QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis

Polycyclic Aromatic Hydrocarbons in seawater

REFERENCE MATERIAL

AQ13 sample 51

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis AQ13 51

General Information

In this report an overview is given of analytical data for this sample collected in our proficiency testing program. The consensus values are calculated using a robust statistical model. With this NDA model mean and standard deviation are calculated using all reported data when at least 4 results are left after removal of reported 'lower than' (<) and 0 (= zero) values. No outliers are removed.

This report is divided into two sections: Consensus Values and Indicative Values. The division is made on the reliability of the data. Consensus Values are based on at least 10 results while the relative uncertainty is smaller than 6.25%. Indicative Values are based on a relative uncertainty of maximum 35% with at least 4 and less than 10 results or a relative uncertainty higher than 6.25%.

For each determinand the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation) and the uncertainty in the assigned value. The confidence limits (at 95 % probabilty) are calculated for these determinands.

Sample information

QUASIMEME reference materials cover a range of natural SeaWater species from contaminated waters from the North Sea and/or Mediterranean.

This AQ13 sample 51 of Estuarine water spiked with fine sediment from North Sea (diluted) is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the periods given in the following table.

Year.Round	Program	Sample Round Id
2023.1	AQ13	QPH049EW

Consensus Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Fluoranthene	µg/L	17.7	2.27	12.8	12	17.0	1.37	0.82	16.3 - 19.1

Indicative Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits
Indeno[1,2,3-cd]pyrene	µg/L	2.69	1.606	59.7	15	2.66	1.202	0.518	1.81 - 3.57
Phenanthrene	µg/L	4.19	3.129	74.7	12	4.30	2.518	1.129	2.22 - 6.16
Benzo[g,h,i]perylene	µg/L	2.18	1.030	47.2	14	2.30	0.608	0.344	1.59 - 2.77
Benzo[b]fluoranthene	µg/L	4.79	2.076	43.4	15	4.96	1.540	0.670	3.64 - 5.93
Benzo[a]pyrene	µg/L	2.53	1.153	45.6	14	2.45	0.651	0.385	1.87 - 3.19
Benzo[k]fluoranthene	µg/L	2.50	1.237	49.4	14	2.43	0.838	0.413	1.80 - 3.21
Anthracene	µg/L	1.27	0.890	70.1	14	1.31	0.688	0.297	0.759 - 1.78
Acenaphthene	µg/L	1.89	1.632	86.4	12	2.00	1.130	0.589	0.864 - 2.92
Acenaphthylene	µg/L	1.15	0.904	78.6	12	1.08	0.606	0.326	0.582 - 1.72
Pyrene	µg/L	11.4	4.49	39.5	12	11.1	2.61	1.62	8.53 - 14.2
Dibenzo[ah]anthracene	µg/L	0.933	0.2296	24.6	12	0.963	0.1185	0.0829	0.788 - 1.08
Benzo[a]anthracene	µg/L	6.18	2.867	46.4	12	5.95	2.460	1.034	4.38 - 7.98
Chrysene	µg/L	5.73	3.101	54.1	11	5.70	2.367	1.169	3.68 - 7.79
Fluorene	µg/L	0.136	0.0643	47.4	11	0.153	0.0450	0.0242	0.0930 - 0.178