

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ



Test Report ID MAR02654

Issue Version: 1

Customer: Associated British Ports, Queen Alexandra House, Cargo Road, Cardiff, CF10 4LY

Customer Reference: Newport - MMO Analysis

Date Sampled: 05-May-25

Date Samples Received: 08-May-25

Test Report Date: 10-Jun-25

Condition of samples: Cold Satisfactory

Opinions and Interpretations expressed herein are outside the scope of our UKAS accreditation
The results reported relate only to the sample tested
The results apply to the sample as received

A handwritten signature in grey ink, appearing to read 'K. Smith'.

Authorised by: Katherine Smith

Position: Customer Services Co-ordinator



1252

MAR02654
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Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	% M/M	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	WSLM59*	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	UKAS/MMO	MMO	MMO	MMO	MMO	MMO	MMO
			Total Organic Carbon	45mm	31.5mm	22.4mm	16mm	11.2mm	8mm
Client Reference:	SOCOTEC Ref:	Matrix	-	-5.5	-5.0	-4.5	-4.0	-3.5	-3.0
A	MAR02654.001	Sediment	2.08	0.00	0.00	0.00	0.00	0.00	0.00
B	MAR02654.002	Sediment	2.15	0.00	0.00	0.00	0.00	0.00	0.00
C	MAR02654.003	Sediment	2.35	0.00	0.00	0.00	0.00	1.19	0.19
D	MAR02654.004	Sediment	2.22	0.00	0.00	0.00	0.00	0.00	0.00
E	MAR02654.005	Sediment	2.21	0.00	0.00	0.00	0.00	0.00	0.00
F	MAR02654.006	Sediment	2.31	0.00	0.00	0.00	0.00	0.00	0.05
G	MAR02654.007	Sediment	2.44	0.00	0.00	0.00	0.00	0.00	0.00
H	MAR02654.008	Sediment	2.51	0.00	0.00	0.00	0.00	0.00	0.00
I	MAR02654.009	Sediment	4.84	0.00	0.00	0.00	0.00	0.00	0.57
J	MAR02654.010	Sediment	2.52	0.00	0.00	0.00	0.00	0.00	0.00

* See Report Notes

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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			5.6mm	4mm	2.8mm	2mm	1.4mm	1mm	707µm
Client Reference:	SOCOTEC Ref:	Matrix	-2.5	-2.0	-1.5	-1.0	-0.5	0.0	0.5
A	MAR02654.001	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B	MAR02654.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	MAR02654.003	Sediment	0.05	0.02	0.04	0.03	0.01	0.01	0.00
D	MAR02654.004	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
E	MAR02654.005	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	MAR02654.006	Sediment	0.04	0.00	0.10	0.07	0.08	0.07	0.00
G	MAR02654.007	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H	MAR02654.008	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I	MAR02654.009	Sediment	0.14	0.18	0.14	0.11	0.17	0.10	0.00
J	MAR02654.010	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			500µm	353.6µm	250µm	176.8µm	125µm	88.39µm	63µm
Client Reference:	SOCOTEC Ref:	Matrix	1.0	1.5	2.0	2.5	3.0	3.5	4.0
A	MAR02654.001	Sediment	0.00	0.00	0.00	0.20	1.89	0.57	0.27
B	MAR02654.002	Sediment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C	MAR02654.003	Sediment	0.00	0.00	0.05	0.39	2.31	1.20	0.07
D	MAR02654.004	Sediment	0.00	0.00	0.08	0.21	1.19	0.84	0.01
E	MAR02654.005	Sediment	0.00	0.00	0.00	0.01	0.50	0.39	0.01
F	MAR02654.006	Sediment	0.00	0.00	0.14	0.50	2.34	0.80	0.01
G	MAR02654.007	Sediment	0.00	0.00	0.00	0.31	1.14	0.16	0.82
H	MAR02654.008	Sediment	0.00	0.00	0.00	0.33	2.71	0.62	0.09
I	MAR02654.009	Sediment	0.00	0.32	1.53	1.87	5.76	4.13	0.25
J	MAR02654.010	Sediment	0.00	0.00	0.00	0.15	2.38	1.06	0.02

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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			44.2µm	31.3µm	22.1µm	15.6µm	11µm	7.8µm	5.5µm
Client Reference:	SOCOTEC Ref:	Matrix	4.5	5.0	5.5	6.0	6.5	7.0	7.5
A	MAR02654.001	Sediment	3.77	5.73	5.73	8.65	10.76	12.08	13.05
B	MAR02654.002	Sediment	0.12	3.02	5.12	5.23	7.21	11.65	14.56
C	MAR02654.003	Sediment	3.00	7.41	7.07	8.40	10.24	12.14	12.58
D	MAR02654.004	Sediment	0.94	6.32	6.92	8.11	10.15	12.86	13.84
E	MAR02654.005	Sediment	1.48	6.03	5.82	8.30	10.02	12.89	14.64
F	MAR02654.006	Sediment	1.80	6.77	6.65	8.74	11.01	13.06	13.65
G	MAR02654.007	Sediment	5.74	6.67	7.01	9.42	10.38	11.15	12.20
H	MAR02654.008	Sediment	3.73	7.28	6.83	8.80	9.28	11.06	12.79
I	MAR02654.009	Sediment	2.66	7.87	8.04	8.27	8.70	10.55	10.65
J	MAR02654.010	Sediment	2.36	8.61	8.66	8.88	10.34	12.21	12.26

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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			3.9µm	2.75µm	1.95µm	1.38µm	0.98µm	0.69µm	0.49µm
Client Reference:	SOCOTEC Ref:	Matrix	8.0	8.5	9.0	9.5	10.0	10.5	11.0
A	MAR02654.001	Sediment	11.48	7.85	4.31	2.48	1.91	1.83	1.80
B	MAR02654.002	Sediment	13.51	9.79	6.21	4.38	3.60	3.21	3.02
C	MAR02654.003	Sediment	10.48	7.01	3.90	2.30	1.78	1.68	1.62
D	MAR02654.004	Sediment	11.64	7.76	4.36	2.69	2.16	2.03	1.96
E	MAR02654.005	Sediment	12.63	8.35	4.53	2.71	2.13	1.99	1.91
F	MAR02654.006	Sediment	11.28	7.35	3.85	2.09	1.59	1.56	1.56
G	MAR02654.007	Sediment	10.89	7.46	4.01	2.23	1.71	1.66	1.66
H	MAR02654.008	Sediment	11.44	7.75	4.11	2.27	1.77	1.77	1.78
I	MAR02654.009	Sediment	8.49	5.55	3.24	2.15	1.74	1.53	1.37
J	MAR02654.010	Sediment	9.89	6.57	3.83	2.47	1.97	1.78	1.65

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		Units	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)	% (at 0.5phi intervals)
		Method No	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01	*SUB_01
		Accreditation	MMO	MMO	MMO	MMO	MMO	MMO	MMO
			0.34µm	0.24µm	0.17µm	0.12µm	0.09µm	0.06µm	0.04µm
Client Reference:	SOCOTEC Ref:	Matrix	11.5	12.0	12.5	13.0	13.5	14.0	14.5
A	MAR02654.001	Sediment	1.68	1.44	1.08	0.77	0.47	0.18	0.02
B	MAR02654.002	Sediment	2.82	2.42	1.79	1.26	0.74	0.29	0.03
C	MAR02654.003	Sediment	1.47	1.23	0.91	0.65	0.39	0.15	0.02
D	MAR02654.004	Sediment	1.80	1.52	1.12	0.79	0.47	0.19	0.02
E	MAR02654.005	Sediment	1.76	1.47	1.07	0.74	0.43	0.17	0.02
F	MAR02654.006	Sediment	1.45	1.22	0.92	0.67	0.41	0.16	0.02
G	MAR02654.007	Sediment	1.57	1.36	1.04	0.76	0.47	0.18	0.02
H	MAR02654.008	Sediment	1.66	1.42	1.06	0.77	0.47	0.18	0.02
I	MAR02654.009	Sediment	1.21	1.00	0.74	0.53	0.32	0.13	0.02
J	MAR02654.010	Sediment	1.48	1.24	0.93	0.68	0.41	0.17	0.02

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		Units	% (at 0.5phi intervals)
		Method No	*SUB_01
		Accreditation	MMO
			<0.04µm
Client Reference:	SOCOTEC Ref:	Matrix	>14.5
A	MAR02654.001	Sediment	0.00
B	MAR02654.002	Sediment	0.00
C	MAR02654.003	Sediment	0.00
D	MAR02654.004	Sediment	0.00
E	MAR02654.005	Sediment	0.00
F	MAR02654.006	Sediment	0.00
G	MAR02654.007	Sediment	0.00
H	MAR02654.008	Sediment	0.00
I	MAR02654.009	Sediment	0.00
J	MAR02654.010	Sediment	0.00

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		Units	mg/Kg (Dry Weight)							
		Method No	ICPMSS*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Mercury (Hg)	Nickel (Ni)	Lead (Pb)	Zinc (Zn)
A	MAR02654.001	Sediment	13.0	0.31	38.0	29.5	0.23	32.9	69.2	245
B	MAR02654.002	Sediment	12.8	0.31	36.5	28.6	0.21	31.2	67.0	230
C	MAR02654.003	Sediment	13.6	0.28	41.4	28.4	0.26	34.8	72.3	231
D	MAR02654.004	Sediment	13.9	0.26	39.2	26.9	0.24	33.7	68.8	224
E	MAR02654.005	Sediment	14.2	0.34	37.2	30.7	0.24	32.3	73.8	242
F	MAR02654.006	Sediment	14.6	0.35	42.0	34.9	0.25	35.4	76.4	247
G	MAR02654.007	Sediment	14.1	0.24	39.4	25.2	0.24	33.5	63.5	210
H	MAR02654.008	Sediment	12.9	0.26	34.3	23.2	0.21	30.9	56.9	193
I	MAR02654.009	Sediment	13.8	0.53	30.5	22.8	0.25	27.4	56.8	162
J	MAR02654.010	Sediment	11.5	0.24	34.1	22.0	0.24	30.0	59.0	184
Certified Reference Material SETOC 768 (% Recovery)			98	117	103	103	104	105	99	106
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

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		Units	mg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	0.001	0.001
		Accreditation	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	Dibutyltin (DBT)	Tributyltin (TBT)
A	MAR02654.001	Sediment	<0.005	<0.005
B	MAR02654.002	Sediment	<0.005	<0.005
C	MAR02654.003	Sediment	<0.005	<0.005
D	MAR02654.004	Sediment	<0.005	<0.005
E	MAR02654.005	Sediment	<0.005	<0.005
F	MAR02654.006	Sediment	<0.005	<0.005
G	MAR02654.007	Sediment	<0.005	<0.005
H	MAR02654.008	Sediment	<0.005	<0.005
I	MAR02654.009	Sediment	0.036	<0.005
J	MAR02654.010	Sediment	<0.005	<0.005
Certified Reference Material BCR-646 (% Recovery)			88	87
QC Blank			<0.001	<0.001

* See Report Notes

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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	ACENAPTH	ACENAPHY	ANTHRACN	BAA	BAP	BBF	BENZGHIP	BEP
A	MAR02654.001	Sediment	93.7	56.6	160	294	388	514	411	396
B	MAR02654.002	Sediment	80.9	53.2	139	290	370	477	374	367
C	MAR02654.003	Sediment	60.1	37.0	107	260	321	420	327	317
D	MAR02654.004	Sediment	64.1	55.7	125	313	371	470	360	359
E	MAR02654.005	Sediment	82.3	54.2	131	320	411	524	422	414
F	MAR02654.006	Sediment	75.7	56.8	140	320	398	512	397	390
G	MAR02654.007	Sediment	71.7	47.7	122	310	359	457	352	343
H	MAR02654.008	Sediment	50.4	54.4	127	309	363	424	330	323
I	MAR02654.009	Sediment	89.2	96.6	488	1060	853	910	690	463
J	MAR02654.010	Sediment	49.6	45.0	117	317	363	431	323	308
Certified Reference Material Nist 1941b (% Recovery)			65	114	66	68	64	92	81	92
QC Blank			<1	<1	<1	<1	<1	<1	<1	<1

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

*See report notes

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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1	1	1
		Accreditation	UKAS/MMO	MMO	MMO	MMO	MMO	MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	BKF*	C1N	C1PHEN	C2N	C3N	CHRYSENE*	DBENZAH	FLUORANT
A	MAR02654.001	Sediment	350	514	418	403	271	443	98.8	697
B	MAR02654.002	Sediment	336	463	411	361	247	433	91.0	664
C	MAR02654.003	Sediment	288	300	318	250	157	376	77.2	533
D	MAR02654.004	Sediment	345	376	372	303	208	447	87.7	668
E	MAR02654.005	Sediment	376	470	442	361	276	468	103	668
F	MAR02654.006	Sediment	361	463	425	354	247	462	94.6	700
G	MAR02654.007	Sediment	327	342	326	268	189	429	86.0	556
H	MAR02654.008	Sediment	321	373	380	288	191	450	79.2	626
I	MAR02654.009	Sediment	825	402	748	330	254	1250	123	2090
J	MAR02654.010	Sediment	317	278	305	217	159	430	76.5	592
Certified Reference Material Nist 1941b (% Recovery)			77	73	78	102	108	92	124	82
QC Blank			<1	<1	<1	<1	<1	<1	<1	<1

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

*See report notes

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		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	FLUORENE	INDPYR	NAPTH	PERYLENE	PHENANT	PYRENE
A	MAR02654.001	Sediment	191	442	351	166	513	544
B	MAR02654.002	Sediment	170	405	279	156	467	530
C	MAR02654.003	Sediment	117	350	179	243	350	407
D	MAR02654.004	Sediment	133	402	205	156	421	509
E	MAR02654.005	Sediment	180	420	282	217	487	532
F	MAR02654.006	Sediment	165	432	275	180	469	599
G	MAR02654.007	Sediment	127	388	187	152	382	431
H	MAR02654.008	Sediment	119	347	185	149	434	488
I	MAR02654.009	Sediment	204	500	234	347	1060	1450
J	MAR02654.010	Sediment	101	341	160	135	375	468
Certified Reference Material Nist 1941b (% Recovery)			47	85	58	61	78	72
QC Blank			<1	<1	<1	<1	<1	<1

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

*See report notes

MAR02654

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Certificate of Analysis



Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 101	PCB 105	PCB 110	PCB 118	PCB 128	PCB 138	PCB 141
A	MAR02654.001	Sediment	0.00267	0.00150	0.00435	0.00389	0.00097	0.00481	0.00086
B	MAR02654.002	Sediment	0.00224	0.00106	0.00389	0.00312	0.00073	0.00336	0.00049
C	MAR02654.003	Sediment	0.00243	0.00114	0.00443	0.00341	0.00091	0.00395	0.00090
D	MAR02654.004	Sediment	0.00315	0.00138	0.00493	0.00375	0.00108	0.00535	0.00111
E	MAR02654.005	Sediment	0.00297	0.00155	0.00524	0.00402	0.00101	0.00540	0.00088
F	MAR02654.006	Sediment	0.00462	0.00202	0.00674	0.00530	0.00120	0.00660	0.00164
Certified Reference Material Nist 1941b (% Recovery)			91	93	111	86	111	104	110~
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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*See report notes

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	MMO*	UKAS/MMO	MMO*	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 149	PCB 151	PCB 153	PCB 156	PCB 158	PCB 170	PCB 18
A	MAR02654.001	Sediment	0.00351	0.00107	0.00588	0.00047	0.00069	0.00188	0.00299
B	MAR02654.002	Sediment	0.00315	0.00086	0.00429	0.00038	0.00055	0.00116	0.00278
C	MAR02654.003	Sediment	0.00358	0.00110	0.00507	0.00039	0.00060	0.00164	0.00330
D	MAR02654.004	Sediment	0.00411	0.00142	0.00614	0.00052	0.00074	0.00184	0.00387
E	MAR02654.005	Sediment	0.00405	0.00121	0.00621	0.00046	0.00079	0.00183	0.00370
F	MAR02654.006	Sediment	0.00562	0.00150	0.00774	0.00073	0.00104	0.00223	0.00800
Certified Reference Material Nist 1941b (% Recovery)			101	113~	90	102	82	103	88
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	MMO*	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 180	PCB 183	PCB 187	PCB 194	PCB 28	PCB 31	PCB 44
A	MAR02654.001	Sediment	0.00412	0.00083	0.00198	0.00096	0.00769	0.00590	0.00315
B	MAR02654.002	Sediment	0.00312	0.00058	0.00181	0.00078	0.00669	0.00488	0.00236
C	MAR02654.003	Sediment	0.00372	0.00078	0.00215	0.00110	0.00669	0.00529	0.00282
D	MAR02654.004	Sediment	0.00472	0.00097	0.00279	0.00122	0.00744	0.00581	0.00348
E	MAR02654.005	Sediment	0.00436	0.00099	0.00224	0.00113	0.00852	0.00648	0.00339
F	MAR02654.006	Sediment	0.00524	0.00116	0.00278	0.00136	0.01230	0.01074	0.00533
Certified Reference Material Nist 1941b (% Recovery)			111	93	122	89	74	95	91
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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*See report notes

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*
Client Reference:	SOCOTEC Ref:	Matrix	PCB 47	PCB 49	PCB 52	PCB 66
A	MAR02654.001	Sediment	0.00128	0.00282	0.00320	0.00655
B	MAR02654.002	Sediment	0.00103	0.00249	0.00275	0.00530
C	MAR02654.003	Sediment	0.00109	0.00265	0.00304	0.00561
D	MAR02654.004	Sediment	0.00138	0.00319	0.00377	0.00647
E	MAR02654.005	Sediment	0.00140	0.00318	0.00360	0.00689
F	MAR02654.006	Sediment	0.00199	0.00535	0.00620	0.00940
Certified Reference Material Nist 1941b (% Recovery)			115~	107	104	114
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 101	PCB 105	PCB 110	PCB 118	PCB 128	PCB 138	PCB 141
G	MAR02654.007	Sediment	0.00241	0.00120	0.00439	0.00351	0.00091	0.00440	0.00085
H	MAR02654.008	Sediment	0.00200	0.00090	0.00341	0.00274	0.00064	0.00351	0.00062
I	MAR02654.009	Sediment	0.00225	0.00099	0.00365	0.00284	0.00079	0.00365	0.00074
J	MAR02654.010	Sediment	0.00216	0.00095	0.00366	0.00273	0.00067	0.00403	0.00056
Certified Reference Material Nist 1941b (% Recovery)			88	78	101	96	112	109	111~
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 149	PCB 151	PCB 153	PCB 156	PCB 158	PCB 170	PCB 18
G	MAR02654.007	Sediment	0.00375	0.00109	0.00516	0.00036	0.00060	0.00148	0.00316
H	MAR02654.008	Sediment	0.00286	0.00065	0.00388	0.00030	0.00050	0.00129	0.00252
I	MAR02654.009	Sediment	0.00317	0.00089	0.00460	0.00036	0.00056	0.00139	0.00307
J	MAR02654.010	Sediment	0.00304	0.00081	0.00432	0.00036	0.00059	0.00139	0.00228
Certified Reference Material Nist 1941b (% Recovery)			100	113~	100	106	88	98	87
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*	MMO*	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	PCB 180	PCB 183	PCB 187	PCB 194	PCB 28	PCB 31	PCB 44
G	MAR02654.007	Sediment	0.00397	0.00071	0.00194	0.00091	0.00630	0.00501	0.00264
H	MAR02654.008	Sediment	0.00296	0.00059	0.00151	0.00079	0.00512	0.00397	0.00217
I	MAR02654.009	Sediment	0.00305	0.00080	0.00175	0.00078	0.00587	0.00474	0.00247
J	MAR02654.010	Sediment	0.00332	0.00066	0.00169	0.00074	0.00530	0.00398	0.00230
Certified Reference Material Nist 1941b (% Recovery)			97	105	94	95	73	94	88
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.00008	0.00008	0.00008	0.00008
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*
Client Reference:	SOCOTEC Ref:	Matrix	PCB 47	PCB 49	PCB 52	PCB 66
G	MAR02654.007	Sediment	0.00108	0.00257	0.00286	0.00535
H	MAR02654.008	Sediment	0.00090	0.00215	0.00239	0.00439
I	MAR02654.009	Sediment	0.00106	0.00256	0.00280	0.00462
J	MAR02654.010	Sediment	0.00101	0.00221	0.00251	0.00484
Certified Reference Material Nist 1941b (% Recovery)			121~	108	100	109
QC Blank			<0.00008	<0.00008	<0.00008	<0.00008

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*See report notes

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)							
		Method No	ASC/SOP/302							
		Limit of Detection	0.0001							
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	AHCH	BHCH	GHCH	DIELDRIN	HCB	PPTDE	PPDDE	PPDDT
A	MAR02654.001	Sediment	<0.0001	<0.0001	<0.0001	0.0002	0.0004	0.0017	0.0006	0.0001
B	MAR02654.002	Sediment	<0.0001	<0.0001	0.0001	0.0004	0.0003	0.0012	0.0006	<0.0001
C	MAR02654.003	Sediment	<0.0001	<0.0001	<0.0001	0.0001	0.0003	0.0015	0.0006	0.0001
D	MAR02654.004	Sediment	<0.0001	<0.0001	<0.0001	0.0003	0.0004	0.0015	0.0005	0.0002
E	MAR02654.005	Sediment	<0.0001	<0.0001	0.0001	0.0004	0.0004	0.0017	0.0006	<0.0001
F	MAR02654.006	Sediment	<0.0001	<0.0001	0.0001	<0.0001	0.0006	0.0017	0.0006	<0.0001
Certified Reference Material Nist 1941b (% Recovery)			127~	101~	140~	138~	158	75	76	108~
QC Blank			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

*See report notes

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Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)							
		Method No	ASC/SOP/302							
		Limit of Detection	0.0001							
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	AHCH	BHCH	GHCH	DIELDIN	HCB	PPTDE	PPDDE	PPDDT
G	MAR02654.007	Sediment	<0.0001	<0.0001	<0.0001	<0.0001	0.0004	0.0012	0.0004	<0.0001
H	MAR02654.008	Sediment	<0.0001	<0.0001	<0.0001	0.0004	0.0005	0.0011	0.0004	<0.0001
I	MAR02654.009	Sediment	<0.0001	<0.0001	<0.0001	0.0003	0.0004	0.0013	0.0006	<0.0001
J	MAR02654.010	Sediment	<0.0001	<0.0001	<0.0001	0.0001	0.0003	0.0013	0.0005	<0.0001
Certified Reference Material Nist 1941b (% Recovery)			130~	98~	133~	121~	144	77	88	78~
QC Blank			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are available.

For full analyte name see method summaries.

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Test Report ID MAR02654
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Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308
		Limit of Detection	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
		Accreditation	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	UKAS/MMO	MMO*	MMO*	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	BDE17	BDE28	BDE47	BDE66	BDE85	BDE99	BDE100	BDE138
A	MAR02654.001	Sediment	<0.00005	<0.00005	0.00018	<0.00005	<0.00005	0.00022	<0.00005	<0.00005
B	MAR02654.002	Sediment	0.00007	0.00007	0.00053	0.00006	<0.00005	0.00064	0.00012	<0.00005
C	MAR02654.003	Sediment	<0.00005	<0.00005	0.00042	0.00007	<0.00005	0.00042	0.00008	<0.00005
D	MAR02654.004	Sediment	0.00012	0.00010	0.00068	0.00008	<0.00005	0.00074	0.00013	<0.00005
E	MAR02654.005	Sediment	0.00008	0.00007	0.00066	0.00009	<0.00005	0.00070	0.00013	<0.00005
F	MAR02654.006	Sediment	0.00008	0.00007	0.00066	0.00009	<0.00005	0.00070	0.00013	<0.00005
G	MAR02654.007	Sediment	<0.00005	<0.00005	0.00038	0.00007	<0.00005	0.00040	0.00010	<0.00005
H	MAR02654.008	Sediment	<0.00005	<0.00005	0.00032	0.00005	<0.00005	0.00038	0.00005	<0.00005
I	MAR02654.009	Sediment	<0.00005	0.00006	0.00049	0.00009	<0.00005	0.00056	0.00008	<0.00005
J	MAR02654.010	Sediment	<0.00005	<0.00005	0.00031	0.00005	<0.00005	0.00055	0.00006	<0.00005
Certified Reference Material QBC069MS (% Recovery)			99~	103	81	85~	114~	87	95	104~
QC Blank			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005

* See Report Notes

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Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

		Units	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)	mg/Kg (Dry Weight)
		Method No	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308	ASC/SOP/308
		Limit of Detection	0.00005	0.00005	0.00005	0.0001
		Accreditation	MMO*	UKAS/MMO	UKAS/MMO	UKAS/MMO
Client Reference:	SOCOTEC Ref:	Matrix	BDE153	BDE154	BDE183	BDE209
A	MAR02654.001	Sediment	<0.00005	<0.00005	<0.00005	0.016
B	MAR02654.002	Sediment	0.00012	0.00009	0.00009	0.051
C	MAR02654.003	Sediment	0.00010	0.00009	0.00007	0.033
D	MAR02654.004	Sediment	0.00021	0.00010	0.00018	0.040
E	MAR02654.005	Sediment	0.00018	0.00010	0.00011	0.042
F	MAR02654.006	Sediment	0.00018	0.00010	0.00011	0.042
G	MAR02654.007	Sediment	0.00011	0.00008	0.00007	0.033
H	MAR02654.008	Sediment	0.00008	<0.00005	0.00006	0.026
I	MAR02654.009	Sediment	0.00015	0.00007	0.00005	0.031
J	MAR02654.010	Sediment	0.00011	0.00006	0.00008	0.043
Certified Reference Material QBC069MS (% Recovery)			158	101~	79	76
QC Blank			<0.00005	<0.00005	<0.00005	<0.001*

* See Report Notes

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Certificate of Analysis



Issuing Laboratory SOCOTEC, Marine Department, Advanced Chemistry and Research, Etwall House, Bretby Business Park, Ashby Road, Burton-upon-Trent DE15 0YZ

Test Report ID MAR02654
Issue Version 1
Customer Reference Newport - MMO Analysis

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
*SUB_01	MAR02654.001-010	Analysis was conducted by an approved subcontracted laboratory.
WSLM59*	MAR02654.001-010	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ICPMSS*	MAR02654.001-010	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
ASC/SOP/301	MAR02654.001-010	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR02654.001-006	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB66, PCB153, PCB158, PCB187, PPDDE) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/302	MAR02654.007-010	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (PCB28, PCB31, PCB66, PCB170, PPTDE) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR02654.001-010	Benzo[k]fluoranthene is known to coelute with Benzo[j]fluoranthene and these peaks can not be resolved. It is believed Benzo[j]fluoranthene is present in these samples therefore it is suggested that the Benzo[k]fluoranthene results should be taken as a Benzo[k]fluoranthene (inc. Benzo[j]fluoranthene). Benzo[j]fluoranthene is not UKAS accredited. This should be taken into consideration when utilising the data.
ASC/SOP/303/304	MAR02654.001-010	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved in the PAHSED UKAS accredited method. Chrysene and Triphenylene are resolved for MMO but this is currently not UKAS accredited therefore Chrysene is reported without this accreditation.
ASC/SOP/308	MAR02654.001-010	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (BDE99, BDE100, BDE153) . These circumstances should be taken into consideration when utilising the data.
ASC/SOP/308	MAR02654.001-010	The Primary process control blank data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with BDE209 falling above acceptable reporting limits. The remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy the report limit for this compound has been raised and samples have been blank subtracted.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Sample Contaminated through Damaged Packaging	N/A	N/A
D3	Sample Contaminated through Sampling	N/A	N/A
D4	Inappropriate Container/Packaging	N/A	N/A
D5	Damaged in Transit	N/A	N/A
D6	Insufficient Quantity of Sample	N/A	N/A
D7	Inappropriate Headspace	N/A	N/A
D8	Retained at Incorrect Temperature	N/A	N/A
D9	Lack of Date & Time of Sampling	N/A	N/A
D10	Insufficient Sample Details	N/A	N/A
D11	Sample integrity compromised or not suitable for analysis	N/A	N/A

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Method	Sample and Fraction Size	Method Summary
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Total Organic Carbon (TOC)	Air dried	Carbonate removal and sulphurous acid/combustion at 1600°C/NDIR.
Metals	Air dried	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Ultra-violet fluorescence spectroscopy
Polychlorinated Biphenyls (PCBs)	Air dried and sieved to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.
Organochlorine Pesticides (OCPs)	Air dried and sieved to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.
Brominated Flame Retardants (PBDEs)	Air dried and sieved to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorocyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorocyclohexane
BAA	Benzo[a]anthracene	DBENZA	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorocyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HC	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	PPDDE	p,p'-Dichlorodiphenyldichloroethylene
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	PPDDT	p,p'-Dichlorodiphenyltrichloroethane
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	PPTDE	p,p'-Dichlorodiphenyldichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		

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