

Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
 Data File : VL032494.D  
 Acq On : 11 Sep 2018 1:22  
 Operator : SY/AP  
 Sample : J4820-05  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 249-BERRY

## Integration Parameters: RTEINT.P

Integrator: RTE  
 Smoothing : ON Filtering: 5  
 Sampling : 3 Min Area: 3 % of largest Peak  
 Start Thrs: 0.001 Max Peaks: 100  
 Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >  
 Peak separation: 0

Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M

Title : AIR ANALYSIS BY METHOD T0-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

Signal : TIC

| peak<br># | R.T.<br>min | first<br>scan | max<br>scan | last<br>scan | PK<br>TY | peak<br>height | corr.<br>area | corr.<br>% max. | % of<br>total |
|-----------|-------------|---------------|-------------|--------------|----------|----------------|---------------|-----------------|---------------|
| 1         | 3.062       | 27            | 39          | 55           | rBV2     | 16742120       | 28279119      | 8.21%           | 1.982%        |
| 2         | 3.265       | 90            | 102         | 124          | rBV      | 21786082       | 52332037      | 15.20%          | 3.668%        |
| 3         | 3.371       | 124           | 135         | 145          | rVV      | 26813534       | 47450257      | 13.78%          | 3.326%        |
| 4         | 3.419       | 145           | 150         | 160          | rVV      | 5821800        | 8375361       | 2.43%           | 0.587%        |
| 5         | 3.946       | 304           | 314         | 334          | rVB2     | 13386632       | 32453434      | 9.43%           | 2.275%        |
| 6         | 4.097       | 351           | 361         | 377          | rVV      | 19670132       | 33082508      | 9.61%           | 2.319%        |
| 7         | 5.306       | 723           | 737         | 747          | rVV      | 5132505        | 11688675      | 3.40%           | 0.819%        |
| 8         | 5.412       | 747           | 770         | 787          | rVV2     | 27155598       | 96101249      | 27.91%          | 6.736%        |
| 9         | 5.602       | 815           | 829         | 854          | rVB3     | 4364354        | 9150310       | 2.66%           | 0.641%        |
| 10        | 5.824       | 880           | 898         | 914          | rBV5     | 4900431        | 11797884      | 3.43%           | 0.827%        |
| 11        | 5.917       | 914           | 927         | 954          | rVB      | 5480096        | 12048563      | 3.50%           | 0.845%        |
| 12        | 6.904       | 1217          | 1234        | 1245         | rBV2     | 1855618        | 3972226       | 1.15%           | 0.278%        |
| 13        | 7.062       | 1273          | 1283        | 1300         | rVB3     | 1667132        | 3589663       | 1.04%           | 0.252%        |
| 14        | 7.358       | 1339          | 1375        | 1386         | rBV4     | 4300752        | 11735622      | 3.41%           | 0.823%        |
| 15        | 7.650       | 1448          | 1466        | 1502         | rBV2     | 9793308        | 24094781      | 7.00%           | 1.689%        |
| 16        | 7.981       | 1556          | 1569        | 1581         | rBV3     | 3005642        | 6670444       | 1.94%           | 0.468%        |
| 17        | 8.493       | 1716          | 1728        | 1746         | rVB2     | 2386700        | 5072695       | 1.47%           | 0.356%        |
| 18        | 10.004      | 2177          | 2198        | 2217         | rBV3     | 1844750        | 4450601       | 1.29%           | 0.312%        |
| 19        | 10.226      | 2256          | 2267        | 2279         | rBV3     | 1766541        | 3853654       | 1.12%           | 0.270%        |
| 20        | 10.322      | 2279          | 2297        | 2314         | rVV      | 19216052       | 51008338      | 14.82%          | 3.575%        |
| 21        | 10.612      | 2372          | 2387        | 2403         | rBV2     | 6429369        | 14343887      | 4.17%           | 1.005%        |
| 22        | 10.821      | 2436          | 2452        | 2458         | rBV2     | 2247544        | 5294953       | 1.54%           | 0.371%        |
| 23        | 10.875      | 2458          | 2469        | 2480         | rVV      | 5991124        | 14784600      | 4.29%           | 1.036%        |
| 24        | 11.181      | 2546          | 2564        | 2572         | rBV3     | 1812518        | 4307427       | 1.25%           | 0.302%        |
| 25        | 11.271      | 2582          | 2592        | 2610         | rVB3     | 1427851        | 3571676       | 1.04%           | 0.250%        |
| 26        | 11.505      | 2652          | 2665        | 2688         | rVB      | 1790420        | 4333160       | 1.26%           | 0.304%        |
| 27        | 11.875      | 2751          | 2780        | 2802         | rBV4     | 3529350        | 11995357      | 3.48%           | 0.841%        |
| 28        | 12.296      | 2897          | 2911        | 2936         | rVV      | 4997954        | 13432039      | 3.90%           | 0.941%        |
| 29        | 12.425      | 2936          | 2951        | 2958         | rVV2     | 1687637        | 4644722       | 1.35%           | 0.326%        |
| 30        | 12.798      | 3041          | 3067        | 3090         | rVV5     | 3105950        | 12032667      | 3.50%           | 0.843%        |
| 31        | 12.920      | 3090          | 3105        | 3121         | rVV      | 8761359        | 21889101      | 6.36%           | 1.534%        |
| 32        | 13.174      | 3168          | 3184        | 3205         | rVB3     | 1903505        | 6344960       | 1.84%           | 0.445%        |
| 33        | 13.338      | 3221          | 3235        | 3250         | rBV      | 2094268        | 5017969       | 1.46%           | 0.352%        |
| 34        | 13.746      | 3343          | 3362        | 3387         | rBV9     | 3386293        | 11853172      | 3.44%           | 0.831%        |

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Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 249-BERRY

## Integration Parameters: RTEINT.P

Integrator: RTE  
 Smoothing : ON  
 Sampling : 3  
 Start Thrs: 0.001  
 Stop Thrs : 0

Filtering: 5  
 Min Area: 3 % of largest Peak  
 Max Peaks: 100  
 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >  
 Peak separation: 0

Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M

Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

|    |        |      |      |      |       |          |           |         |         |
|----|--------|------|------|------|-------|----------|-----------|---------|---------|
| 35 | 13.891 | 3387 | 3407 | 3424 | rVV4  | 1667556  | 4556072   | 1.32%   | 0.319%  |
| 36 | 14.000 | 3424 | 3441 | 3476 | rVV6  | 3351908  | 12108766  | 3.52%   | 0.849%  |
| 37 | 14.627 | 3619 | 3636 | 3651 | rBV   | 4617971  | 11088011  | 3.22%   | 0.777%  |
| 38 | 15.354 | 3843 | 3862 | 3879 | rBV9  | 931176   | 3463185   | 1.01%   | 0.243%  |
| 39 | 15.515 | 3899 | 3912 | 3930 | rVB6  | 1619696  | 5073388   | 1.47%   | 0.356%  |
| 40 | 15.968 | 4032 | 4053 | 4070 | rBV10 | 1467236  | 5463128   | 1.59%   | 0.383%  |
| 41 | 16.370 | 4144 | 4178 | 4193 | rVB7  | 1963026  | 7889975   | 2.29%   | 0.553%  |
| 42 | 16.476 | 4193 | 4211 | 4242 | rBV6  | 1702045  | 6789779   | 1.97%   | 0.476%  |
| 43 | 16.830 | 4279 | 4321 | 4348 | rBV5  | 4638385  | 17337961  | 5.04%   | 1.215%  |
| 44 | 16.981 | 4348 | 4368 | 4393 | rVB8  | 1135175  | 4725903   | 1.37%   | 0.331%  |
| 45 | 17.184 | 4408 | 4431 | 4453 | rVB2  | 9965351  | 30897548  | 8.97%   | 2.166%  |
| 46 | 17.409 | 4453 | 4501 | 4517 | rVV3  | 58555760 | 344279177 | 100.00% | 24.131% |
| 47 | 17.512 | 4520 | 4533 | 4558 | rVB6  | 1211787  | 3970137   | 1.15%   | 0.278%  |
| 48 | 17.740 | 4584 | 4604 | 4622 | rBV   | 10016143 | 26933985  | 7.82%   | 1.888%  |
| 49 | 18.068 | 4692 | 4706 | 4722 | rVV4  | 1536657  | 4785265   | 1.39%   | 0.335%  |
| 50 | 18.171 | 4722 | 4738 | 4753 | rVV7  | 2937136  | 8889465   | 2.58%   | 0.623%  |
| 51 | 18.235 | 4753 | 4758 | 4781 | rVB2  | 1552186  | 4167403   | 1.21%   | 0.292%  |
| 52 | 18.425 | 4781 | 4817 | 4849 | rBV3  | 28808272 | 117555468 | 34.15%  | 8.240%  |
| 53 | 18.576 | 4849 | 4864 | 4876 | rBV   | 3439975  | 8888169   | 2.58%   | 0.623%  |
| 54 | 18.659 | 4876 | 4890 | 4905 | rVB   | 5844716  | 15379542  | 4.47%   | 1.078%  |
| 55 | 18.955 | 4959 | 4982 | 4983 | rBV4  | 4375537  | 8849870   | 2.57%   | 0.620%  |
| 56 | 18.997 | 4983 | 4995 | 5025 | rVB   | 7449118  | 30903144  | 8.98%   | 2.166%  |
| 57 | 19.261 | 5065 | 5077 | 5120 | rVB7  | 2265188  | 12464045  | 3.62%   | 0.874%  |
| 58 | 19.724 | 5209 | 5221 | 5235 | rVB2  | 5858621  | 14441481  | 4.19%   | 1.012%  |
| 59 | 19.807 | 5235 | 5247 | 5260 | rBV4  | 2029135  | 5308122   | 1.54%   | 0.372%  |
| 60 | 20.113 | 5325 | 5342 | 5354 | rBV2  | 2346814  | 5597160   | 1.63%   | 0.392%  |
| 61 | 20.634 | 5482 | 5504 | 5531 | rBV2  | 7931127  | 25258933  | 7.34%   | 1.770%  |
| 62 | 21.376 | 5718 | 5735 | 5764 | rVB7  | 1629148  | 6179876   | 1.80%   | 0.433%  |
| 63 | 21.691 | 5808 | 5833 | 5860 | rVB3  | 4308558  | 20192021  | 5.87%   | 1.415%  |
| 64 | 22.007 | 5907 | 5931 | 5951 | rVV4  | 1069080  | 3816748   | 1.11%   | 0.268%  |
| 65 | 22.171 | 5968 | 5982 | 5997 | rVV8  | 1488387  | 5351863   | 1.55%   | 0.375%  |
| 66 | 22.544 | 6080 | 6098 | 6117 | rBV3  | 1522602  | 4008415   | 1.16%   | 0.281%  |
| 67 | 22.955 | 6211 | 6226 | 6233 | rBV6  | 1523132  | 3796536   | 1.10%   | 0.266%  |
| 68 | 23.019 | 6233 | 6246 | 6273 | rVB2  | 5056811  | 14374706  | 4.18%   | 1.008%  |
| 69 | 23.257 | 6303 | 6320 | 6341 | rVB8  | 1001253  | 3664130   | 1.06%   | 0.257%  |
| 70 | 23.383 | 6341 | 6359 | 6373 | rBV2  | 2327530  | 5984254   | 1.74%   | 0.419%  |
| 71 | 23.579 | 6401 | 6420 | 6446 | rVB4  | 1341920  | 4876468   | 1.42%   | 0.342%  |

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Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

## Integration Parameters: RTEINT.P

Integrator: RTE  
Smoothing : ON Filtering: 5  
Sampling : 3 Min Area: 3 % of largest Peak  
Start Thrs: 0.001 Max Peaks: 100  
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >  
Peak separation: 0

Method : Z:\VOASRV\HPCHEM1\MSVOA\_L\METHODS\VL083118AIR.M  
Title : AIR ANALYSIS BY METHOD T0-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

|    |        |      |      |      |      |         |         |       |        |
|----|--------|------|------|------|------|---------|---------|-------|--------|
| 72 | 24.174 | 6583 | 6605 | 6627 | rBV4 | 3525310 | 8802206 | 2.56% | 0.617% |
| 73 | 24.518 | 6700 | 6712 | 6729 | rVV7 | 1423103 | 3745098 | 1.09% | 0.263% |
| 74 | 25.495 | 7002 | 7016 | 7022 | rVV7 | 1379963 | 3785886 | 1.10% | 0.265% |

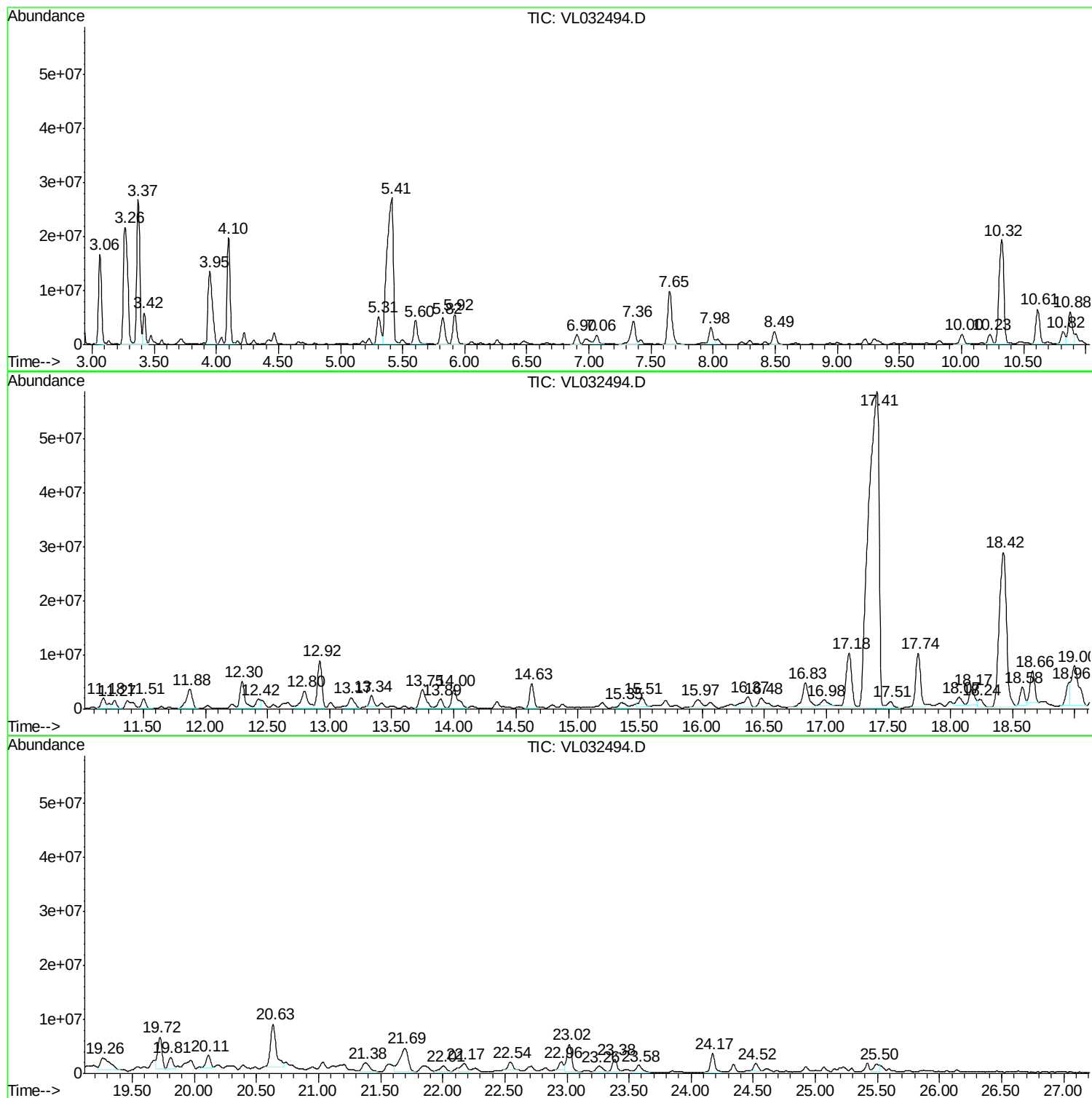
Sum of corrected areas: 1426696400

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Instrument :  
MSVOA\_L  
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249-BERRY

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P



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Data File : VL032494.D  
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Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampled :  
249-BERRY

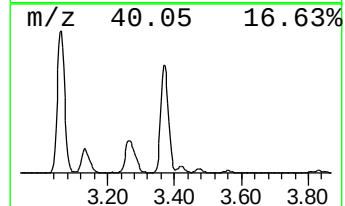
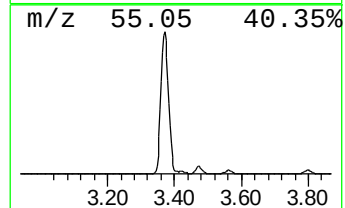
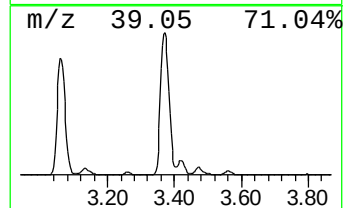
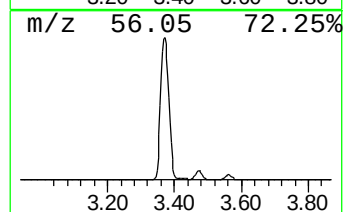
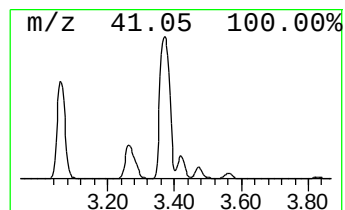
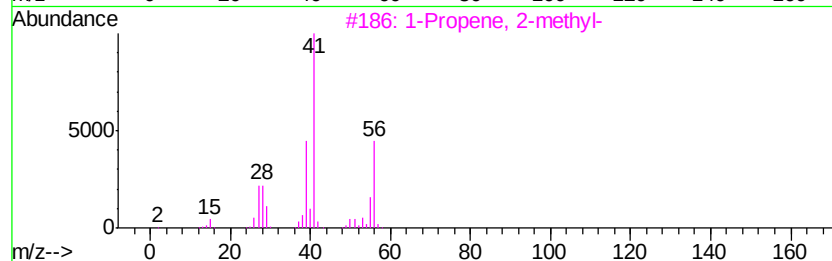
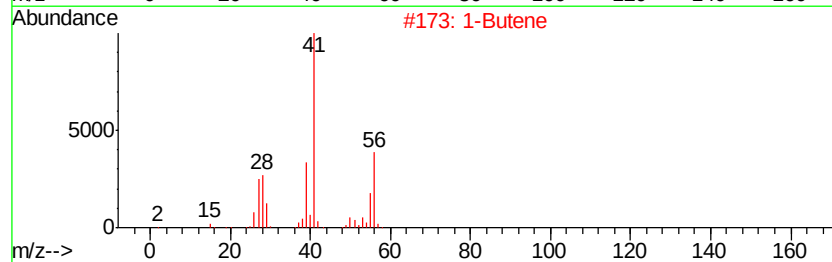
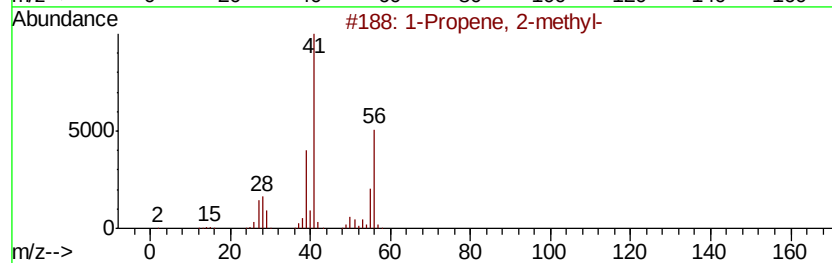
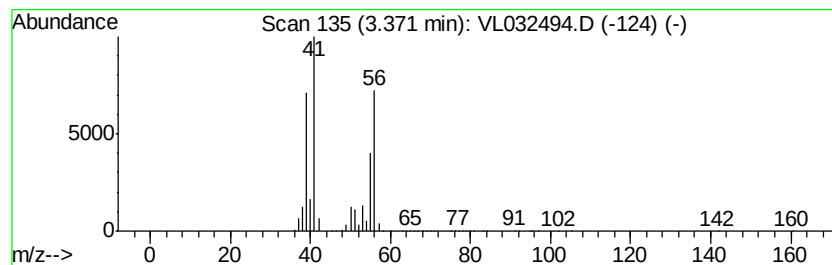
Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 2 1-Propene, 2-methyl- Concentration Rank 4

| R.T. | EstConc    | Area     | Relative to ISTD   | R.T. |
|------|------------|----------|--------------------|------|
| 3.37 | 40.22 ppbv | 47450300 | Bromochloromethane | 5.83 |

| Hit# | of | Tentative ID         | MW | MolForm | CAS#        | Qual |
|------|----|----------------------|----|---------|-------------|------|
| 1    | 5  | 1-Propene, 2-methyl- | 56 | C4H8    | 000115-11-7 | 70   |
| 2    |    | 1-Butene             | 56 | C4H8    | 000106-98-9 | 58   |
| 3    |    | 1-Propene, 2-methyl- | 56 | C4H8    | 000115-11-7 | 58   |
| 4    |    | 2-Butene             | 56 | C4H8    | 000107-01-7 | 58   |
| 5    |    | 1-Butene             | 56 | C4H8    | 000106-98-9 | 58   |



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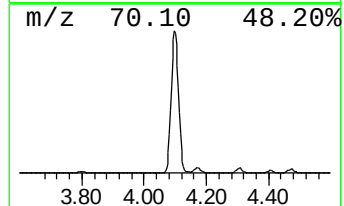
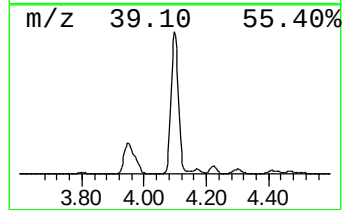
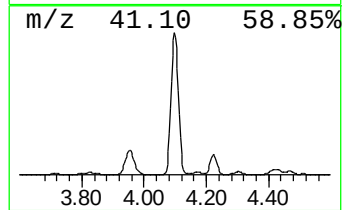
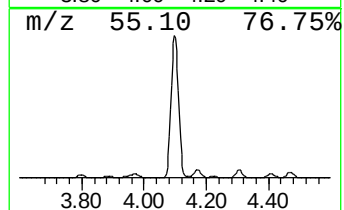
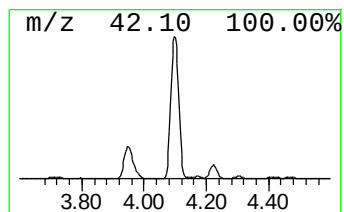
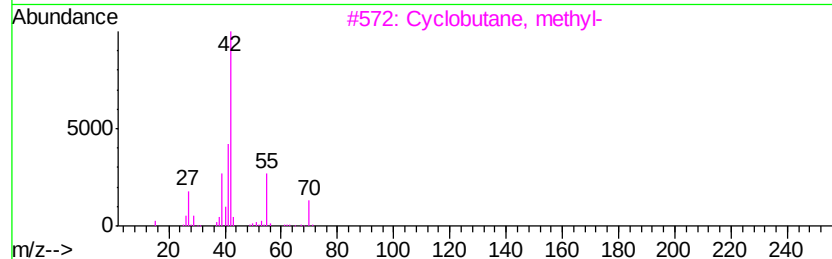
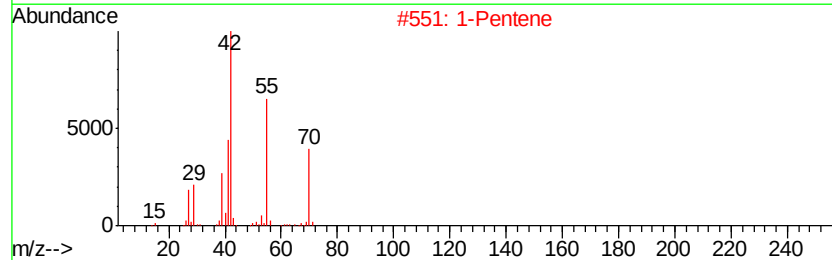
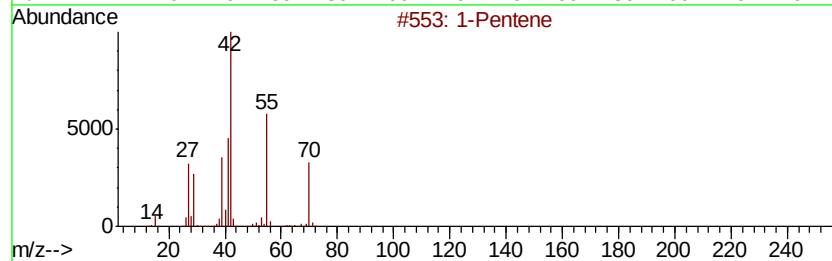
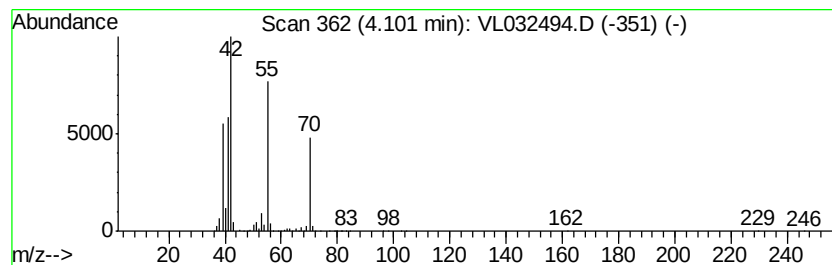
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ClientSampleId :  
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Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

\*\*\*\*\*  
Peak Number 3 1-Pentene Concentration Rank 5

| R.T.    | EstConc              | Area         | Relative to ISTD   | R.T.           |
|---------|----------------------|--------------|--------------------|----------------|
| 4.10    | 28.04 ppbv           | 33082500     | Bromochloromethane | 5.83           |
| Hit# of | 5                    | Tentative ID | MW MolForm         | CAS# Qual      |
| 1       | 1-Pentene            |              | 70 C5H10           | 000109-67-1 76 |
| 2       | 1-Pentene            |              | 70 C5H10           | 000109-67-1 74 |
| 3       | Cyclobutane, methyl- |              | 70 C5H10           | 000598-61-8 72 |
| 4       | Cyclopropane, ethyl- |              | 70 C5H10           | 001191-96-4 68 |
| 5       | Cyclopropane, ethyl- |              | 70 C5H10           | 001191-96-4 64 |



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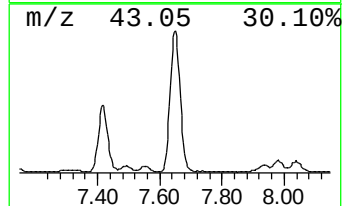
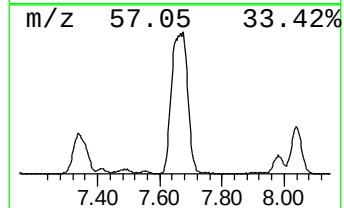
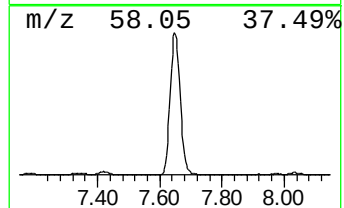
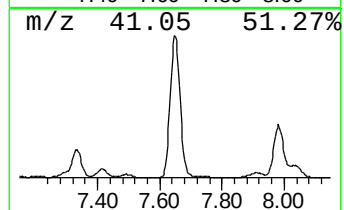
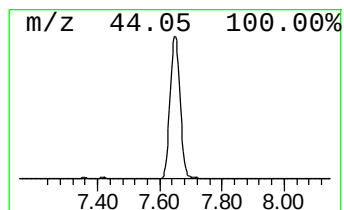
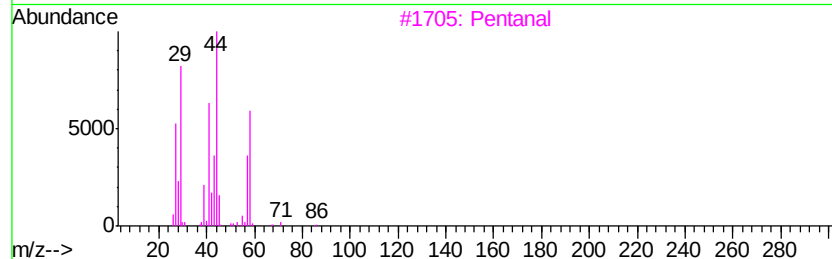
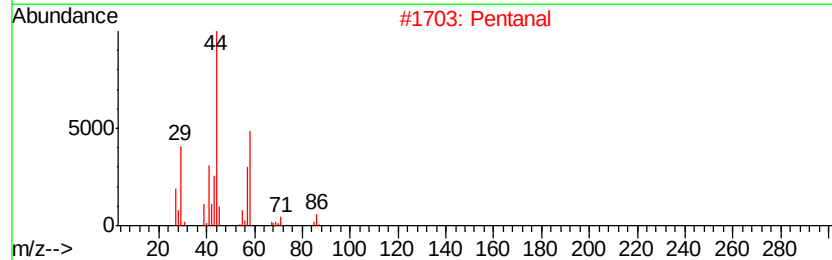
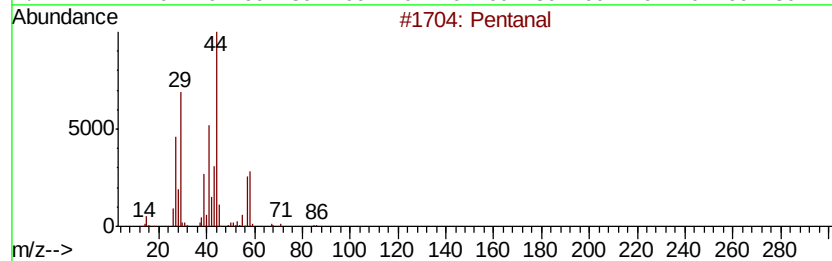
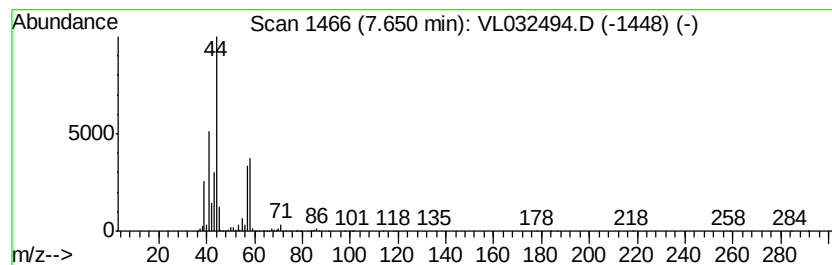
TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 4 Pentanal Concentration Rank 8

| R.T. | EstConc    | Area     | Relative to ISTD    | R.T. |
|------|------------|----------|---------------------|------|
| 7.65 | 20.53 ppbv | 24094800 | 1,4-Difluorobenzene | 7.36 |

| Hit# | of | Tentative ID       | MW | MolForm | CAS#        | Qual |
|------|----|--------------------|----|---------|-------------|------|
| 1    | 5  | Pentanal           | 86 | C5H10O  | 000110-62-3 | 90   |
| 2    |    | Pentanal           | 86 | C5H10O  | 000110-62-3 | 83   |
| 3    |    | Pentanal           | 86 | C5H10O  | 000110-62-3 | 52   |
| 4    |    | Butanal, 3-methyl- | 86 | C5H10O  | 000590-86-3 | 43   |
| 5    |    | Butanal, 3-methyl- | 86 | C5H10O  | 000590-86-3 | 42   |



Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

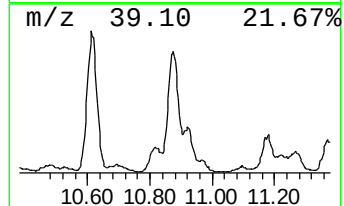
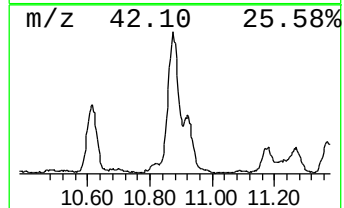
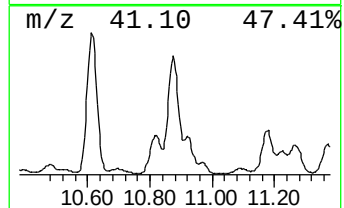
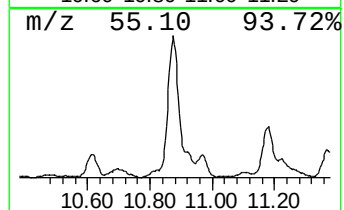
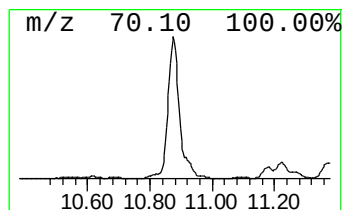
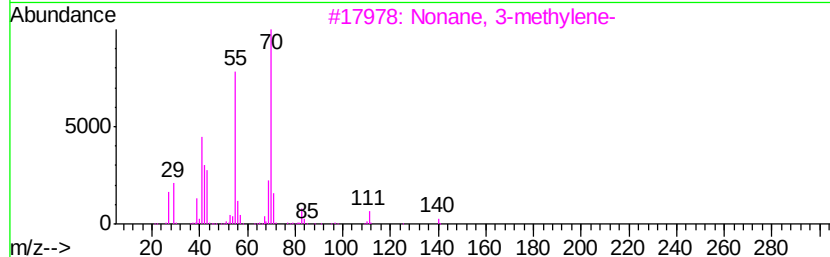
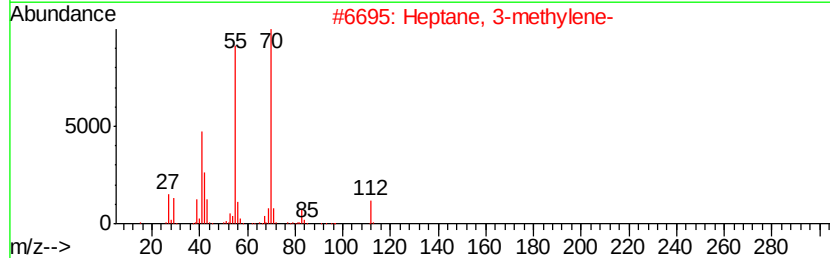
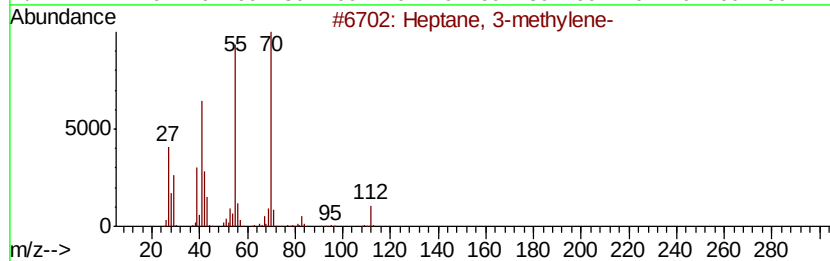
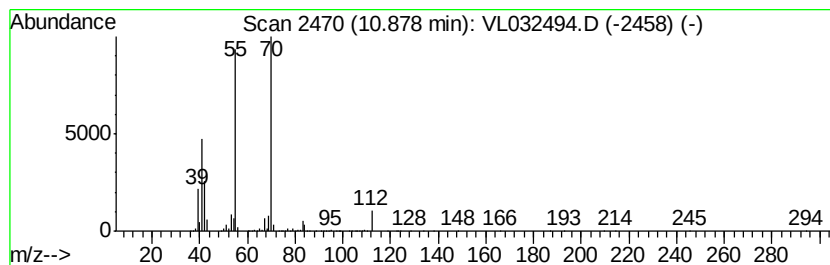
TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 5 Heptane, 3-methylene- Concentration Rank 14

| R.T.  | EstConc    | Area     | Relative to ISTD | R.T.  |
|-------|------------|----------|------------------|-------|
| 10.88 | 11.01 ppbv | 14784600 | Chlorobenzene-d5 | 12.30 |

| Hit# of | 5                                   | Tentative ID | MW      | MolForm     | CAS# | Qual |
|---------|-------------------------------------|--------------|---------|-------------|------|------|
| 1       | Heptane, 3-methylene-               | 112          | C8H16   | 001632-16-2 | 91   |      |
| 2       | Heptane, 3-methylene-               | 112          | C8H16   | 001632-16-2 | 91   |      |
| 3       | Nonane, 3-methylene-                | 140          | C10H20  | 051655-64-2 | 72   |      |
| 4       | 1,2-Oxaborolane, 2-ethyl-4,5-dim... | 126          | C7H15BO | 074685-45-3 | 72   |      |
| 5       | 2-Butene, 2-methyl-                 | 70           | C5H10   | 000513-35-9 | 72   |      |





Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

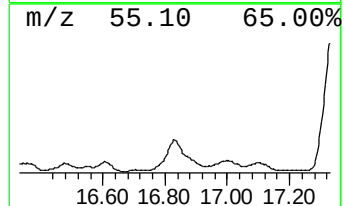
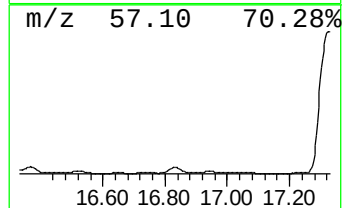
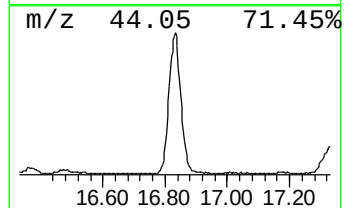
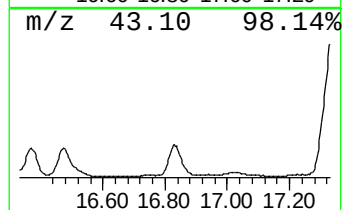
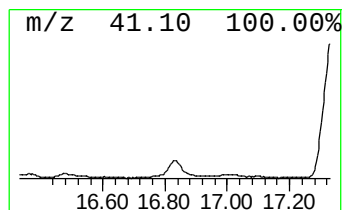
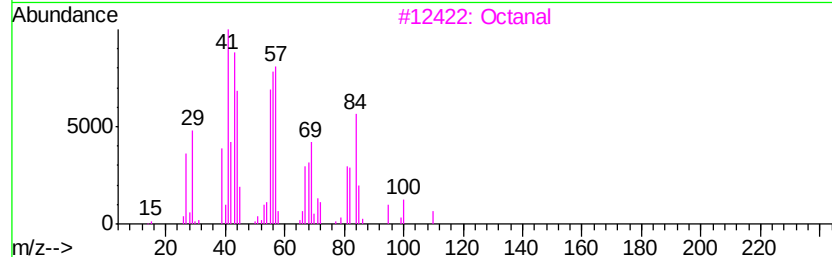
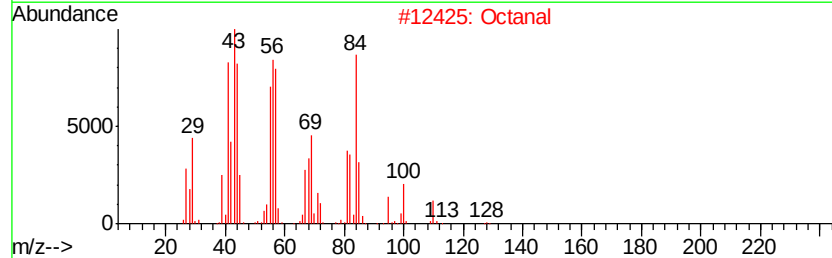
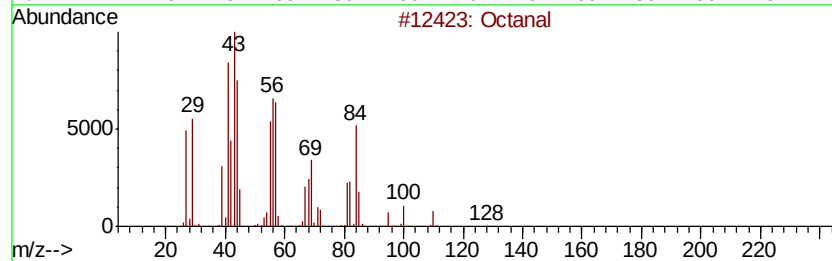
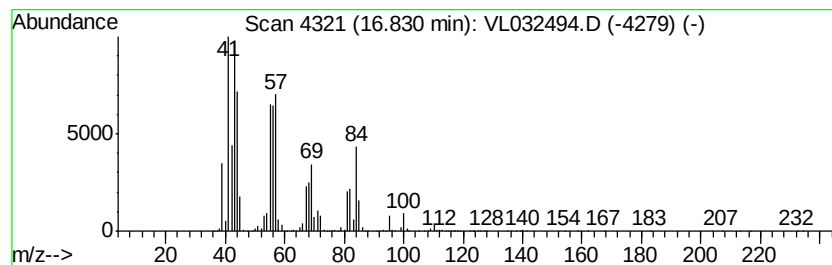
Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

\*\*\*\*\*  
Peak Number 6 Octanal Concentration Rank 12

| R.T.    | EstConc    | Area         | Relative to ISTD | R.T.           |
|---------|------------|--------------|------------------|----------------|
| 16.83   | 12.91 ppbv | 17338000     | Chlorobenzene-d5 | 12.30          |
| Hit# of | 5          | Tentative ID | MW MolForm       | CAS# Qual      |
| 1       | Octanal    |              | 128 C8H16O       | 000124-13-0 95 |
| 2       | Octanal    |              | 128 C8H16O       | 000124-13-0 91 |
| 3       | Octanal    |              | 128 C8H16O       | 000124-13-0 86 |
| 4       | Octanal    |              | 128 C8H16O       | 000124-13-0 62 |
| 5       | Octanal    |              | 128 C8H16O       | 000124-13-0 52 |



Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

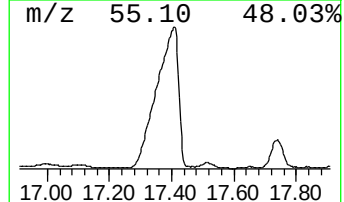
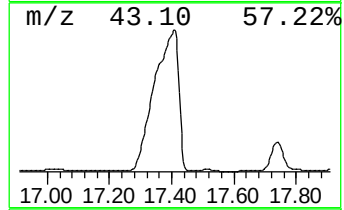
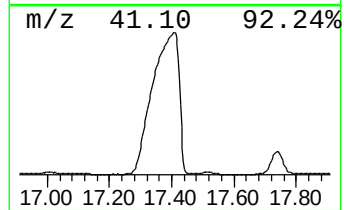
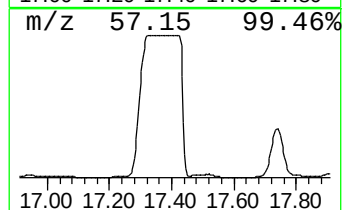
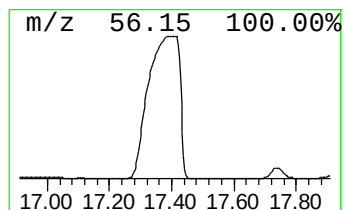
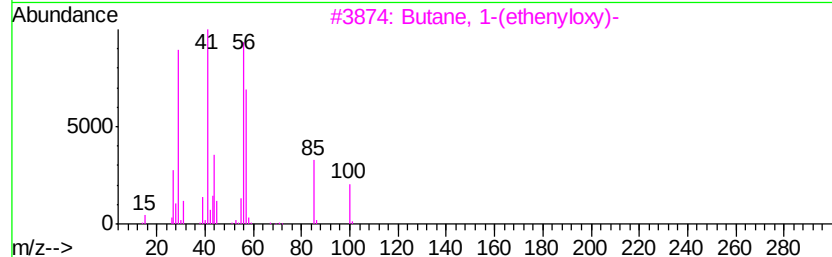
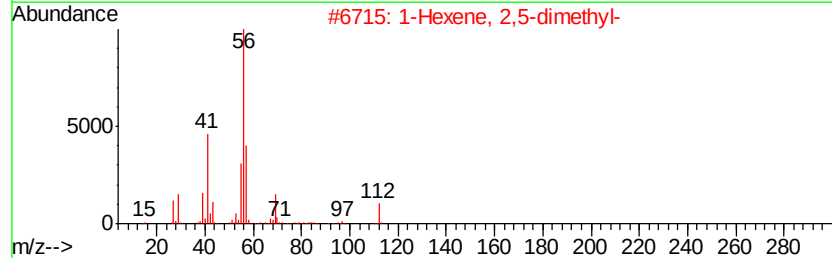
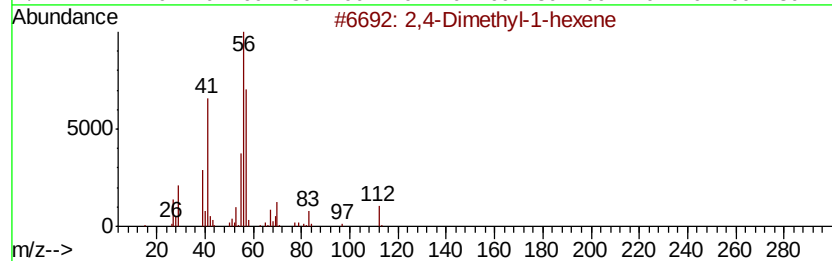
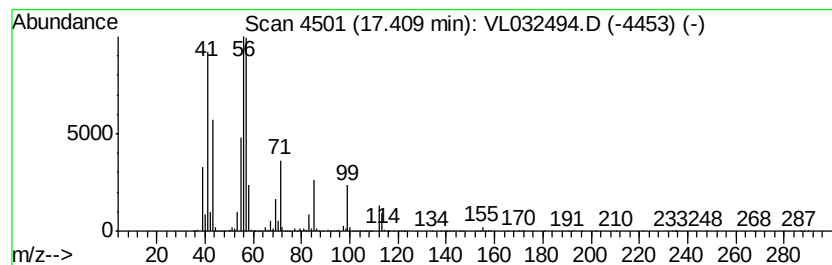
TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 8 unknown17.41 Concentration Rank 1

| R.T.  | EstConc     | Area      | Relative to ISTD | R.T.  |
|-------|-------------|-----------|------------------|-------|
| 17.41 | 256.31 ppbv | 344279000 | Chlorobenzene-d5 | 12.30 |

| Hit# | of | Tentative ID            | MW  | MolForm | CAS#        | Qual |
|------|----|-------------------------|-----|---------|-------------|------|
| 1    | 5  | 2,4-Dimethyl-1-hexene   | 112 | C8H16   | 016746-87-5 | 46   |
| 2    |    | 1-Hexene, 2,5-dimethyl- | 112 | C8H16   | 006975-92-4 | 43   |
| 3    |    | Butane, 1-(ethenyl)-    | 100 | C6H12   | 000111-34-2 | 43   |
| 4    |    | 1-Hexene, 5-methyl-     | 98  | C7H14   | 003524-73-0 | 43   |
| 5    |    | 1-Heptene, 2-methyl-    | 112 | C8H16   | 015870-10-7 | 38   |



Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

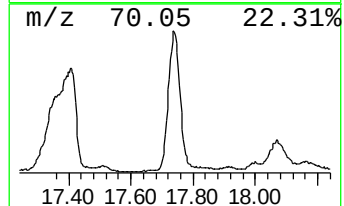
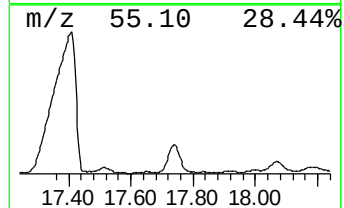
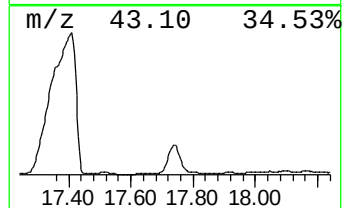
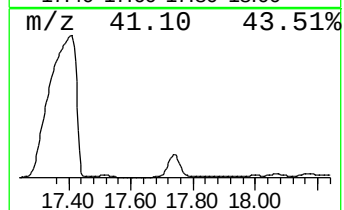
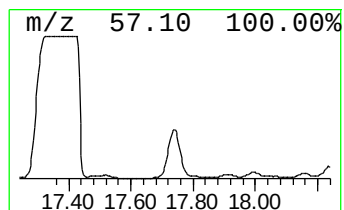
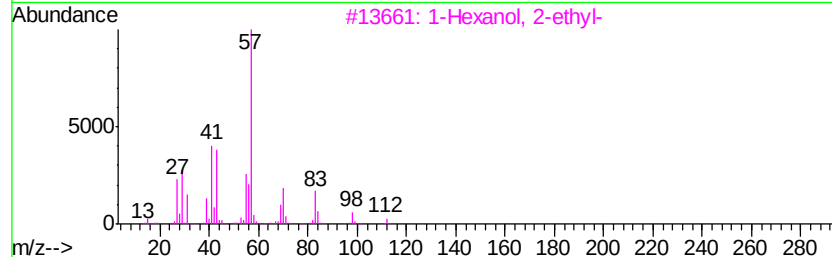
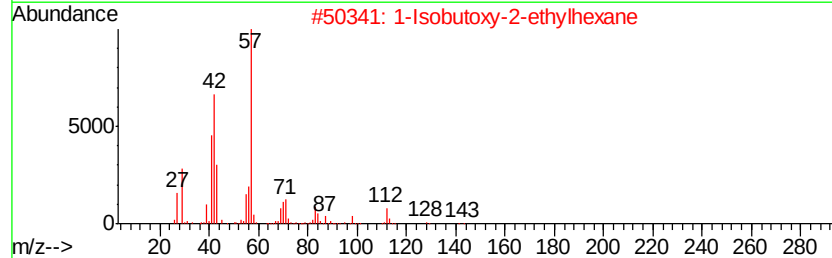
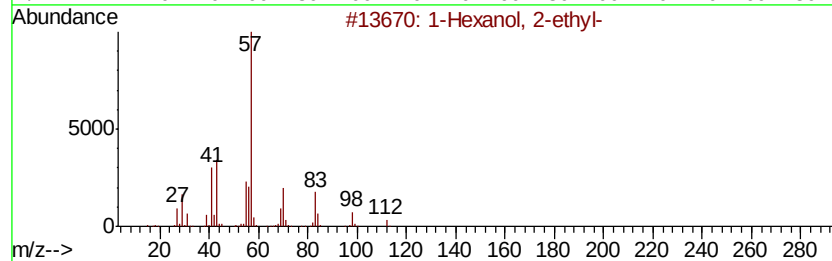
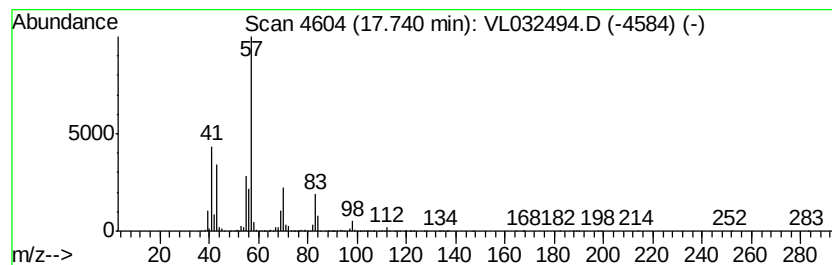
TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 9 1-Hexanol, 2-ethyl- Concentration Rank 9

| R.T.  | EstConc    | Area     | Relative to ISTD | R.T.  |
|-------|------------|----------|------------------|-------|
| 17.74 | 20.05 ppbv | 26934000 | Chlorobenzene-d5 | 12.30 |

| Hit# | of | Tentative ID              | MW  | MolForm | CAS#         | Qual |
|------|----|---------------------------|-----|---------|--------------|------|
| 1    | 5  | 1-Hexanol, 2-ethyl-       | 130 | C8H18O  | 000104-76-7  | 83   |
| 2    |    | 1-Isobutoxy-2-ethylhexane | 186 | C12H26O | 1000139-90-3 | 78   |
| 3    |    | 1-Hexanol, 2-ethyl-       | 130 | C8H18O  | 000104-76-7  | 64   |
| 4    |    | 2-Propyl-1-pentanol       | 130 | C8H18O  | 058175-57-8  | 53   |
| 5    |    | 1-Hexanol, 2-ethyl-       | 130 | C8H18O  | 000104-76-7  | 53   |



Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

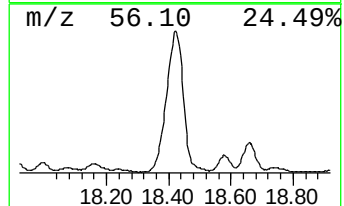
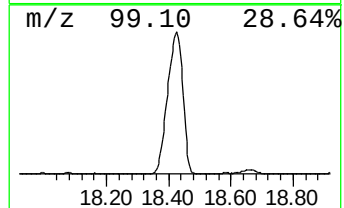
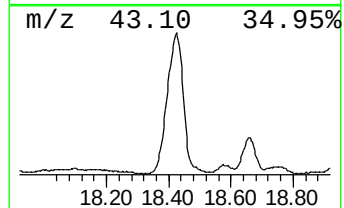
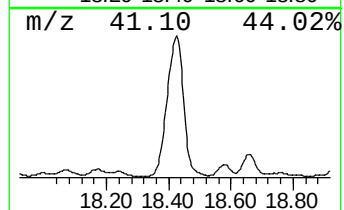
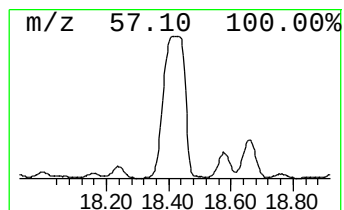
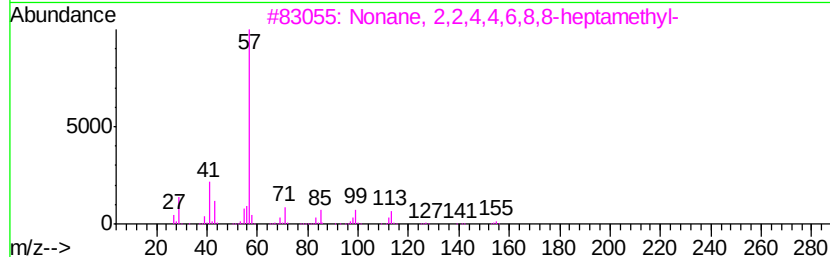
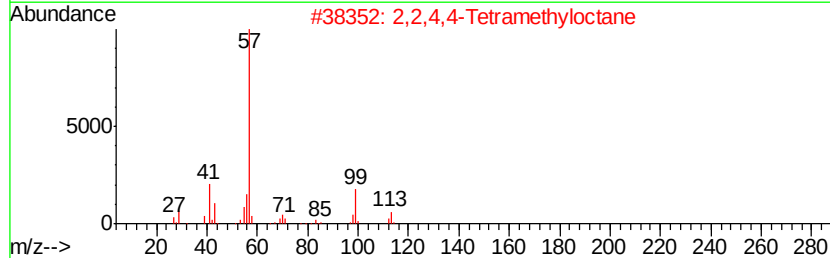
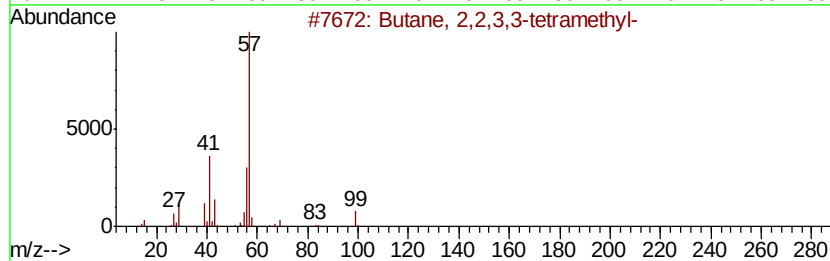
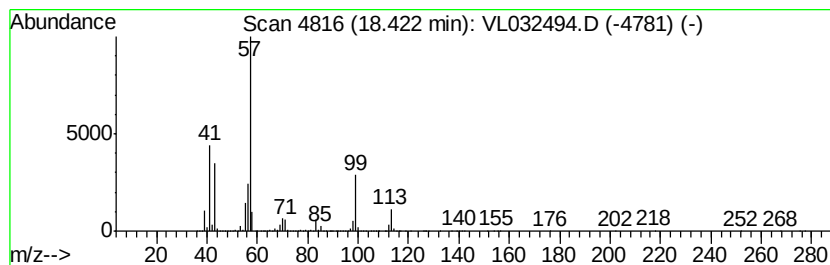
Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 10 Butane, 2,2,3,3-tetramethyl- Concentration Rank 2

| R.T.      | EstConc                            | Area      | Relative to ISTD | R.T.        |      |
|-----------|------------------------------------|-----------|------------------|-------------|------|
| 18.42     | 87.52 ppbv                         | 117555000 | Chlorobenzene-d5 | 12.30       |      |
| Hit# of 5 | Tentative ID                       | MW        | MolForm          | CAS#        | Qual |
| 1         | Butane, 2,2,3,3-tetramethyl-       | 114       | C8H18            | 000594-82-1 | 53   |
| 2         | 2,2,4,4-Tetramethyloctane          | 170       | C12H26           | 062183-79-3 | 53   |
| 3         | Nonane, 2,2,4,4,6,8,8-heptamethyl- | 226       | C16H34           | 004390-04-9 | 50   |
| 4         | 2-Pentene, 5-butoxy-, (E)-         | 142       | C9H18O           | 054004-23-8 | 43   |
| 5         | Heptane, 3,5-dimethyl-             | 128       | C9H20            | 000926-82-9 | 43   |



Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

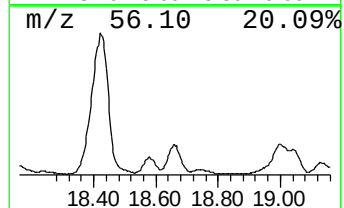
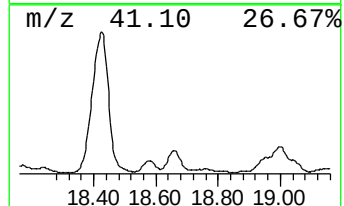
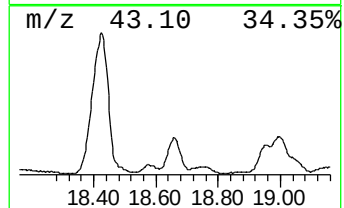
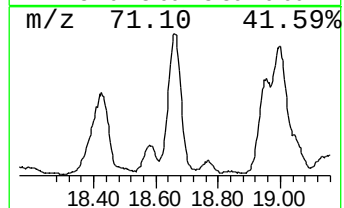
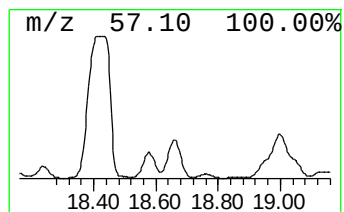
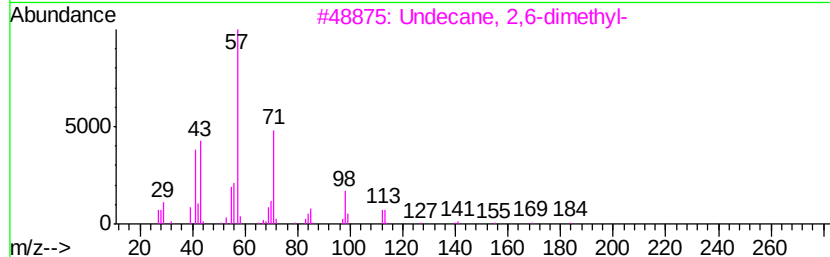
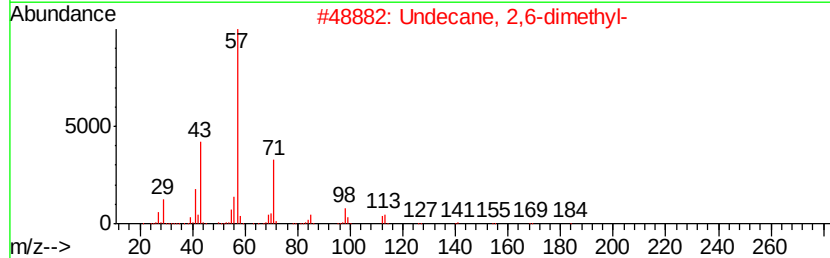
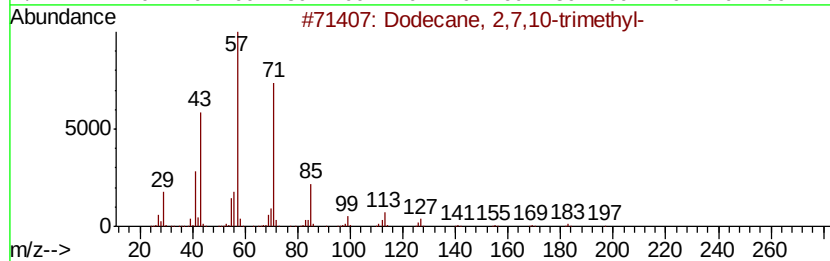
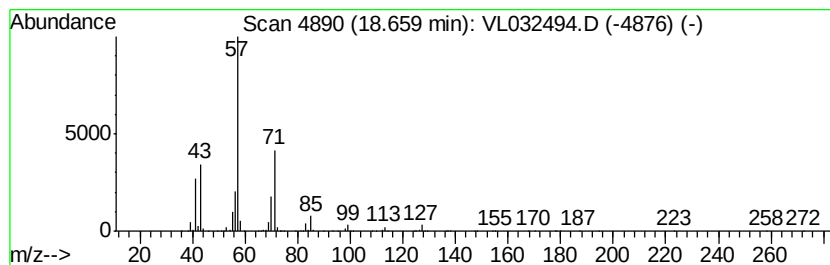
Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 11 Dodecane, 2,7,10-trimethyl- Concentration Rank 13

| R.T.    | EstConc                             | Area         | Relative to ISTD | R.T.         |      |      |
|---------|-------------------------------------|--------------|------------------|--------------|------|------|
| 18.66   | 11.45 ppbv                          | 15379500     | Chlorobenzene-d5 | 12.30        |      |      |
| Hit# of | 5                                   | Tentative ID | MW               | MolForm      | CAS# | Qual |
| 1       | Dodecane, 2,7,10-trimethyl-         | 212          | C15H32           | 074645-98-0  | 72   |      |
| 2       | Undecane, 2,6-dimethyl-             | 184          | C13H28           | 017301-23-4  | 59   |      |
| 3       | Undecane, 2,6-dimethyl-             | 184          | C13H28           | 017301-23-4  | 56   |      |
| 4       | Octane, 2,6-dimethyl-               | 142          | C10H22           | 002051-30-1  | 50   |      |
| 5       | Oxalic acid, 2-ethylhexyl hexyl ... | 286          | C16H30O4         | 1000309-38-9 | 50   |      |



Data Path : Z:\VOASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

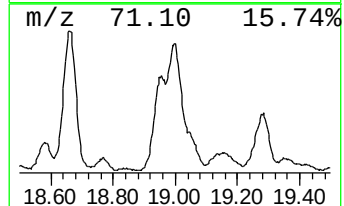
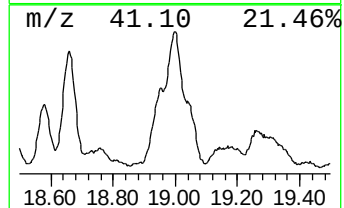
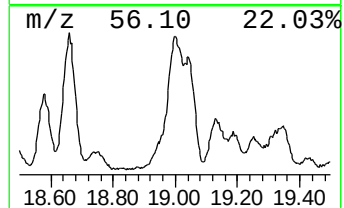
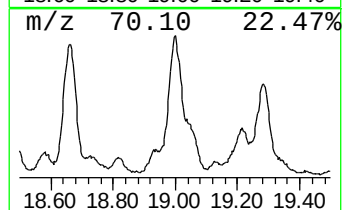
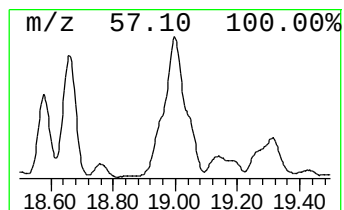
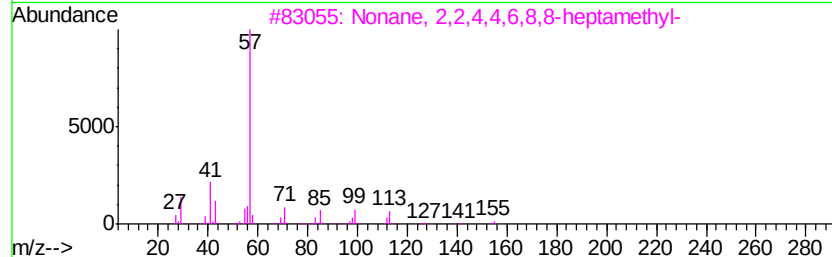
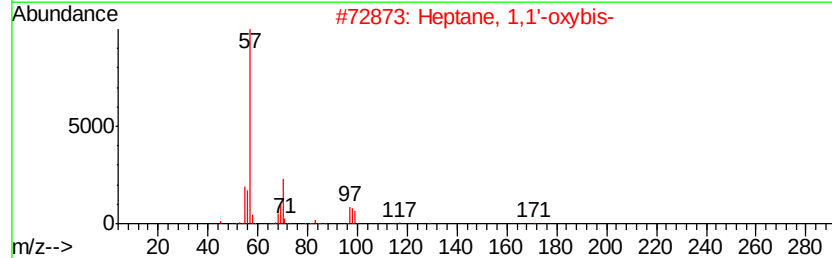
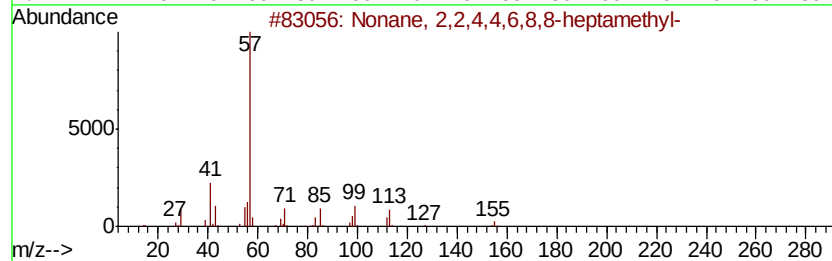
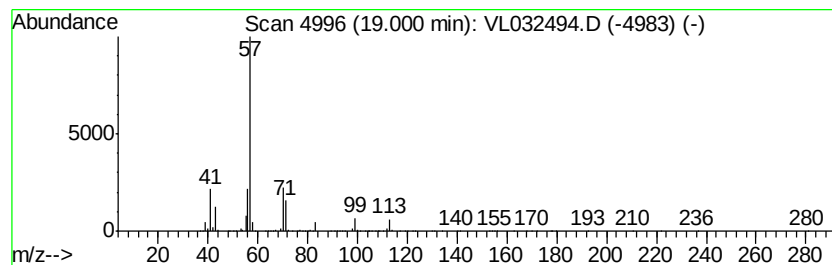
TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 12 Nonane, 2,2,4,4,6,8,8-hepta... Concentration Rank 6

| R.T.  | EstConc    | Area     | Relative to ISTD | R.T.  |
|-------|------------|----------|------------------|-------|
| 19.00 | 23.01 ppbv | 30903100 | Chlorobenzene-d5 | 12.30 |

| Hit# | of | Tentative ID                       | MW  | MolForm | CAS#        | Qual |
|------|----|------------------------------------|-----|---------|-------------|------|
| 1    | 5  | Nonane, 2,2,4,4,6,8,8-heptamethyl- | 226 | C16H34  | 004390-04-9 | 50   |
| 2    |    | Heptane, 1,1'-oxybis-              | 214 | C14H30O | 000629-64-1 | 45   |
| 3    |    | Nonane, 2,2,4,4,6,8,8-heptamethyl- | 226 | C16H34  | 004390-04-9 | 43   |
| 4    |    | Heptane, 2,3,6-trimethyl-          | 142 | C10H22  | 004032-93-3 | 42   |
| 5    |    | Heptane, 2,5-dimethyl-             | 128 | C9H20   | 002216-30-0 | 40   |



Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA L  
ALS Vial : 1 Sample Multiplier: 1

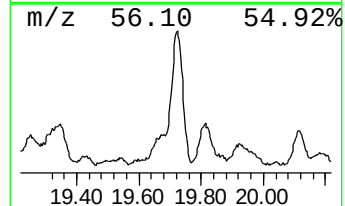
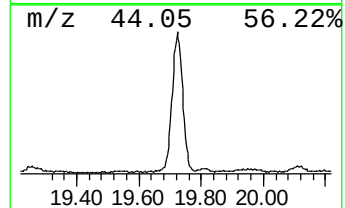
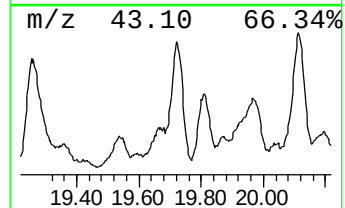
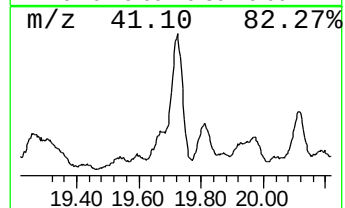
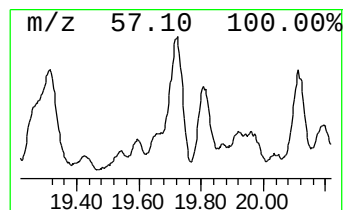
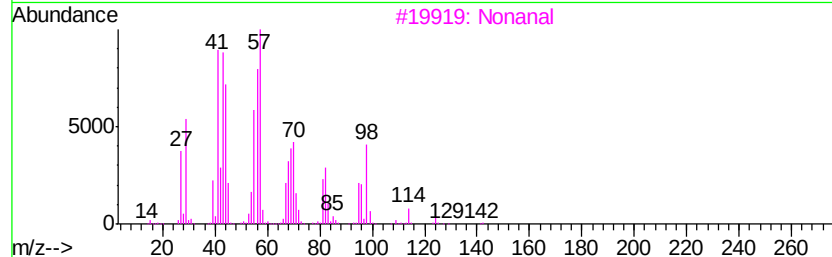
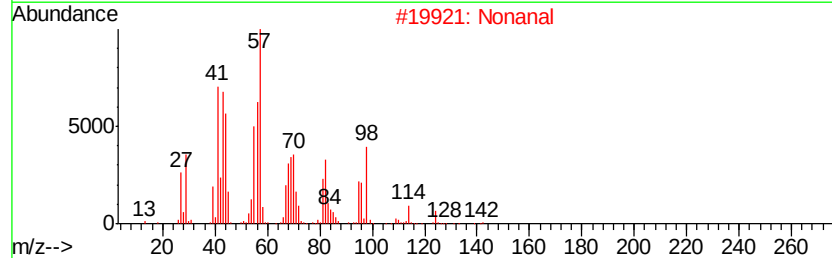
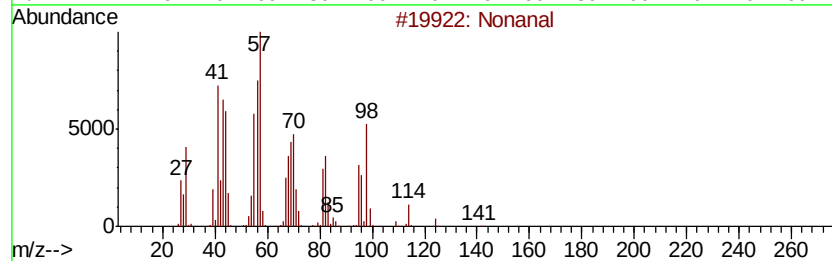
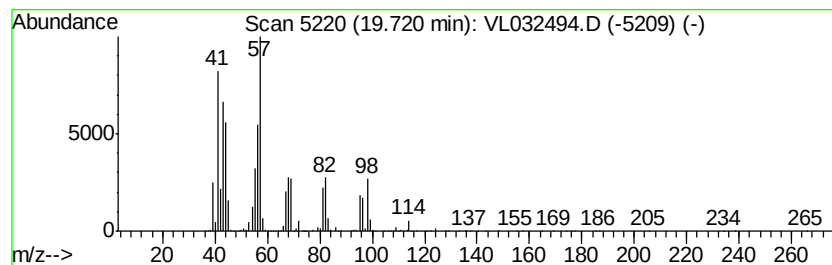
Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

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Peak Number 13 Nonanal Concentration Rank 15

| R.T.    | EstConc            | Area         | Relative to ISTD | R.T.           |
|---------|--------------------|--------------|------------------|----------------|
| 19.72   | 10.75 ppbv         | 14441500     | Chlorobenzene-d5 | 12.30          |
| Hit# of | 5                  | Tentative ID | MW MolForm       | CAS# Qual      |
| 1       | Nonanal            |              | 142 C9H18O       | 000124-19-6 90 |
| 2       | Nonanal            |              | 142 C9H18O       | 000124-19-6 83 |
| 3       | Nonanal            |              | 142 C9H18O       | 000124-19-6 80 |
| 4       | 2-Nonen-1-ol, (Z)- |              | 142 C9H18O       | 041453-56-9 37 |
| 5       | Hexanal            |              | 100 C6H12O       | 000066-25-1 35 |



Data Path : Z:\V0ASRV\HPCHEM1\MSVOA L\DATA\VL091018\  
 Data File : VL032494.D  
 Acq On : 11 Sep 2018 1:22  
 Operator : SY/AP  
 Sample : J4820-05  
 Misc : 400ml/MSVOA L  
 ALS Vial : 1 Sample Multiplier: 1

Instrument :  
 MSVOA\_L  
 ClientSampleId :  
 249-BERRY

Quant Method : Z:\V0ASRV\HPCHEM1\MSVOA L\METHODS\VL083118AIR.M  
 Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

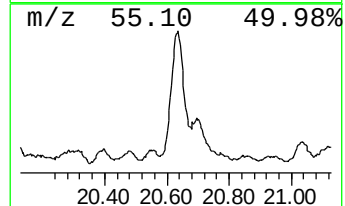
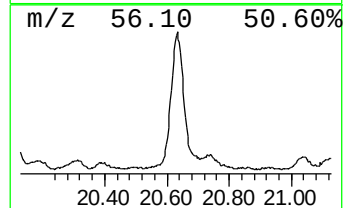
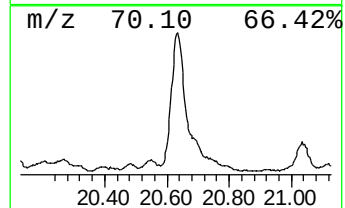
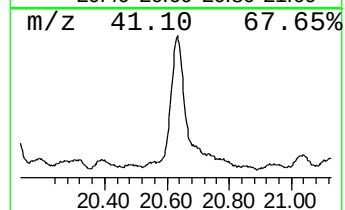
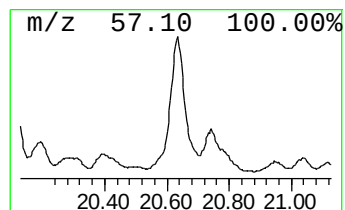
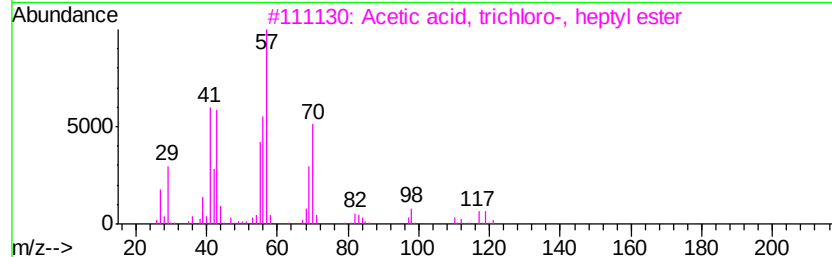
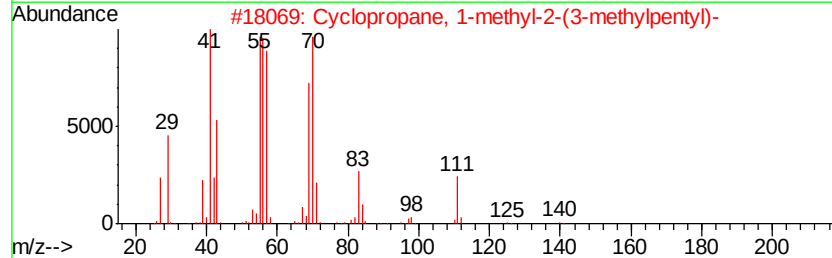
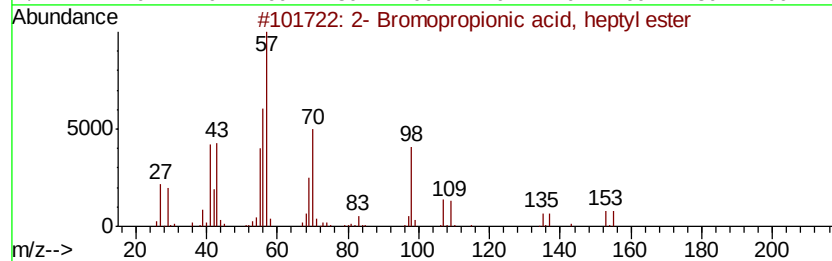
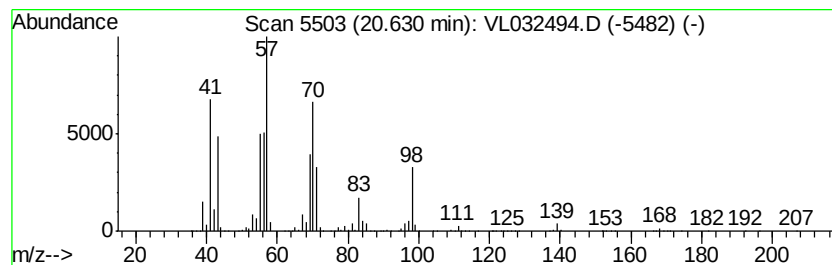
TIC Library : C:\DATABASE\NIST11.L  
 TIC Integration Parameters: LSCINT.P

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 Peak Number 14 2- Bromopropionic acid, hep... Concentration Rank 10

| R.T.  | EstConc    | Area     | Relative to ISTD | R.T.  |
|-------|------------|----------|------------------|-------|
| 20.63 | 18.81 ppbv | 25258900 | Chlorobenzene-d5 | 12.30 |

| Hit# | of | Tentative ID                        | MW  | MolForm    | CAS#        | Qual |
|------|----|-------------------------------------|-----|------------|-------------|------|
| 1    | 5  | 2- Bromopropionic acid, heptyl e... | 250 | C10H19BrO2 | 038674-99-6 | 64   |
| 2    |    | Cyclopropane, 1-methyl-2-(3-meth... | 140 | C10H20     | 062238-07-7 | 52   |
| 3    |    | Acetic acid, trichloro-, heptyl ... | 260 | C9H15Cl3O2 | 065611-31-6 | 50   |
| 4    |    | Hexane, 3-ethyl-4-methyl-           | 128 | C9H20      | 003074-77-9 | 47   |
| 5    |    | 5-Undecene, 3-methyl-, (E)-         | 168 | C12H24     | 074630-67-4 | 43   |





Data Path : Z:\VOASRV\HPCHEM1\MSVOA\_L\DATA\VL091018\  
Data File : VL032494.D  
Acq On : 11 Sep 2018 1:22  
Operator : SY/AP  
Sample : J4820-05  
Misc : 400ml/MSVOA\_L  
ALS Vial : 1 Sample Multiplier: 1

Instrument :  
MSVOA\_L  
ClientSampleId :  
249-BERRY

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA\_L\METHODS\VL083118AIR.M  
Quant Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA\_L Fri Aug 31 21:33:46 2018

TIC Library : C:\DATABASE\NIST11.L  
TIC Integration Parameters: LSCINT.P

| TIC Top Hit name     | RT    | EstConc | Units | Response  | --Internal Standard-- |       |          |      |
|----------------------|-------|---------|-------|-----------|-----------------------|-------|----------|------|
|                      |       |         |       |           | #                     | RT    | Resp     | Conc |
| 1-Propene, 2-methyl- | 3.37  | 40.2    | ppbv  | 47450300  | 1                     | 5.83  | 11797900 | 10.0 |
| 1-Pentene            | 4.10  | 28.0    | ppbv  | 33082500  | 1                     | 5.83  | 11797900 | 10.0 |
| Pentanal             | 7.65  | 20.5    | ppbv  | 24094800  | 2                     | 7.36  | 11735600 | 10.0 |
| Heptane, 3-methyl... | 10.88 | 11.0    | ppbv  | 14784600  | 3                     | 12.30 | 13432000 | 10.0 |
| Octanal              | 16.83 | 12.9    | ppbv  | 17338000  | 3                     | 12.30 | 13432000 | 10.0 |
| unknown17.41         | 17.41 | 256.3   | ppbv  | 344279000 | 3                     | 12.30 | 13432000 | 10.0 |
| 1-Hexanol, 2-ethyl-  | 17.74 | 20.1    | ppbv  | 26934000  | 3                     | 12.30 | 13432000 | 10.0 |
| Butane, 2,2,3,3-t... | 18.42 | 87.5    | ppbv  | 117555000 | 3                     | 12.30 | 13432000 | 10.0 |
| Dodecane, 2,7,10-... | 18.66 | 11.4    | ppbv  | 15379500  | 3                     | 12.30 | 13432000 | 10.0 |
| Nonane, 2,2,4,4,6... | 19.00 | 23.0    | ppbv  | 30903100  | 3                     | 12.30 | 13432000 | 10.0 |
| Nonanal              | 19.72 | 10.8    | ppbv  | 14441500  | 3                     | 12.30 | 13432000 | 10.0 |
| 2- Bromopropionic... | 20.63 | 18.8    | ppbv  | 25258900  | 3                     | 12.30 | 13432000 | 10.0 |