LSC Area Percent Report

Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

Signal : TIC

| peak # | R.T. min | first scan | max scan | last scan | PK TY | peak height | corr. area | corr. % max. | % of total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.869 | 236 | 239 | 252 | rVB | 699174 | 1155347 | 41.66% | 2.850% |
| 2 | 5.314 | 276 | 278 | 300 | rBV | 1917964 | 2178443 | 78.55% | 5.374% |
| 3 | 6.377 | 368 | 371 | 373 | rBV | 2066698 | 2311496 | 83.34% | 5.702% |
| 4 | 6.480 | 378 | 380 | 383 | rBV | 2008969 | 2249521 | 81.11% | 5.549% |
| 5 | 6.709 | 398 | 400 | 405 | rBV | 517812 | 470301 | 16.96% | 1.160% |
| 6 | 6.869 | 411 | 414 | 416 | rBV | 1613488 | 1909376 | 68.84% | 4.710% |
| 7 | 7.292 | 448 | 451 | 453 | rBV | 1246935 | 1510384 | 54.46% | 3.726% |
| 8 | 8.023 | 510 | 515 | 517 | rBV2 | 839712 | 1449739 | 52.27% | 3.576% |
| 9 | 8.080 | 517 | 520 | 524 | rVB | 20738 | 31330 | 1.13% | 0.077% |
| 10 | 8.709 | 574 | 575 | 578 | rBV | 83091 | 115994 | 4.18% | 0.286% |
| 11 | 8.812 | 582 | 584 | 591 | rVB | 73914 | 69259 | 2.50% | 0.171% |
| 12 | 9.075 | 604 | 607 | 610 | rBV | 2359905 | 2679166 | 96.60% | 6.609% |
| 13 | 9.178 | 615 | 616 | 623 | rVB | 33639 | 42580 | 1.54% | 0.105% |
| 14 | 9.418 | 635 | 637 | 638 | rBV | 25040 | 36074 | 1.30% | 0.089% |
| 15 | 9.475 | 640 | 642 | 645 | rVV | 484804 | 487609 | 17.58% | 1.203% |
| 16 | 9.612 | 652 | 654 | 657 | rBV | 50471 | 50233 | 1.81% | 0.124% |
| 17 | 9.749 | 664 | 666 | 668 | rBV | 736810 | 713731 | 25.73% | 1.761% |
| 18 | 9.783 | 668 | 669 | 672 | rVB | 292612 | 230603 | 8.31% | 0.569% |
| 19 | 9.955 | 682 | 684 | 687 | rBV | 188235 | 191550 | 6.91% | 0.473% |
| 20 | 10.183 | 700 | 704 | 705 | rBV3 | 27370 | 60733 | 2.19% | 0.150% |
| 21 | 10.298 | 712 | 714 | 717 | rVB | 304949 | 277611 | 10.01% | 0.685% |
| 22 | 10.389 | 717 | 722 | 725 | rBV3 | 26155 | 75410 | 2.72% | 0.186% |
| 23 | 10.458 | 727 | 728 | 732 | rVB | 51313 | 44145 | 1.59% | 0.109% |
| 24 | 10.549 | 733 | 736 | 738 | rBV | 1251041 | 1493101 | 53.83% | 3.683% |
| 25 | 10.652 | 743 | 745 | 747 | rBV | 53100 | 64524 | 2.33% | 0.159% |
| 26 | 10.846 | 756 | 762 | 764 | rBV2 | 43519 | 76963 | 2.77% | 0.190% |
| 27 | 10.972 | 771 | 773 | 778 | rBV4 | 24406 | 61348 | 2.21% | 0.151% |
| 28 | 11.052 | 778 | 780 | 782 | rVV | 84770 | 84063 | 3.03% | 0.207% |
| 29 | 11.098 | 782 | 784 | 785 | rVV2 | 67401 | 73534 | 2.65% | 0.181% |
| 30 | 11.132 | 785 | 787 | 791 | rVB | 128359 | 139586 | 5.03% | 0.344% |
| 31 | 11.269 | 794 | 799 | 801 | rBV2 | 1471210 | 2773480 | 100.00% | 6.842% |
| 32 | 11.315 | 801 | 803 | 805 | rVV | 517500 | 513437 | 18.51% | 1.267% |
| 33 | 11.361 | 805 | 807 | 809 | rVB | 42803 | 68374 | 2.47% | 0.169% |
| 34 | 11.475 | 815 | 817 | 820 | rBV | 390743 | 482468 | 17.40% | 1.190% |

LSC Area Percent Report

Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 11.521 | 820 | 821 | 823 | rVV2 | 46527 | 62581 | 2.26% | 0.154% |
| 36 | 11.566 | 823 | 825 | 828 | rVB3 | 15365 | 35882 | 1.29% | 0.089% |
| 37 | 11.738 | 838 | 840 | 841 | rBV | 162176 | 146178 | 5.27% | 0.361% |
| 38 | 11.772 | 841 | 843 | 845 | rVV | 250010 | 311184 | 11.22% | 0.768% |
| 39 | 11.818 | 845 | 847 | 848 | rVV | 70514 | 76575 | 2.76% | 0.189% |
| 40 | 11.852 | 848 | 850 | 855 | rVB2 | 233941 | 368315 | 13.28% | 0.909% |
| 41 | 11.932 | 855 | 857 | 858 | rBV | 44479 | 44897 | 1.62% | 0.111% |
| 42 | 11.955 | 858 | 859 | 863 | rVV3 | 25036 | 33569 | 1.21% | 0.083% |
| 43 | 12.035 | 863 | 866 | 868 | rVB | 115020 | 118917 | 4.29% | 0.293% |
| 44 | 12.081 | 868 | 870 | 873 | rVB2 | 38873 | 68223 | 2.46% | 0.168% |
| 45 | 12.184 | 877 | 879 | 880 | rBV | 28478 | 33660 | 1.21% | 0.083% |
| 46 | 12.286 | 886 | 888 | 890 | rBV | 65991 | 84321 | 3.04% | 0.208% |
| 47 | 12.321 | 890 | 891 | 894 | rVB3 | 31734 | 34631 | 1.25% | 0.085% |
| 48 | 12.389 | 894 | 897 | 900 | rBV2 | 49219 | 69164 | 2.49% | 0.171% |
| 49 | 12.458 | 900 | 903 | 905 | rBV | 1453869 | 1911797 | 68.93% | 4.716% |
| 50 | 12.526 | 905 | 909 | 910 | rVV3 | 21551 | 45784 | 1.65% | 0.113% |
| 51 | 12.595 | 913 | 915 | 919 | rVV | 57934 | 94738 | 3.42% | 0.234% |
| 52 | 12.675 | 919 | 922 | 925 | rVV2 | 1230058 | 1753433 | 63.22% | 4.325% |
| 53 | 12.732 | 925 | 927 | 929 | rVB | 63673 | 72365 | 2.61% | 0.179% |
| 54 | 12.824 | 931 | 935 | 939 | rBV | 2237788 | 2356445 | 84.96% | 5.813% |
| 55 | 12.904 | 939 | 942 | 944 | rVV2 | 69890 | 135456 | 4.88% | 0.334% |
| 56 | 12.938 | 944 | 945 | 947 | rVV | 65814 | 68133 | 2.46% | 0.168% |
| 57 | 13.006 | 947 | 951 | 953 | rVV | 121872 | 216946 | 7.82% | 0.535% |
| 58 | 13.075 | 955 | 957 | 958 | rVV | 118592 | 118023 | 4.26% | 0.291% |
| 59 | 13.109 | 958 | 960 | 964 | rVV2 | 113790 | 203594 | 7.34% | 0.502% |
| 60 | 13.166 | 964 | 965 | 967 | rVV | 37256 | 44331 | 1.60% | 0.109% |
| 61 | 13.201 | 967 | 968 | 970 | rVV | 44041 | 47835 | 1.72% | 0.118% |
| 62 | 13.235 | 970 | 971 | 975 | rVV3 | 43012 | 83913 | 3.03% | 0.207% |
| 63 | 13.304 | 975 | 977 | 981 | rVB2 | 51914 | 65430 | 2.36% | 0.161% |
| 64 | 13.521 | 994 | 996 | 1000 | rVB | 92747 | 119469 | 4.31% | 0.295% |
| 65 | 13.635 | 1003 | 1006 | 1009 | rBV2 | 95649 | 248294 | 8.95% | 0.612% |
| 66 | 13.681 | 1009 | 1010 | 1011 | rBV | 79644 | 83190 | 3.00% | 0.205% |
| 67 | 13.715 | 1011 | 1013 | 1014 | rVV2 | 46086 | 51642 | 1.86% | 0.127% |
| 68 | 13.875 | 1023 | 1027 | 1029 | rBV2 | 830507 | 1548129 | 55.82% | 3.819% |
| 69 | 13.909 | 1029 | 1030 | 1032 | rVV | 519852 | 432311 | 15.59% | 1.066% |
| 70 | 13.989 | 1034 | 1037 | 1039 | rVB | 66068 | 104941 | 3.78% | 0.259% |
| 71 | 14.127 | 1047 | 1049 | 1053 | rVB | 66734 | 129612 | 4.67% | 0.320% |

LSC Area Percent Report

Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Integration Parameters: rteint.p
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 14.275 | 1060 | 1062 | 1064 | rVB | 77412 | 83421 | 3.01% | 0.206% |
| 73 | 14.607 | 1089 | 1091 | 1094 | rBV | 40990 | 80401 | 2.90% | 0.198% |
| 74 | 14.767 | 1103 | 1105 | 1107 | rVB | 69999 | 79904 | 2.88% | 0.197% |
| 75 | 14.904 | 1115 | 1117 | 1122 | rVV | 604085 | 1142059 | 41.18% | 2.817% |
| 76 | 15.007 | 1124 | 1126 | 1129 | rVB | 93885 | 101462 | 3.66% | 0.250% |
| 77 | 15.190 | 1139 | 1142 | 1145 | rBV | 259316 | 429873 | 15.50% | 1.060% |
| 78 | 15.247 | 1145 | 1147 | 1150 | rVV | 427098 | 530277 | 19.12% | 1.308% |
| 79 | 15.304 | 1150 | 1152 | 1153 | rVV | 310113 | 405643 | 14.63% | 1.001% |
| 80 | 15.327 | 1153 | 1154 | 1158 | rVB | 135177 | 185105 | 6.67% | 0.457% |
| 81 | 15.887 | 1201 | 1203 | 1209 | rVB2 | 61051 | 149160 | 5.38% | 0.368% |
| 82 | 16.275 | 1234 | 1237 | 1240 | rBV | 67780 | 113841 | 4.10% | 0.281% |
| 83 | 16.481 | 1252 | 1255 | 1256 | rBV2 | 33652 | 61751 | 2.23% | 0.152% |
| 84 | 16.653 | 1267 | 1270 | 1275 | rBV | 246092 | 518463 | 18.69% | 1.279% |
| 85 | 16.733 | 1275 | 1277 | 1281 | rVB2 | 26561 | 48192 | 1.74% | 0.119% |
| 86 | 16.824 | 1282 | 1285 | 1287 | rBV2 | 39210 | 74075 | 2.67% | 0.183% |
| 87 | 17.064 | 1303 | 1306 | 1315 | rVB | 204039 | 441599 | 15.92% | 1.089% |
| 88 | 17.304 | 1325 | 1327 | 1335 | rVB2 | 37643 | 124092 | 4.47% | 0.306% |
| 89 | 19.144 | 1483 | 1488 | 1494 | rBV | 38232 | 150963 | 5.44% | 0.372% |
| 90 | 19.339 | 1501 | 1505 | 1509 | rBV | 27978 | 108554 | 3.91% | 0.268% |
| 91 | 20.230 | 1579 | 1583 | 1588 | rBV | 11024 | 39814 | 1.44% | 0.098% |
| 92 | 20.333 | 1590 | 1592 | 1601 | rVB3 | 20437 | 73798 | 2.66% | 0.182% |

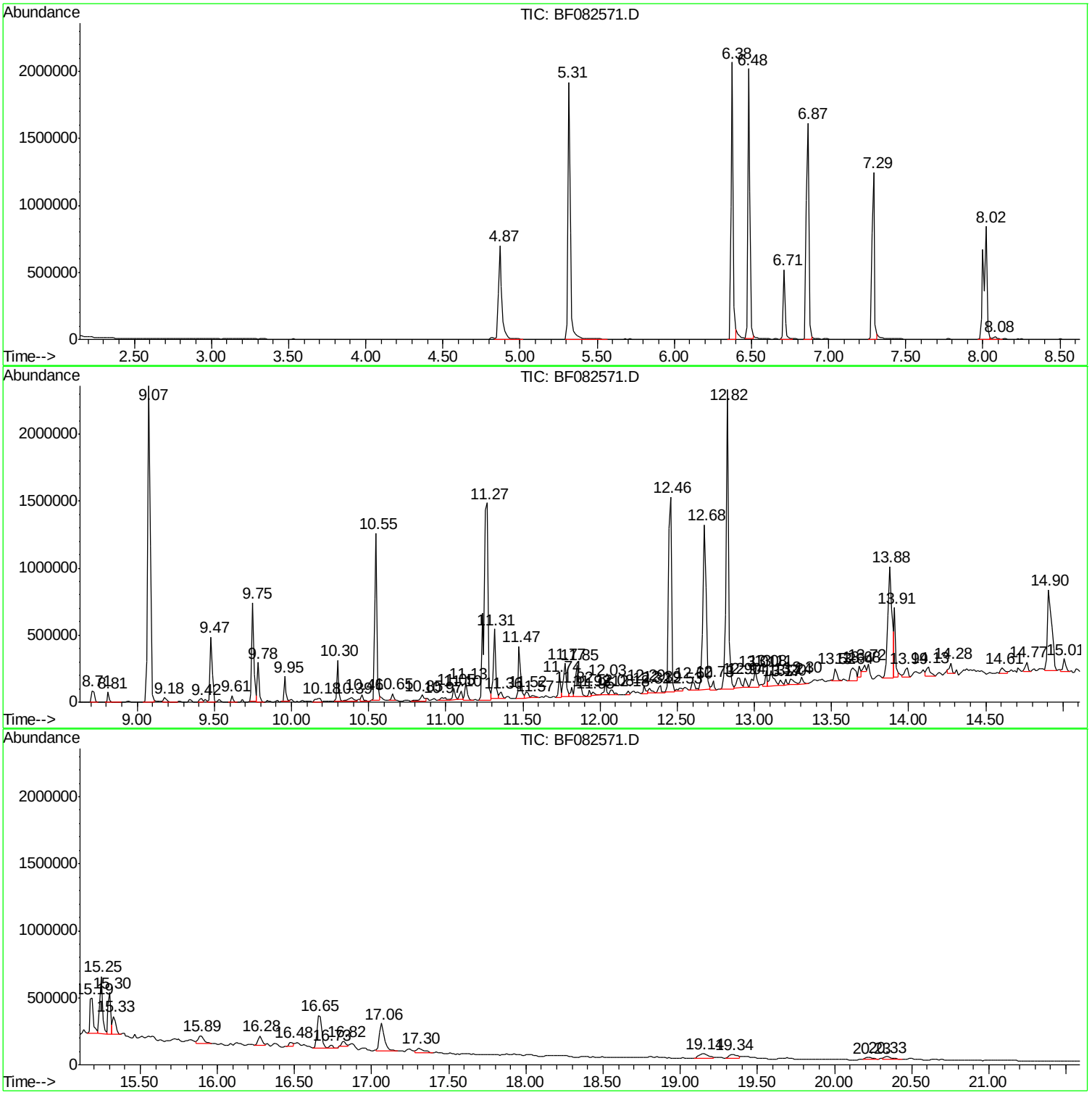
Sum of corrected areas: 40537868

Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

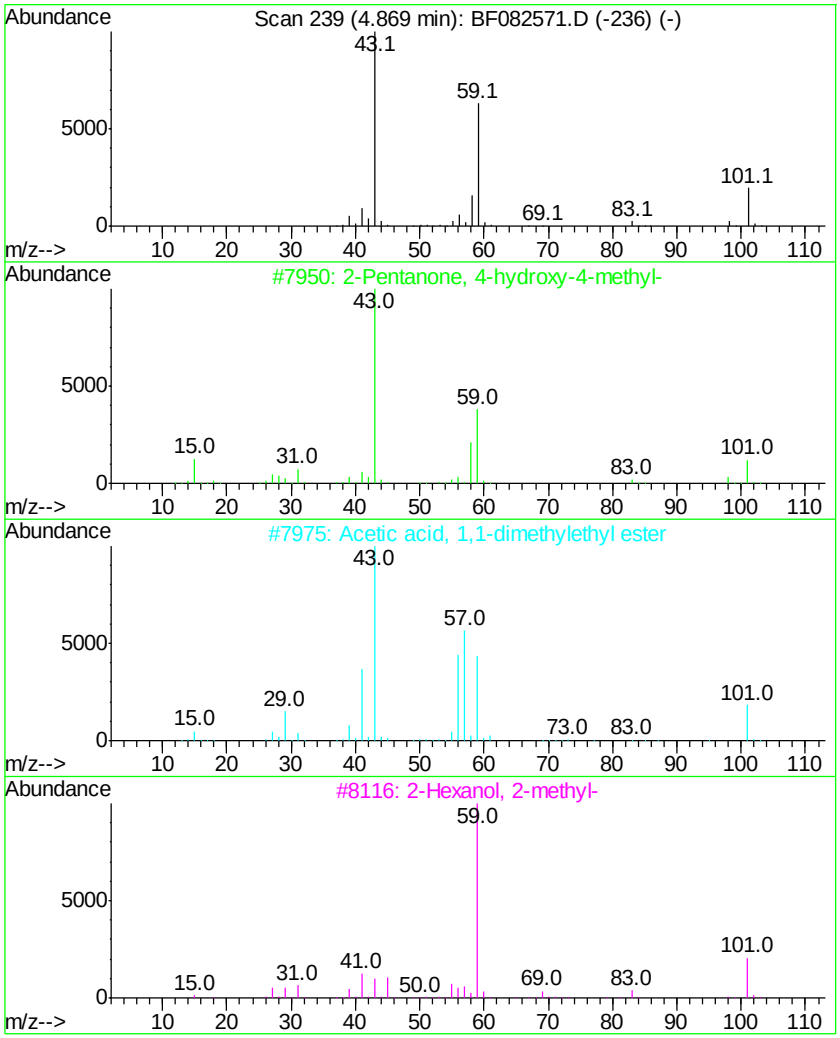
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

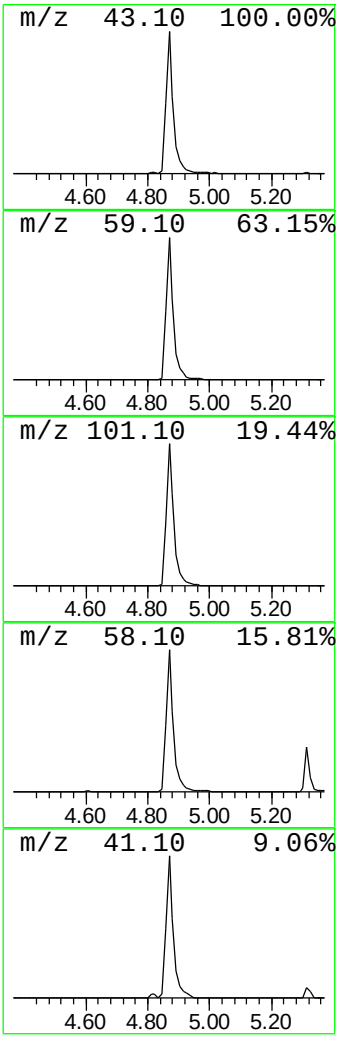
**********

Peak Number 1 2-Pentanone, 4-hydroxy-4-me... Concentration Rank 3

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 4.87 | 49.13 ng | 1155350 | 1,4-Dichlorobenzene-d4 | 6.71 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 2-Pentanone, 4-hydroxy-4-methyl- | 116 | C6H12O2 | 000123-42-2 | 56 |
| 2 | Acetic acid, 1,1-dimethylethyl e... | 116 | C6H12O2 | 000540-88-5 | 39 |
| 3 | 2-Hexanol, 2-methyl- | 116 | C7H16O | 000625-23-0 | 33 |
| 4 | 3-Hexanol, 4-methyl- | 116 | C7H16O | 000615-29-2 | 28 |
| 5 | Propane, 2-methyl-2-(1-methyleth... | 116 | C7H16O | 017348-59-3 | 28 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

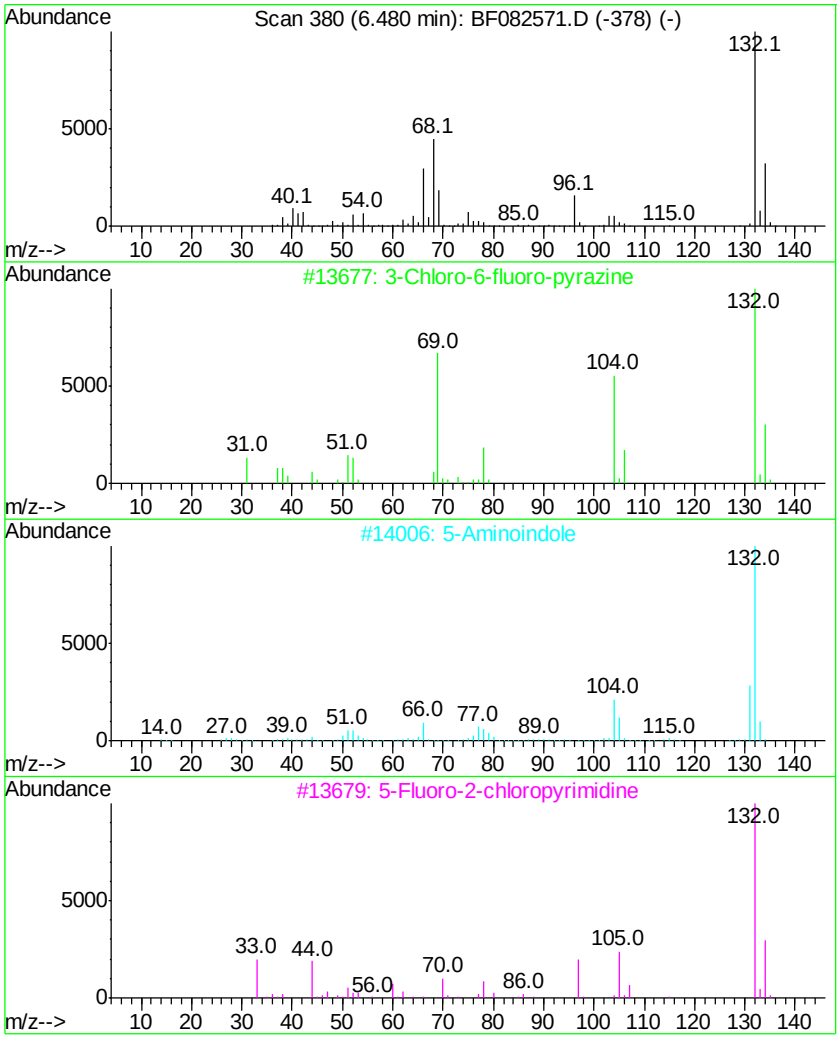
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

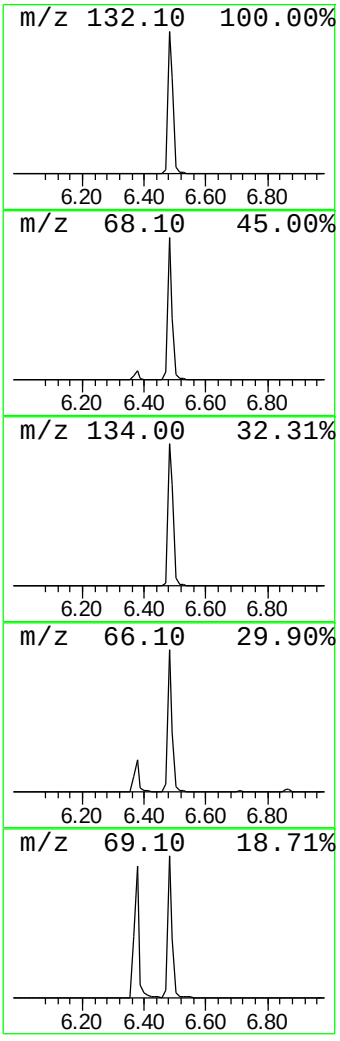
**********

Peak Number 2 unknown6.48 Concentration Rank 1

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 6.48 | 95.66 ng | 2249520 | 1,4-Dichlorobenzene-d4 | 6.71 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 3-Chloro-6-fluoro-pyrazine | 132 | C4H2ClFN2 | 1000146-10-7 | 27 |
| 2 | 5-Aminoindole | 132 | C8H8N2 | 005192-03-0 | 12 |
| 3 | 5-Fluoro-2-chloropyrimidine | 132 | C4H2ClFN2 | 062802-42-0 | 12 |
| 4 | Tranylcypromine-propionyl | 189 | C12H15NO | 1000123-86-3 | 10 |
| 5 | Benzene, 1,3,5-trifluoro- | 132 | C6H3F3 | 000372-38-3 | 9 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

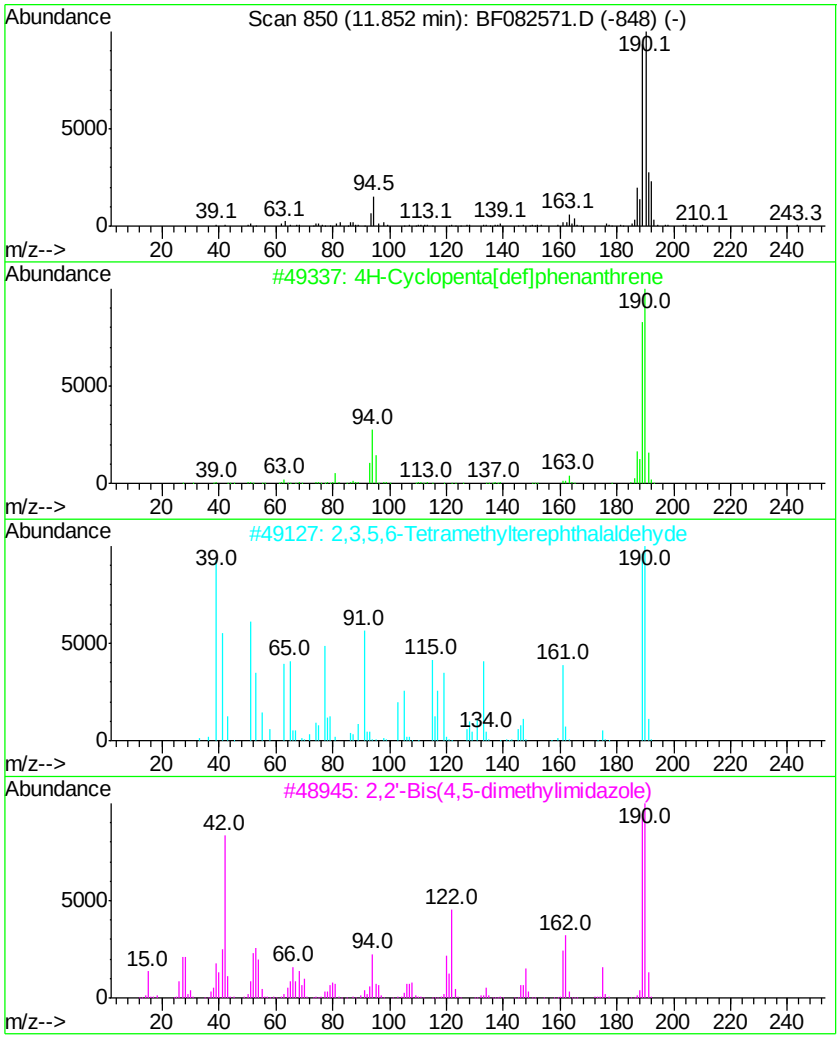
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

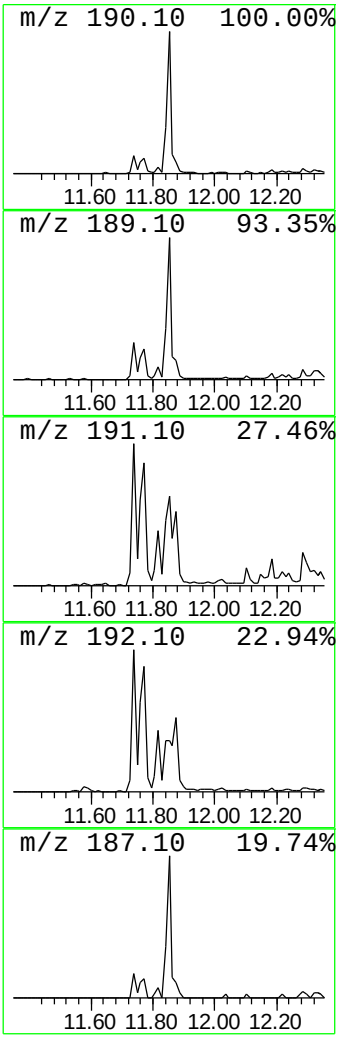
**********

Peak Number 4 4H-Cyclopenta[def]phenanthrene Concentration Rank 18

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.85 | 2.66 ng | 368315 | Phenanthrene-d10 | 11.23 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 4H-Cyclopenta[def]phenanthrene | 190 | C15H10 | 000203-64-5 | 81 |
| 2 | 2,3,5,6-Tetramethylterephthalald... | 190 | C12H14O2 | 007072-01-7 | 50 |
| 3 | 2,2'-Bis(4,5-dimethylimidazole) | 190 | C10H14N4 | 069286-06-2 | 42 |
| 4 | Thiophene-3-carboxaldehyde, 5-ch... | 190 | C5H4BClO3S | 036155-87-0 | 40 |
| 5 | Methyl diselenide | 190 | C2H6Se2 | 007101-31-7 | 27 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

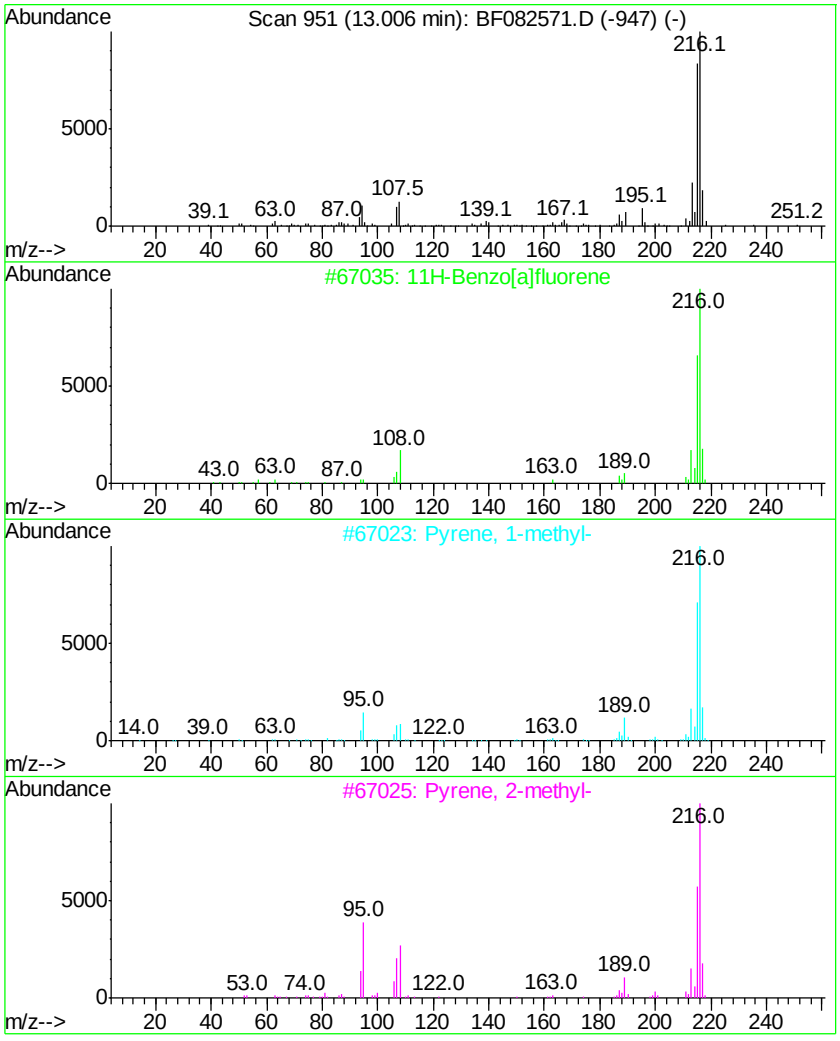
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

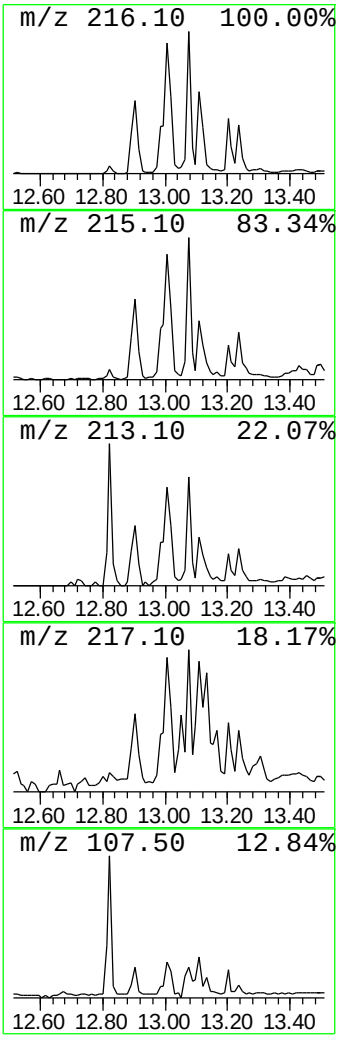
**********

Peak Number 5 11H-Benzo[a]fluorene Concentration Rank 17

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 13.01 | 2.80 ng | 216946 | Chrysene-d12 | 13.88 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 11H-Benzo[a]fluorene | 216 | C17H12 | 000238-84-6 | 93 |
| 2 | Pyrene, 1-methyl- | 216 | C17H12 | 002381-21-7 | 93 |
| 3 | Pyrene, 2-methyl- | 216 | C17H12 | 003442-78-2 | 93 |
| 4 | 11H-Benzo[b]fluorene | 216 | C17H12 | 000243-17-4 | 90 |
| 5 | 7H-Benzo[c]fluorene | 216 | C17H12 | 000205-12-9 | 87 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

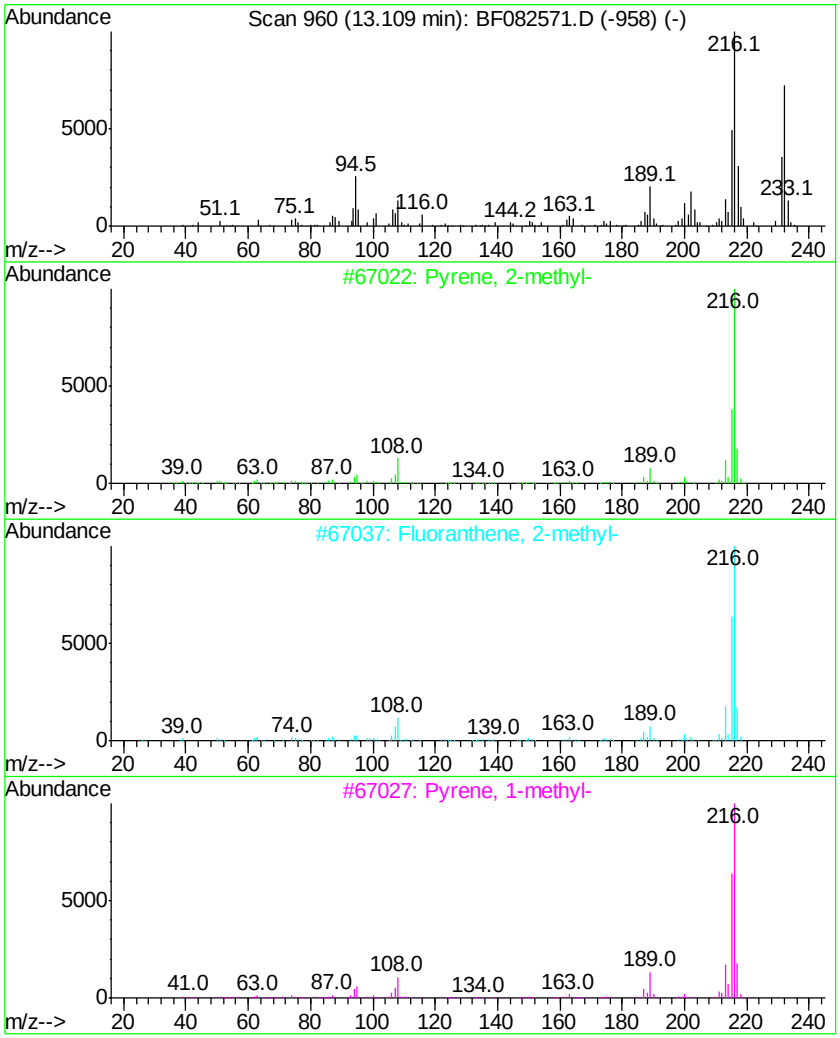
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

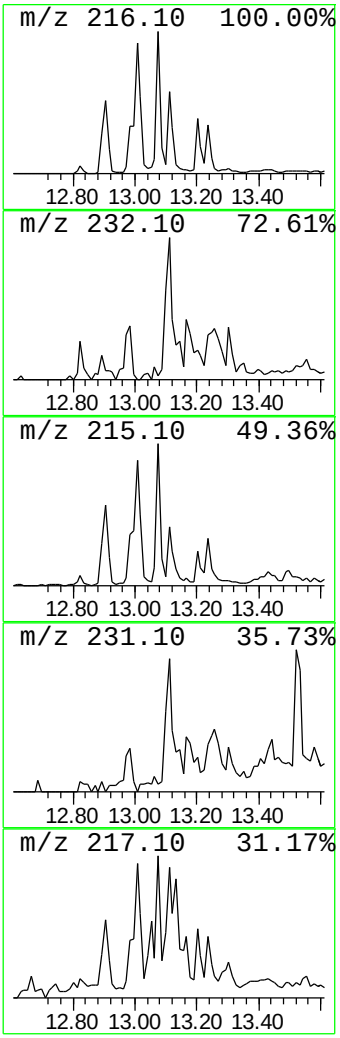
**********

Peak Number 6 Pyrene, 2-methyl- Concentration Rank 19

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 13.11 | 2.63 ng | 203594 | Chrysene-d12 | 13.88 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Pyrene, 2-methyl- | 216 | C17H12 | 003442-78-2 | 78 |
| 2 | Fluoranthene, 2-methyl- | 216 | C17H12 | 033543-31-6 | 55 |
| 3 | Pyrene, 1-methyl- | 216 | C17H12 | 002381-21-7 | 55 |
| 4 | Pyrene, 4-methyl- | 216 | C17H12 | 003353-12-6 | 55 |
| 5 | Azulene, 4,8-dimethyl-6-phenyl- | 232 | C18H16 | 042758-88-3 | 49 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

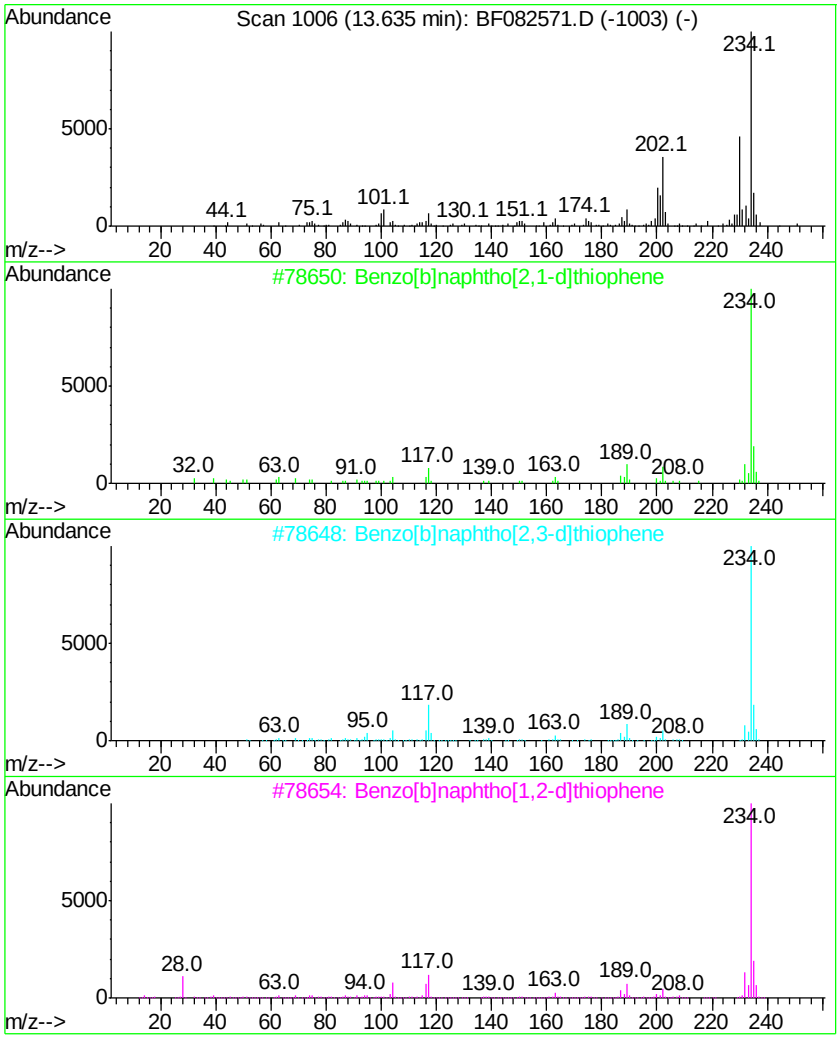
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

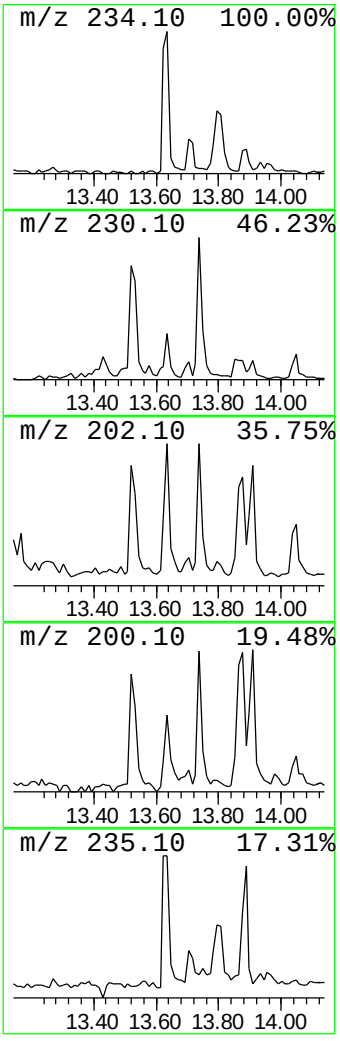
**********

Peak Number 7 Benzo[b]naphtho[2,1-d]thiop... Concentration Rank 15

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 13.64 | 3.21 ng | 248294 | Chrysene-d12 | 13.88 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzo[b]naphtho[2,1-d]thiophene | 234 | C16H10S | 000239-35-0 | 60 |
| 2 | Benzo[b]naphtho[2,3-d]thiophene | 234 | C16H10S | 000243-46-9 | 60 |
| 3 | Benzo[b]naphtho[1,2-d]thiophene | 234 | C16H10S | 000205-43-6 | 43 |
| 4 | Benzo[b]1,4-dioxan-2-ol, 2-(2-th... | 234 | C12H10O3S | 312614-85-0 | 38 |
| 5 | Quinoxalino[2,3-b]quinoxaline, 5... | 234 | C14H10N4 | 000531-46-4 | 38 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

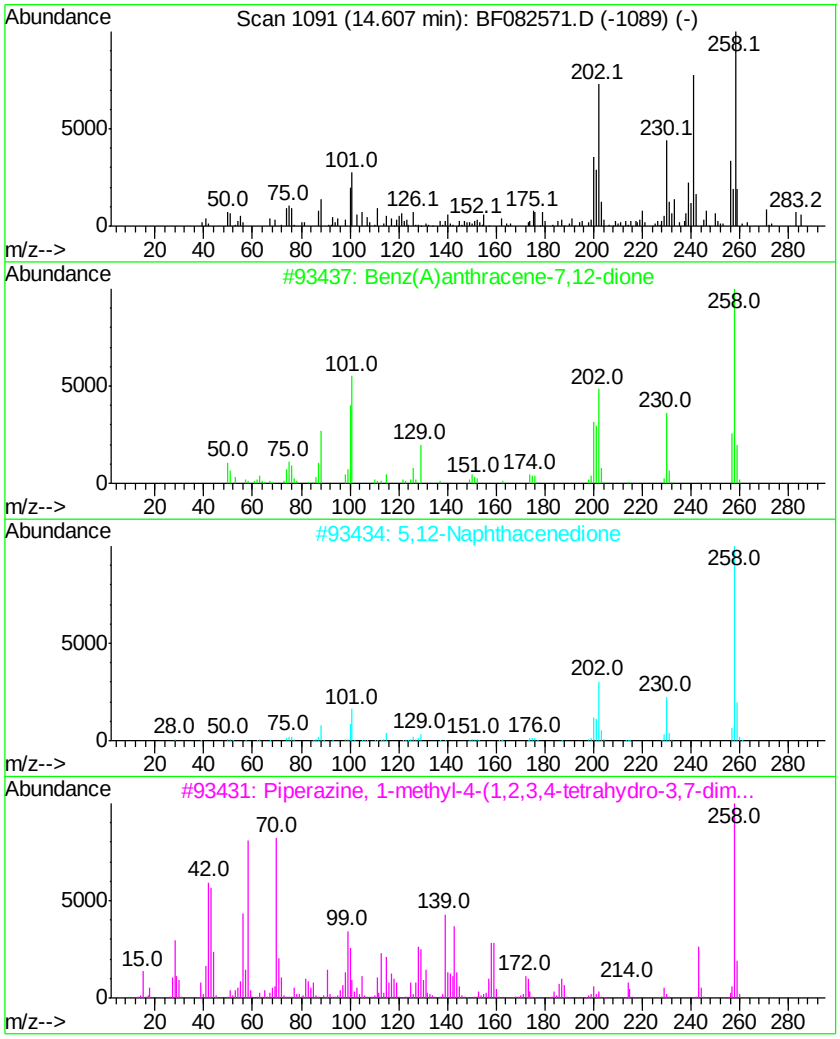
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

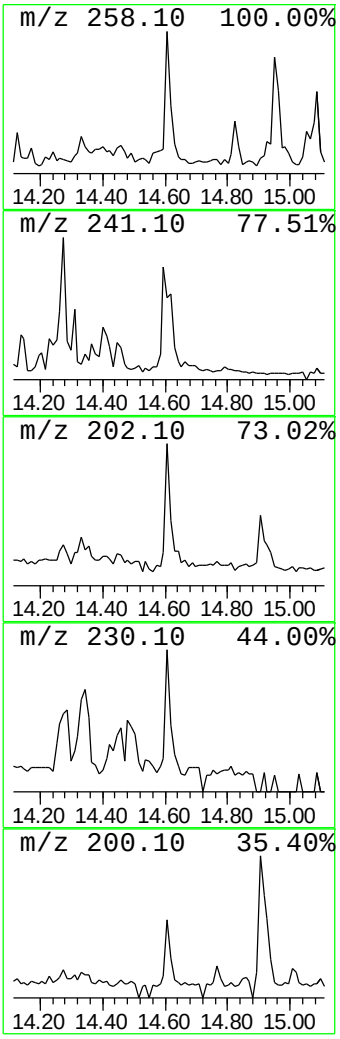
**********

Peak Number 8 Benz(A)anthracene-7,12-dione Concentration Rank 11

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 14.61 | 3.96 ng | 80401 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benz(A)anthracene-7,12-dione | 258 | C18H10O2 | 002498-66-0 | 91 |
| 2 | 5,12-Naphthacenedione | 258 | C18H10O2 | 001090-13-7 | 87 |
| 3 | Piperazine, 1-methyl-4-(1,2,3,4-... | 258 | C17H26N2 | 055591-14-5 | 56 |
| 4 | 1,8-Anthracenedinitrile, 9,10-di... | 258 | C16H6N2O2 | 090866-50-5 | 46 |
| 5 | 1,4-Chrysenequinone | 258 | C18H10O2 | 100900-16-1 | 38 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

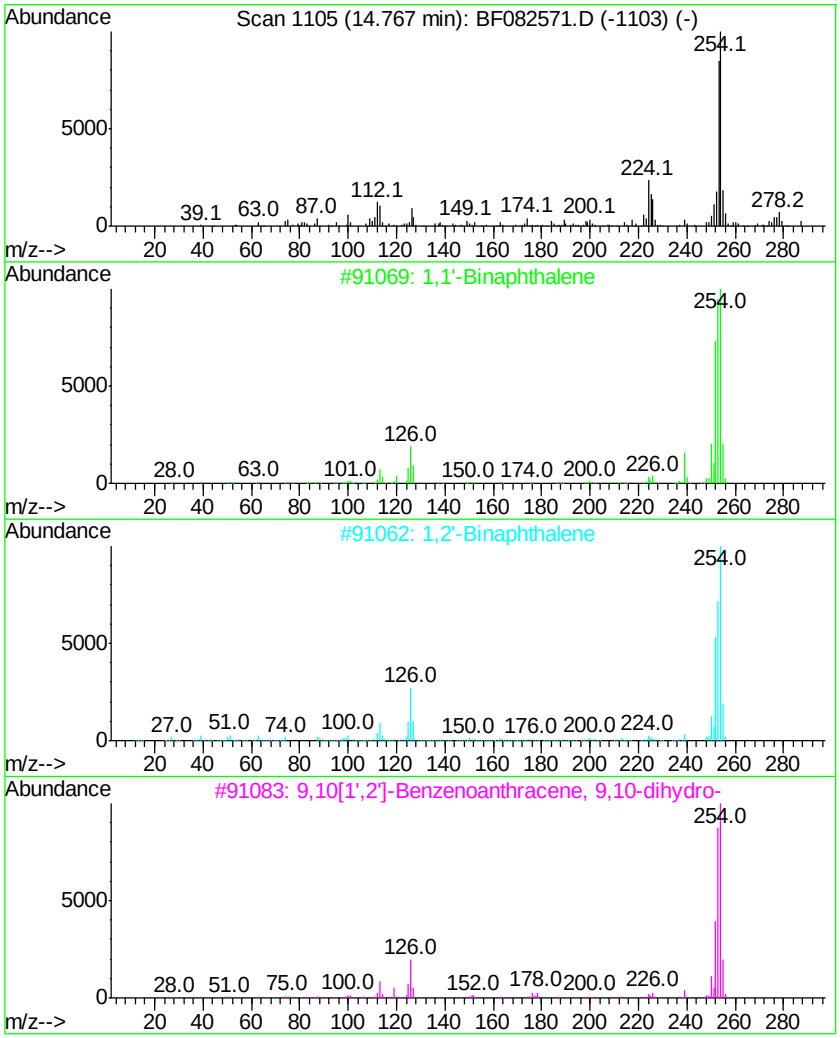
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

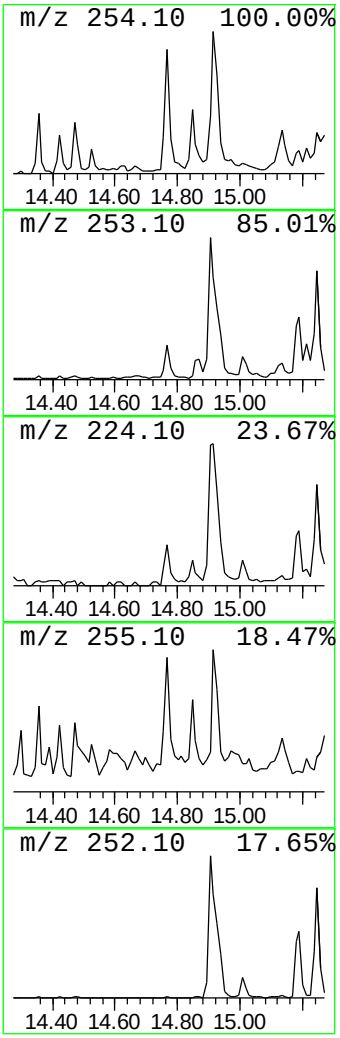
**********

Peak Number 9 1,1'-Binaphthalene Concentration Rank 12

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 14.77 | 3.94 ng | 79904 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 1,1'-Binaphthalene | 254 | C20H14 | 000604-53-5 | 76 |
| 2 | 1,2'-Binaphthalene | 254 | C20H14 | 004325-74-0 | 72 |
| 3 | 9,10[1',2']-Benzenoanthracene, 9... | 254 | C20H14 | 000477-75-8 | 68 |
| 4 | Benzenamine, 4,4'-methylenebis[N... | 254 | C17H22N2 | 000101-61-1 | 58 |
| 5 | Benzofuran-6-ol-3-one, 2-[4-hydr... | 254 | C15H10O4 | 1000128-64-9 | 53 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

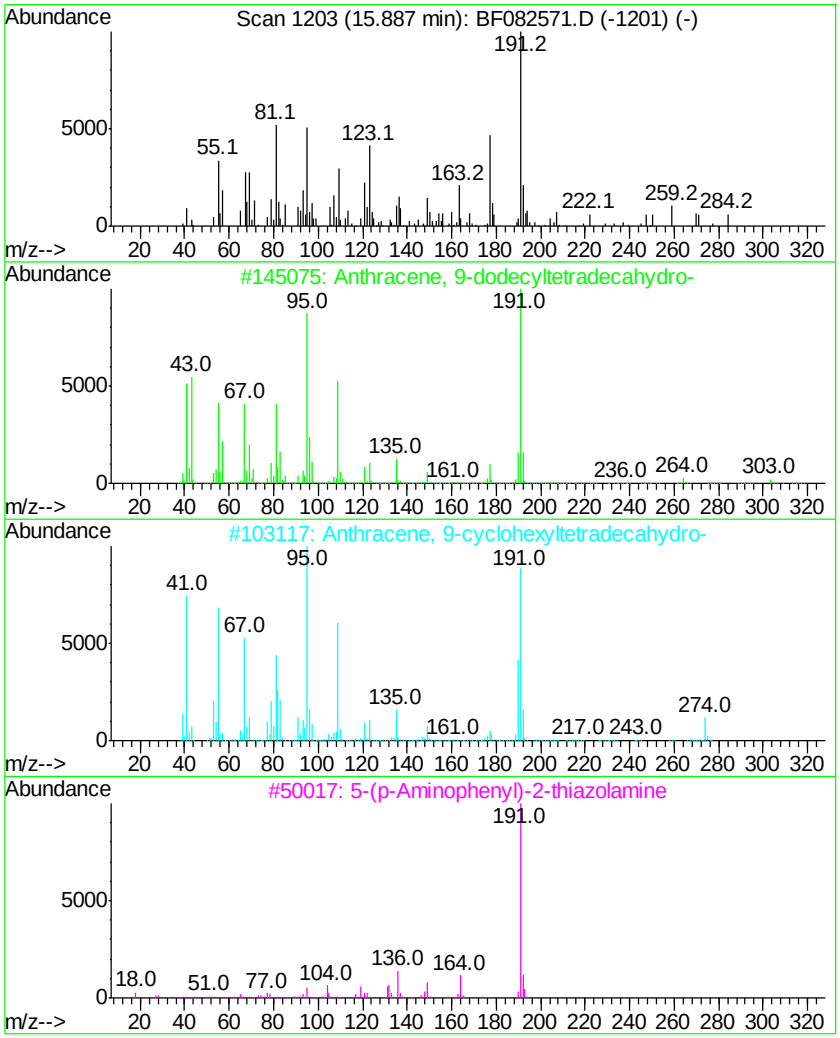
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

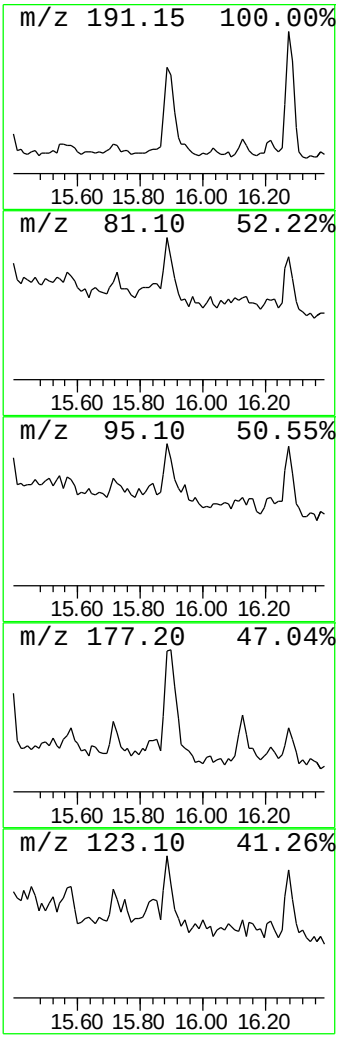
**********

Peak Number 12 unknown15.89 Concentration Rank 6

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 15.89 | 7.35 ng | 149160 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Anthracene, 9-dodecyltetradecahy... | 360 | C26H48 | 055401-75-7 | 37 |
| 2 | Anthracene, 9-cyclohexyltetradec... | 274 | C20H34 | 055255-70-4 | 27 |
| 3 | 5-(p-Aminophenyl)-2-thiazolamine | 191 | C9H9N3S | 090349-87-4 | 22 |
| 4 | 2,4,5,5,8a-Pentamethyl-6,7,8,8a-... | 206 | C14H22O | 1000195-40-9 | 16 |
| 5 | 2-(2-((2-Chloro-6-fluorobenzyl)s... | 334 | C17H16ClFN2S | 1000298-18-2 | 16 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

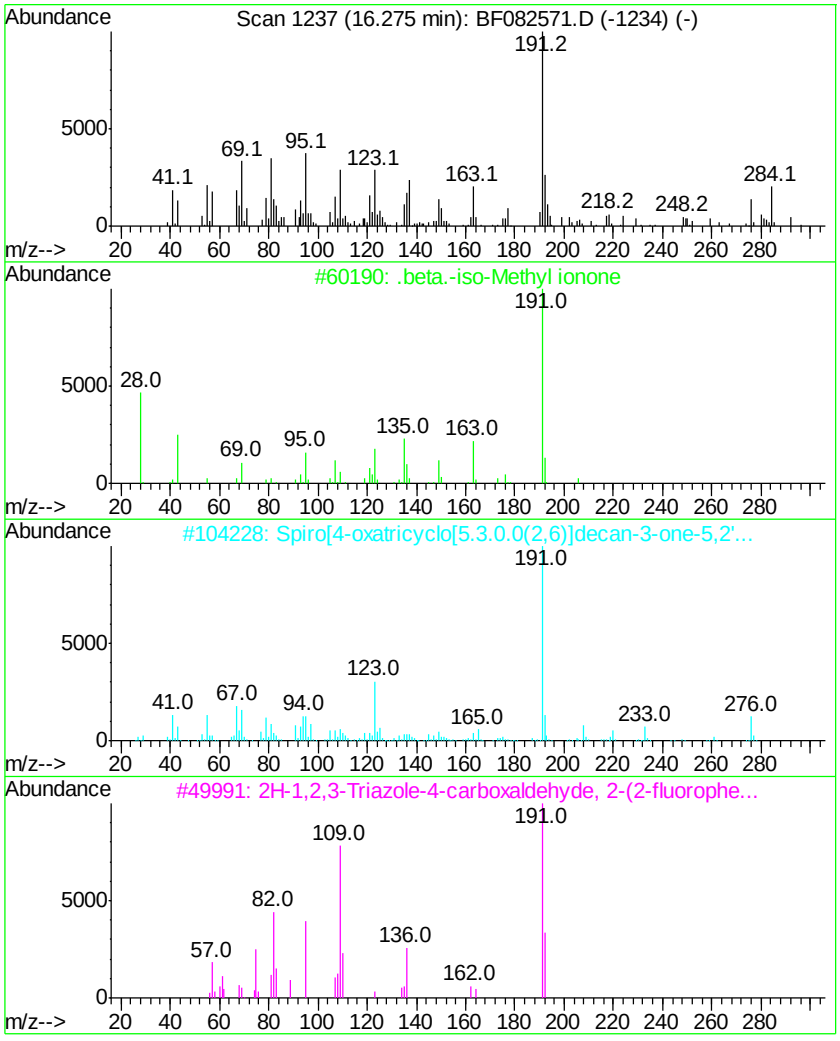
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

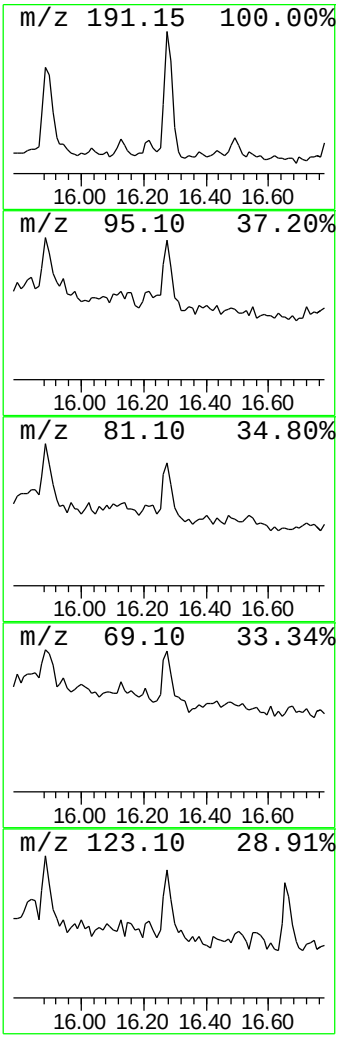
**********

Peak Number 13 .beta.-iso-Methyl ionone Concentration Rank 8

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 16.28 | 5.61 ng | 113841 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | .beta.-iso-Methyl ionone | 206 | C14H22O | 1000285-40-2 | 60 |
| 2 | Spiro[4-oxatricyclo[5.3.0.0(2,6)... | 276 | C18H28O2 | 1000156-82-9 | 43 |
| 3 | 2H-1,2,3-Triazole-4-carboxaldehy... | 191 | C9H6FN3O | 051306-43-5 | 37 |
| 4 | Anthracene, 9-dodecyltetradecahy... | 360 | C26H48 | 055401-75-7 | 37 |
| 5 | 2,4,5,5,8a-Pentamethyl-6,7,8,8a-... | 206 | C14H22O | 1000195-40-9 | 32 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

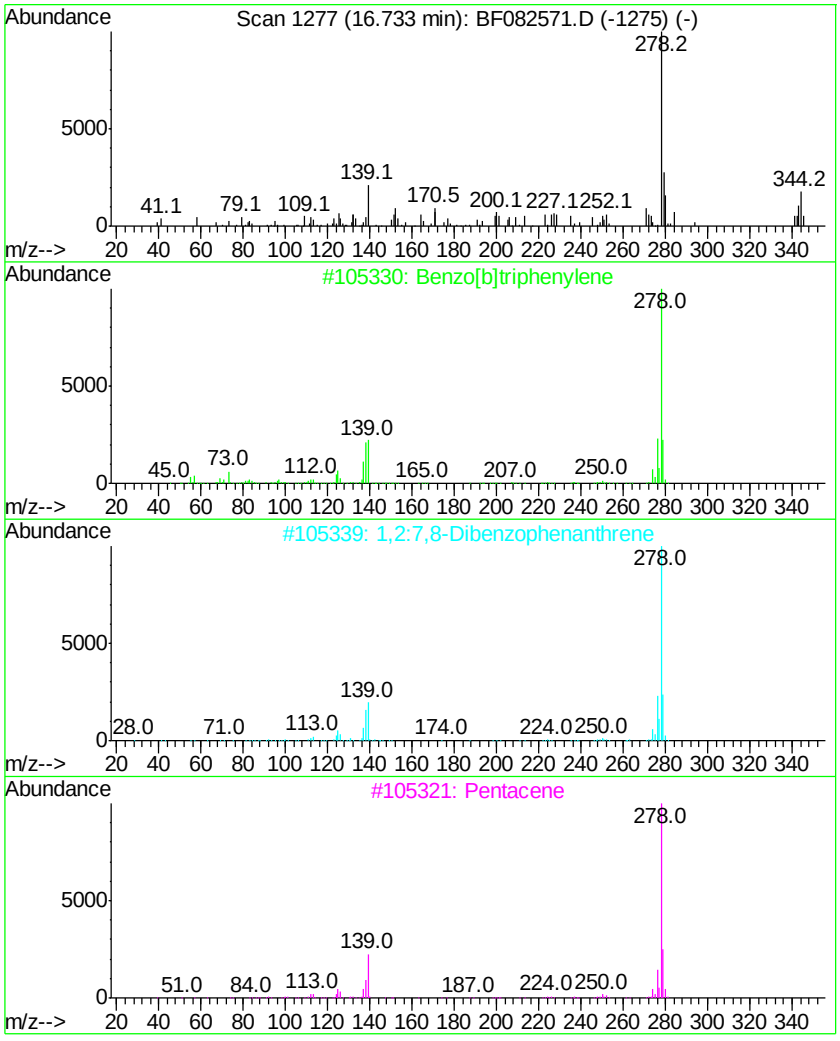
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

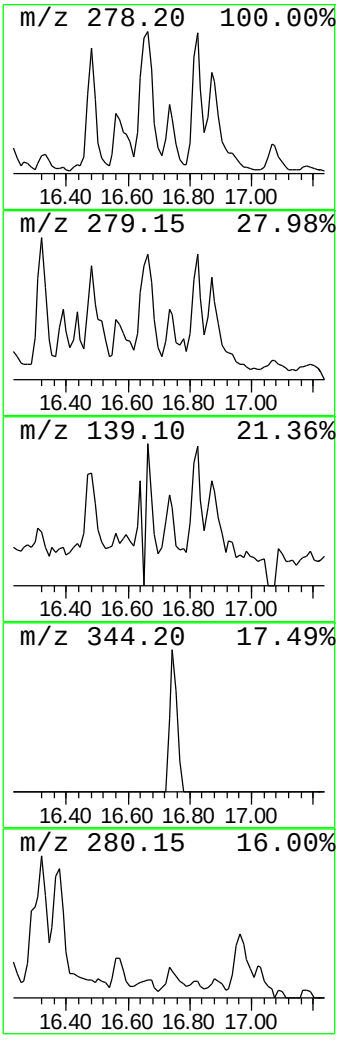
**********

Peak Number 15 Benzo[b]triphenylene Concentration Rank 20

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 16.73 | 2.38 ng | 48192 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzo[b]triphenylene | 278 | C22H14 | 000215-58-7 | 62 |
| 2 | 1,2:7,8-Dibenzophenanthrene | 278 | C22H14 | 000213-46-7 | 58 |
| 3 | Pentacene | 278 | C22H14 | 000135-48-8 | 58 |
| 4 | Dibenz[a,h]anthracene | 278 | C22H14 | 000053-70-3 | 58 |
| 5 | p-Bis(phenylethynyl)benzene | 278 | C22H14 | 001849-27-0 | 58 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

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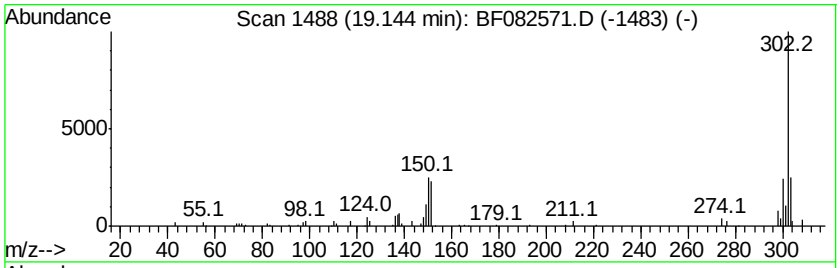
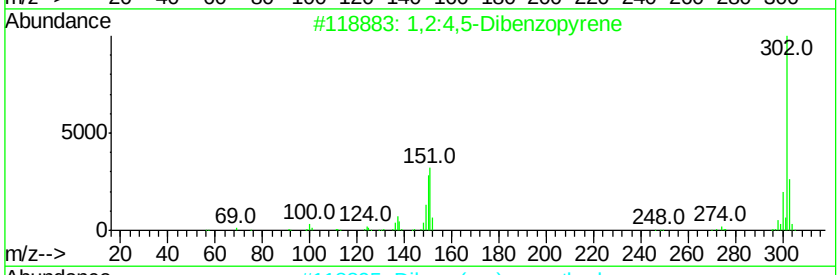
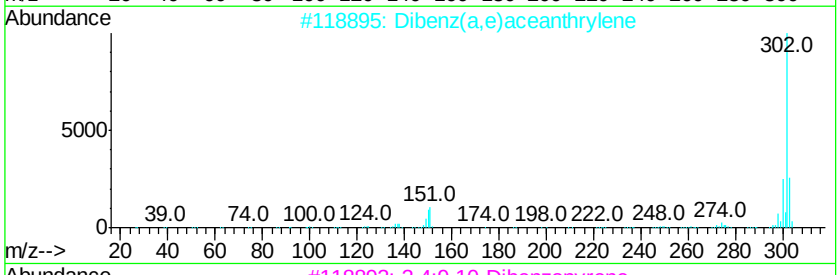
Peak Number 18 1,2:4,5-Dibenzopyrene Concentration Rank 5

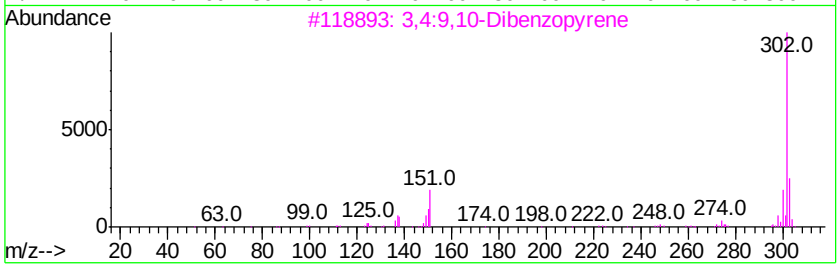
| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 19.14 | 7.44 ng | 150963 | Perylene-d12 | 15.30 |

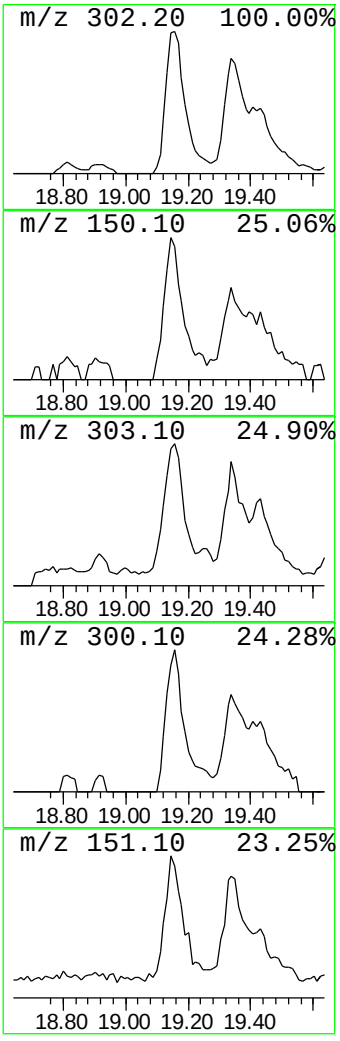
| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 1,2:4,5-Dibenzopyrene | 302 | C24H14 | 000192-65-4 | 95 |
| 2 | Dibenz(a,e)aceanthrylene | 302 | C24H14 | 005385-75-1 | 94 |
| 3 | 3,4:9,10-Dibenzopyrene | 302 | C24H14 | 000189-55-9 | 90 |
| 4 | 3,4:8,9-Dibenzopyrene | 302 | C24H14 | 000189-64-0 | 81 |
| 5 | Indeno[1,2,3-fg]naphthacene | 302 | C24H14 | 000203-11-2 | 76 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

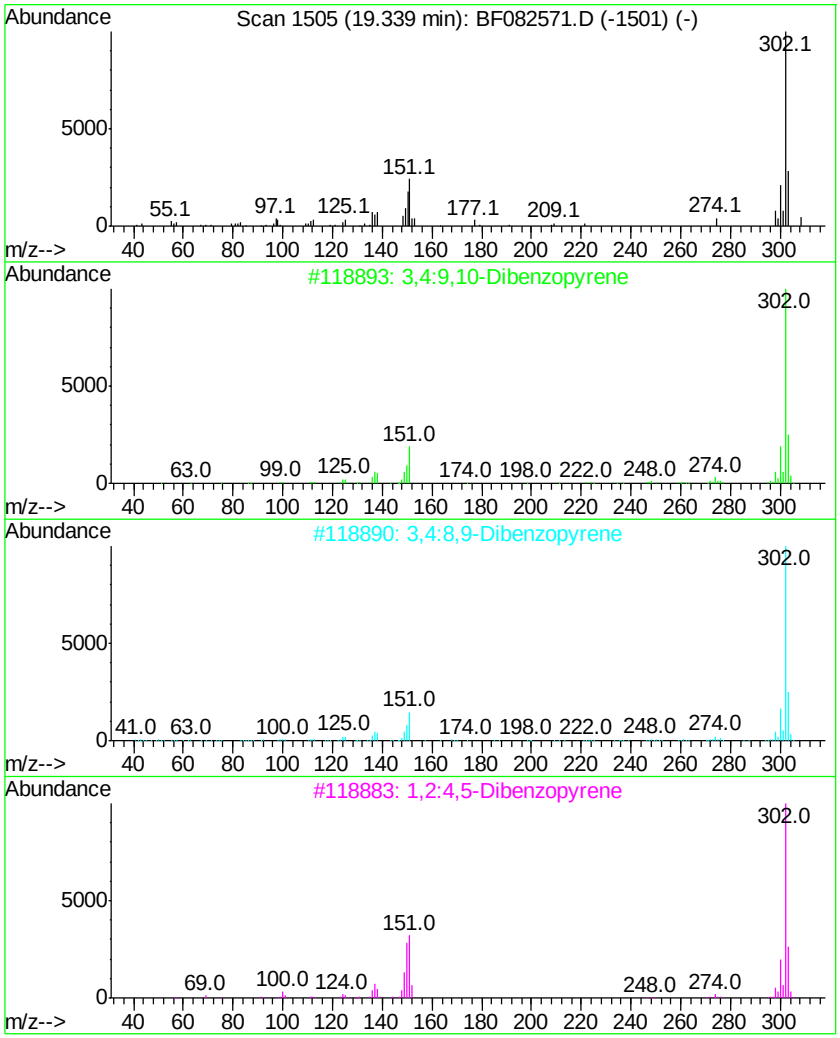
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

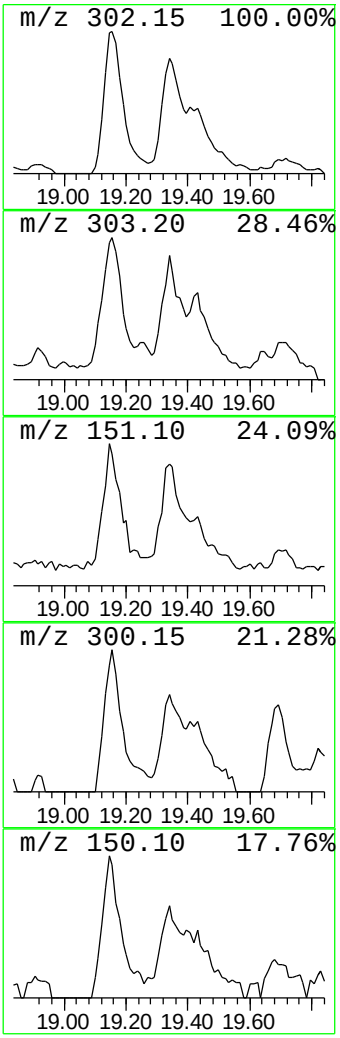
**********

Peak Number 19 3,4:9,10-Dibenzopyrene Concentration Rank 9

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 19.34 | 5.35 ng | 108554 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 3,4:9,10-Dibenzopyrene | 302 | C24H14 | 000189-55-9 | 93 |
| 2 | 3,4:8,9-Dibenzopyrene | 302 | C24H14 | 000189-64-0 | 91 |
| 3 | 1,2:4,5-Dibenzopyrene | 302 | C24H14 | 000192-65-4 | 87 |
| 4 | Dibenz(a,e)aceanthrylene | 302 | C24H14 | 005385-75-1 | 81 |
| 5 | Indeno[1,2,3-fg]naphthacene | 302 | C24H14 | 000203-11-2 | 62 |



Data Path : Z:\HPCHEM1\BNA F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

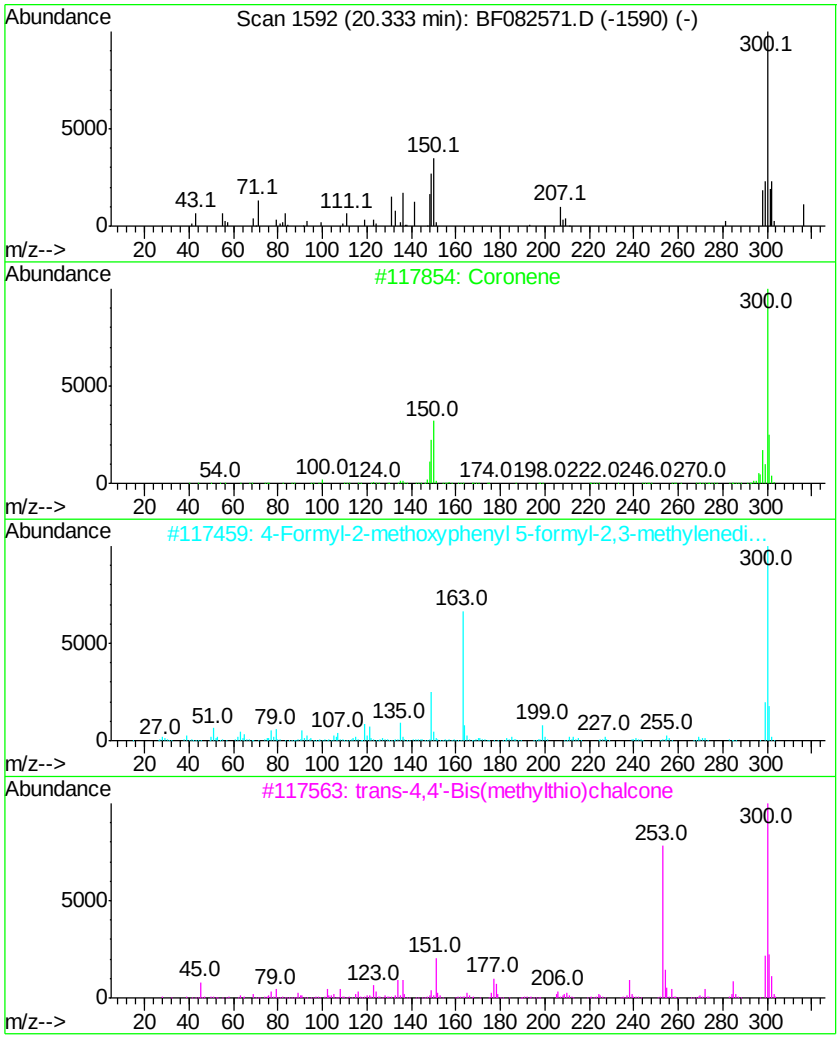
TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

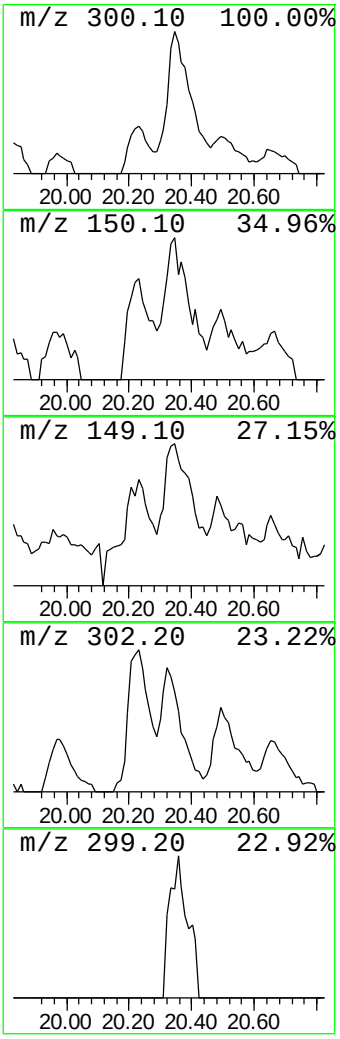
**********

Peak Number 20 Coronene Concentration Rank 14

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 20.33 | 3.64 ng | 73798 | Perylene-d12 | 15.30 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Coronene | 300 | C24H12 | 000191-07-1 | 53 |
| 2 | 4-Formyl-2-methoxyphenyl 5-formy... | 300 | C16H12O6 | 1000242-81-0 | 50 |
| 3 | trans-4,4'-Bis(methylthio)chalcone | 300 | C17H16OS2 | 033868-48-3 | 43 |
| 4 | Benzophenone (2-troponyl)hydrazone | 300 | C20H16N2O | 1000241-54-0 | 43 |
| 5 | Ethanone, 1-phenyl-, (2,4-dinitr... | 300 | C14H12N4O4 | 001677-87-8 | 32 |



# Tentatively Identified Compound (LSC) summary

Data Path : Z:\HPCHEM1\BNA_F\DATA\BF102715\
Data File : BF082571.D
Acq On : 28 Oct 2015 3:37
Operator : UM/IZ
Sample : G4178-04
Misc :
ALS Vial : 20 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** S4-BOILERROOM2.5FTDEEP

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102615.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

TIC Library : C:\DATABASE\NIST02.L
TIC Integration Parameters: LSCINT.P

| | | | | | Internal Standard | | | |
|---|---|---|---|---|---|---|---|---|
| TIC Top Hit name | RT | EstConc | Units | Response | # | RT | Resp | Conc |
| 2-Pentanone, 4-hy... | 4.87 | 49.1 | ng | 1155350 | 1 | 6.71 | 470301 | 20.0 |
| unknown6.48 | 6.48 | 95.7 | ng | 2249520 | 1 | 6.71 | 470301 | 20.0 |
| 4H-Cyclopenta[def... | 11.85 | 2.7 | ng | 368315 | 4 | 11.23 | 2773480 | 20.0 |
| 11H-Benzo[a]fluorene | 13.01 | 2.8 | ng | 216946 | 5 | 13.88 | 1548130 | 20.0 |
| Pyrene, 2-methyl- | 13.11 | 2.6 | ng | 203594 | 5 | 13.88 | 1548130 | 20.0 |
| Benzo[b]naphtho[2... | 13.64 | 3.2 | ng | 248294 | 5 | 13.88 | 1548130 | 20.0 |
| Benz(A)anthracene... | 14.61 | 4.0 | ng | 80401 | 6 | 15.30 | 405643 | 20.0 |
| 1,1'-Binaphthalene | 14.77 | 3.9 | ng | 79904 | 6 | 15.30 | 405643 | 20.0 |
| unknown15.89 | 15.89 | 7.3 | ng | 149160 | 6 | 15.30 | 405643 | 20.0 |
| .beta.-iso-Methyl... | 16.28 | 5.6 | ng | 113841 | 6 | 15.30 | 405643 | 20.0 |
| Benzo[b]triphenylene | 16.73 | 2.4 | ng | 48192 | 6 | 15.30 | 405643 | 20.0 |
| 1,2:4,5-Dibenzopy... | 19.14 | 7.4 | ng | 150963 | 6 | 15.30 | 405643 | 20.0 |
| 3,4:9,10-Dibenzop... | 19.34 | 5.3 | ng | 108554 | 6 | 15.30 | 405643 | 20.0 |
| Coronene | 20.33 | 3.6 | ng | 73798 | 6 | 15.30 | 405643 | 20.0 |