

QUASIMEME

Quality assurance of information for marine environmental monitoring

Certificate of Analysis



Sediment

REFERENCE MATERIAL

Sediment sample 76





Certificate of Analysis Sediment 76

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.

The results of each determinand is expressed on dried sediment.

Sample information

QUASIMEME reference materials cover a range of natural Marine sediment species from contaminated waters from the North Sea and/or Mediterranean. There is no spiking, mixing or other alterations of the samples. For sample preparation the sediment samples are dried at 40 oC and milled to pass a 0.5 mm sieve.

This Sediment sample 76 of Oostende spiked from Oostende harbor spiked 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
2023.2	MS8	QPF024MS
2023.1	MS6	QSP086MS







Method: Organometals - MS6

Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
TributyItin (TBT)	μg Sn/kg	12.1	3.28	27.1	16	12.3	2.30	1.02	10.4	-	13.8
Dibutyltin (DBT)	μg Sn/kg	10.2	2.30	22.6	15	9.83	1.59	0.74	8.90	-	11.4
Monobutyltin (MBT)	μg Sn/kg	40.8	20.91	51.3	12	41.1	15.50	7.55	27.6	-	54.0
Triphenyltin (TPhT)	μg Sn/kg	15.6	3.28	21.0	9	16.5	1.48	1.37	13.2	-	18.1





Consensus Values MS8

	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence limits		
μg/kg	0.912	0.1025		10	0.919	0.0774	0.0405	0.840 -	0.984	
μg/kg	1.24	0.103	8.3	10	1.26	0.050	0.041	1.17 -	1.31	
μg/kg	1.10	0.087	7.9	11	1.13	0.037	0.033	1.05 -	1.16	
μg/kg	1.12	0.085	7.5	10	1.13	0.050	0.033	1.07 -	1.18	
μg/kg	0.825	0.0637	7.7	10	0.835	0.0326	0.0252	0.780 -	0.870	
μg/kg	1.14	0.159	13.9	10	1.13	0.108	0.063	1.03 -	1.26	
μg/kg	0.557	0.0649	11.7	10	0.559	0.0375	0.0256	0.511 -	0.602	
μg/kg	2.62	0.253	9.7	11	2.68	0.184	0.095	2.45 -	2.79	
	µg/kg µg/kg µg/kg µg/kg µg/kg	Unit Mean μg/kg 0.912 μg/kg 1.24 μg/kg 1.10 μg/kg 1.12 μg/kg 0.825 μg/kg 1.14 μg/kg 0.557	Unit Mean Std.Dev. μg/kg 0.912 0.1025 μg/kg 1.24 0.103 μg/kg 1.10 0.087 μg/kg 1.12 0.085 μg/kg 0.825 0.0637 μg/kg 1.14 0.159 μg/kg 0.557 0.0649	Unit Mean Std.Dev. CV % μg/kg 0.912 0.1025 11.2 μg/kg 1.24 0.103 8.3 μg/kg 1.10 0.087 7.9 μg/kg 1.12 0.085 7.5 μg/kg 0.825 0.0637 7.7 μg/kg 1.14 0.159 13.9 μg/kg 0.557 0.0649 11.7	Unit Mean Std.Dev. CV % N μg/kg 0.912 0.1025 11.2 10 μg/kg 1.24 0.103 8.3 10 μg/kg 1.10 0.087 7.9 11 μg/kg 1.12 0.085 7.5 10 μg/kg 0.825 0.0637 7.7 10 μg/kg 1.14 0.159 13.9 10 μg/kg 0.557 0.0649 11.7 10	Unit Mean Std.Dev. CV % N Median μg/kg 0.912 0.1025 11.2 10 0.919 μg/kg 1.24 0.103 8.3 10 1.26 μg/kg 1.10 0.087 7.9 11 1.13 μg/kg 1.12 0.085 7.5 10 1.13 μg/kg 0.825 0.0637 7.7 10 0.835 μg/kg 1.14 0.159 13.9 10 1.13 μg/kg 0.557 0.0649 11.7 10 0.559	Unit Mean Std.Dev. CV % N Median MAD μg/kg 0.912 0.1025 11.2 10 0.919 0.0774 μg/kg 1.24 0.103 8.3 10 1.26 0.050 μg/kg 1.10 0.087 7.9 11 1.13 0.037 μg/kg 1.12 0.085 7.5 10 1.13 0.050 μg/kg 0.825 0.0637 7.7 10 0.835 0.0326 μg/kg 1.14 0.159 13.9 10 1.13 0.108 μg/kg 0.557 0.0649 11.7 10 0.559 0.0375	Unit μg/kg Mean 0.912 Std.Dev. CV % 11.2 N Median 0.919 MAD 0.0774 0.0405 μg/kg 0.912 0.1025 11.2 10 0.919 0.0774 0.0405 μg/kg 1.24 0.103 8.3 10 1.26 0.050 0.041 0.050 0.041 μg/kg 1.10 0.087 7.9 11 1.13 0.037 0.033 μg/kg 1.12 0.085 7.5 10 1.13 0.050 0.033 μg/kg 0.825 0.0637 7.7 10 0.835 0.0326 0.0252 μg/kg 1.14 0.159 13.9 10 1.13 0.108 0.063 μg/kg 0.557 0.0649 11.7 10 0.559 0.0375 0.0256	Unit Mean Std.Dev. CV % N Median MAD Uncertainty 95 % confidence of confidence of confidence of confidence of confidence of pug/kg μg/kg 0.912 0.1025 11.2 10 0.919 0.0774 0.0405 0.840 - μg/kg 1.24 0.103 8.3 10 1.26 0.050 0.041 1.17 - μg/kg 1.10 0.087 7.9 11 1.13 0.037 0.033 1.05 - μg/kg 1.12 0.085 7.5 10 1.13 0.050 0.033 1.07 - μg/kg 0.825 0.0637 7.7 10 0.835 0.0326 0.0252 0.780 - μg/kg 1.14 0.159 13.9 10 1.13 0.108 0.063 1.03 - μg/kg 0.557 0.0649 11.7 10 0.559 0.0375 0.0256 0.511 -	







Method: Perfluorinated alkyl substance	es - MS8										
Element	Unit	Mean	Std.Dev.	CV %	N	Median	MAD	Uncertainty	95 % confidence lin		e limits
n-PFOS	μg/kg	2.18	0.329	15.1	9	2.14	0.150	0.137	1.93	-	2.43
PFOSA	μg/kg	1.05	0.265	25.3	9	1.03	0.185	0.110	0.846	-	1.25
PFBA	μg/kg	0.893	0.1297	14.5	9	0.906	0.0955	0.0540	0.796	-	0.991
PFTrDA	μg/kg	0.875	0.2597	29.7	10	0.854	0.1500	0.1027	0.692	-	1.06
PFTeDA	μg/kg	0.971	0.1427	14.7	8	0.983	0.0712	0.0631	0.855	-	1.09
n-PFBS	μg/kg	1.39	0.172	12.4	8	1.41	0.100	0.076	1.25	-	1.53
n-PFHps	μg/kg	1.26	0.299	23.8	8	1.23	0.240	0.132	1.01	-	1.50
PFODA	μg/kg	-	-	-	5	0.656	0.3	-	-	-	-
GenX	μg/kg	1.13	0.220	19.4	9	1.17	0.162	0.092	0.967	-	1.30
PFBSA	μg/kg	-	-	-	5	0.171	0.0	-	-	-	-
total-PFBS	μg/kg	-	-	-	4	1.42	0.1	-	-	-	-
total-PFHpS	μg/kg	-	-	-	4	1.24	0.2	-	-	-	-