Quantitation Report (LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033500.D
Acq On : 30 Jul 2019 18:26
Operator : JC/SP
Sample : VU0731WBL01
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 11 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : VBLK34

Quant Time: Jul 31 08:23:12 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	326809	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	323658	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	152054	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	110414	46.47	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 92.94%			
7) Chloroethane-d5	1.67	69	97331	47.74	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 95.48%			
11) 1,1-Dichloroethene-d2	2.26	63	161909	37.54	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 75.08%			
21) 2-Butanone-d5	4.15	46	156246	99.28	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 99.28%			
24) Chloroform-d	4.62	84	183818	46.15	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 92.30%			
26) 1,2-Dichloroethane-d4	5.29	65	123204	48.85	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 97.70%			
32) Benzene-d6	5.32	84	387826	48.34	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 96.68%			
36) 1,2-Dichloropropane-d6	6.31	67	123477	49.09	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.18%			
41) Toluene-d8	7.55	98	352560	46.89	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.78%			
43) trans-1,3-Dichloropropene-	7.83	79	57426	46.03	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 92.06%			
47) 2-Hexanone-d5	8.30	63	117394	98.31	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 98.31%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	179528	46.29	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 92.58%			
64) 1,2-Dichlorobenzene-d4	11.85	152	140521	50.47	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.94%			

Target Compounds	Qvalue

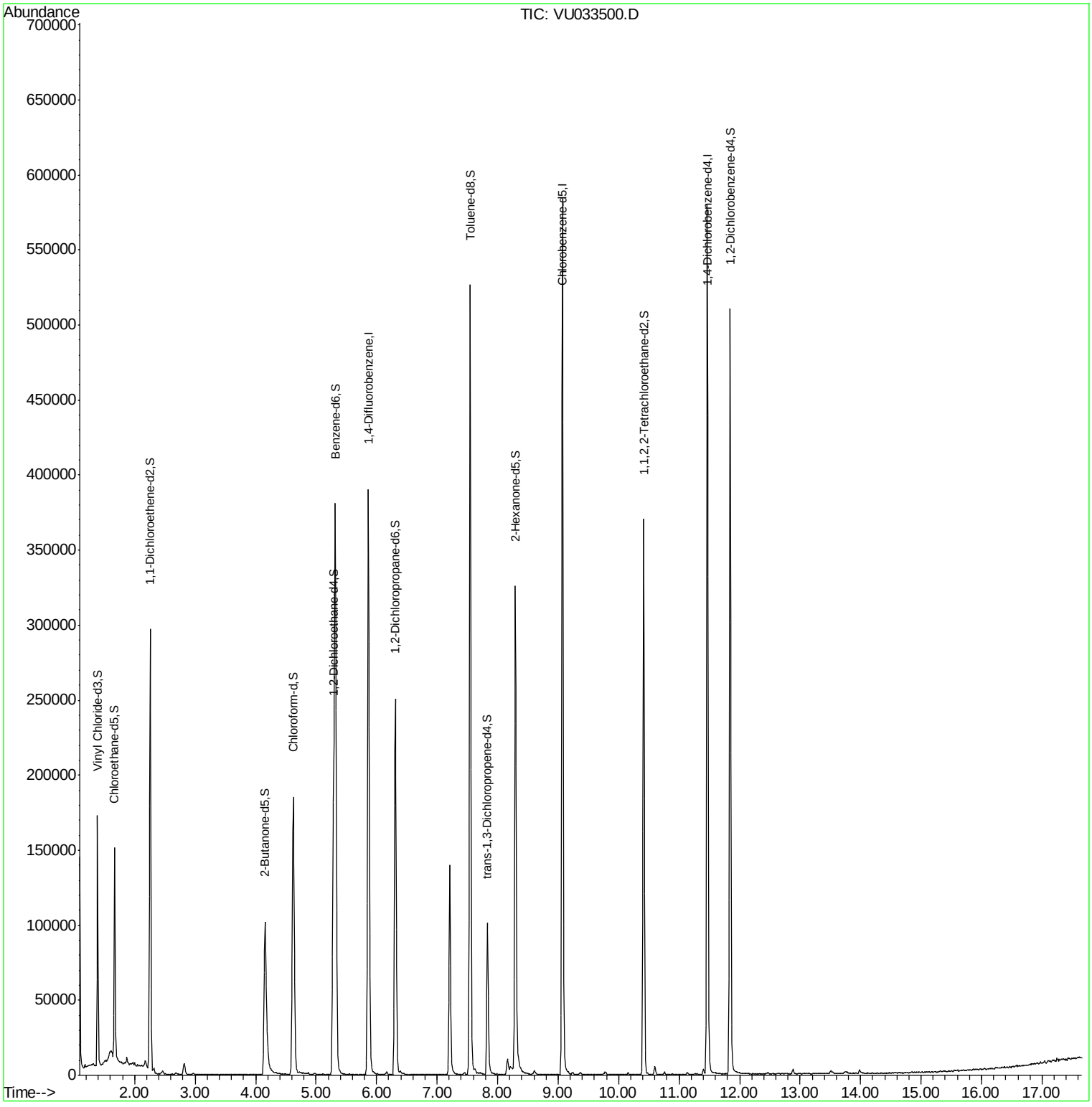
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033500.D
Acq On : 30 Jul 2019 18:26
Operator : JC/SP
Sample : VU0731WBL01
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 11 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
VBLK34

Quant Time: Jul 31 08:23:12 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration



Quantitation Report (LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033513.D
Acq On : 31 Jul 2019 10:17
Operator : JC/SP
Sample : VU0731MBL01
Misc : 5.00g/5mL/100uL/5.0mL/MSVOA_U/MEOH
ALS Vial : 3 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : VBLK35

Quant Time: Aug 01 07:30:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Thu Aug 01 07:20:33 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	323170	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	319831	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	147199	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	111565	47.48	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 94.96%			
7) Chloroethane-d5	1.67	69	102771	50.98	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 101.96%			
11) 1,1-Dichloroethene-d2	2.26	63	163734	38.40	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 76.80%			
21) 2-Butanone-d5	4.16	46	171559	110.24	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 110.24%			
24) Chloroform-d	4.62	84	193037	49.01	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 98.02%			
26) 1,2-Dichloroethane-d4	5.29	65	126895	50.88	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 101.76%			
32) Benzene-d6	5.32	84	402428	50.76	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 101.52%			
36) 1,2-Dichloropropane-d6	6.31	67	126679	50.97	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 101.94%			
41) Toluene-d8	7.55	98	357998	48.19	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.38%			
43) trans-1,3-Dichloropropene-	7.83	79	60103	48.75	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 97.50%			
47) 2-Hexanone-d5	8.30	63	127880	108.37	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 108.37%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	188713	49.24	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 98.48%			
64) 1,2-Dichlorobenzene-d4	11.85	152	140839	52.25	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.50%			

Target Compounds	Qvalue

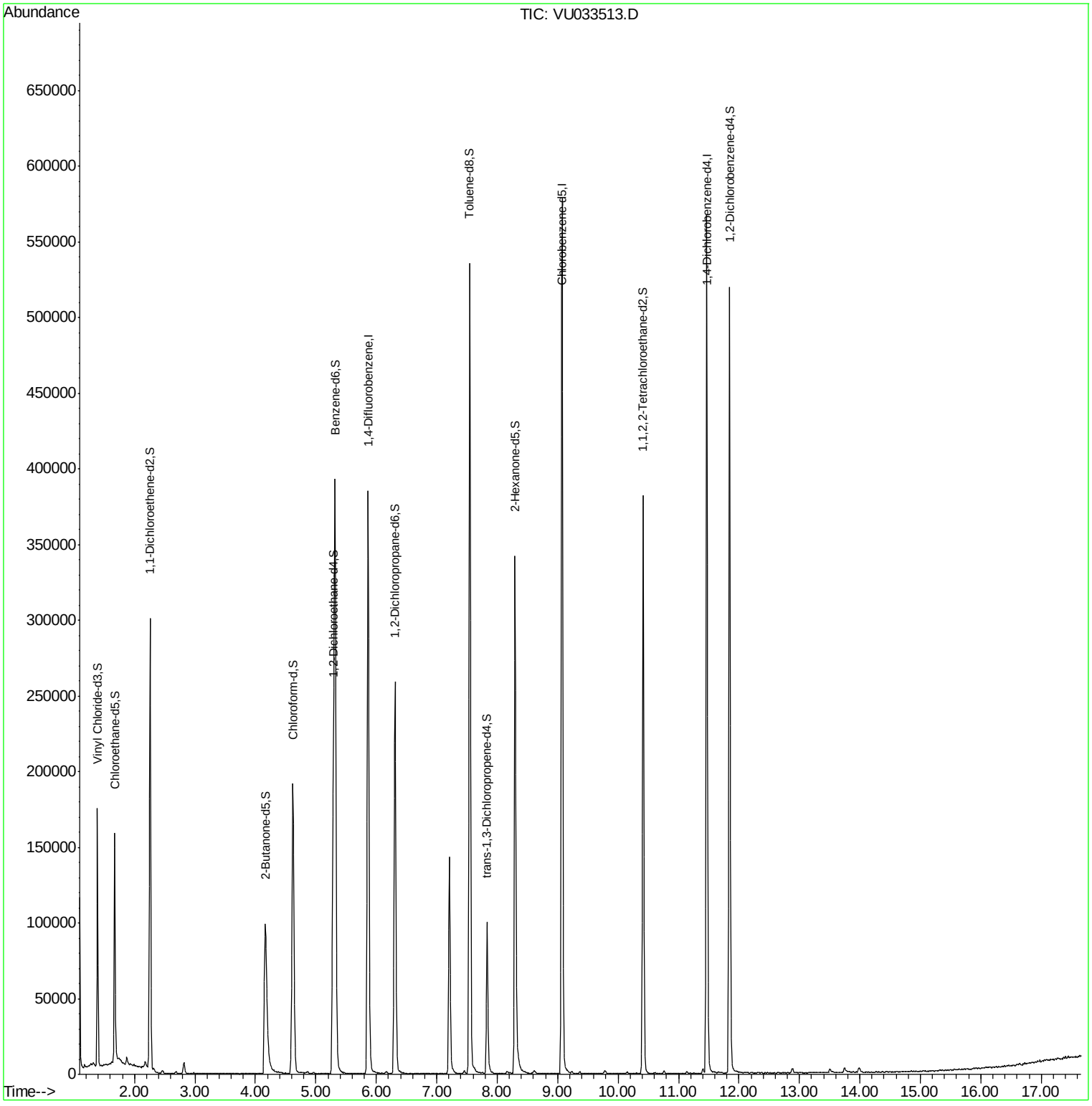
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033513.D
Acq On : 31 Jul 2019 10:17
Operator : JC/SP
Sample : VU0731MBL01
Misc : 5.00g/5mL/100uL/5.0mL/MSVOA_U/MEOH
ALS Vial : 3 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
VBLK35

Quant Time: Aug 01 07:30:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Thu Aug 01 07:20:33 2019
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033514.D
Acq On : 31 Jul 2019 10:40
Operator : JC/SP
Sample : VU0731WBL02
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 4 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : VBLK36

Quant Time: Aug 01 07:35:01 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Thu Aug 01 07:20:33 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	316265	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	310854	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	145842	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	104300	45.36	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 90.72%			
7) Chloroethane-d5	1.67	69	104303	52.87	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 105.74%			
11) 1,1-Dichloroethene-d2	2.26	63	144581	34.64	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 69.28%			
21) 2-Butanone-d5	4.16	46	155219	101.92	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 101.92%			
24) Chloroform-d	4.62	84	186367	48.35	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 96.70%			
26) 1,2-Dichloroethane-d4	5.28	65	120171	49.23	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 98.46%			
32) Benzene-d6	5.32	84	378374	49.10	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 98.20%			
36) 1,2-Dichloropropane-d6	6.31	67	120553	49.90	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 99.80%			
41) Toluene-d8	7.55	98	342207	47.39	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.78%			
43) trans-1,3-Dichloropropene-	7.83	79	56444	47.10	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 94.20%			
47) 2-Hexanone-d5	8.30	63	115269	100.51	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 100.51%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	179233	48.12	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 96.24%			
64) 1,2-Dichlorobenzene-d4	11.85	152	135903	50.89	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.78%			

Target Compounds	Qvalue

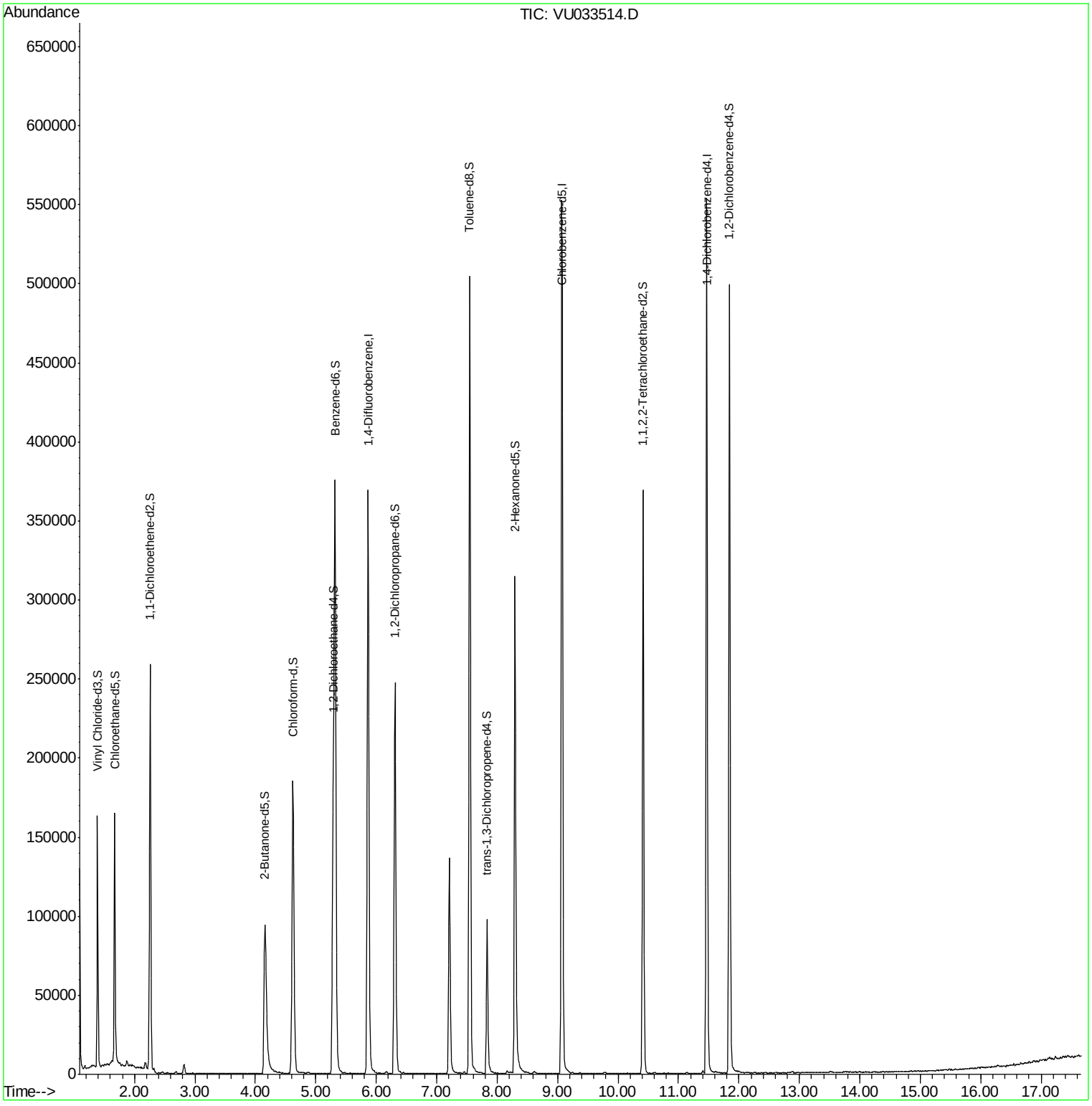
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT/LSC Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033514.D
Acq On : 31 Jul 2019 10:40
Operator : JC/SP
Sample : VU0731WBL02
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 4 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
VBLK36

Quant Time: Aug 01 07:35:01 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Thu Aug 01 07:20:33 2019
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033501.D
Acq On : 30 Jul 2019 18:49
Operator : JC/SP
Sample : MDL01
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 12 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL01

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:33:54 AM

Quant Time: Jul 31 08:24:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	331841	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	326162	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	160425	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	108050	44.78	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 89.56%			
7) Chloroethane-d5	1.67	69	93337	45.09	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 90.18%			
11) 1,1-Dichloroethene-d2	2.26	63	147968	33.79	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 67.58%			
21) 2-Butanone-d5	4.15	46	153749	96.21	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 96.21%			
24) Chloroform-d	4.62	84	182903	45.23	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 90.46%			
26) 1,2-Dichloroethane-d4	5.29	65	117724	45.97	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 91.94%			
32) Benzene-d6	5.32	84	380657	47.08	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 94.16%			
36) 1,2-Dichloropropane-d6	6.31	67	119895	47.30	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 94.60%			
41) Toluene-d8	7.55	98	346143	45.69	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.38%			
43) trans-1,3-Dichloropropene-	7.83	79	56514	44.95	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 89.90%			
47) 2-Hexanone-d5	8.29	63	112062	93.12	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 93.12%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	175539	44.92	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 89.84%			
64) 1,2-Dichlorobenzene-d4	11.85	152	138890	47.28	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	8417	2.690	ug/L	99
3) Chloromethane	1.32	50	9236	2.930	ug/L	96
5) Vinyl chloride	1.40	62	9478	2.805	ug/L #	68
6) Bromomethane	1.62	94	7414	2.487	ug/L	95
8) Chloroethane	1.69	64	5363	2.612	ug/L	90
9) Trichlorofluoromethane	1.87	101	12139	2.746	ug/L	99
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	7297	3.256	ug/L #	83
12) 1,1-Dichloroethene	2.27	96	6749	3.141	ug/L #	1
13) Acetone	2.31	43	8390	5.132	ug/L	97
14) Carbon disulfide	2.46	76	19210	2.850	ug/L	97
15) Methyl Acetate	2.60	43	6889	2.647	ug/L	95
16) Methylene chloride	2.68	84	7195	2.931	ug/L	94
17) trans-1,2-Dichloroethene	2.97	96	6416	2.850	ug/L	92
18) Methyl tert-butyl Ether	2.98	73	17599	2.563	ug/L	97
19) 1,1-Dichloroethane	3.42	63	11749	2.780	ug/L	99
20) cis-1,2-Dichloroethene	4.20	96	6721	2.660	ug/L	99
22) 2-Butanone	4.25	43	10028m	5.138	ug/L	

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033501.D
Acq On : 30 Jul 2019 18:49
Operator : JC/SP
Sample : MDL01
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 12 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL01

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:33:54 AM

Quant Time: Jul 31 08:24:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
23) Bromochloromethane	4.53	128	3406	2.583	ug/L		83
25) Chloroform	4.65	83	15866	3.568	ug/L		98
27) 1,2-Dichloroethane	5.39	62	9351	2.731	ug/L		97
29) Cyclohexane	4.97	56	8949	2.515	ug/L	#	93
30) 1,1,1-Trichloroethane	4.89	97	10260	2.734	ug/L		97
31) Carbon tetrachloride	5.11	117	8371	2.561	ug/L		98
33) Benzene	5.37	78	26125	2.777	ug/L		100
34) Trichloroethene	6.17	95	6714	2.705	ug/L		95
35) Methylcyclohexane	6.40	83	9946	2.568	ug/L		98
37) 1,2-Dichloropropane	6.41	63	6974	2.769	ug/L	#	93
38) Bromodichloromethane	6.74	83	8892	2.731	ug/L		99
39) cis-1,3-Dichloropropene	7.25	75	10467	2.663	ug/L		94
40) 4-Methyl-2-pentanone	7.44	43	17734	5.100	ug/L		99
42) Toluene	7.62	91	27442	2.712	ug/L		96
44) trans-1,3-Dichloropropene	7.86	75	9809m	2.761	ug/L		
45) 1,1,2-Trichloroethane	8.05	97	6455	2.700	ug/L		98
46) Tetrachloroethene	8.22	164	5558	2.743	ug/L		94
48) 2-Hexanone	8.35	43	15198	5.407	ug/L		92
49) Dibromochloromethane	8.46	129	6984	2.567	ug/L		99
50) 1,2-Dibromoethane	8.57	107	7522	2.840	ug/L	#	94
51) Chlorobenzene	9.10	112	17718	2.675	ug/L		99
52) Ethylbenzene	9.23	91	27081	2.486	ug/L		97
53) m,p-Xylene	9.36	106	10569	2.527	ug/L		84
54) o-xylene	9.76	106	9527	2.348	ug/L		97
55) Styrene	9.78	104	14680	2.130	ug/L		99
56) Isopropylbenzene	10.15	105	24314	2.294	ug/L		99
58) 1,1,2,2-Tetrachloroethane	10.44	83	12122	2.811	ug/L	#	98
59) 1,2,3-Trichloropropane	10.48	75	8833	2.657	ug/L		99
61) Bromoform	9.94	173	5319	2.745	ug/L		99
62) 1,3-Dichlorobenzene	11.40	146	14238	2.890	ug/L		98
63) 1,4-Dichlorobenzene	11.49	146	15138	2.957	ug/L		97
65) 1,2-Dichlorobenzene	11.86	146	14660	2.943	ug/L		98
66) 1,2-Dibromo-3-chloropropan	12.65	75	2610	2.836	ug/L		84
67) 1,3,5-Trichlorobenzene	12.88	180	10483	2.637	ug/L		99
68) 1,2,4-trichlorobenzene	13.49	180	7643	2.250	ug/L		93
69) Naphthalene	13.74	128	17824	1.829	ug/L	#	94
70) 1,2,3-Trichlorobenzene	13.98	180	8307	2.326	ug/L		98

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

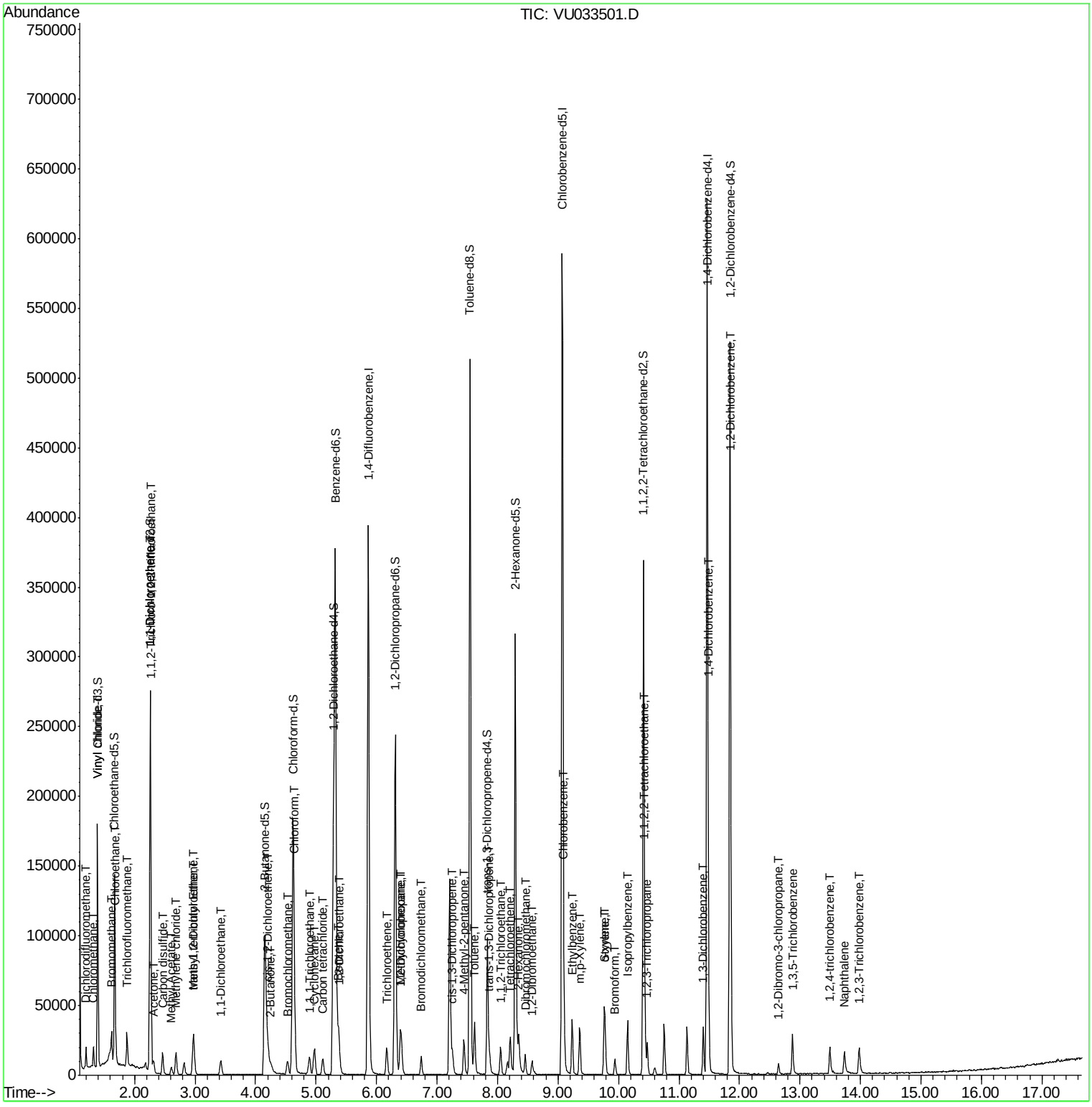
Quantitation Report (QT Reviewed)

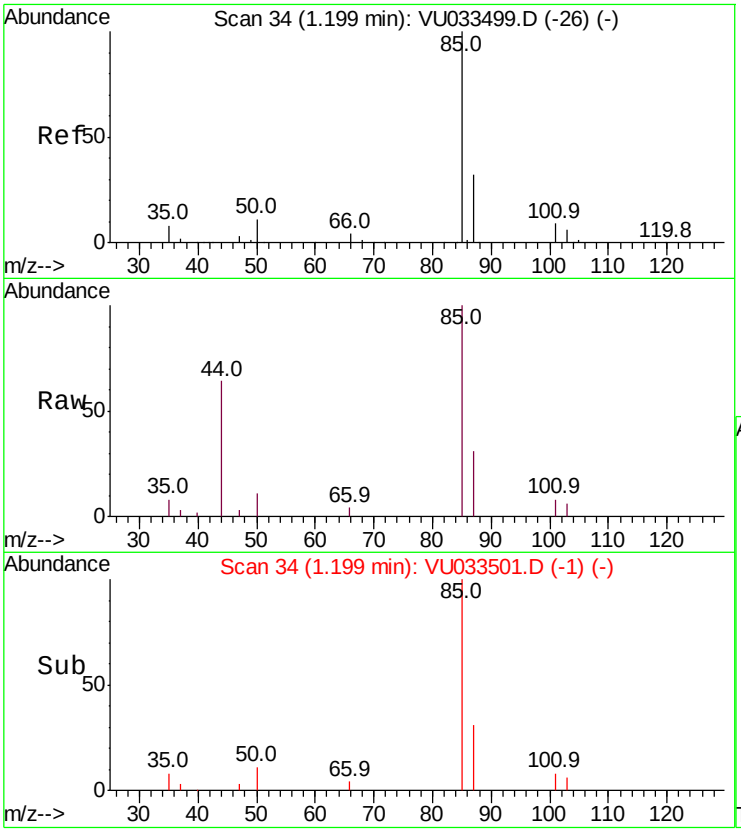
Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033501.D
Acq On : 30 Jul 2019 18:49
Operator : JC/SP
Sample : MDL01
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 31 08:24:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument :
MSVOA_U
ClientSampleId :
MDL01

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:33:54 AM

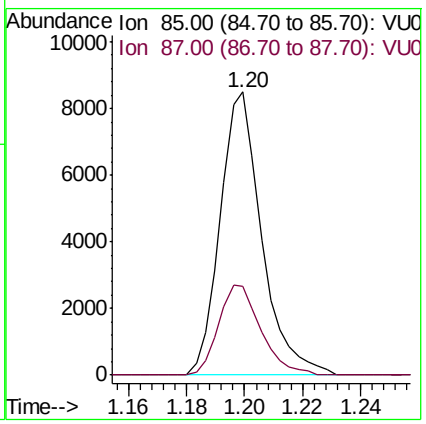




#2
Dichlorodifluoromethane
Concen: 2.690 ug/L
RT: 1.20 min Scan# 34
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 85 Resp: 8417

Ion	Ratio	Lower	Upper
85	100		
87	32.2	25.4	38.2



Instrument :
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ClientSampleId :
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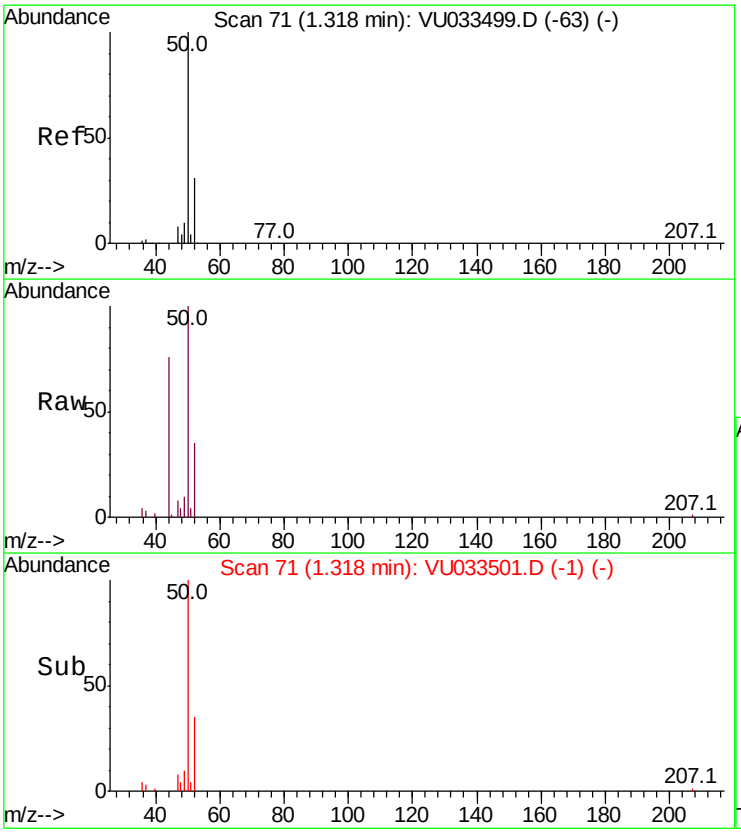
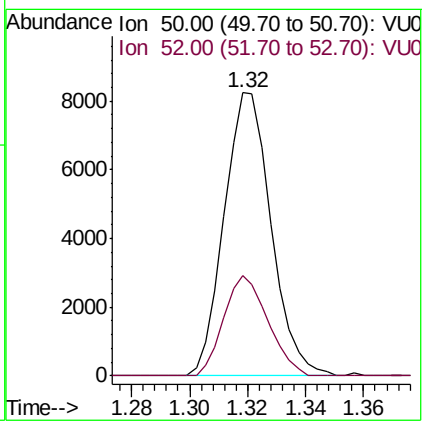
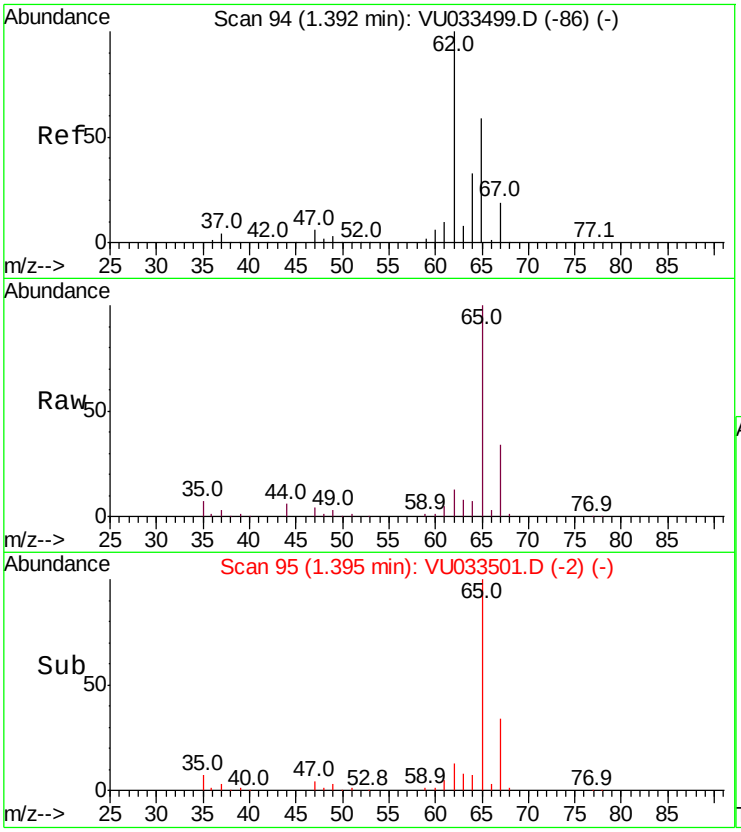


#3
Chloromethane
Concen: 2.930 ug/L
RT: 1.32 min Scan# 71
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 50 Resp: 9236

Ion	Ratio	Lower	Upper
50	100		
52	35.4	23.1	42.9





#5
Vinyl chloride
Concen: 2.805 ug/L
RT: 1.40 min Scan# 95
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 62 Resp: 9478

Ion	Ratio	Lower	Upper
62	100		
64	51.4	23.4	43.4#

Instrument :
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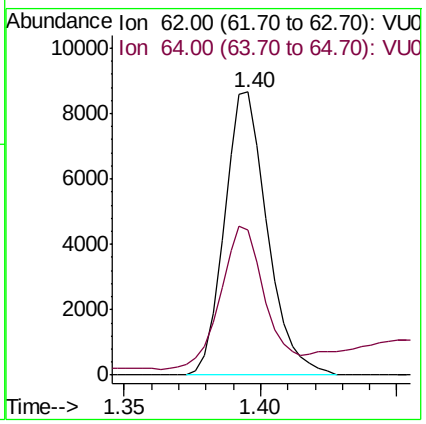
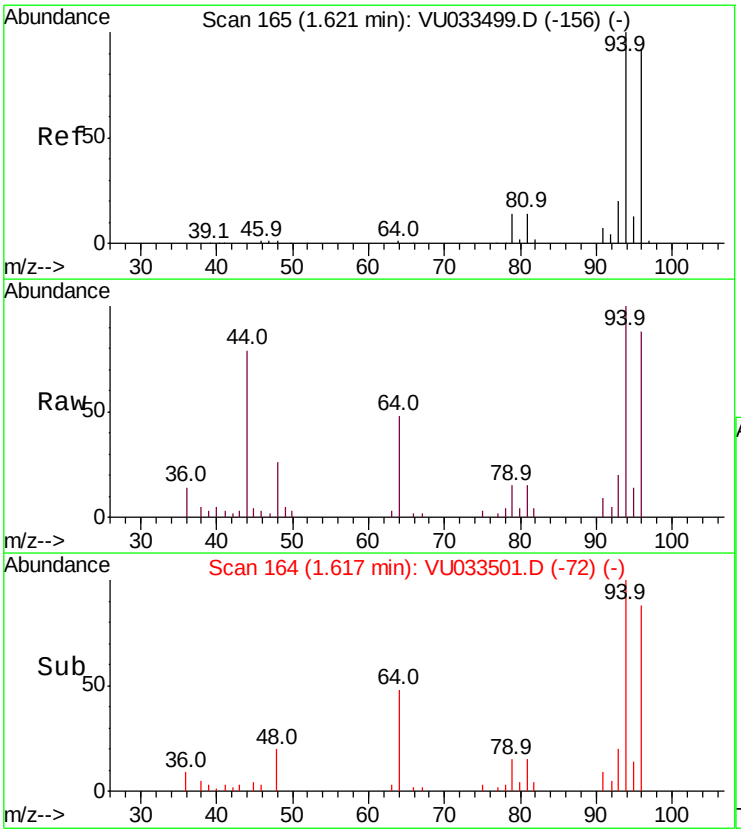
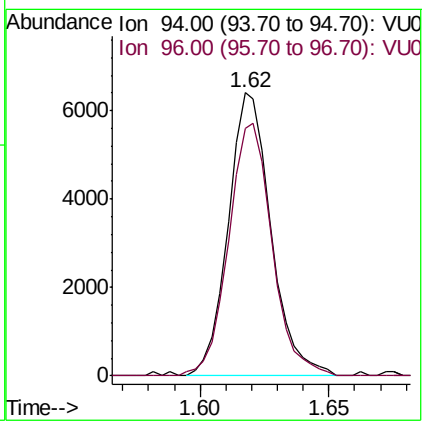


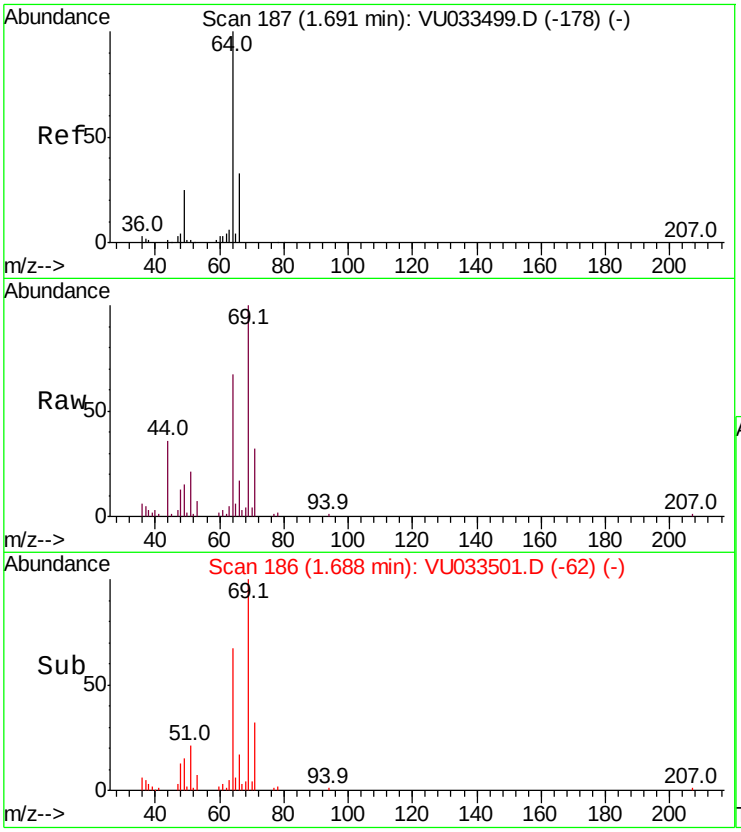


#6
Bromomethane
Concen: 2.487 ug/L
RT: 1.62 min Scan# 164
Delta R.T. -0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 94 Resp: 7414

Ion	Ratio	Lower	Upper
94	100		
96	87.6	64.4	119.6

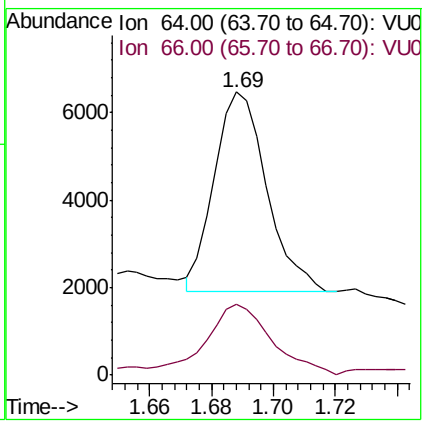




#8
Chloroethane
Concen: 2.612 ug/L
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 64 Resp: 5363

Ion	Ratio	Lower	Upper
64	100		
66	25.0	21.1	39.3



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ClientSampleId :
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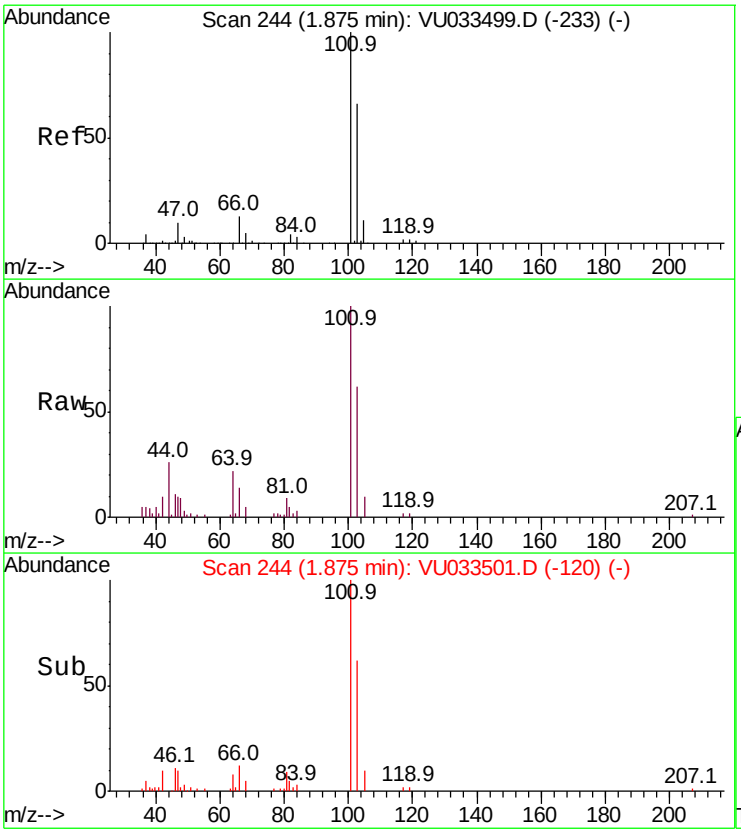
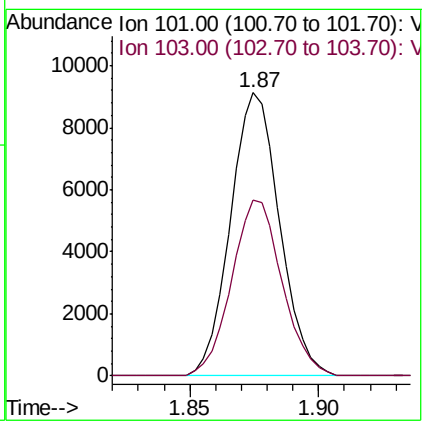
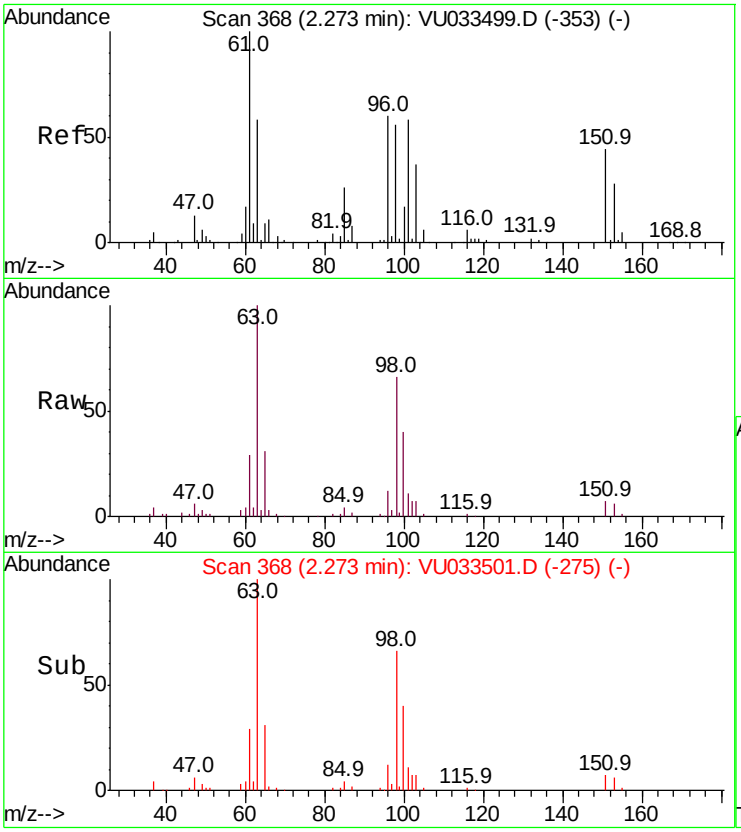


#9
Trichlorofluoromethane
Concen: 2.746 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:101 Resp: 12139

Ion	Ratio	Lower	Upper
101	100		
103	63.8	51.6	77.4





#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 3.256 ug/L
RT: 2.27 min Scan# 368
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Instrument :
MSVOA_U
ClientSampleId :
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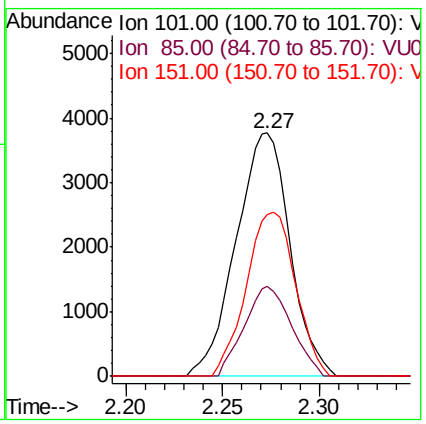
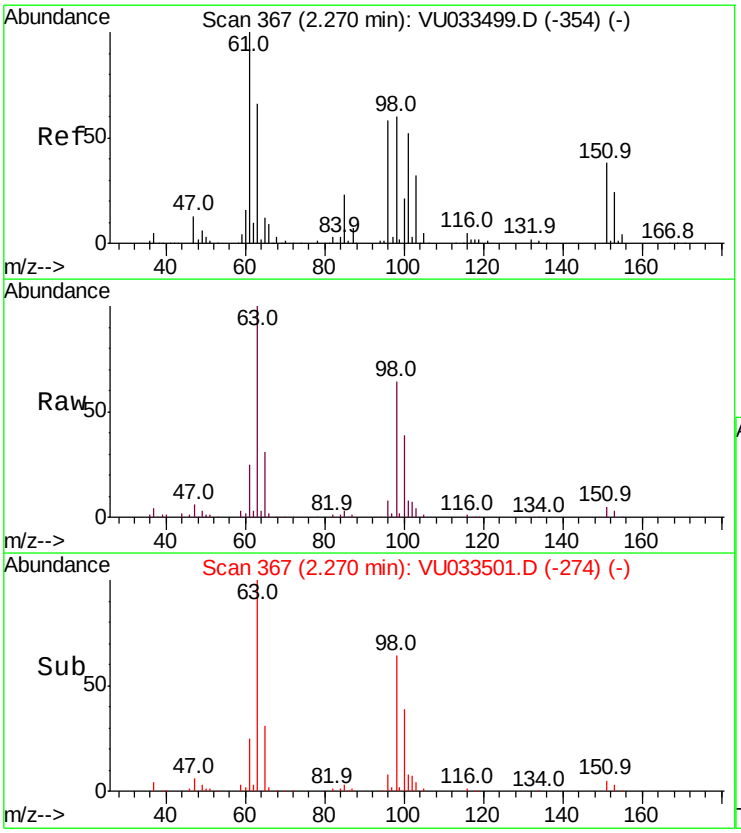
Tgt Ion:101 Resp: 7297

Ion	Ratio	Lower	Upper
101	100		
85	32.3	35.8	53.8#
151	61.6	60.1	90.1

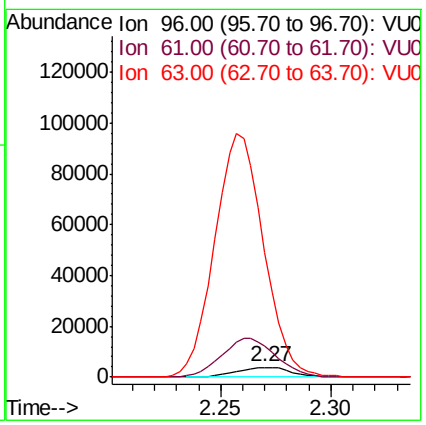


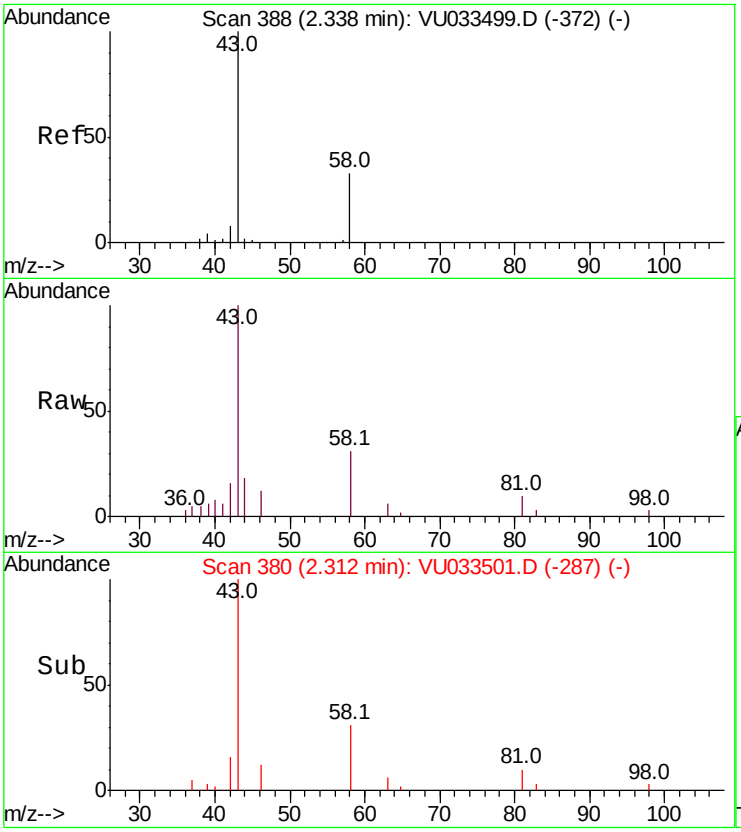


#12
1,1-Dichloroethene
Concen: 3.141 ug/L
RT: 2.27 min Scan# 367
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 96 Resp: 6749

Ion	Ratio	Lower	Upper
96	100		
61	306.2	119.3	221.5#
63	1248.8	86.6	160.8#

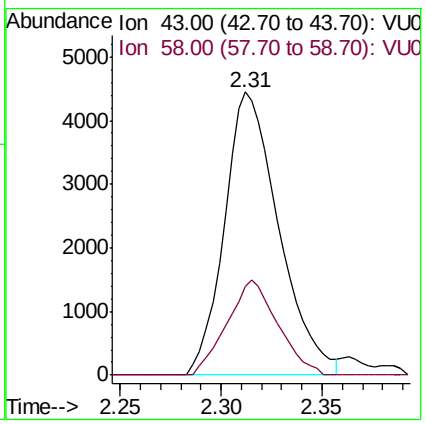




#13
Acetone
Concen: 5.132 ug/L
RT: 2.31 min Scan# 380
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 43 Resp: 8390

Ion	Ratio	Lower	Upper
43	100		
58	31.3	0.0	66.2



Instrument :
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ClientSampleId :
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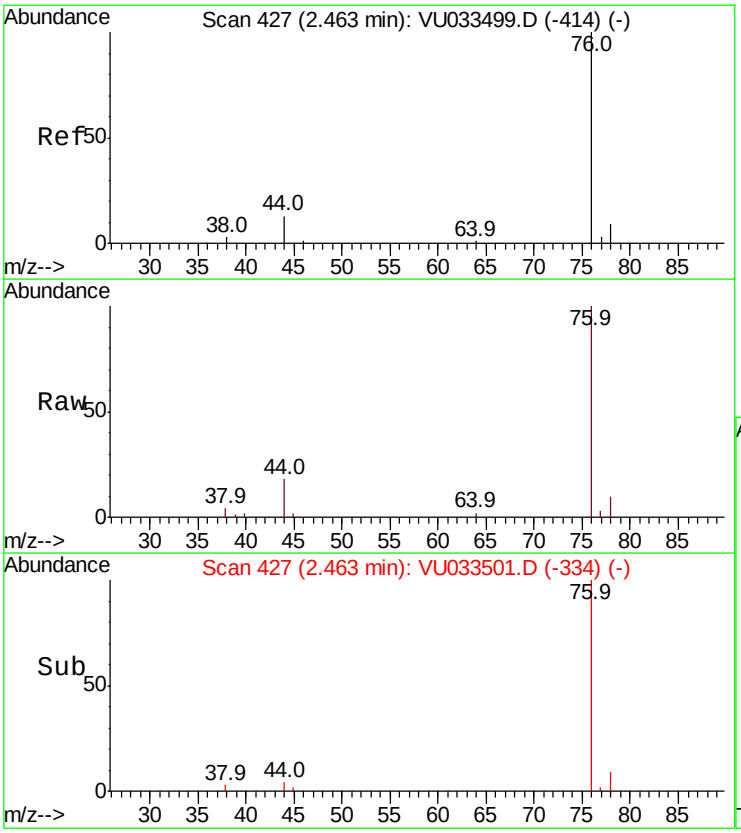
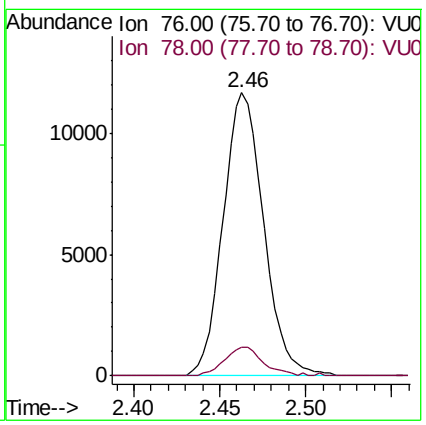
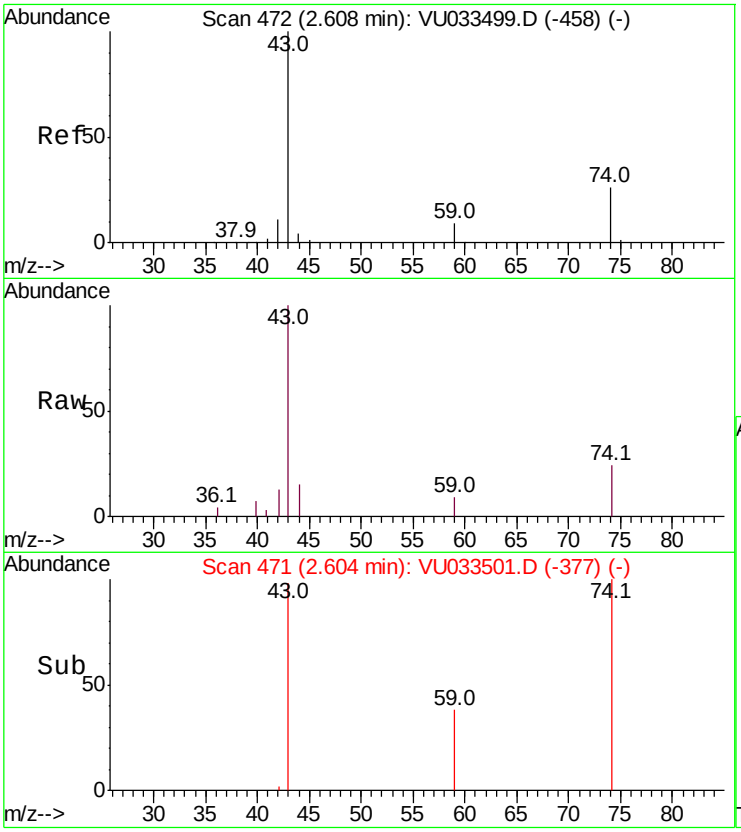


#14
Carbon disulfide
Concen: 2.850 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 76 Resp: 19210

Ion	Ratio	Lower	Upper
76	100		
78	10.3	7.4	11.0

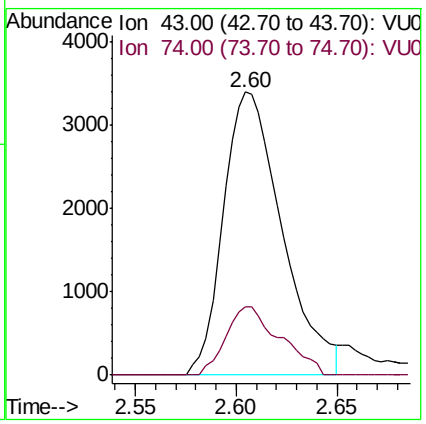




#15
Methyl Acetate
Concen: 2.647 ug/L
RT: 2.60 min Scan# 471
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 43 Resp: 6889

Ion	Ratio	Lower	Upper
43	100		
74	22.3	20.1	30.1



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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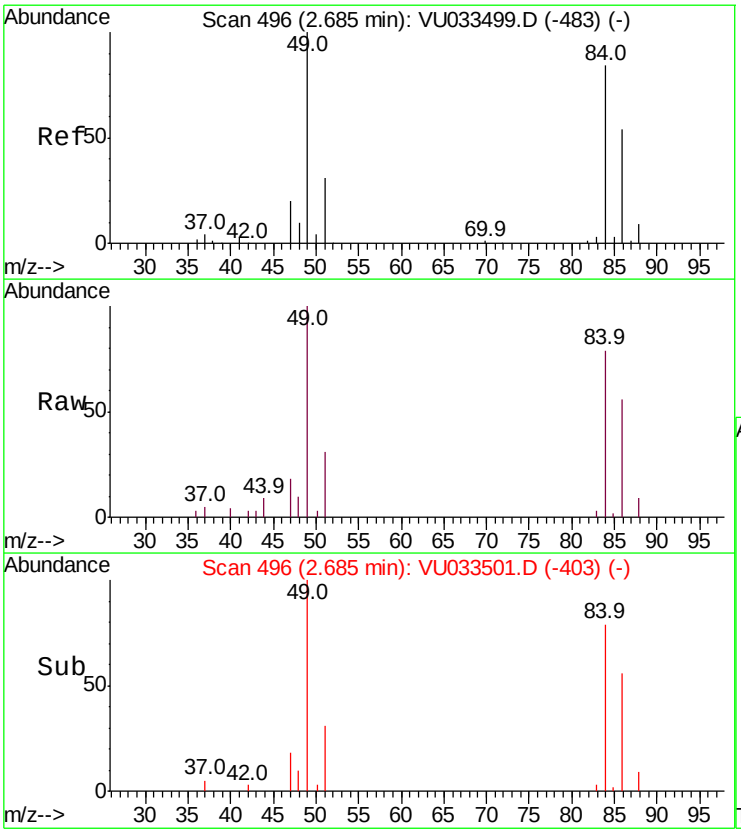
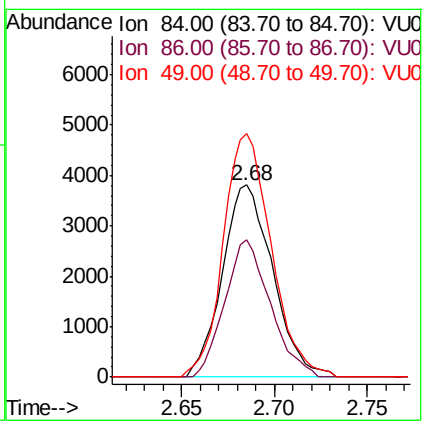
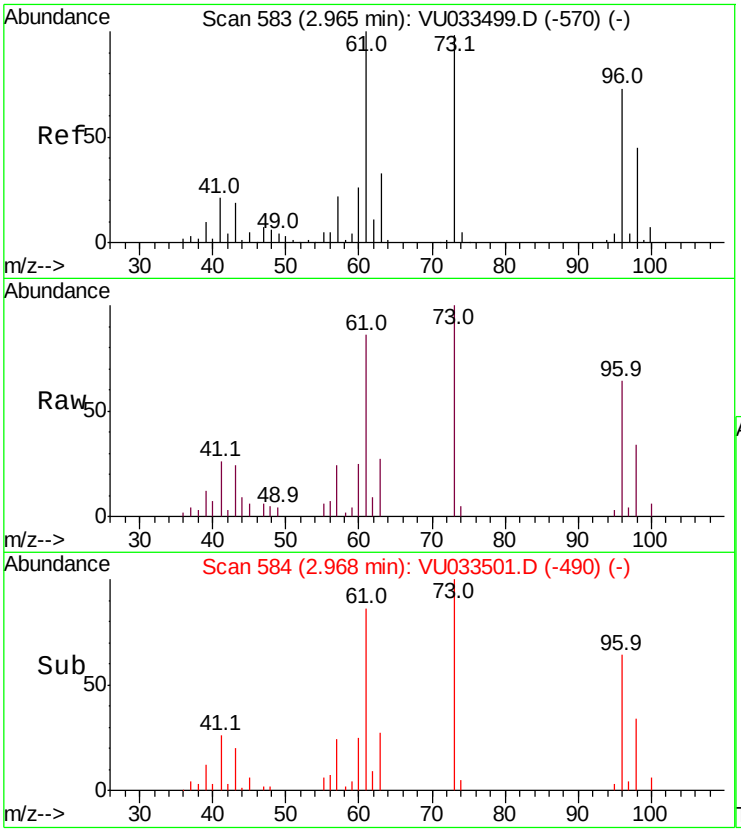


#16
Methylene chloride
Concen: 2.931 ug/L
RT: 2.68 min Scan# 496
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 84 Resp: 7195

Ion	Ratio	Lower	Upper
84	100		
86	71.5	45.7	84.9
49	126.8	85.0	158.0

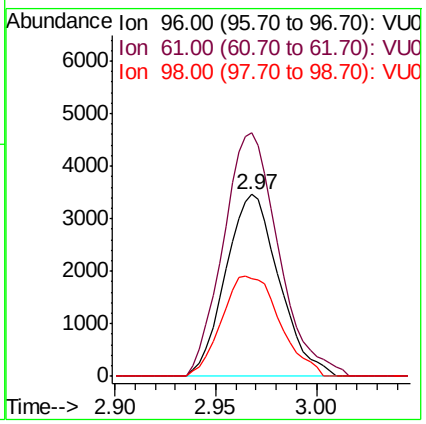




#17
trans-1,2-Dichloroethene
Concen: 2.850 ug/L
RT: 2.97 min Scan# 584
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 96 Resp: 6416

Ion	Ratio	Lower	Upper
96	100		
61	133.8	98.3	182.5
98	53.5	44.3	82.3



Instrument :
MSVOA_U
ClientSampleId :
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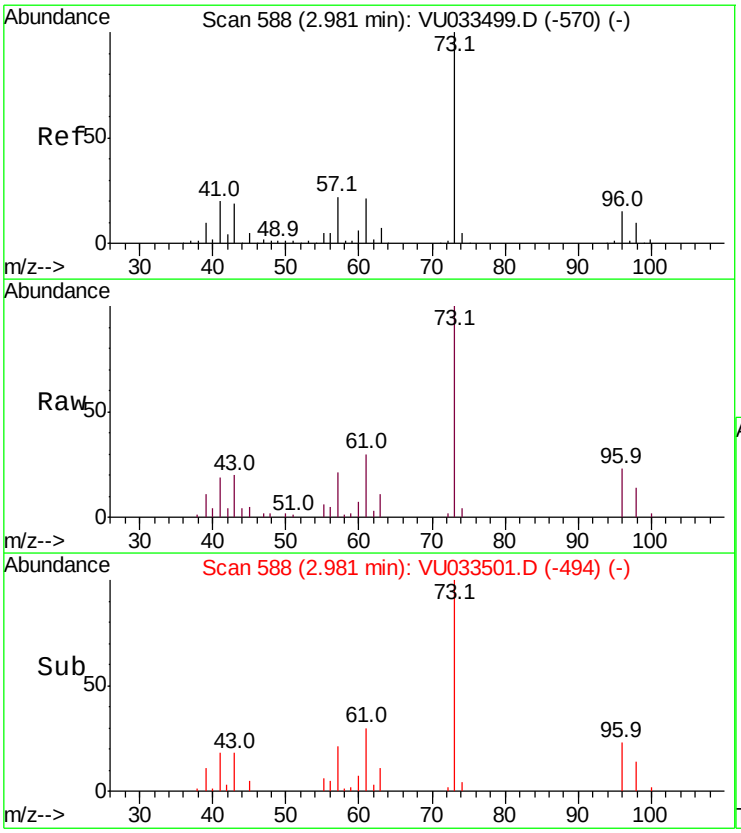
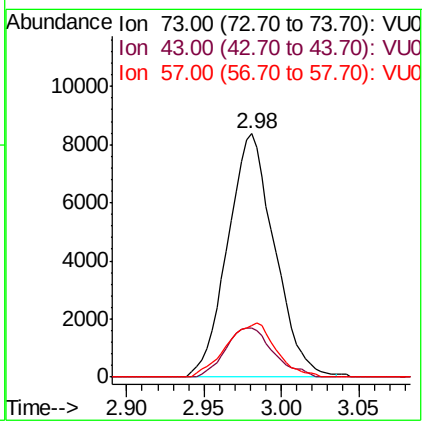
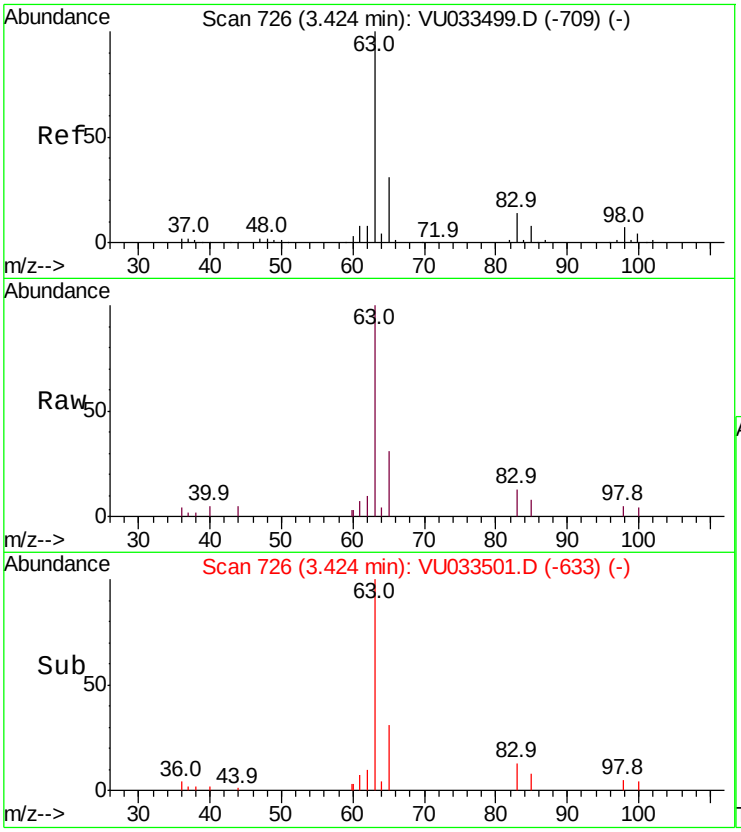


#18
Methyl tert-butyl Ether
Concen: 2.563 ug/L
RT: 2.98 min Scan# 588
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 73 Resp: 17599

Ion	Ratio	Lower	Upper
73	100		
43	20.6	15.4	23.2
57	23.6	17.4	26.2

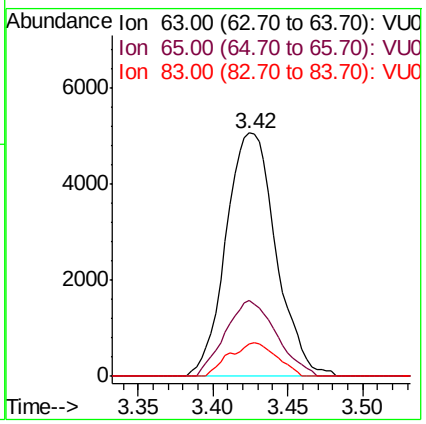




#19
1,1-Dichloroethane
Concen: 2.780 ug/L
RT: 3.42 min Scan# 726
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 63 Resp: 11749

Ion	Ratio	Lower	Upper
63	100		
65	31.1	22.0	40.8
83	13.1	9.5	17.7



Instrument :
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ClientSampleId :
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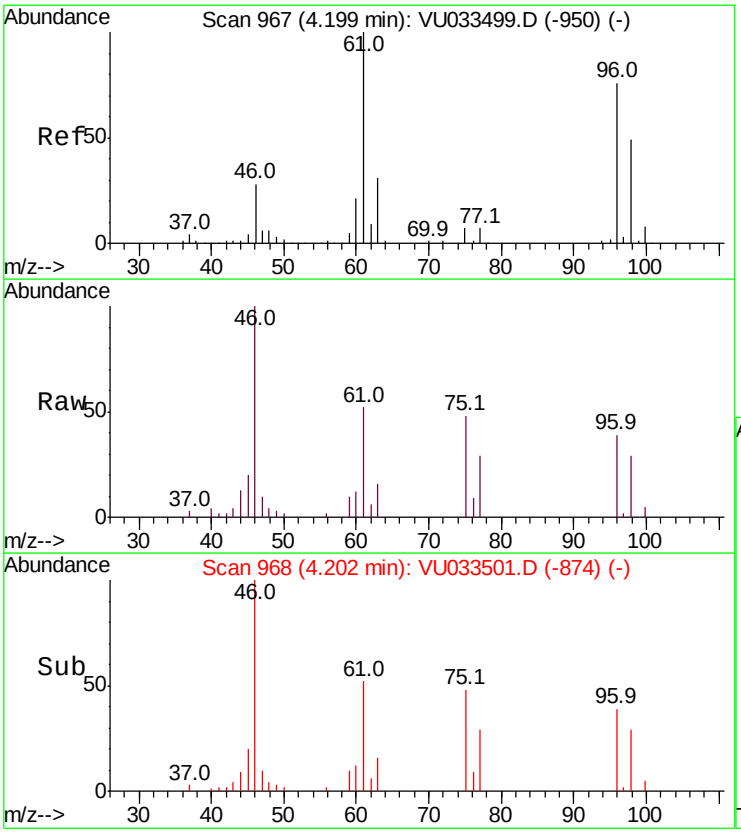
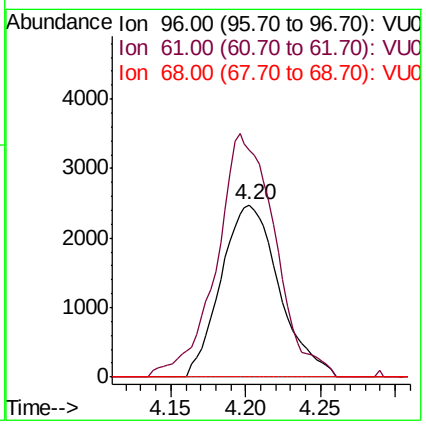
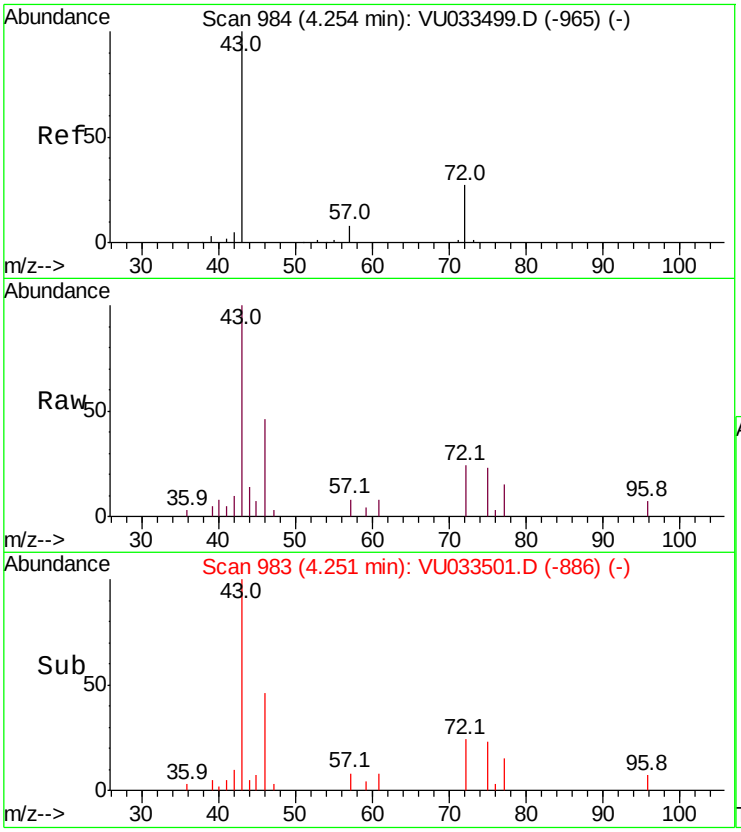


#20
cis-1,2-Dichloroethene
Concen: 2.660 ug/L
RT: 4.20 min Scan# 968
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 96 Resp: 6721

Ion	Ratio	Lower	Upper
96	100		
61	131.9	91.3	169.6
68	0.0	0.0	0.0

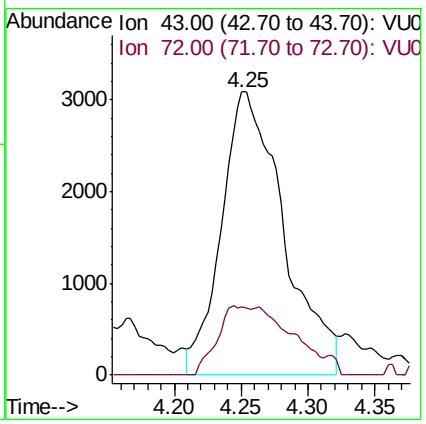




#22
2-Butanone
Concen: 5.138 ug/L m
RT: 4.25 min Scan# 983
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 43 Resp: 10028

Ion	Ratio	Lower	Upper
43	100		
72	0.4	14.2	42.6#



Instrument :
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ClientSampleId :
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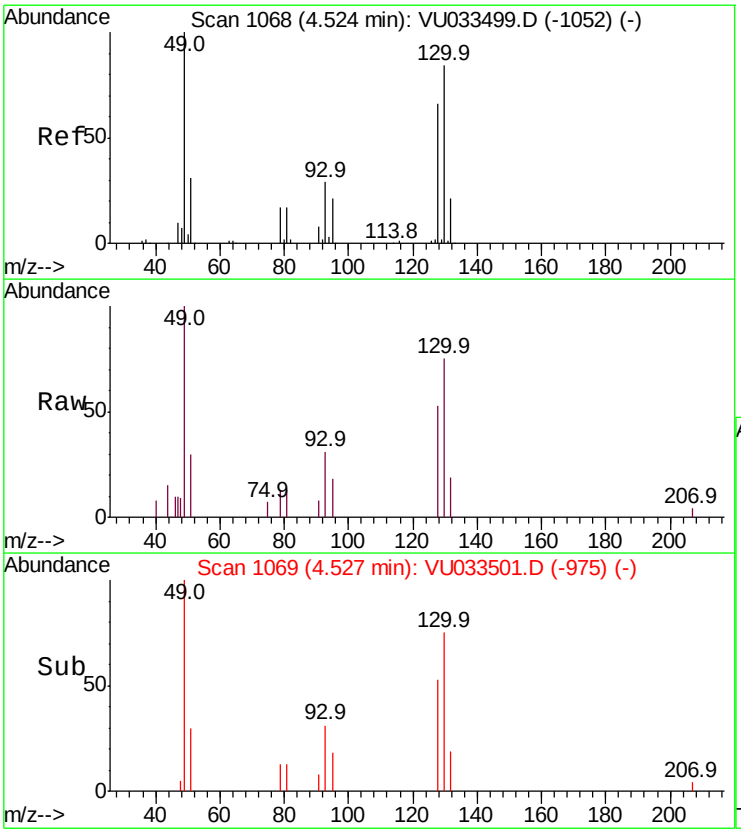
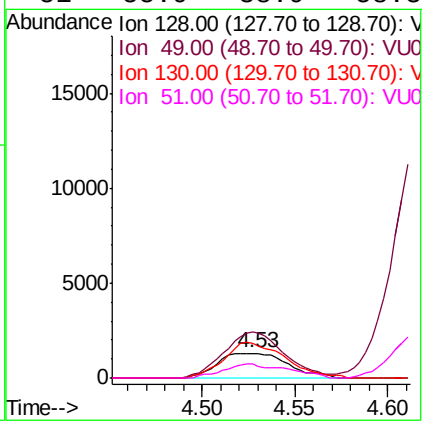
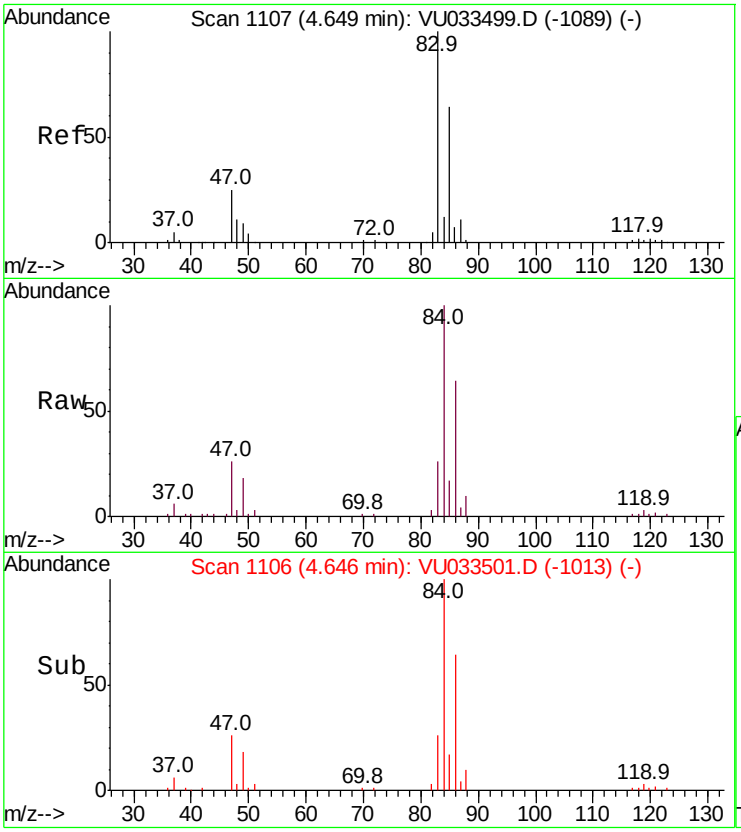


#23
Bromochloromethane
Concen: 2.583 ug/L
RT: 4.53 min Scan# 1069
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:128 Resp: 3406

Ion	Ratio	Lower	Upper
128	100		
49	187.0	108.4	201.2
130	140.3	89.7	166.5
51	55.9	38.9	58.3

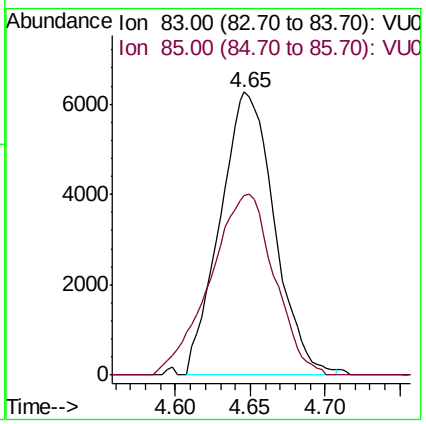




#25
Chloroform
Concen: 3.568 ug/L
RT: 4.65 min Scan# 1106
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 83 Resp: 15866

Ion	Ratio	Lower	Upper
83	100		
85	63.6	45.6	84.8



Instrument :
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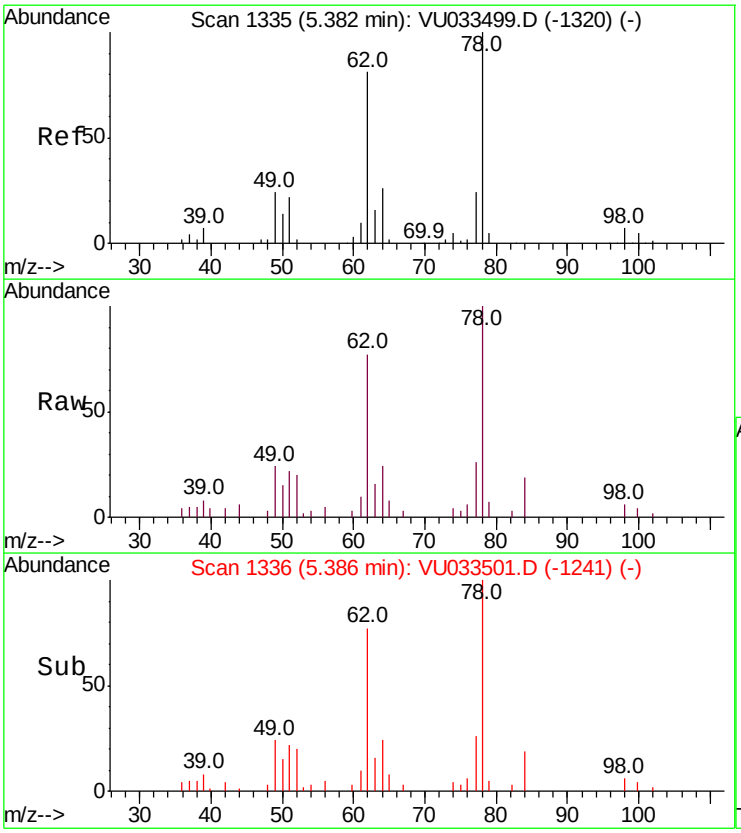
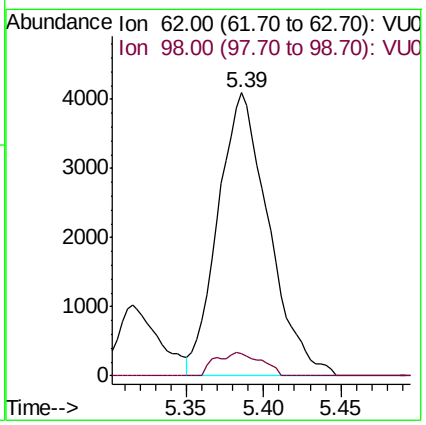
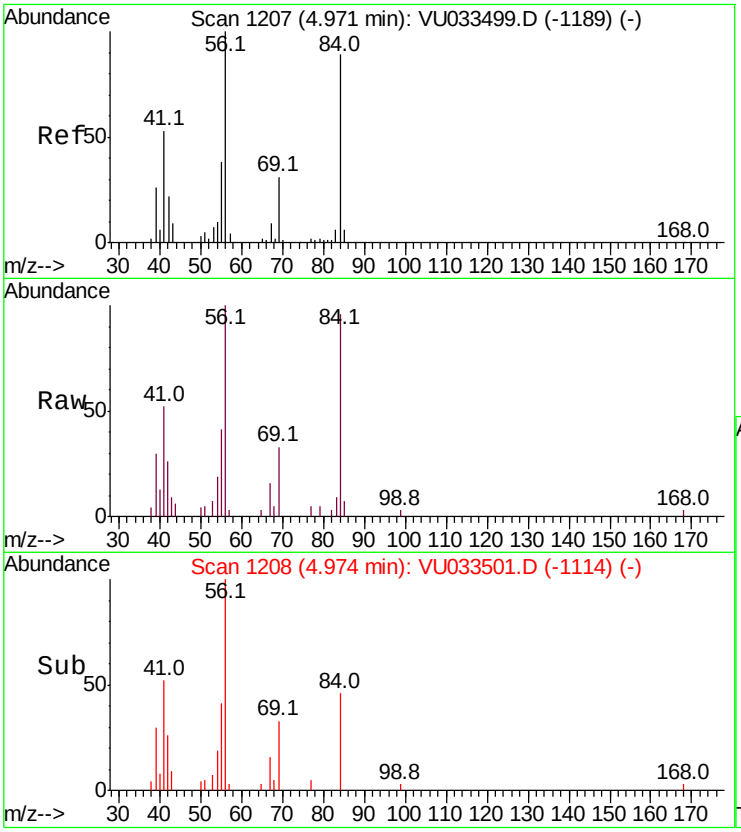


#27
1,2-Dichloroethane
Concen: 2.731 ug/L
RT: 5.39 min Scan# 1336
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 62 Resp: 9351

Ion	Ratio	Lower	Upper
62	100		
98	8.0	7.2	10.8

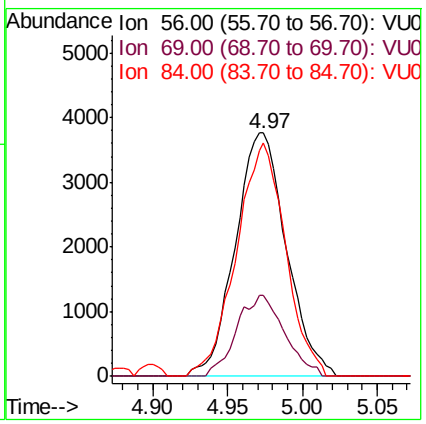




#29
Cyclohexane
Concen: 2.515 ug/L
RT: 4.97 min Scan# 1208
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 56 Resp: 8949

Ion	Ratio	Lower	Upper
56	100		
69	20.4	25.0	37.6#
84	92.0	71.6	107.4



Instrument :
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ClientSampleId :
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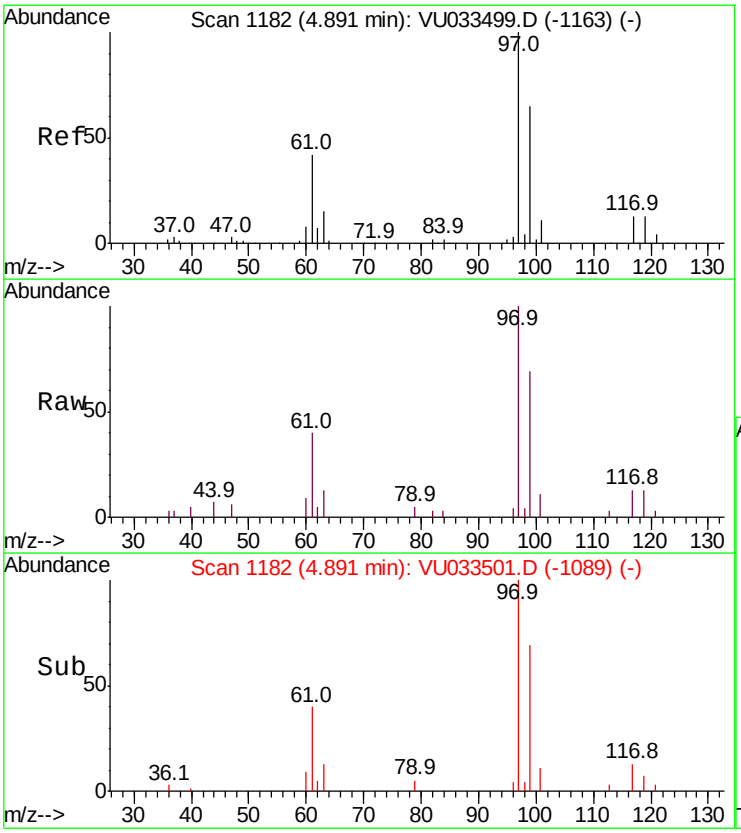
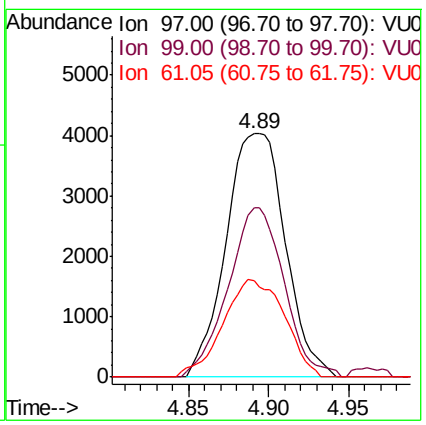
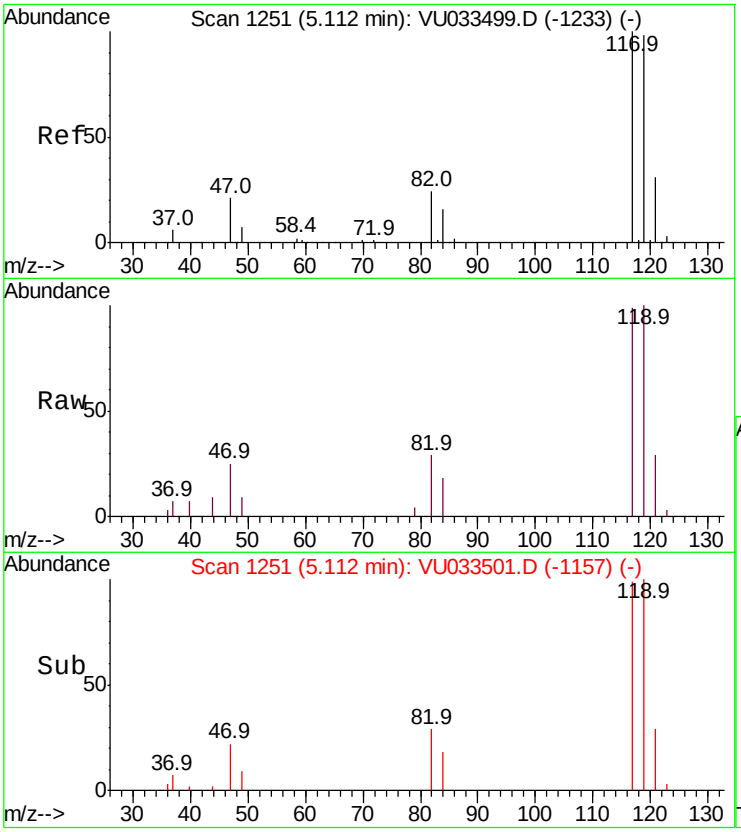


#30
1,1,1-Trichloroethane
Concen: 2.734 ug/L
RT: 4.89 min Scan# 1182
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 97 Resp: 10260

Ion	Ratio	Lower	Upper
97	100		
99	65.6	51.1	76.7
61	41.6	35.5	53.3

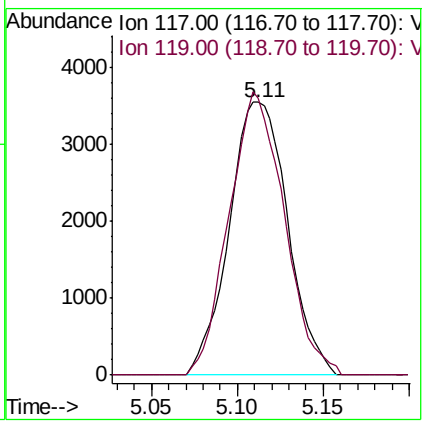




#31
Carbon tetrachloride
Concen: 2.561 ug/L
RT: 5.11 min Scan# 1251
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:117 Resp: 8371

Ion	Ratio	Lower	Upper
117	100		
119	98.1	77.0	115.4



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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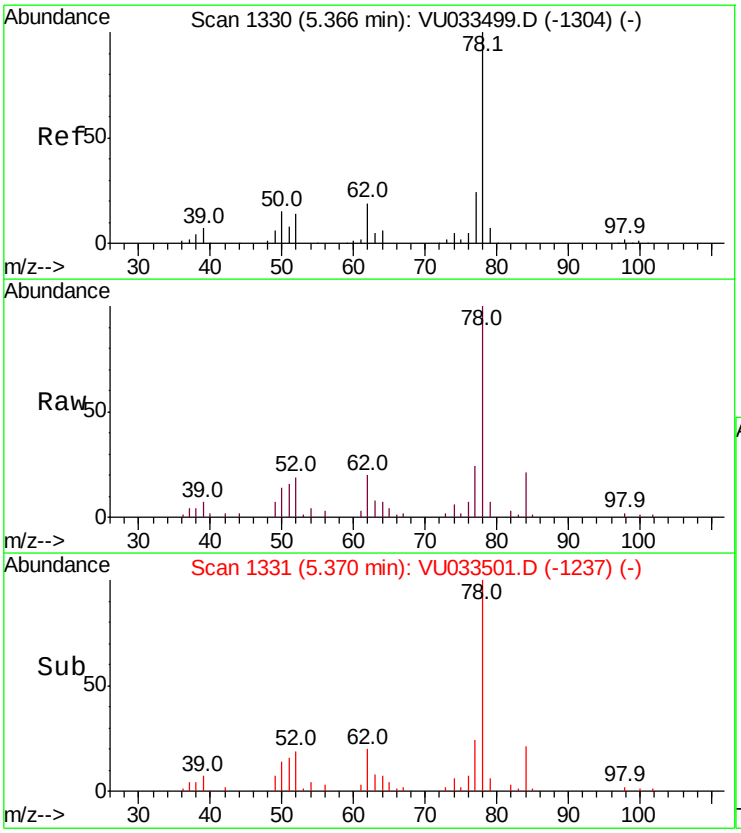
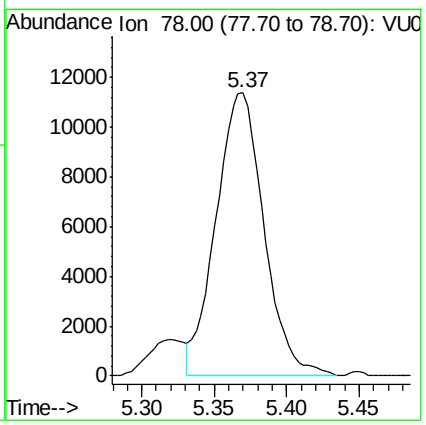
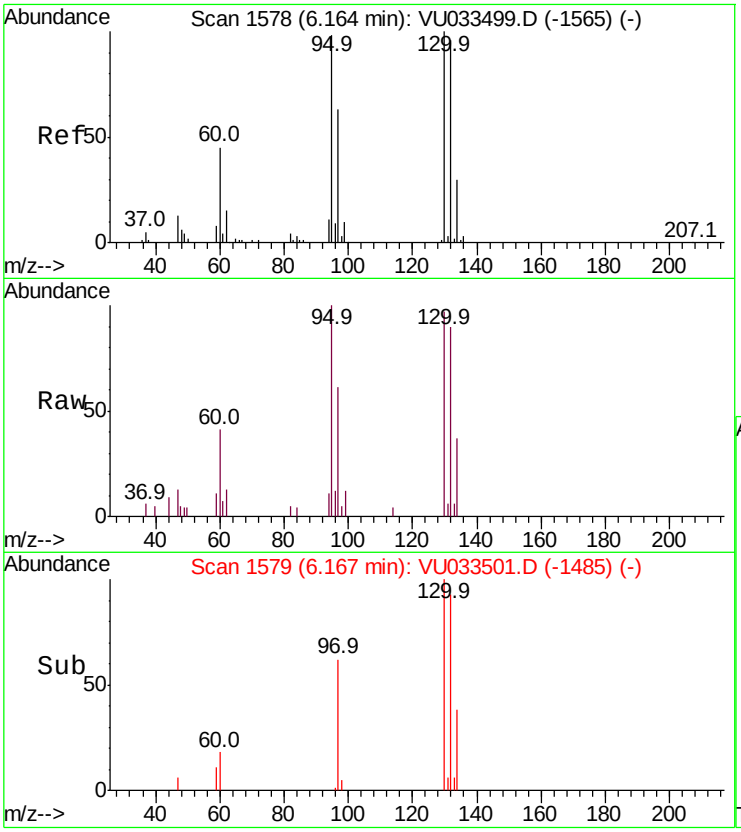


#33
Benzene
Concen: 2.777 ug/L
RT: 5.37 min Scan# 1331
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 78 Resp: 26125

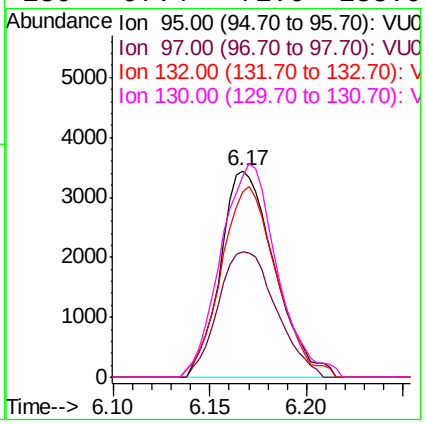




#34
Trichloroethene
Concen: 2.705 ug/L
RT: 6.17 min Scan# 1579
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 95 Resp: 6714

Ion	Ratio	Lower	Upper
95	100		
97	60.8	44.7	83.1
132	90.1	66.8	124.0
130	97.4	71.6	133.0



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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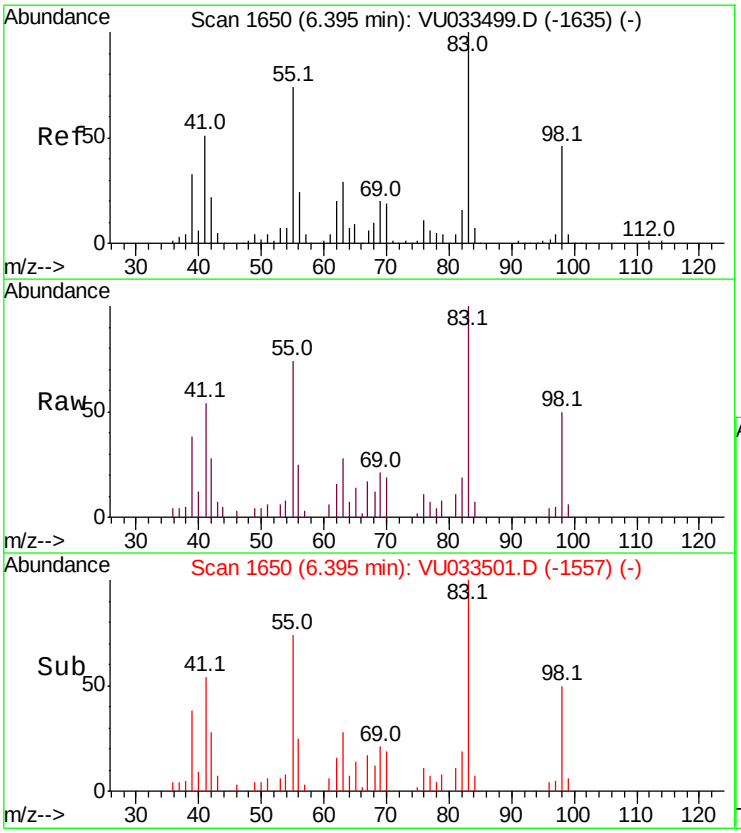
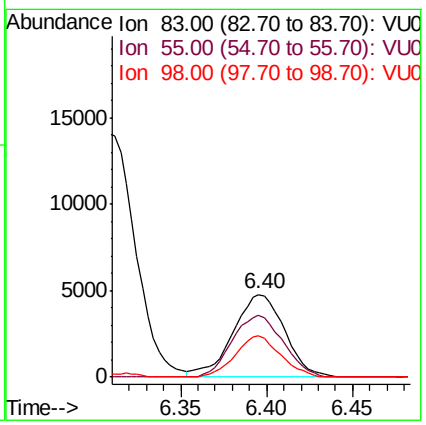
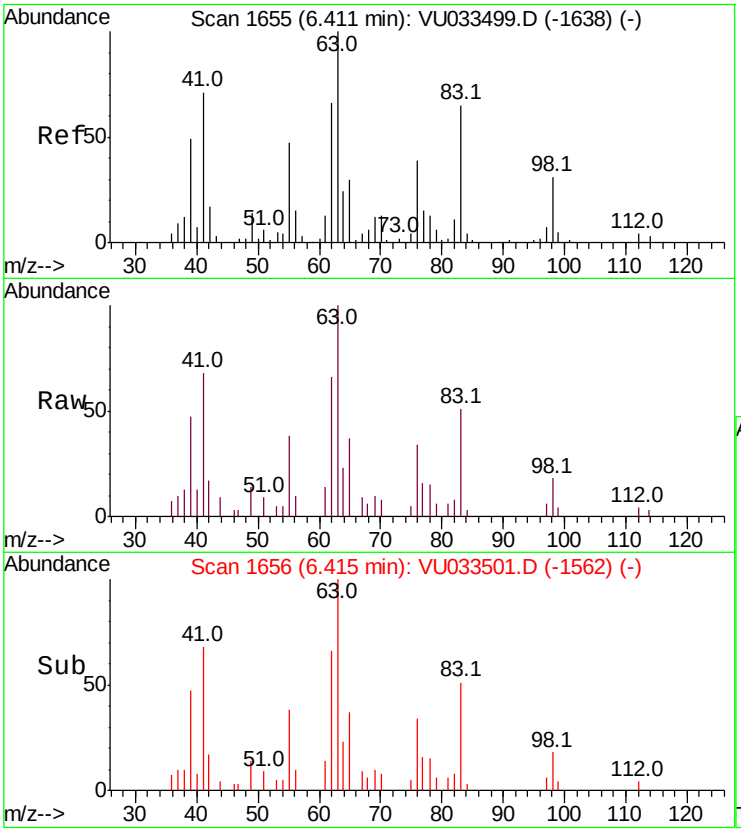


#35
Methylcyclohexane
Concen: 2.568 ug/L
RT: 6.40 min Scan# 1650
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 83 Resp: 9946

Ion	Ratio	Lower	Upper
83	100		
55	73.6	60.2	90.4
98	43.7	36.5	54.7

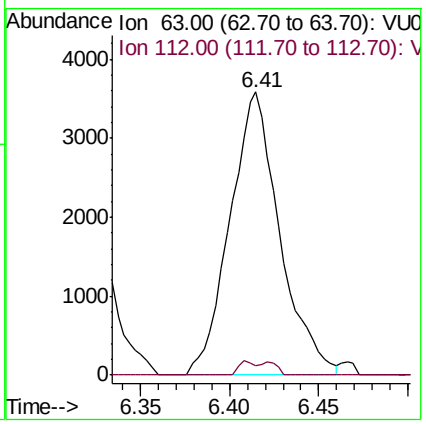




#37
1,2-Dichloropropane
Concen: 2.769 ug/L
RT: 6.41 min Scan# 1656
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 63 Resp: 6974

Ion	Ratio	Lower	Upper
63	100		
112	1.6	3.0	4.6#



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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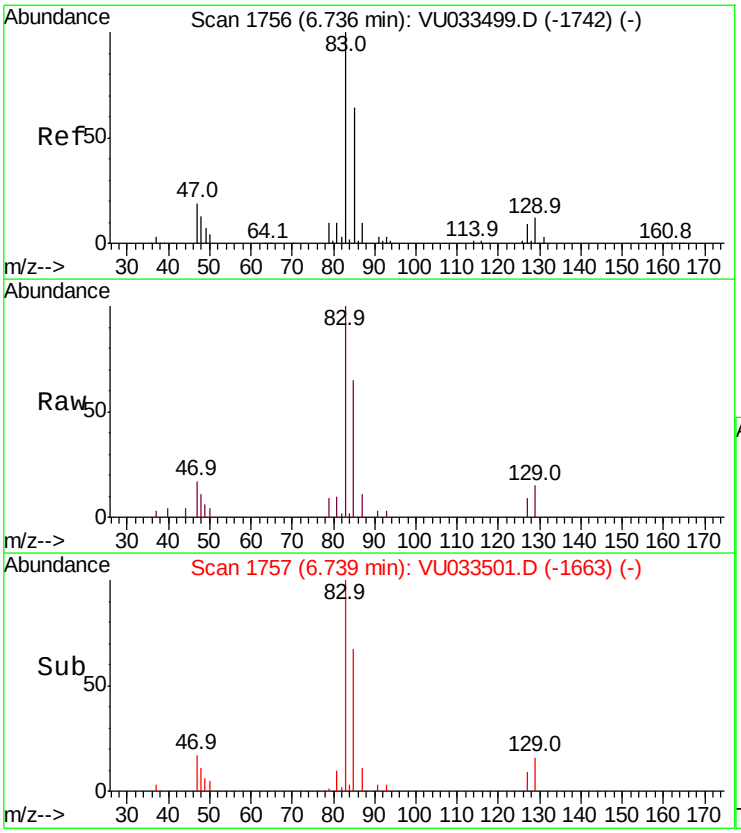
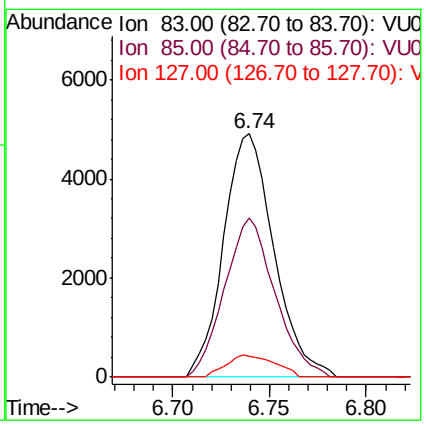
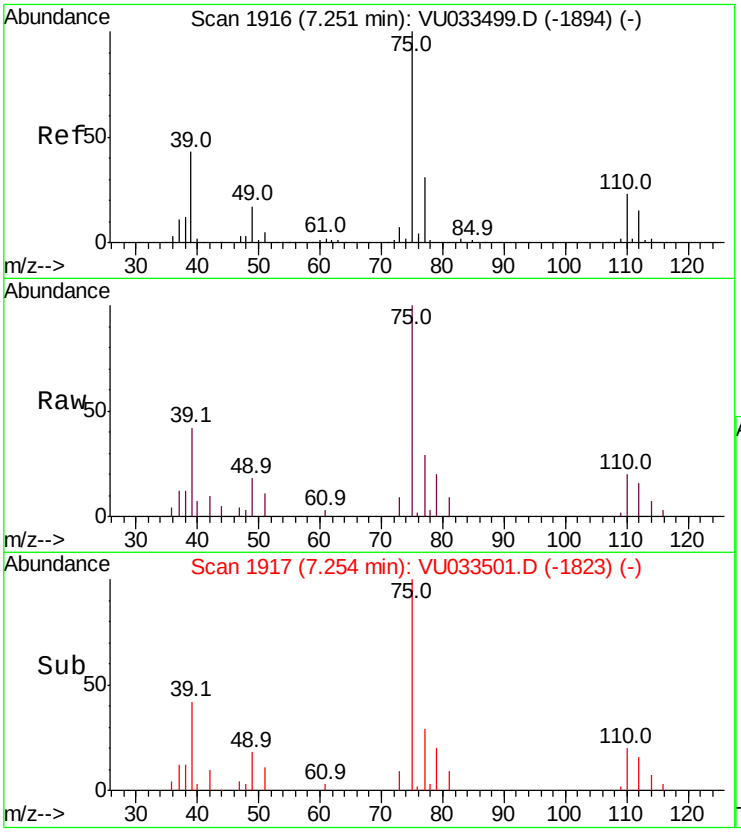


#38
Bromodichloromethane
Concen: 2.731 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 83 Resp: 8892

Ion	Ratio	Lower	Upper
83	100		
85	65.4	45.1	83.9
127	8.7	7.2	10.8

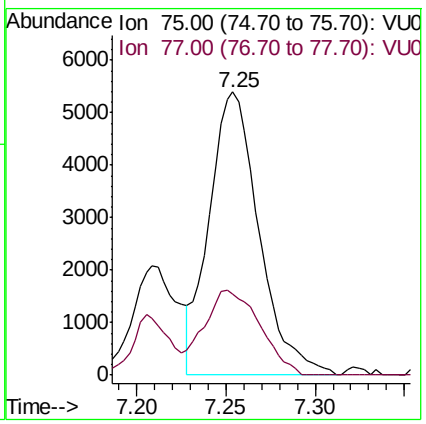




#39
cis-1,3-Dichloropropene
Concen: 2.663 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 75 Resp: 10467

Ion	Ratio	Lower	Upper
75	100		
77	28.5	22.3	41.5



Instrument :
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ClientSampleId :
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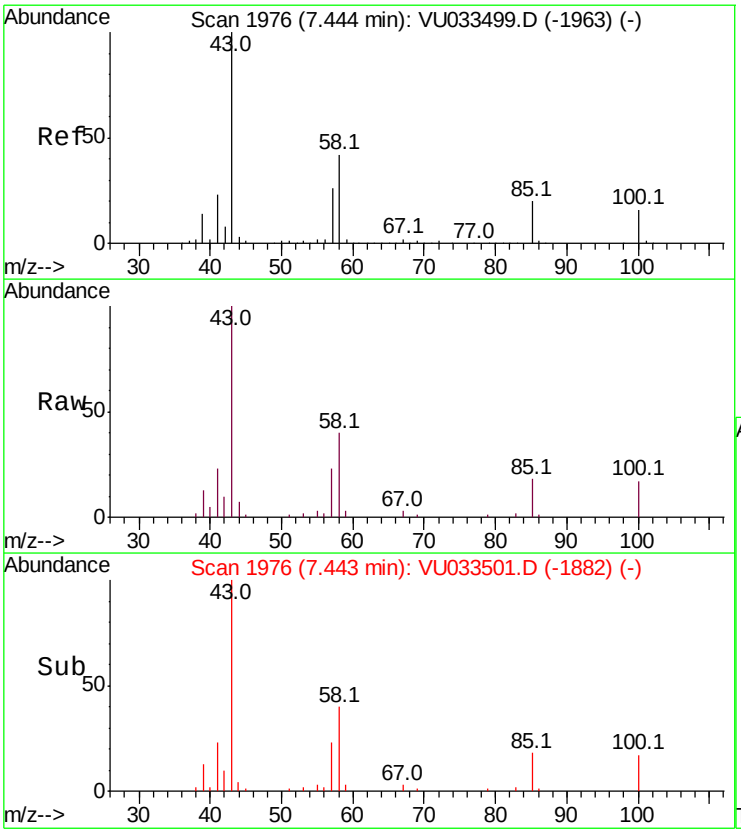
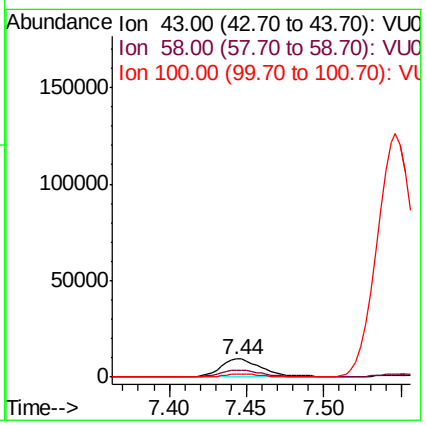
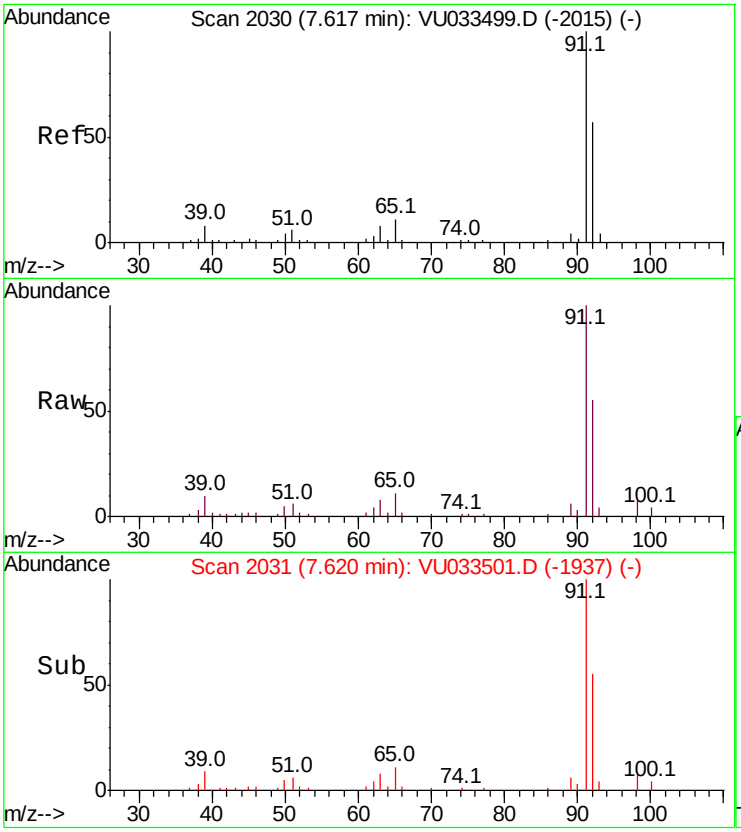


#40
4-Methyl-2-pentanone
Concen: 5.100 ug/L
RT: 7.44 min Scan# 1976
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 43 Resp: 17734

Ion	Ratio	Lower	Upper
43	100		
58	40.4	32.8	49.2
100	15.4	12.9	19.3





#42
Toluene
Concen: 2.712 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 91 Resp: 27442

Ion	Ratio	Lower	Upper
91	100		
92	54.6	40.2	74.6

Instrument :
MSVOA_U
ClientSampleId :
MDL01

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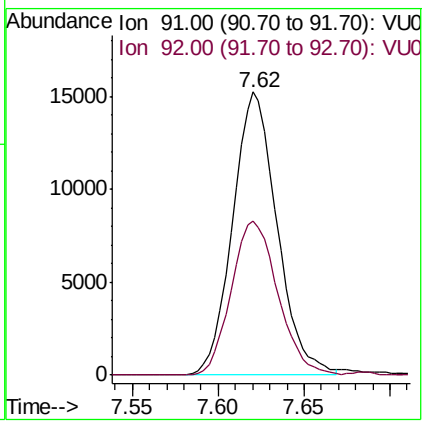
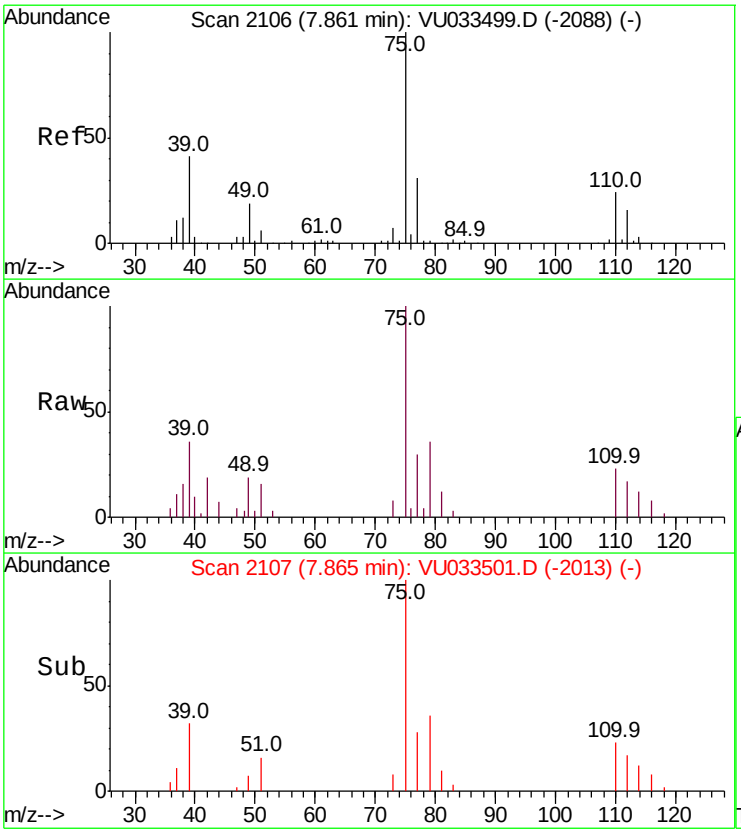
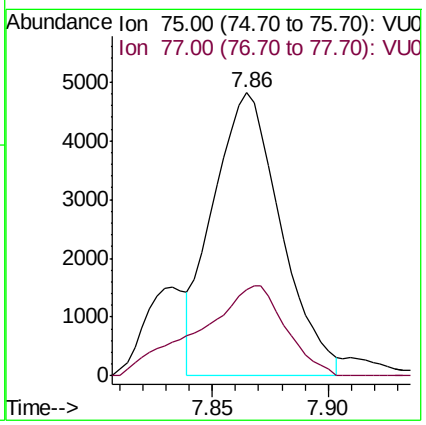


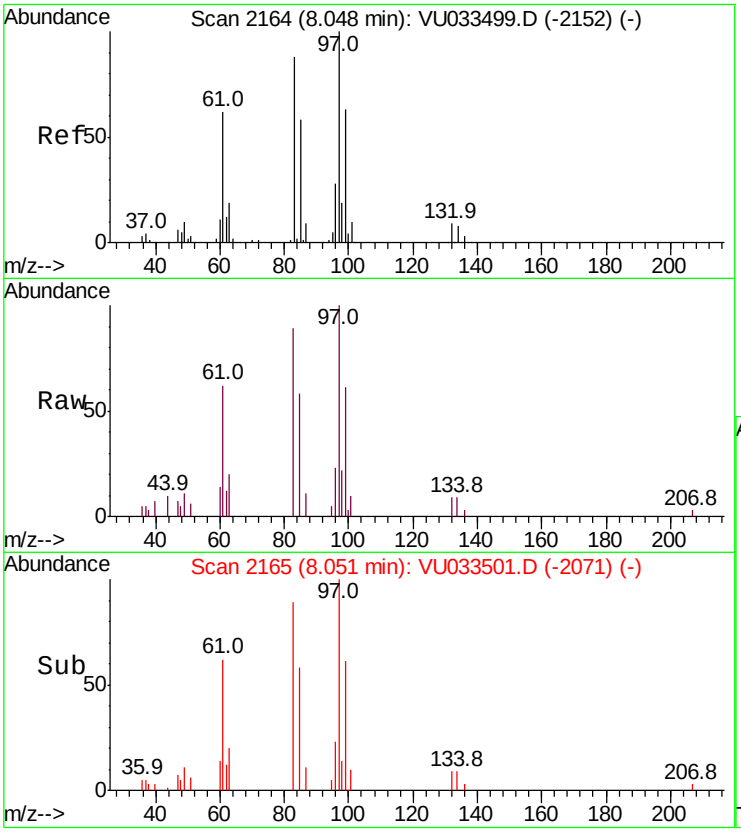


#44
trans-1,3-Dichloropropene
Concen: 2.761 ug/L m
RT: 7.86 min Scan# 2107
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 75 Resp: 9809

Ion	Ratio	Lower	Upper
75	100		
77	30.5	22.7	42.1

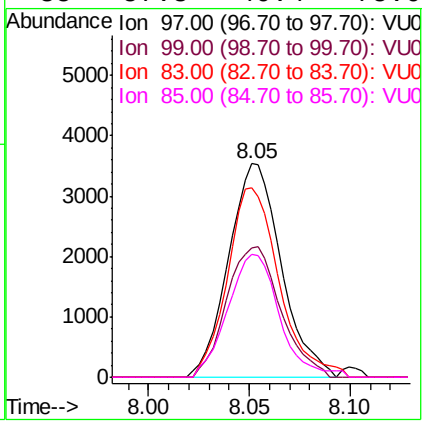




#45
1,1,2-Trichloroethane
Concen: 2.700 ug/L
RT: 8.05 min Scan# 2165
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 97 Resp: 6455

Ion	Ratio	Lower	Upper
97	100		
99	60.6	44.4	82.4
83	88.8	61.5	114.1
85	57.8	40.4	75.0



Instrument :
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ClientSampleId :
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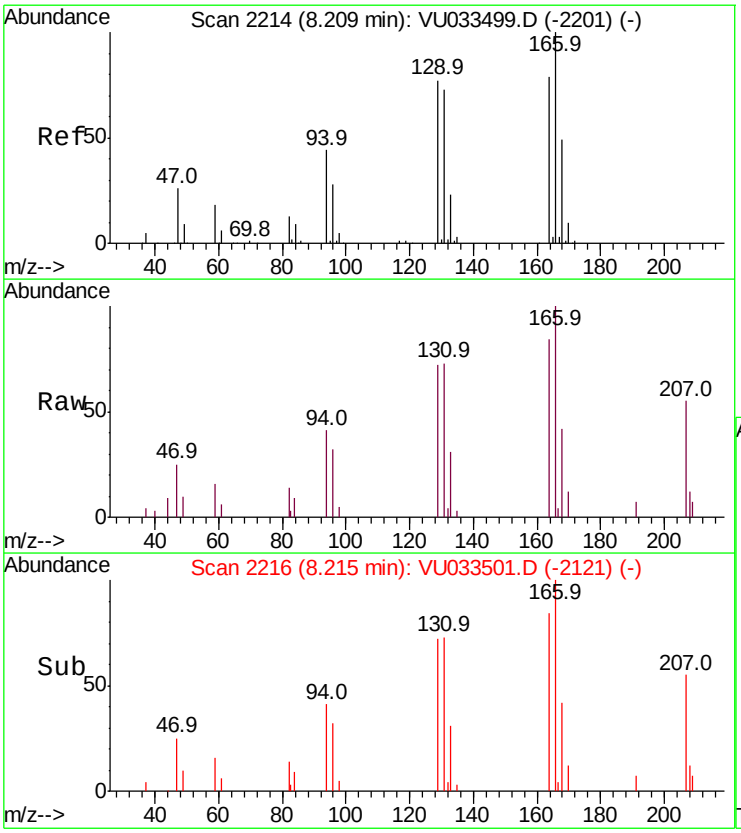
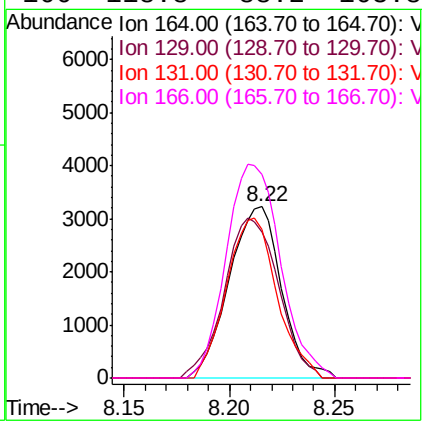
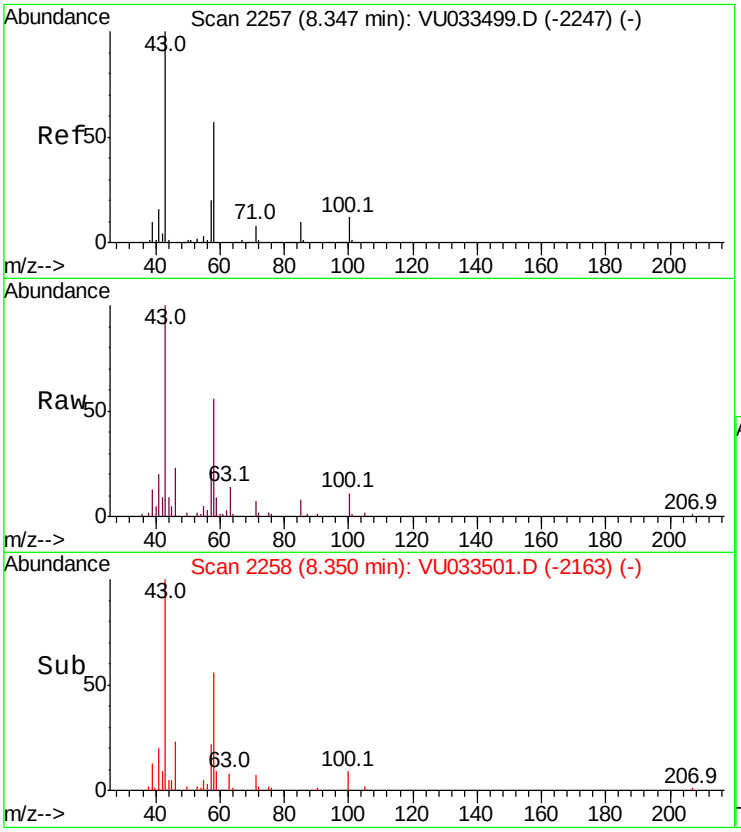


#46
Tetrachloroethene
Concen: 2.743 ug/L
RT: 8.22 min Scan# 2216
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:164 Resp: 5558

Ion	Ratio	Lower	Upper
164	100		
129	85.6	65.5	121.7
131	86.5	63.3	117.7
166	118.8	88.2	163.8

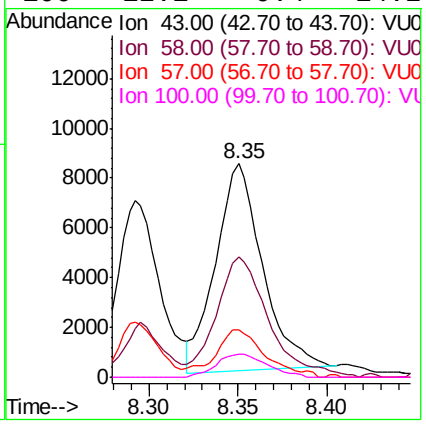




#48
2-Hexanone
Concen: 5.407 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 43 Resp: 15198

Ion	Ratio	Lower	Upper
43	100		
58	64.3	45.8	68.6
57	22.5	15.8	23.6
100	12.1	9.4	14.2



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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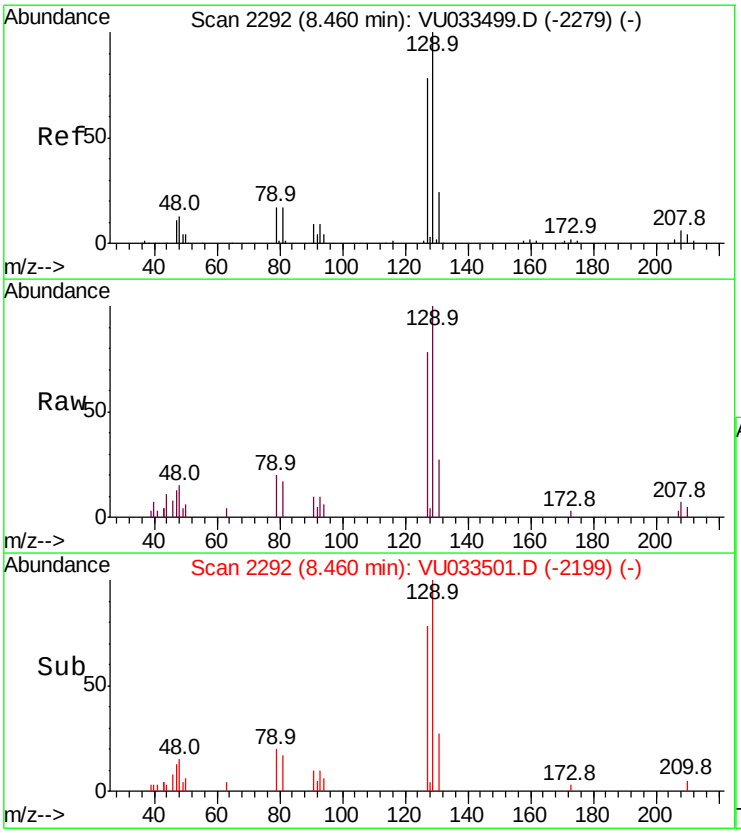
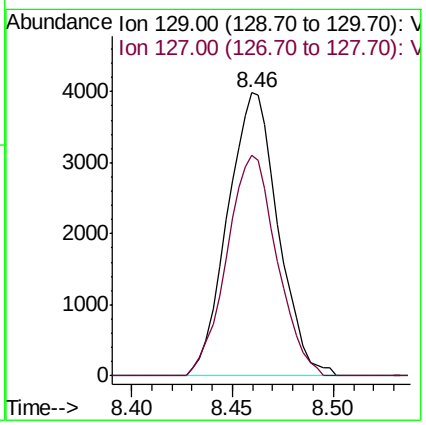
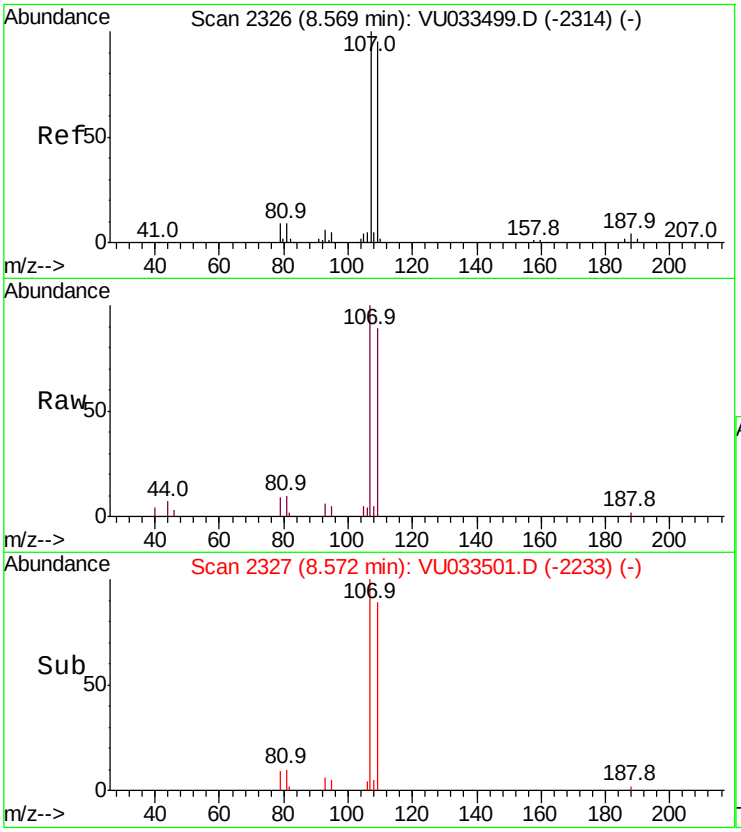


#49
Dibromochloromethane
Concen: 2.567 ug/L
RT: 8.46 min Scan# 2292
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:129 Resp: 6984

Ion	Ratio	Lower	Upper
129	100		
127	77.8	53.8	99.8

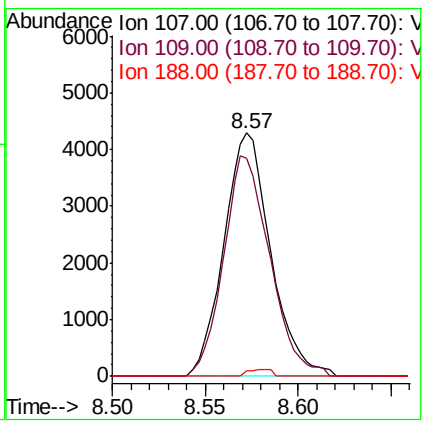




#50
1,2-Dibromoethane
Concen: 2.840 ug/L
RT: 8.57 min Scan# 2327
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:107 Resp: 7522

Ion	Ratio	Lower	Upper
107	100		
109	89.4	66.8	124.0
188	2.3	3.0	4.4#



Instrument :
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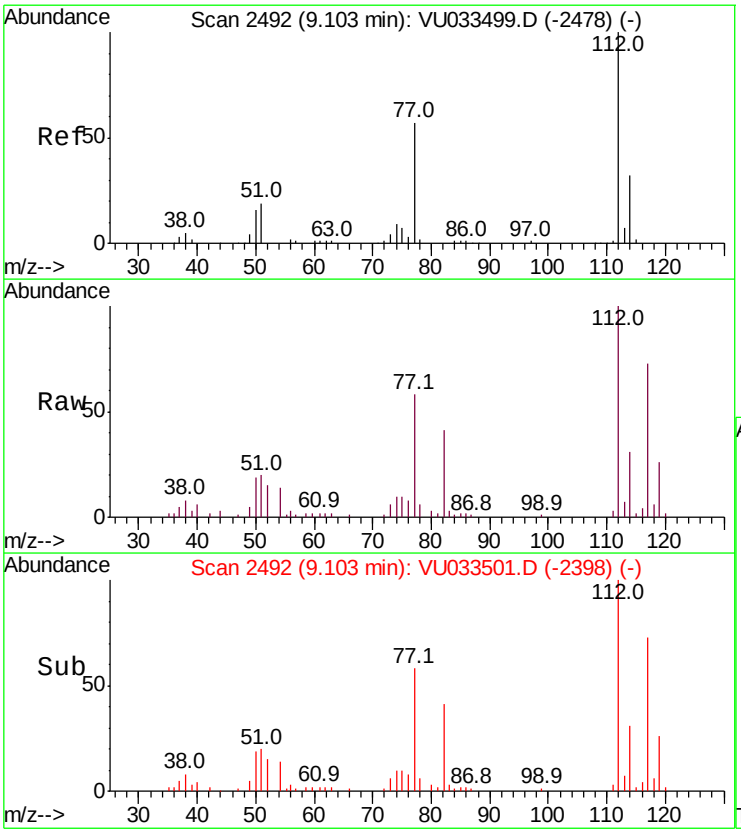
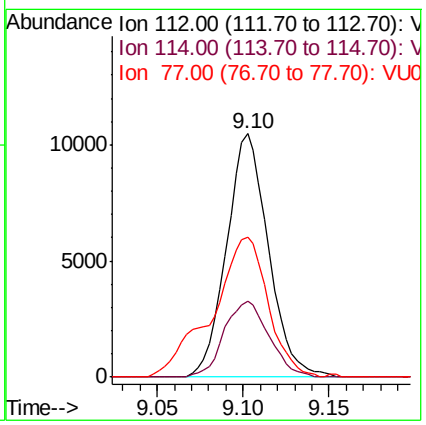
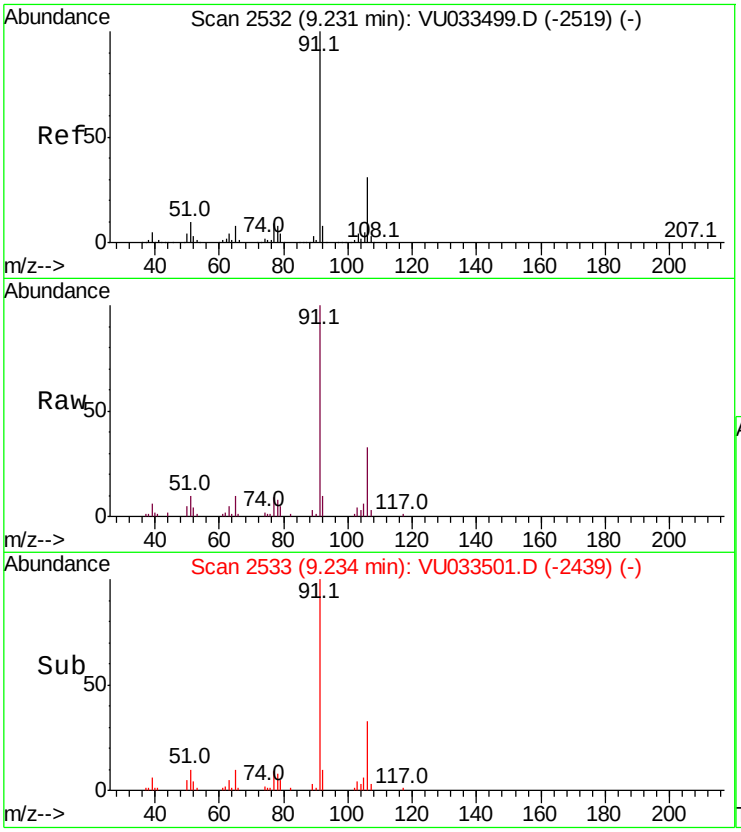


#51
Chlorobenzene
Concen: 2.675 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:112 Resp: 17718

Ion	Ratio	Lower	Upper
112	100		
114	31.4	22.3	41.5
77	57.7	45.6	68.4

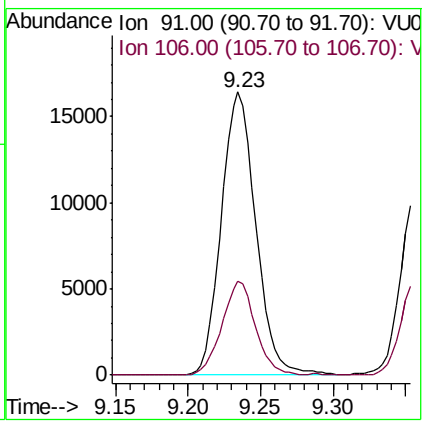




#52
Ethylbenzene
Concen: 2.486 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 91 Resp: 27081

Ion	Ratio	Lower	Upper
91	100		
106	33.1	22.2	41.2



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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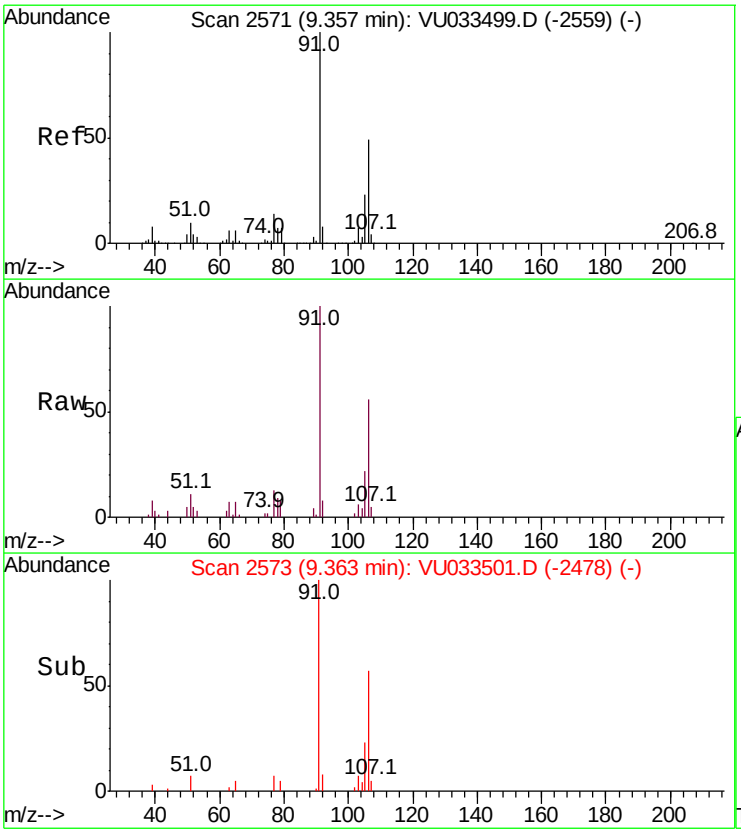
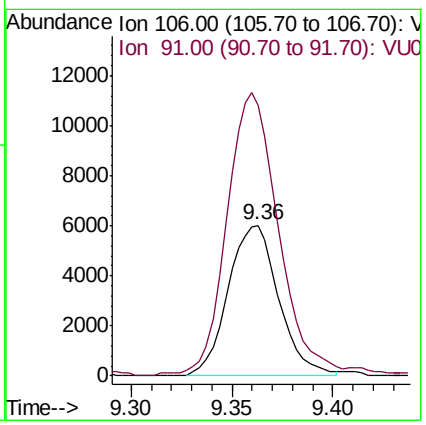
7/31/2019 10:33:54 AM

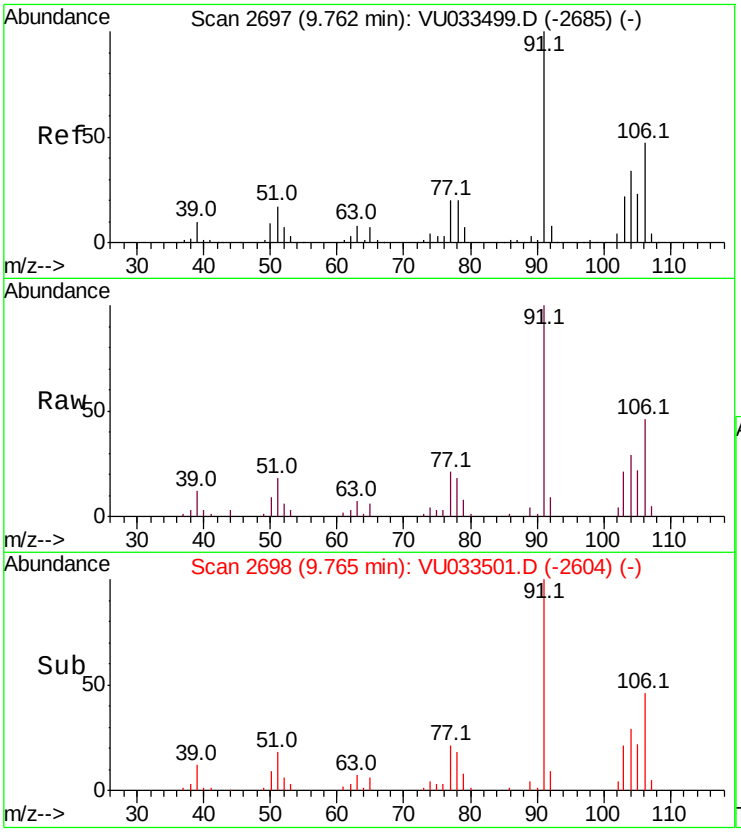


#53
m,p-Xylene
Concen: 2.527 ug/L
RT: 9.36 min Scan# 2573
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:106 Resp: 10569

Ion	Ratio	Lower	Upper
106	100		
91	180.1	143.0	265.6

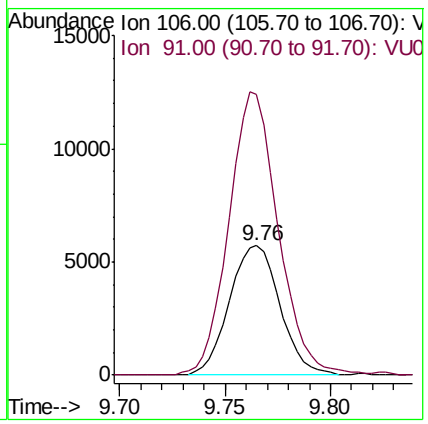




#54
o-xylene
Concen: 2.348 ug/L
RT: 9.76 min Scan# 2698
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:106 Resp: 9527

Ion	Ratio	Lower	Upper
106	100		
91	216.8	148.4	275.6



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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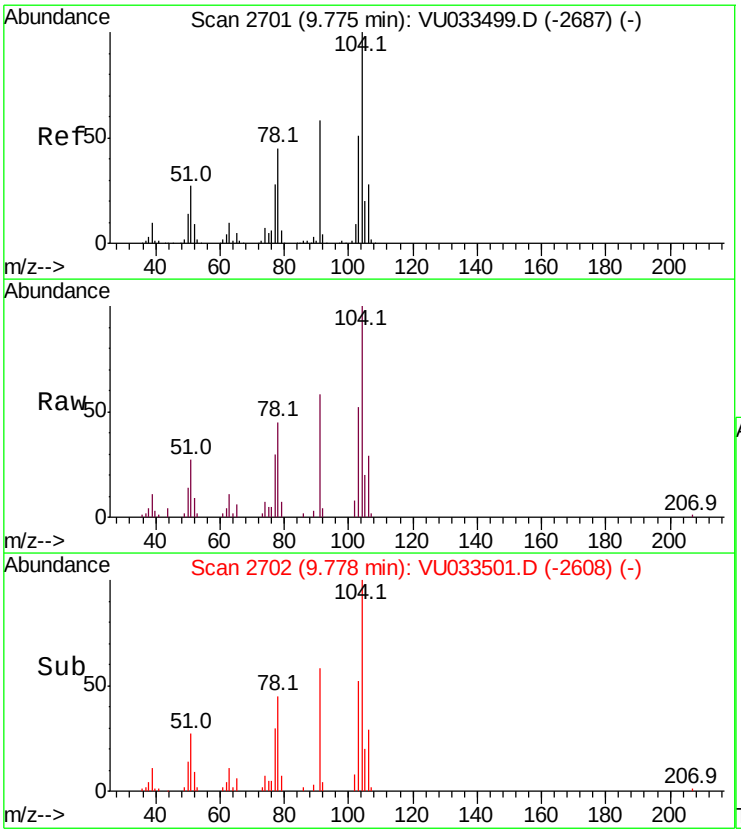
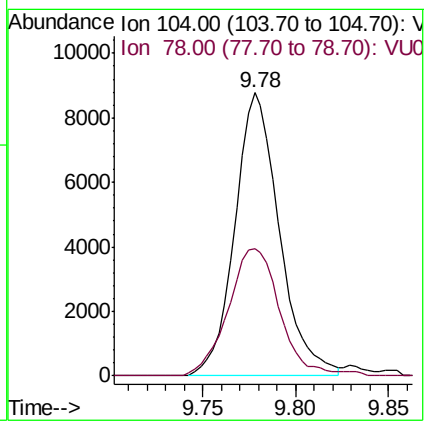
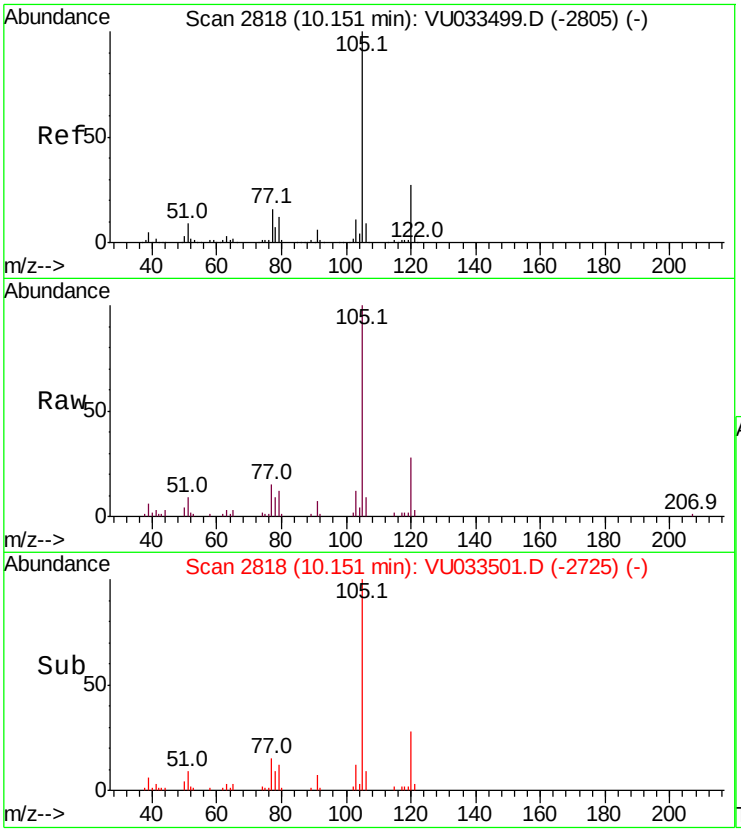


#55
Styrene
Concen: 2.130 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:104 Resp: 14680

Ion	Ratio	Lower	Upper
104	100		
78	45.0	32.2	59.8

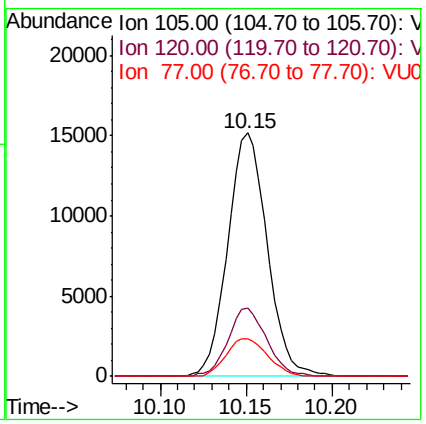




#56
Isopropylbenzene
Concen: 2.294 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:105 Resp: 24314

Ion	Ratio	Lower	Upper
105	100		
120	27.3	21.4	32.0
77	16.3	12.5	18.7



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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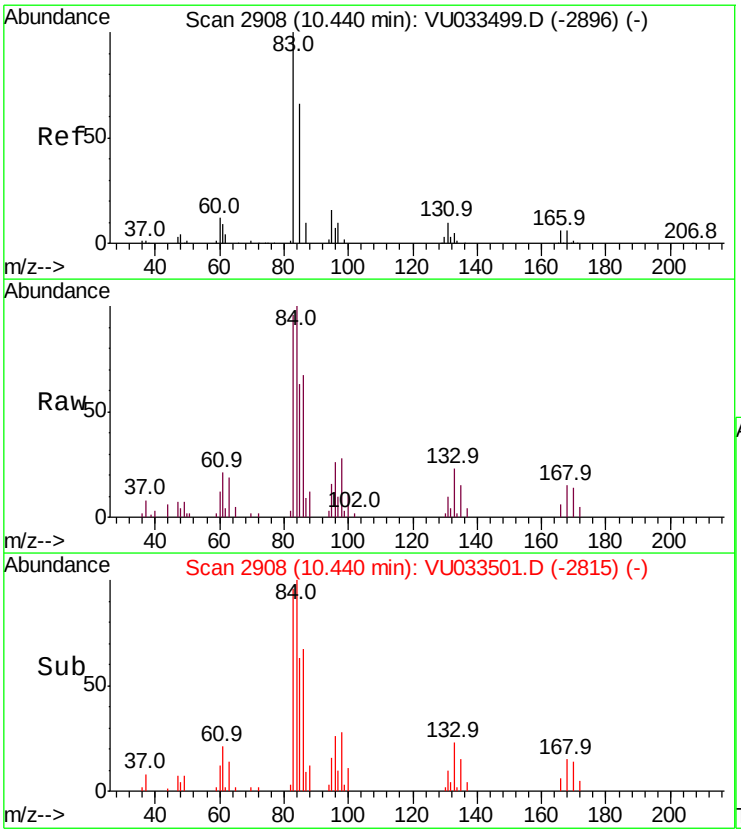
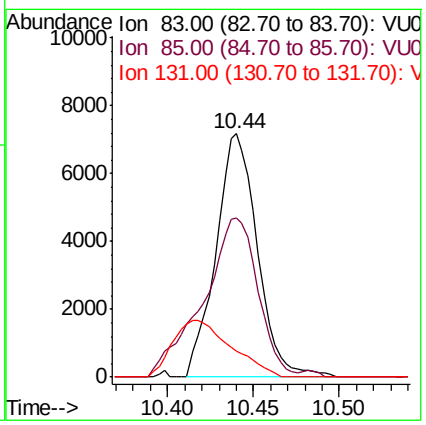
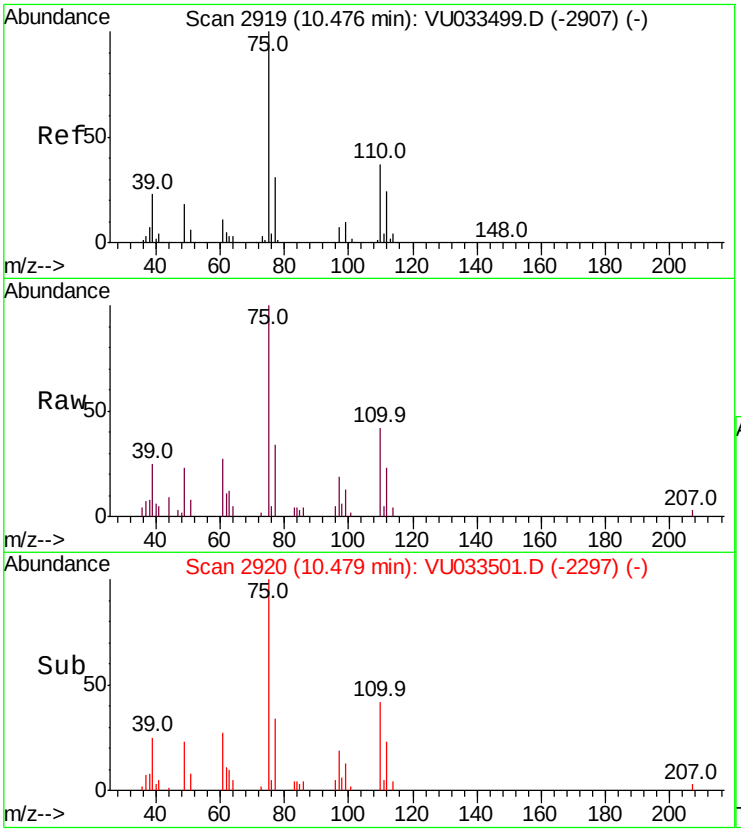


#58
1,1,2,2-Tetrachloroethane
Concen: 2.811 ug/L
RT: 10.44 min Scan# 2908
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 83 Resp: 12122

Ion	Ratio	Lower	Upper
83	100		
85	65.4	45.4	84.4
131	14.8	7.9	11.9#





#59
1,2,3-Trichloropropane
Concen: 2.657 ug/L
RT: 10.48 min Scan# 2920
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 75 Resp: 8833

Ion	Ratio	Lower	Upper
75	100		
77	31.8	25.8	38.6

Instrument :
MSVOA_U
ClientSampleId :
MDL01

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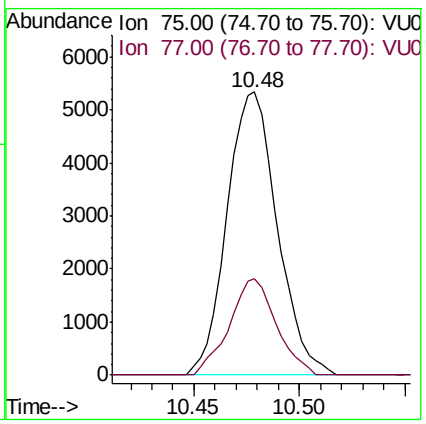
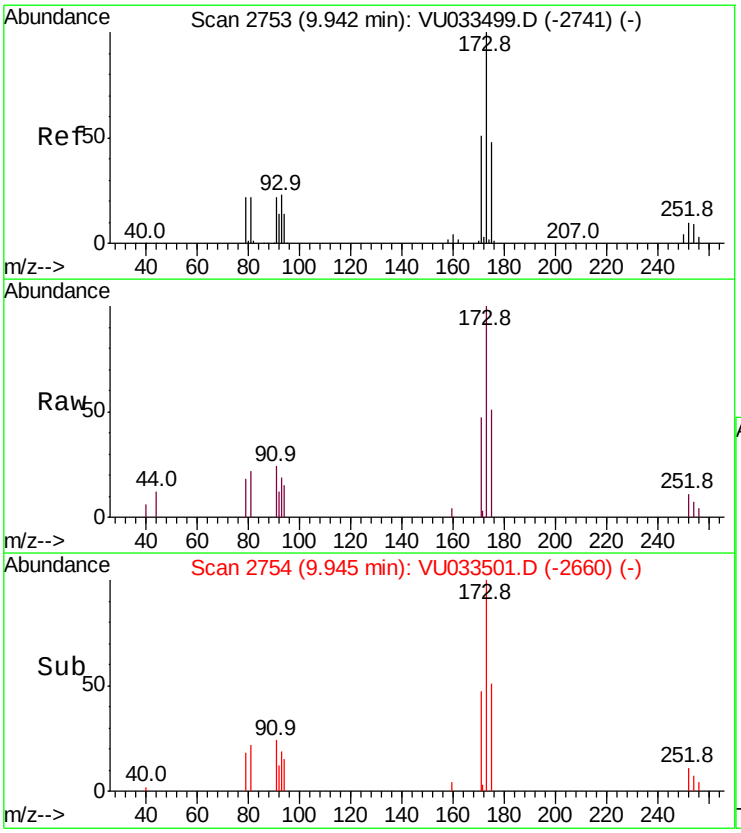
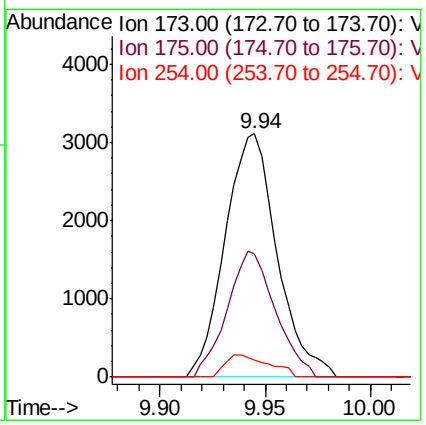


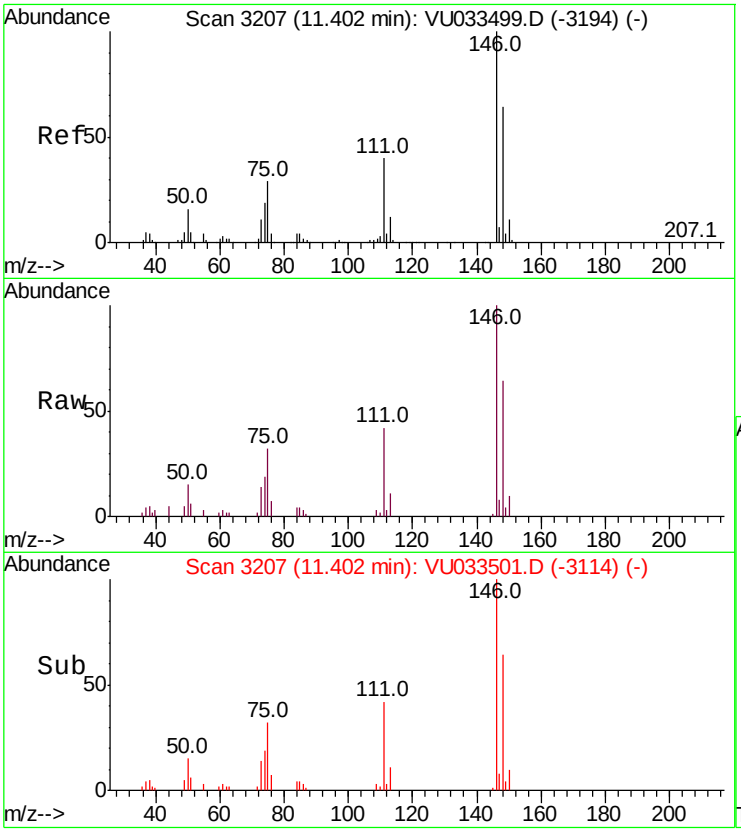


#61
Bromoform
Concen: 2.745 ug/L
RT: 9.94 min Scan# 2754
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:173 Resp: 5319

Ion	Ratio	Lower	Upper
173	100		
175	47.9	38.7	58.1
254	7.6	7.5	11.3

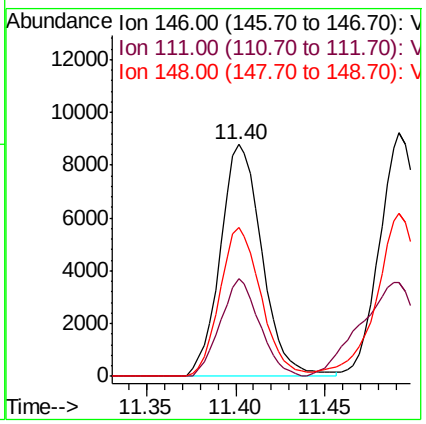




#62
1,3-Dichlorobenzene
Concen: 2.890 ug/L
RT: 11.40 min Scan# 3207
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:146 Resp: 14238

Ion	Ratio	Lower	Upper
146	100		
111	42.4	28.1	52.1
148	64.2	45.0	83.6



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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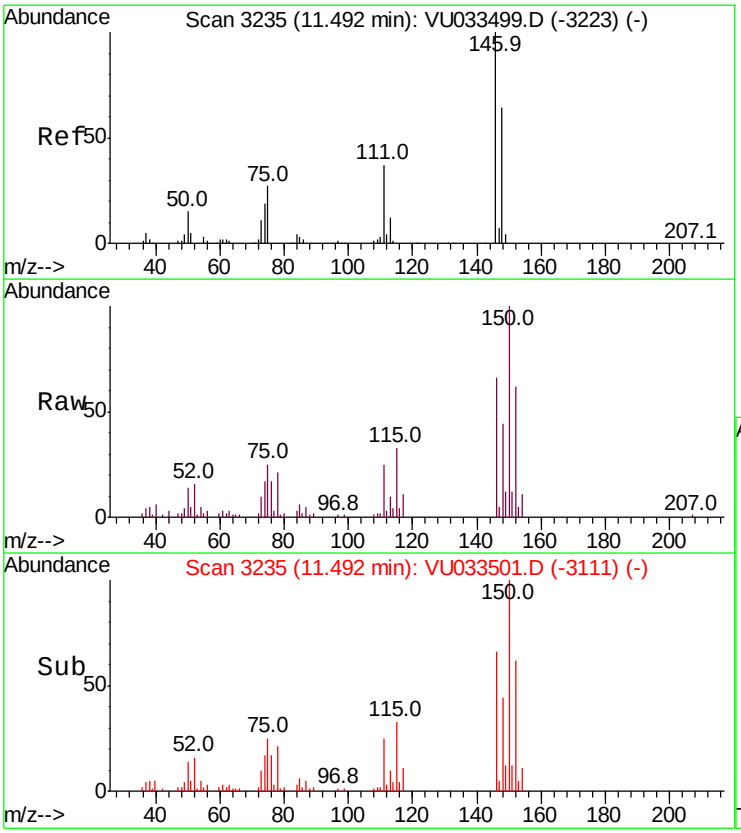
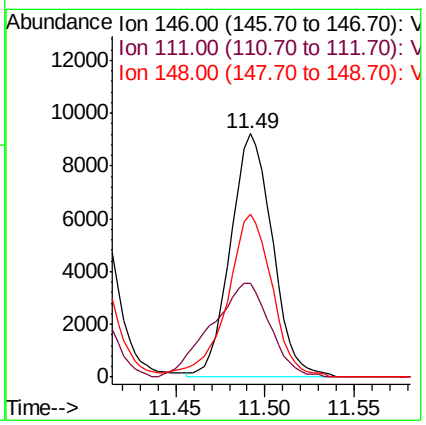
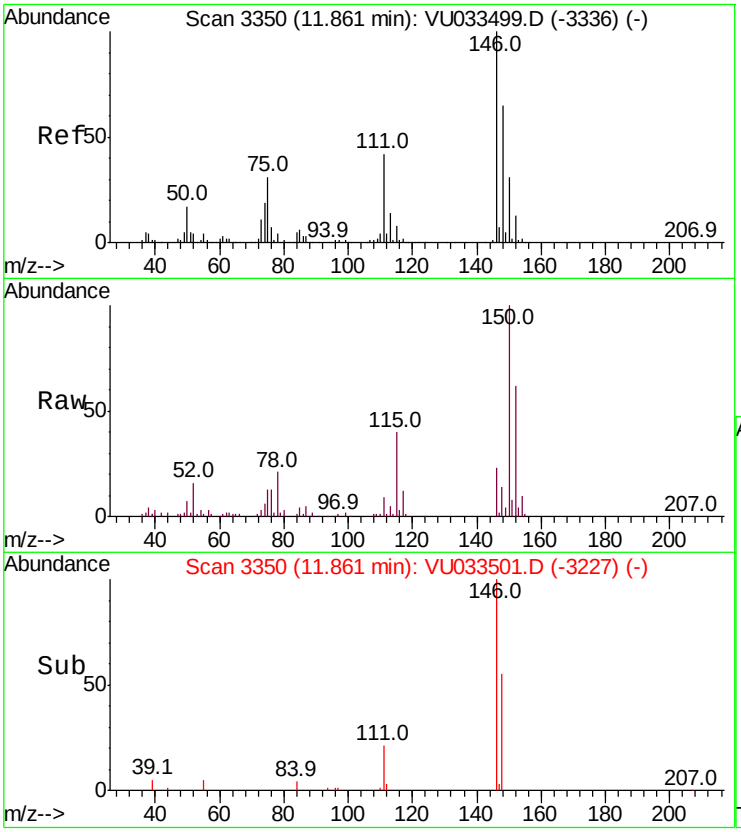


#63
1,4-Dichlorobenzene
Concen: 2.957 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:146 Resp: 15138

Ion	Ratio	Lower	Upper
146	100		
111	38.4	27.2	50.4
148	67.0	44.5	82.7





#65
1,2-Dichlorobenzene
Concen: 2.943 ug/L
RT: 11.86 min Scan# 3350
Delta R.T. -0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:146 Resp: 14660

Ion	Ratio	Lower	Upper
146	100		
111	38.5	31.7	47.5
148	61.0	50.3	75.5

Instrument :
MSVOA_U
ClientSampleId :
MDL01

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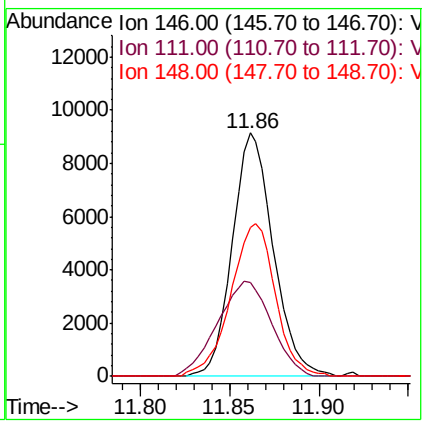
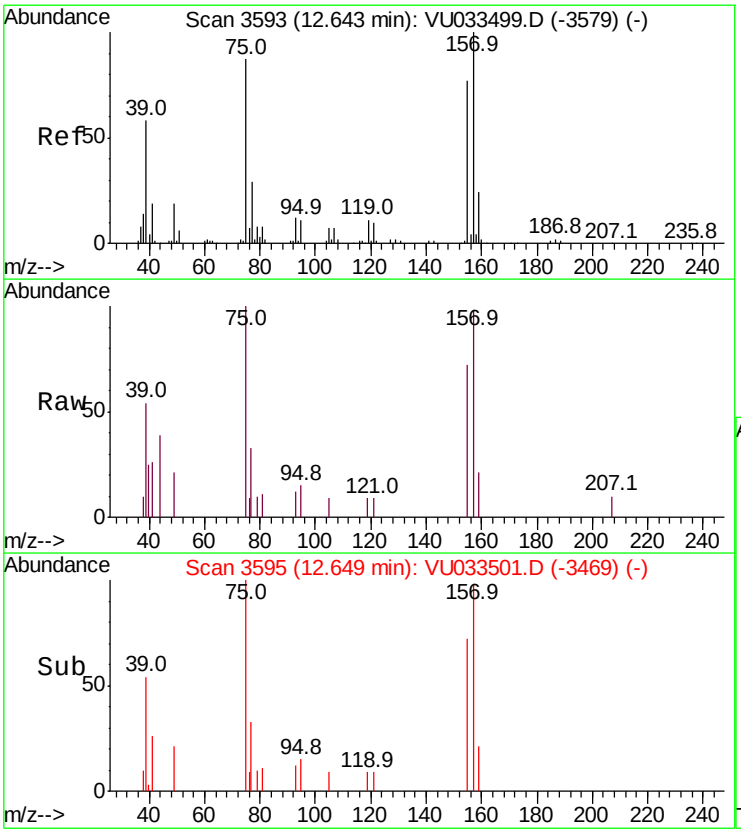
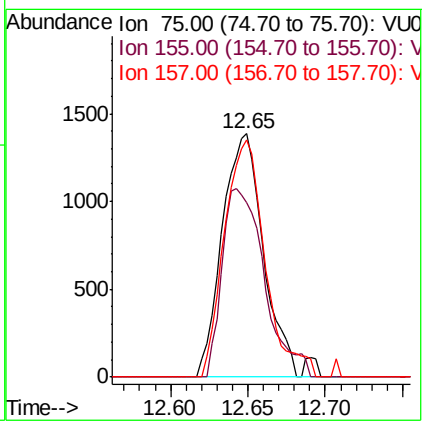


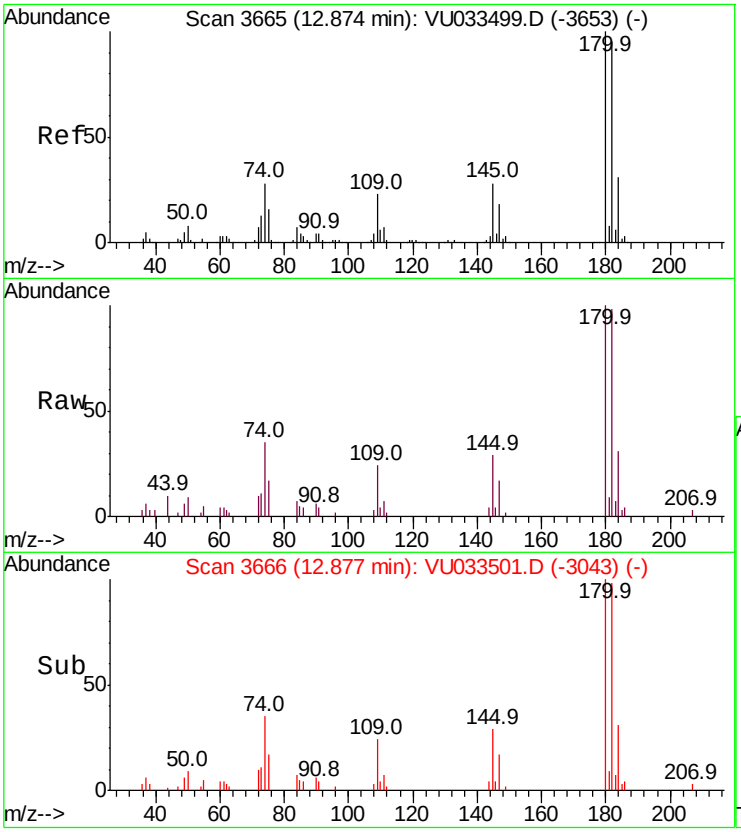


#66
1,2-Dibromo-3-chloropropane
Concen: 2.836 ug/L
RT: 12.65 min Scan# 3595
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion: 75 Resp: 2610

Ion	Ratio	Lower	Upper
75	100		
155	71.5	69.4	104.0
157	97.5	91.8	137.8

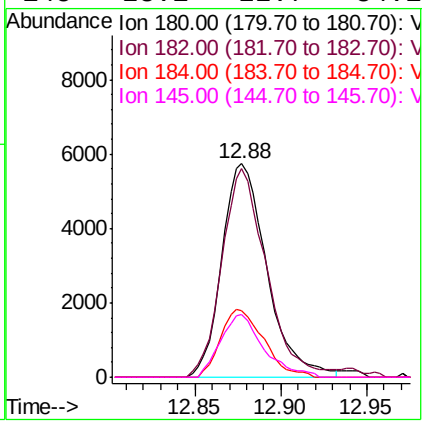




#67
1,3,5-Trichlorobenzene
Concen: 2.637 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:180 Resp: 10483

Ion	Ratio	Lower	Upper
180	100		
182	96.1	75.6	113.4
184	30.3	24.2	36.2
145	28.1	22.7	34.1



Instrument :
MSVOA_U
ClientSampleId :
MDL01

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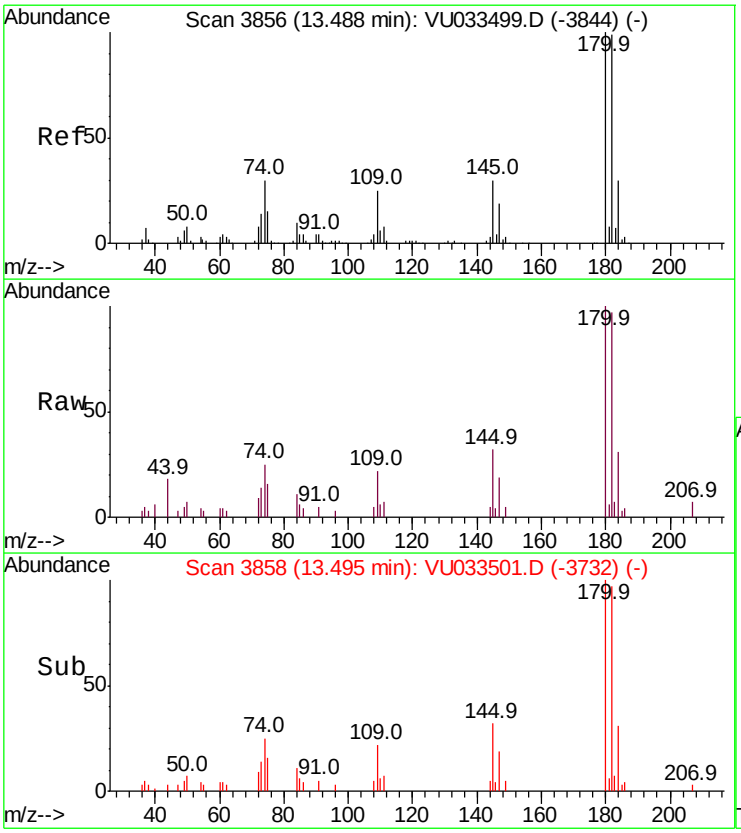
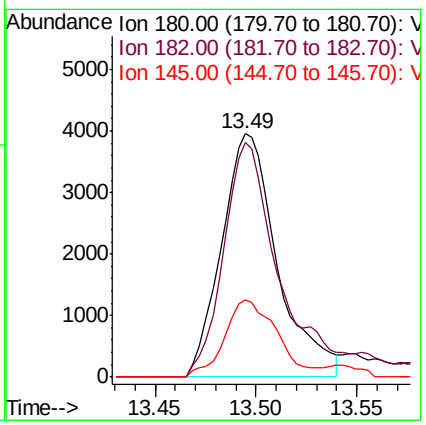
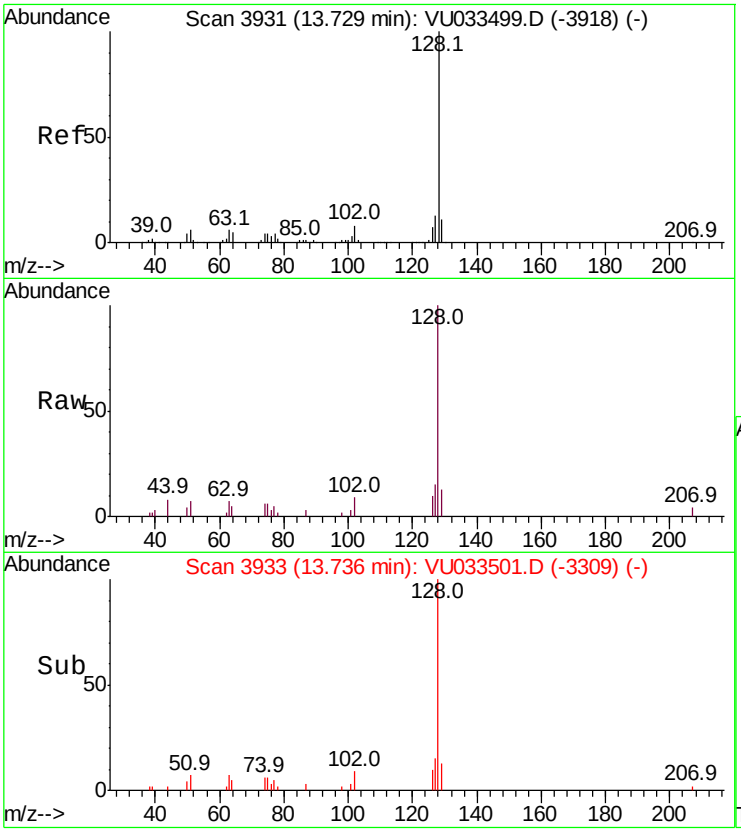


#68
1,2,4-trichlorobenzene
Concen: 2.250 ug/L
RT: 13.49 min Scan# 3858
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:180 Resp: 7643

Ion	Ratio	Lower	Upper
180	100		
182	85.8	75.8	113.8
145	29.7	24.3	36.5





#69
Naphthalene
Concen: 1.829 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:128 Resp: 17824

Ion	Ratio	Lower	Upper
128	100		
127	13.0	10.8	16.2
129	6.8	8.7	13.1#

Instrument :
MSVOA_U
ClientSampleId :
MDL01

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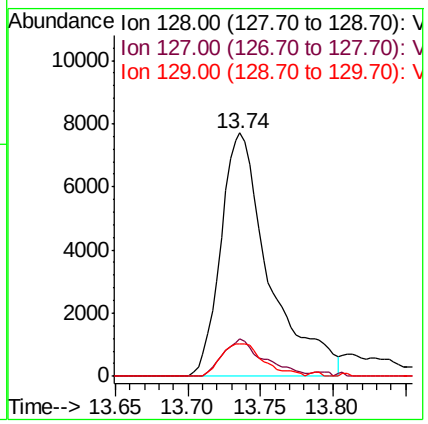
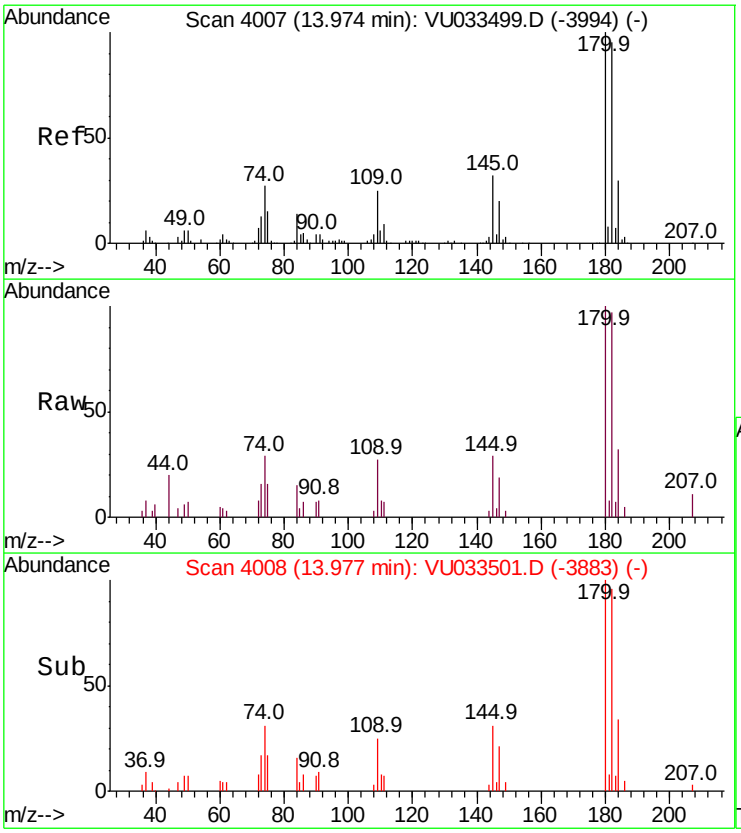
7/31/2019 10:33:54 AM

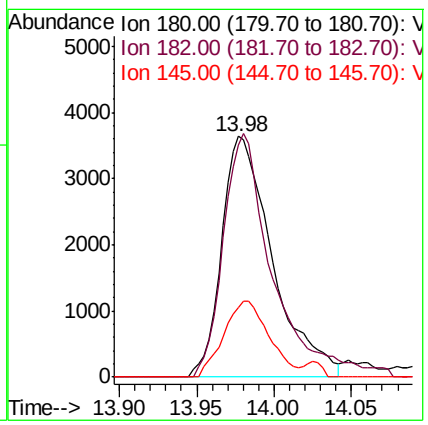




#70
1,2,3-Trichlorobenzene
Concen: 2.326 ug/L
RT: 13.98 min Scan# 4008
Delta R.T. 0.00 min
Lab File: VU033501.D
Acq: 30 Jul 2019 18:49

Tgt Ion:180 Resp: 8307

Ion	Ratio	Lower	Upper
180	100		
182	95.1	75.5	113.3
145	28.1	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033502.D
Acq On : 30 Jul 2019 19:12
Operator : JC/SP
Sample : MDL02
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 13 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL02

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7/31/2019 10:33:59 AM

Quant Time: Jul 31 08:26:05 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	321706	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	313794	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	154768	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	111576	47.70	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 95.40%			
7) Chloroethane-d5	1.67	69	96764	48.22	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 96.44%			
11) 1,1-Dichloroethene-d2	2.26	63	153784	36.23	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 72.46%			
21) 2-Butanone-d5	4.15	46	157607	101.73	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 101.73%			
24) Chloroform-d	4.62	84	188732	48.14	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 96.28%			
26) 1,2-Dichloroethane-d4	5.29	65	122934	49.51	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 99.02%			
32) Benzene-d6	5.32	84	389426	50.06	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 100.12%			
36) 1,2-Dichloropropane-d6	6.31	67	124234	50.95	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 101.90%			
41) Toluene-d8	7.55	98	357844	49.09	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.18%			
43) trans-1,3-Dichloropropene-	7.83	79	57686	47.69	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 95.38%			
47) 2-Hexanone-d5	8.30	63	119146	102.91	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 102.91%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	181248	48.20	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 96.40%			
64) 1,2-Dichlorobenzene-d4	11.85	152	143115	50.50	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	7336	2.418	ug/L	98
3) Chloromethane	1.32	50	7758	2.539	ug/L	99
5) Vinyl chloride	1.40	62	8393	2.562	ug/L #	68
6) Bromomethane	1.62	94	6000	2.076	ug/L	99
8) Chloroethane	1.69	64	5750	2.889	ug/L	90
9) Trichlorofluoromethane	1.87	101	10786	2.517	ug/L	100
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	6616	3.045	ug/L	85
12) 1,1-Dichloroethene	2.27	96	6648	3.191	ug/L #	1
13) Acetone	2.31	43	8183	5.163	ug/L	93
14) Carbon disulfide	2.46	76	17534	2.683	ug/L	99
15) Methyl Acetate	2.60	43	6126	2.428	ug/L	92
16) Methylene chloride	2.68	84	6343	2.666	ug/L	99
17) trans-1,2-Dichloroethene	2.97	96	5508	2.524	ug/L	96
18) Methyl tert-butyl Ether	2.98	73	15394	2.313	ug/L	98
19) 1,1-Dichloroethane	3.42	63	10256	2.503	ug/L	95
20) cis-1,2-Dichloroethene	4.20	96	5989m	2.445	ug/L	
22) 2-Butanone	4.25	43	8809m	4.655	ug/L	

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033502.D
Acq On : 30 Jul 2019 19:12
Operator : JC/SP
Sample : MDL02
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 13 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL02

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Quant Time: Jul 31 08:26:05 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
23) Bromochloromethane	4.53	128	2958	2.314 ug/L	92
25) Chloroform	4.65	83	15196	3.525 ug/L	98
27) 1,2-Dichloroethane	5.38	62	8101	2.440 ug/L	99
29) Cyclohexane	4.97	56	7830	2.288 ug/L	97
30) 1,1,1-Trichloroethane	4.89	97	8958	2.481 ug/L	99
31) Carbon tetrachloride	5.11	117	7384	2.348 ug/L	95
33) Benzene	5.37	78	24132	2.666 ug/L	100
34) Trichloroethene	6.17	95	6101	2.555 ug/L	94
35) Methylcyclohexane	6.40	83	8615	2.312 ug/L	98
37) 1,2-Dichloropropane	6.42	63	5983	2.469 ug/L #	90
38) Bromodichloromethane	6.74	83	7706	2.460 ug/L	96
39) cis-1,3-Dichloropropene	7.25	75	9077	2.400 ug/L	94
40) 4-Methyl-2-pentanone	7.45	43	15229	4.552 ug/L	99
42) Toluene	7.62	91	25537	2.624 ug/L	95
44) trans-1,3-Dichloropropene	7.86	75	8691	2.543 ug/L	100
45) 1,1,2-Trichloroethane	8.05	97	5732	2.492 ug/L	95
46) Tetrachloroethene	8.21	164	4725	2.424 ug/L	94
48) 2-Hexanone	8.35	43	14558	5.383 ug/L	97
49) Dibromochloromethane	8.46	129	6250	2.388 ug/L	90
50) 1,2-Dibromoethane	8.57	107	6558	2.574 ug/L #	87
51) Chlorobenzene	9.10	112	16297	2.557 ug/L	96
52) Ethylbenzene	9.23	91	24951	2.380 ug/L	97
53) m,p-Xylene	9.36	106	8410	2.090 ug/L	86
54) o-xylene	9.76	106	8407	2.154 ug/L	94
55) Styrene	9.78	104	13959	2.106 ug/L	90
56) Isopropylbenzene	10.15	105	21226	2.081 ug/L	99
58) 1,1,2,2-Tetrachloroethane	10.44	83	11212	2.702 ug/L	94
59) 1,2,3-Trichloropropane	10.48	75	7908	2.473 ug/L	99
61) Bromoform	9.94	173	4860	2.600 ug/L #	98
62) 1,3-Dichlorobenzene	11.40	146	12525	2.635 ug/L	94
63) 1,4-Dichlorobenzene	11.49	146	13426	2.719 ug/L	97
65) 1,2-Dichlorobenzene	11.86	146	12887	2.681 ug/L	91
66) 1,2-Dibromo-3-chloropropan	12.65	75	2121	2.389 ug/L	90
67) 1,3,5-Trichlorobenzene	12.88	180	9802	2.556 ug/L	94
68) 1,2,4-trichlorobenzene	13.50	180	6229	1.901 ug/L	98
69) Naphthalene	13.74	128	14408	1.533 ug/L	95
70) 1,2,3-Trichlorobenzene	13.98	180	7652	2.221 ug/L	94

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

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033502.D
Acq On : 30 Jul 2019 19:12
Operator : JC/SP
Sample : MDL02
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 31 08:26:05 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument :
MSVOA_U
ClientSampleId :
MDL02

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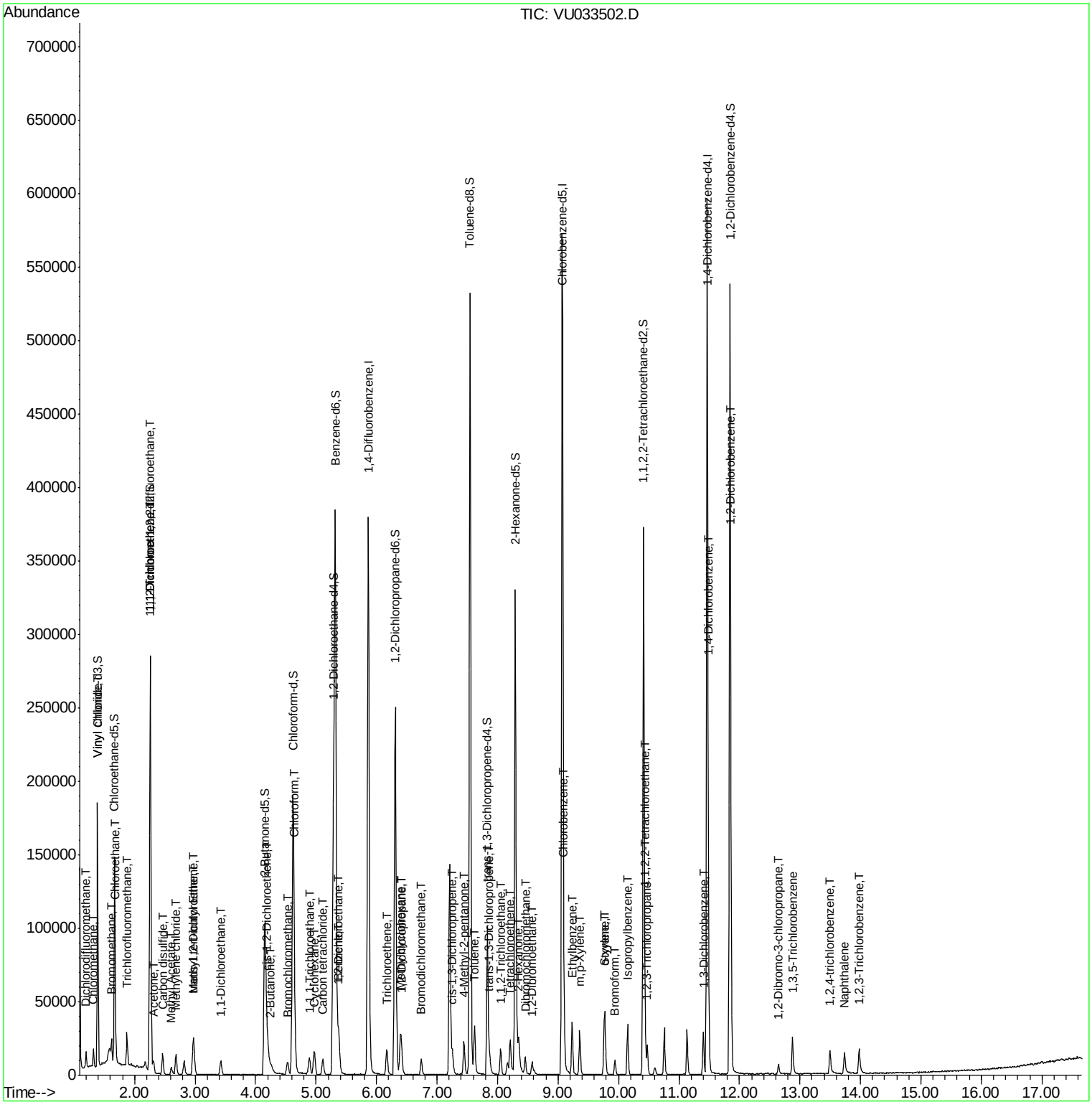
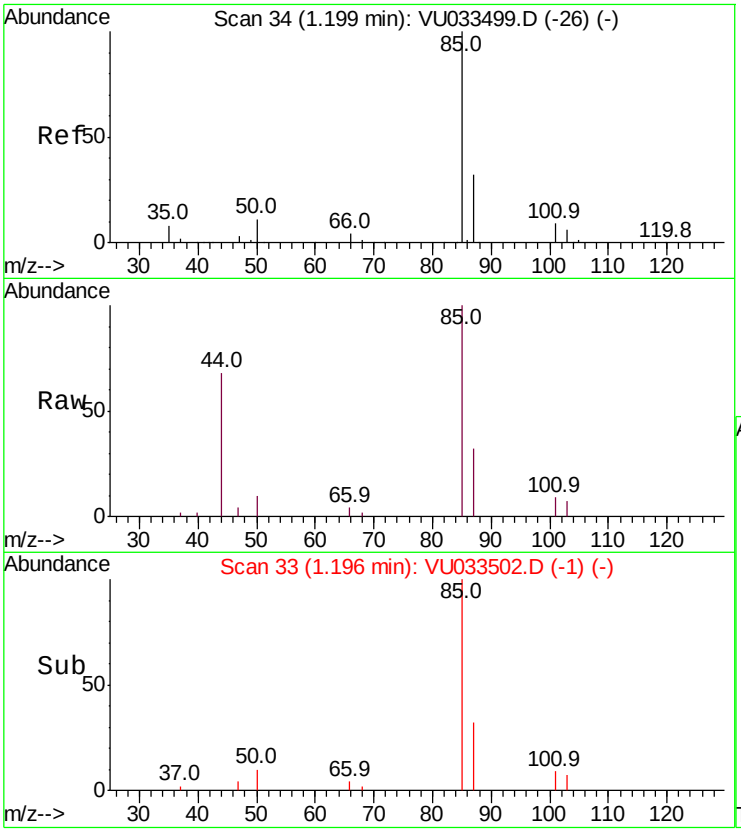
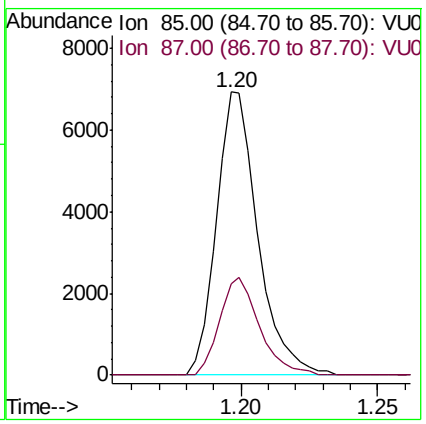




#2
Dichlorodifluoromethane
Concen: 2.418 ug/L
RT: 1.20 min Scan# 33
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 85 Resp: 7336

Ion	Ratio	Lower	Upper
85	100		
87	33.1	25.4	38.2



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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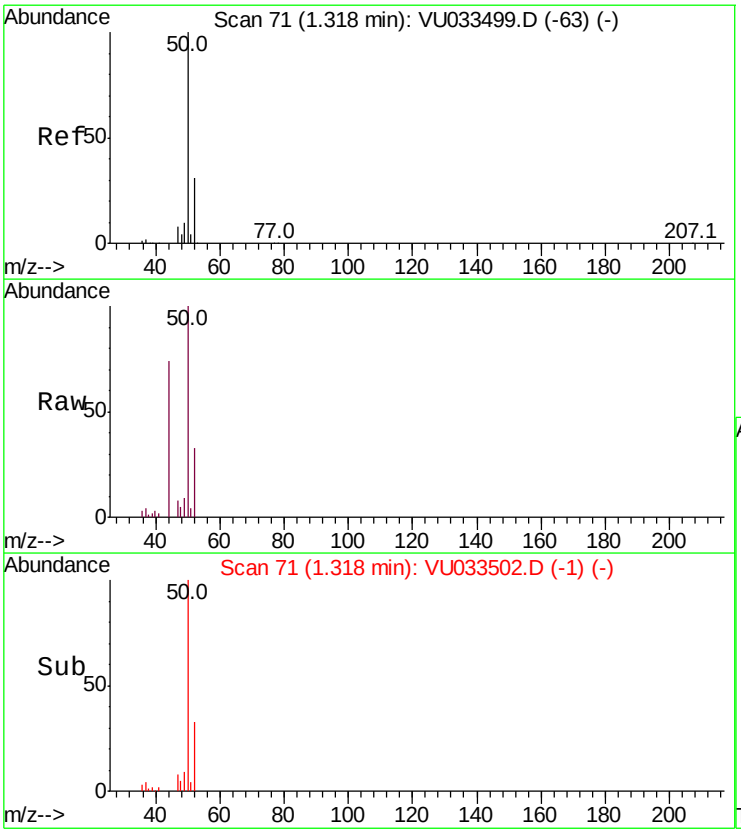
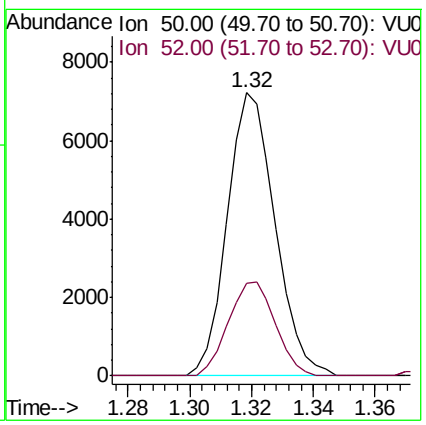
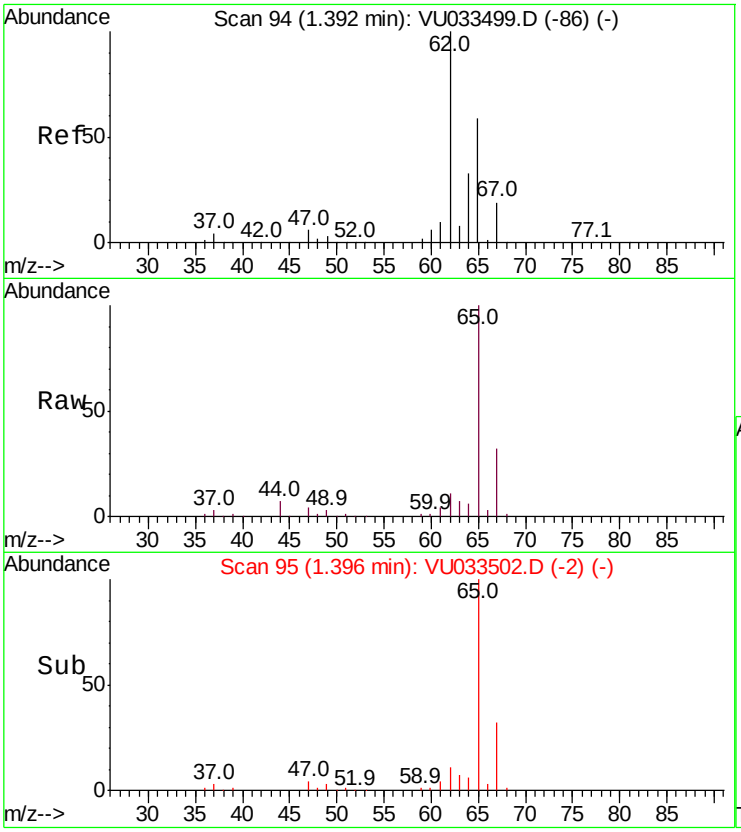


#3
Chloromethane
Concen: 2.539 ug/L
RT: 1.32 min Scan# 71
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 50 Resp: 7758

Ion	Ratio	Lower	Upper
50	100		
52	32.7	23.1	42.9

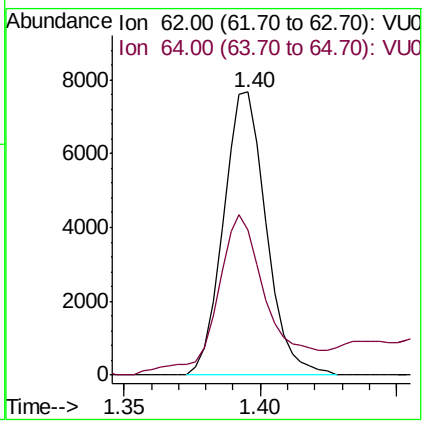




#5
Vinyl chloride
Concen: 2.562 ug/L
RT: 1.40 min Scan# 95
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 62 Resp: 8393

Ion	Ratio	Lower	Upper
62	100		
64	51.5	23.4	43.4#



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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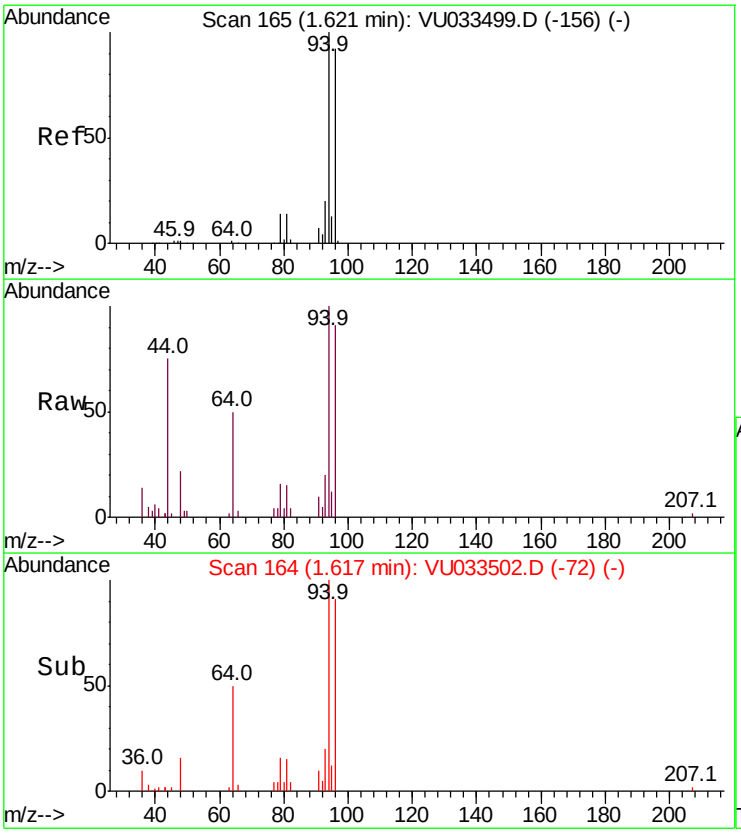
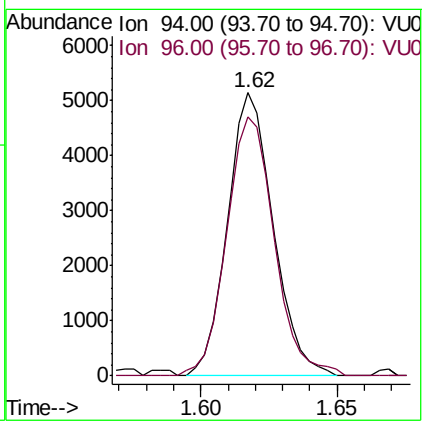
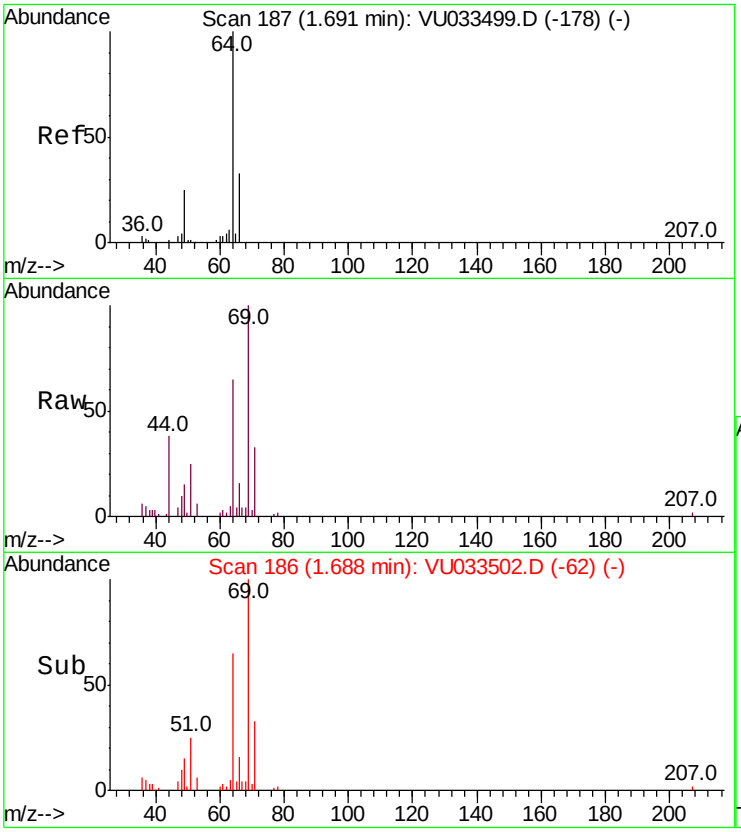


#6
Bromomethane
Concen: 2.076 ug/L
RT: 1.62 min Scan# 164
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 94 Resp: 6000

Ion	Ratio	Lower	Upper
94	100		
96	91.4	64.4	119.6

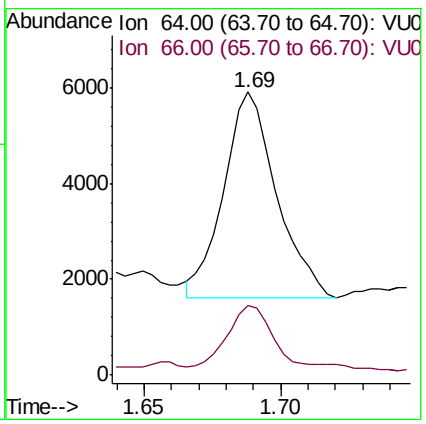




#8
Chloroethane
Concen: 2.889 ug/L
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 64 Resp: 5750

Ion	Ratio	Lower	Upper
64	100		
66	24.6	21.1	39.3



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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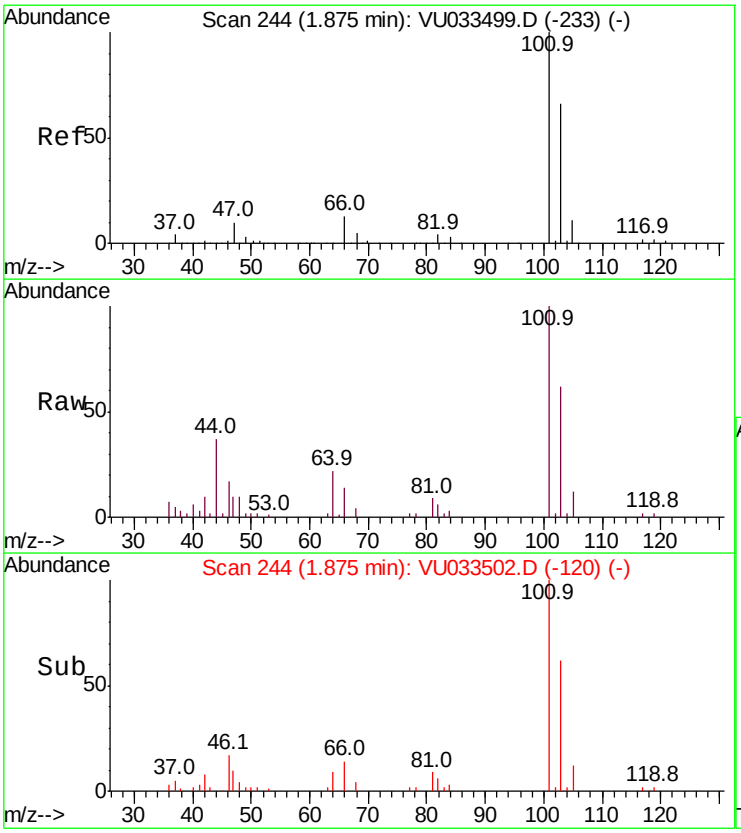
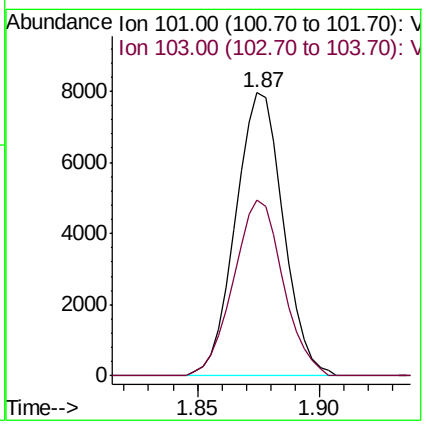
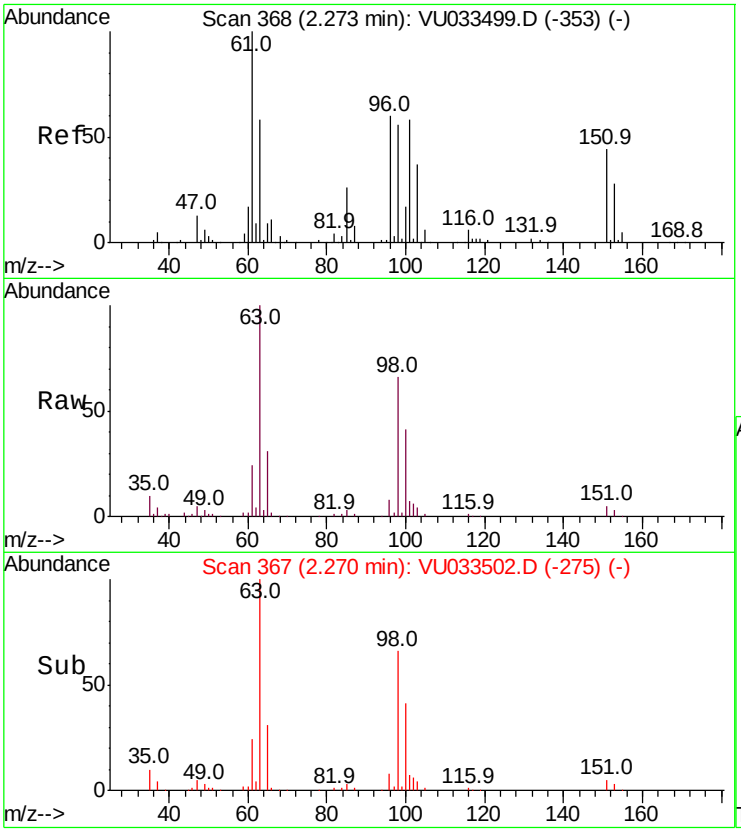


#9
Trichlorofluoromethane
Concen: 2.517 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:101 Resp: 10786

Ion	Ratio	Lower	Upper
101	100		
103	64.5	51.6	77.4





#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 3.045 ug/L
RT: 2.27 min Scan# 367
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Instrument :
MSVOA_U
ClientSampleId :
MDL02

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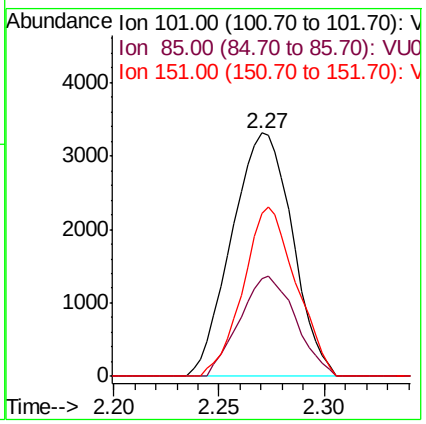
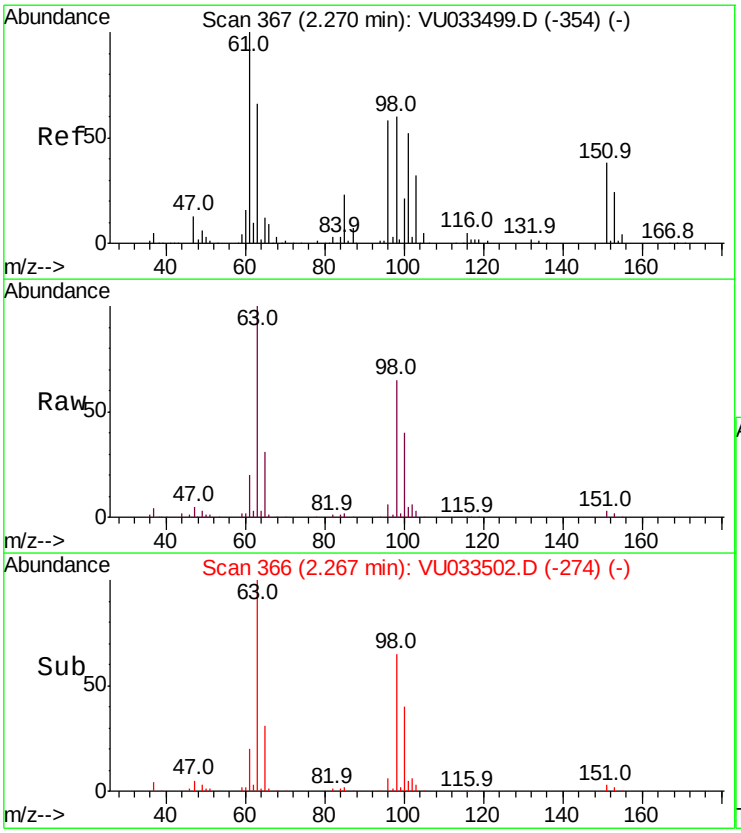
Tgt Ion:101 Resp: 6616

Ion	Ratio	Lower	Upper
101	100		
85	38.0	35.8	53.8
151	60.7	60.1	90.1

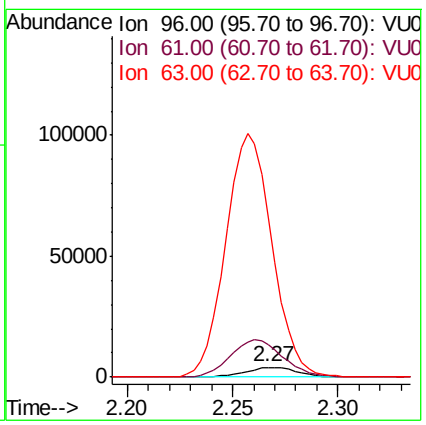


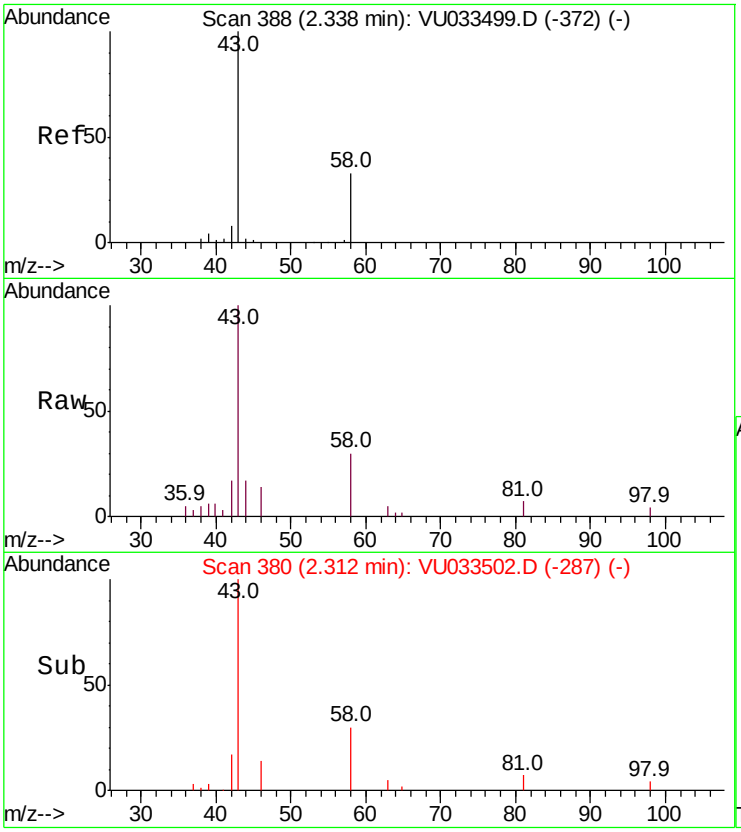


#12
1,1-Dichloroethene
Concen: 3.191 ug/L
RT: 2.27 min Scan# 366
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 96 Resp: 6648

Ion	Ratio	Lower	Upper
96	100		
61	342.4	119.3	221.5#
63	1700.3	86.6	160.8#

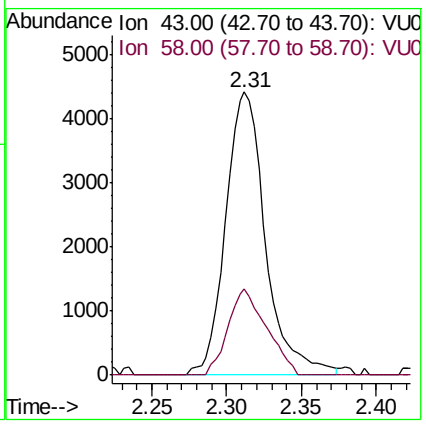




#13
Acetone
Concen: 5.163 ug/L
RT: 2.31 min Scan# 380
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 43 Resp: 8183

Ion	Ratio	Lower	Upper
43	100		
58	29.2	0.0	66.2



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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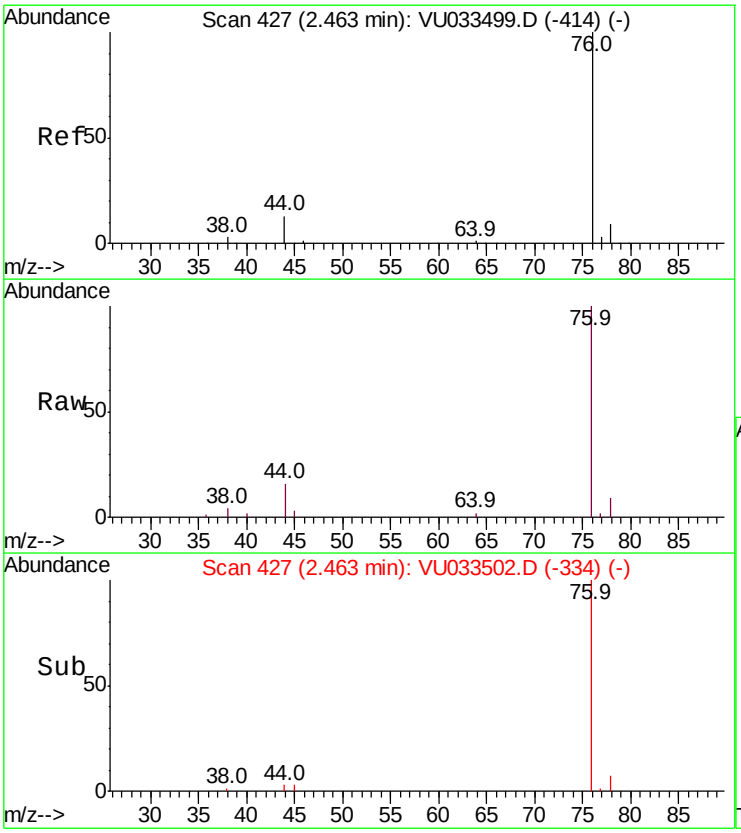
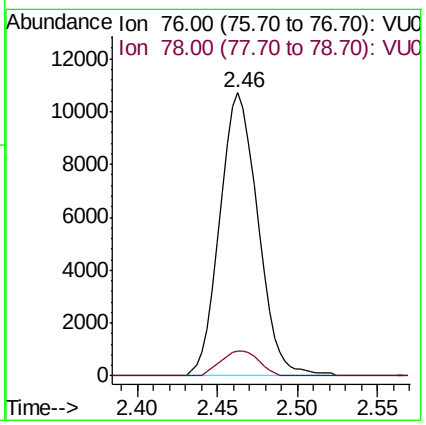
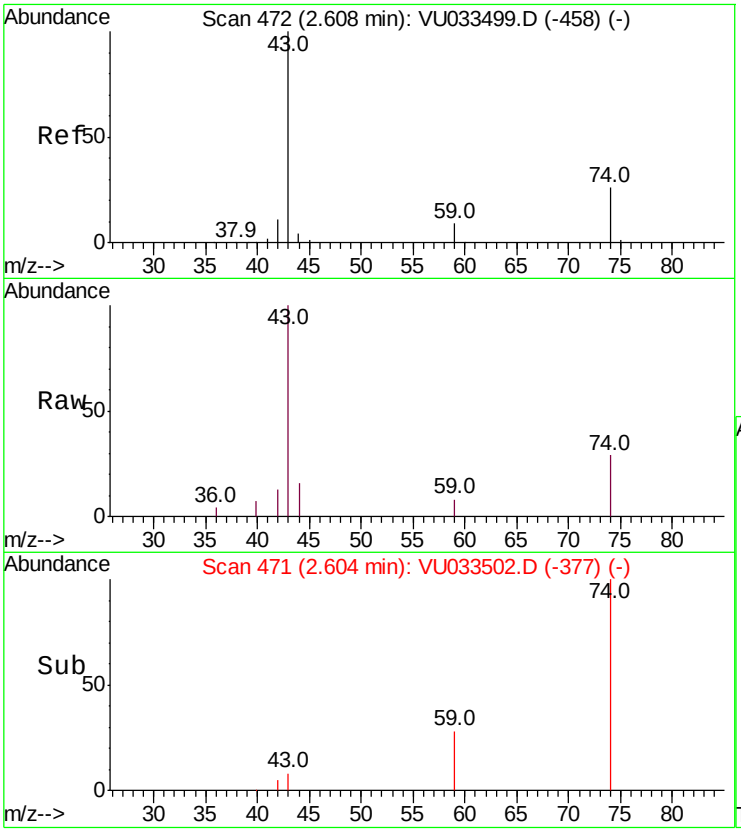


#14
Carbon disulfide
Concen: 2.683 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 76 Resp: 17534

Ion	Ratio	Lower	Upper
76	100		
78	9.0	7.4	11.0





#15
Methyl Acetate
Concen: 2.428 ug/L
RT: 2.60 min Scan# 471
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 43 Resp: 6126

Ion	Ratio	Lower	Upper
43	100		
74	28.9	20.1	30.1

Instrument :
MSVOA_U
ClientSampleId :
MDL02

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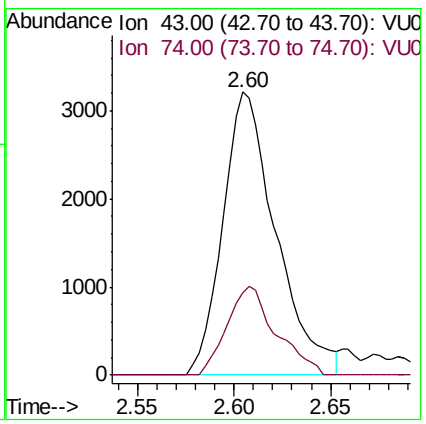
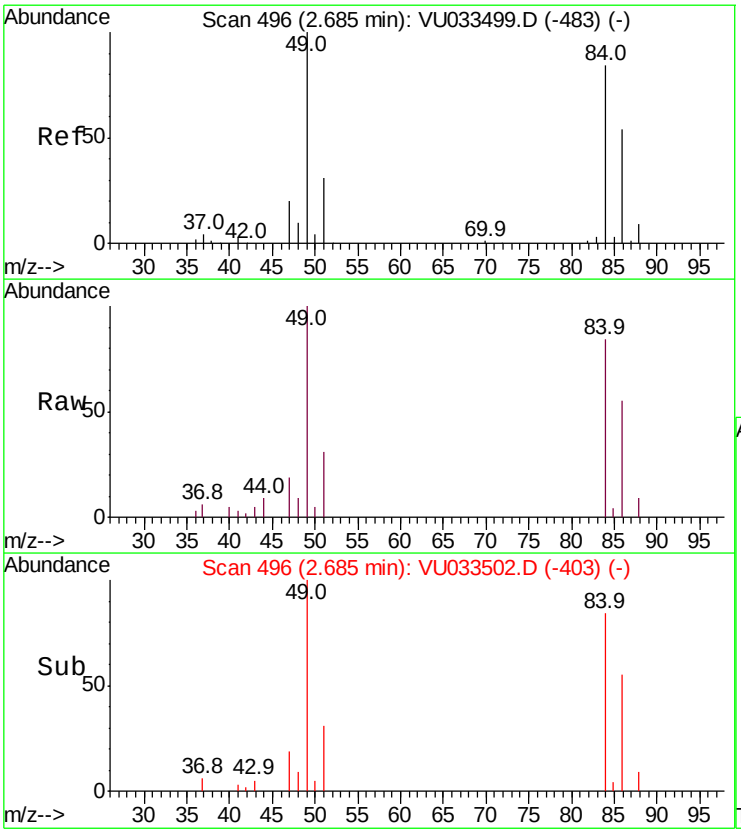
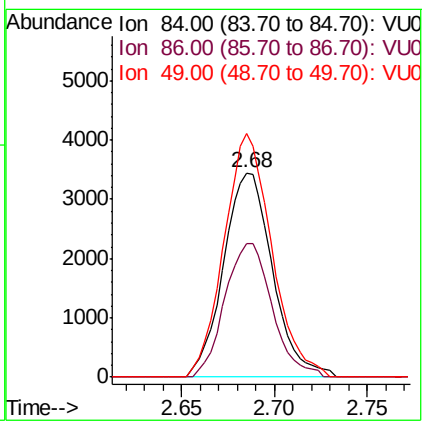


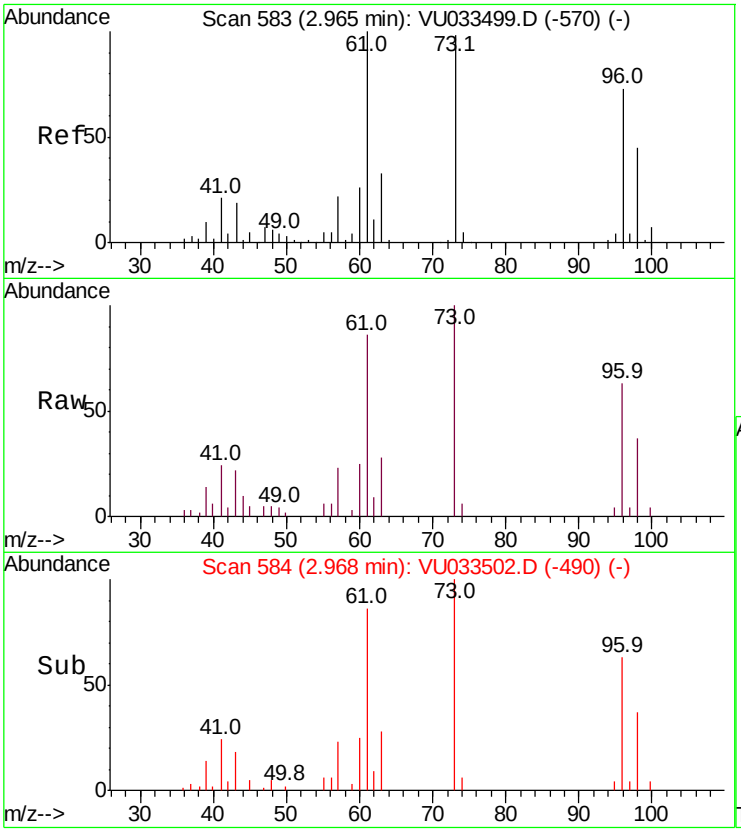


#16
Methylene chloride
Concen: 2.666 ug/L
RT: 2.68 min Scan# 496
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 84 Resp: 6343

Ion	Ratio	Lower	Upper
84	100		
86	65.4	45.7	84.9
49	119.4	85.0	158.0

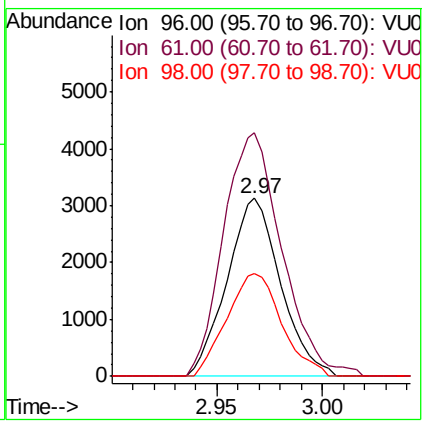




#17
trans-1,2-Dichloroethene
Concen: 2.524 ug/L
RT: 2.97 min Scan# 584
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 96 Resp: 5508

Ion	Ratio	Lower	Upper
96	100		
61	136.7	98.3	182.5
98	58.0	44.3	82.3



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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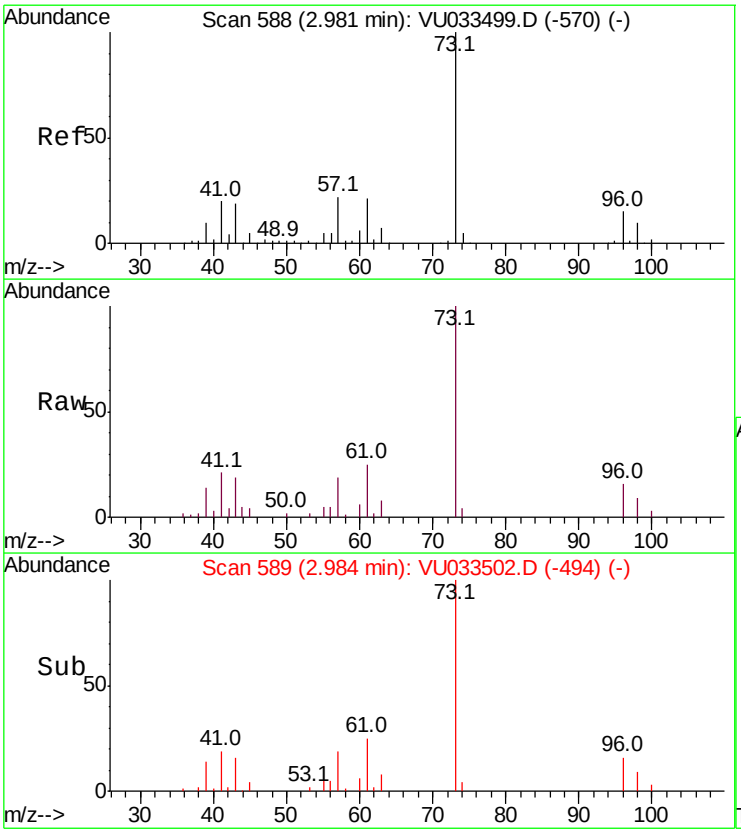
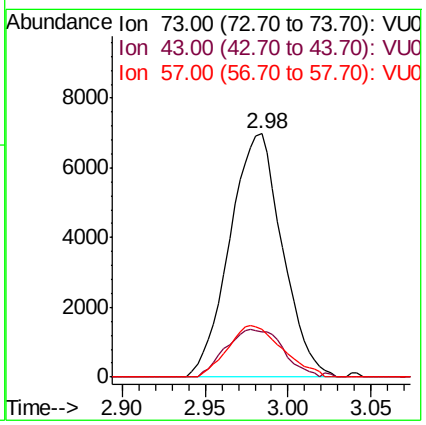
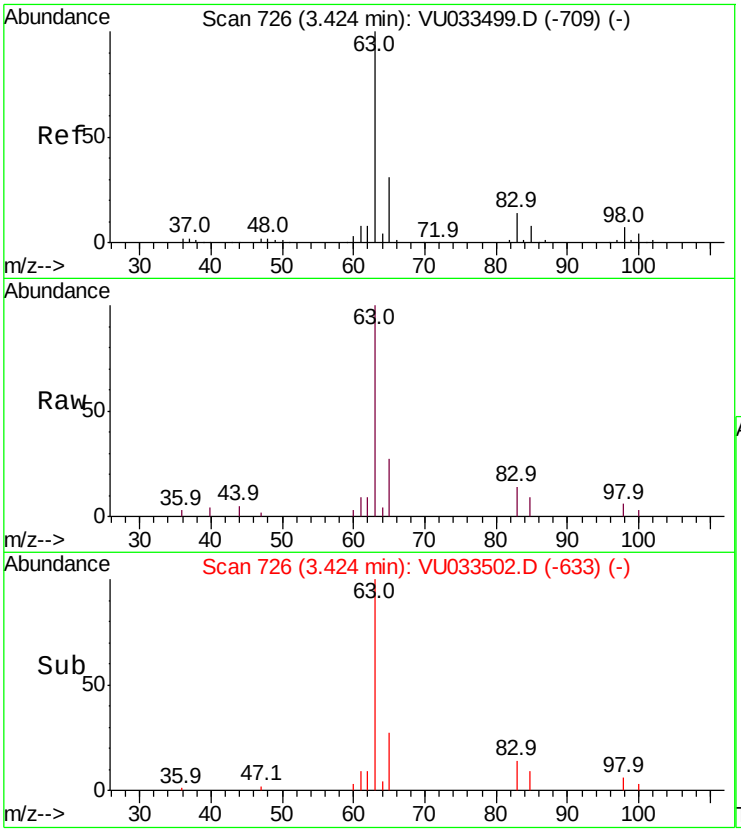


#18
Methyl tert-butyl Ether
Concen: 2.313 ug/L
RT: 2.98 min Scan# 589
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 73 Resp: 15394

Ion	Ratio	Lower	Upper
73	100		
43	21.4	15.4	23.2
57	21.9	17.4	26.2

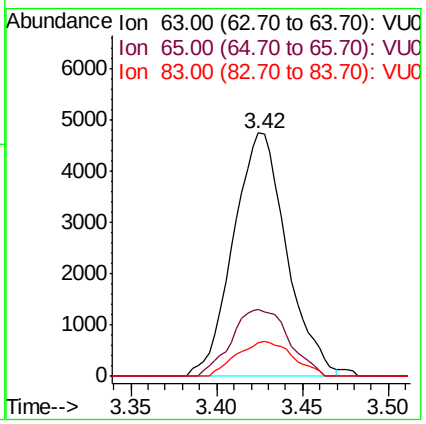




#19
1,1-Dichloroethane
Concen: 2.503 ug/L
RT: 3.42 min Scan# 726
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 63 Resp: 10256

Ion	Ratio	Lower	Upper
63	100		
65	27.5	22.0	40.8
83	14.0	9.5	17.7



Instrument :
MSVOA_U
ClientSampleId :
MDL02

Manual Integrations APPROVED
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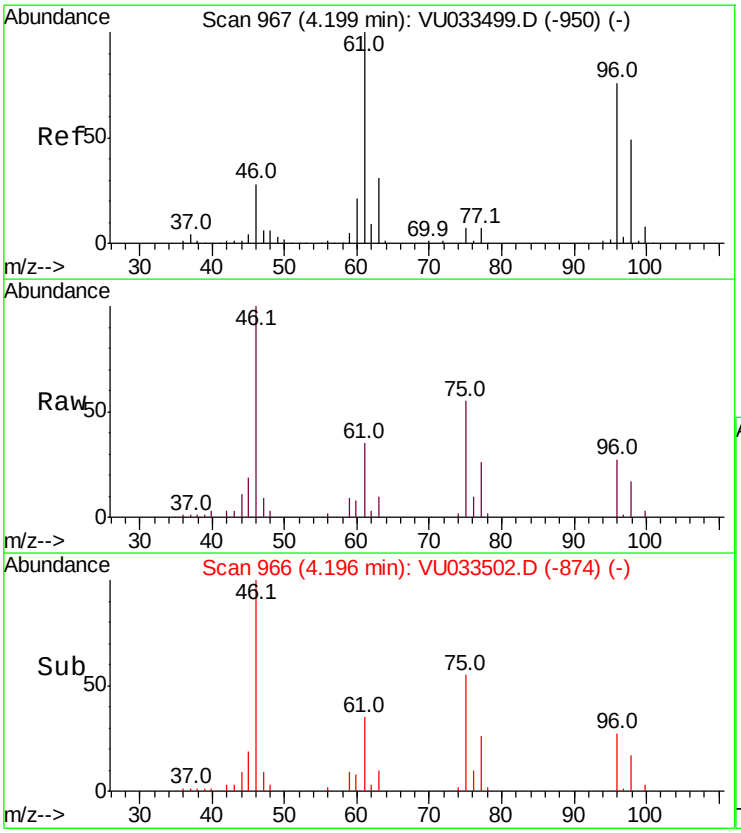
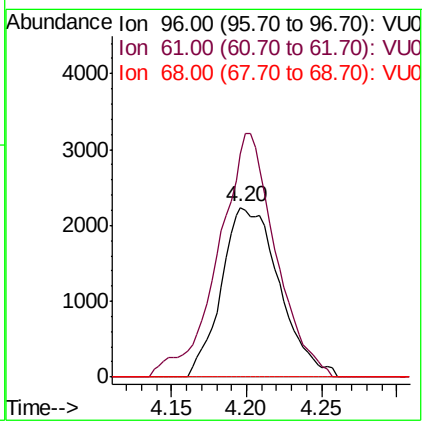
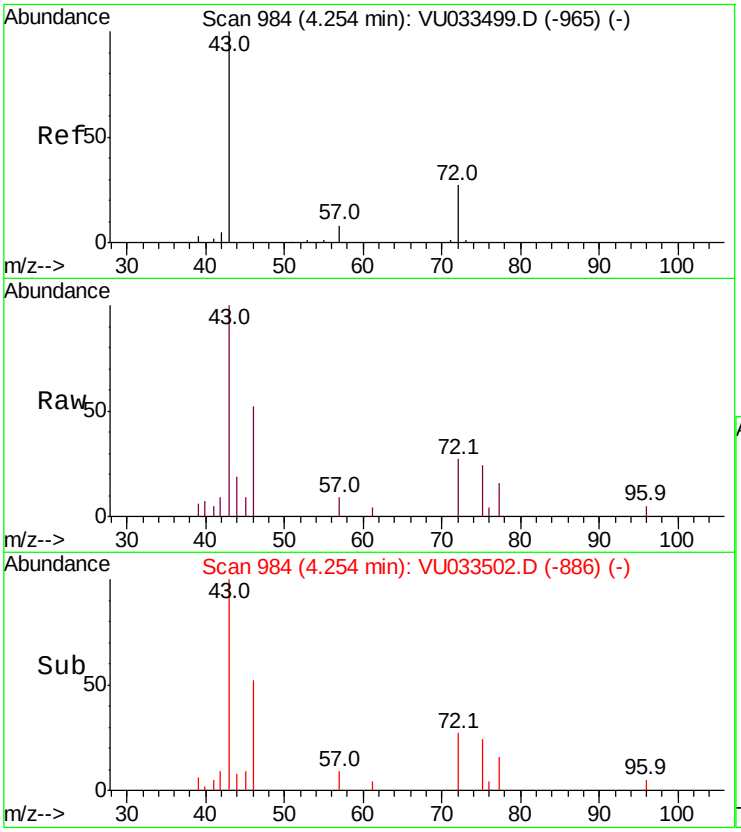


#20
cis-1,2-Dichloroethene
Concen: 2.445 ug/L m
RT: 4.20 min Scan# 966
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 96 Resp: 5989

Ion	Ratio	Lower	Upper
96	100		
61	132.1	91.3	169.6
68	0.0	0.0	0.0





#22
2-Butanone
Concen: 4.655 ug/L m
RT: 4.25 min Scan# 984
Delta R.T. 0.02 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 43 Resp: 8809

Ion	Ratio	Lower	Upper
43	100		
72	11.3	14.2	42.6#

Instrument :
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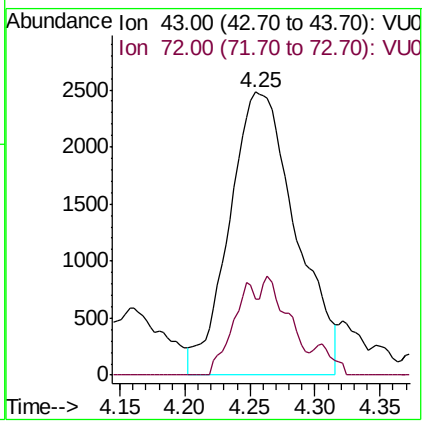
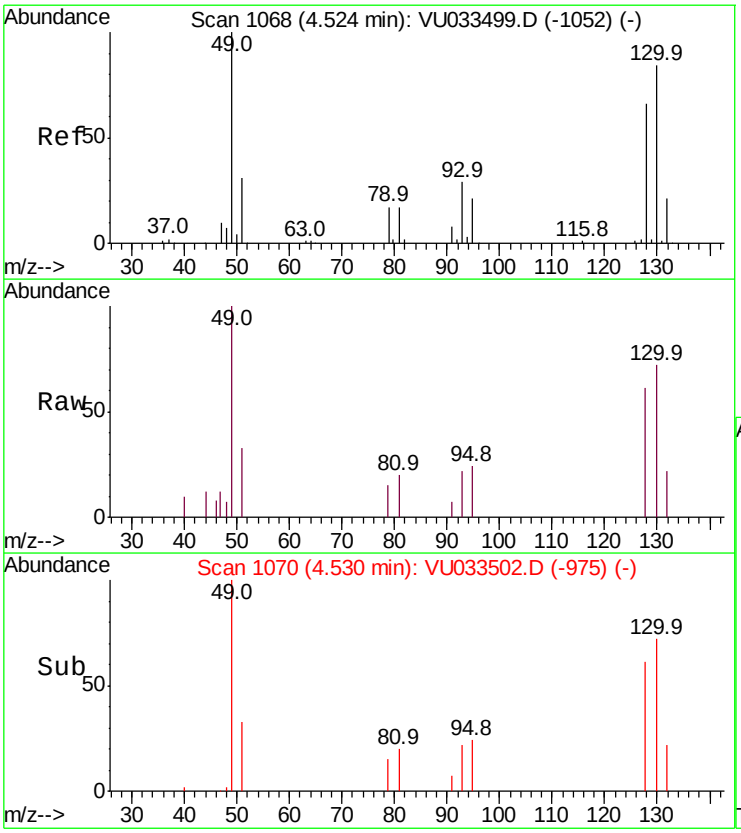
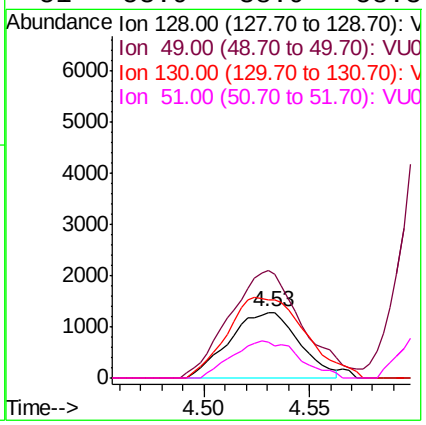


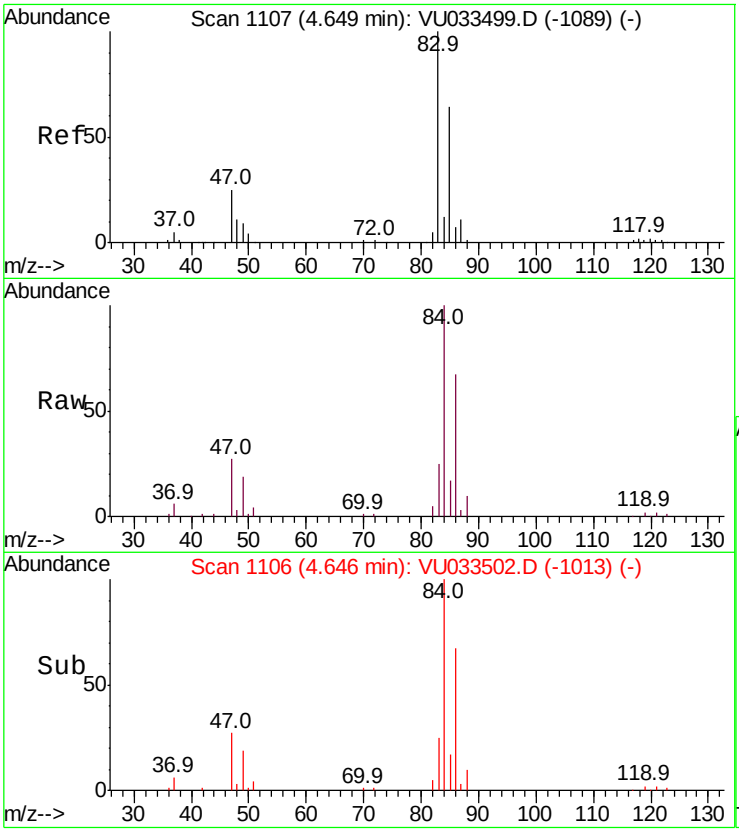


#23
Bromochloromethane
Concen: 2.314 ug/L
RT: 4.53 min Scan# 1070
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:128 Resp: 2958

Ion	Ratio	Lower	Upper
128	100		
49	164.3	108.4	201.2
130	118.8	89.7	166.5
51	53.9	38.9	58.3

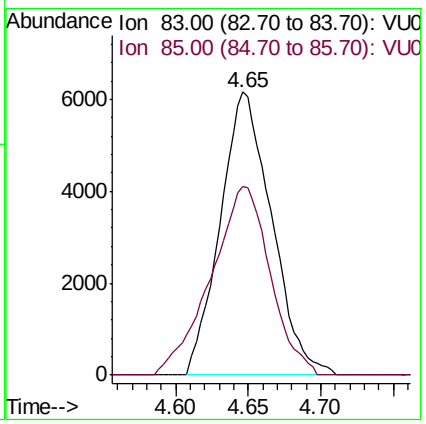




#25
Chloroform
Concen: 3.525 ug/L
RT: 4.65 min Scan# 1106
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 83 Resp: 15196

Ion	Ratio	Lower	Upper
83	100		
85	66.7	45.6	84.8



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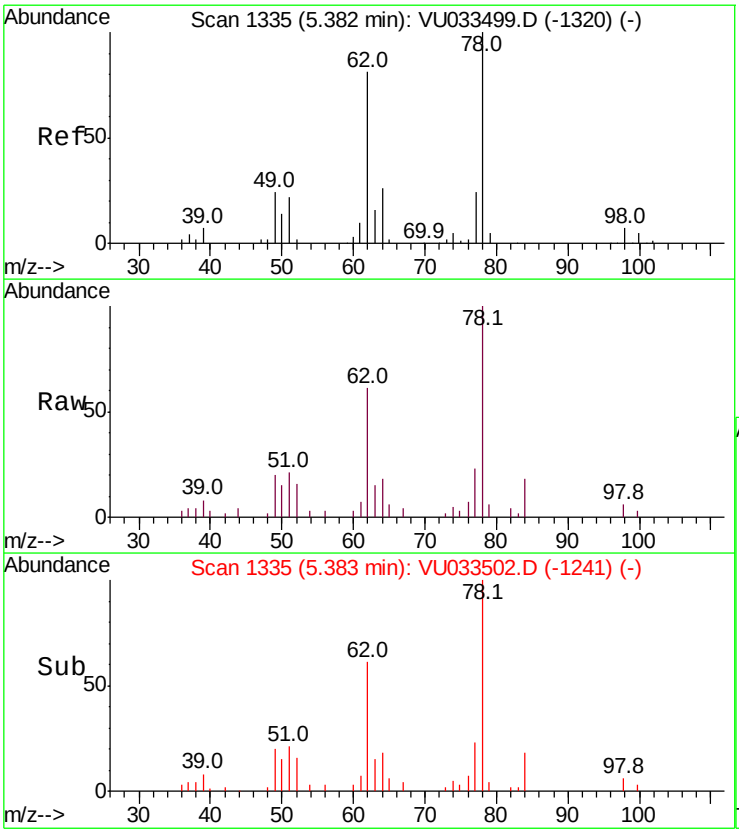
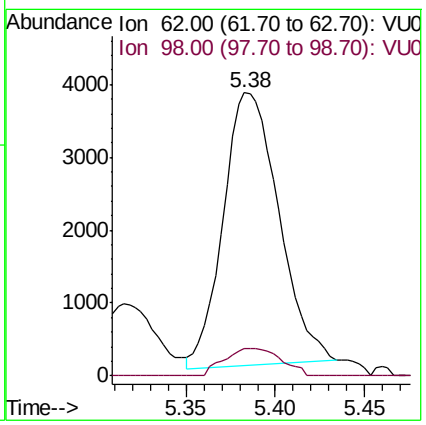
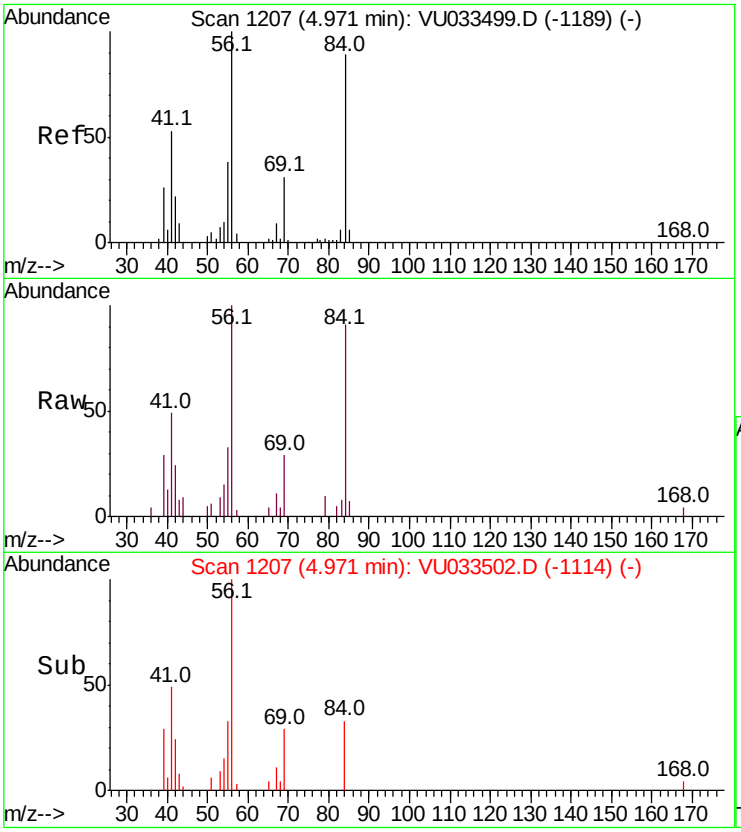


#27
1,2-Dichloroethane
Concen: 2.440 ug/L
RT: 5.38 min Scan# 1335
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 62 Resp: 8101

Ion	Ratio	Lower	Upper
62	100		
98	9.5	7.2	10.8

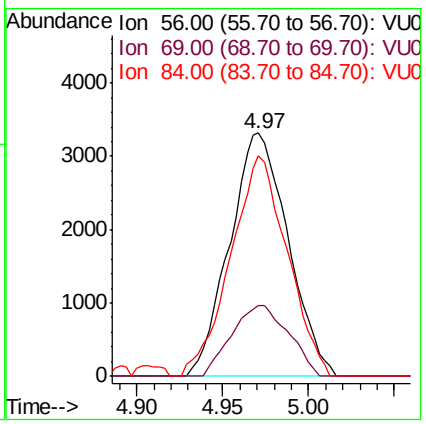




#29
Cyclohexane
Concen: 2.288 ug/L
RT: 4.97 min Scan# 1207
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 56 Resp: 7830

Ion	Ratio	Lower	Upper
56	100		
69	28.3	25.0	37.6
84	87.7	71.6	107.4



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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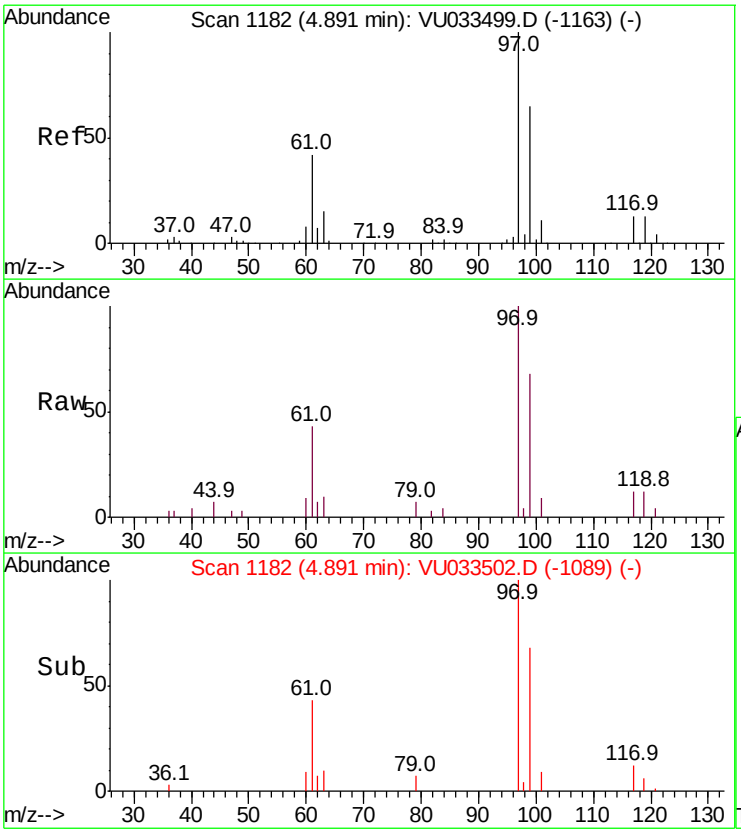
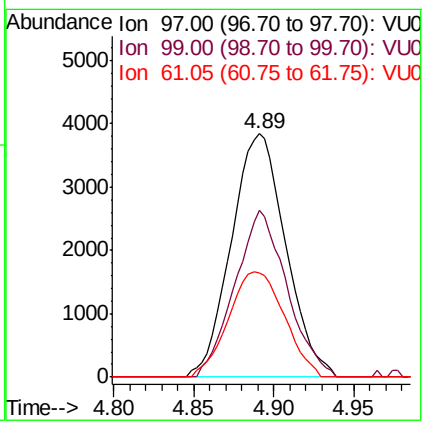
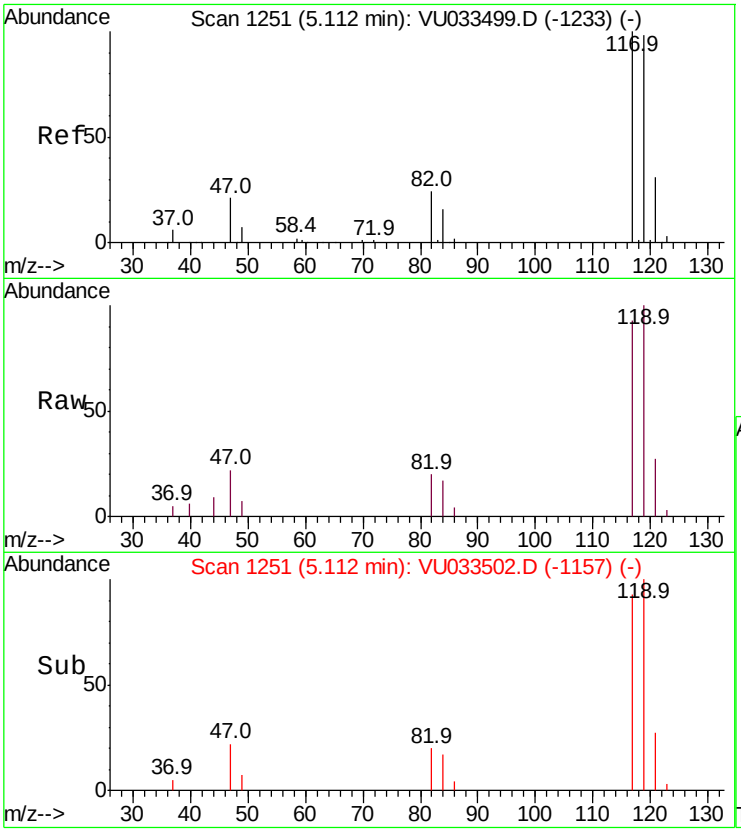


#30
1,1,1-Trichloroethane
Concen: 2.481 ug/L
RT: 4.89 min Scan# 1182
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 97 Resp: 8958

Ion	Ratio	Lower	Upper
97	100		
99	65.4	51.1	76.7
61	44.4	35.5	53.3

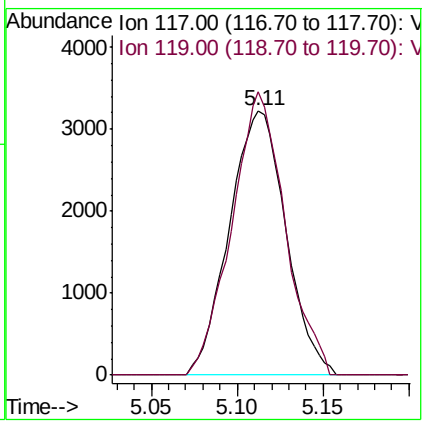




#31
Carbon tetrachloride
Concen: 2.348 ug/L
RT: 5.11 min Scan# 1251
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:117 Resp: 7384

Ion	Ratio	Lower	Upper
117	100		
119	100.7	77.0	115.4



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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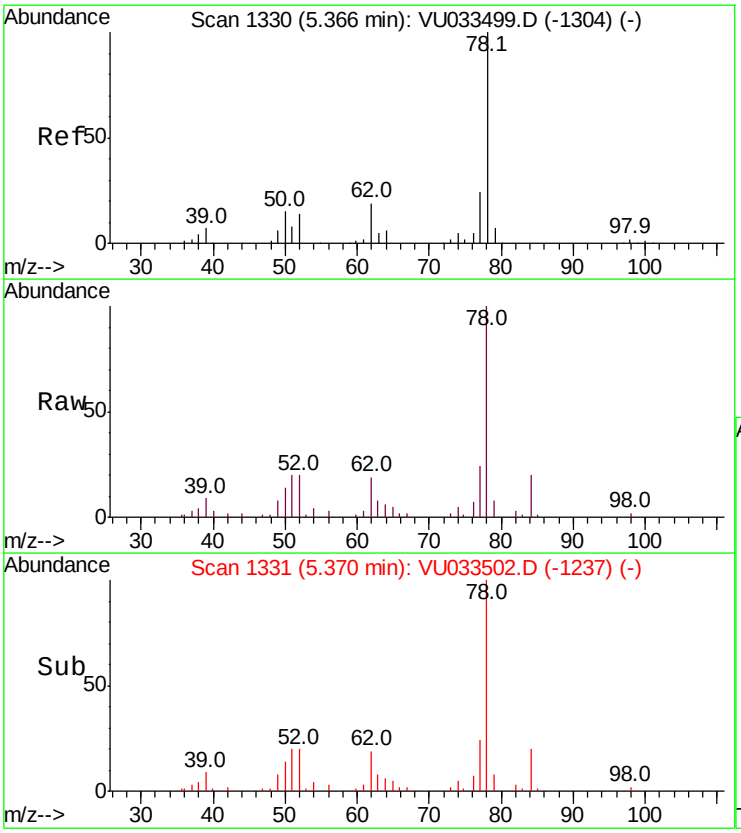
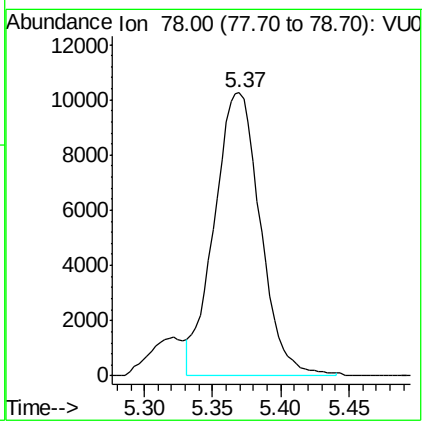
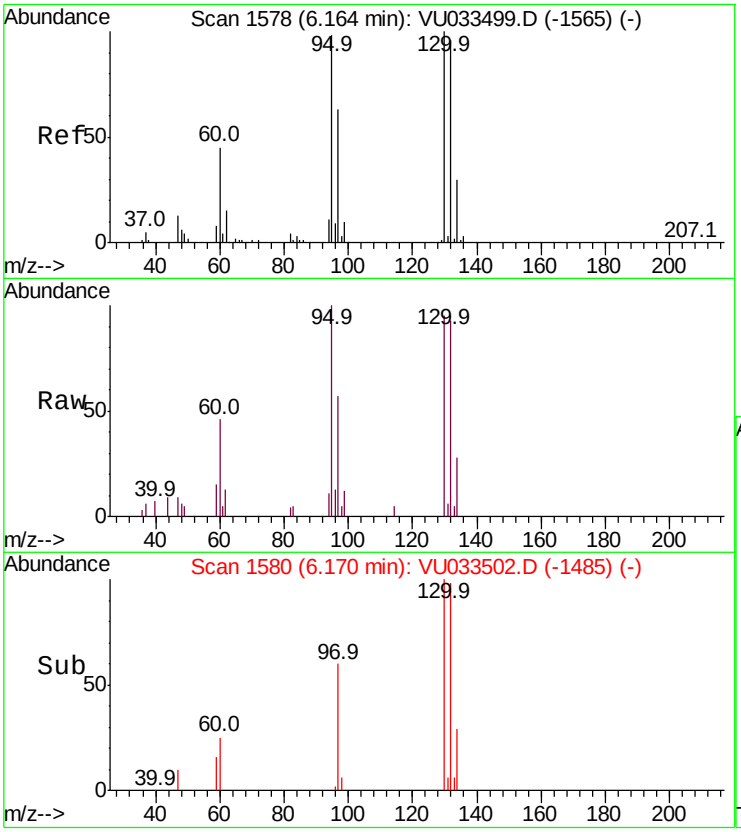


#33
Benzene
Concen: 2.666 ug/L
RT: 5.37 min Scan# 1331
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 78 Resp: 24132

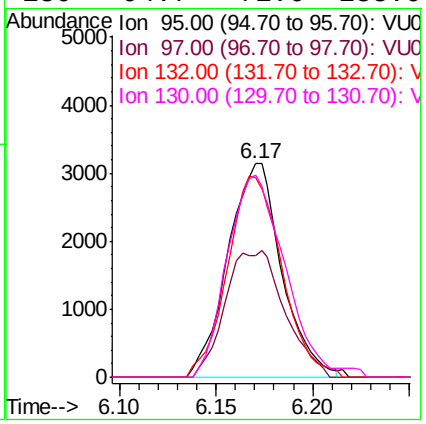




#34
Trichloroethene
Concen: 2.555 ug/L
RT: 6.17 min Scan# 1580
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 95 Resp: 6101

Ion	Ratio	Lower	Upper
95	100		
97	57.0	44.7	83.1
132	93.3	66.8	124.0
130	94.7	71.6	133.0



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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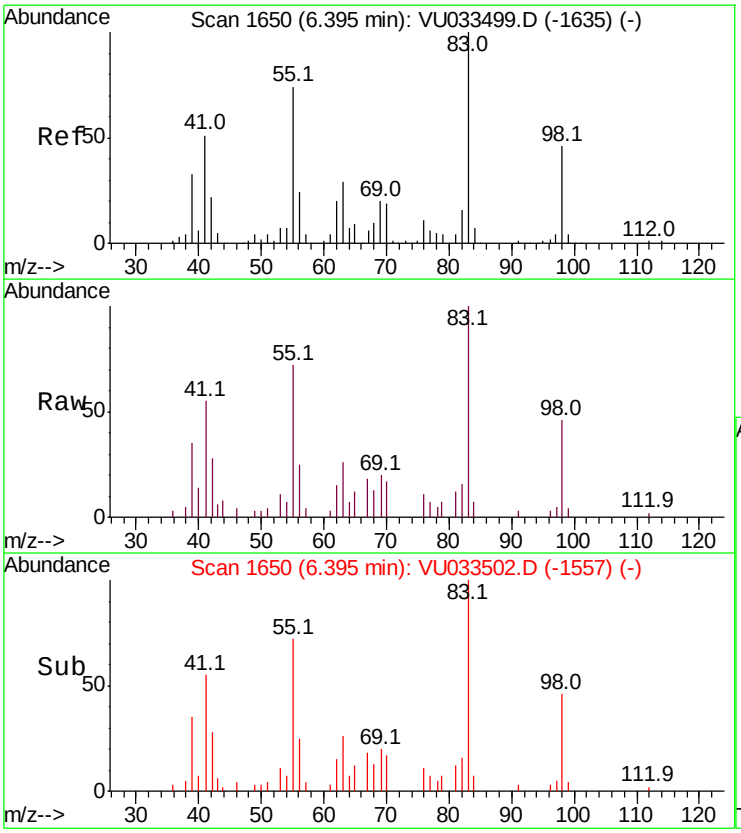
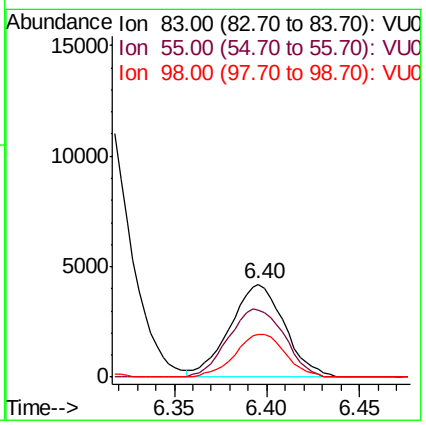
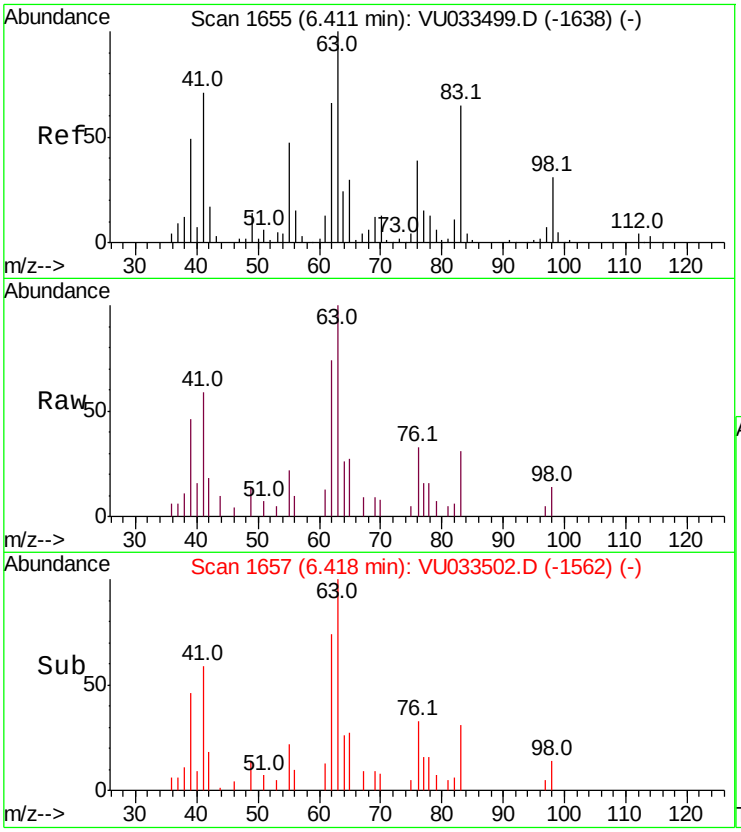


#35
Methylcyclohexane
Concen: 2.312 ug/L
RT: 6.40 min Scan# 1650
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 83 Resp: 8615

Ion	Ratio	Lower	Upper
83	100		
55	74.9	60.2	90.4
98	42.5	36.5	54.7





#37
1,2-Dichloropropane
Concen: 2.469 ug/L
RT: 6.42 min Scan# 1657
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 63 Resp: 5983

Ion	Ratio	Lower	Upper
63	100		
112	0.7	3.0	4.6#

Instrument :
MSVOA_U
ClientSampleId :
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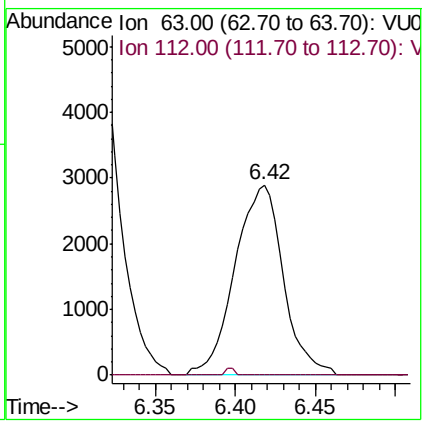
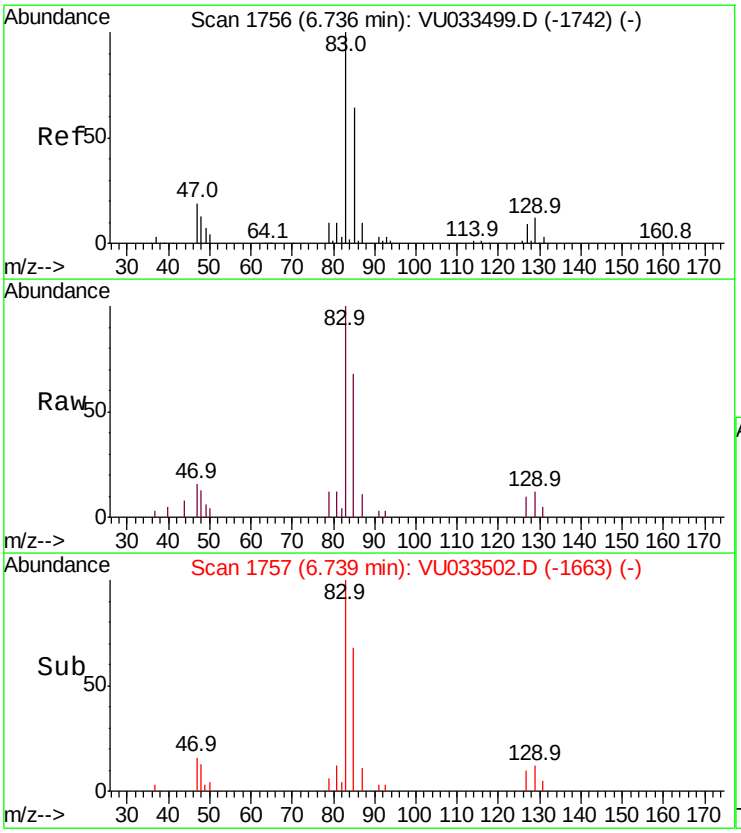
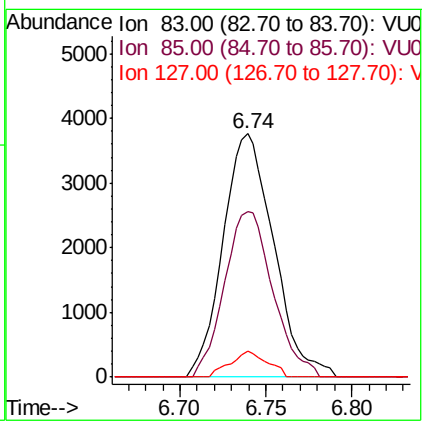


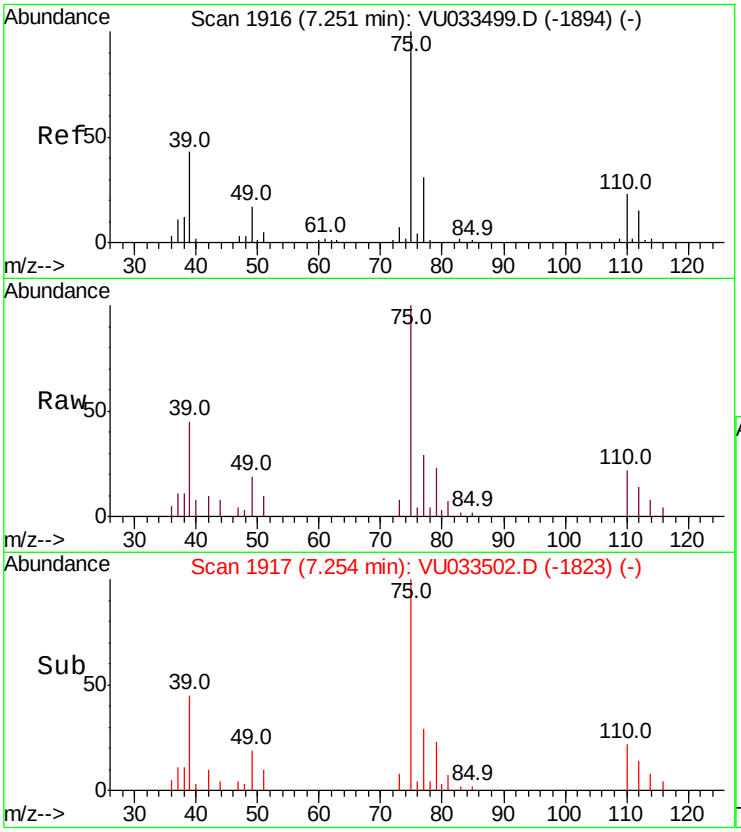


#38
Bromodichloromethane
Concen: 2.460 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 83 Resp: 7706

Ion	Ratio	Lower	Upper
83	100		
85	68.1	45.1	83.9
127	10.4	7.2	10.8

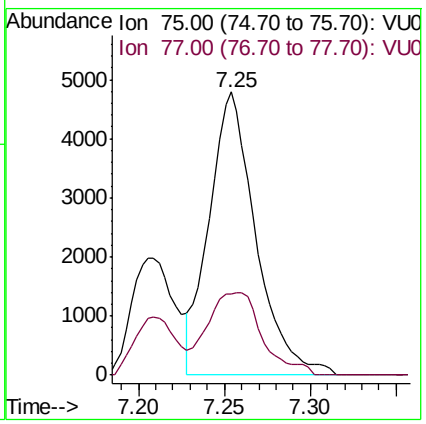




#39
cis-1,3-Dichloropropene
Concen: 2.400 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 75 Resp: 9077

Ion	Ratio	Lower	Upper
75	100		
77	28.7	22.3	41.5



Instrument :
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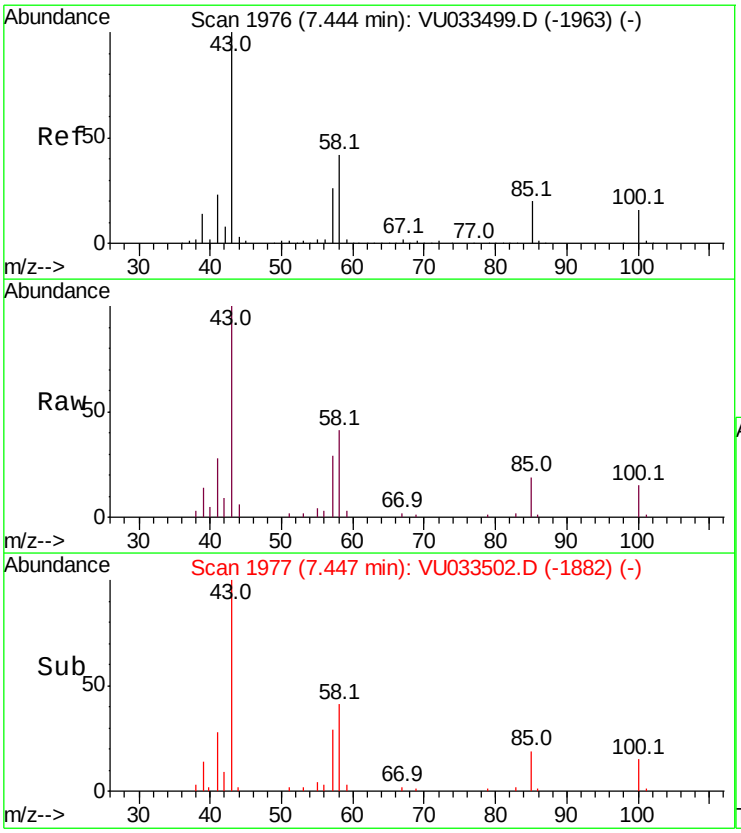
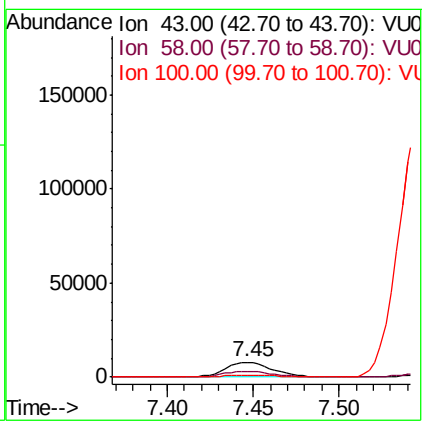
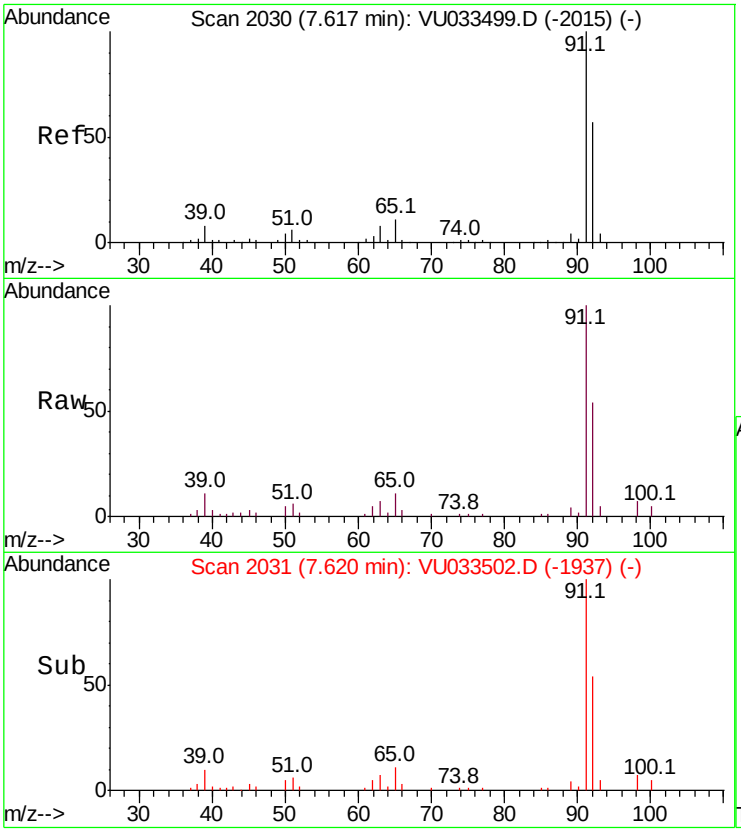


#40
4-Methyl-2-pentanone
Concen: 4.552 ug/L
RT: 7.45 min Scan# 1977
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 43 Resp: 15229

Ion	Ratio	Lower	Upper
43	100		
58	40.7	32.8	49.2
100	15.4	12.9	19.3

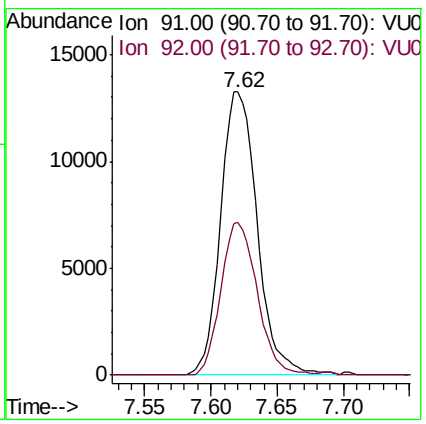




#42
Toluene
Concen: 2.624 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 91 Resp: 25537

Ion	Ratio	Lower	Upper
91	100		
92	54.0	40.2	74.6



Instrument :
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ClientSampleId :
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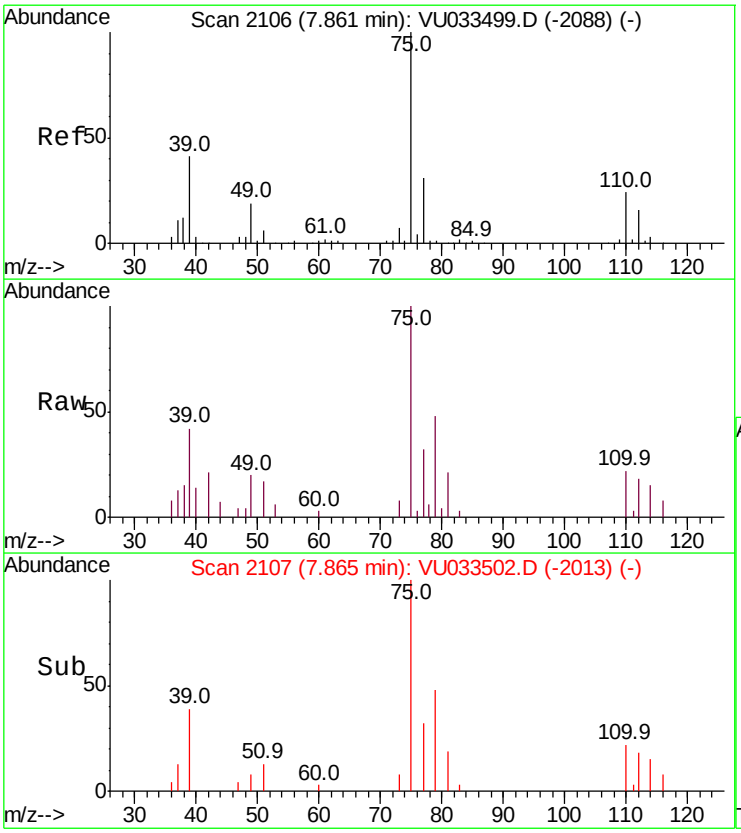
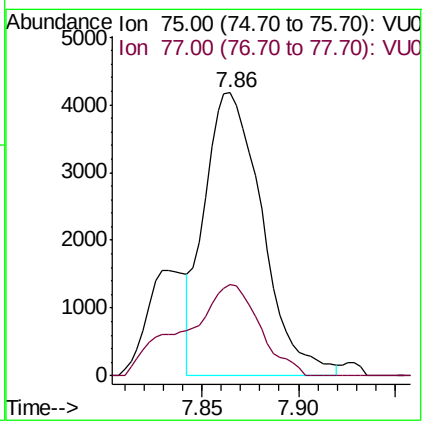
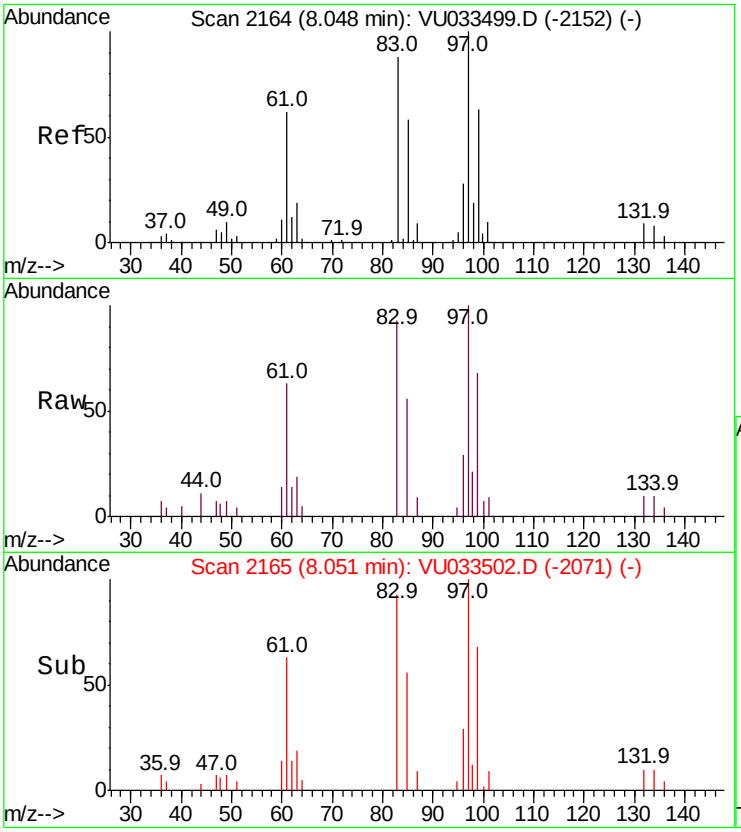


#44
trans-1,3-Dichloropropene
Concen: 2.543 ug/L
RT: 7.86 min Scan# 2107
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 75 Resp: 8691

Ion	Ratio	Lower	Upper
75	100		
77	32.1	22.7	42.1

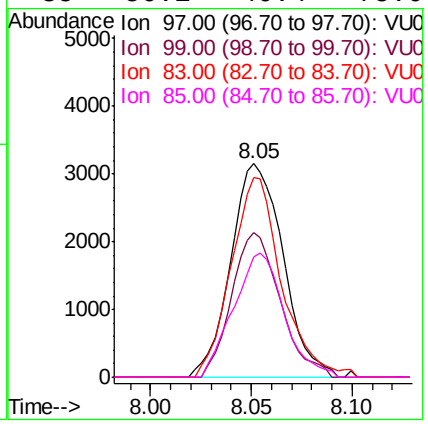




#45
1,1,2-Trichloroethane
Concen: 2.492 ug/L
RT: 8.05 min Scan# 2165
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 97 Resp: 5732

Ion	Ratio	Lower	Upper
97	100		
99	67.6	44.4	82.4
83	93.5	61.5	114.1
85	56.1	40.4	75.0



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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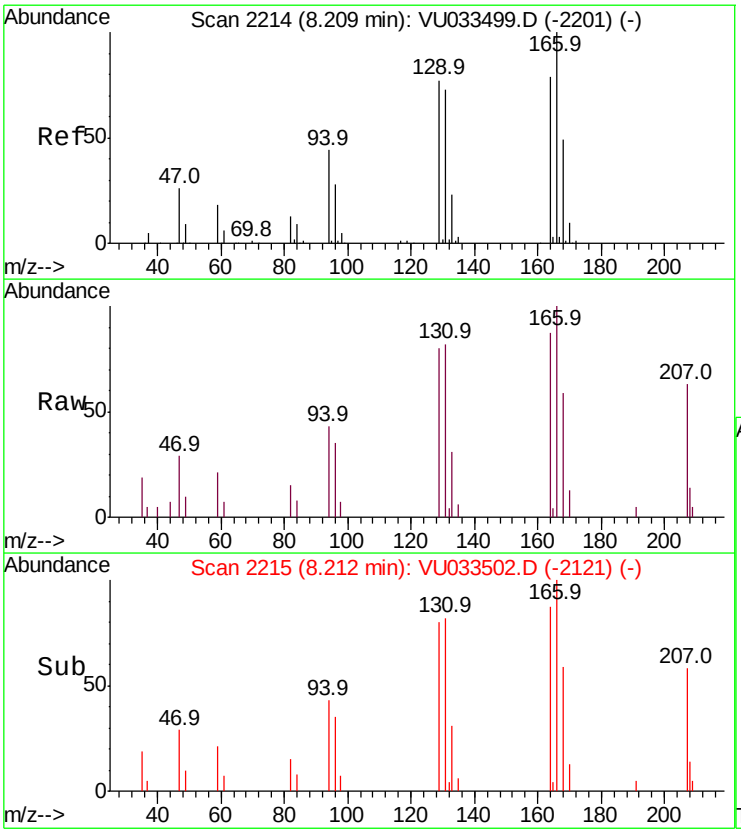
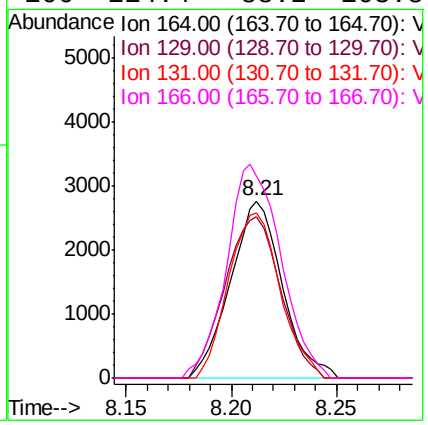
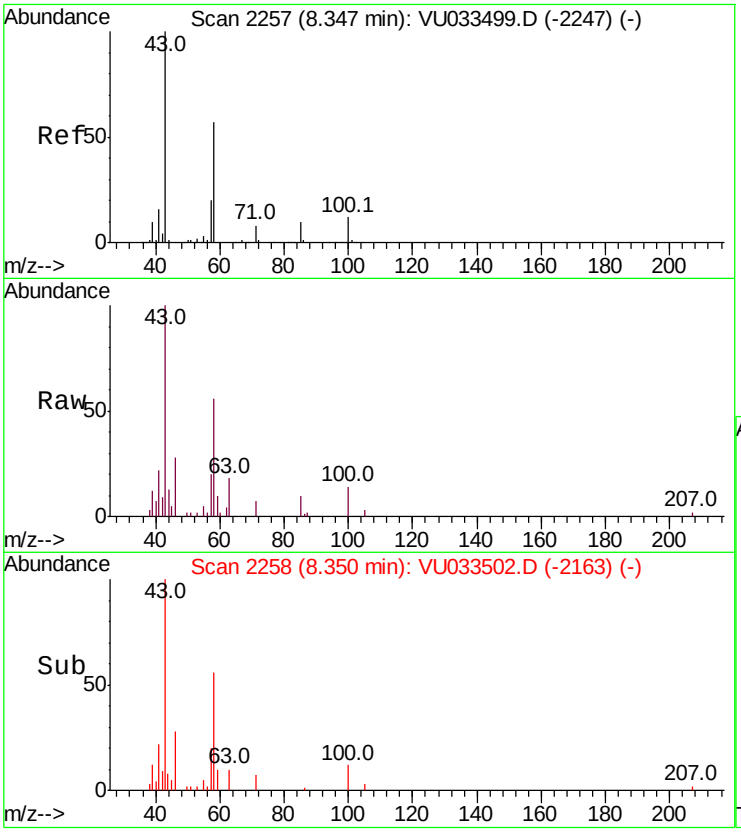


#46
Tetrachloroethene
Concen: 2.424 ug/L
RT: 8.21 min Scan# 2215
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:164 Resp: 4725

Ion	Ratio	Lower	Upper
164	100		
129	91.3	65.5	121.7
131	93.3	63.3	117.7
166	114.4	88.2	163.8

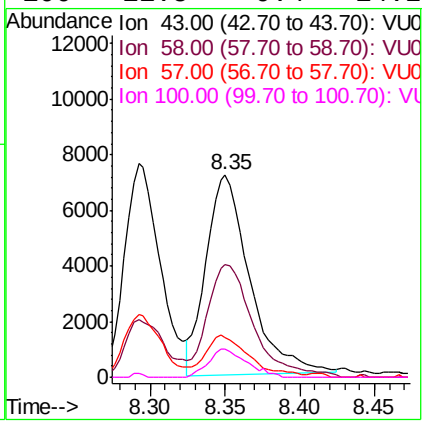




#48
2-Hexanone
Concen: 5.383 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 43 Resp: 14558

Ion	Ratio	Lower	Upper
43	100		
58	59.7	45.8	68.6
57	18.5	15.8	23.6
100	11.5	9.4	14.2



Instrument :
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ClientSampleId :
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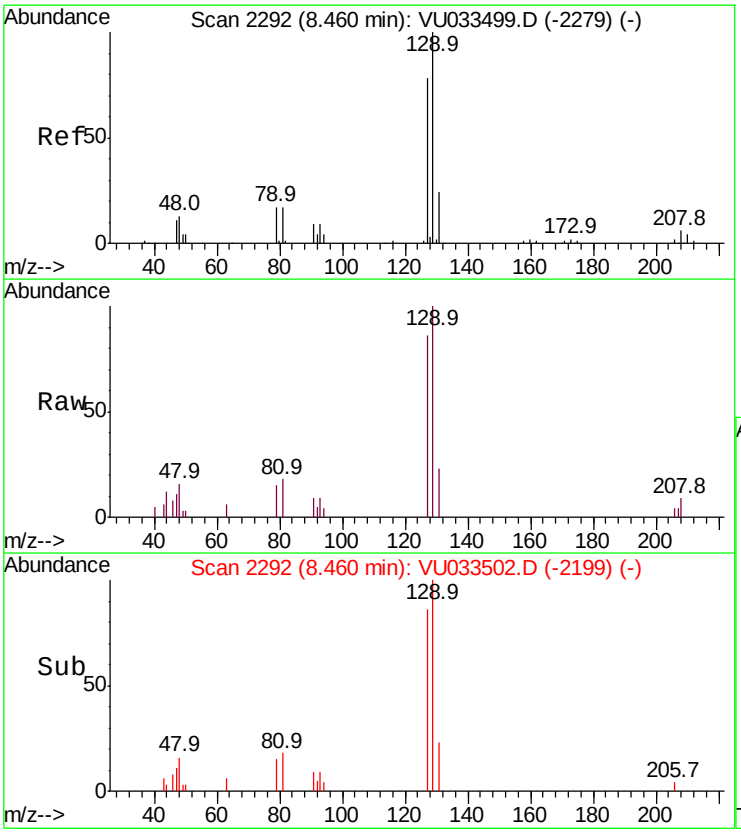
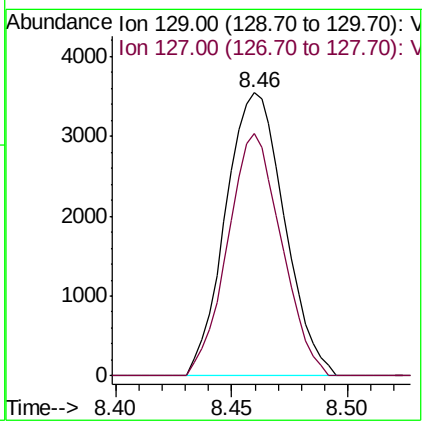
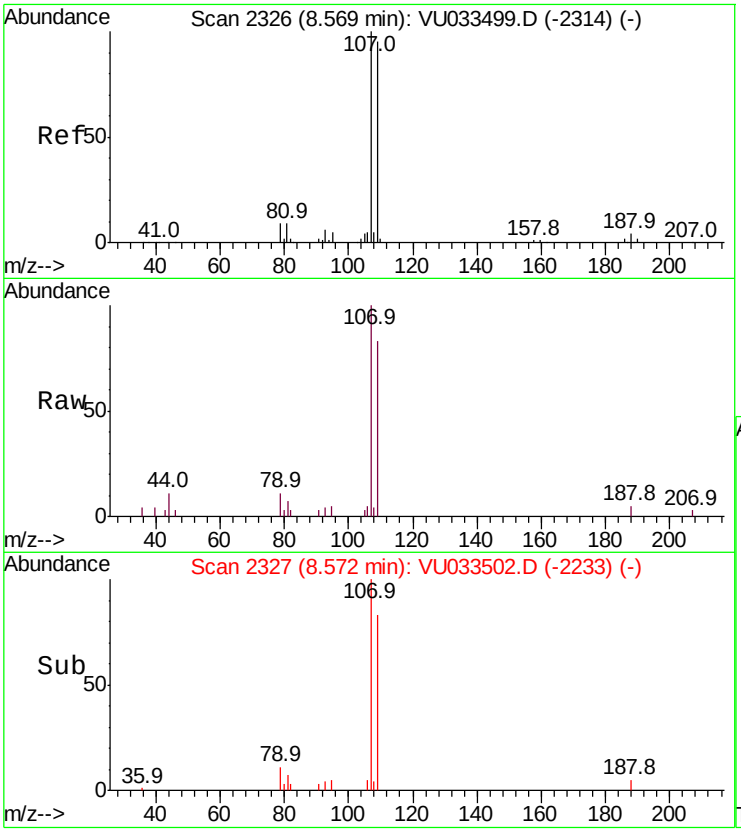


#49
Dibromochloromethane
Concen: 2.388 ug/L
RT: 8.46 min Scan# 2292
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:129 Resp: 6250

Ion	Ratio	Lower	Upper
129	100		
127	85.8	53.8	99.8

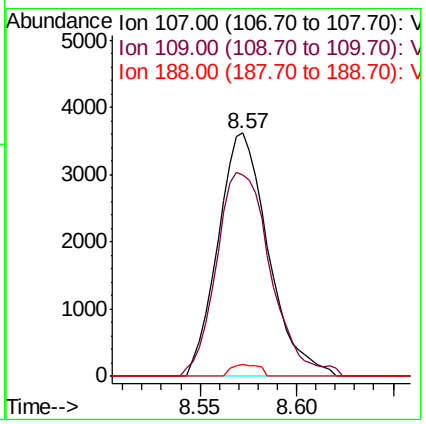




#50
1,2-Dibromoethane
Concen: 2.574 ug/L
RT: 8.57 min Scan# 2327
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:107 Resp: 6558

Ion	Ratio	Lower	Upper
107	100		
109	82.6	66.8	124.0
188	5.0	3.0	4.4#



Instrument :
MSVOA_U
ClientSampleId :
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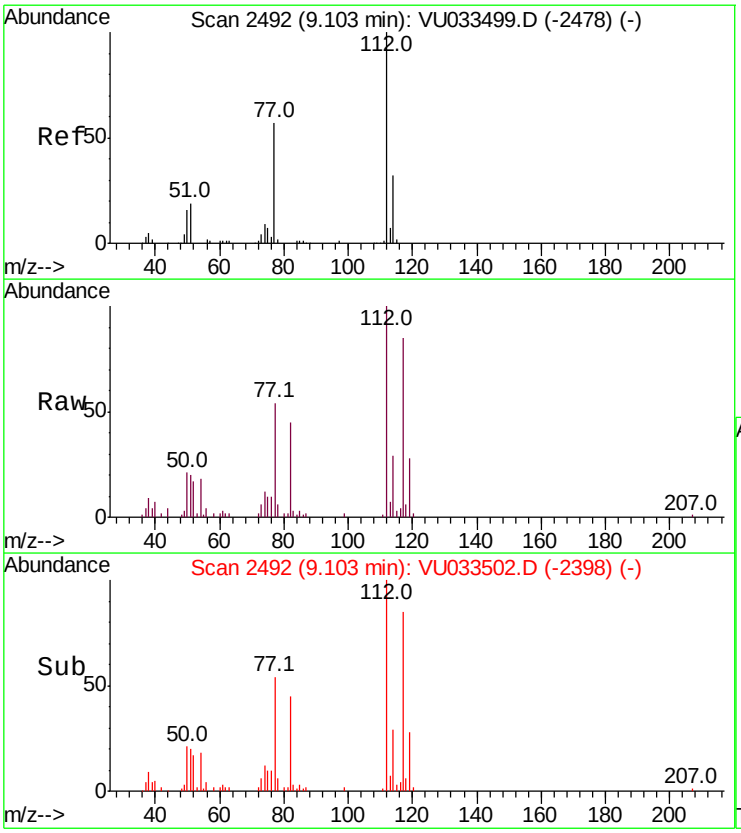
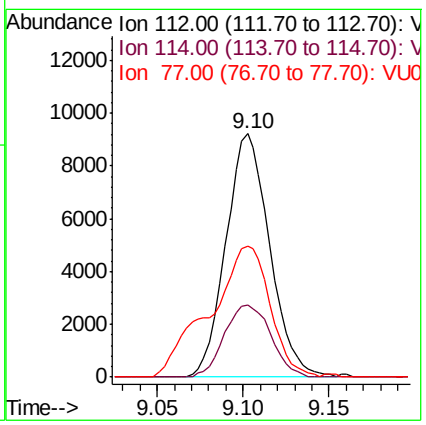
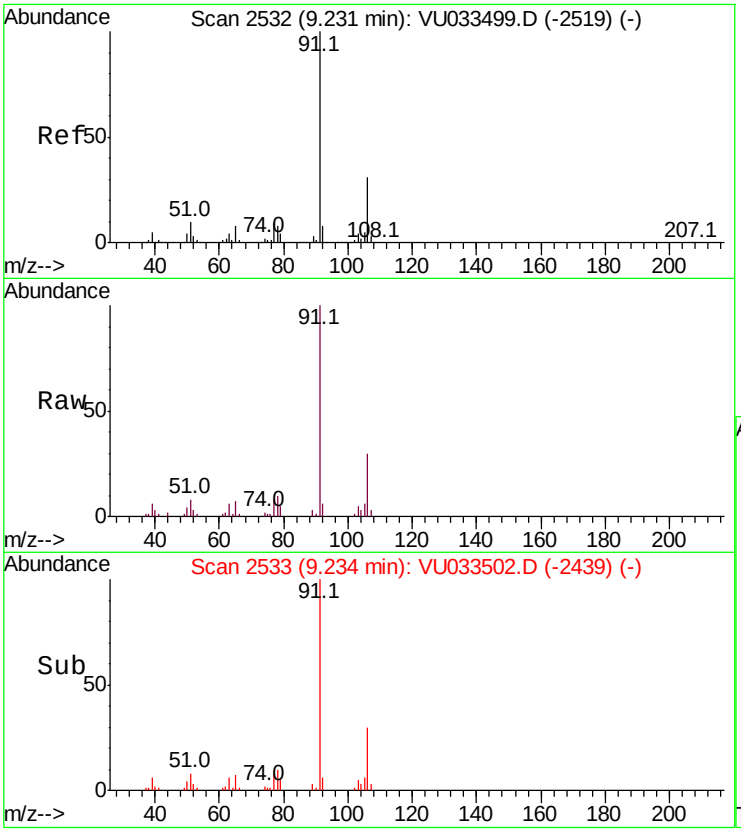


#51
Chlorobenzene
Concen: 2.557 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:112 Resp: 16297

Ion	Ratio	Lower	Upper
112	100		
114	29.4	22.3	41.5
77	54.0	45.6	68.4

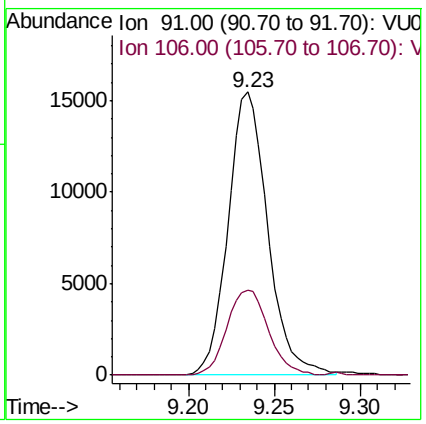




#52
Ethylbenzene
Concen: 2.380 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 91 Resp: 24951

Ion	Ratio	Lower	Upper
91	100		
106	30.2	22.2	41.2



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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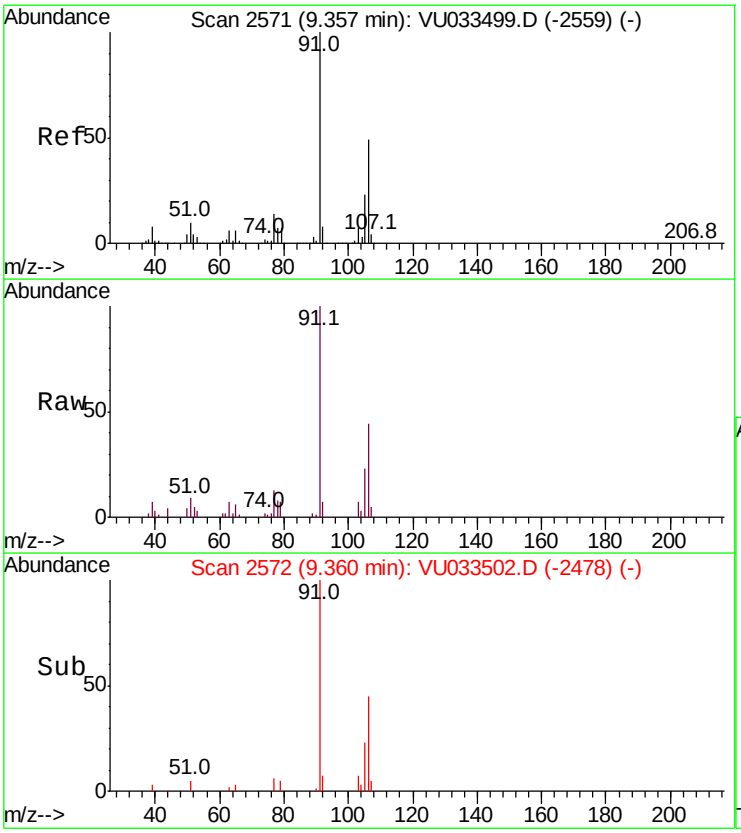
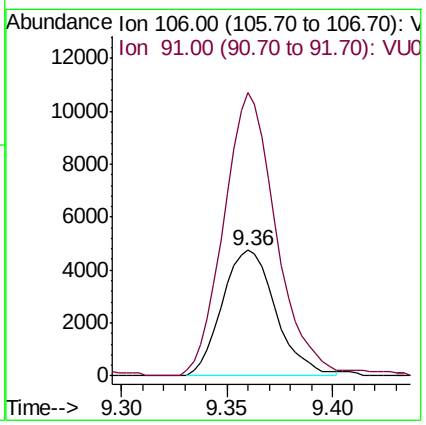
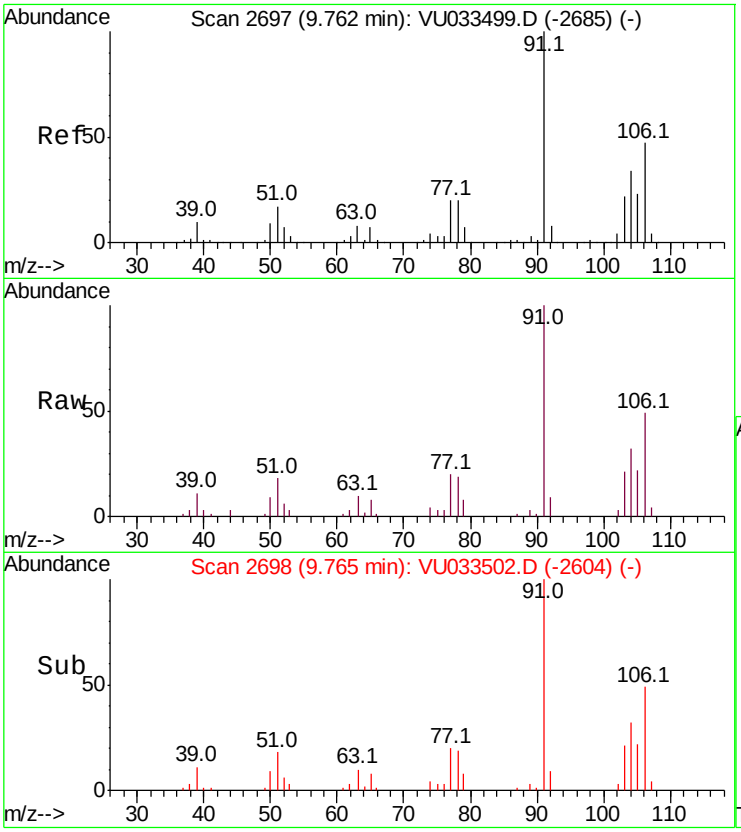


#53
m,p-Xylene
Concen: 2.090 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:106 Resp: 8410

Ion	Ratio	Lower	Upper
106	100		
91	225.6	143.0	265.6

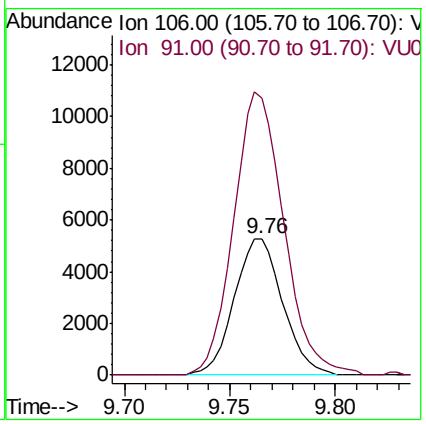




#54
o-xylene
Concen: 2.154 ug/L
RT: 9.76 min Scan# 2698
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:106 Resp: 8407

Ion	Ratio	Lower	Upper
106	100		
91	203.0	148.4	275.6



Instrument :
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ClientSampleId :
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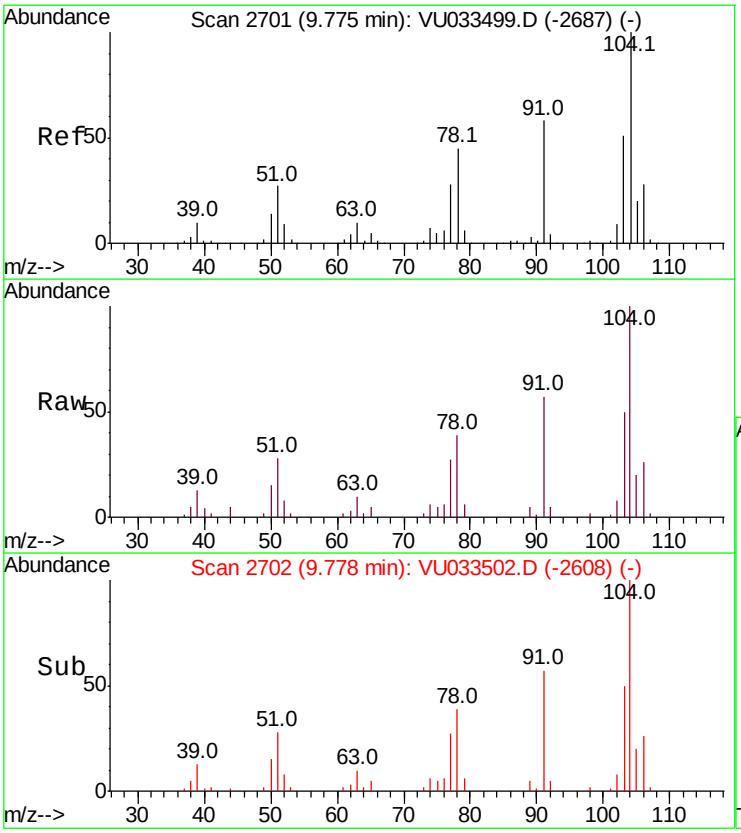
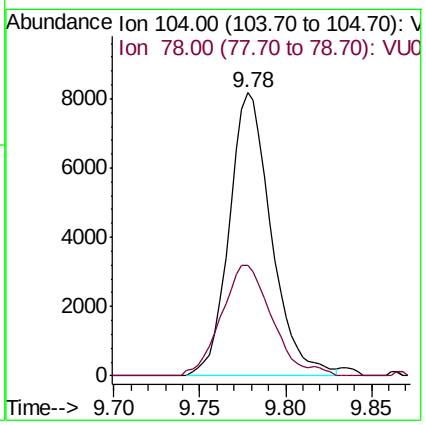
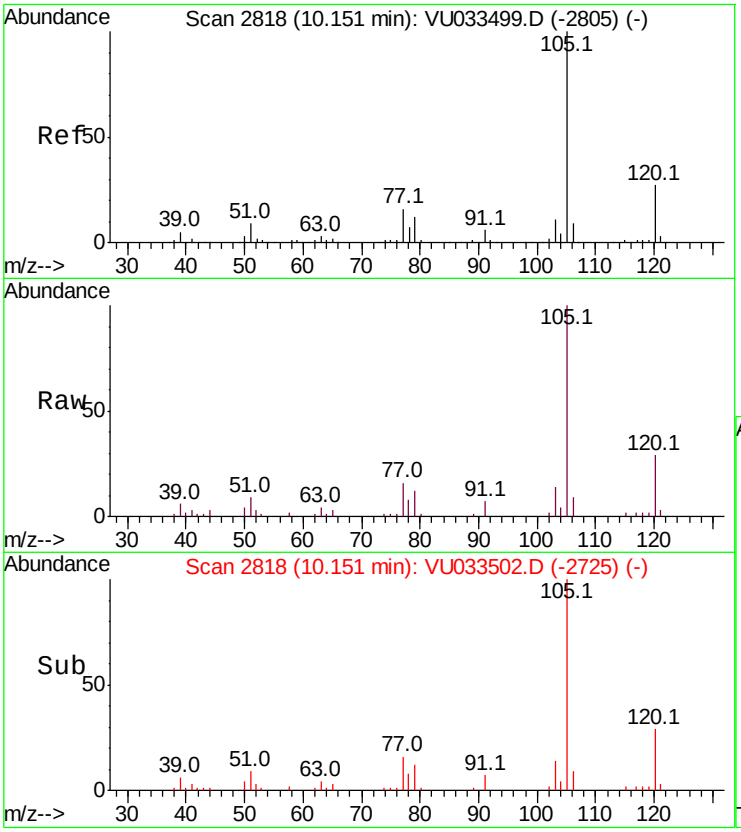


#55
Styrene
Concen: 2.106 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:104 Resp: 13959

Ion	Ratio	Lower	Upper
104	100		
78	39.3	32.2	59.8

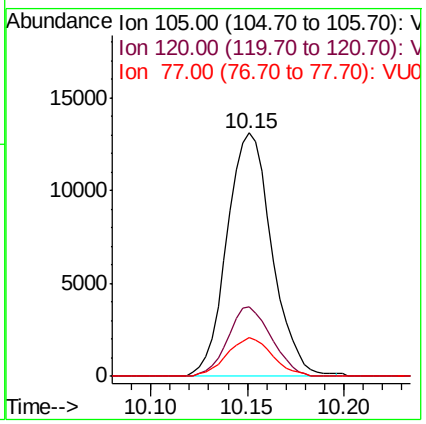




#56
Isopropylbenzene
Concen: 2.081 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:105 Resp: 21226

Ion	Ratio	Lower	Upper
105	100		
120	27.6	21.4	32.0
77	15.8	12.5	18.7



Instrument :
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ClientSampleId :
MDL02

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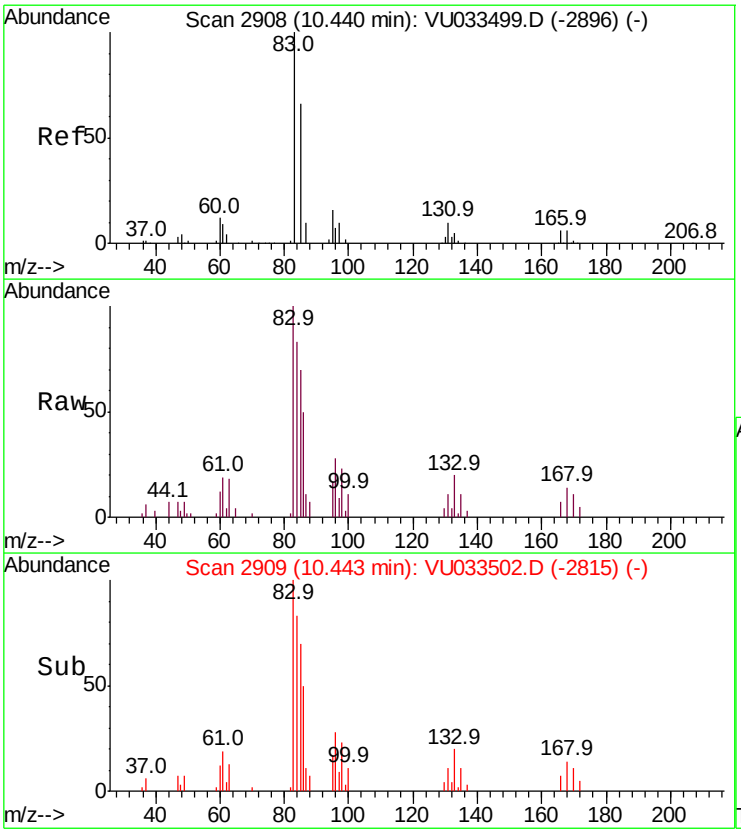
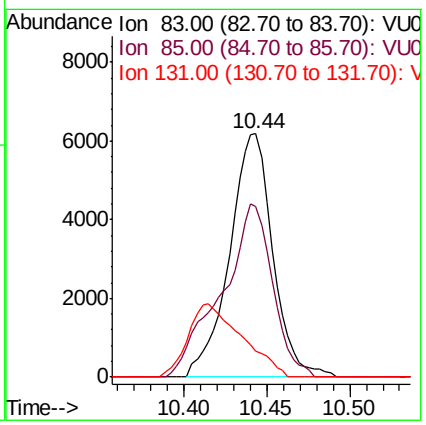
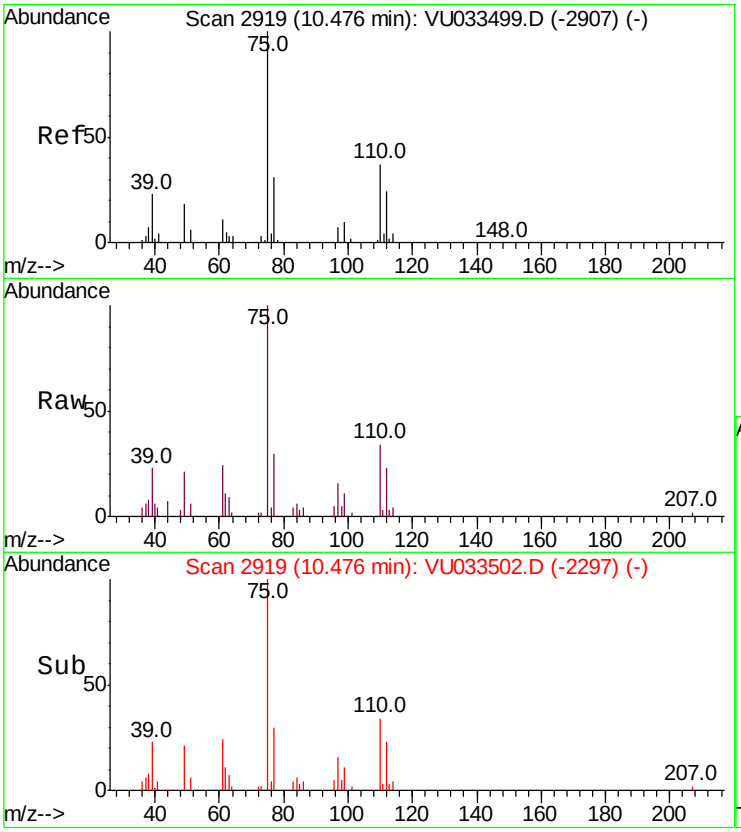


#58
1,1,2,2-Tetrachloroethane
Concen: 2.702 ug/L
RT: 10.44 min Scan# 2909
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 83 Resp: 11212

Ion	Ratio	Lower	Upper
83	100		
85	70.0	45.4	84.4
131	10.8	7.9	11.9





#59
1,2,3-Trichloropropane
Concen: 2.473 ug/L
RT: 10.48 min Scan# 2919
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 75 Resp: 7908

Ion	Ratio	Lower	Upper
75	100		
77	32.8	25.8	38.6

Instrument :
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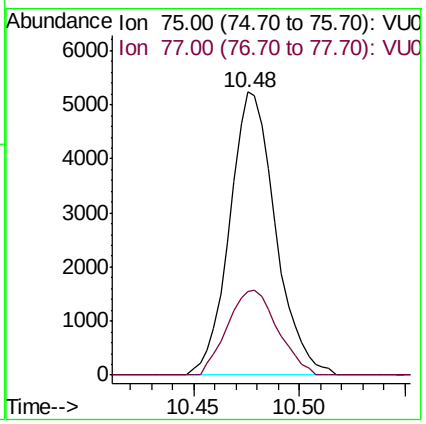
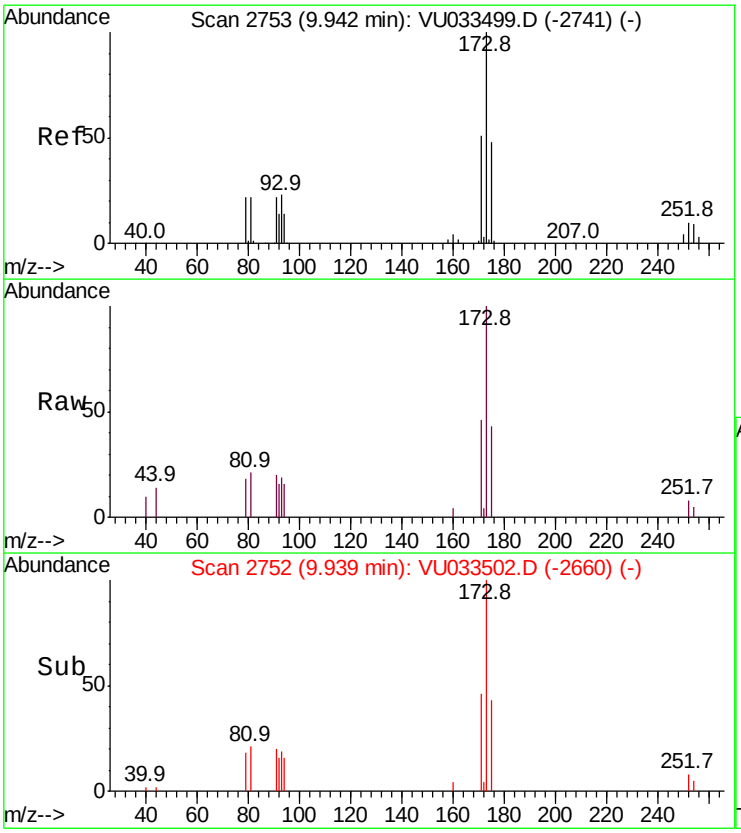
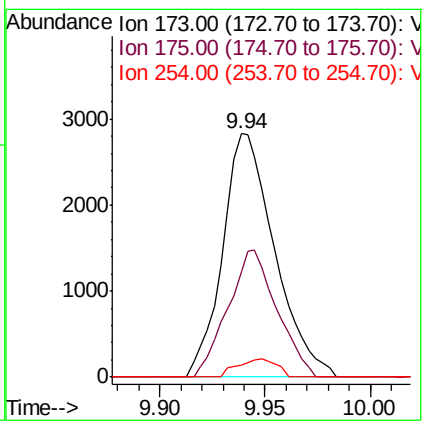


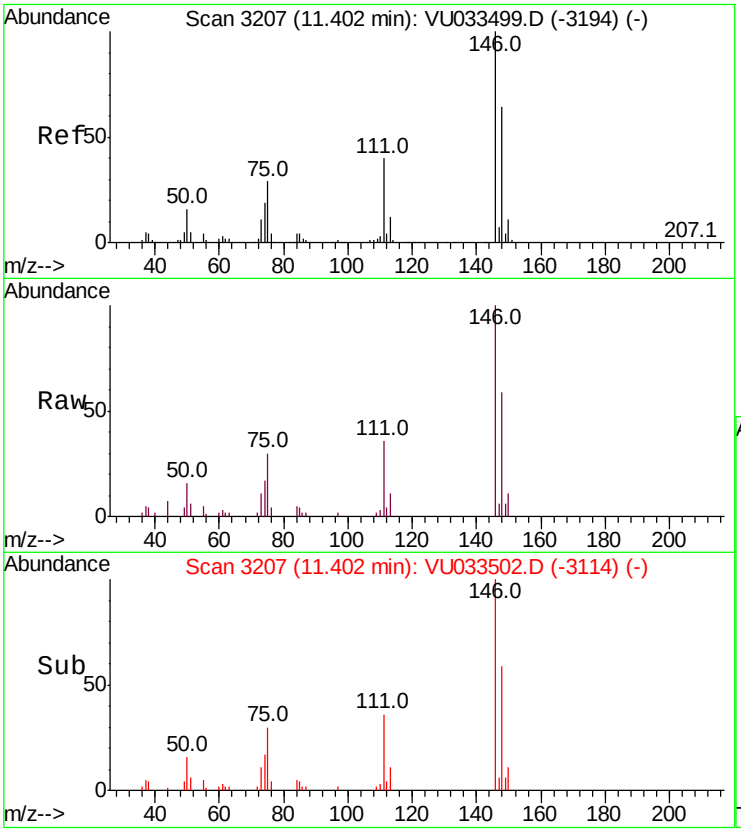


#61
Bromoform
Concen: 2.600 ug/L
RT: 9.94 min Scan# 2752
Delta R.T. -0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:173 Resp: 4860

Ion	Ratio	Lower	Upper
173	100		
175	49.0	38.7	58.1
254	5.7	7.5	11.3#

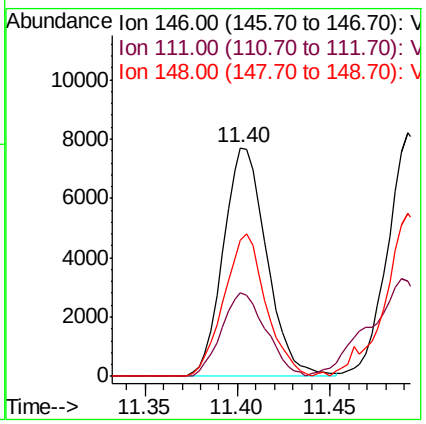




#62
1,3-Dichlorobenzene
Concen: 2.635 ug/L
RT: 11.40 min Scan# 3207
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:146 Resp: 12525

Ion	Ratio	Lower	Upper
146	100		
111	36.3	28.1	52.1
148	59.4	45.0	83.6



Instrument :
MSVOA_U
ClientSampleId :
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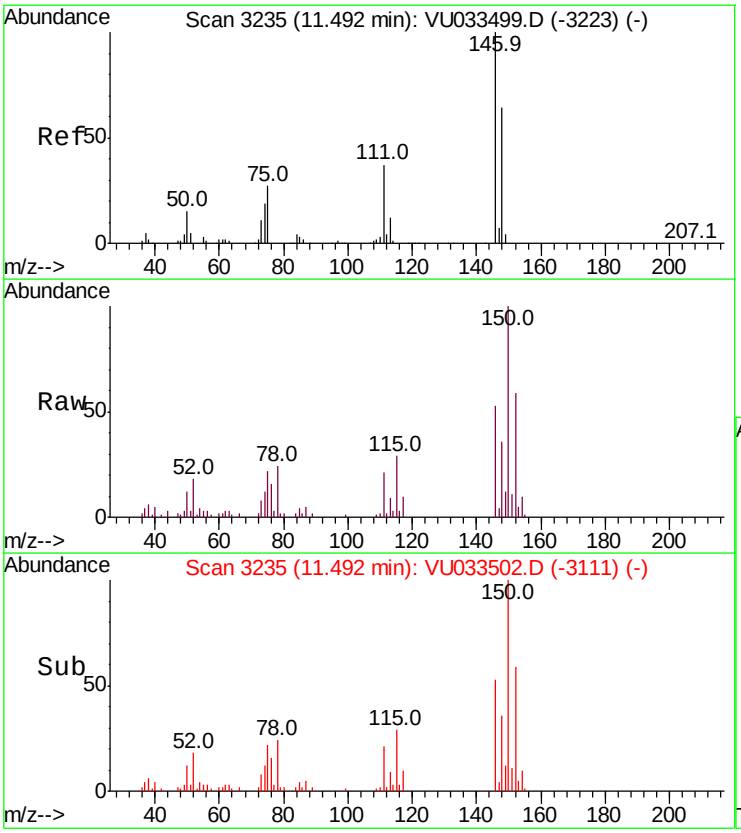
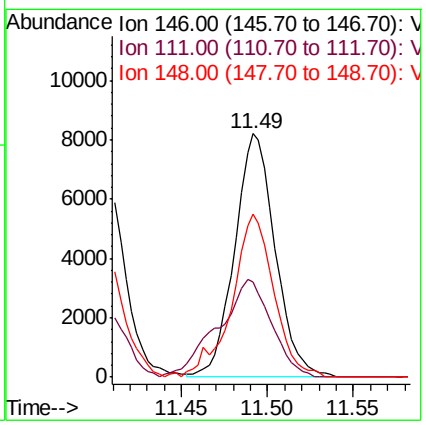
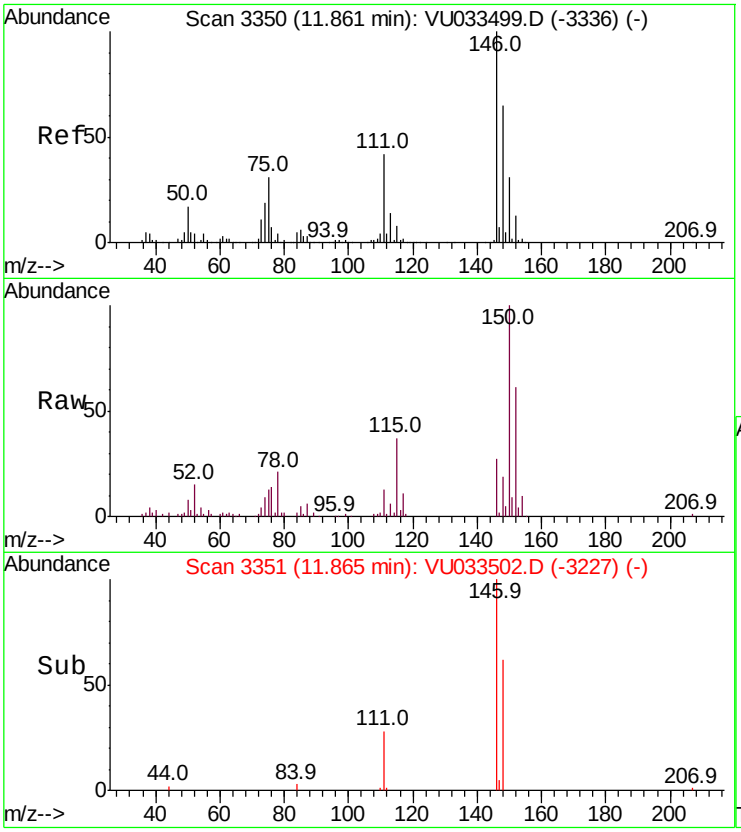


#63
1,4-Dichlorobenzene
Concen: 2.719 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:146 Resp: 13426

Ion	Ratio	Lower	Upper
146	100		
111	39.2	27.2	50.4
148	67.0	44.5	82.7

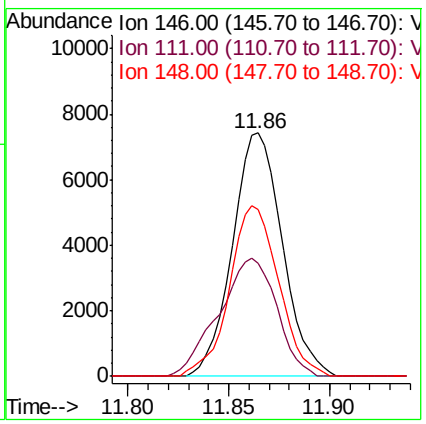




#65
1,2-Dichlorobenzene
Concen: 2.681 ug/L
RT: 11.86 min Scan# 3351
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:146 Resp: 12887

Ion	Ratio	Lower	Upper
146	100		
111	46.5	31.7	47.5
148	68.5	50.3	75.5



Instrument :
MSVOA_U
ClientSampleId :
MDL02

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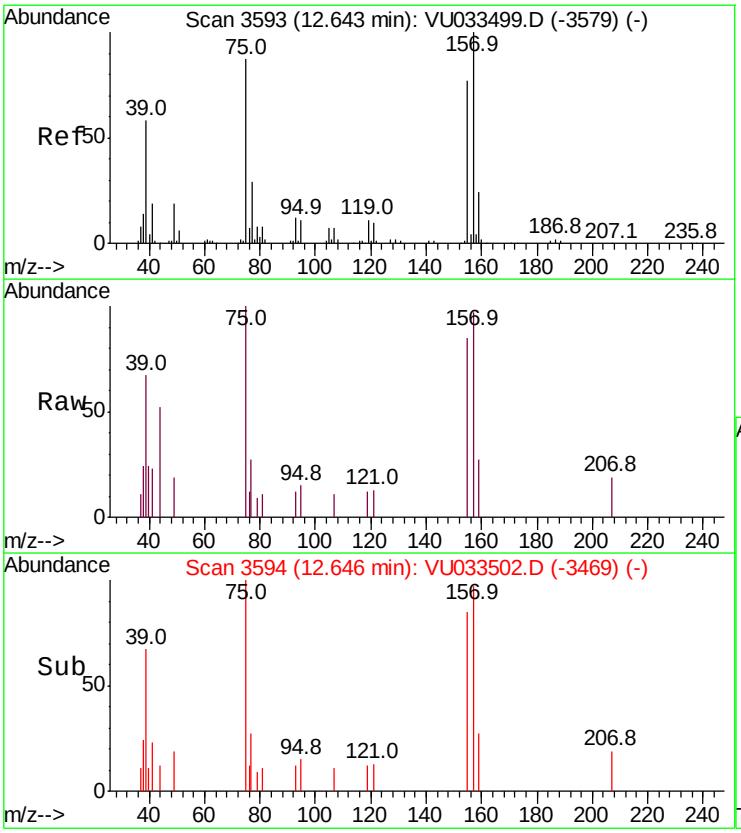
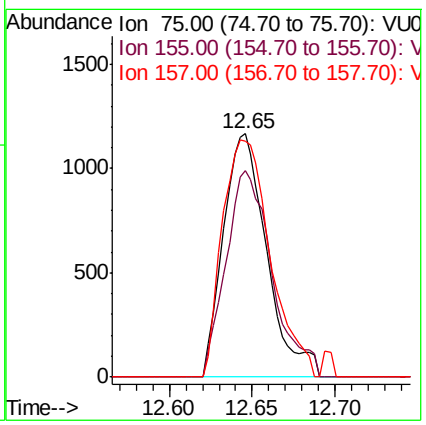
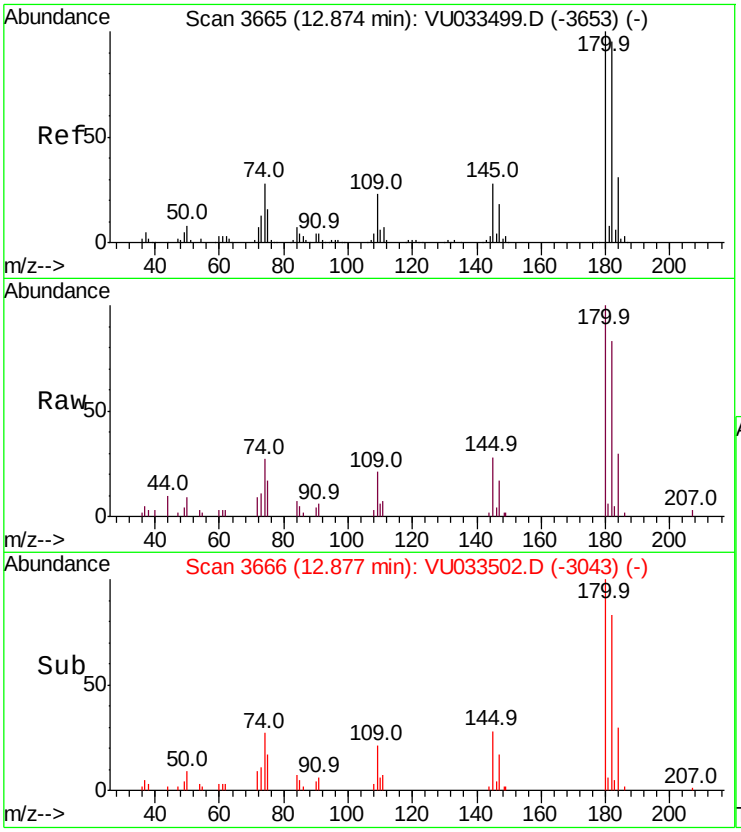


#66
1,2-Dibromo-3-chloropropane
Concen: 2.389 ug/L
RT: 12.65 min Scan# 3594
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion: 75 Resp: 2121

Ion	Ratio	Lower	Upper
75	100		
155	85.0	69.4	104.0
157	97.1	91.8	137.8

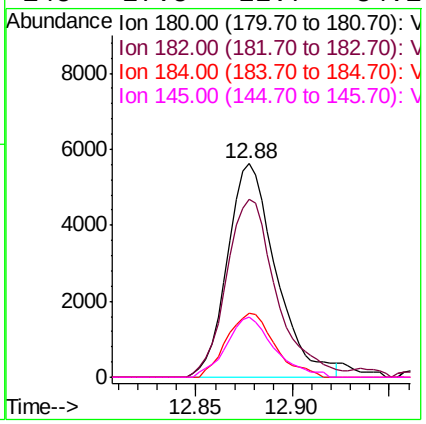




#67
1,3,5-Trichlorobenzene
Concen: 2.556 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:180 Resp: 9802

Ion	Ratio	Lower	Upper
180	100		
182	86.5	75.6	113.4
184	29.8	24.2	36.2
145	27.5	22.7	34.1



Instrument :
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ClientSampleId :
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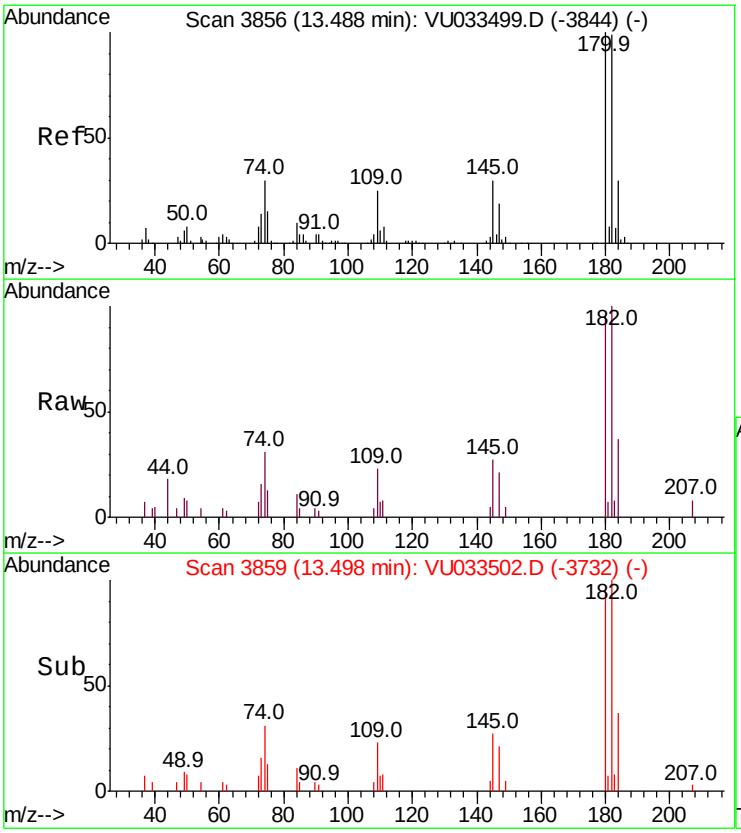
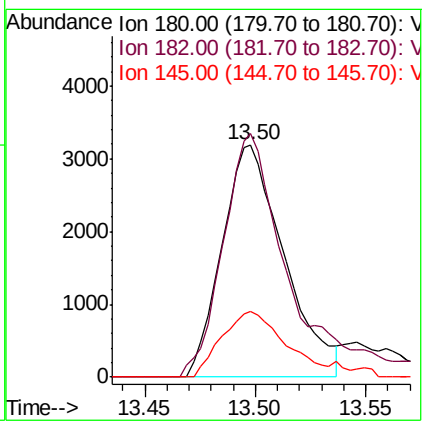
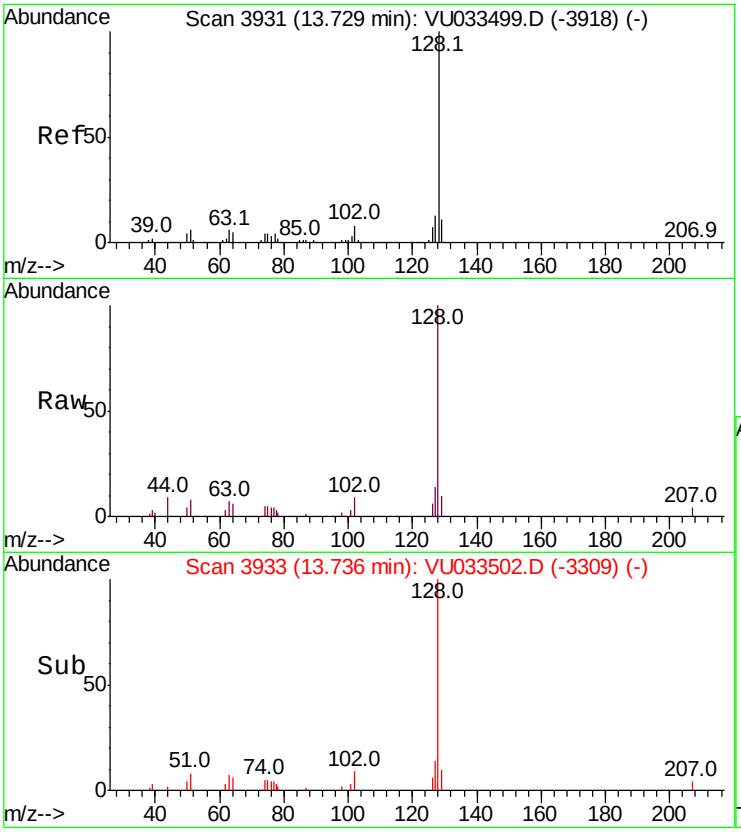


#68
1,2,4-trichlorobenzene
Concen: 1.901 ug/L
RT: 13.50 min Scan# 3859
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:180 Resp: 6229

Ion	Ratio	Lower	Upper
180	100		
182	93.5	75.8	113.8
145	29.0	24.3	36.5

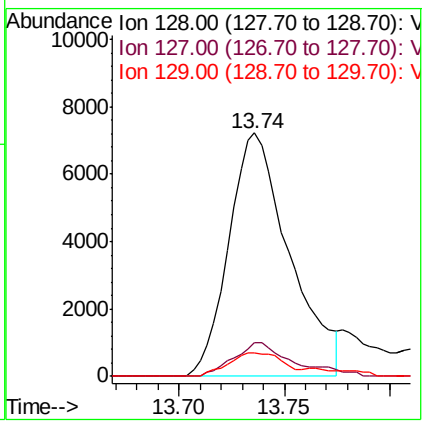




#69
Naphthalene
Concen: 1.533 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

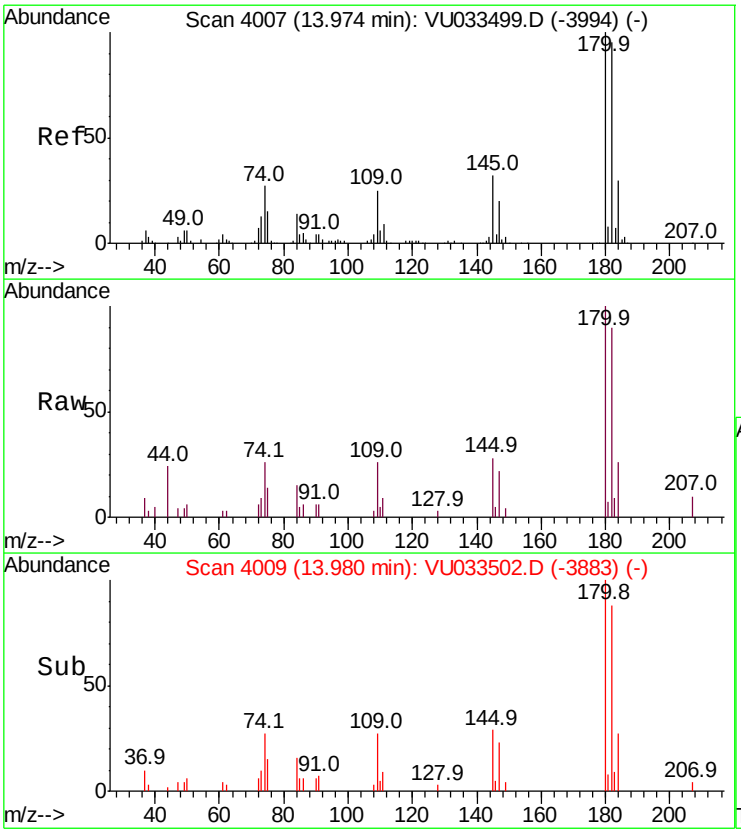
Tgt Ion:128 Resp: 14408

Ion	Ratio	Lower	Upper
128	100		
127	12.0	10.8	16.2
129	8.8	8.7	13.1



Instrument :
MSVOA_U
ClientSampleId :
MDL02

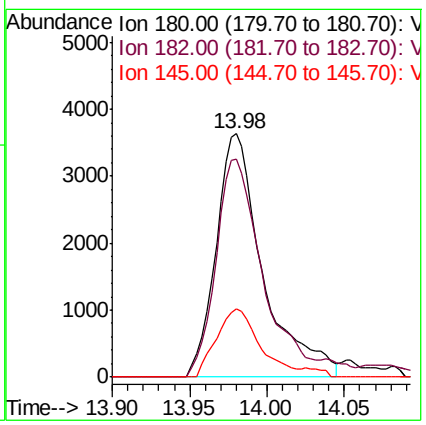
Manual Integrations APPROVED
MMDadoda
7/31/2019 10:33:59 AM



#70
1,2,3-Trichlorobenzene
Concen: 2.221 ug/L
RT: 13.98 min Scan# 4009
Delta R.T. 0.01 min
Lab File: VU033502.D
Acq: 30 Jul 2019 19:12

Tgt Ion:180 Resp: 7652

Ion	Ratio	Lower	Upper
180	100		
182	89.3	75.5	113.3
145	25.8	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033503.D
Acq On : 30 Jul 2019 19:34
Operator : JC/SP
Sample : MDL03
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 14 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

Quant Time: Jul 31 08:27:28 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

7/31/2019 10:34:03 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	335040	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	333257	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	165120	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	103457	42.47	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 84.94%			
7) Chloroethane-d5	1.67	69	89419	42.78	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 85.56%			
11) 1,1-Dichloroethene-d2	2.26	63	144126	32.60	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 65.20%			
21) 2-Butanone-d5	4.15	46	150580	93.33	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 93.33%			
24) Chloroform-d	4.62	84	179709	44.01	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 88.02%			
26) 1,2-Dichloroethane-d4	5.28	65	118077	45.66	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 91.32%			
32) Benzene-d6	5.32	84	374040	45.28	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 90.56%			
36) 1,2-Dichloropropane-d6	6.31	67	117891	45.52	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 91.04%			
41) Toluene-d8	7.55	98	337103	43.54	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.08%			
43) trans-1,3-Dichloropropene-	7.83	79	55940	43.55	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 87.10%			
47) 2-Hexanone-d5	8.29	63	111555	90.73	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 90.73%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	174420	43.68	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 87.36%			
64) 1,2-Dichlorobenzene-d4	11.85	152	136814	45.25	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	7645	2.420	ug/L	100
3) Chloromethane	1.32	50	8679	2.727	ug/L	96
5) Vinyl chloride	1.39	62	8747	2.564	ug/L #	65
6) Bromomethane	1.62	94	5574	1.852	ug/L	93
8) Chloroethane	1.69	64	5465	2.636	ug/L	90
9) Trichlorofluoromethane	1.87	101	11331	2.539	ug/L	100
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	6804	3.007	ug/L #	82
12) 1,1-Dichloroethene	2.27	96	6715	3.095	ug/L #	1
13) Acetone	2.31	43	7728	4.682	ug/L	99
14) Carbon disulfide	2.46	76	18008	2.646	ug/L	96
15) Methyl Acetate	2.60	43	6216	2.365	ug/L	97
16) Methylene chloride	2.68	84	6445	2.601	ug/L	98
17) trans-1,2-Dichloroethene	2.96	96	5502	2.420	ug/L	98
18) Methyl tert-butyl Ether	2.98	73	15809	2.281	ug/L	97
19) 1,1-Dichloroethane	3.43	63	10456	2.451	ug/L	96
20) cis-1,2-Dichloroethene	4.20	96	6616	2.593	ug/L	98
22) 2-Butanone	4.25	43	8259	4.191	ug/L #	67

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033503.D
Acq On : 30 Jul 2019 19:34
Operator : JC/SP
Sample : MDL03
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 31 08:27:28 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument : MSVOA_U
ClientSampleId : MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

7/31/2019 10:34:03 AM

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
23) Bromochloromethane	4.53	128	3260	2.449	ug/L		82
25) Chloroform	4.65	83	15630	3.481	ug/L		96
27) 1,2-Dichloroethane	5.39	62	9165	2.651	ug/L		96
29) Cyclohexane	4.97	56	8158	2.244	ug/L		99
30) 1,1,1-Trichloroethane	4.89	97	9244	2.411	ug/L		97
31) Carbon tetrachloride	5.11	117	8033	2.406	ug/L		99
33) Benzene	5.37	78	24542	2.553	ug/L		100
34) Trichloroethene	6.17	95	6243	2.462	ug/L		96
35) Methylcyclohexane	6.39	83	8921	2.254	ug/L		98
37) 1,2-Dichloropropane	6.41	63	7084	2.753	ug/L	#	92
38) Bromodichloromethane	6.74	83	7954	2.391	ug/L		96
39) cis-1,3-Dichloropropene	7.25	75	10000	2.490	ug/L		96
40) 4-Methyl-2-pentanone	7.44	43	16509	4.646	ug/L		99
42) Toluene	7.62	91	25389	2.456	ug/L		94
44) trans-1,3-Dichloropropene	7.86	75	8783m	2.420	ug/L		
45) 1,1,2-Trichloroethane	8.05	97	6103	2.498	ug/L		94
46) Tetrachloroethene	8.21	164	5236	2.529	ug/L		99
48) 2-Hexanone	8.35	43	14174	4.935	ug/L		98
49) Dibromochloromethane	8.46	129	6449	2.320	ug/L		96
50) 1,2-Dibromoethane	8.58	107	6515	2.408	ug/L	#	86
51) Chlorobenzene	9.10	112	17182	2.539	ug/L		95
52) Ethylbenzene	9.23	91	24614	2.211	ug/L		99
53) m,p-Xylene	9.36	106	9406	2.201	ug/L		98
54) o-xylene	9.76	106	8738	2.108	ug/L		97
55) Styrene	9.78	104	14201	2.017	ug/L		96
56) Isopropylbenzene	10.15	105	22612	2.088	ug/L		97
58) 1,1,2,2-Tetrachloroethane	10.44	83	11592	2.631	ug/L	#	88
59) 1,2,3-Trichloropropane	10.48	75	8428	2.481	ug/L		100
61) Bromoform	9.94	173	4578	2.295	ug/L	#	94
62) 1,3-Dichlorobenzene	11.40	146	12863	2.537	ug/L		99
63) 1,4-Dichlorobenzene	11.49	146	13779	2.615	ug/L		95
65) 1,2-Dichlorobenzene	11.86	146	13966	2.724	ug/L		95
66) 1,2-Dibromo-3-chloropropan	12.65	75	2303	2.431	ug/L		89
67) 1,3,5-Trichlorobenzene	12.88	180	9333	2.281	ug/L		99
68) 1,2,4-trichlorobenzene	13.49	180	6862	1.963	ug/L		93
69) Naphthalene	13.74	128	15621	1.558	ug/L		94
70) 1,2,3-Trichlorobenzene	13.98	180	7160	1.948	ug/L		97

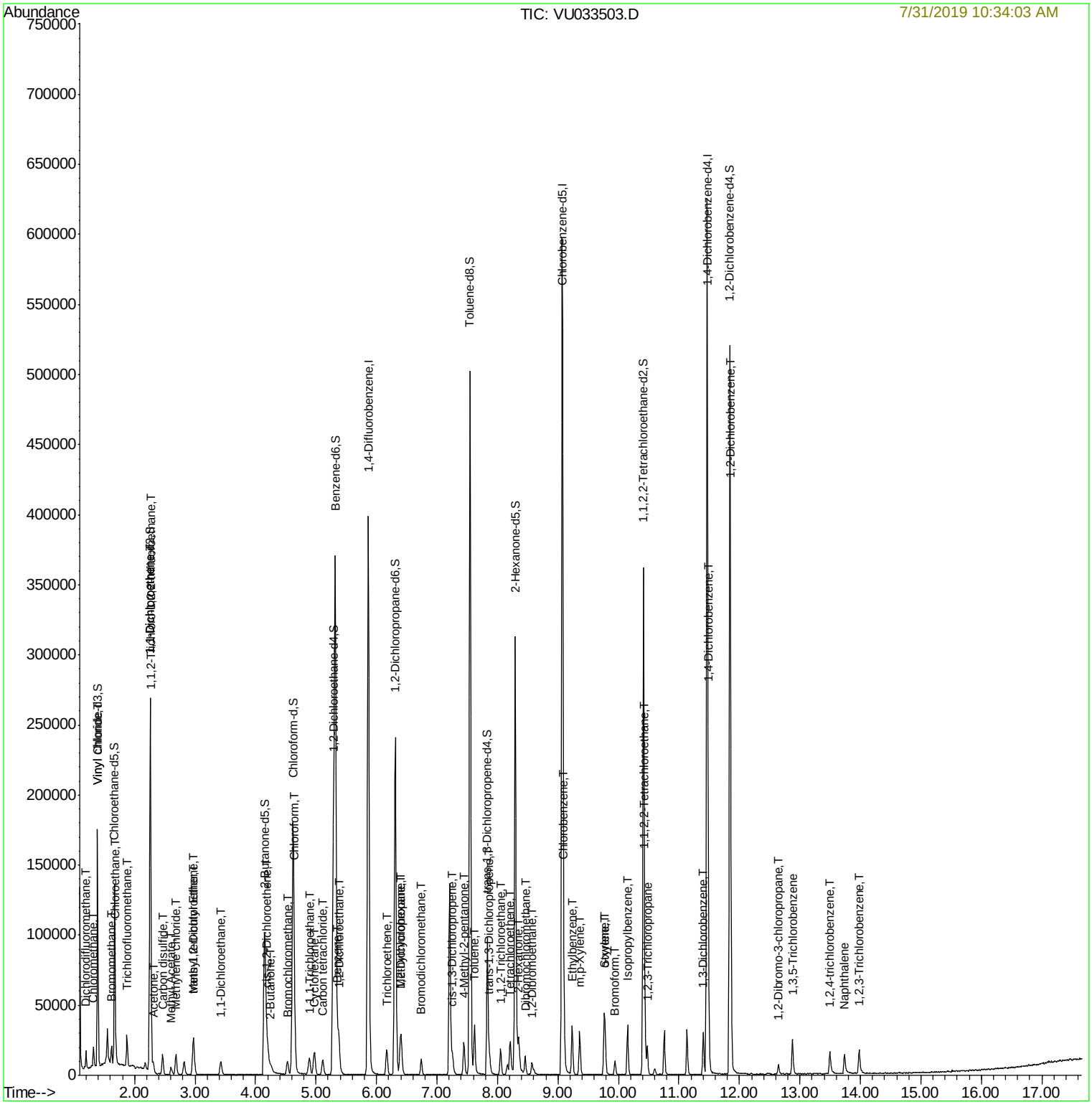
(#) = qualifier out of range (m) = manual integration (+) = signals summed

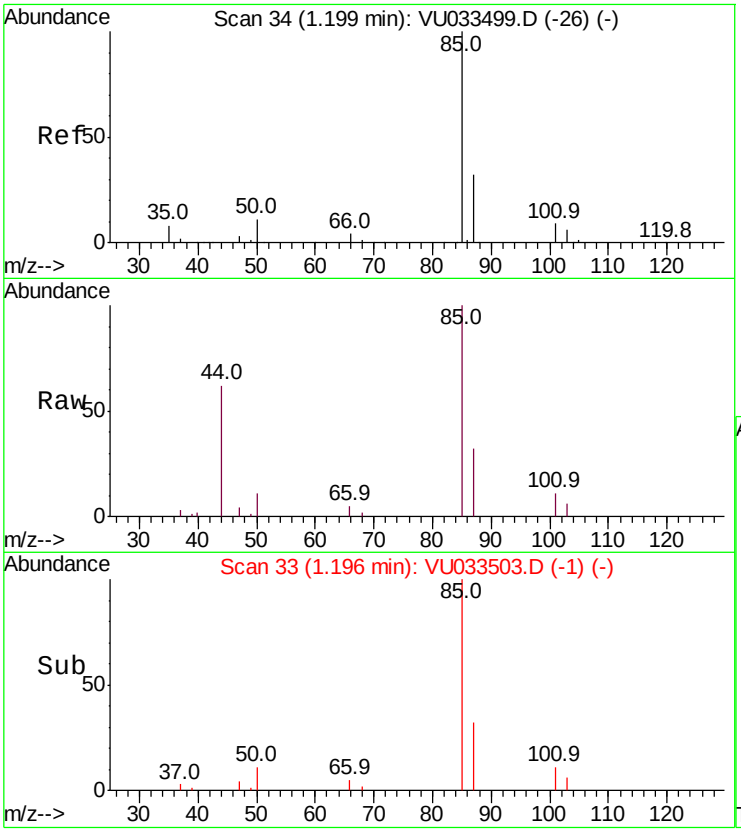
Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033503.D
Acq On : 30 Jul 2019 19:34
Operator : JC/SP
Sample : MDL03
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 31 08:27:28 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

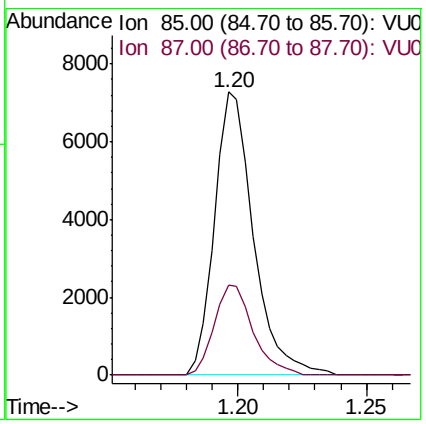




#2
Dichlorodifluoromethane
Concen: 2.420 ug/L
RT: 1.20 min Scan# 33
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 85 Resp: 7645

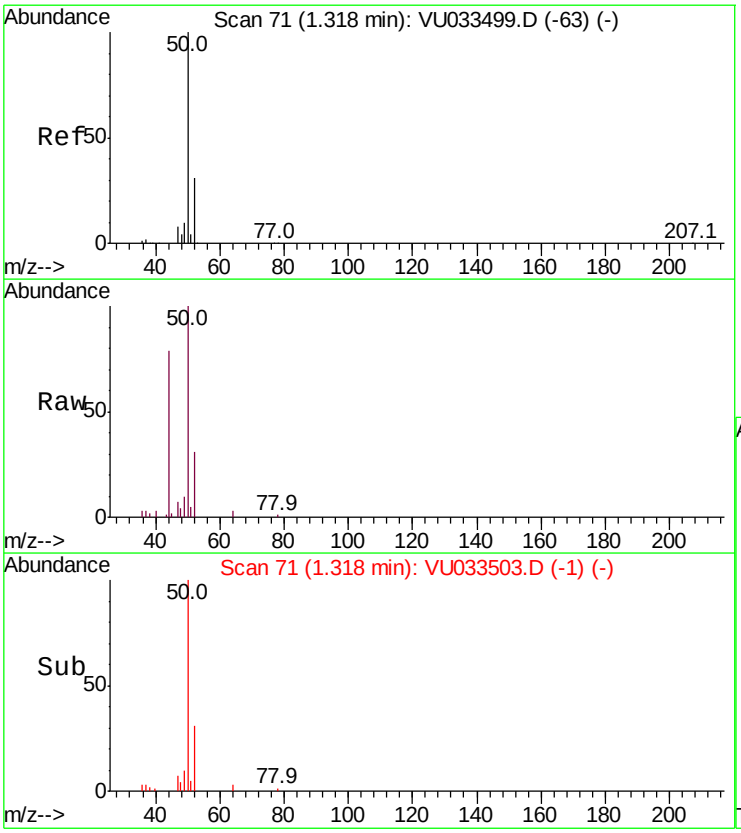
Ion	Ratio	Lower	Upper
85	100		
87	31.6	25.4	38.2



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

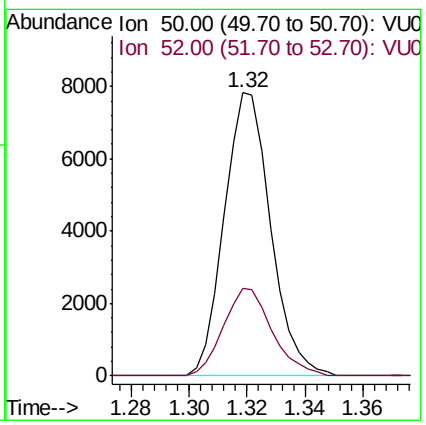
7/31/2019 10:34:03 AM

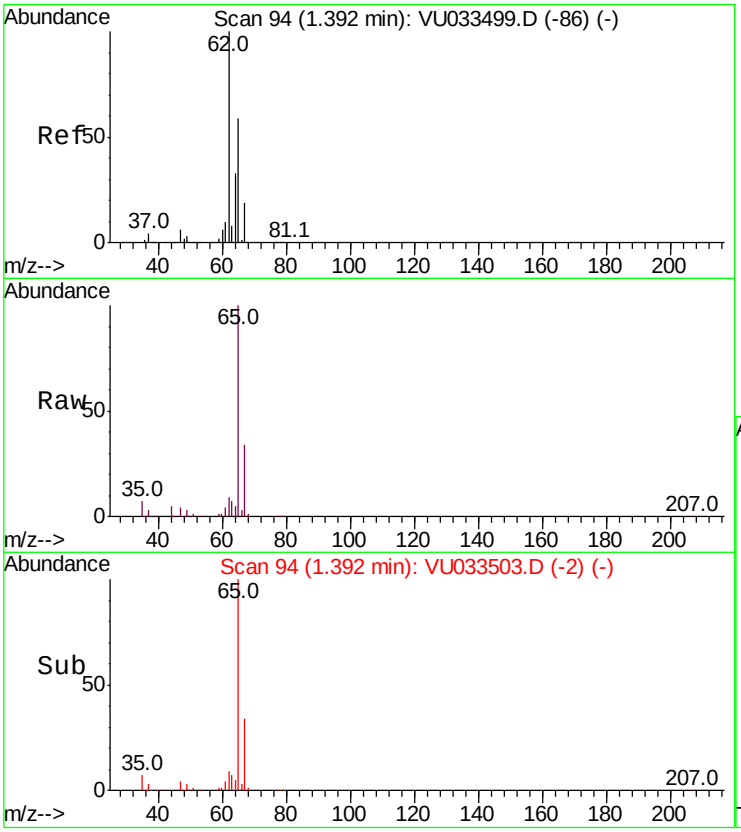


#3
Chloromethane
Concen: 2.727 ug/L
RT: 1.32 min Scan# 71
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 50 Resp: 8679

Ion	Ratio	Lower	Upper
50	100		
52	30.9	23.1	42.9

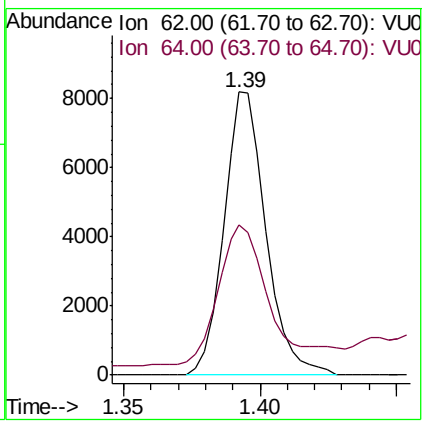




#5
Vinyl chloride
Concen: 2.564 ug/L
RT: 1.39 min Scan# 94
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 62 Resp: 8747

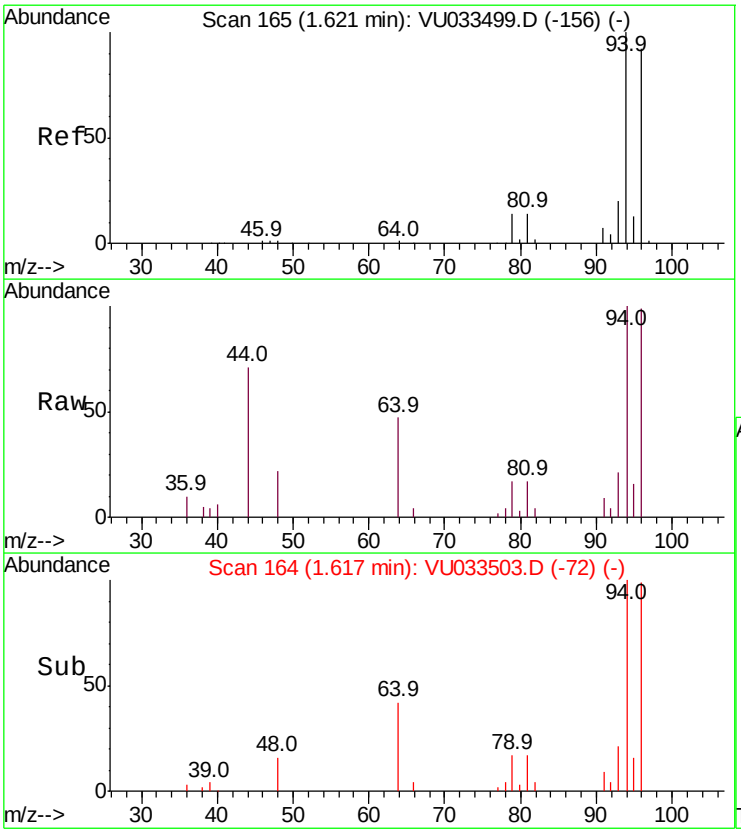
Ion	Ratio	Lower	Upper
62	100		
64	53.2	23.4	43.4#



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

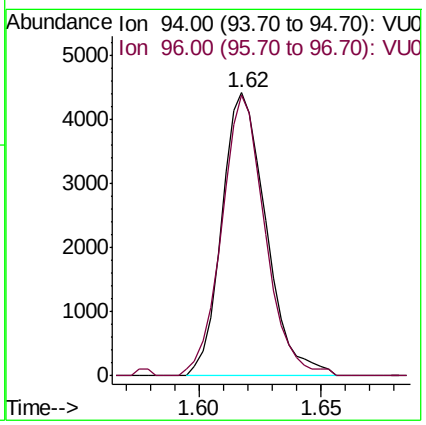
7/31/2019 10:34:03 AM

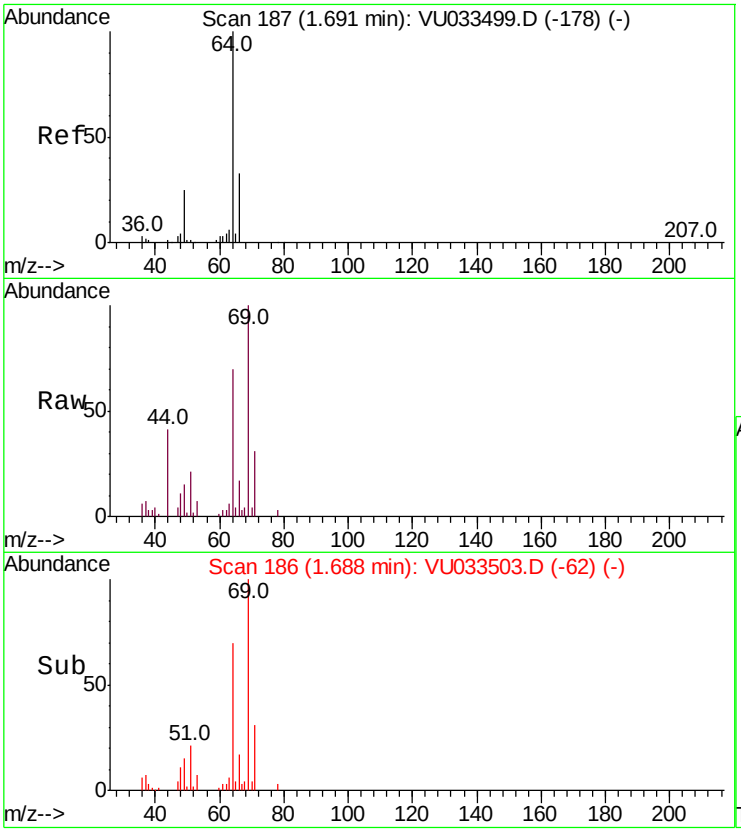


#6
Bromomethane
Concen: 1.852 ug/L
RT: 1.62 min Scan# 164
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 94 Resp: 5574

Ion	Ratio	Lower	Upper
94	100		
96	99.1	64.4	119.6

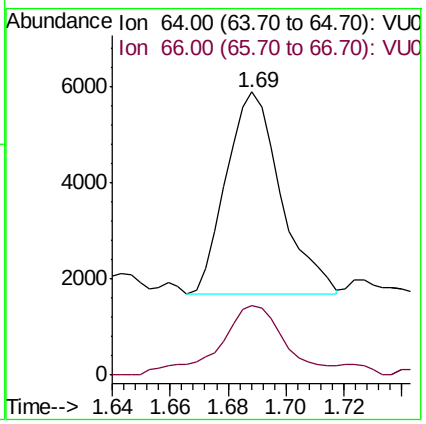




#8
Chloroethane
Concen: 2.636 ug/L
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 64 Resp: 5465

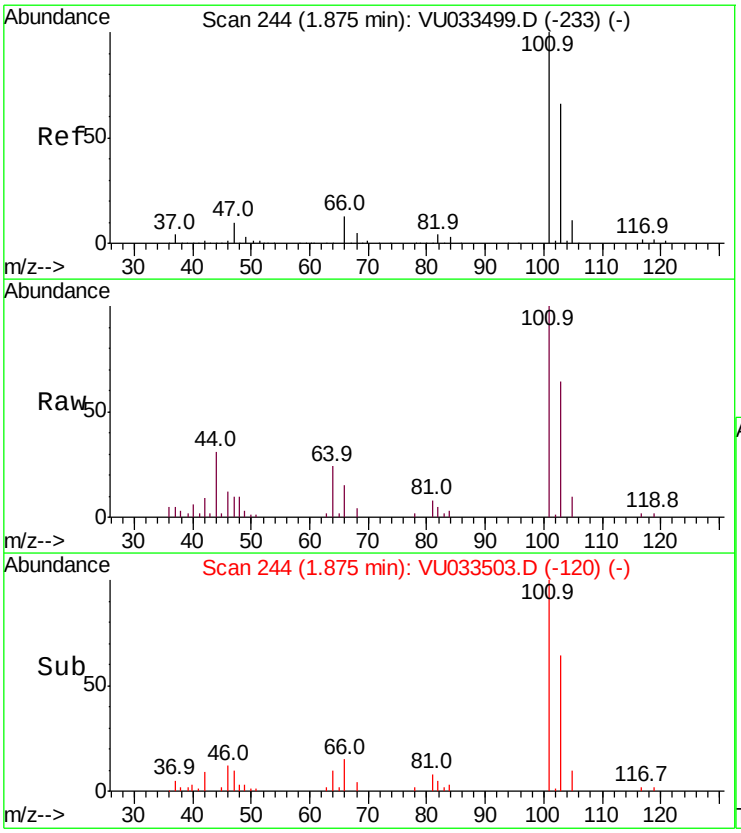
Ion	Ratio	Lower	Upper
64	100		
66	24.6	21.1	39.3



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

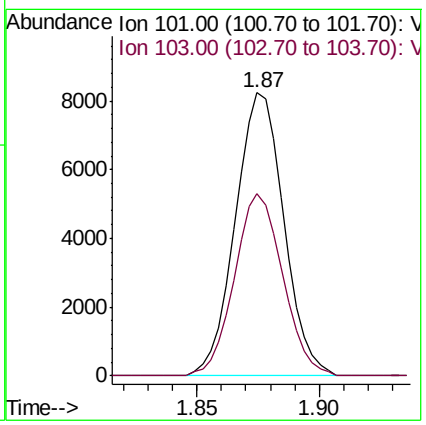
7/31/2019 10:34:03 AM

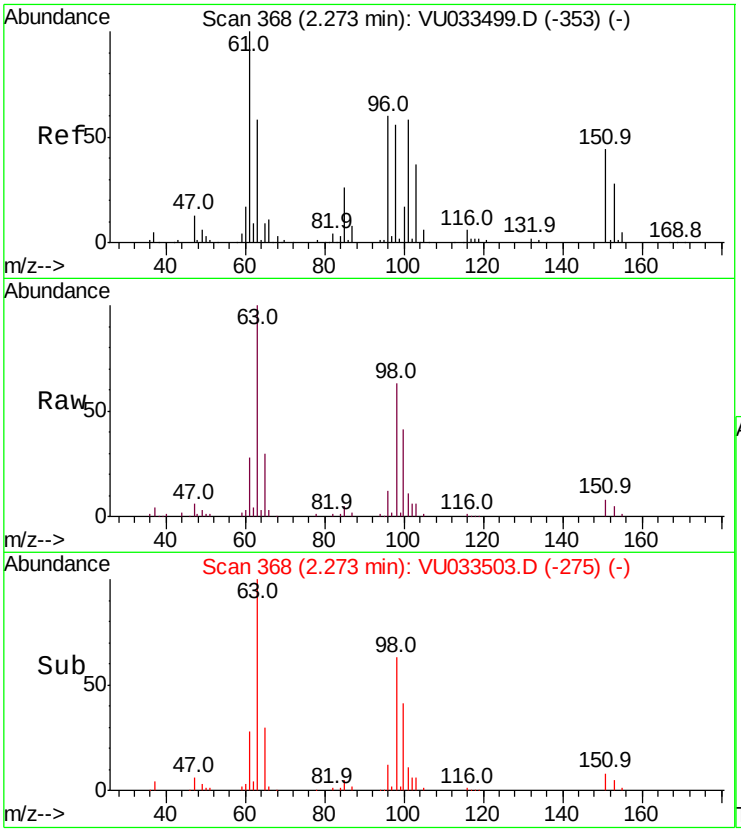


#9
Trichlorofluoromethane
Concen: 2.539 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:101 Resp: 11331

Ion	Ratio	Lower	Upper
101	100		
103	64.2	51.6	77.4





#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 3.007 ug/L
RT: 2.27 min Scan# 368
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

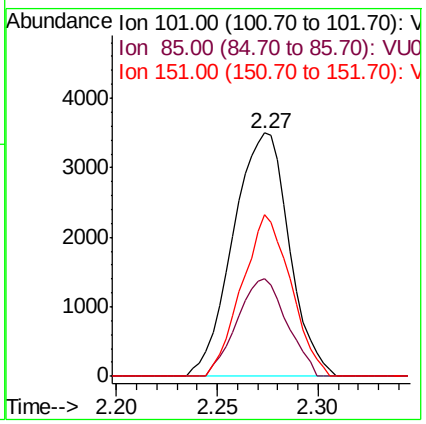
Tgt Ion:101 Resp: 6804

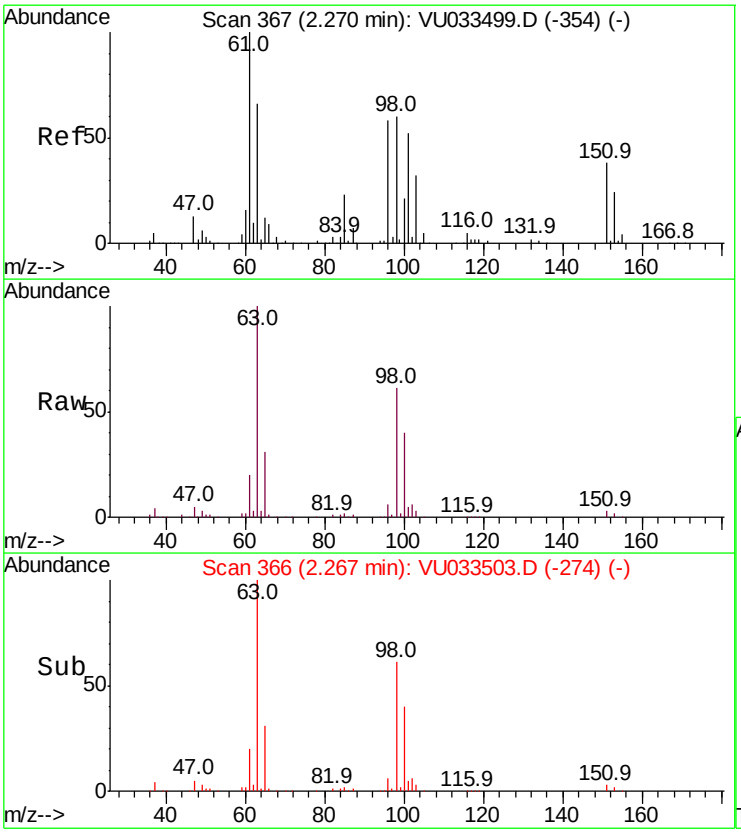
Ion	Ratio	Lower	Upper
101	100		
85	35.5	35.8	53.8#
151	57.9	60.1	90.1#

Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

7/31/2019 10:34:03 AM

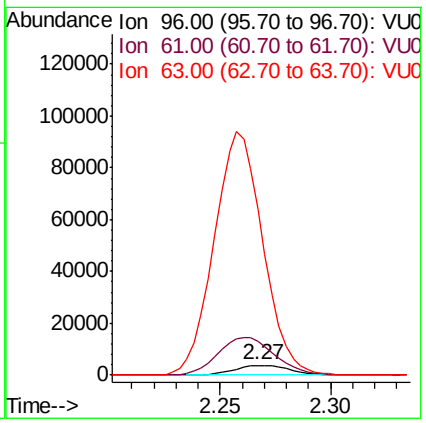


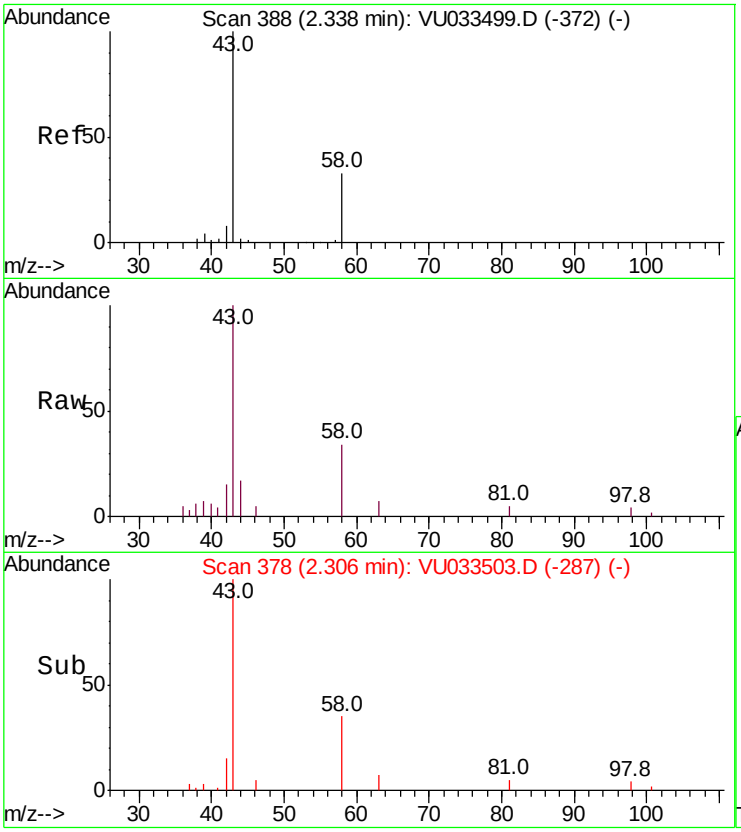


#12
1,1-Dichloroethene
Concen: 3.095 ug/L
RT: 2.27 min Scan# 366
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 96 Resp: 6715

Ion	Ratio	Lower	Upper
96	100		
61	339.9	119.3	221.5#
63	1674.1	86.6	160.8#

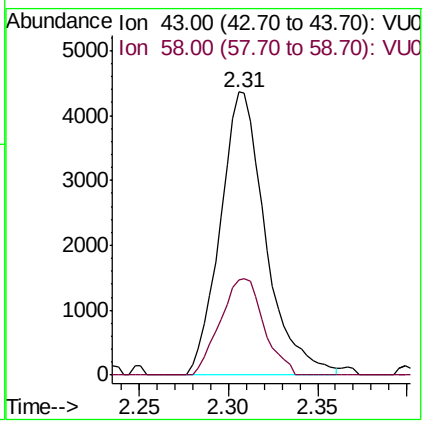




#13
Acetone
Concen: 4.682 ug/L
RT: 2.31 min Scan# 378
Delta R.T. -0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 43 Resp: 7728

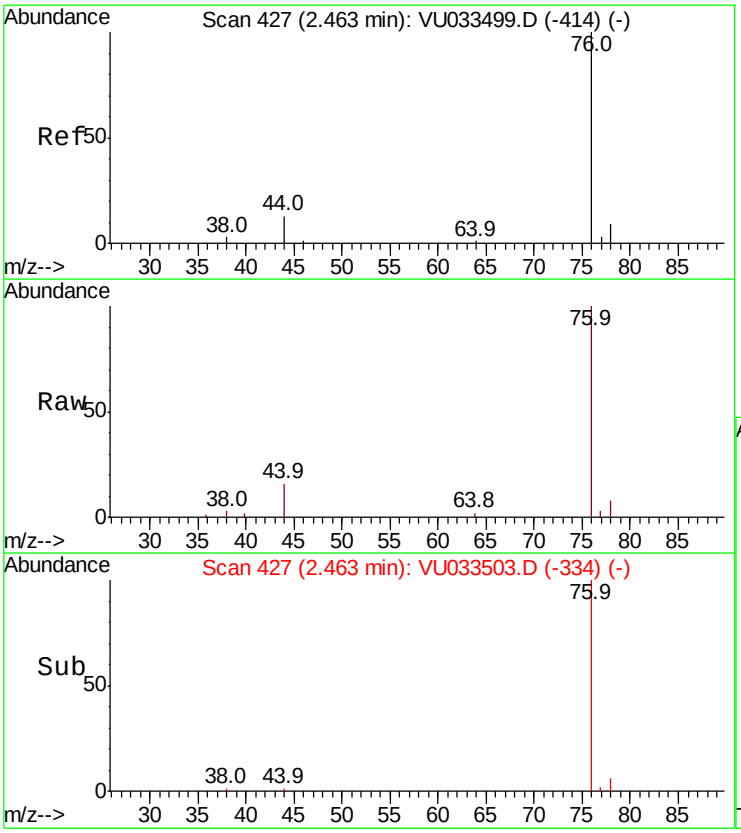
Ion	Ratio	Lower	Upper
43	100		
58	32.6	0.0	66.2



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

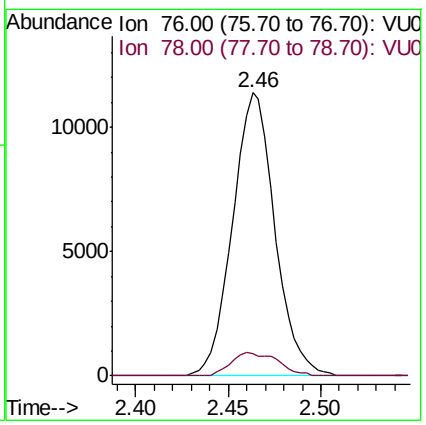
7/31/2019 10:34:03 AM

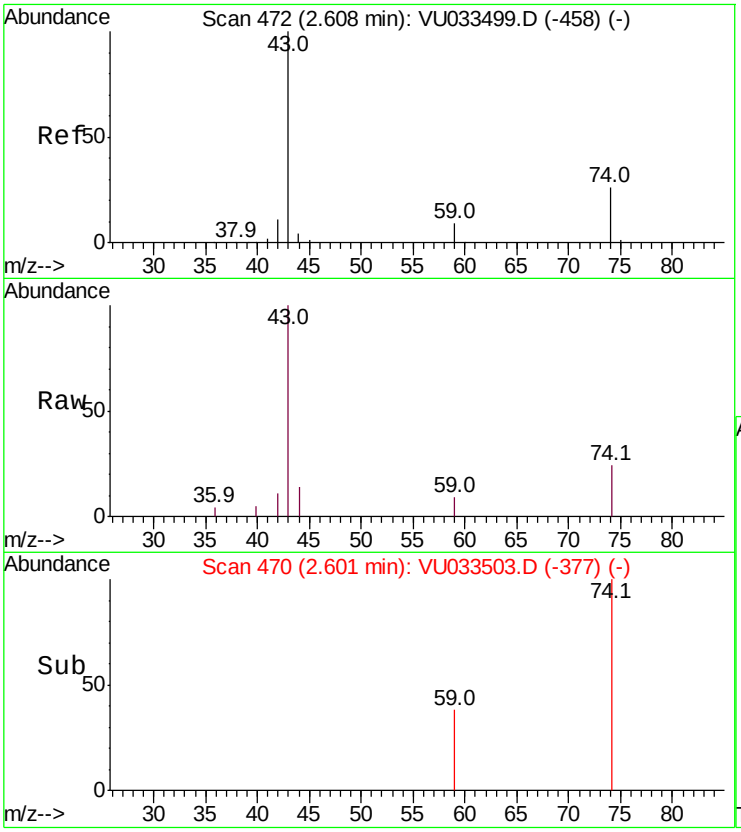


#14
Carbon disulfide
Concen: 2.646 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 76 Resp: 18008

Ion	Ratio	Lower	Upper
76	100		
78	7.9	7.4	11.0

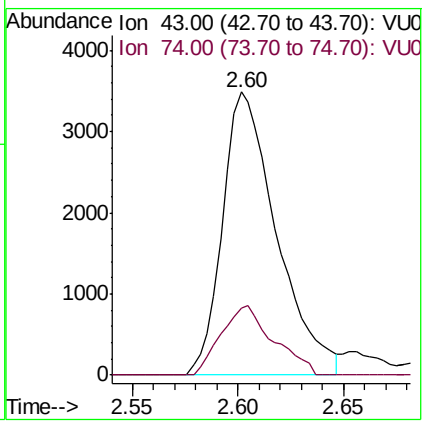




#15
Methyl Acetate
Concen: 2.365 ug/L
RT: 2.60 min Scan# 470
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 43 Resp: 6216

Ion	Ratio	Lower	Upper
43	100		
74	23.7	20.1	30.1



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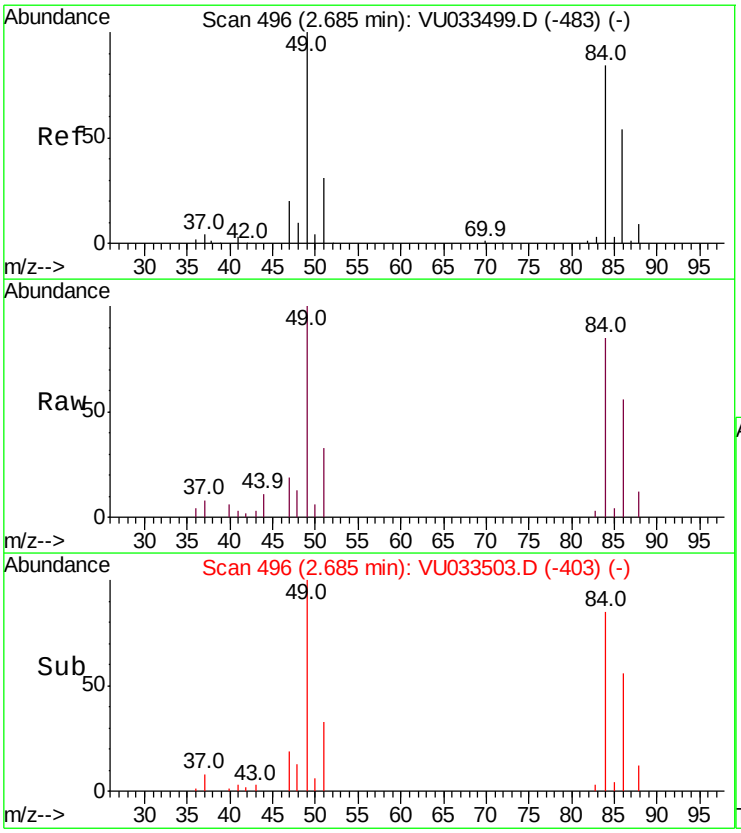
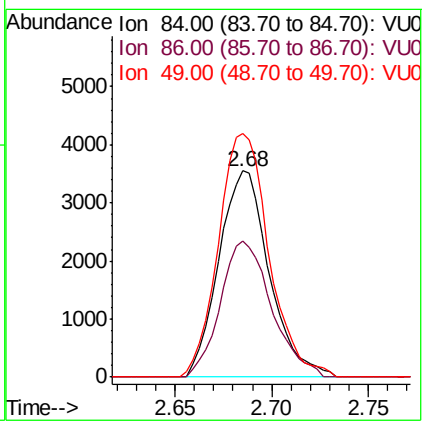
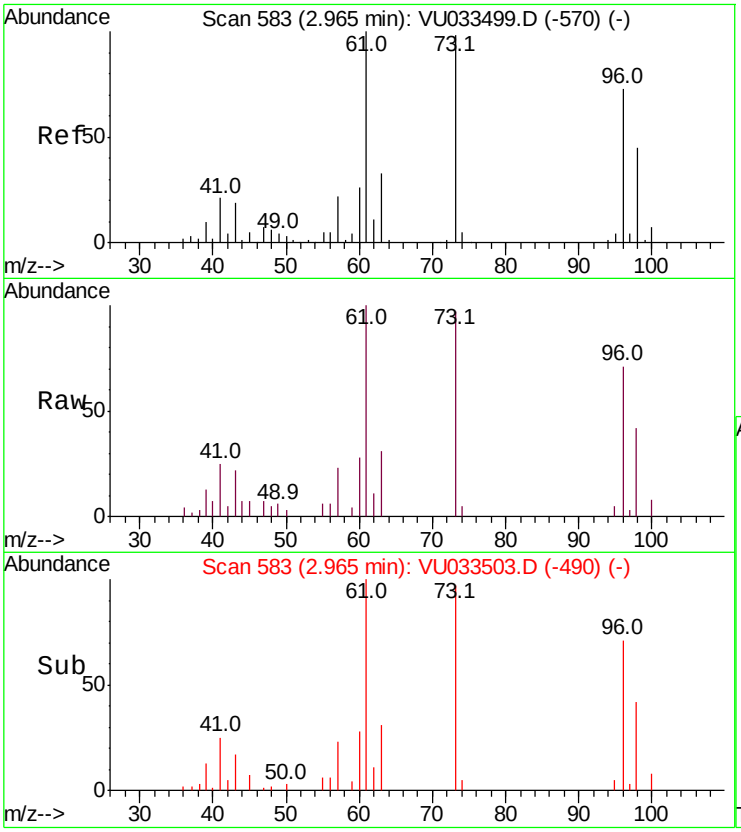


#16
Methylene chloride
Concen: 2.601 ug/L
RT: 2.68 min Scan# 496
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 84 Resp: 6445

Ion	Ratio	Lower	Upper
84	100		
86	66.1	45.7	84.9
49	118.2	85.0	158.0

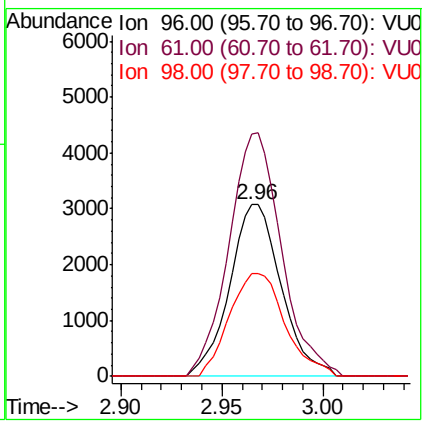




#17
trans-1,2-Dichloroethene
Concen: 2.420 ug/L
RT: 2.96 min Scan# 583
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 96 Resp: 5502

Ion	Ratio	Lower	Upper
96	100		
61	141.2	98.3	182.5
98	59.7	44.3	82.3



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ClientSampleId :
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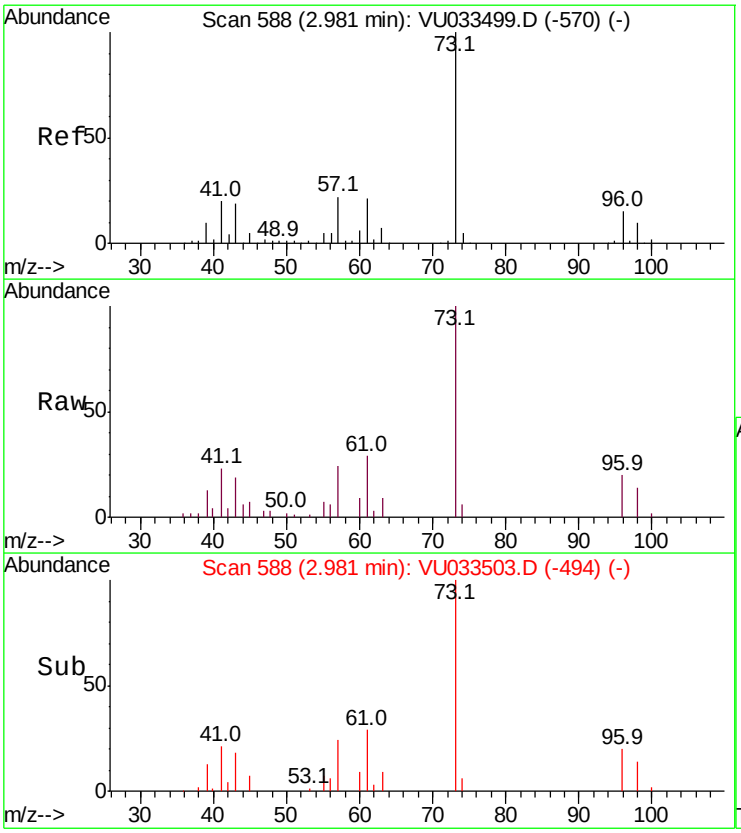
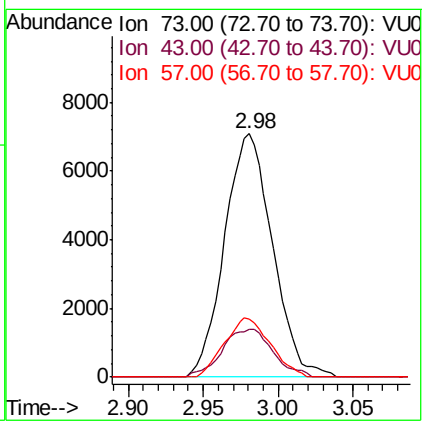
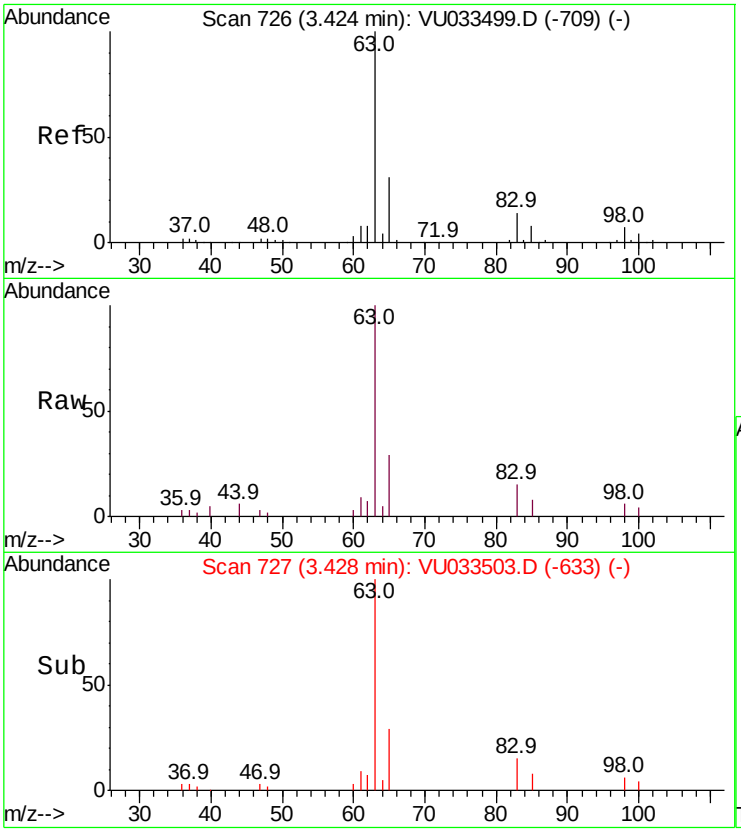


#18
Methyl tert-butyl Ether
Concen: 2.281 ug/L
RT: 2.98 min Scan# 588
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 73 Resp: 15809

Ion	Ratio	Lower	Upper
73	100		
43	20.8	15.4	23.2
57	23.2	17.4	26.2

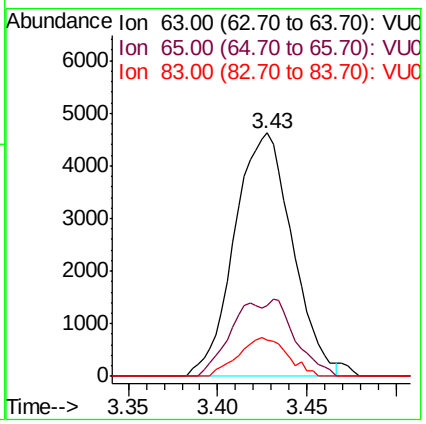




#19
1,1-Dichloroethane
Concen: 2.451 ug/L
RT: 3.43 min Scan# 727
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 63 Resp: 10456

Ion	Ratio	Lower	Upper
63	100		
65	29.3	22.0	40.8
83	15.1	9.5	17.7



Instrument :
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ClientSampleId :
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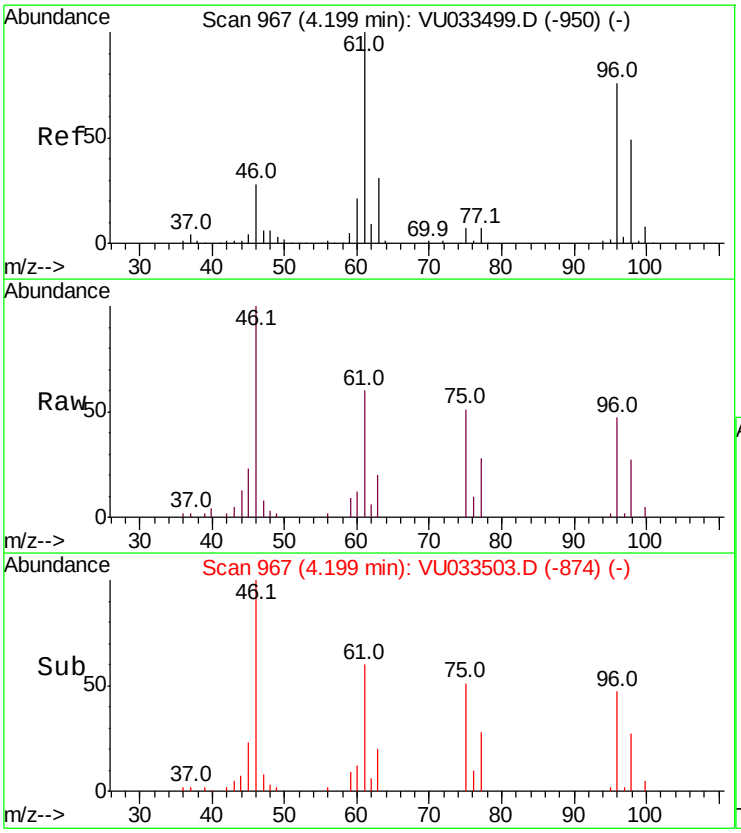
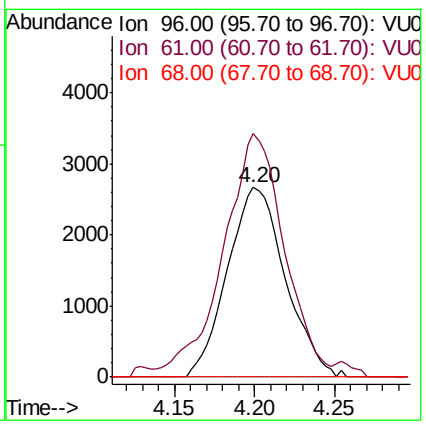
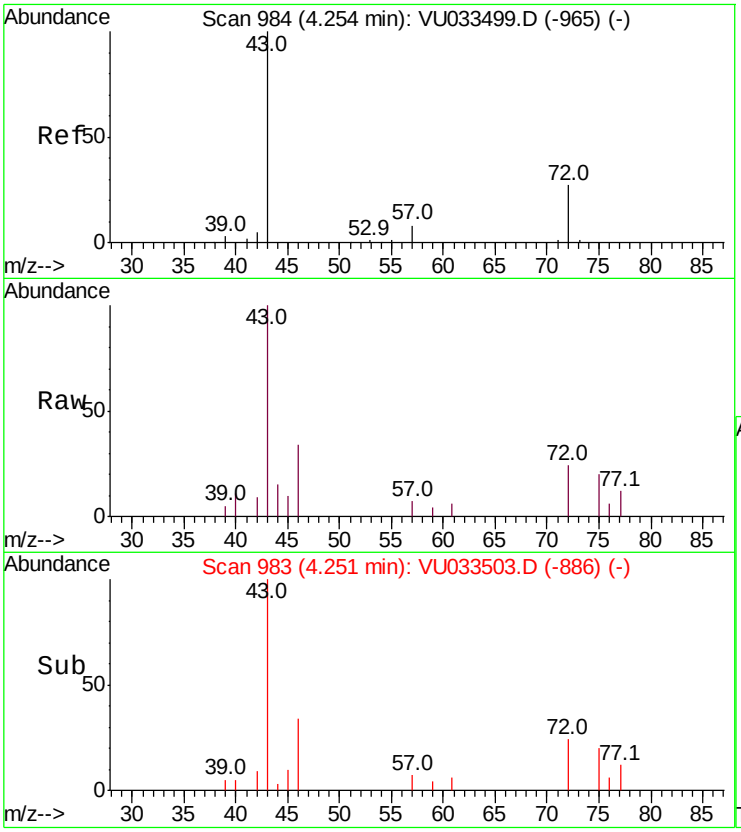


#20
cis-1,2-Dichloroethene
Concen: 2.593 ug/L
RT: 4.20 min Scan# 967
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 96 Resp: 6616

Ion	Ratio	Lower	Upper
96	100		
61	128.4	91.3	169.6
68	0.0	0.0	0.0





#22
2-Butanone
Concen: 4.191 ug/L
RT: 4.25 min Scan# 983
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 43 Resp: 8259

Ion	Ratio	Lower	Upper
43	100		
72	11.0	14.2	42.6#

Instrument :
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ClientSampleId :
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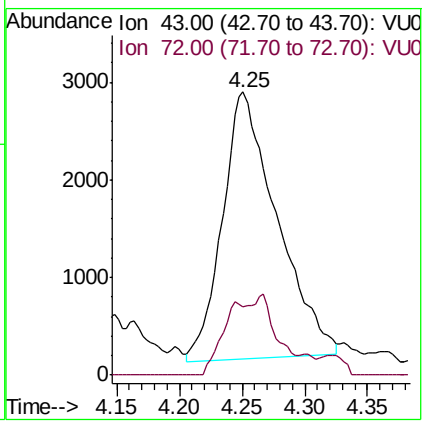

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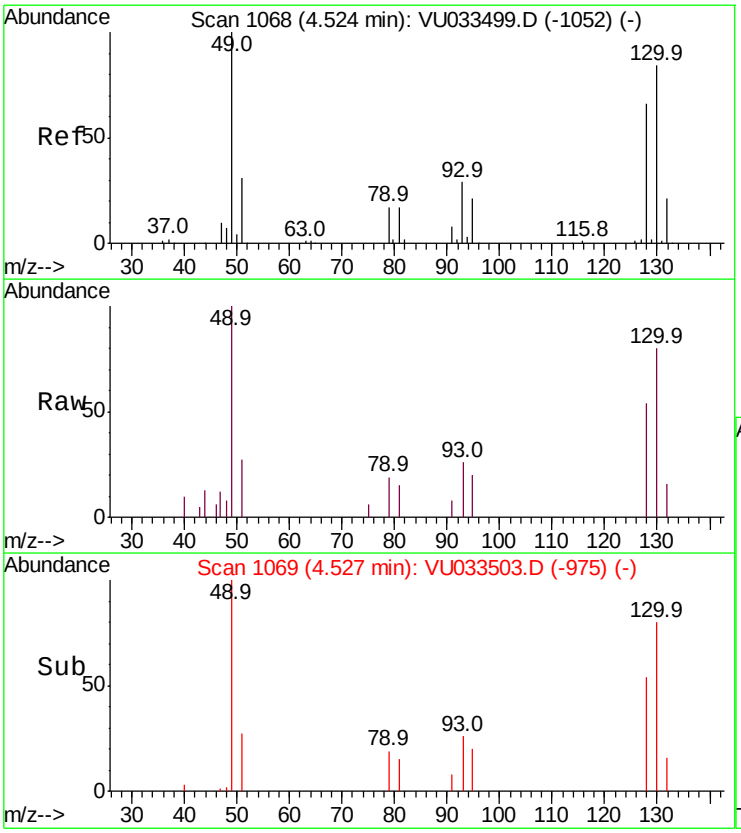
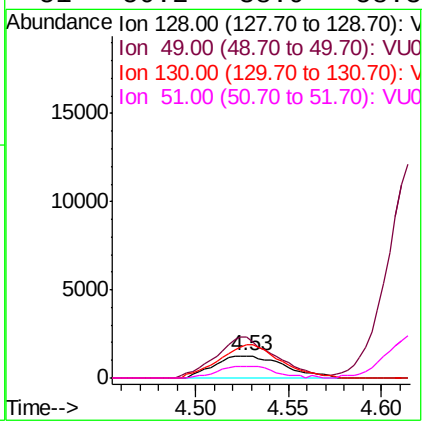
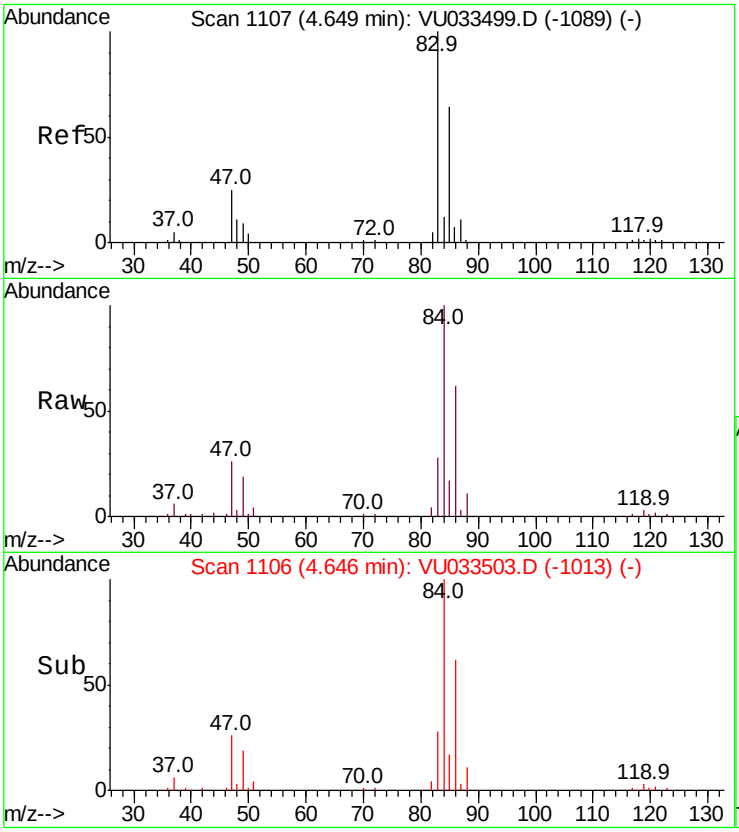


#23
Bromochloromethane
Concen: 2.449 ug/L
RT: 4.53 min Scan# 1069
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:128 Resp: 3260

Ion	Ratio	Lower	Upper
128	100		
49	186.0	108.4	201.2
130	148.2	89.7	166.5
51	50.2	38.9	58.3

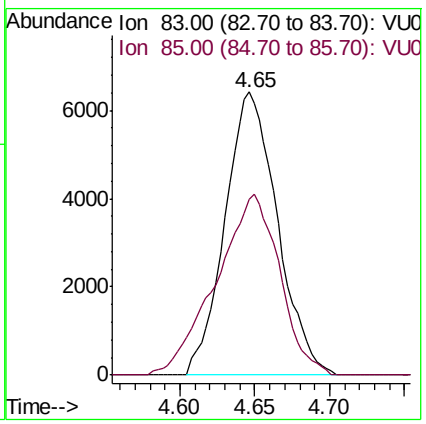




#25
Chloroform
Concen: 3.481 ug/L
RT: 4.65 min Scan# 1106
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 83 Resp: 15630

Ion	Ratio	Lower	Upper
83	100		
85	61.9	45.6	84.8



Instrument :
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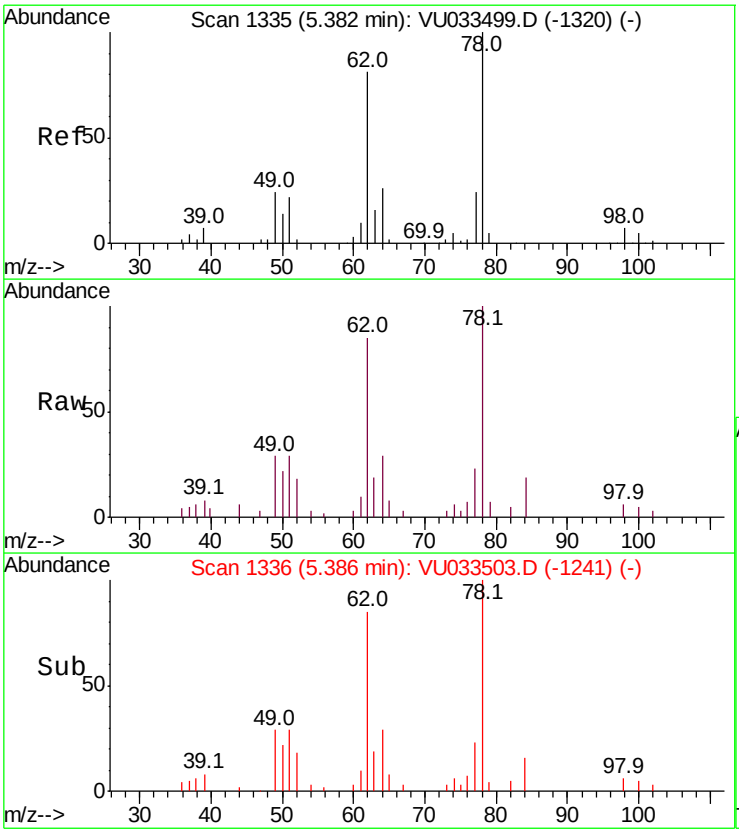
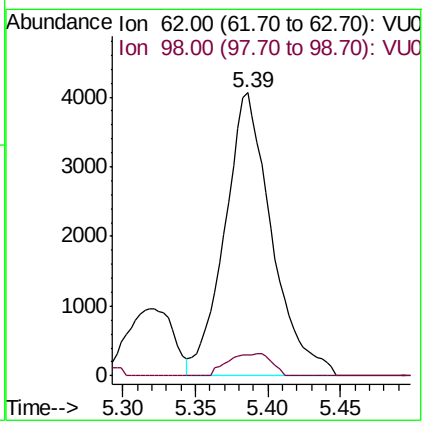
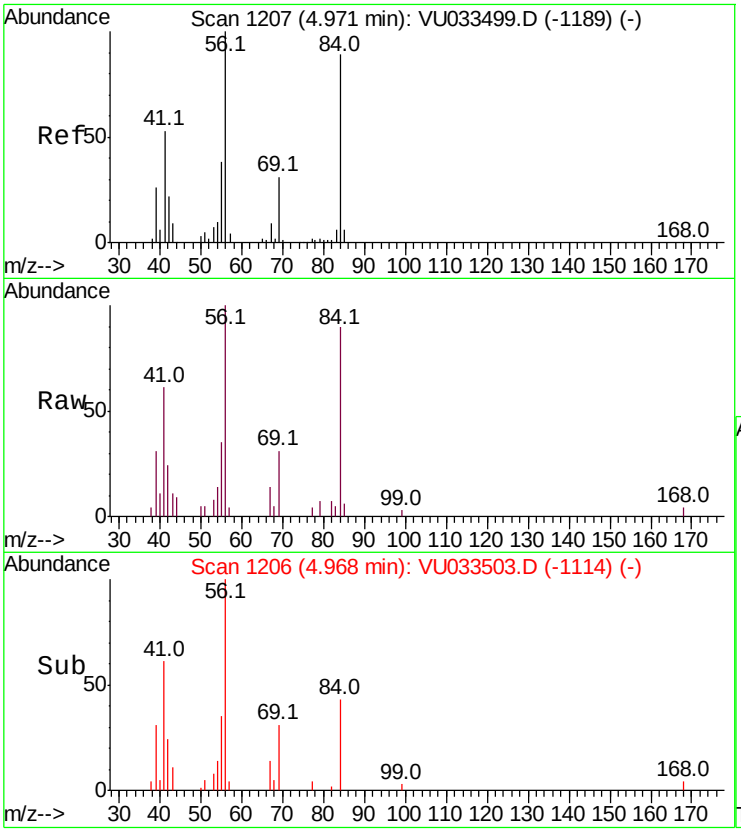


#27
1,2-Dichloroethane
Concen: 2.651 ug/L
RT: 5.39 min Scan# 1336
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 62 Resp: 9165

Ion	Ratio	Lower	Upper
62	100		
98	7.4	7.2	10.8

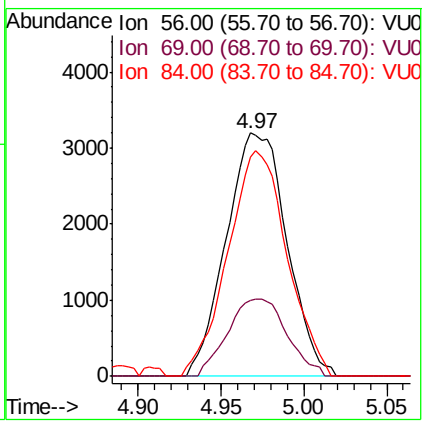




#29
Cyclohexane
Concen: 2.244 ug/L
RT: 4.97 min Scan# 1206
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 56 Resp: 8158

Ion	Ratio	Lower	Upper
56	100		
69	31.1	25.0	37.6
84	90.4	71.6	107.4



Instrument :
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ClientSampleId :
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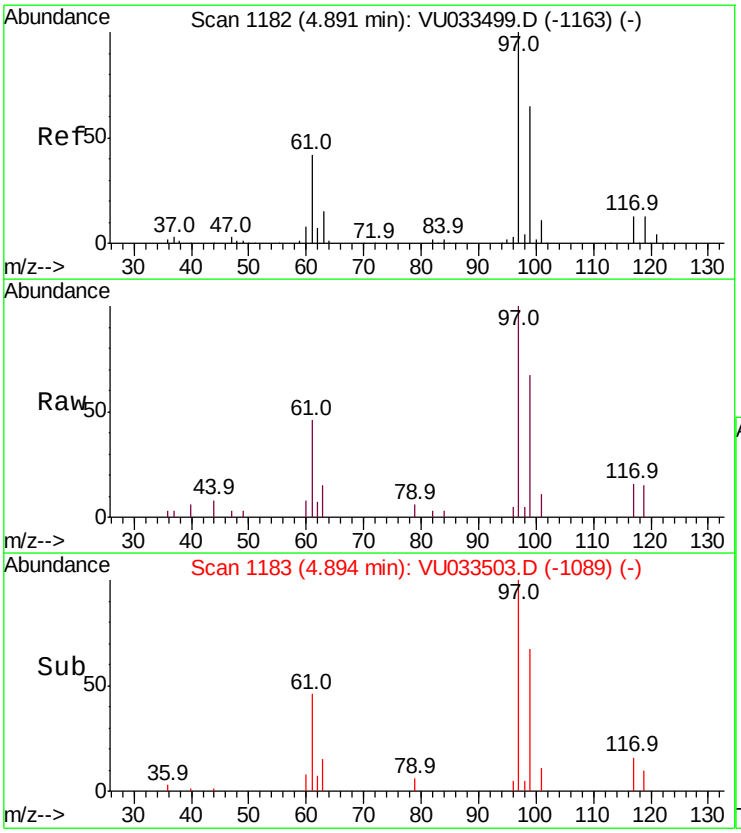
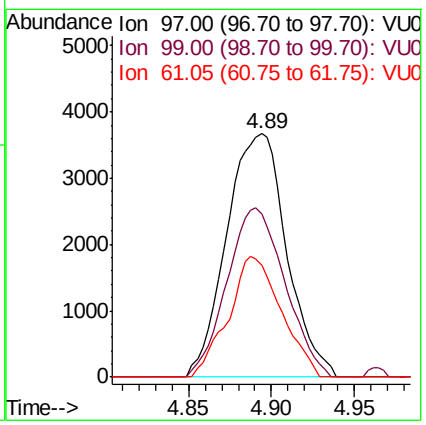
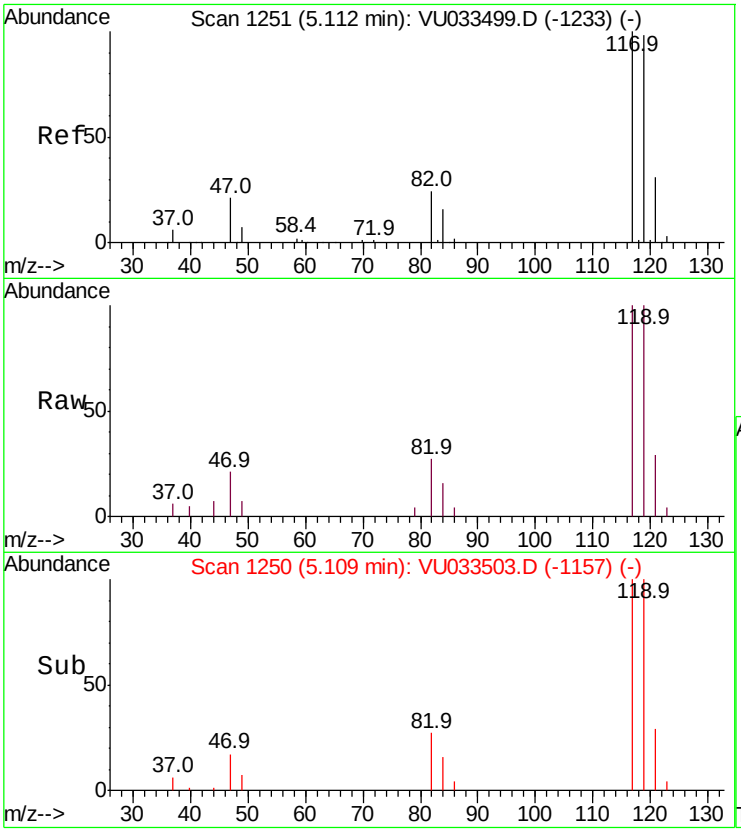


#30
1,1,1-Trichloroethane
Concen: 2.411 ug/L
RT: 4.89 min Scan# 1183
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 97 Resp: 9244

Ion	Ratio	Lower	Upper
97	100		
99	67.4	51.1	76.7
61	43.8	35.5	53.3

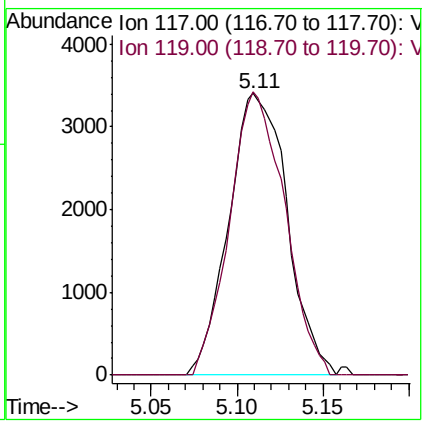




#31
Carbon tetrachloride
Concen: 2.406 ug/L
RT: 5.11 min Scan# 1250
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:117 Resp: 8033

Ion	Ratio	Lower	Upper
117	100		
119	95.2	77.0	115.4



Instrument :
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ClientSampleId :
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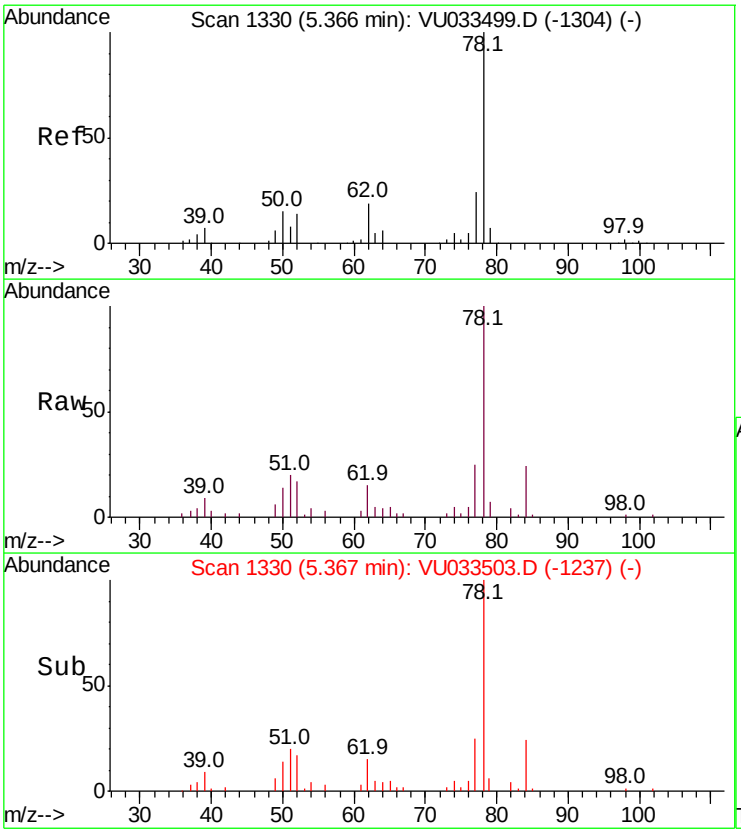
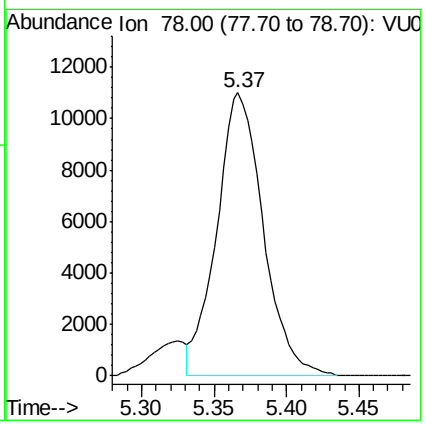
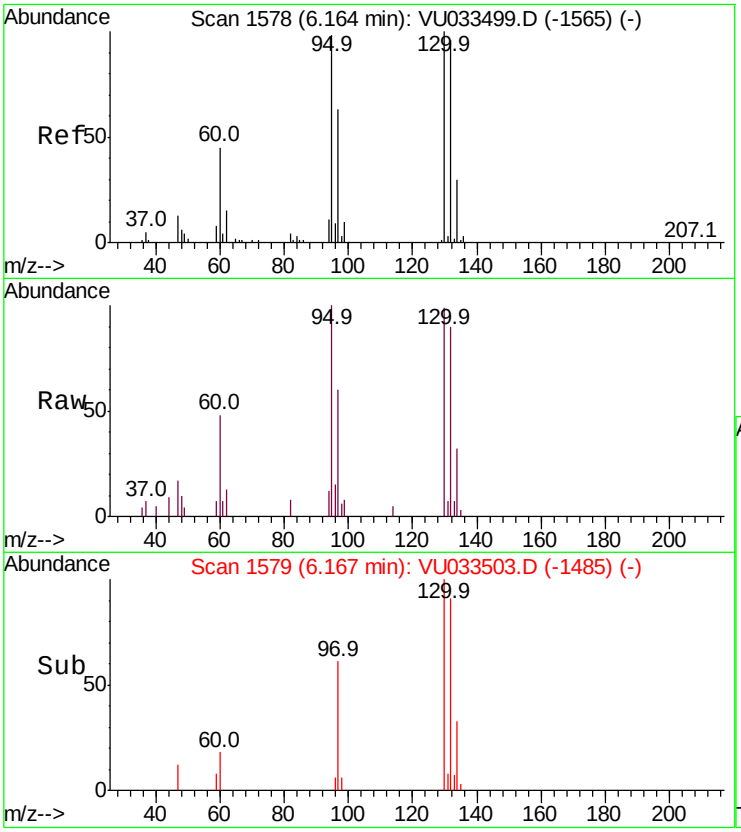


#33
Benzene
Concen: 2.553 ug/L
RT: 5.37 min Scan# 1330
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 78 Resp: 24542

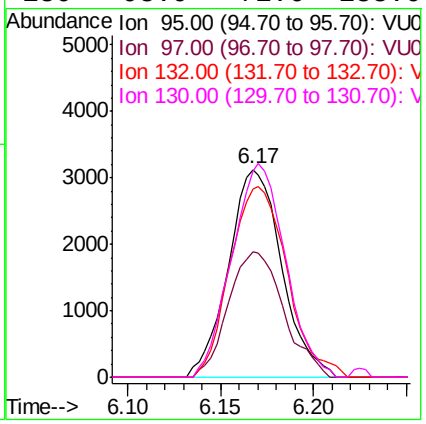




#34
Trichloroethene
Concen: 2.462 ug/L
RT: 6.17 min Scan# 1579
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 95 Resp: 6243

Ion	Ratio	Lower	Upper
95	100		
97	60.1	44.7	83.1
132	90.4	66.8	124.0
130	98.9	71.6	133.0



Instrument :
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ClientSampleId :
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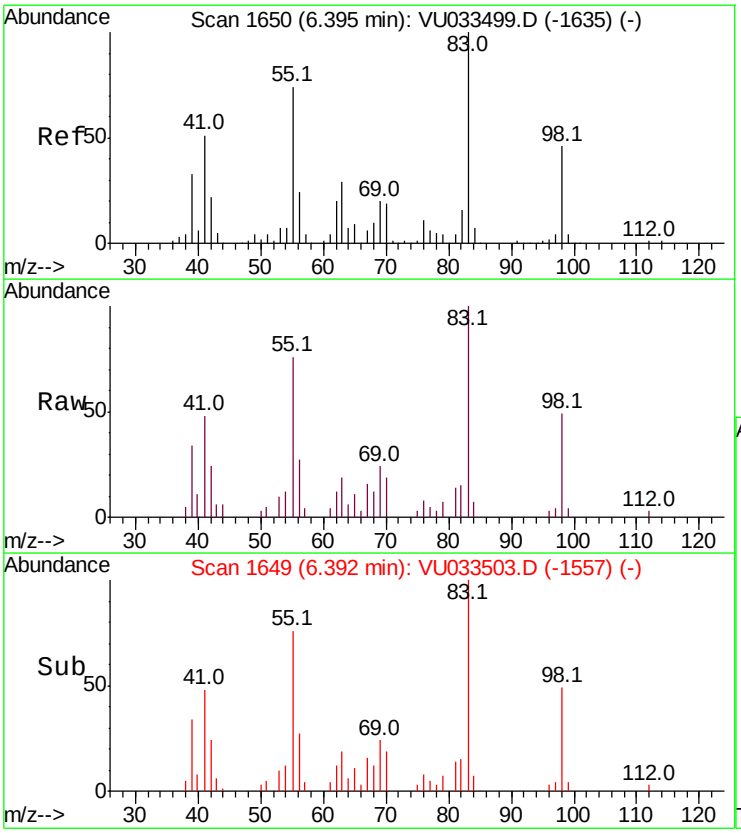
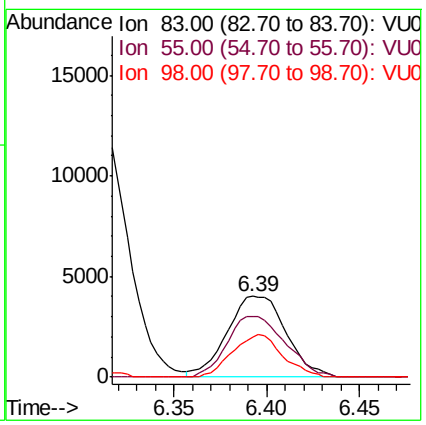
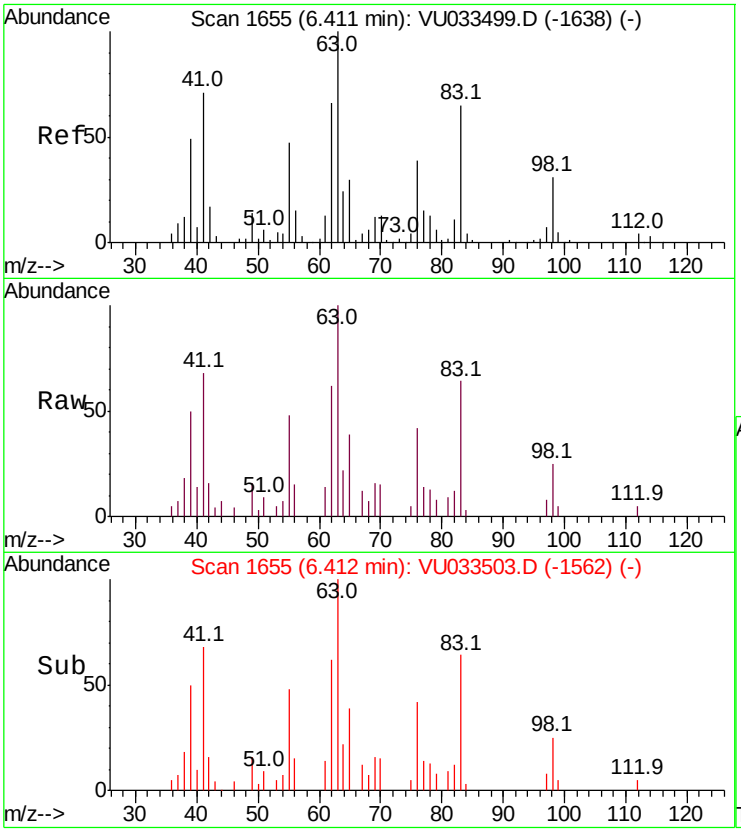


#35
Methylcyclohexane
Concen: 2.254 ug/L
RT: 6.39 min Scan# 1649
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 83 Resp: 8921

Ion	Ratio	Lower	Upper
83	100		
55	73.9	60.2	90.4
98	44.1	36.5	54.7

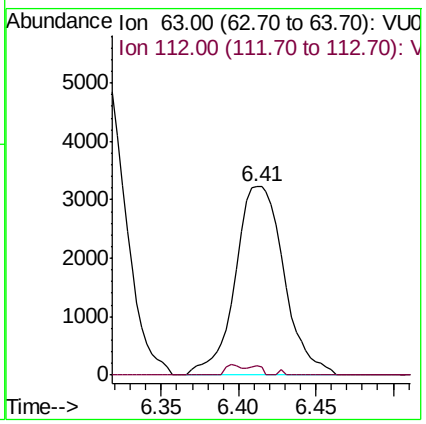




#37
1,2-Dichloropropane
Concen: 2.753 ug/L
RT: 6.41 min Scan# 1655
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 63 Resp: 7084

Ion	Ratio	Lower	Upper
63	100		
112	1.2	3.0	4.6#



Instrument :
MSVOA_U
ClientSampleId :
MDL03

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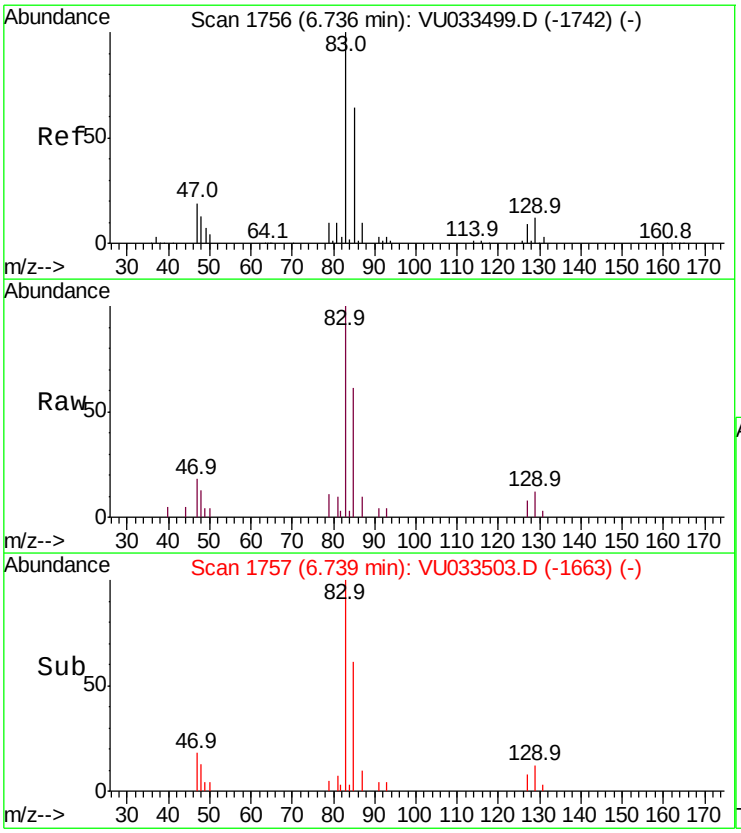
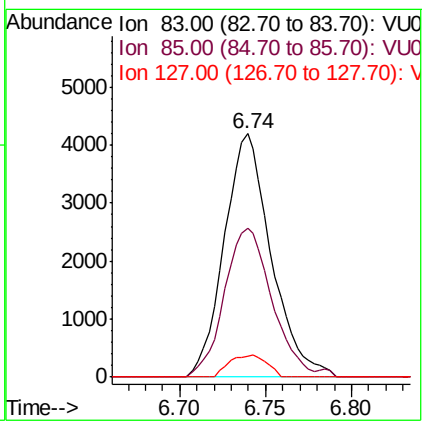
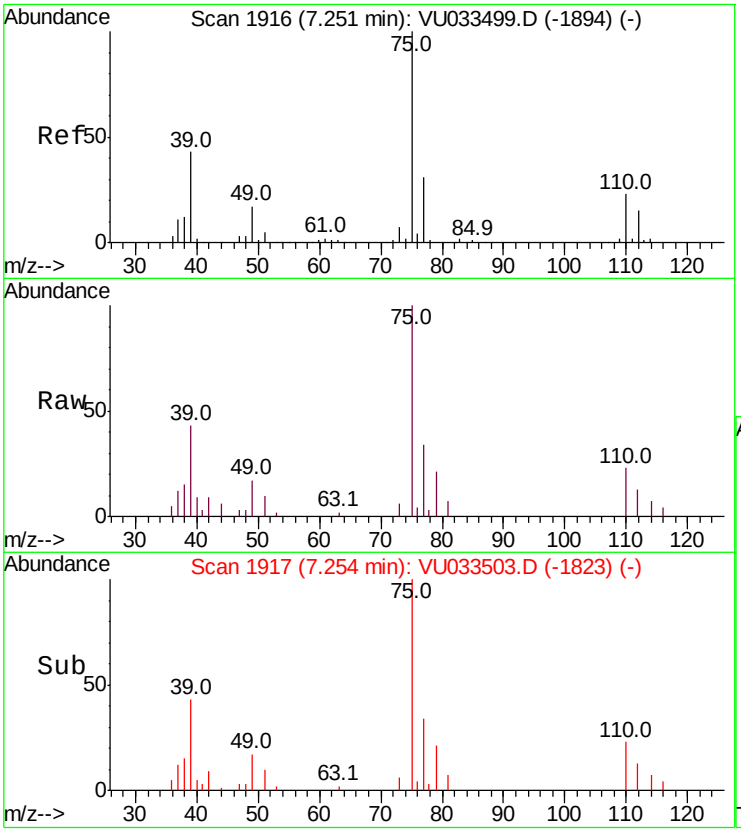


#38
Bromodichloromethane
Concen: 2.391 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 83 Resp: 7954

Ion	Ratio	Lower	Upper
83	100		
85	61.1	45.1	83.9
127	8.5	7.2	10.8





#39
cis-1,3-Dichloropropene
Concen: 2.490 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 75 Resp: 10000

Ion	Ratio	Lower	Upper
75	100		
77	34.2	22.3	41.5

Instrument :
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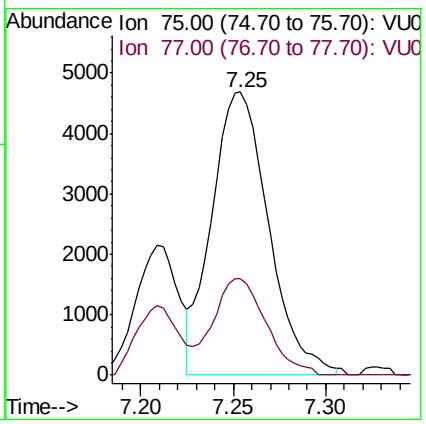

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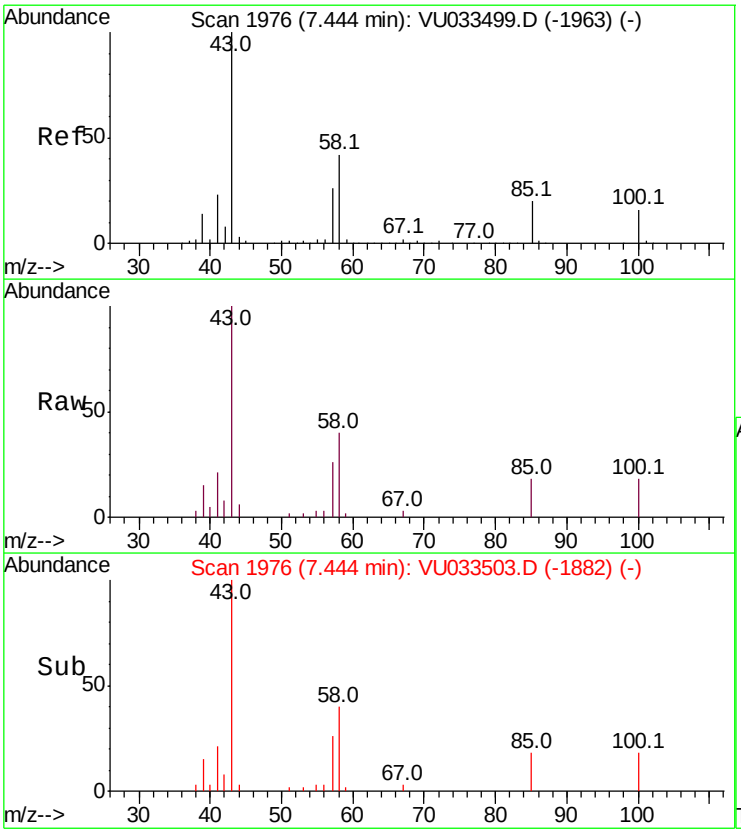
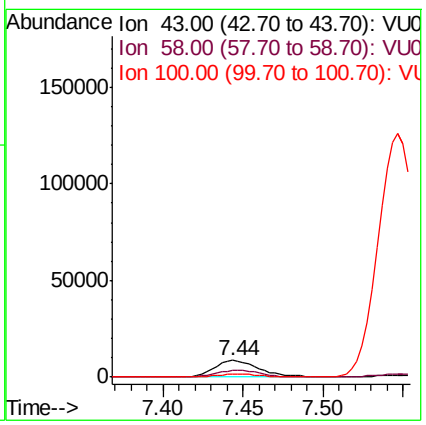
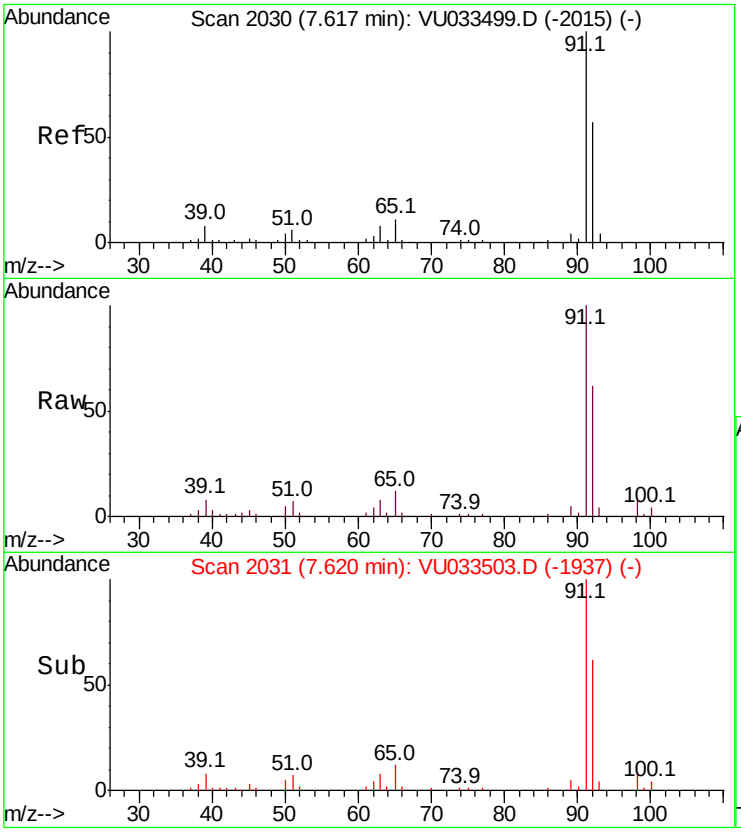


#40
4-Methyl-2-pentanone
Concen: 4.646 ug/L
RT: 7.44 min Scan# 1976
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 43 Resp: 16509

Ion	Ratio	Lower	Upper
43	100		
58	40.5	32.8	49.2
100	16.1	12.9	19.3

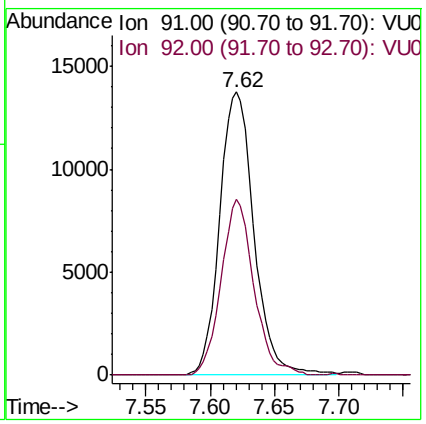




#42
Toluene
Concen: 2.456 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 91 Resp: 25389

Ion	Ratio	Lower	Upper
91	100		
92	62.2	40.2	74.6



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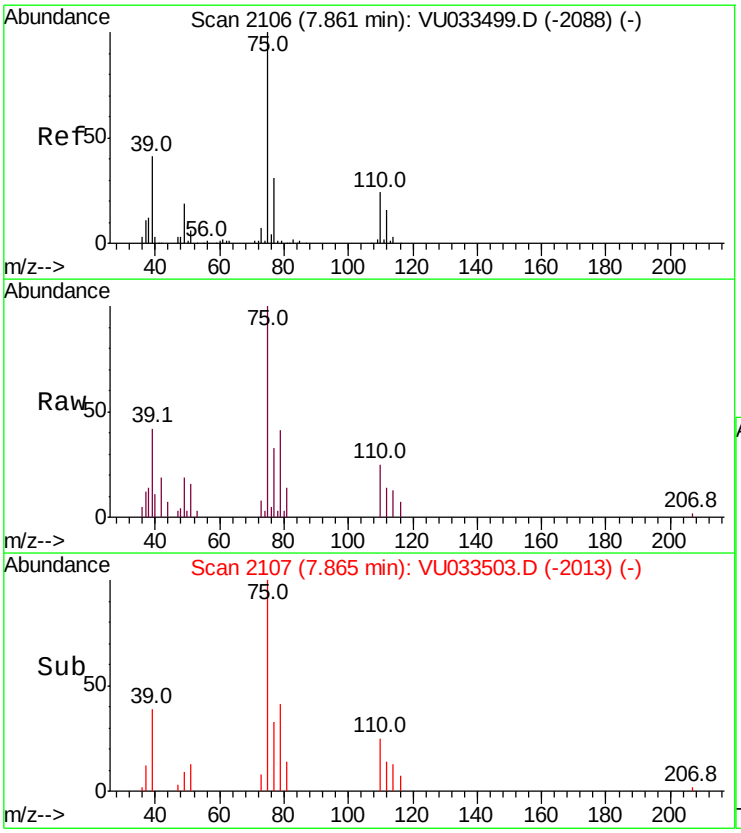
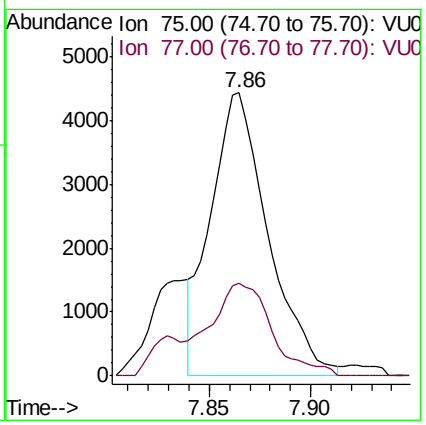
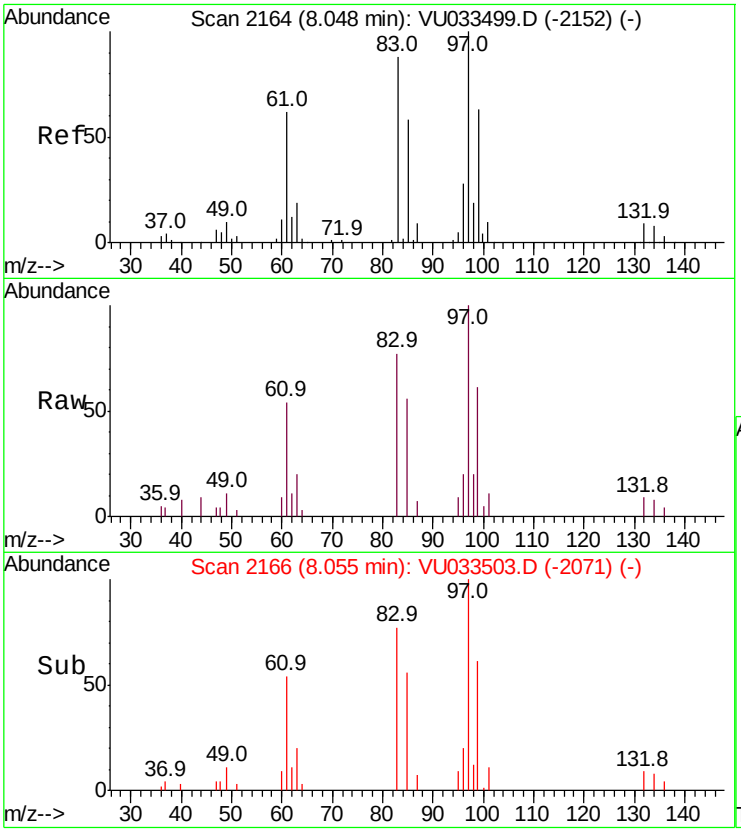


#44
trans-1,3-Dichloropropene
Concen: 2.420 ug/L m
RT: 7.86 min Scan# 2107
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 75 Resp: 8783

Ion	Ratio	Lower	Upper
75	100		
77	32.5	22.7	42.1

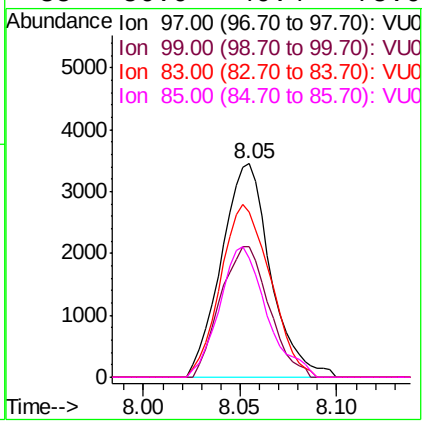




#45
1,1,2-Trichloroethane
Concen: 2.498 ug/L
RT: 8.05 min Scan# 2166
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 97 Resp: 6103

Ion	Ratio	Lower	Upper
97	100		
99	61.3	44.4	82.4
83	77.2	61.5	114.1
85	56.0	40.4	75.0



Instrument :
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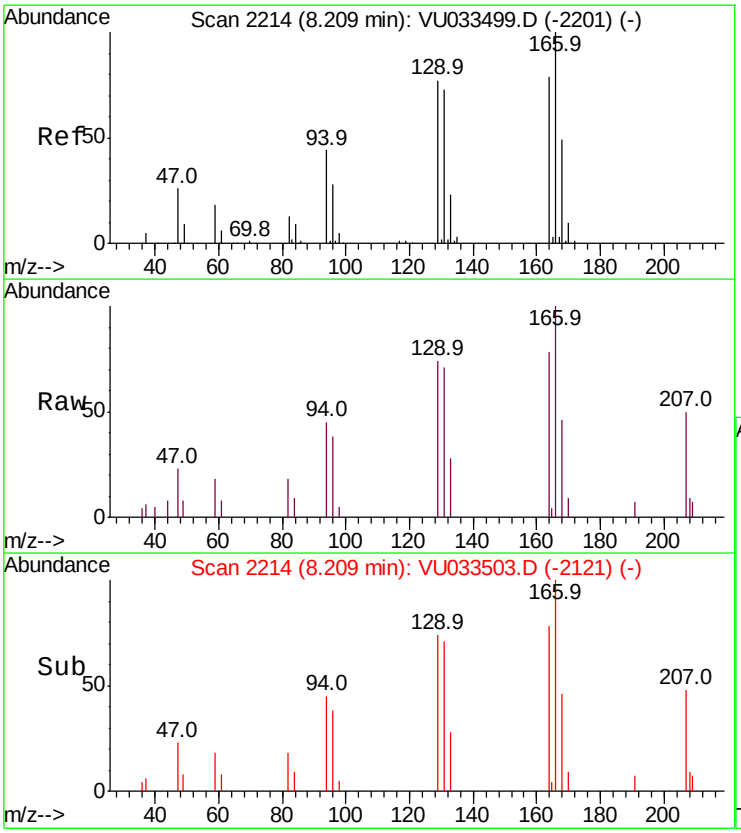
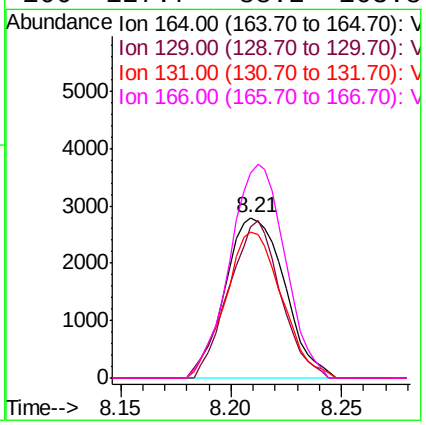
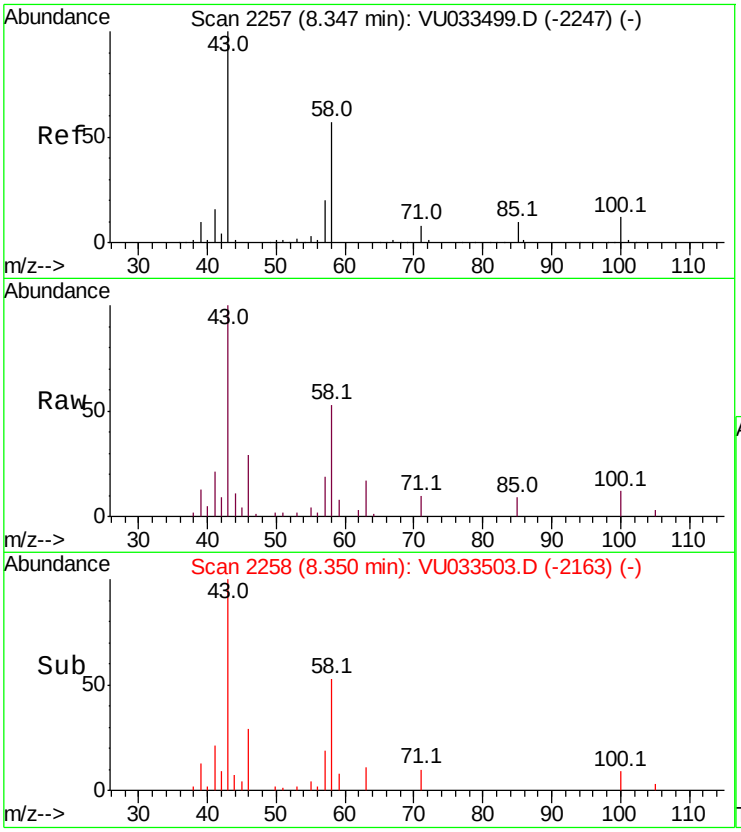


#46
Tetrachloroethene
Concen: 2.529 ug/L
RT: 8.21 min Scan# 2214
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:164 Resp: 5236

Ion	Ratio	Lower	Upper
164	100		
129	94.3	65.5	121.7
131	90.7	63.3	117.7
166	127.7	88.2	163.8

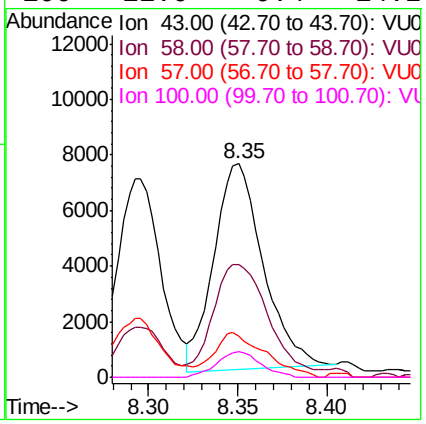




#48
2-Hexanone
Concen: 4.935 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 43 Resp: 14174

Ion	Ratio	Lower	Upper
43	100		
58	56.6	45.8	68.6
57	22.8	15.8	23.6
100	11.0	9.4	14.2



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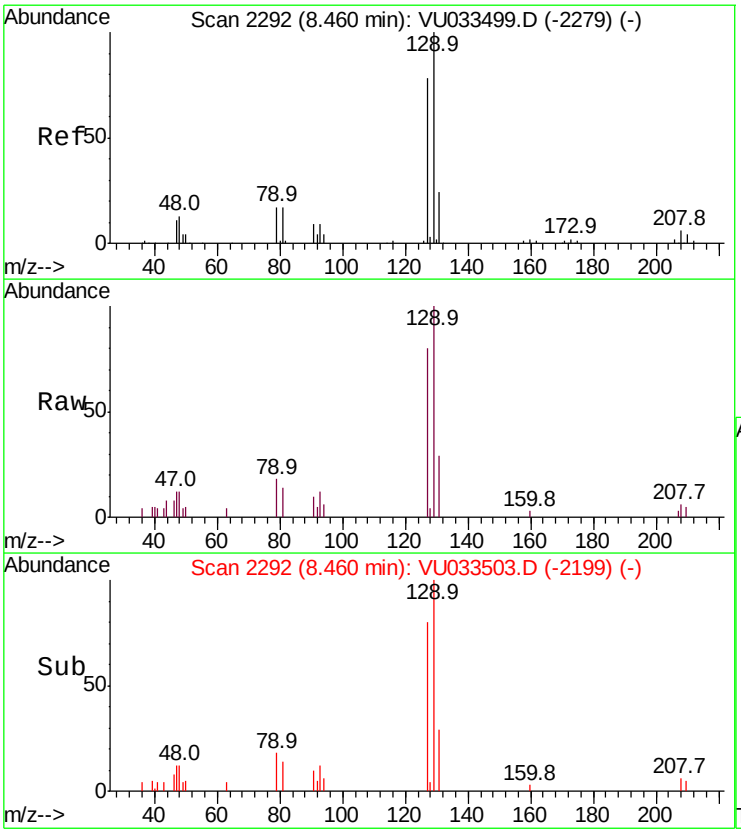
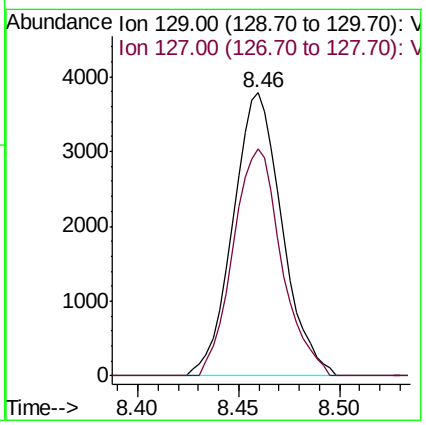
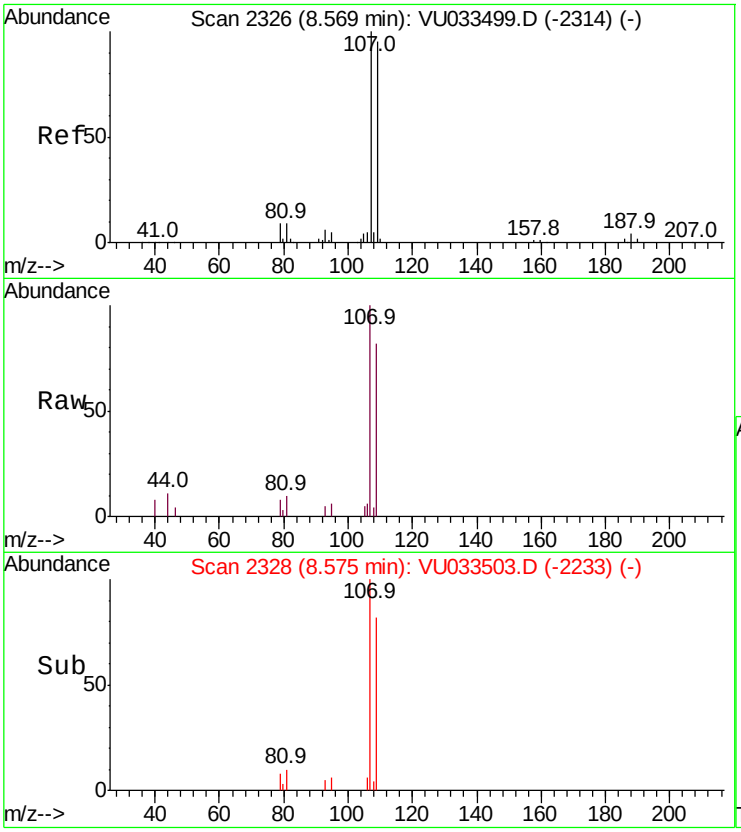


#49
Dibromochloromethane
Concen: 2.320 ug/L
RT: 8.46 min Scan# 2292
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:129 Resp: 6449

Ion	Ratio	Lower	Upper
129	100		
127	80.3	53.8	99.8

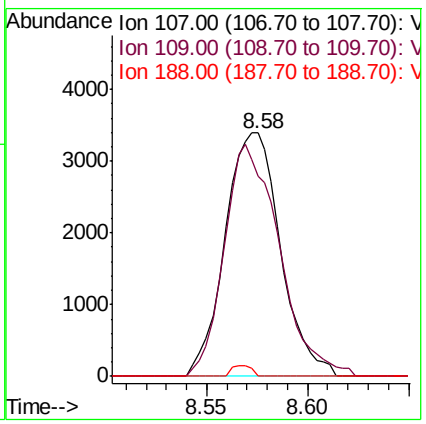




#50
1,2-Dibromoethane
Concen: 2.408 ug/L
RT: 8.58 min Scan# 2328
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:107 Resp: 6515

Ion	Ratio	Lower	Upper
107	100		
109	82.1	66.8	124.0
188	0.0	3.0	4.4#



Instrument :
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ClientSampleId :
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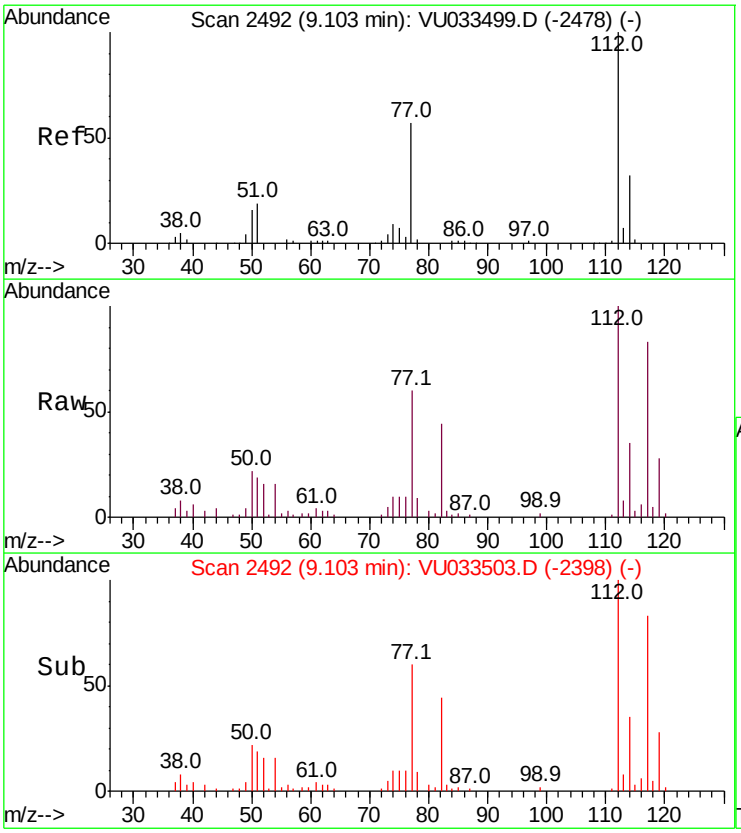
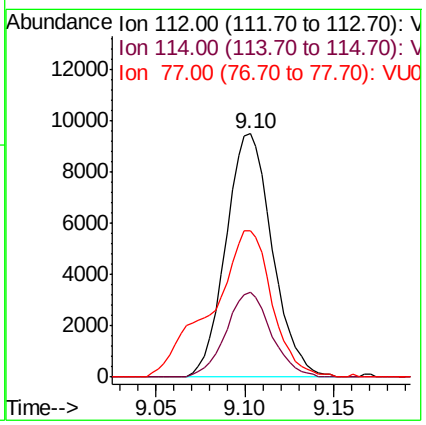
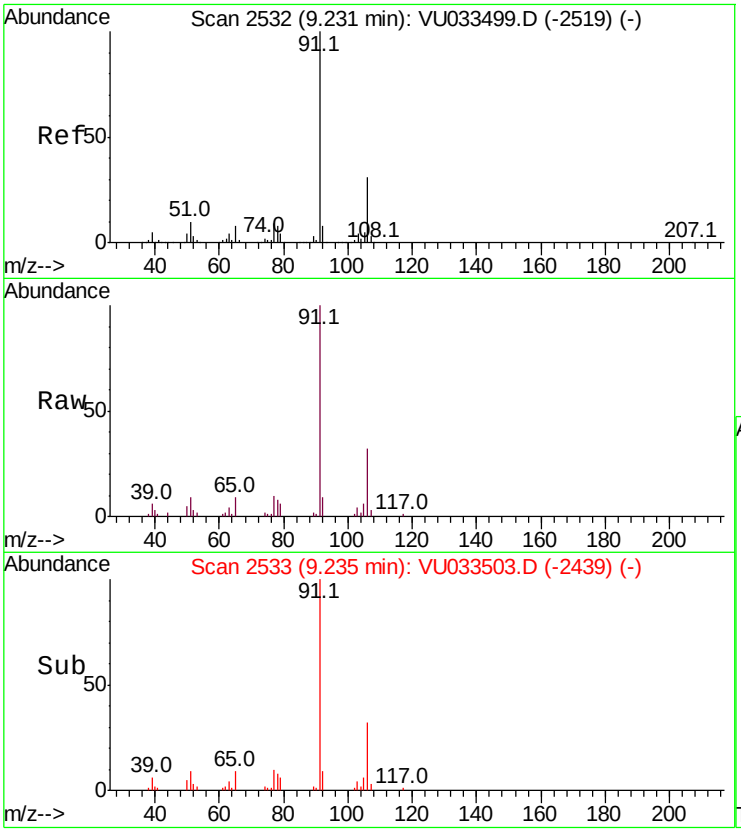


#51
Chlorobenzene
Concen: 2.539 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:112 Resp: 17182

Ion	Ratio	Lower	Upper
112	100		
114	34.8	22.3	41.5
77	60.3	45.6	68.4

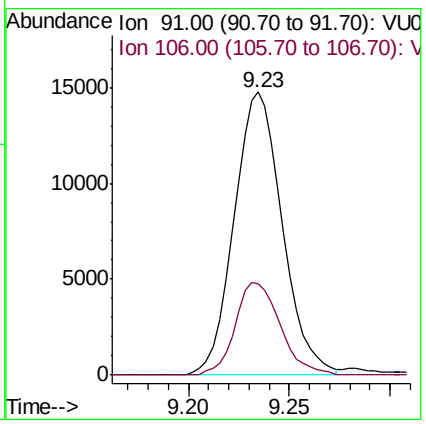




#52
Ethylbenzene
Concen: 2.211 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 91 Resp: 24614

Ion	Ratio	Lower	Upper
91	100		
106	32.3	22.2	41.2



Instrument :
MSVOA_U
ClientSampleId :
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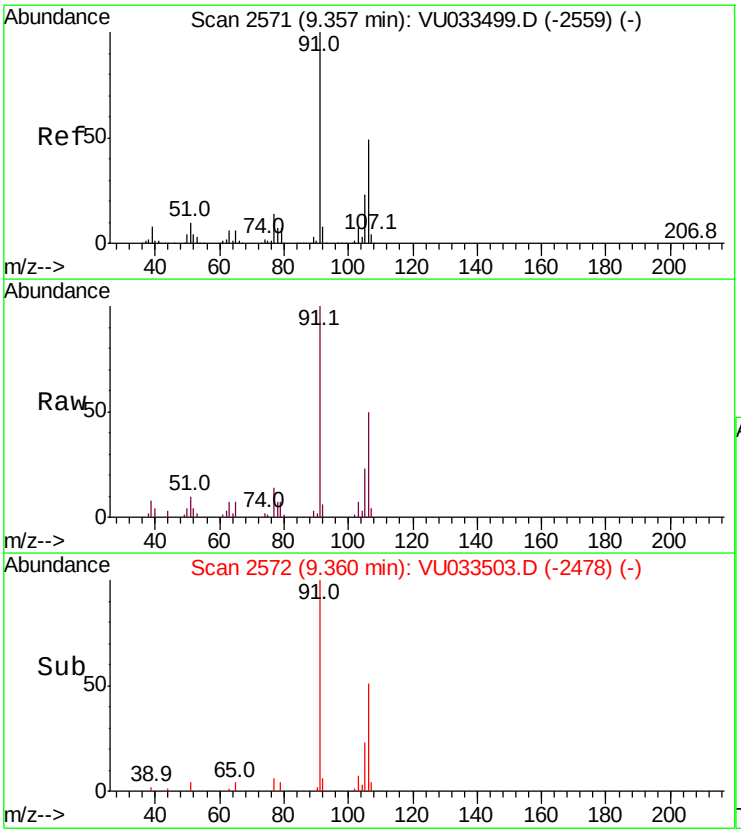
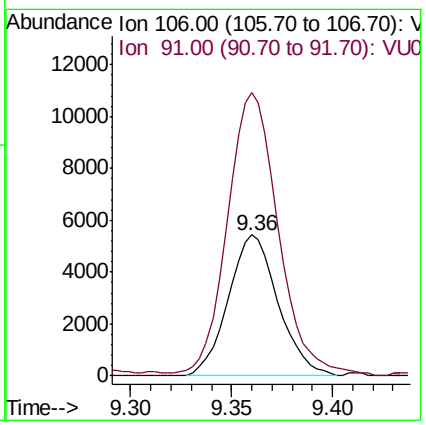
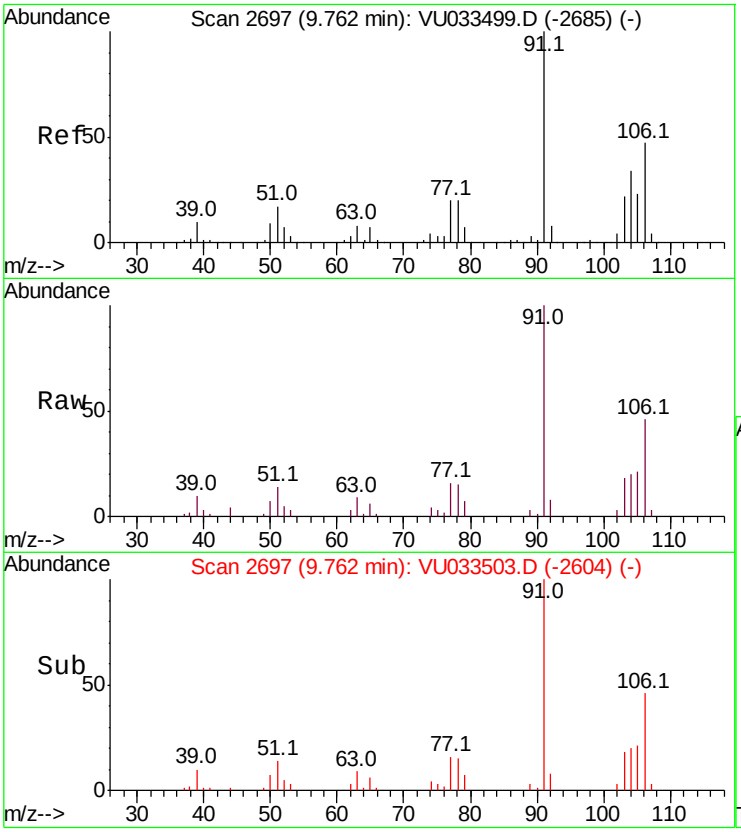


#53
m,p-Xylene
Concen: 2.201 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:106 Resp: 9406

Ion	Ratio	Lower	Upper
106	100		
91	200.8	143.0	265.6

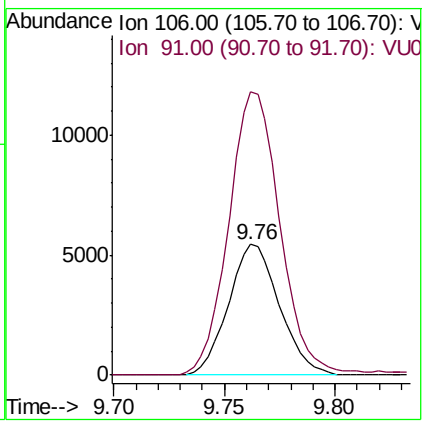




#54
o-xylene
Concen: 2.108 ug/L
RT: 9.76 min Scan# 2697
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:106 Resp: 8738

Ion	Ratio	Lower	Upper
106	100		
91	216.3	148.4	275.6



Instrument :
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ClientSampleId :
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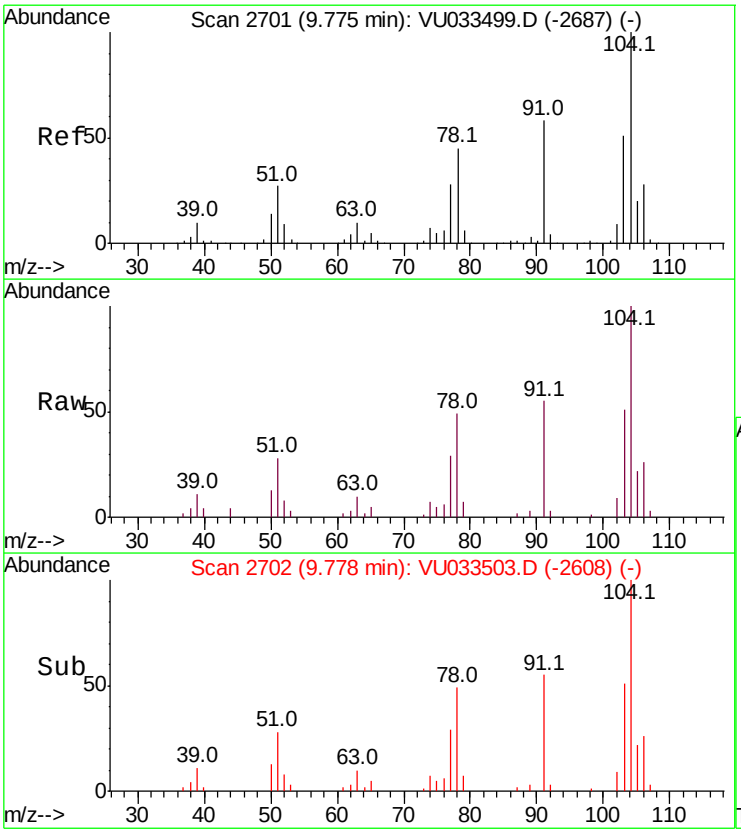
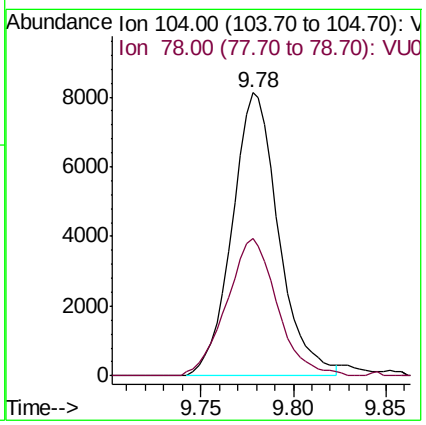
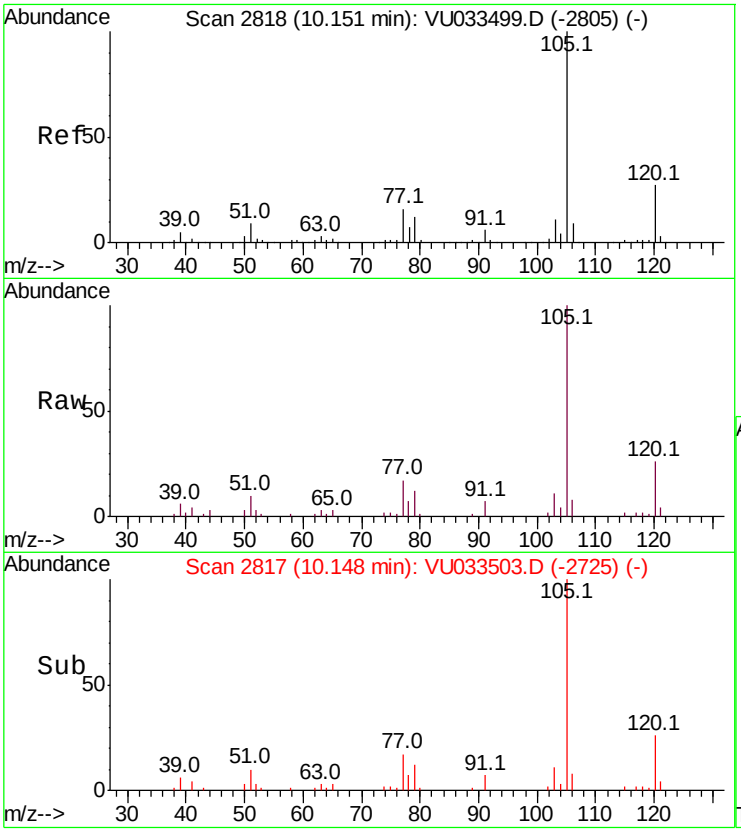


#55
Styrene
Concen: 2.017 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:104 Resp: 14201

Ion	Ratio	Lower	Upper
104	100		
78	48.5	32.2	59.8





#56
Isopropylbenzene
Concen: 2.088 ug/L
RT: 10.15 min Scan# 2817
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:105 Resp: 22612

Ion	Ratio	Lower	Upper
105	100		
120	25.1	21.4	32.0
77	16.8	12.5	18.7

Instrument :
MSVOA_U
ClientSampleId :
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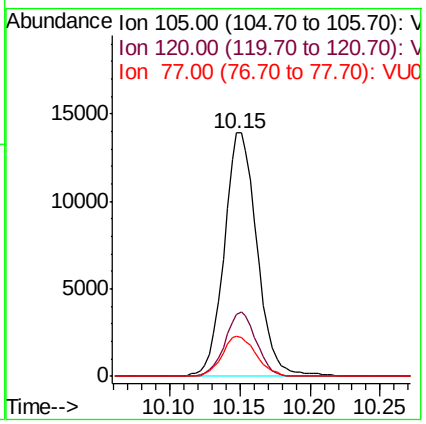

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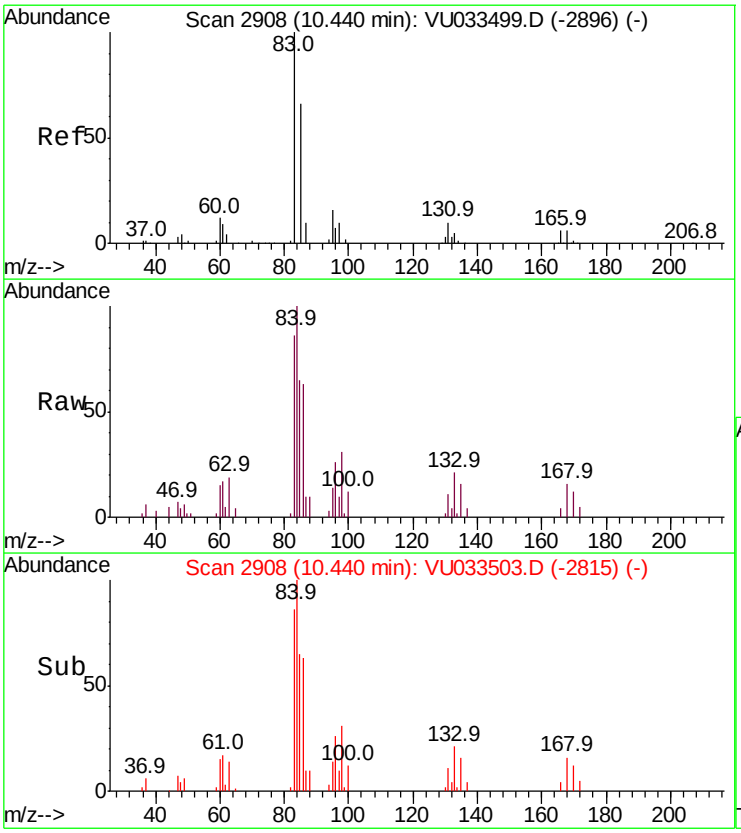
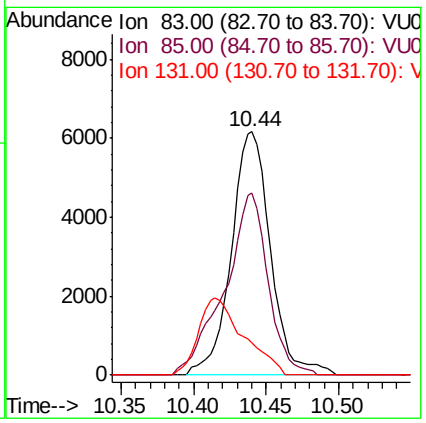
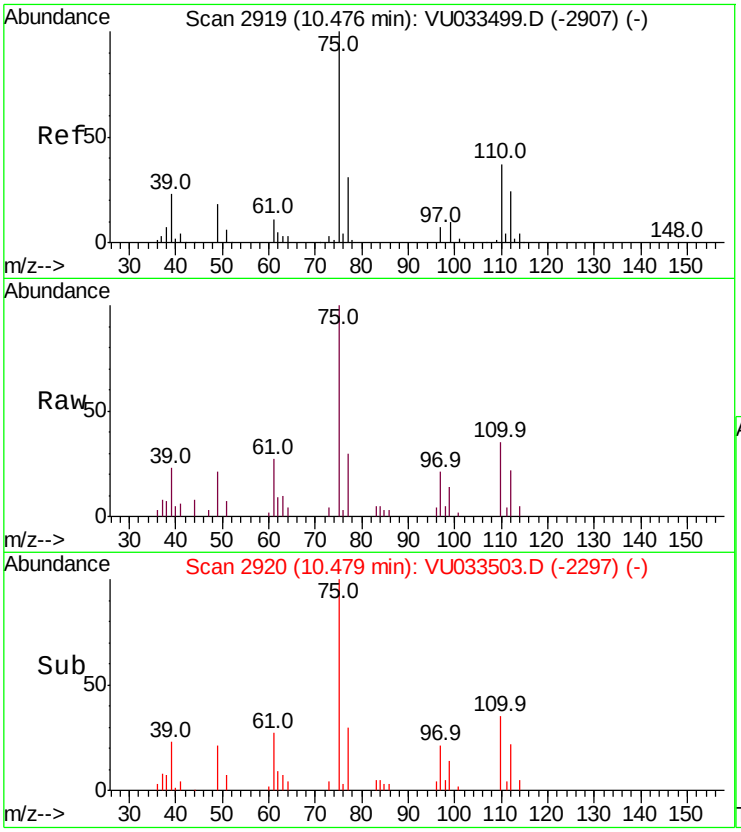


#58
1,1,2,2-Tetrachloroethane
Concen: 2.631 ug/L
RT: 10.44 min Scan# 2908
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 83 Resp: 11592

Ion	Ratio	Lower	Upper
83	100		
85	74.8	45.4	84.4
131	13.1	7.9	11.9#





#59
1,2,3-Trichloropropane
Concen: 2.481 ug/L
RT: 10.48 min Scan# 2920
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 75 Resp: 8428

Ion	Ratio	Lower	Upper
75	100		
77	32.1	25.8	38.6

Instrument :
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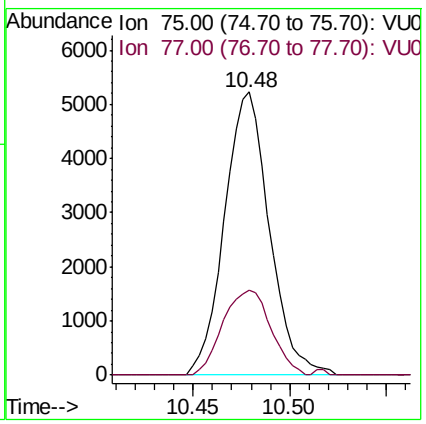

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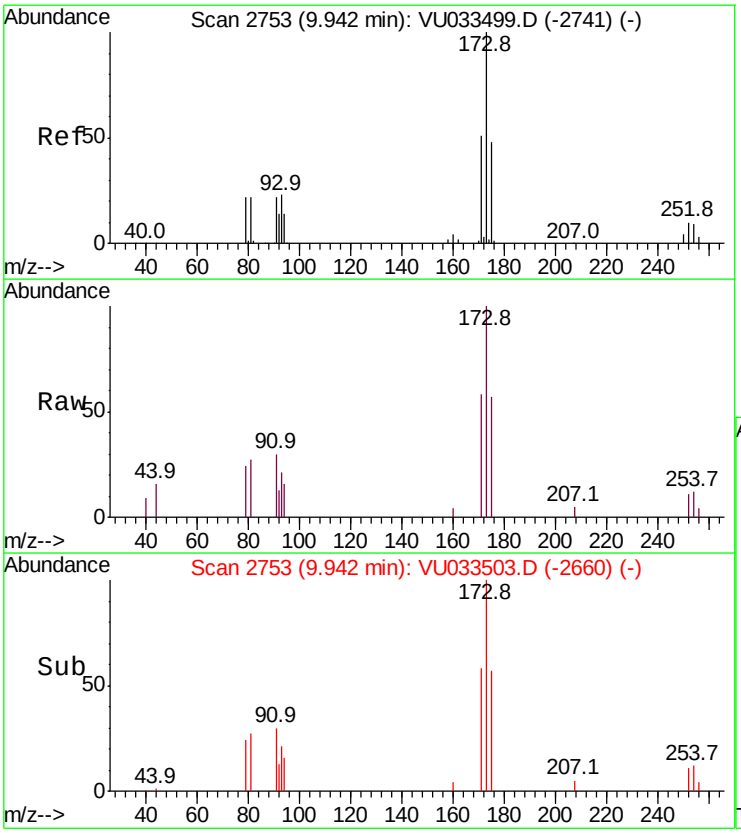
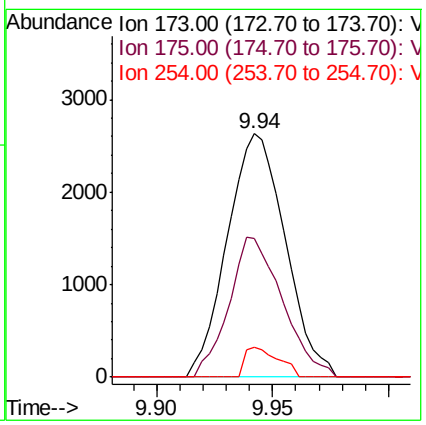
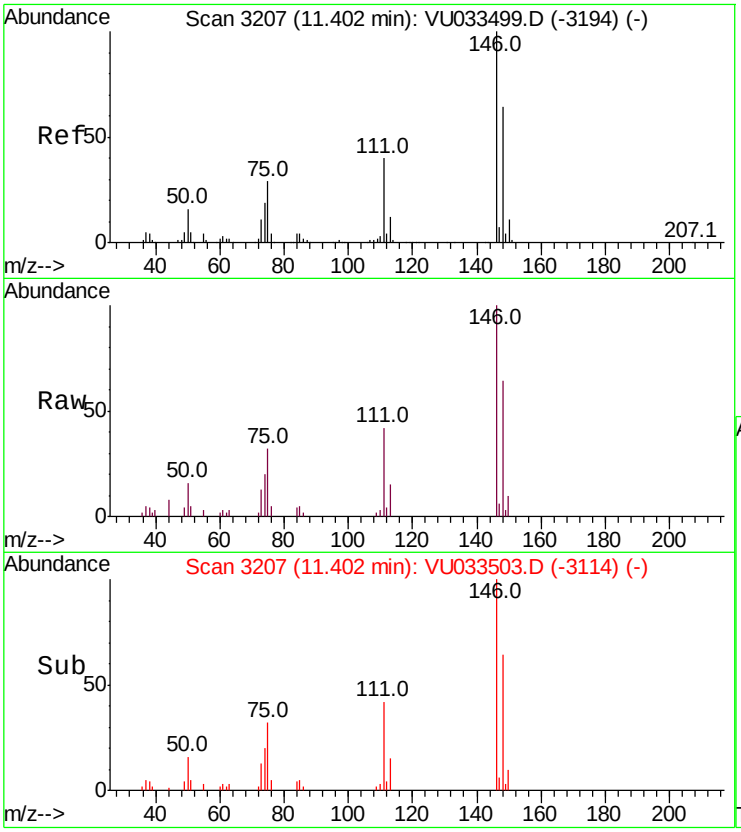


#61
Bromoform
Concen: 2.295 ug/L
RT: 9.94 min Scan# 2753
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:173 Resp: 4578

Ion	Ratio	Lower	Upper
173	100		
175	52.8	38.7	58.1
254	7.0	7.5	11.3#

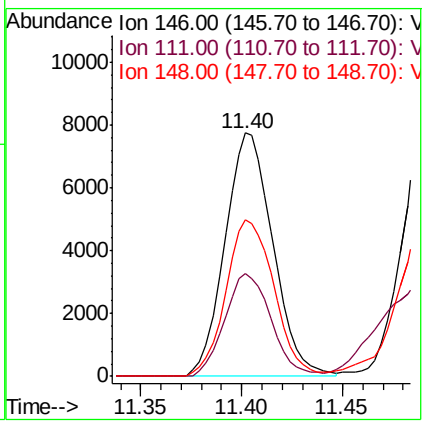




#62
1,3-Dichlorobenzene
Concen: 2.537 ug/L
RT: 11.40 min Scan# 3207
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:146 Resp: 12863

Ion	Ratio	Lower	Upper
146	100		
111	42.2	28.1	52.1
148	64.2	45.0	83.6



Instrument :
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ClientSampleId :
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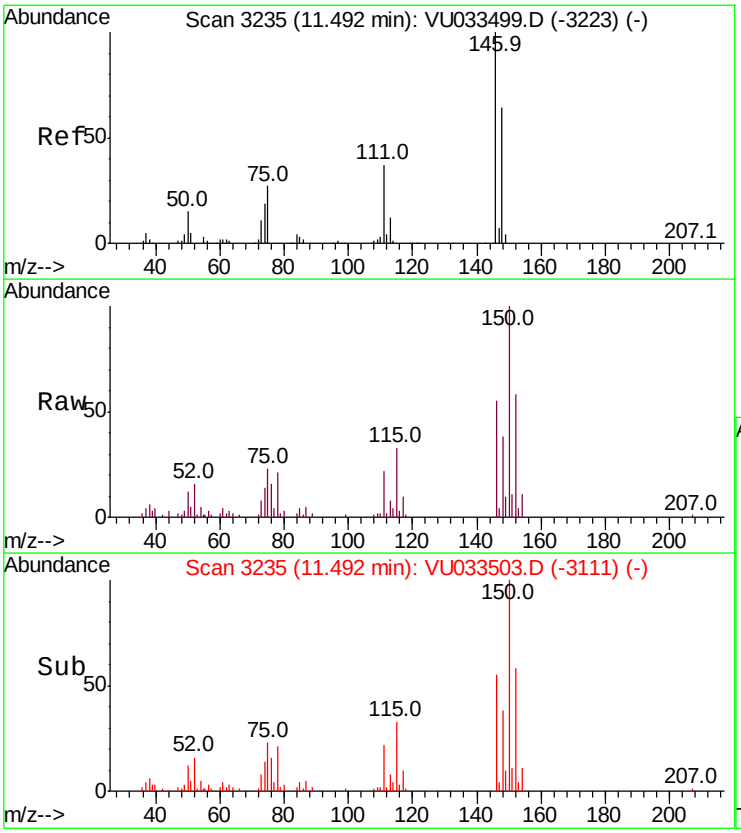
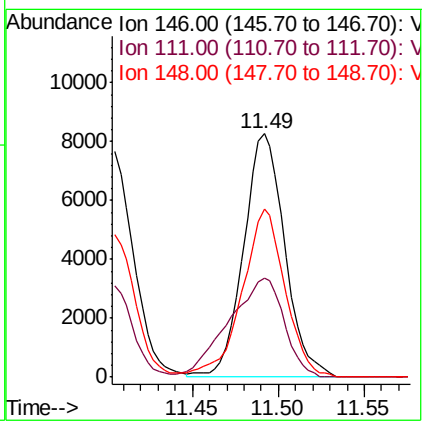
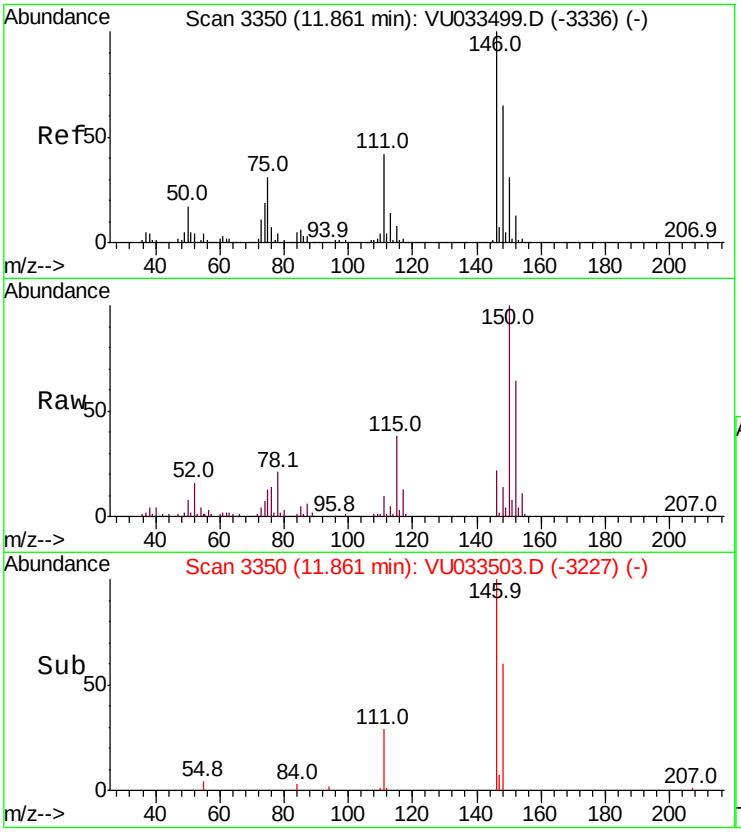


#63
1,4-Dichlorobenzene
Concen: 2.615 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:146 Resp: 13779

Ion	Ratio	Lower	Upper
146	100		
111	40.9	27.2	50.4
148	68.8	44.5	82.7





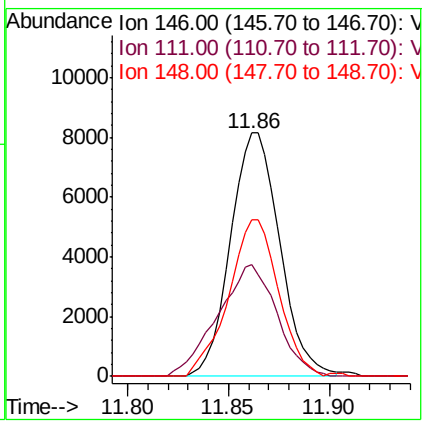
#65
1,2-Dichlorobenzene
Concen: 2.724 ug/L
RT: 11.86 min Scan# 3350
Delta R.T. -0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:146 Resp: 13966

Ion	Ratio	Lower	Upper
146	100		
111	45.9	31.7	47.5
148	64.4	50.3	75.5

Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM



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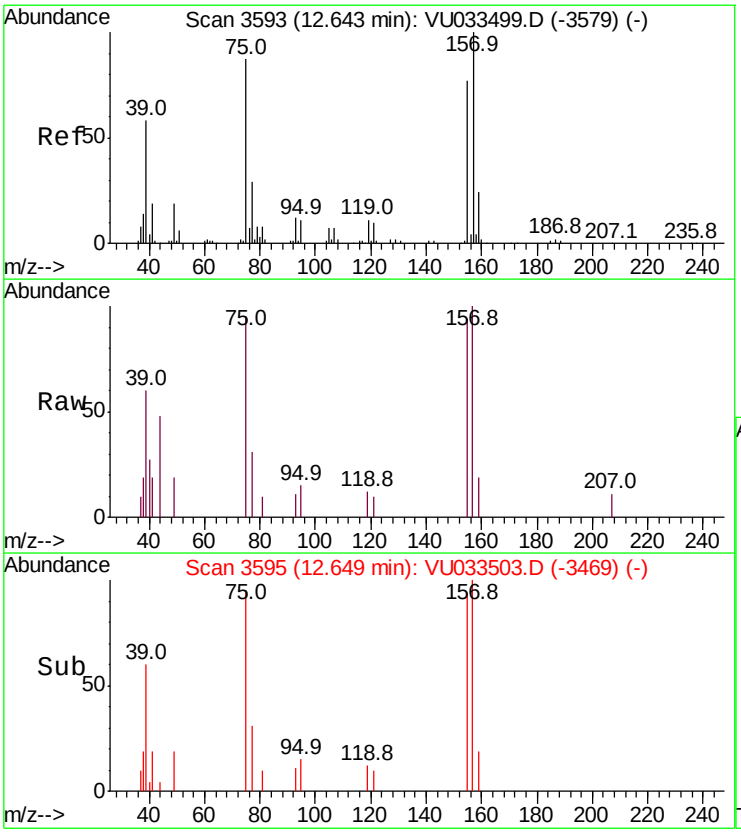
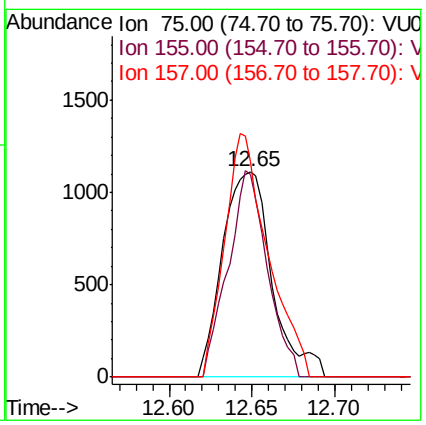
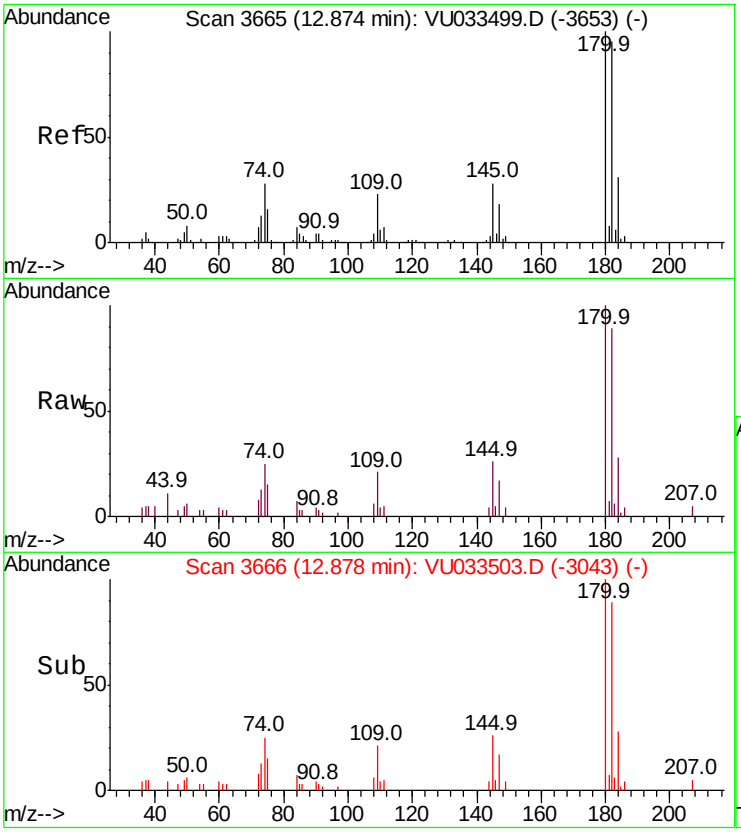


#66
1,2-Dibromo-3-chloropropane
Concen: 2.431 ug/L
RT: 12.65 min Scan# 3595
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion: 75 Resp: 2303

Ion	Ratio	Lower	Upper
75	100		
155	98.5	69.4	104.0
157	105.0	91.8	137.8

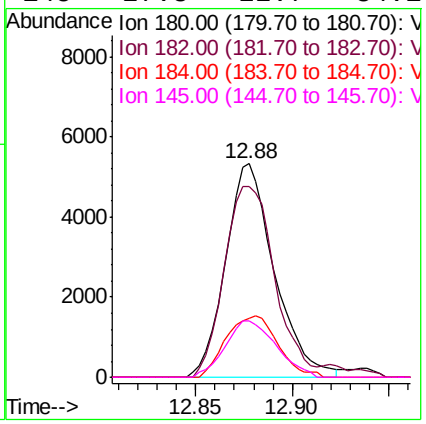




#67
1,3,5-Trichlorobenzene
Concen: 2.281 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:180 Resp: 9333

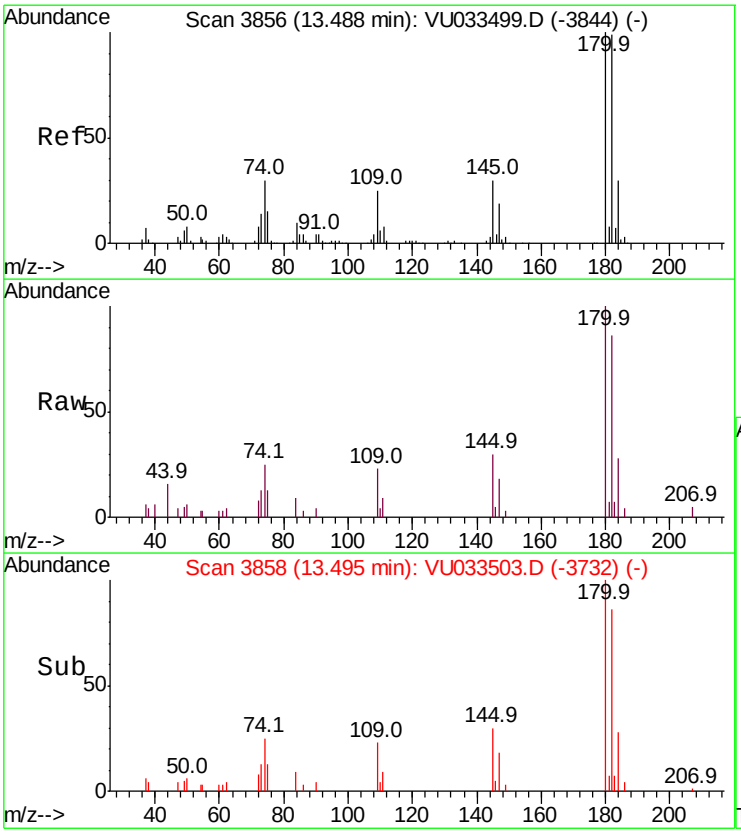
Ion	Ratio	Lower	Upper
180	100		
182	92.7	75.6	113.4
184	30.3	24.2	36.2
145	27.8	22.7	34.1



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

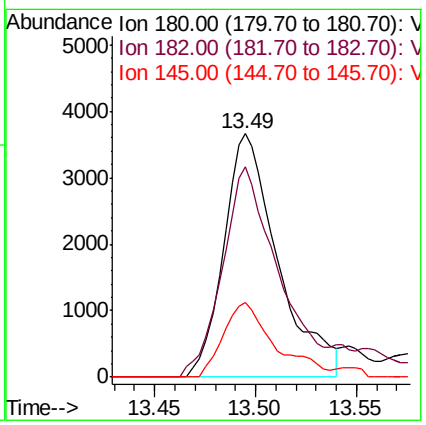
7/31/2019 10:34:03 AM

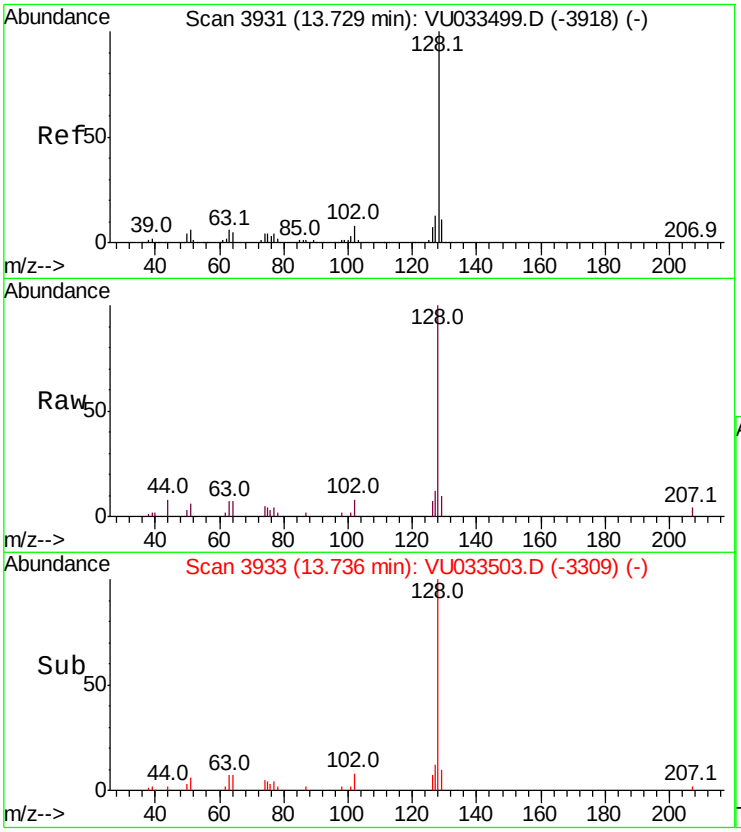


#68
1,2,4-trichlorobenzene
Concen: 1.963 ug/L
RT: 13.49 min Scan# 3858
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:180 Resp: 6862

Ion	Ratio	Lower	Upper
180	100		
182	89.3	75.8	113.8
145	25.2	24.3	36.5

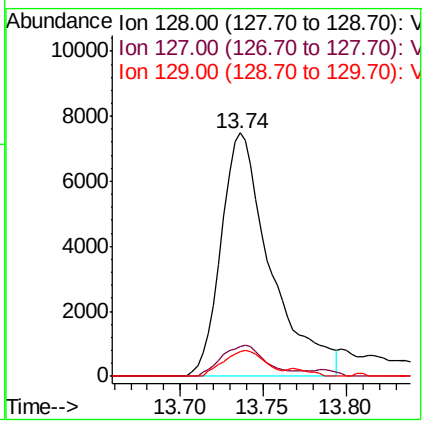




#69
Naphthalene
Concen: 1.558 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:128 Resp: 15621

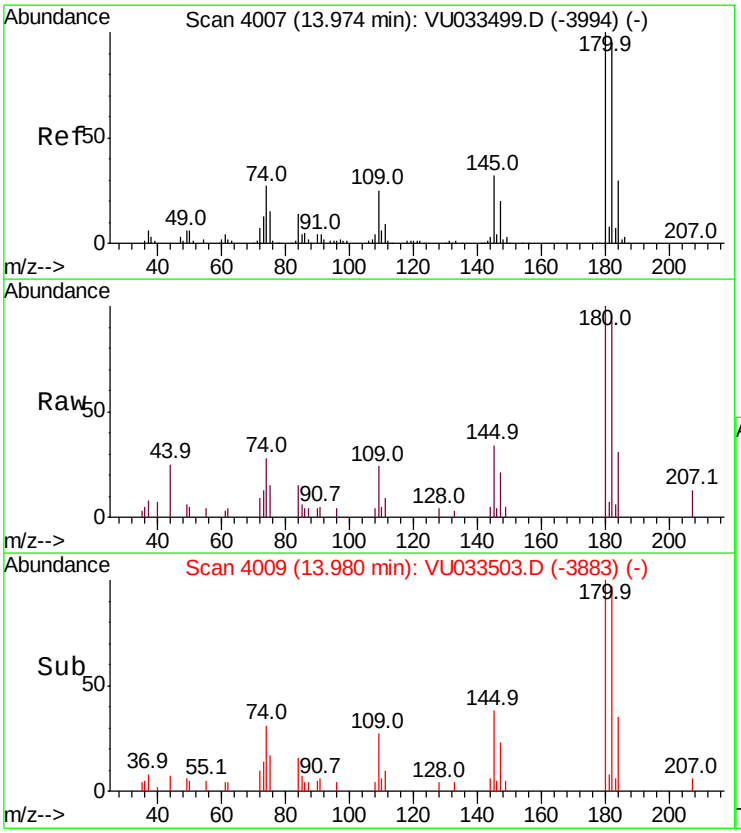
Ion	Ratio	Lower	Upper
128	100		
127	11.2	10.8	16.2
129	8.8	8.7	13.1



Instrument :
MSVOA_U
ClientSampleId :
MDL03

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:03 AM

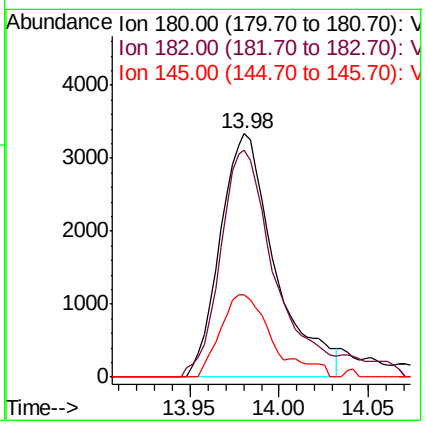
7/31/2019 10:34:03 AM



#70
1,2,3-Trichlorobenzene
Concen: 1.948 ug/L
RT: 13.98 min Scan# 4009
Delta R.T. 0.01 min
Lab File: VU033503.D
Acq: 30 Jul 2019 19:34

Tgt Ion:180 Resp: 7160

Ion	Ratio	Lower	Upper
180	100		
182	91.8	75.5	113.3
145	28.1	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033504.D
Acq On : 30 Jul 2019 19:57
Operator : JC/SP
Sample : MDL04
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 15 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL04

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

Quant Time: Jul 31 08:28:44 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	304676	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	301558	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	148400	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	106560	48.10	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 96.20%			
7) Chloroethane-d5	1.67	69	91241	48.01	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 96.02%			
11) 1,1-Dichloroethene-d2	2.26	63	147347	36.65	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 73.30%			
21) 2-Butanone-d5	4.15	46	153711	104.77	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 104.77%			
24) Chloroform-d	4.62	84	180445	48.60	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 97.20%			
26) 1,2-Dichloroethane-d4	5.29	65	118793	50.52	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 101.04%			
32) Benzene-d6	5.32	84	375901	50.29	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 100.58%			
36) 1,2-Dichloropropane-d6	6.31	67	117162	50.00	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 100.00%			
41) Toluene-d8	7.55	98	340590	48.62	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%			
43) trans-1,3-Dichloropropene-	7.83	79	56279	48.41	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 96.82%			
47) 2-Hexanone-d5	8.30	63	111113	99.87	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 99.87%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	175561	48.59	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 97.18%			
64) 1,2-Dichlorobenzene-d4	11.85	152	136742	50.32	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.64%			

Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	6119	2.130	ug/L	99
3) Chloromethane	1.32	50	7319	2.529	ug/L	96
5) Vinyl chloride	1.40	62	7407	2.387	ug/L #	65
6) Bromomethane	1.62	94	4750	1.735	ug/L	95
8) Chloroethane	1.69	64	5703m	3.025	ug/L	
9) Trichlorofluoromethane	1.87	101	9677	2.384	ug/L	96
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	5882	2.859	ug/L #	62
12) 1,1-Dichloroethene	2.27	96	5408	2.741	ug/L #	1
13) Acetone	2.31	43	6353	4.232	ug/L	96
14) Carbon disulfide	2.46	76	14445	2.334	ug/L	98
15) Methyl Acetate	2.61	43	5301	2.218	ug/L	96
16) Methylene chloride	2.68	84	5580	2.476	ug/L	96
17) trans-1,2-Dichloroethene	2.97	96	4512	2.183	ug/L	99
18) Methyl tert-butyl Ether	2.98	73	13218	2.097	ug/L	96
19) 1,1-Dichloroethane	3.42	63	8941	2.304	ug/L	94
20) cis-1,2-Dichloroethene	4.20	96	5143	2.217	ug/L	96
22) 2-Butanone	4.25	43	7340m	4.096	ug/L	

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033504.D
Acq On : 30 Jul 2019 19:57
Operator : JC/SP
Sample : MDL04
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 15 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL04

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

Quant Time: Jul 31 08:28:44 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
23) Bromochloromethane	4.52	128	2719	2.246 ug/L		94
25) Chloroform	4.65	83	13535	3.315 ug/L		98
27) 1,2-Dichloroethane	5.39	62	7309	2.325 ug/L		99
29) Cyclohexane	4.97	56	6882	2.092 ug/L		97
30) 1,1,1-Trichloroethane	4.89	97	7669	2.210 ug/L		97
31) Carbon tetrachloride	5.12	117	6624	2.192 ug/L	#	55
33) Benzene	5.37	78	19122	2.198 ug/L		100
34) Trichloroethene	6.17	95	5095	2.220 ug/L		93
35) Methylcyclohexane	6.40	83	6854	1.914 ug/L		96
37) 1,2-Dichloropropane	6.41	63	4840	2.078 ug/L	#	95
38) Bromodichloromethane	6.74	83	6666	2.214 ug/L		98
39) cis-1,3-Dichloropropene	7.25	75	7594	2.089 ug/L		95
40) 4-Methyl-2-pentanone	7.45	43	12906	4.014 ug/L		97
42) Toluene	7.62	91	20840	2.228 ug/L		100
44) trans-1,3-Dichloropropene	7.87	75	7012	2.135 ug/L		99
45) 1,1,2-Trichloroethane	8.05	97	5032	2.276 ug/L		90
46) Tetrachloroethene	8.21	164	3722	1.987 ug/L		92
48) 2-Hexanone	8.35	43	10854	4.177 ug/L	#	96
49) Dibromochloromethane	8.46	129	5485	2.181 ug/L		93
50) 1,2-Dibromoethane	8.57	107	5169	2.111 ug/L	#	89
51) Chlorobenzene	9.10	112	13783	2.251 ug/L		96
52) Ethylbenzene	9.24	91	19768	1.962 ug/L		97
53) m,p-Xylene	9.36	106	7655	1.980 ug/L		91
54) o-xylene	9.76	106	6906	1.841 ug/L		95
55) Styrene	9.78	104	11409	1.791 ug/L		99
56) Isopropylbenzene	10.15	105	17500	1.785 ug/L		99
58) 1,1,2,2-Tetrachloroethane	10.44	83	9686	2.429 ug/L		97
59) 1,2,3-Trichloropropane	10.48	75	6800	2.212 ug/L		100
61) Bromoform	9.94	173	3782	2.110 ug/L		95
62) 1,3-Dichlorobenzene	11.40	146	10134	2.224 ug/L		91
63) 1,4-Dichlorobenzene	11.49	146	11042	2.332 ug/L		98
65) 1,2-Dichlorobenzene	11.86	146	11045	2.397 ug/L		95
66) 1,2-Dibromo-3-chloropropan	12.64	75	1730	2.032 ug/L	#	82
67) 1,3,5-Trichlorobenzene	12.88	180	7093	1.929 ug/L		95
68) 1,2,4-trichlorobenzene	13.50	180	5045	1.606 ug/L		96
69) Naphthalene	13.74	128	12293	1.364 ug/L		95
70) 1,2,3-Trichlorobenzene	13.98	180	5313	1.608 ug/L		98

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

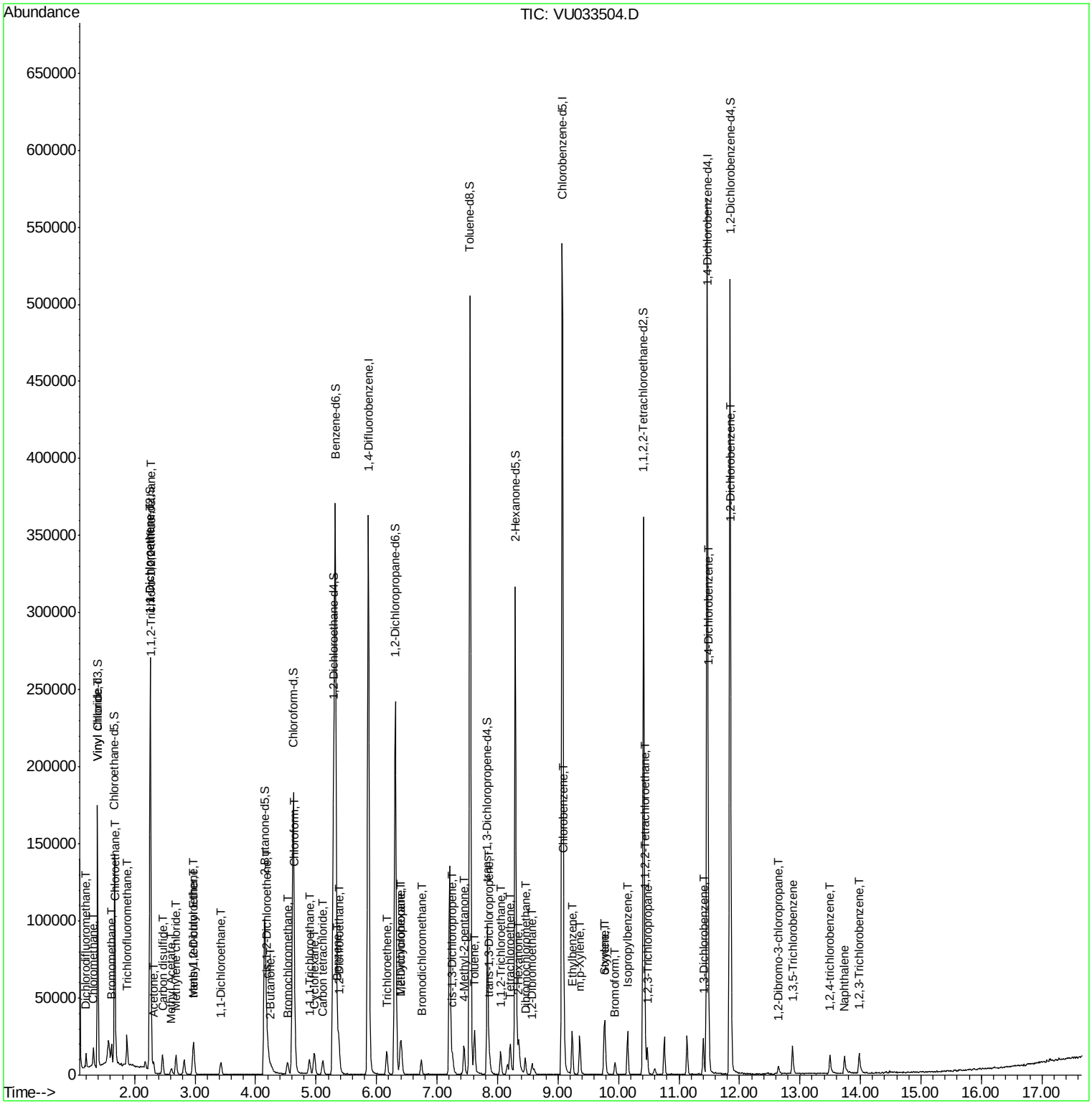
Quantitation Report (QT Reviewed)

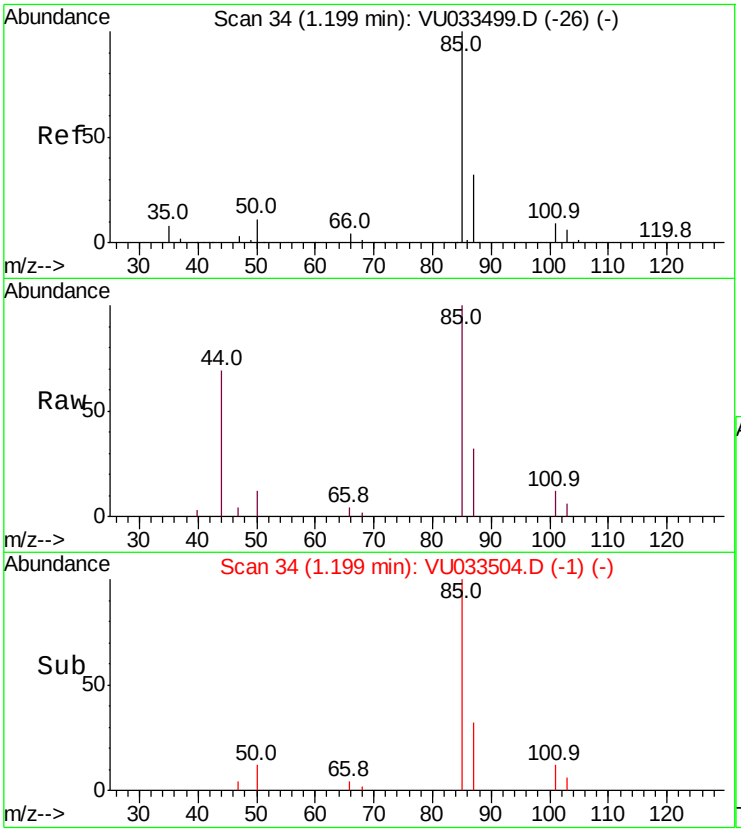
Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033504.D
Acq On : 30 Jul 2019 19:57
Operator : JC/SP
Sample : MDL04
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 31 08:28:44 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument :
MSVOA_U
ClientSampleId :
MDL04

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

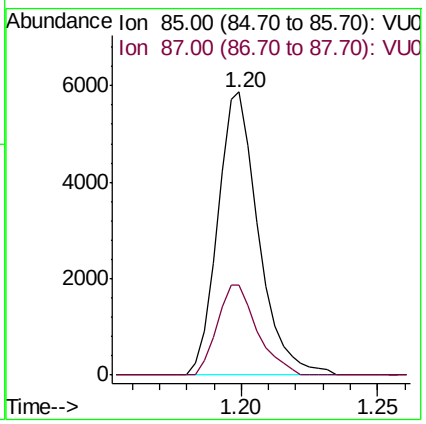




#2
Dichlorodifluoromethane
Concen: 2.130 ug/L
RT: 1.20 min Scan# 34
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

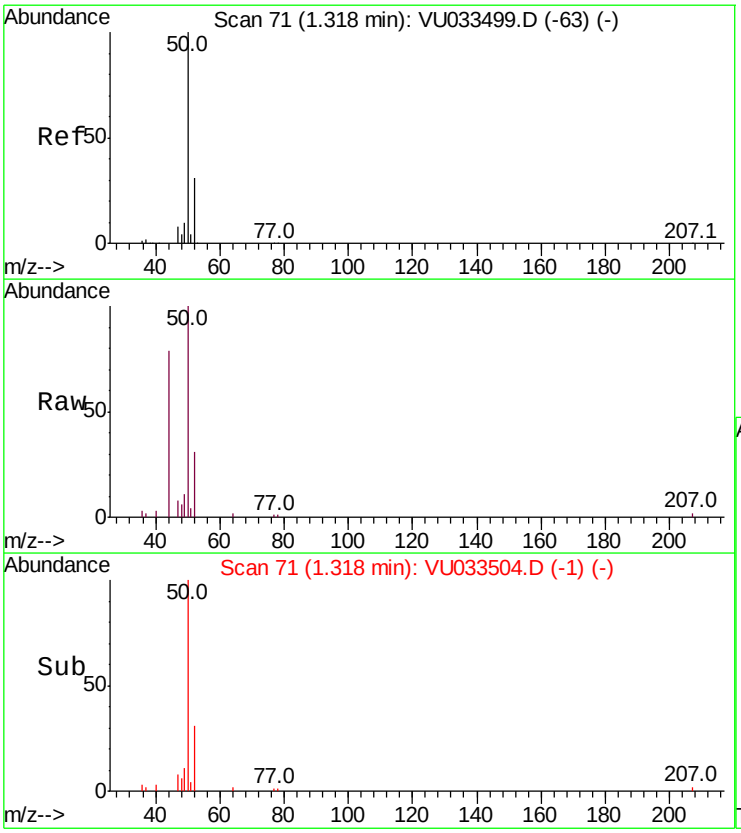
Tgt Ion: 85 Resp: 6119

Ion	Ratio	Lower	Upper
85	100		
87	31.4	25.4	38.2



Instrument :
MSVOA_U
ClientSampleId :
MDL04

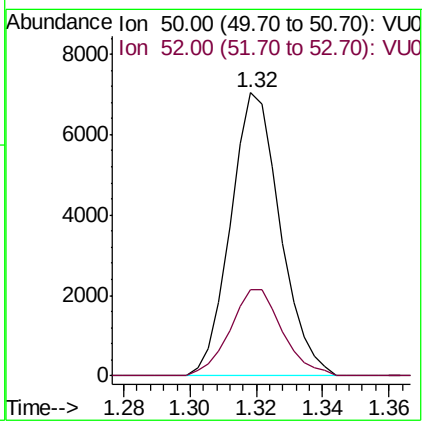
Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

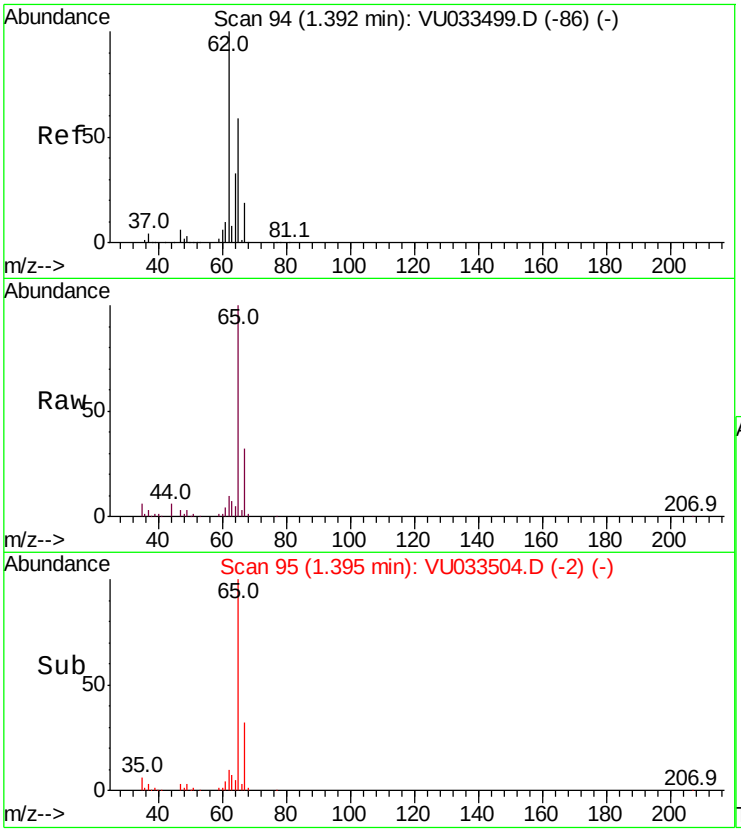


#3
Chloromethane
Concen: 2.529 ug/L
RT: 1.32 min Scan# 71
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 50 Resp: 7319

Ion	Ratio	Lower	Upper
50	100		
52	30.6	23.1	42.9

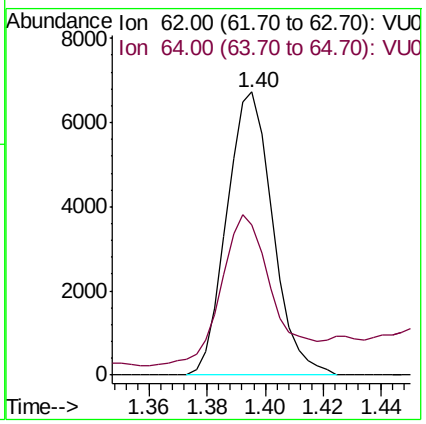




#5
Vinyl chloride
Concen: 2.387 ug/L
RT: 1.40 min Scan# 95
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

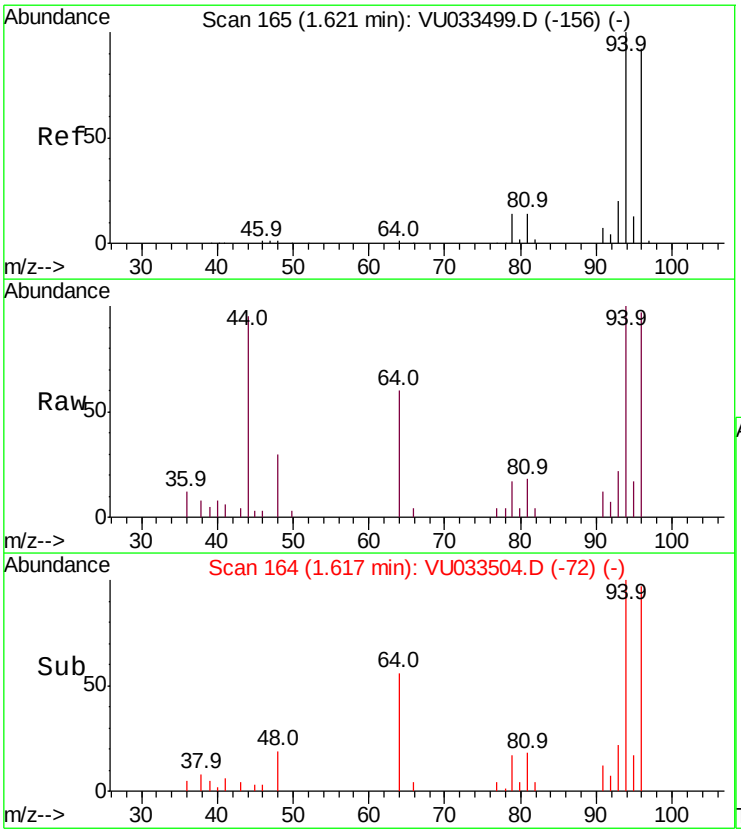
Tgt Ion: 62 Resp: 7407

Ion	Ratio	Lower	Upper
62	100		
64	53.3	23.4	43.4#



Instrument :
MSVOA_U
ClientSampleId :
MDL04

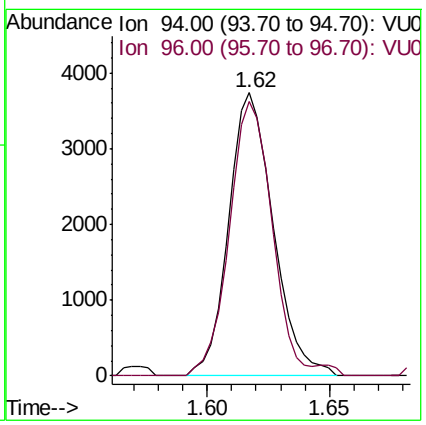
Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

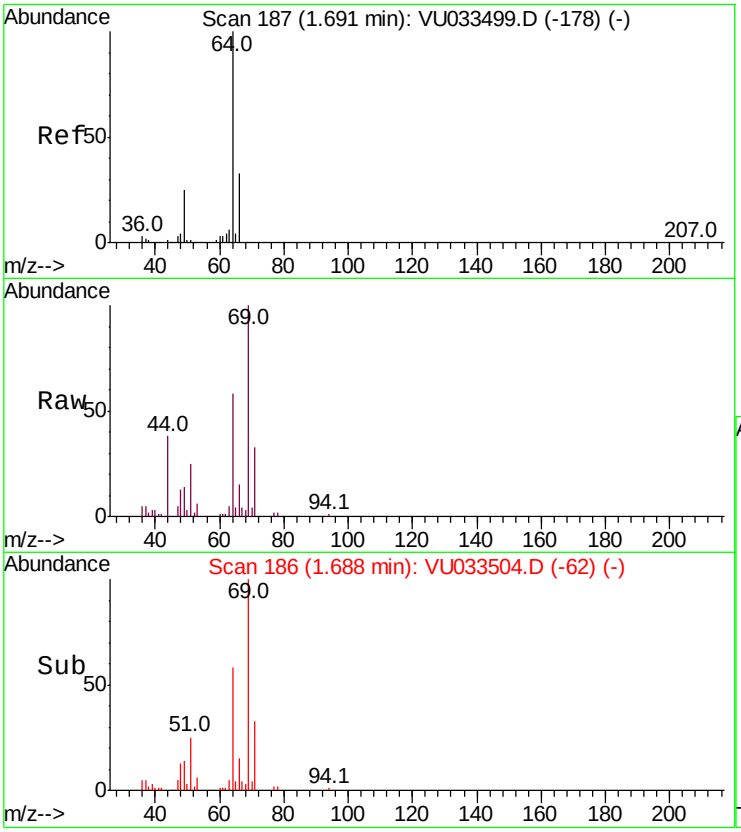


#6
Bromomethane
Concen: 1.735 ug/L
RT: 1.62 min Scan# 164
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 94 Resp: 4750

Ion	Ratio	Lower	Upper
94	100		
96	96.8	64.4	119.6

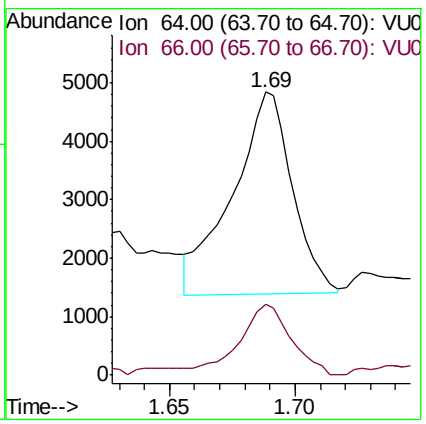




#8
Chloroethane
Concen: 3.025 ug/L m
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 64 Resp: 5703

Ion	Ratio	Lower	Upper
64	100		
66	25.0	21.1	39.3



Instrument :
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ClientSampleId :
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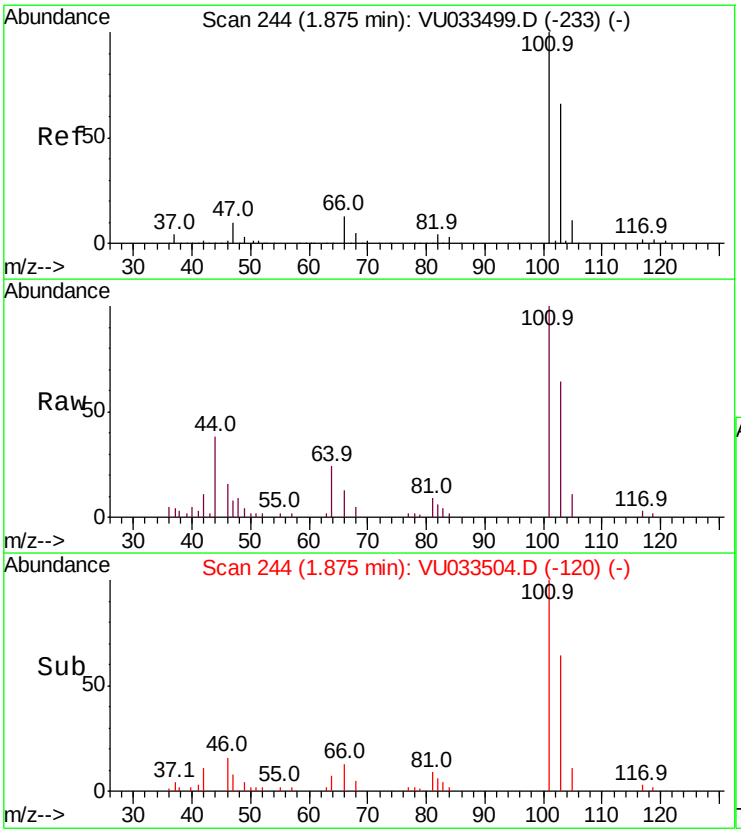
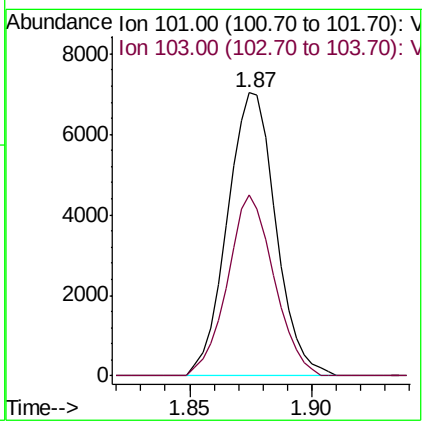
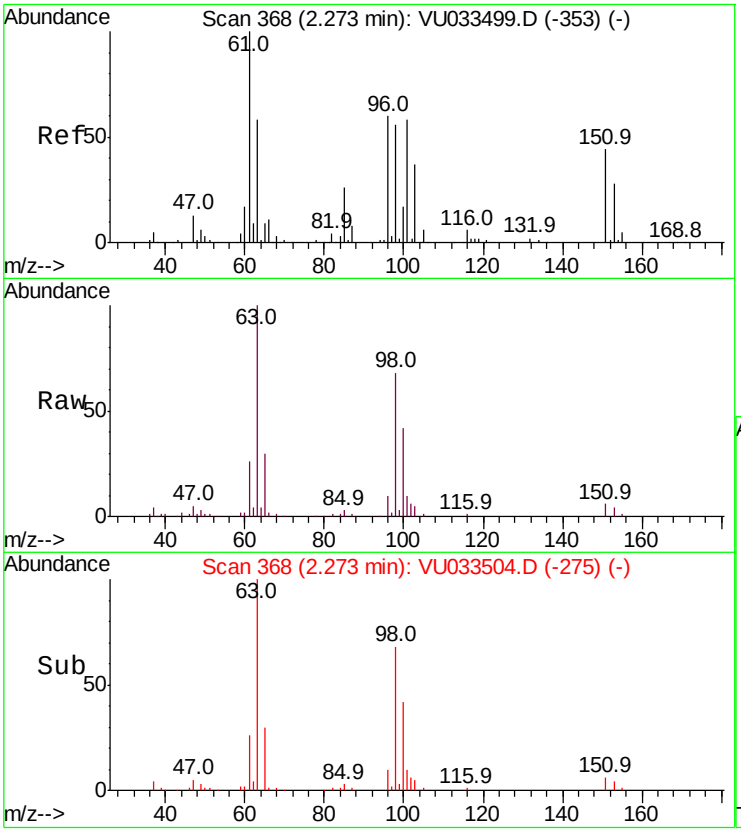


#9
Trichlorofluoromethane
Concen: 2.384 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:101 Resp: 9677

Ion	Ratio	Lower	Upper
101	100		
103	61.4	51.6	77.4





#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 2.859 ug/L
RT: 2.27 min Scan# 368
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Instrument :
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ClientSampleId :
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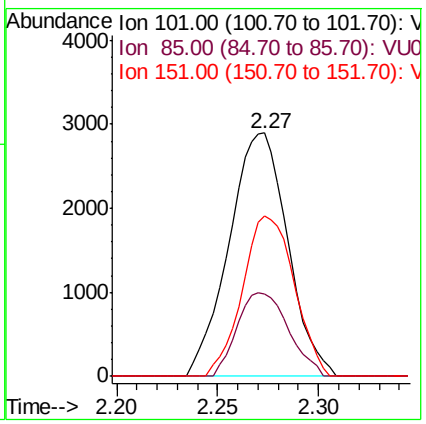
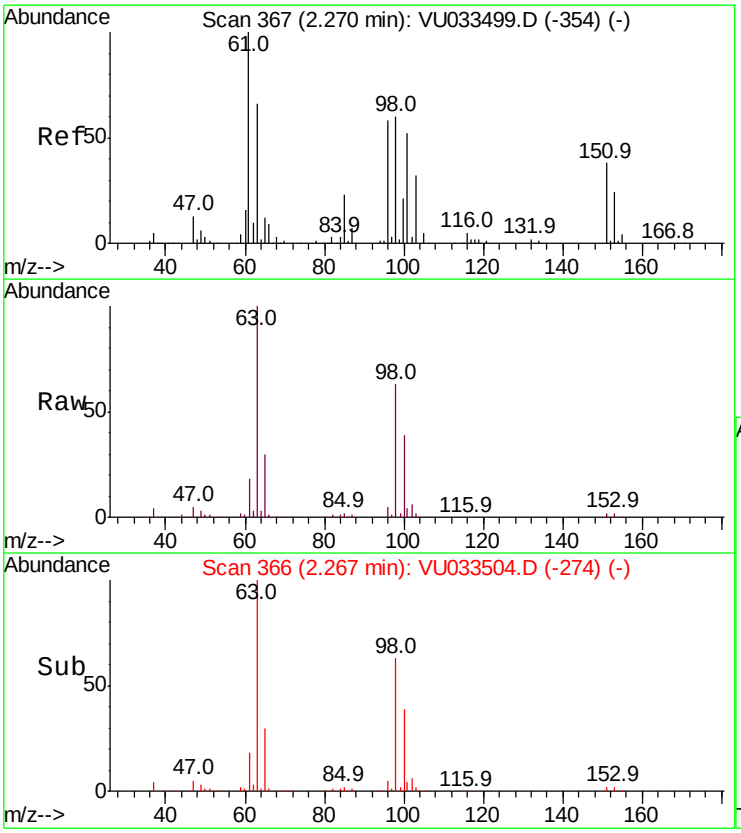
Tgt Ion:101 Resp: 5882

Ion	Ratio	Lower	Upper
101	100		
85	0.0	35.8	53.8#
151	58.1	60.1	90.1#

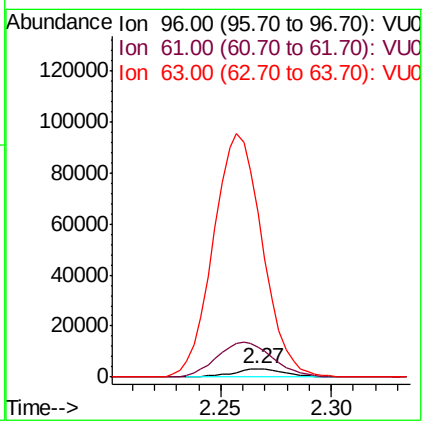


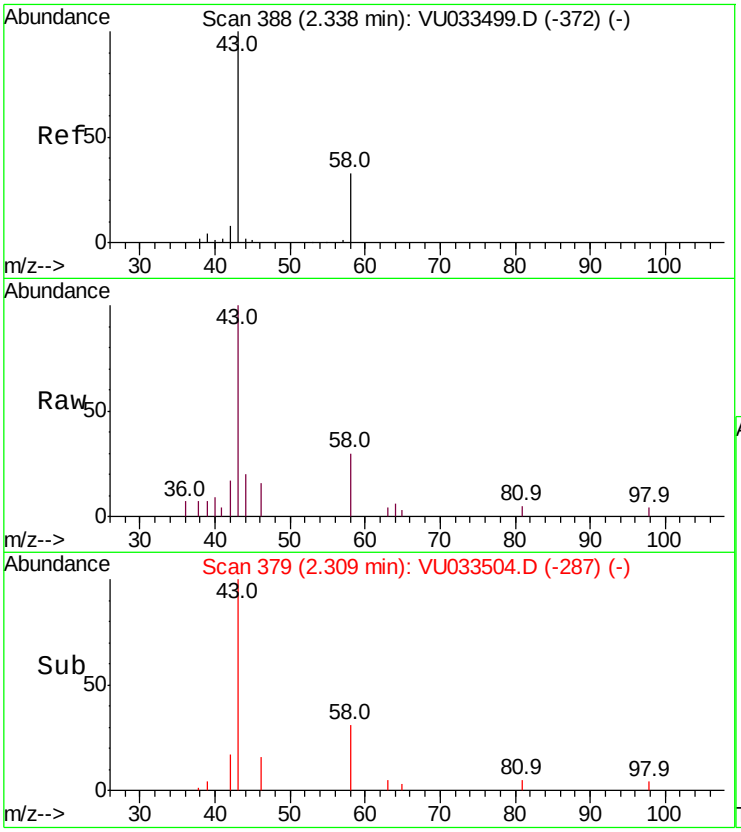


#12
1,1-Dichloroethene
Concen: 2.741 ug/L
RT: 2.27 min Scan# 366
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 96 Resp: 5408

Ion	Ratio	Lower	Upper
96	100		
61	352.2	119.3	221.5#
63	1914.9	86.6	160.8#

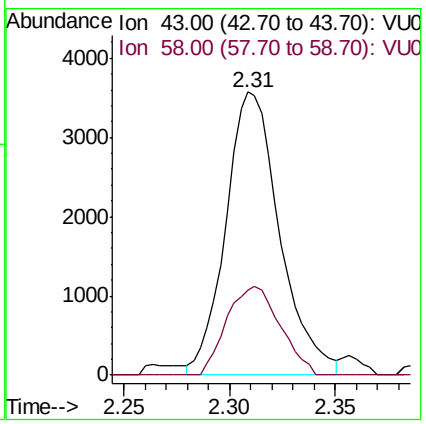




#13
Acetone
Concen: 4.232 ug/L
RT: 2.31 min Scan# 379
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 43 Resp: 6353

Ion	Ratio	Lower	Upper
43	100		
58	31.0	0.0	66.2



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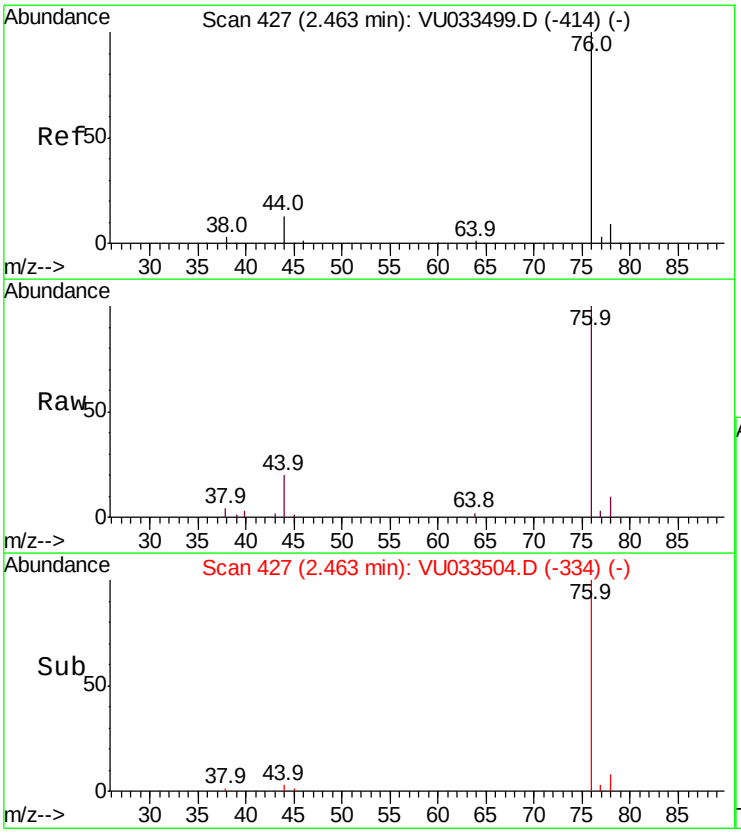
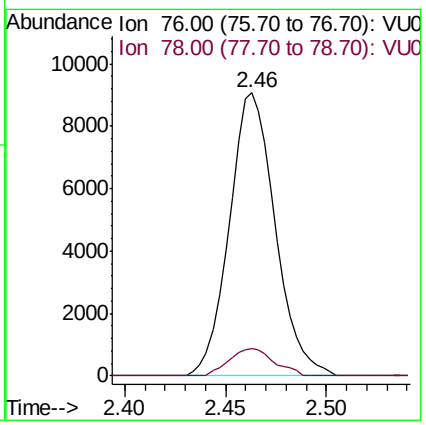
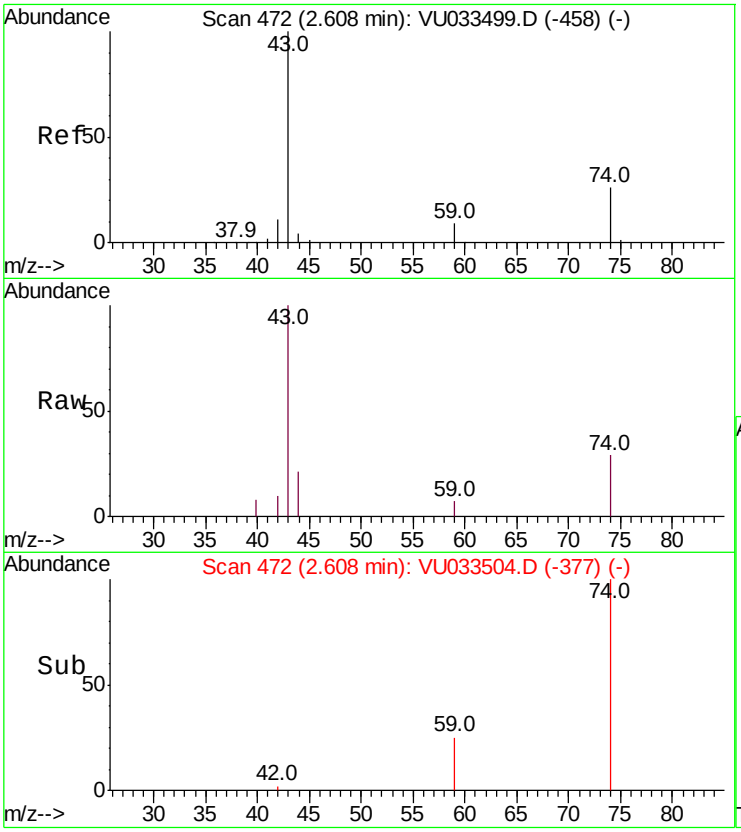


#14
Carbon disulfide
Concen: 2.334 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 76 Resp: 14445

Ion	Ratio	Lower	Upper
76	100		
78	9.9	7.4	11.0





#15
Methyl Acetate
Concen: 2.218 ug/L
RT: 2.61 min Scan# 472
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 43 Resp: 5301

Ion	Ratio	Lower	Upper
43	100		
74	22.9	20.1	30.1

Instrument :
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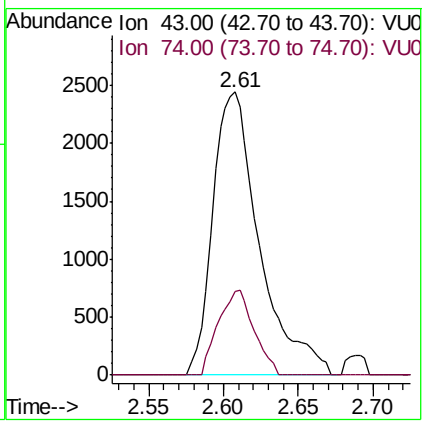
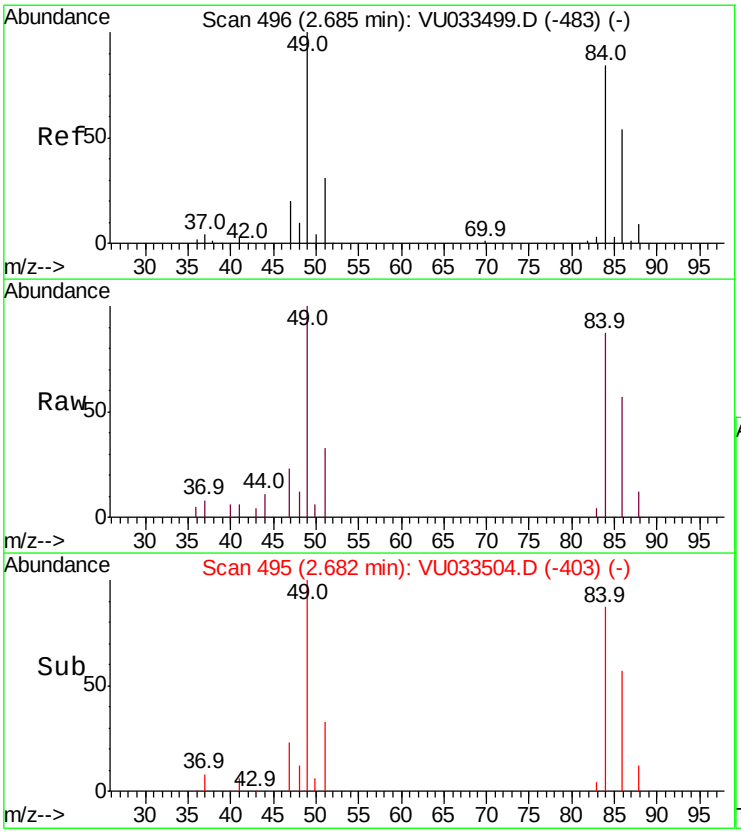
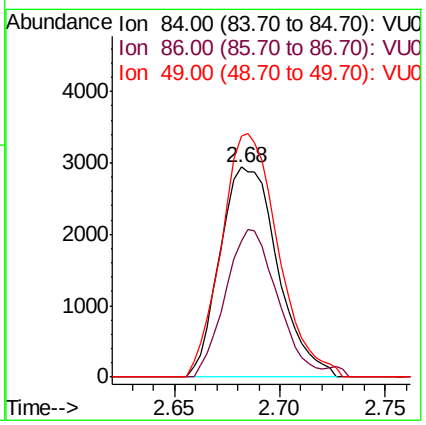


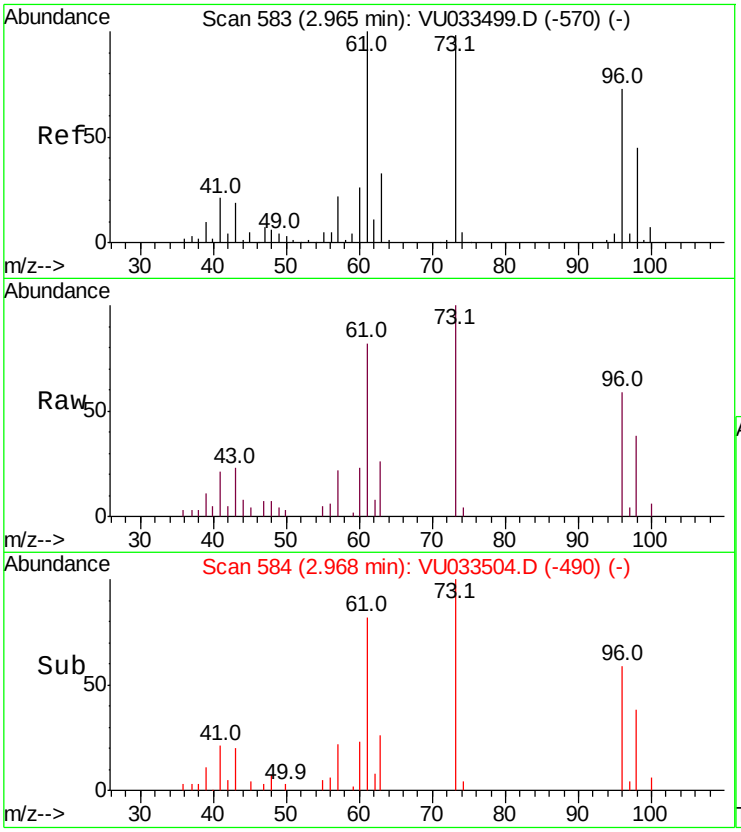


#16
Methylene chloride
Concen: 2.476 ug/L
RT: 2.68 min Scan# 495
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 84 Resp: 5580

Ion	Ratio	Lower	Upper
84	100		
86	64.9	45.7	84.9
49	114.6	85.0	158.0

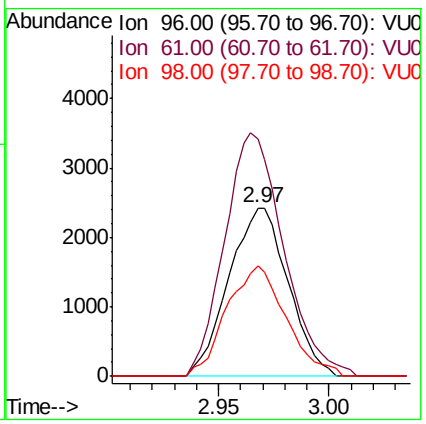




#17
trans-1,2-Dichloroethene
Concen: 2.183 ug/L
RT: 2.97 min Scan# 584
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 96 Resp: 4512

Ion	Ratio	Lower	Upper
96	100		
61	140.5	98.3	182.5
98	65.4	44.3	82.3



Instrument :
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ClientSampleId :
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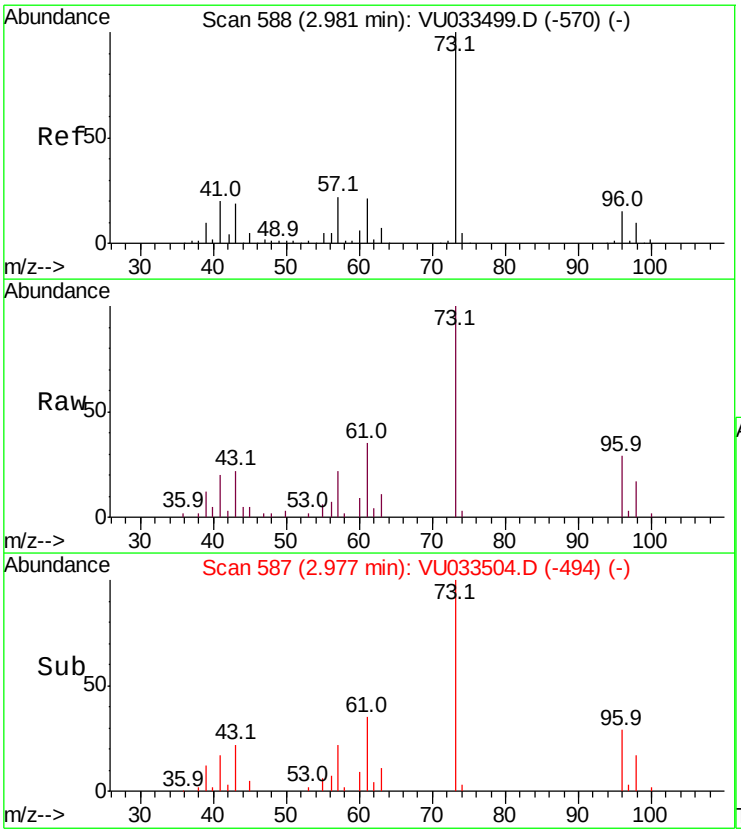
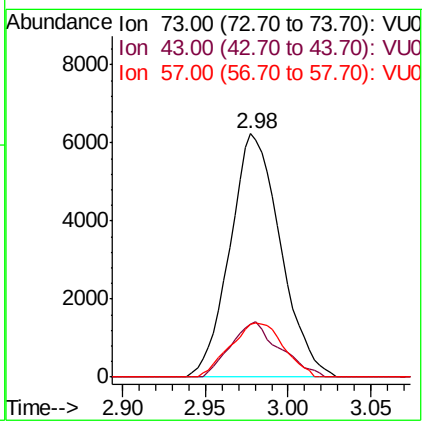
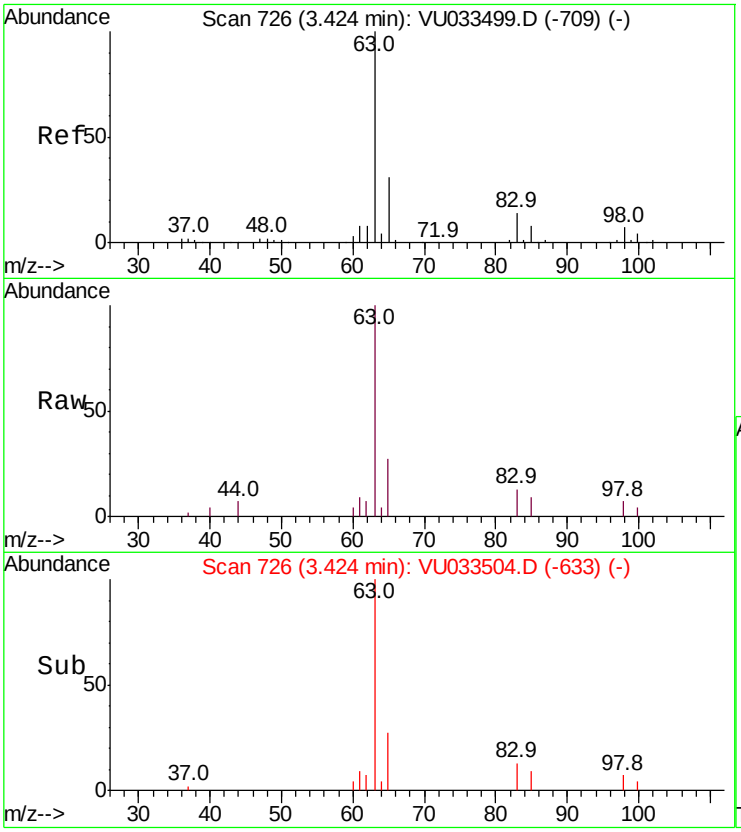


#18
Methyl tert-butyl Ether
Concen: 2.097 ug/L
RT: 2.98 min Scan# 587
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 73 Resp: 13218

Ion	Ratio	Lower	Upper
73	100		
43	21.9	15.4	23.2
57	23.4	17.4	26.2

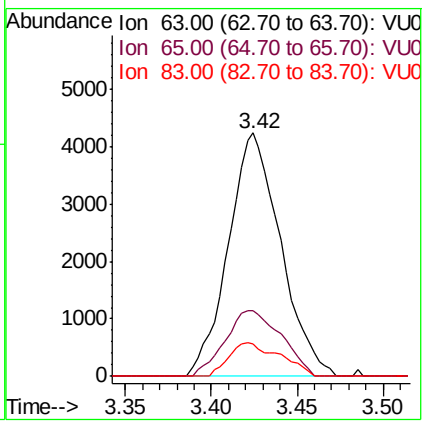




#19
1,1-Dichloroethane
Concen: 2.304 ug/L
RT: 3.42 min Scan# 726
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 63 Resp: 8941

Ion	Ratio	Lower	Upper
63	100		
65	26.8	22.0	40.8
83	13.1	9.5	17.7



Instrument :
MSVOA_U
ClientSampleId :
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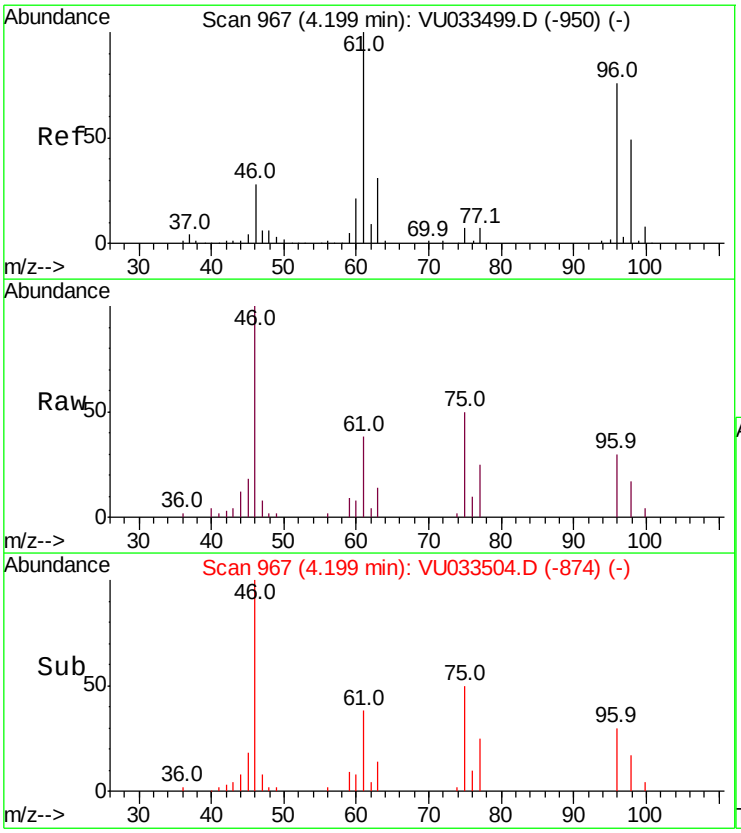
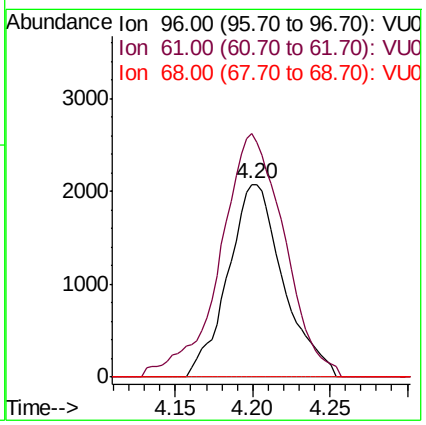
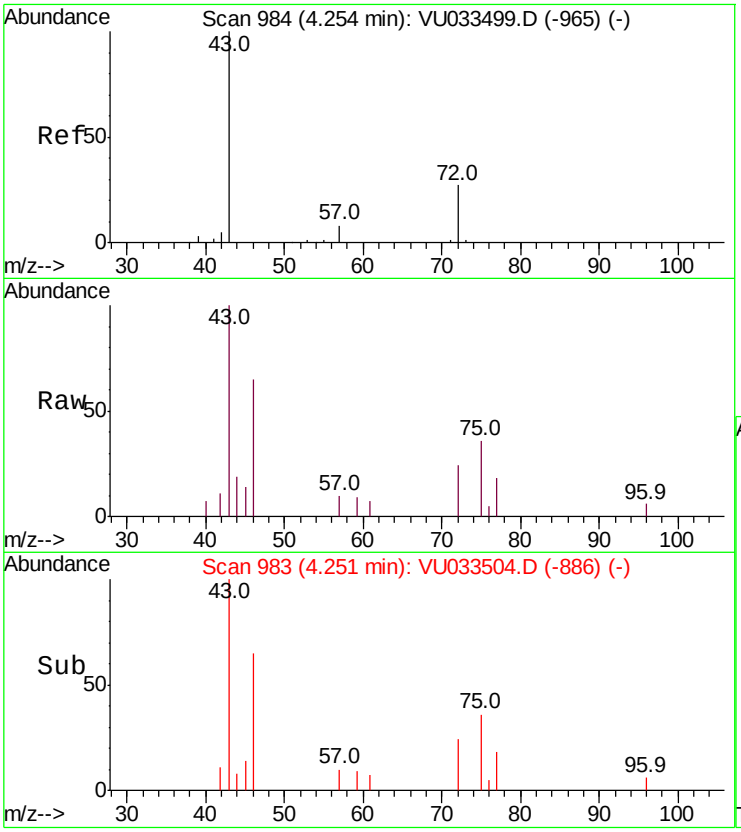


#20
cis-1,2-Dichloroethene
Concen: 2.217 ug/L
RT: 4.20 min Scan# 967
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 96 Resp: 5143

Ion	Ratio	Lower	Upper
96	100		
61	126.2	91.3	169.6
68	0.0	0.0	0.0





#22
2-Butanone
Concen: 4.096 ug/L m
RT: 4.25 min Scan# 983
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 43 Resp: 7340

Ion	Ratio	Lower	Upper
43	100		
72	12.9	14.2	42.6#

Instrument :
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ClientSampleId :
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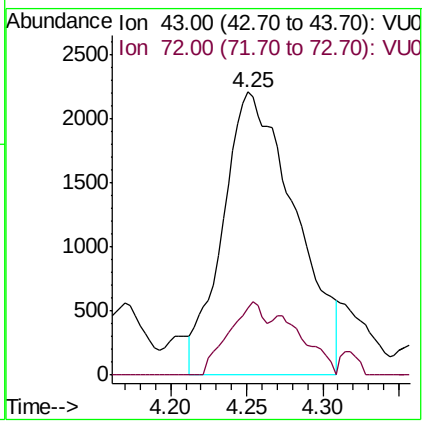
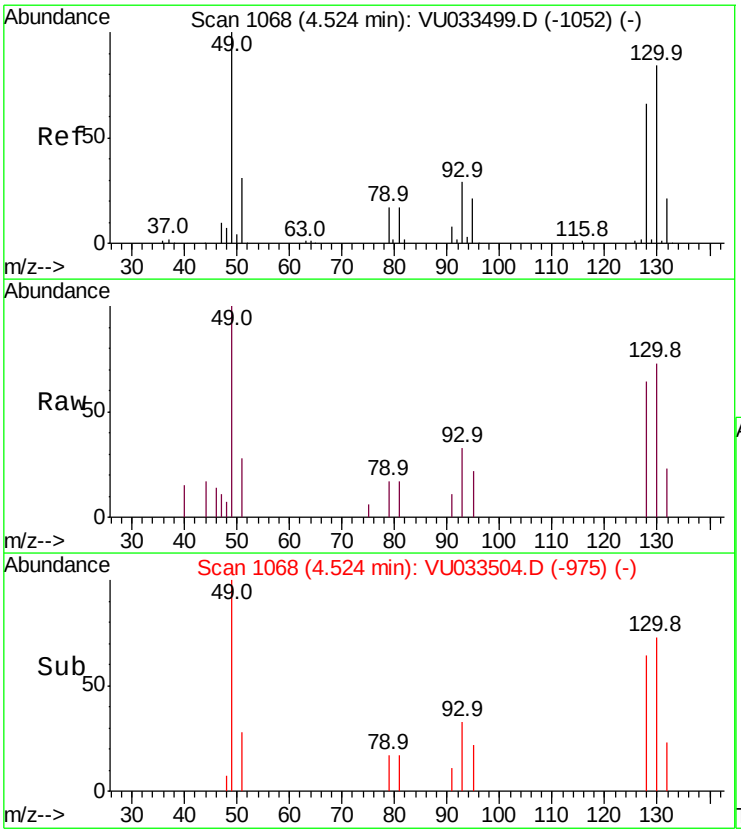
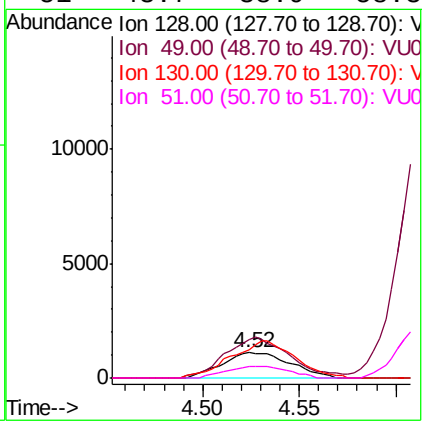


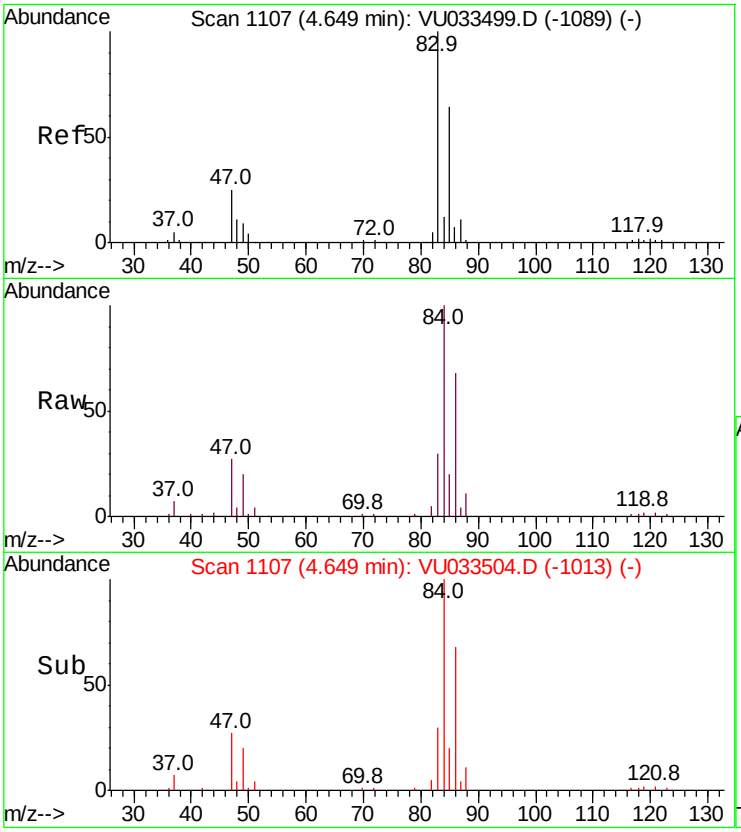


#23
Bromochloromethane
Concen: 2.246 ug/L
RT: 4.52 min Scan# 1068
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:128 Resp: 2719

Ion	Ratio	Lower	Upper
128	100		
49	155.5	108.4	201.2
130	113.1	89.7	166.5
51	43.7	38.9	58.3

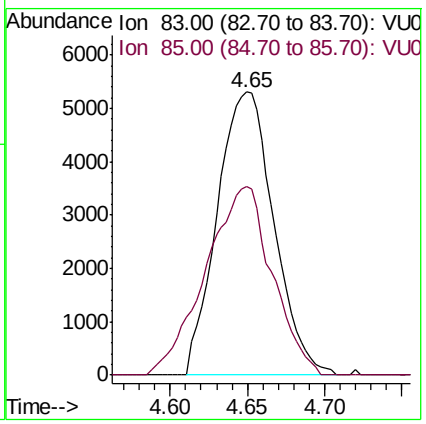




#25
Chloroform
Concen: 3.315 ug/L
RT: 4.65 min Scan# 1107
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 83 Resp: 13535

Ion	Ratio	Lower	Upper
83	100		
85	66.6	45.6	84.8



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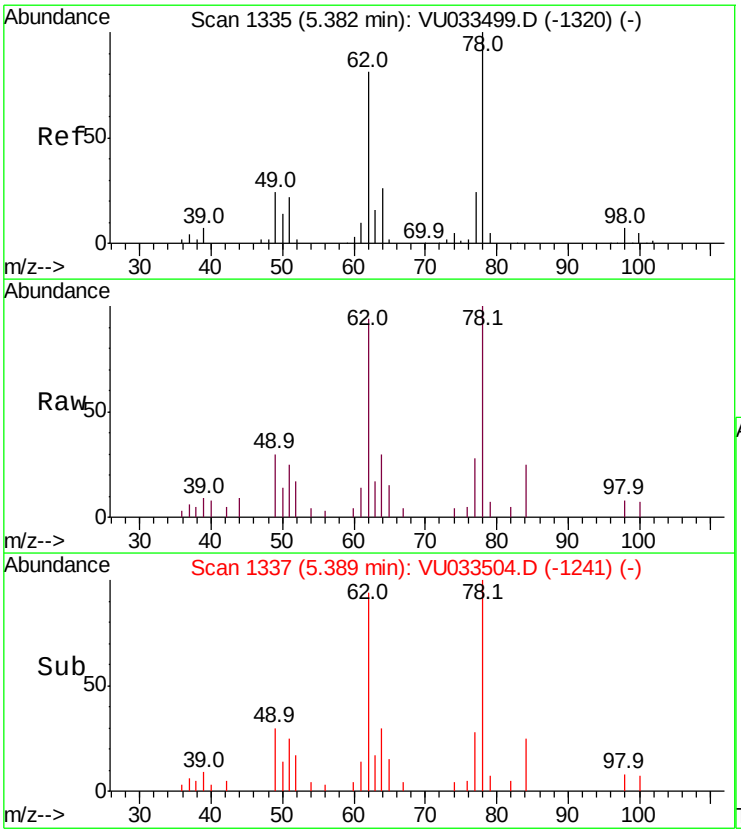
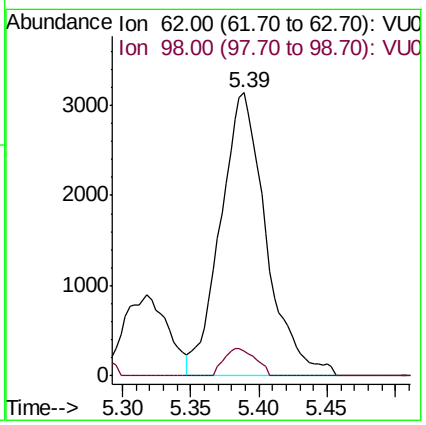
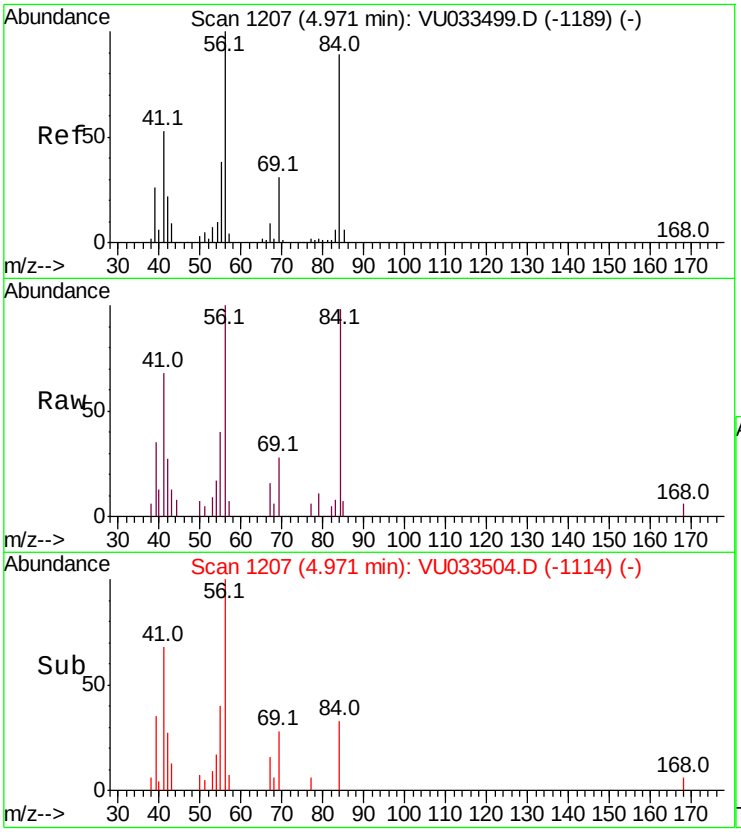


#27
1,2-Dichloroethane
Concen: 2.325 ug/L
RT: 5.39 min Scan# 1337
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 62 Resp: 7309

Ion	Ratio	Lower	Upper
62	100		
98	8.6	7.2	10.8

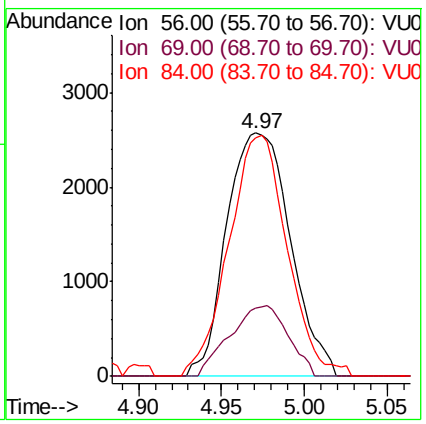




#29
Cyclohexane
Concen: 2.092 ug/L
RT: 4.97 min Scan# 1207
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 56 Resp: 6882

Ion	Ratio	Lower	Upper
56	100		
69	26.5	25.0	37.6
84	90.4	71.6	107.4



Instrument :
MSVOA_U
ClientSampleId :
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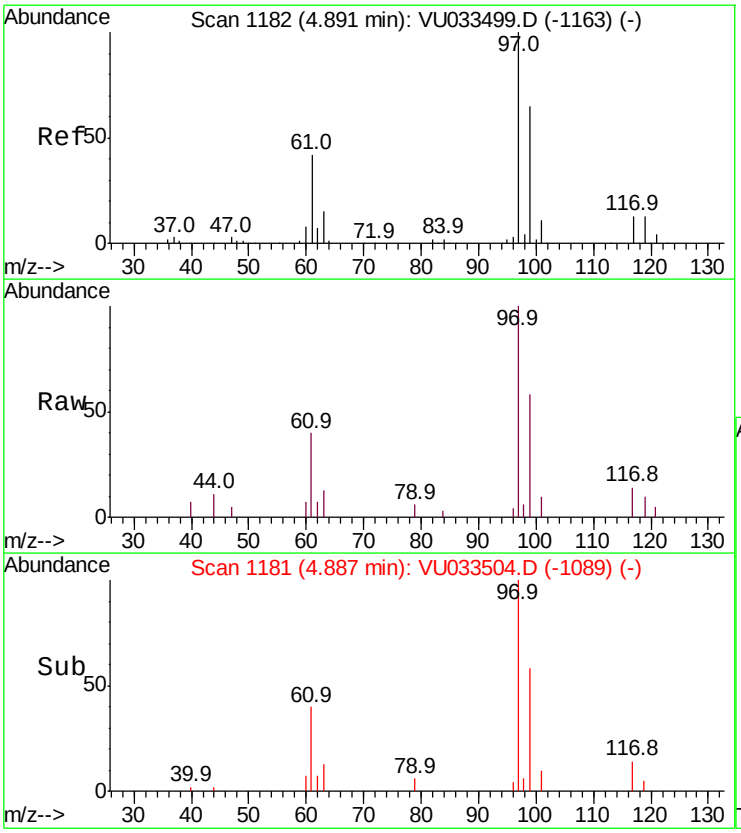
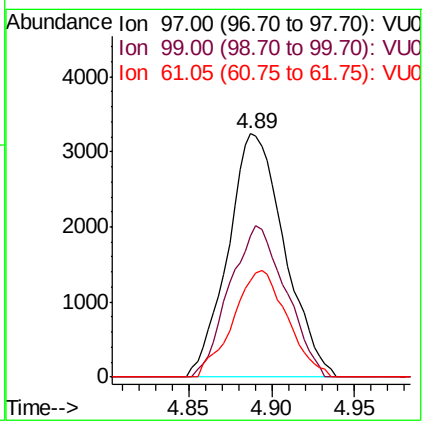
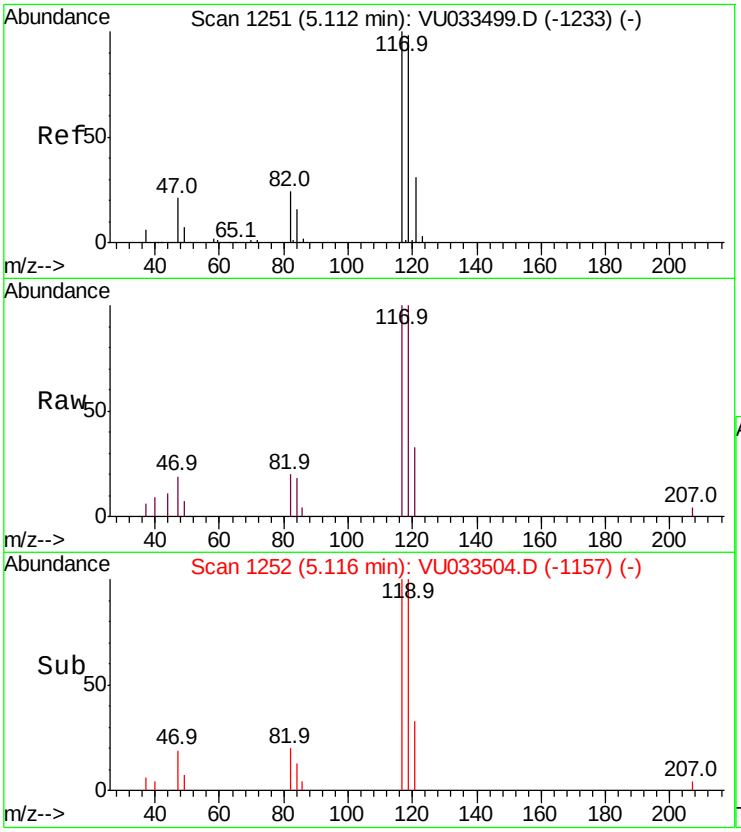


#30
1,1,1-Trichloroethane
Concen: 2.210 ug/L
RT: 4.89 min Scan# 1181
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 97 Resp: 7669

Ion	Ratio	Lower	Upper
97	100		
99	61.8	51.1	76.7
61	42.0	35.5	53.3





#31
Carbon tetrachloride
Concen: 2.192 ug/L
RT: 5.12 min Scan# 1252
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:117 Resp: 6624

Ion	Ratio	Lower	Upper
117	100		
119	52.0	77.0	115.4#

Instrument :
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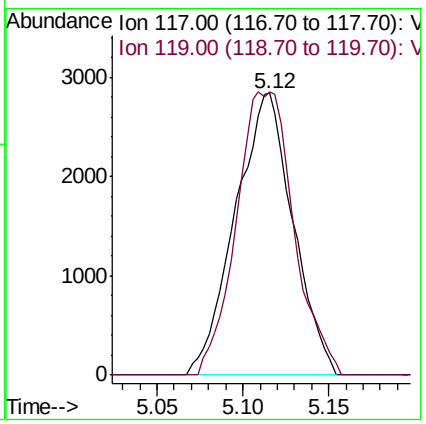
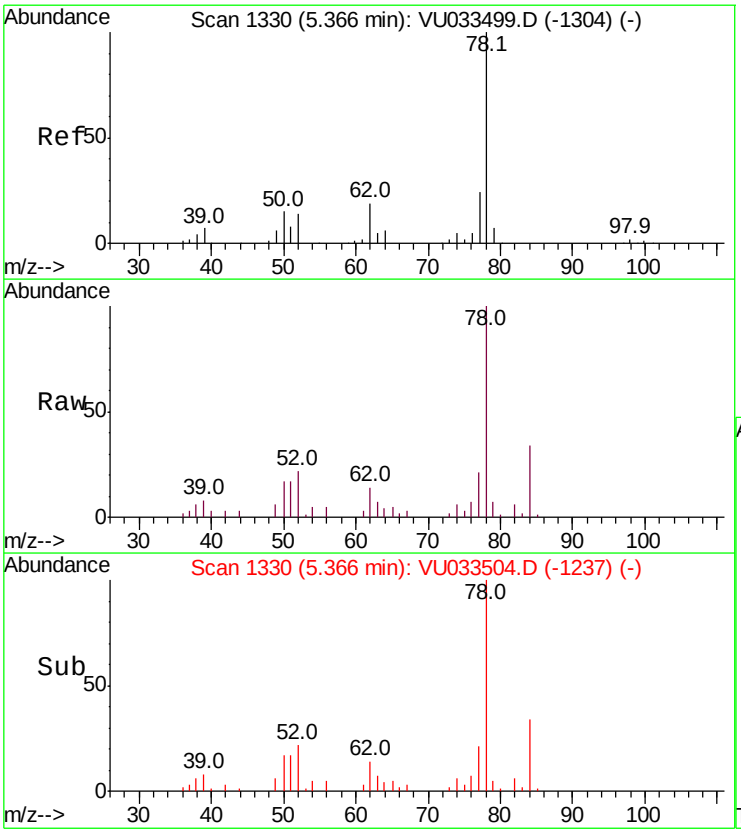
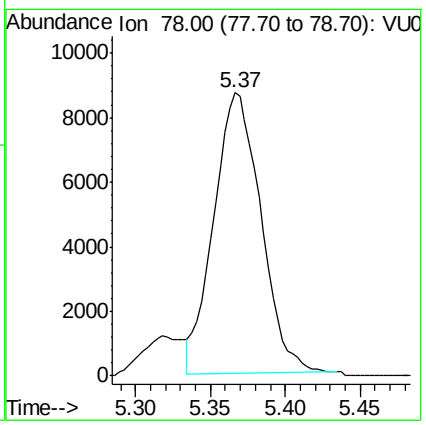
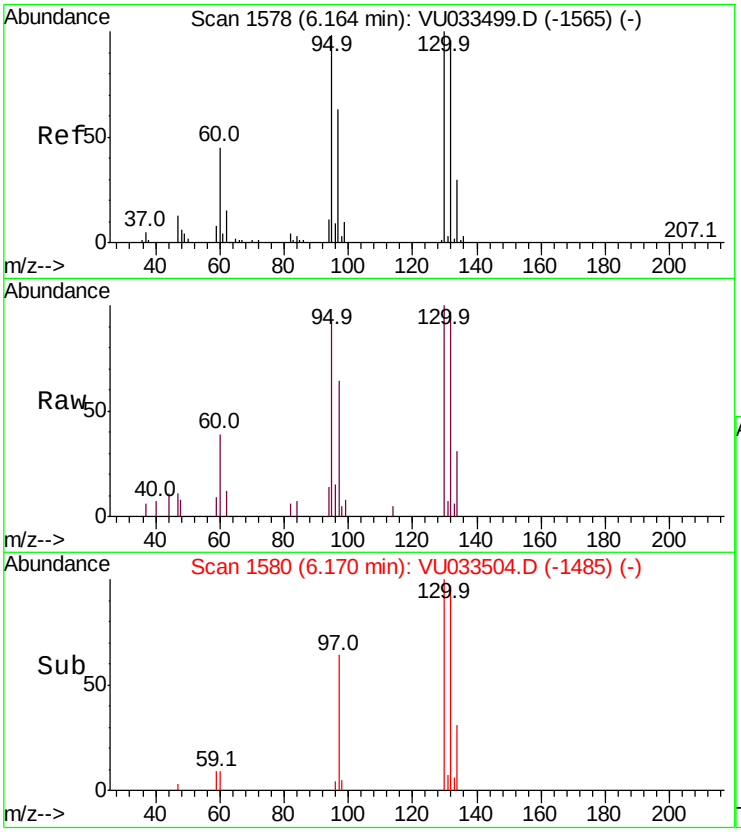




#33
Benzene
Concen: 2.198 ug/L
RT: 5.37 min Scan# 1330
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 78 Resp: 19122

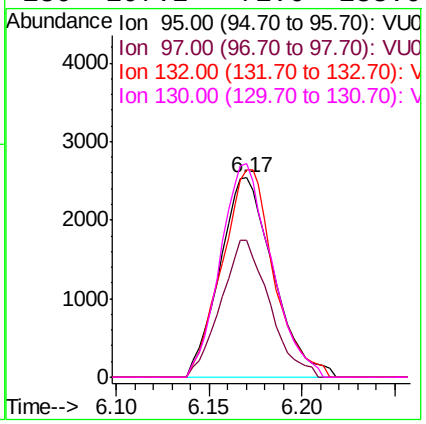




#34
Trichloroethene
Concen: 2.220 ug/L
RT: 6.17 min Scan# 1580
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 95 Resp: 5095

Ion	Ratio	Lower	Upper
95	100		
97	68.6	44.7	83.1
132	103.9	66.8	124.0
130	107.2	71.6	133.0



Instrument :
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ClientSampleId :
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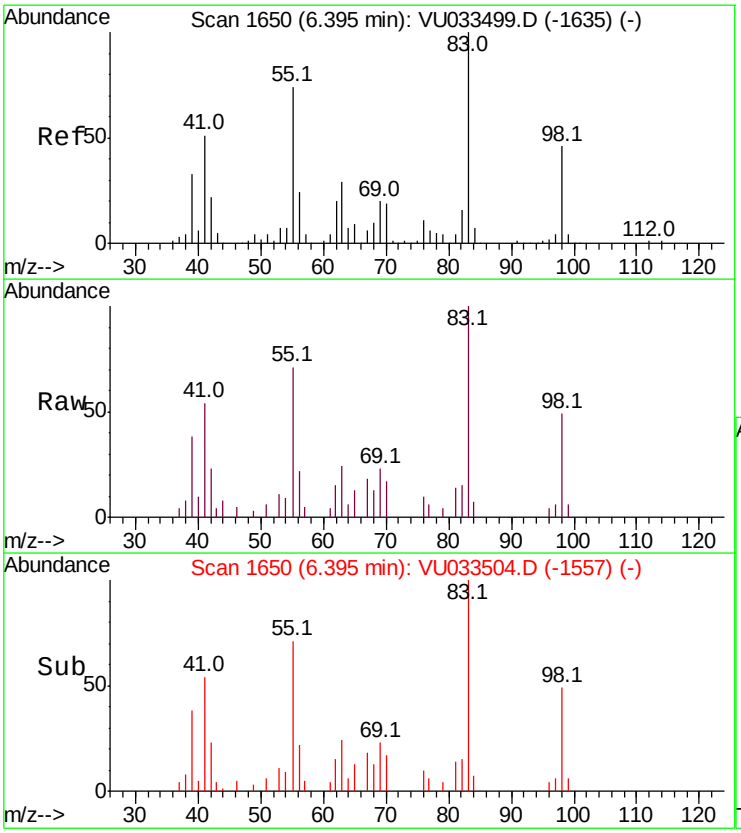
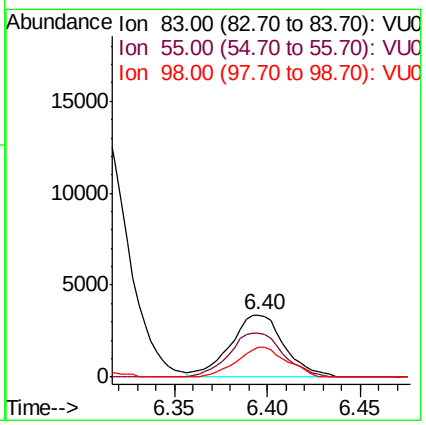
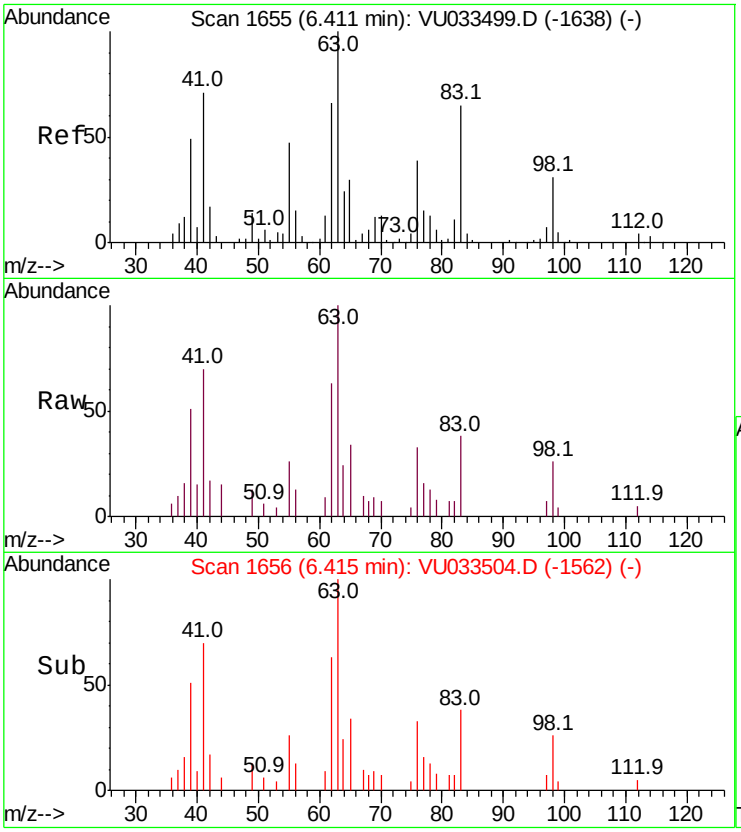


#35
Methylcyclohexane
Concen: 1.914 ug/L
RT: 6.40 min Scan# 1650
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 83 Resp: 6854

Ion	Ratio	Lower	Upper
83	100		
55	70.7	60.2	90.4
98	44.4	36.5	54.7





#37
1,2-Dichloropropane
Concen: 2.078 ug/L
RT: 6.41 min Scan# 1656
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 63 Resp: 4840

Ion	Ratio	Lower	Upper
63	100		
112	2.1	3.0	4.6#

Instrument :
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ClientSampleId :
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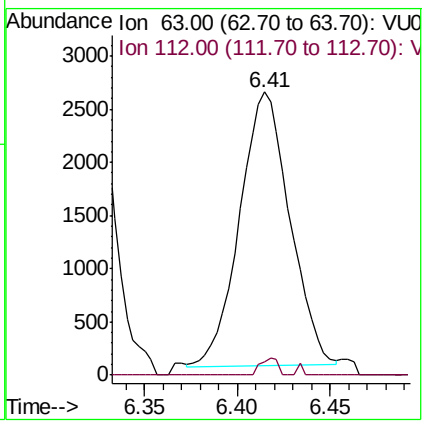
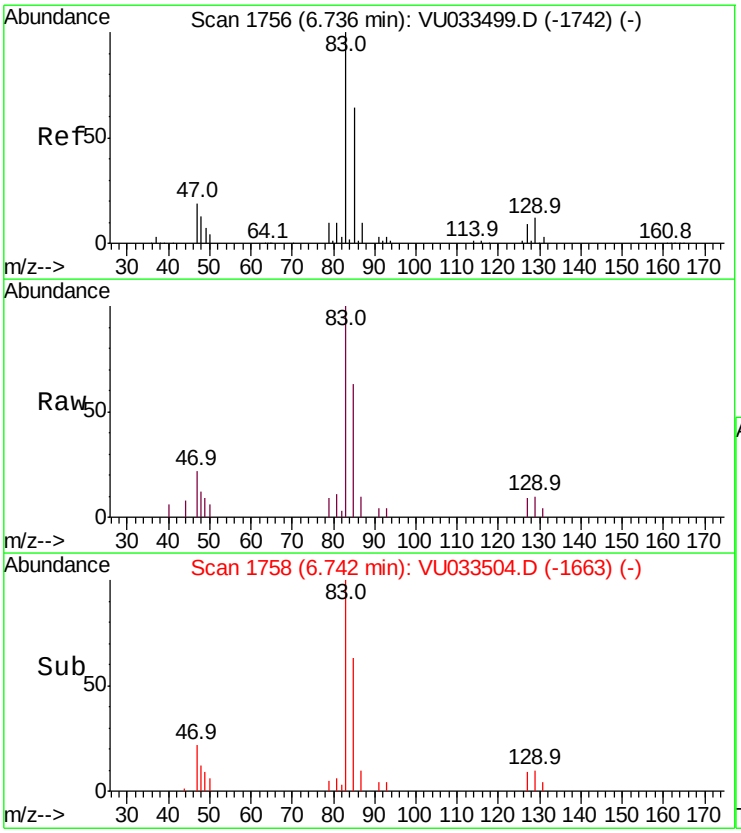
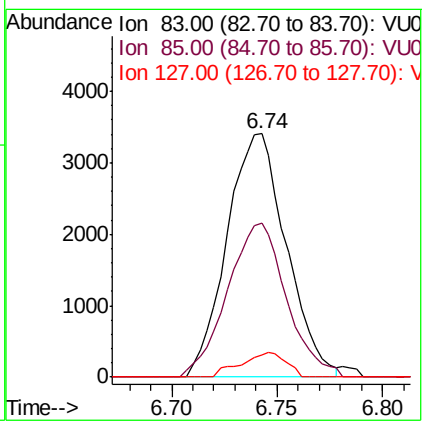


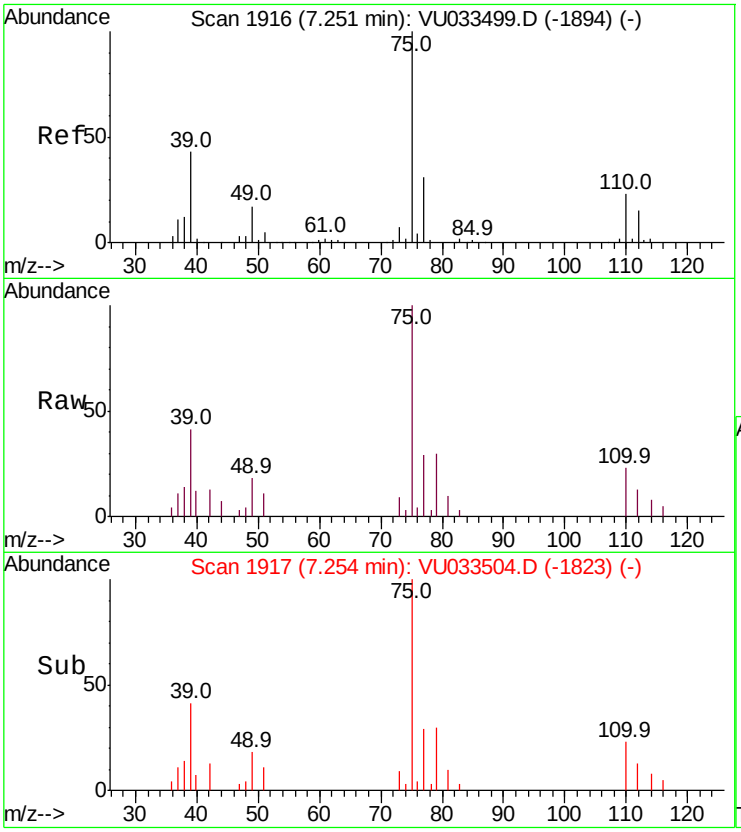


#38
Bromodichloromethane
Concen: 2.214 ug/L
RT: 6.74 min Scan# 1758
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 83 Resp: 6666

Ion	Ratio	Lower	Upper
83	100		
85	63.1	45.1	83.9
127	9.3	7.2	10.8

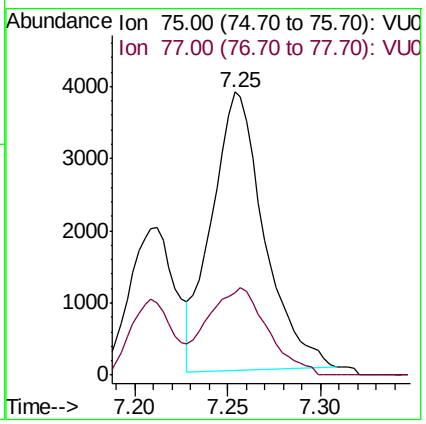




#39
cis-1,3-Dichloropropene
Concen: 2.089 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 75 Resp: 7594

Ion	Ratio	Lower	Upper
75	100		
77	29.3	22.3	41.5



Instrument :
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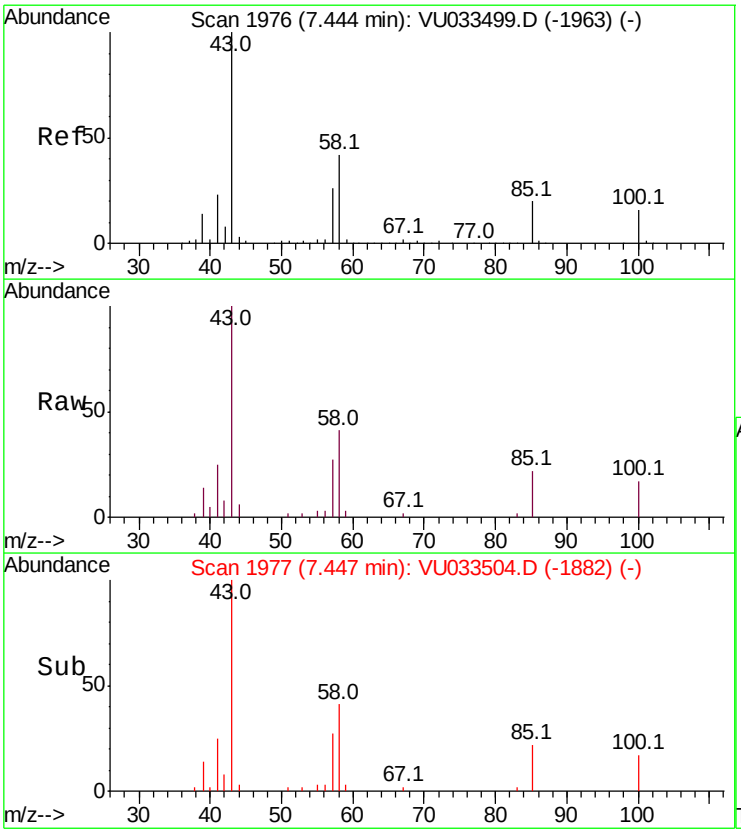
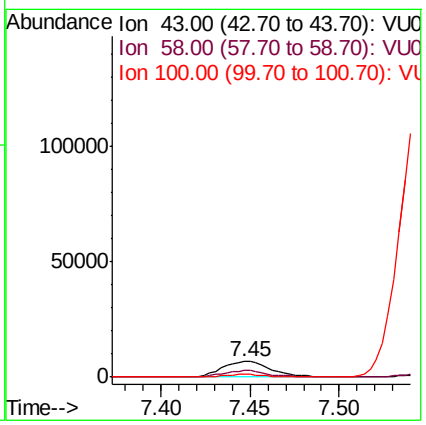
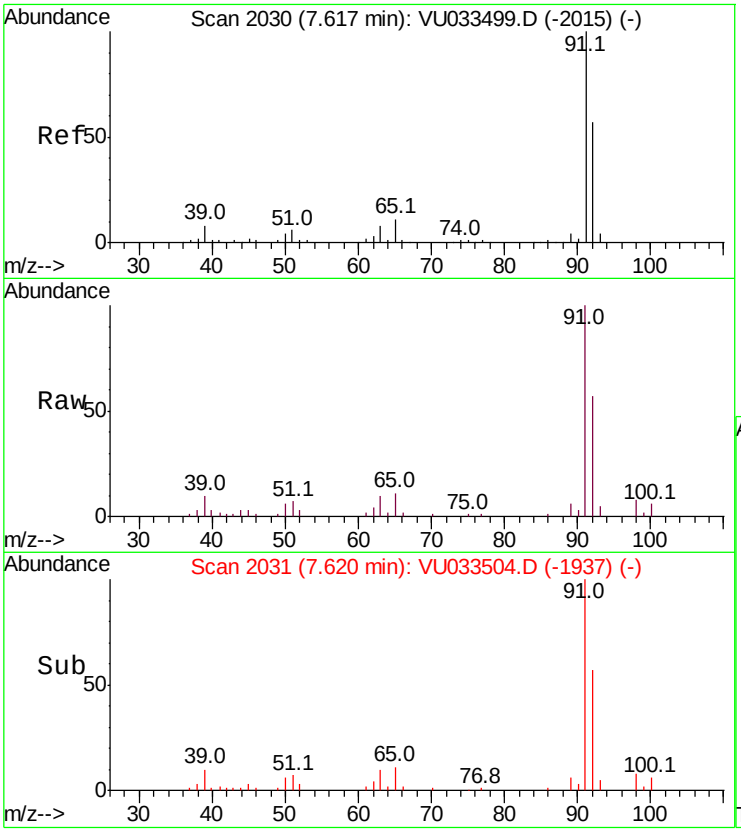


#40
4-Methyl-2-pentanone
Concen: 4.014 ug/L
RT: 7.45 min Scan# 1977
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 43 Resp: 12906

Ion	Ratio	Lower	Upper
43	100		
58	38.6	32.8	49.2
100	15.3	12.9	19.3

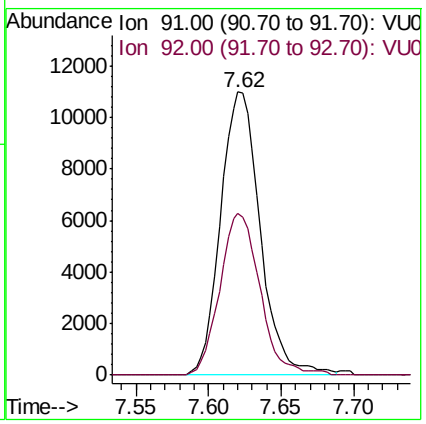




#42
Toluene
Concen: 2.228 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 91 Resp: 20840

Ion	Ratio	Lower	Upper
91	100		
92	57.3	40.2	74.6



Instrument :
MSVOA_U
ClientSampleId :
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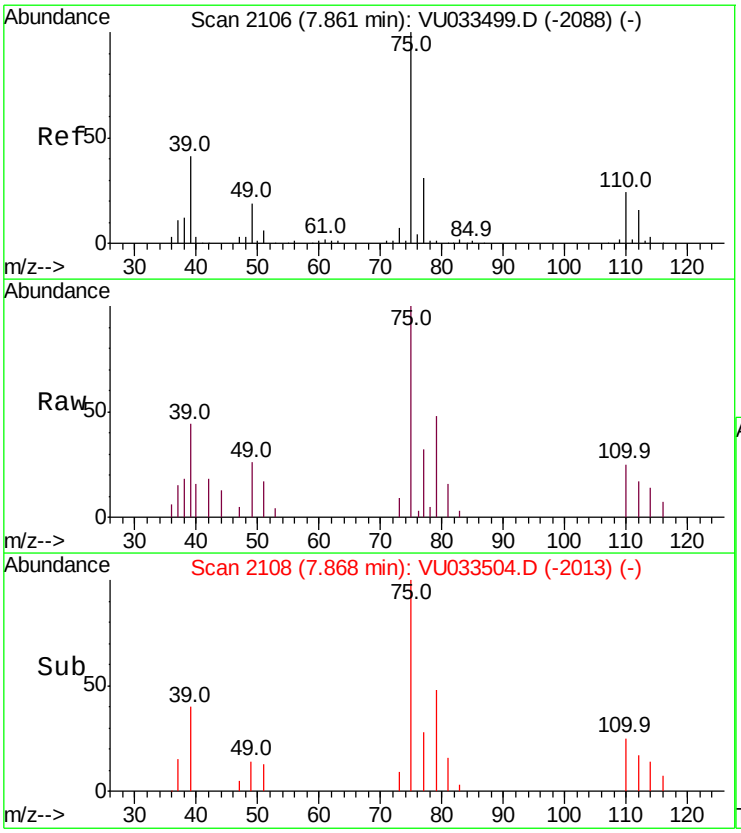
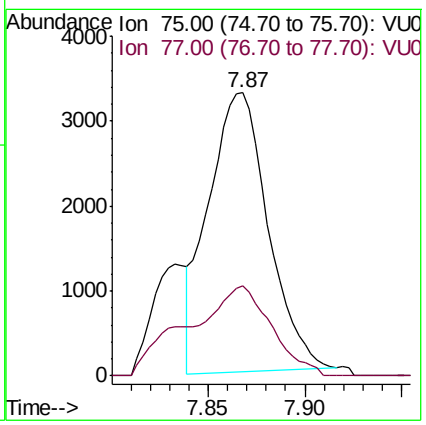
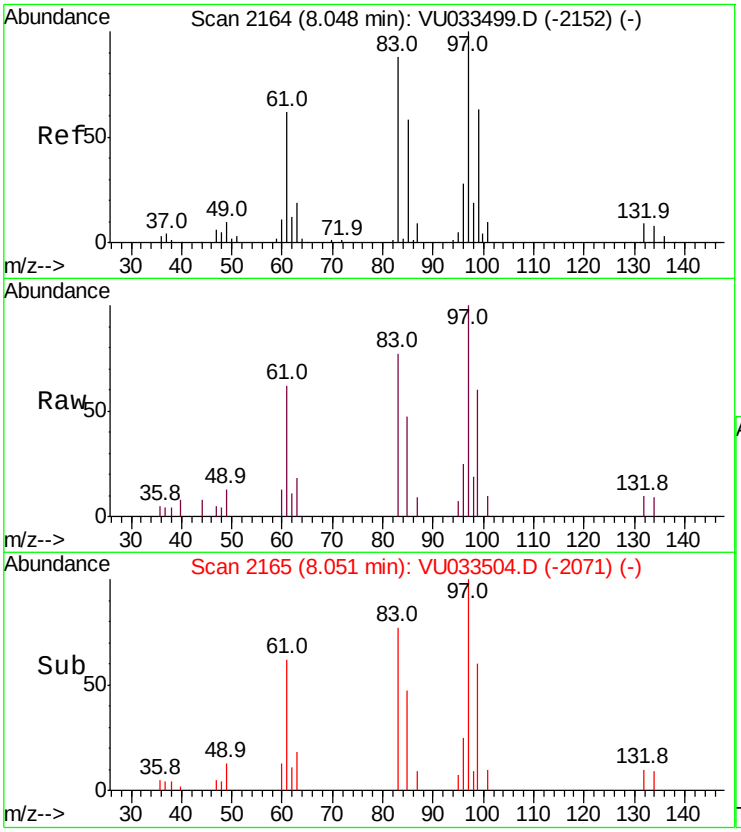


#44
trans-1,3-Dichloropropene
Concen: 2.135 ug/L
RT: 7.87 min Scan# 2108
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 75 Resp: 7012

Ion	Ratio	Lower	Upper
75	100		
77	31.8	22.7	42.1

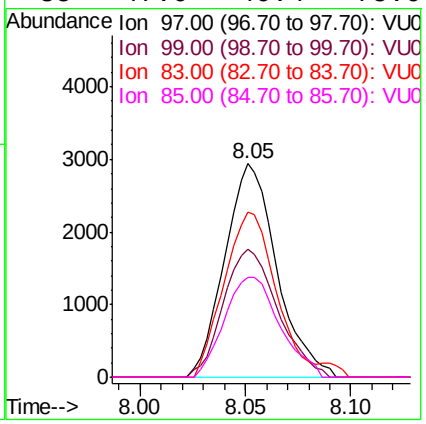




#45
1,1,2-Trichloroethane
Concen: 2.276 ug/L
RT: 8.05 min Scan# 2165
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 97 Resp: 5032

Ion	Ratio	Lower	Upper
97	100		
99	59.7	44.4	82.4
83	77.3	61.5	114.1
85	47.0	40.4	75.0



Instrument :
MSVOA_U
ClientSampleId :
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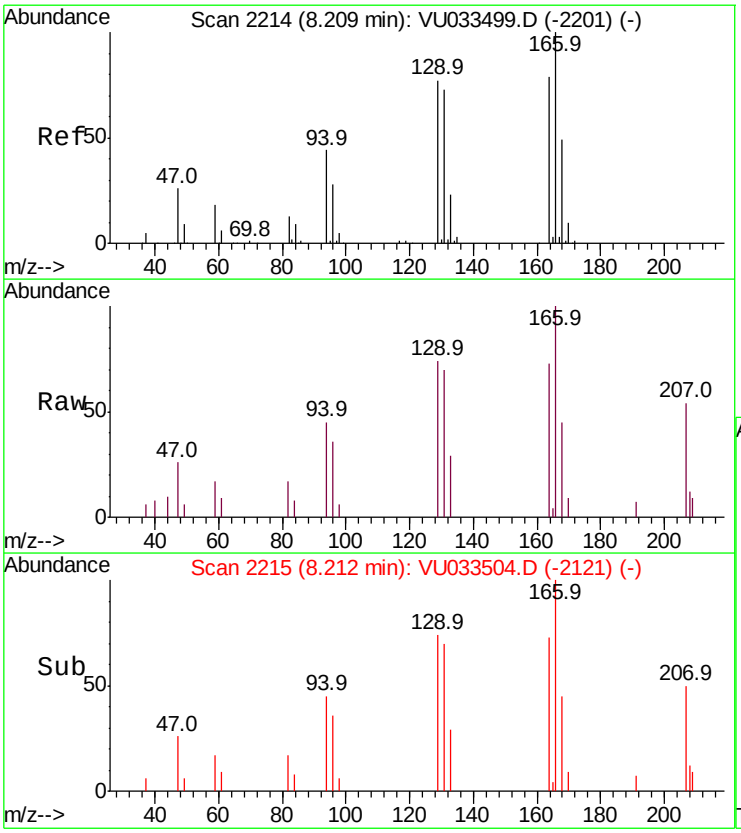
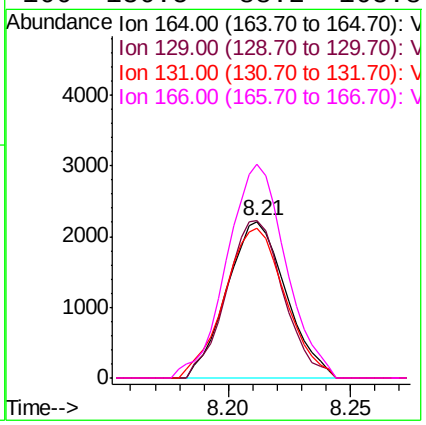
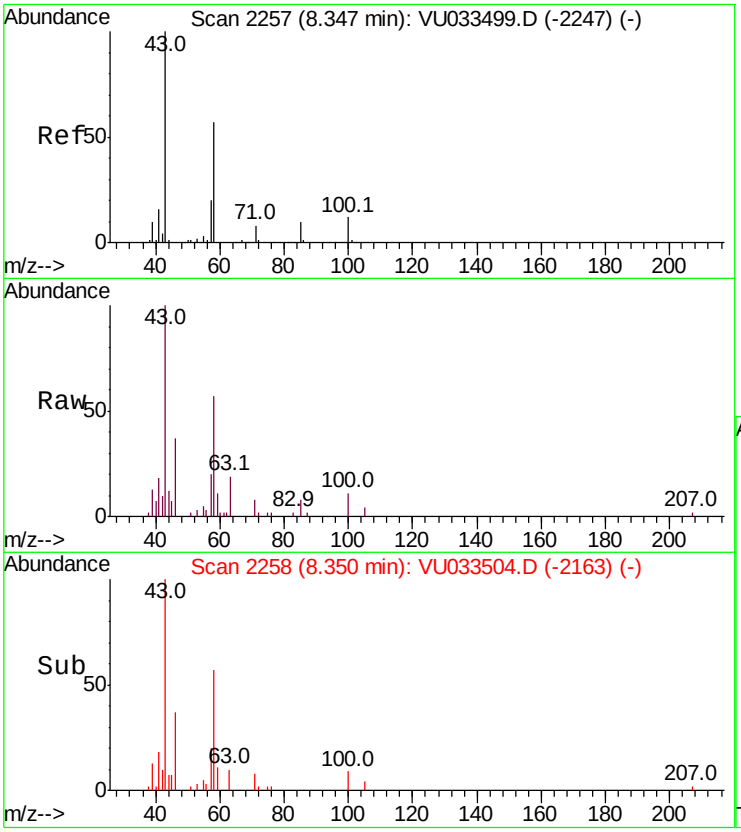


#46
Tetrachloroethene
Concen: 1.987 ug/L
RT: 8.21 min Scan# 2215
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:164 Resp: 3722

Ion	Ratio	Lower	Upper
164	100		
129	101.0	65.5	121.7
131	95.6	63.3	117.7
166	136.5	88.2	163.8

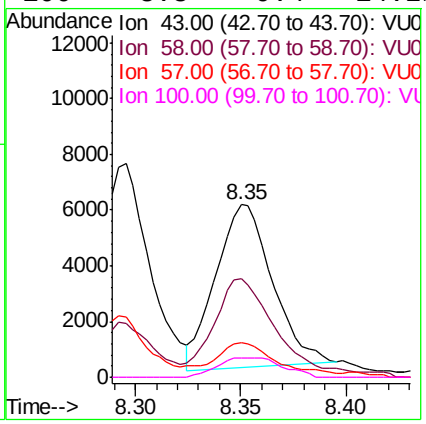




#48
2-Hexanone
Concen: 4.177 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 43 Resp: 10854

Ion	Ratio	Lower	Upper
43	100		
58	56.3	45.8	68.6
57	14.7	15.8	23.6#
100	8.3	9.4	14.2#



Instrument :
MSVOA_U
ClientSampleId :
MDL04

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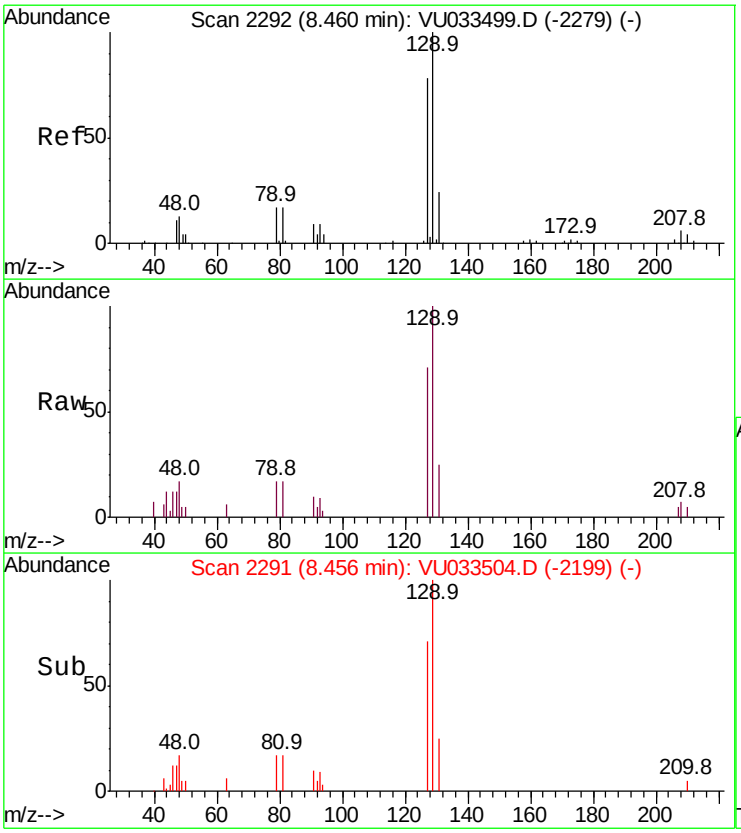
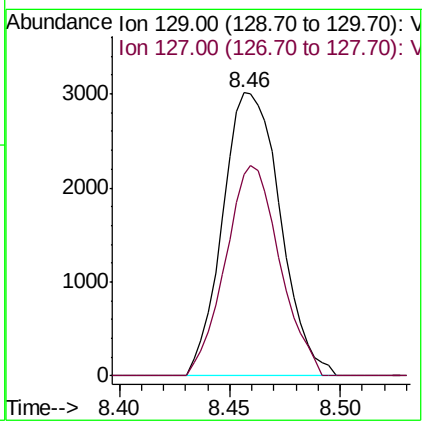
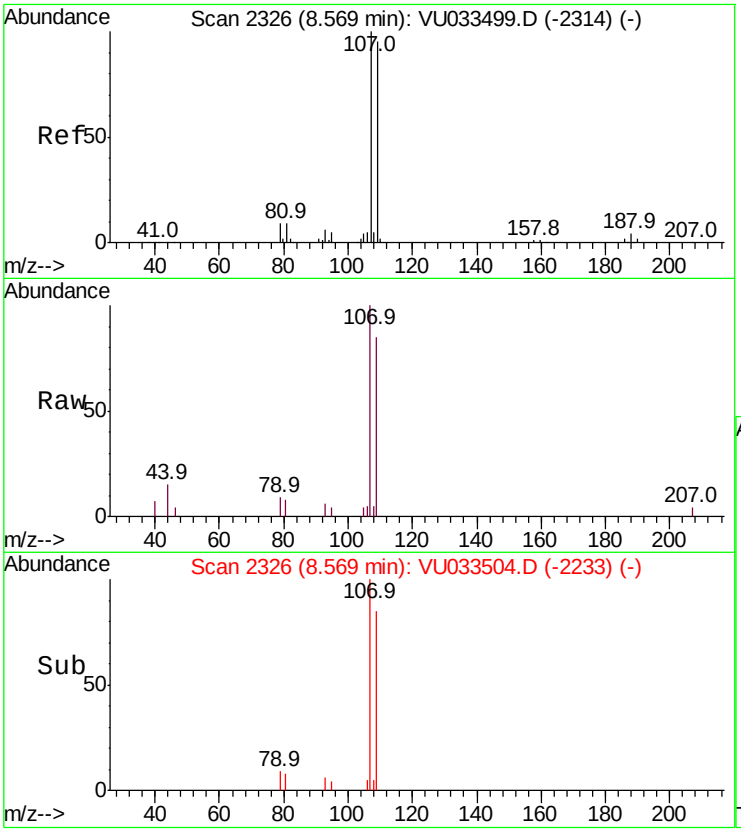


#49
Dibromochloromethane
Concen: 2.181 ug/L
RT: 8.46 min Scan# 2291
Delta R.T. -0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:129 Resp: 5485

Ion	Ratio	Lower	Upper
129	100		
127	71.1	53.8	99.8

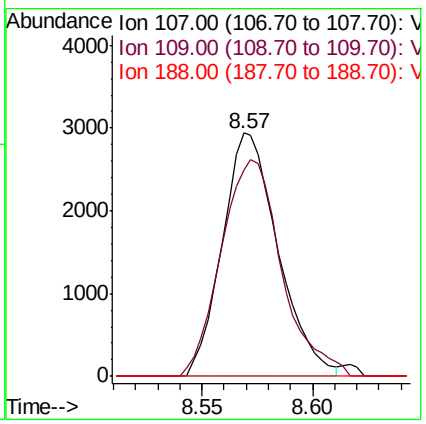




#50
1,2-Dibromoethane
Concen: 2.111 ug/L
RT: 8.57 min Scan# 2326
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:107 Resp: 5169

Ion	Ratio	Lower	Upper
107	100		
109	84.6	66.8	124.0
188	0.0	3.0	4.4#



Instrument :
MSVOA_U
ClientSampleId :
MDL04

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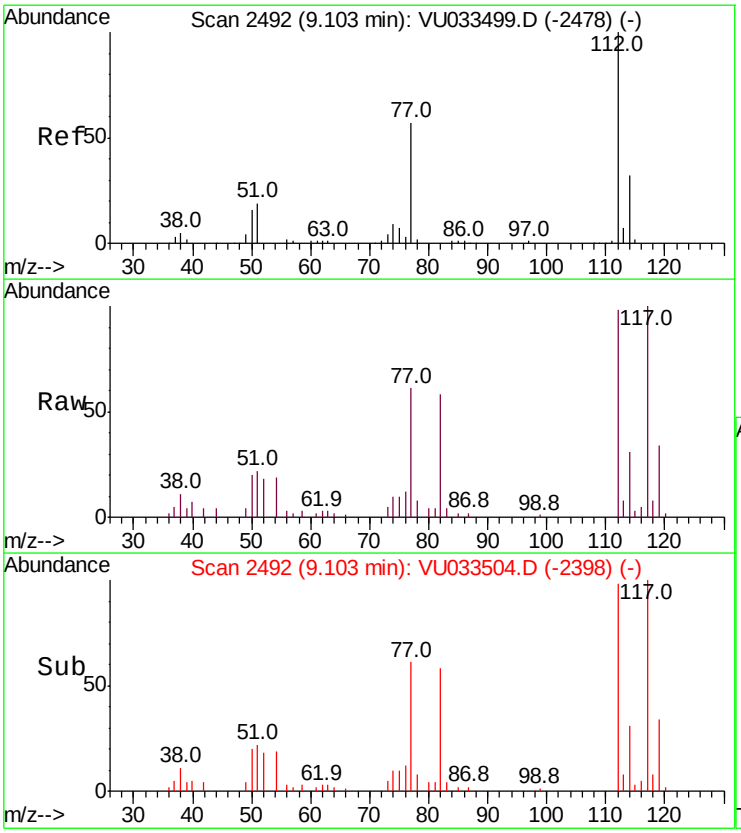
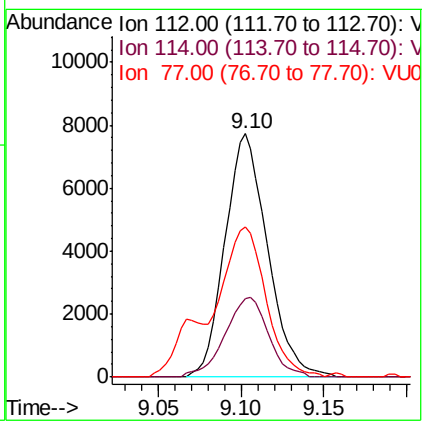
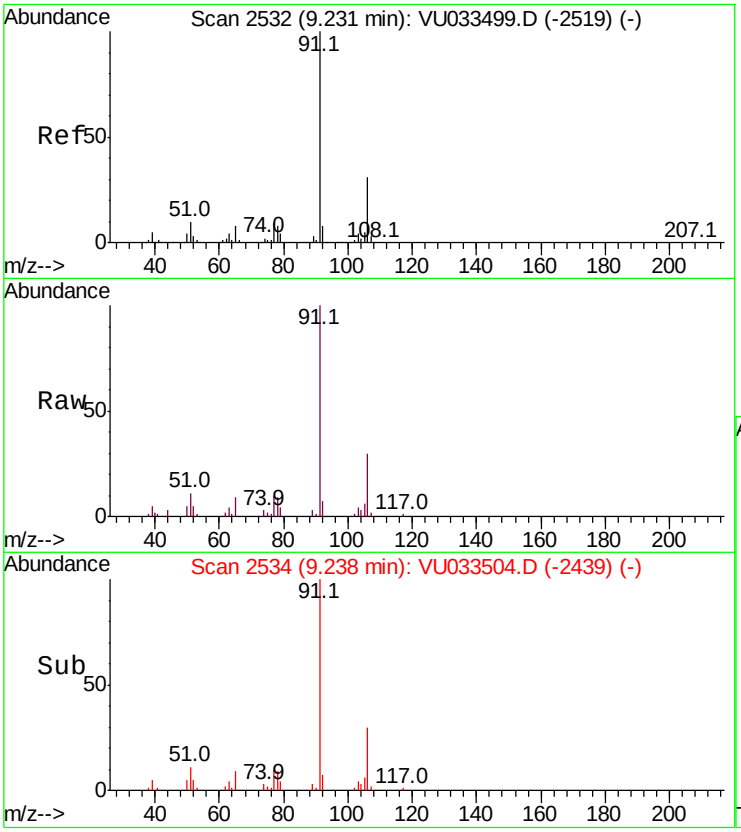


#51
Chlorobenzene
Concen: 2.251 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:112 Resp: 13783

Ion	Ratio	Lower	Upper
112	100		
114	32.0	22.3	41.5
77	61.6	45.6	68.4

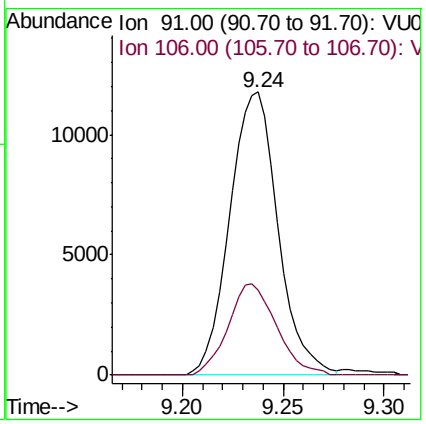




#52
Ethylbenzene
Concen: 1.962 ug/L
RT: 9.24 min Scan# 2534
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 91 Resp: 19768

Ion	Ratio	Lower	Upper
91	100		
106	29.9	22.2	41.2



Instrument :
MSVOA_U
ClientSampleId :
MDL04

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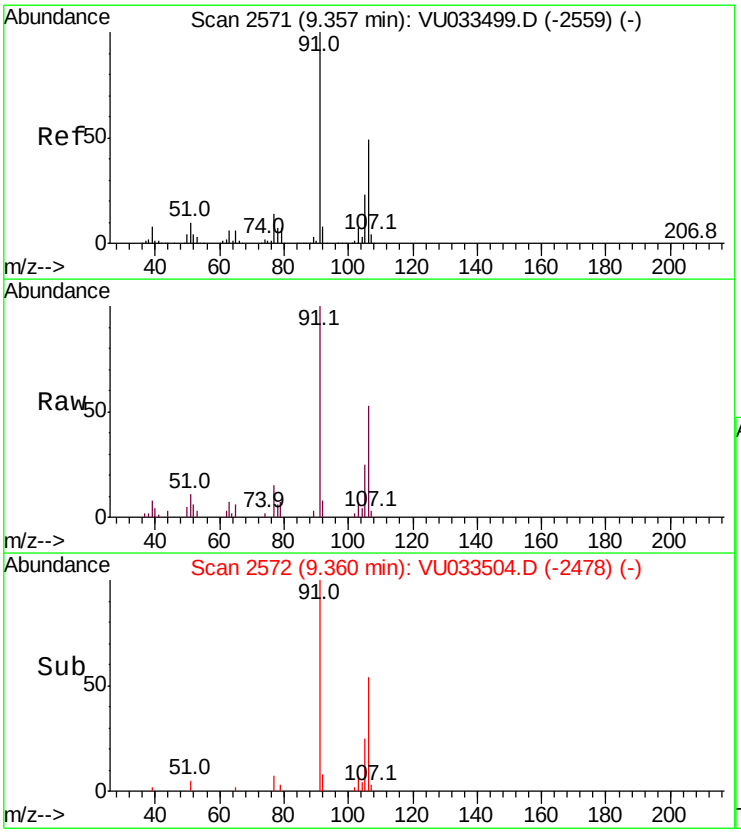
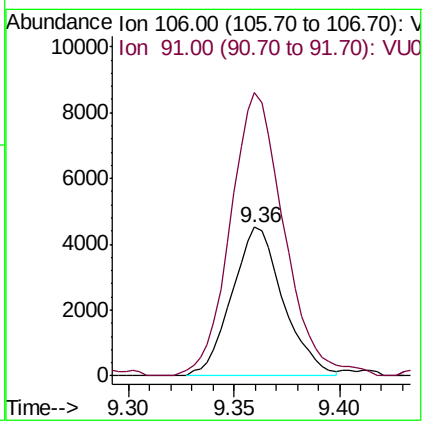
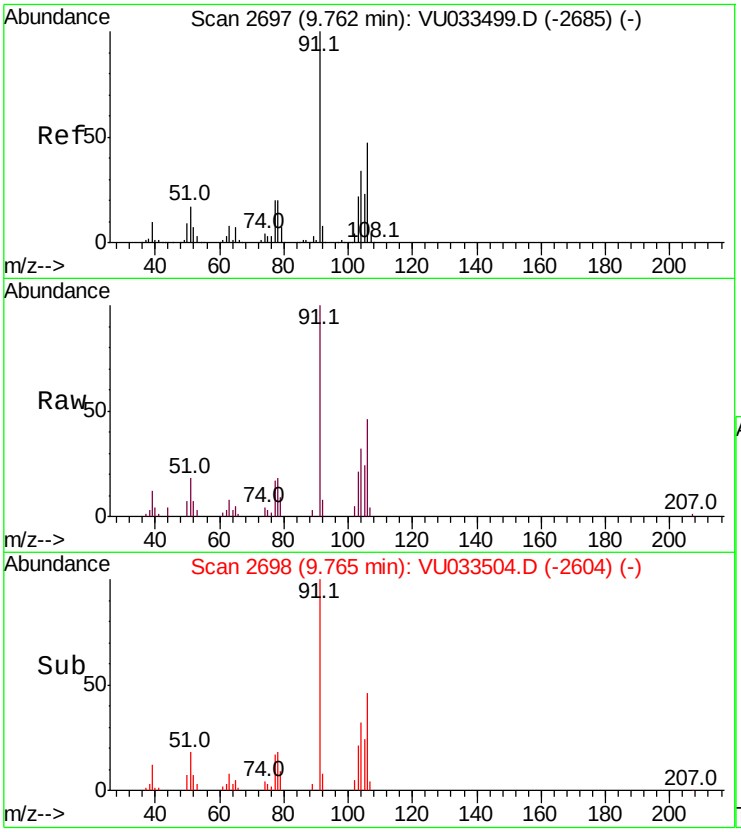


#53
m,p-Xylene
Concen: 1.980 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:106 Resp: 7655

Ion	Ratio	Lower	Upper
106	100		
91	190.2	143.0	265.6

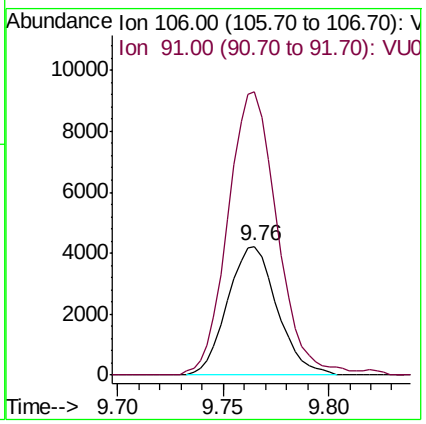




#54
o-xylene
Concen: 1.841 ug/L
RT: 9.76 min Scan# 2698
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:106 Resp: 6906

Ion	Ratio	Lower	Upper
106	100		
91	219.4	148.4	275.6



Instrument :
MSVOA_U
ClientSampleId :
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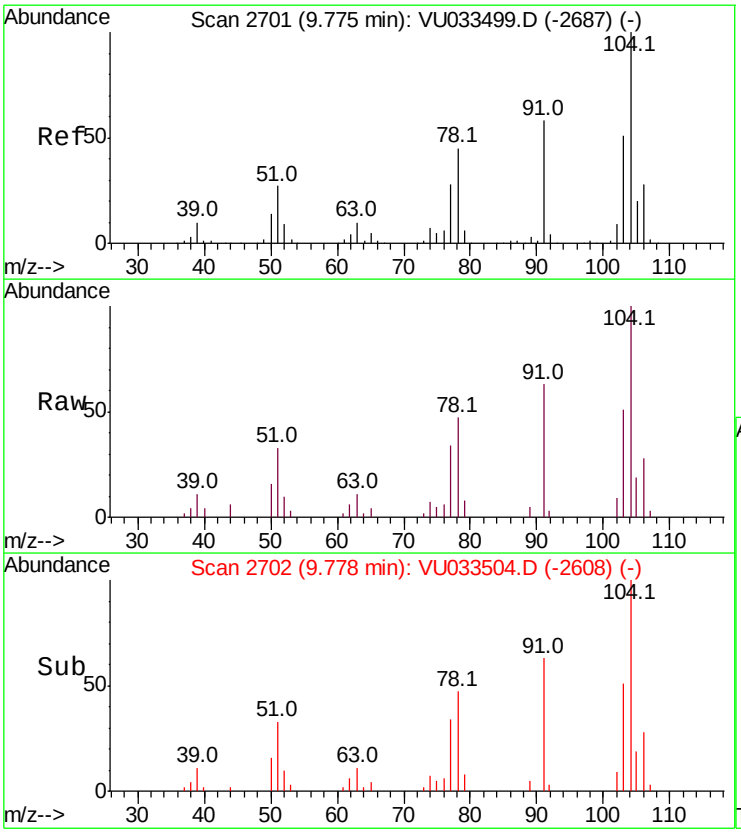
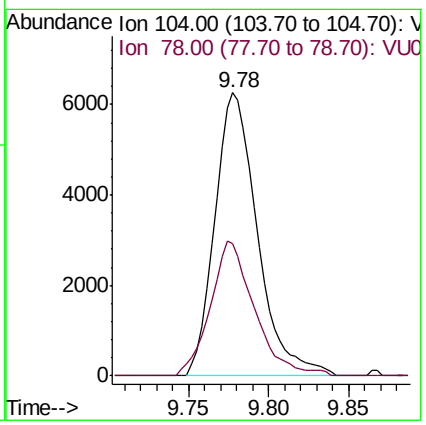
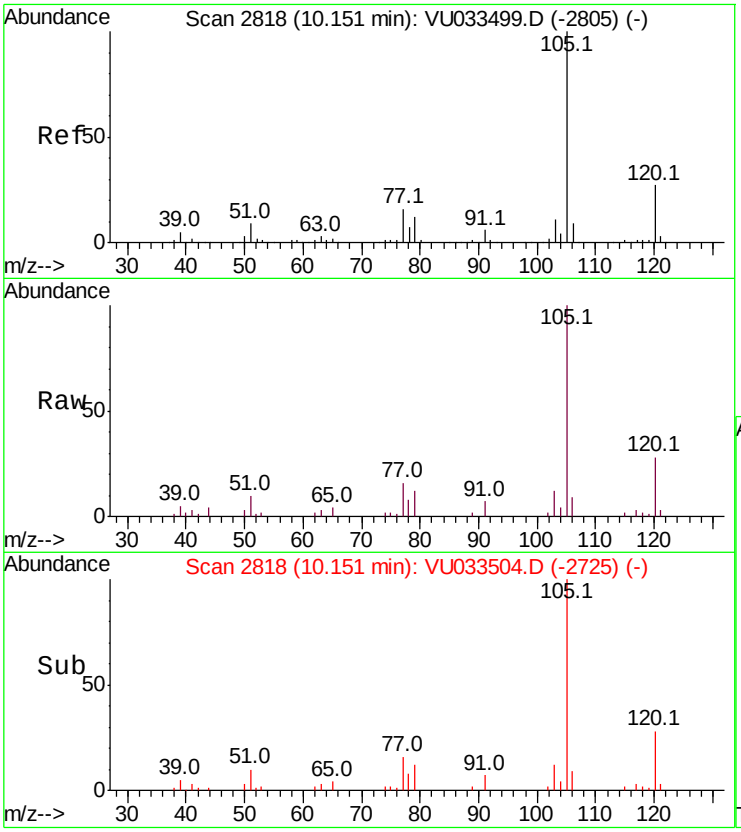


#55
Styrene
Concen: 1.791 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:104 Resp: 11409

Ion	Ratio	Lower	Upper
104	100		
78	47.0	32.2	59.8

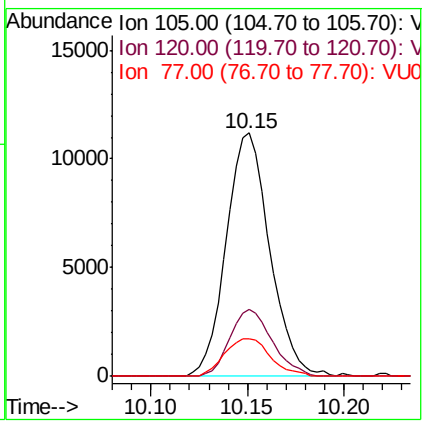




#56
Isopropylbenzene
Concen: 1.785 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

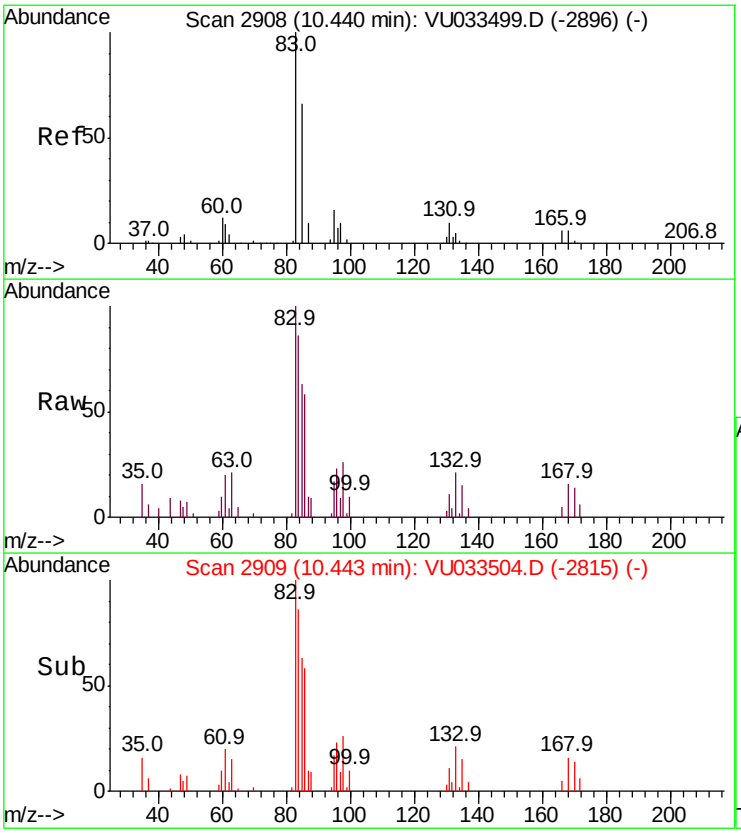
Tgt Ion:105 Resp: 17500

Ion	Ratio	Lower	Upper
105	100		
120	26.6	21.4	32.0
77	16.5	12.5	18.7



Instrument :
MSVOA_U
ClientSampleId :
MDL04

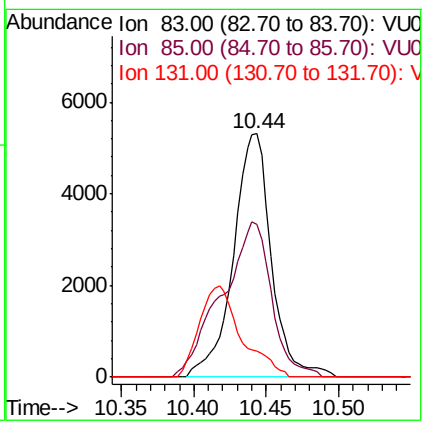
Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

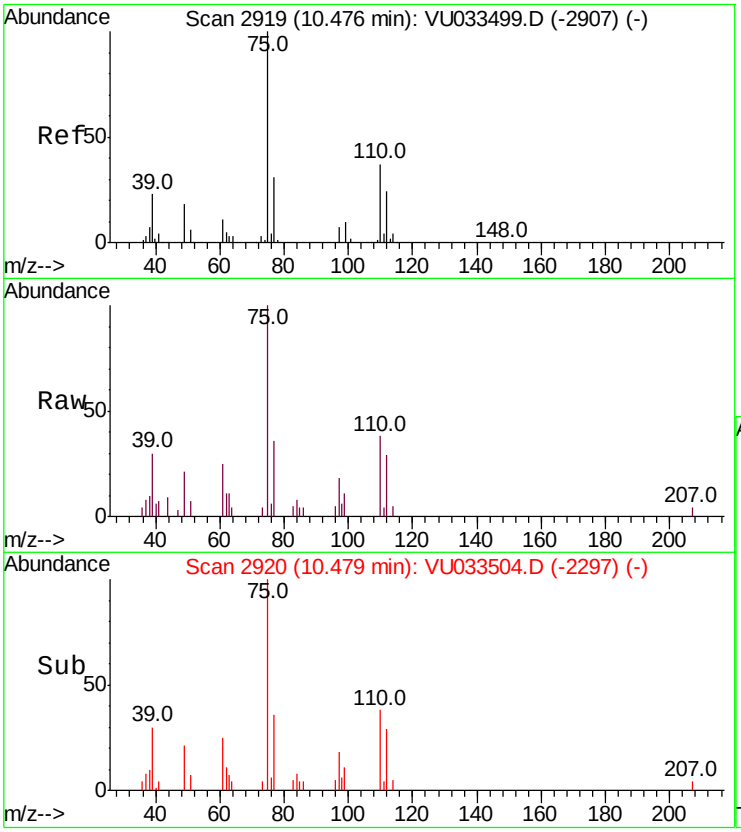


#58
1,1,2,2-Tetrachloroethane
Concen: 2.429 ug/L
RT: 10.44 min Scan# 2909
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 83 Resp: 9686

Ion	Ratio	Lower	Upper
83	100		
85	62.6	45.4	84.4
131	10.8	7.9	11.9





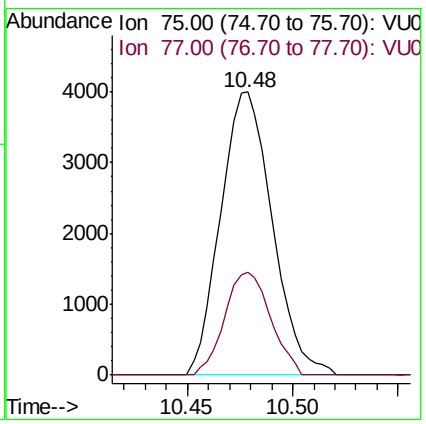
#59
1,2,3-Trichloropropane
Concen: 2.212 ug/L
RT: 10.48 min Scan# 2920
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

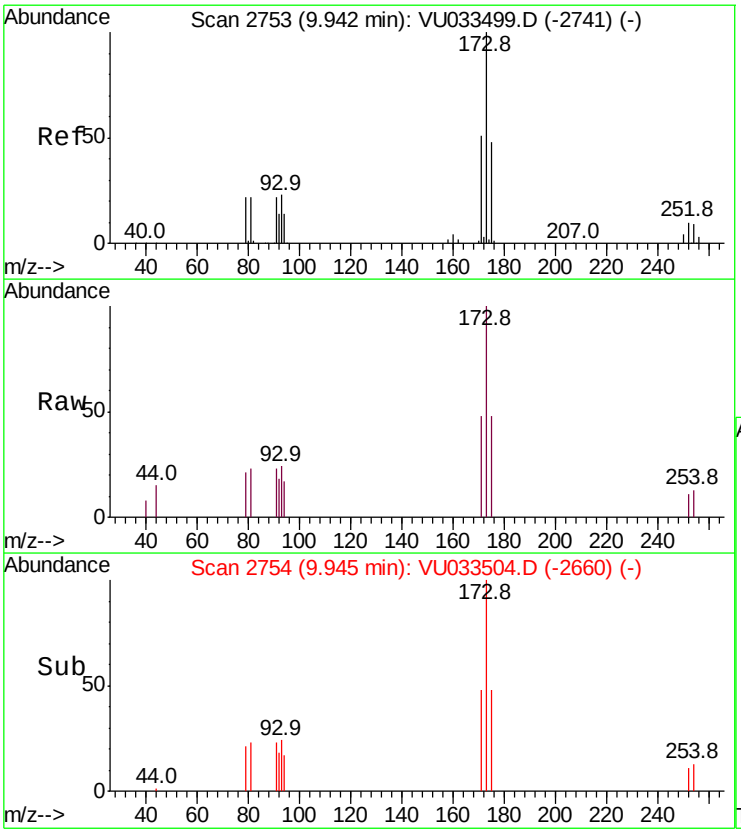
Tgt Ion: 75 Resp: 6800

Ion	Ratio	Lower	Upper
75	100		
77	32.3	25.8	38.6

Instrument :
MSVOA_U
ClientSampleId :
MDL04

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM

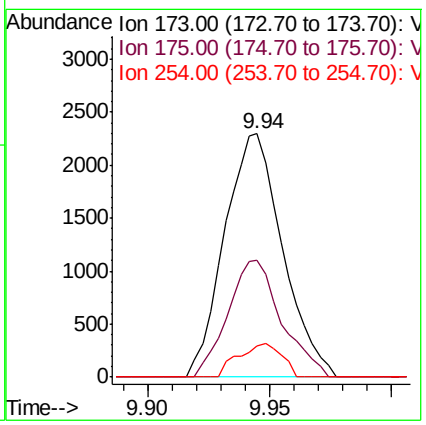


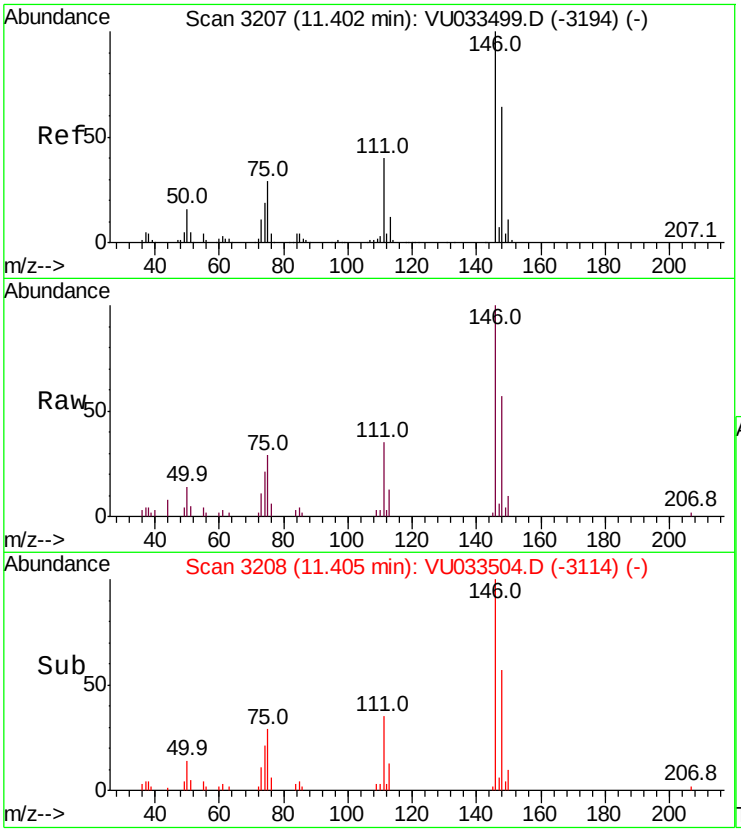


#61
Bromoform
Concen: 2.110 ug/L
RT: 9.94 min Scan# 2754
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:173 Resp: 3782

Ion	Ratio	Lower	Upper
173	100		
175	44.3	38.7	58.1
254	10.3	7.5	11.3

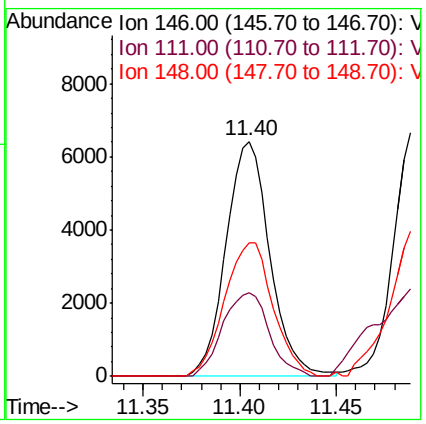




#62
1,3-Dichlorobenzene
Concen: 2.224 ug/L
RT: 11.40 min Scan# 3208
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:146 Resp: 10134

Ion	Ratio	Lower	Upper
146	100		
111	35.5	28.1	52.1
148	56.9	45.0	83.6



Instrument :
MSVOA_U
ClientSampleId :
MDL04

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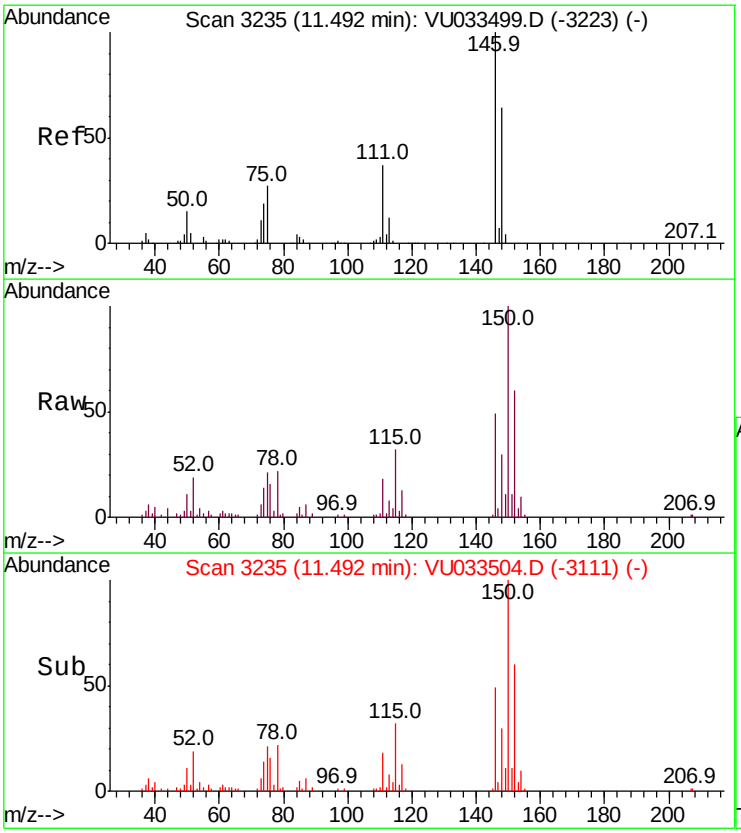
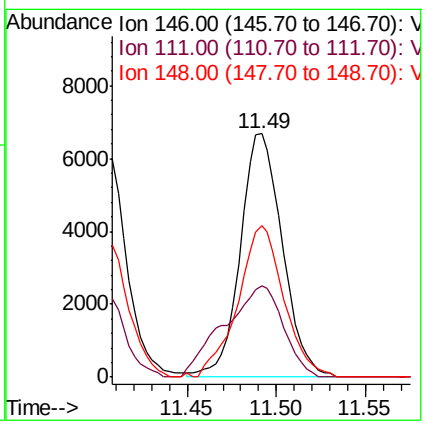
7/31/2019 10:34:08 AM

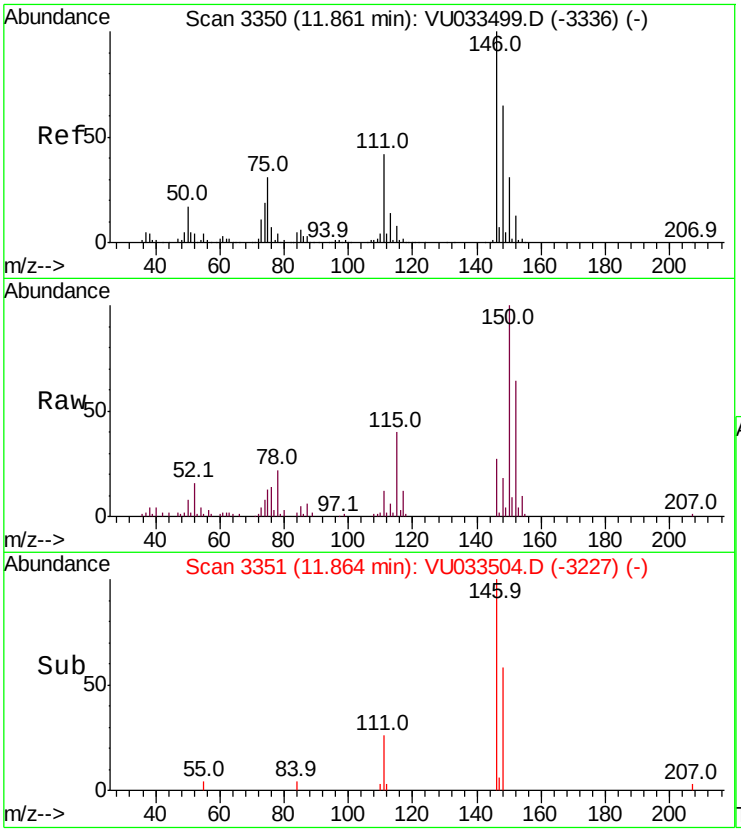


#63
1,4-Dichlorobenzene
Concen: 2.332 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:146 Resp: 11042

Ion	Ratio	Lower	Upper
146	100		
111	37.6	27.2	50.4
148	62.2	44.5	82.7





#65
1,2-Dichlorobenzene
Concen: 2.397 ug/L
RT: 11.86 min Scan# 3351
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:146 Resp: 11045

Ion	Ratio	Lower	Upper
146	100		
111	44.6	31.7	47.5
148	65.6	50.3	75.5

Instrument :
MSVOA_U
ClientSampleId :
MDL04

Manual Integrations APPROVED
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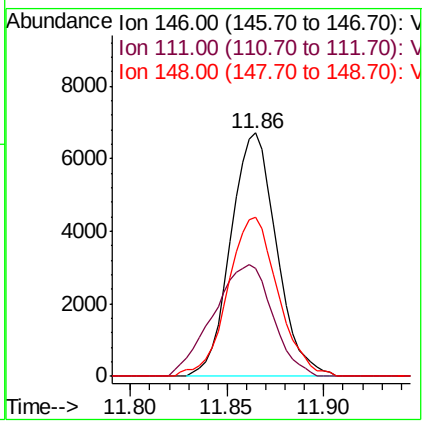
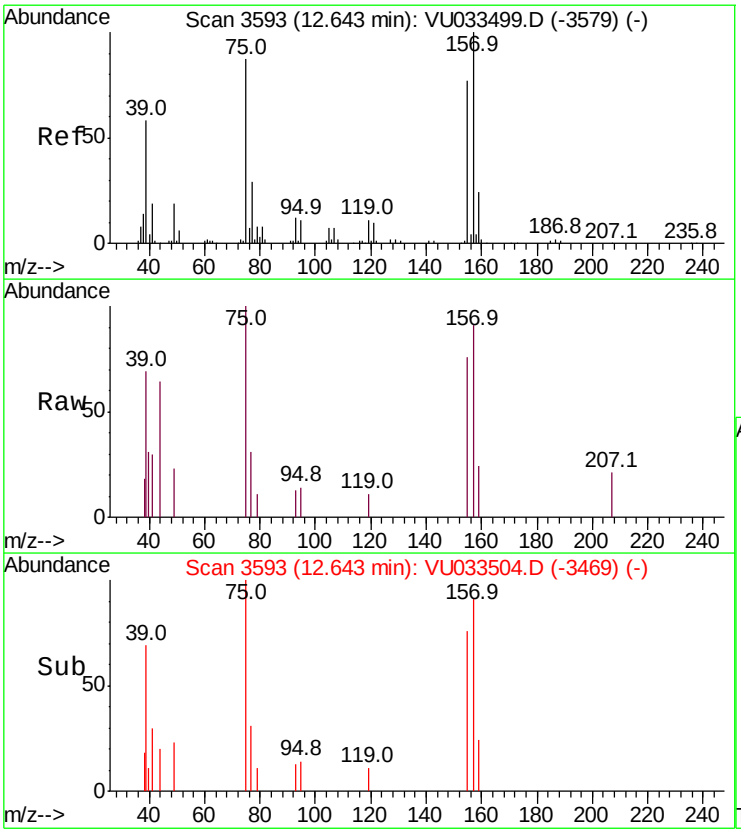
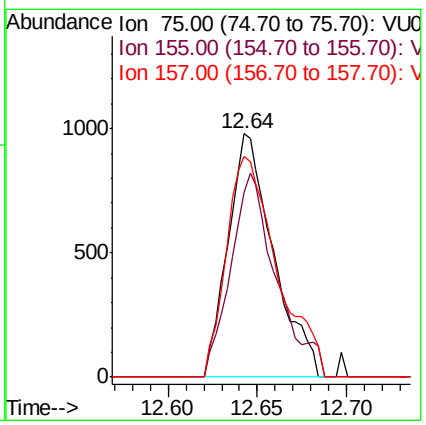


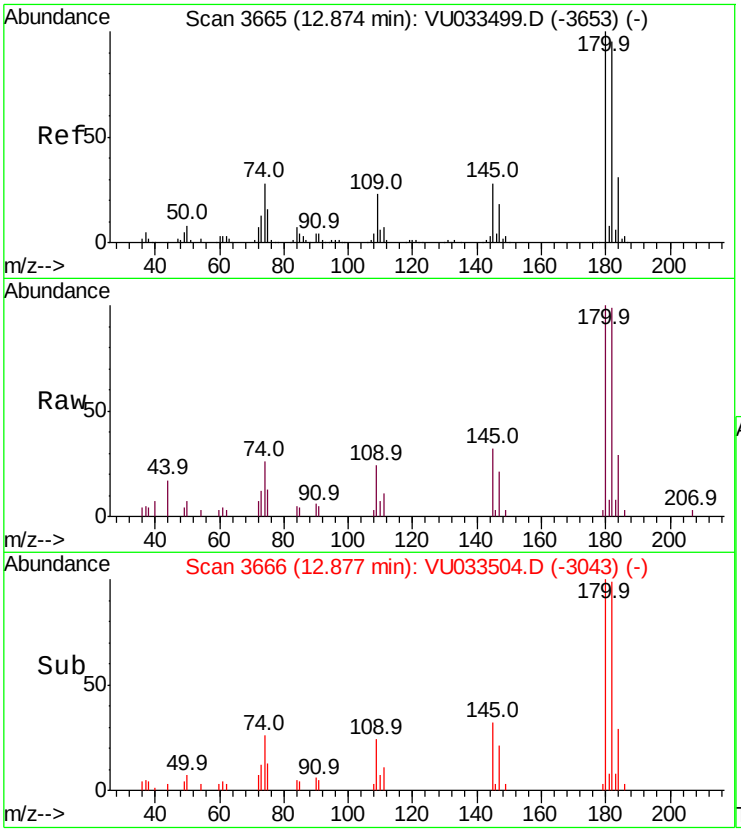


#66
1,2-Dibromo-3-chloropropane
Concen: 2.032 ug/L
RT: 12.64 min Scan# 3593
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion: 75 Resp: 1730

Ion	Ratio	Lower	Upper
75	100		
155	76.1	69.4	104.0
157	90.8	91.8	137.8#

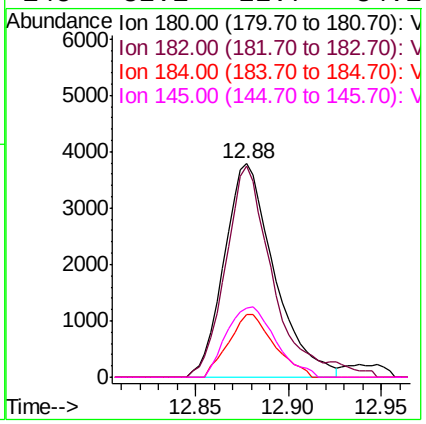




#67
1,3,5-Trichlorobenzene
Concen: 1.929 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:180 Resp: 7093

Ion	Ratio	Lower	Upper
180	100		
182	90.5	75.6	113.4
184	26.8	24.2	36.2
145	32.1	22.7	34.1



Instrument :
MSVOA_U
ClientSampleId :
MDL04

Manual Integrations APPROVED
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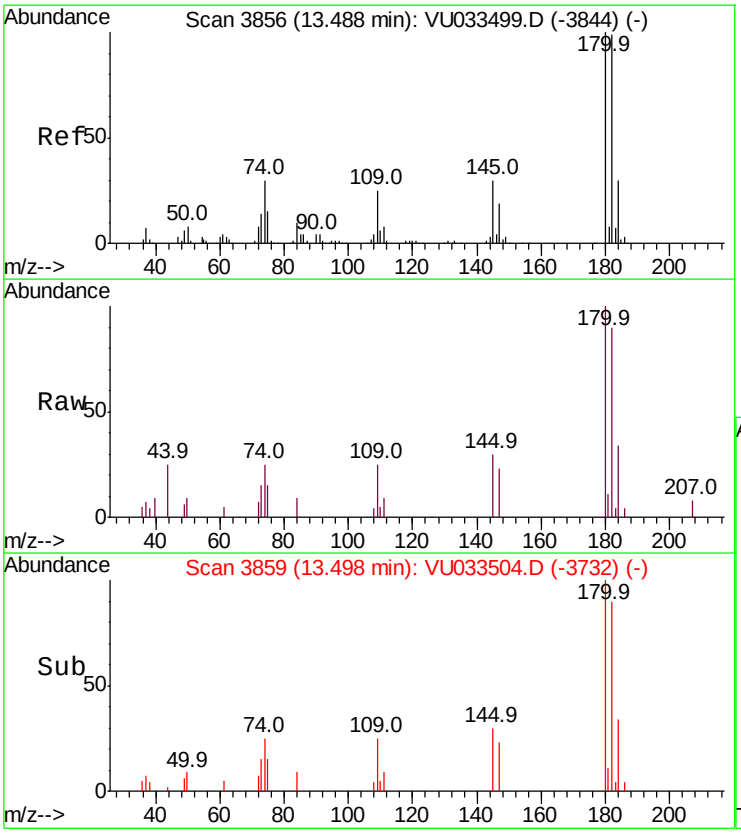
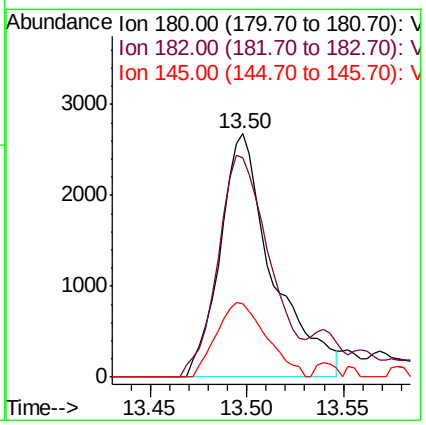
7/31/2019 10:34:08 AM

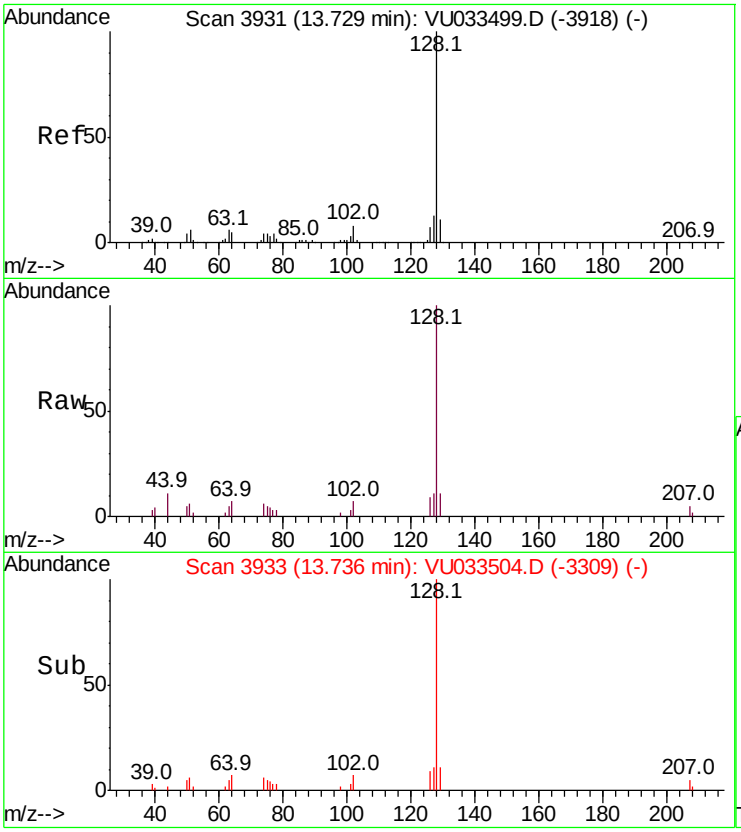


#68
1,2,4-trichlorobenzene
Concen: 1.606 ug/L
RT: 13.50 min Scan# 3859
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:180 Resp: 5045

Ion	Ratio	Lower	Upper
180	100		
182	90.6	75.8	113.8
145	29.1	24.3	36.5

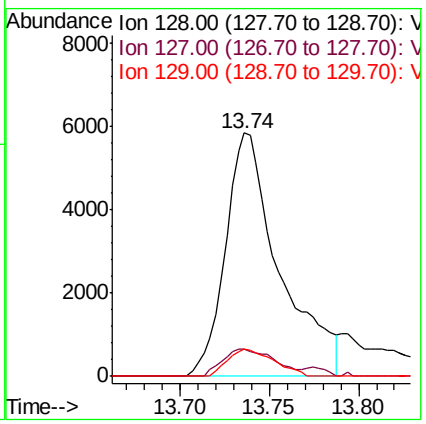




#69
Naphthalene
Concen: 1.364 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

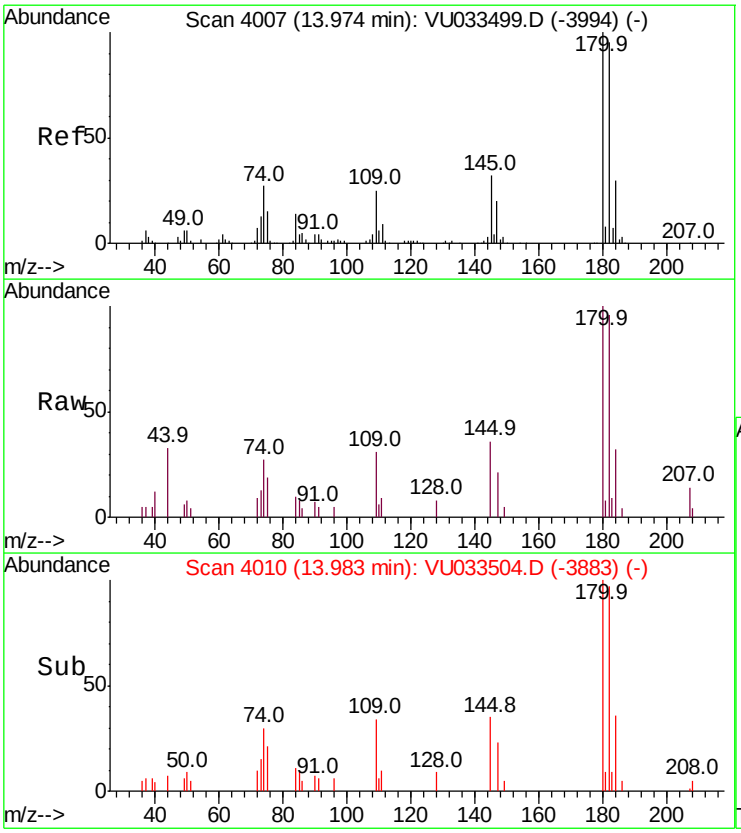
Tgt Ion:128 Resp: 12293

Ion	Ratio	Lower	Upper
128	100		
127	10.9	10.8	16.2
129	9.5	8.7	13.1



Instrument :
MSVOA_U
ClientSampleId :
MDL04

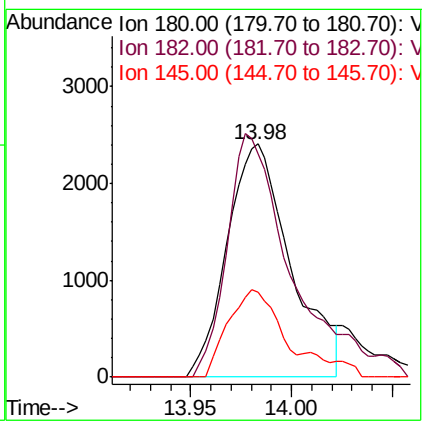
Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:08 AM



#70
1,2,3-Trichlorobenzene
Concen: 1.608 ug/L
RT: 13.98 min Scan# 4010
Delta R.T. 0.01 min
Lab File: VU033504.D
Acq: 30 Jul 2019 19:57

Tgt Ion:180 Resp: 5313

Ion	Ratio	Lower	Upper
180	100		
182	97.0	75.5	113.3
145	29.5	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033505.D
Acq On : 30 Jul 2019 20:20
Operator : JC/SP
Sample : MDL05
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 16 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL05

Quant Time: Jul 31 08:10:24 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	321035	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	317852	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	154617	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	103692	44.42	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 88.84%			
7) Chloroethane-d5	1.67	69	89484	44.68	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 89.36%			
11) 1,1-Dichloroethene-d2	2.26	63	142913	33.74	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 67.48%			
21) 2-Butanone-d5	4.15	46	148607	96.13	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 96.13%			
24) Chloroform-d	4.62	84	176286	45.06	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 90.12%			
26) 1,2-Dichloroethane-d4	5.29	65	116670	47.09	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 94.18%			
32) Benzene-d6	5.32	84	369450	46.89	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 93.78%			
36) 1,2-Dichloropropane-d6	6.31	67	117293	47.49	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 94.98%			
41) Toluene-d8	7.55	98	331211	44.86	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.72%			
43) trans-1,3-Dichloropropene-	7.83	79	54520	44.50	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 89.00%			
47) 2-Hexanone-d5	8.29	63	110360	94.11	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 94.11%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	172113	45.19	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 90.38%			
64) 1,2-Dichlorobenzene-d4	11.85	152	133351	47.10	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	6901	2.279	ug/L	95
3) Chloromethane	1.32	50	7593	2.490	ug/L	96
5) Vinyl chloride	1.39	62	8325	2.547	ug/L #	72
6) Bromomethane	1.62	94	5076	1.760	ug/L	91
8) Chloroethane	1.69	64	4789	2.411	ug/L	89
9) Trichlorofluoromethane	1.87	101	10221	2.390	ug/L	98
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	6083	2.806	ug/L	88
12) 1,1-Dichloroethene	2.27	96	5991	2.882	ug/L #	1
13) Acetone	2.31	43	6791	4.294	ug/L	94
14) Carbon disulfide	2.46	76	15758	2.417	ug/L	100
15) Methyl Acetate	2.60	43	6186	2.457	ug/L	98
16) Methylene chloride	2.68	84	6274	2.642	ug/L	90
17) trans-1,2-Dichloroethene	2.96	96	5311	2.438	ug/L	95
18) Methyl tert-butyl Ether	2.98	73	15329	2.308	ug/L	97
19) 1,1-Dichloroethane	3.42	63	10045	2.457	ug/L	99
20) cis-1,2-Dichloroethene	4.20	96	5801	2.373	ug/L	92
22) 2-Butanone	4.25	43	7635	4.043	ug/L #	49

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033505.D
Acq On : 30 Jul 2019 20:20
Operator : JC/SP
Sample : MDL05
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 16 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL05

Quant Time: Jul 31 08:10:24 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

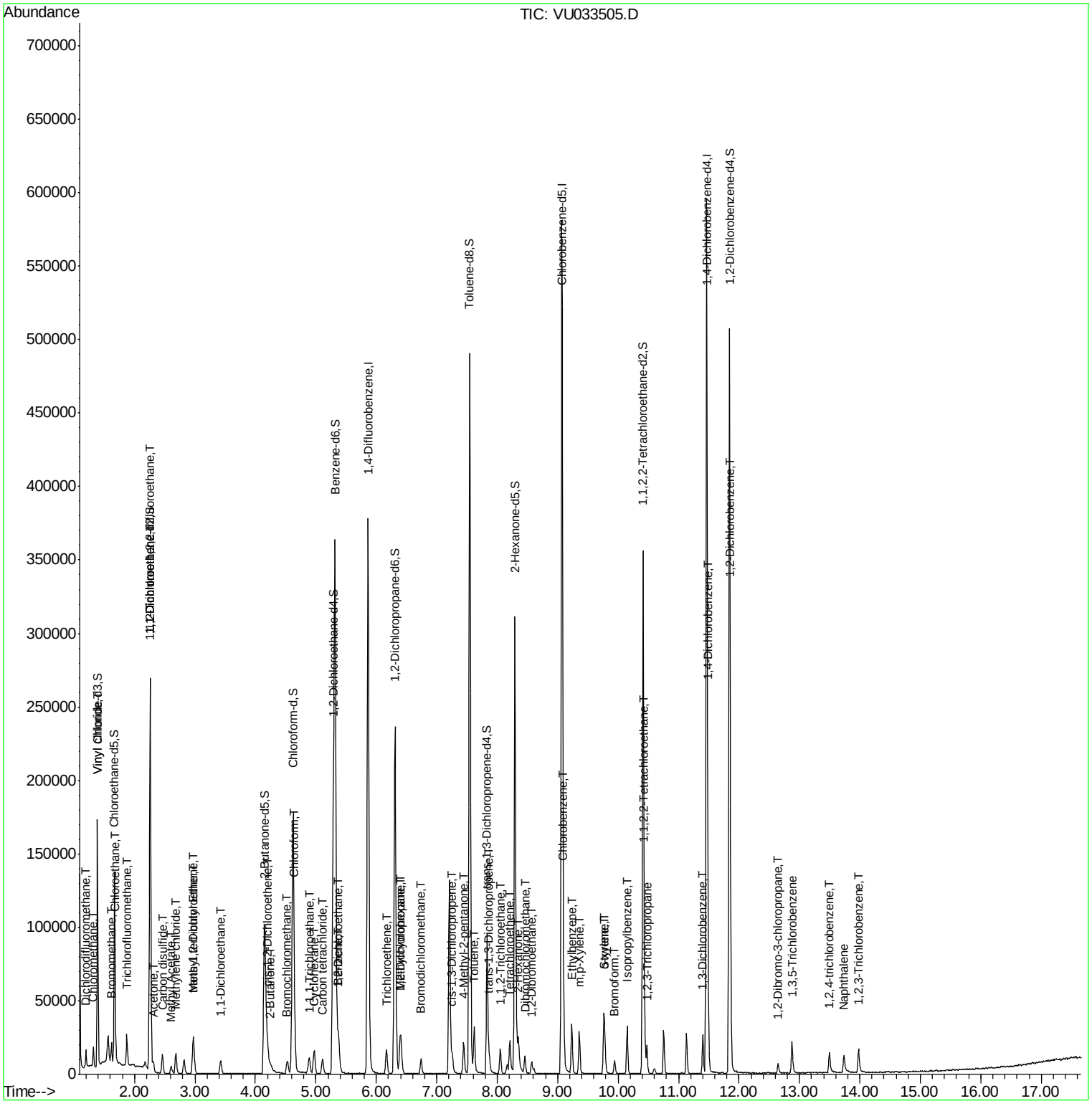
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
23) Bromochloromethane	4.52	128	2835	2.222 ug/L #	85
25) Chloroform	4.65	83	14974	3.480 ug/L	98
27) 1,2-Dichloroethane	5.38	62	8223	2.482 ug/L	98
29) Cyclohexane	4.97	56	7793	2.248 ug/L	96
30) 1,1,1-Trichloroethane	4.89	97	8322	2.275 ug/L	94
31) Carbon tetrachloride	5.11	117	7373	2.315 ug/L	95
33) Benzene	5.37	78	20652	2.252 ug/L	100
34) Trichloroethene	6.17	95	5868	2.426 ug/L	98
35) Methylcyclohexane	6.39	83	7979	2.114 ug/L	96
37) 1,2-Dichloropropane	6.41	63	5843	2.381 ug/L #	96
38) Bromodichloromethane	6.74	83	7531	2.374 ug/L	94
39) cis-1,3-Dichloropropene	7.25	75	8637	2.255 ug/L	97
40) 4-Methyl-2-pentanone	7.45	43	14332	4.229 ug/L	98
42) Toluene	7.62	91	23364	2.370 ug/L	99
44) trans-1,3-Dichloropropene	7.86	75	7973	2.303 ug/L	99
45) 1,1,2-Trichloroethane	8.05	97	5641	2.421 ug/L	95
46) Tetrachloroethene	8.21	164	4582	2.320 ug/L	97
48) 2-Hexanone	8.35	43	13296	4.854 ug/L	92
49) Dibromochloromethane	8.46	129	6030	2.275 ug/L	96
50) 1,2-Dibromoethane	8.57	107	6192	2.399 ug/L #	98
51) Chlorobenzene	9.10	112	15543	2.408 ug/L	99
52) Ethylbenzene	9.23	91	23522	2.215 ug/L	98
53) m,p-Xylene	9.36	106	8878	2.178 ug/L	90
54) o-xylene	9.76	106	7994	2.022 ug/L	100
55) Styrene	9.78	104	12530	1.866 ug/L	94
56) Isopropylbenzene	10.15	105	20281	1.963 ug/L	98
58) 1,1,2,2-Tetrachloroethane	10.44	83	10942	2.604 ug/L #	96
59) 1,2,3-Trichloropropane	10.48	75	8111	2.504 ug/L	99
61) Bromoform	9.94	173	4419	2.366 ug/L #	96
62) 1,3-Dichlorobenzene	11.40	146	11262	2.372 ug/L	99
63) 1,4-Dichlorobenzene	11.49	146	12808	2.596 ug/L	98
65) 1,2-Dichlorobenzene	11.86	146	12887	2.684 ug/L	95
66) 1,2-Dibromo-3-chloropropan	12.65	75	1982	2.234 ug/L #	84
67) 1,3,5-Trichlorobenzene	12.88	180	8410	2.195 ug/L	99
68) 1,2,4-trichlorobenzene	13.49	180	6231	1.904 ug/L	96
69) Naphthalene	13.74	128	13257	1.412 ug/L #	95
70) 1,2,3-Trichlorobenzene	13.98	180	5843	1.697 ug/L	97

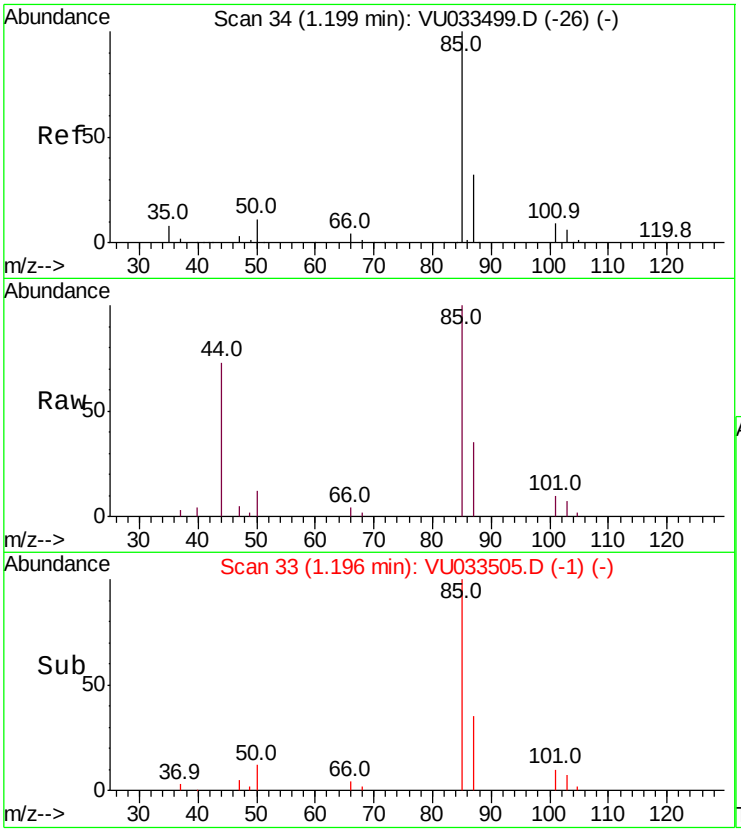
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033505.D
Acq On : 30 Jul 2019 20:20
Operator : JC/SP
Sample : MDL05
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 16 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Quant Time: Jul 31 08:10:24 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

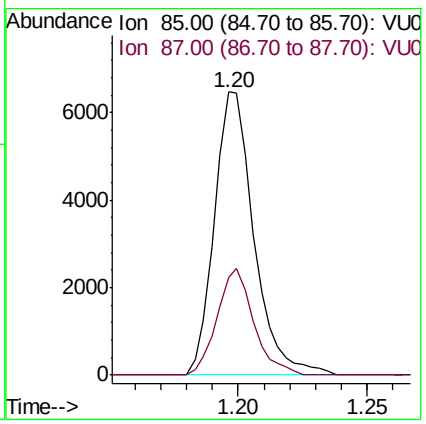




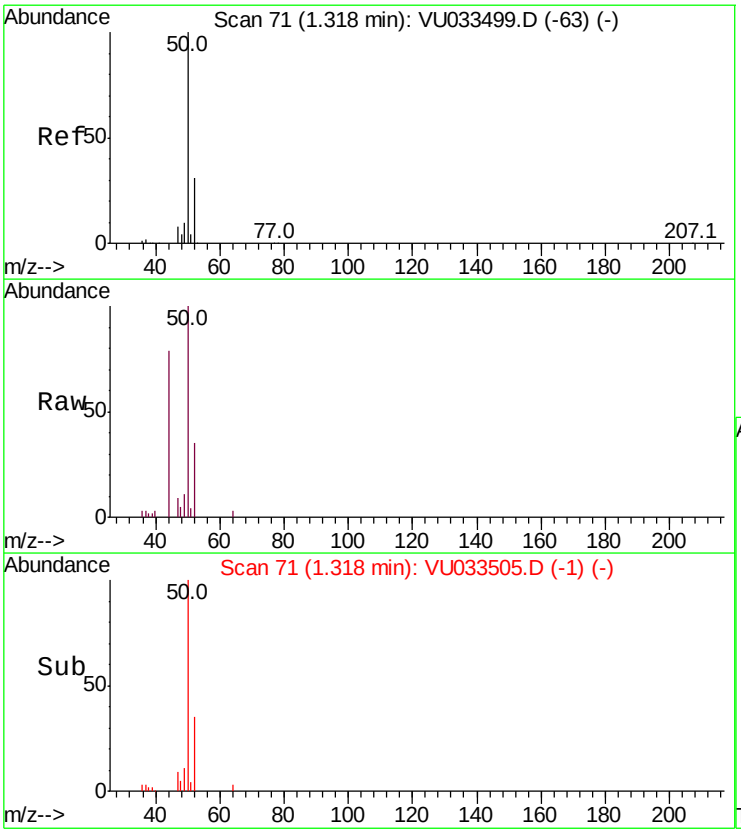
#2
Dichlorodifluoromethane
Concen: 2.279 ug/L
RT: 1.20 min Scan# 33
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 85 Resp: 6901

Ion	Ratio	Lower	Upper
85	100		
87	34.9	25.4	38.2



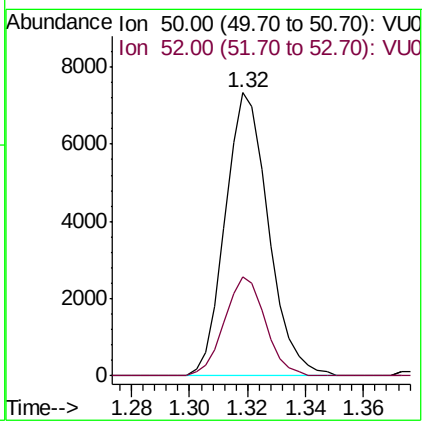
Instrument :
MSVOA_U
ClientSampleId :
MDL05

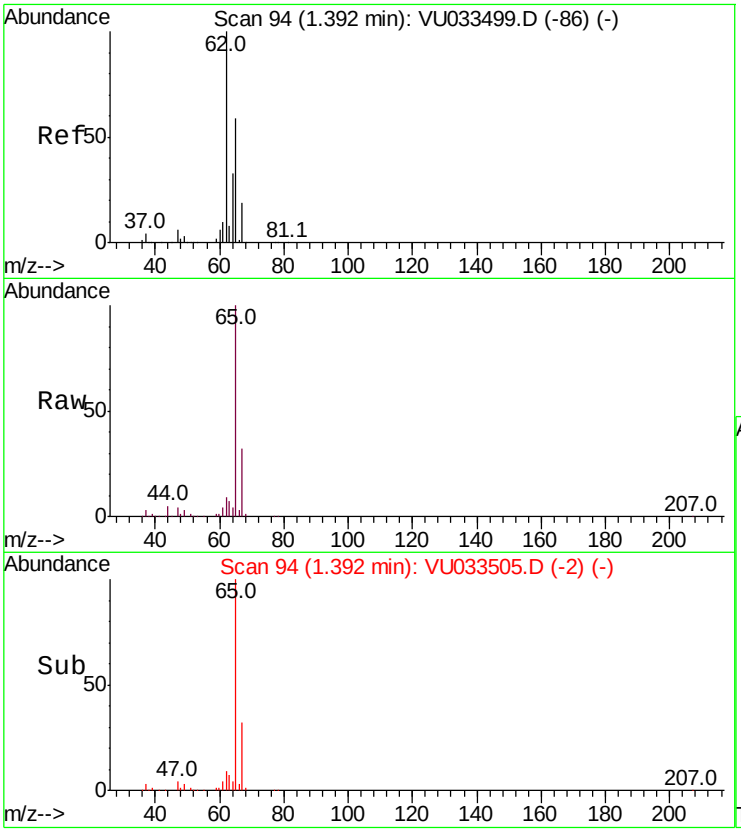


#3
Chloromethane
Concen: 2.490 ug/L
RT: 1.32 min Scan# 71
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 50 Resp: 7593

Ion	Ratio	Lower	Upper
50	100		
52	35.1	23.1	42.9



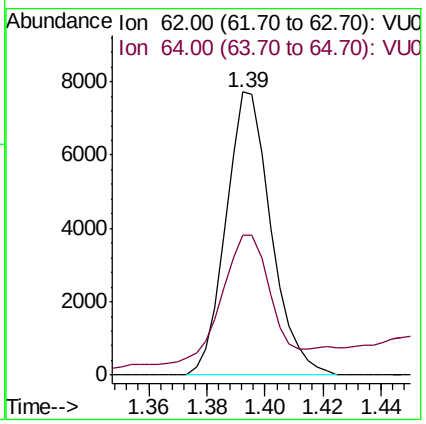


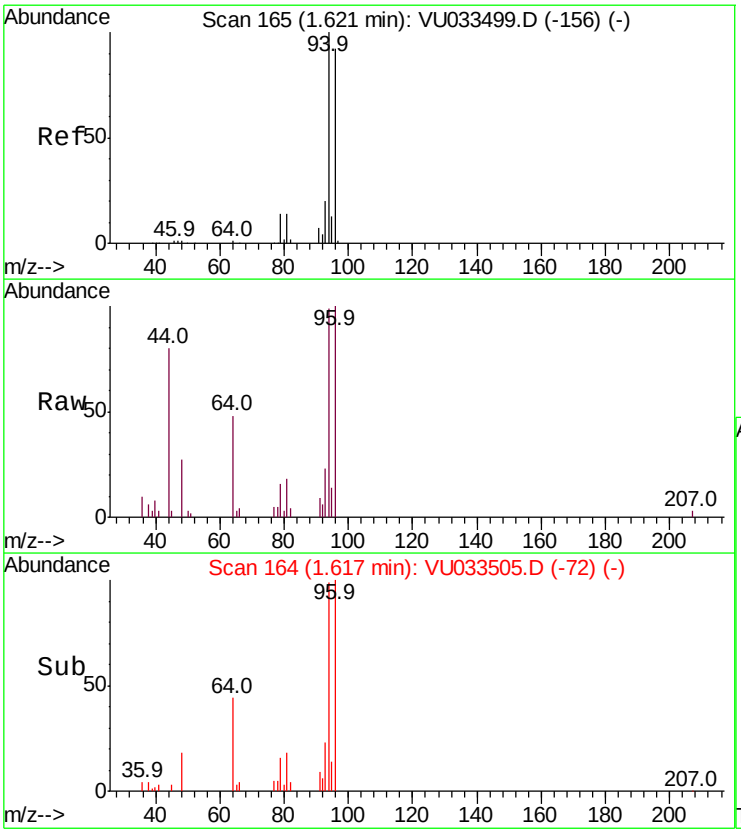
#5
Vinyl chloride
Concen: 2.547 ug/L
RT: 1.39 min Scan# 94
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 62 Resp: 8325

Ion	Ratio	Lower	Upper
62	100		
64	49.3	23.4	43.4#

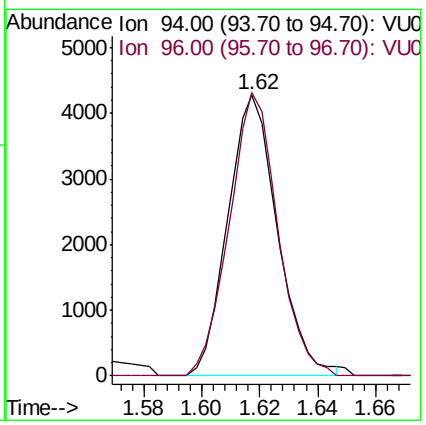


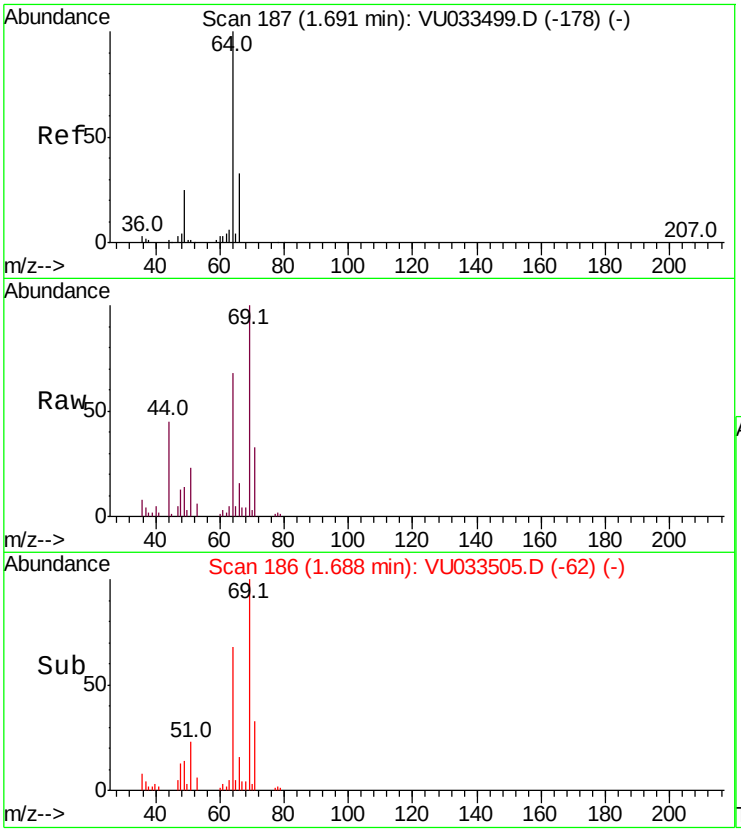


#6
Bromomethane
Concen: 1.760 ug/L
RT: 1.62 min Scan# 164
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 94 Resp: 5076

Ion	Ratio	Lower	Upper
94	100		
96	100.7	64.4	119.6



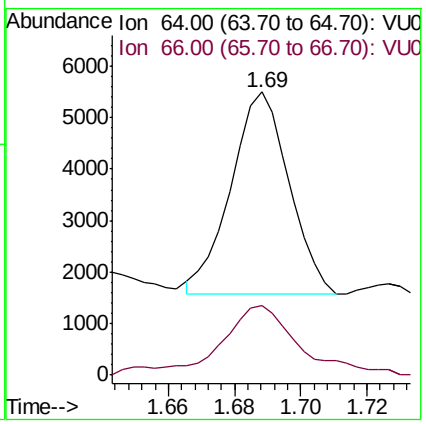


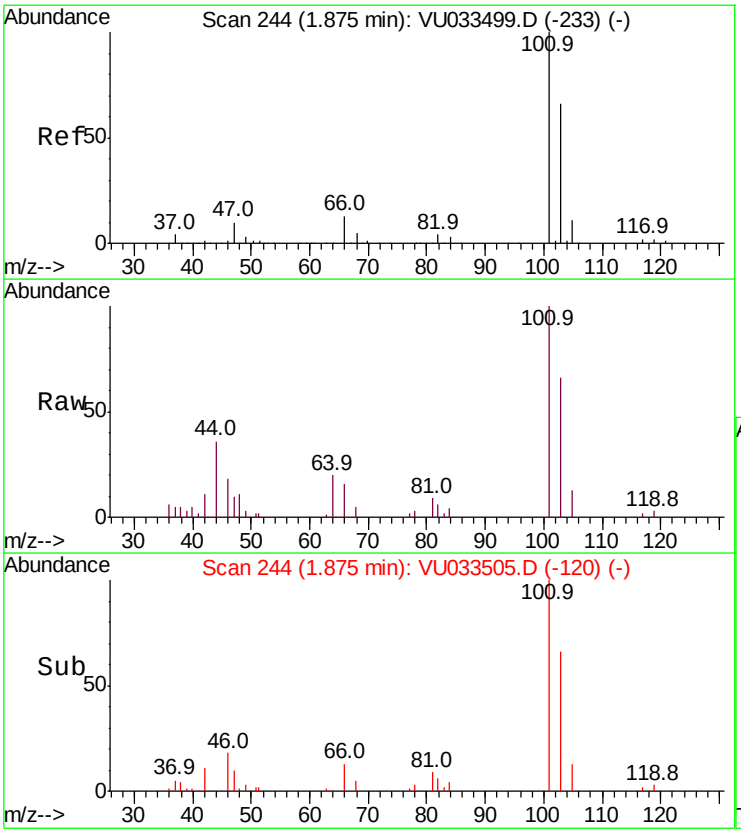
#8
Chloroethane
Concen: 2.411 ug/L
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 64 Resp: 4789

Ion	Ratio	Lower	Upper
64	100		
66	24.4	21.1	39.3

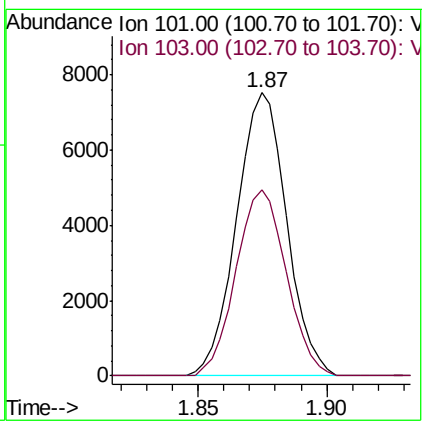


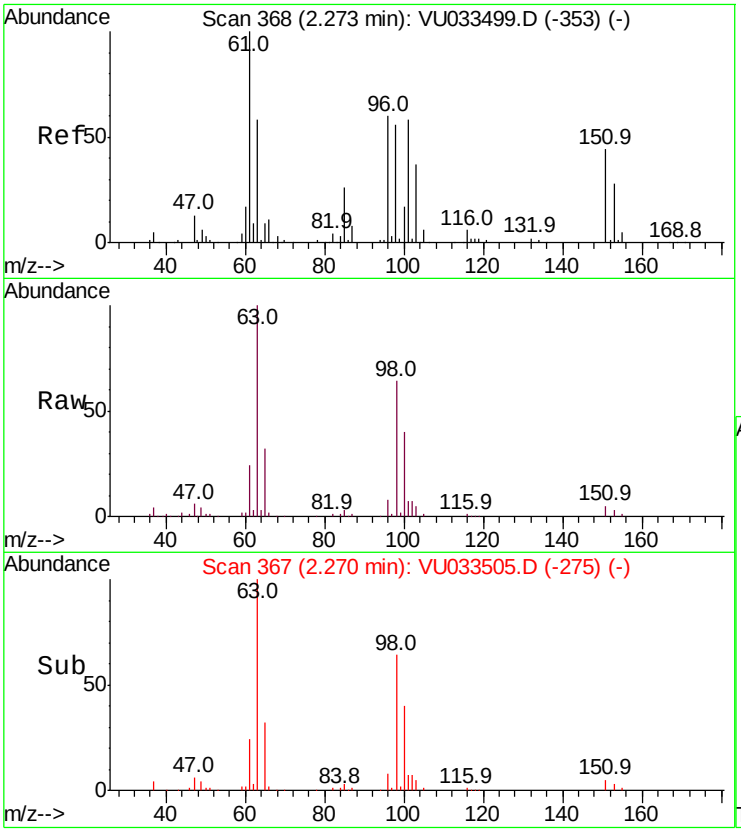


#9
Trichlorofluoromethane
Concen: 2.390 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:101 Resp: 10221

Ion	Ratio	Lower	Upper
101	100		
103	66.0	51.6	77.4



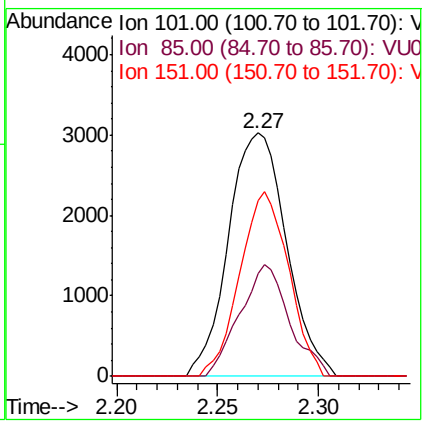


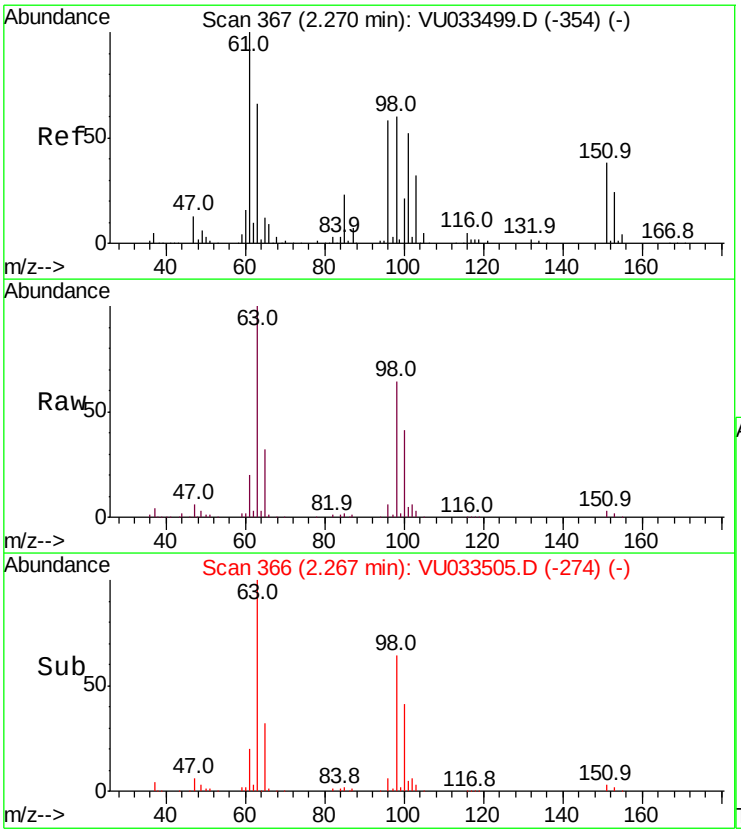
#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 2.806 ug/L
RT: 2.27 min Scan# 367
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:101 Resp: 6083

Ion	Ratio	Lower	Upper
101	100		
85	39.1	35.8	53.8
151	63.8	60.1	90.1

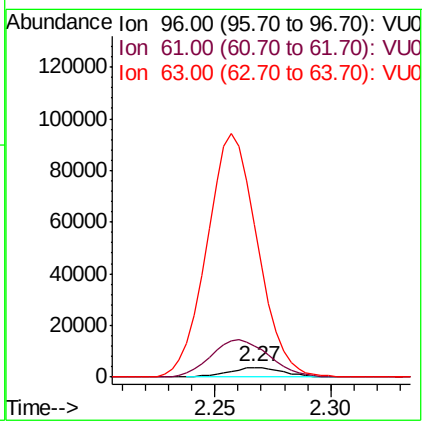


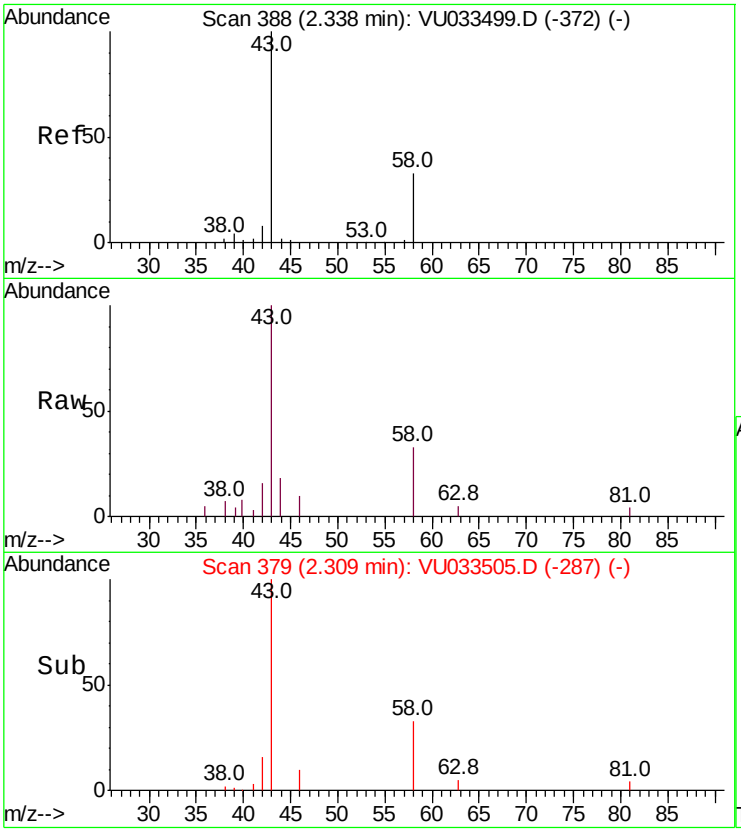


#12
1,1-Dichloroethene
Concen: 2.882 ug/L
RT: 2.27 min Scan# 366
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 96 Resp: 5991

Ion	Ratio	Lower	Upper
96	100		
61	330.6	119.3	221.5#
63	1620.6	86.6	160.8#



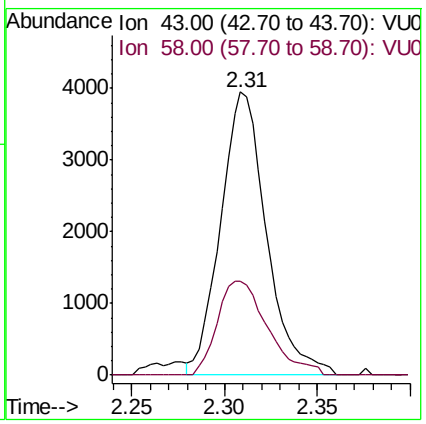


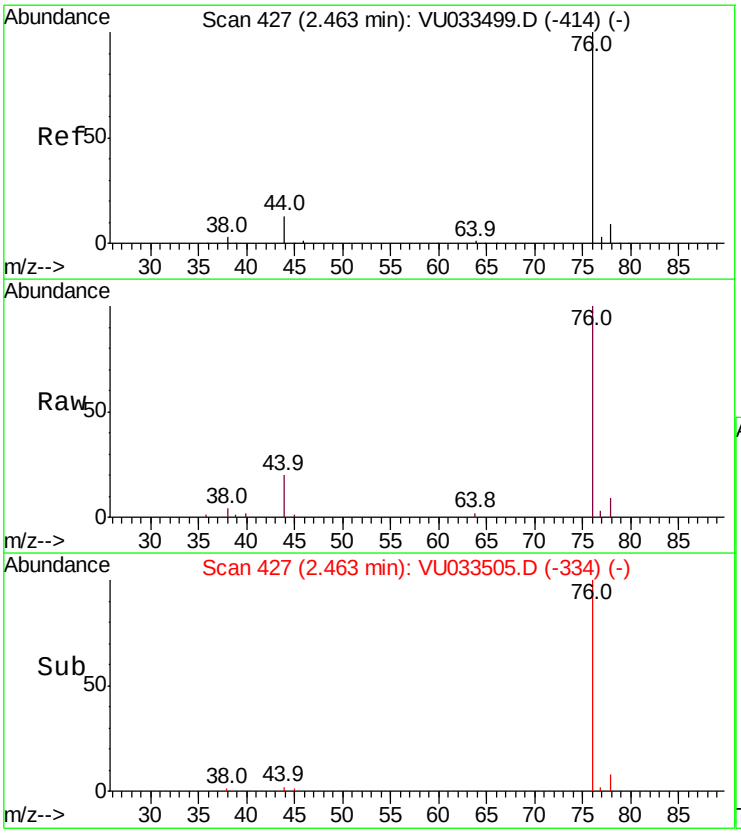
#13
Acetone
Concen: 4.294 ug/L
RT: 2.31 min Scan# 379
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 43 Resp: 6791

Ion	Ratio	Lower	Upper
43	100		
58	36.4	0.0	66.2

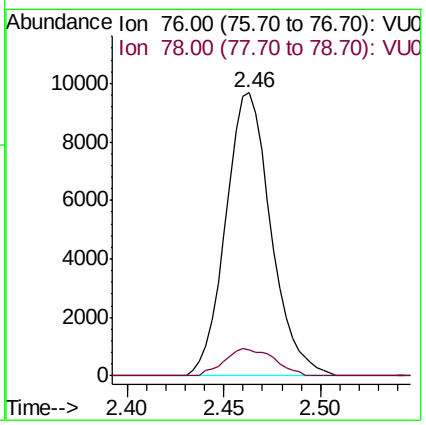


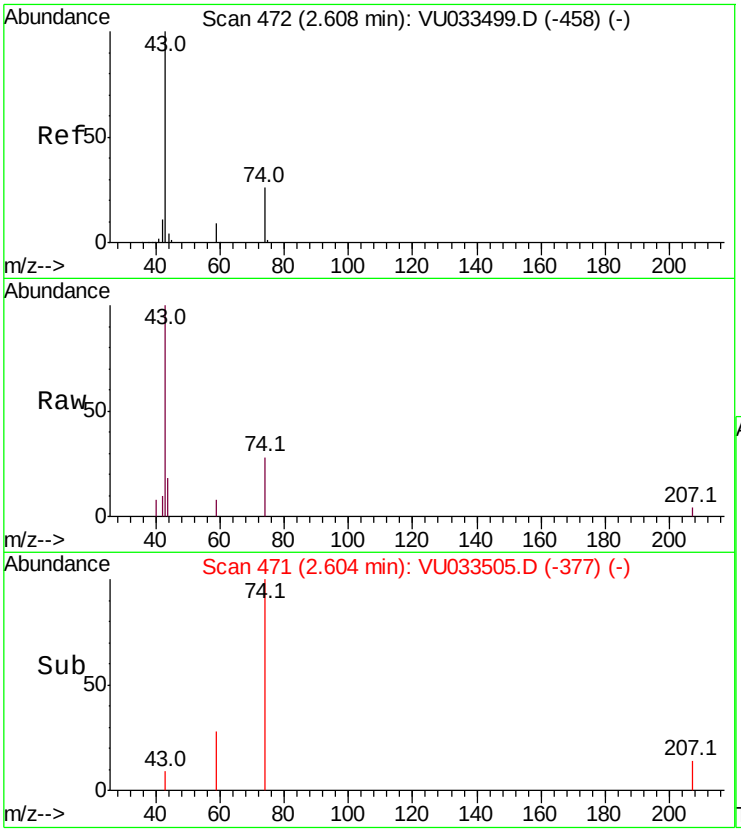


#14
Carbon disulfide
Concen: 2.417 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 76 Resp: 15758

Ion	Ratio	Lower	Upper
76	100		
78	9.4	7.4	11.0



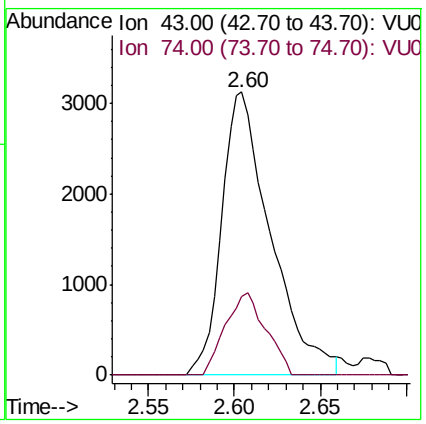


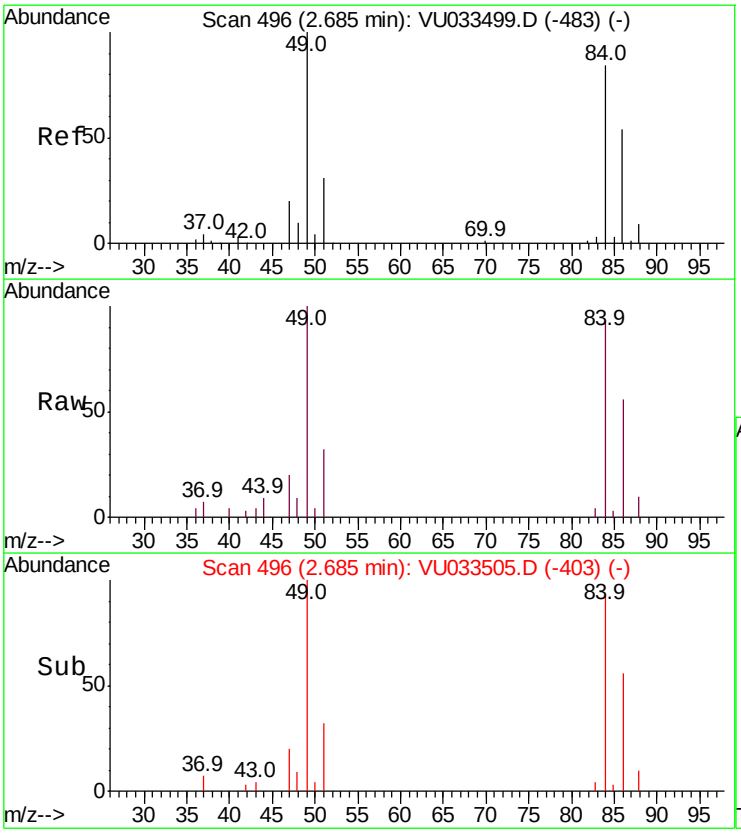
#15
Methyl Acetate
Concen: 2.457 ug/L
RT: 2.60 min Scan# 471
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 43 Resp: 6186

Ion	Ratio	Lower	Upper
43	100		
74	23.9	20.1	30.1

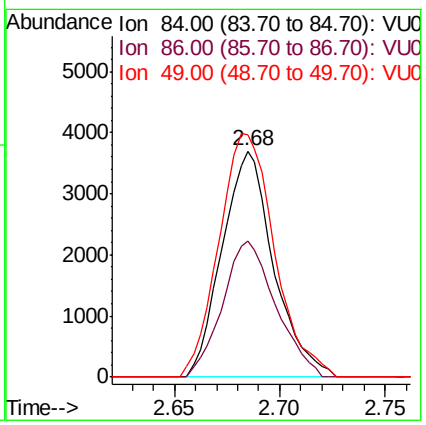


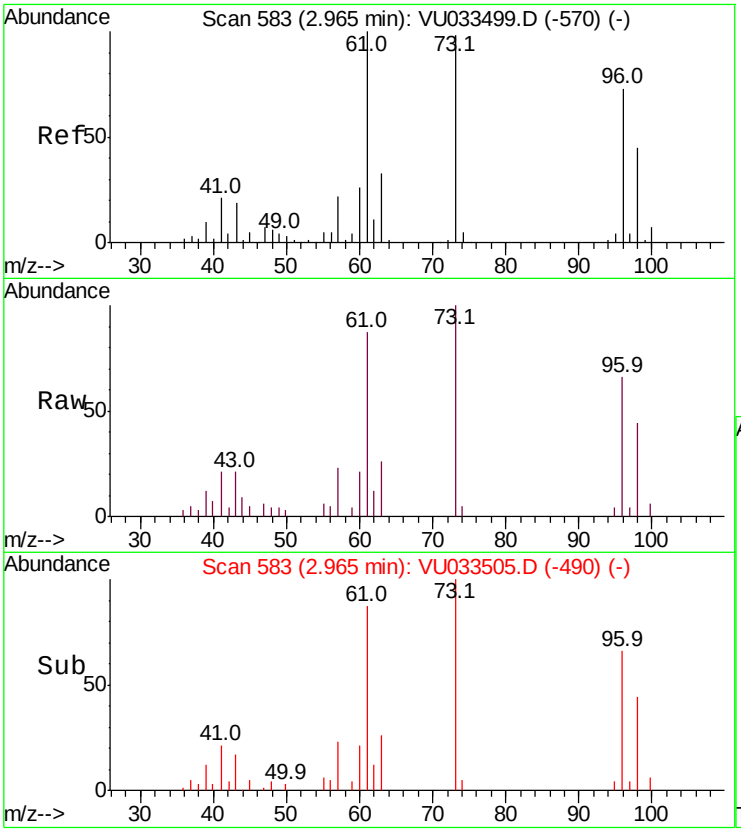


#16
Methylene chloride
Concen: 2.642 ug/L
RT: 2.68 min Scan# 496
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 84 Resp: 6274

Ion	Ratio	Lower	Upper
84	100		
86	60.3	45.7	84.9
49	107.4	85.0	158.0



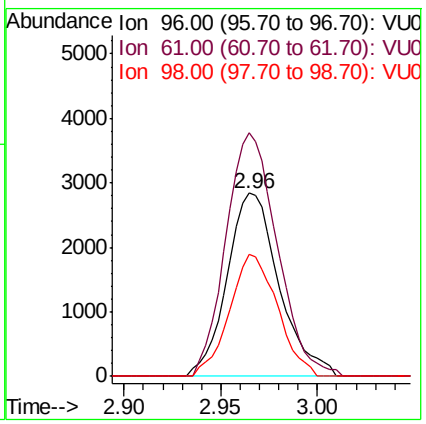


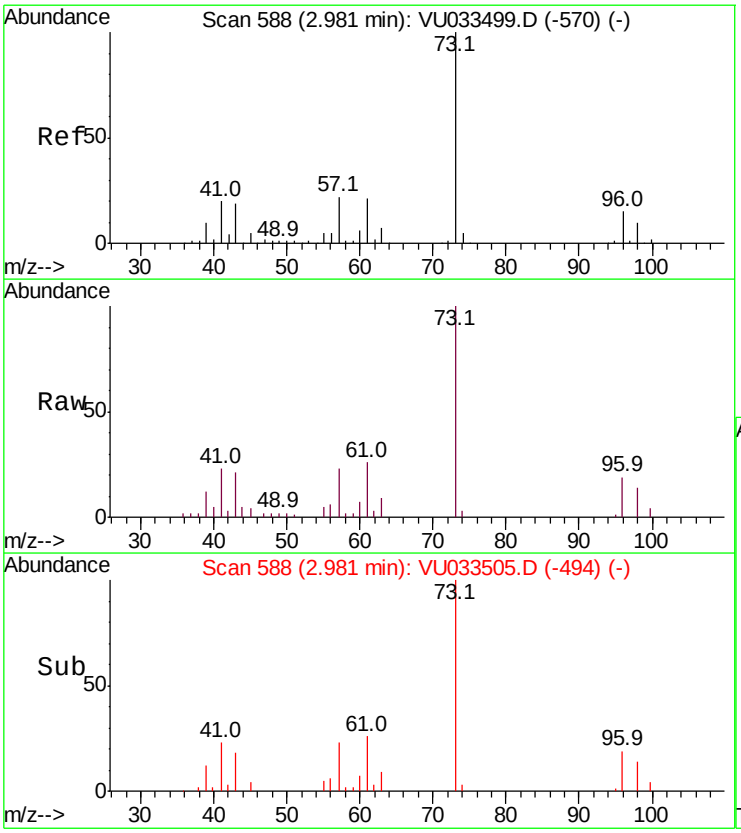
#17
trans-1,2-Dichloroethene
Concen: 2.438 ug/L
RT: 2.96 min Scan# 583
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 96 Resp: 5311

Ion	Ratio	Lower	Upper
96	100		
61	133.1	98.3	182.5
98	66.8	44.3	82.3

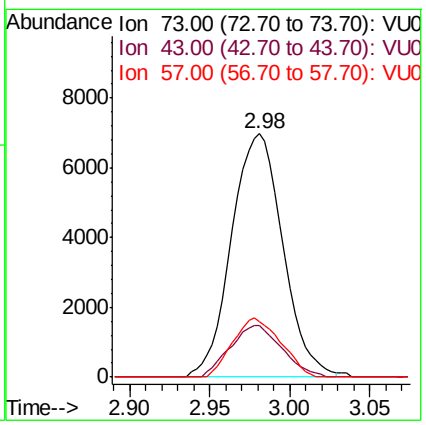


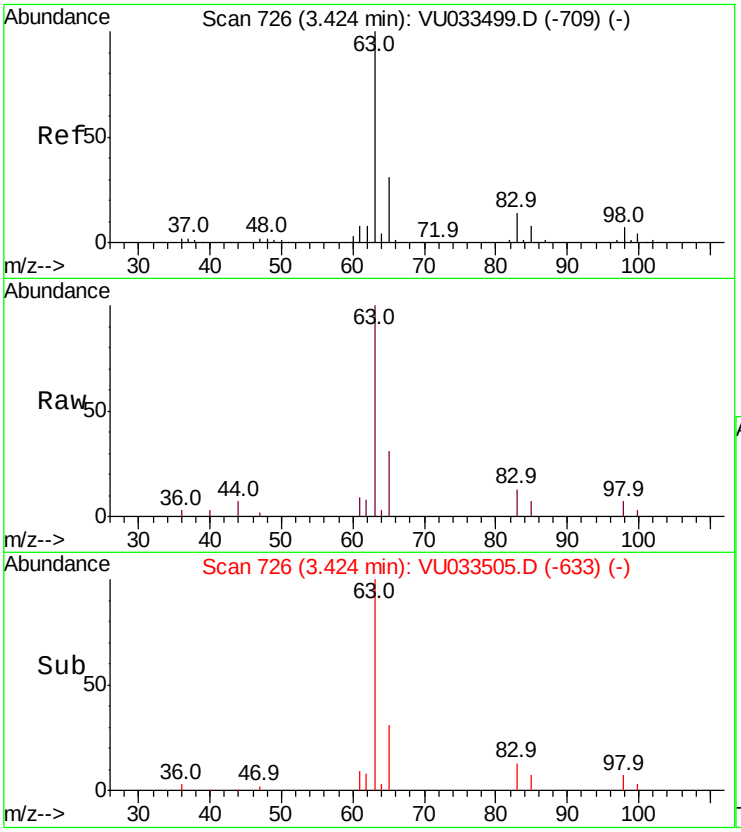


#18
Methyl tert-butyl Ether
Concen: 2.308 ug/L
RT: 2.98 min Scan# 588
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 73 Resp: 15329

Ion	Ratio	Lower	Upper
73	100		
43	21.5	15.4	23.2
57	22.7	17.4	26.2



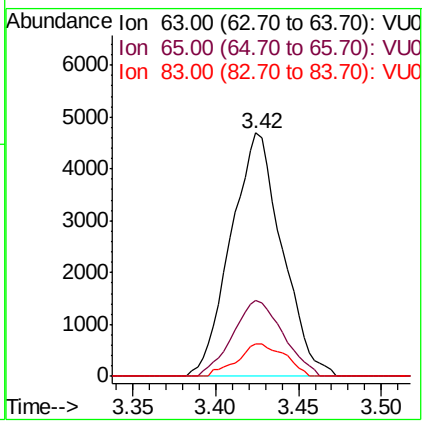


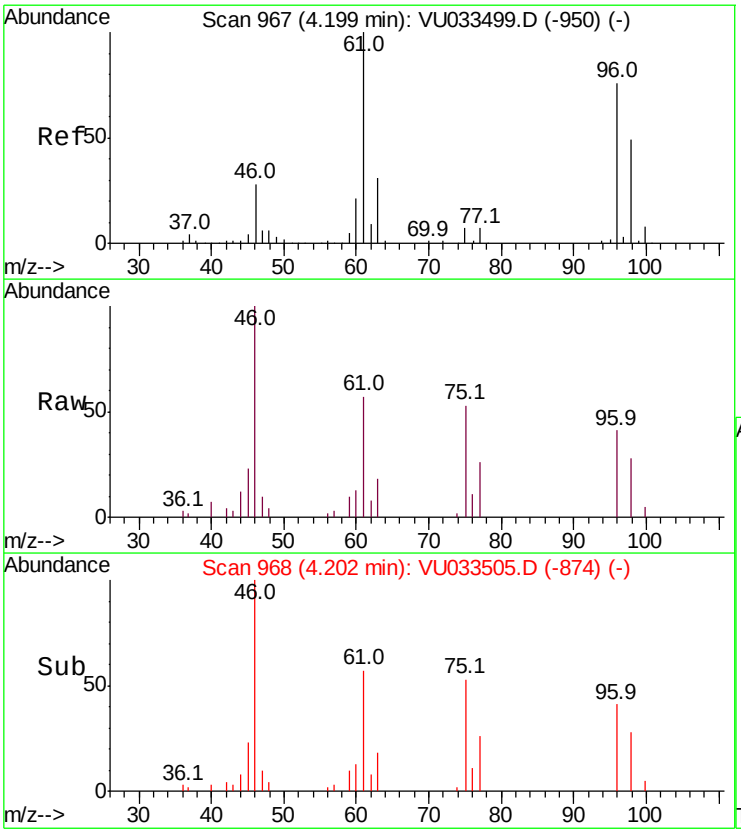
#19
1,1-Dichloroethane
Concen: 2.457 ug/L
RT: 3.42 min Scan# 726
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 63 Resp: 10045

Ion	Ratio	Lower	Upper
63	100		
65	31.2	22.0	40.8
83	13.3	9.5	17.7

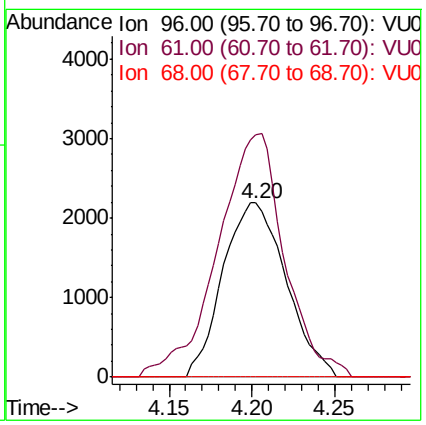


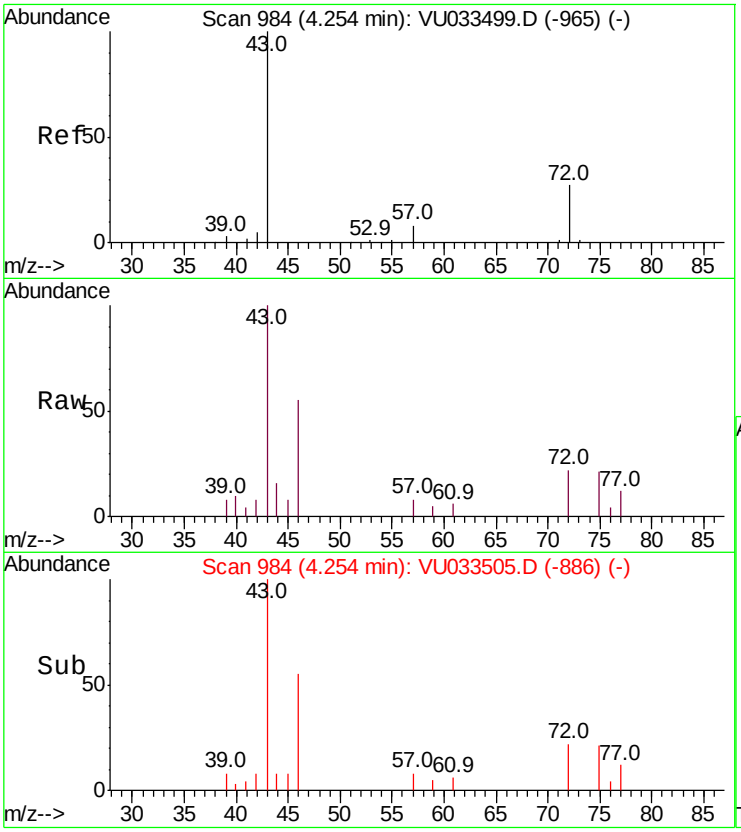


#20
cis-1,2-Dichloroethene
Concen: 2.373 ug/L
RT: 4.20 min Scan# 968
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 96 Resp: 5801

Ion	Ratio	Lower	Upper
96	100		
61	139.3	91.3	169.6
68	0.0	0.0	0.0



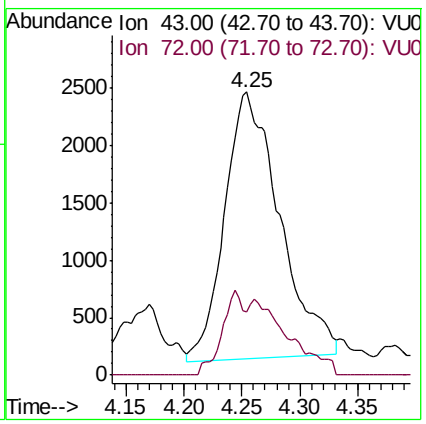


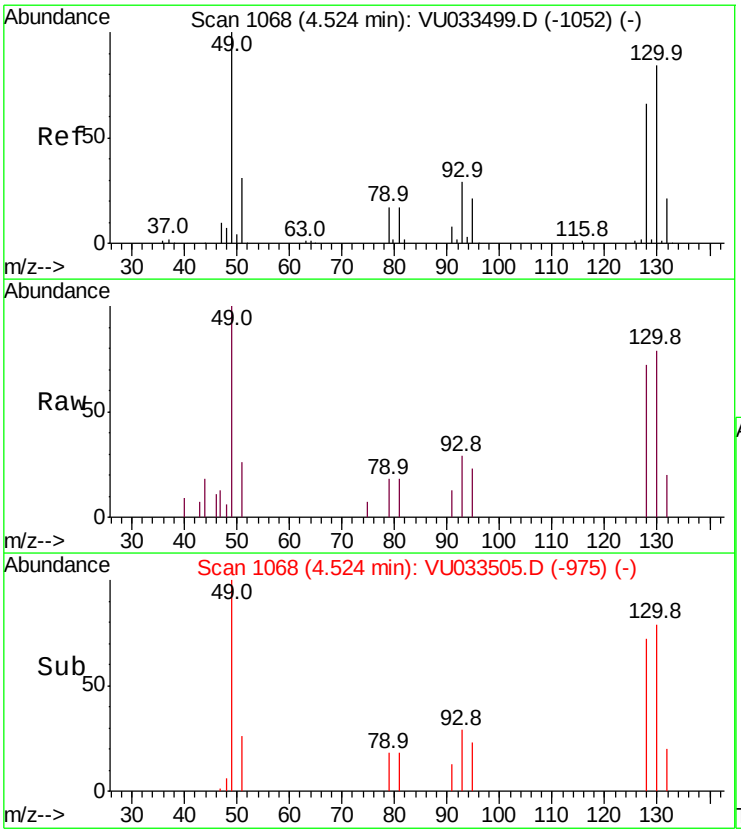
#22
2-Butanone
Concen: 4.043 ug/L
RT: 4.25 min Scan# 984
Delta R.T. 0.02 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 43 Resp: 7635

Ion	Ratio	Lower	Upper
43	100		
72	1.6	14.2	42.6#

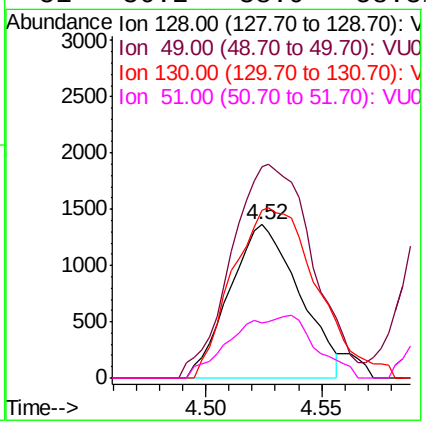


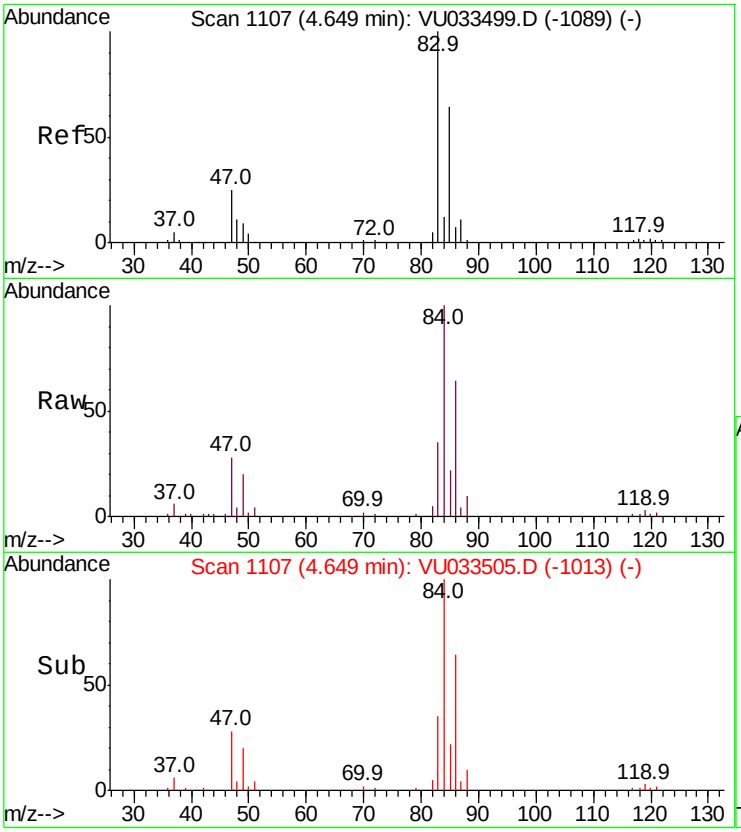


#23
Bromochloromethane
Concen: 2.222 ug/L
RT: 4.52 min Scan# 1068
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:128 Resp: 2835

Ion	Ratio	Lower	Upper
128	100		
49	138.2	108.4	201.2
130	109.7	89.7	166.5
51	36.2	38.9	58.3#



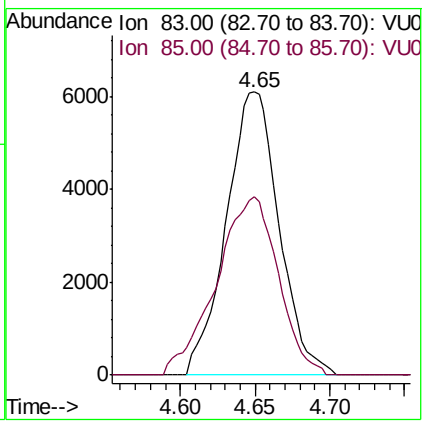


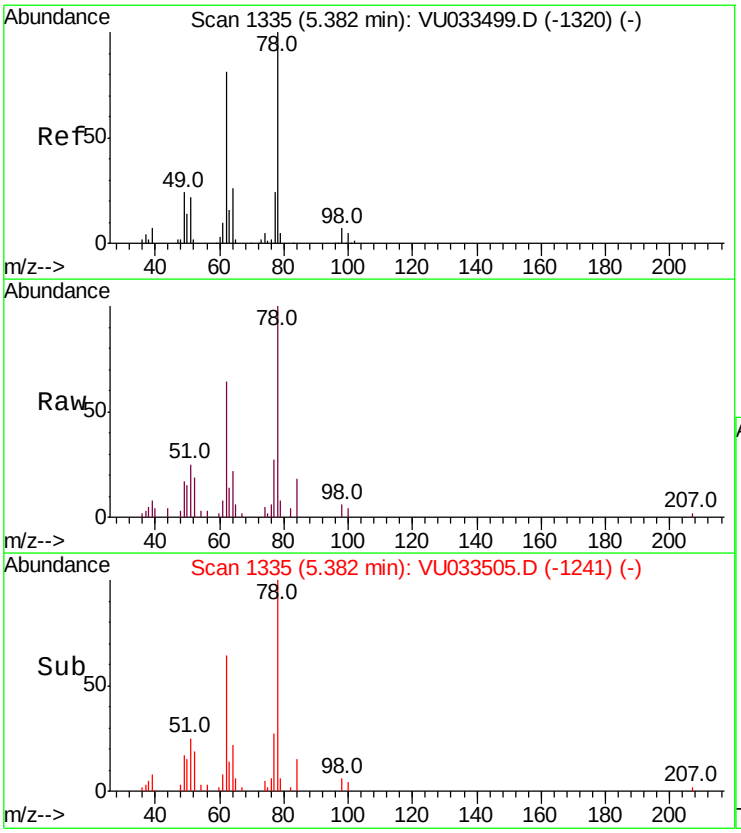
#25
Chloroform
Concen: 3.480 ug/L
RT: 4.65 min Scan# 1107
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 83 Resp: 14974

Ion	Ratio	Lower	Upper
83	100		
85	63.2	45.6	84.8

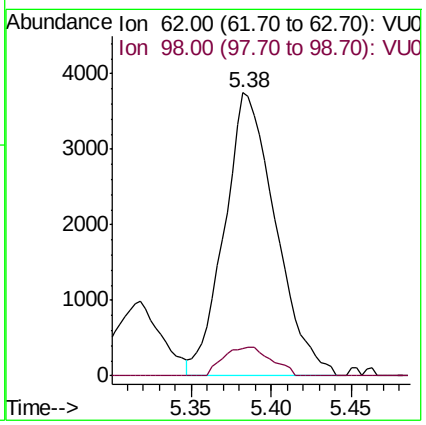


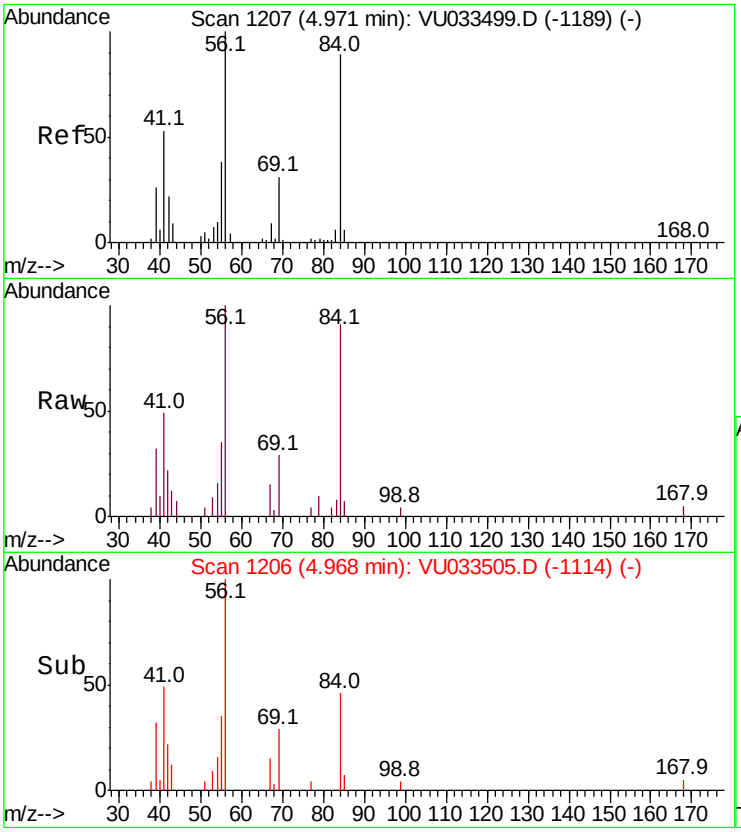


#27
1,2-Dichloroethane
Concen: 2.482 ug/L
RT: 5.38 min Scan# 1335
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 62 Resp: 8223

Ion	Ratio	Lower	Upper
62	100		
98	9.6	7.2	10.8



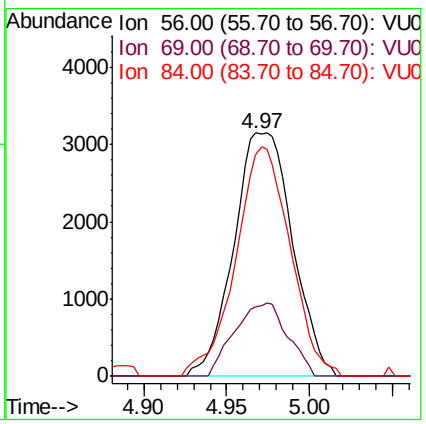


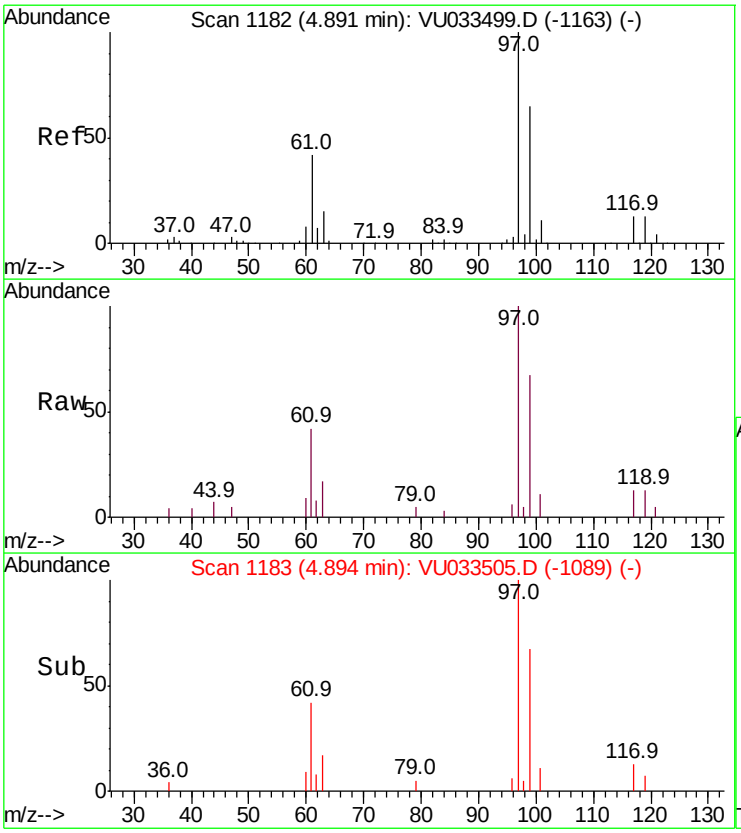
#29
Cyclohexane
Concen: 2.248 ug/L
RT: 4.97 min Scan# 1206
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 56 Resp: 7793

Ion	Ratio	Lower	Upper
56	100		
69	27.2	25.0	37.6
84	87.3	71.6	107.4

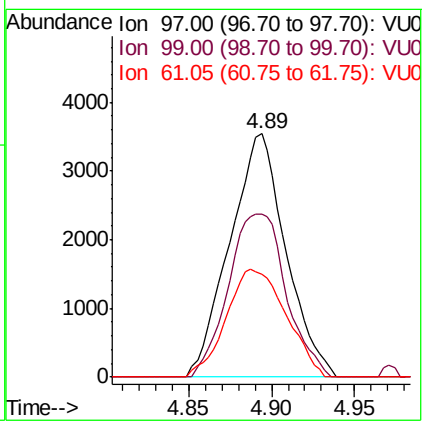


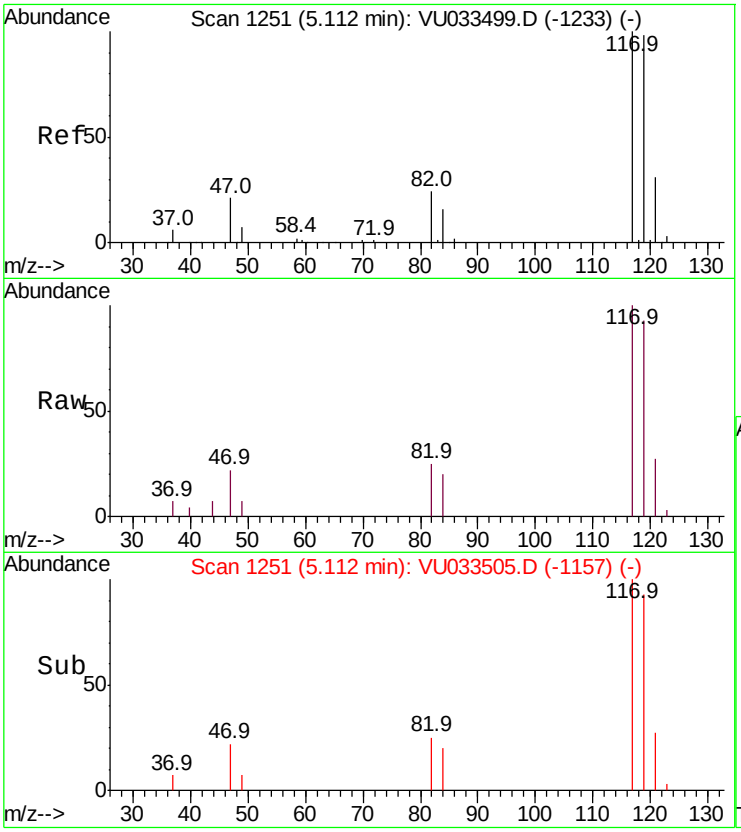


#30
1,1,1-Trichloroethane
Concen: 2.275 ug/L
RT: 4.89 min Scan# 1183
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 97 Resp: 8322

Ion	Ratio	Lower	Upper
97	100		
99	69.5	51.1	76.7
61	47.4	35.5	53.3



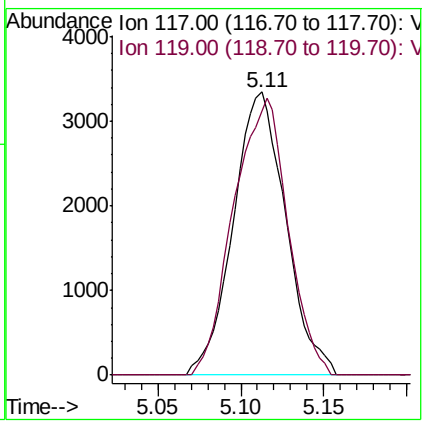


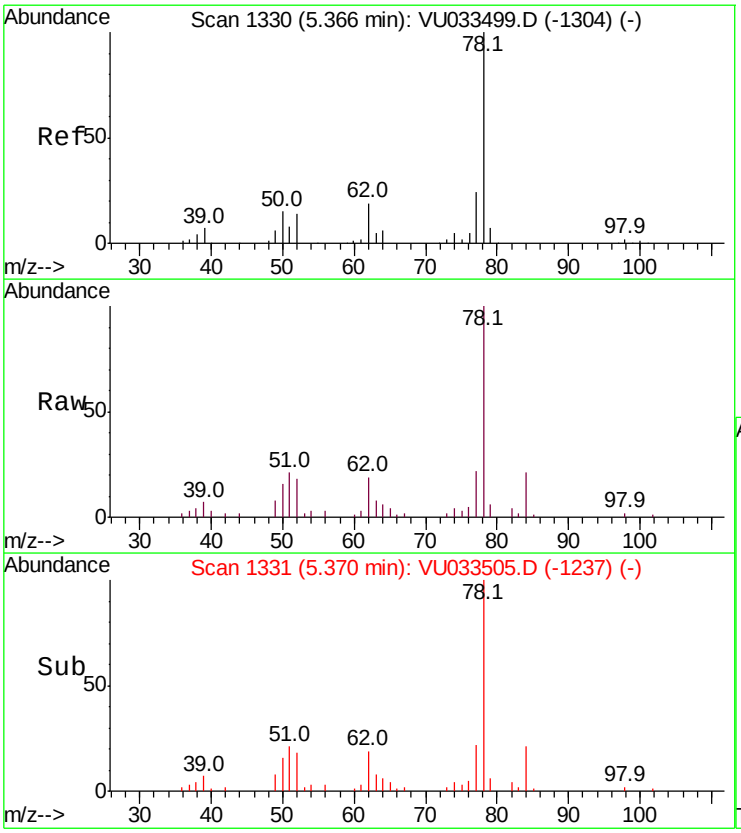
#31
Carbon tetrachloride
Concen: 2.315 ug/L
RT: 5.11 min Scan# 1251
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:117 Resp: 7373

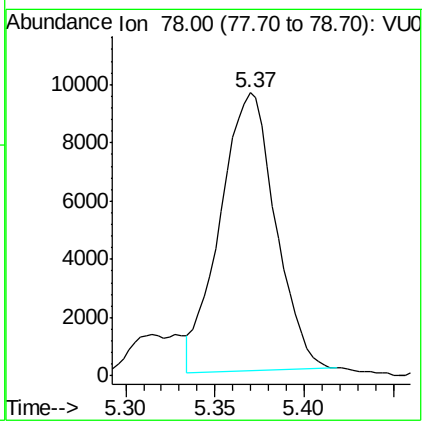
Ion	Ratio	Lower	Upper
117	100		
119	101.1	77.0	115.4

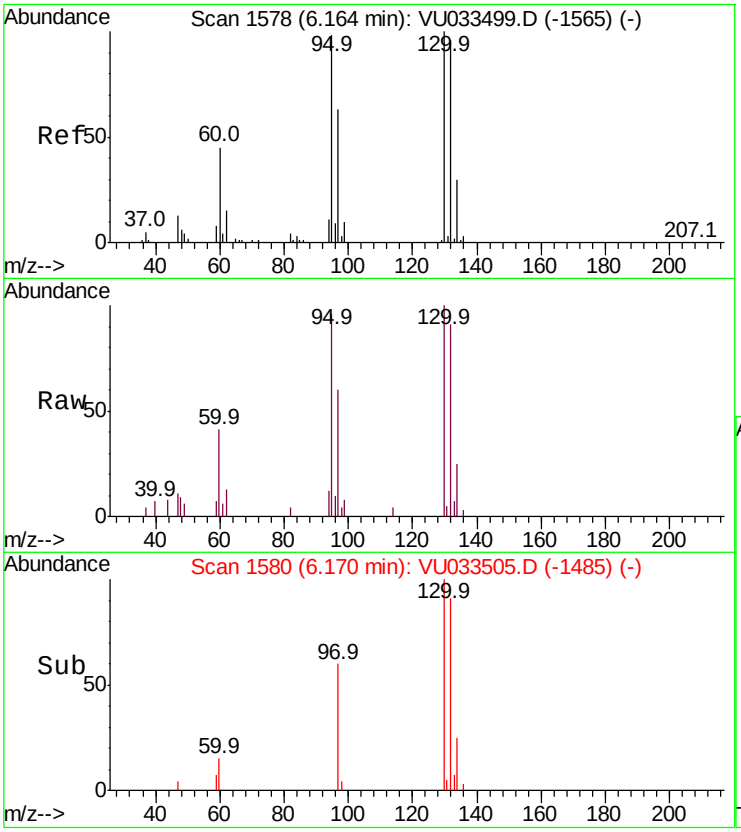




#33
Benzene
Concen: 2.252 ug/L
RT: 5.37 min Scan# 1331
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 78 Resp: 20652



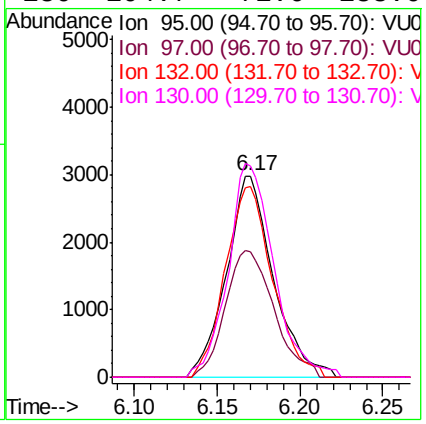


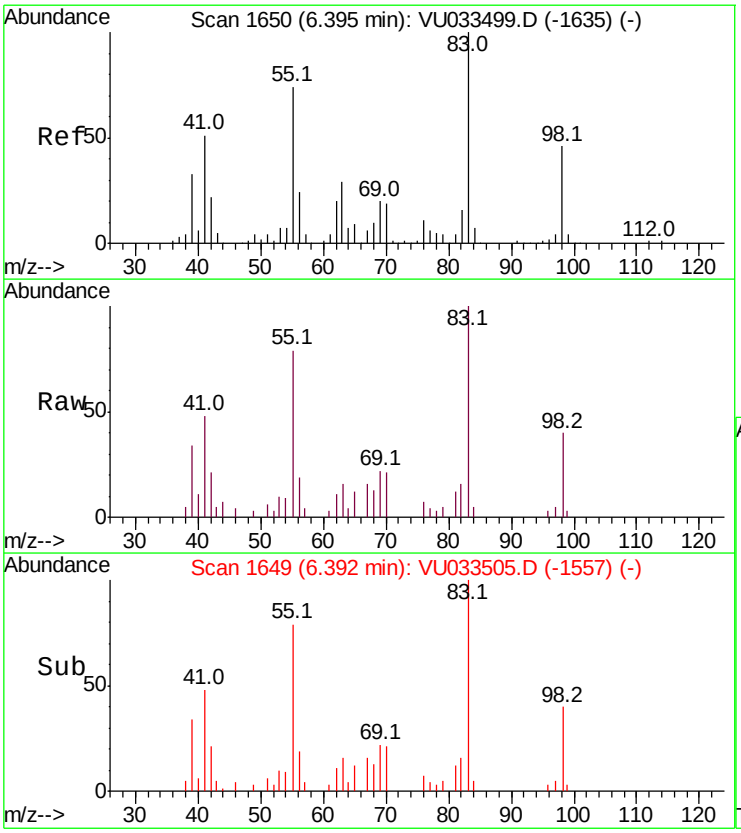
#34
Trichloroethene
Concen: 2.426 ug/L
RT: 6.17 min Scan# 1580
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 95 Resp: 5868

Ion	Ratio	Lower	Upper
95	100		
97	62.4	44.7	83.1
132	94.7	66.8	124.0
130	104.7	71.6	133.0

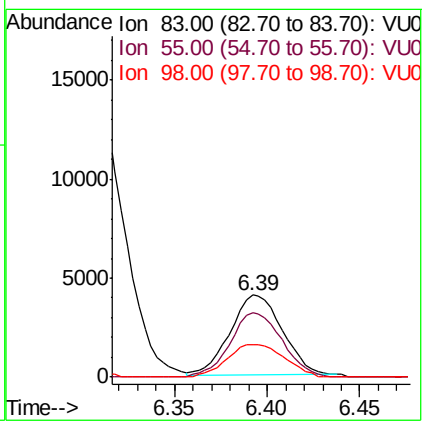


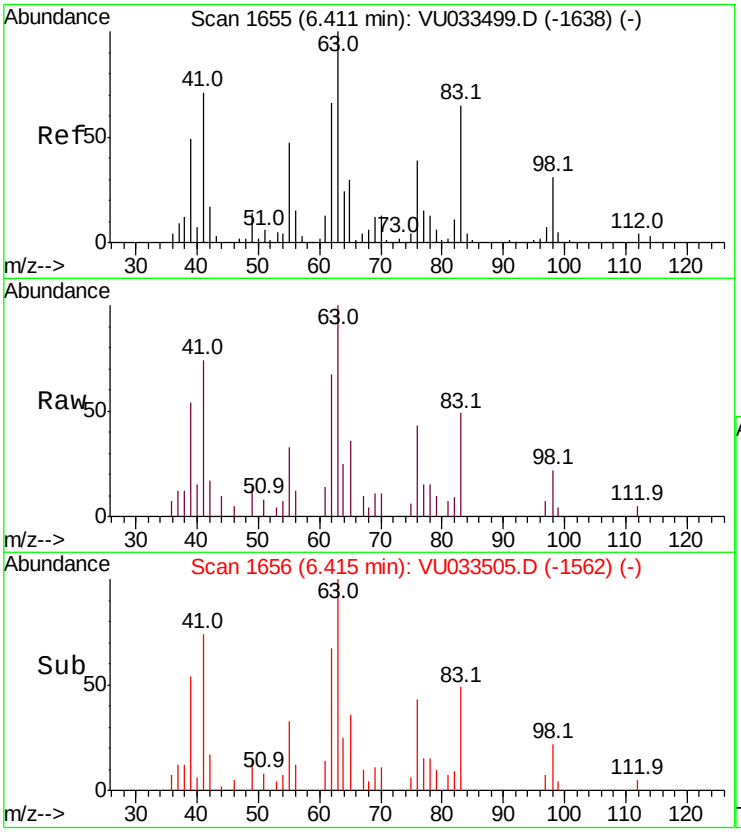


#35
Methylcyclohexane
Concen: 2.114 ug/L
RT: 6.39 min Scan# 1649
Delta R.T. -0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 83 Resp: 7979

Ion	Ratio	Lower	Upper
83	100		
55	79.8	60.2	90.4
98	44.1	36.5	54.7



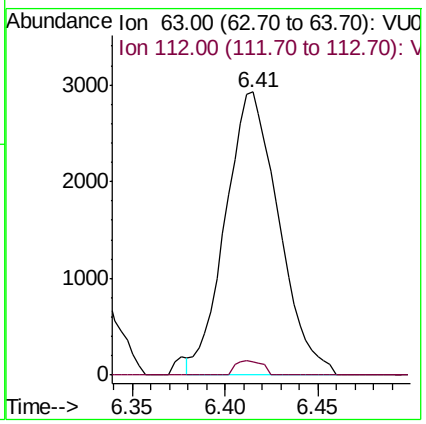


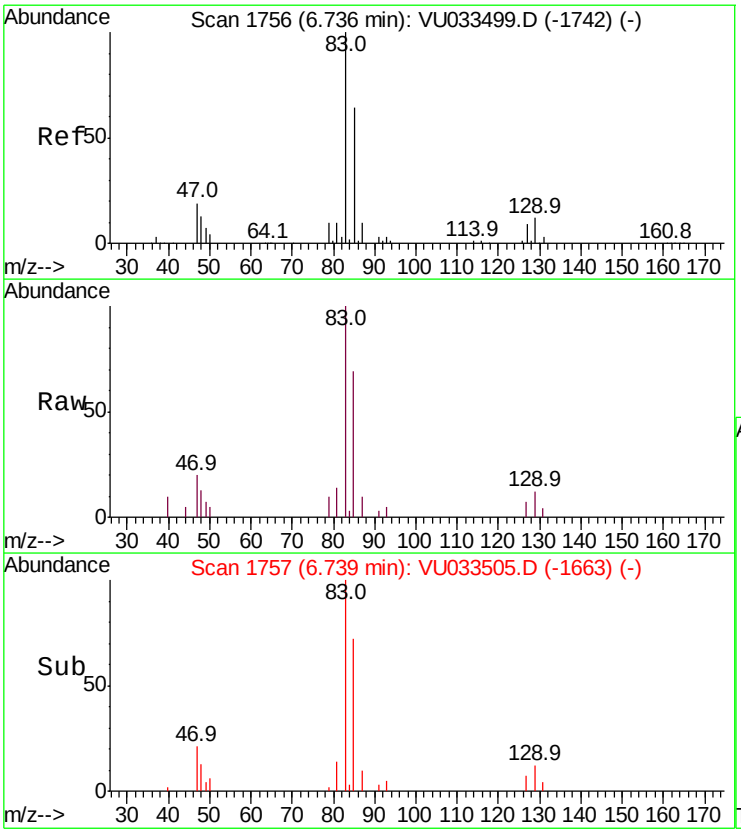
#37
1,2-Dichloropropane
Concen: 2.381 ug/L
RT: 6.41 min Scan# 1656
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 63 Resp: 5843

Ion	Ratio	Lower	Upper
63	100		
112	2.5	3.0	4.6#

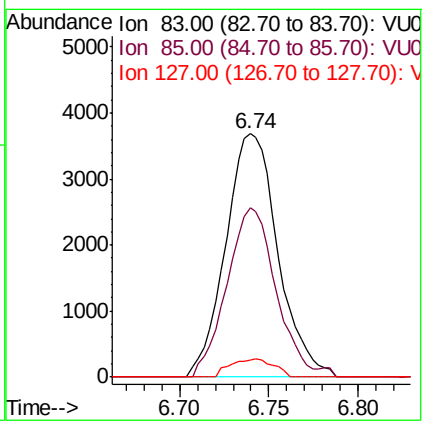


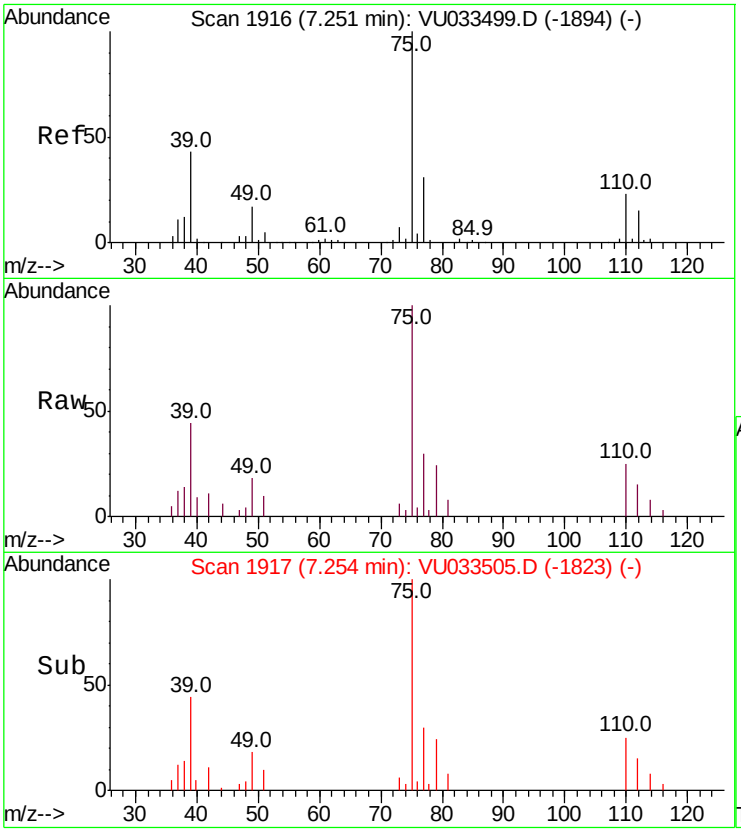


#38
Bromodichloromethane
Concen: 2.374 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 83 Resp: 7531

Ion	Ratio	Lower	Upper
83	100		
85	69.3	45.1	83.9
127	7.2	7.2	10.8



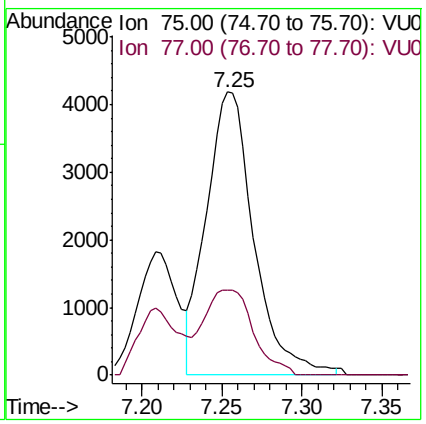


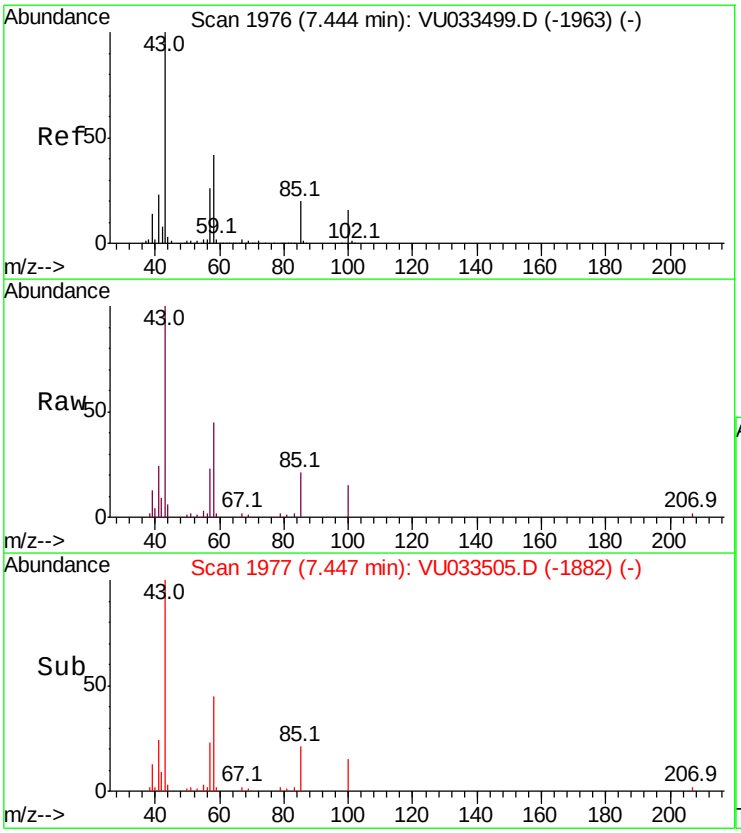
#39
cis-1,3-Dichloropropene
Concen: 2.255 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 75 Resp: 8637

Ion	Ratio	Lower	Upper
75	100		
77	30.2	22.3	41.5

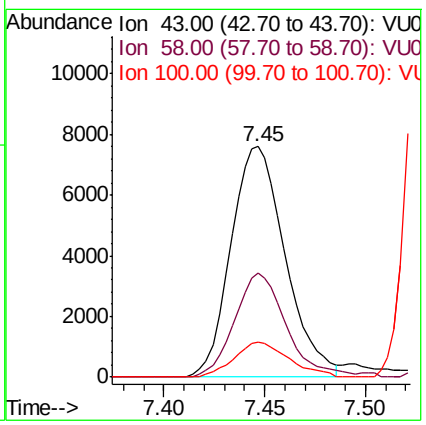


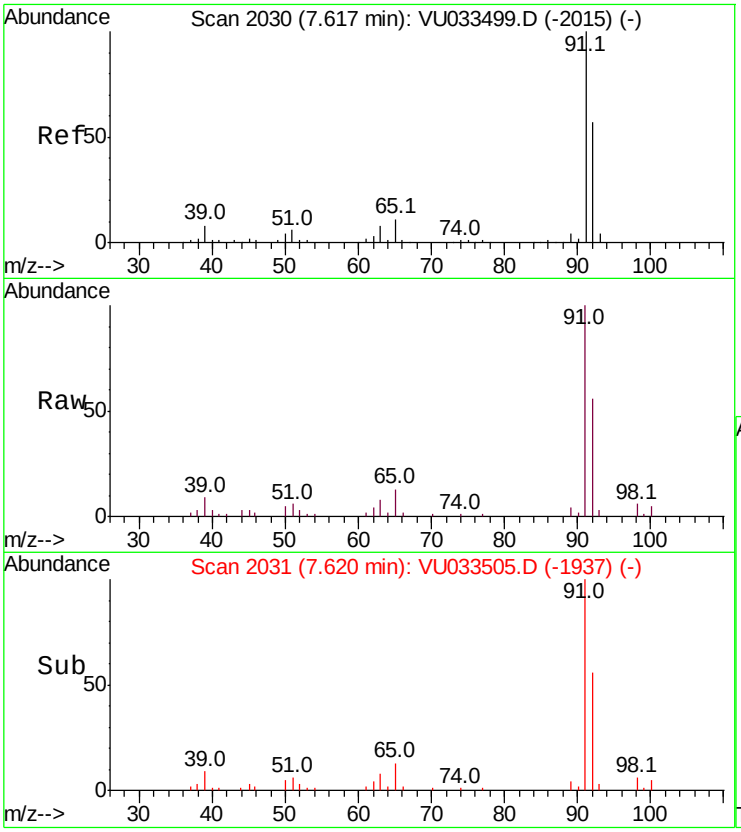


#40
4-Methyl-2-pentanone
Concen: 4.229 ug/L
RT: 7.45 min Scan# 1977
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 43 Resp: 14332

Ion	Ratio	Lower	Upper
43	100		
58	42.6	32.8	49.2
100	15.3	12.9	19.3



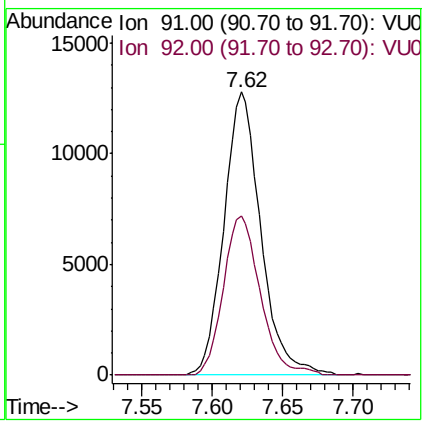


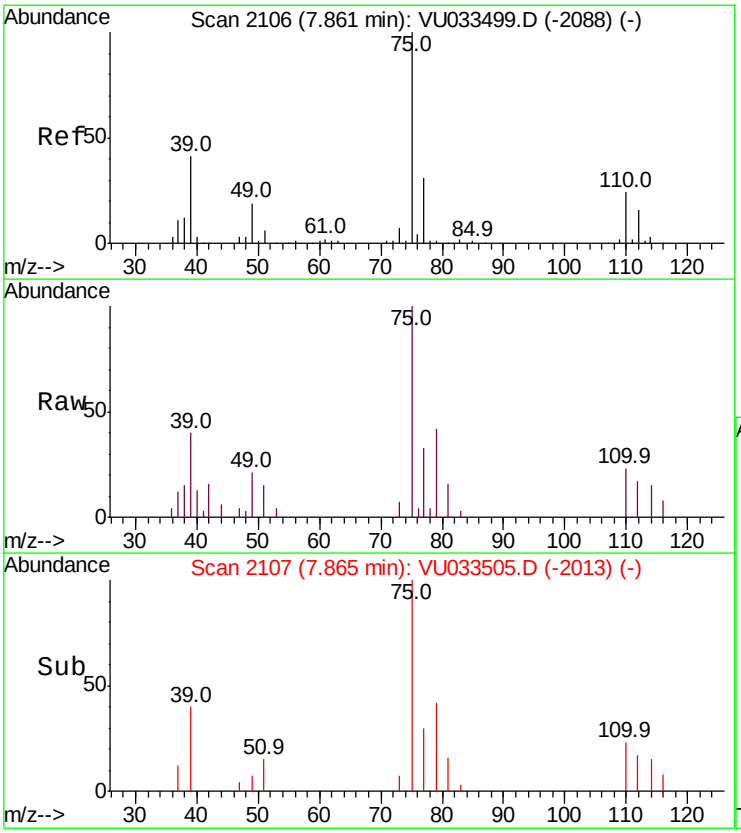
#42
Toluene
Concen: 2.370 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 91 Resp: 23364

Ion	Ratio	Lower	Upper
91	100		
92	56.4	40.2	74.6

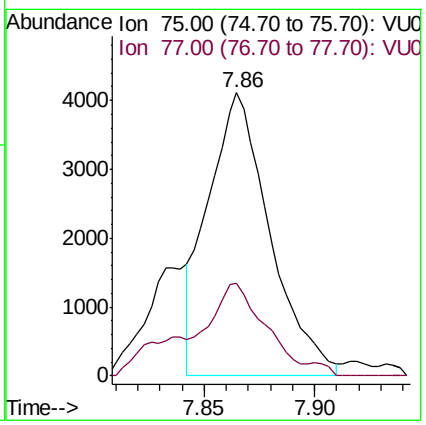


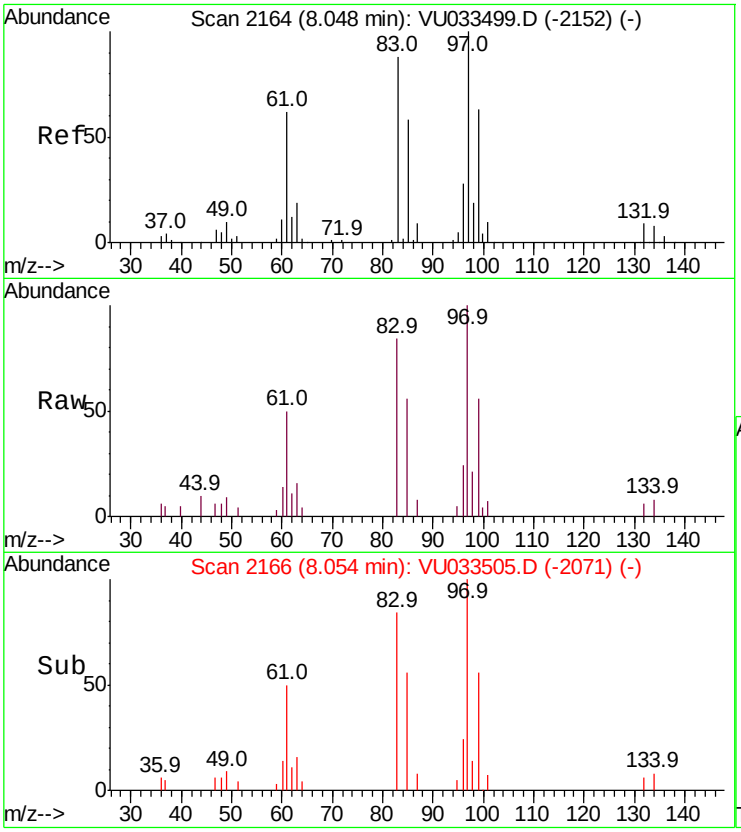


#44
trans-1,3-Dichloropropene
Concen: 2.303 ug/L
RT: 7.86 min Scan# 2107
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 75 Resp: 7973

Ion	Ratio	Lower	Upper
75	100		
77	32.8	22.7	42.1



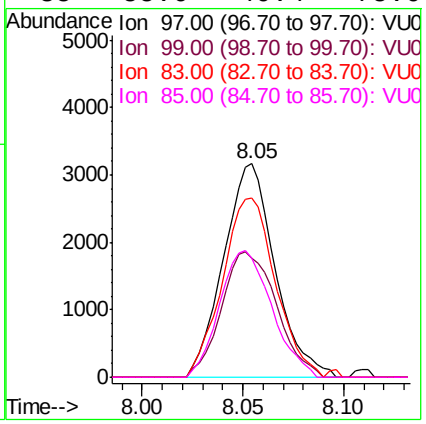


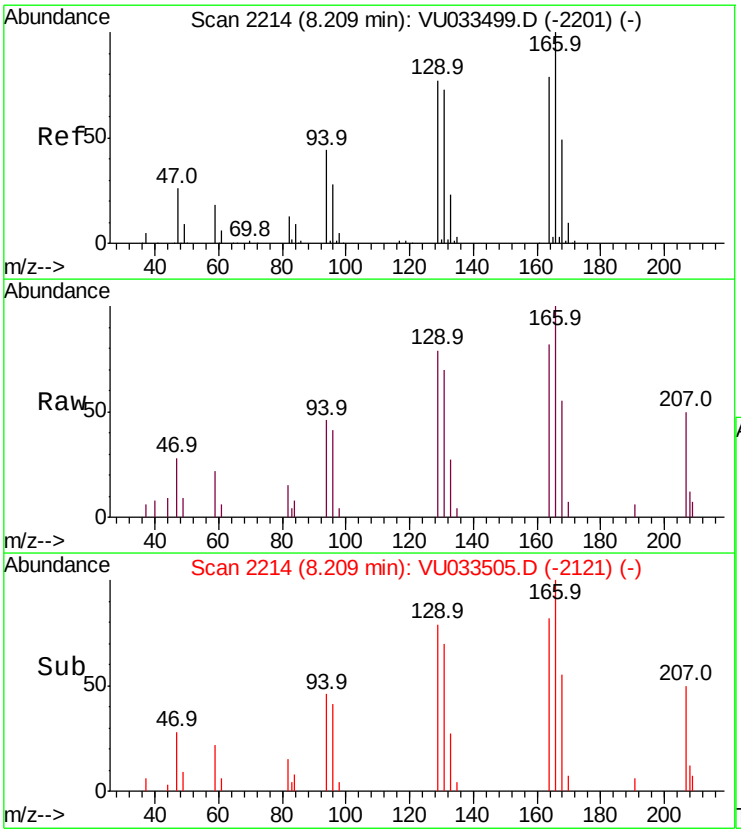
#45
1,1,2-Trichloroethane
Concen: 2.421 ug/L
RT: 8.05 min Scan# 2166
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 97 Resp: 5641

Ion	Ratio	Lower	Upper
97	100		
99	56.0	44.4	82.4
83	84.1	61.5	114.1
85	55.6	40.4	75.0

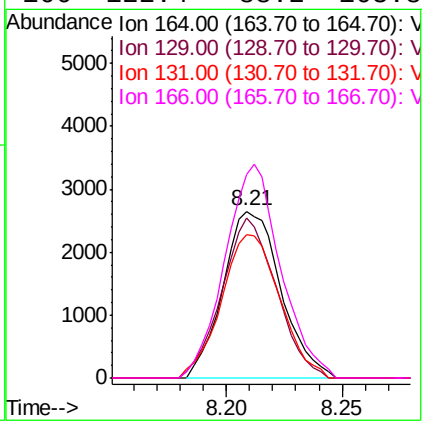


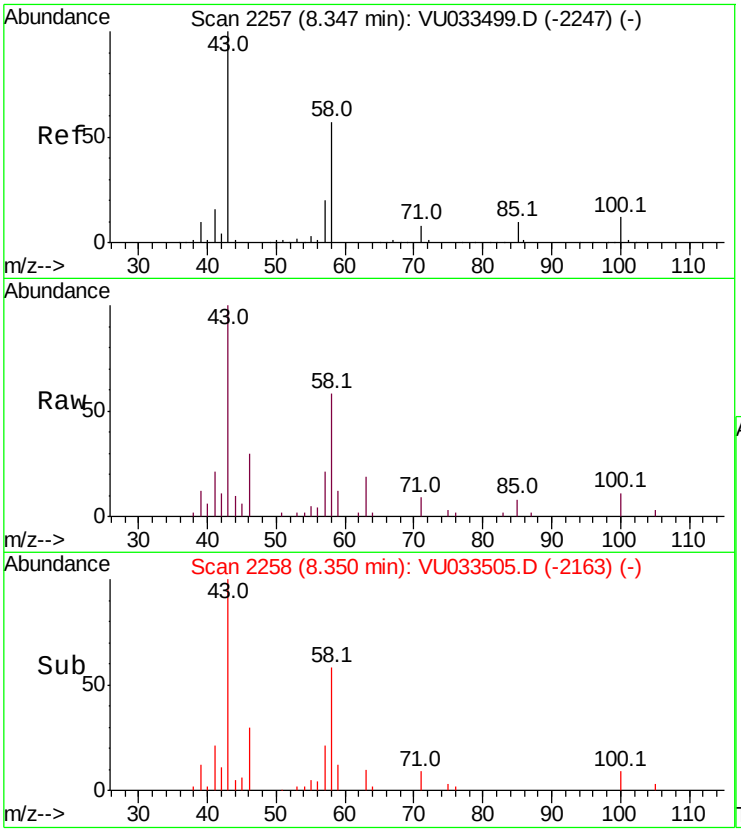


#46
Tetrachloroethene
Concen: 2.320 ug/L
RT: 8.21 min Scan# 2214
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:164 Resp: 4582

Ion	Ratio	Lower	Upper
164	100		
129	96.4	65.5	121.7
131	86.3	63.3	117.7
166	122.4	88.2	163.8



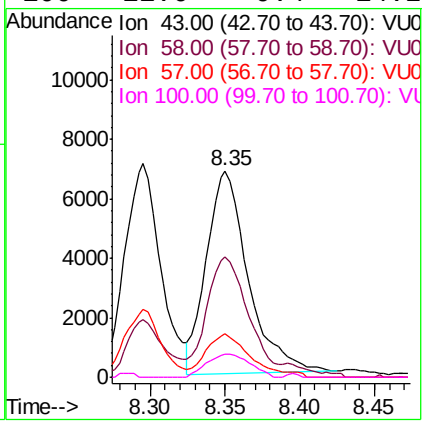


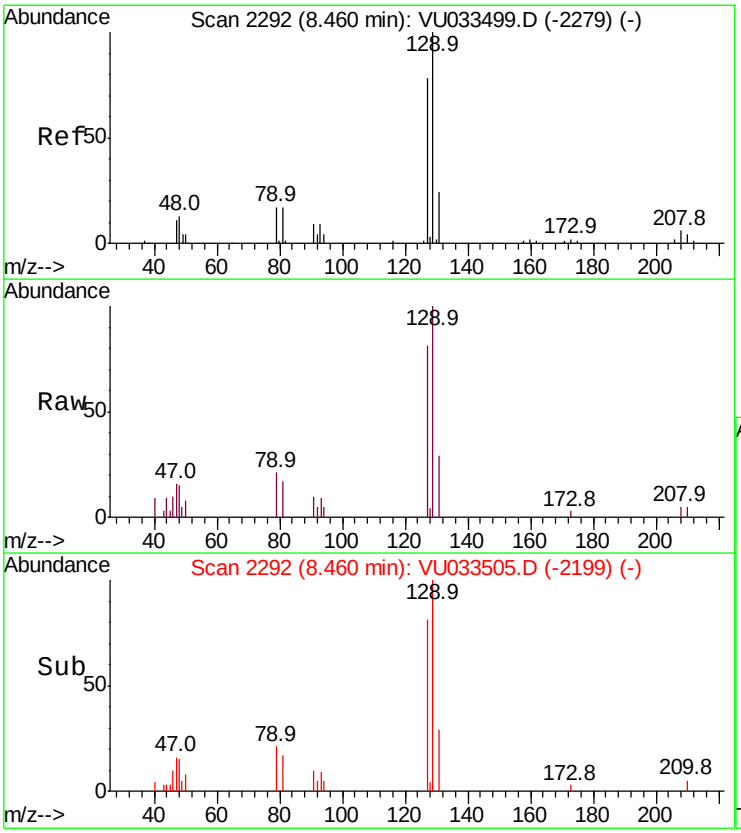
#48
2-Hexanone
Concen: 4.854 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 43 Resp: 13296

Ion	Ratio	Lower	Upper
43	100		
58	49.6	45.8	68.6
57	22.9	15.8	23.6
100	11.6	9.4	14.2

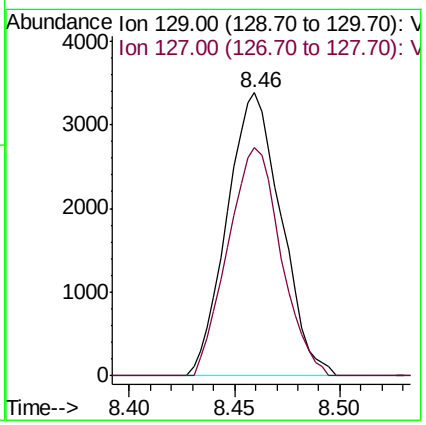


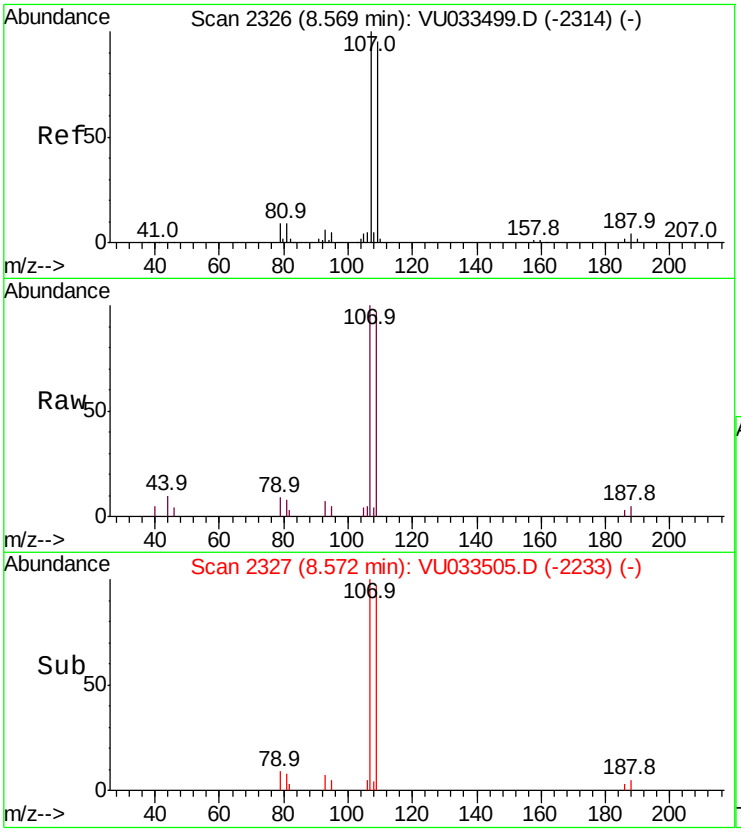


#49
Dibromochloromethane
Concen: 2.275 ug/L
RT: 8.46 min Scan# 2292
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:129 Resp: 6030

Ion	Ratio	Lower	Upper
129	100		
127	80.6	53.8	99.8



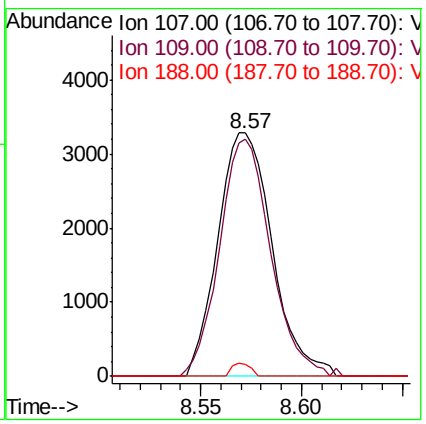


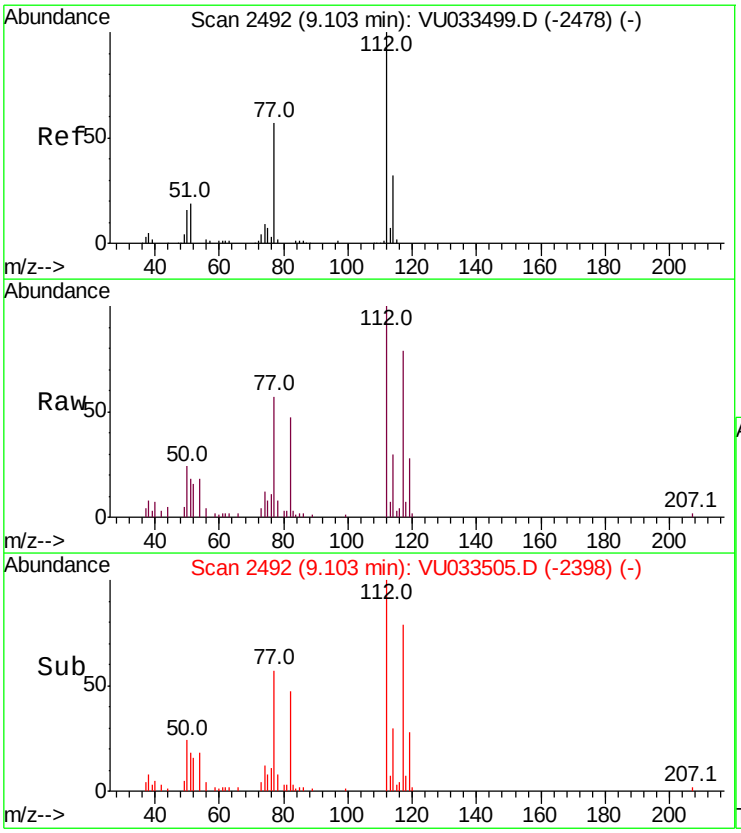
#50
1,2-Dibromoethane
Concen: 2.399 ug/L
RT: 8.57 min Scan# 2327
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:107 Resp: 6192

Ion	Ratio	Lower	Upper
107	100		
109	97.3	66.8	124.0
188	4.8	3.0	4.4#

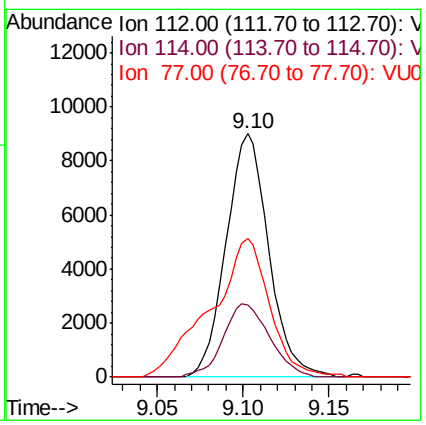


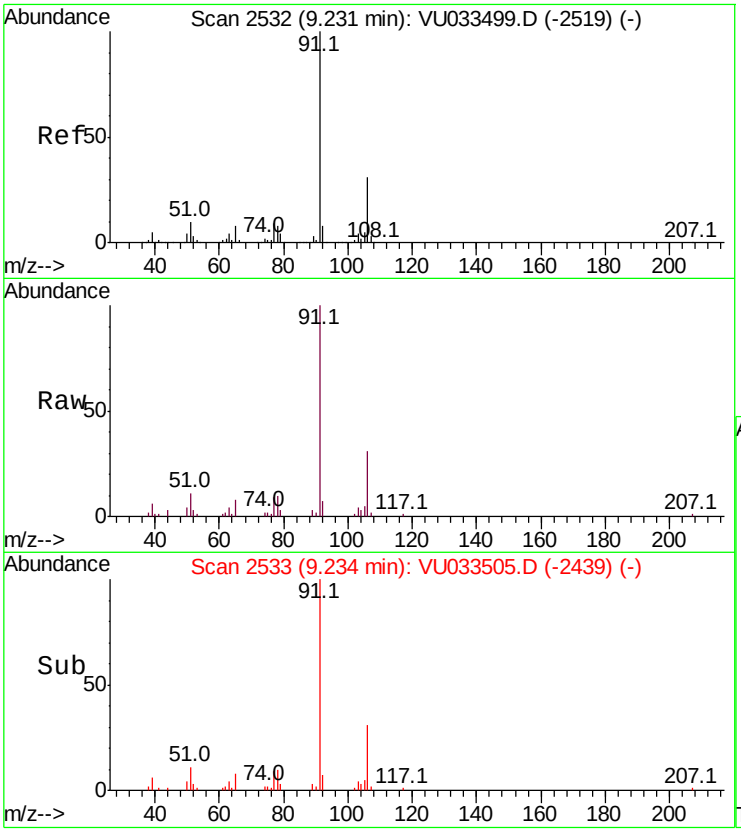


#51
Chlorobenzene
Concen: 2.408 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:112 Resp: 15543

Ion	Ratio	Lower	Upper
112	100		
114	29.9	22.3	41.5
77	56.8	45.6	68.4



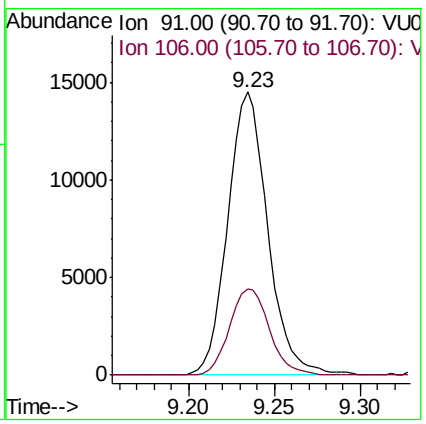


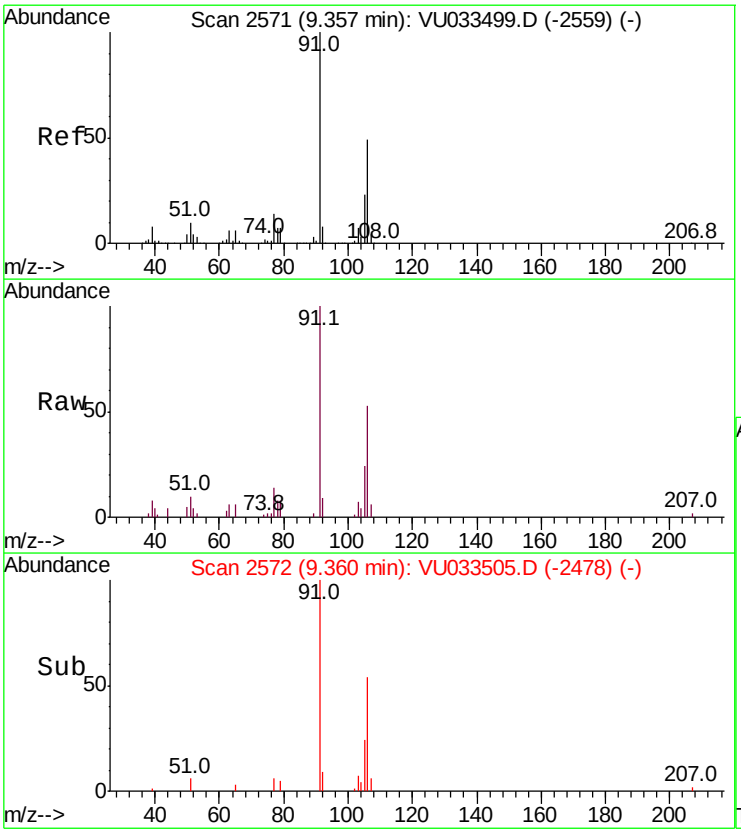
#52
Ethylbenzene
Concen: 2.215 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion: 91 Resp: 23522

Ion	Ratio	Lower	Upper
91	100		
106	30.6	22.2	41.2

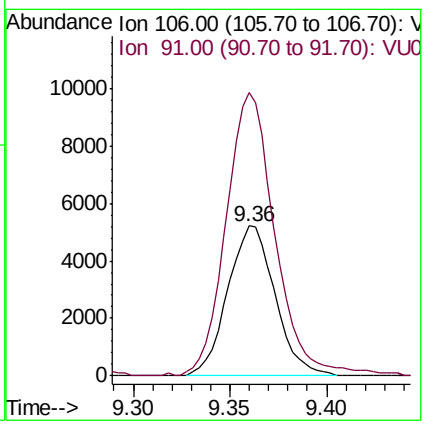


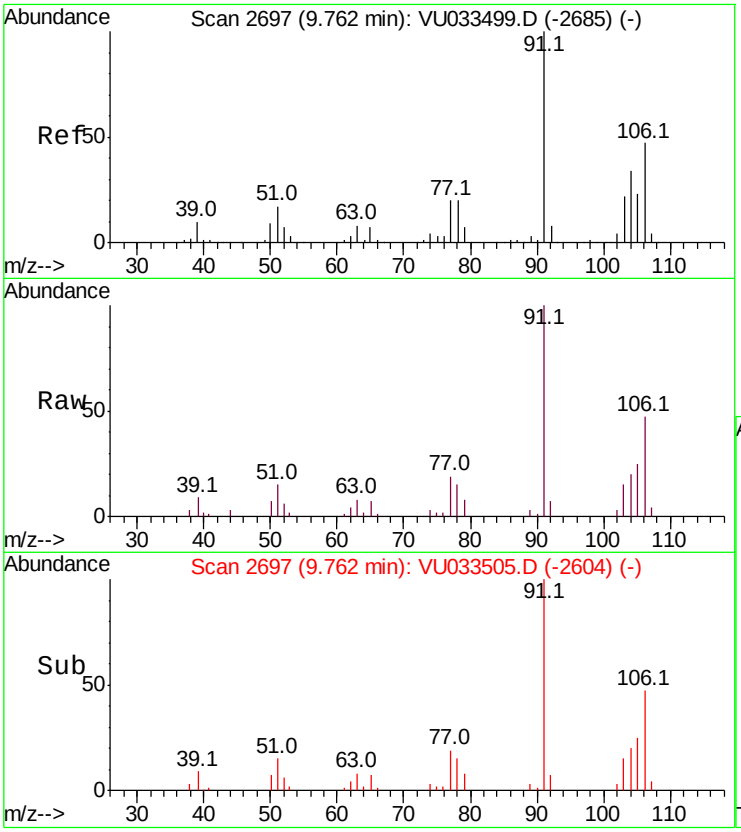


#53
m,p-Xylene
Concen: 2.178 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:106 Resp: 8878

Ion	Ratio	Lower	Upper
106	100		
91	189.0	143.0	265.6



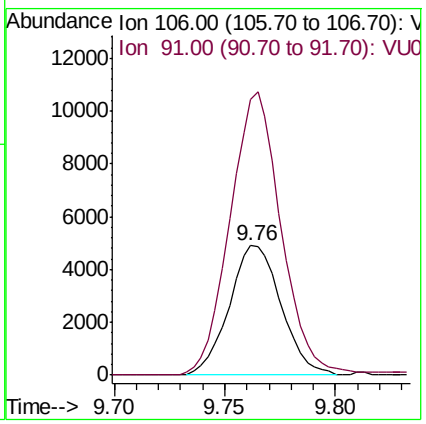


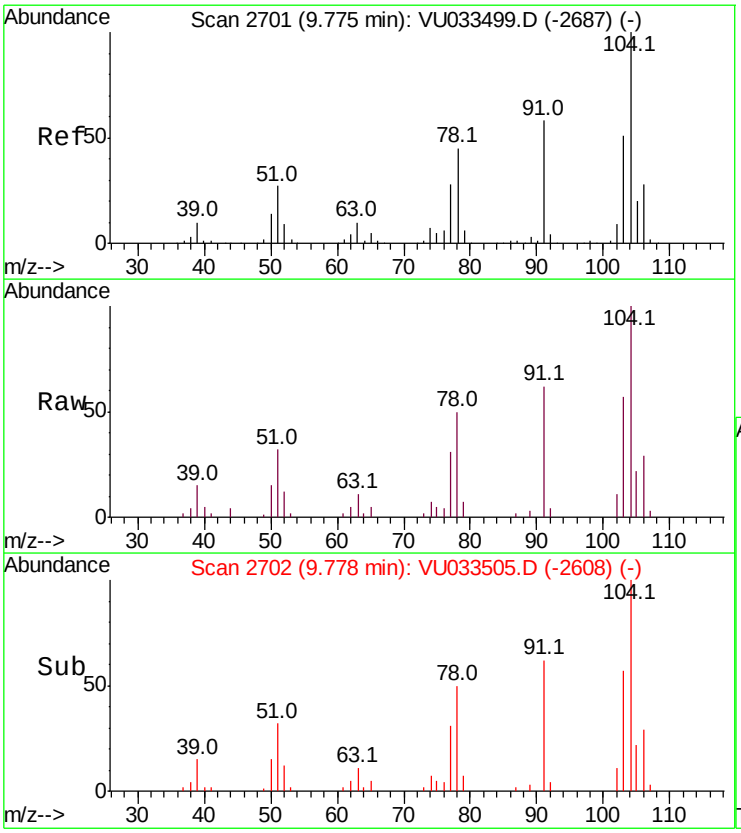
#54
o-xylene
Concen: 2.022 ug/L
RT: 9.76 min Scan# 2697
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:106 Resp: 7994

Ion	Ratio	Lower	Upper
106	100		
91	212.3	148.4	275.6

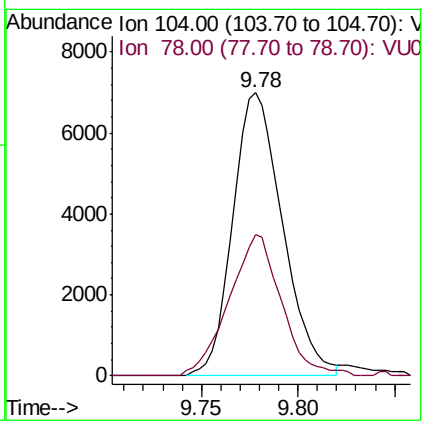


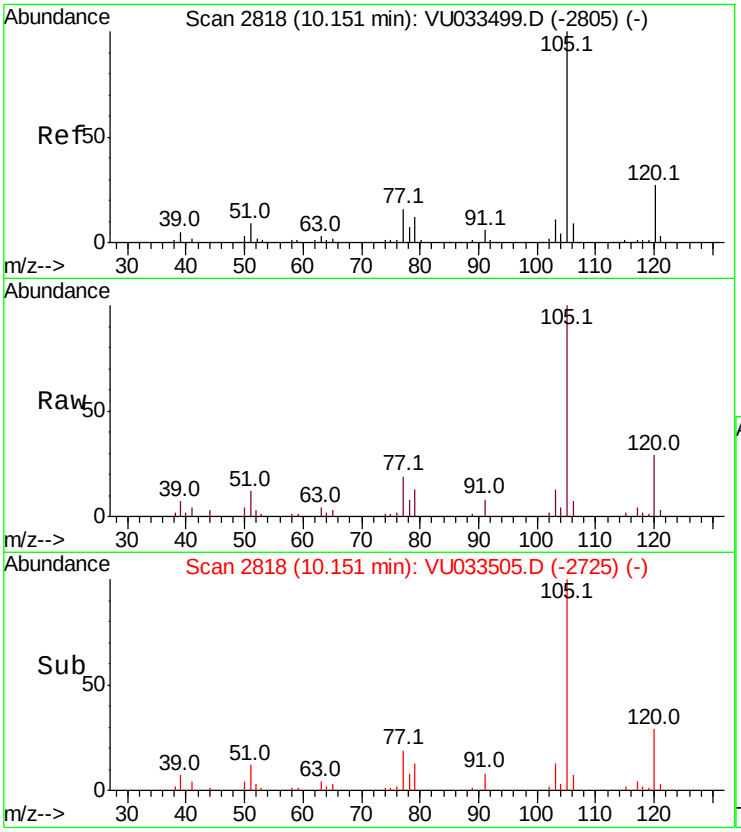


#55
Styrene
Concen: 1.866 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:104 Resp: 12530

Ion	Ratio	Lower	Upper
104	100		
78	50.1	32.2	59.8



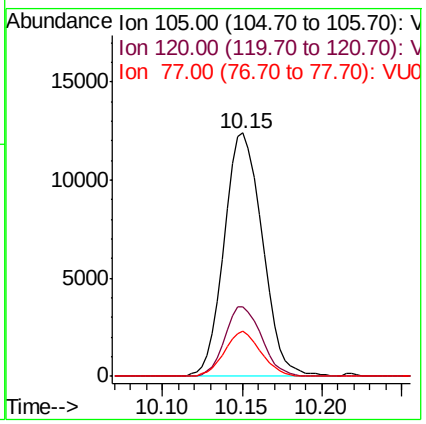


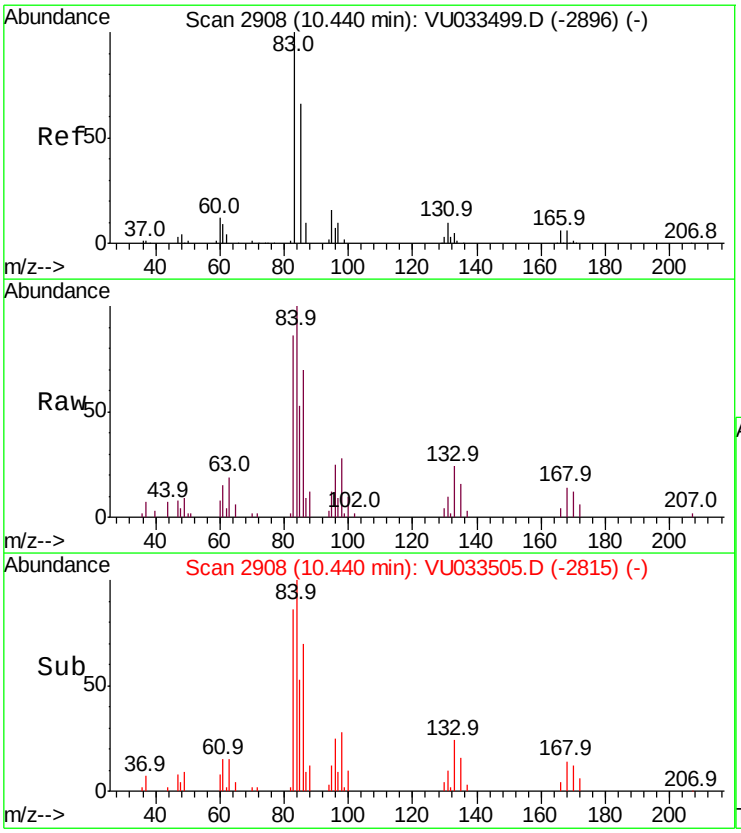
#56
Isopropylbenzene
Concen: 1.963 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument : MSVOA_U
ClientSampleId : MDL05

Tgt Ion:105 Resp: 20281

Ion	Ratio	Lower	Upper
105	100		
120	27.4	21.4	32.0
77	17.4	12.5	18.7

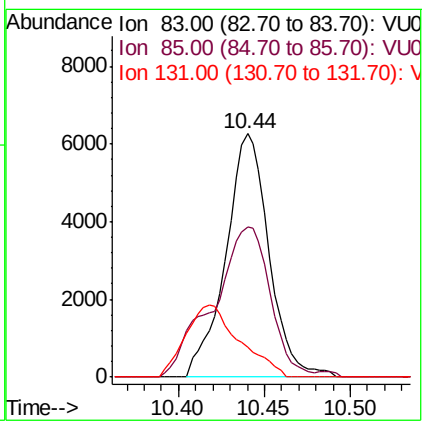


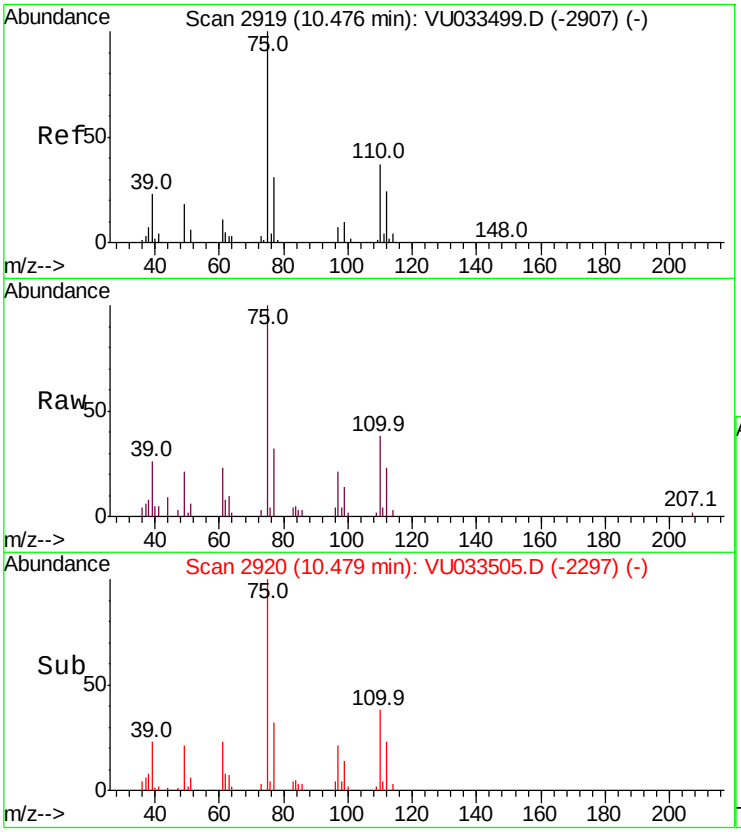


#58
1,1,2,2-Tetrachloroethane
Concen: 2.604 ug/L
RT: 10.44 min Scan# 2908
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 83 Resp: 10942

Ion	Ratio	Lower	Upper
83	100		
85	61.6	45.4	84.4
131	12.1	7.9	11.9#



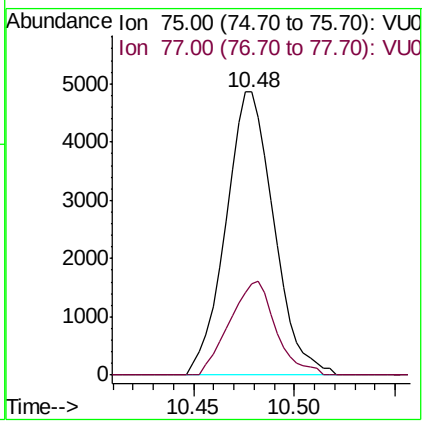


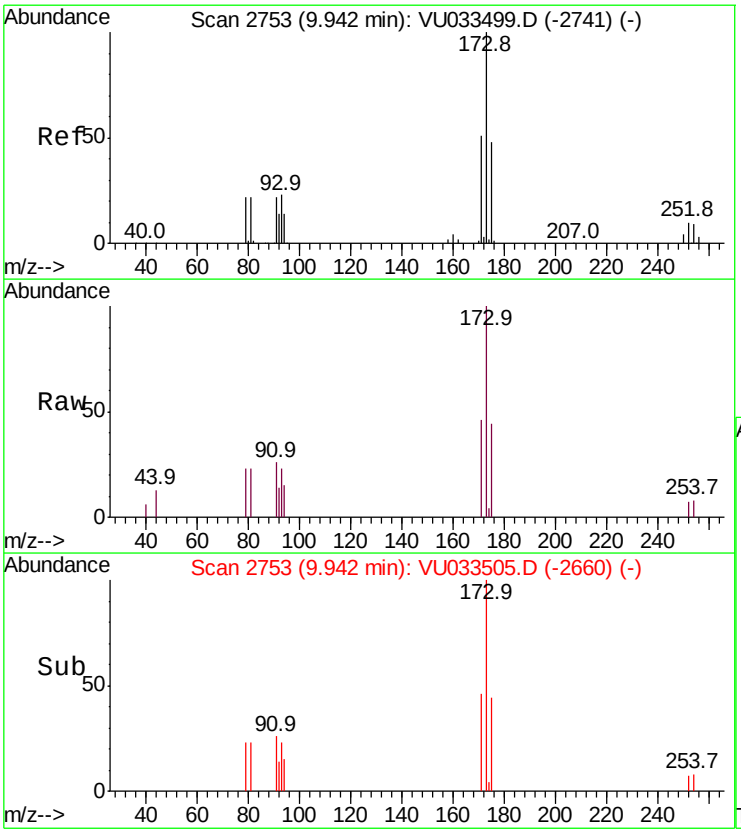
#59
1,2,3-Trichloropropane
Concen: 2.504 ug/L
RT: 10.48 min Scan# 2920
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion: 75 Resp: 8111

Ion	Ratio	Lower	Upper
75	100		
77	31.9	25.8	38.6

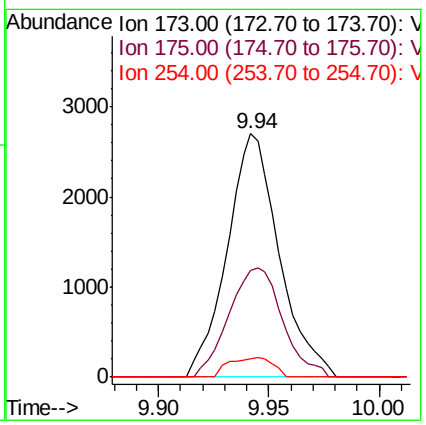


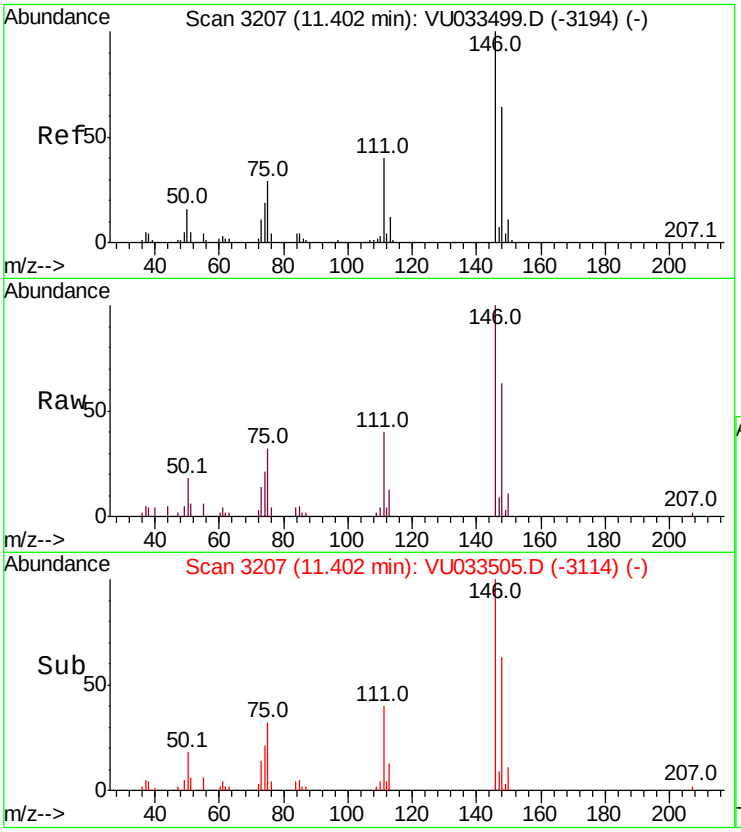


#61
Bromoform
Concen: 2.366 ug/L
RT: 9.94 min Scan# 2753
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:173 Resp: 4419

Ion	Ratio	Lower	Upper
173	100		
175	46.3	38.7	58.1
254	6.7	7.5	11.3#



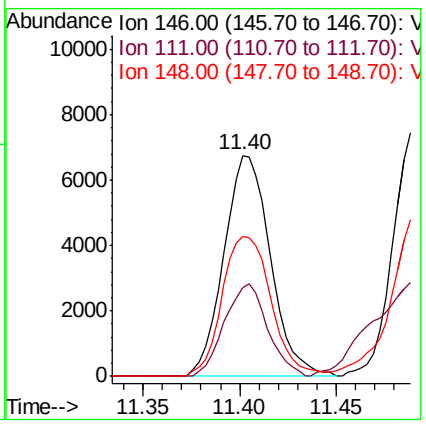


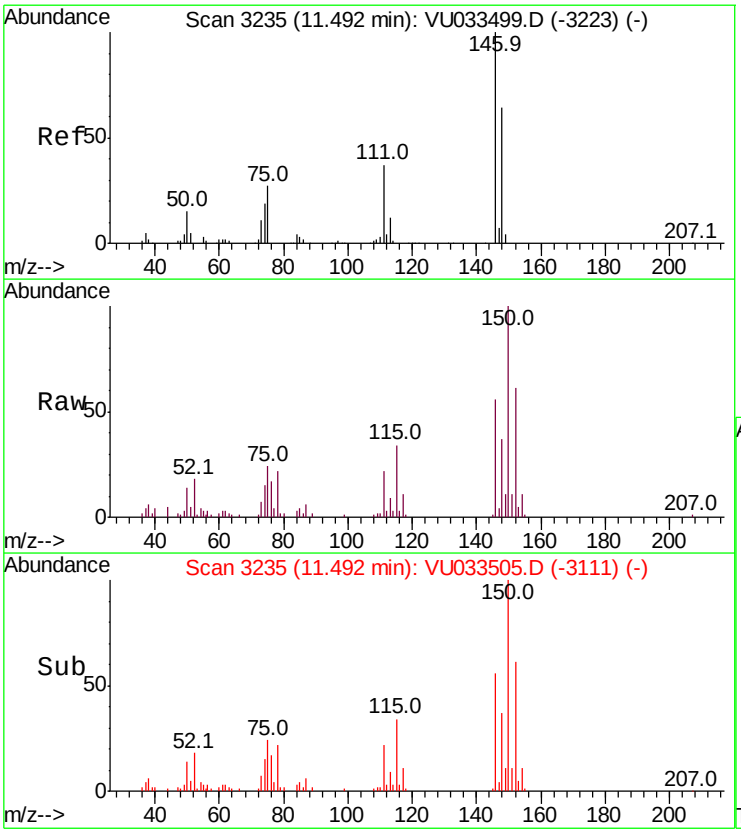
#62
1,3-Dichlorobenzene
Concen: 2.372 ug/L
RT: 11.40 min Scan# 3207
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:146 Resp: 11262

Ion	Ratio	Lower	Upper
146	100		
111	40.3	28.1	52.1
148	63.3	45.0	83.6

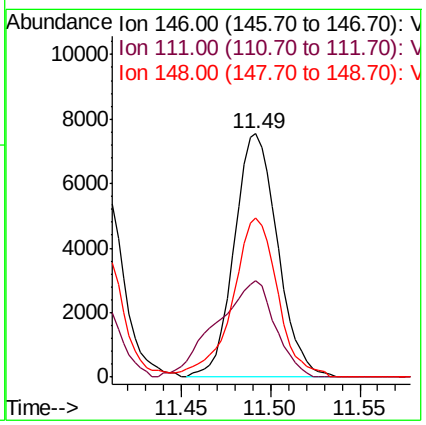


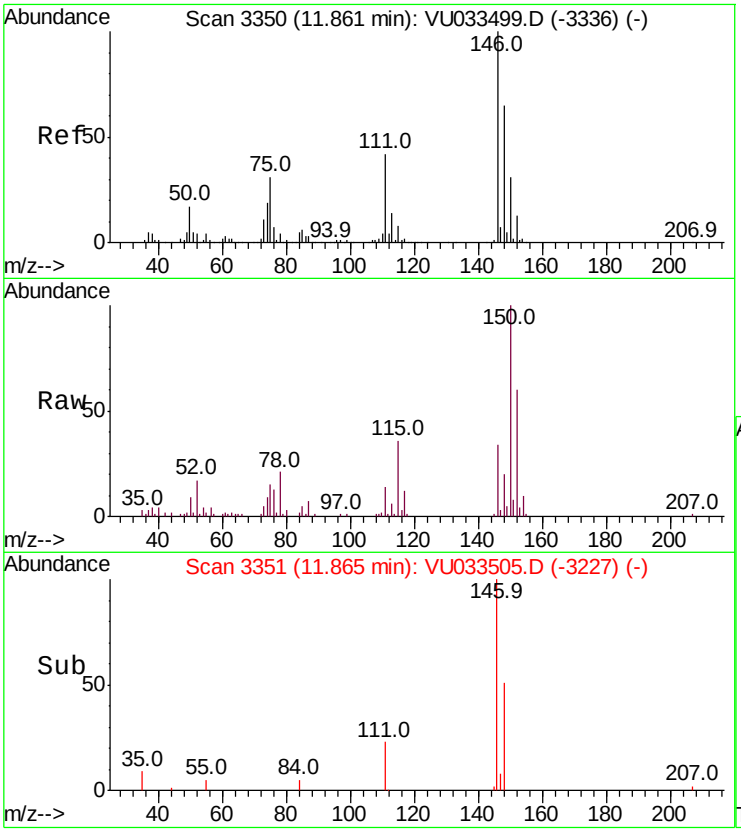


#63
1,4-Dichlorobenzene
Concen: 2.596 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:146 Resp: 12808

Ion	Ratio	Lower	Upper
146	100		
111	39.8	27.2	50.4
148	65.6	44.5	82.7



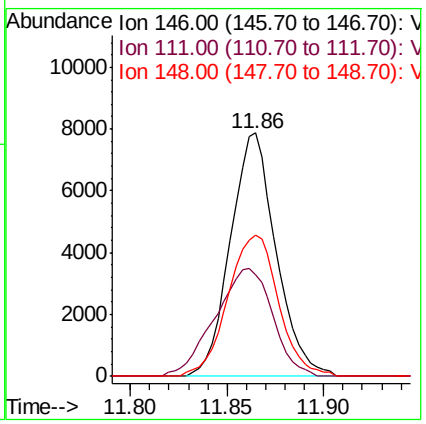


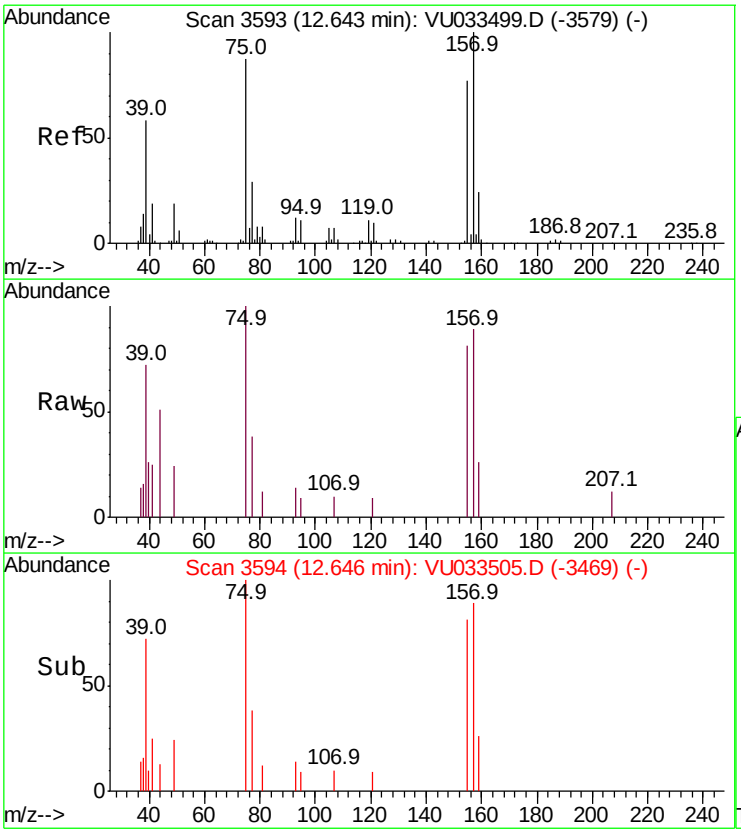
#65
1,2-Dichlorobenzene
Concen: 2.684 ug/L
RT: 11.86 min Scan# 3351
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:146 Resp: 12887

Ion	Ratio	Lower	Upper
146	100		
111	41.7	31.7	47.5
148	57.9	50.3	75.5

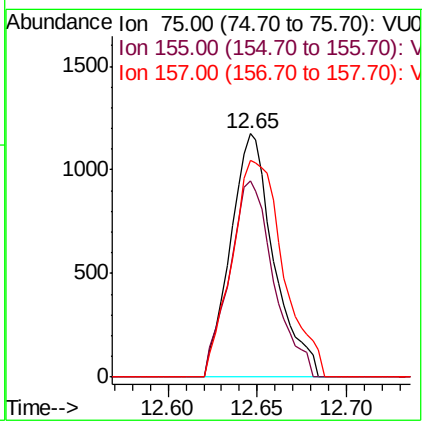


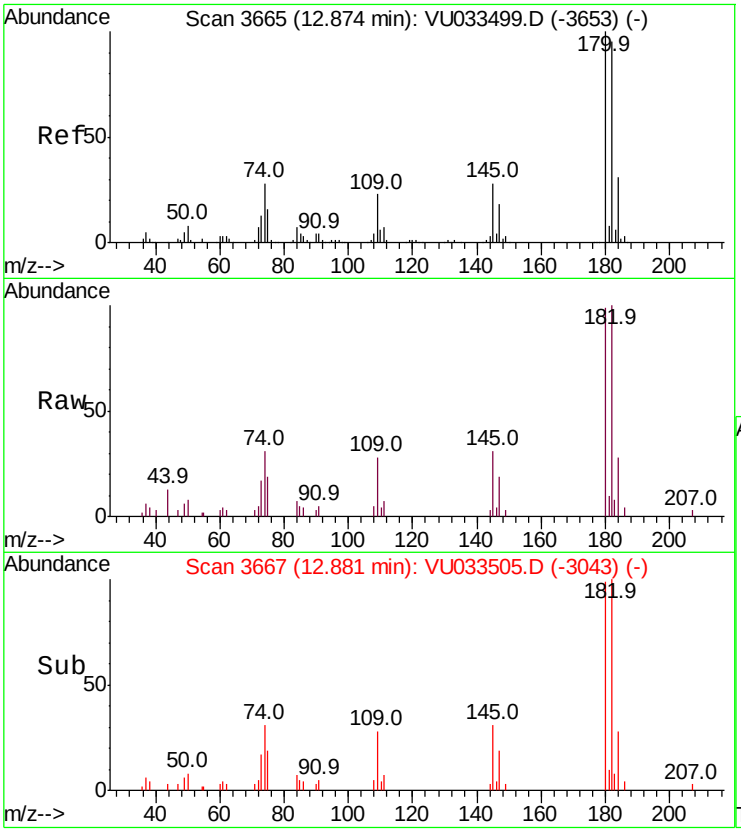


#66
1,2-Dibromo-3-chloropropane
Concen: 2.234 ug/L
RT: 12.65 min Scan# 3594
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion: 75 Resp: 1982

Ion	Ratio	Lower	Upper
75	100		
155	80.6	69.4	104.0
157	89.3	91.8	137.8#



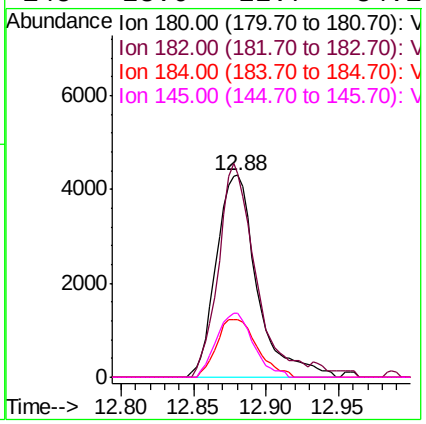


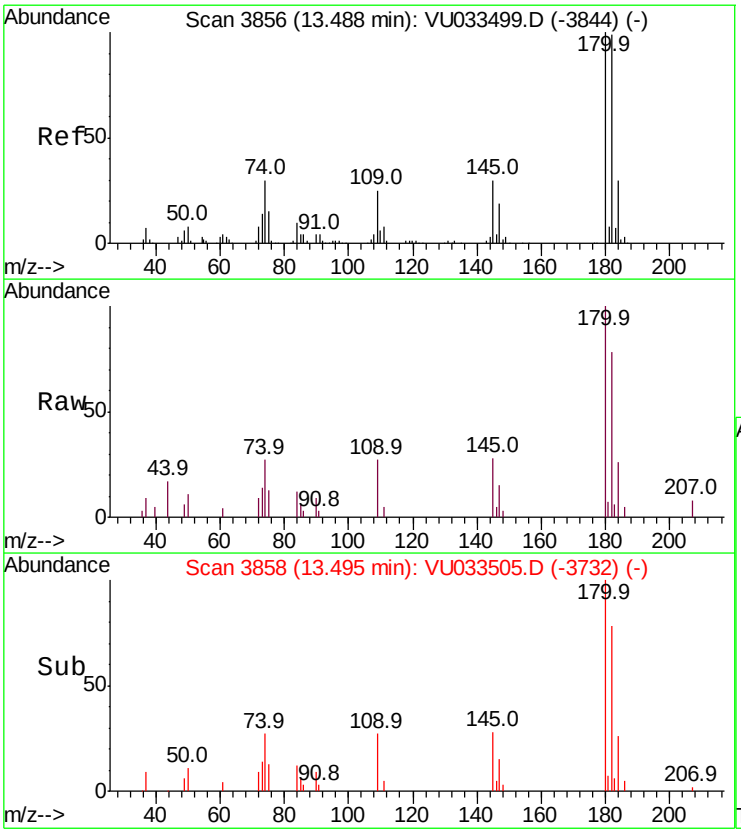
#67
1,3,5-Trichlorobenzene
Concen: 2.195 ug/L
RT: 12.88 min Scan# 3667
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:180 Resp: 8410

Ion	Ratio	Lower	Upper
180	100		
182	95.5	75.6	113.4
184	28.4	24.2	36.2
145	28.6	22.7	34.1

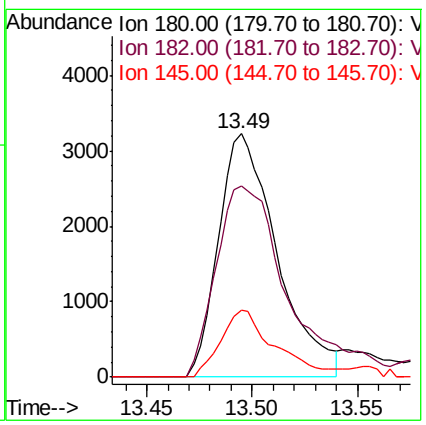


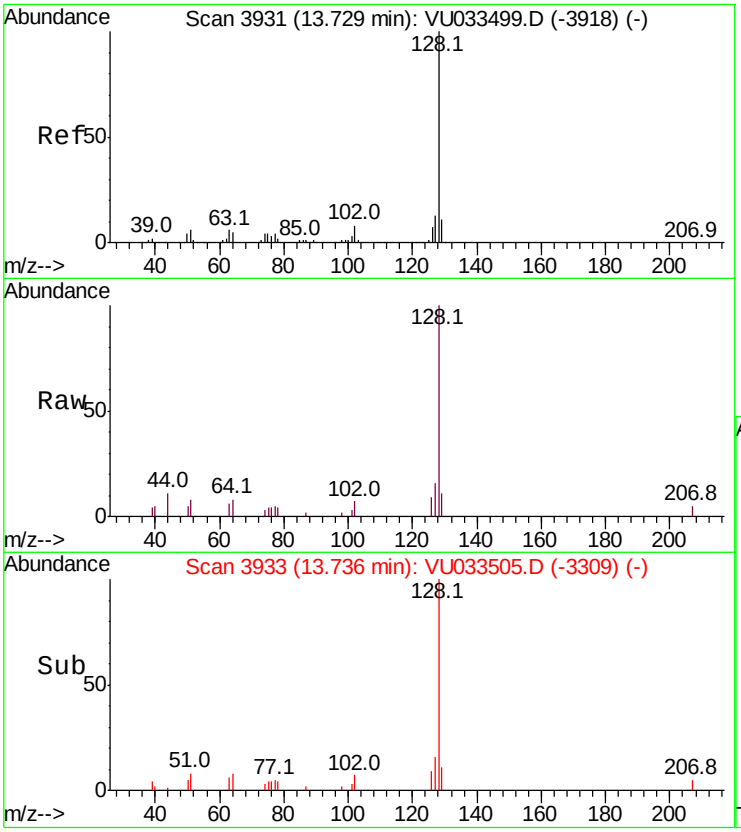


#68
1,2,4-trichlorobenzene
Concen: 1.904 ug/L
RT: 13.49 min Scan# 3858
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:180 Resp: 6231

Ion	Ratio	Lower	Upper
180	100		
182	92.3	75.8	113.8
145	25.4	24.3	36.5



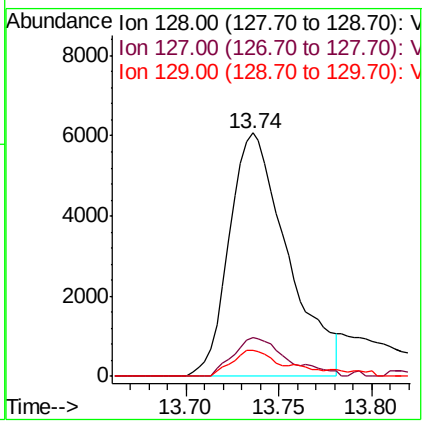


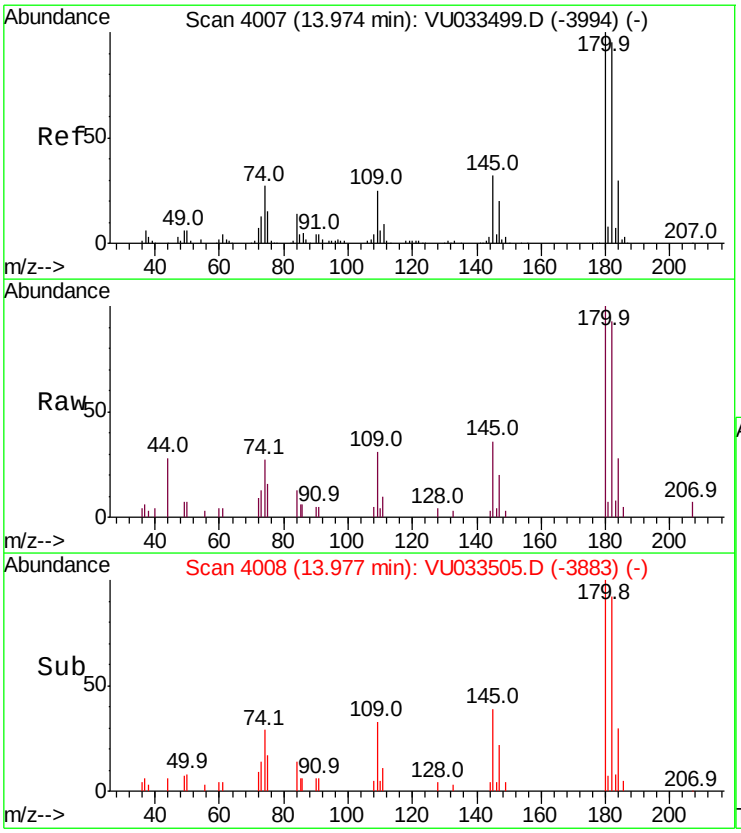
#69
Naphthalene
Concen: 1.412 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Instrument :
MSVOA_U
ClientSampleId :
MDL05

Tgt Ion:128 Resp: 13257

Ion	Ratio	Lower	Upper
128	100		
127	12.9	10.8	16.2
129	7.5	8.7	13.1#

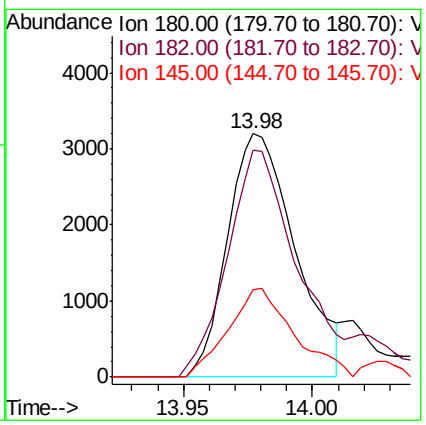




#70
1,2,3-Trichlorobenzene
Concen: 1.697 ug/L
RT: 13.98 min Scan# 4008
Delta R.T. 0.00 min
Lab File: VU033505.D
Acq: 30 Jul 2019 20:20

Tgt Ion:180 Resp: 5843

Ion	Ratio	Lower	Upper
180	100		
182	94.9	75.5	113.3
145	35.5	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033506.D
Acq On : 30 Jul 2019 20:43
Operator : JC/SP
Sample : MDL06
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 17 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:13 AM

Quant Time: Jul 31 08:31:21 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	316853	50.00	ug/L	0.00
28) Chlorobenzene-d5	9.07	117	311335	50.00	ug/L	0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	155931	50.00	ug/L	0.00
System Monitoring Compounds						
4) Vinyl Chloride-d3	1.39	65	106308	46.15	ug/L	0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 92.30%			
7) Chloroethane-d5	1.67	69	104949	53.10	ug/L	0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 106.20%			
11) 1,1-Dichloroethene-d2	2.26	63	146942	35.14	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 70.28%			
21) 2-Butanone-d5	4.16	46	154231	101.08	ug/L	0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 101.08%			
24) Chloroform-d	4.62	84	184573	47.80	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 95.60%			
26) 1,2-Dichloroethane-d4	5.29	65	119856	49.01	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 98.02%			
32) Benzene-d6	5.32	84	382185	49.52	ug/L	0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 99.04%			
36) 1,2-Dichloropropane-d6	6.31	67	118995	49.18	ug/L	0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.36%			
41) Toluene-d8	7.55	98	345410	47.76	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.52%			
43) trans-1,3-Dichloropropene-	7.83	79	55400	46.16	ug/L	0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 92.32%			
47) 2-Hexanone-d5	8.30	63	114431	99.62	ug/L	0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 99.62%			
57) 1,1,2,2-Tetrachloroethane-	10.41	84	177813	47.66	ug/L	0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 95.32%			
64) 1,2-Dichlorobenzene-d4	11.85	152	138556	48.52	ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	8752	2.929	ug/L	98
3) Chloromethane	1.32	50	9585	3.185	ug/L	98
5) Vinyl chloride	1.40	62	10540	3.267	ug/L #	78
6) Bromomethane	1.62	94	7063	2.481	ug/L	92
8) Chloroethane	1.69	64	8545	4.358	ug/L	89
9) Trichlorofluoromethane	1.87	101	13708	3.248	ug/L	100
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	7328	3.425	ug/L	91
12) 1,1-Dichloroethene	2.27	96	7143	3.481	ug/L #	1
13) Acetone	2.32	43	8708	5.578	ug/L	99
14) Carbon disulfide	2.46	76	20047	3.115	ug/L	96
15) Methyl Acetate	2.61	43	7582	3.051	ug/L	96
16) Methylene chloride	2.68	84	7627	3.254	ug/L	95
17) trans-1,2-Dichloroethene	2.96	96	6599	3.070	ug/L	97
18) Methyl tert-butyl Ether	2.98	73	19363	2.954	ug/L	98
19) 1,1-Dichloroethane	3.43	63	12706	3.149	ug/L	94
20) cis-1,2-Dichloroethene	4.20	96	7193	2.981	ug/L	96
22) 2-Butanone	4.26	43	9774	5.245	ug/L	98

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033506.D
Acq On : 30 Jul 2019 20:43
Operator : JC/SP
Sample : MDL06
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 17 Sample Multiplier: 1

Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:13 AM

Quant Time: Jul 31 08:31:21 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
23) Bromochloromethane	4.53	128	3918m	3.112	ug/L		
25) Chloroform	4.65	83	17532	4.129	ug/L		93
27) 1,2-Dichloroethane	5.39	62	9855	3.014	ug/L		100
29) Cyclohexane	4.97	56	9762	2.875	ug/L		100
30) 1,1,1-Trichloroethane	4.89	97	11306	3.156	ug/L		97
31) Carbon tetrachloride	5.11	117	9405	3.015	ug/L		98
33) Benzene	5.37	78	28825	3.209	ug/L		100
34) Trichloroethene	6.17	95	7223	3.049	ug/L		93
35) Methylcyclohexane	6.39	83	10438	2.823	ug/L		98
37) 1,2-Dichloropropane	6.41	63	7704	3.205	ug/L	#	96
38) Bromodichloromethane	6.74	83	9632	3.099	ug/L	#	98
39) cis-1,3-Dichloropropene	7.25	75	10581	2.820	ug/L		100
40) 4-Methyl-2-pentanone	7.45	43	18825	5.671	ug/L		99
42) Toluene	7.62	91	30195	3.127	ug/L		97
44) trans-1,3-Dichloropropene	7.86	75	10418m	3.072	ug/L		
45) 1,1,2-Trichloroethane	8.05	97	7387	3.237	ug/L		94
46) Tetrachloroethene	8.21	164	5939	3.070	ug/L		96
48) 2-Hexanone	8.35	43	18642	6.948	ug/L		93
49) Dibromochloromethane	8.46	129	8291	3.193	ug/L		97
50) 1,2-Dibromoethane	8.57	107	7870	3.113	ug/L		93
51) Chlorobenzene	9.10	112	19787	3.129	ug/L		98
52) Ethylbenzene	9.23	91	30452	2.928	ug/L		99
53) m,p-Xylene	9.36	106	10939	2.740	ug/L		89
54) o-xylene	9.76	106	10404	2.686	ug/L		98
55) Styrene	9.78	104	17394	2.644	ug/L		99
56) Isopropylbenzene	10.15	105	26413	2.610	ug/L		98
58) 1,1,2,2-Tetrachloroethane	10.44	83	13749	3.340	ug/L		93
59) 1,2,3-Trichloropropane	10.48	75	10121	3.189	ug/L		98
61) Bromoform	9.94	173	5800	3.079	ug/L		97
62) 1,3-Dichlorobenzene	11.40	146	14878	3.107	ug/L		96
63) 1,4-Dichlorobenzene	11.49	146	15660	3.148	ug/L		99
65) 1,2-Dichlorobenzene	11.86	146	15680	3.238	ug/L		95
66) 1,2-Dibromo-3-chloropropan	12.65	75	2637	2.948	ug/L		93
67) 1,3,5-Trichlorobenzene	12.88	180	10018	2.593	ug/L		96
68) 1,2,4-trichlorobenzene	13.49	180	7781	2.357	ug/L		97
69) Naphthalene	13.74	128	19176	2.025	ug/L		98
70) 1,2,3-Trichlorobenzene	13.98	180	8039	2.315	ug/L		98

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

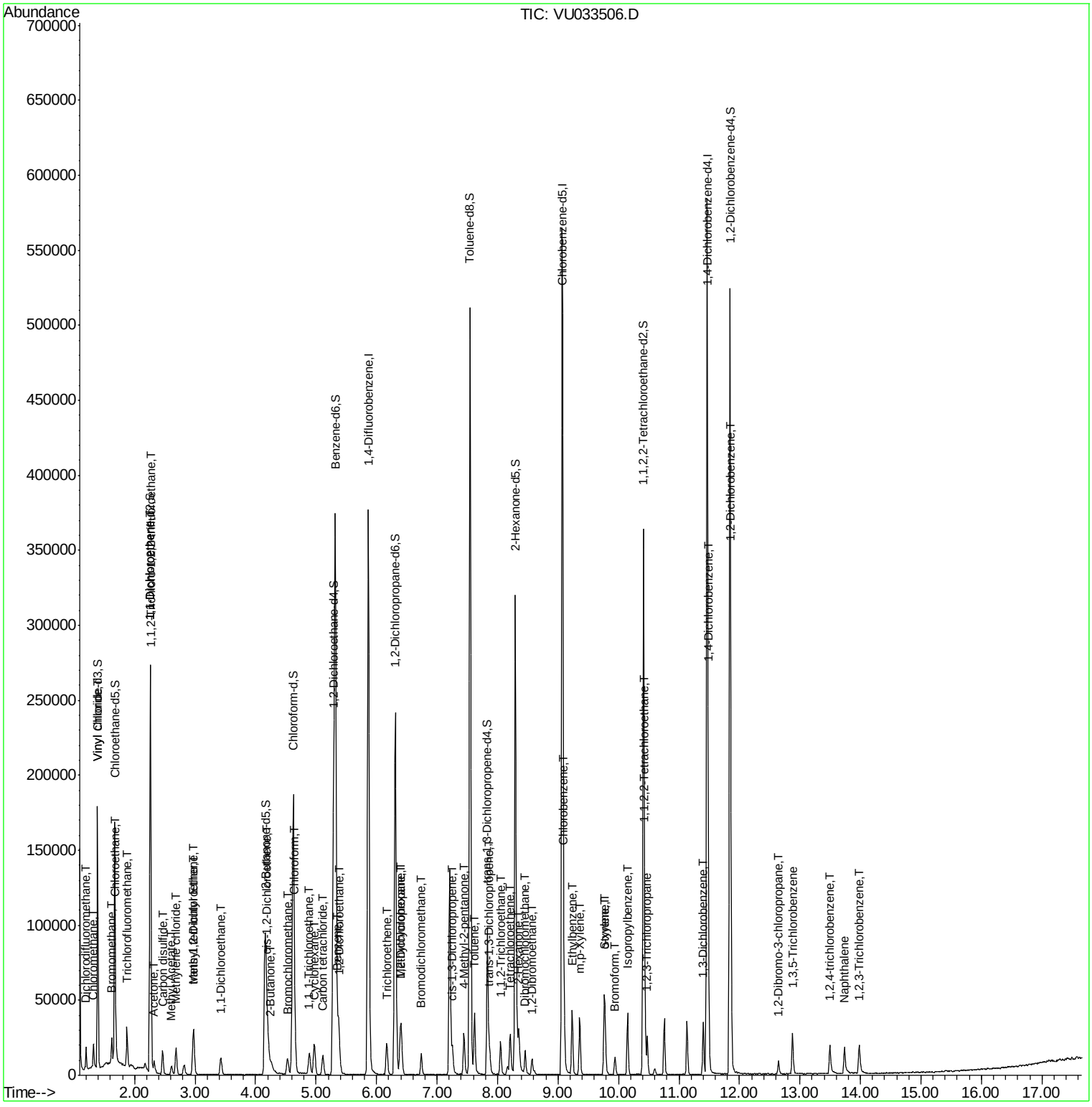
Quantitation Report (QT Reviewed)

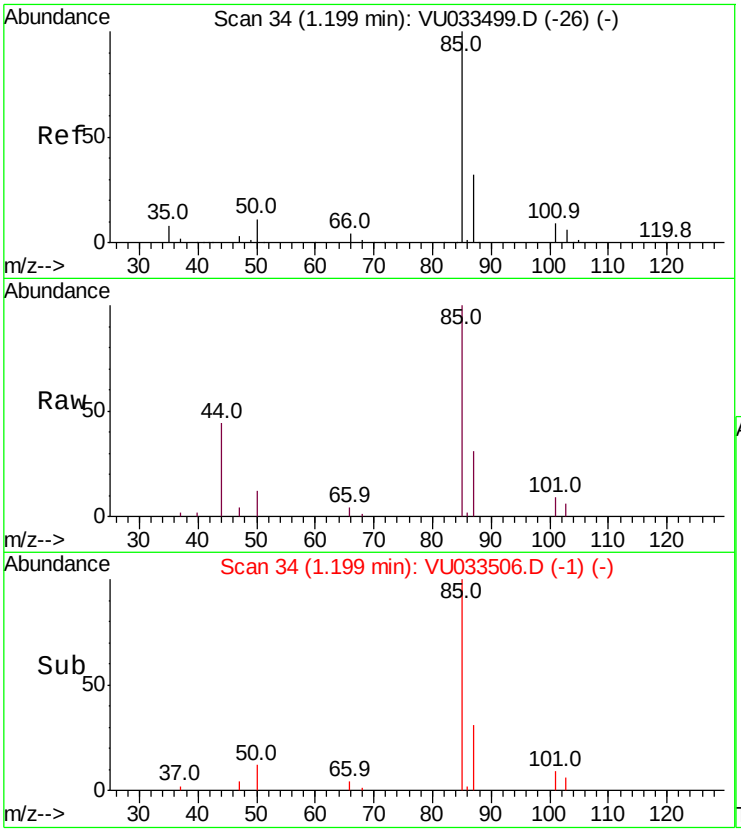
Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033506.D
Acq On : 30 Jul 2019 20:43
Operator : JC/SP
Sample : MDL06
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 31 08:31:21 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
MMDadoda
7/31/2019 10:34:13 AM

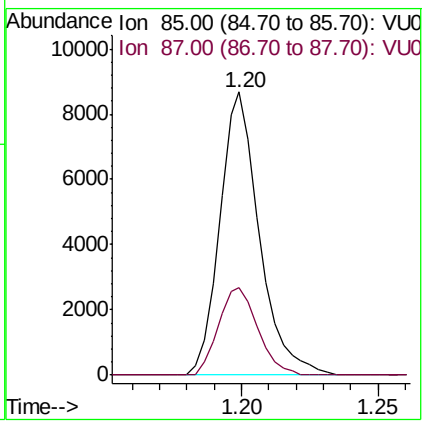




#2
Dichlorodifluoromethane
Concen: 2.929 ug/L
RT: 1.20 min Scan# 34
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 85 Resp: 8752

Ion	Ratio	Lower	Upper
85	100		
87	30.7	25.4	38.2



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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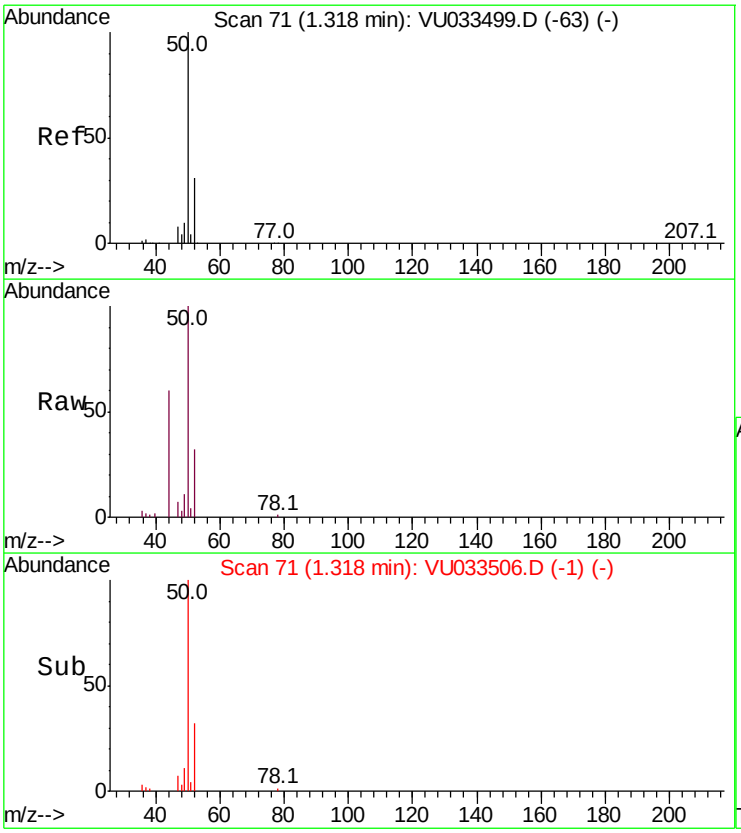
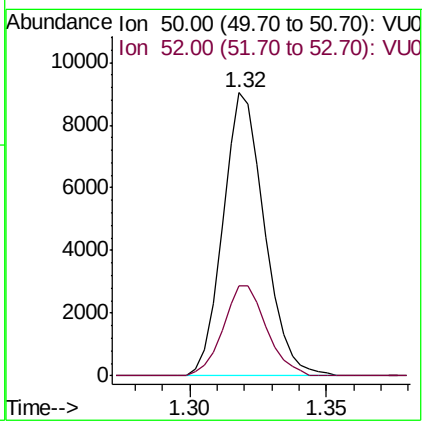
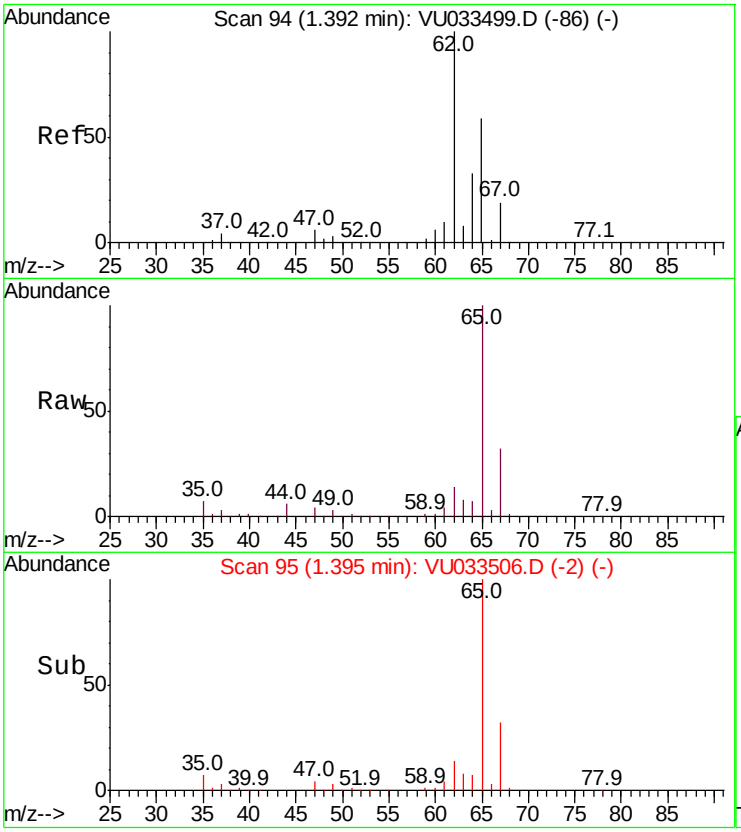


#3
Chloromethane
Concen: 3.185 ug/L
RT: 1.32 min Scan# 71
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 50 Resp: 9585

Ion	Ratio	Lower	Upper
50	100		
52	32.0	23.1	42.9





#5
Vinyl chloride
Concen: 3.267 ug/L
RT: 1.40 min Scan# 95
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 62 Resp: 10540

Ion	Ratio	Lower	Upper
62	100		
64	45.7	23.4	43.4#

Instrument :
MSVOA_U
ClientSampleId :
MDL06

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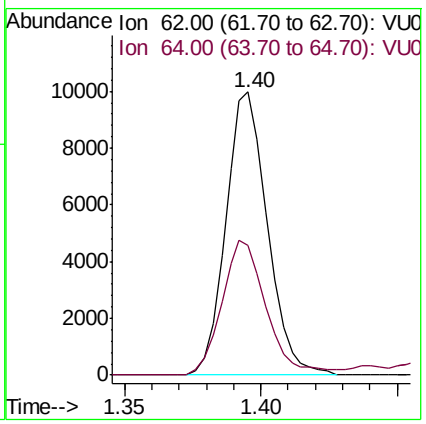
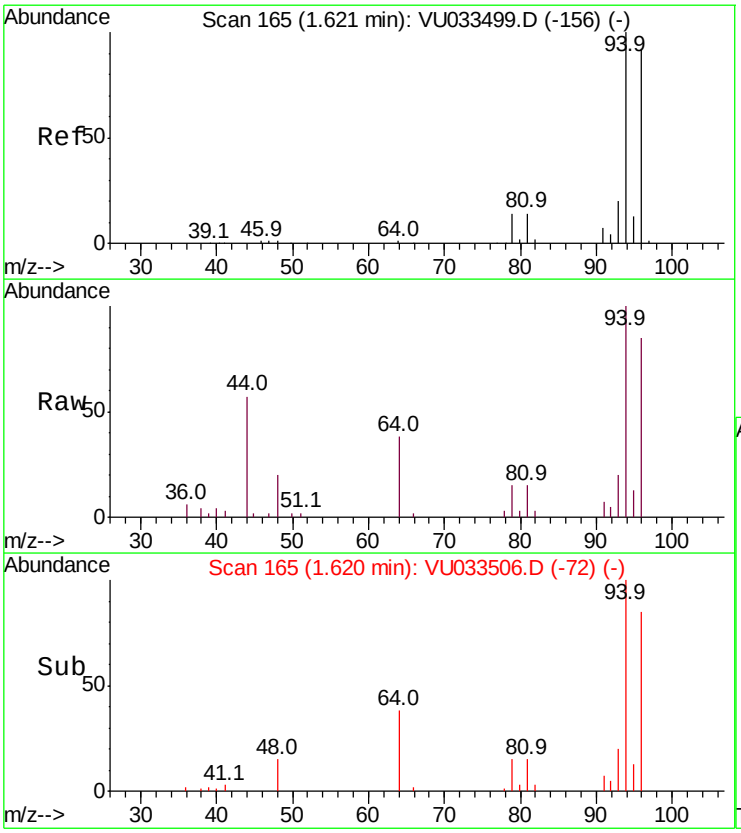
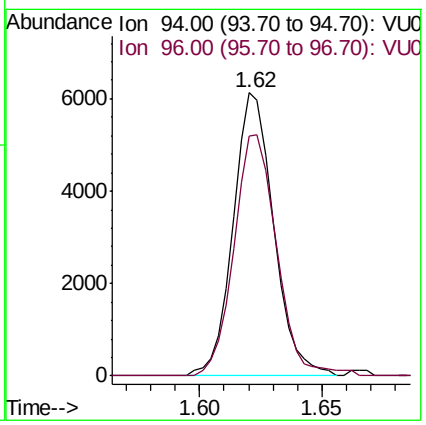


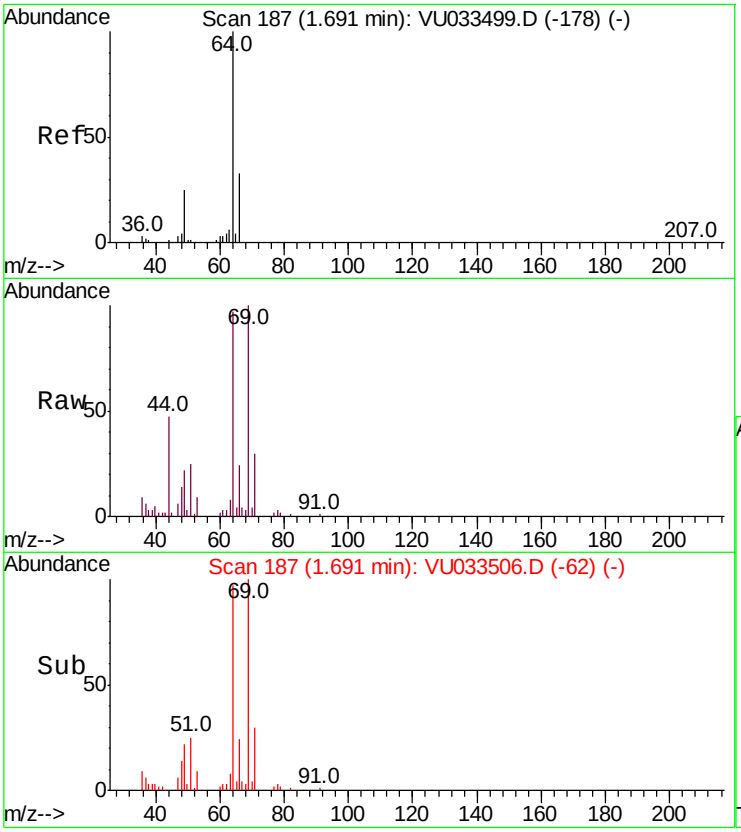


#6
Bromomethane
Concen: 2.481 ug/L
RT: 1.62 min Scan# 165
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 94 Resp: 7063

Ion	Ratio	Lower	Upper
94	100		
96	84.5	64.4	119.6

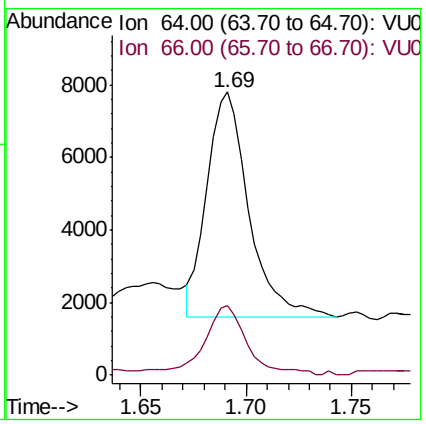




#8
Chloroethane
Concen: 4.358 ug/L
RT: 1.69 min Scan# 187
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 64 Resp: 8545

Ion	Ratio	Lower	Upper
64	100		
66	24.5	21.1	39.3



Instrument :
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ClientSampleId :
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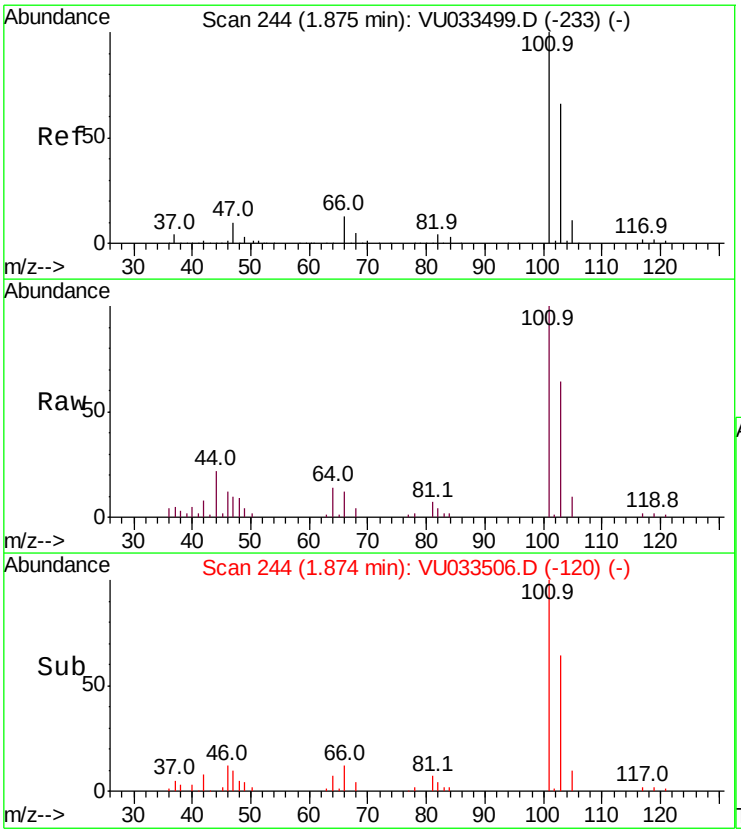
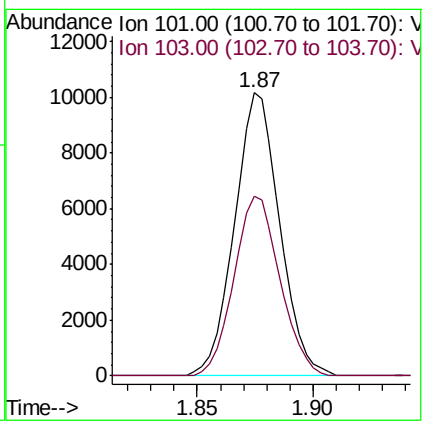
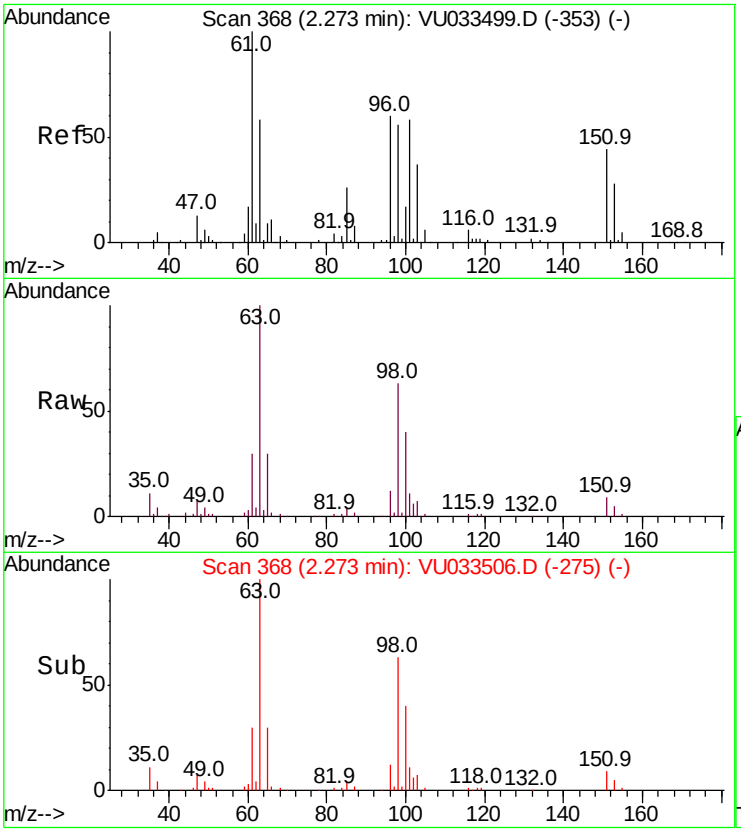


#9
Trichlorofluoromethane
Concen: 3.248 ug/L
RT: 1.87 min Scan# 244
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:101 Resp: 13708

Ion	Ratio	Lower	Upper
101	100		
103	64.7	51.6	77.4





#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 3.425 ug/L
RT: 2.27 min Scan# 368
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:101 Resp: 7328

Ion	Ratio	Lower	Upper
101	100		
85	36.7	35.8	53.8
151	69.4	60.1	90.1

Instrument :
MSVOA_U
ClientSampleId :
MDL06

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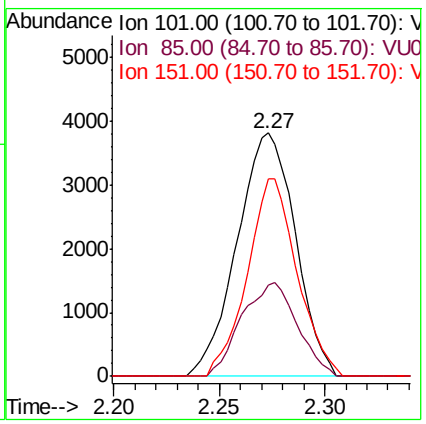
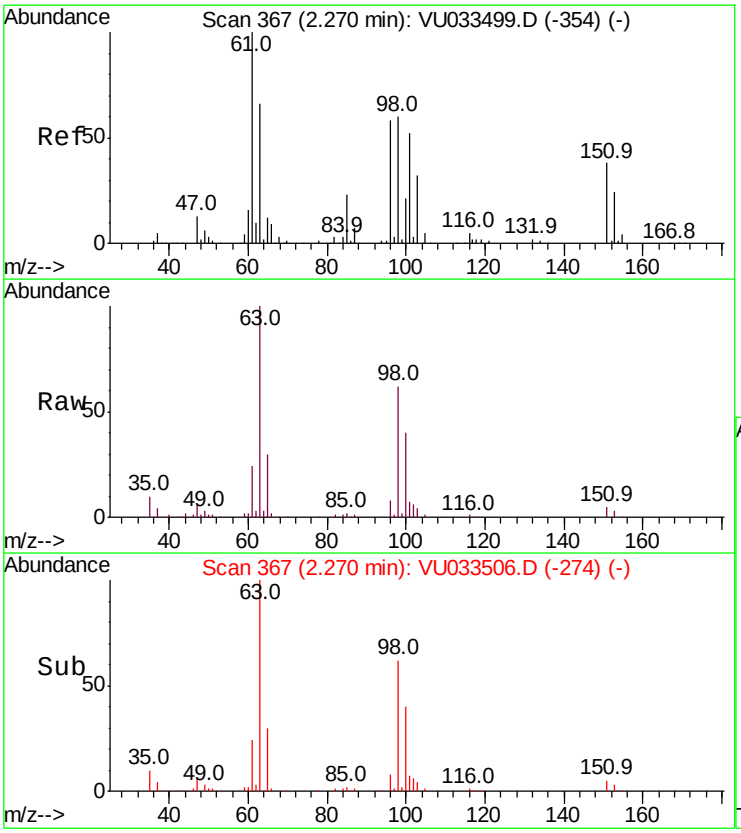
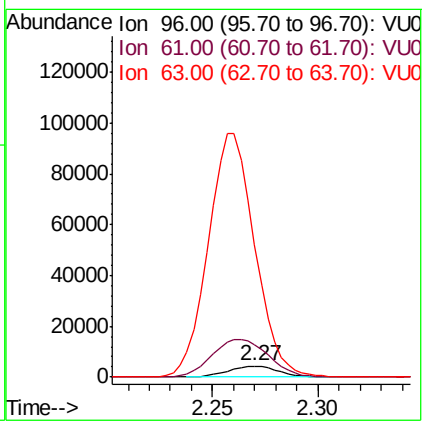


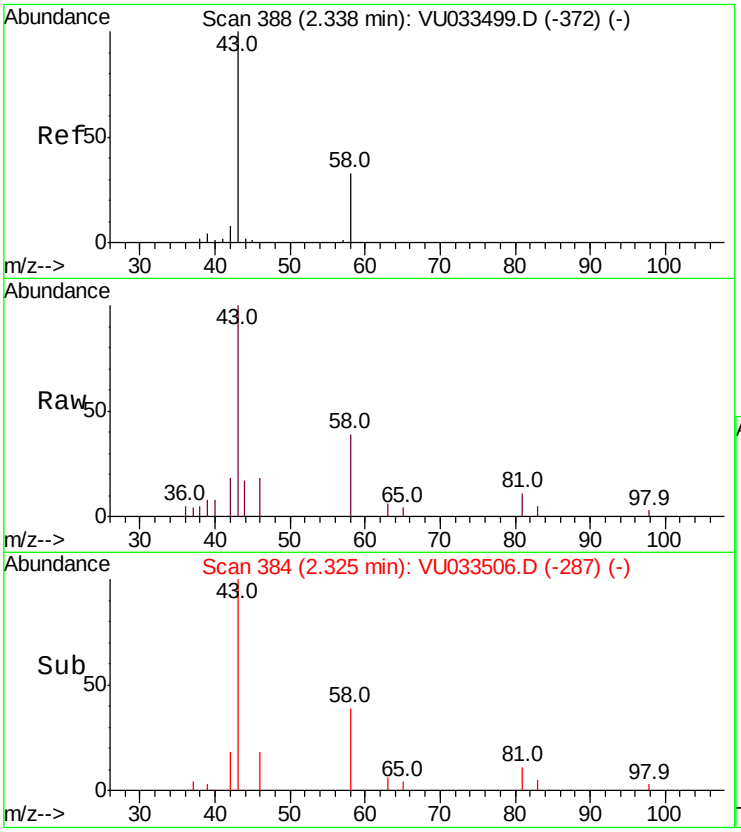


#12
1,1-Dichloroethene
Concen: 3.481 ug/L
RT: 2.27 min Scan# 367
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 96 Resp: 7143

Ion	Ratio	Lower	Upper
96	100		
61	292.8	119.3	221.5#
63	1198.7	86.6	160.8#

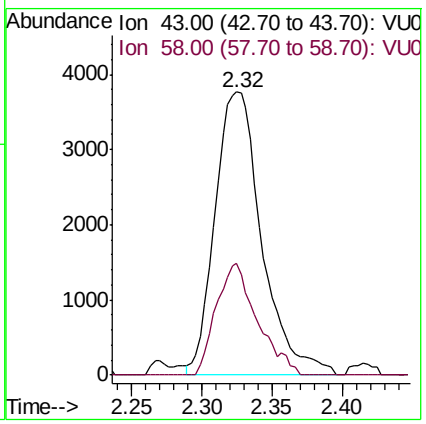




#13
Acetone
Concen: 5.578 ug/L
RT: 2.32 min Scan# 384
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 43 Resp: 8708

Ion	Ratio	Lower	Upper
43	100		
58	32.7	0.0	66.2



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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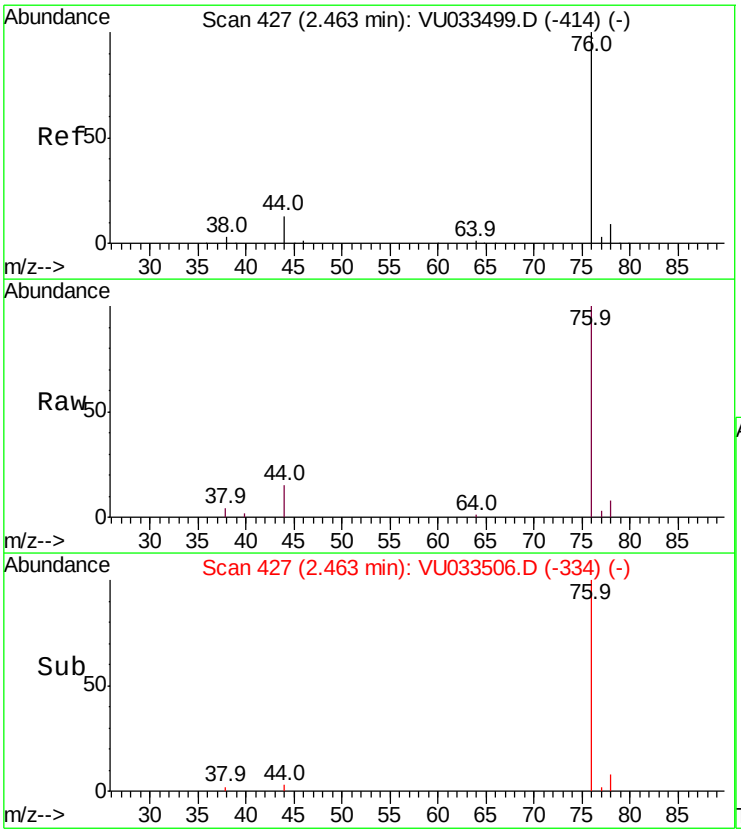
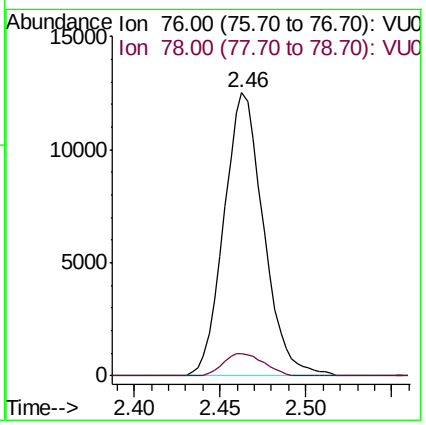
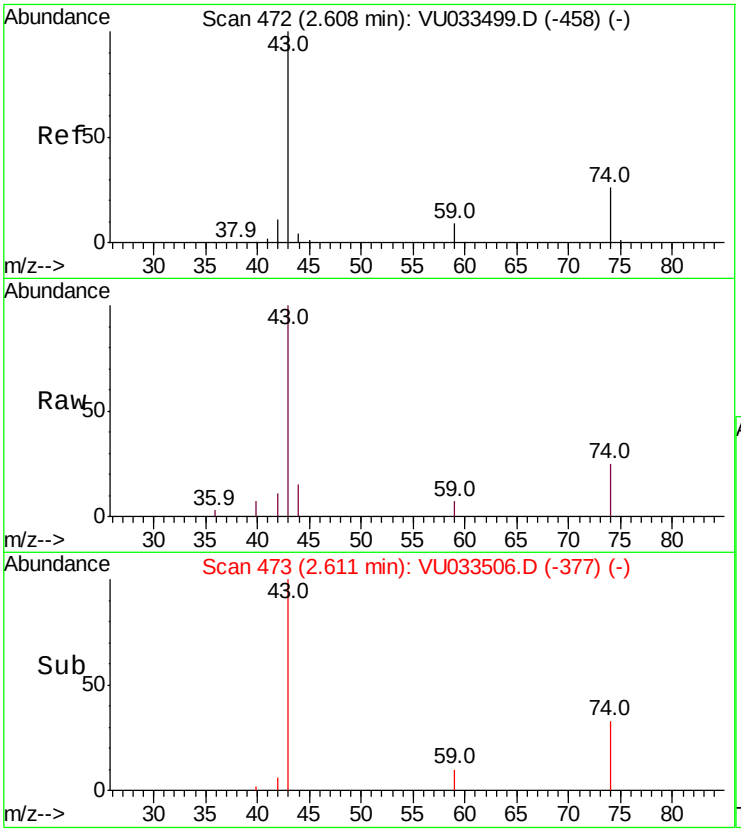


#14
Carbon disulfide
Concen: 3.115 ug/L
RT: 2.46 min Scan# 427
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 76 Resp: 20047

Ion	Ratio	Lower	Upper
76	100		
78	7.9	7.4	11.0

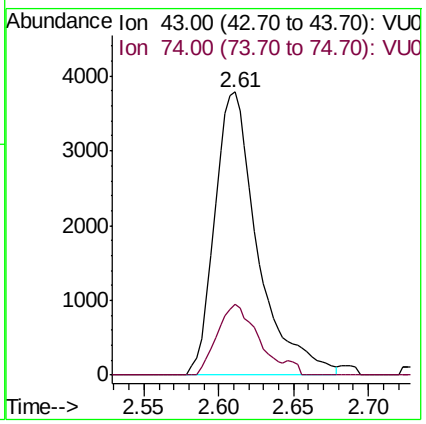




#15
Methyl Acetate
Concen: 3.051 ug/L
RT: 2.61 min Scan# 473
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 43 Resp: 7582

Ion	Ratio	Lower	Upper
43	100		
74	23.2	20.1	30.1



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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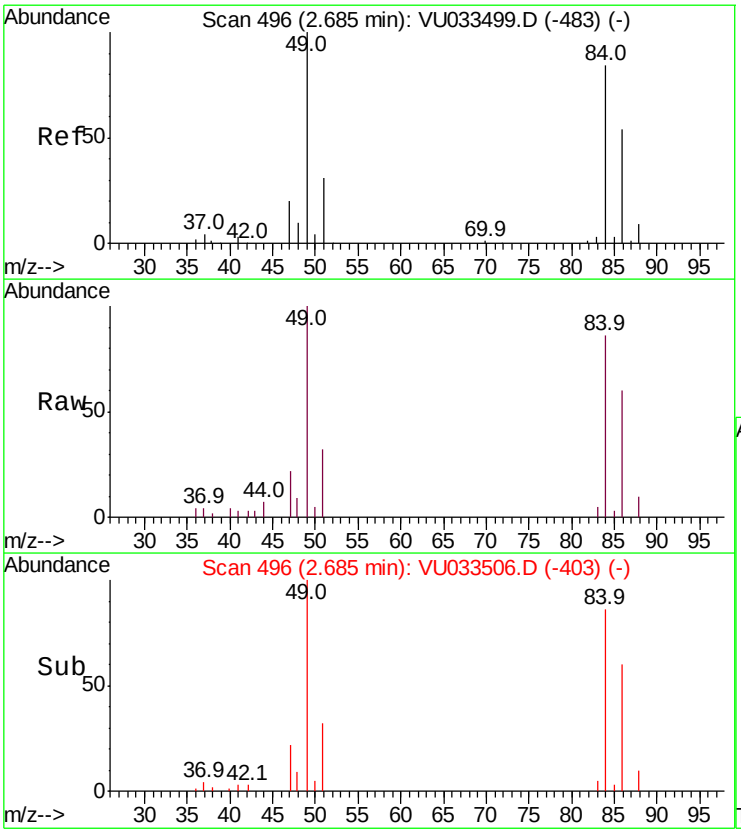
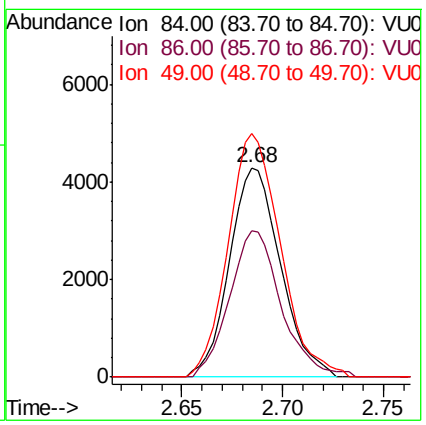
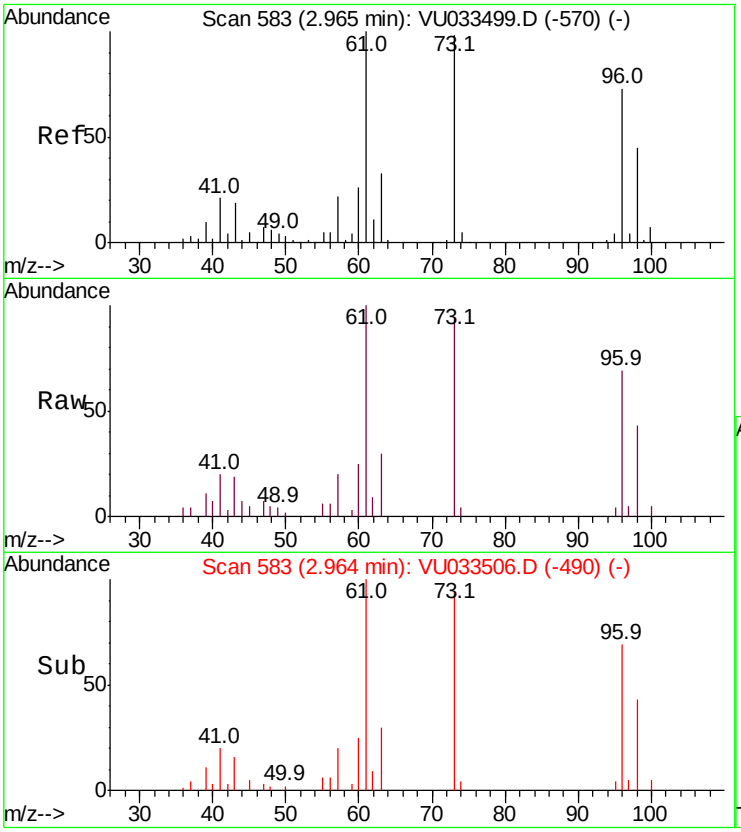


#16
Methylene chloride
Concen: 3.254 ug/L
RT: 2.68 min Scan# 496
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 84 Resp: 7627

Ion	Ratio	Lower	Upper
84	100		
86	70.1	45.7	84.9
49	116.2	85.0	158.0

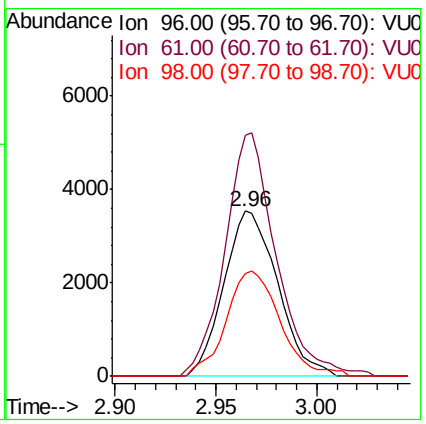




#17
trans-1,2-Dichloroethene
Concen: 3.070 ug/L
RT: 2.96 min Scan# 583
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 96 Resp: 6599

Ion	Ratio	Lower	Upper
96	100		
61	145.8	98.3	182.5
98	62.3	44.3	82.3



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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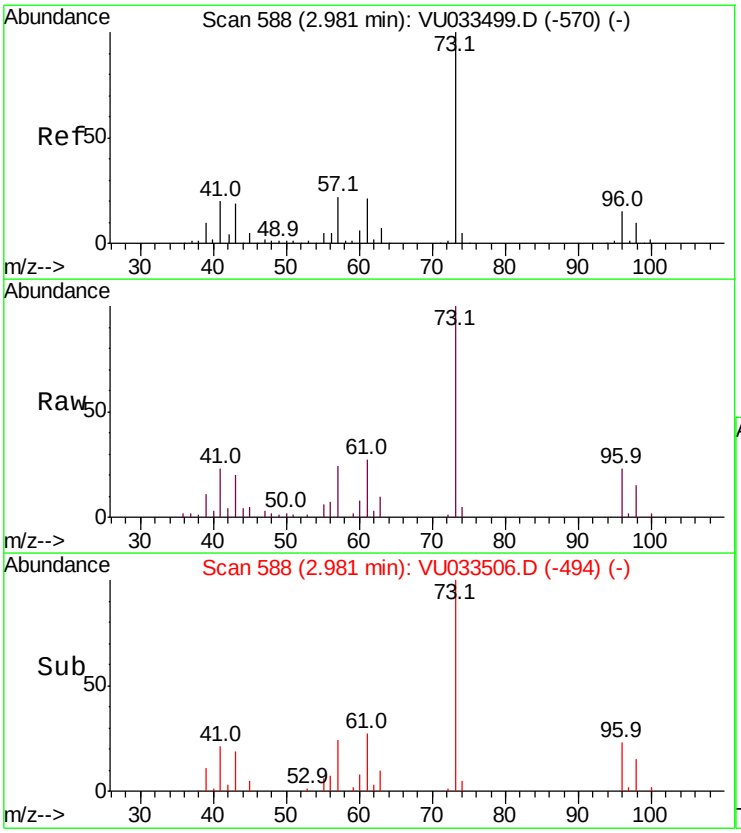
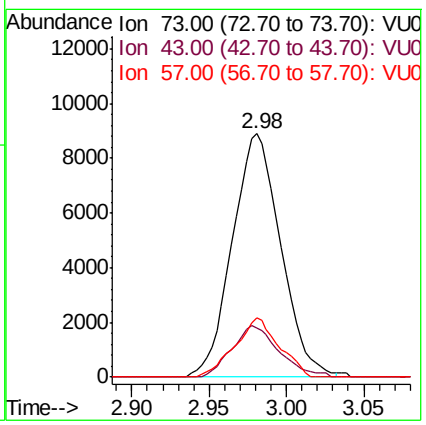
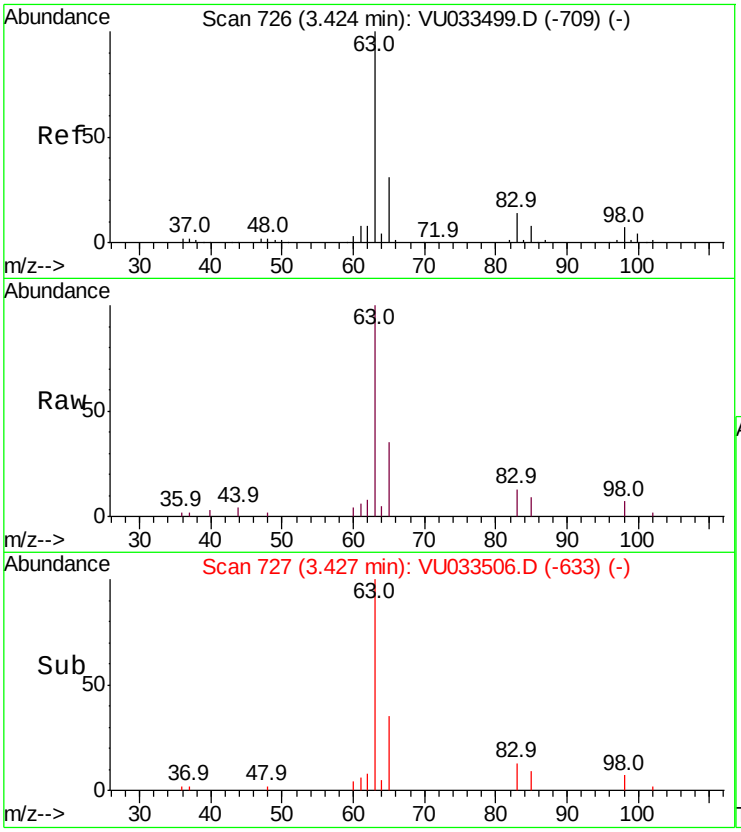


#18
Methyl tert-butyl Ether
Concen: 2.954 ug/L
RT: 2.98 min Scan# 588
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 73 Resp: 19363

Ion	Ratio	Lower	Upper
73	100		
43	20.4	15.4	23.2
57	22.2	17.4	26.2

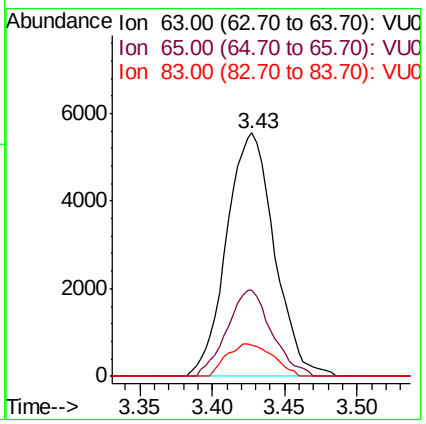




#19
1,1-Dichloroethane
Concen: 3.149 ug/L
RT: 3.43 min Scan# 727
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 63 Resp: 12706

Ion	Ratio	Lower	Upper
63	100		
65	35.4	22.0	40.8
83	12.7	9.5	17.7



Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
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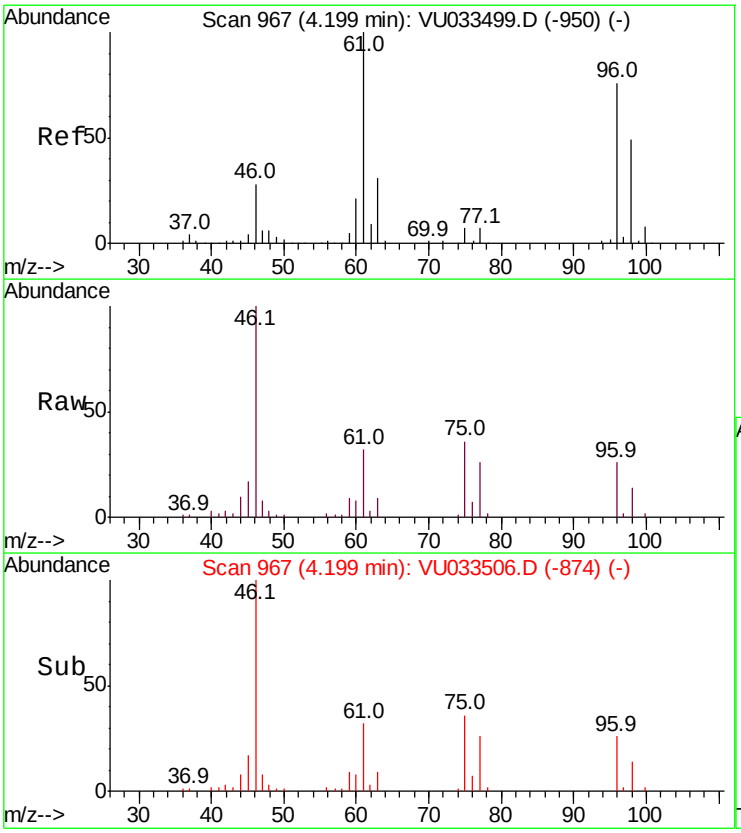
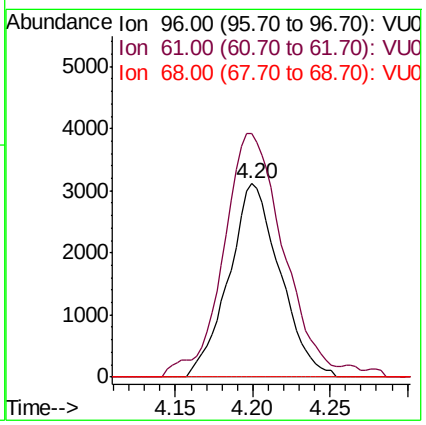
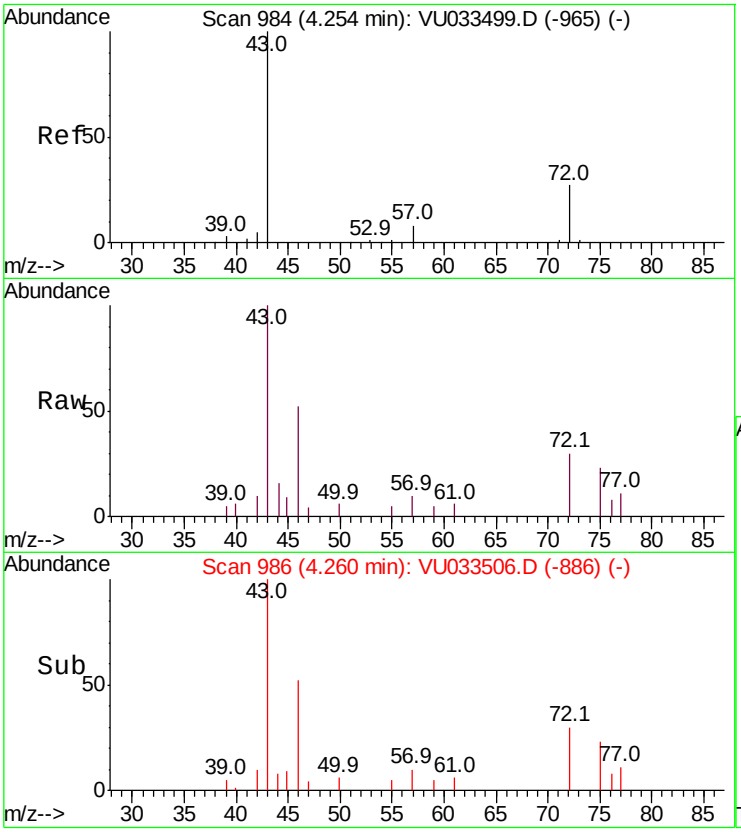


#20
cis-1,2-Dichloroethene
Concen: 2.981 ug/L
RT: 4.20 min Scan# 967
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 96 Resp: 7193

Ion	Ratio	Lower	Upper
96	100		
61	125.7	91.3	169.6
68	0.0	0.0	0.0

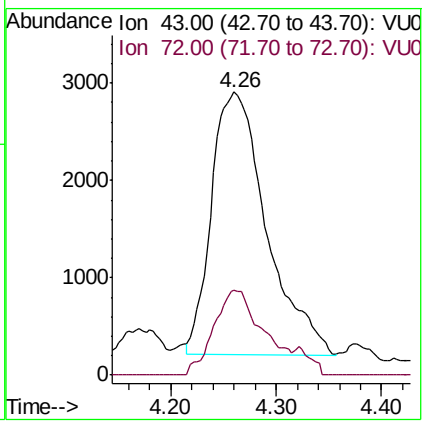




#22
2-Butanone
Concen: 5.245 ug/L
RT: 4.26 min Scan# 986
Delta R.T. 0.02 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 43 Resp: 9774

Ion	Ratio	Lower	Upper
43	100		
72	27.5	14.2	42.6



Instrument :
MSVOA_U
ClientSampleId :
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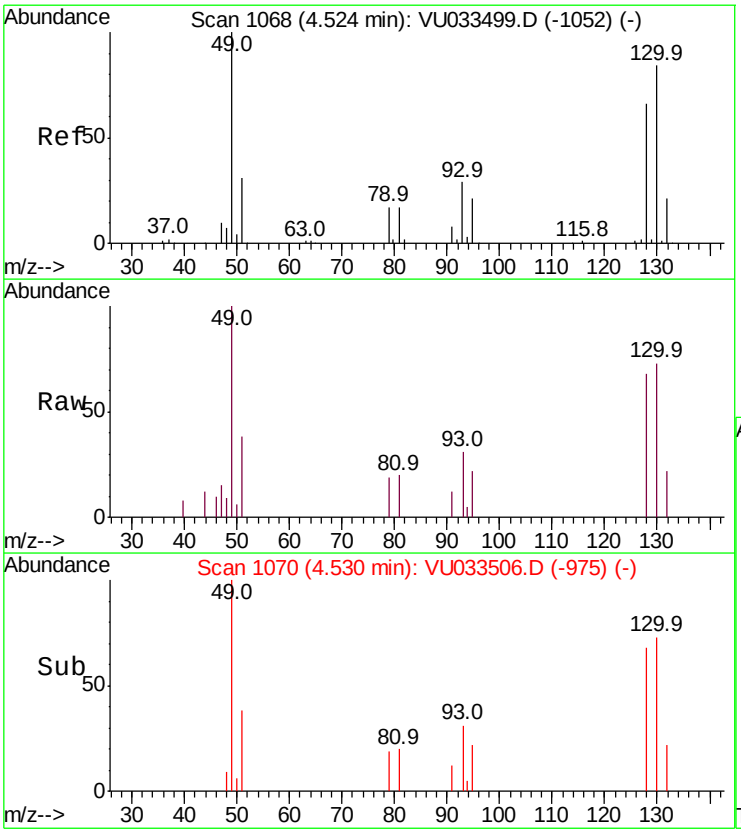
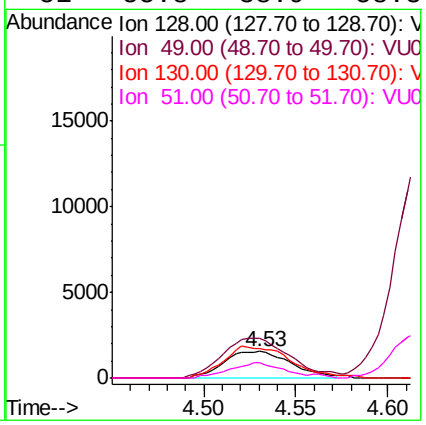
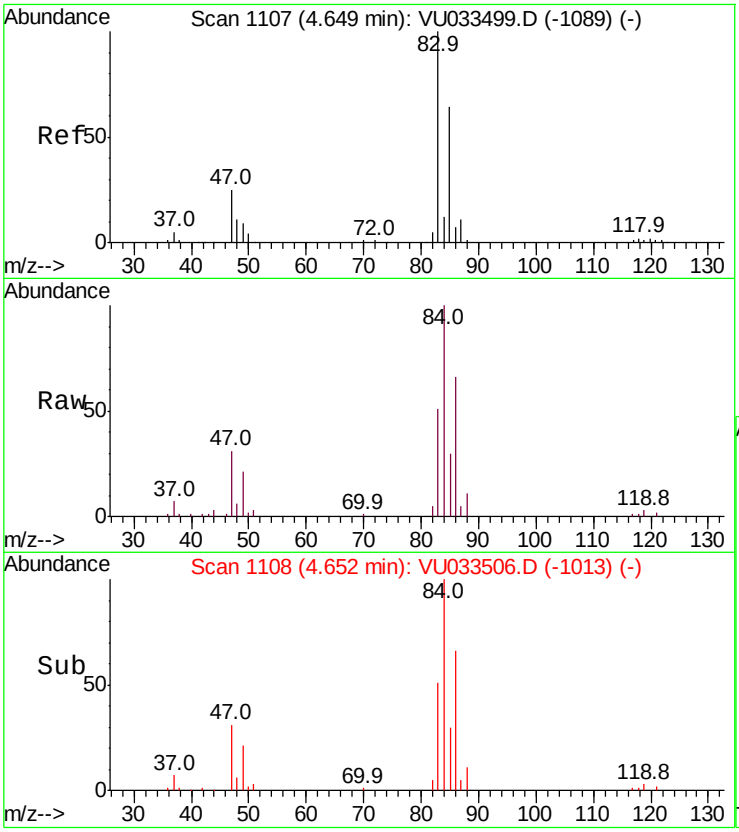


#23
Bromochloromethane
Concen: 3.112 ug/L m
RT: 4.53 min Scan# 1070
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:128 Resp: 3918

Ion	Ratio	Lower	Upper
128	100		
49	147.6	108.4	201.2
130	108.1	89.7	166.5
51	55.8	38.9	58.3

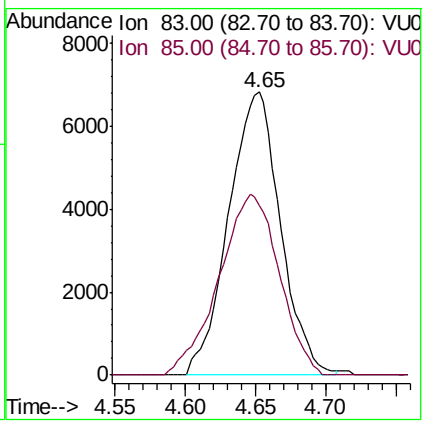




#25
Chloroform
Concen: 4.129 ug/L
RT: 4.65 min Scan# 1108
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 83 Resp: 17532

Ion	Ratio	Lower	Upper
83	100		
85	60.0	45.6	84.8



Instrument :
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ClientSampleId :
MDL06

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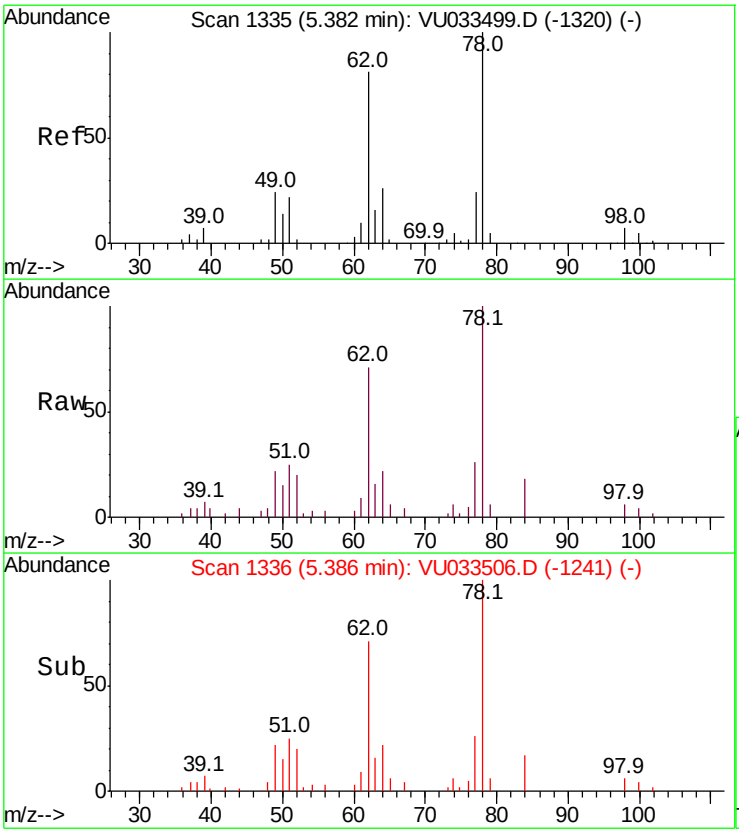
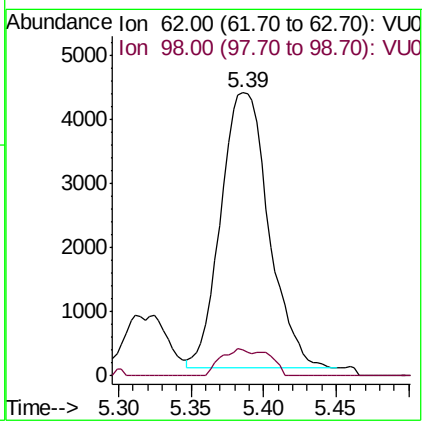
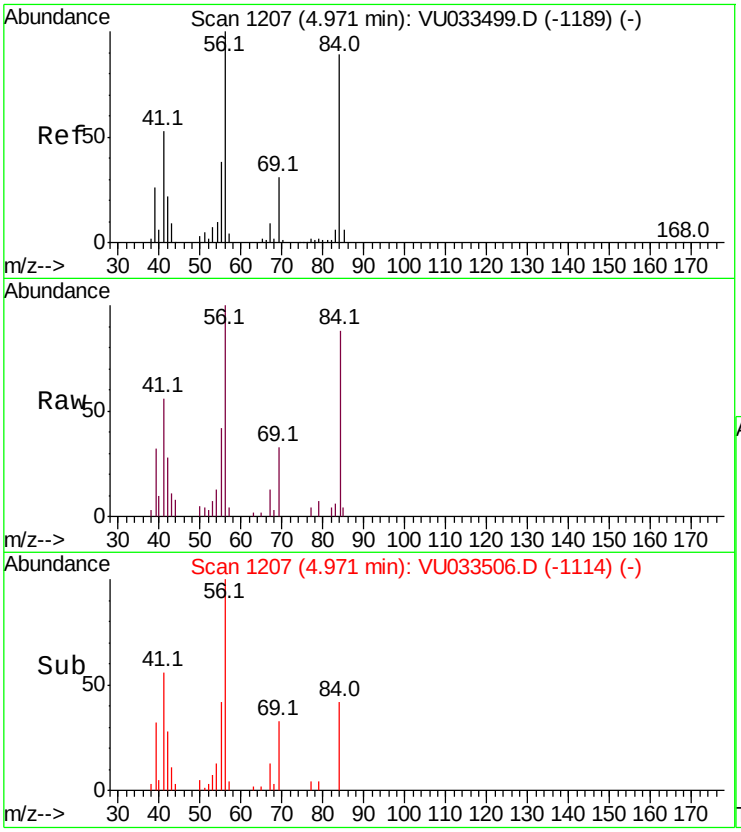


#27
1,2-Dichloroethane
Concen: 3.014 ug/L
RT: 5.39 min Scan# 1336
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 62 Resp: 9855

Ion	Ratio	Lower	Upper
62	100		
98	9.1	7.2	10.8

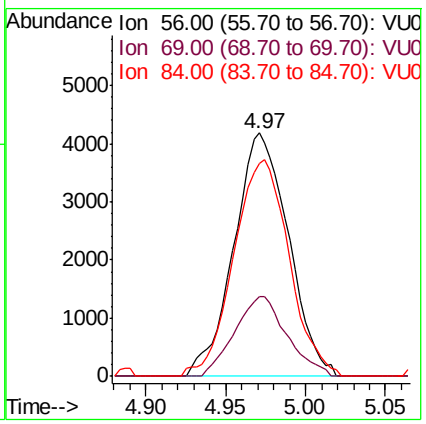




#29
Cyclohexane
Concen: 2.875 ug/L
RT: 4.97 min Scan# 1207
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 56 Resp: 9762

Ion	Ratio	Lower	Upper
56	100		
69	31.4	25.0	37.6
84	89.7	71.6	107.4



Instrument :
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ClientSampleId :
MDL06

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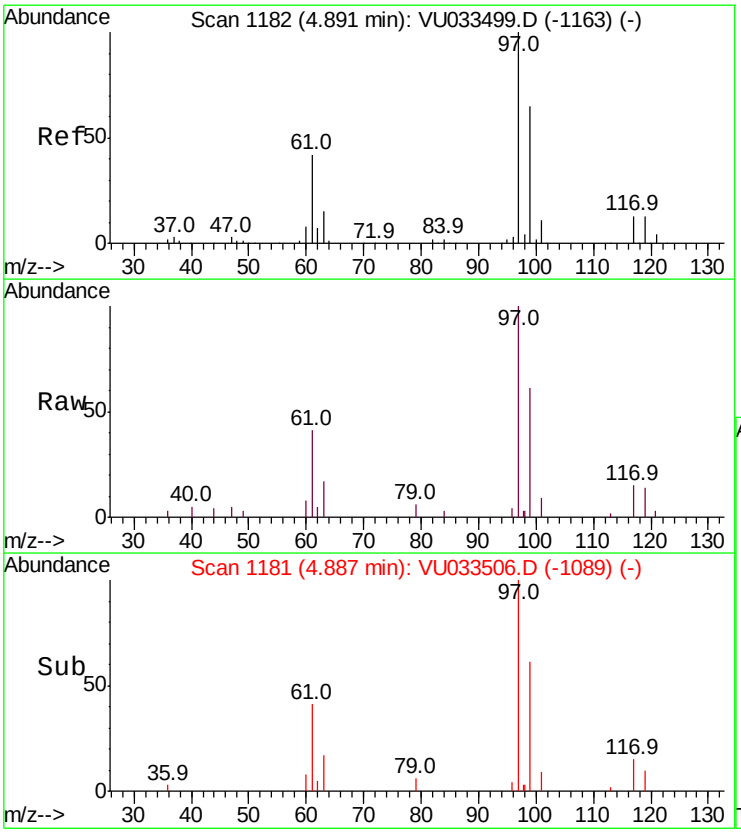
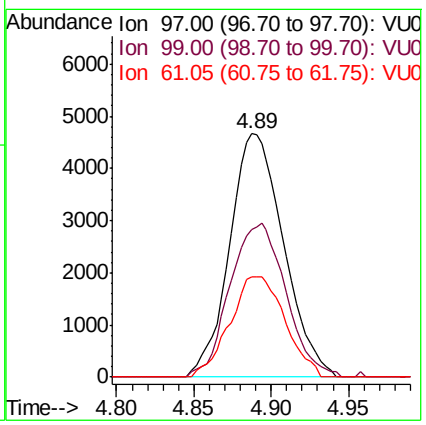
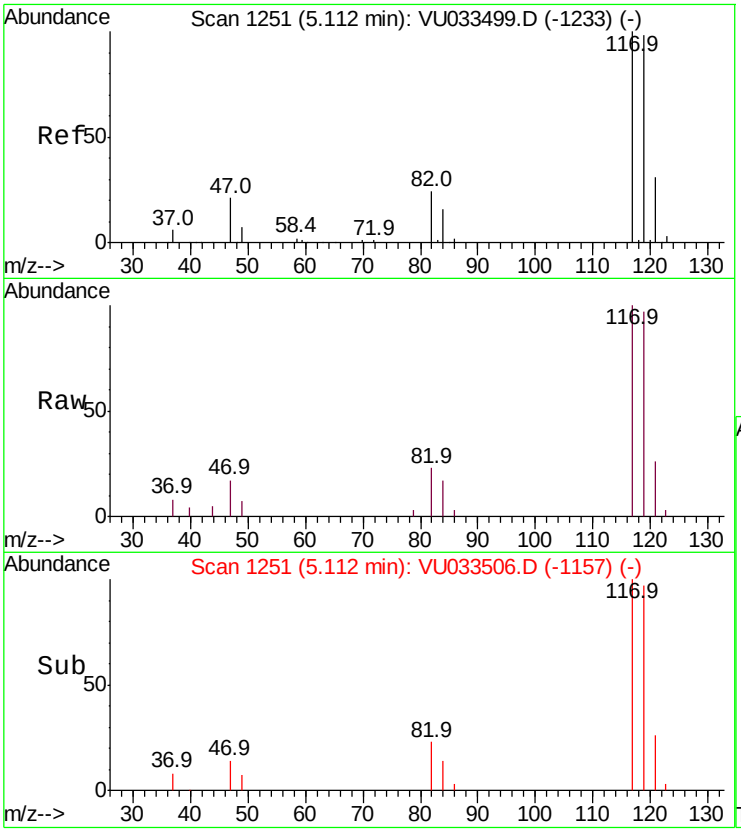


#30
1,1,1-Trichloroethane
Concen: 3.156 ug/L
RT: 4.89 min Scan# 1181
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 97 Resp: 11306

Ion	Ratio	Lower	Upper
97	100		
99	65.6	51.1	76.7
61	42.3	35.5	53.3

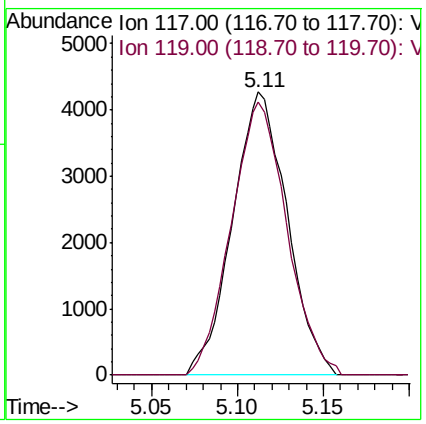




#31
Carbon tetrachloride
Concen: 3.015 ug/L
RT: 5.11 min Scan# 1251
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:117 Resp: 9405

Ion	Ratio	Lower	Upper
117	100		
119	98.2	77.0	115.4



Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
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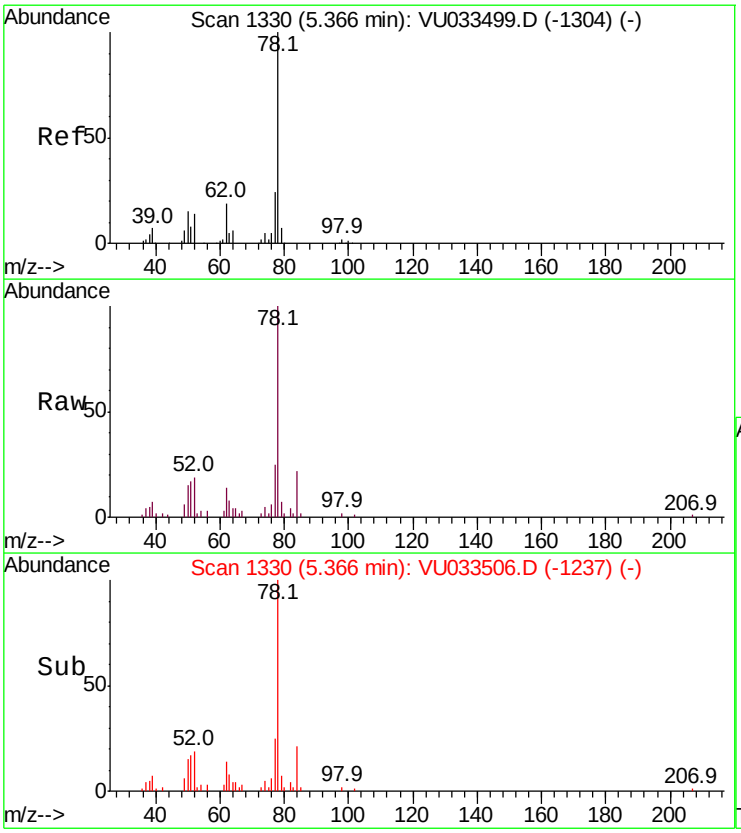
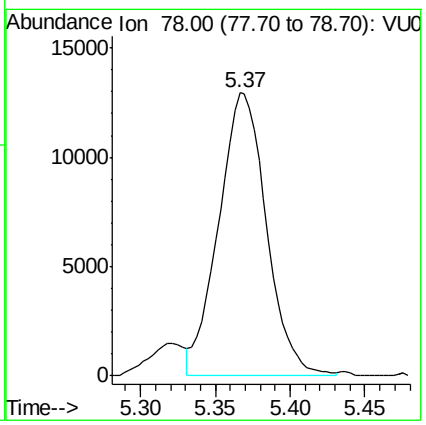
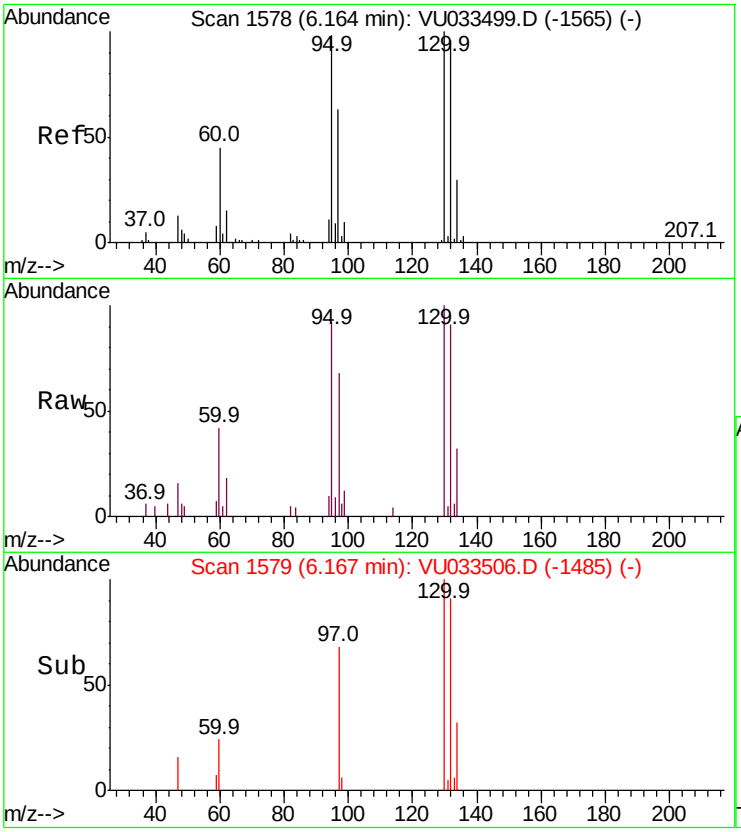


#33
Benzene
Concen: 3.209 ug/L
RT: 5.37 min Scan# 1330
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 78 Resp: 28825

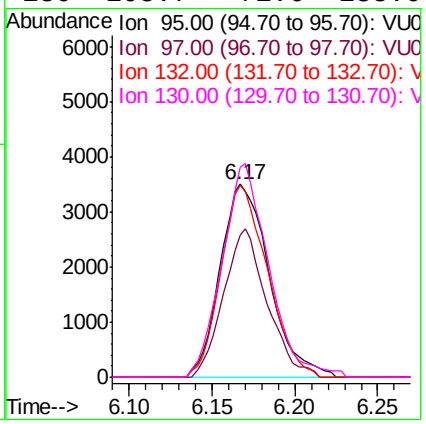




#34
Trichloroethene
Concen: 3.049 ug/L
RT: 6.17 min Scan# 1579
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 95 Resp: 7223

Ion	Ratio	Lower	Upper
95	100		
97	73.8	44.7	83.1
132	99.3	66.8	124.0
130	108.7	71.6	133.0



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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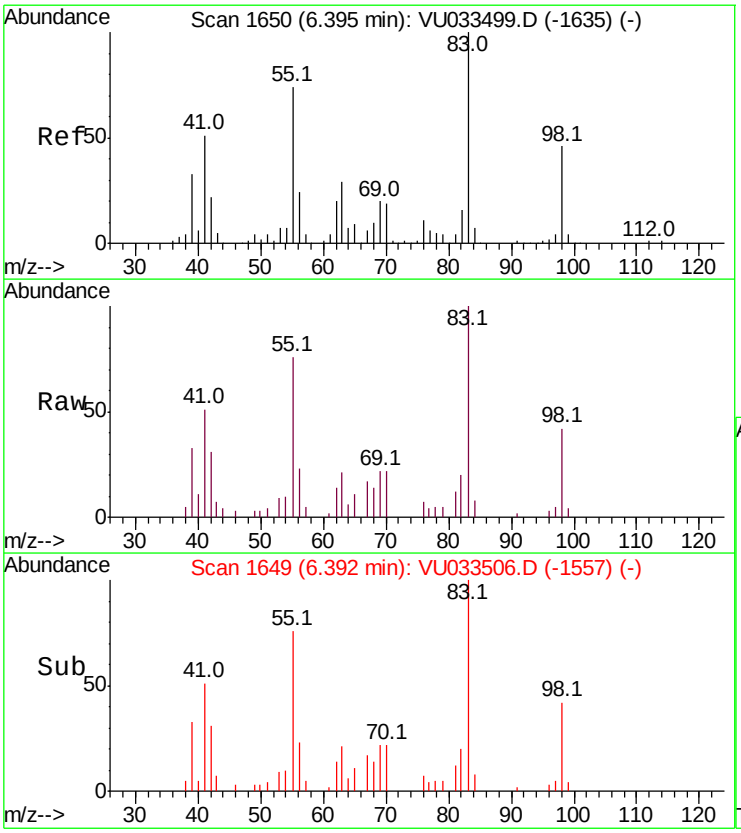
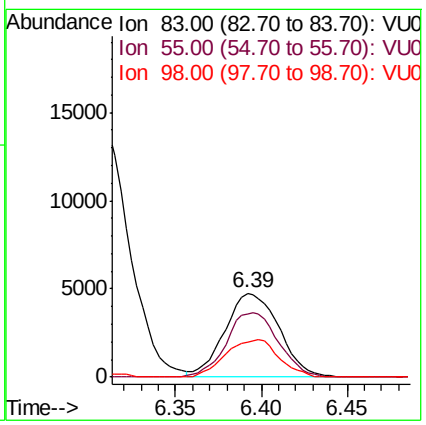
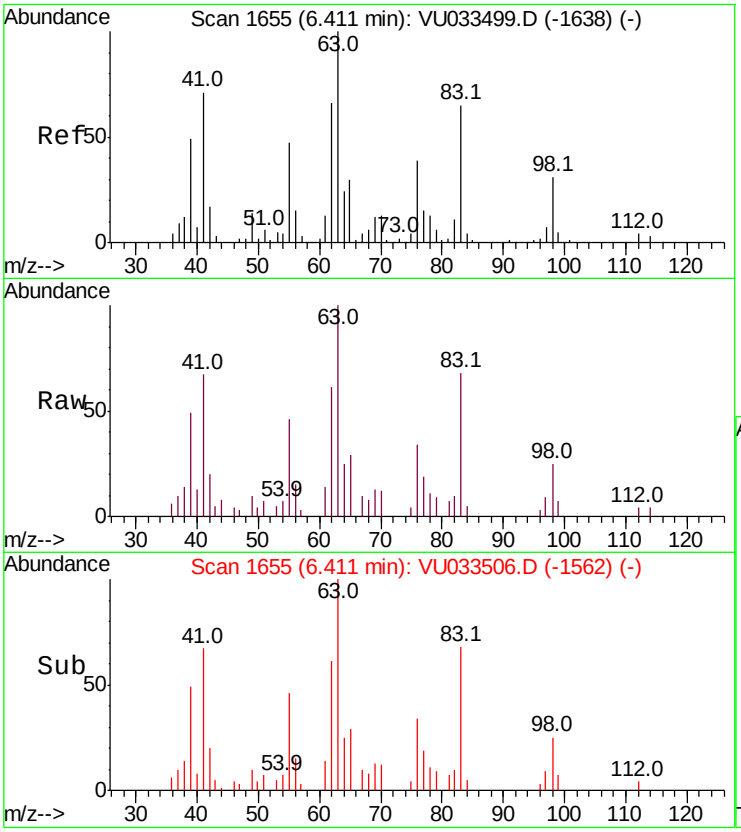


#35
Methylcyclohexane
Concen: 2.823 ug/L
RT: 6.39 min Scan# 1649
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 83 Resp: 10438

Ion	Ratio	Lower	Upper
83	100		
55	73.8	60.2	90.4
98	43.8	36.5	54.7

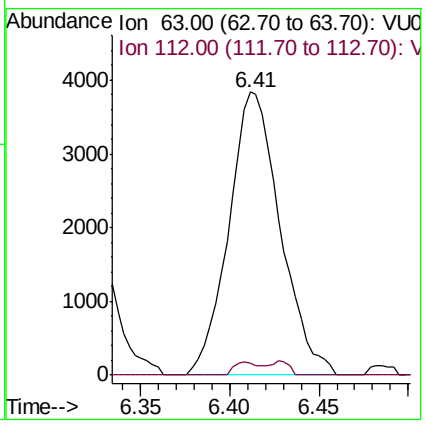




#37
1,2-Dichloropropane
Concen: 3.205 ug/L
RT: 6.41 min Scan# 1655
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 63 Resp: 7704

Ion	Ratio	Lower	Upper
63	100		
112	2.5	3.0	4.6#



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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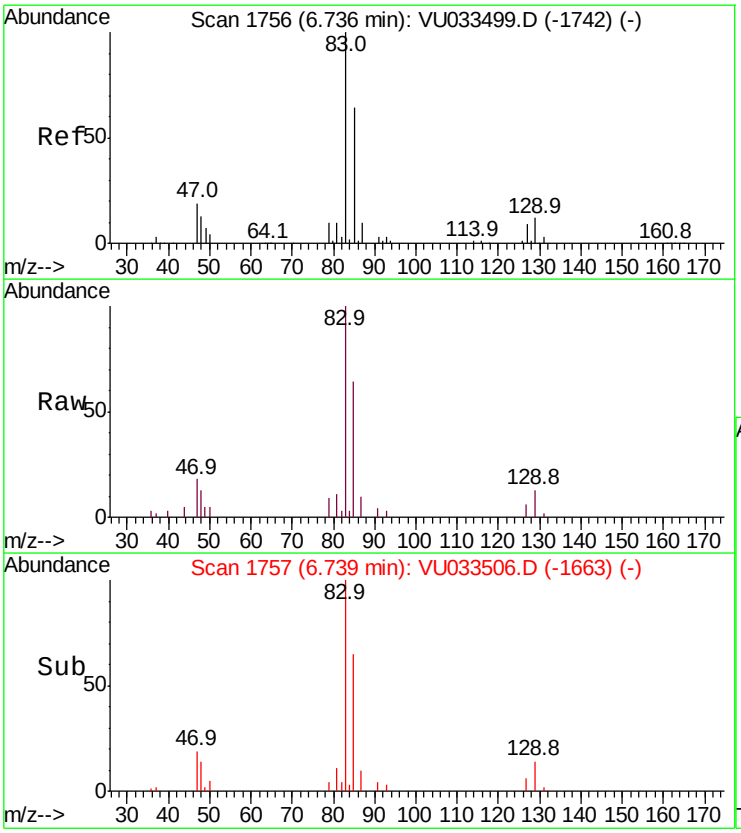
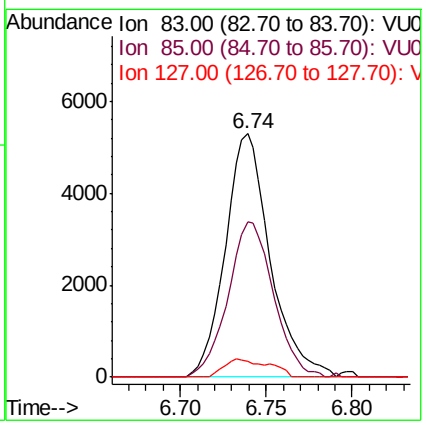
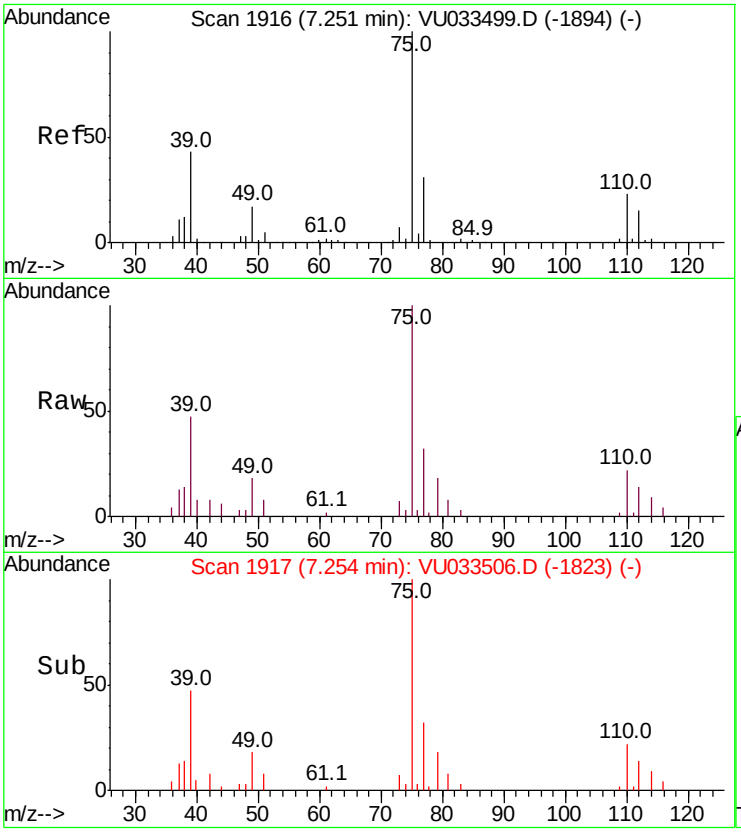


#38
Bromodichloromethane
Concen: 3.099 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 83 Resp: 9632

Ion	Ratio	Lower	Upper
83	100		
85	63.6	45.1	83.9
127	6.3	7.2	10.8#

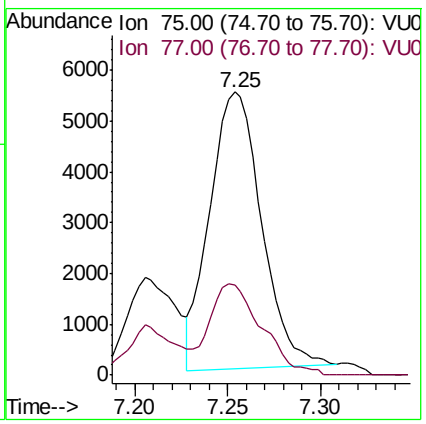




#39
cis-1,3-Dichloropropene
Concen: 2.820 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 75 Resp: 10581

Ion	Ratio	Lower	Upper
75	100		
77	32.0	22.3	41.5



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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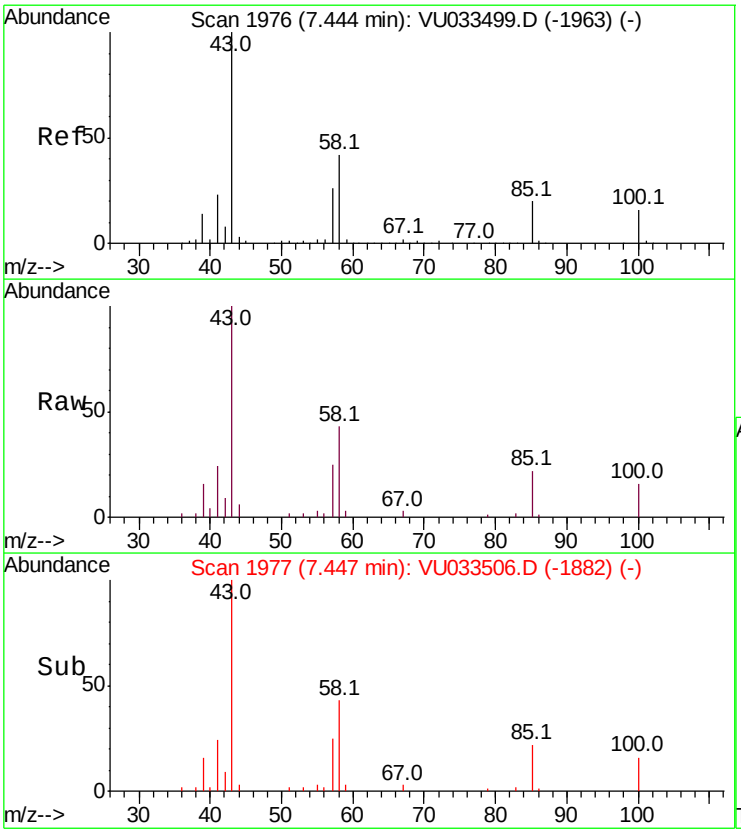
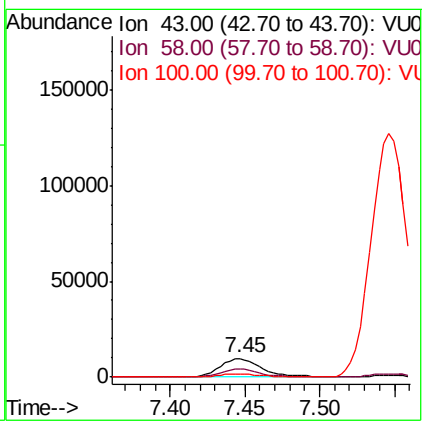
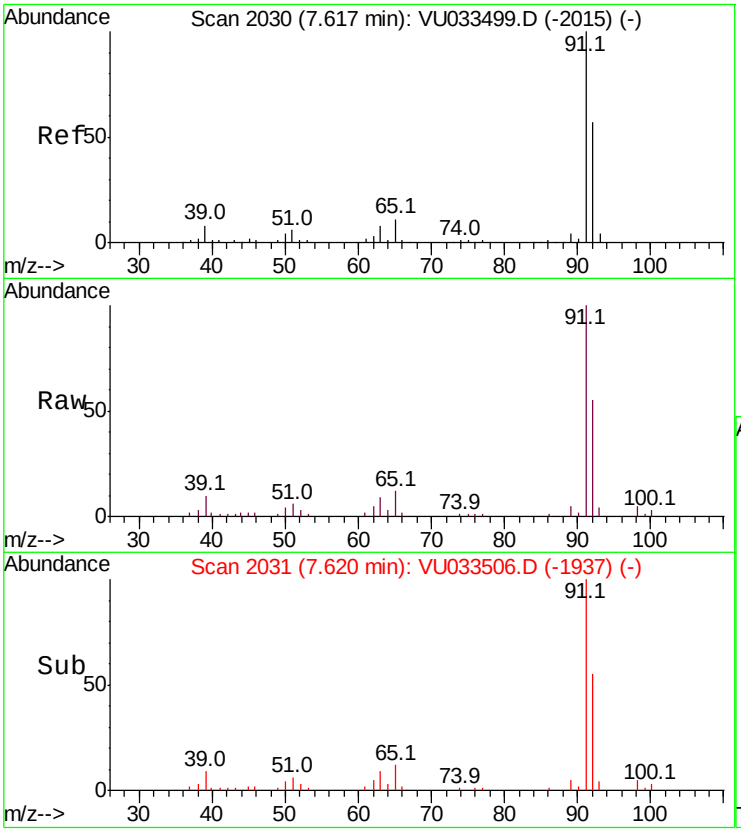


#40
4-Methyl-2-pentanone
Concen: 5.671 ug/L
RT: 7.45 min Scan# 1977
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 43 Resp: 18825

Ion	Ratio	Lower	Upper
43	100		
58	40.1	32.8	49.2
100	16.6	12.9	19.3

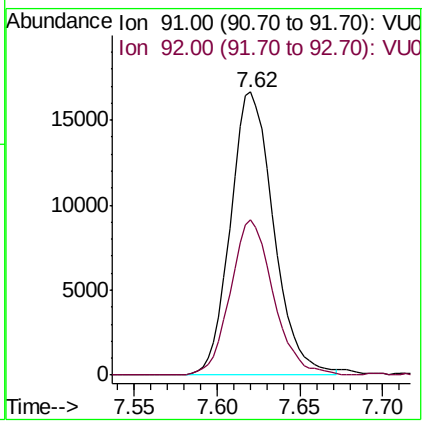




#42
Toluene
Concen: 3.127 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 91 Resp: 30195

Ion	Ratio	Lower	Upper
91	100		
92	55.0	40.2	74.6



Instrument :
MSVOA_U
ClientSampleId :
MDL06

Manual Integrations APPROVED
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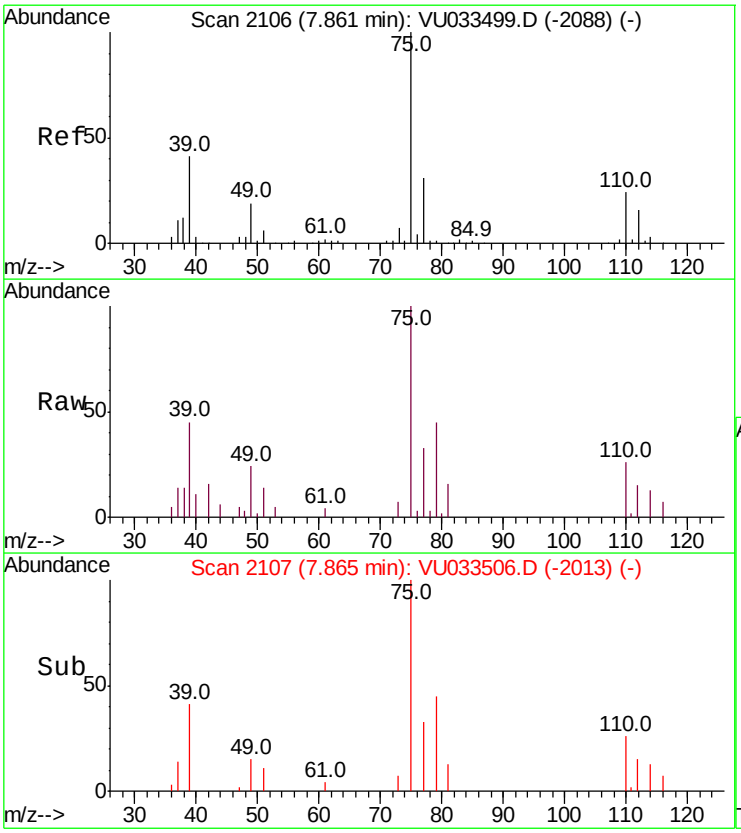
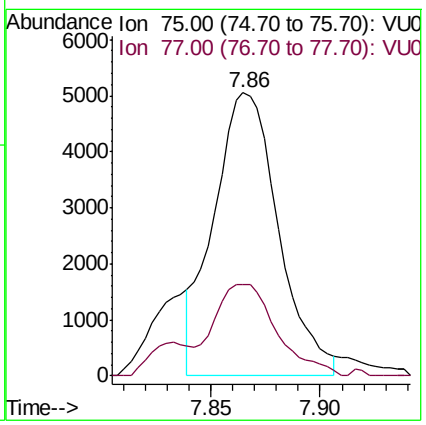
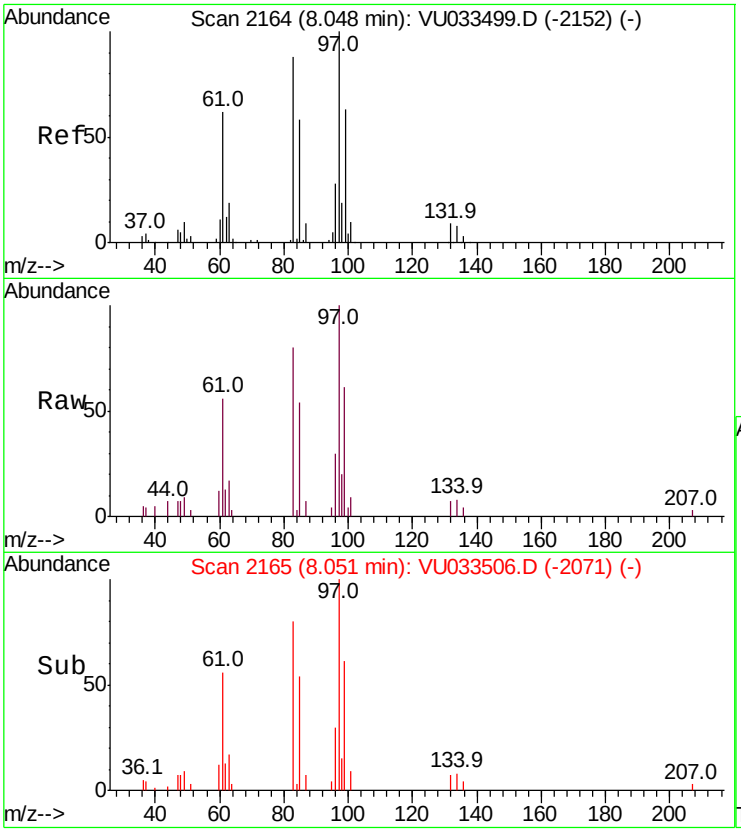


#44
trans-1,3-Dichloropropene
Concen: 3.072 ug/L m
RT: 7.86 min Scan# 2107
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 75 Resp: 10418

Ion	Ratio	Lower	Upper
75	100		
77	32.5	22.7	42.1

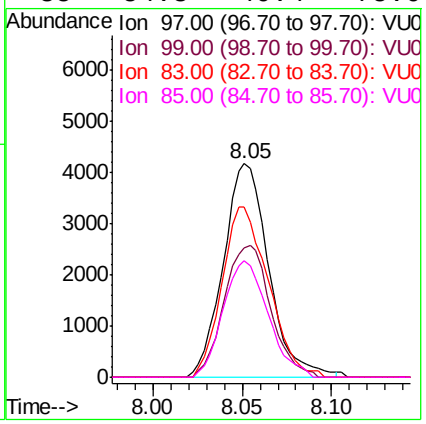




#45
1,1,2-Trichloroethane
Concen: 3.237 ug/L
RT: 8.05 min Scan# 2165
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 97 Resp: 7387

Ion	Ratio	Lower	Upper
97	100		
99	60.7	44.4	82.4
83	79.8	61.5	114.1
85	54.3	40.4	75.0



Instrument :
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ClientSampleId :
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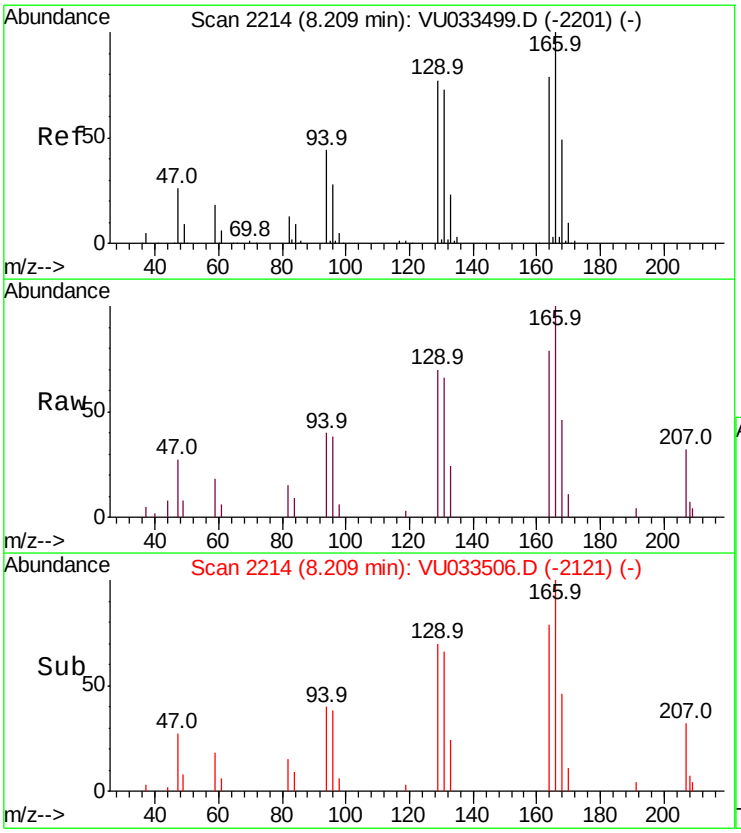
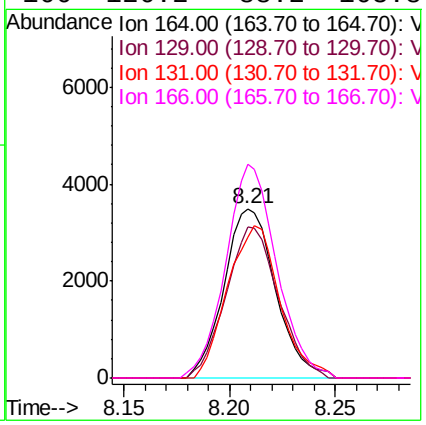
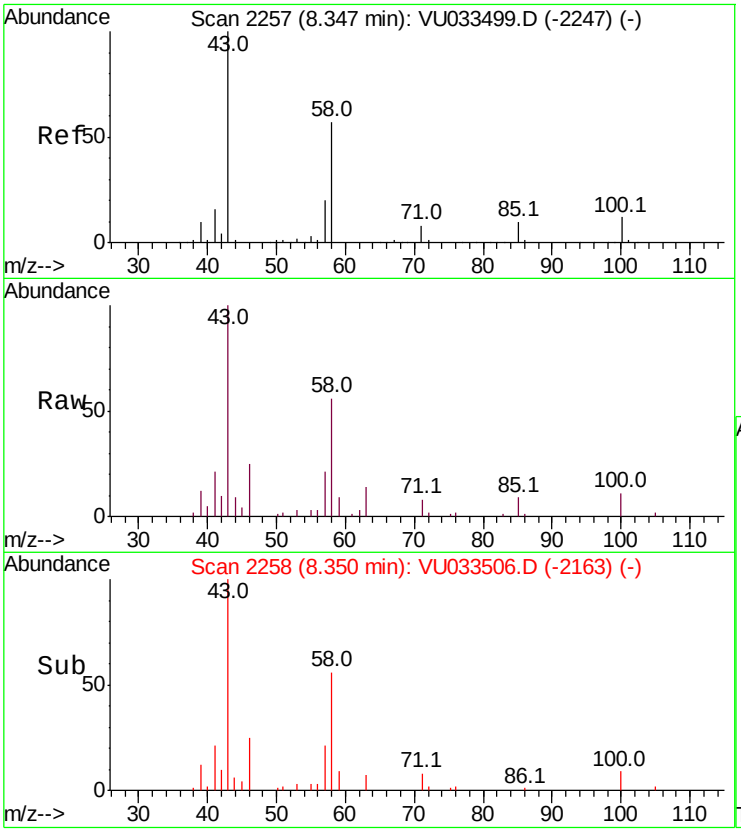


#46
Tetrachloroethene
Concen: 3.070 ug/L
RT: 8.21 min Scan# 2214
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:164 Resp: 5939

Ion	Ratio	Lower	Upper
164	100		
129	88.9	65.5	121.7
131	83.6	63.3	117.7
166	126.2	88.2	163.8

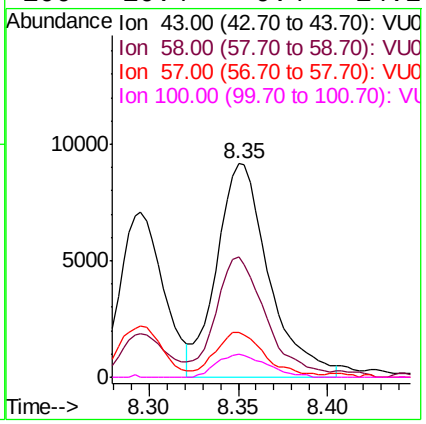




#48
2-Hexanone
Concen: 6.948 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 43 Resp: 18642

Ion	Ratio	Lower	Upper
43	100		
58	49.8	45.8	68.6
57	20.4	15.8	23.6
100	10.4	9.4	14.2



Instrument :
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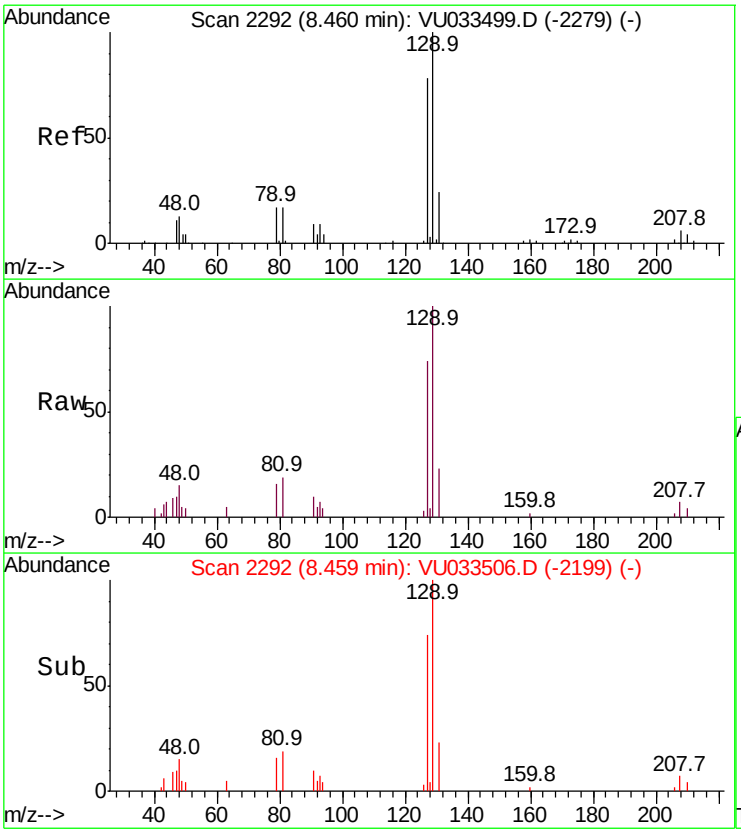
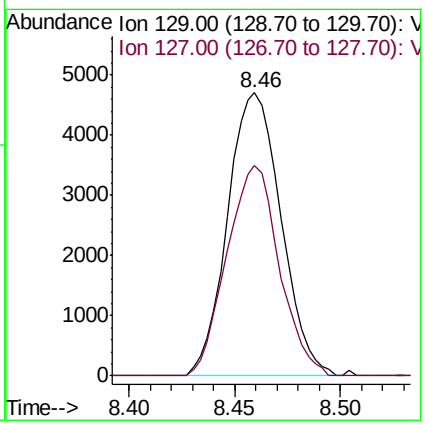
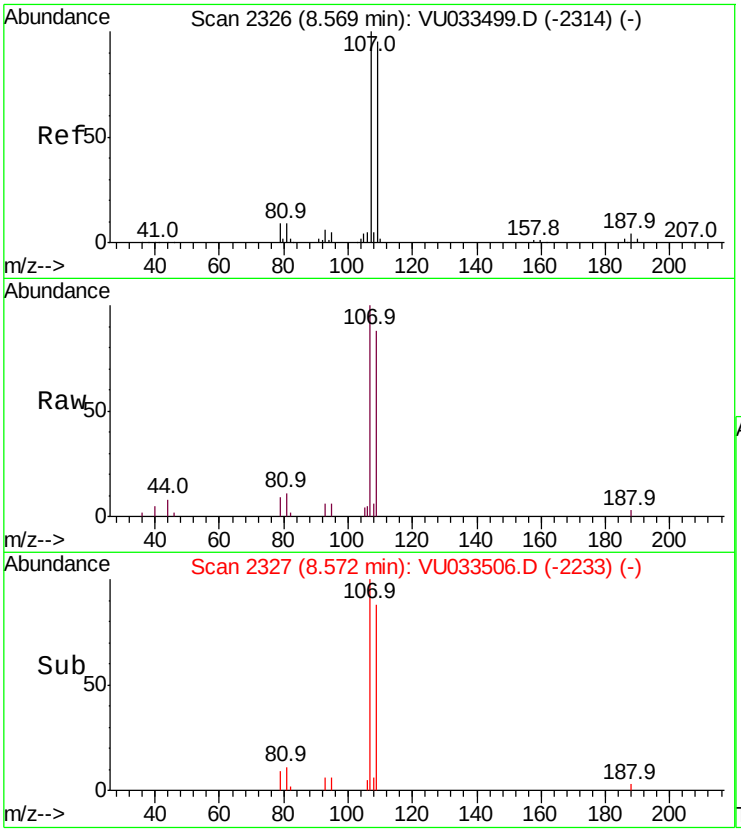


#49
Dibromochloromethane
Concen: 3.193 ug/L
RT: 8.46 min Scan# 2292
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:129 Resp: 8291

Ion	Ratio	Lower	Upper
129	100		
127	74.5	53.8	99.8

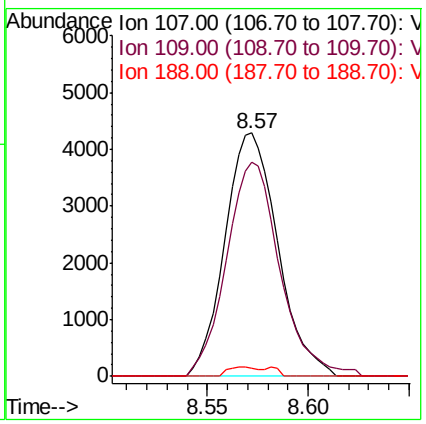




#50
1,2-Dibromoethane
Concen: 3.113 ug/L
RT: 8.57 min Scan# 2327
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:107 Resp: 7870

Ion	Ratio	Lower	Upper
107	100		
109	88.1	66.8	124.0
188	3.5	3.0	4.4



Instrument :
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ClientSampleId :
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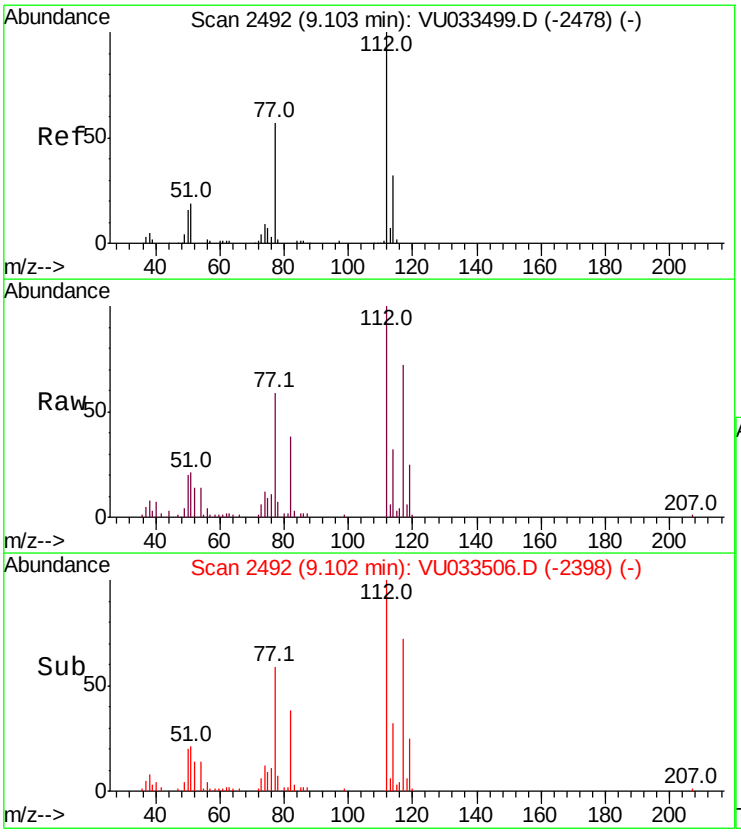
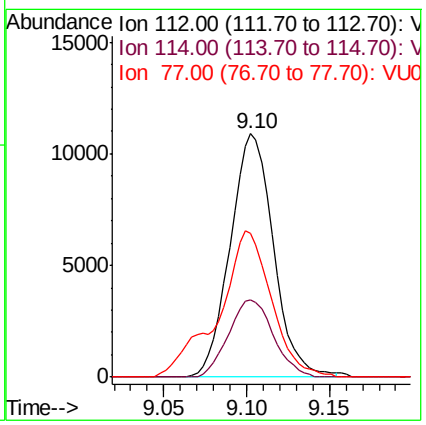
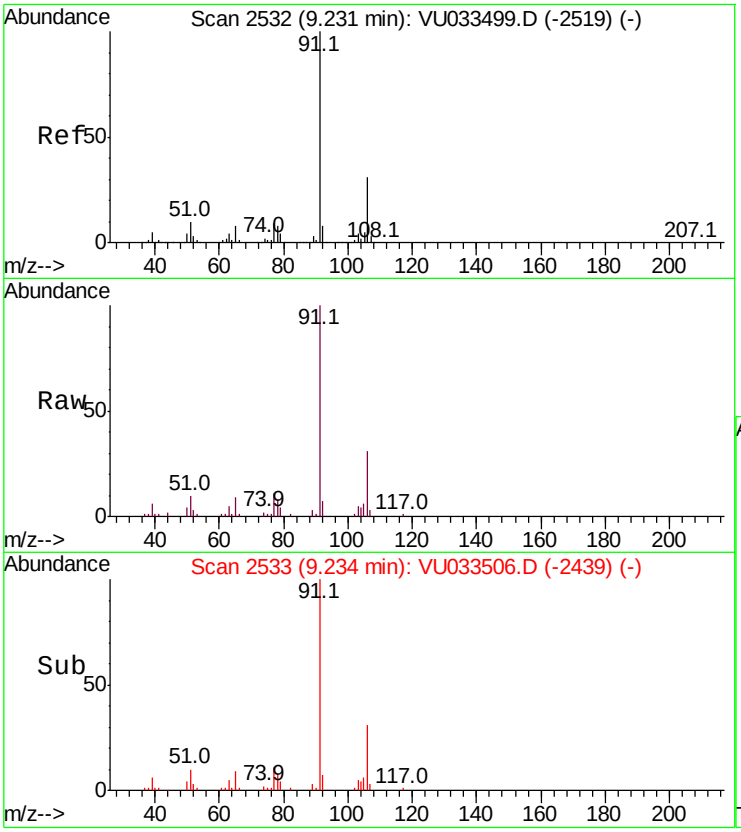


#51
Chlorobenzene
Concen: 3.129 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:112 Resp: 19787

Ion	Ratio	Lower	Upper
112	100		
114	31.9	22.3	41.5
77	59.3	45.6	68.4

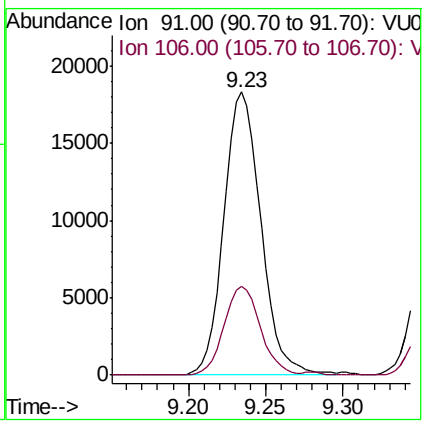




#52
Ethylbenzene
Concen: 2.928 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 91 Resp: 30452

Ion	Ratio	Lower	Upper
91	100		
106	31.2	22.2	41.2



Instrument :
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ClientSampleId :
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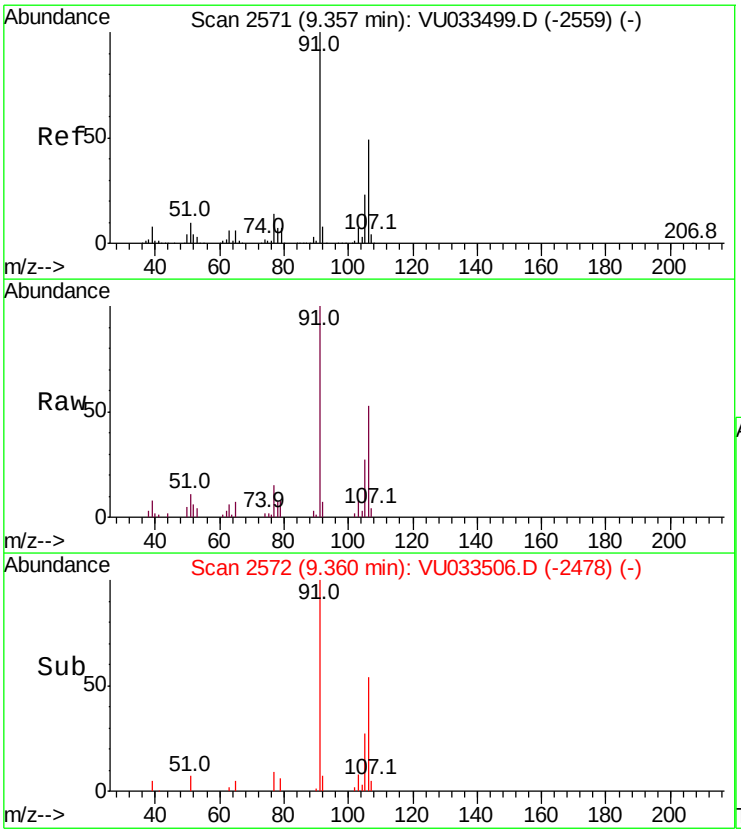
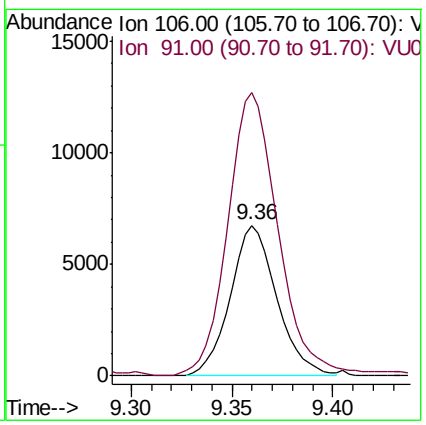
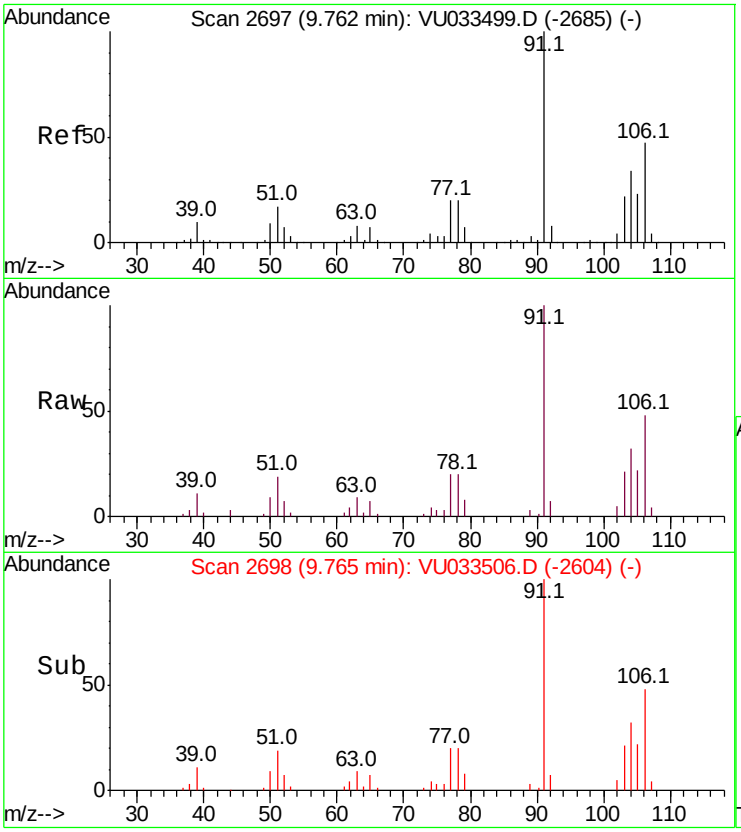


#53
m,p-Xylene
Concen: 2.740 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:106 Resp: 10939

Ion	Ratio	Lower	Upper
106	100		
91	188.0	143.0	265.6

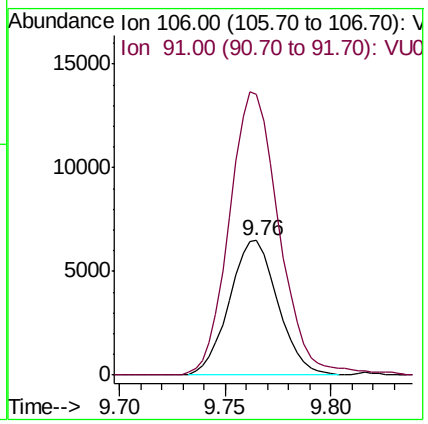




#54
o-xylene
Concen: 2.686 ug/L
RT: 9.76 min Scan# 2698
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:106 Resp: 10404

Ion	Ratio	Lower	Upper
106	100		
91	208.8	148.4	275.6



Instrument :
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ClientSampleId :
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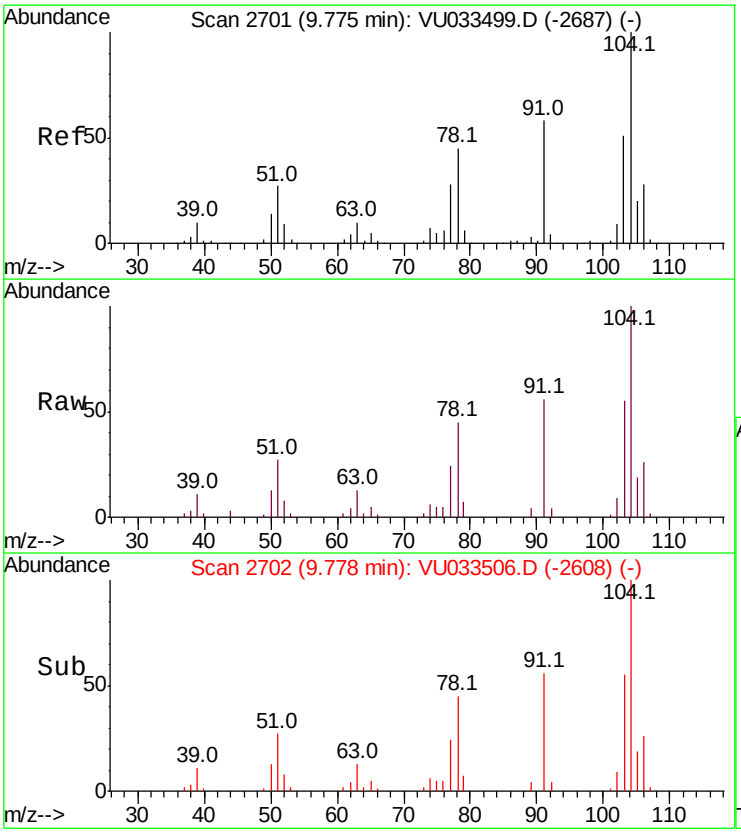
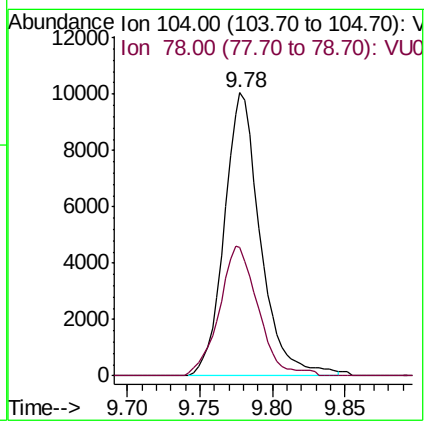
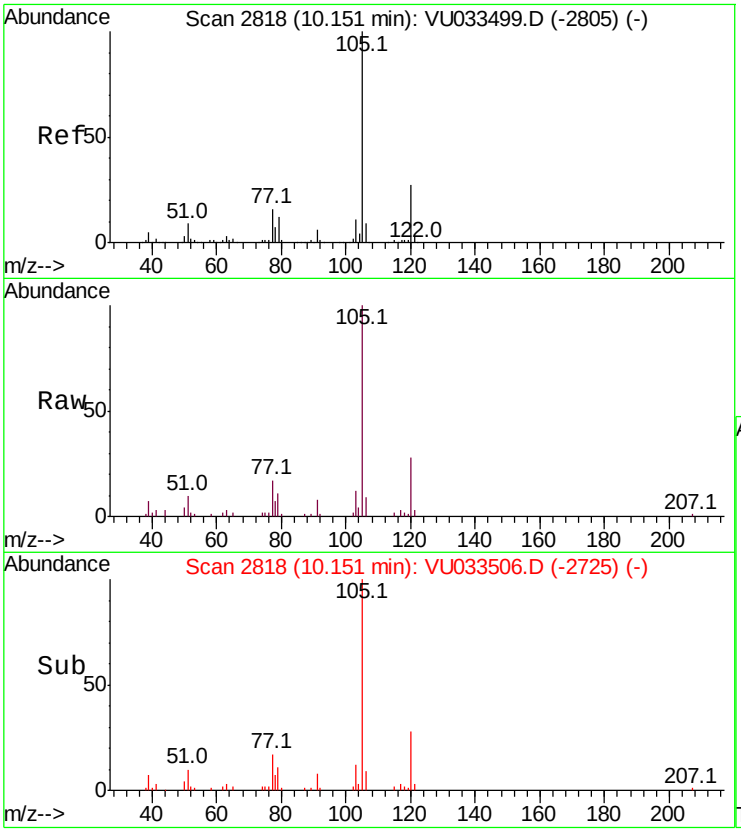


#55
Styrene
Concen: 2.644 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:104 Resp: 17394

Ion	Ratio	Lower	Upper
104	100		
78	45.4	32.2	59.8

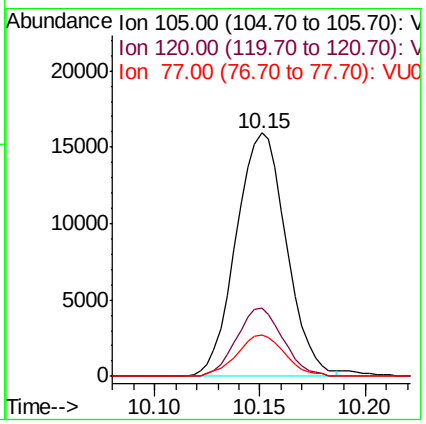




#56
Isopropylbenzene
Concen: 2.610 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:105 Resp: 26413

Ion	Ratio	Lower	Upper
105	100		
120	25.8	21.4	32.0
77	16.2	12.5	18.7



Instrument :
MSVOA_U
ClientSampleId :
MDL06

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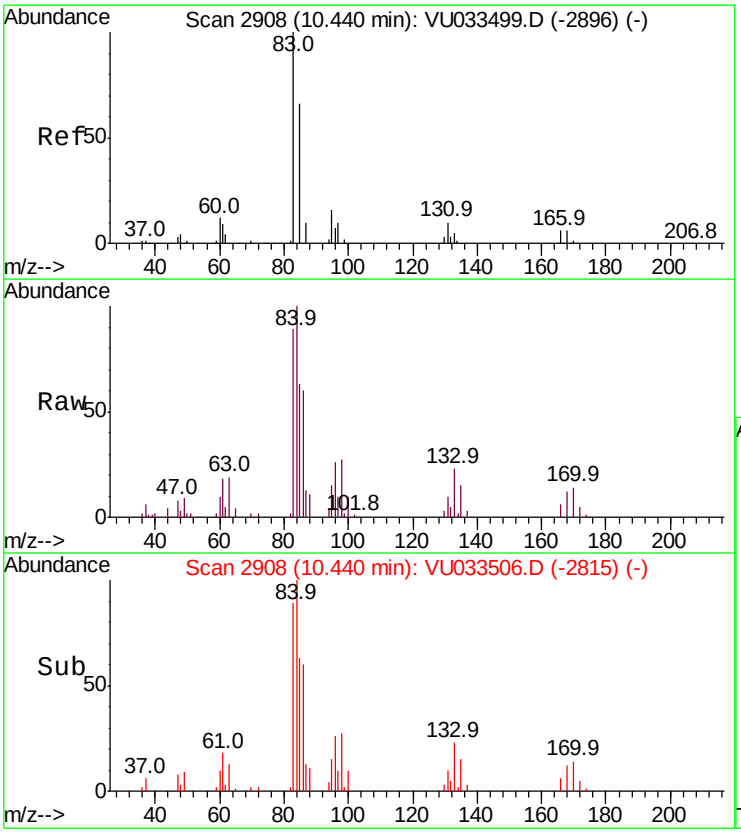
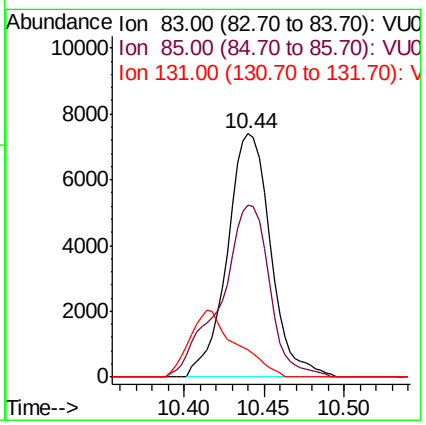
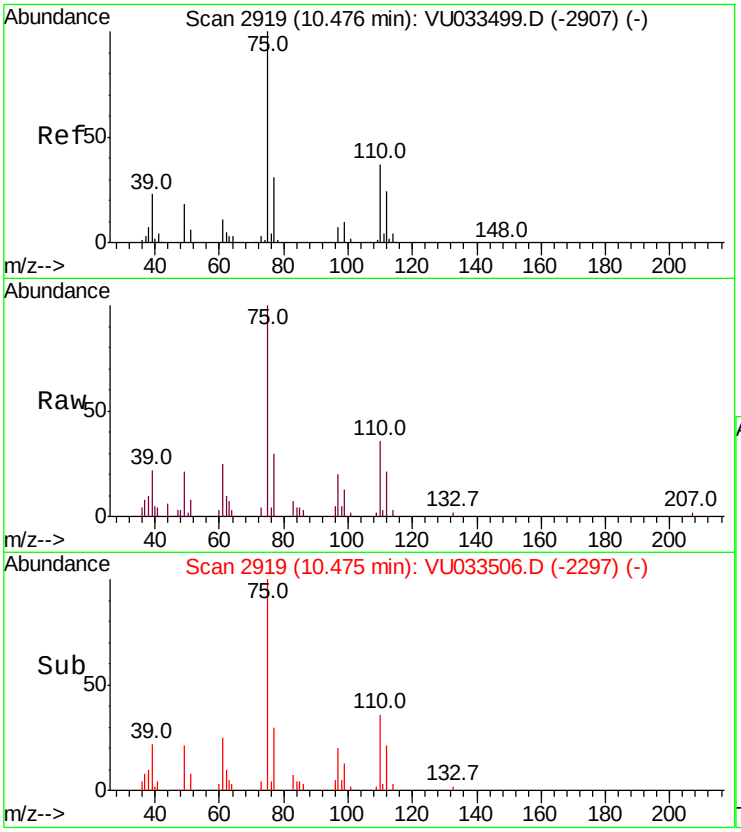


#58
1,1,2,2-Tetrachloroethane
Concen: 3.340 ug/L
RT: 10.44 min Scan# 2908
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 83 Resp: 13749

Ion	Ratio	Lower	Upper
83	100		
85	70.8	45.4	84.4
131	11.0	7.9	11.9





#59
1,2,3-Trichloropropane
Concen: 3.189 ug/L
RT: 10.48 min Scan# 2919
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 75 Resp: 10121

Ion	Ratio	Lower	Upper
75	100		
77	31.2	25.8	38.6

Instrument :
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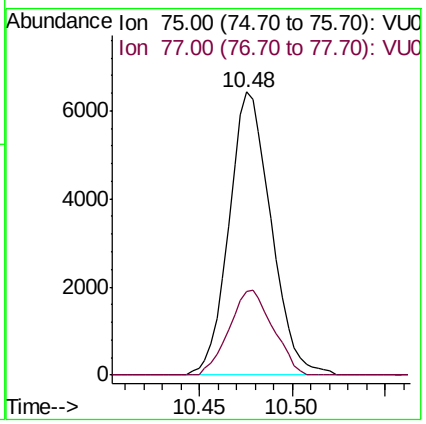
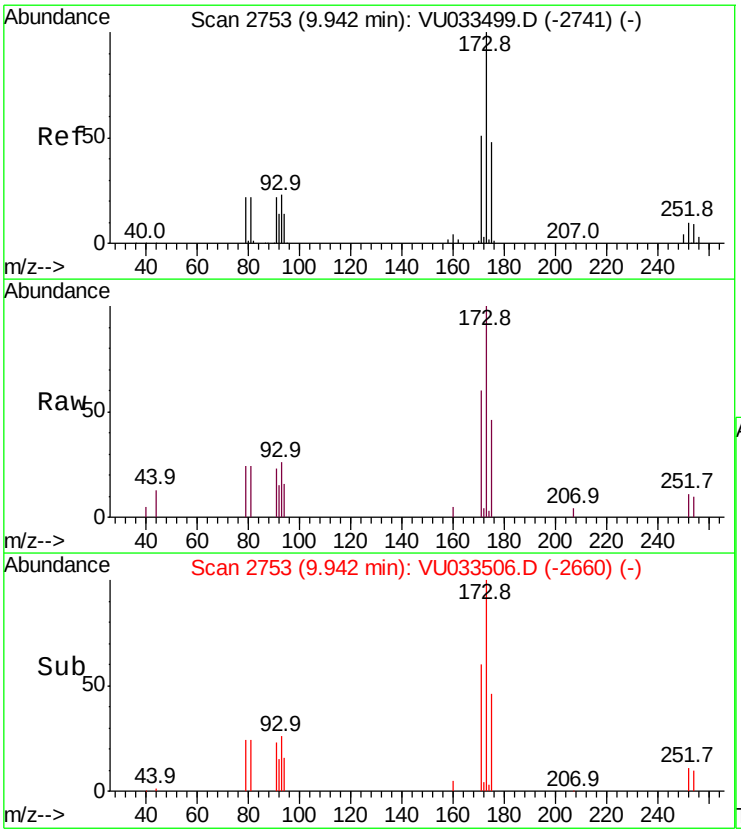
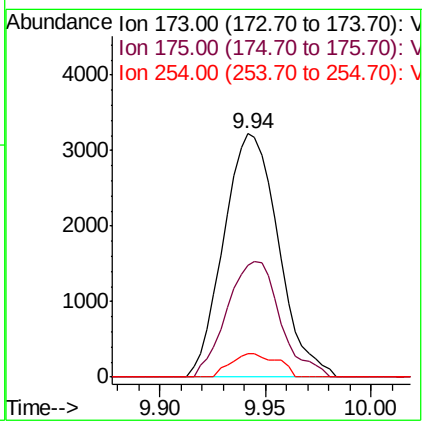


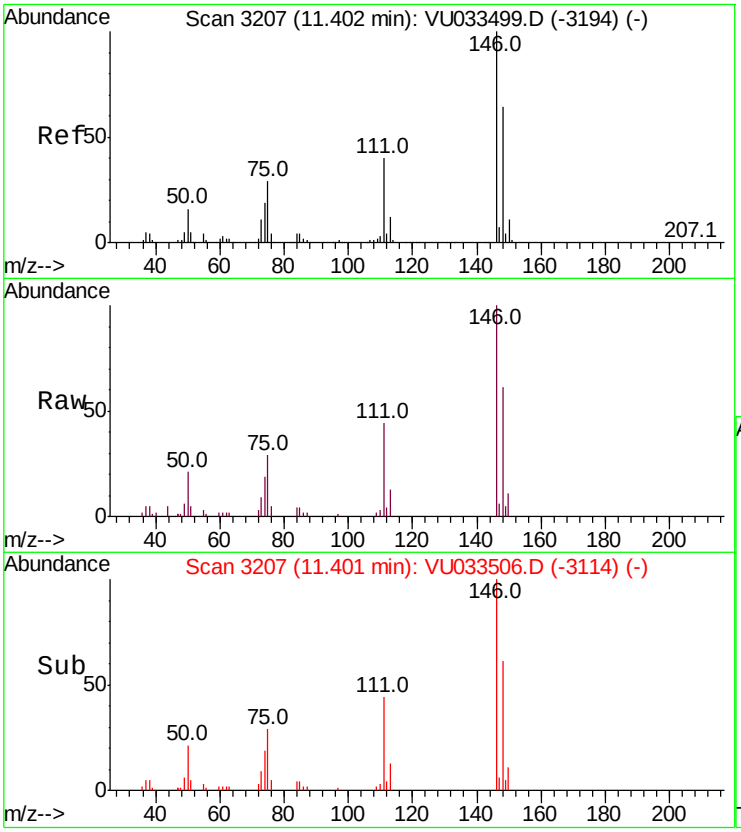


#61
Bromoform
Concen: 3.079 ug/L
RT: 9.94 min Scan# 2753
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:173 Resp: 5800

Ion	Ratio	Lower	Upper
173	100		
175	46.3	38.7	58.1
254	8.2	7.5	11.3

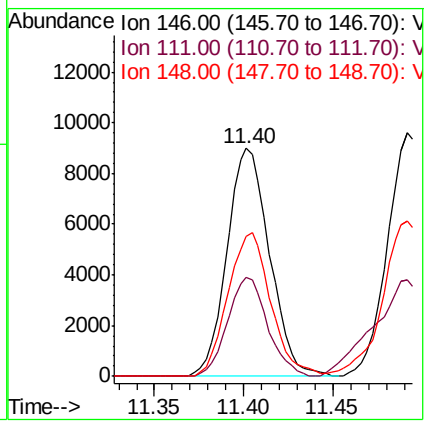




#62
1,3-Dichlorobenzene
Concen: 3.107 ug/L
RT: 11.40 min Scan# 3207
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:146 Resp: 14878

Ion	Ratio	Lower	Upper
146	100		
111	43.6	28.1	52.1
148	61.4	45.0	83.6



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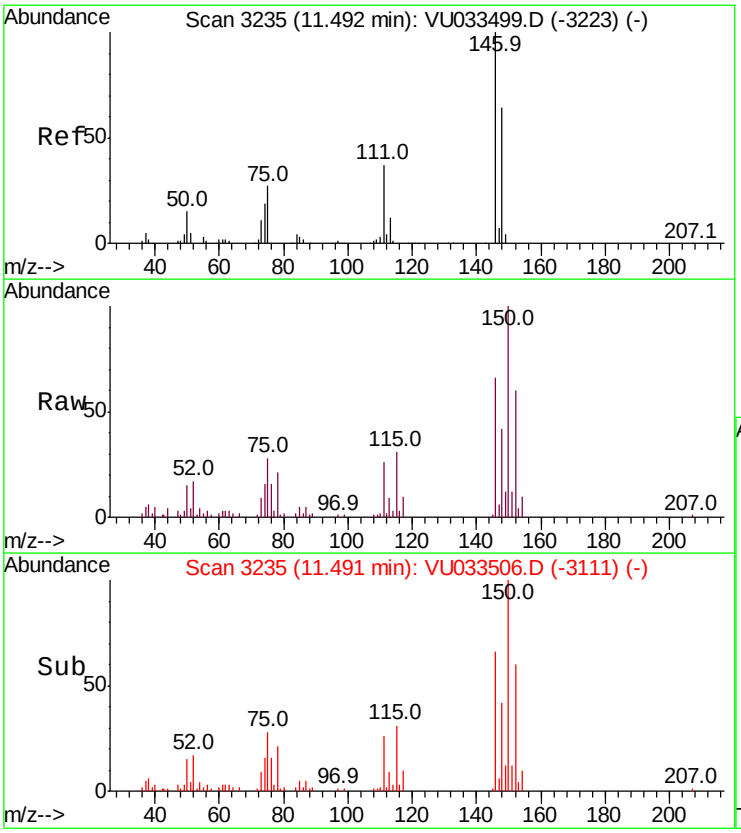
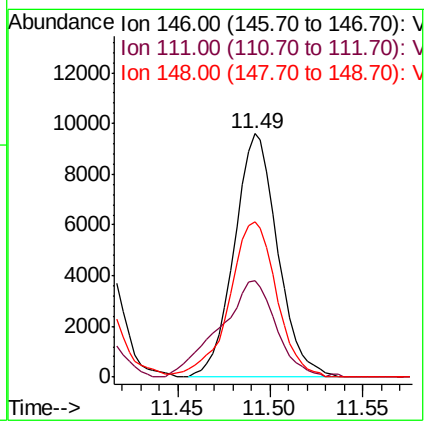
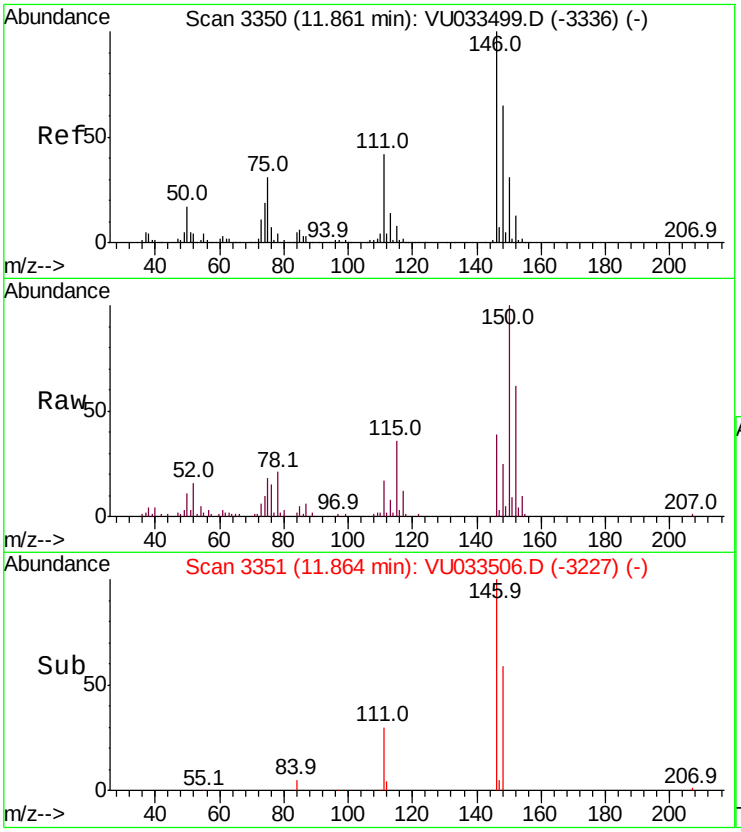


#63
1,4-Dichlorobenzene
Concen: 3.148 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:146 Resp: 15660

Ion	Ratio	Lower	Upper
146	100		
111	39.7	27.2	50.4
148	63.8	44.5	82.7





#65
1,2-Dichlorobenzene
Concen: 3.238 ug/L
RT: 11.86 min Scan# 3351
Delta R.T. -0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:146 Resp: 15680

Ion	Ratio	Lower	Upper
146	100		
111	44.7	31.7	47.5
148	65.2	50.3	75.5

Instrument :
MSVOA_U
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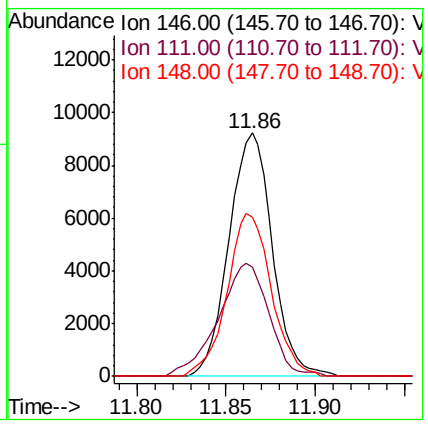
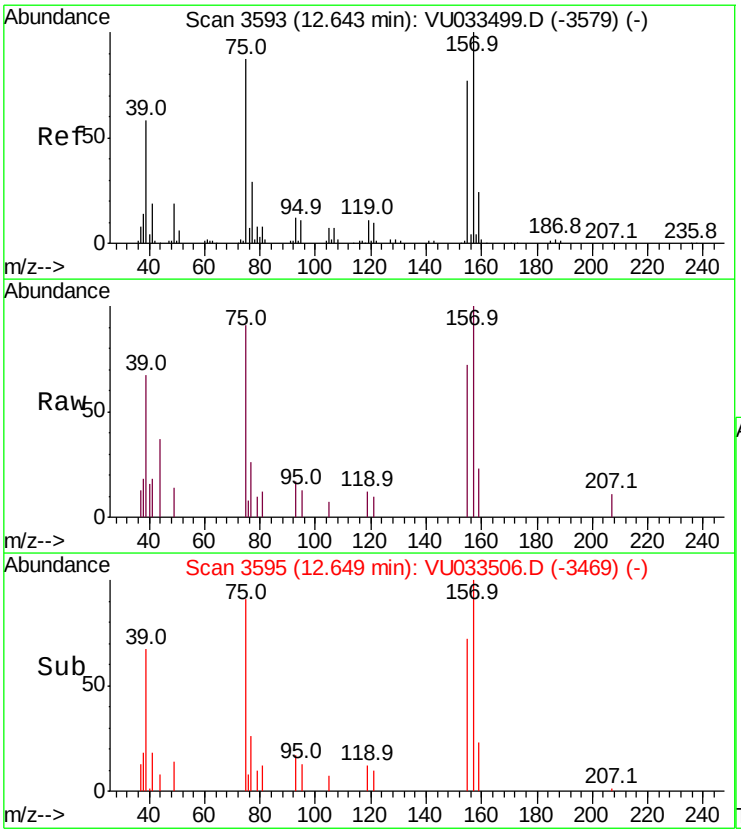
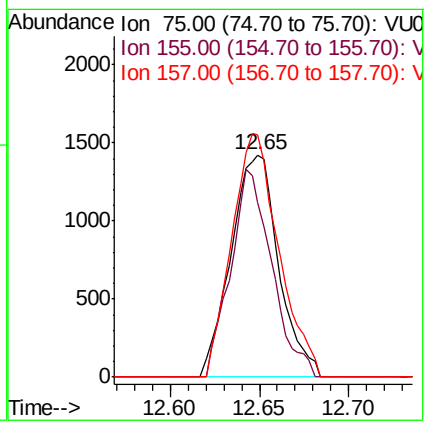


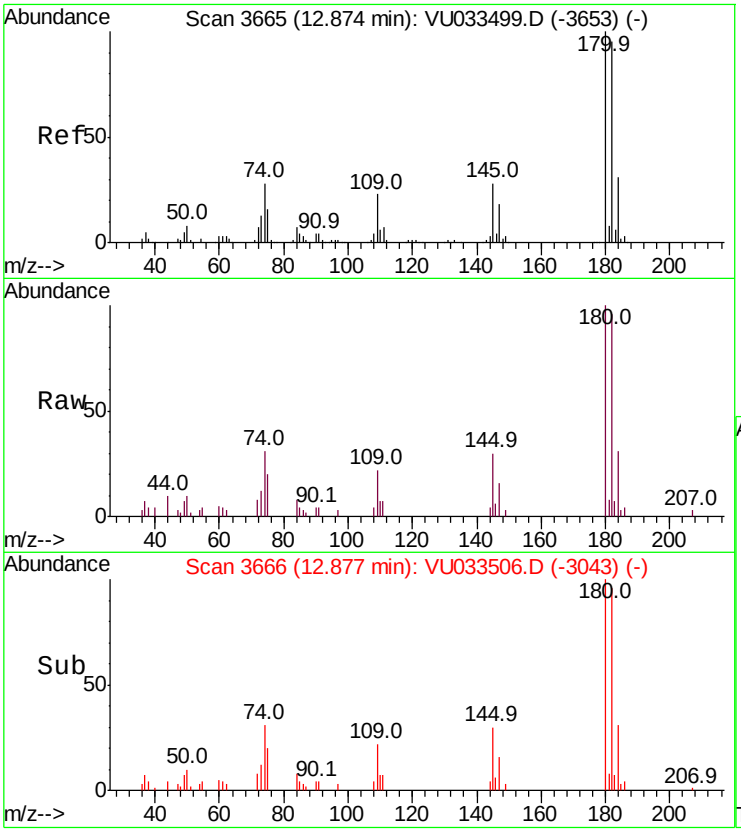


#66
1,2-Dibromo-3-chloropropane
Concen: 2.948 ug/L
RT: 12.65 min Scan# 3595
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion: 75 Resp: 2637

Ion	Ratio	Lower	Upper
75	100		
155	78.6	69.4	104.0
157	109.4	91.8	137.8

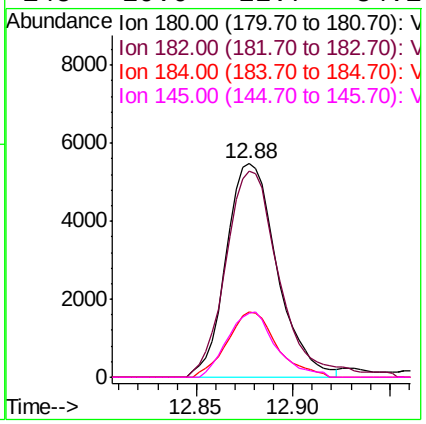




#67
1,3,5-Trichlorobenzene
Concen: 2.593 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:180 Resp: 10018

Ion	Ratio	Lower	Upper
180	100		
182	100.7	75.6	113.4
184	29.8	24.2	36.2
145	29.0	22.7	34.1



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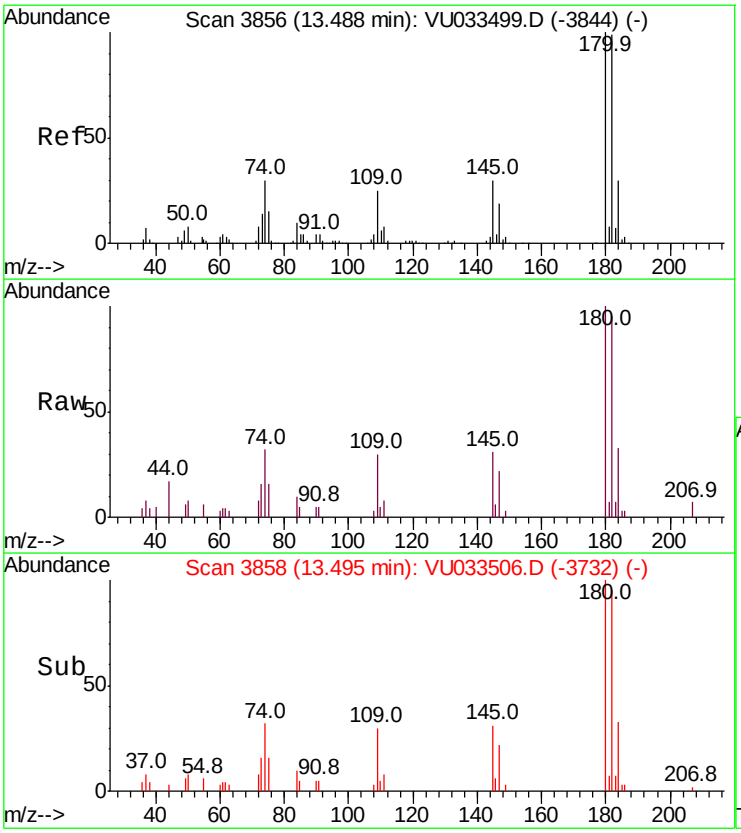
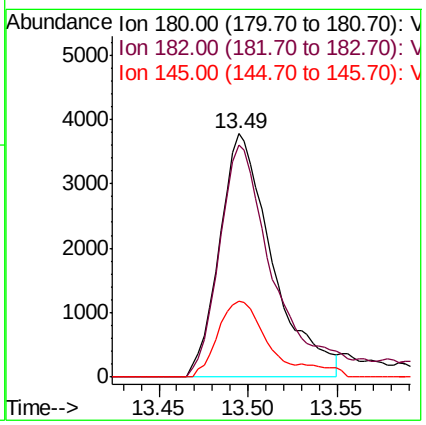
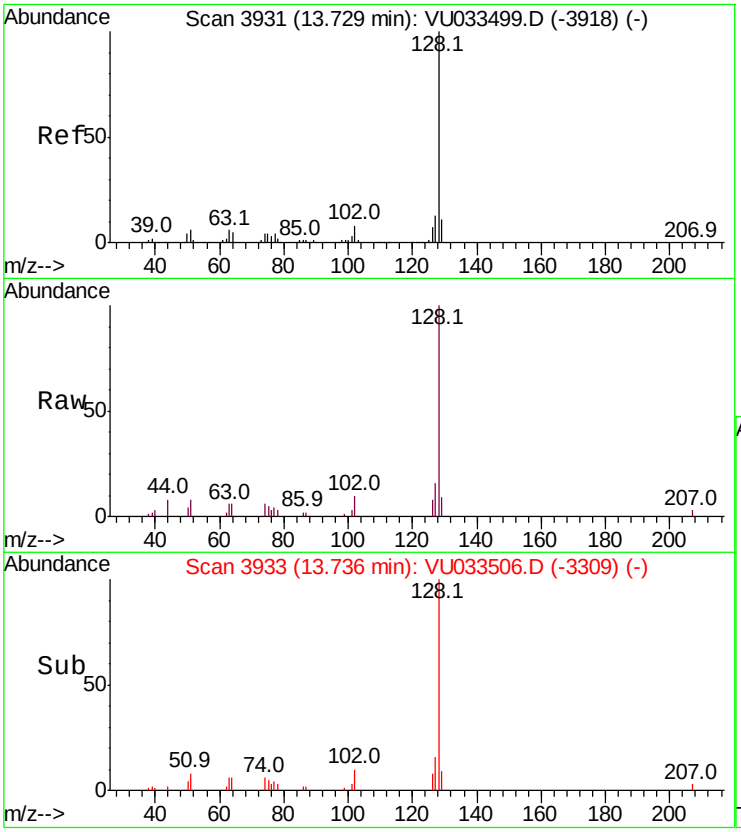


#68
1,2,4-trichlorobenzene
Concen: 2.357 ug/L
RT: 13.49 min Scan# 3858
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:180 Resp: 7781

Ion	Ratio	Lower	Upper
180	100		
182	97.1	75.8	113.8
145	27.6	24.3	36.5

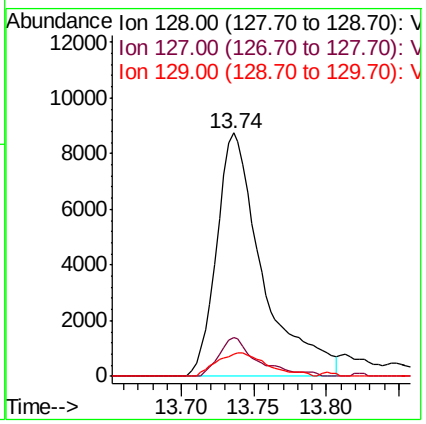




#69
Naphthalene
Concen: 2.025 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:128 Resp: 19176

Ion	Ratio	Lower	Upper
128	100		
127	12.6	10.8	16.2
129	10.6	8.7	13.1



Instrument :
MSVOA_U
ClientSampleId :
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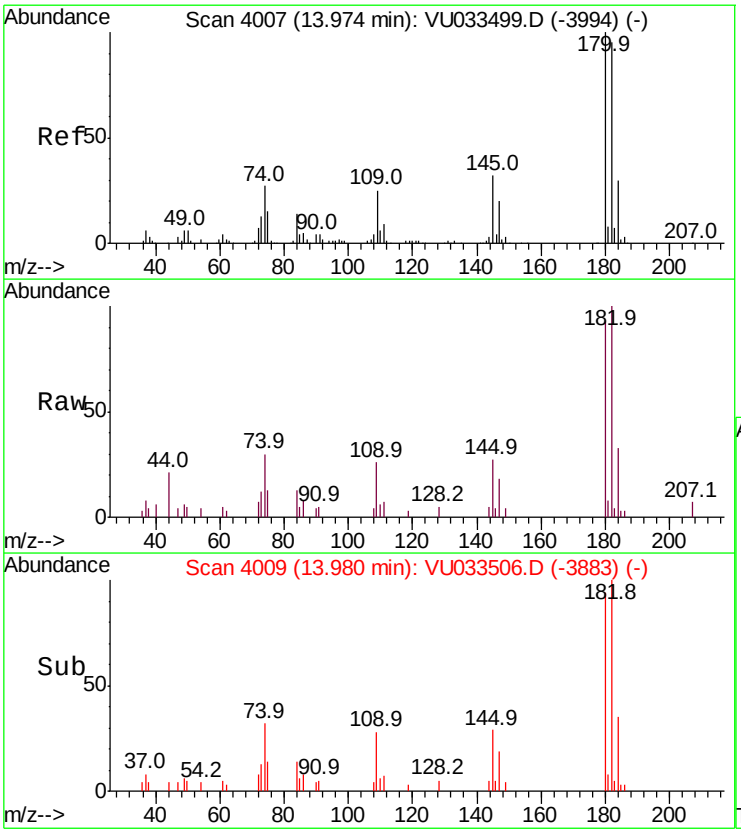
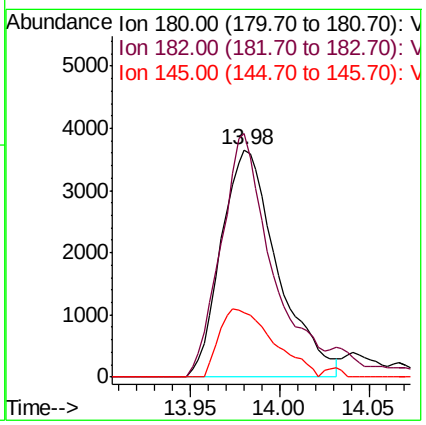


#70
1,2,3-Trichlorobenzene
Concen: 2.315 ug/L
RT: 13.98 min Scan# 4009
Delta R.T. 0.01 min
Lab File: VU033506.D
Acq: 30 Jul 2019 20:43

Tgt Ion:180 Resp: 8039

Ion	Ratio	Lower	Upper
180	100		
182	96.2	75.5	113.3
145	28.7	24.4	36.6



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033507.D
Acq On : 30 Jul 2019 21:06
Operator : JC/SP
Sample : MDL07
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 18 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL07

Quant Time: Jul 31 08:11:20 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) 1,4-Difluorobenzene	5.86	114	321074	50.00	ug/L		0.00
28) Chlorobenzene-d5	9.07	117	314249	50.00	ug/L		0.00
60) 1,4-Dichlorobenzene-d4	11.47	152	157602	50.00	ug/L		0.00
System Monitoring Compounds							
4) Vinyl Chloride-d3	1.39	65	106579	45.65	ug/L		0.00
Spiked Amount 50.000	Range 60 - 135		Recovery = 91.30%				
7) Chloroethane-d5	1.67	69	92433	46.15	ug/L		0.00
Spiked Amount 50.000	Range 70 - 130		Recovery = 92.30%				
11) 1,1-Dichloroethene-d2	2.26	63	146489	34.58	ug/L		0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 69.16%				
21) 2-Butanone-d5	4.15	46	150682	97.46	ug/L		0.00
Spiked Amount 100.000	Range 40 - 130		Recovery = 97.46%				
24) Chloroform-d	4.62	84	182645	46.68	ug/L		0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 93.36%				
26) 1,2-Dichloroethane-d4	5.29	65	121100	48.87	ug/L		0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 97.74%				
32) Benzene-d6	5.32	84	381116	48.92	ug/L		0.00
Spiked Amount 50.000	Range 70 - 125		Recovery = 97.84%				
36) 1,2-Dichloropropane-d6	6.31	67	119688	49.01	ug/L		0.00
Spiked Amount 50.000	Range 70 - 120		Recovery = 98.02%				
41) Toluene-d8	7.55	98	348736	47.77	ug/L		0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.54%				
43) trans-1,3-Dichloropropene-	7.83	79	55341	45.68	ug/L		0.00
Spiked Amount 50.000	Range 60 - 125		Recovery = 91.36%				
47) 2-Hexanone-d5	8.30	63	111656	96.30	ug/L		0.00
Spiked Amount 100.000	Range 45 - 130		Recovery = 96.30%				
57) 1,1,2,2-Tetrachloroethane-	10.41	84	174027	46.22	ug/L		0.00
Spiked Amount 50.000	Range 65 - 120		Recovery = 92.44%				
64) 1,2-Dichlorobenzene-d4	11.85	152	139606	48.37	ug/L		0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.74%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.20	85	8027	2.651	ug/L		99
3) Chloromethane	1.32	50	8318	2.727	ug/L		100
5) Vinyl chloride	1.40	62	8968	2.743	ug/L	#	69
6) Bromomethane	1.62	94	6323	2.192	ug/L		93
8) Chloroethane	1.69	64	4932	2.483	ug/L		89
9) Trichlorofluoromethane	1.87	101	11792	2.757	ug/L		99
10) 1,1,2-Trichloro-1,2,2-trif	2.27	101	7057	3.255	ug/L	#	82
12) 1,1-Dichloroethene	2.27	96	6791	3.266	ug/L	#	1
13) Acetone	2.31	43	8029	5.076	ug/L		98
14) Carbon disulfide	2.46	76	17163	2.632	ug/L		98
15) Methyl Acetate	2.61	43	6196	2.460	ug/L		96
16) Methylene chloride	2.68	84	6739	2.838	ug/L		94
17) trans-1,2-Dichloroethene	2.96	96	5716	2.624	ug/L		99
18) Methyl tert-butyl Ether	2.98	73	16664	2.509	ug/L		97
19) 1,1-Dichloroethane	3.43	63	11469	2.805	ug/L		97
20) cis-1,2-Dichloroethene	4.20	96	6358	2.600	ug/L		99
22) 2-Butanone	4.25	43	7872	4.168	ug/L		82

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033507.D
Acq On : 30 Jul 2019 21:06
Operator : JC/SP
Sample : MDL07
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 18 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL07

Quant Time: Jul 31 08:11:20 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration

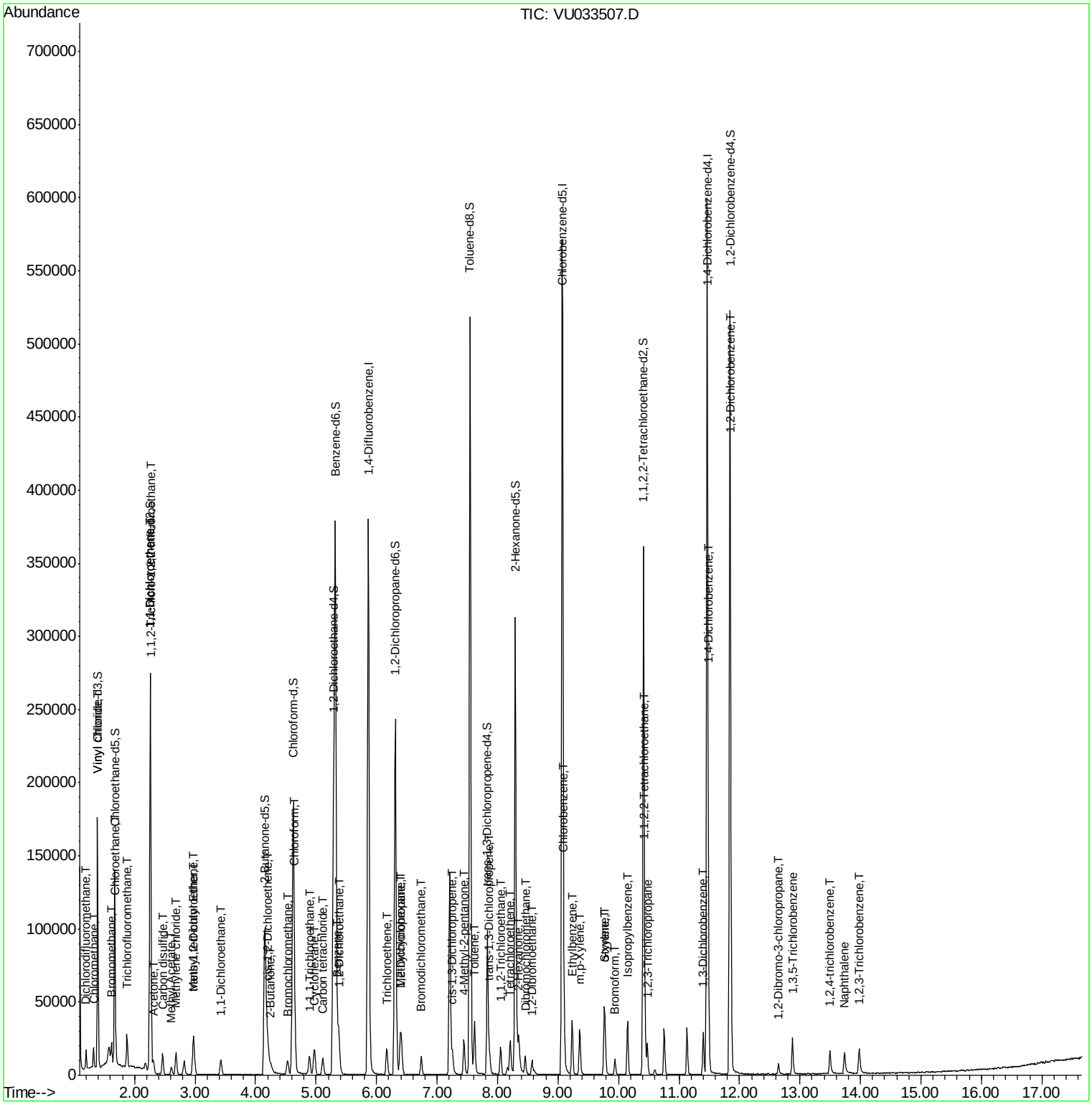
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
23) Bromochloromethane	4.53	128	3174	2.488 ug/L	93
25) Chloroform	4.65	83	15385	3.575 ug/L	92
27) 1,2-Dichloroethane	5.39	62	9411	2.840 ug/L	100
29) Cyclohexane	4.97	56	8436	2.461 ug/L	96
30) 1,1,1-Trichloroethane	4.89	97	9377	2.593 ug/L	96
31) Carbon tetrachloride	5.11	117	8143	2.586 ug/L	99
33) Benzene	5.37	78	24990	2.757 ug/L	100
34) Trichloroethene	6.17	95	6324	2.645 ug/L	93
35) Methylcyclohexane	6.40	83	8922	2.391 ug/L	98
37) 1,2-Dichloropropane	6.41	63	6402	2.638 ug/L #	95
38) Bromodichloromethane	6.74	83	8391	2.675 ug/L	96
39) cis-1,3-Dichloropropene	7.25	75	8846	2.336 ug/L	97
40) 4-Methyl-2-pentanone	7.45	43	16408	4.897 ug/L	97
42) Toluene	7.62	91	27359	2.807 ug/L	98
44) trans-1,3-Dichloropropene	7.86	75	8735	2.552 ug/L	93
45) 1,1,2-Trichloroethane	8.05	97	6524	2.832 ug/L	92
46) Tetrachloroethene	8.21	164	4843	2.481 ug/L	93
48) 2-Hexanone	8.35	43	15267	5.637 ug/L #	95
49) Dibromochloromethane	8.46	129	6571	2.507 ug/L	93
50) 1,2-Dibromoethane	8.57	107	6856	2.687 ug/L #	98
51) Chlorobenzene	9.10	112	17046	2.671 ug/L	95
52) Ethylbenzene	9.23	91	26044	2.481 ug/L	98
53) m,p-Xylene	9.36	106	9188	2.280 ug/L	95
54) o-xylene	9.76	106	9225	2.360 ug/L	93
55) Styrene	9.78	104	13976	2.105 ug/L	92
56) Isopropylbenzene	10.15	105	23460	2.297 ug/L	99
58) 1,1,2,2-Tetrachloroethane	10.44	83	11933	2.872 ug/L	92
59) 1,2,3-Trichloropropane	10.48	75	8575	2.677 ug/L	99
61) Bromoform	9.94	173	4976	2.614 ug/L #	97
62) 1,3-Dichlorobenzene	11.40	146	12781	2.641 ug/L	95
63) 1,4-Dichlorobenzene	11.49	146	13509	2.686 ug/L	98
65) 1,2-Dichlorobenzene	11.86	146	13838	2.828 ug/L	91
66) 1,2-Dibromo-3-chloropropan	12.65	75	2186	2.418 ug/L #	88
67) 1,3,5-Trichlorobenzene	12.88	180	9017	2.309 ug/L	99
68) 1,2,4-trichlorobenzene	13.50	180	6187	1.854 ug/L	97
69) Naphthalene	13.74	128	17261	1.803 ug/L #	93
70) 1,2,3-Trichlorobenzene	13.98	180	7461	2.126 ug/L	99

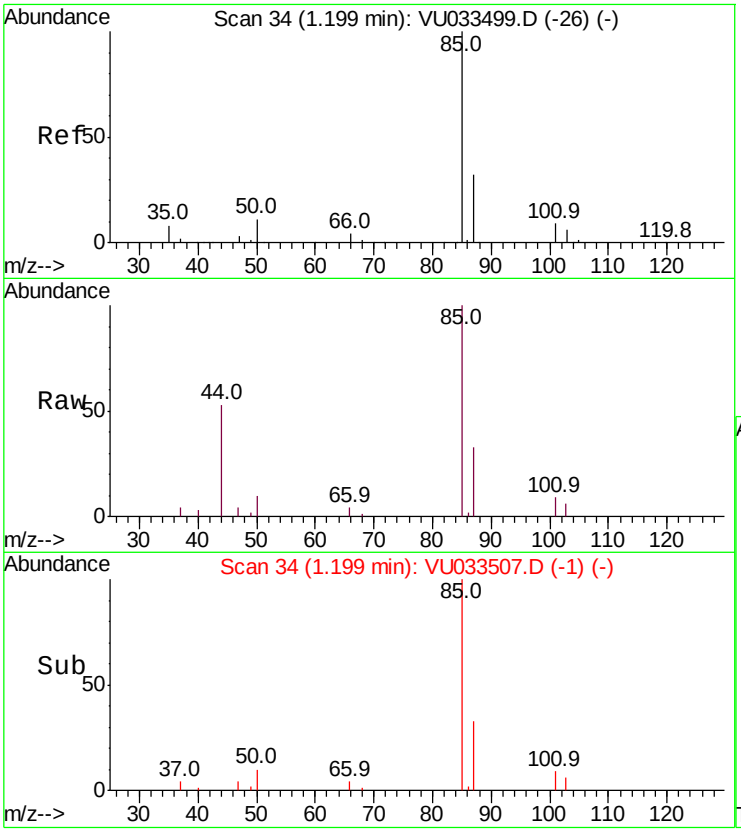
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_U\DATA\VU073119\
Data File : VU033507.D
Acq On : 30 Jul 2019 21:06
Operator : JC/SP
Sample : MDL07
Misc : 5.0mL/MSVOA_U/WATER
ALS Vial : 18 Sample Multiplier: 1

Instrument : MSVOA_U
ClientSampleId : MDL07

Quant Time: Jul 31 08:11:20 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_U\METHOD\SOMULM073119WMA.M
Quant Title : VOC Analysis
QLast Update : Wed Jul 31 08:02:52 2019
Response via : Initial Calibration



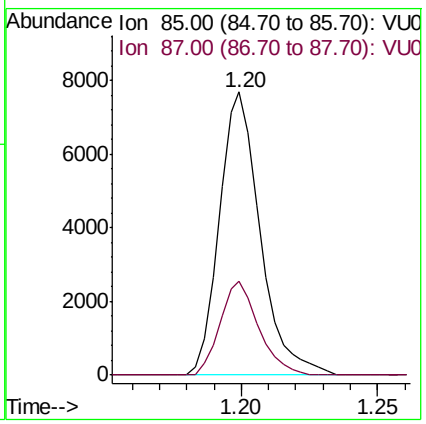


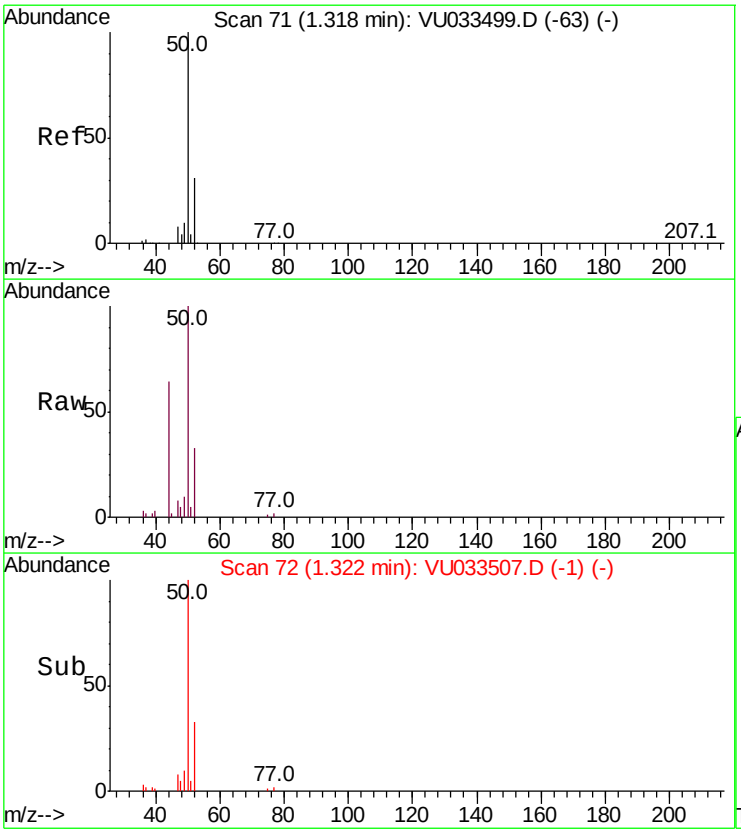
#2
Dichlorodifluoromethane
Concen: 2.651 ug/L
RT: 1.20 min Scan# 34
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 85 Resp: 8027

Ion	Ratio	Lower	Upper
85	100		
87	31.4	25.4	38.2

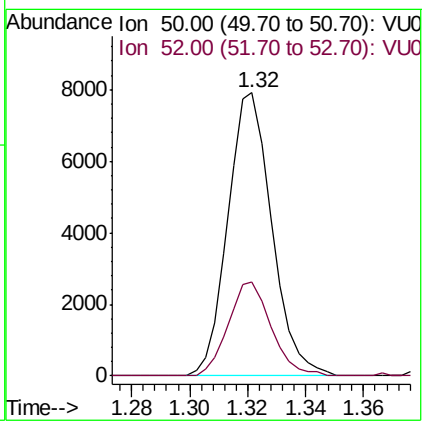


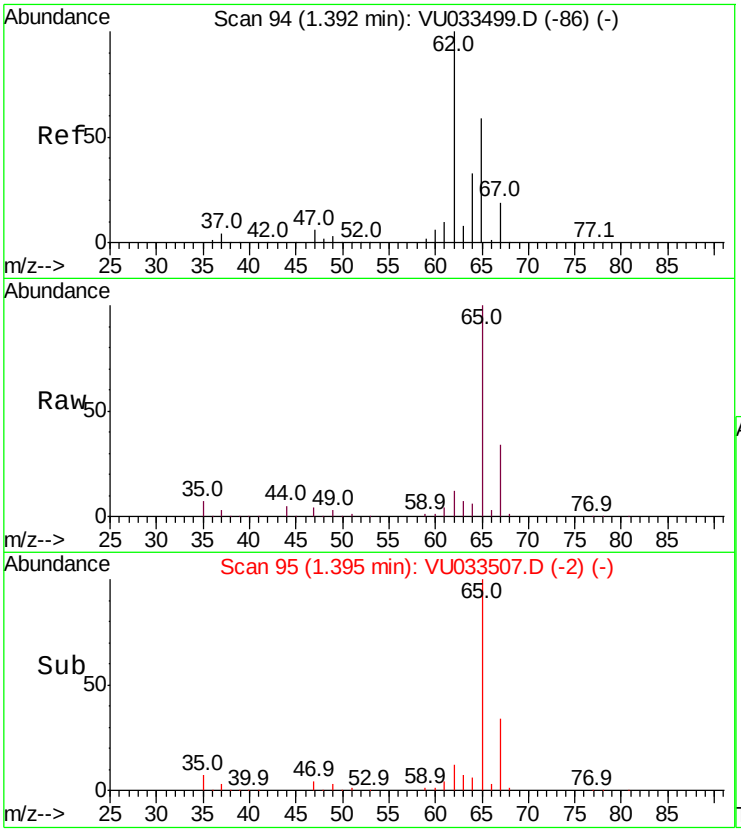


#3
Chloromethane
Concen: 2.727 ug/L
RT: 1.32 min Scan# 72
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 50 Resp: 8318

Ion	Ratio	Lower	Upper
50	100		
52	33.2	23.1	42.9



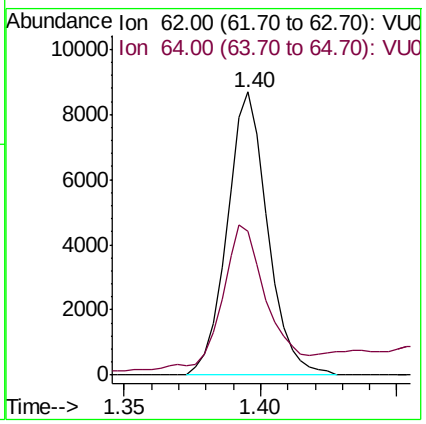


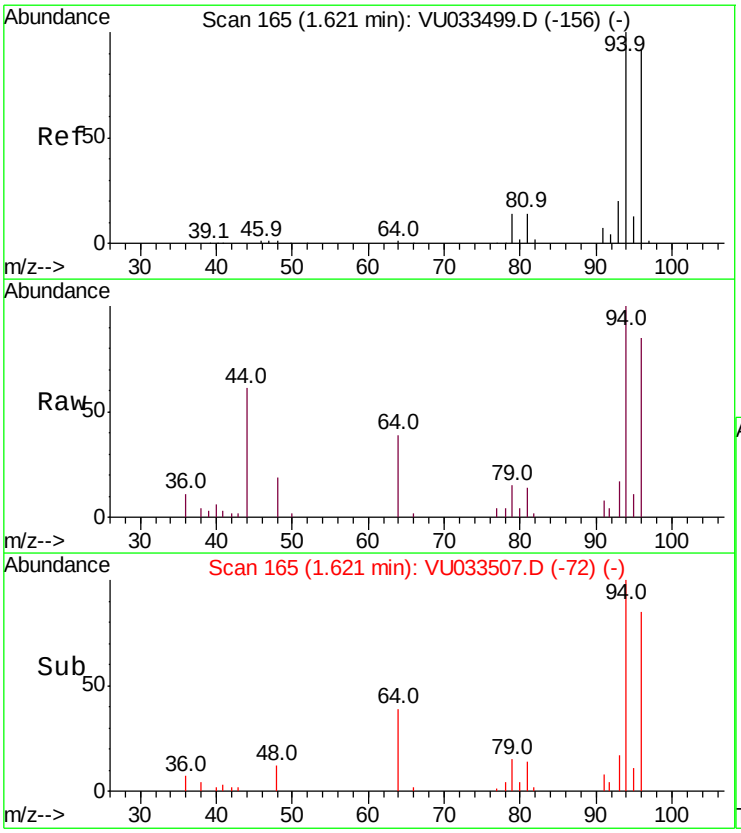
#5
Vinyl chloride
Concen: 2.743 ug/L
RT: 1.40 min Scan# 95
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 62 Resp: 8968

Ion	Ratio	Lower	Upper
62	100		
64	50.9	23.4	43.4#

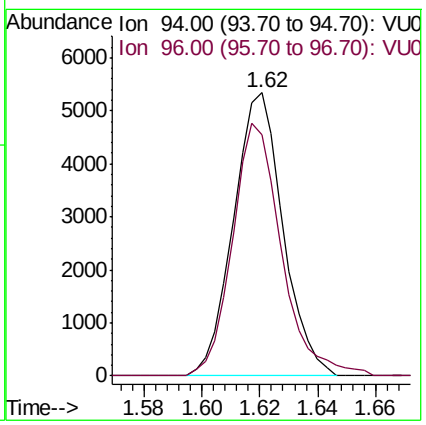


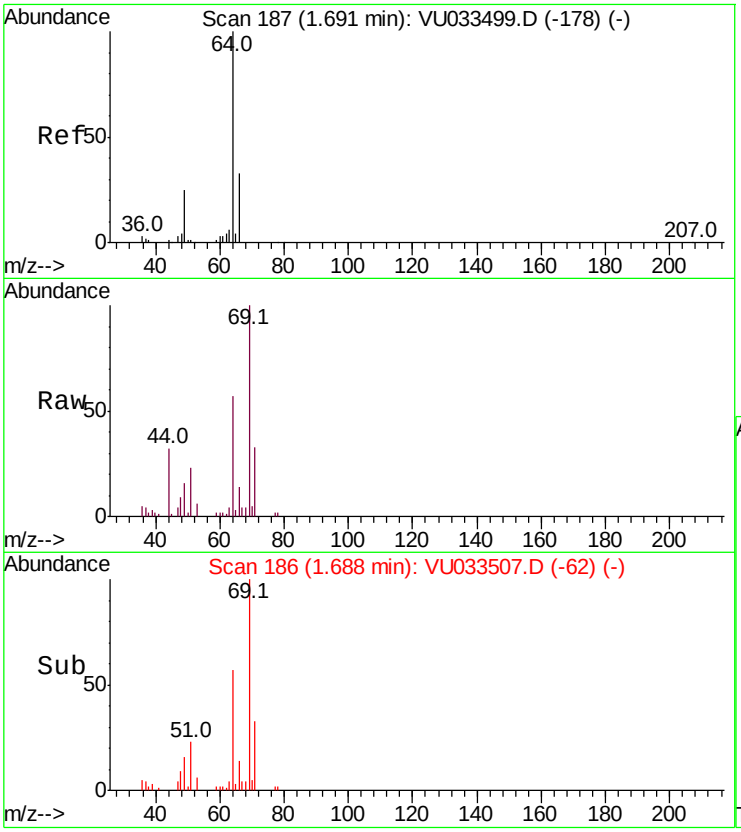


#6
Bromomethane
Concen: 2.192 ug/L
RT: 1.62 min Scan# 165
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 94 Resp: 6323

Ion	Ratio	Lower	Upper
94	100		
96	85.4	64.4	119.6



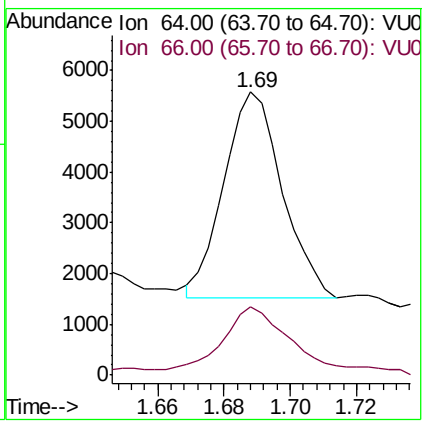


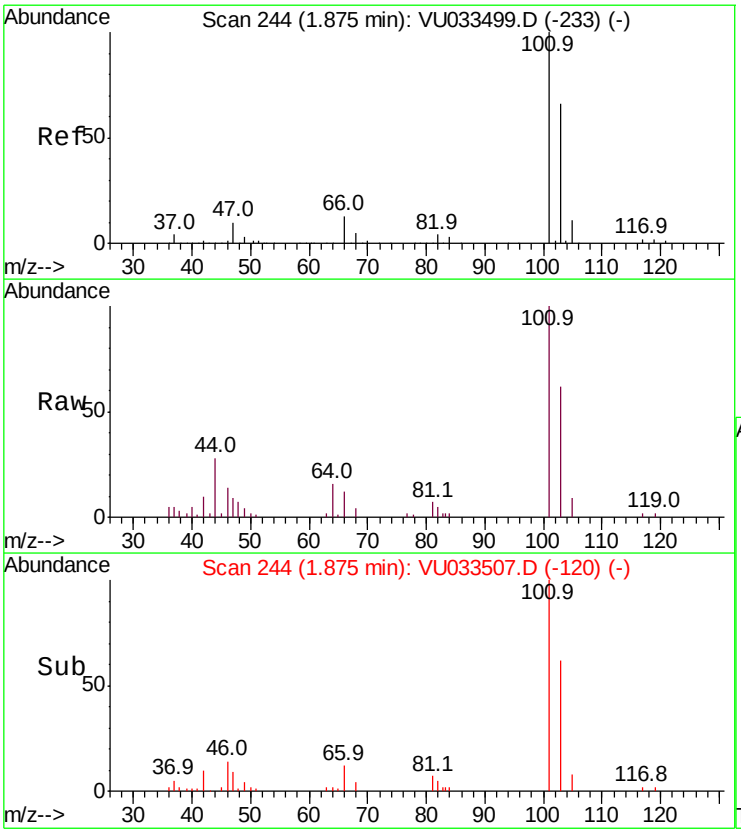
#8
Chloroethane
Concen: 2.483 ug/L
RT: 1.69 min Scan# 186
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 64 Resp: 4932

Ion	Ratio	Lower	Upper
64	100		
66	24.2	21.1	39.3

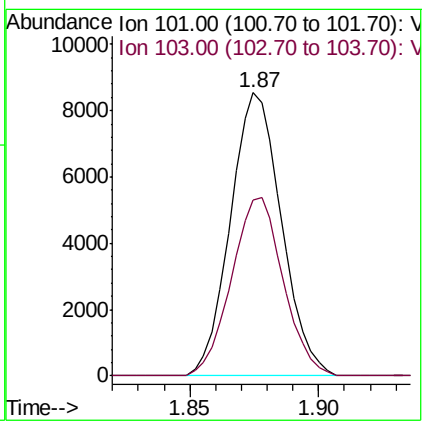


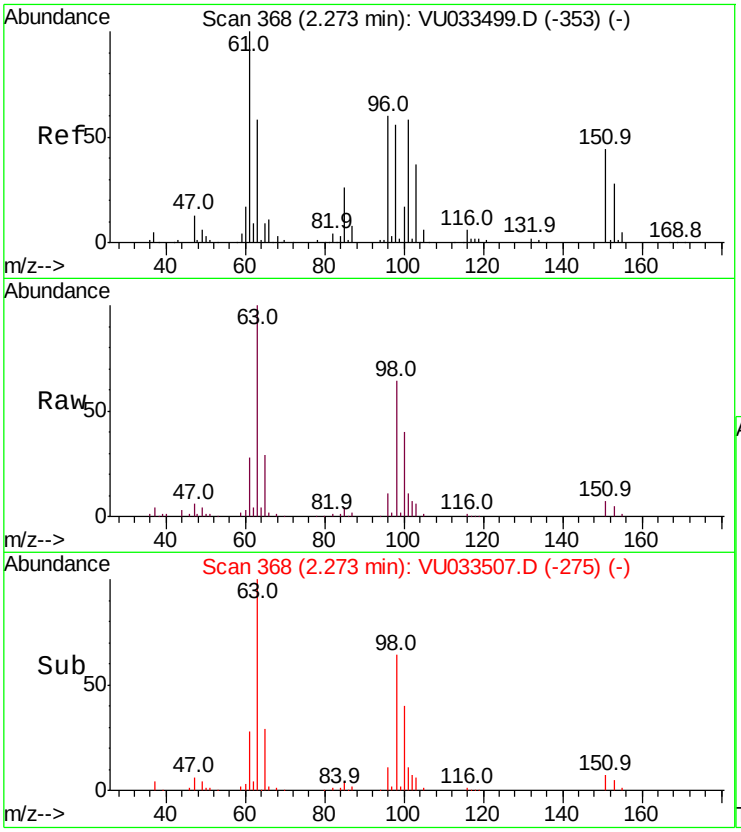


#9
Trichlorofluoromethane
Concen: 2.757 ug/L
RT: 1.87 min Scan# 244
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:101 Resp: 11792

Ion	Ratio	Lower	Upper
101	100		
103	63.7	51.6	77.4



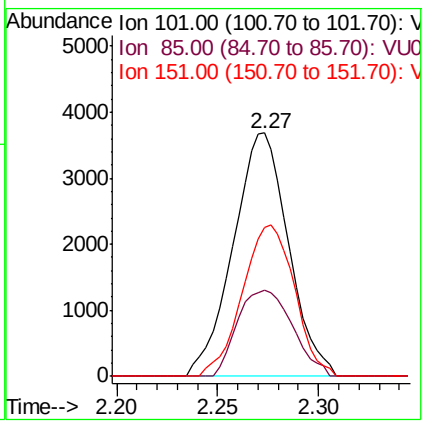


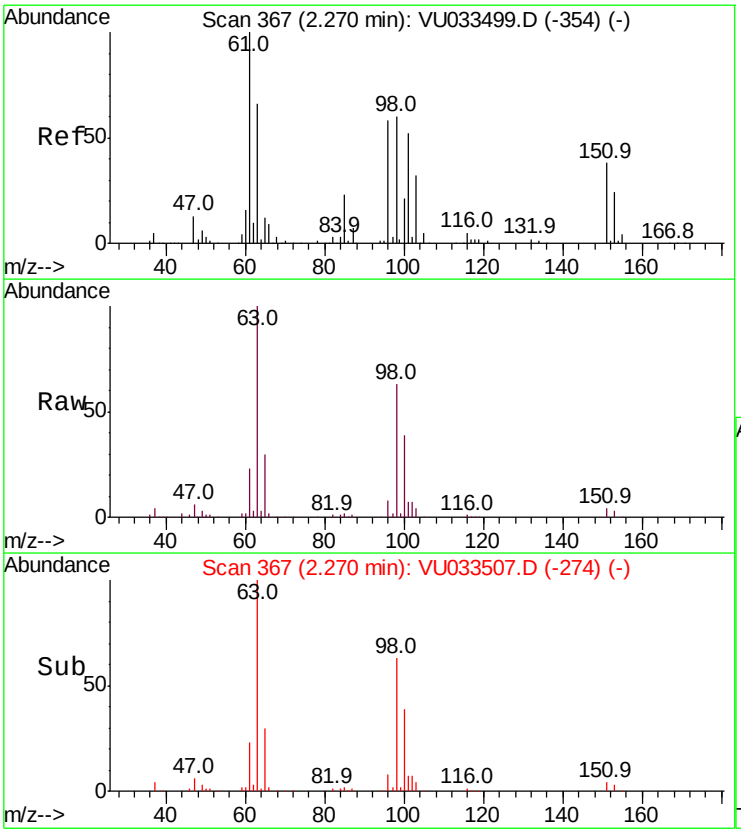
#10
1,1,2-Trichloro-1,2,2-trifluoroethane
Concen: 3.255 ug/L
RT: 2.27 min Scan# 368
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:101 Resp: 7057

Ion	Ratio	Lower	Upper
101	100		
85	35.3	35.8	53.8#
151	58.6	60.1	90.1#

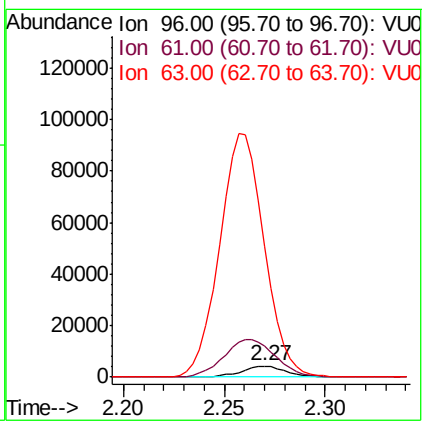


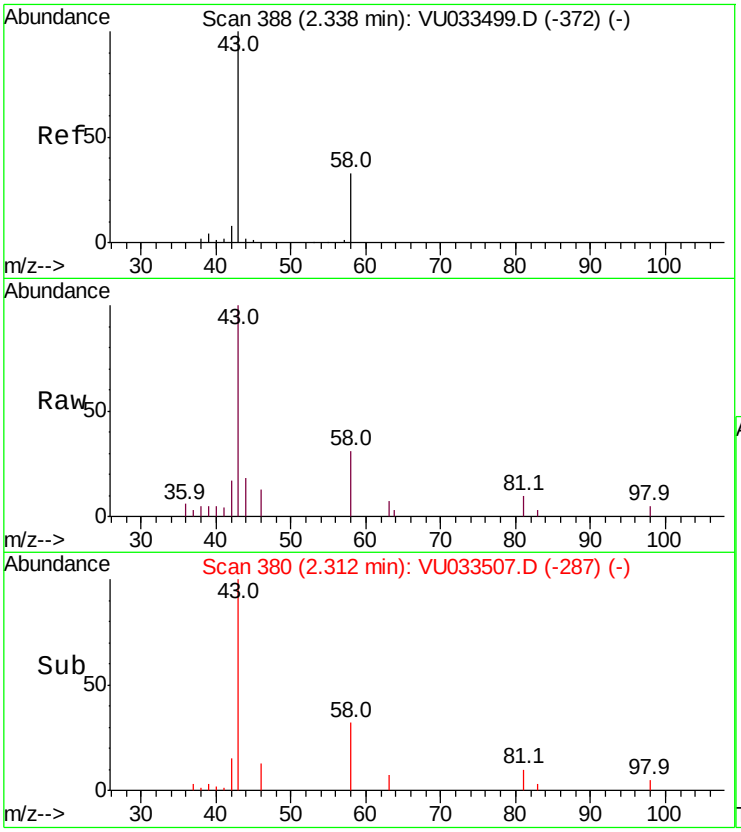


#12
1,1-Dichloroethene
Concen: 3.266 ug/L
RT: 2.27 min Scan# 367
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 96 Resp: 6791

Ion	Ratio	Lower	Upper
96	100		
61	279.3	119.3	221.5#
63	1189.7	86.6	160.8#



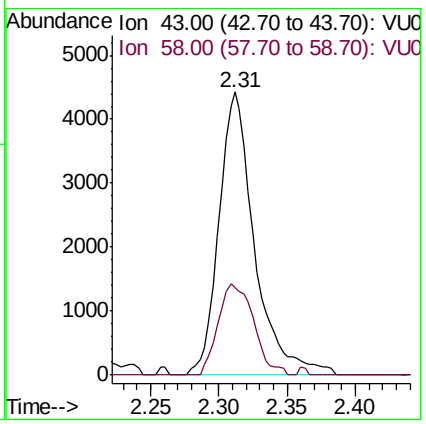


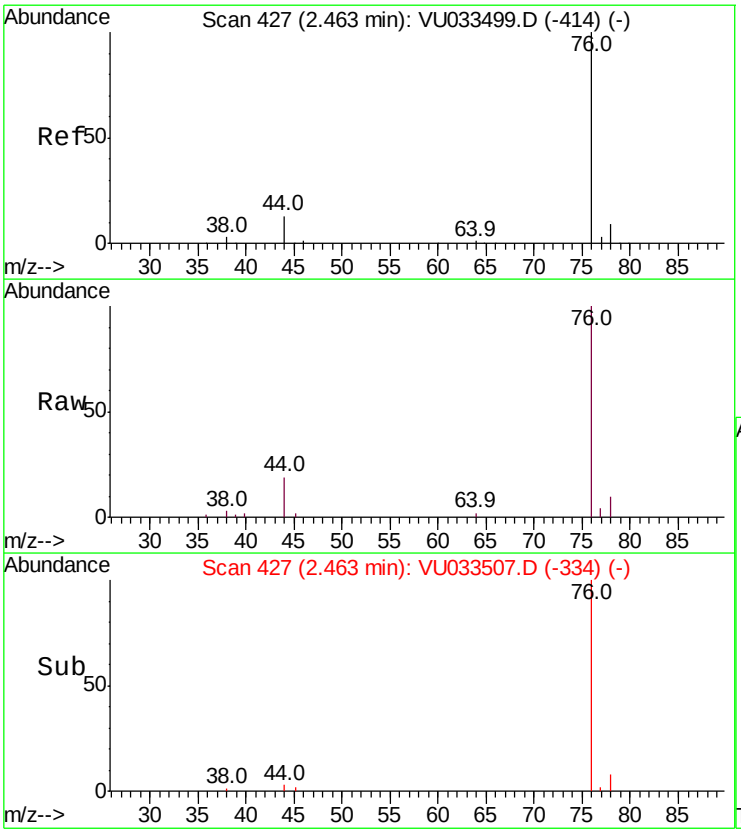
#13
Acetone
Concen: 5.076 ug/L
RT: 2.31 min Scan# 380
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 43 Resp: 8029

Ion	Ratio	Lower	Upper
43	100		
58	32.1	0.0	66.2

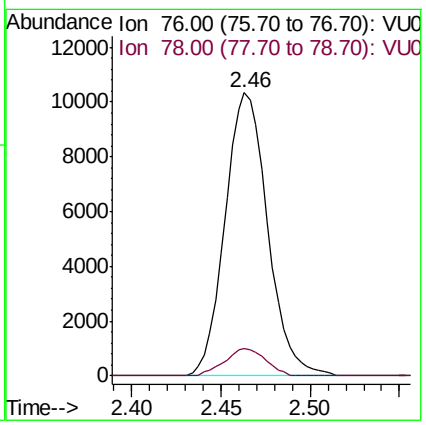


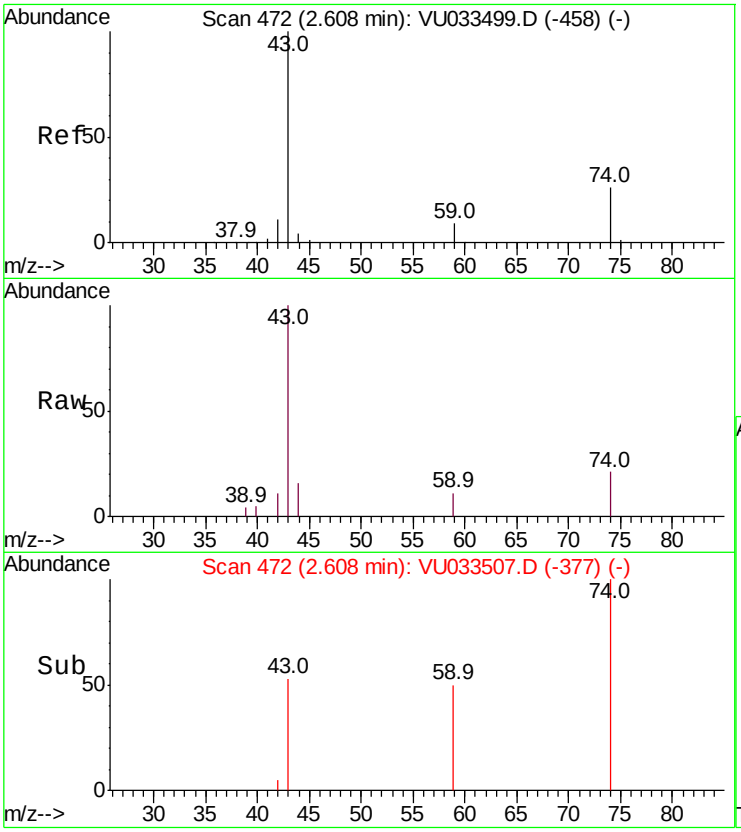


#14
Carbon disulfide
Concen: 2.632 ug/L
RT: 2.46 min Scan# 427
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 76 Resp: 17163

Ion	Ratio	Lower	Upper
76	100		
78	9.9	7.4	11.0



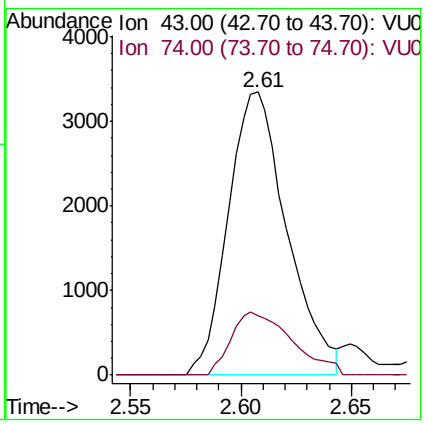


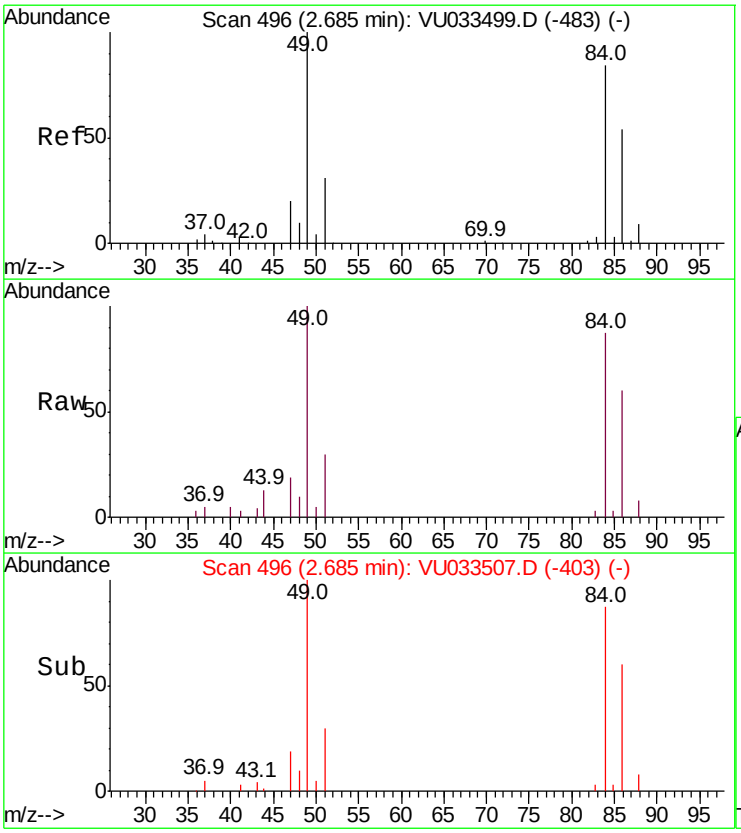
#15
Methyl Acetate
Concen: 2.460 ug/L
RT: 2.61 min Scan# 472
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 43 Resp: 6196

Ion	Ratio	Lower	Upper
43	100		
74	23.2	20.1	30.1

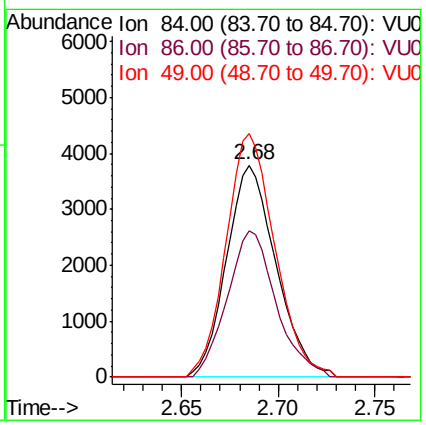


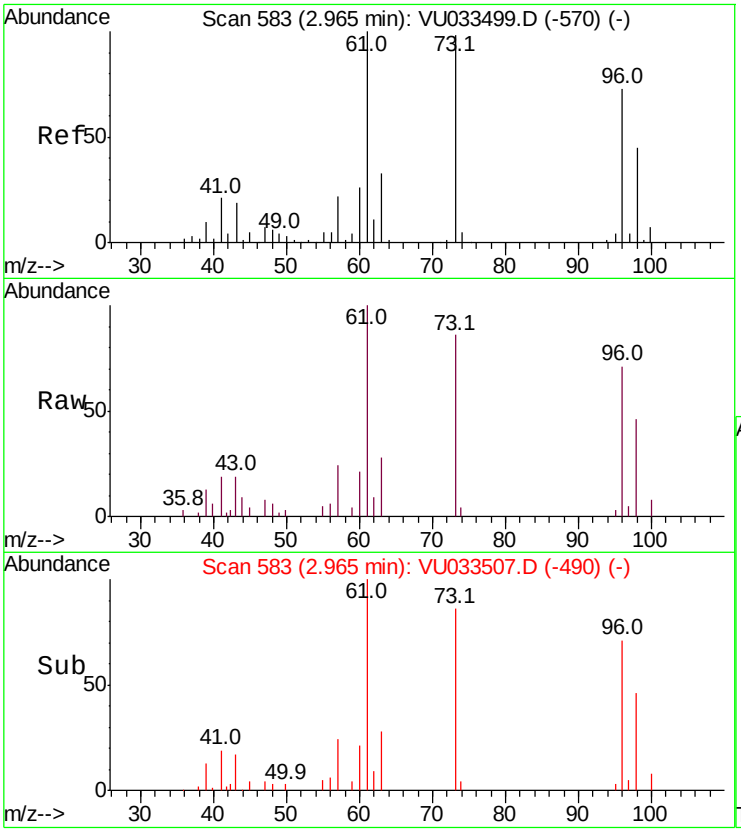


#16
Methylene chloride
Concen: 2.838 ug/L
RT: 2.68 min Scan# 496
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 84 Resp: 6739

Ion	Ratio	Lower	Upper
84	100		
86	69.2	45.7	84.9
49	114.7	85.0	158.0



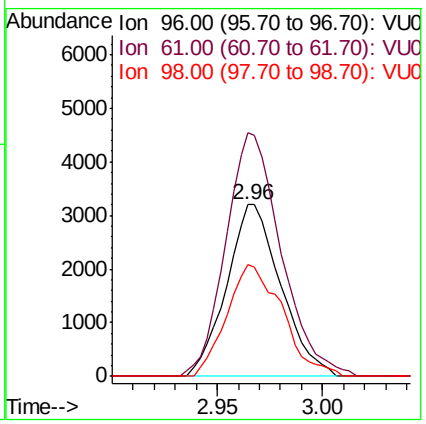


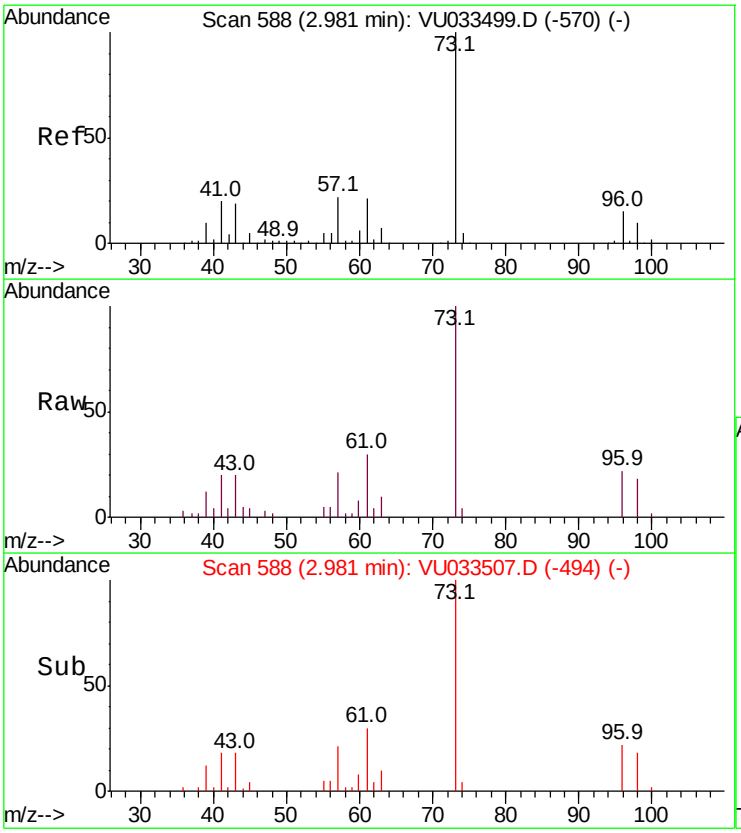
#17
trans-1,2-Dichloroethene
Concen: 2.624 ug/L
RT: 2.96 min Scan# 583
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 96 Resp: 5716

Ion	Ratio	Lower	Upper
96	100		
61	141.6	98.3	182.5
98	64.8	44.3	82.3

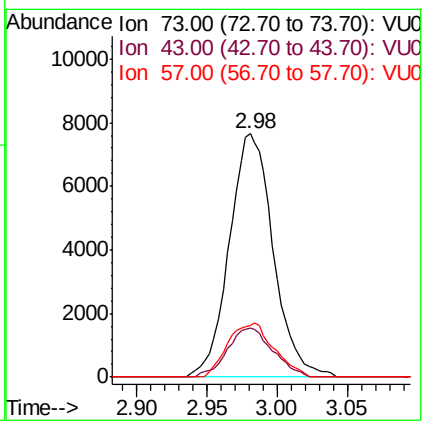


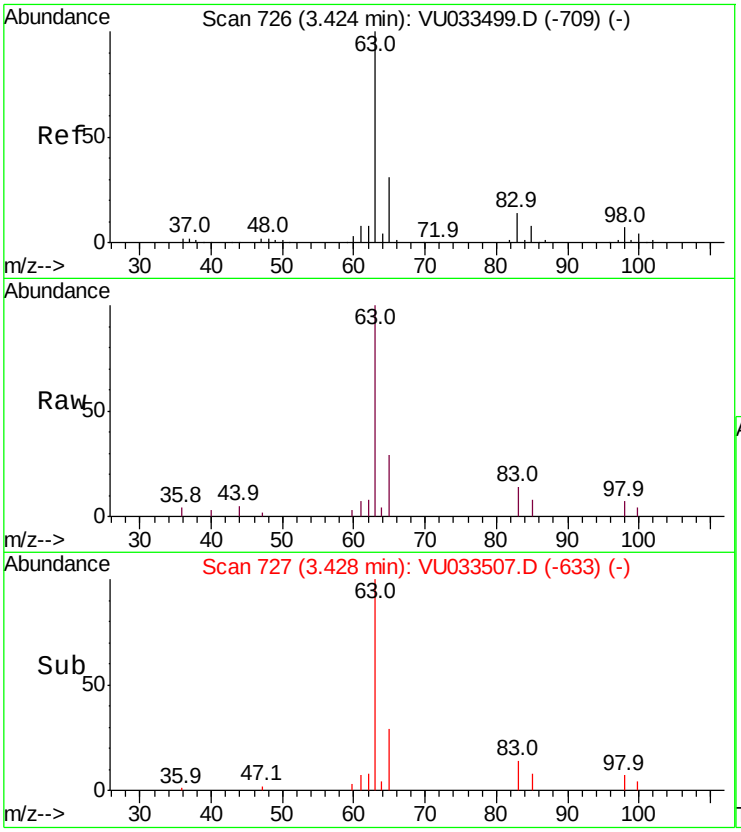


#18
Methyl tert-butyl Ether
Concen: 2.509 ug/L
RT: 2.98 min Scan# 588
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 73 Resp: 16664

Ion	Ratio	Lower	Upper
73	100		
43	20.8	15.4	23.2
57	23.1	17.4	26.2



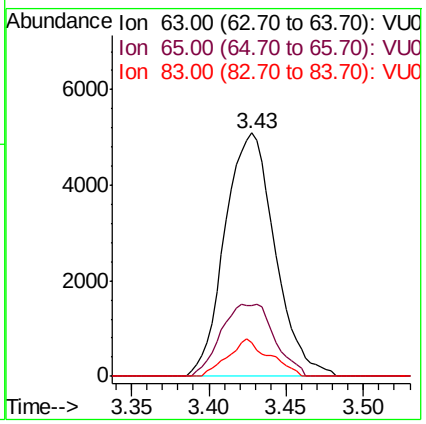


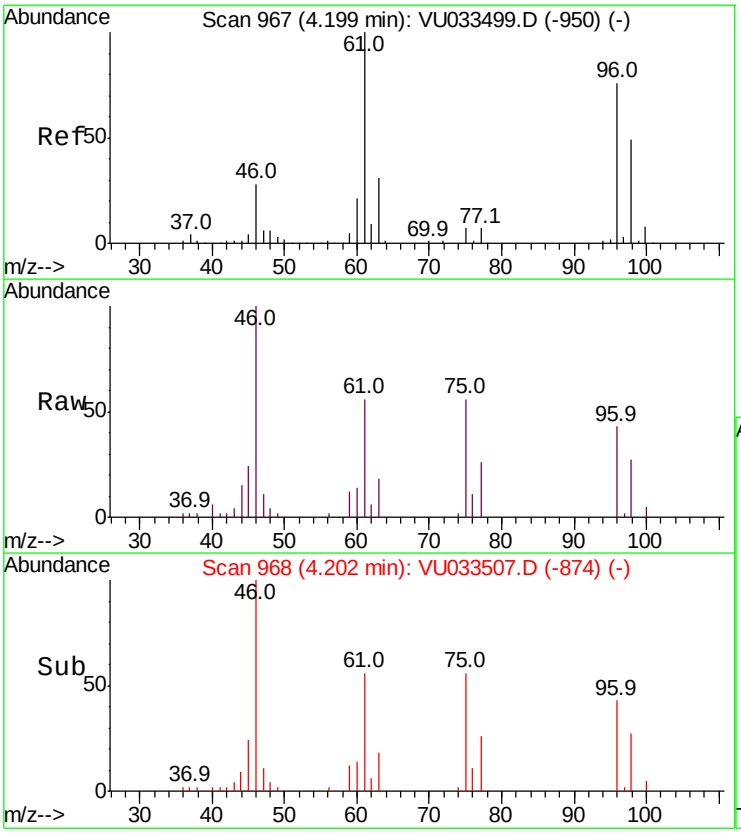
#19
1,1-Dichloroethane
Concen: 2.805 ug/L
RT: 3.43 min Scan# 727
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 63 Resp: 11469

Ion	Ratio	Lower	Upper
63	100		
65	29.2	22.0	40.8
83	13.6	9.5	17.7

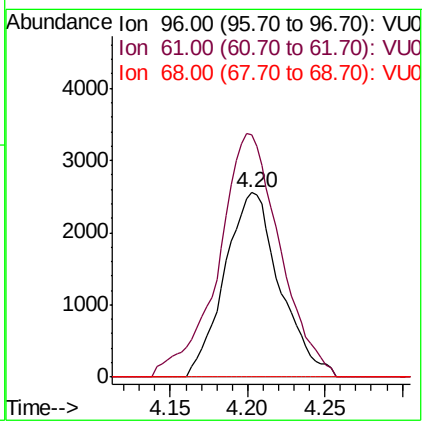


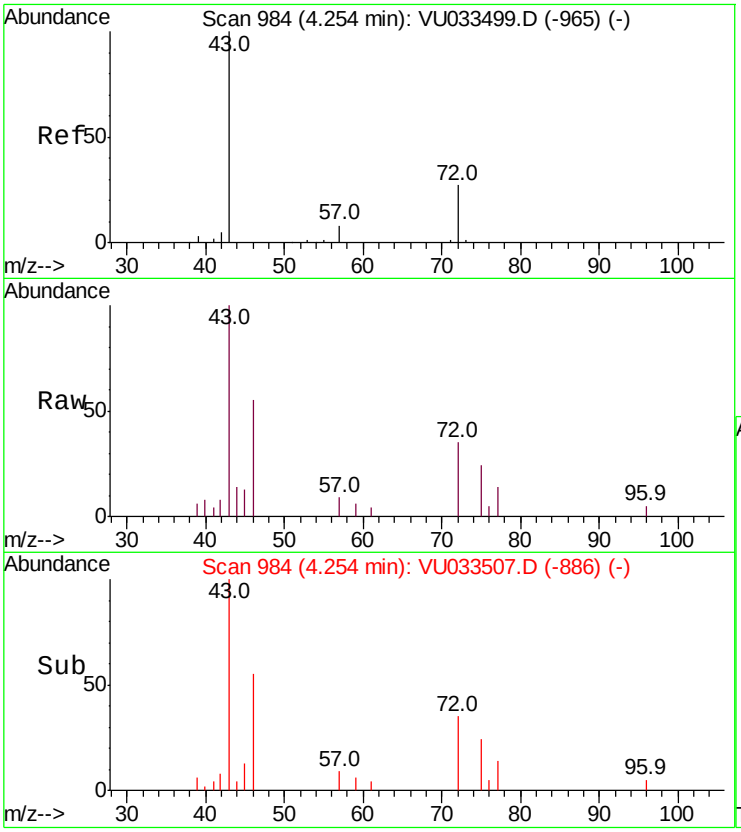


#20
cis-1,2-Dichloroethene
Concen: 2.600 ug/L
RT: 4.20 min Scan# 968
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 96 Resp: 6358

Ion	Ratio	Lower	Upper
96	100		
61	131.6	91.3	169.6
68	0.0	0.0	0.0



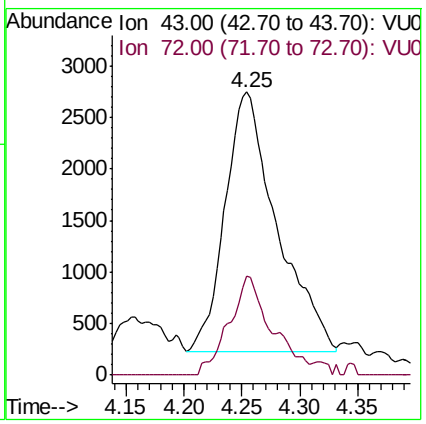


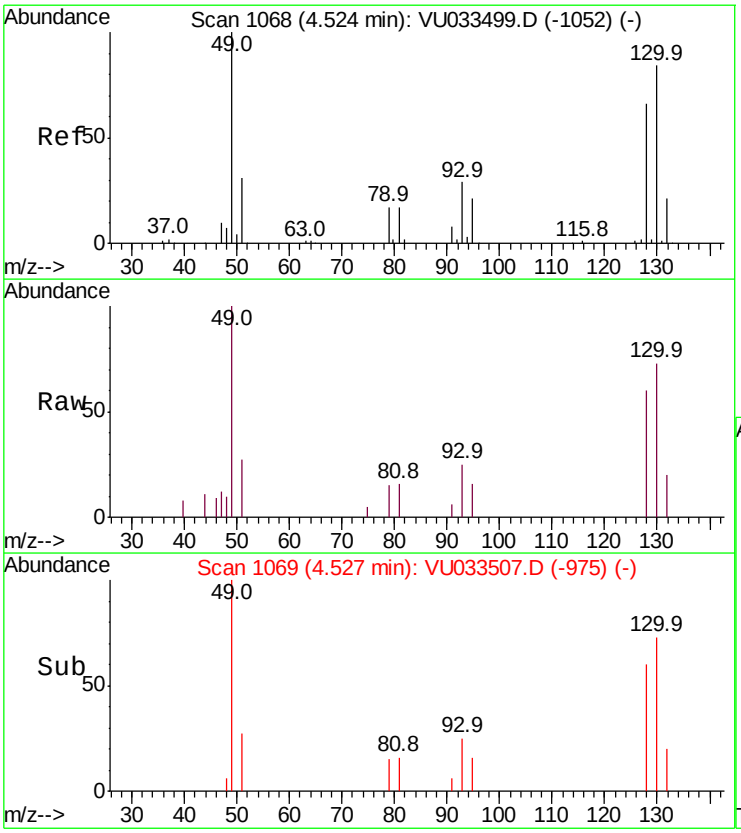
#22
2-Butanone
Concen: 4.168 ug/L
RT: 4.25 min Scan# 984
Delta R.T. 0.02 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 43 Resp: 7872

Ion	Ratio	Lower	Upper
43	100		
72	18.7	14.2	42.6

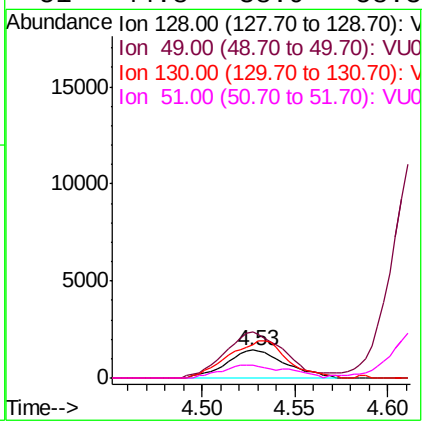


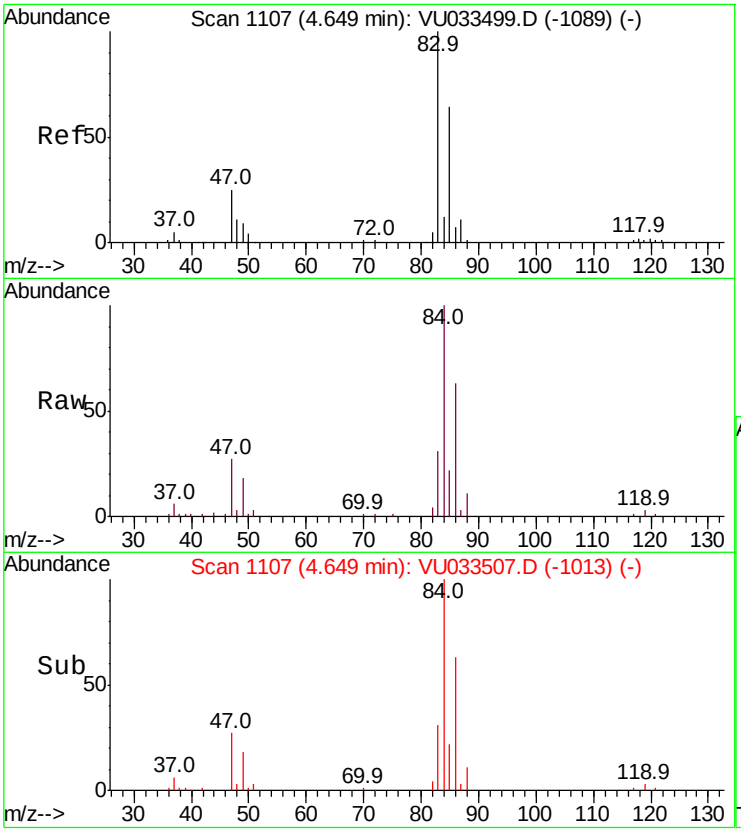


#23
Bromochloromethane
Concen: 2.488 ug/L
RT: 4.53 min Scan# 1069
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:128 Resp: 3174

Ion	Ratio	Lower	Upper
128	100		
49	166.5	108.4	201.2
130	121.7	89.7	166.5
51	44.8	38.9	58.3



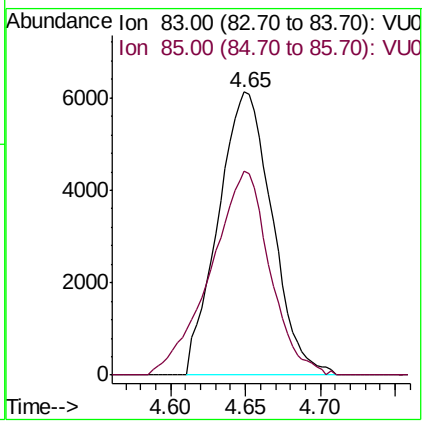


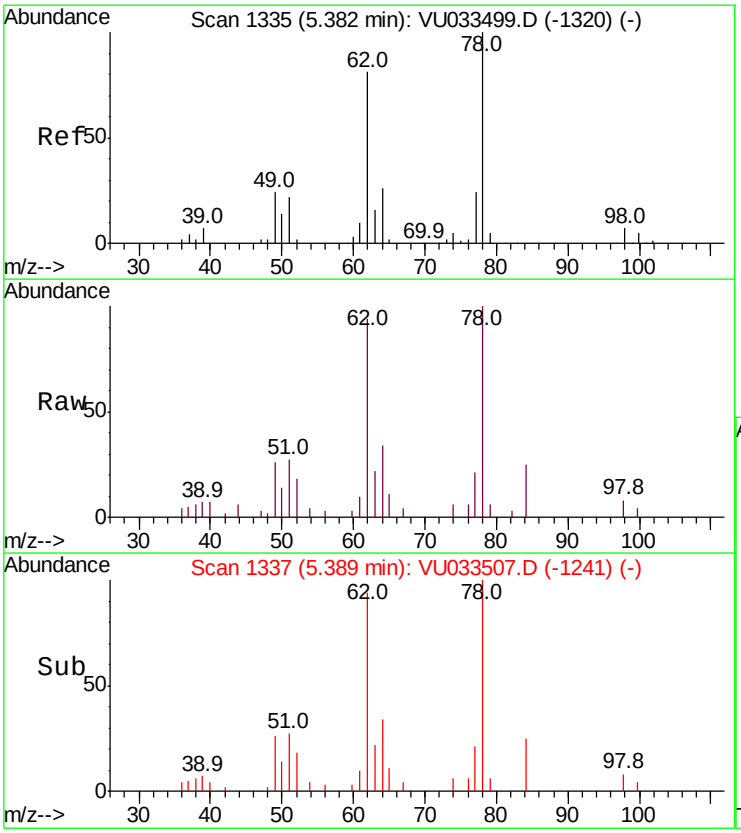
#25
Chloroform
Concen: 3.575 ug/L
RT: 4.65 min Scan# 1107
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 83 Resp: 15385

Ion	Ratio	Lower	Upper
83	100		
85	71.9	45.6	84.8

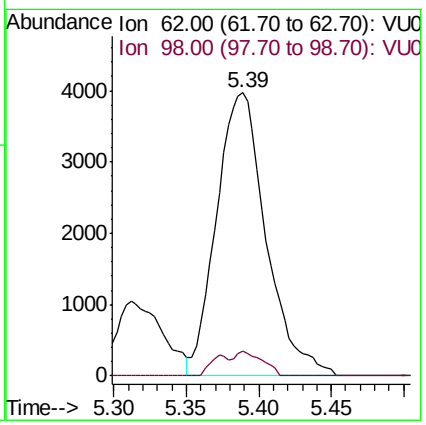


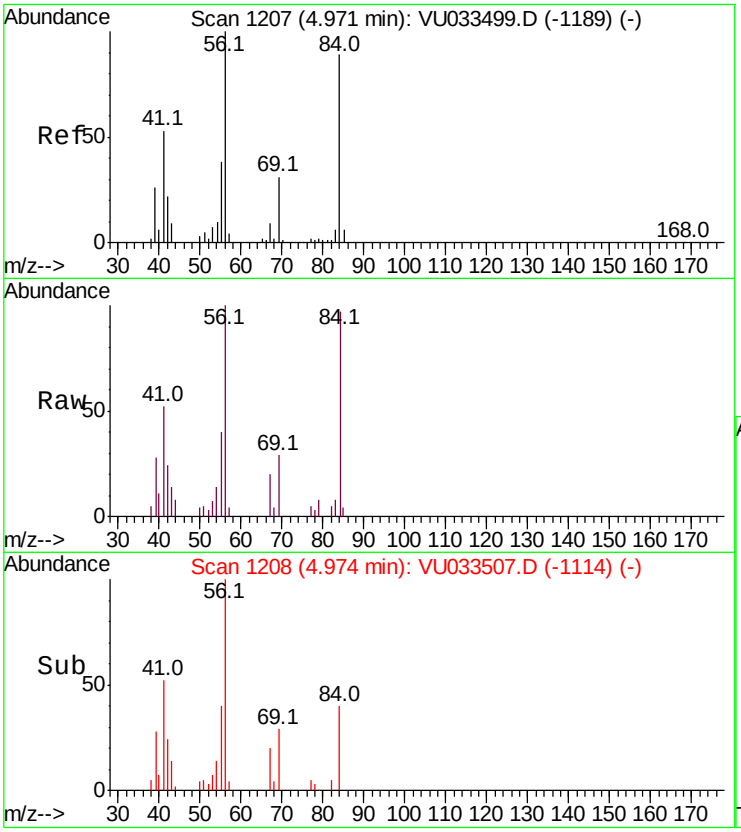


#27
1,2-Dichloroethane
Concen: 2.840 ug/L
RT: 5.39 min Scan# 1337
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 62 Resp: 9411

Ion	Ratio	Lower	Upper
62	100		
98	8.8	7.2	10.8



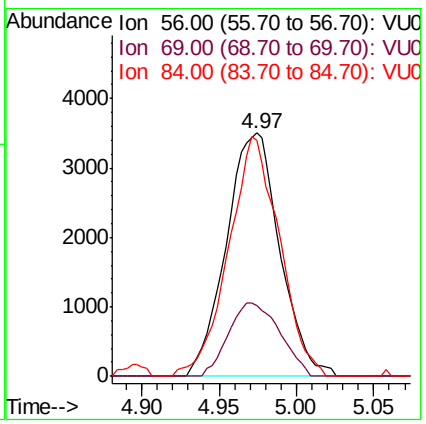


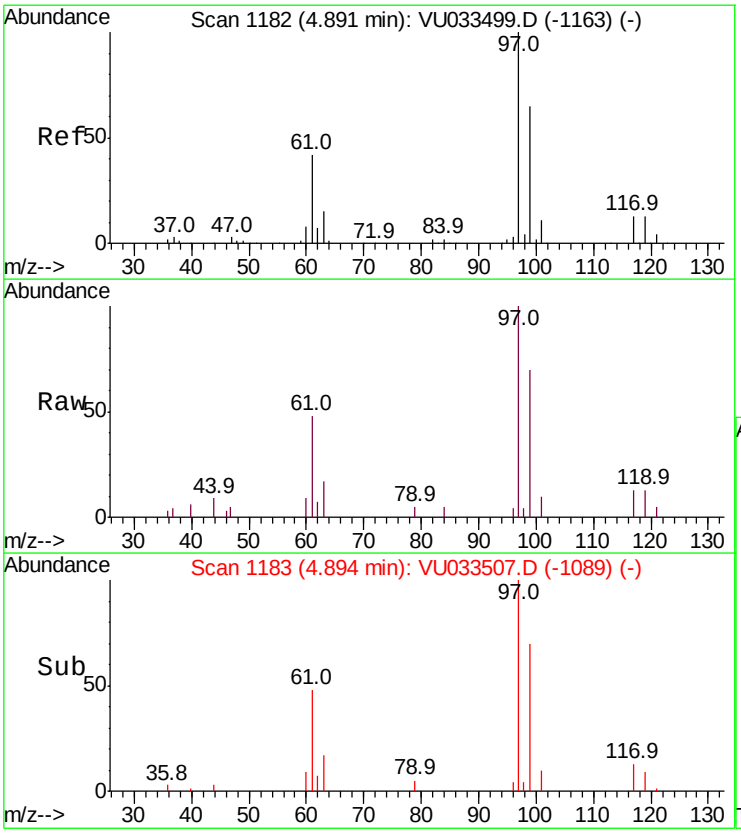
#29
Cyclohexane
Concen: 2.461 ug/L
RT: 4.97 min Scan# 1208
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 56 Resp: 8436

Ion	Ratio	Lower	Upper
56	100		
69	28.8	25.0	37.6
84	93.3	71.6	107.4

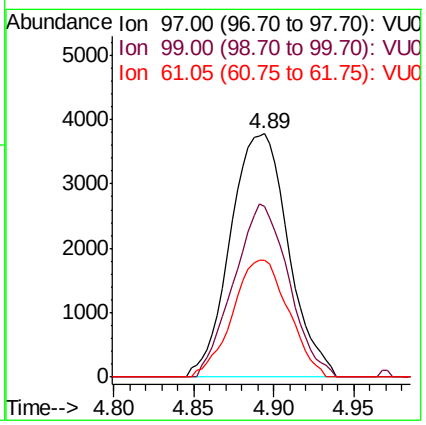


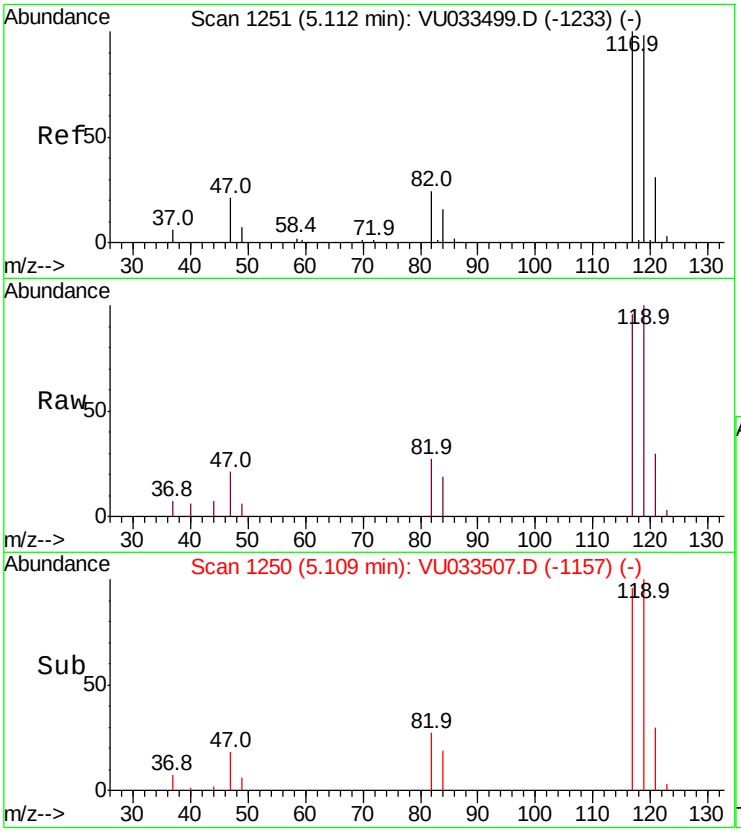


#30
1,1,1-Trichloroethane
Concen: 2.593 ug/L
RT: 4.89 min Scan# 1183
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 97 Resp: 9377

Ion	Ratio	Lower	Upper
97	100		
99	67.4	51.1	76.7
61	46.2	35.5	53.3



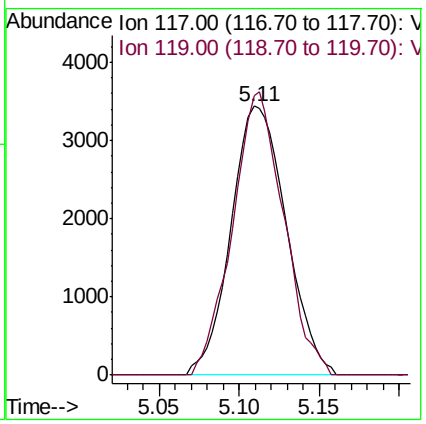


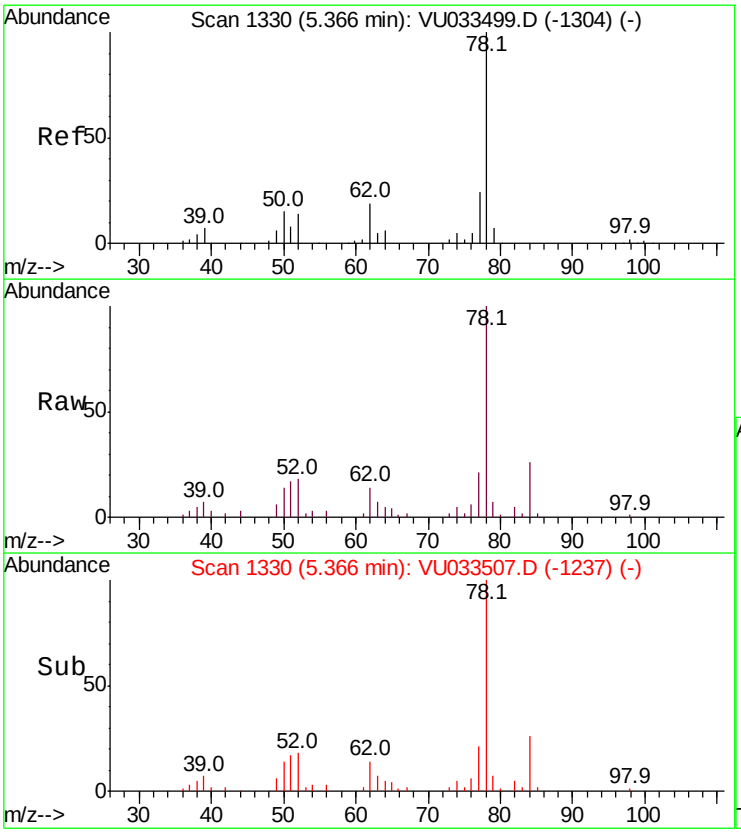
#31
Carbon tetrachloride
Concen: 2.586 ug/L
RT: 5.11 min Scan# 1250
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:117 Resp: 8143

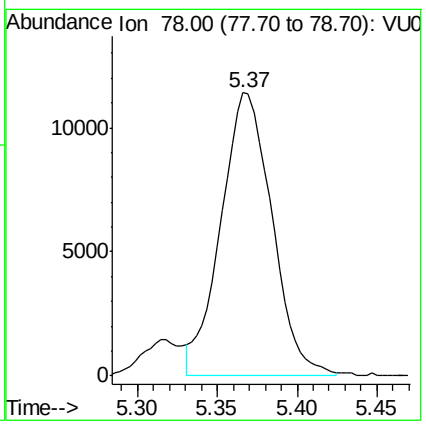
Ion	Ratio	Lower	Upper
117	100		
119	97.3	77.0	115.4

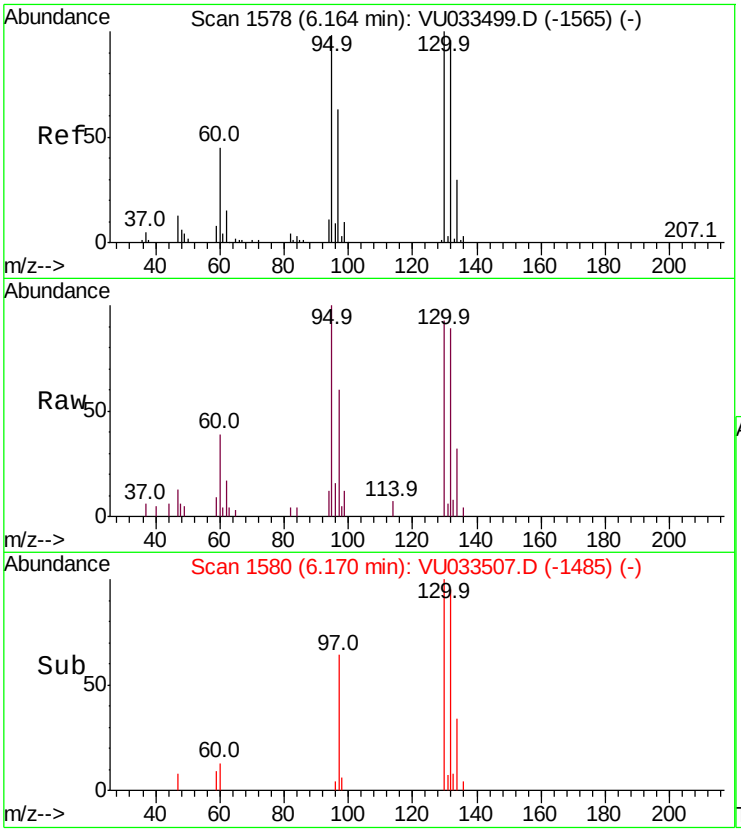




#33
Benzene
Concen: 2.757 ug/L
RT: 5.37 min Scan# 1330
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 78 Resp: 24990



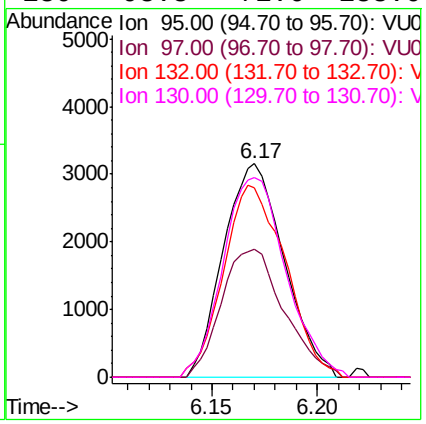


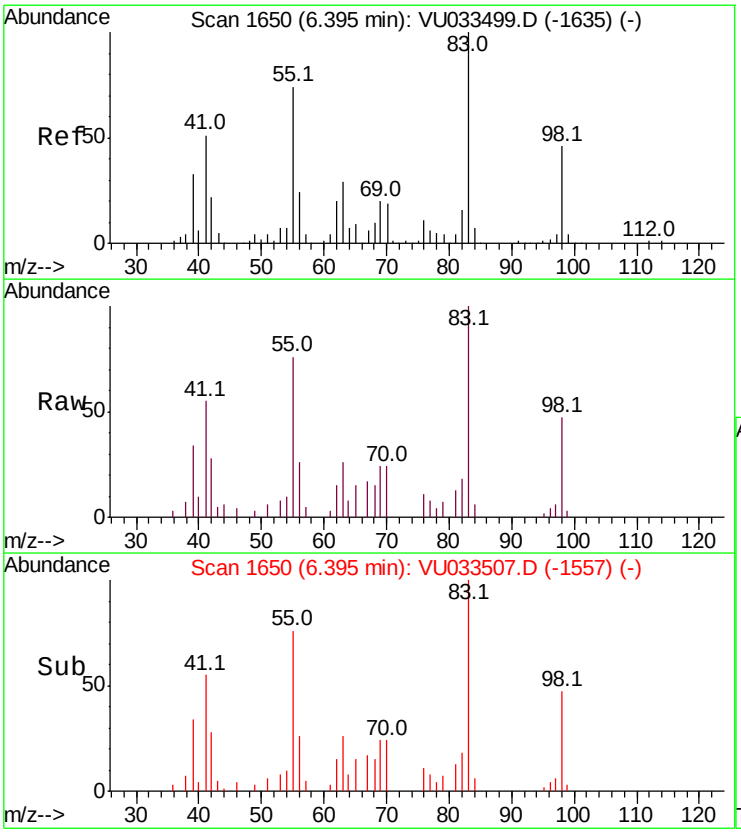
#34
Trichloroethene
Concen: 2.645 ug/L
RT: 6.17 min Scan# 1580
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 95 Resp: 6324

Ion	Ratio	Lower	Upper
95	100		
97	60.0	44.7	83.1
132	88.7	66.8	124.0
130	93.3	71.6	133.0

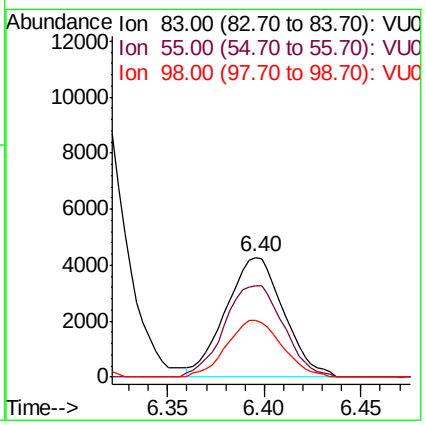


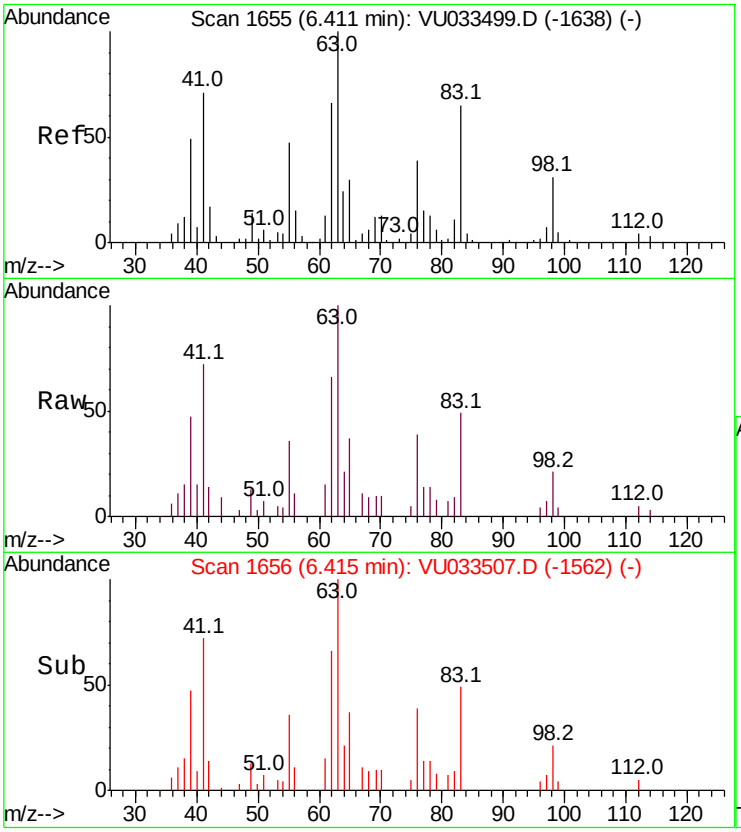


#35
Methylcyclohexane
Concen: 2.391 ug/L
RT: 6.40 min Scan# 1650
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 83 Resp: 8922

Ion	Ratio	Lower	Upper
83	100		
55	77.9	60.2	90.4
98	45.1	36.5	54.7



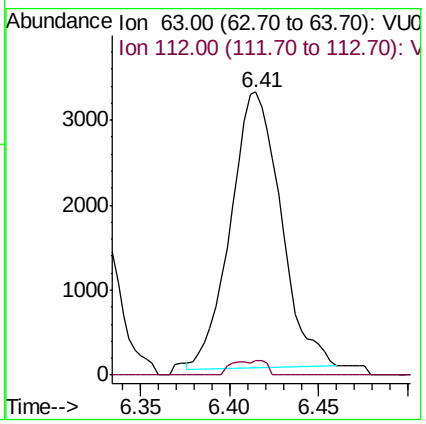


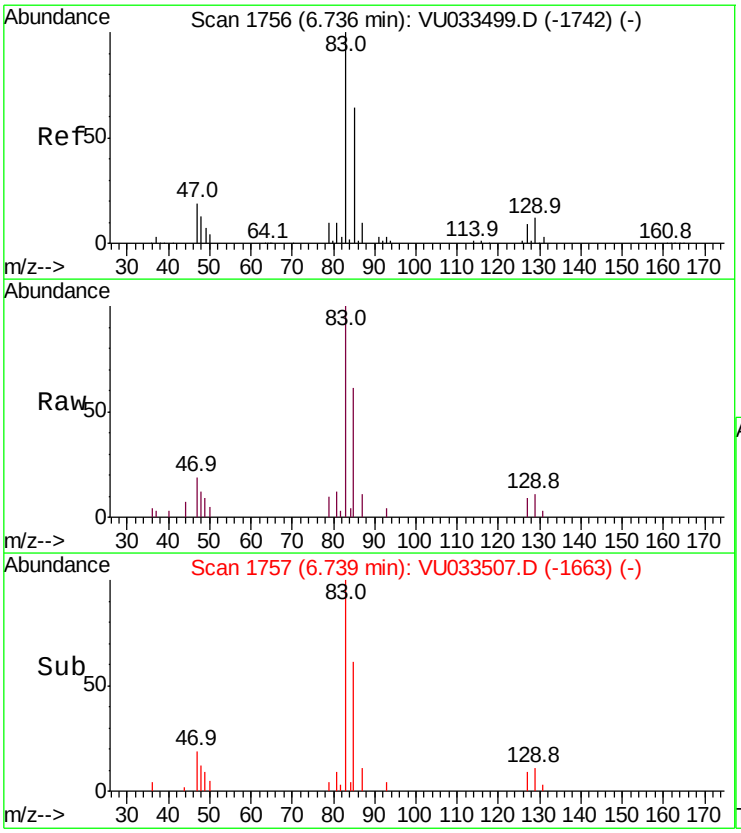
#37
1,2-Dichloropropane
Concen: 2.638 ug/L
RT: 6.41 min Scan# 1656
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 63 Resp: 6402

Ion	Ratio	Lower	Upper
63	100		
112	2.1	3.0	4.6#

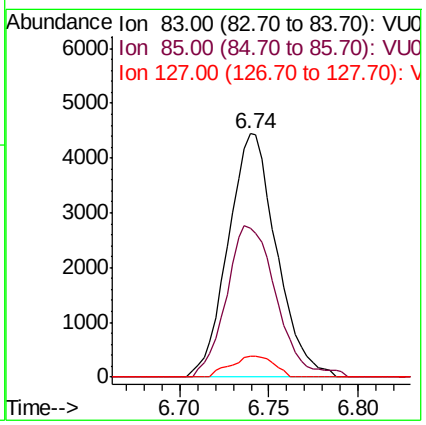


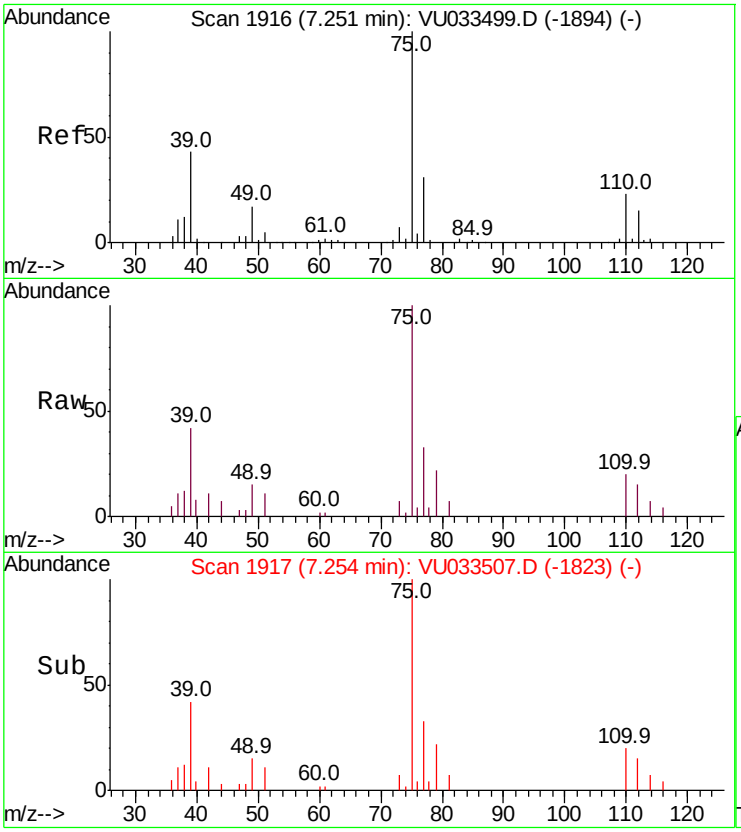


#38
Bromodichloromethane
Concen: 2.675 ug/L
RT: 6.74 min Scan# 1757
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 83 Resp: 8391

Ion	Ratio	Lower	Upper
83	100		
85	61.0	45.1	83.9
127	8.8	7.2	10.8



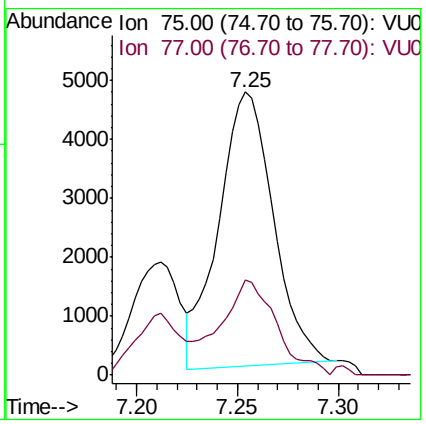


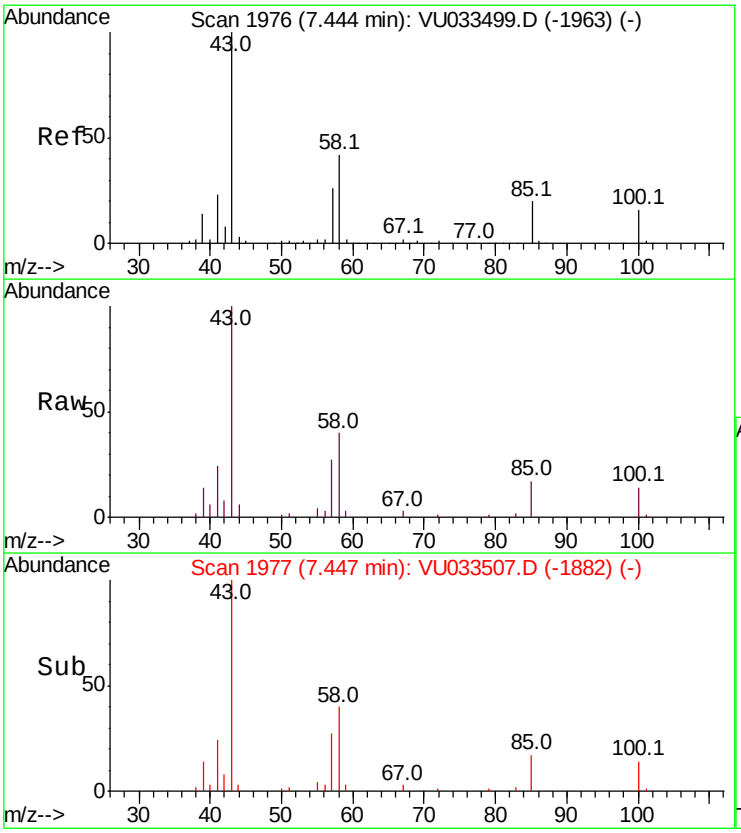
#39
cis-1,3-Dichloropropene
Concen: 2.336 ug/L
RT: 7.25 min Scan# 1917
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 75 Resp: 8846

Ion	Ratio	Lower	Upper
75	100		
77	33.5	22.3	41.5

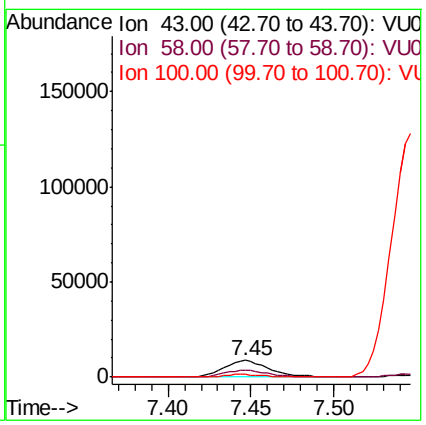


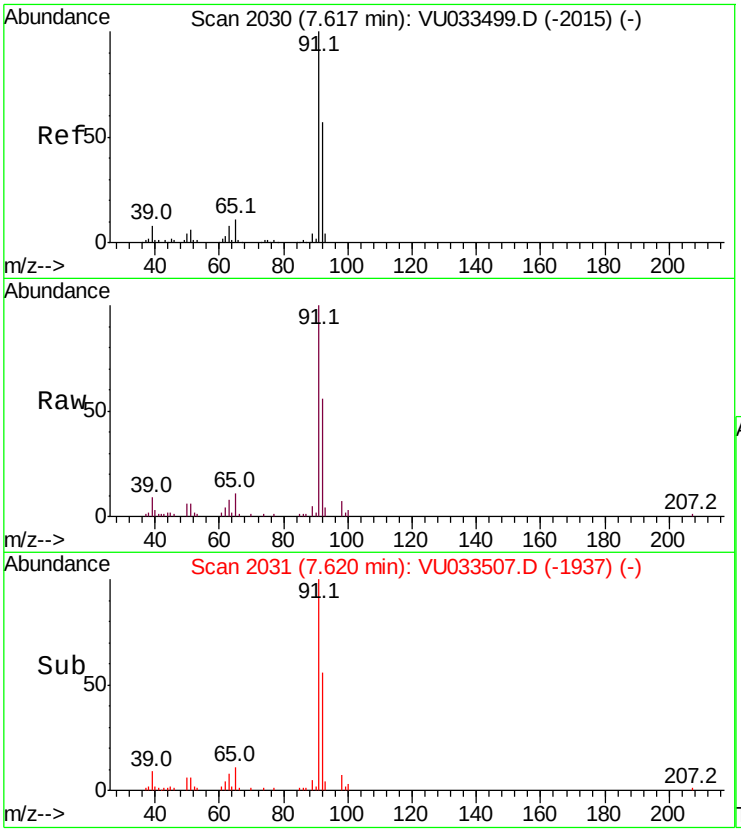


#40
4-Methyl-2-pentanone
Concen: 4.897 ug/L
RT: 7.45 min Scan# 1977
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 43 Resp: 16408

Ion	Ratio	Lower	Upper
43	100		
58	39.6	32.8	49.2
100	13.6	12.9	19.3



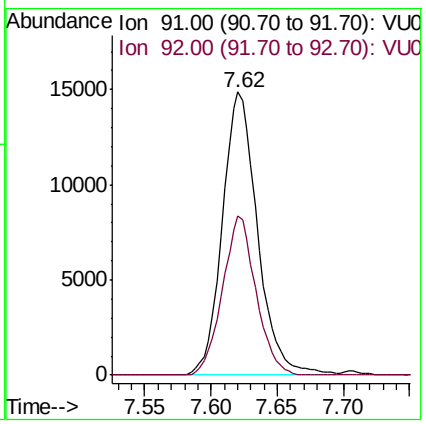


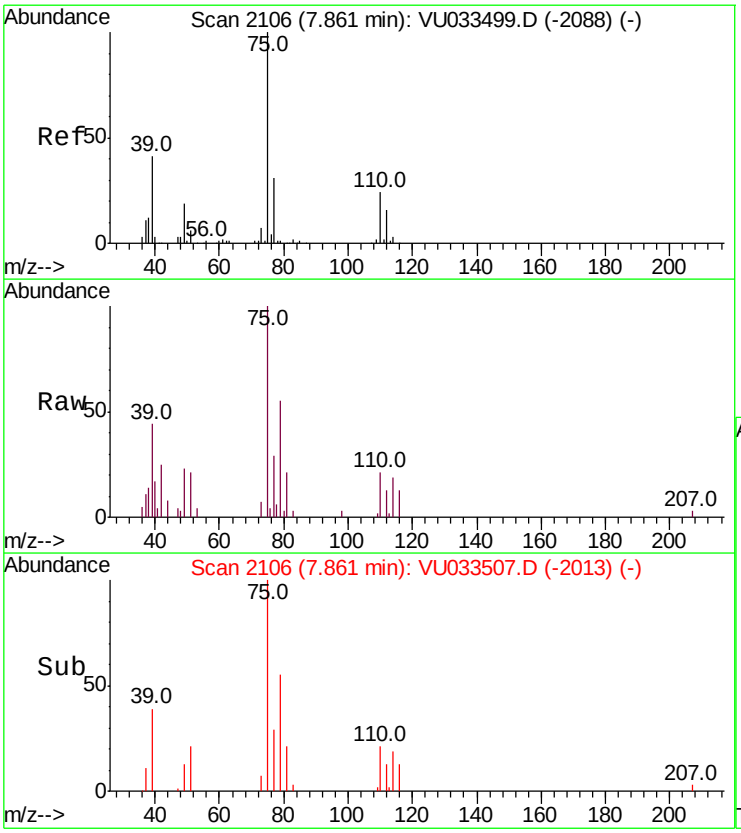
#42
Toluene
Concen: 2.807 ug/L
RT: 7.62 min Scan# 2031
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 91 Resp: 27359

Ion	Ratio	Lower	Upper
91	100		
92	56.1	40.2	74.6

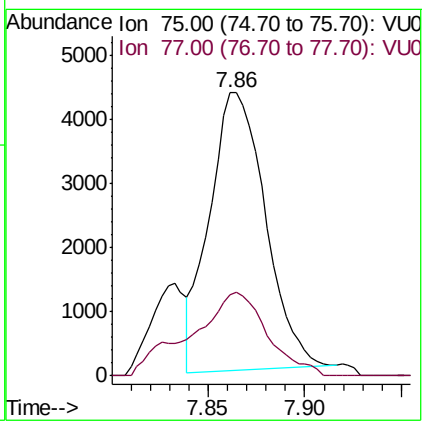


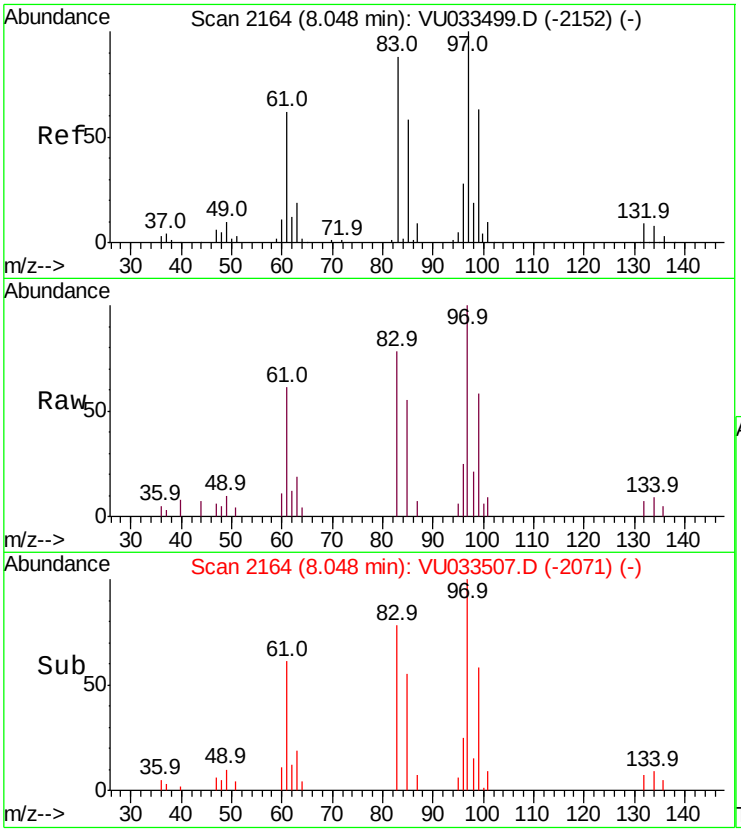


#44
trans-1,3-Dichloropropene
Concen: 2.552 ug/L
RT: 7.86 min Scan# 2106
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 75 Resp: 8735

Ion	Ratio	Lower	Upper
75	100		
77	28.6	22.7	42.1



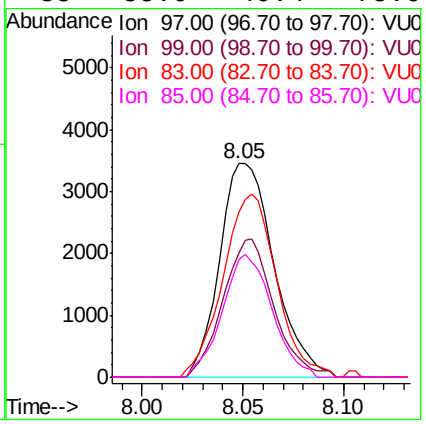


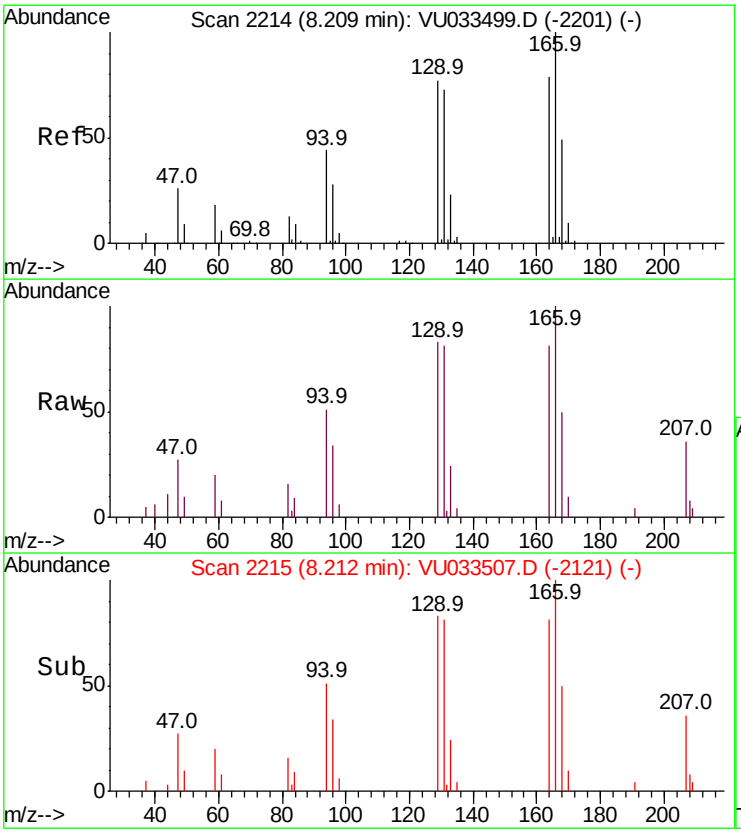
#45
1,1,2-Trichloroethane
Concen: 2.832 ug/L
RT: 8.05 min Scan# 2164
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion: 97 Resp: 6524

Ion	Ratio	Lower	Upper
97	100		
99	58.3	44.4	82.4
83	77.5	61.5	114.1
85	55.0	40.4	75.0

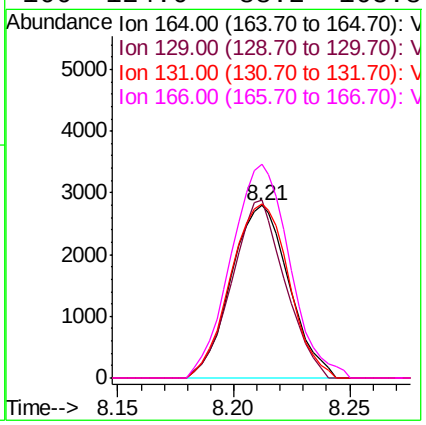


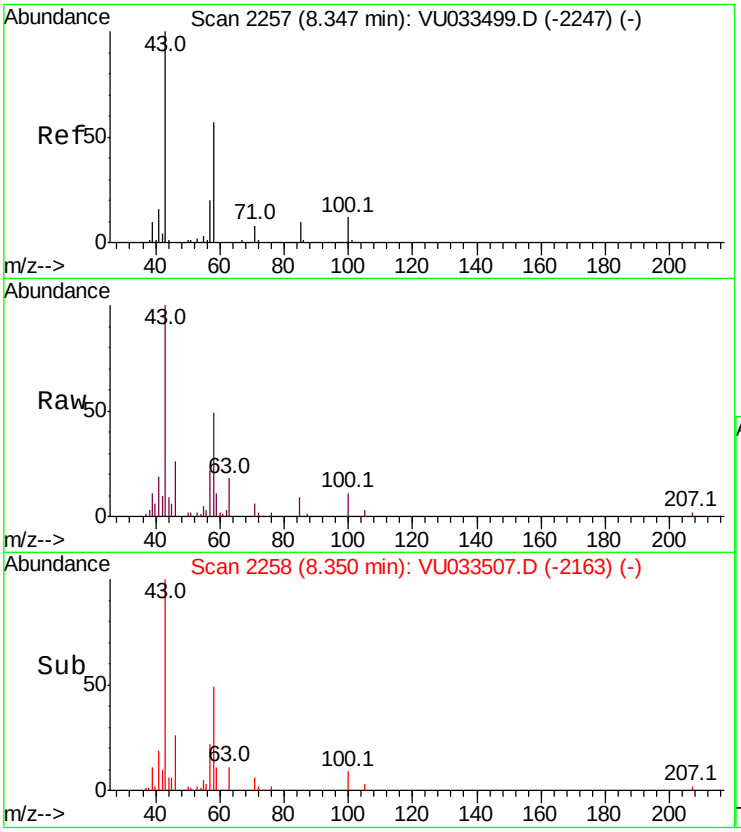


#46
Tetrachloroethene
Concen: 2.481 ug/L
RT: 8.21 min Scan# 2215
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:164 Resp: 4843

Ion	Ratio	Lower	Upper
164	100		
129	103.2	65.5	121.7
131	100.9	63.3	117.7
166	124.0	88.2	163.8



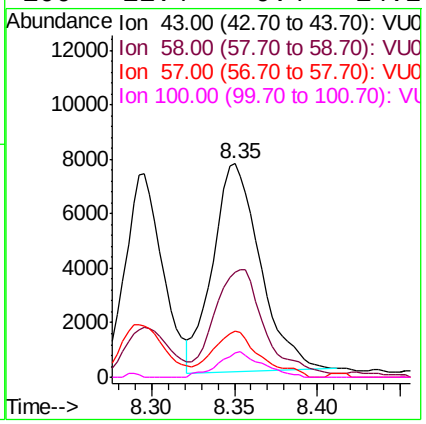


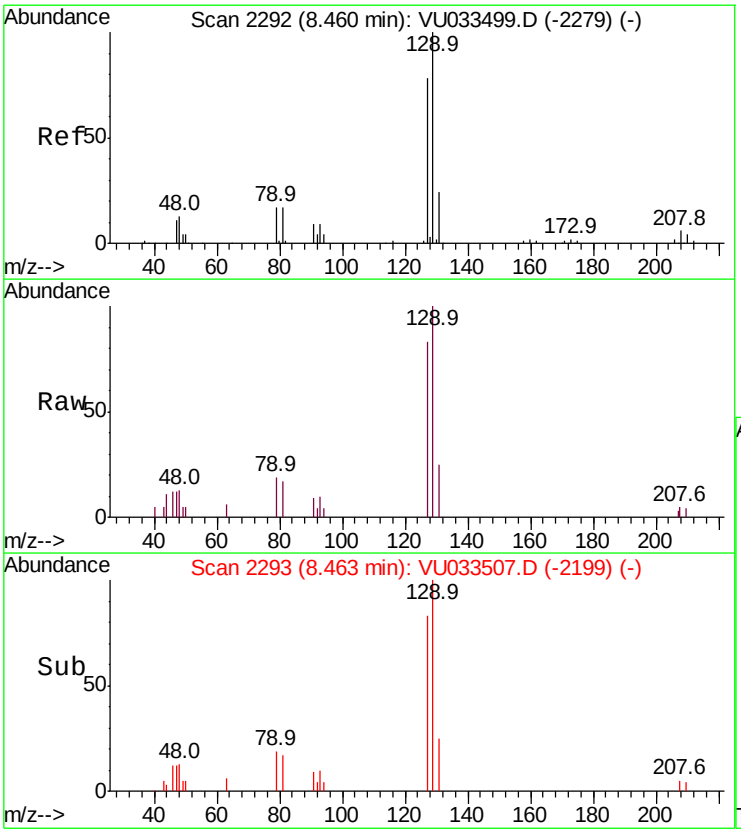
#48
2-Hexanone
Concen: 5.637 ug/L
RT: 8.35 min Scan# 2258
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 43 Resp: 15267

Ion	Ratio	Lower	Upper
43	100		
58	53.9	45.8	68.6
57	15.5	15.8	23.6#
100	11.4	9.4	14.2

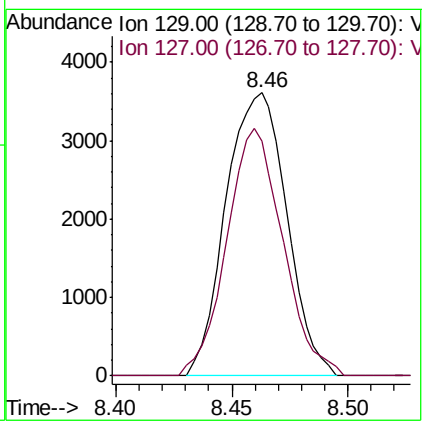


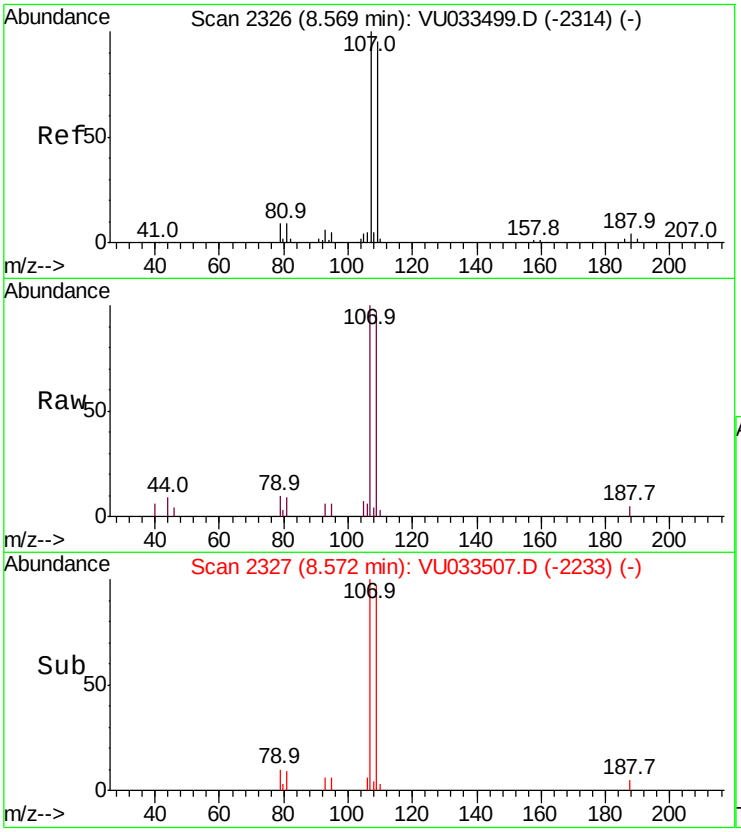


#49
Dibromochloromethane
Concen: 2.507 ug/L
RT: 8.46 min Scan# 2293
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:129 Resp: 6571

Ion	Ratio	Lower	Upper
129	100		
127	83.0	53.8	99.8



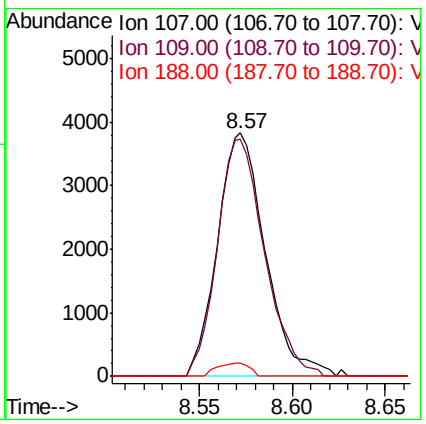


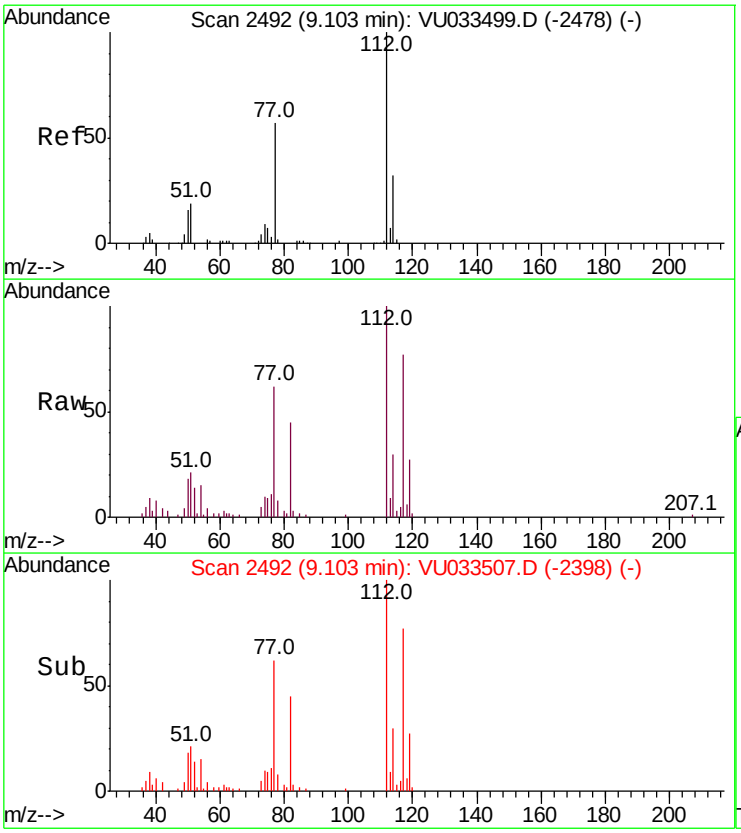
#50
1,2-Dibromoethane
Concen: 2.687 ug/L
RT: 8.57 min Scan# 2327
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion:107 Resp: 6856

Ion	Ratio	Lower	Upper
107	100		
109	97.3	66.8	124.0
188	5.2	3.0	4.4#

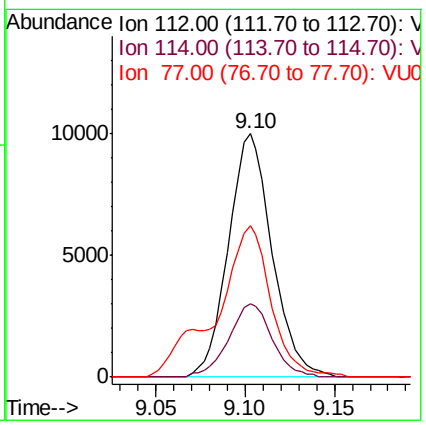


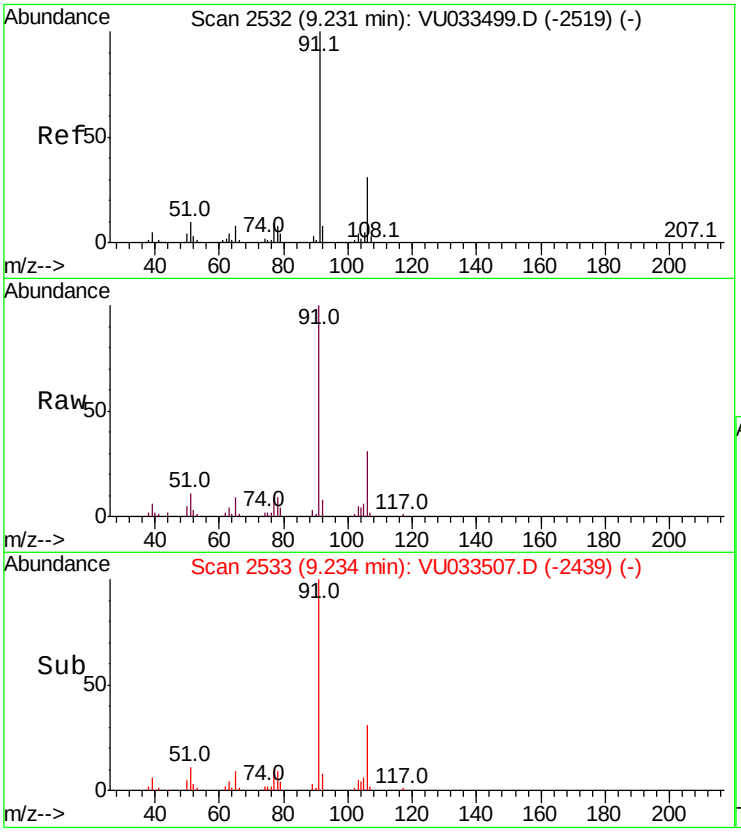


#51
Chlorobenzene
Concen: 2.671 ug/L
RT: 9.10 min Scan# 2492
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:112 Resp: 17046

Ion	Ratio	Lower	Upper
112	100		
114	30.4	22.3	41.5
77	62.0	45.6	68.4



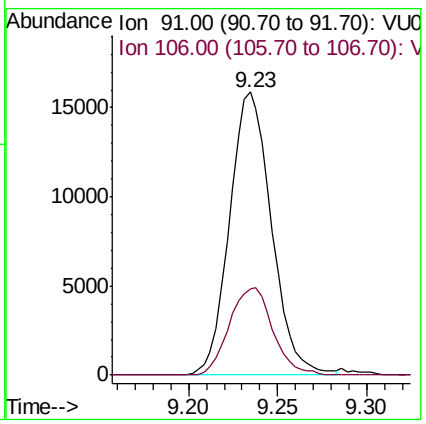


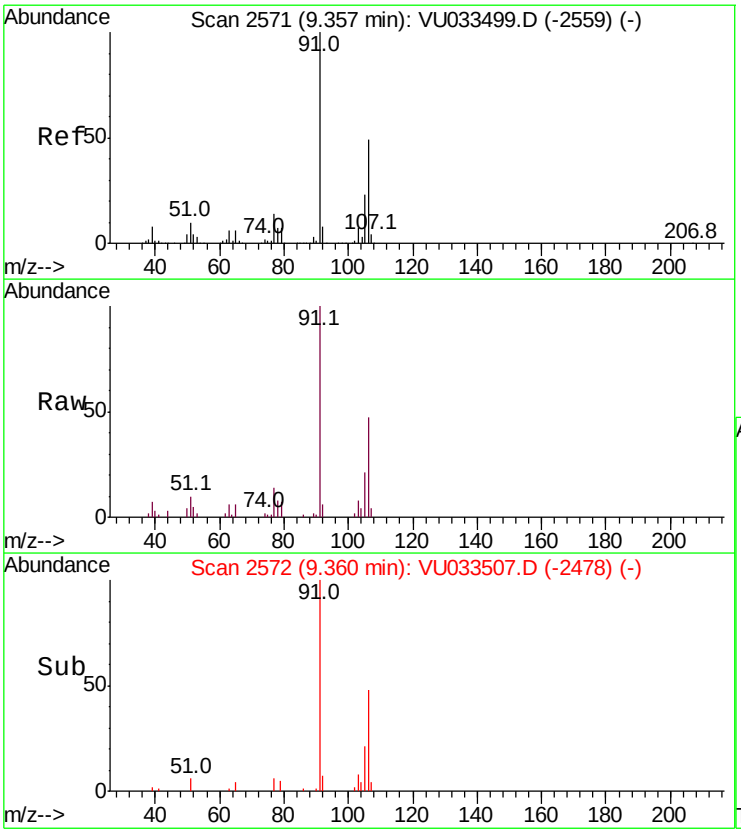
#52
Ethylbenzene
Concen: 2.481 ug/L
RT: 9.23 min Scan# 2533
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 91 Resp: 26044

Ion	Ratio	Lower	Upper
91	100		
106	30.6	22.2	41.2

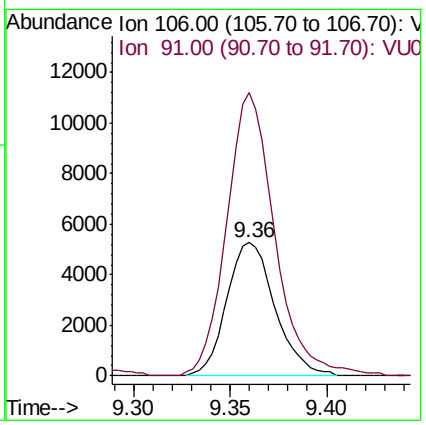


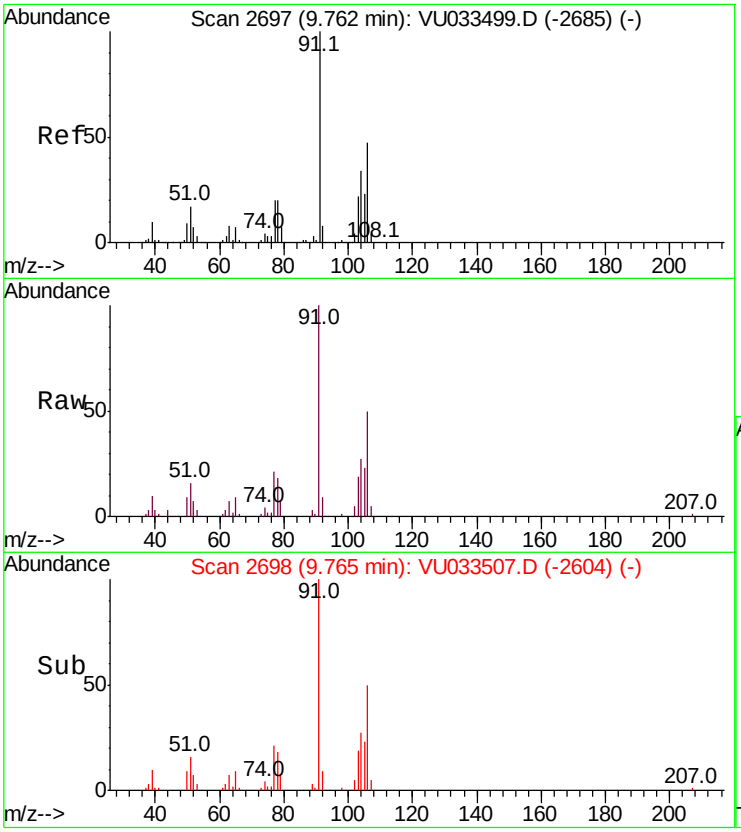


#53
m,p-Xylene
Concen: 2.280 ug/L
RT: 9.36 min Scan# 2572
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:106 Resp: 9188

Ion	Ratio	Lower	Upper
106	100		
91	212.4	143.0	265.6



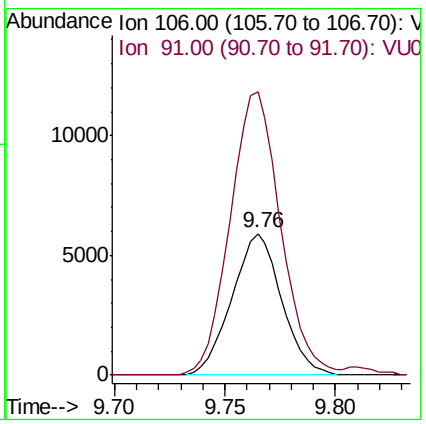


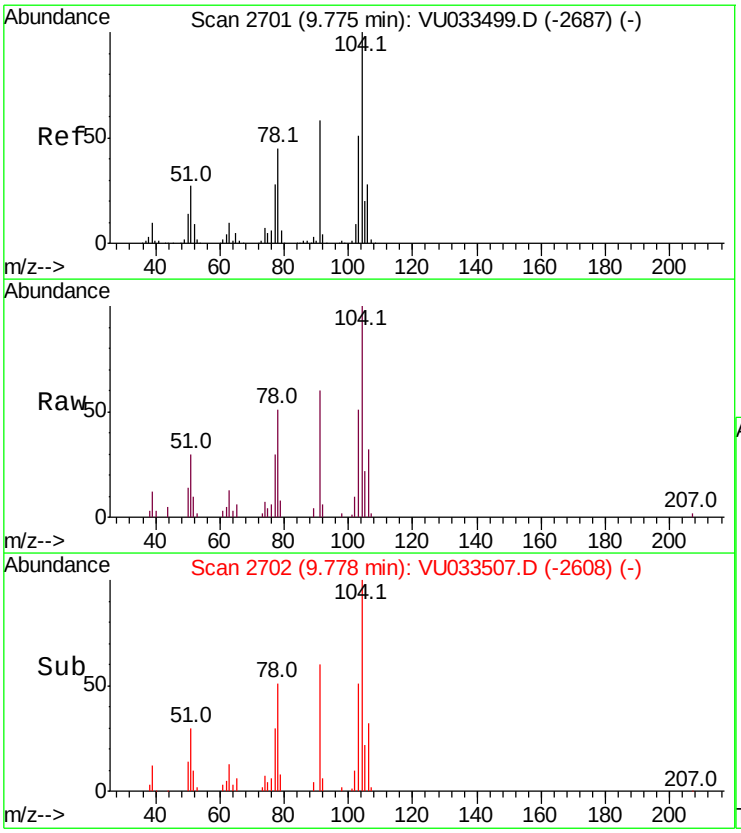
#54
o-xylene
Concen: 2.360 ug/L
RT: 9.76 min Scan# 2698
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:106 Resp: 9225

Ion	Ratio	Lower	Upper
106	100		
91	200.2	148.4	275.6

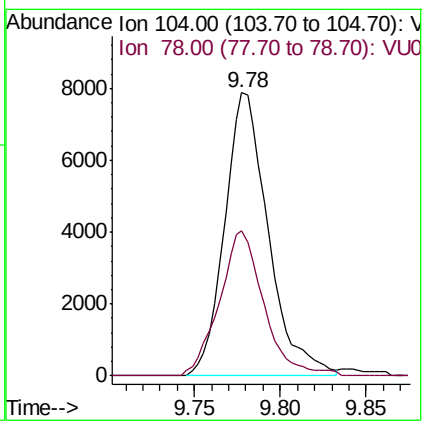


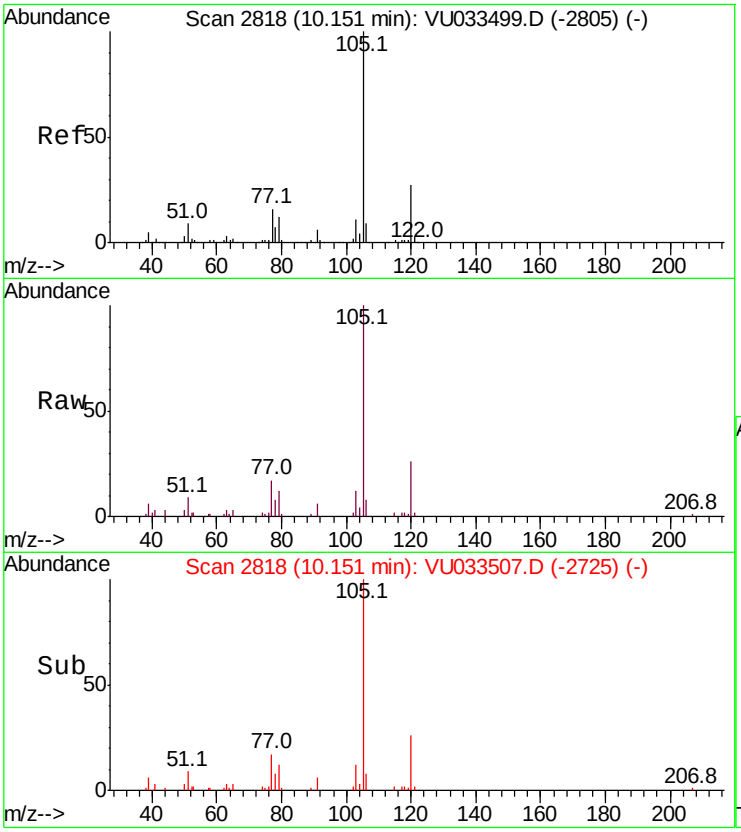


#55
Styrene
Concen: 2.105 ug/L
RT: 9.78 min Scan# 2702
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:104 Resp: 13976

Ion	Ratio	Lower	Upper
104	100		
78	51.4	32.2	59.8



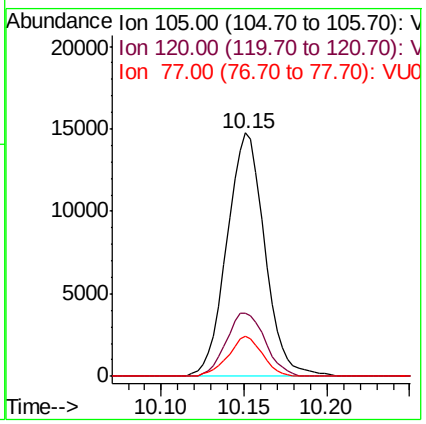


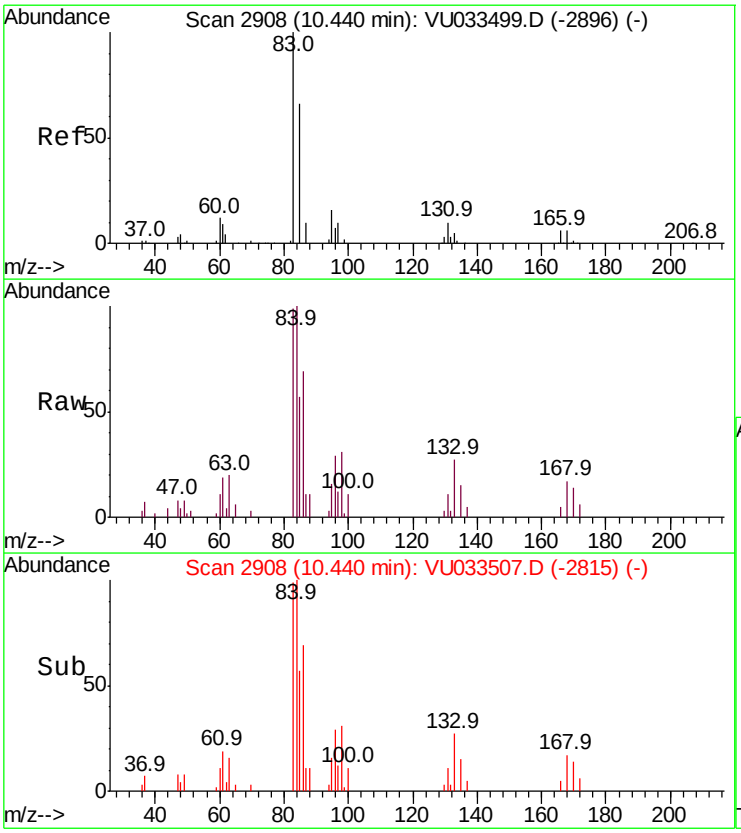
#56
Isopropylbenzene
Concen: 2.297 ug/L
RT: 10.15 min Scan# 2818
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion:105 Resp: 23460

Ion	Ratio	Lower	Upper
105	100		
120	26.5	21.4	32.0
77	14.9	12.5	18.7

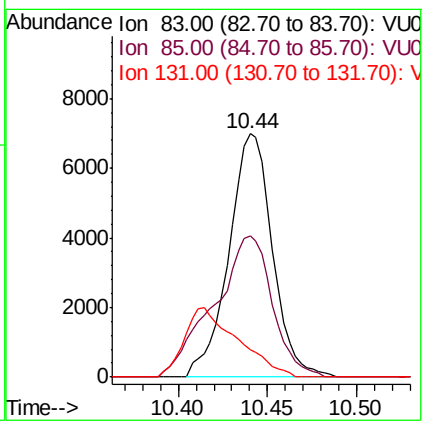


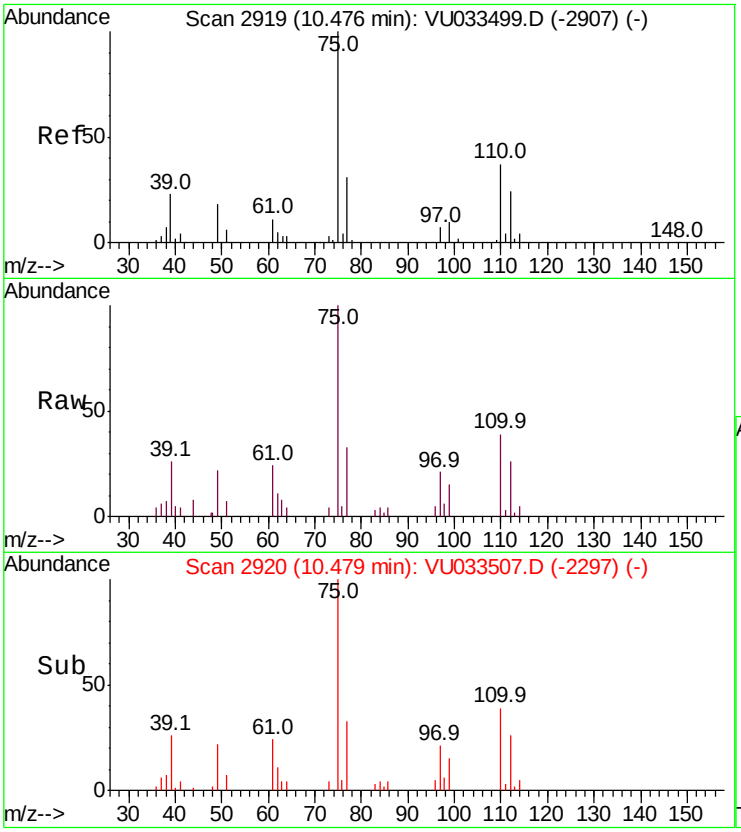


#58
1,1,2,2-Tetrachloroethane
Concen: 2.872 ug/L
RT: 10.44 min Scan# 2908
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 83 Resp: 11933

Ion	Ratio	Lower	Upper
83	100		
85	57.8	45.4	84.4
131	11.4	7.9	11.9



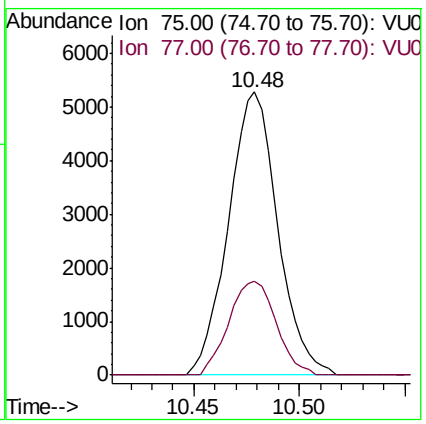


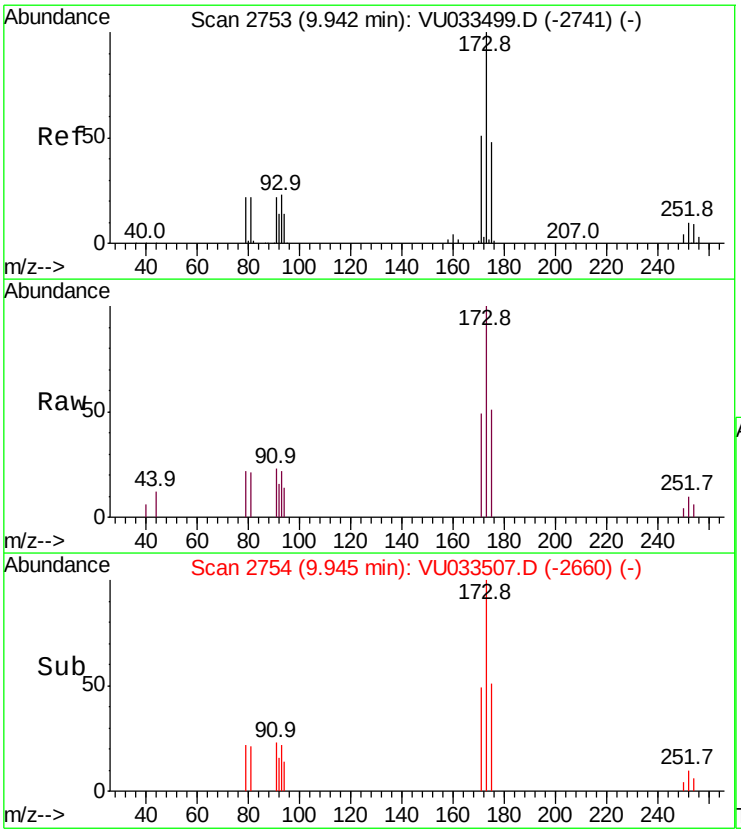
#59
1,2,3-Trichloropropane
Concen: 2.677 ug/L
RT: 10.48 min Scan# 2920
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion: 75 Resp: 8575

Ion	Ratio	Lower	Upper
75	100		
77	31.8	25.8	38.6

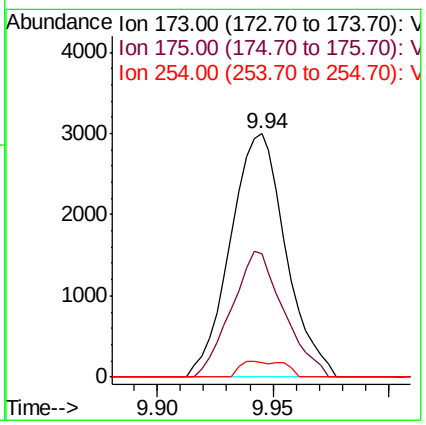


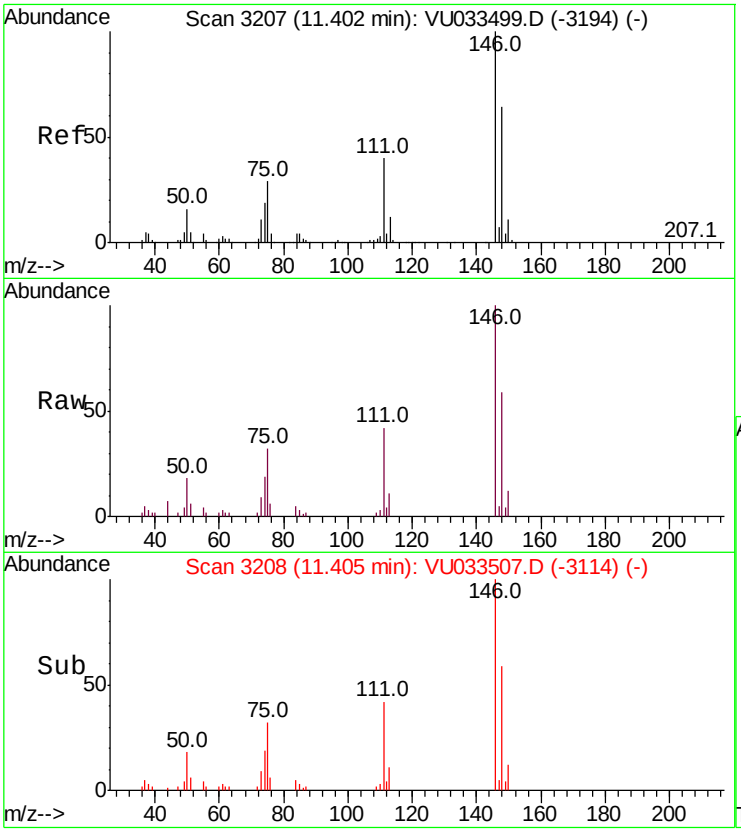


#61
Bromoform
Concen: 2.614 ug/L
RT: 9.94 min Scan# 2754
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:173 Resp: 4976

Ion	Ratio	Lower	Upper
173	100		
175	48.9	38.7	58.1
254	3.3	7.5	11.3#



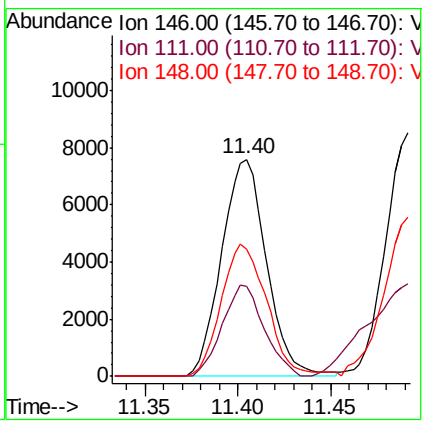


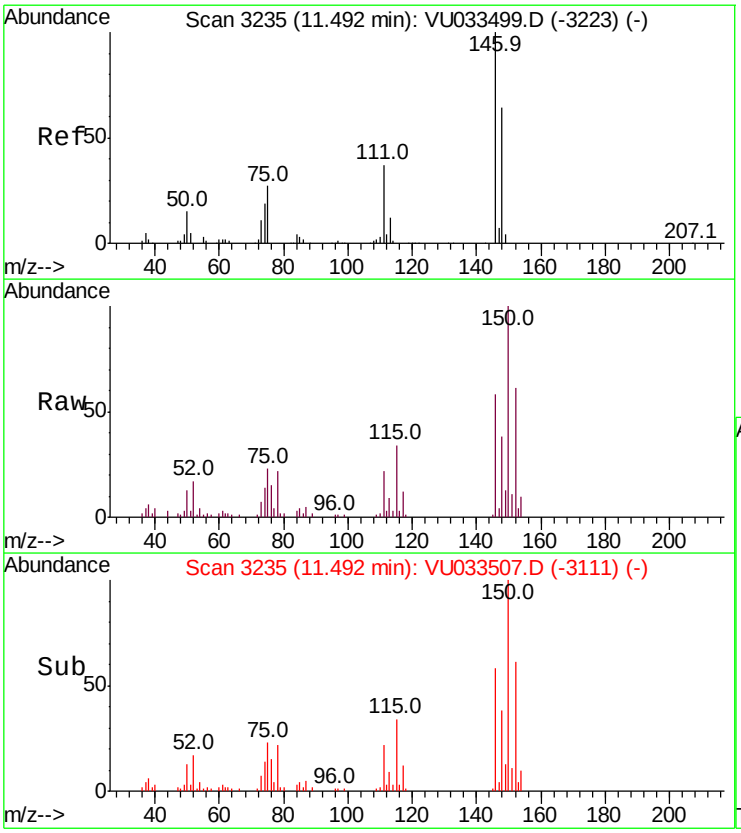
#62
1,3-Dichlorobenzene
Concen: 2.641 ug/L
RT: 11.40 min Scan# 3208
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument : MSVOA_U
ClientSampleId : MDL07

Tgt Ion:146 Resp: 12781

Ion	Ratio	Lower	Upper
146	100		
111	41.6	28.1	52.1
148	58.9	45.0	83.6

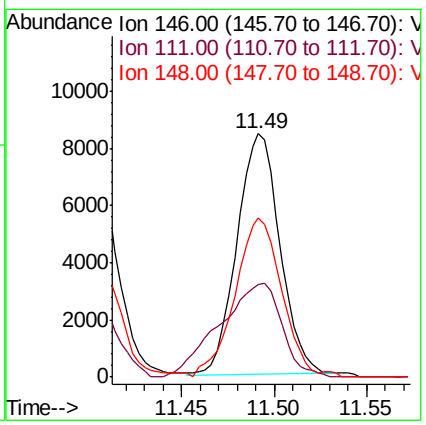


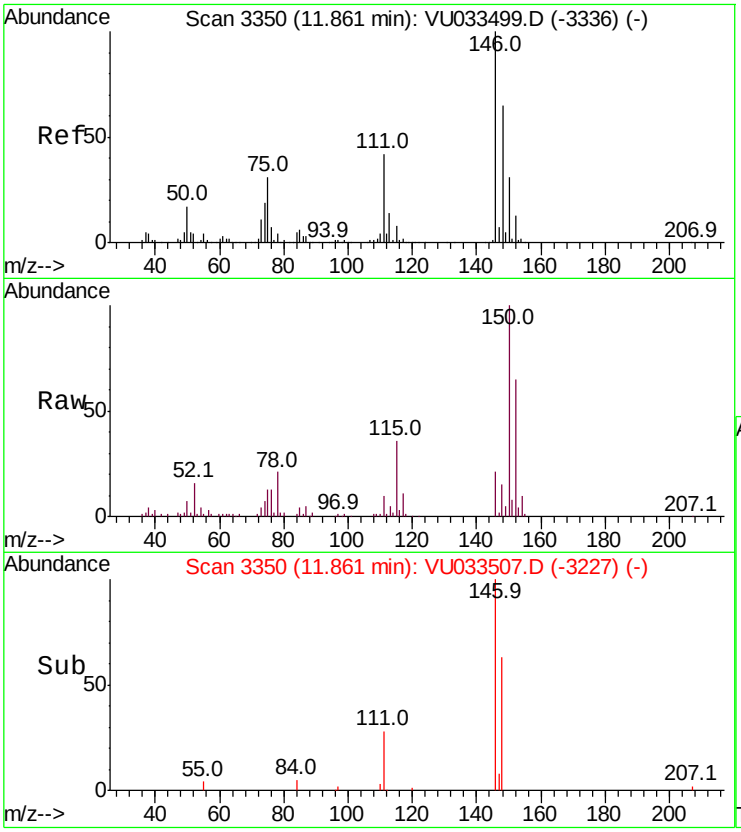


#63
1,4-Dichlorobenzene
Concen: 2.686 ug/L
RT: 11.49 min Scan# 3235
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:146 Resp: 13509

Ion	Ratio	Lower	Upper
146	100		
111	38.1	27.2	50.4
148	65.2	44.5	82.7



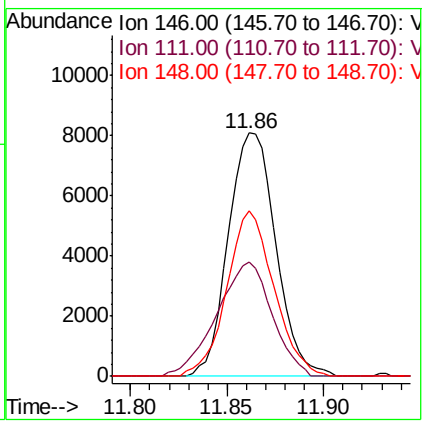


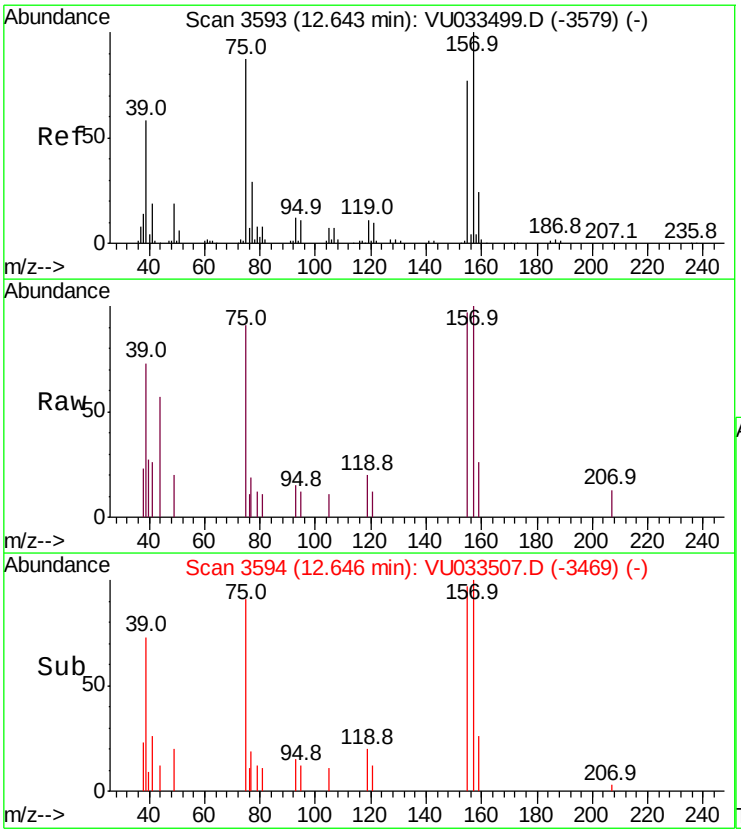
#65
1,2-Dichlorobenzene
Concen: 2.828 ug/L
RT: 11.86 min Scan# 3350
Delta R.T. -0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:146 Resp: 13838

Ion	Ratio	Lower	Upper
146	100		
111	46.9	31.7	47.5
148	68.1	50.3	75.5

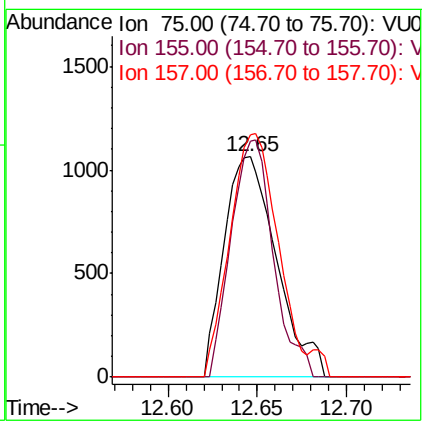


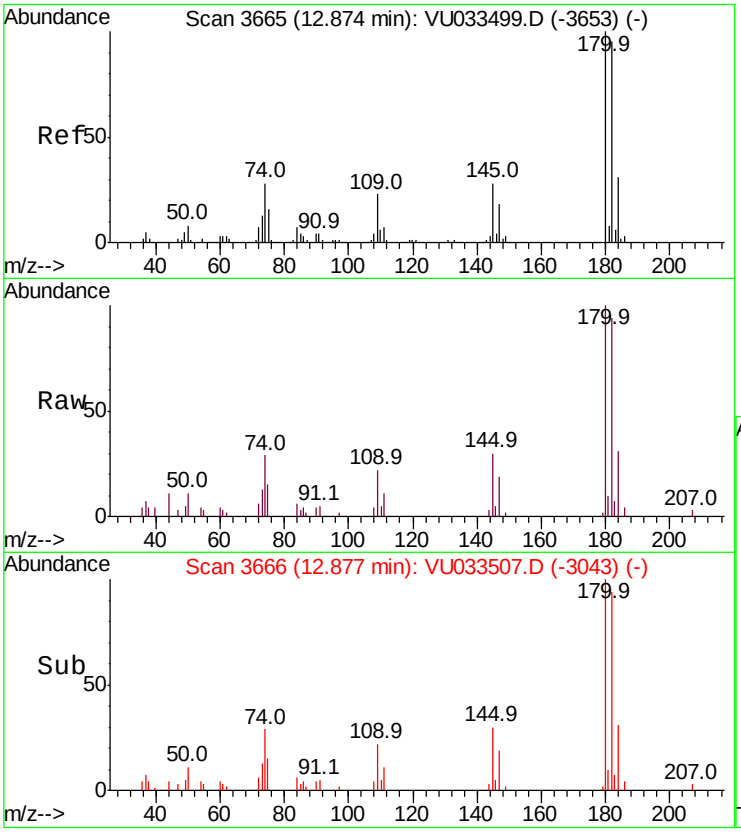


#66
1,2-Dibromo-3-chloropropane
Concen: 2.418 ug/L
RT: 12.65 min Scan# 3594
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion: 75 Resp: 2186

Ion	Ratio	Lower	Upper
75	100		
155	106.8	69.4	104.0#
157	109.9	91.8	137.8



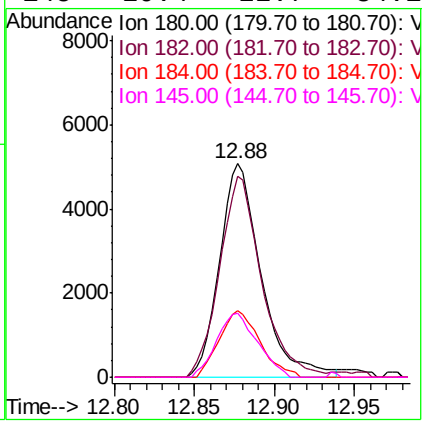


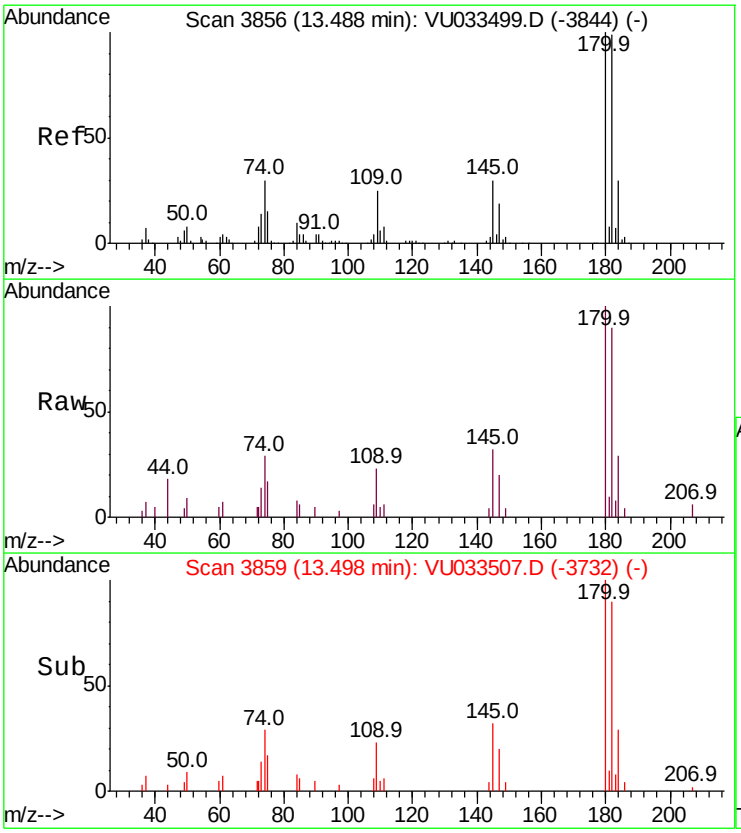
#67
1,3,5-Trichlorobenzene
Concen: 2.309 ug/L
RT: 12.88 min Scan# 3666
Delta R.T. 0.00 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:180 Resp: 9017

Ion	Ratio	Lower	Upper
180	100		
182	94.7	75.6	113.4
184	30.5	24.2	36.2
145	29.4	22.7	34.1

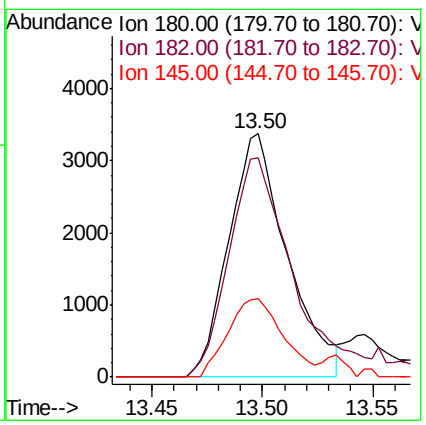


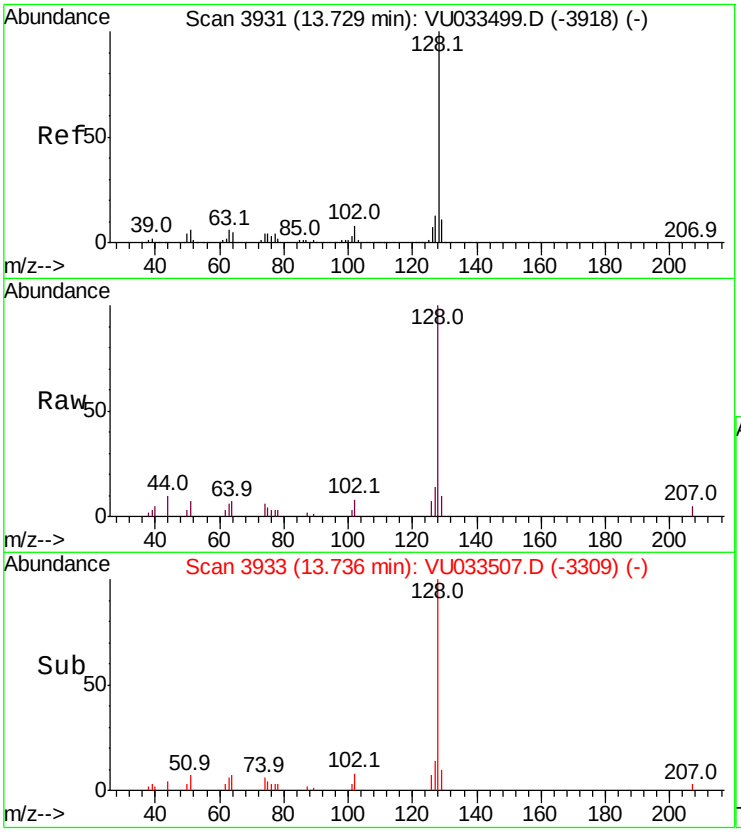


#68
1,2,4-trichlorobenzene
Concen: 1.854 ug/L
RT: 13.50 min Scan# 3859
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:180 Resp: 6187

Ion	Ratio	Lower	Upper
180	100		
182	98.4	75.8	113.8
145	30.4	24.3	36.5



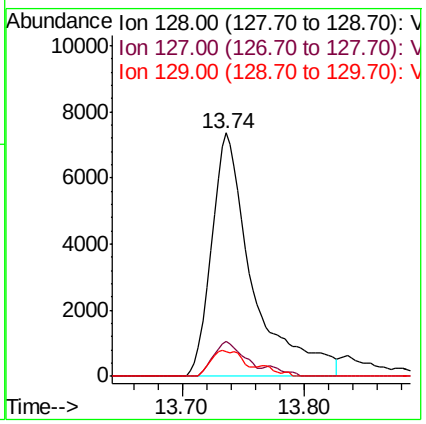


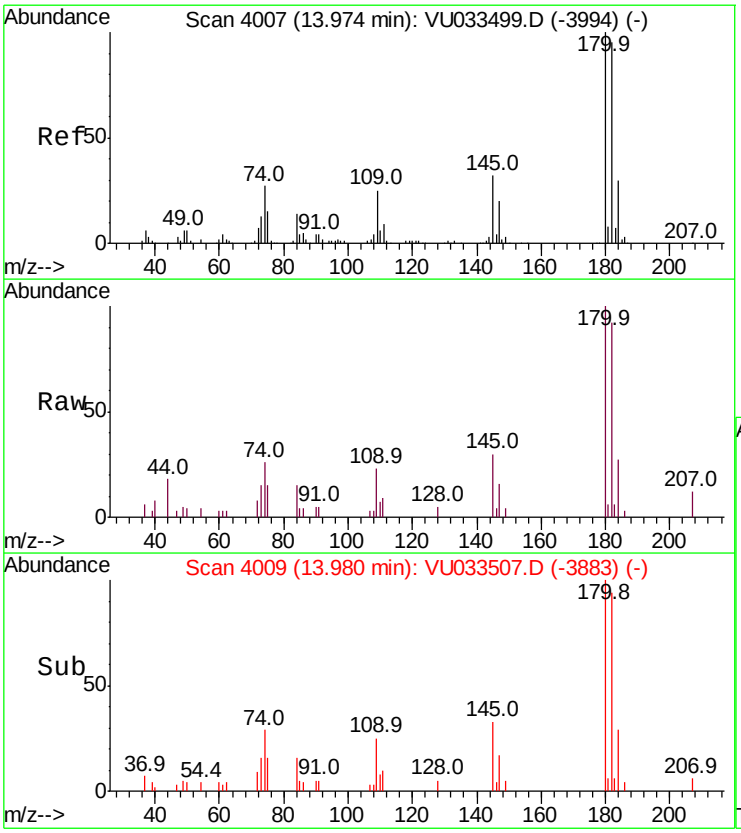
#69
Naphthalene
Concen: 1.803 ug/L
RT: 13.74 min Scan# 3933
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Instrument :
MSVOA_U
ClientSampleId :
MDL07

Tgt Ion:128 Resp: 17261

Ion	Ratio	Lower	Upper
128	100		
127	10.8	10.8	16.2
129	8.4	8.7	13.1#

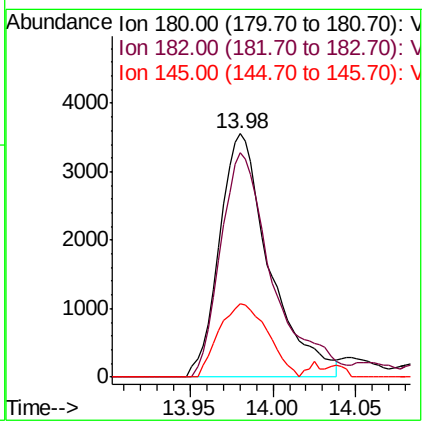




#70
1,2,3-Trichlorobenzene
Concen: 2.126 ug/L
RT: 13.98 min Scan# 4009
Delta R.T. 0.01 min
Lab File: VU033507.D
Acq: 30 Jul 2019 21:06

Tgt Ion:180 Resp: 7461

Ion	Ratio	Lower	Upper
180	100		
182	95.6	75.5	113.3
145	29.4	24.4	36.6



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Prep Standard - Chemical Standard Summary

Order ID : K4103

Test : VOC-TCLVOA-10

Prepbatch ID :

Sequence ID/Qc Batch ID: VU073119,VU073119

Standard ID :

VP84154,VP84295,VP84661,VP84777,VP84850,VP84895,VP84948,VP84949,VP84950,VP84951,VP84952,VP84953,VP84954,VP84956,VP84957,VP84958,VP84959;2.5PPB
MDL:VP84955,VP84976,VP84977,VP84978,VP84979;VP85022,VP85021,VP85023,

Chemical ID :

V10037,V10040,V10054,V10064,V1456,V7852,V8848,V8854,V8989,V8991,V9259,V9274,V9301,V9335,V9379,V9408,V9409,V9423,V9437,V9451,V9597,V9599,V9604,V9661,V9753,V9755,V9756,V9757,V9766,V9773,V9958,V9959,V9968,

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
649	SOM01.2 Internal Standard, 250PPM	VP84154	07/01/2019	08/01/2019	Semsettin Yesilyurt	None	None	mohammad ahmed 07/27/2019

FROM 1.000ml of V9661 + 9.000ml of V9773 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
218	BFB, 25PPM	VP84295	07/08/2019	01/08/2020	Semsettin Yesilyurt	None	None	mohammad ahmed 07/16/2019

FROM 0.500ml of V7852 + 49.500ml of V9766 = Final Quantity: 50.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3418	SOMO2.4-VOC L/M ICV,100 PPM	VP84661	07/22/2019	08/22/2019	Semsettin Yesilyurt	None	None	Mahesh Dadoda 07/22/2019

FROM 0.200ml of V9274 + 0.250ml of V8854 + 0.250ml of V9301 + 0.250ml of V9335 + 0.250ml of V9379 + 0.250ml of V9437 + 3.550ml of V9968 = Final Quantity: 5.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3751	L/M ICV-100 PPM 2 COMP.MIX	VP84777	07/24/2019	08/31/2019	Semsettin Yesilyurt	None	None	Mahesh Dadoda 07/25/2019

FROM 0.250ml of V10037 + 0.250ml of V10064 + 4.500ml of V9958 = Final Quantity: 5.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
650	SOM01.2 Surrogate, 100PPM	VP84850	07/26/2019	08/31/2019	Semsettin Yesilyurt	None	None	Mahesh Dadoda 07/26/2019

FROM 0.400ml of V9757 + 0.500ml of V9599 + 0.500ml of V9604 + 1.000ml of V9597 + 1.200ml of V9753 + 1.200ml of V9755 + 1.200ml of V9756 + 4.000ml of V9959 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
651	SOM01.2 Calibration Mix, 200PPM	VP84895	07/29/2019	08/31/2019	Semsettin Yesilyurt	None	None	Mahesh Dadoda 07/29/2019

FROM 0.200ml of V9958 + 0.800ml of V8989 + 0.800ml of V9259 + 0.800ml of V9408 + 1.000ml of V10040 + 1.000ml of V10054 + 1.000ml of V8848 + 1.000ml of V9423 + 1.000ml of V9451 + 1.200ml of V8991 + 1.200ml of V9409 = Final Quantity: 10.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
589	BFB TUNE CHECK	VP84948	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.984ml of V1456 + 0.016ml of VP84295 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
652	5 PPB ICC, SOM01.2LM-Water	VP84949	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.980ml of V1456 + 0.001ml of VP84895 + 0.002ml of VP84850 + 0.008ml of VP84154 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
653	10 PPB ICC, SOM01.2LM-Water	VP84950	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.980ml of V1456 + 0.002ml of VP84895 + 0.004ml of VP84850 + 0.008ml of VP84154 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
654	50 PPB ICC, SOM01.2LM-Water	VP84951	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.960ml of V1456 + 0.008ml of VP84154 + 0.010ml of VP84895 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
655	100 PPB ICC, SOM01.2LM-Water	VP84952	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.930ml of V1456 + 0.008ml of VP84154 + 0.020ml of VP84895 + 0.040ml of VP84850 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
656	200 PPB ICC, SOM01.2LM-Water	VP84953	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.870ml of V1456 + 0.008ml of VP84154 + 0.040ml of VP84895 + 0.080ml of VP84850 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3419	50 PPB ICV-SOMO2.4 WATER	VP84954	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.950ml of V1456 + 0.008ml of VP84154 + 0.020ml of VP84661 + 0.020ml of VP84777 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP84956	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.790ml of V1456 + 0.001ml of VP84895 + 0.008ml of VP84154 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP84957	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.790ml of V1456 + 0.001ml of VP84895 + 0.008ml of VP84154 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP84958	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/30/2019

FROM 39.790ml of V1456 + 0.001ml of VP84895 + 0.008ml of VP84154 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
652	5 PPB ICC, SOM01.2LM-Water	VP84976	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/31/2019

FROM 39.980ml of V1456 + 0.001ml of VP84895 + 0.002ml of VP84850 + 0.008ml of VP84154 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP84977	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/31/2019

FROM 39.790ml of V1456 + 0.001ml of VP84895 + 0.008ml of VP84154 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
1754	2.5 PPB MDL,SOM01.2LM-WATER	VP84978	07/30/2019	07/31/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/31/2019

FROM 39.790ml of V1456 + 0.001ml of VP84895 + 0.008ml of VP84154 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
589	BFB TUNE CHECK	VP85021	07/31/2019	08/01/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/31/2019

FROM 39.984ml of V1456 + 0.016ml of VP84295 = Final Quantity: 40.000 ml

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VOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
657	50 PPB CCC-CCV, SOM01.2LM-Water	VP85023	07/31/2019	08/01/2019	Sweetuben Patel	None	None	Mahesh Dadoda 07/31/2019

FROM 39.960ml of V1456 + 0.008ml of VP84154 + 0.010ml of VP84895 + 0.020ml of VP84850 = Final Quantity: 40.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	CQ18257 / 1,3,5-Trimethylbenzene 2000 ug/mL	071719	01/24/2020	07/24/2019 / sam	07/19/2019 / sam	V10037

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	CQ18257 / 1,3,5-Trimethylbenzene 2000 ug/mL	071819	01/24/2020	07/24/2019 / sam	07/19/2019 / sam	V10040

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	31491 / 1,2,4-Trimethylbenzene 2000ppm	072219	01/24/2020	07/24/2019 / sam	07/23/2019 / sam	V10054

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	31491 / 1,2,4-Trimethylbenzene 2000ppm	011316	01/24/2020	07/24/2019 / sam	07/23/2019 / sam	V10064

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Res-Kem General water	DIW / DI Water	DAILY	12/31/2019	03/01/2010 / apatel	03/02/2010 / apatel	V1456

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0127174	01/08/2020	07/08/2019 / sam	08/10/2017 / sam	V7852

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30429 / 1,2,3-Trichloropropane Standard, 2,000 ug/ml	A0139377	01/24/2020	07/24/2019 / sam	08/09/2018 / sam	V8848

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30429 / 1,2,3-Trichloropropane Standard, 2,000 ug/ml	A0136632	01/22/2020	07/22/2019 / sam	08/09/2018 / sam	V8854

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31280 / Naphthalene, 1000 PPM in Methanol	A0137587	01/24/2020	07/24/2019 / sam	09/14/2018 / sam	V8989

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31280 / Naphthalene, 1000 PPM in Methanol	A0137587	01/24/2020	07/24/2019 / sam	09/14/2018 / sam	V8991

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0141722	01/24/2020	07/24/2019 / sam	01/04/2019 / sam	V9259

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A0137141	01/22/2020	07/22/2019 / sam	01/04/2019 / sam	V9274

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	94559 / 1,3,5-Trichlorobenzene, 2000 ug/mL, in methanol	101717	11/01/2019	05/01/2019 / sam	01/08/2019 / sam	V9301

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Stds	90298 / Naphthalene, 2000 ug/ml	010419	01/22/2020	07/22/2019 / sam	01/08/2019 / sam	V9335

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30492 / VOA Mix, OLC 03.2 VOA Mega Mix, 1mL, 2000ug/mL, P&TM	A0125239	01/22/2020	07/22/2019 / sam	01/24/2019 / sam	V9379

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31081 / 1,3,5-Trichlorobenzene	A0144688	01/24/2020	07/24/2019 / sam	02/01/2019 / sam	V9408

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31081 / 1,3,5-Trichlorobenzene	A0144688	01/24/2020	07/24/2019 / sam	02/01/2019 / sam	V9409

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000ug/ml, PTM, 1ml	A0144104	01/24/2020	07/24/2019 / sam	02/01/2019 / sam	V9423

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000ug/ml, PTM, 1ml	A0140223	01/22/2020	07/22/2019 / sam	02/01/2019 / sam	V9437

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30492 / VOA Mix, OLC 03.2 VOA Mega Mix, 1mL, 2000ug/mL, P&TM	A0125780	01/24/2020	07/24/2019 / sam	02/08/2019 / sam	V9451

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30624 / VOA Stock Standard, OLC 3.2 VOA non-ketone, deuterated monitoring compounds, 1mL, 500ug/mL, Methanol-d	A0140742	01/16/2020	07/16/2019 / SAM	04/12/2019 / sam	V9597

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30624 / VOA Stock Standard, OLC 3.2 VOA non-ketone, deuterated monitoring compounds, 1mL, 500ug/mL, Methanol-d	A0140742	01/11/2020	07/11/2019 / SAM	04/12/2019 / sam	V9599

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30624 / VOA Stock Standard, OLC 3.2 VOA non-ketone, deuterated monitoring compounds, 1mL, 500ug/mL, Methanol-d	A0140742	01/26/2020	07/26/2019 / sam	04/12/2019 / sam	V9604

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30091 / VOA Mix, CLP method L/C Internal Std 2500uq/ml, PT&M, 1ml/ampul	A0131727	12/17/2019	06/17/2019 / sam	04/19/2019 / sam	V9661

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30625 / VOA Stock Std, OLC 3.2 VOA Ketone Deuterated Monitoring Compounds, 1mL, 500ug/mL, d2O	A0147651	01/26/2020	07/26/2019 / sam	05/20/2019 / sam	V9753

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30625 / VOA Stock Std, OLC 3.2 VOA Ketone Deuterated Monitoring Compounds, 1mL, 500ug/mL, d2O	A0147651	01/26/2020	07/26/2019 / sam	05/20/2019 / sam	V9755

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30625 / VOA Stock Std, OLC 3.2 VOA Ketone Deuterated Monitoring Compounds, 1mL, 500ug/mL, d2O	A0147651	01/26/2020	07/26/2019 / sam	05/20/2019 / sam	V9756

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30625 / VOA Stock Std, OLC 3.2 VOA Ketone Deuterated Monitoring Compounds, 1mL, 500ug/mL, d2O	A0147651	01/26/2020	07/26/2019 / sam	05/20/2019 / sam	V9757

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	199507	01/08/2020	07/08/2019 / sam	06/03/2019 / sam	V9766

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	199507	12/19/2019	06/19/2019 / pedro	06/03/2019 / sam	V9773

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	199507	01/24/2020	07/24/2019 / sam	07/02/2019 / sam	V9958

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	199507	01/26/2020	07/26/2019 / sam	07/02/2019 / sam	V9959

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	202404	01/18/2020	07/18/2019 / sam	07/02/2019 / sam	V9968

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30067 **Lot No.:** A0127174

Description : 4-Bromofluorobenzene Standard

4-Bromofluorobenzene Standard 2,500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2022 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav Conc. (weight volume)	Expanded Uncertainty (95% C.L. K=2)		
1	1-Bromo-4-fluorobenzene (BFB)	2,506.0 µg/mL	+/- 14.7066	µg/mL	Gravimetric
	CAS # 460-00-4 (Lot 01127COV)		+/- 140.5232	µg/mL	Unstressed
	Purity 99%		+/- 143.8106	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis

Material No.: 9077-02
Batch No.: 0000202404
Manufactured Date: 2018/05/21
Expiration Date: 2020/05/18
Revision No: 1

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Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	>= 99.9 %	100.0
Residue after Evaporation	<= 1.0000 ppm	0.2000
Titrable Acid (µeq/g)	<= 0.3	0.2
Titrable Base (µeq/g)	<= 0.1	<0.01
Water (by KF, coulometric)	<= 0.08 %	0.01
Photoionization Detection (PID) Below CRQL	Passes Test	PT
Electroconductivity Detection (ELCD) Below CRQL	Passes Test	PT

For Laboratory, Research or Manufacturing Use
Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
Phillipsburg, NJ 9001:2015, FSSC 22000
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2008
Selangor, Malaysia 9001:2008
Dehradun, India, 9001:2008, 14001:2004, 13485:2003
Mumbai, India, 9001:2015, 17025:2005
Panoli, India 9001:2015

James Ethier
Jamie Ethier
Vice President Global Quality

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.573.2600
Avantor Performance Materials, LLC.
3477 Corporate Parkway. Center Valley, PA 18034. U.S.A. Phone: 610.573.2600 . Fax: 610.573.2610

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30429 **Lot No.:** A0136632

Description : 1,2,3-Trichloropropane Standard

1,2,3-Trichloropropane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2023 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,2,3-Trichloropropane **CAS #** 96-18-4 **Purity** 99% (Lot BCBH8722V)	2,000.0 µg/mL	+/- 11.8794 µg/mL +/- 112.1643 µg/mL +/- 114.7876 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

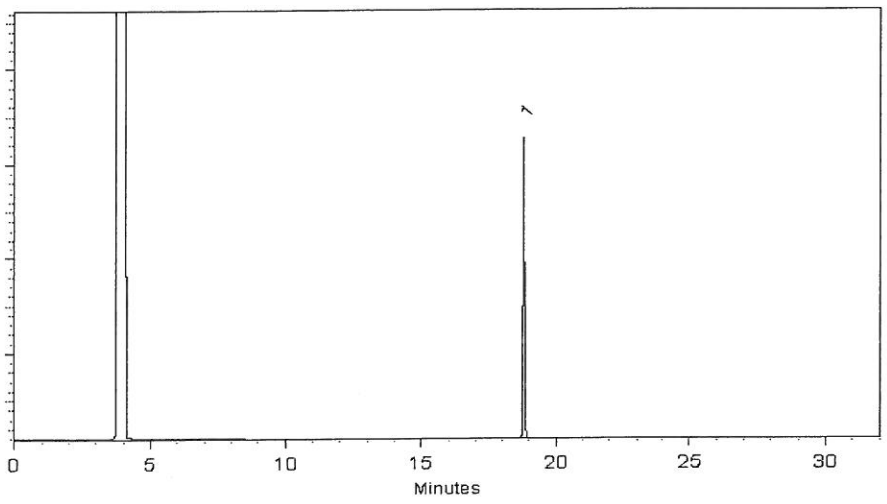
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust - Mix Technician

Date Mixed: 28-Mar-2018 **Balance:** B251644995

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 30-Mar-2018

Manufactured under Restek's ISO 9001:2008
Registered Quality System
Certificate #FM 80397

16 V.4

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30429 **Lot No.:** A0139377

Description : 1,2,3-Trichloropropane Standard

1,2,3-Trichloropropane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2023 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,2,3-Trichloropropane **CAS #** 96-18-4 (Lot BCBH8722V) **Purity** 99%	2,008.0 µg/mL	+/- 18.6733 µg/mL +/- 113.5259 µg/mL +/- 116.1390 µg/mL		Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

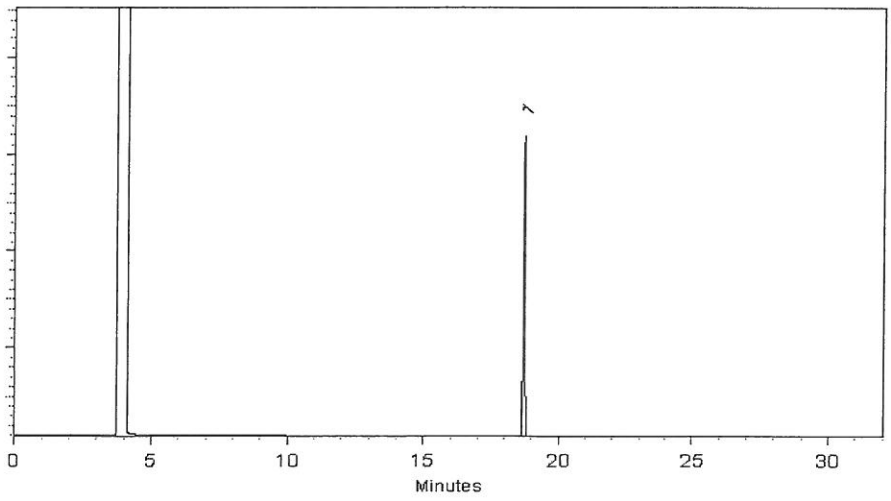
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alice Brooks

Alice Brooks - Mix Technician

Date Mixed: 03-Jul-2018 **Balance:** B707717271

Jennifer J Pollino

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 06-Jul-2018

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK

Safety Data Sheet

Revision Date: 04/05/18
www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:	**30429 / 1,2,3-Trichloropropane Standard**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Email:	www.restek.com
Revision Number:	8
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:	Carcinogenicity Category 1B Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1 Flammable Liquid Category 2 Acute Toxicity - Inhalation Dust / Mist Category 3 Acute Toxicity - Dermal Category 3 Acute Toxicity - Oral Category 3
GHS Signal Word:	Danger
GHS Hazard:	Highly flammable liquid and vapour. Toxic if swallowed, in contact with skin or if inhaled. May cause cancer. Causes damage to organs.
GHS Precautions:	
Safety Precautions:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilation and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
First Aid Measures:	IF SWALLOWED: Immediately call a POISON CENTER/doctor/.... IF ON SKIN: Wash with plenty of soap and water. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Specific treatment see section 4. Rinse mouth.

Take off immediately all contaminated clothing and wash it before reuse.
In case of fire: Use extinguishing media in section 5 for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal: Dispose of contents/container according to section 13 of the SDS.

Single Exposure Target Organs: Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure - STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot be translated into GHS from the DSD especially when minimum classifications are given)

Repeated Exposure Target Organs: No data available

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	99.8
1,2,3-trichloropropane	96-18-4	202-486-1	0.2

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal

evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment
Storage Technical Measures and Conditions:	Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
1,2,3-trichloropropane	96-18-4	100 ppm IDLH	None Known	0.005 ppm TWA	50 ppm TWA; 300 mg/m3 TWA

Personal Protection:

Engineering Measures:	Local exhaust ventilation is recommended when generating excessive levels of vapours from handling or thermal processing.
Respiratory Protection:	Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.
Eye Protection:	Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.
Skin Protection:	Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available
Odor:	Mild
Physical State:	Liquid
pH:	Not applicable
Vapor Pressure:	No data available
Vapor Density:	1.1 (air = 1)
Boiling Point (°C):	155 - 156 °C 64.7 °C at 760 mmHg (HSDB)
Melting Point (°C):	-98 °C
Flash Point (°F):	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36
Lower Flammable/Explosive Limit, % in air:	6
Autoignition Temperature (°C):	464 deg C
Decomposition Temperature (°C):	No data available
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 °C
Evaporation Rate:	No data available
Odor Threshold:	No data available
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available
VOC % by weight:	0
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	None known.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Propane, 1,2,3-trichloro-	96-18-4	Dermal LD50 Rabbit 250 mg/kg
Methanol	67-56-1	Inhalation LC50 Rat 22500 ppm 8 h

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
1,2,3-Trichloropropane	96-18-4	Present

ACGIH:

Chemical Name	CAS No.	
1,2,3-Trichloropropane	96-18-4	A2 - Suspected Human Carcinogen

NIOSH:

Chemical Name	CAS No.	
1,2,3-Trichloropropane	96-18-4	potential occupational carcinogen

NTP:

Chemical Name	CAS No.
No data available	

IARC:

Chemical Name	CAS No.	Group No.
Monograph 63 [1995]	96-18-4	Group 2A

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data

Bioaccumulation:	No data
Degradability:	Biodegrades slowly.
Ecological Toxicity Data:	No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product:	Spent or discarded material is a hazardous waste.Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
Disposal Methods:	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging:	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:	
DOT Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3
Packing Group:	II
International:	
IATA Proper Shipping Name:	Methanol
UN Number:	UN1230
Hazard Class:	3(6.1)
Packing Group:	II

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
1,2,3-trichloropropane	96-18-4	-	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
1,2,3-Trichloropropane	96-18-4	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
1,2,3-trichloropropane	96-18-4	X	X	X	X

16. OTHER INFORMATION

Prior Version Date:	07/06/16
Other Information:	Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.
References:	No data available
Disclaimer:	Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided

be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30042 **Lot No.:** A0140223

Description : 502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2025 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dichlorodifluoromethane (CFC-12) **CAS #** 75-71-8 (Lot 00012554) **Purity** 99%	2,001.8 µg/mL	+/- 13.9358 µg/mL +/- 112.5026 µg/mL +/- 115.1229 µg/mL	Gravimetric Unstressed Stressed
2	Chloromethane (methyl chloride) **CAS #** 74-87-3 (Lot SHBJ6334) **Purity** 99%	2,002.1 µg/mL	+/- 13.1132 µg/mL +/- 112.4175 µg/mL +/- 115.0404 µg/mL	Gravimetric Unstressed Stressed
3	Vinyl chloride **CAS #** 75-01-4 (Lot 00012557) **Purity** 99%	2,000.6 µg/mL	+/- 13.0868 µg/mL +/- 112.3308 µg/mL +/- 114.9518 µg/mL	Gravimetric Unstressed Stressed
4	Bromomethane (methyl bromide) **CAS #** 74-83-9 (Lot 101604) **Purity** 99%	2,002.3 µg/mL	+/- 13.8451 µg/mL +/- 112.5163 µg/mL +/- 115.1375 µg/mL	Gravimetric Unstressed Stressed
5	Chloroethane (ethyl chloride) **CAS #** 75-00-3 (Lot 107-401039114-1) **Purity** 99%	2,002.9 µg/mL	+/- 13.9516 µg/mL +/- 112.5604 µg/mL +/- 115.1821 µg/mL	Gravimetric Unstressed Stressed
6	Trichlorofluoromethane (CFC-11) **CAS #** 75-69-4 (Lot SHBH4155V) **Purity** 99%	2,000.2 µg/mL	+/- 13.0598 µg/mL +/- 112.3044 µg/mL +/- 114.9249 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

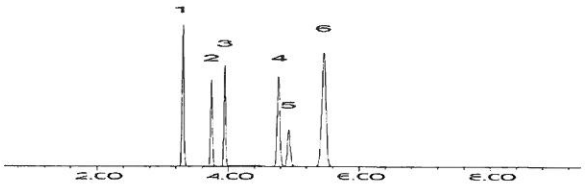
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 01-Aug-2018 **Balance:** B707717271

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Aug-2018

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30042 **Lot No.:** A0144104

Description : 502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2025 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dichlorodifluoromethane (CFC-12)	1,999.9 µg/mL	+/- 13.7815	µg/mL	Gravimetric
	CAS # 75-71-8 (Lot 00012554)		+/- 112.3751	µg/mL	Unstressed
	Purity 99%		+/- 114.9932	µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,000.0 µg/mL	+/- 17.2612	µg/mL	Gravimetric
	CAS # 74-87-3 (Lot SHBJ6334)		+/- 112.8635	µg/mL	Unstressed
	Purity 99%		+/- 115.4710	µg/mL	Stressed
3	Vinyl chloride	2,000.2 µg/mL	+/- 16.3520	µg/mL	Gravimetric
	CAS # 75-01-4 (Lot 00012557)		+/- 112.7385	µg/mL	Unstressed
	Purity 99%		+/- 115.3493	µg/mL	Stressed
4	Bromomethane (methyl bromide)	2,000.2 µg/mL	+/- 14.6880	µg/mL	Gravimetric
	CAS # 74-83-9 (Lot 101604)		+/- 112.5059	µg/mL	Unstressed
	Purity 99%		+/- 115.1218	µg/mL	Stressed
5	Chloroethane (ethyl chloride)	2,000.2 µg/mL	+/- 12.9653	µg/mL	Gravimetric
	CAS # 75-00-3 (Lot 107-401039114-1)		+/- 112.2934	µg/mL	Unstressed
	Purity 99%		+/- 114.9142	µg/mL	Stressed
6	Trichlorofluoromethane (CFC-11)	1,999.9 µg/mL	+/- 17.7163	µg/mL	Gravimetric
	CAS # 75-69-4 (Lot SHBH4155V)		+/- 112.9252	µg/mL	Unstressed
	Purity 99%		+/- 115.5309	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

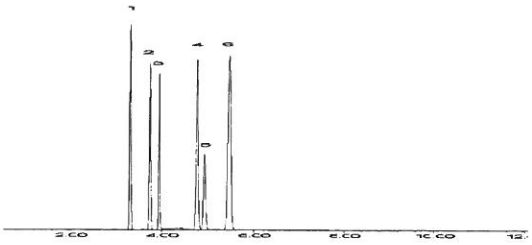
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon - Mix Technician **Date Mixed:** 13-Dec-2018 **Balance:** B251644995

Jennifer Pollino - Operations Tech-ARM QC **Date Passed:** 18-Dec-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31081 **Lot No.:** A0144688

Description : 1,3,5-Trichlorobenzene Standard

1,3,5-Trichlorobenzene Standard 1,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,3,5-Trichlorobenzene **CAS #** 108-70-3 (Lot 11319AS) **Purity** 99%	1,010.0 µg/mL	+/- 5.9991 +/- 56.6430 +/- 57.9678	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

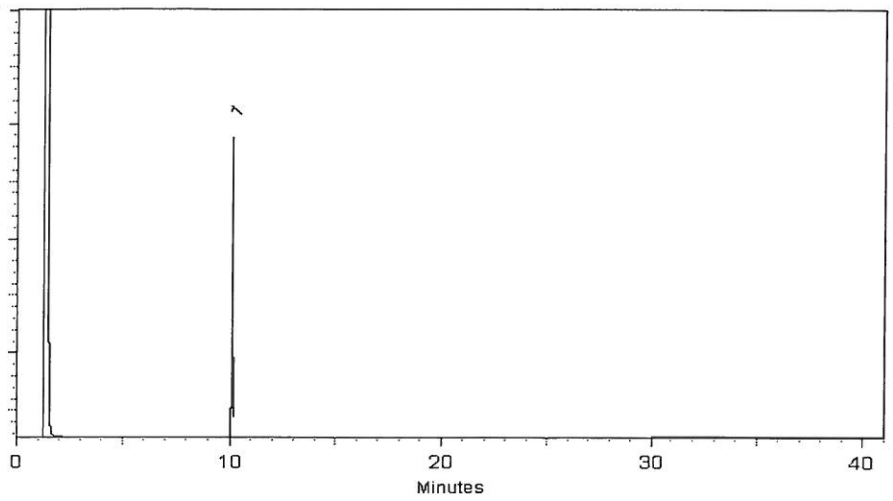
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cheryl Graham - Mix Technician

Date Mixed: 07-Jan-2019 **Balance:** B251644995

Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 10-Jan-2019

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30625 **Lot No.:** A0147651

Description : OLC 3.2 VOA Deuterated Monitoring Compounds

OLC 3.2 VOA Ketone Deuterated Monitoring Compounds 500µg/mL, Deuterium Oxide, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2020 **Storage:** 10°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	2-Butanone-d5 **CAS #** 24313-50-6 **Purity** 99%	(Lot M-276)	504.0 µg/mL	+/- 2.9936 µg/mL +/- 30.4147 µg/mL +/- 30.4869 µg/mL		Gravimetric Unstressed Stressed
2	2-Hexanone-d5 **CAS #** 4840-82-8 **Purity** 99%	(Lot I500P2)	504.0 µg/mL	+/- 2.9936 µg/mL +/- 30.4147 µg/mL +/- 30.4869 µg/mL		Gravimetric Unstressed Stressed

Solvent: Deuterium oxide
CAS # 7789-20-0
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

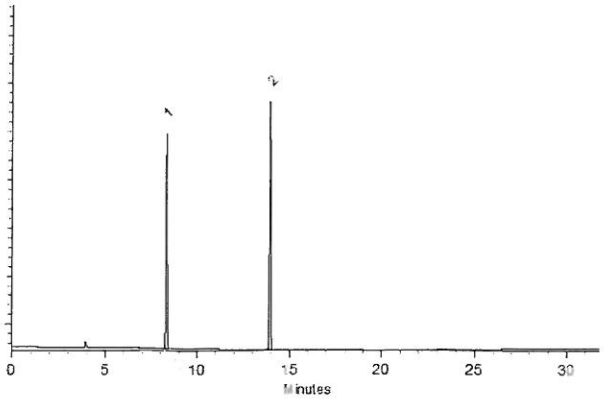
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Maggie Wang

Maggie Wang - Operations Technician I

Date Mixed: 01-Apr-2019 **Balance:** 1128342314

Justine Albertson - Operations Tech-ARM QC

Date Passed: 03-Apr-2019

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Material No.: 9077-02
Batch No.: 0000199507
Manufactured Date: 2018/06/25
Expiration Date: 2020/06/22
Revision No: 1

Certificate of Analysis

Test	Specification	Result
Assay (CH_3OH) (by GC, corrected for water)	>= 99.9 %	100.0
Residue after Evaporation	<= 1.0000 ppm	<0.1
Titrable Acid (µeq/g)	<= 0.3	< 0.1
Titrable Base (µeq/g)	<= 0.1	<0.01
Water (by KF, coulometric)	<= 0.08 %	< 0.01
Photoionization Detection (PID) Below CRQL	Passes Test	PT
Electroconductivity Detection (ELCD) Below CRQL	Passes Test	PT

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Performance Tested for Use in EPA Methods
500 Series for Drinking Water
600 Series for Wastewater
846 for Solid Waste

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

ISO
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Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Gliwice, Poland 9001:2008
Selangor, Malaysia 9001:2008
Dehradun, India 9001:2015, 14001:2015, 13485:2016
Mumbai, India 9001:2015
Panoli, India 9001:2015

James T Ethier
Jamie Ethier
Vice President Global Quality

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30091 **Lot No.:** A0131727

Description : L/C VOA Internal Standard Mix

L/C Internal Std 2500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2022 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,4-Difluorobenzene **CAS #** 540-36-3 **Purity** 99%	(Lot MKBN8571V)	2,490.7 µg/mL	+/- 14.6166 +/- 139.6633 +/- 142.9306	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Chlorobenzene-d5 **CAS #** 3114-55-4 **Purity** 99%	(Lot PR-23926)	2,512.7 µg/mL	+/- 14.7457 +/- 140.8970 +/- 144.1931	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	1,4-Dichlorobenzene-d4 **CAS #** 3855-82-1 **Purity** 99%	(Lot PR-18488)	2,489.3 µg/mL	+/- 14.6088 +/- 139.5886 +/- 142.8541	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

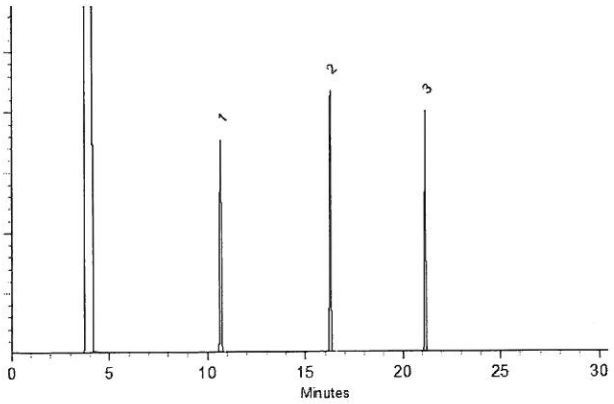
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Larry J. Moore - Mix Technician

Date Mixed: 17-Oct-2017 **Balance:** B251644995

Justine Albertson - Operations Tech-ARM QC

Date Passed: 18-Oct-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

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  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30624 **Lot No.:** A0140742

Description : SOM 01.1 VOA DMC Non-Ketones Standard

OLC 3.2 VOA Non-Ketone Deuterated Monitoring Compounds
500µg/mL, Methanol-OD, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Vinyl Chloride-d3 **CAS #** 6745-35-3 (Lot PR-21820) **Purity** 98%	498.0 µg/mL	+/- 7.5576 +/- 28.7834 +/- 29.4177	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	Chloroethane-d5 **CAS #** 19199-91-8 (Lot F-243) **Purity** 99%	507.8 µg/mL	+/- 17.5730 +/- 33.3296 +/- 33.9006	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	1,1-Dichloroethylene-d2 **CAS #** 22280-73-5 (Lot PR-21050) **Purity** 97%	500.5 µg/mL	+/- 2.9729 +/- 28.0702 +/- 28.7268	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Chloroform-d **CAS #** 865-49-6 (Lot A0219685001) **Purity** 99%	501.0 µg/mL	+/- 2.9758 +/- 28.0972 +/- 28.7543	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	1,2-Dichloroethane-d4 **CAS #** 17060-07-0 (Lot PR-29377) **Purity** 99%	502.0 µg/mL	+/- 2.9817 +/- 28.1533 +/- 28.8117	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Benzene-d6 **CAS #** 1076-43-3 (Lot PR-27642) **Purity** 99%	501.0 µg/mL	+/- 2.9758 +/- 28.0972 +/- 28.7543	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	1,2-Dichloropropane-d6 **CAS #** 93952-08-0 (Lot Z322P8) **Purity** 99%	502.0 µg/mL	+/- 2.9817 +/- 28.1533 +/- 28.8117	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	1,3-Dichloropropene-d4 (cis/ trans mixture)		501.0	µg/mL	+/-	2.9758	µg/mL	Gravimetric
	CAS # 202656-23-3	(Lot Z-181P11)			+/-	28.0972	µg/mL	Unstressed
	Purity ----%				+/-	28.7543	µg/mL	Stressed
9	Toluene-d8		502.0	µg/mL	+/-	2.9817	µg/mL	Gravimetric
	CAS # 2037-26-5	(Lot PR-27981)			+/-	28.1533	µg/mL	Unstressed
	Purity 99%				+/-	28.8117	µg/mL	Stressed
10	1,1,2,2-Tetrachloroethane-d2		502.0	µg/mL	+/-	2.9817	µg/mL	Gravimetric
	CAS # 33685-54-0	(Lot F465P1)			+/-	28.1533	µg/mL	Unstressed
	Purity 99%				+/-	28.8117	µg/mL	Stressed
11	1,2-Dichlorobenzene-d4		502.0	µg/mL	+/-	2.9817	µg/mL	Gravimetric
	CAS # 2199-69-1	(Lot M-1611)			+/-	28.1533	µg/mL	Unstressed
	Purity 99%				+/-	28.8117	µg/mL	Stressed

Solvent: Methanol-OD
CAS # 1455-13-6
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

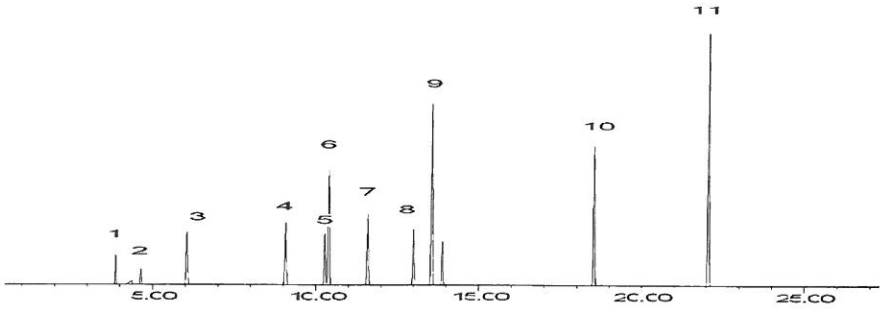
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Michael J Maye

Date Mixed: 16-Aug-2018 **Balance:** B251644995

Jennifer L Pollino

Jennifer Pollino - Operations Tech-ARM QC **Date Passed:** 20-Aug-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Absolute Standards, Inc.
800-368-1131
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Analytical Reference Material ARM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

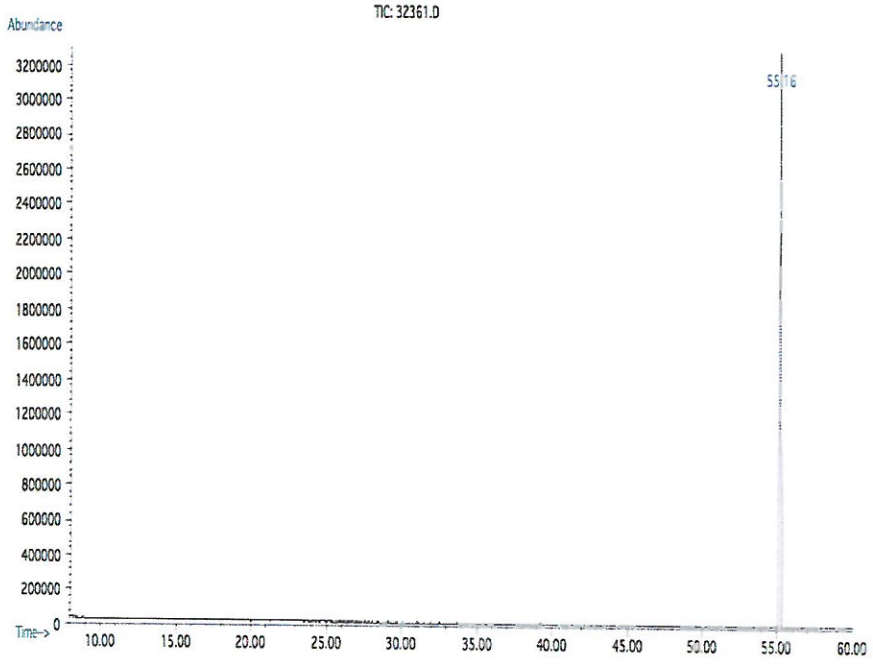
CERTIFIED WEIGHT REPORT

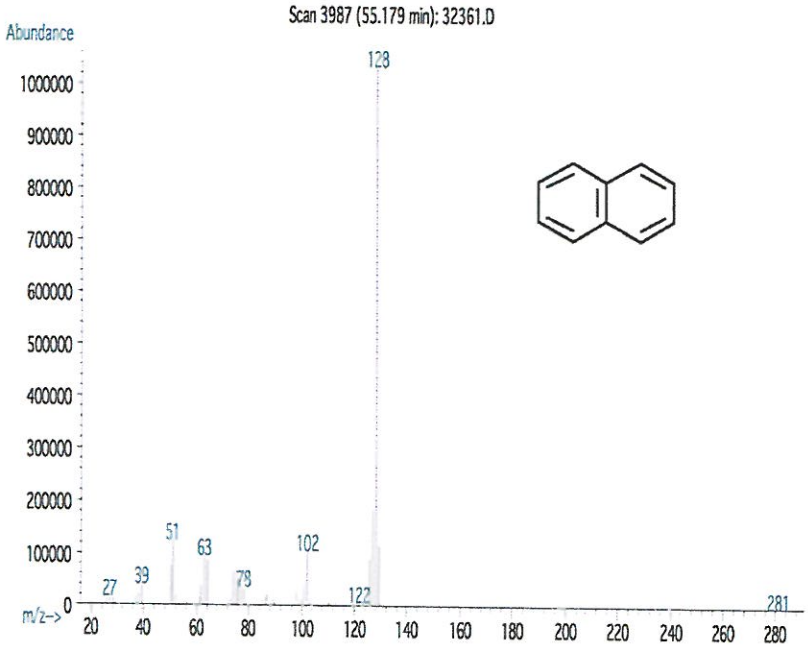
Part Number:	**90298**	**Solvent(s):**	**Lot#**	
Lot Number:	010419	Methanol	DT140	
Description:	Naphthalene			
Expiration Date:	010424			
Recommended Storage:	Refrigerate (4 °C)			
Nominal Concentration (µg/mL):	2000			
NIST Test ID#:	2684186	5E-05	Balance Uncertainty	
Volume(s) shown below were combined and diluted to (mL):	100.0	0.001	Flask Uncertainty	

Prashant Chauhan		010419
Formulated By:	Prashant Chauhan	DATE
Pedro Rentas		010419
Reviewed By:	Pedro L. Rentas	DATE

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette	Initial Conc.(ug/mL)	Final Conc.(ug/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. Naphthalene	32361	102418	0.10	10.00	0.006	20000.7	1999.9	8.4	91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg

Method: GC6MSD-1. **Detector:** MSD (Scan mode). **Column:** Vocol (60m X 0.25mm ID X 1.5µm film thickness). **Oven Profile:** Temp. 1=35°C (Time 1=10min.), Temp. 2=200°C (Time 2=8.75 min.), Rate=4°C/min., Injector Temp.=200°C, Detector Temp.=220°C. **Analyst:** Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

Absolute Standards Inc.
PO Box 5585
Hamden, CT 06518-0585
Phone: 203-281-2917
FAX: 203-281-2922

Safety Data Sheet (SDS) GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN METHANOL**

Manufacturer's Name	ABSOLUTE STANDARDS INC	Emergency Telephone USA & CANADA	**1-800-535-5053**
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	**1-352-323-3500** May 1, 2015

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225	**Highly Flammable Liquid and Vapor**	**H301, 311, 331**	**Toxic if swallowed, skin contact, inhaled**
H370	**Cause damage to organs**	**H351**	**Suspected of causing cancer**
P271	**Use in ventilated area**	**P280**	**Use gloves, eye protection/face sheild**
P302,332	**If on skin, wash with soap and water**	**P305,351,338**	**If in eyes, remove contacts, rinse with water**

Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
Methanol	METHYL ALCOHOL	CAS#: 67-56-1	> 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.Move to safe area.
If inhaled	If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with soap and water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment for fire	Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean up	Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
Potential for skin absorption , ingestion and inhalation.
Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability — Stable under recommended storage conditions.
Possibility of hazardous reactions — Vapours may form explosive mixture with air.
Conditions to avoid — Heat, flames, sparks, extreme temperature and sunlight.
Materials to avoid — Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg
LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
Toxic if absorbed through skin. Causes skin irritation.
Eye damage/eye irritation
Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

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www.absolutestandards.com

Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 31491
Lot Number: 011316
Description: 1,2,4-Trimethylbenzene

Expiration Date: 011321
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000

Solvent(s):	Lot#
Methanol	DM417

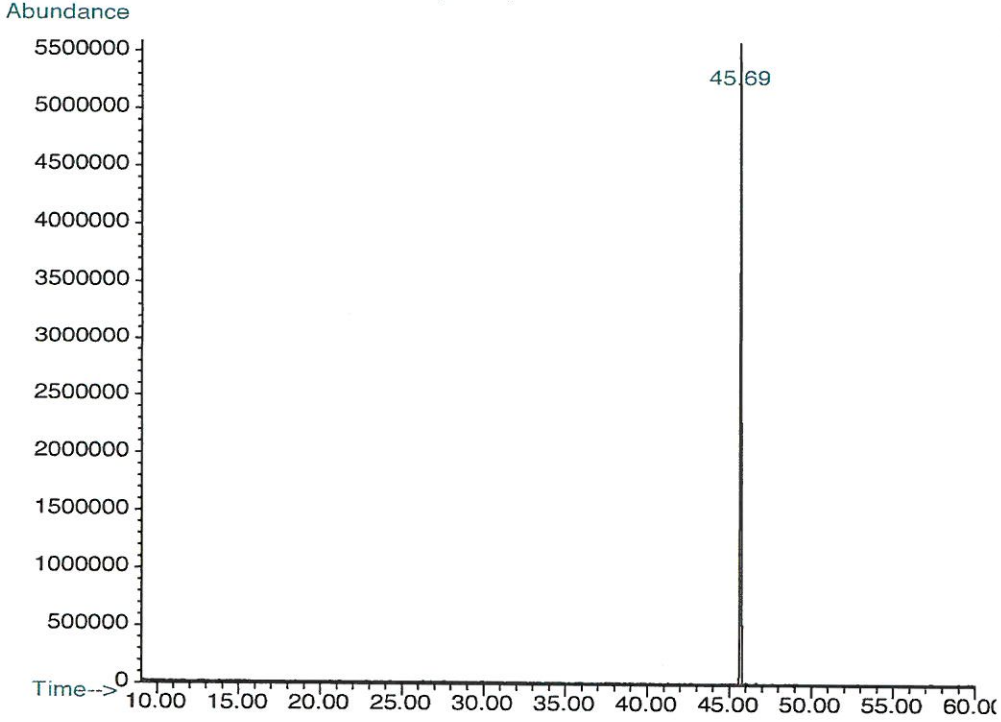
		011316
Formulated By:	Jason Criscio	DATE
		011316
Reviewed By:	Pedro L. Rentas	DATE

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 25.0 0.006 Flask Uncertainty

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,4-Trimethylbenzene	475	MKBC4243	2000	98	0.2	0.05102	0.05110	2003.0	9.1	00095-63-6	N/A	orl-rat 5g/kg

Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.

TIC: [BSB2]70475.D



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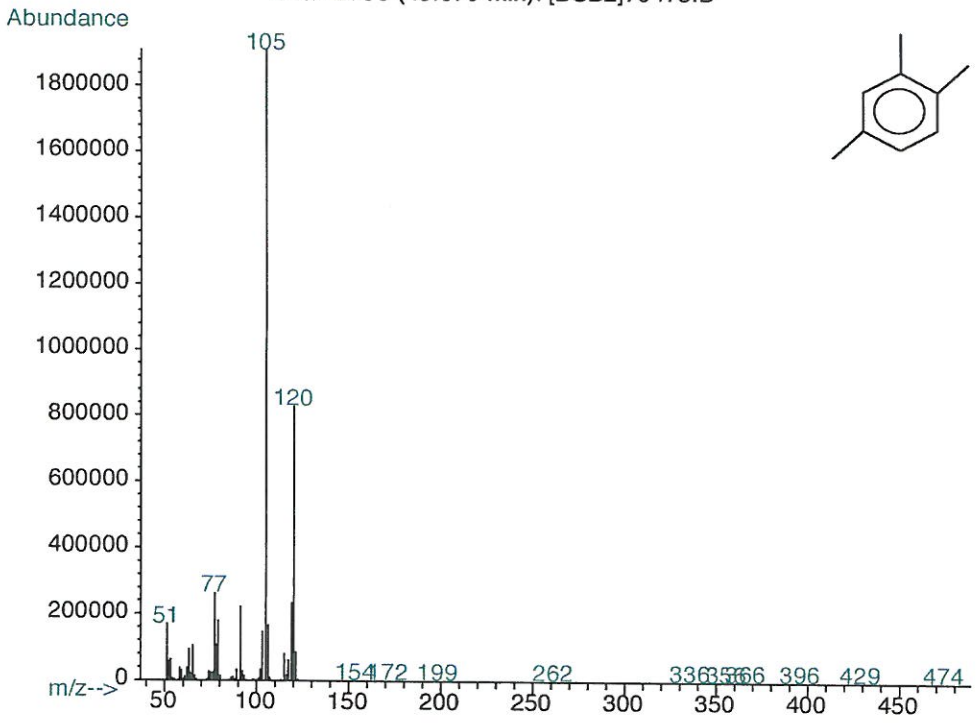
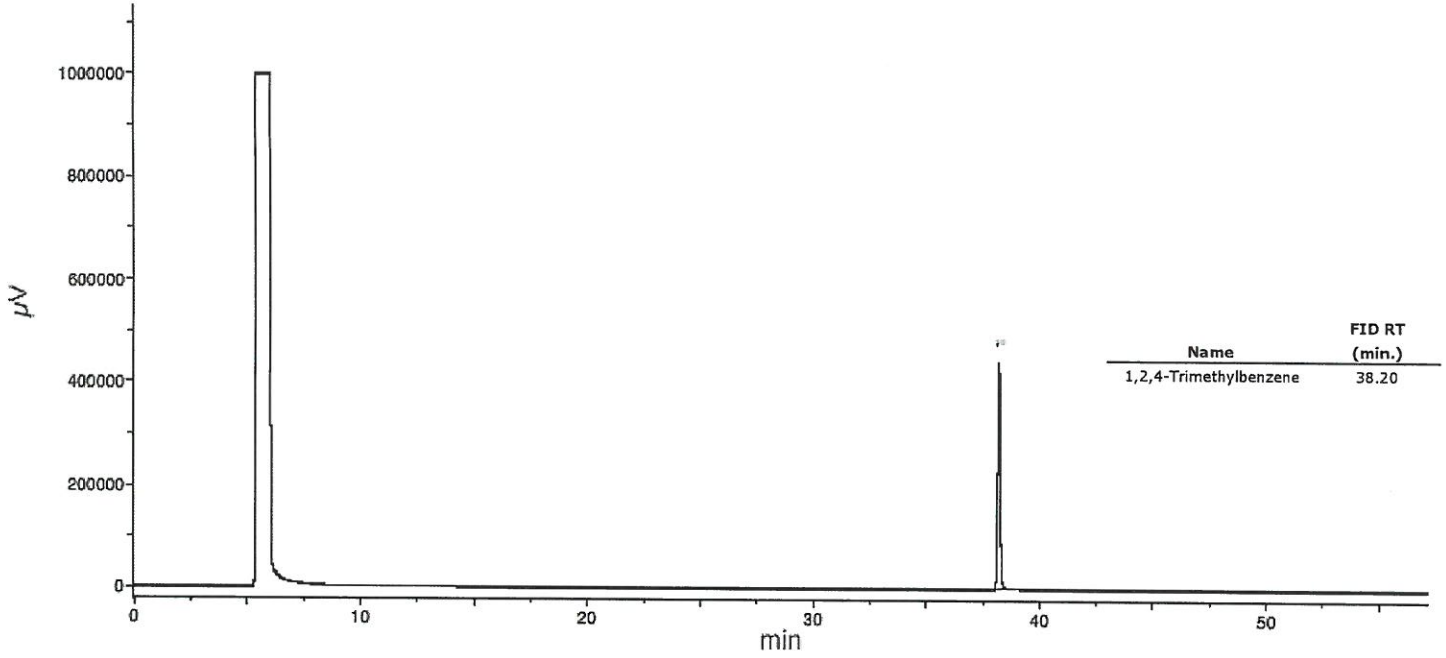


Run 20, "P31491 L011316 [2000µg/mL in MeOH]"

Run Length: 57.15 min, 34288 points at 10 points/second.
Created: Thu, Jan 14, 2016 at 8:48:25 AM.
Sampled: Sequence "011316-GC13M1", Method "GC13-M1".
Analyzed using Method "GC13-M1".

Comments
GC13-M1 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min.,
Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C.
FID Signal = Edaq Channel 1
Standard injection = 0.5µL, Range=3



Absolute Standards Inc.
PO Box 5585
Hamden, CT 06518-0585
Phone: 203-281-2917
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Safety Data Sheet (SDS) GHS/OSHA Compliant

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GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225	**Highly Flammable Liquid and Vapor**	**H301, 311, 331**	**Toxic if swallowed, skin contact, inhaled**
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P302,332	**If on skin, wash with soap and water**	**P305,351,338**	**If in eyes, remove contacts, rinse with water**

Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
Methanol	METHYL ALCOHOL	CAS#: 67-56-1	> 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.Move to safe area.
If inhaled	If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with soap and water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment for fire	Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean up	Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
Potential for skin absorption , ingestion and inhalation.
Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

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Chemical stability Stable under recommended storage conditions.
Possibility of hazardous reactions Vapours may form explosive mixture with air.
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Hazardous decomposition products formed under fire conditions. - Carbon oxides

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LD50 Oral - rat - 5,628 mg/kg
LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
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Eye damage/eye irritation
Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

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Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 90319
Lot Number: 071719
Description: 1,3,5-Trimethylbenzene [Mesitylene]
Expiration Date: 071724
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

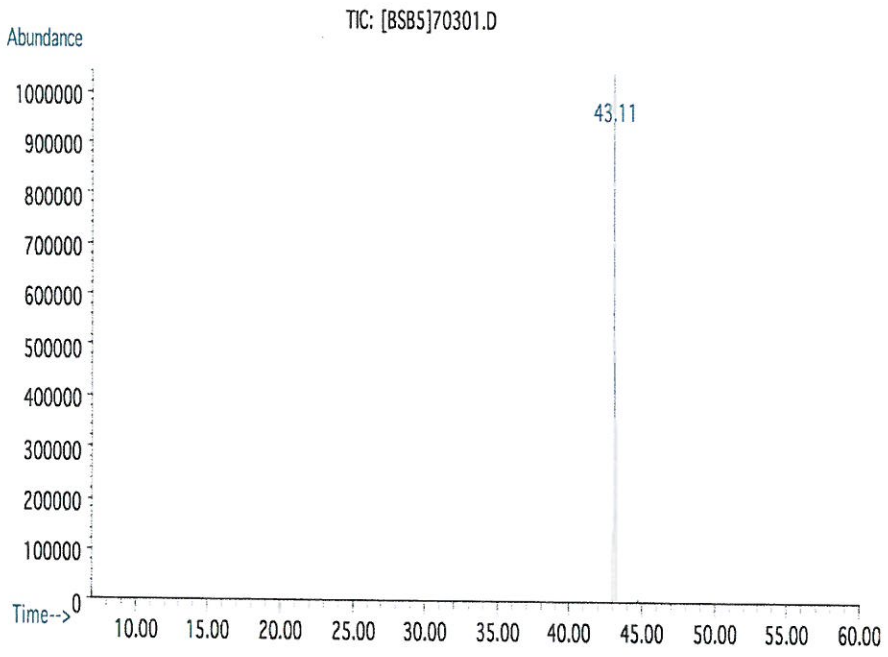
Solvent: Methanol **Lot#** DV182-US

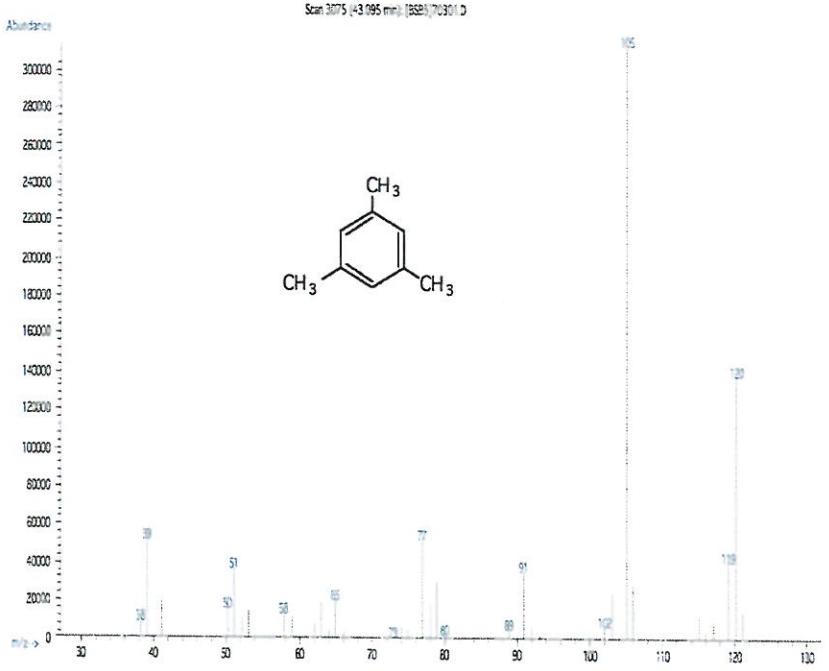
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 20.0 0.002 Flask Uncertainty

Justin Dippold	071719
Formulated By: Justin Dippold	DATE
Pedro Rentas	071719
Reviewed By: Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,3,5-Trimethylbenzene	301	K44RC-BG	2000	97	0.2	0.04121	0.04125	2002.1	9.6	108-67-8	N/A	orl-rat 5000mg/kg

Method GC6MSD-1: Column: Vocol 60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.





- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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Certified Reference Material CRM

ISO 17034 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 90319
Lot Number: 071819
Description: 1,3,5-Trimethylbenzene [Mesitylene]
Expiration Date: 071824
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

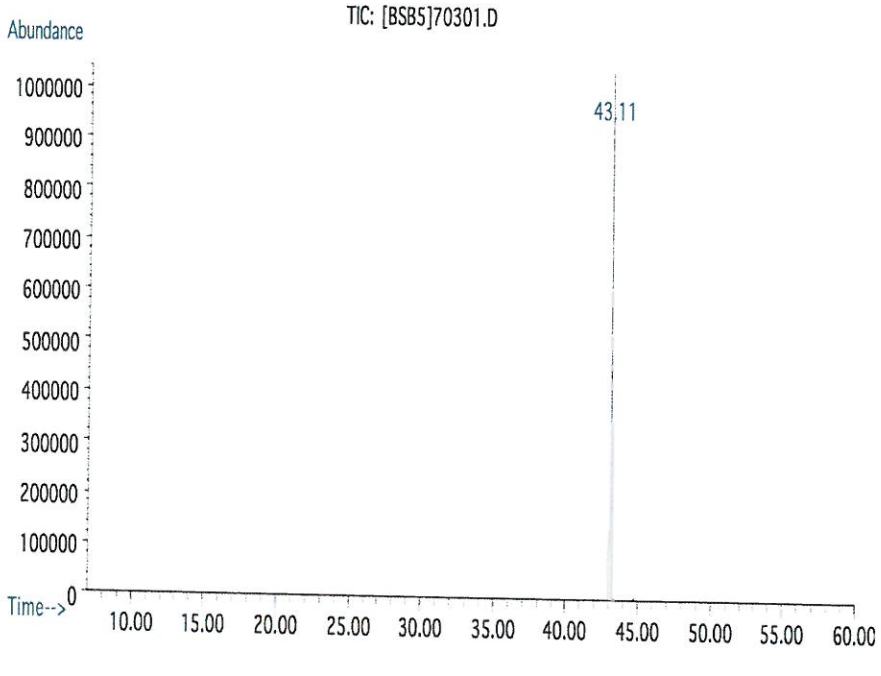
Solvent: Methanol **Lot#** DV182-US

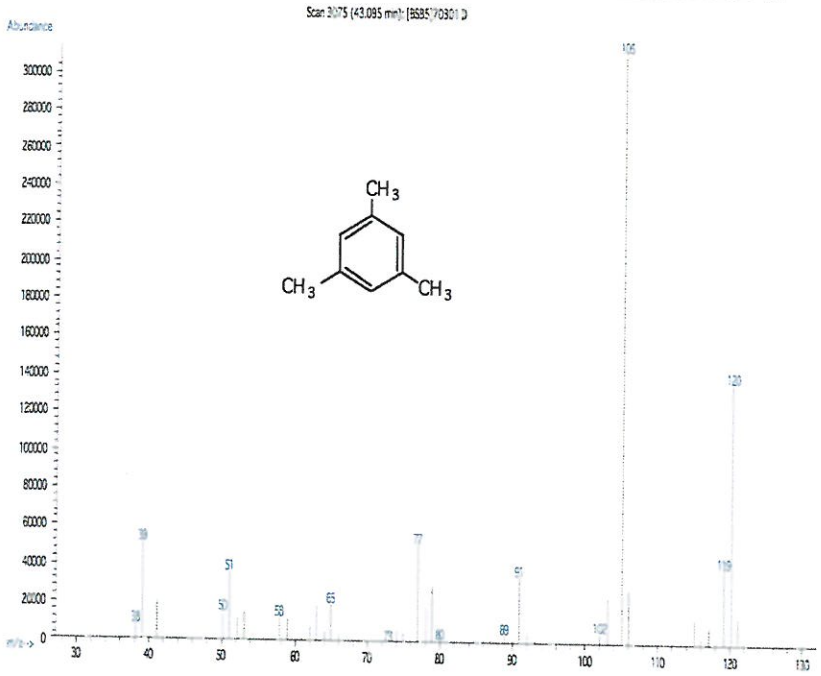
Weight(s) shown below were combined and diluted to (mL): 30.0 | 5E-05 Balance Uncertainty | 0.002 Flask Uncertainty

Gabriel Helland	071819
Formulated By: Gabriel Helland	DATE
Pedro Rentas	071819
Reviewed By: Pedro L. Rentas	DATE

	Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity (%)	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1.	1,3,5-Trimethylbenzene	301	K44RC-BG	2000	97	0.2	0.06182	0.06188	2002.0	8.9	108-67-8	N/A	orl-rat 5000mg/kg

Method GC6MSD-1: Column: Vocol 60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.





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- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
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Absolute Standards Inc.
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Hamden, CT 06518-0585
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FAX: 203-281-2922

Safety Data Sheet (SDS) GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY **ANALYTICAL STANDARD DISSOLVED IN METHANOL**

Manufacturer's Name	ABSOLUTE STANDARDS INC	Emergency Telephone USA & CANADA	**1-800-535-5053**
Address	44 Rossotto Dr. Hamden CT, 06514	Emergency Telephone International Date Prepared/Revised	**1-352-323-3500** May 1, 2015

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225	**Highly Flammable Liquid and Vapor**	**H301, 311, 331**	**Toxic if swallowed, skin contact, inhaled**
H370	**Cause damage to organs**	**H351**	**Suspected of causing cancer**
P271	**Use in ventilated area**	**P280**	**Use gloves, eye protection/face sheild**
P302,332	**If on skin, wash with soap and water**	**P305,351,338**	**If in eyes, remove contacts, rinse with water**

Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
Methanol	METHYL ALCOHOL	CAS#: 67-56-1	> 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.Move to safe area.
If inhaled	If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash with soap and water. Consult a physician.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed	Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability	Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Protective equipment for fire	Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Vapours accumulate to form explosive concentrations.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Clean up	Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.
Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
Potential for skin absorption , ingestion and inhalation.
Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Vapours may form explosive mixture with air.
Conditions to avoid	Heat, flames, sparks, extreme temperature and sunlight.
Materials to avoid	Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg
LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
Toxic if absorbed through skin. Causes skin irritation.
Eye damage/eye irritation
Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

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Certified Reference Material CRM

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Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 31491
Lot Number: 072219
Description: 1,2,4-Trimethylbenzene

Solvent(s): **Lot#**
Methanol DV182-US

Expiration Date: 072224
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 25.0 0.002 Flask Uncertainty

Gabriel Helland		072219
Formulated By:	Gabriel Helland	DATE
Pedro Rentas		072219
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,2,4-Trimethylbenzene	475	WXBC9428V	2000	98.8	0.2	0.05061	0.05075	2005.3	9.0	95-63-6	N/A	orl-rat 5g/kg

Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1 = 35°C (10min.), Temp. 2 = 200°C (8.75 min.), Rate = 4°C/min., Injector Temp.= 200°C, Detector Temp. = 220°C. Analysis performed by Candice Warren.

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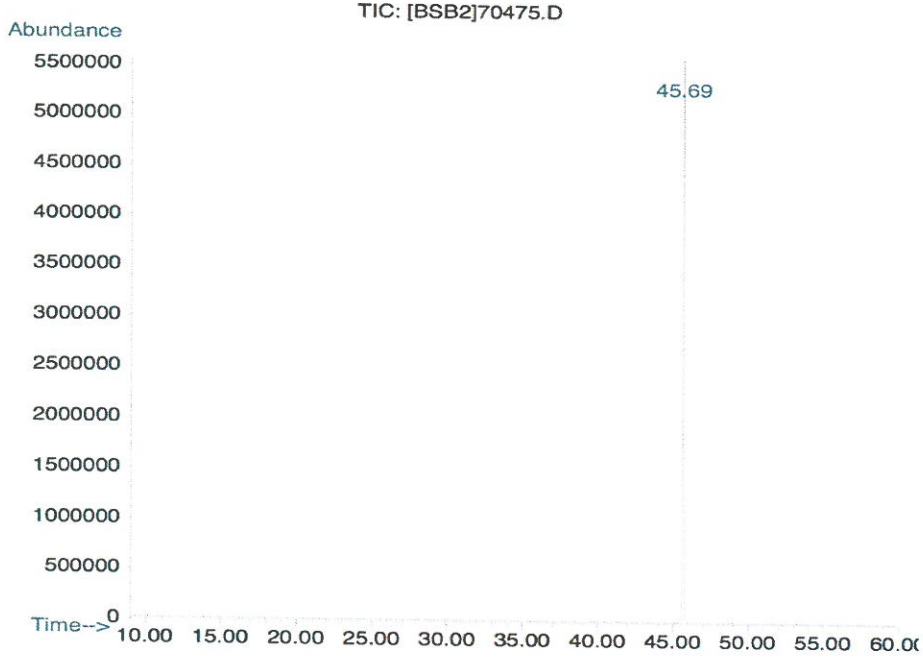

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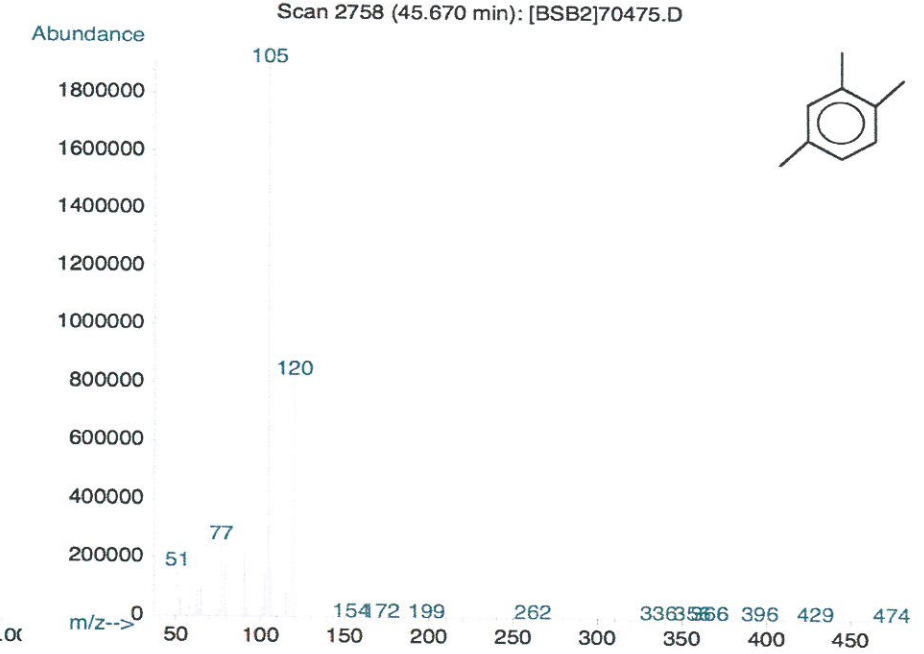

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Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

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Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))			% (optional)
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Methanol 67-56-1 TWA 200 ppm
Skin notation TWA 200 ppm
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Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection.
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Boiling Point	65°C	Specific Gravity (H2O = 1)	0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions.
Possibility of hazardous reactions Vapours may form explosive mixture with air.
Conditions to avoid Heat, flames, sparks, extreme temperature and sunlight.
Materials to avoid Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

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LC50 Inhalation - rat - 4 h - 64000 ppm
LD50 Dermal - rabbit - 15,800 mg/kg
Toxic if absorbed through skin. Causes skin irritation.
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Toxic if inhaled. Causes respiratory tract irritation.
Toxic if swallowed.

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LC50	15,400 mg/l - 96 h
EC50	24,500.00 mg/l - 48 h
EC100	10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

IATA
UN number: 1230 Class: 3 Packing group: II
Proper shipping name: Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

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Certified Reference Material CRM

ISO 9001 QS Registered
ISO 17025-34-35-43 Accredited
Scopes: http://AbsoluteStandards.com

CERTIFIED WEIGHT REPORT

Part Number: 94559
Lot Number: 101717
Description: 1,3,5-Trichlorobenzene

Solvent(s): Methanol **Lot#** DQ538

Expiration Date: 101722
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 2506734D

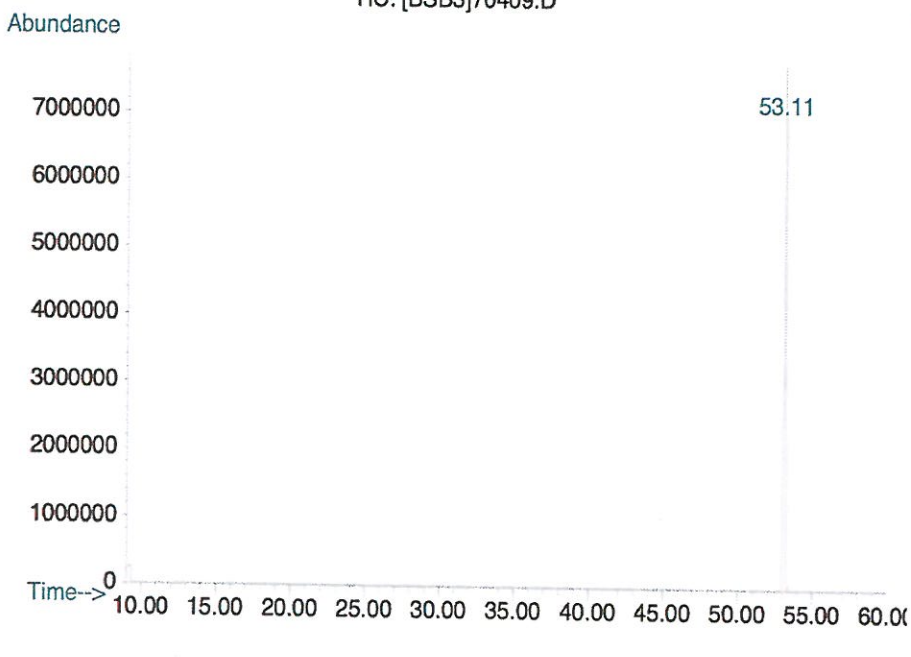
Weight(s) shown below were combined and diluted to (mL): 100.0 | 5E-05 Balance Uncertainty | 0.001 Flask Uncertainty

Formulated By:	Mario Luis	101717 DATE
Reviewed By:	Pedro L. Rentas	101717 DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1,3,5-Trichlorobenzene	409	11319AS	2000	99	0.2	0.20204	0.20206	2000.2	8.1	108-70-3	N/A	orl-rat 800mg/kg

Method GC6MSD-1: Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Temp. 1=35°C (10min.), Temp. 2=200°C (8.75 min.), Rate=4°C/min., Injector Temp.=200°C, Detector Temp.=220°C. Analysis performed by Candice Warren.

TIC: [BSB3]70409.D



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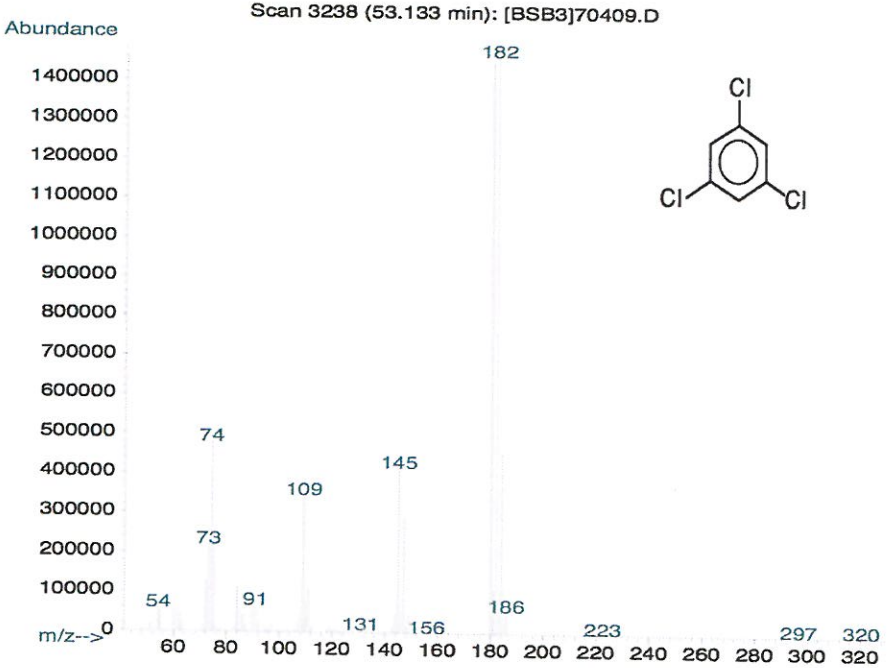

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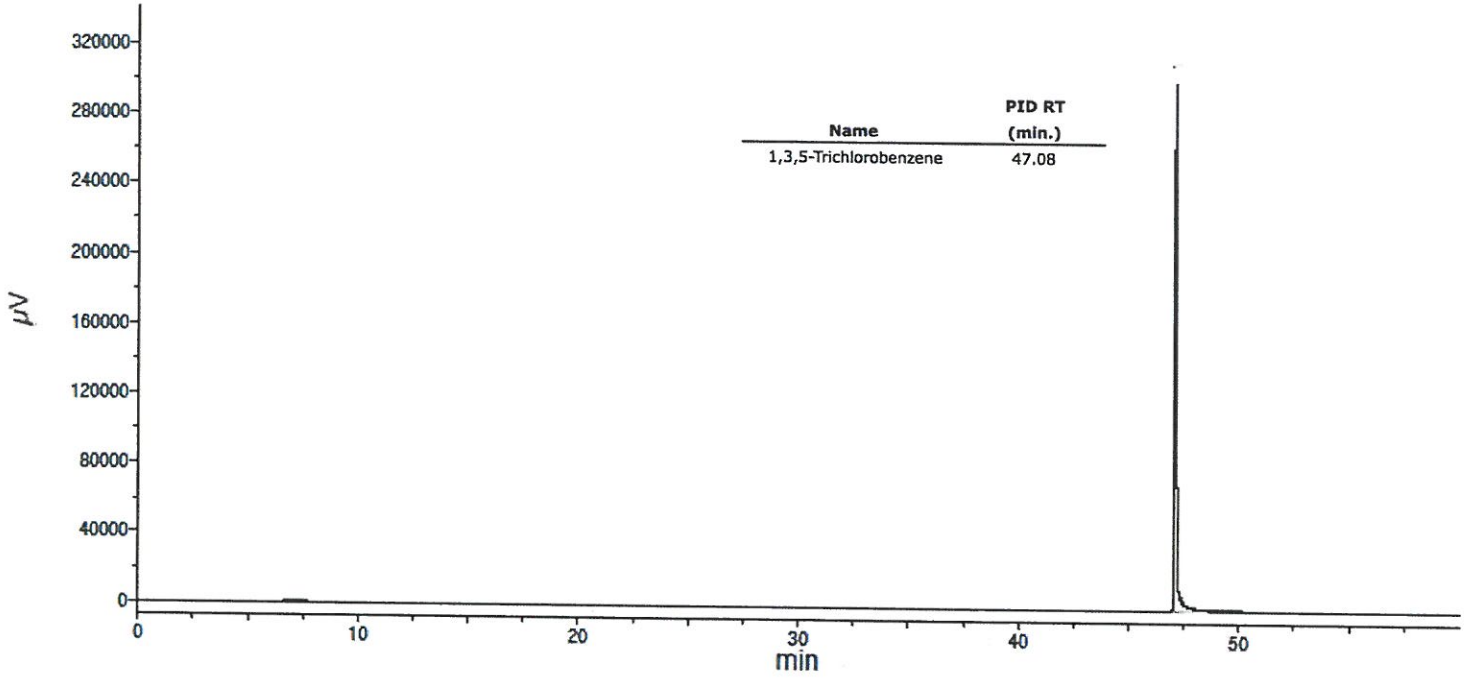
Run 14, "P94559 L101717 [2000µg/mL in MeOH]"

Run Length: 59.99 min, 35996 points at 10 points/second.
Created: Thu, Oct 19, 2017 at 12:05:19 AM.
Sampled: Sequence "101817-GC15", Method "GC15-M7".
Analyzed using Method "GC15-M7".

Comments

GC15-M7 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=150mL/min., Helium (carrier)=10mL/min.,
Helium(make-up)=40mL/min., Hydogen(make-up)=100mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C.
ELCD Signal = Edaq Channel 1 PID Signal = Edaq Channel 2
Standard injection = 0.5µL, Range=3 Purge Valve = 8 min.



RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO Guide 34 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30492 **Lot No.:** A0125239

Description : OLC 03.2 VOA Mega Mix

OLC 03.2 VOA Mega Mix 1,000-2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 29, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1 (Lot 00009482) **Purity** 99%	2,017.0 µg/mL	+/- 11.8369 µg/mL +/- 121.7052 µg/mL +/- 121.9941 µg/mL	Gravimetric Unstressed Stressed
2	1,1-dichloroethene **CAS #** 75-35-4 (Lot 73896KMV) **Purity** 99%	2,000.3 µg/mL	+/- 15.4219 µg/mL +/- 121.1082 µg/mL +/- 121.3937 µg/mL	Gravimetric Unstressed Stressed
3	Methyl acetate **CAS #** 79-20-9 (Lot SHBG4345V) **Purity** 99%	2,002.5 µg/mL	+/- 11.7518 µg/mL +/- 120.8303 µg/mL +/- 121.1171 µg/mL	Gravimetric Unstressed Stressed
4	Methylene chloride (dichloromethane) **CAS #** 75-09-2 (Lot SHBG6426V) **Purity** 99%	2,000.5 µg/mL	+/- 15.4236 µg/mL +/- 121.1218 µg/mL +/- 121.4074 µg/mL	Gravimetric Unstressed Stressed
5	Carbon disulfide **CAS #** 75-15-0 (Lot S20A856) **Purity** 99%	2,008.0 µg/mL	+/- 11.7841 µg/mL +/- 121.1621 µg/mL +/- 121.4497 µg/mL	Gravimetric Unstressed Stressed
6	Methyl-tert-butyl ether (MTBE) **CAS #** 1634-04-4 (Lot SHBG2655V) **Purity** 99%	2,006.0 µg/mL	+/- 11.7723 µg/mL +/- 121.0414 µg/mL +/- 121.3288 µg/mL	Gravimetric Unstressed Stressed
7	trans-1,2-Dichloroethene **CAS #** 156-60-5 (Lot MKBH9850V) **Purity** 99%	2,000.3 µg/mL	+/- 15.4222 µg/mL +/- 121.1112 µg/mL +/- 121.3968 µg/mL	Gravimetric Unstressed Stressed

8	1,1-Dichloroethane		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 75-34-3	(Lot 00009677)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
9	cis-1,2-Dichloroethene		2,011.5	µg/mL	+/-	11.8043	µg/mL	Gravimetric
	CAS # 156-59-2	(Lot MKBV2831V)			+/-	121.3703	µg/mL	Unstressed
	Purity 98%				+/-	121.6584	µg/mL	Stressed
10	chloroform		2,000.8	µg/mL	+/-	15.4261	µg/mL	Gravimetric
	CAS # 67-66-3	(Lot MKBV2089V)			+/-	121.1415	µg/mL	Unstressed
	Purity 99%				+/-	121.4271	µg/mL	Stressed
11	Bromochloromethane		2,019.5	µg/mL	+/-	11.8516	µg/mL	Gravimetric
	CAS # 74-97-5	(Lot 00004559)			+/-	121.8560	µg/mL	Unstressed
	Purity 99%				+/-	122.1453	µg/mL	Stressed
12	1,1,1-trichloroethane		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot B15W12061)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
13	Cyclohexane		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 110-82-7	(Lot MKBX4768V)			+/-	121.1923	µg/mL	Unstressed
	Purity 99%				+/-	121.4800	µg/mL	Stressed
14	carbon tetrachloride		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 56-23-5	(Lot SHBG1763V)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
15	1,2-Dichloroethane		2,001.8	µg/mL	+/-	15.4336	µg/mL	Gravimetric
	CAS # 107-06-2	(Lot SHBF9313V)			+/-	121.2006	µg/mL	Unstressed
	Purity 99%				+/-	121.4863	µg/mL	Stressed
16	Benzene		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 71-43-2	(Lot SHBG7315V)			+/-	121.1923	µg/mL	Unstressed
	Purity 99%				+/-	121.4800	µg/mL	Stressed
17	Trichloroethene		2,001.0	µg/mL	+/-	15.4276	µg/mL	Gravimetric
	CAS # 79-01-6	(Lot SHBF0943V)			+/-	121.1536	µg/mL	Unstressed
	Purity 99%				+/-	121.4393	µg/mL	Stressed
18	Methylcyclohexane		2,005.5	µg/mL	+/-	11.7694	µg/mL	Gravimetric
	CAS # 108-87-2	(Lot 50996APV)			+/-	121.0113	µg/mL	Unstressed
	Purity 99%				+/-	121.2985	µg/mL	Stressed
19	1,2-Dichloropropane		2,000.4	µg/mL	+/-	15.4226	µg/mL	Gravimetric
	CAS # 78-87-5	(Lot 01113D0V)			+/-	121.1143	µg/mL	Unstressed
	Purity 99%				+/-	121.3998	µg/mL	Stressed
20	bromodichloromethane		2,001.4	µg/mL	+/-	15.4306	µg/mL	Gravimetric
	CAS # 75-27-4	(Lot MKBL1617V)			+/-	121.1767	µg/mL	Unstressed
	Purity 98%				+/-	121.4623	µg/mL	Stressed
21	cis-1,3-Dichloropropene		2,001.0	µg/mL	+/-	15.4276	µg/mL	Gravimetric
	CAS # 10061-01-5	(Lot 22622)			+/-	121.1536	µg/mL	Unstressed
	Purity 99%				+/-	121.4393	µg/mL	Stressed
22	Toluene		2,008.0	µg/mL	+/-	11.7841	µg/mL	Gravimetric
	CAS # 108-88-3	(Lot SHBH1932V)			+/-	121.1621	µg/mL	Unstressed
	Purity 99%				+/-	121.4497	µg/mL	Stressed
23	trans-1,3-Dichloropropene		2,001.1	µg/mL	+/-	15.4282	µg/mL	Gravimetric
	CAS # 10061-02-6	(Lot C584177)			+/-	121.1582	µg/mL	Unstressed
	Purity 99%				+/-	121.4438	µg/mL	Stressed

24	1,1,2-Trichloroethane **CAS #** 79-00-5 **Purity** 99%	(Lot FGB01)	2,000.2	µg/mL	+/- +/- +/-	15.4217 121.1067 121.3922	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
25	Tetrachloroethene **CAS #** 127-18-4 **Purity** 99%	(Lot SHBD9374V)	2,000.8	µg/mL	+/- +/- +/-	15.4263 121.1430 121.4286	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
26	dibromochloromethane **CAS #** 124-48-1 **Purity** 98%	(Lot MKBW3597V)	2,001.4	µg/mL	+/- +/- +/-	15.4304 121.1752 121.4609	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
27	1,2-Dibromoethane (EDB) **CAS #** 106-93-4 **Purity** 99%	(Lot BCBH3877V)	2,007.0	µg/mL	+/- +/- +/-	11.7782 121.1018 121.3893	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
28	Chlorobenzene **CAS #** 108-90-7 **Purity** 99%	(Lot SHBF0505V)	2,000.3	µg/mL	+/- +/- +/-	15.4224 121.1128 121.3983	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
29	Ethylbenzene **CAS #** 100-41-4 **Purity** 99%	(Lot SHBF8969V)	2,011.5	µg/mL	+/- +/- +/-	11.8046 121.3733 121.6614	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
30	m-Xylene **CAS #** 108-38-3 **Purity** 99%	(Lot SHBG9538V)	1,004.5	µg/mL	+/- +/- +/-	5.8950 60.6112 60.7551	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
31	p-Xylene **CAS #** 106-42-3 **Purity** 99%	(Lot SHBG3928V)	1,001.0	µg/mL	+/- +/- +/-	5.8744 60.4000 60.5434	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
32	o-Xylene **CAS #** 95-47-6 **Purity** 99%	(Lot SHBH3432V)	2,009.0	µg/mL	+/- +/- +/-	11.7899 121.2225 121.5102	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
33	Styrene **CAS #** 100-42-5 **Purity** 99%	(Lot MKBS7097V)	2,017.5	µg/mL	+/- +/- +/-	11.8398 121.7354 122.0243	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
34	Isopropylbenzene (cumene) **CAS #** 98-82-8 **Purity** 99%	(Lot 10185056)	2,010.0	µg/mL	+/- +/- +/-	11.7958 121.2828 121.5707	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
35	bromoform **CAS #** 75-25-2 **Purity** 99%	(Lot SHBD8459V)	2,000.6	µg/mL	+/- +/- +/-	15.4248 121.1309 121.4165	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
36	1,1,2,2-Tetrachloroethane **CAS #** 79-34-5 **Purity** 99%	(Lot CFA4D)	2,000.8	µg/mL	+/- +/- +/-	15.4259 121.1400 121.4256	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
37	1,3-Dichlorobenzene **CAS #** 541-73-1 **Purity** 99%	(Lot BCBM5751V)	2,000.5	µg/mL	+/- +/- +/-	15.4240 121.1249 121.4104	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
38	1,4-Dichlorobenzene **CAS #** 106-46-7 **Purity** 99%	(Lot MKBS1350V)	2,001.7	µg/mL	+/- +/- +/-	15.4327 121.1930 121.4787	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
39	1,2-Dichlorobenzene **CAS #** 95-50-1 **Purity** 99%	(Lot SHBD7331V)	2,000.6	µg/mL	+/- +/- +/-	15.4244 121.1279 121.4135	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

40	1,2-Dibromo-3-chloropropane		2,019.0	µg/mL	+/-	11.8486	µg/mL	Gravimetric
	CAS # 96-12-8	(Lot FBL01)			+/-	121.8259	µg/mL	Unstressed
	Purity 99%				+/-	122.1150	µg/mL	Stressed
41	1,2,4-Trichlorobenzene		2,008.0	µg/mL	+/-	11.7841	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot SHBC5541V)			+/-	121.1621	µg/mL	Unstressed
	Purity 99%				+/-	121.4497	µg/mL	Stressed
42	1,2,3-Trichlorobenzene		2,018.5	µg/mL	+/-	11.8457	µg/mL	Gravimetric
	CAS # 87-61-6	(Lot 12912PFV)			+/-	121.7957	µg/mL	Unstressed
	Purity 99%				+/-	122.0848	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

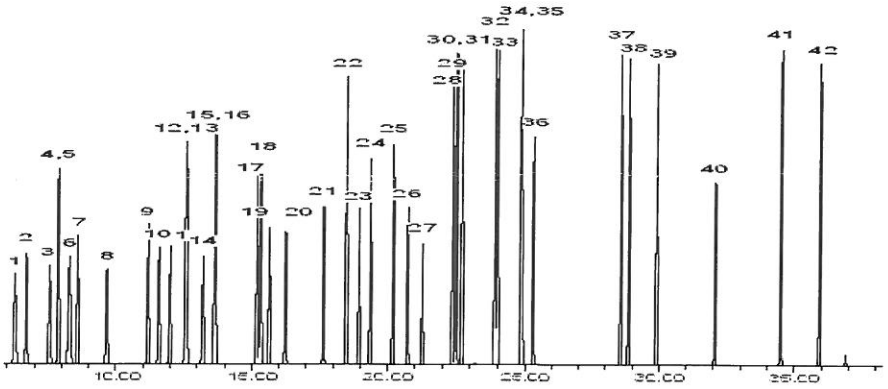
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Joseph Jaglowski - Mix Technician

Date Mixed: 22-Feb-2017 **Balance:** 1127510105

Diane Shaffer - Operations Tech-ARM QC

Date Passed: 28-Mar-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK

Safety Data Sheet

Revision Date: 10/25/18
www.restek.com

2 Letter ISO country code/language code: US/EN

1. IDENTIFICATION

Catalog Number / Product Name:	**30492 / OLC 03.2 VOA Mega Mix**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Email:	www.restek.com
Revision Number:	10
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:
Skin Sensitisation Category 1
Germ Cell Mutagenicity Category 1B
Carcinogenicity Category 1A
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1
Hazardous for the ozone layer
Flammable Liquid Category 2
Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2
Acute Toxicity - Inhalation Dust / Mist Category 3
Acute Toxicity - Dermal Category 3
Acute Toxicity - Oral Category 3

GHS Signal Word:
Danger

GHS Hazard:
Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
Causes damage to organs.
May cause damage to organs through prolonged or repeated exposure.
Harms public health and the environment by destroying ozone in the upper atmosphere.

GHS Precautions:

Safety Precautions:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilation and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Measures:
IF SWALLOWED: Immediately call a POISON CENTER/doctor/....
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Specific treatment see section 4.
Rinse mouth.
If skin irritation or rash occurs: Get medical advice/attention.
Take off immediately all contaminated clothing and wash it before reuse.
In case of fire: Use extinguishing media in section 5 for extinction.

Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal:
Dispose of contents/container according to section 13 of the SDS.
Refer to manufacturer/supplier for information on recovery/recycling.

Single Exposure Target Organs:
Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure - STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot be translated into GHS from the DSD especially when minimum classifications are given)

Repeated Exposure Target Organs:
Specific target organ toxicity - Repeated exposure - STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure. (C >= 1 %; No information to prove exclusion of certain routes of exposure)

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	91.8
trans-1,2-dichloroethylene	156-60-5	205-860-2	0.2
bromodichloromethane	75-27-4	200-856-7	0.2
1,2,3-trichlorobenzene	87-61-6	201-757-1	0.2
1,2-dibromo-3-chloropropane	96-12-8	202-479-3	0.2
Carbon tetrachloride	56-23-5	200-262-8	0.2
Toluene	108-88-3	203-625-9	0.2
Cyclohexane	110-82-7	203-806-2	0.2
bromochloromethane	74-97-5	200-826-3	0.2
trichloroethylene	79-01-6	201-167-4	0.2
1,1-Dichloroethylene	75-35-4	200-864-0	0.2
Tetrachloroethylene	127-18-4	204-825-9	0.2
1,4-dichlorobenzene	106-46-7	203-400-5	0.2
o-xylene	95-47-6	202-422-2	0.2
1,2-Dichlorobenzene	95-50-1	202-425-9	0.2
1,1,2-trichloroethane	79-00-5	201-166-9	0.2
Benzene	71-43-2	200-753-7	0.2
1,2-dibromoethane	106-93-4	203-444-5	0.2
1,2-dichloropropane	78-87-5	201-152-2	0.2
1,2-dichloroethane	107-06-2	203-458-1	0.2
Methyl acetate	79-20-9	201-185-2	0.2
Methylcyclohexane	108-87-2	203-624-3	0.2
Styrene	100-42-5	202-851-5	0.2
1,1,2-Trichlorotrifluoroethane	76-13-1	200-936-1	0.2
methyl-tert-butyl ether	1634-04-4	216-653-1	0.2
carbon disulfide	75-15-0	200-843-6	0.2

chlorobenzene	108-90-7	203-628-5	0.2
trans-1,3-Dichloropropylene	10061-02-6		0.2
cis-1,2-dichloroethylene	156-59-2	205-859-7	0.2
Bromoform	75-25-2	200-854-6	0.2
1,3-Dichlorobenzene	541-73-1	208-792-1	0.2
1,1-dichloroethane	75-34-3	200-863-5	0.2
isopropylbenzene (cumene)	98-82-8	202-704-5	0.2
Dichloromethane	75-09-2	200-838-9	0.2
Ethylbenzene	100-41-4	202-849-4	0.2
cis-1,3-Dichloropropene	10061-01-5	233-195-8	0.2
1,2,4-trichlorobenzene	120-82-1	204-428-0	0.2
1,1,2,2-tetrachloroethane	79-34-5	201-197-8	0.2
1,1,1-Trichloroethane	71-55-6	200-756-3	0.2
chlorodibromomethane	124-48-1	204-704-0	0.2
chloroform	67-66-3	200-663-8	0.2
p-xylene	106-42-3	203-396-5	0.1
m-xylene	108-38-3	203-576-3	0.1

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention. Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists. Do NOT take contaminated clothing home.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Never give anything by mouth to an unconscious person

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water spray or fog may also be effective for extinguishing if swept across the base of the fire. Water can also be used to absorb heat and keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid. Not combustible. Use extinguishing media appropriate for surrounding fire. Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a water stream directly into the hot burning liquid.

Fire and/or Explosion Hazards: Vapors may be ignited by heat, sparks, flames or other sources of

	ignition at or above the low flash point giving rise to a Class B fire. Vapors are heavier than air and may travel to a source of ignition and flash back
Fire Fighting Methods and Protection:	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.
Hazardous Combustion Products:	Carbon dioxide, Carbon monoxide, Hydrogen chloride, Chlorine containing gases, Phosgene, Toxic gases

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment:	Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.
Methods for Clean-up:	Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions:	Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment As with all chemicals, good industrial hygiene practices should be followed when handling this material. Wash thoroughly after handling Avoid contact with material. Special care must be taken to avoid inhalation exposure when using this product at high temperatures (above 300 degrees F) or if product is sanded, ground or cut. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous.
Storage Technical Measures and Conditions:	Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition Store in a cool place in original container and protect from sunlight Keep away from food and drinking water. Keep away from heat, sparks, and flame

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
bromodichloromethane	75-27-4	Not established	None Known	Not established	No data available
1,2-dibromo-3-chloropropane	96-12-8	Not established	None Known	Not established	1 ppb TWA
Carbon tetrachloride	56-23-5	ND	10 ppm STEL; 63 mg/m3 STEL	5 ppm TWA; 31 mg/m3 TWA	10 ppm TWA
trichloroethylene	79-01-6	1000 ppm IDLH	25 ppm STEL	10 ppm TWA	100 ppm TWA
Tetrachloroethylene	127-18-4	150 ppm IDLH	100 ppm STEL; 685 mg/m3 STEL	25 ppm TWA; 170 mg/m3 TWA	100 ppm TWA; C 200 ppm
1,4-dichlorobenzene	106-46-7	150 ppm IDLH	None Known	10 ppm TWA	75 ppm TWA; 450 mg/m3 TWA
Benzene	71-43-2	500 ppm	2.5 ppm	0.5 ppm TWA; 1.6	10 ppm TWA (apply

		IDLH	STEL; 8 mg/m3 STEL	mg/m3 TWA	only to exempt industry segments)
1,2-dibromoethane	106-93-4	100 ppm IDLH	None Known	Not established	20 ppm TWA
1,2-dichloroethane	107-06-2	50 ppm IDLH	None Known	10 ppm TWA	50 ppm TWA
Styrene	100-42-5	700 ppm IDLH	40 ppm STEL; 170 mg/m3 STEL	20 ppm TWA; 85 mg/m3 TWA	100 ppm TWA; C 200 ppm
Bromoform	75-25-2	850 ppm IDLH	None Known	0.5 ppm TWA	0.5 ppm TWA; 5 mg/m3 TWA
Dichloromethane	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)
Ethylbenzene	100-41-4	800 ppm IDLH	125 ppm STEL; 543 mg/m3 STEL	100 ppm TWA; 434 mg/m3 TWA	100 ppm TWA; 435 mg/m3 TWA
chloroform	67-66-3	500 ppm IDLH	None Known	10 ppm TWA	No data available

Personal Protection:

Engineering Measures: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. Local exhaust ventilation, process enclosures, or other engineering controls are imperative when handling or using this product to avoid overexposure. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910. Engineering controls must be designed to control vapor concentrations to below levels published in 29 CFR 1910.1000. Facilities storing or using this material should be equipped with an eyewash and safety shower.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms.Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Wear a NIOSH approved respirator if any exposure is possible. If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Do not wear contact lenses. Have an eye wash station available. Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.Wear goggles and a Face shield

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Not normally considered a skin hazard. Where use can result in skin contact, practice good personal hygiene and wear a barrier cream and/or impervious surgical style gloves. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available
Odor:	Mild
Physical State:	Liquid
pH:	Not applicable
Vapor Pressure:	No data available
Vapor Density:	1.1 (air = 1)
Boiling Point (°C):	80.1 °C (HSDB) 136.1 °C (HSDB) 145 °C (HSDB) 174 °C at 760 mmHg (HSDB) 131 °C 85.3 °C (HSDB) 60.5 - 61.2

	°C 148 °C 90 °C 196 °C 87.2 °C (HSDB) 64.7 °C at 760 mmHg (HSDB)
Melting Point (°C):	-98 °C
Flash Point (°F):	12
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36
Lower Flammable/Explosive Limit, % in air:	6
Autoignition Temperature (°C):	464 deg C
Decomposition Temperature (°C):	No data available
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 °C
Evaporation Rate:	No data available
Odor Threshold:	ND
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	2.64
VOC % by weight:	0
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.Contamination Mechanical shock High temperatures
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents Metals Caustics (bases) Peroxides Strong acids
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide Hydrogen chloride Chlorine containing gases Phosgene Toxic gases

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs) Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs).
Skin Contact:	Upon prolonged or repeated contact can cause severe irritation, defatting, and dermatitis. May cause lingering affects but not likely to result in permanent damage if the exposure is eliminated.
Skin Absorption:	Upon prolonged or repeated exposure, toxic if absorbed through the skin. Likely to cause systemic damage. Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause

severe irritation and systemic damage Upon prolonged or repeated exposure, no hazard in normal industrial use.

Ingestion: Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:
NIOSH:

Chemical Name	CAS No.	LD50/LC50
Dichlorobromomethane	75-27-4	Oral LD50 Rat 430 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	Dermal LD50 Rabbit 1400 mg/kg
Carbon tetrachloride	56-23-5	Inhalation LC50 Rat : 8000 ppm/4H; Inhalation LC50 Mouse : 9526 ppm/8H; Oral LD50 Rat : 2350 mg/kg; Oral LD50 Mouse : 8263 mg/kg; Dermal LD50 Rabbit : >20 gm/kg
Ethylene, trichloro-	79-01-6	Dermal LD50 Rabbit 29000 mg/kg; Inhalation LC50 Rat 26 mg/L 4 h vapor; Oral LD50 Rat 4920 mg/kg
Ethylene, tetrachloro-	127-18-4	Inhalation LC50 Rat : 34200 mg/m3/8H; Inhalation LC50 Mouse : 5200 ppm/4H; Oral LD50 Rat : 2629 mg/kg; Oral LD50 Mouse : 8100 mg/kg
1,4-Dichlorobenzene	106-46-7	Oral LD50 Rat 500 mg/kg
Benzene	71-43-2	Dermal LD50 Rabbit >8200 mg/kg
Ethane, 1,2-dibromo-	106-93-4	Dermal LD50 Rabbit 300 mg/kg; Inhalation LC50 Rat 3.08 mg/L 2 h; Oral LD50 Rat 117 mg/kg
Ethane, 1,2-dichloro-	107-06-2	Dermal LD50 Rabbit 4890 mg/kg
Styrene	100-42-5	Inhalation LC50 Rat : 12 gm/m3/4H; Inhalation LC50 Mouse : 9500 mg/m3/4H; Oral LD50 Rat : 2650 mg/kg; Oral LD50 Mouse : 316 mg/kg
Bromoform	75-25-2	Oral LD50 Rat 933 mg/kg
Methane, dichloro-	75-09-2	Inhalation LC50 Rat 53 mg/L 6 h
Benzene, ethyl-	100-41-4	Oral LD50 Rat : 3500 mg/kg; Dermal LD50 Rabbit : 17800 uL/kg
Chloroform	67-66-3	Dermal LD50 Rabbit >20 g/kg
Methanol	67-56-1	Inhalation LC50 Rat 22500 ppm 8 h

Component Carcinogenic Data:
OSHA:

Chemical Name	CAS No.	
Bromodichloromethane	75-27-4	Present
1,2-Dibromo-3-chloropropane	96-12-8	Present
Carbon tetrachloride	56-23-5	Present
Trichloroethylene	79-01-6	Present
Tetrachloroethylene	127-18-4	Present
1,4-Dichlorobenzene	106-46-7	Present
Benzene	71-43-2	Monograph 29, Supplement 7; 1987; {IARC - Group 1 (carcinogenic to humans)}; Known Carcinogen; {NTP Eighth Report - Known Carcinogens}; 1 ppm TWA; 5 ppm STEL; 0.5 ppm TWA action limit; Cancer hazard; Flammable (see 29 CFR 1910.1028); {OSHA - 29 CFR 1910 Specifically Regulated Chemicals}
1,2-Dibromoethane	106-93-4	Present
1,2-Dichloroethane	107-06-2	Present
Styrene	100-42-5	Present
Methylene chloride	75-09-2	25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to acheive the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate
Ethylbenzene	100-41-4	Present
Chloroform	67-66-3	Present

ACGIH:

Chemical Name	CAS No.	
Carbon tetrachloride	56-23-5	A2 - Suspected Human Carcinogen
Trichloroethylene	79-01-6	A2 - Suspected Human Carcinogen
Tetrachloroethylene	127-18-4	A3-animal carcinogen
p-Dichlorobenzene	106-46-7	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Benzene	71-43-2	A1-confirmed human carcinogen
Ethylene dibromide	106-93-4	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Ethylene dichloride	107-06-2	A4 - Not Classifiable as a Human Carcinogen
Styrene, monomer	100-42-5	A4 - Not Classifiable as a Human Carcinogen
Bromoform	75-25-2	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Dichloromethane	75-09-2	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Ethyl benzene	100-41-4	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Chloroform	67-66-3	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

NIOSH:

Chemical Name	CAS No.	
1,2-Dibromo-3-chloropropane	96-12-8	potential occupational carcinogen
Carbon tetrachloride	56-23-5	potential occupational carcinogen
Trichloroethylene	79-01-6	potential occupational carcinogen
Tetrachloroethylene	127-18-4	potential occupational carcinogen
p-Dichlorobenzene	106-46-7	potential occupational carcinogen
Benzene	71-43-2	potential occupational carcinogen
Ethylene dibromide	106-93-4	potential occupational carcinogen
Ethylene dichloride	107-06-2	potential occupational carcinogen
Methylene chloride	75-09-2	potential occupational carcinogen
Chloroform	67-66-3	potential occupational carcinogen

NTP:

Chemical Name	CAS No.	
Trichloroethylene	79-01-6	Known Human Carcinogen
Benzene	71-43-2	Known Carcinogen

IARC:

Chemical Name	CAS No.	Group No.
Monograph 106 [in preparation]; Monograph 63 [1995]	79-01-6	Group 1
Monograph 29, Supplement 7; 1987	71-43-2	Group 1
Monograph 110 [in preparation]; Monograph 71 [1999]; Monograph 41 [1986]	78-87-5	Group 1
Monograph 63; 1995	127-18-4	Group 2A
Monograph 71 [1999]; Supplement 7 [1987]; Monograph 15 [1977] (overall evaluation upgraded from 2B to 2A with supporting evidence from other relevant data)	106-93-4	Group 2A
Monograph 110 [in preparation]; Monograph 71 [1999]	75-09-2	Group 2A
Monograph 71 [1999]; Monograph 52 [1991]	75-27-4	Group 2B
Monograph 71 [1999]; Supplement 7 [1987]; Monograph 20 [1979]	96-12-8	Group 2B
Monograph 20, Supplement 7, Monograph 71; 1998	56-23-5	Group 2B
Monograph 119 [in preparation]; Monograph 71 [1999];	75-35-4	Group 2B

Supplement 7 [1987]; Monograph 39 [1986]		
Monograph 73 [1999]; Supplement 7 [1987]	106-46-7	Group 2B
Monograph 71 [1999]; Supplement 7 [1987]; Monograph 20 [1979]	107-06-2	Group 2B
Monograph 60; 1994 (Overall evaluation upgraded from 3 to 2B with supporting evidence from other data relevant to the evaluation of carcinogenicity and its mechanisms)	100-42-5	Group 2B
Monograph 77 [2000]	100-41-4	Group 2B
Monograph 106 [in preparation]; Monograph 71 [1999]; Supplement 7 [1987]; Monograph 20 [1979]	79-34-5	Group 2B
Monograph 73 [1999]	67-66-3	Group 2B

12. ECOLOGICAL INFORMATION

Overview: Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility: No data
Persistence: No data
Bioaccumulation: No data
Degradability: Biodegrades slowly.
Ecological Toxicity Data: No data available

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Flammable liquids, toxic, n.o.s. (Methanol,Carbon tetrachloride)
UN Number: UN1992
Hazard Class: 3(6.1)
3
Packing Group: II

International:
IATA Proper Shipping Name: Flammable liquids, toxic, n.o.s. (Methanol,Carbon tetrachloride)
UN Number: UN1992
Hazard Class: 3 (6.1)
Packing Group: II

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS	TSCA

				313	
methanol	67-56-1	X	X	-	X
bromodichloromethane	75-27-4	X	X	-	X
1,2-dibromo-3-chloropropane	96-12-8	X	X	-	X
Carbon tetrachloride	56-23-5	X	X	-	X
trichloroethylene	79-01-6	X	X	-	X
Tetrachloroethylene	127-18-4	X	X	-	X
1,4-dichlorobenzene	106-46-7	X	X	-	X
Benzene	71-43-2	X	X	-	X
1,2-dibromoethane	106-93-4	X	X	-	X
1,2-dichloroethane	107-06-2	X	X	-	X
Styrene	100-42-5	X	X	-	X
Bromoform	75-25-2	X	X	-	X
Dichloromethane	75-09-2	X	X	-	X
Ethylbenzene	100-41-4	X	X	-	X
chloroform	67-66-3	X	X	X	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Bromodichloromethane	75-27-4	Prop 65 Cancer
1,2-Dibromo-3-chloropropane	96-12-8	Prop 65 Cancer
Carbon tetrachloride	56-23-5	Prop 65 Cancer
Trichloroethylene	79-01-6	Prop 65 Cancer
Tetrachloroethylene Tetrachloroethylene (Perchloroethylene)	127-18-4	Prop 65 Cancer
p-Dichlorobenzene	106-46-7	Prop 65 Cancer
Vinyl trichloride	79-00-5	Prop 65 Cancer
Benzene	71-43-2	Prop 65 Cancer
Ethylene dibromide	106-93-4	Prop 65 Cancer
1,2-Dichloropropane	78-87-5	Prop 65 Cancer
Ethylene dichloride	107-06-2	Prop 65 Cancer
Styrene	100-42-5	Prop 65 Cancer
Bromoform	75-25-2	Prop 65 Cancer
1,1-Dichloroethane	75-34-3	Prop 65 Cancer
Cumene	98-82-8	Prop 65 Cancer
Dichloromethane Dichloromethane (Methylene chloride)	75-09-2	Prop 65 Cancer
Ethylbenzene	100-41-4	Prop 65 Cancer
1,1,2,2-Tetrachloroethane	79-34-5	Prop 65 Cancer
Chloroform	67-66-3	Prop 65 Cancer
Toluene	108-88-3	Prop 65 Devolop Tox
Trichloroethylene	79-01-6	Prop 65 Devolop Tox
Benzene	71-43-2	Prop 65 Devolop Tox
Ethylene dibromide	106-93-4	Prop 65 Devolop Tox
Carbon disulfide	75-15-0	Prop 65 Devolop Tox
Chloroform	67-66-3	Prop 65 Devolop Tox
Methanol	67-56-1	Prop 65 Devolop Tox
Carbon disulfide	75-15-0	Prop 65 Rep Female
1,2-Dibromo-3-chloropropane	96-12-8	Prop 65 Rep Male
Trichloroethylene	79-01-6	Prop 65 Rep Male
Benzene	71-43-2	Prop 65 Rep Male
Ethylene dibromide	106-93-4	Prop 65 Rep Male
Carbon disulfide	75-15-0	Prop 65 Rep Male

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
trans-1,2-dichloroethylene	156-60-5	-	X	X	X
bromodichloromethane	75-27-4	X	X	X	X
1,2,3-trichlorobenzene	87-61-6	-	X	-	-
1,2-dibromo-3-chloropropane	96-12-8	X	X	X	X

Carbon tetrachloride	56-23-5	X	X	X	X
Toluene	108-88-3	X	X	X	X
Cyclohexane	110-82-7	X	X	X	X
bromochloromethane	74-97-5	X	X	X	X
trichloroethylene	79-01-6	X	X	X	X
1,1-Dichloroethylene	75-35-4	X	X	X	X
Tetrachloroethylene	127-18-4	X	X	X	X
1,4-dichlorobenzene	106-46-7	X	X	X	X
o-xylene	95-47-6	X	X	X	X
1,2-Dichlorobenzene	95-50-1	X	X	X	X
1,1,2-trichloroethane	79-00-5	X	X	X	X
Benzene	71-43-2	X	X	X	X
1,2-dibromoethane	106-93-4	X	X	X	X
1,2-dichloropropane	78-87-5	X	X	X	X
1,2-dichloroethane	107-06-2	X	X	X	X
Methyl acetate	79-20-9	X	X	X	X
Methylcyclohexane	108-87-2	X	X	X	X
Styrene	100-42-5	X	X	X	X
1,1,2-Trichlorotrifluoroethane	76-13-1	X	X	X	X
methyl-tert-butyl ether	1634-04-4	X	X	X	-
carbon disulfide	75-15-0	X	X	X	X
chlorobenzene	108-90-7	X	X	X	X
trans-1,3-Dichloropropylene	10061-02-6	X	X	-	-
cis-1,2-dichloroethylene	156-59-2	-	X	X	-
Bromoform	75-25-2	X	X	X	X
1,3-Dichlorobenzene	541-73-1	X	X	X	X
1,1-dichloroethane	75-34-3	X	X	X	X
isopropylbenzene (cumene)	98-82-8	X	X	X	X
Dichloromethane	75-09-2	X	X	X	X
Ethylbenzene	100-41-4	X	X	X	X
cis-1,3-Dichloropropene	10061-01-5	-	X	-	-
1,2,4-trichlorobenzene	120-82-1	X	X	X	X
1,1,2,2-tetrachloroethane	79-34-5	X	X	X	X
1,1,1-Trichloroethane	71-55-6	X	X	X	X
chlorodibromomethane	124-48-1	X	X	X	X
chloroform	67-66-3	X	X	X	X
p-xylene	106-42-3	X	X	X	X
m-xylene	108-38-3	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 11/11/16

Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

References: No data available

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30492 **Lot No.:** A0125780

Description : OLC 03.2 VOA Mega Mix

OLC 03.2 VOA Mega Mix 1,000-2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2020 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1 (Lot 00009482) **Purity** 99%	2,008.0 µg/mL	+/- 11.7841 +/- 121.1621 +/- 121.4497	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
2	1,1-dichloroethene **CAS #** 75-35-4 (Lot 73896KMV) **Purity** 99%	2,000.3 µg/mL	+/- 15.4219 +/- 121.1082 +/- 121.3937	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
3	Methyl acetate **CAS #** 79-20-9 (Lot SHBG4345V) **Purity** 99%	2,000.5 µg/mL	+/- 11.7401 +/- 120.7096 +/- 120.9961	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
4	Methylene chloride (dichloromethane) **CAS #** 75-09-2 (Lot SHBG6426V) **Purity** 99%	2,000.5 µg/mL	+/- 15.4236 +/- 121.1218 +/- 121.4074	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
5	Carbon disulfide **CAS #** 75-15-0 (Lot S20A856) **Purity** 99%	2,014.5 µg/mL	+/- 11.8222 +/- 121.5543 +/- 121.8429	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
6	Methyl-tert-butyl ether (MTBE) **CAS #** 1634-04-4 (Lot SHBG2655V) **Purity** 99%	2,016.5 µg/mL	+/- 11.8340 +/- 121.6750 +/- 121.9638	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed
7	trans-1,2-Dichloroethene **CAS #** 156-60-5 (Lot MKBH9850V) **Purity** 99%	2,000.3 µg/mL	+/- 15.4222 +/- 121.1112 +/- 121.3968	µg/mL µg/mL µg/mL	Gravimetric Unstressed Stressed

8	1,1-Dichloroethane		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 75-34-3	(Lot 00009677)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
9	cis-1,2-Dichloroethene		2,000.2	µg/mL	+/-	11.7382	µg/mL	Gravimetric
	CAS # 156-59-2	(Lot MKBV2831V)			+/-	120.6903	µg/mL	Unstressed
	Purity 98%				+/-	120.9768	µg/mL	Stressed
10	chloroform		2,000.8	µg/mL	+/-	15.4261	µg/mL	Gravimetric
	CAS # 67-66-3	(Lot MKBV2089V)			+/-	121.1415	µg/mL	Unstressed
	Purity 99%				+/-	121.4271	µg/mL	Stressed
11	Bromochloromethane		2,001.0	µg/mL	+/-	11.7430	µg/mL	Gravimetric
	CAS # 74-97-5	(Lot 00004559)			+/-	120.7397	µg/mL	Unstressed
	Purity 99%				+/-	121.0264	µg/mL	Stressed
12	1,1,1-trichloroethane		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot B15W12061)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
13	Cyclohexane		2,002.0	µg/mL	+/-	11.7489	µg/mL	Gravimetric
	CAS # 110-82-7	(Lot MKBX4768V)			+/-	120.8001	µg/mL	Unstressed
	Purity 99%				+/-	121.0868	µg/mL	Stressed
14	carbon tetrachloride		2,000.8	µg/mL	+/-	15.4257	µg/mL	Gravimetric
	CAS # 56-23-5	(Lot SHBG1763V)			+/-	121.1385	µg/mL	Unstressed
	Purity 99%				+/-	121.4241	µg/mL	Stressed
15	1,2-Dichloroethane		2,001.8	µg/mL	+/-	15.4336	µg/mL	Gravimetric
	CAS # 107-06-2	(Lot SHBF9313V)			+/-	121.2006	µg/mL	Unstressed
	Purity 99%				+/-	121.4863	µg/mL	Stressed
16	Benzene		2,001.5	µg/mL	+/-	11.7459	µg/mL	Gravimetric
	CAS # 71-43-2	(Lot SHBH2056V)			+/-	120.7699	µg/mL	Unstressed
	Purity 99%				+/-	121.0566	µg/mL	Stressed
17	Trichloroethene		2,001.0	µg/mL	+/-	15.4276	µg/mL	Gravimetric
	CAS # 79-01-6	(Lot SHBF0943V)			+/-	121.1536	µg/mL	Unstressed
	Purity 99%				+/-	121.4393	µg/mL	Stressed
18	Methylcyclohexane		2,002.5	µg/mL	+/-	11.7518	µg/mL	Gravimetric
	CAS # 108-87-2	(Lot 50996APV)			+/-	120.8303	µg/mL	Unstressed
	Purity 99%				+/-	121.1171	µg/mL	Stressed
19	1,2-Dichloropropane		2,000.4	µg/mL	+/-	15.4226	µg/mL	Gravimetric
	CAS # 78-87-5	(Lot 01113D0V)			+/-	121.1143	µg/mL	Unstressed
	Purity 99%				+/-	121.3998	µg/mL	Stressed
20	bromodichloromethane		2,001.4	µg/mL	+/-	15.4306	µg/mL	Gravimetric
	CAS # 75-27-4	(Lot MKBL1617V)			+/-	121.1767	µg/mL	Unstressed
	Purity 98%				+/-	121.4623	µg/mL	Stressed
21	cis-1,3-Dichloropropene		2,001.0	µg/mL	+/-	15.4276	µg/mL	Gravimetric
	CAS # 10061-01-5	(Lot 22622)			+/-	121.1536	µg/mL	Unstressed
	Purity 99%				+/-	121.4393	µg/mL	Stressed
22	Toluene		2,011.0	µg/mL	+/-	11.8017	µg/mL	Gravimetric
	CAS # 108-88-3	(Lot SHBH1932V)			+/-	121.3431	µg/mL	Unstressed
	Purity 99%				+/-	121.6312	µg/mL	Stressed
23	trans-1,3-Dichloropropene		2,001.1	µg/mL	+/-	15.4282	µg/mL	Gravimetric
	CAS # 10061-02-6	(Lot C584177)			+/-	121.1582	µg/mL	Unstressed
	Purity 99%				+/-	121.4438	µg/mL	Stressed

24	1,1,2-Trichloroethane		2,000.2	µg/mL	+/-	15.4217	µg/mL	Gravimetric
	CAS # 79-00-5	(Lot FGB01)			+/-	121.1067	µg/mL	Unstressed
	Purity 99%				+/-	121.3922	µg/mL	Stressed
25	Tetrachloroethene		2,000.8	µg/mL	+/-	15.4263	µg/mL	Gravimetric
	CAS # 127-18-4	(Lot SHBD9374V)			+/-	121.1430	µg/mL	Unstressed
	Purity 99%				+/-	121.4286	µg/mL	Stressed
26	dibromochloromethane		2,001.4	µg/mL	+/-	15.4304	µg/mL	Gravimetric
	CAS # 124-48-1	(Lot MKBW3597V)			+/-	121.1752	µg/mL	Unstressed
	Purity 98%				+/-	121.4609	µg/mL	Stressed
27	1,2-Dibromoethane (EDB)		2,001.0	µg/mL	+/-	11.7430	µg/mL	Gravimetric
	CAS # 106-93-4	(Lot BCBH3877V)			+/-	120.7397	µg/mL	Unstressed
	Purity 99%				+/-	121.0264	µg/mL	Stressed
28	Chlorobenzene		2,000.3	µg/mL	+/-	15.4224	µg/mL	Gravimetric
	CAS # 108-90-7	(Lot SHBF0505V)			+/-	121.1128	µg/mL	Unstressed
	Purity 99%				+/-	121.3983	µg/mL	Stressed
29	Ethylbenzene		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 100-41-4	(Lot SHBF8969V)			+/-	121.1923	µg/mL	Unstressed
	Purity 99%				+/-	121.4800	µg/mL	Stressed
30	m-Xylene		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 108-38-3	(Lot SHBG9538V)			+/-	60.4302	µg/mL	Unstressed
	Purity 99%				+/-	60.5737	µg/mL	Stressed
31	p-Xylene		1,007.5	µg/mL	+/-	5.9126	µg/mL	Gravimetric
	CAS # 106-42-3	(Lot SHBG3928V)			+/-	60.7923	µg/mL	Unstressed
	Purity 99%				+/-	60.9366	µg/mL	Stressed
32	o-Xylene		2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS # 95-47-6	(Lot SHBH3432V)			+/-	121.2828	µg/mL	Unstressed
	Purity 99%				+/-	121.5707	µg/mL	Stressed
33	Styrene		2,007.5	µg/mL	+/-	11.7811	µg/mL	Gravimetric
	CAS # 100-42-5	(Lot MKBS7097V)			+/-	121.1320	µg/mL	Unstressed
	Purity 99%				+/-	121.4195	µg/mL	Stressed
34	Isopropylbenzene (cumene)		2,002.5	µg/mL	+/-	11.7518	µg/mL	Gravimetric
	CAS # 98-82-8	(Lot 10185056)			+/-	120.8303	µg/mL	Unstressed
	Purity 99%				+/-	121.1171	µg/mL	Stressed
35	bromoform		2,000.6	µg/mL	+/-	15.4248	µg/mL	Gravimetric
	CAS # 75-25-2	(Lot SHBD8459V)			+/-	121.1309	µg/mL	Unstressed
	Purity 99%				+/-	121.4165	µg/mL	Stressed
36	1,1,2,2-Tetrachloroethane		2,000.8	µg/mL	+/-	15.4259	µg/mL	Gravimetric
	CAS # 79-34-5	(Lot CFA4D)			+/-	121.1400	µg/mL	Unstressed
	Purity 99%				+/-	121.4256	µg/mL	Stressed
37	1,3-Dichlorobenzene		2,000.5	µg/mL	+/-	15.4240	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBM5751V)			+/-	121.1249	µg/mL	Unstressed
	Purity 99%				+/-	121.4104	µg/mL	Stressed
38	1,4-Dichlorobenzene		2,001.7	µg/mL	+/-	15.4327	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS1350V)			+/-	121.1930	µg/mL	Unstressed
	Purity 99%				+/-	121.4787	µg/mL	Stressed
39	1,2-Dichlorobenzene		2,000.6	µg/mL	+/-	15.4244	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBD7331V)			+/-	121.1279	µg/mL	Unstressed
	Purity 99%				+/-	121.4135	µg/mL	Stressed

40	1,2-Dibromo-3-chloropropane		2,008.5	µg/mL	+/-	11.7870	µg/mL	Gravimetric
	CAS # 96-12-8	(Lot FBL01)			+/-	121.1923	µg/mL	Unstressed
	Purity 99%				+/-	121.4800	µg/mL	Stressed
41	1,2,4-Trichlorobenzene		2,010.0	µg/mL	+/-	11.7958	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot SHBC5541V)			+/-	121.2828	µg/mL	Unstressed
	Purity 99%				+/-	121.5707	µg/mL	Stressed
42	1,2,3-Trichlorobenzene		2,014.5	µg/mL	+/-	11.8222	µg/mL	Gravimetric
	CAS # 87-61-6	(Lot MKBS4859V)			+/-	121.5543	µg/mL	Unstressed
	Purity 99%				+/-	121.8429	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

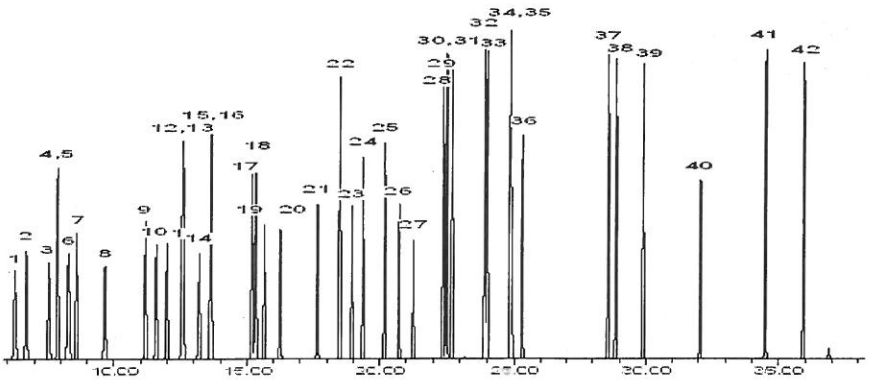
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 6 min.) to 240°C
@ 6°C/min. (hold 10 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Bradley Meyer
Bradley Meyer - Mix Technician

Date Mixed: 13-Mar-2017 **Balance:** 1127510105

Diane Shaffer
Diane Shaffer - Operations Tech-ARM QC

Date Passed: 28-Mar-2017

Manufactured under Restek's ISO 9001:2008 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO Guides 34 and 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Samples should be transferred into deactivated vials for handling and storage. Restek supplies deactivated vials along with most standards packed in 2 mL ampules. Due to space constraints, Restek does not supply vials for larger volume ampules. Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions. Restek will also deactivate larger volume vials from our inventory as a custom ordered item. Contact your Restek sales or customer service representative for details.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30006 **Lot No.:** A0137141

Description : VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone **CAS #** 67-64-1 (Lot SHBJ3819) **Purity** 99%	5,011.6 µg/mL	+/- 29.1379 µg/mL +/- 302.3720 µg/mL +/- 303.0899 µg/mL	Gravimetric Unstressed Stressed
2	2-Butanone (MEK) **CAS #** 78-93-3 (Lot SHBF2461V) **Purity** 99%	5,011.2 µg/mL	+/- 29.1355 µg/mL +/- 302.3479 µg/mL +/- 303.0657 µg/mL	Gravimetric Unstressed Stressed
3	4-Methyl-2-pentanone (MIBK) **CAS #** 108-10-1 (Lot SHBG7318V) **Purity** 99%	5,004.9 µg/mL	+/- 29.0989 µg/mL +/- 301.9678 µg/mL +/- 302.6847 µg/mL	Gravimetric Unstressed Stressed
4	2-Hexanone **CAS #** 591-78-6 (Lot MKBW0198V) **Purity** 99%	5,007.9 µg/mL	+/- 29.1164 µg/mL +/- 302.1488 µg/mL +/- 302.8661 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

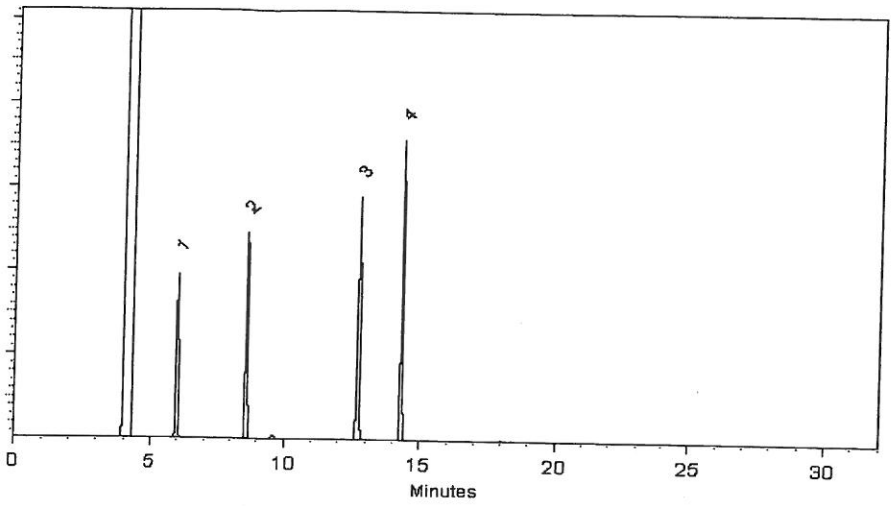
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cydnei L. Crust
Cydnei L. Crust - Mix Technician

Date Mixed: 12-Apr-2018 **Balance:** 1128342314

Jennifer Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 16-Apr-2018

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31280 **Lot No.:** A0137587

Description : Naphthalene Standard

Naphthalene Standard 1000 µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2024 **Storage:** 25°C nominal

Handling: Sonicate prior to use.

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Naphthalene	1,003.0 µg/mL	+/- 5.9575	µg/mL	Gravimetric
	CAS # 91-20-3 (Lot MKBW2603V)		+/- 45.1922	µg/mL	Unstressed
	Purity 99%		+/- 50.1429	µg/mL	Stressed

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

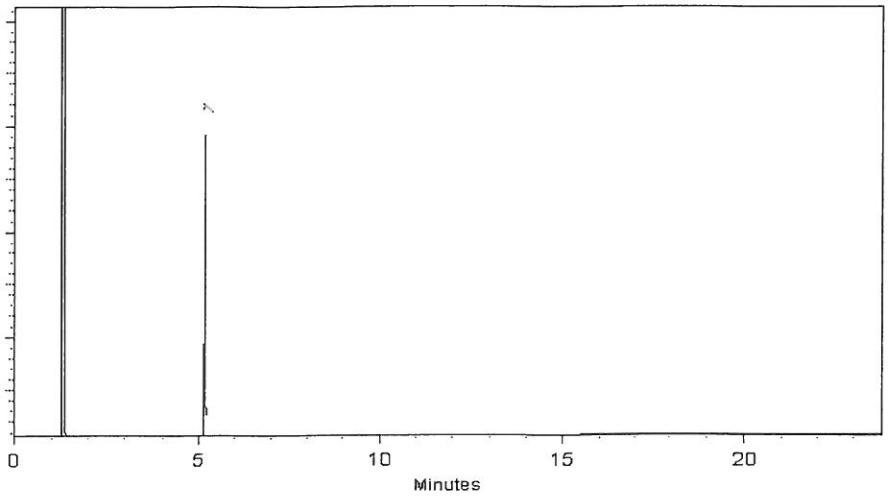
Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon - Mix Technician **Date Mixed:** 30-Apr-2018 **Balance:** B251644995

Jennifer Pollino - Operations Tech-ARM QC **Date Passed:** 02-May-2018

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

RESTEK

Safety Data Sheet

Revision Date: 07/06/16
www.restek.com

1. IDENTIFICATION

Catalog Number / Product Name:	**31280 / Naphthalene Standard**
Company:	Restek Corporation
Address:	110 Benner Circle Bellefonte, Pa. 16823
Phone#:	814-353-1300
Fax#:	814-353-1309
Emergency#:	800-424-9300 (CHEMTREC) 703-527-3887 (Outside the US)
Email:	www.restek.com
Revision Number:	9
Intended use:	For Laboratory use only

2. HAZARD(S)IDENTIFICATION

Emergency Overview:

GHS Hazard Symbols:

GHS Classification:	Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1 Flammable Liquid Category 2 Acute Toxicity - Inhalation Dust / Mist Category 3
GHS Signal Word:	Danger
GHS Hazard:	Highly flammable liquid and vapour. Toxic if inhaled. Causes damage to organs.
GHS Precautions:	
Safety Precautions:	Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilation and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
First Aid Measures:	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed: Call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician. Specific treatment see section 4. In case of fire: Use extinguishing media in section 5 for extinction.
Storage:	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal:	Dispose of contents/container according to section 13 of the SDS.

Single Exposure Target Organs: No data available.

Repeated Exposure Target Organs: No data available.

3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	99.900000
Naphthalene	91-20-3	202-049-5	0.100000

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately

Eyes: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS.

5. FIRE- FIGHTING MEASURES

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used extinguish a fire if swept across the base of the flames. Water can absorb heat and keep exposed material from being damaged by fire.

Fire and/or Explosion Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

Fire Fighting Methods and Protection: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Equipment: Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Methods for Clean-up: Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

7. HANDLING AND STORAGE

Handling Technical Measures and Precautions: Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment

Storage Technical Measures and Conditions: Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

United States:

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
Naphthalene	91-20-3	250 ppm IDLH	15 ppm STEL; 79 mg/m3 STEL	10 ppm TWA 10 ppm TWA; 52 mg/m3 TWA	10 ppm TWA; 50 mg/m3 TWA

Personal Protection:

Engineering Measures: Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing.

Respiratory Protection: Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Respiratory protection will be required when handling this product. Use respirators only if ventilation cannot be used to eliminate symptoms or reduce the exposure to below acceptable levels. If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

Eye Protection: Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

Skin Protection: Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, color:	No data available.
Odor:	Mild
Physical State:	No data available.
pH:	No data available.
Vapor Pressure:	No data available.
Vapor Density:	1.1 (air = 1)
Boiling Point:	No data available.
Melting Point:	-98 °C
Flash Point:	52
Flammability:	Highly Flammable
Upper Flammable/Explosive Limit, % in air:	36
Lower Flammable/Explosive Limit, % in air:	6
Autoignition Temperature:	464 deg C
Decomposition Temperature:	No data available.
Specific Gravity:	0.791 - 0.792 g/cm3 at 20 °C
Evaporation Rate:	No data available.
Odor Threshold:	No data available.
Solubility:	Moderate; 50-99%
Partition Coefficient: n-octanol in water:	No data available.
VOC % by weight:	99.9
Molecular Weight:	32.04

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	No data available.
Materials to Avoid / Chemical Incompatiability:	Strong oxidizing agents
Hazardous Decomposition Products:	Carbon dioxide Carbon monoxide

11. TOXICOLOGICAL INFORMATION

Routes of Entry:	Inhalation, Skin Contact, Eye Contact, Ingestion
Target Organs Potentially Affected By Exposure:	Eyes, Central nervous system stimulation, Skin, GI Tract, Respiratory Tract
Chemical Interactions That Change Toxicity:	None Known

Immediate (Acute) Health Effects by Route of Exposure:

Inhalation Irritation:	Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.
Inhalation Toxicity:	Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.
Skin Contact:	Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Eye Contact:	Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.
Ingestion Irritation:	Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.
Ingestion Toxicity:	Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

Long-Term (Chronic) Health Effects:

Carcinogenicity:	Contains a probable or known human carcinogen.
Reproductive and Developmental Toxicity:	Contains a known human reproductive and/or developmental hazard.
Inhalation:	Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)
Skin Contact:	Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.
Ingestion:	Toxic if swallowed. May cause target organ failure and/or death.

Component Toxicological Data:

NIOSH:

Chemical Name	CAS No.	LD50/LC50
Methanol	67-56-1	Inhalation LC50 Rat 22500 ppm 8 h
Naphthalene	91-20-3	Inhalation LC50 Rat : >340 mg/m3/1H; Oral LD50 Rat : 490 mg/kg; Oral LD50 Mouse : 533 mg/kg; Dermal LD50 Rabbit : >20 gm/kg

Component Carcinogenic Data:

OSHA:

Chemical Name	CAS No.	
Naphthalene	91-20-3	Present

ACGIH:

Chemical Name	CAS No.	
Naphthalene	91-20-3	A4 - Not Classifiable as a Human Carcinogen

NIOSH:

Chemical Name	CAS No.
No data available.	

NTP:

Chemical Name	CAS No.
No data available.	

IARC:

Chemical Name	CAS No.	Group No.
No data.		Group 1
No data.		Group 2A
Naphthalene	91-20-3	Group 2B

12. ECOLOGICAL INFORMATION

Overview:	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
Mobility:	No data
Persistence:	No data
Bioaccumulation:	No data
Degradability:	Biodegrades slowly.

Ecological Toxicity Data: No data available.

13. DISPOSAL CONSIDERATIONS

Waste Description of Spent Product: Spent or discarded material is a hazardous waste.
Disposal Methods: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Disposal of Packaging: Comply with all Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSPORTATION INFORMATION

United States:
DOT Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3
Packing Group: II

International:
IATA Proper Shipping Name: Methanol
UN Number: UN1230
Hazard Class: 3(6.1)
Packing Group: II

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available.			

15. REGULATORY INFORMATION

United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
Naphthalene	91-20-3	X	X	-	X

The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Naphthalene	91-20-3	Prop 65 Cancer
Methanol	67-56-1	Prop 65 Devolop Tox

State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
Naphthalene	91-20-3	X	X	X	X

16. OTHER INFORMATION

Prior Version Date: 05/13/14
Other Information: Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.
References: No data available.
Disclaimer: Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding prodcuts described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions, data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

30 Vials

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ilac-MRA

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30006 **Lot No.:** A0141722

Description : VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : December 31, 2021 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Acetone	5,000.2 µg/mL	+/- 29.0716	µg/mL	Gravimetric
	CAS # 67-64-1 (Lot SHBJ4459)		+/- 301.6842	µg/mL	Unstressed
	Purity 99%		+/- 302.4005	µg/mL	Stressed
2	2-Butanone (MEK)	5,001.3 µg/mL	+/- 29.0780	µg/mL	Gravimetric
	CAS # 78-93-3 (Lot SHBH7233)		+/- 301.7506	µg/mL	Unstressed
	Purity 99%		+/- 302.4670	µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)	5,002.1 µg/mL	+/- 29.0826	µg/mL	Gravimetric
	CAS # 108-10-1 (Lot SHBH8930)		+/- 301.7989	µg/mL	Unstressed
	Purity 99%		+/- 302.5154	µg/mL	Stressed
4	2-Hexanone	5,001.8 µg/mL	+/- 29.0809	µg/mL	Gravimetric
	CAS # 591-78-6 (Lot MKCD9048)		+/- 301.7808	µg/mL	Unstressed
	Purity 99%		+/- 302.4972	µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

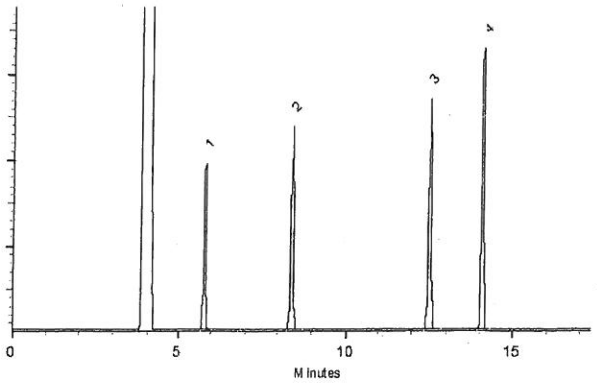
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

F. Joseph Tallon - Mix Technician

Date Mixed: 20-Sep-2018 **Balance:** B251644995

Justine Albertson - Operations Tech-ARM QC

Date Passed: 24-Sep-2018

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

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0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Manual Integration Report

Sequence:	VU073119	Instrument	MSVOA_u

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTD00533/ VSTD00533	VU033498.D	2-Butanone	Sweetuben	7/31/2019 10:01:16 AM	MMDadoda	7/31/2019 10:33:45 AM	Peak Integrated by Software incorrectly
VSTD00533/ VSTD00533	VU033498.D	2-Butanone-d5	Sweetuben	7/31/2019 10:01:16 AM	MMDadoda	7/31/2019 10:33:45 AM	Peak Integrated by Software incorrectly

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: MSVOA_U

Daily Analysis Runlog For Sequence/QCBatch ID # VU073119

Review By	Sweetuben	Review On	7/31/2019 10:09:13 AM		
Supervise By	MMDadoda	Supervise On	7/31/2019 10:34:21 AM		
SubDirectory	VU073119	HP Acquire Method	MSVOA_U	HP Processing Method	somulm073119wma.m

STD. NAME	STD REF.#
Tune/Reschk	VP84948,VP85021
Initial Calibration Stds	VP84949,VP84976,VP84950,VP84951,VP84952,VP84953
CCC	VP84959;2.5PPB MDL:VP84955,VP84956,VP84957,VP84958,VP84977,VP84978,VP84979;VP85022,VP85023
Internal Standard/PEM	VP84850
ICV/I.BLK	VP84954

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	BFB42	VU033491.D	30 Jul 2019 14:29	JC/SP	Ok
2	VSTD00534	VU033492.D	30 Jul 2019 14:59	JC/SP	Not Ok
3	VSTD01035	VU033493.D	30 Jul 2019 15:22	JC/SP	Ok
4	VSTD05036	VU033494.D	30 Jul 2019 15:45	JC/SP	Ok
5	VSTD10031	VU033495.D	30 Jul 2019 16:08	JC/SP	Ok
6	VSTD20032	VU033496.D	30 Jul 2019 16:31	JC/SP	Ok
7	VIBLK40	VU033497.D	30 Jul 2019 16:54	JC/SP	Ok
8	VSTD00533	VU033498.D	30 Jul 2019 17:17	JC/SP	Ok,M
9	VSTDICV050	VU033499.D	30 Jul 2019 17:40	JC/SP	Ok
10	VU0731WBL01	VU033500.D	30 Jul 2019 18:26	JC/SP	Ok
11	MDL01	VU033501.D	30 Jul 2019 18:49	JC/SP	Ok,M
12	MDL02	VU033502.D	30 Jul 2019 19:12	JC/SP	Ok,M
13	MDL03	VU033503.D	30 Jul 2019 19:34	JC/SP	Ok,M
14	MDL04	VU033504.D	30 Jul 2019 19:57	JC/SP	Ok,M
15	MDL05	VU033505.D	30 Jul 2019 20:20	JC/SP	Ok
16	MDL06	VU033506.D	30 Jul 2019 20:43	JC/SP	Ok,M
17	MDL07	VU033507.D	30 Jul 2019 21:06	JC/SP	Ok
18	K4103-02	VU033508.D	30 Jul 2019 22:15	JC/SP	Not Ok
19	K4103-03	VU033509.D	30 Jul 2019 22:38	JC/SP	Not Ok
20	VSTDCCC050EC	VU033510.D	30 Jul 2019 23:01	JC/SP	Ok
21	BFB43	VU033511.D	31 Jul 2019 08:56	JC/SP	Ok
22	VSTDCCC050	VU033512.D	31 Jul 2019 09:47	JC/SP	Ok
23	VU0731MBL01	VU033513.D	31 Jul 2019 10:17	JC/SP	Ok
24	VU0731WBL02	VU033514.D	31 Jul 2019 10:40	JC/SP	Ok
25	K4103-01	VU033515.D	31 Jul 2019 11:03	JC/SP	Ok
26	K4103-07	VU033516.D	31 Jul 2019 11:30	JC/SP	Ok

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Instrument ID: MSVOA_U

Daily Analysis Runlog For Sequence/QCBatch ID # VU073119

Review By	Sweetuben	Review On	7/31/2019 10:09:13 AM		
Supervise By	MMDadoda	Supervise On	7/31/2019 10:34:21 AM		
SubDirectory	VU073119	HP Acquire Method	MSVOA_U	HP Processing Method	somulm073119wma.m

STD. NAME	STD REF.#
Tune/Reschk	VP84948,VP85021
Initial Calibration Stds	VP84949,VP84976,VP84950,VP84951,VP84952,VP84953
CCC	VP84959;2.5PPB MDL:VP84955,VP84956,VP84957,VP84958,VP84977,VP84978,VP84979;VP85022,VP85023
Internal Standard/PEM	VP84850
ICV/I.BLK	VP84954

27	K4103-04	VU033517.D	31 Jul 2019 11:53	JC/SP	Not Ok
28	K4103-03DL	VU033518.D	31 Jul 2019 12:16	JC/SP	Ok
29	K4103-02	VU033519.D	31 Jul 2019 12:39	JC/SP	Ok
30	K4103-04	VU033520.D	31 Jul 2019 13:02	JC/SP	Ok
31	K4103-05MS	VU033521.D	31 Jul 2019 13:25	JC/SP	Ok
32	K4103-06MSD	VU033522.D	31 Jul 2019 13:48	JC/SP	Ok
33	K4103-11	VU033523.D	31 Jul 2019 14:11	JC/SP	Ok
34	K4103-08	VU033524.D	31 Jul 2019 14:33	JC/SP	Dilution
35	K4103-09	VU033525.D	31 Jul 2019 14:56	JC/SP	Dilution
36	K4103-10	VU033526.D	31 Jul 2019 15:19	JC/SP	Dilution
37	VIBLK40	VU033527.D	31 Jul 2019 15:42	JC/SP	Ok
38	K4103-03	VU033528.D	31 Jul 2019 16:05	JC/SP	Dilution
39	VIBLK41	VU033529.D	31 Jul 2019 16:51	JC/SP	Ok
40	VIBLK42	VU033530.D	31 Jul 2019 17:14	JC/SP	Ok
41	K4103-08DL	VU033531.D	31 Jul 2019 17:37	JC/SP	Ok
42	K4103-09DL	VU033532.D	31 Jul 2019 18:00	JC/SP	Ok
43	K4103-10DL	VU033533.D	31 Jul 2019 18:23	JC/SP	Ok
44	VSTDCCC050EC	VU033534.D	31 Jul 2019 18:46	JC/SP	Ok

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Instrument ID: MSVOA_U

Daily Analysis Runlog For Sequence/QCBatch ID # VU073119

Review By	Sweetuben	Review On	7/31/2019 10:09:13 AM		
Supervise By	MMDadoda	Supervise On	7/31/2019 10:34:21 AM		
SubDirectory	VU073119	HP Acquire Method	MSVOA_U	HP Processing Method	somulm073119wma.m

STD. NAME	STD REF.#
Tune/Reschk	VP84948,VP85021
Initial Calibration Stds	VP84949,VP84976,VP84950,VP84951,VP84952,VP84953
CCC	VP84959;2.5PPB MDL:VP84955,VP84956,VP84957,VP84958,VP84977,VP84978,VP84979;VP85022,VP85023
Internal Standard/PEM	VP84850
ICV/I.BLK	VP84954

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	BFB42	BFB42	VU033491.D	30 Jul 2019 14:29	pH#LOT#V9654	JC/SP	Ok
2	VSTD00534	VSTD00534	VU033492.D	30 Jul 2019 14:59	low spiking	JC/SP	Not Ok
3	VSTD01035	VSTD01035	VU033493.D	30 Jul 2019 15:22		JC/SP	Ok
4	VSTD05036	VSTD05036	VU033494.D	30 Jul 2019 15:45		JC/SP	Ok
5	VSTD10031	VSTD10031	VU033495.D	30 Jul 2019 16:08		JC/SP	Ok
6	VSTD20032	VSTD20032	VU033496.D	30 Jul 2019 16:31		JC/SP	Ok
7	VIBLK40	VIBLK40	VU033497.D	30 Jul 2019 16:54		JC/SP	Ok
8	VSTD00533	VSTD00533	VU033498.D	30 Jul 2019 17:17		JC/SP	Ok,M
9	VSTDICV050	VICV34	VU033499.D	30 Jul 2019 17:40		JC/SP	Ok
10	VU0731WBL01	VBLK34	VU033500.D	30 Jul 2019 18:26		JC/SP	Ok
11	MDL01	MDL01	VU033501.D	30 Jul 2019 18:49	som2.4	JC/SP	Ok,M
12	MDL02	MDL02	VU033502.D	30 Jul 2019 19:12	2.5 ppb MDL-low medium water	JC/SP	Ok,M
13	MDL03	MDL03	VU033503.D	30 Jul 2019 19:34		JC/SP	Ok,M
14	MDL04	MDL04	VU033504.D	30 Jul 2019 19:57		JC/SP	Ok,M
15	MDL05	MDL05	VU033505.D	30 Jul 2019 20:20		JC/SP	Ok
16	MDL06	MDL06	VU033506.D	30 Jul 2019 20:43		JC/SP	Ok,M
17	MDL07	MDL07	VU033507.D	30 Jul 2019 21:06		JC/SP	Ok
18	K4103-02	DB9D6	VU033508.D	30 Jul 2019 22:15	pH#1.0 vial A,Run straigh	JC/SP	Not Ok
19	K4103-03	DB9D7	VU033509.D	30 Jul 2019 22:38	pH#1.0 vial A	JC/SP	Not Ok
20	VSTDCCC050EC	VSTD05040	VU033510.D	30 Jul 2019 23:01		JC/SP	Ok
21	BFB43	BFB43	VU033511.D	31 Jul 2019 08:56		JC/SP	Ok

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Review By	Sweetuben	Review On	7/31/2019 10:09:13 AM		
Supervise By	MMDadoda	Supervise On	7/31/2019 10:34:21 AM		
SubDirectory	VU073119	HP Acquire Method	MSVOA_U	HP Processing Method	somulm073119wma.m

STD. NAME	STD REF.#
Tune/Reschk	VP84948,VP85021
Initial Calibration Stds	VP84949,VP84976,VP84950,VP84951,VP84952,VP84953
CCC	VP84959;2.5PPB MDL:VP84955,VP84956,VP84957,VP84958,VP84977,VP84978,VP84979;VP85022,VP85023
Internal Standard/PEM	VP84850
ICV/I.BLK	VP84954

22	VSTDCCC050	VSTD05041	VU033512.D	31 Jul 2019 09:47		JC/SP	Ok
23	VU0731MBL01	VBLK35	VU033513.D	31 Jul 2019 10:17		JC/SP	Ok
24	VU0731WBL02	VBLK36	VU033514.D	31 Jul 2019 10:40		JC/SP	Ok
25	K4103-01	DB9A5	VU033515.D	31 Jul 2019 11:03	PE	JC/SP	Ok
26	K4103-07	DB9D9	VU033516.D	31 Jul 2019 11:30	pH#1.0 vial A,TB	JC/SP	Ok
27	K4103-04	DB9D8	VU033517.D	31 Jul 2019 11:53	pH#1.0 vial A,Run Straight	JC/SP	Not Ok
28	K4103-03DL	DB9D7DL	VU033518.D	31 Jul 2019 12:16	pH#1.0 vial A	JC/SP	Ok
29	K4103-02	DB9D6	VU033519.D	31 Jul 2019 12:39	pH#1.0 vial B	JC/SP	Ok
30	K4103-04	DB9D8	VU033520.D	31 Jul 2019 13:02	pH#1.0 vial B	JC/SP	Ok
31	K4103-05MS	DB9D8MS	VU033521.D	31 Jul 2019 13:25	pH#1.0 vial A	JC/SP	Ok
32	K4103-06MSD	DB9D8MSD	VU033522.D	31 Jul 2019 13:48	pH#1.0 vial A	JC/SP	Ok
33	K4103-11	DB9F0	VU033523.D	31 Jul 2019 14:11	TB, pH#1.0 vial A	JC/SP	Ok
34	K4103-08	DB9E4	VU033524.D	31 Jul 2019 14:33	pH#1.0 vial A,Need 100X	JC/SP	Dilution
35	K4103-09	DB9E5	VU033525.D	31 Jul 2019 14:56	pH#1.0 vial A,Need 100X	JC/SP	Dilution
36	K4103-10	DB9E6	VU033526.D	31 Jul 2019 15:19	pH#1.0 vial A,Need 40X	JC/SP	Dilution
37	VIBLK40	VIBLK40	VU033527.D	31 Jul 2019 15:42		JC/SP	Ok
38	K4103-03	DB9D7	VU033528.D	31 Jul 2019 16:05	pH#1.0 vial B,Need 10X	JC/SP	Dilution
39	VIBLK41	VIBLK41	VU033529.D	31 Jul 2019 16:51		JC/SP	Ok
40	VIBLK42	VIBLK42	VU033530.D	31 Jul 2019 17:14		JC/SP	Ok
41	K4103-08DL	DB9E4DL	VU033531.D	31 Jul 2019 17:37	pH#1.0 vial B	JC/SP	Ok
42	K4103-09DL	DB9E5DL	VU033532.D	31 Jul 2019 18:00	pH#1.0 vial B	JC/SP	Ok
43	K4103-10DL	DB9E6DL	VU033533.D	31 Jul 2019 18:23	pH#1.0 vial B	JC/SP	Ok

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Review By	Sweetuben	Review On	7/31/2019 10:09:13 AM		
Supervise By	MMDadoda	Supervise On	7/31/2019 10:34:21 AM		
SubDirectory	VU073119	HP Acquire Method	MSVOA_U	HP Processing Method	somulm073119wma.m

STD. NAME	STD REF.#
Tune/Reschk	VP84948,VP85021
Initial Calibration Stds	VP84949,VP84976,VP84950,VP84951,VP84952,VP84953
CCC	VP84959;2.5PPB MDL:VP84955,VP84956,VP84957,VP84958,VP84977,VP84978,VP84979;VP85022,VP85023
Internal Standard/PEM	VP84850
ICV/I.BLK	VP84954

44	VSTDCCC050EC	VSTD05042	VU033534.D	31 Jul 2019 18:46		JC/SP	Ok