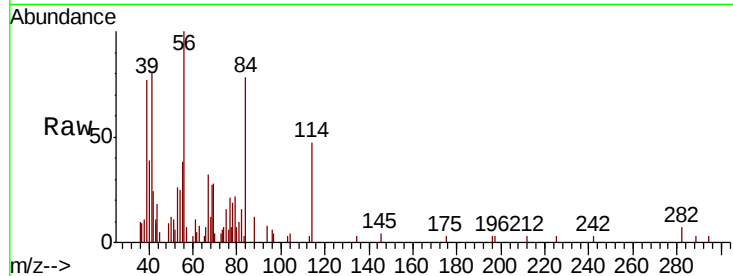
Abundance Ion 83.00 (82.70 to 83.70): VL0
 Ion 85.00 (84.70 to 85.70): VL0





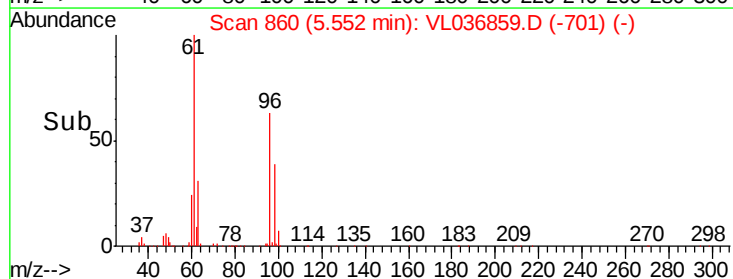
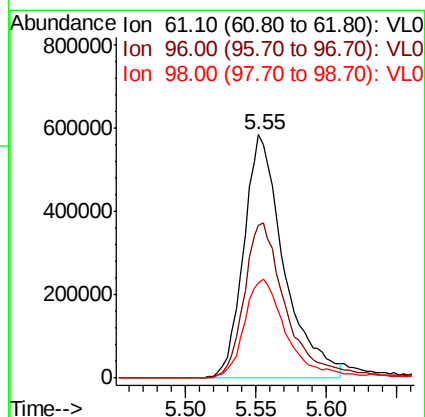
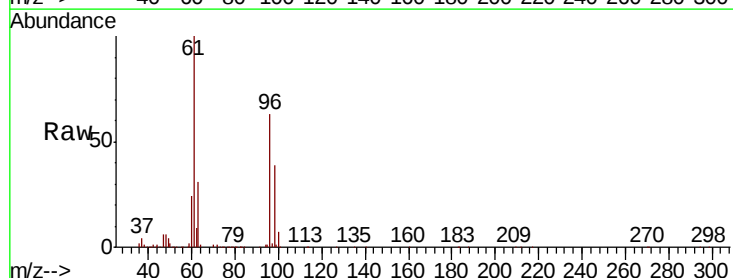
#30
Cvclohexane
Concen: 0.035 ppbv
RT: 7.14
Instrument: MSVOA_1
Delta R.T.:
Lab File: ClientSampleId:
Acq: 27 Apr 2021 15:54

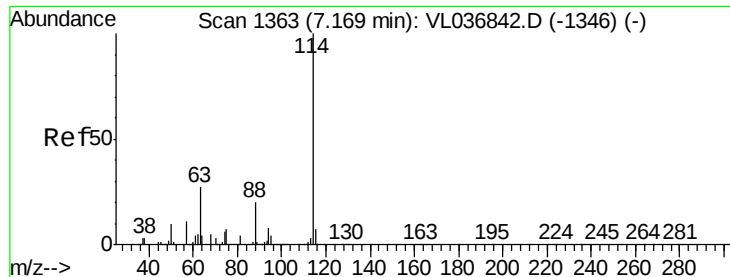
Tot Ion	84	Resp	3888
Ion Ratio	Lower	Upper	
84	100		
56	0.0	115.8	173.6#
41	0.0	74.6	111.8#



#31
cis-1,2-Dichloroethene
Concen: 9.198 ppbv
RT: 5.55 min Scan# 860
Delta R.T.: 0.01 min
Lab File: VL036859.D
Acq: 27 Apr 2021 15:54

Tgt Ion	61	Resp	1168916
Ion Ratio	Lower	Upper	
61	100		
96	62.8	51.0	76.6
98	39.3	32.7	49.1

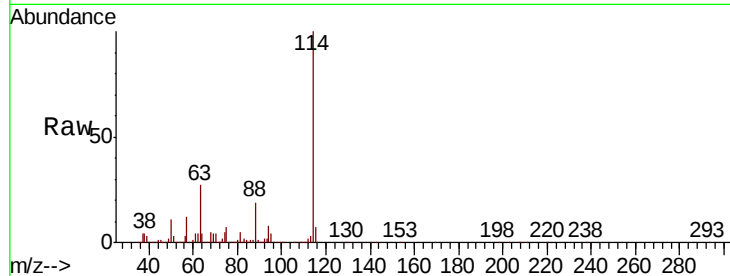




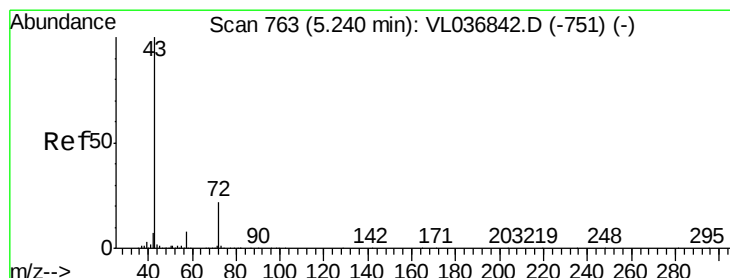
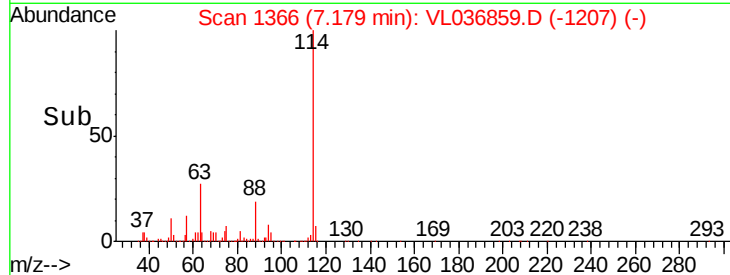
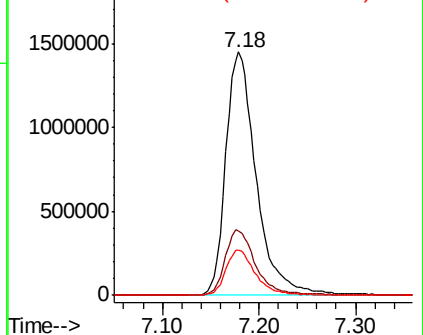
#33
 1,4-Difluorobenzene
 Concen: 10.000 ppbv
 RT: 7.18 min
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 27 Apr 2021 15:54

Tot Ion: 114 Resp: 3168903

Ion	Ratio	Lower	Upper
114	100		
63	27.4	21.9	32.9
88	18.5	15.1	22.7



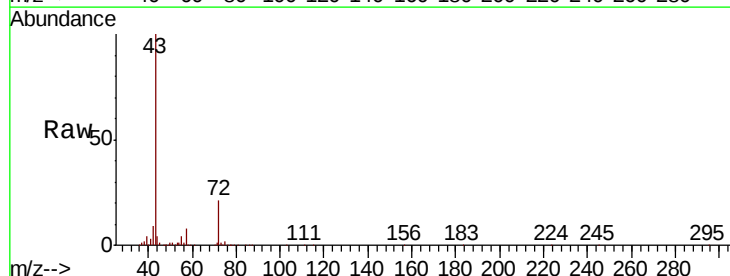
Abundance Ion 114.10 (113.80 to 114.80): VL0
 Ion 63.10 (62.80 to 63.80): VL0
 Ion 88.10 (87.80 to 88.80): VL0



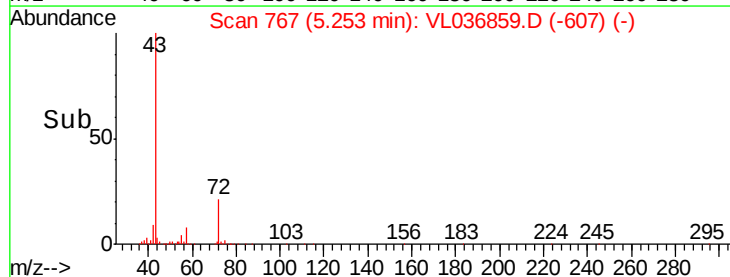
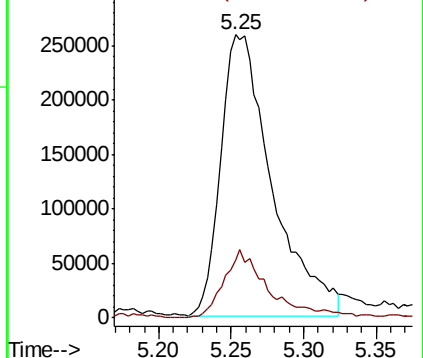
#34
 2-Butanone
 Concen: 4.578 ppbv
 RT: 5.25 min Scan# 767
 Delta R.T.: 0.01 min
 Lab File: VL036859.D
 Acq: 27 Apr 2021 15:54

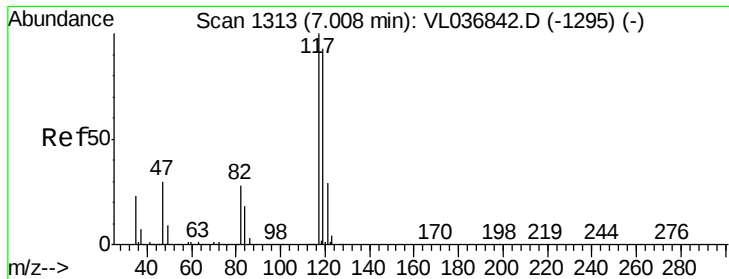
Tgt Ion: 43 Resp: 635431

Ion	Ratio	Lower	Upper
43	100		
72	21.2	17.6	26.4



Abundance Ion 43.10 (42.80 to 43.80): VL0
 Ion 72.10 (71.80 to 72.80): VL0





#35

Carbon Tetrachloride

Concen: 0.074 ppbv

RT: 7.02 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

Acq: 27 Apr 2021 15:54

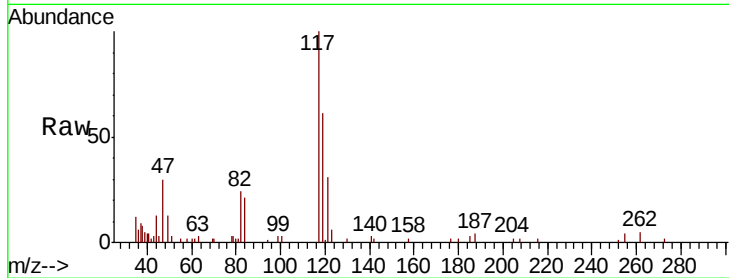
Tot Ion:117 Resp: 15866

Ion Ratio Lower Upper

117 100

119 52.8 74.6 111.8#

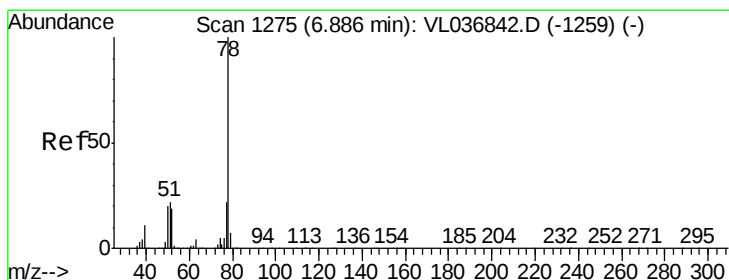
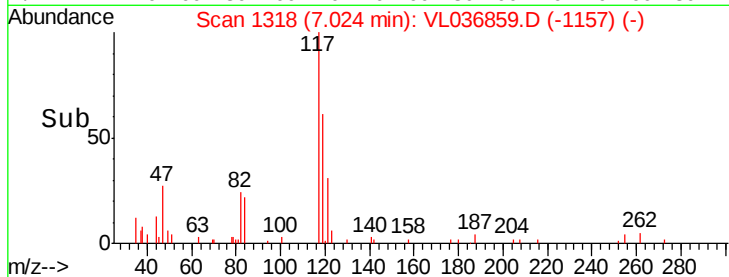
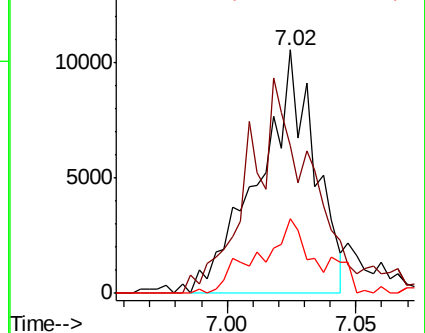
121 30.6 23.3 34.9



Abundance Ion 117.00 (116.70 to 117.70): V

Ion 119.00 (118.70 to 119.70): V

Ion 121.00 (120.70 to 121.70): V



#36

Benzene

Concen: 0.183 ppbv

RT: 6.90 min Scan# 1278

Delta R.T. 0.01 min

Lab File: VL036859.D

Acq: 27 Apr 2021 15:54

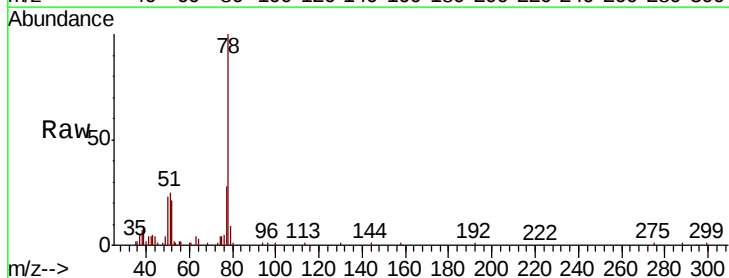
Tgt Ion: 78 Resp: 48809

Ion Ratio Lower Upper

78 100

77 27.6 17.6 26.4#

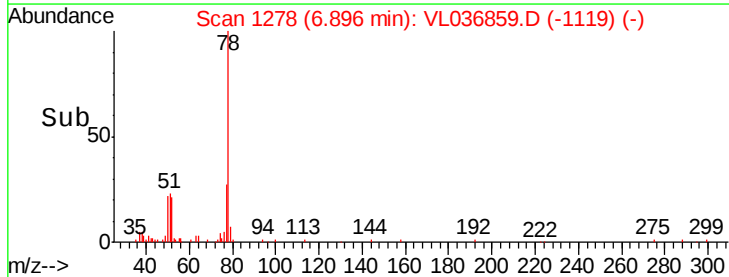
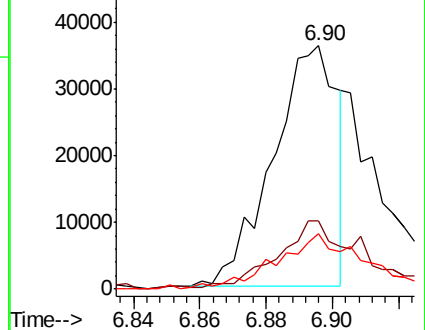
50 22.1 16.3 24.5

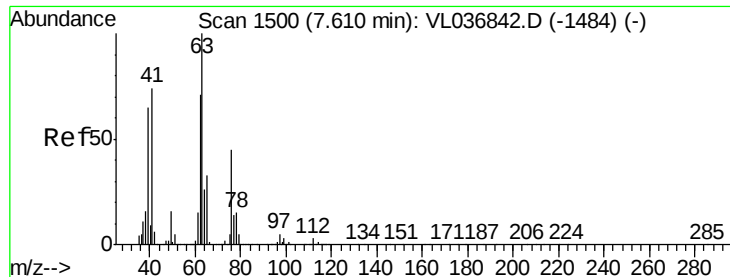


Abundance Ion 78.10 (77.80 to 78.80): VL0

Ion 77.10 (76.80 to 77.80): VL0

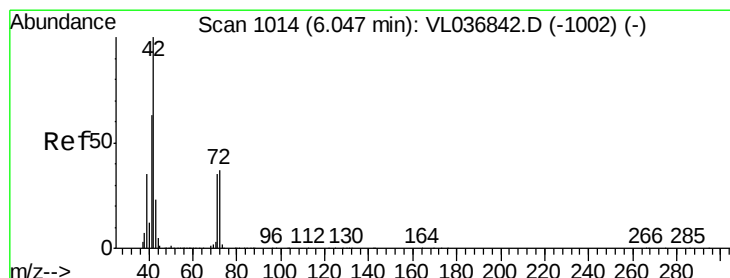
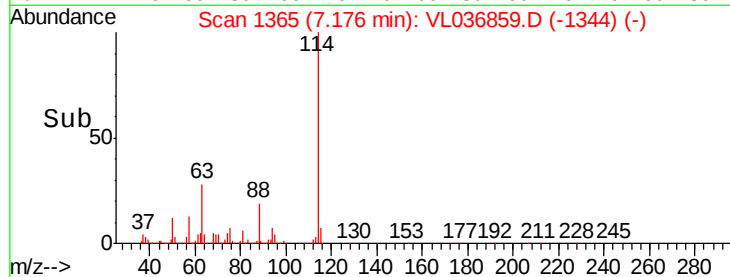
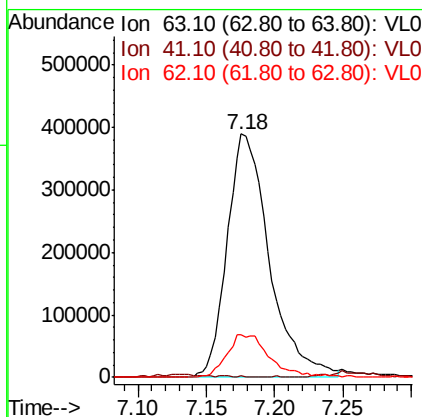
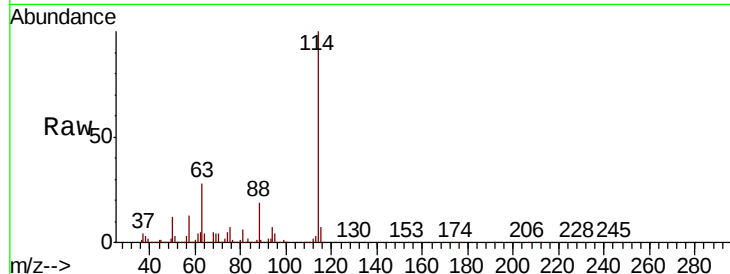
Ion 50.10 (49.80 to 50.80): VL0





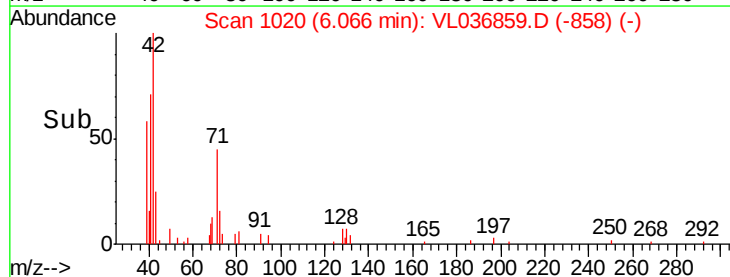
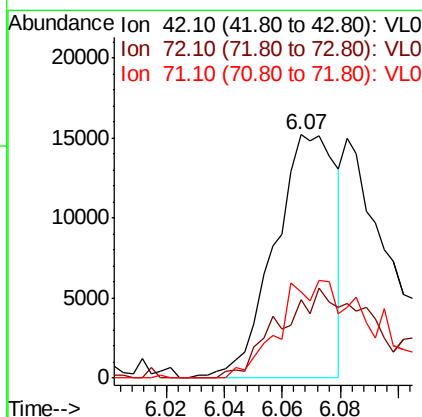
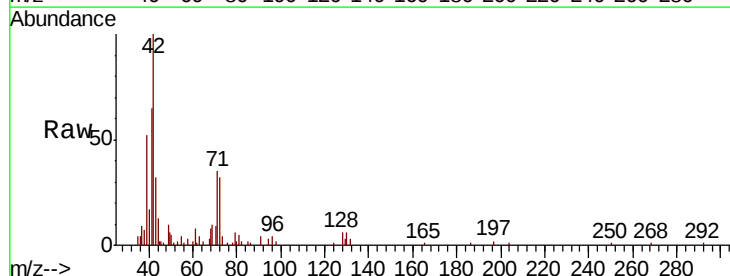
#39
 1,2-Dichloropropane
 Concen: 7.828 ppbv
 RT: 7.18
 Instrument: MSVOA_1
 Delta R.T.:
 Lab File: ClientSampleId:
 Acq: 27 Apr 2021 15:54

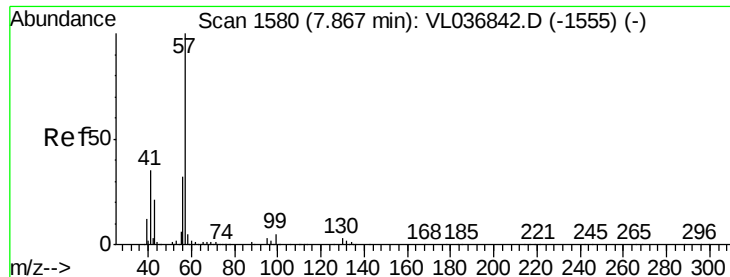
Tot Ion	Ratio	Lower	Upper
63	100		
41	0.0	59.1	88.7#
62	17.7	56.9	85.3#



#41
 Tetrahydrofuran
 Concen: 0.370 ppbv
 RT: 6.07 min Scan# 1020
 Delta R.T.: 0.02 min
 Lab File: VL036859.D
 Acq: 27 Apr 2021 15:54

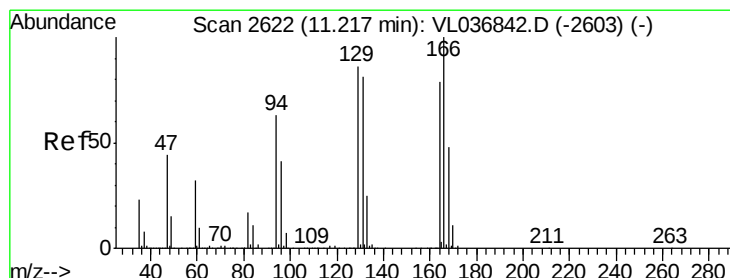
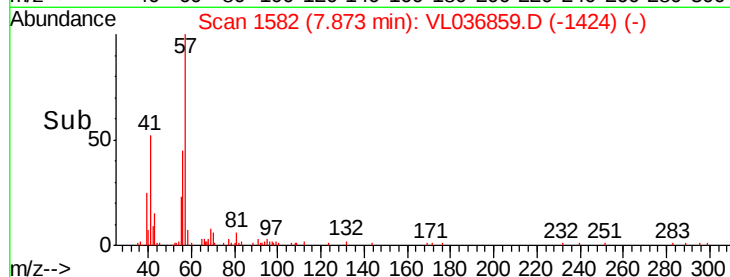
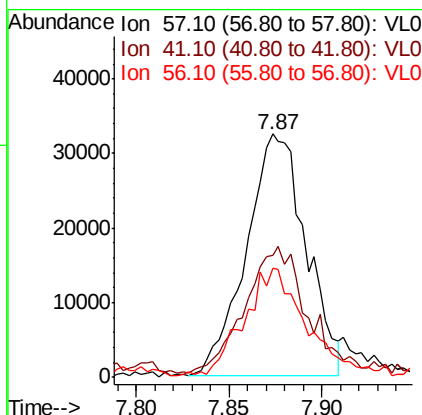
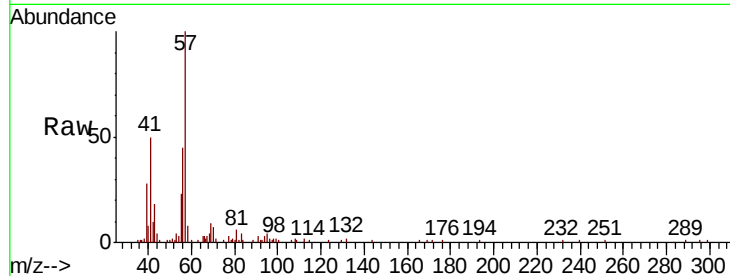
Tgt Ion	Ratio	Lower	Upper
42	100		
72	65.5	29.7	44.5#
71	69.2	29.0	43.6#





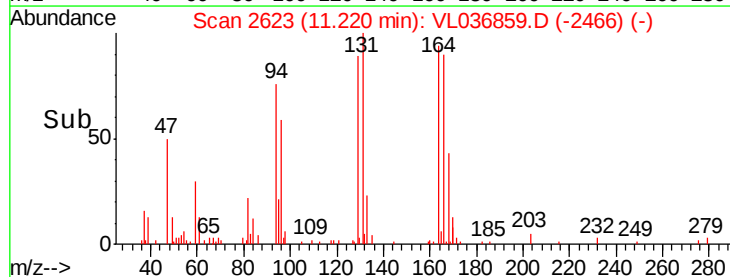
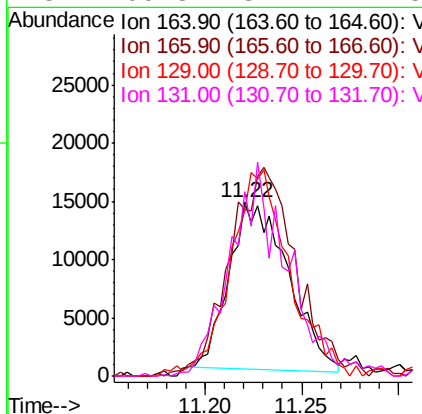
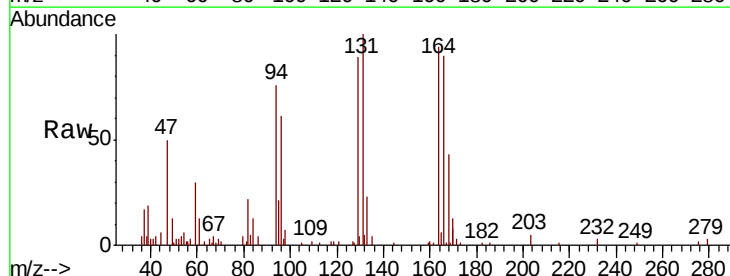
#44
 2,2,4-Trimethylpentane
 Concen: 0.158 ppbv
 RT: 7.87
 Delta R.T. MSVOA_L
 Lab File: ClientSampleId :
 Acq: 27 Apr 2021 15:54

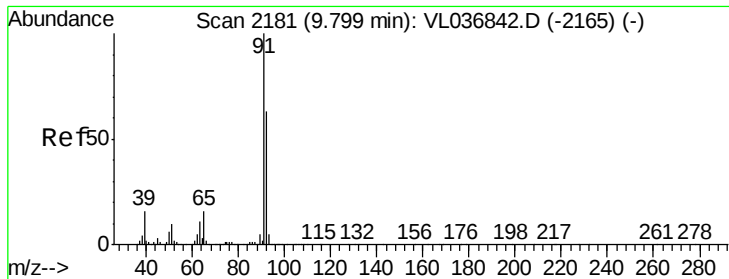
Tot Ion	57	Resp	72158
Ion Ratio	100	Lower	Upper
41	58.6	28.2	42.4#
56	48.3	25.9	38.9#



#52
 Tetrachloroethene
 Concen: 0.334 ppbv
 RT: 11.22 min Scan# 2623
 Delta R.T. 0.00 min
 Lab File: VL036859.D
 Acq: 27 Apr 2021 15:54

Tgt Ion	164	Resp	30403
Ion Ratio	100	Lower	Upper
166	93.9	100.9	151.3#
129	94.7	87.0	130.4
131	109.8	81.7	122.5





#53

Toluene

Concen: 0.863 ppbv

RT: 9.82 Instrument:

Delta R.T. MSVOA_L

Lab File: ClientSampleId:

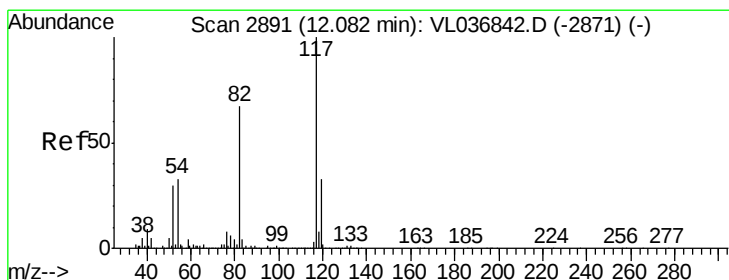
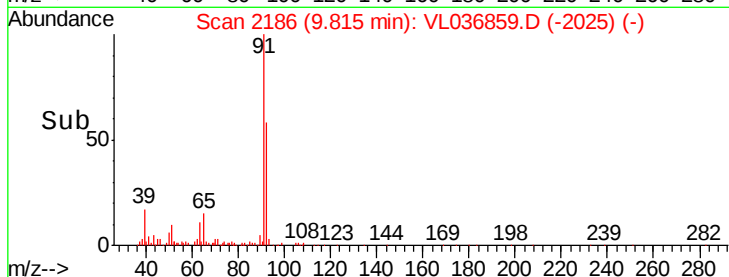
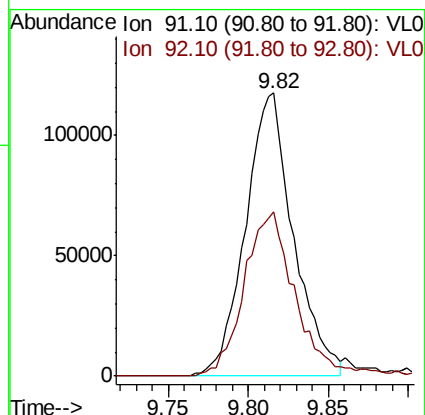
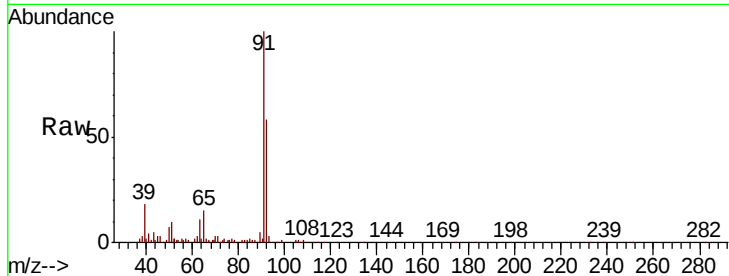
Acq: 27 Apr 2021 15:54

Tot Ion: 91 Resp: 241063

Ion Ratio Lower Upper

91 100

92 64.2 49.0 73.4



#55

Chlorobenzene-d5

Concen: 10.000 ppbv

RT: 12.09 min Scan# 2894

Delta R.T. 0.01 min

Lab File: VL036859.D

Acq: 27 Apr 2021 15:54

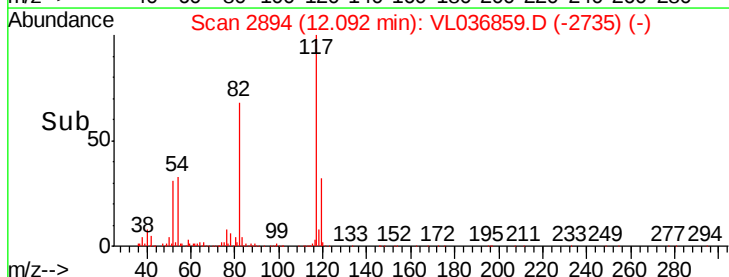
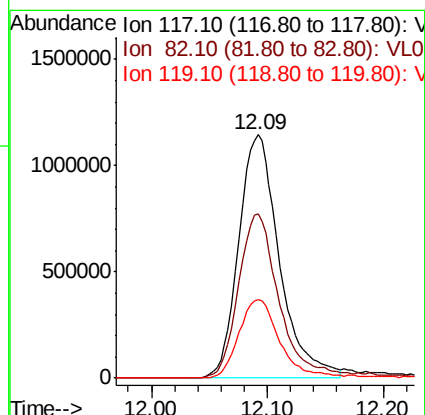
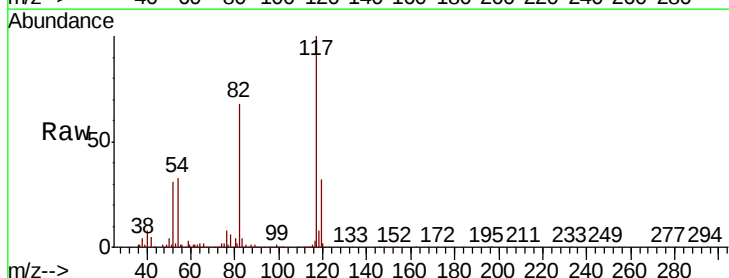
Tgt Ion: 117 Resp: 2788295

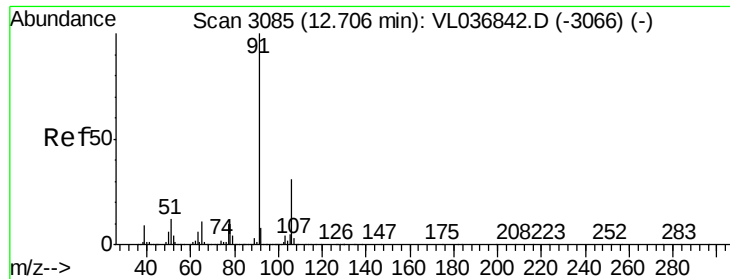
Ion Ratio Lower Upper

117 100

82 70.3 53.5 80.3

119 33.7 25.6 38.4





#58

Ethyl Benzene

Concen: 0.040 ppbv

RT: 12.72 min

Delta R.T. MSVOA_L

Lab File: ClientSampleId :

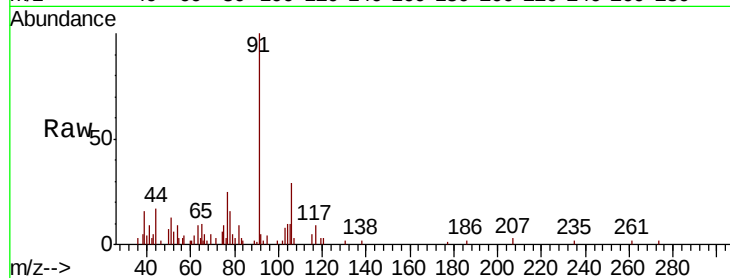
Acq: 27 Apr 2021 15:54

Tot Ion: 91 Resp: 14085

Ion Ratio Lower Upper

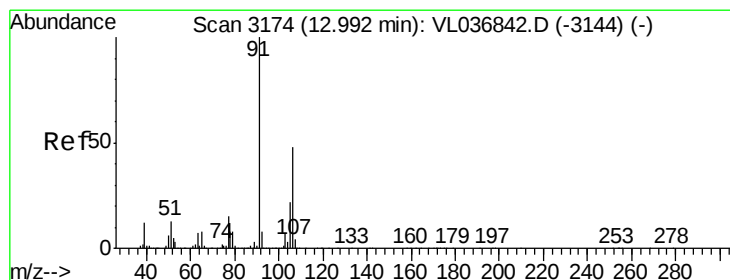
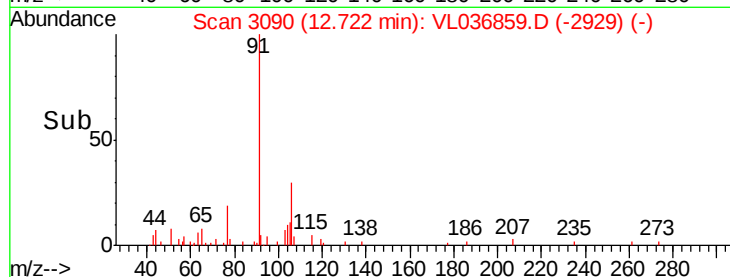
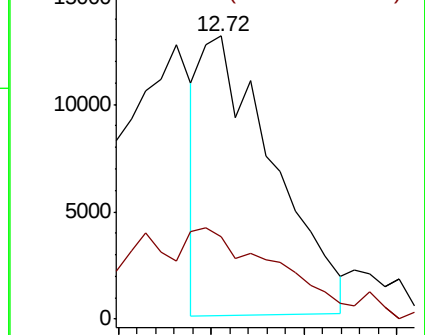
91 100

106 27.6 25.1 37.7



Abundance Ion 91.10 (90.80 to 91.80): VL0

Ion 106.10 (105.80 to 106.80): V



#59

m/p-Xylene

Concen: 0.035 ppbv

RT: 13.00 min Scan# 3178

Delta R.T. 0.01 min

Lab File: VL036859.D

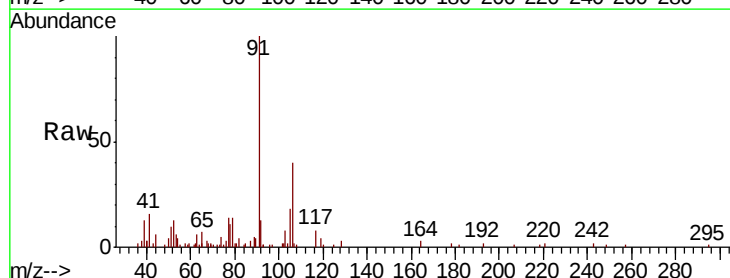
Acq: 27 Apr 2021 15:54

Tgt Ion: 91 Resp: 11077

Ion Ratio Lower Upper

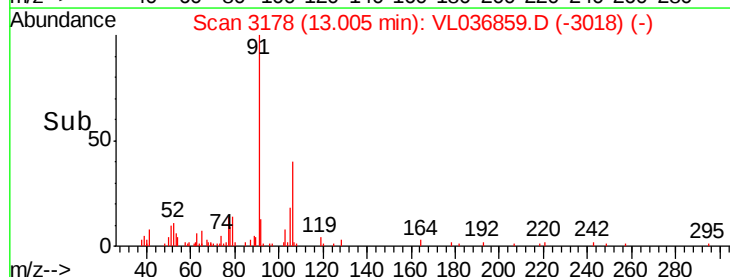
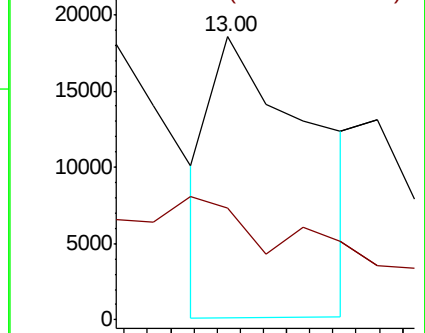
91 100

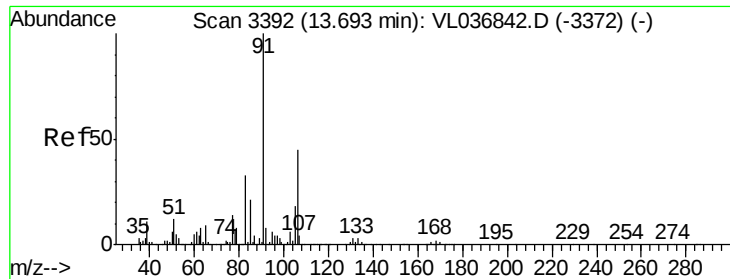
106 0.0 35.8 53.6#



Abundance Ion 91.10 (90.80 to 91.80): VL0

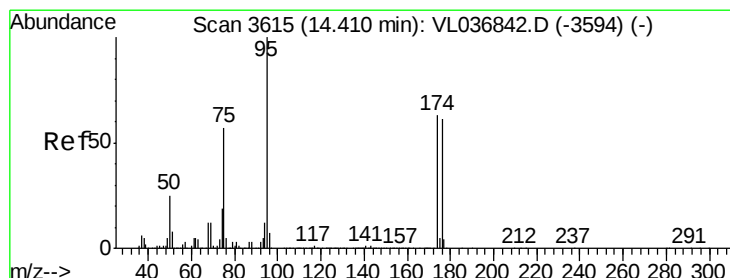
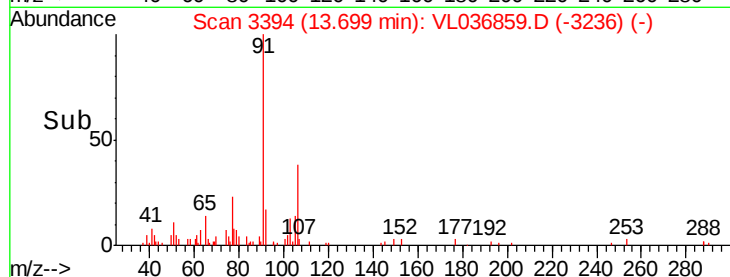
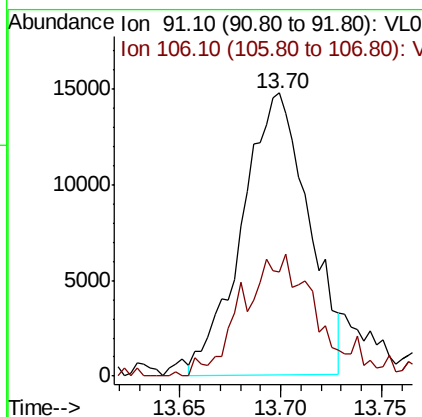
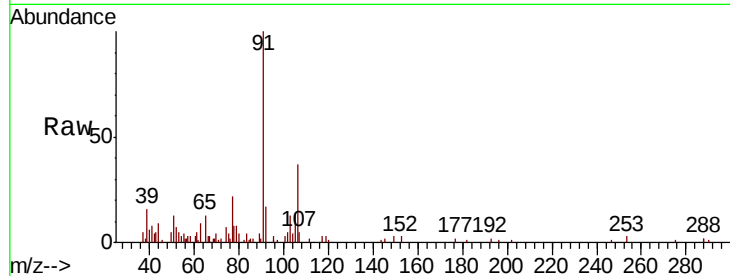
Ion 106.10 (105.80 to 106.80): V





#60
o-Xylene
Concen: 0.111 ppbv
RT: 13.70 min
Delta R.T. MSVOA_L
Lab File: ClientSampleId :
Acq: 27 Apr 2021 15:54

Tot Ion: 91 Resp: 33879
Ion Ratio Lower Upper
91 100
106 51.2 22.6 67.7



#68
1-Bromo-4-Fluorobenzene
Concen: 9.811 ppbv
RT: 14.42 min Scan# 3619
Delta R.T. 0.01 min
Lab File: VL036859.D
Acq: 27 Apr 2021 15:54

Tgt Ion: 95 Resp: 2195916
Ion Ratio Lower Upper
95 100
174 67.3 52.2 78.2
175 4.7 4.0 6.0

