WEPAL-QUASIMEME

Certificate of Analysis

Polycyclic Aromatic Hydrocarbons in seawater

REFERENCE MATERIAL

AQ13 sample 59

2026-Aug-13

WAGENINGEN
UNIVERSITY & RESEARCH

Certificate of Analysis AQ13 59

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, the 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 8 results and a maximum relative uncertainty of 6.25%. Indicative Values are based on a maximum relative uncertainty of 35% and a minimum of 4 and maximum of 7 results, or a relative uncertainty greater than 6.25% when there are at least 8 results.

For each measurand, the following parameters are given: mean, standard deviation, coefficient of variation, number of results, median, MAD (Median of Absolute Deviation), the uncertainty of the mean (consensus or indicative) value and the relative uncertainty.

Please note: Most WEPAL-QUASIMEME reference materials are found to be stable over the long term (>10 years) for most measurand/matrix combinations. There are a few exceptions known to us as being less stable over the long term. These are organotins in sediment (MS6), ASP in shellfish (BT7), some PAHs and PCBs in sediment (SETOC) and N-NH_4 (as N) & N-NO_3 (as N) in clay soils (ISE).

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 59 of Seawater with spike solution from North Sea, the Netherlands is prepared for the QUASIMEME proficiency programs. The results on which the values in this report are based were taken from the rounds given in the following table.

Year.Round	Program	Sample Round Id
2026.1	AQ13	QPH057SW

Consensus Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Phenanthrene	µg/L	0.310	0.025	8.0	14	0.310	0.015	0.008	2.69
Fluoranthene	µg/L	0.303	0.025	8.3	15	0.307	0.015	0.008	2.67
Benzo[b]fluoranthene	µg/L	0.150	0.024	16.1	15	0.146	0.014	0.008	5.20
Benzo[a]pyrene	µg/L	0.092	0.011	11.6	14	0.091	0.006	0.004	3.87
Benzo[k]fluoranthene	µg/L	0.130	0.007	5.7	15	0.130	0.003	0.002	1.83
Anthracene	µg/L	0.263	0.038	14.3	15	0.265	0.025	0.012	4.63
Acenaphthene	µg/L	0.191	0.024	12.7	14	0.194	0.015	0.008	4.23
Acenaphthylene	µg/L	0.080	0.009	11.2	13	0.082	0.004	0.003	3.88
Pyrene	µg/L	0.121	0.007	6.1	15	0.120	0.005	0.002	1.96
Chrysene	µg/L	0.104	0.010	9.9	14	0.106	0.006	0.003	3.30
Fluorene	µg/L	0.187	0.022	12.0	14	0.188	0.012	0.007	3.99

Indicative Values AQ13

Method: Polycyclic aromatic hydrocarbons - AQ13

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	Rel.Uncert. %
Indeno[1,2,3-cd]pyrene	µg/L	0.404	0.132	32.7	14	0.416	0.083	0.044	10.9
Benzo[g,h,i]perylene	µg/L	0.045	0.010	21.5	15	0.045	0.005	0.003	6.95
Naphthalene	µg/L	0.186	0.042	22.5	16	0.192	0.020	0.013	7.04
Dibenzo[ah]anthracene	µg/L	0.122	0.030	24.4	14	0.120	0.021	0.010	8.14
Benzo[a]anthracene	µg/L	0.013	0.004	27.7	14	0.013	0.003	0.001	9.26
Benzo[e]pyrene	µg/L	0.114	0.012	10.9	6	0.115	0.006	0.006	5.55