NISTIR 7792

Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment: Description and Results for Marine Sediment QA10SED01

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Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment: Description and Results for Marine Sediment QA10SED01

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September 2011

U.S. Department of Commerce
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National Institute of Standards and Technology
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ABSTRACT

To support natural resource damage assessment (NRDA) in response to the Deepwater Horizon (DWH) oil spill in the Gulf of Mexico, a large number of coastal sediment and tissue (i.e., oysters) samples have been collected outside of the spill zone to define baseline environmental conditions prior to being exposed to oil. Analysis of oiled sediments and oil-exposed oysters will continue for the foreseeable future. To support these efforts, NOAA will require additional analytical laboratories to perform NRDA sample analyses To compare the data among these laboratories, inter-laboratory comparison studies have been initiated with the results from the first exercise, marine sediment QA10SED01 reported here. In this exercise, selected polycyclic aromatic hydrocarbons (PAHs), alkylated PAHs, hopanes, and steranes were determined in the exercise material, which consisted of wet frozen sediment, and in SRM 1941b Organics in Marine Sediment. The results from this first exercise are reported along with a summary of the analytical methods used.

INTRODUCTION

On April 20, 2010, a fatal explosion, fire, and sinking of BP's Deepwater Horizon drilling rig occurred approximately 40 miles off the Louisiana coast. The disaster resulted in the discharge of tens of thousands of barrels of oil per day from the seafloor into the Gulf of Mexico. In what has become the worst offshore oil spill in U.S. history, a wide expanse and variety of natural resources have become exposed and potentially impacted by oil and other consequences of the spill. Under the Oil Pollution Act, those responsible for an oil spill are liable for clean-up and for natural resource damages. Several federal and state agencies are conducting a natural resource damage assessment (NRDA) to determine what resources have been injured and what uses of the resources have been lost due to the spill.

To support this NRDA, the trustees and BP's representatives have been collecting and analyzing tens of thousands of environmental samples to characterize both pre-spill and post-spill environmental conditions. A broad range of sample types have been collected including oil in various forms, water, sediment, and biota. For the foreseeable future, subsequent sampling and analysis will be required. In addition, numerous other entities have collected environmental samples for hydrocarbon analysis and submitted them to different laboratories throughout the country.

In the past the National Institute of Standards and Technology (NIST) has helped benchmark and improve the quality of analytical data gathered on the marine environment by administering interlaboratory comparison exercises. To compare the data among the many laboratories analyzing samples from this spill, the National Oceanic and Atmospheric Administration (NOAA) has requested that NIST coordinate interlaboratory comparison studies with sediment, crude oil, and bivalve tissue being the three matrices of interest. These studies are performance-based with each laboratory using its current methods for analysis of similar matrices that it would use for its program customers. The target analytes for each study are selected polycyclic aromatic hydrocarbons (PAHs), alkylated PAHs, hopanes, and steranes. More than three dozen laboratory facilities were contacted by NOAA and invited to participate in the studies; for all three matrix studies a large number of laboratories agreed to receive samples and report their analytical results to NIST.

The data received from 33 laboratories for the marine sediment QA10SED01 are summarized in this report along with summaries of the analytical methods used by each laboratory. Numerical indices, z-

and p-scores, are used to assess and track laboratory performances for accuracy and precision, respectively, and to provide a mechanism for assessing the comparability of data produced by the participating laboratories for the target analytes.

SOURCE OF MATERIAL

The sediment material used for the exercise consisted of the fine-sieved fraction remaining from the preparation of SRM 1944 New York/New Jersey Waterway Sediment [1]. The sediment was collected from six sites in the vicinity of New York Bay and Newark Bay in October 1994 using an epoxy-coated modified Van Veen-type grab sampler designed to sample the sediment to a depth of 10 cm. A total of approximately 2100 kg of wet sediment was collected from the six sites. The sediment was freeze-dried, sieved (nominally 250 µm to 61 µm was used for SRM 1944 and <250 µm was used for QA10SED01), homogenized in a cone blender, radiation sterilized at an estimated minimum dose of 3.2 megarads (^{60}Co). The fine-sieved fraction (<250 µm) was wetted by the addition of approximately 47% (mass fraction) of HPLC-grade water. For the interlaboratory study, the participants received wet frozen sediment. The mean water composition was 47.4% with a standard deviation of 0.2%.

SAMPLE DISTRIBUTION

Three jars of wet frozen sediment were distributed to each of 40 laboratories in August and September 2010. Each laboratory was requested to analyze three samples of Marine Sediment QA10SED01 and at least one or more samples of SRM 1941b Organics in Marine Sediment using their laboratory's and/or program's analytical protocols, for determination of the concentrations (mass/mass [dry-mass basis]) of the parent polycyclic aromatic hydrocarbon (PAH) compounds, alkylated PAH compounds, hopanes, and steranes currently being determined in their laboratory.

The instructions including the list of target analytes sent to participants are attached in Appendix A.

EVALUATION OF EXERCISE RESULTS

Establishment of the Assigned Values

Laboratory data submission: Each participating laboratory was asked to submit data from three replicate determinations of the “unknown” material QA10SED01 and was requested to report results of concurrent analyses of NIST SRM 1941b Organics in Marine Sediment. Laboratories were requested to report these results to three significant figures and to provide brief descriptions of their extraction, cleanup, and analytical procedures.

Determination of laboratory analyte means: For each laboratory, the laboratory analyte mean of the three sample results (S1, S2, and S3) was calculated for each analyte. Non-numerical data were treated as follows: A mean "<value" was used when three "<values" were reported; NA (not analyzed/determined) was used for three reported NAs; and, if the reported results were of mixed type, e.g., S1 and S2 were numerical values and S3 was reported as “<value”, the two similar "types" were used to either determine the mean or to set a non-numerical descriptor.

Determination of assigned values: The assigned values are the means of the acceptable data as defined here. For a particular analyte, the performance on the reference material, SRM 1941b, was initially deemed acceptable for the purpose of this exercise if the laboratory result was within 30 % of the upper and lower limits of the confidence interval for analytes listed in the Certificate of Analysis for SRM 1941b [2]. The criterion of 30 % is the same as the one that was used for the National Oceanic and Atmospheric Administration (NOAA) Mussel Watch and National Status and Trends Quality Assurance Programs [3]. If a laboratory demonstrated acceptable performance on a particular analyte in the reference material, that laboratory's results for that analyte in the corresponding "unknown" exercise material was then used in the calculation of the analyte's exercise assigned value, unless it was deemed an outlier. For evaluation of potential outliers, statistical tests and expert analyst judgment were used after viewing both normal and log-normal plots of the data. This judgment utilized knowledge of potential coeluters based on the laboratory's reported methods. In instances for which the analyte concentration was below the detection limit of most participating laboratories, no exercise assigned value was calculated. In data sets where a number of laboratories report results as "not detected" at various detection limits, there is no consensus as to what numerical value should be assigned to these results in the computation of consensus means and other values.

Reported Results

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of the two NIST laboratories which are Lab 1 and 32 in this exercise. The laboratory mean replicate data are shown in Tables 1 to 3 for QA10SED01. Included in the means tables are the exercise assigned mean values and the standard deviation of the assigned mean values along with the exercise assigned median values. Summaries of the methods used by each laboratory are in Appendix B, and notes included by a laboratory with its data are listed in Appendix C. In Appendix D, charts of the mean numerical results reported by each laboratory for each analyte are shown for the exercise material and the corresponding reference material, SRM 1941b.

Performance Scores

The exercise coordinators recognize that different environmental monitoring programs have different data quality objectives and needs. The acceptability of the results submitted by a particular laboratory will be decided by the individual program(s) for which the laboratory provides data. Typically, each program will use these exercise results in conjunction with the laboratory's performance in the analysis of certified reference materials and/or control materials, and of other quality assurance samples. These exercise results are exhibited in a number of ways in this report to facilitate their use by most environmental monitoring programs in their acceptability assessments.

IUPAC guidelines describe the use of z-scores and p-scores for assessment of accuracy and precision in intercomparison exercises such as those described in this report. These indices assess the difference between the result of the laboratory and the exercise assigned value and can be used to compare the performance of different laboratories among the participants on different analytes and on different materials.

<u>Accuracy Assessment (z-score)</u>

$$\text{z-score} = (\text{bias estimate})/(\text{performance criterion}) = (x - X)/\sigma$$

where x is the individual laboratory result, X is the "Exercise Assigned Value," and σ is the target value for standard deviation.

As described in the IUPAC guidelines, the choice of σ is dependent upon data quality objectives of a particular program. It can be "fixed" and arrived at by perception, prescription, or reference to validated methodology (e.g., σ = 0.025 X; X is the exercise assigned value,), or it can be an estimate of the actual variation (e.g., the calculated sample standard deviation, *s*, from the exercise data). The "fixed" performance criterion is more useful in the comparison of a laboratory's performance on different materials while the use of the actual variation may be more useful within a given exercise, for example, if the determination of a particular analyte is exceptionally problematic. The measurement of analytes in this study is not particularly problematic.

We have calculated and reported z-scores using the fixed performance criterion for each analyte for each laboratory using "25 % of the exercise assigned value" as the fixed target value for standard deviation for this program. The use of z-score (25 % X) is also taken from the the NOAA Mussel Watch and National Status and Trends Quality Assurance Programs. The z-scores calculated for these exercises can thus be interpreted as shown in the following examples:

z-score (25 % X):

+1 ⇒ laboratory result is 25 % higher than the assigned value
-2 ⇒ laboratory result is 50 % lower than the assigned value.

From a scientific point of view, IUPAC does not recommend the classification of z-scores but allows that a common classification is:

$\lvert z \rvert \leq 2$	Satisfactory
$2 < \lvert z \rvert < 3$	Questionable
$\lvert z \rvert \geq 3$	Unsatisfactory.

This classification has been deemed acceptable within the measurement community.

Tables 4 through 6 summarize the z-scores (25 %) for each laboratory for each reported analyte in QA10SED01.

In addition, Tables 7 through 9 summarize the percent differences from the consensus values with color coding to reflect laboratories using similar extraction methods, and Tables 10 through 12 summarize the percent differences from the consensus values with color coding to reflect the differences in use of surrogates, internal standards, and recovery corrections among the laboratories.

Precision Assessment (p-score)

$$\text{p-score} = \sigma_{lab} / \sigma_{target}$$

For the calculation of p-scores for this program, the σ values used are coefficients of variation (CV calculated as relative standard deviations) with the current target σ (CV) for the three replicates being

15 %. Tables 13 through 15 summarize the relative standard deviations (RSDs) calculated from the three concentrations reported by the laboratory for each analyte quantified while Tables 16 through 18 summarize the p-scores (15%).

DISCUSSION

NOAA's NRDA office solicited laboratories involved in the analysis of samples shortly after the DWH disaster for their interest in participating in this interlaboratory study for analytes of interest in sediment. The participation by the laboratories was voluntary, and samples of QA10SED01 were provided free of charge. Laboratories were provided with information for ordering SRM 1941b (See Appendix A). Interested laboratories were requested to quantify selected PAHs, alkylated PAHs (some individual and some as groups), and biomarkers (hopanes and steranes) in three aliquots of QA10SED01 and SRM 1941b using their laboratories' analytical protocols for these analyses. A total of 40 laboratories received samples of which 33 laboratories submitted data. The 33 participating laboratories are listed in alphabetical order in Appendix E. One laboratory (33) submitted data using two analytical methods. The results using gas chromatography with mass spectrometric detection (GC/MS) are reported in the data tables and shown in Appendix D while the data for the PAHs quantified using GC/MS/MS are reported in the notes (Appendix C) but not used in the calculation of the consensus values.

Tables 1 through 3 summarize the laboratory means and exercise assigned values for the PAHs, alkylated PAHs, and biomarkers (hopanes and steranes), respectively. The consensus value for a given compound in QA10SED01 was derived by combining data where corresponding values in SRM 1941b were within 30% of the expanded uncertainty of the SRM value. In the absence of a corresponding SRM value, individual results were screened using outlier tests and included in the consensus value if values were shown not to be statistical outliers. Appendix D contains the charts of the QA10SED01 and SRM 1941b data by analyte. In these charts, the analytes that are not included on the Certificate of Analysis for SRM 1941b are shown with no target value. A number of laboratories are reporting values below the certified and reference values for the analytes in SRM 1941b. So as not to eliminate too many data points in the calculation of the exercise assigned values for QA10SED01, a less stringent criterion of 50%, as opposed to 30%, below the confidence interval for the SRM data was used for screening the data for the majority of the analytes. However, the two NIST data sets (Lab 1 and Lab 32) as well as data from some laboratories that have participated in previous sediment interlaboratory studies as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment agreed with the certified and reference concentrations for the majority of the analytes characterized in SRM 1941b thus suggesting some issues with data from laboratories that failed to report agreement with the certified and reference values for SRM 1941b.

In an effort to determine what could be causing the differences, the laboratory's % difference from the exercise assigned values for QA10SED01 was color coded based on extraction method (Tables 7, 8, and 9 for PAHs, alkyl PAHs, and biomarkers, respectively) and based on quantitation method (Tables 10, 11, and 12 for PAHs, alkyl PAHs, and biomarkers, respectively). No general statements can be made about the extraction method, other than it was noted that the one laboratory that used QuEChERS as an extraction method reported low values for all of the analytes that it reported. With only one laboratory using this method, it is not possible to determine if the low result by the QuEChERS method was method- or lab-related. Similarly, no general statement can be made on the use of surrogates

versus internal standards and recovery correcting versus not recovery correcting in relationship to agreement with the consensus value.

The spread in the PAH data for QA10SED01 among the laboratories is highest for naphthalene, acenaphthylene, benzo[*b*]fluorene, benzo[*j*]fluroanthene, cis/trans decalin, benzothiophene, and naphthobenzothiopene. The alkylated PAH data show even more spread among the laboratories, particularly for the C1 to C4 phenanthrenes, C1 to C4 fluoranthenes, and C1 to C4 naphthothiophenes. It is interesting to note that for the laboratories who reported 1-methylnaphthalene and 2-methylnaphthalene as well as C1-naphthalenes, generally the reported values for C1-naphthalenes were lower than the sum of the 1-methyl- and 2-methylnaphthalene. Fewer laboratories reported data for the selected biomarkers with the largest spread in the data seen for 17α(H), 21β(H)-30-norhopane and 17α, 21β(H)-hopane. Laboratory 29 (see notes in Appendix C) pointed out some possible nomenclature issues for the hopanes which may have caused confusion. These issues will be clarified in future studies.

The majority of the z-scores based on 25% (Tables 4 through 6) are within ± 2 while the majority of the p-scores based on 15% (Tables 16 through 18) are within ± 1. This indicates that the laboratories are internally consistent, but there is still a fair amount of spread among the laboratories.

It is important to evaluate the non-quantitative results reported by each laboratory as well. Although these results are not easily presented or numerically evaluated, they are included in Tables 1 through 3 of this report. The laboratory and its data users should closely examine these non-quantitative results. Decisions based on false negative or false positive results from a laboratory can lead to significant environmental and/or economic consequences. Some laboratories reported detection limits in this sediment material that may be too high for the data quality objectives and needs of their program(s), and these issues should be assessed as well.

Intercomparison exercises provide an important mechanism for assessing the comparability, accuracy, precision, and reproducibility of data being produced by the participating laboratories. Exercise materials similar in matrix, form, and analyte concentration to typical samples routinely analyzed by the laboratories are most useful for demonstrating the level of comparability and for revealing potential problem areas.
Minimizing the among-laboratory biases so that the analytical variability is significantly less than the field sampling variability should be an achievable goal in environmental monitoring.

Acknowledgments

The time and effort of the analysts and management of the participating laboratories and the assistance of the NIST Standard Reference Materials Program with the procurement and preparation of the exercise material are gratefully acknowledged.

Disclaimer

Certain commercial equipment, instruments, or materials are identified in this report to specify adequately the experimental procedure. Such identification does not imply recommendation or

endorsement by the National Institute of Standards and Technology, nor does it imply that the materials or equipment identified are the best available for the purpose.

References

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Table 1. Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs

(reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	47.4	47.9	48.7	45.4	45.0	48.6	47.7	47.8	47.7	47.6	37.3	48.8	49.4	47.3	46.4	48.0	46.2
TOC (%)	NA	NA		NA	NA	NA	4.67	4.96	NA	NA				NA			NA

ng/g dry mass

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
naphthalene	497	418	<4000	357	252	489	386	105	590	121	52.0	185	274	206	207	429	119
biphenyl	102	100		NA	<100	147	95.1	33.0	126	44.8	45.2	97.4	62.1	73.7	144	82.3	52.0
acenaphthene	65.7	71.4	<4000	<371	<100	59.0	66.1	31.2	74.5	43.3	24.4	46.2	37.7	43.4	116	61.9	42.2
acenaphthylene	243	25.4	<4000	<371	351	85.4	169	195	356	237	257	238	53.0	152	675	314	289
fluorene	89.4	83.5	<4000	<371	<100	137	108	43.6	158	52.1	29.9	56.1	54.9	80.1	141	84.3	40.7
phenanthrene	1546	1608	1487	1249	1353	1377	1140	817	1573	873	773	1200	842	983	1427	1143	898
anthracene	457	398	<4000	276	547	282	246	243	495	264	296	416	331	235	550	430	315
fluoranthene	4148	4167	3227	3650	4510	3083	4070	3347	4930	3140	2363	4423	2240	3143	6000	3390	3030
pyrene	3520	3387	3067	3087	3633	3217	3523	2580	3800	2740	2577	3483	1943	2377	4710	2873	2397
benzo[b]fluorene	NA	NA		NA	NA	NA	134	94.7	NA	NA	NA	NA	134	113	206	NA	NA
benz[a]anthracene	1369	1175	918	1085	1477	1077	1290	1103	1333	1044	988	1290	1198	995	2147	1012	1053
chrysene		2695	1650	1793	2270	2710		1460	1660	1680	1583	2407	1172		2420		1790
triphenylene		NA		NA	NA	NA		NA	NA	NA	NA	NA	NA		NA		NA
chrysene/triphenylene	2513						2113							1650		1953	
benzo[b]fluoranthene	1923	1641	1150	2210	2313	2257		1707	1813	1530	1062	1765	1024	1810	2113	1573	1617
benzo[j]fluoranthene	829	NA		NA	NA	NA		NA	NA	NA	NA	NA	NA		NA		NA
benzo[k]fluoranthene	841	1629	<4000	702	2063	984	731	1450	978	1343	1173	1457	662		1800		1583
benzo[a]fluoranthene	205	NA		NA	NA	NA	198	NA	NA	NA	NA	NA	NA	193	NA	NA	NA
benzo[b+j]fluoranthene							2287										
benzo[j+k]fluoranthene														1407		1460	
benzo[a+b+j+k]fluoranthene																	
benzo[a+b]fluoranthene																	
benzo[e]pyrene	1742	1898		NA	1867	1837	1483	1200	1477	1203	1233	1343	853	1283	1403	1353	1377
benzo[a]pyrene	1005	1046	<4000	790	1443	929	869	840	923	770	621	814	549	666	1260	816	637
perylene	402	369		NA	449	396	304	272	371	296	232	264	210	274	266	349	275
indeno[1,2,3-cd]pyrene	1208	1217	<4000	965	1793	1210	1133	1043	1243	880	697	944	1087	1083	299	1157	505
benzo[ghi]perylene	1305	1468	<4000	1080	1860	1237	1210	1200	1397	1037	749	1078	623	1093	261	1210	496
dibenz[a,h]anthracene	310	296	<4000	337	**1137**	371	278	349	199	285	<5	297	163	435	108	309	205
dibenz[a,h+a,c]anthracene																	
cis/trans-decalin	NA	NA		NA	NA	NA	10.8	NA	NA	NA	NA	NA	NA	8.71	NA	29.4	NA
dibenzofuran	NA	NA	<4000	155	NA	230	177	57.8	NA	69.0	45.1	111	114	105	153	157	75.2
retene	NA	NA		NA	NA	NA	352	NA	NA	NA	NA	NA	NA	677	NA	664	NA
benzothiophene	NA	17.0		NA	NA	NA	15.3	NA	NA	NA	NA	NA	12.0	9.02	NA	15.6	NA
dibenzothiophene	167	138		NA	163	184	94.1	97.1	185	99.2	94.1	112	101	98.5	174	129	102
naphthobenzothiophene	NA	NA		NA	NA	NA	380	NA	NA	NA	NA	NA	NA	289	NA	207	NA

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

Table 1 (cont). Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs

(reported as if three figures were significant)

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29*	30	31	32	33	Consensus Values (%) mean	std dev	median
Percent Water	NA	48.2	48.5	48.1	48.0	47.4	48.5	47.9	48.5	48.0	49.8	52.2	52.8	47.3	48.1	48.4	47.8	2.4	48.0
TOC (%)	NA	NA	2.18			5.57	NA	NA	NA	NA		NA		NA	NA	NA	4.34	1.49	4.81

ng/g dry mass Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Consensus Values (ng/g dry mass) mean	std dev	median
naphthalene	96.7	197	90.0	135	186	187	1181	501	549	63.8	ND	515	237	161	638	653	325	243	237
biphenyl	34.3	86.0	**16.7**	42.7	45.9	<125	99.1	120	103	<83.5	NA	88.0	58.7	<94.8	113	127	84.9	34.4	88.0
acenaphthene	32.3	60.7	DL	30.9	29.8	**337**	61.8	74.3	67.2	<83.5	**6.30**	66.8	35.0	<94.8	69.9	76.6	55.5	21.0	60.7
acenaphthylene	200	459	102	227	234	549	143	390	251	70.0	48.0	270	88.3	519	86.3	199	241	156	234
fluorene	42.5	59.6	16.8	65.7	57.9	**272**	98.6	128	91.5	30.6	**22.0**	85.6	65.3	112	133	110	80.8	37.2	81.8
phenanthrene	710	1417	402	972	1143	781	1219	1497	1587	692	595	1547	1013	1080	1752	1587	1160	350	1143
anthracene	206	583	104	739	297	<125	310	576	473	134	91.9	379	207	552	374	546	366	158	331
fluoranthene	2577	4557	**1463**	4311	3860	2350	2826	4129	4277	2057	2463	4690	2533	3560	4238	4660	3623	941	3605
pyrene	2037	3767	**1294**	3108	4437	1803	2381	3310	3743	1683	2017	4060	1967	3730	3479	3837	3071	793	3163
benzo[b]fluorene	NA	NA	303	NA	NA	534	NA	91.2	NA	NA	NA	136	NA	110	NA	132	181	132	133
benz[a]anthracene	777	1260	**443**	2455	1333	925	819	2348	1357	616	663	1320	787	1300	1424	1500	1232	425	1187
chrysene	1270	2623	**315**		2113	2427	864			1087	1437		1500		NA		1839	559	1680
triphenylene	NA	NA	310			1713	NA			NA	NA		NA		NA		No target		
chrysene/triphenylene				2188				2954	2503			2303		1820		2873	2287	430	2287
benzo[b]fluoranthene	1223	3080	**512**	1508	1500	1687	1196	2364	1990		989	1833	1567		1825	2010	1734	464	1707
benzo[j]fluoranthene	NA	NA	454	NA		2270	NA				NA		NA	NA	903		1114	795	866
benzo[k]fluoranthene	994	1019	**328**	629	1303	1917	524				904		467	739	827		1113	454	989
benzo[a]fluoranthene	NA	NA	247	NA		NA	NA	224	NA		NA	194	NA		205	235	212	20	205
benzo[b+j]fluoranthene																	No target		
benzo[j+k]fluoranthene								1035	1720			1587				2419	1605	461	1523
benzo[a+b+j+k]fluoranthene										1640							No target		
benzo[a+b]fluoranthene														2070			No target		
benzo[e]pyrene	1022	NA	814	1336	1037	1707	1046	1233	1737	694	NA	1550	920	1420	1470	1940	1361	338	1353
benzo[a]pyrene	609	991	**95.8**	1104	602	**2697**	688	904	1090	395	405	879	640	824	993	1133	841	240	822
perylene	206	NA	142	275	281	**785**	146	353	410	165	NA	331	243	261	421	473	301	89	278
indeno[1,2,3-cd]pyrene	1024	1403	1079	1227	482	**2580**	776	1137	1277	395	463	1106	843	680	1082	1443	996	335	1082
benzo[ghi]perylene	928	1360	675	1497	527	**2180**	943	925	1357	441	419	1233	857	926	1419	1520	1078	427	1087
dibenz[a,h]anthracene	218	395	DL	362	185	<125	156	303	338	150	148	315	223	<94.8	NA		270	88	296
dibenz[a,h+a,c]anthracene																356	No target		
cis/trans-decalin	NA	NA	DL	NA		<125	NA	<2.6	NA	<83.5	NA	13.6	NA	<94.8	NA	DL	15.6	9.4	12.2
dibenzofuran	NA	110	37.1	NA	96.0	<125	NA	212	NA	38.1	NA	160	98.3	104	NA	261	122	62	110
retene	NA	NA	DL	NA		<125	NA	147	631	292	NA	699	NA	1240	661.32	853	622	308	663
benzothiophene	NA	NA	79.4	NA		**1400**	NA	18.6	NA	<83.5	NA	20.4	NA	<94.8	NA	38.8	25.1	22.0	17.0
dibenzothiophene	88.0	133	82.7	68.1	142	**1247**	131	126	171	72.0	NA	153	95.3	158	182	172	128	37	129
naphthobenzothiophene	NA	NA	DL	NA		<125	NA	1260	NA	200	NA	686	NA	<94.8	NA	NA	504	412	335

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

*Lab 29 originally reported % solids. Their % water was 47.8% std dev 0.5% (n=3). Lab 29 also reported TOC 5.17% std dev 0.14% after the initial data treatment.

Table 2. Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Alkylated PAHs (ng/g dry mass)
(reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	119	133			<100	129	109	38.4	121	40.5	52.4	62.2	72.7	73.2	86.8	120	43.6
2-methylnaphthalene	321	295	<4000	220	194	305	241	82.9	291	87.1	48.8	159	514	189	176	290	84.6
2,6-dimethylnaphthalene	257	NA			NA	278	225	78.3	149	100	61.6	155	NA	187	139	202	100
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene	NA	NA			NA	182	176	81.9	NA	102	74.0	99.0	NA	108	NA	149	113
1-methylphenanthrene	308	NA			NA	252	263	229	366	173	261	175	225	267	266	308	139
C1-decalins	NA	NA			NA	NA	29.3	NA	NA	NA	NA	NA	NA	18.1	NA	28.5	NA
C2-decalins	NA	NA			NA	NA	59.0	NA	NA	NA	NA	NA	NA	66.2	NA	54.8	NA
C3-decalins	NA	NA			NA	NA	102	NA	NA	NA	NA	NA	NA	70.9	NA	41.5	NA
C4-decalins	NA	NA			NA	NA	101	NA	NA	NA	NA	NA	NA	163	NA	93.1	NA
C1-naphthalenes	424	NA			170	NA	237	60.3	413	72.5	70.8	128	NA	156	123	248	128
C2-naphthalenes	761	NA			267	NA	367	150	453	152	117	454	398	294	275	290	187
C3-naphthalenes	1208	NA			478	NA	660	252	623	329	243	750	611	581	616	472	407
C4-naphthalenes	1593	NA			732	NA	1047	397	583	609	496	657	NA	931	908	695	696
C1-benzothiophenes	NA	NA			NA	NA	16.3	NA	NA	NA	NA	NA	NA	48.7	NA	42.1	NA
C2-benzothiophenes	NA	NA			NA	NA	22.7	NA	NA	NA	NA	NA	NA	30.4	NA	41.4	NA
C3-benzothiophenes	NA	NA			NA	NA	31.0	NA	NA	NA	NA	NA	NA	52.5	NA	48.6	NA
C4-benzothiophenes	NA	NA			NA	NA	72.0	NA	NA	NA	NA	NA	NA	141	NA	49.3	NA
C1-fluorenes	356	NA			**2480**	NA	133	78.6	202	215	161	229	NA	132	241	129	inf
C2-fluorenes	582	NA			**2373**	NA	370	136	363	431	146	216	NA	454	979	467	inf
C3-fluorenes	2140	NA			744	NA	707	1022	293	1297	912	686	NA	1227	2093	1450	1130
C1-phenanthrenes/anthracenes	2309	NA			1497	NA	1633	940	2150	893	817	923	2053	1120	1450	1220	917
C2-phenanthrenes/anthracenes	3288	NA			2667	NA	2667	1480	3127	1860	1237	1760	2540	1993	2690	1950	2027
C3-phenanthrenes/anthracenes	2643	NA			2607	NA	1900	1074	2017	1657	974	1760	NA	1637	2577	1527	1613
C4-phenanthrenes/anthracenes	891	NA			1890	NA	1167	695	581	1447	949	933	NA	849	1294	773	1000
C1-dibenzothiophenes	405	NA			333	NA	300	176	436	311	213	388	NA	330	320	397	245
C2-dibenzothiophenes	1020	NA			888	NA	960	443	986	662	601	842	NA	826	783	963	624
C3-dibenzothiophenes	1027	NA			569	NA	1133	499	708	728	726	883	NA	846	834	964	649
C4-dibenzothiophenes	563	NA			314	NA	513	287	215	652	563	725	NA	476	580	538	420
C1-fluoranthenes/pyrenes	2474	NA			2480	NA	1433	1217	1907	1563	818	1340	1020	1303	2643	1573	1500
C2-fluoranthenes/pyrenes	2561	NA			2373	NA	1027	1343	831	1660	913	1550	NA	1190	2807	1633	1637
C3-fluoranthenes/pyrenes	1317	NA			744	NA	610	546	292	966	857	778	NA	606	1188	906	827
C4-fluoranthenes/pyrenes	878	NA			NA	NA	443	NA	132	NA	NA	NA	NA	513	<6.6	NA	NA
C1-naphthobenzothiophenes	NA	NA			NA	NA	613	NA	NA	NA	NA	NA	NA	618	NA	332	NA
C2-naphthobenzothiophenes	NA	NA			NA	NA	677	NA	NA	NA	NA	NA	NA	646	NA	353	NA
C3-naphthobenzothiophenes	NA	NA			NA	NA	597	NA	NA	NA	NA	NA	NA	458	NA	279	NA
C4-naphthobenzothiophenes	NA	NA			NA	NA	347	NA	NA	NA	NA	NA	NA	289	NA	127	NA
C1-B[a]A/chrysenes	1827	NA			1407	NA	1533	836	1253	1138	1223	1224	NA	1237	1727	1163	1463
C2-B[a]A/chrysenes	1368	NA			1140	NA	1133	618	786	848	765	746	NA	738	1197	827	993
C3-B[a]A/chrysenes	599	NA			604	NA	693	285	277	576	505	582	NA	580	<6.6	592	512
C4-B[a]A/chrysenes	311	NA			NA	NA	317	192	37.5	**1150**	<5	248	NA	449	<6.6	322	277

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

Table 2 (cont). Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Alkylated PAHs (ng/g dry mass)
(reported as if three figures were significant)

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Consensus Values (ng/g dry mass) mean	std dev	median
1-methylnaphthalene	31.5	74.6	DL	44.0	42.1	<125	270	130	103	<83.5	ND	119	68.3	<94.8	110	192	95.4	54.0	86.8
2-methylnaphthalene	69.4	173	66.9	99.7	123	<125	694	341	319	36.7	ND	311	150	131	295	446	225	149	192
2,6-dimethylnaphthalene	NA	183	71.2	121	110	<125	521	279	260	38.8	NA	190	115	136	123		170	102	144
2,6+2,7-dimethylnaphthalene																269	no target		
1,6,7-trimethylnaphthalene	NA	NA	59.9	75.5		NA	203	89.5	NA	57.6	NA	76.3	118	124	NA	210	117	48	105
1-methylphenanthrene	NA	342	140	227		146	243	226	313	105	NA	249	243	400	NA	381	250	77	249
C1-decalins	NA	NA	DL	NA		NA	NA	<5.2	NA	<835	NA	27.0	NA	**17300**	NA	NA	25.7	5.2	27.7
C2-decalins	NA	NA	DL	NA		NA	NA	21.9	NA	<835	NA	49.6	NA	<94.8	NA	NA	50.3	17.0	54.8
C3-decalins	NA	NA	DL	NA		NA	NA	33.8	NA	<835	NA	36.5	NA	<94.8	NA	NA	57.0	29.4	41.5
C4-decalins	NA	NA	DL	NA		NA	NA	47.0	NA	NA	NA	85.0	NA	<94.8	NA	NA	97.8	41.9	93.1
C1-naphthalenes	60.4	153	69.9	NA	94.0	<125	NA	305	422	<835	NA	278	133	266	NA	495	205	135	154
C2-naphthalenes	124	274	95.3	NA	121	1683	984	416	775	<835	NA	293	200	439	NA	805	415	356	293
C3-naphthalenes	230	502	310	NA	299	<125	1511	550	1223	<835	NA	518	337	1160	NA	1453	638	385	534
C4-naphthalenes	404	468	76.3	NA	419	<125	2089	905	1600	<835	NA	797	500	684	NA	2500	860	575	695
C1-benzothiophenes	NA	NA	54.7	NA		<125	NA	36.1	NA	<835	NA	51.3	NA	<94.8	NA	130	54.2	35.8	48.7
C2-benzothiophenes	NA	NA	DL	NA		1600	NA	35.5	NA	<835	NA	36.3	NA	260	NA	96	no target		
C3-benzothiophenes	NA	NA	DL	NA		<125	NA	26.1	NA	<835	NA	69.9	NA	349	NA	207	no target		
C4-benzothiophenes	NA	NA	DL	NA		NA	NA	52.4	NA	NA	NA	110	NA	<94.8	NA	191	103	56	91
C1-fluorenes	48.9	458	165	NA		<125	129	160	364	<835	NA	107	81.7	591	NA	435	221	146	163
C2-fluorenes	137	449	35.0	NA		NA	506	555	920	<835	NA	557	313	467	NA	397	424	239	440
C3-fluorenes	730	1078	91.7	NA	938	<125	1340	2071	3277	<835	NA	1383	213	1050	NA	1640	1196	715	1078
C1-phenanthrenes/anthracenes	465	1343	448	NA	499	184	1250	1581	2323	366	NA	1710	1200	2790	NA	2707	1338	721	1235
C2-phenanthrenes/anthracenes	1179	2940	1090	NA	2230	<125	2088	2806	3500	1467	NA	2720	2100	1710	NA	4373	2300	795	2100
C3-phenanthrenes/anthracenes	1054	1953	530	NA	1607	<125	1806	2190	3107	1293	NA	1940	1800	1100	NA	3927	1845	744	1780
C4-phenanthrenes/anthracenes	582	594	430	NA	671	NA	834	1388	**4877**	401	NA	1033	967	664	NA	3200	1010	593	891
C1-dibenzothiophenes	130	410	142	NA	304	<125	360	301	577	<835	NA	470	330	356	NA	531	338	112	330
C2-dibenzothiophenes	360	1073	260	NA	735	NA	886	926	2047	538	NA	1117	807	693	NA	1176	842	348	834
C3-dibenzothiophenes	392	901	230	NA	869	NA	867	1084	2007	471	NA	1142	863	996	NA	1450	868	362	865
C4-dibenzothiophenes	297	<150	424	NA		NA	NA	555	1096	<835	NA	677	493	372	NA	895	533	211	526
C1-fluoranthenes/pyrenes	750	1930	1098	NA	2400	**156**	1654	1871	**5457**	1014	NA	2143	1200	2800	NA	2113	1677	596	1568
C2-fluoranthenes/pyrenes	846	2190	382	NA	1750	NA	NA	1963	**5777**	1056	NA	2153	710	1830	NA	2233	1575	655	1635
C3-fluoranthenes/pyrenes	525	NA	313	NA	667	<125	NA	1081	**2697**	641	NA	1430	360	923	NA	1457	811	341	778
C4-fluoranthenes/pyrenes	NA	432	189	NA	671	<125	NA	869	1337	NA	NA	1230	163	1220	NA	1823	762	522	671
C1-naphthobenzothiophenes	NA	NA	DL	NA		NA	NA	1236	NA	314	NA	728	NA	387	NA	NA	604	322	613
C2-naphthobenzothiophenes	NA	NA	DL	NA		NA	NA	1333	NA	<835	NA	934	NA	368	NA	NA	719	371	662
C3-naphthobenzothiophenes	NA	NA	DL	NA		NA	NA	876	NA	<835	NA	800	NA	2110	NA	NA	853	653	698
C4-naphthobenzothiophenes	NA	NA	DL	NA		NA	NA	403	NA	NA	NA	489	NA	198	NA	NA	309	133	318
C1-B[a]A/chrysenes	788	1867	704	NA	1380	1167	876	1790	1950	799	NA	1433	977	1780	NA	2003	1342	392	1253
C2-B[a]A/chrysenes	527	973	695	NA	898	<125	715	1328	1640	482	NA	1121	677	1220	NA	1517	956	311	873
C3-B[a]A/chrysenes	305	572	DL	NA		NA	39.1	717	400	<835	NA	852	350	713	NA	1111	543	232	578
C4-B[a]A/chrysenes	NA	297	DL	NA		<125	105	310	187	<835	NA	475	106	169	NA	715	282	165	287

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

Table 3. Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Biomarkers (ng/g dry mass)
(reported as if three figures were significant)

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole	NA	NA	<4000		NA	274	108	NA	NA	NA	NA	NA	NA	109	NA	NA	NA
17α(H)-22,29,30-Tisnorhopane	828	NA			889	NA		457	751	541	447	328	NA	NA	508	358	610
17α(H),21β(H)-30-Norhopane	1209	NA			2693	NA		1517	1740	1610	1357	980	NA	NA	981	1120	1793
17α(H),21β(H)-Hopane	2251	NA			3700	NA	2703	2280	2350	2210	2093	1493	NA	1963	1016	1520	2357
ααα 20R-Cholestane	670	NA			1497	NA		824	237	744	<5	653	NA	NA	789	553	933
αββ 20R-Cholestane	291	NA			549	NA		464	407	422	340	220	NA	NA	539	295	448
αββ 20R 24S-Methylcholestane	341	NA			478	NA		414	276	376	310	219	NA	NA	379	287	457
ααα 20R 24R-Ethylcholestane	363	NA			441	NA		455	348	419	310	309	NA	NA	249	303	399
αββ 20R 24R-Ethylcholestane	465	NA			723	NA		529	459	579	321	332	NA	NA	669	479	856
17α(H),21β(H)-22R-Homohopane	494	NA			794	NA		491	618	540	375	367	NA	NA	151	409	537
17α(H),21β(H)- 22S-Homohopane	791	NA				NA		704	773	712	547	524	NA	NA	214	559	828

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

Table 3 (cont). Marine Sediment (QA10SED01): Laboratory means of three replicates and exercise assigned values - Biomarkers (ng/g dry mass)
(reported as if three figures were significant)

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	Consensus Values (ng/g dry mass) mean	std dev	median
Carbazole	NA	140	65.2	NA		296	NA	NA	117	NA	NA	150	NA	192	NA	NA	161	78	140
17α(H)-22,29,30-Tisnorhopane	354	NA	506	NA	433	<125	NA	NA	875	NA	NA	574	NA	NA	NA	NA	564	189	508
17α(H),21β(H)-30-Norhopane	1056	NA	NA	NA	1177	NA	NA	NA	2514	NA	NA	1840	NA	2400	NA	NA	1599	566	1517
17α(H),21β(H)-Hopane	1510	NA	2458	NA	1473	894	NA	NA	2561	NA	NA	2480	NA	NA	NA	NA	2073	672	2230
ααα 20R-Cholestane	534	NA	DL	NA		<125	NA	NA	277	NA	NA	722	NA	NA	NA	NA	703	325	696
αββ 20R-Cholestane	285	NA	NA	NA	396	NA	NA	NA	310	NA	NA	337	NA	NA	NA	NA	379	99	368
αββ 20R 24S-Methylcholestane	258	NA	**1448**	NA		265	NA	NA	367	NA	NA	361	NA	NA	NA	NA	342	77	351
ααα 20R 24R-Ethylcholestane	253	NA	373	NA	315	<125	NA	NA	354	NA	NA	369	NA	NA	NA	NA	351	62	354
αββ 20R 24R-Ethylcholestane	331	NA	NA	NA	390	NA	NA	NA	463	NA	NA	609	NA	NA	NA	NA	515	159	472
17α(H),21β(H)-22R-Homohopane	347	NA	NA	NA	295	NA	NA	NA	1022	NA	NA	708	NA	NA	NA	NA	511	223	492
17α(H),21β(H)- 22S-Homohopane	494	NA	NA	NA	429	NA	NA	NA	1256	NA	NA	826	NA	NA	NA	NA	666	253	704

NA=Not analyzed; DL=Detection limit; No value in space=nothing reported by lab: Bolded values were not used in the calculation of the consensus statistics

Table 4. Marine Sediment (QA10SED10): z-scores (25%) - Water, TOC, and PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	-0.03	0.01	0.08	-0.20	-0.24	0.07	-0.01	0.00	-0.01	-0.01	-0.88	0.09	0.14	-0.04	-0.12	0.02	-0.14
TOC (%)							0.30	0.57									

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
naphthalene	2.11	1.14		0.39	-0.90	2.01	0.75	-2.70	3.26	-2.51	-3.36	-1.73	-0.63	-1.46	-1.45	1.28	-2.54
biphenyl	0.82	0.70				2.94	0.48	-2.44	1.93	-1.89	-1.87	0.59	-1.08	-0.53	2.77	-0.12	-1.55
acenaphthene	0.73	1.14				0.25	0.76	-1.75	1.37	-0.88	-2.24	-0.67	-1.29	-0.87	4.38	0.46	-0.96
acenaphthylene	0.02	-3.58			1.83	-2.58	-1.20	-0.76	1.90	-0.07	0.27	-0.05	-3.12	-1.48	7.19	1.21	0.79
fluorene	0.43	0.13				2.80	1.33	-1.84	3.83	-1.42	-2.52	-1.22	-1.28	-0.03	3.00	0.17	-1.99
phenanthrene	1.33	1.54	1.13	0.31	0.67	0.75	-0.07	-1.18	1.43	-0.99	-1.33	0.14	-1.10	-0.61	0.92	-0.06	-0.90
anthracene	0.99	0.35		-0.99	1.97	-0.92	-1.31	-1.34	1.41	-1.11	-0.76	0.54	-0.38	-1.44	2.01	0.70	-0.56
fluoranthene	0.58	0.60	-0.44	0.03	0.98	-0.60	0.49	-0.31	1.44	-0.53	-1.39	0.88	-1.53	-0.53	2.62	-0.26	-0.66
pyrene	0.59	0.41	-0.01	0.02	0.73	0.19	0.59	-0.64	0.95	-0.43	-0.64	0.54	-1.47	-0.90	2.13	-0.26	-0.88
benzo[b]fluorene							-1.03	-1.90					-1.04	-1.49	0.55		
benz[a]anthracene	0.44	-0.19	-1.02	-0.48	0.79	-0.51	0.19	-0.42	0.33	-0.61	-0.79	0.19	-0.11	-0.77	2.97	-0.72	-0.58
chrysene		1.86	-0.41	-0.10	0.94	1.90		-0.82	-0.39	-0.35	-0.56	1.24	-1.45		1.26		-0.11
triphenylene																	
chrysene/triphenylene	0.40						-0.30							-1.11		-0.58	
benzo[b]fluoranthene	0.44	-0.21	-1.35	1.10	1.34	1.21		-0.06	0.18	-0.47	-1.55	0.07	-1.64	0.18	0.88	-0.37	-0.27
benzo[j]fluoranthene	-1.02																
benzo[k]fluoranthene	-0.98	1.85		-1.48	3.41	-0.46	-1.37	1.21	-0.49	0.83	0.22	1.23	-1.62	0.00	2.47		1.69
benzo[a]fluoranthene	-0.15						-0.28							-0.37			
benzo[b+j]fluoranthene																	
benzo[j+k]fluoranthene														-0.49		-0.36	
benzo[a+b+j+k]fluoranthene																	
benzo[a+b]fluoranthene																	
benzo[e]pyrene	1.12	1.58			1.48	1.40	0.36	-0.47	0.34	-0.46	-0.38	-0.05	-1.49	-0.23	0.12	-0.02	0.05
benzo[a]pyrene	0.78	0.97		-0.25	2.86	0.42	0.13	-0.01	0.39	-0.34	-1.05	-0.13	-1.39	-0.83	1.99	-0.12	-0.97
perylene	1.34	0.90		0.00	1.96	1.26	0.04	-0.38	0.92	-0.07	-0.92	-0.50	-1.21	-0.36	-0.46	0.63	-0.35
indeno[1,2,3-cd]pyrene	0.85	0.89		-0.13	3.20	0.86	0.55	0.19	0.99	-0.47	-1.20	-0.21	0.36	0.35	-2.80	0.64	-1.97
benzo[ghi]perylene	0.84	1.44		0.01	2.90	0.59	0.49	0.45	1.18	-0.15	-1.22	0.00	-1.69	0.06	-3.03	0.49	-2.16
dibenz[a,h]anthracene	0.61	0.39		1.01	12.87	1.50	0.13	1.18	-1.04	0.24	0.00	0.40	-1.58	2.45	-2.40	0.59	-0.95
dibenz[a,h+a,c]anthracene																	
cis/trans-decalin							-1.24							-1.77		3.54	
dibenzofuran				1.07		3.52	1.79	-2.11		-1.74	-2.52	-0.36	-0.25	-0.58	1.00	1.13	-1.54
retene							-1.74							0.36		0.27	
benzothiophene		-1.30					-1.56						-2.09	-2.56		-1.51	
dibenzothiophene	1.21	0.32			1.10	1.76	-1.06	-0.97	1.79	-0.90	-1.06	-0.51	-0.83	-0.92	1.43	0.02	-0.82
naphthobenzothiophene							-0.98							-1.71		-2.36	

Table 4 (cont). Marine Sediment (QA10SED10): z-scores (25%) - Water, TOC, and PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.04	0.06	0.03	0.02	-0.03	0.06	0.01	0.06	0.02	0.17	0.37	0.42	-0.04	0.03	0.05
TOC (%)			-2.00			1.13										

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
naphthalene	-2.81	-1.57	-2.89	-2.34	-1.71	-1.70	10.53	2.16	2.75	-3.22		2.34	-1.09	-2.02	3.86	4.03
biphenyl	-2.38	0.05	-3.21	-1.99	-1.84		0.67	1.67	0.83			0.15	-1.24		1.31	2.00
acenaphthene	-1.68	0.37		-1.78	-1.85	20.24	0.45	1.35	0.84		-3.55	0.81	-1.48		1.04	1.51
acenaphthylene	-0.68	3.61	-2.32	-0.24	-0.11	5.10	-1.63	2.48	0.17	-2.84	-3.20	0.48	-2.54	4.61	-2.57	-0.70
fluorene	-1.90	-1.05	-3.17	-0.75	-1.13	9.46	0.89	2.35	0.53	-2.48	-2.91	0.24	-0.76	1.55	2.59	1.43
phenanthrene	-1.55	0.88	-2.61	-0.65	-0.06	-1.31	0.20	1.16	1.47	-1.61	-1.95	1.33	-0.51	-0.28	2.04	1.47
anthracene	-1.75	2.36	-2.86	4.07	-0.75		-0.62	2.29	1.16	-2.54	-3.00	0.14	-1.74	2.03	0.09	1.97
fluoranthene	-1.16	1.03	-2.38	0.76	0.26	-1.41	-0.88	0.56	0.72	-1.73	-1.28	1.18	-1.20	-0.07	0.68	1.14
pyrene	-1.35	0.91	-2.31	0.05	1.78	-1.65	-0.90	0.31	0.88	-1.81	-1.37	1.29	-1.44	0.86	0.53	1.00
benzo[b]fluorene			2.70			7.82		-1.98				-0.99		-1.56		-1.08
benz[a]anthracene	-1.48	0.09	-2.56	3.97	0.33	-1.00	-1.34	3.62	0.40	-2.00	-1.85	0.28	-1.45	0.22	0.62	0.87
chrysene	-1.24	1.71	-3.32		0.60	1.28	-2.12			-1.63	-0.87		-0.74			
triphenylene																
chrysene/triphenylene				-0.17				1.17	0.38			0.03		-0.82		1.03
benzo[b]fluoranthene	-1.18	3.11	-2.82	-0.52	-0.54	-0.11	-1.24	1.45	0.59		-1.72	0.23	-0.39		0.21	0.64
benzo[j]fluoranthene			-2.37	0.00	0.00	4.15									-0.76	
benzo[k]fluoranthene	-0.43	-0.34	-2.82	-1.74	0.68	2.89	-2.12				-0.75		-2.32	-1.34	-1.03	
benzo[a]fluoranthene			0.65					0.21				-0.35			-0.14	0.42
benzo[b+j]fluoranthene																
benzo[j+k]fluoranthene								-1.42	0.29			-0.04				2.03
benzo[a+b+j+k]fluoranthene																
benzo[a+b]fluoranthene																
benzo[e]pyrene	-1.00		-1.61	-0.07	-0.95	1.01	-0.93	-0.38	1.10	-1.96		0.55	-1.30	0.17	0.32	1.70
benzo[a]pyrene	-1.10	0.71	-3.54	1.25	-1.14	8.82	-0.73	0.30	1.18	-2.12	-2.08	0.18	-0.96	-0.08	0.72	1.39
perylene	-1.26		-2.12	-0.35	-0.27	6.41	-2.07	0.69	1.44	-1.81	0.00	0.39	-0.77	-0.54	1.59	2.28
indeno[1,2,3-cd]pyrene	0.11	1.63	0.33	0.93	-2.06	6.36	-0.88	0.57	1.13	-2.42	-2.14	0.44	-0.61	-1.27	0.34	1.80
benzo[ghi]perylene	-0.56	1.04	-1.50	1.55	-2.04	4.09	-0.50	-0.57	1.03	-2.36	-2.44	0.57	-0.82	-0.57	1.26	1.64
dibenz[a,h]anthracene	-0.76	1.86		1.38	-1.25		-1.68	0.50	1.02	-1.78	-1.80	0.67	-0.69			
dibenz[a,h+a,c]anthracene																
cis/trans-decalin												-0.53				
dibenzofuran		-0.40	-2.78		-0.85			2.94		-2.75		1.24	-0.78	-0.59		4.55
retene								-3.05	0.06	-2.12		0.50		3.98	0.25	1.49
benzothiophene			8.64			218.73		-1.04		0.00		-0.75				2.18
dibenzothiophene	-1.25	0.14	-1.42	-1.87	0.45	34.95	0.10	-0.06	1.34	-1.75		0.79	-1.02	0.94	1.68	1.38
naphthobenzothiophene								6.01		-2.41		1.45				

Table 5. Marine Sediment (QA10SED10): z scores (25%) - Alkylated PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	0.99	1.59				1.39	0.58	-2.39	1.09	-2.30	-1.81	-1.39	-0.95	-0.93	-0.36	1.04	-2.17
2-methylnaphthalene	1.70	1.23		-0.09	-0.55	1.41	0.28	-2.53	1.18	-2.45	-3.13	-1.17	5.13	-0.64	-0.87	1.15	-2.50
2,6-dimethylnaphthalene	2.05					2.55	1.30	-2.16	-0.50	-1.64	-2.55	-0.36		0.40	-0.73	0.75	-1.65
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene						2.24	2.05	-1.19	0.00	-0.51	-1.46	-0.60		-0.30		1.10	-0.13
1-methylphenanthrene	0.93					0.03	0.21	-0.33	1.86	-1.24	0.18	-1.19	-0.39	0.27	0.25	0.93	-1.77
C1-decalins							0.56							-1.19		0.43	
C2-decalins							0.69							1.27		0.36	
C3-decalins							3.18							0.98		-1.09	
C4-decalins							0.12							2.67		-0.19	
C1-naphthalenes	4.28				-0.69		0.62	-2.82	4.06	-2.58	-2.62	-1.50		-0.96	-1.59	0.85	-1.49
C2-naphthalenes	3.34				-1.43		-0.47	-2.55	0.37	-2.54	-2.87	0.37	-0.17	-1.17	-1.35	-1.21	-2.19
C3-naphthalenes	3.57				-1.01		0.13	-2.42	-0.10	-1.94	-2.48	0.70	-0.17	-0.36	-0.14	-1.04	-1.45
C4-naphthalenes	3.40				-0.60		0.87	-2.15	-1.29	-1.17	-1.70	-0.94		0.33	0.22	-0.77	-0.77
C1-benzothiophenes							-2.79							-0.41		-0.89	
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes							-1.19							1.51		-2.08	
C1-fluorenes	2.45				40.93		-1.58	-2.58	-0.34	-0.11	-1.09	0.14		-1.60	0.37	-1.66	
C2-fluorenes	1.49				18.39		-0.51	-2.71	-0.58	0.07	-2.63	-1.97		0.28	5.24	0.40	
C3-fluorenes	3.16				-1.51		-1.64	-0.58	-3.02	0.34	-0.95	-1.70		0.10	3.00	0.85	-0.22
C1-phenanthrenes/anthracenes	2.90				0.47		0.88	-1.19	2.43	-1.33	-1.56	-1.24	2.14	-0.65	0.33	-0.35	-1.26
C2-phenanthrenes/anthracenes	1.72				0.64		0.64	-1.43	1.44	-0.76	-1.85	-0.94	0.42	-0.53	0.68	-0.61	-0.47
C3-phenanthrenes/anthracenes	1.73				1.65		0.12	-1.67	0.37	-0.41	-1.89	-0.19		-0.45	1.58	-0.69	-0.50
C4-phenanthrenes/anthracenes	-0.47				3.48		0.62	-1.25	-1.70	1.73	-0.24	-0.30		-0.64	1.12	-0.94	-0.04
C1-dibenzothiophenes	0.80				-0.05		-0.45	-1.92	1.17	-0.31	-1.48	0.60		-0.09	-0.21	0.70	-1.10
C2-dibenzothiophenes	0.84				0.22		0.56	-1.90	0.68	-0.86	-1.14	0.00		-0.08	-0.28	0.57	-1.04
C3-dibenzothiophenes	0.73				-1.38		1.22	-1.70	-0.74	-0.64	-0.66	0.07		-0.10	-0.16	0.44	-1.01
C4-dibenzothiophenes	0.23				-1.64		-0.15	-1.85	-2.38	0.90	0.23	1.44		-0.43	0.36	0.04	-0.85
C1-fluoranthenes/pyrenes	1.90				1.92		-0.58	-1.10	0.55	-0.27	-2.05	-0.80	-1.57	-0.89	2.31	-0.25	-0.42
C2-fluoranthenes/pyrenes	2.51				2.03		-1.39	-0.59	-1.89	0.22	-1.68	-0.06		-0.98	3.13	0.15	0.16
C3-fluoranthenes/pyrenes	2.49				-0.33		-0.99	-1.31	-2.56	0.77	0.22	-0.16		-1.01	1.86	0.47	0.08
C4-fluoranthenes/pyrenes	0.61						-1.67		-3.31					-1.30			
C1-naphthobenzothiophenes							0.06							0.09		-1.80	
C2-naphthobenzothiophenes							-0.23							-0.40		-2.03	
C3-naphthobenzothiophenes							-1.20							-1.85		-2.69	
C4-naphthobenzothiophenes							0.49							-0.26		-2.35	
C1-B[a]A/chrysenes	1.45				0.19		0.57	-1.51	-0.26	-0.61	-0.35	-0.35		-0.31	1.15	-0.53	0.36
C2-B[a]A/chrysenes	1.72				0.77		0.74	-1.41	-0.71	-0.45	-0.80	-0.88		-0.91	1.01	-0.54	0.15
C3-B[a]A/chrysenes	0.41				0.45		1.11	-1.90	-1.96	0.24	-0.28	0.28		0.27		0.36	-0.23
C4-B[a]A/chrysenes	0.41						0.49	-1.28	-3.47	12.30		-0.49		2.36		0.56	-0.07

Table 5 (cont). Marine Sediment (QA10SED10): z scores (25%) - Alkylated PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	-2.68	-0.87	0.00	-2.16	-2.24		7.30	1.47	0.31	0.00		0.99	-1.14	0.00	0.61	4.03
2-methylnaphthalene	-2.77	-0.93	-2.81	-2.23	-1.82		8.33	2.05	1.66	-3.35		1.53	-1.34	-1.67	1.25	3.93
2,6-dimethylnaphthalene		0.31	-2.33	-1.16	-1.40		8.25	2.57	2.12	-3.09		0.46	-1.29	-0.80	-1.10	
2,6+2,7-dimethylnaphthalene																
1,6,7-trimethylnaphthalene			-1.94	-1.41			2.96	-0.93		-2.02		-1.38	0.06	0.26		3.22
1-methylphenanthrene		1.47	-1.76	-0.36		-1.66	-0.11	-0.38	1.01	-2.32		-0.02	-0.11	2.40		2.10
C1-decalins												0.19		2685.99		
C2-decalins								-2.26				-0.06				
C3-decalins								-1.63				-1.44				
C4-decalins								-2.08				-0.52				
C1-naphthalenes	-2.82	-1.02	-2.63		-2.16			1.96	4.23			1.42	-1.40	1.19		5.67
C2-naphthalenes	-2.80	-1.36	-3.08		-2.84	12.23	5.49	0.01	3.47			-1.18	-2.07	0.23		3.76
C3-naphthalenes	-2.56	-0.86	-2.06		-2.13		5.46	-0.55	3.66			-0.75	-1.89	3.27		5.11
C4-naphthalenes	-2.12	-1.82	-3.65		-2.05		5.71	0.21	3.44			-0.30	-1.68	-0.82		7.62
C1-benzothiophenes			0.04					-1.33				-0.21				5.60
C2-benzothiophenes																
C3-benzothiophenes																
C4-benzothiophenes								-1.96				0.27				3.45
C1-fluorenes	-3.11	4.29	-1.00				-1.67	-1.11	2.59			-2.06	-2.52	6.71		3.88
C2-fluorenes	-2.70	0.23	-3.67				0.77	1.24	4.68			1.26	-1.04	0.40		-0.25
C3-fluorenes	-1.56	-0.39	-3.69		-0.86		0.48	2.93	6.96			0.63	-3.29	-0.49		1.48
C1-phenanthrenes/anthracenes	-2.61	0.02	-2.66		-2.51	-3.45	-0.26	0.73	2.95	-2.91		1.11	-0.41	4.34		4.09
C2-phenanthrenes/anthracenes	-1.95	1.11	-2.10		-0.12		-0.37	0.88	2.09	-1.45		0.73	-0.35	-1.03		3.61
C3-phenanthrenes/anthracenes	-1.72	0.23	-2.85		-0.52		-0.08	0.75	2.73	-1.20		0.20	-0.10	-1.62		4.51
C4-phenanthrenes/anthracenes	-1.70	-1.65	-2.30		-1.34		-0.70	1.50	15.31	-2.41		0.09	-0.17	-1.37		8.67
C1-dibenzothiophenes	-2.46	0.85	-2.32		-0.40		0.27	-0.43	2.83			1.57	-0.09	0.22		2.30
C2-dibenzothiophenes	-2.29	1.09	-2.77		-0.51		0.21	0.40	5.72	-1.45		1.31	-0.17	-0.71		1.59
C3-dibenzothiophenes	-2.20	0.15	-2.94		0.00		-0.01	0.99	5.25	-1.83		1.26	-0.02	0.59		2.68
C4-dibenzothiophenes	-1.77		-0.82					0.16	4.23			1.08	-0.30	-1.21		2.72
C1-fluoranthenes/pyrenes	-2.21	0.60	-1.38		1.72	-3.63	-0.05	0.46	9.02	-1.58		1.11	-1.14	2.68		1.04
C2-fluoranthenes/pyrenes	-1.85	1.56	-3.03		0.45			0.99	10.68	-1.32		1.47	-2.20	0.65		1.67
C3-fluoranthenes/pyrenes	-1.41		-2.46		-0.71			1.33	9.30	-0.84		3.05	-2.22	0.55		3.18
C4-fluoranthenes/pyrenes		-1.73	-3.01		-0.48			0.56	3.02			2.46	-3.14	2.41		5.58
C1-naphthobenzothiophenes								4.19		-1.92		0.82		-1.44		
C2-naphthobenzothiophenes								3.42				1.20		-1.95		
C3-naphthobenzothiophenes								0.11				-0.25		5.89		
C4-naphthobenzothiophenes								1.22				2.34		-1.44		
C1-B[a]A/chrysenes	-1.65	1.56	-1.90		0.11	-0.52	-1.39	1.34	1.81	-1.62		0.27	-1.09	1.31		1.97
C2-B[a]A/chrysenes	-1.80	0.07	-1.09		-0.25		-1.01	1.55	2.86	-1.98		0.69	-1.17	1.10		2.34
C3-B[a]A/chrysenes	-1.75	0.21					-3.71	1.28	-1.05			2.28	-1.42	1.25		4.18
C4-B[a]A/chrysenes		0.20					-2.52	0.39	-1.35			2.74	-2.50	-1.60		6.13

Table 6. Marine Sediment (QA10SED10): z-scores (25%) - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole						2.79	-1.32							-1.30			
17α(H)-22,29,30-Tisnorhopane	1.87				2.30			-0.76	1.32	-0.16	-0.83	-1.67			-0.39	-1.46	0.33
17α(H),21β(H)-30-Norhopane	-0.98				2.74			-0.21	0.35	0.03	-0.61	-1.55			-1.55	-1.20	0.49
17α(H),21β(H)-Hopane	0.34				3.14		1.22	0.40	0.53	0.26	0.04	-1.12		-0.21	-2.04	-1.07	0.55
ααα 20R-Cholestane	-0.19				4.52			0.69	-2.65	0.23		-0.28			0.49	-0.85	1.31
αββ 20R-Cholestane	-0.92				1.80			0.90	0.30	0.46	-0.41	-1.68			1.69	-0.89	0.73
αββ 20R 24S-Methylcholestane	-0.01				1.59			0.84	-0.77	0.40	-0.37	-1.44			0.44	-0.65	1.34
ααα 20R 24R-Ethylcholestane	0.14				1.03			1.19	-0.03	0.78	-0.46	-0.48			-1.16	-0.54	0.56
αββ 20R 24R-Ethylcholestane	-0.38				1.62			0.11	-0.43	0.50	-1.50	-1.42			1.20	-0.28	2.65
17α(H),21β(H)-22R-Homohopane	-0.13				2.22			-0.16	0.84	0.23	-1.06	-1.12			-2.82	-0.80	0.20
17α(H),21β(H)- 22S-Homohopane	0.75							0.23	0.64	0.28	-0.71	-0.85			-2.72	-0.64	0.98

Table 6 (cont). Marine Sediment (QA10SED10): z-scores (25%) - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		-0.53	-2.38			3.35			-1.11			-0.28		0.76		
17α(H)-22,29,30-Tisnorhopane	-1.49		-0.41		-0.93				2.21			0.07				
17α(H),21β(H)-30-Norhopane	-1.36				-1.06				2.29			0.60		2.00		
17α(H),21β(H)-Hopane	-1.09		0.74		-1.16	-2.28			0.94			0.79				
ααα 20R-Cholestane	-0.96								-2.42			0.11				
αββ 20R-Cholestane	-0.99				0.18				-0.72			-0.44				
αββ 20R 24S-Methylcholestane	-0.99		12.94			-0.90			0.29			0.23				
ααα 20R 24R-Ethylcholestane	-1.11		0.25		-0.41				0.04			0.21				
αββ 20R 24R-Ethylcholestane	-1.43				-0.97				-0.40			0.74				
17α(H),21β(H)-22R-Homohopane	-1.28				-1.69				4.01			1.55				
17α(H),21β(H)- 22S-Homohopane	-1.03				-1.42				3.54			0.96				

Tables 7 through 9: % differences from Exercise Assigned Values color coded by extraction method

Soxhlet
EPA 3545; ASE
EPA 3541; Soxtherm
EPA 3550B; EPA 3550C; Sonication
Tumbler; Shaker; Partitioning
Quechers

Table 7. Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by extraction method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	-0.79%	0.32%	1.93%	-5.05%	-5.89%	1.72%	-0.17%	-0.03%	-0.17%	-0.33%	-21.93%	2.21%	3.39%	-0.93%	-2.89%	0.40%	-3.41%
TOC (%)							7.44%	14.19%									

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
naphthalene	52.76%	28.46%		9.80%	-22.49%	50.30%	18.72%	-67.60%	81.50%	-62.63%	-84.02%	-43.20%	-15.72%	-36.54%	-36.23%	32.05%	-63.40%
biphenyl	20.44%	17.38%				73.58%	12.08%	-61.08%	48.37%	-47.27%	-46.79%	14.75%	-26.88%	-13.21%	69.37%	-3.04%	-38.74%
acenaphthene	18.28%	28.54%				6.22%	19.06%	-43.83%	34.15%	-21.99%	-56.01%	-16.77%	-32.19%	-21.81%	109.38%	11.44%	-24.09%
acenaphthylene	0.61%	-89.46%			45.66%	-64.58%	-29.93%	-19.01%	47.54%	-1.65%	6.69%	-1.19%	-78.01%	-37.12%	179.72%	30.32%	19.68%
fluorene	10.71%	3.36%				70.07%	33.37%	-45.97%	95.66%	-35.44%	-62.93%	-30.57%	-32.06%	-0.77%	75.02%	4.35%	-49.64%
phenanthrene	33.27%	38.58%	28.15%	7.67%	16.66%	18.67%	-1.73%	-29.57%	35.63%	-24.76%	-33.37%	3.44%	-27.39%	-15.26%	22.98%	-1.44%	-22.62%
anthracene	24.84%	8.73%		-24.66%	49.22%	-22.93%	-32.85%	-33.58%	35.14%	-27.82%	-19.11%	13.55%	-9.56%	-35.94%	50.22%	17.47%	-13.93%
fluoranthene	14.49%	14.99%	-10.95%	0.73%	24.47%	-14.90%	12.33%	-7.64%	36.06%	-13.34%	-34.78%	22.08%	-38.18%	-13.25%	65.59%	-6.44%	-16.38%
pyrene	14.63%	10.28%	-0.14%	0.51%	18.31%	4.74%	14.73%	-15.99%	23.74%	-10.78%	-16.10%	13.43%	-36.72%	-22.61%	53.37%	-6.44%	-21.96%
benzo[b]fluorene							-25.64%	-47.56%					-26.01%	-37.27%	13.84%		
benz[a]anthracene	11.11%	-4.63%	-25.48%	-11.99%	19.82%	-12.64%	4.67%	-10.47%	8.19%	-15.28%	-19.80%	4.67%	-2.79%	-19.26%	74.19%	-17.91%	-14.58%
chrysene		46.59%	-10.26%	-2.47%	23.46%	47.39%		-20.60%	-9.72%	-8.63%	-13.89%	30.89%	-36.24%		31.62%		-2.65%
triphenylene																	
chrysene/triphenylene	9.89%						-7.60%							-27.86%		-14.60%	
benzo[b]fluoranthene	10.91%	-5.36%	-33.67%	27.46%	33.42%	30.15%		-1.57%	4.58%	-11.76%	-38.73%	1.80%	-40.96%	4.39%	21.89%	-9.26%	-6.76%
benzo[j]fluoranthene	-25.59%																
benzo[k]fluoranthene	-24.43%	46.29%		-36.94%	85.34%	-11.58%	-34.34%	30.24%	-12.14%	20.66%	5.39%	30.84%	-40.57%		61.68%		42.22%
benzo[a]fluoranthene	-3.64%						-6.94%							-9.29%			
benzo[b+j]fluoranthene																	
benzo[j+k]fluoranthene														-12.33%		-9.01%	
benzo[a+b+j+k]fluoranthene																	
benzo[a+b]fluoranthene																	
benzo[e]pyrene	27.96%	39.45%			37.12%	34.92%	8.96%	-11.85%	8.47%	-11.61%	-9.40%	-1.32%	-37.34%	-5.73%	3.09%	-0.59%	1.13%
benzo[a]pyrene	19.44%	24.35%		-6.14%	71.59%	10.40%	3.27%	-0.14%	9.70%	-8.46%	-26.17%	-3.19%	-34.77%	-20.82%	49.79%	-3.03%	-24.23%
perylene	33.52%	22.57%			48.90%	31.42%	0.89%	-9.62%	23.07%	-1.86%	-22.90%	-12.50%	-30.20%	-9.07%	-11.61%	15.71%	-8.63%
indeno[1,2,3-cd]pyrene	21.26%	22.20%		-3.18%	80.01%	21.46%	13.73%	4.73%	24.80%	-11.68%	-30.00%	-5.24%	9.08%	8.74%	-70.01%	16.11%	-49.27%
benzo[ghi]perylene	21.03%	36.12%		0.14%	72.46%	14.67%	12.19%	11.27%	29.50%	-3.84%	-30.52%	-0.02%	-42.27%	1.38%	-75.82%	12.19%	-54.04%
dibenz[a,h]anthracene	15.14%	9.83%		25.16%	321.74%	37.53%	3.15%	29.61%	-26.03%	5.92%		10.07%	-39.52%	61.27%	-59.97%	14.65%	-23.81%
dibenz[a,h+a,c]anthracene																	
cis/trans-decalin							-31.07%							-44.22%		88.43%	
dibenzofuran				26.68%		88.11%	44.70%	-52.63%		-43.47%	-63.06%	-8.89%	-6.33%	-14.41%	25.04%	28.32%	-38.38%
retene							-43.39%							8.94%		6.79%	
benzothiophene		-32.39%					-39.01%						-52.26%	-64.11%		-37.82%	
dibenzothiophene	30.17%	8.04%			27.57%	43.97%	-26.51%	-24.19%	44.63%	-22.50%	-26.48%	-12.79%	-20.86%	-23.07%	35.64%	0.49%	-20.47%
naphthobenzothiophene							-24.50%							-42.63%		-58.97%	

Table 7 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by extraction method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.95%	1.44%	0.74%	0.46%	-0.72%	1.44%	0.27%	1.51%	0.53%	4.32%	9.25%	10.44%	-1.00%	0.67%	1.33%
TOC (%)			-49.89%			28.26%										

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
naphthalene	-70.25%	-39.30%	-72.33%	-58.48%	-42.79%	-42.38%	263.26%	54.06%	68.76%	-80.38%		58.50%	-27.21%	-50.48%	96.38%	100.85%
biphenyl	-59.59%	1.36%	-80.33%	-49.69%	-45.92%		16.70%	41.73%	20.84%			3.67%	-30.88%		32.83%	50.01%
acenaphthene	-41.91%	9.28%		-44.43%	-46.35%	506.11%	11.25%	33.78%	21.04%		-88.66%	20.20%	-36.99%		25.88%	37.84%
acenaphthylene	-16.94%	90.30%	-57.89%	-6.02%	-2.84%	127.62%	-40.68%	61.88%	4.20%	-70.99%	-80.11%	12.08%	-63.38%	115.18%	-64.21%	-17.49%
fluorene	-47.41%	-26.23%	-79.20%	-18.68%	-28.34%	236.42%	22.13%	58.79%	13.31%	-62.11%	-72.76%	5.96%	-19.09%	38.70%	64.74%	35.81%
phenanthrene	-38.77%	22.12%	-65.35%	-16.21%	-1.44%	-32.68%	5.08%	29.02%	36.77%	-40.35%	-48.71%	33.33%	-12.65%	-6.90%	51.04%	36.77%
anthracene	-43.68%	59.05%	-71.51%	101.72%	-18.84%		-15.43%	57.32%	29.11%	-63.51%	-74.91%	3.54%	-43.59%	50.68%	2.16%	49.13%
fluoranthene	-28.89%	25.76%	-59.62%	18.98%	6.53%	-35.14%	-22.02%	13.95%	18.03%	-43.24%	-32.02%	29.44%	-30.08%	-1.75%	16.96%	28.62%
pyrene	-33.68%	22.65%	-57.86%	1.22%	44.47%	-41.28%	-22.47%	7.78%	21.89%	-45.19%	-34.33%	32.20%	-35.96%	21.46%	13.30%	24.93%
benzo[b]fluorene			67.53%			195.58%		-49.50%				-24.72%		-39.11%		-27.12%
benz[a]anthracene	-36.95%	2.24%	-64.03%	99.18%	8.19%	-24.94%	-33.57%	90.50%	10.08%	-49.99%	-46.20%	7.11%	-36.17%	5.48%	15.53%	21.71%
chrysene	-30.93%	42.67%	-82.89%		14.94%	31.98%	-53.00%			-40.86%	-21.86%		-18.42%			
triphenylene																
chrysene/triphenylene				-4.35%				29.17%	9.45%			0.70%		-20.43%		25.63%
benzo[b]fluoranthene	-29.44%	77.64%	-70.49%	-13.03%	-13.49%	-2.72%	-31.01%	36.37%	14.77%		-42.94%	5.74%	-9.64%		5.28%	15.93%
benzo[j]fluoranthene			-59.22%			103.75%									-18.94%	
benzo[k]fluoranthene	-10.74%	-8.47%	-70.54%	-43.53%	17.07%	72.16%	-52.97%				-18.77%		-58.08%	-33.62%	-25.72%	
benzo[a]fluoranthene			16.29%					5.25%				-8.67%			-3.47%	10.48%
benzo[b+j]fluoranthene																
benzo[j+k]fluoranthene								-35.48%	7.20%			-1.11%				50.74%
benzo[a+b+j+k]fluoranthene																
benzo[a+b]fluoranthene																
benzo[e]pyrene	-24.93%		-40.21%	-1.86%	-23.80%	25.37%	-23.16%	-9.46%	27.57%	-49.02%		13.86%	-32.42%	4.31%	7.98%	42.51%
benzo[a]pyrene	-27.56%	17.77%	-88.61%	31.21%	-28.39%	220.59%	-18.16%	7.46%	29.54%	-53.00%	-51.89%	4.54%	-23.91%	-2.04%	18.10%	34.74%
perylene	-31.53%		-52.99%	-8.63%	-6.75%	160.35%	-51.71%	17.15%	36.06%	-45.13%		9.74%	-19.25%	-13.38%	39.64%	57.08%
indeno[1,2,3-cd]pyrene	2.82%	40.87%	8.31%	23.13%	-51.62%	158.98%	-22.06%	14.14%	28.15%	-60.38%	-53.49%	11.02%	-15.35%	-31.74%	8.59%	44.88%
benzo[ghi]perylene	-13.99%	26.10%	-37.38%	38.83%	-51.10%	102.13%	-12.53%	-14.21%	25.79%	-59.11%	-61.12%	14.36%	-20.57%	-14.14%	31.56%	40.94%
dibenz[a,h]anthracene	-19.12%	46.56%		34.44%	-31.24%		-41.95%	12.59%	25.53%	-44.47%	-44.96%	16.75%	-17.14%			
dibenz[a,h+a,c]anthracene																
cis/trans-decalin												-13.15%				
dibenzofuran		-9.90%	-69.59%		-21.37%			73.46%		-68.79%		31.05%	-19.46%	-14.82%		113.77%
retene								-76.29%	1.54%	-53.09%		12.47%		99.43%	6.36%	37.24%
benzothiophene			215.93%			5468.27%		-26.07%				-18.73%				54.45%
dibenzothiophene	-31.27%	3.62%	-35.44%	-46.81%	11.17%	873.67%	2.62%	-1.59%	33.55%	-43.74%		19.76%	-25.54%	23.40%	42.03%	34.60%
naphthobenzothiophene								150.15%		-60.23%		36.18%				

Table 8. Marine Sediment (QA10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by extraction method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	24.69%	39.70%				34.81%	14.56%	-59.80%	27.26%	-57.51%	-45.13%	-34.83%	-23.79%	-23.34%	-9.05%	26.08%	-54.35%
2-methylnaphthalene	42.56%	30.87%		-2.14%	-13.69%	35.31%	7.03%	-63.17%	29.38%	-61.34%	-78.33%	-29.24%	128.13%	-16.06%	-21.69%	28.80%	-62.43%
2,6-dimethylnaphthalene	51.33%					63.68%	32.51%	-53.94%	-12.54%	-40.96%	-63.80%	-9.05%		9.97%	-18.14%	18.79%	-41.29%
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene						55.89%	51.31%	-29.72%		-12.66%	-36.53%	-15.08%		-7.61%		27.57%	-3.32%
1-methylphenanthrene	23.34%					0.81%	5.34%	-8.26%	46.61%	-30.93%	4.54%	-29.86%	-9.86%	6.68%	6.28%	23.21%	-44.29%
C1-decalins							14.03%							-29.64%		10.79%	
C2-decalins							17.27%							31.65%		8.99%	
C3-decalins							79.53%							24.38%		-27.20%	
C4-decalins							2.98%							66.74%		-4.76%	
C1-naphthalenes	106.97%				-17.18%		15.52%	-70.58%	101.48%	-64.60%	-65.44%	-37.52%		-24.01%	-39.73%	21.22%	-37.36%
C2-naphthalenes	83.41%				-35.73%		-11.63%	-63.85%	9.29%	-63.44%	-71.80%	9.34%	-4.16%	-29.14%	-33.72%	-30.19%	-54.85%
C3-naphthalenes	89.26%				-25.13%		3.37%	-60.58%	-2.41%	-48.49%	-61.89%	17.47%	-4.25%	-8.95%	-3.57%	-26.07%	-36.31%
C4-naphthalenes	85.12%				-14.88%		21.66%	-53.85%	-32.19%	-29.16%	-42.39%	-23.60%		8.18%	5.58%	-19.22%	-19.14%
C1-benzothiophenes							-69.85%							-10.18%		-22.24%	
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes							-29.83%							37.75%		-51.95%	
C1-fluorenes	61.25%				1023.33%		-39.61%	-64.40%	-8.58%	-2.75%	-27.21%	3.58%		-40.06%	9.16%	-41.42%	
C2-fluorenes	37.24%				459.63%		-12.75%	-67.85%	-14.41%	1.69%	-65.64%	-49.15%		6.97%	130.93%	10.12%	
C3-fluorenes	78.90%				-37.83%		-40.92%	-14.56%	-75.54%	8.40%	-23.79%	-42.62%		2.55%	75.00%	21.22%	-5.53%
C1-phenanthrenes/anthracenes	72.57%				11.86%		22.07%	-29.75%	60.68%	-33.24%	-38.94%	-31.02%	53.46%	-16.30%	8.37%	-8.82%	-31.49%
C2-phenanthrenes/anthracenes	42.99%				15.97%		15.97%	-35.64%	35.97%	-19.11%	-46.22%	-23.46%	10.46%	-13.32%	16.98%	-15.20%	-11.87%
C3-phenanthrenes/anthracenes	43.20%				41.25%		2.96%	-41.80%	9.28%	-10.23%	-47.20%	-4.63%		-11.31%	39.62%	-17.27%	-12.58%
C4-phenanthrenes/anthracenes	-11.82%				87.12%		15.51%	-31.16%	-42.43%	43.23%	-6.08%	-7.59%		-15.98%	28.11%	-23.47%	-1.03%
C1-dibenzothiophenes	19.88%				-1.35%		-11.13%	-47.96%	29.27%	-7.84%	-37.00%	14.94%		-2.14%	-5.30%	17.51%	-27.52%
C2-dibenzothiophenes	21.06%				5.43%		13.97%	-47.41%	17.04%	-21.41%	-28.61%	-0.07%		-1.93%	-7.04%	14.33%	-25.88%
C3-dibenzothiophenes	18.33%				-34.46%		30.54%	-42.52%	-18.49%	-16.11%	-16.38%	1.67%		-2.59%	-3.90%	11.04%	-25.28%
C4-dibenzothiophenes	5.71%				-41.01%		-3.67%	-46.14%	-59.60%	22.42%	5.71%	36.05%		-10.68%	8.90%	1.02%	-21.19%
C1-fluoranthenes/pyrenes	47.53%				47.89%		-14.53%	-27.45%	13.70%	-6.78%	-51.22%	-20.09%	-39.17%	-22.28%	57.63%	-6.18%	-10.55%
C2-fluoranthenes/pyrenes	62.65%				50.73%		-34.79%	-14.68%	-47.21%	5.44%	-42.01%	-1.56%		-24.42%	78.26%	3.74%	3.95%
C3-fluoranthenes/pyrenes	62.37%				-8.31%		-24.79%	-32.68%	-63.94%	19.16%	5.62%	-4.08%		-25.24%	46.43%	11.70%	1.92%
C4-fluoranthenes/pyrenes	15.33%						-41.79%		-82.71%					-32.60%			
C1-naphthobenzothiophenes							1.54%							2.25%		-44.98%	
C2-naphthobenzothiophenes							-5.84%							-10.06%		-50.83%	
C3-naphthobenzothiophenes							-30.06%							-46.28%		-67.34%	
C4-naphthobenzothiophenes							12.26%							-6.41%		-58.87%	
C1-B[a]A/chrysenes	36.16%				4.84%		14.28%	-37.72%	-6.59%	-15.17%	-8.83%	-8.78%		-7.83%	28.69%	-13.30%	9.06%
C2-B[a]A/chrysenes	43.06%				19.21%		18.52%	-35.37%	-17.83%	-11.34%	-19.97%	-21.95%		-22.86%	25.14%	-13.48%	3.81%
C3-B[a]A/chrysenes	10.33%				11.25%		27.63%	-47.54%	-49.07%	6.02%	-7.04%	7.07%		6.71%		8.98%	-5.75%
C4-B[a]A/chrysenes	10.32%						12.21%	-32.08%	-86.71%	307.49%		-12.24%		58.98%		14.10%	-1.73%

Table 8 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by extraction method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	-66.96%	-21.87%		-53.90%	-55.89%		182.43%	36.68%	7.78%			24.69%	-28.40%		15.32%	100.82%
2-methylnaphthalene	-69.16%	-23.17%	-70.30%	-55.74%	-45.52%		208.30%	51.30%	41.53%	-83.72%		38.27%	-33.38%	-41.82%	31.17%	98.23%
2,6-dimethylnaphthalene		7.81%	-58.13%	-29.02%	-35.06%		206.28%	64.20%	52.90%	-77.18%		11.54%	-32.37%	-20.02%	-27.49%	
2,6+2,7-dimethylnaphthalene																
1,6,7-trimethylnaphthalene			-48.60%	-35.21%			73.89%	-23.20%		-50.57%		-34.56%	1.54%	6.40%		80.48%
1-methylphenanthrene		36.81%	-44.09%	-9.06%		-41.59%	-2.75%	-9.46%	25.21%	-58.08%		-0.52%	-2.66%	60.01%		52.55%
C1-decalins												4.83%		67149.76%		
C2-decalins								-56.49%				-1.41%				
C3-decalins								-40.74%				-35.97%				
C4-decalins								-51.93%				-13.02%				
C1-naphthalenes	-70.50%	-25.48%	-65.86%		-54.10%			49.10%	105.83%			35.54%	-34.92%	29.84%		141.79%
C2-naphthalenes	-70.03%	-33.88%	-77.03%		-70.92%	305.71%	137.24%	0.18%	86.71%			-29.46%	-51.80%	5.81%		93.94%
C3-naphthalenes	-63.92%	-21.43%	-51.50%		-53.17%		136.59%	-13.80%	91.61%			-18.87%	-47.27%	81.69%		127.63%
C4-naphthalenes	-53.00%	-45.56%	-91.13%		-51.30%		142.86%	5.23%	85.98%			-7.40%	-41.88%	-20.50%		190.59%
C1-benzothiophenes			0.90%					-33.31%				-5.26%				139.94%
C2-benzothiophenes																
C3-benzothiophenes																
C4-benzothiophenes								-48.92%				6.79%				86.16%
C1-fluorenes	-77.84%	107.30%	-25.11%				-41.65%	-27.68%	64.72%			-51.44%	-63.01%	167.70%		97.04%
C2-fluorenes	-67.62%	5.87%	-91.75%				19.32%	30.97%	116.94%			31.42%	-26.12%	10.12%		-6.31%
C3-fluorenes	-38.95%	-9.85%	-92.33%		-21.61%		12.05%	73.14%	173.93%			15.64%	-82.17%	-12.22%		37.10%
C1-phenanthrenes/anthracenes	-65.25%	0.40%	-66.49%		-62.68%	-86.29%	-6.58%	18.17%	73.64%	-72.65%		27.80%	-10.32%	108.51%		102.29%
C2-phenanthrenes/anthracenes	-48.73%	27.85%	-52.58%		-3.02%		-9.18%	22.01%	52.21%	-36.22%		18.29%	-8.68%	-25.64%		90.18%
C3-phenanthrenes/anthracenes	-42.91%	5.85%	-71.28%		-12.94%		-2.11%	18.67%	68.34%	-29.92%		5.12%	-2.46%	-40.39%		112.77%
C4-phenanthrenes/anthracenes	-42.41%	-41.16%	-57.43%		-33.57%		-17.47%	37.40%	382.82%	-60.30%		2.24%	-4.29%	-34.26%		216.82%
C1-dibenzothiophenes	-61.39%	21.36%	-58.03%		-10.04%		6.74%	-10.83%	70.84%			39.34%	-2.24%	5.46%		57.41%
C2-dibenzothiophenes	-57.26%	27.35%	-69.13%		-12.78%		5.21%	9.90%	142.99%	-36.13%		32.65%	-4.23%	-17.72%		39.66%
C3-dibenzothiophenes	-54.89%	3.74%	-73.57%		0.06%		-0.18%	24.83%	131.14%	-45.75%		31.58%	-0.56%	14.72%		67.02%
C4-dibenzothiophenes	-44.27%		-20.43%					4.06%	105.67%			27.04%	-7.42%	-30.19%		68.01%
C1-fluoranthenes/pyrenes	-55.26%	15.09%	-34.52%		43.12%	-90.68%	-1.37%	11.58%	225.40%	-39.51%		27.81%	-28.44%	66.97%		26.02%
C2-fluoranthenes/pyrenes	-46.27%	39.09%	-75.74%		11.15%			24.69%	266.88%	-32.93%		36.76%	-54.91%	16.23%		41.84%
C3-fluoranthenes/pyrenes	-35.27%		-61.47%		-17.77%			33.29%	232.47%	-21.01%		76.31%	-55.62%	13.80%		79.59%
C4-fluoranthenes/pyrenes		-43.28%	-75.18%		-11.89%			14.05%	75.51%			61.51%	-78.55%	60.19%		139.41%
C1-naphthobenzothiophenes								104.67%		-48.02%		20.47%		-35.93%		
C2-naphthobenzothiophenes								85.54%				29.97%		-48.79%		
C3-naphthobenzothiophenes								2.63%				-6.27%		147.32%		
C4-naphthobenzothiophenes								30.43%				58.46%		-35.88%		
C1-B[a]A/chrysenes	-41.30%	39.12%	-47.53%		2.85%	-13.05%	-34.74%	33.41%	45.33%	-40.48%		6.82%	-27.21%	32.66%		49.31%
C2-B[a]A/chrysenes	-44.89%	1.75%	-27.36%		-6.13%		-25.21%	38.85%	71.50%	-49.60%		17.19%	-29.24%	27.58%		58.60%
C3-B[a]A/chrysenes	-43.79%	5.29%					-92.79%	31.99%	-26.31%			56.90%	-35.57%	31.25%		104.45%
C4-B[a]A/chrysenes		5.12%					-62.92%	9.69%	-33.86%			68.43%	-62.44%	-40.12%		153.24%

Table 9. Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by extraction method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole						69.76%	-33.01%							-32.39%			
17α(H)-22,29,30-Tisnorhopane	46.85%				57.61%			-19.01%	33.12%	-4.10%	-20.78%	-41.77%			-9.84%	-36.56%	8.13%
17α(H),21β(H)-30-Norhopane	-24.40%				68.43%			-5.16%	8.81%	0.68%	-15.16%	-38.69%			-38.65%	-29.96%	12.15%
17α(H),21β(H)-Hopane	8.58%				78.50%		30.41%	9.99%	13.37%	6.61%	0.99%	-27.97%		-5.29%	-51.00%	-26.67%	13.69%
ααα 20R-Cholestane	-4.65%				112.99%			17.22%	-66.27%	5.85%		-7.02%			12.28%	-21.35%	32.73%
αββ 20R-Cholestane	-23.09%				44.94%			22.41%	7.40%	11.44%	-10.24%	-41.92%			42.30%	-22.21%	18.27%
αββ 20R 24S-Methylcholestane	-0.26%				39.71%			21.09%	-19.21%	9.92%	-9.23%	-36.04%			10.95%	-16.15%	33.57%
ααα 20R 24R-Ethylcholestane	3.45%				25.79%			29.69%	-0.78%	19.54%	-11.57%	-11.95%			-28.88%	-13.48%	13.91%
αββ 20R 24R-Ethylcholestane	-9.60%				40.52%			2.70%	-10.76%	12.48%	-37.57%	-35.57%			29.97%	-7.01%	66.36%
17α(H),21β(H)-22R-Homohopane	-3.30%				55.46%			-3.89%	21.05%	5.72%	-26.48%	-28.05%			-70.40%	-19.89%	5.12%
17α(H),21β(H)- 22S-Homohopane	18.80%							5.68%	16.11%	6.89%	-17.80%	-21.35%			-67.89%	-16.09%	24.41%

Table 9 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by extraction method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		-13.16%	-59.56%			83.82%			-27.63%			-6.95%		19.10%		
17α(H)-22,29,30-Tisnorhopane	-37.21%		-10.32%		-23.14%				55.16%			1.86%				
17α(H),21β(H)-30-Norhopane	-33.98%				-26.42%				57.21%			15.06%		50.08%		
17α(H),21β(H)-Hopane	-27.15%		18.58%		-28.92%	-56.89%			23.55%			19.64%				
ααα 20R-Cholestane	-23.96%								-60.58%			2.75%				
αββ 20R-Cholestane	-24.67%				4.46%				-18.04%			-11.03%				
αββ 20R 24S-Methylcholestane	-24.64%		323.52%			-22.59%			7.21%			5.68%				
ααα 20R 24R-Ethylcholestane	-27.83%		6.30%		-10.24%				0.90%			5.16%				
αββ 20R 24R-Ethylcholestane	-35.63%				-24.30%				-9.97%			18.38%				
17α(H),21β(H)-22R-Homohopane	-32.03%				-42.22%				100.16%			38.75%				
17α(H),21β(H)- 22S-Homohopane	-25.81%				-35.62%				88.56%			24.11%				

Tables 10 through 12: % differences from Exercise Assigned Values color coded by quantitation method

IS/surrogate standards used for quantitation calculations were:

those added prior to extraction

those added after extraction/cleanup and just prior to chromatographic analysis - not correct for recovery

those added after extraction/cleanup and just prior to chromatographic analysis - correct for recovery

Table 10. Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by quantitation method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	-0.79%	0.32%	1.93%	-5.05%	-5.89%	1.72%	-0.17%	-0.03%	-0.17%	-0.33%	-21.93%	2.21%	3.39%	-0.93%	-2.89%	0.40%	-3.41%
TOC (%)							7.44%	14.19%									

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
naphthalene	52.76%	28.46%		9.80%	-22.49%	50.30%	18.72%	-67.60%	81.50%	-62.63%	-84.02%	-43.20%	-15.72%	-36.54%	-36.23%	32.05%	-63.40%
biphenyl	20.44%	17.38%				73.58%	12.08%	-61.08%	48.37%	-47.27%	-46.79%	14.75%	-26.88%	-13.21%	69.37%	-3.04%	-38.74%
acenaphthene	18.28%	28.54%				6.22%	19.06%	-43.83%	34.15%	-21.99%	-56.01%	-16.77%	-32.19%	-21.81%	109.38%	11.44%	-24.09%
acenaphthylene	0.61%	-89.46%			45.66%	-64.58%	-29.93%	-19.01%	47.54%	-1.65%	6.69%	-1.19%	-78.01%	-37.12%	179.72%	30.32%	19.68%
fluorene	10.71%	3.36%				70.07%	33.37%	-45.97%	95.66%	-35.44%	-62.93%	-30.57%	-32.06%	-0.77%	75.02%	4.35%	-49.64%
phenanthrene	33.27%	38.58%	28.15%	7.67%	16.66%	18.67%	-1.73%	-29.57%	35.63%	-24.76%	-33.37%	3.44%	-27.39%	-15.26%	22.98%	-1.44%	-22.62%
anthracene	24.84%	8.73%		-24.66%	49.22%	-22.93%	-32.85%	-33.58%	35.14%	-27.82%	-19.11%	13.55%	-9.56%	-35.94%	50.22%	17.47%	-13.93%
fluoranthene	14.49%	14.99%	-10.95%	0.73%	24.47%	-14.90%	12.33%	-7.64%	36.06%	-13.34%	-34.78%	22.08%	-38.18%	-13.25%	65.59%	-6.44%	-16.38%
pyrene	14.63%	10.28%	-0.14%	0.51%	18.31%	4.74%	14.73%	-15.99%	23.74%	-10.78%	-16.10%	13.43%	-36.72%	-22.61%	53.37%	-6.44%	-21.96%
benzo[b]fluorene							-25.64%	-47.56%					-26.01%	-37.27%	13.84%		
benz[a]anthracene	11.11%	-4.63%	-25.48%	-11.99%	19.82%	-12.64%	4.67%	-10.47%	8.19%	-15.28%	-19.80%	4.67%	-2.79%	-19.26%	74.19%	-17.91%	-14.58%
chrysene		46.59%	-10.26%	-2.47%	23.46%	47.39%		-20.60%	-9.72%	-8.63%	-13.89%	30.89%	-36.24%		31.62%		-2.65%
triphenylene																	
chrysene/triphenylene	9.89%						-7.60%							-27.86%		-14.60%	
benzo[b]fluoranthene	10.91%	-5.36%	-33.67%	27.46%	33.42%	30.15%		-1.57%	4.58%	-11.76%	-38.73%	1.80%	-40.96%	4.39%	21.89%	-9.26%	-6.76%
benzo[j]fluoranthene	-25.59%																
benzo[k]fluoranthene	-24.43%	46.29%		-36.94%	85.34%	-11.58%	-34.34%	30.24%	-12.14%	20.66%	5.39%	30.84%	-40.57%		61.68%		42.22%
benzo[a]fluoranthene	-3.64%						-6.94%							-9.29%			
benzo[b+j]fluoranthene																	
benzo[j+k]fluoranthene														-12.33%		-9.01%	
benzo[a+b+j+k]fluoranthene																	
benzo[a+b]fluoranthene																	
benzo[e]pyrene	27.96%	39.45%			37.12%	34.92%	8.96%	-11.85%	8.47%	-11.61%	-9.40%	-1.32%	-37.34%	-5.73%	3.09%	-0.59%	1.13%
benzo[a]pyrene	19.44%	24.35%		-6.14%	71.59%	10.40%	3.27%	-0.14%	9.70%	-8.46%	-26.17%	-3.19%	-34.77%	-20.82%	49.79%	-3.03%	-24.23%
perylene	33.52%	22.57%			48.90%	31.42%	0.89%	-9.62%	23.07%	-1.86%	-22.90%	-12.50%	-30.20%	-9.07%	-11.61%	15.71%	-8.63%
indeno[1,2,3-cd]pyrene	21.26%	22.20%		-3.18%	80.01%	21.46%	13.73%	4.73%	24.80%	-11.68%	-30.00%	-5.24%	9.08%	8.74%	-70.01%	16.11%	-49.27%
benzo[ghi]perylene	21.03%	36.12%		0.14%	72.46%	14.67%	12.19%	11.27%	29.50%	-3.84%	-30.52%	-0.02%	-42.27%	1.38%	-75.82%	12.19%	-54.04%
dibenz[a,h]anthracene	15.14%	9.83%		25.16%	321.74%	37.53%	3.15%	29.61%	-26.03%	5.92%		10.07%	-39.52%	61.27%	-59.97%	14.65%	-23.81%
dibenz[a,h+a,c]anthracene																	
cis/trans-decalin							-31.07%							-44.22%		88.43%	
dibenzofuran				26.68%		88.11%	44.70%	-52.63%		-43.47%	-63.06%	-8.89%	-6.33%	-14.41%	25.04%	28.32%	-38.38%
retene							-43.39%							8.94%		6.79%	
benzothiophene		-32.39%					-39.01%						-52.26%	-64.11%		-37.82%	
dibenzothiophene	30.17%	8.04%			27.57%	43.97%	-26.51%	-24.19%	44.63%	-22.50%	-26.48%	-12.79%	-20.86%	-23.07%	35.64%	0.49%	-20.47%
naphthobenzothiophene							-24.50%							-42.63%		-58.97%	

Table 10 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Water, TOC, and PAHs

Color coded by quantitation method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.95%	1.44%	0.74%	0.46%	-0.72%	1.44%	0.27%	1.51%	0.53%	4.32%	9.25%	10.44%	-1.00%	0.67%	1.33%
TOC (%)			-49.89%			28.26%										

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
naphthalene	-70.25%	-39.30%	-72.33%	-58.48%	-42.79%	-42.38%	263.26%	54.06%	68.76%	-80.38%		58.50%	-27.21%	-50.48%	96.38%	100.85%
biphenyl	-59.59%	1.36%	-80.33%	-49.69%	-45.92%		16.70%	41.73%	20.84%			3.67%	-30.88%		32.83%	50.01%
acenaphthene	-41.91%	9.28%		-44.43%	-46.35%	506.11%	11.25%	33.78%	21.04%		-88.66%	20.20%	-36.99%		25.88%	37.84%
acenaphthylene	-16.94%	90.30%	-57.89%	-6.02%	-2.84%	127.62%	-40.68%	61.88%	4.20%	-70.99%	-80.11%	12.08%	-63.38%	115.18%	-64.21%	-17.49%
fluorene	-47.41%	-26.23%	-79.20%	-18.68%	-28.34%	236.42%	22.13%	58.79%	13.31%	-62.11%	-72.76%	5.96%	-19.09%	38.70%	64.74%	35.81%
phenanthrene	-38.77%	22.12%	-65.35%	-16.21%	-1.44%	-32.68%	5.08%	29.02%	36.77%	-40.35%	-48.71%	33.33%	-12.65%	-6.90%	51.04%	36.77%
anthracene	-43.68%	59.05%	-71.51%	101.72%	-18.84%		-15.43%	57.32%	29.11%	-63.51%	-74.91%	3.54%	-43.59%	50.68%	2.16%	49.13%
fluoranthene	-28.89%	25.76%	-59.62%	18.98%	6.53%	-35.14%	-22.02%	13.95%	18.03%	-43.24%	-32.02%	29.44%	-30.08%	-1.75%	16.96%	28.62%
pyrene	-33.68%	22.65%	-57.86%	1.22%	44.47%	-41.28%	-22.47%	7.78%	21.89%	-45.19%	-34.33%	32.20%	-35.96%	21.46%	13.30%	24.93%
benzo[b]fluorene			67.53%			195.58%		-49.50%				-24.72%		-39.11%		-27.12%
benz[a]anthracene	-36.95%	2.24%	-64.03%	99.18%	8.19%	-24.94%	-33.57%	90.50%	10.08%	-49.99%	-46.20%	7.11%	-36.17%	5.48%	15.53%	21.71%
chrysene	-30.93%	42.67%	-82.89%		14.94%	31.98%	-53.00%			-40.86%	-21.86%		-18.42%			
triphenylene																
chrysene/triphenylene				-4.35%				29.17%	9.45%			0.70%		-20.43%		25.63%
benzo[b]fluoranthene	-29.44%	77.64%	-70.49%	-13.03%	-13.49%	-2.72%	-31.01%	36.37%	14.77%		-42.94%	5.74%	-9.64%		5.28%	15.93%
benzo[j]fluoranthene			-59.22%			103.75%									-18.94%	
benzo[k]fluoranthene	-10.74%	-8.47%	-70.54%	-43.53%	17.07%	72.16%	-52.97%				-18.77%		-58.08%	-33.62%	-25.72%	
benzo[a]fluoranthene			16.29%					5.25%				-8.67%			-3.47%	10.48%
benzo[b+j]fluoranthene																
benzo[j+k]fluoranthene								-35.48%	7.20%			-1.11%				50.74%
benzo[a+b+j+k]fluoranthene																
benzo[a+b]fluoranthene																
benzo[e]pyrene	-24.93%		-40.21%	-1.86%	-23.80%	25.37%	-23.16%	-9.46%	27.57%	-49.02%		13.86%	-32.42%	4.31%	7.98%	42.51%
benzo[a]pyrene	-27.56%	17.77%	-88.61%	31.21%	-28.39%	220.59%	-18.16%	7.46%	29.54%	-53.00%	-51.89%	4.54%	-23.91%	-2.04%	18.10%	34.74%
perylene	-31.53%		-52.99%	-8.63%	-6.75%	160.35%	-51.71%	17.15%	36.06%	-45.13%		9.74%	-19.25%	-13.38%	39.64%	57.08%
indeno[1,2,3-cd]pyrene	2.82%	40.87%	8.31%	23.13%	-51.62%	158.98%	-22.06%	14.14%	28.15%	-60.38%	-53.49%	11.02%	-15.35%	-31.74%	8.59%	44.88%
benzo[ghi]perylene	-13.99%	26.10%	-37.38%	38.83%	-51.10%	102.13%	-12.53%	-14.21%	25.79%	-59.11%	-61.12%	14.36%	-20.57%	-14.14%	31.56%	40.94%
dibenz[a,h]anthracene	-19.12%	46.56%		34.44%	-31.24%		-41.95%	12.59%	25.53%	-44.47%	-44.96%	16.75%	-17.14%			
dibenz[a,h+a,c]anthracene																
cis/trans-decalin												-13.15%				
dibenzofuran		-9.90%	-69.59%		-21.37%			73.46%		-68.79%		31.05%	-19.46%	-14.82%		113.77%
retene								-76.29%	1.54%	-53.09%		12.47%		99.43%	6.36%	37.24%
benzothiophene			215.93%			5468.27%		-26.07%				-18.73%				54.45%
dibenzothiophene	-31.27%	3.62%	-35.44%	-46.81%	11.17%	873.67%	2.62%	-1.59%	33.55%	-43.74%		19.76%	-25.54%	23.40%	42.03%	34.60%
naphthobenzothiophene								150.15%		-60.23%		36.18%				

Table 11. Marine Sediment (QA10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by quantitation method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	24.69%	39.70%				34.81%	14.56%	-59.80%	27.26%	-57.51%	-45.13%	-34.83%	-23.79%	-23.34%	-9.05%	26.08%	-54.35%
2-methylnaphthalene	42.56%	30.87%		-2.14%	-13.69%	35.31%	7.03%	-63.17%	29.38%	-61.34%	-78.33%	-29.24%	128.13%	-16.06%	-21.69%	28.80%	-62.43%
2,6-dimethylnaphthalene	51.33%					63.68%	32.51%	-53.94%	-12.54%	-40.96%	-63.80%	-9.05%		9.97%	-18.14%	18.79%	-41.29%
2,6+2,7-dimethylnaphthalene																	
1,6,7-trimethylnaphthalene						55.89%	51.31%	-29.72%		-12.66%	-36.53%	-15.08%		-7.61%		27.57%	-3.32%
1-methylphenanthrene	23.34%					0.81%	5.34%	-8.26%	46.61%	-30.93%	4.54%	-29.86%	-9.86%	6.68%	6.28%	23.21%	-44.29%
C1-decalins							14.03%							-29.64%		10.79%	
C2-decalins							17.27%							31.65%		8.99%	
C3-decalins							79.53%							24.38%		-27.20%	
C4-decalins							2.98%							66.74%		-4.76%	
C1-naphthalenes	106.97%				-17.18%		15.52%	-70.58%	101.48%	-64.60%	-65.44%	-37.52%		-24.01%	-39.73%	21.22%	-37.36%
C2-naphthalenes	83.41%				-35.73%		-11.63%	-63.85%	9.29%	-63.44%	-71.80%	9.34%	-4.16%	-29.14%	-33.72%	-30.19%	-54.85%
C3-naphthalenes	89.26%				-25.13%		3.37%	-60.58%	-2.41%	-48.49%	-61.89%	17.47%	-4.25%	-8.95%	-3.57%	-26.07%	-36.31%
C4-naphthalenes	85.12%				-14.88%		21.66%	-53.85%	-32.19%	-29.16%	-42.39%	-23.60%		8.18%	5.58%	-19.22%	-19.14%
C1-benzothiophenes							-69.85%							-10.18%		-22.24%	
C2-benzothiophenes																	
C3-benzothiophenes																	
C4-benzothiophenes							-29.83%							37.75%		-51.95%	
C1-fluorenes	61.25%				1023.33%		-39.61%	-64.40%	-8.58%	-2.75%	-27.21%	3.58%		-40.06%	9.16%	-41.42%	
C2-fluorenes	37.24%				459.63%		-12.75%	-67.85%	-14.41%	1.69%	-65.64%	-49.15%		6.97%	130.93%	10.12%	
C3-fluorenes	78.90%				-37.83%		-40.92%	-14.56%	-75.54%	8.40%	-23.79%	-42.62%		2.55%	75.00%	21.22%	-5.53%
C1-phenanthrenes/anthracenes	72.57%				11.86%		22.07%	-29.75%	60.68%	-33.24%	-38.94%	-31.02%	53.46%	-16.30%	8.37%	-8.82%	-31.49%
C2-phenanthrenes/anthracenes	42.99%				15.97%		15.97%	-35.64%	35.97%	-19.11%	-46.22%	-23.46%	10.46%	-13.32%	16.98%	-15.20%	-11.87%
C3-phenanthrenes/anthracenes	43.20%				41.25%		2.96%	-41.80%	9.28%	-10.23%	-47.20%	-4.63%		-11.31%	39.62%	-17.27%	-12.58%
C4-phenanthrenes/anthracenes	-11.82%				87.12%		15.51%	-31.16%	-42.43%	43.23%	-6.08%	-7.59%		-15.98%	28.11%	-23.47%	-1.03%
C1-dibenzothiophenes	19.88%				-1.35%		-11.13%	-47.96%	29.27%	-7.84%	-37.00%	14.94%		-2.14%	-5.30%	17.51%	-27.52%
C2-dibenzothiophenes	21.06%				5.43%		13.97%	-47.41%	17.04%	-21.41%	-28.61%	-0.07%		-1.93%	-7.04%	14.33%	-25.88%
C3-dibenzothiophenes	18.33%				-34.46%		30.54%	-42.52%	-18.49%	-16.11%	-16.38%	1.67%		-2.59%	-3.90%	11.04%	-25.28%
C4-dibenzothiophenes	5.71%				-41.01%		-3.67%	-46.14%	-59.60%	22.42%	5.71%	36.05%		-10.68%	8.90%	1.02%	-21.19%
C1-fluoranthenes/pyrenes	47.53%				47.89%		-14.53%	-27.45%	13.70%	-6.78%	-51.22%	-20.09%	-39.17%	-22.28%	57.63%	-6.18%	-10.55%
C2-fluoranthenes/pyrenes	62.65%				50.73%		-34.79%	-14.68%	-47.21%	5.44%	-42.01%	-1.56%		-24.42%	78.26%	3.74%	3.95%
C3-fluoranthenes/pyrenes	62.37%				-8.31%		-24.79%	-32.68%	-63.94%	19.16%	5.62%	-4.08%		-25.24%	46.43%	11.70%	1.92%
C4-fluoranthenes/pyrenes	15.33%						-41.79%		-82.71%					-32.60%			
C1-naphthobenzothiophenes							1.54%							2.25%		-44.98%	
C2-naphthobenzothiophenes							-5.84%							-10.06%		-50.83%	
C3-naphthobenzothiophenes							-30.06%							-46.28%		-67.34%	
C4-naphthobenzothiophenes							12.26%							-6.41%		-58.87%	
C1-B[a]A/chrysenes	36.16%				4.84%		14.28%	-37.72%	-6.59%	-15.17%	-8.83%	-8.78%		-7.83%	28.69%	-13.30%	9.06%
C2-B[a]A/chrysenes	43.06%				19.21%		18.52%	-35.37%	-17.83%	-11.34%	-19.97%	-21.95%		-22.86%	25.14%	-13.48%	3.81%
C3-B[a]A/chrysenes	10.33%				11.25%		27.63%	-47.54%	-49.07%	6.02%	-7.04%	7.07%		6.71%		8.98%	-5.75%
C4-B[a]A/chrysenes	10.32%						12.21%	-32.08%	-86.71%	307.49%		-12.24%		58.98%		14.10%	-1.73%

Table 11 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Alkylated PAHs

Color coded by quantitation method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	-66.96%	-21.87%		-53.90%	-55.89%		182.43%	36.68%	7.78%			24.69%	-28.40%		15.32%	100.82%
2-methylnaphthalene	-69.16%	-23.17%	-70.30%	-55.74%	-45.52%		208.30%	51.30%	41.53%	-83.72%		38.27%	-33.38%	-41.82%	31.17%	98.23%
2,6-dimethylnaphthalene		7.81%	-58.13%	-29.02%	-35.06%		206.28%	64.20%	52.90%	-77.18%		11.54%	-32.37%	-20.02%	-27.49%	
2,6+2,7-dimethylnaphthalene																
1,6,7-trimethylnaphthalene			-48.60%	-35.21%			73.89%	-23.20%		-50.57%		-34.56%	1.54%	6.40%		80.48%
1-methylphenanthrene		36.81%	-44.09%	-9.06%		-41.59%	-2.75%	-9.46%	25.21%	-58.08%		-0.52%	-2.66%	60.01%		52.55%
C1-decalins												4.83%		67149.76%		
C2-decalins								-56.49%				-1.41%				
C3-decalins								-40.74%				-35.97%				
C4-decalins								-51.93%				-13.02%				
C1-naphthalenes	-70.50%	-25.48%	-65.86%		-54.10%			49.10%	105.83%			35.54%	-34.92%	29.84%		141.79%
C2-naphthalenes	-70.03%	-33.88%	-77.03%		-70.92%	305.71%	137.24%	0.18%	86.71%			-29.46%	-51.80%	5.81%		93.94%
C3-naphthalenes	-63.92%	-21.43%	-51.50%		-53.17%		136.59%	-13.80%	91.61%			-18.87%	-47.27%	81.69%		127.63%
C4-naphthalenes	-53.00%	-45.56%	-91.13%		-51.30%		142.86%	5.23%	85.98%			-7.40%	-41.88%	-20.50%		190.59%
C1-benzothiophenes			0.90%					-33.31%				-5.26%				139.94%
C2-benzothiophenes																
C3-benzothiophenes																
C4-benzothiophenes								-48.92%				6.79%				86.16%
C1-fluorenes	-77.84%	107.30%	-25.11%				-41.65%	-27.68%	64.72%			-51.44%	-63.01%	167.70%		97.04%
C2-fluorenes	-67.62%	5.87%	-91.75%				19.32%	30.97%	116.94%			31.42%	-26.12%	10.12%		-6.31%
C3-fluorenes	-38.95%	-9.85%	-92.33%		-21.61%		12.05%	73.14%	173.93%			15.64%	-82.17%	-12.22%		37.10%
C1-phenanthrenes/anthracenes	-65.25%	0.40%	-66.49%		-62.68%	-86.29%	-6.58%	18.17%	73.64%	-72.65%		27.80%	-10.32%	108.51%		102.29%
C2-phenanthrenes/anthracenes	-48.73%	27.85%	-52.58%		-3.02%		-9.18%	22.01%	52.21%	-36.22%		18.29%	-8.68%	-25.64%		90.18%
C3-phenanthrenes/anthracenes	-42.91%	5.85%	-71.28%		-12.94%		-2.11%	18.67%	68.34%	-29.92%		5.12%	-2.46%	-40.39%		112.77%
C4-phenanthrenes/anthracenes	-42.41%	-41.16%	-57.43%		-33.57%		-17.47%	37.40%	382.82%	-60.30%		2.24%	-4.29%	-34.26%		216.82%
C1-dibenzothiophenes	-61.39%	21.36%	-58.03%		-10.04%		6.74%	-10.83%	70.84%			39.34%	-2.24%	5.46%		57.41%
C2-dibenzothiophenes	-57.26%	27.35%	-69.13%		-12.78%		5.21%	9.90%	142.99%	-36.13%		32.65%	-4.23%	-17.72%		39.66%
C3-dibenzothiophenes	-54.89%	3.74%	-73.57%		0.06%		-0.18%	24.83%	131.14%	-45.75%		31.58%	-0.56%	14.72%		67.02%
C4-dibenzothiophenes	-44.27%		-20.43%					4.06%	105.67%			27.04%	-7.42%	-30.19%		68.01%
C1-fluoranthenes/pyrenes	-55.26%	15.09%	-34.52%		43.12%	-90.68%	-1.37%	11.58%	225.40%	-39.51%		27.81%	-28.44%	66.97%		26.02%
C2-fluoranthenes/pyrenes	-46.27%	39.09%	-75.74%		11.15%			24.69%	266.88%	-32.93%		36.76%	-54.91%	16.23%		41.84%
C3-fluoranthenes/pyrenes	-35.27%		-61.47%		-17.77%			33.29%	232.47%	-21.01%		76.31%	-55.62%	13.80%		79.59%
C4-fluoranthenes/pyrenes		-43.28%	-75.18%		-11.89%			14.05%	75.51%			61.51%	-78.55%	60.19%		139.41%
C1-naphthobenzothiophenes								104.67%		-48.02%		20.47%		-35.93%		
C2-naphthobenzothiophenes								85.54%				29.97%		-48.79%		
C3-naphthobenzothiophenes								2.63%				-6.27%		147.32%		
C4-naphthobenzothiophenes								30.43%				58.46%		-35.88%		
C1-B[a]A/chrysenes	-41.30%	39.12%	-47.53%		2.85%	-13.05%	-34.74%	33.41%	45.33%	-40.48%		6.82%	-27.21%	32.66%		49.31%
C2-B[a]A/chrysenes	-44.89%	1.75%	-27.36%		-6.13%		-25.21%	38.85%	71.50%	-49.60%		17.19%	-29.24%	27.58%		58.60%
C3-B[a]A/chrysenes	-43.79%	5.29%					-92.79%	31.99%	-26.31%			56.90%	-35.57%	31.25%		104.45%
C4-B[a]A/chrysenes		5.12%					-62.92%	9.69%	-33.86%			68.43%	-62.44%	-40.12%		153.24%

Table 12. Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by quantitation method

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole						69.76%	-33.01%							-32.39%			
17α(H)-22,29,30-Tisnorhopane	46.85%				57.61%			-19.01%	33.12%	-4.10%	-20.78%	-41.77%			-9.84%	-36.56%	8.13%
17α(H),21β(H)-30-Norhopane	-24.40%				68.43%			-5.16%	8.81%	0.68%	-15.16%	-38.69%			-38.65%	-29.96%	12.15%
17α(H),21β(H)-Hopane	8.58%				78.50%		30.41%	9.99%	13.37%	6.61%	0.99%	-27.97%		-5.29%	-51.00%	-26.67%	13.69%
ααα 20R-Cholestane	-4.65%				112.99%			17.22%	-66.27%	5.85%		-7.02%			12.28%	-21.35%	32.73%
αββ 20R-Cholestane	-23.09%				44.94%			22.41%	7.40%	11.44%	-10.24%	-41.92%			42.30%	-22.21%	18.27%
αββ 20R 24S-Methylcholestane	-0.26%				39.71%			21.09%	-19.21%	9.92%	-9.23%	-36.04%			10.95%	-16.15%	33.57%
ααα 20R 24R-Ethylcholestane	3.45%				25.79%			29.69%	-0.78%	19.54%	-11.57%	-11.95%			-28.88%	-13.48%	13.91%
αββ 20R 24R-Ethylcholestane	-9.60%				40.52%			2.70%	-10.76%	12.48%	-37.57%	-35.57%			29.97%	-7.01%	66.36%
17α(H),21β(H)-22R-Homohopane	-3.30%				55.46%			-3.89%	21.05%	5.72%	-26.48%	-28.05%			-70.40%	-19.89%	5.12%
17α(H),21β(H)- 22S-Homohopane	18.80%							5.68%	16.11%	6.89%	-17.80%	-21.35%			-67.89%	-16.09%	24.41%

Table 12 (cont). Marine Sediment (QA10SED10): % differences from exercised assigned values - Biomarkers

Color coded by quantitation method

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		-13.16%	-59.56%			83.82%			-27.63%			-6.95%		19.10%		
17α(H)-22,29,30-Tisnorhopane	-37.21%		-10.32%		-23.14%				55.16%			1.86%				
17α(H),21β(H)-30-Norhopane	-33.98%				-26.42%				57.21%			15.06%		50.08%		
17α(H),21β(H)-Hopane	-27.15%		18.58%		-28.92%	-56.89%			23.55%			19.64%				
ααα 20R-Cholestane	-23.96%								-60.58%			2.75%				
αββ 20R-Cholestane	-24.67%				4.46%				-18.04%			-11.03%				
αββ 20R 24S-Methylcholestane	-24.64%		323.52%			-22.59%			7.21%			5.68%				
ααα 20R 24R-Ethylcholestane	-27.83%		6.30%		-10.24%				0.90%			5.16%				
αββ 20R 24R-Ethylcholestane	-35.63%				-24.30%				-9.97%			18.38%				
17α(H),21β(H)-22R-Homohopane	-32.03%				-42.22%				100.16%			38.75%				
17α(H),21β(H)- 22S-Homohopane	-25.81%				-35.62%				88.56%			24.11%				

Table 13. Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Water, TOC, and PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	0.21%	0.12%	1.55%	1.42%	2.58%	0.82%	0.36%	1.03%	4.12%	2.36%	5.58%	1.51%	1.58%	1.22%	1.12%	0.04%	0.00%
TOC							4.95%	5.97%									
naphthalene	1.23%	4.04%		4.36%	7.81%	17.92%	6.06%	4.87%	2.14%	20.85%	13.48%	25.19%	20.89%	3.57%	24.61%	13.81%	3.85%
biphenyl	3.58%	4.23%				20.02%	8.17%	2.73%	3.61%	28.36%	14.53%	17.66%	20.76%	7.85%	54.19%	13.11%	10.96%
acenaphthene	3.80%	3.90%				2.85%	7.86%	5.33%	2.04%	25.98%	9.20%	16.12%	23.09%	5.75%	19.78%	9.92%	5.34%
acenaphthylene	6.08%	7.88%			2.85%	14.32%	8.53%	1.07%	4.86%	34.71%	12.36%	18.51%	29.74%	7.64%	39.64%	12.01%	9.26%
fluorene	1.91%	6.20%				13.53%	9.30%	6.85%	3.35%	21.78%	56.32%	17.49%	19.77%	5.12%	21.02%	13.03%	24.53%
phenanthrene	3.18%	7.91%	12.87%	21.64%	8.88%	3.02%	6.33%	8.48%	0.97%	15.11%	16.76%	5.20%	23.90%	6.20%	35.50%	11.65%	8.09%
anthracene	2.79%	4.42%			6.76%	8.53%	5.50%	4.20%	1.45%	24.14%	8.91%	23.74%	16.53%	8.71%	32.91%	9.53%	10.56%
fluoranthene	0.79%	7.32%	9.60%	21.13%	10.18%	3.26%	7.73%	9.67%	0.88%	15.22%	2.33%	7.81%	25.02%	8.21%	39.95%	11.10%	7.76%
pyrene	3.79%	6.38%	12.61%	22.83%	9.37%	3.54%	7.68%	8.73%	1.15%	14.69%	2.81%	14.78%	23.36%	8.27%	41.74%	10.67%	5.30%
benzo[b]fluorene							2.27%	2.22%					19.74%	7.40%	47.02%		
benz[a]anthracene	3.01%	5.92%	13.16%	21.63%	12.21%	3.26%	10.43%	9.17%	3.77%	17.16%	12.50%	9.14%	22.64%	5.07%	35.39%	12.70%	7.36%
chrysene		6.68%	11.22%	22.07%	10.25%	4.88%	11.05%	9.49%	1.59%	16.37%	3.48%	12.85%	26.01%	8.33%	34.84%	12.38%	7.31%
triphenylene																	
benzo[*b*]fluoranthene	0.77%	12.05%	23.92%	22.22%	8.74%	3.82%	11.59%	2.71%	2.09%	15.56%	74.67%	6.94%	19.48%	9.96%	18.73%	13.25%	4.02%
benzo[*j*]fluoranthene	0.67%																
benzo[*k*]fluoranthene	0.59%	6.35%		1.81%	5.86%	2.46%	11.24%	11.35%	2.57%	15.30%	5.55%	5.59%	33.86%	3.51%	12.06%	7.63%	4.21%
benzo[a]fluoranthene	3.33%						10.63%							4.68%			
benzo[e]pyrene	0.32%	0.81%			10.83%	2.06%	10.12%	6.51%	2.74%	14.52%	2.04%	4.55%	22.72%	7.07%	2.06%	10.38%	5.45%
benzo[a]pyrene	0.90%	2.28%		2.06%	5.89%	2.73%	10.01%	2.49%	0.52%	14.12%	2.66%	7.33%	21.98%	5.74%	10.32%	9.81%	3.85%
perylene	3.11%	4.77%			11.81%	3.54%	10.54%	4.03%	2.63%	16.64%	5.26%	15.98%	18.20%	5.38%	10.02%	10.93%	5.65%
indeno[1,2,3-cd]pyrene	2.01%	4.80%		3.74%	6.65%	2.19%	11.96%	5.53%	5.11%	15.59%	6.03%	13.73%	23.98%	6.93%	117.56%	12.11%	20.23%
benzo[ghi]perylene	1.15%	4.84%		3.93%	7.62%	1.24%	10.74%	5.07%	3.53%	17.58%	9.64%	9.99%	29.07%	5.59%	122.49%	10.36%	24.23%
dibenz[a,h]anthracene	2.60%	6.31%			0.51%	3.44%	11.73%	1.63%	1.93%	14.02%		23.80%	12.81%	9.59%	120.49%	11.02%	13.78%
cis/trans-decalin							9.12%							1.67%		16.62%	
dibenzofuran						5.67%	9.97%	7.20%		18.84%	11.94%	16.28%	24.44%	4.25%	18.63%	13.75%	11.69%
retene							7.17%							8.04%		14.57%	
benzothiophene							5.31%						21.85%	4.55%		14.45%	
dibenzothiophene	2.27%	10.23%			10.18%	1.66%	5.81%	16.00%	2.23%	31.83%	21.40%	8.51%	17.55%	6.80%	35.64%	10.89%	19.89%
naphthobenzothiophene							10.03%							9.33%		10.22%	

Table 13 (cont). Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Water, TOC, and PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.43%	0.24%	0.52%	1.10%	0.30%	0.43%	1.36%	2.03%	5.11%	1.37%	1.01%	0.61%	n=1	0.42%	1.20%
TOC			3.91%			2.82%										
naphthalene	14.47%	10.24%	7.97%	4.86%	10.30%	6.44%	44.43%	10.44%	7.59%	33.64%		13.00%	13.58%	n=1	3.87%	2.79%
biphenyl	10.72%	13.02%		13.90%	21.78%		23.13%	9.75%	9.97%			16.03%	15.75%	n=1	1.43%	6.30%
acenaphthene	14.88%	4.95%		5.19%	54.34%	6.71%	21.45%	10.02%	18.96%			13.99%	22.68%	n=1	2.19%	2.21%
acenaphthylene	22.17%	7.40%	12.02%	10.63%	8.32%	2.91%	33.44%	7.17%	8.39%	22.62%	8.81%	8.12%	14.24%	n=1	5.93%	8.27%
fluorene	23.94%	11.80%		5.87%	10.60%	11.15%	27.56%	9.95%	12.97%		59.78%	14.93%	25.26%	n=1	2.76%	2.79%
phenanthrene	17.04%	10.81%	13.76%	14.66%	9.95%	21.41%	10.17%	12.50%	11.45%	23.10%	34.83%	16.88%	17.80%	n=1	3.40%	0.36%
anthracene	18.33%	11.28%	12.89%	12.37%	1.69%		12.68%	7.52%	10.60%	37.80%	23.04%	9.25%	11.17%	n=1	2.44%	3.59%
fluoranthene	17.85%	11.43%	12.68%	8.96%	11.74%	8.64%	7.40%	10.76%	9.14%	24.19%	13.40%	13.40%	12.06%	n=1	3.54%	1.69%
pyrene	19.67%	11.68%	13.97%	11.09%	17.44%	10.76%	12.25%	10.49%	8.90%	23.05%	12.91%	13.23%	12.80%	n=1	3.68%	2.19%
benzo[b]fluorene			30.18%			9.81%		4.97%				12.88%		n=1		16.58%
benz[a]anthracene	19.46%	6.20%	17.38%	10.54%	12.91%	5.99%	13.01%	13.22%	11.19%	23.98%	11.85%	18.10%	14.62%	n=1	4.03%	0.67%
chrysene	20.52%	15.41%	14.16%	10.34%	12.79%	7.80%	27.58%	16.25%	10.81%	25.74%	13.25%	17.88%	13.33%	n=1		0.88%
triphenylene			12.12%	10.34%		6.30%								n=1		
benzo[*b*]fluoranthene	20.44%	10.97%	13.86%	23.39%	10.91%	6.17%	14.61%	11.32%	11.31%	24.29%	9.46%	14.96%	9.75%	n=1	4.16%	3.89%
benzo[*j*]fluoranthene			16.86%			3.08%								n=1	4.18%	2.80%
benzo[*k*]fluoranthene	18.29%	8.77%	15.69%	1.96%	7.87%	8.19%	39.79%	2.67%	9.61%		10.67%	17.79%	13.09%	n=1	4.44%	
benzo[a]fluoranthene			11.66%					7.51%				10.65%		n=1	5.05%	2.50%
benzo[e]pyrene	20.77%		16.90%	14.66%	11.55%	4.77%	11.13%	9.93%	8.17%	25.86%		16.23%	10.71%	n=1	4.43%	0.52%
benzo[a]pyrene	19.48%	10.57%	20.43%	17.12%	1.78%	4.92%	11.08%	10.21%	8.80%	24.90%	7.48%	16.16%	10.94%	n=1	3.70%	2.22%
perylene	17.93%		18.55%	5.17%	5.83%	30.74%	7.67%	7.70%	8.15%	28.64%		15.92%	12.56%	n=1	2.56%	1.20%
indeno[1,2,3-cd]pyrene	15.81%	13.56%	13.80%	16.14%	13.97%	1.69%	13.68%	9.05%	10.34%	31.22%	10.31%	16.04%	11.39%	n=1	4.23%	11.60%
benzo[ghi]perylene	22.27%	10.83%	14.10%	17.14%	18.30%	3.75%	13.87%	10.06%	9.95%	32.70%	9.73%	15.22%	12.15%	n=1	3.63%	1.32%
dibenz[a,h]anthracene	29.83%	19.24%		10.20%	21.34%		17.11%	12.29%	9.79%	15.76%	7.40%	16.53%	13.68%	n=1		6.58%
cis/trans-decalin												6.36%		n=1		
dibenzofuran		9.23%	10.73%		15.34%			13.94%		6.31%		16.67%	22.93%	n=1		16.59%
retene								13.25%	10.36%	22.57%		14.54%		n=1	4.70%	2.29%
benzothiophene			10.08%			3.98%		9.99%				10.37%		n=1		15.36%
dibenzothiophene	8.08%	9.95%	69.57%	7.84%	13.77%	7.58%	15.69%	14.11%	9.41%	24.94%		17.76%	15.75%	n=1	3.05%	1.77%
naphthobenzothiophene								14.98%		33.20%		8.26%		n=1		

Table 14. Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Alkylated PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	8.85%	4.26%				24.61%	6.09%	2.50%	3.32%	25.18%	11.01%	12.06%	19.10%	6.67%	24.55%	8.81%	6.30%
2-methylnaphthalene	1.12%	3.04%			7.72%	21.35%	6.52%	4.62%	5.32%	22.52%	16.84%	16.72%	19.52%	6.61%	20.17%	10.76%	4.42%
2,6-dimethylnaphthalene	8.19%					20.31%	8.93%	2.48%	10.92%	19.48%	4.48%	16.54%		8.61%	36.97%	12.14%	8.11%
1,6,7-trimethylnaphthalene						4.17%	11.46%	9.22%		15.47%	34.26%	14.94%		3.75%		10.87%	5.77%
1-methylphenanthrene	3.15%					5.95%	8.77%	10.08%	3.74%	7.11%	7.23%	25.66%	34.43%	9.52%	57.81%	11.97%	26.26%
C1-decalins							5.21%							10.23%		8.25%	
C2-decalins							0.00%							7.41%		11.00%	
C3-decalins							6.51%							6.85%		3.19%	
C4-decalins							16.06%							5.85%		2.09%	
C1-naphthalenes	0.82%				10.95%		6.45%	4.79%	4.71%	22.68%	12.82%	14.47%		6.69%	22.67%	10.51%	4.70%
C2-naphthalenes	0.92%				13.17%		6.86%	5.81%	9.47%	26.89%	10.26%	17.49%	20.51%	8.58%	35.11%	11.82%	7.78%
C3-naphthalenes	1.02%				8.02%		9.09%	8.36%	11.92%	18.35%	8.79%	16.86%	25.27%	8.84%	41.31%	12.90%	8.79%
C4-naphthalenes	1.05%				13.48%		13.01%	10.71%	15.76%	22.65%	17.91%	19.30%		9.39%	38.30%	14.34%	9.37%
C1-benzothiophenes							3.53%							9.18%		7.94%	
C2-benzothiophenes							6.74%							7.47%		12.90%	
C3-benzothiophenes							8.53%							14.02%		2.54%	
C4-benzothiophenes							5.01%							9.50%		15.14%	
C1-fluorenes	2.57%				9.89%		11.46%	7.95%	2.92%	12.10%	117.13%	21.84%		7.34%	67.21%	15.35%	
C2-fluorenes	1.24%				7.80%		36.36%	11.28%	3.17%	13.67%	70.99%	17.84%		5.66%	32.21%	16.86%	
C3-fluorenes	3.93%				15.88%		21.66%	8.60%	4.38%	8.87%	12.94%	36.15%		3.77%	48.35%	13.95%	6.38%
C1-phenanthrenes/anthracenes	0.53%				20.34%		9.35%	15.15%	3.63%	21.91%	18.95%	16.09%	30.40%	8.61%	28.90%	12.40%	9.57%
C2-phenanthrenes/anthracenes	0.64%				8.27%		15.16%	12.89%	6.74%	18.48%	8.10%	14.41%	27.35%	9.50%	40.11%	11.09%	6.91%
C3-phenanthrenes/anthracenes	1.70%				7.08%		10.53%	11.41%	9.67%	16.88%	6.03%	12.81%		8.58%	44.29%	12.17%	7.26%
C4-phenanthrenes/anthracenes	1.97%				5.57%		17.84%	10.45%	12.73%	2.00%	41.02%	24.87%		7.01%	31.23%	15.56%	9.77%
C1-dibenzothiophenes	1.61%				9.07%		10.00%	10.53%	5.46%	17.95%	27.42%	12.82%		10.21%	39.80%	10.10%	4.79%
C2-dibenzothiophenes	0.79%				9.92%		14.58%	13.10%	8.78%	17.54%	23.76%	15.08%		9.50%	43.57%	10.04%	8.06%
C3-dibenzothiophenes	0.48%				3.81%		5.09%	7.86%	13.11%	11.00%	9.76%	10.55%		9.28%	34.76%	7.48%	5.85%
C4-dibenzothiophenes	1.68%				5.10%		7.87%	3.96%	19.74%	14.37%	4.57%	16.71%		4.10%	39.80%	6.74%	2.86%
C1-fluoranthenes/pyrenes	3.86%				9.89%		4.03%	6.69%	2.59%	12.11%	3.55%	13.98%	35.86%	5.96%	45.61%	9.09%	4.81%
C2-fluoranthenes/pyrenes	3.01%				7.80%		6.26%	1.55%	6.32%	14.41%	7.40%	24.20%		1.68%	49.69%	9.17%	3.93%
C3-fluoranthenes/pyrenes	1.72%				15.88%		7.51%	4.49%	9.26%	17.05%	4.41%	27.58%		4.15%	46.12%	9.85%	1.97%
C4-fluoranthenes/pyrenes	1.08%						8.54%		3.71%					8.32%			
C1-naphthobenzothiophenes							8.98%							10.63%		11.34%	
C2-naphthobenzothiophenes							9.62%							5.67%		9.22%	
C3-naphthobenzothiophenes							10.90%							7.57%		9.87%	
C4-naphthobenzothiophenes							12.01%							8.06%		12.67%	
C1-chrysenes	2.92%				6.05%		9.96%	6.17%	4.39%	15.72%	0.94%	17.13%		9.48%	34.95%	10.88%	3.37%
C2-chrysenes	2.60%				7.89%		13.48%	5.68%	7.13%	13.34%	9.70%	10.66%		4.98%	31.87%	11.70%	4.13%
C3-chrysenes	1.88%				6.45%		8.45%	5.78%	11.43%	13.59%	8.52%	5.50%		7.50%		13.13%	6.97%
C4-chrysenes	2.81%						14.59%	2.87%	11.42%	8.70%		15.75%		7.33%		9.70%	12.34%

Table 14 (cont). Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Alkylated PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	8.80%	14.43%		9.83%	11.70%		46.18%	7.81%	6.29%	#DIV/0!		10.92%	14.44%	n=1	2.75%	8.58%
2-methylnaphthalene	7.84%	17.64%	6.97%	9.32%	11.88%		41.53%	8.17%	8.03%	0.19%		11.40%	17.64%	n=1	2.15%	10.68%
2,6-dimethylnaphthalene		13.41%	11.04%	18.41%	14.86%		38.86%	9.44%	11.92%	0.36%		16.63%	15.68%	n=1	3.77%	1.41%
1,6,7-trimethylnaphthalene			20.67%	4.90%			30.48%	13.60%		16.45%		7.48%	19.05%	n=1		14.74%
1-methylphenanthrene		26.80%	34.24%	2.26%		0.00%	1.76%	14.09%	4.64%	24.52%		18.24%	14.43%	n=1		1.49%
C1-decalins												13.91%		n=1		
C2-decalins								8.49%				15.25%		n=1		
C3-decalins								12.03%				4.28%		n=1		
C4-decalins								14.17%				5.44%		n=1		
C1-naphthalenes	7.99%	14.11%	24.93%		10.19%			8.08%	7.50%			12.08%	15.61%	n=1		22.90%
C2-naphthalenes	16.74%	13.55%	9.88%		15.77%	7.33%	44.45%	8.22%	11.74%			15.70%	13.23%	n=1		13.62%
C3-naphthalenes	18.54%	5.30%	15.41%		26.27%		38.86%	15.25%	5.26%			18.44%	17.90%	n=1		8.85%
C4-naphthalenes	20.02%	2.38%	14.43%		33.56%		36.73%	13.19%	3.75%			17.72%	15.62%	n=1		4.06%
C1-benzothiophenes			13.00%					2.48%				23.36%		n=1		3.26%
C2-benzothiophenes						15.17%		10.22%				12.41%		n=1		4.41%
C3-benzothiophenes								1.26%				14.25%		n=1		5.47%
C4-benzothiophenes								6.05%				16.16%		n=1		39.24%
C1-fluorenes	51.43%	13.88%	14.43%				20.24%	14.49%	10.47%			18.46%	21.57%	n=1		15.64%
C2-fluorenes	30.43%	21.10%					28.94%	13.60%	12.74%			11.95%	9.75%	n=1		10.02%
C3-fluorenes	18.34%	10.01%			42.95%		43.25%	10.47%	13.59%			4.36%	27.47%	n=1		11.13%
C1-phenanthrenes/anthracenes	11.36%	31.52%	12.24%		17.48%	1.16%	8.73%	14.10%	11.79%	6.18%		16.72%	16.67%	n=1		17.07%
C2-phenanthrenes/anthracenes	19.28%	19.92%	100.21%		3.59%		9.16%	15.22%	11.70%	20.41%		16.49%	14.29%	n=1		22.18%
C3-phenanthrenes/anthracenes	13.78%	21.58%			24.28%		7.54%	14.97%	11.43%	18.01%		12.92%	9.62%	n=1		10.89%
C4-phenanthrenes/anthracenes	18.72%	14.59%			12.84%		4.27%	12.90%	10.49%	11.99%		13.31%	13.46%	n=1		38.80%
C1-dibenzothiophenes	25.05%	9.02%	20.49%		15.40%		8.12%	13.98%	12.00%			14.27%	13.89%	n=1		14.64%
C2-dibenzothiophenes	29.76%	23.36%	41.29%		17.39%		9.06%	15.60%	11.78%	9.99%		16.43%	12.48%	n=1		19.36%
C3-dibenzothiophenes	20.95%	7.32%	84.73%		15.71%		6.92%	12.99%	11.96%	19.22%		14.67%	12.28%	n=1		17.93%
C4-dibenzothiophenes	35.95%							7.59%	7.86%			15.29%	8.44%	n=1		17.22%
C1-fluoranthenes/pyrenes	18.59%	15.54%	22.04%		10.01%	9.62%	7.71%	10.01%	9.36%	30.47%		11.68%	8.33%	n=1		17.90%
C2-fluoranthenes/pyrenes	15.32%	4.36%			27.15%			6.54%	9.18%	31.59%		6.31%	11.18%	n=1		19.27%
C3-fluoranthenes/pyrenes	18.33%		11.54%		21.19%			7.10%	9.86%	32.51%		5.28%	10.02%	n=1		23.10%
C4-fluoranthenes/pyrenes		5.34%			12.84%			9.33%	9.88%			8.01%	19.68%	n=1		23.43%
C1-naphthobenzothiophenes								12.15%		3.60%		9.37%		n=1		
C2-naphthobenzothiophenes								4.00%				10.07%		n=1		
C3-naphthobenzothiophenes								7.37%				12.83%		n=1		
C4-naphthobenzothiophenes								4.04%				12.98%		n=1		
C1-chrysenes	18.70%	8.04%	7.92%		8.79%	0.49%	8.97%	9.47%	9.23%	27.42%		17.05%	13.36%	n=1		19.32%
C2-chrysenes	14.15%	2.05%	16.40%		55.91%		11.32%	6.23%	9.47%	2.93%		16.28%	14.05%	n=1		9.33%
C3-chrysenes	27.27%	17.76%					9.51%	13.00%	7.83%			12.69%	14.29%	n=1		18.74%
C4-chrysenes		11.85%					10.04%	2.49%	11.00%			6.50%	11.48%	n=1		51.92%

Table 15. Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole						11.50%	6.48%							10.42%			
17α(H)-22,29,30-Tisnorhopane	2.81%				6.89%			8.77%	5.18%	15.15%	2.08%	15.42%			12.84%	8.30%	8.13%
17α(H),21β(H)-30-Norhopane	2.73%				5.80%			6.99%	4.70%	17.97%	8.64%	12.97%			22.04%	7.94%	3.59%
17α(H),21β(H)-Hopane	0.57%				9.14%		10.98%	7.68%	3.40%	15.32%	1.81%	14.92%		10.80%	46.14%	6.28%	5.34%
ααα 20R-Cholestane	6.21%				8.51%			6.38%	4.07%	16.58%		33.47%			24.44%	9.45%	7.00%
αββ 20R-Cholestane	2.96%				13.94%			8.64%	2.32%	16.64%	5.30%	14.29%			17.86%	7.13%	9.43%
αββ 20R 24S-Methylcholestane	4.85%				7.61%			3.86%	3.77%	17.92%	23.45%	22.87%			9.25%	8.18%	8.34%
ααα 20R 24R-Ethylcholestane	1.57%				14.40%			23.65%	5.14%	12.00%	4.97%	13.56%			38.75%	5.61%	17.30%
αββ 20R 24R-Ethylcholestane	0.54%				25.83%			10.37%	10.23%	29.40%	5.57%	6.64%			24.17%	14.06%	8.70%
17α(H),21β(H)-22R-Homohopane	2.99%				7.03%			7.10%	4.42%	19.85%	3.64%	13.94%			57.83%	7.04%	7.57%
17α(H),21β(H)- 22S-Homohopane	2.53%							15.67%	3.28%	17.99%	4.70%	19.00%			73.97%	4.87%	9.37%

Table 15 (cont). Marine Sediment (QA10SED10): Laboratory relative standard deviations of three replicates - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		8.24%	8.13%			5.59%			7.49%			11.57%		n=1		
17α(H)-22,29,30-Tisnorhopane	24.37%		13.59%		8.14%				15.03%			9.69%		n=1		
17α(H),21β(H)-30-Norhopane	19.66%				7.71%				13.33%			9.66%		n=1		
17α(H),21β(H)-Hopane	20.93%		11.37%		6.97%	7.26%			18.12%			9.43%		n=1		
ααα 20R-Cholestane	14.77%								12.82%			13.42%		n=1		
αββ 20R-Cholestane	29.10%				33.60%				25.95%			10.66%		n=1		
αββ 20R 24S-Methylcholestane	16.52%		6.70%			7.39%			4.80%			8.72%		n=1		
ααα 20R 24R-Ethylcholestane	12.89%		7.67%		25.16%				17.32%			15.39%		n=1		
αββ 20R 24R-Ethylcholestane	22.57%				15.67%				20.42%			14.05%		n=1		
17α(H),21β(H)-22R-Homohopane	32.50%				13.87%				19.88%			10.37%		n=1		
17α(H),21β(H)- 22S-Homohopane	21.17%				11.62%				18.74%			10.56%		n=1		

Table 16. Marine Sediment (QA10SED10): p scores (15%) - Water, TOC, and PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Percent Water	0.01	0.01	0.10	0.09	0.17	0.05	0.02	0.07	0.27	0.16	0.37	0.10	0.11	0.08	0.07	0.00	0.00
TOC							0.33	0.40									
naphthalene	0.08	0.27		0.29	0.52	1.19	0.40	0.32	0.14	1.39	0.90	1.68	1.39	0.24	1.64	0.92	0.26
biphenyl	0.24	0.28				1.33	0.54	0.18	0.24	1.89	0.97	1.18	1.38	0.52	3.61	0.87	0.73
acenaphthene	0.25	0.26				0.19	0.52	0.36	0.14	1.73	0.61	1.07	1.54	0.38	1.32	0.66	0.36
acenaphthylene	0.41	0.53			0.19	0.95	0.57	0.07	0.32	2.31	0.82	1.23	1.98	0.51	2.64	0.80	0.62
fluorene	0.13	0.41				0.90	0.62	0.46	0.22	1.45	3.75	1.17	1.32	0.34	1.40	0.87	1.64
phenanthrene	0.21	0.53	0.86	1.44	0.59	0.20	0.42	0.57	0.06	1.01	1.12	0.35	1.59	0.41	2.37	0.78	0.54
anthracene	0.19	0.29			0.45	0.57	0.37	0.28	0.10	1.61	0.59	1.58	1.10	0.58	2.19	0.64	0.70
fluoranthene	0.05	0.49	0.64	1.41	0.68	0.22	0.52	0.64	0.06	1.01	0.16	0.52	1.67	0.55	2.66	0.74	0.52
pyrene	0.25	0.43	0.84	1.52	0.62	0.24	0.51	0.58	0.08	0.98	0.19	0.99	1.56	0.55	2.78	0.71	0.35
benzo[b]fluorene							0.15	0.15					1.32	0.49	3.13		
benz[a]anthracene	0.20	0.39	0.88	1.44	0.81	0.22	0.70	0.61	0.25	1.14	0.83	0.61	1.51	0.34	2.36	0.85	0.49
chrysene		0.45	0.75	1.47	0.68	0.33	0.74	0.63	0.11	1.09	0.23	0.86	1.73	0.56	2.32	0.83	0.49
triphenylene																	
benzo[*b*]fluoranthene	0.05	0.80	1.59	1.48	0.58	0.25	0.77	0.18	0.14	1.04	4.98	0.46	1.30	0.66	1.25	0.88	0.27
benzo[*j*]fluoranthene	0.04																
benzo[*k*]fluoranthene	0.04	0.42		0.12	0.39	0.16	0.75	0.76	0.17	1.02	0.37	0.37	2.26	0.23	0.80	0.51	0.28
benzo[a]fluoranthene	0.22						0.71							0.31			
benzo[e]pyrene	0.02	0.05			0.72	0.14	0.67	0.43	0.18	0.97	0.14	0.30	1.51	0.47	0.14	0.69	0.36
benzo[a]pyrene	0.06	0.15		0.14	0.39	0.18	0.67	0.17	0.03	0.94	0.18	0.49	1.47	0.38	0.69	0.65	0.26
perylene	0.21	0.32			0.79	0.24	0.70	0.27	0.18	1.11	0.35	1.07	1.21	0.36	0.67	0.73	0.38
indeno[1,2,3-cd]pyrene	0.13	0.32		0.25	0.44	0.15	0.80	0.37	0.34	1.04	0.40	0.92	1.60	0.46	7.84	0.81	1.35
benzo[ghi]perylene	0.08	0.32		0.26	0.51	0.08	0.72	0.34	0.24	1.17	0.64	0.67	1.94	0.37	8.17	0.69	1.62
dibenz[a,h]anthracene	0.17	0.42			0.03	0.23	0.78	0.11	0.13	0.93		1.59	0.85	0.64	8.03	0.73	0.92
cis/trans-decalin							0.61							0.11		1.11	
dibenzofuran						0.38	0.66	0.48		1.26	0.80	1.09	1.63	0.28	1.24	0.92	0.78
retene							0.48							0.54		0.97	
benzothiophene							0.35						1.46	0.30		0.96	
dibenzothiophene	0.15	0.68			0.68	0.11	0.39	1.07	0.15	2.12	1.43	0.57	1.17	0.45	2.38	0.73	1.33
naphthobenzothiophene							0.67							0.62		0.68	

Table 16 (cont). Marine Sediment (QA10SED10): p scores (15%) - Water, TOC, and PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Percent Water		0.03	0.02	0.03	0.07	0.02	0.03	0.09	0.14	0.34	0.09	0.07	0.04	n=1	0.03	0.08
TOC			0.26			0.19										
naphthalene	0.96	0.68	0.53	0.32	0.69	0.43	2.96	0.70	0.51	2.24		0.87	0.91	n=1	0.26	0.19
biphenyl	0.71	0.87		0.93	1.45		1.54	0.65	0.66			1.07	1.05	n=1	0.10	0.42
acenaphthene	0.99	0.33		0.35	3.62	0.45	1.43	0.67	1.26			0.93	1.51	n=1	0.15	0.15
acenaphthylene	1.48	0.49	0.80	0.71	0.55	0.19	2.23	0.48	0.56	1.51	0.59	0.54	0.95	n=1	0.40	0.55
fluorene	1.60	0.79		0.39	0.71	0.74	1.84	0.66	0.86		3.99	1.00	1.68	n=1	0.18	0.19
phenanthrene	1.14	0.72	0.92	0.98	0.66	1.43	0.68	0.83	0.76	1.54	2.32	1.13	1.19	n=1	0.23	0.02
anthracene	1.22	0.75	0.86	0.82	0.11		0.85	0.50	0.71	2.52	1.54	0.62	0.74	n=1	0.16	0.24
fluoranthene	1.19	0.76	0.85	0.60	0.78	0.58	0.49	0.72	0.61	1.61	0.89	0.89	0.80	n=1	0.24	0.11
pyrene	1.31	0.78	0.93	0.74	1.16	0.72	0.82	0.70	0.59	1.54	0.86	0.88	0.85	n=1	0.25	0.15
benzo[b]fluorene			2.01			0.65		0.33				0.86		n=1		1.11
benz[a]anthracene	1.30	0.41	1.16	0.70	0.86	0.40	0.87	0.88	0.75	1.60	0.79	1.21	0.97	n=1	0.27	0.04
chrysene	1.37	1.03	0.94	0.69	0.85	0.52	1.84	1.08	0.72	1.72	0.88	1.19	0.89	n=1		0.06
triphenylene			0.81	0.69		0.42								n=1		
benzo[*b*]fluoranthene	1.36	0.73	0.92	1.56	0.73	0.41	0.97	0.75	0.75	1.62	0.63	1.00	0.65	n=1	0.28	0.26
benzo[*j*]fluoranthene			1.12			0.21								n=1	0.28	0.19
benzo[*k*]fluoranthene	1.22	0.58	1.05	0.13	0.52	0.55	2.65	0.18	0.64		0.71	1.19	0.87	n=1	0.30	
benzo[a]fluoranthene			0.78					0.50				0.71		n=1	0.34	0.17
benzo[e]pyrene	1.38		1.13	0.98	0.77	0.32	0.74	0.66	0.54	1.72		1.08	0.71	n=1	0.30	0.03
benzo[a]pyrene	1.30	0.70	1.36	1.14	0.12	0.33	0.74	0.68	0.59	1.66	0.50	1.08	0.73	n=1	0.25	0.15
perylene	1.20		1.24	0.34	0.39	2.05	0.51	0.51	0.54	1.91		1.06	0.84	n=1	0.17	0.08
indeno[1,2,3-cd]pyrene	1.05	0.90	0.92	1.08	0.93	0.11	0.91	0.60	0.69	2.08	0.69	1.07	0.76	n=1	0.28	0.77
benzo[ghi]perylene	1.48	0.72	0.94	1.14	1.22	0.25	0.92	0.67	0.66	2.18	0.65	1.01	0.81	n=1	0.24	0.09
dibenz[a,h]anthracene	1.99	1.28		0.68	1.42		1.14	0.82	0.65	1.05	0.49	1.10	0.91	n=1		0.44
cis/trans-decalin												0.42		n=1		
dibenzofuran		0.62	0.72		1.02			0.93		0.42		1.11	1.53	n=1		1.11
retene								0.88	0.69	1.50		0.97		n=1	0.31	0.15
benzothiophene			0.67			0.27		0.67				0.69		n=1		1.02
dibenzothiophene	0.54	0.66	4.64	0.52	0.92	0.51	1.05	0.94	0.63	1.66		1.18	1.05	n=1	0.20	0.12
naphthobenzothiophene								1.00		2.21		0.55		n=1		

Table 17. Marine Sediment (QA10SED10): p scores (15%) - Alkylated PAHs

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1-methylnaphthalene	0.59	0.28				1.64	0.41	0.17	0.22	1.68	0.73	0.80	1.27	0.44	1.64	0.59	0.42
2-methylnaphthalene	0.07	0.20			0.51	1.42	0.43	0.31	0.35	1.50	1.12	1.11	1.30	0.44	1.34	0.72	0.29
2,6-dimethylnaphthalene	0.55					1.35	0.60	0.17	0.73	1.30	0.30	1.10		0.57	2.46	0.81	0.54
1,6,7-trimethylnaphthalene						0.28	0.76	0.61		1.03	2.28	1.00		0.25		0.72	0.38
1-methylphenanthrene	0.21					0.40	0.58	0.67	0.25	0.47	0.48	1.71	2.30	0.63	3.85	0.80	1.75
C1-decalins							0.35							0.68		0.55	
C2-decalins							0.00							0.49		0.73	
C3-decalins							0.43							0.46		0.21	
C4-decalins							1.07							0.39		0.14	
C1-naphthalenes	0.05				0.73		0.43	0.32	0.31	1.51	0.85	0.96		0.45	1.51	0.70	0.31
C2-naphthalenes	0.06				0.88		0.46	0.39	0.63	1.79	0.68	1.17	1.37	0.57	2.34	0.79	0.52
C3-naphthalenes	0.07				0.53		0.61	0.56	0.79	1.22	0.59	1.12	1.68	0.59	2.75	0.86	0.59
C4-naphthalenes	0.07				0.90		0.87	0.71	1.05	1.51	1.19	1.29		0.63	2.55	0.96	0.62
C1-benzothiophenes							0.24							0.61		0.53	
C2-benzothiophenes							0.45							0.50		0.86	
C3-benzothiophenes							0.57							0.93		0.17	
C4-benzothiophenes							0.33							0.63		1.01	
C1-fluorenes	0.17				0.66		0.76	0.53	0.19	0.81	7.81	1.46		0.49	4.48	1.02	
C2-fluorenes	0.08				0.52		2.42	0.75	0.21	0.91	4.73	1.19		0.38	2.15	1.12	
C3-fluorenes	0.26				1.06		1.44	0.57	0.29	0.59	0.86	2.41		0.25	3.22	0.93	0.43
C1-phenanthrenes/anthracenes	0.04				1.36		0.62	1.01	0.24	1.46	1.26	1.07	2.03	0.57	1.93	0.83	0.64
C2-phenanthrenes/anthracenes	0.04				0.55		1.01	0.86	0.45	1.23	0.54	0.96	1.82	0.63	2.67	0.74	0.46
C3-phenanthrenes/anthracenes	0.11				0.47		0.70	0.76	0.64	1.13	0.40	0.85		0.57	2.95	0.81	0.48
C4-phenanthrenes/anthracenes	0.13				0.37		1.19	0.70	0.85	0.13	2.73	1.66		0.47	2.08	1.04	0.65
C1-dibenzothiophenes	0.11				0.60		0.67	0.70	0.36	1.20	1.83	0.85		0.68	2.65	0.67	0.32
C2-dibenzothiophenes	0.05				0.66		0.97	0.87	0.59	1.17	1.58	1.01		0.63	2.90	0.67	0.54
C3-dibenzothiophenes	0.03				0.25		0.34	0.52	0.87	0.73	0.65	0.70		0.62	2.32	0.50	0.39
C4-dibenzothiophenes	0.11				0.34		0.52	0.26	1.32	0.96	0.30	1.11		0.27	2.65	0.45	0.19
C1-fluoranthenes/pyrenes	0.26				0.66		0.27	0.45	0.17	0.81	0.24	0.93	2.39	0.40	3.04	0.61	0.32
C2-fluoranthenes/pyrenes	0.20				0.52		0.42	0.10	0.42	0.96	0.49	1.61		0.11	3.31	0.61	0.26
C3-fluoranthenes/pyrenes	0.11				1.06		0.50	0.30	0.62	1.14	0.29	1.84		0.28	3.07	0.66	0.13
C4-fluoranthenes/pyrenes	0.07						0.57		0.25					0.55			
C1-naphthobenzothiophenes							0.60							0.71		0.76	
C2-naphthobenzothiophenes							0.64							0.38		0.61	
C3-naphthobenzothiophenes							0.73							0.50		0.66	
C4-naphthobenzothiophenes							0.80							0.54		0.84	
C1-chrysenes	0.19				0.40		0.66	0.41	0.29	1.05	0.06	1.14		0.63	2.33	0.73	0.22
C2-chrysenes	0.17				0.53		0.90	0.38	0.48	0.89	0.65	0.71		0.33	2.12	0.78	0.28
C3-chrysenes	0.13				0.43		0.56	0.39	0.76	0.91	0.57	0.37		0.50		0.88	0.46
C4-chrysenes	0.19						0.97	0.19	0.76	0.58		1.05		0.49		0.65	0.82

Table 17 (cont). Marine Sediment (QA10SED10): p scores (15%) - Alkylated PAHs

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1-methylnaphthalene	0.59	0.96		0.66	0.78		3.08	0.52	0.42			0.73	0.96	n=1	0.18	0.57
2-methylnaphthalene	0.52	1.18	0.46	0.62	0.79		2.77	0.54	0.54	0.01		0.76	1.18	n=1	0.14	0.71
2,6-dimethylnaphthalene		0.89	0.74	1.23	0.99		2.59	0.63	0.79	0.02		1.11	1.05	n=1	0.25	0.09
1,6,7-trimethylnaphthalene		0.00	1.38	0.33			2.03	0.91		1.10		0.50	1.27	n=1		0.98
1-methylphenanthrene		1.79	2.28	0.15		0.00	0.12	0.94	0.31	1.63		1.22	0.96	n=1		0.10
C1-decalins												0.93		n=1		
C2-decalins								0.57				1.02		n=1		
C3-decalins								0.80				0.29		n=1		
C4-decalins								0.94				0.36		n=1		
C1-naphthalenes	0.53	0.94	1.66		0.68			0.54	0.50			0.81	1.04	n=1		1.53
C2-naphthalenes	1.12	0.90	0.66		1.05	0.49	2.96	0.55	0.78			1.05	0.88	n=1		0.91
C3-naphthalenes	1.24	0.35	1.03		1.75		2.59	1.02	0.35			1.23	1.19	n=1		0.59
C4-naphthalenes	1.33	0.16	0.96		2.24		2.45	0.88	0.25			1.18	1.04	n=1		0.27
C1-benzothiophenes			0.87					0.17				1.56		n=1		0.22
C2-benzothiophenes						1.01		0.68				0.83		n=1		0.29
C3-benzothiophenes								0.08				0.95		n=1		0.36
C4-benzothiophenes								0.40				1.08		n=1		2.62
C1-fluorenes	3.43	0.93	0.96				1.35	0.97	0.70			1.23	1.44	n=1		1.04
C2-fluorenes	2.03	1.41					1.93	0.91	0.85			0.80	0.65	n=1		0.67
C3-fluorenes	1.22	0.67			2.86		2.88	0.70	0.91			0.29	1.83	n=1		0.74
C1-phenanthrenes/anthracenes	0.76	2.10	0.82		1.17	0.08	0.58	0.94	0.79	0.41		1.11	1.11	n=1		1.14
C2-phenanthrenes/anthracenes	1.29	1.33	6.68		0.24		0.61	1.01	0.78	1.36		1.10	0.95	n=1		1.48
C3-phenanthrenes/anthracenes	0.92	1.44			1.62		0.50	1.00	0.76	1.20		0.86	0.64	n=1		0.73
C4-phenanthrenes/anthracenes	1.25	0.97			0.86		0.28	0.86	0.70	0.80		0.89	0.90	n=1		2.59
C1-dibenzothiophenes	1.67	0.60	1.37		1.03		0.54	0.93	0.80			0.95	0.93	n=1		0.98
C2-dibenzothiophenes	1.98	1.56	2.75		1.16		0.60	1.04	0.79	0.67		1.10	0.83	n=1		1.29
C3-dibenzothiophenes	1.40	0.49	5.65		1.05		0.46	0.87	0.80	1.28		0.98	0.82	n=1		1.20
C4-dibenzothiophenes	2.40							0.51	0.52			1.02	0.56	n=1		1.15
C1-fluoranthenes/pyrenes	1.24	1.04	1.47		0.67	0.64	0.51	0.67	0.62	2.03		0.78	0.56	n=1		1.19
C2-fluoranthenes/pyrenes	1.02	0.29			1.81			0.44	0.61	2.11		0.42	0.75	n=1		1.28
C3-fluoranthenes/pyrenes	1.22		0.77		1.41			0.47	0.66	2.17		0.35	0.67	n=1		1.54
C4-fluoranthenes/pyrenes		0.36			0.86			0.62	0.66			0.53	1.31	n=1		1.56
C1-naphthobenzothiophenes		0.00						0.81		0.24		0.62		n=1		
C2-naphthobenzothiophenes								0.27				0.67		n=1		
C3-naphthobenzothiophenes								0.49				0.86		n=1		
C4-naphthobenzothiophenes								0.27				0.87		n=1		
C1-chrysenes	1.25	0.54	0.53		0.59	0.03	0.60	0.63	0.62	1.83		1.14	0.89	n=1		1.29
C2-chrysenes	0.94	0.14	1.09		3.73		0.75	0.42	0.63	0.20		1.09	0.94	n=1		0.62
C3-chrysenes	1.82	1.18					0.63	0.87	0.52			0.85	0.95	n=1		1.25
C4-chrysenes		0.79					0.67	0.17	0.73			0.43	0.77	n=1		3.46

Table 18. Marine Sediment (QA10SED10): p scores (15%) - Biomarkers

Laboratory No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Carbazole						0.77	0.43							0.69			
17α(H)-22,29,30-Tisnorhopane	0.19				0.46			0.58	0.35	1.01	0.14	1.03			0.86	0.55	0.54
17α(H),21β(H)-30-Norhopane	0.18				0.39			0.47	0.31	1.20	0.58	0.86			1.47	0.53	0.24
17α(H),21β(H)-Hopane	0.04				0.61		0.73	0.51	0.23	1.02	0.12	0.99		0.72	3.08	0.42	0.36
ααα 20R-Cholestane	0.41				0.57			0.43	0.27	1.11		2.23			1.63	0.63	0.47
αββ 20R-Cholestane	0.20				0.93			0.58	0.15	1.11	0.35	0.95			1.19	0.48	0.63
αββ 20R 24S-Methylcholestane	0.32				0.51			0.26	0.25	1.19	1.56	1.52			0.62	0.55	0.56
ααα 20R 24R-Ethylcholestane	0.10				0.96			1.58	0.34	0.80	0.33	0.90			2.58	0.37	1.15
αββ 20R 24R-Ethylcholestane	0.04				1.72			0.69	0.68	1.96	0.37	0.44			1.61	0.94	0.58
17α(H),21β(H)-22R-Homohopane	0.20				0.47			0.47	0.29	1.32	0.24	0.93			3.86	0.47	0.50
17α(H),21β(H)- 22S-Homohopane	0.17							1.04	0.22	1.20	0.31	1.27			4.93	0.32	0.62

Table 18 (cont). Marine Sediment (QA10SED10): p scores (15%) - Biomarkers

Laboratory No.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Carbazole		0.55	0.54			0.37			0.50			0.77		n=1		
17α(H)-22,29,30-Tisnorhopane	1.62		0.91		0.54				1.00			0.65		n=1		
17α(H),21β(H)-30-Norhopane	1.31				0.51				0.89			0.64		n=1		
17α(H),21β(H)-Hopane	1.40		0.76		0.46	0.48			1.21			0.63		n=1		
ααα 20R-Cholestane	0.98								0.85			0.89		n=1		
αββ 20R-Cholestane	1.94				2.24				1.73			0.71		n=1		
αββ 20R 24S-Methylcholestane	1.10		0.45			0.49			0.32			0.58		n=1		
ααα 20R 24R-Ethylcholestane	0.86		0.51		1.68				1.15			1.03		n=1		
αββ 20R 24R-Ethylcholestane	1.50				1.04				1.36			0.94		n=1		
17α(H),21β(H)-22R-Homohopane	2.17				0.92				1.33			0.69		n=1		
17α(H),21β(H)- 22S-Homohopane	1.41				0.77				1.25			0.70		n=1		

APPENDIX A Instructions Sent to Laboratories

Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment

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Intercomparison Exercise: Marine Sediment QA10SED01 Description of Materials and Instructions

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Intercomparison Exercise Materials:

Each of the three jars contains approximately 19 g (wet basis) of Marine Sediment QA10SED01. This wetted sediment was prepared from material collected from the northeastern section of the US coast and then freeze-dried, ground sieved, and radiation-sterilized. This material was not enriched or spiked. Each 2-oz clear glass jar has a Teflon-lined screw cap and is labeled with an individual jar number as well as the above name.

In addition, three concurrent analyses of SRM 1941b Organics in Marine Sediment are recommended. This material can be obtained from the NIST Standard Reference Materials Program ($652/50 g (dry-mass basis). See the following link for information on ordering on-line: https://www-s.nist.gov/srmors/view_detail.cfm?srm=1941B.

Storage of Materials:

Marine Sediment Material. The Marine Sediment QA10SED01 material should be stored in the dark at temperatures of -15 ˚C or lower. If only a portion of the contents of a jar is used, that jar should be tightly closed immediately after removal of a subsample to preserve the integrity of the remaining material for later analysis.

Instructions for Use:

You are to analyze Marine Sediment QA10SED01 and SRM 1941b using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the parent polycyclic aromatic hydrocarbon (PAH) compounds, alkylated PAH compounds, and biomarkers currently being determined in your laboratory. A target list of compounds are presented in the following Table; however, participants do not need to quantify all of these compounds and can add additional compounds when reporting data.

The percentage of water in Marine Sediment QA10SED01 should be determined so that the results can be reported on a dry basis. You should have received sufficient material so that you can perform separate determinations for the water content if you do not dry your sediment samples prior to analysis. The amount of material used for each analysis should correspond to the amount (wet basis) of marine sediment that you would typically analyze as prescribed in your protocols. Prior to removing an aliquot of Marine Sediment QA10SED01, you should thaw the sample in the jar and then **stir or otherwise mix it thoroughly**.

You should analyze three samples of Marine Sediment QA10SED01 and at least one or more samples of SRM 1941b using your protocol for marine sediment samples. If time allows, we are asking that you analyze one sample of Marine Sediment QA10SED01 and one sample of SRM 1941b with one batch of laboratory samples; analyze a second sample of each material with another batch; and the third sample with yet another batch. This will allow a more realistic assessment of laboratory precision over a longer term than the assessment obtained when a laboratory places all three samples in the same extraction and cleanup batch and the resulting extracts are analyzed using the same calibration curve, etc.

Reporting of Results:

Please report one result, as if three figures were significant, for each of the analytes quantified in each of the three replicates of the Marine Sediment QA10SED01 and of SRM 1941b. Report results in units of ng/g **dry-mass** basis. Report the date of measurement of each sample in the requested m/d/y format. Also, report the results of your percentage water determinations of Marine Sediment QA10SED01.

If you know that a target or non-target compound is interfering (coeluting) with the determination of a target analyte, please identify this issue by qualifying the data and note the data qualifier used at the bottom of your table of results. Please note that any changes you make to the column or row headings **within** the tables will **not** be seen by the coordinators because only the table entries and comments at the bottom of the tables are automatically transferred to the exercise database.

We prefer that concentration values be reported for each analyte determined. If the measured concentration is below your typical reporting concentration for an analyte in a particular matrix, you can report the number and list the appropriate detection limit, quantification limit, etc. at the bottom of the data table. However, if you need to report non-numerical data please use the following conventions:

NA	"Not analyzed", "not determined"
<"value"	"Less than specified concentration", e.g., <8 ng/g
Other	"Other"; add note of explanation at end of data table, e.g., interference
DL	"Below detection limit" may be used, however, <"value" is preferable

Do not use negative numbers or parentheses to indicate "less than detection limits".

The attached file is an EXCEL file, QA10SED01.xls. If you have any software/hardware conversion problems, please contact Michele Schantz. The data file templates also include places for you to list the surrogate/internal standards and type of calibration curve used, and to provide a brief description of the analyses. Please **do not** add spaces before entering numbers in the table cells and enter them as "numbers" not as "labels". Please **do not** insert any columns or rows **within** the table in the data file. If you wish to include additional data and/or other information or comments, you may add it to the bottom of the data table in the attached file.

Submit your results by **September 24, 2010** as an attached file via e-mail to:

michele.schantz@nist.gov

Further Information:

If you need further information, please contact Michele at the following address or phone numbers:

Michele M. Schantz
NIST
100 Bureau Drive Stop 8392
Gaithersburg, MD 20899-8392

Phone: (301)975-3106
FAX: (301)977-0685

Table: A-1 Preliminary List of Analytes of Interest in the Interlaboratory Analytical Comparison Study to Support Deepwater Horizon Natural Resource Damage Assessment

PAHs

Naphthalene
Biphenyl
Acenaphthene
Acenaphthylene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo[*b*]fluorene
Benz[*a*]anthracene
Chrysene
Triphenylene
Benzo[*b*]fluoranthene
Benzo[*j*]fluoranthene
Benzo[*k*]fluoranthene
Benzo[*a*]fluoranthene
Benzo[*e*]pyrene
Benzo[*a*]pyrene
Perylene
Indeno[1,2,3-*cd*]pyrene
Benzo[*ghi*]perylene
Dibenz[*a,h*]anthracene

cis/trans-Decalin
Dibenzofuran
Retene
Benzothiophene
Dibenzothiophene
Naphthobenzothiophene

Alkylated PAHs

1-Methylnaphthalene
2-Methylnaphthalene
2,6-Dimethylnaphthalene
1,6.7-Trimethylnaphthalene
1-Methylphenanthrene

C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins

C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes

C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes

Table (cont.)

C1-Fluorenes
C2-Fluorenes
C3-Fluorenes

C1-Phenanthrenes/anthracenes
C2- Phenanthrenes/anthracenes
C3- Phenanthrenes/anthracenes
C4- Phenanthrenes/anthracenes
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophenes

C1-Fluoranthenes/pyrenes
C2-Fluoranthenes/pyrenes
C3-Fluoranthenes/pyrenes
C4-Fluoranthenes/pyrenes

C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes

C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes

<u>Biomarkers</u>

Carbazole
17α(H)-22,29,30-Tisnorhopane
17α(H),21β(H)-30-Norhopane
17α(H),21β(H)-Hopane
ααα 20R-Cholestane
αββ 20R-Cholestane
αββ 20R 24S-Methylcholestane
ααα 20R 24R-Ethylcholestane
αββ 20R 24R-Ethylcholestane
17α(H),21β(H)-22R-Homohopane
17α(H),21β(H)- 22S-Homohopane

Appendix B

Summary of Method Information Provided by the Participating Laboratories

Lab #	Reported	g extracted QA10SED01	g extracted SRM 1941b	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1	9/24/2010	7 wet	2 dry	oven drying at 110 °C until stable mass	Soxhlet	hexane:acetone (1:1 v:v)	16h	mixed samples with hydromatrix in the extraction thimbles
2	9/9/2010	6 wet	substituted NRC-CNRS HS-6 Marine Sediment	Shell Vials/Heating Block: Temperature held at >105 ℃ for 8 h. Samples held at >105 ℃ overnight to verify no weight change with increased bake time.	Soxhlet	1:1 DCM:Acetone	Overnight (>18 h): 2 - 3 cycles per hour	NA
3	9/17/2010	5 wet		Oven drying at 100 °C.	EPA 3540 (Sohxlet)	DCM	18.5 h	
4	9/22/2010	12.5 wet	substituted LPTP10-S1	2540B SM	USEPA Method 3545	acetone/DCM	20 min	
5	9/22/2010	10.2 wet	9.7 dry	2540G	8270 3541	DCM\ Acetone	2h program:starts at 150 °C boils 15 min/4-15 min reductions/55min extraction/3-15min reductions/ Cools for 45 min/ pulled off/ N blow down.	NA
6	9/22/2010	5 wet	5 dry	Percent dry solids: dried ~4g of sample and measured gravimetrically	Soxhlet extraction	50% hexane/acetone	18 h	
7	9/22/2010	10 wet	10 dry	EPA 160.3M	EPA 3541	DCM	3 h, 15 min	
8	9/23/2010	10.0 wet	10.0 dry	As per SW-846 guidance	3550B	DCM:Acetone	3 reps at 3min each	
9	9/22/2010	2 wet	1 dry	subsample weighed into aluminum dish and baked at 100 °C for 24 h.	Accelerated Solvent Extraction (ASE)	DCN	10 min.	pressure: 2000psi (13.8 Mpa); temp.: 100 °C
10	9/23/2010	10.0 wet	2.0 dry	ASTM D2216	SW-846 3550B	DCM	3 times at 3 min each	
11	9/23/2010	5.00 wet	5.00 dry	160.3	3550C	DCM	09.16.10 1500	
12	9/24/2010	10.0 wet	5.0 dry	Standard Methods 2540G	SW-846 3541	DCM:Acetone (1:1)	2 h 20 min	None
13	9/24/2010	5 wet	2 dry	aliquot dried overnight at 110 °C, loss of water calculated	SW 846 Method 3545, ASE	75% DCM:25% acetone	~30 min	
14	9/24/2010	7.5 wet	2.5 dry	EPA 160.3 Modified (drying at 105 °C)	Tumbled for 2 h with 50% DCM/Acetone; 2 additional tumbles with 100% DCM for 2 h each (total extraction time = 6 h)	50% DCM/Acetone; 100% DCM; 100% DCM	2 h for 3 cycles	
15	9/24/2010	1.0 wet	5.0 dry	USEPA SOM1.1	3550B	DCM		
16	9/24/2010	10.00 wet	10.00 dry	Aliquot of sample placed in tared weighing pan, weighed, dried in drying oven, and re-weighed.	Orbital shaker table	DCM	1st extraction = 1h; 2nd extraction = 1h; 3rd extraction = 15min	Samples are centrifuged at 1000 rpn (105 rad/sec) after each extraction.
17	9/24/2010	10 wet	5 dry	160.3	Sonication	Acetone/DCM (50/50)	3 min in triplicate	
18	9/20/2010	5.02 wet	5 dry	NA	35580B	DCM\ Acetone	sonication for three sets of 3 min each	NA

Lab #	Reported	g extracted QA10SED01	g extracted SRM 1941b	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
19	9/24/2010	12 & 5 wet	5 dry	SM 2540G - 1 g of sediment used for dry weight. Dried 24 h in an oven at 105 °C.	EPA 3550C, Ultrasonic Extraction	1:1 DCM-Acetone, 3 x 100mL	10 min each	
20	9/24/2010	8.6 wet	10.0 dry	ASTM D2974.87	Sonication	DCM/Acetone	9 min	
21	9/23/2010	3.8 wet		gravimetric	Liquid solid phase partitioning extraction with manual shaking	50 mL acetone, 50 mL pet ether	shake the acetone partition 6 times over 90 min then 6 times over 90 min after addition of pet ether	
22	9/24/2010	5 wet	5 dry		3550B	DCM/Acetone		
23	9/24/2010	4.1643 dry	20.0193 dry	EPA SW846 3550C - Approximately 1 g was placed in a preweighd aluminum weighing dish and placed in an oven at 105 °C overnight and until a constant weight was reached.	EPA SW846 3550C - Ultrasonic Extraction	DCM:Acetone (1:1 by volume)	Three times for 5 min each	Samples were filtered through Whatman #41 125mm filter and brought to a final volume of 1mL using a Turbovap concentrater
24	9/24/2010	11.00 wet	5.00 dry	Heated sample at 70 °C until constant weight established	ASE on Dionex 200, 33 ml cells	DCM	5 min; 2 cycles; 100°C at 1500 psi (10.4 Mpa)	
25	9/24/2010	2.5 wet	4 dry	oven drying at 105 ºC to constant weight	ASE	100% DCM	13 min per sample	1500 psi, 100 °C, 2 static extraction cycles/sample, reduction to 2.0 mL to 3.0 mL using water bath
26	09/27/2010	10 wet	10 dry	Gravimetric	Soxhlet extraction	DCM	21 h	
27	9/28/2010	8.65 wet	1.00 dry	Gravimetric at 104 °C	Sonication (EPA SW3550C)	DCM/Acetone	3 min, three times	
28	10/1/2010	5 wet			Quechers	Acetonitrile	1 min	
29	10/1/2010	10 wet	5 dry	Standard Methods 2540G	Shaker Table - Lab SOP: OP-013	DCM	18.5 h	
30	9/23/2010	10.0 wet	10.0 dry	160.4m	EPA 3541	DCM	3 h using automated soxtherm	
31	10/6/2010	30.00 wet	30.40 dry	ASTM D 2974-87	SW3550 Sonication	DCM	9/28/2010	
32	10/7/2010	3.60 wet	1.00 dry	Weight 1 g portion and dry overnight at 110 °C. Cool in dessicator and reweigh.	Pressurized Fluid Extraction (Dionex ASE)	Dichloromethane (DCM)	3 cycles at 5 minutes each	The cell temperature was 100 °C, equilibration 5 min, static time 5 min, cell pressure was 2000 psi (13.8 Mpa) and there were three cycles
33	10/12/2010	4 wet	2 dry	gravimetric: weigh wet, dry in oven 24 hours at 120 oC, weigh dry	ASE	dichloromethane, acetone	40 min	

Lab #	Sample extract cleanup method	Method of quantitation
1	Concentrate extracts to approx 0.5 mL and run through a classic Silica SepPak that was conditioned and then eluted with 20 mL of 20% dichloromethane (DCM) in hexane. Conc extracts again to approx 1 mL and add activated copper powder. Let sit over a weekend and remove approx 0.5 mL of the supernatent for GC/MS analysis	IS
2	1. KOH-Silica Gel 60 column clean-up (5% MtBE in hexanes eluent); 2. Copper-SPE (1000mg) with DCM eluent (Sulfur removal); 3. Size Exclusion Chromatography with DCM Eluent and Phenogel column; 4. 3% deactivated Silica Gel 60 fractionation (25% MtBE in hexanes eluent)	IS
3	none	IS
4	Gel Permeation Chromatography (GPC)- USEPA method 3640	IS
5	NA	IS
6	Gel Permeation Chromatography	IS
7	EPA 3630C Silica Gel - eluted from column with 1:1 Pentane:DCM. Aliphatic and Aromatic fractions collected. EPA 3660A (Mercury) - the mercury cleanup was repeated 3X.	IS
8	3640A	IS
9	Extract solvent changed from dichloromethane to hexane and the extract eluted from 6 g silica gel column with 1:1 pentane:dichloromethane solution.	IS
10	N/A	IS
11		IS
12	None	IS
13	SW 846;Method 3630, silica gel	IS
14	Silica gel column eluted with 50% DCM/Pentane;Copper cleanup to remove sulfur	IS
15	none.	IS
16	Samples extracts were were processed through alumina gravity columns.	IS
17	Filter through sodium sulfate followed by final concentration	IS
18	NA	IS
19	EPA 3660B, Copper sulfur cleanup;EPA 3630C, 6 grams of Silica gel cleanup	IS
20	Method 3660B	IS
21		IS
22		IS
23	EPA SW846 3660B - Activated copper metal powder.	IS
24	Mixed bed Silica/Alumina Column; 20g Silica/10g Alumina;5% deactivation/1% deactivation	IS
25	Silica/Alumina column chromatography, addition of copper granules for sulfur removal, reduction to 1.0 mL using water bath	IS
26	Column chromatography; PAHs & carbazole - silica gel, 2%-deactivated alumina.; biomarkers (except carbazole) - silica gel	IS
27	Silica Gel	IS
28	Quechers Dispersive SPE Cleanup	IS
29	Alumina/Silica - NOAA Technical Memorandum MNSF-NWFSC-59, 3/2004	IS
30	Silica Gel	IS
31	NA	IS
32	Size exclusion chromatography followed by alumina SPE eluting with 35% DCM in hexane (volume fraction)	IS
33	GPC SX Biobeads, alumina SPE	IS

Lab #	**PAHs** Instrument	Phase	Dimensions	Calibration Curve # points	range*
1	GC/MS	DB-17MS	film	4	varied by compound
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25µm film	7	(10-4000) ng/mL
3	GC/MS	DB-5.625	20m x 0.18mm, 0.36µm	5	(5-80) ng/uL
4	#3	DB5MS	30m x 0.25mm, 1µm film	8	(1-80) mg/L
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25µm	6	(0.1 - 4.0) ug/mL
6	GC/MS	DB-5	30m x 0.25mm, 0.25µm	4	(10 - 500) ng/mL
7	GC/MS-SIM	ZB-5MS	30m (+5m guard) x 0.25mm, 0.25µm film	10	(2.0 - 2000) ng/ml
8	Agilent7890 /5975	ZB-5MSi	60m x 0.25mm, 0.25µm film	6	(0.02-0.80) ug/mL
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33µm film	5	(15-700) ng/ml
10	Hp 5973	DB - 5	60m x 0.25mm, 0.25µm	6	(0.1 - 4.0) ug/mL
11	MSME5975	5% phenylpolydimeth ylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1-4.0) ppm
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/L
13	GC/MS	HP 5 MS	30m x 0.25mm, 0.25µm	5	(0.05-20) ppm
14	GC/MS	DB5	30m x 0.25mm, 0.25µm	8	(4 - 1000) ng/mL
15	GC/MS	5%PHENYL-95% DIMETHYLPOL YSILOXAN	60m x 0.25mm, 0.25µm film	6	(0.1,0.2,0.5,1,2,4) ppm
16	GC-MS	DB-5	60m x 0.25mm, 0.25µm	7	(~0.01 to 7) ng/uL
17	6890/5973	5% phenylpolydimeth ylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1 - 4) ug/mL
18	_HM_MS3	ZB-MS-5si	60m x 0.25mm, 0.25µm	6	(0.1 - 4.0) ug/mL
19	Agilent 5975C MSD/7890A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25µm film	7	(0.2 - 50) ug/mL
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5µm film	5	(2 - 50) ug/mL
21	GC/MS		20m x 0.18mm, 0.14µm	6	(0.5 - 100) pg/uL
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25µm	6	(0.1 - 4.0) ug/mL
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25µm film	6	(130 - 50,000) ug/L
24	GC/MS	DB5	30m x 0.25mm, 0.25µm	6	(0.02-4) ng/uL
25	GC/MS HP5972	HP-5MS	60m x 0.25mm, 0.25µm film	5	(20, 100, 250, 500,1000) ng/mL
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25µm	5	(50-5000) ng/mL
27	NT8 (HP)	ZB-5msi (proprietary)	30m x 0.25mm, 0.5µm film	6	0.1 - 10
28	GC/MS	DB-5	60m x 0.25mm, 0.25µm	7	(0.015 - 10.5) ng/uL
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25µm film	7	(10-20,000) ng/mL
30	GC/MS	ZB-5MS	30m x 0.25mm, 0.25µm	10	(2-2000) ppb
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5µm film	8	(0.01-7.0) ug/mL
32	HP 6890/5973	DB-17 (J&W)	60m x 0.25mm, 0.25µm film	6	(2 - 3500) ng/g
33	Agilent	DB-5	30m x 0.25mm, 0.25µm	9	3-7500

*Note - units are those provided by laboratory

Lab #	Alkylated PAH Instrument	Phase	Dimensions	Calibration Curve # points	range*
1	GC/MS	DB-17MS/ proprietary	60m x 0.25mm, 0.25µm film; 20m x 0.18mm, 0.10µm film	4	varied by compound
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25µm film	7	(10-4000) ng/mL
3	GC/MS	DB-5.625	20m x 0.18mm, 0.36µm film	5	(5-80) ng/uL
4	#3	DB5MS	30m x 0.25mm, 1µm film	8	(1-80) mg/L
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
6	GC/MS	DB-5	30m x 0.25mm, 0.25µm film	4	(10 - 500) ng/mL
7	GC/MS-SIM	ZB-5MS	30m (+5m guard) x 0.25mm, 0.25µm film	10	(2.0 - 2000) ng/ml
8	Agilent7890 /5975	ZB-5MSi	60m x 0.25mm, 0.25µm film	6	(0.02-0.80) ug/mL
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33µm film	5	(15-700) ng/mL
10	Hp 5973	DB - 5	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
11	MSME5975	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1-4.0) ppm
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/L
13	GC/MS	HP 5 MS	30m x 0.25mm, 0.25µm film	3 to 5	(0.05-10) ppm
14	GC/MS	DB5	30m x 0.25mm, 0.25µm film	8	(4 - 1000) ng/mL
15	GC/MS	5%PHENYL-95% DIMETHYLPOLYSILOXAN	60m x 0.25mm, 0.25µm film	6	(0.1,0.2,0.5,1,2,4) ppm
16	GC-MS	DB-5	60m x 0.25mm, 0.25µm film	7	(~0.01 - 7) ng/uL
17	6890/5973	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1 - 4) ug/mL
18	_HM_MS3	ZB-MS-5si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
19	Agilent 5975C MSD/7890A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25µm film	7	(0.2 - 50) ug/mL
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5µm film	5	(2 - 50) ug/mL
21	GC/MS		20m x 0.18mm, 0.14µm film	6	(0.5 - 100) pg/uL
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25µm film	6	(130 - 25,000) ug/L
24	GC/MS	DB5	30m x 0.25mm, 0.25µm film	6	(0.02 - 4) ng/uL
25	GC/MS HP5972	HP-5MS	60m x 0.25mm, 0.25µm film	5	(20, 100, 250, 500,1000) ng/mL
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25µm film	1	2000
27	NT8 (HP)	ZB-5msi (proprietary)	30m x 0.25mm, 0.5µm film	6	0.1 to 10
28	NA	NA	NA	NA	NA
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25µm film	7	(10-20,000) ng/mL
30	GC/MS	ZB-5MS	30m x 0.25mm, 0.25µm film	10	(2-2000) ppb
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5µm film	8	(0.01-7.0) ug/mL
32	HP 6890/5973	DB-17 (J&W)	60m x 0.25mm, 0.25µm film	6	(0.8 - 1000) ng/g
33	Agilent	DB5	30m x 0.25mm, 0.25µm film	6	10-5000

*Note - units are those provided by laboratory

	Biomarkers			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range*
1	GC/MS	DB-17MS	60m x 0.25mm, 0.25µm film	4	varied by compound
2	GC/MS-SIM	DB5	30m x 0.25mm, 0.25µm film	7	(10-4000) ng/mL
3	NA	NA	NA	NA	NA
4	NA	NA	NA	NA	NA
5	MSD7	ZB-MS-5si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
6	GC/MS	DB-5	30m x 0.25mm, 0.25µm film	3	(100 - 500) ng/mL
7	NA	NA	NA	NA	NA
8	Agilent7890/5975	ZB-5MSi	60m x 0.25mm, 0.25µm film	6	(0.02-0.80) ug/mL
9	GC/MS	5% phenylmethyl silicone	25m x 0.2mm, 0.33µm film	5	(10-5000) ng/mL
10	Hp 5973	DB - 5	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
11	MSME5975	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1-4.0) ppm
12	GC/MS 7890A	ZB5MSi	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/L
13	NA	NA	NA	NA	NA
14	GC/MS	DB5	30m x 0.25mm, 0.25µm film	6	Varies - used NIST 2266 diluted 1:200, 1:100, 1:40, 1:20, 1:10, 1:4
15	GC/MS	5%PHENYL-95% DIMETHYLPOLYSILOXAN	60m x 0.25mm, 0.25µm film	6	(0.1,0.2,0.5,1,2,4) ppm
16	GC-MS	DB-5	60m x 0.25mm, 0.25µm film	7	(~0.01 to 7) ng/uL
17	6890/5973	5% phenylpolydimethylsiloxane	60m x 0.25mm, 0.25µm film	6	(0.1 - 4) ug/mL
18	_HM_MS3	ZB-MS-5si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
19	Agilent 5975C MSD/7890 A GC	HP-5MS, 19091S-433	30m x 0.25mm, 0.25µm film	7	(0.2 - 50) ug/mL
20	GC/MS	HP-5MS	30m x 0.25mm, 0.5µm film	5	(2 - 50) ug/mL
21	NA	NA	NA	NA	NA
22	SEA016	ZB-MS-5Si	60m x 0.25mm, 0.25µm film	6	(0.1 - 4.0) ug/mL
23	GC/MS	5% diphenyl / 95% dimethyl polysiloxane	60m x 0.25mm, 0.25µm film	6	(130 - 25,000) ug/L
24	NA	NA	NA	NA	NA
25	NA	NA	NA	NA	NA
26	LR GC/MS	RTX-5	30m x 0.25mm, 0.25µm film	1	(500 - 11500) ng/mL
27	NA	NA	NA	NA	NA
28	NA	NA	NA	NA	NA
29	GC/MS-SIM	ZB-5	60m x 0.25mm, 0.25µm film	6	(10-10,000) ng/mL
30	NA	NA	NA	NA	NA
31	GC/MS SIM	DB5MS	30m x 0.25mm, 0.5µm film	8	(0.01-7.0) ug/mL
32	NA	NA	NA	NA	NA
33	NA	NA	NA	NA	NA

*Note - units are those provided by laboratory

			PAHs		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
1	naphthalene-d8;biphenyl-d10; acenaphthalene-d10; phenanthrene-d10; fluoranthene-d10; pyrene-d10; B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12;DB[a,h]A-d14	x			
2	deuterated priority pollutant PAHs (16)	x	d10-2-methylnaphthalene and d12-benzo(e)pyrene		
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14		1,4-dichlorobenzene-d4, naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no
4	nitrobenzene-d5; fluorobuphenyl; p-Terphenyl-d14		naphthalene-d8: acenaphthalene-d10; phenanthrene-d10; Chrysene-d12; perylene-d12	z	no
5	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	z	yes
6	Acenaphthene-d10, Acenaphthylene-d8, Anthracene-d10, Benz[a]Anthracene-d12, Benzo[b]Fluoranthene-d12, Benzo[k]Fluoranthene-d12, Benzo[g,h,i]Perylene-d12, Benzo[a]Pyrene-d12, Chrysene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[l,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x			
7	Fluorene-d10, Fluoranthene-d10, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	yes
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
9	d8Naph, d10Ace, d10Phen, d12Chry, d12B-a-P, d12Pery	x	hexamethylbenzene		
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14		IS: Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	x	no
13			Nd8, Ad10, Pd10, Cd12, Pd12	x	no
14	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12		JUST PRIOR: Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12	x	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d8,Phenthanthrene-d10,Chrysene-d12,Perylene-d12	x	
16	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Benzo[a]pyrene-d12		Fluorene-d10, Chrysene-d12	x	yes
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
18	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	x	yes

			PAHs		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
19	Surrogates = nitrobenzene - d5, 2-Fluorobiphenyl, terphenyl - d14		IS = naphthalene - d8, acenaphthene - d10, phenanthrene - d10, chrysene - d12, perylene - d12	x	no
20	Nitrobanzene-d5, Terphenyl-d12 (S), 2-Fluorbiphenyl		Naphthalene d8 Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12	x	yes
21	Fluorene-d10, Fluoranthene-d10		Napthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14		Acenaphthene-d10; Chrysene-d12; Naphthalene-d8; Perylene-d12; Phenanthrene-d10	x	yes
23	Nitrobenzene d5/p Terphenyl d14/2-Fluorobiphenyl		1,4 Dichlorobenzene d4/Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x	no
24	Napthalene-d8; Acenapthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	x	Fluorene-d10; Benzo(a)pyrene d-12		
25	SU-Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12		IS-Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12	x	yes
26	d8-naphthalene, d10-2-methylnaphthalene, d10-biphenyl, d12-2,6-dimethylnaphthalene, d8-acenaphthylene, d10-phenanthrene, d10-fluoranthene, d12- benz[a]anthracene, d12-chrysene, d12-benzo[b,k]fluoranthenes, d12-benzo[a]pyrene, d12-perylene, d14-dibenz[a,h]anthracene, d12-indeno[123-cd]perylene, d12-benzo(ghi)perylene	x	d10-acenaphthene, d10-pyrene, d12-benzo[e]pyrene, used to quantify labeled surrogates only.		
27			d10-Fluorene, d10-Pyrene, d12-Benzo(a)Pyrene	x	no
28			Acenaphtene D10, Phenanthrene D10, Chrysene D12	x	no
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	x	IS: Acenaphthene-d10, Chrysene-d12.	x	yes
30	surrogates only	x	Internal standards	x	no
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
32	naphthalene-d_8, biphenyl-d_{10}, acenaphthene-d_{10}, phenanthrene-d_{10}, fluoranthene-d_{10}, pyrene-d_{12}, benz[a]anthracene-d_{12}, benzo[a]pyrene-d_{12}, perylene-d_{12}, dibenenz[a,h]anthracene-d_{14}, benzo[ghi]perylene-d_{12}	x			
33	d8-Napthalene, d8-1-Methylnapthalene, d8-Acenaphthylene, d10-Acenaphthene, d10-Fluorene, d10-Phenanthrene, d10-Anthracene, d10-Fluoranthene, d10-Pyrene, d12-Benz(a)anthracene, d12-Chrysene, d12-Benzo(b)fluoranthene, d12-Benzo(k)fluoranthene, d12-Benzo(e)pyrene, d12-Benzo(a)pyrene, d12-Perylene, d12-Benzo(g,h,i)perylene	x	d14-p-Terphenyl		

			Alkylated PAHs		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
1	naphthalene-d8;biphenyl-d10; acenaphthalene-d10; phenanthrene-d10; fluoranthene-d10; pyrene-d10; B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12;DB[a,h]A-d14	x			
2	deuterated priority pollutant PAHs (16)	x	d10-2-methylnaphthalene and d12-benzo(e)pyrene		
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14		1,4-dichlorobenzene-d4, naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no
4	nitrobenzene-d5; fluorobuphenyl; p-Terphenyl-d14		naphthalene-d8: acenaphthalene-d10; phenanthrene-d10; Chrysene-d12; perylene-d12	z	no
5	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	z	yes
6	Acenaphthene-d10, Acenaphthylene-d8, Anthracene-d10, Benz[a]Anthracene-d12, Benzo[b]Fluoranthene-d12, Benzo[k]Fluoranthene-d12, Benzo[g,h,i]Perylene-d12, Benzo[a]Pyrene-d12, Chrysene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[l,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x			
7	Fluorene-d10, Fluoranthene-d10, Terphenyl-d14	x	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	yes
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
9	d8Naph, d10Ace, d10Phen, d12Chry, d12B-a-P, d12Pery	x	hexamethylbenzene		
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14		IS: Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	x	no
13			Nd8, Ad10, Pd10, Cd12, Pd12	x	no
14	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12		JUST PRIOR: Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12	x	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d8,Phenthanthrene-d10,Chrysene-d12,Perylene-d12	x	
16	Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Benzo[a]pyrene-d12		Fluorene-d10, Chrysene-d12	x	yes
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
18	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	x	yes

			Alkylated PAHs		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
19	Surrogates = nitrobenzene - d5, 2-Fluorobiphenyl, terphenyl - d14		IS = naphthalene - d8, acenaphthene - d10, phenanthrene - d10, chrysene - d12, perylene - d12	x	no
20	Nitrobanzene-d5, Terphenyl-d12 (S), 2-Fluorbiphenyl		Naphthalene d8 Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12	x	yes
21	1-methyl Napthalene-d10		Napthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14		Acenaphthene-d10; Chrysene-d12; Naphthalene-d8; Perylene-d12; Phenanthrene-d10	x	yes
23	Nitrobenzene d5/p Terphenyl d14/2-Fluorobiphenyl		1,4 Dichlorobenzene d4/Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x	no
24	Napthalene-d8; Acenapthene-d10; Phenanthrene-d10; Chrysene-d12	x	Fluorene-d10; Benzo(a)pyrene d-12		
25	SU-Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12		IS-Fluorene-d10, Pyrene-d10, Benzo(a)pyrene-d12	x	yes
26	d10-2-methylnaphthalene, d12-2,6-dimethylnaphthalene, d8-acenaphthylene, d10-phenanthrene, d10-fluoranthene, d12-chrysene	x	d10-acenaphthene, d10-pyrene, d12-benzo[e]pyrene, used to quantify labeled surrogates only.		
27			d10-Fluorene, d10-Pyrene, d12-Benzo(a)Pyrene	x	no
28	NA				
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	x	IS: Acenaphthene-d10, Chrysene-d12.	x	yes
30	surrogates only	x	Internal standards	x	no
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
32	Non-alkyl parent	x			
33	d8-Napthalene, d8-1-Methylnapthalene, d10-Acenaphthene, d10-Fluorene, d8-Dibenzothiophene, d10-Anthracene, d10-Fluoranthene, d12-Chrysene, d12-Benzo(e)pyrene	x	d14-p-Terphenyl		

			Biomarkers		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
1a	naphthalene-d8;biphenyl-d10; acenaphthalene-d10; phenanthrene-d10; fluoranthene-d10; pyrene-d10; B[a]A-d12; B[a]P-d12; perylene-d12; B[ghi]P-d12;DB[a,h]A-d14	x			
2	NA				
3	2-fluorophenol, phenol-d6, 2-chlorophenol-d4, 1,2-dichlorobenzene-d4, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, terphenyl-d14		1,4-dichlorobenzene-d4, naphthalene-d8, acenaphthene-d10, phenanthrene-d10, chrysene-d12, perylene-d12	x	no
4	NA		NA		
5	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	z	yes
6	Acenaphthene-d10, Acenaphthylene-d8, Anthracene-d10, Benz[a]Anthracene-d12, Benzo[b]Fluoranthene-d12, Benzo[k]Fluoranthene-d12, Benzo[g,h,i]Perylene-d12, Benzo[a]Pyrene-d12, Chrysene-d12, Dibenz[a,h]Anthracene-d14, Fluoranthene-d10, Fluorene-d10, Indeno[l,2,3-cd]Pyrene-d12, Naphthalene-d8, Phenanthrene-d10, Pyrene-d10	x			
7	NA				
8	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
9	Tm (17α,-21β-trisnorhopane), H30 (17α, 21β-hopane),C27S (ααα(20S)-cholestane)	x	dodecylcyclohexane		
10	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d10	x	no
11	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	
12	Surrogates: Nitrobenzene-d5; 2-Fluorobiphenyl; Terphenyl-d14		IS: Naphthalene-d8; Acenaphthene-d10; Phenanthrene-d10; Chrysene-d12; Perylene-d12	x	no
13	NA				
14	5-alpha Androstane		JUST PRIOR: Benzo(a)pyrene-d12	x	yes
15	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthene-d8,Phenthanthrene-d10,Chrysene-d12,Perylene-d12	x	
16	5b(H)-Cholane		Chrysene-d12	x	yes
17	2-fluorobiphenyl, nitrobenzene-d5, terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
18	Nitrobenzene- d5; 2- Fluorobiphenyl; Terphenyl- d14		Naphthalene- d8; Acenapthene- d10; Chrysene- d12; Perylene- d12	x	yes

			Biomarkers		corrected for
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?
19	Surrogates = terphenyl - d14		IS = phenanthrene-d10	x	no
20	Nitrobanzene-d5, Terphenyl-d12 (S), 2-Fluorbiphenyl		Naphthalene d8 Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12	x	yes
21	NA				
22	2-Fluorobiphenyl; Nitrobenzene-d5; Terphenyl-d14		Acenaphthene-d10; Chrysene-d12; Naphthalene-d8; Perylene-d12; Phenanthrene-d10	x	yes
23	Nitrobenzene d5/p Terphenyl d14/2-Fluorobiphenyl		1,4 Dichlorobenzene d4/Naphthalene d8/Acenaphthene d10/Phenanthrene d10/Chrysene d12/Perylene d12	x	no
24	NA				
25	NA				
26	d10-phenanthrene, d50-tetracosane	x	d10-pyrene, used to quantify labeled surrogates only		
27	NA				
28	NA				
29	Surrogates: Naphthalene-d8, Phenanthrene-d10, Benzo[a]pyrene-d12	x	IS: Acenaphthene-d10, Chrysene-d12.	x	yes
30	NA				
31	Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14		Naphthalene-d8, Acenaphthalene-d10, Phenanthrene-d10, Chrysene-d12, Perylene-d12	x	no
32	NA				
33	NA				

PAHs - IS/surrogate used for quantitation

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6
naphthalene	naphthalene-d8	d8-naphthalene	naphthalene-d8	naphthalene_d8	Napthalene- d8	naphthalene-d8
biphenyl	biphenyl-d10	d10-acenaphthylene			Acenapthene- d10	naphthalene-d8
acenaphthene	acenaphthene-d10	d10-acenaphthene	acenaphthene-d10	acenaphthalene-d10	Acenapthene- d10	acenaphthene-d10
acenaphthylene	acenaphthene-d10	d10-acenaphthylene	acenaphthene-d10	acenaphthalene-d10	Acenapthene- d10	acenaphthylene-d8
fluorene	phenanthrene-d10	d10-fluorene	acenaphthene-d10	acenaphthalene-d10	Acenapthene- d10	fluorene-d10
phenanthrene	phenanthrene-d10	d10-phenanthrene	phenanthrene-d10	phenanthrene-d10	Phananthrene- d10	phenanthrene-d10
anthracene	phenanthrene-d10	d10-anthracene	phenanthrene-d10	phenanthrene-d10	Phananthrene- d10	anthracene-d10
fluoranthene	fluoranathene-d10	d10-fluoranthene	phenanthrene-d10	phenanthrene-d10	Phananthrene- d10	fluoranthene-d10
pyrene	pyrene-d10	d10-pyrene	chrysene-d12	chrysene-d12	Chyrsene- 12	pyrene-d10
benzo[b]fluorene	NA				NA	
benz[a]anthracene	B[a]A-d12	d12-benz[a]anthracene	chrysene-d12	chrysene-d12	Chyrsene- 12	benz[a]anthracene-d12
chrysene	B[a]A-d12	d12-chrysene	chrysene-d12		Chyrsene- 12	chrysene-d12
triphenylene	B[a]A-d12				NA	
benzo[*b*]fluoranthene	B[a]P-d12	d12-benzo[*b*]fluoranthene	perylene-d12	perylene-d12	Chyrsene- 12	benzo[*b*]fluoranthene-d12
benzo[*j*]fluoranthene	B[a]P-d12				NA	
benzo[*k*]fluoranthene	B[a]P-d12	d12-benzo[*k*]fluoranthene	perylene-d12	perylene-d12	Chyrsene- 12	benzo[*k*]fluoranthene-d12
benzo[a]fluoranthene	B[a]P-d12				NA	
benzo[e]pyrene	B[a]P-d12	d12-benzo[a]pyrene			Chyrsene- 12	benzo[*k*]fluoranthene-d12
benzo[a]pyrene	B[a]P-d12	d12-benzo[a]pyrene	perylene-d12	perylene-d12	Chyrsene- 12	benzo[a]pyrene-d12
perylene	perylene-d12	d12-benzo[a]pyrene			Chyrsene- 12	benzo[a]pyrene-d12
indeno[1,2,3-cd]pyrene	B[ghi]P-d12	d12-indeno[1,2,3-cd]pyrene	perylene-d12	perylene-d12	Chyrsene- 12	indeno[1,2,3-cd]pyrene-d12
benzo[ghi]perylene	B[ghi]P-d12	d12-benzo[ghi]perylene	perylene-d12	perylene-d12	Chyrsene- 12	benzo[ghi]perylene-d12
dibenz[a,h]anthracene	DB[a,h]A-d14	d14-dibenz[a,h]anthracene	perylene-d12	perylene-d12	Chyrsene- 12	dibenz[a,h]anthracene-d14
cis/trans-decalin	NA				NA	
dibenzofuran	NA		perylene-d12	acenaphthalene-d10	NA	acenaphthylene-d8
retene	NA				NA	
benzothiophene	NA	d8-naphthalene			NA	
dibenzothiophene	fluoranathene-d10	d10-fluorene			Phananthrene- d10	fluorene-d10
naphthobenzothiophene	NA				NA	

PAHs - IS/surrogate used for quantitation

	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
naphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
biphenyl	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
acenaphthene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
acenaphthylene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
fluorene	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
phenanthrene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
anthracene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
fluoranthene	Phenanthrene-d10/Fluoranthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
pyrene	Chrysene-d12/Fluoranthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[b]fluorene	Chrysene-d12/Fluoranthene-d10	Chrysene-d12		NA		_____
benz[a]anthracene	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
chrysene	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
triphenylene	Chrysene-d12/Terphenyl-d14	NA		NA		_____
benzo[*b*]fluoranthene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[*j*]fluoranthene	Perylene-d12Terphenyl-d14	NA		NA		_____
benzo[*k*]fluoranthene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[a]fluoranthene	Perylene-d12Terphenyl-d14	NA		NA		_____
benzo[e]pyrene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[a]pyrene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
perylene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Perylene	Chrysene-d12	chrysene-d12	Chrysene-d12
indeno[1,2,3-cd]pyrene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
benzo[ghi]perylene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
dibenz[a,h]anthracene	Perylene-d12Terphenyl-d14	Chrysene-d12	d12-Benzo-a-pyrene	Chrysene-d12	chrysene-d12	Chrysene-d12
cis/trans-decalin	Naphthalene-d8/Fluorene-d10	NA		NA		_____
dibenzofuran	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10		Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
retene	Chrysene-d12/Fluoranthene-d10	NA		NA		_____
benzothiophene	Naphthalene-d8/Fluorene-d10	NA		NA		_____
dibenzothiophene	Phenanthrene-d10/Fluoranthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
naphthobenzothiophene	Chrysene-d12/Terphenyl-d14	NA		NA		_____

PAHs - IS/surrogate used for quantitation

	Lab 13	Lab 14	Lab 15	Lab 16	Lab 17	Lab 18
naphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Napthalene- d8
biphenyl	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Acenapthene- d10
acenaphthene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
acenaphthylene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
fluorene	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
phenanthrene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
anthracene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
fluoranthene	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
pyrene	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
benzo[b]fluorene	Phenanthrene-d10	Chrysene-d12				NA
benz[a]anthracene	Chrysene-d12	Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
chrysene	Chrysene-d12	Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
triphenylene					Chrysene-d12	NA
benzo[*b*]fluoranthene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
benzo[*j*]fluoranthene						NA
benzo[*k*]fluoranthene	Chrysene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
benzo[a]fluoranthene		Perylene-d12				NA
benzo[e]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
benzo[a]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
perylene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
indeno[1,2,3-cd]pyrene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
benzo[ghi]perylene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
dibenz[a,h]anthracene	Perylene-d12	Perylene-d12		Chrysene-d12/Benzo[a]pyrene-d12	Chrysene-d12	Chyrsene- 12
cis/trans-decalin	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
dibenzofuran	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	NA
retene		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
benzothiophene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
dibenzothiophene	Acenaphthene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Acenaphthalene-d10	Phananthrene- d10
naphthobenzothiophene		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA

PAHs - IS/surrogate used for quantitation

	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24
naphthalene	Naphthalene-d10	naphthalene-D8 (IS)	Naphthalene-d8			Napthalene-d8
biphenyl	Acenaphthene-d10	Nitrobanzene-d5 (S)	Naphthalene-d8			Acenapthene-d10
acenaphthene	Acenaphthene-d10		Acenaphthene-d10			Acenapthene-d10
acenaphthylene	Acenaphthene-d10		Naphthalene-d8			Acenapthene-d10
fluorene	Acenaphthene-d10		Acenaphthene-d10			Acenapthene-d10
phenanthrene	Phenanthrene-d10	Acenapthene-d10 (IS)	Phenanthrene-d10			Phenanthrene-d10
anthracene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
fluoranthene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
pyrene	Chrysene-d12	2-Fluorbiphenyl (S)	Phenanthrene-d10			Phenanthrene-d10
benzo[b]fluorene						NA
benz[a]anthracene	Chrysene-d12		Phenanthrene-d10			Chrysene-d12
chrysene	Chrysene-d12	Phenantherene-d10 (IS)	Chrysene-d12			Chrysene-d12
triphenylene			Chrysene-d12			NA
benzo[*b*]fluoranthene	Perylene-d12		Chrysene-d12			Chrysene-d12
benzo[*j*]fluoranthene						NA
benzo[*k*]fluoranthene	Perylene-d12		Chrysene-d12			Chrysene-d12
benzo[a]fluoranthene						NA
benzo[e]pyrene			Chrysene-d12			Chrysene-d12
benzo[a]pyrene	Perylene-d12		Chrysene-d12			Chrysene-d12
perylene		Chysene-d12 (IS)	Perylene-d12			Perylene-d12
indeno[1,2,3-cd]pyrene	Perylene-d12	Terphenyl-d12 (S)	Perylene-d12			Chrysene-d12
benzo[ghi]perylene	Perylene-d12		Perylene-d12			Chrysene-d12
dibenz[a,h]anthracene	Perylene-d12		Perylene-d12			Chrysene-d12
cis/trans-decalin						NA
dibenzofuran	Acenaphthene-d10					NA
retene						NA
benzothiophene						NA
dibenzothiophene	Phenanthrene-d10		Acenaphthene-d10			Phenanthrene-d10
naphthobenzothiophene						NA

PAHs - IS/surrogate used for quantitation

	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30
naphthalene	Fluorene-d10/Phenanthrene-d10	d8-naphthalene	d10-fluorene	Acenaphtene D10	Acenaphthene-d10	Naphthalene-d8
biphenyl	Fluorene-d10/Phenanthrene-d10	d10-biphenyl	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
acenaphthene	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene	Acenaphtene D10	Acenaphthene-d10	Acenapthene-d10
acenaphthylene	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene	Acenaphtene D10	Acenaphthene-d10	Acenapthene-d10
fluorene	Fluorene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene	Acenaphtene D10	Acenaphthene-d10	Acenapthene-d10
phenanthrene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene	Phenanthrene D10	Acenaphthene-d10	Phenanthrene-d10
anthracene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
fluoranthene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
pyrene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Chrysene-d12
benzo[b]fluorene	Pyrene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
benz[a]anthracene	Pyrene-d10/Phenanthrene-d10	d12-benz[a]anthracene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
chrysene	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
triphenylene	Pyrene-d10/Phenanthrene-d10	NA			Chrysene-d12	
benzo[*b*]fluoranthene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-benzo[b]fluoranthene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[*j*]fluoranthene	Benzo(a)pyrene-d12/Phenanthrene-d10				Chrysene-d12	
benzo[*k*]fluoranthene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-benzo[k]fluoranthene			Chrysene-d12	Perylene-d12
benzo[a]fluoranthene	Benzo(a)pyrene-d12/Phenanthrene-d10	NA			Chrysene-d12	
benzo[e]pyrene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-benzo[a]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[a]pyrene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-benzo[a]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
perylene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-perylene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
indeno[1,2,3-cd]pyrene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-indeno[1,2,3-cd]pyrene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
benzo[ghi]perylene	Benzo(a)pyrene-d12/Phenanthrene-d10	d12-benzo[ghi]perylene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
dibenz[a,h]anthracene	Benzo(a)pyrene-d12/Phenanthrene-d10	d14-dibenz[a,h]anthracene	d12-benzo(a)pyrene		Chrysene-d12	Perylene-d12
cis/trans-decalin	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
dibenzofuran	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	Acenapthene-d10
retene	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	
benzothiophene	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
dibenzothiophene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
naphthobenzothiophene	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	

PAHs - IS/surrogate used for quantitation

	Lab 31	Lab 32	Lab 33
naphthalene	Naphthalene-d8	napthalene d_8	d8-Napthalene
biphenyl	Acenaphthalene-d10	biphenely d_{10}	d8-Napthalene
acenaphthene	Acenaphthalene-d10	napthalene d_8	d10Acenapthene
acenaphthylene	Acenaphthalene-d10	napthalene d_8	d8Acenapthylene
fluorene	Acenaphthalene-d10	acenaphthene d_{10}	d10Fluorene
phenanthrene	Phenanthrene-d10	phenanthrene d_{10}	d10-Phenanthrene
anthracene	Phenanthrene-d10	phenanthrene d_{10}	d10-Anthracene
fluoranthene	Phenanthrene-d10	phenanthrene d_{10}	d10-Fluoranthene
pyrene	Chrysene-d12	pyrene d_{12}	d10-Pyrene
benzo[b]fluorene	Chrysene-d12	benz[a]anthracene d_{12}	d12-Benzo(b)fluoranthene
benz[a]anthracene	Chrysene-d12	benz[a]anthracene d_{12}	d12-Benz(a)anthracene
chrysene	Chrysene-d12	benz[a]anthracene d_{12}	d12-Chrysene
triphenylene	Chrysene-d12	benz[a]anthracene d_{12}	d12-Chrysene
benzo[*b*]fluoranthene	Perylene-d12	benz[a]anthracene d_{12}	d12-Benzo(b)fluoranthene
benzo[*j*]fluoranthene	Perylene-d12	benz[a]anthracene d_{12}	d12-Benzo(k)fluoranthene
benzo[*k*]fluoranthene	Perylene-d12	benz[a]anthracene d_{12}	d12-Benzo(k)fluoranthene
benzo[a]fluoranthene	Perylene-d12	benz[a]anthracene d_{12}	d12-Benzo(e)pyrene
benzo[e]pyrene	Perylene-d12	benz[a]anthracene d_{12}	d12-Benzo(e)pyrene
benzo[a]pyrene	Perylene-d12	benzo[a]pyrene d_{12}	d12benzo(a)pyrene
perylene	Perylene-d12	perylene d_{12}	d12perylene
indeno[1,2,3-cd]pyrene	Perylene-d12	dibenzo[a,h]anthracene d_{14}	d12benzo(ghi)perylene
benzo[ghi]perylene	Perylene-d12	dibenzo[a,h]anthracene d_{14}	d12benzo(ghi)perylene
dibenz[a,h]anthracene	Perylene-d12		d12benzo(ghi)perylene
cis/trans-decalin	Naphthalene-d8		d8-Napthalene
dibenzofuran	Acenaphthalene-d10		d10Acenapthene
retene	Chrysene-d12	fluoranthene d_{10}	d10-Pyrene
benzothiophene	Naphthalene-d8		d8-Napthalene
dibenzothiophene	Acenaphthalene-d10	phenanthrene d_{10}	d10-Phenanthrene
naphthobenzothiophene	Chrysene-d12		

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6
1-methylnaphthalene	naphthalene-d8	d8-naphthalene			Napthalene- d8	naphthalene-d8
2-methylnaphthalene	naphthalene-d8	d8-naphthalene	naphthalene-d8	naphthalene_d8	Napthalene- d8	naphthalene-d8
2,6-dimethylnaphthalene	naphthalene-d8				NA	naphthalene-d8
1,6,7-trimethylnaphthalene	naphthalene-d8				NA	acenaphthylene-d8
1-methylphenanthrene	phenanthrene-d10				NA	anthracene-d10
C1-decalins	NA				NA	
C2-decalins	NA				NA	
C3-decalins	NA				NA	
C4-decalins	NA				NA	
C1-naphthalenes	naphthalene-d8				Napthalene- d8	
C2-naphthalenes	naphthalene-d8				Napthalene- d8	
C3-naphthalenes	naphthalene-d8				Napthalene- d8	
C4-naphthalenes	naphthalene-d8				Napthalene- d8	
C1-benzothiophenes	NA				NA	
C2-benzothiophenes	NA				NA	
C3-benzothiophenes	NA				NA	
C4-benzothiophenes	NA				NA	
C1-fluorenes	phenanthrene-d10				Acenapthene- d10	
C2-fluorenes	phenanthrene-d10				Acenapthene- d10	
C3-fluorenes	phenanthrene-d10				Acenapthene- d10	
C1-phenanthrenes/anthracenes	phenanthrene-d10				Phananthrene- d10	
C2-phenanthrenes/anthracenes	phenanthrene-d10				Phananthrene- d10	
C3-phenanthrenes/anthracenes	phenanthrene-d10				Phananthrene- d10	
C4-phenanthrenes/anthracenes	phenanthrene-d10				Phananthrene- d10	
C1-dibenzothiophenes	phenanthrene-d10				Phananthrene- d10	
C2-dibenzothiophenes	phenanthrene-d10				Phananthrene- d10	
C3-dibenzothiophenes	phenanthrene-d10				Phananthrene- d10	
C4-dibenzothiophenes	phenanthrene-d10				Phananthrene- d10	
C1-fluoranthenes/pyrenes	fluoranthene-d10				Chyrsene- 12	
C2-fluoranthenes/pyrenes	fluoranthene-d10				Chyrsene- 12	
C3-fluoranthenes/pyrenes	fluoranthene-d10				Chyrsene- 12	
C4-fluoranthenes/pyrenes	fluoranthene-d10				NA	
C1-naphthobenzothiophenes	NA				NA	
C2-naphthobenzothiophenes	NA				NA	
C3-naphthobenzothiophenes	NA				NA	
C4-naphthobenzothiophenes	NA				NA	
C1-chrysenes	B[a]A-d12				Chyrsene- 12	
C2-chrysenes	B[a]A-d12				Chyrsene- 12	
C3-chrysenes	B[a]A-d12				Chyrsene- 12	
C4-chrysenes	B[a]A-d12				NA	

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
1-methylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
2-methylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
2,6-dimethylnaphthalene	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
1,6,7-trimethylnaphthalene	Naphthalene-d8/Fluorene-d10	Acenaphthene-d10		Acenaphthene-d10	acenaphthene-d10	Acenaphthene-d10
1-methylphenanthrene	Phenanthrene-d10/Fluorasnthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C1-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C2-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C3-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C4-decalins	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C1-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d8-Naphthalene	Naphthalene-d8	naphthalene-d8	Naphthalene-d8
C2-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
C3-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Acenaphthene-d10
C4-naphthalenes	Naphthalene-d8/Fluorene-d10	Naphthalene-d8	d10-Acenaphthene	Naphthalene-d8	naphthalene-d8	Phenanthrene-d10
C1-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C2-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C3-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C4-benzothiophenes	Naphthalene-d8/Fluorene-d10	NA		NA		_____
C1-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C2-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C3-fluorenes	Acenaphthene-d10/Fluorene-d10	Acenaphthene-d10	d10-Acenaphthene	Acenaphthene-d10	acenaphthene-d10	Phenanthrene-d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10/Fluorasnthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10/Fluorasnthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Phenanthrene-d10
C3-phenanthrenes/anthracenes	Phenanthrene-d10/Fluorasnthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Chrysene-d12
C4-phenanthrenes/anthracenes	Phenanthrene-d10/Fluorasnthene-d10	Phenanthrene-d10	d10-Phenanthrene	Phenanthrene-d10	phenanthrene-d10	Chrysene-d12
C1-dibenzothiophenes	Phenanthrene-d10/Fluorasnthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C2-dibenzothiophenes	Phenanthrene-d10/Fluorasnthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C3-dibenzothiophenes	Phenanthrene-d10/Fluorasnthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Phenanthrene-d10
C4-dibenzothiophenes	Phenanthrene-d10/Fluorasnthene-d10	Acenaphthene-d10	d10-Phenanthrene	Acenaphthene-d10	phenanthrene-d10	Chrysene-d12
C1-fluoranthenes/pyrenes	Phenanthrene-d10/Fluorasnthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C2-fluoranthenes/pyrenes	Phenanthrene-d10/Fluorasnthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C3-fluoranthenes/pyrenes	Phenanthrene-d10/Fluorasnthene-d10	Chrysene-d12	d10-Phenanthrene	Chrysene-d12	chrysene-d12	Chrysene-d12
C4-fluoranthenes/pyrenes	Phenanthrene-d10/Fluorasnthene-d10	NA	d10-Phenanthrene	NA	chrysene-d12	_____
C1-naphthobenzothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		_____
C2-naphthobenzothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		_____
C3-naphthobenzothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		_____
C4-naphthobenzothiophenes	Chrysene-d12/Terphenyl-d14	NA		NA		_____
C1-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C2-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C3-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12
C4-chrysenes	Chrysene-d12/Terphenyl-d14	Chrysene-d12	d12-Chrysene	Chrysene-d12	chrysene-d12	Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 13	Lab 14	Lab 15	Lab 16	Lab 17	Lab 18
1-methylnaphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Napthalene- d8
2-methylnaphthalene	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Napthalene- d8
2,6-dimethylnaphthalene		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	NA
1,6,7-trimethylnaphthalene		Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Phenanthrene-d10	NA
1-methylphenanthrene	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	NA
C1-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C2-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C3-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C4-decalins		Naphthalene-d8		Fluorene-d10/Naphthalene-d8		NA
C1-naphthalenes		Naphthalene-d8		Fluorene-d10/Naphthalene-d8	Naphthalene-d8	Napthalene- d8
C2-naphthalenes	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Napthalene- d8
C3-naphthalenes	Naphthalene-d8	Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Napthalene- d8
C4-naphthalenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10	Naphthalene-d8	Napthalene- d8
C1-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C2-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C3-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C4-benzothiophenes		Naphthalene-d8		Fluorene-d10/Acenaphthene-d10		NA
C1-fluorenes	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
C2-fluorenes	Acenaphthene-d10	Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
C3-fluorenes		Acenaphthene-d10		Fluorene-d10/Acenaphthene-d10	Acenaphthalene-d10	Acenapthene- d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10	Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
C3-phenanthrenes/anthracenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
C4-phenanthrenes/anthracenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Phenanthrene-d10	Phananthrene- d10
C1-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phananthrene- d10
C2-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phananthrene- d10
C3-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phananthrene- d10
C4-dibenzothiophenes		Phenanthrene-d10		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Phananthrene- d10
C1-fluoranthenes/pyrenes	Phenanthrene-d10	Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C2-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C3-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C4-fluoranthenes/pyrenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10	Chrysene-d12	NA
C1-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C2-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C3-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C4-naphthobenzothiophenes		Chrysene-d12		Fluorene-d10/Phenanthrene-d10		NA
C1-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C2-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C3-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	Chyrsene- 12
C4-chrysenes		Chrysene-d12		Chrysene-d12/Phenanthrene-d10	Chrysene-d12	NA

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24
1-methylnaphthalene	Acenaphthene-d10		Naphthalene-d8			Napthalene-d8
2-methylnaphthalene	Acenaphthene-d10	naphthalene-D8 (IS)	Naphthalene-d8			Napthalene-d8
2,6-dimethylnaphthalene	Acenaphthene-d10		Naphthalene-d8			Napthalene-d8
1,6,7-trimethylnaphthalene		Nitrobanzene-d5 (S)	Acenphthene-d10			Napthalene-d8
1-methylphenanthrene	Phenanthrene-d10		Phenanthrene-d10			Phenanthrene-d10
C1-decalins						NA
C2-decalins						NA
C3-decalins		Acenapthene-d10 (IS)				NA
C4-decalins						NA
C1-naphthalenes	Naphthalene-d10					NA
C2-naphthalenes	Naphthalene-d10	2-Fluorbiphenyl (S)				Napthalene-d8
C3-naphthalenes	Naphthalene-d10					Napthalene-d8
C4-naphthalenes	Naphthalene-d10					Napthalene-d8
C1-benzothiophenes		Phenantherene-d10 (IS)				NA
C2-benzothiophenes						NA
C3-benzothiophenes						NA
C4-benzothiophenes		Chysene-d12 (IS)				NA
C1-fluorenes	Acenaphthene-d10	Terphenyl-d12 (S)				Acenapthene-d10
C2-fluorenes	Acenaphthene-d10					Acenapthene-d10
C3-fluorenes	Acenaphthene-d10					Acenapthene-d10
C1-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C2-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C3-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C4-phenanthrenes/anthracenes	Phenanthrene-d10					Phenanthrene-d10
C1-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C2-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C3-dibenzothiophenes	Phenanthrene-d10					Phenanthrene-d10
C4-dibenzothiophenes	Phenanthrene-d10					NA
C1-fluoranthenes/pyrenes	Chrysene-d12					Phenanthrene-d10
C2-fluoranthenes/pyrenes	Chrysene-d12					NA
C3-fluoranthenes/pyrenes	Chrysene-d12					NA
C4-fluoranthenes/pyrenes	Chrysene-d12					NA
C1-naphthobenzothiophenes						NA
C2-naphthobenzothiophenes						NA
C3-naphthobenzothiophenes						NA
C4-naphthobenzothiophenes						NA
C1-chrysenes	Chrysene-d12					Chrysene-d12
C2-chrysenes	Chrysene-d12					Chrysene-d12
C3-chrysenes	Chrysene-d12					Chrysene-d12
C4-chrysenes	Chrysene-d12					Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30
1-methylnaphthalene	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene			Naphthalene-d8
2-methylnaphthalene	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
2,6-dimethylnaphthalene	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
1,6,7-trimethylnaphthalene	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
1-methylphenanthrene	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C1-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C2-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C3-decalins	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C4-decalins	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-naphthalenes	Fluorene-d10/Phenanthrene-d10	d10-2-methylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C2-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C3-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C4-naphthalenes	Fluorene-d10/Phenanthrene-d10	d12-2,6-dimethylnaphthalene	d10-fluorene		Acenaphthene-d10	Naphthalene-d8
C1-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C2-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C3-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA	d10-fluorene		Acenaphthene-d10	
C4-benzothiophenes	Fluorene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenapthene-d10
C2-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenapthene-d10
C3-fluorenes	Fluorene-d10/Phenanthrene-d10	d8-acenaphthylene	d10-fluorene		Acenaphthene-d10	Acenapthene-d10
C1-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C2-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C3-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C4-phenanthrenes/anthracenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C1-dibenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C2-dibenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C3-dibenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C4-dibenzothiophenes	Pyrene-d10/Phenanthrene-d10	d10-phenanthrene	d10-fluorene		Acenaphthene-d10	Phenanthrene-d10
C1-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C2-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C3-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C4-fluoranthenes/pyrenes	Pyrene-d10/Phenanthrene-d10	d10-fluoranthene	d10-pyrene		Acenaphthene-d10	Phenanthrene-d10
C1-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C2-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C3-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA	d10-pyrene		Acenaphthene-d10	
C4-naphthobenzothiophenes	Pyrene-d10/Phenanthrene-d10	NA			Acenaphthene-d10	
C1-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
C2-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
C3-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12
C4-chrysenes	Pyrene-d10/Phenanthrene-d10	d12-chrysene	d12-benzo(a)pyrene		Chrysene-d12	Chrysene-d12

Alkylated PAHs - IS/surrogate used for quantitation

	Lab 31	Lab 32	Lab 33
1-methylnaphthalene	Naphthalene-d8	napthalene d_8	d8-Napthalene
2-methylnaphthalene	Naphthalene-d8	napthalene d_8	d8-Napthalene
2,6-dimethylnaphthalene	Acenaphthalene-d10	napthalene d_8	d8-1-MeNaphthalene
1,6,7-trimethylnaphthalene	Acenaphthalene-d10		d8-1-MeNaphthalene
1-methylphenanthrene	Phenanthrene-d10		d10-Phenanthrene
C1-decalins	Naphthalene-d8		d8-Napthalene
C2-decalins	Naphthalene-d8		d8-Napthalene
C3-decalins	Naphthalene-d8		d8-Napthalene
C4-decalins	Naphthalene-d8		d8-Napthalene
C1-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C2-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C3-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C4-naphthalenes	Naphthalene-d8		d8-1-MeNaphthalene
C1-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C2-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C3-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C4-benzothiophenes	Acenaphthalene-d10		d8-1-MeNaphthalene
C1-fluorenes	Acenaphthalene-d10		d10Fluorene
C2-fluorenes	Acenaphthalene-d10		d10Fluorene
C3-fluorenes	Acenaphthalene-d10		d10Fluorene
C1-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C2-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C3-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C4-phenanthrenes/anthracenes	Phenanthrene-d10		d10-Anthracene
C1-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C2-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C3-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C4-dibenzothiophenes	Acenaphthalene-d10		d8-dibenzothiophene
C1-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C2-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C3-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C4-fluoranthenes/pyrenes	Phenanthrene-d10		d10-Fluoranthene
C1-naphthobenzothiophenes	Chrysene-d12		
C2-naphthobenzothiophenes	Chrysene-d12		
C3-naphthobenzothiophenes	Chrysene-d12		
C4-naphthobenzothiophenes	Chrysene-d12		
C1-chrysenes	Chrysene-d12		d12-Chrysene
C2-chrysenes	Chrysene-d12		d12-Chrysene
C3-chrysenes	Chrysene-d12		d12-Chrysene
C4-chrysenes	Chrysene-d12		d12-Chrysene

Biomarkers - IS/surrogate used for quantitation

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15	Lab 16
Carbazole	NA		phenanthrene-d10		NA	anthracene-d10	Phenanthrene-d10/Fluorasnthene-d10	NA		NA		_____		Phenanthrene-d10		
17α(H)-22,29,30-Tisnorhopane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12		5-alpha Androstane		Chrysene-d12/5b(H)Cholane
17α(H),21β(H)-30-Norhopane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
17α(H),21β(H)-Hopane	B[a]A-d12				Chyrsene- 12		Chrysene-d12/Terphenyl-d14	Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
ααα 20R-Cholestane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
αββ 20R-Cholestane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
αββ 20R 24S-Methylcholestane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
ααα 20R 24R-Ethylcholestane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
αββ 20R 24R-Ethylcholestane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
17α(H),21β(H)-22R-Homohopane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane
17α(H),21β(H)- 22S-Homohopane	B[a]A-d12				Chyrsene- 12			Chrysene-d12	DCH	Chrysene-d12	chrysene-d12	Chrysene-d12				Chrysene-d12/5b(H)Cholane

Biomarkers - IS/surrogate used for quantitation

	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
Carbazole		NA	Phenanthrene-d10	naphthalene-D8 (IS)				NA	NA	d10-phenanthrene	d10-fluorene		Chrysene-d12		Phenanthrene-d10		
17α(H)-22,29,30-Tisnorhopane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				
17α(H),21β(H)-30-Norhopane	Chrysene-d12	Chyrsene- 12		Nitrobanzene-d5 (S)				NA	NA	d50-tetracosane			Chrysene-d12		Perylene-d12		
17α(H),21β(H)-Hopane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				
ααα 20R-Cholestane	Chrysene-d12	Chyrsene- 12		Acenapthene-d10 (IS)				NA	NA	d50-tetracosane			Chrysene-d12				
αββ 20R-Cholestane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				
αββ 20R 24S-Methylcholestane	Chrysene-d12	Chyrsene- 12		2-Fluorbiphenyl (S)				NA	NA	d50-tetracosane			Chrysene-d12				
ααα 20R 24R-Ethylcholestane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				
αββ 20R 24R-Ethylcholestane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				
17α(H),21β(H)-22R-Homohopane	Chrysene-d12	Chyrsene- 12		Phenantherene-d10 (IS)				NA	NA	d50-tetracosane			Chrysene-d12				
17α(H),21β(H)- 22S-Homohopane	Chrysene-d12	Chyrsene- 12						NA	NA	d50-tetracosane			Chrysene-d12				

PAHs - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10
naphthalene		NA			minus 50 to plus 100		40-120	60-140	30-120	60-140
biphenyl		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
acenaphthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
acenaphthylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
fluorene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
phenanthrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[b]fluorene					minus 50 to plus 100		40-120	60-140		NA
benz[a]anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
chrysene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
triphenylene					minus 50 to plus 100		40-120	NA		NA
benzo[*b*]fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[*j*]fluoranthene					minus 50 to plus 100		40-120	NA		NA
benzo[*k*]fluoranthene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[a]fluoranthene					minus 50 to plus 100		40-120	NA		NA
benzo[e]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[a]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
perylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
indeno[1,2,3-cd]pyrene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
benzo[ghi]perylene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
dibenz[a,h]anthracene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
cis/trans-decalin					minus 50 to plus 100		40-120	NA		NA
dibenzofuran					minus 50 to plus 100		40-120	60-140		60-140
retene					minus 50 to plus 100		40-120	NA		NA
benzothiophene		50-120			minus 50 to plus 100		40-120	NA		NA
dibenzothiophene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140
naphthobenzothiophene					minus 50 to plus 100		40-120	NA		NA

PAHs - Associated % recovery / acceptance ranges

	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21
naphthalene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
biphenyl				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
acenaphthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100		70-130	
acenaphthylene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
fluorene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
phenanthrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[b]fluorene				25 - 150				minus 50 to plus 100		70-130	
benz[a]anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
chrysene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
triphenylene							60-140	minus 50 to plus 100			
benzo[*b*]fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[*j*]fluoranthene								minus 50 to plus 100			
benzo[*k*]fluoranthene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[a]fluoranthene				25 - 150				minus 50 to plus 100			
benzo[e]pyrene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[a]pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
perylene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
indeno[1,2,3-cd]pyrene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
benzo[ghi]perylene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100		70-130	
dibenz[a,h]anthracene		60 - 140		25 - 150		70 - 130%	60-140	minus 50 to plus 100			
cis/trans-decalin				25 - 150		70 - 130%		minus 50 to plus 100			
dibenzofuran				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
retene				25 - 150		70 - 130%		minus 50 to plus 100			
benzothiophene				25 - 150		70 - 130%		minus 50 to plus 100			
dibenzothiophene				25 - 150		70 - 130%	60-140	minus 50 to plus 100			
naphthobenzothiophene				25 - 150		70 - 130%		minus 50 to plus 100			

PAHs - Associated % recovery / acceptance ranges

	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
naphthalene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
biphenyl			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
acenaphthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
acenaphthylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
fluorene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
phenanthrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
fluoranthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[b]fluorene			NA	60-120				40-120	40-120	-50% to +100%		
benz[a]anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
chrysene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
triphenylene			NA	NA				40-120	40-120	-50% to +100%		
benzo[*b*]fluoranthene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[*j*]fluoranthene			NA	NA				40-120	40-120	-50% to +100%		
benzo[*k*]fluoranthene			50-150	60-120				40-120	40-120	-50% to +100%		
benzo[a]fluoranthene			NA	60-120				40-120	40-120	-50% to +100%		
benzo[e]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[a]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
perylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
indeno[1,2,3-cd]pyrene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
benzo[ghi]perylene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
dibenz[a,h]anthracene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
cis/trans-decalin			NA	60-120				40-120	40-120	-50% to +100%		
dibenzofuran			NA	60-120		50-150		40-120	40-120	-50% to +100%		
retene			NA	60-120		50-150		40-120	40-120	-50% to +100%		
benzothiophene			NA	60-120		50-150		40-120	40-120	-50% to +100%		
dibenzothiophene			50-150	60-120		50-150		40-120	40-120	-50% to +100%		
naphthobenzothiophene			NA	60-120		50-150		40-120	40-120	-50% to +100%		

AlkylatedPAHs - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
1-methylnaphthalene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
2-methylnaphthalene		50-120			minus 50 to plus 100		40-120	60-140	30-120	60-140		60 - 140		25 - 150	
2,6-dimethylnaphthalene					minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
1,6,7-trimethylnaphthalene					minus 50 to plus 100		40-120	60-140		60-140				25 - 150	
1-methylphenanthrene					minus 50 to plus 100		40-120	60-140	30-120	60-140				25 - 150	
C1-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C2-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C3-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C4-decalins					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C1-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C4-naphthalenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C2-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C3-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C4-benzothiophenes					minus 50 to plus 100		40-120	NA		NA				25 - 150	
C1-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C2-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C3-fluorenes					minus 50 to plus 100		40-120	NA	30-120	NA				25 - 150	
C1-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C2-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C3-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C4-phenanthrenes/anthracenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C1-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C2-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C3-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C4-dibenzothiophenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C1-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C2-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C3-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C4-fluoranthenes/pyrenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C1-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA		_____ _		25 - 150	
C2-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA		_____ _		25 - 150	
C3-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA		_____ _		25 - 150	
C4-naphthobenzothiophenes					minus 50 to plus 100		40-120	NA		NA		_____ _		25 - 150	
C1-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C2-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C3-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	
C4-chrysenes					minus 50 to plus 100		40-120	NA	30-120	NA		_____ _		25 - 150	

AlkylatedPAHs - Associated % recovery / acceptance ranges

	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
1-methylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
2-methylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
2,6-dimethylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
1,6,7-trimethylnaphthalene	70 - 130%	60-140	minus 50 to plus 100						50-150	60-120		50-150		40-120	40-120	-50% to +100%		
1-methylphenanthrene	70 - 130%	60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-decalins			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-decalins			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-naphthalenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-naphthalenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-naphthalenes		60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-naphthalenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-benzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-benzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-fluorenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-fluorenes		60-140	minus 50 to plus 100		70-130				50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-fluorenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-phenanthrenes/anthracenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C1-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-dibenzothiophenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-dibenzothiophenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C1-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C4-fluoranthenes/pyrenes		60-140	minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C1-naphthobenzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C2-naphthobenzothiophenes			minus 50 to plus 100						NA	NA		50-150		40-120	40-120	-50% to +100%		
C3-naphthobenzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C4-naphthobenzothiophenes			minus 50 to plus 100						NA	NA				40-120	40-120	-50% to +100%		
C1-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C2-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C3-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		
C4-chrysenes		60-140	minus 50 to plus 100						50-150	NA		50-150		40-120	40-120	-50% to +100%		

Biomarkers - Associated % recovery / acceptance ranges

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14	Lab 15
Carbazole					minus 50 to plus 100		40-120	NA		NA				25 - 150	
17α(H)-22,29,30-Tisnorhopane					minus 50 to plus 100			NA	80-120	NA				25 - 150	
17α(H),21β(H)-30-Norhopane					minus 50 to plus 100			NA	80-120	NA					
17α(H),21β(H)-Hopane					minus 50 to plus 100		40-120	60-140	80-120	60-140					
ααα 20R-Cholestane					minus 50 to plus 100			NA	80-120	NA					
αββ 20R-Cholestane					minus 50 to plus 100			NA	80-120	NA					
αββ 20R 24S-Methylcholestane					minus 50 to plus 100			NA	80-120	NA					
ααα 20R 24R-Ethylcholestane					minus 50 to plus 100			NA	80-120	NA					
αββ 20R 24R-Ethylcholestane					minus 50 to plus 100			NA	80-120	NA					
17α(H),21β(H)-22R-Homohopane					minus 50 to plus 100			NA	80-120	NA					
17α(H),21β(H)- 22S-Homohopane					minus 50 to plus 100			NA	80-120	NA					

Biomarkers - Associated % recovery / acceptance ranges

	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 21	Lab 22	Lab 23	Lab 24	Lab 25	Lab 26	Lab 27	Lab 28	Lab 29	Lab 30	Lab 31	Lab 32	Lab 33
Carbazole			minus 50 to plus 100						NA	NA						-50% to +100%		
17α(H)-22,29,30-Tisnorhopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17α(H),21β(H)-30-Norhopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA						-50% to +100%		
17α(H),21β(H)-Hopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
ααα 20R-Cholestane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
αββ 20R-Cholestane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
αββ 20R 24S-Methylcholestane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
ααα 20R 24R-Ethylcholestane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
αββ 20R 24R-Ethylcholestane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17α(H),21β(H)-22R-Homohopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								
17α(H),21β(H)- 22S-Homohopane	70 - 130%	60-140	minus 50 to plus 100						NA	NA								

PAHs -If "representative compound" used for quantitation, list the compound

	Lab 17	Lab 21	Lab 25	Lab 33
naphthalene	naphthalene		NA	
biphenyl	biphenyl		NA	
acenaphthene	acenaphthene		NA	
acenaphthylene	acenaphthylene		NA	
fluorene	fluorene		NA	
phenanthrene	phenanthrene		NA	
anthracene	anthracene		NA	
fluoranthene	fluoranthene		NA	
pyrene	pyrene		NA	
benzo[b]fluorene			NA	
benz[a]anthracene	benz[a]anthracene		NA	
chrysene	chrysene		NA	
triphenylene	triphenylene	Chrysene	chrysene	
benzo[*b*]fluoranthene	benzo[b]fluoranthene		NA	
benzo[*j*]fluoranthene			benzo[k]fluoranthene	
benzo[*k*]fluoranthene	benzo[k]fluoranthene		NA	
benzo[a]fluoranthene			benzo[k]fluoranthene	benzo[*b*]fluoranthene
benzo[e]pyrene	benzo[e]pyrene		NA	
benzo[a]pyrene	benzo[a]pyrene		NA	
perylene	perylene		NA	
indeno[1,2,3-cd]pyrene	indeno[1,2,3-cd]pyrene		NA	
benzo[ghi]perylene	benzo[ghi]perylene		NA	
dibenz[a,h]anthracene	dibenz[a,h]anthracene		NA	
cis/trans-decalin			NA	
dibenzofuran	dibenzofuran		NA	
retene			NA	
benzothiophene			NA	
dibenzothiophene	dibenzothiophene		NA	
naphthobenzothiophene			NA	

Alkylated PAHs -If "representative compound" used for quantitation, list the compound

	Lab 1	Lab 5	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12
1-methylnaphthalene		NA		NA		NA		
2-methylnaphthalene		NA		NA		NA		
2,6-dimethylnaphthalene		NA		NA		NA		
1,6,7-trimethylnaphthalene		NA		NA		NA		
1-methylphenanthrene		NA	Phenanthrene	NA		NA		
C1-decalins		NA	Decalin	NA		NA		
C2-decalins		NA	Decalin	NA		NA		
C3-decalins		NA	Decalin	NA		NA		
C4-decalins		NA	Decalin	NA		NA		
C1-naphthalenes	1-me and 2-menaphthalene	Napthalene	Naphthalene	Naphthalene		Naphthalene	naphthalene	Naphthalene
C2-naphthalenes	2,6-dimehtylnaphthalene	Napthalene	Naphthalene	Naphthalene	2,6-dimethylnaphthalene	Naphthalene	naphthalene	Naphthalene
C3-naphthalenes	2,3,5-trimethylnaphthalene	Napthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene	Naphthalene	naphthalene	Naphthalene
C4-naphthalenes	2,3,5-trimethylnaphthalene	Napthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene	Naphthalene	naphthalene	Naphthalene
C1-benzothiophenes		NA	Benzothiophene	NA		NA		
C2-benzothiophenes		NA	Benzothiophene	NA		NA		
C3-benzothiophenes		NA	Benzothiophene	NA		NA		
C4-benzothiophenes		NA	Benzothiophene	NA		NA		
C1-fluorenes	fluorene	Flourene	Fluorene	Fluorene	fluorene	Fluorene	fluorenes	Fluorene
C2-fluorenes		Flourene	Fluorene	Fluorene	fluorene	Fluorene	fluorenes	Fluorene
C3-fluorenes		Flourene	Fluorene	Fluorene	fluorene	Fluorene	fluorenes	Fluorene
C1-phenanthrenes/anthracenes	1-me, 2-me, 3-me, and 9-mephenanthrene plus 2-meanthracene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	Phenanthrene	phenanthrene	Phenanthrene
C2-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	Phenanthrene	phenanthrene	Phenanthrene
C3-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	Phenanthrene	phenanthrene	Phenanthrene
C4-phenanthrenes/anthracenes	1,7-dimethylphenanthrene	Phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene	Phenanthrene	phenanthrene	Phenanthrene
C1-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene
C2-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene
C3-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene
C4-dibenzothiophenes	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene
C1-fluoranthenes/pyrenes	1-me and 3-mefluoranthene plus 1me and 4-mepyrene	Pyrene	Fluoranthene	Pyrene	pyrene	Pyrene	pyrene	Pyrene
C2-fluoranthenes/pyrenes	1-me and 3-mefluoranthene plus 1me and 4-mepyrene	Pyrene	Fluoranthene	Pyrene	pyrene	Pyrene	pyrene	Pyrene
C3-fluoranthenes/pyrenes	1-me and 3-mefluoranthene plus 1me and 4-mepyrene	Pyrene	Fluoranthene	Pyrene	pyrene	Pyrene	pyrene	Pyrene
C4-fluoranthenes/pyrenes	1-me and 3-mefluoranthene plus 1me and 4-mepyrene	NA	Fluoranthene	NA	pyrene	NA	pyrene	
C1-naphthobenzothiophenes		NA	Naphthobenzothiophene	NA		NA		
C2-naphthobenzothiophenes		NA	Naphthobenzothiophene	NA		NA		
C3-naphthobenzothiophenes		NA	Naphthobenzothiophene	NA		NA		
C4-naphthobenzothiophenes		NA	Naphthobenzothiophene	NA		NA		
C1-chrysenes	3-me and 6-mechyrsne	Chyrsene	Chrysene	Chrysene	chrysene	Chrysene	chrysene	Chrysene
C2-chrysenes	3-me and 6-mechyrsne	Chyrsene	Chrysene	Chrysene	chrysene	Chrysene	chrysene	Chrysene
C3-chrysenes	3-me and 6-mechyrsne	Chyrsene	Chrysene	Chrysene	chrysene	Chrysene	chrysene	Chrysene
C4-chrysenes	3-me and 6-mechyrsne	NA	Chrysene	Chrysene	chrysene	Chrysene	chrysene	Chrysene

Alkylated PAHs -If "representative compound" used for quantitation, list the compound

	Lab 13	Lab 14	Lab 16	Lab 17	Lab 18	Lab 19	Lab 20	Lab 23
1-methylnaphthalene				1-methylnaphthalene	NA			
2-methylnaphthalene				2-methylnaphthalene	NA		1-methylnaphthalene	
2,6-dimethylnaphthalene				2,6-dimethylnaphthalene	NA			
1,6,7-trimethylnaphthalene				1,6,7-trimethylnaphthalene	NA			
1-methylphenanthrene				1-methylphenanthrene	NA			
C1-decalins		cis/trans-Decalin	trans-decalin		NA			
C2-decalins		cis/trans-Decalin	trans-decalin		NA			
C3-decalins		cis/trans-Decalin	trans-decalin		NA			
C4-decalins		cis/trans-Decalin	trans-decalin		NA			
C1-naphthalenes		Naphthalene	naphthalene	Naphthalene	Napthalene	Naphthalene	2-Methylnaphthalenes	2-methylnaphthalene
C2-naphthalenes	1,6-dimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Napthalene	Naphthalene	2-ethylnaphthalenes	1-ethylnaphthalene
C3-naphthalenes	2,3,5-trimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Napthalene	Naphthalene	2-ethylnaphthalenes	2-isopropylnaphthalene
C4-naphthalenes		Naphthalene	naphthalene	Naphthalene	Napthalene	Naphthalene	1,4,6,7Tetramethylnaphthalenes	1,4,6,7-tetramethylnaphthalene
C1-benzothiophenes		Benzothiophene	benzothiophene		NA		4-Methylbenzothiophenes	4-methylbenzothiophene
C2-benzothiophenes		Benzothiophene	benzothiophene		NA		2,3-Dimethybenzothiophenes	2,3-dimethylbenzothiophene
C3-benzothiophenes		Benzothiophene	benzothiophene		NA		2,3,4\2,3,6-trimethybenzothiophenes	2,3,4-trimethylbenzothiophene
C4-benzothiophenes		Benzothiophene	benzothiophene		NA			
C1-fluorenes	1-methylfluorene	Fluorene	fluorene	fluorene	Flourene	Fluorene	3-Methyfluorenes	1-methylfluorene
C2-fluorenes	1,8-dimethylfluorene	Fluorene	fluorene	fluorene	Flourene	Fluorene	3-ethyfluorenes	
C3-fluorenes		Fluorene	fluorene	fluorene	Flourene	Fluorene	9-n-propylfluorenes	9-n-propylfluorene
C1-phenanthrenes/anthracenes	2-methylanthracene	Phenanthrene	phenanthrene	phenanthrene	phenanthrene	Phenanthrene	1-Methylphenanthrene	2-methylphenanthrene
C2-phenanthrenes/anthracenes	3,6-dimethylphenanthrene	Phenanthrene	phenanthrene	phenanthrene	phenanthrene	Phenanthrene	2-Ethylanthracene	3-ethylphenanthrene
C3-phenanthrenes/anthracenes		Phenanthrene	phenanthrene	phenanthrene	phenanthrene	Phenanthrene	9-n-propylanthrecene	1,2,5-trimethylphenanthrene
C4-phenanthrenes/anthracenes		Phenanthrene	phenanthrene	phenanthrene	phenanthrene	Phenanthrene		
C1-dibenzothiophenes		Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	4-Methyldibenzothiophenes	3-methyldibenzothiophenes
C2-dibenzothiophenes		Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	2,3-Dimethyldibenzothiophenes	
C3-dibenzothiophenes		Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	2,4,7-trimethyldibenzothiophene	
C4-dibenzothiophenes		Dibenzothiophene	dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene		
C1-fluoranthenes/pyrenes	1-methylpyrene	Pyrene	pyrene	pyrene	pyrene	Pyrene	2,Methylfluoranthene	1-methylpyrene
C2-fluoranthenes/pyrenes		Pyrene	pyrene	pyrene	pyrene	Pyrene		
C3-fluoranthenes/pyrenes		Pyrene	pyrene	pyrene	pyrene	Pyrene	1-n-propylpyrene	1,n-propylpyrene
C4-fluoranthenes/pyrenes		Pyrene		pyrene	NA	Pyrene		1,n-butylpyrene
C1-naphthobenzothiophenes		Naphthobenzothiophene	naphthobenzothiophene		NA			
C2-naphthobenzothiophenes		Naphthobenzothiophene	naphthobenzothiophene		NA			
C3-naphthobenzothiophenes		Naphthobenzothiophene	naphthobenzothiophene		NA			
C4-naphthobenzothiophenes		Naphthobenzothiophene	naphthobenzothiophene		NA			
C1-chrysenes		Chrysene	chrysene	chrysene	Chyrsene	Chrysene	6-Methychysene	5-methylchrysene
C2-chrysenes		Chrysene	chrysene	chrysene	Chyrsene	Chrysene	6-ethylchrysene	6-ethylethylchrysene
C3-chrysenes		Chrysene	chrysene	chrysene	Chyrsene	Chrysene		
C4-chrysenes		Chrysene	chrysene	chrysene	NA	Chrysene	6-n-Butylchrysene	6,n-butylchrysene

Alkylated PAHs -If "representative compound" used for quantitation, list the compound

	Lab 24	Lab 25	Lab 26	Lab 27	Lab 29	Lab 30	Lab 31	Lab 33
1-methylnaphthalene		NA						
2-methylnaphthalene		NA						
2,6-dimethylnaphthalene		NA						
1,6,7-trimethylnaphthalene		NA						
1-methylphenanthrene		phenanthrene						
C1-decalins		cis/trans-decalin		Decalin	trans-decalin		trans-Decalin	
C2-decalins		cis/trans-decalin		Decalin	trans-decalin		trans-Decalin	
C3-decalins		cis/trans-decalin		Decalin	trans-decalin		trans-Decalin	
C4-decalins		cis/trans-decalin			trans-decalin		trans-Decalin	
C1-naphthalenes		naphthalene	1- & 2-methylnaphthalene	Naphthalene	naphthalene	Naphthalene	2-Methylnaphthalene	1+2-methylnapthalene
C2-naphthalenes	Napthalene	naphthalene	2,6- & 1,2-dimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,6-dimethylnaphthalene
C3-naphthalenes	Napthalene	naphthalene	2,3,5- & 2,3,6-trimethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene
C4-naphthalenes	Napthalene	naphthalene	1,4,6,7-tetramethylnaphthalene	Naphthalene	naphthalene	Naphthalene	Naphthalene	2,3,5-trimethylnaphthalene
C1-benzothiophenes		benzothiophene		Benzothiophene	benzothiophene		Benzothiophene	benzothiophene
C2-benzothiophenes		benzothiophene		Benzothiophene	benzothiophene		Benzothiophene	benzothiophene
C3-benzothiophenes		benzothiophene		Benzothiophene	benzothiophene		Benzothiophene	benzothiophene
C4-benzothiophenes		benzothiophene			benzothiophene		Benzothiophene	benzothiophene
C1-fluorenes	Fluorene	fluorene	2-methylfluorene	Fluorene	fluorene	Fluorene	Fluorene	Fluorene
C2-fluorenes	Fluorene	fluorene	1,7-dimethylfluorene	Fluorene	fluorene	Fluorene	Fluorene	Fluorene
C3-fluorenes	Fluorene	fluorene	1,7-dimethylfluorene	Fluorene	fluorene	Fluorene	Fluorene	Fluorene
C1-phenanthrenes/anthracenes	Phenanthrene	phenanthrene	1- & 2-methylphenanthrene & 2-methylanthracene	Anthracene	phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene
C2-phenanthrenes/anthracenes	Phenanthrene	phenanthrene	3,6- & 1,7-dimethylphenanthrene	Anthracene	phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene
C3-phenanthrenes/anthracenes	Phenanthrene	phenanthrene	1,2,6-trimethylphenanthrene	Anthracene	phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene
C4-phenanthrenes/anthracenes	Phenanthrene	phenanthrene	retene	Anthracene	phenanthrene	Phenanthrene	Phenanthrene	1-methylphenanthrene
C1-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2/3-methyldibenzothiophenes	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C2-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C3-dibenzothiophenes	Dibenzothiophene	dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C4-dibenzothiophenes		dibenzothiophene	2,4-dimethyldibenzothiophene	Dibenzothiophene	dibenzothiophene	Dibenzothiophene	Dibenzothiophene	dibenzothiophene
C1-fluoranthenes/pyrenes	Fluoranthene	fluoranthene	3-methylfluoranthene	Fluoranthene	pyrene	Fluoranthene	Fluoranthene	fluoranthene
C2-fluoranthenes/pyrenes		fluoranthene	3-methylfluoranthene	Fluoranthene	pyrene	Fluoranthene	Fluoranthene	fluoranthene
C3-fluoranthenes/pyrenes		fluoranthene	3-methylfluoranthene	Fluoranthene	pyrene	Fluoranthene	Fluoranthene	fluoranthene
C4-fluoranthenes/pyrenes		fluoranthene	3-methylfluoranthene		pyrene	Fluoranthene	Fluoranthene	fluoranthene
C1-naphthobenzothiophenes		naphthobenzothiophene		Naphthobenzothiophene	naphthobenzothiophene		Naphthobenzothiphene	
C2-naphthobenzothiophenes		naphthobenzothiophene		Naphthobenzothiophene	naphthobenzothiophene		Naphthobenzothiphene	
C3-naphthobenzothiophenes		naphthobenzothiophene		Naphthobenzothiophene	naphthobenzothiophene		Naphthobenzothiphene	
C4-naphthobenzothiophenes		naphthobenzothiophene			naphthobenzothiophene		Naphthobenzothiphene	
C1-chrysenes	Chrysene	chrysene	1- & 6-methylchrysene	Benzo(a)anthracene	chrysene	Chysene	Chrysene/Triphenylene	chrysene
C2-chrysenes	Chrysene	chrysene	5,9-dimethylchrysene	Benzo(a)anthracene	chrysene	Chysene	Chrysene/Triphenylene	chrysene
C3-chrysenes	Chrysene	chrysene	5,9-dimethylchrysene	Benzo(a)anthracene	chrysene	Chysene	Chrysene/Triphenylene	chrysene
C4-chrysenes	Chrysene	chrysene	5,9-dimethylchrysene	Benzo(a)anthracene	chrysene	Chysene	Chrysene/Triphenylene	chrysene

Biomarkers -If "representative compound" used for quantitation, list the compound

	Lab 5	Lab 8	Lab 9	Lab 10	Lab 11
Carbazole	NA	NA		NA	
17α(H)-22,29,30-Tisnorhopane	17α(H),21β(H)-Hopane	17β(H),21β(H)-Hopane		17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane
17α(H),21β(H)-30-Norhopane	17α(H),21β(H)-Hopane	17β(H),21β(H)-Hopane	H30	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane
17α(H),21β(H)-Hopane	NA	17β(H),21β(H)-Hopane		17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane
ααα 20R-Cholestane	NA	5α - Cholestane	C27S	5α - Cholestane	5a-Cholestane
αββ 20R-Cholestane	5(a) Cholestane	5α - Cholestane	C27S	5α - Cholestane	5a-Cholestane
αββ 20R 24S-Methylcholestane	5(a) Cholestane	5α - Cholestane	C27S	5α - Cholestane	5a-Cholestane
ααα 20R 24R-Ethylcholestane	5(a) Cholestane	5α - Cholestane	C27S	5α - Cholestane	5a-Cholestane
αββ 20R 24R-Ethylcholestane	5(a) Cholestane	5α - Cholestane	C27S	5α - Cholestane	5a-Cholestane
17α(H),21β(H)-22R-Homohopane	17α(H),21β(H)-Hopane	17β(H),21β(H)-Hopane	H30	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane
17α(H),21β(H)- 22S-Homohopane	17α(H),21β(H)-Hopane	17β(H),21β(H)-Hopane	H30	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane

Biomarkers -If "representative compound" used for quantitation, list the compound

	Lab 12	Lab 16	Lab 17	Lab 18	Lab 29
Carbazole	_____			NA	
17α(H)-22,29,30-Tisnorhopane	17b(H)21b(H)Hopane	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane	17α(H),21β(H)-Hopane	17a(H),21b(H)-hopane
17α(H),21β(H)-30-Norhopane	17b(H)21b(H)Hopane	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane	17α(H),21β(H)-Hopane	17a(H),21b(H)-hopane
17α(H),21β(H)-Hopane	17b(H)21b(H)Hopane	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane	NA	
ααα 20R-Cholestane	5a-Cholestane		5a-Cholestane	NA	5b(H)Cholane
αββ 20R-Cholestane	5a-Cholestane	ααα 20R-Cholestane	5a-Cholestane	5(a) Cholestane	5b(H)Cholane
αββ 20R 24S-Methylcholestane	5a-Cholestane	ααα 20R-Cholestane	5a-Cholestane	5(a) Cholestane	
ααα 20R 24R-Ethylcholestane	5a-Cholestane	ααα 20R-Cholestane	5a-Cholestane	5(a) Cholestane	
αββ 20R 24R-Ethylcholestane	5a-Cholestane	ααα 20R-Cholestane	5a-Cholestane	5(a) Cholestane	
17α(H),21β(H)-22R-Homohopane	17b(H)21b(H)Hopane	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane	17α(H),21β(H)-Hopane	17a(H),21b(H)-hopane
17α(H),21β(H)- 22S-Homohopane	17b(H)21b(H)Hopane	17β(H),21β(H)-Hopane	17b(H)21b(H) Hopane	17α(H),21β(H)-Hopane	17a(H),21b(H)-hopane

APPENDIX C

Laboratory Notes Submitted with the Data

Lab	Notes								
1	Due to higher conc in the QASED sample, chrysene and triphenylene did not separate enough to qunatify individually.								
	QA10SED01	mean	stdev	rsd					
	chrysene/triphenylene	2513	37	1.48%					
2		QA10SED01	QA10SED01	QA10SED01					
		Sample 1	Sample 2	Sample 3		IS/surrogate		Associated % recovery	
		(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)		used for qunatitation		acceptance ranges	
	benzo(b)naphtho(2,1-d)thiophene	360	356	310		d10-fluoranthene		50-120	
	4-methylbiphenyl	67.3	62.9	67.3		d10-acenaphthene		50-120	
	1-ethylnaphthalene	<17	<17	<17		d8-naphthalene		50-120	
	1,2-dimethylnaphthalene	26.4	24.5	26.6		d10-acenaphthylene		50-120	
	2,3,5-trimethylnaphthalene	146	141	136		d10-acenaphthene		50-120	
	1-methylfluorene	108	110	98.9		d10-fluorene		50-120	
	2-methylphenanthrene	572	531	436		d10-phenanthrene		50-120	
	3,6-dimethylphenanthrene	398	387	337		d10-phenanthrene		50-120	
	2-methylfluoranthene	435	456	412		d10-fluoranthene		50-120	
	1 SRM-1941b was not available at our laboratory for these analyses. Therefore, we substituted NRC-CNRS HS-6 Marine Sediment as the SRM material.								
	Data for this SRM, and associated certified concentrations, are included below along with laboratory fortified matrix spike recoveries:								
	Analysis Date: 9/3/10								
		HS-6	HS-6	HS-6	Laboratory-Fortified				
		Sample 1	Sample 2	Sample 3	Certified	Matrix Spiked			
		(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	(ng/g)	Recoveries			
	naphthalene	4508	3457	3165	4100 ±1100	82			
	biphenyl	411	379	353	NA	112			
	acenaphthene	131	122	122	230 ±70	97			
	acenaphthylene	77.1	74.8	75.2	190 ±50	104			
	fluorene	160	155	152	470 ±120	105			
	phenanthrene	2990	2846	2827	3000 ±600	104			
	anthracene	850	778	799	1100 ±400	104			
	fluoranthene	2984	2908	2915	3540 ±650	105			
	pyrene	2100	2020	1978	3000 ±600	103			
	benz[a]anthracene	1100	1035	1168	1800 ±300	110			
	chrysene	2149	2112	2108	2000 ±300	103			
	benzo[b]fluoranthene	1793	1648	1865	2800 ±600	116			
	benzo[k]fluoranthene	2074	2186	2085	1430 ±150	100			
	benzo[e]pyrene	1776	2085	2000	NA	111			
	benzo[a]pyrene	1295	1351	1456	2200 ±400	101			
	perylene	307	343	354	NA	110			
	indeno[1,2,3-cd]pyrene	1479	1448	1514	1950 ±580	86			
	benzo[ghi]perylene	1561	1478	1602	1780 ±720	103			
	dibenz[a,h]anthracene	362	388	359	490 ±160	106			
	benzothiophene	142	130	118	NA	93			
	dibenzothiophene	213	207	197	NA	95			
	1-methylnaphthalene	1701	1421	1261	NA	105			
	2-methylnaphthalene	2696	2155	1906	NA	101			
	benzo(b)naphtho(2,1-d)thiophene	173	189	177	NA	97			
	4-methylbiphenyl	119	138	130	NA	111			
	1-ethylnaphthalene	176	127	120	NA	90			
	1,2-dimethylnaphthalene	307	183	161	NA	84			
	2,3,5-trimethylnaphthalene	363	456	427	NA	104			
	1-methylfluorene	106	128	134	NA	113			
	2-methylphenanthrene	681	636	589	NA	112			
	3,6-dimethylphenanthrene	135	118	102	NA	115			
	2-methylfluoranthene	302	285	270	NA	109			

3	Analysis of SRM 1941b was not performed.							
	Samples 158 and 167 were extracted in one batch on 9/07/2010. Sample 183 was extracted 9/08/2010.							
	The concentration range of 5-80 ng/uL for the calibration curve represent on column concentrations.							
	The range in final reporting concentration is 4000 ng/g dry mass to 320000 ng/g dry mass.							
	Concentrations reported as <4000 ng/g dry mass represent < quantitation limit.							
	Values reported below 4000 ng/g dry mass are below the quantitation limit and are considered estimated.							
4	T=Reported value is less than the reporting limit (RL). Result is estimated.							
	We normally extract 25 grams of sample, since less was provided the RLs were raised.							
	Not enough sample was submitted for TOC analysis.							
5	J values will be reported as <100							
6	1-methylphenanthrene has an interferent peak							
	Benzo(k)fluoranthene co-elutes with benzo(b)fluoranthene							
	Dibenzofuran has an interferent peak							
7	* - Analytes coelute and cannot be resolved under the chromatographic conditions used							
	** - The analytes could not be resolved from the Sulfur interference							
	*** - Analyte coelutes with one of the other isomers of Benzofluoranthene. Efforts are being made to confirm which isomer it							
	X - Results may have a high bias due to interference from Sulfur							
8	QA10SED01 Sample quantification limits = 100ng/g							
	SRM 1941b Sample quantification limits = 20ng/g							
13		QA10SED01	QA10SED01	QA10SED01	SRM 1941b	SRM 1941b	SRM 1941b	
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	IS/surrogate
		(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	g/g dry mass)	used for qunatitation
	1,3-dimethylnaphthalene	103	87	63	59	30.0	54	Naphthalene-d8
	1,5-dimethylnaphthalene	16	14	10	9	5.01	6.92	Naphthalene-d8
	1,6-dimethylnaphthalene	57	51	40	33	20	28	Naphthalene-d8
	2,6/2,7-dimethylnaphthalene	96	83	62	38	21	33	Naphthalene-d8
	1,4/2,3-dimethylnaphthalene	55	47	35	28	15	23	Naphthalene-d8
	2,3,5-trimethylnaphthalene	100	76	59	23	16	19	Acenaphthene-d10
	1-methylfluorene	86	37	50	32	22	26	Acenaphthene-d10
	1,8-dimethylfluorene	63	46	48	25	31	21	Phenanthrene-d10
	4-methyldibenzothiophene	239	179	142	42	32	34	Phenanthrene-d10
	4,6-dimethyldibenzothiophene	277	199	159	31	26	24	Phenanthrene-d10
	2-methylphenanthrene	543	454	353	169	142	120	Phenanthrene-d10
	2-methylanthracene	123	112	93	104	51	68	Phenanthrene-d10
	3,6-dimethylphenanthrene	368	261	198	46	35	32	Phenanthrene-d10
	2,3-dimethylanthracene	106	80	72	47	45	25	Phenanthrene-d10
	1-methylfluoranthene	393	248	239	63	60	61	Phenanthrene-d10
	2-methylfluoranthene	587	421	350	112	109	95	Phenanthrene-d10
	1-methylpyrene	223	172	157	137	134	66	Phenanthrene-d10
	1/2-dimethylbenzo(a)anthracene	114	89	79	27	25	22	Chrysene-d12
	7/9-dimethylbenzo(a)anthracene	436	326	296	158	148	49	Chrysene-d12
	6,8-dimethylbenzo(a)anthracene	384	273	253	61	57	49	Chrysene-d12
	3,9-dimethylbenzo(a)anthracene	101	74	62	11	19	8.91	Chrysene-d12
14	QA10SED01 Jar 108:	Sample showed signs of heterogeneity relative to jars 200 and 202 based on the oil content of the extract.						
	a	2,6-Dimethylnaphthalene may be high biased due to coelution with an unknown dimethylnaphthalene isomer.						
	b	1,6,7-Trimethylnaphthalene may be high biased due to coelution with an unknown trimethylnaphthalene isomer.						
	c	Triphenylene coelutes with Chrysene in our method.						
	d	Benzo(j)fluoranthene coelutes with Benzo(k)fluoranthene in our method.						
16	Other: Reported Chrysene concentration equals combined detected Chrysene and Triphenylene concentration (we do not report them separately).							
	Reported Benzo[k]fluoranthene concentration equals combined detected Benzo[j]fluoranthene and Benzo[k]fluoranthene concentration (we do not report them separate							
17	NA = Not analyzed for							
	Other = Matrix interferencs precluded identification/quantitation of target analyte							
18	Any values under 100 ug/Kg weight weight are below the reporting limit and should either not be reported or reported with qualifiers.							
19	Quantitations for 1-Methylphenanthrene, C2-Fluorenes and C1-Phenanthrenes are not certain due to interference with sulfur peak.							
	Due to sulfur interference, result for 1-Methylphenanthrene in QA10SED01/Sample 2 is uncertain.							
	No peak found for 1-Methylphenenthrene in SRM1941b/Sample 2 due to large sulfur peak.							
	No C2-Fluorenes peaks detected in QA10SED01/Sample 2 due to sulfur interference.							
	No C2-Fluorenes peaks found in SRM1941b/Sample 2 due to large sulfur peak.							
	No C1-phenanthrenes/anthracenes peaks found in SRM1941b/Sample 2 due to large sulfur peak.							
	QA10SED01: Method Detection Limit - 75 ng/g; Practical Quantitation Limit - 300 ng/g							
	SRM 1941b: Method Detection Limit - 21 ng/g; Practical Quantitation Limit - 82 ng/g							
	The Method Detection Limit for each alkyl homologue series is assigned twice the method detection limit of its representative compound used for quantitation.							
	Benzo[*b*]fluoranthene and Benzo[k]fluoranthene results reported from Agilent 5973 MSD/6890GC; Phenomenex ZB-5MS column, 30m length, 0.25mm id, 0.50um film thic							
	Our current procedure uses 30 grams of sediment sample to 1 mL final volume. For the first sample of QA10SED01, we tried to use 12 grams, but							
	determined the 5 x dilution was required due to heavy matrix effects. As a result, 5 grams to 1 mL was used for the remaining two samples.							

23		QA10SED01	QA10SED01	QA10SED01	SRM 1941b				
		Batch A	Batch B	Batch C	Batch A				
		Sample 1	Sample 2	Sample 3	Sample 1				
		BP/WLJ	**BP/WLJ**	**BP/WLJ**	**BP/WLJ**				
		9/23/2010 - 9/24/2	**3/2010 - 9/24/2**	**3/2010 - 9/24/2**	**3/2010 - 9/24/2010**				
		194	**173**	**189**					
	1,4,6,7-TETRAMETHYLNAPHTHALI	<125	<125	<125	<8.0				
	2,7-DI-TERT-BUTYLNAPHTHALENE	<125	<125	<125	<8.0				
	4-METHYLBENZOTHIOPHENE	<125	147	127	14.3				
	2,3-DIMETHYLBENZOTHIOPHENE	<125	1920	1680	<8.0				
	2,3,4-/2,3,6-TRIMETHYLBENZOTHIO	<125	<125	<125	8.97				
	1,3-DIPHENYLBENZO[C]THIOPHENE	<125	<125	<125	<8.0				
	9-N-PROPYLFLUORENE	<125	<125	<125	9.72				
	3-ETHYLPHENANTHRENE	151	210	197	<8.0				
	1,2,5-/1,2,7-TRIMETHYLPHENANTHI	<125	<125	<125	8.91				
	9-N-PROPYLPHENANTHRENE	<125	<125	<125	<8.0				
	2-METHYLFLUORANTHENE	138	<125	165	17.8				
	3-METHYLDIBENZOTHIOPHENE	<125	<125	<125	<8.0				
	7,8,9,10-TETRAHYDROBENZO[B]NA	<125	<125	<125	<8.0				
	6-ETHYLCHRYSENE	<125	<125	<125	<8.0				
	6-N-BUTYLCHRYSENE	<125	<125	<125	<8.0				
	1-N-BUTYLPYRENE	<125	<125	<125	<8.0				
	1-N-PROPYLPYRENE	147	177	172	12.6				
	1,5-/1,7-DIMETHYLPHENANTHRENE	722	950	959	41.1				
	1,2-DIHYDRO-3,5,8-TRIMETHYLNAP	415	475	403	21.9				
	2-ETHYL-6-MEHTYLNAPHTHALENE	<125	<125	<125	<8.0				
	2 ETHYLNAPHTHALENE	<125	<125	<125	<8.0				
	1,8 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0				
	6 METHYLCHRYSENE	<125	<125	<125	35.3				
	7,12DIMETHYLBENZ A ANTHRA	<125	<125	<125	<8.0				
	1 ETHYLNAPHTHALENE	<125	<125	<125	<8.0				
	1,3 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0				
	2 ISOPROPYLNAPHTHALENE	<125	<125	<125	<8.0				
	1,2 DIMETHYLNAPHTHALENE	<125	<125	<125	<8.0				
	2,3,5 TRIMETHYLNAPHTHALEN	<125	<125	<125	10.2				
	1 METHYLFLUORENE	<125	<125	<125	<8.0				
	2 MEHTYLPHENANTHRENE	188	288	277	41.3				
	1 METHYLPYRENE	290	329	337	22.4				
	5 METHYLCHRYSENE	1130	1120	1130	73.7				
25	<symbol refers to values less than our MDL								
	The reported value of chrysene is the sum of chrysene and triphenylene								
	The reported value of benzo(j)fluoranthene is the sum of benzo(k)fluoranthene and benzo(j)fluoranthene								
26	"other" = analyte co-elutes with another reported analyte. Triphenylene co-elutes with chrysene. Benzo[j]fluoranthene co-elutes with benzo[k]fluoranthene.								
	Dibenz[a,h]anthracene co-elutes with dibenz[a,c]anthracene								
27	Recovery Surrogates (added before extraction)		% recovery	% recovery	% recovery	% recovery	Default limits		
	d8-naphthalene	54	48	50	41.6	44.4	30-160		
	d10-acenaphthene	68	64	62	52.8	56.8	30-160		
	d10-phenanthrene	88	80	64	63.6	66.4	30-160		
	d12-chrysene	76	72	62	36.4	51.6	30-160		
	d12-perylene	70	68	70	26	40.8	30-160		
29	1) Surrogates added prior to extraction were used for recovery correction of PAH and Alkylated PAH concentrations only.								
	2) chrysene is reported as a coelution of both chrysene and triphenylene.								
	3) benzo[k]fluoranthene is reported as a coelution of both benzo[j]fluoranthene and benzo[k]fluoranthene.								
	4) for biomarkers:	ααα 20R-Cholestane							
		αββ 20R-Cholestane							
		αββ 20R 24S-Methylcholestane							
		ααα 20R 24R-Ethylcholestane							
		αββ 20R 24R-Ethylcholestane							
	the laboratory quantifies these as:	5a,14a(H),17a(H)-20R-Cholestane							
		5a,14b(H),17b(H)-20R-Cholestane							
		5a,14b,17b-20R-Methylcholestane							
		5a,14a(H),17a(H)-20R-Ethylcholestane							
		5a,14b(H),17b(H)-20R-Ethylcholestane							

32		QA10SED01	QA10SED01	QA10SED01	SRM 1941b	SRM 1941b	SRM 1941b		
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3	IS/surrogate	
		(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	(ng/g dry mass)	g/g dry mas	used for qunatitation	
	1,6-dimethylnaphthalene	209.78	207.92	215.00	9.06	8.91	9.49	napthalene d8	
	1,2-dimethylnaphthalene	84.71	82.21	92.06	56.46	55.96	57.87	napthalene d8	
	1_methylphenanthrene	381.86	364.26	401.45	102.78	98.04	108.05	phenanthrene d10	
	3_methylphenanthrene	763.57	732.14	810.65	205.51	197.06	218.19	phenanthrene d10	
	2_methylphenanthrene	611.48	586.76	646.24	164.58	157.93	173.94	phenanthrene d10	
	2-methylanthracene	131.77	142.61	151.29	35.46	38.38	40.72	phenanthrene d10	
	9_methylphenanthrene	447.37	427.10	470.86	120.41	114.95	126.73	phenanthrene d10	
	4_H_cyclopenta[def]phena	195.02	191.05	207.03	52.49	51.42	55.72	phenanthrene d10	
	1,7_dimethylphenanthrene	568.35	565.58	633.03	152.97	152.23	170.38	phenanthrene d10	
	3_methylfluoranthrene	389.87	388.64	421.40	104.93	104.60	113.42	fluoranthene d10	
	1_methylfluoranthene	209.94	199.56	214.05	56.51	53.71	57.61	fluoranthene d10	
	4_methylpyrene	633.06	618.75	667.23	170.39	166.54	179.58	pyrene d12	
	1_methylpyrene	431.88	419.97	456.35	116.24	113.04	122.83	pyrene d12	
	benzo[ghi]fluoranthene	380.08	367.35	391.99	102.30	98.87	105.50	benz[a]anthracene d12	
	benzo[c]penanthrene	333.05	321.32	346.48	89.64	86.48	93.26	benz[a]anthracene d12	
	cyclopenta[cd]pyrene	39.70	38.41	38.52	10.69	10.34	10.37	benz[a]anthracene d12	
	3_methylchrysene	286.50	278.94	301.20	77.11	75.08	81.07	benz[a]anthracene d12	
	6_methylchyrsene	166.01	179.95	175.46	44.68	48.43	47.23	benz[a]anthracene d12	
	dibenz[a,j]anthracene	180.98	174.02	192.34	48.71	46.84	51.77	dibenzo[a,h]anthracene	
	dibenz[a,c]anthracene	159.15	152.88	168.60	42.84	41.15	45.38	dibenzo[a,h]anthracene	
	dibenz[a,h]anthracene	166.10	159.83	175.72	44.71	43.02	47.30	dibenzo[a,h]anthracene	
	benzo[b]chrysene	237.59	226.71	254.21	63.95	61.02	68.42	dibenzo[a,h]anthracene	
	picene	268.28	257.41	280.38	72.21	69.28	75.46	dibenzo[a,h]anthracene	
	anthanthrene	239.69	238.50	263.02	76.52	64.19	70.79	benzo[ghi]perylene d12	
	dibenzo[b,k]fluoranthene	294.64	278.97	280.28	102.40	94.63	91.47	benzo[ghi]perylene d12	
	dibenzo[a,e]pyrene	207.37	226.12	227.17	97.49	84.48	90.76	benzo[ghi]perylene d12	
	coronene	265.57	274.62	252.70	99.15	94.62	89.11	benzo[ghi]perylene d12	
	dibenzo[a,h]pyrene	45.79	42.60	43.75	24.41	24.92	22.81	benzo[ghi]perylene d12	
	chrysene/triphenylene	2334.52	2255.26	2437.49	464.55	484.98	463.25	benz[a]anthracene d12	

33	Reported data from GC/MS and GC/MS/MS - The GC/MS data used in the interlaboratory comparison.								
		GC/MS		GC/MS		GC/MS/MS		GC/MS/MS	
		QA10SED01		SRM 1941b		QA10SED01		SRM 1941b	
	PAH ANALYSES	mean	stdev	mean	stdev	mean	stdev	mean	stdev
	naphthalene	653	18	906	25	643	18	857	69
	biphenyl	127	8	78.2	7.7	151	18	59.3	15.9
	acenaphthene	76.6	1.7	31.2	0.3	110	22	36.2	4.8
	acenaphthylene	199	16	68.6	9.6	442	55	85.8	17.4
	fluorene	110	3	51.6	0.7	138	7	60.2	6.5
	phenanthrene	1587	6	388	2	2209	244	439	59
	anthracene	546	20	168	14	856	88	166	26
	fluoranthene	4660	79	572	32	4594	251	656	77
	pyrene	3837	84	476	9	4500	218	601	59
	benzo[b]fluorene	132	22	57.0	7.4	NA		NA	
	benz[a]anthracene	1500	10	255	12	1476	126	222	29
	chrysene	2873	25	392	7	Other		Other	
	triphenylene	w/ chrysene		w/ chrysene		Other		Other	
	benzo[*b*]fluoranthene	2010	78	363	38	1609	326	373	20
	benzo[*j*]fluoranthene	2419	68	436	37	Other		Other	
	benzo[*k*]fluoranthene	w/ B[j]F		w/ B[j]F		Other		Other	
	benzo[a]fluoranthene	235	6	75.6	3.6	NA		NA	
	benzo[e]pyrene	1940	10	308	14	1900	148	293	31
	benzo[a]pyrene	1133	25	260	12	825	61	328	21
	perylene	473	6	371	46	508	25	412	55
	indeno[1,2,3-cd]pyrene	1443	167	280	52	1513	57	326	24
	benzo[ghi]perylene	1520	20	246	15	1672	102	235	28
	dibenz[a,h]anthracene	356	23	73.0	18.6	NA		NA	
	cis/trans-decalin	DL		DL		NA		NA	
	dibenzofuran	261	43	97.3	11.0	NA		NA	
	retene	853	20	52.1	7.9	NA		NA	
	benzothiophene	38.8	6.0	49.3	0.6	NA		NA	
	dibenzothiophene	172	3	51.2	3.2	241	15	59.6	5.1

33 cont.	**ALKYLATED PAH ANALYSES**	GC/MS		GC/MS		GC/MS/MS		GC/MS/MS	
		QA10SED01		SRM 1941b		QA10SED01		SRM 1941b	
		mean	stdev	mean	stdev	mean	stdev	mean	stdev
	1-methylnaphthalene	192	16	127	1	218	12	130	9
	2-methylnaphthalene	446	48	260	21	491	15	245	52
	2,6-dimethylnaphthalene	269	4	97.1	14.7	404	15	89.8	13.4
	1,6,7-trimethylnaphthalene	210	31	36.3	6.7	119	14	22.4	2.4
	1-methylphenanthrene	381	6	64.0	1.4	847	96	92.6	2.2
	C1-naphthalenes	495	113	343	33	NA		NA	
	C2-naphthalenes	805	110	374	63	NA		NA	
	C3-naphthalenes	1453	129	323	77	NA		NA	
	C4-naphthalenes	2500	101	301	35	NA		NA	
	C1-benzothiophenes	130	4	48.4	2.1	NA		NA	
	C2-benzothiophenes	96.2	4.2	42.5	4.6	NA		NA	
	C3-benzothiophenes	207	11	55.3	22.9	NA		NA	
	C4-benzothiophenes	191	75	27.3	0.4	NA		NA	
	C1-fluorenes	435	68	111	14	NA		NA	
	C2-fluorenes	397	40	113	61	NA		NA	
	C3-fluorenes	1640	182	171	50	NA		NA	
	C1-phenanthrenes/anthracenes	2707	462	377	18	NA		NA	
	C2-phenanthrenes/anthracenes	4373	970	400	73	NA		NA	
	C3-phenanthrenes/anthracenes	3927	428	267	87	NA		NA	
	C4-phenanthrenes/anthracenes	3200	1242	233	85	NA		NA	
	C1-dibenzothiophenes	531	78	59.4	12.4	NA		NA	
	C2-dibenzothiophenes	1176	228	95.0	21.4	NA		NA	
	C3-dibenzothiophenes	1450	260	97.1	22.2	NA		NA	
	C4-dibenzothiophenes	895	154	56.6	24.6	NA		NA	
	C1-fluoranthenes/pyrenes	2113	378	272	8	NA		NA	
	C2-fluoranthenes/pyrenes	2233	430	228	29	NA		NA	
	C3-fluoranthenes/pyrenes	1457	337	129	13	NA		NA	
	C4-fluoranthenes/pyrenes	1823	427	206	30	NA		NA	
	C1-chrysenes	2003	387	234	15	NA		NA	
	C2-chrysenes	1517	142	217	16	NA		NA	
	C3-chrysenes	1111	208	114	8	NA		NA	
	C4-chrysenes	715	371	50.4	14.5	NA		NA	
	For GC/MS method	Chrysene and triphenylene measured together as one coeluting peak.							
		Benzo[j]fluoranthene and benzo[k]fluoranthene measured together as one coeluting peak.							
		dibenz[a,h]anthracene and dibenz[a,c]anthracene measured together as one coeluting peak.							
		2,6- and 2,7-Dimethylnapthalene measured as one coeluting peak.							
	For GC/MS/MS method								
	chrysene+triphenylene					6262	780	465	6
	benzo[*j*+*k*]fluoranthene					1535	50	389	96

APPENDIX D

Charts of QA10SED01 and SRM 1941b Results by Analyte

See Tables 1 through 3 for results reported as <*number*, detection limit, etc.

For QA10SED01 plots:

Solid line: exercise assigned value

Dotted line: z = ± 1, i. e., 25 % from assigned value

Dotted/dashed line: z = ± 2, i. e., 50 % from assigned value

Dashed line: z = ± 3, i. e., 75 % from assigned value

For SRM 1941b plots:

Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95 % confidence interval (CI)

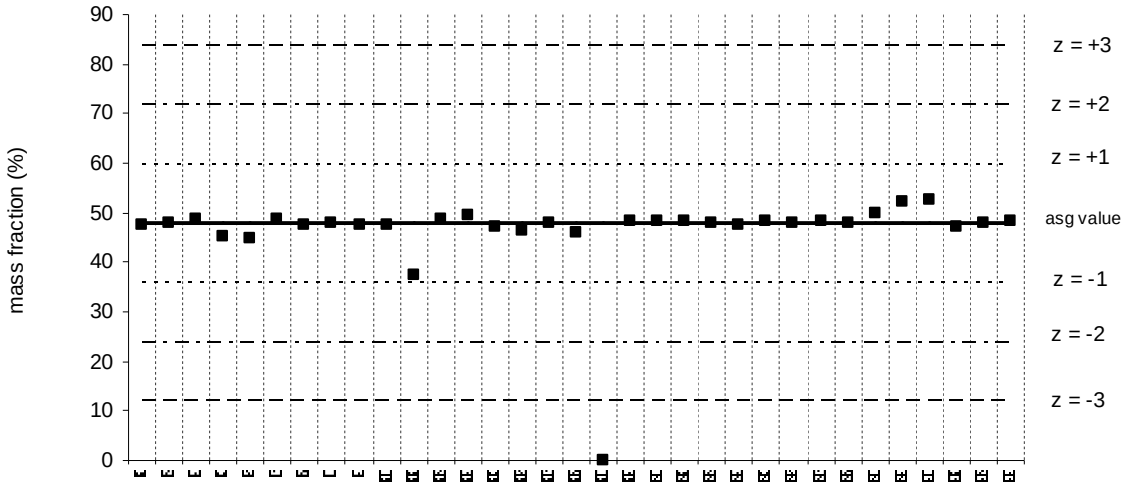
Dashed line: 30 % from 95 % confidence interval (CI)

Note: The numbers added to the charts are the values reported that are off the scale of the chart.

Percent Water **QA10SED01**

Assigned value = 47.8 % s = 2.4 % 95% CI = 0.8 %

Reported Results: 32 Quantitative Results: 32



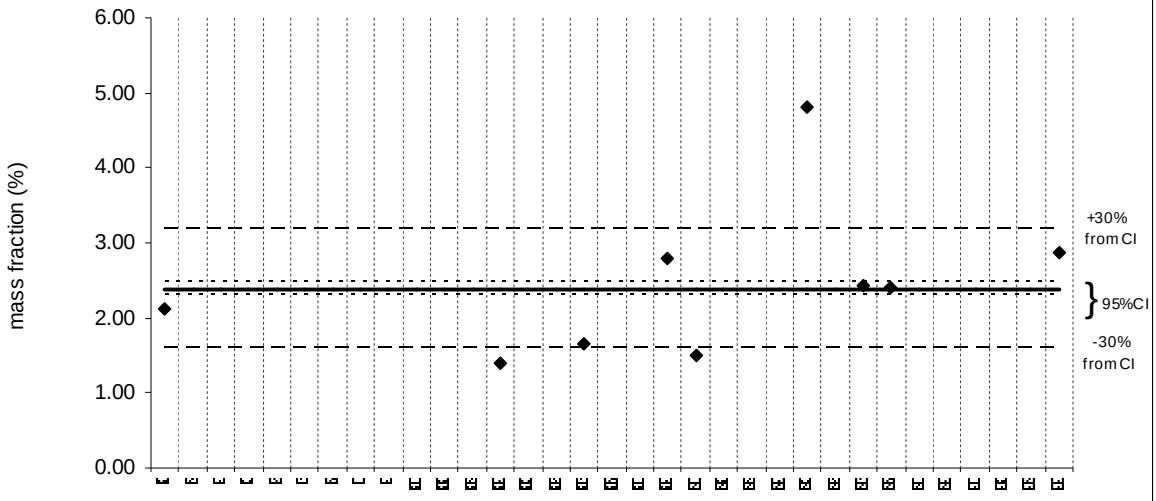
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

Percent Water **SRM 1941b**

Target Value = 2.39 % ; 95% CI 0.08 %

Reported Results: 9 Quantitative Results: 9



laboratory number

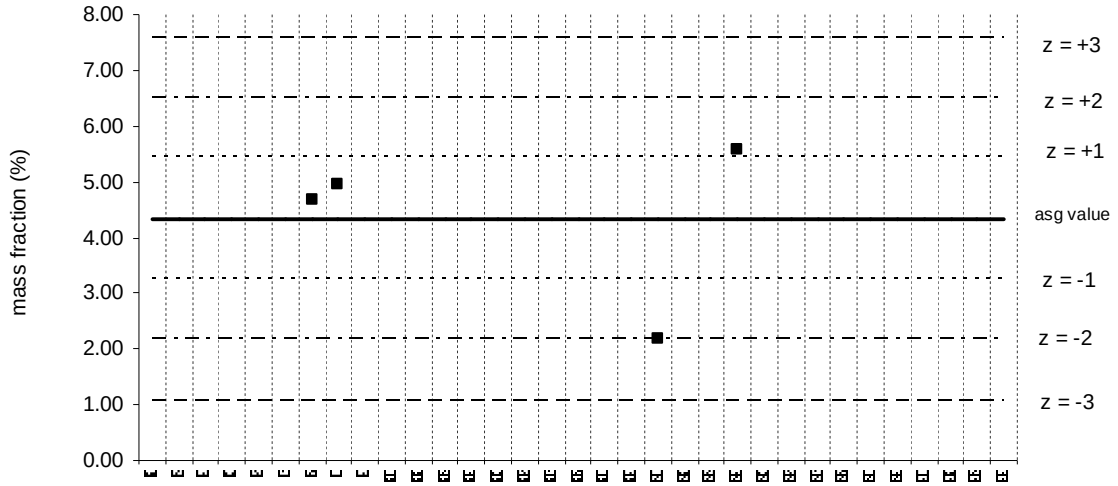
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Note – Lab 29 reported % solids (shown above). Their % water for QA10SED01 was 47.8% with a std dev 0.5% (n=3).

TOC **QA10SED01**

Assigned value = 4.34 % s = 1.49 % 95% CI = 1.46 %

Reported Results: 4 Quantitative Results: 4



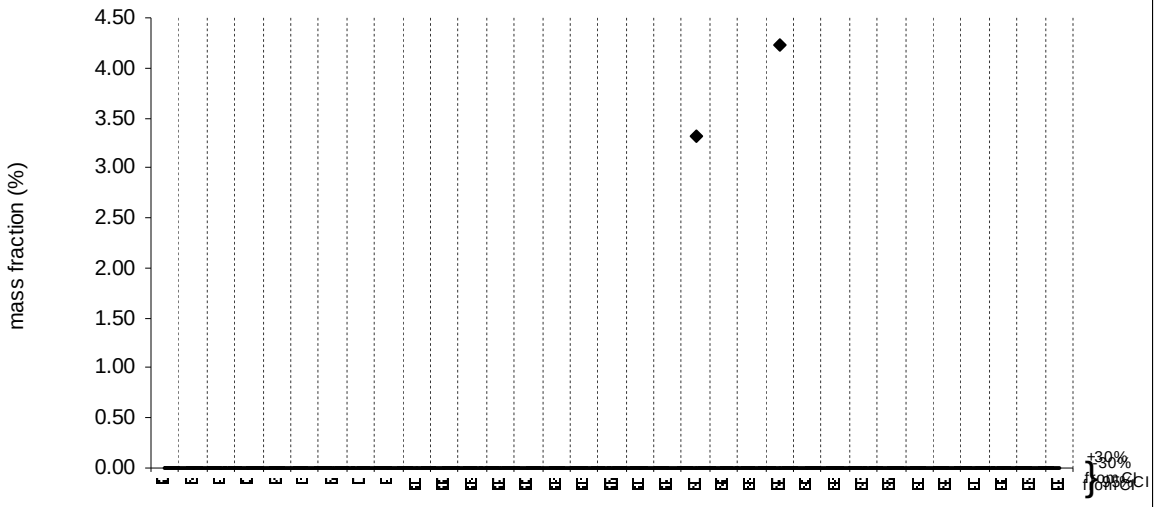
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

TOC **SRM 1941b**

Target Value = no target %

Reported Results: 2 Quantitative Results: 2



laboratory number

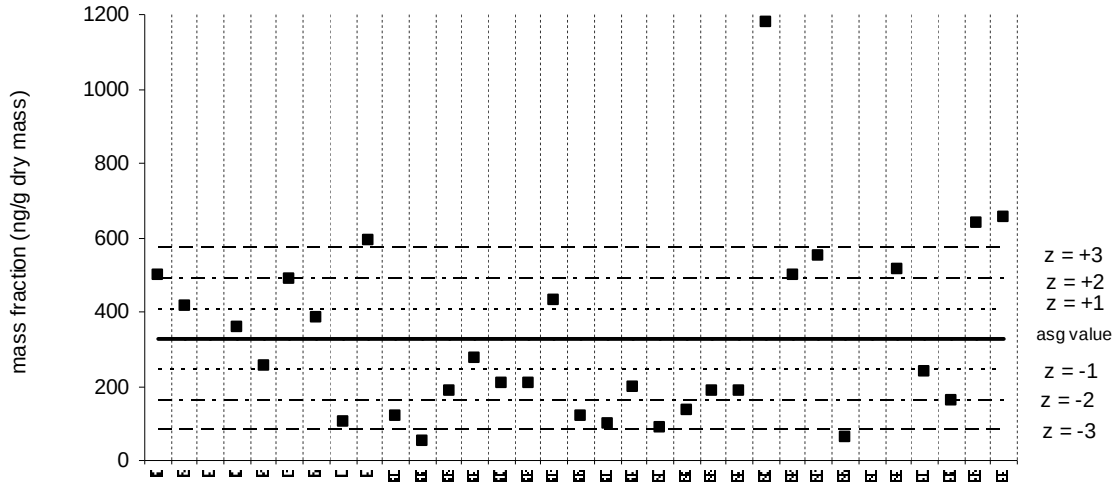
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Note -Lab 29: % TOC for QA10SED01 - 5.17 % with a std dev 0.14% (n=3) and for SRM 1941b – 3.18 with a std dev 0.02% (n=3).

naphthalene **QA10SED01**

Assigned value = 325 ng/g (dry mass) s = 243 ng/g (dry mass) 95% CI = 85 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31



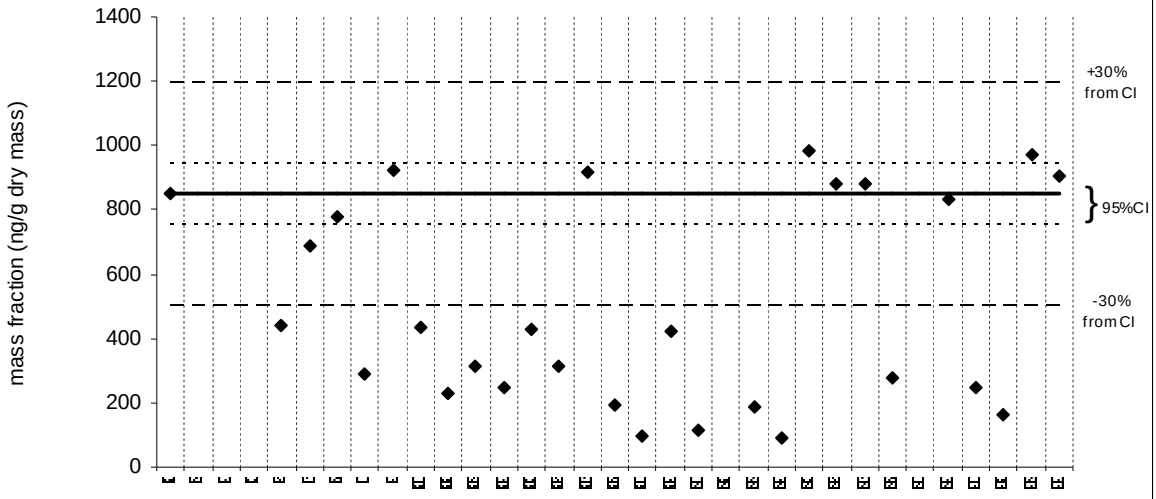
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

naphthalene **SRM 1941b**

Certified Value = 848 ng/g (dry mass) ; 95% CI 95 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28



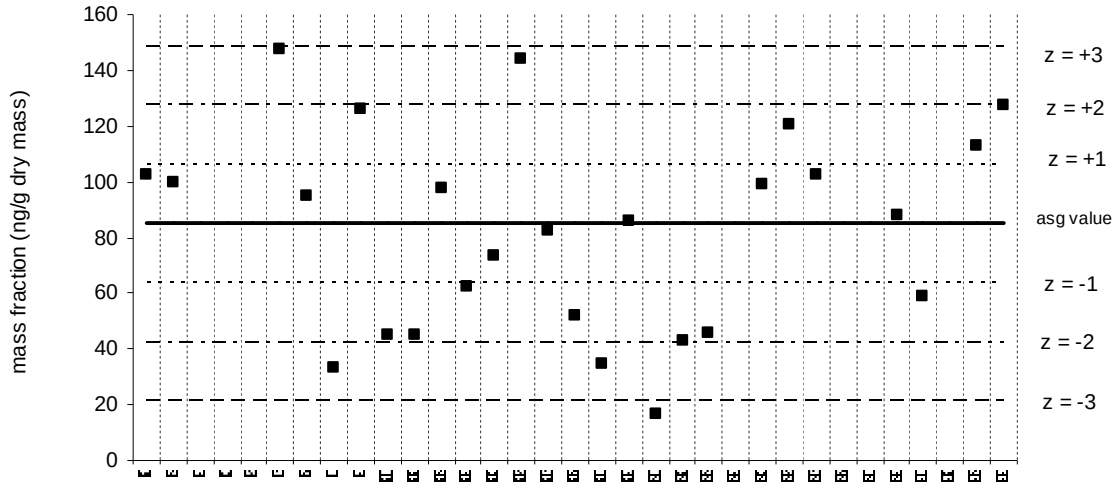
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

biphenyl **QA10SED01**

Assigned value = 84.9 ng/g (dry mass) s = 34.4 ng/g (dry mass) 95% CI = 13.5 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 26

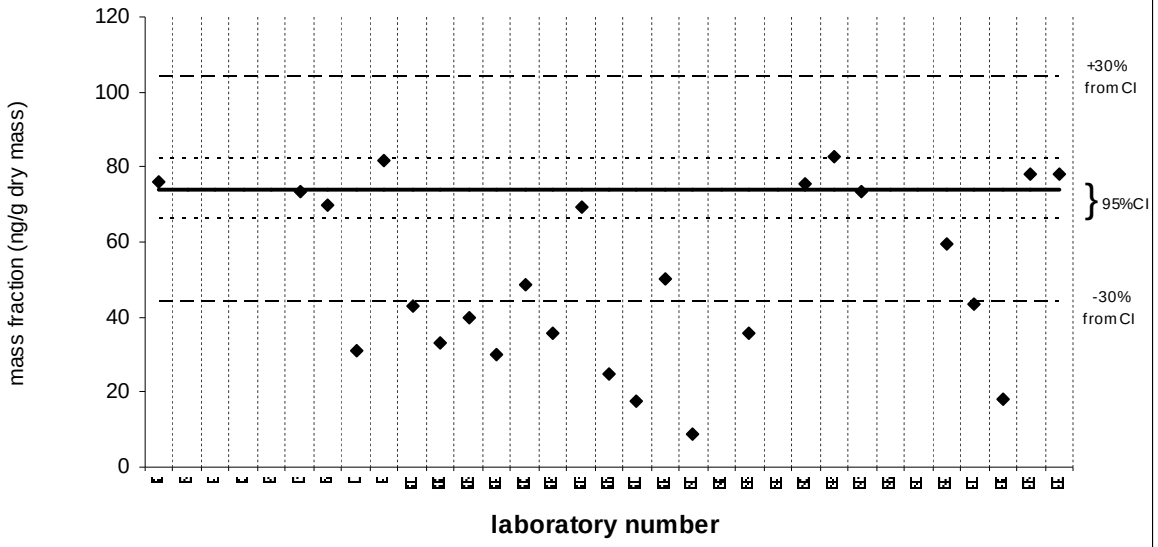


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

biphenyl **SRM 1941b**

Reference Value = 74 ng/g (dry mass) ; 95% CI 8 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 25

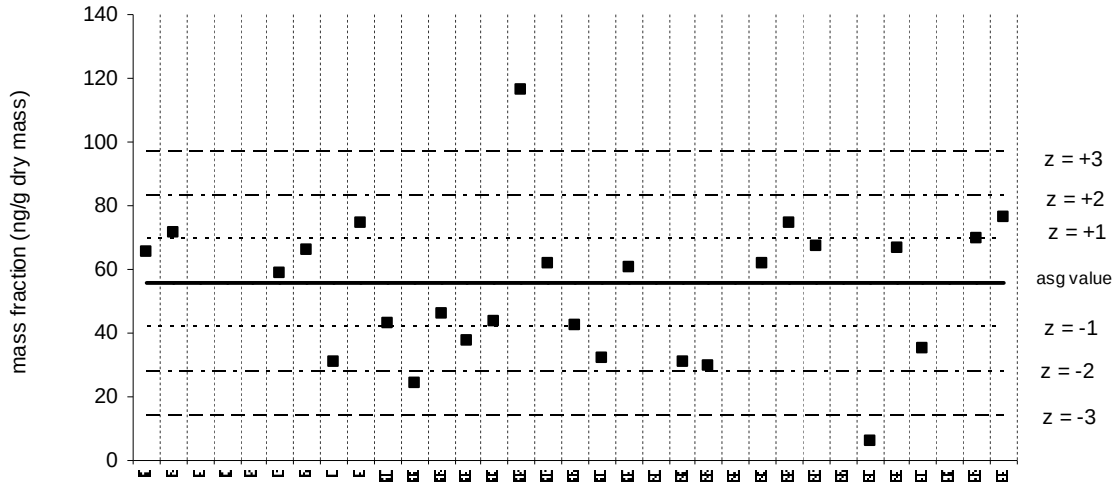


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthene **QA10SED01**

Assigned value = 55.5 ng/g (dry mass) s = 21.0 ng/g (dry mass) 95% CI = 8.2 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 27 Lab 23 reported 337 ng/g (dry mass)

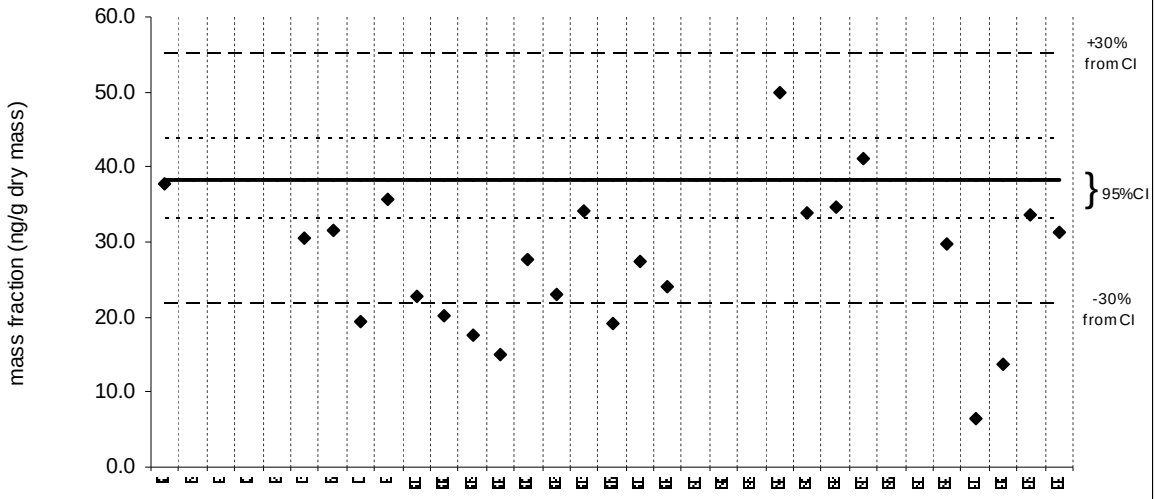


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthene **SRM 1941b**

Reference Value = 38.4 ng/g (dry mass) ; 95% CI 5.2 ng/g (dry mass)

Reported Results: 27 Quantitative Results: 24

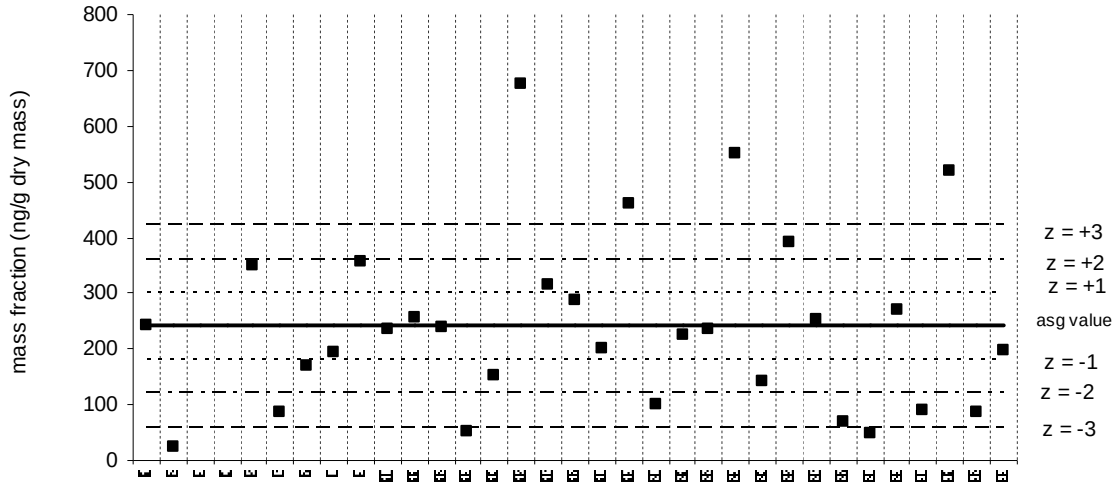


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthylene **QA10SED01**

Assigned value = 241 ng/g (dry mass) s = 156 ng/g (dry mass) 95% CI = 55 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31

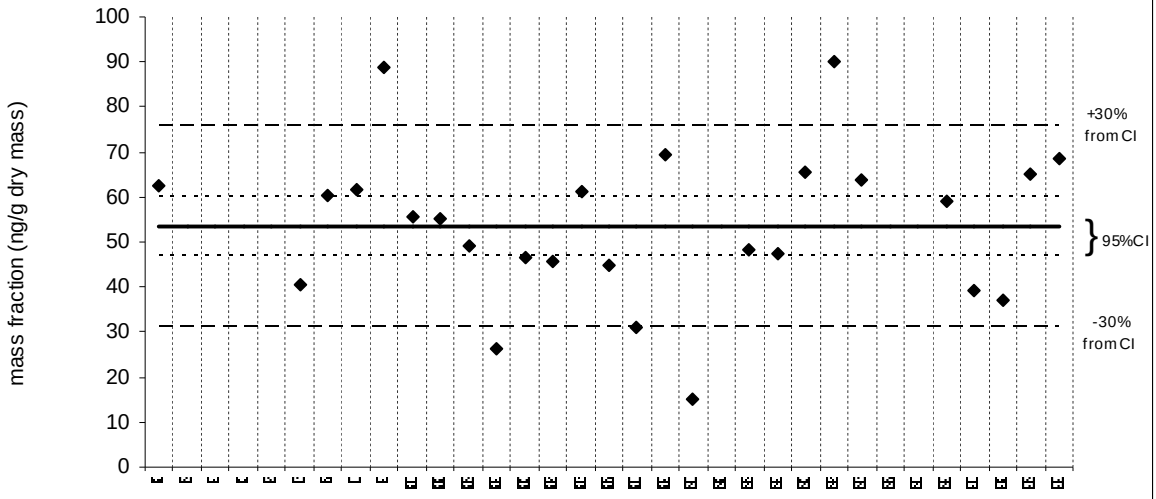


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthylene **SRM 1941b**

Reference Value = 53.3 ng/g (dry mass) ; 95% CI 6.4 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 26

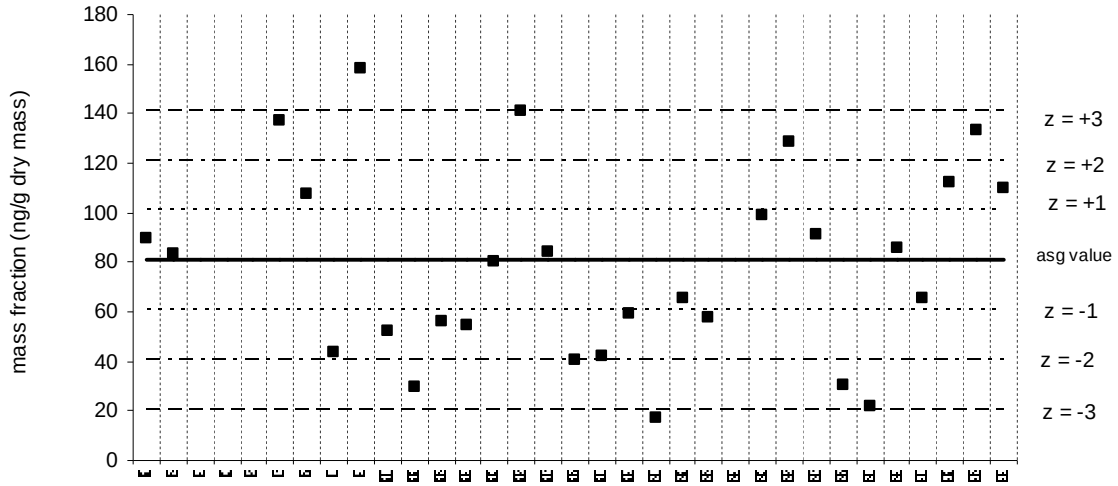


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

fluorene **QA10SED01**

Assigned value = 80.8 ng/g (dry mass) s = 37.2 ng/g (dry mass) 95% CI = 13.8 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 30 Lab 23 reported 272 ng/g (dry mass)

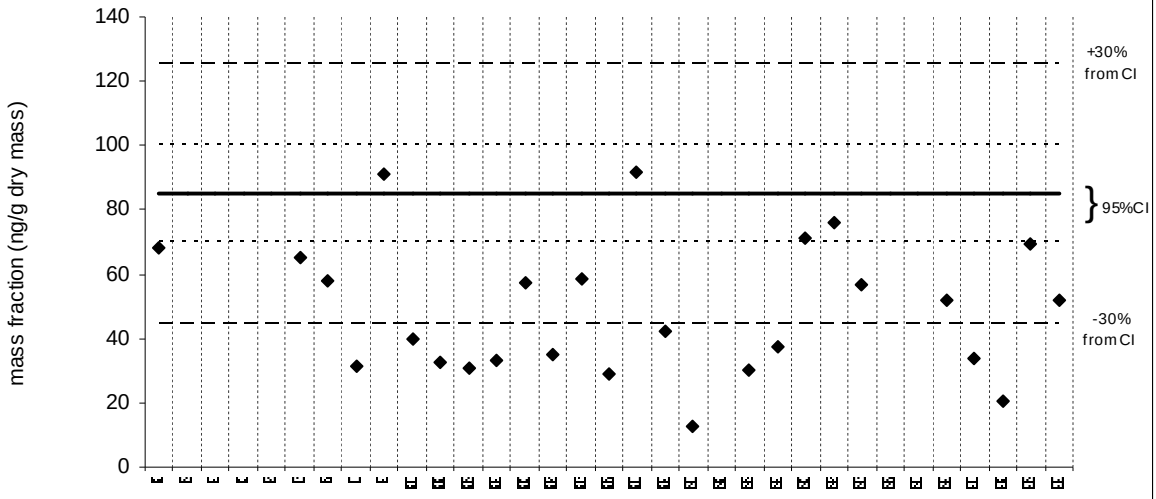


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluorene **SRM 1941b**

Certified Value = 85 ng/g (dry mass) ; 95% CI 15 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 26

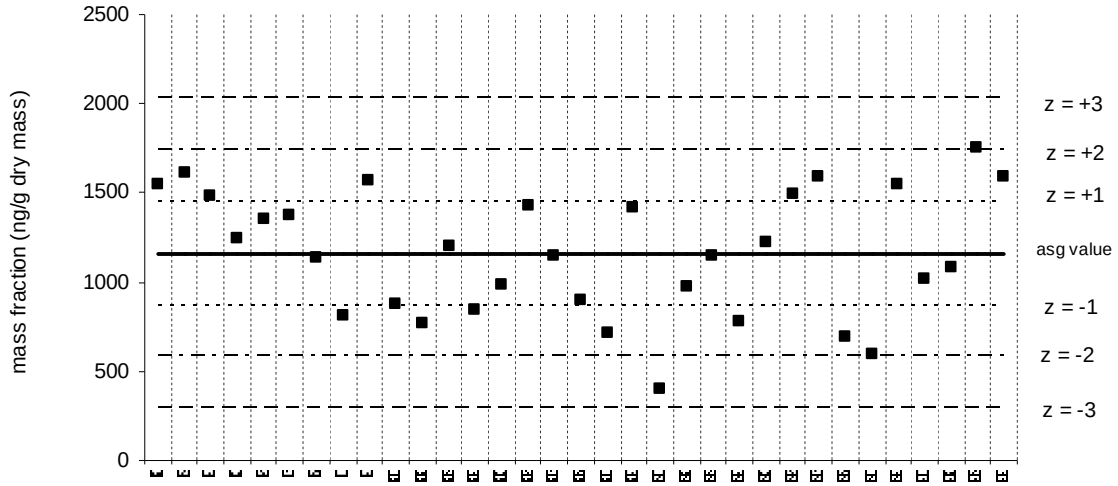


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

phenanthrene **QA10SED01**

Assigned value = 1160 ng/g (dry mass) s = 350 ng/g (dry mass) 95% CI = 119 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

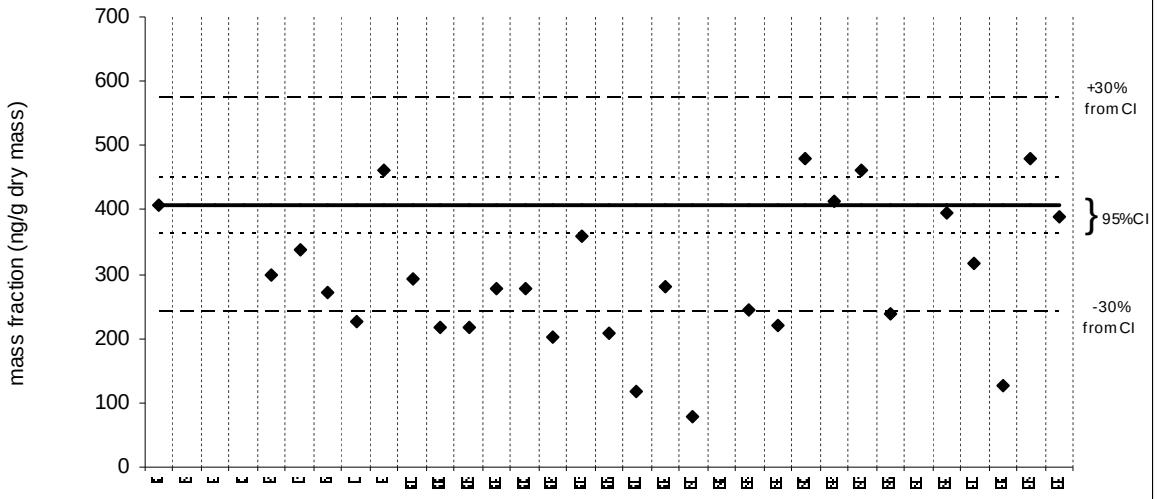


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

phenanthrene **SRM 1941b**

Certified Value = 406 ng/g (dry mass) ; 95% CI 44 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28

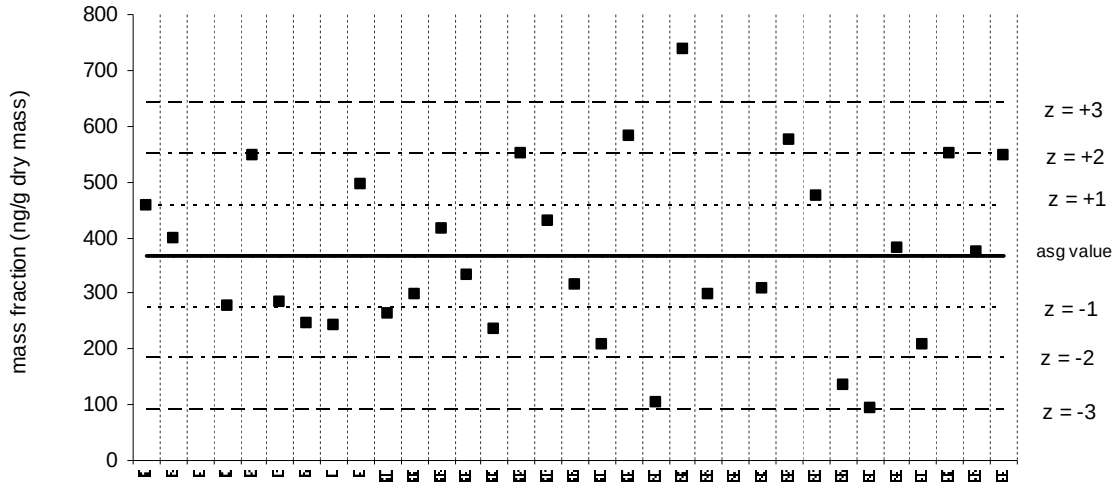


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

anthracene **QA10SED01**

Assigned value = 366 ng/g (dry mass) s = 158 ng/g (dry mass) 95% CI = 55 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 31



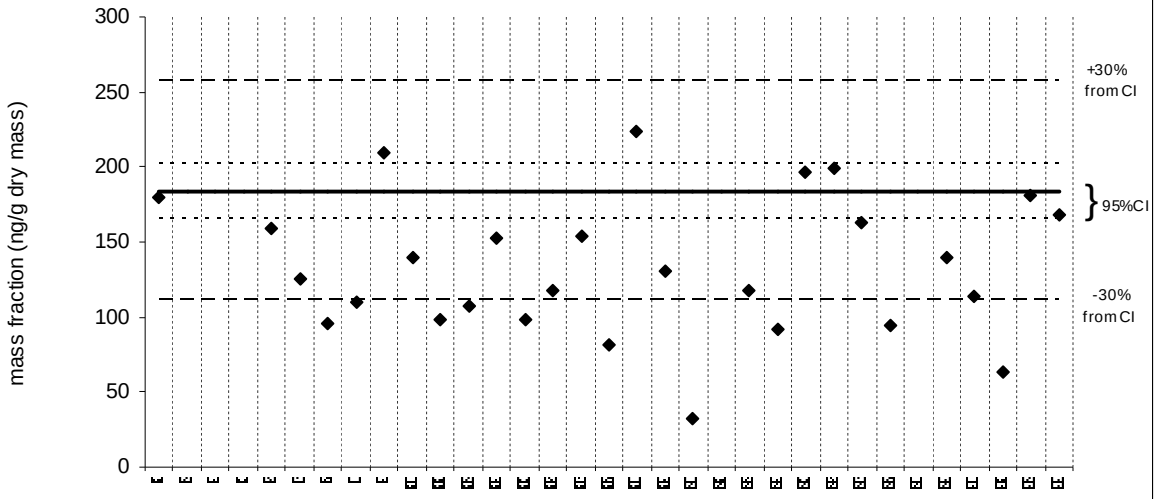
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

anthracene **SRM 1941b**

Certified Value = 184 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28



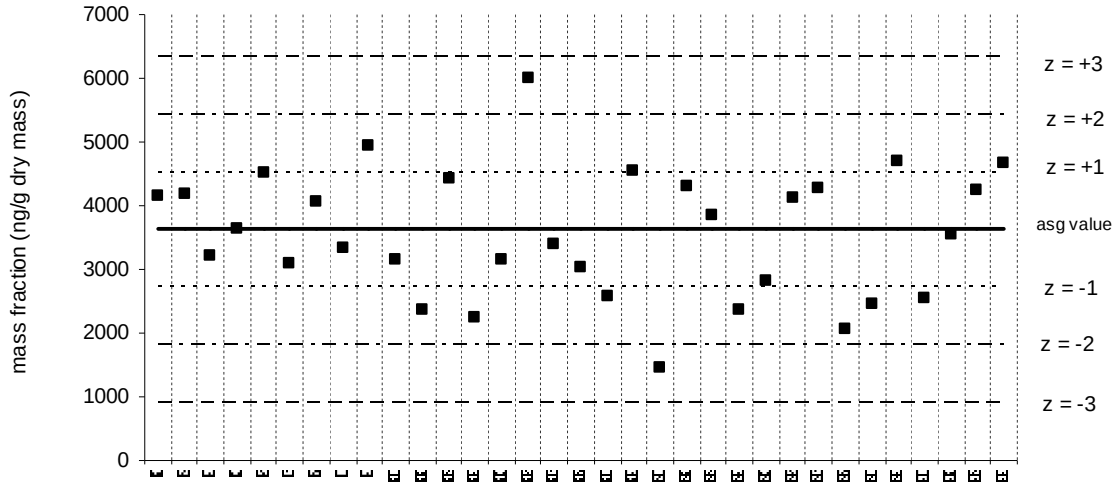
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

fluoranthene **QA10SED01**

Assigned value = 3623 ng/g (dry mass) s = 941 ng/g (dry mass) 95% CI = 326 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

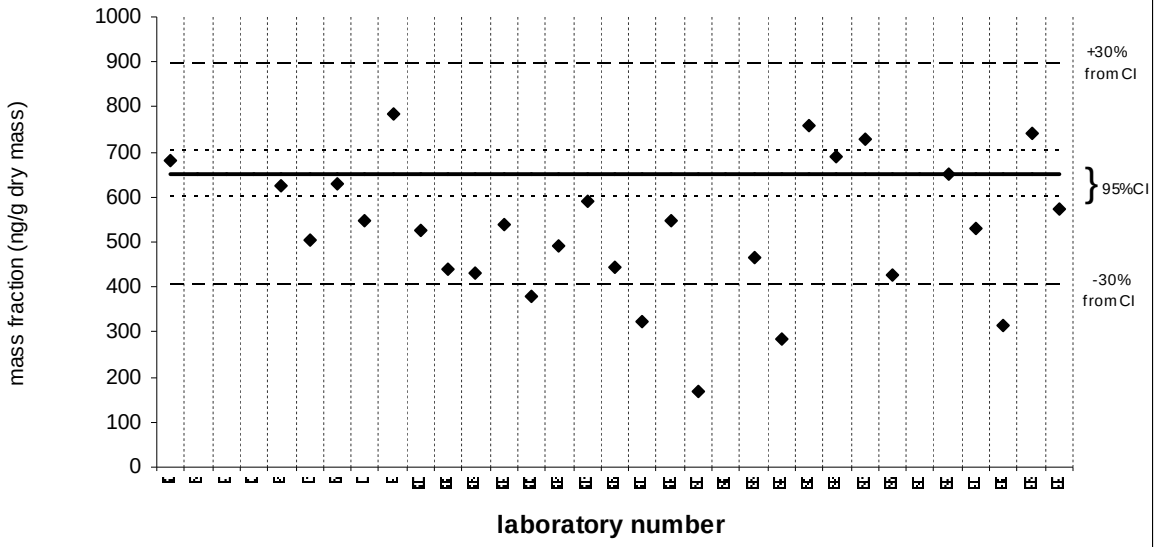


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluoranthene **SRM 1941b**

Certified Value = 651 ng/g (dry mass) ; 95% CI 50 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28

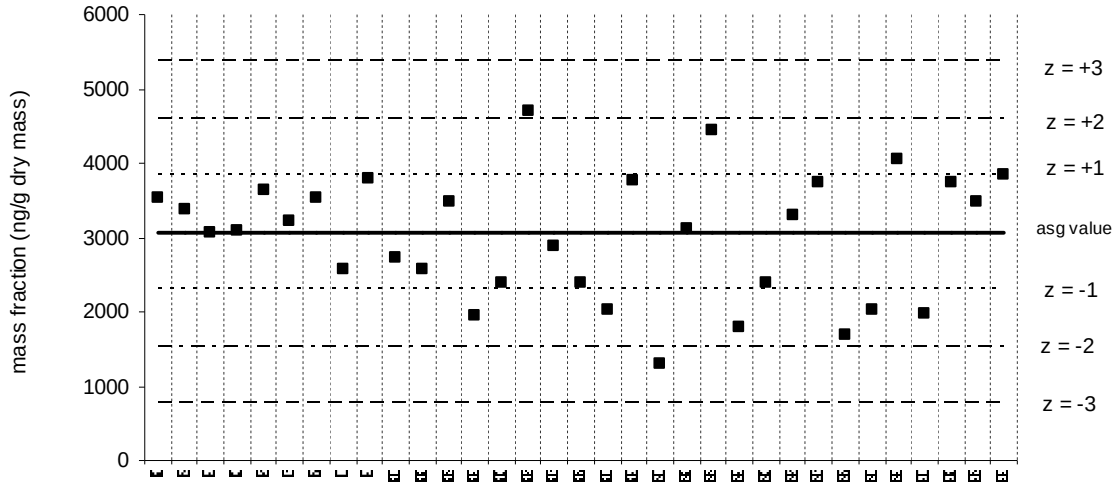


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

pyrene **QA10SED01**

Assigned value = 3071 ng/g (dry mass) s = 793 ng/g (dry mass) 95% CI = 275 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33

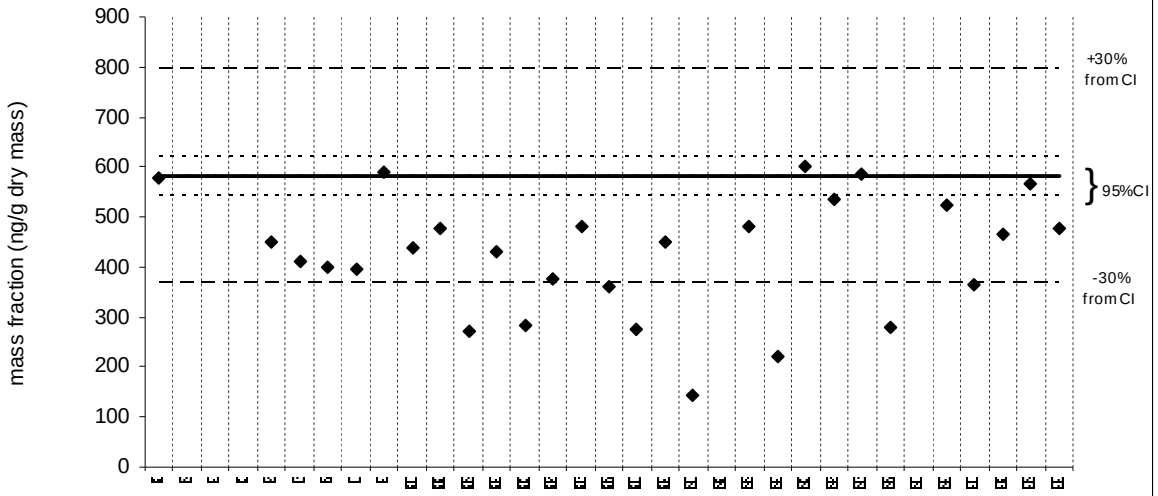


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

pyrene **SRM 1941b**

Certified Value = 581 ng/g (dry mass) ; 95% CI 39 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28

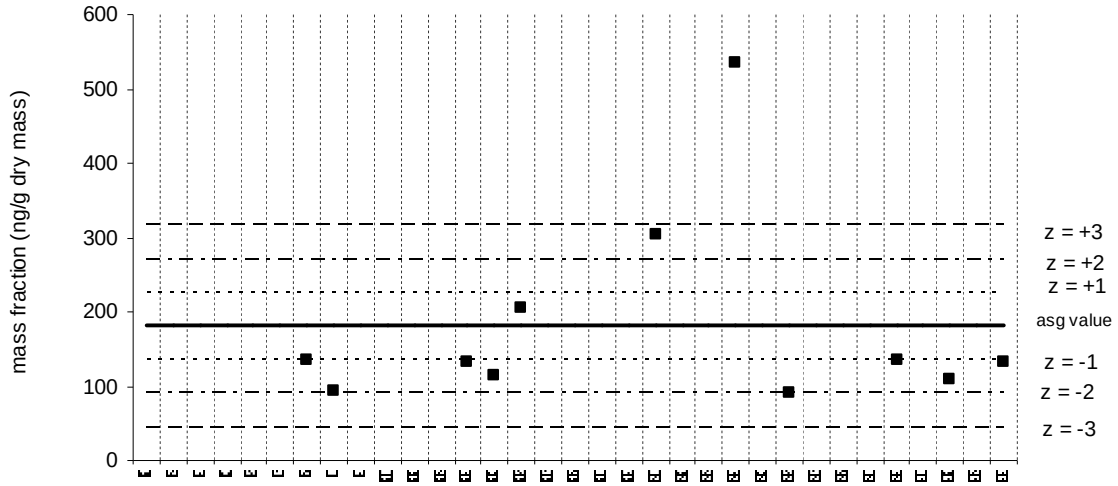


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[b]fluorene **QA10SED01**

Assigned value = 181 ng/g (dry mass) s = 132 ng/g (dry mass) 95% CI = 78 ng/g (dry mass)

Reported Results: 11 Quantitative Results: 11

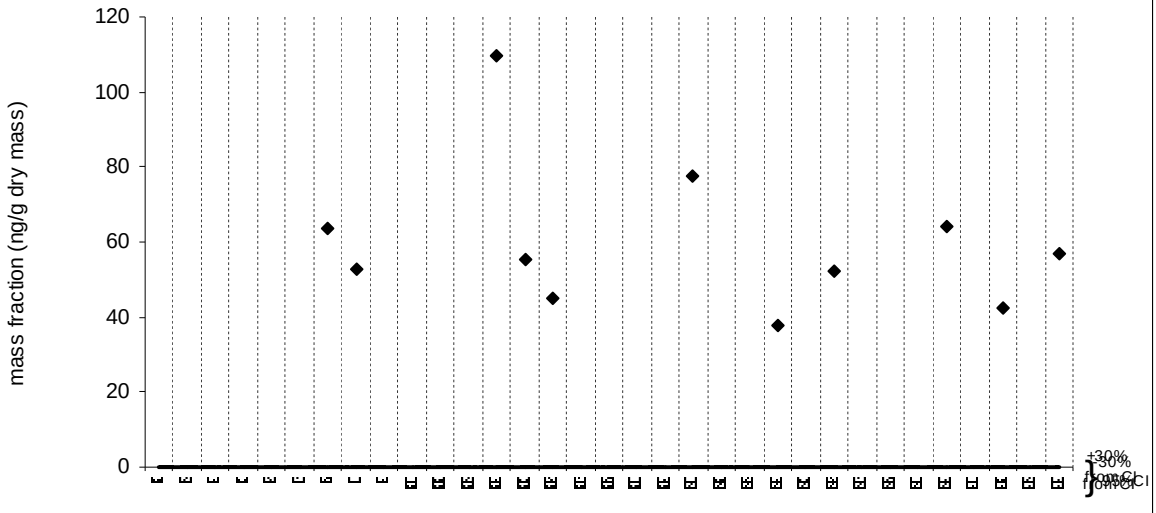


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[b]fluorene **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 11 Quantitative Results: 11

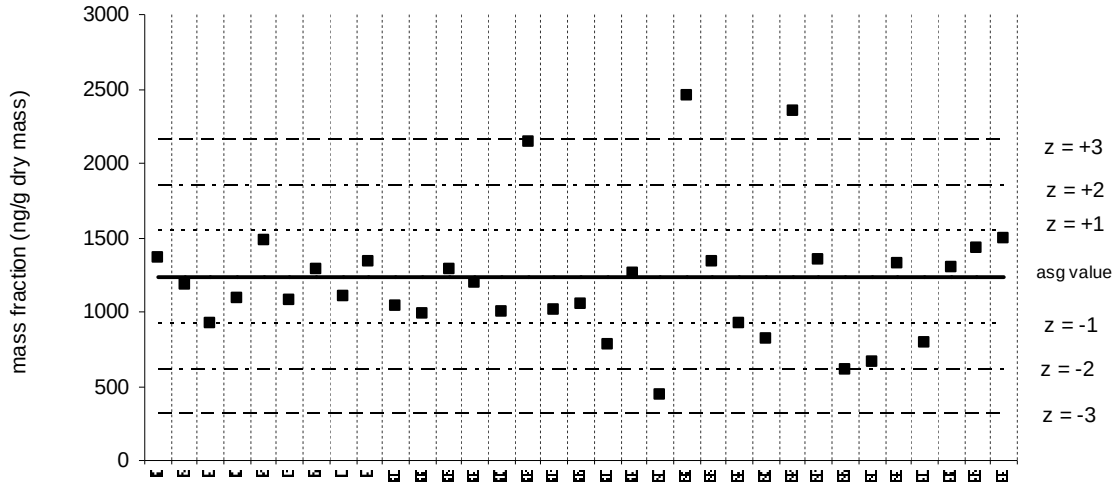


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benz[a]anthracene **QA10SED01**

Assigned value = 1232 ng/g (dry mass) s = 425 ng/g (dry mass) 95% CI = 147 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 33



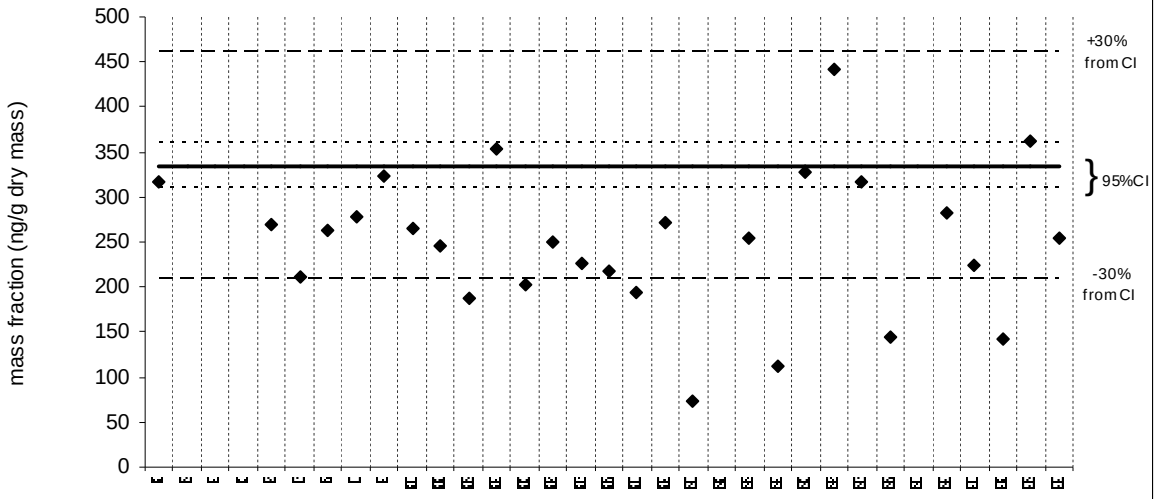
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benz[a]anthracene **SRM 1941b**

Certified Value = 335 ng/g (dry mass) ; 95% CI 25 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28



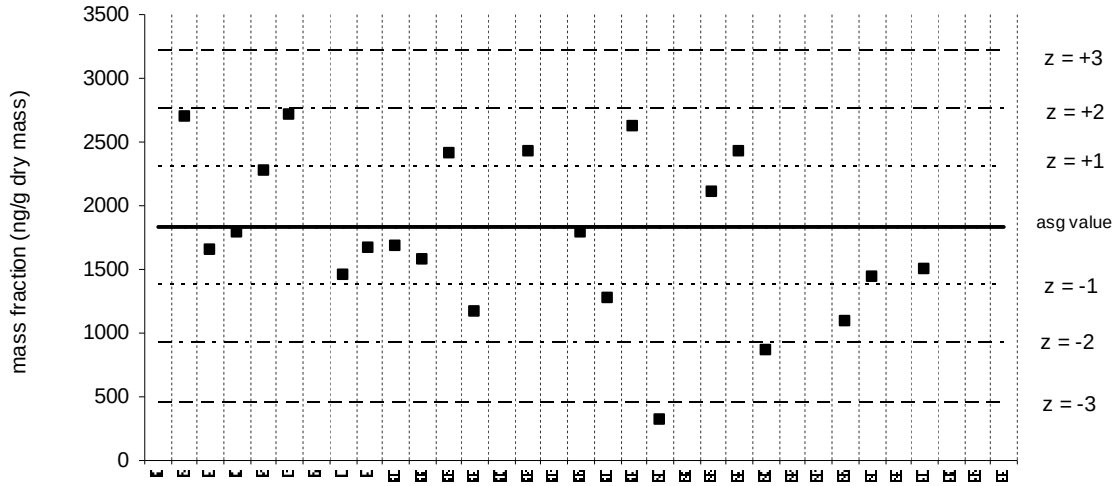
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

chrysene **QA10SED01**

Assigned value = 1839 ng/g (dry mass) s = 559 ng/g (dry mass) 95% CI = 239 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 22

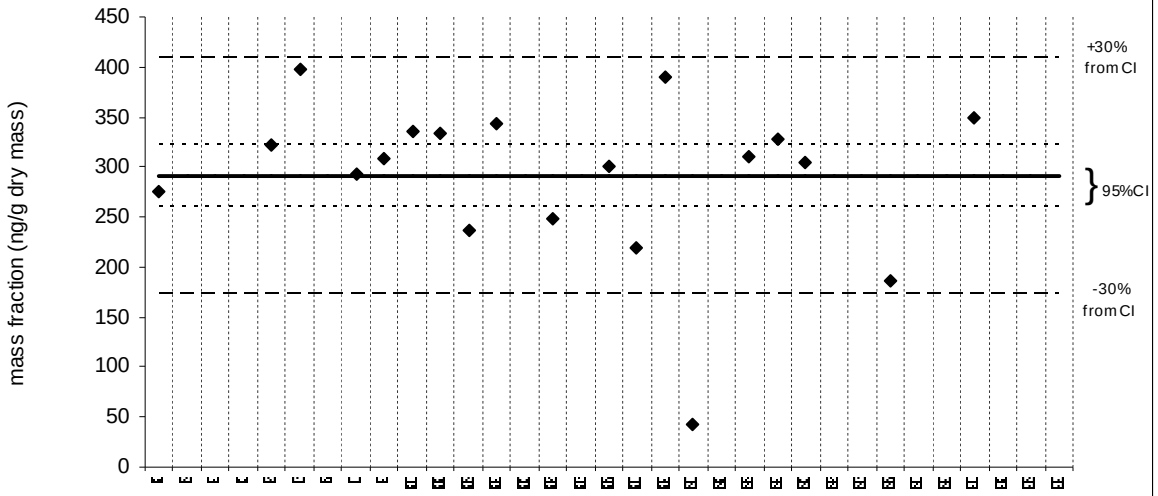


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

chrysene **SRM 1941b**

Certified Value = 291 ng/g (dry mass) ; 95% CI 31 ng/g (dry mass)

Reported Results: 19 Quantitative Results: 19

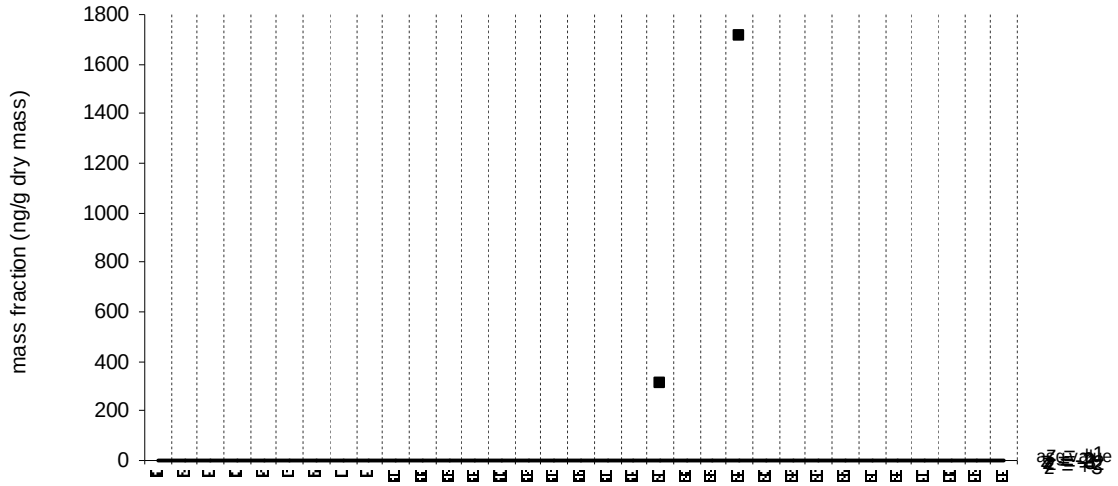


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

triphenylene **QA10SED01**

Assigned value = No target ng/g (dry mass)

Reported Results: 2 Quantitative Results: 2

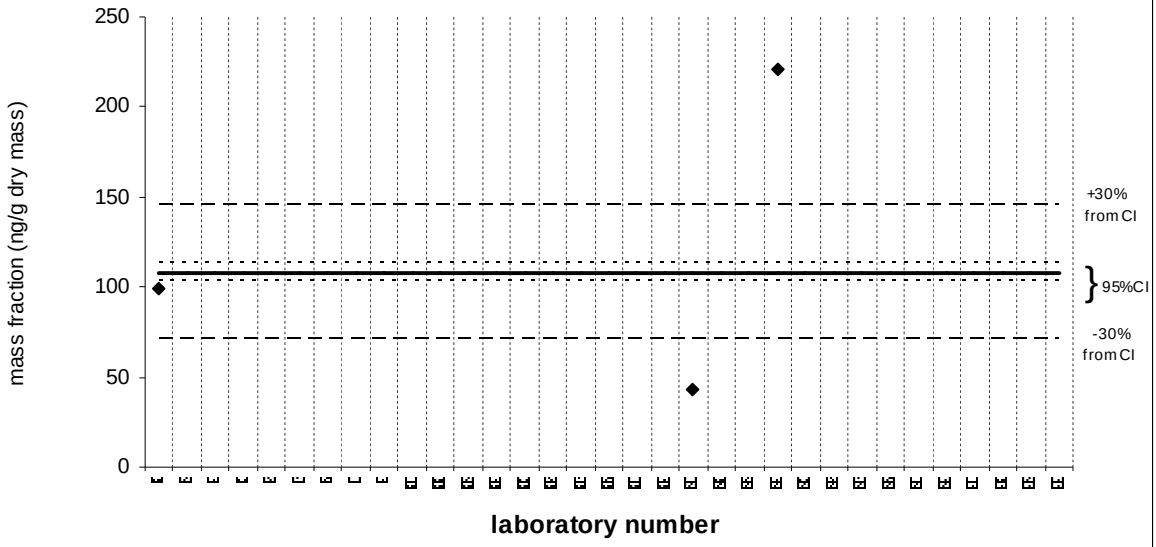


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

triphenylene **SRM 1941b**

Certified Value = 108 ng/g (dry mass) ; 95% CI 5 ng/g (dry mass)

Reported Results: 3 Quantitative Results: 3

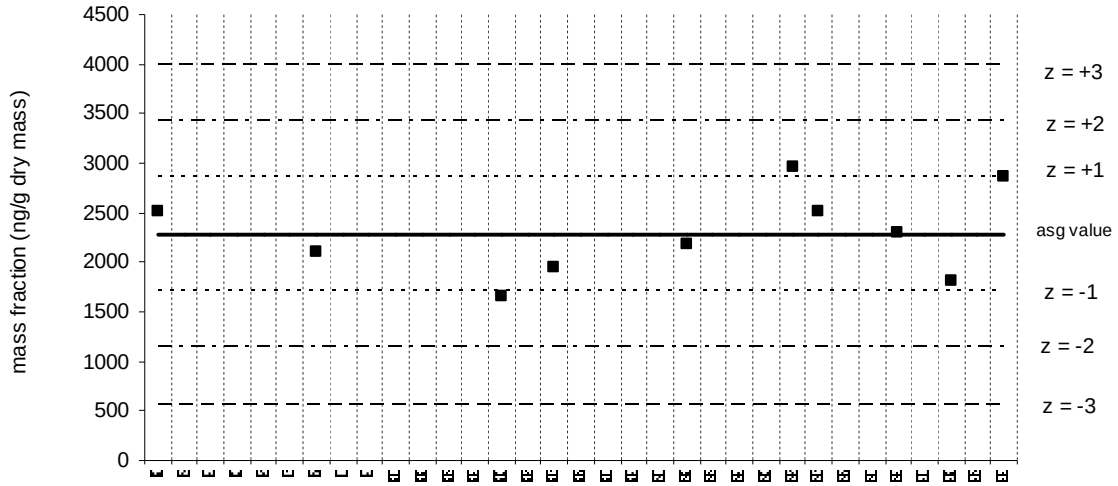


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

chrysene/triphenylene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 10



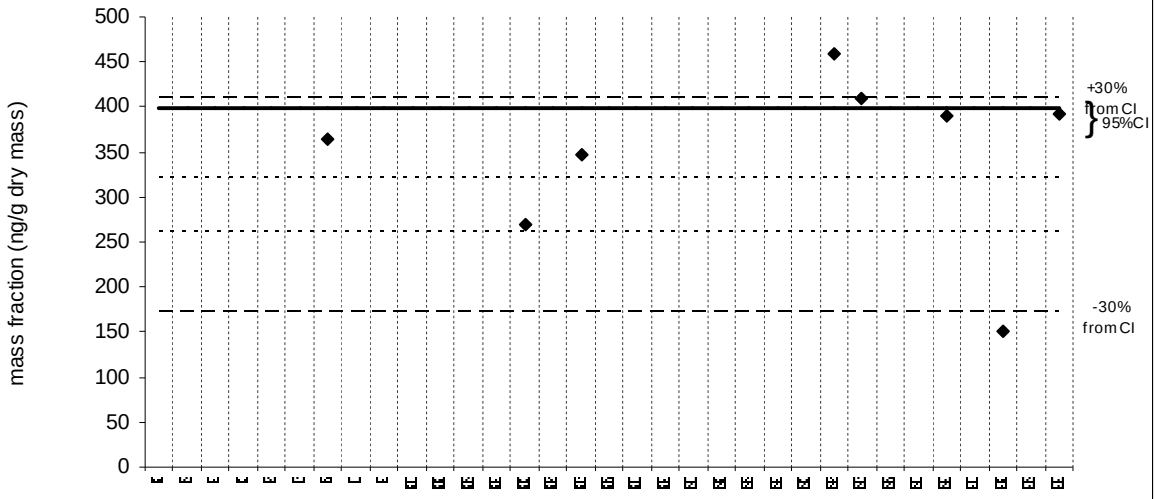
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

chrysene/triphenylene **SRM 1941b**

Target Value = 399 ng/g (dry mass) ; 95% CI 36 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 8



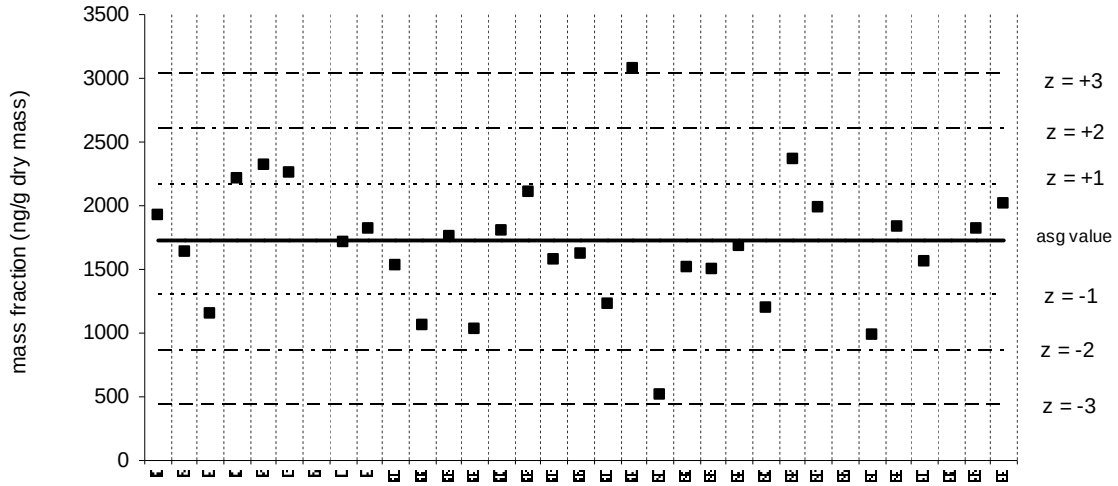
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[b]fluoranthene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 30



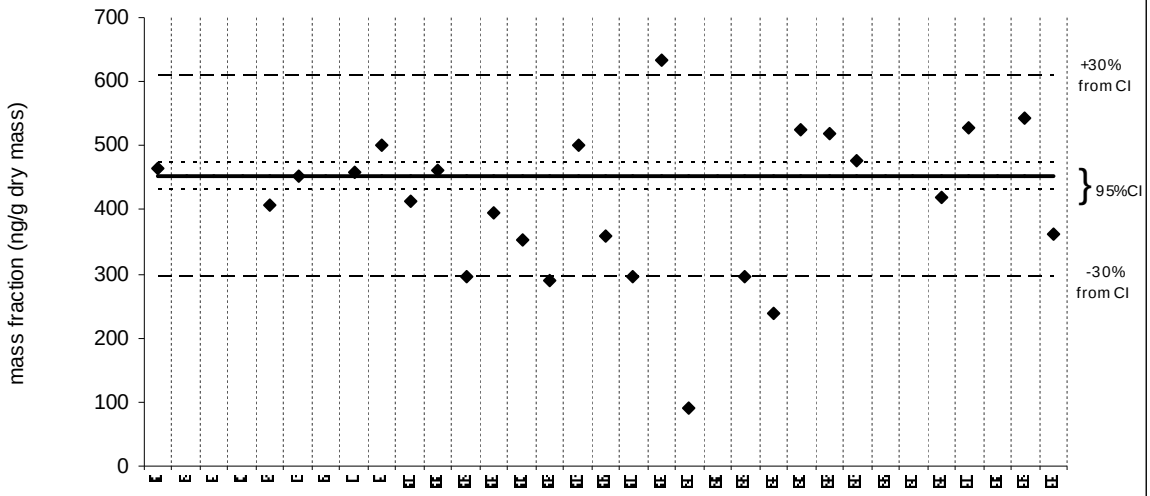
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[b]fluoranthene **SRM 1941b**

Certified Value = 453 ng/g (dry mass) ; 95% CI 21 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 25



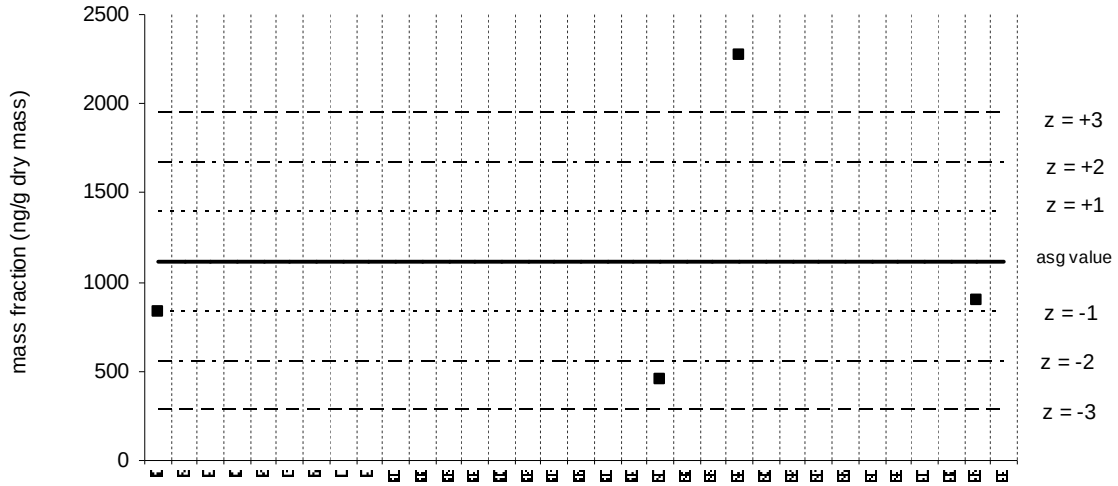
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[j]fluoranthene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 4 Quantitative Results: 4



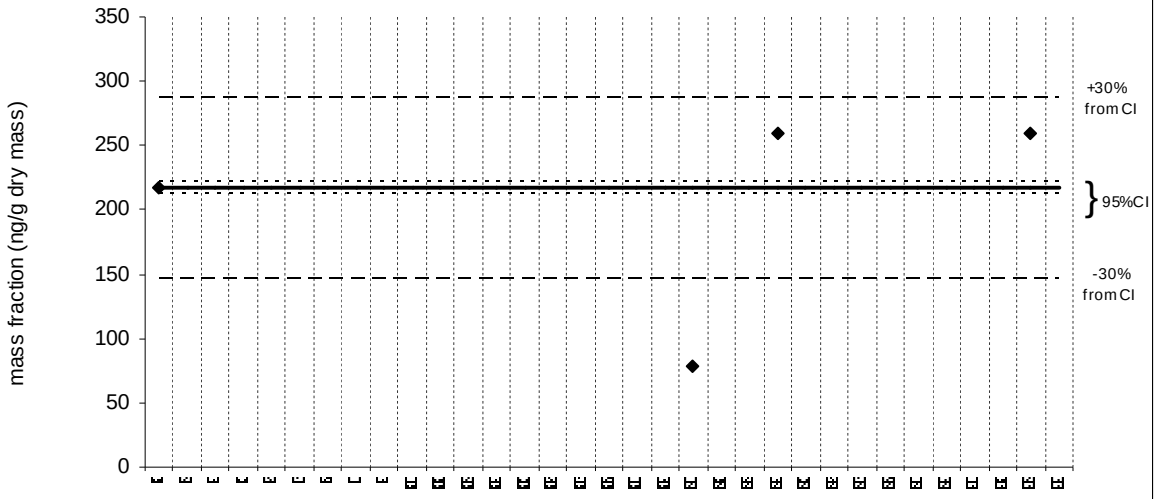
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[j]fluoranthene **SRM 1941b**

Reference Value = 217 ng/g (dry mass) ; 95% CI 5 ng/g (dry mass)

Reported Results: 4 Quantitative Results: 4



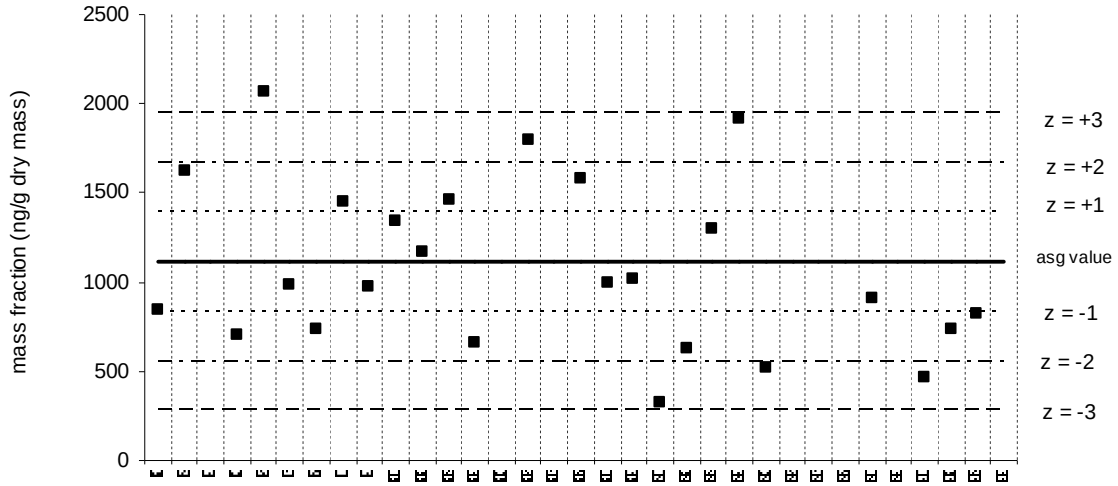
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[k]fluoranthene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25



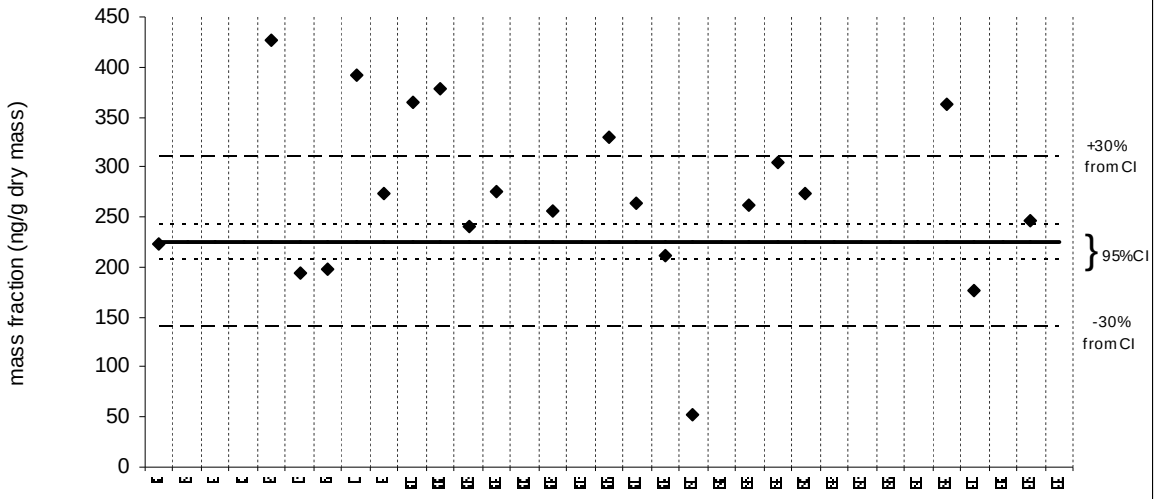
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[k]fluoranthene **SRM 1941b**

Certified Value = 225 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 21



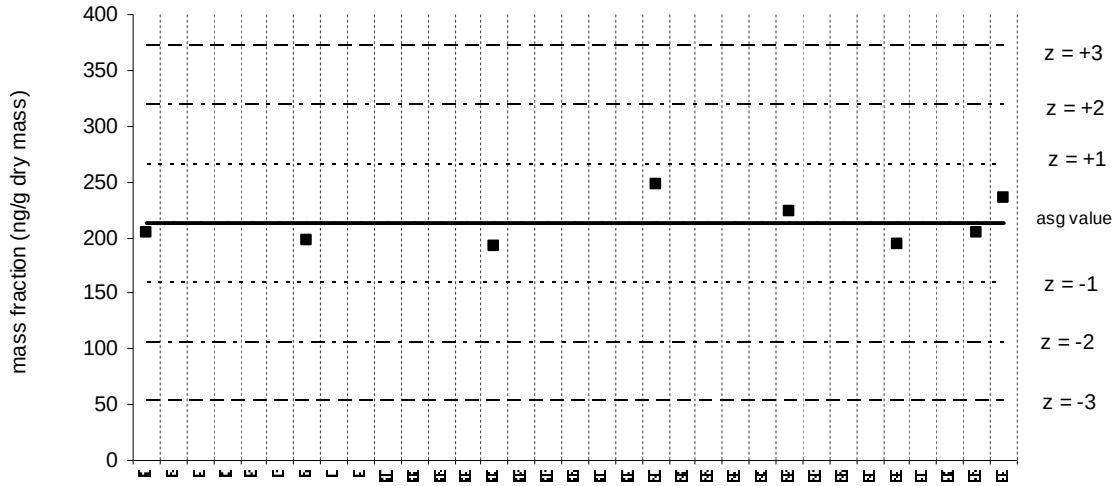
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[a]fluoranthene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 8

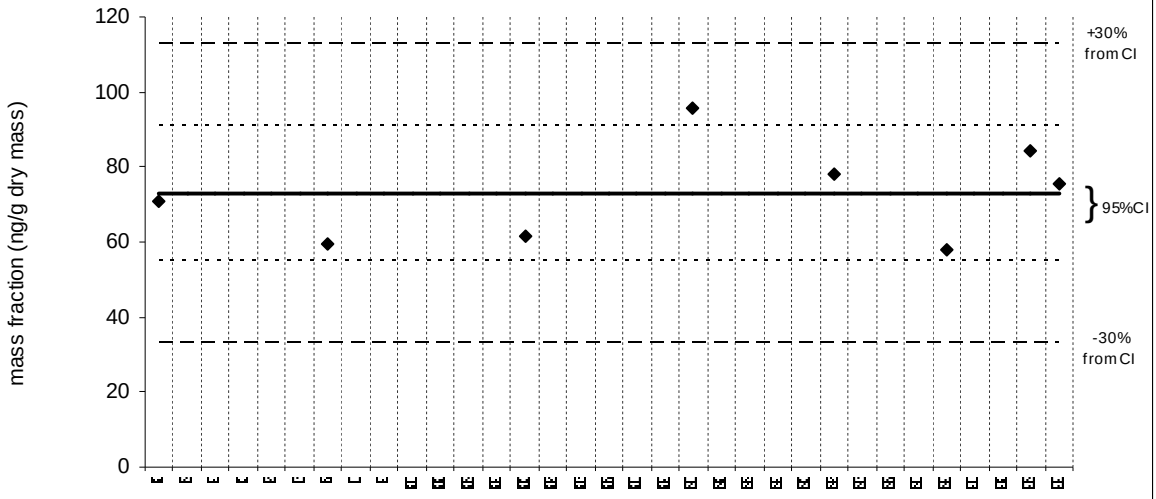


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[a]fluoranthene **SRM 1941b**

Certified Value = 73 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 8

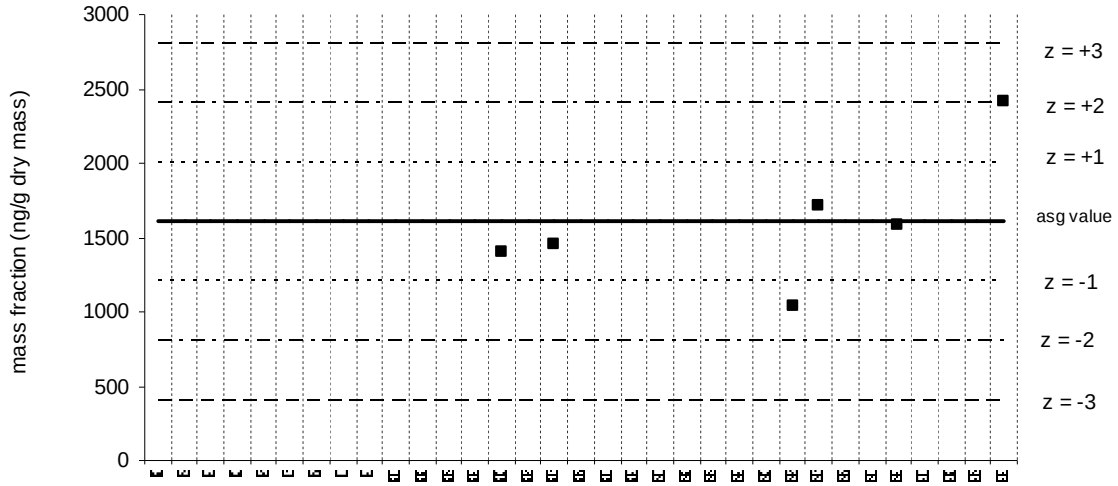


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[j+k]fluoranthene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 6 Quantitative Results: 6



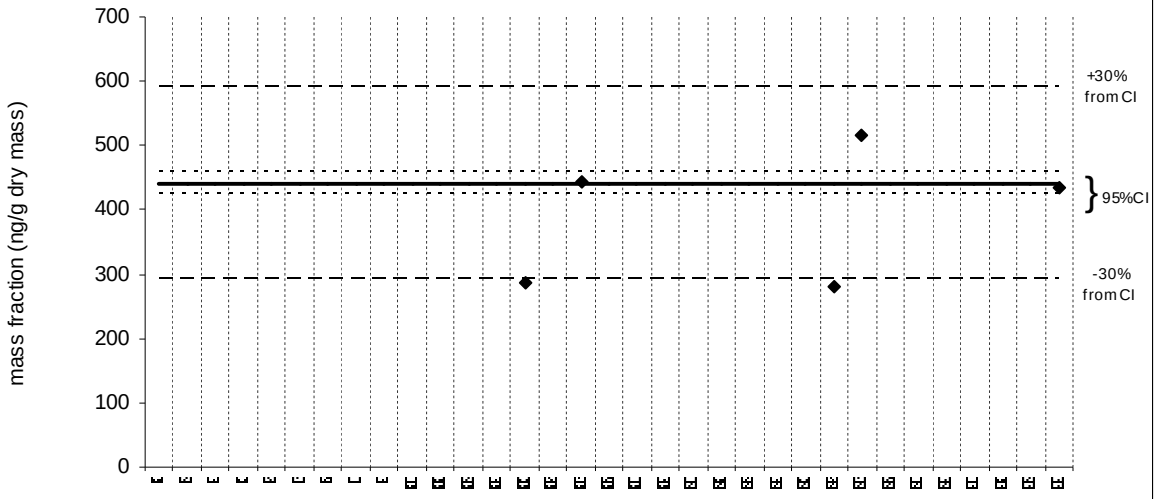
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[j+k]fluoranthene **SRM 1941b**

Target Value = 442 ng/g (dry mass) ; 95% CI 18 ng/g (dry mass)

Reported Results: 5 Quantitative Results: 5



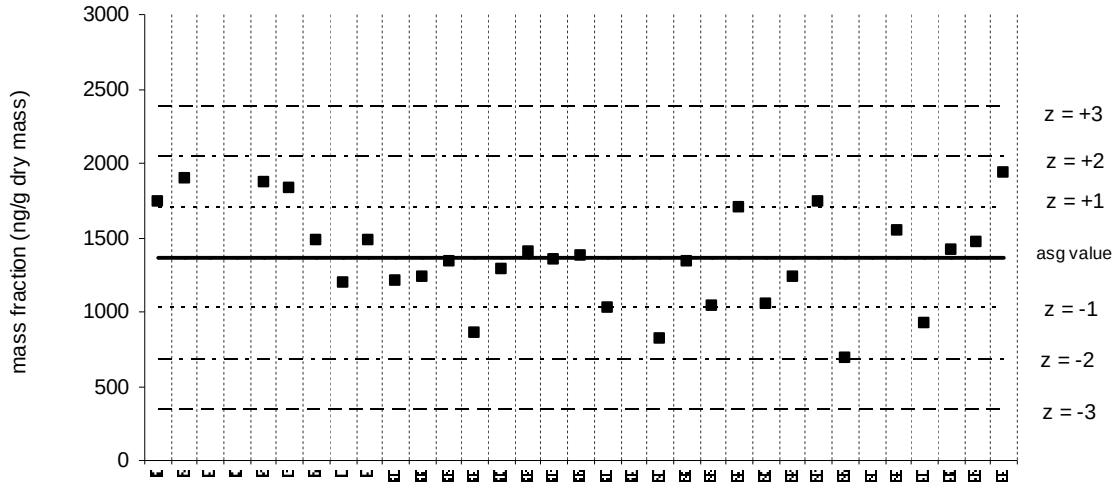
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[e]pyrene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 29 Quantitative Results: 29

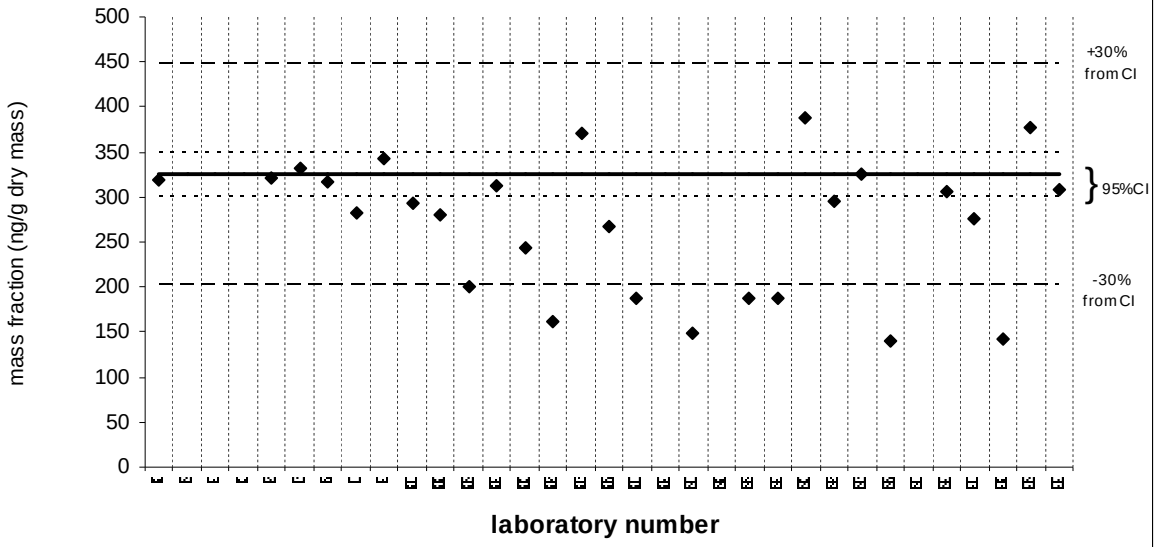


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[e]pyrene **SRM 1941b**

Certified Value = 325 ng/g (dry mass) ; 95% CI 25 ng/g (dry mass)

Reported Results: 27 Quantitative Results: 27

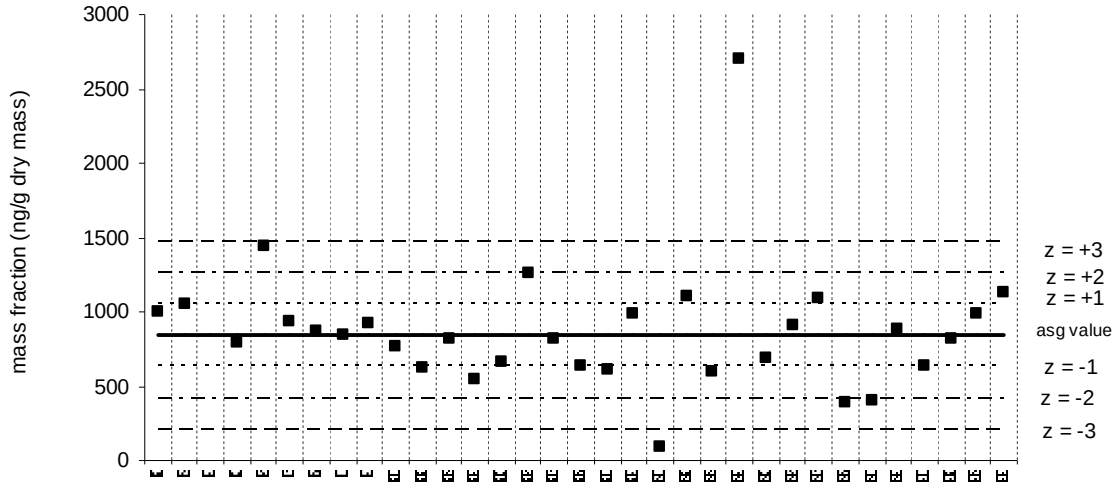


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[a]pyrene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32



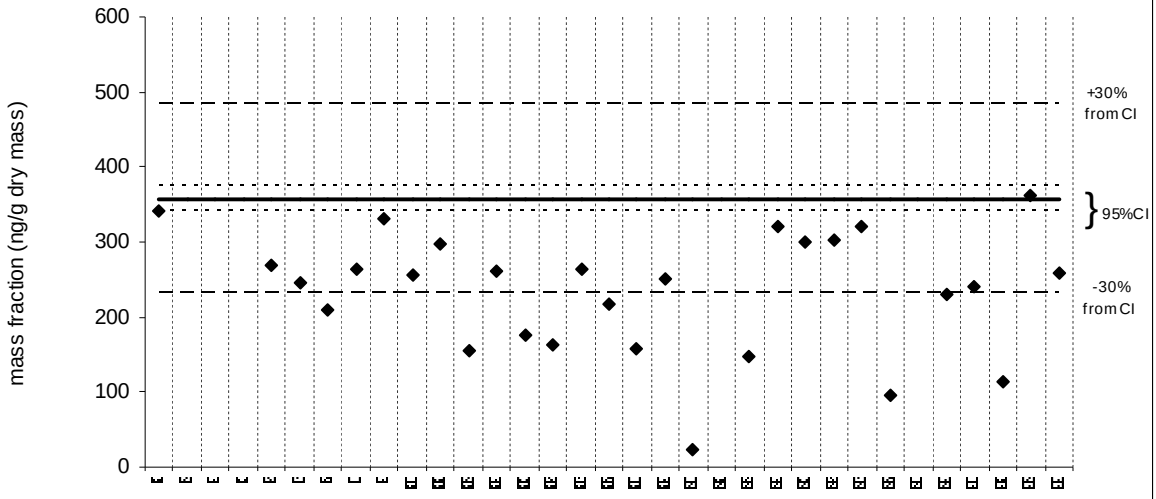
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[a]pyrene **SRM 1941b**

Certified Value = 358 ng/g (dry mass) ; 95% CI 17 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28



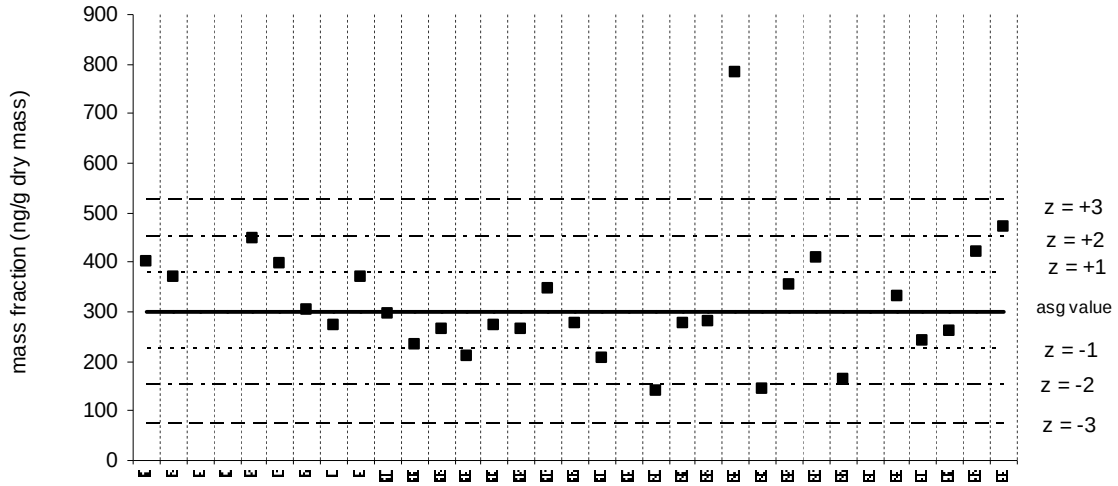
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

perylene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 29 Quantitative Results: 29



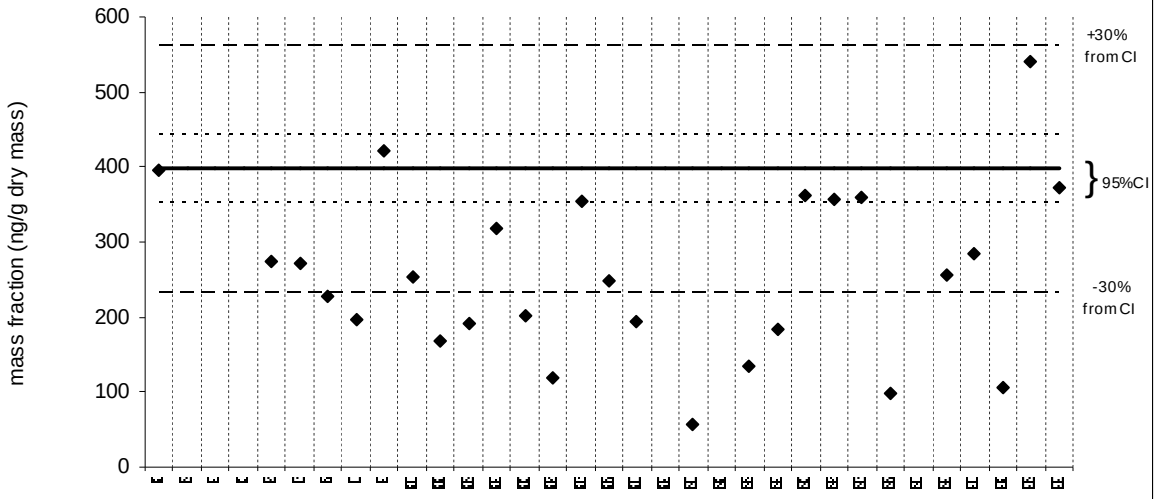
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

perylene **SRM 1941b**

Certified Value = 397 ng/g (dry mass) ; 95% CI 45 ng/g (dry mass)

Reported Results: 27 Quantitative Results: 27



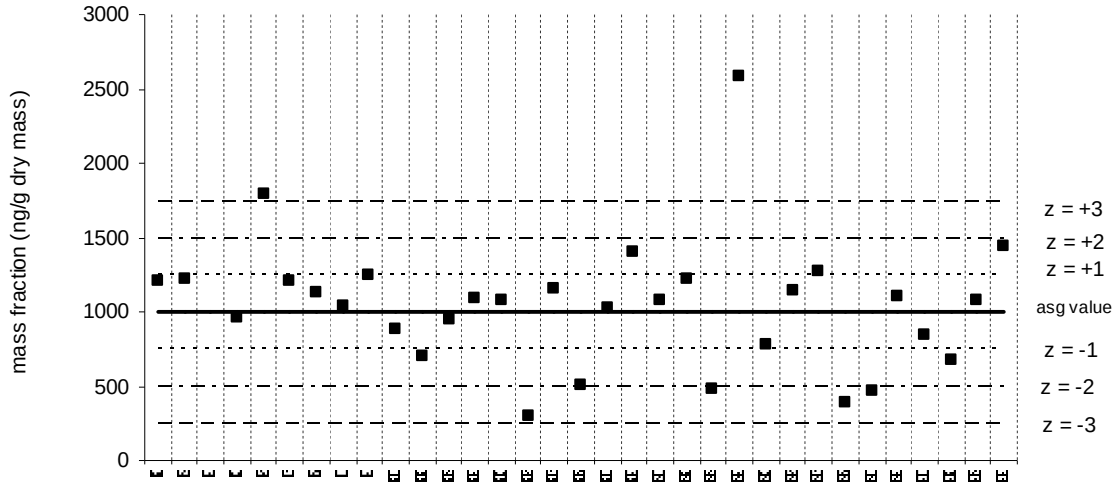
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

indeno[1,2,3-cd]pyrene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32



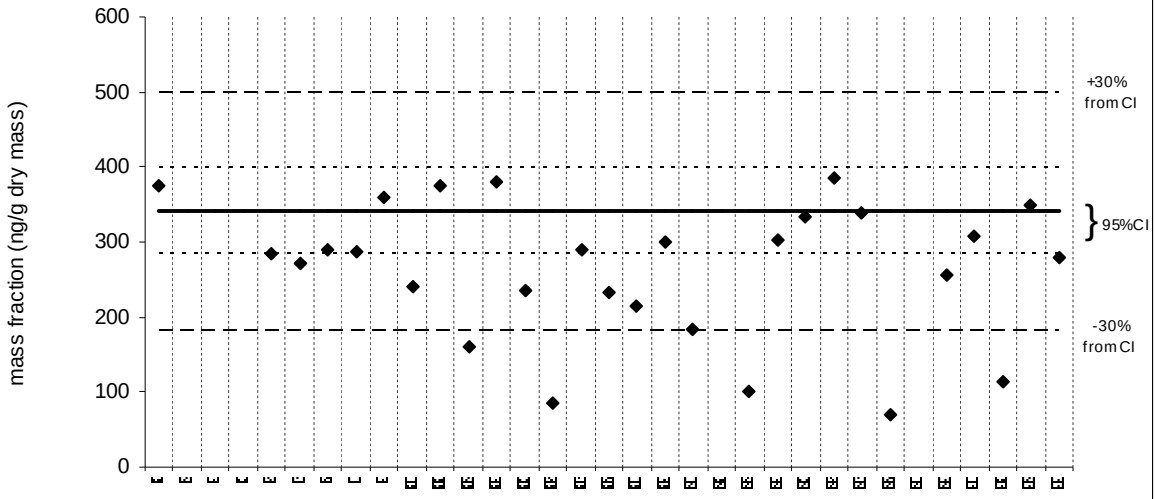
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

indeno[1,2,3-cd]pyrene **SRM 1941b**

Certified Value = 341 ng/g (dry mass) ; 95% CI 57 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28



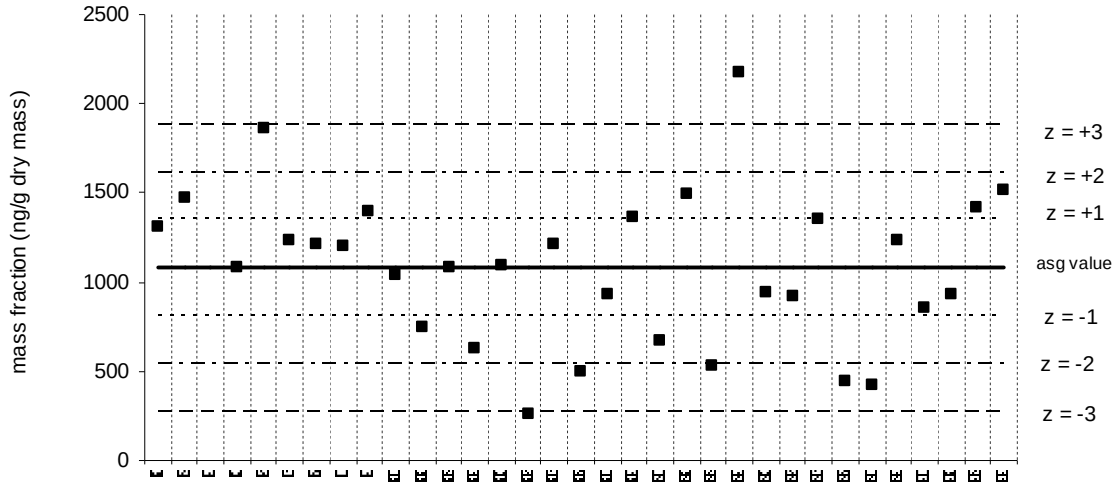
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[ghi]perylene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 33 Quantitative Results: 32

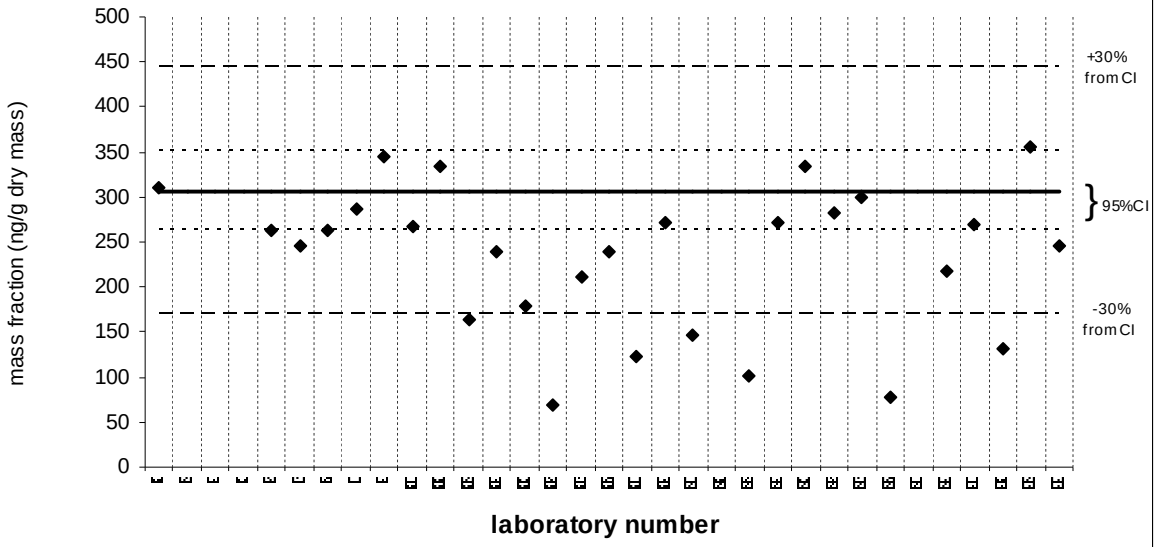


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[ghi]perylene **SRM 1941b**

Certified Value = 307 ng/g (dry mass) ; 95% CI 45 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 28

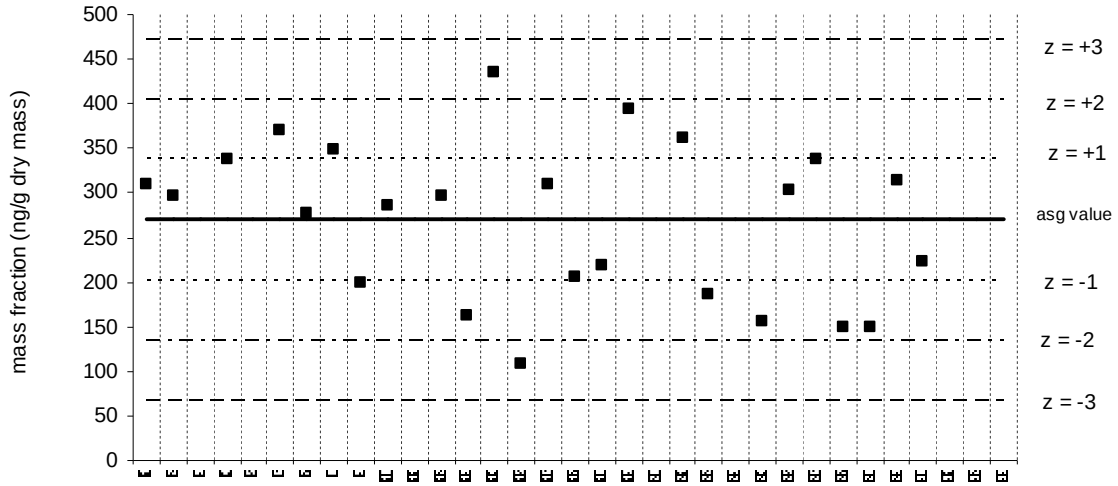


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenz[a,h]anthracene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 31 Quantitative Results: 26 Lab 5 reported 1137 ng/g (dry mass)

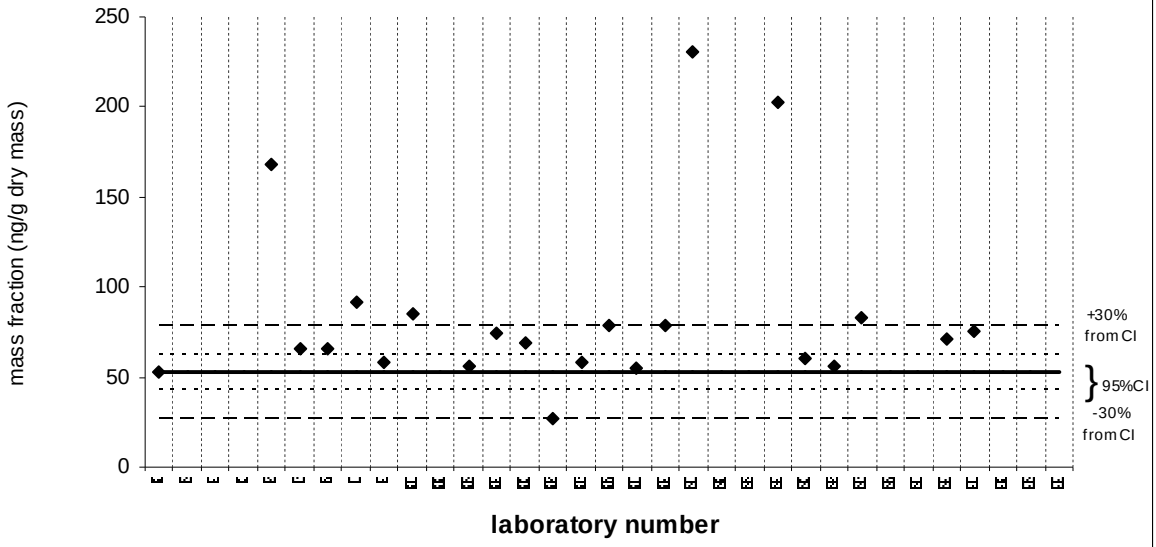


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenz[a,h]anthracene **SRM 1941b**

Certified Value = 53 ng/g (dry mass) ; 95% CI 10 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 22

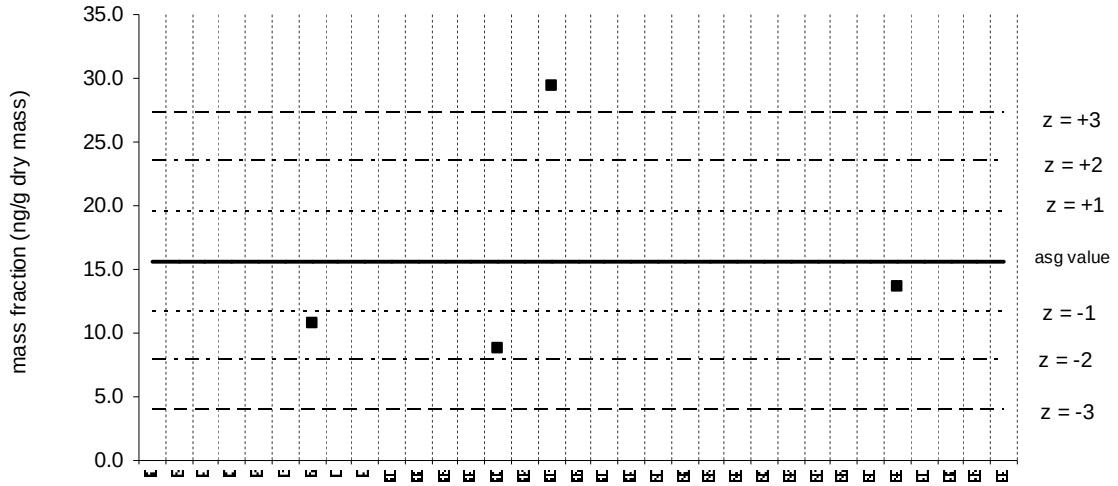


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

cis/trans-decalin **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 4



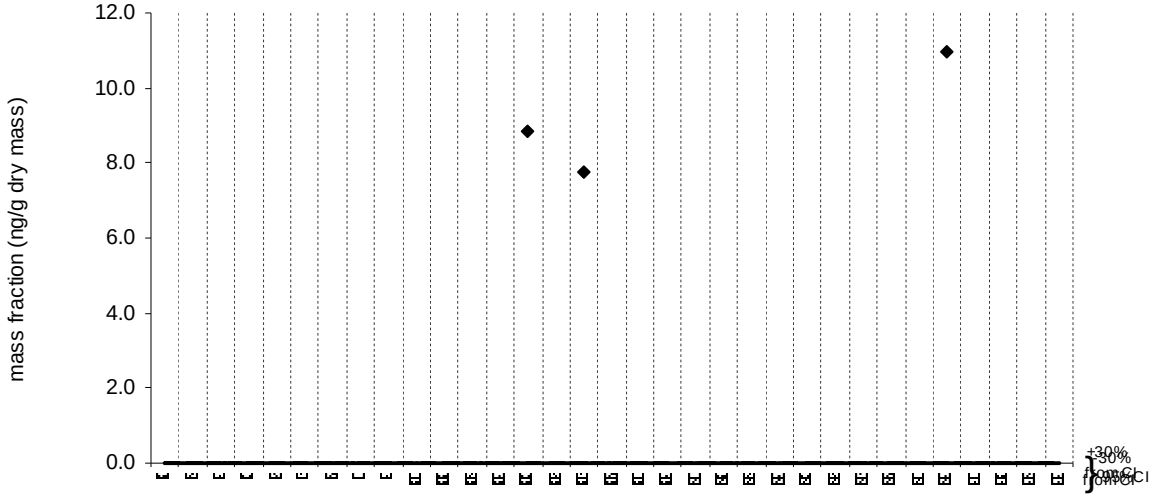
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis/trans-decalin **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 10 Quantitative Results: 4 Lab 27 reported 225 ng/g (dry mass)



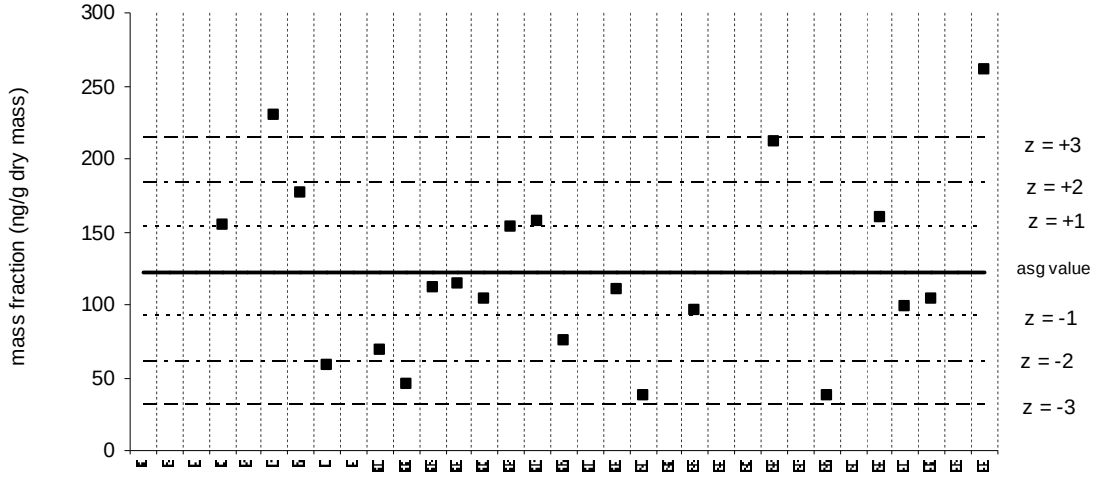
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenzofuran **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 21



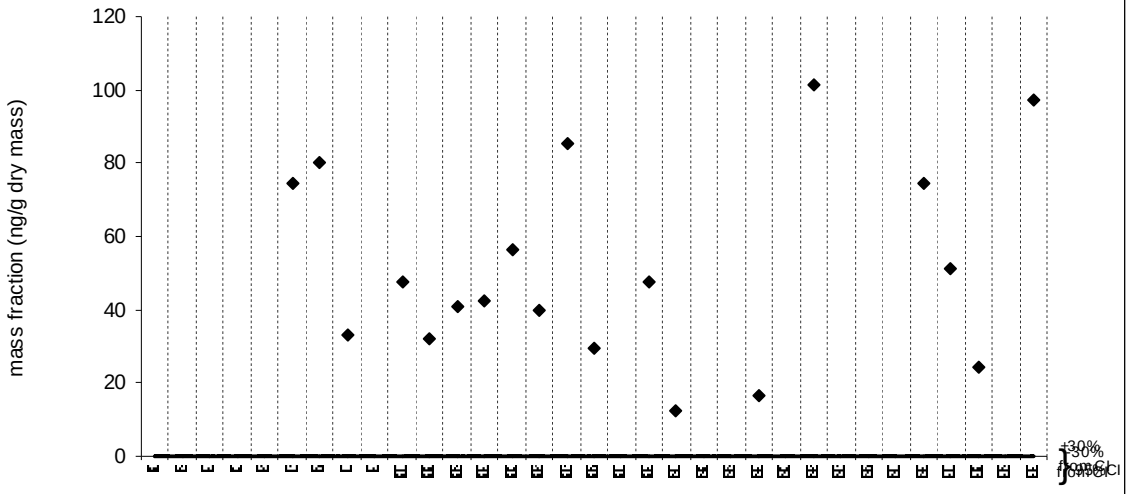
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenzofuran **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 19



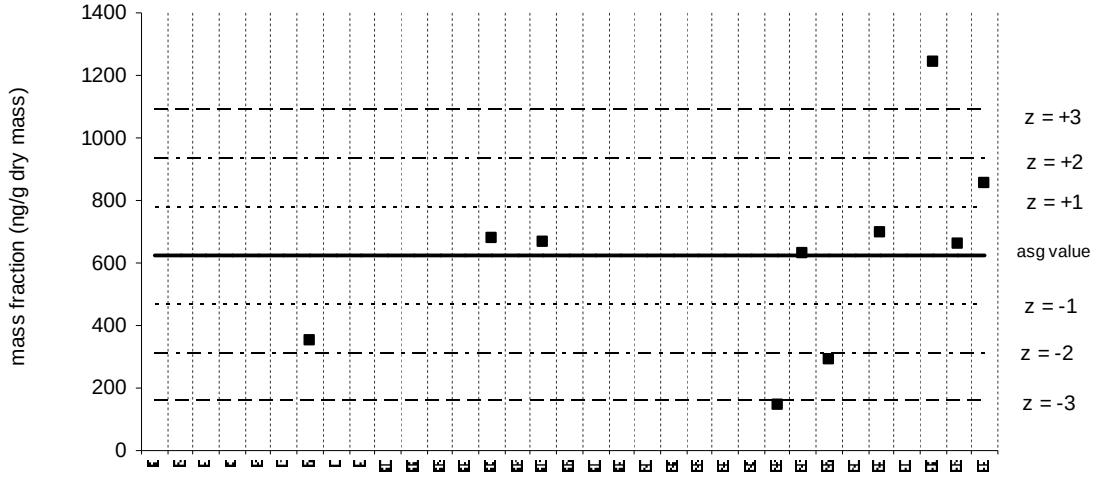
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

retene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 12 Quantitative Results: 10



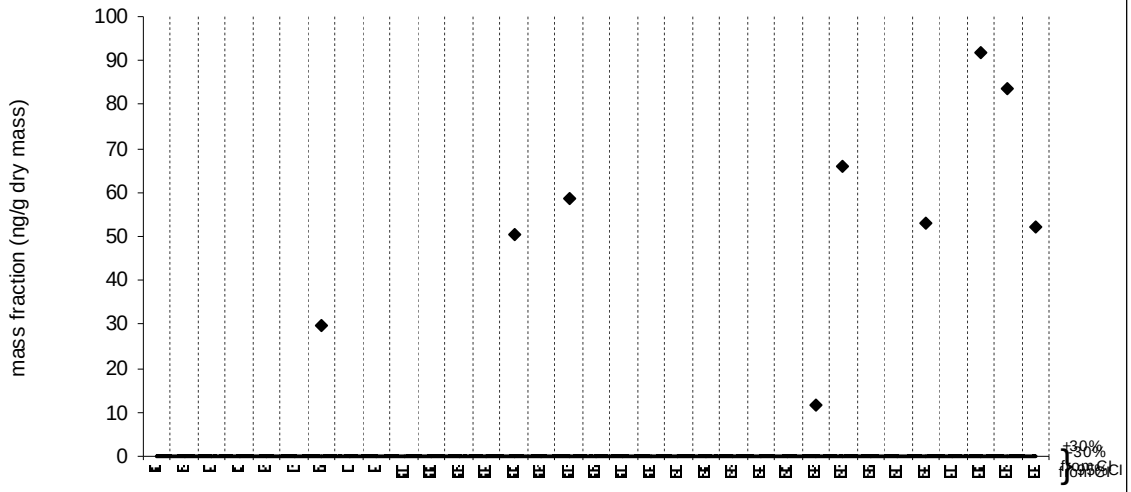
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

retene **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 12 Quantitative Results: 9



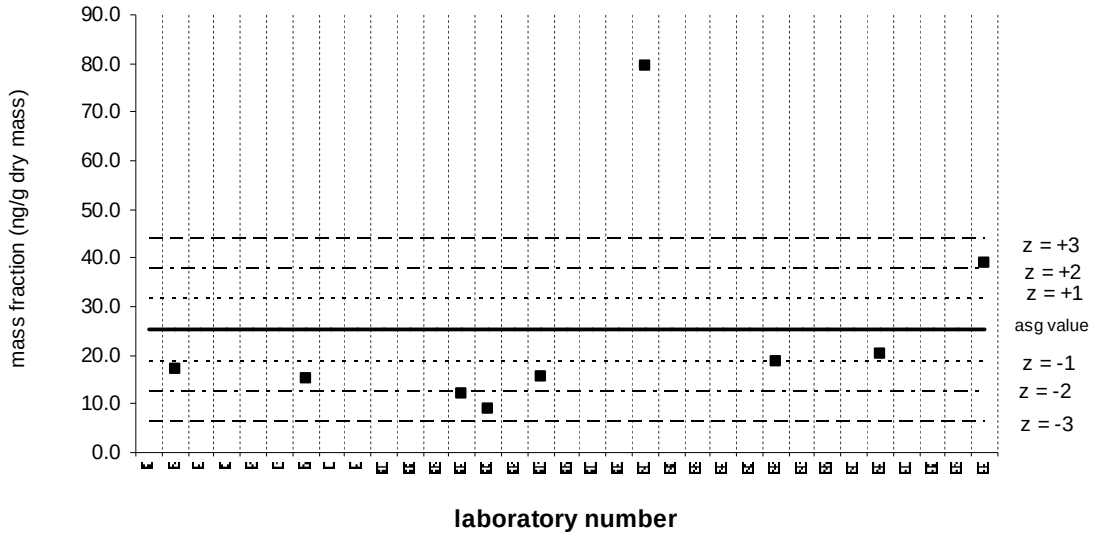
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzothiophene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 12 Quantitative Results: 10 Lab 23 reported 1400 ng/g (dry mass)

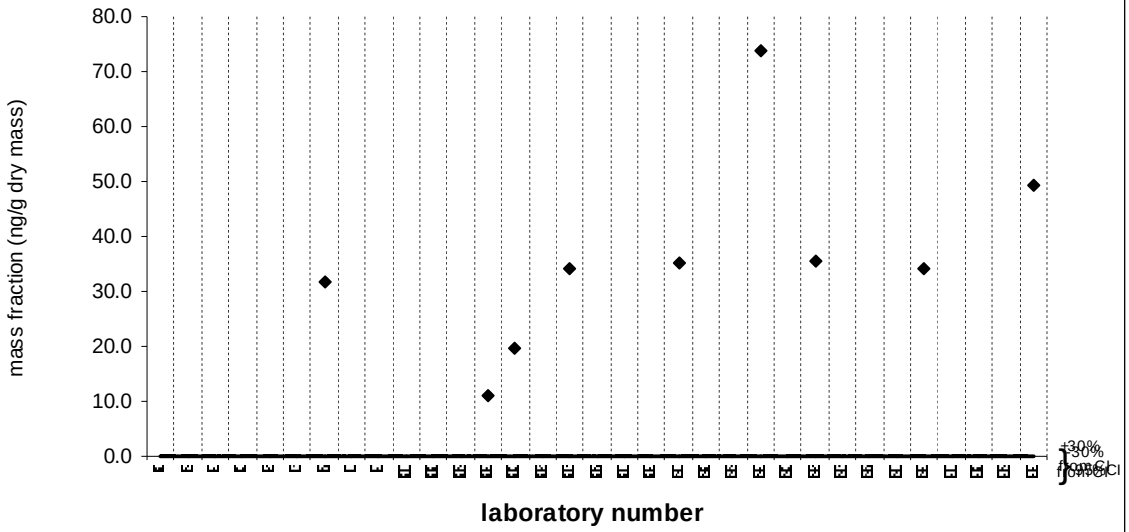


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzothiophene **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 11 Quantitative Results: 9

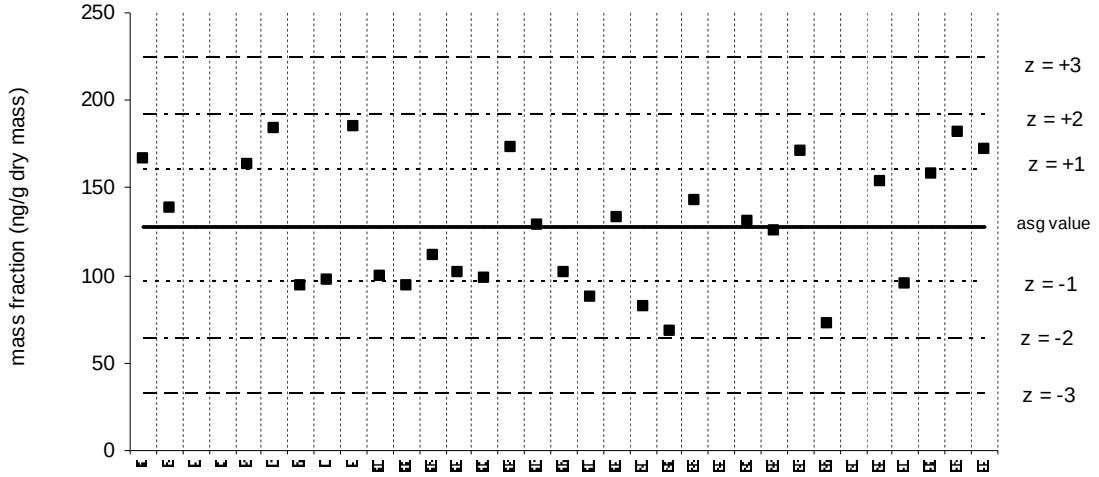


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenzothiophene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 30 Lab 23 reported 1247 ng/g (dry mass)



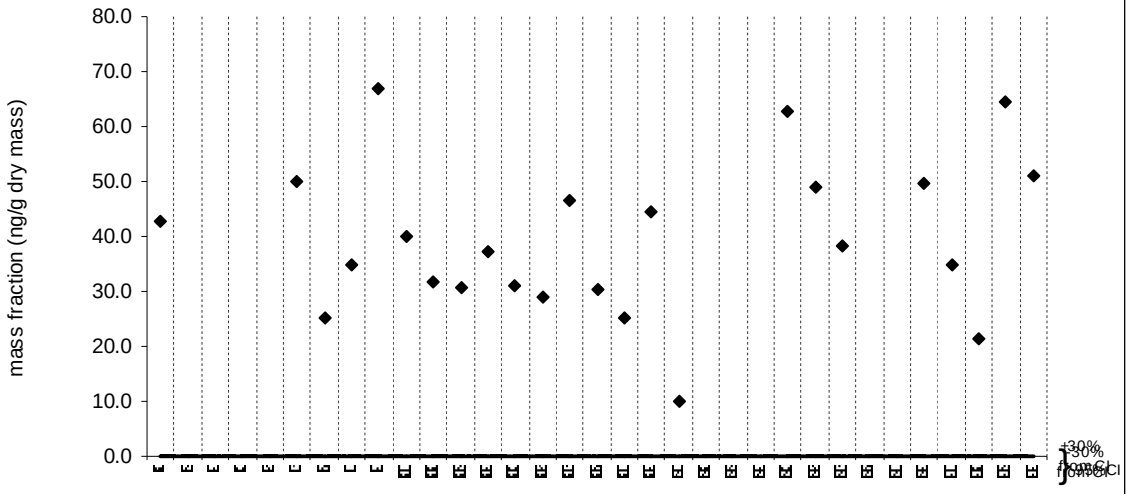
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenzothiophene **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 27 Quantitative Results: 24



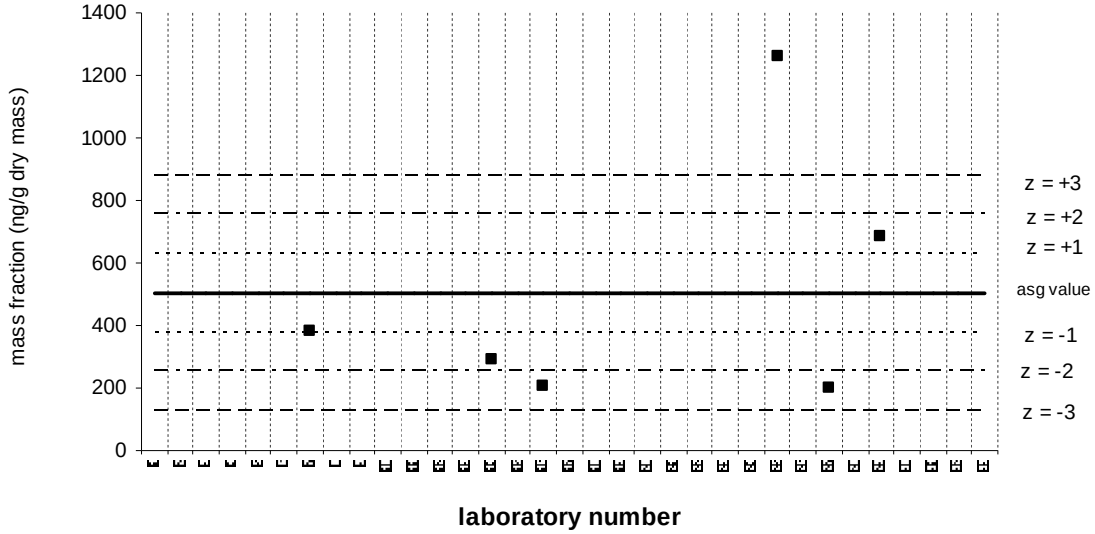
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

naphthobenzothiophene **QA10SED01**

Assigned value = 2287 ng/g (dry mass) s = 430 ng/g (dry mass) 95% CI = 266 ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6

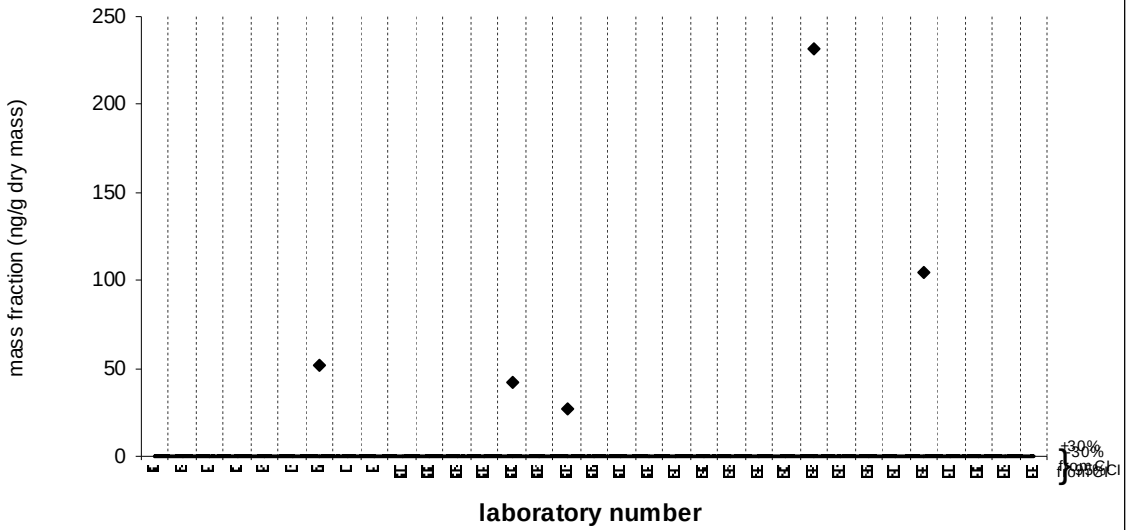


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

naphthobenzothiophene **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 5

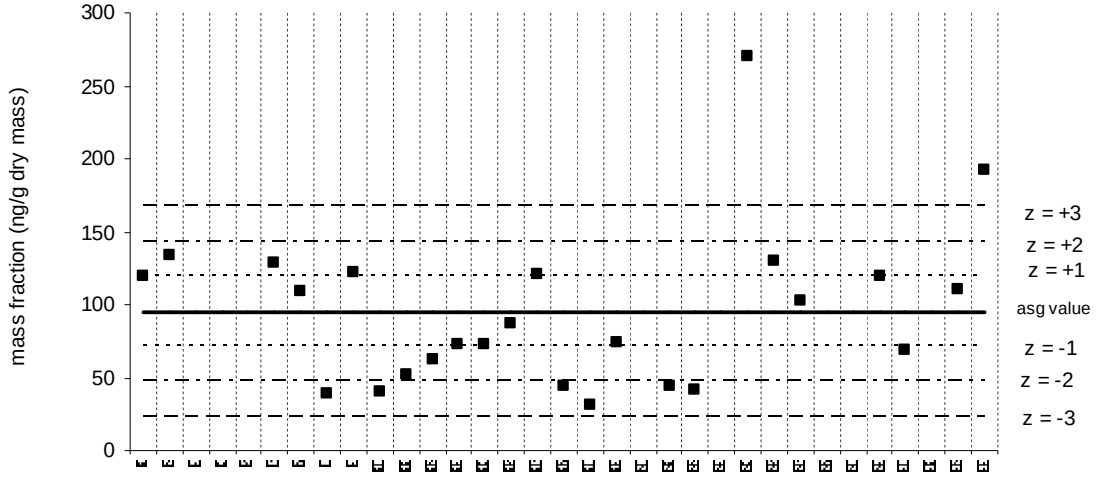


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylnaphthalene QA10SED01

Assigned value = 95.4 ng/g (dry mass) s = 54.0 ng/g (dry mass) 95% CI = 21.2 ng/g (dry mass)

Reported Results: 30 Quantitative Results: 25

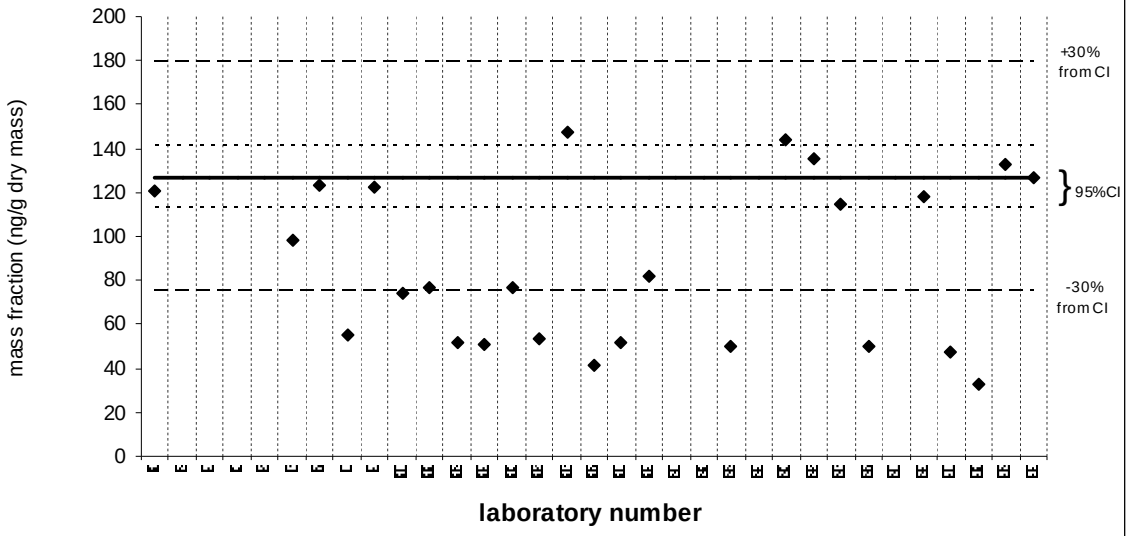


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylnaphthalene

Reference Value = 127 ng/g (dry mass) ; 95% CI 14 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 25

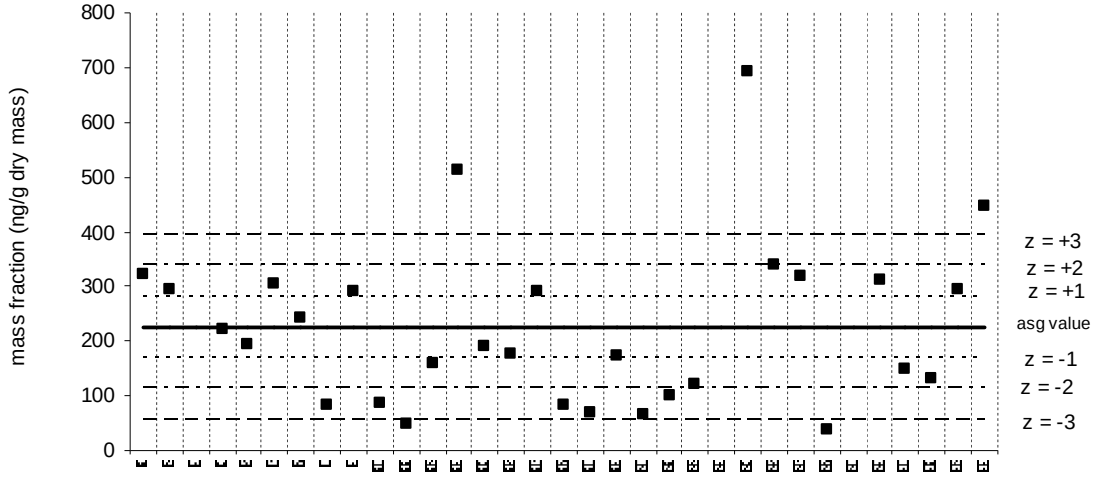


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2-methylnaphthalene QA10SED01

Assigned value = 225 ng/g (dry mass) s = 149 ng/g (dry mass) 95% CI = 53 ng/g (dry mass)

Reported Results: 32 Quantitative Results: 30



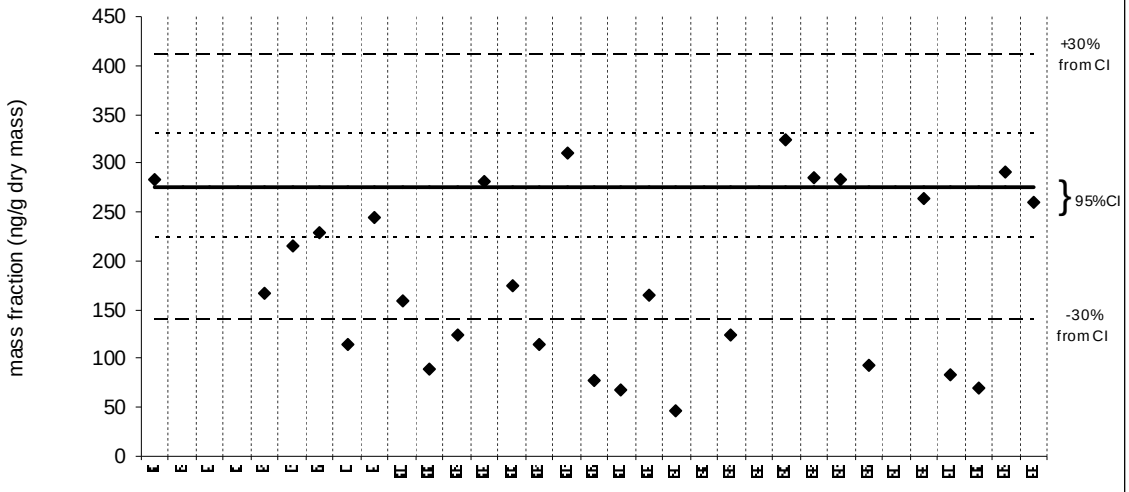
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2-methylnaphthalene

Reference Value = 276 ng/g (dry mass) ; 95% CI 53 ng/g (dry mass)

Reported Results: 28 Quantitative Results: 27



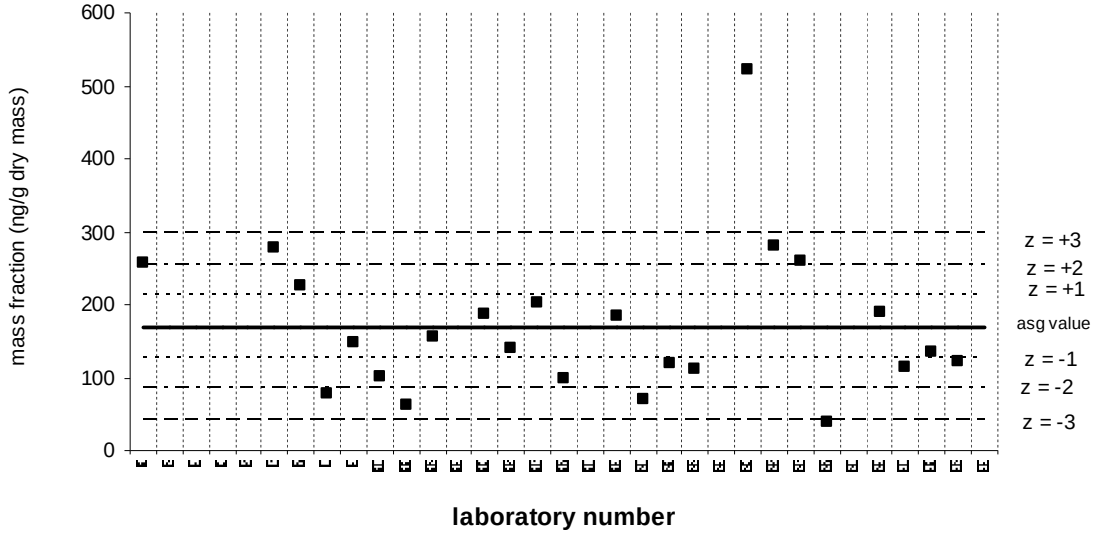
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,6-dimethylnaphthalene QA10SED01

Assigned value = 170 ng/g (dry mass) s = 102 ng/g (dry mass) 95% CI = 41 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 24

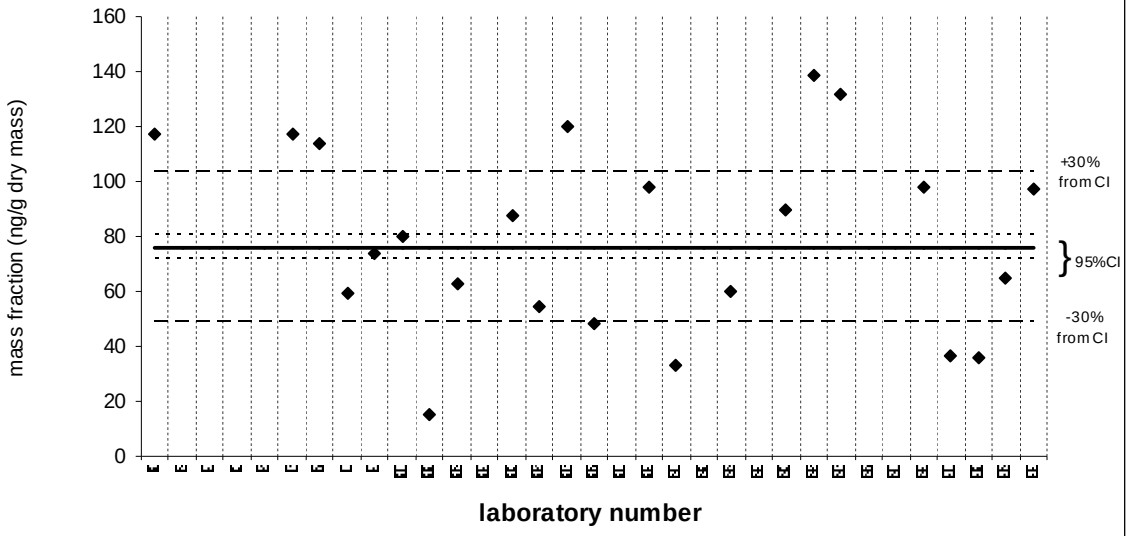


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,6-dimethylnaphthalene

Reference Value = 75.9 ng/g (dry mass) ; 95% CI 4.5 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23

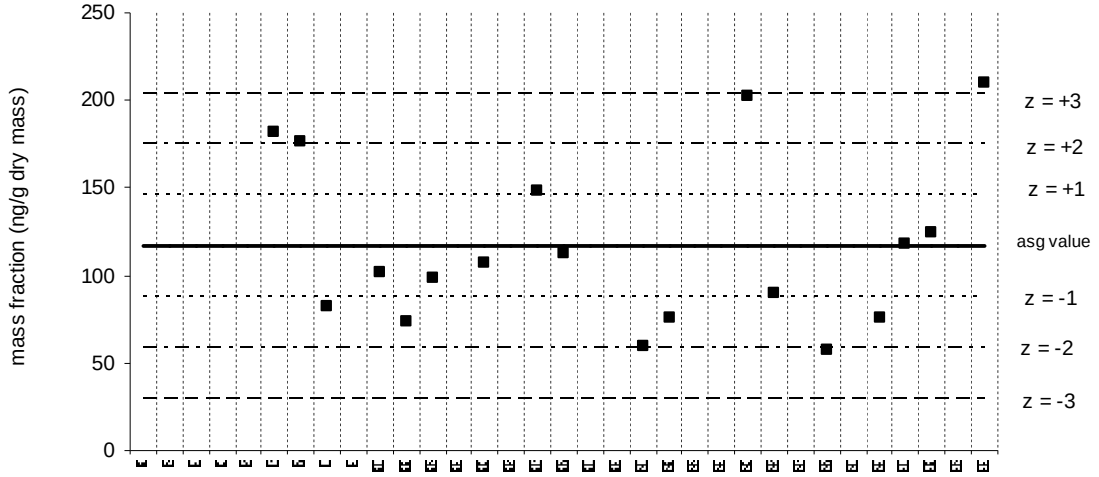


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1,6,7-trimethylnaphthalene — QA10SED01

Assigned value = 117 ng/g (dry mass) s = 48 ng/g (dry mass) 95% CI = 22 ng/g (dry mass)

Reported Results: 18 Quantitative Results: 18

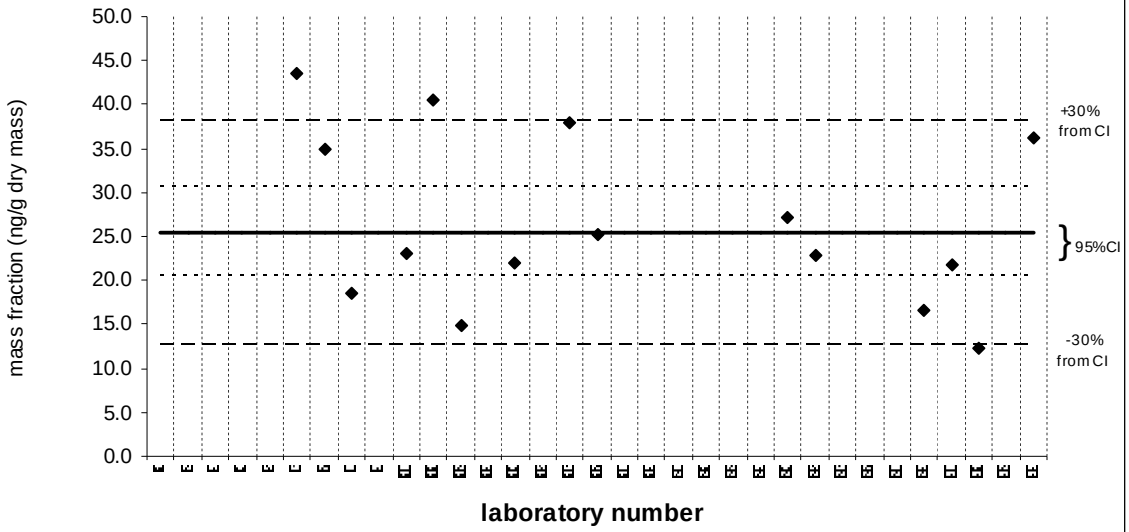


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1,6,7-trimethylnaphthalene — SRM 1941b

Reference Value = 25.5 ng/g (dry mass) ; 95% CI 5.1 ng/g (dry mass)

Reported Results: 16 Quantitative Results: 15

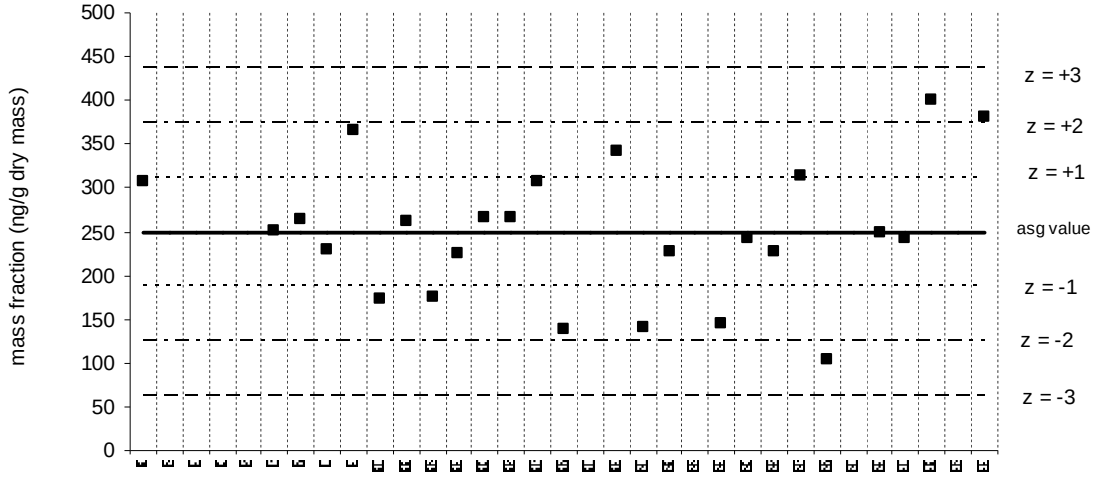


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylphenanthrene **QA10SED01**

Assigned value = 250 ng/g (dry mass) s = 77 ng/g (dry mass) 95% CI = 30 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 25

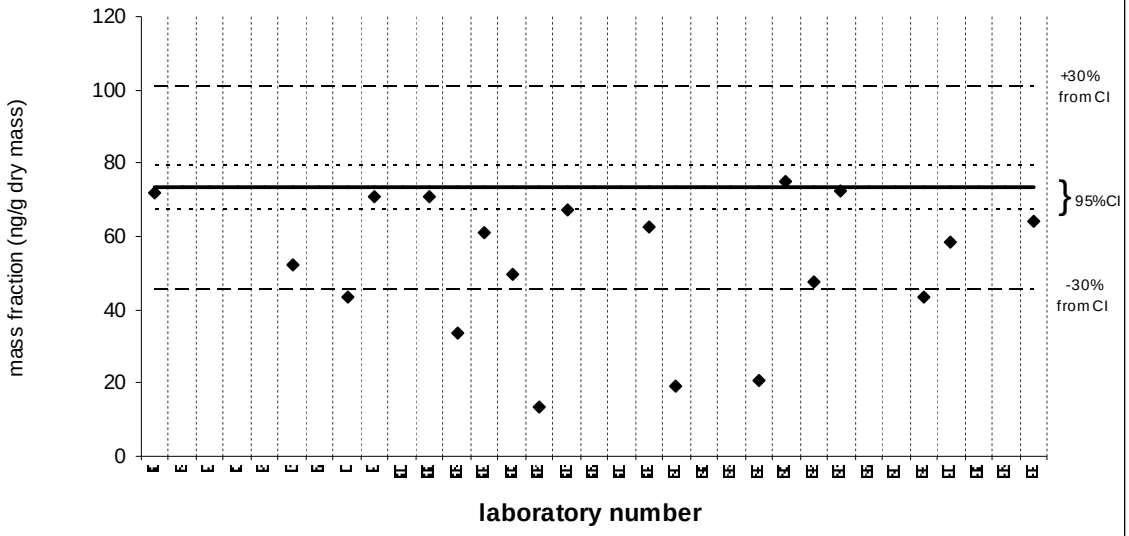


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylphenanthrene **SRM 1941b**

Reference Value = 25.5 ng/g (dry mass) ; 95% CI 5.1 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 19

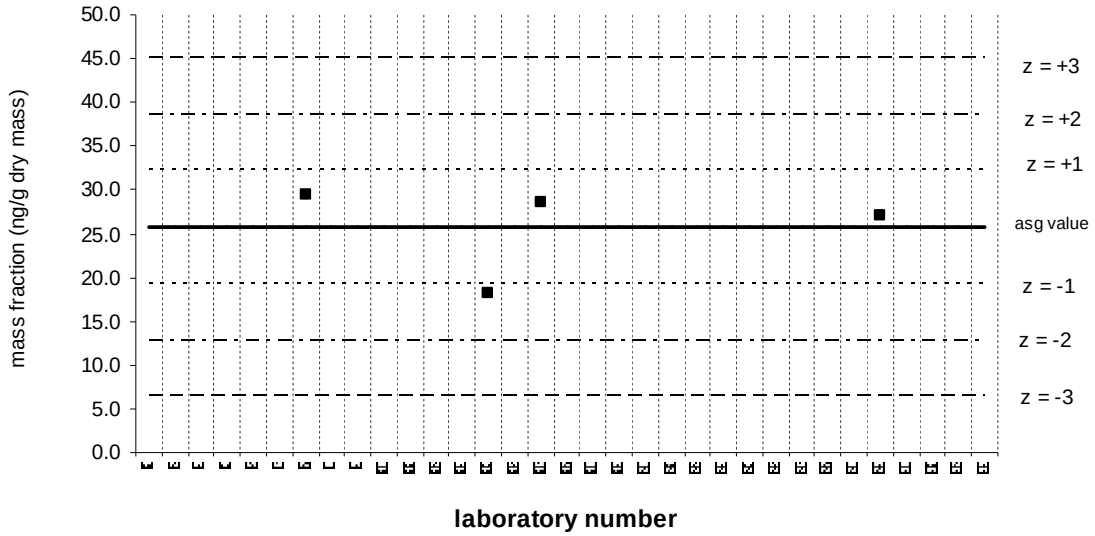


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-decalins — QA10SED01

Assigned value = 25.7 ng/g (dry mass) s = 5.2 ng/g (dry mass) 95% CI = 5.1 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5 Lab 31 reported 17300 ng/g (dry mass)

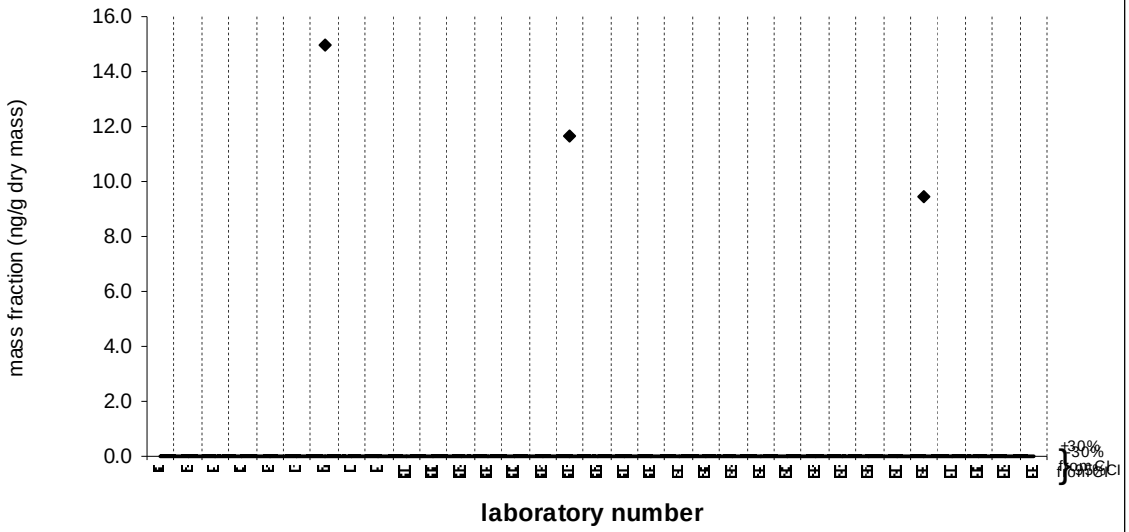


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-decalins — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 4 Lab 31 reported 1370 ng/g (dry mass)

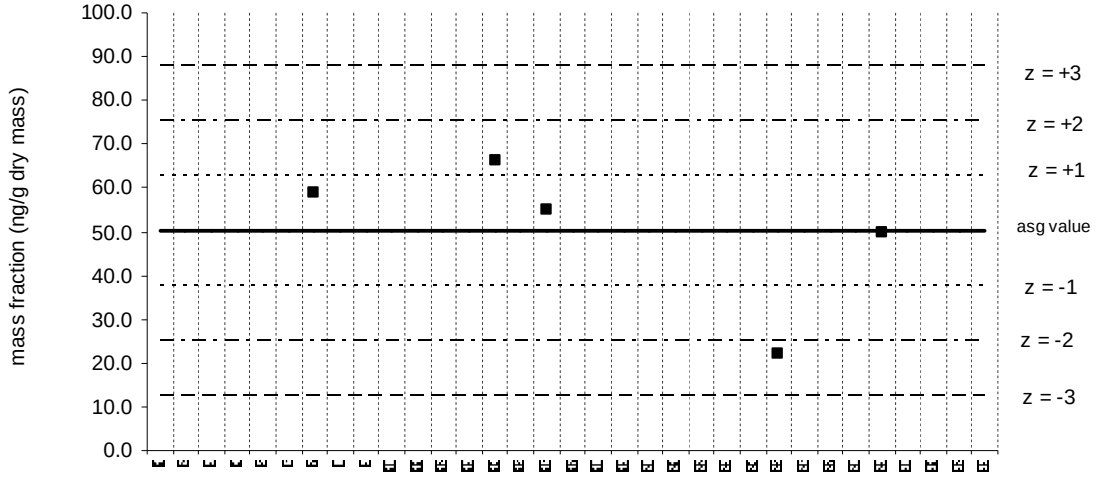


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-decalins **QA10SED01**

Assigned value = 50.3 ng/g (dry mass) s = 17.0 ng/g (dry mass) 95% CI = 14.9 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5



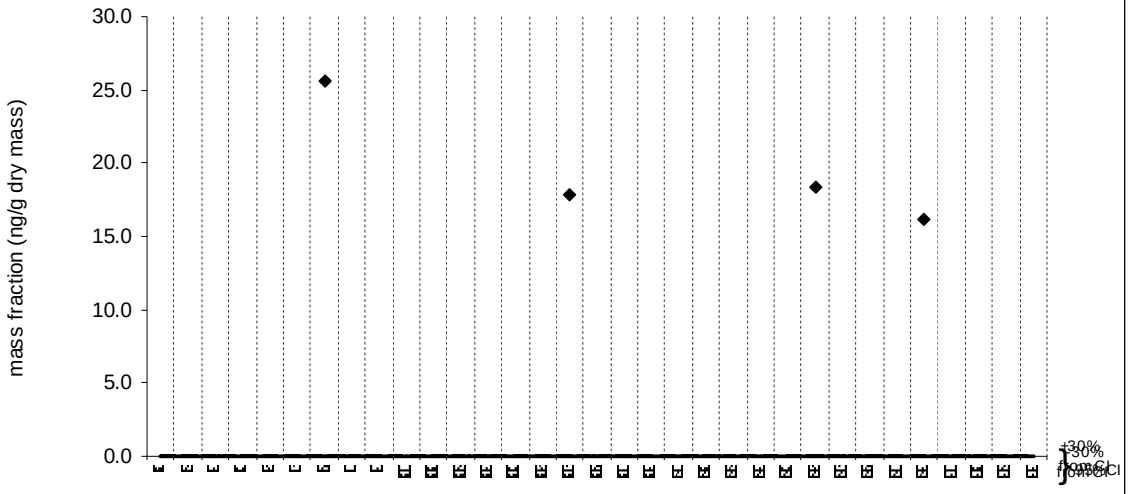
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-decalins **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 4



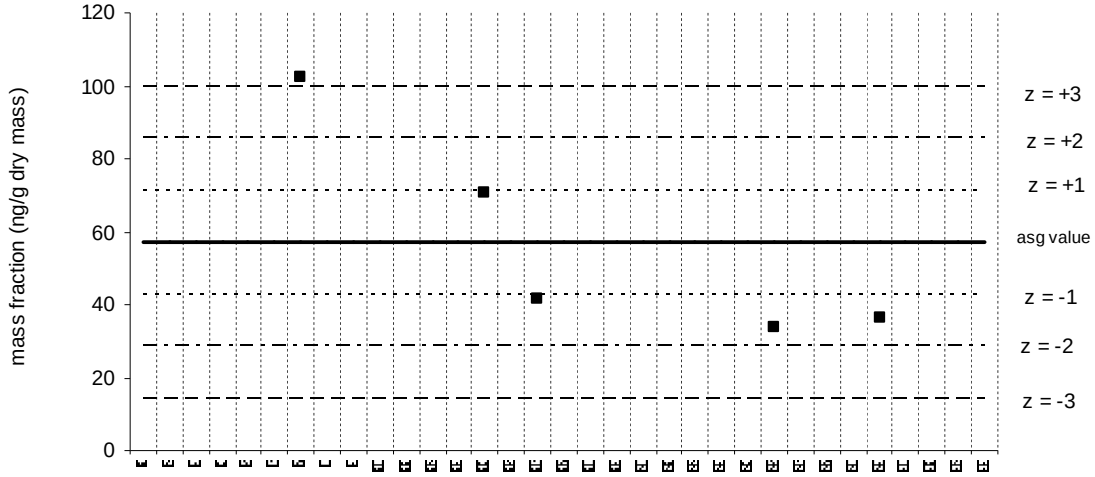
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-decalins **QA10SED01**

Assigned value = 57.0 ng/g (dry mass) s = 29.4 ng/g (dry mass) 95% CI = 25.7 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 5



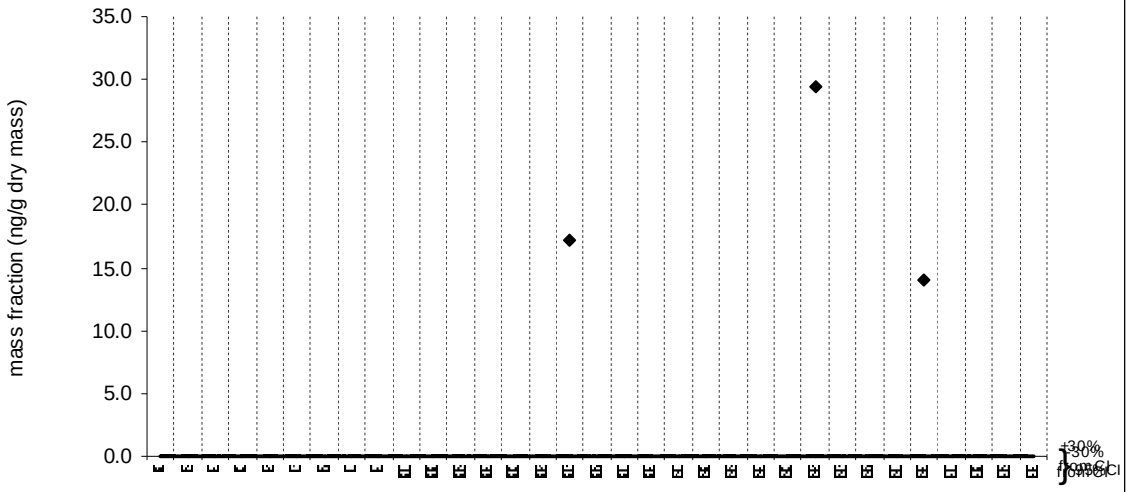
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-decalins **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 3



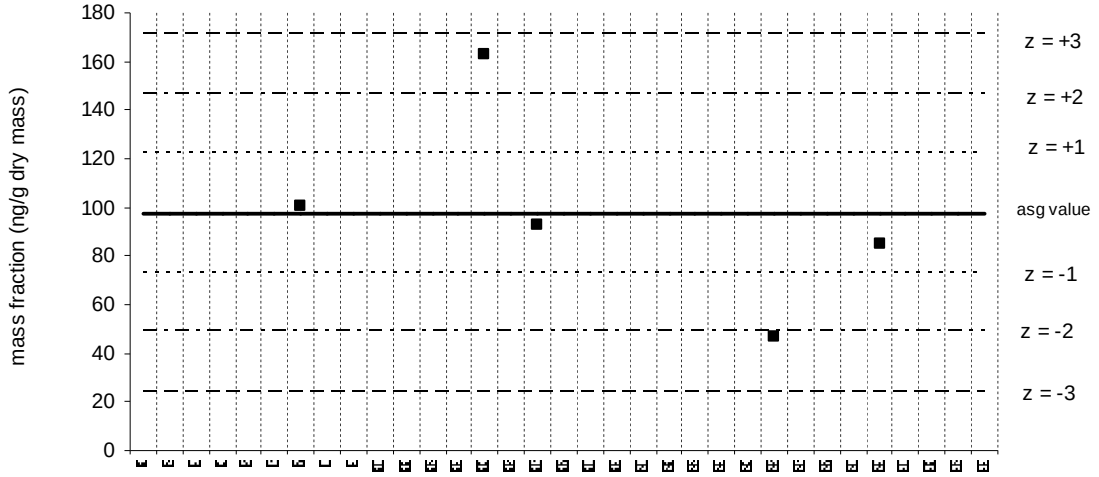
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-decalins **QA10SED01**

Assigned value = 97.8 ng/g (dry mass) s = 41.9 ng/g (dry mass) 95% CI = 36.7 ng/g (dry mass)

Reported Results: 7 Quantitative Results: 5



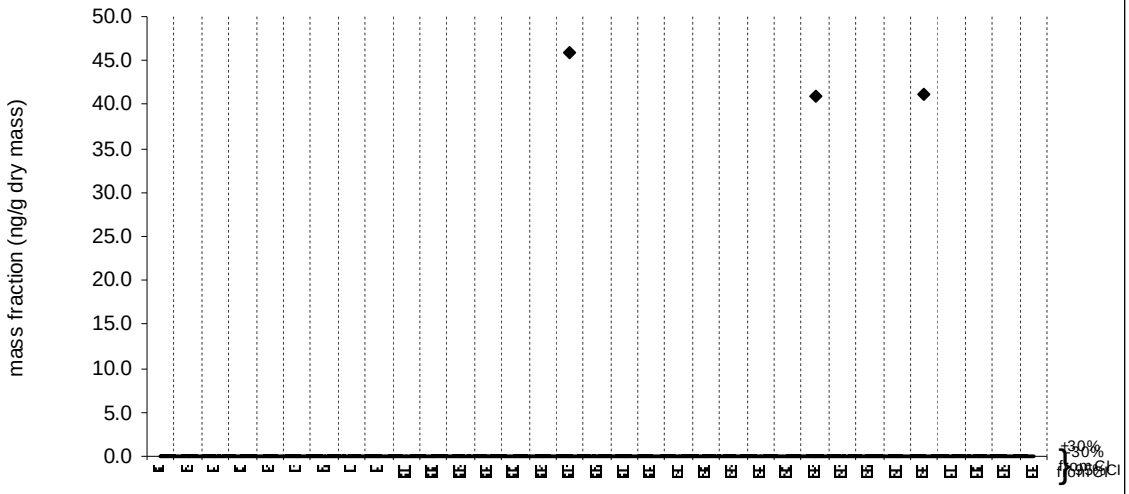
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-decalins **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 3



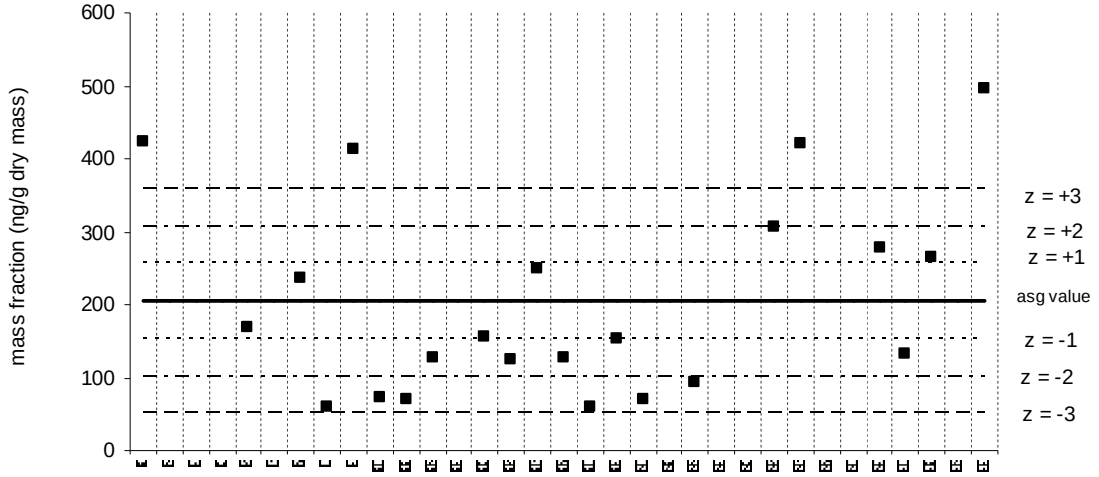
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-naphthalenes — QA10SED01

Assigned value = 205 ng/g (dry mass) s = 135 ng/g (dry mass) 95% CI = 56 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 22

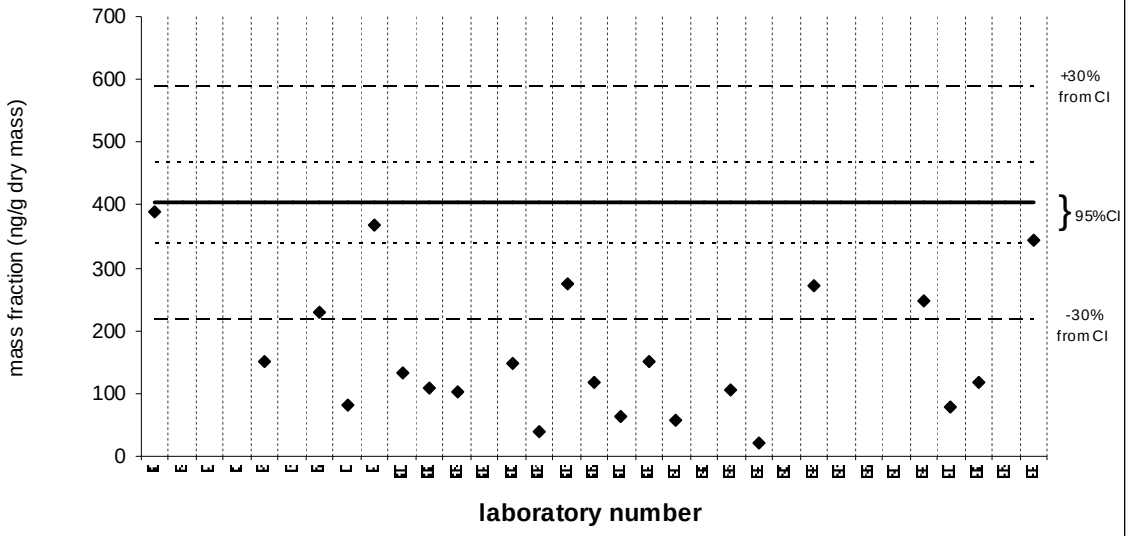


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-naphthalenes — SRM 1941b

Target Value = 403 ng/g (dry mass) ; 95% CI 64 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 22

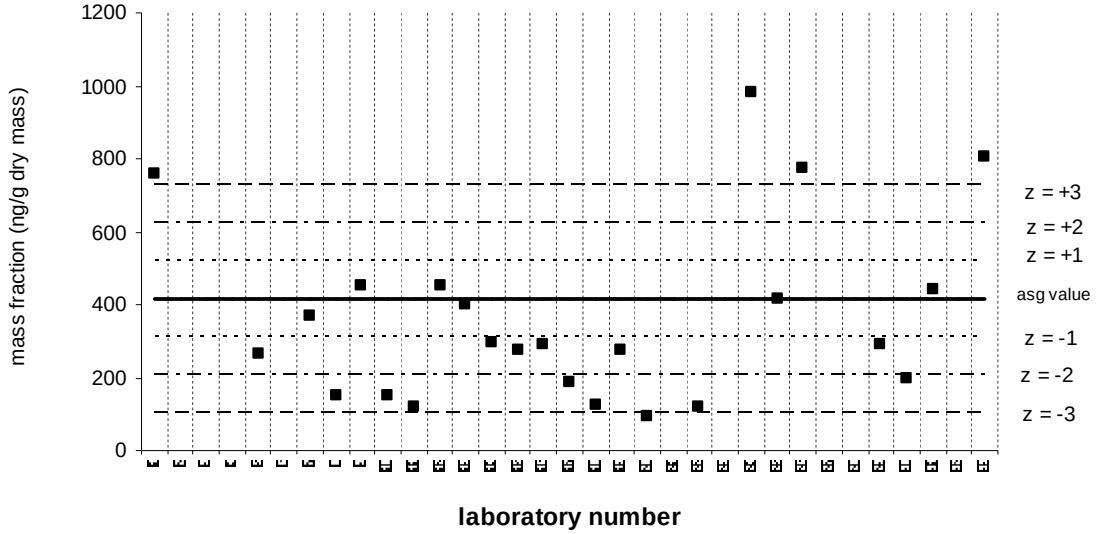


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-naphthalenes — QA10SED01

Assigned value = 415 ng/g (dry mass) s = 356 ng/g (dry mass) 95% CI = 140 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25 Lab 23 reported 1683 ng/g (dry mass)

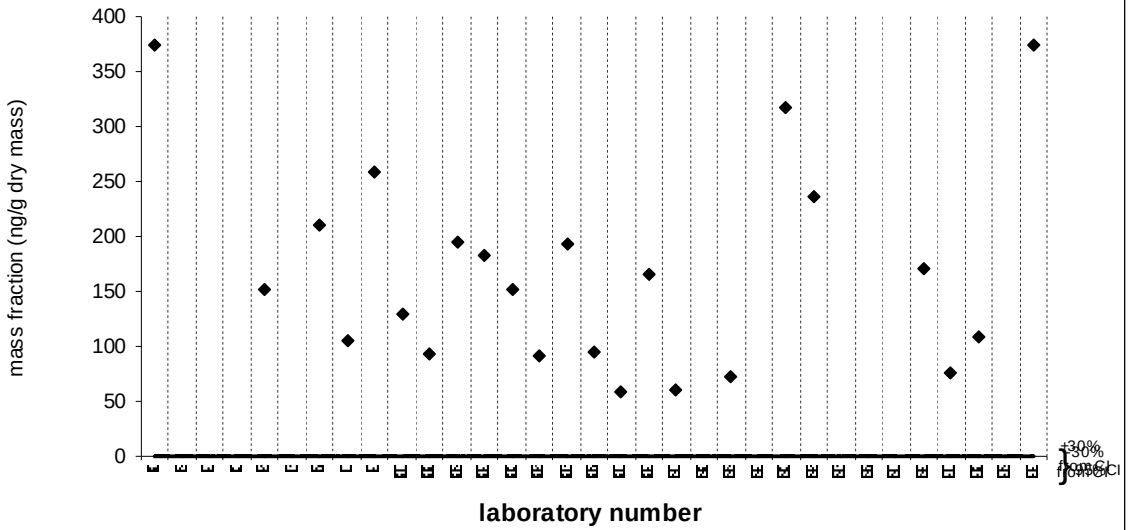


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-naphthalenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 24 Quantitative Results: 23

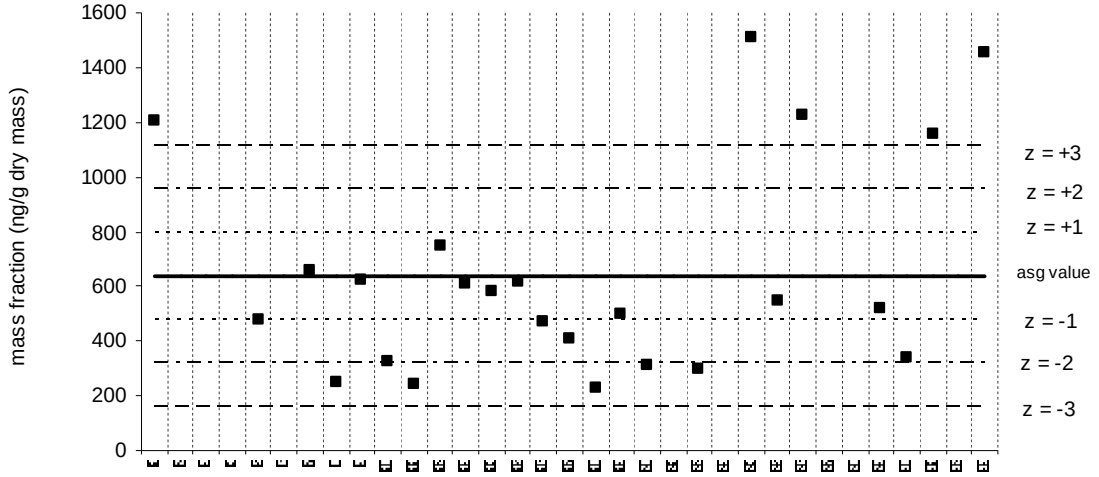


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-naphthalenes — QA10SED01

Assigned value = 638 ng/g (dry mass) s = 385 ng/g (dry mass) 95% CI = 154 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 24



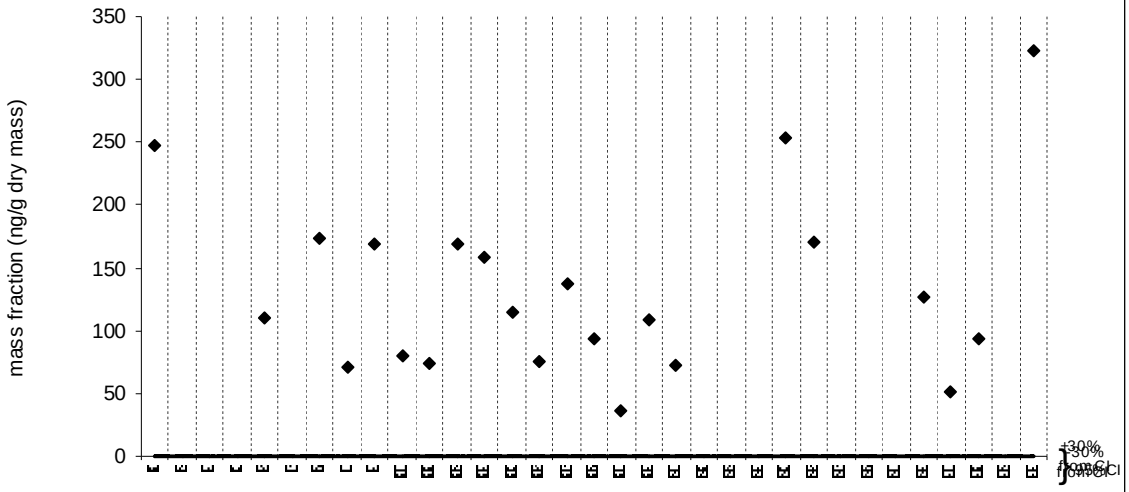
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-naphthalenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 23 Quantitative Results: 22



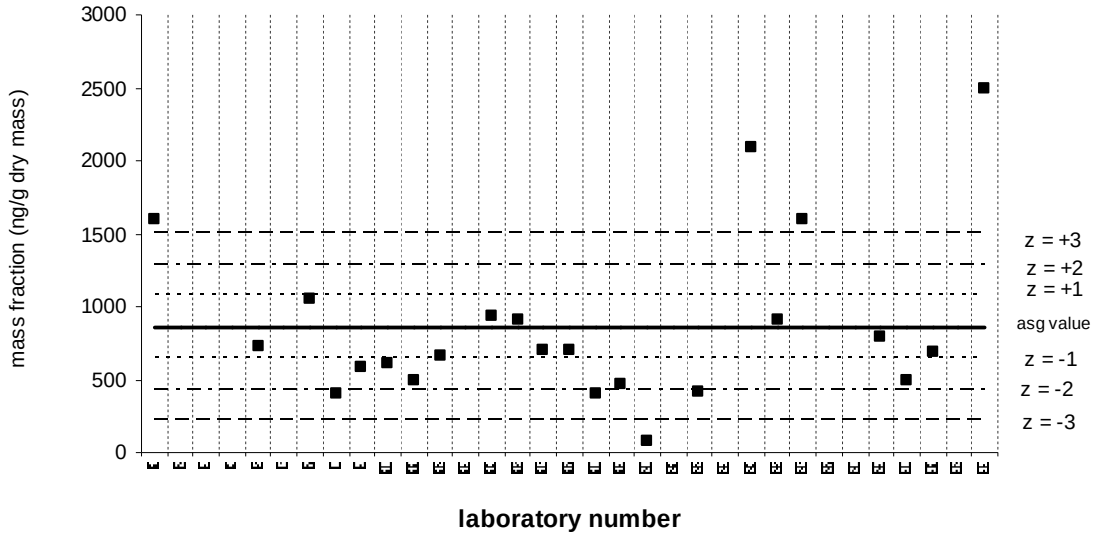
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-naphthalenes — QA10SED01

Assigned value = 860 ng/g (dry mass) s = 575 ng/g (dry mass) 95% CI = 235 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23

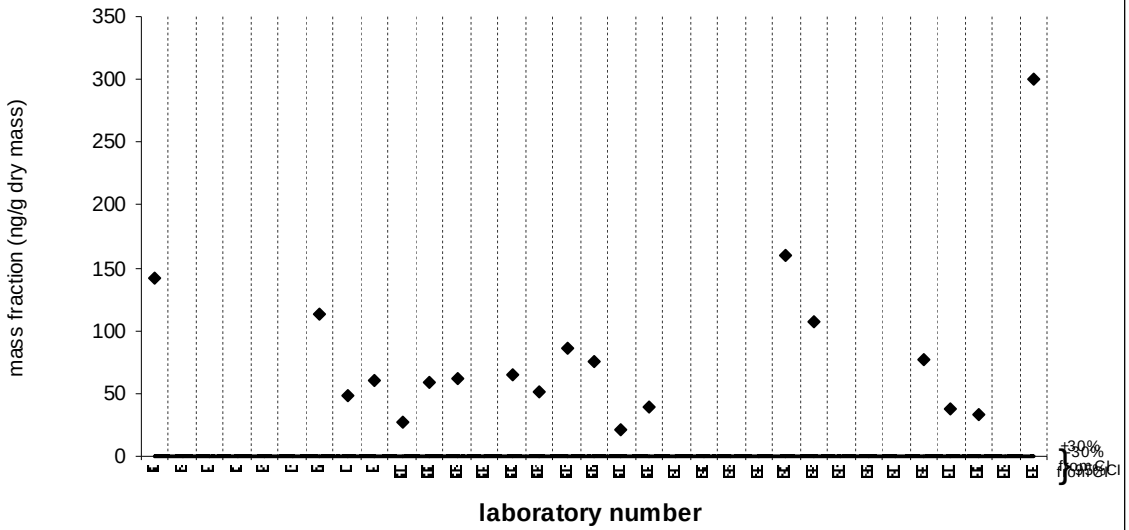


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-naphthalenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 19

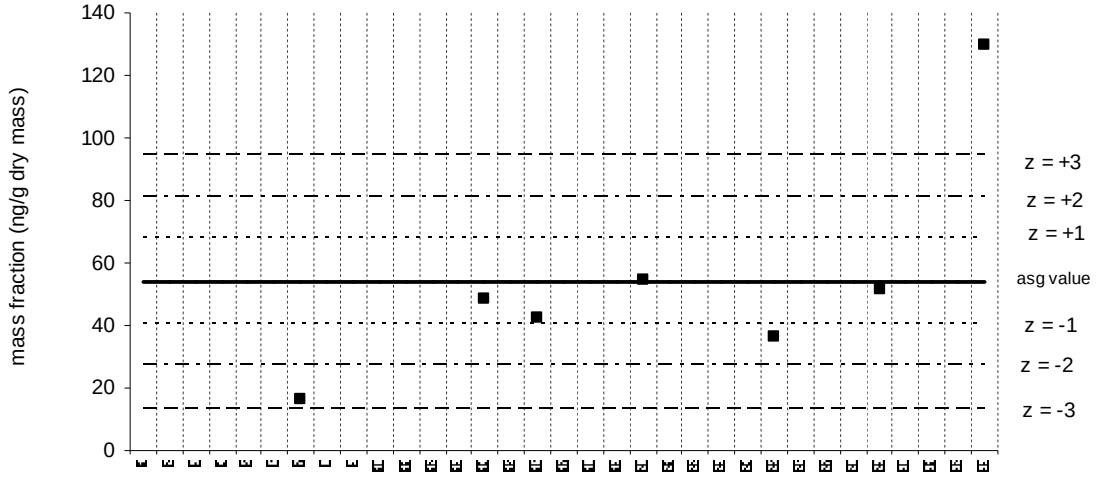


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-benzothiophenes — QA10SED01

Assigned value = 54.2 ng/g (dry mass) s = 35.8 ng/g (dry mass) 95% CI = 26.5 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 7



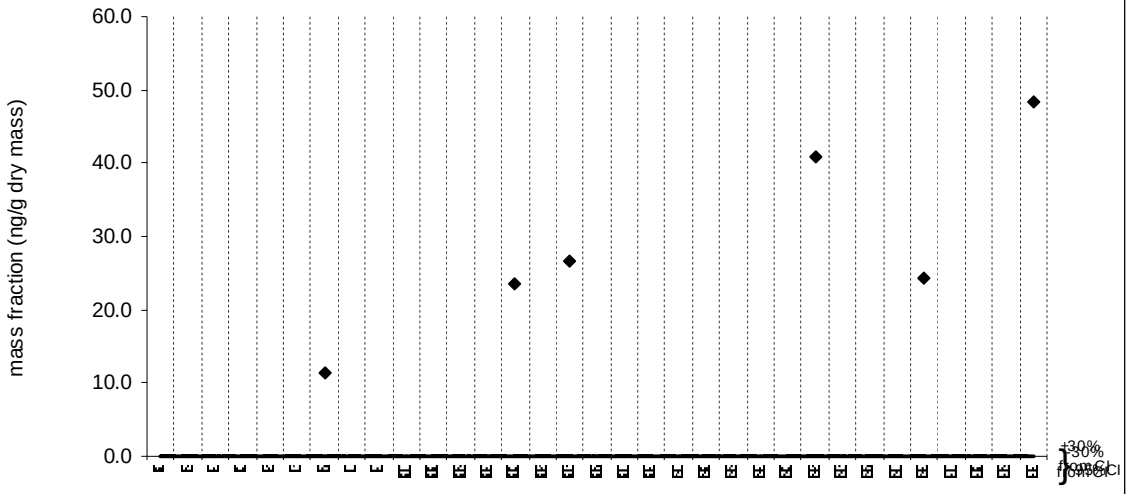
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-benzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6



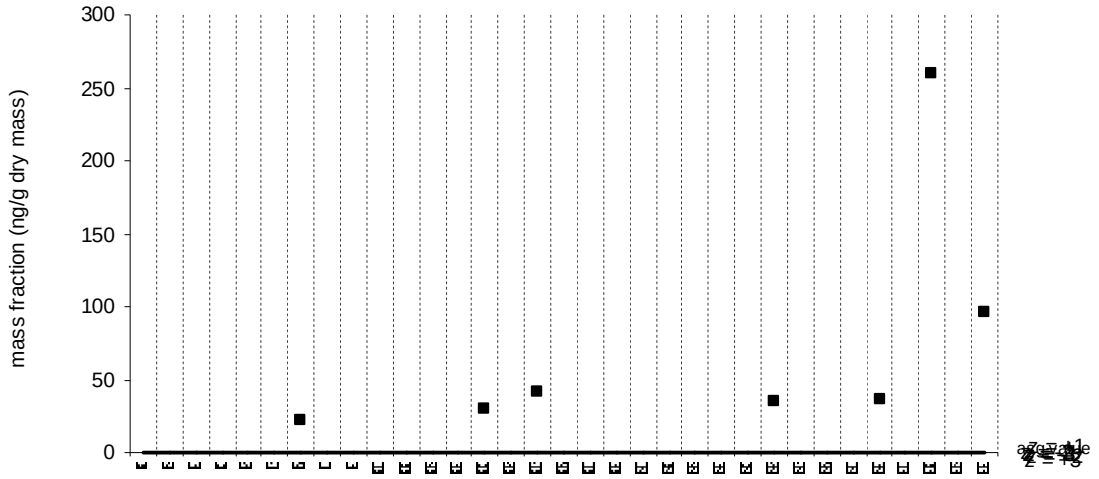
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-benzothiophenes **QA10SED01**

Assigned value = no target ng/g (dry mass)

Reported Results: 10 Quantitative Results: 8 Lab 23 reported 1600 ng/g (dry mass)



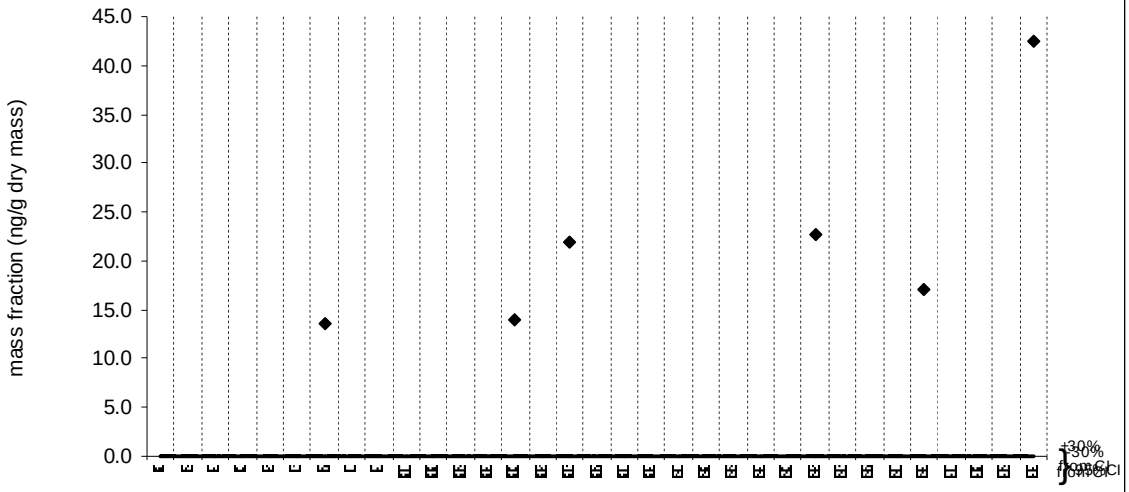
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-benzothiophenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 6



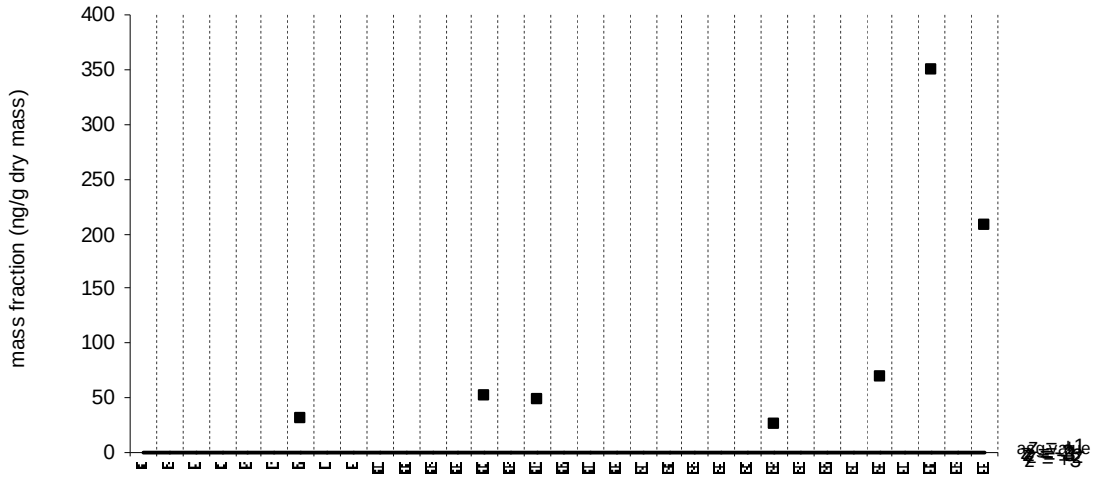
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-benzothiophenes **QA10SED01**

Assigned value = no target ng/g (dry mass)

Reported Results: 10 Quantitative Results: 7



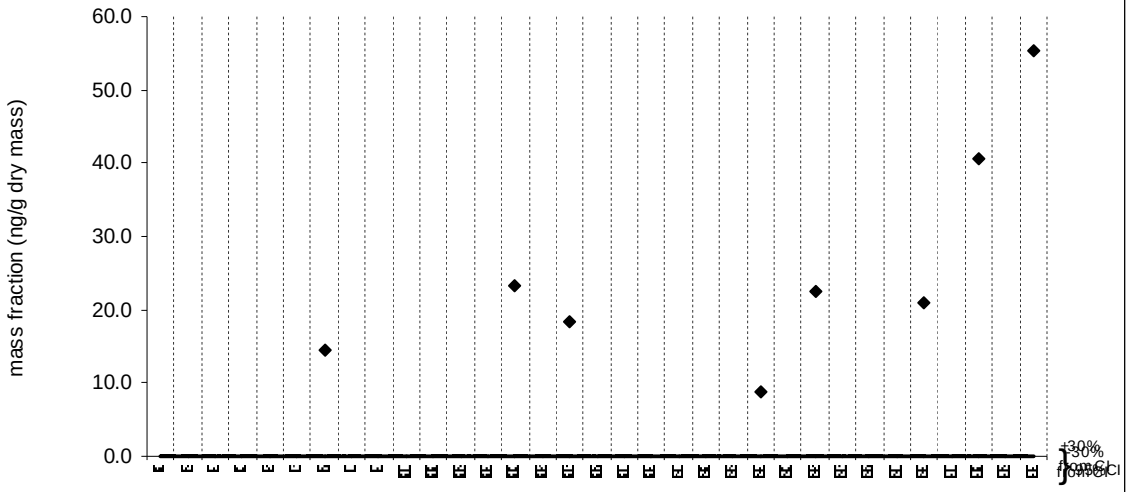
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-benzothiophenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 8



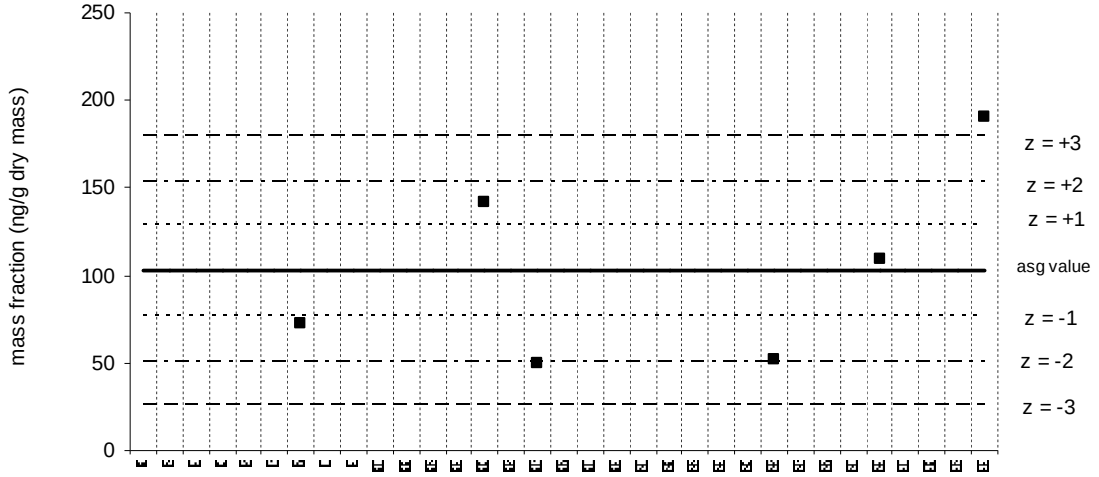
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-benzothiophenes — QA10SED01

Assigned value = 103 ng/g (dry mass) s = 56 ng/g (dry mass) 95% CI = 45 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6

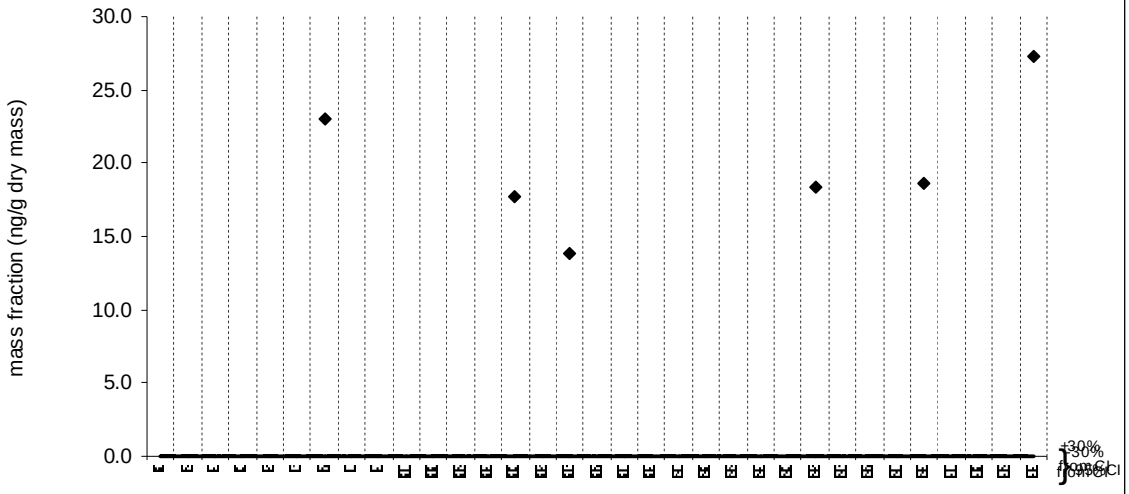


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-benzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6

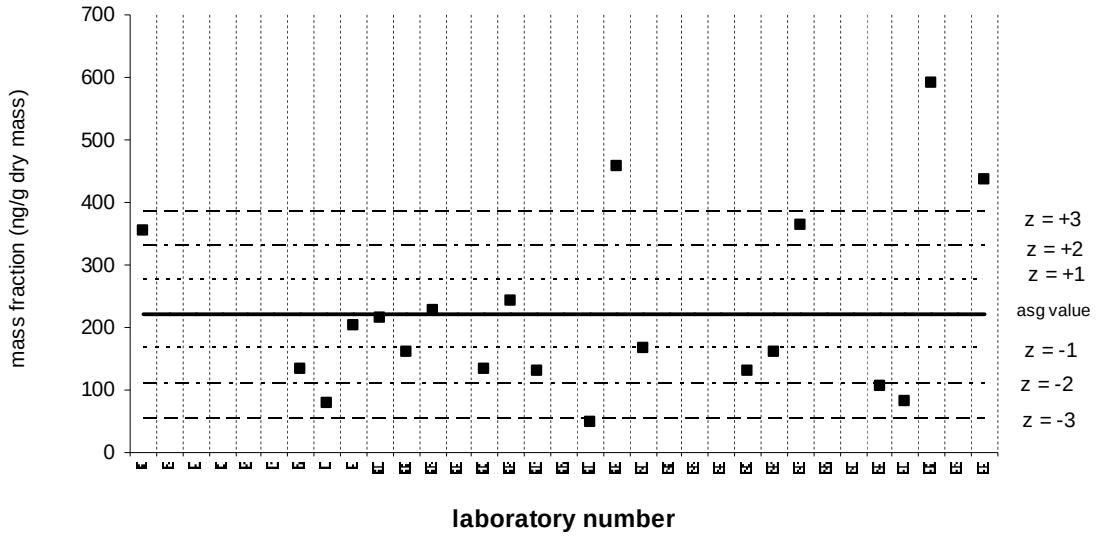


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-fluorenes **QA10SED01**

Assigned value = 221 ng/g (dry mass) s = 146 ng/g (dry mass) 95% CI = 64 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 21 Lab 5 reported 2480 ng/g (dry mass)



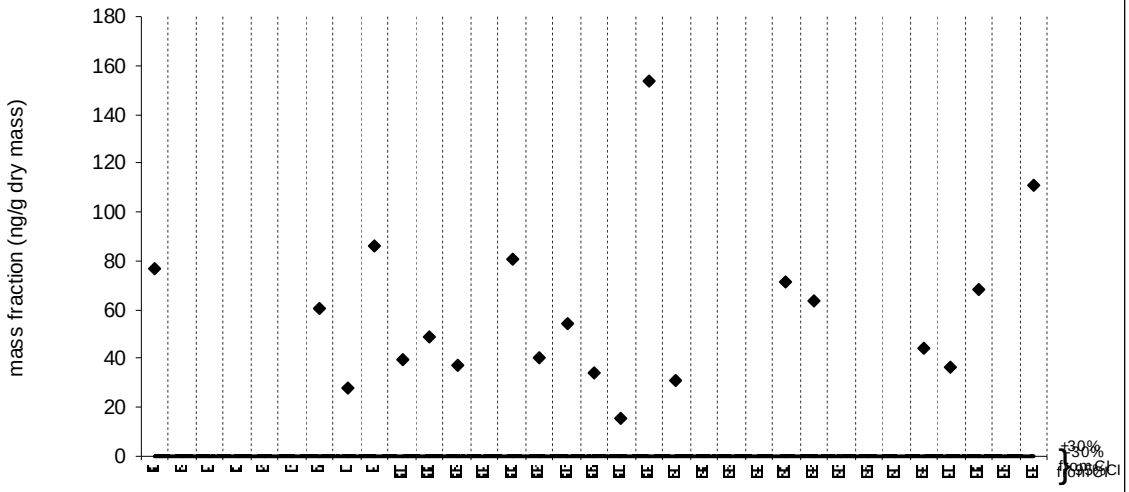
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-fluorenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 21 Lab 5 reported 323 ng/g (dry mass)



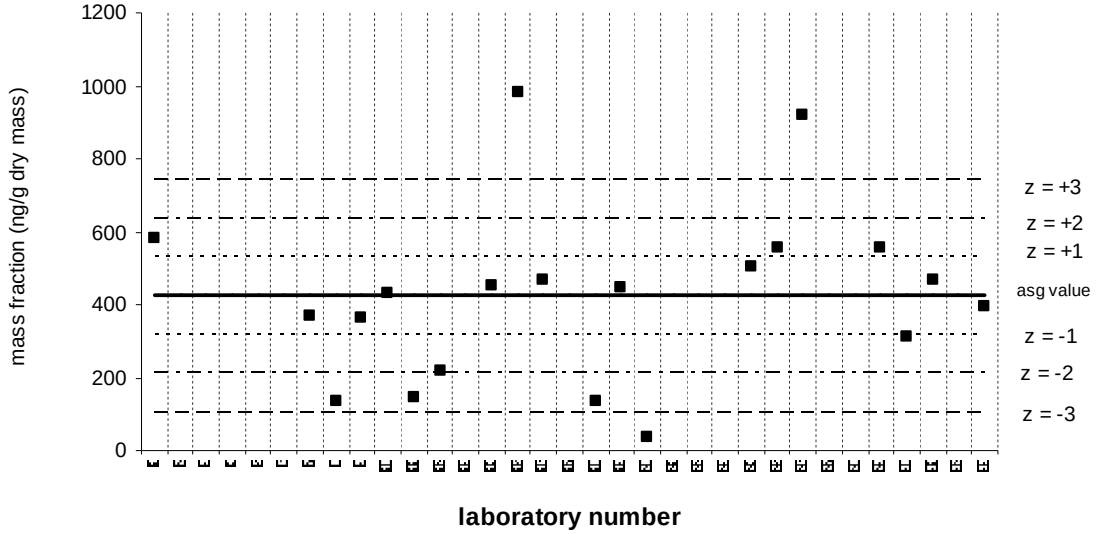
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-fluorenes — QA10SED01

Assigned value = 424 ng/g (dry mass) s = 239 ng/g (dry mass) 95% CI = 105 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 21 Lab 5 reported 2373 ng/g (dry mass)

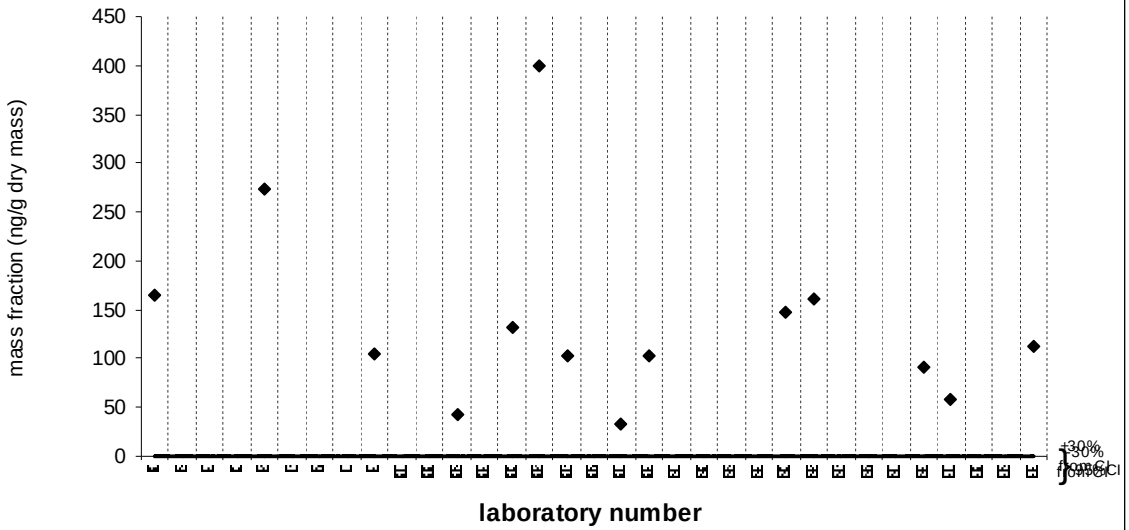


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-fluorenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 14

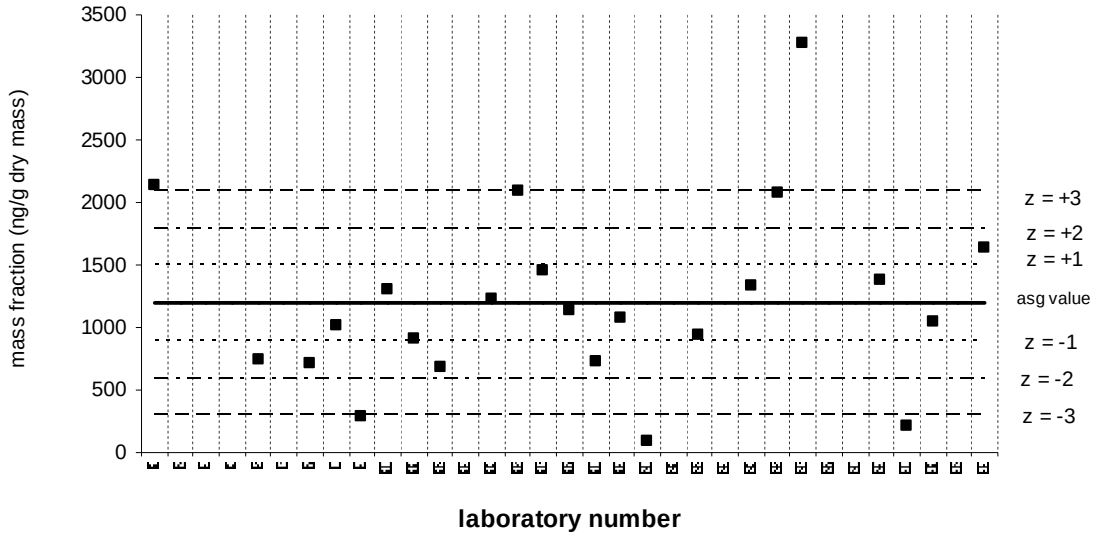


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-fluorenes **QA10SED01**

Assigned value = 1196 ng/g (dry mass) s = 715 ng/g (dry mass) 95% CI = 292 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23

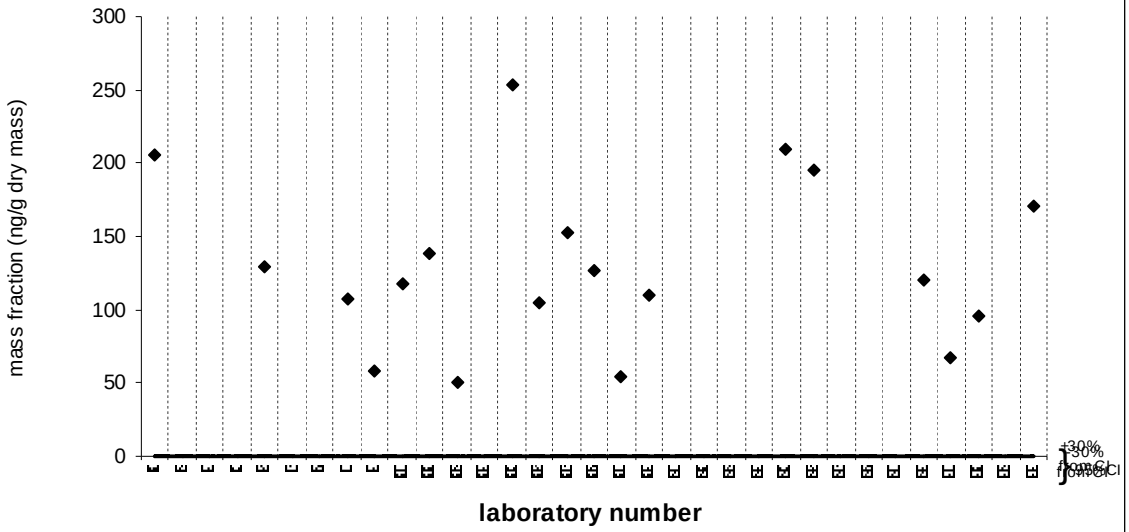


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-fluorenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 19

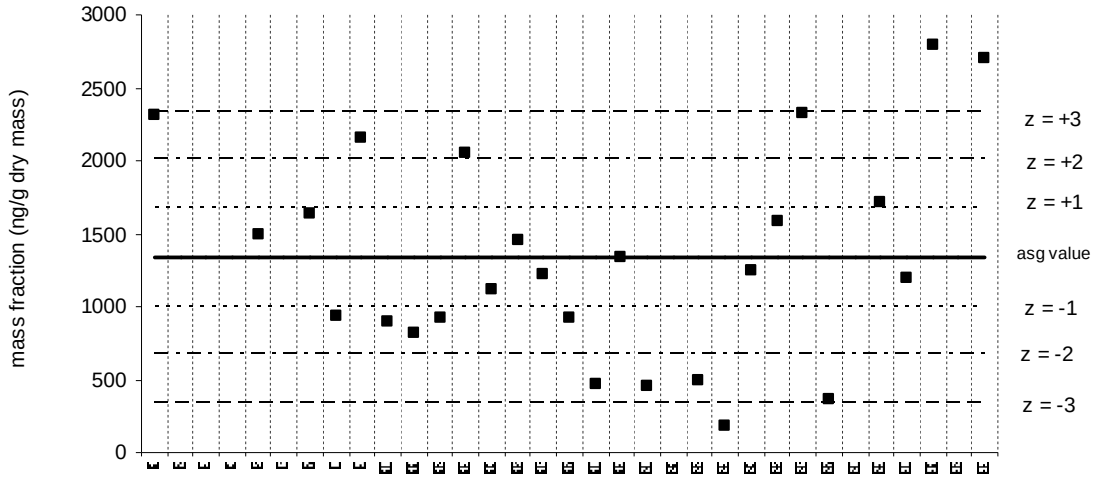


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-phenanthrenes/anthracenes — QA10SED01

Assigned value = 1338 ng/g (dry mass) s = 721 ng/g (dry mass) 95% CI = 277 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 26

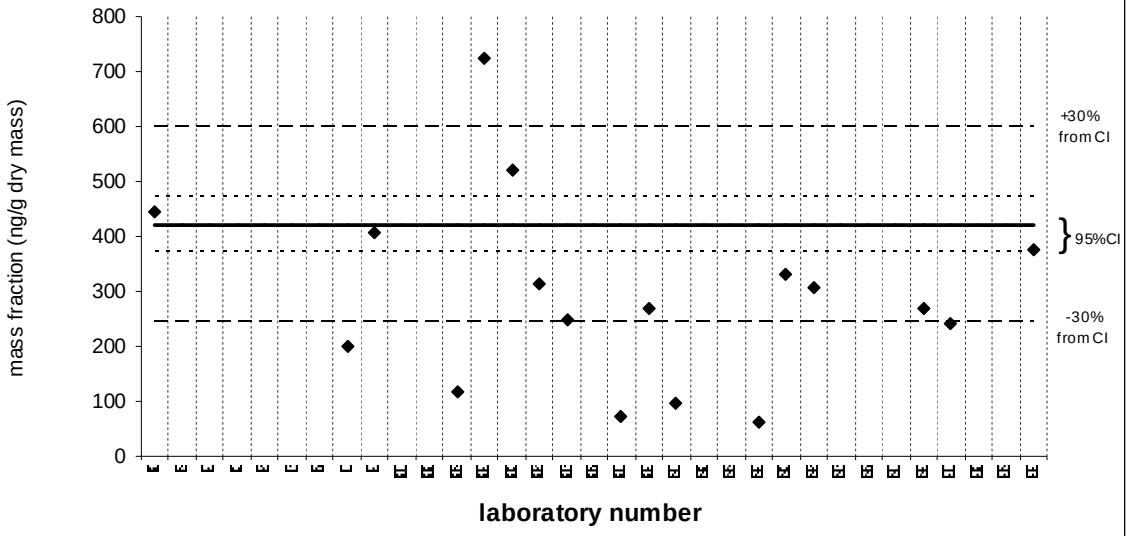


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-phenanthrenes/anthracenes — SRM 1941b

Target Value = 422 ng/g (dry mass) ; 95% CI 50 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 17

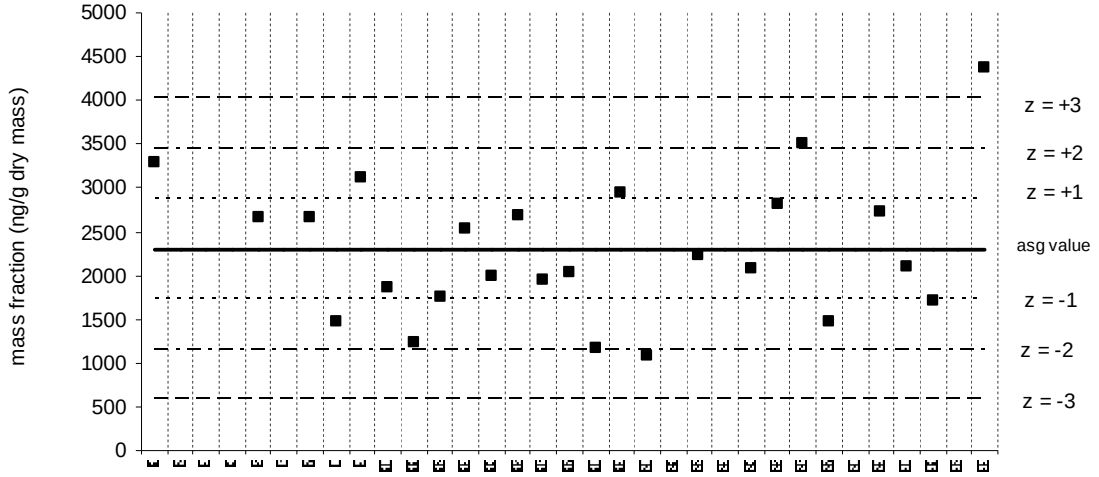


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-phenanthrenes/anthracenes — QA10SED01

Assigned value = 2300 ng/g (dry mass) s = 795 ng/g (dry mass) 95% CI = 311 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 25

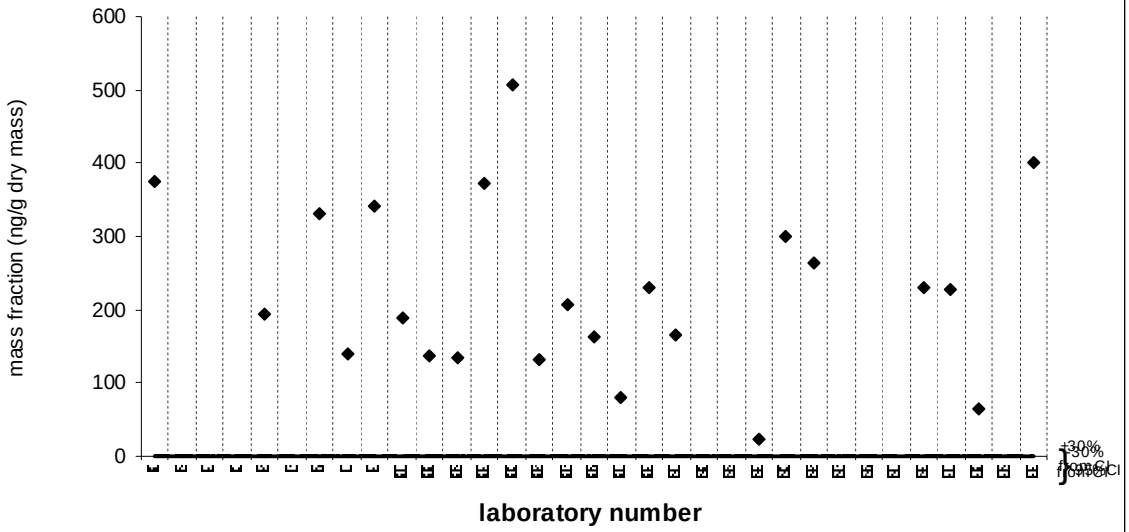


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-phenanthrenes/anthracenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 23 Quantitative Results: 23

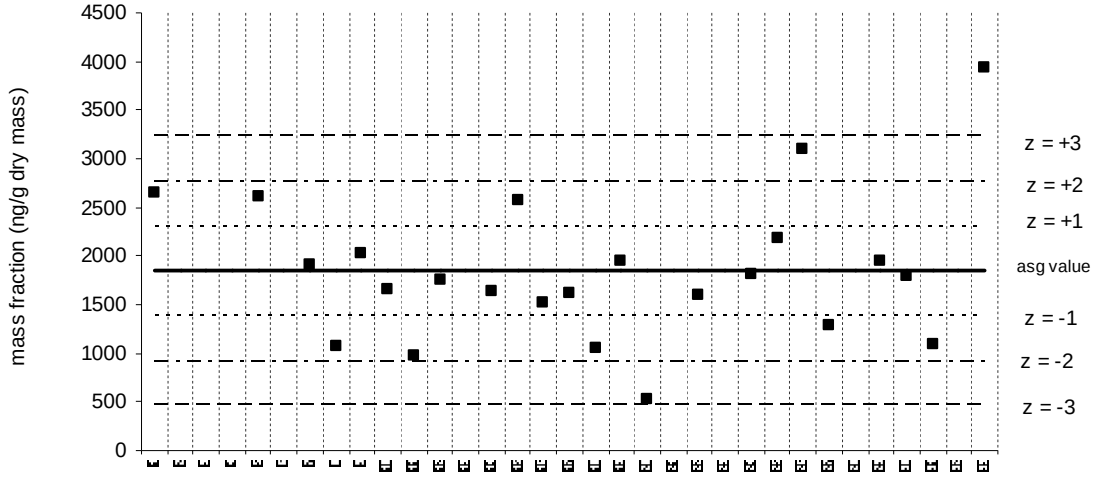


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-phenanthrenes/anthracenes — QA10SED01

Assigned value = 1845 ng/g (dry mass) s = 744 ng/g (dry mass) 95% CI = 297 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 24

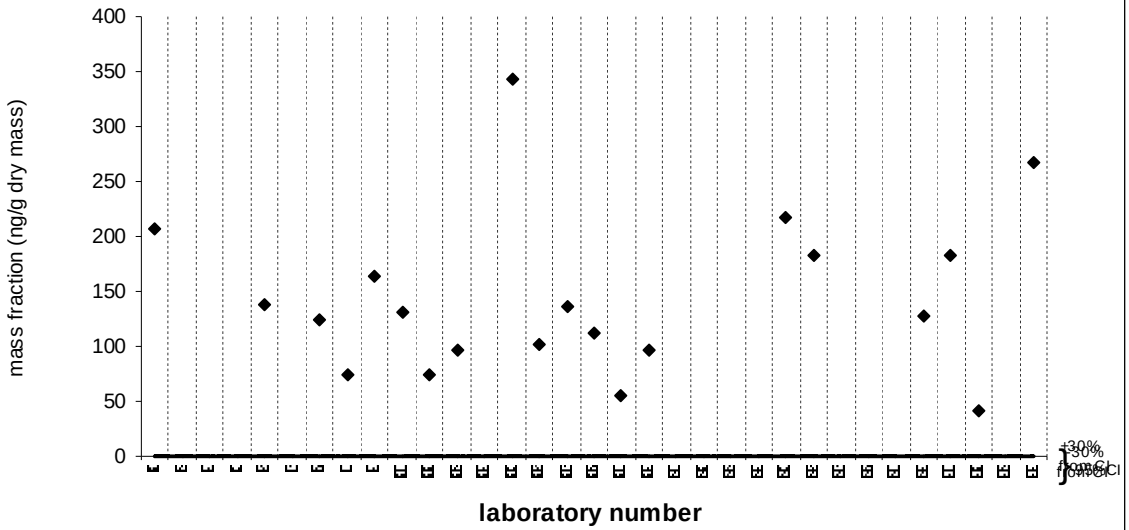


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-phenanthrenes/anthracenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20

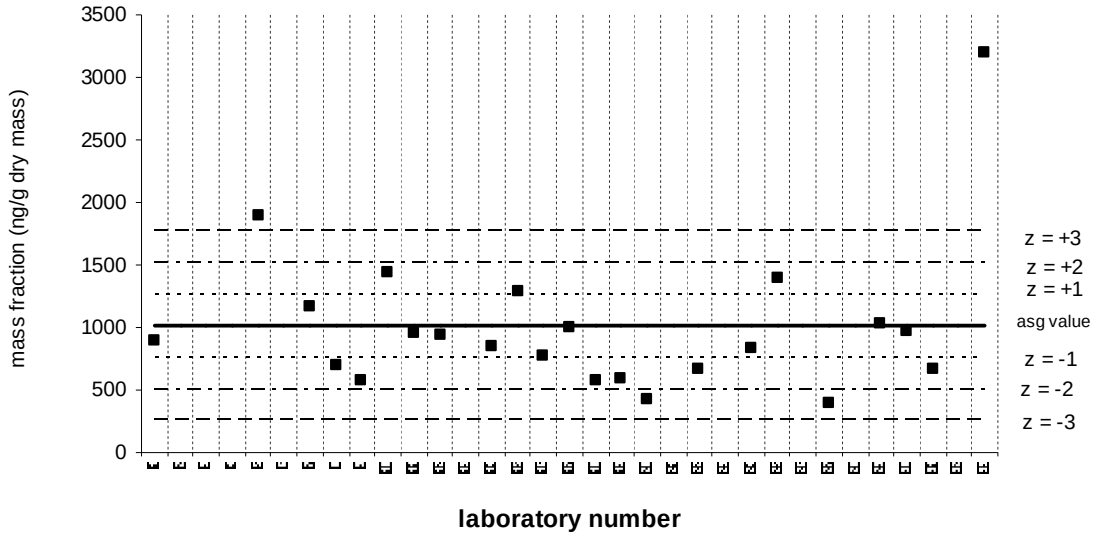


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-phenanthrenes/anthracenes — QA10SED01

Assigned value = 1010 ng/g (dry mass) s = 593 ng/g (dry mass) 95% CI = 242 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24 Lab 26 reported 4877 ng/g (dry mass)

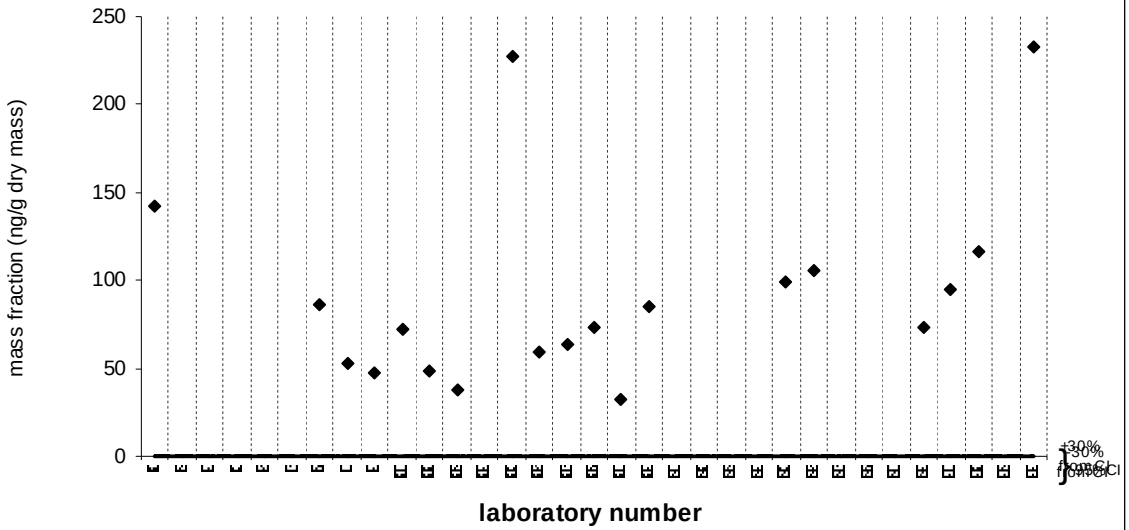


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-phenanthrenes/anthracenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 19

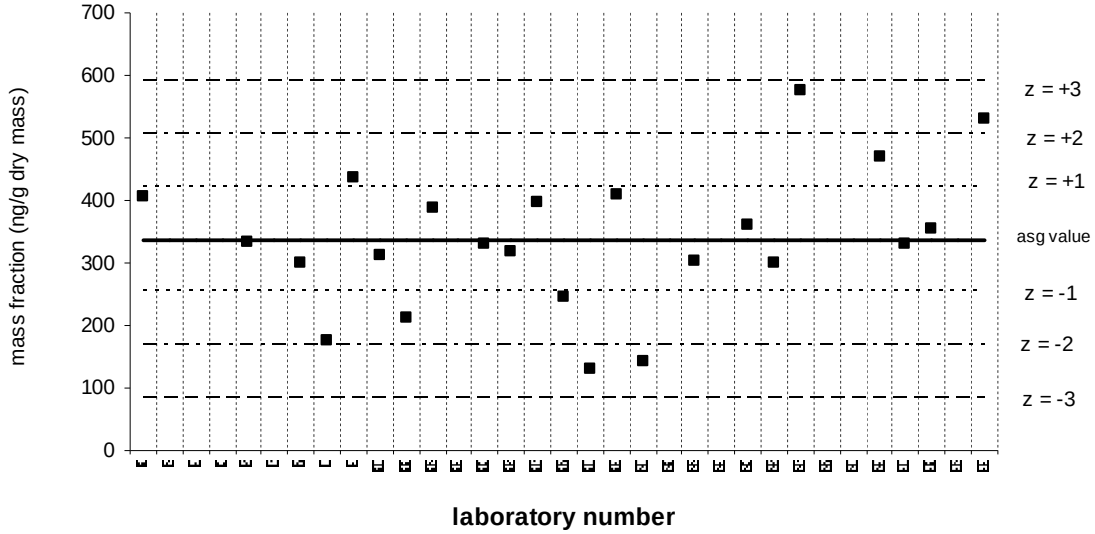


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-dibenzothiophenes — QA10SED01

Assigned value = 338 ng/g (dry mass) s = 112 ng/g (dry mass) 95% CI = 46 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 23

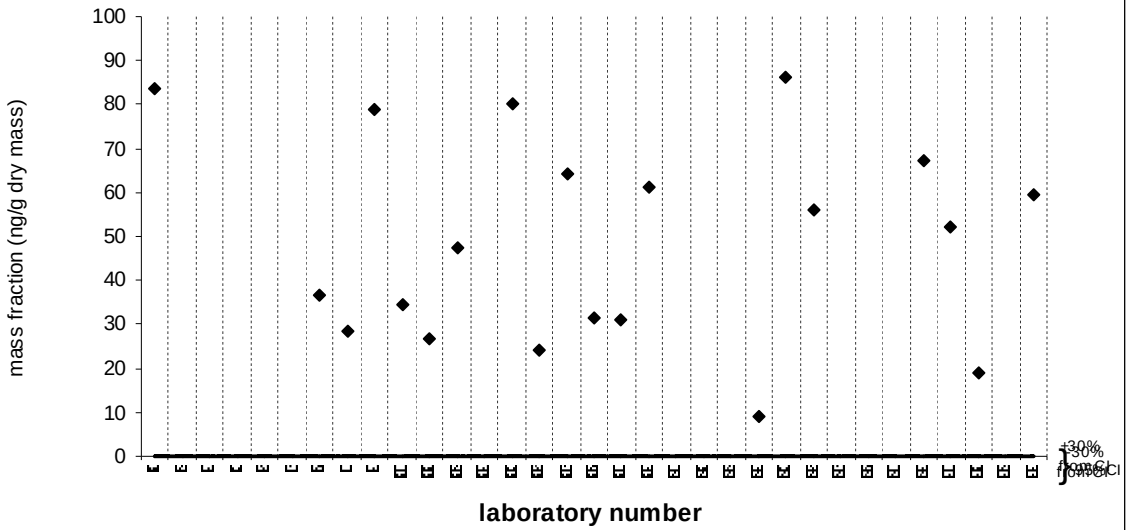


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-dibenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20

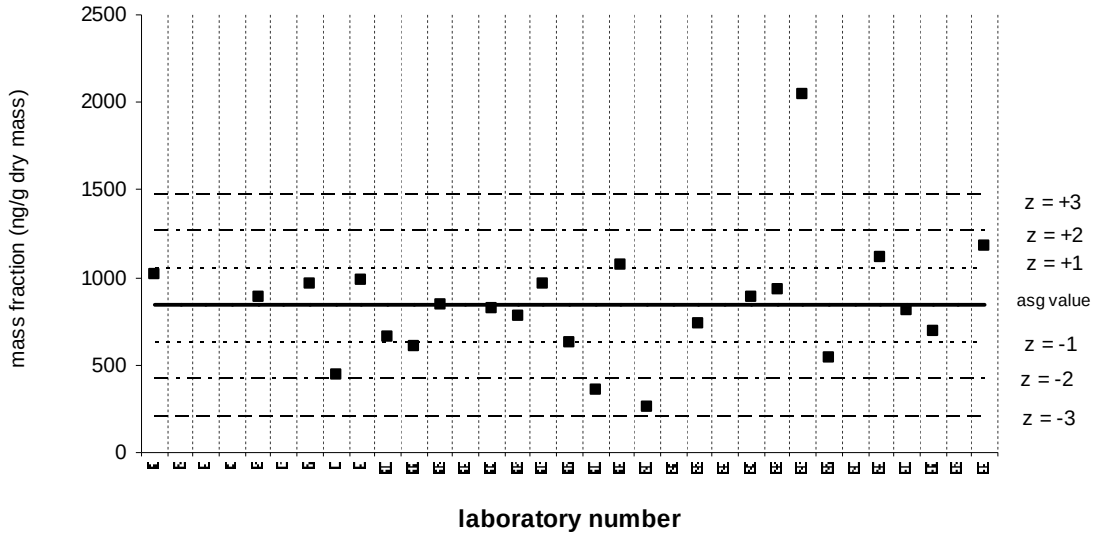


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-dibenzothiophenes — QA10SED01

Assigned value = 842 ng/g (dry mass) s = 348 ng/g (dry mass) 95% CI = 139 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24

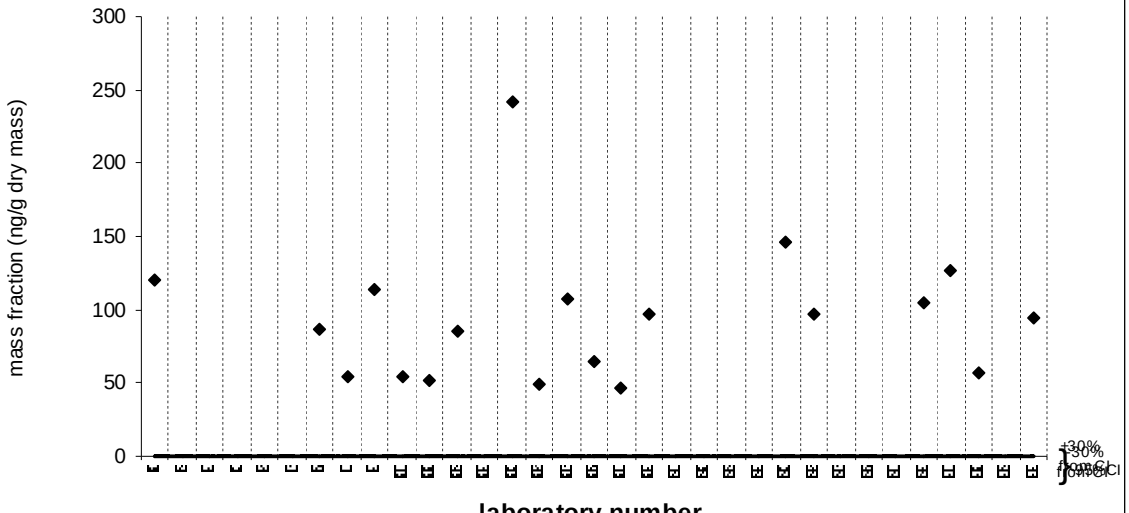


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-dibenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 19

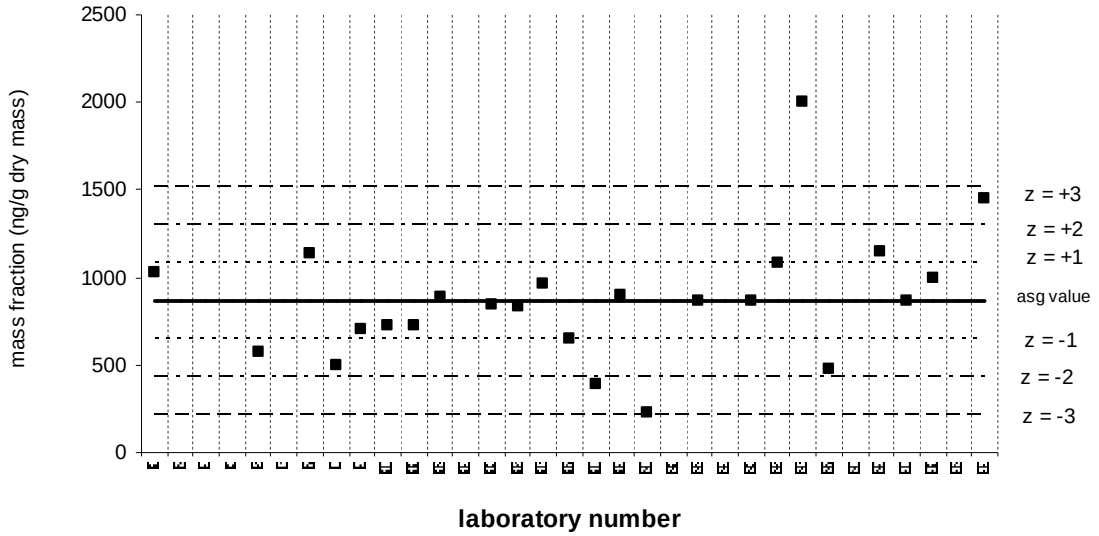


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-dibenzothiophenes **QA10SED01**

Assigned value = 868 ng/g (dry mass) s = 362 ng/g (dry mass) 95% CI = 145 ng/g (dry mass)

Reported Results: 24 Quantitative Results: 24

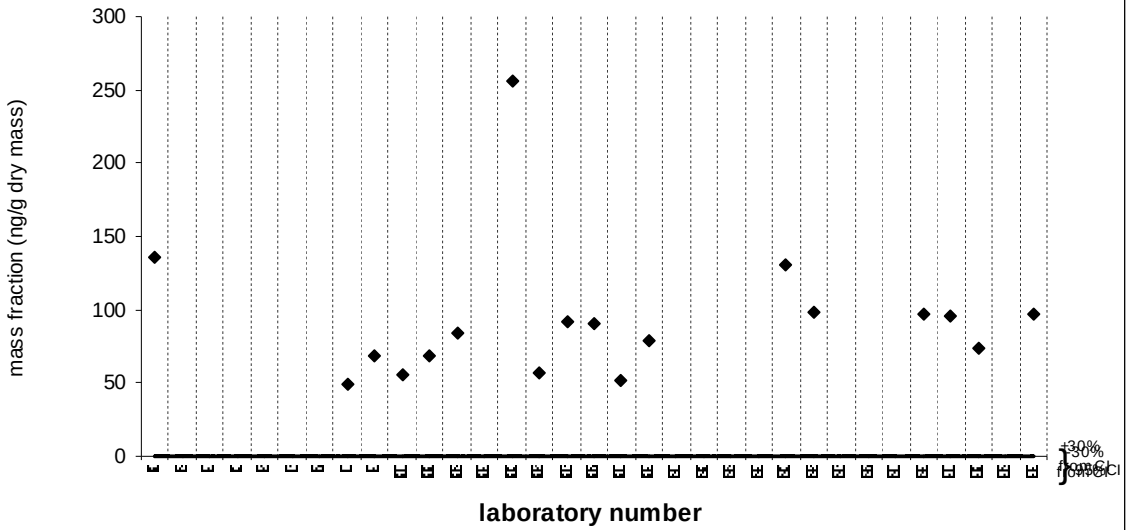


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-dibenzothiophenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 18

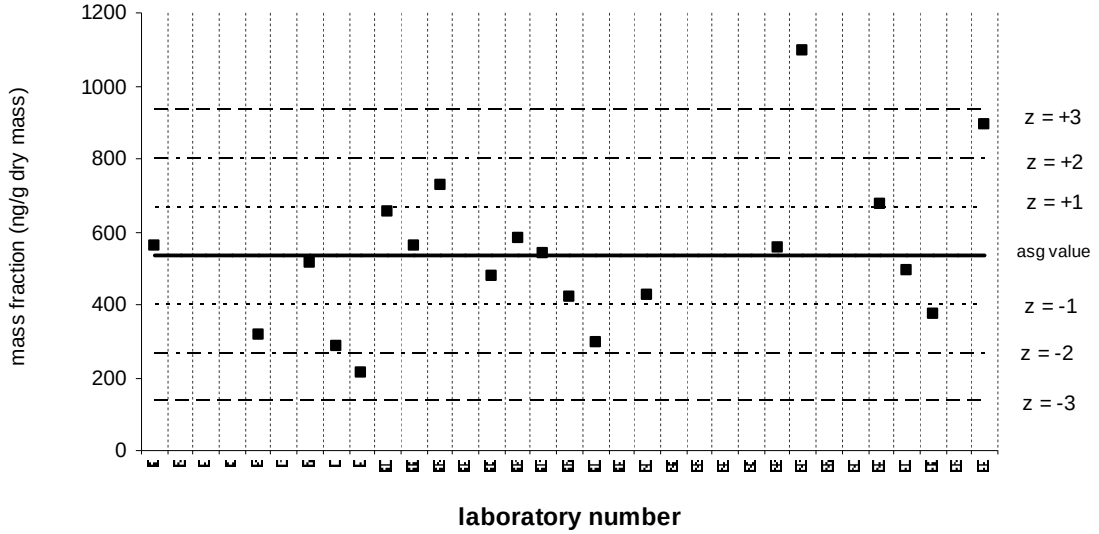


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-dibenzothiophenes — QA10SED01

Assigned value = 533 ng/g (dry mass) s = 211 ng/g (dry mass) 95% CI = 92 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20

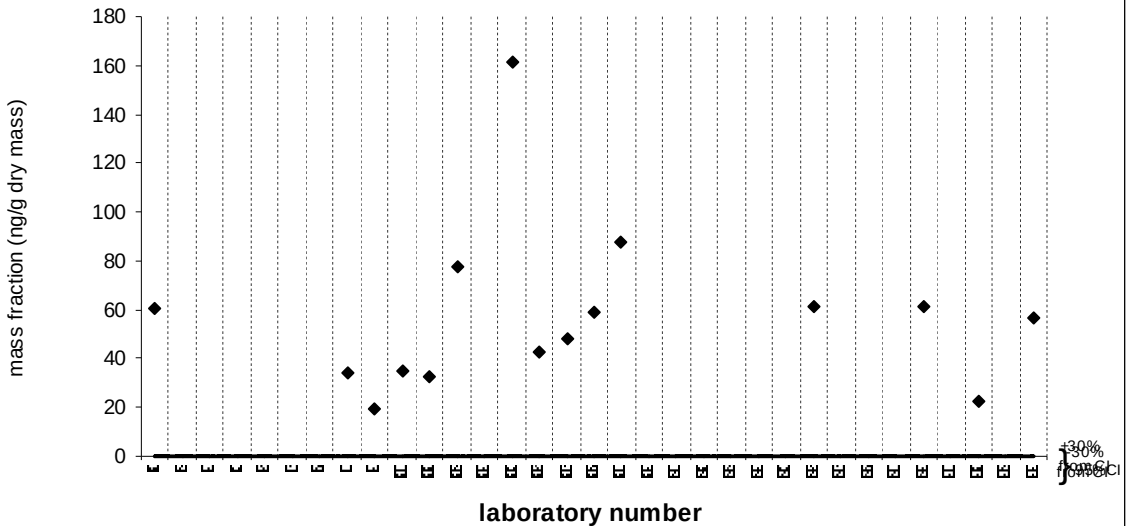


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-dibenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 15

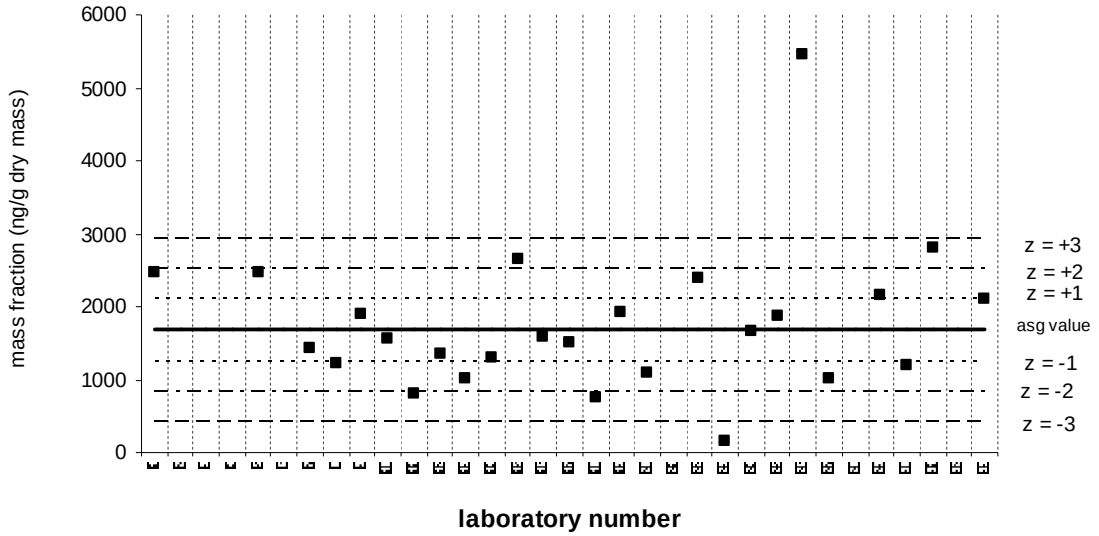


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-fluoranthenes/pyrenes — QA10SED01

Assigned value = 1677 ng/g (dry mass) s = 596 ng/g (dry mass) 95% CI = 238 ng/g (dry mass)

Reported Results: 26 Quantitative Results: 26

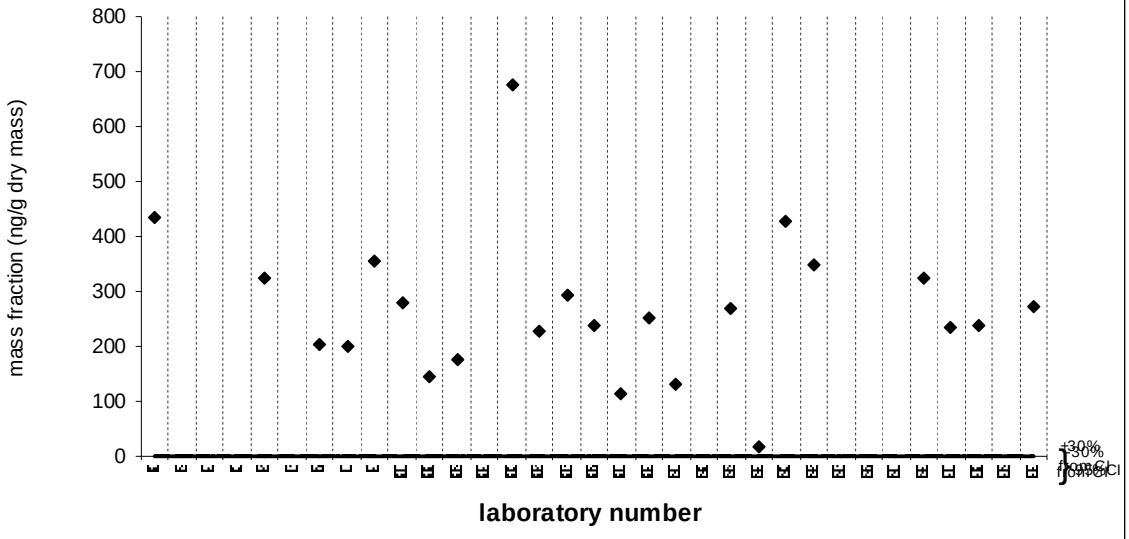


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-fluoranthenes/pyrenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 23 Quantitative Results: 23

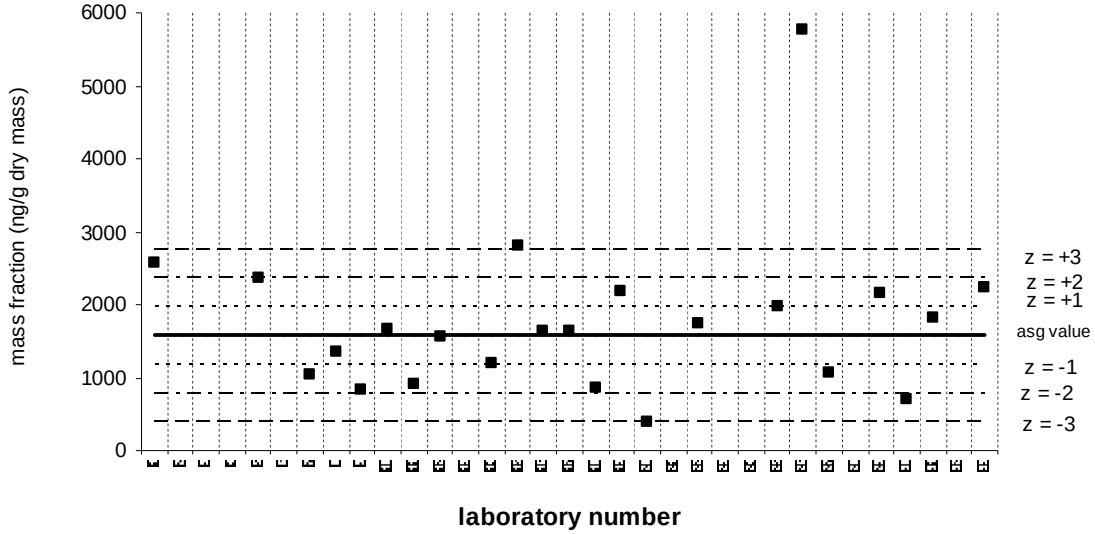


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-fluoranthenes/pyrenes — QA10SED01

Assigned value = 1575 ng/g (dry mass) s = 655 ng/g (dry mass) 95% CI = 274 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 23

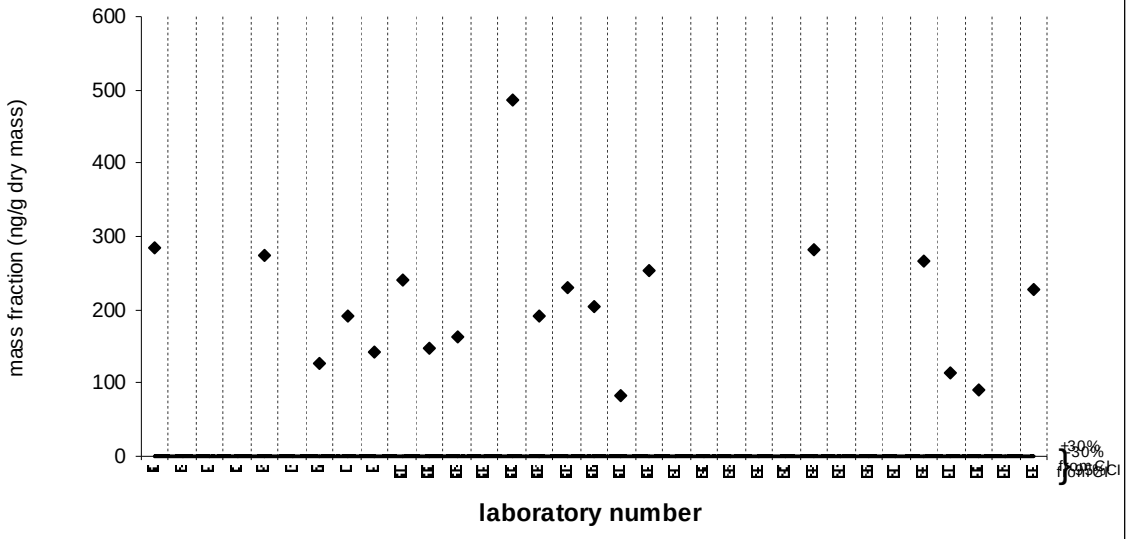


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-fluoranthenes/pyrenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 19

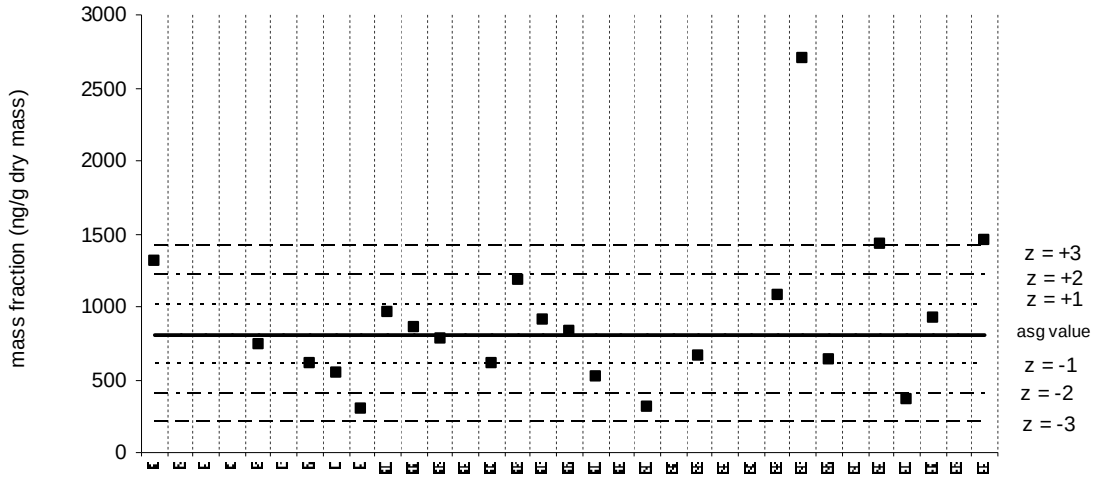


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-fluoranthenes/pyrenes — QA10SED01

Assigned value = 811 ng/g (dry mass) s = 341 ng/g (dry mass) 95% CI = 146 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 22

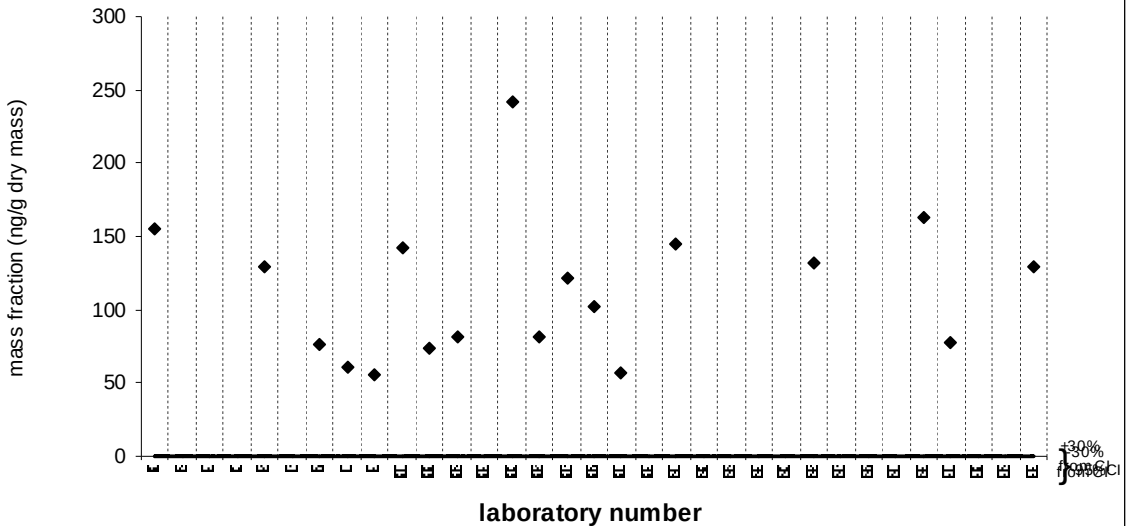


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-fluoranthenes/pyrenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 18

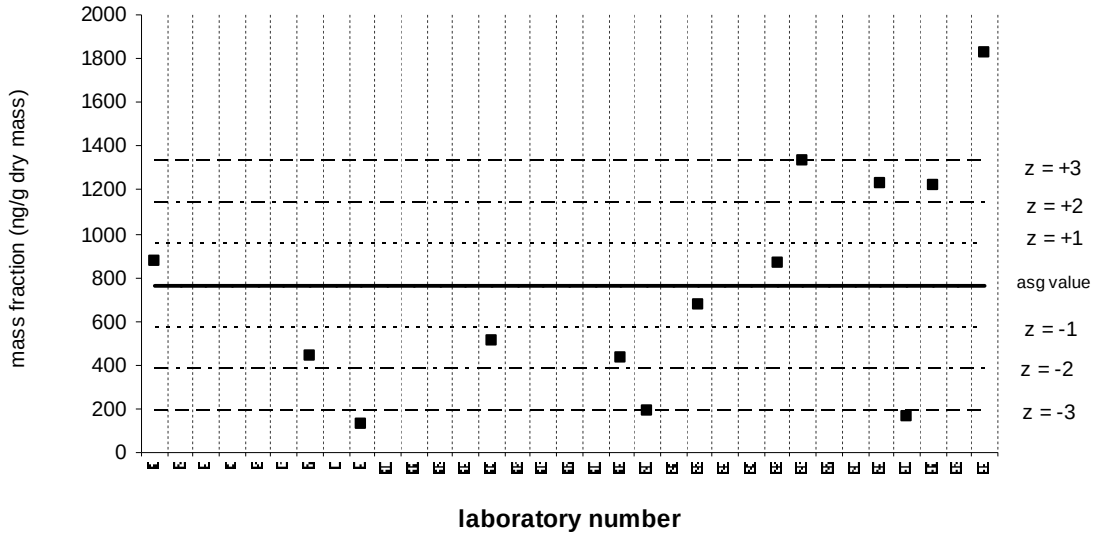


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-fluoranthenes/pyrenes — QA10SED01

Assigned value = 762 ng/g (dry mass) s = 522 ng/g (dry mass) 95% CI = 284 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 13

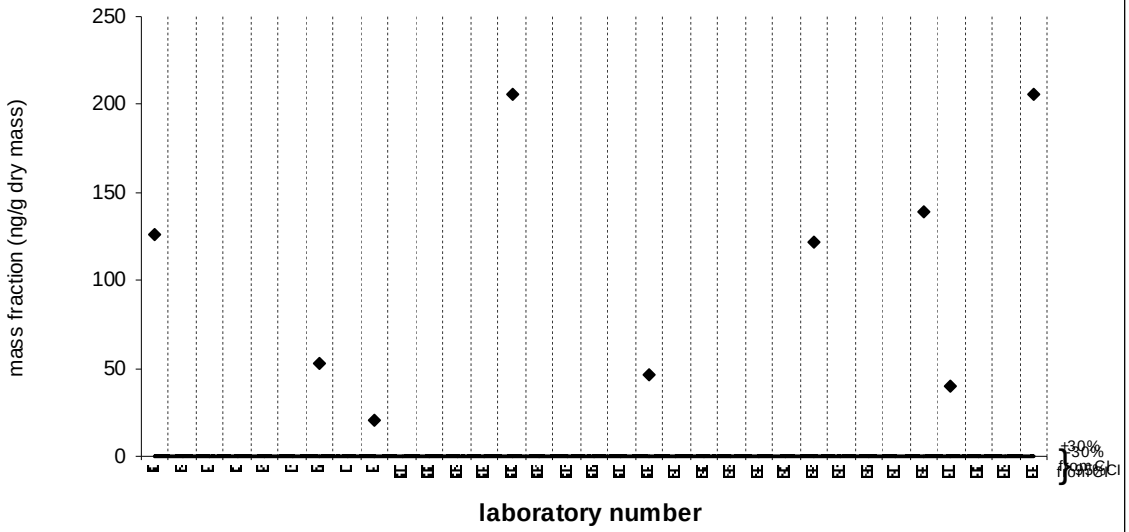


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-fluoranthenes/pyrenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 9

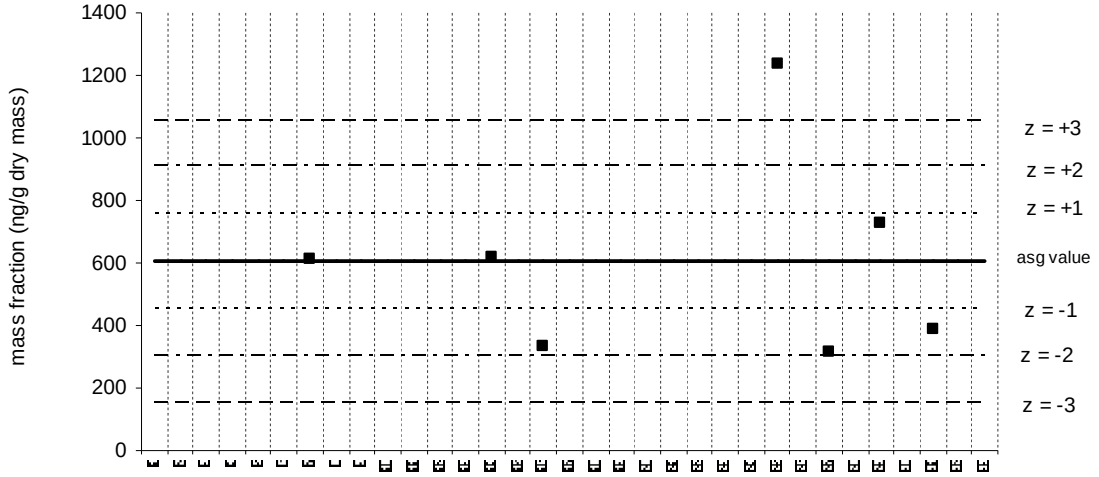


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-naphthobenzothiophenes — QA10SED01

Assigned value = 604 ng/g (dry mass) s = 322 ng/g (dry mass) 95% CI = 238 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 7

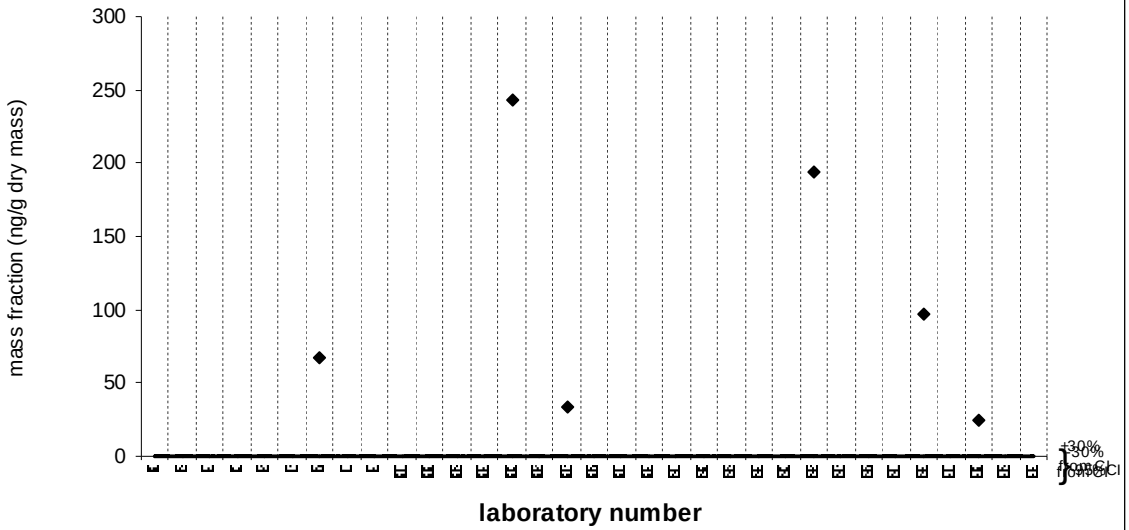


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-naphthobenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 6 Quantitative Results: 6

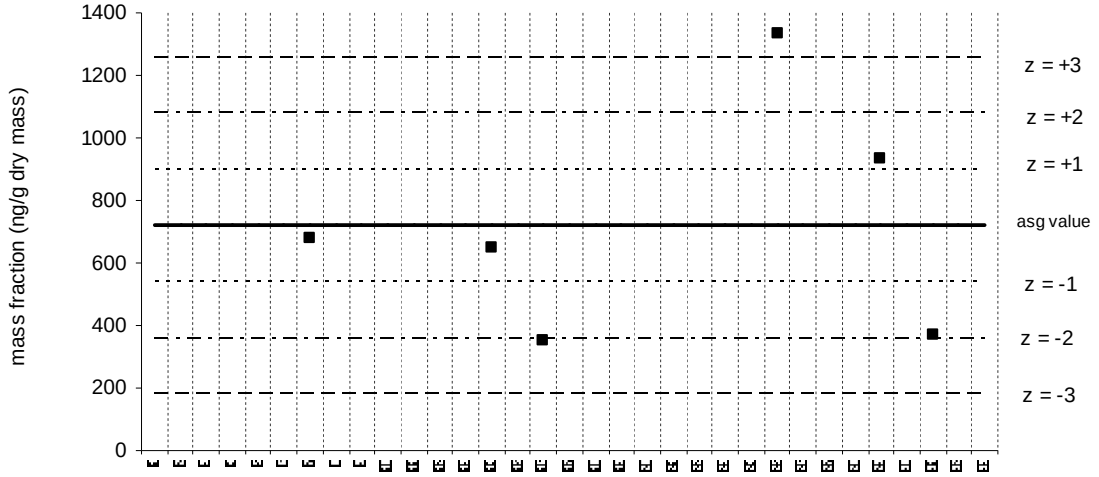


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-naphthobenzothiophenes — QA10SED01

Assigned value = 719 ng/g (dry mass) s = 371 ng/g (dry mass) 95% CI = 297 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6



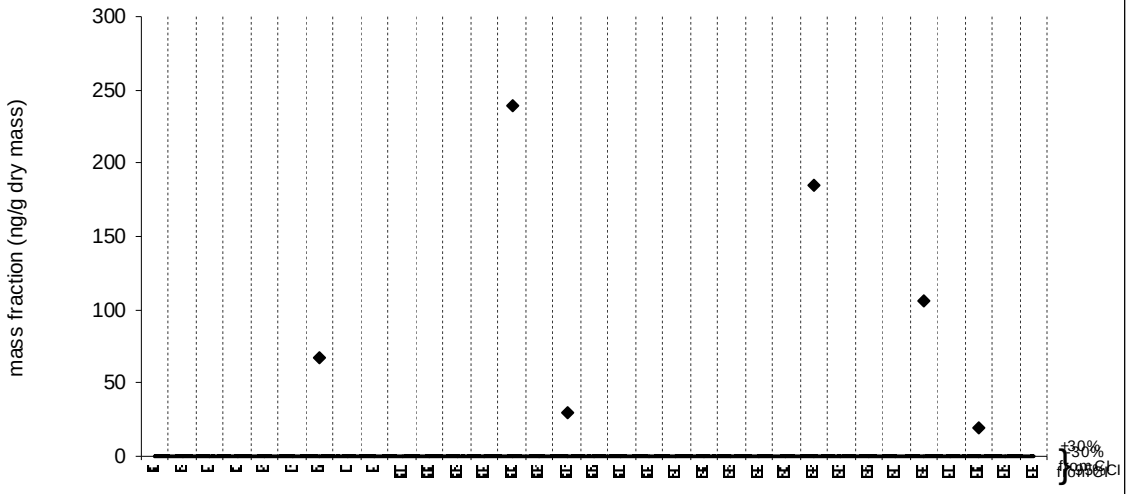
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-naphthobenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 6 Quantitative Results: 6



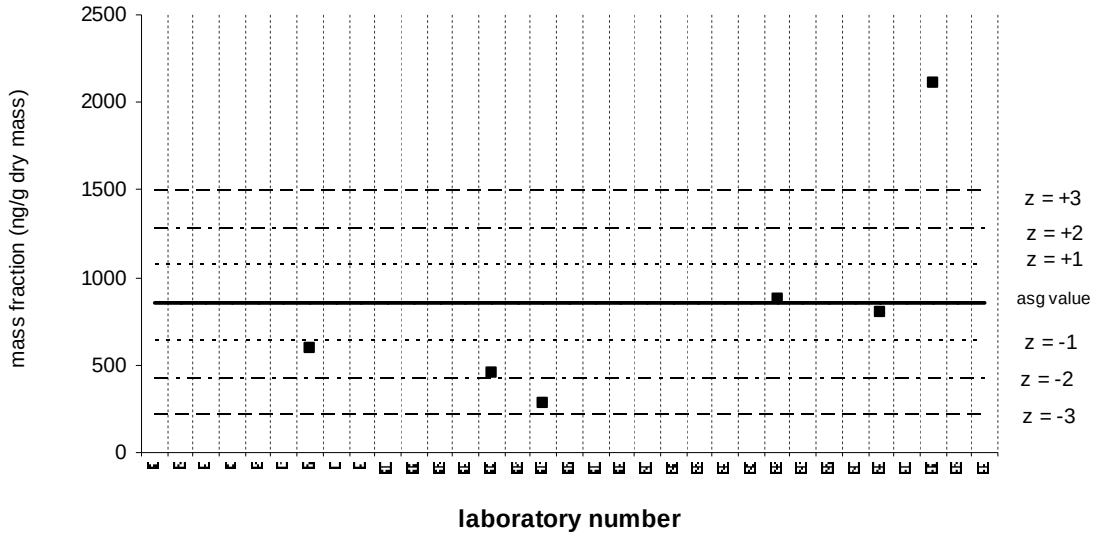
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-naphthobenzothiophenes — QA10SED01

Assigned value = 853 ng/g (dry mass) s = 653 ng/g (dry mass) 95% CI = 523 ng/g (dry mass)

Reported Results: 8 Quantitative Results: 6

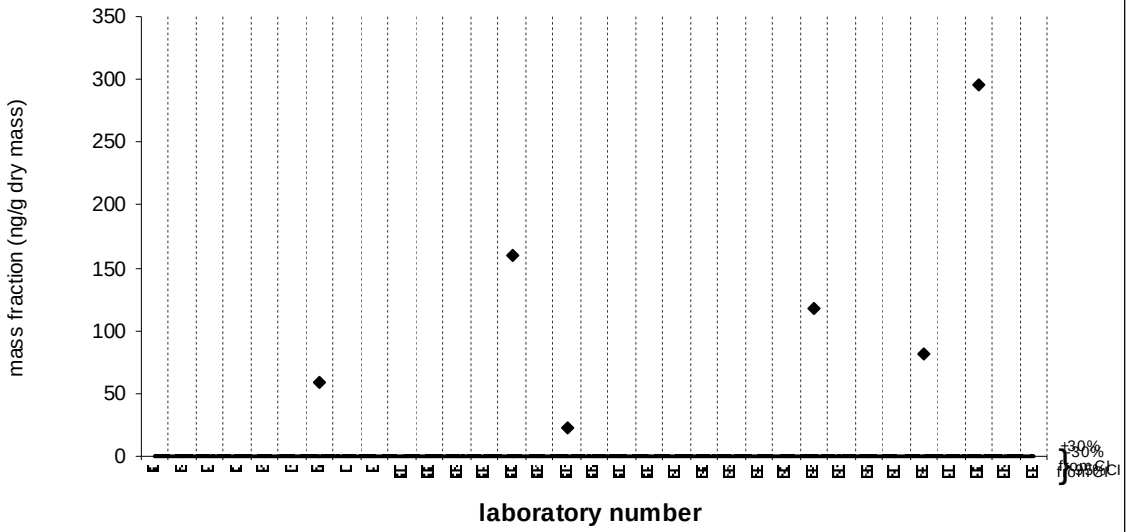


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-naphthobenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 6

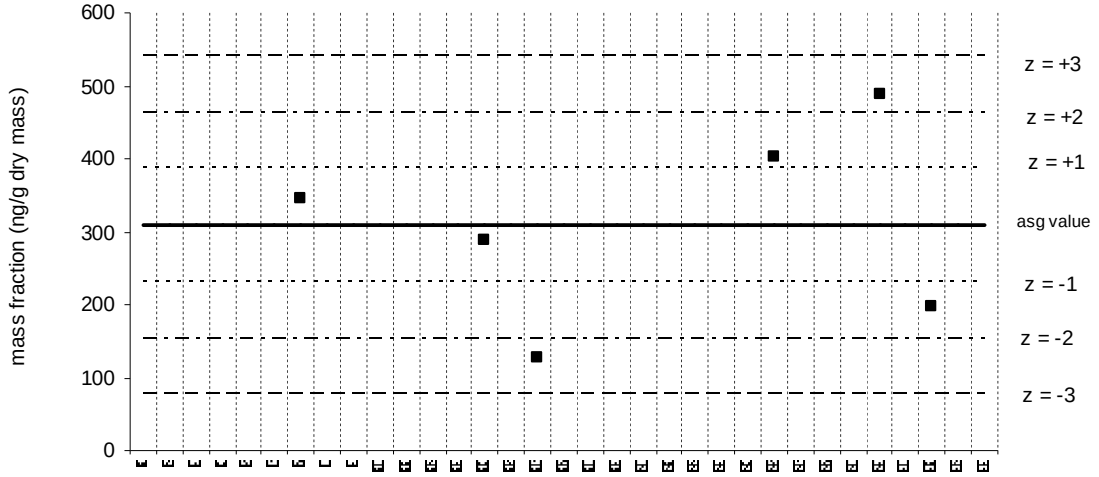


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-naphthobenzothiophenes — QA10SED01

Assigned value = 309 ng/g (dry mass) s = 133 ng/g (dry mass) 95% CI = 107 ng/g (dry mass)

Reported Results: 7 Quantitative Results: 6

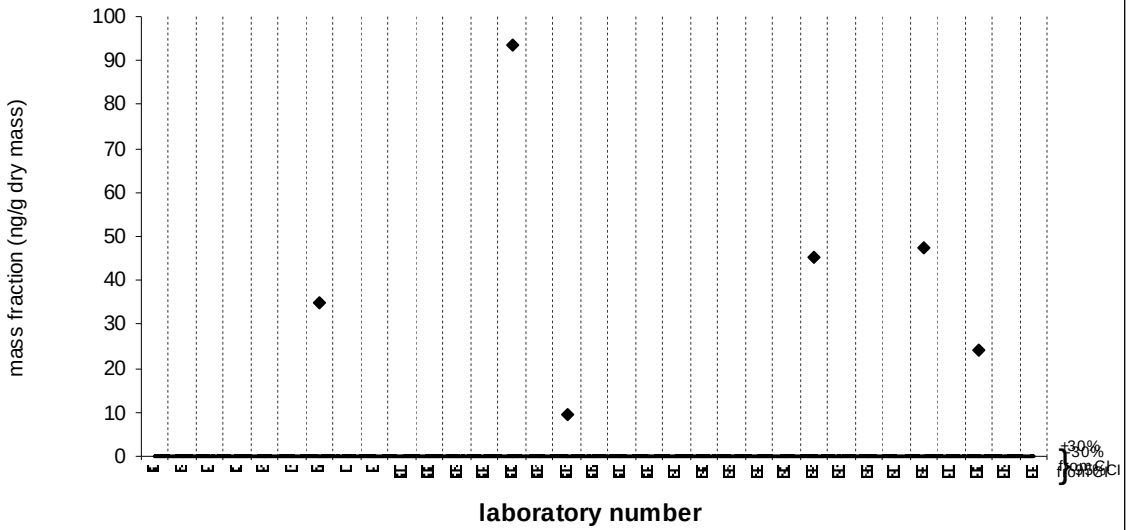


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-naphthobenzothiophenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 7 Quantitative Results: 6

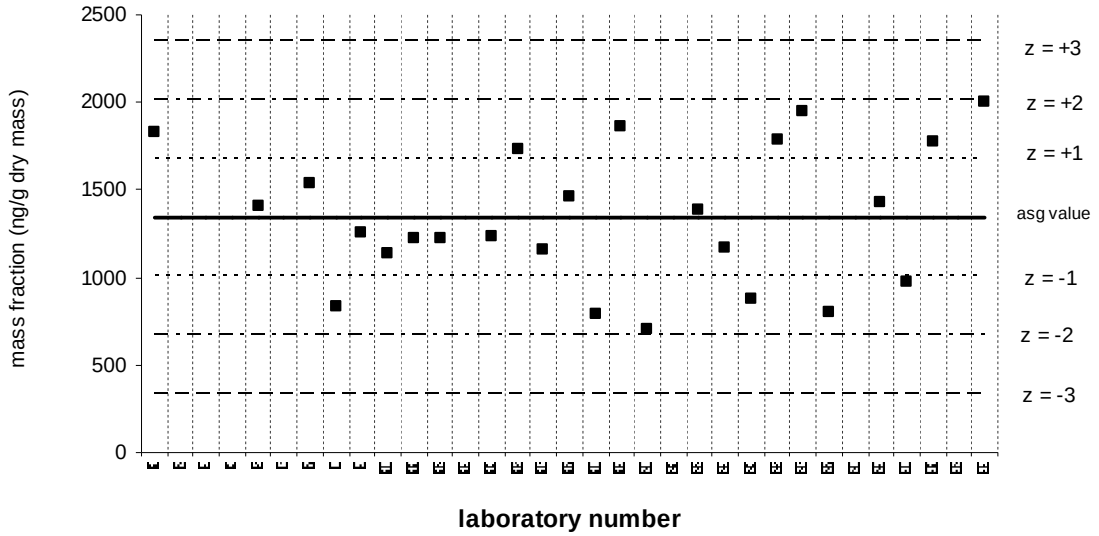


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C1-B[a]A/chrysenes — QA10SED01

Assigned value = 1342 ng/g (dry mass) s = 392 ng/g (dry mass) 95% CI = 154 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 25

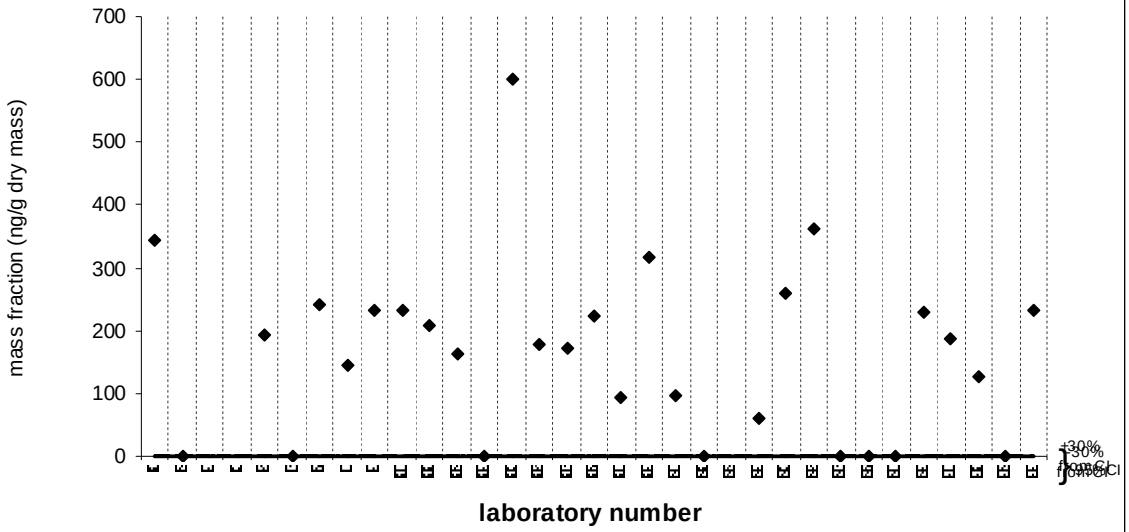


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C1-B[a]A/chrysenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 22

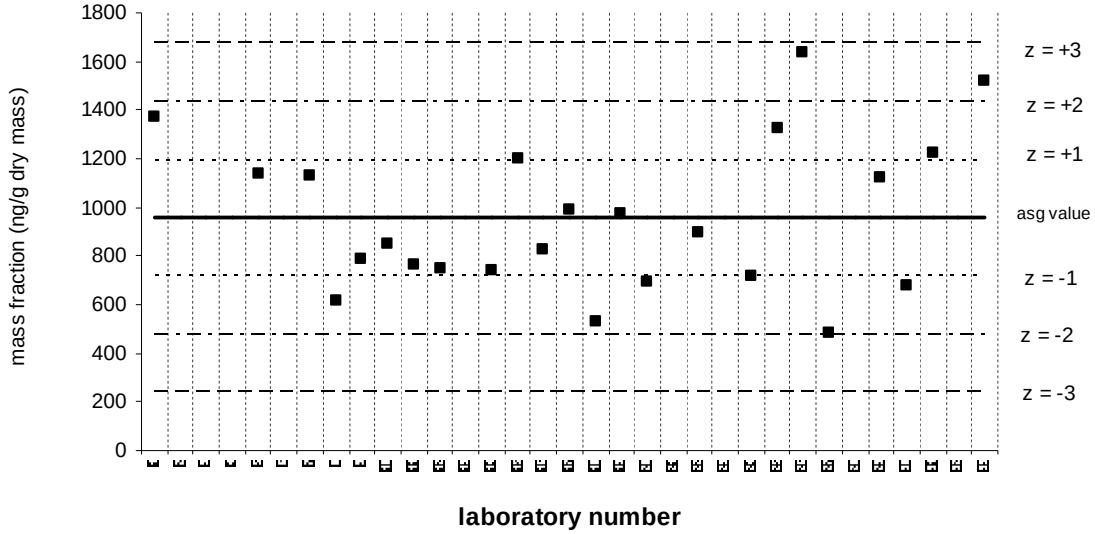


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C2-B[a]A/chrysenes — QA10SED01

Assigned value = 956 ng/g (dry mass) s = 311 ng/g (dry mass) 95% CI = 125 ng/g (dry mass)

Reported Results: 25 Quantitative Results: 24

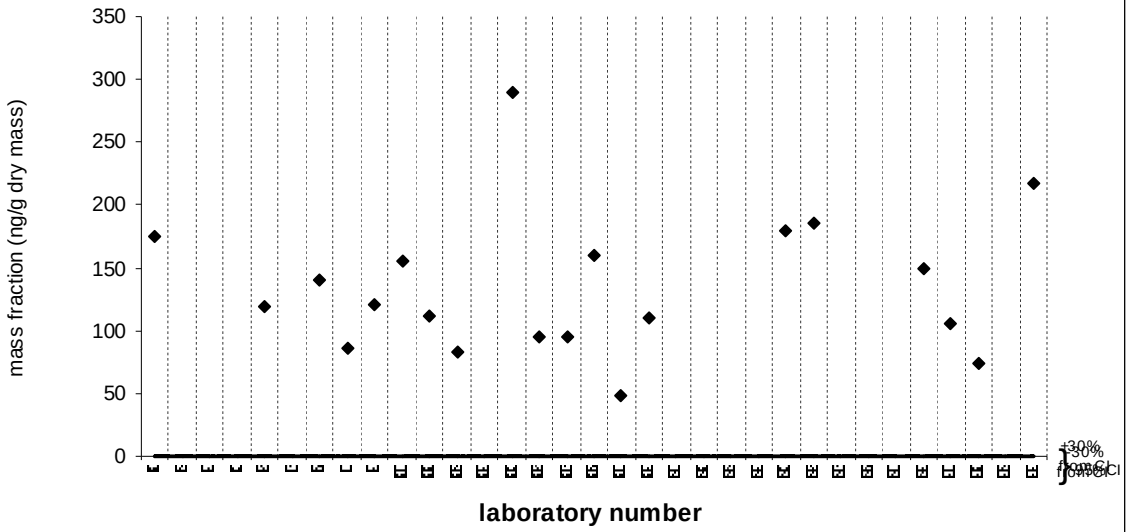


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C2-B[a]A/chrysenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 22 Quantitative Results: 20

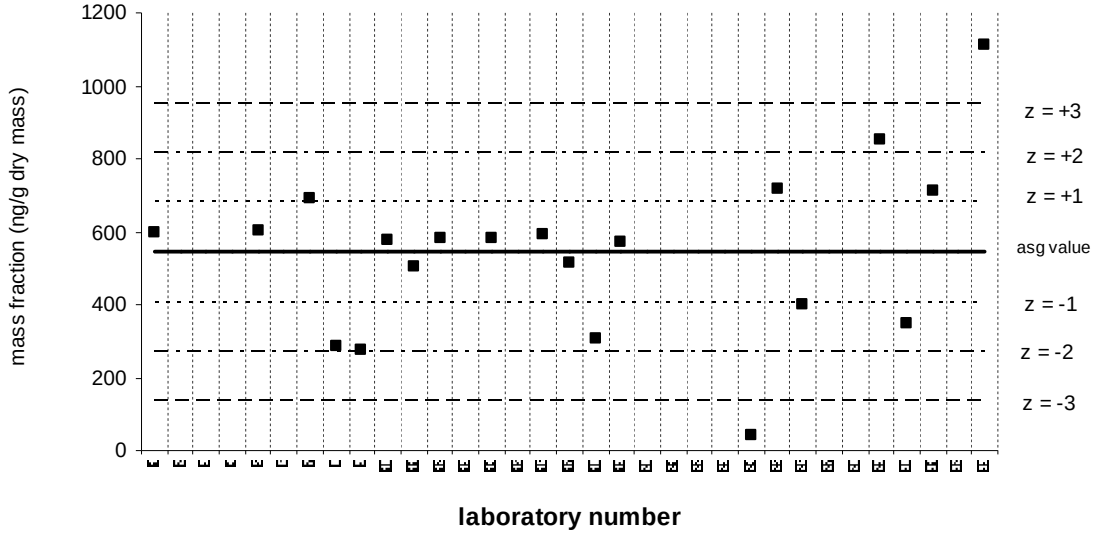


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C3-B[a]A/chrysenes — QA10SED01

Assigned value = 543 ng/g (dry mass) s = 232 ng/g (dry mass) 95% CI = 102 ng/g (dry mass)

Reported Results: 23 Quantitative Results: 20

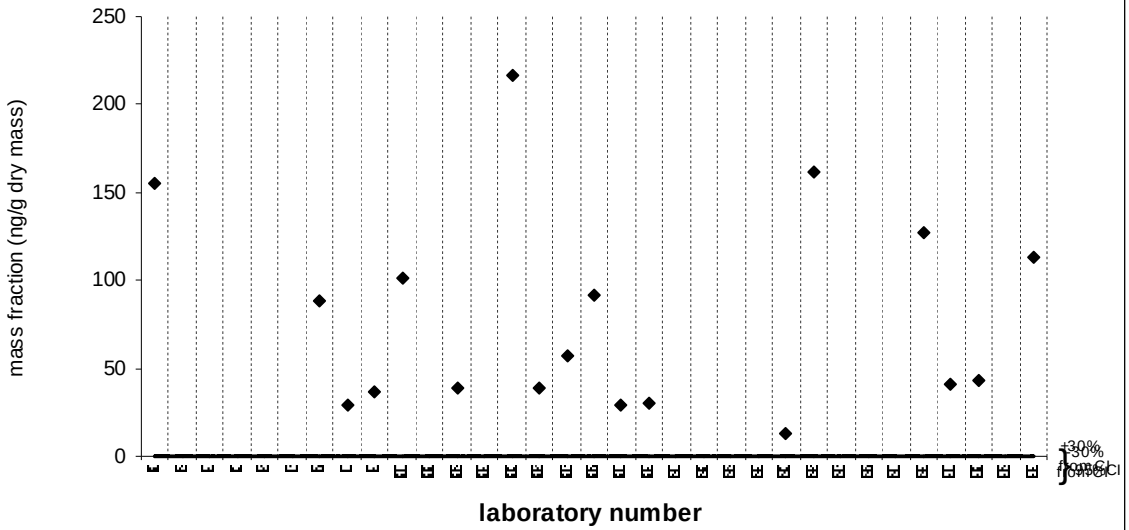


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C3-B[a]A/chrysenes — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 21 Quantitative Results: 18

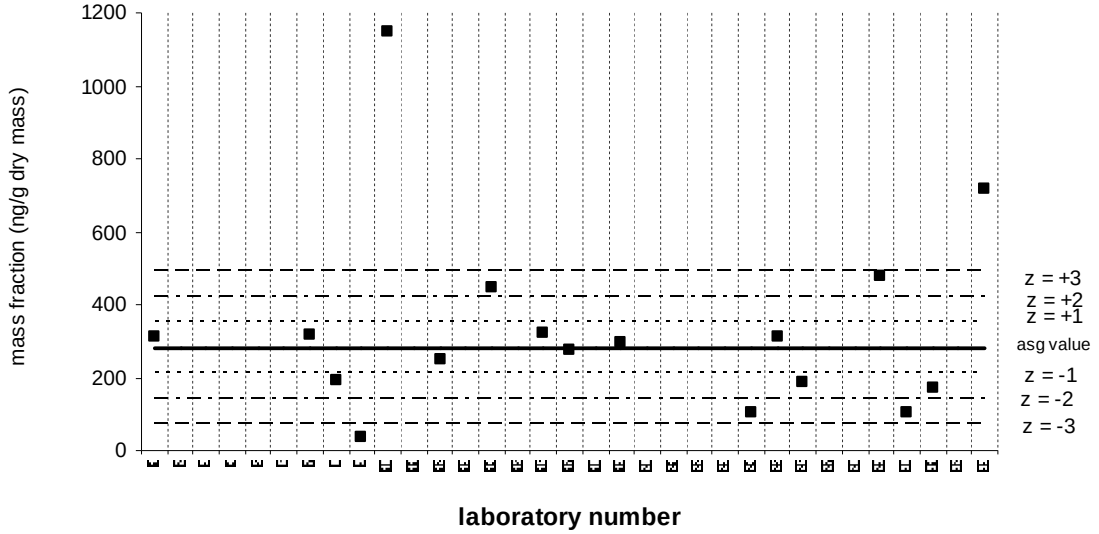


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

C4-B[a]A/chrysenes **QA10SED01**

Assigned value = 282 ng/g (dry mass) s = 165 ng/g (dry mass) 95% CI = 81 ng/g (dry mass)

Reported Results: 22 Quantitative Results: 17

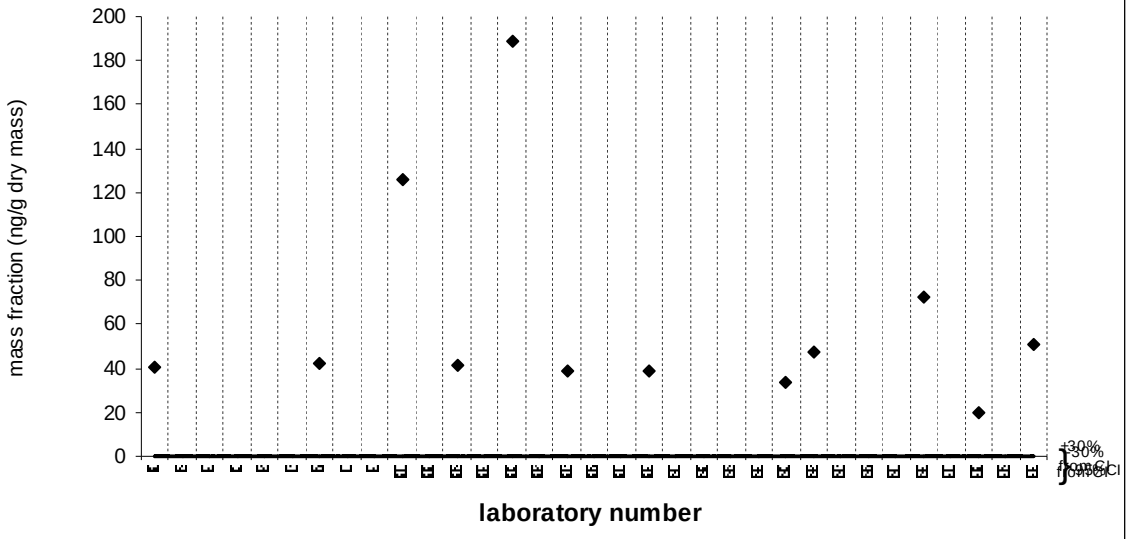


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

C4-B[a]A/chrysenes **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 20 Quantitative Results: 12

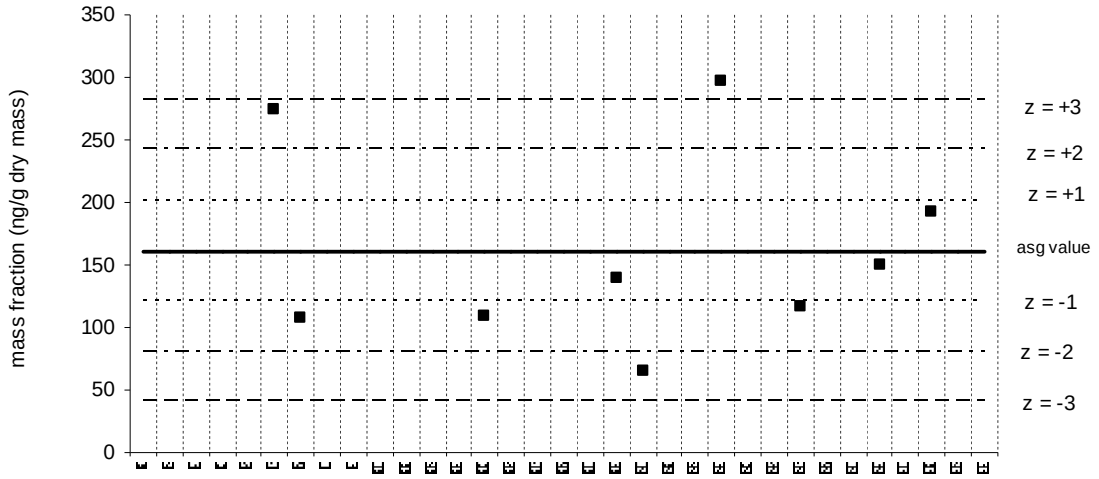


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Carbazole **QA10SED01**

Assigned value = 161 ng/g (dry mass) s = 78 ng/g (dry mass) 95% CI = 51 ng/g (dry mass)

Reported Results: 10 Quantitative Results: 9



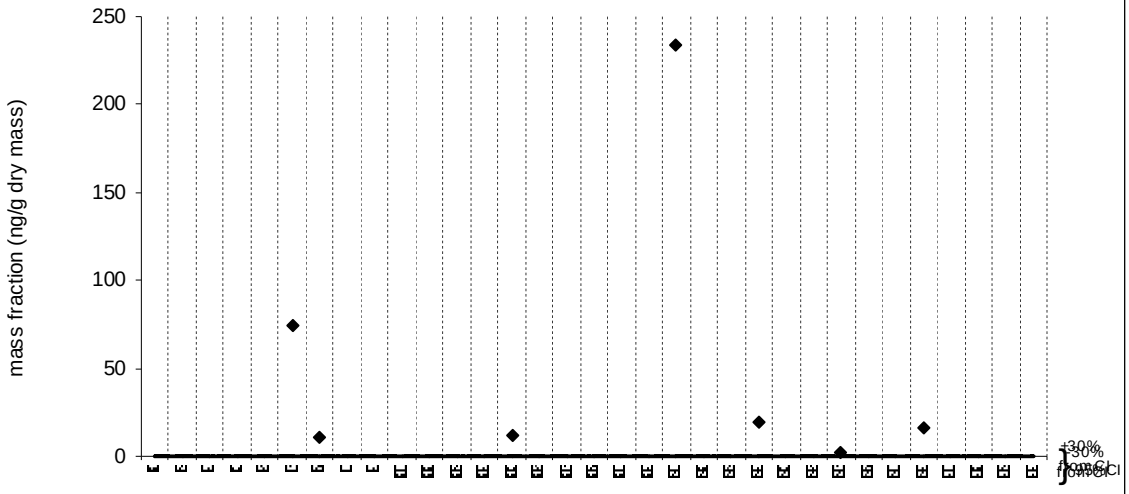
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

Carbazole **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 9 Quantitative Results: 7



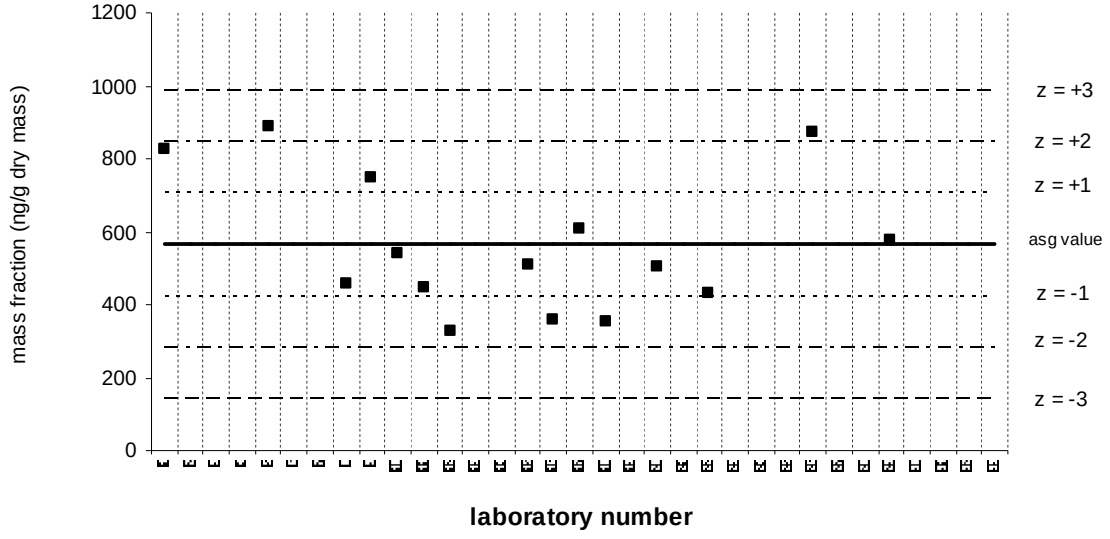
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17α(H)-22,29,30-Tisnorhopane — QA10SED01

Assigned value = 564 ng/g (dry mass) s = 189 ng/g (dry mass) 95% CI = 99 ng/g (dry mass)

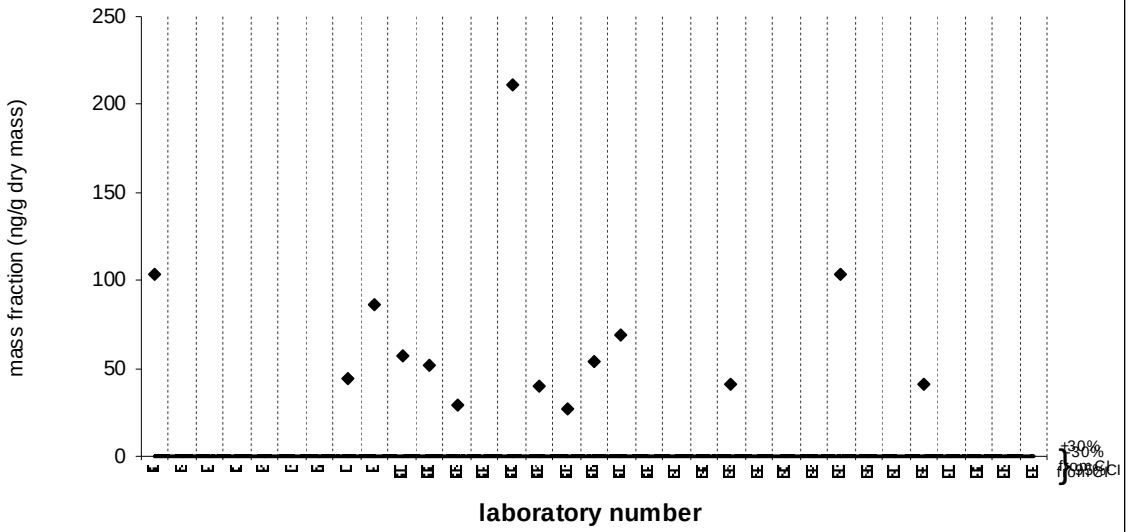
Reported Results: 17 Quantitative Results: 15



17α(H)-22,29,30-Tisnorhopane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 17 Quantitative Results: 14

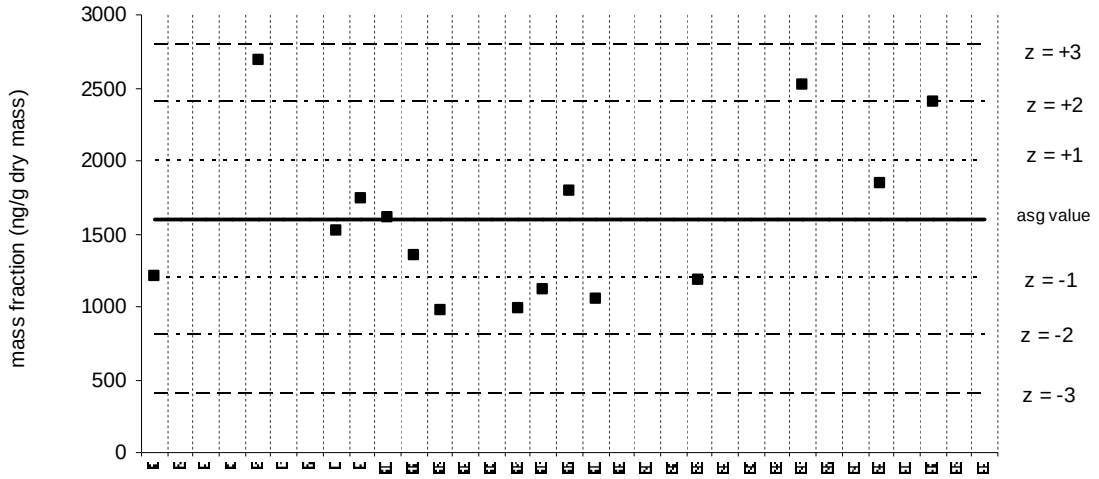


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17α(H),21β(H)-30-Norhopane — QA10SED01

Assigned value = 1599 ng/g (dry mass) s = 566 ng/g (dry mass) 95% CI = 286 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 15



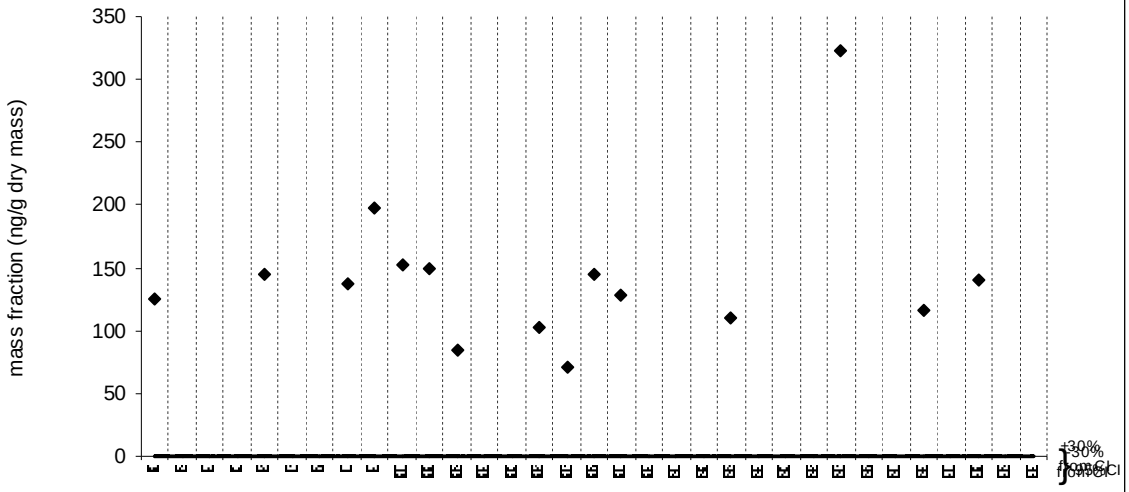
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

17α(H),21β(H)-30-Norhopane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 15 Quantitative Results: 15



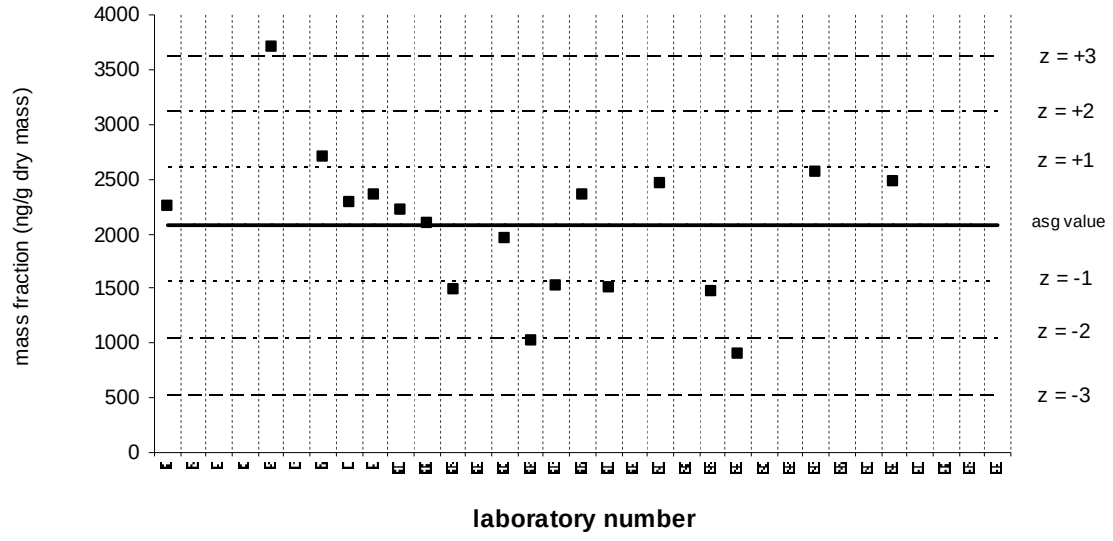
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17α(H),21β(H)-Hopane — QA10SED01

Assigned value = 2073 ng/g (dry mass) s = 672 ng/g (dry mass) 95% CI = 311 ng/g (dry mass)

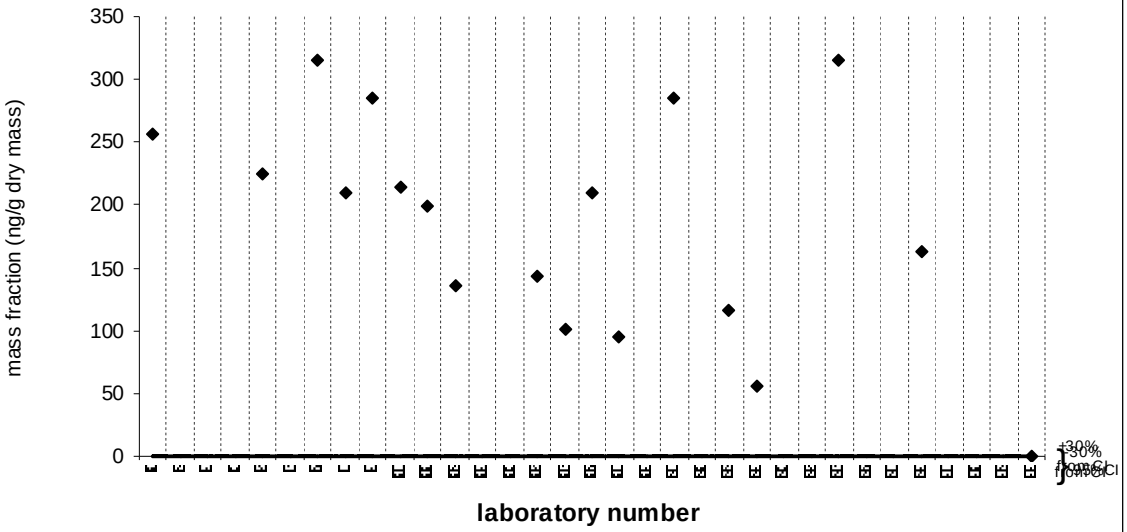
Reported Results: 18 Quantitative Results: 18



17α(H),21β(H)-Hopane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 17 Quantitative Results: 17

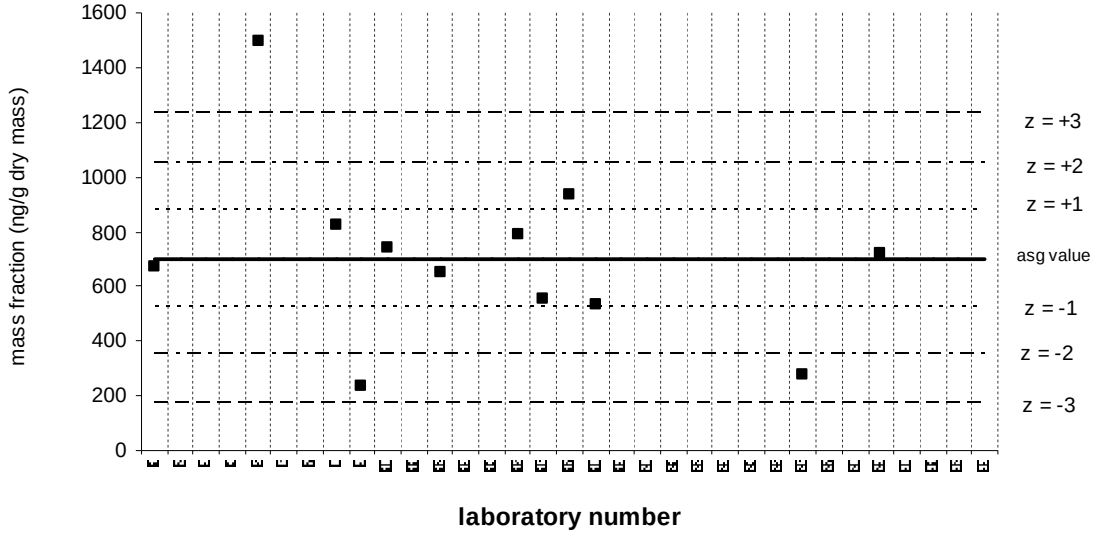


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

ααα 20R-Cholestane **QA10SED01**

Assigned value = 703 ng/g (dry mass) s = 325 ng/g (dry mass) 95% CI = 184 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 12

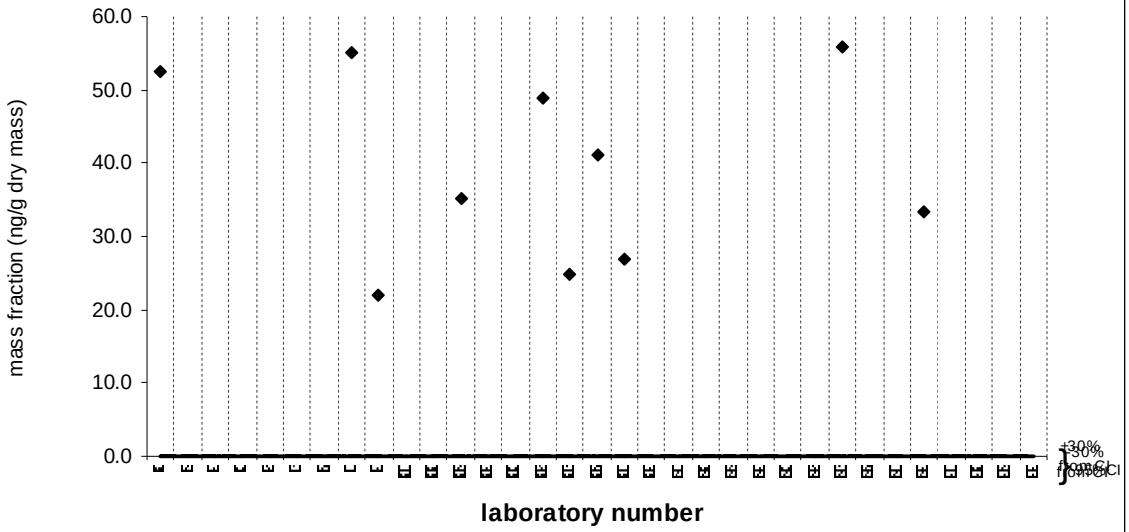


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

ααα 20R-Cholestane **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 15 Quantitative Results: 10

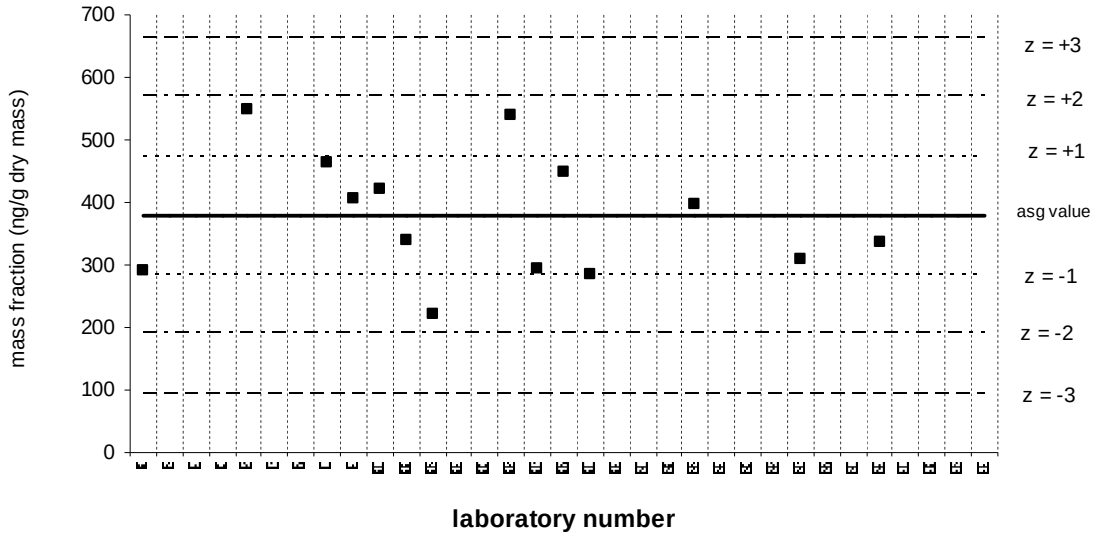


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

αββ 20R-Cholestane **QA10SED01**

Assigned value = 379 ng/g (dry mass) s = 99 ng/g (dry mass) 95% CI = 52 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14



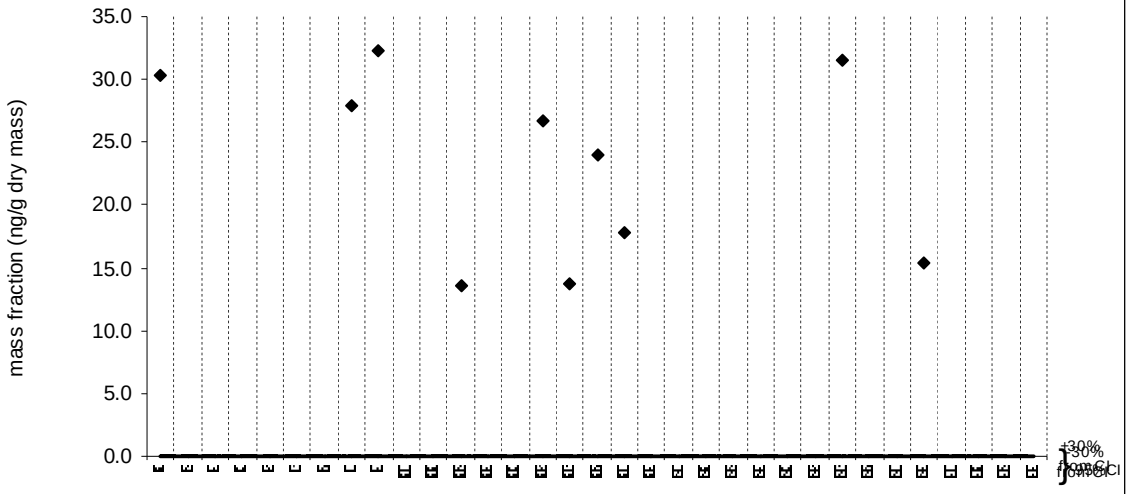
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

αββ 20R-Cholestane **SRM 1941b**

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 10



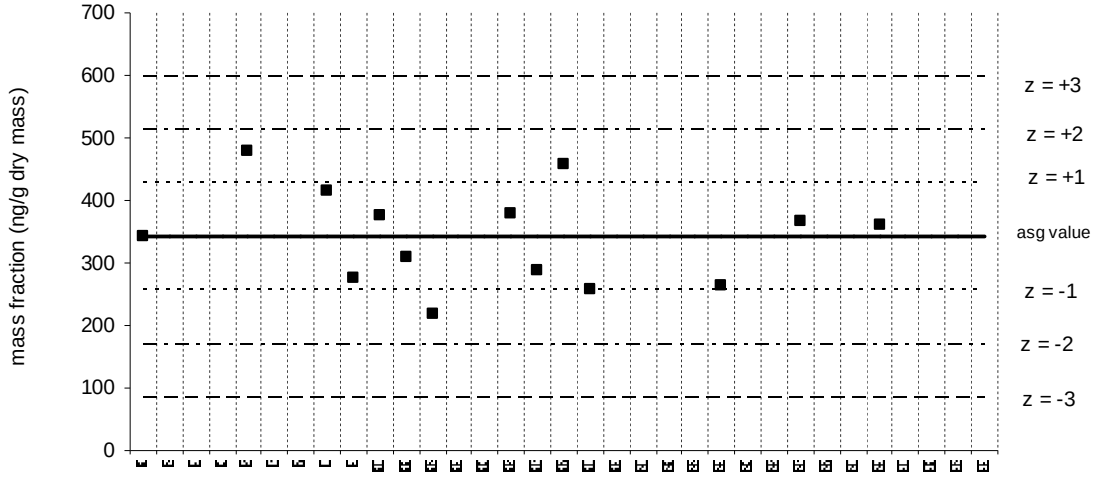
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

αββ 20R 24S-Methylcholestane — QA10SED01

Assigned value = 342 ng/g (dry mass) s = 77 ng/g (dry mass) 95% CI = 40 ng/g (dry mass)

Reported Results: 15 Quantitative Results: 15 Lab 20 reported 1448 ng/g (dry mass)



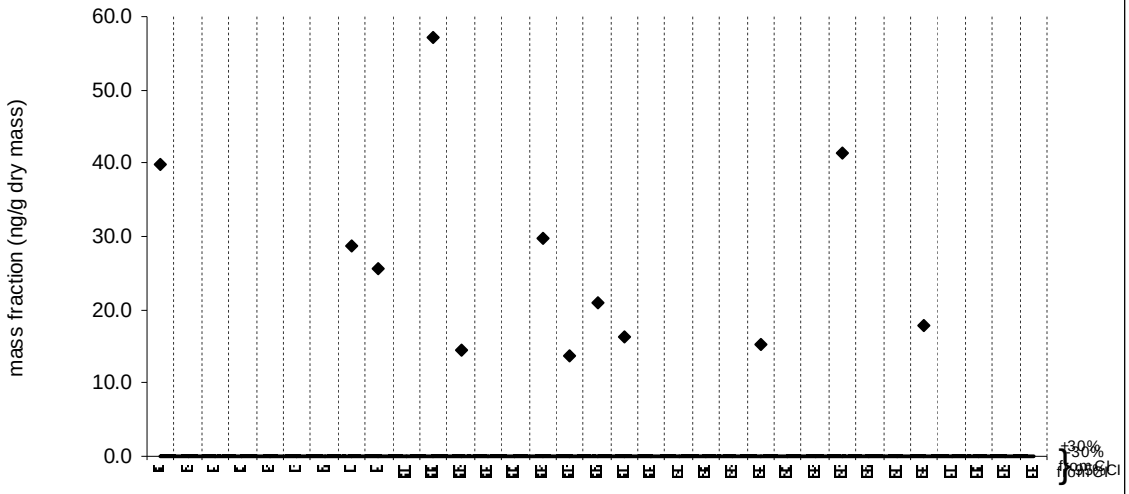
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

αββ 20R 24S-Methylcholestane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 15 Quantitative Results: 12



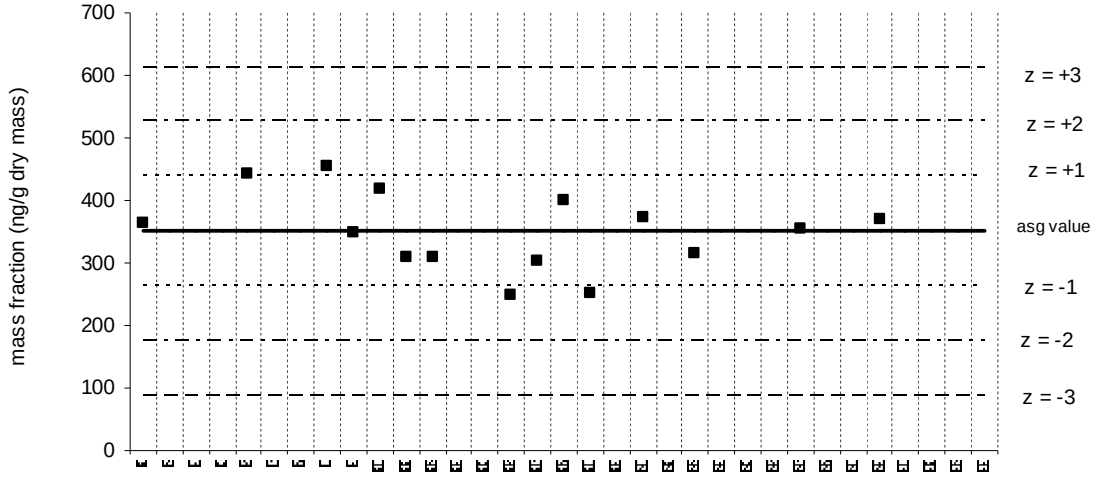
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

αααα 20R 24R-Ethylcholestane — QA10SED01

Assigned value = 351 ng/g (dry mass) s = 62 ng/g (dry mass) 95% CI = 31 ng/g (dry mass)

Reported Results: 16 Quantitative Results: 15



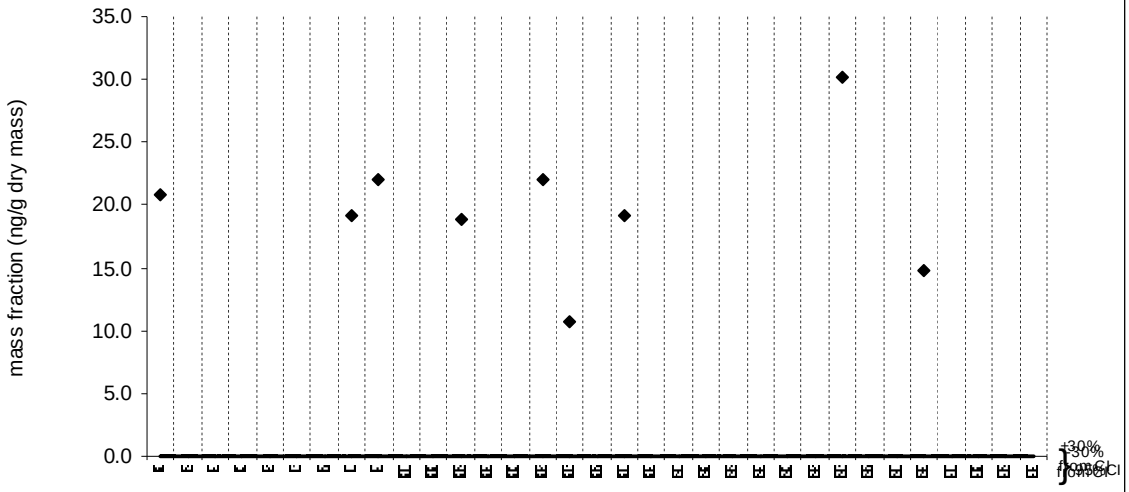
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

αααα 20R 24R-Ethylcholestane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 15 Quantitative Results: 9



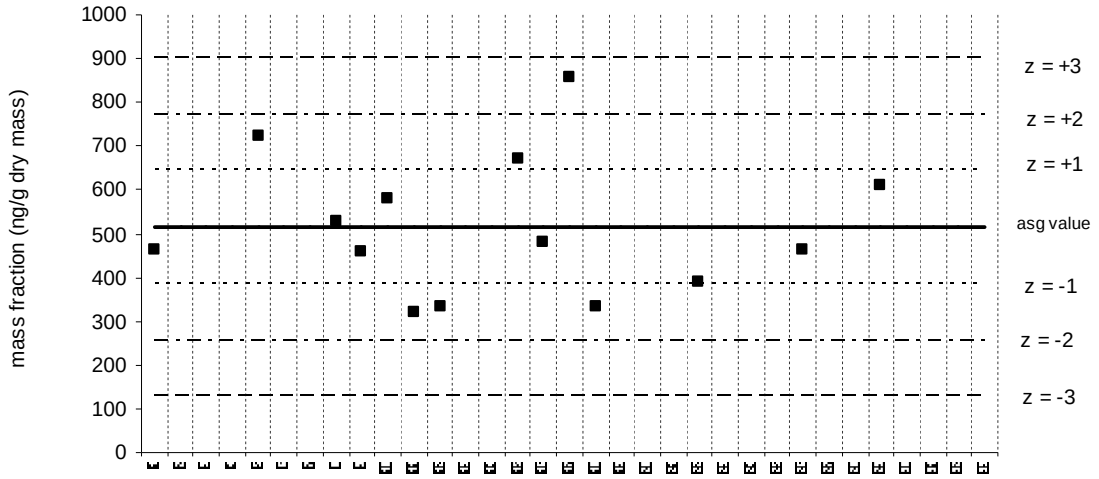
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

αββ 20R 24R-Ethylcholestane — QA10SED01

Assigned value = 515 ng/g (dry mass) s = 159 ng/g (dry mass) 95% CI = 83 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14

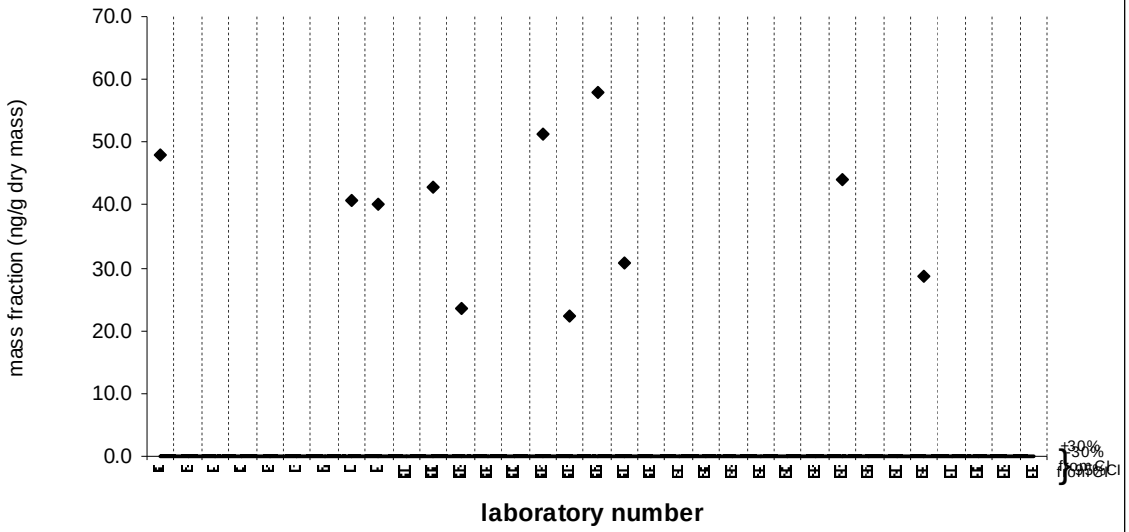


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

αββ 20R 24R-Ethylcholestane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 11

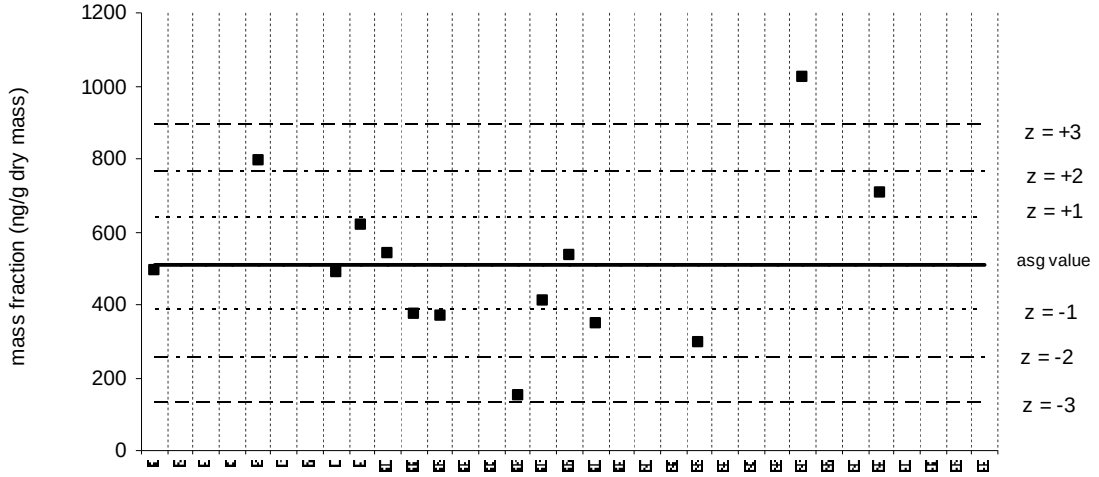


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17α(H),21β(H)-22R-Homohopane — QA10SED01

Assigned value = 511 ng/g (dry mass) s = 223 ng/g (dry mass) 95% CI = 117 ng/g (dry mass)

Reported Results: 14 Quantitative Results: 14



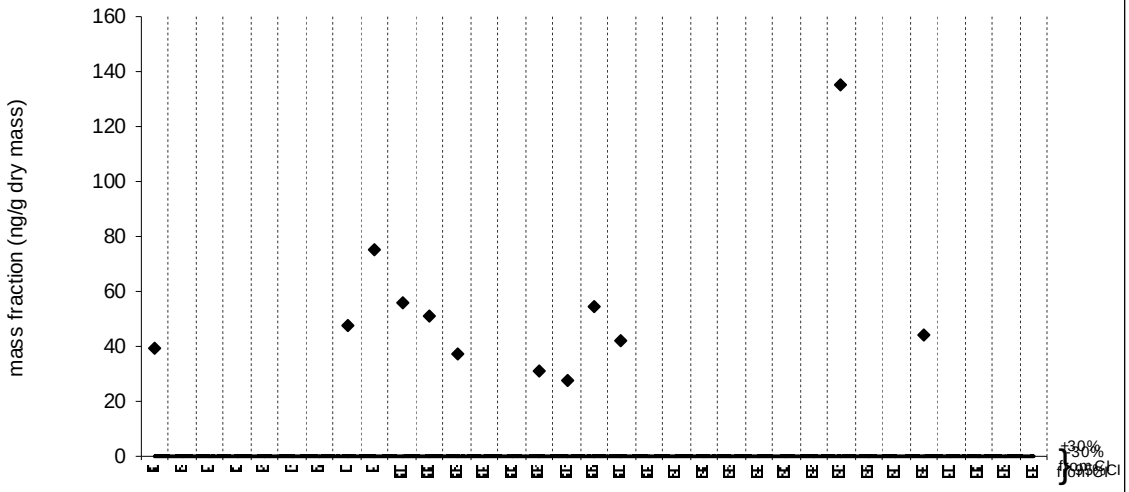
laboratory number

Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

17α(H),21β(H)-22R-Homohopane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 13 Quantitative Results: 12



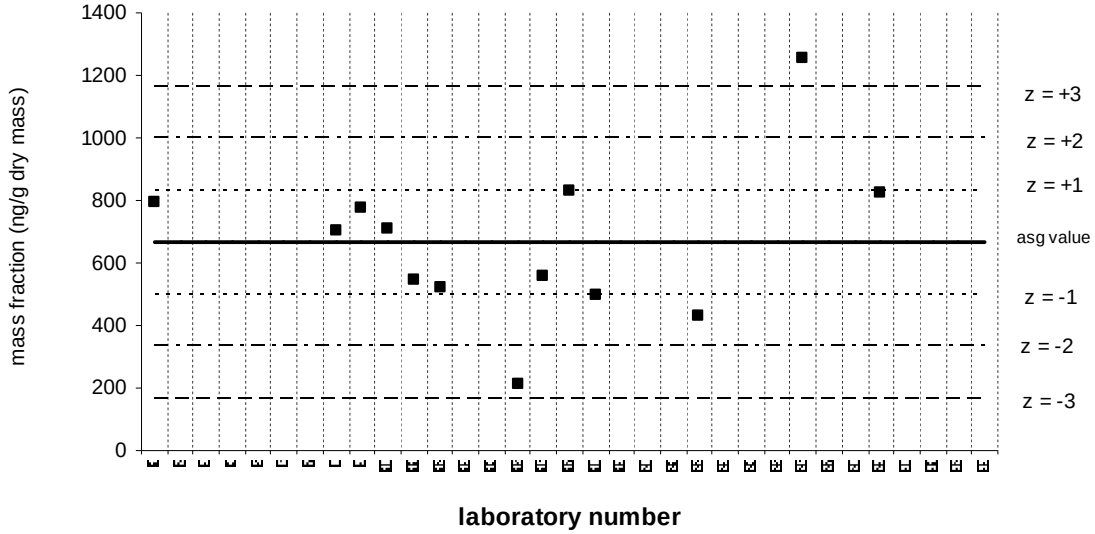
laboratory number

Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

17α(H),21β(H)- 22S-Homohopane — QA10SED01

Assigned value = 666 ng/g (dry mass) s = 253 ng/g (dry mass) 95% CI = 137 ng/g (dry mass)

Reported Results: 13 Quantitative Results: 13

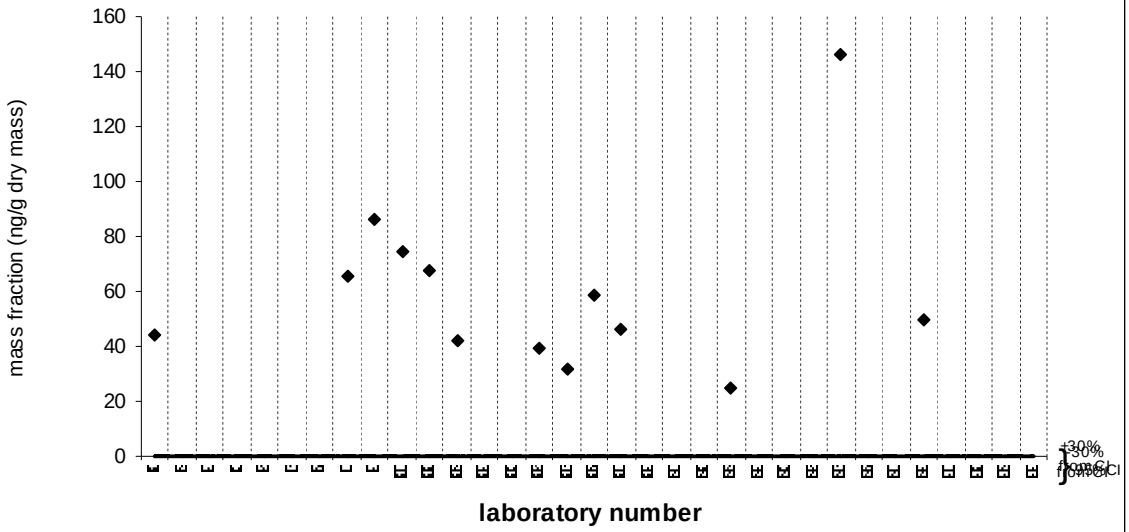


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

17α(H),21β(H)- 22S-Homohopane — SRM 1941b

Target Value = no target ng/g (dry mass)

Reported Results: 14 Quantitative Results: 13



Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

Appendix E
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