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NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment:

Description and Results of 2007 Organic Intercomparison Exercises

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Abstract

In support of marine monitoring measurement programs, the National Institute of Standards and Technology (NIST) conducts interlaboratory comparison exercises. The intercomparibility of data after participation in these exercises provides one mechanism for participating laboratories and/or monitoring programs to evaluate the quality and comparability of their performance in measuring selected organic contaminants in environmental samples. In this report, results of the 2007 exercises of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment are described in which selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominated diphenyl ether (PBDE) congeners were determined in Mussel Tissue XIII and Marine Sediment XIV exercise materials. The analytical methods used by each participating laboratory in this performance-based program are also summarized.

Introduction

The preparation and distribution of two materials, Mussel Tissue XIII (QA07TIS13) and Marine Sediment XIV (QA07SED14), used in interlaboratory comparison exercises in 2007 for the National Institute of Standards and Technology (NIST) Intercomparison Exercise Program for Organic Contaminants in the Marine Environment, and the results of these exercises are described in this report. The analytical methods used by each participating laboratory are also summarized.

Tools and mechanisms for the assessment of data produced by laboratories providing environmental analyses are critical because decision-making based on inaccurate results or data of unknown quality can have significant economic and health consequences. NIST provides a variety of activities in support of environmental monitoring programs for organic contaminants. The largest of these programs was initiated and funded in part for 12 years (until 1999) by the National Oceanic and Atmospheric Administration (NOAA) National Status and Trends (NS&T) Marine Monitoring Program [1-3]. The Environmental Protection Agency (EPA) Environmental Monitoring and Assessment Program (EMAP) also participated in the NIST/NOAA NS&T effort for a number of years. Private sector and other laboratories that could not be accommodated under the NOAA, EPA, and NIST funding have reimbursed NIST for participation costs and have participated in these exercises and workshops as part of the NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. NIST is now continuing this program on a pay-to-participate basis. Through this program, NIST provides mechanisms for assessing the interlaboratory and temporal comparability of data with the goal of improving measurements for the monitoring of organic contaminants such as polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and, as of the 2005 exercise, polybrominated diphenyl ether (PBDE) congeners in bivalve, sediment, and fish samples. This program includes the development of improved analytical methods, production of needed NIST Standard Reference Materials (SRMs) and other control materials, conduct of annual interlaboratory comparison exercises, and the coordination of workshops to discuss the results of these exercises and to provide a forum for cooperative problem-solving efforts by participants. Current participants represent multi-laboratory monitoring programs as well as a number of individual programs, and include federal, state/municipal, university/college, private sector, and international laboratories. In this performance-based program, each participating laboratory uses its current methods for analysis of similar materials for its program customers.

For the annual intercomparison exercises, samples of two natural-matrix, homogeneous materials that are derived from the marine environment and that have not been fortified with any of the target analytes are analyzed by the participating laboratories. Typical materials, such as mussel or fish tissue homogenates or wetted marine sediment, have levels of target analytes in the 1 ng/g to 15,000 ng/g range. The target analytes are listed in Table 1.

Numerical indices, z- and p-scores, are used to assess and track laboratory performance for accuracy and precision, respectively, and to provide a mechanism for assessing the comparability of data being produced by the participating laboratories for over 75 target analytes, total organic carbon (TOC), percent total extractable organics (TEO), and percent moisture.

Sources and Preparation of Materials Used in 2007 Intercomparison Exercises

Mussel Tissue XIII. Mussel Tissue XIII was prepared by mixing two previously freeze-dried mussel tissue materials, SRM 2977 Mussel Tissue (Organic Contaminants and Trace Elements) and SRM 2978 Mussel Tissue (Organic Contaminants – Raritan Bay, New Jersey). The mixed material was then bottled with approximately 6 g per bottle. The homogeneity of the material was tested by taking duplicate subsamples at differing sample sizes from 0.5 g to 4 g from six bottles. The bottles were selected using a stratified random sampling across the bottling sequence. The analysis of these subsamples did not indicate significant heterogeneity with sample sizes $\geq$ 0.5 g. The degree of heterogeniety of the material was overshadowed by the uncertainty in the analytical techniques used (approximately 3%). Each participant received one bottle. This freeze-dried mussel tissue homogenate material had not been enriched or spiked.

Marine Sediment XIV. Marine Sediment XIV was prepared by mixing a subsample of the fines remaining from the preparation of SRM 1944 New York/New Jersey Waterway Sediment. The sediment was bottled with approximately 10 g (exact mass known) of sediment per bottle. The homogeneity of the dried sediment was tested by analyzing 18 samples, six samples of differing sample masses between 0.5 g and 2 g from each of three bottles chosen from the beginning, middle, and end of the bottling sequence. As for the mussel tissue, the sediment was homogeneous (within 2%) at these sample sizes.

The Marine Sediment XIV material was issued as a wet sediment to more closely match the matrix of wet sediments routinely analyzed by the laboratories. A calibrated toploader balance (resolution of 0.01 g) was used for weighing the sediment and water. For each sample, 10.00 g of sediment (see above) was weighed into a tared 2-oz, wide-mouth bottle. The bottle was then capped and stored in the dark at room temperature. Approximately four days before samples were to be shipped to laboratories participating in the intercomparison exercise, 9.0 g of HPLC-grade water were added by pipet to each tared bottle of sediment. The masses of sediment and water in each bottle were recorded. Each sample was tilted by hand until no dry sediment was visible. Only a very small amount of water was observed on the top of the wet sediment. After being held 24 h at room temperature (in the dark), followed by approximately 4 h at -20 °C, each bottle of material was stored at -80 °C until shipped. The bottles were never inverted until the wet samples had been frozen in the bottom of the bottles. The material was not enriched or spiked with any of the analytes of interest in this intercomparison exercise.

Storage and Distribution of Materials

Mussel Tissue XIII material was stored at room temperature, and Marine Sediment XIV material was stored at -80 °C until shipped via overnight delivery to participating laboratories. Instructions for the storage and use of the exercise material and a diskette with files for electronic submission of data were included with each set of material shipped. These instructions are reproduced in Appendices A and B.

Each laboratory participating in these intercomparison exercises was sent the following by overnight delivery:

Exercise 1: Mussel Tissue XIII (QA07TIS13)
One bottle of Mussel Tissue XIII material (shipped on dry ice)

Description of the materials and storage/use/reporting instructions for the exercise (see Appendix A.)
Files for the reporting of results were sent as an e-mail attachment.

Exercise 2: Marine Sediment XIV (QA07SED14)
Three bottles of Marine Sediment XIV material (shipped on dry ice)
Description of the materials and storage/use/reporting instructions for the exercise (see Appendix B.)
Files for the reporting of results were sent as an e-mail attachment.

In the an e-mail message sent notifying the participants of the sample shipment, each participant was asked to analyze each of three replicate samples (three from one bottle for the mussel tissue and one from each jar for the sediment) to provide a more realistic assessment of laboratory precision and, if possible, to concurrently analyze the NIST SRM 2977 Mussel Tissue (Organic Contaminants and Trace Elements) [4] with Mussel Tissue XIII and NIST SRM 1944 New York/New Jersey Waterway Sediment [5] with Marine Sediment XIV.

Evaluation of Exercise Results

Establishment of the Assigned Values

The following guidelines were used by the NIST exercise coordinators for the establishment of the exercise "Assigned Values" for these two exercises. Each laboratory's performance on concurrent Standard Reference Material (SRM) analyses was used to determine if that laboratory's results would be eligible for inclusion in the calculation of the exercise assigned value for the unknown material for a particular analyte. The results reported for the unknown materials from laboratories that did not report results for the SRMs were not used in these calculations. After the exercise assigned values, standard deviations, and 95% confidence limits had been calculated, all reported results for the Mussel Tissue XIII and Marine Sediment XIV materials were evaluated relative to the exercise assigned values.

Laboratory data submission: Each participating laboratory was to submit data from three replicate determinations of the "unknown" materials (Mussel Tissue XIII and Marine Sediment XIV) and was requested to report results of concurrent analyses of NIST SRM 2977, a freeze-dried mussel tissue SRM, and SRM 1944, a marine sediment SRM. 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 NA's; 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 was 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 Certificates of Analysis for SRM 2977 and SRM 1944. For each analyte of interest for which a certified value is not provided in these materials, a “target” concentration and the associated uncertainty were calculated. The targets for SRM 2977 were based on reference concentrations for SRM 2977. The targets for SRM 1944 were based on reference concentrations for SRM 1944 and for the PBDEs on an interlaboratory study coordinated in 2004 specifically for the determination of PBDE congeners in sediment [6]. Laboratory results within target upper and lower limits, typically 30 % to 40 %, of these concentrations were deemed acceptable for this exercise. 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 judgement were used after viewing both normal and log-normal plots of the data. This judgement 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 grand means, etc.; e.g., "0,” half Detection Limit (DL), and the DL value itself have all been used and the choice is influenced by the particular data set.

Reported Results

Laboratories were assigned numerical identification codes in order of receipt of data with the exception of NIST, which is Laboratory 1 in these exercises. A laboratory was assigned the same code for each material. The laboratory mean replicate data are shown in Tables 2 to 5 and Tables 6 to 9 for the Mussel Tissue XIII and SRM 2977, respectively, and in Tables 10 to 13 and 14 to 17 for Marine Sediment XIV and SRM 1944, respectively. Included in the means tables for Mussel Tissue XIII and Marine Sediment XIV are the exercise assigned values, the standard deviation of the assigned value, the percent relative standard deviation (% RSD), and the calculated 95 % confidence limit of the assigned value for the percent water (sediment), percent total extractable organics, TEO (mussel tissue), total organic carbon, TOC (sediment), PAHs, chlorinated pesticides, PCB congeners, and PBDE congeners. Notes included by a laboratory with its data are listed in Appendices C (Mussel Tissue XIII) and D (Marine Sediment XIV). Summaries of the methods used by each laboratory are in Appendices E (Mussel Tissue XIII) and F (Marine Sediment XIV). Tables 6 through 9 and 14 through 17 summarize the data received from the participating laboratories for SRM 2977 and 1944, respectively. The certified and target values for the analytes of interest are also shown in these tables.

In Appendices G (Mussel Tissue XIII) and H (Marine Sediment XIV), charts of the mean numerical results reported by each laboratory for each analyte are shown for the exercise material and the corresponding reference material.

Performance Scores

The exercise coordinators recognize that different programs have different data quality 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, the 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 these programs in their acceptability assessments.

IUPAC guidelines [7] 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, with caution, to compare performance on different analytes and on different materials.

Accuracy Assessment (z-score)

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

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., $\sigma = 0.025$ 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.

We have calculated and reported z-scores using the fixed performance criterion for each analyte for each laboratory. At a previous workshop, it was decided to use "25 % of the exercise assigned value" as the fixed target value for standard deviation for this program. The z-scores calculated for these exercises can thus be interpreted as shown in the following examples:

z-score (25 % X):

+1 $\Rightarrow$ laboratory result is 25 % higher than the assigned value

-2 $\Rightarrow$ 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.

Tables 18 through 21 summarize the z-scores (25 %) for each laboratory for each reported analyte in Mussel Tissue XIII while Tables 22 through 25 summarize the z-scores (25 %) for each laboratory for each reported analyte in Marine Sediment XIV.

Precision Assessment (p-score)

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

Prior to the 1994 exercises, participating laboratories typically analyzed the three replicate samples for an exercise with the same sample set, i.e., one set of samples with the same blank, calibration curve, etc. applicable for each. Since the repeatability for replicates within a set generally shows better reproducibility than for replicates across different sets, this does not result in data that are very useful for realistic uncertainty assessment. Since 1994, laboratories have been requested to process each replicate in a different sample set for uncertainty assessment. 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 26 through 29 summarize the relative standard deviations (RSDs) calculated from the three concentrations reported by the laboratory for each analyte quantified in Mussel Tissue XIII and SRM 2977 while Tables 30 through 33 summarize the RSDs calculated for each reported analyte by laboratory in Marine Sediment XIV and SRM 1944. To calculate the p-scores (15 %), divide the RSDs reported in the tables by 15%. If a different criterion is chosen, follow the same procedure, and divide the RSD by that criterion.

Discussion

Laboratories were requested to quantify 26 PAHs, 25 chlorinated pesticides, 25 PCB congeners, and 34 PBDE congeners in this year's exercises. A total of 13 sets of results were submitted for Mussel Tissue XIII, and 16 sets of results (2 sets from laboratory 14) were submitted for Marine Sediment XIV. In the mussel tissue exercise, one laboratory (6) reported data for SRM 2978 Mussel Tissue as the control material for the pesticides. Their data were evaluated based on the certified and target values for this SRM (see Evaluation of Exercise Results above).

The concentrations of the PAHs of interest in Mussel Tissue XIII range from 7 ng/g dry-mass basis to 200 ng/g dry-mass basis, the concentrations of the pesticides of interest range from below the detection limits of the methods used to 24 ng/g dry-mass basis, and the concentrations of the PCB congeners range from 1 ng/g dry-mass basis to 30 ng/g dry-mass basis. For the chlorinated pesticides, 11 of the 25 compounds were above the detection limits for the majority of the laboratories reporting, while 22 of the 25 PCB congeners were above the detection limits for the majority of the laboratories. There was poor agreement among the laboratories for total extractable organics (TEO), ranging from 2 % to 9 % even though the laboratories are reporting using similar methods for determining the TEOs (Appendix E). TEO is sometimes referred to as percent lipid but is typically determined by taking a known portion of the extract and evaporating to dryness and then weighing the dried residue. As one can imagine, the TEO value is then dependent on the extraction method and solvent used and the drying method used. It is, therefore typical to see the TEO values vary greatly from lab to lab particularly for relatively lean (non-fatty) materials.

The z-scores for the PAHs, pesticides, PCB congeners, and PBDE congeners in Mussel Tissue XIII based on 25 % of the exercise assigned value are summarized in Tables 18 to 21, respectively. The majority of the z-scores based on 25 % are within ± 2 (± 50 % of the exercise assigned value). The RSDs for Mussel Tissue XIII and SRM 2977 are summarized in Tables 26 to 29 for the PAHs, pesticides, PCB congeners, and PBDE congeners, respectively. Only four laboratories reported results for a limited number of PBDE congeners with most of the data reported being less than the detection limit.

The PAH concentrations in Marine Sediment XIV range from 50 ng/g dry-mass basis to 3200 ng/g dry-mass basis. The pesticide concentrations range from below the detection limits of the methods used to 485 ng/g dry-mass basis, while the PCB concentrations range from 4 ng/g dry-mass basis to 72 ng/g dry-mass basis. There was relatively good agreement among the laboratories for percent water in the wet sediment with the exception of one laboratory reporting 36% compared to the 47% added. Only four laboratories returned data for the TOC with the values ranging from 2.7 % to 4.4 %.

The z-scores for the PAHs, pesticides, PCB congeners, and PBDE congeners based on 25 % of the exercise assigned value are summarized for Marine Sediment XIV in Tables 22 to 25, respectively. In general, the z-scores based on 25 % were within ± 2 (± 50 % of the exercise assigned value) for Marine Sediment XIV. The RSDs for the Marine Sediment XIV and SRM 1944 are summarized in Tables 30 to 33 for the PAHs, pesticides, PCB congeners, and PBDE congeners, respectively. Only six laboratories reported data for the PBDE congeners.

As in the past exercises, a variety of methods were used for extraction, extract cleanup, and analysis. These are summarized in Appendix E for the mussel tissue and Appendix F for the marine sediment. For the PAHs in the mussel tissue and marine sediment, all of the laboratories used gas chromatography with mass spectrometry (GC/MS). For the chlorinated analytes in the mussel tissue, laboratories 6, 11, 12 (for the PCBs), and 14 specified the use of high-resolution MS, and laboratories 5, 7, 8, 9, 10, 12 (for the pesticides), and 15 used GC-ECD. For the PBDE congeners, laboratories 6, 11, and 12 used GC with high-resolution MS while laboratory 1a used GC with low-resolution MS in the negative chemical ionization mode and laboratories 3 and 13 used GC with low-resolution MS in the electron ionization mode. There was no obvious correlation between z-scores and method used.

For the 2007 exercises, the data provided in the various figures and tables of this report can be used for assessing the comparability of results of over 100 analytes of interest in this program and the performance of individual laboratories. In these exercises, interlaboratory variability is a greater contributor to measurement incomparability than intralaboratory variability.

Subgroups of the exercise participants have demonstrated comparability of results for many analytes within the 0 to 2 z-range based on use of 25 % of the exercise assigned concentration as the performance criterion. This implies that this subgroup can distinguish between two samples that have an analyte concentration difference of 100 %. The reported accuracy and reproducibility indices (z- and p-scores, respectively) can be easily converted to conform to the acceptability requirements of a particular program. For example, a z-score based on 25 % can be multiplied by two to convert to a z-score based on 12.5 % of the analyte concentration.

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 the various tables of this report that list the mean and individual results of the laboratories. 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 these “real” matrix materials that may be too high for the data quality 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.

For the determination of the target compounds in these complex marine matrices with relatively low concentrations of these analytes, the levels of bias and reproducibility of many of the participating laboratories meet their current acceptability requirements; however, there is certainly room for improvement. Minimizing the among-laboratory biases so that the analytical variability is significantly less than the field sampling variability should be an achievable goal.

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 materials 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.

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List of Tables

Table 1. Target Analytes in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
gamma-HCH (gamma-BHC, Lindane)	2,4'-DDD
beta-HCH	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
cis-chlordane (alpha-chlordane)	aldrin
trans-chlordane (gamma-chlordane)	dieldrin
oxychlordane	endrin
cis-nonachlor	endosulfan sulfate
trans-nonachlor	endosulfan I
mirex	endosulfan II
chlorpyrifos	

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

Table 1. (continued)

Polycyclic aromatic hydrocarbons (PAH)

naphthalene
2-methylnaphthalene
1-methylnaphthalene
biphenyl
2,6-dimethylnaphthalene
acenaphthylene
acenaphthene
1,6,7-trimethylnaphthalene
fluorene
phenanthrene
anthracene
1-methylphenanthrene
fluoranthene
pyrene
benz[*a*]anthracene
chrysene
triphenylene
benzo[*b*]fluoranthene
benzo[*j*]fluoranthene
benzo[*k*]fluoranthene
benzo[*e*]pyrene
benzo[*a*]pyrene
perylene
indeno[1,2,3-*cd*]pyrene
dibenz[*a,h*]anthracene
benzo[*ghi*]perylene

Polybrominated diphenyl ethers (PBDEs)

BDE 15 (4,4'-dibromo-)
BDE 17 (2,2',4-tribromo-)
BDE 25 (2,3',4-tribromo-)
BDE 28 (2,4,4'-tribromo-)
BDE 30 (2,4,6-tribromo-)
BDE 33 (2',3,4-tribromo-)
BDE 47 (2,2',4,4'-tetrabromo-)
BDE 49 (2,2',4,5'-tetrabromo-)
BDE 66 (2,3',4,4'-tetrabromo-)
BDE 71 (2,3',4',6-tetrabromo-)
BDE 75 (2,4,4',6-tetrabromo-)
BDE 85 (2,2',3,4,4'-pentabromo-)
BDE 99 (2,2',4,4',5-pentabromo-)
BDE 100 (2,2',4,4',6-pentabromo-)
BDE 116 (2,3,4,5,6-pentabromo-)
BDE 118 (2,3',4,4',5-pentabromo-)
BDE 119 (2,3',4,4',6-pentabromo-)
BDE 138 (2,2',3,4,4',5'-hexabromo-)
BDE 153 (2,2',4,4',5,5'-hexabromo-)
BDE 154 (2,2',4,4',5,6'-hexabromo-)
BDE 155 (2,2',4,4',6,6'-hexabromo-)
BDE 156 (2,3,3',4,4',5-hexabromo-)
BDE 181 (2,2',3,4,4',5,6-heptabromo-)
BDE 183 (2,2',3,4,4',5',6-heptabromo-)
BDE 190 (2,3,3',4,4',5,6-heptabromo-)
BDE 191 (2,3,3',4,4',5,6'-heptabromo-)
BDE 196 (2,2',3,3',4,4',5,6'-octabromo-)
BDE 197 (2,2',3,3',4,4',6,6'-octabbromo-)
BDE 203 (2,2',3,4,4',5,5',6-octabromo-)
BDE 205 (2,3,3',4,4',5,5',6-octabromo-)
BDE 206 (2,2',3,3',4,4',5,6,6'-nonabromo-)
BDE 207 (2,2'3,3',4,4',5,6,6'-nonabromo-)
BDE 208 (2,2',3,3',4,5,5',6,6'-nonabromo-)
BDE 209 (decabromo-)

Table 2. Mussel TissueXIII (QA07TIS13): Laboratory means of three replicates and exercise assigned values - TEO and PAHs

(reported as if three figures were significant)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Value	s	%RSD
TEO (percent)	6.33	6.22	NA	6.09	NA	1.99	2.90	9.14	NA	9.39	6.88	2.85	2.50	no target		

PAHs (ng/g dry mass)

														Exercise Assigned		
Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Value	s	%RSD
naphthalene	104	96.9	37.9	NA	128	40.9	**142**	82.3	**177**	**254**	92.0	88.9	57.3	80.9	30.1	37.1
2-methylnaphthalene	64.5	70.6	27.3	NA	58.2	31.8	54.6	47.8	**73.8**	NA	<75.1	**55.2**	40.8	49.5	15.4	31.1
1-methylnaphthalene	80.9	83.7	26.7	NA	79.1	24.5	**57.8**	66.9	**78.8**	NA	78.6	41.9	29.8	56.9	25.7	45.2
biphenyl	6.69	6.86	3.85	NA	6.60	6.99	NA	4.70	<667	NA	<23.9	11.27	<27.0	6.71	2.35	35.0
2,6-dimethylnaphthalene	20.4	20.9	38.0	NA	19.5	14.5	NA	14.0	NA	NA	<51.9	22.9	<27.0	21.4	8.0	37.4
acenaphthylene	6.90	4.89	3.92	NA	8.37	7.12	<40	8.03	**15.6**	**5.16**	<21.1	7.01	<27.0	6.61	1.62	24.6
acenaphthene	25.1	24.8	9.91	NA	25.1	11.8	<40	16.0	<38.0	**42.8**	<61.0	13.4	<27.0	18.0	6.8	37.6
1,6,7-trimethylnaphthalene	coelute	35.3	NA	NA	67.5	NA	NA	13.1	NA	NA	<90.5	30.6	39.3	37.2	19.7	52.9
fluorene	23.9	27.9	**7.44**	NA	20.7	18.6	<40	23.2	<17.3	**17.0**	<63.7	15.3	<27.0	21.6	4.4	20.4
phenanthrene	180	188	69.1	NA	174	112	**135**	52.1	<26.7	**105**	139	142	105	129	49	37.6
anthracene	20.6	5.07	19.8	NA	21.3	9.10	<40	NA	<28.7	<25.0	31.7	16.2	30.2	19.3	9.2	47.9
1-methylphenanthrene	53.3	57.5	28.0	NA	46.6	32.6	NA	41.3	NA	NA	56.8	35.8	32.6	42.7	11.3	26.4
fluoranthene	130	152	65.9	NA	124	111	**103**	67.2	**80.8**	**102**	<168	107	113	109	30	27.2
pyrene	237	268	125	NA	229	197	**147**	166	**148**	**192**	174	184	191	197	42	21.6
benz[a]anthracene	26.9	32.9	15.1	NA	25.3	20.6	<40	18.5	**42.6**	**25.7**	23.9	24.6	33.5	24.6	6.1	24.8
chrysene	59.3	coelute	63.5	NA	coelute	91.7	<40	coelute	<50.0	**81.9**	coelute	**110**	coelute	71.5	17.6	24.6
triphenylene	48.8	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	coelute	no target		
chrysene/triphenylene	above	129	above	NA	109	above	above	56.5	above	above	83.6	above	103	96.2	27.5	28.6
benzo[*b*]fluoranthene	34.6	45.7	31.2	NA	35.6	29.5	<40	coelute	<36.0	**46.4**	37.6	32.1	49.6	37.0	7.1	19.3
benzo[*j*]fluoranthene	14.3	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	coelute	no target		
benzo[*k*]fluoranthene	15.7	coelute	11.0	NA	coelute	19.9	<40	coelute	<46.0	15.1	coelute	**29.6**	coelute	15.4	3.6	23.4
benzo[*j+k*]fluoranthene	above	35.0	above	NA	29.4	above	above	NA	above	above	<32.9	above	43.6	36.0	7.1	19.8
benzo[*b+j+k*]fluoranthene	above	above	above	above	above	above	above	48.5	above	above	above	above	above	no target		
benzo[e]pyrene	64.8	71.0	36.6	NA	61.3	48.8	NA	36.0	NA	NA	<46.4	58.2	54.9	53.9	12.7	23.6
benzo[a]pyrene	5.41	5.48	6.19	NA	5.30	2.91	**<40**	4.37	<56.7	**7.52**	<37.8	**14.2**	**39.3**	4.94	1.16	23.4
perylene	3.71	3.88	**7.38**	NA	3.53	2.80	NA	3.63	NA	NA	<15.9	**5.61**	<27.0	3.51	0.41	11.8
indeno[1,2,3-cd]pyrene	8.45	10.7	**4.63**	NA	7.61	12.3	<40	4.97	<80.0	<25.0	<63.1	8.94	**39.4**	8.82	2.53	28.6
dibenz[a,h]anthracene	2.24	NA	**2.43**	NA	<3.89	2.32	<40	1.80	<80.0	<25.0	<49.8	**4.05**	<27.0	2.12	0.28	13.1
benzo[ghi]perylene	19.3	21.2	13.3	NA	17.9	11.5	<40	8.77	<48.7	**18.9**	<25.4	17.8	**44.3**	15.7	4.6	29.1

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

Table 3. Mussel Tissue XIII (QA07TIS13): Laboratory means of three replicates and exercise assigned values - Pesticides

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Exercise Assigned Value	s	%RSD
alpha-HCH (a-BHC)	<1	inf	NA	NA	0.069	<2.0	8.70	<0.23	7.93	<3641	NA	NA	<2.67	no target		
hexachlorobenzene	<1	<0.378	1.50	DL	0.156	<2.4	DL	<0.25	6.34	NA	<1.79	NA	3.83	no target		
gamma-HCH (g-BHC,lindane)	<1	inf	<2.67	DL	0.226	<1.5	DL	<0.22	2.77	<123	<0.73	NA	<2.67	no target		
beta-HCH (b-BHC)	3.08	inf	NA	NA	3.12	NA	DL	3.29	**7.56**	<3641	NA	NA	<2.67	3.16	0.11	3.5
heptachlor	<1	inf	<2.67	NA	0.142	<2	9.90	<0.25	9.59	<124	<1.72	NA	3.52	no target		
aldrin	<1	inf	<2.67	NA	0.034	<1.5	DL	<0.24	2.53	<124	<4.43	NA	<2.67	no target		
heptachlor epoxide	<1	0.669	<2.67	NA	0.521	<1.8	2.20	<0.23	2.84	<3641	<4.91	NA	3.12	no target		
oxychlordane	<1	62.6	<2.67	NA	<0.113	NA	DL	<0.28	NA	NA	NA	NA	<2.67	no target		
gamma-chlordane	5.54	8.18	7.04	NA	4.94	8.00	DL	6.08	**6.71**	<3641	NA	NA	3.68	6.21	1.65	26.5
2,4'-DDE	1.76	4.82	1.28	NA	1.70	1.83	DL	1.81	NA	<248	3.06	NA	5.98	2.78	1.72	61.9
endosulfan I	<1	<0.381	NA	NA	< 0.217	<1.5	DL	<0.25	6.94	<3641	<1.06	NA	3.61	no target		
cis-chlordane (alpha-chlordane)	6.07	10.5	5.94	5.83	6.14	6.29	DL	5.45	**6.17**	<124	12.0	NA	4.66	6.99	2.50	35.7
trans-nonachlor	6.35	8.99	5.21	4.86	6.39	6.02	**5.73**	5.18	NA	NA	<12.0	NA	5.23	6.03	1.33	22.1
dieldrin	4.51	8.49	<2.67	NA	4.26	4.69	DL	5.25	**14.8**	<248	7.09	NA	2.70	5.28	1.92	36.4
4,4'-DDE	19.6	34.9	19.1	20.5	20.0	21.6	**18.7**	23.2	**24.1**	**18.6**	37.6	NA	12.9	23.3	7.9	33.9
2,4'-DDD	6.95	inf	7.35	NA	6.41	7.30	DL	10.3	NA	<248	10.5	NA	5.08	7.69	1.99	25.8
endrin	<1	NA	<2.67	NA	0.577	<2.2	DL	0.514	31.7	<7282	NA	NA	9.16	no target		
endosulfan II	<1	NA	NA	NA	<0.5	<3.4	DL	<0.25	5.98	<7282	<2.18	NA	<2.67	no target		
4,4'-DDD	14.4	inf	18.9	16.6	14.0	13.1	**13.0**	20.5	**27.3**	<248	26.0	NA	**9.08**	17.7	4.6	25.8
2,4'-DDT	<1	inf	<2.67	NA	0.883	<2.8	DL	1.54	NA	<248	<2.98	NA	2.74	no target		
cis-nonachlor	3.53	5.43	2.66	NA	3.31	NA	3.83	3.85	NA	NA	NA	NA	<2.67	3.77	0.92	24.5
4,4'-DDT	1.56	2.15	1.57	1.49	1.37	<2.5	DL	1.53	**15.4**	<248	<6.63	NA	<2.67	1.61	0.27	17.0
mirex	<1	inf	<2.67	NA	0.793	<1.5	DL	0.561	NA	NA	<1.49	NA	10.1	no target		
endosulfan sulfate	<1	NA	NA	NA	< 0.627	NA	DL	<0.27	<3.43	<7282	<3.19	NA	3.11	no target		
chlorpyrifos	NA	NA	NA	NA	NA	NA	NA	2.39	NA	NA	<5.00	NA	NA	no target		

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

Table 4. Mussel Tissue XIII (QA07TIS13): Laboratory means of three replicates and exercise assigned values - PCBs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Exercise Assigned Value	s	%RSD
PCB 8	1.13	NA	1.55	**0.774**	1.05	<2.8	NA	0.926	NA	**1.75**	3.09	1.26	2.99333	1.71	1.05	61.3
PCB 18	1.65	3.63	2.23	1.93	1.42	<2.7	NA	2.40	NA	**1.68**	5.25	2.27	3.313	2.68	1.20	44.9
PCB 28	6.29	**10.1**	7.33	7.04	6.03	4.03	NA	4.89	NA	**6.76**	<3.21	5.71	**2.72**	5.90	1.16	19.7
PCB 31	3.68	**11.9**	NA	NA	3.82	NA	NA	3.51	NA	**4.63**	<2.73	3.71	<2.00	3.68	0.13	3.5
PCB 44	7.33	8.40	5.56	**6.80**	7.77	5.81	NA	6.84	NA	**3.46**	7.74	7.83	**3.70**	7.16	1.01	14.1
PCB 49	5.85	9.25	NA	NA	5.18	NA	NA	7.56	NA	**6.25**	NA	6.06	4.47	6.40	1.74	27.2
PCB 52	12.0	18.0	12.7	13.1	10.1	11.9	NA	14.0	NA	**7.11**	15.5	11.9	**5.25**	13.2	2.3	17.7
PCB 66	10.8	13.9	10.7	11.1	10.4	10.5	NA	8.58	NA	**7.60**	11.0	10.0	**4.00**	10.8	1.4	13.0
PCB 95	10.9	15.2	NA	NA	10.2	NA	NA	13.0	NA	**9.47**	14.9	11.0	NA	12.5	2.2	17.4
PCB 99	12.1	14.4	NA	NA	12.9	NA	NA	12.0	NA	**11.2**	13.7	15.8	8.35	12.7	2.3	18.4
PCB 101	23.3	30.5	24.8	24.9	20.6	27.0	NA	23.8	NA	**13.4**	28.1	23.0	**13.87**	25.1	3.0	11.9
PCB 105	5.69	9.08	6.27	7.47	5.48	5.89	NA	4.53	NA	**5.03**	7.25	5.64	3.94	6.13	1.49	24.4
PCB 118	18.0	29.4	24.4	22.2	17.3	20.5	NA	21.4	NA	**14.4**	25.1	19.4	**11.1**	22.0	3.8	17.3
PCB 128	3.06	5.17	5.14	3.32	2.94	4.32	NA	2.69	NA	**2.98**	4.83	3.25	<4.00	3.86	1.00	26.0
PCB 138	25.5	coelute	**30.7**	22.9	coelute	22.9	NA	**24.8**	NA	coelute	coelute	coelute	11.0	20.6	6.5	31.5
PCB 138/163	above	36.8	above	above	25.0	above	NA	above	NA	**22.7**	27.9	26.2	above	29.0	5.4	18.5
PCB 149	16.5	24.2	NA	NA	16.9	NA	NA	12.8	NA	**15.6**	18.4	17.6	**14.1**	17.7	3.7	21.0
PCB 153	26.6	coelute	34.3	29.2	27.8	28.3	NA	coelute	NA	**20.9**	31.9	28.8	**16.3**	29.6	2.6	9.0
PCB 153/132	above	48.1	above	above	above	above	NA	38.9	NA	above	above	above	above	no target		
PCB 156	1.59	1.65	NA	NA	1.41	NA	NA	2.88	NA	**0.950**	1.71	1.27	<2.00	1.75	0.58	32.9
PCB 170	1.71	2.53	2.20	**0.198**	1.54	2.11	NA	2.10	NA	**1.93**	1.65	1.61	2.14	1.95	0.34	17.4
PCB 180	5.25	8.69	6.01	5.14	5.12	5.15	NA	**5.64**	NA	**5.84**	5.55	5.17	<4.00	5.76	1.22	21.2
PCB 187	9.80	15.1	10.7	11.5	9.72	9.77	NA	10.5	NA	**9.18**	10.6	10.2	**6.42**	10.9	1.7	15.4
PCB 194	0.480	0.664	NA	NA	0.434	NA	NA	0.451	NA	**0.520**	0.913	0.462	<4.00	0.567	0.189	33.4
PCB 195	<1	<0.384	<2.67	DL	0.083	<1.8	NA	<0.27	NA	<0.40	<2.13	0.082	<2.00	no target		
PCB 206	<1	<0.386	<2.67	DL	0.075	<1.7	NA	<0.29	NA	<0.40	<0.866	0.064	<4.00	no target		
PCB 209	<1	<0.383	<2.67	DL	0.062	<1.7	NA	<0.24	NA	<0.40	<0.974	0.076	<2.00	no target		

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

Table 5. Mussel Tissue XIII (QA07TIS13): Laboratory means of three replicates and exercise assigned values - PBDEs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Exercise Assigned Value	s	%RSD
BDE 15	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 17	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.893	NA	NA	no target		
BDE 25	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 28	coelute	3.34	NA	NA	NA	NA	NA	NA	NA	2.06	1.46	NA	NA	no target		
BDE 30	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 33	coelute	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 28/33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 47	34.5	42.0	NA	NA	NA	NA	NA	NA	NA	**23.7**	33.9	NA	NA	36.8	4.5	12.2
BDE 49	<5	3.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 66	<5	0.977	NA	NA	NA	NA	NA	NA	NA	0.420	<1.12	NA	NA	no target		
BDE 71	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.17	NA	NA	no target		
BDE 75	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 85	<5	<0.967	NA	NA	NA	NA	NA	NA	NA	<0.24	<6.15	NA	NA	no target		
BDE 99	7.76	8.18	NA	NA	NA	NA	NA	NA	NA	<10.0	5.54	NA	NA	7.16	1.42	19.8
BDE 100	3.58	3.97	NA	NA	NA	NA	NA	NA	NA	**2.15**	3.65	NA	NA	3.73	0.21	5.5
BDE 116	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 118	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 119	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 138	<5	NA	NA	NA	NA	NA	NA	NA	NA	<2.00	<3.12	NA	NA	no target		
BDE 153	<5	<0.965	NA	NA	NA	NA	NA	NA	NA	<0.24	<1.00	NA	NA	no target		
BDE 154	<5	<0.973	NA	NA	NA	NA	NA	NA	NA	<0.20	<5.75	NA	NA	no target		
BDE 155	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 156	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 181	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 183	<5	<0.977	NA	NA	NA	NA	NA	NA	NA	<0.20	<1.48	NA	NA	no target		
BDE 190	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.17	NA	NA	no target		
BDE 191	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 196	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 197	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 203	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 205	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 206	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 207	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 208	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 209	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		

Note: Bolded values were not used in the calculation of the exercise assigned value; NA = not analyzed

Table 6. SRM 2977: Laboratory means of three replicates and target values - TEO and PAHs

(reported as if three figures were significant)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	
TEO (percent)	5.89	7.74	NA	7.99	NA	4.32	0.00	11.0	NA	NA	9.02	2.92	4.20	no target

PAHs (ng/g dry mass)

														Certificate Values		
Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	conc.	95%CL	type
naphthalene	14.8	9.45	13.7	NA	14.3	14.8	**186**	8.30	**NA**	**NA**	44.5	56.3	<20.0	21.1	1.4	Reference
2-methylnaphthalene	12.5	11.1	5.51	NA	8.35	8.63	<40	7.50	**NA**	NA	<75.6	**32.4**	<20.0	17.3	1.7	Reference
1-methylnaphthalene	7.97	7.09	8.95	NA	6.52	5.12	**55.0**	5.80	**NA**	NA	<48.5	20.6	<20.0	15.6	1.5	Reference
biphenyl	4.90	3.55	2.35	NA	<5	4.66	NA	5.10	NA	NA	<24.0	8.28	<20.0	6.0	1.3	Reference
2,6-dimethylnaphthalene	17.4	17.0	10.4	NA	16.1	13.0	NA	15.7	NA	NA	<52.3	22.2	<20.0	no target		Target
acenaphthylene	2.98	<0.380	3.26	NA	1.34	3.45	<40	4.10	**NA**	**NA**	<21.3	3.29	<20.0	no target		Target
acenaphthene	3.15	3.19	5.55	NA	3.18	3.20	<40	2.70	NA	**NA**	<61.4	2.98	<20.0	4.9	1.2	Reference
1,6,7-trimethylnaphthalene	coelute	32.1	NA	NA	79.3	NA	NA	24.3	NA	NA	<91.1	38.0	51.8	no target		Target
fluorene	10.2	10.0	**6.02**	NA	9.82	8.20	<40	10.4	NA	**NA**	<64.2	9.03	<20.0	**10.30**	**0.13**	Certified
phenanthrene	39.4	41.8	21.8	NA	41.4	35.4	**108**	30.2	NA	**NA**	31.5	39.5	35.3	**36.2**	**2.5**	Certified
anthracene	3.16	3.05	3.32	NA	2.85	6.59	<40	NA	NA	NA	<24.1	8.42	<20.0	6.2	1.4	Reference
1-methylphenanthrene	44.9	57.2	46.6	NA	49.7	28.1	NA	43.7	NA	NA	56.9	49.3	36.5	**39.0**	**1.9**	Certified
fluoranthene	39.0	46.0	24.3	NA	38.7	35.6	**170**	38.2	**NA**	**NA**	<169	34.1	37.8	**38.90**	**0.63**	Certified
pyrene	79.0	90.4	46.2	NA	86.4	33.4	**252**	73.6	**NA**	**NA**	64.4	63.7	70.0	**77.4**	**2.1**	Certified
benz[a]anthracene	22.1	25.3	12.1	NA	20.5	21.7	<40	15.3	**NA**	**NA**	19.7	19.1	**<20.0**	**20.19**	**0.87**	Certified
chrysene	44.6	coelute	52.2	NA	coelute	63.4	<40	coelute	NA	**NA**	coelute	**85.0**	coelute	42.2	5.5	Reference
triphenylene	35.3	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	coelute	36.1	2.4	Reference
chrysene/triphenylene	above	101	above	NA	95.9	above	above	86.9	NA	NA	76.5	above	75.5	78.1	8.4	Target
benzo[*b*]fluoranthene	11.7	16.0	11.7	NA	13.5	9.18	43.4	coelute	NA	**NA**	17.3	12.6	<20.0	**11.10**	**0.50**	Certified
benzo[*j*]fluoranthene	4.49	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	coelute	**4.48**	**0.15**	Certified
benzo[*k*]fluoranthene	4.09	coelute	5.51	NA	coelute	5.86	<40	coelute	NA	NA	coelute	**12.0**	coelute	4.02	0.75	Reference
benzo[*j+k*]fluoranthene	above	13.6	above	NA	10.7	above	above	NA	NA	NA	<33.2	above	<20.0	8.50	0.85	Target
benzo[*b+j+k*]fluoranthene	above	above	above	NA	above	above	above	24.8	NA	NA	above	above	above	19.6	1.4	Target
benzo[e]pyrene	13.8	20.3	11.3	NA	17.5	11.5	NA	17.7	NA	NA	<46.7	22.1	<20.0	**13.3**	**0.43**	Certified
benzo[a]pyrene	5.48	5.30	7.20	NA	6.96	3.34	**74.4**	6.20	NA	NA	<38.0	**29.3**	**<20.0**	**5.30**	**0.61**	Certified
perylene	3.38	2.70	**15.3**	NA	2.70	2.10	NA	3.10	NA	NA	<16.0	**8.660**	<20.0	**3.69**	**0.38**	Certified
indeno[1,2,3-cd]pyrene	4.56	4.61	**8.02**	NA	4.20	3.79	<40	3.90	NA	NA	<63.5	4.37	**<20.0**	**4.76**	**0.15**	Certified
dibenz[a,h]anthracene	1.53	2.10	**5.55**	NA	2.07	DL	<40	1.30	NA	NA	<50.1	**2.820**	<20.0	1.47	0.33	Reference
benzo[ghi]perylene	10.2	11.3	11.3	NA	10.1	5.82	<40	10.0	NA	**NA**	<25.6	11.20	**<20.0**	**9.45**	**0.37**	Certified

Table 7. SRM 2977: Laboratory means of three replicates and target values - Pesticides

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Certificate Values conc.	95%CL	type
alpha-HCH (a-BHC)	<2	inf	NA	NA	SRM 2978	<2.0	17.0	<0.23	NA	NA	NA	NA	<2.00	no target		Target
hexachlorobenzene	<2	<0.326	3.04	DL	SRM 2978	2.47	DL	<0.25	NA	NA	<1.80	NA	<2.00	no target		Target
gamma-HCH (g-BHC,lindane)	<2	inf	<4.44	DL	SRM 2978	<1.5	DL	<0.22	NA	NA	<0.73	NA	<2.00	no target		Target
beta-HCH (b-BHC)	<2	inf	NA	NA	SRM 2978	NA	10.0	8.65	**NA**	NA	NA	NA	4.85	no target		Target
heptachlor	<2	inf	<4.44	NA	SRM 2978	<2	13.0	<0.25	NA	NA	<1.73	NA	2.23	no target		Target
aldrin	<2	inf	<4.44	NA	SRM 2978	<1.5	DL	<0.24	NA	NA	<4.46	NA	<2.00	no target		Target
heptachlor epoxide	<2	0.544	<4.44	NA	SRM 2978	<1.8	1.79	<0.23	NA	NA	<4.95	NA	2.98	no target		Target
oxychlordane	<2	inf	<4.44	NA	SRM 2978	NA	DL	<0.28	NA	NA	NA	NA	2.00	no target		Target
gamma-chlordane	1.63	1.58	3.38	NA	SRM 2978	3.55	DL	1.47	**NA**	NA	NA	NA	<2.00	2.01	0.39	Reference
2,4'-DDE	1.09	1.26	<4.44	NA	SRM 2978	<1.0	DL	0.311	NA	NA	<0.666	NA	4.60	no target		Target
endosulfan I	<2	<0.329	NA	NA	SRM 2978	<1.5	DL	<0.25	NA	NA	<1.07	NA	2.18	no target		Target
cis-chlordane (alpha-chlordane)	1.04	0.631	0.803	0.311	SRM 2978	1.55	DL	0.785	**NA**	NA	<11.8	NA	2.45	1.14	0.39	Reference
trans-nonachlor	1.03	0.525	0.518	DL	SRM 2978	<1.4	**16.0**	0.835	NA	NA	<12.1	NA	2.49	**1.25**	**0.17**	Certified
dieldrin	5.56	6.74	7.53	NA	SRM 2978	5.52	DL	7.80	**NA**	NA	6.45	NA	2.42	**5.55**	**0.61**	Certified
4,4'-DDE	12.3	12.4	6.48	5.90	SRM 2978	6.70	**29.0**	10.3	**NA**	**NA**	12.6	NA	5.17	**11.8**	**1.2**	Certified
2,4'-DDD	3.24	inf	2.26	NA	SRM 2978	<4.0	3.60	2.83	NA	NA	3.55	NA	<2.00	**3.15**	**0.25**	Certified
endrin	<2	NA	<4.44	NA	SRM 2978	<2.2	DL	1.12	NA	NA	NA	NA	18.1	no target		Target
endosulfan II	<2	NA	NA	NA	SRM 2978	<3.4	4.70	2.34	NA	NA	<2.20	NA	<2.00	no target		Target
4,4'-DDD	3.40	inf	3.39	1.50	SRM 2978	3.00	**26.0**	2.98	**NA**	NA	3.64	NA	**<2.00**	**3.92**	**0.56**	Certified
2,4'-DDT	<2	inf	<4.44	NA	SRM 2978	<2.8	4.00	<0.25	NA	NA	<3.00	NA	<2.00	no target		Target
cis-nonachlor	<2	0.300	0.223	NA	SRM 2978	NA	7.60	1.69	NA	NA	NA	NA	<2.00	no target		Target
4,4'-DDT	1.07	<0.325	1.17	0.472	SRM 2978	<2.5	**21.0**	0.748	**NA**	NA	<6.67	NA	1.99	**1.32**	**0.16**	Certified
mirex	<2	inf	<4.44	NA	SRM 2978	<1.5	DL	0.637	NA	NA	<1.50	NA	6.90	no target		Target
endosulfan sulfate	<2	NA	NA	NA	SRM 2978	NA	DL	<0.27	NA	NA	<3.21	NA	3.12	no target		Target
chlorpyrifos	NA	NA	NA	NA	SRM 2978	NA	NA	1.06	NA	NA	<5.00	NA	NA	no target		Target

NA = not analyzed; inf=interference; DL=detection limit

Table 8. SRM 2977: Laboratory means of three replicates and target values - PCBs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Certificate Values conc.	95%CL	type
PCB 8	1.78	NA	2.33	**0.111**	1.21	<2.8	NA	1.55	NA	**NA**	<3.10	1.35	2.34	**1.99**	**0.14**	Certified
PCB 18	1.90	2.78	1.88	1.06	1.31	<2.7	NA	1.99	NA	**NA**	<3.57	2.14	2.420	2.24	0.74	Reference
PCB 28	5.95	**8.10**	6.72	5.21	6.48	4.62	NA	5.65	NA	**NA**	5.77	6.16	**2.51**	**5.17**	**0.36**	Certified
PCB 31	3.58	**4.35**	NA	NA	3.33	NA	NA	3.68	NA	**NA**	3.81	3.38	1.43	**3.86**	**0.29**	Certified
PCB 44	2.95	2.31	2.13	**1.26**	4.06	<2.3	NA	2.68	NA	**NA**	3.25	4.56	**1.58**	**3.22**	**0.21**	Certified
PCB 49	2.04	2.08	NA	NA	1.28	NA	NA	1.80	NA	**NA**	NA	1.32	1.80	**2.44**	**0.27**	Certified
PCB 52	7.77	9.36	7.84	9.59	6.38	6.18	NA	9.53	NA	**NA**	8.03	7.30	**2.74**	**8.02**	**0.56**	Certified
PCB 66	3.61	4.57	4.09	3.45	3.59	2.66	NA	3.54	NA	**NA**	3.71	3.08	**<1.33**	**3.55**	**0.18**	Certified
PCB 95	5.12	5.31	NA	NA	4.30	NA	NA	5.20	NA	**NA**	5.01	3.88	NA	**5.17**	**0.53**	Certified
PCB 99	4.50	4.99	NA	NA	4.99	NA	NA	2.58	NA	**NA**	4.55	5.23	3.21	3.0	1.2	Reference
PCB 101	9.62	10.9	10.0	8.69	8.32	9.17	NA	10.0	NA	**NA**	10.0	7.64	**5.66**	**10.6**	**1.2**	Certified
PCB 105	2.86	4.15	3.07	3.20	2.82	3.24	NA	3.17	NA	**NA**	3.87	2.31	1.86	2.93	0.46	Reference
PCB 118	9.06	12.6	14.3	8.75	8.50	8.43	NA	10.2	NA	**NA**	9.69	7.40	**4.90**	**10.00**	**0.41**	Certified
PCB 128	2.04	3.37	2.90	1.45	1.67	2.08	NA	1.81	NA	**NA**	2.71	1.52	<2.67	**2.38**	**0.28**	Certified
PCB 138	8.62	coelute	**15.3**	10.0	coelute	9.89	NA	**14.3**	NA	**NA**	coelute	coelute	4.92	**7.94**	**0.63**	Certified
PCB 138/163	above	18.0	above	above	12.6	above	NA	above	above	**NA**	14.6	11.6	above	no target		Target
PCB 149	7.46	7.96	NA	NA	5.88	NA	NA	6.15	NA	**NA**	6.75	5.61	**3.14**	**8.95**	**0.67**	Certified
PCB 153	13.2	coelute	12.9	10.5	11.5	10.4	NA	coelute	NA	**NA**	11.8	9.64	**5.76**	**14.1**	**1.3**	Certified
PCB 153/132	above	17.5	above	above	above	above	NA	15.5	NA	**NA**	above	above	above	no target		Target
PCB 156	0.908	0.757	NA	NA	0.866	NA	NA	0.986	NA	**NA**	1.04	0.597	<1.33	**0.959**	**0.036**	Certified
PCB 170	2.76	3.30	2.76	**ND**	2.81	2.29	NA	2.85	NA	**NA**	2.42	2.01	2.11	**2.74**	**0.25**	Certified
PCB 180	6.98	7.90	5.57	4.41	7.16	4.53	NA	**12.0**	NA	**NA**	5.58	4.56	2.91	**6.32**	**0.72**	Certified
PCB 187	4.60	5.55	4.35	3.87	4.54	3.08	NA	4.50	NA	**NA**	4.29	3.35	**2.46**	**4.47**	**0.32**	Certified
PCB 194	0.895	0.860	NA	NA	1.07	NA	NA	0.748	NA	**NA**	0.944	0.553	<2.67	**0.881**	**0.032**	Certified
PCB 195	<1	<0.331	<4.44	DL	0.293	<1.8	NA	<0.27	NA	NA	<2.15	0.116	<1.33	no target		Target
PCB 206	<1	<0.333	<4.44	DL	0.073	<1.7	NA	<0.29	NA	NA	<0.873	<1.09	<2.67	no target		Target
PCB 209	<1	<0.331	<4.44	DL	<0.005	<1.7	NA	<0.24	NA	NA	<0.981	<1.09	<1.33	no target		Target

NA = not analyzed

Table 9. SRM 2977: Laboratory means of three replicates and target values - PBDEs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15	Certificate Values conc.	std dev	type
BDE 15	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 17	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.900	NA	NA	1.04	0.19	Reference
BDE 25	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 28	coelute	4.49	NA	NA	NA	NA	NA	NA	NA	NA	1.55	NA	NA	no target		Target
BDE 30	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 33	coelute	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 28/33	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.54**	**0.40**	Certified
BDE 47	40.5	55.1	NA	NA	NA	NA	NA	NA	NA	NA	40.9	NA	NA	**36.5**	**4.0**	Certified
BDE 49	<5	2.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.20**	**0.19**	Certified
BDE 66	<5	1.05	NA	NA	NA	NA	NA	NA	NA	NA	<1.13	NA	NA	**0.453**	**0.046**	Certified
BDE 71	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<1.18	NA	NA	no target		Target
BDE 75	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 85	<5	<0.834	NA	NA	NA	NA	NA	NA	NA	NA	<6.20	NA	NA	no target		Target
BDE 99	4.96	7.94	NA	NA	NA	NA	NA	NA	NA	NA	5.02	NA	NA	4.68	0.92	Reference
BDE 100	2.51	3.34	NA	NA	NA	NA	NA	NA	NA	NA	2.50	NA	NA	1.82	0.64	Reference
BDE 116	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 118	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 119	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 138	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3.15	NA	NA	no target		Target
BDE 153	<5	<0.832	NA	NA	NA	NA	NA	NA	NA	NA	<1.00	NA	NA	0.16	0.04	Reference
BDE 154	<5	<0.839	NA	NA	NA	NA	NA	NA	NA	NA	<5.79	NA	NA	0.20	0.09	Reference
BDE 155	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 156	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 181	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 183	<5	<0.843	NA	NA	NA	NA	NA	NA	NA	NA	<1.49	NA	NA	no target		Target
BDE 190	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	<6.21	NA	NA	no target		Target
BDE 191	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 196	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 197	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 203	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 205	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 206	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 207	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 208	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 209	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target

NA = not analyzed

Table 10. Marine Sediment XIV (QA07SED14): Laboratory means of three replicates and exercise assigned values - Water, TOC, and PAHs

(reported as if three figures were significant)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Value	s	%RSD
Water (percent)	47.4	48.2	49.6	NA	42.3	48.1	49.0	47.3	50.0	48.6	35.5	44.5	47.7	43.5	43.5	45.4	46.0	3.8	8.2
TOC (percent)	NA	2.69	NA	4.44	NA	NA	NA	4.37	4.15	NA	NA	NA	NA	NA	NA	4.15	3.96	0.72	18.2

PAHs (ng/g dry mass)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Exercise Assigned Value	s	%RSD
naphthalene	568	202	543	245	NA	587	87.5	233	369	26.2	427	123	547	318	486	169	329	190	57.7
2-methylnaphthalene	349	< 1920	382	82.1	NA	317	65.1	163	232	16.6	270	102	426	245	283	111	217	129	59.2
1-methylnaphthalene	126	68.2	129	176	NA	131	32.4	74.0	101	11.8	107	50	197	112	123	<75.1	103	52	50.4
biphenyl	106	NA	118	64.6	NA	101	30.1	NA	58.2	<39.2	63.5	NA	216	129	113	<75.1	99.9	51.7	51.7
2,6-dimethylnaphthalene	251	NA	276	49.1	NA	235	78.9	NA	153	NA	161	NA	225	206	210	105	177	74	41.8
acenaphthylene	155	172	45.2	177	NA	141	132	310	164	35.8	236	169	528	180	237	82.6	184	119	64.5
acenaphthene	69.3	40.6	70.5	41.0	NA	67	34.7	85.0	41.9	8.04	56.2	29.2	63.2	66.4	74	<75.1	53.4	21.3	39.9
1,6,7-trimethylnaphthalene	coelute	NA	103	NA	NA	259	NA	NA	51.4	NA	NA	NA	149	189	117	151	146	66	45.5
fluorene	88.4	102	113	60.0	62.6	81.3	70.4	92.7	**79.6**	**9.72**	93.0	**83.9**	135	130	80.7	73.0	85.1	23.8	27.9
phenanthrene	1334	886	1387	1112	1019	1280	873	860	**1437**	**120**	1117	**669**	1236	957	1110	1015	1022	177	17.3
anthracene	315	289	325	223	234	301	170	303	**470**	**27.3**	361	**158**	815	250	469	143	302	170	56.3
1-methylphenanthrene	333	NA	330	337	NA	271	211	NA	**267**	NA	413	NA	327	363	245	202	303	68	22.6
fluoranthene	3565	2580	3567	3717	3520	3593	3000	2600	**2657**	**319**	4113	**1695**	2676	2540	2950	3680	3238	532	16.4
pyrene	3213	2513	3173	3073	2970	3250	2583	2100	**3140**	**296**	3247	**1702**	2835	2477	2627	3247	2870	377	13.1
benz[*a*]anthracene	1104	956	1290	1333	1010	1093	1052	893	**992**	**139**	1140	**715**	1328	969	1033	1270	1113	149	13.4
chrysene	1753	1487	coelute	2103	1490	coelute	1583	1500	coelute	**200**	1870	**1171**	coelute	1453	1880	coelute	1680	231	13.8
triphenylene	390	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	NA	coelute	NA	NA	coelute	no target		
chrysene/triphenylene	above	above	2217	above	above	2150	above	above	**1177**	above	above	above	1917	above	above	1917	2050	156	7.6
benzo[*b*]fluoranthene	1147	1630	1850	3097	NA	1643	1580	1600	coelute	**214**	1557	**1108**	2664	1947	1477	1987	1848	539	29.1
benzo[*j*]fluoranthene	614	NA	coelute	NA	NA	coelute	NA	NA	coelute	NA	NA	NA	coelute	NA	NA	coelute	no target		
benzo[*k*]fluoranthene	873	878	coelute	836	NA	coelute	1383	553	coelute	**114**	1213	**783**	coelute	762	**1473**	coelute	929	280	30.2
benzo[*j+k*]fluoranthene	above	above	1640	above	above	1617	above	above	coelute	above	above	above	979	above	above	1617	1463	323	22.1
benzo[*b+j+k*]fluoranthene	above	above	above	above	above	above	above	above	2628	above	above	above	above	above	above	above	no target		
benzo[*e*]pyrene	1582	NA	1573	1743	**2747**	1597	1350	NA	**1045**	NA	1270	NA	1457	1105	1450	1413	1454	183	12.6
benzo[*a*]pyrene	999	693	1000	945	800	996	758	760	**688**	**143**	809	**536**	991	696	881	980	870	121	13.9
perylene	397	NA	405	332	**151**	396	355	NA	**214**	NA	438	NA	459	328	386	356	385	43	11.2
indeno[1,2,3-*cd*]pyrene	1156	693	1250	973	944	1073	864	867	**709**	**104**	923	**675**	1487	744	978	1187	1011	218	21.6
dibenz[*a,h*]anthracene	297	255	NA	236	214	coelute	184	217	**165**	**32.7**	297	**267**	**477**	293	335	384	271	61	22.7
dibenz[*a,h+a,c*]anthracene	NA	NA	319	NA	NA	344	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
benzo[*ghi*]perylene	1221	870	1313	933	898	1187	808	940	**676**	**139**	975	**671**	1054	923	1210	1263	1046	171	16.3

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

Table 11. Marine Sediment XIV (QA07SED14): Laboratory means of three replicates and exercise assigned values - Pesticides

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Exercise Assigned Value	s	%RSD
alpha-HCH (a-BHC)	<2	< 49.3	inf	NA	NA	0.228	1.05	DL	<0.52	1.34	0.249	<229	NA	NA	NA	<0.943	no target		
hexachlorobenzene	5.19	NA	5.12	5.17	3.79	5.34	5.09	DL	5.04	3.81	5.71	NA	6.61	NA	NA	3.19	4.92	0.97	19.7
gamma-HCH (g-BHC,lindane)	<1	< 49.3	inf	<25.7	0.370	0.119	<1	29.0	<0.25	2.28	0.115	<229	<0.36	NA	NA	0.965	no target		
beta-HCH (b-BHC)	<1	< 49.3	inf	NA	NA	0.355	NA	DL	<0.43	<0.507	0.413	<229	NA	NA	NA	4.51	no target		
heptachlor	<1	< 49.3	<1.20	<25.7	NA	0.100	<1	12.0	<0.38	<0.527	0.170	<229	DL	NA	NA	1.02	no target		
aldrin	<1	< 49.3	inf	<25.7	NA	0.078	<1	DL	<0.3	0.820	0.114	<229	DL	NA	NA	<0.943	no target		
heptachlor epoxide	<1	< 49.3	<1.20	<25.7	NA	0.778	<1	**14.5**	<0.47	0.913	0.736	<229	0.757	NA	NA	**3.22**	0.796	0.079	10.0
oxychlordane	<1	NA	inf	<25.7	NA	<0.3	NA	DL	<0.51	NA	0.058	NA	NA	NA	NA	2.43	no target		
gamma-chlordane	28.6	< 49.1	inf	42.1	NA	30.3	29.5	DL	34.5	**3.69**	31.9	**81.5**	NA	NA	NA	15.2	30.3	8.1	26.6
2,4'-DDE	44.2	NA	54.1	33.5	NA	42.5	35.3	**21.7**	41.4	NA	44.0	**130**	59.1	NA	NA	26.9	42.3	10.0	23.5
endosulfan I	<1	< 49.3	<1.21	NA	NA	< 0.154	<1	DL	<0.59	<0.464	NA	<229	DL	NA	NA	2.96	no target		
cis-chlordane (alpha-chlordane)	28.5	18.8	inf	32.6	19.2	28.6	25.0	DL	21.2	**4.18**	36.7	<229	34.3	NA	NA	12.7	25.8	7.7	30.0
trans-nonachlor	18.1	NA	inf	18.4	11.7	17.4	22.3	DL	13.8	NA	18.4	NA	16.0	NA	NA	**17.8**	17.0	3.2	19.0
dieldrin	7.77	< 49.3	inf	<25.7	NA	7.98	7.82	DL	7.25	1.26	9.04	<457	**41.7**	NA	NA	4.05	6.45	2.77	42.9
4,4'-DDE	175	130	184	177	140	143	193	193	165	**17.9**	156	**211**	197	NA	NA	**97.3**	169	30	18.1
2,4'-DDD	89.4	NA	inf	114	NA	88.9	102	**71.0**	88.7	NA	83.0	**145**	97.8	NA	NA	59.4	90.4	16.0	17.7
endrin	<1	< 49.3	NA	<25.7	NA	<0.102	19.2	DL	<1.12	2.26	0.061	<457	NA	NA	NA	1.64	no target		
endosulfan II	<1	< 49.3	NA	NA	NA	<0.436	<1	DL	<0.8	2.00	NA	<457	0.163	NA	NA	1.17	no target		
4,4'-DDD	277	155	inf	**375**	218	274	311	**330**	252	**30.8**	216	**264**	299	NA	NA	165	241	56	23.3
2,4'-DDT	4.85	NA	inf	<25.7	NA	10.4	4.42	DL	6.02	NA	9.55	<457	DL	NA	NA	4.47	6.61	2.67	40.3
cis-nonachlor	7.64	NA	inf	7.66	NA	7.53	NA	DL	6.36	NA	6.65	NA	NA	NA	NA	3.85	6.61	1.46	22
4,4'-DDT	532	378	inf	**701**	408	530	745	**497**	345	**52.5**	568	**665**	**1014**	NA	NA	374	485	135	27.9
mirex	<1	NA	59.5	<25.7	NA	0.773	<1	DL	<0.44	NA	0.546	20.1	0.813	NA	NA	18.7	no target		
endosulfan sulfate	<1	< 49.3	NA	NA	NA	<0.320	NA	DL	<0.39	<1.34	NA	<457	0.028	NA	NA	3.20	no target		
chlorpyrifos	NA	NA	NA	NA	NA	NA	NA	NA	<0.76	NA	NA	NA	2.28	NA	NA	NA	no target		

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

Table 12. Marine Sediment XIV (QA07SED14): Laboratory means of three replicates and exercise assigned values - PCBs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Exercise Assigned Value	s	%RSD
PCB 8	14.6	NA	NA	20.0	13.0	14.6	11.3	NA	14.9	NA	16.3	**20.2**	**4.31**	NA	12.5	9.39	14.1	3.0	21.6
PCB 18	25.9	NA	37.7	40.5	30.9	27.3	34.4	NA	22.3	NA	36.6	**20.8**	13.2	NA	29.3	21.5	29.1	8.1	28.0
PCB 28	68.3	NA	83.2	90.5	50.7	84.7	65.2	NA	75.6	NA	69.9	**66.2**	85.7	NA	54.9	**30.6**	72.9	13.5	18.5
PCB 31	56.2	NA	54.9	NA	NA	62.5	NA	NA	74.2	NA	57.4	**53.8**	26.6	NA	41.4	**29.6**	53.3	15.3	28.7
PCB 44	64.1	NA	51.9	70.2	41.4	**67.2**	53.5	NA	49.8	NA	74.2	**28.1**	47.2	NA	48.6	**27.1**	55.6	11.2	20.1
PCB 49	46.5	NA	47.9	NA	NA	44.4	NA	NA	47.6	NA	43.9	**42.1**	NA	NA	34.3	**24.4**	44.1	5.1	11.5
PCB 52	72.3	NA	71.9	85.8	55.0	69.6	72.7	NA	75.4	NA	67.0	**37.2**	**116**	NA	53.2	**34.7**	69.2	10.0	14.5
PCB 66	57.8	NA	71.1	78.0	48.1	66.2	62.9	NA	48.1	NA	53.4	**40.5**	64.6	NA	46.3	**27.8**	59.6	10.7	18.0
PCB 95	40.7	NA	46.2	NA	NA	42.9	NA	NA	45.6	NA	38.8	**41.1**	51.6	NA	36.2	NA	43.1	5.2	12.0
PCB 99	33.9	NA	28.9	NA	NA	34.4	NA	NA	31.5	NA	27.9	**28.0**	32.1	NA	30.9	**16.1**	31.4	2.4	7.6
PCB 101	49.3	NA	65.6	97.4	49.7	53.9	68.6	NA	63.3	NA	63.1	**37.6**	66.9	NA	47.6	**34.4**	62.5	14.6	23.3
PCB 105	20.4	NA	25.9	29.2	16.8	19.9	28.8	NA	18.6	NA	20.9	**16.1**	20.2	NA	15.0	**10.8**	21.6	4.8	22.4
PCB 118	42.9	NA	59.6	70.2	40.3	43.4	59.4	NA	48.1	NA	46.0	**34.5**	43.5	NA	36.8	**23.4**	49.0	10.6	21.5
PCB 128	8.16	NA	11.1	**15.8**	7.92	8.88	13.2	NA	8.11	NA	9.71	**7.71**	9.34	NA	7.79	6.42	9.06	1.94	21.4
PCB 138	62.9	NA	below	**102**	47.0	below	67.5	NA	39.4	NA	58.0	below	below	NA	below	**29.8**	62.8	21.7	34.6
PCB 138/163	NA	NA	78.70	NA	NA	64.9	NA	NA	NA	NA	NA	**47.9**	67.5	NA	53.5	NA	66.1	10.3	15.6
PCB 149	50.3	NA	59.00	NA	NA	53.1	NA	NA	42.1	NA	46.7	**50.3**	48.6	NA	44.6	36.6	47.6	6.9	14.4
PCB 153	53.7	NA	below	91.5	48.5	59.7	74.0	NA	below	NA	62.2	**44.5**	79.1	NA	47.6	**31.2**	64.5	15.6	24.2
PCB 153/132	NA	NA	90.50	NA	NA	NA	NA	NA	65.3	NA	NA	NA	NA	NA	NA	NA	no target		
PCB 156	6.45	NA	6.74	NA	NA	6.86	NA	NA	5.11	NA	6.71	**4.77**	DL	NA	4.68	3.32	5.69	1.36	23.9
PCB 170	17.2	NA	20.3	27.9	20.4	16.4	22.9	NA	20.8	NA	18.2	**20.6**	19.9	NA	14.0	**9.93**	19.8	3.8	19.4
PCB 180	42.7	NA	50.2	61.8	36.5	below	44.1	NA	39.8	NA	44.6	**46.5**	44.4	NA	below	**23.8**	45.5	7.7	16.8
PCB 180/193	NA	NA	NA	NA	NA	40.4	NA	NA	NA	NA	NA	NA	NA	NA	34.6	NA	no target		
PCB 187	25.7	NA	29.6	36.3	23.7	25.8	32.8	NA	26.4	NA	29.0	**19.0**	28.2	NA	21.6	**13.9**	27.9	4.3	15.5
PCB 194	10.1	NA	11.5	NA	NA	9.90	NA	NA	9.33	NA	12.9	**10.5**	11.2	NA	8.34	6.48	9.97	2.00	20.0
PCB 195	3.63	NA	3.59	5.68	3.22	3.79	<1	NA	3.94	NA	4.98	**2.85**	6.25	NA	3.26	<3.01	4.26	1.10	25.9
PCB 206	6.63	NA	9.67	11.2	7.83	6.69	8.79	NA	7.61	NA	NA	**10.9**	8.42	NA	6.13	<6.03	8.10	1.61	19.9
PCB 209	6.42	NA	6.53	9.18	6.24	6.36	7.28	NA	4.58	NA	NA	**6.60**	6.96	NA	4.79	**3.31**	6.48	1.36	20.9

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

Table 13. Marine Sediment XIV (QA07SED14): Laboratory means of three replicates and exercise assigned values - PBDEs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Exercise Assigned Value	s	%RSD
BDE 15	1.13	NA	NA	NA	NA	1.23	NA	NA	NA	NA	0.807	NA	NA	NA	NA	NA	no target		
BDE 17	1.30	NA	NA	NA	NA	1.33	NA	NA	NA	NA	1.57	NA	DL	NA	NA	NA	1.40	0.15	10.7
BDE 25	<2	NA	NA	NA	NA	other	NA	NA	NA	NA	1.57	NA	NA	NA	NA	NA	no target		
BDE 28	coelute	NA	<2.62	NA	NA	coelute	NA	NA	NA	NA	coelute	0.66667	DL	NA	NA	NA	no target		
BDE 30	<2	NA	NA	NA	NA	< 0.0195	NA	NA	NA	NA	< .0429	NA	NA	NA	NA	NA	no target		
BDE 33	coelute	NA	NA	NA	NA	coelute	NA	NA	NA	NA	coelute	NA	NA	NA	NA	NA	no target		
BDE 28/33	<2	NA	NA	NA	NA	0.392	NA	NA	NA	NA	0.582	NA	NA	NA	NA	NA	no target		
BDE 47	4.14	NA	4.53	NA	NA	3.65	NA	NA	NA	NA	4.58	4.12	4.09	NA	NA	NA	4.19	0.34	8.1
BDE 49	1.84	NA	2.52	NA	NA	1.72	NA	NA	NA	NA	1.47	NA	NA	NA	NA	NA	1.89	0.45	23.7
BDE 66	<2	NA	<2.62	NA	NA	0.185	NA	NA	NA	NA	0.132	0.150	DL	NA	NA	NA	0.156	0.027	17.3
BDE 71	<2	NA	NA	NA	NA	0.276	NA	NA	NA	NA	< .0417	NA	DL	NA	NA	NA	no target		
BDE 75	<2	NA	NA	NA	NA	0.033	NA	NA	NA	NA	0.085	NA	NA	NA	NA	NA	no target		
BDE 85	<2	NA	<2.62	NA	NA	0.148	NA	NA	NA	NA	< .0642	0.173	DL	NA	NA	NA	no target		
BDE 99	3.94	NA	5.41	NA	NA	3.52	NA	NA	NA	NA	3.93	4.48	3.15	NA	NA	NA	4.07	0.80	19.5
BDE 100	<2	NA	<2.62	NA	NA	0.878	NA	NA	NA	NA	0.795	1.06	2.24	NA	NA	NA	no target		
BDE 116	<2	NA	NA	NA	NA	< 0.171	NA	NA	NA	NA	0.123	NA	NA	NA	NA	NA	no target		
BDE 118	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		
BDE 119	<2	NA	NA	NA	NA	< 0.0898	NA	NA	NA	NA	<0.283	NA	NA	NA	NA	NA	no target		
BDE 138	<2	NA	NA	NA	NA	0.610	NA	NA	NA	NA	<.726	0.173	0.541	NA	NA	NA	no target		
BDE 153	3.00	NA	3.74	NA	NA	2.63	NA	NA	NA	NA	2.90	2.18	2.86	NA	NA	NA	2.88	0.51	17.7
BDE 154	<2	NA	<2.63	NA	NA	1.03	NA	NA	NA	NA	0.877	0.867	0.805	NA	NA	NA	0.895	0.096	10.7
BDE 155	<2	NA	NA	NA	NA	0.104	NA	NA	NA	NA	0.148	NA	NA	NA	NA	NA	no target		
BDE 156	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	no target		
BDE 181	<2	NA	NA	NA	NA	0.108	NA	NA	NA	NA	< .0312	NA	NA	NA	NA	NA	no target		
BDE 183	11.9	NA	12.7	NA	NA	12.1	NA	NA	NA	NA	8.87	10.0	12.5	NA	NA	NA	11.3	1.5	13.5
BDE 190	<15	NA	NA	NA	NA	1.74	NA	NA	NA	NA	0.665	NA	1.15	NA	NA	NA	no target		
BDE 191	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	no target		
BDE 196	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.76	NA	NA	NA	NA	NA	no target		
BDE 197	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.72	NA	NA	NA	NA	NA	no target		
BDE 203	<15	NA	NA	NA	NA	<5	NA	NA	NA	NA	4.06	NA	NA	NA	NA	NA	no target		
BDE 205	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	< .619	NA	NA	NA	NA	NA	no target		
BDE 206	<15	NA	NA	NA	NA	<15	NA	NA	NA	NA	9.41	NA	NA	NA	NA	NA	no target		
BDE 207	<15	NA	NA	NA	NA	<25	NA	NA	NA	NA	12.2	NA	NA	NA	NA	NA	no target		
BDE 208	<15	NA	NA	NA	NA	<15	NA	NA	NA	NA	1.90	NA	NA	NA	NA	NA	no target		
BDE 209	269	NA	NA	NA	NA	243	NA	NA	NA	NA	389	NA	276	NA	NA	NA	294	65	22.0

Note: Bolded values were not used in the calculation of the exercise assigned values; NA = not analyzed

Table 14. SRM 1944: Laboratory means of three replicates and target values - Water, TOC, and PAHs

(reported as if three figures were significant)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Certificate Values conc.	95%CL	type
Water (percent)	1.33	NA	NA	NA	NA	NA	1.83	NA	NA	NA	NA	NA	NA	1.33	1.33	NA	no target		Target
TOC (percent)	NA	3.38	NA	4.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.57	4.4	0.3	Reference

PAHs (ng/g dry mass)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Certificate Values conc.	95%CL	type
naphthalene	1465	485	1403	522	NA	2390	261	557	NA	414	1200	NA	1357	883	1030	398	**1650**	**310**	Certified
2-methylnaphthalene	926	316	969	270	NA	999	161	343	NA	240	829	NA	863	553	558	246	950	50	Reference
1-methylnaphthalene	539	231	461	305	NA	585	167	243	NA	167	442	NA	580	312	344	266	520	30	Reference
biphenyl	264	NA	248	101	NA	249	58.8	NA	NA	75.0	271	NA	339	160	196	<80.7	320	70	Reference
2,6-dimethylnaphthalene	802	NA	821	321	NA	814	309	NA	NA	NA	569	NA	730	490	500	401	no target		Target
acenaphthylene	447	578	207	513	NA	720	470	973	NA	393	754	NA	1372	512	826	444	no target		Target
acenaphthene	541	202	334	246	NA	376	173	227	NA	117	459	NA	255	231	294	244	570	30	Reference
1,6,7-trimethylnaphthalene	coelute	NA	286	NA	NA	805	NA	NA	NA	NA	NA	NA	324	431	300	487	no target		Target
fluorene	336	308	394	284	290	317	204	287	**NA**	**162**	747	**NA**	436	299	288	397	no target		Target
phenanthrene	5292	3883	5427	4227	4140	5140	3370	3400	**NA**	**2410**	4173	**NA**	4312	4040	4270	4660	**5270**	**220**	Certified
anthracene	1709	873	1080	695	801	1060	617	863	**NA**	**430**	1457	**NA**	2029	718	1260	642	**1770**	**330**	Certified
1-methylphenanthrene	1328	NA	1417	1025	NA	1260	1063	NA	**NA**	NA	1540	NA	1439	1220	1110	1180	1700	100	Reference
fluoranthene	8898	6623	8640	6833	8060	9240	6177	6267	**NA**	**4113**	9603	**NA**	6769	6680	5830	10100	**8920**	**320**	Certified
pyrene	9854	6770	8923	6760	8195	9980	6363	5467	**NA**	**4100**	9960	**NA**	7105	7540	6290	10200	**9700**	**420**	Certified
benz[a]anthracene	4785	3330	4293	3657	3460	4260	3533	3100	**NA**	**2247**	4147	**NA**	4395	3780	3390	5090	**4720**	**110**	Certified
chrysene	4811	4203	coelute	4383	3935	coelute	4090	4033	NA	**2553**	4883	**NA**	coelute	4430	5030	coelute	**4860**	**100**	Certified
triphenylene	1069	NA	coelute	NA	NA	coelute	NA	NA	NA	NA	NA	NA	coelute	NA	NA	coelute	**1040**	**270**	Certified
chrysene/triphenylene	above	above	5910	above	above	5580	above	above	**NA**	above	above	NA	4802	above	above	5670	**5900**	**370**	Target
benzo[*b*]fluoranthene	3775	4007	3700	4937	NA	3530	2993	3367	NA	**2363**	3647	**NA**	5092	4960	2510	3930	**3870**	**420**	Certified
benzo[*j*]fluoranthene	2342	NA	coelute	NA	NA	coelute	NA	NA	NA	NA	NA	NA	coelute	NA	NA	coelute	**2090**	**440**	Certified
benzo[*k*]fluoranthene	2320	1677	coelute	1593	NA	coelute	2920	1400	NA	**980**	2980	**NA**	coelute	1850	**3990**	coelute	**2300**	**200**	Certified
benzo[*j+k*]fluoranthene	above	above	3597	above	above	4650	above	above	NA	above	above	NA	2215	above	above	4770	**4390**	**640**	Target
benzo[*b+j+k*]fluoranthene	above	above	above	above	above	above	above	above	NA	above	above	NA	above	above	above	above	**8260**	**1060**	Target
benzo[*e*]pyrene	3197	NA	3190	2830	**5670**	3570	2667	NA	**NA**	NA	3287	NA	2896	2700	3470	3550	**3280**	**110**	Certified
benzo[*a*]pyrene	4410	2647	3550	2657	3100	3870	2753	2433	**NA**	**1793**	3757	**NA**	3554	2810	3150	4420	**4300**	**130**	Certified
perylene	1194	NA	952	748	**334**	983	698	NA	**NA**	NA	1040	NA	944	760	851	959	**1170**	**240**	Certified
indeno[1,2,3-*cd*]pyrene	2724	1643	2730	2177	2045	2740	1820	2067	**NA**	**1011**	2400	**NA**	3132	1890	2100	3480	**2780**	**100**	Certified
dibenz[*a,h*]anthracene	438	662	NA	146	476	coelute	484	527	**NA**	**394**	491	**NA**	**1120**	629	761	1280	**424**	**69**	Certified
dibenz[*a,h +a,c*]anthracene	NA	NA	807	NA	NA	896	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
benzo[*ghi*]perylene	2816	1923	2783	2133	1870	2890	1653	2067	**NA**	**1234**	2500	**NA**	2274	2180	2430	3460	**2840**	**100**	Certified

NA = not analyzed

Table 15. SRM 1944: Laboratory means of three replicates and target values - Pesticides

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Certificate Values conc.	95%CL	type
alpha-HCH (a-BHC)	<2	< 51.1	inf	NA	NA	0.199	<1	NA	<2.61	<0.420	0.181	NA	NA	NA	NA	<1.00	no target		Target
hexachlorobenzene	6.07	NA	5.69	4.84	4.22	5.77	5.45	NA	5.02	5.09	5.90	NA	7.42	NA	NA	4.13	**6.03**	**0.35**	Certified
gamma-HCH (g-BHC,lindane	<2	< 51.1	inf	<13.6	0	0.130	2.52	NA	1.75	17.1	0.087	NA	<0.89	NA	NA	<1.00	no target		Target
beta-HCH (b-BHC)	<2	< 51.1	inf	NA	NA	0.207	NA	NA	9.92	2.27	0.246	NA	NA	NA	NA	6.25	no target		Target
heptachlor	<2	< 51.1	<1.35	<13.6	NA	0.056	<1	NA	<1.91	5.68	0.096	NA	DL	NA	NA	1.36	no target		Target
aldrin	<2	< 51.1	inf	<13.6	NA	0.055	<1	NA	<1.51	3.32	0.079	NA	DL	NA	NA	<1.00	no target		Target
heptachlor epoxide	<2	< 51.1	<1.35	<13.6	NA	0.305	<1	**NA**	4.59	12.0	0.286	NA	<3.8	NA	NA	**3.06**	no target		Target
oxychlordane	<2	NA	inf	<13.6	NA	<0.2	NA	NA	<2.54	NA	0.041	NA	NA	NA	NA	4.38	no target		Target
gamma-chlordane	21.6	< 51.1	inf	25.4	NA	23.7	24.2	NA	10.4	**22.0**	22.8	**NA**	NA	NA	NA	12.7	no target		Target
2,4'-DDE	16.0	NA	24.1	8.55	NA	16.2	13.5	**NA**	16.0	NA	16.8	**NA**	18.0	NA	NA	13.1	19	3	Reference
endosulfan I	<2	< 51.1	<1.36	NA	NA	<0.013	<1	NA	<2.96	<0.458	NA	NA	DL	NA	NA	3.43	no target		Target
cis-chlordane (alpha-chlordan	21.5	15.0	inf	19.2	12.3	20.5	19.6	NA	14.4	**24.8**	23.9	NA	19.8	NA	NA	9.85	**16.51**	**0.83**	Certified
trans-nonachlor	10.7	NA	inf	10.8	7.59	11.7	13.7	NA	10.9	NA	11.6	NA	9.67	NA	NA	**26.3**	**8.20**	**0.51**	Certified
dieldrin	7.59	< 51.1	inf	<13.6	NA	7.87	7.36	NA	12.4	10.9	8.83	NA	**72.2**	NA	NA	4.36	no target		Target
4,4'-DDE	72.5	77.7	91.2	92.9	64.7	67.2	82.6	NA	88.7	**62.4**	70.0	**NA**	116	NA	NA	**46.6**	86	12	Reference
2,4'-DDD	42.7	NA	inf	48.3	NA	42.6	57.4	**NA**	44.5	NA	34.3	**NA**	50.7	NA	NA	23.8	38	8	Reference
endrin	<2	< 51.1	NA	<13.6	NA	<0.056	11.1	NA	<5.6	14.3	0.061	NA	NA	NA	NA	1.63	no target		Target
endosulfan II	<2	< 51.1	NA	NA	NA	0.122	<1	NA	25.7	5.27	NA	NA	1.13	NA	NA	2.90	no target		Target
4,4'-DDD	95.3	77.7	inf	**218**	79.4	97.2	103	**NA**	91.5	**93.0**	90.1	**NA**	116	NA	NA	49.6	108	16	Reference
2,4'-DDT	8.05	NA	inf	<13.6	NA	9.29	1.92	NA	6.75	NA	2.25	NA	47.0	NA	NA	2.61	no target		Target
cis-nonachlor	4.38	NA	inf	4.8	NA	5.63	NA	NA	4.46	NA	4.14	NA	NA	NA	NA	4.62	3.70	0.70	Reference
4,4'-DDT	137	160	inf	**219**	134	137	165	**213**	138	**183**	96.4	**NA**	**172**	NA	NA	94.3	**119**	**11**	Certified
mirex	<2	NA	94.1	<13.6	NA	1.04	1.72	NA	<2.19	NA	0.599	NA	0.537	NA	NA	30.8	no target		Target
endosulfan sulfate	<2	< 51.1	NA	NA	NA	<0.050	NA	NA	7.06	6.01	NA	NA	DL	NA	NA	4.38	no target		Target
chlorpyrifos	NA	NA	NA	NA	NA	NA	NA	NA	<3.79	NA	NA	NA	1.30	NA	NA	NA	no target		Target

NA = not analyzed; inf=interference; DL=detection limit

Table 16. SRM 1944: Laboratory means of three replicates and target values - PCBs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Certificate Values conc.	95%CL	type
PCB 8	22.0	NA	NA	24.3	18.7	20.8	15.1	NA	17.6	NA	24.4	**NA**	**DL**	NA	17.4	13.5	**22.3**	**2.3**	Certified
PCB 18	50.3	NA	60.5	54.2	46.9	47.4	56.4	NA	42.5	NA	58.8	**NA**	54.4	NA	48.7	32.0	**51.0**	**2.6**	Certified
PCB 28	80.2	NA	106	99.7	66.7	114	77.2	NA	81.2	NA	86.6	**NA**	92.9	NA	75.2	**41.8**	**80.8**	**2.7**	Certified
PCB 31	78.2	NA	83.6	NA	NA	92.0	NA	NA	72.3	NA	82.5	**NA**	61.9	NA	61.0	**41.9**	**78.7**	**1.6**	Certified
PCB 44	61.2	NA	64.4	69.1	51.2	**87.4**	61.3	NA	55.5	NA	81.7	**NA**	60.6	NA	59.0	**34.2**	**60.2**	**2.0**	Certified
PCB 49	53.0	NA	56.4	NA	NA	57.3	NA	NA	47.7	NA	43.6	**NA**	NA	NA	42.7	**31.0**	**53.0**	**1.7**	Certified
PCB 52	78.2	NA	87.4	85.2	67.1	93.9	66.9	NA	74.3	NA	79.2	**NA**	**113**	NA	68.4	**43.2**	**79.4**	**2.0**	Certified
PCB 66	68.0	NA	78.3	77.5	56.1	81.1	72.5	NA	66.0	NA	55.2	**NA**	62.8	NA	57.9	**34.7**	**71.9**	**4.3**	Certified
PCB 95	60.9	NA	52.1	NA	NA	58.4	NA	NA	44.2	NA	39.9	**NA**	59.9	NA	41.9	NA	**65.0**	**8.9**	Certified
PCB 99	37.9	NA	31.5	NA	NA	41.0	NA	NA	30.1	NA	27.0	**NA**	36.5	NA	37.5	**20.0**	**37.5**	**2.4**	Certified
PCB 101	73.8	NA	73.8	90.4	56.5	71.8	63.6	NA	82.5	NA	63.0	**NA**	76.3	NA	59.2	**39.4**	**73.4**	**2.5**	Certified
PCB 105	23.7	NA	29.7	28.4	19.7	24.5	26.4	NA	22.7	NA	22.3	**NA**	20.9	NA	18.5	**13.7**	**24.5**	**1.1**	Certified
PCB 118	55.9	NA	67.1	68.3	47.4	55.6	58.4	NA	50.2	NA	48.9	**NA**	50.8	NA	45.6	**28.6**	**58.0**	**4.3**	Certified
PCB 128	8.34	NA	11.9	**15.8**	8.87	10.4	9.06	NA	10.6	NA	10.0	**NA**	10.5	NA	9.78	7.39	**8.47**	**0.28**	Certified
PCB 138	62.2	NA	below	**93.2**	50.9	below	61.9	NA	60.0	NA	56.1	NA	below	NA	below	**34.7**	**65.1**	**3.0**	Certified
PCB 138/163	NA	NA	82.2	NA	NA	75.9	NA	NA	NA	NA	NA	**NA**	63.1	NA	66.4	NA	**no target**		Target
PCB 149	49.0	NA	61.3	NA	NA	60.5	NA	NA	40.2	NA	45.5	**NA**	48.0	NA	55.9	42.0	**49.7**	**1.2**	Certified
PCB 153	75.2	NA	below	81.6	53.8	70.6	64.2	NA	below	NA	61.4	**NA**	59.4	NA	58.4	**38.1**	**74.0**	**2.9**	Certified
PCB 153/132	NA	NA	94.5	NA	NA	NA	NA	NA	72.4	NA	NA	NA	NA	NA	NA	NA	**no target**		Target
PCB 156	6.39	NA	7.61	NA	NA	8.24	NA	NA	6.01	NA	6.63	**NA**	4.53	NA	5.77	4.20	**6.52**	**0.66**	Certified
PCB 170	23.1	NA	20.2	23.1	20.1	18.1	21.1	NA	28.6	NA	18.0	**NA**	18.7	NA	14.2	**10.7**	**22.6**	**1.4**	Certified
PCB 180	43.4	NA	48.3	52.8	36.4	below	41.6	NA	37.8	NA	41.5	**NA**	39.4	NA	below	**27.6**	**44.3**	**1.2**	Certified
PCB 180/193	NA	NA	NA	NA	NA	43.2	NA	NA	NA	NA	NA	NA	NA	NA	30.8	NA	**no target**		Target
PCB 187	24.7	NA	29.0	30.2	24.8	27.7	23.9	NA	24.6	NA	23.9	**NA**	26.0	NA	21.9	**15.3**	**25.1**	**1.0**	Certified
PCB 194	11.0	NA	11.1	NA	NA	10.3	NA	NA	8.47	NA	10.8	**NA**	11.2	NA	9.27	7.76	**11.2**	**1.4**	Certified
PCB 195	3.67	NA	3.49	4.73	3.36	4.18	3.48	NA	3.82	NA	4.09	**NA**	4.37	NA	3.62	<3.20	**3.75**	**0.39**	Certified
PCB 206	9.38	NA	9.25	9.55	8.89	7.56	8.44	NA	8.57	NA	NA	**NA**	8.80	NA	6.84	<6.40	**9.21**	**0.51**	Certified
PCB 209	6.68	NA	6.76	8.21	7.27	7.23	6.43	NA	7.01	NA	NA	**NA**	6.54	NA	6.13	**3.99**	**6.81**	**0.33**	Certified

NA = not analyzed; DL=detection limit

Table 17. SRM 1944: Laboratory means of three replicates and target values - PBDEs

(reported as if three figures were significant)

ng/g dry mass

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15	Target Values conc.	std dev	type
BDE 15	<2	NA	NA	NA	NA	0.951	NA	NA	NA	NA	0.630	NA	NA	NA	NA	NA	no target		Target
BDE 17	<2	NA	NA	NA	NA	0.902	NA	NA	NA	NA	0.842	NA	DL	NA	NA	NA	no target		Target
BDE 25	<2	NA	NA	NA	NA	other	NA	NA	NA	NA	0.842	NA	NA	NA	NA	NA	no target		Target
BDE 28	coelute	NA	<2.94	NA	NA	coelute	NA	NA	NA	NA	coelute	NA	DL	NA	NA	NA	no target		Target
BDE 30	<2	NA	NA	NA	NA	< 0.0175	NA	NA	NA	NA	<.050	NA	NA	NA	NA	NA	no target		Target
BDE 33	coelute	NA	NA	NA	NA	coelute	NA	NA	NA	NA	coelute	NA	NA	NA	NA	NA	no target		Target
BDE 28/33	<2	NA	NA	NA	NA	0.242	NA	NA	NA	NA	0.311	NA	NA	NA	NA	NA	no target		Target
BDE 47	1.96	NA	<2.94	NA	NA	2.15	NA	NA	NA	NA	2.00	NA	2	NA	NA	NA	1.63	0.41	Target
BDE 49	<2	NA	<2.94	NA	NA	1.17	NA	NA	NA	NA	0.766	NA	NA	NA	NA	NA	no target		Target
BDE 66	<2	NA	<2.94	NA	NA	0.125	NA	NA	NA	NA	0.060	NA	DL	NA	NA	NA	no target		Target
BDE 71	<2	NA	NA	NA	NA	0.239	NA	NA	NA	NA	< .082	NA	DL	NA	NA	NA	no target		Target
BDE 75	<2	NA	NA	NA	NA	0.039	NA	NA	NA	NA	0.057	NA	NA	NA	NA	NA	no target		Target
BDE 85	<2	NA	<2.93	NA	NA	0.095	NA	NA	NA	NA	< 0.0796	NA	DL	NA	NA	NA	no target		Target
BDE 99	2.14	NA	2.67	NA	NA	2.12	NA	NA	NA	NA	1.83	NA	<0.6	NA	NA	NA	1.80	0.35	Target
BDE 100	<2	NA	<2.93	NA	NA	0.486	NA	NA	NA	NA	0.333	NA	DL	NA	NA	NA	0.46	0.12	Target
BDE 116	<2	NA	NA	NA	NA	< 0.186	NA	NA	NA	NA	0.173	NA	NA	NA	NA	NA	no target		Target
BDE 118	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 119	<2	NA	NA	NA	NA	< 0.0980	NA	NA	NA	NA	<.0926	NA	NA	NA	NA	NA	no target		Target
BDE 138	<2	NA	NA	NA	NA	1.35	NA	NA	NA	NA	<.472	NA	DL	NA	NA	NA	no target		Target
BDE 153	6.75	NA	8.48	NA	NA	6.17	NA	NA	NA	NA	7.55	NA	5	NA	NA	NA	6.53	1.32	Target
BDE 154	<2	NA	<2.95	NA	NA	1.23	NA	NA	NA	NA	0.793	NA	1	NA	NA	NA	1.24	0.58	Target
BDE 155	<2	NA	NA	NA	NA	0.111	NA	NA	NA	NA	0.103	NA	NA	NA	NA	NA	no target		Target
BDE 156	<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 181	<2	NA	NA	NA	NA	0.157	NA	NA	NA	NA	< 0.164	NA	NA	NA	NA	NA	no target		Target
BDE 183	36.6	NA	34.0	NA	NA	30.9	NA	NA	NA	NA	23.4	NA	28.8	NA	NA	NA	32.2	7.9	Target
BDE 190	<15	NA	NA	NA	NA	4.58	NA	NA	NA	NA	2.02	NA	4.22	NA	NA	NA	no target		Target
BDE 191	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	no target		Target
BDE 196	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.0	NA	NA	NA	NA	NA	no target		Target
BDE 197	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.7	NA	NA	NA	NA	NA	no target		Target
BDE 203	<15	NA	NA	NA	NA	9.41	NA	NA	NA	NA	9.45	NA	NA	NA	NA	NA	no target		Target
BDE 205	<15	NA	NA	NA	NA	NA	NA	NA	NA	NA	< .165	NA	NA	NA	NA	NA	no target		Target
BDE 206	<15	NA	NA	NA	NA	6.13	NA	NA	NA	NA	7.73	NA	NA	NA	NA	NA	no target		Target
BDE 207	<15	NA	NA	NA	NA	<25	NA	NA	NA	NA	18.4	NA	NA	NA	NA	NA	no target		Target
BDE 208	<15	NA	NA	NA	NA	<5	NA	NA	NA	NA	1.82	NA	NA	NA	NA	NA	no target		Target
BDE 209	166	NA	NA	NA	NA	101	NA	NA	NA	NA	219	NA	162	NA	NA	NA	128	84	Target

NA = not analyzed; DL=detection limit

Table 18. Mussel TissueXIII (QA07TIS13): z scores (25%) by laboratory - TEO and PAHs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15
TEO (percent)													

PAHs

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15
naphthalene	1.1	0.8	-2.1		2.3	-2.0	3.0	0.1	4.7	8.6	0.5	0.4	-1.2
2-methylnaphthalene	1.2	1.7	-1.8		0.7	-1.4	0.4	-0.1	2.0			0.5	-0.7
1-methylnaphthalene	1.7	1.9	-2.1		1.6	-2.3	0.1	0.7	1.5		1.5	-1.1	-1.9
biphenyl	0.0	0.1	-1.7		-0.1	0.2		-1.2				2.7	
2,6-dimethylnaphthalene	-0.2	-0.1	3.1		-0.4	-1.3		-1.4				0.3	
acenaphthylene	0.2	-1.0	-1.6		1.1	0.3		0.9	5.4	-0.9		0.2	
acenaphthene	1.6	1.5	-1.8		1.6	-1.4		-0.4		5.5		-1.0	
1,6,7-trimethylnaphthalene		-0.2			3.3			-2.6				-0.7	0.2
fluorene	0.4	1.2	-2.6		-0.2	-0.6		0.3		-0.9		-1.2	
phenanthrene	1.6	1.8	-1.9		1.4	-0.5	0.2	-2.4		-0.8	0.3	0.4	-0.8
anthracene	0.3	-2.9	0.1		0.4	-2.1					2.6	-0.6	2.3
1-methylphenanthrene	1.0	1.4	-1.4		0.4	-0.9		-0.1			1.3	-0.6	-0.9
fluoranthene	0.8	1.6	-1.6		0.6	0.1	-0.2	-1.5	-1.0	-0.3		-0.1	0.2
pyrene	0.8	1.4	-1.4		0.7	0.0	-1.0	-0.6	-1.0	-0.1	-0.5	-0.3	-0.1
benz[a]anthracene	0.4	1.4	-1.5		0.1	-0.7		-1.0	2.9	0.2	-0.1	0.0	1.4
chrysene	-0.7		-0.4			1.1				0.6		2.2	
triphenylene													
chrysene/triphenylene		1.4			0.5			-1.7			-0.5		0.3
benzo[*b*]fluoranthene	-0.3	0.9	-0.6		-0.2	-0.8				1.0	0.1	-0.5	1.4
benzo[*j*]fluoranthene	0.0												
benzo[*k*]fluoranthene	0.1		-1.1			1.2				-0.1		3.7	
benzo[*j*+*k*]fluoranthene		-0.1			-0.7								0.8
benzo[*b*+*j*+*k*]fluoranthene													
benzo[e]pyrene	0.8	1.3	-1.3		0.5	-0.4		-1.3				0.3	0.1
benzo[a]pyrene	0.4	0.4	1.0		0.3	-1.6		-0.5		2.1		7.5	27.8
perylene	0.2	0.4	4.4		0.0	-0.8		0.1				2.4	
indeno[1,2,3-cd]pyrene	-0.2	0.9	-1.9		-0.6	1.6		-1.7				0.1	13.9
dibenz[a,h]anthracene	0.2		0.6			0.4		-0.6				3.6	
benzo[ghi]perylene	0.9	1.4	-0.6		0.6	-1.1		-1.8		0.8		0.5	7.3

Table 19. Mussel TissueXIII (QA07TIS13): z scores (25%) by laboratory - Pesticides

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15
alpha-HCH (a-BHC)													
hexachlorobenzene													
gamma-HCH (g-BHC,lindane)													
beta-HCH (b-BHC)	-0.1				-0.1			0.2	5.6				
heptachlor													
aldrin													
heptachlor epoxide													
oxychlordane													
gamma-chlordane	-0.4	1.3	0.5		-0.8	1.2		-0.1	0.3				-1.6
2,4'-DDE	-1.5	2.9	-2.2		-1.6	-1.4		-1.4			0.4		4.6
endosulfan I													
cis-chlordane (alpha-chlordane)	-0.5	2.0	-0.6	-0.7	-0.5	-0.4		-0.9	-0.5		2.9		-1.3
trans-nonachlor	0.2	2.0	-0.5	-0.8	0.2	0.0	-0.2	-0.6					-0.5
dieldrin	-0.6	2.4			-0.8	-0.4		0.0	7.2		1.4		-2.0
4,4'-DDE	-0.6	2.0	-0.7	-0.5	-0.6	-0.3	-0.8	0.0	0.1	-0.8	2.5		-1.8
2,4'-DDD	-0.4		-0.2		-0.7	-0.2		1.3			1.4		-1.4
endrin													
endosulfan II													
4,4'-DDD	-0.7		0.3	-0.2	-0.8	-1.0	-1.1	0.6	2.2		1.9		-1.9
2,4'-DDT													
cis-nonachlor	-0.3	1.8	-1.2		-0.5		0.1	0.1					
4,4'-DDT	-0.1	1.3	-0.1	-0.3	-0.6			-0.2	34.2				
mirex													
endosulfan sulfate													
chlorpyrifos													

Table 20 Mussel TissueXIII (QA07TIS13): z scores (25%) by laboratory - PCBs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15
PCB 8	-1.4		-0.4	-2.2	-1.6			-1.8		0.1	3.2	-1.1	3.0
PCB 18	-1.5	1.4	-0.7	-1.1	-1.9			-0.4		-1.5	3.8	-0.6	0.9
PCB 28	0.3	2.8	1.0	0.8	0.1	-1.3		-0.7		0.6		-0.1	-2.2
PCB 31	0.0	8.9			0.2			-0.2		1.0		0.0	
PCB 44	0.1	0.7	-0.9	-0.2	0.3	-0.8		-0.2		-2.1	0.3	0.4	-1.9
PCB 49	-0.3	1.8			-0.8			0.7		-0.1		-0.2	-1.2
PCB 52	-0.4	1.4	-0.1	-0.1	-1.0	-0.4		0.2		-1.9	0.7	-0.4	-2.4
PCB 66	0.0	1.2	0.0	0.1	-0.1	-0.1		-0.8		-1.2	0.1	-0.3	-2.5
PCB 95	-0.5	0.9			-0.8			0.2		-1.0	0.7	-0.5	
PCB 99	-0.2	0.5			0.0			-0.2		-0.5	0.3	0.9	-1.4
PCB 101	-0.3	0.9	0.0	0.0	-0.7	0.3		-0.2		-1.9	0.5	-0.3	-1.8
PCB 105	-0.3	1.9	0.1	0.9	-0.4	-0.2		-1.0		-0.7	0.7	-0.3	-1.4
PCB 118	-0.7	1.3	0.4	0.0	-0.8	-0.3		-0.1		-1.4	0.6	-0.5	-2.0
PCB 128	-0.8	1.4	1.3	-0.6	-0.9	0.5		-1.2		-0.9	1.0	-0.6	
PCB 138	0.9		2.0	0.5		0.5		0.8					-1.9
PCB 138/163		1.1			-0.6					-0.9	-0.1	-0.4	
PCB 149	-0.3	1.5			-0.2			-1.1		-0.5	0.1	0.0	-0.8
PCB 153	-0.4		0.6	0.0	-0.2	-0.2				-1.2	0.3	-0.1	-1.8
PCB 153/132													
PCB 156	-0.4	-0.2			-0.8			2.6		-1.8	-0.1	-1.1	
PCB 170	-0.5	1.2	0.5	-3.6	-0.9	0.3		0.3		0.0	-0.6	-0.7	0.4
PCB 180	-0.4	2.0	0.2	-0.4	-0.4	-0.4		-0.1		0.1	-0.1	-0.4	
PCB 187	-0.4	1.5	-0.1	0.2	-0.4	-0.4		-0.1		-0.6	-0.1	-0.3	-1.6
PCB 194	-0.6	0.7			-0.9			-0.8		-0.3	2.4	-0.7	
PCB 195													
PCB 206													
PCB 209													

Table 21 Mussel TissueXIII (QA07TIS13): z scores (25%) by laboratory - PBDEs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	3	4	5	6	7	8	9	10	12	13	14	15
BDE 15													
BDE 17													
BDE 25													
BDE 28													
BDE 30													
BDE 33													
BDE 28/33													
BDE 47	-0.3	0.6								-1.4	-0.3		
BDE 49													
BDE 66													
BDE 71													
BDE 75													
BDE 85													
BDE 99	0.3	0.6									-0.9		
BDE 100	-0.2	0.3								-1.7	-0.1		
BDE 116													
BDE 118													
BDE 119													
BDE 138													
BDE 153													
BDE 154													
BDE 155													
BDE 156													
BDE 181													
BDE 183													
BDE 190													
BDE 191													
BDE 196													
BDE 197													
BDE 203													
BDE 205													
BDE 206													
BDE 207													
BDE 208													
BDE 209													

Table 22. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- water, TOC, and PAHs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15
Water (percent)	0.1	0.2	0.3		-0.3	0.2	0.3	0.1	0.3	0.2	-0.9	-0.1	0.1	-0.2	-0.2	-0.1
TOC		-1.3		0.5				0.4	0.2							0.2

PAHs

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15
naphthalene	2.9	-1.5	2.6	-1.0		3.1	-2.9	-1.2	0.5	-3.7	1.2	-2.5	2.7	-0.1	1.9	-1.9
2-methylnaphthalene	2.4		3.0	-2.5		1.8	-2.8	-1.0	0.3	-3.7	1.0	-2.1	3.8	0.5	1.2	-2.0
1-methylnaphthalene	0.9	-1.3	1.0	2.9		1.1	-2.7	-1.1	-0.1	-3.5	0.2	-2.1	3.7	0.4	0.8	
biphenyl	0.2		0.7	-1.4		0.0	-2.8		-1.7		-1.5		4.6	1.2	0.5	
2,6-dimethylnaphthalene	1.7		2.2	-2.9		1.3	-2.2		-0.6		-0.4		1.1	0.6	0.7	-1.6
acenaphthylene	-0.6	-0.3	-3.0	-0.2		-0.9	-1.1	2.7	-0.4	-3.2	1.1	-0.3	7.5	-0.1	1.1	-2.2
acenaphthene	1.2	-1.0	1.3	-0.9		1.0	-1.4	2.4	-0.9	-3.4	0.2	-1.8	0.7	1.0	1.6	
1,6,7-trimethylnaphthalene			-1.2			3.1			-2.6				0.1	1.2	-0.8	0.1
fluorene	0.2	0.8	1.3	-1.2	-1.1	-0.2	-0.7	0.4	-0.3	-3.5	0.4	-0.1	2.3	2.1	-0.2	-0.6
phenanthrene	1.2	-0.5	1.4	0.4	0.0	1.0	-0.6	-0.6	1.6	-3.5	0.4	-1.4	0.8	-0.3	0.3	0.0
anthracene	0.2	-0.2	0.3	-1.0	-0.9	0.0	-1.7	0.0	2.2	-3.6	0.8	-1.9	6.8	-0.7	2.2	-2.1
1-methylphenanthrene	0.4		0.4	0.4		-0.4	-1.2		-0.5		1.5		0.3	0.8	-0.8	-1.3
fluoranthene	0.4	-0.8	0.4	0.6	0.3	0.4	-0.3	-0.8	-0.7	-3.6	1.1	-1.9	-0.7	-0.9	-0.4	0.5
pyrene	0.5	-0.5	0.4	0.3	0.1	0.5	-0.4	-1.1	0.4	-3.6	0.5	-1.6	0.0	-0.5	-0.3	0.5
benz[*a*]anthracene	0.0	-0.6	0.6	0.8	-0.4	-0.1	-0.2	-0.8	-0.4	-3.5	0.1	-1.4	0.8	-0.5	-0.3	0.6
chrysene	0.2	-0.5		1.0	-0.5		-0.2	-0.4		-3.5	0.5	-1.2		-0.5	0.5	
triphenylene																
chrysene/triphenylene			0.3			0.2			-1.7				-0.3			-0.3
benzo[*b*]fluoranthene	-1.5	-0.5	0.0	2.7		-0.4	-0.6	-0.5		-3.5	-0.6	-1.6	1.8	0.2	-0.8	0.3
benzo[*j*]fluoranthene																
benzo[*k*]fluoranthene	-0.2	-0.2		-0.4			2.0	-1.6		-3.5	1.2	-0.6		-0.7	2.3	
benzo[*j+k*]fluoranthene			0.5			0.4							-1.3			0.4
benzo[*b+j+k*]fluoranthene																
benzo[*e*]pyrene	0.4		0.3	0.8	3.6	0.4	-0.3		-1.1		-0.5		0.0	-1.0	0.0	-0.1
benzo[*a*]pyrene	0.6	-0.8	0.6	0.3	-0.3	0.6	-0.5	-0.5	-0.8	-3.3	-0.3	-1.5	0.6	-0.8	0.1	0.5
perylene	0.1		0.2	-0.6	-2.4	0.1	-0.3		-1.8		0.6		0.8	-0.6	0.0	-0.3
indeno[1,2,3-*cd*]pyrene	0.6	-1.3	0.9	-0.1	-0.3	0.2	-0.6	-0.6	-1.2	-3.6	-0.3	-1.3	1.9	-1.1	-0.1	0.7
dibenz[*a,h*]anthracene	0.4	-0.2		-0.5	-0.8		-1.3	-0.8	-1.6	-3.5	0.4	-0.1	3.0	0.3	0.9	1.7
dibenz[*a,h +a,c*]anthracene																
benzo[*ghi*]perylene	0.7	-0.7	1.0	-0.4	-0.6	0.5	-0.9	-0.4	-1.4	-3.5	-0.3	-1.4	0.0	-0.5	0.6	0.8

Table 23. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- pesticides

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15
alpha-HCH (a-BHC)																
hexachlorobenzene	0.2		0.2	0.2	-0.9	0.3	0.1		0.1	-0.9	0.6		1.4			-1.4
gamma-HCH (g-BHC,lindane)																
beta-HCH (b-BHC)																
heptachlor																
aldrin																
heptachlor epoxide						-0.1		68.9		0.6	-0.3		-0.2			12.2
oxychlordane																
gamma-chlordane	-0.2			1.6		0.0	-0.1		0.6	-3.5	0.2	6.8				-2.0
2,4'-DDE	0.2		1.1	-0.8		0.0	-0.7	-2.0	-0.1		0.2	8.3	1.6			-1.5
endosulfan I																
cis-chlordane (alpha-chlordane	0.4	-1.1		1.1	-1.0	0.4	-0.1		-0.7	-3.4	1.7		1.3			-2.0
trans-nonachlor	0.3			0.3	-1.3	0.1	1.2		-0.8		0.3		-0.2			0.2
dieldrin	0.8					0.9	0.8		0.5	-3.2	1.6		21.9			-1.5
4,4'-DDE	0.2	-0.9	0.4	0.2	-0.7	-0.6	0.6	0.6	-0.1	-3.6	-0.3	1.0	0.7			-1.7
2,4'-DDD	0.0			1.1		-0.1	0.5	-0.9	-0.1		-0.3	2.4	0.3			-1.4
endrin																
endosulfan II																
4,4'-DDD	0.6	-1.4		2.2	-0.4	0.5	1.2	1.5	0.2	-3.5	-0.4	0.4	1.0			-1.3
2,4'-DDT	-1.1					2.3	-1.3		-0.4		1.8					-1.3
cis-nonachlor	0.6			0.6		0.6			-0.2		0.0					-1.7
4,4'-DDT	0.4	-0.9		1.8	-0.6	0.4	2.1	0.1	-1.2	-3.6	0.7	1.5	4.4			-0.9
mirex																
endosulfan sulfate																
chlorpyrifos																

Table 24. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- PCBs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15
PCB 8	0.1			1.7	-0.3	0.2	-0.8		0.2		0.6	1.8	-2.8		-0.4	-1.3
PCB 18	-0.4		1.2	1.6	0.3	-0.2	0.7		-0.9		1.0	-1.1	-2.2		0.0	-1.0
PCB 28	-0.3		0.6	1.0	-1.2	0.7	-0.4		0.1		-0.2	-0.4	0.7		-1.0	-2.3
PCB 31	0.2		0.1			0.7			1.6		0.3	0.0	-2.0		-0.9	-1.8
PCB 44	0.6		-0.3	1.0	-1.0	0.8	-0.2		-0.4		1.3	-2.0	-0.6		-0.5	-2.1
PCB 49	0.2		0.3			0.0			0.3		0.0	-0.2			-0.9	-1.8
PCB 52	0.2		0.2	1.0	-0.8	0.0	0.2		0.4		-0.1	-1.8	2.7		-0.9	-2.0
PCB 66	-0.1		0.8	1.2	-0.8	0.4	0.2		-0.8		-0.4	-1.3	0.3		-0.9	-2.1
PCB 95	-0.2		0.3			0.0			0.2		-0.4	-0.2	0.8		-0.6	
PCB 99	0.3		-0.3			0.4			0.0		-0.4	-0.4	0.1		-0.1	-1.9
PCB 101	-0.8		0.2	2.2	-0.8	-0.6	0.4		0.0		0.0	-1.6	0.3		-1.0	-1.8
PCB 105	-0.2		0.8	1.4	-0.9	-0.3	1.3		-0.6		-0.1	-1.0	-0.2		-1.2	-2.0
PCB 118	-0.5		0.9	1.7	-0.7	-0.5	0.8		-0.1		-0.2	-1.2	-0.5		-1.0	-2.1
PCB 128	-0.4		0.9	3.0	-0.5	-0.1	1.8		-0.4		0.3	-0.6	0.1		-0.6	-1.2
PCB 138	0.0			2.5	-1.0		0.3		-1.5		-0.3					-2.1
PCB 138/163			0.8			-0.1						-1.1	0.1		-0.8	
PCB 149	0.2		1.0			0.5			-0.5		-0.1	0.2	0.1		-0.3	-0.9
PCB 153	-0.7			1.7	-1.0	-0.3	0.6				-0.1	-1.2	0.9		-1.0	-2.1
PCB 153/132																
PCB 156	0.5		0.7			0.8			-0.4		0.7	-0.6			-0.7	-1.7
PCB 170	-0.5		0.1	1.6	0.1	-0.7	0.6		0.2		-0.3	0.2	0.0		-1.2	-2.0
PCB 180	-0.2		0.4	1.4	-0.8		-0.1		-0.5		-0.1	0.1	-0.1			-1.9
PCB 180/193																
PCB 187	-0.3		0.2	1.2	-0.6	-0.3	0.7		-0.2		0.2	-1.3	0.0		-0.9	-2.0
PCB 194	0.0		0.6			0.0			-0.3		1.2	0.2	0.5		-0.7	-1.4
PCB 195	-0.6		-0.6	1.3	-1.0	-0.4			-0.3		0.7	-1.3	1.9		-0.9	
PCB 206	-0.7		0.8	1.5	-0.1	-0.7	0.3		-0.2			1.4	0.2		-1.0	
PCB 209	0.0		0.0	1.7	-0.1	-0.1	0.5		-1.2			0.1	0.3		-1.0	-2.0

Table 25. Marine Sediment XIII (QA05SED13): z scores (25% by laboratory)- PBDEs

(z=+1 is 25% higher than the exercise assigned value; z=-1 is 25% lower than the exercise assigned value.)

Laboratory No.	1a	2	3	4	5	6	7	8	9	10	11	12	13	14-1	14-2	15
BDE 15																
BDE 17	-0.3					-0.2					0.5					
BDE 25																
BDE 28																
BDE 30																
BDE 33																
BDE 28/33																
BDE 47	0.0		0.3			-0.5					0.4	-0.1	-0.1			
BDE 49	-0.1		1.3			-0.3					-0.9					
BDE 66						0.8					-0.6	-0.1				
BDE 71																
BDE 75																
BDE 85																
BDE 99	-0.1		1.3			-0.5					-0.1	0.4	-0.9			
BDE 100																
BDE 116																
BDE 118																
BDE 119																
BDE 138																
BDE 153	0.2		1.2			-0.4					0.0	-1.0	0.0			
BDE 154						0.6					-0.1	-0.1	-0.4			
BDE 155																
BDE 156																
BDE 181																
BDE 183	0.2		0.5			0.3					-0.9	-0.5	0.4			
BDE 190																
BDE 191																
BDE 196																
BDE 197																
BDE 203																
BDE 205																
BDE 206																
BDE 207																
BDE 208																
BDE 209	-0.3					-0.7					1.3		-0.2			

Table 26. Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - TEO and PAHs												
	Lab 1a		Lab 3		Lab 4		Lab 5		Lab 6		Lab 7	
	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
TEO or lipid	2.9%	5.3%	2.1%	4.7%			5.7%	1.3%			19.8%	4.0%
PAH ANALYSES	Lab 1a		Lab 3		Lab 4		Lab 5		Lab 6		Lab 7	
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	2.5%	1.7%	2.6%	9.2%	16.4%	10.7%			3.8%		15.2%	21.3%
2-methylnaphthalene	5.4%	7.6%	1.3%	5.5%	21.1%	10.1%			6.3%		7.8%	19.7%
1-methylnaphthalene	0.7%	2.2%	1.2%	4.9%	18.9%	28.5%			6.4%		10.7%	15.5%
biphenyl	0.4%	4.4%	1.8%	9.8%	11.8%	12.7%			4.6%		6.5%	10.3%
2,6-dimethylnaphthalene	2.0%	2.0%	0.5%	1.9%	36.6%	14.0%			1.3%		8.6%	9.9%
acenaphthylene	4.5%	13.1%	3.9%		26.4%	2.6%			11.0%		5.4%	5.6%
acenaphthene	2.2%	3.7%	0.8%	0.6%	15.0%	10.2%			10.7%		11.0%	1.7%
1,6,7-trimethylnaphthalene			1.1%	8.0%					6.7%			
fluorene	6.5%	2.6%	1.3%	0.6%	11.7%	5.8%			26.6%		9.2%	9.6%
phenanthrene	4.2%	3.2%	1.6%	0.4%	33.4%	35.1%			1.5%		10.8%	16.1%
anthracene	4.4%	4.9%	7.8%	4.4%	15.1%	34.4%			40.6%		10.1%	7.6%
1-methylphenanthrene	3.8%	4.3%	1.8%	0.5%	22.5%	24.9%			5.4%		8.4%	11.6%
fluoranthene	5.4%	0.9%	1.7%	0.7%	6.7%	10.3%			3.7%		14.0%	3.2%
pyrene	2.2%	1.7%	1.9%	0.2%	6.2%	13.2%			3.6%		10.3%	26.7%
benz[a]anthracene	6.7%	1.1%	0.6%	9.0%	19.1%	23.1%			3.8%		16.0%	10.4%
chrysene	2.3%	2.1%			7.0%	9.9%			3.8%		15.8%	20.5%
triphenylene	5.5%	4.6%										
benzo[*b*]fluoranthene	2.6%	3.2%	1.1%	10.5%	9.6%	22.6%			2.3%		19.5%	11.3%
benzo[*j*]fluoranthene	2.3%	1.3%										
benzo[*k*]fluoranthene	2.0%	0.9%			14.5%	23.4%			5.2%		18.6%	1.9%
benzo[e]pyrene	3.3%	5.8%	0.7%	10.7%	7.5%	9.1%			10.5%		17.3%	4.8%
benzo[a]pyrene	2.3%	3.3%	3.2%	11.3%	11.5%	30.3%			11.5%		43.1%	12.6%
perylene	1.7%	4.2%	3.9%	10.0%	42.2%	48.5%			0.6%		31.8%	4.3%
indeno[1,2,3-cd]pyrene	4.9%	2.4%	1.9%	10.8%	35.2%				6.7%		14.4%	5.7%
dibenz[a,h]anthracene	3.9%	3.2%			47.4%						23.7%	
benzo[ghi]perylene	4.0%	2.8%	2.6%	10.5%	28.8%	36.9%			7.0%		9.7%	4.2%

Table 26 (cont). Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - TEO and PAHs												
	Lab 8		Lab 9		Lab 10		Lab 13		Lab 14		Lab 15	
	Tissue XIII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
TEO or lipid	61.2%						1.7%	1.9%	19.9%		8.0%	
PAH ANALYSES	Lab 8		Lab 9		Lab 10		Lab 13		Lab 14		Lab 15	
	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	46.1%	10.6%					10.2%	5.5%	23.2%		8.7%	
2-methylnaphthalene					17.6%				17.1%		8.1%	
1-methylnaphthalene	9.8%				12.7%		1.3%		23.9%		8.8%	
biphenyl									8.4%			
2,6-dimethylnaphthalene									10.1%			
acenaphthylene									18.7%			
acenaphthene									41.3%			
1,6,7-trimethylnaphthalene									12.7%		2.4%	
fluorene									18.9%			
phenanthrene		10.9%					1.5%	3.0%	13.8%		5.4%	
anthracene							5.5%		19.3%		2.4%	
1-methylphenanthrene							2.4%	1.0%	10.3%		17.9%	
fluoranthene	5.1%	17.9%							5.1%		6.2%	
pyrene	21.7%	12.9%					0.9%	2.6%	6.0%		6.0%	
benz[a]anthracene							15.8%	3.2%	3.9%			
chrysene							11.8%	3.2%	3.7%		8.5%	
triphenylene												
benzo[*b*]fluoranthene							11.7%		4.8%		44.0%	
benzo[*j*]fluoranthene												
benzo[*k*]fluoranthene									9.8%		36.2%	
benzo[e]pyrene									3.7%		22.4%	
benzo[a]pyrene									53.6%			
perylene									3.0%			
indeno[1,2,3-cd]pyrene									3.9%			
dibenz[a,h]anthracene									8.6%			
benzo[ghi]perylene									3.8%			

Table 27. Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - Pesticides												
	Lab 1a		Lab 3		Lab 4		Lab 5		Lab 6		Lab 7	
	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)									17.4%			
hexachlorobenzene					37.5%	20.7%			8.4%			0.4%
gamma-HCH (g-BHC,lindane)									12.4%			
beta-HCH (b-BHC)	4.0%								1.9%			
heptachlor									16.8%			
aldrin									15.6%			
heptachlor epoxide			2.1%	1.3%					6.1%			
oxychlordane			3.4%									
gamma-chlordane	8.6%	2.6%	0.5%	2.6%	19.6%	46.8%			1.1%		9.3%	12.5%
2,4'-DDE	6.3%	10.7%	0.7%	5.3%	22.1%				0.7%		4.7%	
endosulfan I												
cis-chlordane (alpha-chlordane)	2.0%	8.8%	0.5%	4.3%	10.7%	21.3%	2.7%	25.7%	12.2%		6.6%	4.0%
trans-nonachlor	1.3%	2.7%	0.9%	3.2%	16.1%	31.0%	2.2%		7.0%		0.6%	
dieldrin	3.1%	1.9%	12.9%	7.2%		56.1%			1.2%		7.3%	3.0%
4,4'-DDE	3.9%	4.2%	1.1%	3.8%	8.5%	12.5%	2.4%	1.7%	0.8%		1.6%	6.9%
2,4'-DDD	3.6%	3.3%			7.2%	5.3%			3.0%		4.0%	
endrin									11.1%			
endosulfan II												
4,4'-DDD	3.3%	1.6%			6.3%	8.0%	2.2%	3.0%	1.2%		7.8%	3.8%
2,4'-DDT									15.8%			
cis-nonachlor	1.4%		2.5%		8.0%	13.7%			0.0%			
4,4'-DDT	7.1%	5.8%	27.9%		11.8%	16.5%	1.6%	7.9%	2.6%			
mirex									1.9%			
endosulfan sulfate												
chlorpyrifos												

Table 27 (cont). Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - Pesticides												
	Lab 8		Lab 9		Lab 10		Lab 13		Lab 14		Lab 15	
	Tissue XIII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)	45.8%	31.1%			94.3%							
hexachlorobenzene					70.0%							
gamma-HCH (g-BHC,lindane)					56.7%							
beta-HCH (b-BHC)			23.3%	29.2%	78.1%							
heptachlor		0.0%			106.5%							
aldrin					51.9%							
heptachlor epoxide		72.5%									20.2%	
oxychlordane												
gamma-chlordane			14.8%	16.2%	27.9%						36.6%	
2,4'-DDE			31.2%	33.2%			3.3%				12.4%	
endosulfan I					#DIV/0!						33.6%	
cis-chlordane (alpha-chlordane)			14.1%	8.2%	1.0%		2.2%				17.0%	
trans-nonachlor	23.2%	17.7%	13.7%	17.8%							9.8%	
dieldrin			10.6%	10.2%	58.7%		4.1%	1.6%				
4,4'-DDE	18.8%	29.3%	8.3%	29.8%	52.1%		0.6%	1.6%			11.4%	
2,4'-DDD			4.5%	19.5%			1.5%	5.3%			23.2%	
endrin			26.1%	18.9%	144.0%						55.3%	
endosulfan II		69.2%		11.2%	58.7%							
4,4'-DDD	13.3%	0.0%	11.3%	24.4%	75.2%		2.3%	12.7%			12.6%	
2,4'-DDT			6.4%									
cis-nonachlor	21.1%	5.6%	18.4%	27.4%								
4,4'-DDT			12.1%	22.9%	52.7%							
mirex			15.1%	11.3%							3.1%	
endosulfan sulfate											20.9%	
chlorpyrifos			32.3%	41.7%								

Table 28. Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - PCBs												
	Lab 1a		Lab 3		Lab 4		Lab 5		Lab 6		Lab 7	
	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	7.1%	5.0%			31.4%	78.4%			9.6%			
PCB 18	6.4%	7.2%	2.5%	5.7%	20.9%	7.0%	13.6%	0.0%	8.8%			
PCB 28	5.2%	1.5%	2.9%	2.5%	17.8%	13.6%	0.7%	1.1%	3.1%		4.7%	5.0%
PCB 31	4.8%	4.1%	1.0%	1.4%					5.1%			
PCB 44	3.2%	2.3%	1.4%	3.3%	12.8%	8.3%	2.0%	3.8%	2.6%		0.1%	
PCB 49	3.2%	2.7%	0.6%	1.1%					0.7%			
PCB 52	3.6%	2.8%	0.6%	1.8%	12.5%	8.5%	1.4%	2.0%	1.1%		1.3%	7.0%
PCB 66	3.3%	3.1%	0.8%	1.6%	9.4%	11.7%	1.3%	2.9%	2.2%		1.5%	6.6%
PCB 95	4.0%	2.0%	0.8%	2.1%					0.6%			
PCB 99	2.9%	3.1%	0.7%	1.5%					0.4%			
PCB 101	5.1%	2.3%	1.4%	1.6%	12.8%	4.8%	1.6%	2.1%	1.7%		1.7%	7.4%
PCB 105	2.5%	2.7%	1.9%	2.1%	10.7%	13.3%	2.1%	2.2%	5.7%		8.6%	12.2%
PCB 118	3.2%	0.7%	3.2%	2.0%	26.0%	39.1%	2.2%	2.7%	4.7%		1.5%	6.1%
PCB 128	2.8%	3.2%	1.4%	47.1%	14.6%	13.1%	2.4%	1.1%	3.6%		2.3%	2.0%
PCB 138	3.1%	2.6%	1.6%	1.7%	10.3%	5.2%	2.0%	0.6%	2.1%		2.5%	5.7%
PCB 149	0.9%	1.2%	2.0%	1.4%					2.1%			
PCB 153	2.6%	2.6%			9.7%	4.5%	1.5%	0.6%	0.9%		7.4%	10.0%
PCB 156	2.9%	1.3%	2.8%	2.9%					4.3%			
PCB 170	3.8%	1.8%	3.3%	4.2%	9.9%	19.9%			3.0%		16.7%	8.4%
PCB 180	1.9%	1.4%	0.5%	2.2%	10.6%	9.1%	2.5%	2.0%	1.3%		2.9%	7.0%
PCB 187	2.1%	1.1%	1.0%	1.7%	10.0%	3.9%	1.6%	1.3%	1.5%		6.8%	9.6%
PCB 194	6.5%	0.6%	4.0%	2.6%					0.9%			
PCB 195									7.0%			
PCB 206									6.6%			
PCB 209									4.3%			

Table 28 (cont). Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - PCBs												
	Lab 8		Lab 9		Lab 10		Lab 13		Lab 14		Lab 15	
	Tissue XIII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977	Tissue XII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8			13.3%	5.6%					2.4%		9.3%	
PCB 18			14.8%	20.2%			1.5%		2.7%		2.5%	
PCB 28			19.4%	12.5%				6.4%	11.8%		5.5%	
PCB 31			21.3%	19.1%				4.2%	7.4%			
PCB 44			13.0%	48.0%			0.9%	0.8%	10.4%		1.3%	
PCB 49			8.9%	3.9%					6.0%		6.0%	
PCB 52			11.5%	3.9%			1.5%	0.4%	5.5%		7.7%	
PCB 66			20.0%	2.3%			1.1%	1.8%	1.7%		5.5%	
PCB 95			3.9%	7.6%			1.9%	5.2%	10.0%			
PCB 99			0.8%	7.8%			2.6%	0.5%	8.1%		8.4%	
PCB 101			0.8%	14.8%			2.1%	5.0%	9.1%		4.0%	
PCB 105			12.3%	4.3%			4.0%	6.4%	2.1%		3.2%	
PCB 118			5.3%	9.5%			2.6%	0.2%	6.6%		1.8%	
PCB 128			13.6%	4.9%			3.6%	1.3%	7.0%			
PCB 138			11.6%	7.3%			3.7%	3.5%	2.4%		0.5%	
PCB 149			7.4%	17.0%			7.7%	8.6%	4.6%		3.9%	
PCB 153			3.3%	5.8%			3.1%	5.9%	2.7%		3.2%	
PCB 156			20.9%	8.5%			6.2%	3.4%	10.6%			
PCB 170			20.8%	21.5%			3.7%	2.3%	5.1%		5.3%	
PCB 180			16.6%	23.4%			2.5%	5.0%	6.3%			
PCB 187			4.8%	22.0%			7.9%	1.4%	7.8%		0.4%	
PCB 194			18.4%	24.7%			16.9%	5.9%	6.0%			
PCB 195									19.1%			
PCB 206									31.9%			
PCB 209									5.5%			

Table 29. Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - PBDEs												
	Lab 1a		Lab 3		Lab 4		Lab 5		Lab 6		Lab 7	
	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15												
BDE 17												
BDE 25												
BDE 28			1.2%	2.4%								
BDE 30												
BDE 33												
BDE 47	2.3%	4.0%	2.0%	2.9%								
BDE 49			1.3%	3.9%								
BDE 66			3.5%	1.6%								
BDE 71												
BDE 75												
BDE 85												
BDE 99	2.8%	1.6%	3.4%	3.4%								
BDE 100	1.7%	4.5%	0.5%	2.0%								
BDE 116												
BDE 118												
BDE 119												
BDE 138												
BDE 153												
BDE 154												
BDE 155												
BDE 156												
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												
BDE 206												
BDE 207												
BDE 208												
BDE 209												

Table 29 (cont). Mussel Tissue XIII (QA07TIS13): RSDs for three replicates - PBDEs												
	Lab 8		Lab 9		Lab 10		Lab 13		Lab 14		Lab 15	
	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977	Tissue XIII	SRM 2977
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15												
BDE 17												
BDE 25												
BDE 28							3.1%	6.1%				
BDE 30												
BDE 33												
BDE 47							4.3%	0.3%				
BDE 49												
BDE 66												
BDE 71												
BDE 75												
BDE 85												
BDE 99							4.3%	4.9%				
BDE 100							10.6%	10.0%				
BDE 116												
BDE 118												
BDE 119												
BDE 138												
BDE 153												
BDE 154												
BDE 155												
BDE 156												
BDE 181												
BDE 183												
BDE 190												
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												
BDE 206												
BDE 207												
BDE 208												
BDE 209												

Table 30. Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Water, TOC. and PAHs												
	Lab 1a		Lab 2		Lab 3		Lab 4		Lab 5		Lab 6	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
Water	0.6%	8.0%	0.8%		2.5%				1.4%		2.1%	
TOC			38.1%	17.9%			6.0%	1.8%				
PAH ANALYSES	Lab 1a		Lab 2		Lab 3		Lab 4		Lab 5		Lab 6	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	2.6%	3.5%	10.4%	1.2%	3.0%	3.7%	3.9%	26.2%			4.5%	
2-methylnaphthalene	3.0%	1.8%		7.6%	2.9%	3.8%	12.7%	8.7%			1.7%	
1-methylnaphthalene	4.7%	3.2%	25.2%	3.5%	2.8%	4.2%	7.1%	25.8%			0.4%	
biphenyl	5.7%	8.3%			3.0%	3.8%	6.0%	26.7%			0.0%	
2,6-dimethylnaphthalene	4.4%	0.3%			3.7%	4.1%	10.9%	26.9%			0.9%	
acenaphthylene	6.8%	2.8%	22.7%	2.2%	5.3%	7.2%	6.6%	22.7%			4.6%	
acenaphthene	4.9%	3.4%		4.1%	5.6%	3.0%	1.5%	19.6%			3.1%	
1,6,7-trimethylnaphthalene					8.2%	2.2%					2.5%	
fluorene	0.8%	6.0%	19.4%	23.1%	3.2%	3.7%	6.6%	30.4%	3.5%	0.2%	4.1%	
phenanthrene	3.5%	1.5%	15.1%	7.2%	3.7%	3.2%	12.9%	17.1%	2.7%	2.4%	1.6%	
anthracene	2.4%	2.6%	11.2%	6.6%	4.8%	1.9%	16.2%	26.7%	3.9%	0.4%	1.5%	
1-methylphenanthrene	4.2%	1.5%			2.5%	4.8%	19.4%	18.6%			3.8%	
fluoranthene	1.2%	0.2%	11.9%	10.5%	4.2%	3.4%	16.4%	21.1%	2.7%	2.8%	2.7%	
pyrene	0.9%	0.5%	20.1%	9.2%	4.1%	4.6%	11.6%	22.0%	2.6%	2.5%	3.7%	
benz[a]anthracene	0.4%	0.7%	22.8%	12.0%	2.8%	2.5%	6.1%	20.1%	3.0%	2.0%	1.4%	
chrysene	1.5%	0.4%	18.2%	11.4%			8.8%	19.6%	2.0%	0.2%	5.2%	
triphenylene	3.5%	3.0%										
benzo[*b*]fluoranthene	0.8%	3.3%	24.4%	9.6%	4.7%	2.4%	5.1%	16.6%			2.3%	
benzo[*j*]fluoranthene	1.9%	5.0%										
benzo[*k*]fluoranthene	4.9%	1.0%	7.7%	23.1%			6.3%	16.1%			3.5%	
benzo[e]pyrene	1.6%	1.1%			2.9%	1.1%	4.4%	16.5%	2.1%	2.0%	6.3%	
benzo[a]pyrene	1.2%	0.3%	18.3%	8.3%	2.7%	2.2%	5.1%	20.3%	4.4%	2.7%	2.7%	
perylene	2.3%	1.2%			3.7%	1.9%	4.8%	22.5%	5.0%	2.1%	2.4%	
indeno[1,2,3-cd]pyrene	4.4%	1.7%	16.2%	4.1%	3.5%	1.3%	10.4%	17.7%	5.2%	2.4%	3.3%	
dibenz[a,h]anthracene	2.9%	3.7%	22.0%	10.7%			14.2%	28.1%	3.9%	2.2%	8.0%	
benzo[ghi]perylene	1.4%	0.9%	16.7%	6.5%	3.5%	2.3%	11.2%	13.4%	5.0%	3.0%	1.3%	

Table 30 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Water, TOC. and PAHs												
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
Water	0.0%	0.0%	0.0%		2.8%		0.7%		2.4%		1.1%	
TOC			4.8%		0.5%							
PAH ANALYSES	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	26.1%	2.3%	6.5%	19.7%	0.9%		69.1%	21.4%	1.1%	6.8%	20.0%	
2-methylnaphthalene	25.3%	2.5%	7.1%	21.5%	5.0%		61.6%	17.7%	14.0%	15.2%	27.9%	
1-methylnaphthalene	25.2%	2.3%	7.5%	19.4%	4.5%		24.7%	6.3%	13.2%	12.1%	35.1%	
biphenyl	26.1%	0.6%			1.9%			16.0%	5.7%	12.2%		
2,6-dimethylnaphthalene	24.8%	2.0%			3.9%				3.6%	13.2%		
acenaphthylene	22.1%	2.9%	12.9%	21.8%	7.2%		69.1%	22.2%	17.3%	15.8%	14.6%	
acenaphthene	23.0%	3.0%	10.0%	14.2%	4.7%		62.8%	9.2%	19.6%	6.8%	31.4%	
1,6,7-trimethylnaphthalene					10.6%							
fluorene	35.4%	1.5%	9.4%	21.0%	3.5%		81.3%	18.0%	6.2%	13.5%	14.5%	
phenanthrene	8.9%	2.6%	5.8%	15.3%	12.5%		69.6%	7.4%	5.8%	1.4%	14.1%	
anthracene	30.4%	8.5%	9.5%	21.7%	16.2%		69.9%	11.9%	13.2%	5.8%	15.3%	
1-methylphenanthrene	22.3%	3.8%			8.9%				18.7%	0.6%		
fluoranthene	9.6%	2.2%	10.2%	19.2%	9.0%		68.2%	12.2%	9.1%	7.0%	9.8%	
pyrene	8.8%	2.4%	4.8%	7.4%	14.7%		69.9%	5.5%	24.9%	6.0%	13.3%	
benz[a]anthracene	8.8%	2.1%	10.6%	14.1%	9.4%		66.1%	18.0%	5.8%	6.3%	15.7%	
chrysene	9.7%	1.7%	6.7%	13.7%	9.6%		73.5%	4.5%	8.6%	7.9%	10.3%	
triphenylene												
benzo[*b*]fluoranthene	7.7%	2.3%	16.5%	19.8%	9.8%		67.6%	34.6%	23.7%	10.7%	12.2%	
benzo[*j*]fluoranthene												
benzo[*k*]fluoranthene	10.4%	1.7%	15.2%	18.9%			84.3%	58.4%	22.4%	10.8%	15.4%	
benzo[e]pyrene	9.1%	2.3%			13.6%				7.8%	12.0%		
benzo[a]pyrene	7.9%	2.1%	25.9%	15.6%	11.8%		73.1%	10.0%	7.5%	6.9%	14.1%	
perylene	8.7%	2.0%			8.0%				7.4%	11.4%		
indeno[1,2,3-cd]pyrene	8.0%	2.4%	13.3%	17.0%	14.6%		68.5%	28.7%	13.9%	3.8%	15.8%	
dibenz[a,h]anthracene	25.1%	2.0%	5.3%	16.1%	8.5%		96.3%	100.5%	38.6%	6.4%	13.4%	
benzo[ghi]perylene	9.3%	3.3%	14.8%	14.8%	15.5%		74.0%	31.2%	15.0%	3.8%	14.0%	

Table 30 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Water, TOC. and PAHs								
	Lab 13		Lab 14-1		Lab 14-2		Lab 15	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
Water	1.2%		10.1%		10.1%		3.5%	
TOC							0.4%	
PAH ANALYSES	Lab 13		Lab 14-1		Lab 14-2		Lab 15	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
naphthalene	7.2%	14.1%	25.6%		4.5%		8.0%	
2-methylnaphthalene	4.6%	15.2%	18.2%		5.5%		11.0%	
1-methylnaphthalene	7.2%	12.2%			5.7%			
biphenyl	7.1%	13.8%			12.6%			
2,6-dimethylnaphthalene	18.5%	32.9%			7.6%		5.3%	
acenaphthylene	15.5%	10.5%			10.6%		8.4%	
acenaphthene	3.4%	6.8%			8.1%			
1,6,7-trimethylnaphthalene	2.0%	10.5%			7.8%		7.8%	
fluorene	1.6%	5.6%			9.3%		2.6%	
phenanthrene	4.3%	4.4%	29.4%		2.4%		2.3%	
anthracene	7.0%	5.4%	30.5%		3.5%		11.4%	
1-methylphenanthrene	3.5%	1.5%	14.8%		15.6%		9.8%	
fluoranthene	2.4%	2.8%	30.5%		4.4%		3.3%	
pyrene	1.8%	3.6%	29.3%		6.3%		9.5%	
benz[a]anthracene	4.1%	3.4%	24.5%		3.0%		12.4%	
chrysene	4.8%	11.7%	30.6%		5.2%		2.9%	
triphenylene								
benzo[*b*]fluoranthene	3.2%	7.4%	24.7%		6.5%		23.0%	
benzo[*j*]fluoranthene	9.8%	6.0%						
benzo[*k*]fluoranthene			38.4%		6.6%		8.2%	
benzo[e]pyrene	1.0%	7.4%	29.4%		10.8%		9.2%	
benzo[a]pyrene	1.4%	7.4%	30.4%		3.4%		15.0%	
perylene	4.5%	12.9%	25.3%		2.5%		9.0%	
indeno[1,2,3-cd]pyrene	2.3%	9.2%	27.8%		4.6%		15.5%	
dibenz[a,h]anthracene	4.6%	6.6%	18.7%		3.7%		15.3%	
benzo[ghi]perylene	4.8%	10.5%	24.1%		7.9%		12.0%	

Table 31. Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Pesticides												
	Lab 1a		Lab 2		Lab 3		Lab 4		Lab 5		Lab 6	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)											2.2%	
hexachlorobenzene	2.5%	2.9%			1.3%	4.0%	6.0%	20.8%	6.7%	12.3%	2.1%	
gamma-HCH (g-BHC,lindane)									4.6%	6.0%	12.9%	
beta-HCH (b-BHC)											4.1%	
heptachlor											35.5%	
aldrin											7.9%	
heptachlor epoxide											4.1%	
oxychlordane												
gamma-chlordane	3.8%	6.3%					14.5%	24.7%			0.9%	
2,4'-DDE	7.4%	3.2%			1.5%	2.8%	21.8%	6.2%			6.8%	
endosulfan I												
cis-chlordane (alpha-chlordane)	3.2%	2.8%	20.5%	41.1%			12.4%	30.4%	3.2%	3.3%	1.3%	
trans-nonachlor	3.3%	6.7%					11.8%	23.8%	3.0%	0.0%	2.9%	
dieldrin	1.4%	2.1%									9.0%	
4,4'-DDE	3.7%	1.3%	10.8%	43.1%	1.4%	3.6%	8.7%	23.7%	6.1%	1.5%	4.5%	
2,4'-DDD	1.8%	4.7%					12.6%	27.1%			5.6%	
endrin												
endosulfan II												
4,4'-DDD	2.1%	2.7%	12.1%	8.7%			10.5%	25.7%	4.1%	0.1%	4.0%	
2,4'-DDT	7.2%	2.1%									6.2%	
cis-nonachlor	1.0%	1.0%					10.7%	23.9%			4.3%	
4,4'-DDT	1.1%	4.3%	12.5%	6.0%			11.1%	25.8%	3.3%	1.0%	6.3%	
mirex					2.8%	4.1%					5.4%	
endosulfan sulfate												
chlorpyrifos												

Table 31 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Pesticides												
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)	4.0%						40.3%		15.1%	13.4%		
hexachlorobenzene	8.4%	8.8%			4.7%	13.8%	68.6%	22.9%	5.2%	4.9%		
gamma-HCH (g-BHC,lindane)		7.3%	22.6%			15.3%	79.2%	101.9%	19.2%	14.9%		
beta-HCH (b-BHC)						11.7%		41.1%	4.4%	5.2%		
heptachlor			23.6%					145.1%	64.8%	4.9%		
aldrin							31.0%	10.1%	24.3%	37.8%		
heptachlor epoxide			43.9%			19.8%	29.1%	119.3%	3.6%	1.9%		
oxychlordane									6.5%	18.5%		
gamma-chlordane	20.0%	5.3%			3.8%	20.9%	41.8%	26.5%	2.1%	4.9%	41.1%	
2,4'-DDE	12.4%	11.9%	30.7%		6.3%	3.3%			6.6%	4.1%		
endosulfan I												
cis-chlordane (alpha-chlordane)	34.4%	3.1%			5.1%	1.4%	52.2%	16.7%	7.7%	7.9%		
trans-nonachlor	17.8%	15.2%			2.0%	3.4%			3.8%	4.0%		
dieldrin	9.2%	7.2%			6.6%	5.4%		15.1%	10.2%	8.2%		
4,4'-DDE	6.7%	3.3%	19.6%		7.3%	5.6%	44.2%	1.8%	5.8%	1.9%	16.8%	
2,4'-DDD	12.7%	2.7%	15.2%		16.9%	10.4%			8.8%	6.2%	10.2%	
endrin	14.5%	8.5%						90.8%	30.6%	43.9%		
endosulfan II						5.7%	42.2%	7.5%				
4,4'-DDD	18.6%	2.0%	10.9%		6.8%	8.4%	52.9%	32.6%	25.7%	5.3%	8.8%	
2,4'-DDT	9.6%	33.0%			9.0%	35.8%			23.2%	18.1%		
cis-nonachlor					6.1%	12.2%			7.8%	4.6%		
4,4'-DDT	12.5%	1.5%	18.2%		13.9%	17.7%	48.3%	8.3%	9.4%	75.1%	4.0%	
mirex		2.1%							14.2%	14.6%	12.8%	
endosulfan sulfate						12.2%		49.6%				
chlorpyrifos												

Table 31 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - Pesticides								
	Lab 13		Lab 14-1		Lab 14-2		Lab 15	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
alpha-HCH (a-BHC)								
hexachlorobenzene	12.0%	3.6%					3.8%	
gamma-HCH (g-BHC,lindane)							1.6%	
beta-HCH (b-BHC)							3.4%	
heptachlor							5.1%	
aldrin								
heptachlor epoxide	6.7%						5.5%	
oxychlordane							6.2%	
gamma-chlordane							5.3%	
2,4'-DDE	18.2%	40.5%					3.7%	
endosulfan I							8.7%	
cis-chlordane (alpha-chlordane)	2.1%	4.2%					4.4%	
trans-nonachlor	0.8%	1.6%					4.9%	
dieldrin	5.7%	2.4%					3.5%	
4,4'-DDE	5.4%	6.5%					3.9%	
2,4'-DDD	7.0%	6.9%					2.5%	
endrin							3.9%	
endosulfan II	3.8%	8.8%					7.0%	
4,4'-DDD	7.9%	4.0%					1.5%	
2,4'-DDT		26.9%					4.5%	
cis-nonachlor							6.5%	
4,4'-DDT	17.2%	2.2%					2.7%	
mirex	7.4%	7.8%					2.7%	
endosulfan sulfate	24.3%						9.0%	
chlorpyrifos	103.1%	19.4%						

Table 32. Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PCBs												
	Lab 1a		Lab 2		Lab 3		Lab 4		Lab 5		Lab 6	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	3.2%	2.3%					16.5%	7.7%	6.1%	8.9%	2.8%	
PCB 18	2.8%	2.6%			1.8%	3.7%	2.9%	4.2%	6.3%	8.4%	1.2%	
PCB 28	3.0%	1.0%			1.5%	3.3%	5.7%	6.3%	4.5%	6.6%	8.1%	
PCB 31	7.0%	0.4%			3.0%	2.6%					2.5%	
PCB 44	5.0%	1.1%			1.3%	3.7%	2.0%	5.9%	5.8%	4.2%	8.8%	
PCB 49	1.7%	1.3%			1.3%	4.0%					8.2%	
PCB 52	6.5%	1.3%			1.2%	3.8%	6.8%	8.2%	4.5%	5.7%	8.4%	
PCB 66	4.7%	2.4%			16.7%	9.2%	4.4%	6.9%	5.5%	4.1%	1.5%	
PCB 95	4.9%	0.9%			2.0%	4.1%					12.1%	
PCB 99	4.0%	1.2%			2.2%	3.4%					3.4%	
PCB 101	6.1%	1.3%			1.3%	3.7%	3.8%	6.6%	4.3%	4.2%	9.0%	
PCB 105	3.9%	4.5%			2.7%	1.7%	2.6%	8.4%	3.3%	4.1%	3.8%	
PCB 118	4.9%	0.8%			1.0%	3.0%	4.8%	8.6%	3.7%	3.9%	4.1%	
PCB 128	2.2%	1.4%			1.8%	4.4%	11.5%	8.5%	6.5%	9.0%	7.9%	
PCB 138	3.7%	0.9%			1.4%	3.6%	0.6%	8.2%	4.3%	5.2%	11.2%	
PCB 149	2.6%	0.8%			1.4%	3.5%					4.1%	
PCB 153	4.7%	0.5%					1.9%	6.8%	6.3%	6.2%	10.1%	
PCB 156	1.8%	2.4%			2.0%	5.3%					3.8%	
PCB 170	3.4%	1.9%			5.7%	4.3%	1.3%	6.3%	3.7%	5.9%	9.5%	
PCB 180	4.5%	2.1%			1.3%	2.8%	0.9%	7.9%	8.0%	7.3%	5.7%	
PCB 187	4.1%	3.9%			1.9%	2.4%	6.8%	8.4%	5.9%	7.1%	6.3%	
PCB 194	2.8%	4.3%			0.5%	5.0%					3.6%	
PCB 195	6.1%	5.1%			4.1%	7.2%	4.2%	11.4%	13.2%	8.0%	5.1%	
PCB 206	0.9%	1.6%			3.0%	8.7%	7.2%	12.0%	6.6%	5.7%	0.8%	
PCB 209	3.3%	2.2%			2.4%	5.4%	16.3%	12.3%	9.4%	12.5%	3.9%	

Table 32 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PCBs												
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8	2.7%	1.7%			26.2%	12.2%			12.4%	3.8%	4.2%	
PCB 18	7.5%	4.5%			11.9%	16.8%			6.0%	8.9%	3.6%	
PCB 28	10.8%	3.6%			7.3%	3.7%			6.3%	7.1%	2.6%	
PCB 31					11.7%	8.5%			10.3%	19.5%	5.0%	
PCB 44	10.5%	1.9%			3.3%	8.5%			1.1%	5.1%	8.7%	
PCB 49					5.8%	4.6%			1.1%	4.4%	8.9%	
PCB 52	10.5%	1.1%			5.8%	4.4%			1.0%	7.4%	8.5%	
PCB 66	9.7%	1.5%			5.8%	3.3%			4.9%	6.9%	4.3%	
PCB 95					7.5%	6.4%			2.2%	5.8%	3.0%	
PCB 99					7.3%	5.4%			6.8%	3.4%	4.7%	
PCB 101	11.9%	2.5%			5.0%	1.8%			2.3%	14.3%	4.2%	
PCB 105	12.3%	8.6%			3.4%	12.9%			1.9%	2.1%	3.5%	
PCB 118	5.2%	1.8%			7.2%	2.8%			4.6%	2.6%	0.9%	
PCB 128	15.2%	9.0%			1.3%	6.0%			1.0%	10.9%	2.9%	
PCB 138	5.7%	2.7%			18.9%	0.8%			3.1%	7.1%	9.5%	
PCB 149					5.1%	6.0%			4.7%	6.7%	8.9%	
PCB 153	8.4%	0.3%			5.9%	4.9%			8.6%	8.5%	9.8%	
PCB 156					35.6%	13.1%			2.6%	7.5%	1.9%	
PCB 170	16.4%	3.4%			0.4%	5.6%			8.5%	12.3%	5.1%	
PCB 180	17.2%	8.0%			5.0%	6.0%			8.5%	11.0%	4.2%	
PCB 187	8.2%	8.5%			5.0%	2.7%			8.5%	11.0%	5.9%	
PCB 194					5.7%	21.2%			9.5%	17.5%	3.9%	
PCB 195		4.2%			27.6%	7.3%			13.7%	20.0%	1.1%	
PCB 206	14.1%	8.1%			4.6%	11.0%					7.4%	
PCB 209	21.7%	1.3%			12.3%	5.3%					2.7%	

Table 32 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PCBs								
	Lab 13		Lab 14-1		Lab 14-2		Lab 15	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
PCB 8					8.4%		7.5%	
PCB 18	29.3%	15.5%			9.4%		5.2%	
PCB 28	22.4%	6.0%			9.8%		6.2%	
PCB 31	25.5%	2.0%			8.6%		7.3%	
PCB 44	19.7%	2.7%			6.4%		5.2%	
PCB 49					6.2%		6.1%	
PCB 52	5.8%	2.9%			6.2%		6.0%	
PCB 66	6.4%	3.3%			6.3%		8.0%	
PCB 95	4.0%	7.0%			8.1%			
PCB 99	1.5%	3.9%			8.1%		6.0%	
PCB 101	3.7%	3.7%			8.8%		9.4%	
PCB 105	3.0%	6.0%			9.7%		7.6%	
PCB 118	1.4%	4.0%			10.0%		7.1%	
PCB 128	11.1%	2.0%			10.3%		4.5%	
PCB 138	0.4%	5.3%			9.7%		6.8%	
PCB 149	1.1%	3.9%			8.7%		6.5%	
PCB 153	5.7%	5.1%			8.9%		8.3%	
PCB 156		8.1%			9.5%		6.6%	
PCB 170	3.2%	11.1%			2.2%		8.9%	
PCB 180	2.9%	12.4%			4.7%		6.1%	
PCB 187	4.4%	15.7%			6.5%		3.4%	
PCB 194	6.2%	20.4%			1.9%		5.0%	
PCB 195	28.4%	35.7%			14.2%			
PCB 206	4.3%	15.8%			4.3%			
PCB 209	3.3%	4.4%			7.0%		3.2%	

Table 33. Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PBDEs												
	Lab 1a		Lab 2		Lab 3		Lab 4		Lab 5		Lab 6	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15	8.6%										3.3%	
BDE 17	5.8%										7.4%	
BDE 25												
BDE 28											4.8%	
BDE 30												
BDE 33												
BDE 47	2.7%	6.3%			2.2%						11.2%	
BDE 49	4.1%				2.5%						6.2%	
BDE 66											13.0%	
BDE 71											14.2%	
BDE 75											12.7%	
BDE 85											4.9%	
BDE 99	2.3%	3.2%			0.8%						2.9%	
BDE 100											4.8%	
BDE 116												
BDE 118												
BDE 119												
BDE 138											7.2%	
BDE 153	4.4%	3.5%			10.6%	5.9%					3.3%	
BDE 154											5.3%	
BDE 155											7.4%	
BDE 156												
BDE 181											11.6%	
BDE 183	2.7%	7.1%			20.7%	16.5%					10.4%	
BDE 190											10.7%	
BDE 191												
BDE 196												
BDE 197												
BDE 203												
BDE 205												
BDE 206												
BDE 207												
BDE 208												
BDE 209	6.3%	5.7%									3.0%	

Table 33 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PBDEs												
	Lab 7		Lab 8		Lab 9		Lab 10		Lab 11		Lab 12	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15									4.2%	6.0%		
BDE 17									7.4%	15.0%		
BDE 25									7.4%	15.0%		
BDE 28									8.3%	13.7%	68.5%	
BDE 30												
BDE 33									8.3%	13.7%		
BDE 47									4.9%	13.1%	5.9%	
BDE 49									8.5%	23.3%		
BDE 66									6.1%	28.2%	11.5%	
BDE 71												
BDE 75									28.0%	45.4%		
BDE 85											17.6%	
BDE 99									4.3%	6.6%	7.1%	
BDE 100									11.6%	11.7%	8.0%	
BDE 116												
BDE 118												
BDE 119												
BDE 138											8.8%	
BDE 153									8.8%	4.9%	6.0%	
BDE 154									3.8%	25.2%	5.7%	
BDE 155									109.4%	67.5%		
BDE 156												
BDE 181												
BDE 183									6.7%	5.8%	9.6%	
BDE 190									7.2%	3.5%		
BDE 191												
BDE 196									9.8%	5.0%		
BDE 197									4.5%	1.8%		
BDE 203									11.2%	8.8%		
BDE 205												
BDE 206									7.4%	18.5%		
BDE 207									12.4%	14.2%		
BDE 208									10.8%	8.4%		
BDE 209									2.7%	53.3%		

Table 33 (cont). Marine Sediment XIVI (QA07SED14): RSDs for three replicates - PBDEs								
	Lab 13		Lab 14-1		Lab 14-2		Lab 15	
	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944	Sed XIV	SRM 1944
	rsd	rsd	rsd	rsd	rsd	rsd	rsd	rsd
BDE 15								
BDE 17								
BDE 25								
BDE 28								
BDE 30								
BDE 33								
BDE 47	2.0%	6.4%						
BDE 49								
BDE 66								
BDE 71								
BDE 75								
BDE 85								
BDE 99	70.2%							
BDE 100	12.0%							
BDE 116								
BDE 118								
BDE 119								
BDE 138	14.9%							
BDE 153	14.6%	12.1%						
BDE 154	17.4%	12.2%						
BDE 155								
BDE 156								
BDE 181								
BDE 183	3.2%	17.8%						
BDE 190	20.2%							
BDE 191								
BDE 196								
BDE 197								
BDE 203								
BDE 205								
BDE 206								
BDE 207								
BDE 208								
BDE 209	15.0%	72.1%						

Appendix A” Description, Storage, Use, and Reporting Instructions for Mussel Tissue XIII (QA07TIS 13)

NIST Intercomparison Exercise Program for
Organic Contaminants in the Marine Environment

NIST QA Program

Intercomparison Exercise: Mussel Tissue XIII
Description of Materials and Instructions

Intercomparison Exercise Materials:

QA07TIS13 (Mussel Tissue XIII)

The one jar contains approximately 6.5 g (dry-mass basis) of Mussel Tissue XIII. This freeze-dried material was prepared from mussels collected from two urban areas. This material has not been enriched or spiked. Each 30-mL amber 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 2977 Mussel Tissue (Organic Contaminants and Trace Elements) are recommended. This material can be obtained from the NIST Standard Reference Materials Program ($506/10 g (dry-mass basis) (phone: 301/975-6776; fax: 301/948-3730). See the following link for information on ordering on-line: https://srmors.nist.gov/view_detail.cfm?srm=2977.

Storage of Materials:

Mussel Tissue Material. The tissue material should be stored in the dark at room temperature. If only a portion of the contents of a jar is used, the 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 Mussel Tissue XIII and SRM 2977, using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the 26 polycyclic aromatic hydrocarbon (PAH) compounds, 25 chlorinated pesticides, 25 polychlorinated biphenyl (PCB) congeners, and 34 polybrominated diphenyl ether (PBDE) congeners[1] of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

[1]If your laboratory is not analyzing samples for all three chemical classes, you are expected to submit results only for those compounds currently being determined in your laboratory.

The percentage of total extractable organics (or lipid) in Mussel Tissue XIII and SRM 2977 should also be determined. You should have received sufficient material for this purpose. The amount of material used for each analysis should correspond to the amount (dry-mass basis) of marine tissue that you would typically analyze as prescribed in your protocols.

You should analyze three samples of Mussel Tissue XIII and at least one or more samples of SRM 2977 in three different batches using your protocol for tissue samples. Specifically, we are asking that you analyze one sample of Mussel Tissue XIII and one sample of SRM 2977 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 requested analytes in each of the three replicates of the Mussel Tissue XIII and of SRM 2977. 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.

We recognize that the reported concentrations for some of the requested determinands will probably include concentrations of compounds reported to coelute with the determinand of interest with methods commonly in use in environmental laboratories. Please note at the bottom of your table of reported results if any coelution qualifiers are applicable to your data. 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, TIS13.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 diskette file or send it in hard copy.

Submit your results by **January 31, 2008** as an attached file via e-mail to:

E-mail: 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 1: Analytes of Interest in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
beta-HCH (beta-BHC)	2,4'-DDD
gamma-HCH (gamma-BHC, Lindane)	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
cis-chlordane (alpha-chlordane)	chlorpyrifos
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

Table 1. (continued)

Polycyclic aromatic hydrocarbons (PAH)

naphthalene
2-methylnaphthalene
1-methylnaphthalene
biphenyl
2,6-dimethylnaphthalene
acenaphthylene
acenaphthene
1,6,7-trimethylnaphthalene
fluorene
phenanthrene
anthracene
1-methylphenanthrene
fluoranthene
pyrene
benz[*a*]anthracene
chrysene
triphenylene
benzo[*b*]fluoranthene
benzo[*j*]fluoranthene
benzo[*k*]fluoranthene
benzo[*e*]pyrene
benzo[*a*]pyrene
perylene
indeno[1,2,3-*cd*]pyrene
dibenz[*a,h*]anthracene
benzo[*ghi*]perylene

Polybrominated diphenyl ethers (PBDEs)

BDE 15
BDE 17
BDE 25
BDE 28
BDE 30
BDE 33
BDE 47
BDE 49
BDE 66
BDE 71
BDE 75
BDE 85
BDE 99
BDE 100
BDE 116
BDE 118
BDE 119
BDE 138
BDE 153
BDE 154
BDE 155
BDE 156
BDE 181
BDE 183
BDE 190
BDE 191
BDE 196
BDE 197
BDE 203
BDE 205
BDE 206
BDE 207
BDE 208
BDE 209

Appendix B: Description, Storage, Use, and Reproting Insturctions for Marine Sediment XIV (QA07SED14)

NIST Intercomparison Exercise Program for
Organic Contaminants in the Marine Environment

NIST QA Program

Intercomparison Exercise: Marine Sediment XIV
Description of Materials and Instructions

Intercomparison Exercise Materials:

QA07SED14 (Marine Sediment XIV)

Each of the three jars contains approximately 19 g (wet basis) of Marine Sediment XIV. This wetted sediment was prepared from material that was collected from a harbor area in the northeasetern section of the US coast and then freeze-dried, ground sieved, and radiation-sterilized. This material has not been 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 1944 New York/New Jersey Waterway Sediment are recommended. This material can be obtained from the NIST Standard Reference Materials Program ($544/50 g (dry-mass basis) (phone: 301/975-6776; fax: 301/948-3730). See the following link for information on ordering on-line: https://srmors.nist.gov/view_detail.cfm?srm=1944.

Storage of Materials:

Marine Sediment Material. This Marine Sediment XIV 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 XIV and SRM 1944 using **your** laboratory's and/or program's analytical protocols, for the concentrations (mass/mass [dry-mass basis]) of the 26 polycyclic aromatic hydrocarbon (PAH) compounds, 25 chlorinated pesticides, 25 polychlorinated biphenyl (PCB) congeners, and 34 polybrominated diphenyl ether (PBDE) congeners[2] of interest in the current NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment. These compounds are listed in Table 1.

[2]If your laboratory is not analyzing samples for all chemical classes, you are expected to submit results only for those compounds currently being determined in your laboratory.

The percentage of water in Sediment XIV 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. In addition, the percentage of total organic carbon should be determined in Sediment XIV and SRM 1944.

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 Sediment XIV, you should thaw the sample in the jar and then **stir or otherwise mix it thoroughly**.

You should analyze three samples of Marine Sediment XIV and at least one or more samples of SRM 1944 in three different batches using your protocol for marine sediment samples. Specifically, we are asking that you analyze one sample of Sediment XIV and one sample of SRM 1944 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 requested analytes in each of the three replicates of the Marine Sediment XIV and of SRM 1944. 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 XIV.

We recognize that the reported concentrations for some of the requested determinands will probably include concentrations of compounds reported to coelute with the determinand of interest with methods commonly in use in environmental laboratories. Please note at the bottom of your table of reported results if any coelution qualifiers are applicable to your data. 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, SED14.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 diskette file or send it in hard copy.

Submit your results by **January 31, 2008** as an attached file via e-mail to:

E-mail:
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 1: Analytes of Interest in NIST Intercomparison Exercise Program for Organic Contaminants in the Marine Environment

Chlorinated Pesticides

hexachlorobenzene	2,4'-DDE
alpha-HCH (alpha-BHC)	4,4'-DDE
beta-HCH (beta-BHC)	2,4'-DDD
gamma-HCH (gamma-BHC, Lindane)	4,4'-DDD
heptachlor	2,4'-DDT
heptachlor epoxide	4,4'-DDT
cis-chlordane (alpha-chlordane)	chlorpyrifos
trans-chlordane (gamma-chlordane)	aldrin
oxychlordane	dieldrin
cis-nonachlor	endrin
trans-nonachlor	endosulfan I
mirex	endosulfan II
	endosulfan sulfate

Polychlorinated Biphenyl Congeners

PCB No.	*Compound Name*
8	2,4'-dichlorobiphenyl
18	2,2',5-trichlorobiphenyl
28	2,4,4'-trichlorobiphenyl
31	2,4',5-trichlorobiphenyl
44	2,2',3,5'-tetrachlorobiphenyl
49	2,2',4,5'-tetrachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl
95	2,2',3,5',6-pentachlorobiphenyl
99	2,2',4,4',5-pentachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl
118	2,3',4,4',5-pentachlorobiphenyl
128	2,2',3,3',4,4'-hexachlorobiphenyl
138	2,2',3,4,4',5'-hexachlorobiphenyl
149	2,2',3,4',5',6-hexachlorobiphenyl
153	2,2',4,4',5,5'-hexachlorobiphenyl
156	2,3,3',4,4',5-hexachlorobiphenyl
170	2,2',3,3',4,4',5-heptachlorobiphenyl
180	2,2',3,4,4',5,5'-heptachlorobiphenyl
187	2,2',3,4',5,5',6-heptachlorobiphenyl
194	2,2',3,3',4,4',5,5'-octachlorobiphenyl
195	2,2',3,3',4,4',5,6-octachlorobiphenyl
206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
209	decachlorobiphenyl

Table 1. (continued)

Polycyclic aromatic hydrocarbons (PAH)

naphthalene
2-methylnaphthalene
1-methylnaphthalene
biphenyl
2,6-dimethylnaphthalene
acenaphthylene
acenaphthene
1,6,7-trimethylnaphthalene
fluorene
phenanthrene
anthracene
1-methylphenanthrene
fluoranthene
pyrene
benz[*a*]anthracene
chrysene
triphenylene
benzo[*b*]fluoranthene
benzo[*j*]fluoranthene
benzo[*k*]fluoranthene
benzo[*e*]pyrene
benzo[*a*]pyrene
perylene
indeno[1,2,3-*cd*]pyrene
dibenz[*a,h*]anthracene
benzo[*ghi*]perylene

Polybrominated diphenyl ethers (PBDEs)

BDE 15
BDE 17
BDE 25
BDE 28
BDE 30
BDE 33
BDE 47
BDE 49
BDE 66
BDE 71
BDE 75
BDE 85
BDE 99
BDE 100
BDE 116
BDE 118
BDE 119
BDE 138
BDE 153
BDE 154
BDE 155
BDE 156
BDE 181
BDE 183
BDE 190
BDE 191
BDE 196
BDE 197
BDE 203
BDE 205
BDE 206
BDE 207
BDE 208
BDE 209

Appendix C: Laboratory Notes Accompanying Data, Mussel Tissue XIII

Lab	Additional notes for Mussel Tissue XIII
1a	Used a DB-17 column to separate the chrysene from triphenylene and the dibenz[a,h]anthracene from dibenz[a,c]anthracene
3	

	Tissue XIII Sample 1 (ng/g dry ma	Tissue XIII Sample 2 (ng/g dry mas	Tissue XIII Sample 3 (ng/g dry ma	SRM 2977 Sample 1 (ng/g dry ma	SRM 2977 Sample 2 (ng/g dry ma	SRM 2977 Sample 3 (ng/g dry mass)
chrysene + triphenylene	129	129	129	113	94.7	94.4
benzo[j]fluoranthene + benzo[k]fl	36.2	35.4	33.3	15	13	12.7
Dibenzithiophene	34.1	34	33.4	29.6	29.7	29.6
Retene	8.96	9.48	10.3	10.6	12.1	10.3
PCB 17	3.08	3.06	3.04	1.88	2.02	1.94
PCB 33	2.26	2.57	2.51	1.89	1.65	1.61
PCB 70	14	13.9	13.6	3.74	3.82	3.63
PCB 74	7.41	7.46	7.26	2.77	2.74	2.7
PCB 82	2.59	2.53	2.46	0.629	0.525	0.56
PCB 87	*8.45*	8.42	8.25	1.58	1.65	1.58
PCB 110	*25.5*	25.3	24.7	6.04	6.18	6.02
PCB 151	7.38	7.49	7.31	3.3	3.3	3.21
PCB 153 + PCB 132	48.4	48.8	47	17.6	17.8	17.2
PCB 158	2.01	2.01	1.97	0.369	0.346	0.34
PCB 171	1.12	1.1	1.1	0.295	<0.330	<0.322
PCB 177	5.1	4-Jan-00	5-Jan-00	2.21	2.2	2.12
PCB 183	3.24	3.2	3.24	0.645	0.632	0.61
PCB 191	<0.358	<0.384	<0.276	<0.262	<0.331	<0.323
PCB 199	0.36	0.32	0.33	0.68	0.55	0.61
PCB 205	<0.357	<0.382	<0.275	<0.281	<0.330	<0.322
PCB 208	<0.358	<0.384	<0.276	<0.282	<0.331	<0.323
Iatroscan total lipid (%)	5.80	6.00	5.70	7.00	6.300	8.100
Free fatty acids + triglycerides (%	37.3	35.7	37.6	46.10	43.70	40.90
cholesterol (% of total lipid)	0.5	0.4	0.5	0.00	0.00	0.00
phospholipid (% of total lipid)	54.30	56.20	55.00	42.00	46.60	48.30
wax esters (% of total lipid)	7.90	7.70	6.90	11.90	9.600	10.700

Other - Analytes coelute with others and are reported as sums in the additional data portion.
NA - not analyzed; the analyte is not included in our reported suite of compounds
I - the analyte concentration could not be reported; the analyte could not be quantitated due to the presence of interfering compounds
PCB 101 is assumed to coelute with PCB 90.
PCB 138 is assumed to coelute with PCBs 163 and 164.
PCB 187 is assumed to coelute with PCBs 159 and 182.
Iatroscan total lipid is determined from the sum of the masses of free fatty acids, triglycerides, cholesterol, phospholipid, and waxx esters.

4	Due to problems with laboratory TS results, all concentrations are reported on a wet-weight basis. Michele Schantz will convert results to dry-weight by using average correction factor from all data received (per email 1/17/08). Due to problems with the lipids prodedure we are not reporting % lipids results. Congener samples 2 and 3 were run in the same instrument batch but were prepped in 2 separate extraction batches.
6	"other" = congener co-elutes as follows: PCB co-elutions: PCB 18/30, 20/28, 44/47/65, 95/100/93/102/98, 99/83, 101/90/113, 128/166, 138/163/129/160, 149/147, 153/168, 156/157, 180/19 PAH co-elutions: triphenylene/chrysene, benzo[j]fluoranthene/benzo[k]fluoranthene, 1,2,6-trimethynaphthalene/1,2,7-trimethynaphthalene/1,6,7-trimethylnaphthalene/2,3,5-trimethynaphthalene, dibenz[a,h]anthracene/dibenz[a,c]anthracene Pesticide SRM data are provided in separate file
7	red is below LOQ
8	pg This is a qualifier that is used for GC. It means that the % difference between the results from both columns is >40%.
9	PCB 101 coelutes with PCB 90 PCB 153 coelutes with PCB 132 and 168 PCB 170 coelutes with PCB 190 PCB 8 coelutes with PCB 5 PCB 195 coelutes with PCB 208 <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(b)fluoranthene is the sum of benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(j)fluoranthene Insufficient sample to determine PBDE
10	Notes: for non-freeze-dried tissue, our normal sample weight is 10 g for each test, wet weight. PAHs: The initial analyses for the first two batches had no target analytes detected, so the extracts were concentrated and reanalyzed

12	Aldrin is noted to have matrix interference causing a raised detection limit. Typical PCB coelution on a DB-5 column - Method 1668 (209 congeners) Di- Chlorinated PCB Coeulters DiCB-4/10 DiCB-9/7 DiCB-8/5 DiCB-12/13 Tri- Chlorinated PCB Coeulters TrCB-27/24 TrCB-32/16 TrCB-34/23 * TrCB-21/20/33 Tetra- Chlorinated PCB Coeulters TeCB-52/73 TeCB-43/49 TeCB-47/75/48 TeCB-59/42 * TeCB-64/41/68 TeCB-74/61 TeCB-66/76/80 TeCB-56/60 Penta- Chlorinated PCB Coeulters PeCB-98/102 PeCB-95/93 PeCB-121/88 PeCB-89/90/101 PeCB-83/108 Pe-97/86/125/111/117/87 PeCB-115/116 PeCB-85/120 PeCB-109/107 PeCB-118/106 PeCB-105/127 Hexa- Chlorinated PCB Coeulters HxCB-135/144 HxCB-139/149 HxCB-131/142/165 HxCB-132/168 HxCB-164/163/138 HxCB-160/158 Hepta- Chlorinated PCB Coeulters HpCB-187/182 HpCB-172/192 HpCB-170/190 Octa- Chlorinated PCB Coeulters OcCB-196/203 *These coelutions can be resolved in some cases.
13	PCB 8 coelutes - PCB 5/8 PCB 101 coelute - PCB 89/90/101 PCB 118 coelutes - PCB 106/118 PCB 128 coelutes - PCB 128/167 PCB 138 coelutes - PCB138/163/164 PCB 170 coelutes - PCB170/190 chrysene colutes - chrysene/triphenylene benzo(j)fluoranthene coelutes - benzo(j+k)flouranthene
14	PCB congener analyses: The following co-elutions are observed and may effect the reported results for the following congeners: PCB 28 and 20 PCB 44, 47, and 65 PCB 95 and 100 PCB 99 and 83 PCB 101, 90, and 113 PCB 138, 129, 160 and 163 PCB 149 and 147 PCB 153 and 168 PCB 156 and 157 PCB 180 and 193 Naphthalene, 2-Methylnaphthalene, and 1-Methylnaphthalene were detected above the minimum calibration level in the associated method blanks. As a result, there is a likely high bias to the results for these target analytes.
15	In performing the analytical work for the chlorinated pesticides and the congener PCBs by GC/ECD, the laboratory did evaluate the results that were generated from each of two columns in deriving a result for a particular compound, and has reported the lower of the two values. The laboratory did evaluate instrument response to the established reporting limit, and has not reported derived results from instrument response to the established reporting limit, and has not reported derived results from instrument response below that limit. The established reporting limit is based on the lowest concetration level in the initial calibration(s). *triphenylene and chrysene are known to co-elute in this method w/ virtually the same mass spectral aspect. **benzo[j]fluoranthene is known to co-elute with benzo[b] or benzo[k] fluoranthene in this method w/ virtually the same mass spectral aspect.

Appendix D: Laboratory Notes Accompanying Data, Marine Sediment XIV

Lab	Additional notes for Sediment XIV
1a	Used a DB-17 column to separate the chrysene from triphenylene and the dibenz[a,h]anthracene from dibenz[a,c]anthracene
2	Note: Despite the GPC clean-up for the Pesticides there was a fair amount of matrix interference present. The final extract was yellow in color and required that the samples be diluted prior to analysis (either a (1/5) or (1/10)). Additionally, there were a fair number of additional peaks in the chromatograms on both the primary and secondary columns. Although the pesticides confirmed', the obvious presence of other compounds, as evidenced by several high percent differences for the results between the columns for several compounds, may have biased some results. All of the concentrations above, including the < conc, were adjusted for sample weight, final volume, dilution performed and percent moisture. Note: Historically, the laboratory does not perform any clean-up methods on GCMS Semi-volatile samples. Attempts in the past to 'clean-up' soil samples (i.e. GPC or otherwise) have not yielded significant beneficial results. The laboratory will attempt to concentrate the extracted samples to 0.5 mL prior to GCMS analysis. In two cases the extract could only be concentrated to 1.0 mL. Additionally, due to a varying amount of background (i.e. baseline rise/'humpograms') several extracts were diluted by (1/2) just prior to analysis. All of the concentrations above, including the < conc, were adjusted for sample weight, final volume, dilution performed and percent moisture.
3	Sediment XIV Sediment XIV Sediment XIV SRM 1944 SRM 1944 SRM 1944 *Sample 1* Sample 2 Sample 3 Sample 1 Sample 2 Sample 3 *(ng/g dry mas*ng/g dry mass ng/g dry mas ng/g dry mas ng/g dry mas ng/g dry mass) chrysene + triphenylene 2150 2250 2250 5800 5970 5960 B[j]F + B[k]F 1610 1650 1660 3680 3550 3560 Dibenzithiophene 153 162 168 708 732 759 Retene 224 236 237 395 411 389 PCB 17 19.9 19.7 20.6 29.2 29.4 29.4 PCB 33 26.40 26.00 27.20 38.40 41.60 41.20 PCB 70 72.30 70.60 72.60 84.60 88.90 88.90 PCB 74 31.10 30.50 31.40 36.50 38.60 39.00 PCB 82 11.20 11.10 10.40 13.10 13.60 12.90 PCB 87 28.10 27.60 29.20 31.60 32.40 32.50 PCB 110 68.80 67.40 69.10 73.30 79.000 77.600 PCB 151 17.0 16.5 17.1 16.30 17.30 17.20 PCB 153 + PCB 132 90.7 88.8 91.9 90.90 96.70 96.00 PCB 158 7.77 7.68 7.91 8.20 8.62 8.56 PCB 171 5.52 5.41 5.52 5.11 5.430 5.410 PCB 177 13.30 13.00 13.50 12.20 13.00 12.90 PCB 183 13.10 12.90 13.30 12.10 13.100 13.000 PCB 191 <1.04 <1.08 <1.22 <1.37 <1.20 <1.08 PCB 199 13.50 13.20 13.40 12.30 13.00 13.00 PCB 205 <1.03 <1.08 <1.21 <1.36 <1.19 <1.08 PCB 208 2.80 2.77 2.78 2.62 2.920 2.950 Other - Analytes coelute with others and are reported as sums in the additional data portion. NA - not analyzed; the analyte is not included in our reported suite of compounds I - the analyte concentration could not be reported; the analyte could not be quantitated due to the presence of interfering compounds PCB 101 is assumed to coelute with PCB 90. PCB 138 is assumed to coelute with PCBs 163 and 164. PCB 187 is assumed to coelute with PCBs 159 and 182.
4	Due to problems with laboratory TS results, the NIST provided TS value of 47.3% was used for all 3 replicates of Sediment XIV. Due to problems with laboratory TS results, the NIST provided TS value of 98.7% was used for all 3 replicates of SRM1944. Pesticide and congener samples 105 and 120 were run in the same instrument batch but were prepped in 2 separate extraction batches.
6	NA = not analyzed **"other" = congener co-elutes as follows:** PCB co-elutions: PCB 18/30, 20/28, 44/47/65, 95/100/93/102/98, 99/83, 101/90/113, 128/166, 138/163/129/160, 149/147, 153/168, 156/157, 180/19 BDE co-elutions: BDE 17/25, 28/33, 119/120, 138/166 PAH co-elutions: triphenylene/chrysene, benzo[j]fluoranthene/benzo[k]fluoranthene, 1,2,6-trimethynaphthalene/1,2,7-trimethynaphthalene/1,6,7-trimethylnaphthalene/2,3,5-trimethynaphthalene, dibenz[a,h]anthracene/dibenz[a,c]anthracene
8	pg means columns did not agree This is a qualifier that is used for GC. It means that the % difference between the results from both columns is >40%.
9	PCB 101 coelutes with PCB 90 PCB 153 coelutes with PCB 132 and 168 PCB 170 coelutes with PCB 190 PCB 8 coelutes with PCB 5 PCB 195 coelutes with PCB 208 <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(b)fluoranthene is the sum of benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(j)fluoranthene Insufficient sample to determine PBDE
10	Amount extracted for pesticides was 2.0 grams. Note that both tests are smaller amounts than we normally extract for West Coast sediment projects. There was insufficient sample volume to extract using our normal proceedure (20 grams for PAH analysis, 10 grams for pesticides)

11		Sediment XI	Sediment XI	Sediment XI	SRM 1944	SRM 1944	SRM 1944
		Sample 1	Sample 2	Sample 3	Sample 1	Sample 2	Sample 3
		(ng/g dry ma	(ng/g dry mas	(ng/g dry ma	(ng/g dry ma	(ng/g dry ma	(ng/g dry mass)
	2-methylnapthalene	245	252	314	734	972	780
	1-methylnapthalene	90.8	111	118	381	465	480
	2,3,5-trimethylnapthalene	107	115	107	318	489	386
	dibenzothiophene	94.6	121	87.7	574	556	575
	C1-Naphthalenes	340	372	434	1120	1730	1290
	C2-Naphthalenes	494	531	570	3070	2400	2970
	C3-Naphthalenes	1360	5-Oct-04	19-Jun-02	4380	4280	4540
	C4-Naphthalenes	<15.6	<15.4	<15.4	<10	<10	<10
	C1-Fluorenes	<15.6	<15.4	<15.4	<10	<10	<10
	C2-Fluorenes	<15.6	<15.4	<15.4	<10	<10	<10
	C3-Fluorenes	<15.6	<15.4	<15.4	<10	<10	<10
	C1-Phenanthrene/Anthracene	2510	2320	2070	8290	7600	7480
	C2-Phenanthrene/Anthracene	4790	6170	5510	13000	12100	12500
	C3-Phenanthrene/Anthracene	4500	<15.4	<15.4	189.000	9730	10700
	C4-Phenanthrene/Anthracene	<15.6	<15.4	<15.4	<10	<10	<10
	C1-Dibenzothiophenes	<15.6	<15.4	<15.4	<10	<10	<10
	C2-Dibenzothiophenes	<15.6	<15.4	21.9	<10	<10	<10
	C3-Dibenzothiophenes	<15.6	<15.4	531	<10	<10	<10
	C1-Fluoranthenes/pyrenes	1860	2800	23.8	7190	7350	6630
	C1-Chrysenes	1540.00	1730	<15.4	4650	4190	4470
	C2-Chrysenes	<15.6	<15.4	<15.4	<10	<10	<10
	C3-Chrysenes	<15.6	<15.4	<15.4	<10	<10	<10
	C4-Chrysenes	<15.6	<15.4	<15.4	<10	<10	<10
	PCB 33	19.2	19.1	20.6	28.6	27.6	30.3
	PCB 56	25.7	27.5	26.3	28.5	27.4	28.9
	PCB 60	10.1	11.1	11	13	11	12.5
	PCB 70/74	85.8	93.8	97.6	98.3	102	103
	PCB 87/97	43.3	45.2	47	44.5	50	49.6
	PCB 110	66.1	61.8	61	65.6	66.5	66.2
	PCB 132	19.2	19.6	20.2	18.5	18.7	19.7
	PCB 141	11.1	5.16	6.32	11.8	11.2	10.9
	PCB 151	23.5	23.8	23	21.8	21.2	22.2
	PCB 158	6.36	6.28	6.82	5.96	6.75	7.32
	PCB 174	20.4	22.1	25.2	16.4	17.2	21.4
	PCB 177	11.9	9.57	11.3	9.83	10.6	10.7
	PCB 183	14	15	16.5	11.8	12	15.9
	PCB 201	1.75	2.16	1.48	1.44	1.5	1.25
	PCB 203	8.4	8.7	9.96	6.2	7.15	7.98
	PBDE						
	8 and 11 coelute						
	12 and 13 coelute						
	17 and 25 coelute						
	28 and 33 coelute						
	51 and 75 coelute						
	119 and 120 coelute						
	138 and 166 coelute						
	PBDE 7	0.899	0.993	0.9	0.5	0.631	0.538
	PBDE 8/11	0.588	0.572	0.544	0.439	0.421	0.413
	PBDE 10	< 0.173	<.171	<.171	< 0.111	<.111	<.111
	PBDE 12/13	< 0.0839	0.0218	<.0106	0.0366	<.0209	<.0113
	PBDE 32	< 0.0544	<.0598	<.0429	< 0.0643	<.0337	<.0357
	PBDE 35	< 0.00922	<.0185	<.0138	< 0.0865	<.0182	<.0076
	PBDE 37	0.0377	0.0318	<.0238	< 0.0192	0.0207	<.0171
	PBDE 77	< 0.0417	<.00708	<.0157	< 0.0138	<.0116	<.0288
	PBDE 79	< 0.0144	<.00815	<.0177	< 0.0147	<.0131	<.0325
	PBDE 105	< 0.0617	<.0652	<.0632	< 0.0801	<.0721	<.0696
	PBDE 126	< 0.0256	<.0305	<.0297	< 0.0319	<.0305	<.0452
	PBDE 128	< 0.0748	<.0797	<.0837	< 0.062	<.0786	<.0787
	PBDE 140	< 0.03	<.0297	<.0312	< 0.0249	<.0293	<.0293
	PBDE 204	< 0.199	<.110	<.0951	< 0.130	<.110	<.104

12	Several PCB congeners had concentrations that are above the upper calibration limit of the method, but do no saturate the detector. Aldrin is noted to have matrix interference causing a raised detection limit. 4,4'-DDE and Mirex in Bottle 168 do not confirm primary and secondary column confirmation criteria. Mirex in Bottle 171 does not confirm primary and secondary column confirmation criteria. Typical PCB coelution on a DB-5 column - Method 1668 (209 congeners) <u>Di- Chlorinated PCB Coeulters</u> DiCB-4/10 DiCB-9/7 DiCB-8/5 DiCB-12/13 <u>Tri- Chlorinated PCB Coeulters</u> TrCB-27/24 TrCB-32/16 TrCB-34/23 * TrCB-21/20/33 <u>Tetra- Chlorinated PCB Coeulters</u> TeCB-52/73 TeCB-43/49 TeCB-47/75/48 TeCB-59/42 * TeCB-64/41/68 TeCB-74/61 TeCB-66/76/80 TeCB-56/60 <u>Penta- Chlorinated PCB Coeulters</u> PeCB-98/102 PeCB-95/93 PeCB-121/88 PeCB-89/90/101 PeCB-83/108 Pe-97/86/125/111/117/87 PeCB-115/116 PeCB-85/120 PeCB-109/107 PeCB-118/106 PeCB-105/127 <u>Hexa- Chlorinated PCB Coeulters</u> HxCB-135/144 HxCB-139/149 HxCB-131/142/165 HxCB-132/168 HxCB-164/163/138 HxCB-160/158 <u>Hepta- Chlorinated PCB Coeulters</u> HpCB-187/182 HpCB-172/192 HpCB-170/190 <u>Octa- Chlorinated PCB Coeulters</u> OcCB-196/203 *These coelutions can be resolved in some cases.
13	Analytical method used (e.g., GC-FID, GC-ECD): BDE 209: Analyt. Instr. = GC NCIMS; Column Phase = 5% diphenyl; Col. Length, m = 15; Col. i.d., mm = 0.25; Col. film thickness, µm = 0.1 Chrysene and triphenylene co-elute Benzo(j)fluoranthene and benzo(k)fluoranthene co-elute PCB 8 was measured as cong 8+5. PCB 101was meaured as 101+90+89. PCB 118 measured as 118+106 PCB 128 measured as 128+167 PCB 138 measured as 164+163+138 PCB 170 measured as 170+190
14-2	PCB congener analyses: The following co-elutions are observed and may effect the reported results for the following congeners: PCB 28 and 20 PCB 44, 47, and 65 PCB 95 and 100 PCB 99 and 83 PCB 101, 90, and 113 PCB 138, 129, 160 and 163 PCB 149 and 147 PCB 153 and 168 PCB 156 and 157 PCB 180 and 193
15	In performing the analytical work for the chlorinated pesticides and the congener PCBs by GC/ECD, the laboratory did evaluate the results that were generated from each of two columns in deriving a result for a particular compound, and has reported the lower of the two values. The laboratory did evaluate instrument response to the established reporting limit, and has not reported derived results from instrument response to the established reporting limit, and has not reported derived results from instrument response below that limit. The established reporting limit is based on the lowest concetration level in the initial calibration(s). *triphenylene and chrysene are known to co-elute in this method w/ virtually the same mass spectral aspect. **benzo[j]fluoranthene is known to co-elute with benzo[b] or benzo[k] fluoranthene in this method w/ virtually the same mass spectral aspect.

Appendix E: Laboratory Methods Used, Mussel Tissue XIII

Lab #	Reported	g extracted QA07TIS13	g extracted SRM 2977	TEO Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1a	3/10/2008	1 dry	1 dry	gravimetric	PFE	dichloromethane (DCM)	3 cycles each 5 min	temp = 100 ^{o}C; pressure 2000 psi; 3 static cycles / sample
3	1/28/2008	2 dry	2 dry	gravimetric	PFE	DCM	approx. 16 min	temp = 100 ^{o}C; pressure 2000 psi
4	1/31/2008	2 dry	1 dry		Sonication	DCM	3 x 2.0 min each	
5	1/31/2008	1.32 dry	1.32 dry	gravimetric	microwave	acetone:hexane (8:2)	15 min at 100 °C	
6	1/31/2008	1 dry	1 dry	gravimetric	Soxhlet	DCM	16 h	
7	1/31/2008	0.6 dry	0.9 dry	gravimetric	Polytron homogenizer	DCM (3x 100 mL)	2 min	decanted and filtered during extraction
8	1/31/2008	2 dry	2 dry	Method 3541	EPA 3541 (PAH); EPA 3540 (pesticide)	DCM:Acetone (1:1)		
9	1/31/2008	2 dry	2 dry	gravimetric	PFE	DCM	13 min	temp = 100 ^{o}C; pressure 1500 psi; 2 static cycles / sample
10	1/31/2008	1 dry		NA	SW-846 Method 3550B	DCM	30 min shaker, 30 min heated sonicator bath	
12	2/5/2008	2 (PAH & pest): 0.5 (PCB & BDE) wet			PAH and pest - Sonication EPA 3550B; PCB and BDE - Soxhlet	PAHs: DCM; Pesticides: DCM:Acetone (1:1); PCB and BDE: toluene	sonication 3 x 2 min; Soxhlet 16 h	
13	2/7/2008	1.2 dry	1.2 dry	gravimetric	PFE	DCM:acetone (1:1)	30 min	temp = 100 ^{o}C; pressure 2000 psi; 3 x 5 min static cycles / sample
14	2/15/2008	1 dry	1 dry	micro-colorimetric assay	Soxhlet	DCM (PAHs); Acetone:hexane (1:1) (PCBs)	16 h	
15	2/15/2008	0.75(PAH); 0.75 (pest); 0.5(PCB) dry	1(PAH); 1 (pest); 0.75(PCB) dry	gravimetric	Tissumizer	PAHs: DCM:Acetone (1:1); PCBs & Pesticides: Hexane Acetone (1:1)	2 min	add 30 g sodium sulfate; extraction process repeated 3 x

Lab #	Sample extract cleanup method	Method of quantitation
1a	silica solid phase extraction (SPE) column; condition and elute with 15 mL of 10 % dichloromethane (DCM) in hexane	IS
3	Gravity flow column with silica gel and neutral alumina, followed by HPLC-SEC to elute fraction containing analytes of interest	IS
4	silica gel; activated copper; sulfuric acid for PCBs	IS
5	acid	IS
6	PAHs -GPC & silica; pesticides - GPC & Florisil; PCBs - GPC, Florisil, acid/base silica, alumina	IS
7	GPC (51 cm x 25 mm SX-3 Biobeads); 7.3% deactivated silica gel	IS
8	pesticides - GPC	IS for PAHs; ES for pest
9	silica/alumina colum chromatography	IS
10	PAHs - GPC; pesticides - sulfur clean-up (SW-846 Method 3660) & GPC on batch B&C	IS for PAHs; ES for pest
12	pest - florisil SPE and Hg to remove sulfur; PCBs and BDEs - acid/neutral silica column and acid alumina column	IS for PAHs, PCBs, BDEs; ES for pest
13	GPC (SX-3 Biobeads); SPE using silica	IS
14	GPC, neutral silica gel (PAHs); acid/neutral silica gel, florisil (PCBs)	IS
15	PAHs - GPC and silica gel; PCBs - sulfuric acid; pesticides - GPC and silica gel	IS for PAHs; ES for pest, PCBs

Lab #	PAHs Instrument	Phase	Dimensions	Calibration Curve # points	range
1a	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm filn	6	1 ng - 500 ng extracted
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm filn	6	0.001 ng/µL - 1.0 ng/µL
4	GC/MS	RTX-5 Sil MS	30m x 0.28 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
6	GC/MS	RTX-5	30m x 0.25 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
7	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm filn	5	10 ng/mL - 500 ng/mL
8	GC/MS	DB-5MS	30m x 0.32 mm, 0.5µm film	7	0.2 ng - 80 ng
9	GC/MS	HP-5MS	60m x 0.25 mm, 0.25µm filn	5	20 ng/mL - 1000 ng/mL
10	GC/MS	ZB-5MS	30m x 0.25 mm, 0.25µm filn	7	20 µg/L - 5000 µg/L
12	GC/MS	DB-5MS	30m x 0.25 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
13	GC/IT-MS	5% diphenyl	30m x 0.25 mm, 0.25µm filn	5	30 ng/mL - 4200 ng/mL
14	GC/MS	5% diphenyl	60m x 0.25 mm, 0.25µm filn	7	1 ng/g - 250 ng/g
15	GC/MS	Rxi-5MS	30m x 0.25 mm, 0.25µm filn	5	20 ng/mL - 1000 ng/mL

Lab #	PBDEs Instrument	Phase	Dimensions	Calibration Curve # points	range
1a	GC/MS NCI	DB-5	15m x 0.25 mm, 0.25µm film	6	1 ng - 400 ng extracted
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	4	0.0025 ng/µL - 1 ng/µL
12	GC/HRMS	DB-5HT	30m x 0.25 mm, 0.1µm film	6	1 ng/mL - 5000 ng/mL
13	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25µm film	5	0.25 ng/mL - 25 ng/mL

	PCBs			Calibration Curve		PESTICIDES			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1a	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm	6	1 ng - 300 ng extracted	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm	6	1 ng - 300 ng extracted
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	6	0.001 ng/µL - 0.31 ng/µL	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	6	0.001 ng/µL - 0.31 ng/µL
4	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	6	2 ng/mL - 100 ng/mL	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	6	2 ng/mL - 100 ng/mL
5	GC-ECD	DB-5	60m x 0.25 mm, 0.25µm film	5	4 ng/mL - 120 ng/mL	GC-ECD	DB-5	60m x 0.25 mm, 0.25µm film	5	4 ng/mL - 120 ng/mL
6	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.1µm film	5	1 ng/mL - 2000 ng/mL	GC/HRMS	DB-5	60m x 0.25 mm, 0.1µm film	5	10 ng/mL - 4000 ng/mL
7	GC-ECD	HP-5MS & DB-XLB	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 50 ng/mL	GC-ECD	HP-5MS & DB-XLB	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 50 ng/mL
8						GC-ECD	MR-1/MR-2	30m x 0.53 mm, 1µm film	6	0.001 ng - 0.2 ng
9	GC-ECD	DB-5, DB-17	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 200 ng/mL	GC-ECD	DB-5, DB-17	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 200 ng/mL
10						GC-ECD	MR-1/MR-2	30m x 0.53 mm, 0.5 µm film (MR-1) or 0.25 µm film (MR-2)	7	1 µg/L - 100 µg/L
12	GC/HRMS	DB-5	60m x 0.32 mm, 0.25µm film	5	1 ng/mL - 1000 ng/mL	GC-ECD	STX-CLP	30m x 0.32 mm, 0.25µm film	6	1.25 ng/mL - 50 ng/mL
13	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25µm film	7	0.5 ng/mL - 100 ng/mL	GC/MS NCI	5% diphenyl	30m x 0.25 mm, 0.25µm film	8	0.25 ng/mL - 100 ng/mL
14	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25µm	6	0.1 ng/g - 200 ng/g					
15	GC-ECD	RTX-5/RTX-PCB	each one 60m x 0.25 mm, 0.25µm	5	2 ng/mL - 100 ng/mL	GC-ECD	RTX-CLP/RTX-CLPII	30m x 0.32 mm, 0.5 µm film (CLP) or 0.25 µm film (CLPII)	5	2 ng/mL - 100 ng/mL

			PAHs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, indeno[1,2,3-cd]pyrene	x				
2			1,4-DCB-D4; Naphthalene-D8;Acenaphthene-d10;Phenanthrene-d10;Chrysene-d12;Perylene-d12	x	n	
3	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene			deuterated phenanthrene prior to clean-up
4	deuterated naphthalene, phenanthrene, chrysene		deuterated fluorene, acenaphthene, B[a]P	x	n	
6	deuterated naphthalene, 2-methylnaphthalene, biphenyl, 2,6-dimethylnaphthalene, acenaphthylene, phenanthrene, fluoranthene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, DB[a,h]A, indeno[1,2,3-cd]perylene, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P - used to quantify labelled surrogates only.			
7	deuterated napthalene, acenaphthene, phenanthrene, fluoranthene, chrysene, B[a]P,		deuterated fluorene, pyrene, perylene	x	n	
8	Surrogates:Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14, Phenol-d5, 2-Fluorophenol, 2,4,6 Tribromophenol, 2-Chlorophenol-d4, 1,2 Dichlorobenzene-d4		IS:1,4 Dichlorobenzene-d4,Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10,Chrysene-d12, Perylene-d12		n	
9	surrogates-deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene		IS-deuterated fluorene, pyrnee, B[a]P	x	y	
10	surrogates-2-fluorophenol, phenol-d5, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, p-trephine-d14		IS:1,4 Dichlorobenzene-d4,Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10,Chrysene-d12, Perylene-d12		n	
12	mixture of deuterated PAHs	x	four carbon-13 labeled PAHs			
13	deutereated perylene, B[e]P, acenaphthene, acenaphthylene, antracene, B[a]A, B[b]F, B[k]F, B[ghi]P, B[a]P, Chrysene, DB(a,h)A, fluoranthene, fuorene, indeno(1,2,3-cd)pyrene, napthalene, phenanthrene, pyrene.	x	p-terphenyl			
14	deuterated 1,4-dichlorobenzene, naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, acenaphthylene, phenanthrene, dibenzothiophene, 2,6-dimethylnaphthalene, anthracene, fluoranthene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, indeno[1,2,3-cd]pyrene, DB[a,h]A, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P, pyrene			
15	deuterated 1,4-dichlorobenzene, naphthalene, acenapthene, phenanthrene,chrysene, perylene	x	deuterated fluorene, B[a]P			

			PBDEs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	Fluorinated BDE 47	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
12	mixture of carbon-13 labeled BDEs	x	carbon-13 labeled PCBs and one BDE			
13	13C12 labeled BDE 28,47,99,100,118,153,183	x	delta-HCH			

			Pesticides		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	carbon-13 labeled 4,4'-DDE, 4,4'-DDT, lindane, and trans-nonachlor	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
4	13C6-gamma-HCH, 13C12-4,4'-DDT		3-chlorobiphenyl; 2,3,3',4,4',5,5',6-octachlorobiphenyl (13C12)	x	n	
5	2,5-dichloro-m-terphenyl	x				
6	13C-labeled HCB, b-HCH, g-HCH, d-HCH, Heptachlor, Aldrin, Oxychlordane, t-Chlordane, t-Nonachlor, c-nonachlor, DDE, DDD, DDT, Mirex, Heptachlor-epoxide, Dieldrin, Endrin, Endrin-aldehyde, Methoxychlor, Endosulphan-I, Endosulphan-II	x	13C12-labeled PCBs 52, 138, 153, used to quantify labelled surrogates only.			
7	g-chlordene, b-HCH		4,4'-dibromooctafluorobiphenyl	x	n	
9	surrogates - 4,4'-dibromooctachlorobiphenyl; 2,3',4,5',6-pentachlorobiphenyl, 2,2',3,3',4,5,5',6-octachlorobiphenyl		IS - tetrachloro-m-xylene	x	y	
10	surrogates-tetrachloro-m-xylene, decachlorobiphenyl				n	
12						surrogates added prior to extraction but not used for quantitation
13	Carbon-13 labeled lindane, chlorpyrifox, endosulfan-I, endosulfan-II, 4,4'-DDD, 4,4'-DDT, heptachlor epoxide, 2,4'-DDE	x	delta-HCH			

			PCBs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	PCB 103 and PCB 198	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
4	2',3,5-trichlorobiphenyl, 2,2',4,6,6'-pentachlorobiphenyl, 2,3,3',4,5,5',6-heptachlorobiphenyl		3-chlorobiphenyl; 2,3,3',4,4',5,5',6-octachlorobiphenyl (13C12)	x	n	
5	PCB 198	x				
6	13C12-labeled PCBs 4,15,19,37,54,77,81,104,105,114,118,123,126,155,156,157, 167,169,170,180,188,189,202,205,206,208,209	x	13C12-labeled PCBs 9,52,101,138,194, used to quantify labelled surrogates only.			13C12-labelled PCBs 28,111,178, used as cleanup standards.
7	PCB 103, PCB 198		4,4'-dibromooctafluorobiphenyl	x	n	
9	surrogates - 4,4'-dibromooctachlorobiphenyl; 2,3',4,5',6-pentachlorobiphenyl, 2,2',3,3',4,5,5',6-octachlorobiphenyl		IS - tetrachloro-m-xylene	x	y	
12	mixture of carbon-13 labeled PCBs	x	carbon-13 labeled PCBs			
13	Carbon-13 labeled PCB 3,15,28,52,118,153,180,208,194,209	x	delta-HCH			
14	Carbon-13 labeled 2-MoCB, 4-MoCB, 2,2'-DiCB, 4,4'-DiCB, 2,2',6-TriCB, 3,4,4'-TriCB, 2,2',6,6'-TeCB, 3,3',4,4'-TeCB, 3,4,4',5-TeCB, 2,3',4,6,6'-PeCB, 2,3,3',4,4'-PeCB, 2,3,4,4',5-PeCB, 2,3',4,4',5-PeCB, 2',3,4,4',5-PeCB, 3,3',4,4',5-PeCB, 2,2',4,4',6,6'-HxCB, 2,3,3',4,4',5-HxCB, 2,3,3',4,4',5-HxCB, 2,3',4,4',5,5'-HxCB, 3,3',4,4',5,5'-HxCB, 2,2',3,3',4,4',5-HpCB, 2,2',3,4',5,6,6'-HpCB, 2,3,3',4,4',5,5'-HpCB, 2,2',3,3',5,5',6,6'-OcCB, 2,3,3',4,4',5,5',6-OcCB, 2,2',3,3',4,4',5,5',6-NoCB, 2,2',3,3',4',5,5',6,6'-NoCb, DcCB	x	Carbon-13 labeled 2,5-DiCB, 2,4',5-TriCB, 2,4',6-TriCB, 2,2',5,5'-TeCB, 2,2',4',5,5'-PeCB, 3,3',4,5,5'-PeCB, 2,2',3',4,4',5'-HxCB, 2,2',3,4,4',5,5'-HpCB, 2,2',3,3',4,4',5,5'-OcCB			clean-up standards - Carbon-13 labeled 2,4,4'-TriCB, 2,3,3',5,5'-PeCB, 2,2',3,3',5,5',6-HpCB,

Appendix F: Laboratory Methods Used, Marine Sediment XIV

Lab #	Reported	g extracted QA07SED14	g extracted SRM 1944	% water Determination	Extraction Method	Extraction Solvent	Extraction Time	Extraction other
1a	3/10/2008	1 wet	1 dry	oven 120 °C	PFE	dichloromethane (DCM)	3 cycles each 5 min	temp = 100 °C; pressure 2000 psi; 3 static cycles / sample
2	12/18/2007	5 wet	5 dry	EPA 2540G	EPA 3541 Organics	PAHs: DCM:Acetone (1:1); Pesticides: Hexane:Acetone (1:1)	EPA 3541 2.5 h	
3	1/28/2008	2 wet	1 dry	oven at 120 °C overnight	PFE	DCM	approx. 16 min	temp = 100 °C; pressure 2000 psi
4	1/31/2008	10 wet	5 dry	NA	Sonication	DCM	3 x 2.0 min each	
5	1/31/2008	4-5 wet	1.5 dry	oven 100 °C for 24 h	Sonication	acetone:hexane (1:1)	3 x 20 min each	
6	1/31/2008	7 wet	3 dry	gravimetric	Soxhlet	DCM	16 h	
7	1/31/2008	6 wet	8 dry		Sonication	acetone:hexane (1:1)	3 x 3 min each	decanted and filtered during extraction; back extracted to remove residual H_20 in acetone
8	1/31/2008	7.5 wet	5 (PAH): 10 (pesticide) dry		EPA 3541 (PAH); EPA 3540 (pesticide)	PAHs: DCM:Acetone (1:1); Pesticides: Hexane Acetone (1:1)		
9	1/31/2008	2.5 wet	0.5 dry	oven 105 °C	PFE	DCM	13 min	temp = 100 °C; pressure 1500 psi; 2 static cycles / sample
10	1/31/2008	10 wet	10 dry	oven 105 °C	SW-846 Method 3550B	DCM	30 min shaker, 30 min heated sonicator bath	
11	1/31/2008	1 wet	1 dry	EPA 160.3	PFE	DCM:acetone (1:1)	approx. 30 min	
12	2/5/2008	4 (PAH & pest): 1 (PCB & BDE) wet		ASTM D-2216	PAH and pest - Sonication EPA 3550B; PCB and BDE - Soxhlet	PAHs: DCM; Pesticides: DCM:Acetone (1:1); PCB and BDE: toluene	sonication 3 x 2 min; Soxhlet 16 h	
13	2/7/2008	5 wet	0.4 dry	oven 120 °C for 24 h	PFE	DCM:acetone (1:1)	15 min	temp = 100 °C; pressure 1500 psi; 3 x 5 min static cycles / sample
14-1	2/15/2008	1 wet	1 dry	EPA 160.3	Soxhlet	DCM:acetone (1:1) for jar 166 and SRM 1944; DCM for jars 169 and 172	18 h	
14-2	2/15/2008	1 wet	1 dry	EPA 160.3	Soxhlet	DCM for PAHs; acetone:hexane (1:1) for PCBs	16 h	
15	2/15/2008	2(PAH); 8 (pest); 5(PCB) wet	1(PAH); 4 (pest); 2.5(PCB) wet	gravimetric	Sonication	PAHs: DCM:Acetone (1:1); PCBs & Pesticides: Hexane Acetone (1:1)	3 min	add 60 g sodium sulfate; extraction process repeated 3 x

Lab #	Sample extract cleanup method	Method of quantitation
1a	silica solid phase extraction (SPE) column; condition and elute with 15 mL of 10 % dichloromethane (DCM) in hexane; sulfur	IS
2	EPA 3640A Pesticides only	IS for PAHs; ES for pest
3	Gravity flow column with silica gel and neutral alumina, followed by HPLC-SEC to elute fraction containing analytes of interest	IS
4	silica gel; activated copper; sulfuric acid for PCBs	IS
5	silica cartridge; condition (5 mL) and elute (15 mL) with 10% DCM in hexane; 1/2 extract treated with acid followed by activated copper to remove sulfur	IS
6	PAHs -silica; pesticides - Florisil; PCBs and BDEs - Florisil, acid/base silica, alumina	IS
7	GPC (51 cm x 25 mm SX-3 Biobeads); 3% deactivated silica gel	IS
8	PAHs - none; pesticides - Carboprep 90	IS for PAHs; ES for pest
9	silica/alumina colum chromatography; addition of copper for sulfur removal	IS
10	PAHs - none; pesticides - sulfur clean-up (SW-846 Method 3660)	IS for PAHs; ES for pest
11	sodium sulfate; GPC; alumina for pesticides, PCBs, and BDEs	IS
12	pest - florisil SPE and Hg to remove sulfur; PCBs and BDEs - acid/neutral silica column and acid alumina column	IS for PAHs, PCBs, BDEs; ES for pest
13	Post extraction activated copper and filtration through separation paper and sodium sulfate; GPC (SX-3 Biobeads); SPE using silica for PCBs and pest and cyano for PAHs	IS
14-1	silica gel for PAHs	IS
14-2	PAHs - GPC and neutral silica gel; PCBs - acid/neutral silica gel, florisil, sulfur	IS
15	PAHs - GPC and silica gel; PCBs - sulfuric acid and sulfur; pesticides - GPC, silica gel, and sulfur	IS for PAHs; ES for pest, PCBs

Lab #	PAHs Instrument	Phase	Dimensions	Calibration Curve # points	range
1a	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm filn	6	5 ng - 2500 ng extracted
2	GC/MS	ZB-5	30m x 0.25 mm, 0.5µm film	9 to 11	0.005 ng/µL - 0.160 ng/µL
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm filn	7	0.015 ng/µL - 10.0 ng/µL
4	GC/MS	RTX-5 Sil MS	30m x 0.28 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
5	GC/MS	DB-5MS	60m x 0.25 mm, 0.25µm filn	5	0.5 ng/µL - 20 ng/µL
6	GC/MS	DB-5	30m x 0.25 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
7	GC/MS	HP-5MS	30m x 0.25 mm, 0.25µm filn	5	10 ng/mL - 500 ng/mL
8	GC/MS	DB-5MS	30m x 0.32 mm, 0.5µm film	7	0.2 ng - 80 ng
9	GC/MS	HP-5MS	60m x 0.25 mm, 0.25µm filn	5	20 ng/mL - 1000 ng/mL
10	GC/MS	ZB-5MS	30m x 0.25 mm, 0.25µm filn	10	20 µg/L - 5000 µg/L
11	GC/MS	Equity 5	30m x 0.25 mm, 0.5µm film	9	0.020 µg/mL - 8.0 µg/mL
12	GC/MS	DB-5MS	30m x 0.25 mm, 0.25µm filn	5	50 ng/mL - 5000 ng/mL
13	GC/IT-MS	5% diphenyl	30m x 0.25 mm, 0.25µm filn	7	30 ng/mL - 4200 ng/mL
14-1	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25µm filn	7	100 ng/g - 25000 ng/g
14-2	GC/MS	5% diphenyl	60m x 0.25 mm, 0.25µm filn	7	1 ng/g - 250 ng/g
15	GC/MS	Rxi-5MS	30m x 0.25 mm, 0.25µm filn	5	20 ng/mL - 1000 ng/mL

Lab #	PBDEs Instrument	Phase	Dimensions	Calibration Curve # points	range
1a	GC/MS NCI	DB-5	15m x 0.25 mm, 0.25µm film	6	2 ng - 500 ng extracted
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	4	0.0025 ng/µL - 1 ng/µL
6	GC/HRMS	DB-5HT	30m x 0.25 mm, 0.1µm film	5	1 ng/mL - 2500 ng/mL
11	GC/HRMS	5% phenyl	30m x 0.25 mm, 0.1µm film	6	1 ng/mL - 500 ng/mL, except BDE 209 10 ng/mL - 5000 ng/mL
12	GC/HRMS	DB-5HT	30m x 0.25 mm, 0.1µm film	6	1 ng/mL - 5000 ng/mL
13	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25µm film	8	0.25 ng/mL - 25 ng/mL

	PCBs			Calibration Curve		PESTICIDES			Calibration Curve	
Lab #	Instrument	Phase	Dimensions	# points	range	Instrument	Phase	Dimensions	# points	range
1a	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm	6	5 ng - 300 ng extracted	GC/MS	DB-XLB	60m x 0.25 mm, 0.25µm	6	5 ng - 300 ng extracted
2						GC-ECD	RTX-CLPesticide	30m x 0.53 mm, 0.42µm film	6	0.005 ng/µL - 0.160 ng/µL
3	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	6	0.001 ng/µL - 0.31 ng/µL	GC/MS	DB-5	60m x 0.25 mm, 0.25µm film	6	0.001 ng/µL - 0.31 ng/µL
4	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	6	2 ng/mL - 100 ng/mL	GC/MS	RTX-5	60m x 0.25 mm, 0.25µm film	6	2 ng/mL - 100 ng/mL
5	GC-ECD	DB-5	60m x 0.25 mm, 0.25µm film	5	4 ng/mL - 120 ng/mL	GC-ECD	DB-5	60m x 0.25 mm, 0.25µm film	5	4 ng/mL - 120 ng/mL
6	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.1µm film	5	1 ng/mL - 2000 ng/mL	GC/HRMS	DB-5	60m x 0.25 mm, 0.1µm film	5	10 ng/mL - 4000 ng/mL
7	GC-ECD	HP-5MS & DB-XLB	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 50 ng/mL	GC-ECD	HP-5MS & DB-XLB	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 50 ng/mL
8						GC-ECD	MR-1/MR-2	30m x 0.53 mm, 1µm film	6	0.001 ng - 0.2 ng
9	GC-ECD	DB-5, DB-17	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 200 ng/mL	GC-ECD	DB-5, DB-17	30m x 0.25 mm, 0.25µm film	5	5 ng/mL - 200 ng/mL
10						GC-ECD	MR-1/MR-2	30m x 0.53 mm, 0.5 µm film (MR-1) or 0.25 µm film (MR-2)	7	1 µg/L - 100 µg/L
11	GC/HRMS	50% n-octyl	30m x 0.25 mm, 0.25µm film	7	0.2 ng/mL - 800 ng/mL	GC/HRMS	5% phenyl	30m x 0.25 mm, 0.1µm film	7	0.2 ng/mL - 400 ng/mL
12	GC/HRMS	DB-5	60m x 0.32 mm, 0.25µm film	5	1 ng/mL - 1000 ng/mL	GC-ECD	STX-CLP	30m x 0.32 mm, 0.25µm film	6	1.25 ng/mL - 50 ng/mL
13	GC/MS	5% diphenyl	30m x 0.25 mm, 0.25µm film	7	0.5 ng/mL - 100 ng/mL	GC/MS NCI	5% diphenyl	30m x 0.25 mm, 0.25µm film	8	0.25 ng/mL - 100 ng/mL
14-2	GC/HRMS	SPB-Octyl	30m x 0.25 mm, 0.25µm	6	0.1 ng/g - 200 ng/g					
15	GC-ECD	RTX-5/RTX-PCB	each one 60m x 0.25 mm, 0.25µm	5	2 ng/mL - 100 ng/mL	GC-ECD	RTX-CLP/RTX-CLPII	30m x 0.32 mm, 0.5 µm film (CLP) or 0.25 µm film (CLPII)	5	2 ng/mL - 100 ng/mL

			PAHs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	deuterated naphthalene, biphenyl, acenaphthene, phenanthrene, fluoranthene, pyrene, B[a]A, B[a]P, perylene, B[ghi]P, indeno[1,2,3-cd]pyrene	x				
2			1,4-DCB-D4; Naphthalene-D8;Acenaphthene-d10;Phenanthrene-d10;Chrysene-d12;Perylene-d12	x	n	
3	deuterated naphthalene, acenaphthene, B[a]P	x	hexamethylbenzene			deuterated phenanthrene prior to clean-up
4	deuterated naphthalene, phenanthrene, chrysene		deuterated fluorene, acenaphthene, B[a]P	x	n	
5	deuterated phenanthrene, perylene, B[a]A	x				
6	deuterated naphthalene, 2-methylnaphthalene, biphenyl, 2,6-dimethylnaphthalene, acenaphthylene, phenanthrene, fluoranthene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, DB[a,h]A, indeno[1,2,3-cd]perylene, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P - used to quantify labelled surrogates only.			
7	deuterated napthalene, acenaphthene, phenanthrene, fluoranthene, chrysene, B[a]P,		deuterated fluorene, pyrene, perylene	x	n	
8	Surrogates:Nitrobenzene-d5, 2-Fluorobiphenyl, Terphenyl-d14, Phenol-d5, 2-Fluorophenol, 2,4,6 Tribromophenol, 2-Chlorophenol-d4, 1,2 Dichlorobenzene-d4		IS:1,4 Dichlorobenzene-d4,Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10,Chrysene-d12, Perylene-d12		n	
9	surrogates-deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene		IS-deuterated fluorene, pyrnee, B[a]P	x	y	
10	surrogates-2-fluorophenol, phenol-d5, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, p-trephine-d14		IS:1,4 Dichlorobenzene-d4,Naphthalene-d8, Acenaphthene-d10, Phenanthrene-d10,Chrysene-d12, Perylene-d12		n	
11	deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene	x	deuterated fluorene, B[a]P			
12	mixture of deuterated PAHs	x	four carbon-13 labeled PAHs			
13	deutereated perylene, B[e]P, acenaphthene, acenaphthylene, antracene, B[a]A, B[b]F, B[k]F, B[ghi]P, B[a]P, Chrysene, DB(a,h)A, fluoranthene, fuorene, indeno(1,2,3-cd)pyrene, napthalene, phenanthrene, pyrene.	x	p-terphenyl			
14-1	2-fluorobiphenyl and d14 terphenyl		deuterated naphthalene, acenaphthene, phenanthrene, chrysene, perylene	x	n	
14-2	deuterated 1,4-dichlorobenzene, naphthalene, 2-methylnaphthalene, 1-methylnaphthalene, acenaphthylene, phenanthrene, dibenzothiophene, 2,6-dimethylnaphthalene, anthracene, fluoranthene, B[a]A, chrysene, B[b]F, B[k]F, B[a]P, perylene, indeno[1,2,3-cd]pyrene, DB[a,h]A, B[ghi]P	x	deuterated acenaphthene, pyrene, B[e]P, pyrene			
15	deuterated 1,4-dichlorobenzene, naphthalene, acenapthene, phenanthrene,chrysene, perylene	x	deuterated fluorene, B[a]P			

			PBDEs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	Fluorinated BDE 47	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
6	13C12-labelled BDEs 15,28,47,77,99,100,126,153,154,183,209	x	13C12-labelled PCBs 52,138, used to quantify labelled surrogates only.			13C12-labelled BDE 139, used as cleanup standard.
11	13C12-labelled PCBs 52, 138	x	13C12-labelled BDEs 3,15,28.47.99,153,154,183,197,207,209			13C12-labelled BDE 139, prior to cleanup
12	mixture of carbon-13 labeled BDEs	x	carbon-13 labeled PCBs and one BDE			
13	13C12 labeled BDE 28,47,99,100,118,153,183,209	x	delta-HCH			

			Pesticides		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	carbon-13 labeled 4,4'-DDE, 4,4'-DDT, lindane, and trans-nonachlor	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
4	13C6-gamma-HCH, 13C12-4,4'-DDT		3-chlorobiphenyl; 2,3,3',4,4',5,5',6-octachlorobiphenyl (13C12)	x	n	
5	2,5-dichloro-m-terphenyl	x				
6	13C-labeled HCB, b-HCH, g-HCH, d-HCH, Heptachlor, Aldrin, Oxychlordane, t-Chlordane, t-Nonachlor, c-nonachlor, DDE, DDD, DDT, Mirex, Heptachlor-epoxide, Dieldrin, Endrin, Endrin-aldehyde, Methoxychlor, Endosulphan-I, Endosulphan-II	x	13C12-labeled PCBs 52, 138, 153, used to quantify labelled surrogates only.			
7	g-chlordene, b-HCH		4,4'-dibromooctafluorobiphenyl	x	n	
9	surrogates - 4,4'-dibromooctachlorobiphenyl; 2,3',4,5',6-pentachlorobiphenyl, 2,2',3,3',4,5,5',6-octachlorobiphenyl		IS - tetrachloro-m-xylene	x	y	
10	surrogates-tetrachloro-m-xylene, decachlorobiphenyl				n	
11	Carbon-13 labeled Hexachlorobenzene, a-BHC, b-BHC, g-BHC, Aldrin, Dieldrin, Endrin, trans-chlordane, oxychlordane, trans-nonachlor,heptachlor,heptachlor epoxide, 4,4'DDT, 4,4'DDE, 4,4'DDD	x	Carbon-13 labeled PCB 9,51,101,138,194			Carbon-13 labeled PCB 28,111,178 prior to clean-up
12						surrogates added prior to extraction but not used for quantitation
13	Carbon-13 labeled lindane, chlorpyrifox, endosulfan-I, endosulfan-II, 4,4'-DDD, 4,4'-DDT, heptachlor epoxide, 2,4'-DDE	x	delta-HCH			

			PCBs		corrected for	
Lab #	IS/surrogate added prior to extraction	Used?	added prior to analysis	Used?	recovery?	others?
1a	PCB 103 and PCB 198	x				
3	PCB 103	x	tetrachloro-o-xylene			tetrachloro-m-xylene prior to clean-up
4	2',3,5-trichlorobiphenyl, 2,2',4,6,6'-pentachlorobiphenyl, 2,3,3',4,5,5',6-heptachlorobiphenyl		3-chlorobiphenyl; 2,3,3',4,4',5,5',6-octachlorobiphenyl (13C12)	x	n	
5	PCB 198	x				
6	13C12-labeled PCBs 4,15,19,37,54,77,81,104,105,114,118,123,126,155,156,157, 167,169,170,180,188,189,202,205,206,208,209	x	13C12-labeled PCBs 9,52,101,138,194, used to quantify labelled surrogates only.			13C12-labelled PCBs 28,111,178, used as cleanup standards.
7	PCB 103, PCB 198		4,4'-dibromooctafluorobiphenyl	x	n	
9	surrogates - 4,4'-dibromooctachlorobiphenyl; 2,3',4,5',6-pentachlorobiphenyl, 2,2',3,3',4,5,5',6-octachlorobiphenyl		IS - tetrachloro-m-xylene	x	y	
11	carbon-13 labeled PCB 1,3,4,15,19,37,54,77,81,104,105,114,118,123,125,155,156,157167,169,170,180,188,189,202,205,206,208,209	x	Carbon-13 labeled PCB 9,51,101,138,194			Carbon-13 labeled PCB 28,111,178 prior to clean-up
12	mixture of carbon-13 labeled PCBs	x	carbon-13 labeled PCBs			
13	Carbon-13 labeled PCB 3,15,28,52,118,153,180,208,194,209	x	delta-HCH			
14-2	Carbon-13 labeled 2-MoCB, 4-MoCB, 2,2'-DiCB, 4,4'-DiCB, 2,2',6-TriCB, 3,4,4'-TriCB, 2,2',6,6'-TeCB, 3,3',4,4'-TeCB, 3,4,4',5-TeCB, 2,3',4,6,6'-PeCB, 2,3,3',4,4'-PeCB, 2,3,4,4',5-PeCB, 2,3',4,4',5-PeCB, 2',3,4,4',5-PeCB, 3,3',4,4',5-PeCB, 2,2',4,4',6,6'-HxCB, 2,3,3',4,4',5-HxCB, 2,3,3',4,4',5-HxCB, 2,3',4,4',5,5'-HxCB, 3,3',4,4',5,5'-HxCB, 2,2',3,3',4,4',5-HpCB, 2,2',3,4',5,6,6'-HpCB, 2,3,3',4,4',5,5'-HpCB, 2,2',3,3',5,5',6,6'-OcCB, 2,3,3',4,4',5,5',6-OcCB, 2,2',3,3',4,4',5,5',6-NoCB, 2,2',3,3',4',5,5',6,6'-NoCb, DcCB	x	Carbon-13 labeled 2,5-DiCB, 2,4',5-TriCB, 2,4',6-TriCB, 2,2',5,5'-TeCB, 2,2',4',5,5'-PeCB, 3,3',4,5,5'-PeCB, 2,2',3',4,4',5'-HxCB, 2,2',3,4,4',5,5'-HpCB, 2,2',3,3',4,4',5,5'-OcCB			clean-up standards - Carbon-13 labeled 2,4,4'-TriCB, 2,3,3',5,5'-PeCB, 2,2',3,3',5,5',6-HpCB,

Appendix G: Charts of Mussel Tissue XIII and SRM 2977 Results by Analyte

See Tables 2 through 9 for results reported as <*number*, detection limit, etc.

Charts for analytes with few reported numerical results are not included in this appendix.

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

For Mussel Tissue XIII 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 2977 plots:

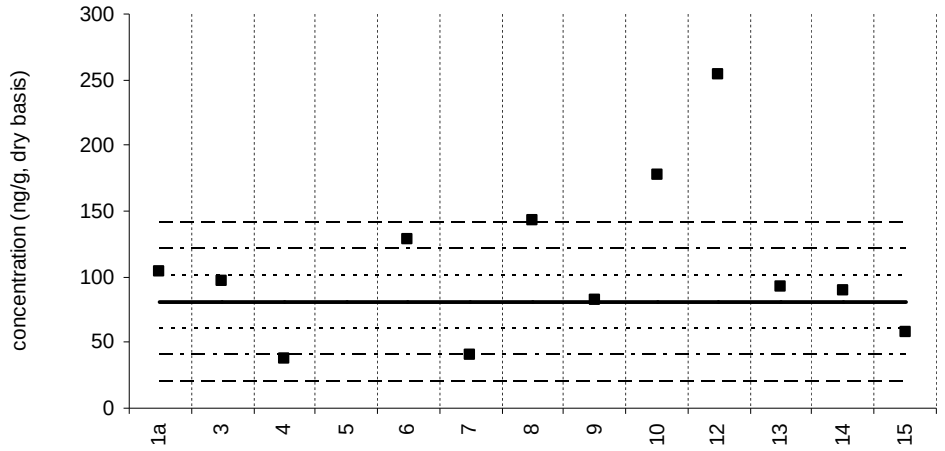
Solid line: material certified concentration or target value (see caption of each plot)

Dotted line: 95 % confidence interval (CI)

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

naphthalene **Tissue XIII (QA07TIS13)**

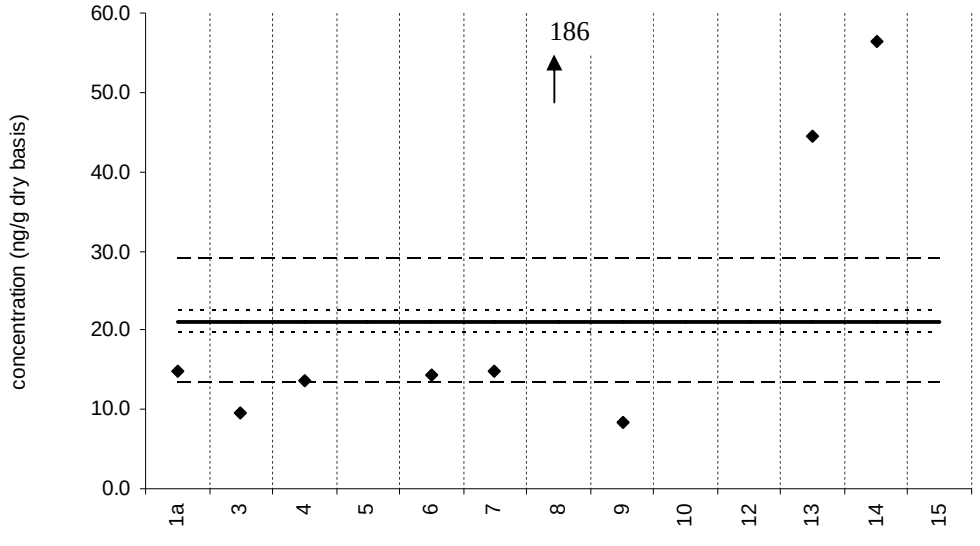
Assigned value = 80.9 ng/g s = 30.1 ng/g 95% CL = 23.1 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

naphthalene **SRM 2977**

Reference Value = 21.1 ± 1.4 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9

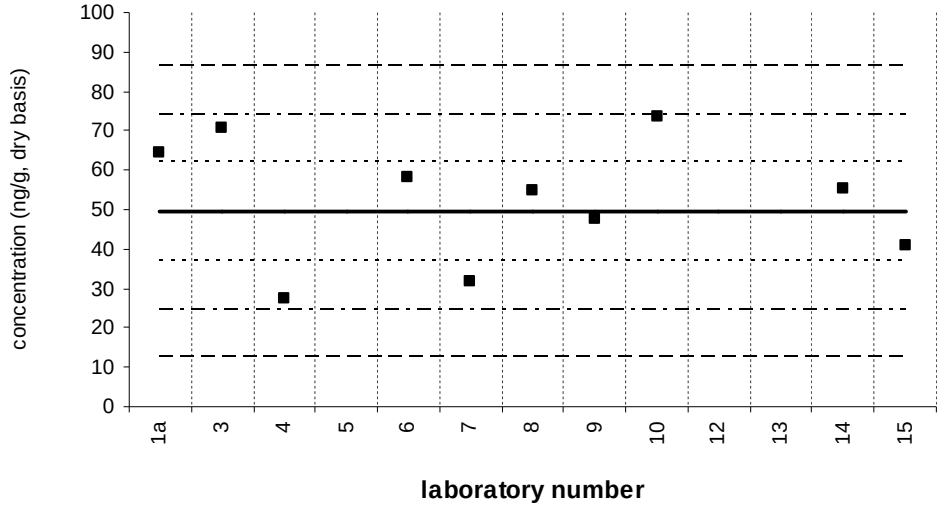


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2-methylnaphthalene

Tissue XIII (QA07TIS13)

Assigned value = 49.5 ng/g s = 15.4 ng/g 95% CL = 12.9 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

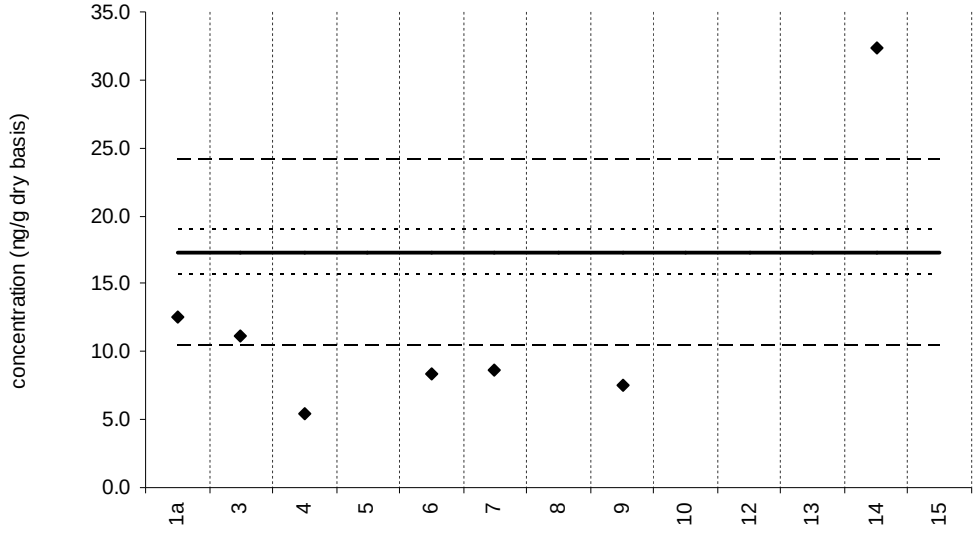


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2-methylnaphthalene

SRM 2977

Reference Value = 17.3 ± 1.7 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7

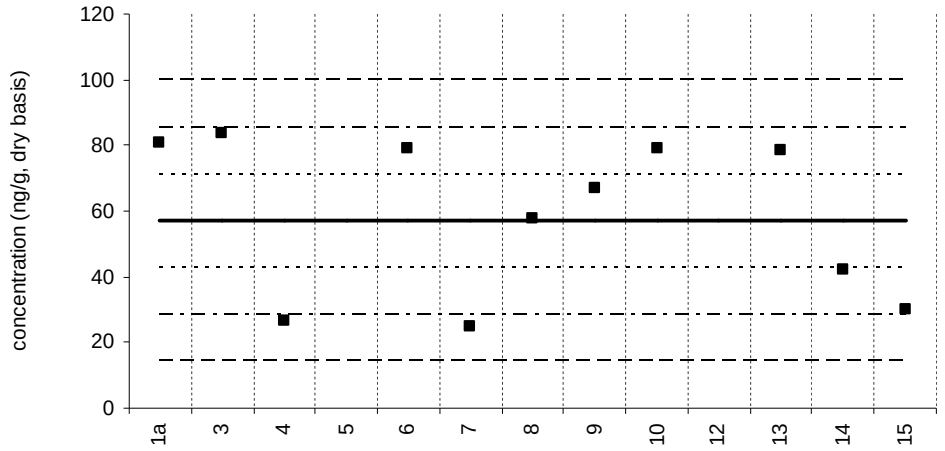


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylnaphthalene

Tissue XIII (QA07TIS13)

Assigned value = 56.9 ng/g s = 25.7 ng/g 95% CL = 19.8 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

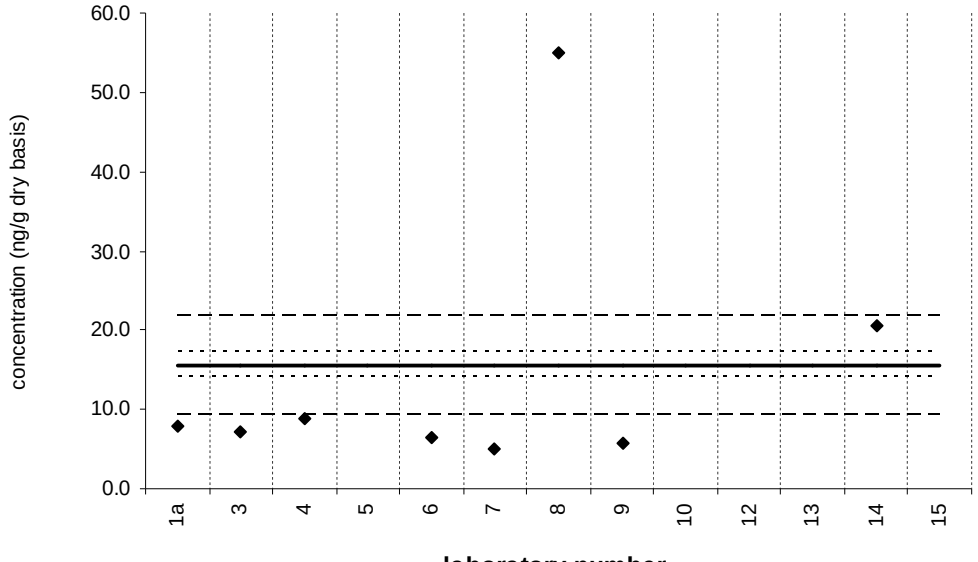


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylnaphthalene

SRM 2977

Reference Value = 15.6 ± 1.5 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8

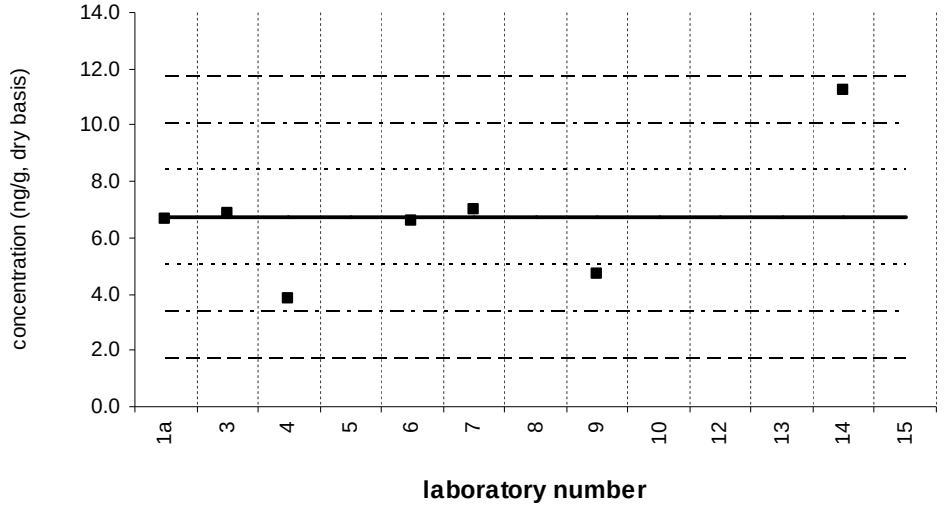


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

biphenyl

Tissue XIII (QA07TIS13)

Assigned value = 6.71 ng/g s = 2.35 ng/g 95% CL = 2.17 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7

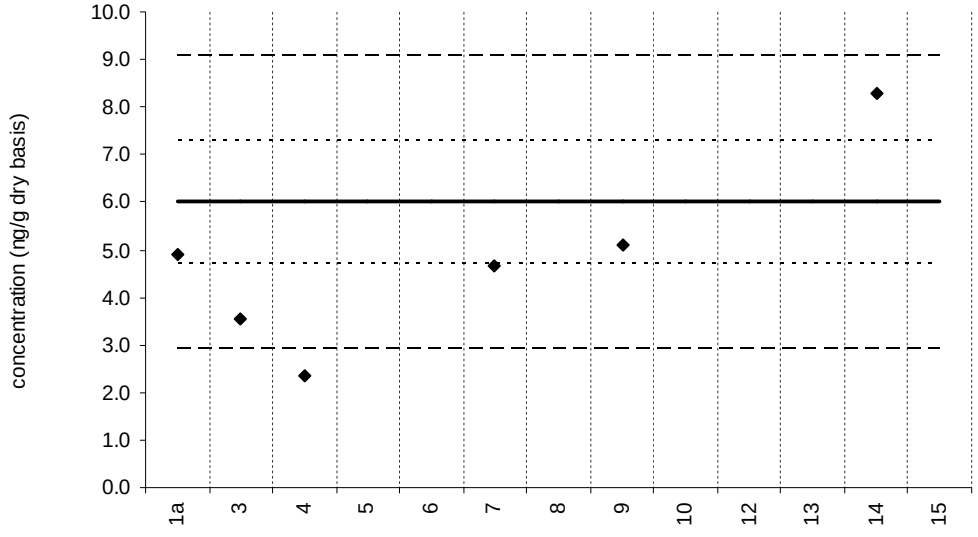


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

biphenyl

SRM 2977

Reference Value = 6.0 ± 1.3 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 6

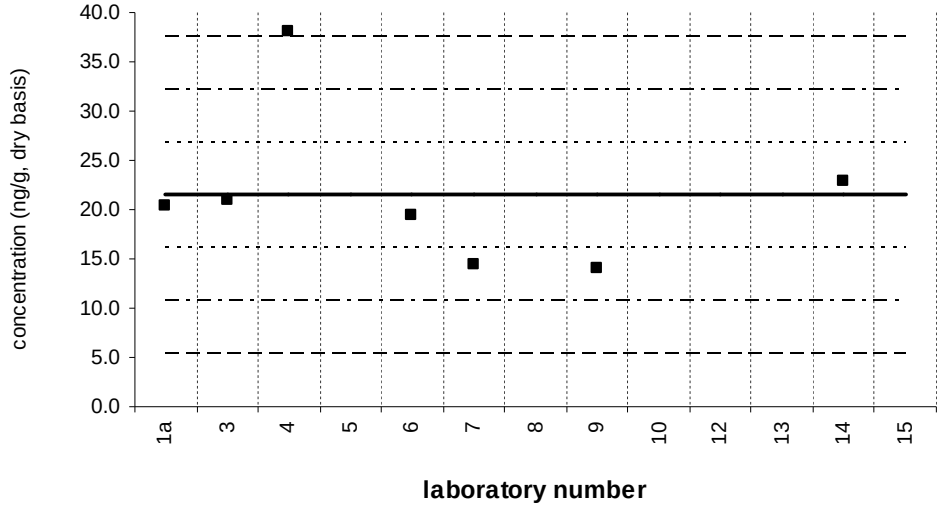


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,6-dimethylnaphthalene

Tissue XIII (QA07TIS13)

Assigned value = 21.4 ng/g s = 8.0 ng/g 95% CL = 7.4 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7

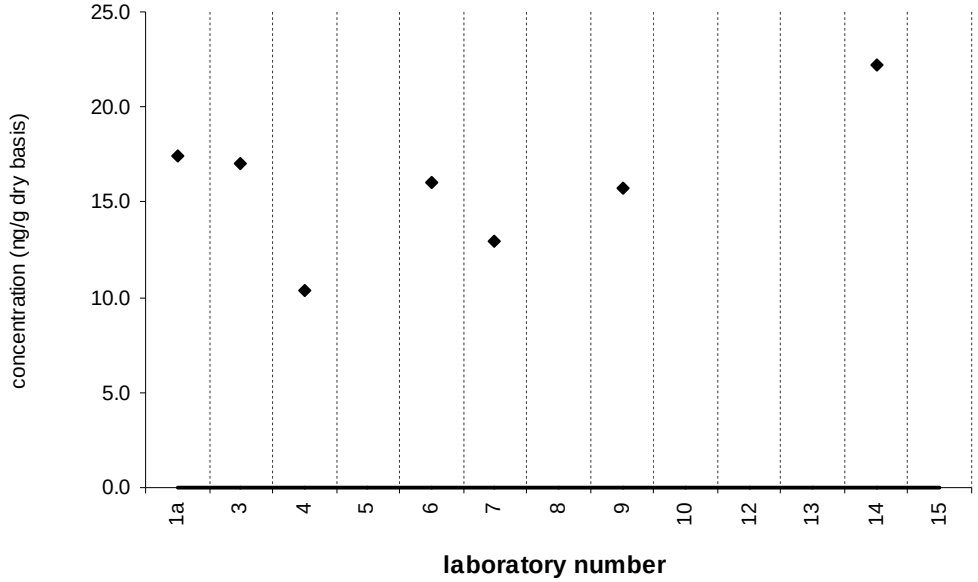


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,6-dimethylnaphthalene

SRM 2977

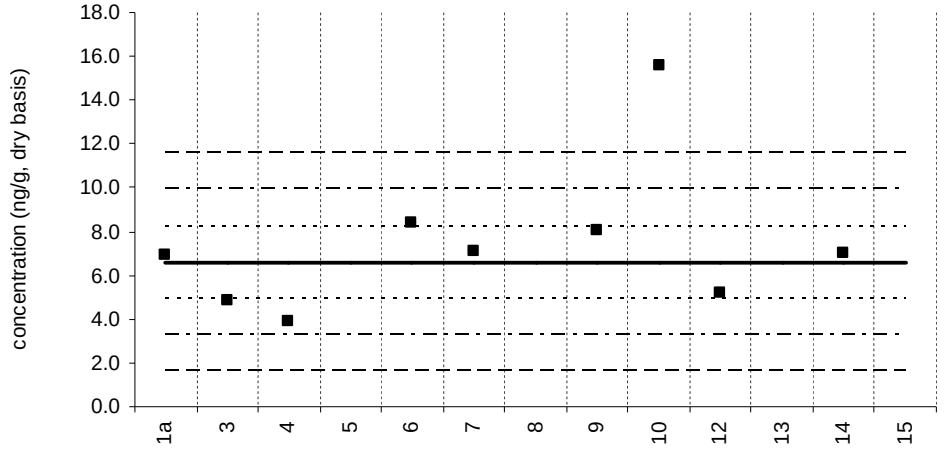
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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

acenaphthylene **Tissue XIII (QA07TIS13)**

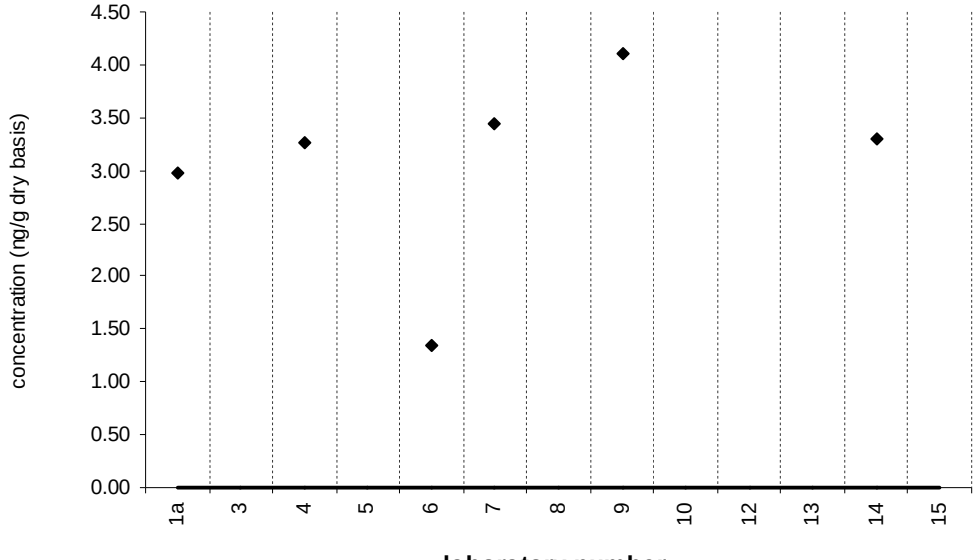
Assigned value = 6.61 ng/g s = 1.62 ng/g 95% CL = 1.50 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 9



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 2977**

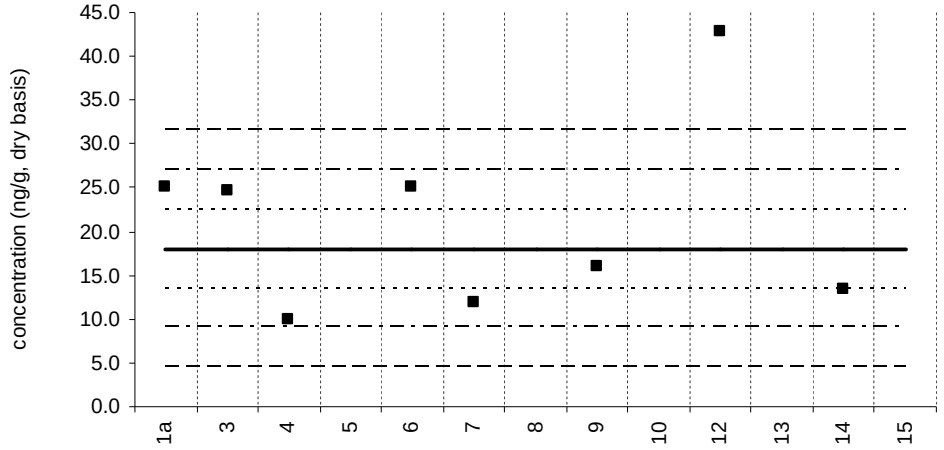
Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 6



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

acenaphthene **Tissue XIII (QA07TIS13)**

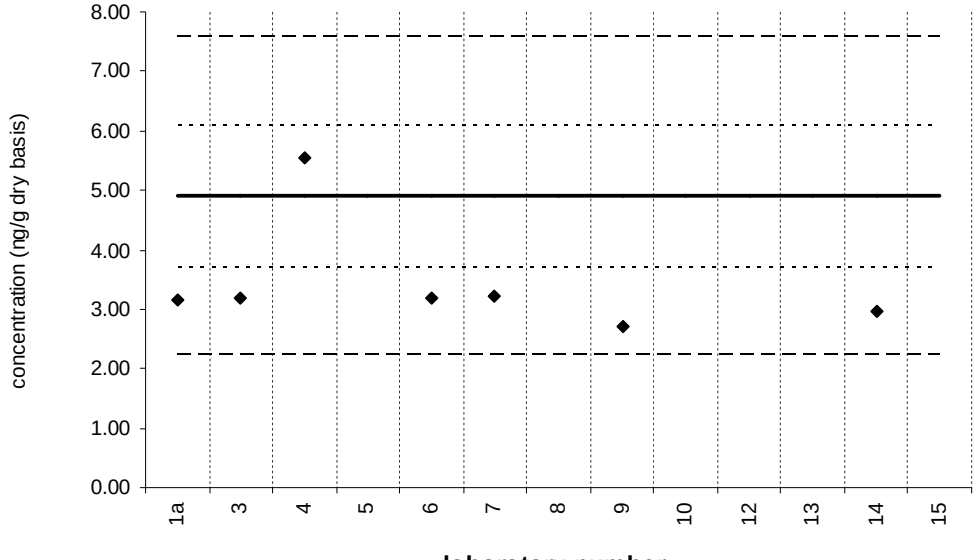
Assigned value = 18.0 ng/g s = 6.8 ng/g 95% CL = 6.3 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 8



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)

acenaphthene **SRM 2977**

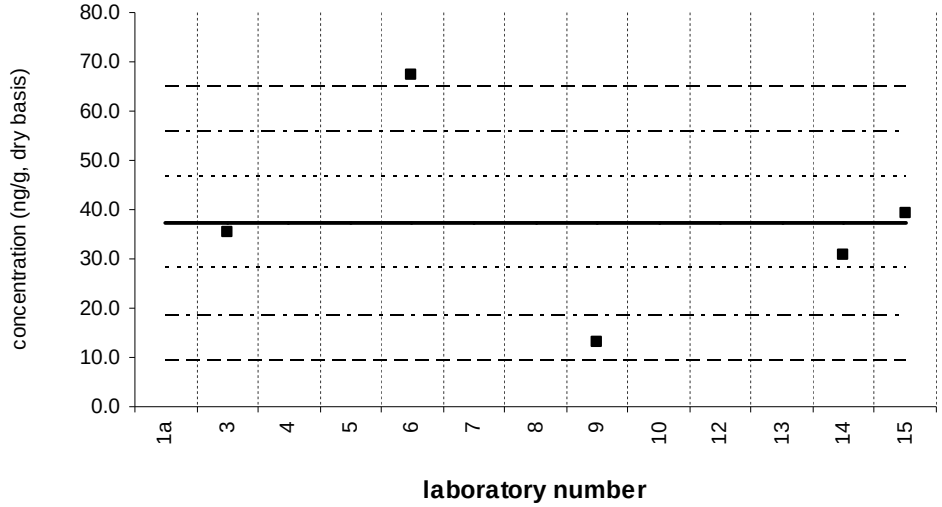
Reference Value = 4.9 ± 1.2 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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

1,6,7-trimethylnaphthalene **Tissue XIII (QA07TIS13)**

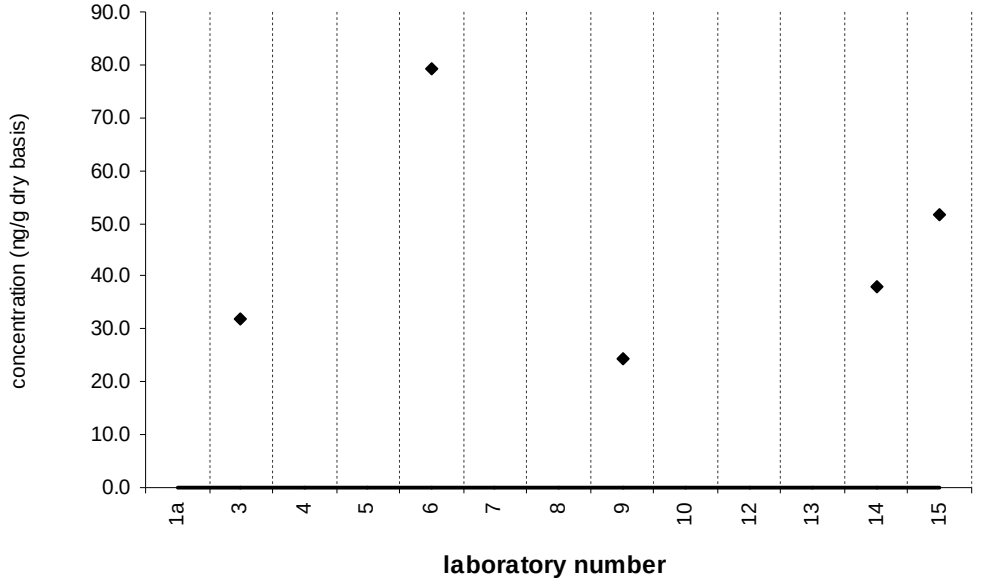
Assigned value = 37.2 ng/g s = 19.7 ng/g 95% CL = 24.4 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 5



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 2977**

Target Value = no target ng/g (dry basis)
Reported Results: 7 Quantitative Results: 5

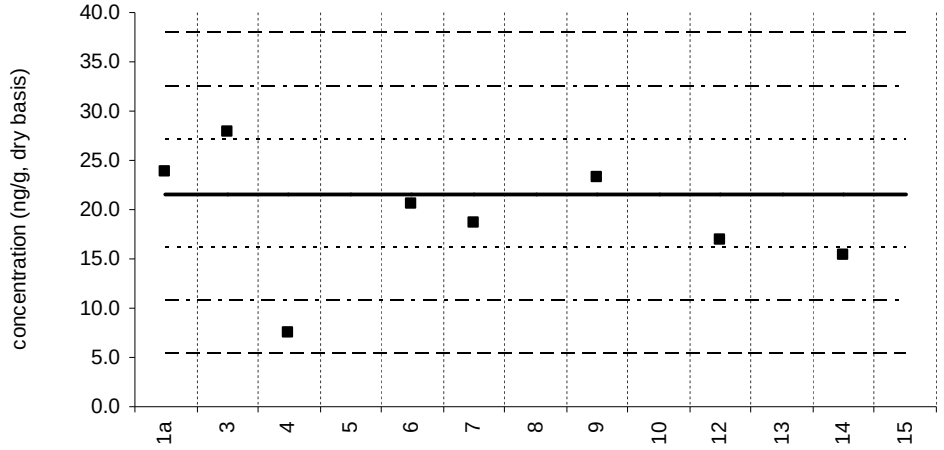


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

fluorene

Tissue XIII (QA07TIS13)

Assigned value = 21.6 ng/g s = 4.4 ng/g 95% CL = 4.6 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 8

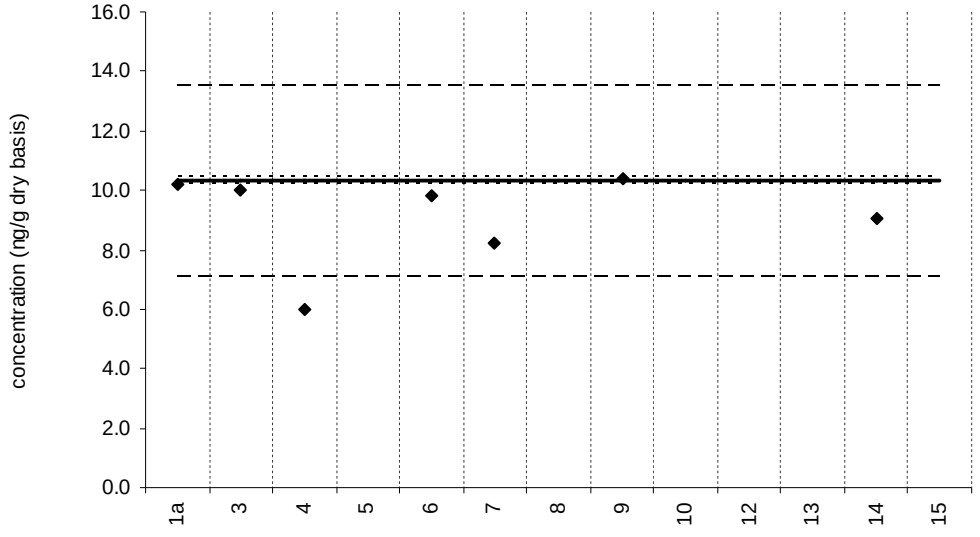


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

fluorene

SRM 2977

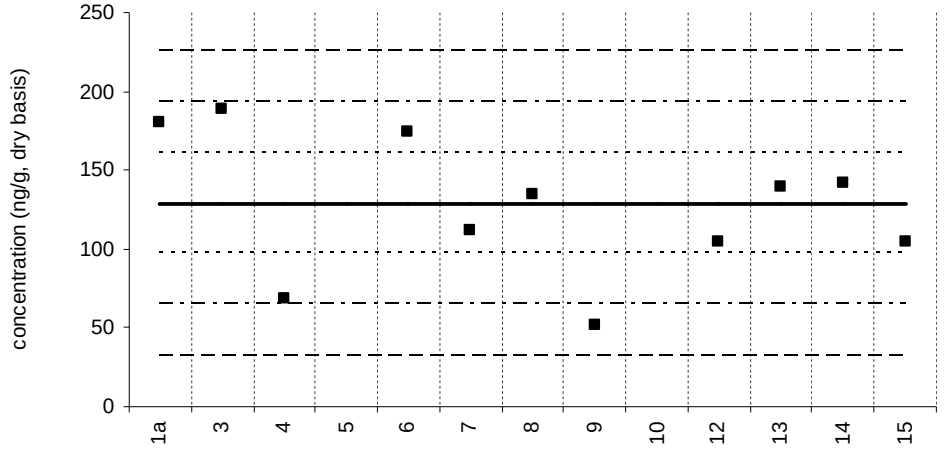
Certified Value = 10.30 ± 0.13 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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

phenanthrene **Tissue XIII (QA07TIS13)**

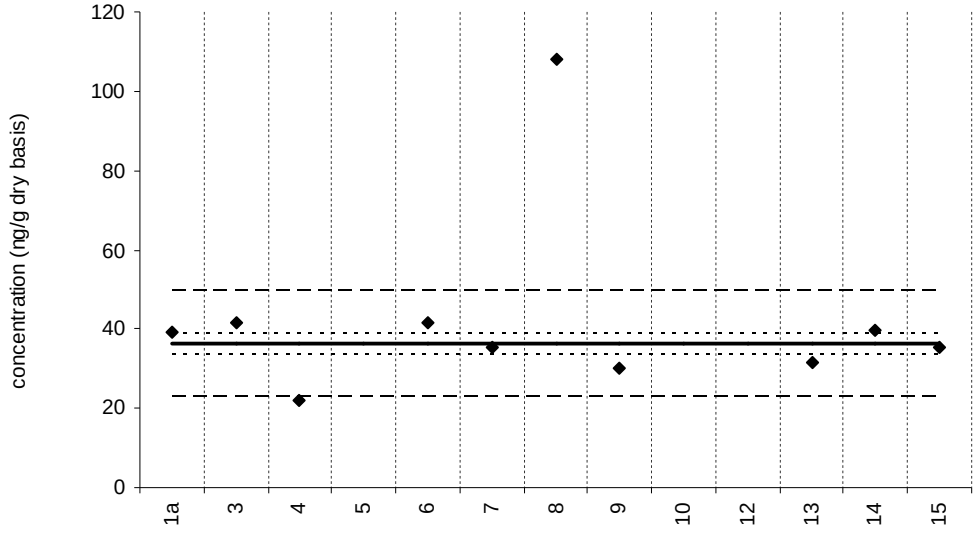
Assigned value = 129 ng/g s = 49 ng/g 95% CL = 37 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 11



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)

phenanthrene **SRM 2977**

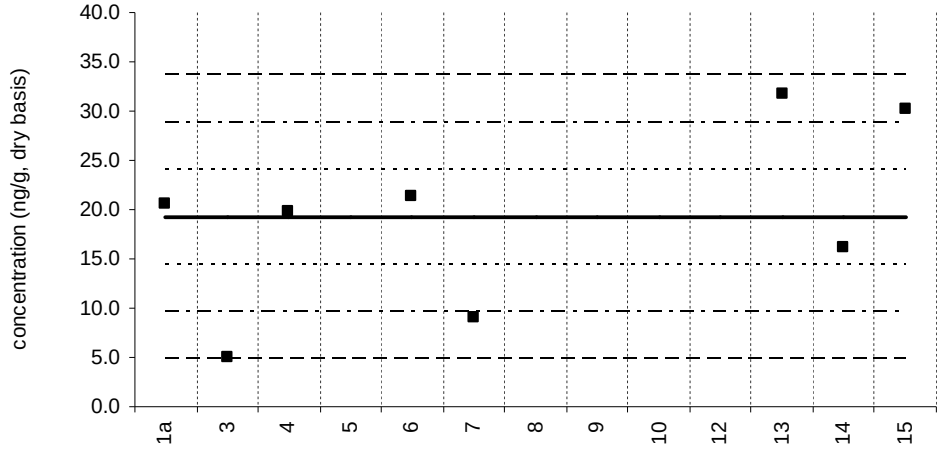
Certified Value = 36.2 ± 2.5 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

anthracene **Tissue XIII (QA07TIS13)**

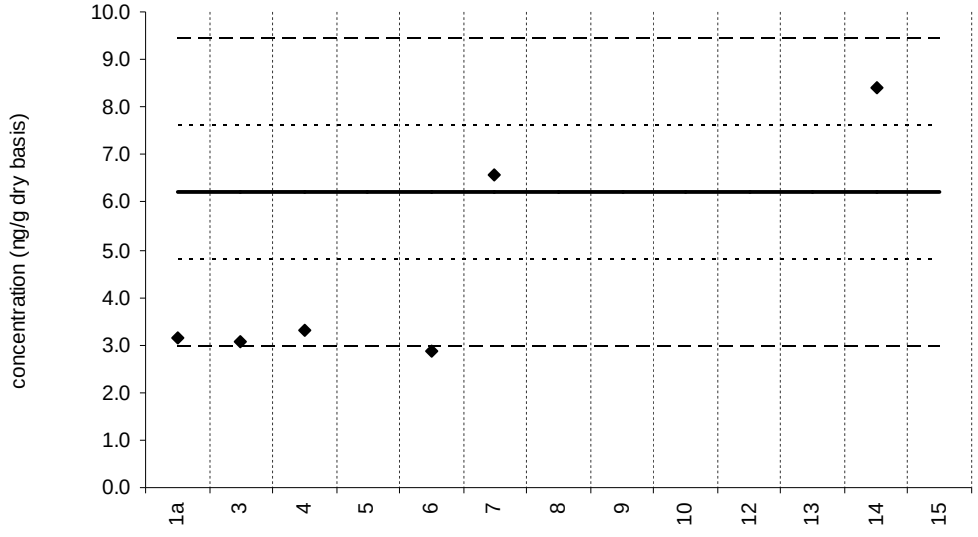
Assigned value = 19.3 ng/g s = 9.2 ng/g 95% CL = 7.7 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 8



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)

anthracene **SRM 2977**

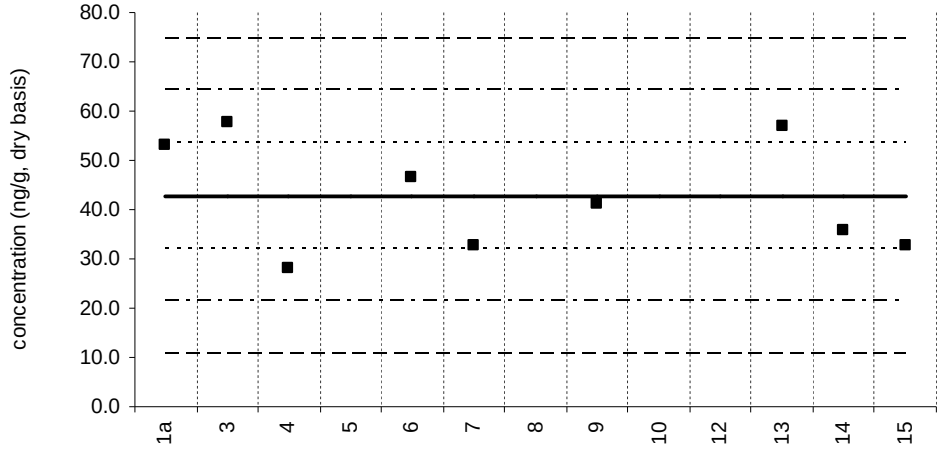
Reference Value = 6.2 ± 1.4 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 6



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

1-methylphenanthrene **Tissue XIII (QA07TIS13)**

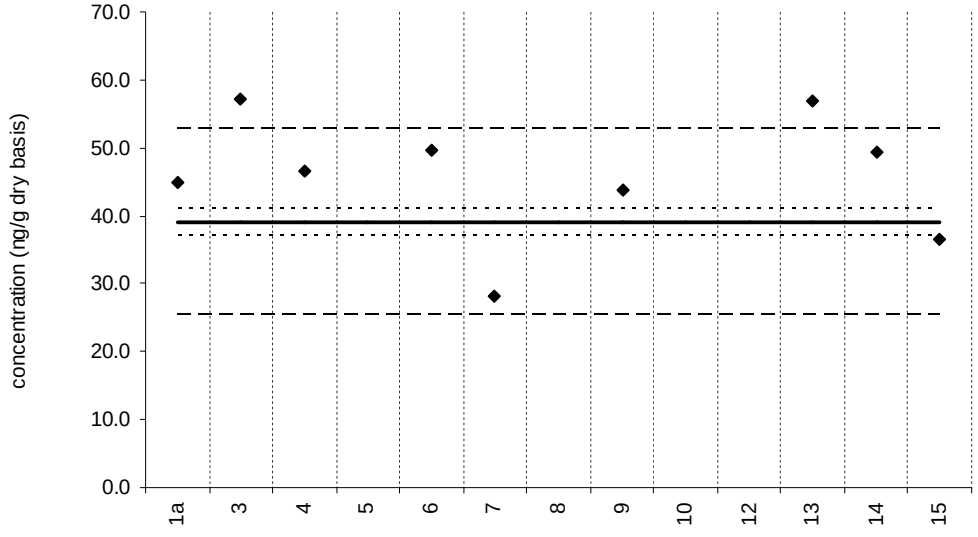
Assigned value = 42.7 ng/g s = 11.3 ng/g 95% CL = 8.7 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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 2977**

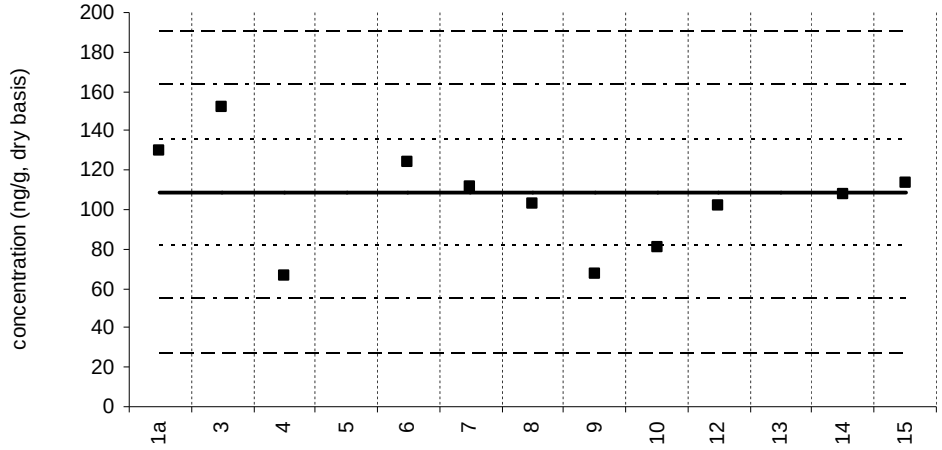
Certified Value = 39.0 ± 1.9 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

fluoranthene **Tissue XIII (QA07TIS13)**

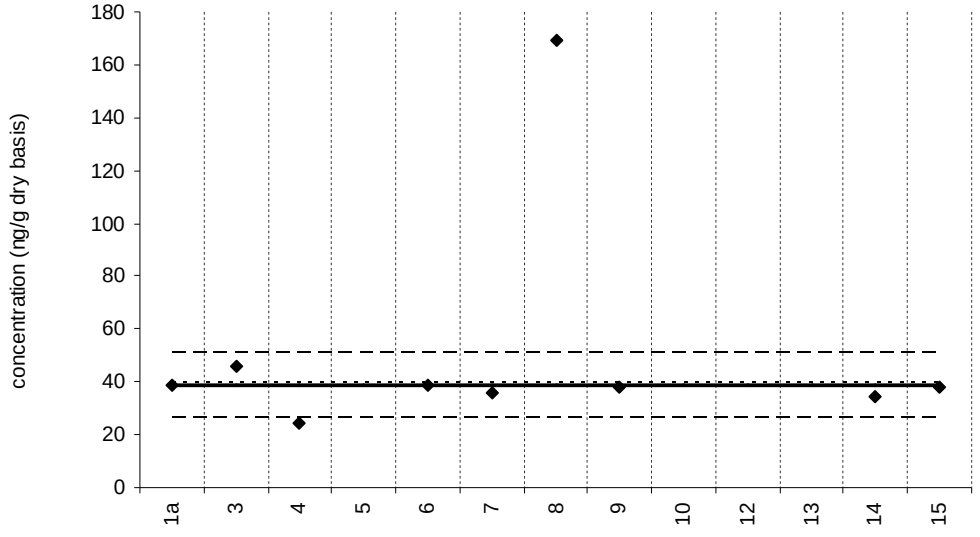
Assigned value = 109 ng/g s = 30 ng/g 95% CL = 25 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 11



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)

fluoranthene **SRM 2977**

Certified Value = 38.90 ± 0.63 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9

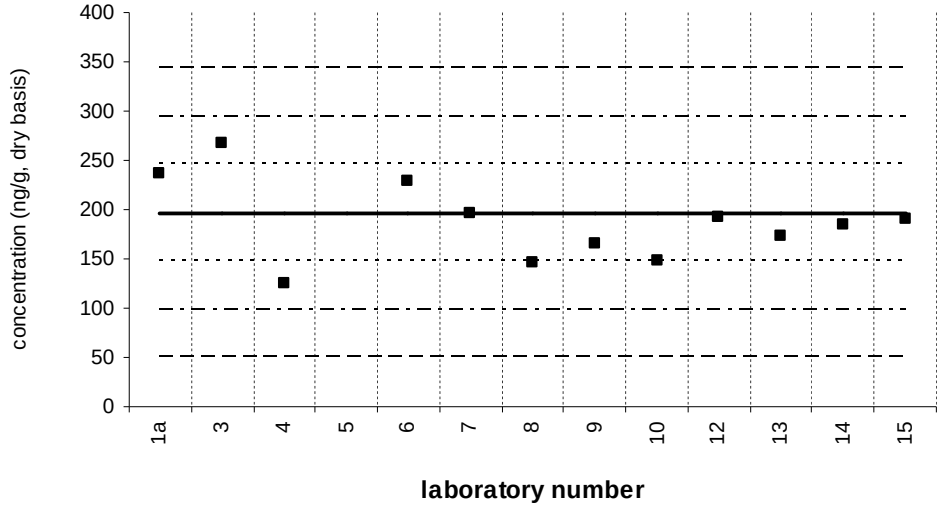


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

pyrene

Tissue XIII (QA07TIS13)

Assigned value = 197 ng/g s = 42 ng/g 95% CL = 33 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12

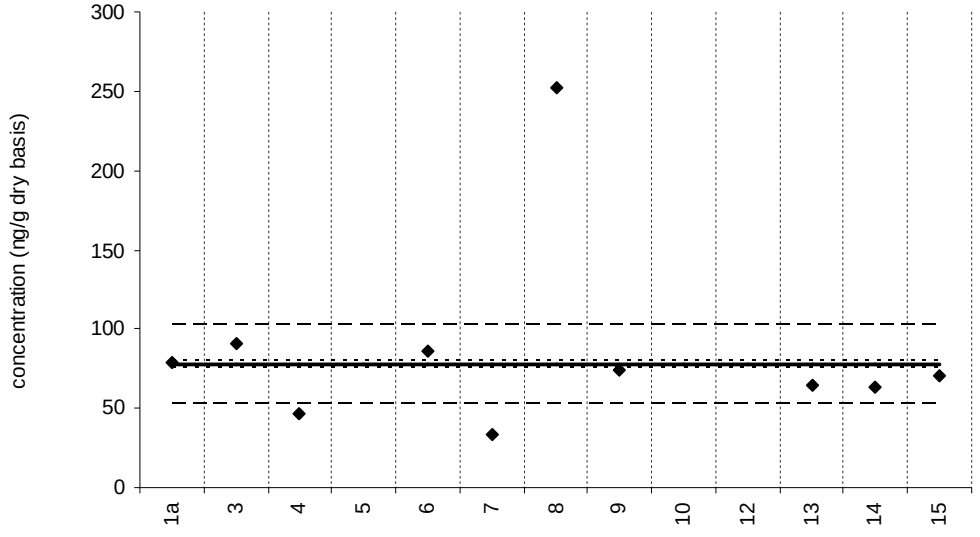


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

pyrene

SRM 2977

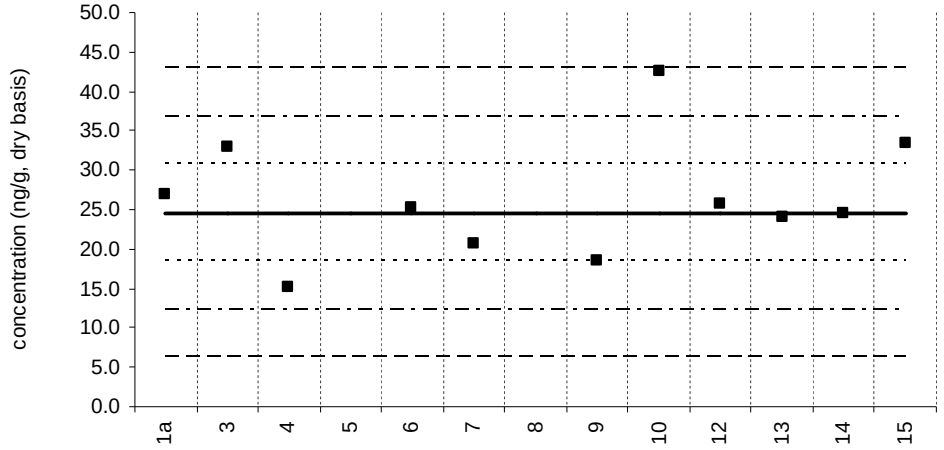
Certified Value = 77.4 ± 2.1 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

benz[a]anthracene **Tissue XIII (QA07TIS13)**

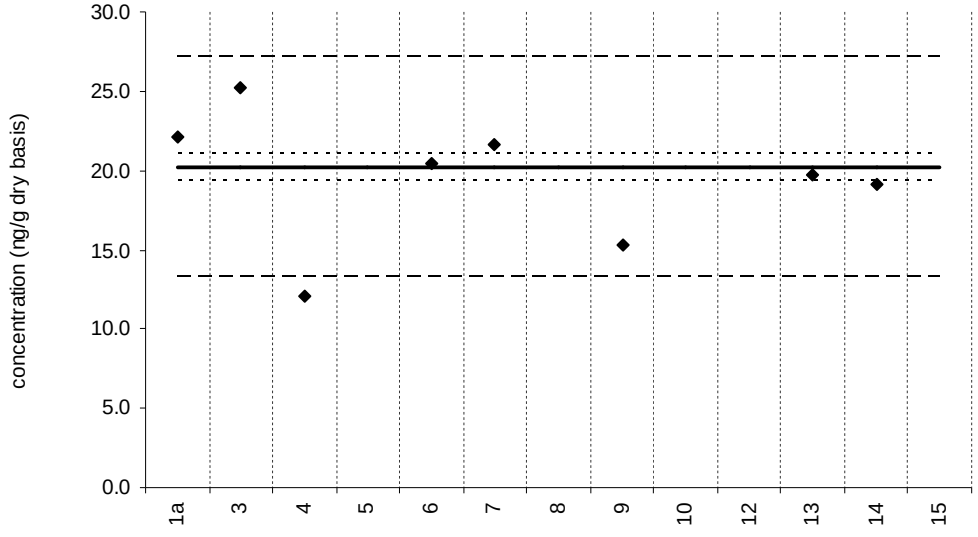
Assigned value = 24.6 ng/g s = 6.1 ng/g 95% CL = 4.7 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 11



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)

benz[a]anthracene **SRM 2977**

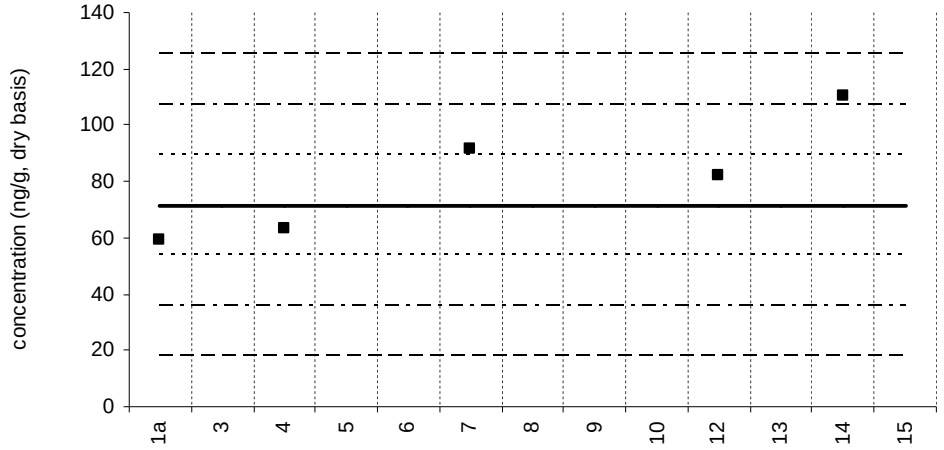
Certified Value = 20.19 ± 0.87 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8



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

chrysene **Tissue XIII (QA07TIS13)**

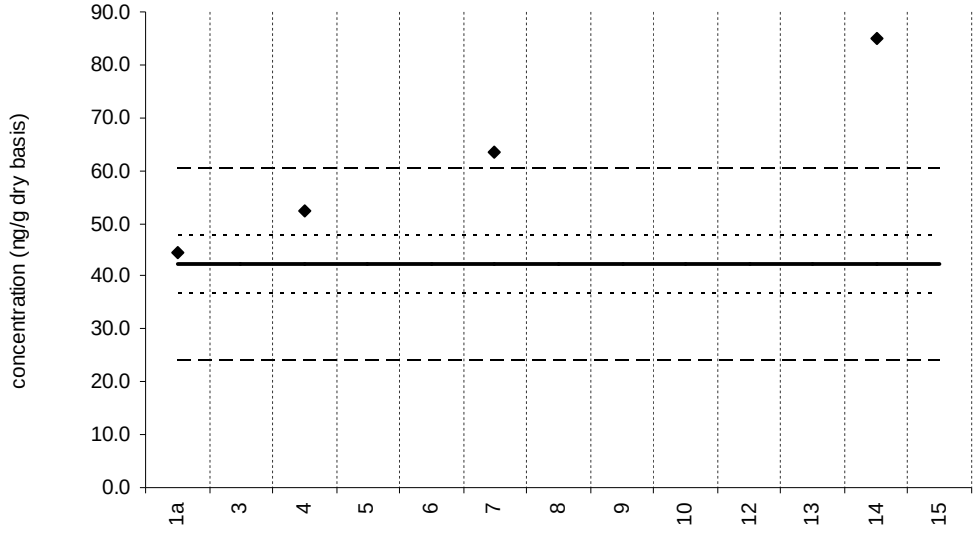
Assigned value = 71.5 ng/g s = 17.6 ng/g 95% CL = 43.7 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 5



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 2977**

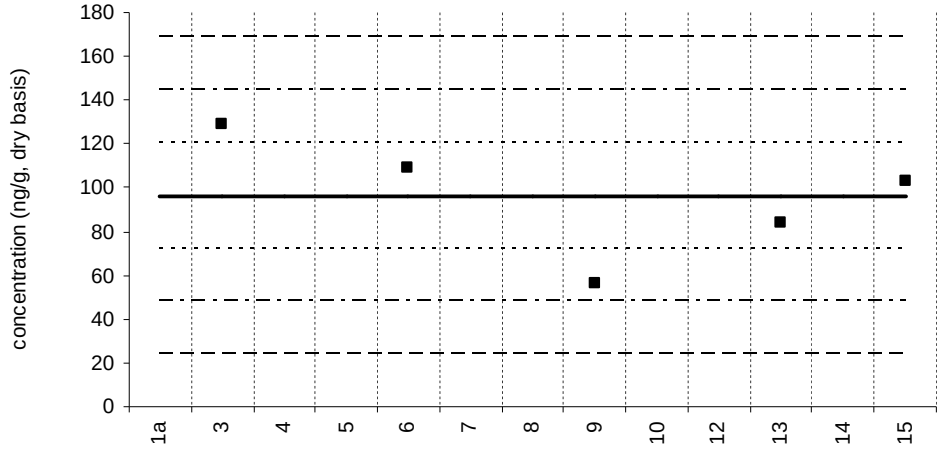
Reference Value = 42.2 ± 5.5 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 4



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

chrysene/triphenylene **Tissue XIII (QA07TIS13)**

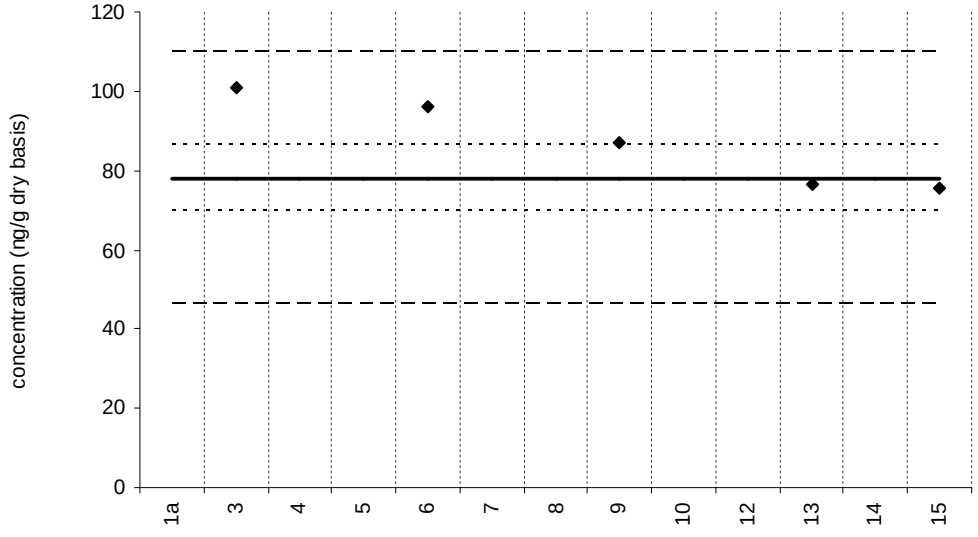
Assigned value = 96.2 ng/g s = 27.5 ng/g 95% CL = 34.1 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5



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 2977**

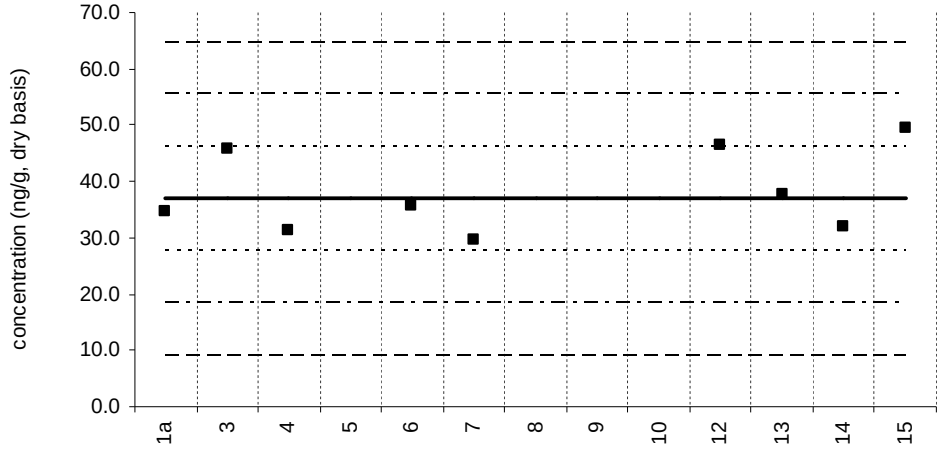
Target Value = 78.1 ± 8.4 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5



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

benzo[b]fluoranthene **Tissue XIII (QA07TIS13)**

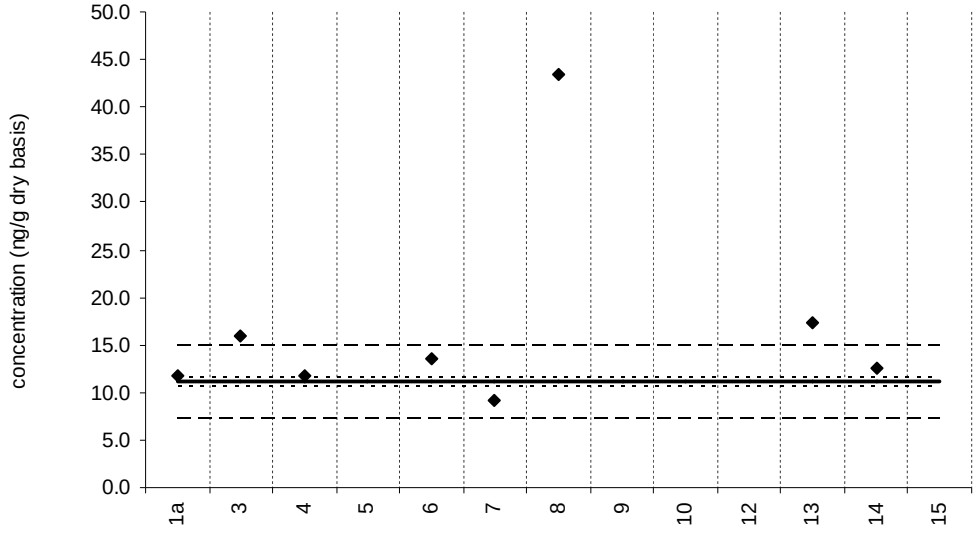
Assigned value = 37.0 ng/g s = 7.1 ng/g 95% CL = 6.0 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 9



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 2977**

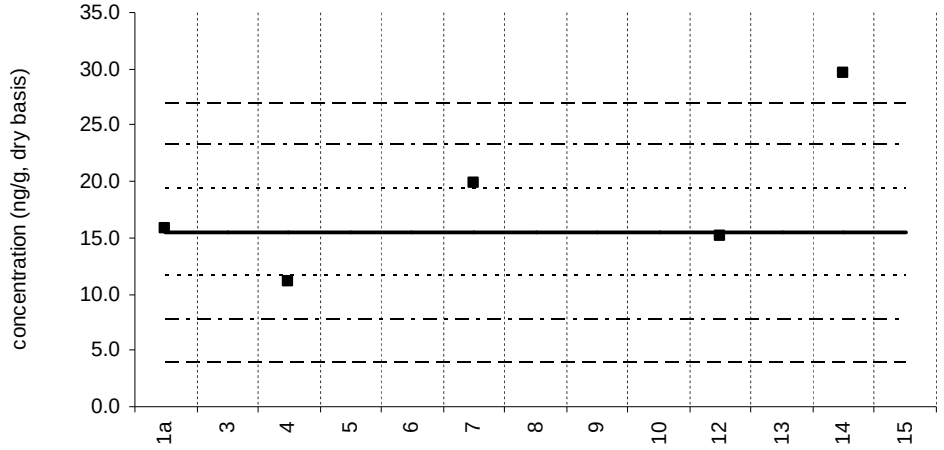
Certified Value = 11.1 ± 0.5 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 8



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

benzo[k]fluoranthene **Tissue XIII (QA07TIS13)**

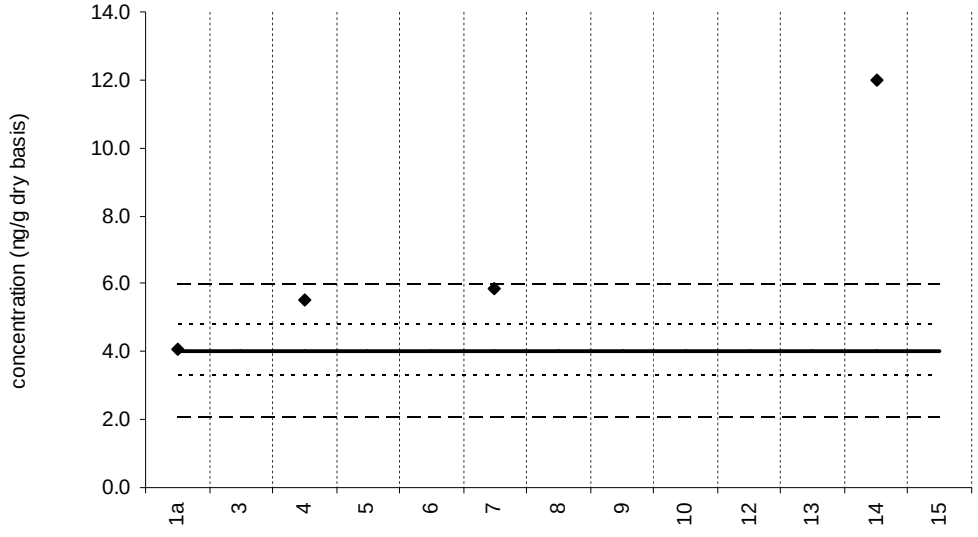
Assigned value = 15.4 ng/g s = 3.6 ng/g 95% CL = 5.8 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 5



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 2977**

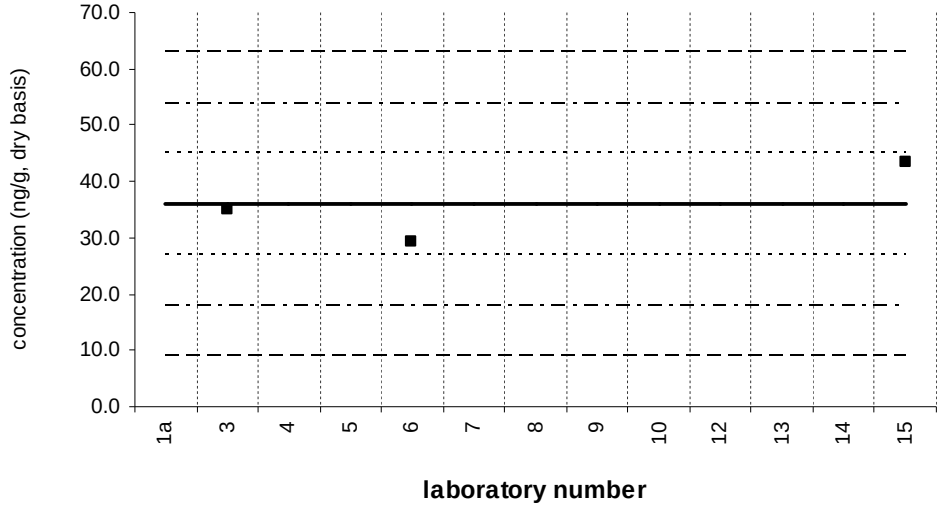
Reference Value = 4.02 ± 0.75 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 4



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

benzo[j+k]fluoranthene **Tissue XIII (QA07TIS13)**

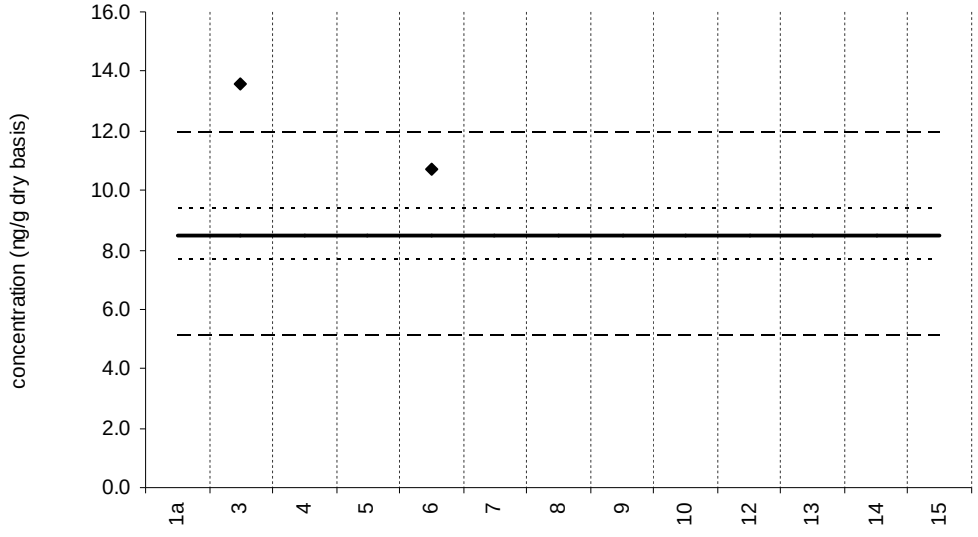
Assigned value = 36.0 ng/g s = 7.1 ng/g 95% CL = 17.7 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 3



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 2977**

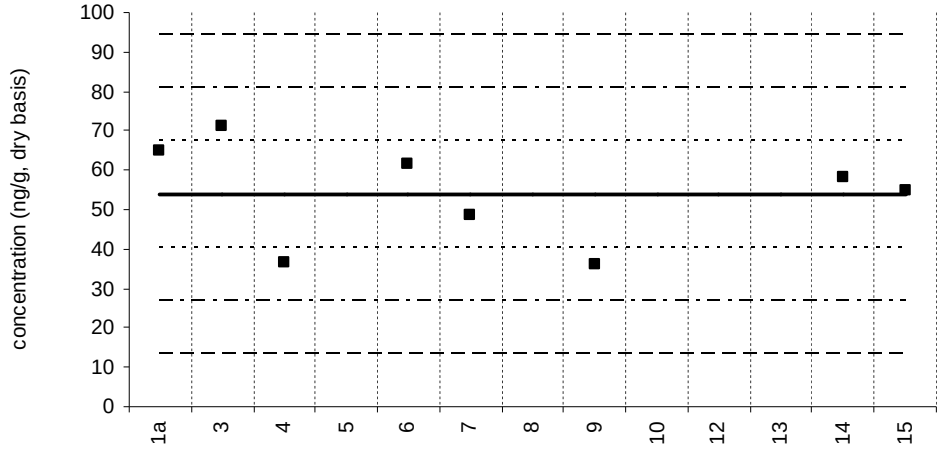
Target Value = 8.50 ± 0.85 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 2



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

benzo[e]pyrene **Tissue XIII (QA07TIS13)**

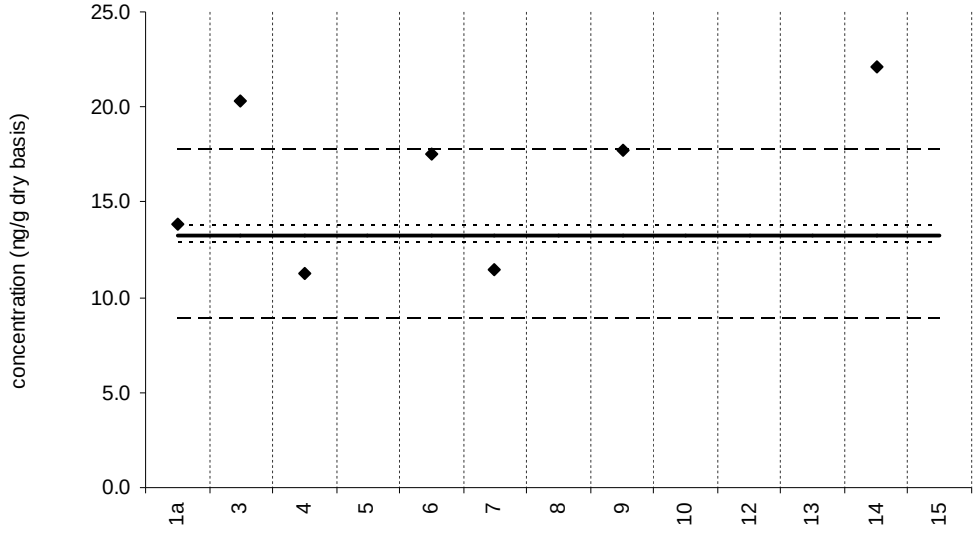
Assigned value = 53.9 ng/g s = 12.7 ng/g 95% CL = 10.6 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 8



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[e]pyrene **SRM 2977**

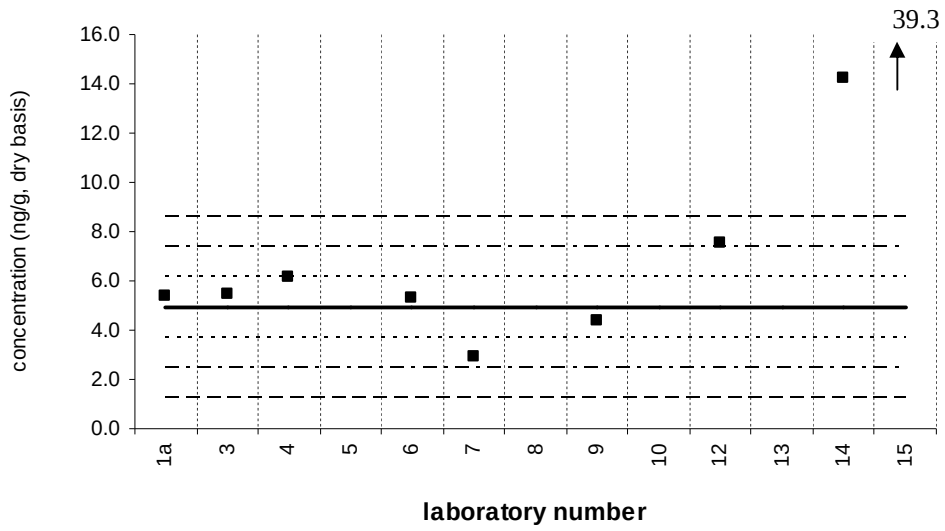
Certified Value = 13.29 ± 0.43 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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

benzo[a]pyrene **Tissue XIII (QA07TIS13)**

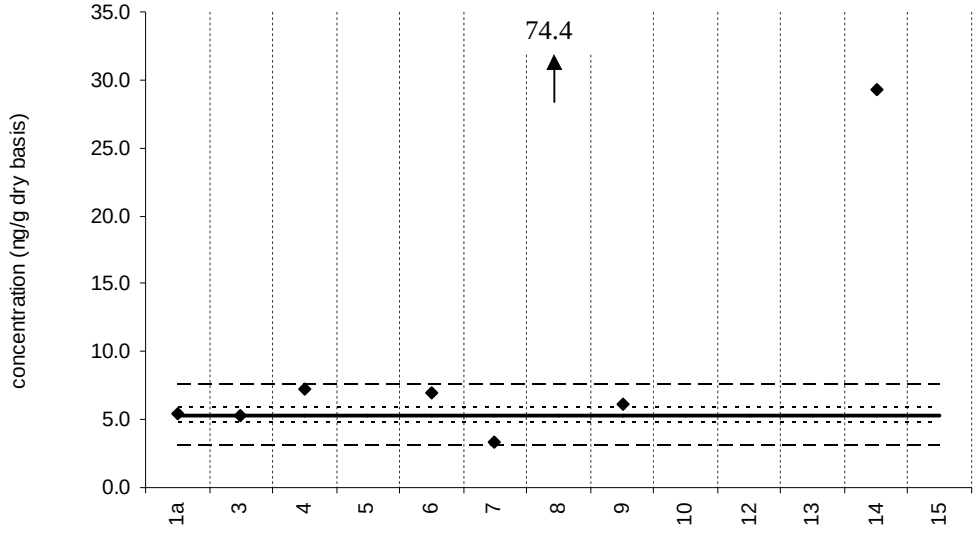
Assigned value = 4.94 ng/g s = 1.16 ng/g 95% CL = 1.43 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 9



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 2977**

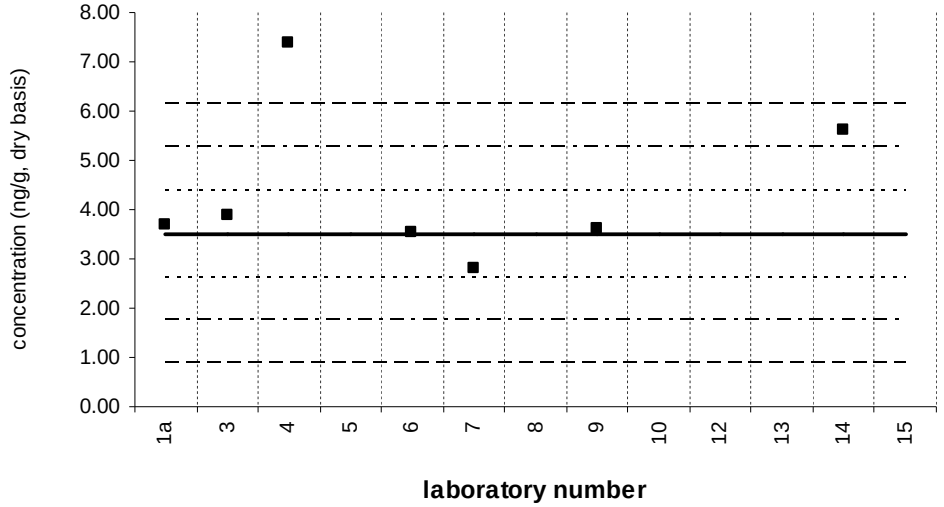
Certified Value = 5.30 ± 0.61 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8



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

perylene **Tissue XIII (QA07TIS13)**

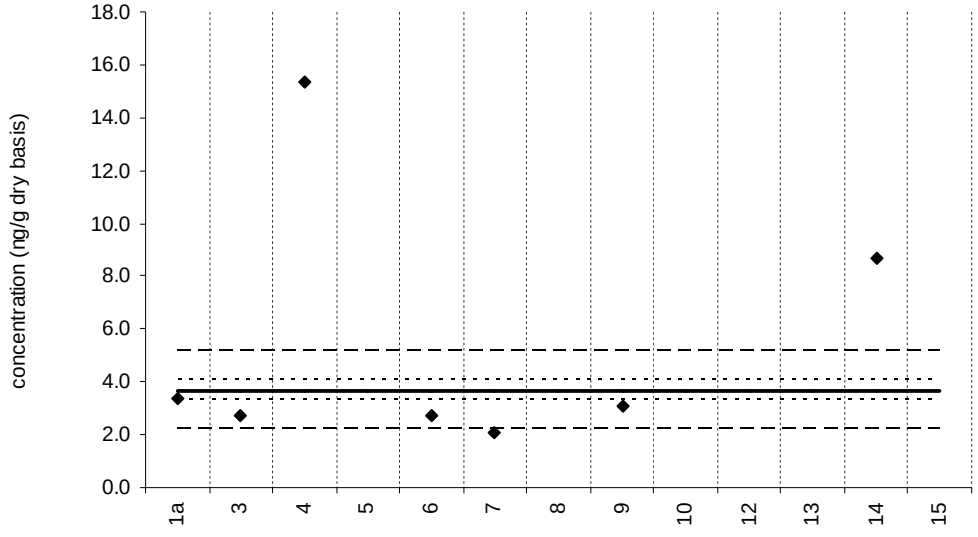
Assigned value = 3.51 ng/g s = 0.41 ng/g 95% CL = 0.51 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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)

perylene **SRM 2977**

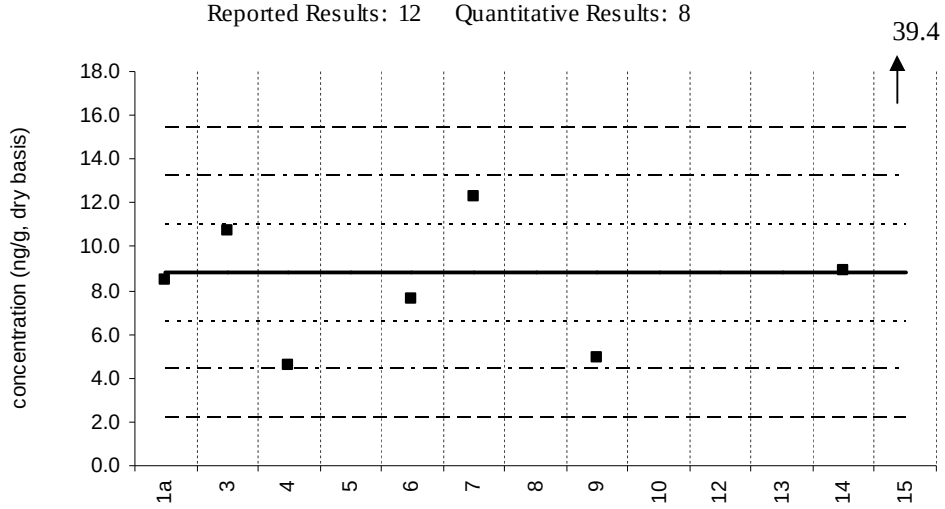
Certified Value = 3.69 ± 0.38 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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 **Tissue XIII (QA07TIS13)**

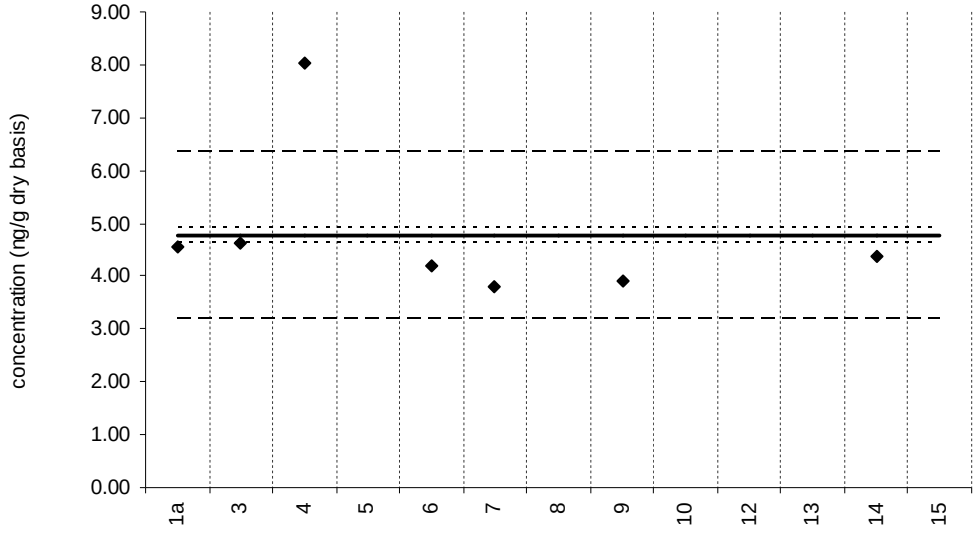
Assigned value = 8.82 ng/g s = 2.53 ng/g 95% CL = 2.65 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 8



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)

indeno[1,2,3-cd]pyrene **SRM 2977**

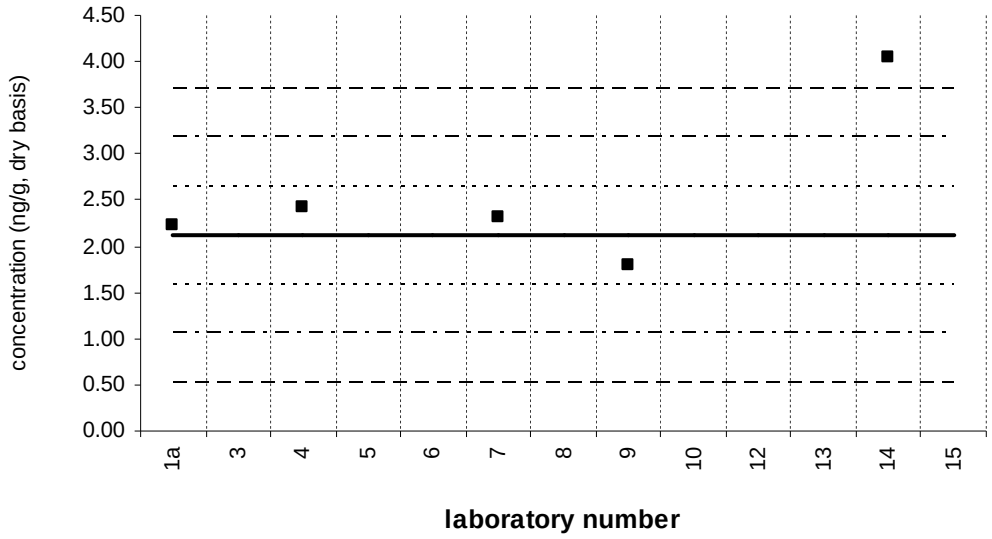
Certified Value = 4.76 ± 0.15 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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

dibenz[a,h]anthracene **Tissue XIII (QA07TIS13)**

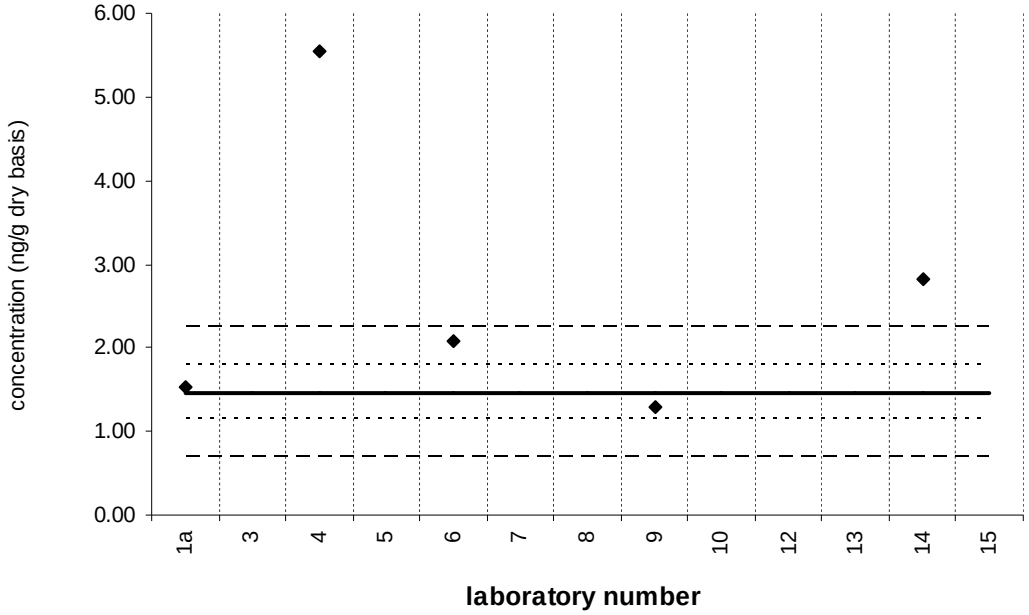
Assigned value = 2.12 ng/g s = 0.28 ng/g 95% CL = 0.69 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 5



Z=-3

dibenz[a,h]anthracene **SRM 2977**

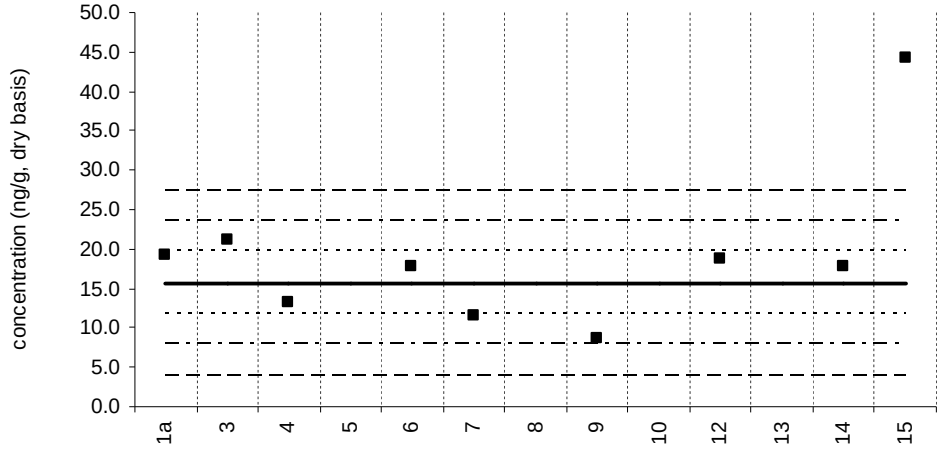
Reference Value = 1.47 ± 0.33 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 5



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

benzo[ghi]perylene **Tissue XIII (QA07TIS13)**

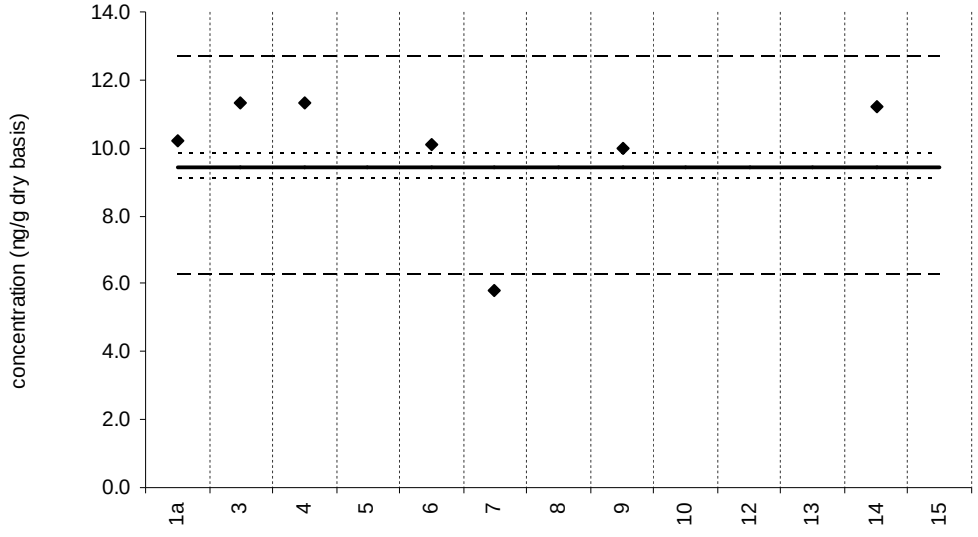
Assigned value = 15.7 ng/g s = 4.6 ng/g 95% CL = 4.2 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 9



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 2977**

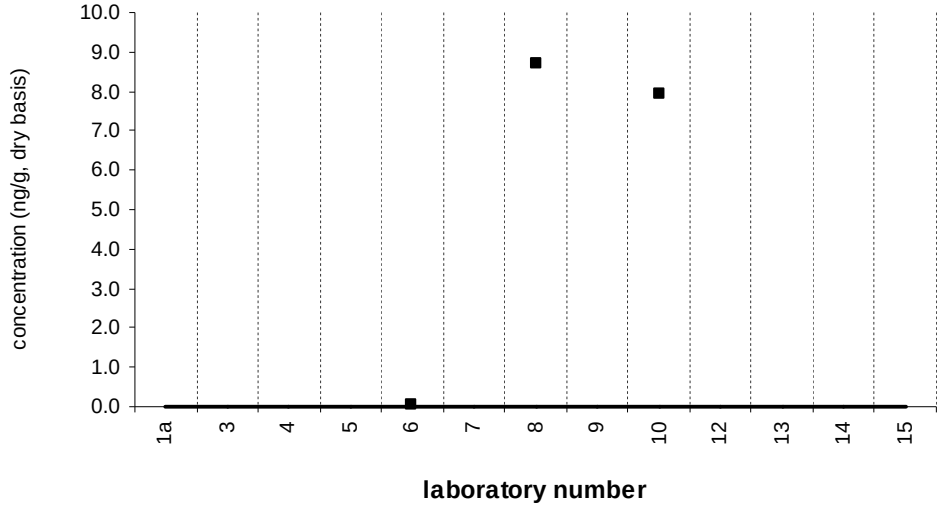
Certified Value = 9.45 ± 0.37 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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

alpha-HCH (a-BHC) **Tissue XIII (QA07TIS13)**

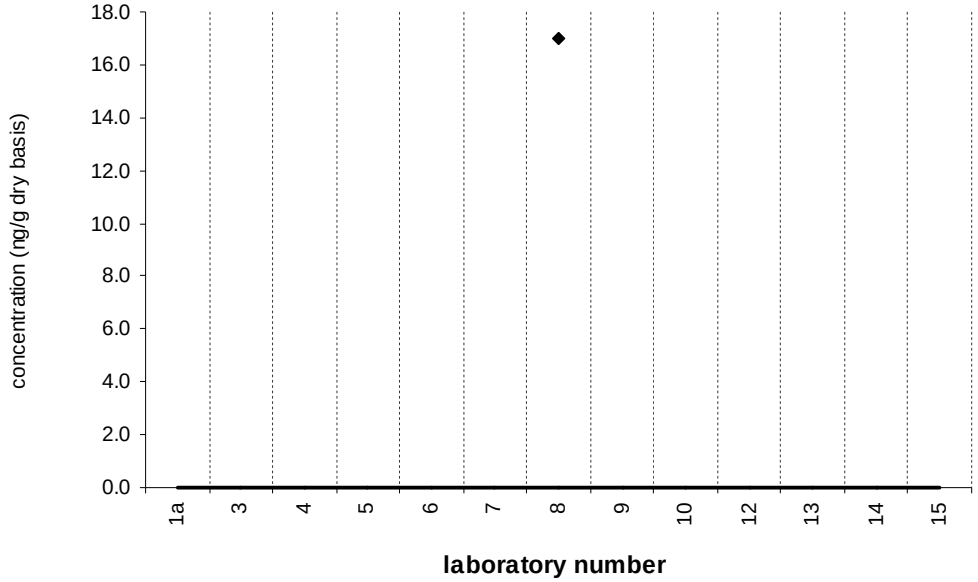
Assigned value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 3



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)

alpha-HCH (a-BHC) **SRM 2977**

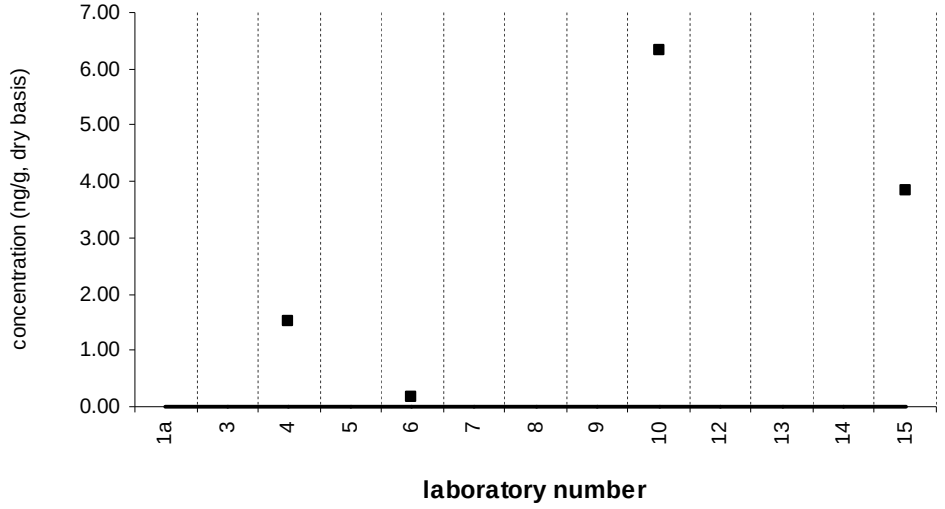
Target Value = no target ng/g (dry basis)
Reported Results: 7 Quantitative Results: 1



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

hexachlorobenzene **Tissue XIII (QA07TIS13)**

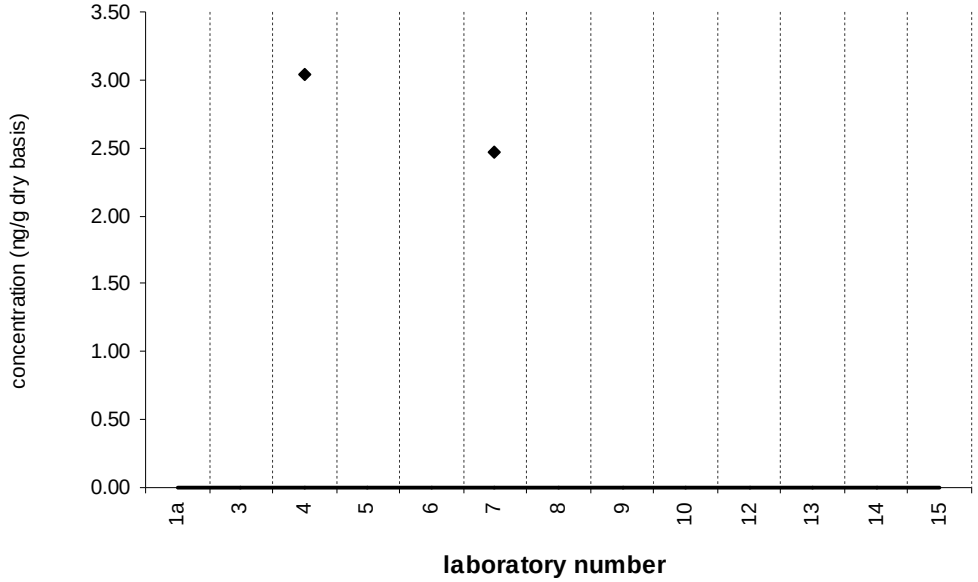
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 4



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)

hexachlorobenzene **SRM 2977**

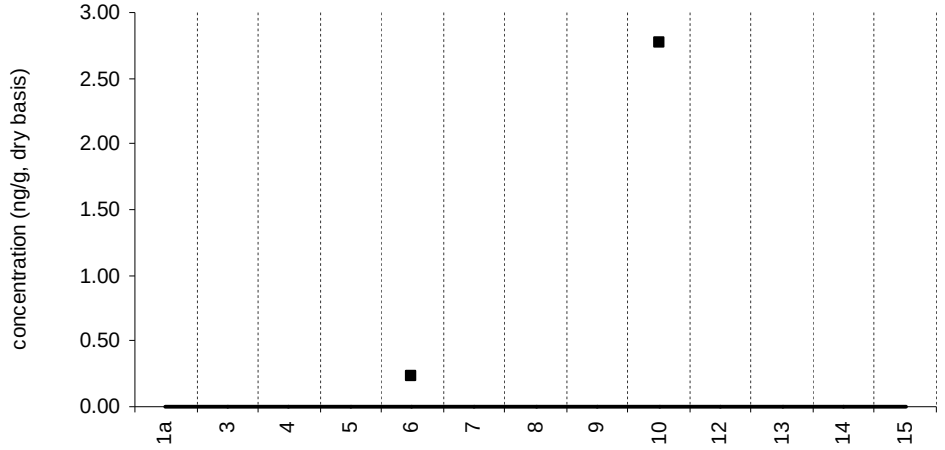
Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 2



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

gamma-HCH (g-BHC,lindane) **Tissue XIII (QA07TIS13)**

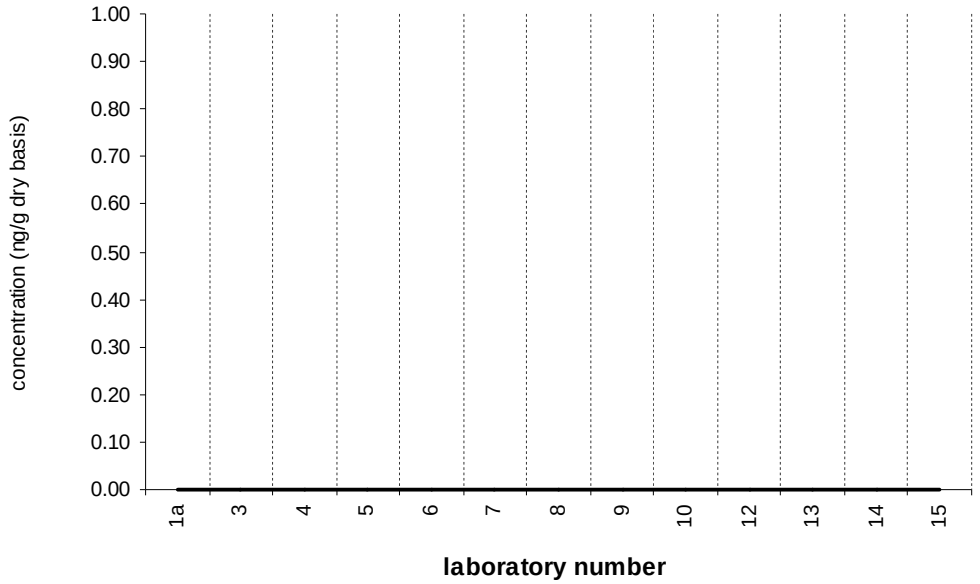
Assigned value = no target ng/g (dry basis)
Reported Results: 12 Quantitative Results: 2



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)

gamma-HCH (g-BHC,lindane) **SRM 2977**

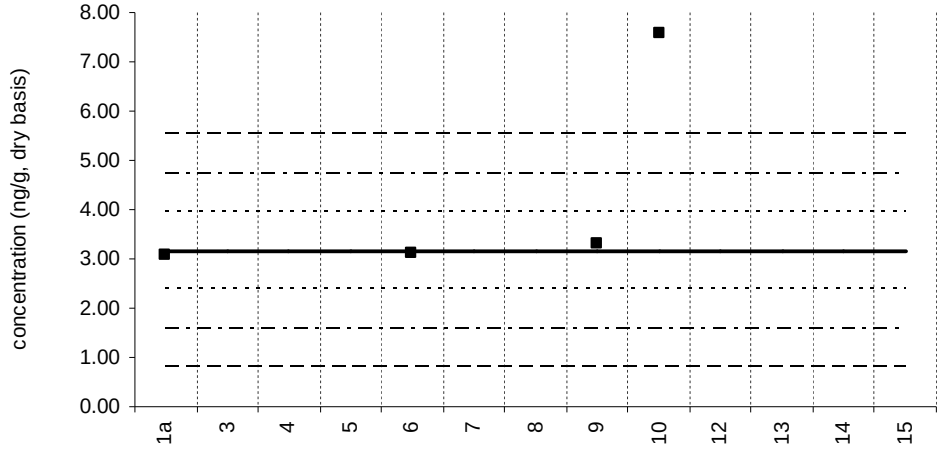
Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 0



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

beta-HCH (b-BHC) **Tissue XIII (QA07TIS13)**

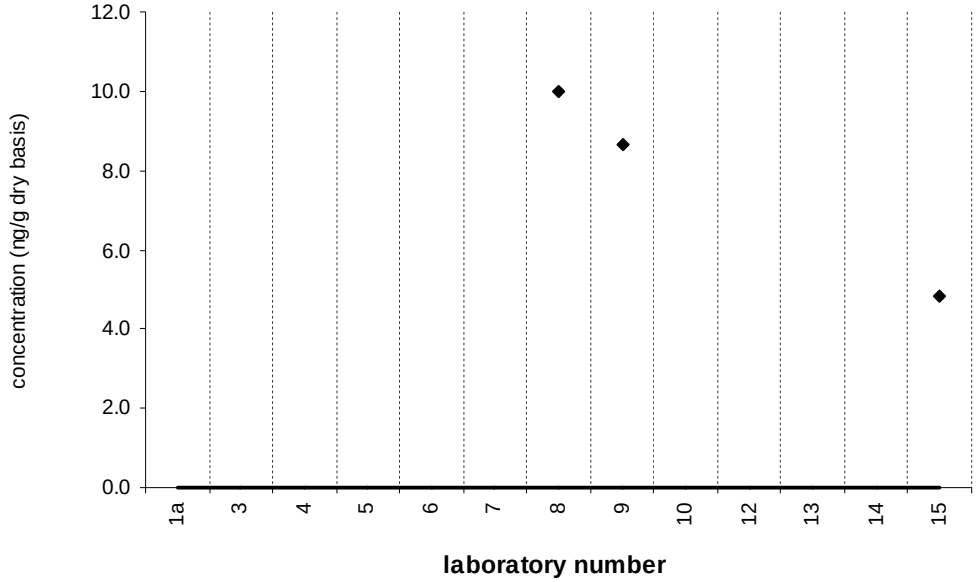
Assigned value = 3.16 ng/g s = 0.11 ng/g 95% CL = 0.28 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 4



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)

beta-HCH (b-BHC) **SRM 2977**

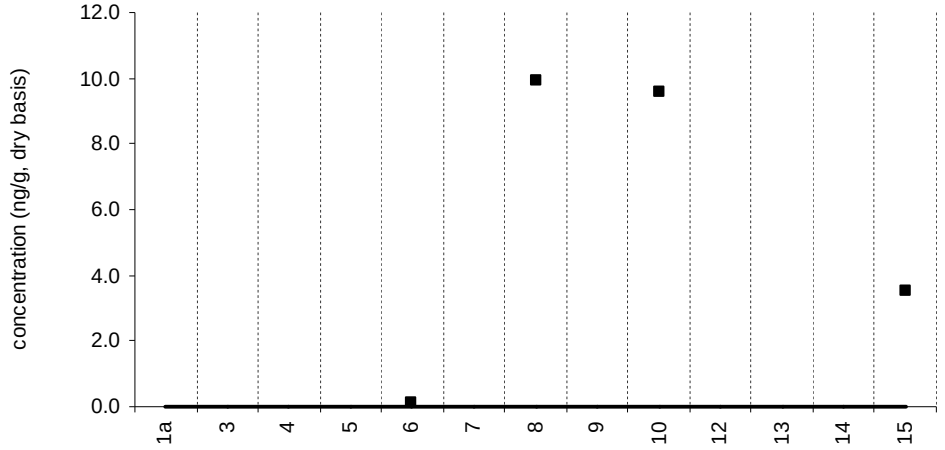
Target Value = no target ng/g (dry basis)
Reported Results: 6 Quantitative Results: 3



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

heptachlor **Tissue XIII (QA07TIS13)**

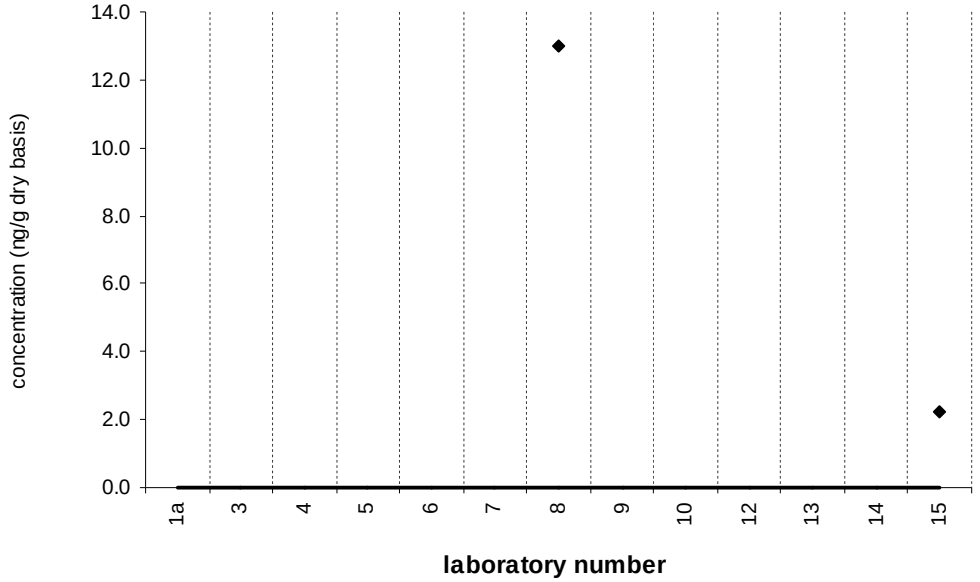
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 4



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)

heptachlor **SRM 2977**

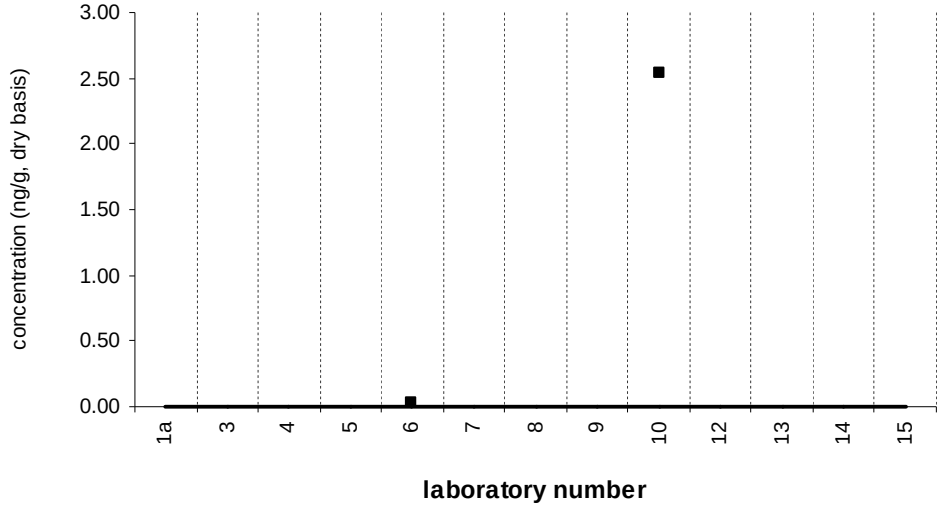
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 2



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

aldrin **Tissue XIII (QA07TIS13)**

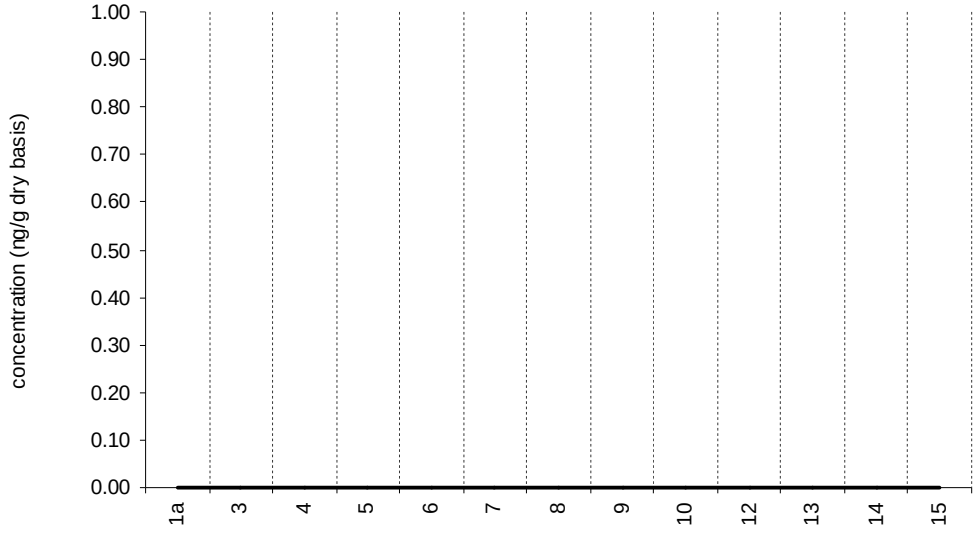
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 2



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)

aldrin **SRM 2977**

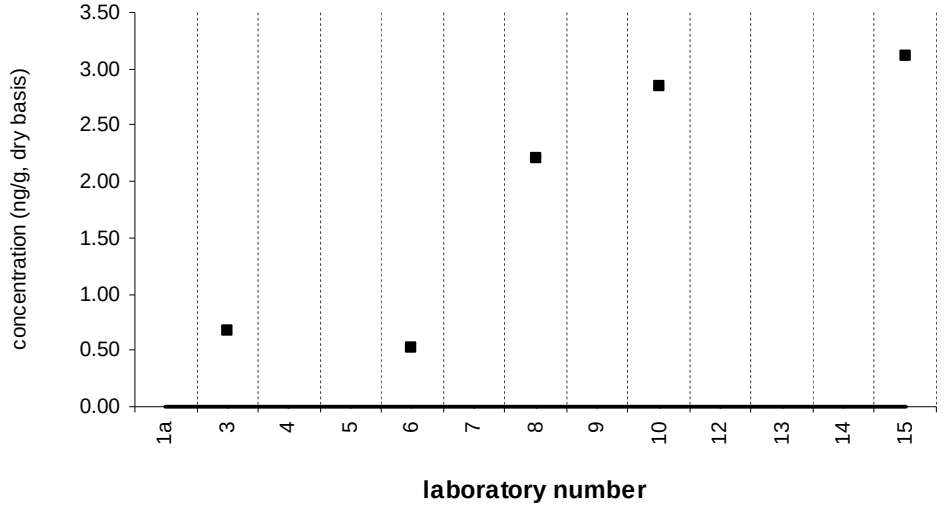
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 0



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

heptachlor epoxide **Tissue XIII (QA07TIS13)**

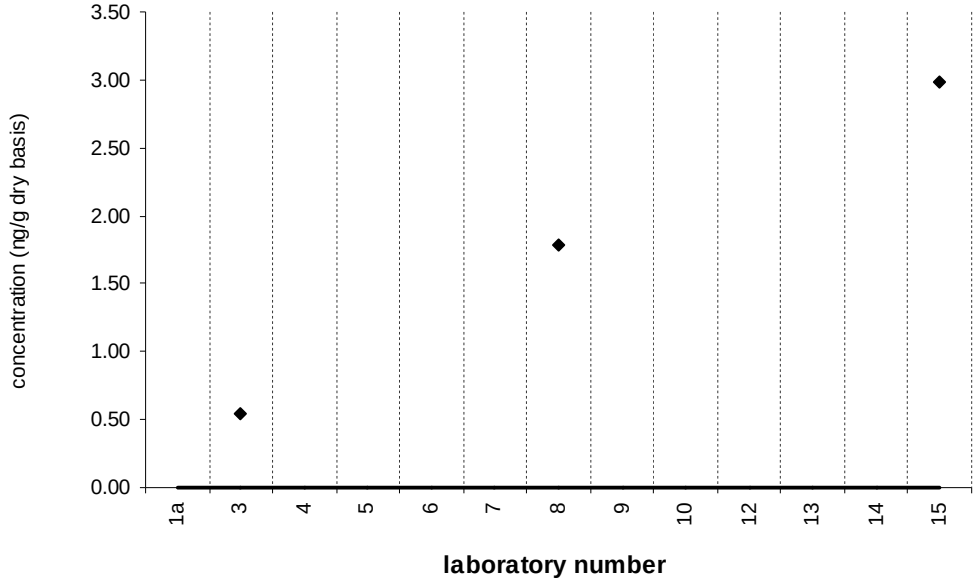
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 5



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)

heptachlor epoxide **SRM 2977**

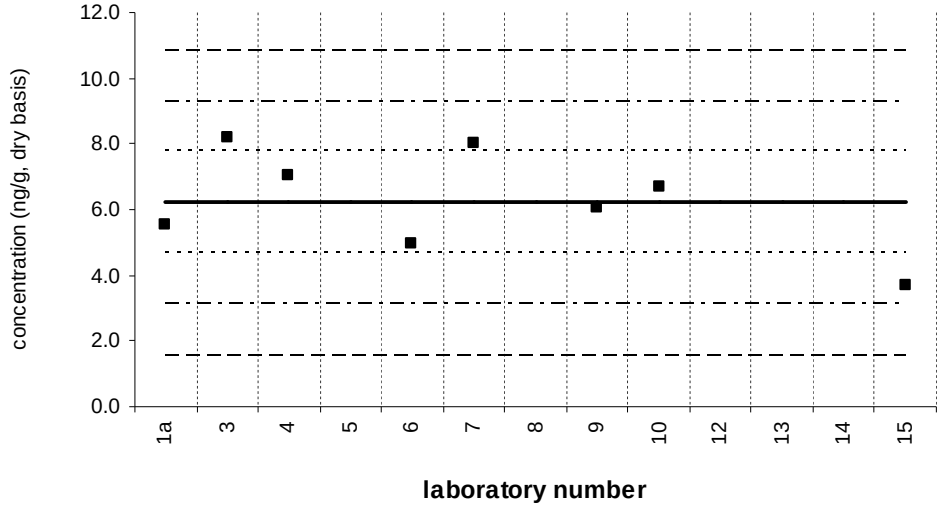
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 3



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

gamma-chlordane **Tissue XIII (QA07TIS13)**

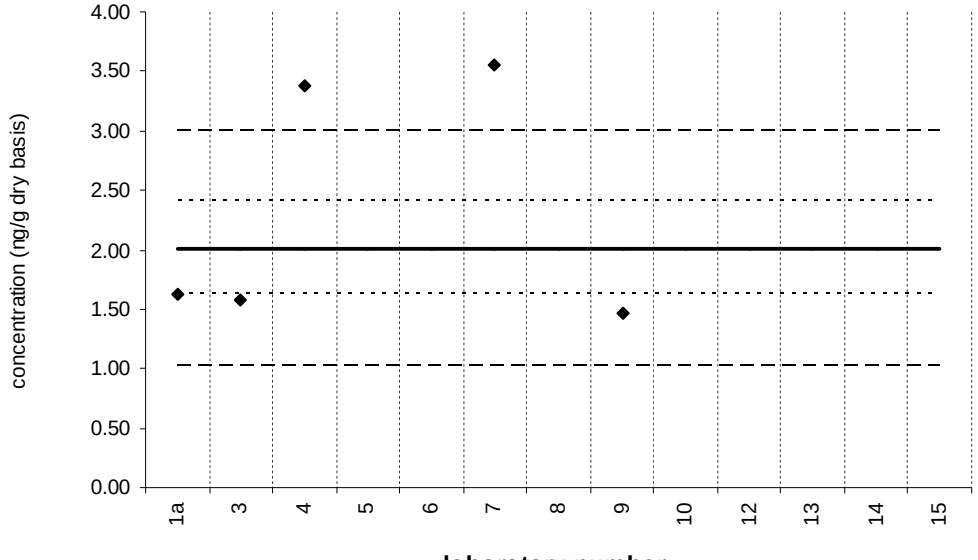
Assigned value = 6.21 ng/g s = 1.65 ng/g 95% CL = 1.52 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8



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)

gamma-chlordane **SRM 2977**

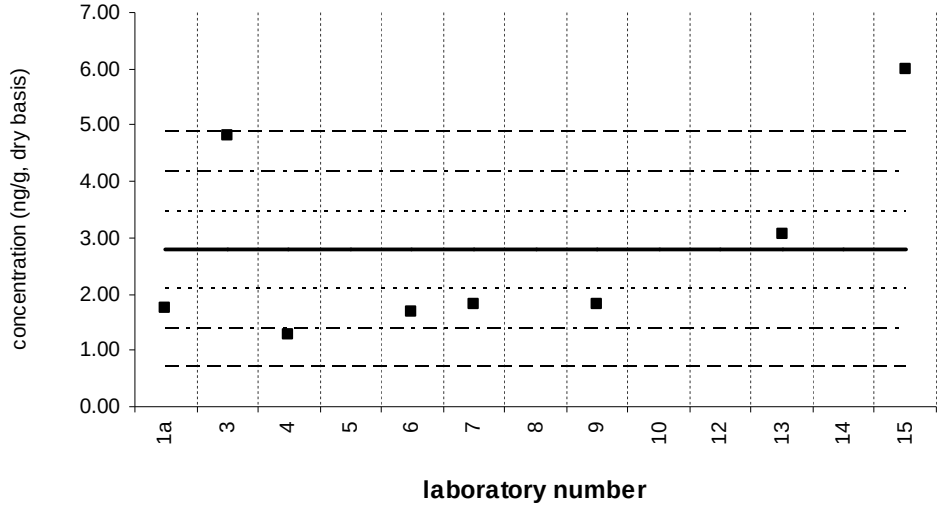
Reference Value = 2.01 ± 0.39 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 5



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

2,4'-DDE **Tissue XIII (QA07TIS13)**

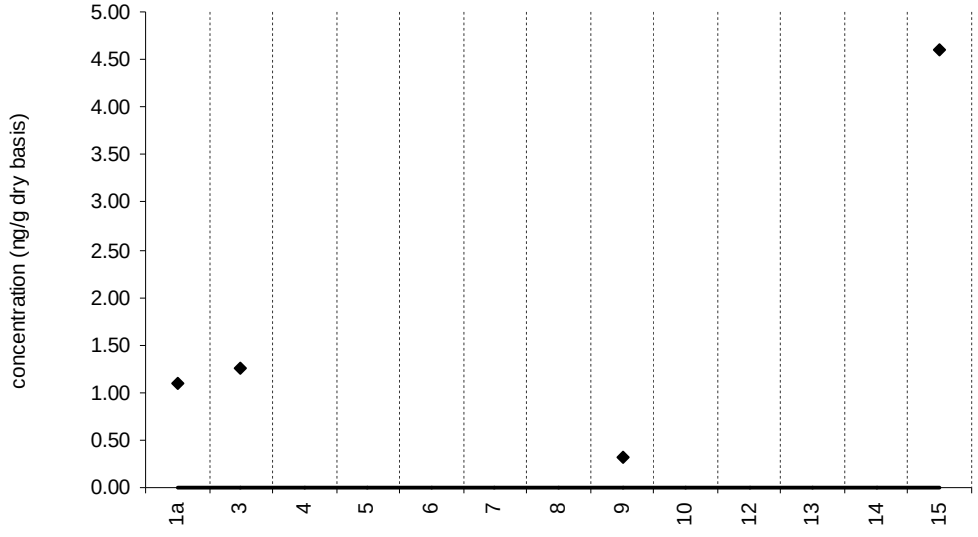
Assigned value = 2.78 ng/g s = 1.72 ng/g 95% CL = 1.44 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8



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)

2,4'-DDE **SRM 2977**

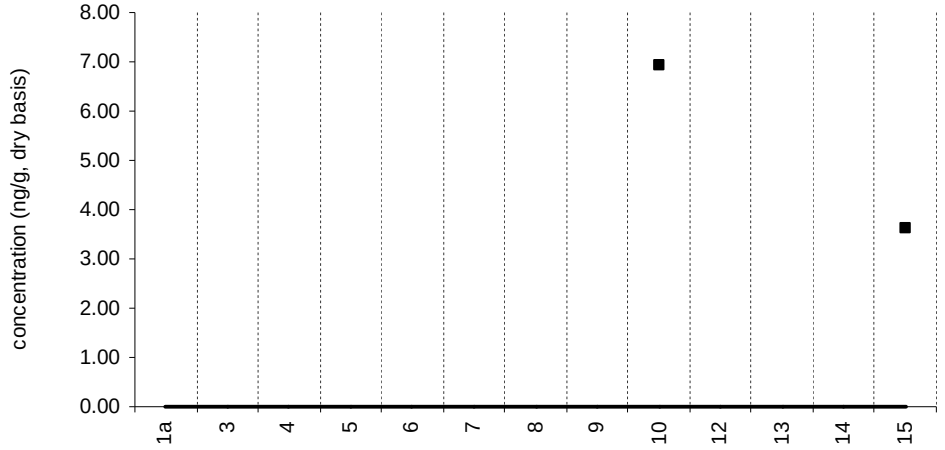
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 4



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

endosulfan I **Tissue XIII (QA07TIS13)**

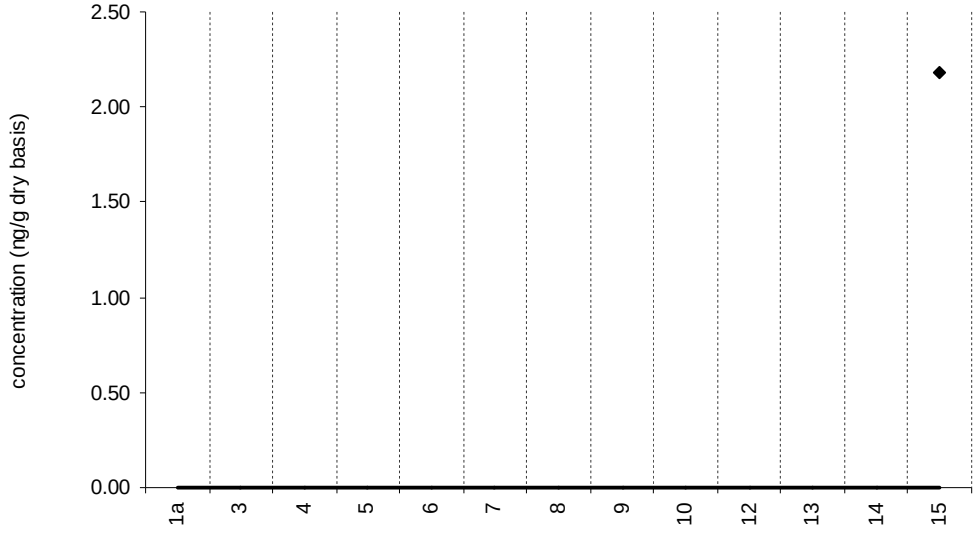
Assigned value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 2



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)

endosulfan I **SRM 2977**

Target Value = no target ng/g (dry basis)
Reported Results: 8 Quantitative Results: 1

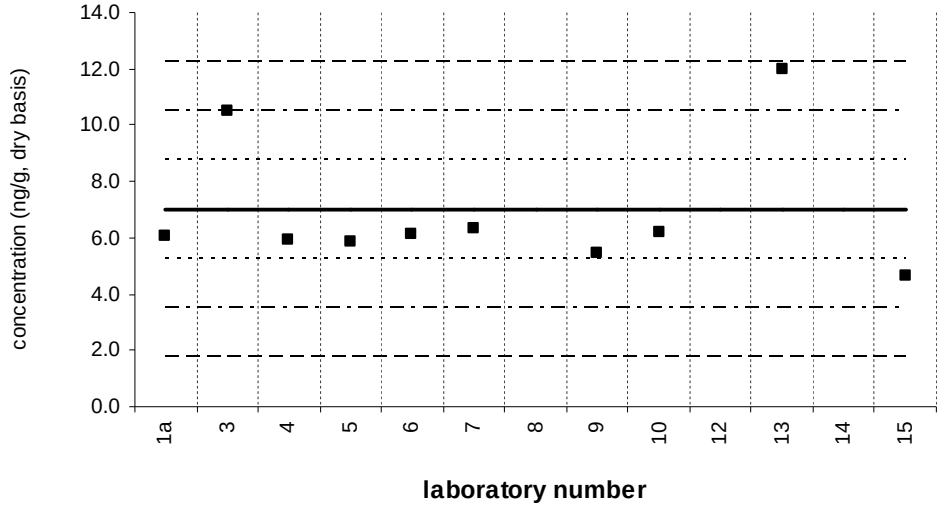


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

cis-chlordane (alpha-chlordane)

Tissue XIII (QA07TIS13)

Assigned value = 6.99 ng/g s = 2.50 ng/g 95% CL = 1.92 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 10

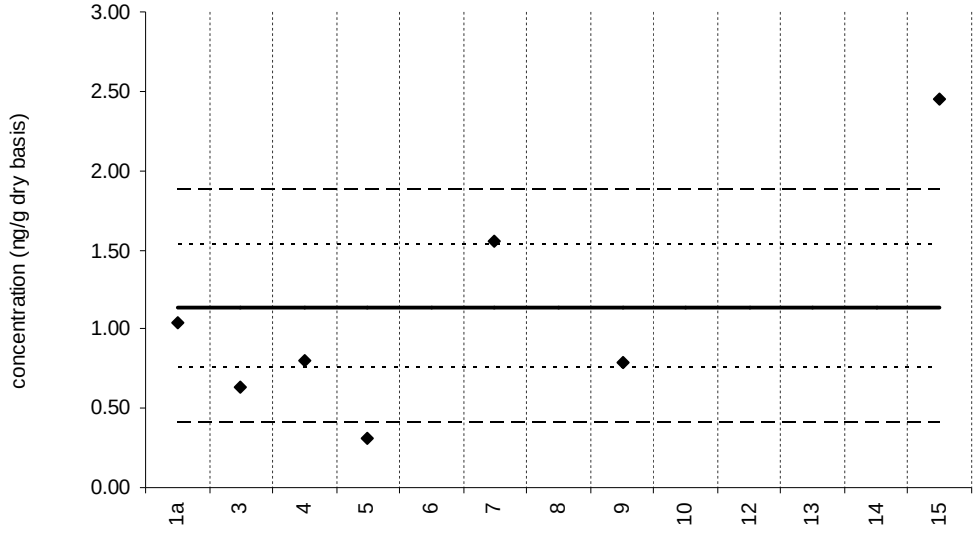


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-chlordane (alpha-chlordane)

SRM 2977

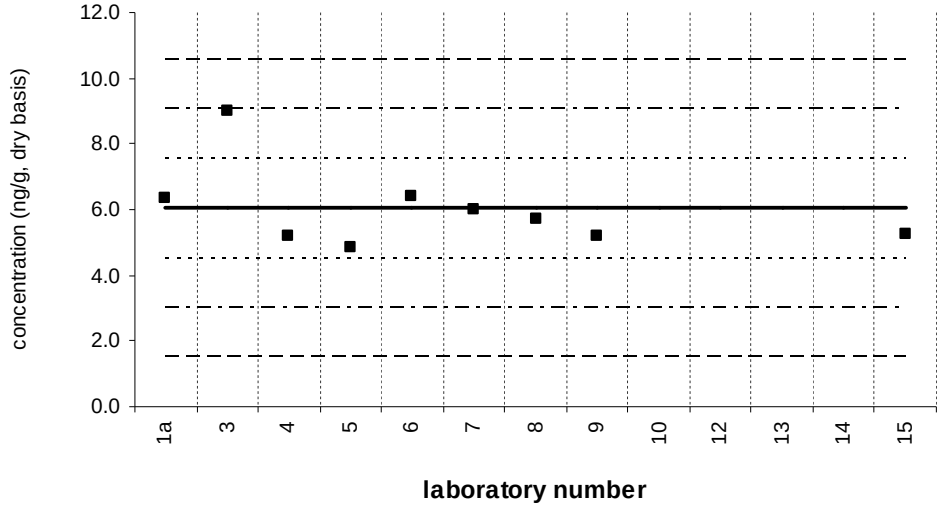
Reference Value = 1.14 ± 0.39 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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

trans-nonachlor **Tissue XIII (QA07TIS13)**

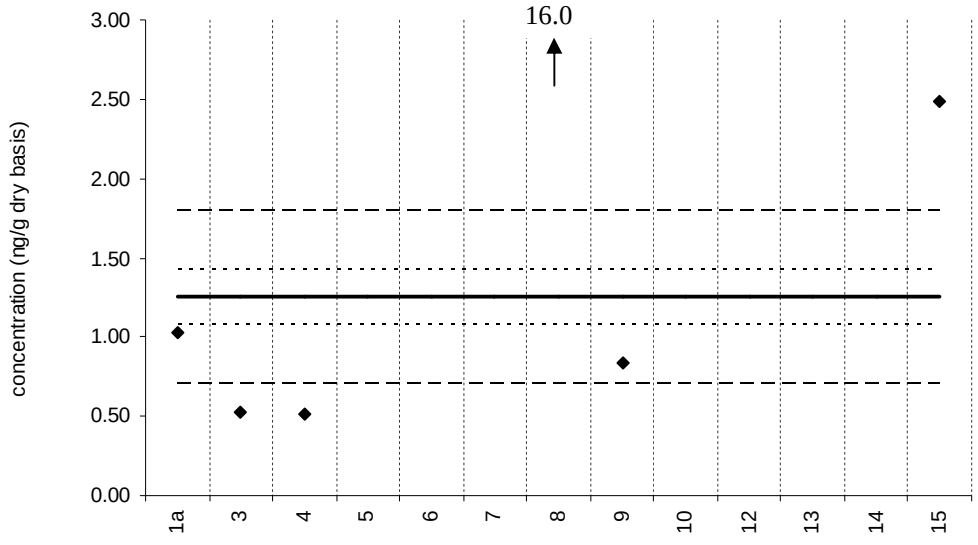
Assigned value = 6.03 ng/g s = 1.33 ng/g 95% CL = 1.11 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9



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)

trans-nonachlor **SRM 2977**

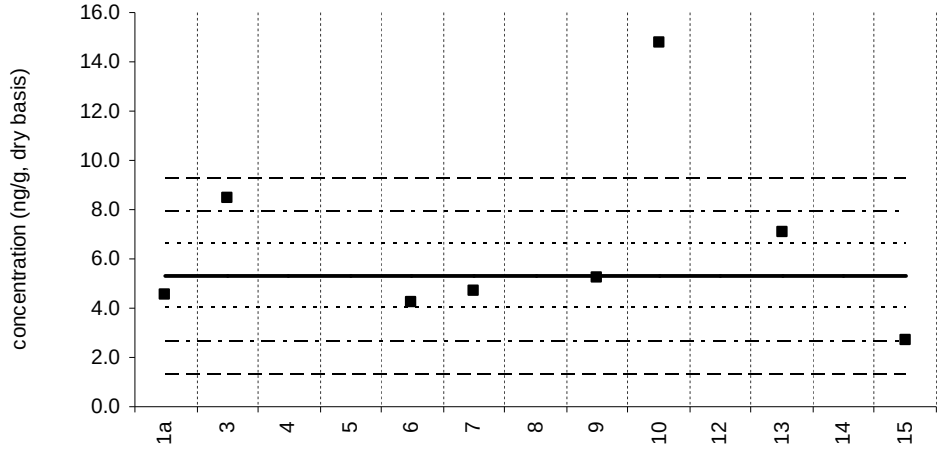
Certified Value = 1.25 ± 0.17 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 6



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

dieldrin **Tissue XIII (QA07TIS13)**

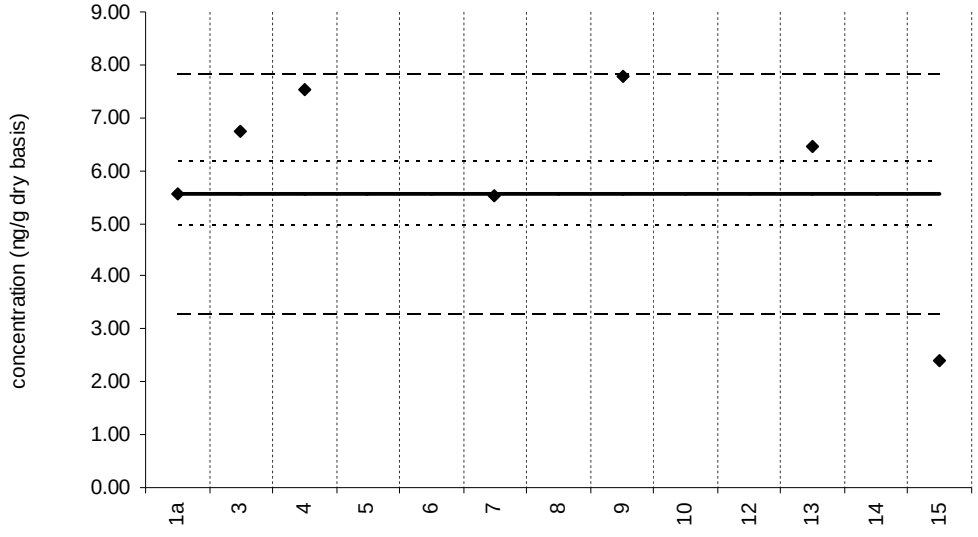
Assigned value = 5.28 ng/g s = 1.92 ng/g 95% CL = 1.78 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 8



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)

dieldrin **SRM 2977**

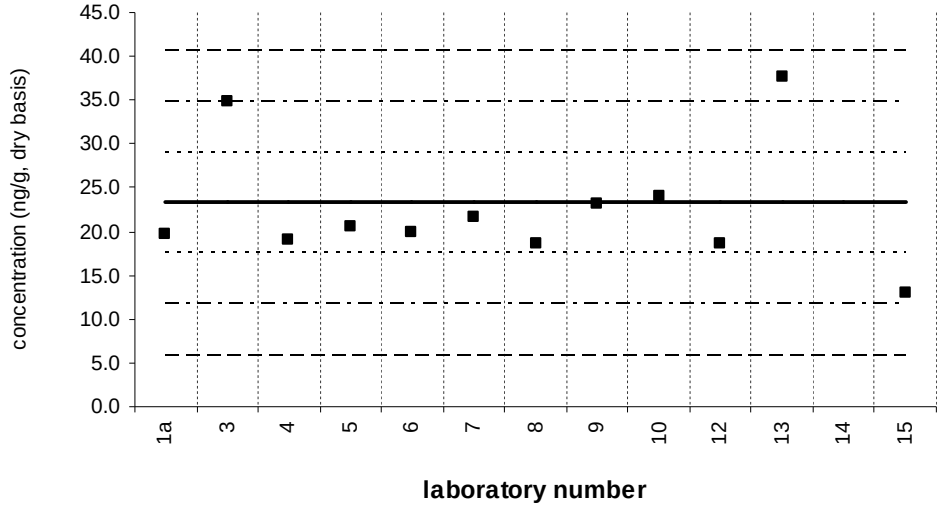
Certified Value = 5.55 ± 0.61 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7



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

4,4'-DDE **Tissue XIII (QA07TIS13)**

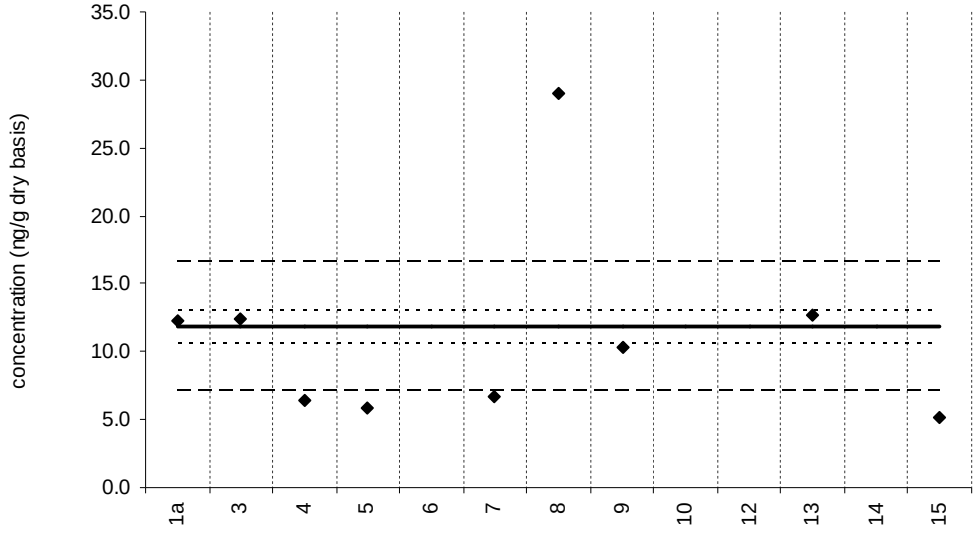
Assigned value = 23.3 ng/g s = 7.9 ng/g 95% CL = 6.1 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

4,4'-DDE **SRM 2977**

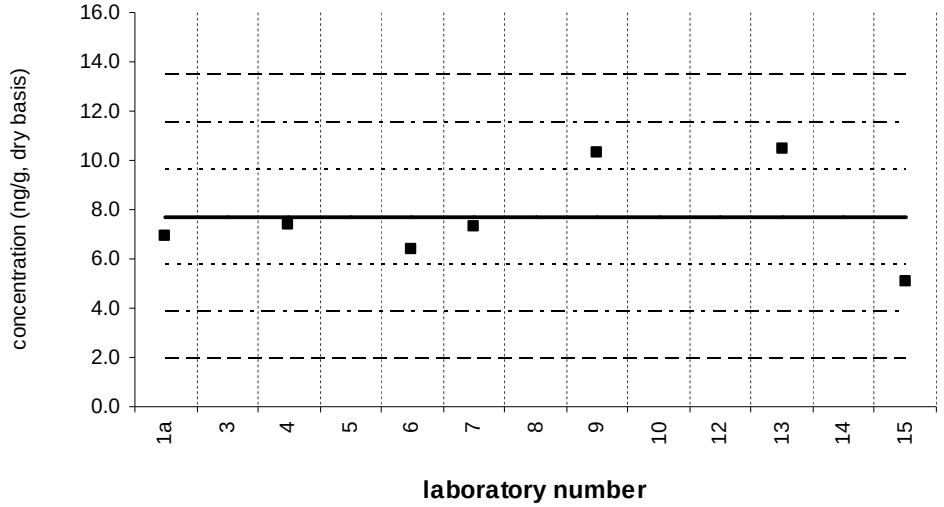
Certified Value = 11.8 ± 1.2 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 8



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

2,4'-DDD **Tissue XIII (QA07TIS13)**

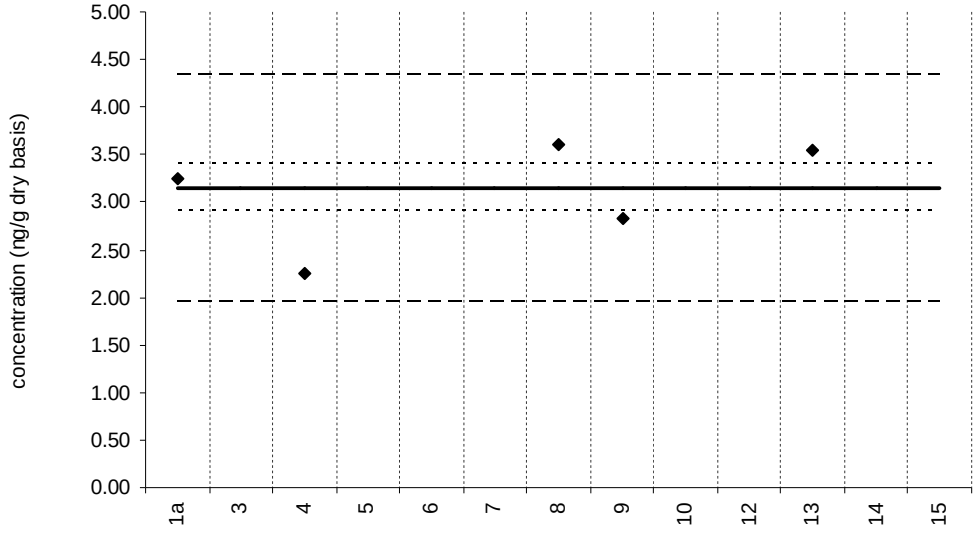
Assigned value = 7.69 ng/g s = 1.99 ng/g 95% CL = 1.84 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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)

2,4'-DDD **SRM 2977**

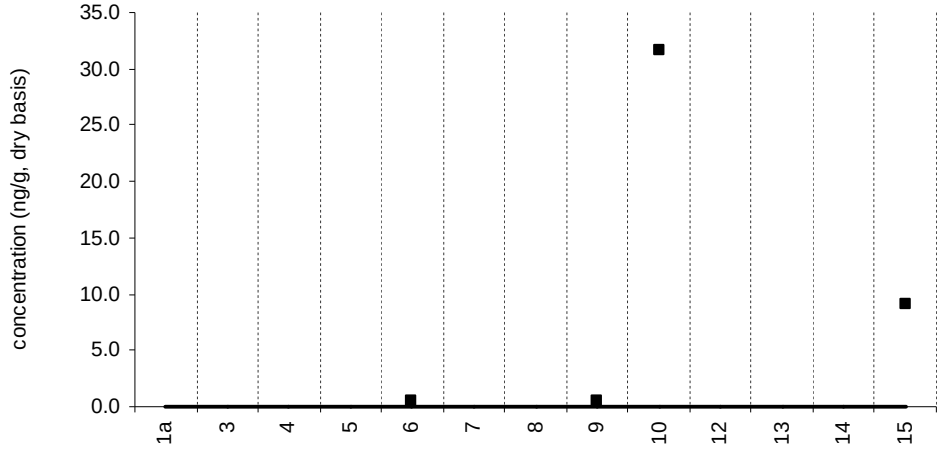
Certified Value = 3.15 ± 0.25 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 5



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

endrin **Tissue XIII (QA07TIS13)**

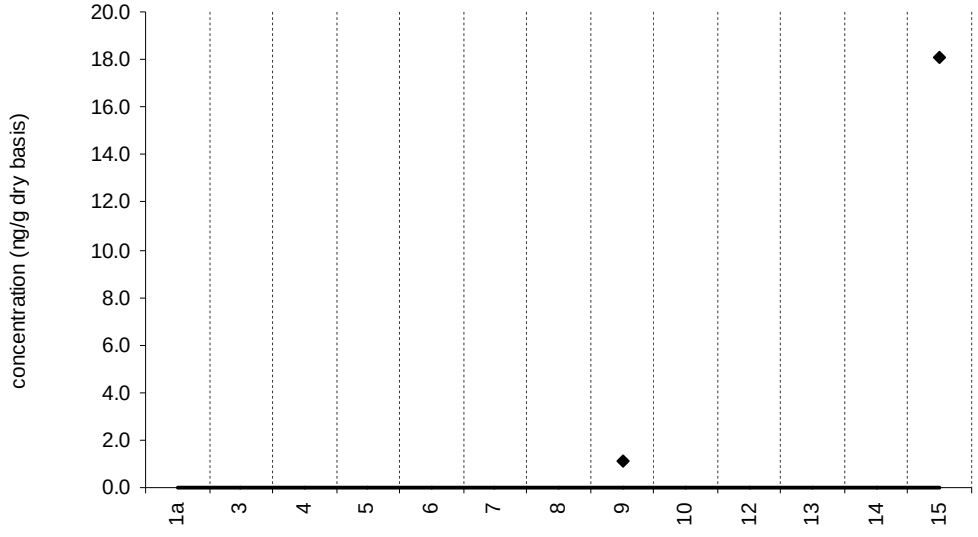
Assigned value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 4



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)

endrin **SRM 2977**

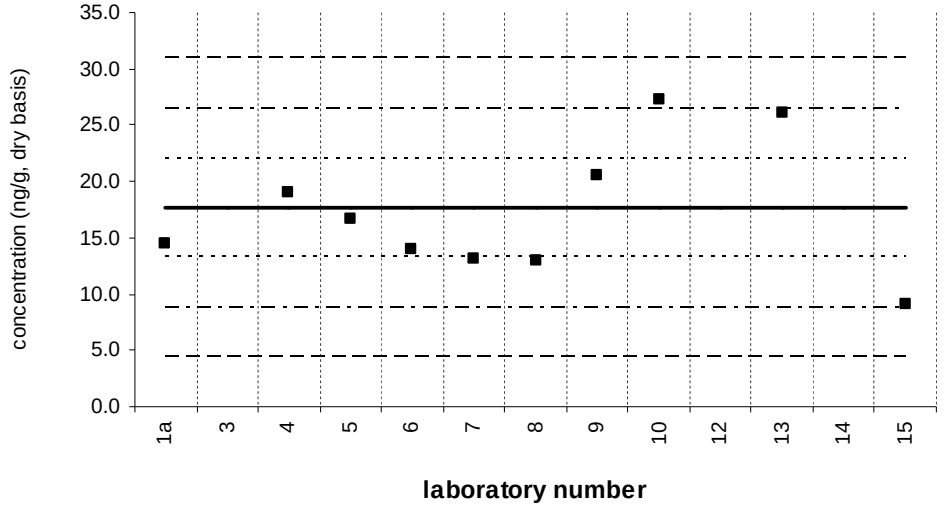
Target Value = no target ng/g (dry basis)
Reported Results: 7 Quantitative Results: 2



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

4,4'-DDD **Tissue XIII (QA07TIS13)**

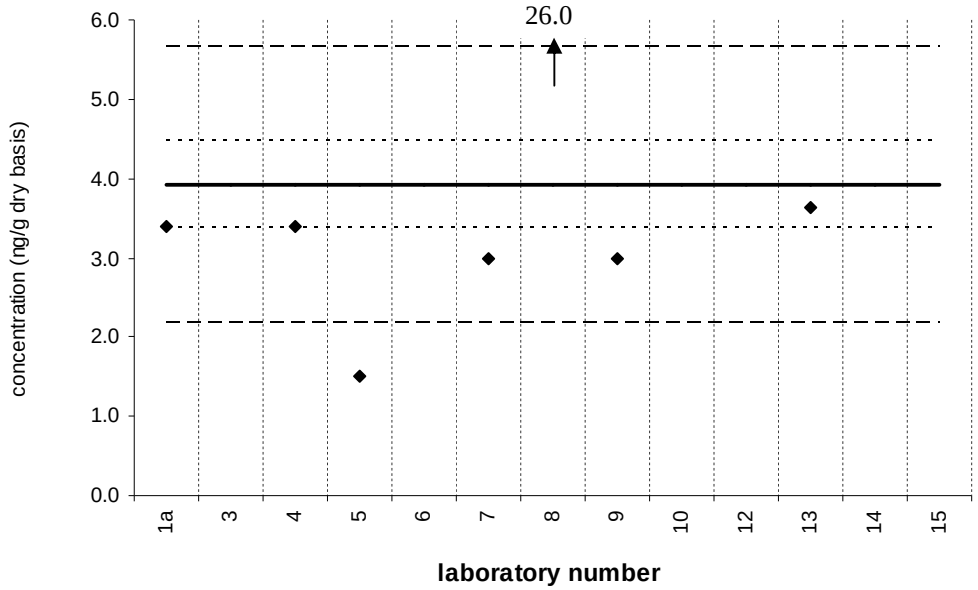
Assigned value = 17.7 ng/g s = 4.6 ng/g 95% CL = 4.2 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 10



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)

4,4'-DDD **SRM 2977**

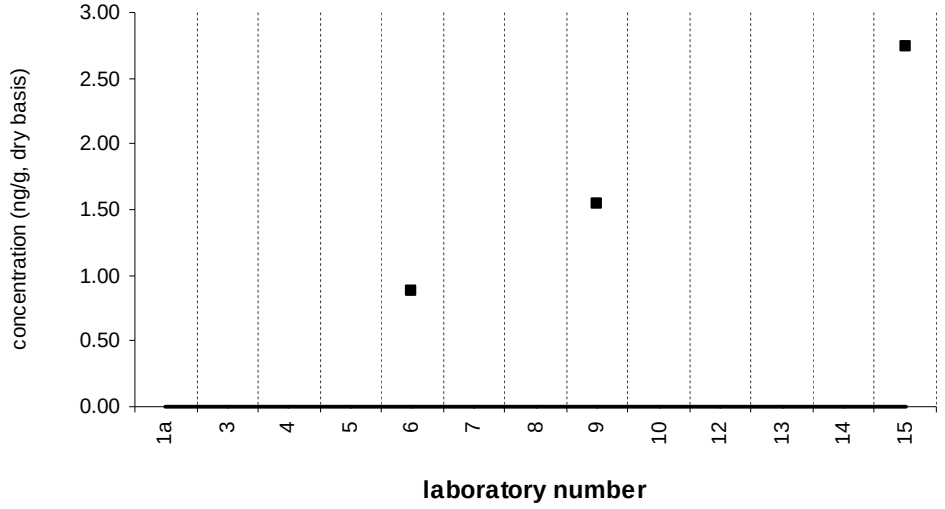
Certified Value = 3.92 ± 0.56 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 7



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

2,4'-DDT **Tissue XIII (QA07TIS13)**

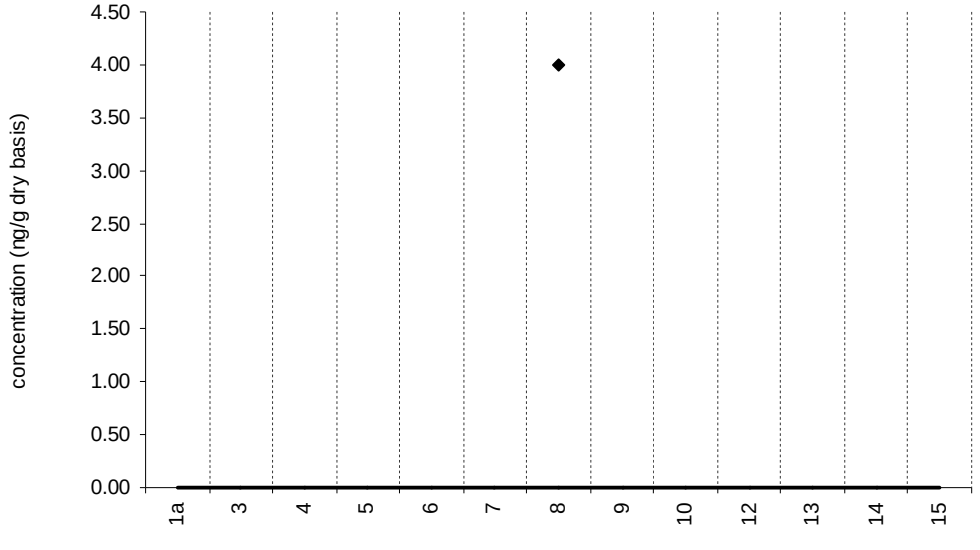
Assigned value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 3



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)

2,4'-DDT **SRM 2977**

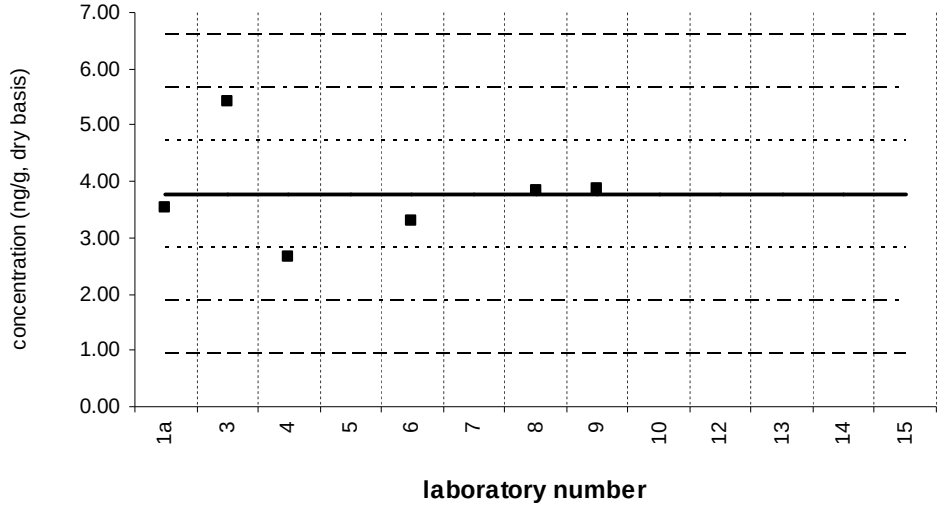
Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 1



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

cis-nonachlor **Tissue XIII (QA07TIS13)**

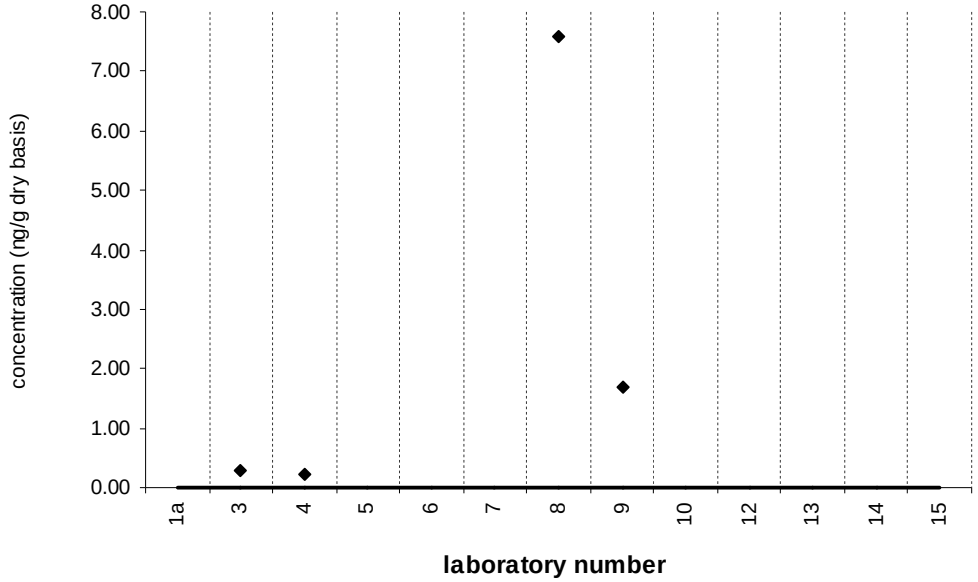
Assigned value = 3.77 ng/g s = 0.92 ng/g 95% CL = 0.97 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 6



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)

cis-nonachlor **SRM 2977**

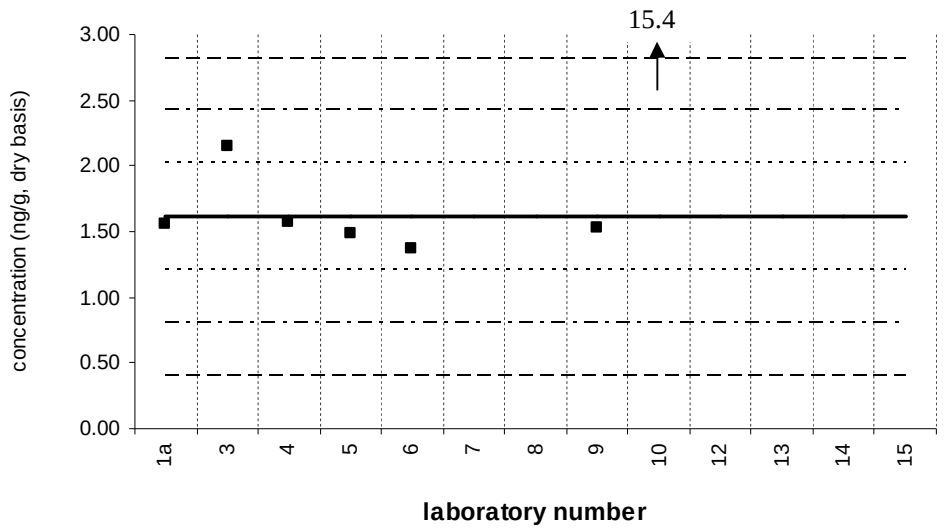
Target Value = no target ng/g (dry basis)
Reported Results: 7 Quantitative Results: 4



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

4,4'-DDT **Tissue XIII (QA07TIS13)**

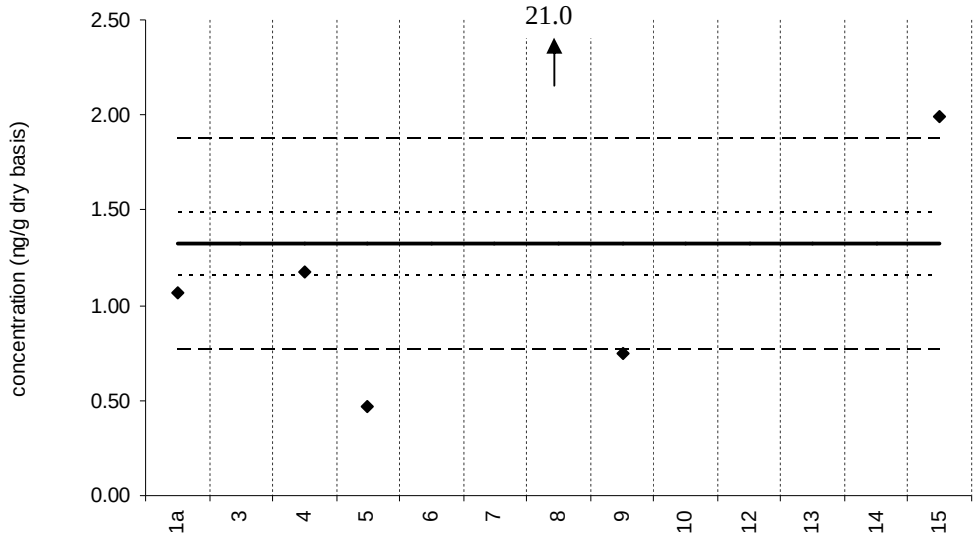
Assigned value = 1.61 ng/g s = 0.27 ng/g 95% CL = 0.29 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 7



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)

4,4'-DDT **SRM 2977**

Certified Value = 1.32 ± 0.16 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 6

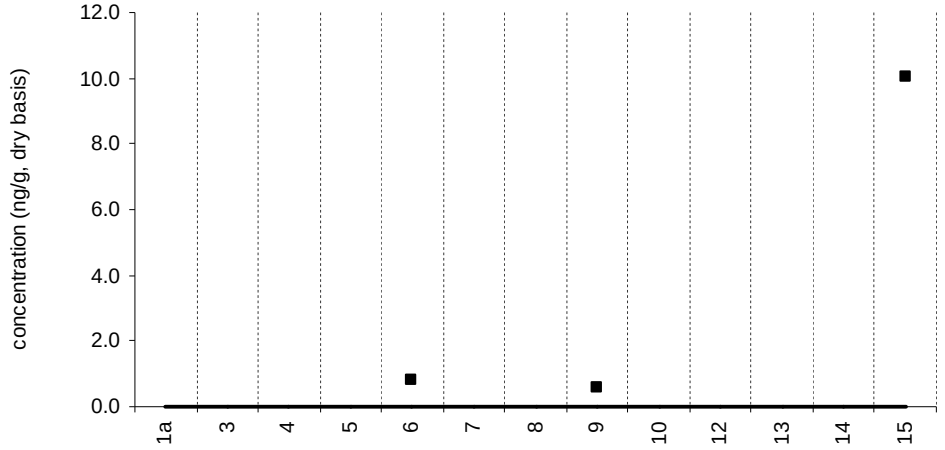


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

mirex

Tissue XIII (QA07TIS13)

Assigned value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 3

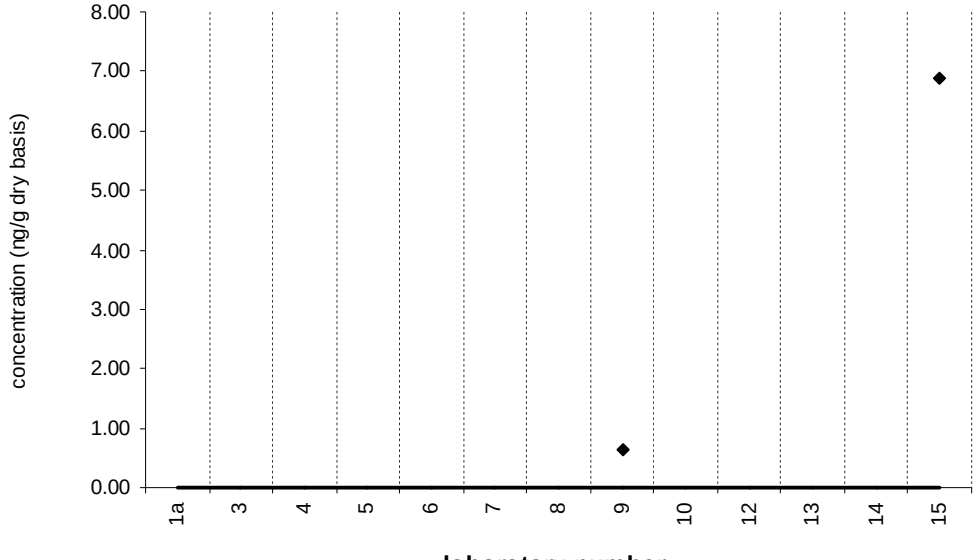


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

mirex

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 9 Quantitative Results: 2

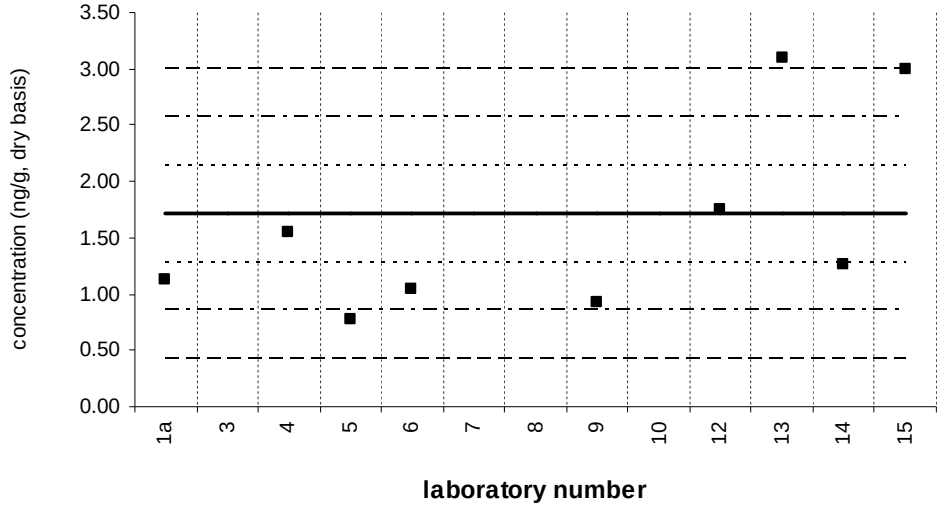


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 8

Tissue XIII (QA07TIS13)

Assigned value = 1.71 ng/g s = 1.05 ng/g 95% CL = 0.97 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9

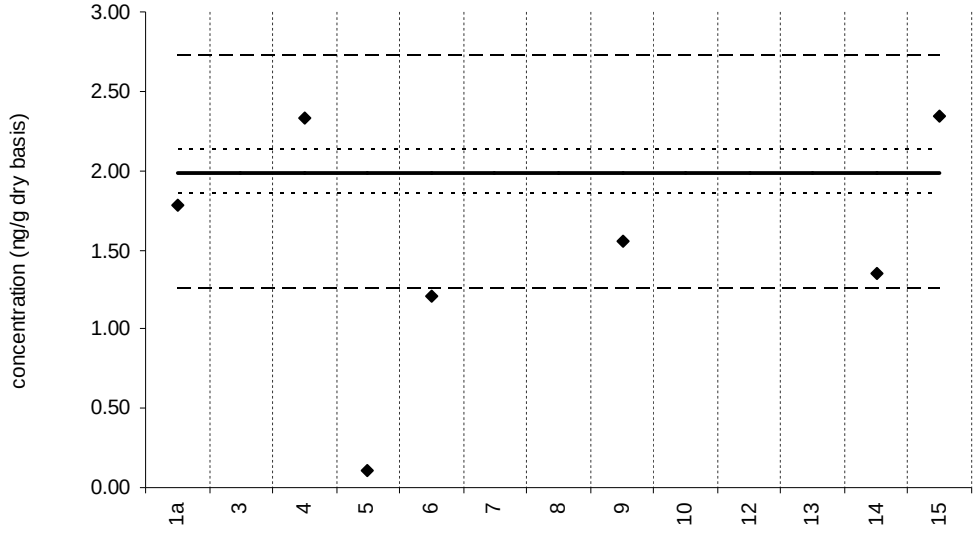


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 8

SRM 2977

Certified Value = 1.99 ± 0.14 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 7

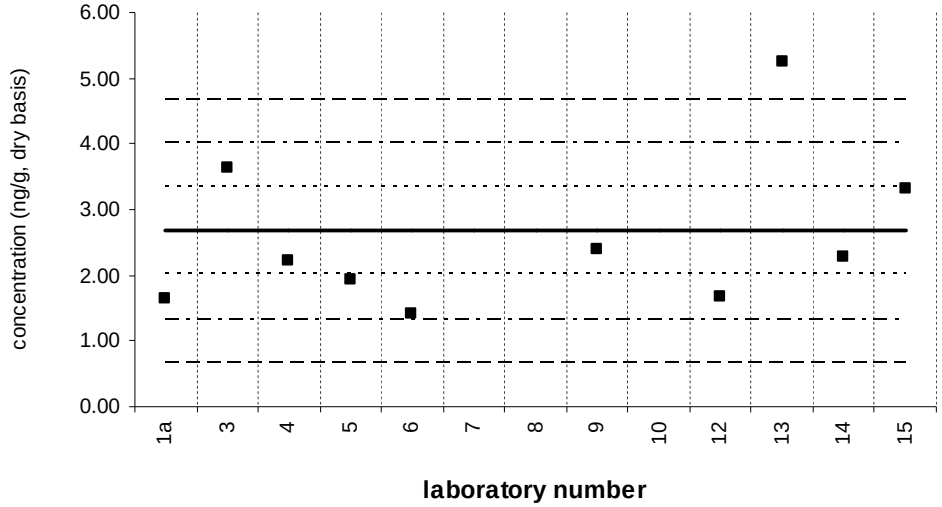


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 18

Tissue XIII (QA07TIS13)

Assigned value = 2.68 ng/g s = 1.20 ng/g 95% CL = 0.92 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

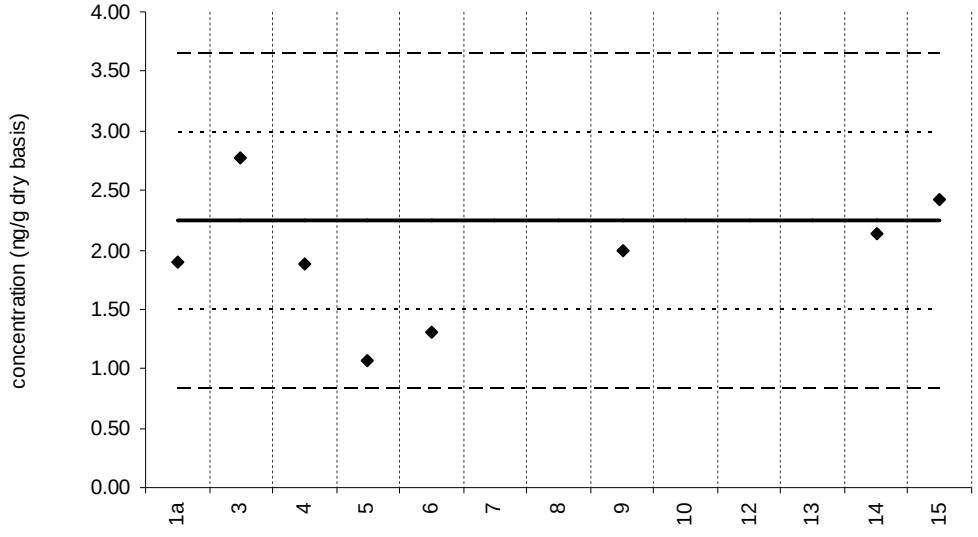


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 18

SRM 2977

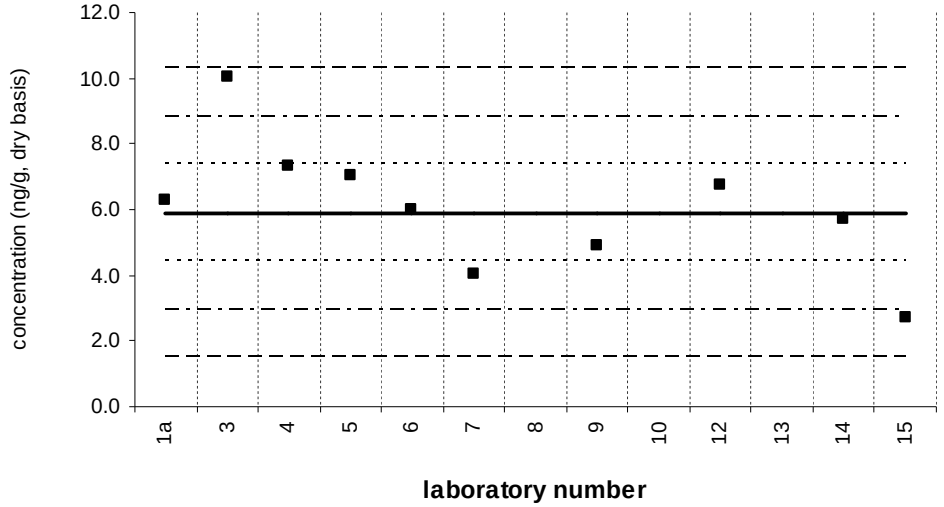
Reference Value = 2.24 ± 0.74 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 8



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

PCB 28 **Tissue XIII (QA07TIS13)**

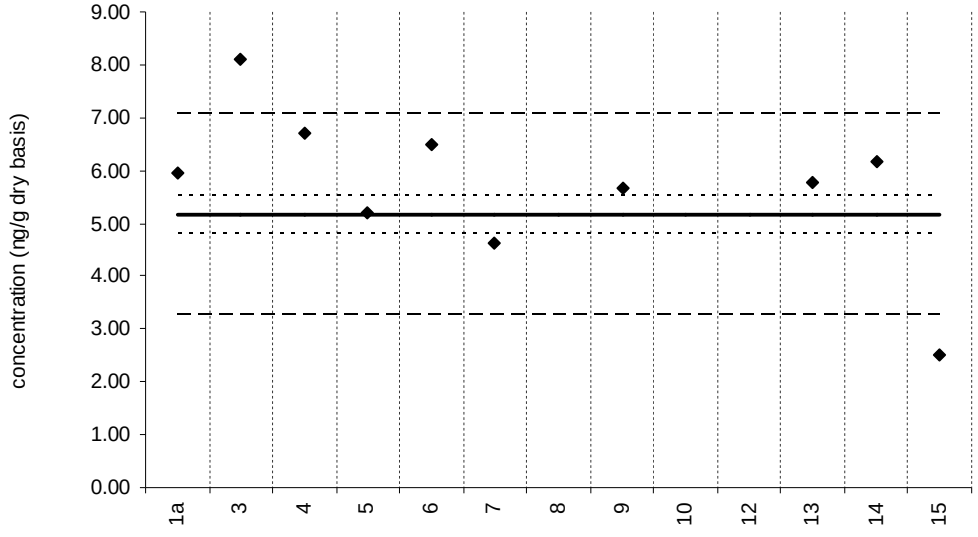
Assigned value = 5.90 ng/g s = 1.16 ng/g 95% CL = 1.07 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10



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)

PCB 28 **SRM 2977**

Certified Value = 5.17 ± 0.36 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

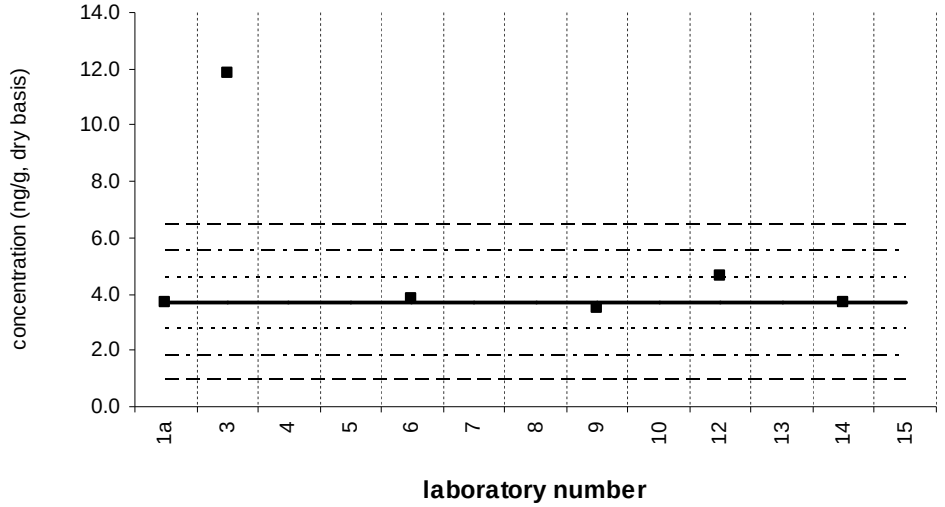


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 31

Tissue XIII (QA07TIS13)

Assigned value = 3.68 ng/g s = 0.13 ng/g 95% CL = 0.21 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 6

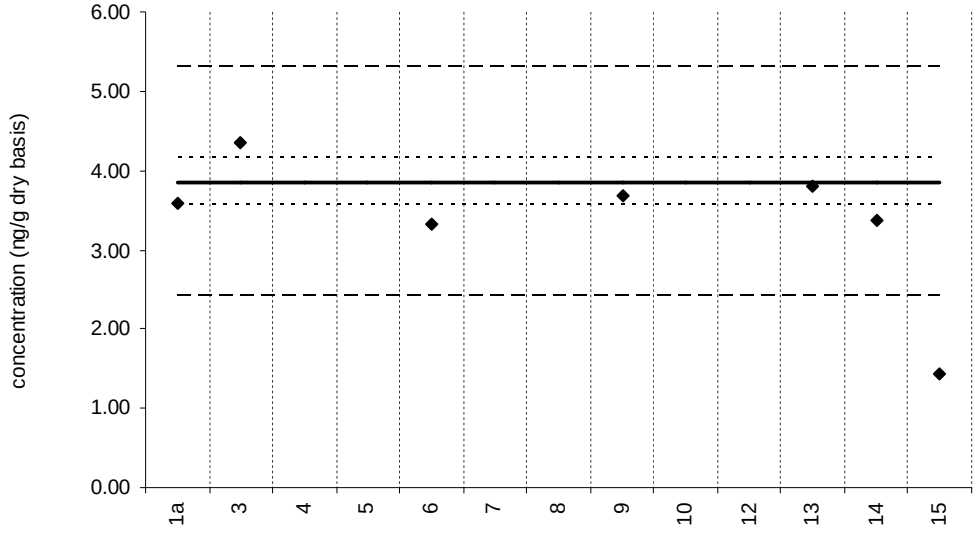


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 31

SRM 2977

Certified Value = 3.86 ± 0.29 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7

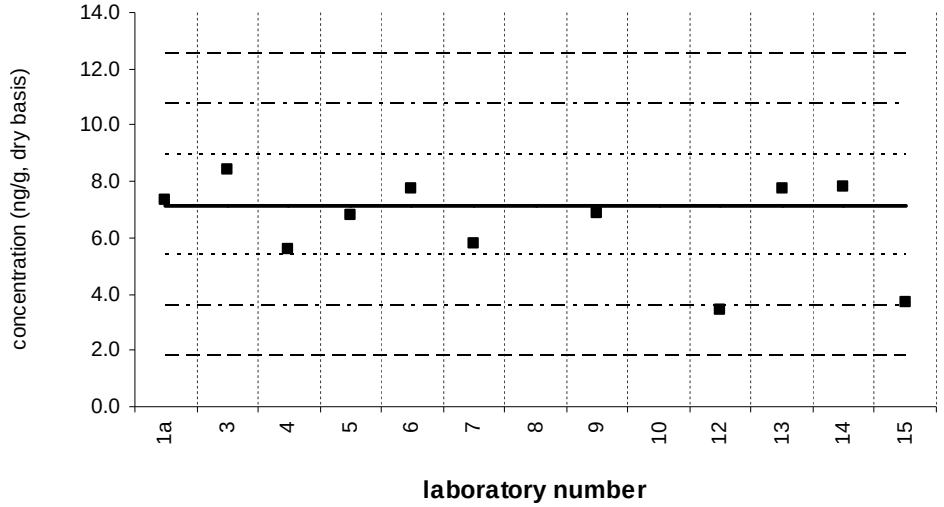


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 44

Tissue XIII (QA07TIS13)

Assigned value = 7.16 ng/g s = 1.01 ng/g 95% CL = 0.85 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

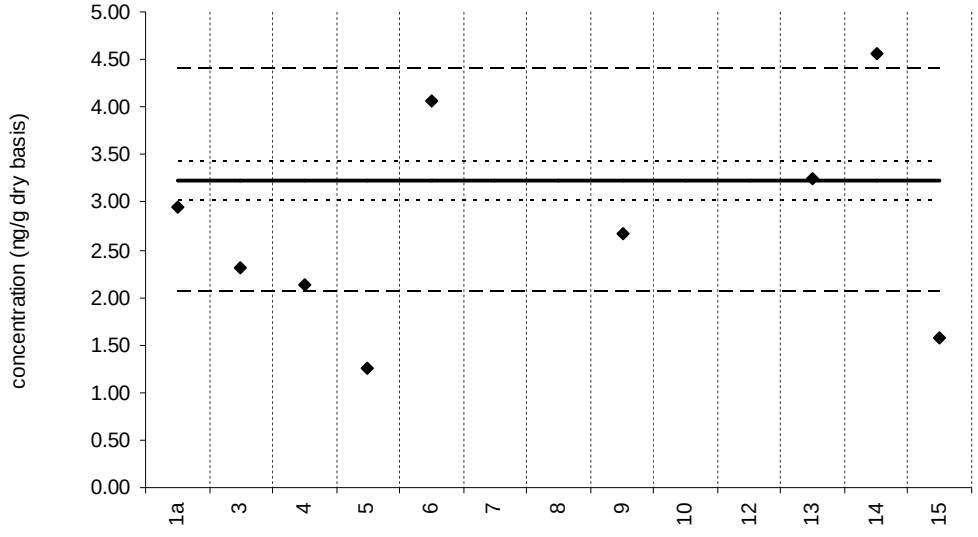


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 44

SRM 2977

Certified Value = 3.22 ± 0.21 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9

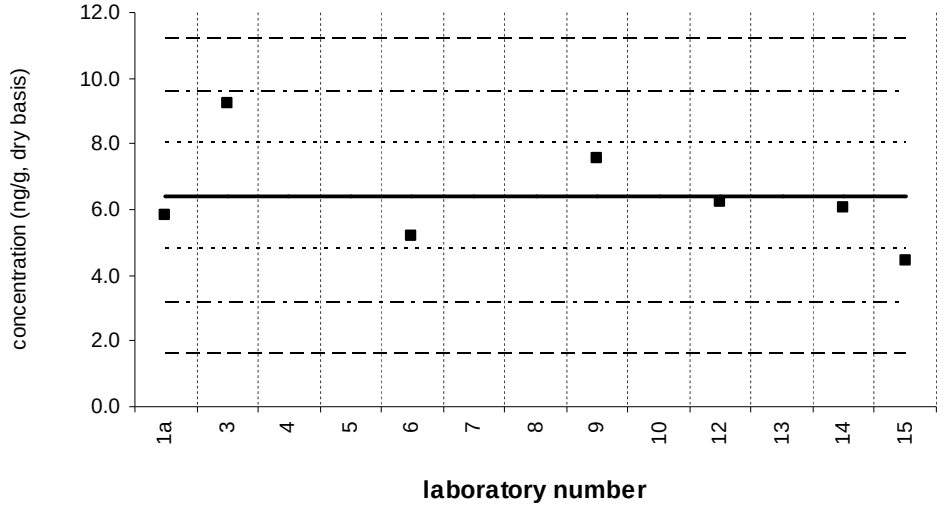


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 49

Tissue XIII (QA07TIS13)

Assigned value = 6.40 ng/g s = 1.74 ng/g 95% CL = 1.83 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7

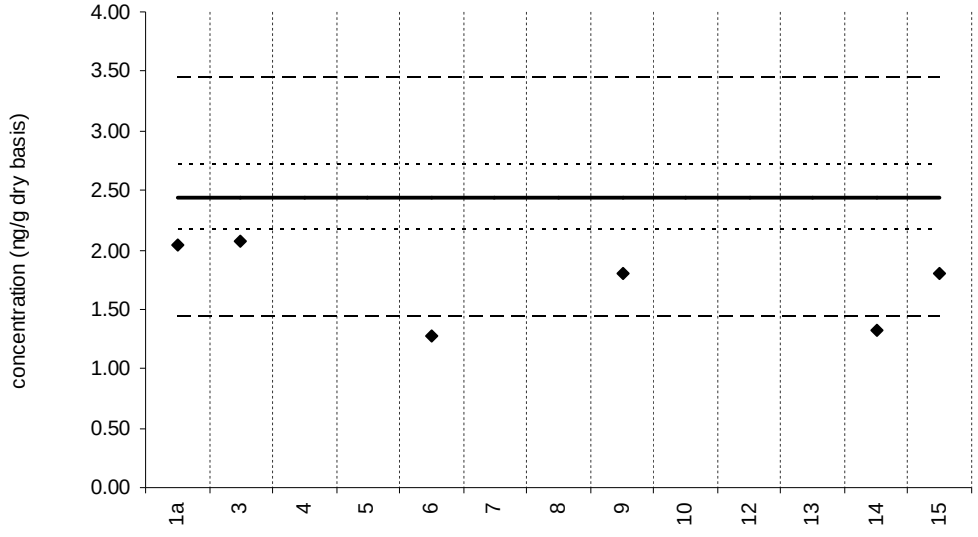


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 49

SRM 2977

Certified Value = 2.44 ± 0.27 ng/g (dry basis)
Reported Results: 6 Quantitative Results: 6

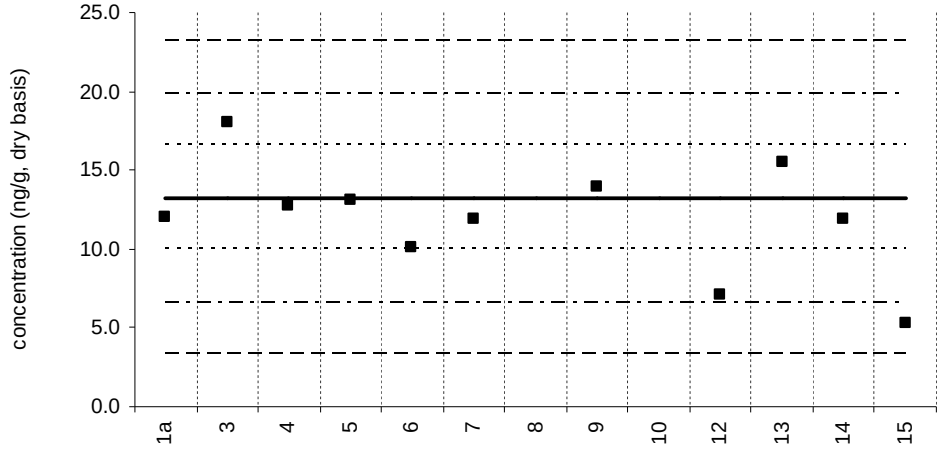


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 52

Tissue XIII (QA07TIS13)

Assigned value = 13.2 ng/g s = 2.3 ng/g 95% CL = 1.8 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

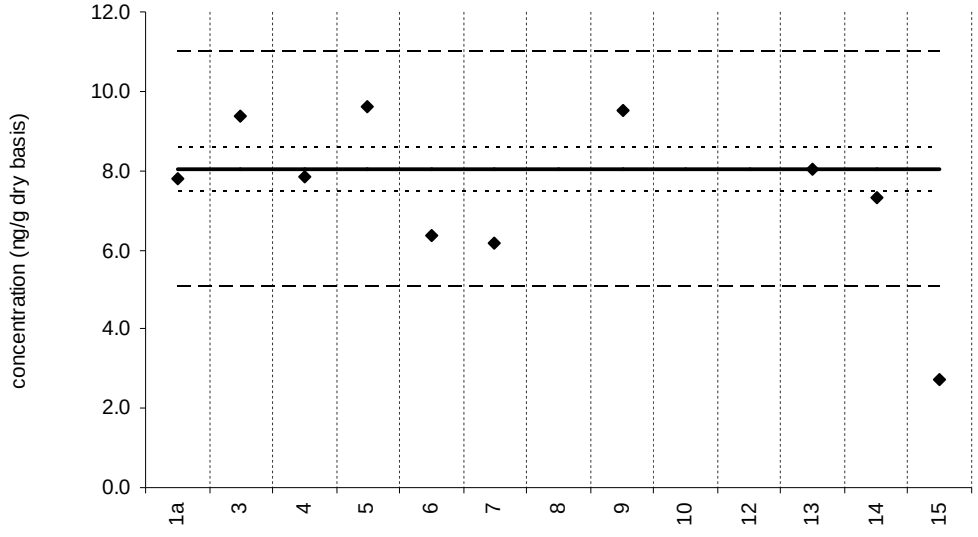


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 52

SRM 2977

Certified Value = 8.02 ± 0.56 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

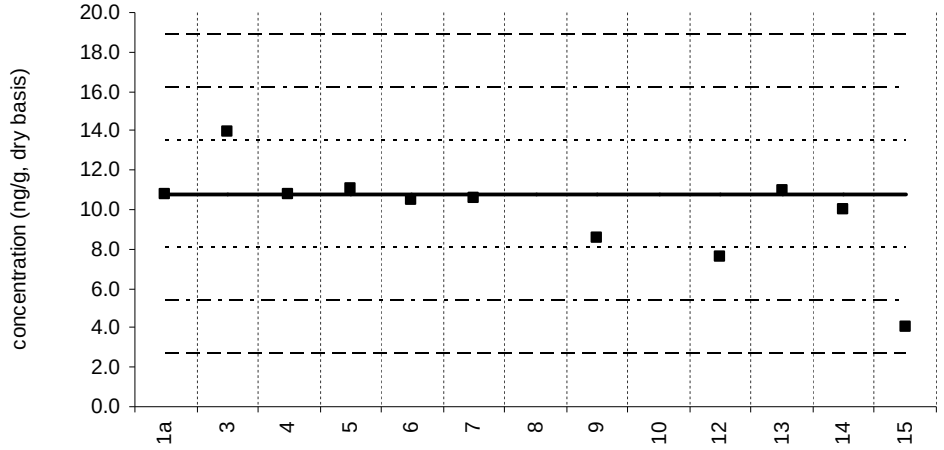


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 66

Tissue XIII (QA07TIS13)

Assigned value = 10.8 ng/g s = 1.4 ng/g 95% CL = 1.1 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

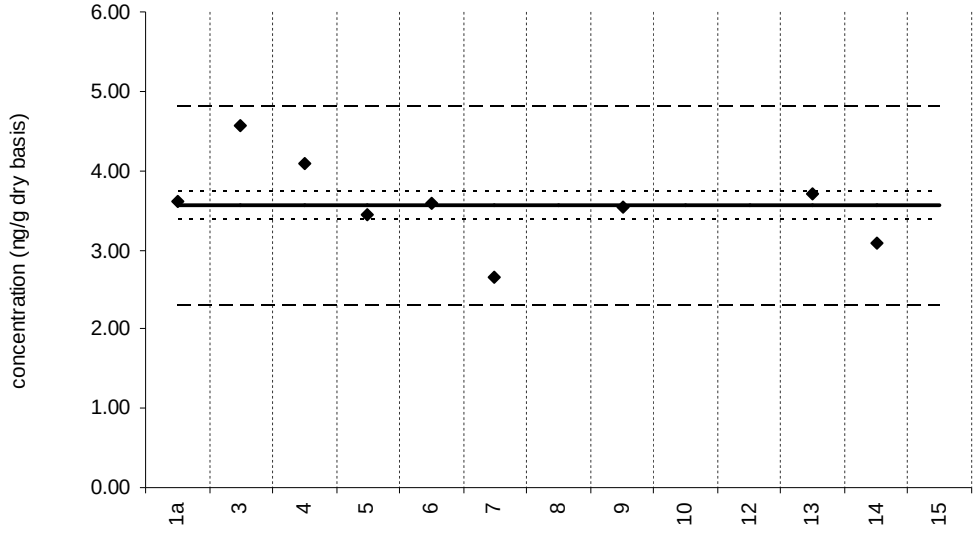


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 66

SRM 2977

Certified Value = 3.55 ± 0.18 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9

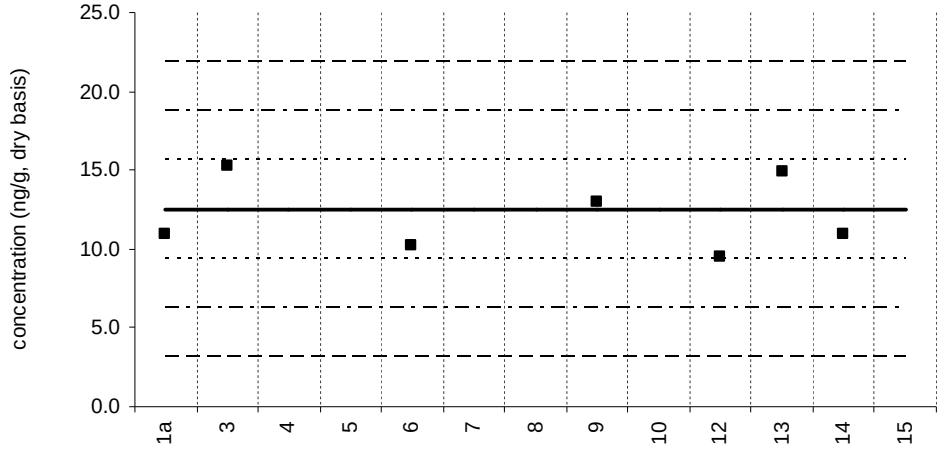


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 95

Tissue XIII (QA07TIS13)

Assigned value = 12.5 ng/g s = 2.2 ng/g 95% CL = 2.3 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7

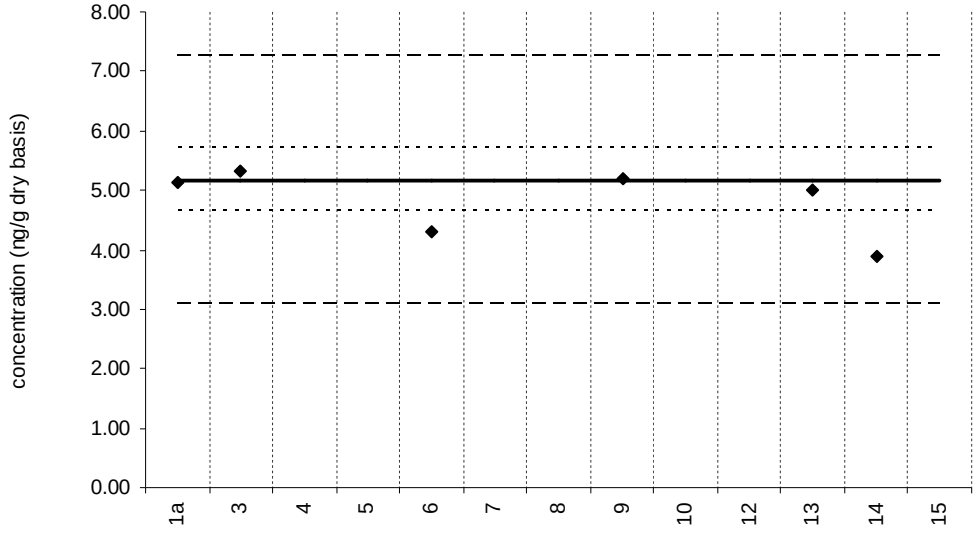


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 95

SRM 2977

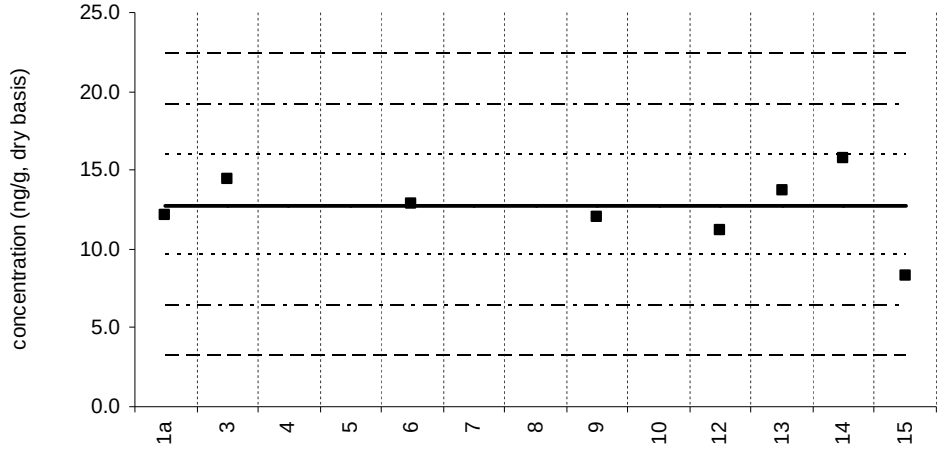
Certified Value = 5.17 ± 0.53 ng/g (dry basis)
Reported Results: 6 Quantitative Results: 6



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

PCB 99 **Tissue XIII (QA07TIS13)**

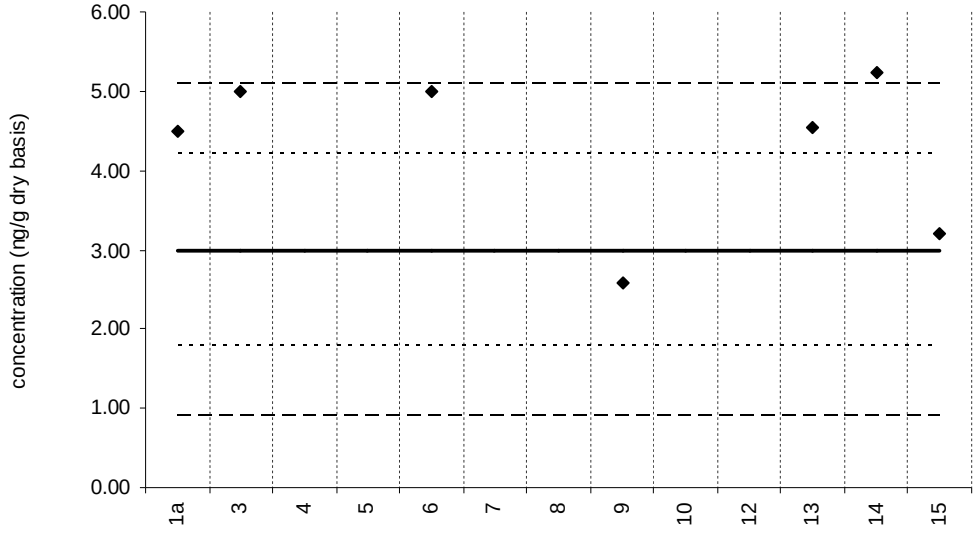
Assigned value = 12.7 ng/g s = 2.3 ng/g 95% CL = 2.2 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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)

PCB 99 **SRM 2977**

Reference Value = 3.0 ± 1.2 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7

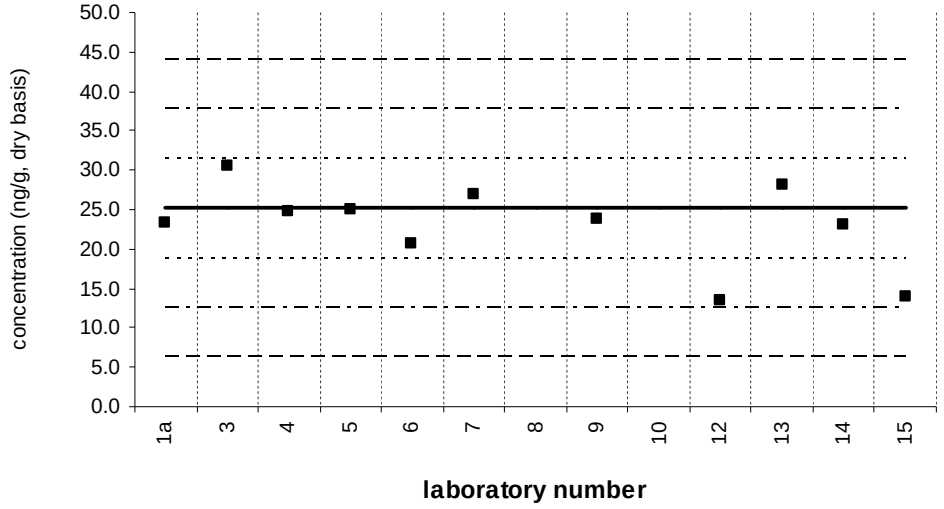


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 101

Tissue XIII (QA07TIS13)

Assigned value = 25.1 ng/g s = 3.0 ng/g 95% CL = 2.3 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

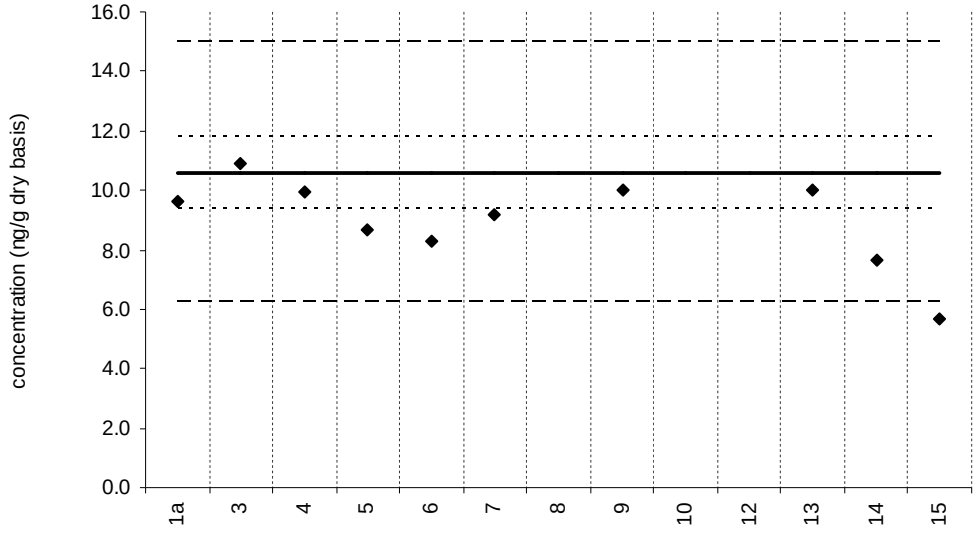


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 101

SRM 2977

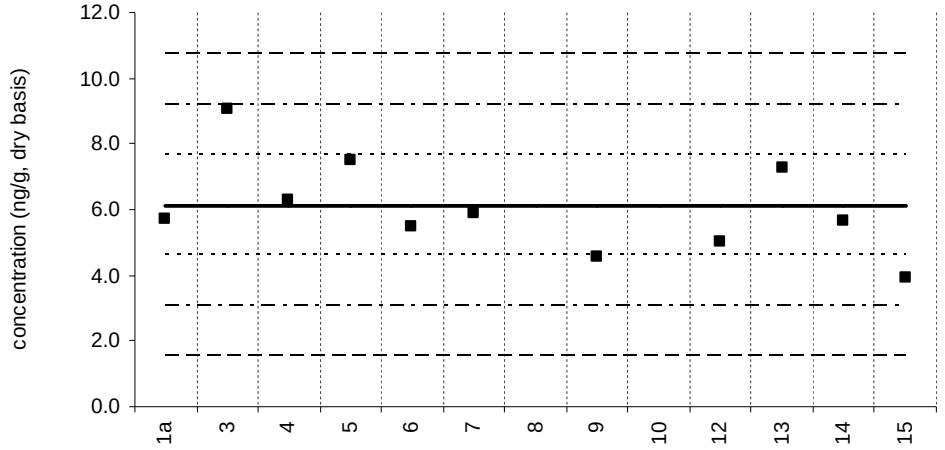
Certified Value = 10.6 ± 1.2 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 105 **Tissue XIII (QA07TIS13)**

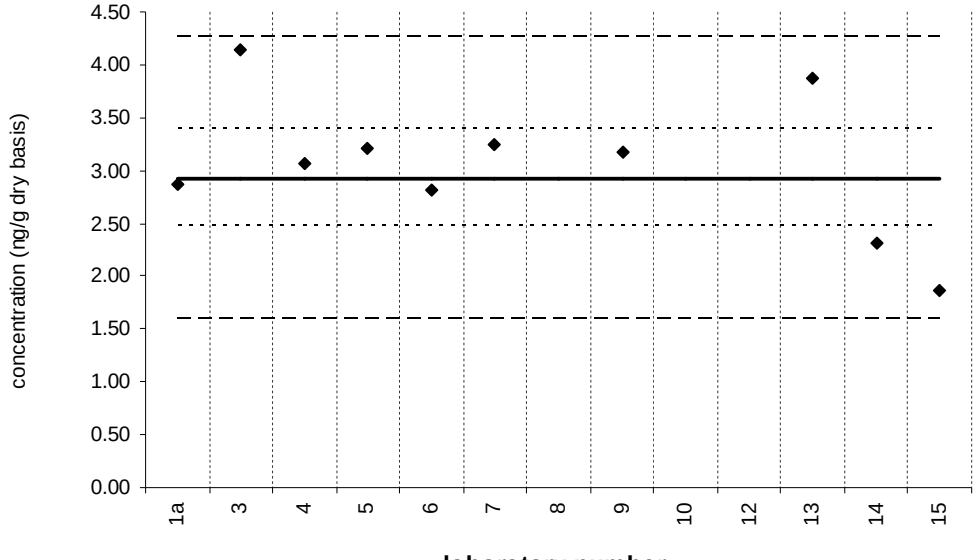
Assigned value = 6.13 ng/g s = 1.49 ng/g 95% CL = 1.07 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 105 **SRM 2977**

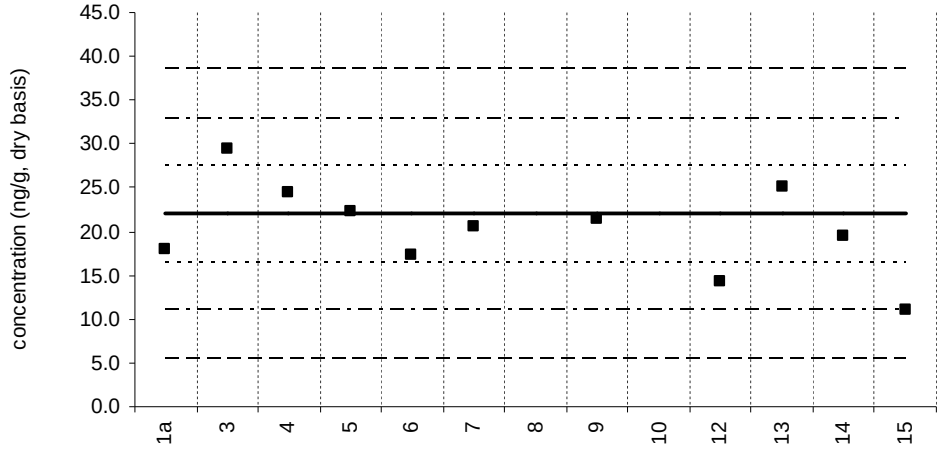
Reference Value = 2.93 ± 0.46 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 118 **Tissue XIII (QA07TIS13)**

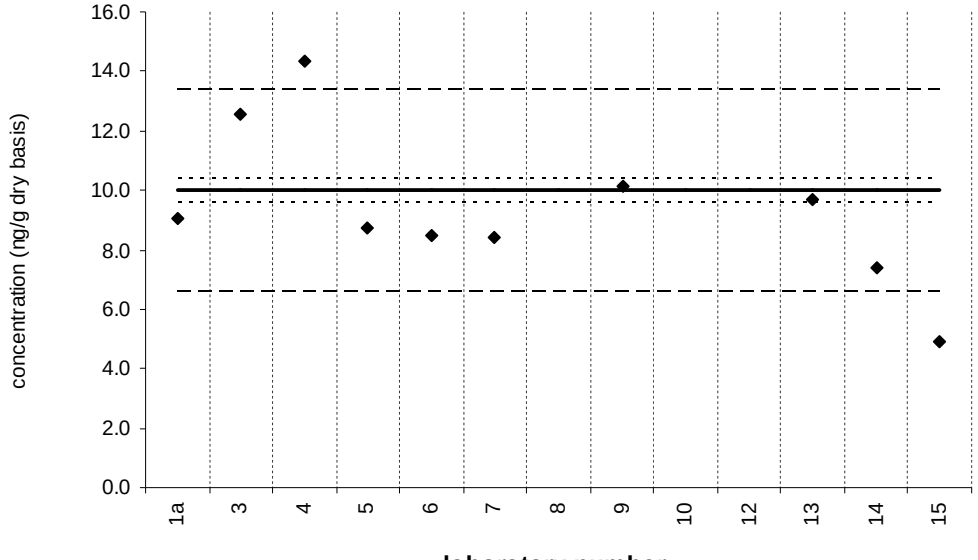
Assigned value = 22.0 ng/g s = 3.8 ng/g 95% CL = 2.9 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 118 **SRM 2977**

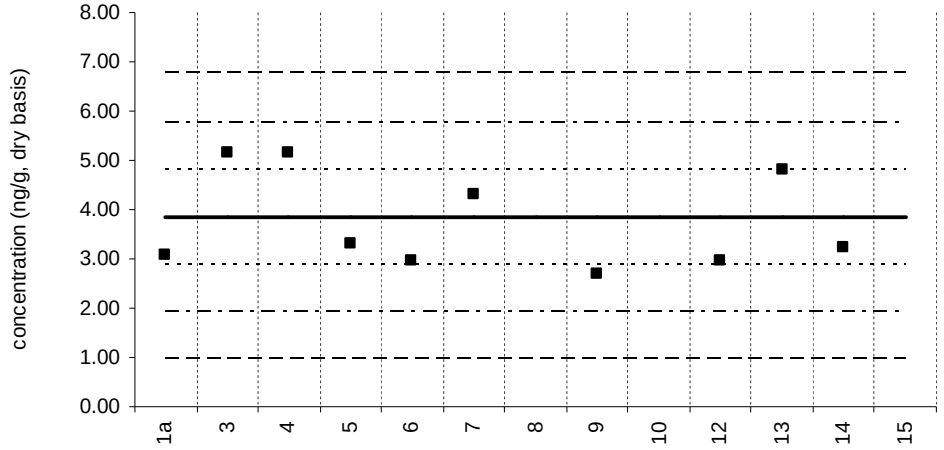
Certified Value = 10.0 ± 0.4 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 128 **Tissue XIII (QA07TIS13)**

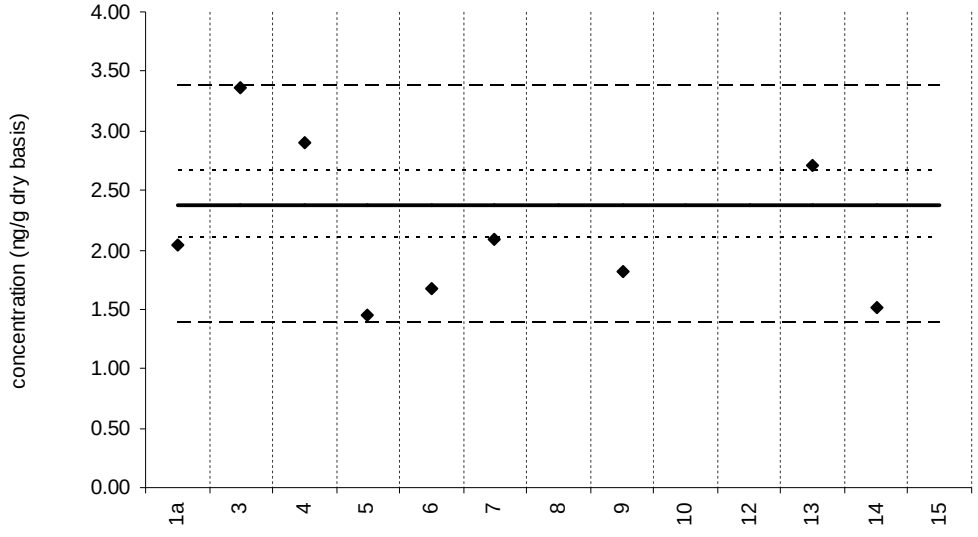
Assigned value = 3.86 ng/g s = 1.00 ng/g 95% CL = 0.77 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10



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)

PCB 128 **SRM 2977**

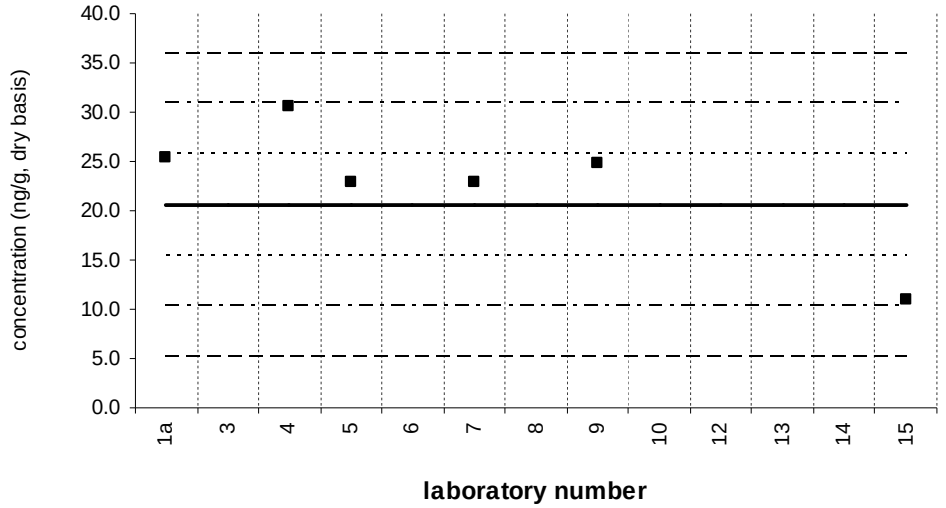
Certified Value = 2.38 ± 0.28 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9



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

PCB 138 **Tissue XIII (QA07TIS13)**

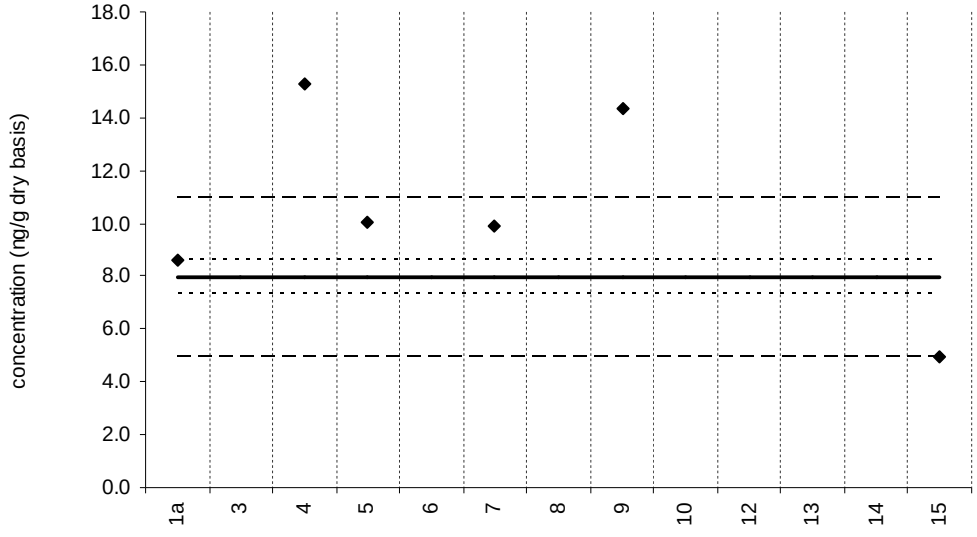
Assigned value = 20.6 ng/g s = 6.5 ng/g 95% CL = 10.3 ng/g (dry basis)
Reported Results: 6 Quantitative Results: 6



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)

PCB 138 **SRM 2977**

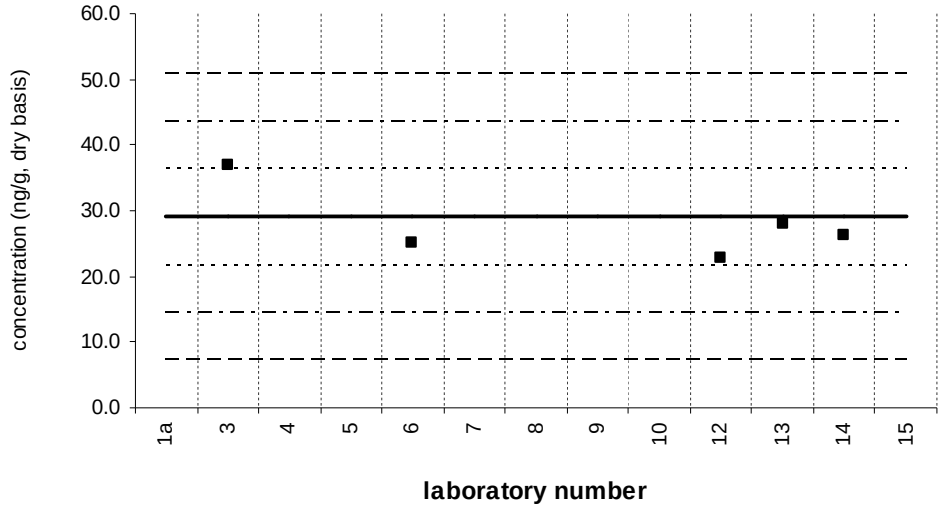
Certified Value = 7.94 ± 0.63 ng/g (dry basis)
Reported Results: 6 Quantitative Results: 6



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

PCB 138/163 **Tissue XIII (QA07TIS13)**

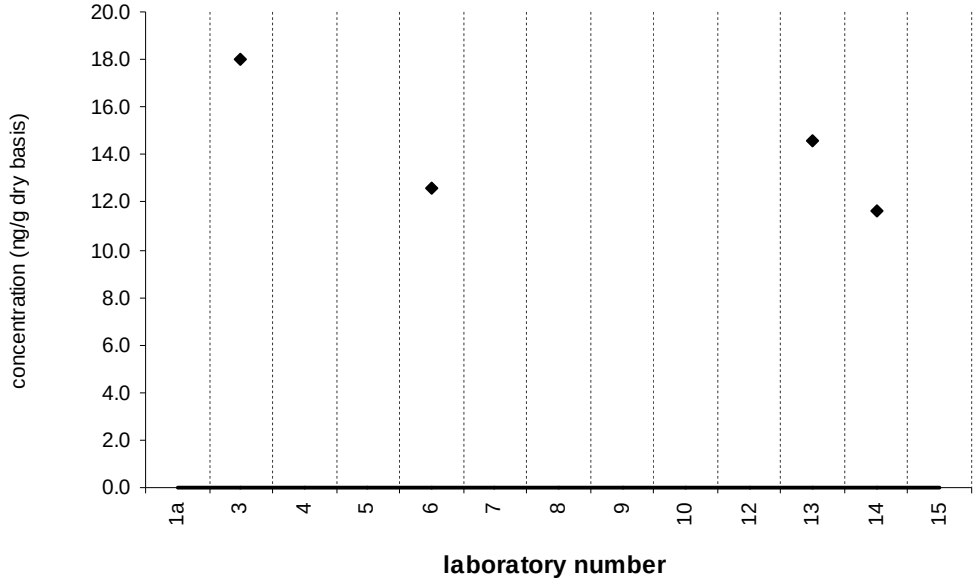
Assigned value = 29.0 ng/g s = 5.4 ng/g 95% CL = 8.5 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 5



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)

PCB 138/163 **SRM 2977**

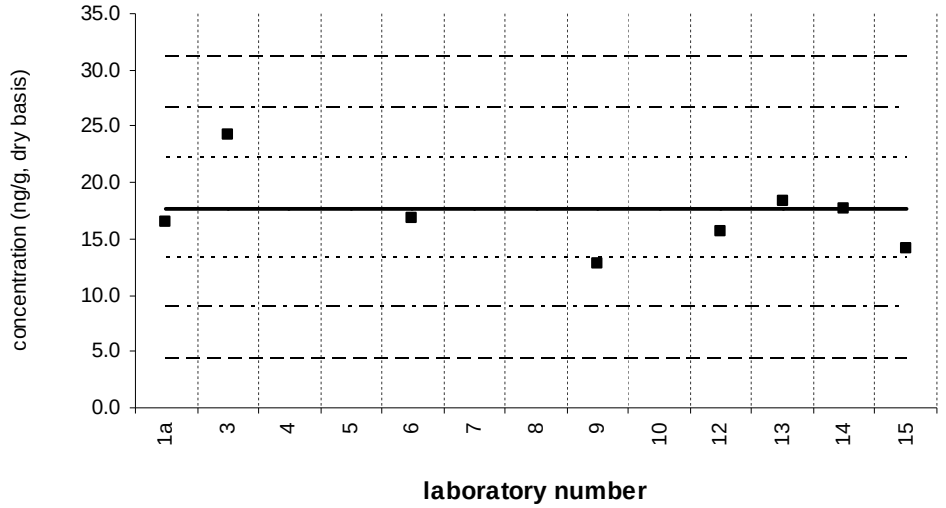
Target Value = no target ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4



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

PCB 149 **Tissue XIII (QA07TIS13)**

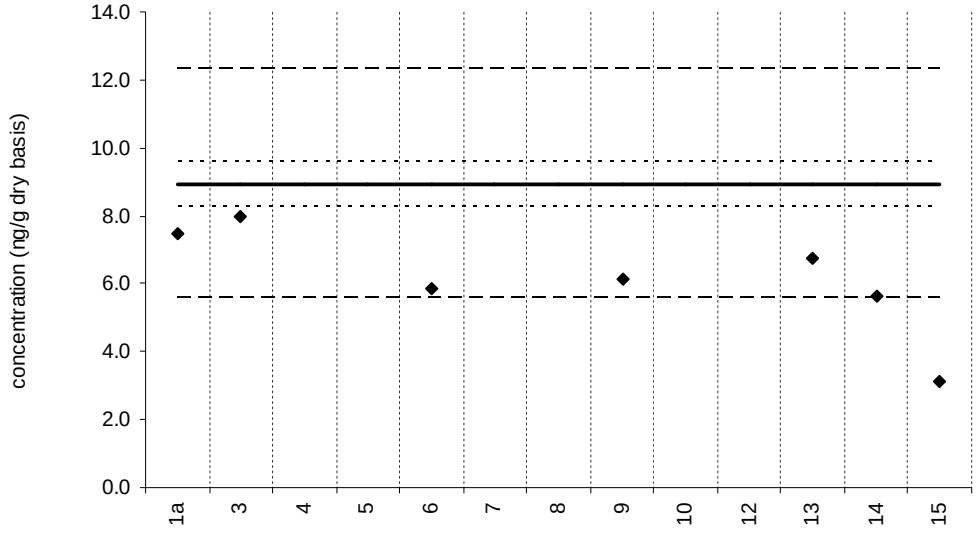
Assigned value = 17.7 ng/g s = 3.7 ng/g 95% CL = 3.9 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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)

PCB 149 **SRM 2977**

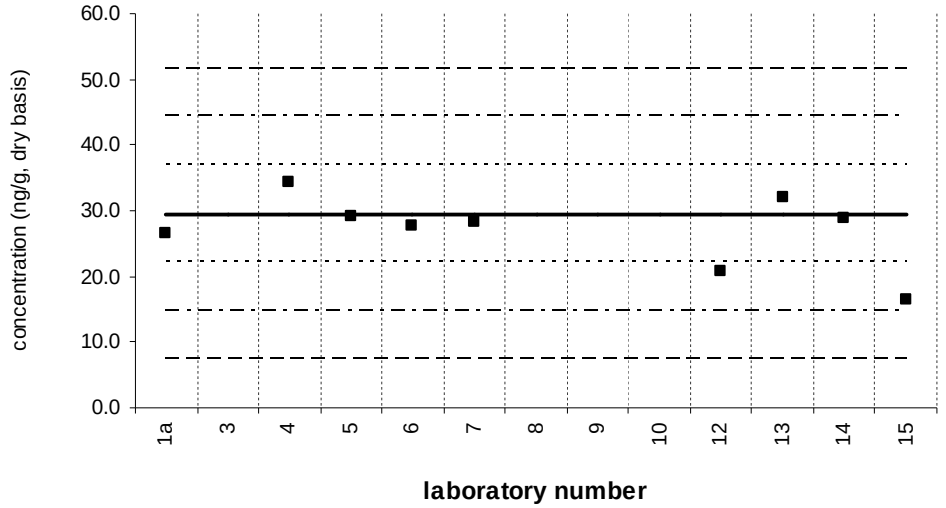
Certified Value = 8.95 ± 0.67 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7



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

PCB 153 **Tissue XIII (QA07TIS13)**

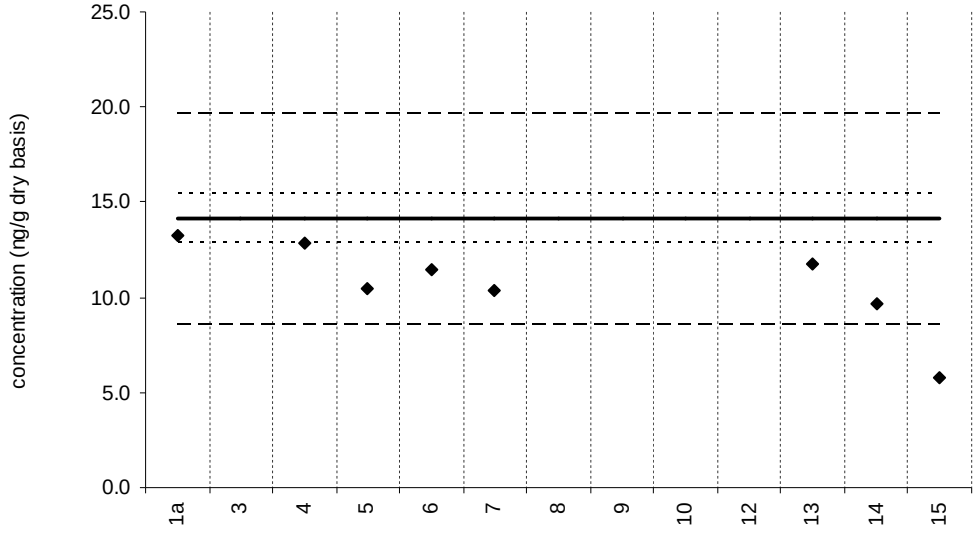
Assigned value = 29.6 ng/g s = 2.6 ng/g 95% CL = 2.5 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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)

PCB 153 **SRM 2977**

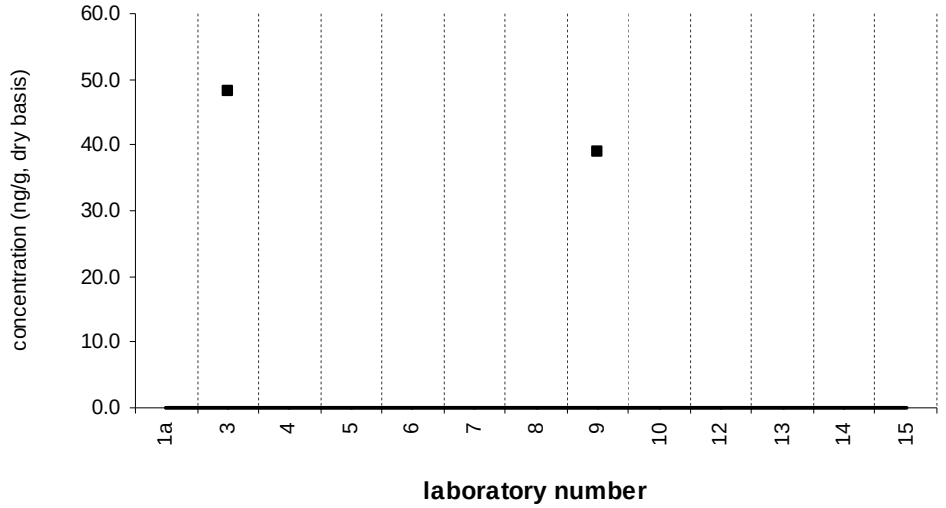
Certified Value = 14.1 ± 1.3 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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

PCB 153/132 **Tissue XIII (QA07TIS13)**

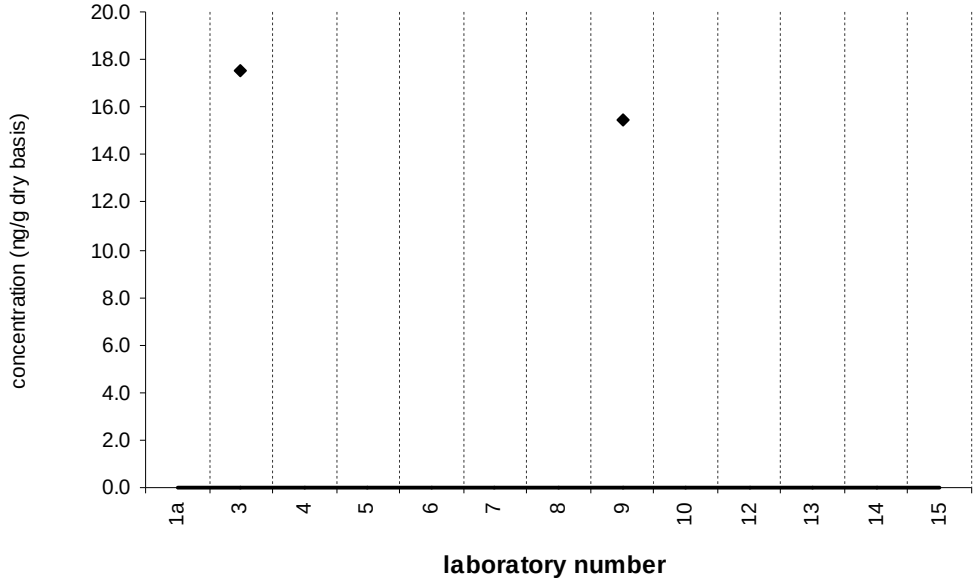
Assigned value = no target ng/g (dry basis)
Reported Results: 2 Quantitative Results: 2



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)

PCB 153/132 **SRM 2977**

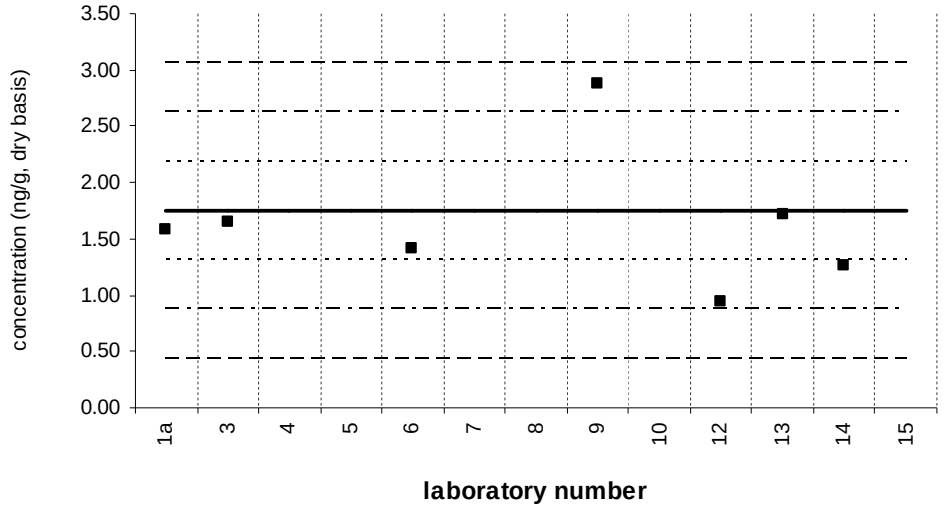
Target Value = no target ng/g (dry basis)
Reported Results: 2 Quantitative Results: 2



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

PCB 156 **Tissue XIII (QA07TIS13)**

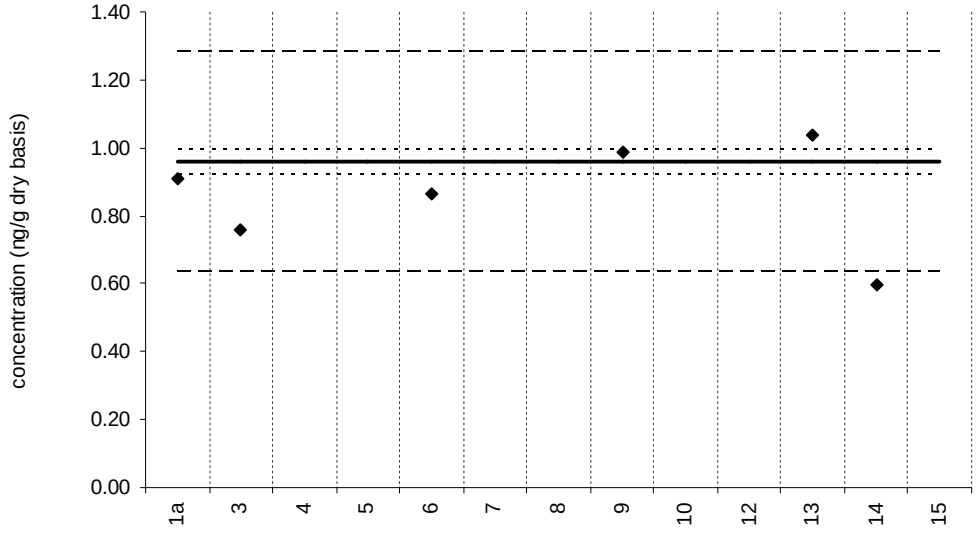
Assigned value = 1.75 ng/g s = 0.58 ng/g 95% CL = 0.60 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 7



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)

PCB 156 **SRM 2977**

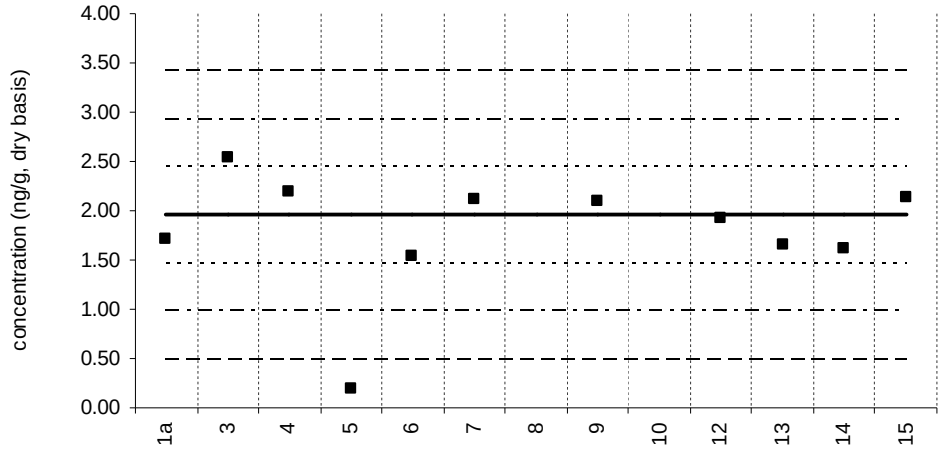
Certified Value = 0.959 ± 0.036 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 6



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

PCB 170 **Tissue XIII (QA07TIS13)**

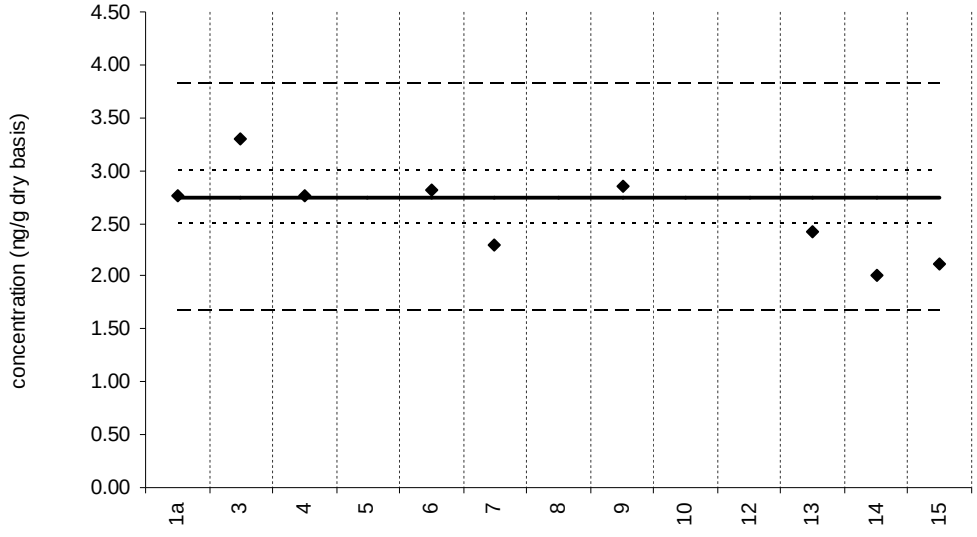
Assigned value = 1.95 ng/g s = 0.34 ng/g 95% CL = 0.26 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 170 **SRM 2977**

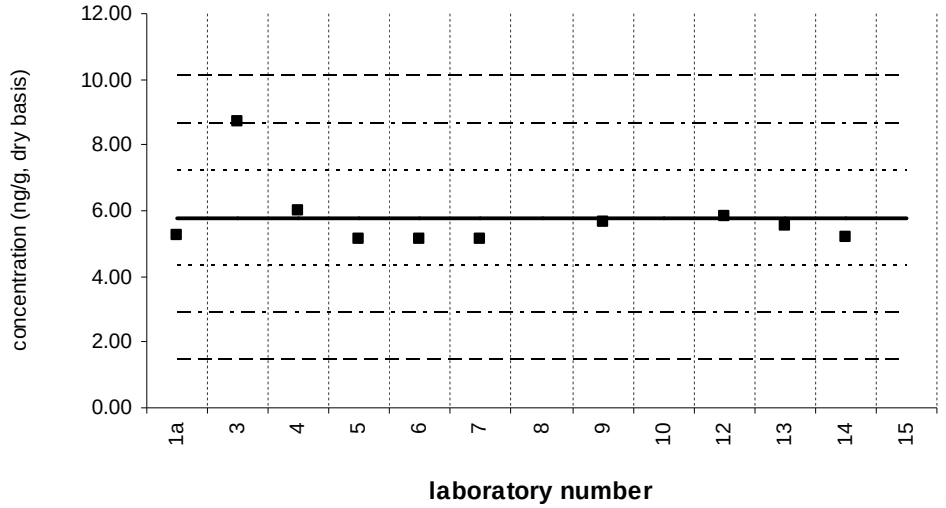
Certified Value = 2.74 ± 0.25 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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

PCB 180 **Tissue XIII (QA07TIS13)**

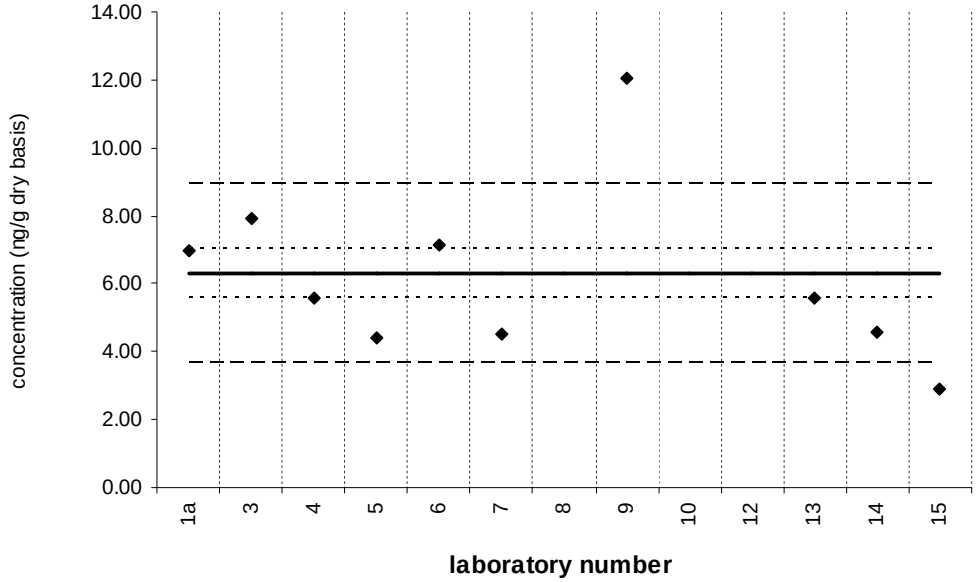
Assigned value = 5.76 ng/g s = 1.22 ng/g 95% CL = 1.02 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10



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)

PCB 180 **SRM 2977**

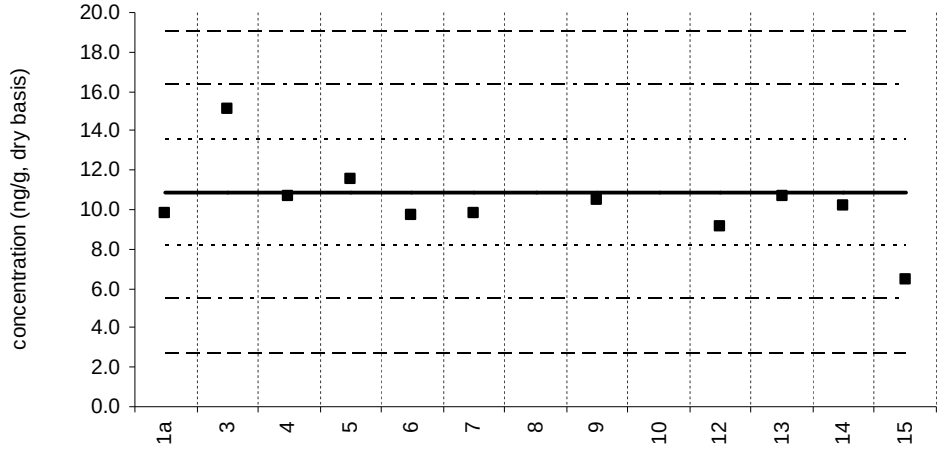
Certified Value = 6.32 ± 0.72 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 187 **Tissue XIII (QA07TIS13)**

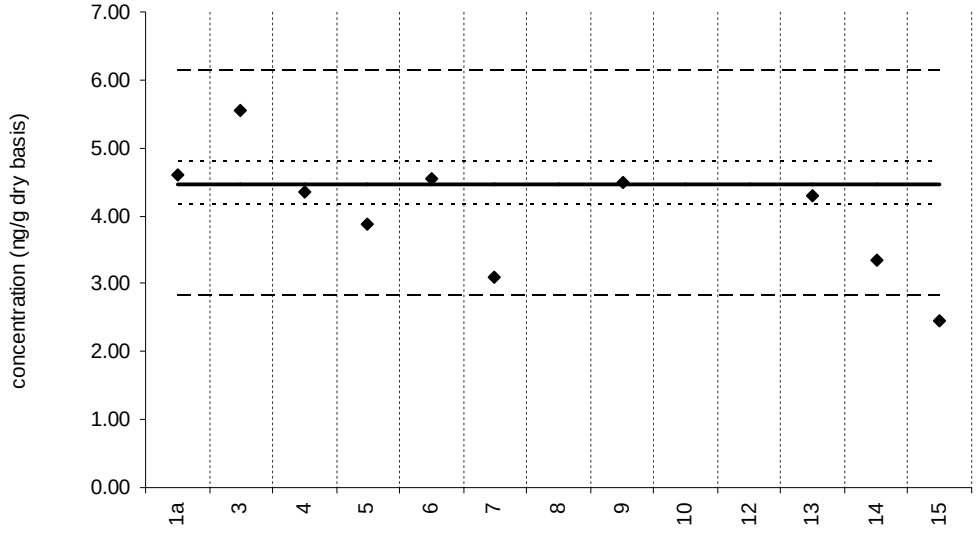
Assigned value = 10.9 ng/g s = 1.7 ng/g 95% CL = 1.3 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 187 **SRM 2977**

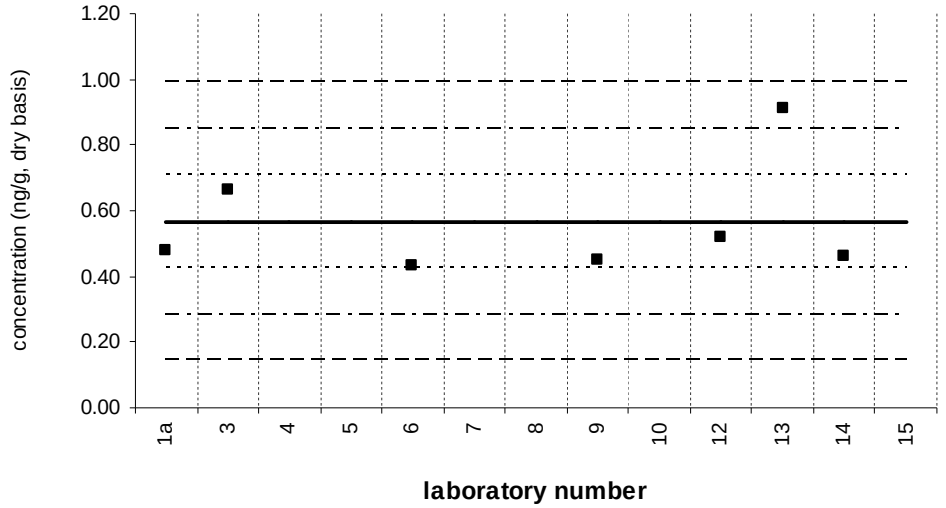
Certified Value = 4.47 ± 0.32 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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

PCB 194 **Tissue XIII (QA07TIS13)**

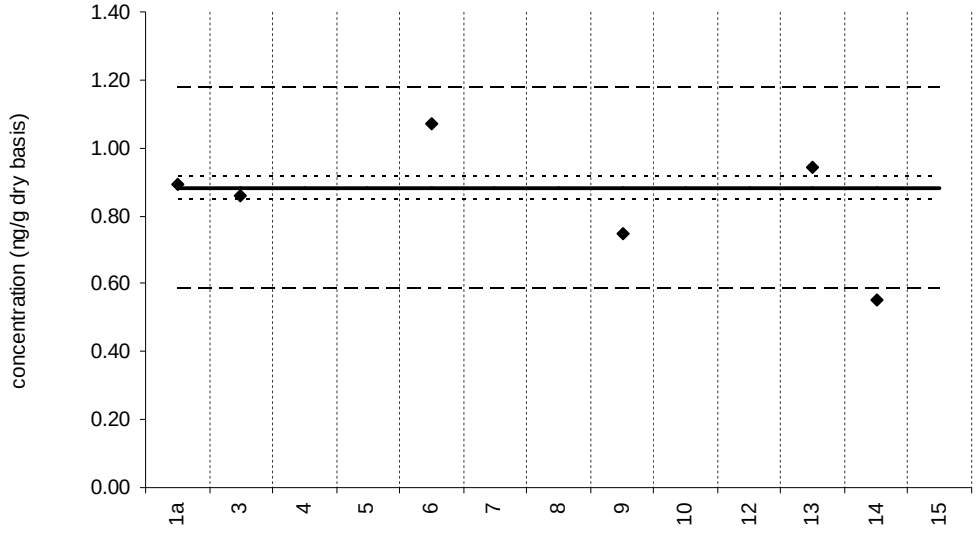
Assigned value = 0.567 ng/g s = 0.189 ng/g 95% CL = 0.199 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 7



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)

PCB 194 **SRM 2977**

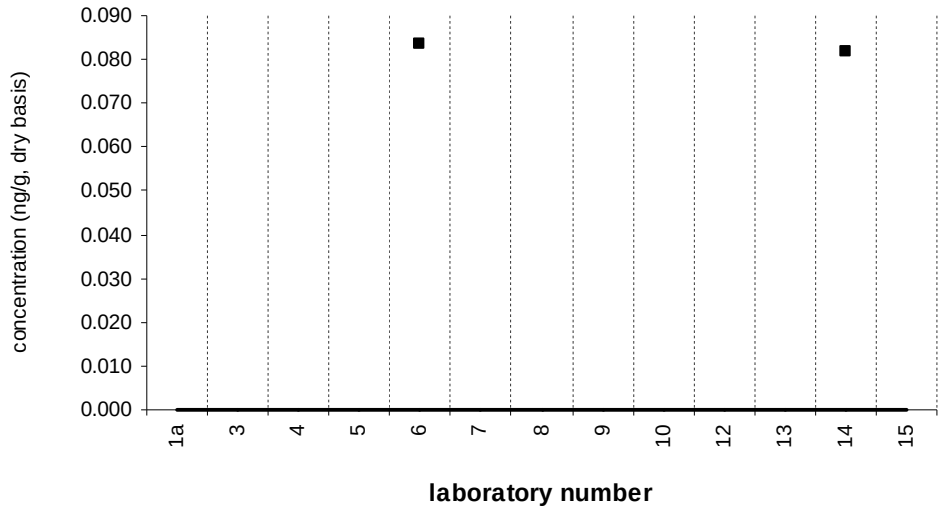
Certified Value = 0.881 ± 0.032 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 6



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

PCB 195 **Tissue XIII (QA07TIS13)**

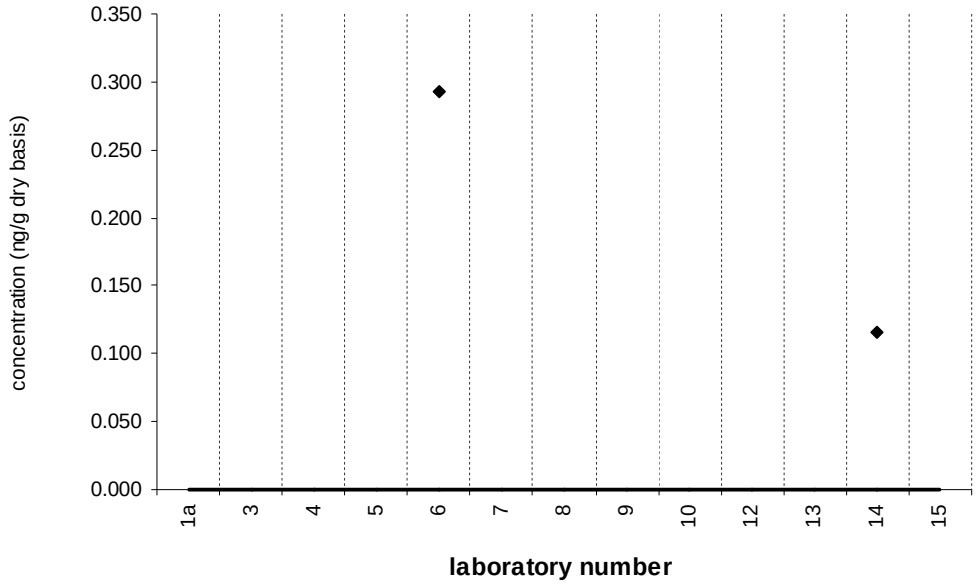
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 2



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)

PCB 195 **SRM 2977**

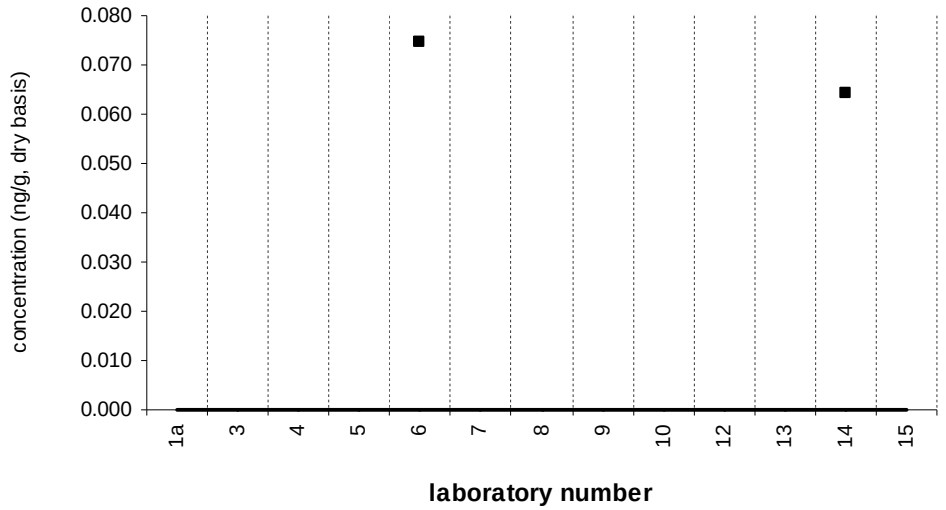
Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 2



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

PCB 206 **Tissue XIII (QA07TIS13)**

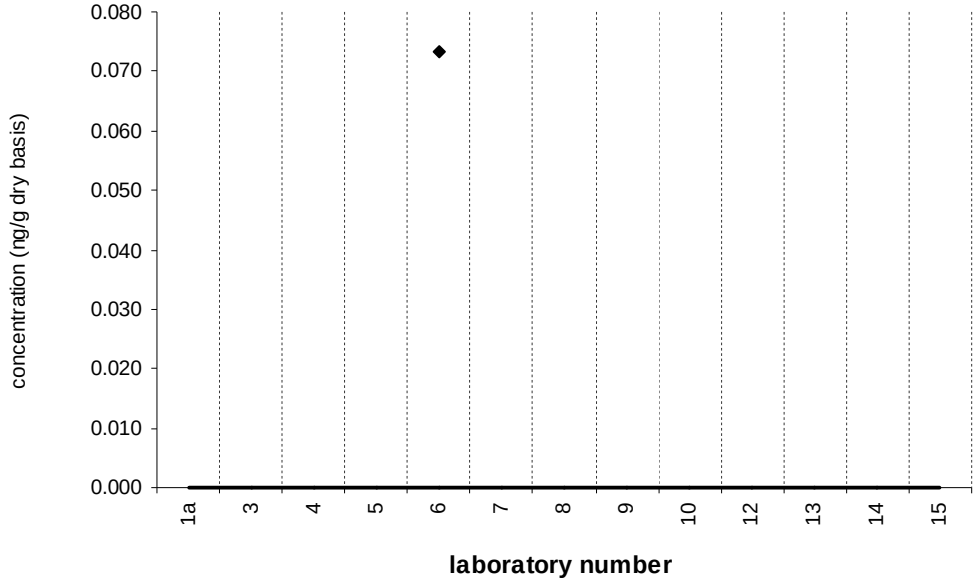
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 2



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)

PCB 206 **SRM 2977**

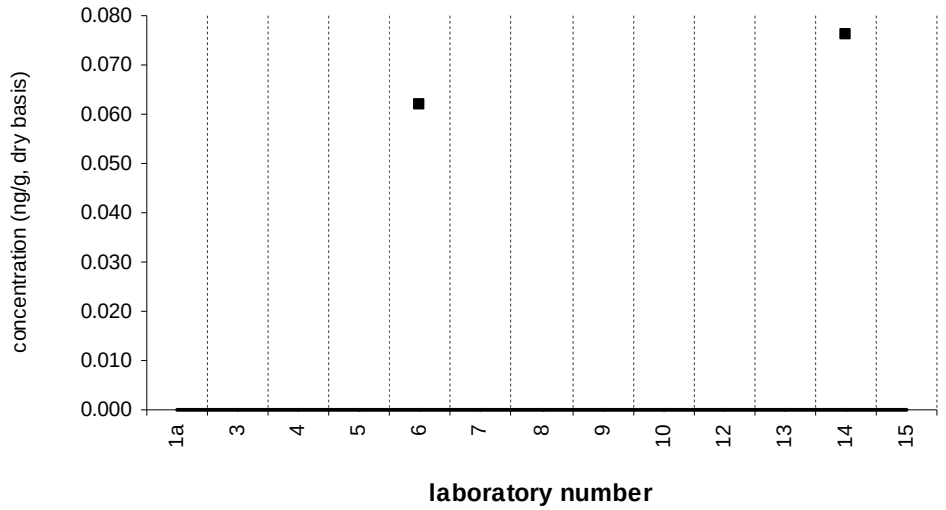
Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 1



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

PCB 209 **Tissue XIII (QA07TIS13)**

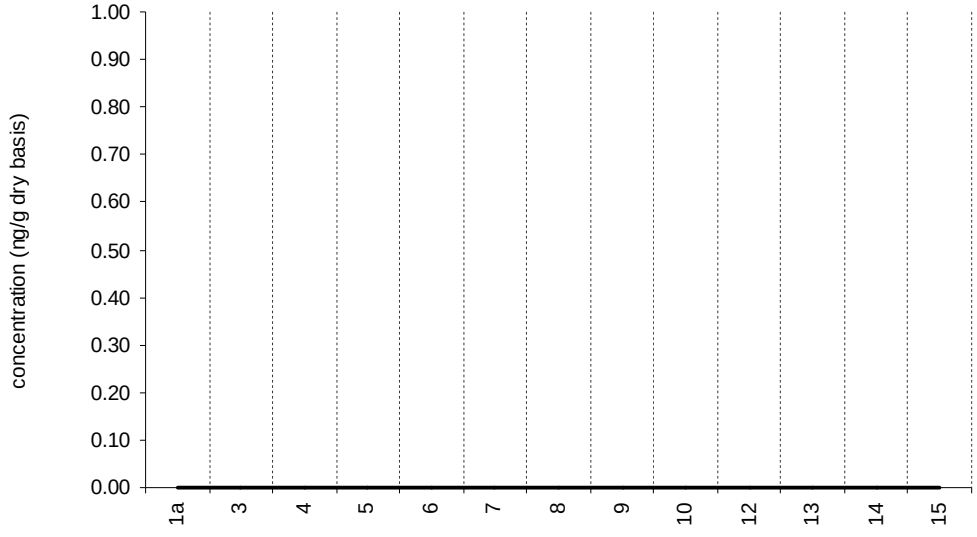
Assigned value = no target ng/g (dry basis)
Reported Results: 11 Quantitative Results: 2



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)

PCB 209 **SRM 2977**

Target Value = no target ng/g (dry basis)
Reported Results: 10 Quantitative Results: 0

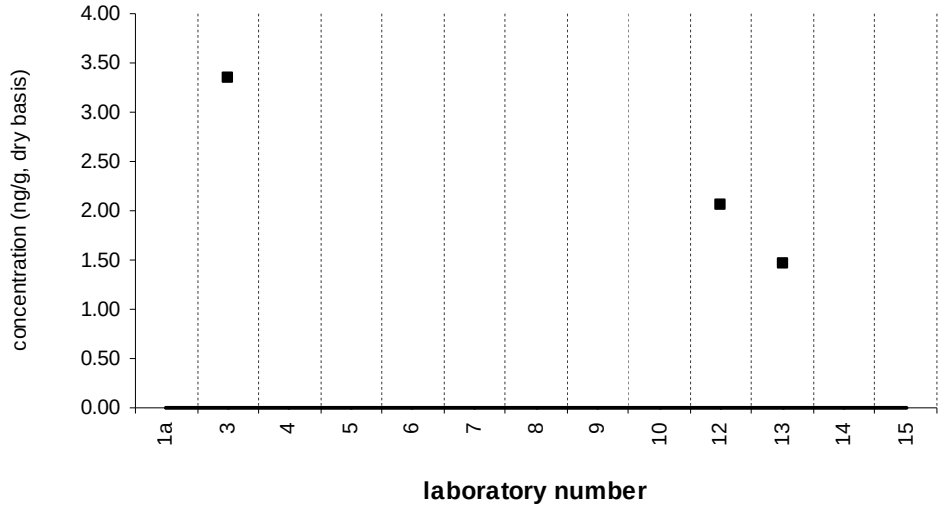


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 28

Tissue XIII (QA07TIS13)

Assigned value = no target ng/g (dry basis)
Reported Results: 4 Quantitative Results: 3

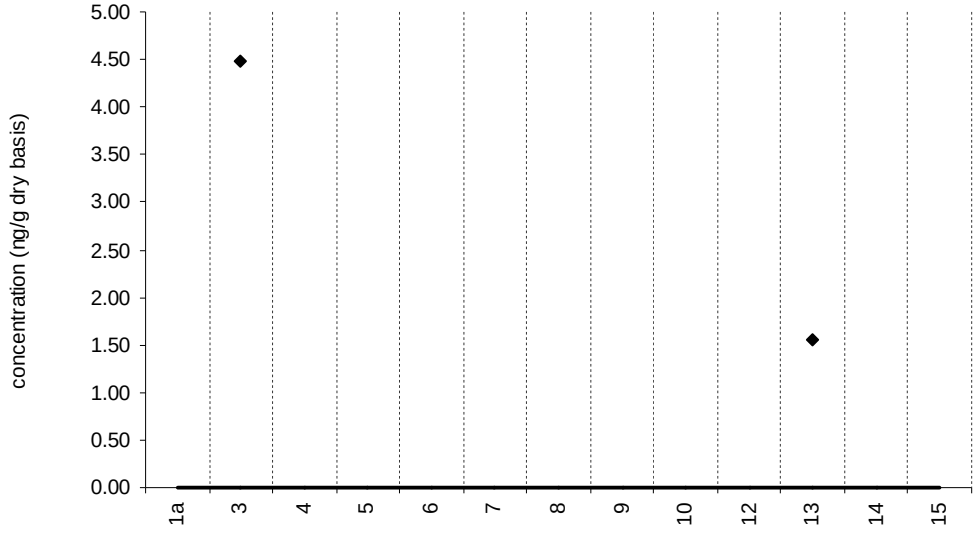


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 28

SRM 2977

Target Value = no target ng/g (dry basis)
Reported Results: 3 Quantitative Results: 2

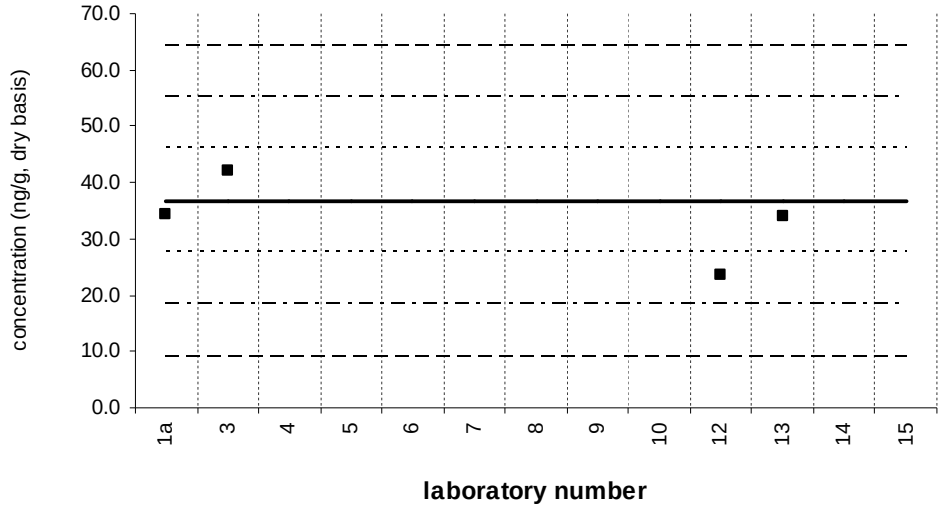


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 47

Tissue XIII (QA07TIS13)

Assigned value = 36.8 ng/g s = 4.5 ng/g 95% CL = 11.2 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4

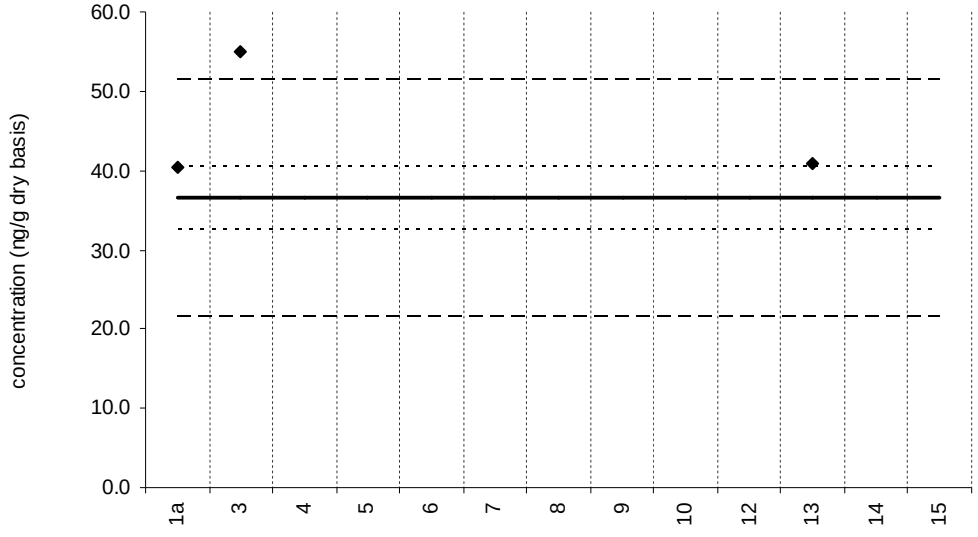


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 47

SRM 2977

Certified Value = 36.5 ± 4.0 ng/g (dry basis)
Reported Results: 3 Quantitative Results: 3

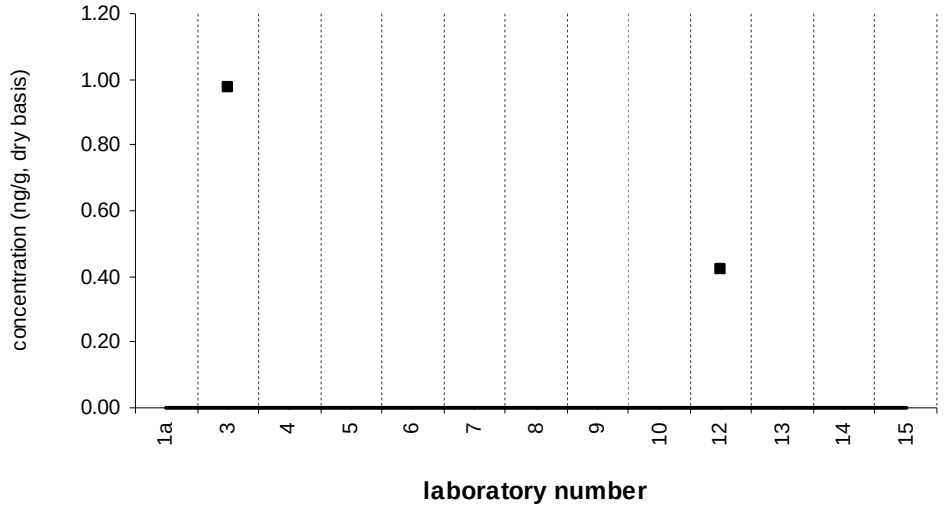


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 66

Tissue XIII (QA07TIS13)

Assigned value = no target ng/g (dry basis)
Reported Results: 4 Quantitative Results: 2

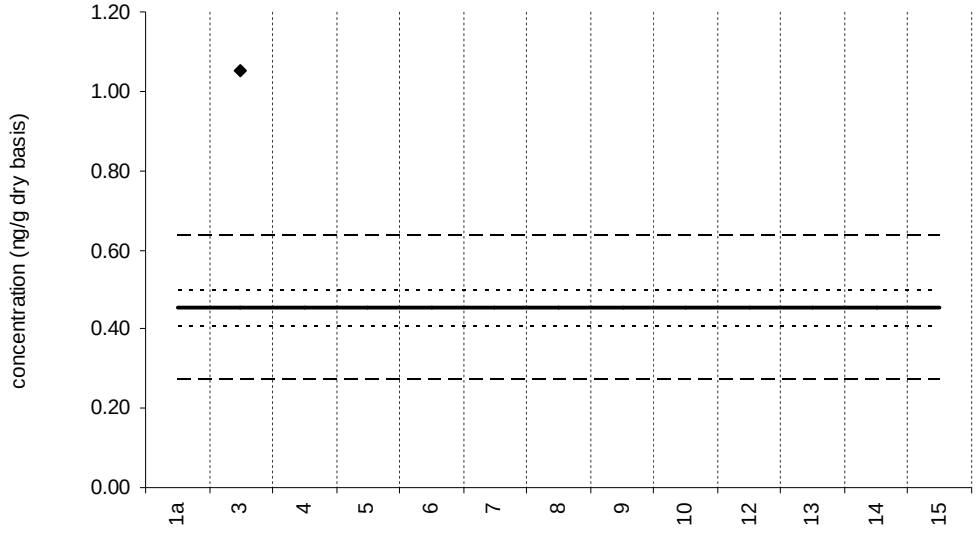


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 66

SRM 2977

Certified Value = 0.453 ± 0.046 ng/g (dry basis)
Reported Results: 3 Quantitative Results: 1

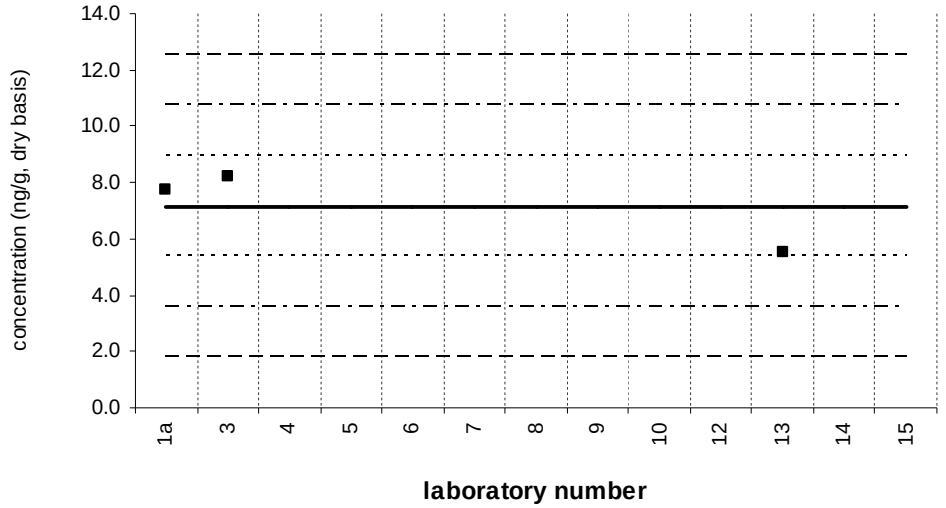


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 99

Tissue XIII (QA07TIS13)

Assigned value = 7.16 ng/g s = 1.42 ng/g 95% CL = 3.53 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 3

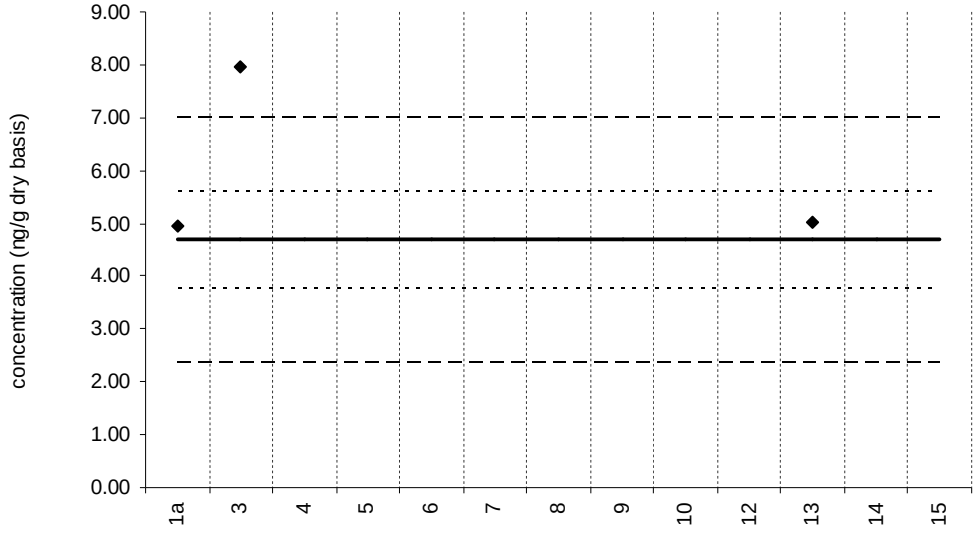


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 99

SRM 2977

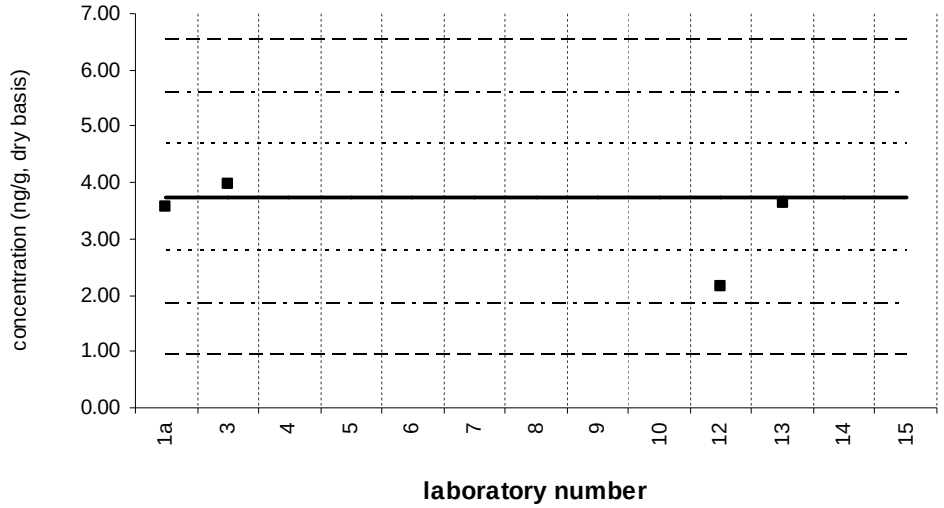
Reference Value = 4.68 ± 0.92 ng/g (dry basis)
Reported Results: 3 Quantitative Results: 3



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

BDE 100 **Tissue XIII (QA07TIS13)**

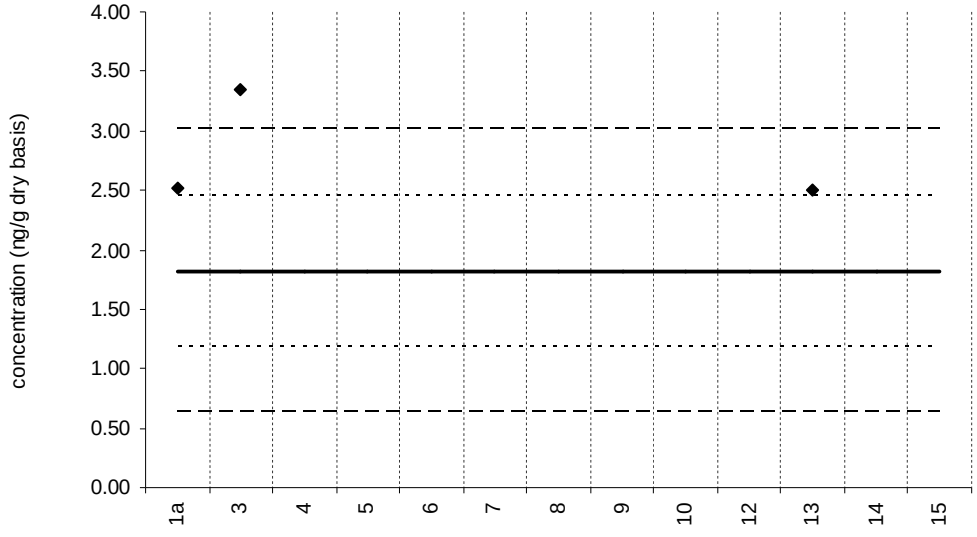
Assigned value = 3.73 ng/g s = 0.21 ng/g 95% CL = 0.51 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4



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)

BDE 100 **SRM 2977**

Reference Value = 1.82 ± 0.64 ng/g (dry basis)
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

Appendix H: Charts of Marine Sediment XIV and SRM 1944 Results by Analyte

See Tables 10 through 17 for results reported as <*number*, detection limit, etc.

Charts for analytes with few reported numerical results are not included in this appendix.

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

For Marine Sediment XIV plots:

Solid line: exercise assigned value

Dotted line: $z = \pm 1$, i. e., 25 % from assigned value

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

Dashed line: $z = \pm 3$, i. e., 75 % from assigned value

For SRM 1944 plots:

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

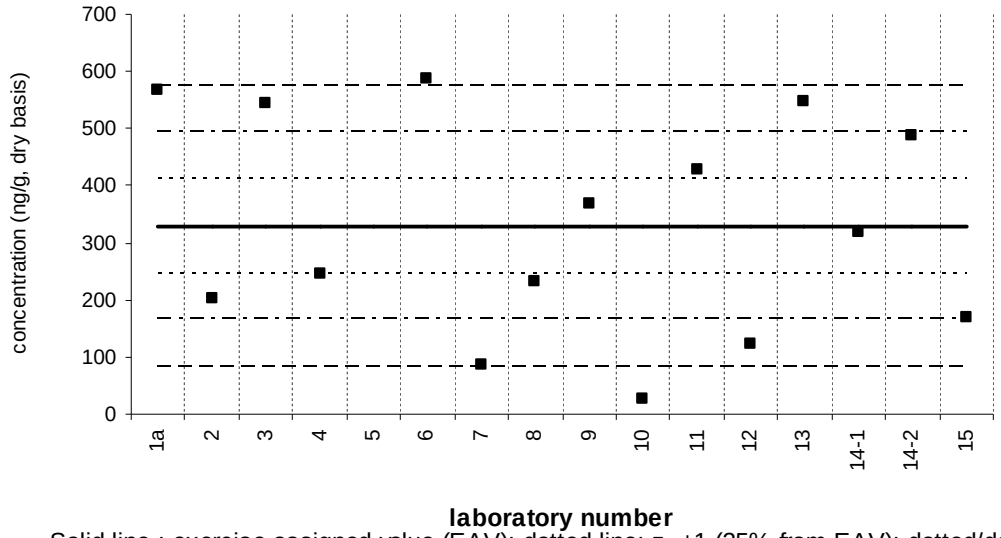
Dotted line: 95 % confidence interval (CI)

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

naphthalene **Sediment XIV (QA07SED14)**

Assigned value = 329 ng/g s = 190 ng/g 95% CL = 105 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 15

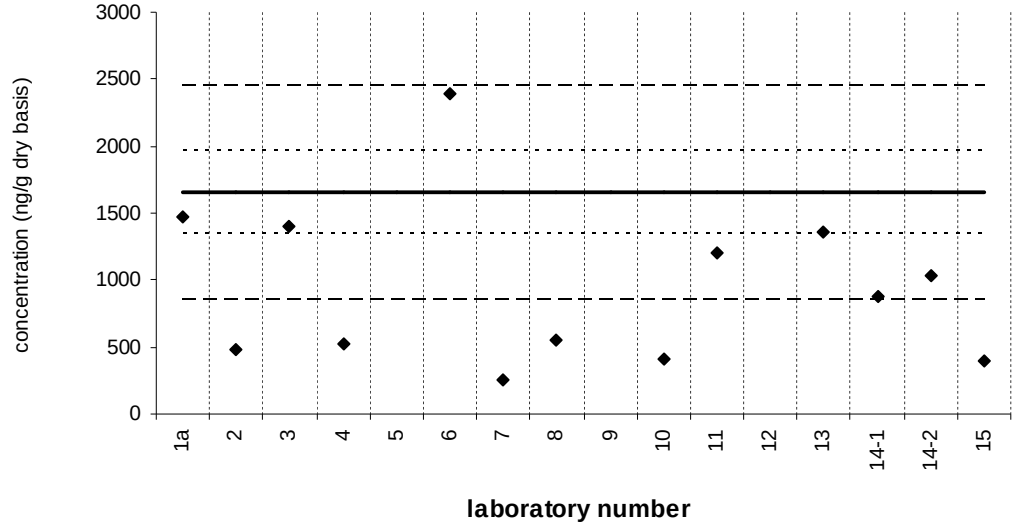


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

naphthalene **SRM 1944**

Certified Value = 1650 ± 310 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 13

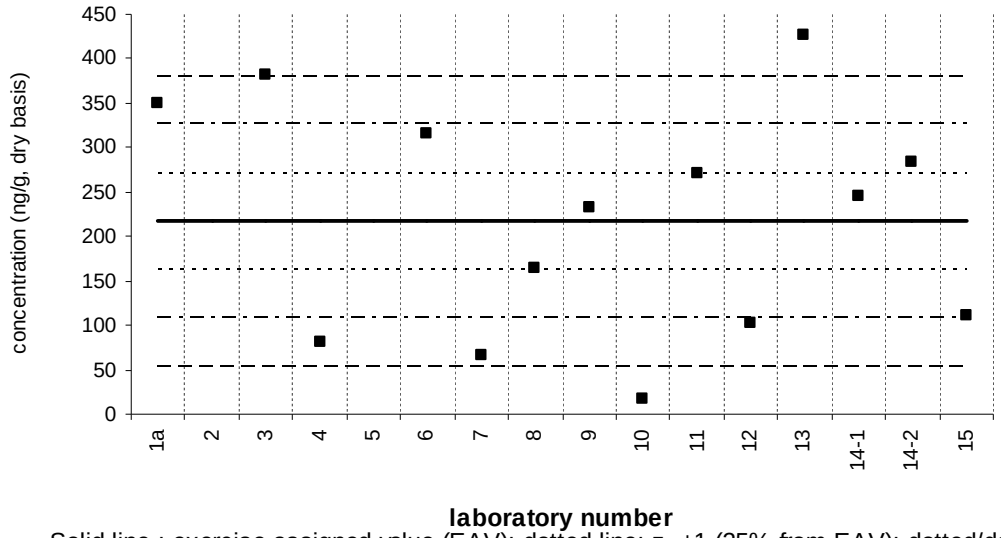


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2-methylnaphthalene **Sediment XIV (QA07SED14)**

Assigned value = 217 ng/g s = 129 ng/g 95% CL = 74 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 14

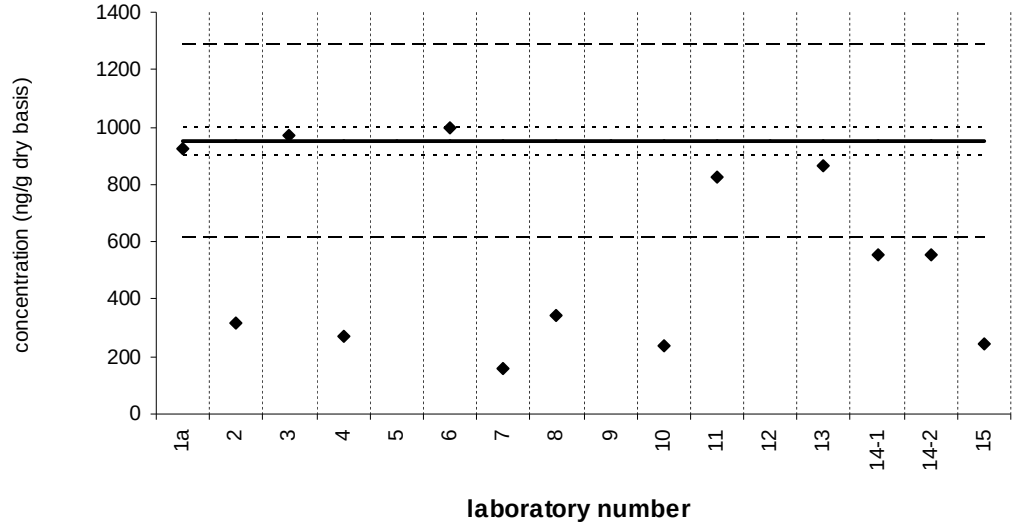


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2-methylnaphthalene **SRM 1944**

Reference Value = 950 ± 50 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 13

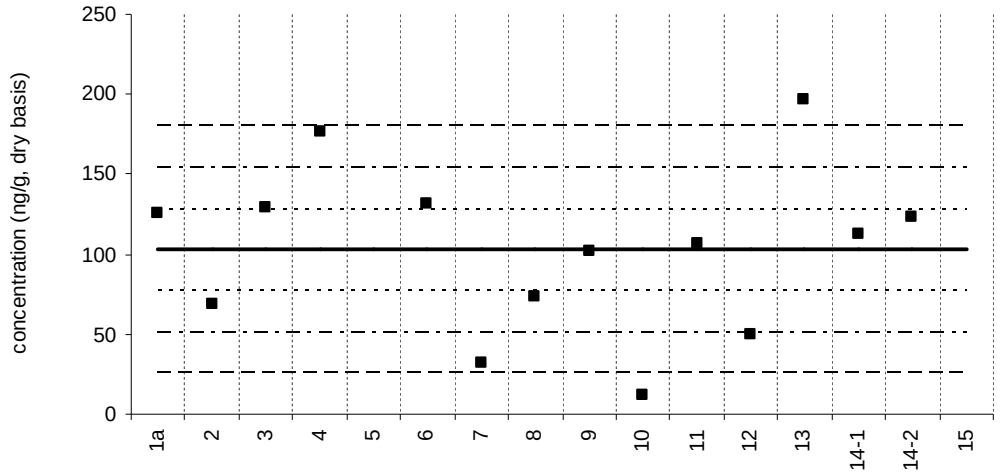


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylnaphthalene **Sediment XIV (QA07SED14)**

Assigned value = 103 ng/g s = 52 ng/g 95% CL = 30 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 14

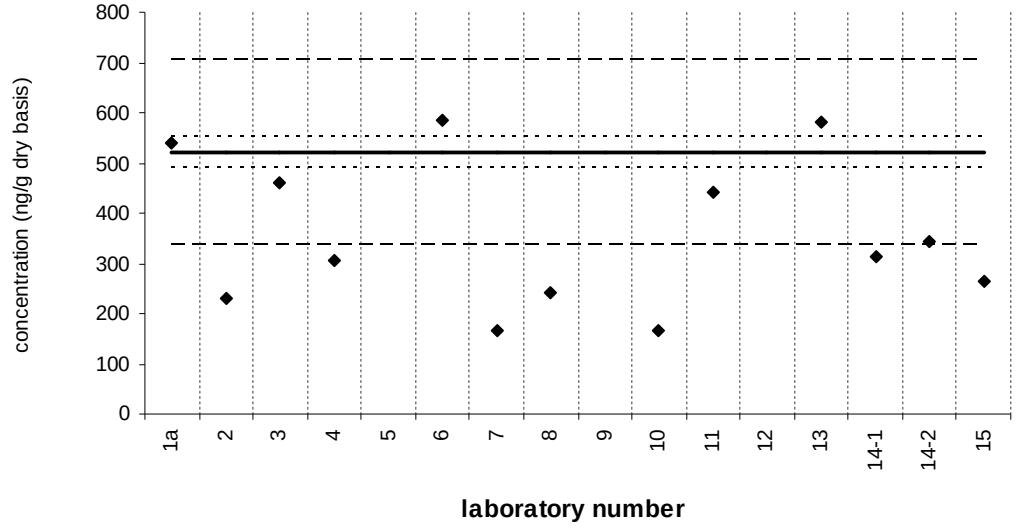


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylnaphthalene **SRM 1944**

Reference Value = 520 ± 30 ng/g (dry basis)

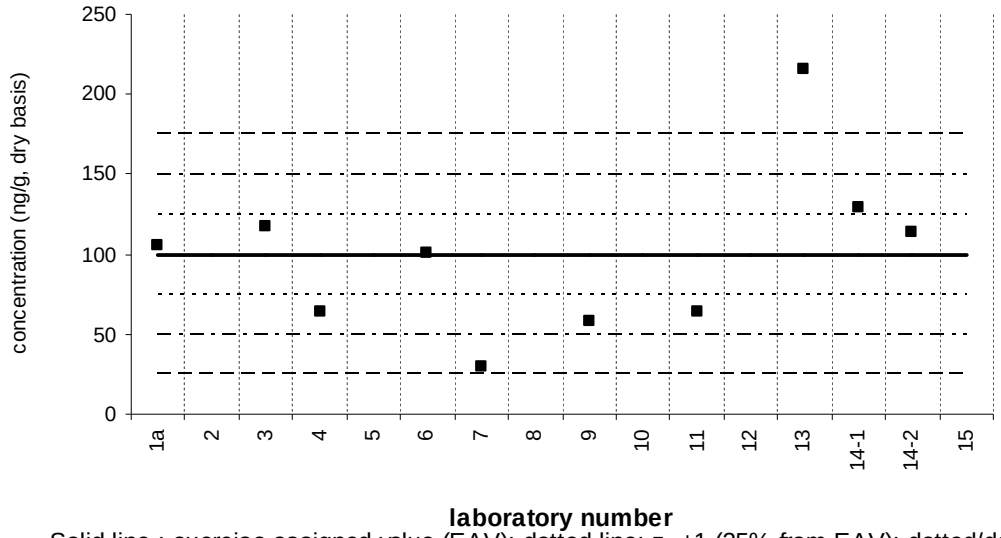
Reported Results: 13 Quantitative Results: 13



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

biphenyl **Sediment XIV (QA07SED14)**

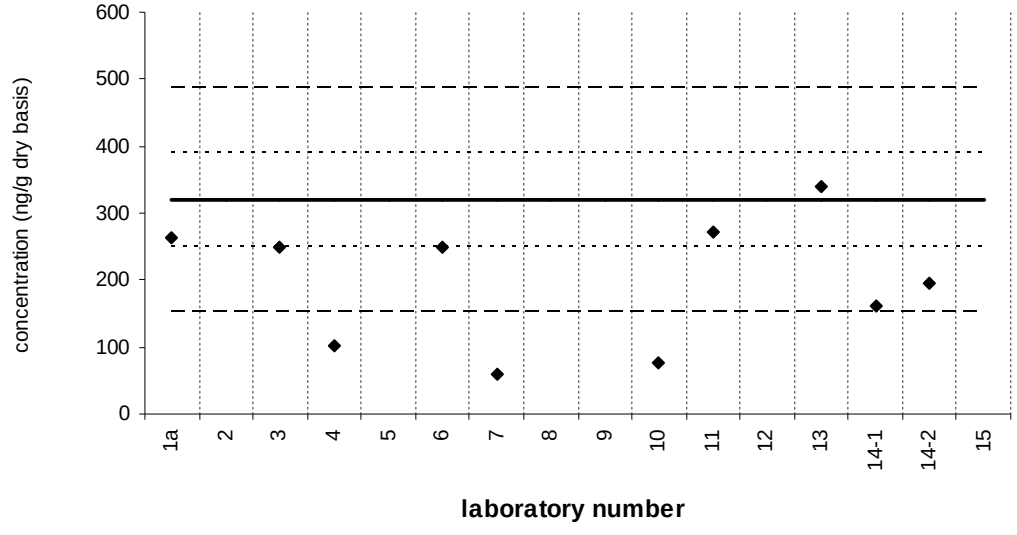
Assigned value = 100 ng/g s = 52 ng/g 95% CL = 37 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 10



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 1944**

Reference Value = 320 ± 70 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10

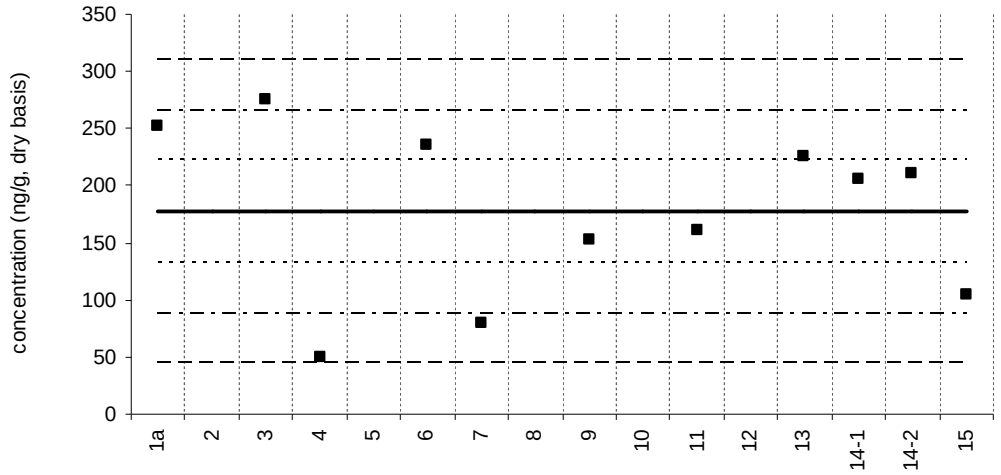


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,6-dimethylnaphthalene **Sediment XIV (QA07SED14)**

Assigned value = 177 ng/g s = 74 ng/g 95% CL = 50 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

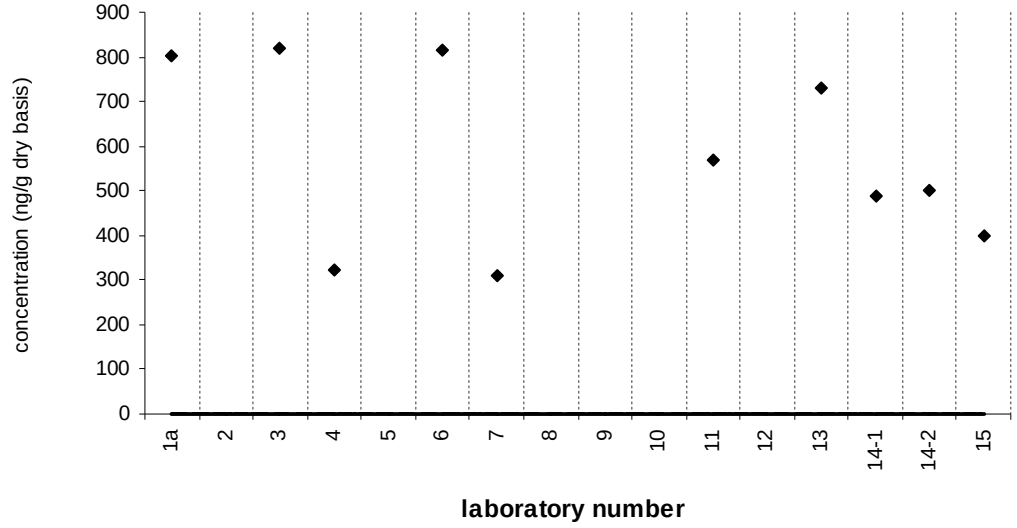


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,6-dimethylnaphthalene **SRM 1944**

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

Reported Results: 10 Quantitative Results: 10

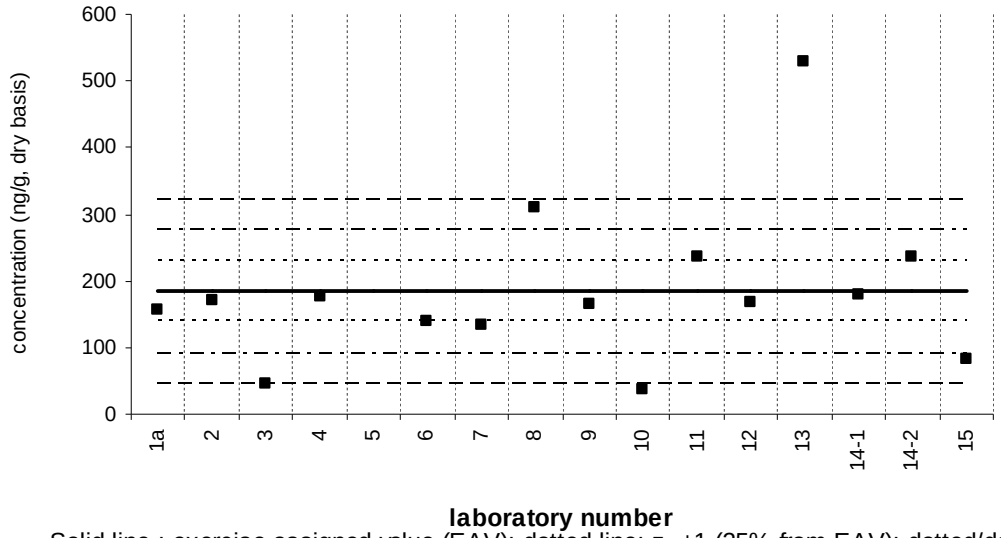


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthylene **Sediment XIV (QA07SED14)**

Assigned value = 184 ng/g s = 119 ng/g 95% CL = 66 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 15

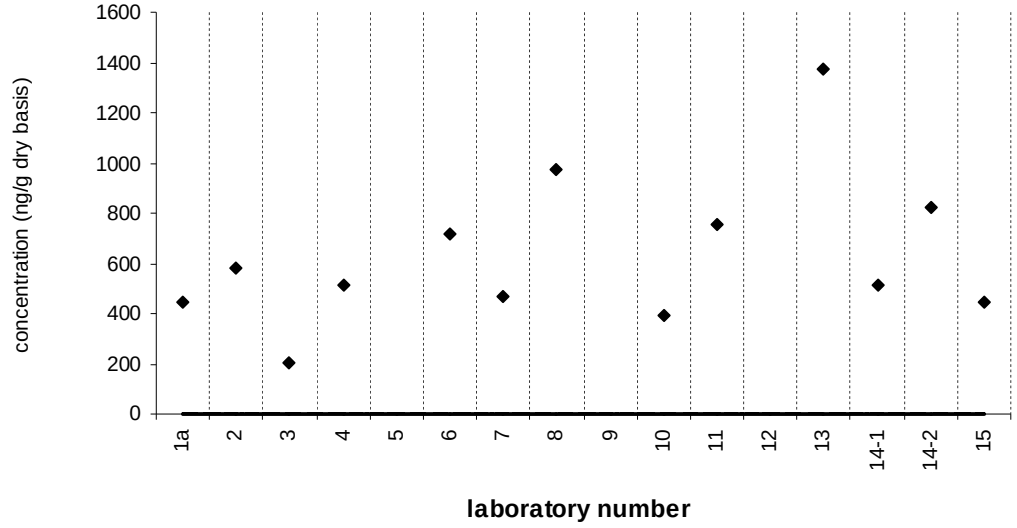


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthylene **SRM 1944**

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

Reported Results: 13 Quantitative Results: 13

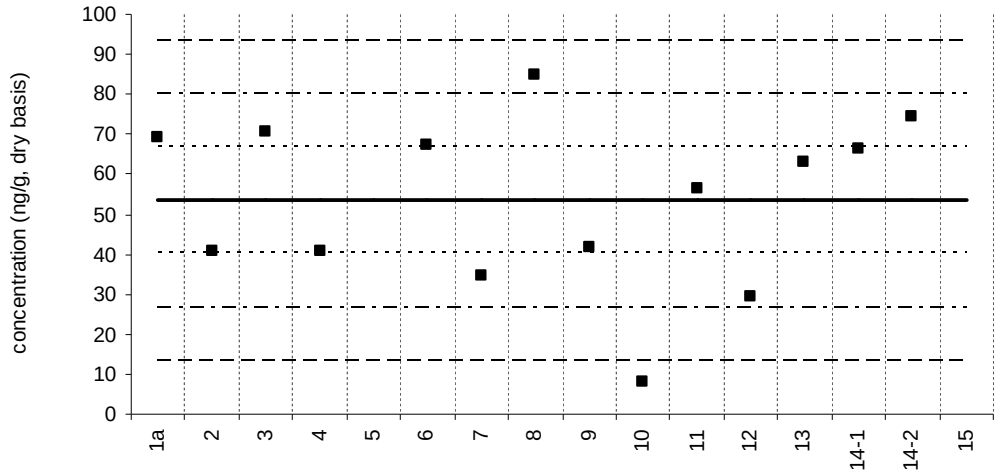


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

acenaphthene **Sediment XIV (QA07SED14)**

Assigned value = 53.4 ng/g s = 21.3 ng/g 95% CL = 12.3 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 14

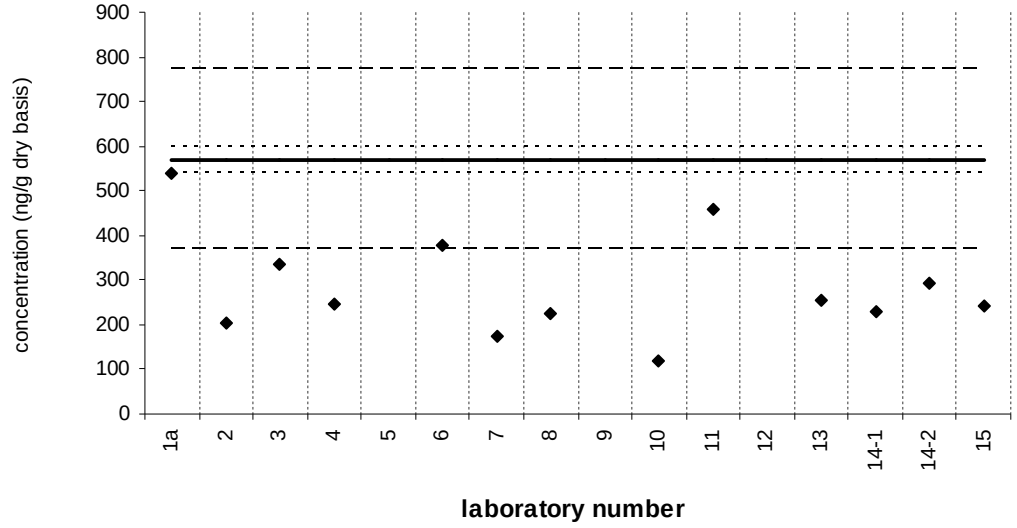


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

acenaphthene **SRM 1944**

Reference Value = 570 ± 30 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 13

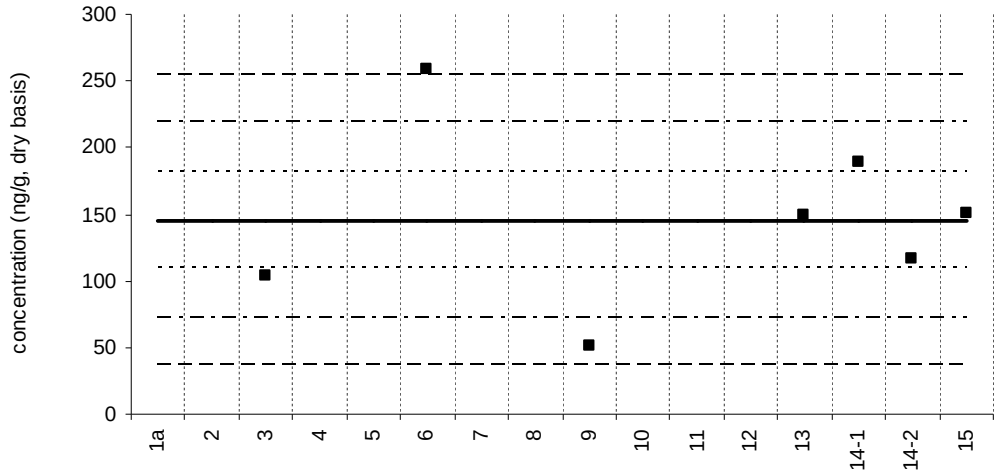


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1,6,7-trimethylnaphthalene **Sediment XIV (QA07SED14)**

Assigned value = 146 ng/g s = 66 ng/g 95% CL = 61 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 7

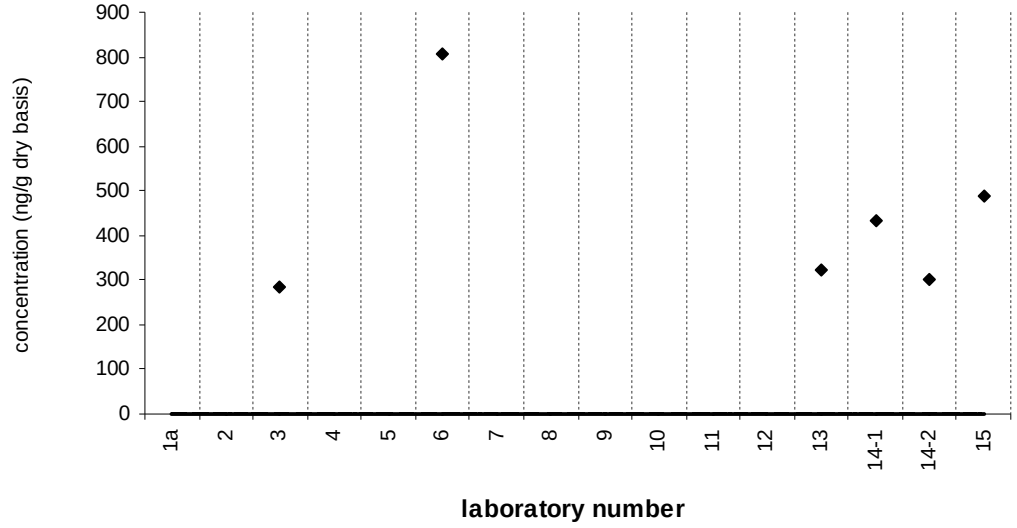


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1,6,7-trimethylnaphthalene **SRM 1944**

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

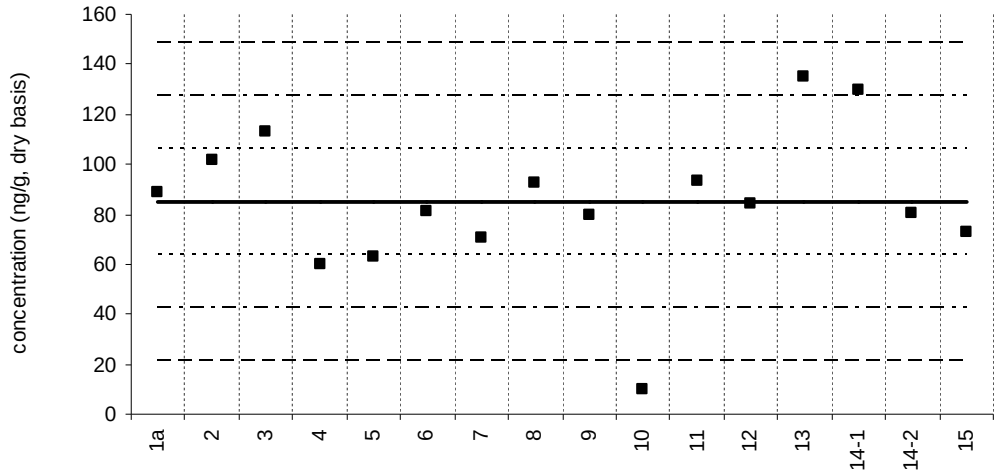
Reported Results: 6 Quantitative Results: 6



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

fluorene **Sediment XIV (QA07SED14)**

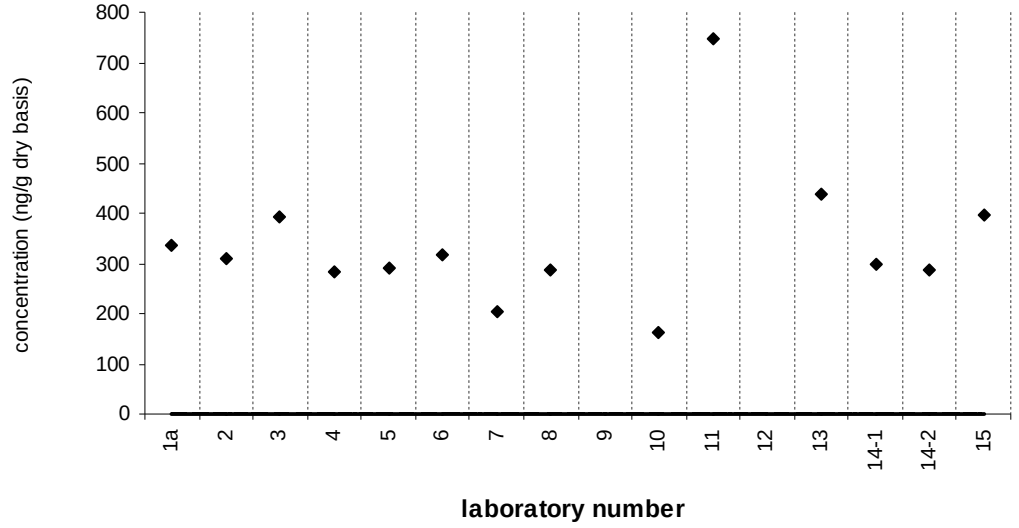
Assigned value = 85.1 ng/g s = 23.8 ng/g 95% CL = 14.4 ng/g (dry basis)
Reported Results: 16 Quantitative Results: 16



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 1944**

Target Value = no target ng/g (dry basis)
Reported Results: 14 Quantitative Results: 14

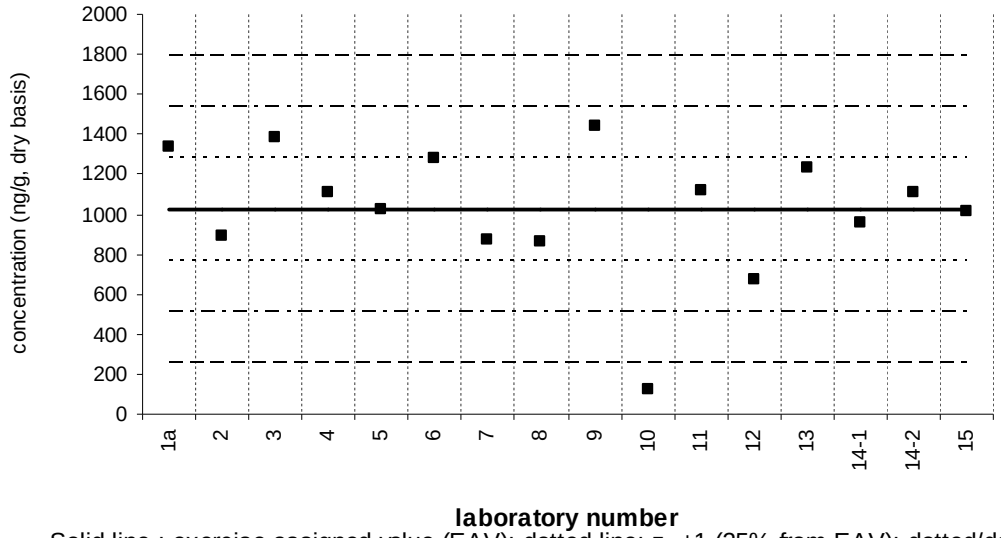


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

phenanthrene **Sediment XIV (QA07SED14)**

Assigned value = 1022 ng/g s = 177 ng/g 95% CL = 107 ng/g (dry basis)

Reported Results: 16 Quantitative Results: 16

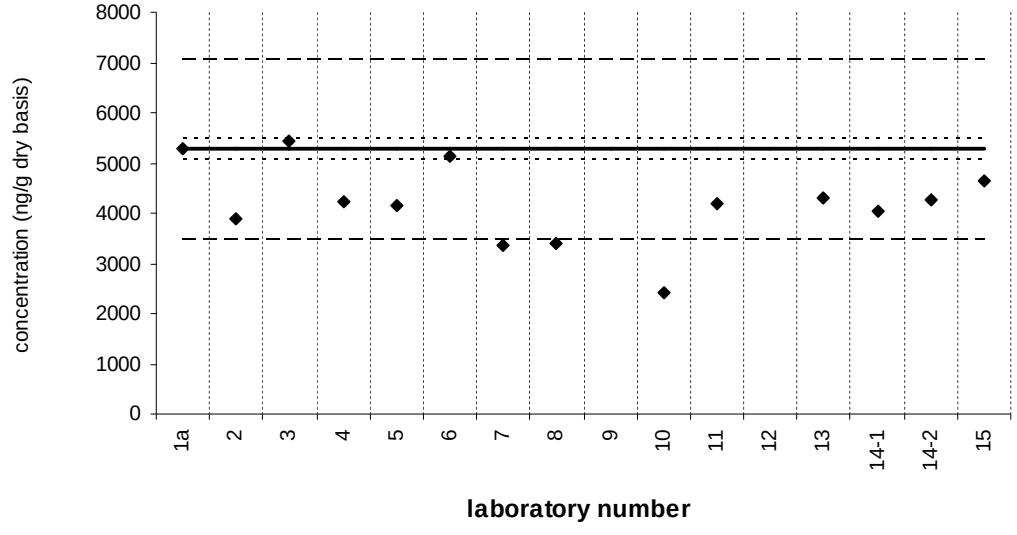


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

phenanthrene **SRM 1944**

Certified Value = 5270 ± 220 ng/g (dry basis)

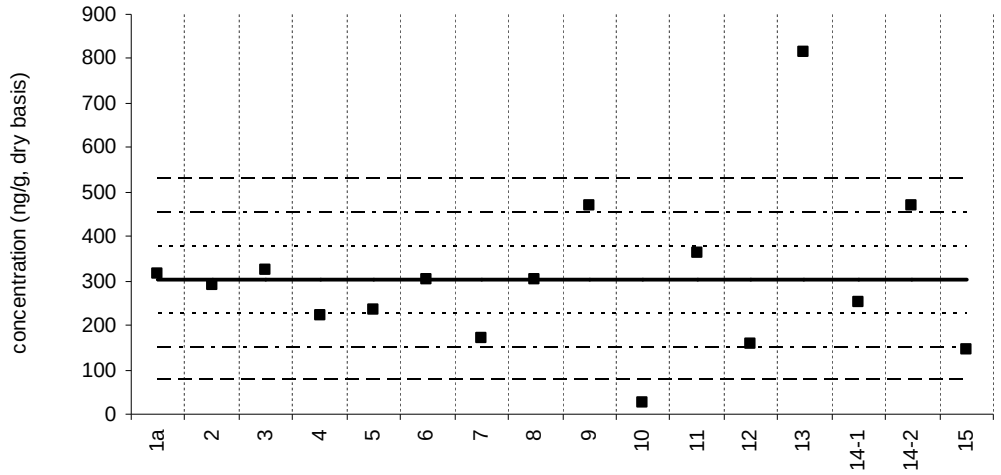
Reported Results: 14 Quantitative Results: 14



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

anthracene **Sediment XIV (QA07SED14)**

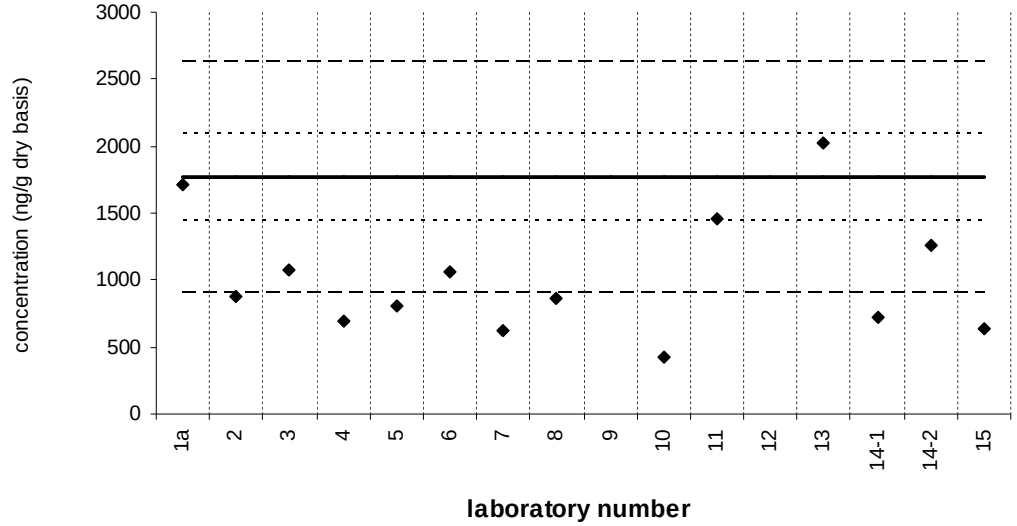
Assigned value = 302 ng/g s = 170 ng/g 95% CL = 103 ng/g (dry basis)
Reported Results: 16 Quantitative Results: 16



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 1944**

Certified Value = 1770 ± 330 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 14

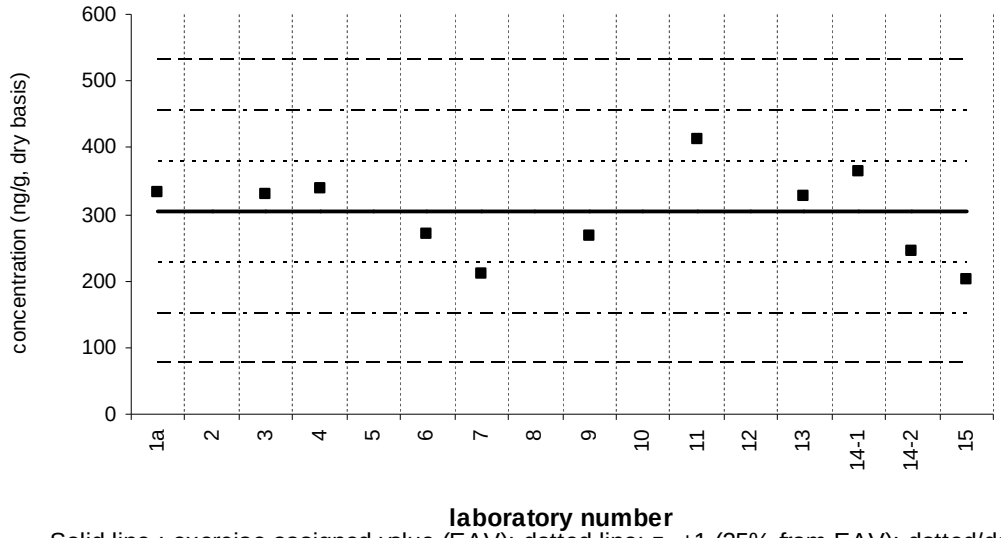


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

1-methylphenanthrene **Sediment XIV (QA07SED14)**

Assigned value = 303 ng/g s = 68 ng/g 95% CL = 49 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

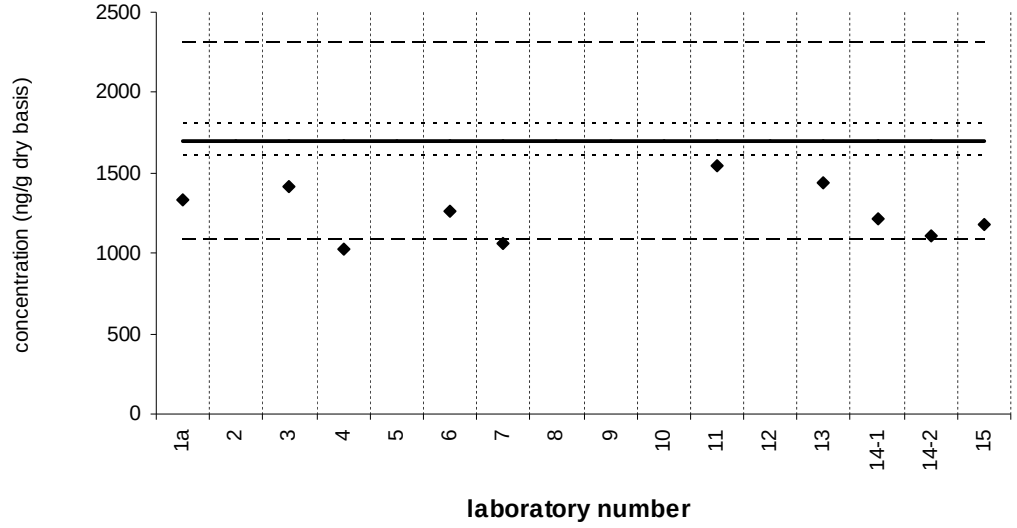


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

1-methylphenanthrene **SRM 1944**

Reference Value = 1700 ± 100 ng/g (dry basis)

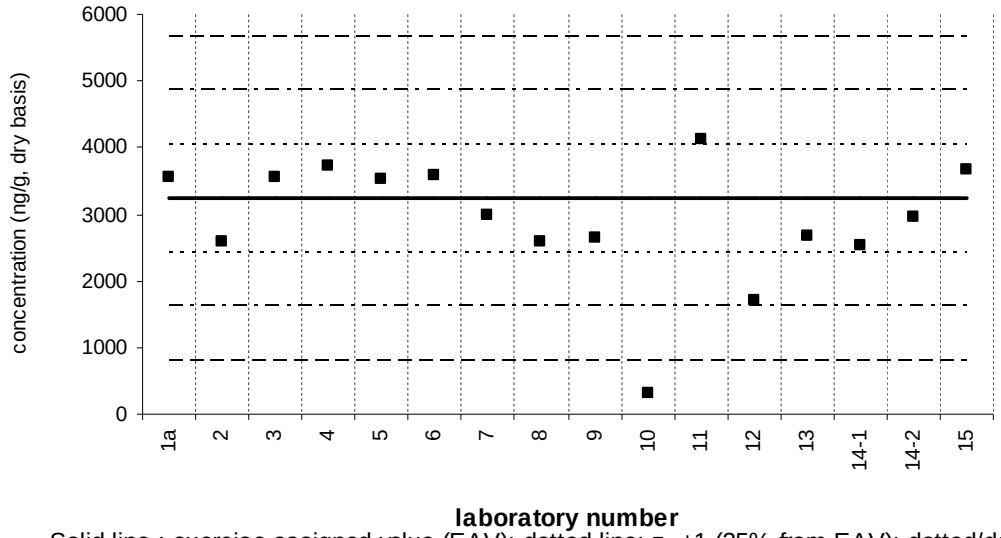
Reported Results: 10 Quantitative Results: 10



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

fluoranthene **Sediment XIV (QA07SED14)**

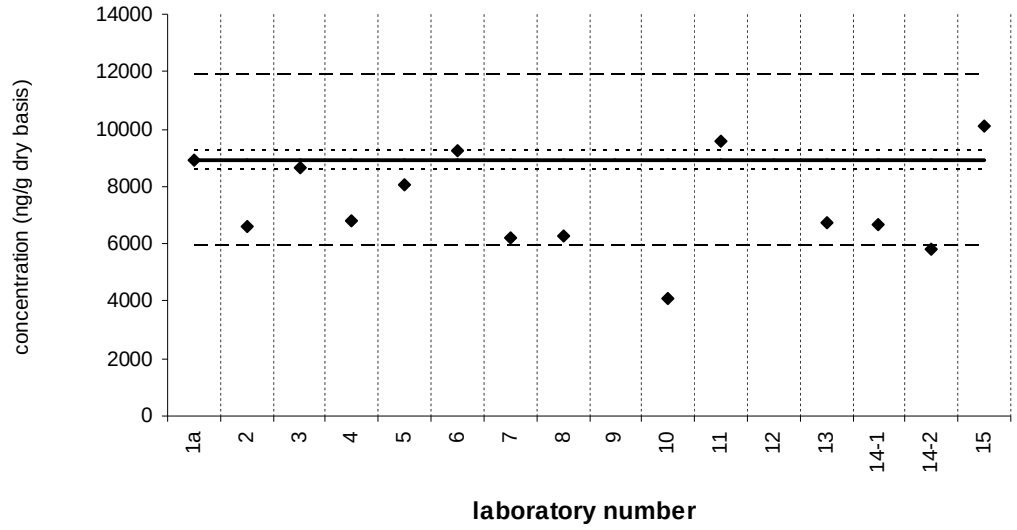
Assigned value = 3238 ng/g s = 532 ng/g 95% CL = 321 ng/g (dry basis)
Reported Results: 16 Quantitative Results: 16



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 1944**

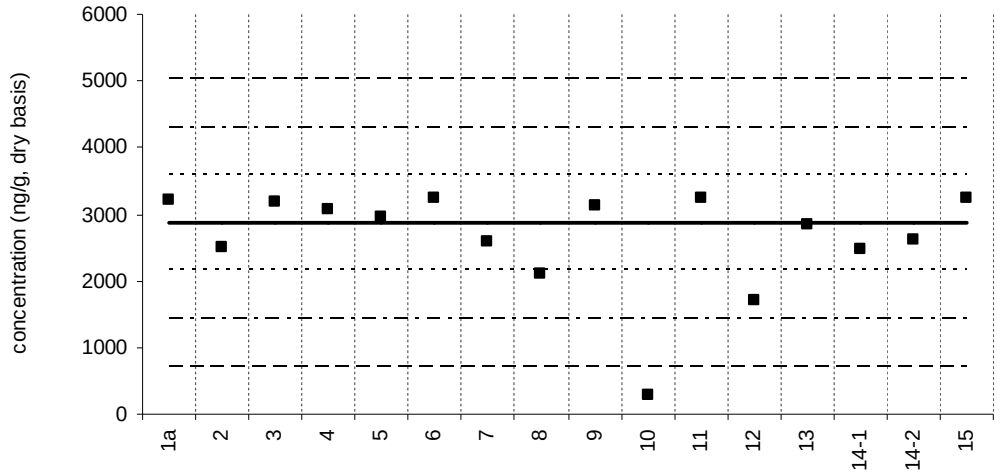
Certified Value = 8920 ± 320 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 14



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

pyrene **Sediment XIV (QA07SED14)**

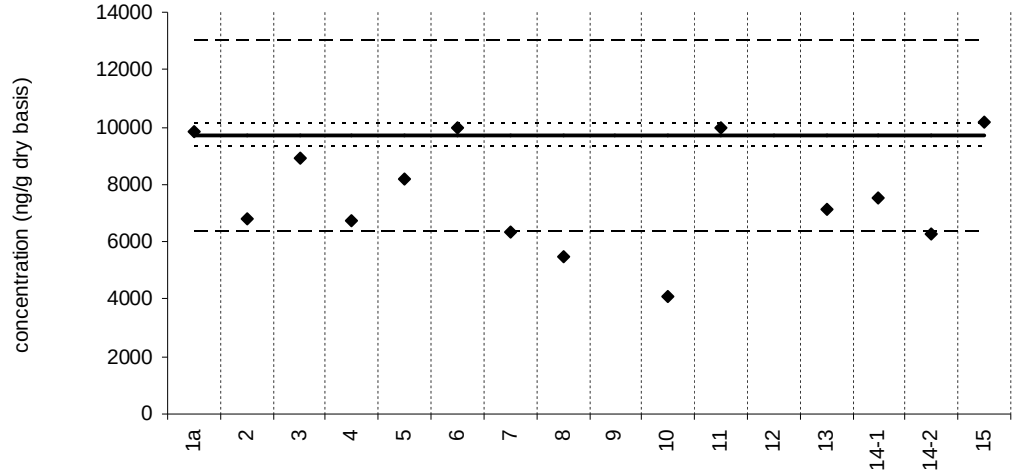
Assigned value = 2870 ng/g s = 377 ng/g 95% CL = 228 ng/g (dry basis)
Reported Results: 16 Quantitative Results: 16



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 1944**

Certified Value = 9700 ± 420 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 14

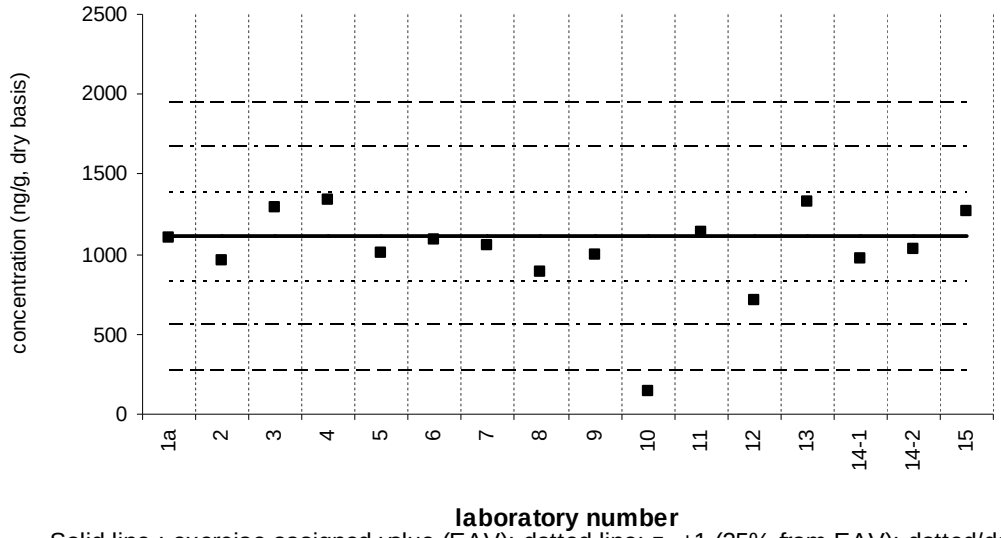


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benz[a]anthracene **Sediment XIV (QA07SED14)**

Assigned value = 1113 ng/g s = 149 ng/g 95% CL = 90 ng/g (dry basis)

Reported Results: 16 Quantitative Results: 16

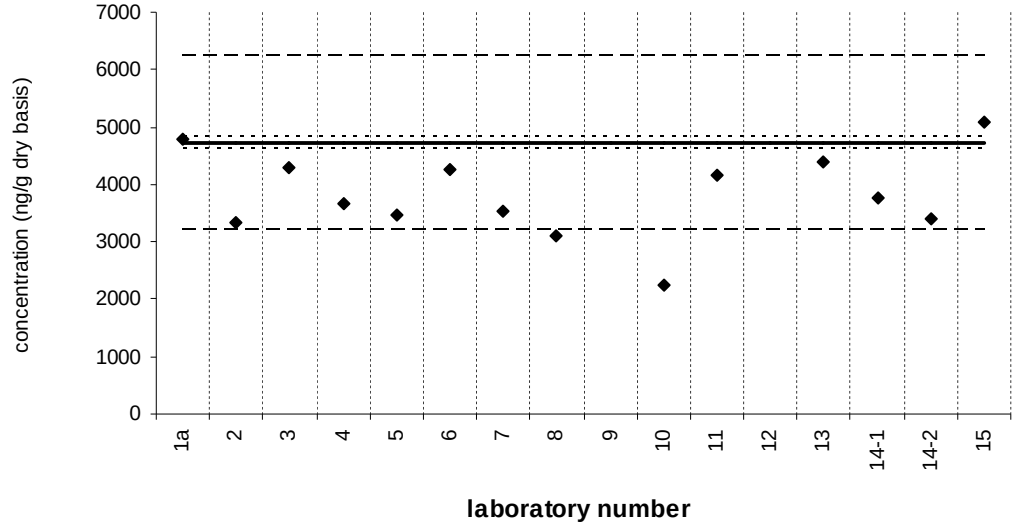


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benz[a]anthracene **SRM 1944**

Certified Value = 4720 ± 110 ng/g (dry basis)

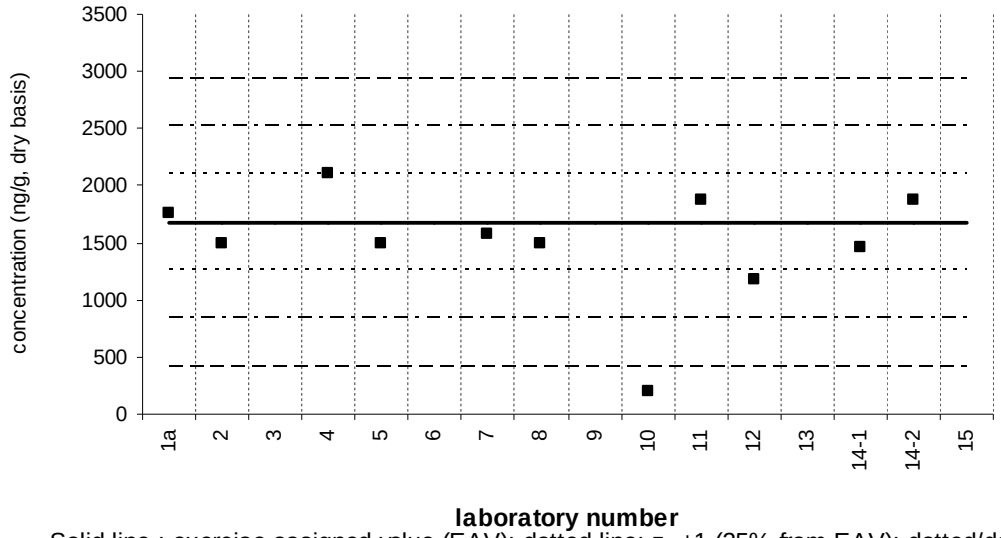
Reported Results: 14 Quantitative Results: 14



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

chrysene **Sediment XIV (QA07SED14)**

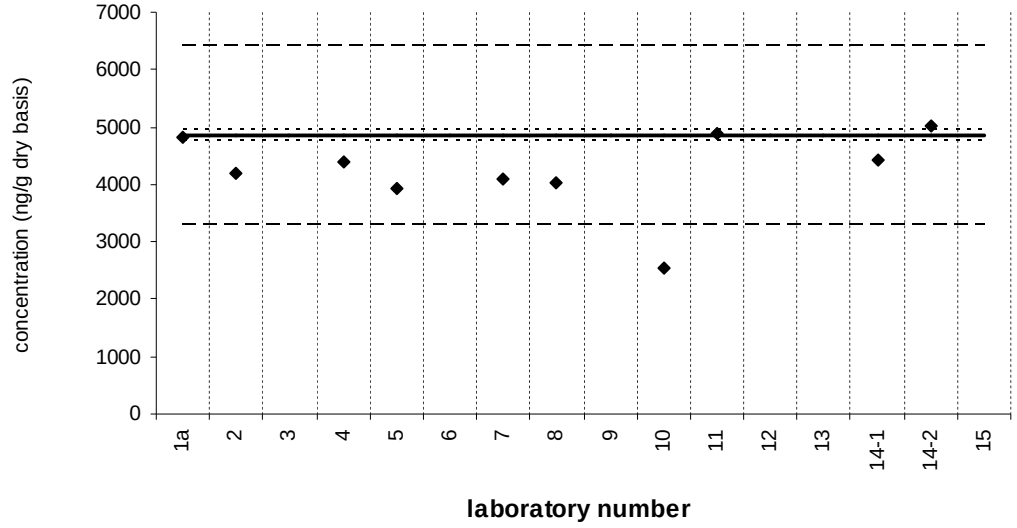
Assigned value = 1680 ng/g s = 231 ng/g 95% CL = 178 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

chrysene **SRM 1944**

Certified Value = 4860 ± 100 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

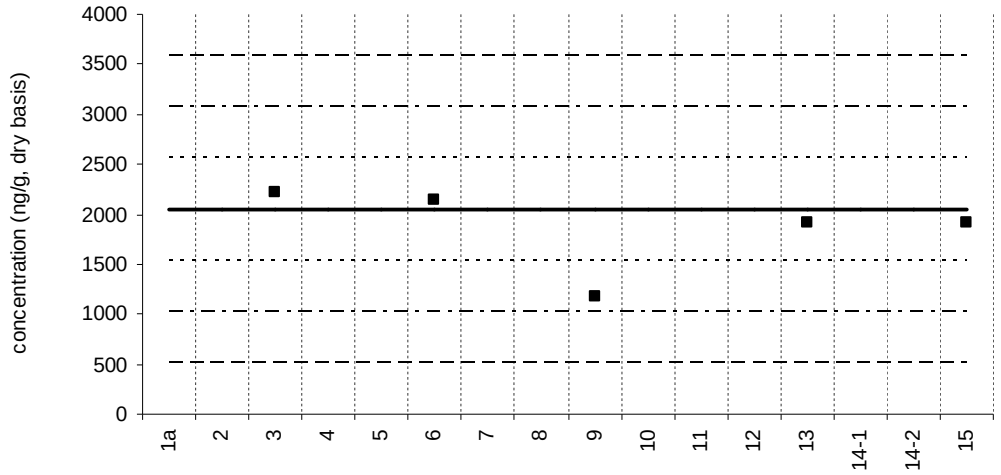


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

chrysene/triphenylene **Sediment XIV (QA07SED14)**

Assigned value = 2050 ng/g s = 156 ng/g 95% CL = 194 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

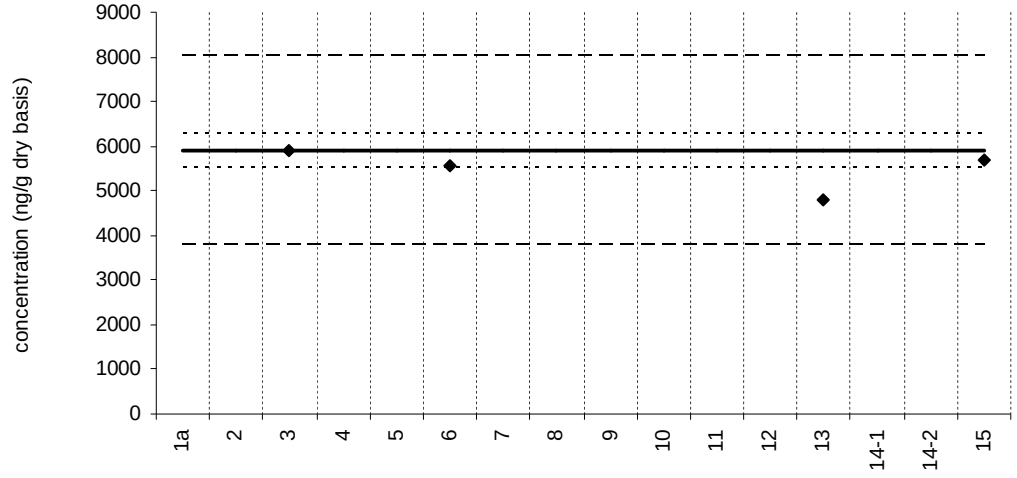


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

chrysene/triphenylene **SRM 1944**

Target Value = 5900 ± 370 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4

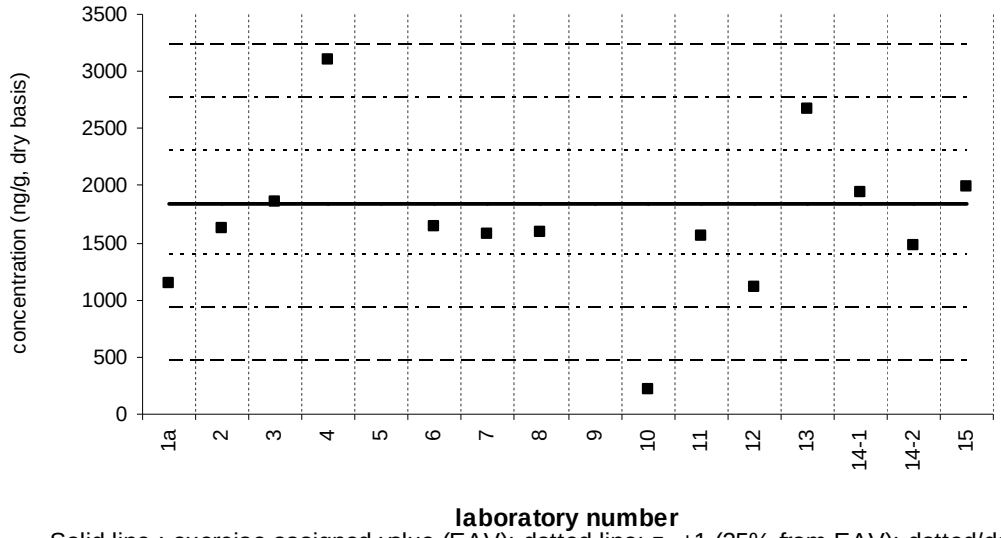


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[b]fluoranthene **Sediment XIV (QA07SED14)**

Assigned value = 1848 ng/g s = 539 ng/g 95% CL = 342 ng/g (dry basis)

Reported Results: 14 Quantitative Results: 14

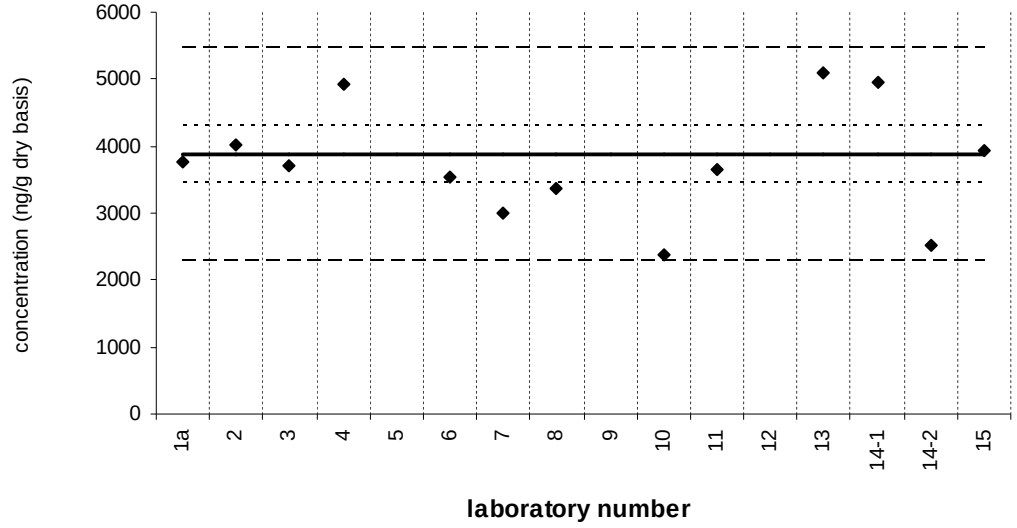


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[b]fluoranthene **SRM 1944**

Certified Value = 3870 ± 420 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 13

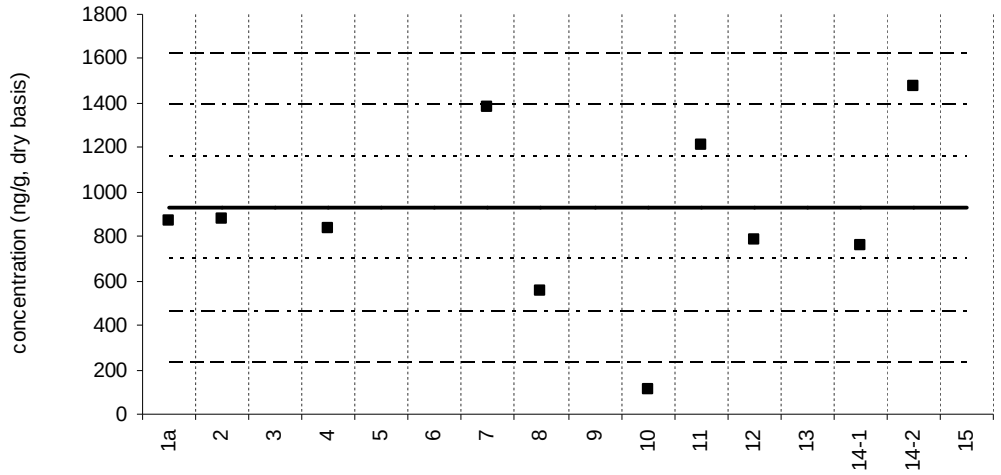


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[k]fluoranthene **Sediment XIV (QA07SED14)**

Assigned value = 929 ng/g s = 280 ng/g 95% CL = 259 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 10

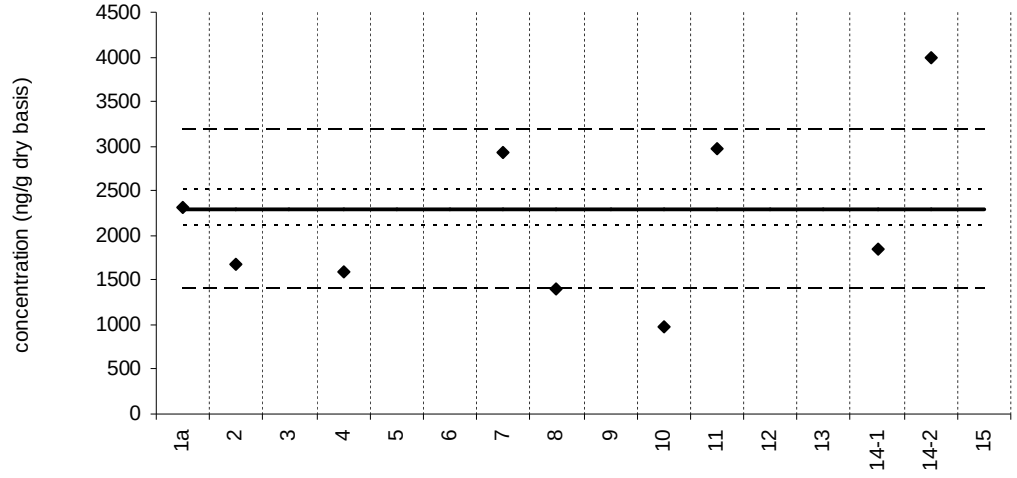


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[k]fluoranthene **SRM 1944**

Certified Value = 2300 ± 200 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

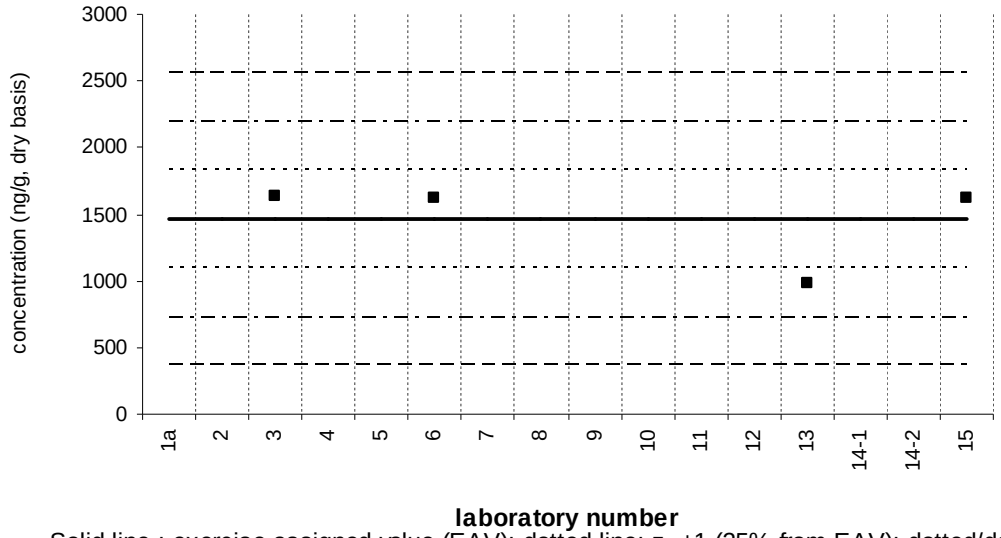


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[j+k]fluoranthene **Sediment XIV (QA07SED14)**

Assigned value = 1463 ng/g s = 323 ng/g 95% CL = 514 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4

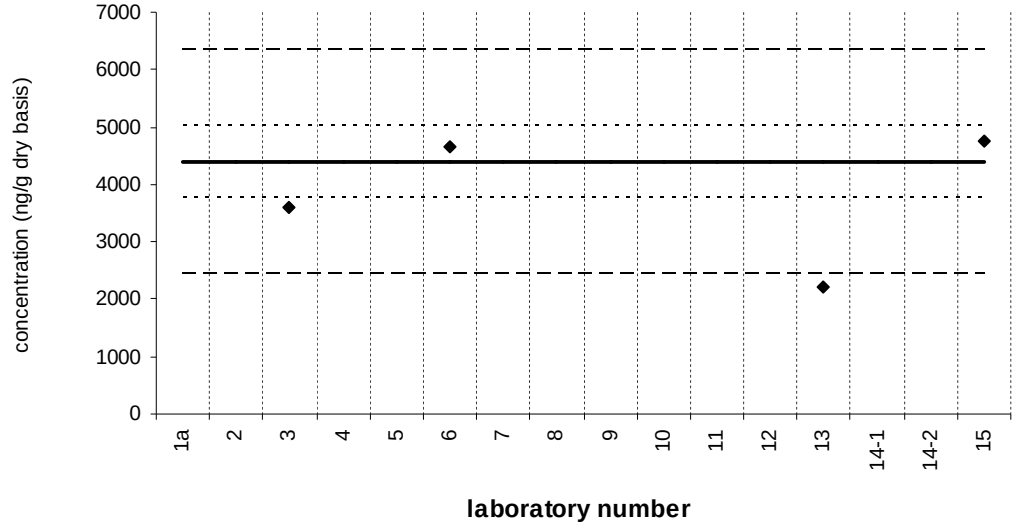


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[j+k]fluoranthene **SRM 1944**

Target Value = 4390 ± 640 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4

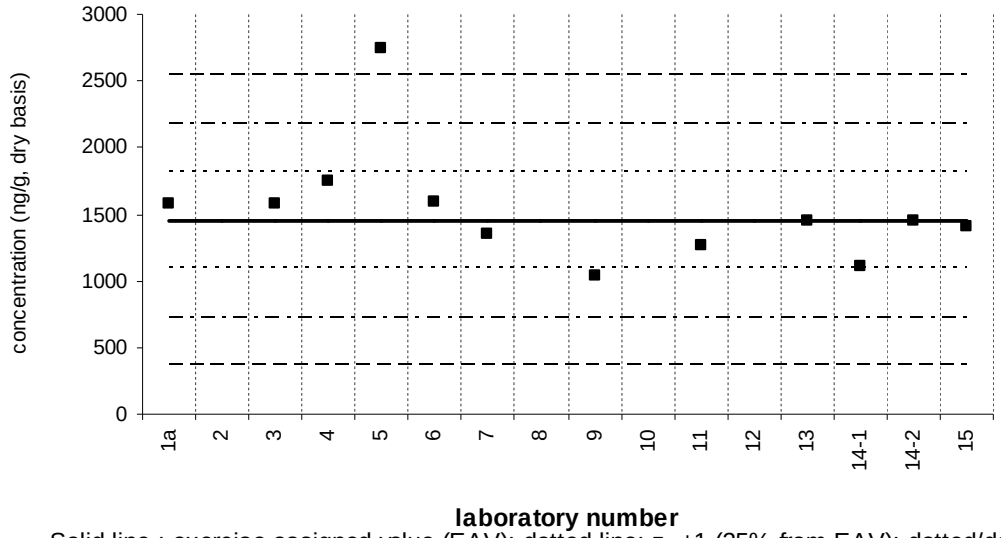


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[e]pyrene **Sediment XIV (QA07SED14)**

Assigned value = 1454 ng/g s = 183 ng/g 95% CL = 131 ng/g (dry basis)

Reported Results: 12 Quantitative Results: 12

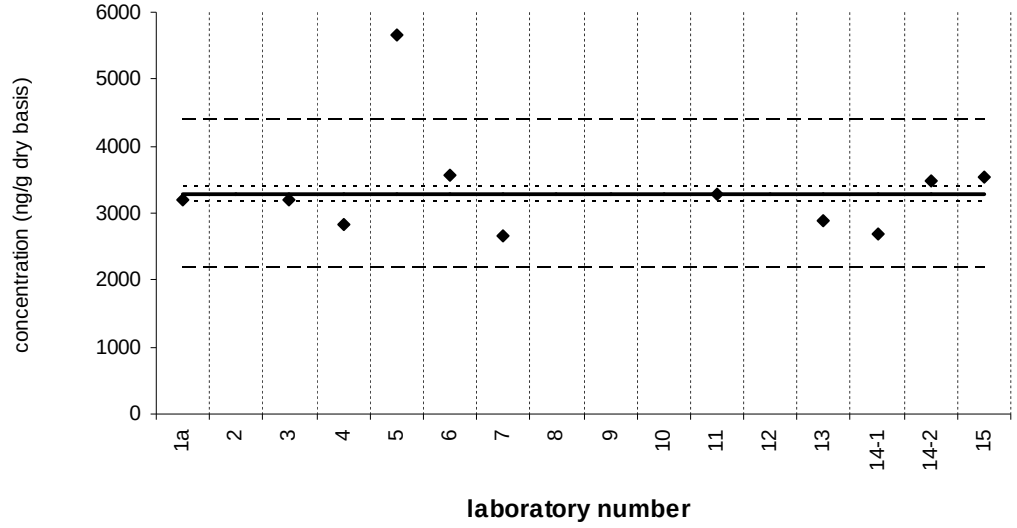


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[e]pyrene **SRM 1944**

Certified Value = 3280 ± 110 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

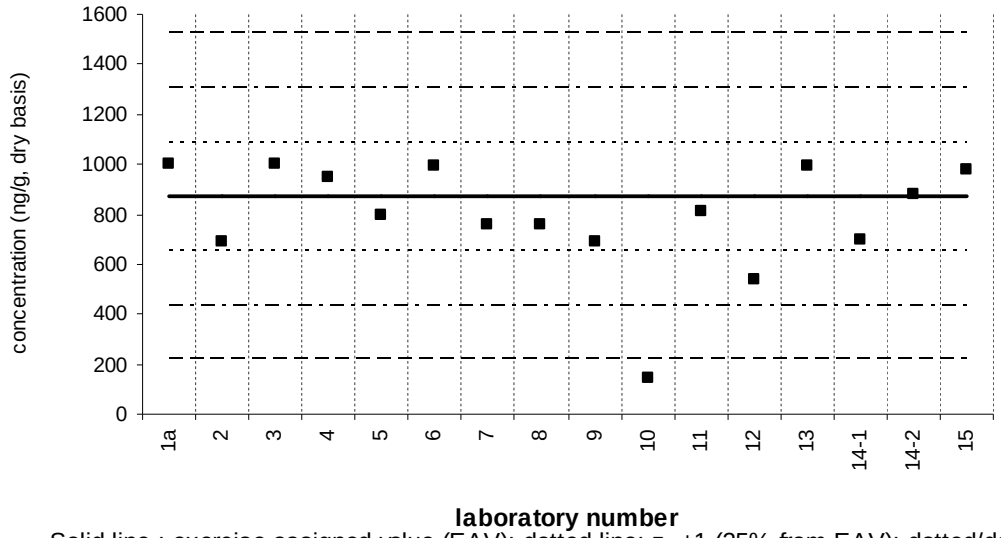


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[a]pyrene **Sediment XIV (QA07SED14)**

Assigned value = 870 ng/g s = 121 ng/g 95% CL = 73 ng/g (dry basis)

Reported Results: 16 Quantitative Results: 16

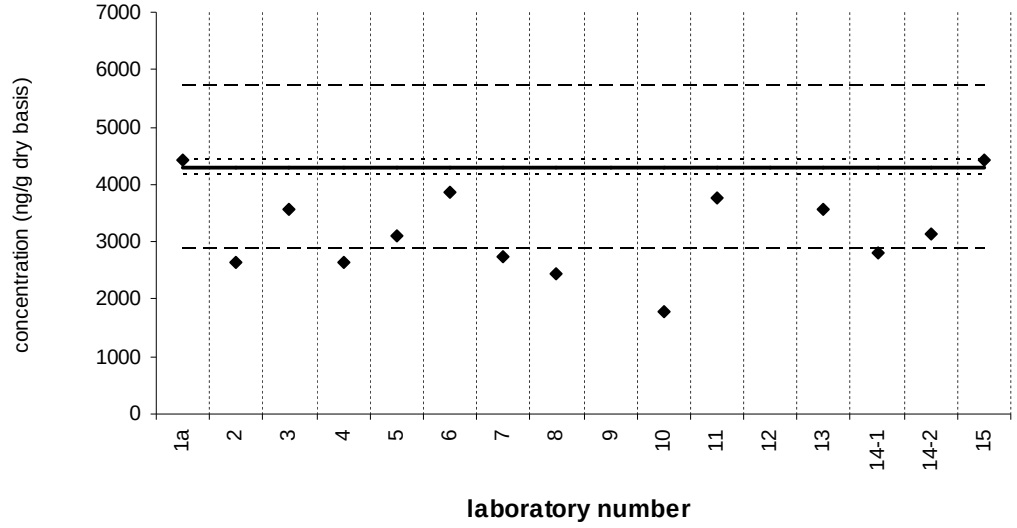


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[a]pyrene **SRM 1944**

Certified Value = 4300 ± 130 ng/g (dry basis)

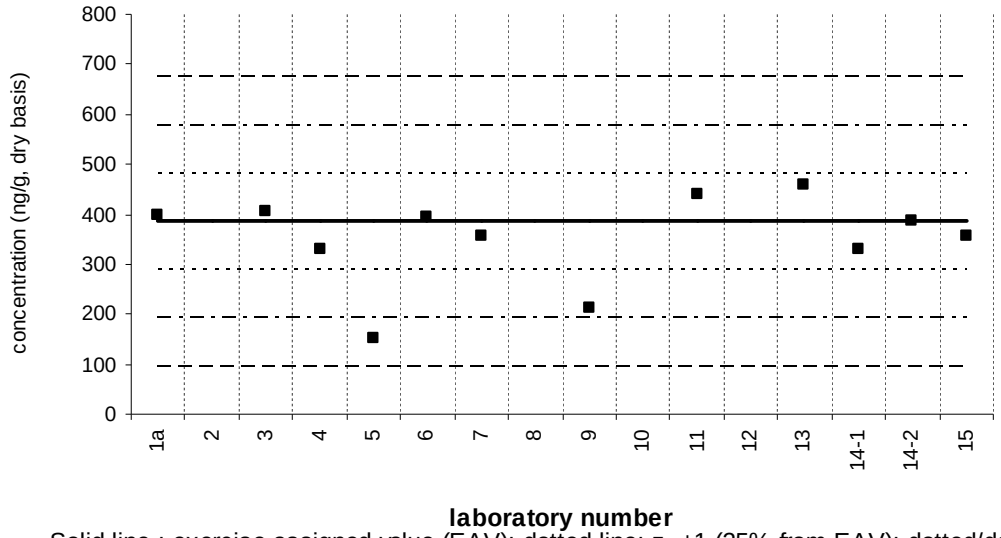
Reported Results: 14 Quantitative Results: 14



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

perylene **Sediment XIV (QA07SED14)**

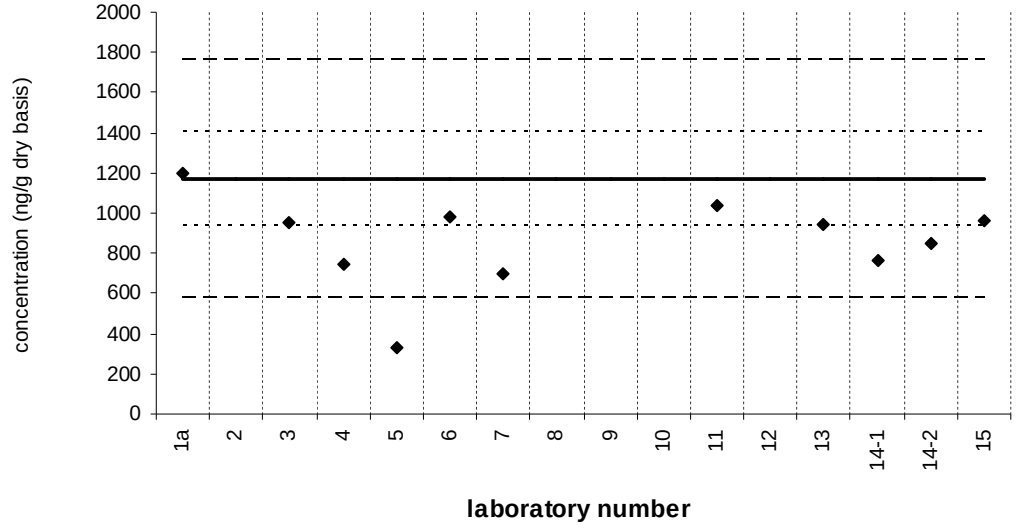
Assigned value = 385 ng/g s = 43 ng/g 95% CL = 31 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

perylene **SRM 1944**

Certified Value = 1170 ± 240 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

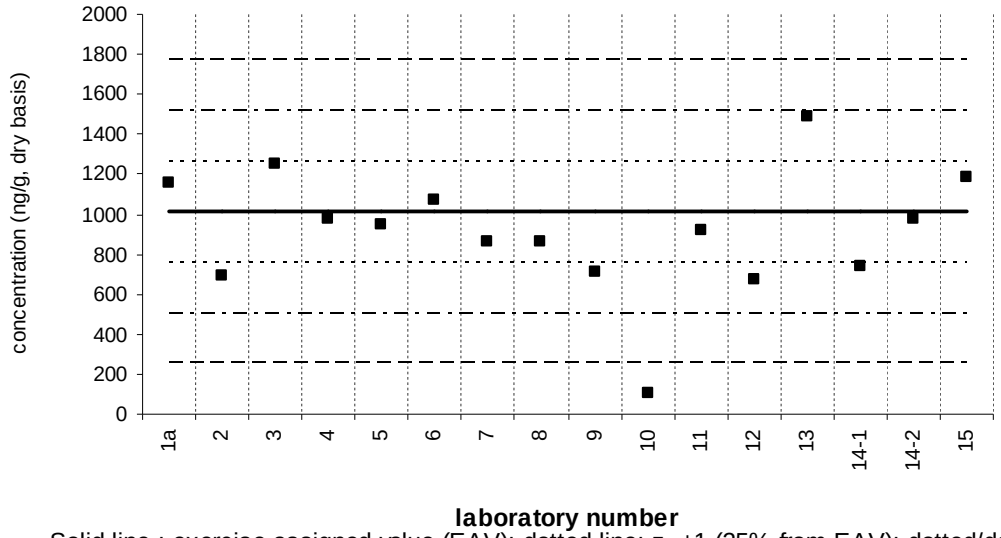


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

indeno[1,2,3-cd]pyrene **Sediment XIV (QA07SED14)**

Assigned value = 1011 ng/g s = 218 ng/g 95% CL = 132 ng/g (dry basis)

Reported Results: 16 Quantitative Results: 16

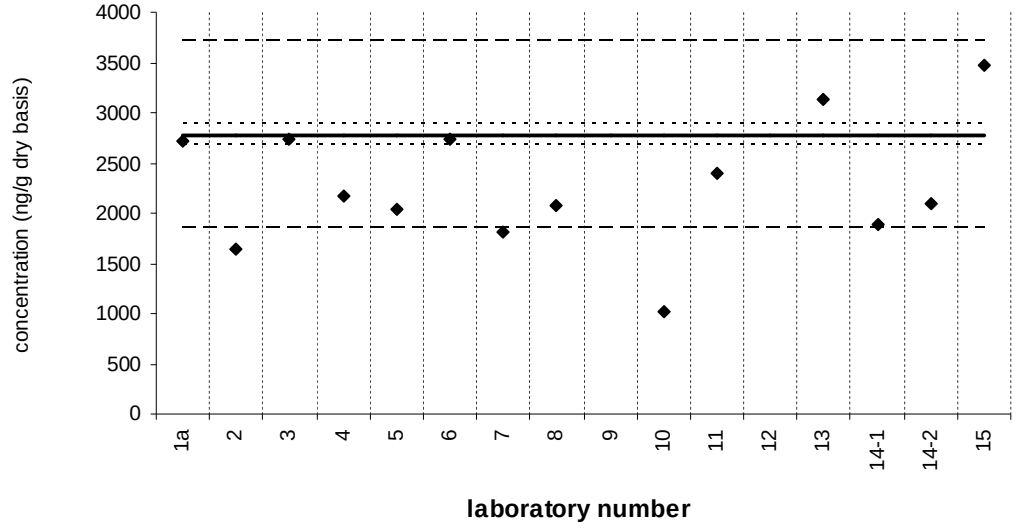


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

indeno[1,2,3-cd]pyrene **SRM 1944**

Certified Value = 2780 ± 100 ng/g (dry basis)

Reported Results: 14 Quantitative Results: 14

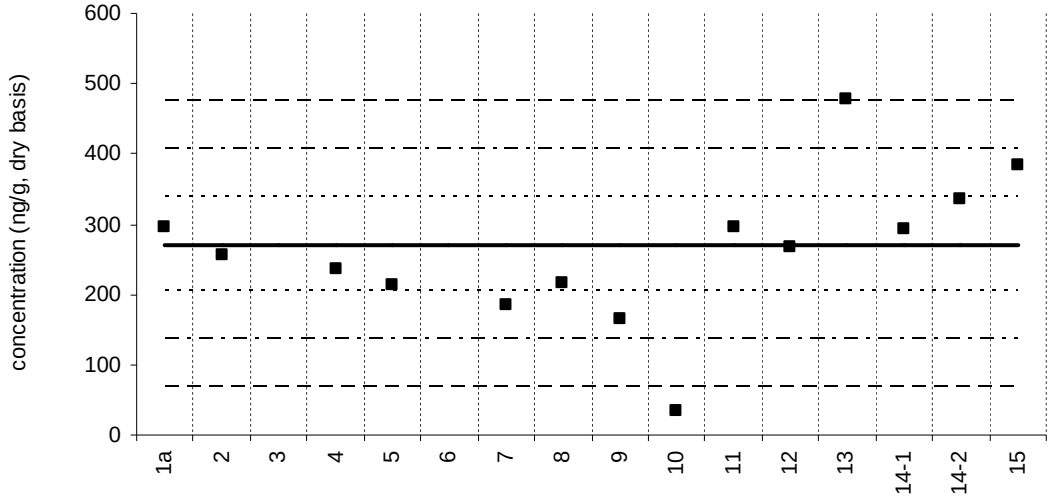


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dibenz[a,h]anthracene **Sediment XIV (QA07SED14)**

Assigned value = 271 ng/g s = 61 ng/g 95% CL = 41 ng/g (dry basis)

Reported Results: 15 Quantitative Results: 14

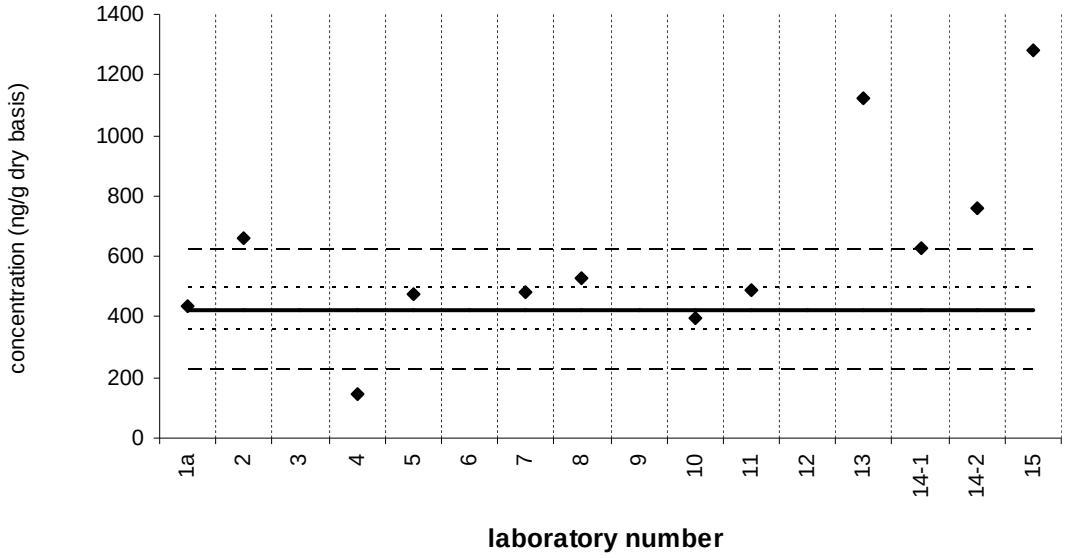


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dibenz[a,h]anthracene **SRM 1944**

Certified Value = 424 ± 69 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 12

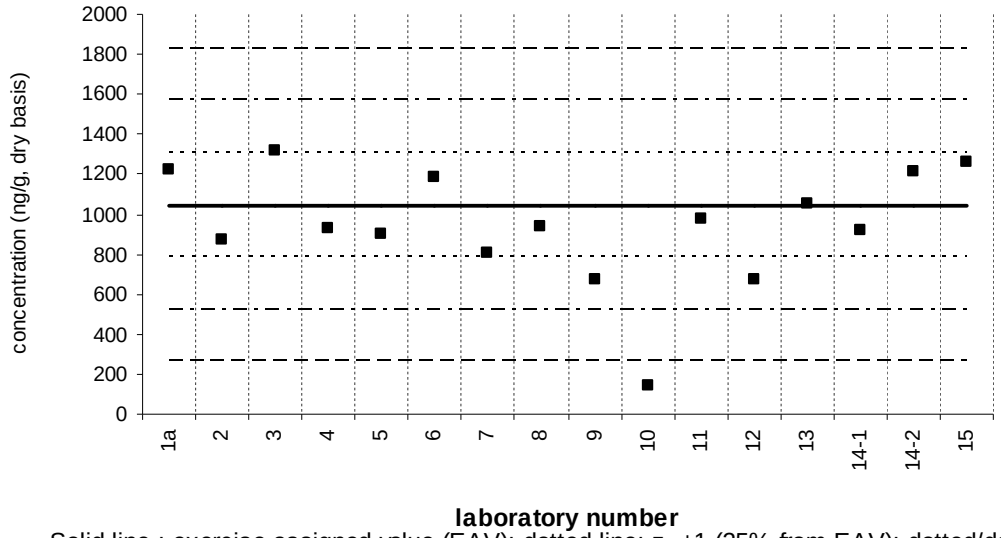


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

benzo[ghi]perylene **Sediment XIV (QA07SED14)**

Assigned value = 1046 ng/g s = 171 ng/g 95% CL = 103 ng/g (dry basis)

Reported Results: 16 Quantitative Results: 16

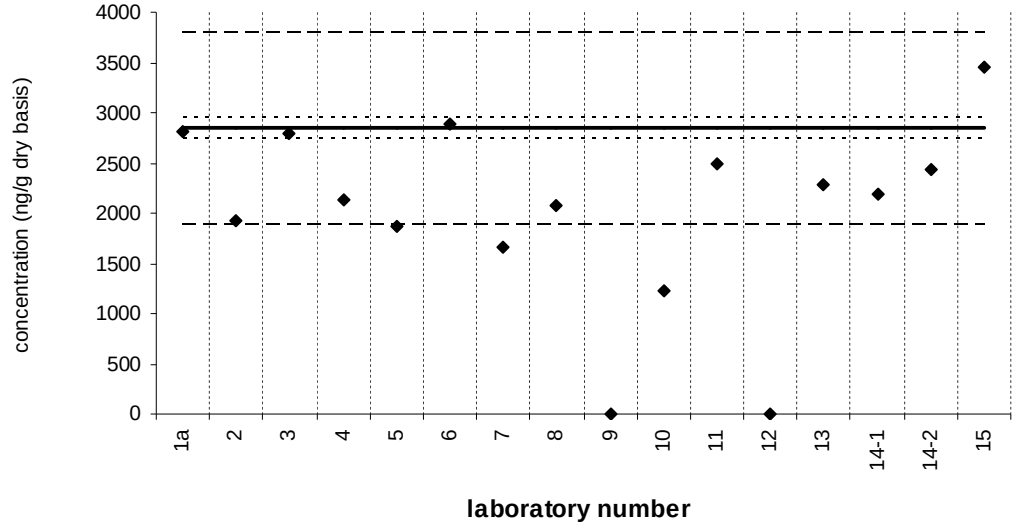


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

benzo[ghi]perylene **SRM 1944**

Certified Value = 2840 ± 100 ng/g (dry basis)

Reported Results: 14 Quantitative Results: 14

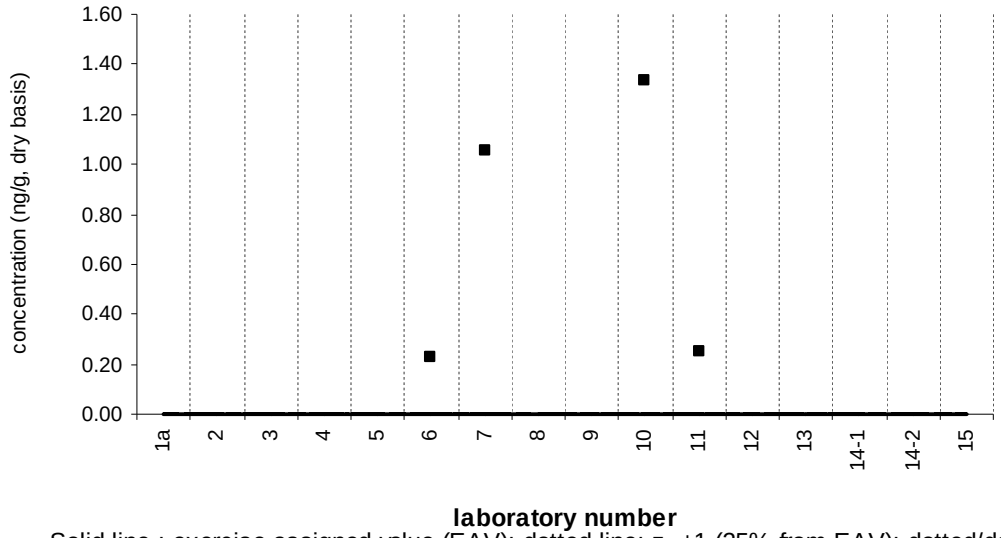


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

alpha-HCH (a-BHC) **Sediment XIV (QA07SED14)**

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

Reported Results: 11 Quantitative Results: 4

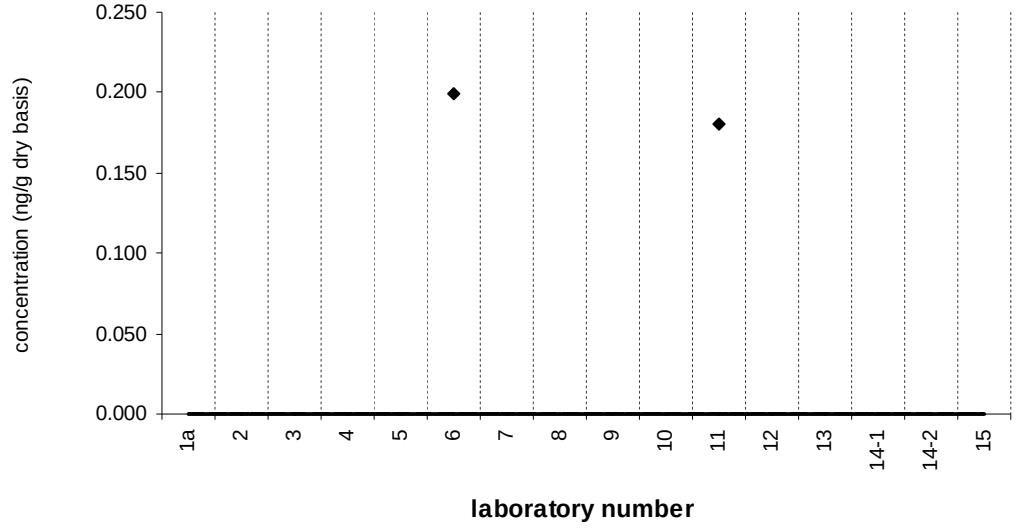


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

alpha-HCH (a-BHC) **SRM 1944**

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

Reported Results: 9 Quantitative Results: 2

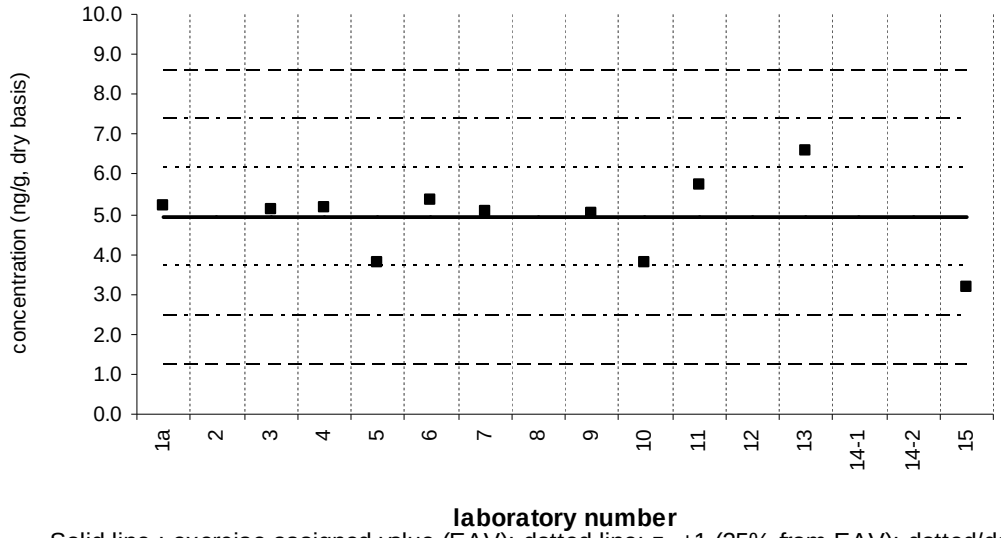


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

hexachlorobenzene **Sediment XIV (QA07SED14)**

Assigned value = 4.92 ng/g s = 0.97 ng/g 95% CL = 0.65 ng/g (dry basis)

Reported Results: 12 Quantitative Results: 11

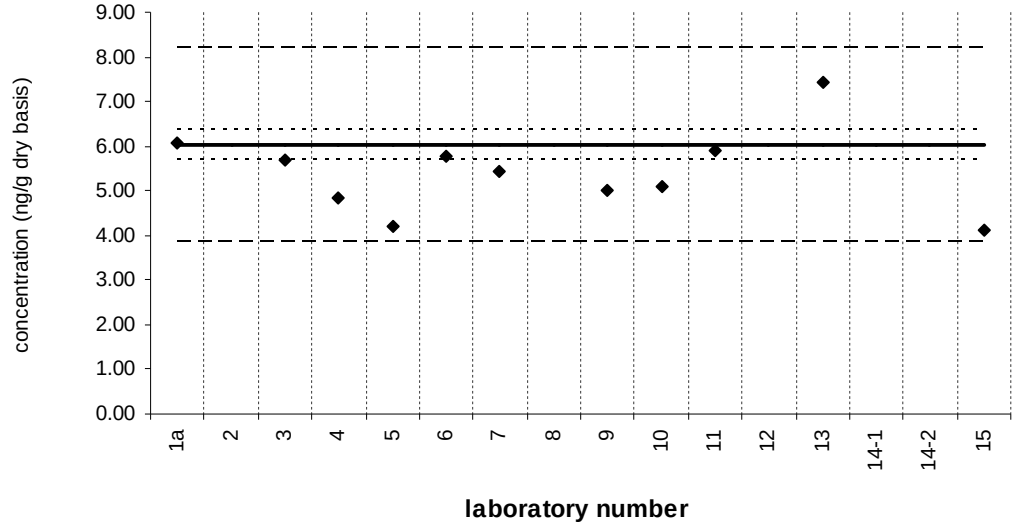


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

hexachlorobenzene **SRM 1944**

Certified Value = 6.03 ± 0.35 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

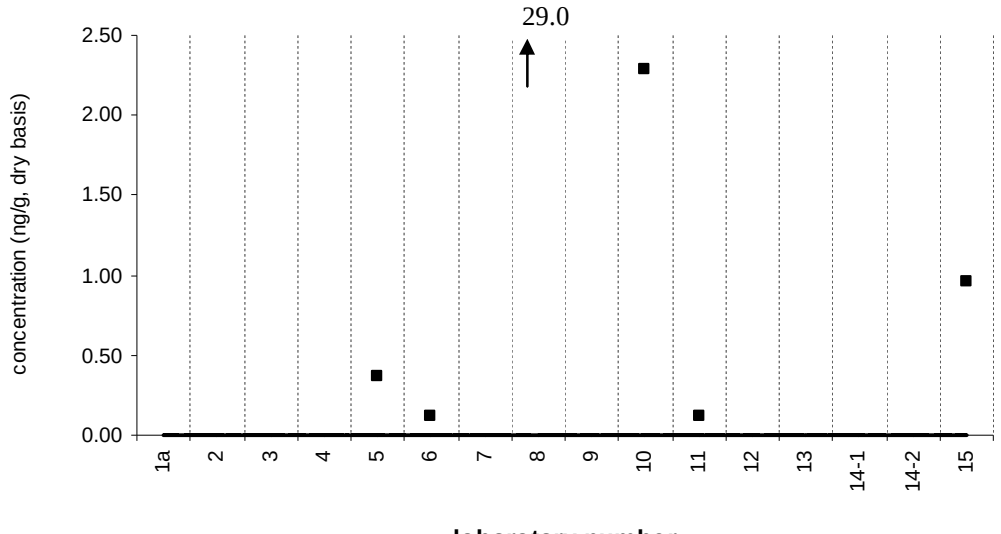


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

gamma-HCH (g-BHC,lindane) **Sediment XIV (QA07SED14)**

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

Reported Results: 14 Quantitative Results: 6

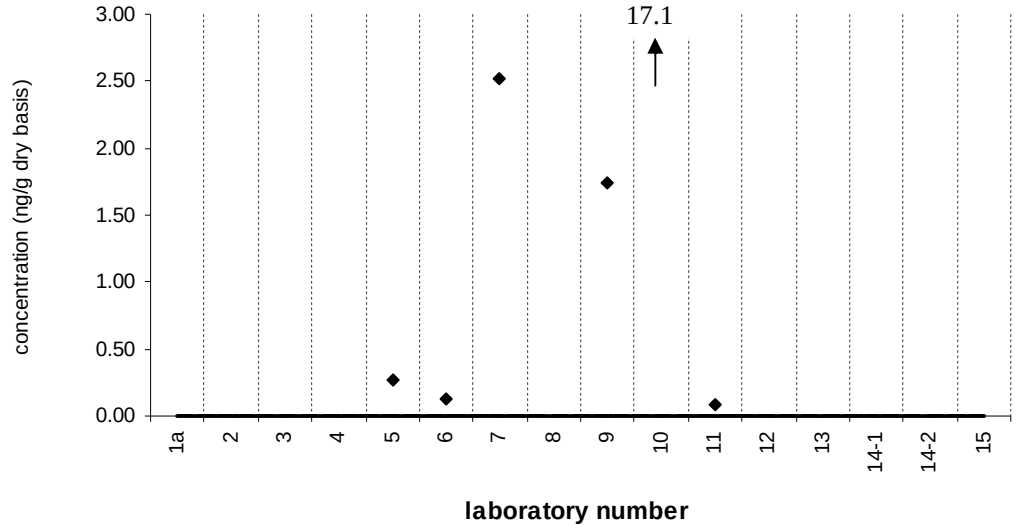


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-HCH (g-BHC,lindane) **SRM 1944**

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

Reported Results: 12 Quantitative Results: 6

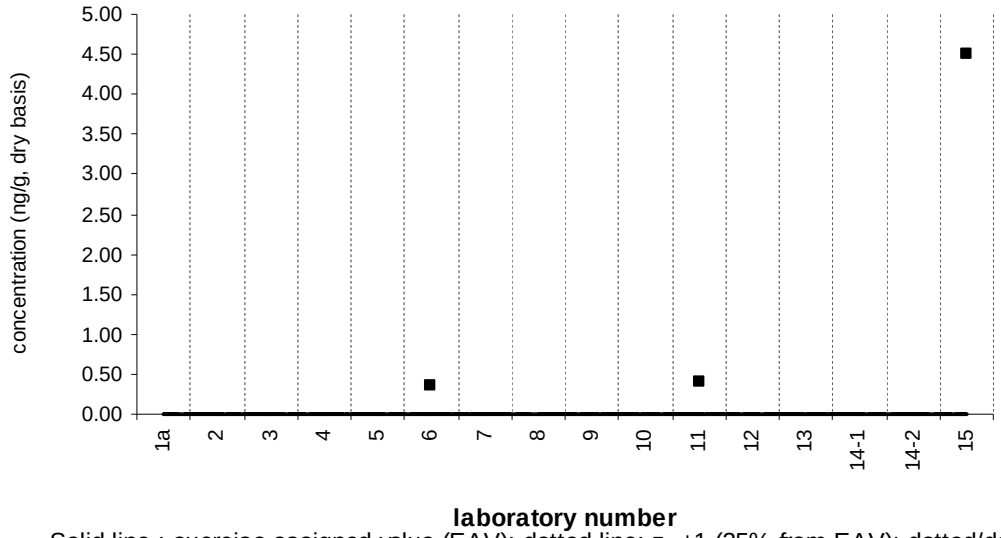


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

beta-HCH (b-BHC) **Sediment XIV (QA07SED14)**

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

Reported Results: 10 Quantitative Results: 3

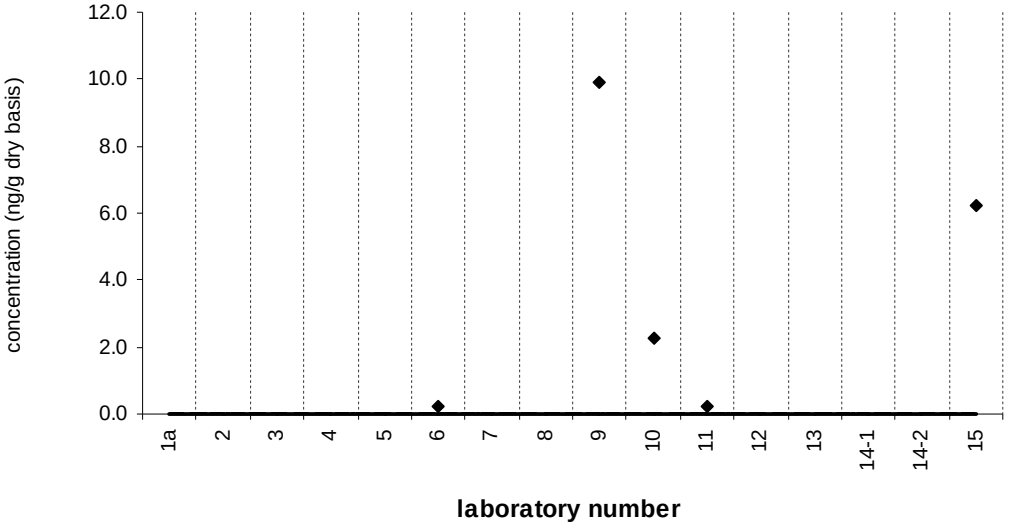


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

beta-HCH (b-BHC) **SRM 1944**

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

Reported Results: 8 Quantitative Results: 5

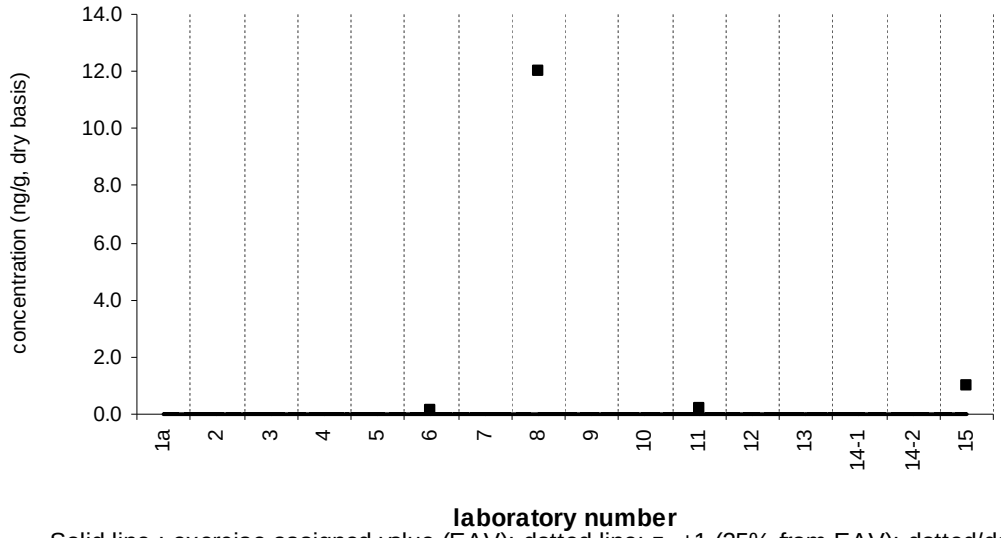


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

heptachlor **Sediment XIV (QA07SED14)**

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

Reported Results: 13 Quantitative Results: 4

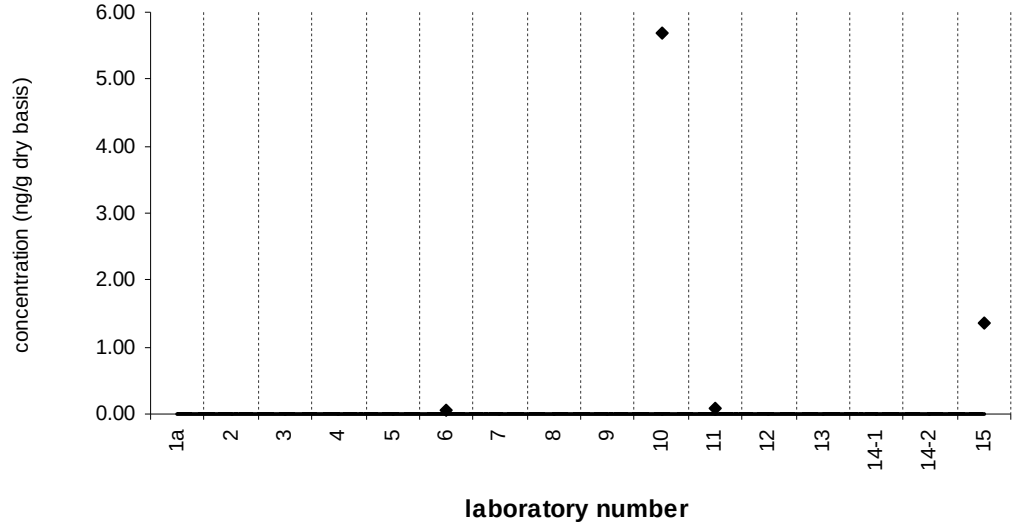


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

heptachlor **SRM 1944**

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

Reported Results: 11 Quantitative Results: 4

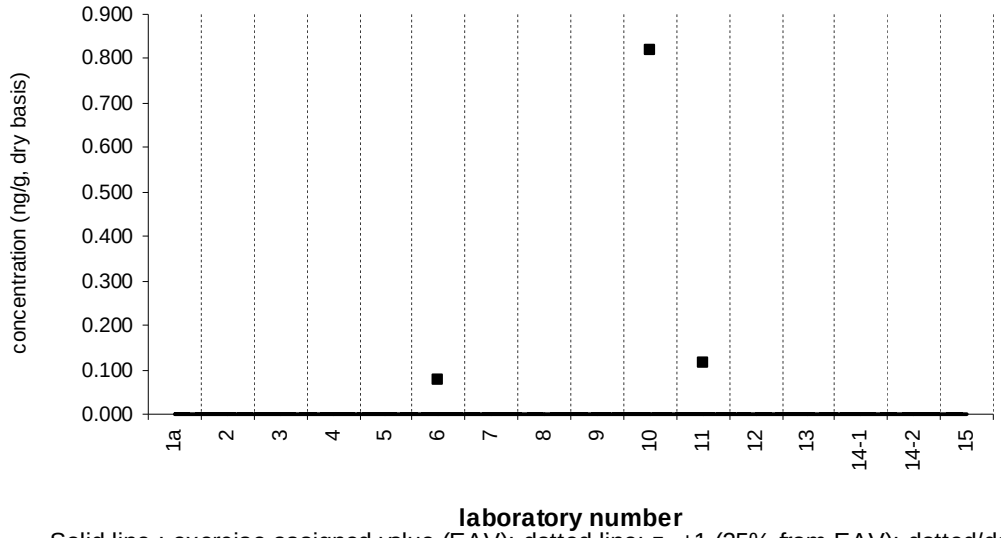


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

aldrin **Sediment XIV (QA07SED14)**

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

Reported Results: 13 Quantitative Results: 3

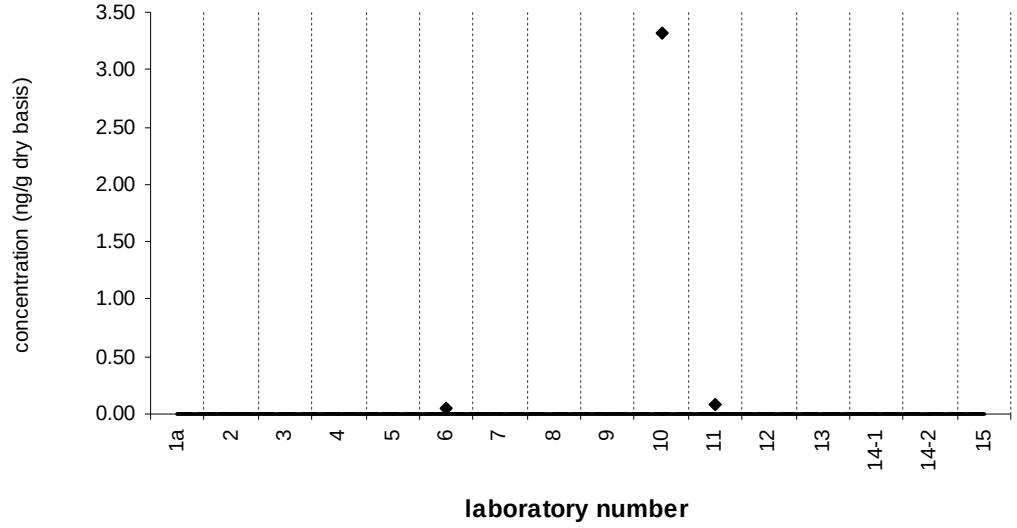


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

aldrin **SRM 1944**

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

Reported Results: 11 Quantitative Results: 3

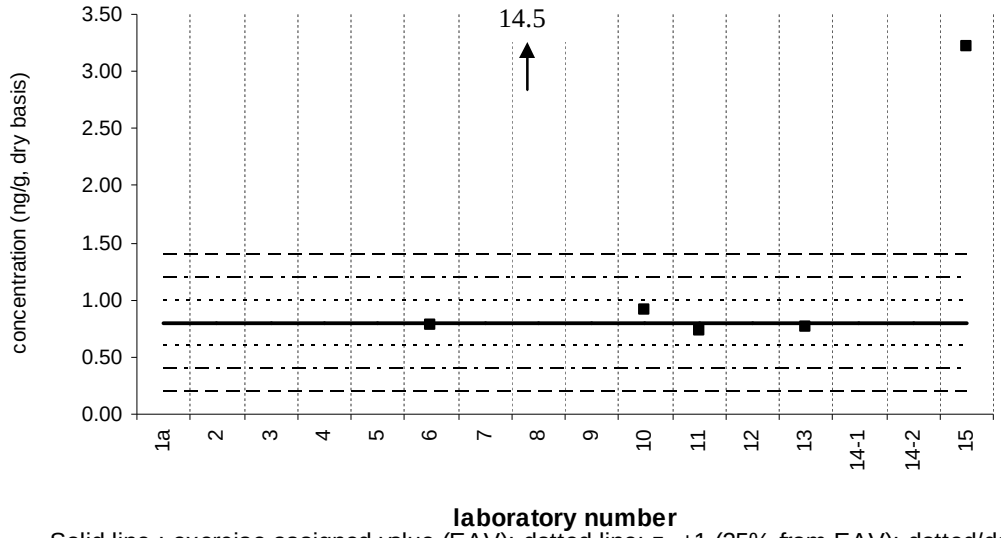


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

heptachlor epoxide **Sediment XIV (QA07SED14)**

Assigned value = 0.796 ng/g s = 0.079 ng/g 95% CL = 0.126 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 6

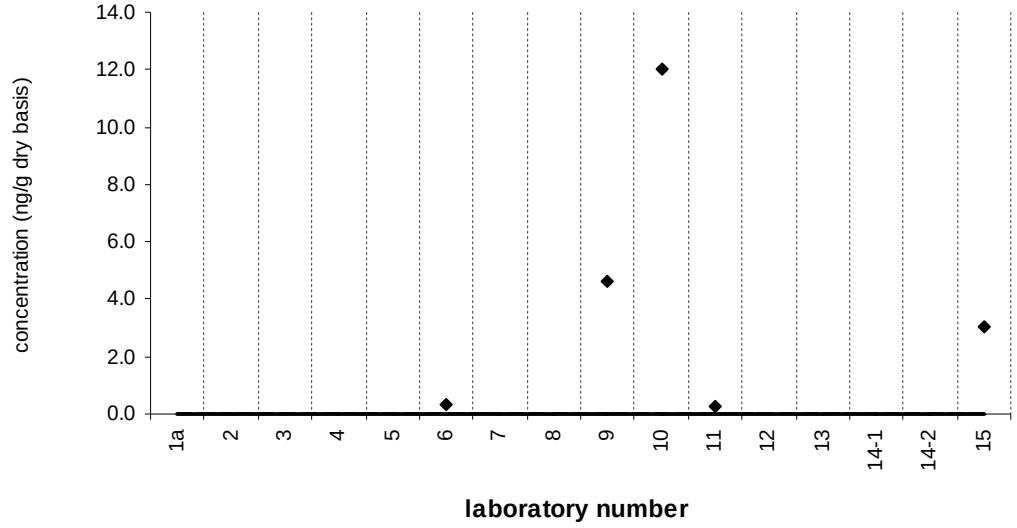


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

heptachlor epoxide **SRM 1944**

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

Reported Results: 11 Quantitative Results: 5

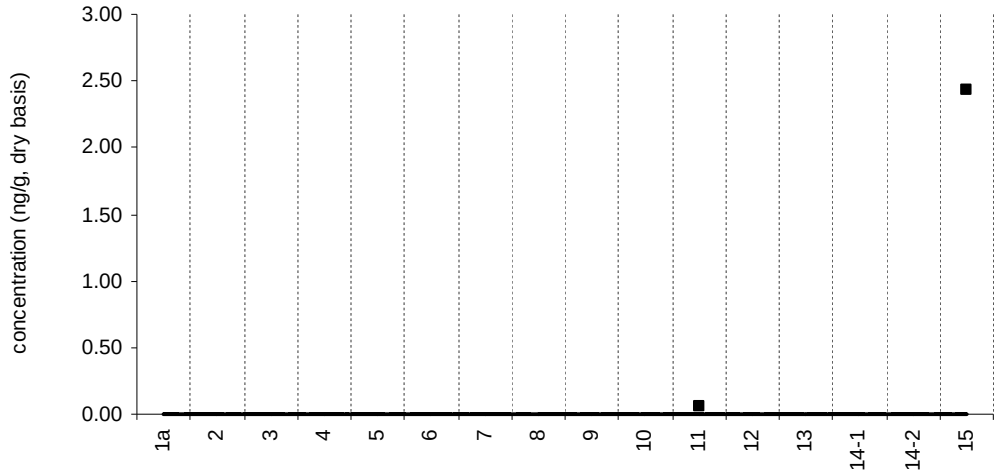


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

oxychlordane **Sediment XIV (QA07SED14)**

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

Reported Results: 8 Quantitative Results: 2

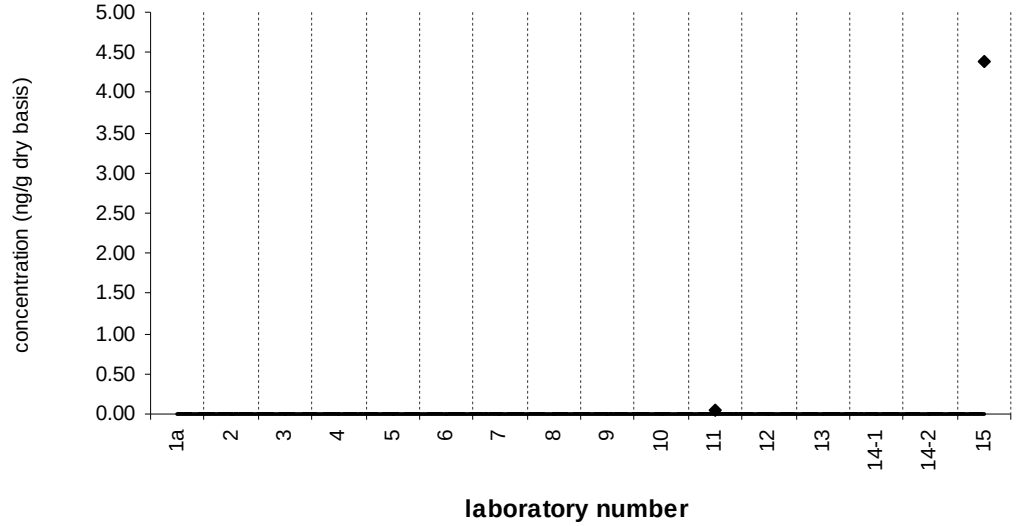


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

oxychlordane **SRM 1944**

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

Reported Results: 7 Quantitative Results: 2

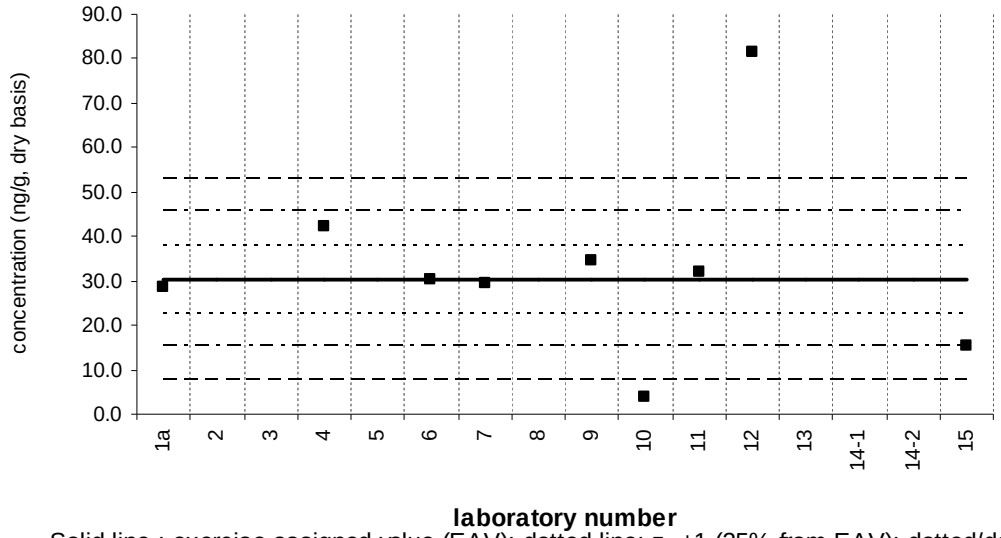


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

gamma-chlordane **Sediment XIV (QA07SED14)**

Assigned value = 30.3 ng/g s = 8.1 ng/g 95% CL = 7.5 ng/g (dry basis)

Reported Results: 12 Quantitative Results: 9

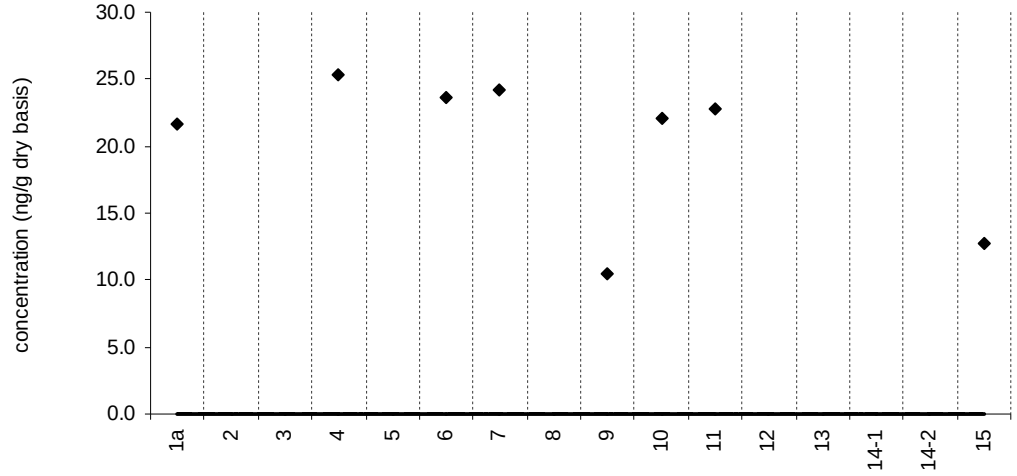


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

gamma-chlordane **SRM 1944**

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

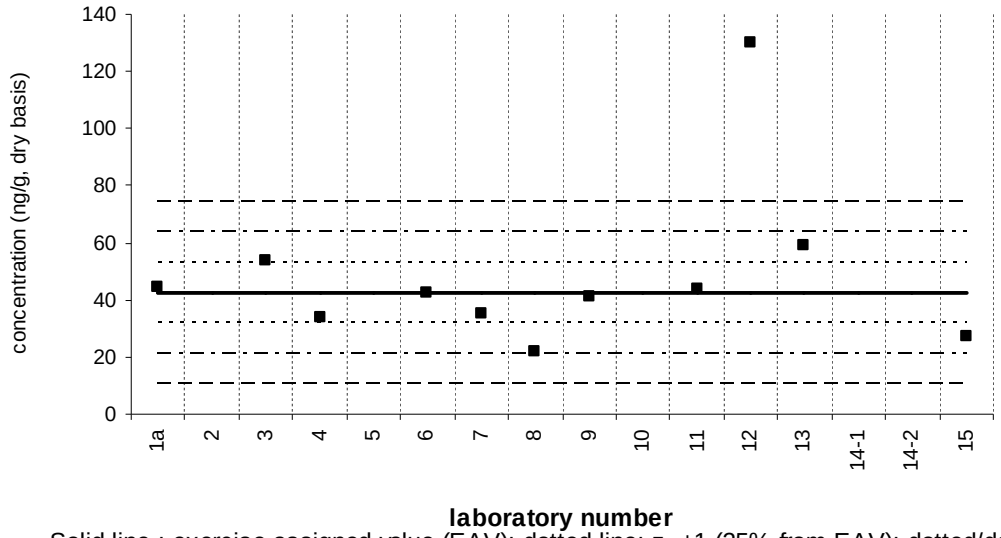
Reported Results: 10 Quantitative Results: 8



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

2,4'-DDE **Sediment XIV (QA07SED14)**

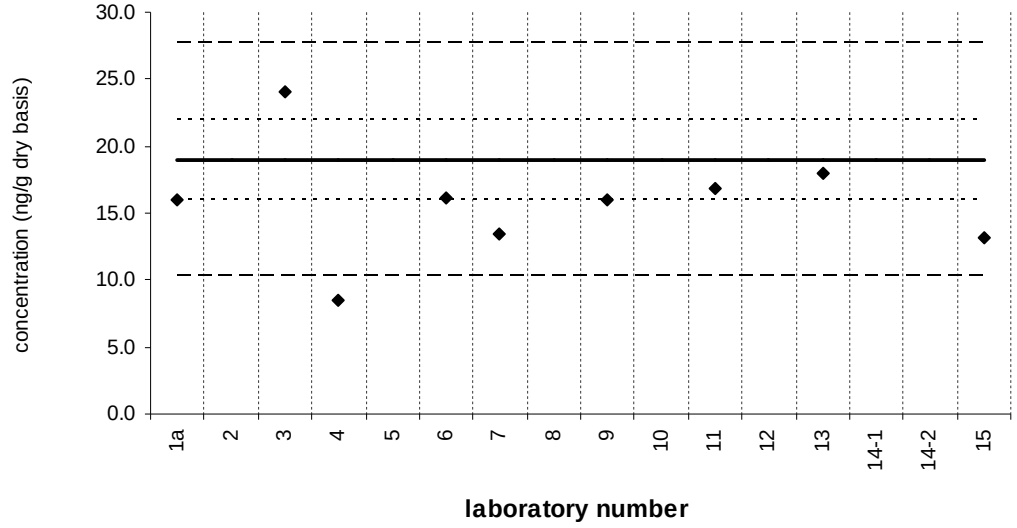
Assigned value = 42.3 ng/g s = 10.0 ng/g 95% CL = 7.6 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

2,4'-DDE **SRM 1944**

Reference Value = 19.0 ± 3.0 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9

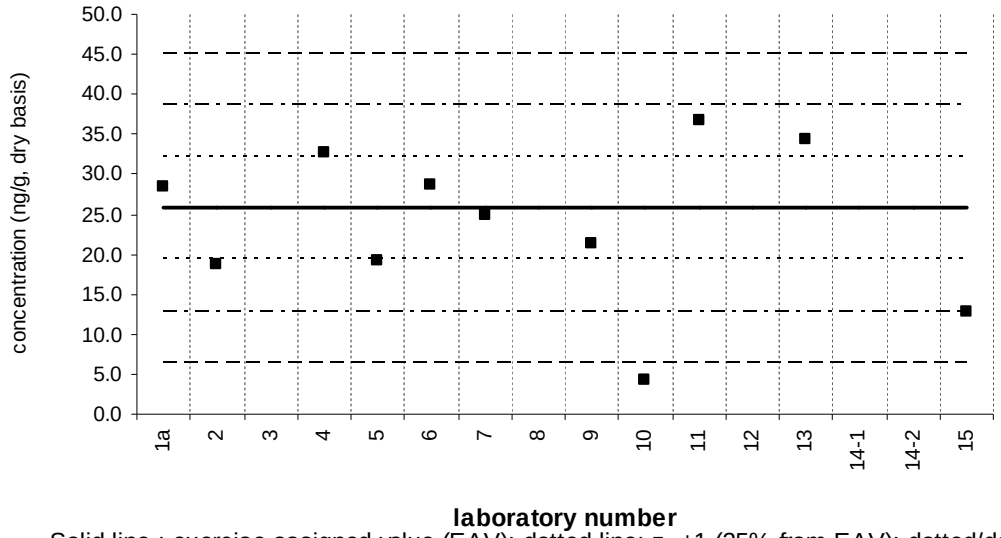


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

cis-chlordane (alpha-chlordane) **Sediment XIV (QA07SED14)**

Assigned value = 25.8 ng/g s = 7.7 ng/g 95% CL = 5.5 ng/g (dry basis)

Reported Results: 14 Quantitative Results: 11

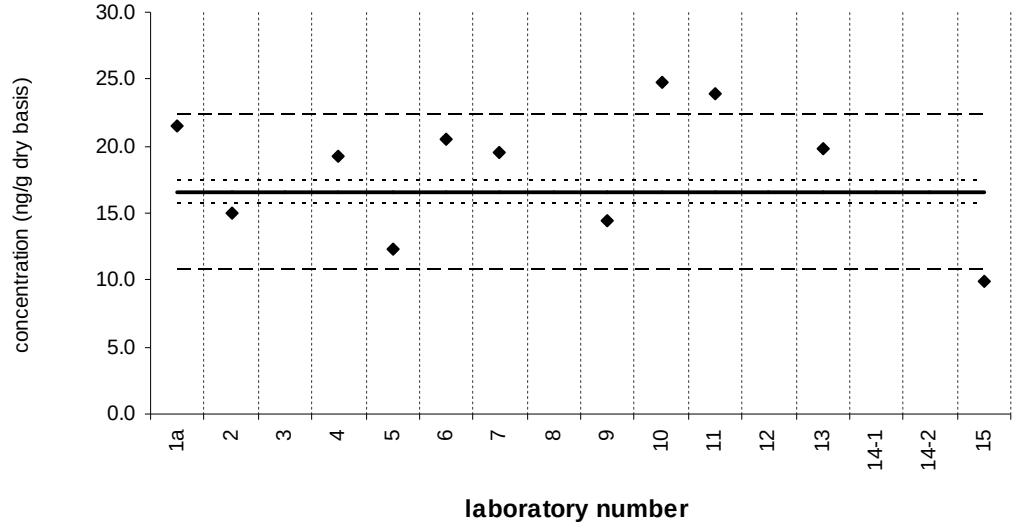


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-chlordane (alpha-chlordane) **SRM 1944**

Certified Value = 16.51 ± 0.83 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

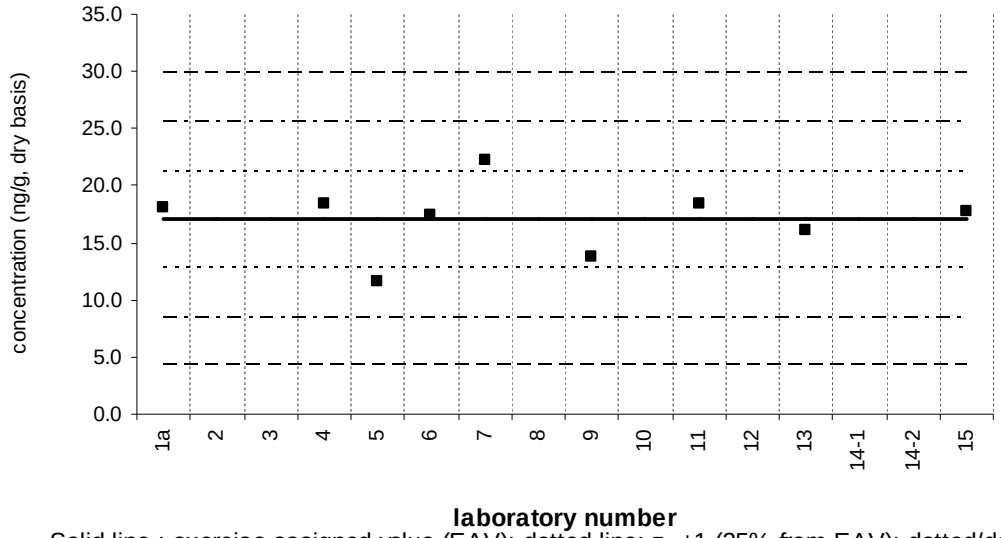


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

trans-nonachlor **Sediment XIV (QA07SED14)**

Assigned value = 17.0 ng/g s = 3.2 ng/g 95% CL = 2.7 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 9

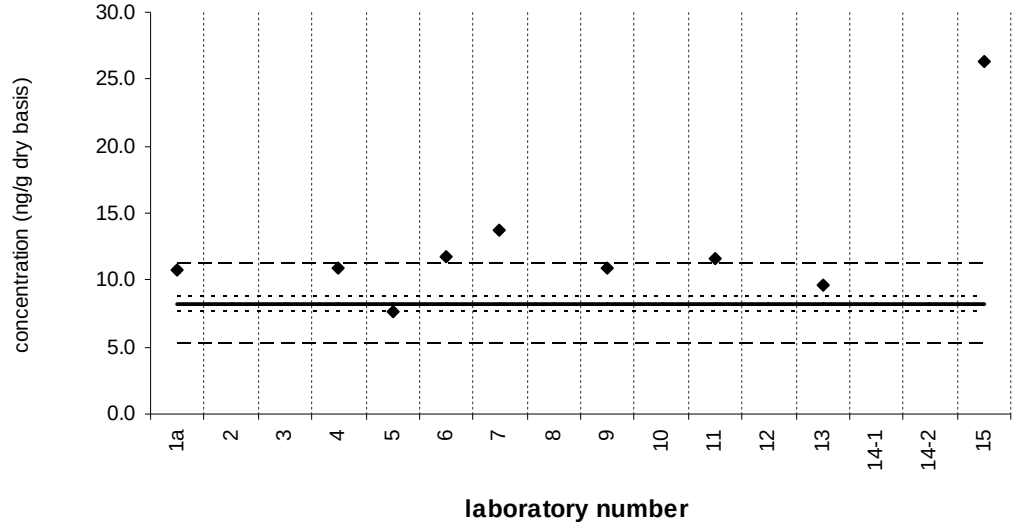


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

trans-nonachlor **SRM 1944**

Certified Value = 8.20 ± 0.51 ng/g (dry basis)

Reported Results: 10 Quantitative Results: 9

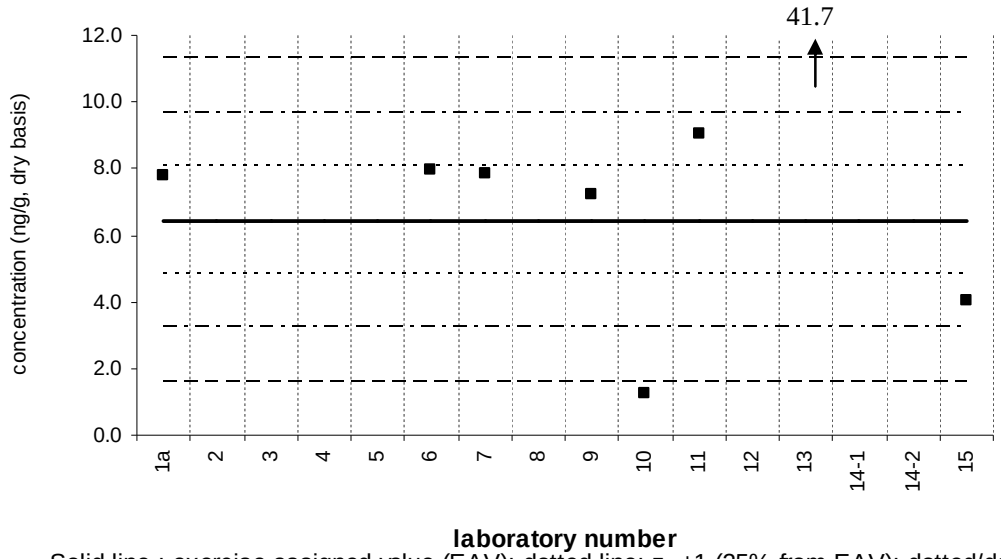


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

dieldrin **Sediment XIV (QA07SED14)**

Assigned value = 6.45 ng/g s = 2.77 ng/g 95% CL = 2.56 ng/g (dry basis)

Reported Results: 13 Quantitative Results: 8

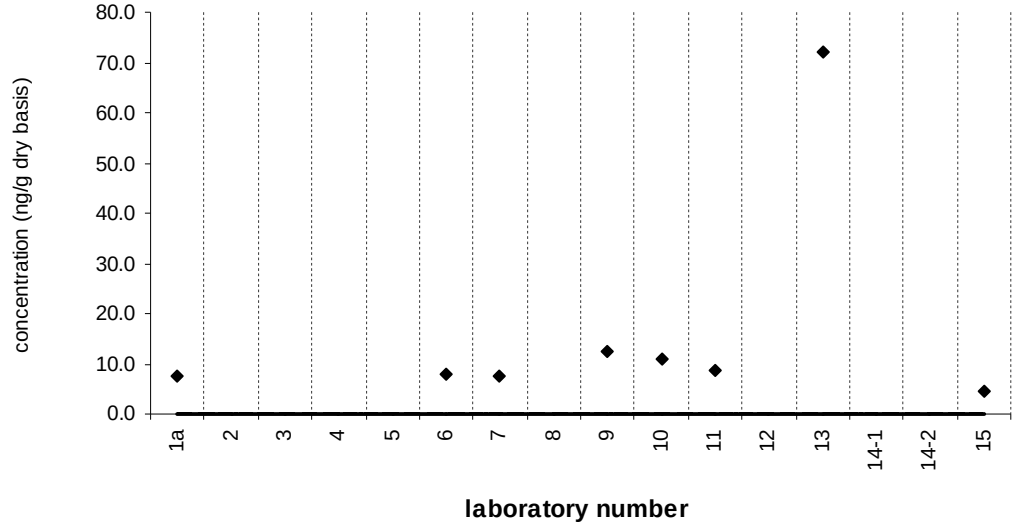


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

dieldrin **SRM 1944**

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

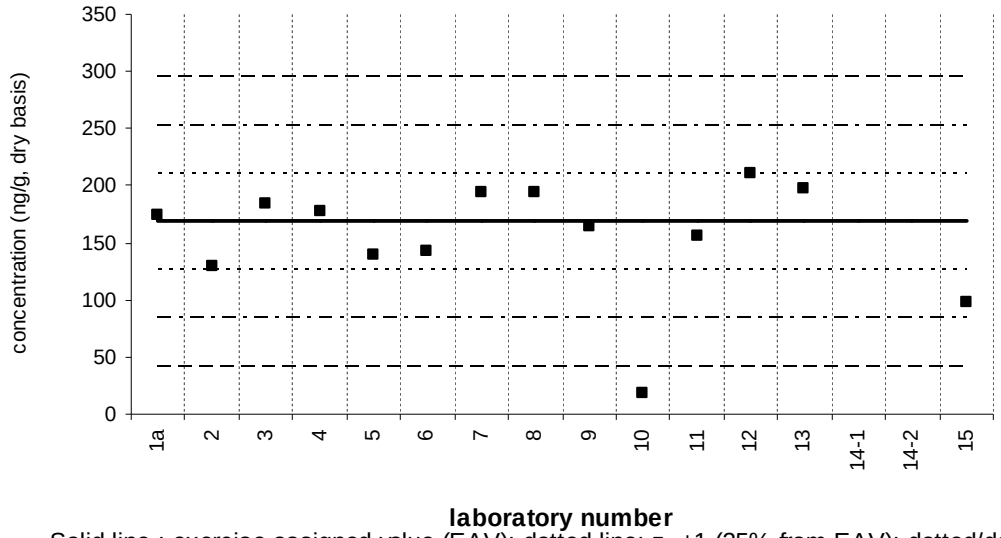
Reported Results: 11 Quantitative Results: 8



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

4,4'-DDE **Sediment XIV (QA07SED14)**

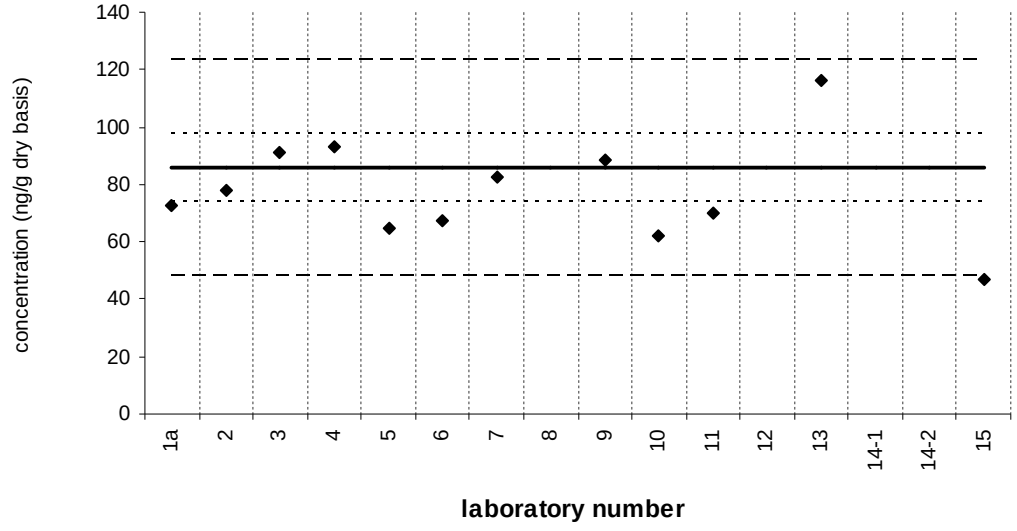
Assigned value = 169 ng/g s = 30 ng/g 95% CL = 20 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 14



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)

4,4'-DDE **SRM 1944**

Reference Value = 86 ± 12 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12

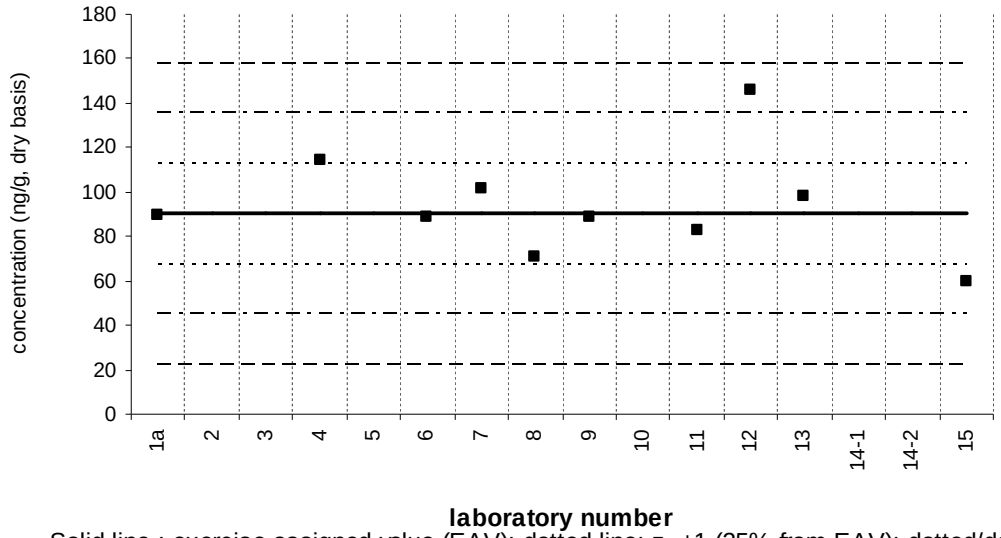


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,4'-DDD **Sediment XIV (QA07SED14)**

Assigned value = 90.4 ng/g s = 16.0 ng/g 95% CL = 13.3 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 10

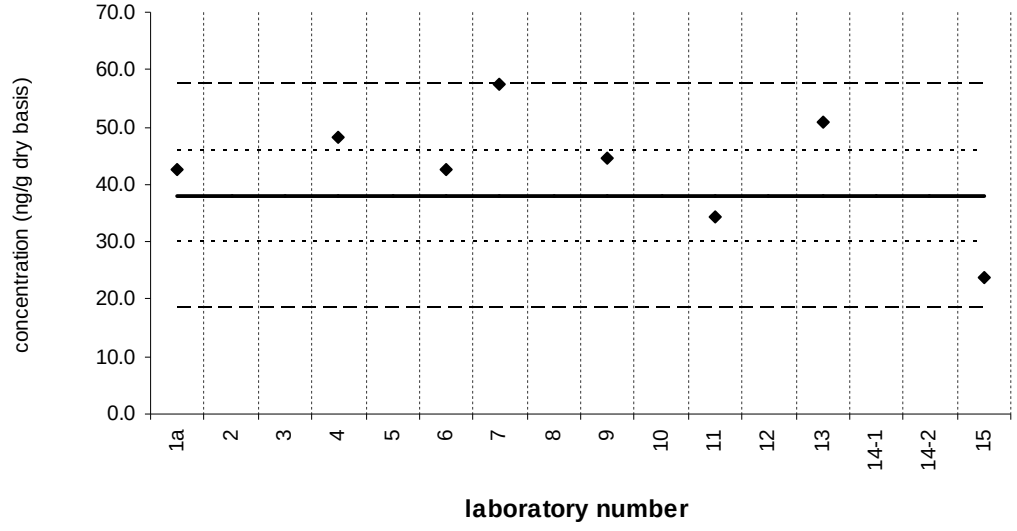


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDD **SRM 1944**

Reference Value = 38 ± 8 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 8

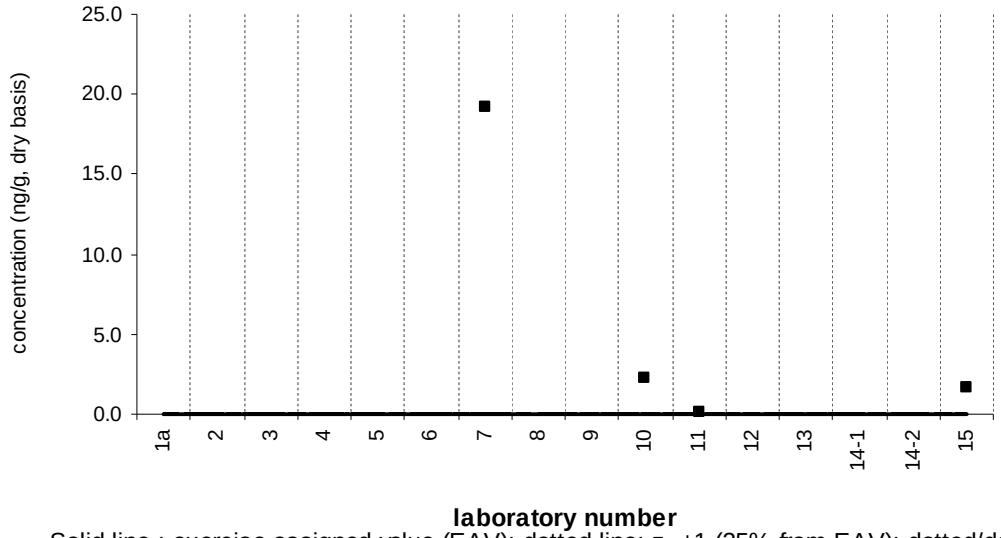


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

endrin **Sediment XIV (QA07SED14)**

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

Reported Results: 10 Quantitative Results: 4

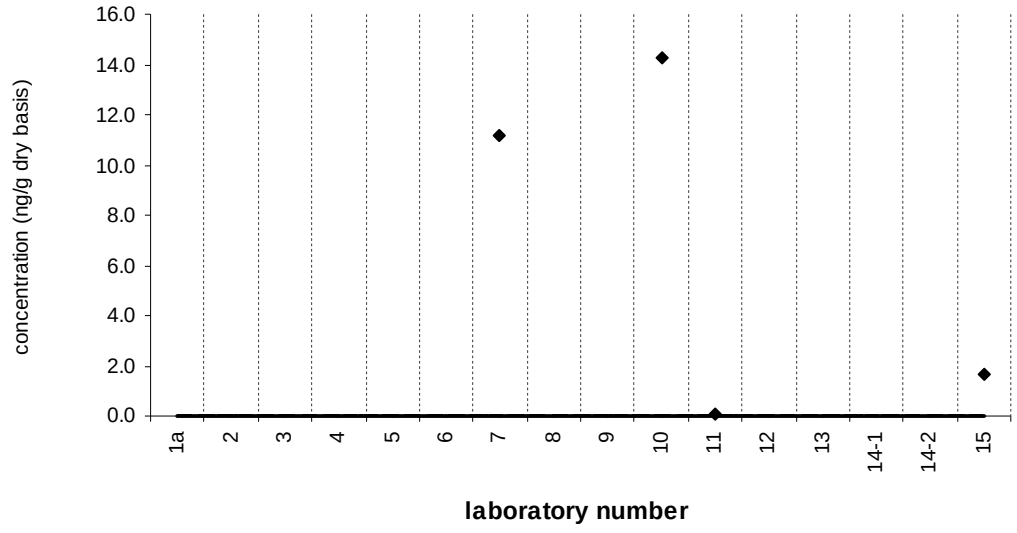


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

endrin **SRM 1944**

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

Reported Results: 9 Quantitative Results: 4

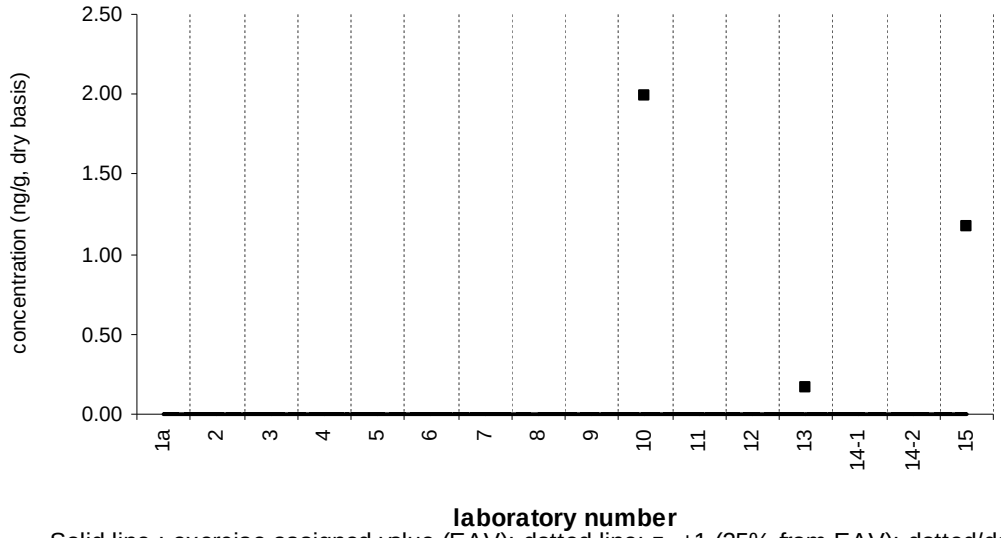


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

endosulfan II **Sediment XIV (QA07SED14)**

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

Reported Results: 10 Quantitative Results: 3

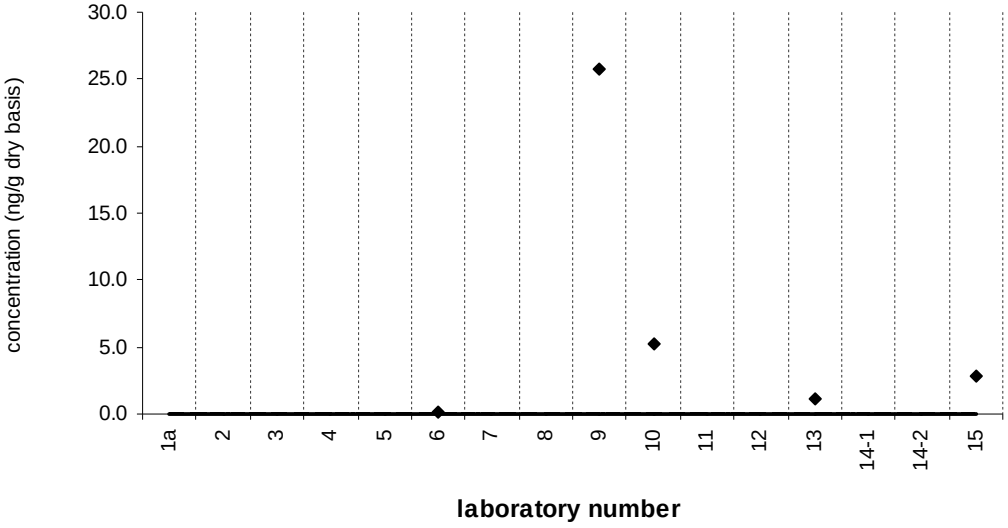


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

endosulfan II **SRM 1944**

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

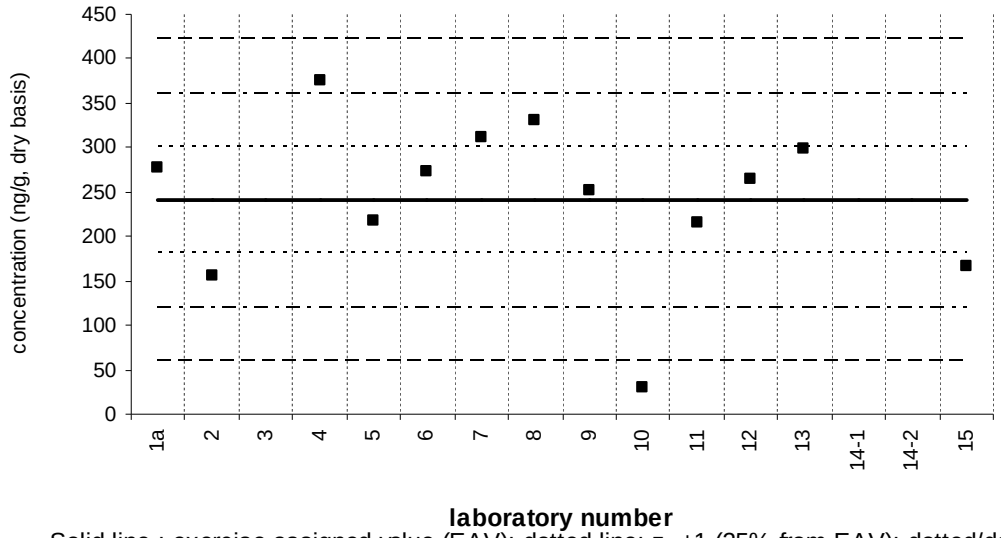
Reported Results: 8 Quantitative Results: 5



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

4,4'-DDD **Sediment XIV (QA07SED14)**

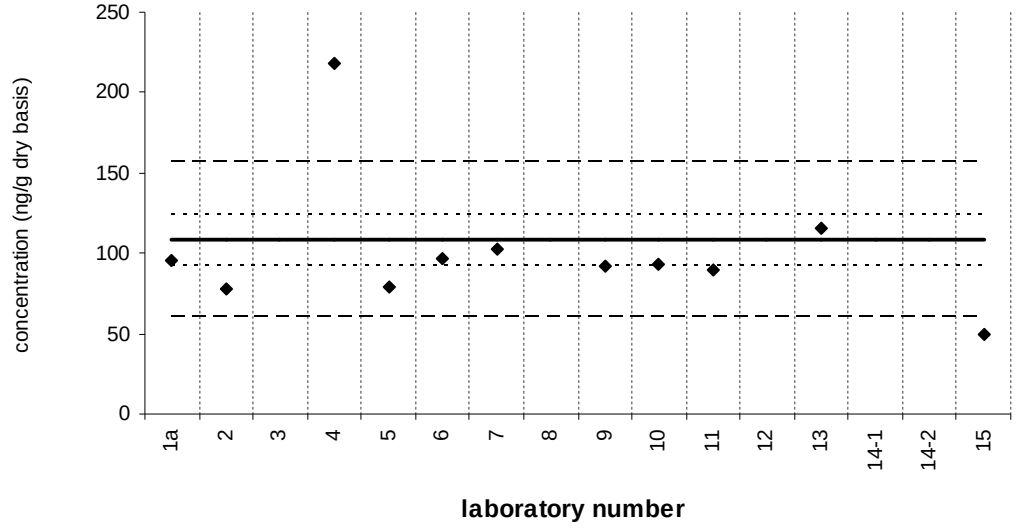
Assigned value = 241 ng/g s = 56 ng/g 95% CL = 43 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 13



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)

4,4'-DDD **SRM 1944**

Reference Value = 108 ± 16 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 11

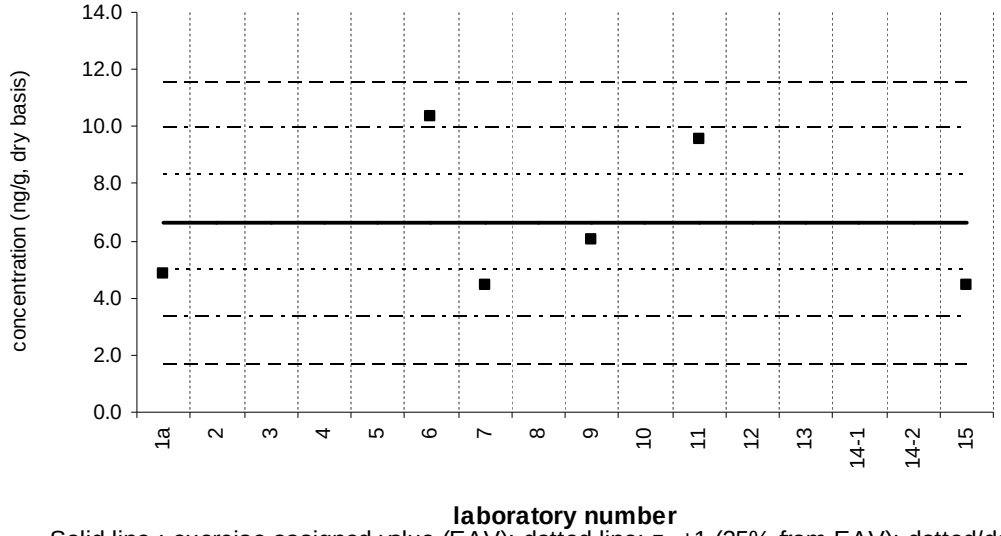


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

2,4'-DDT **Sediment XIV (QA07SED14)**

Assigned value = 6.61 ng/g s = 2.67 ng/g 95% CL = 2.80 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 6

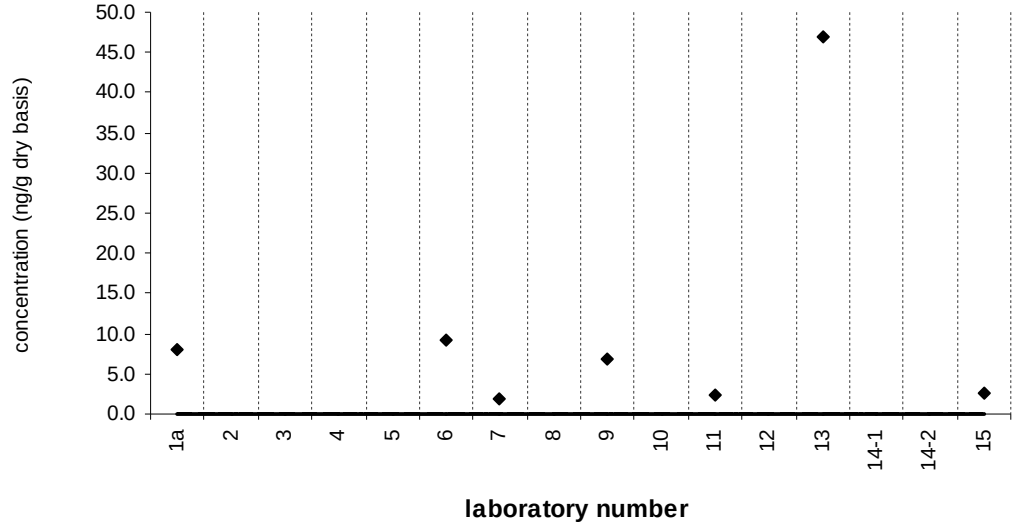


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

2,4'-DDT **SRM 1944**

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

Reported Results: 9 Quantitative Results: 7

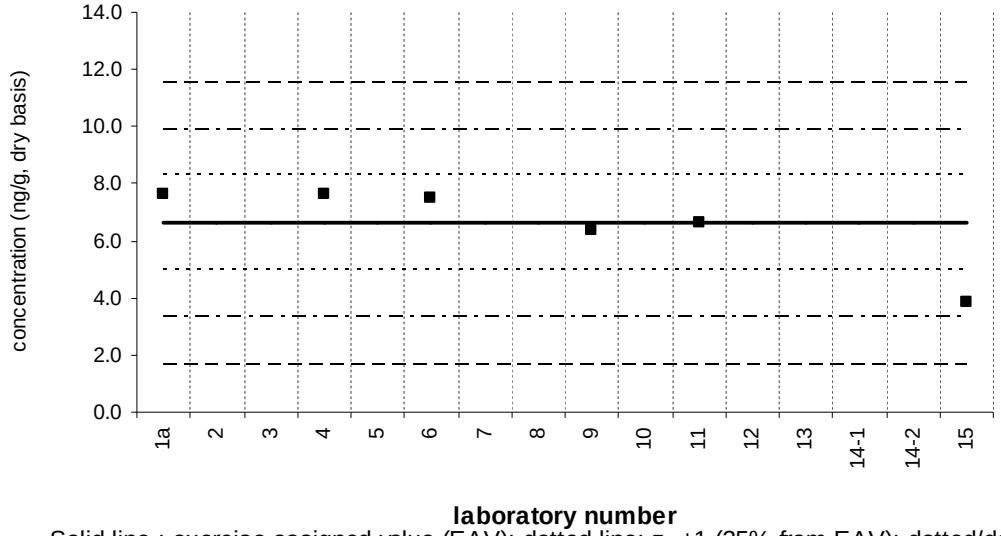


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

cis-nonachlor **Sediment XIV (QA07SED14)**

Assigned value = 6.61 ng/g s = 1.46 ng/g 95% CL = 1.54 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 6

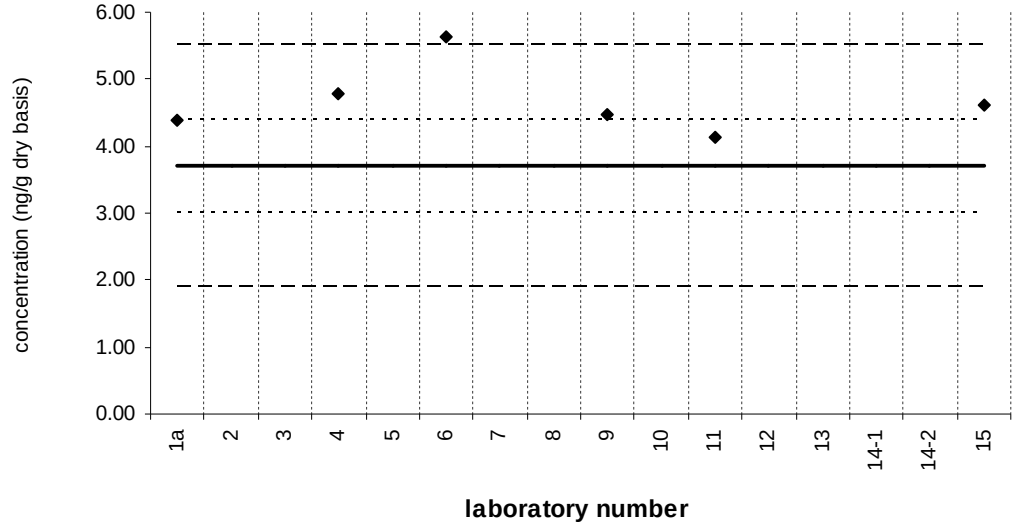


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

cis-nonachlor **SRM 1944**

Reference Value = 3.7 ± 0.7 ng/g (dry basis)

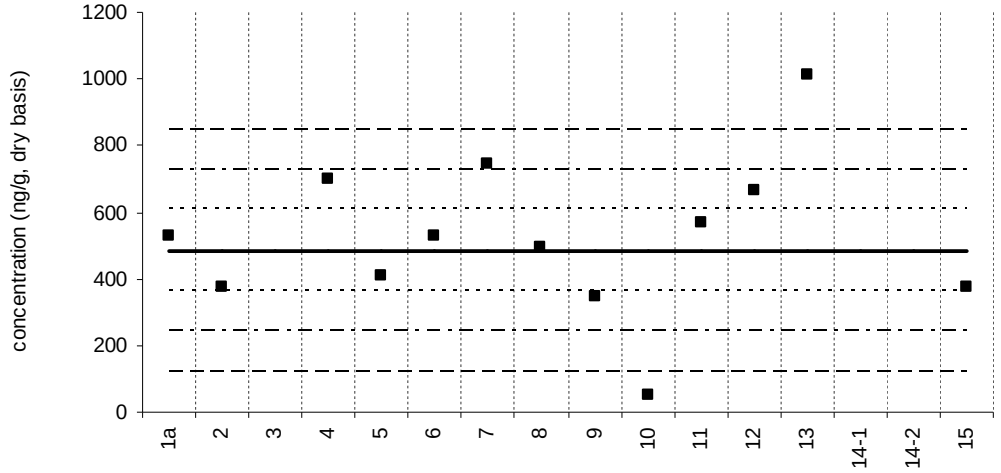
Reported Results: 7 Quantitative Results: 6



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

4,4'-DDT **Sediment XIV (QA07SED14)**

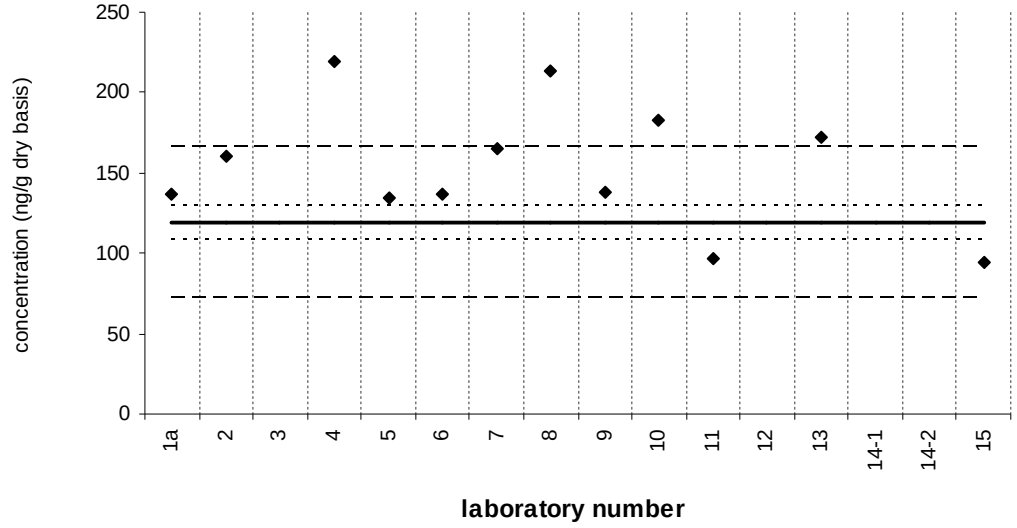
Assigned value = 485 ng/g s = 135 ng/g 95% CL = 113 ng/g (dry basis)
Reported Results: 14 Quantitative Results: 13



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)

4,4'-DDT **SRM 1944**

Certified Value = 119 ± 11 ng/g (dry basis)
Reported Results: 13 Quantitative Results: 12

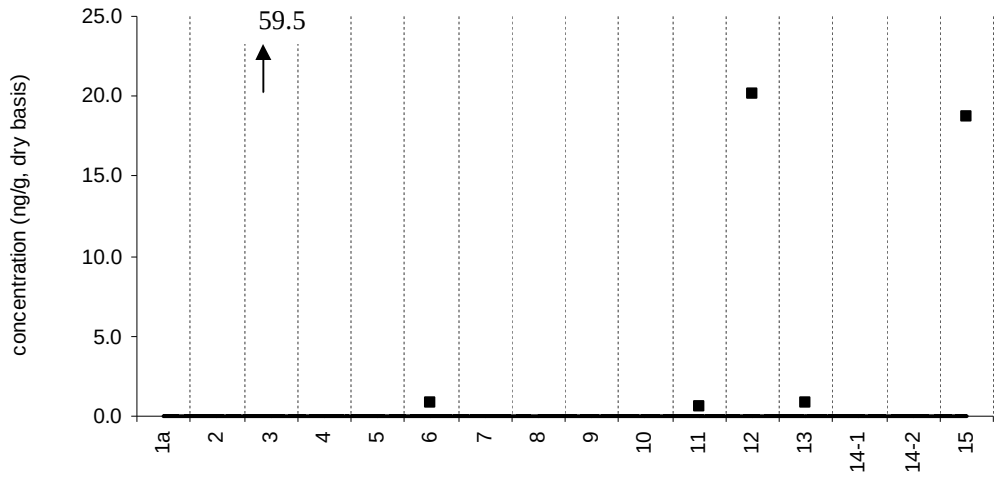


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

mirex **Sediment XIV (QA07SED14)**

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

Reported Results: 11 Quantitative Results: 6

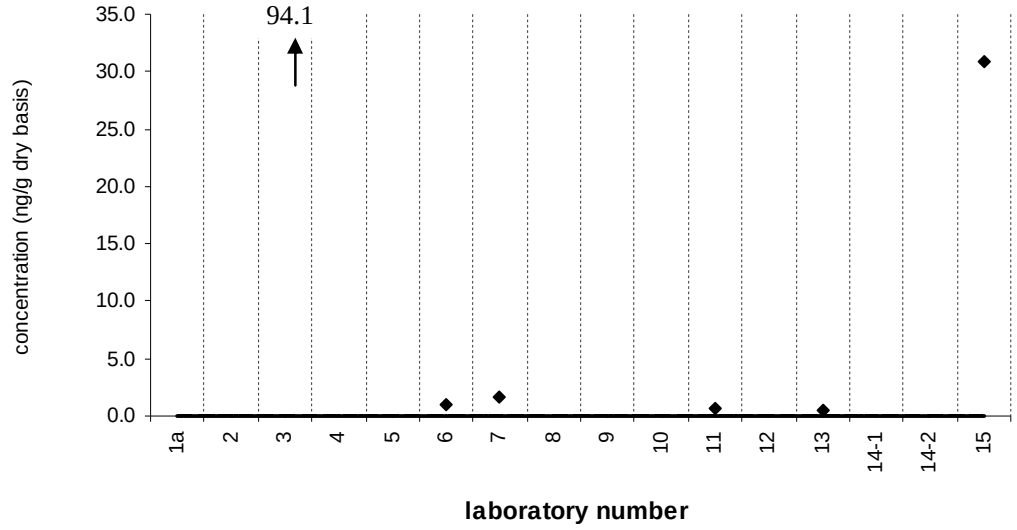


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

mirex **SRM 1944**

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

Reported Results: 9 Quantitative Results: 6

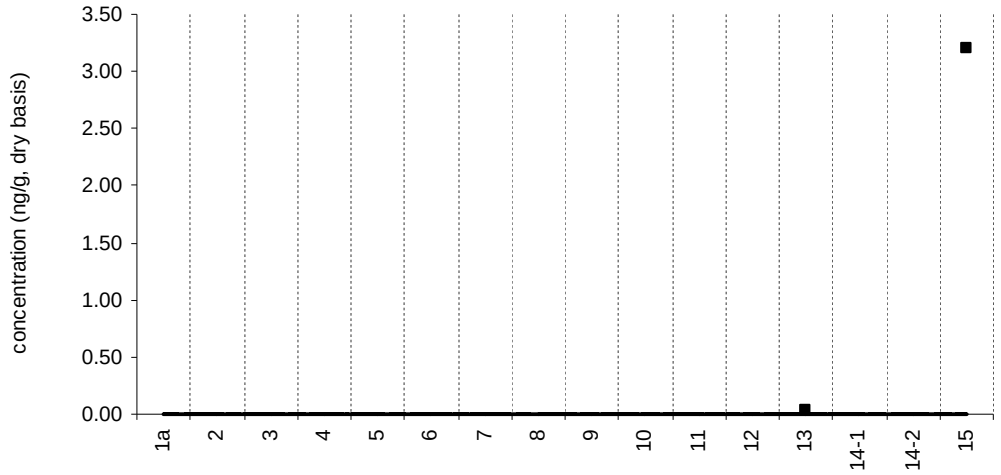


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

endosulfan sulfate **Sediment XIV (QA07SED14)**

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

Reported Results: 7 Quantitative Results: 2

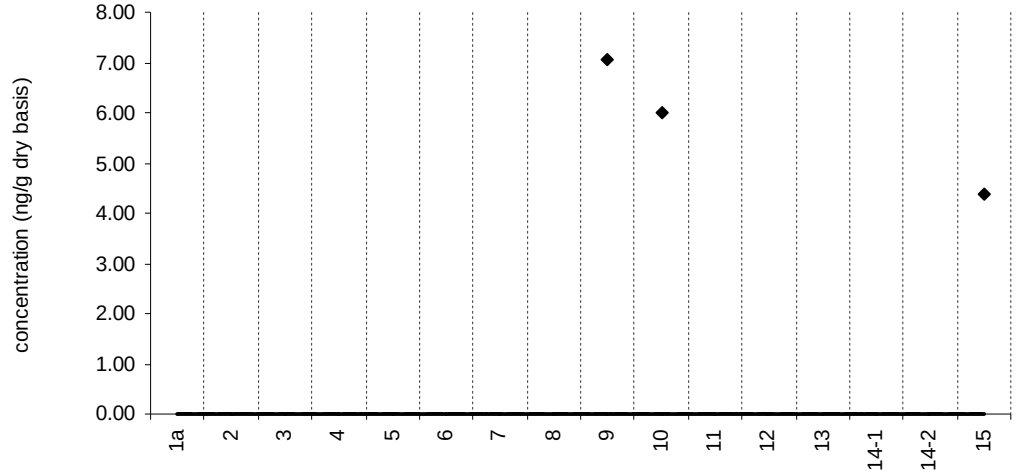


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

endosulfan sulfate **SRM 1944**

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

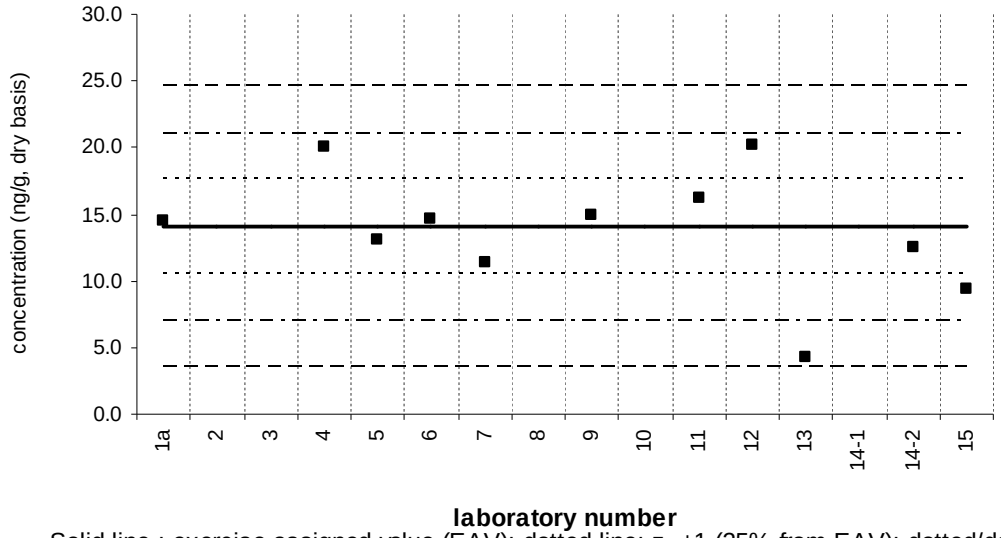
Reported Results: 7 Quantitative Results: 3



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

PCB 8 **Sediment XIV (QA07SED14)**

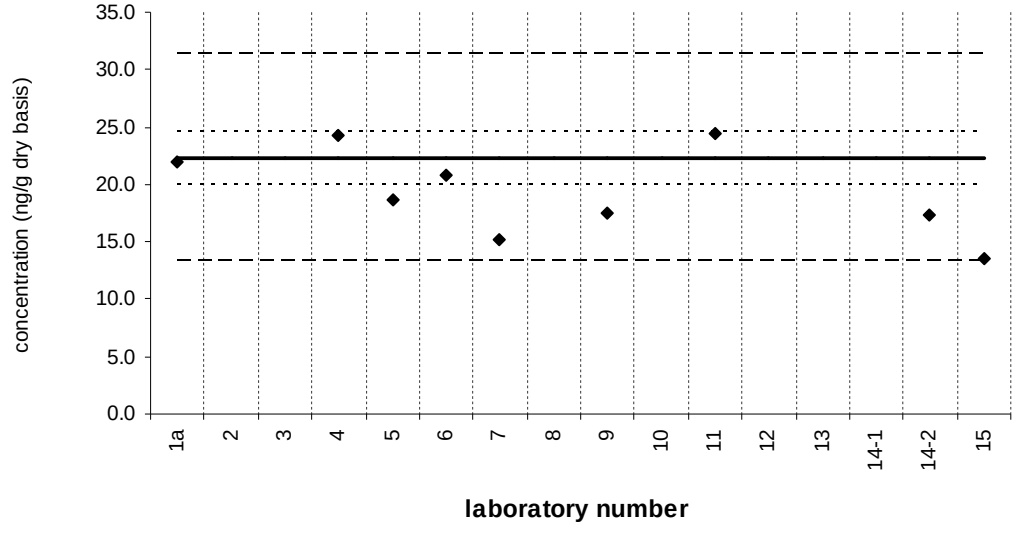
Assigned value = 14.1 ng/g s = 3.0 ng/g 95% CL = 2.3 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 8 **SRM 1944**

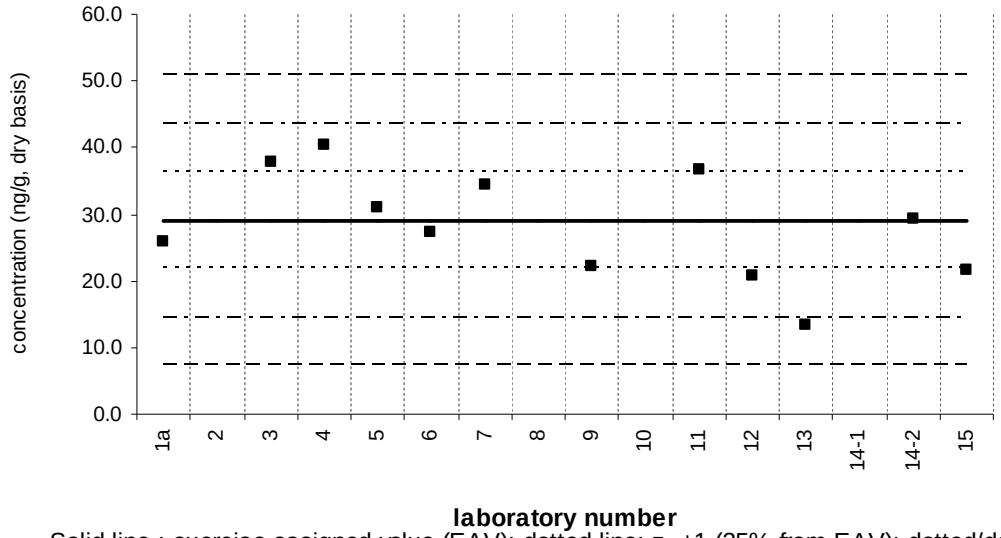
Certified Value = 22.3 ± 2.3 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9



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

PCB 18 **Sediment XIV (QA07SED14)**

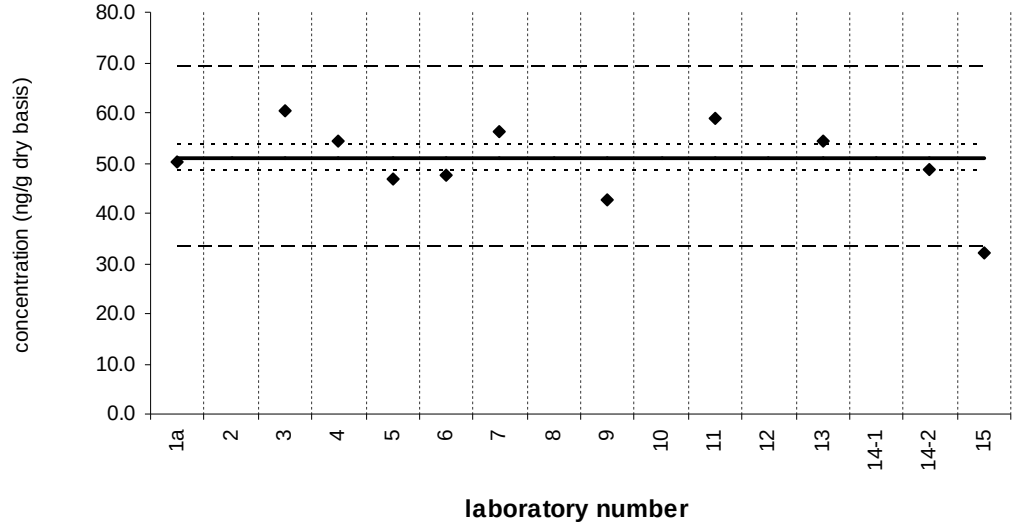
Assigned value = 29.1 ng/g s = 8.1 ng/g 95% CL = 5.5 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 18 **SRM 1944**

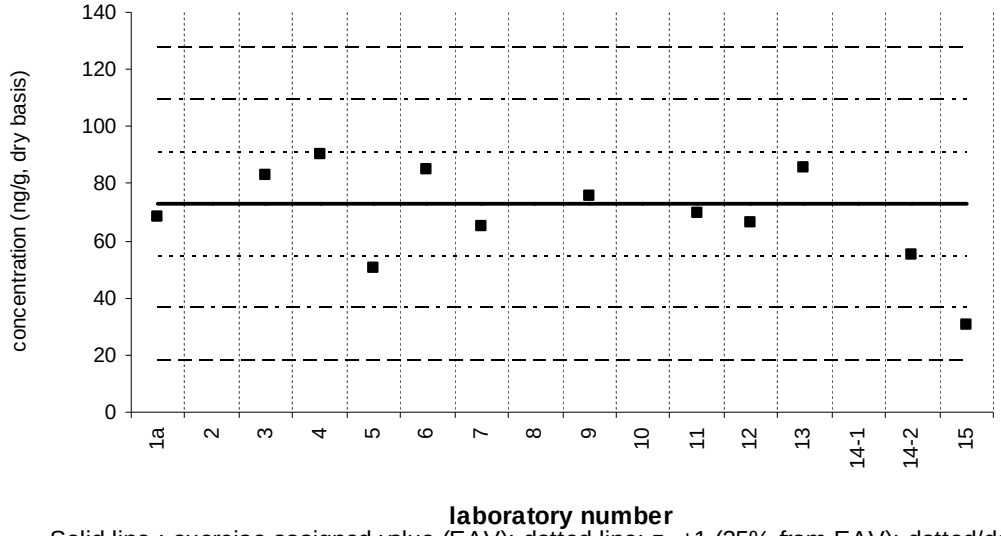
Certified Value = 51.0 ± 2.6 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 28 **Sediment XIV (QA07SED14)**

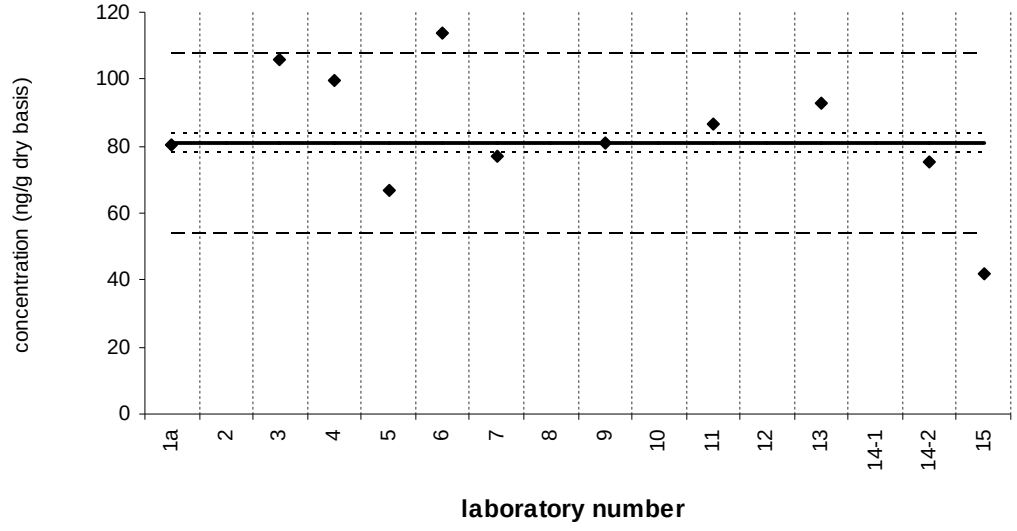
Assigned value = 72.9 ng/g s = 13.5 ng/g 95% CL = 9.6 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 28 **SRM 1944**

Certified Value = 80.8 ± 2.7 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

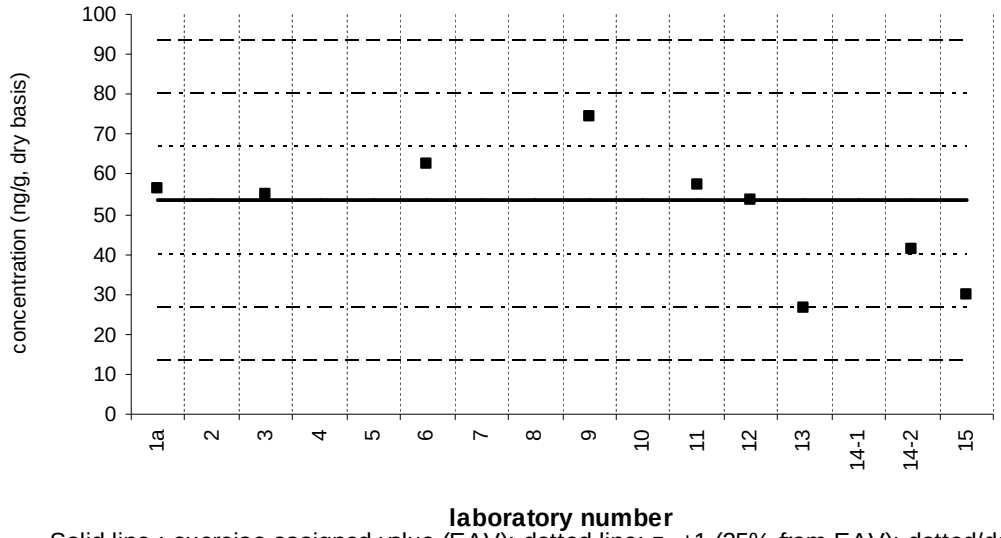


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 31 **Sediment XIV (QA07SED14)**

Assigned value = 53.3 ng/g s = 15.3 ng/g 95% CL = 14.1 ng/g (dry basis)

Reported Results: 9 Quantitative Results: 9

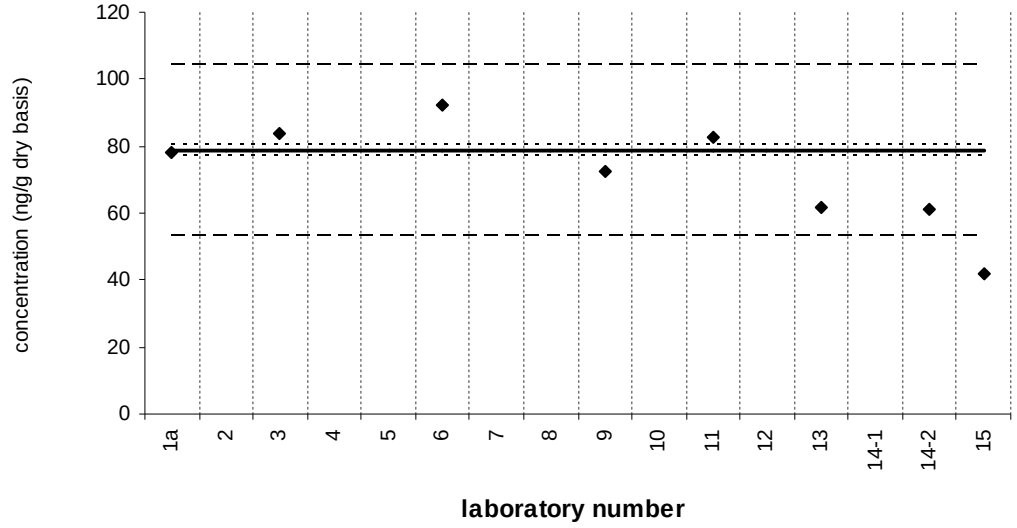


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 31 **SRM 1944**

Certified Value = 78.7 ± 1.6 ng/g (dry basis)

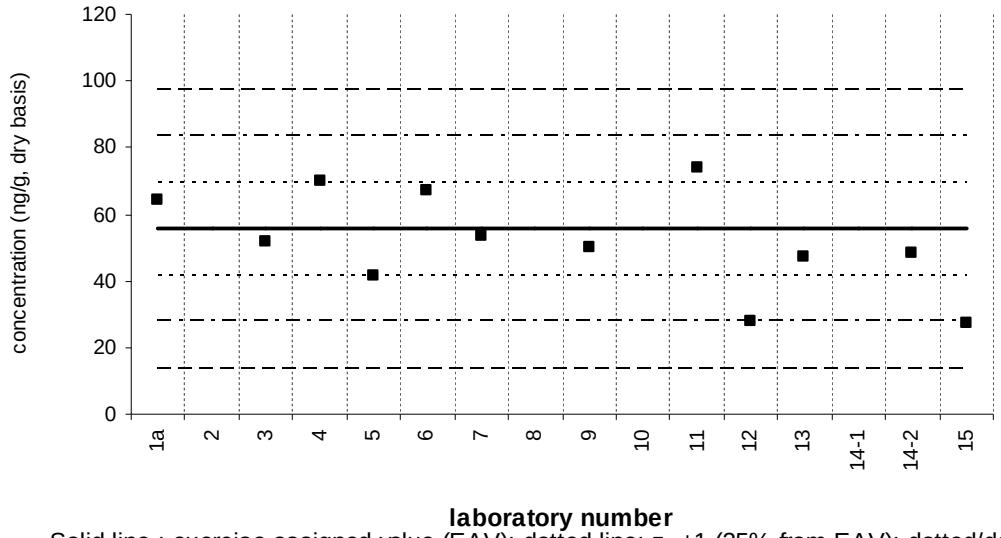
Reported Results: 8 Quantitative Results: 8



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

PCB 44 **Sediment XIV (QA07SED14)**

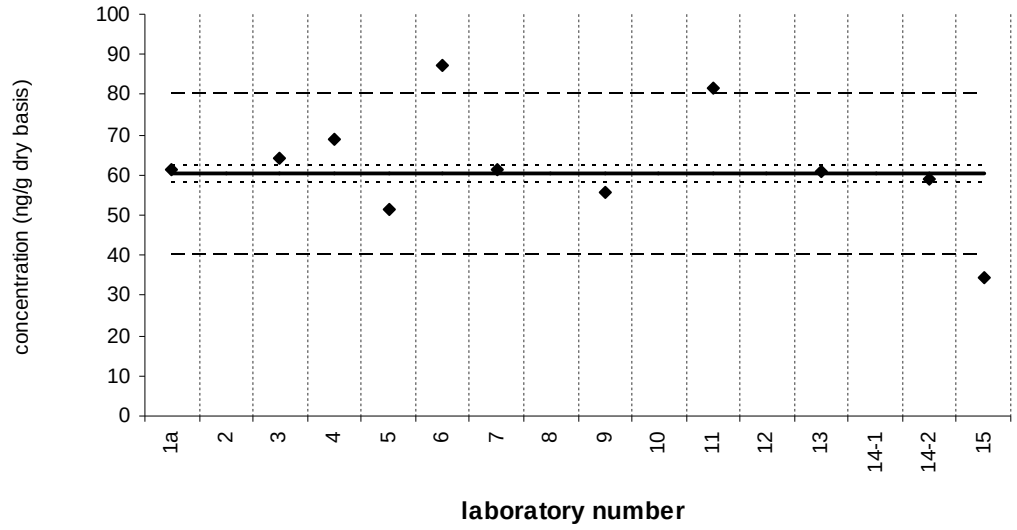
Assigned value = 55.6 ng/g s = 11.2 ng/g 95% CL = 8.6 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 44 **SRM 1944**

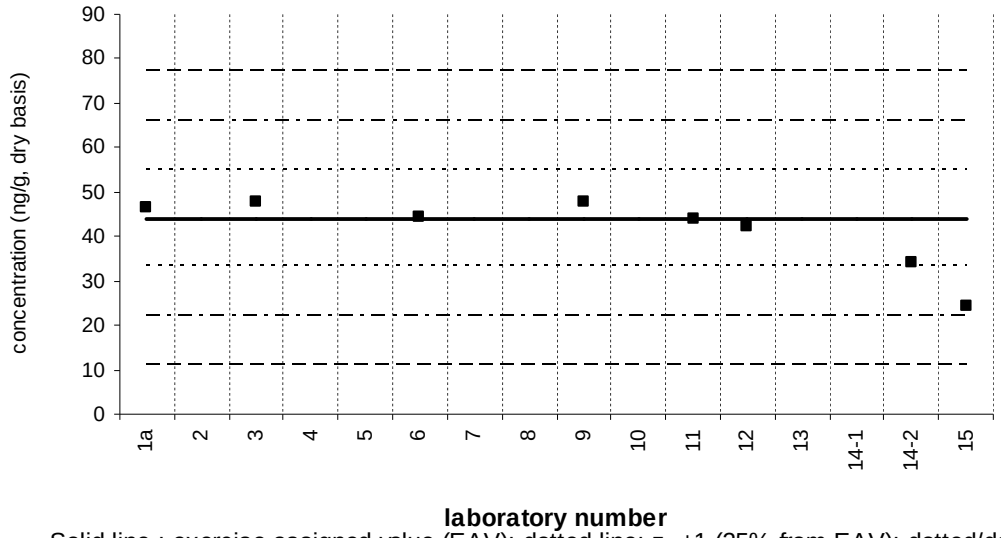
Certified Value = 60.2 ± 2.0 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 49 **Sediment XIV (QA07SED14)**

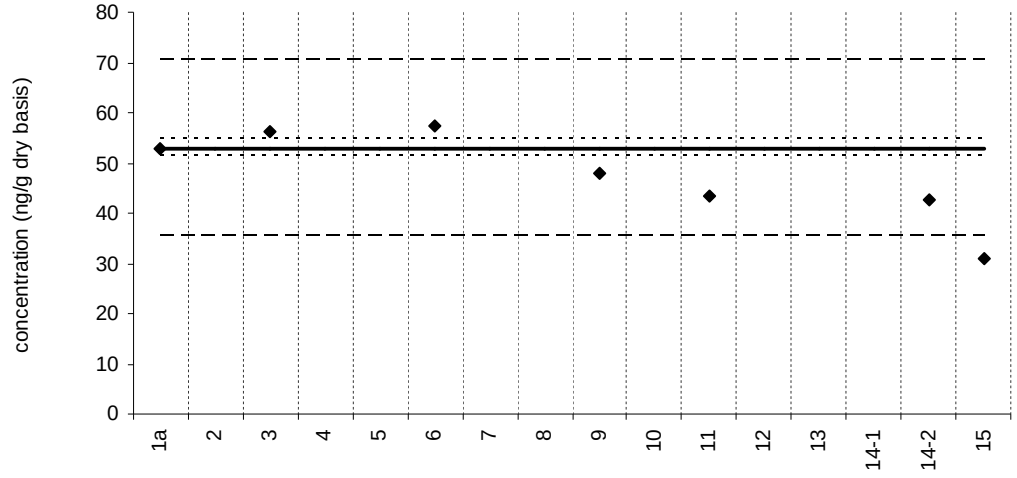
Assigned value = 44.1 ng/g s = 5.1 ng/g 95% CL = 5.3 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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)

PCB 49 **SRM 1944**

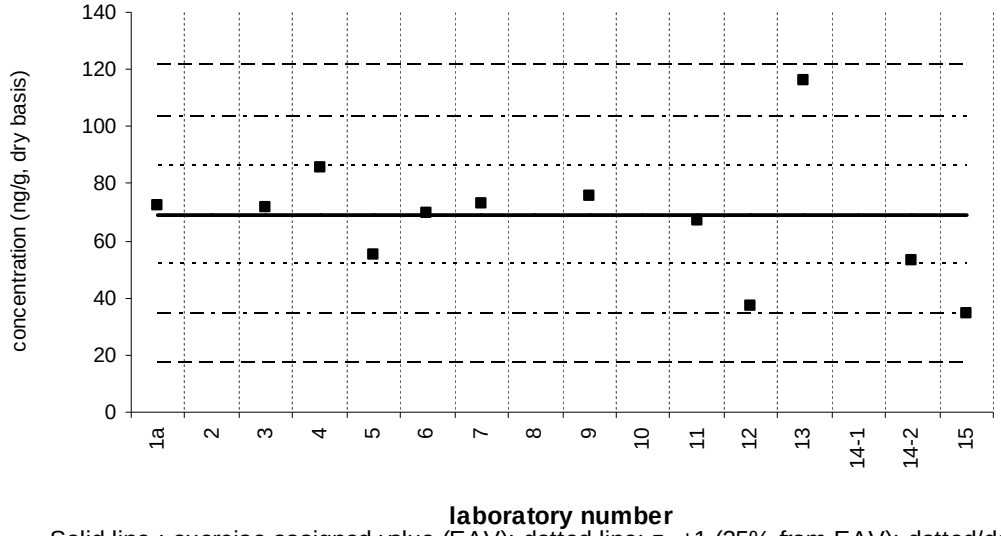
Certified Value = 53.0 ± 1.7 ng/g (dry basis)
Reported Results: 7 Quantitative Results: 7



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

PCB 52 **Sediment XIV (QA07SED14)**

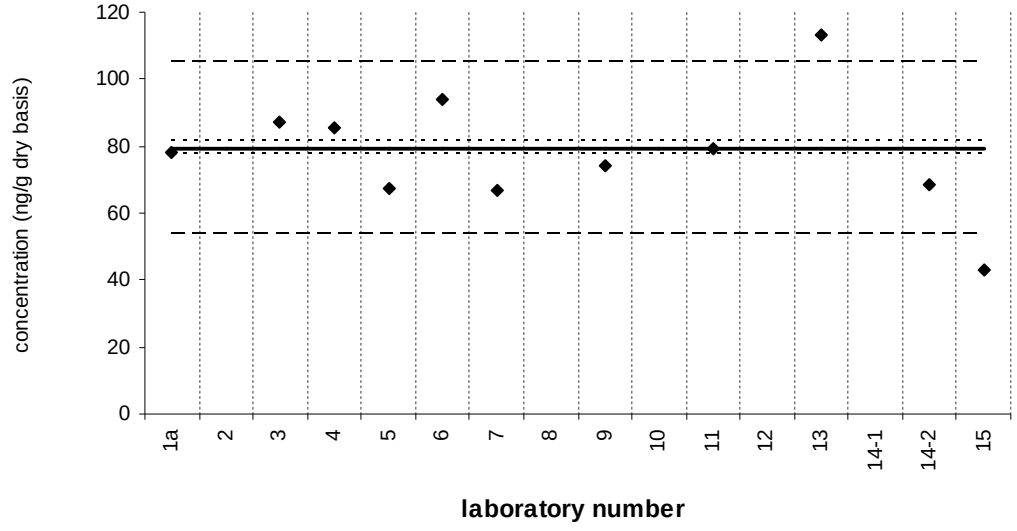
Assigned value = 69.2 ng/g s = 10.0 ng/g 95% CL = 7.7 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 52 **SRM 1944**

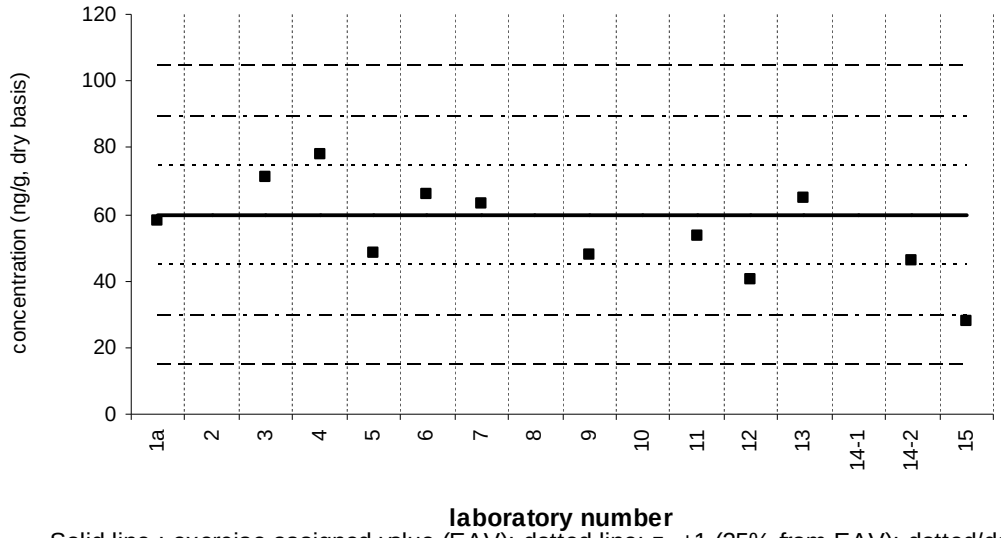
Certified Value = 79.4 ± 2.0 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 66 **Sediment XIV (QA07SED14)**

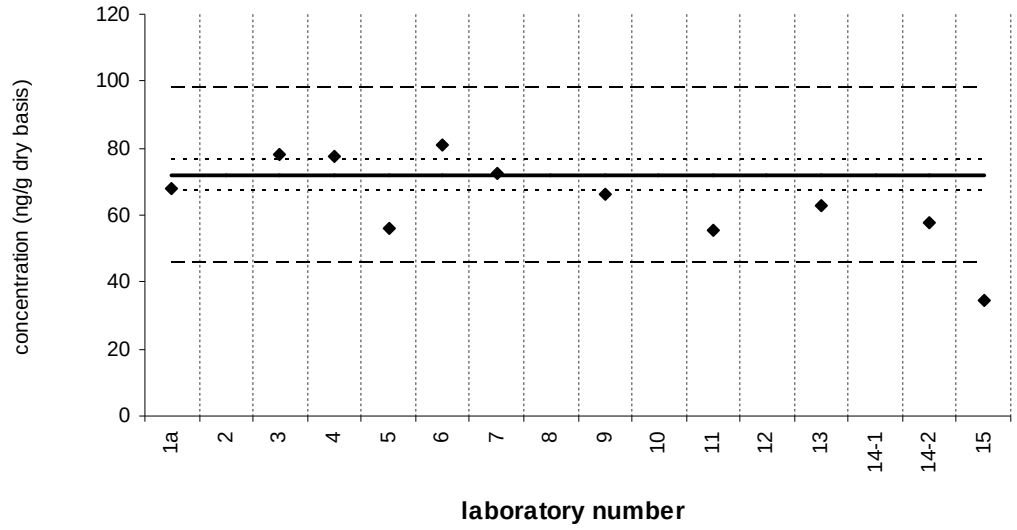
Assigned value = 59.6 ng/g s = 10.7 ng/g 95% CL = 7.7 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 66 **SRM 1944**

Certified Value = 71.9 ± 4.3 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

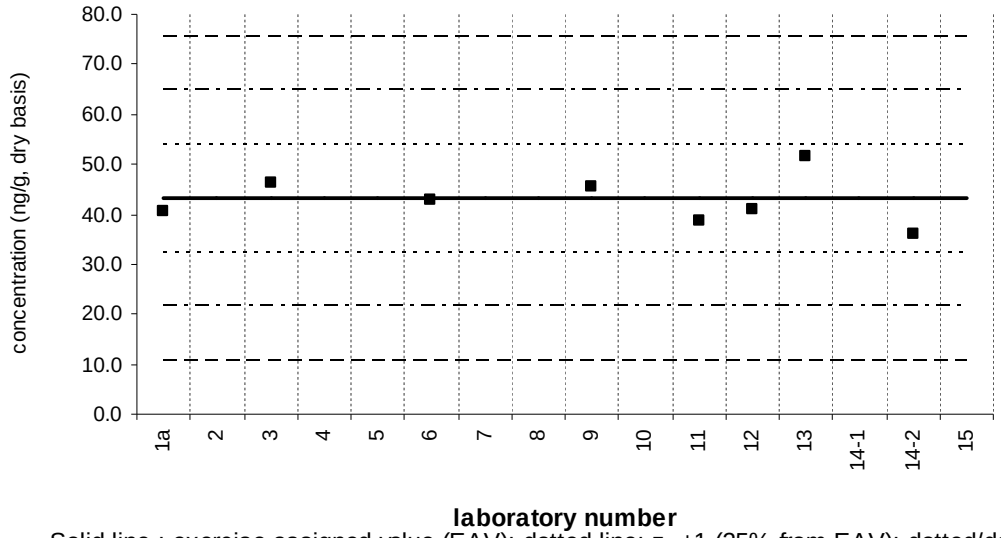


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 95 **Sediment XIV (QA07SED14)**

Assigned value = 43.1 ng/g s = 5.2 ng/g 95% CL = 4.8 ng/g (dry basis)

Reported Results: 8 Quantitative Results: 8

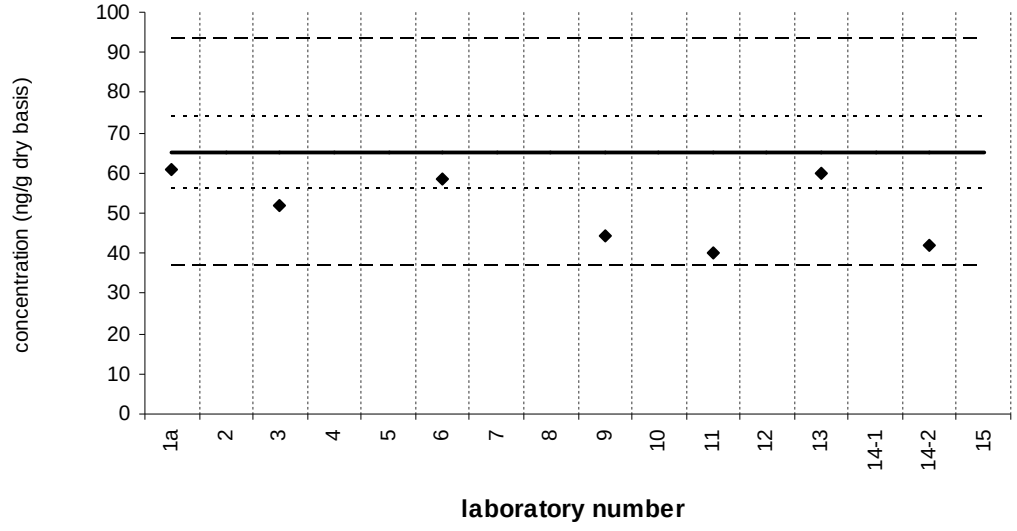


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 95 **SRM 1944**

Certified Value = 65.0 ± 8.9 ng/g (dry basis)

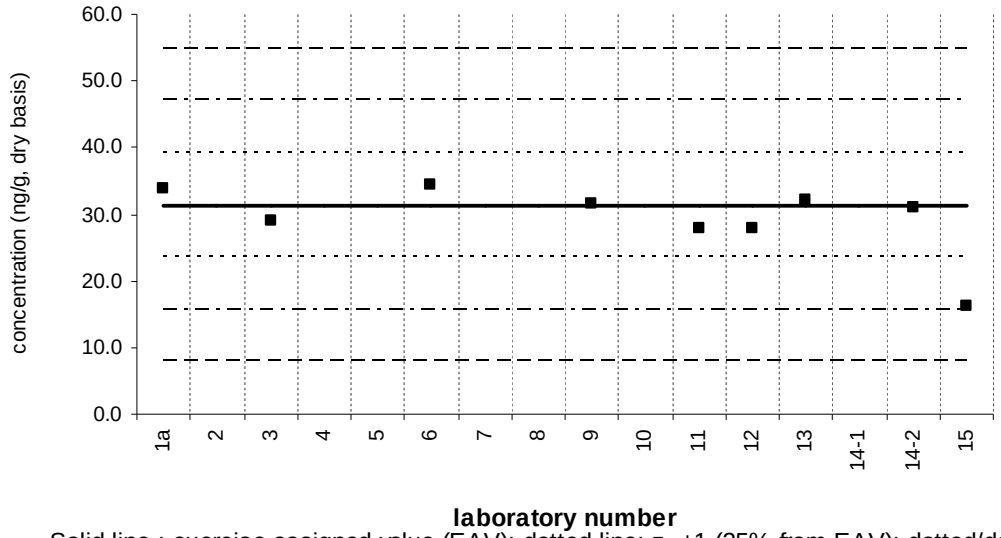
Reported Results: 7 Quantitative Results: 7



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

PCB 99 **Sediment XIV (QA07SED14)**

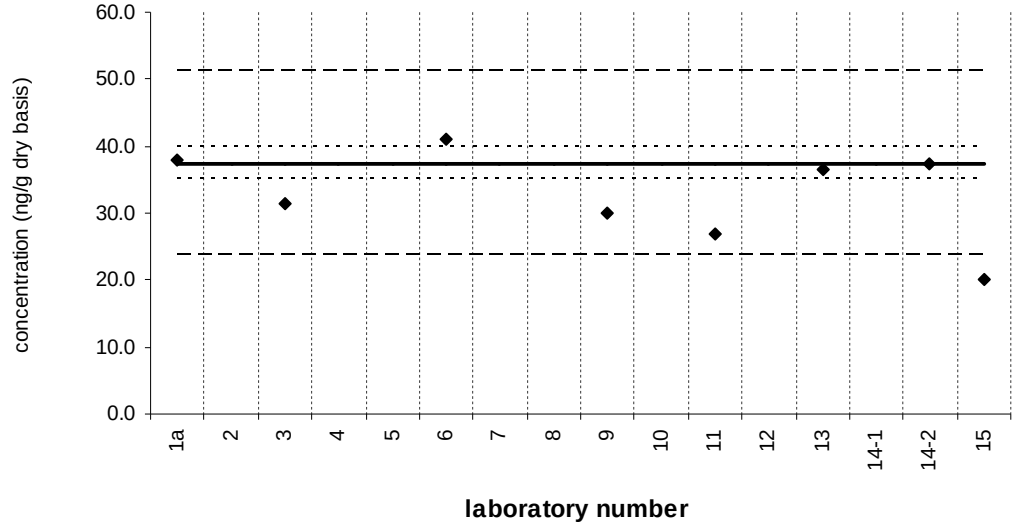
Assigned value = 31.4 ng/g s = 2.4 ng/g 95% CL = 2.2 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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)

PCB 99 **SRM 1944**

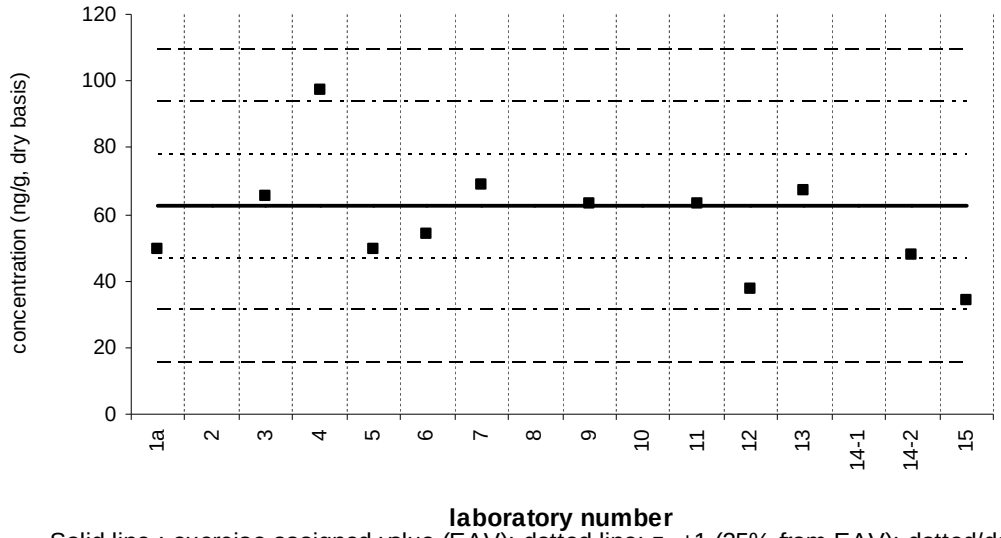
Certified Value = 37.5 ± 2.4 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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

PCB 101 **Sediment XIV (QA07SED14)**

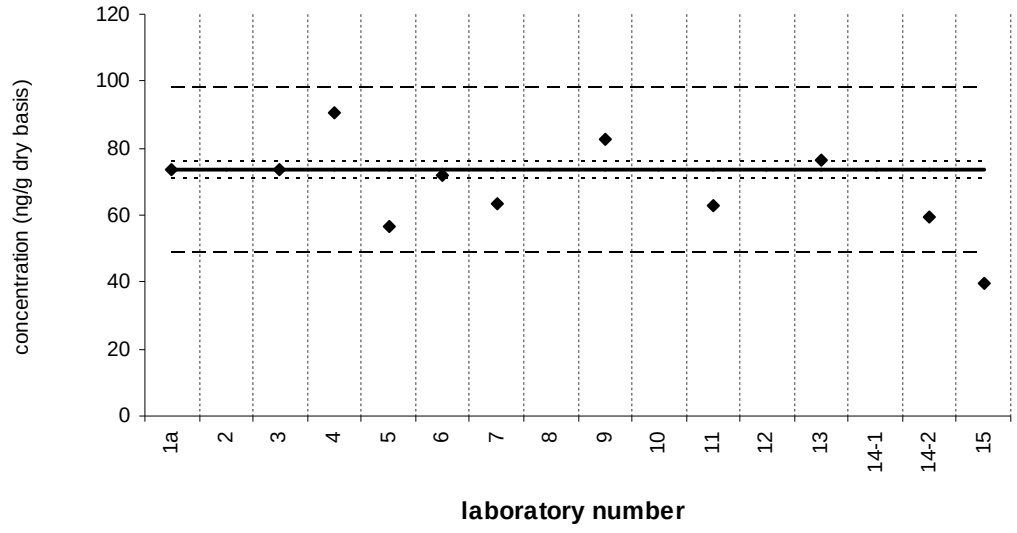
Assigned value = 62.5 ng/g s = 14.6 ng/g 95% CL = 10.4 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 101 **SRM 1944**

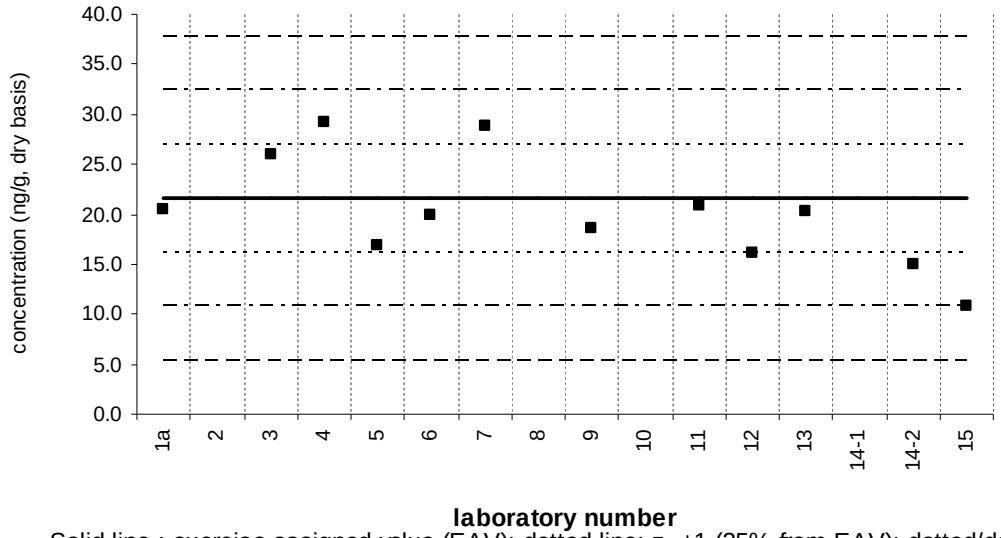
Certified Value = 73.4 ± 2.5 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 105 **Sediment XIV (QA07SED14)**

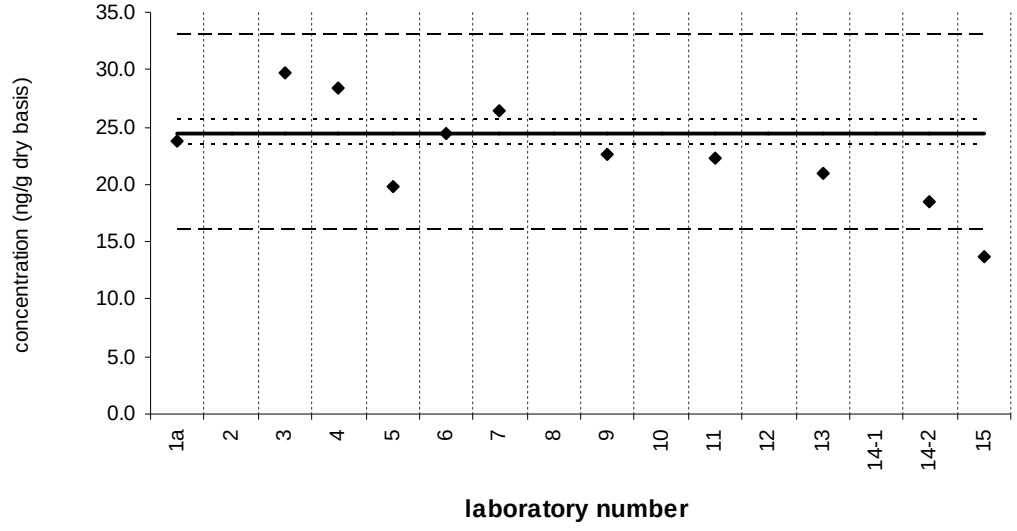
Assigned value = 21.6 ng/g s = 4.8 ng/g 95% CL = 3.5 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 105 **SRM 1944**

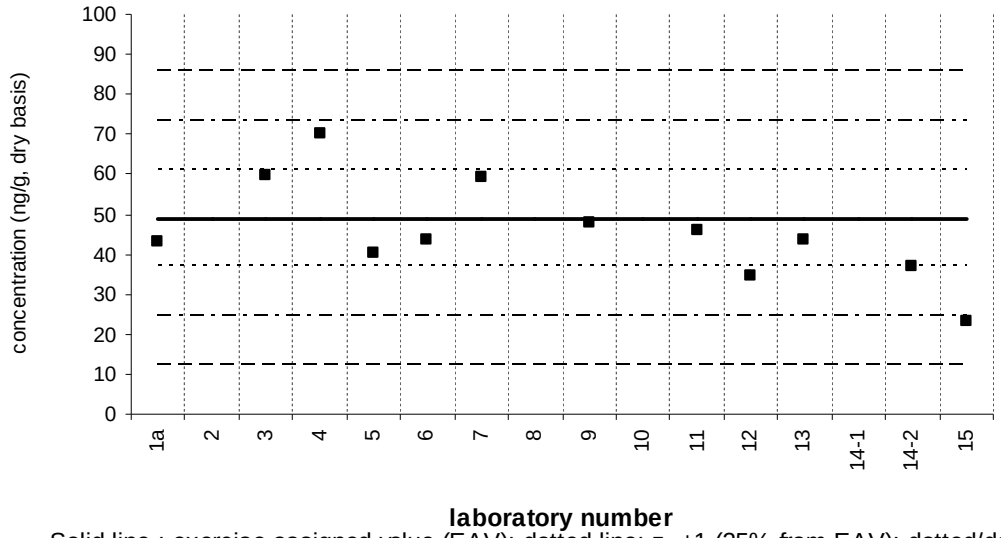
Certified Value = 24.5 ± 1.1 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 118 **Sediment XIV (QA07SED14)**

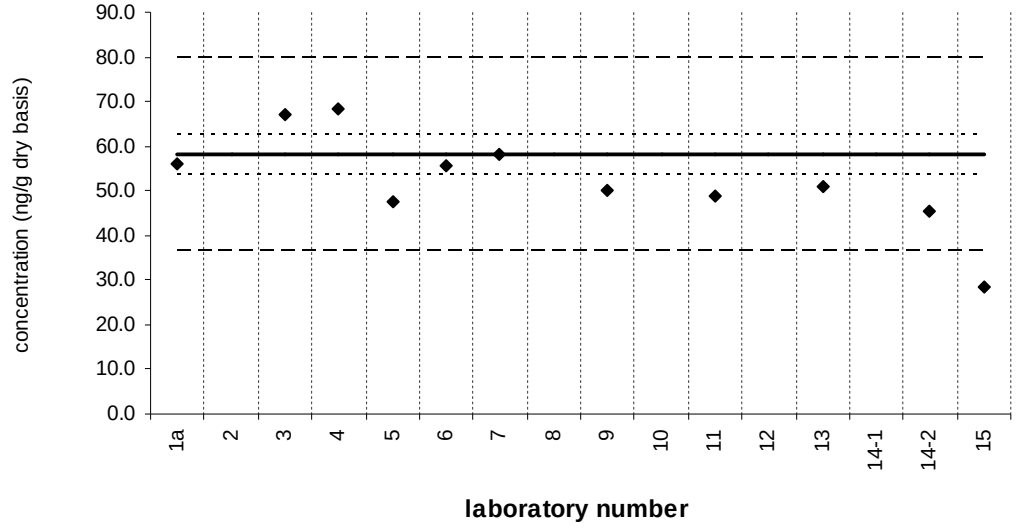
Assigned value = 49.0 ng/g s = 10.6 ng/g 95% CL = 7.5 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 118 **SRM 1944**

Certified Value = 58.0 ± 4.3 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11

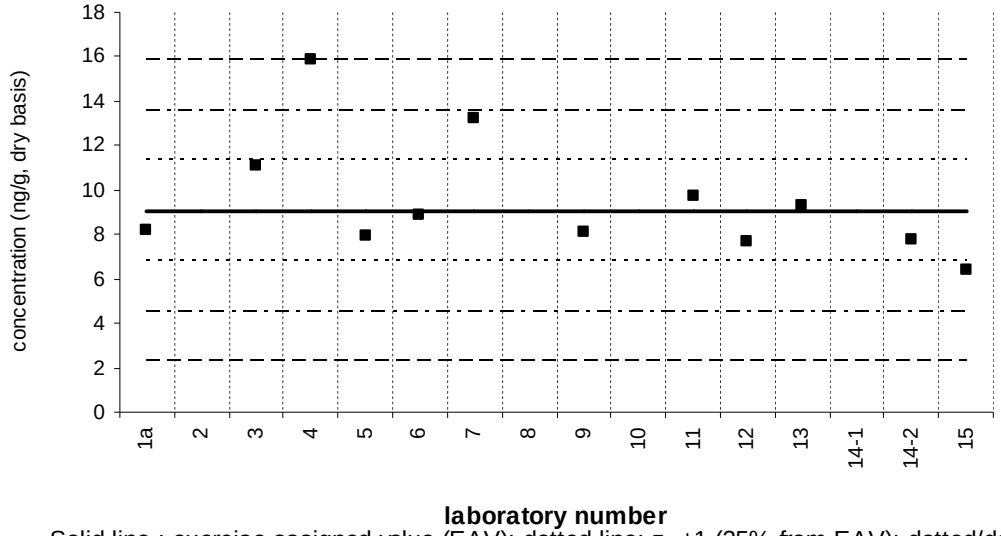


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 128 **Sediment XIV (QA07SED14)**

Assigned value = 9.06 ng/g s = 1.94 ng/g 95% CL = 1.38 ng/g (dry basis)

Reported Results: 12 Quantitative Results: 12

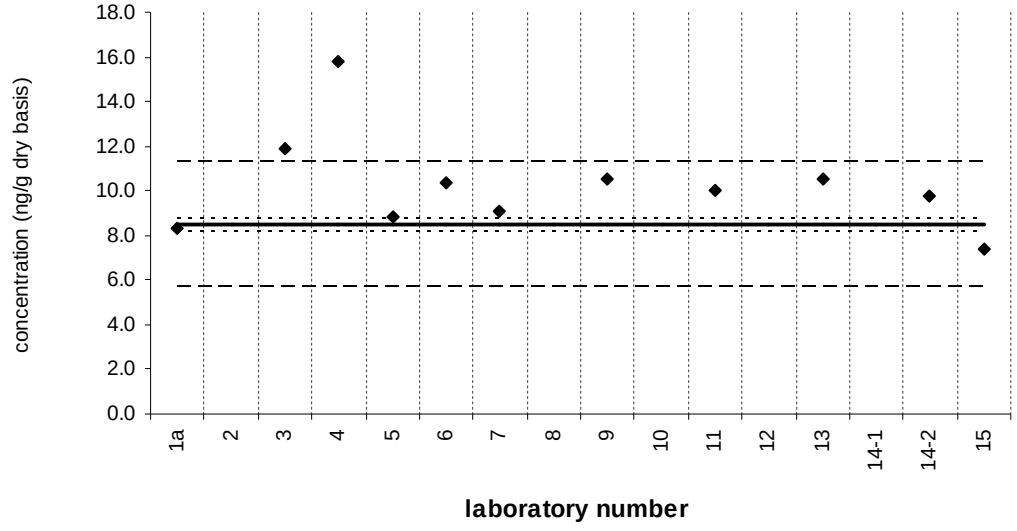


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 128 **SRM 1944**

Certified Value = 8.47 ± 0.28 ng/g (dry basis)

Reported Results: 11 Quantitative Results: 11

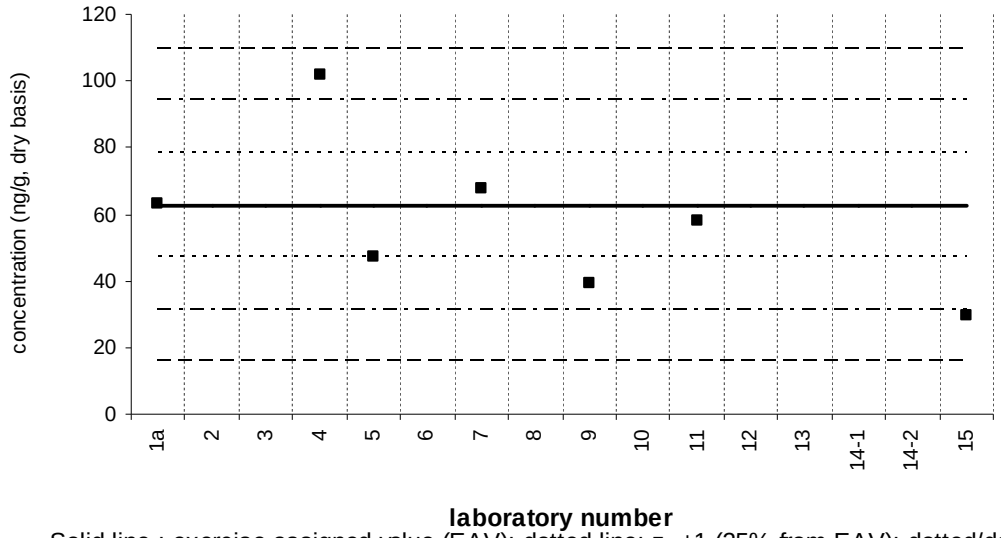


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 138 **Sediment XIV (QA07SED14)**

Assigned value = 62.8 ng/g s = 21.7 ng/g 95% CL = 26.9 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

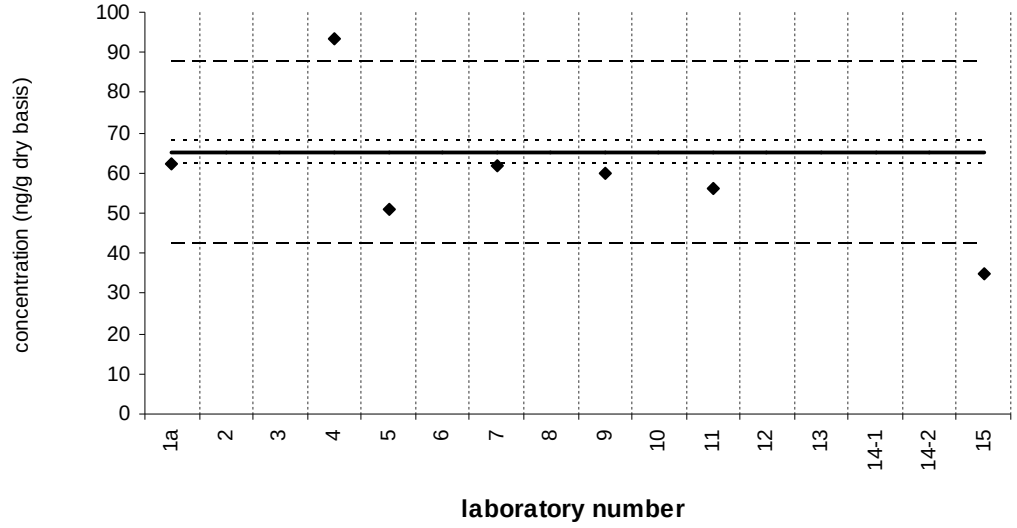


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 138 **SRM 1944**

Certified Value = 65.1 ± 3.0 ng/g (dry basis)

Reported Results: 7 Quantitative Results: 7

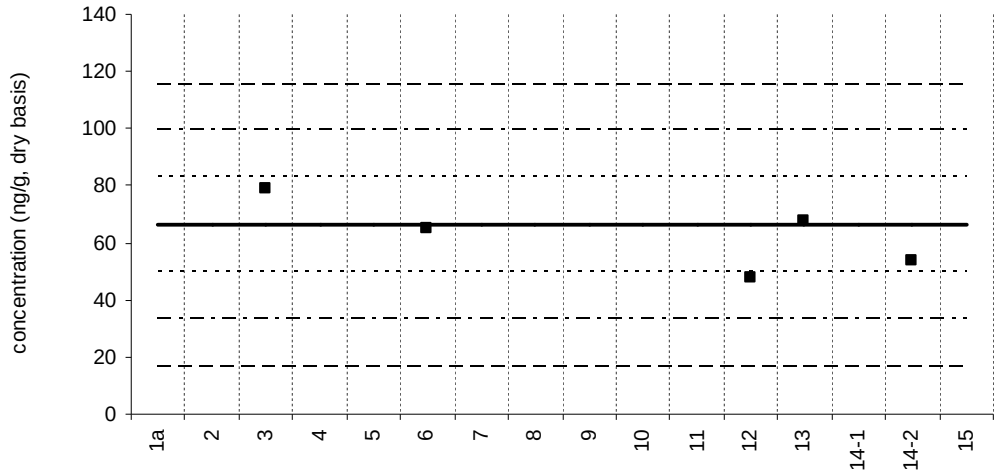


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 138/163 **Sediment XIV (QA07SED14)**

Assigned value = 66.1 ng/g s = 10.3 ng/g 95% CL = 16.5 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

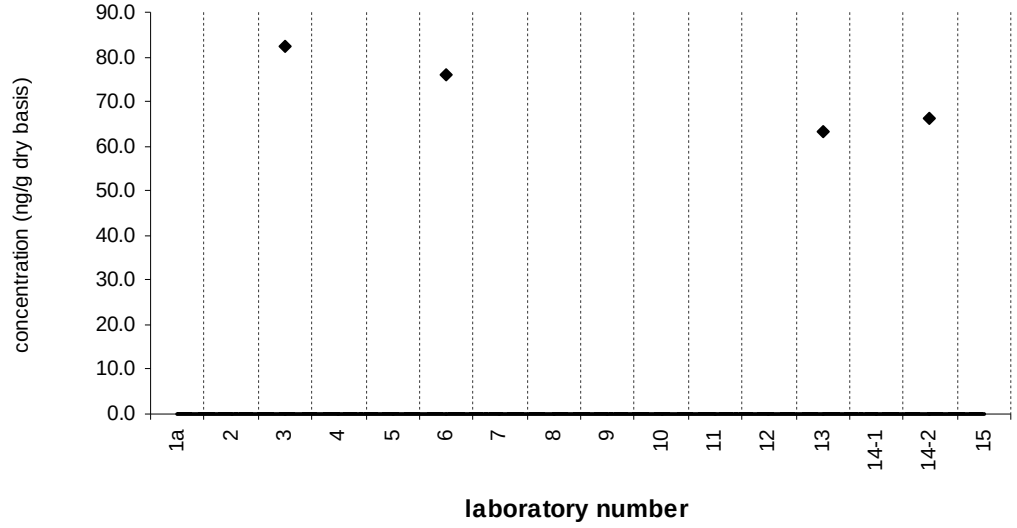


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 138/163 **SRM 1944**

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

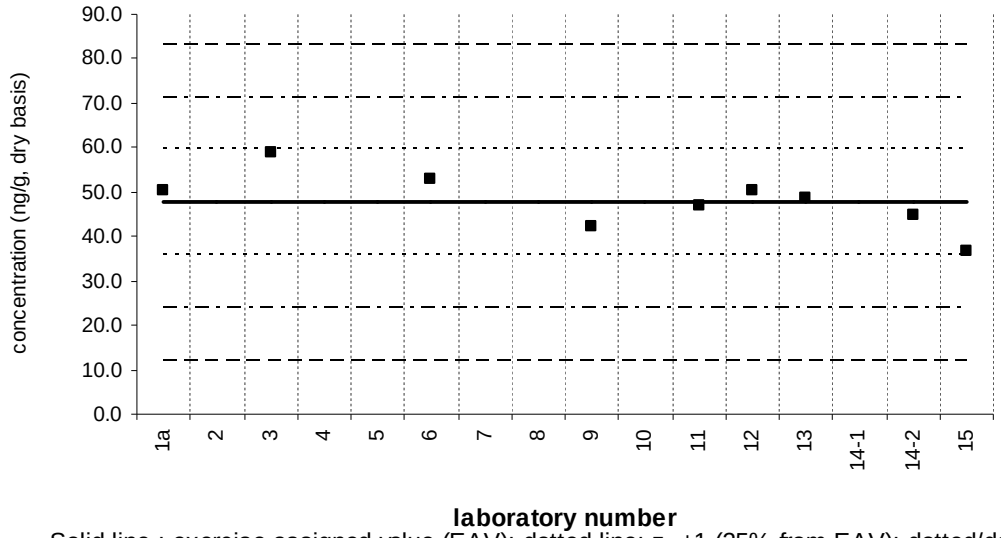
Reported Results: 4 Quantitative Results: 4



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

PCB 149 **Sediment XIV (QA07SED14)**

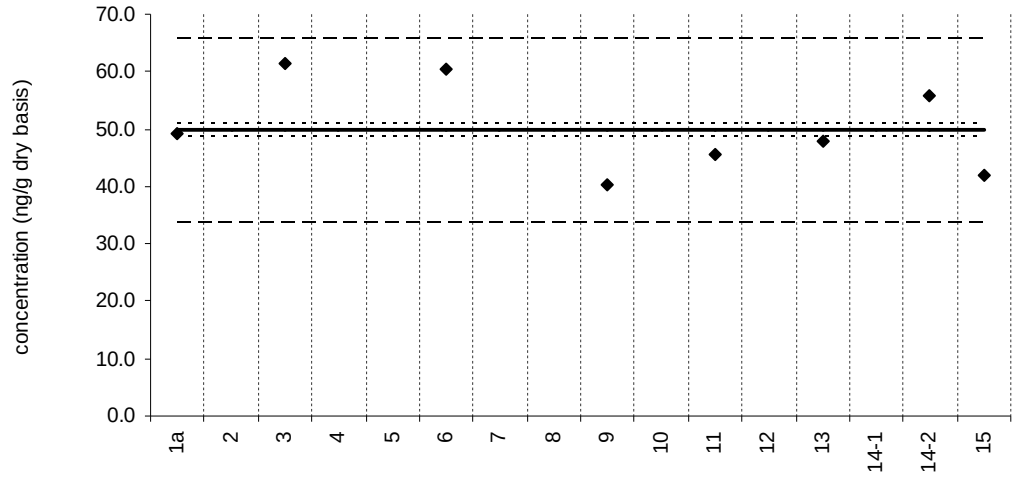
Assigned value = 47.6 ng/g s = 6.9 ng/g 95% CL = 5.7 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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)

PCB 149 **SRM 1944**

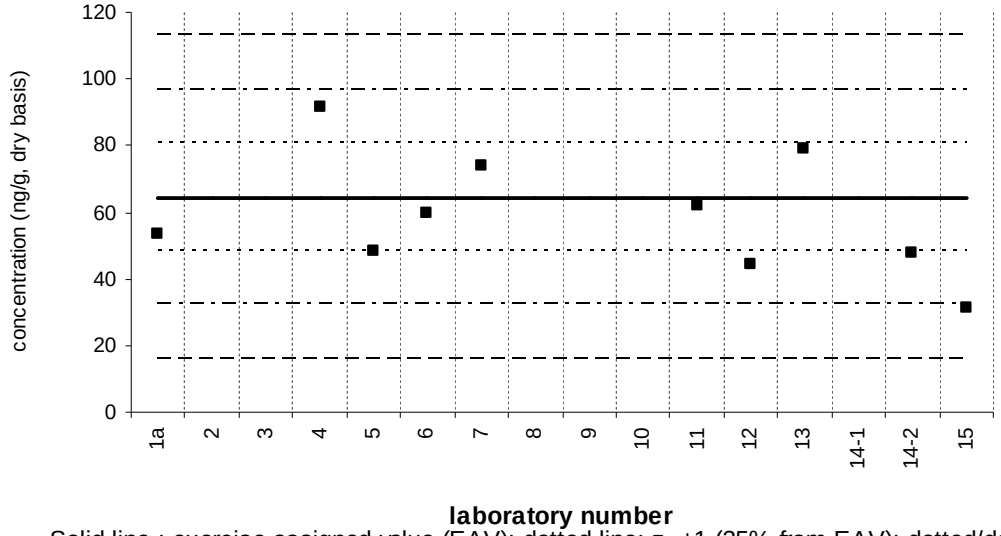
Certified Value = 49.7 ± 1.2 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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

PCB 153 **Sediment XIV (QA07SED14)**

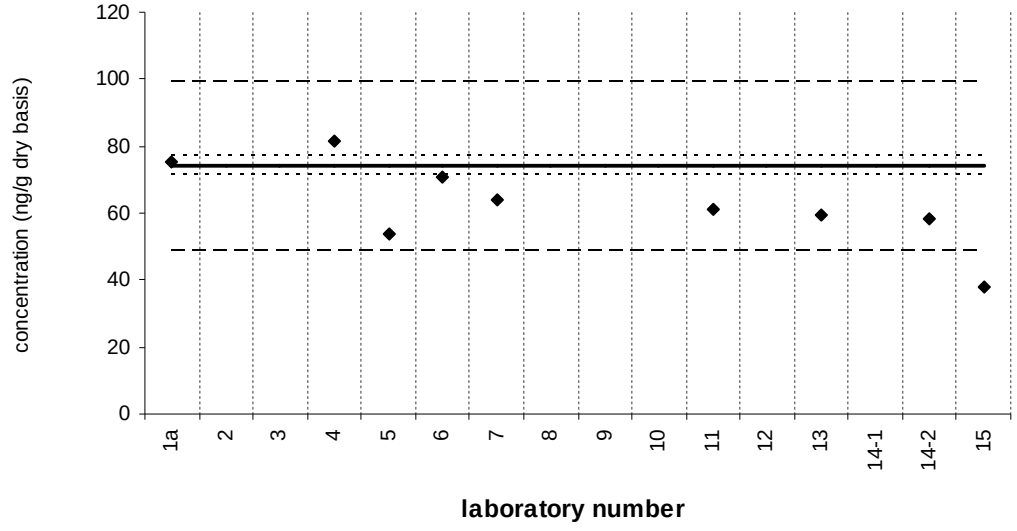
Assigned value = 64.5 ng/g s = 15.6 ng/g 95% CL = 13.1 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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)

PCB 153 **SRM 1944**

Certified Value = 74.0 ± 2.9 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9

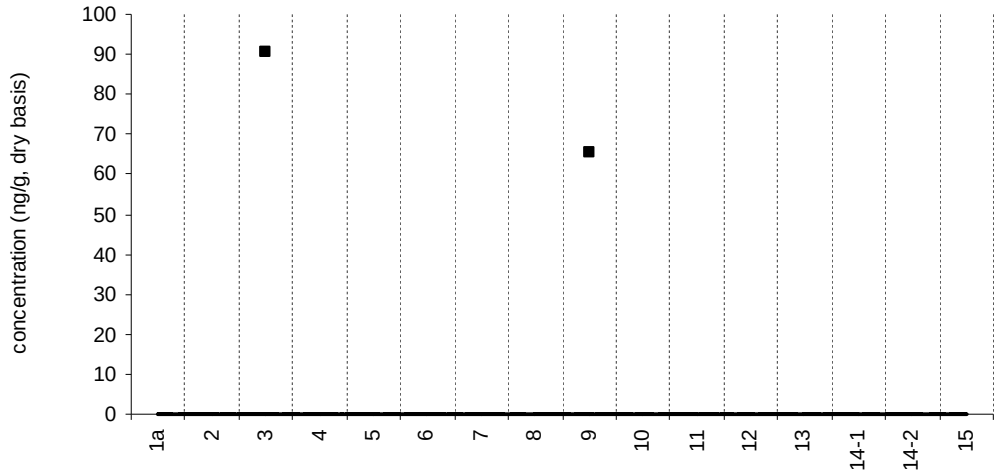


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 153/132 **Sediment XIV (QA07SED14)**

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

Reported Results: 2 Quantitative Results: 2

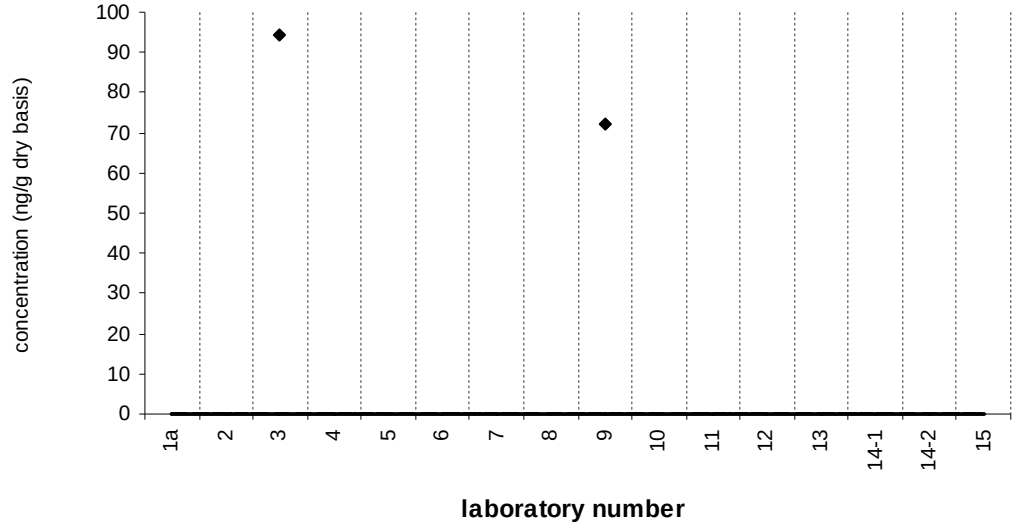


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 153/132 **SRM 1944**

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

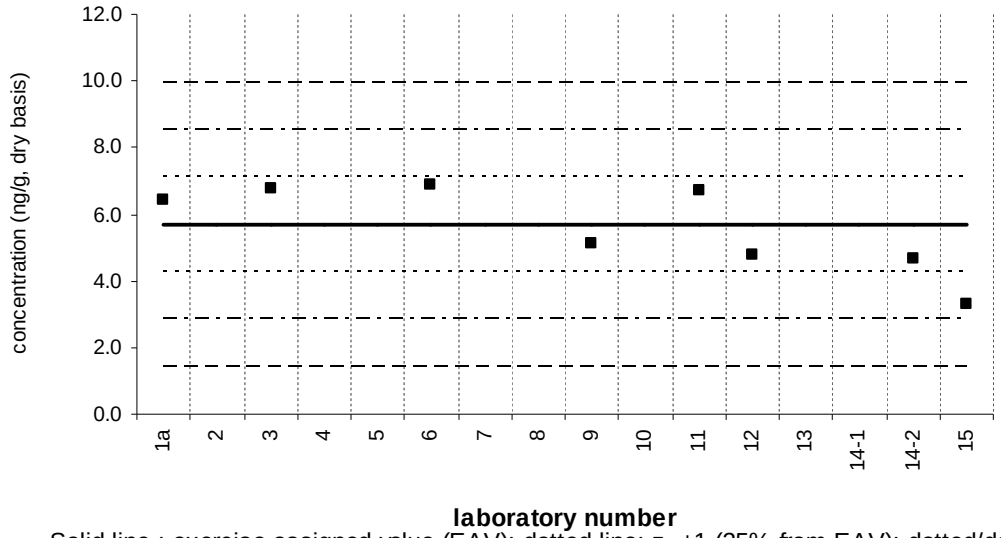
Reported Results: 2 Quantitative Results: 2



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

PCB 156 **Sediment XIV (QA07SED14)**

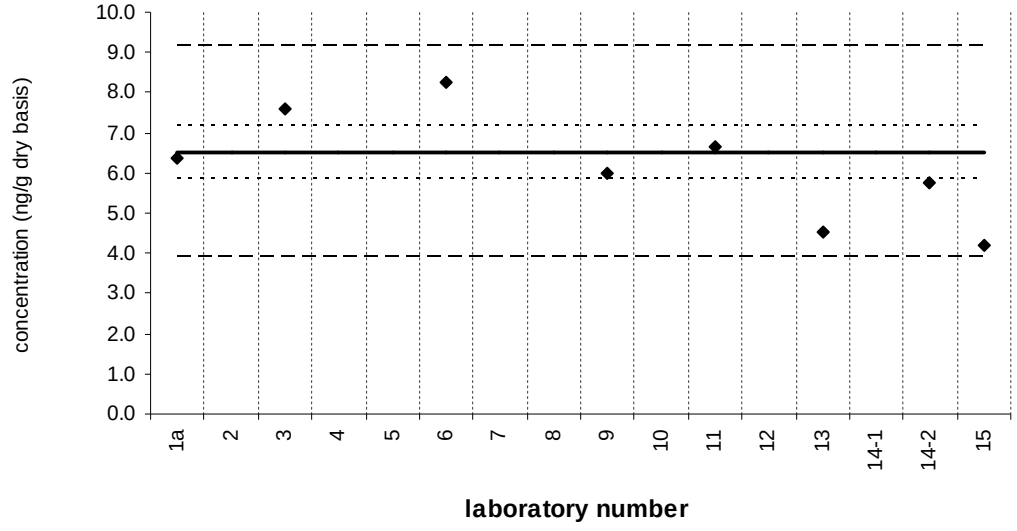
Assigned value = 5.69 ng/g s = 1.36 ng/g 95% CL = 1.14 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 8



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)

PCB 156 **SRM 1944**

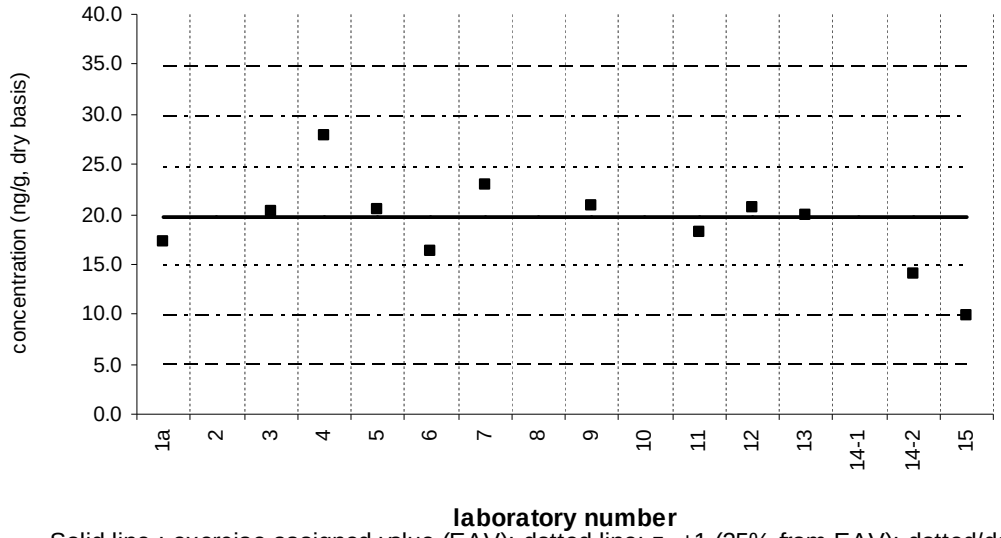
Certified Value = 6.52 ± 0.66 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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

PCB 170 **Sediment XIV (QA07SED14)**

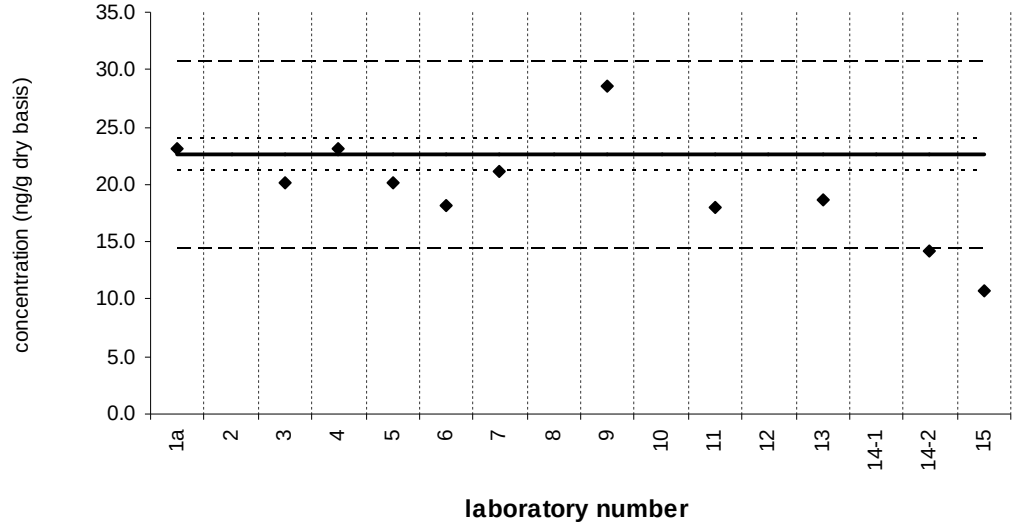
Assigned value = 19.8 ng/g s = 3.8 ng/g 95% CL = 2.7 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 170 **SRM 1944**

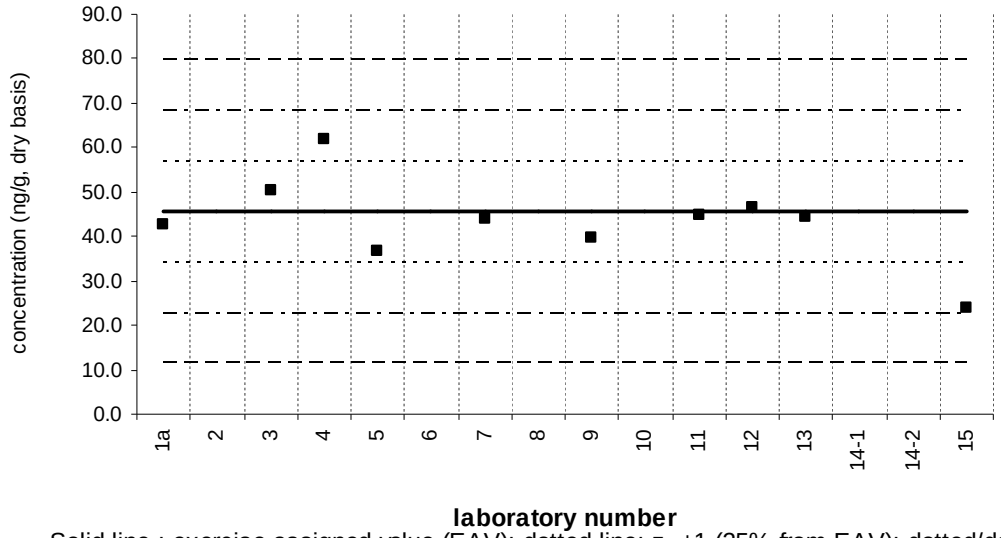
Certified Value = 22.6 ± 1.4 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 180 **Sediment XIV (QA07SED14)**

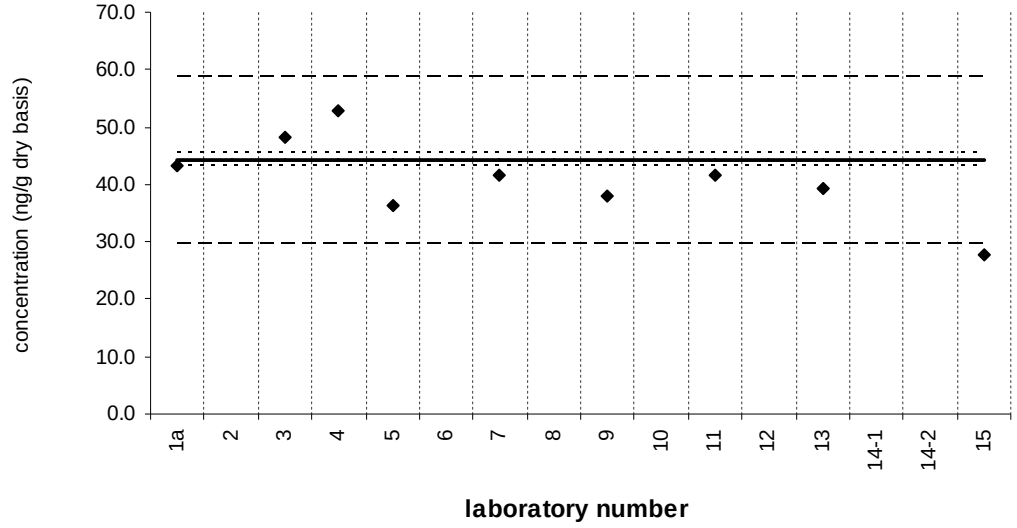
Assigned value = 45.5 ng/g s = 7.7 ng/g 95% CL = 6.4 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10



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)

PCB 180 **SRM 1944**

Certified Value = 44.3 ± 1.2 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9

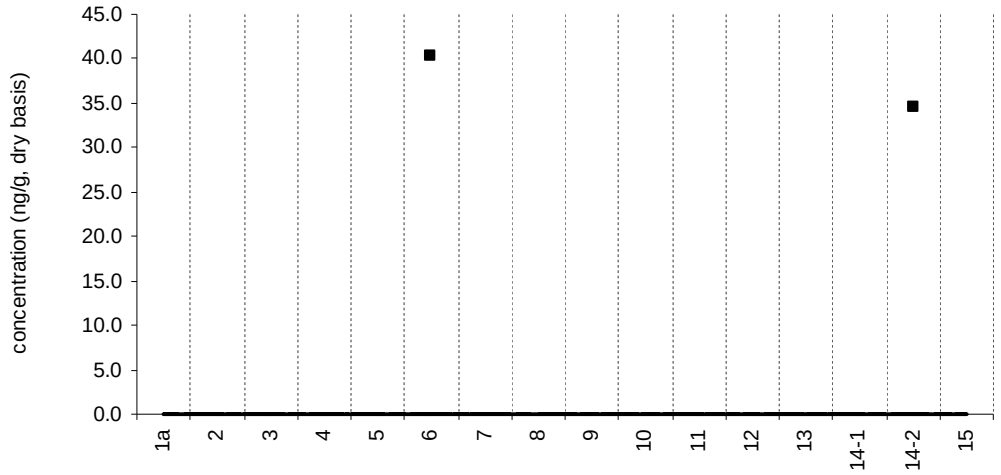


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

PCB 180/193 **Sediment XIV (QA07SED14)**

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

Reported Results: 2 Quantitative Results: 2

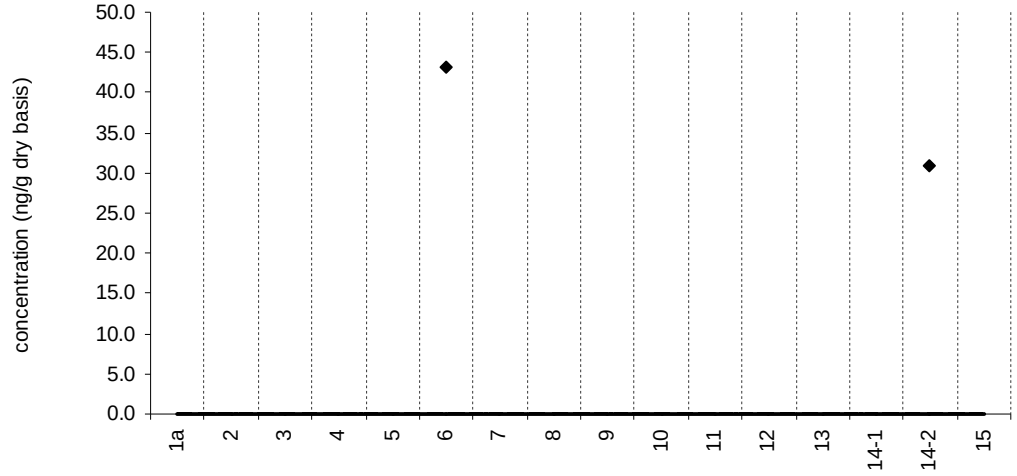


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

PCB 180/193 **SRM 1944**

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

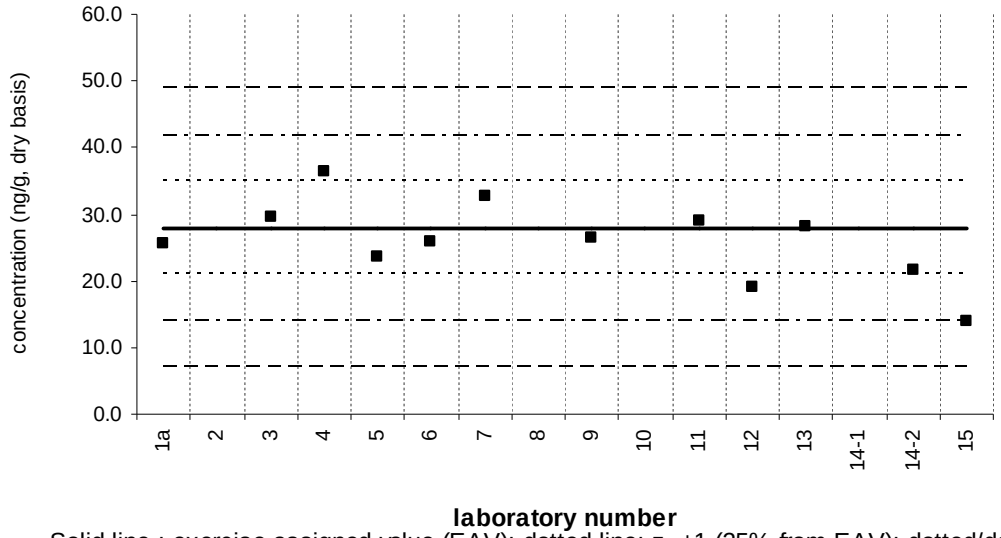
Reported Results: 2 Quantitative Results: 2



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

PCB 187 **Sediment XIV (QA07SED14)**

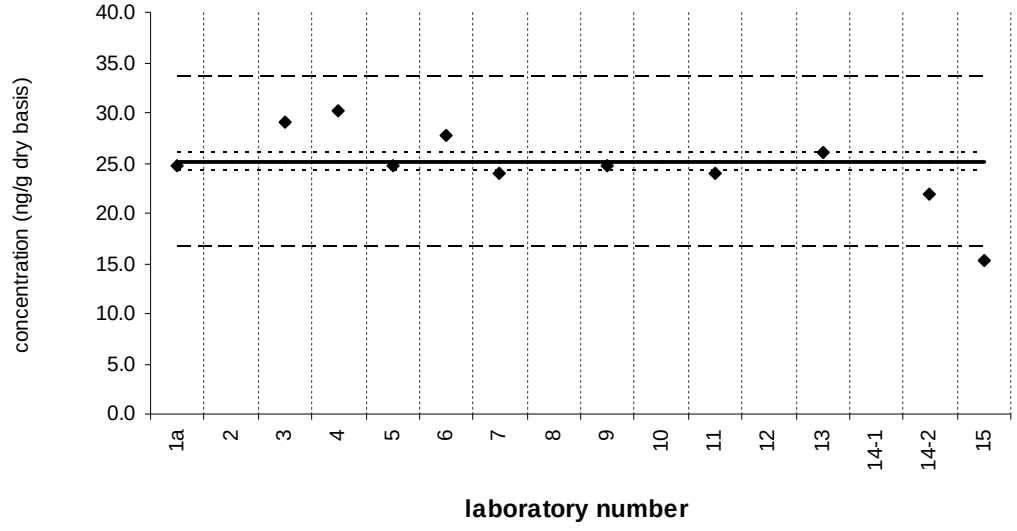
Assigned value = 27.9 ng/g s = 4.3 ng/g 95% CL = 3.1 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 12



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)

PCB 187 **SRM 1944**

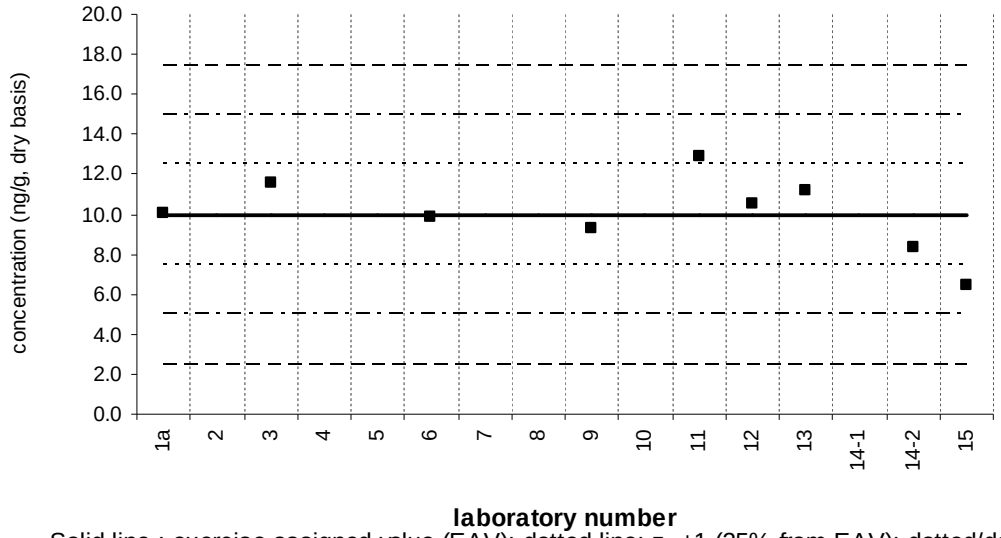
Certified Value = 25.1 ± 1.0 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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

PCB 194 **Sediment XIV (QA07SED14)**

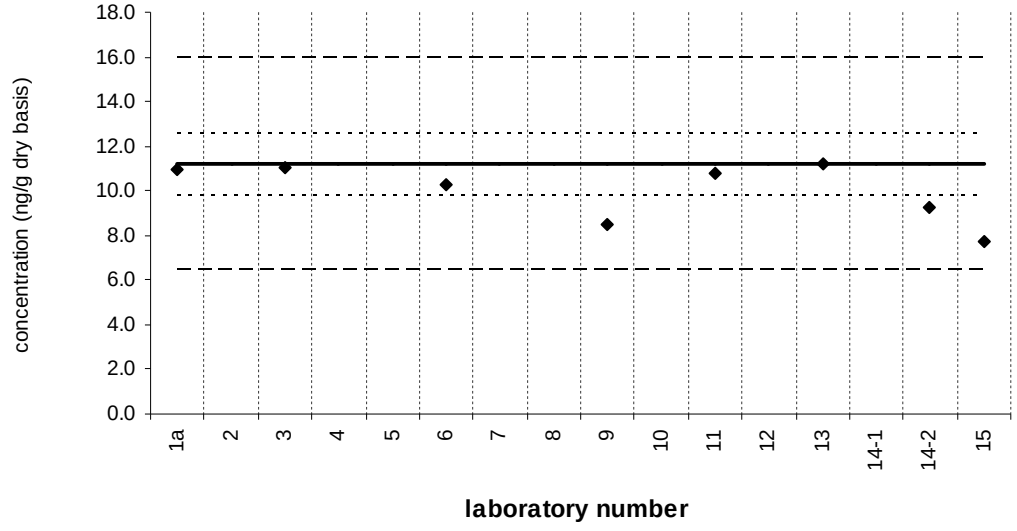
Assigned value = 10.0 ng/g s = 2.0 ng/g 95% CL = 1.7 ng/g (dry basis)
Reported Results: 9 Quantitative Results: 9



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)

PCB 194 **SRM 1944**

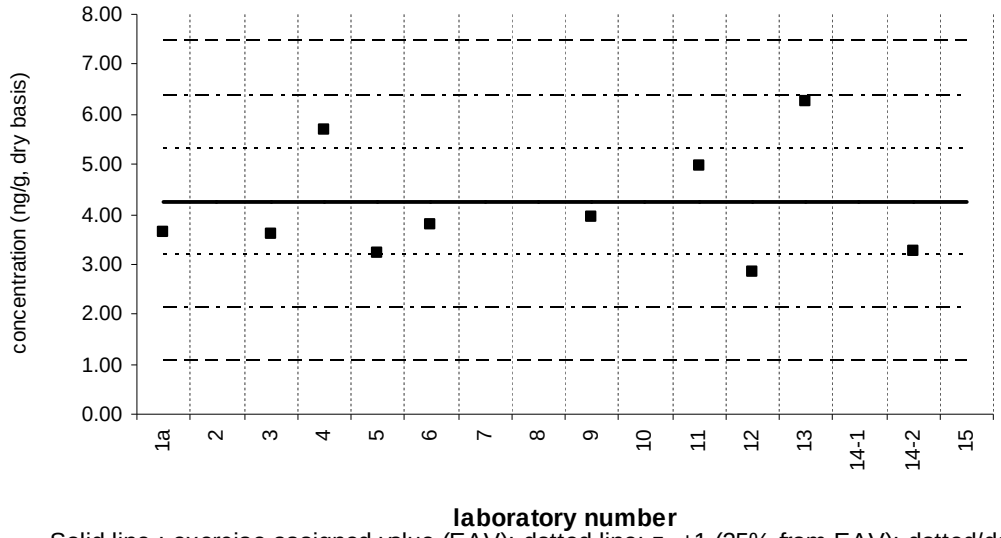
Certified Value = 11.2 ± 1.4 ng/g (dry basis)
Reported Results: 8 Quantitative Results: 8



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

PCB 195 **Sediment XIV (QA07SED14)**

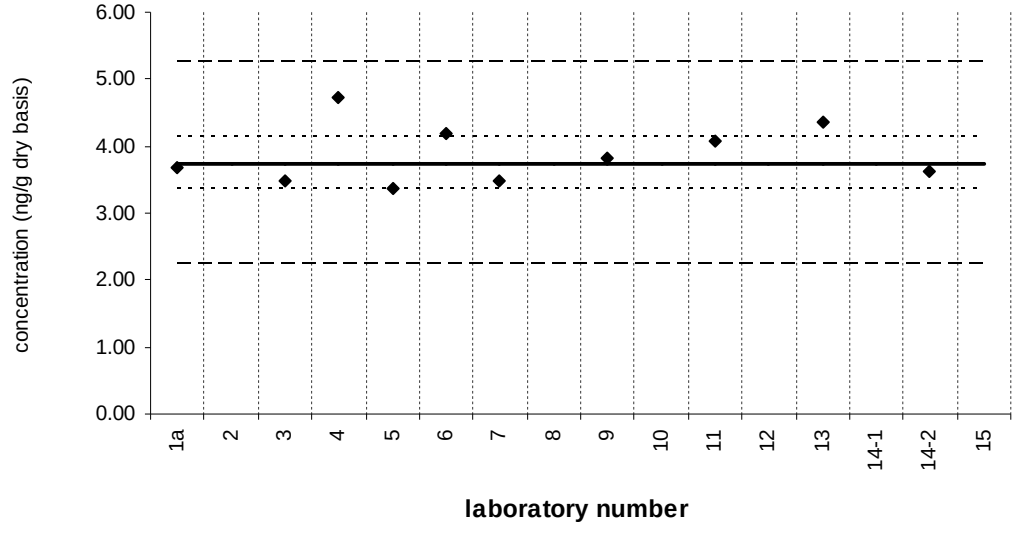
Assigned value = 4.26 ng/g s = 1.10 ng/g 95% CL = 0.85 ng/g (dry basis)
Reported Results: 12 Quantitative Results: 10



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)

PCB 195 **SRM 1944**

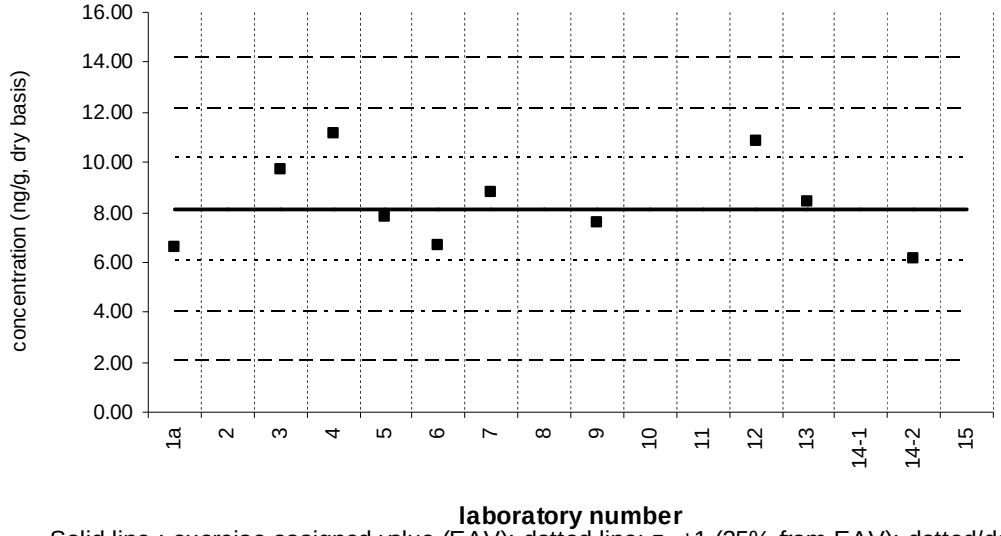
Certified Value = 3.75 ± 0.39 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10



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

PCB 206 **Sediment XIV (QA07SED14)**

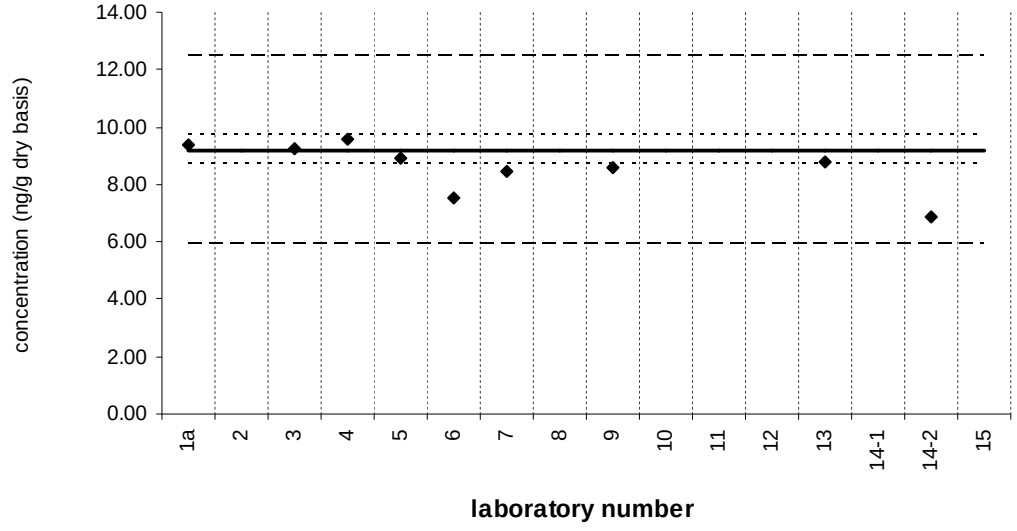
Assigned value = 8.10 ng/g s = 1.61 ng/g 95% CL = 1.24 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 10



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)

PCB 206 **SRM 1944**

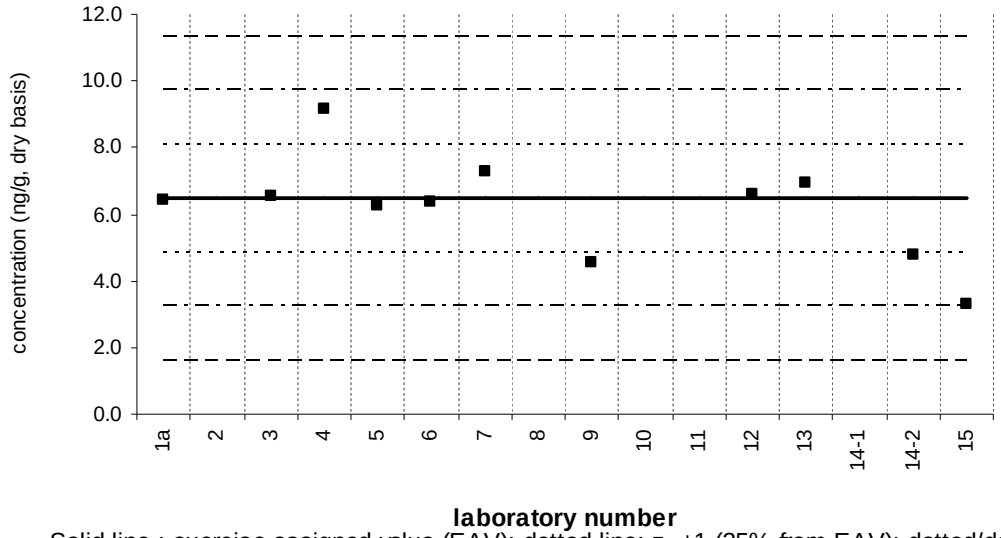
Certified Value = 9.21 ± 0.51 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 9



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

PCB 209 **Sediment XIV (QA07SED14)**

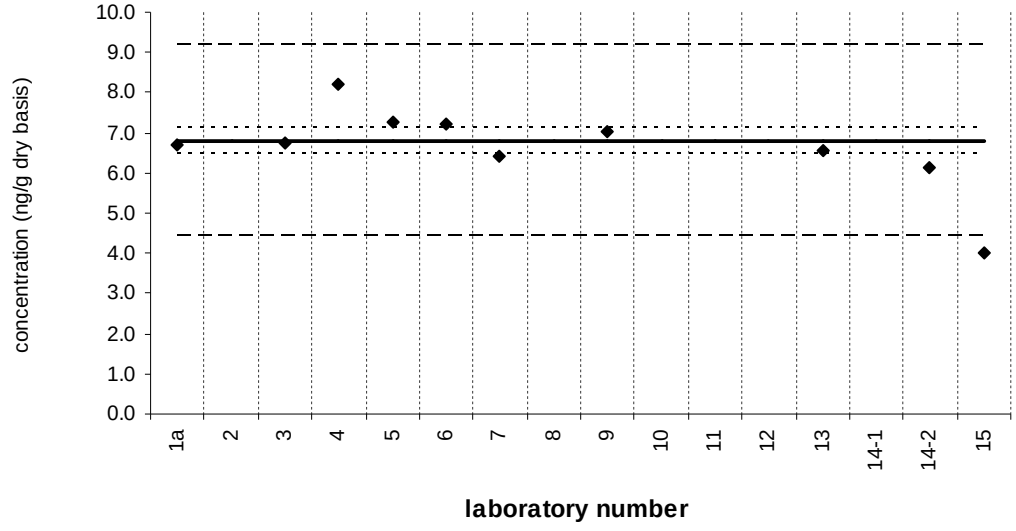
Assigned value = 6.48 ng/g s = 1.36 ng/g 95% CL = 0.97 ng/g (dry basis)
Reported Results: 11 Quantitative Results: 11



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)

PCB 209 **SRM 1944**

Certified Value = 6.81 ± 0.33 ng/g (dry basis)
Reported Results: 10 Quantitative Results: 10

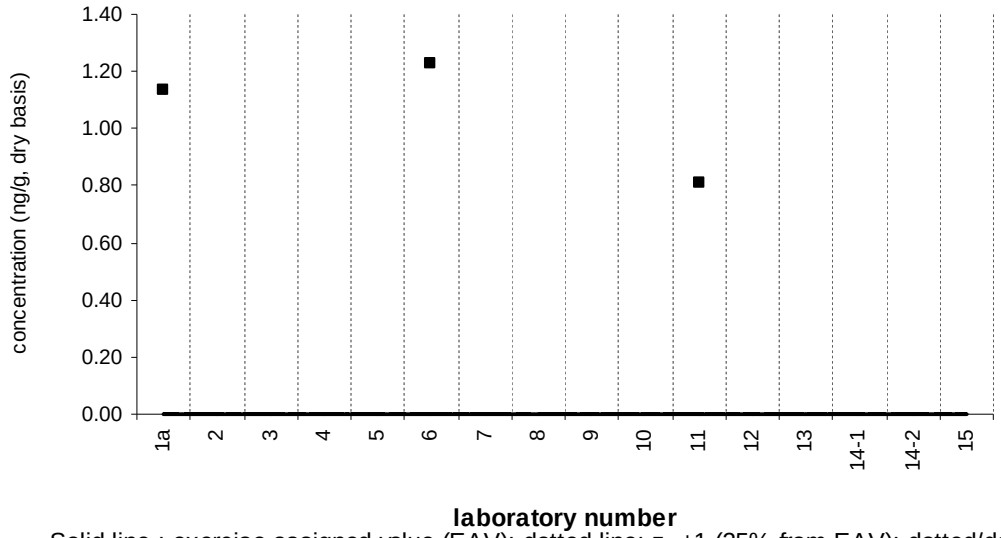


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 15 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 3

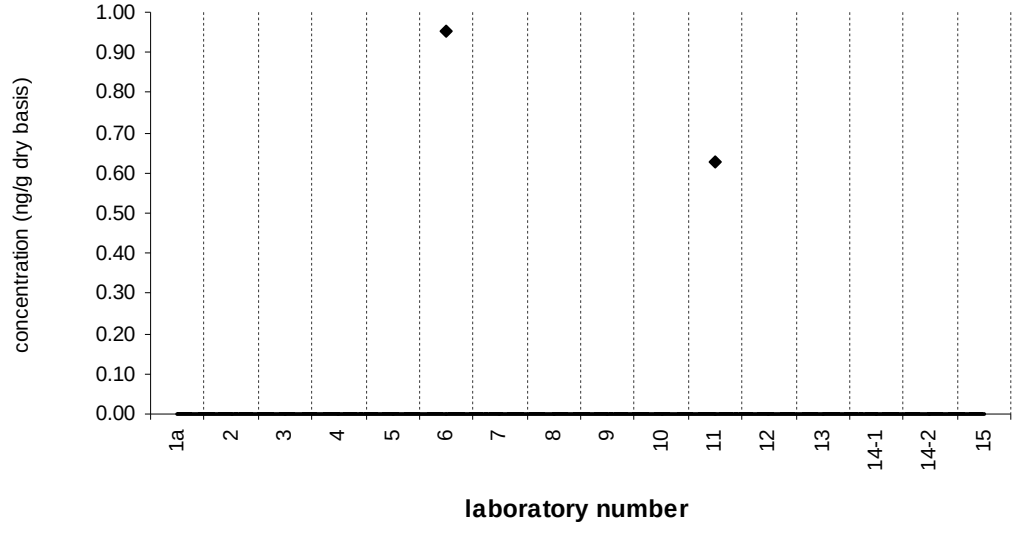


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 15 **SRM 1944**

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

Reported Results: 3 Quantitative Results: 2



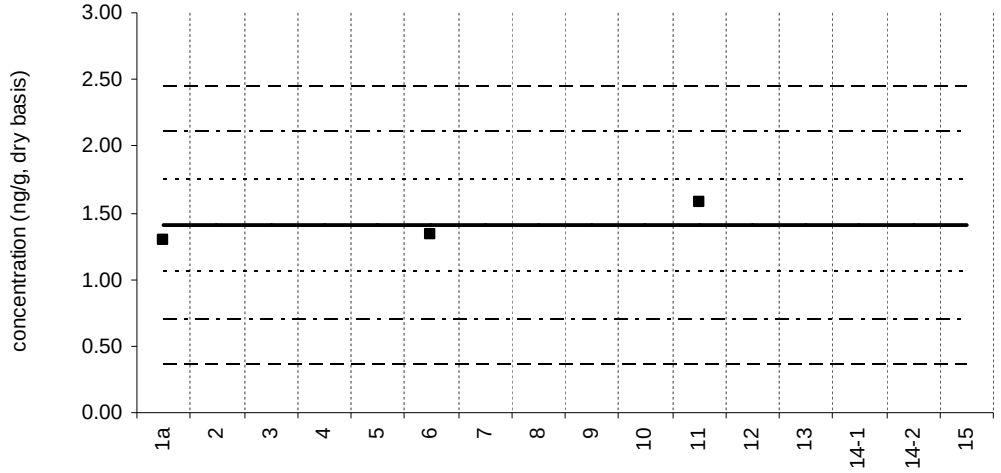
Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 17

Sediment XIV (QA07SED14)

Assigned value = 1.40 ng/g s = 0.15 ng/g 95% CL = 0.37 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 3



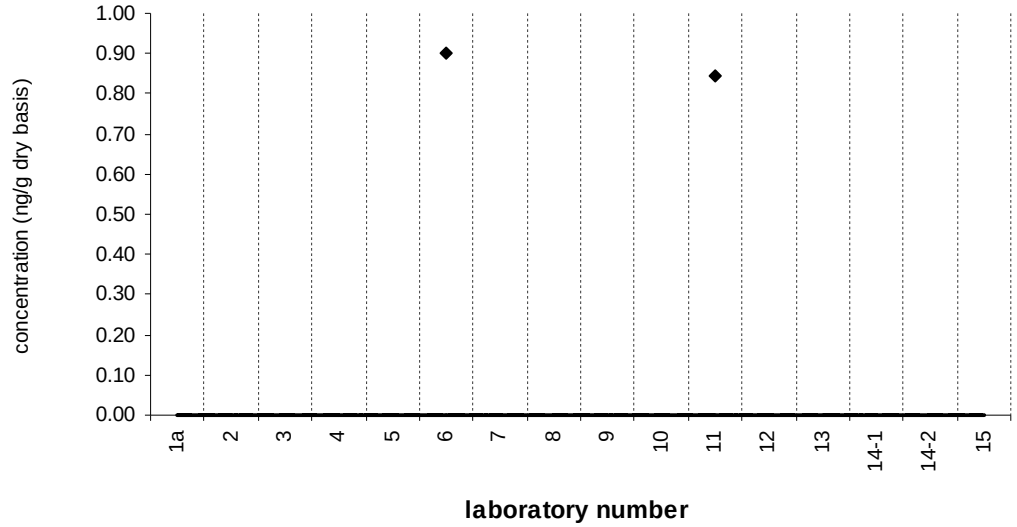
Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 17

SRM 1944

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

Reported Results: 4 Quantitative Results: 2

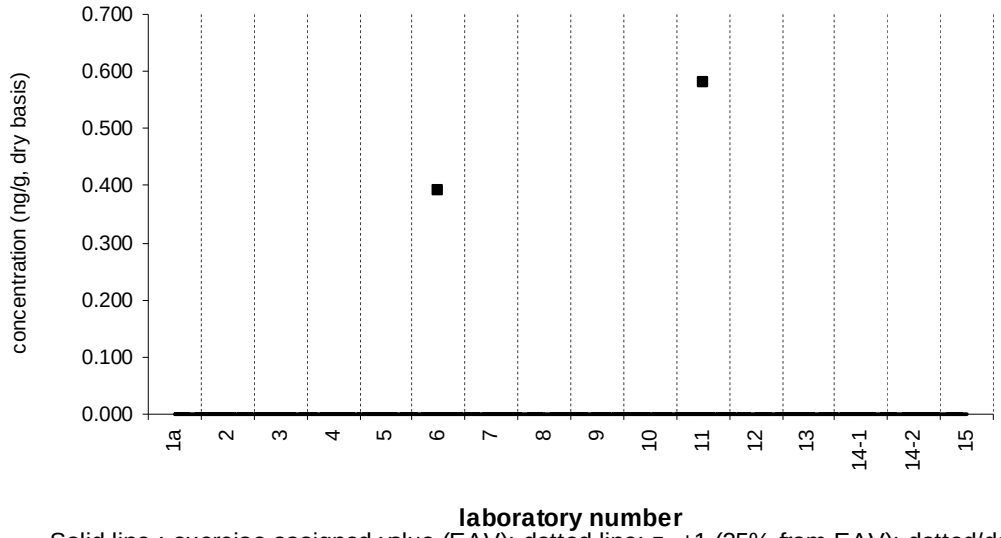


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 28/33 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 2

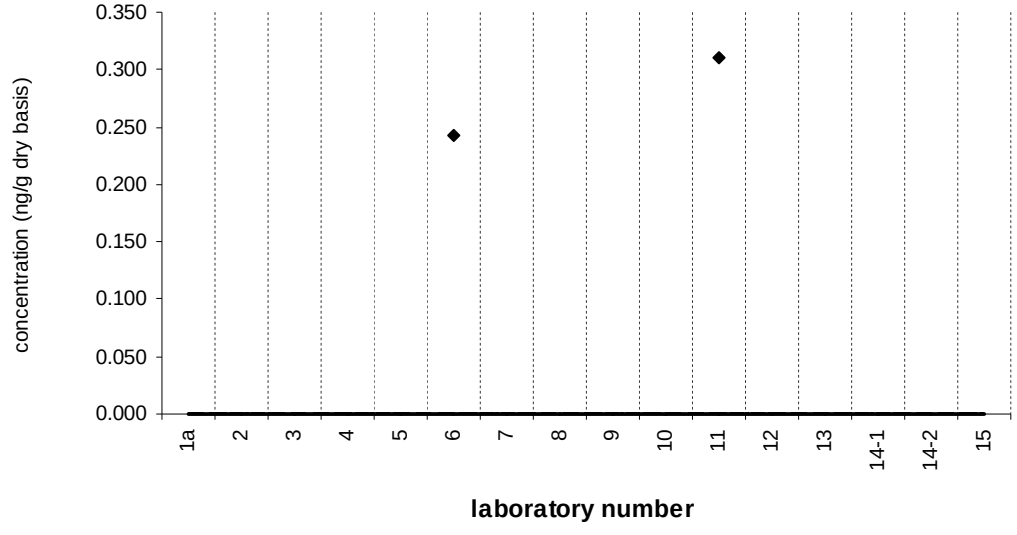


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 28/33 **SRM 1944**

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

Reported Results: 3 Quantitative Results: 2

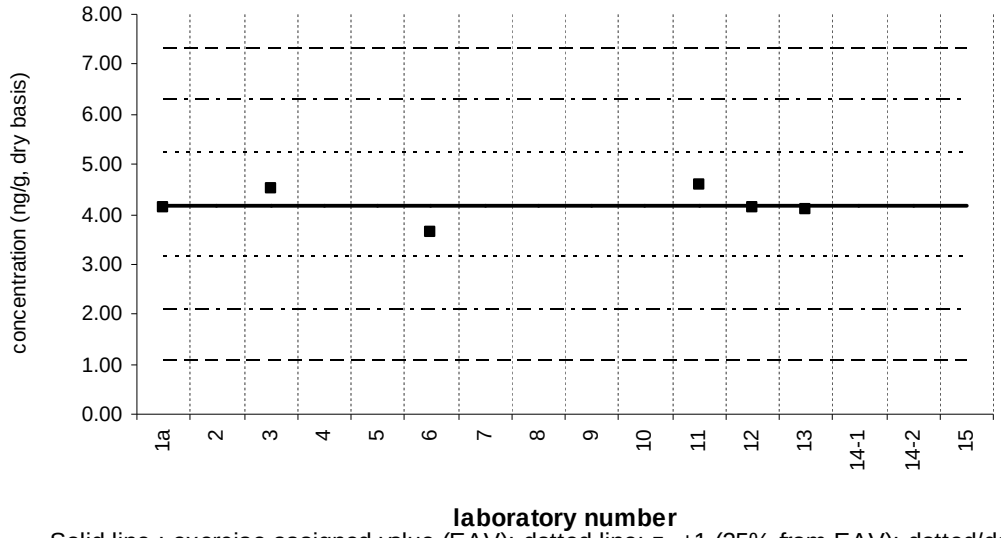


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 47 **Sediment XIV (QA07SED14)**

Assigned value = 4.19 ng/g s = 0.34 ng/g 95% CL = 0.36 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6

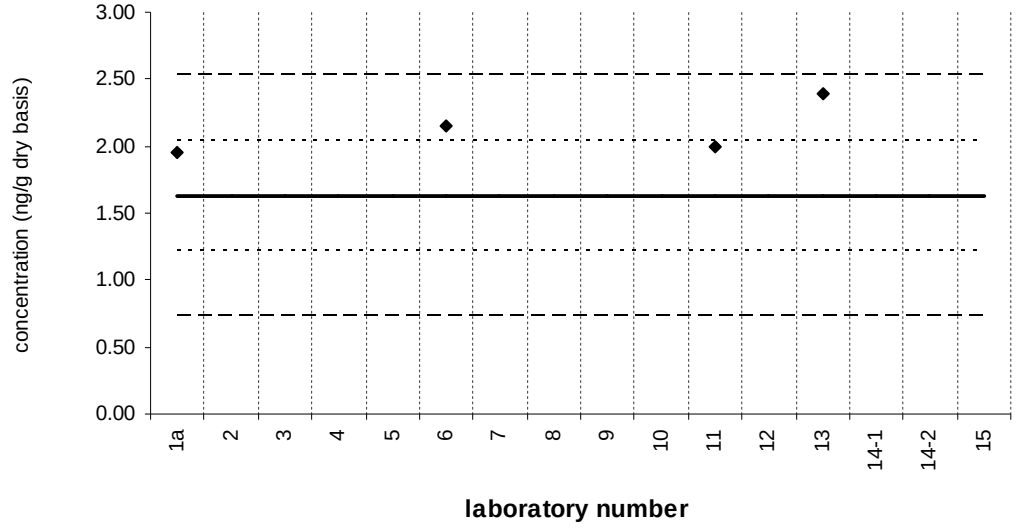


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 47 **SRM 1944**

Target Value = 1.63 ± 0.41 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 4

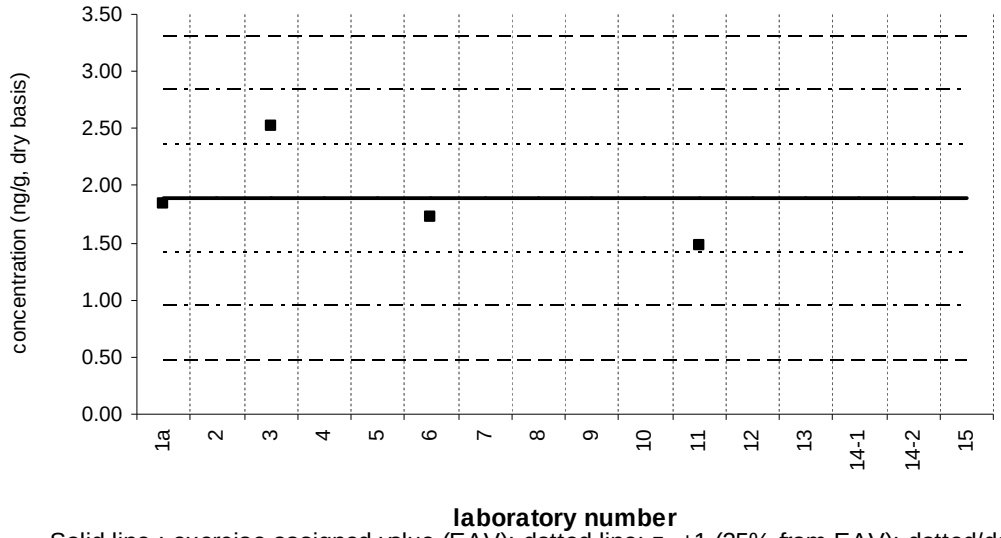


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 49 **Sediment XIV (QA07SED14)**

Assigned value = 1.89 ng/g s = 0.45 ng/g 95% CL = 0.71 ng/g (dry basis)

Reported Results: 4 Quantitative Results: 4

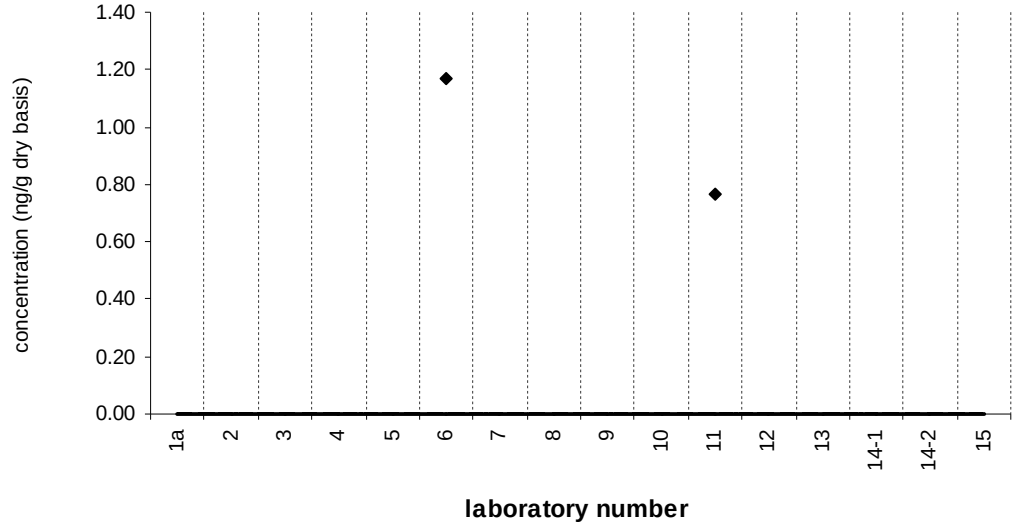


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 49 **SRM 1944**

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

Reported Results: 4 Quantitative Results: 2

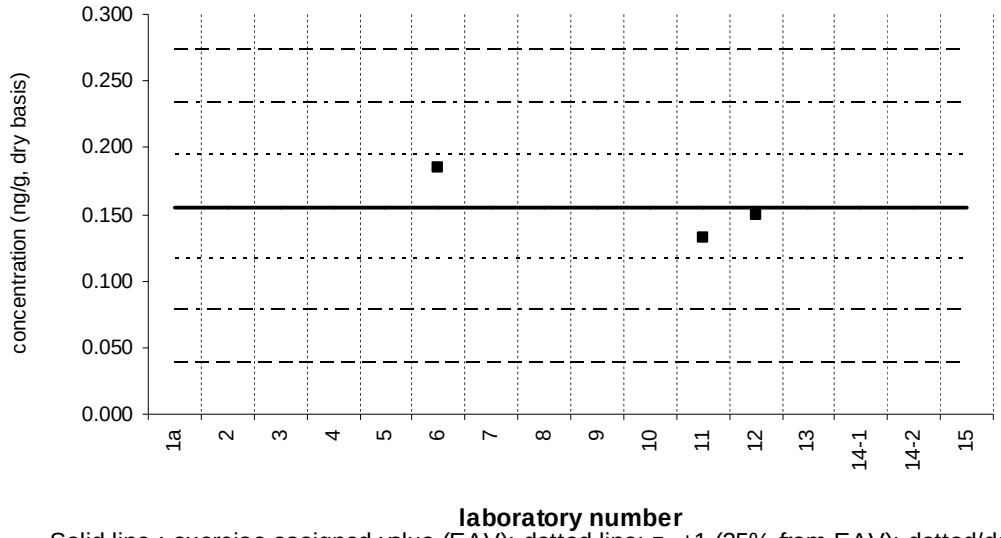


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 66 **Sediment XIV (QA07SED14)**

Assigned value = 0.156 ng/g s = 0.027 ng/g 95% CL = 0.067 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 3

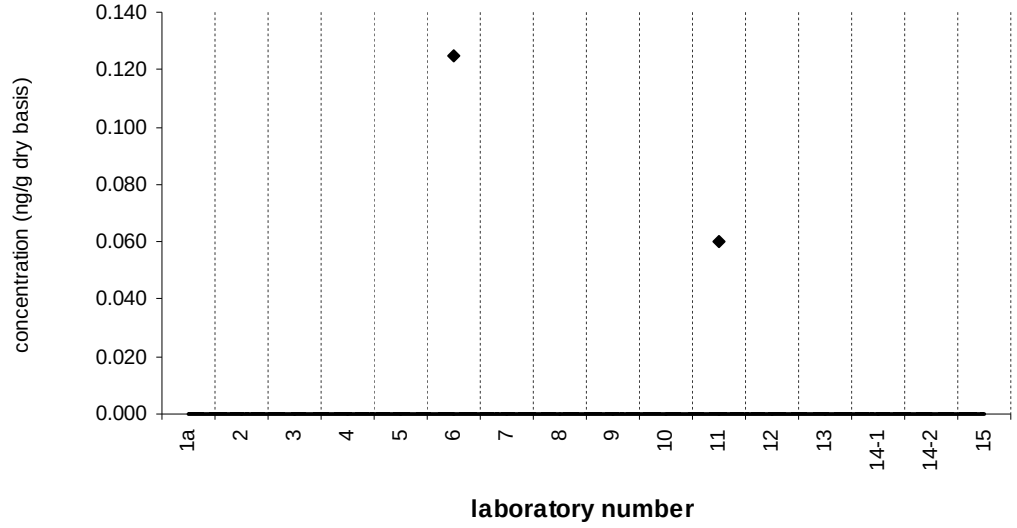


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 66 **SRM 1944**

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

Reported Results: 5 Quantitative Results: 2

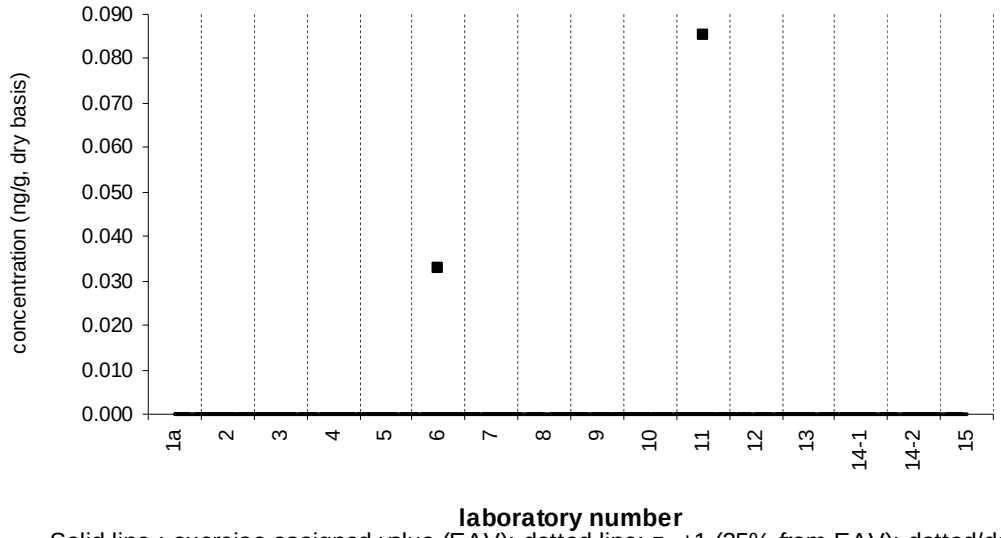


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 75 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 2

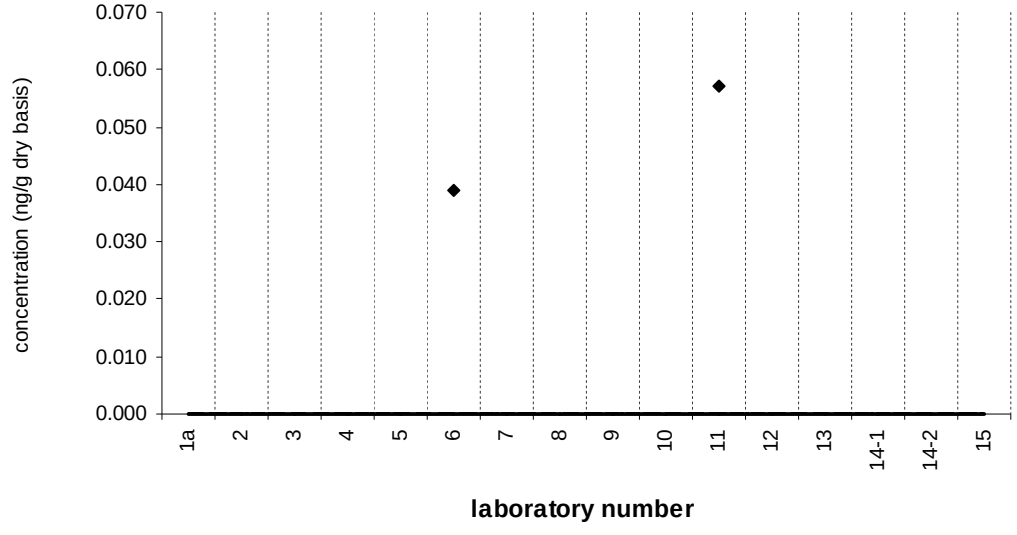


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 75 **SRM 1944**

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

Reported Results: 3 Quantitative Results: 2

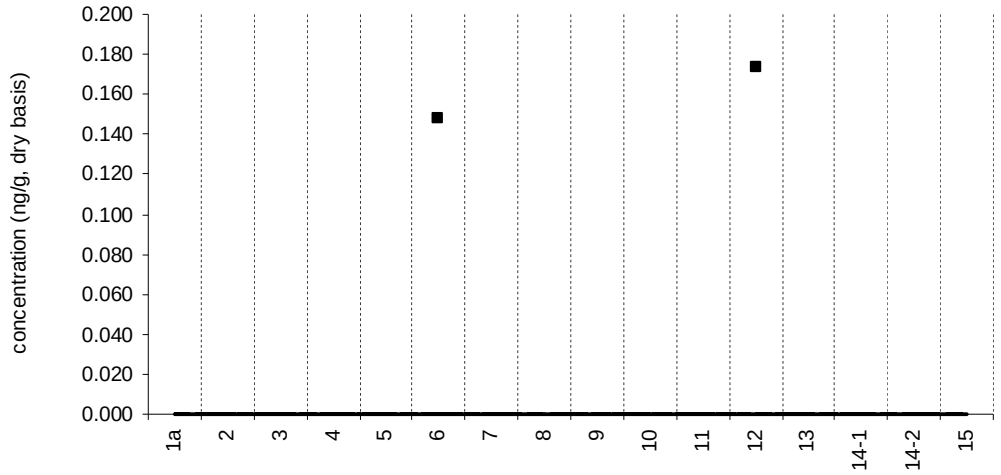


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 85 **Sediment XIV (QA07SED14)**

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

Reported Results: 6 Quantitative Results: 2

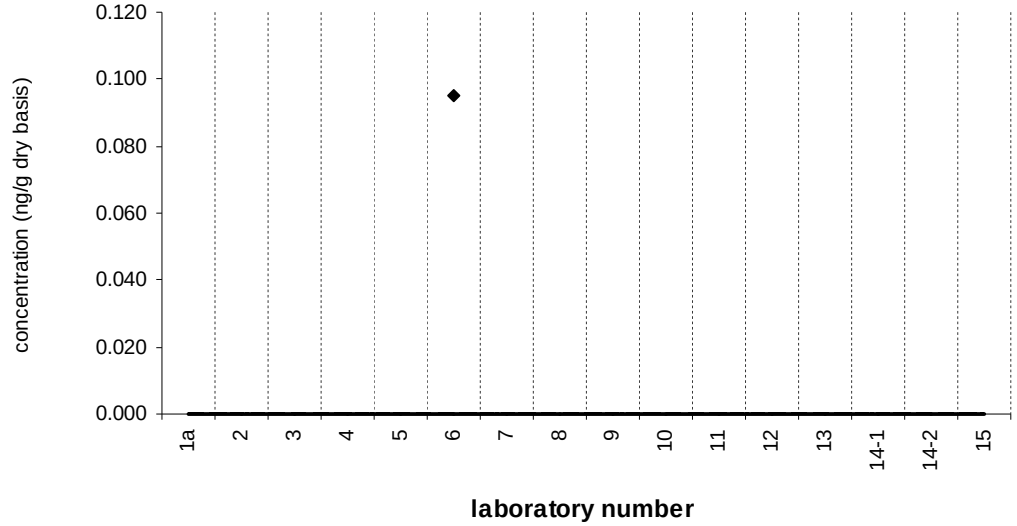


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 85 **SRM 1944**

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

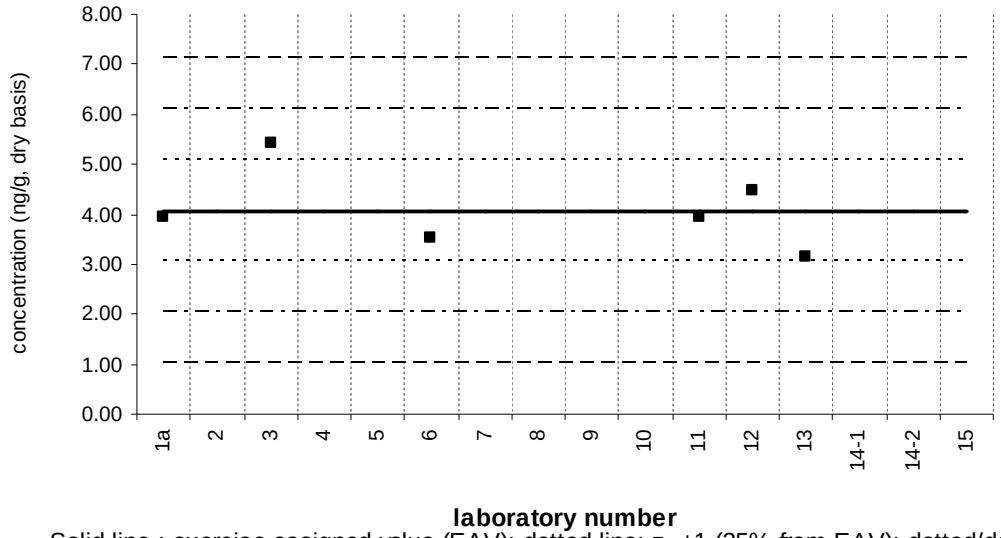
Reported Results: 5 Quantitative Results: 1



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

BDE 99 **Sediment XIV (QA07SED14)**

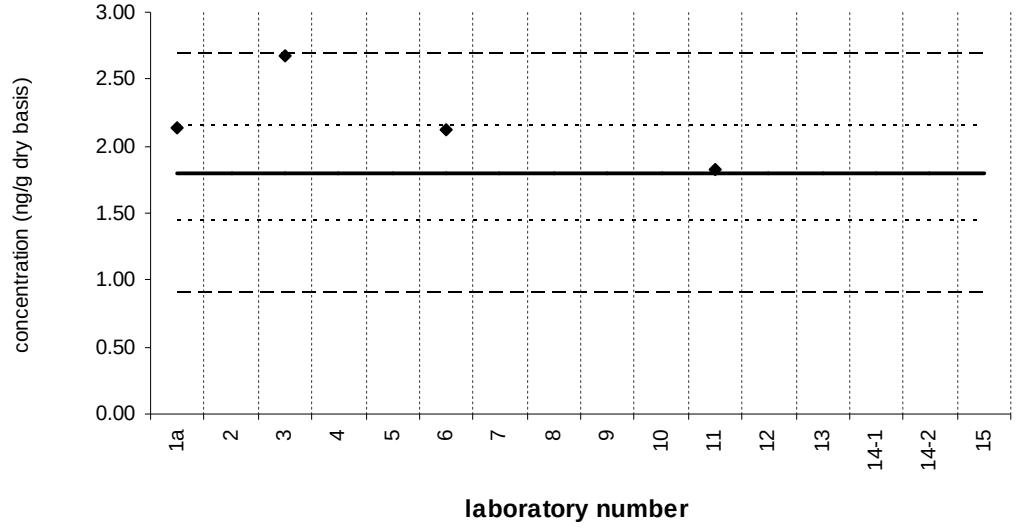
Assigned value = 4.07 ng/g s = 0.80 ng/g 95% CL = 0.83 ng/g (dry basis)
Reported Results: 6 Quantitative Results: 6



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)

BDE 99 **SRM 1944**

Target Value = 1.80 ± 0.35 ng/g (dry basis)
Reported Results: 5 Quantitative Results: 4

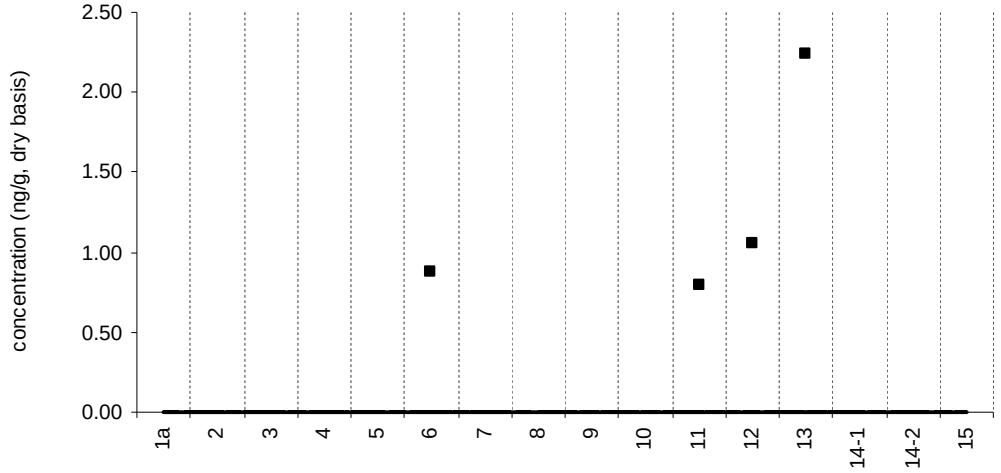


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 100 **Sediment XIV (QA07SED14)**

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

Reported Results: 6 Quantitative Results: 4

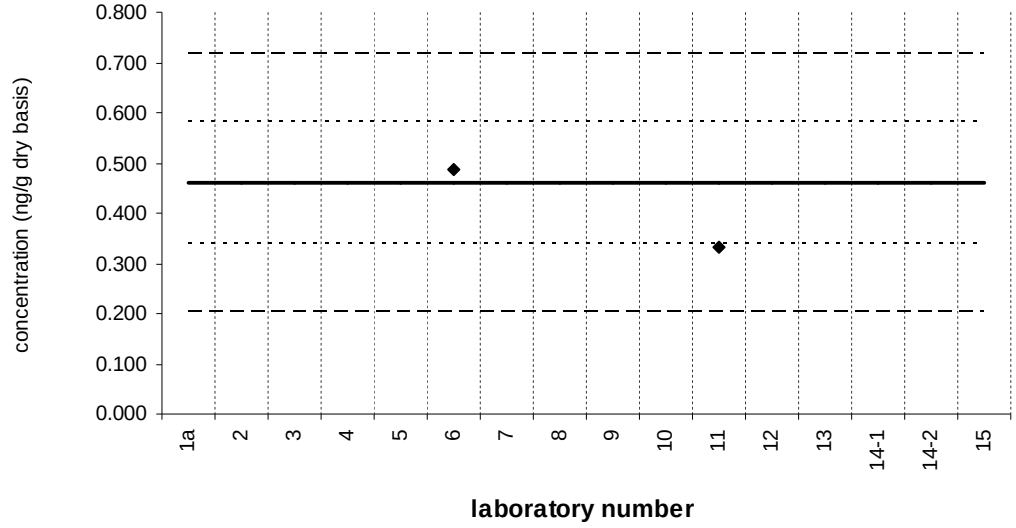


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 100 **SRM 1944**

Target Value = 0.46 ± 0.12 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 2

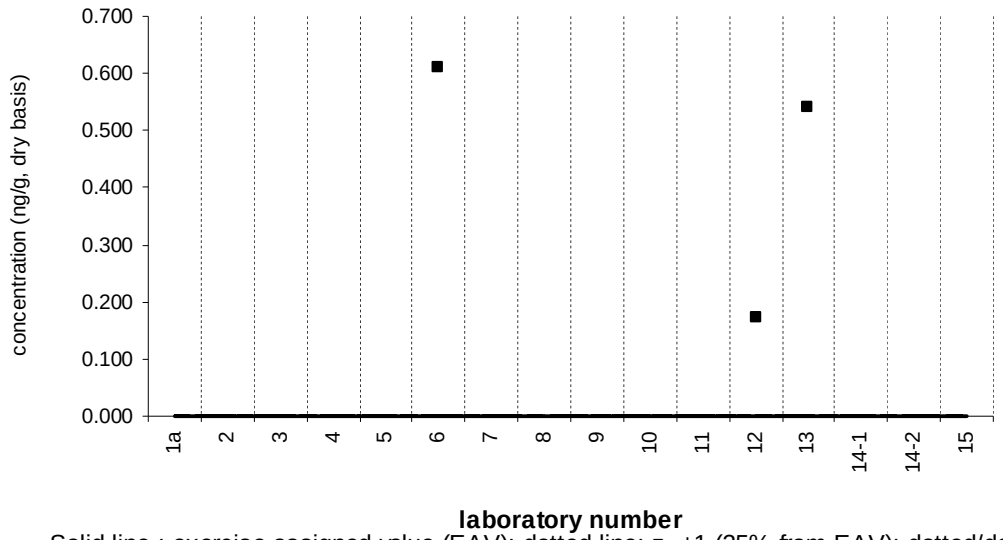


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 138 **Sediment XIV (QA07SED14)**

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

Reported Results: 5 Quantitative Results: 3

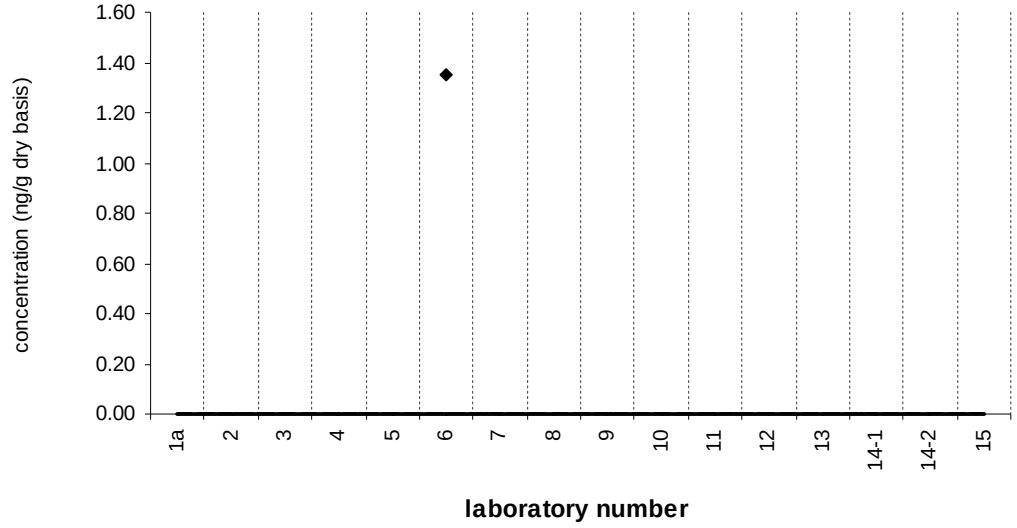


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 138 **SRM 1944**

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

Reported Results: 4 Quantitative Results: 1

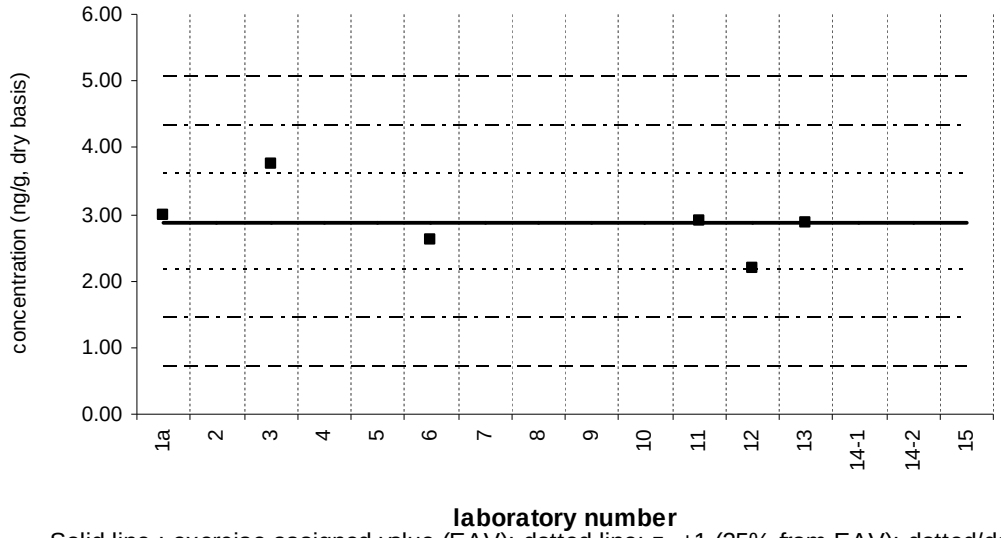


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 153 **Sediment XIV (QA07SED14)**

Assigned value = 2.88 ng/g s = 0.51 ng/g 95% CL = 0.54 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6

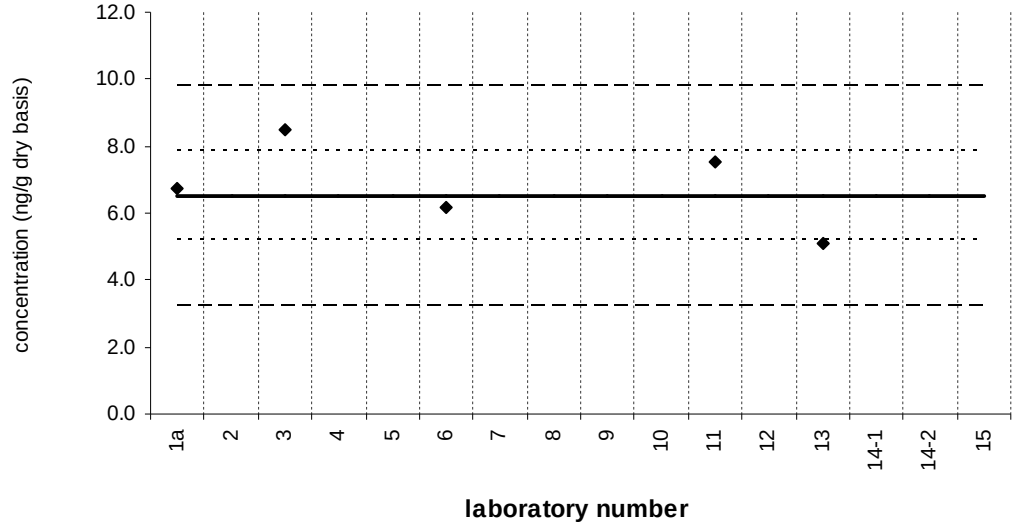


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 153 **SRM 1944**

Target Value = 6.53 ± 1.32 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

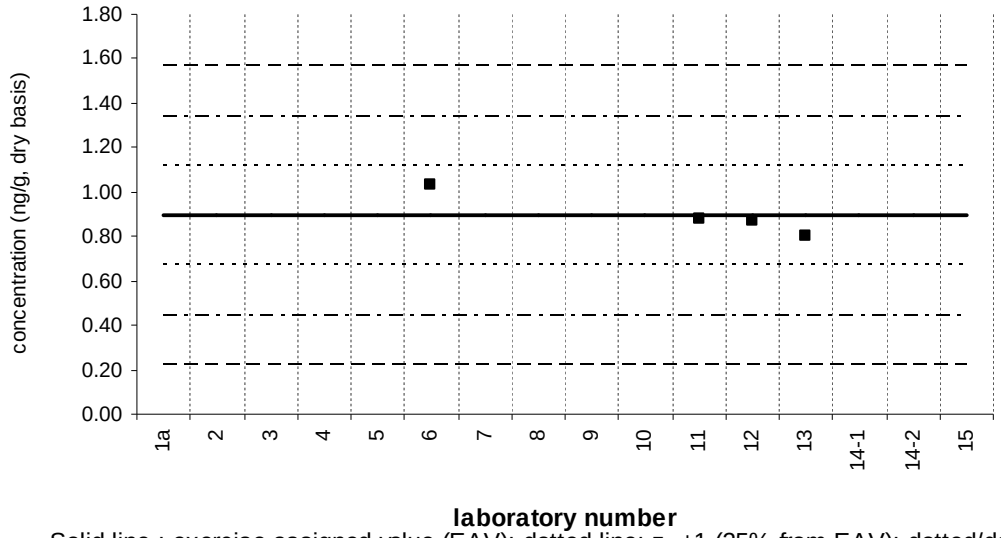


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 154 **Sediment XIV (QA07SED14)**

Assigned value = 0.895 ng/g s = 0.096 ng/g 95% CL = 0.153 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 4

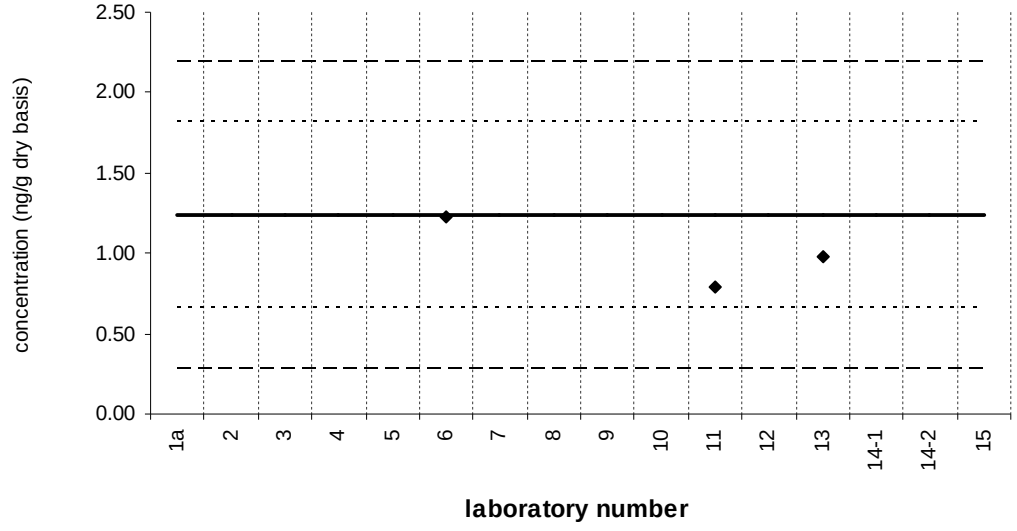


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 154 **SRM 1944**

Target Value = 1.24 ± 0.58 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 3

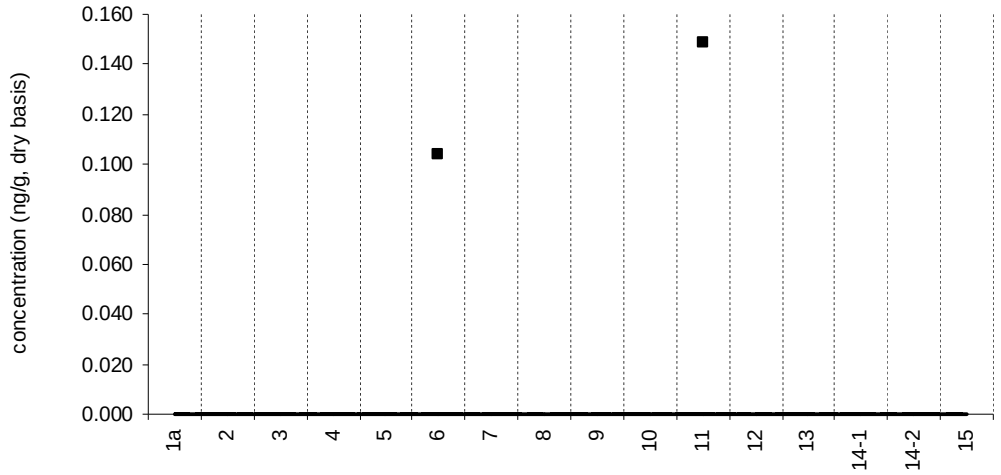


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 155 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 2

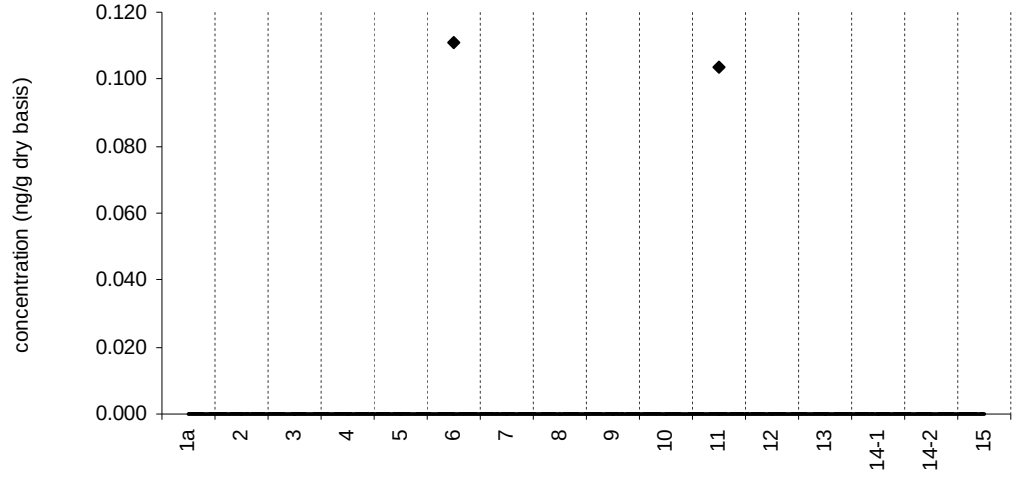


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 155 **SRM 1944**

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

Reported Results: 3 Quantitative Results: 2

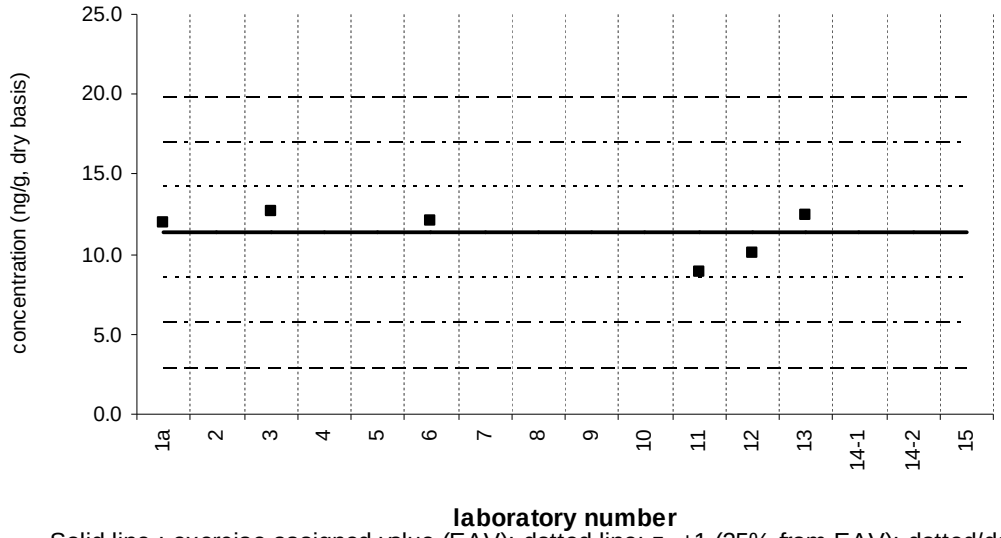


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 183 **Sediment XIV (QA07SED14)**

Assigned value = 11.3 ng/g s = 1.5 ng/g 95% CL = 1.6 ng/g (dry basis)

Reported Results: 6 Quantitative Results: 6

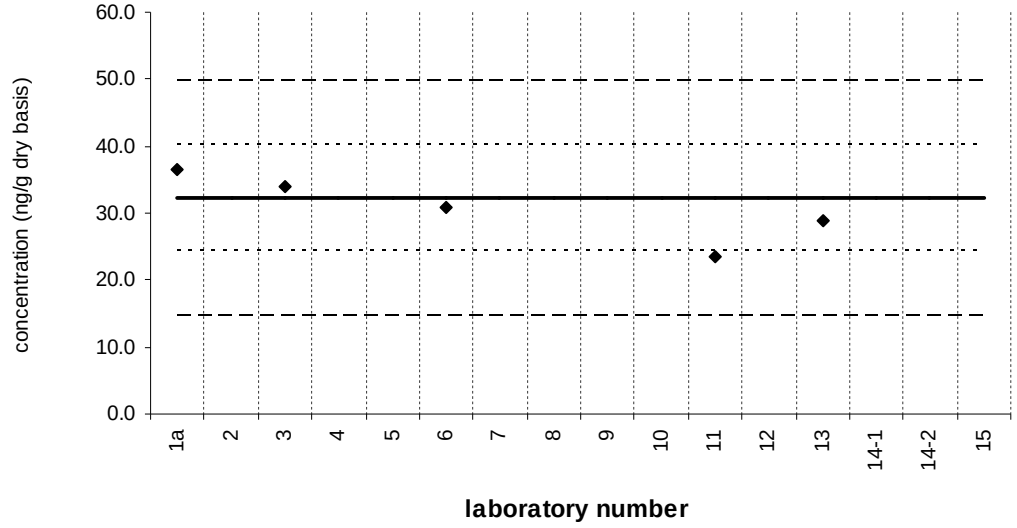


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 183 **SRM 1944**

Target Value = 32.2 ± 7.9 ng/g (dry basis)

Reported Results: 5 Quantitative Results: 5

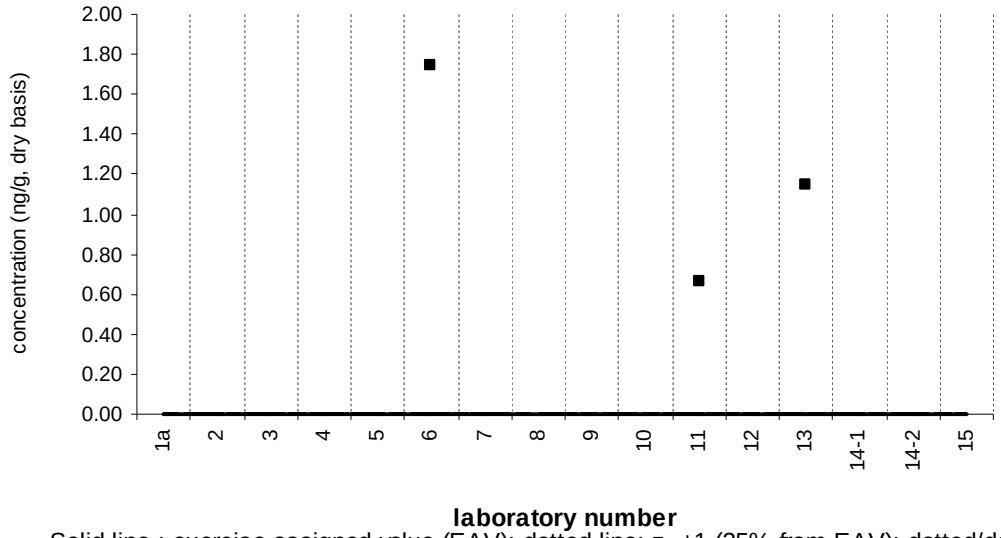


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 190 **Sediment XIV (QA07SED14)**

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

Reported Results: 4 Quantitative Results: 3

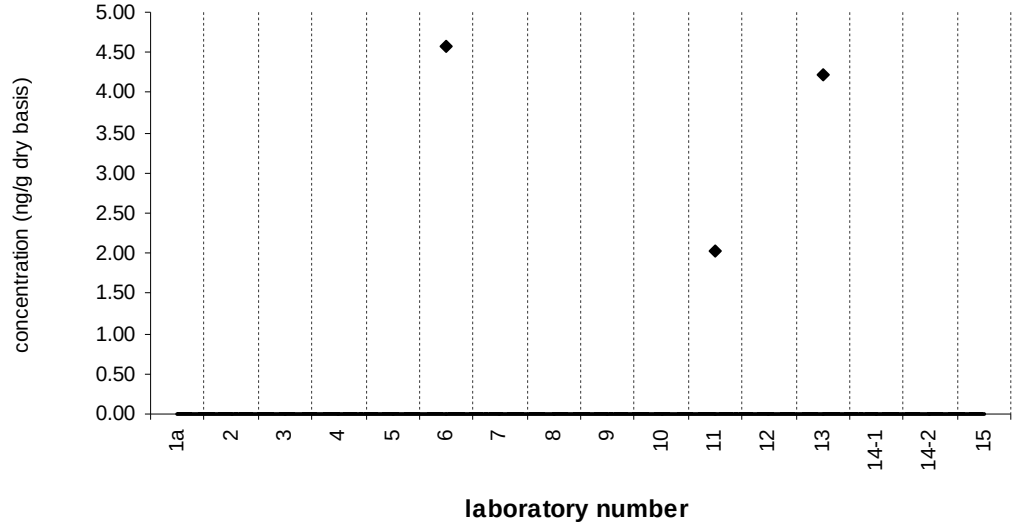


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 190 **SRM 1944**

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

Reported Results: 4 Quantitative Results: 3

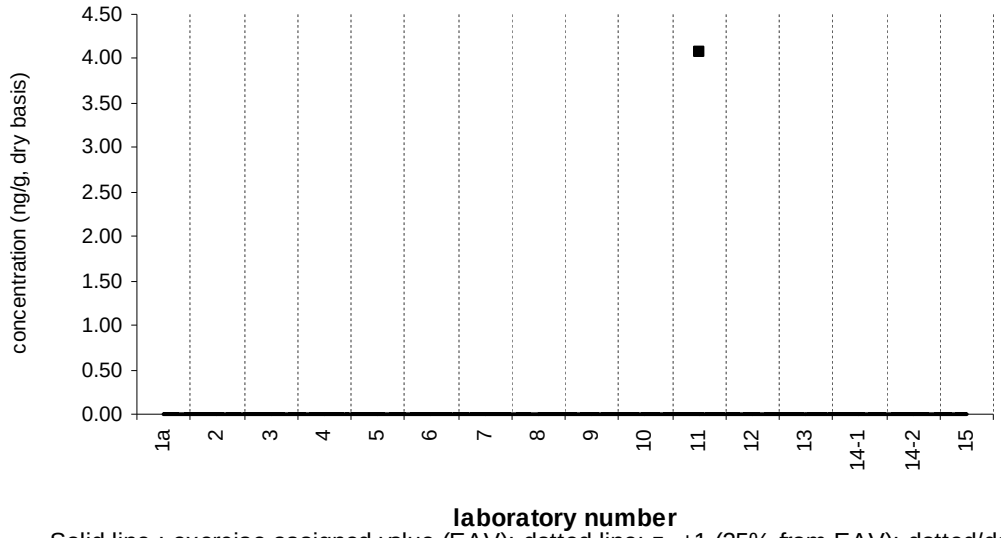


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 203 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 1

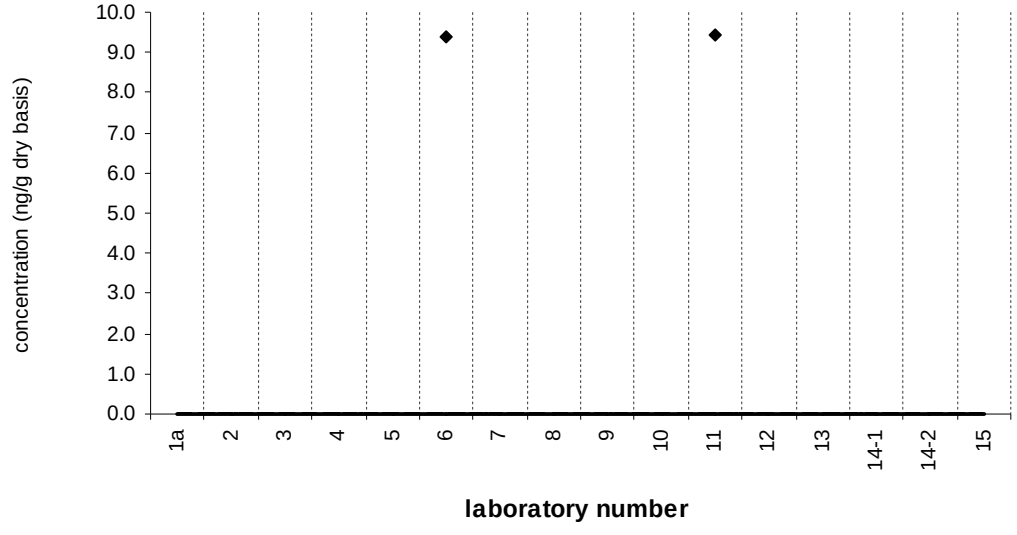


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 203 **SRM 1944**

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

Reported Results: 3 Quantitative Results: 2

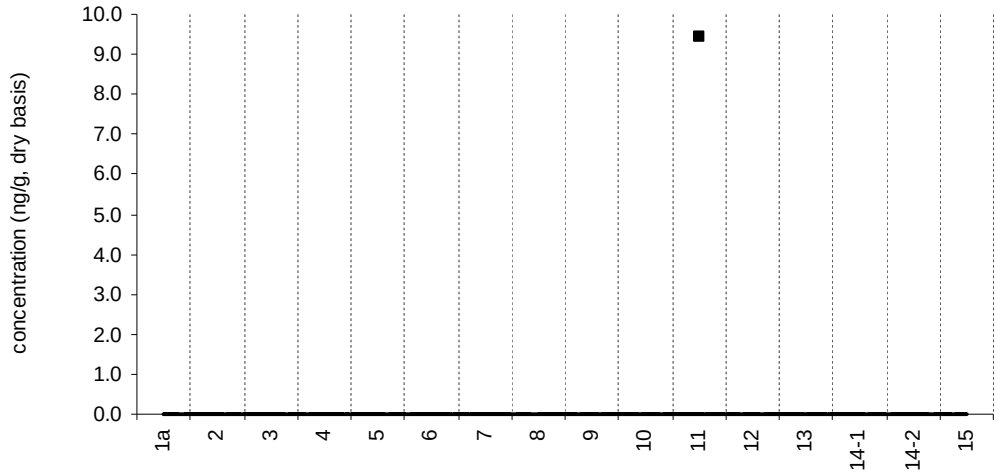


Solid line: value from Certificate of Analysis ; dotted line: 95% confidence limits; dashed line: 30% from 95% confidence limits

BDE 206 **Sediment XIV (QA07SED14)**

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

Reported Results: 3 Quantitative Results: 1

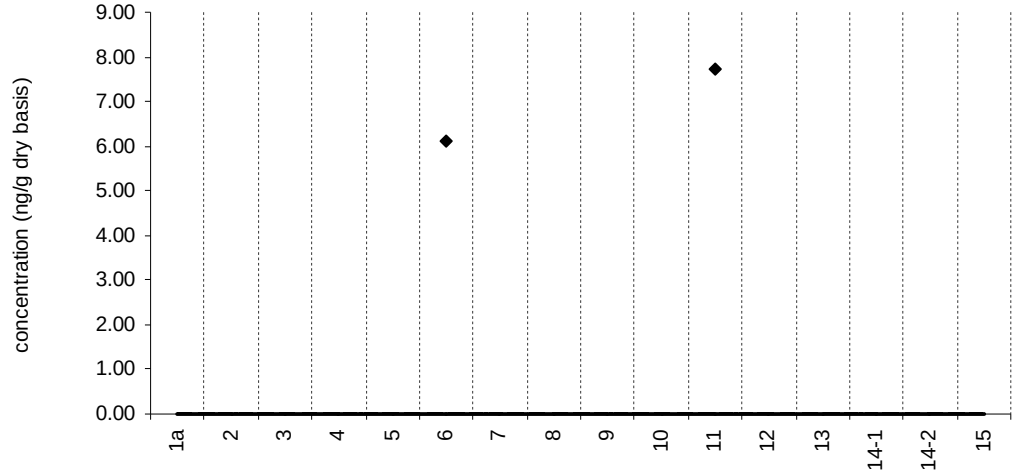


Solid line : exercise assigned value (EAV); dotted line: z=±1 (25% from EAV); dotted/dashed line: z=±2 (50% from EAV); dashed line: z=±3 (75% from EAV)

BDE 206 **SRM 1944**

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

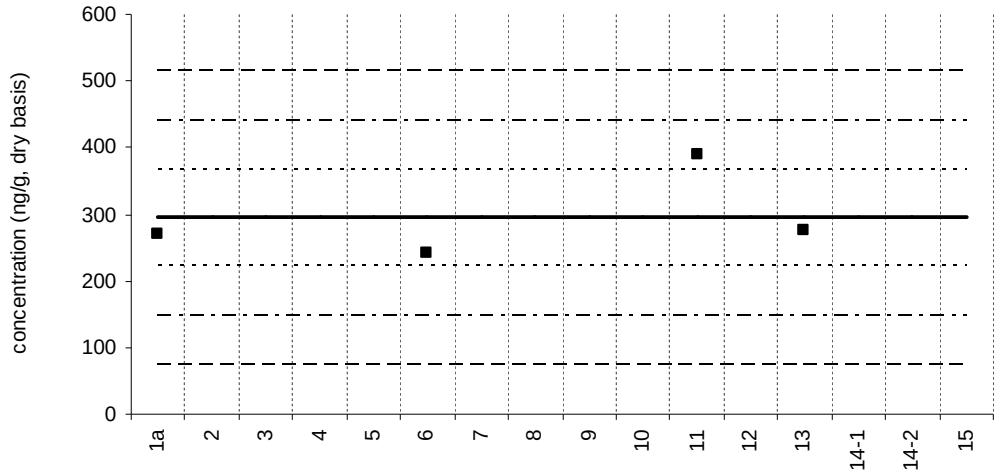
Reported Results: 3 Quantitative Results: 2



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

BDE 209 **Sediment XIV (QA07SED14)**

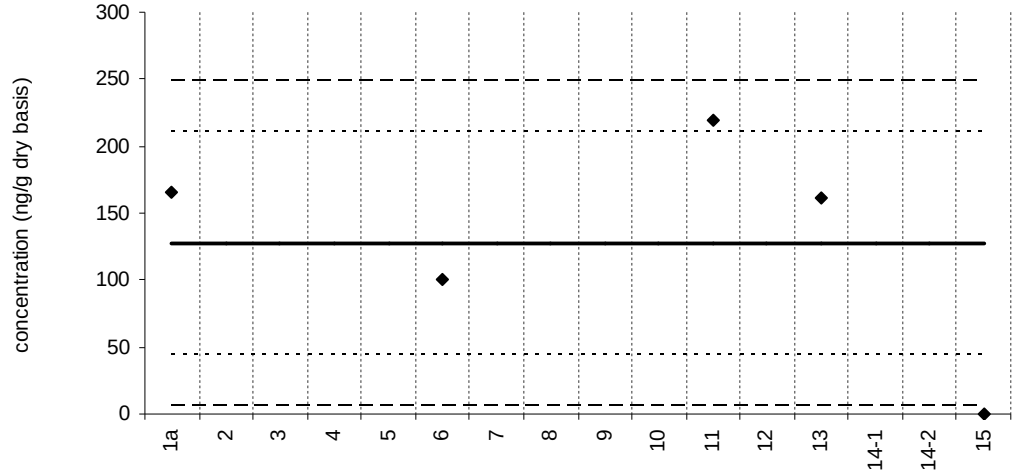
Assigned value = 294 ng/g s = 65 ng/g 95% CL = 103 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4



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)

BDE 209 **SRM 1944**

Target Value = 128 ± 84 ng/g (dry basis)
Reported Results: 4 Quantitative Results: 4



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

Appendix I: List of Laboratories Participating in 2007 Intercomparison Exercises

For this exercise, data were received from the following laboratories within the required timeframe. (This listing does NOT correspond to the laboratory number identification codes used in this report which were assigned in order of receipt of data with the exception of NIST which is Laboratory #1 in this exercise. The same code was used for both exercises.)

AXYS Analytical
2045 Mills Rd West / PO Box 2219
Sidney, BC V8L 3S8
Canada
Dale Hoover

East Bay Municipal Utility District
2020 Wake Avenue
Oakland, CA 94607
Saskai van Bergen and Francois Rodigari

Environment Canada - ALET
Environmental Science Center
Corner Morton & Université Ave
Moncton, NB E1A3E9 Canada
Jamie Aubé

Massachusetts Water Resources Authourity
100 Tafts Ave.
Winthrop, MA 02152
Jennifer Prasse

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

NOAA-NMFS
2725 Montlake Boulevard, East
Seattle, WA 98112
Catherine Sloan / Jennie Bolton

NOAA-NOS
Hollings Marine Laboratory
331 Fort Johnson Road
Charleston, SC 29412
Ed Wirth

TDI-Brooks International
B&B Laboratories

1902 Pinon
College Station, TX 77845
Juan Ramirez

Test America – Chicago
2417 Bond St.
University Park, IL 60466
Marilyn Krueding

Test America – Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921
Christopher Rigell

Test America – Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
Nasreen DeRubeis

Test America – South Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
Sara Goff

Test America – Tacoma
5755 8th Street East
Tacoma, WA 98424
Kathy Kreps

Test America – West Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Patrick Rainey

US Environmental Protection Agency – AED
27 Tarzwell Drive
Narragansett, RI 02882
Joseph LiVolsi