LSC Area Percent Report

Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

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-BF102317.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 | 6.563 | 758 | 761 | 775 | rVB | 116852 | 212638 | 2.36% | 0.260% |
| 2 | 6.763 | 792 | 795 | 806 | rBV | 474696 | 461209 | 5.12% | 0.564% |
| 3 | 6.922 | 819 | 822 | 838 | rBV | 133193 | 153092 | 1.70% | 0.187% |
| 4 | 8.045 | 1010 | 1013 | 1026 | rBV | 678453 | 624932 | 6.94% | 0.764% |
| 5 | 9.116 | 1192 | 1195 | 1201 | rBV | 259767 | 225007 | 2.50% | 0.275% |
| 6 | 9.457 | 1249 | 1253 | 1256 | rBV | 153899 | 161721 | 1.80% | 0.198% |
| 7 | 9.792 | 1300 | 1310 | 1313 | rBV2 | 671532 | 724130 | 8.04% | 0.885% |
| 8 | 9.828 | 1313 | 1316 | 1320 | rVV | 802280 | 720052 | 8.00% | 0.880% |
| 9 | 9.898 | 1324 | 1328 | 1332 | rBV2 | 107952 | 155754 | 1.73% | 0.190% |
| 10 | 9.951 | 1332 | 1337 | 1341 | rVV3 | 107049 | 148362 | 1.65% | 0.181% |
| 11 | 9.992 | 1341 | 1344 | 1349 | rVV3 | 140353 | 226864 | 2.52% | 0.277% |
| 12 | 10.039 | 1349 | 1352 | 1356 | rVV2 | 151077 | 150295 | 1.67% | 0.184% |
| 13 | 10.204 | 1374 | 1380 | 1382 | rBV3 | 107407 | 166388 | 1.85% | 0.203% |
| 14 | 10.345 | 1397 | 1404 | 1410 | rBV3 | 253196 | 349075 | 3.88% | 0.427% |
| 15 | 10.598 | 1442 | 1447 | 1451 | rBV4 | 115410 | 175850 | 1.95% | 0.215% |
| 16 | 10.892 | 1491 | 1497 | 1500 | rVV2 | 130229 | 227500 | 2.53% | 0.278% |
| 17 | 10.922 | 1500 | 1502 | 1505 | rVV | 173973 | 184137 | 2.04% | 0.225% |
| 18 | 11.139 | 1536 | 1539 | 1543 | rVB4 | 107654 | 134017 | 1.49% | 0.164% |
| 19 | 11.186 | 1544 | 1547 | 1555 | rVB | 411639 | 393025 | 4.36% | 0.480% |
| 20 | 11.292 | 1561 | 1565 | 1566 | rBV | 553459 | 549231 | 6.10% | 0.671% |
| 21 | 11.322 | 1566 | 1570 | 1573 | rVV | 3765291 | 4472659 | 49.67% | 5.466% |
| 22 | 11.369 | 1573 | 1578 | 1582 | rVV | 2172855 | 2058785 | 22.86% | 2.516% |
| 23 | 11.416 | 1584 | 1586 | 1589 | rVV | 154725 | 194214 | 2.16% | 0.237% |
| 24 | 11.451 | 1589 | 1592 | 1596 | rVV3 | 118289 | 157821 | 1.75% | 0.193% |
| 25 | 11.527 | 1600 | 1605 | 1611 | rVV2 | 629582 | 758579 | 8.42% | 0.927% |
| 26 | 11.616 | 1615 | 1620 | 1628 | rBV3 | 171798 | 324767 | 3.61% | 0.397% |
| 27 | 11.704 | 1632 | 1635 | 1639 | rVB2 | 109844 | 146020 | 1.62% | 0.178% |
| 28 | 11.792 | 1646 | 1650 | 1652 | rBV | 789101 | 744939 | 8.27% | 0.910% |
| 29 | 11.822 | 1652 | 1655 | 1660 | rVB | 1030305 | 932624 | 10.36% | 1.140% |
| 30 | 11.869 | 1660 | 1663 | 1666 | rBV | 537406 | 458995 | 5.10% | 0.561% |
| 31 | 11.904 | 1666 | 1669 | 1671 | rVV | 1619764 | 1667784 | 18.52% | 2.038% |
| 32 | 11.927 | 1671 | 1673 | 1676 | rVB | 615639 | 498192 | 5.53% | 0.609% |
| 33 | 12.010 | 1685 | 1687 | 1691 | rBV2 | 121178 | 172080 | 1.91% | 0.210% |
| 34 | 12.080 | 1696 | 1699 | 1704 | rVV | 929657 | 852943 | 9.47% | 1.042% |

LSC Area Percent Report

Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

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-BF102317.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 35 | 12.151 | 1708 | 1711 | 1714 | rVB2 | 206092 | 252168 | 2.80% | 0.308% |
| 36 | 12.210 | 1714 | 1721 | 1723 | rBV4 | 99093 | 136737 | 1.52% | 0.167% |
| 37 | 12.233 | 1723 | 1725 | 1728 | rVV | 232475 | 199113 | 2.21% | 0.243% |
| 38 | 12.269 | 1728 | 1731 | 1733 | rVV | 178393 | 182745 | 2.03% | 0.223% |
| 39 | 12.292 | 1733 | 1735 | 1739 | rVB | 135074 | 141573 | 1.57% | 0.173% |
| 40 | 12.339 | 1739 | 1743 | 1746 | rBV | 509531 | 541752 | 6.02% | 0.662% |
| 41 | 12.380 | 1748 | 1750 | 1752 | rVV | 266562 | 284038 | 3.15% | 0.347% |
| 42 | 12.439 | 1756 | 1760 | 1762 | rVV2 | 173905 | 272075 | 3.02% | 0.332% |
| 43 | 12.463 | 1762 | 1764 | 1768 | rVB | 278208 | 274132 | 3.04% | 0.335% |
| 44 | 12.533 | 1768 | 1776 | 1779 | rBV | 4465065 | 8863101 | 98.42% | 10.831% |
| 45 | 12.586 | 1780 | 1785 | 1788 | rVB2 | 206755 | 306062 | 3.40% | 0.374% |
| 46 | 12.663 | 1795 | 1798 | 1802 | rBV2 | 641637 | 676191 | 7.51% | 0.826% |
| 47 | 12.710 | 1802 | 1806 | 1807 | rVV2 | 104674 | 144406 | 1.60% | 0.176% |
| 48 | 12.763 | 1807 | 1815 | 1818 | rVV3 | 4229137 | 9005282 | 100.00% | 11.004% |
| 49 | 12.792 | 1818 | 1820 | 1823 | rVV | 466117 | 404208 | 4.49% | 0.494% |
| 50 | 12.863 | 1826 | 1832 | 1835 | rVV2 | 851343 | 840030 | 9.33% | 1.027% |
| 51 | 12.910 | 1838 | 1840 | 1844 | rVV | 487958 | 457045 | 5.08% | 0.559% |
| 52 | 12.957 | 1844 | 1848 | 1852 | rVV3 | 529101 | 886046 | 9.84% | 1.083% |
| 53 | 12.998 | 1852 | 1855 | 1859 | rVV | 318999 | 294513 | 3.27% | 0.360% |
| 54 | 13.045 | 1859 | 1863 | 1864 | rVV2 | 403853 | 492351 | 5.47% | 0.602% |
| 55 | 13.069 | 1864 | 1867 | 1872 | rVB | 1397757 | 1495829 | 16.61% | 1.828% |
| 56 | 13.133 | 1875 | 1878 | 1881 | rVV | 1378895 | 1311124 | 14.56% | 1.602% |
| 57 | 13.174 | 1881 | 1885 | 1891 | rVV3 | 753297 | 1275383 | 14.16% | 1.559% |
| 58 | 13.227 | 1891 | 1894 | 1897 | rVV3 | 177308 | 190377 | 2.11% | 0.233% |
| 59 | 13.269 | 1897 | 1901 | 1903 | rVV | 409480 | 407210 | 4.52% | 0.498% |
| 60 | 13.298 | 1903 | 1906 | 1914 | rVB2 | 500937 | 641373 | 7.12% | 0.784% |
| 61 | 13.486 | 1936 | 1938 | 1941 | rVV | 205739 | 220479 | 2.45% | 0.269% |
| 62 | 13.551 | 1945 | 1949 | 1951 | rBV2 | 148052 | 205411 | 2.28% | 0.251% |
| 63 | 13.592 | 1951 | 1956 | 1962 | rVB | 294813 | 445774 | 4.95% | 0.545% |
| 64 | 13.692 | 1967 | 1973 | 1974 | rBV | 767854 | 759870 | 8.44% | 0.929% |
| 65 | 13.710 | 1974 | 1976 | 1979 | rVB2 | 969096 | 837745 | 9.30% | 1.024% |
| 66 | 13.745 | 1979 | 1982 | 1984 | rBV | 824040 | 858390 | 9.53% | 1.049% |
| 67 | 13.763 | 1984 | 1985 | 1989 | rVB3 | 575554 | 396497 | 4.40% | 0.485% |
| 68 | 13.810 | 1990 | 1993 | 1996 | rVB | 390242 | 375071 | 4.17% | 0.458% |
| 69 | 13.863 | 1996 | 2002 | 2007 | rBV | 296062 | 474974 | 5.27% | 0.580% |
| 70 | 13.945 | 2010 | 2016 | 2019 | rBV4 | 3028818 | 5430694 | 60.31% | 6.636% |
| 71 | 13.980 | 2019 | 2022 | 2027 | rVB | 2860886 | 3488007 | 38.73% | 4.262% |

LSC Area Percent Report

Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

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-BF102317.M
Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 72 | 14.051 | 2032 | 2034 | 2038 | rVB | 1035293 | 863224 | 9.59% | 1.055% |
| 73 | 14.110 | 2038 | 2044 | 2048 | rBV5 | 243486 | 380251 | 4.22% | 0.465% |
| 74 | 14.145 | 2048 | 2050 | 2052 | rVV | 366433 | 339038 | 3.76% | 0.414% |
| 75 | 14.180 | 2054 | 2056 | 2059 | rVB | 384767 | 319932 | 3.55% | 0.391% |
| 76 | 14.292 | 2072 | 2075 | 2077 | rVV | 192132 | 181887 | 2.02% | 0.222% |
| 77 | 14.327 | 2077 | 2081 | 2084 | rVV | 604608 | 788522 | 8.76% | 0.964% |
| 78 | 14.363 | 2084 | 2087 | 2090 | rVV2 | 307464 | 305275 | 3.39% | 0.373% |
| 79 | 14.404 | 2090 | 2094 | 2096 | rVV | 279686 | 316677 | 3.52% | 0.387% |
| 80 | 14.433 | 2096 | 2099 | 2101 | rVV2 | 322331 | 348028 | 3.86% | 0.425% |
| 81 | 14.457 | 2101 | 2103 | 2105 | rVV | 417398 | 474477 | 5.27% | 0.580% |
| 82 | 14.515 | 2109 | 2113 | 2120 | rVV3 | 260515 | 432279 | 4.80% | 0.528% |
| 83 | 14.668 | 2132 | 2139 | 2144 | rBV2 | 331784 | 602050 | 6.69% | 0.736% |
| 84 | 14.833 | 2161 | 2167 | 2180 | rVB4 | 180222 | 489376 | 5.43% | 0.598% |
| 85 | 14.939 | 2180 | 2185 | 2188 | rBV | 142721 | 189047 | 2.10% | 0.231% |
| 86 | 14.992 | 2188 | 2194 | 2196 | rBV | 2101728 | 3454629 | 38.36% | 4.222% |
| 87 | 15.010 | 2196 | 2197 | 2202 | rVB | 1292759 | 1116730 | 12.40% | 1.365% |
| 88 | 15.092 | 2207 | 2211 | 2217 | rBV | 442164 | 520422 | 5.78% | 0.636% |
| 89 | 15.168 | 2221 | 2224 | 2226 | rBV2 | 144535 | 173814 | 1.93% | 0.212% |
| 90 | 15.280 | 2239 | 2243 | 2247 | rVV | 1075314 | 1337988 | 14.86% | 1.635% |
| 91 | 15.351 | 2251 | 2255 | 2260 | rVB | 1635668 | 2169085 | 24.09% | 2.651% |
| 92 | 15.404 | 2260 | 2264 | 2267 | rBV | 324614 | 384110 | 4.27% | 0.469% |
| 93 | 15.439 | 2267 | 2270 | 2277 | rVB | 574558 | 724459 | 8.04% | 0.885% |
| 94 | 15.574 | 2289 | 2293 | 2296 | rBV | 105690 | 147010 | 1.63% | 0.180% |
| 95 | 15.627 | 2296 | 2302 | 2308 | rVB2 | 132375 | 275657 | 3.06% | 0.337% |
| 96 | 15.892 | 2343 | 2347 | 2355 | rBV5 | 59798 | 132994 | 1.48% | 0.163% |
| 97 | 16.868 | 2505 | 2513 | 2521 | rVB2 | 533421 | 1040008 | 11.55% | 1.271% |
| 98 | 17.027 | 2535 | 2540 | 2546 | rBV | 129663 | 247329 | 2.75% | 0.302% |
| 99 | 17.309 | 2582 | 2588 | 2603 | rVB | 372335 | 821602 | 9.12% | 1.004% |
| 100 | 17.574 | 2628 | 2633 | 2644 | rVB | 91617 | 205398 | 2.28% | 0.251% |

Sum of corrected areas: 81832755

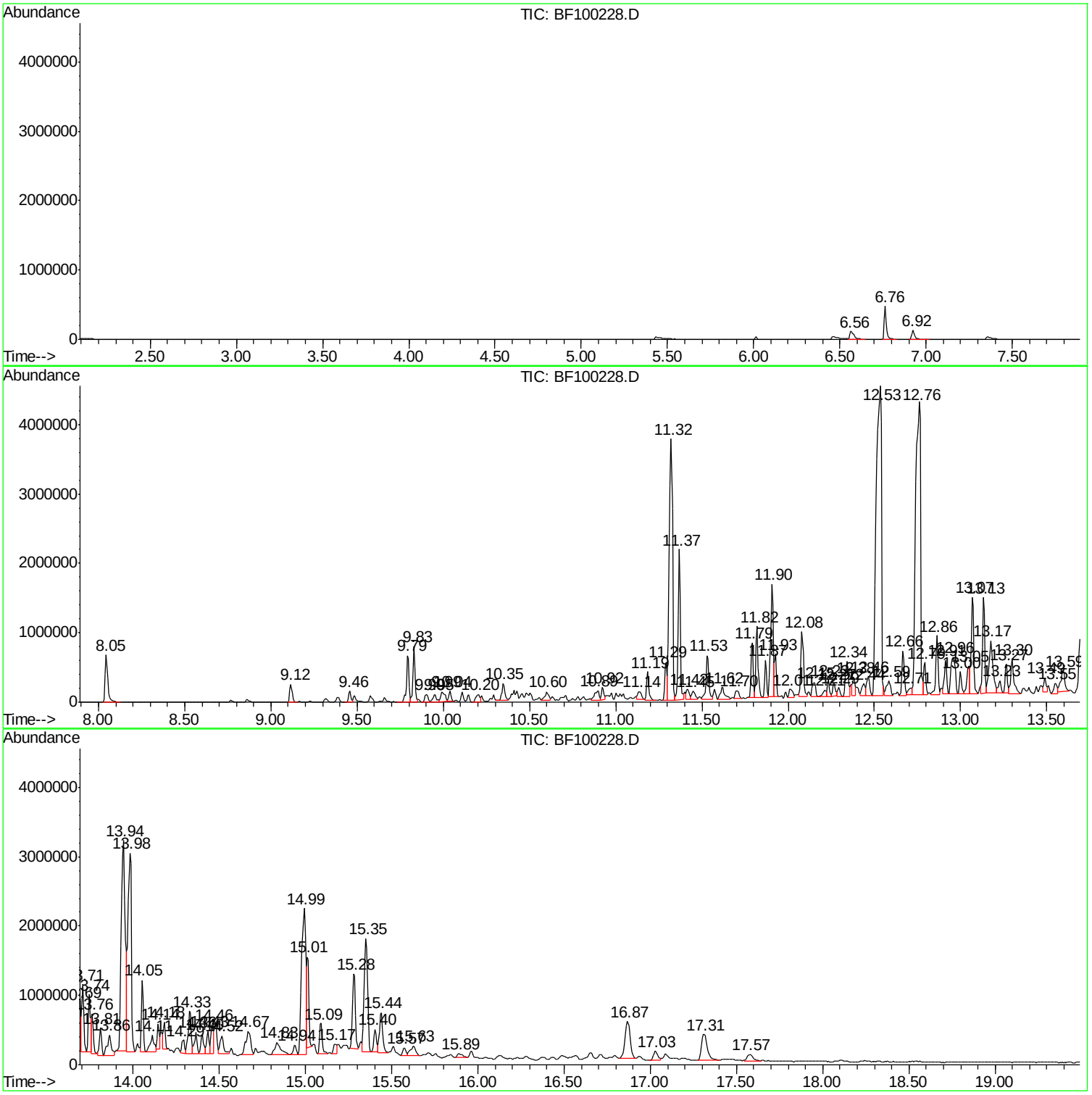
LSC Report - Integrated Chromatogram

Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :**
BNA_F
**ClientSampleId :**
EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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



Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

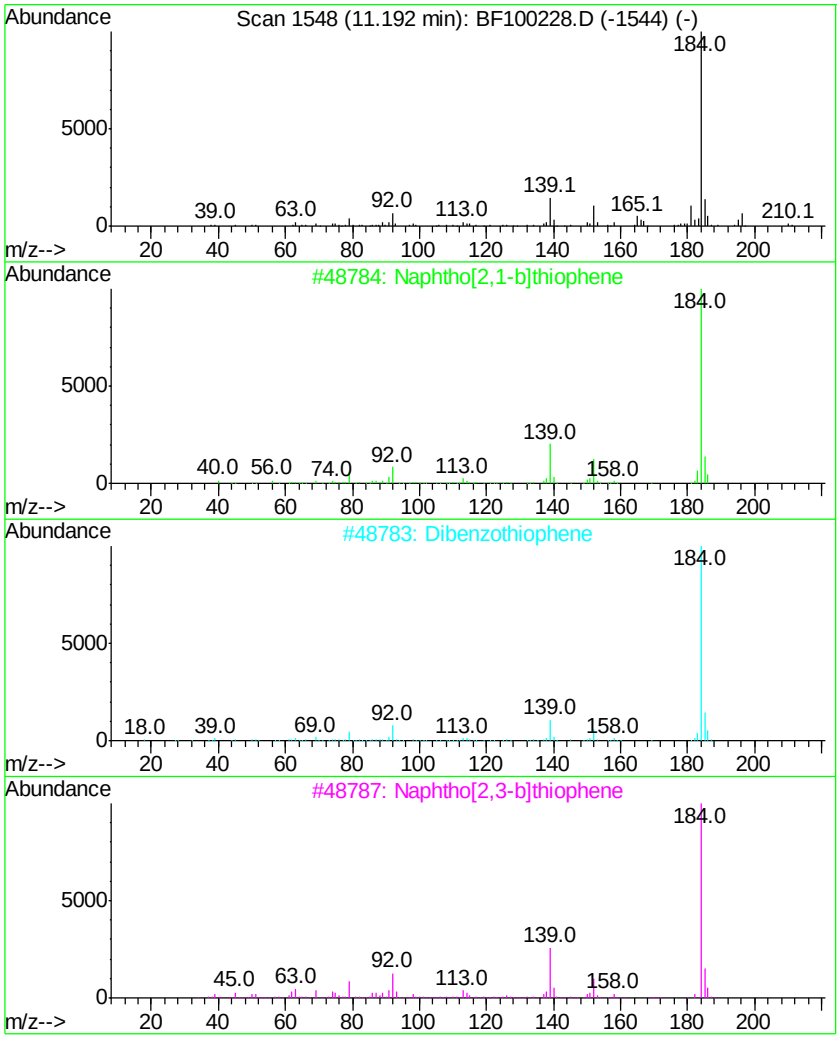
TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

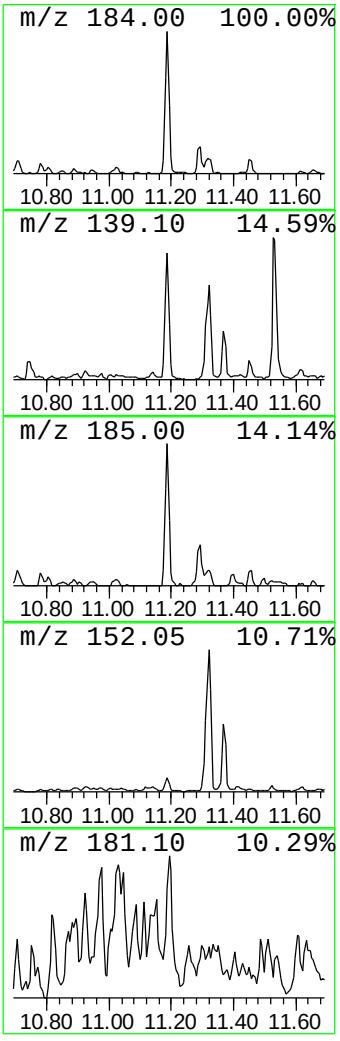
**********

Peak Number 1 Naphtho[2,1-b]thiophene Concentration Rank 12

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.19 | 14.31 ng | 393025 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Naphtho[2,1-b]thiophene | 184 | C12H8S | 000233-02-3 | 97 |
| 2 | Dibenzothiophene | 184 | C12H8S | 000132-65-0 | 97 |
| 3 | Naphtho[2,3-b]thiophene | 184 | C12H8S | 000268-77-9 | 94 |
| 4 | Naphtho[1,2-b]thiophene | 184 | C12H8S | 000234-41-3 | 94 |
| 5 | Azuleno(2,1-b)thiophene | 184 | C12H8S | 000248-13-5 | 91 |



Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

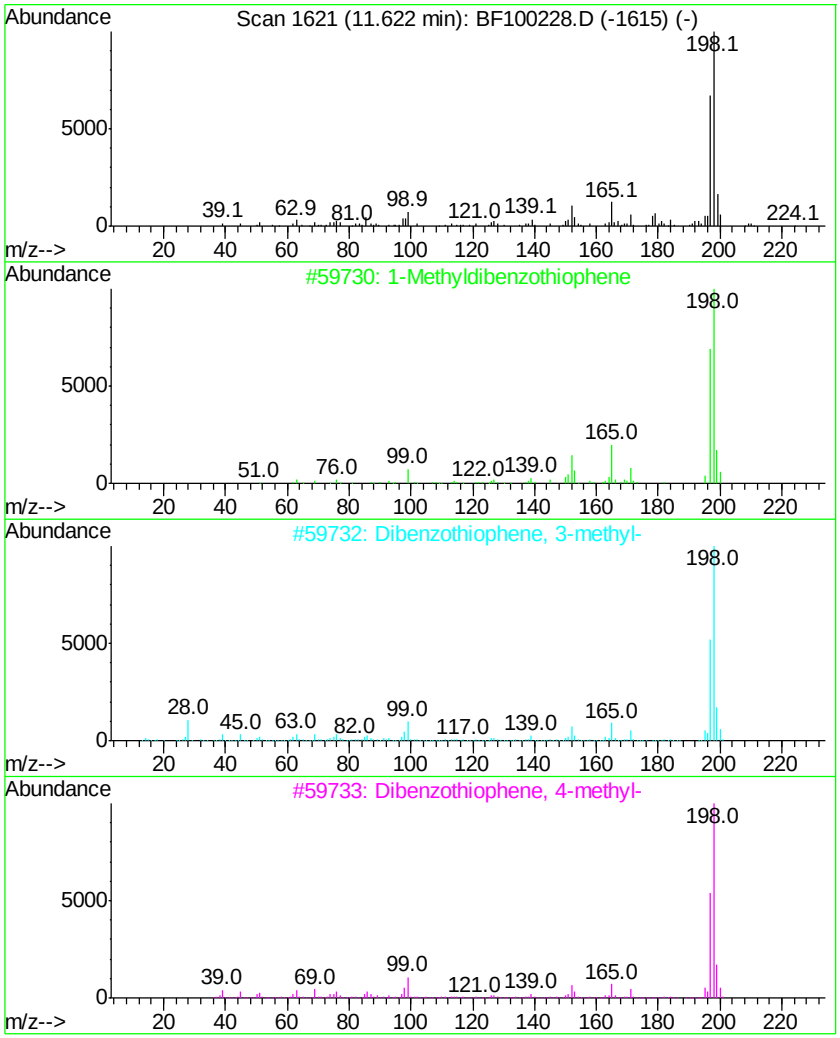
TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

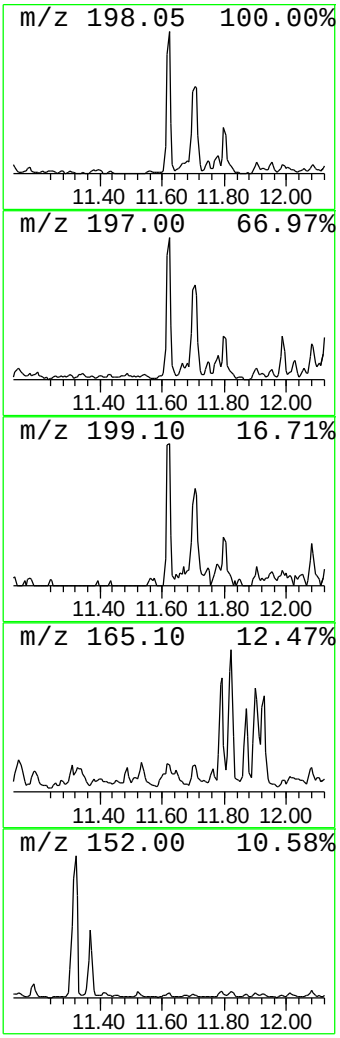
**********

Peak Number 2 1-Methyldibenzothiophene Concentration Rank 14

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.62 | 11.83 ng | 324767 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 1-Methyldibenzothiophene | 198 | C13H10S | 031317-07-4 | 95 |
| 2 | Dibenzothiophene, 3-methyl- | 198 | C13H10S | 016587-52-3 | 94 |
| 3 | Dibenzothiophene, 4-methyl- | 198 | C13H10S | 007372-88-5 | 90 |
| 4 | Benzene, 1-fluoro-4-(2-phenyleth... | 198 | C14H11F | 017404-69-2 | 72 |
| 5 | Benzenamine, 4,4'-methylenebis- | 198 | C13H14N2 | 000101-77-9 | 58 |



Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

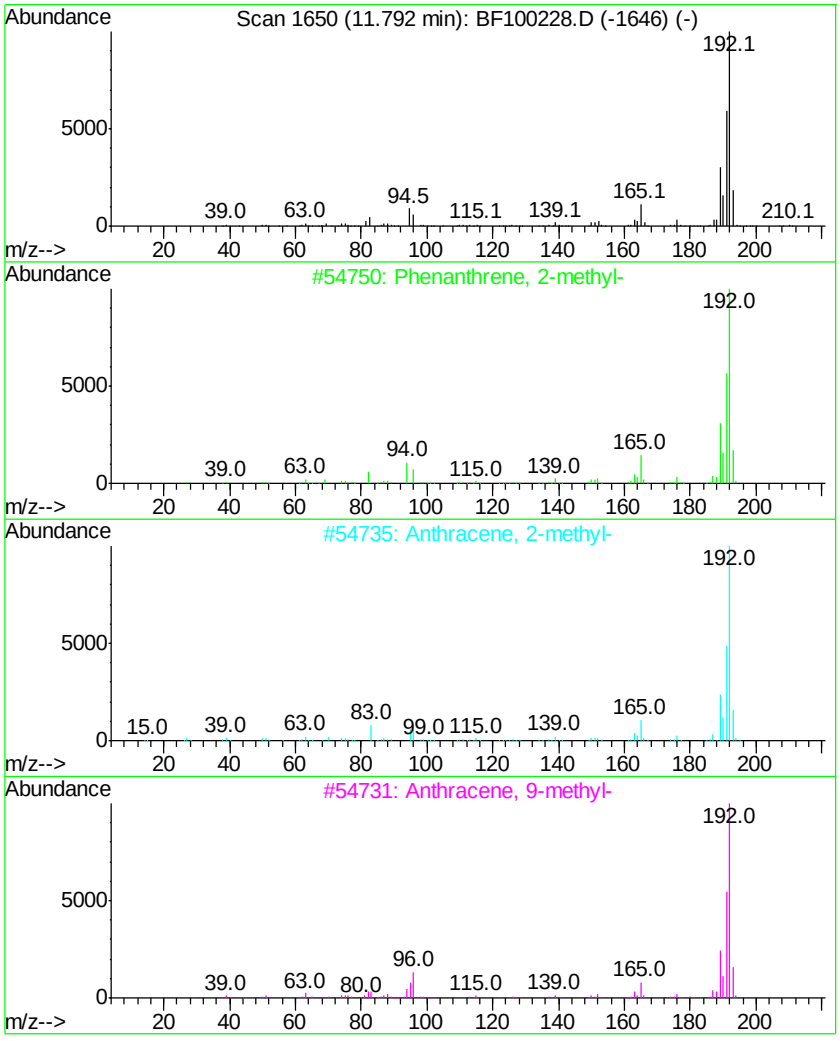
TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

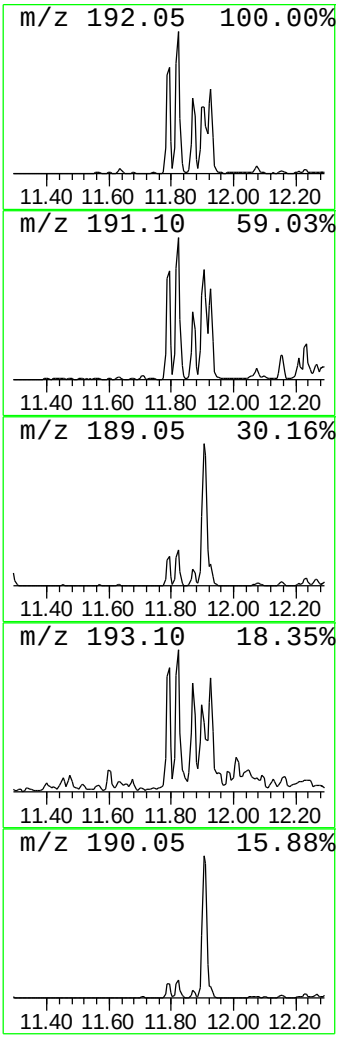
**********

Peak Number 3 Phenanthrene, 2-methyl- Concentration Rank 5

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.79 | 27.13 ng | 744939 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Phenanthrene, 2-methyl- | 192 | C15H12 | 002531-84-2 | 98 |
| 2 | Anthracene, 2-methyl- | 192 | C15H12 | 000613-12-7 | 96 |
| 3 | Anthracene, 9-methyl- | 192 | C15H12 | 000779-02-2 | 94 |
| 4 | 1H-Indene, 2-phenyl- | 192 | C15H12 | 004505-48-0 | 93 |
| 5 | Phenanthrene, 3-methyl- | 192 | C15H12 | 000832-71-3 | 93 |



Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

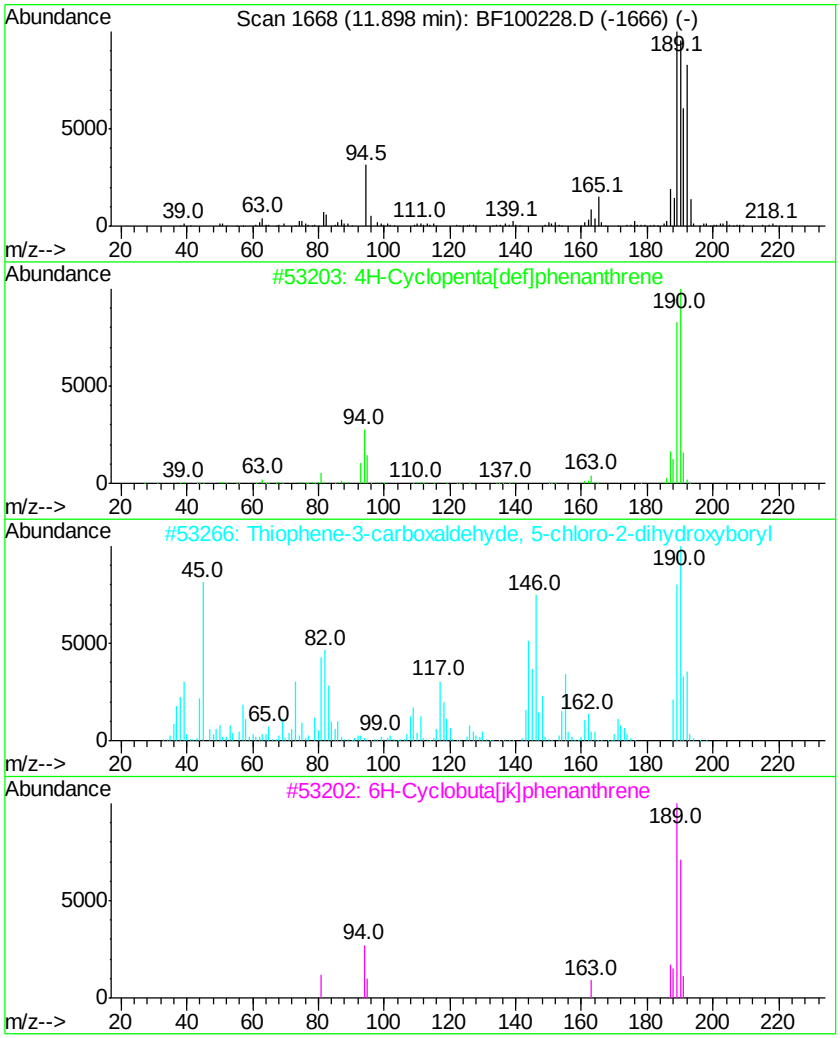
TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

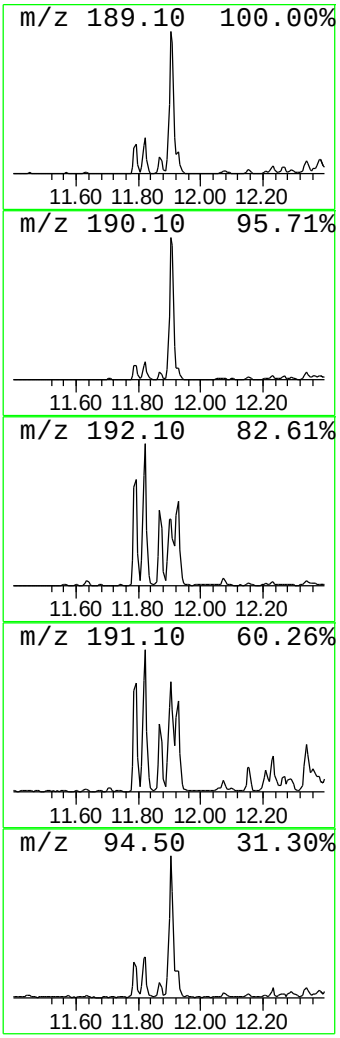
**********

Peak Number 6 4H-Cyclopenta[def]phenanthrene Concentration Rank 2

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.90 | 60.73 ng | 1667780 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 4H-Cyclopenta[def]phenanthrene | 190 | C15H10 | 000203-64-5 | 94 |
| 2 | Thiophene-3-carboxaldehyde, 5-ch... | 190 | C5H4BClO3S | 036155-87-0 | 59 |
| 3 | 6H-Cyclobuta[jk]phenanthrene | 190 | C15H10 | 083469-43-6 | 50 |
| 4 | 2,3,5,6-Tetramethylterephthalald... | 190 | C12H14O2 | 007072-01-7 | 50 |
| 5 | 2,2'-Bis(4,5-dimethylimidazole) | 190 | C10H14N4 | 069286-06-2 | 45 |



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Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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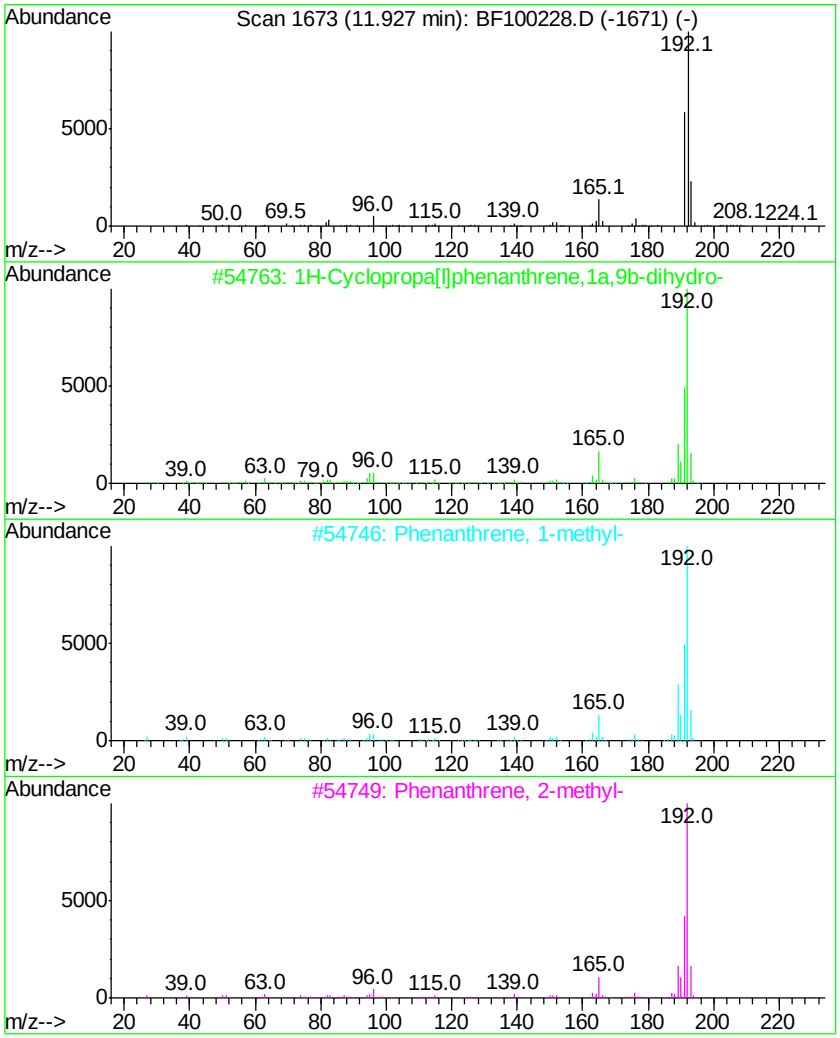
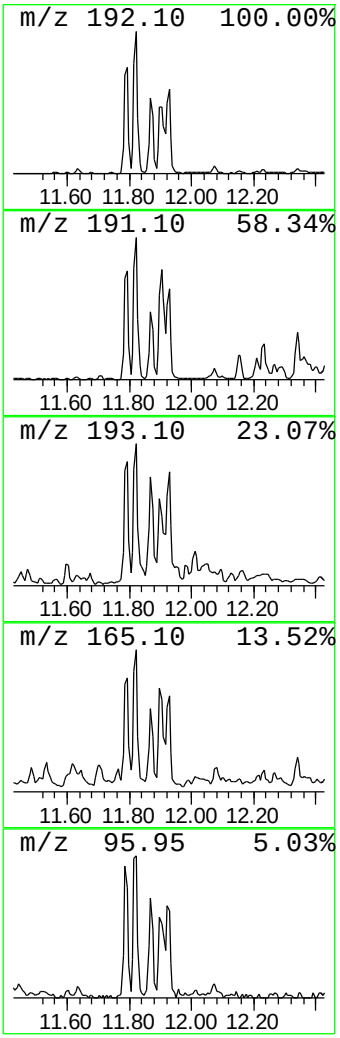
Peak Number 7 1H-Cyclopropa[l]phenanthren... Concentration Rank 9

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 11.93 | 18.14 ng | 498192 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 1H-Cyclopropa[l]phenanthrene,1a,... | 192 | C15H12 | 000949-41-7 | 91 |
| 2 | Phenanthrene, 1-methyl- | 192 | C15H12 | 000832-69-9 | 91 |
| 3 | Phenanthrene, 2-methyl- | 192 | C15H12 | 002531-84-2 | 91 |
| 4 | Phenanthrene, 4-methyl- | 192 | C15H12 | 000832-64-4 | 87 |
| 5 | 1H-Indene, 2-phenyl- | 192 | C15H12 | 004505-48-0 | 87 |



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Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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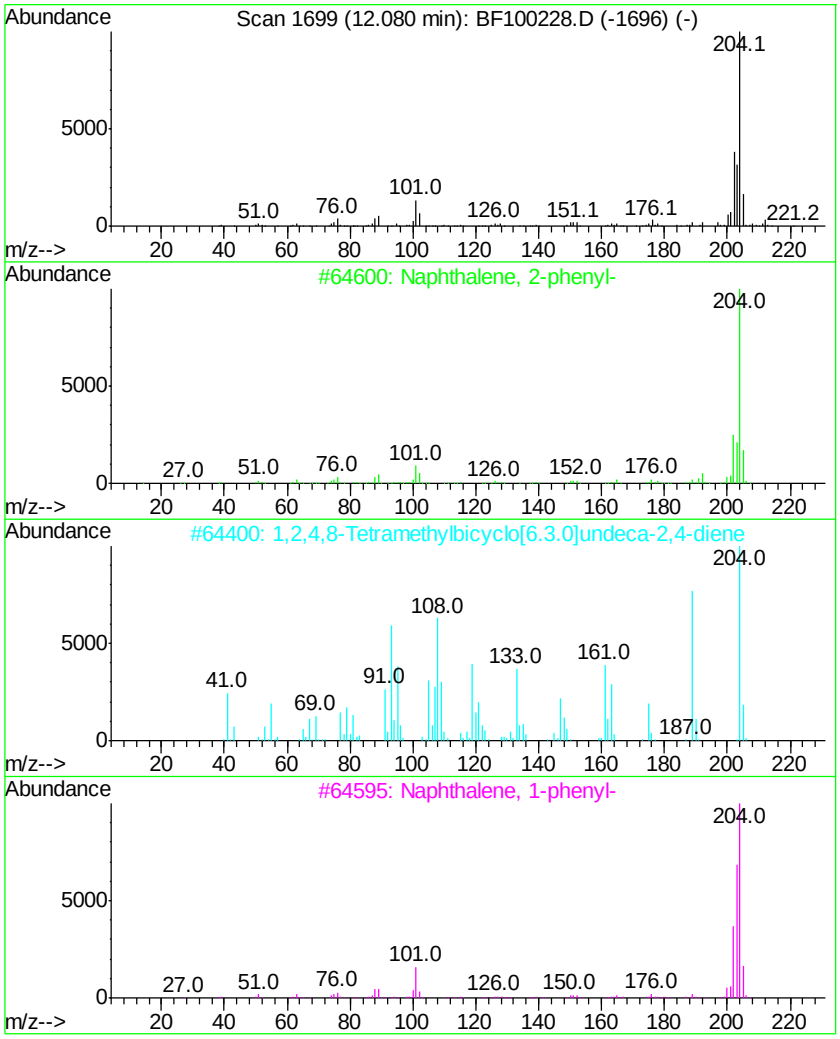
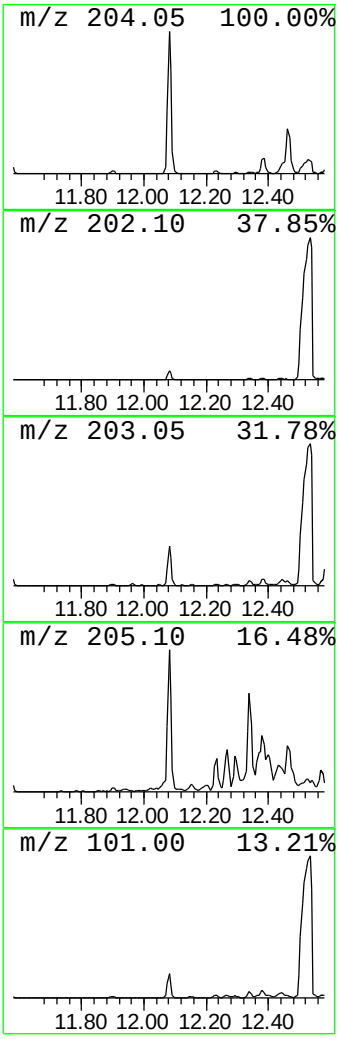
Peak Number 8 Naphthalene, 2-phenyl- Concentration Rank 4

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.08 | 31.06 ng | 852943 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Naphthalene, 2-phenyl- | 204 | C16H12 | 000612-94-2 | 89 |
| 2 | 1,2,4,8-Tetramethylbicyclo[6.3.0... | 204 | C15H24 | 137235-51-9 | 86 |
| 3 | Naphthalene, 1-phenyl- | 204 | C16H12 | 000605-02-7 | 78 |
| 4 | 5,16[1',2']:8,13[1'',2'']-Dibenz... | 408 | C32H24 | 005672-97-9 | 78 |
| 5 | Tricyclo[8.2.2.2(4,7)]hexadeca-2... | 204 | C16H12 | 006572-60-7 | 64 |



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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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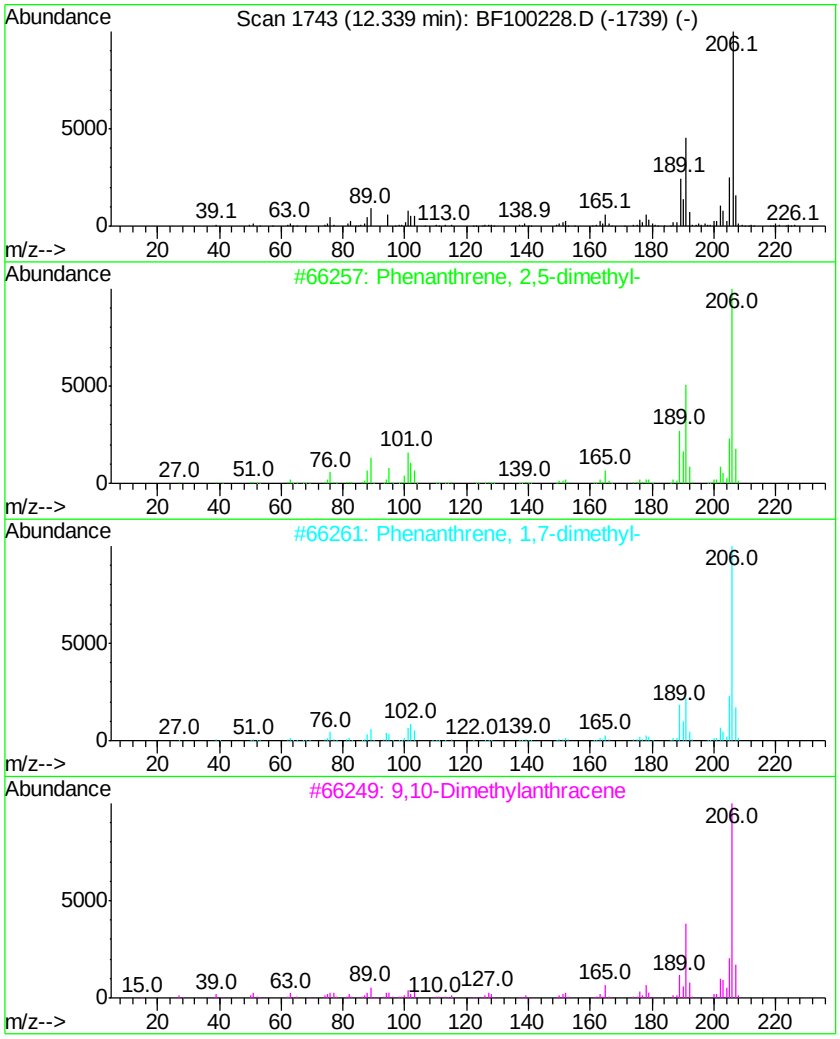
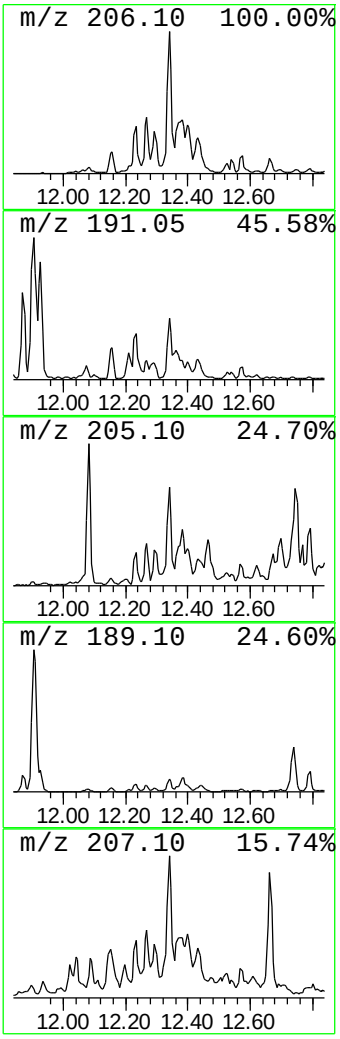
Peak Number 9 Phenanthrene, 2,5-dimethyl- Concentration Rank 8

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.34 | 19.73 ng | 541752 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Phenanthrene, 2,5-dimethyl- | 206 | C16H14 | 003674-66-6 | 97 |
| 2 | Phenanthrene, 1,7-dimethyl- | 206 | C16H14 | 000483-87-4 | 93 |
| 3 | 9,10-Dimethylanthracene | 206 | C16H14 | 000781-43-1 | 93 |
| 4 | Phenanthrene, 2,3-dimethyl- | 206 | C16H14 | 003674-65-5 | 93 |
| 5 | 1,3-Diphenyl-3-methylcyclopropene | 206 | C16H14 | 086544-79-8 | 90 |



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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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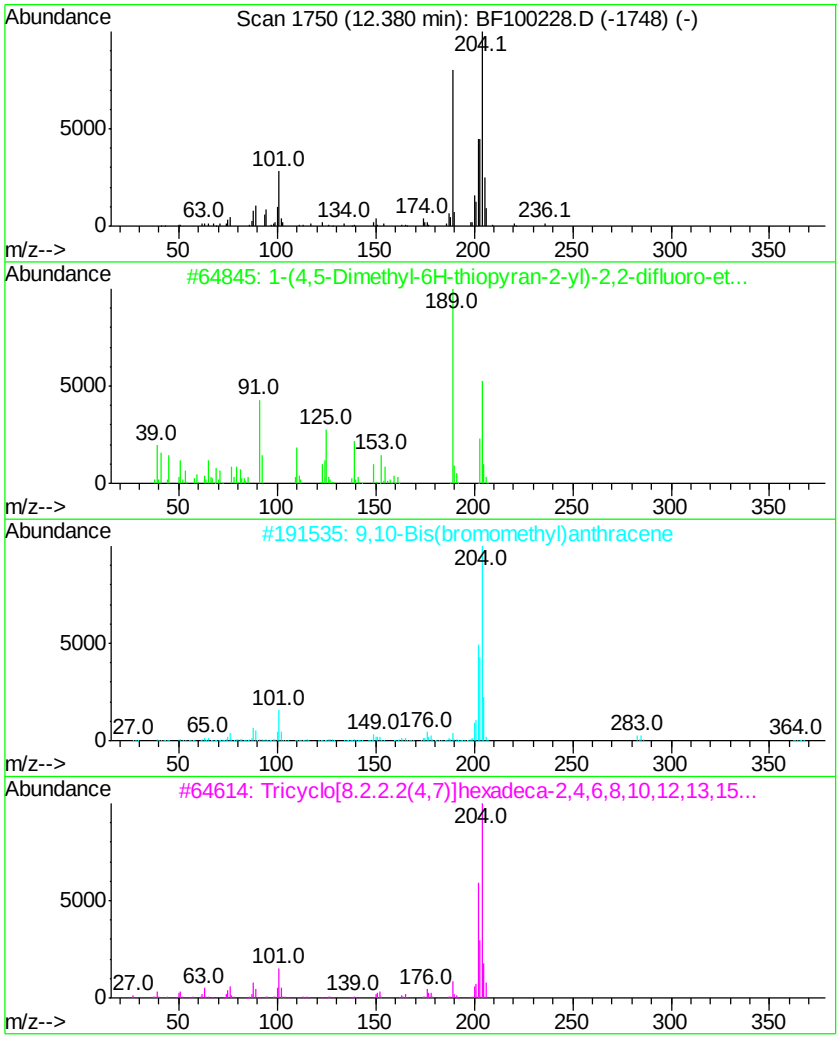
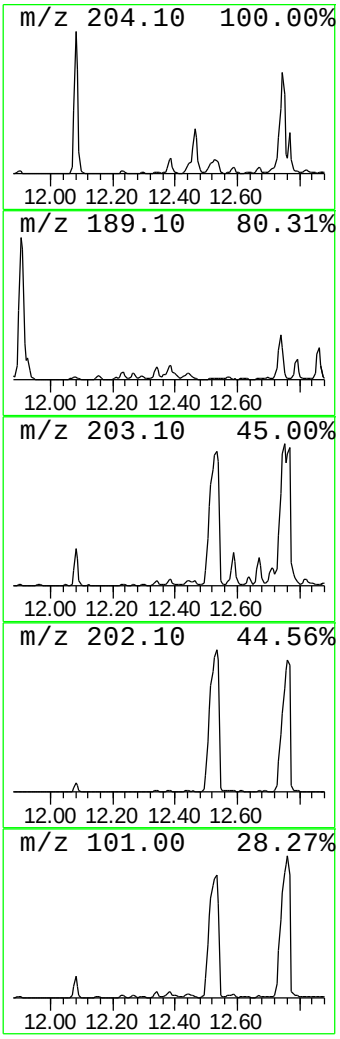
Peak Number 10 1-(4,5-Dimethyl-6H-thiopyra... Concentration Rank 17

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.38 | 10.34 ng | 284038 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 1-(4,5-Dimethyl-6H-thiopyran-2-y... | 204 | C9H10F2OS | 1000318-25-0 | 53 |
| 2 | 9,10-Bis(bromomethyl)anthracene | 362 | C16H12Br2 | 034373-96-1 | 53 |
| 3 | Tricyclo[8.2.2.2(4,7)]hexadeca-2... | 204 | C16H12 | 006572-60-7 | 43 |
| 4 | Acephenanthrylene, 4,5-dihydro- | 204 | C16H12 | 006232-48-0 | 38 |
| 5 | Naphthalene, 2-phenyl- | 204 | C16H12 | 000612-94-2 | 38 |



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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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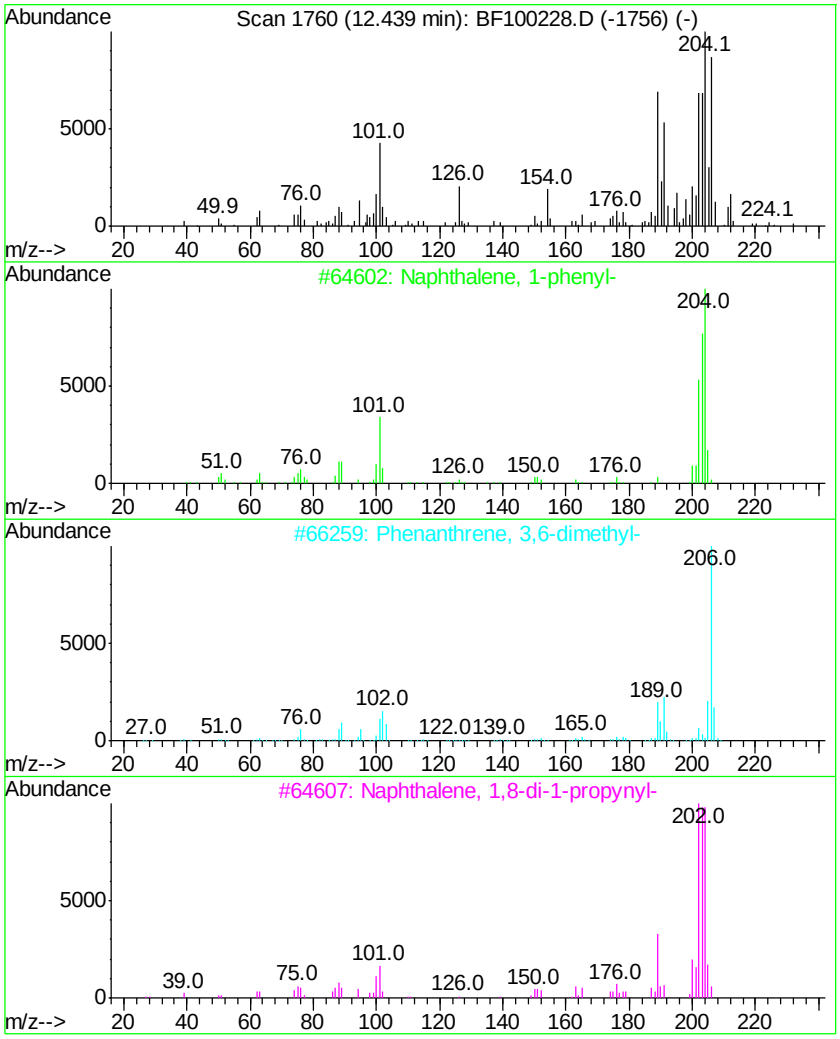
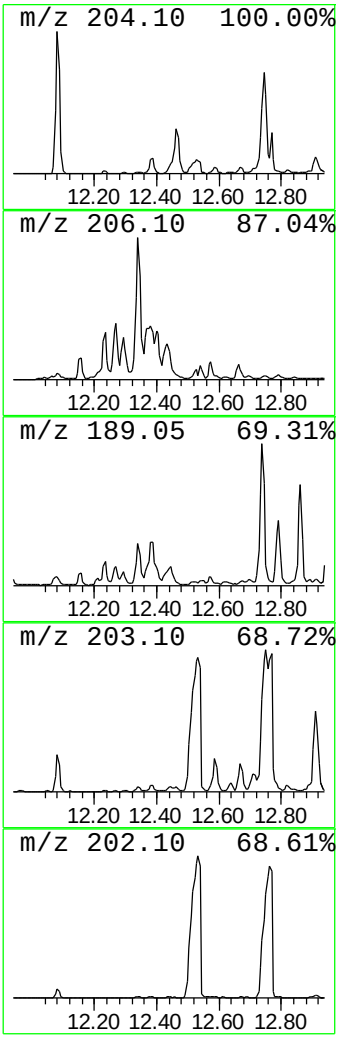
Peak Number 11 Naphthalene, 1-phenyl- Concentration Rank 19

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.44 | 9.91 ng | 272075 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Naphthalene, 1-phenyl- | 204 | C16H12 | 000605-02-7 | 55 |
| 2 | Phenanthrene, 3,6-dimethyl- | 206 | C16H14 | 001576-67-6 | 45 |
| 3 | Naphthalene, 1,8-di-1-propynyl- | 204 | C16H12 | 022360-77-6 | 42 |
| 4 | Pyrene, 4,5-dihydro- | 204 | C16H12 | 006628-98-4 | 35 |
| 5 | Anthracene, 9-ethenyl- | 204 | C16H12 | 002444-68-0 | 35 |



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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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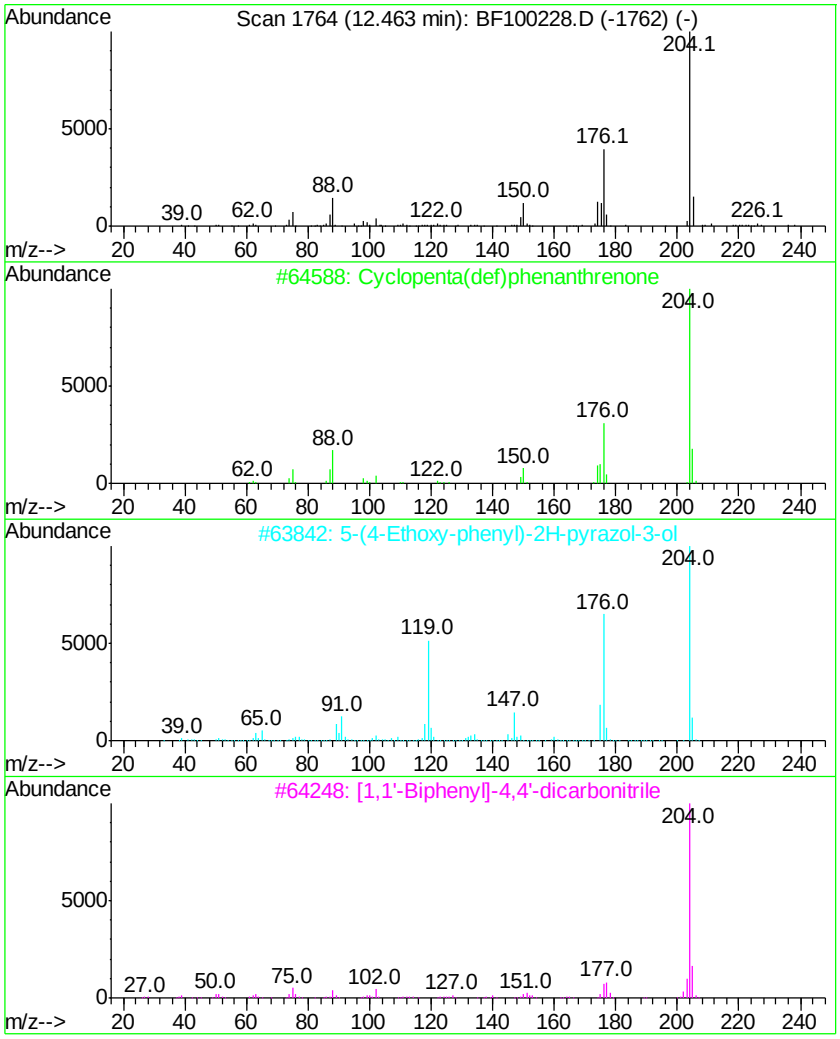
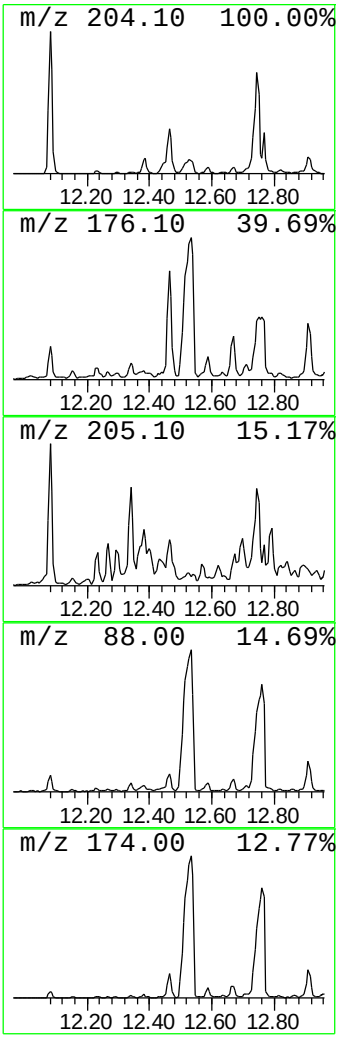
Peak Number 12 Cyclopenta(def)phenanthrenone Concentration Rank 18

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.46 | 9.98 ng | 274132 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Cyclopenta(def)phenanthrenone | 204 | C15H8O | 005737-13-3 | 96 |
| 2 | 5-(4-Ethoxy-phenyl)-2H-pyrazol-3-ol | 204 | C11H12N2O2 | 1000278-26-8 | 59 |
| 3 | [1,1'-Biphenyl]-4,4'-dicarbonitrile | 204 | C14H8N2 | 001591-30-6 | 47 |
| 4 | 4(equat)-(but-3-en-1-ynyl)-2(axi... | 219 | C14H21NO | 038423-22-2 | 45 |
| 5 | 3,4-Biphenyldicarbonitrile | 204 | C14H8N2 | 004128-63-6 | 42 |



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Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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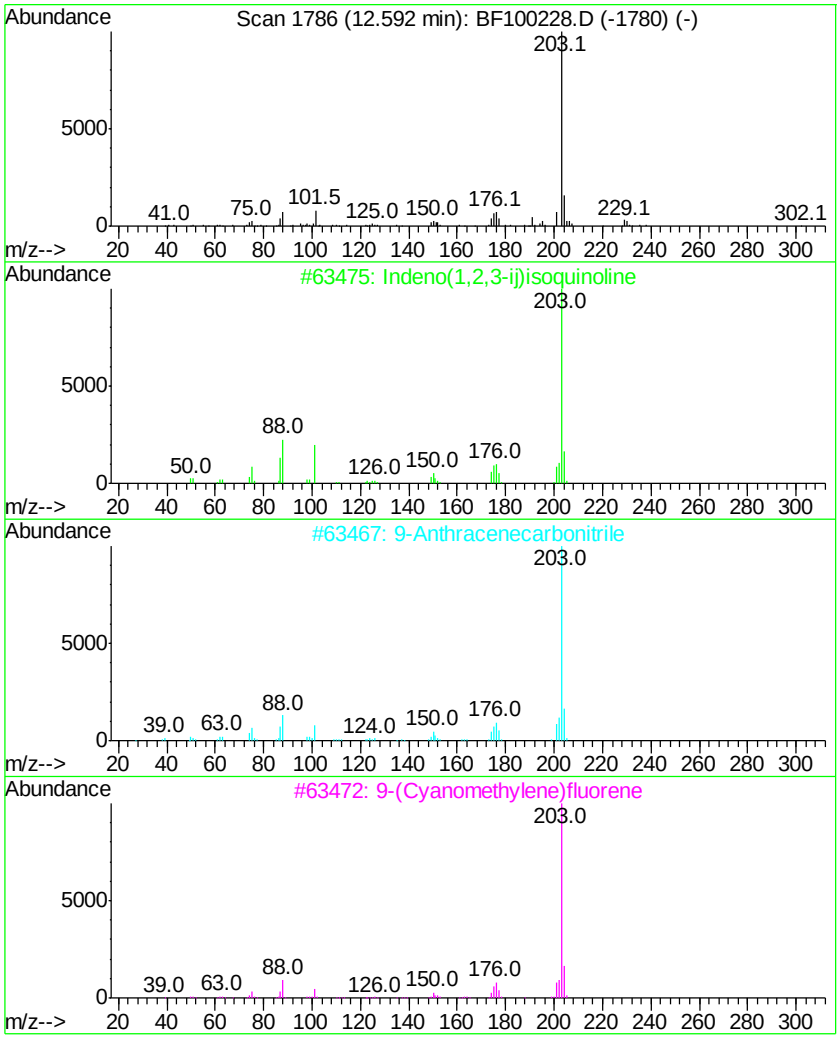
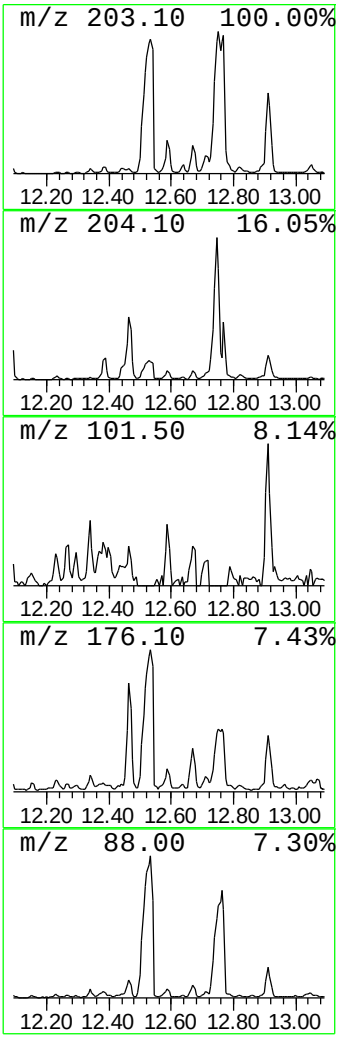
Peak Number 13 Indeno(1,2,3-ij)isoquinoline Concentration Rank 15

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 12.59 | 11.15 ng | 306062 | Phenanthrene-d10 | 11.29 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Indeno(1,2,3-ij)isoquinoline | 203 | C15H9N | 000206-56-4 | 93 |
| 2 | 9-Anthracenecarbonitrile | 203 | C15H9N | 001210-12-4 | 93 |
| 3 | 9-(Cyanomethylene)fluorene | 203 | C15H9N | 004425-74-5 | 91 |
| 4 | Naphtho(2,1,8-def)quinoline | 203 | C15H9N | 000313-80-4 | 90 |
| 5 | 9-Cyanophenanthrene | 203 | C15H9N | 002510-55-6 | 90 |



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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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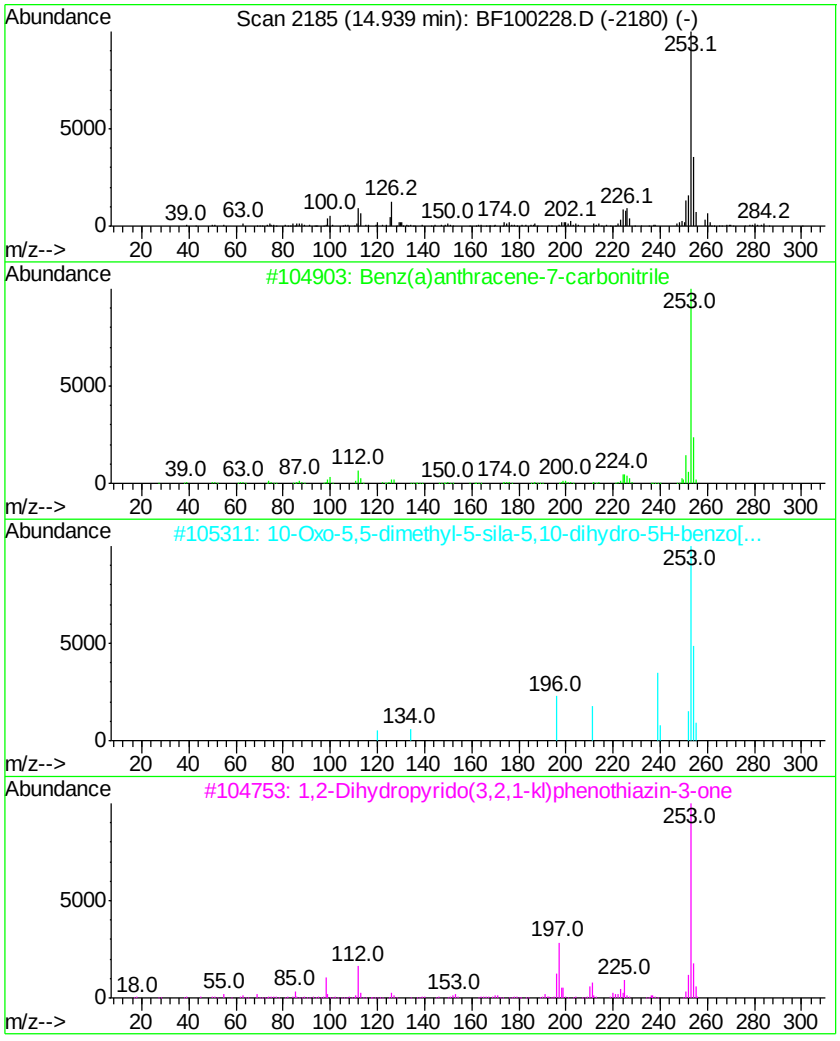
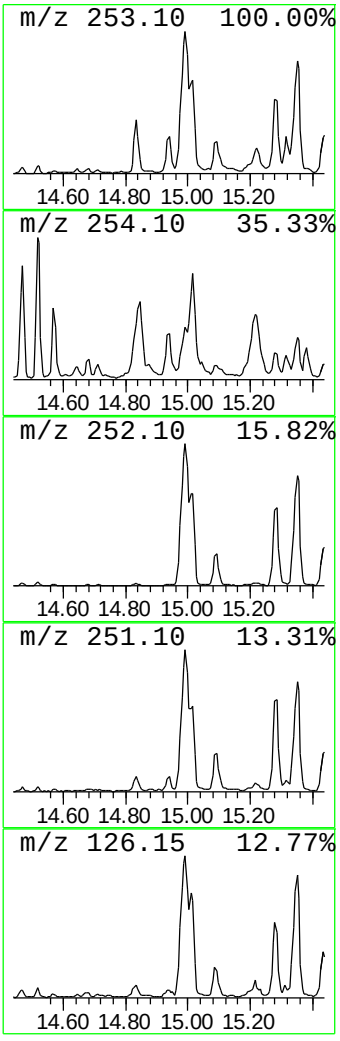
Peak Number 15 Benz(a)anthracene-7-carboni... Concentration Rank 20

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 14.94 | 9.84 ng | 189047 | Perylene-d12 | 15.40 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benz(a)anthracene-7-carbonitrile | 253 | C19H11N | 007476-08-6 | 76 |
| 2 | 10-Oxo-5,5-dimethyl-5-sila-5,10-... | 254 | C14H14N2OSi | 089052-45-9 | 53 |
| 3 | 1,2-Dihydropyrido(3,2,1-kl)pheno... | 253 | C15H11NOS | 069513-42-4 | 53 |
| 4 | 1,2'-Binaphthalene | 254 | C20H14 | 004325-74-0 | 43 |
| 5 | 2H-1,4-Benzothiazin-2-acetic aci... | 253 | C11H11NO2S2 | 002832-88-4 | 43 |



Library Search Compound Report

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Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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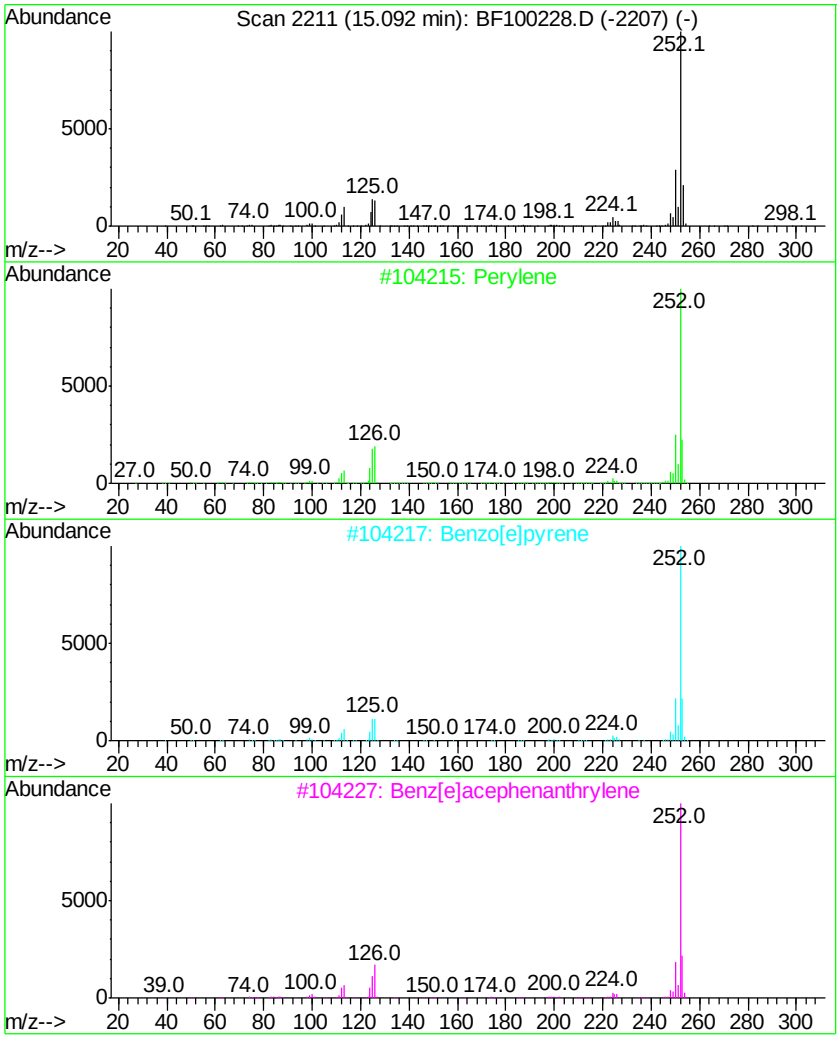
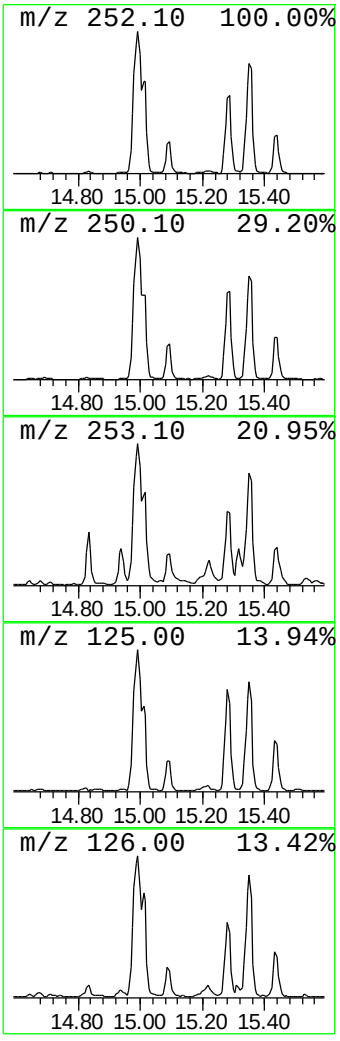
Peak Number 16 Perylene Concentration Rank 6

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 15.09 | 27.10 ng | 520422 | Perylene-d12 | 15.40 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Perylene | 252 | C20H12 | 000198-55-0 | 96 |
| 2 | Benzo[e]pyrene | 252 | C20H12 | 000192-97-2 | 95 |
| 3 | Benz[e]acephenanthrylene | 252 | C20H12 | 000205-99-2 | 94 |
| 4 | Benzo[a]pyrene | 252 | C20H12 | 000050-32-8 | 93 |
| 5 | Benzo[j]fluoranthene | 252 | C20H12 | 000205-82-3 | 91 |



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Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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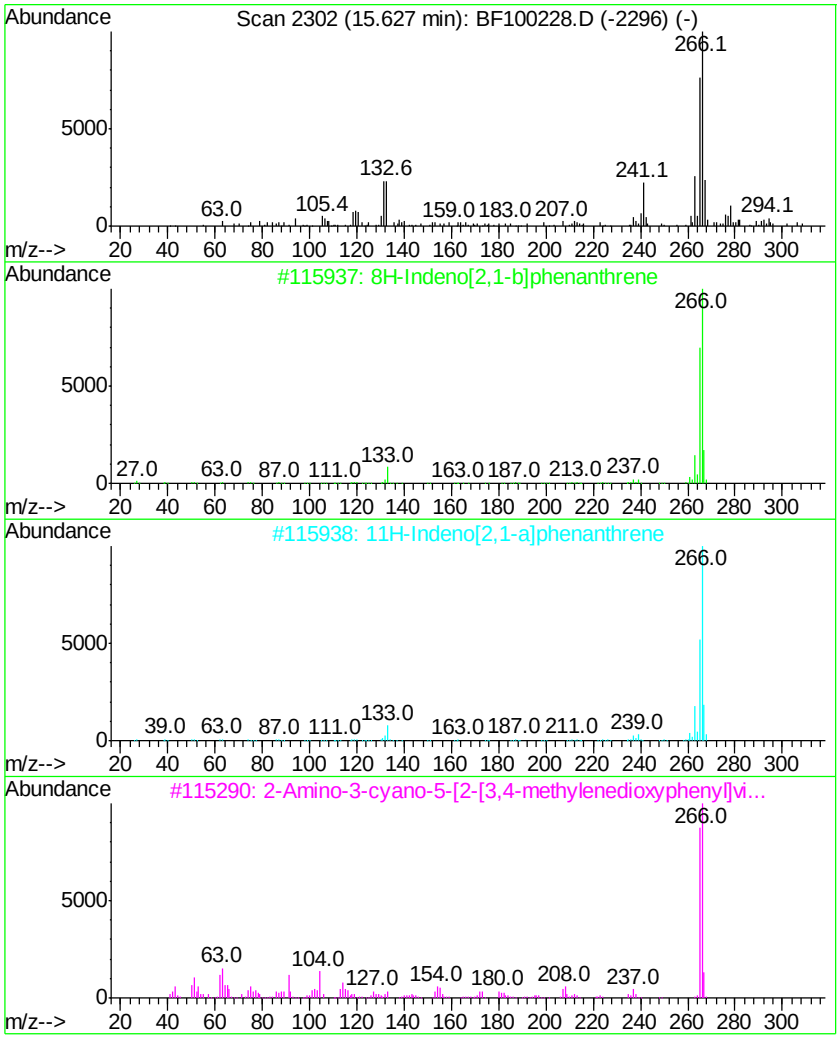
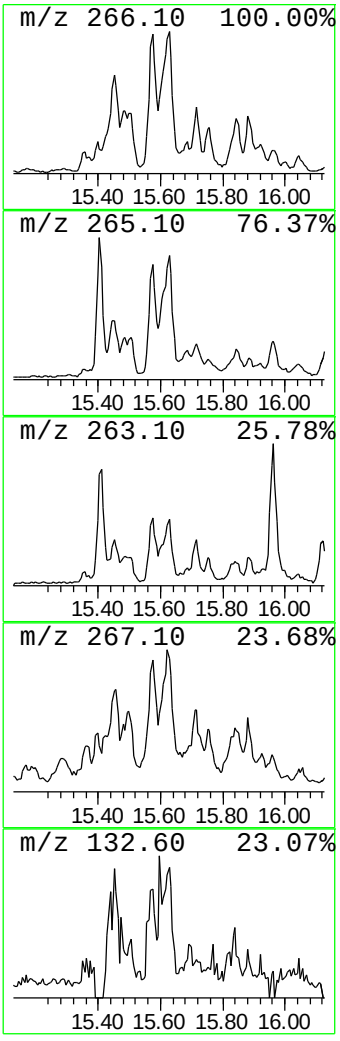
Peak Number 18 8H-Indeno[2,1-b]phenanthrene Concentration Rank 11

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 15.63 | 14.35 ng | 275657 | Perylene-d12 | 15.40 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | 8H-Indeno[2,1-b]phenanthrene | 266 | C21H14 | 000241-28-1 | 64 |
| 2 | 11H-Indeno[2,1-a]phenanthrene | 266 | C21H14 | 000220-97-3 | 50 |
| 3 | 2-Amino-3-cyano-5-[2-[3,4-methyl... | 266 | C14H10N4O2 | 1000252-72-1 | 49 |
| 4 | 13H-Dibenzo[a,h]fluorene | 266 | C21H14 | 000239-85-0 | 45 |
| 5 | 4,6-Dimethyl-4'-hydroxy-2-benzyl... | 266 | C17H14O3 | 002567-73-9 | 40 |



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Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

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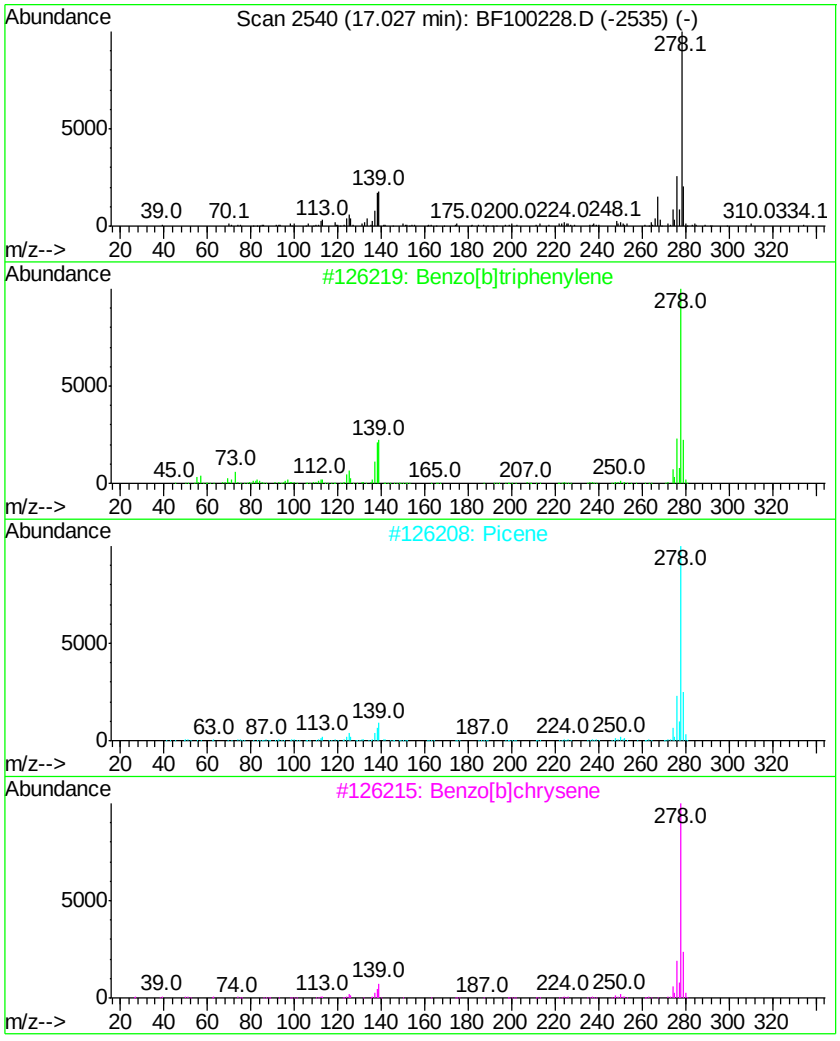
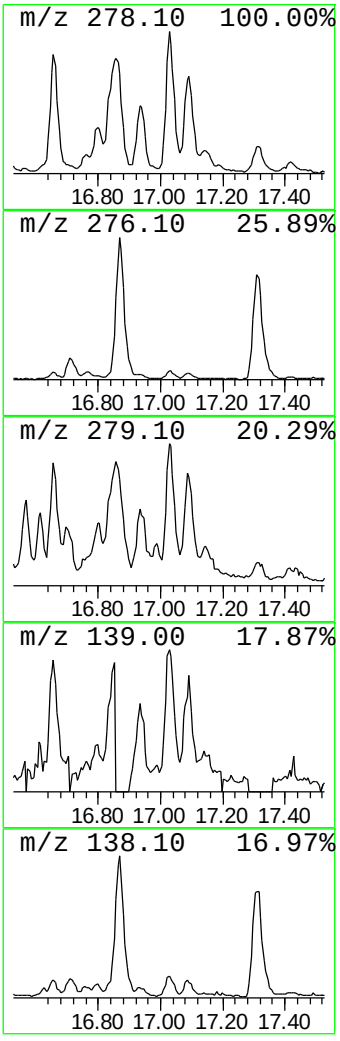
Peak Number 19 Benzo[b]triphenylene Concentration Rank 13

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 17.03 | 12.88 ng | 247329 | Perylene-d12 | 15.40 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Benzo[b]triphenylene | 278 | C22H14 | 000215-58-7 | 96 |
| 2 | Picene | 278 | C22H14 | 000213-46-7 | 93 |
| 3 | Benzo[b]chrysene | 278 | C22H14 | 000214-17-5 | 89 |
| 4 | Dibenz[a,h]anthracene | 278 | C22H14 | 000053-70-3 | 89 |
| 5 | Naphtho[1,2-a]anthracene | 278 | C22H14 | 000195-06-2 | 89 |



Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

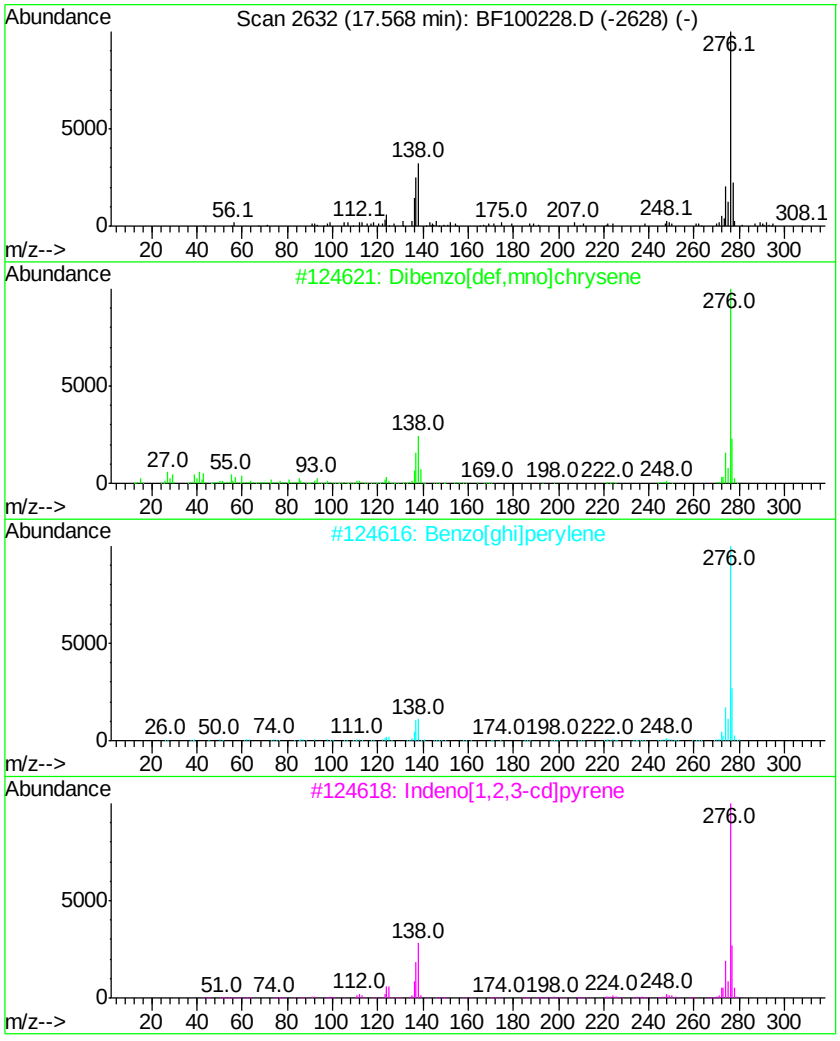
TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

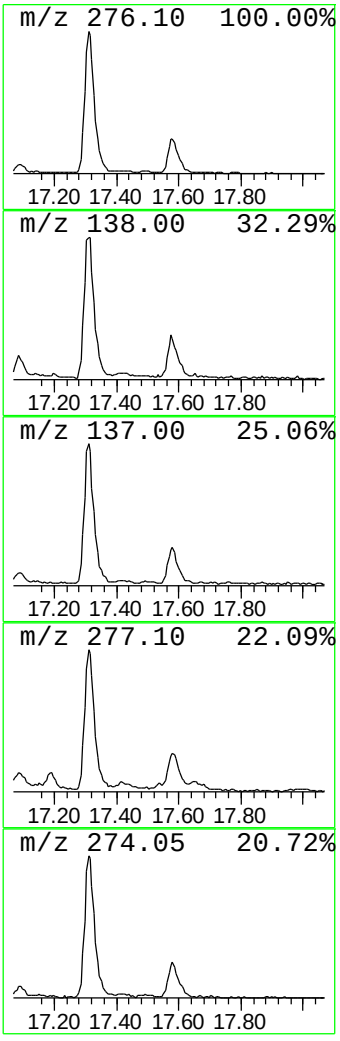
**********

Peak Number 20 Dibenzo[def,mno]chrysene Concentration Rank 16

| R.T. | EstConc | Area | Relative to ISTD | R.T. |
|---|---|---|---|---|
| 17.57 | 10.69 ng | 205398 | Perylene-d12 | 15.40 |

| Hit# of 5 | Tentative ID | MW | MolForm | CAS# | Qual |
|---|---|---|---|---|---|
| 1 | Dibenzo[def,mno]chrysene | 276 | C22H12 | 000191-26-4 | 95 |
| 2 | Benzo[ghi]perylene | 276 | C22H12 | 000191-24-2 | 91 |
| 3 | Indeno[1,2,3-cd]pyrene | 276 | C22H12 | 000193-39-5 | 90 |
| 4 | Indeno[1,2,3-cd]fluoranthene | 276 | C22H12 | 000193-43-1 | 72 |
| 5 | Oxalic acid, diamide, N,N'-bis(4... | 276 | C14H10F2N2O2 | 1000309-42-9 | 50 |



Tentatively Identified Compound (LSC) summary

Data Path : \\74.0.250.170\SVOASRV\HPCHEM1\BNA_F\DATA\BF110517\
Data File : BF100228.D
Acq On : 5 Nov 2017 17:12
Operator : SJ/JU
Sample : I6257-01 10X
Misc :
ALS Vial : 14 Sample Multiplier: 1

**Instrument :** BNA_F
**ClientSampleId :** EPE-110-1(0-5)

Quant Method : Z:\HPCHEM1\BNA_F\METHODS\8270-BF102317.M
Quant Title : ASP BNA STANDARDS FOR 5 POINT CALIBRATION

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

| | | | | | Internal Standard | | | |
|---|---|---|---|---|---|---|---|---|
| TIC Top Hit name | RT | EstConc | Units | Response | # | RT | Resp | Conc |
| Naphtho[2,1-b]thi... | 11.19 | 14.3 | ng | 393025 | 4 | 11.29 | 549231 | 20.0 |
| 1-Methyldibenzoth... | 11.62 | 11.8 | ng | 324767 | 4 | 11.29 | 549231 | 20.0 |
| Phenanthrene, 2-m... | 11.79 | 27.1 | ng | 744939 | 4 | 11.29 | 549231 | 20.0 |
| 4H-Cyclopenta[def... | 11.90 | 60.7 | ng | 1667780 | 4 | 11.29 | 549231 | 20.0 |
| 1H-Cyclopropa[l]p... | 11.93 | 18.1 | ng | 498192 | 4 | 11.29 | 549231 | 20.0 |
| Naphthalene, 2-ph... | 12.08 | 31.1 | ng | 852943 | 4 | 11.29 | 549231 | 20.0 |
| Phenanthrene, 2,5... | 12.34 | 19.7 | ng | 541752 | 4 | 11.29 | 549231 | 20.0 |
| 1-(4,5-Dimethyl-6... | 12.38 | 10.3 | ng | 284038 | 4 | 11.29 | 549231 | 20.0 |
| Naphthalene, 1-ph... | 12.44 | 9.9 | ng | 272075 | 4 | 11.29 | 549231 | 20.0 |
| Cyclopenta(def)ph... | 12.46 | 10.0 | ng | 274132 | 4 | 11.29 | 549231 | 20.0 |
| Indeno(1,2,3-ij)i... | 12.59 | 11.2 | ng | 306062 | 4 | 11.29 | 549231 | 20.0 |
| Benz(a)anthracene... | 14.94 | 9.8 | ng | 189047 | 6 | 15.40 | 384110 | 20.0 |
| Perylene | 15.09 | 27.1 | ng | 520422 | 6 | 15.40 | 384110 | 20.0 |
| 8H-Indeno[2,1-b]p... | 15.63 | 14.4 | ng | 275657 | 6 | 15.40 | 384110 | 20.0 |
| Benzo[b]triphenylene | 17.03 | 12.9 | ng | 247329 | 6 | 15.40 | 384110 | 20.0 |
| Dibenzo[def,mno]c... | 17.57 | 10.7 | ng | 205398 | 6 | 15.40 | 384110 | 20.0 |