

The National Centre for Environmental Data and Surveillance

**NATIONAL COASTAL BASELINE SURVEY
1996 RESULTS**



**ENVIRONMENT
AGENCY**

NATIONAL COASTAL BASELINE SURVEY 1996 RESULTS

PART 1 OF 2

**National Centre for Environmental Data and Surveillance
29 May 1997**

ENVIRONMENT AGENCY



135564

1. INTRODUCTION

- 1.1 This document presents the results from the 1996 National Coastal Baseline Survey. Two main baseline surveys were carried out in 1996, in Winter and Summer, with a further survey undertaken in Spring around the majority of the coastline. The results of this third survey have been compiled with the baseline results as the survey was carried out to the baseline format.
- 1.2 The dates of the three surveys are detailed below:
- | | |
|---------|------------------------------------|
| Winter: | 15 January 1996 - 22 February 1996 |
| Spring: | 13 May 1996 - 21 June 1996 |
| Summer: | 12 July 1996 - 11 August 1996 |
- 1.3 Water sampling for laboratory analysis was carried out at 120 of the original 189 baseline sampling sites. These were selected after Canberra Metric analysis of the data from 1991-1995 revealed the spatial homogeneity of certain areas of the coastline. The revised sampling site positions are shown in the following table. The determinand suite measured at each site is shown in this table. The three determinand suites are also included.
- 1.4 Continuous sampling was carried out between the baseline sampling sites using both the Towfish to record physical parameters and the Skalar auto-analyser to record nutrient concentrations. Additionally, vertical profile data were recorded at the baseline sampling sites.

Environment Agency National Coastal Baseline Sites 1996

Base	Site name	Easting	Northing	Det Group	Measured	
				1	2	3
1	Berwick	401443	652107	1	1	1
2	Castlehead Rocks	413450	644616	1		
3	Shoreston Outcrops	421779	633985	1	1	
4	Craster	426513	620379	1		1
7	Blyth	434352	579260	1		1
8	Tyne (North)	438454	569686	1		
10	Tyne (South)	439317	568451	1		
11	Marsden	440937	566073	1		
13	Wear (Middle)	442402	558854	1		1
15	Pincushion Rock	443338	551556	1	1	1
16	Blackhall	449679	538324	1		
17	Tees (North)	455462	530528	1		
18	Tees (Middle)	456231	529147	1	1	1
19	Tees (South)	459667	527892	1		
20	Skinningrove	472910	521798	1		
21	Sandsend	486288	515059	1	1	
24	Filey Brigg	514516	481769	1	1	
25	Flamborough (North)	524615	473502	1		1
26	Bridlington	520418	466428	1		
28	Beacon Hill	528006	438358	1		
29	Withernsea	536920	426310	1		
30	Spurn Head	546422	414537	1	1	1
31	Haile Sand Flat	547030	405650	1	1	1
32	Theddlethorpe	552061	390130	1		
33	Chapel St. Leonards	558791	374579	1	1	1
33.1	Skegness	561065	363243	1		
34	Outer Dogs Head	560595	357290	1		
34.1	Lynn Deep	561129	348030	1		
35	Wash	568866	346069	1	1	1
36	Overy, Staithe	585381	349089	1		
37	Cley, Lookout	605814	347878	1	1	1
39	Mundesley	632565	339254	1	1	1
41	Winterton	651212	318639	1	1	1
42	Gorleston	655611	302520	1		
43	Kessingland	656311	286951	1	1	1
44	Dunwich Cliffs	651442	271096	1		
46	Shingle Street	639608	242466	1		
46.1	Felixstowe, Cobbolds	634500	234000	1	1	1
48	Walton	627041	219040	1		
48.1	Holland Radar	623902	214629	1		
50	Maplin Bank	613318	192638	1		
51	Medway Buoy	600023	179518	1	1	1
52	Shivering Sand Buoy	614810	173220	1		
54	East Brake Buoy	642560	164290	1		
55	Goodwin Fork Buoy	640780	152520	1		
56	South Foreland	637420	142840	1	1	1
57	Sandgate Bay	623350	133160	1		
58	Dungeness	610960	115460	1		
61	Beachy Head	560440	92640	1	1	1
63	Brighton	531560	101530	1		
66	Selsey Bill	486600	89740	1	1	1
67	Nab Tower	477220	89080	1		
68.1	East Brambles	454500	99090	1		
68.2	Calshot	449950	102320	1	1	1
68.3	Dockhead	442954	109622	1		
68.4	West Princessa	467490	89410	1		
69	St. Catherines	449780	74450	1		
70	The Needles	427320	83450	1		
73	St. Aldhelms	391444	74806	1		
75	Portland Bill	366887	68905	1		
78	Seaton	327371	85782	1	1	1
80	Exmouth	298768	73910	1		
83	Start Point	282855	34413	1		
85	Bigbury Bay	260244	41176	1		

Environment Agency National Coastal Baseline Sites 1996

86	Plymouth	246016	46192	1	1	1
87	East Looe	232461	50530	1		
88	Fowey	216744	48055	1		
89	Dodman Point	203301	38283	1		
90	St. Antony Head	191045	31497	1		
93	Lizard	171990	9880	1		
95	Penzance	151330	23980	1		
97	Cape Cornwall	132110	31440	1	1	1
100	St. Agnes	168780	52800	1		
102	Trevose	182760	77920	1		
105	Bosccastle	207848	93942	1		
108	Hartland Point	222623	132318	1		
110	Bull Point	244082	147356	1		
112	Foreland	272883	153182	1		
113	Porlock	287856	150676	1		
114	Minchhead	302829	147589	1		
116	Weston-super-Mare	328422	160435	1		
117	Clevedon	337342	171688	1		
118	Avonmouth	350046	178825	1		
119	No. 1 Beacon	351230	184940	1	1	1
122	Lavernock	319740	166990	1		
124	Nash Point	291470	167040	1		
125	Porthcawl	279540	175580	1	1	1
128	Mumbles	264920	183970	1		
130	Worms Head	237680	186370	1	1	1
134	Caldey Island	219540	197440	1	1	1
137	Turbot Bank	184870	194230	1	1	1
138	St. Ann's	180565	201679	1	1	1
139	Skomer	170162	208214	1		
142	Strumble Head	189368	242641	1		
146	Penly-Badell	229134	257723	1		
148	Pen Pigyn	251196	271016	1		
151	Pen-Bwch Point	251567	301984	1		
154	Pwllheli	240180	333514	1	1	1
156	Bardsey	214489	322368	1	1	1
157	Penrhyn Colmon	217789	335234	1		
159	Dylan	241352	352029	1		
161	Penrhos	222588	376813	1	1	1
163	Middle Mouse	239518	396995	1	1	1
164	Red Wharf	255740	384043	1		
165	Great Orme	275785	386259	1	1	1
166	Llanddulas	289027	383149	1		
167	Chester Flat	302955	385626	1		
168	Welsh Channel	311359	390098	1	1	
170	North Wirral	321644	395462	1	1	
171	Formby Point	323261	408435	1		
172	Gut	324086	423257	1	1	1
173	Blackpool	327725	438035	1		
174	Shell Wharf	324489	448100	1	1	1
175	Hilpsford	317047	460468	1		
176	Duddon	311551	471698	1	1	1
178	Calder Hall	297170	501675	1	1	1
179	Whitehaven	292652	516620	1	1	
180.1	Maryport	299955	537044	1	1	1
184	Abbey Head	271290	541294	1	1	1
185	Meggerland	258289	545024	1		
186	St. Ninians	250301	536374	1	1	1

National Centre Det Code	Determinand	Units
Group 1		
105	Mercury Total	µg/l
106	Cadmium Dissolved	µg/l
135	Suspended Solids 105°C	mg/l
143	Suspended Solids 500°C	mg/l
189	Orthophosphate	µg/l P
729	Chlorophyll a	µg/l
3403	Ammonia	µg/l N
3404	Nitrite	µg/l N
3420	Silicate	µg/l SiO ₂
7213	Copper Dissolved	µg/l
7230	Lead Dissolved	µg/l
7243	Zinc Dissolved	µg/l
7354	Arsenic Dissolved	µg/l
7373	Chromium Dissolved	µg/l
7427	Nickel Dissolved	µg/l
9991	Total Oxidised Nitrogen	µg/l N
Group 2		
108	Cadmium Total	µg/l
7215	Copper Total	µg/l
7229	Lead Total	µg/l
7245	Zinc Total	µg/l
7356	Arsenic Total	µg/l
7375	Chromium Total	µg/l
7429	Nickel Total	µg/l
Group 3		
3081	Isodrin	µg/l
3276	Aldrin	µg/l
3301	Dieldrin	µg/l
3306	Endrin	µg/l
3082	Hexachlorobenzene	µg/l
3083	Hexachlorobutadiene	µg/l
3142	PCB 28	µg/l
3145	PCB 52	µg/l
3148	PCB 101	µg/l
3151	PCB 118	µg/l
3154	PCB 138	µg/l
3157	PCB 153	µg/l
3160	PCB 180	µg/l
3294	DDE (Pp')	µg/l
3295	DDE (Op')	µg/l
3296	DDT (Op')	µg/l
3297	DDT (Pp')	µg/l
3310	HCH alpha	µg/l
3311	HCH beta	µg/l
3312	HCH delta	µg/l
3313	HCH gamma	µg/l
3329	TDE (Op')	µg/l
3330	TDE (Pp')	µg/l

LABORATORY RESULTS TABLES

WINTER 1996

WATER GUARDIAN
INORGANICS

WATER GUARDIAN INORGANICS																			
				Berwick	Castlehead Rocks	Shoreston Outcans	Crasler	Blyth	Tyne (North)	Tyne (South)	Marsden	Wear (Middle)	Pincushon Rock	Blackhall	Tees (North)	Tees (Middle)	Tees (South)	Skinningrove	Sandsend
			Base	1	2	3	4	7	8	10	11	13	15	16	17	18	19	20	21
			Date	17Jan	17Jan	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb	04Feb
			Time	11:50	12:45	11:45	12:40	15:00	15:25	15:50	16:05	16:35	17:00	18:00	18:40	20:45	20:05	22:05	11:10
Det.	MRV	Units																	
105	Mercury total	0.008	µg/l	<	<	<	<	<	<	<	<		0.015	<	<	<	<	<	<
106	Cadmium dissolved	0.04	µg/l	<	<		0.063	0.060	0.076	0.046	0.047	0.050		0.064	<	<	<	<	<
108	Cadmium total	0.04	µg/l	<		0.061							0.044			<			<
7213	Copper dissolved	0.051	µg/l		3.16	3.14	1.85	1.68	1.98	1.85	1.37	1.51	1.81	1.74	1.32	1.12	1.11	3.32	1.36
7215	Copper total	0.051	µg/l	2.97		4.11							2.50			1.77			1.93
7230	Lead dissolved	0.024	µg/l	0.633	0.473	0.836	0.334	0.436	0.513	2.160	0.502	0.653	0.632	0.422	0.772	0.488	0.465	0.835	0.381
7229	Lead total	0.024	µg/l	0.77		1.78							1.85			1.93			1.24
7243	Zinc dissolved	2	µg/l		16.9		16.4	12.8	9.6	19.8	15.2	15.1		12.4	10.6	11.7	10.4	14.6	7.59
7245	Zinc total	2	µg/l	13.1		15.9							8.0			11.7			11.3
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<		<							<			<			<
7373	Chromium dissolved	0.35	µg/l		0.97	2.15	0.76	<	1.01	14.80	2.53	2.58	1.44	1.43	4.10		0.77	2.49	
7375	Chromium total	0.35	µg/l	1.14		2.36							1.49			1.06			0.70
7427	Nickel dissolved	0.058	µg/l		0.596	1.350	0.746	0.904	0.675	0.702	0.767	1.000	0.839	0.921	0.828	0.669	0.648	0.547	0.598
7429	Nickel total	0.058	µg/l	0.771		2.100							1.530			0.785			1.180
3403	Ammonia	1	µg/l N	99	80	74	60	89	96	99	125	190	109	110	685	335	382	52	54
3404	Nitrite	0.5	µg/l N	6.06	0.55	1.93	3.06	2.60	3.69	4.63	3.86	9.70	4.49	3.94	34.00	17.20	21.00	1.93	1.29
9991	Total Oxidised Nitrogen	2.5	µg/l N	2001	231	594	365	250	243	437	293	607	314	257	832	417	455	226	229
3420	Silicate	2	µg/l SiO2	3041	343	369	414	426	454	431	514	943	499	450	688	450	480	298	379
189	Orthophosphate	0.5	µg/l P	42	9	23	24	28	28	30	31	69	32	31	73	42	42	27	23
143	Suspended solids 500°C	1.5	mg/l	<	<	5	7	5	12	5	2		4	5	4	7	2	4	9
135	Suspended solids 105°C	1.5	mg/l	<	<	5	7	5	14	5	2		4	6	4	9	2	4	11
729	Chlorophyll a	0.2	µg/l	0.98	0.36	0.36	0.36	0.40	0.36	0.31	0.22	0.27	<	<	0.31	0.27	<	0.27	0.22

WATER GUARDIAN
INORGANICS

				Filey Brigg	Flamborough (North)	Bridlington	Beacon Hill	Withemsea	Spurn Head	Haile Sand Flat	Theddlethorpe	Chapel St. Leonards	Outer Dogs Head
				24	25	26	28	29	30	31	32	33	34
				15Feb	15Feb	15Feb	15Feb	15Feb	15Feb	22Feb	22Feb	22Feb	22Feb
				12:55	13:40	16:15	18:10	19:10	20:35	12:15	13:40	14:50	16:00
Det.	MRV	Units											
105	Mercury total	0.008	µg/l	0.008	<	<	0.011	0.031	0.020	0.044	0.021	0.017	-
106	Cadmium dissolved	0.04	µg/l		<	<	<	0.056	0.072	0.084	0.059	0.051	<
108	Cadmium total	0.04	µg/l	<					0.078	0.162		0.080	
7213	Copper dissolved	0.051	µg/l	2.57	1.65	2.71	1.62	1.63	2.44	4.14	3.83	2.46	2.02
7215	Copper total	0.051	µg/l	3.17					8.14	20.20		7.43	
7230	Lead dissolved	0.024	µg/l	1.720	0.588	0.394	0.060	0.681	0.246	0.553	1.280	0.429	0.195
7229	Lead total	0.024	µg/l	2.44					12.50	20.80		9.64	
7243	Zinc dissolved	2	µg/l	11.80	6.22	5.04	4.26	11.50	8.49	13.09	11.08	8.89	6.58
7245	Zinc total	2	µg/l	16.1					31.2	44.2		23.9	
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<					1.18	<		<	
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	0.84	2.88	5.71	7.78	6.23	4.89
7375	Chromium total	0.35	µg/l	0.44					5.80	17.56		11.40	
7427	Nickel dissolved	0.058	µg/l	0.488	0.557	0.845	0.677	1.130	1.390	1.790	1.010	1.290	0.758
7429	Nickel total	0.058	µg/l	1.070					2.300	8.120		4.290	
3403	Ammonia	1	µg/l N	13	21	8	39		12	56	32	68	63
3404	Nitrite	0.5	µg/l N	2.70	2.30	2.40	2.30		2.60	4.12	2.08	2.06	2.48
9991	Total Oxidised Nitrogen	2.5	µg/l N	364	259	396	435		1052	1155	715	977	651
3420	Silicate	2	µg/l SiO ₂	360	328	403	418		981	1059	589	806	617
189	Orthophosphate	0.5	µg/l P	21	25	32	30		51	53	39	39	37
143	Suspended solids 500°C	1.5	mg/l	5	10	11	67	261	107	237	140	132	40
135	Suspended solids 105°C	1.5	mg/l	6	11	12	73	280	117	253	153	145	43
729	Chlorophyll a	0.2	µg/l	0.36	0.38	0.32	1.37	2.23	1.52	2.50	2.14	1.79	1.25

SEA VIGIL
INORGANICS

SEA VIGIL INORGANICS																					

SEA VIGIL
INORGANICS

SEA VIGIL INORGANICS				East Brake Buoy	Goodwin Fork Buoy	South Foreland	Sandgate Bay	Dungeness	Beachy Head	Brighton	Selsey Bill	Nab Tower	East Brambles	Calshot	Dockhead	West Princessa	St. Cathelines	The Needles
			Base	54	55	56	57	58	61	63	66	67	68.1	68.2	68.3	68.4	69	70
			Date	20Jan	20Jan	19Jan	19Jan	19Jan	18Jan	18Jan	18Jan	18Jan	16Jan	16Jan	16Jan	16Jan	16Jan	16Jan
			Time	01:22	00:30	23:46	22:43	18:15	21:20	18:49	15:14	14:22	20:07	20:43	21:44	16:00	14:27	12:51
Det.	MRV	Units																
105	Mercury total	0.008	µg/l	0.020	0.035	<	<	<	<	0.091	<	<	<	<	<	<	0.019	<
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<		<	<	<		<	<	<	<	<
108	Cadmium total	0.04	µg/l			<			<		<			<				
7213	Copper dissolved	0.051	µg/l	0.56	0.70	0.91	0.75	0.50	1.22	0.47	0.79	1.01	0.90	0.99	1.45	0.60	0.77	1.00
7215	Copper total	0.051	µg/l			1.57			1.97		1.96			3.13				
7230	Lead dissolved	0.024	µg/l	<	<	<	<	<	0.095	0.045	0.067	<	<	<	0.071	0.149	<	0.048
7229	Lead total	0.024	µg/l			0.338			0.283		0.894			0.438				
7243	Zinc dissolved	2	µg/l	3.44	4.33	4.85	5.35	2.71	10.70	2.25	4.11	3.52	3.45	3.80	8.84	2.02	2.24	2.22
7245	Zinc total	2	µg/l			8.69			12.40		12.00			9.98				
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l			<			<		<			<				
7373	Chromium dissolved	0.35	µg/l	0.67	0.51	<	0.45	<	<	<	<	<	<	<	<	<	<	<
7375	Chromium total	0.35	µg/l			0.68			<		<			<				
7427	Nickel dissolved	0.058	µg/l	0.316	0.407	0.422	0.430	0.346	0.306	0.285	0.241	0.449	0.547	0.459	1.190	0.389	0.509	0.415
7429	Nickel total	0.058	µg/l			0.728			1.280		0.769			0.997				
3403	Ammonia	1	µg/l N	5	<	<	3	<	2	11	22	37	62	74	736	16	8	26
3404	Nitrite	0.5	µg/l N	3.4	3.0	3.0	3.5	1.6	2.6	3.0	4.7	32.0	14.0	15.0	35.0	7.5	4.1	12.0
9991	Total Oxidised Nitrogen	2.5	µg/l N	137	135	134	151	112	139	156	283	649	557	629	1978	169	247	495
3420	Silicate	2	µg/l SiO2	279	276	272	287	210	251	279	377	467	911	1024	4997	321	362	707
189	Orthophosphate	0.5	µg/l P	22	21	21	21	18	20	21	26	28	43	47	190	22	24	35
143	Suspended solids 500°C	1.5	mg/l	4	3	<	2	<	<	<	<	5	<	19	9	16	26	14
135	Suspended solids 105°C	1.5	mg/l	7	6	<	4	<	<	<	2	7	3	25	12	20	34	18
729	Chlorophyll a	0.2	µg/l	1.25	1.24	1.22	1.20	0.96	1.09	1.34	0.66	1.05	0.63	0.80	0.53	0.86	1.44	0.98

**VIGILANCE
INORGANICS**

				St. Alhelms	Portland Bill	Seaton	Exmouth	Start Point	Bigbury Bay	Plymouth	East Looe	Fowey	Dodman Point	St. Antony Head	Lizard	Penzance	Cape Cornwall	St. Agnes	Trevose
				73	75	78	80	83	85	86	87	88	89	90	93	95	97	100	102
				15Jan	15Jan	15Jan	15Jan	16Jan	16Jan	16Jan	17Jan	17Jan	17Jan	17Jan	17Jan	17Jan	18Jan	18Jan	18Jan
				12:38	14:52	18:00	19:55	11:03	12:43	13:50	08:40	11:41	12:45	15:25	17:31	19:04	08:56	11:41	13:25
Det.	MRV	Units																	
105	Mercury total	0.008	µg/l	<	<	<	0.012	<	<	<	<	<	<	<	<	0.013	0.010	<	<
106	Cadmium dissolved	0.04	µg/l	0.061	0.093	0.045	0.105	<	<	<	0.164	0.253	0.157	0.193	0.087	0.170	0.129	0.130	0.177
108	Cadmium total	0.04	µg/l			0.091				0.743							0.192		
7213	Copper dissolved	0.051	µg/l	1.21	1.20	1.19	1.99	0.55	1.04	0.84	2.98	1.60	1.85	2.09	1.43	3.17	1.04	2.05	1.62
7215	Copper total	0.051	µg/l			2.08				8.61							2.20		
7230	Lead dissolved	0.024	µg/l	0.316	0.603	<	0.031	<	<	0.408	0.279	0.567	0.350	0.203	0.035	0.392	0.211	0.173	0.313
7229	Lead total	0.024	µg/l			0.334				1.400							0.488		
7243	Zinc dissolved	2	µg/l	11.8	12.9		23.9	8.3	6.5	11.8	19.8	19.5	46.0	36.8	35.0	41.4	22.8	53.6	32.8
7245	Zinc total	2	µg/l			10.2				56.0							41.2		
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l			<				<							<		
7373	Chromium dissolved	0.35	µg/l	1.17	0.05	<	<	<	<	<	1.16	0.57	0.84	0.52	0.66	0.86	0.43	0.70	<
7375	Chromium total	0.35	µg/l			0.43				5.94							0.54		
7427	Nickel dissolved	0.058	µg/l	0.293	0.349	0.190	0.874	0.187	0.124	0.149	1.080	0.437	0.535	0.817	0.460	0.557	0.760	0.689	0.561
7429	Nickel total	0.058	µg/l			1.080				4.050							1.980		
3403	Ammonia	1	µg/l N	7	114	5	56	4	1	166	28	10	10	11	13	7	6	66	15
3404	Nitrite	0.5	µg/l N	2.1	3.9	6.0	12.7	3.8	2.0	7.0	8.8	5.3	5.5	2.5	2.2	1.6	2.6	3.6	3.4
9991	Total Oxidised Nitrogen	2.5	µg/l N	179	163	333	946	235	153	231	856	371	494	169	183	164	177	178	155
3420	Silicate	2	µg/l SiO ₂	212	242	474	1350	291	165	210	789	409	495	210	129	221	148	133	126
189	Orthophosphate	0.5	µg/l P	<	4	13	43	16	13	21	25	21	21	31	107	29	17	24	36
143	Suspended solids 500°C	1.5	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
135	Suspended solids 105°C	1.5	mg/l	5	2	<	3	2	2	<	<	<	<	<	<	<	<	2	<
729	Chlorophyll a	0.2	µg/l	0.76	0.94	0.89	0.67	0.94	0.98	0.76	0.98	1.16	0.89	0.62	0.76	0.54	0.89	1.07	1.43

**VIGILANCE
INORGANICS**

				Boscaille	Harland Point	Bull Point	Foreland	Porlock	Minehead	Weston-super-Mare	Clevedon	Avonmouth	No. 1 Beacon	Lavemock	Nash Point	Porthcawl	Mumbles	Worms Head	Caldey Island
				105	108	110	112	113	114	116	117	118	119	122	124	125	128	130	134
				18Jan	18Jan	18Jan	19Jan	19Jan	19Jan	19Jan	19Jan	19Jan	19Jan	30Jan	30Jan	30Jan	30Jan	30Jan	30Jan
				15:12	17:46	23:12	01:31	02:18	03:06	04:55	05:52	06:58	07:31	07:20	09:57	11:14	14:03	16:36	07:45
Det.	MRV	Units																	
105	Mercury total	0.008	µg/l	<	<	<	<	<	0.013	0.027	0.028	0.031	0.087	0.041	<	0.011	0.018	<	<
106	Cadmium dissolved	0.04	µg/l	<	<	0.094	<	0.103	0.155	0.172	0.249	0.336	0.269	0.229	0.158	0.120	0.959	0.058	
108	Cadmium total	0.04	µg/l										0.408			0.154		0.136	0.060
7213	Copper dissolved	0.051	µg/l	0.68	0.77	0.93	0.70	1.17	2.00	3.05	2.66	3.37	3.12	2.89	1.83	1.21	4.13	1.09	1.32
7215	Copper total	0.051	µg/l										13.70			2.81		3.41	1.34
7230	Lead dissolved	0.024	µg/l	<	<	<	<	<	<	<	<	<	<	0.069	<	0.063	0.311	<	0.032
7229	Lead total	0.024	µg/l										21.20			2.670		0.423	0.087
7243	Zinc dissolved	2	µg/l	6.4	5.9	15.0	12.3	26.2	22.1	17.6	17.3	17.5	20.2	26.9	13.4	12.7	47.6	7.9	
7245	Zinc total	2	µg/l										94.7			19.0		7.9	6.0
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l										1.66			<		<	<
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	0.59	0.61	<	<	<	<	0.48	0.61	0.39	0.71	<	0.51
7375	Chromium total	0.35	µg/l										10.82			3.43		0.52	0.57
7427	Nickel dissolved	0.058	µg/l	0.161	0.167	0.332	0.298	0.406	0.676	1.770	1.370	1.220	1.290	1.150	0.856	0.735	1.930	0.399	0.669
7429	Nickel total	0.058	µg/l										4.030			0.948		0.625	0.888
3403	Ammonia	1	µg/l N	14	9	14	7	2	5	26	25	45	57		58	65	70	74	51
3404	Nitrite	0.5	µg/l N	3.6	2.2	1.6	1.2	1.6	1.0	4.2	3.8	8.0	8.7	40.0	2.48	2.21	3.11	1.28	2.69
9991	Total Oxidised Nitrogen	2.5	µg/l N	247	197	204	275	496	768	1859	2242	3486	3691	2599	1265	649	407	136	376
3420	Silicate	2	µg/l SiO ₂	206	199	261	345	564	1211	3195	3626	4468	4916	1987	1305	909	604	439	521
189	Orthophosphate	0.5	µg/l P	19	18	23	24	40	88	157	172	211	205	136	96	65	48	139	38
143	Suspended solids 500°C	1.5	mg/l	<	8	9	7	22	55	91	98	99	268	141	21	31	4	3	5
135	Suspended solids 105°C	1.5	mg/l	<	9	9	7	24	60	99	106	109	294	154	22	36	5	5	5
729	Chlorophyll a	0.2	µg/l	1.43	0.98	0.89	0.76	0.94	1.20	1.16	1.50	1.34	3.30	1.43	0.54	1.03	0.36	0.62	0.54

**VIGILANCE
INORGANICS**

Turbid Bank

St. Ann's

Base 137 138
Date 30Jan 30Jan
Time 10:42 11:20

Det.	MRV	Units		
105	Mercury total	0.008	µg/l	< <
106	Cadmium dissolved	0.04	µg/l	0.361
108	Cadmium total	0.04	µg/l	0.135
7213	Copper dissolved	0.051	µg/l	1.64 4.35
7215	Copper total	0.051	µg/l	3.22
7230	Lead dissolved	0.024	µg/l	0.218 0.153
7229	Lead total	0.024	µg/l	0.310
7243	Zinc dissolved	2	µg/l	21.2
7245	Zinc total	2	µg/l	8.7
7354	Arsenic dissolved	1	µg/l	< <
7356	Arsenic total	1	µg/l	<
7373	Chromium dissolved	0.35	µg/l	0.50 0.45
7375	Chromium total	0.35	µg/l	1.16
7427	Nickel dissolved	0.058	µg/l	0.544 0.736
7429	Nickel total	0.058	µg/l	0.558
3403	Ammonia	1	µg/l N	56 57
3404	Nitrite	0.5	µg/l N	1.94 1.30
9991	Total Oxidised Nitrogen	2.5	µg/l N	211 191
3420	Silicate	2	µg/l SiO ₂	306 287
189	Orthophosphate	0.5	µg/l P	27 26
143	Suspended solids 500°C	1.5	mg/l	3 3
135	Suspended solids 105°C	1.5	mg/l	4 3
729	Chlorophyll a	0.2	µg/l	0.54 0.62

COASTAL GUARDIAN
INORGANICS

				Skomer	Strumble Head	Strumble Head	Penly-Badell	Pen Pigyn	Pen Pigyn	Pen-Bwch Point	Pwllheili	Pwllheili	Bardsey	Pentryn Colmon	Dylan	Pentnos	Middle Mouse	Red Wharf	Great Orme
	Base			139	142	142	146	148	148	151	154	154	156	157	159	161	163	164	165
	Date			30Jan	30Jan	29Jan	29Jan	29Jan	23Jan	23Jan	19Jan	23Jan	19Jan	19Jan	19Jan	19Jan	18Jan	18Jan	18Jan
	Time			12:58	10:20	20:01	17:24	15:41	16:43	14:27	14:46	11:28	12:51	12:01	10:19	08:02	20:09	18:18	16:40
Det.	MRV																		
105	Mercury total	0.02	µg/l	<	<	<	<	<	<	0.03	<	<	<	<	<	<	<	<	<
106	Cadmium dissolved	0.07	µg/l	<	<	<	<	<	<	<	0.076	<	<	<	<	<	<	<	<
108	Cadmium total	0.07	µg/l								<		<			<	<		0.125
7213	Copper dissolved	0.5	µg/l	0.71	0.80	0.50	<	1.53	0.88	0.51	<	0.69	<	<	<	0.62	<	0.61	0.88
7215	Copper total	0.5	µg/l	0.665							<	1.130	0.509			0.621	<		0.707
7230	Lead dissolved	0.12	µg/l	0.167		<	0.184	<	<	0.253	<	0.672	<	<	<	<	<	<	0.235
7229	Lead total	0.12	µg/l								0.271		0.808			0.189	0.502		0.312
7243	Zinc dissolved	0.4	µg/l	2.66		3.54	1.85	1.84	4.77	6.26	2.28	5.72	1.24	1.28	2.96	1.71	3.93	2.94	3.16
7245	Zinc total	0.4	µg/l								2.4		2.4			3.3	3.4		6.0
7354	Arsenic dissolved	1	µg/l	1.8	1.7	1.5	1.9	1.6	1.8	1.7	1.6	1.6	1.8	1.8	1.7	1.6	1.9	2.1	2.2
7356	Arsenic total	1	µg/l	1.4							1.6	1.6	1.8			1.9	1.8		2.2
7373	Chromium dissolved	2	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7375	Chromium total	2	µg/l	<							<	<	<			<	<		<
7427	Nickel dissolved	0.25	µg/l	<	0.35	0.83	0.42	<	0.57	0.28	0.52	0.41	0.49	0.31	0.42	0.59	0.49	0.70	0.66
7429	Nickel total	0.25	µg/l								0.58		0.76			0.67	0.66		0.75
3403	Ammonia	3	µg/l	4	4	13	10	9	<	5	11	8	7	<	<	5	6	20	29
3404	Nitrite	1	µg/l N	1.4	<	<	<	2.2	1.7	2.4	3.5	3.6	2.6	2.1	2.6	2.2	2.6	6.6	10.2
9991	Total Oxidised Nitrogen	2.75	µg/l N	164.4	1031	156.0	163.0	186.7	198.2	165.4	190.5	136.6	104.6	78.5	141.6	533.2	129.6	184.6	207.2
3420	Silicate	2	µg/l SiO2	446	376	382	362	414	425	434	537	419	273	205	315	337	375	473	482
189	Orthophosphate	0.042	µg/l P	21	21	21.6	20.3	21.2	20.3	20	18.2	18.8	17.4	15.6	19.6	20.1	28.7	42.6	42.5
135	Suspended Solids 105°C	2	mg/l	2	5	4	2	3	4	<	4	<	4	7	3	6	2	<	2
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
729	Chlorophyll-a	0.4	µg/l	0.6	0.7	0.6	0.8	0.6	1.3	1.5	1.4	1.1	0.8	1.1	0.8	0.9	0.7	1.3	1.4

COASTAL GUARDIAN
INORGANICS

				Llandulas	Chester Flat	Welsh Channel	North Wirral	North Wirral	Formby Point	Gut	Blackpool	Shell Wharf	Hilpsford	Duddon	Calder Hall	Whitehaven	Maryport	Abbey Head	Megerland
				166	167	168	170	170	171	172	173	174	175	176	178	179	180.1	184	185
				18Jan	18Jan	18Jan	17Jan	18Jan	17Jan	17Jan	17Jan	17Jan	17Jan	17Jan	17Jan	17Jan	16Jan	16Jan	16Jan
				13:39	12:41	11:50	18:16	10:47	17:05	16:09	14:51	13:58	12:57	11:57	09:00	07:46	10:00	12:12	13:06
Det.	MRV																		
105	Mercury total	0.02	µg/l	<	0.03			<	<	<	<	<	<	<	<	<	<	<	<
106	Cadmium dissolved	0.07	µg/l	0.194	0.157	<	0.089	0.128	<	<	0.073	<	<	<	0.091	0.085	0.075	0.080	0.106
108	Cadmium total	0.07	µg/l				<	0.095		<		<		<	0.120	0.073	0.093		
7213	Copper dissolved	0.5	µg/l	1.22	1.54	1.13	0.90	1.11	0.91	1.07	1.20	0.99	0.54	0.54	0.90	0.58	0.52	0.54	<
7215	Copper total	0.5	µg/l				1.020	1.600		1.110		1.480		1.070	0.823	0.628	0.705		
7230	Lead dissolved	0.12	µg/l	0.320	0.306	0.220	0.303	0.239	0.276	0.266	0.323	0.142	0.170	0.409	0.156	0.184	0.147	0.210	0.127
7229	Lead total	0.12	µg/l				1.160	1.410		0.925		0.787		0.641	0.447	0.704	0.632		
7243	Zinc dissolved	0.4	µg/l	8.92	6.04	4.45	4.55	8.44	5.53	6.21	0.50	3.42	2.69	4.80	6.91	4.11	3.71	4.29	4.05
7245	Zinc total	0.4	µg/l				6.6	10.1		7.2		2.8		3.1	6.1	3.5	2.9		
7354	Arsenic dissolved	1	µg/l	2.4	2.5	2.4	2.0	2.1	2.6	2.5	3.0	2.2	2.3	2.3	2.2	2.2	1.6	1.6	1.0
7356	Arsenic total	1	µg/l				2.2	2.2		2.6		2.6		2.1	2.2	1.9	1.7		
7373	Chromium dissolved	2	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7375	Chromium total	2	µg/l				<	<		<		<		<	<	<	<		
7427	Nickel dissolved	0.25	µg/l	0.88	0.89	0.67	1.04	0.78	0.67	1.26	1.40	1.10	0.72	0.65	1.03	0.84	0.85	1.04	0.68
7429	Nickel total	0.25	µg/l				1.13	1.10		1.36		1.74		1.33	1.40	1.10	1.34		
3403	Ammonia	3	µg/l	67	67	34	34	29	95	101	132	57	30	20	5	9	15	23	17
3404	Nitrite	1	µg/l N	20.5	20.5	9.7	8.5	6.7	13.3	14.7	17.6	5.5	2.6	1.8	1.4	2.2	2.5	3.4	3.5
9991	Total Oxidised Nitrogen	2.75	µg/l N	346.5	515.5	323.7	264.7	322.5	420.3	478.7	640.6	322.5	221.6	189.8	172.4	194.2	240.5	322.4	390.5
3420	Silicate	2	µg/l SiO ₂	789	1021	780	905	599	1041	980	1281	740	705	727	642	602	603	816	1151
189	Orthophosphate	0.042	µg/l P	62.3	72.7	60.2	58	51.5	72.2	78.5	93.8	57.6	49.2	46.7	46.9	61.3	41.9	40.1	34.1
135	Suspended Solids 105°C	3	mg/l	4	26	13		5	7	5	13	13	4	6	<	<	3	7	<
143	Suspended Solids 500°C	10	mg/l	<	23	11	64	<	<	<	11	<	<	<	<	<	<	<	<
729	Chlorophyll-a	0.4	µg/l	2	4.1	<	1.6	1.7	1.1	1.3	1.7	1	1.2	0.7	1.3	0.9	2.1	1	11.2

COASTAL GUARDIAN
INORGANICS

St. Nilians

Base 186
Date 16Jan
Time 14:30

Det.	MRV			
105	Mercury total	0.02	µg/l	<
106	Cadmium dissolved	0.07	µg/l	<
108	Cadmium total	0.07	µg/l	<
7213	Copper dissolved	0.5	µg/l	0.90
7215	Copper total	0.5	µg/l	1.170
7230	Lead dissolved	0.12	µg/l	<
7229	Lead total	0.12	µg/l	0.702
7243	Zinc dissolved	0.4	µg/l	5.05
7245	Zinc total	0.4	µg/l	3.5
7354	Arsenic dissolved	1	µg/l	1.5
7356	Arsenic total	1	µg/l	1.8
7373	Chromium dissolved	2	µg/l	<
7375	Chromium total	2	µg/l	<
7427	Nickel dissolved	0.25	µg/l	0.88
7429	Nickel total	0.25	µg/l	1.12
3403	Ammonia	3	µg/l	17
3404	Nitrite	1	µg/l N	3.1
9991	Total Oxidised Nitrogen	2.75	µg/l N	310.1
3420	Silicate	2	µg/l SiO2	911
189	Orthophosphate	0.042	µg/l P	37.1
135	Suspended Solids 105°C	2	mg/l	<
143	Suspended Solids 500°C	10	mg/l	<
729	Chlorophyll-a	0.4	µg/l	0.9

WATER GUARDIAN
ORGANICS

			Tees (Middle)	Flamborough (North)	Spurn Head	Haile Sand Flat	Chapel St. Leonards
	Base		18	25	30	31	33
	Date		04Feb	15Feb	15Feb	22Feb	22Feb
	Time		20:45	13:40	20:35	12:15	14:50

Det.	MRV							
3081	Isodrin	0.001	µg/l	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<0.004	<0.002	<0.002	<
3306	Endrin	0.001	µg/l	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<				
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<0.025	<0.028	<0.015	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	<	<0.002	<0.002	<	<

SEA VIGIL
ORGANICS

	Wash	Cley, Lookout	Mundesley	Kessingland	Felixstowe, Cobbolds	Medway Buoy	South Foreland	Beachy Head	Calshot
Base	35	37	39	43	46.1	51	56	61	68.2
Date	15Feb	15Feb	15Feb	15Feb	08Feb	08Feb	19Jan	18Jan	16Jan
Time	15:41	10:17	08:27	01:50	21:25	15:50	23:46	21:20	20:43

Det.	MRV										
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<0.002	<0.002	<	<0.002	<0.004	<0.003	<0.004
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l								
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<0.011	<0.03	<	<0.029	<0.021	<0.012	<0.016
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<0.002
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	<	<	<	<	<0.002	<0.002	<	<0.002

VIGILANCE
ORGANICS

	Seaton	Plymouth	Cape Cornwall	No. 1 Beacon	Porthcawl	Worms Head	Caldey Island	Turbot Bank
Base	78	86	97	119	125	130	134	137
Date	15Jan	16Jan	18Jan	19Jan	30Jan	30Jan	30Jan	30Jan
Time	18:00	13:50	08:56	07:31	11:14	16:36	07:45	10:42

Det.	MRV										
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.001	<	<	0.002	<	<	<	<

COASTAL GUARDIAN
ORGANICS

	Pwllheli	Bardsey	Penrhos	Middle Mouse	Great Orme	Welsh Channel	North Wirral
Base	154	156	161	163	165	168	170
Date	19Jan	19Jan	19Jan	18Jan	18Jan	18Jan	18Jan
Time	14:46	12:51	08:02	20:09	16:40	11:50	10:47

Det.	MRV								
3081	Isodrin	0.005	µg/l						
3276	Aldrin	0.005	µg/l	<	<	<	<	<	<
3301	Dieldrin	0.005	µg/l	<	<	<	<	<	<
3306	Endrin	0.005	µg/l						
3082	Hexachlorobenzene	0.005	µg/l	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.01	µg/l	<	<	<	<	<	<
3142	PCB 28	0.005	µg/l	<	<	<	<	<	<
3145	PCB 52	0.005	µg/l	<	<	<	<	<	<
3148	PCB 101	0.005	µg/l	<	<	<	<	<	<
3151	PCB 118	0.005	µg/l	<	<	<	<	<	<
3154	PCB 138	0.005	µg/l	<	<	<	<	<	<
3157	PCB 153	0.005	µg/l	<	<	<	<	<	<
3160	PCB 180	0.005	µg/l	<	<	<	<	<	<
3295	DDE (Op')	0.005	µg/l	<	<	<	<	<	<
3294	DDE (Pp')	0.005	µg/l	<	<	<	<	<	<
3296	DDT (Op')	0.005	µg/l	<	<	<	<	<	<
3297	DDT (Pp')	0.005	µg/l	<	<	<	<	<	<
3329	TDE (Op')	0.005	µg/l	<	<	<	<	<	<
3330	TDE (Pp')	0.005	µg/l	<	<	<	<	<	<
3310	HCH alpha	0.005	µg/l	<	<	<	<	<	<
3311	HCH beta	0.005	µg/l	<	<	<	<	<	<
3312	HCH delta	0.005	µg/l	<	<	<	<	<	<
3313	HCH gamma	0.005	µg/l	<	<	<	<	<	<

LABORATORY RESULTS TABLES

SPRING 1996

WATER GUARDIAN
INORGANICS

	Berwick	Castlehead Rocks	Shoreston Outcrops	Craster	Blyth	Tyne (North)	Tyne (South)	Marsden	Wear (Middle)	Pincushon Rock	Blackhall	Tees (North)	Tees (Middle)	Tees (South)	Skinningrove	Sandsend
Base	1.	2	3	4	7	8	10	11	13	15	16	17	18	19	20	21
Date	17May	17May	17May	17May	17May	20May	20May	20May	20May	20May	20May	20May	20May	20May	20May	20May
Time	08:05	09:16	10:10	11:10	13:40	11:55	12:10	12:25	12:55	13:25	14:25	15:05	15:40	16:30	17:30	18:10

Det.	MRV																		
105	Mercury total	0.008	µg/l	0.010	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.011
106	Cadmium dissolved	0.04	µg/l	<	0.041	<	<	<	<	0.046	<	<	<	<	<	<	<	<	<
108	Cadmium total	0.04	µg/l	<		<						<			<			<	<
7213	Copper dissolved	0.051	µg/l	2.04	4.63	3.20	1.45	1.21	2.11	2.93	2.03	2.36	1.36	1.44	1.27	1.27	1.72	0.97	1.84
7215	Copper total	0.051	µg/l	2.73		3.55							3.68			1.65			12.50
7230	Lead dissolved	0.024	µg/l	0.767	1.050		0.443	0.317	1.430	1.160	1.380	0.649	0.511	0.807	0.457	1.140	0.988	0.421	0.494
7229	Lead total	0.024	µg/l	1.220		0.492							3.680			1.850			2.710
7243	Zinc dissolved	0.4	µg/l	9.99	12.8	6.93	5.19	3.09	11.6	6.39	7.51	5.11	4.28	4.73	2.55		4.73	3.99	5.52
7245	Zinc total	0.4	µg/l	17.6		10.0							14.9			8.49			11.3
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<		<							<			<			<
7373	Chromium dissolved	0.35	µg/l	<	<	<	0.58	<	0.45	<	<	0.44	<	<	<		1.27	0.44	<
7375	Chromium total	0.35	µg/l	0.40		<							0.51			0.43			0.39
7427	Nickel dissolved	0.058	µg/l	0.52	0.55	0.42	0.40	0.30	0.62	0.38	0.43	0.63	0.65	0.39	0.52	0.66	0.45	0.38	0.38
7429	Nickel total	0.058	µg/l	0.66		0.47							0.92			1.15			1.33
3403	Ammonia	1	µg/l N	36	<	<	9.6	4.3	<	9.3	11.1	26	1.9	2.5	28	13	20	<	
3404	Nitrite	0.5	µg/l N	9.6	<	<	2.9	<	4.6	3.9	2.0	10.0	1.5	2.1	5.3	3.7	0.9	0.9	
9991	Total Oxidised Nitrogen	1	µg/l N	192	<	<	6.3	165	545	93	101	158	6.8	48	128	162	5.1	84	
3420	Silicate	2.143	µg/l SiO2	87.9	30.0	40.7	51.4	57.9	94.3	23.6	40.7	72.9	36.4	27.9	36.4	42.9	23.6	32.1	
189	Orthophosphate	0.5	µg/l P	3.0	3.6	4.1	4.0	4.1	4.5	4.2	4.6	4.7	5.2	5.4	5.6	28	5.3	27	
135	Suspended Solids 105°C	1.5	mg/l	6	4	<	<	<	11	<	9	13	17	7	4	9	2	5	22
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	<	<	9	<	7	12	14	5	2	9	<	5	21
729	Chlorophyll-a	0.1	µg/l	4.60	3.95	1.80	3.23	4.64	4.33	3.48	4.69	4.33	4.33	3.19	4.83	5.45	4.23	4.42	5.18

**WATER GUARDIAN
INORGANICS**

	Filey Brigg	Flamborough (North)	Bridlington	Beacon Hill	Withemsea	Spurn Head	Haile Sand Flat	Tredlethorpe	Chapel St. Leonards	Skegness	Outer Dogs Head	Lynn Deep
Base	24	25	26	28	29	30	31	32	33	33.1	34	34.1
Date	21May	21May	21May	23May	23May	23May	23May	23May	23May	23May	23May	23May
Time	08:25	09:35	15:40	12:45	13:45	15:35	16:35	17:55	18:55	19:35	19:55	20:25

Det.	MRV												
105	Mercury total	0.008	µg/l	<	<	<	0.016	<	<	<	<	<	<
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<	0.054	0.044	<	<	<
108	Cadmium total	0.04	µg/l	<				0.058	0.075				
7213	Copper dissolved	0.051	µg/l	1.75	1.18	2.18	2.00	1.52	1.48	1.99	1.64	1.62	2.48
7215	Copper total	0.051	µg/l	2.73					2.70	2.40		3.43	
7230	Lead dissolved	0.024	µg/l	0.475	0.305	0.495	0.314	0.503	0.271	0.613	0.345	0.202	0.201
7229	Lead total	0.024	µg/l	1.320					1.120	1.800		1.200	
7243	Zinc dissolved	0.4	µg/l	5.22	2.73	4.91	12.6	7.64	5.28	4.74	5.50	2.67	3.52
7245	Zinc total	0.4	µg/l	9.20					12.6	12.7		7.33	
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<					<	<		<	
7373	Chromium dissolved	0.35	µg/l	<	<	<	0.62	0.75	0.42	<	0.63	0.41	<
7375	Chromium total	0.35	µg/l	0.60					0.65	0.58		0.49	
7427	Nickel dissolved	0.058	µg/l	0.47	0.45	0.50	0.60	0.56	1.05	0.84	1.02	0.73	0.56
7429	Nickel total	0.058	µg/l	1.01					1.51	1.39		1.16	
3403	Ammonia	1	µg/l N	<	<	<	77	17	10	53	26	34	21
3404	Nitrite	0.5	µg/l N	<	<	<	1.5	1.4	4.0	5.9	5.3	7.1	4.0
9991	Total Oxidised Nitrogen	1	µg/l N	163	144	9.2	183	57	317	277	433	435	283
3420	Silicate	2.143	µg/l SiO ₂	109.3	85.7	<	7.1	<	<	6.0	4.9	15.6	<
189	Orthophosphate \	0.5	µg/l P	36	<	1.1	29	4.2	4.5	4.5	3.9	6.1	3.5
135	Suspended Solids 105°C	1.5	mg/l	16	3	4	2	6	18	18	14	17	19
143	Suspended Solids 500°C	1.5	mg/l	16	<	<	<	6	14	15	12	16	16
729	Chlorophyll-a	0.1	µg/l	3.43	6.18	5.78	3.41	6.73	38.31	26.55	19.97	7.53	7.80

SEA VIGIL
INORGANICS

	Lynn Deep	Wash	Overy, Staithe	Cley, Lookout	Mundesley	Winterton	Gorleston	Kessingland	Dunwich Cliffs	Shingle Street	Felixstowe, Cobbolds	Walton	Holland Radar	Maplin Bank	Medway Buoy	Shivering Sand Buoy
Base	34.1	35	36	37	39	41	42	43	44	46	46.1	48	48.1	50	51	52
Date	30May	30May	30May	30May	30May	30May	30May	29May	29May	29May	29May	23May	23May	23May	23May	21May
Time	19:51	18:39	17:19	14:01	12:02	10:20	09:12	14:31	13:16	11:18	09:29	19:19	18:52	17:03	16:31	16:51

Det.

MRV

105	Mercury total	0.008	µg/l	<	<	<	<	<	<	<	<	<	<	0.011	<	<	<	<	
106	Cadmium dissolved	0.04	µg/l	<	<	<	0.048	<	<	0.047	<	<	<	<	0.042	<	<	<	
108	Cadmium total	0.04	µg/l		0.045			<			0.049			<			<		
7213	Copper dissolved	0.051	µg/l	0.87	0.91	0.76	1.30	0.81	0.75	0.84	0.72	0.96	1.26	1.51	1.02	1.22	0.93	1.24	1.36
7215	Copper total	0.051	µg/l		1.95			2.11			2.04			2.30				2.14	
7230	Lead dissolved	0.024	µg/l	0.105	0.287	0.063	0.324	0.066	<	0.069	0.065	<	<	<	<	<	<	0.046	0.064
7229	Lead total	0.024	µg/l		0.828			1.090			1.540			0.312				0.190	
7243	Zinc dissolved	0.4	µg/l	4.42	0.89	1.03	2.91	2.09	1.99	2.23	1.36	1.22	1.23	3.88	1.70	1.55	1.12	1.58	2.33
7245	Zinc total	0.4	µg/l		12.9			8.09			7.08			14.6				5.89	
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l		<			<			<			<				<	
7373	Chromium dissolved	0.35	µg/l	<	1.34	<	<	<	<	<	<	<	<	0.38	1.11	<	<	<	<
7375	Chromium total	0.35	µg/l		3.04			<			<			0.57				<	
7427	Nickel dissolved	0.058	µg/l	0.63	0.61	0.56	0.52	0.49	0.56	0.63	0.60	0.64	0.82	0.71	0.82	0.74	0.58	0.83	0.96
7429	Nickel total	0.058	µg/l		1.25			1.07			1.64			1.32				1.35	
3403	Ammonia	1	µg/l N		9	<	5	3	6	4	10	<	<	2	18	9	<	1	3
3404	Nitrite	0.5	µg/l N		6.1	4.0	4.3	3.5	3.4	2.7	4.3	4.3	3.4	4.3	3.4	2.9	1.2	2.5	1.1
9991	Total Oxidised Nitrogen	1	µg/l N		281	113	189	179	184	150	427	368	357	280	194	180	2.7	71	9.7
3420	Silicate	2.143	µg/l SiO2		<	<	<	<	<	<	85.7	117.9	40.7	40.7	66.4	62.1	8.8	15.9	11.8
189	Orthophosphate	0.5	µg/l P		2.0	2.7	5.9	7.6	7.9	7.3	21	22	12	15	16	15	10	30	32
135	Suspended Solids 105°C	1.5	mg/l	2	24	9	7	8	19	6	23	17	39	2	48	55	5	3	12
143	Suspended Solids 500°C	1.5	mg/l	<	18	7	5	6	16	5	20	15	35	2	44	50	2	<	11
729	Chlorophyll-a	0.1	µg/l	15.04	11.95	13.66	4.90	9.52	6.55	5.15	3.63	3.49	7.68	5.72	6.87	7.54	13.07	1.26	34.09

SEA VIGIL
INORGANICS

	East Brake Buoy	Goodwin Fork Buoy	South Foreland	Sandgate Bay	Dungeness	Beachy Head	Brighton	Selsey Bill	Nab Tower	East Brambles	Calshot	Dockhead	West Princessa	St. Catherine's	The Needles
Base	54	55	56	57	58	61	63	66	67	68.1	68.2	68.3	68.4	69	70
Date	21May	21May	21May	20May	20May	14May	14May	14May	14May	13May	13May	13May	13May	13May	13May
Time	14:12	13:17	19:01	16:53	15:28	18:59	17:04	14:02	13:15	20:11	20:39	21:29	18:06	15:56	14:33

Det.	MRV																	
105	Mercury total	0.008	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<	<	<	0.054	<	<	<	<	<	<	
108	Cadmium total	0.04	µg/l			<			0.044		<		<					
7213	Copper dissolved	0.051	µg/l	0.93	1.05	0.93	0.65	0.69	0.52	0.62	0.50	0.94	1.07	1.09	0.99	0.68	0.95	0.86
7215	Copper total	0.051	µg/l			1.58			1.69		1.24			2.09				
7230	Lead dissolved	0.024	µg/l	0.069	0.065	<	0.071	0.073	0.108	<	<	<	<	<	0.108	0.064	0.048	<
7229	Lead total	0.024	µg/l			0.230			0.481		<			0.265				
7243	Zinc dissolved	0.4	µg/l	2.05	5.55	1.42	5.67	1.23	3.17	1.45	2.26	2.92	2.39	2.12	3.37	4.97	1.52	1.25
7245	Zinc total	0.4	µg/l			3.90			17.3		3.87			6.69				
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l			<			<		<		<					
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	<	<	<	<	0.64	<	<	<	<	<	<
7375	Chromium total	0.35	µg/l			<			<		<		<					
7427	Nickel dissolved	0.058	µg/l	0.69	0.64	0.54	0.50	<	<	<	<	<	0.46	0.39	0.53	<	<	0.43
7429	Nickel total	0.058	µg/l			1.04			0.94		0.74			0.95				
3403	Ammonia	1	µg/l N	2	26	5	1	4	1	5	3	2	37	22	172	8	6	10
3404	Nitrite	0.5	µg/l N	2.8	1.2	1.2	1.1	0.9	0.9	1.4	1.0	1.9	5.1	3.8	11.0	2.1	2.0	3.0
9991	Total Oxidised Nitrogen	1	µg/l N	24	2.6	3.5	1.9	1.2	1.2	1.9	2.1	30	274	177	713	46	100	160
3420	Silicate	2.143	µg/l SiO2	23.6	34.3	49.3	92.1	60.0	10.1	3.9	23.6	49.3	143.6	405.0	47.1	47.1	23.6	68.6
189	Orthophosphate	0.5	µg/l P	7.4	9.2	9.6	10	6.7	3.5	3.8	4.2	5.7	16	13	56	6.8	8.3	11
135	Suspended Solids 105°C	1.5	mg/l	30	13	11	14	3	<	<	<	<	3	<	6	2	<	<
143	Suspended Solids 500°C	1.5	mg/l	18	13	9	10	<	<	<	<	<	2	<	4	<	<	<
729	Chlorophyll-a	0.1	µg/l	12.26	9.83	5.50	6.75	1.97	7.63	19.40	1.08	1.42	3.31	1.80	1.22	1.07	1.27	1.79

VIGILANCE
INORGANICS

	St. Aldhelms	Portland Bill	Seaton	Exmouth	Start Point	Bigbury Bay	Plymouth	East Looe	Fowey	Dodman Point	St. Antony Head	Lizard	Penzance	Cape Cornwall	St. Agnes	Trevose
Base	73	75	78	80	83	85	86	87	88	89	90	93	95	97	100	102
Date	14May	14May	14May	14May	21May	21May	28May	28May	28May	28May	28May	04Jun	04Jun	04Jun	04Jun	04Jun
Time	07:42	09:32	16:06	18:12	09:52	12:05	12:22	13:37	15:45	16:57	18:55	07:23	09:08	11:05	14:08	15:56

Det.

MRV

105	Mercury total	0.008	µg/l	<	<	<	<	<	<	<	0.010	<	<	0.012	0.017	0.026	0.154	<	<
106	Cadmium dissolved	0.04	µg/l	0.189	0.243	0.071	0.107	0.236	0.071	0.124	0.060	<	<	<	0.068	0.042	0.059	<	<
108	Cadmium total	0.04	µg/l			0.083				0.200							0.121		
7213	Copper dissolved	0.051	µg/l	0.79	0.79	0.77	0.82	1.28	0.77	1.76	0.80	0.57	0.41	0.53	0.89	0.95	0.72	0.72	0.90
7215	Copper total	0.051	µg/l			1.62				3.62							2.40		
7230	Lead dissolved	0.024	µg/l	0.793	0.875	0.542	0.469	0.320	0.404	0.658	0.112	0.050	<	<	0.089	0.049	0.077	0.624	0.360
7229	Lead total	0.024	µg/l			0.542				1.070							0.516		
7243	Zinc dissolved	0.4	µg/l	15.7	14.8	8.70	14.7	20.0	14.8	67.8	18.0	8.31	3.44	2.31	21.2	17.4	18.1	18.1	9.17
7245	Zinc total	0.4	µg/l			10.5				89.6							29.2		
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l			<				<							<		
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	<	0.42		<	0.54	<	0.49	<	0.50		<	<
7375	Chromium total	0.35	µg/l			<				0.56							<		
7427	Nickel dissolved	0.058	µg/l	0.38	0.38	0.34	0.36	0.33	0.36	1.58	0.34	<	<	<	0.44	<	<	<	<
7429	Nickel total	0.058	µg/l			0.79				2.01							<		
3403	Ammonia	1	µg/l N	3	4	4	<	29	1	20	15	18	20	9	8	4	16	7	6
3404	Nitrite	0.5	µg/l N	2.0	1.9	1.0	1.2	2.0	1.6	3.5	1.5	2.0	1.9	1.4	1.4	1.1	1.9	1.0	1.0
9991	Total Oxidised Nitrogen	1	µg/l N	67	47	13	12	23	7.1	27	11	22	16	19	8.6	6.0	26	4.7	4.1
3420	Silicate	2.143	µg/l SiO ₂	5.8	21.4	13.3	3.6	38.6	47.1	66.4	66.4	85.7	64.3	72.9	81.4	45.0	96.4	90.0	90.0
189	Orthophosphate	0.5	µg/l P	11	38	7.9	3.9	5.6	6.6	7.0	6.2	9.4	7.3	14	5.7	4.8	12	10	8.1
135	Suspended Solids 105°C	1.5	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
729	Chlorophyll-a	0.1	µg/l	1.25	1.25	1.16	1.52	1.83	3.21	0.67	0.36	0.62	0.89	1.16	2.95	0.85	2.41	0.89	0.89

**VIGILANCE
INORGANICS**

	Boscawle	Hartland Point	Bull Point	Foreland	Portrack	Minehead	Weston-super-Mare	Clevedon	Avonmouth	No. 1 Beacon	Lavemock	Nash Point	Portcawl	Mumbles	Worms Head	Caldey Island
Base	105	108	110	112	113	114	116	117	118	119	122	124	125	128	130	134
Date	05Jun	05Jun	05Jun	05Jun	05Jun	05Jun	05Jun	06Jun	06Jun	06Jun	06Jun	06Jun	06Jun	06Jun	12Jun	12Jun
Time	05:18	07:49	09:50	14:29	16:37	17:32	18:00	06:48	07:31	07:51	12:38	15:54	17:12	19:27	08:25	10:58

Det.

MRV

105	Mercury total	0.008	µg/l	<	0.023	<	<	<	0.060	0.074	0.091	0.098	0.112	0.059	0.048	<	0.029	<	<
106	Cadmium dissolved	0.04	µg/l	0.044	0.053	0.056	0.071	0.124	0.146	0.210	0.235	0.261	0.278	0.181	0.133	0.084	0.075		0.051
108	Cadmium total	0.04	µg/l										0.459			0.128		0.194	0.060
7213	Copper dissolved	0.051	µg/l	0.77	0.84	0.54	0.70	1.51	1.82	2.73	2.62	2.44	3.03	2.51	1.53	1.36	0.86		0.96
7215	Copper total	0.051	µg/l										18.20			1.71		1.27	1.09
7230	Lead dissolved	0.024	µg/l	0.264	0.130	0.148	0.073	0.135	<	0.150	0.165	0.158	0.353	0.103	0.127	0.092	0.135	0.452	0.168
7229	Lead total	0.024	µg/l										42			1.610		0.877	0.393
7243	Zinc dissolved	0.4	µg/l	15.1	10.1	6.78	6.97	7.95	7.20	12.7	15.9	12.5	9.59	7.79	5.29	6.52	8.4		8.78
7245	Zinc total	0.4	µg/l										95.0			21.9		55.3	12.7
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l										1.8			<		<	<
7373	Chromium dissolved	0.35	µg/l	<	<	<	0.66	0.51	0.40	0.93	0.50	0.46	0.38	0.84	0.55	0.44	<	0.88	<
7375	Chromium total	0.35	µg/l										6.54			0.61		1.20	0.57
7427	Nickel dissolved	0.058	µg/l	<	<	<	<	0.63	0.61	1.10	1.07	1.07	1.27	1.09	0.74	0.39	0.54		0.32
7429	Nickel total	0.058	µg/l										6.99			0.87		0.69	0.43
3403	Ammonia	1	µg/l N	8	6	5	8	8	3	9	7	28	<		10	20	33	85	52
3404	Nitrite	0.5	µg/l N	1.4	1.4	1.1	3.7	4.1	2.4	2.4	2.0	5.9	2.5	4.6	6.6	5.8	5.0	3.2	1.2
9991	Total Oxidised Nitrogen	1	µg/l N	7.1	7.5	5.9	408	1088	1247	1808	1975	2119	2489	1569	1077	595	397	165	4.9
3420	Silicate	2.143	µg/l SiO ₂	92.1	25.7	21.0	214.3	752.2	1009.4	1630.8	1825.8	2102.3	2423.7	1553.7	752.2	379.3	263.6	150.0	139.3
189	Orthophosphate	0.5	µg/l P	5.6	6.9	8.9	27	70	95	142	159	190	218	130	75	46	30	20	8.0
135	Suspended Solids 105°C	1.5	mg/l	<	6	<	15	9	156	301	388	394	418	194	33	8	12	9	2
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	13	8	141	278	360	366	388	176	29	7	11	7	<
729	Chlorophyll-a	0.1	µg/l	0.89	4.77	5.40	2.63	0.89	4.55	2.32	3.12	4.55	4.28	2.81	1.74	1.52	2.32	5.44	4.11

**COASTAL GUARDIAN
INORGANICS**

	St. Ann's	Skomer	Strumble Head	Penly-Badell	Pen Plyn	Pen-Bwch Point	Pwllhell	Bardsey
Base	138	139	142	146	148	151	154	156
Date	19Jun	19Jun	19Jun	19Jun	19Jun	20Jun	20Jun	21Jun
Time	09:22	11:09	15:18	18:47	20:33	10:51	14:08	08:46

Det.	MRV										
105	Mercury total	0.008	µg/l	0.011	0.013	0.009	0.013	0.014	0.016	0.015	0.020
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<	0.059	<	<
108	Cadmium total	0.04	µg/l	<						0.048	0.166
7213	Copper dissolved	0.051	µg/l	1.11	0.71	0.81	0.74	0.72	3.31	1.12	0.61
7215	Copper total	0.051	µg/l	2.25						1.62	1.57
7230	Lead dissolved	0.024	µg/l	0.087	0.034	0.287	0.175	0.098	0.936	0.395	0.312
7229	Lead total	0.024	µg/l	0.408						1.100	1.050
7243	Zinc dissolved	0.4	µg/l	2.04	1.77	3.81	3.45	2.05	10.9	7.70	4.32
7245	Zinc total	0.4	µg/l	13.3						10.7	12.1
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<						<	<
7373	Chromium dissolved	0.35	µg/l	<	0.30	<	<	<	2.74	<	<
7375	Chromium total	0.35	µg/l	0.51						0.40	0.93
7427	Nickel dissolved	0.058	µg/l	0.64	0.36	1.05	0.45	0.42	0.56	0.30	<
7429	Nickel total	0.058	µg/l	1.87						0.46	0.37
3403	Ammonia	1	µg/l N	21	7.1	178	13	<	2.9		14
3404	Nitrite	0.5	µg/l N	2.2	2.4	3.4	<	0.6	<		2.8
9991	Total Oxidised Nitrogen	1	µg/l N	52	50	32	<	<	51		59
3420	Silicate	2.143	µg/l SiO2	32.1	34.3	<	<	8.8	42.9		36.4
189	Orthophosphate	0.5	µg/l P	2.1	3.2	1.7	1.0	1.5	1.6		3.7
135	Suspended Solids 105°C	1.5	mg/l	<	<	<	<	<	<	<	6
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	<	<	<	<	2
729	Chlorophyll-a	0.1	µg/l	1.92	2.14	2.99	0.76	0.45	0.62	1.20	1.34

WATER GUARDIAN
ORGANICS

	Base	Berwick	Craster	Blyth	Wear (Middle)	Tees (Middle)	Flamborough (North)	Spurn Head	Haile Sand Flat	Chapel St. Leonards
	1	4	7	13	18	25	30	31	33	
Date	17May	17May	17May	20May	20May	21May	23May	23May	23May	
Time	08:05	11:10	13:40	12:55	15:40	09:35	15:35	16:35	18:55	

Det.	MRV											
3081	Isodrin	0.001	µg/l	0.002	<	<	<	<	<	<	0.001	<
3278	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<0.002	<	<	<	<0.002	<0.002	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	0.003	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.002	<	<0.002	<	<	<	<	<0.002	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<	<

SEA VIGIL
ORGANICS

	Wash	Mundesley	Kessingland	Felixstowe, Cobbolds	Medway Buoy	South Foreland	Beachy Head	Selsey Bill	Calsot
Base	35	39	43	46.1	51	56	61	66	68.2
Date	30May	30May	29May	29May	23May	21May	14May	14May	13May
Time	18:39	12:02	14:31	09:29	16:31	19:01	18:59	14:02	20:39

Det.	MRV											
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<	<	<	<	<
3295	DDE (Op)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3294	DDE (Pp)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3296	DDT (Op)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3297	DDT (Pp)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3329	TDE (Op)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3330	TDE (Pp)	0.001	µg/l	<	<	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.003	0.002	0.002	0.002	0.003	0.002	0.002	0.002	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<	<

**VIGILANCE
ORGANICS**

	Plymouth	Cape Cornwall	No. 1 Beacon	Portcawl	Worms Head	Caldey Island	Turbot Bank
Base	86	97	119	125	130	134	137
Date	28May	04Jun	06Jun	06Jun	12Jun	12Jun	12Jun
Time	12:22	11:05	07:51	17:12	08:25	10:58	15:28

Det.	MRV								
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<0.002	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.002	<	0.008	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<

COASTAL GUARDIAN -
ORGANICS

	St. Anns	Pwllheli	Bardsey
Base	138	154	156
Date	19Jun	20Jun	21Jun
Time	09:22	14:08	08:46

Det.	MRV				
3081	Isodrin	0.001	µg/l	<	<
3276	Aldrin	0.001	µg/l	<	<
3301	Dieldrin	0.001	µg/l	<	<
3306	Endrin	0.001	µg/l	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<
3142	PCB 28	0.001	µg/l	<	<
3145	PCB 52	0.001	µg/l	<	<
3148	PCB 101	0.001	µg/l	<	<
3151	PCB 118	0.001	µg/l	<	<
3154	PCB 138	0.001	µg/l	<	<
3157	PCB 153	0.001	µg/l	<	<
3160	PCB 180	0.001	µg/l	<	<
3295	DDE (Op')	0.001	µg/l	<	<
3294	DDE (Pp')	0.001	µg/l	<	<
3296	DDT (Op')	0.001	µg/l	<	<
3297	DDT (Pp')	0.001	µg/l	<	<
3329	TDE (Op')	0.001	µg/l	<	<
3330	TDE (Pp')	0.001	µg/l	<	<
3310	HCH alpha	0.001	µg/l	<	<
3311	HCH beta	0.001	µg/l	<	<
3313	HCH gamma	0.001	µg/l	<	<
3312	HCH delta	0.001	µg/l	<	<

WATER GUARDIAN
ORGANICS

	Base	Berwick	Craster	Blyth	Wear (Middle)	Tees (Middle)	Flamborough (North)	Spurn Head	Haile Sand Flat	Chapel St. Leonards
	1	4	7	13	18	25	30	31	33	
Date	17May	17May	17May	20May	20May	21May	23May	23May	23May	
Time	08:05	11:10	13:40	12:55	15:40	09:35	15:35	16:35	18:55	

Det.	MRV										
3081	Isodrin	0.001	µg/l	0.002	<	<	<	<	<	0.001	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<0.002	<	<	<	<0.002	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	0.003	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.002	<	<0.002	<	<	<	<0.002	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<

SEA VIGIL
ORGANICS

	Wash	Mundesley	Kessingland	Felixstowe, Cobbolds	Medway Buoy	South Foreland	Beachy Head	Selsey Bill	Calshot
Base	35	39	43	46.1	51	56	61	66	68.2
Date	30May	30May	29May	29May	23May	21May	14May	14May	13May
Time	18:39	12:02	14:31	09:29	16:31	19:01	18:59	14:02	20:39

Det.	MRV										
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.003	0.002	0.002	0.002	0.003	0.002	0.002	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<

VIGILANCE
ORGANICS

	Plymouth	Cape Cornwall	No. 1 Beacon	Portlcawl	Worms Head	Caldey Island	Turbot Bank
Base	86	97	119	125	130	134	137
Date	28May	04Jun	06Jun	06Jun	12Jun	12Jun	12Jun
Time	12:22	11:05	07:51	17:12	08:25	10:58	15:28

Det.	MRV									
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<0.002	<	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<
3296	DDT (Op')	0.001	µg/l	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.002	<	0.008	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<

COASTAL GUARDIAN
ORGANICS

	St. Anns	Pwllheli	Bardsey
Base	138	154	156
Date	19Jun	20Jun	21Jun
Time	09:22	14:08	08:46

Det.	MRV			
3081	Isodrin	0.001	µg/l	<
3276	Aldrin	0.001	µg/l	<
3301	Dieldrin	0.001	µg/l	<
3306	Endrin	0.001	µg/l	<
3082	Hexachlorobenzene	0.001	µg/l	<
3083	Hexachlorobutadiene	0.001	µg/l	<
3142	PCB 28	0.001	µg/l	<
3145	PCB 52	0.001	µg/l	<
3148	PCB 101	0.001	µg/l	<
3151	PCB 118	0.001	µg/l	<
3154	PCB 138	0.001	µg/l	<
3157	PCB 153	0.001	µg/l	<
3160	PCB 180	0.001	µg/l	<
3295	DDE (Op')	0.001	µg/l	<
3294	DDE (Pp')	0.001	µg/l	<
3296	DDT (Op')	0.001	µg/l	<
3297	DDT (Pp')	0.001	µg/l	<
3329	TDE (Op')	0.001	µg/l	<
3330	TDE (Pp')	0.001	µg/l	<
3310	HCH alpha	0.001	µg/l	<
3311	HCH beta	0.001	µg/l	<
3313	HCH gamma	0.001	µg/l	<
3312	HCH delta	0.001	µg/l	<

LABORATORY RESULTS TABLES

SUMMER 1996

WATER GUARDIAN
INORGANICS

				Bewick	Castlehead Rocks	Shoreston Outcrops	Craster	Blyth	Tyne (North)	Tyne (South)	Marsden	Wear (Middle)	Pincushon Rock	Blackhall	Tees (North)	Tees (Middle)	Tees (South)	Skningrove	Sandsend
				1	2	3	4	7	8	10	11	13	15	16	17	18	19	20	21
				12Jul	12Jul	12Jul	13Jul	13Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul
				13:00	14:05	15:06	12:20	15:05	07:00	07:15	07:35	08:15	08:50	09:55	10:40	11:31	12:40	13:40	14:41
Det.	MRV																		
105	Mercury total	0.02	µg/l	0.315	0.071	0.081	0.780	0.057	0.179	0.080	<	0.102	0.073	0.084	0.065	0.066	0.077	0.070	0.088
106	Cadmium dissolved	0.04	µg/l	<	<	0.165	0.100	0.061		0.061	0.046	0.043	<	<	<	<	0.040	<	<
108	Cadmium total	0.04	µg/l	<		0.150							0.053			0.049			0.041
7213	Copper dissolved	0.5	µg/l	1.67	1.50	3.03	2.33	1.32		3.61	1.57	1.97	2.76	2.58	3.67	2.17	2.90	1.25	1.20
7215	Copper total	0.5	µg/l	1.38		1.62							3.29			2.36			1.85
7229	Lead total	0.1	µg/l	0.569		0.427							0.857			1.130			0.658
7230	Lead dissolved	0.1	µg/l	0.412	0.272	0.260	0.890	0.481		0.863	0.472	0.295	0.340	0.275	0.656	0.357	0.301	0.161	0.144
7243	Zinc dissolved	0.4	µg/l	3.59	6.44	5.73	7.9	4.45		9.65	5.11	5.22	4.36	3.68	8.66	5.54	15	5.13	3.86
7245	Zinc total	0.4	µg/l	2.97		2.79							6.36			14.6			7.24
7354	Arsenic dissolved	1	µg/l																
7356	Arsenic total	1	µg/l																
7373	Chromium dissolved	2	µg/l	<	2.83	3.66	<	<		<	<	<	<	2.08	<	<	2.33	<	<
7375	Chromium total	2	µg/l	2.07		<							<			<			<
7427	Nickel dissolved	0.25	µg/l	0.25	0.38	0.40	0.83	0.42		0.62	0.55	0.45	0.47	0.45	1.81	0.99	0.69	0.59	0.47
7429	Nickel total	0.25	µg/l	0.85		0.40							0.47			1.67			0.87
3403	Ammonia	3	µg/l N	16.2	23.9	53	50.1	22.6	57.9	29.6	35.8	25.2	31.7	5.86	448	224.3	55	28.2	33.1
3404	Nitrite	0.5	µg/l N	1.0	1.5	0.8	1.8	1.1	1.9	0.9	1.0	1.6	2.0	0.5	21.9	11.2	3.1	2.3	2.0
9991	Total Oxidised Nitrogen	2.75	µg/l N	137.2	41.6	17.1	275.2	56.2	1030	81.4	51.1	37.8	25.1	11.7	121.1	69.9	24.1	24.7	18.5
3420	Silicate	2	µg/l SiO ₂	132.2	147.7	124.0	142.1	118.2	141.1	132.9	114.1	138.3	121.8	113.4	261.1	136.8	93.7	99.2	91.2
189	Orthophosphate	1	µg/l P	4.3	3.7	4.2	7.6	3.9	5.9	4.2	4.1	4.4	9.9	3	50.5	15.6	1.5	4	2.4
135	Suspended Solids 105°C	3	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
729	Chlorophyll-a	0.4	µg/l	2.54	3.93	2.59	1.29	0.85	0.98	1.47	1.47	1.38	1.65	2.81	2.37	2.90	3.79	3.35	4.19

**WATER GUARDIAN
INORGANICS**

WATER GUARDIAN INORGANICS				Filey Brigg	Flamborough (North)	Bridlington	Beacon Hill	Withernsea	Spurn Head	
				Base	24	25	26	28	29	30
				Date	16Jul	16Jul	16Jul	16Jul	16Jul	16Jul
				Time	07:40	08:00	09:55	12:11	13:33	15:50
Det.	MRV									
105	Mercury total	0.02	µg/l	0.048	0.083	0.050		0.068	0.093	
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<	0.079	
108	Cadmium total	0.04	µg/l	<					0.099	
7213	Copper dissolved	0.5	µg/l	5.77	1.01	1.05	0.78	1.20	2.19	
7215	Copper total	0.5	µg/l	2.88					3.85	
7229	Lead total	0.1	µg/l	1.010					1.780	
7230	Lead dissolved	0.1	µg/l	0.514	0.146	0.253	0.177	0.263	0.191	
7243	Zinc dissolved	0.4	µg/l	5.4	5.07	6.04	3.89	6.79	12.4	
7245	Zinc total	0.4	µg/l	5.37					76.7	
7354	Arsenic dissolved	1	µg/l							
7356	Arsenic total	1	µg/l							
7373	Chromium dissolved	2	µg/l	4.38	<	2.16	<	3.34	<	
7375	Chromium total	2	µg/l	6.38					2.28	
7427	Nickel dissolved	0.25	µg/l	1.69	0.38	0.26	0.35	0.42	1.63	
7429	Nickel total	0.25	µg/l	3.15					1.22	
3403	Ammonia	3	µg/l N	21.8	20	23	11.7	10.4	71.2	
3404	Nitrite	0.5	µg/l N	1.9	1.3	<	<	<	4.6	
9991	Total Oxidised Nitrogen	2.75	µg/l N	354.7	51.5	10.7	13.5	14.7	332.5	
3420	Silicate	2	µg/l SiO2	83.7	90.9	108.5	84.0	80.6	212.3	
189	Orthophosphate	1	µg/l P	3.77	3.85	5.08	<	2.3	37.5	
135	Suspended Solids 105°C	3	mg/l	<	7	11	7	<	<	
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<	
729	Chlorophyll-a	0.4	µg/l	2.63	1.43	0.67	0.71	0.67	2.41	

VIGILANCE
INORGANICS

				Haile Sand Flat	Theddlethorpe	Chapel St. Leonards	Skegness	Outer Dogs Head	Lynn Deep	Wash	Overy, Staithe	Cley, Lookout	Mundesley	Winterton	Gorleston	Kessingland	Dunwich Cliffs	Shingle Street	Felixstowe
				31	32	33	33.1	34	34.1	35	36	37	39	41	42	43	44	46	47
				11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	10Aug	10Aug	10Aug	10Aug	10Aug
				19:41	18:32	17:28	16:41	16:14	15:23	14:45	13:05	10:20	08:44	06:42	15:20	14:15	13:20	11:31	10:43
Det.	MRV																		
105	Mercury total	0.008	µg/l	<	<	<	<	<	<	<	0.018	<	<	0.011	0.022	<	<	<	<
106	Cadmium dissolved	0.04	µg/l	0.064	0.048	<	<	<	<	<	<	<	<	<	<	0.052	0.047	0.052	0.080
108	Cadmium total	0.04	µg/l	0.152		0.059				0.054		0.075	<	0.068		0.076			0.165
7213	Copper dissolved	0.051	µg/l	1.32	1.07	1.11	0.94	1.28	1.24	1.06	0.76	0.69	0.89	0.86	0.81	1.13	0.86	1.10	1.52
7215	Copper total	0.051	µg/l	3.78		1.72				1.88		1.80	1.39	1.82		1.61			6.39
7230	Lead dissolved	0.024	µg/l	0.101	0.083	0.096	0.041	0.099	0.097	0.118	0.099	0.057	0.042	0.052	0.112	0.106	0.226	0.083	0.211
7229	Lead total	0.024	µg/l	1.75		0.937				0.840		0.586	0.246	0.518		1.02			0.922
7243	Zinc dissolved	0.4	µg/l	30.20	8.48	10.7	12.10	14.6	18.5	11.10	8.82	6.65	10.1	16.8	6.98	41.4	10.5	9.84	10.3
7245	Zinc total	0.4	µg/l	137.4		46				20.7		38.8	11.2	46.4		63.3			66.4
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l	<		<				<		<	<	<		<			<
7373	Chromium dissolved	0.35	µg/l	0.65	0.58	<	<	0.74	<	<	<	<	<	<	<	<	<	0.63	<
7375	Chromium total	0.35	µg/l	1.28		1.96				0.51		0.86	<	<		0.42			0.58
7427	Nickel dissolved	0.058	µg/l	0.95	0.97	0.84	0.56	0.57	0.40	0.60	0.43	0.40	0.41	0.65	0.57	0.59	0.44	0.63	0.77
7429	Nickel total	0.058	µg/l	1.55		0.86				0.90		0.72	0.58	0.78		0.75			1.97
3403	Ammonia	1	µg/l N	21	56	76	32	11	21	5	2	4	7	5	12	30	21	7	21
3404	Nitrite	0.5	µg/l N	5.1	5.1	5.3	3.0	2.0	2.1	0.7	<	<	<	<	0.6	0.6	<	2.4	4.5
9991	Total Oxidised Nitrogen	1	µg/l N	177	204	42	23	18	22	3	1	2	3	2	4	5	2	30	47
3420	Silicate	2.143	µg/l SiO ₂	70.7	75.0	85.7	38.6	21.4	25.7	<	<	<	<	<	<	<	<	<	<
189	Orthophosphate	0.5	µg/l P	25.2	30	18.8	10.8	7.1	12.9	2.8	<	<	<	3.3	2.1	9.1	7.9	4.1	7.8
135	Suspended Solids 105°C	1.5	mg/l	20	<	7	9	11	8	15	<	39	<	7	5	10	5	<	31
143	Suspended Solids 500°C	1.5	mg/l	19	<	4	9	9	4	12	<	33	<	7	2	5	4	<	25
729	Chlorophyll-a	0.1	µg/l	3.26	10.04	2.59	3.97	5.76	3.12	14.55	1.43	1.74	1.83	2.77	7.59	6.83	7.27		8.88

VIGILANCE
INORGANICS

VIGILANCE INORGANICS				Walton	Maplin Bank	Medway Buoy	Shiveningsand Buoy	East Brake Buoy	Goodwin Fork Buoy	South Foreland	Sandgate Bay	Dungeness	Beachy Head	Brighton	Selsey Bill	Nab Tower	East Brambles	Calshot	Dockhead
			Base	48	50	51	52	54	55	56	57	58	61	63	66	67	68.1	68.2	68.3
			Date	10Aug	10Aug	09Aug	09Aug	09Aug	09Aug	09Aug	09Aug	09Aug	09Aug	09Aug	08Aug	08Aug	07Aug	07Aug	07Aug
			Time	10:00	07:44	20:06	19:03	14:21	13:29	12:43	11:35	08:22	05:05	11:01	07:57	07:12	17:49	18:10	18:51
Det.	MRV																		
105	Mercury total	0.008	µg/l	<	<	<	<	<	0.034	<	<	<	<	<	<	0.046	0.010	0.027	<
106	Cadmium dissolved	0.04	µg/l	<	<	0.043	<	<	<	<	<	<	<	<	<	<	<	<	<
108	Cadmium total	0.04	µg/l			0.161				0.060			0.120		0.085			0.132	
7213	Copper dissolved	0.051	µg/l	0.94	0.92	1.36	2.50	0.95	2.38	1.15	0.95	0.89	2.84	1.29	0.98	2.40	1.25	0.99	1.29
7215	Copper total	0.051	µg/l			2.51				1.17			3.26		1.21			2.93	
7230	Lead dissolved	0.024	µg/l	<	0.171	0.102	0.123	0.057	0.165	<	<	<	0.032	0.090	0.132	0.336	<	0.075	0.474
7229	Lead total	0.024	µg/l			0.751				0.391			0.528		0.412			0.577	
7243	Zinc dissolved	0.4	µg/l	8.61	16.9	12.7	15.7	6.13	4.3	15.1	7.67	10.1	16.4	12.2	7.05	33.60	8.18	13.8	8.53
7245	Zinc total	0.4	µg/l			58.4				42.1			50.7		22.6			69.6	
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l			<				<			<		<			<	
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	<	<	<	<	0.53	0.61	0.78	<	0.42	<	<	<
7375	Chromium total	0.35	µg/l			0.52				<			1.35		0.48			0.35	
7427	Nickel dissolved	0.058	µg/l	0.86	0.54	0.92	0.85	0.60	0.31	0.29	0.21	0.28	0.35	0.38	0.41	0.39	0.60	0.60	0.69
7429	Nickel total	0.058	µg/l			1.45				1.04			0.86		0.63			1.41	
3403	Ammonia	1	µg/l N	75	68	89	78	35	7	4	14	4	6	19	6	7	35	14	103
3404	Nitrite	0.5	µg/l N	6.9	4.8	9.9	9.2	4.1	0.8	<	1.0	<	<	0.8	<	<	4.6	2.5	8.7
9991	Total Oxidised Nitrogen	1	µg/l N	106	57	202	205	65	3	2	3	1	2	5	1	5	59	18	176
3420	Silicate	2.143	µg/l SiO ₂	64.3	21.4	51.4	64.3	34.3	57.9	32.1	21.4	<	15.0	51.4	17.1	8.6	102.9	57.9	319.3
189	Orthophosphate	0.5	µg/l P	19	18.6	60.3	67.9	19.9	5.3	5.6	2.3	1.5	2.9	7.1	5.4	3.9	13.8	8.7	30.4
135	Suspended Solids 105°C	1.5	mg/l	15	<	6	<	13	7	6	<	<	13	<	<	<	<	27	8
143	Suspended Solids 500°C	1.5	mg/l	12	<	5	<	9	5	5	<	<	9	<	<	<	<	24	6
729	Chlorophyll-a	0.1	µg/l	2.01	3.17	3.79	3.21	2.10	3.80	3.39	4.46	0.89	1.92	1.92	1.29	1.25	4.64	2.81	5.76

VIGILANCE
INORGANICS

VIGILANCE			INORGANICS																
			West Princessa	St. Catherine's	The Needles	St. Aldehelms	Seaton	Exmouth	Start Point	Bigbury Bay	Plymouth	East Looe	Fowey	Dodman Point	St. Antony Head	Lizard	Penzance	Cape Cornwall	
			Base	68.4	69	70	73	78	80	83	85	86	87	88	89	90	93	95	97
			Date	07Aug	07Aug	07Aug	07Aug	06Aug	06Aug	04Aug	04Aug	03Aug	03Aug	03Aug	03Aug	03Aug	03Aug	02Aug	02Aug
			Time	15:54	14:30	13:15	08:23	08:12	04:32	11:39	09:58	17:30	14:37	13:28	09:38	08:40	06:42	17:40	15:18
Det.	MRV																		
105	Mercury total	0.008	µg/l	<	0.019	<	0.010	0.015	<	<	<	<	<	<	<	0.010	<	<	<
106	Cadmium dissolved	0.04	µg/l	<	<	<	0.065	<	<	0.052	<	<	0.057	0.275	<	<	0.207	0.115	0.104
108	Cadmium total	0.04	µg/l					0.076				0.147							0.125
7213	Copper dissolved	0.051	µg/l	1.06	1.48	0.99	0.99	0.45	0.58	3.99	0.91	0.39	0.55	0.63	0.34	0.24	0.41	0.33	1.01
7215	Copper total	0.051	µg/l					1.27				1.46							1.13
7230	Lead dissolved	0.024	µg/l	0.114	0.128	0.123	0.225		0.080	0.213	0.669	0.075	0.181	0.411	0.053	0.138	0.180	0.235	0.142
7229	Lead total	0.024	µg/l					0.317				0.653							0.977
7243	Zinc dissolved	0.4	µg/l	8.93	4.1	6	14	10.9	24.9	30.2	8.39	5.57	11.4	10.9	7.39	15	23	10.60	7.62
7245	Zinc total	0.4	µg/l					24.7				83.3							59.2
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l					<				<							<
7373	Chromium dissolved	0.35	µg/l	<	<	<	<	<	<	1.04	<	<	0.39	0.49	1.11	0.41	1.09	0.42	<
7375	Chromium total	0.35	µg/l					<				2.70							1.29
7427	Nickel dissolved	0.058	µg/l	0.33	0.36	0.33	0.41	0.34	0.34	0.47	0.22	0.46	0.37	0.43	0.34	0.52	0.70	0.48	0.38
7429	Nickel total	0.058	µg/l					0.58				0.50							1.20
3403	Ammonia	1	µg/l N	12	18	5	11	2	6	13	3	3	8	5	6	3	22	6	21
3404	Nitrite	0.5	µg/l N	0.8	0.9	<	1.4	<	<	0.8	<	<	<	<	<	<	1.5	0.6	1.7
9991	Total Oxidised Nitrogen	1	µg/l N	5	8	3	6	2	9.0	23	3	4	4	2	5	4	14	8	23
3420	Silicate	2.143	µg/l SiO2	4.3	15.0	4.3	<	<	<	8.6	<	<	<	<	<	<	<	<	8.6
189	Orthophosphate	0.5	µg/l P	5.1	5.4	3.5	23.1	1.5	2.6	4.6	0.6	1.6	2.3	3.3	1.6	2	11.5	1.3	3.8
135	Suspended Solids 105°C	1.5	mg/l	<	<	14	15	<	11	15	<	<	8	<	45	5	<	<	<
143	Suspended Solids 500°C	1.5	mg/l	<	<	13	8	<	8	12	<	<	8	<	37	3	<	<	<
729	Chlorophyll-a	0.1	µg/l	1.25	1.20	1.12	0.85	1.03	0.85	2.45	3.48	3.35	1.03	0.76	1.52	0.85	1.74	2.19	1.65

**VIGILANCE
INORGANICS**

			St. Agnes	Trevose	Boscawle	Hartland Point	Bull Point	Foreland	Porlock	Minehead	Weston-super-Mare	Clevedon	Avonmouth	No. 1 Beacon	Lavenock	Nash Point	Porhcawl	Mumbles
			Base 100	102	105	108	110	112	113	114	116	117	118	119	122	124	125	128
			Date 02Aug	02Aug	02Aug	01Aug	01Aug	01Aug	01Aug	01Aug	01Aug	01Aug	01Aug	01Aug	25Jul	25Jul	25Jul	25Jul
			Time 12:26	10:44	09:06	17:58	15:20	13:10	12:22	11:38	10:17	09:32	08:35	07:50	12:38	10:26	09:25	06:30
Det.	MRV																	
105	Mercury total	0.008	µg/l	<	0.065	0.020	<	<	0.010	0.060	0.027	0.045	0.016	0.027	0.071	0.016	0.008	0.014
106	Cadmium dissolved	0.04	µg/l	1.060	0.088	0.086	<	0.040	0.081	0.177	0.186	0.332	0.282	0.295	0.392	0.166	0.060	0.093
108	Cadmium total	0.04	µg/l											0.543			0.127	
7213	Copper dissolved	0.051	µg/l	0.87	1.98	0.49	0.68	0.86	0.72	1.55	1.38	2.13	3.17	3.02	3.06	1.86	1.10	1.05
7215	Copper total	0.051	µg/l											11.70			2.21	
7230	Lead dissolved	0.024	µg/l	0.250	0.548	0.302	0.075	0.092	0.369	0.225	0.187	0.086	0.089	0.083	0.081	0.120	0.127	0.129
7229	Lead total	0.024	µg/l											21.1			1.59	
7243	Zinc dissolved	0.4	µg/l	14.9	20.5	12.6	6.26	4.01	6.83	17	8.48	9.1	13.5	13.6	25.5	7.85	7.54	4.38
7245	Zinc total	0.4	µg/l											133.5			32.2	
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	1	<	<	<	<
7356	Arsenic total	1	µg/l											1.4			<	
7373	Chromium dissolved	0.35	µg/l	0.68	0.97	0.61	0.37	0.44	<	0.69	0.35	<	0.43	<	0.48	1.76	0.41	<
7375	Chromium total	0.35	µg/l											5.37			<	
7427	Nickel dissolved	0.058	µg/l	1.03	0.71	0.46	0.29	0.50	0.69	0.74	1.03	1.33	1.00	1.26	1.57	1.14	0.53	0.56
7429	Nickel total	0.058	µg/l											4.45			0.96	
3403	Ammonia	1	µg/l N	6	13	7	8	16	17	3	<	6	6	6	14	3.8	6.5	13.1
3404	Nitrite	0.5	µg/l N	<	<	<	0.6	1.3	6.8	11.1	4.5	1.0	0.9	5.1	1.9	4.0	5.4	4.2
9991	Total Oxidised Nitrogen	1	µg/l N	6	7	7	5	26	322	817	1197	1366	1569	1851	1785	1200	308	198
3420	Silicate	2.143	µg/l SiO ₂	<	<	<	<	<	53.6	317.2	645.0	1090.8	972.9	1275.1	1217.2	897.9	<	<
189	Orthophosphate	0.5	µg/l P	2.2	3	6.2	3.3	3.5	18.5	50.7	79	99.0	118	144	138	100	15.9	11.4
135	Suspended Solids 105°C	1.5	mg/l	1.5	<	<	6	<	17	15	102	86	61	76	146	35	<	<
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	6	<	14	14	91	77	47	67	131	32	<	<
729	Chlorophyll-a	0.1	µg/l	1.29	1.12	1.20	1.12	2.10	1.47	2.23	4.91	3.21	2.81	3.21	3.57	2.10	3.97	4.19

**VIGILANCE
INORGANICS**

	Worms Head	Caldey Island	Turbot Bank	St. Ann's
Base	130	134	137	138
Date	24Jul	24Jul	24Jul	24Jul
Time	19:15	16:02	12:26	11:54

Det.	MRV						
105	Mercury total	0.008	µg/l	0.008	0.013	0.013	<
106	Cadmium dissolved	0.04	µg/l	0.058	0.092	0.083	0.086
108	Cadmium total	0.04	µg/l	0.099	0.312	0.276	
7213	Copper dissolved	0.051	µg/l	0.81	0.89	0.66	0.62
7215	Copper total	0.051	µg/l	1.85	6.24	6.56	
7230	Lead dissolved	0.024	µg/l	0.228	0.229	0.169	0.077
7229	Lead total	0.024	µg/l	1.15	2.48	2.83	
7243	Zinc dissolved	0.4	µg/l	10.9	6.60	7.19	5.51
7245	Zinc total	0.4	µg/l	26.3	71.1	54.3	
7354	Arsenic dissolved	1	µg/l	<	<	<	<
7356	Arsenic total	1	µg/l	<	<	<	
7373	Chromium dissolved	0.35	µg/l	<	<	<	<
7375	Chromium total	0.35	µg/l	1.53	1.08	1.83	
7427	Nickel dissolved	0.058	µg/l	0.34	0.42	0.44	0.37
7429	Nickel total	0.058	µg/l	1.63	1.45	1.28	
3403	Ammonia	1	µg/l N	9.7	16.2	9	21.8
3404	Nitrite	0.5	µg/l N	1.0	<	1.7	1.9
9991	Total Oxidised Nitrogen	1	µg/l N	14.9	4.7	14.2	17.4
3420	Silicate	2.143	µg/l SiO ₂	<	<	<	<
189	Orthophosphate	0.5	µg/l P	3.1	4.4	3.7	4.5
135	Suspended Solids 105°C	1.5	mg/l	<	<	<	<
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	<
729	Chlorophyll-a	0.1	µg/l	2.99	3.57	1.96	1.38

COASTAL GUARDIAN
INORGANICS

COASTAL GUARDIAN			INORGANICS																
			Skomer	Strumble Head	Penly-Badell	Pen Pigyn	Pen-Bwch Point	Pwllheli	Bardsey	Pentryn Colmon	Dylan	Penrhos	Middle Mouse	Red Wharf	Great Orme	Llandulas	Chester Flat	Welsh Channel	
			Base	139	142	146	148	151	154	156	157	159	161	163	164	165	166	167	168
			Date	24Jul	24Jul	24Jul	24Jul	24Jul	23Jul	23Jul	23Jul	23Jul	23Jul	23Jul	22Jul	22Jul	22Jul	22Jul	22Jul
			Time	19:33	17:16	14:29	12:42	10:24	19:17	15:17	14:12	12:10	10:02	17:48	20:54	19:35	16:49	15:51	15:06
Det.		MRV																	
105	Mercury total	0.008	µg/l	0.020	0.020	0.014	0.025	0.014	0.035	0.053	0.054	0.058	0.036	0.035	0.023	0.030	0.027	0.018	0.042
106	Cadmium dissolved	0.04	µg/l	0.044	0.046	0.051	0.049	0.047			0.041	0.094	0.040		0.069		0.081	0.086	
108	Cadmium total	0.04	µg/l						<	<			0.058	0.048		<			0.059
7213	Copper dissolved	0.051	µg/l	1.57	1.61	1.28	1.78	3.33			1.69	4.78			1.51	1.19	1.91	1.26	
7215	Copper total	0.051	µg/l						0.77	0.99			1.08	1.83		1.66			1.61
7230	Lead dissolved	0.024	µg/l	0.360	0.253	0.300	0.400	0.821		0.326	0.386	2.02	0.546		0.309	0.317	0.342	0.402	
7229	Lead total	0.024	µg/l						0.468	0.389			0.546	0.612		0.610			0.888
7243	Zinc dissolved	0.4	µg/l	6.03	3.22	4.98	7.86	19.9		4.73	6.43	33.9			4.19	3.68	7.44	5.42	
7245	Zinc total	0.4	µg/l						6.31	12.2			3.21	9.43		5.55			4.91
7354	Arsenic dissolved	1	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
7356	Arsenic total	1	µg/l						<	<			<	<		<			<
7373	Chromium dissolved	0.35	µg/l	<	0.56	<	<	<	<	<	<	0.65			0.81	<	1.43	0.35	
7375	Chromium total	0.35	µg/l						<	0.48			0.51	<		0.56			0.38
7427	Nickel dissolved	0.058	µg/l	0.45	0.39	0.23	0.37	0.46		0.28	0.55	1.03	0.39		0.45	0.42	0.61	0.79	
7429	Nickel total	0.058	µg/l						0.46	0.41			0.39	0.54		0.42			0.70
3403	Ammonia	1	µg/l N	33.1	22.8	3.4	8.6	15	55.2		11.7	113.7	7.4	21.1	16.9	22.6	26.5	38.5	44.6
3404	Nitrite	0.5	µg/l N	1.8	1.3	<	<	1.1	<	224.0	0.7	<	1.0	0.7	<	0.6	2.0	1.4	4.2
9991	Total Oxidised Nitrogen	1	µg/l N	32.7	38.4	8.8	10.2	29.4	17.6	882	13	35.5	13.6	13.1	6.2	9.1	10	334	19.5
3420	Silicate	2.143	µg/l SiO2	<	<	<	<	<	42.0	16.5	<	17.8	<	32.1	8.1	5.1	15.0	<	<
189	Orthophosphate	0.5	µg/l P	5.3	4.2	2.5	3.4	4.3	11	5	3.7	26.1	5.9	11.6	13.4	20.1	22.7	28.2	30.1
135	Suspended Solids 105°C	1.5	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	2	4
143	Suspended Solids 500°C	1.5	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	4
729	Chlorophyll-a	0.1	µg/l	1.74	1.74	1.65	1.38	1.29	0.85	1.29	2.10	1.25	2.05	2.01	3.17	3.48	7.45	18.86	16.91

COASTAL GUARDIAN
INORGANICS

INORGANICS				North Wirral	Formby Point	Gut	Blackpool	Shell Wharf	Hilpsford	Duddon	Calder Hall	Whitehaven	Maryport	Abbey Head	Meggerland	St. Ninians
	Base	170	171	172	173	174	175	176	178	179	180.1	184	185	186		
	Date	17Jul	17Jul	17Jul	17Jul	17Jul	17Jul	17Jul	17Jul	17Jul	16Jul	16Jul	16Jul	16Jul		
	Time	23:09	21:14	20:12	19:11	18:23	17:21	16:30	14:06	12:52	19:20	16:38	15:35	13:59		
Det.	MRV															
105	Mercury total	0.02	µg/l	0.025	0.034	0.028	0.030	0.029	0.027	0.033	0.033	<	<	0.026	0.034	0.028
106	Cadmium dissolved	0.04	µg/l	0.051	0.053	0.050	0.059	0.052	0.062	0.052	0.051	0.067	0.054	0.042	<	<
108	Cadmium total	0.04	µg/l	0.047		0.054		0.076	0.055	0.079	0.061	0.040	<	0.043		<
7213	Copper dissolved	0.5	µg/l	2.76	2.30	1.93	1.38	13.90	1.63	1.68	1.63	2.16	1.44	1.98	1.60	2.32
7215	Copper total	0.5	µg/l	2.87		2.31		1.56	1.29	3.07	2.27	1.69	1.04	2.31		1.97
7230	Lead dissolved	0.1	µg/l	0.442	0.505	0.309	0.278	4.92	0.806	0.401	0.101	1.03	0.243	0.308	0.346	0.555
7229	Lead total	0.1	µg/l	1.45		0.638		0.558	0.883	2.13	0.393	0.517	0.429	0.598		0.323
7243	Zinc dissolved	0.4	µg/l	12.2	11	8.59	10.1	63.8	9.69	9.56	5.13	8.32	6.14	4.52	4.67	9.12
7245	Zinc total	0.4	µg/l	9.63		6.77		5.6	6.6	11.1	5.09	5.3	3.78	4.31		4.96
7354	Arsenic dissolved	1	µg/l	3.46	4.34	2.42	2.28	2.08	1.9	1.68	2.06	1.82	1.68	1.2	1.32	2.1
7356	Arsenic total	1	µg/l	3.58		2.44		1.98	1.76	1.78	1.68	1.92	1.5	1.2		2
7373	Chromium dissolved	2	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<
7375	Chromium total	2	µg/l	2.03		2.10		2.29	<	<	<	2.40	<	2.26		2.00
7427	Nickel dissolved	0.25	µg/l	0.93	1.08	0.56	0.48	1.89	0.33	0.51	0.40	0.71	0.55	0.42	0.37	0.44
7429	Nickel total	0.25	µg/l	0.96		0.68		0.49	0.47	0.66	0.52	0.66	0.31	0.31		0.63
3403	Ammonia	3	µg/l N	153	162	43.6	65.8	11.8	185	12.4	7.9	19.8	31.6	50.2	36.5	46.1
3404	Nitrite	0.5	µg/l N	31.6	39.7	4.9	3.7	<	<	<	<	0.8	0.9	<	<	<
9991	Total Oxidised Nitrogen	2.75	µg/l N	174.6	269.7	81.71	85.78	17.75	45.95	11.45	218.25	24620	17.65	20.65	9.87	17.15
3420	Silicate	2	µg/l SiO ₂	212.2	384.3	235.2	144.1	61.1	71.4	15.7	52.1	20.3	45.3	118.1	86.6	64.1
189	Orthophosphate	1	µg/l P	70.1	78.1	44.1	40.5	23.5	25.6	19.9	29.8	12.3	16.9	9.94	7.56	9.29
135	Suspended Solids 105°C	3	mg/l	13		3	4	<	<	<		<	<	5	<	<
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<
729	Chlorophyll-a	0.4	µg/l	12.50	6.07	7.32	2.45	2.86	0.98	0.94	1.03	1.03	2.37	0.94	0.98	1.83

VIGILANCE
ORGANICS

				Haile Sand Flat	Chapel St. Leonards	Wash	Cley, Lookout	Mundesley	Winterton	Kessingland	Felixstowe	Medway Buoy	South Foreland	Beachy Head	Selsey Bill	Catshot	Seaton	Plymouth	Cape Cornwall
				31	33	35	37	39	41	43	47	51	56	61	66	68.2	78	86	97
				11Aug	11Aug	11Aug	11Aug	11Aug	11Aug	10Aug	10Aug	09Aug	09Aug	09Aug	08Aug	07Aug	06Aug	03Aug	02Aug
				19:41	17:28	14:45	10:20	08:44	06:42	14:15	10:43	20:06	12:43	05:05	07:57	18:10	08:12	17:30	15:18
Det.	MRV																		
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3296	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	0.001	0.001	0.001	<	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.001	0.002	0.001	0.001	0.001
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

**VIGILANCE
ORGANICS**

	No. 1 Beacon	Porthcawl	Worms Head	Caldey Island	Turbot Bank
Base	119	125	130	134	137
Date	01Aug	25Jul	24Jul	24Jul	24Jul
Time	07:50	09:25	19:15	16:02	12:26

Det.	MRV							
3081	Isodrin	0.001	µg/l	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<
3296	DDE (Op')	0.001	µg/l	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	<	0.002	0.001	0.001	0.001
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<

COASTAL GUARDIAN
ORGANICS

	St. Anns	Pwllheli	Bardsey	Pentnos	Middle Mouse	Great Orme	Welsh Channel
Base	138	154	156	161	163	165	168
Date	24Jul	23Jul	23Jul	23Jul	23Jul	22Jul	22Jul
Time	20:22	19:17	15:17	10:02	17:48	19:35	15:06

Det.	MRV									
3081	Isodrin	0.001	µg/l	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.001	µg/l	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.001	µg/l	<	<	<	<	<	<	<
3142	PCB 28	0.001	µg/l	<	<	<	<	<	<	<
3145	PCB 52	0.001	µg/l	<	<	<	<	<	<	<
3148	PCB 101	0.001	µg/l	<	<	<	<	<	<	<
3151	PCB 118	0.001	µg/l	<	<	<	<	<	<	<
3154	PCB 138	0.001	µg/l	<	<	<	<	<	<	<
3157	PCB 153	0.001	µg/l	<	<	<	<	<	<	<
3160	PCB 180	0.001	µg/l	<	<	<	<	<	<	<
3276	Aldrin	0.001	µg/l	<	<	<	<	<	<	<
3294	DDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<
3295	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<
3296	DDE (Op')	0.001	µg/l	<	<	<	<	<	<	<
3297	DDT (Pp')	0.001	µg/l	<	<	<	<	<	<	<
3301	Dieldrin	0.001	µg/l	<	<	<	<	<	<	<
3306	Endrin	0.001	µg/l	<	<	<	<	<	<	<
3310	HCH alpha	0.001	µg/l	<	<	<	<	<	<	<
3311	HCH beta	0.001	µg/l	<	<	<	<	<	<	<
3312	HCH delta	0.001	µg/l	<	<	<	<	<	<	<
3313	HCH gamma	0.001	µg/l	<	0.001	0.001	0.001	0.001	0.001	0.001
3329	TDE (Op')	0.001	µg/l	<	<	<	<	<	<	<
3330	TDE (Pp')	0.001	µg/l	<	<	<	<	<	<	<

**COASTAL GUARDIAN
ORGANICS**

Det.	MRV										
		Base	170	172	174	175	176	178	180.1	184	
		Date	17Jul	17Jul	17Jul	17Jul	17Jul	17Jul	16Jul	16Jul	
		Time	23:09	20:12	18:23	17:21	16:30	14:06	19:20	16:38	
3081	Isodrin	0.005	µg/l	<	<	<	<	<	<	<	<
3082	Hexachlorobenzene	0.005	µg/l	<	<	<	<	<	<	<	<
3083	Hexachlorobutadiene	0.005	µg/l	<	<	<	<	<	<	<	<
3142	PCB 28	0.005	µg/l	<	<	<	<	<	<	<	<
3145	PCB 52	0.005	µg/l	<	<	<	<	<	<	<	<
3148	PCB 101	0.005	µg/l	<	<	<	<	<	<	<	<
3151	PCB 118	0.005	µg/l	<	<	<	<	<	<	<	<
3154	PCB 138	0.005	µg/l	<	<	<	<	<	<	<	<
3157	PCB 153	0.005	µg/l	<	<	<	<	<	<	<	<
3160	PCB 180	0.005	µg/l	<	<	<	<	<	<	<	<
3276	Aldrin	0.005	µg/l	<	<	<	<	<	<	<	<
3294	DDE (Pp')	0.005	µg/l	<	<	<	<	<	<	<	<
3295	DDE (Op')	0.005	µg/l	<	<	<	<	<	<	<	<
3296	DDE (Op')	0.005	µg/l	<	<	<	<	<	<	<	<
3297	DDT (Pp')	0.005	µg/l	<	<	<	<	<	<	<	<
3301	Dieldrin	0.005	µg/l	<	<	<	<	<	<	<	<
3306	Endrin	0.005	µg/l	<	<	<	<	<	<	<	<
3310	HCH alpha	0.005	µg/l	<	<	<	<	<	<	<	<
3311	HCH beta	0.005	µg/l	<	<	<	<	<	<	<	<
3312	HCH delta	0.005	µg/l	<	<	<	<	<	<	<	<
3313	HCH gamma	0.005	µg/l	<	<	<	<	<	<	<	<
3329	TDE (Op')	0.005	µg/l	<	<	<	<	<	<	<	<
3330	TDE (Pp')	0.005	µg/l	<	<	<	<	<	<	<	<

**WATER GUARDIAN
INORGANICS**

WATER GUARDIAN INORGANICS																				
				Benwick	Castlehead Rocks	Shoresion Outcarts	Craster	Byth	Tyne (North)	Tyne (South)	Marsden	Wear (Middle)	Pincushon Rock	Blackhall	Tees (North)	Tees (Middle)	Tees (South)	Skimmingrove	Sandsend	
				Base	1	2	3	4	7	8	10	11	13	15	16	17	18	19	20	21
				Date	12Jul	12Jul	12Jul	13Jul	13Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul	14Jul
				Time	13:00	14:05	15:06	12:20	15:05	07:00	07:15	07:35	08:15	08:50	09:55	10:40	11:31	12:40	13:40	14:41
Det.	MRV																			
105	Mercury total	0.02	µg/l	0.315	0.071	0.081	0.780	0.057	0.179	0.080	<	0.102	0.073	0.084	0.065	0.066	0.077	0.070	0.088	
106	Cadmium dissolved	0.04	µg/l	<	<	0.165	0.100	0.061		0.061	0.046	0.043	<	<	<	<	0.040	<	<	
108	Cadmium total	0.04	µg/l	<		0.150							0.053			0.049			0.041	
7213	Copper dissolved	0.5	µg/l	1.67	1.50	3.03	2.33	1.32		3.61	1.57	1.97	2.76	2.58	3.67	2.17	2.90	1.25	1.20	
7215	Copper total	0.5	µg/l	1.38		1.62							3.29			2.36			1.85	
7229	Lead total	0.1	µg/l	0.569		0.427							0.857			1.130			0.658	
7230	Lead dissolved	0.1	µg/l	0.412	0.272	0.260	0.890	0.481		0.863	0.472	0.295	0.340	0.275	0.656	0.357	0.301	0.161	0.144	
7243	Zinc dissolved	0.4	µg/l	3.59	6.44	5.73	7.9	4.45		9.65	5.11	5.22	4.36	3.68	8.66	5.54	15	5.13	3.86	
7245	Zinc total	0.4	µg/l	2.97		2.79							6.36			14.6	-		7.24	
7354	Arsenic dissolved	1	µg/l																	
7356	Arsenic total	1	µg/l																	
7373	Chromium dissolved	2	µg/l	<	2.83	3.66	<	<		<	<	<	<	2.08	<	<	2.33	<	<	
7375	Chromium total	2	µg/l	2.07		<							<			<			<	
7427	Nickel dissolved	0.25	µg/l	0.25	0.38	0.40	0.83	0.42		0.62	0.55	0.45	0.47	0.45	1.81	0.99	0.69	0.59	0.47	
7429	Nickel total	0.25	µg/l	0.85		0.40							0.47			1.67			0.87	
3403	Ammonia	3	µg/l N	16.2	23.9	53	50.1	22.6	57.9	29.6	35.8	25.2	31.7	5.86	448	224.3	55	28.2	33.1	
3404	Nitrite	0.5	µg/l N	1.0	1.5	0.8	1.8	1.1	1.9	0.9	1.0	1.6	2.0	0.5	21.9	11.2	3.1	2.3	2.0	
9991	Total Oxidised Nitrogen	2.75	µg/l N	137.2	41.6	17.1	275.2	56.2	1030	81.4	51.1	37.8	25.1	11.7	121.1	69.9	24.1	24.7	18.5	
3420	Silicate	2	µg/l SiO2	132.2	147.7	124.0	142.1	118.2	141.1	132.9	114.1	138.3	121.8	113.4	261.1	136.8	93.7	99.2	91.2	
189	Orthophosphate	1	µg/l P	4.3	3.7	4.2	7.6	3.9	5.9	4.2	4.1	4.4	9.9	3	50.5	15.6	1.5	4	2.4	
135	Suspended Solids 105°C	3	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
729	Chlorophyll-a	0.4	µg/l	2.54	3.93	2.59	1.29	0.85	0.98	1.47	1.47	1.38	1.65	2.81	2.37	2.90	3.79	3.35	4.19	

**WATER GUARDIAN
INORGANICS**

WATER GUARDIAN INORGANICS				Filey Brigg	Flamborough (North)	Bridlington	Beacon Hill	Withemsea	Spurn Head
		Base		24	25	26	28	29	30
		Date		16Jul	16Jul	16Jul	16Jul	16Jul	16Jul
		Time		07:40	08:00	09:55	12:11	13:33	15:50
Det.	MRV								
105	Mercury total	0.02	µg/l	0.046	0.083	0.050		0.068	0.093
106	Cadmium dissolved	0.04	µg/l	<	<	<	<	<	0.079
108	Cadmium total	0.04	µg/l	<					0.099
7213	Copper dissolved	0.5	µg/l	5.77	1.01	1.05	0.78	1.20	2.19
7215	Copper total	0.5	µg/l	2.88					3.85
7229	Lead total	0.1	µg/l	1.010					1.780
7230	Lead dissolved	0.1	µg/l	0.514	0.146	0.253	0.177	0.263	0.191
7243	Zinc dissolved	0.4	µg/l	5.4	5.07	6.04	3.89	6.79	12.4
7245	Zinc total	0.4	µg/l	5.37					76.7
7354	Arsenic dissolved	1	µg/l						
7356	Arsenic total	1	µg/l						
7373	Chromium dissolved	2	µg/l	4.38	<	2.16	<	3.34	<
7375	Chromium total	2	µg/l	6.38					2.28
7427	Nickel dissolved	0.25	µg/l	1.69	0.38	0.26	0.35	0.42	1.63
7429	Nickel total	0.25	µg/l	3.15					1.22
3403	Ammonia	3	µg/l N	21.8	20	23	11.7	10.4	71.2
3404	Nitrite	0.5	µg/l N	1.9	1.3	<	<	<	4.6
9991	Total Oxidised Nitrogen	2.75	µg/l N	354.7	51.5	10.7	13.5	14.7	332.5
3420	Silicate	2	µg/l SiO2	83.7	90.9	108.5	84.0	80.6	212.3
189	Orthophosphate	1	µg/l P	3.77	3.85	5.08	<	2.3	37.5
135	Suspended Solids 105°C	3	mg/l	<	7	11	7	<	<
143	Suspended Solids 500°C	10	mg/l	<	<	<	<	<	<
729	Chlorophyll-a	0.4	µg/l	2.63	1.43	0.67	0.71	0.67	2.41

2. LABORATORY ANALYSIS OF WATER SAMPLES

- 2.1 Water samples were collected at 1m depth and analysed at one of two National Laboratory Service laboratories: Llanelli and Nottingham. The sites analysed for each survey are shown below:

Winter:	Llanelli	1 - 138
	Nottingham	139 - 186
Spring:	Llanelli	1 - 156
	Nottingham	not sampled
Summer:	Llanelli	1 - 30 and 170 - 186
	Nottingham	31 - 168

- 2.2 The results are shown in both tabular and graphical format. Additionally the tables have been stored in Quattro Pro format on the enclosed CD-ROM.
- 2.3 The tables show the time and date of sampling above each sample result. The determinand codes (left hand column of the results tables) are South Western codes. These differ from those used by other Regions of the Environment Agency and the laboratory determinand code. However, they should be used when contacting the National Centre with queries or data requests.
- 2.4 The less than sign (<) in results columns indicates that the results was less than the laboratory minimum reporting value. The minimum reporting values for each determinand are shown in the third column of the results tables.
- 2.5 Blank squares in the results tables indicate either where this analysis was not required at a particular site, or where samples were not collected, for example due to weather constraints.
- 2.6 The following determinands have been mapped to allow geographical comparison between baseline sampling sites. These maps are shown below.

chlorophyll-*a*

T.O.N

nitrite

ammoniacal nitrogen

orthophosphate

silicate

suspended solids at 105°C

suspended solids at 500°C

suspended solids - organic fraction

suspended solids - % organic fraction

dissolved arsenic
dissolved cadmium
dissolved chromium
dissolved copper
dissolved nickel
dissolved lead
dissolved zinc

total mercury

organic chemicals

LABORATORY DATA MAPS

WINTER 1996

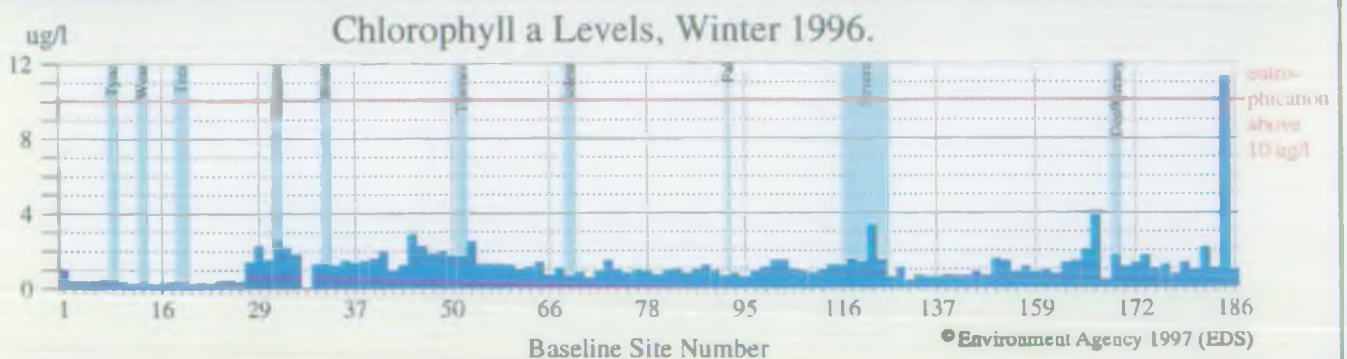
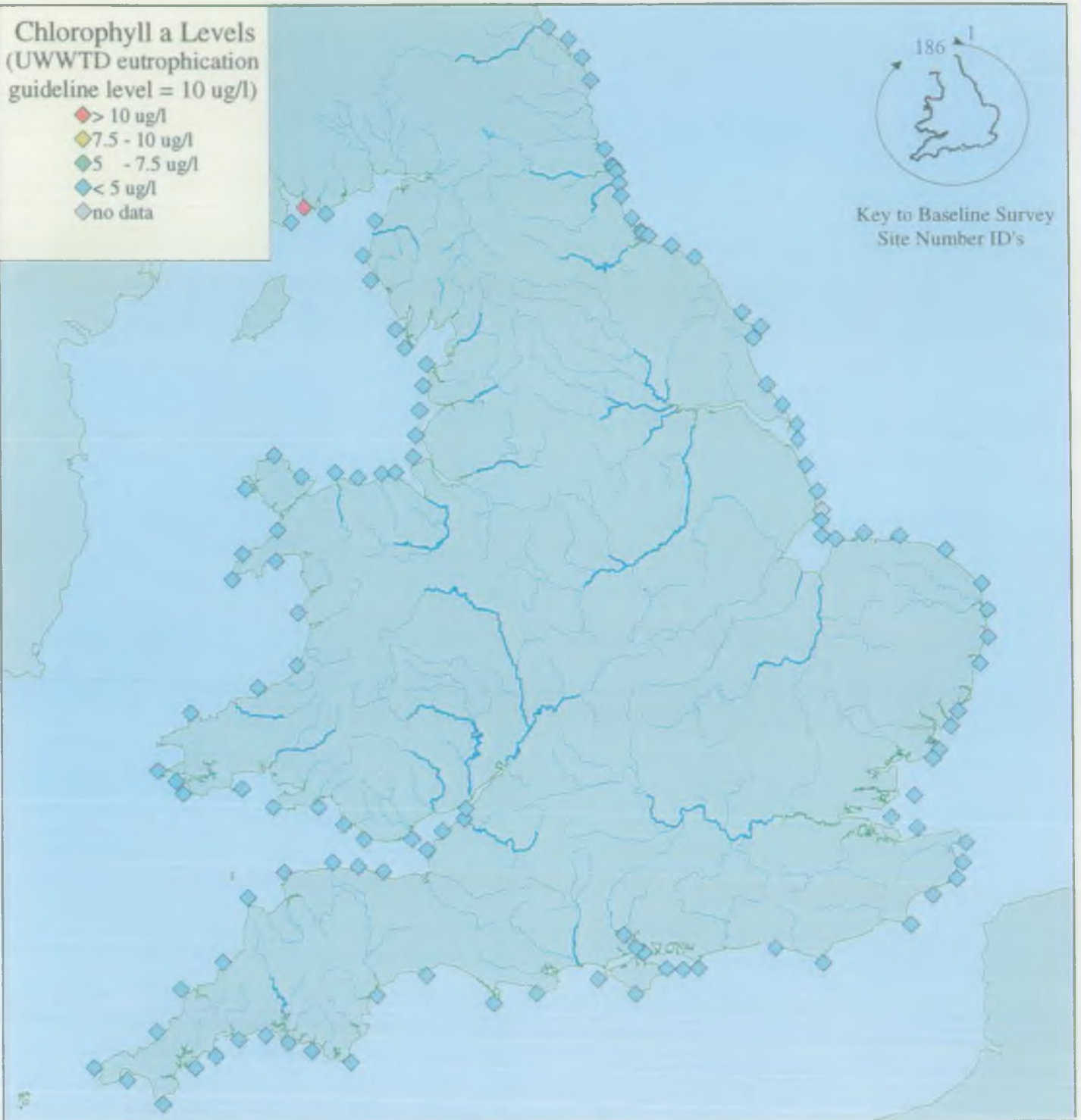
Chlorophyll a Levels, National Baseline Survey, Winter 1996.

Chlorophyll a Levels
(UWWTD eutrophication
guideline level = 10 ug/l)

- ◆ > 10 ug/l
- ◆ 7.5 - 10 ug/l
- ◆ 5 - 7.5 ug/l
- ◆ < 5 ug/l
- ◆ no data



Key to Baseline Survey
Site Number ID's



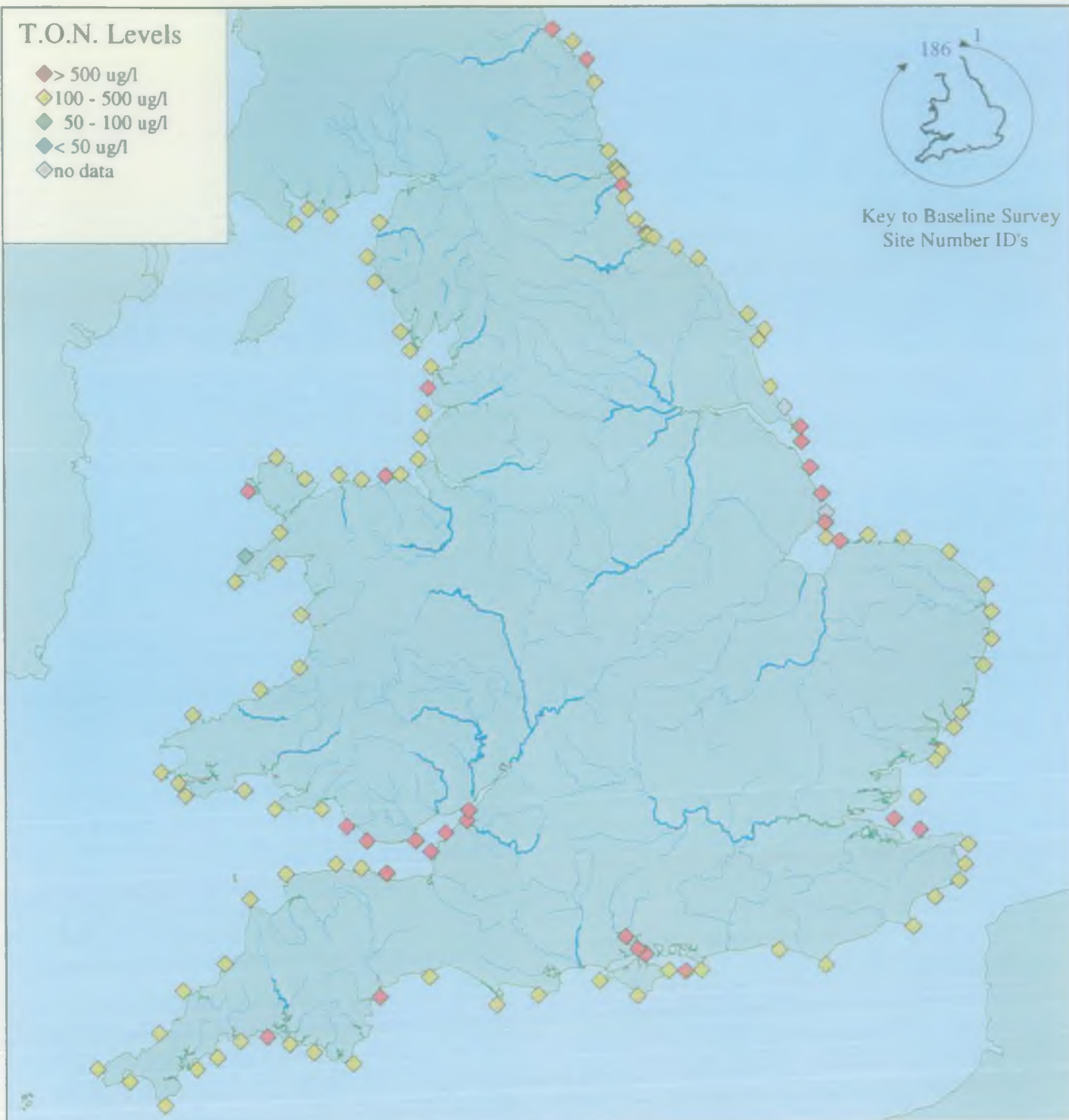
T.O.N. Levels, National Baseline Survey, Winter 1996.

T.O.N. Levels

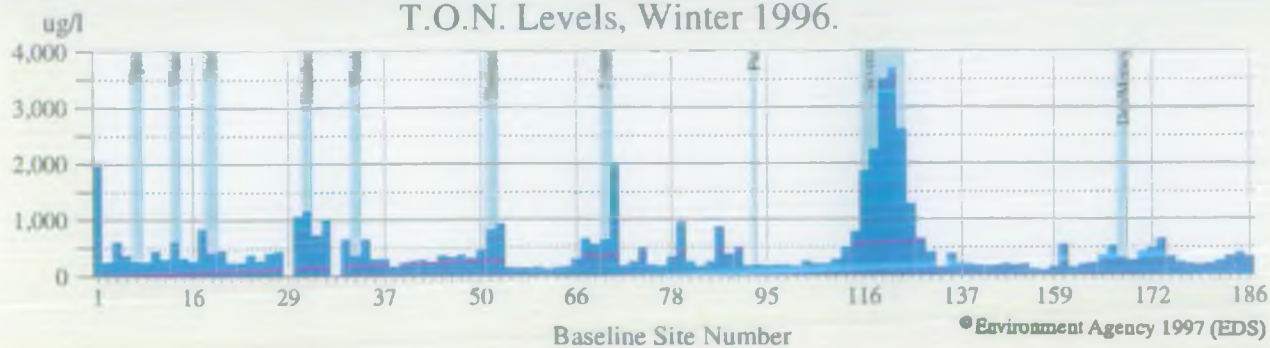
- ◆ > 500 ug/l
- ◆ 100 - 500 ug/l
- ◆ 50 - 100 ug/l
- ◆ < 50 ug/l
- ◆ no data



Key to Baseline Survey
Site Number ID's



T.O.N. Levels, Winter 1996.



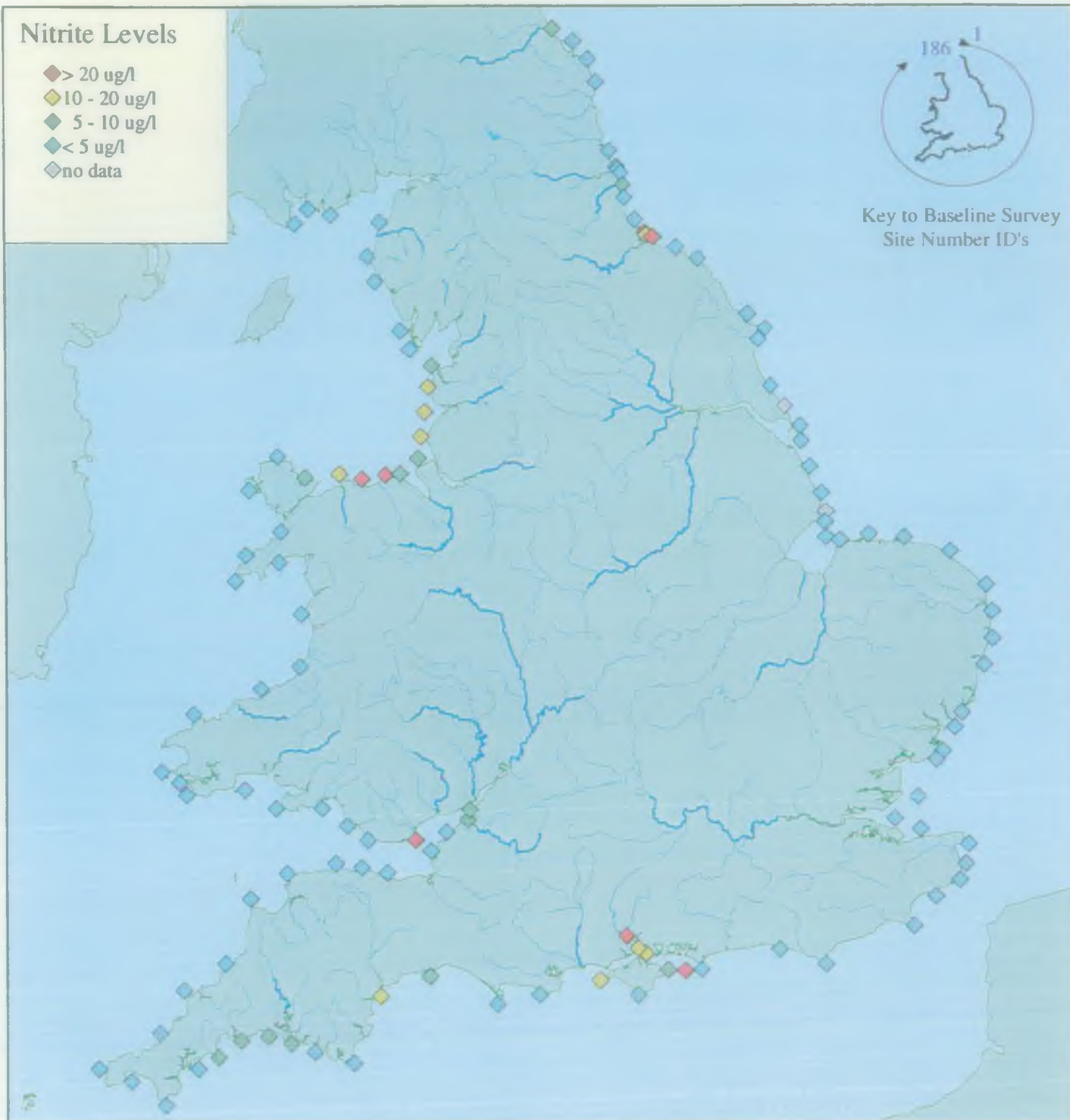
Nitrite Levels, National Baseline Survey, Winter 1996.

Nitrite Levels

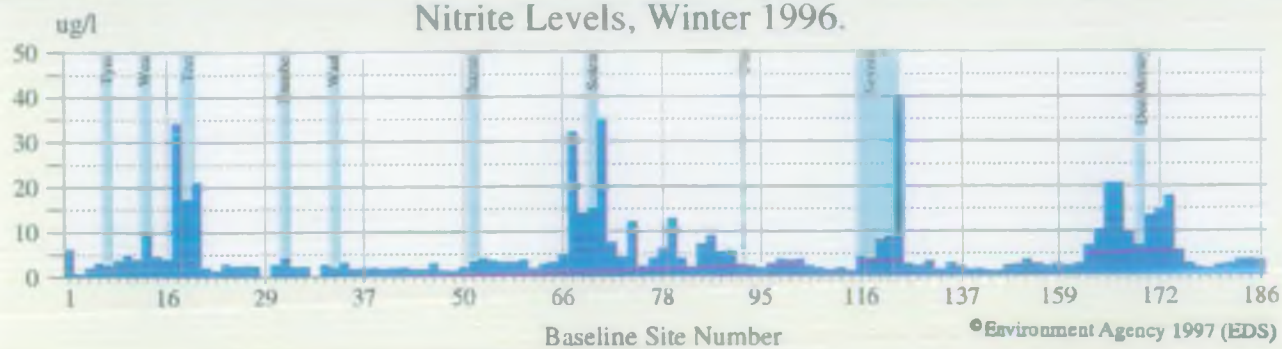
- ◆ > 20 ug/l
- ◆ 10 - 20 ug/l
- ◆ 5 - 10 ug/l
- ◆ < 5 ug/l
- ◆ no data



Key to Baseline Survey
Site Number ID's



Nitrite Levels, Winter 1996.



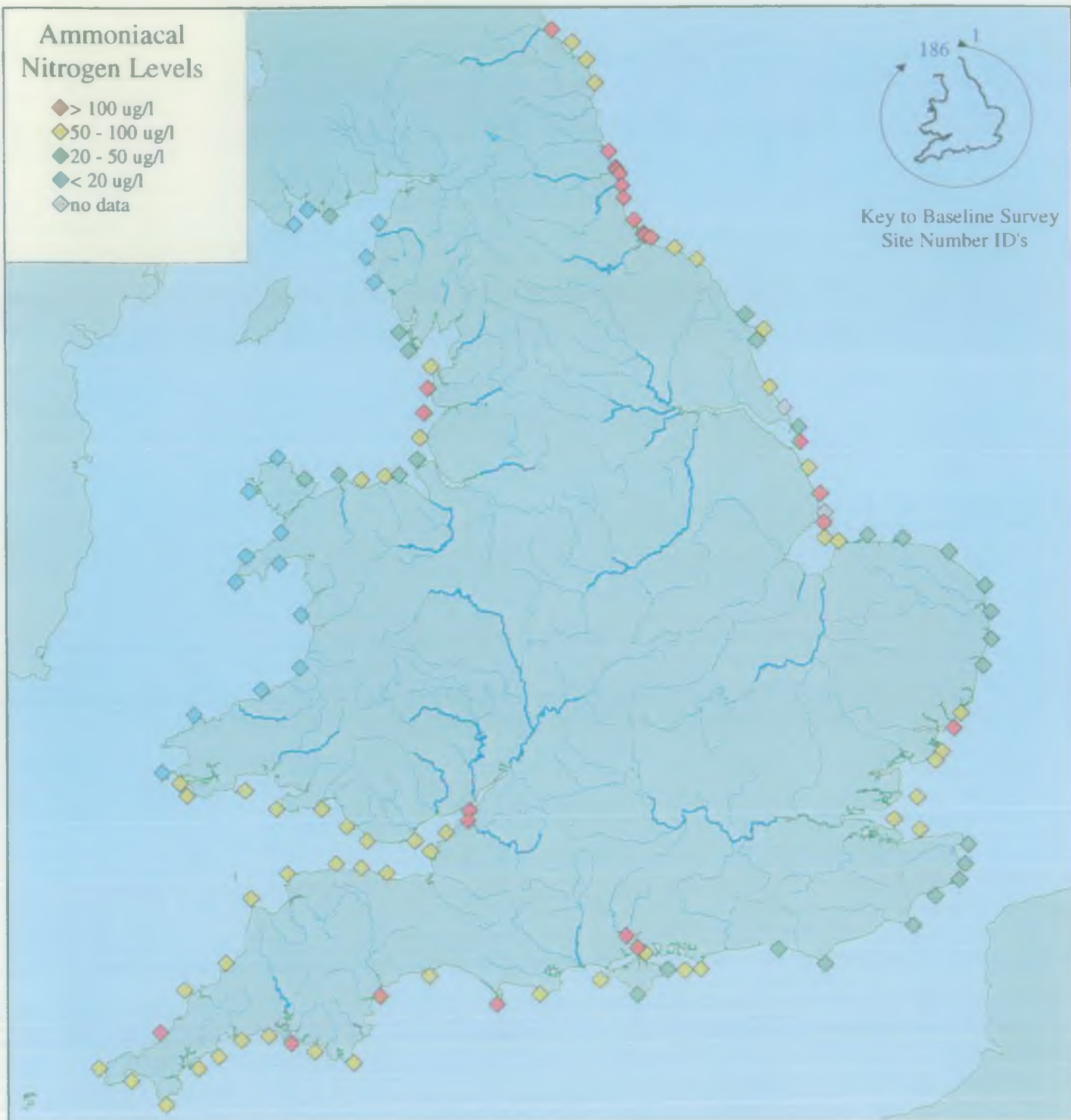
Ammoniacal Nitrogen Levels, National Baseline Survey, Winter 1996.

Ammoniacal Nitrogen Levels

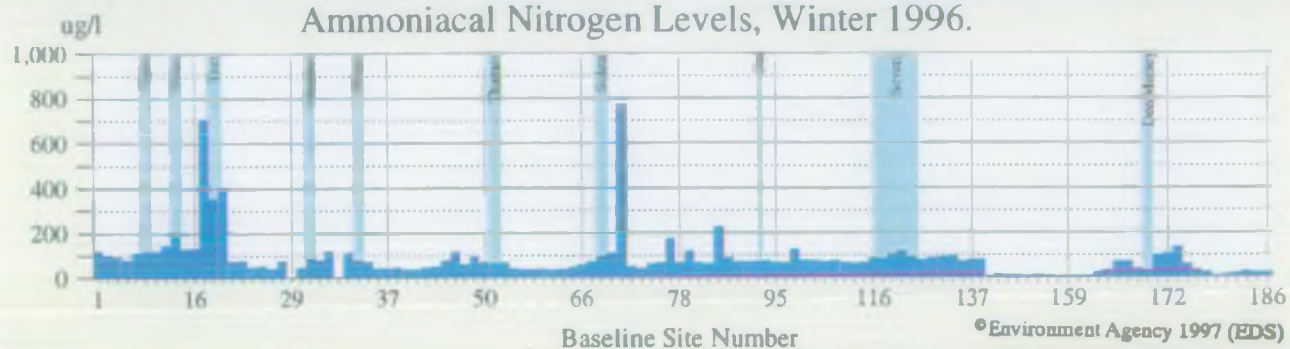
- ◆ > 100 ug/l
- ◆ 50 - 100 ug/l
- ◆ 20 - 50 ug/l
- ◆ < 20 ug/l
- ◆ no data



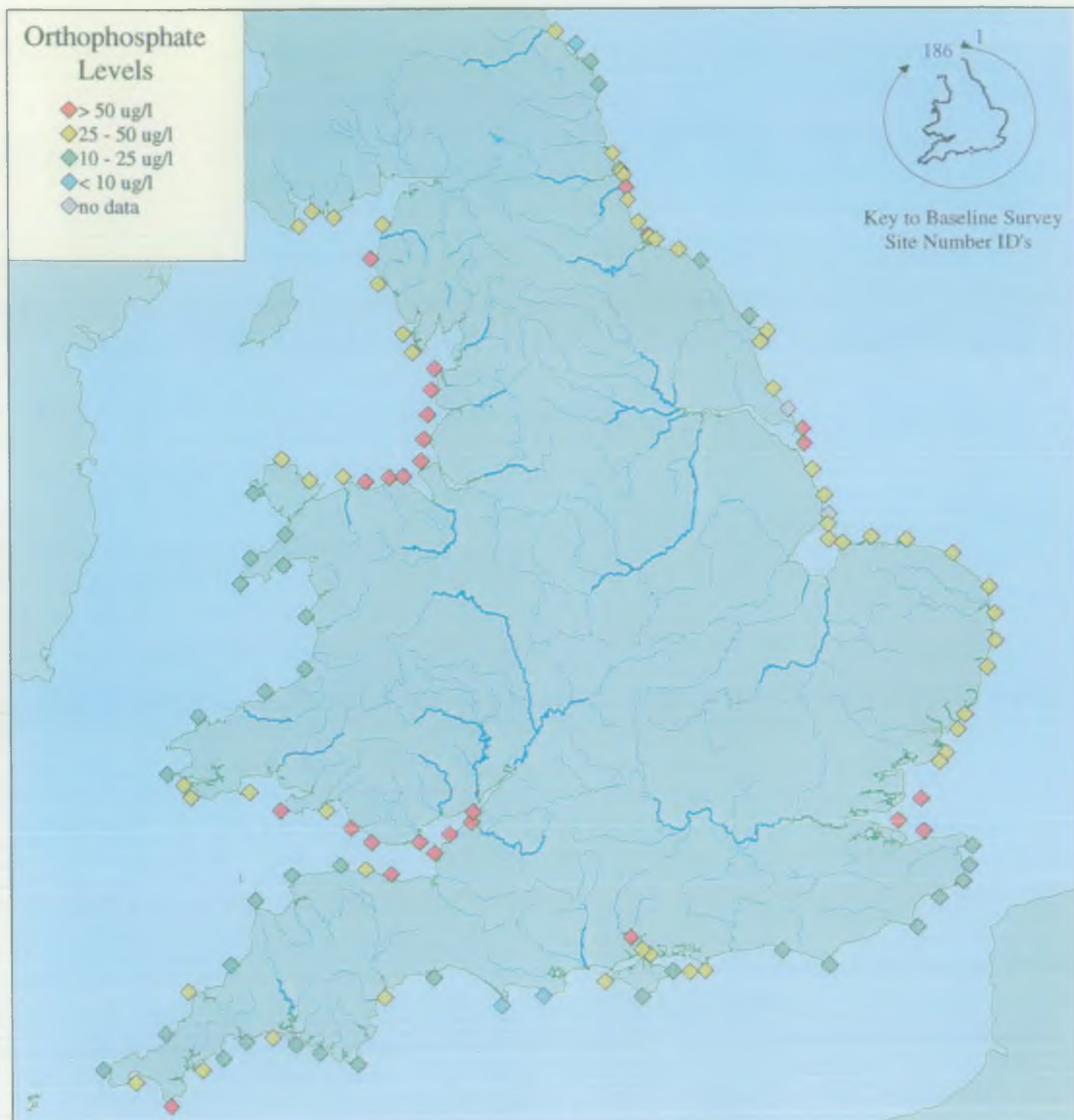
Key to Baseline Survey
Site Number ID's



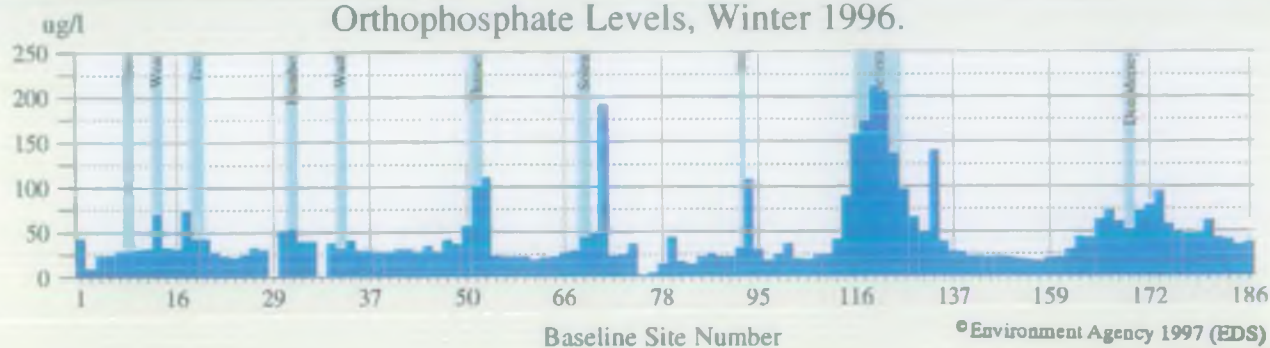
Ammoniacal Nitrogen Levels, Winter 1996.



Orthophosphate Levels, National Baseline Survey, Winter 1996.



Orthophosphate Levels, Winter 1996.



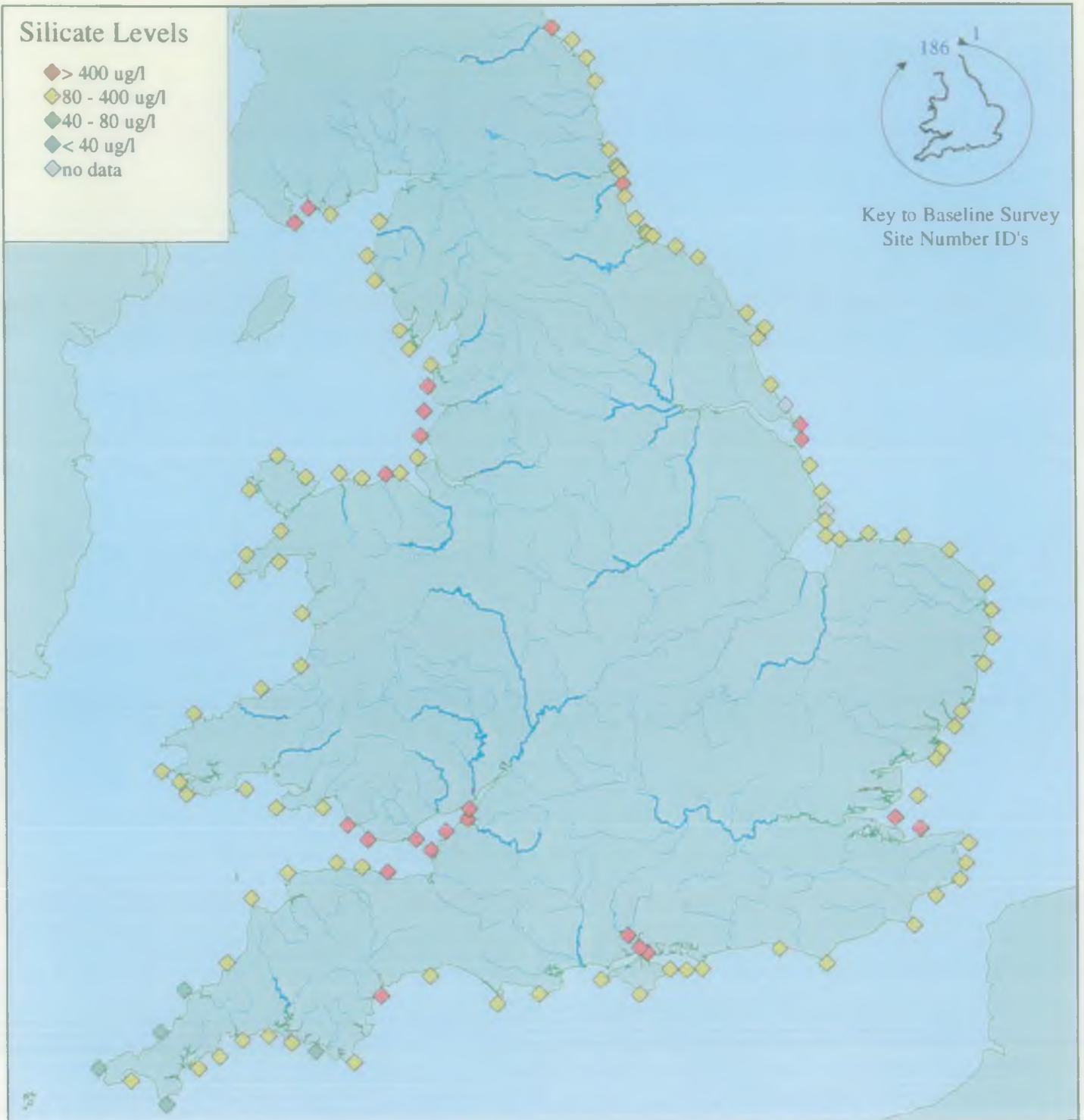
Silicate Levels, National Baseline Survey, Winter 1996.

Silicate Levels

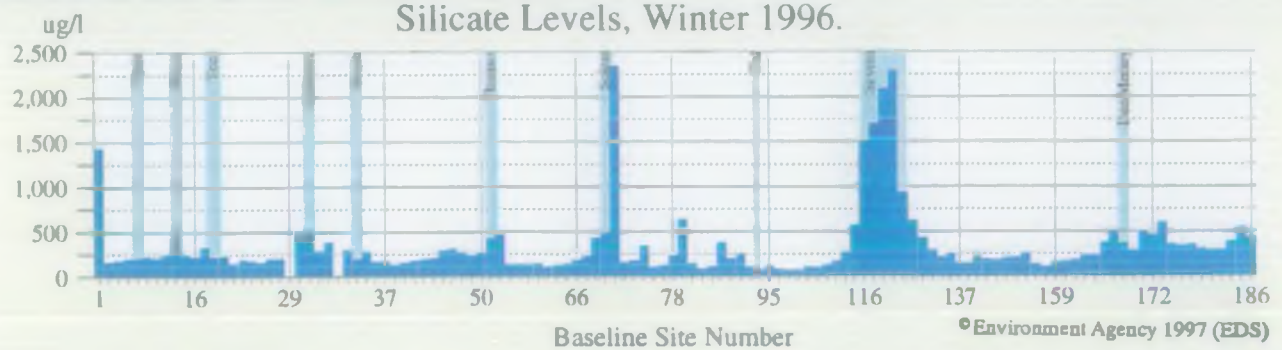
- ◆ > 400 ug/l
- ◆ 80 - 400 ug/l
- ◆ 40 - 80 ug/l
- ◆ < 40 ug/l
- ◇ no data



Key to Baseline Survey
Site Number ID's



Silicate Levels, Winter 1996.



Suspended Solids at 105°C, National Baseline Survey, Winter 1996.

Suspended Solids at 105°C

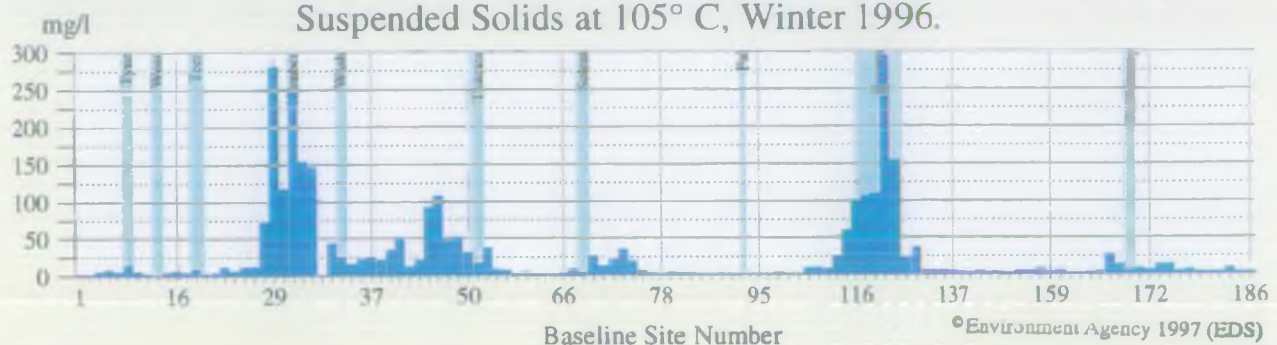
- ◆ > 60 mg/l
- ◆ 30 - 60 mg/l
- ◆ 15 - 30 mg/l
- ◆ < 15 mg/l
- ◆ no data



Key to Baseline Survey Site Number ID's



Suspended Solids at 105° C, Winter 1996.



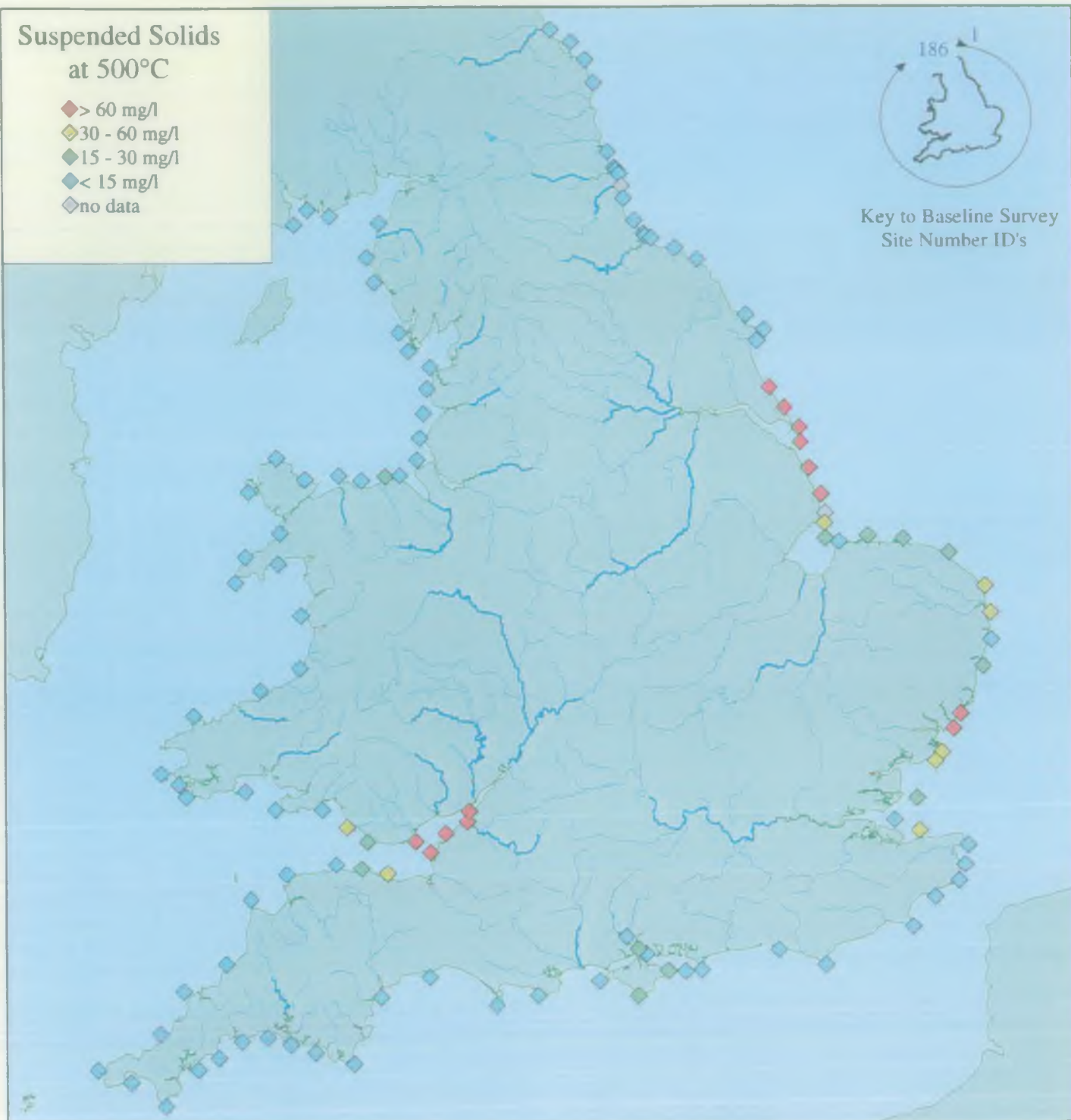
Suspended Solids at 500°C, National Baseline Survey, Winter 1996.

Suspended Solids at 500°C

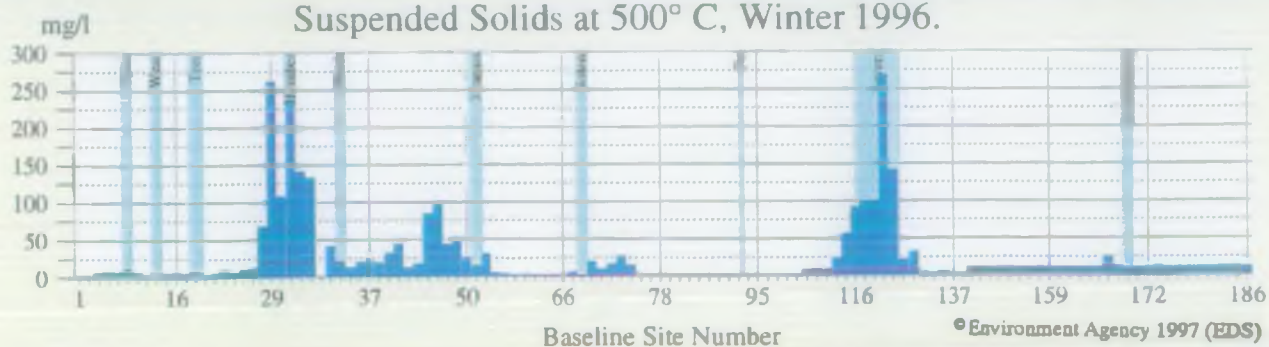
- ◆ > 60 mg/l
- ◆ 30 - 60 mg/l
- ◆ 15 - 30 mg/l
- ◆ < 15 mg/l
- ◆ no data



Key to Baseline Survey Site Number ID's



Suspended Solids at 500° C, Winter 1996.



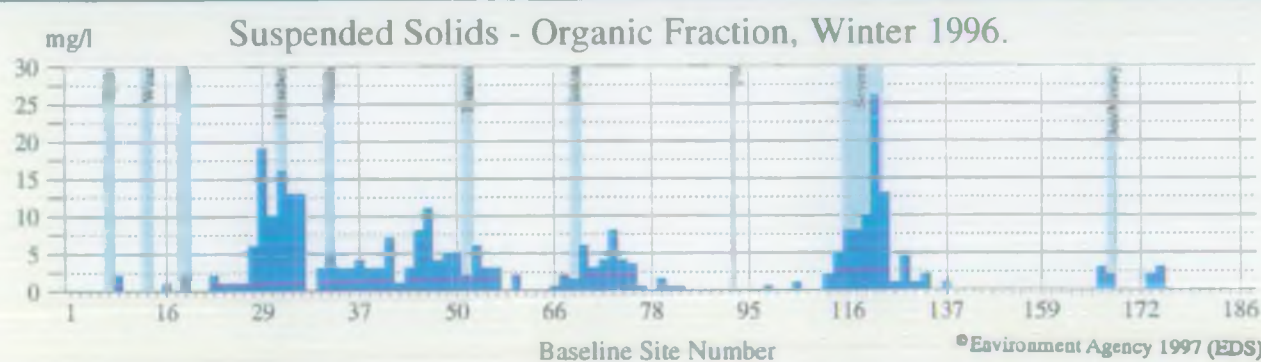
Suspended Solids - Organic Fraction, National Baseline Survey, Winter 1996.

Suspended Solids Organic Fraction

- ◆ > 12 mg/l
- ◆ 8 - 12 mg/l
- ◆ 4 - 8 mg/l
- ◆ < 4 mg/l
- ◇ < Limit of Detection
- ◇ no data



Key to Baseline Survey
Site Number ID's



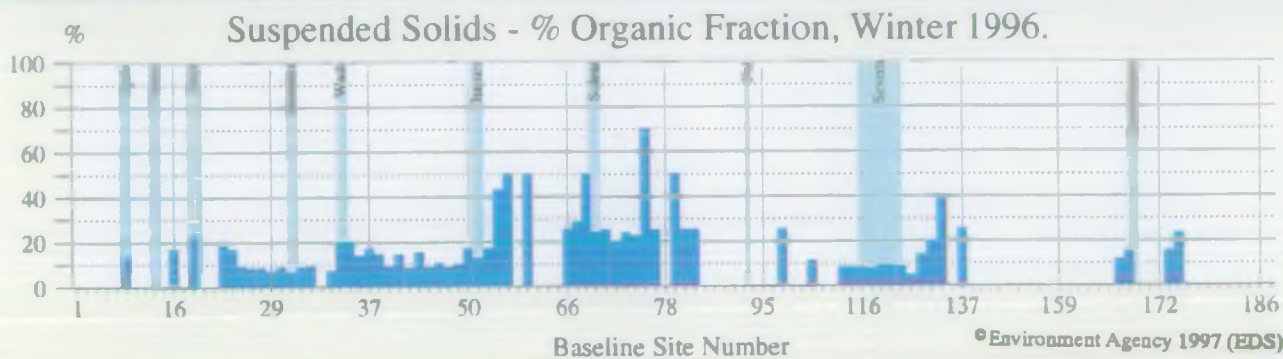
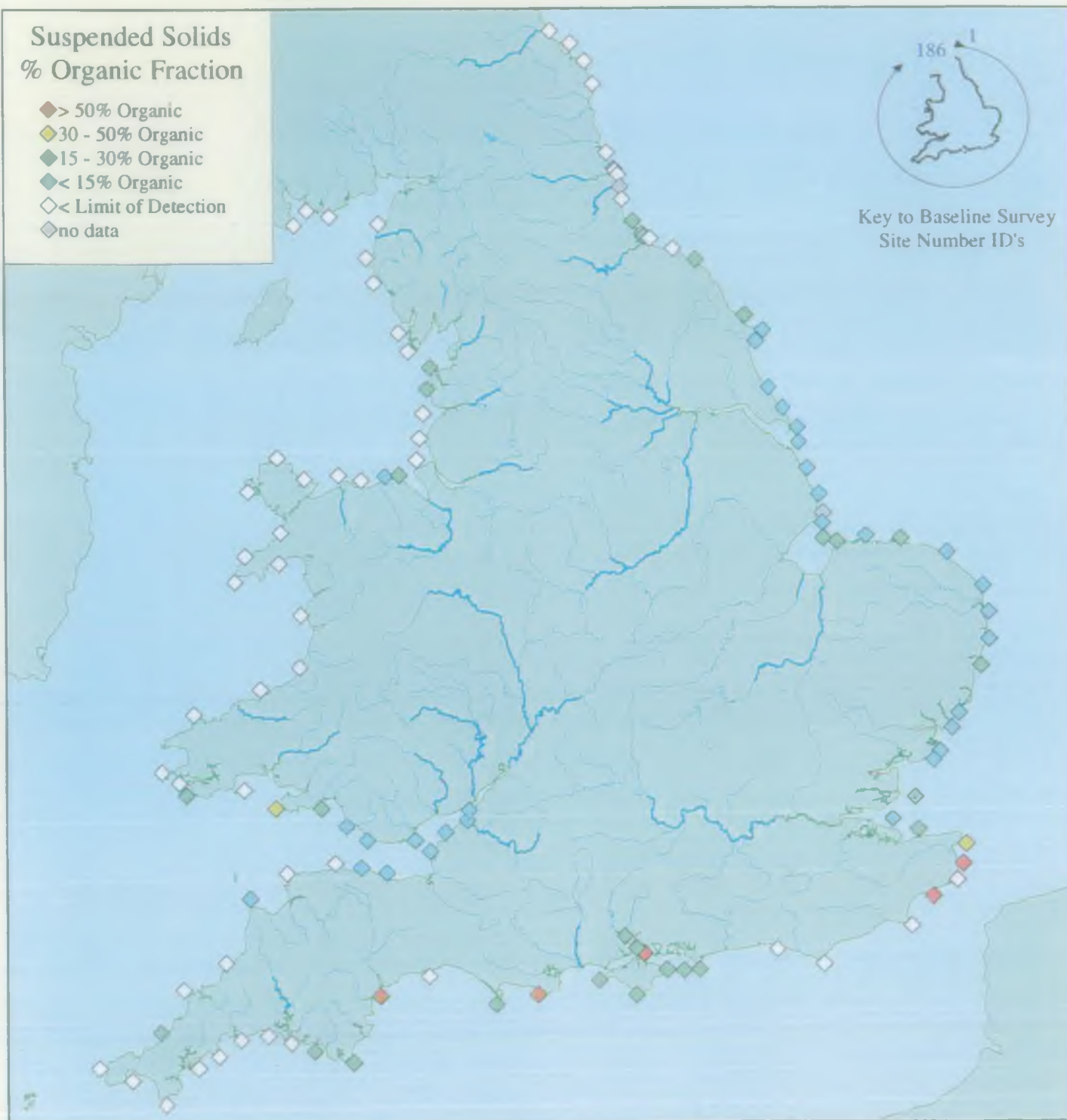
Suspended Solids - % Organic Fraction, National Baseline Survey, Winter 1996.

Suspended Solids % Organic Fraction

- ◆ > 50% Organic
- ◆ 30 - 50% Organic
- ◆ 15 - 30% Organic
- ◆ < 15% Organic
- ◇ < Limit of Detection
- ◇ no data



Key to Baseline Survey
Site Number ID's



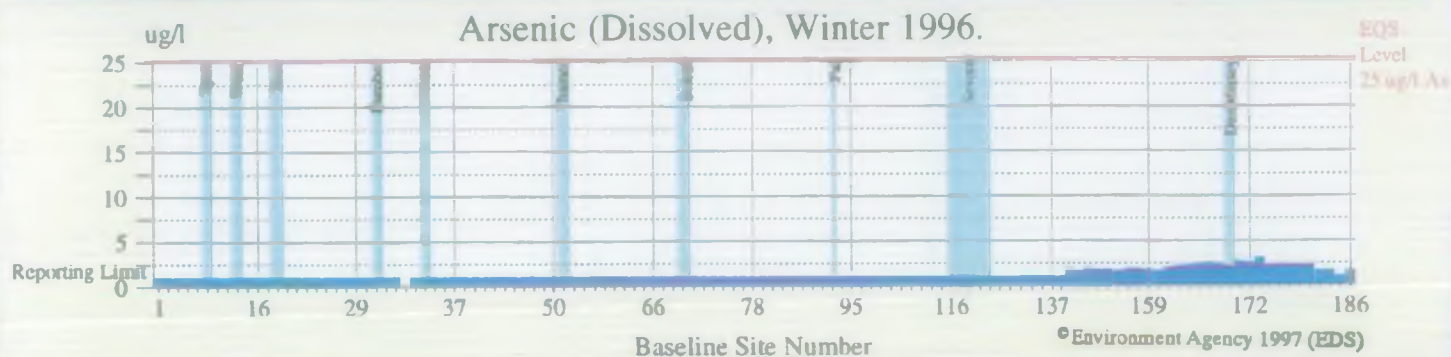
Arsenic (Dissolved), National Baseline Survey, Winter 1996.

Arsenic (Dissolved)
EQS=25 ug/l As

- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Cadmium (Dissolved), National Baseline Survey, Winter 1996.

Cadmium (Dissolved)
EQS=2.5 ug/l Cd

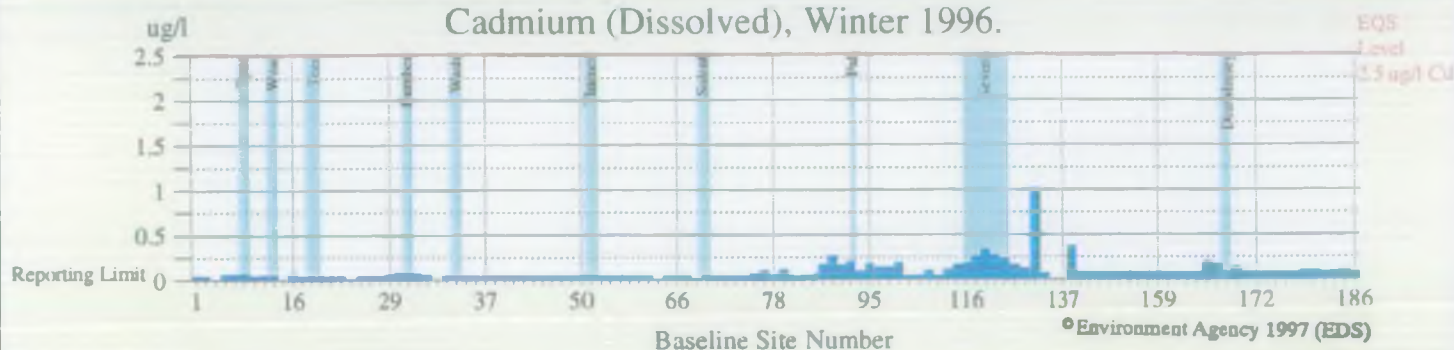
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Cadmium (Dissolved), Winter 1996.



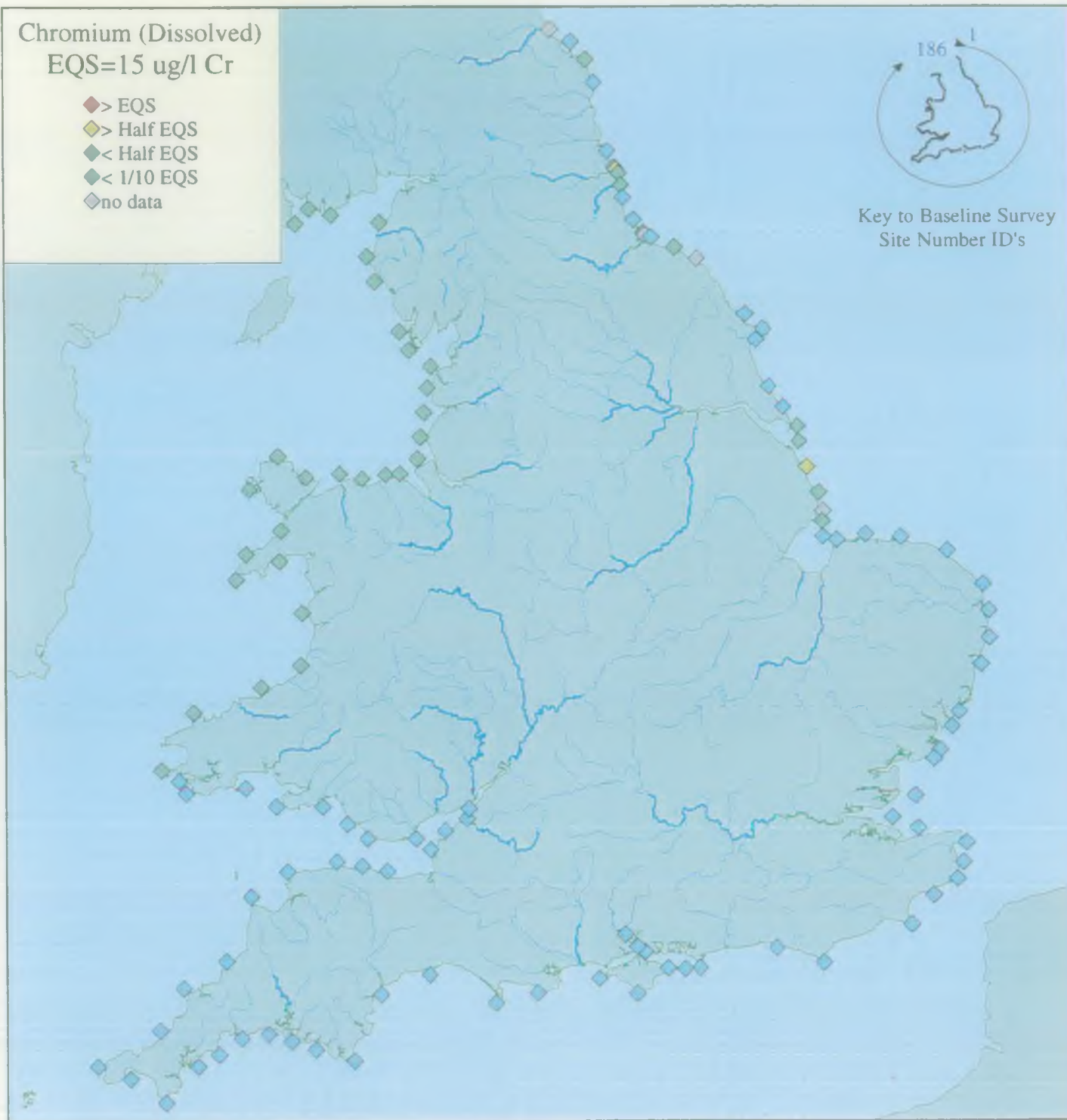
Chromium (Dissolved), National Baseline Survey, Winter 1996.

Chromium (Dissolved)
EQS=15 ug/l Cr

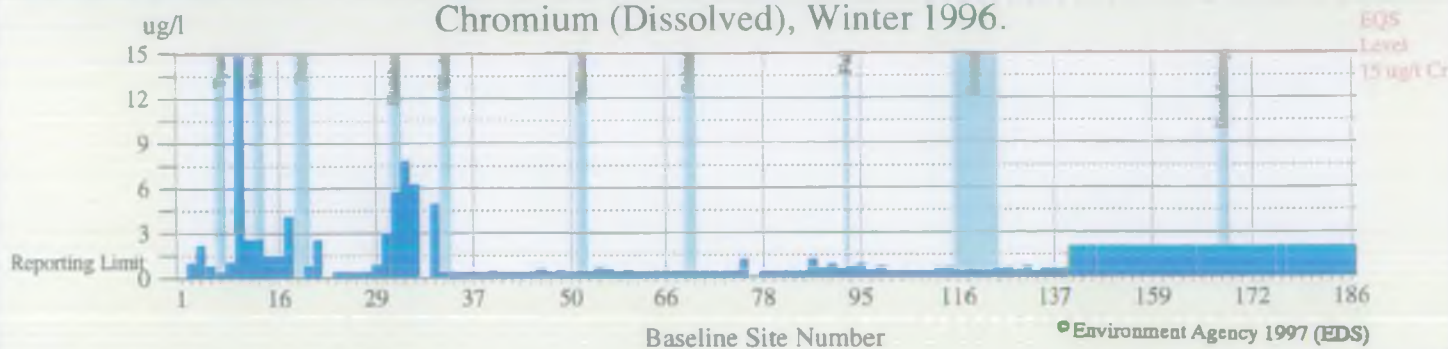
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



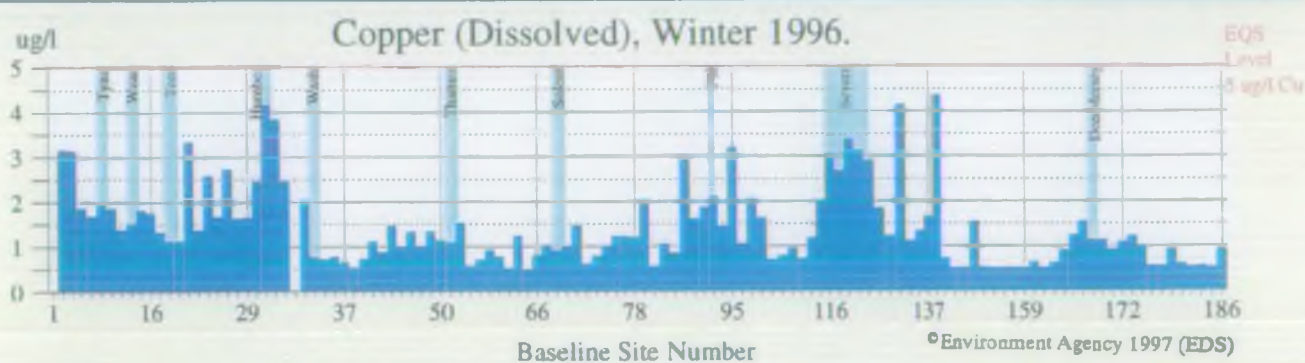
Key to Baseline Survey
Site Number ID's



Chromium (Dissolved), Winter 1996.



Copper (Dissolved), National Baseline Survey, Winter 1996.



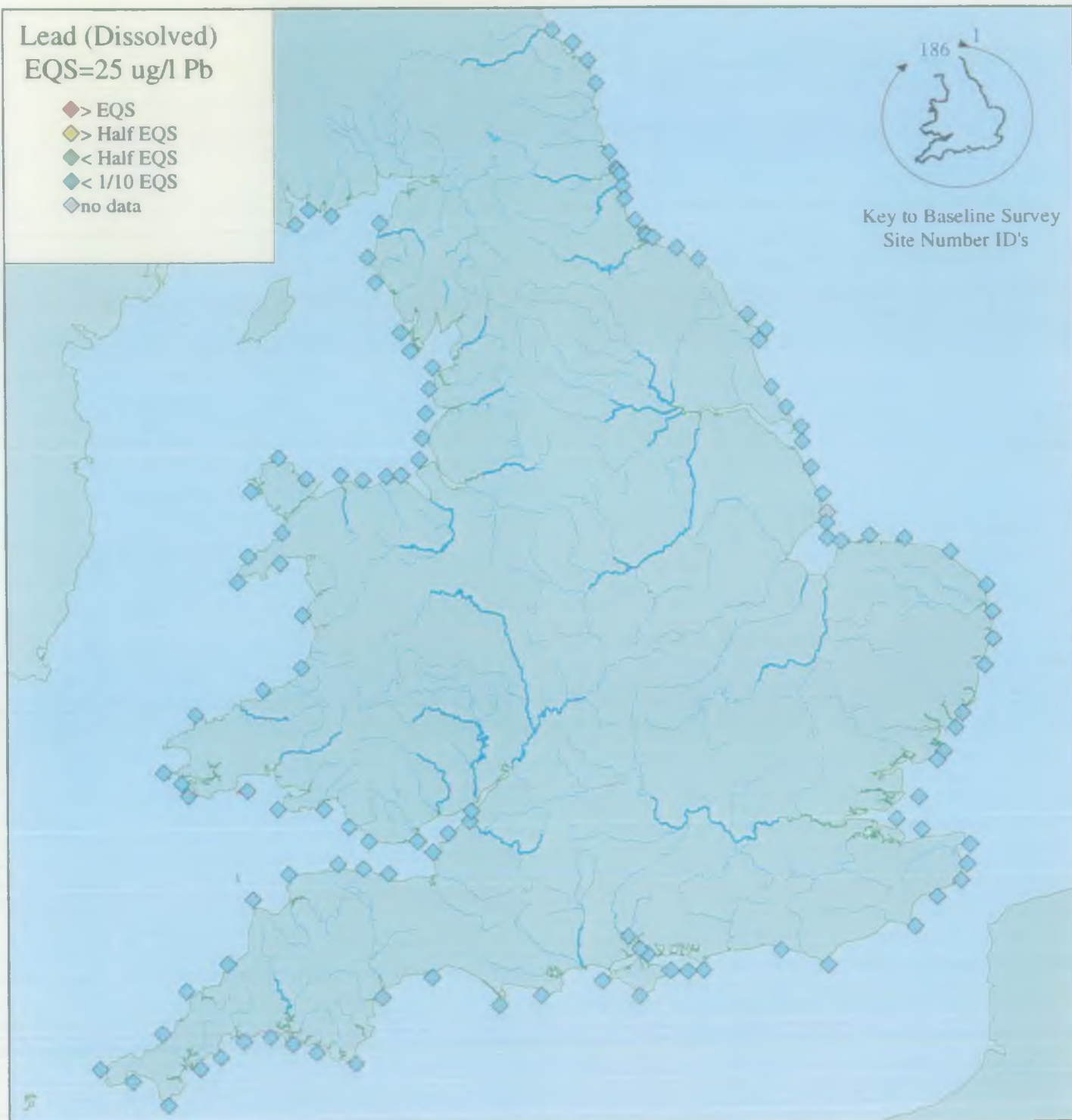
Lead (Dissolved), National Baseline Survey, Winter 1996.

Lead (Dissolved)
EQS=25 ug/l Pb

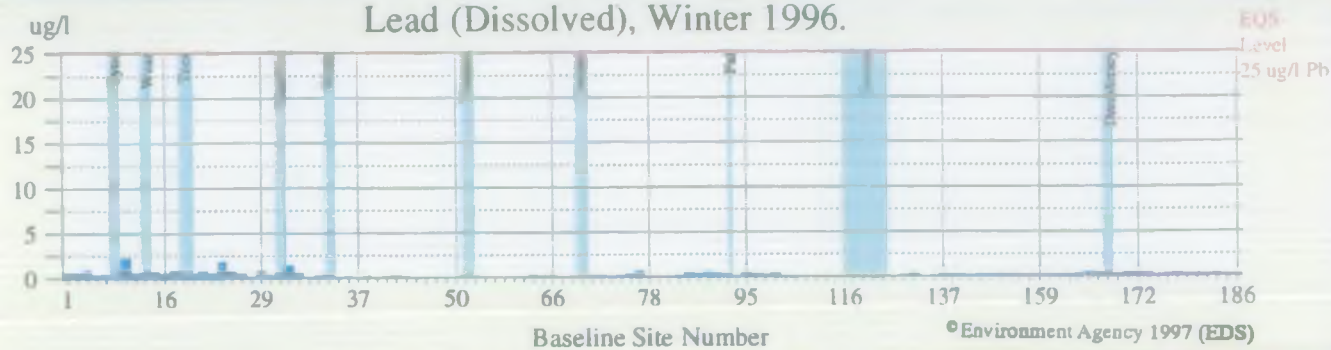
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



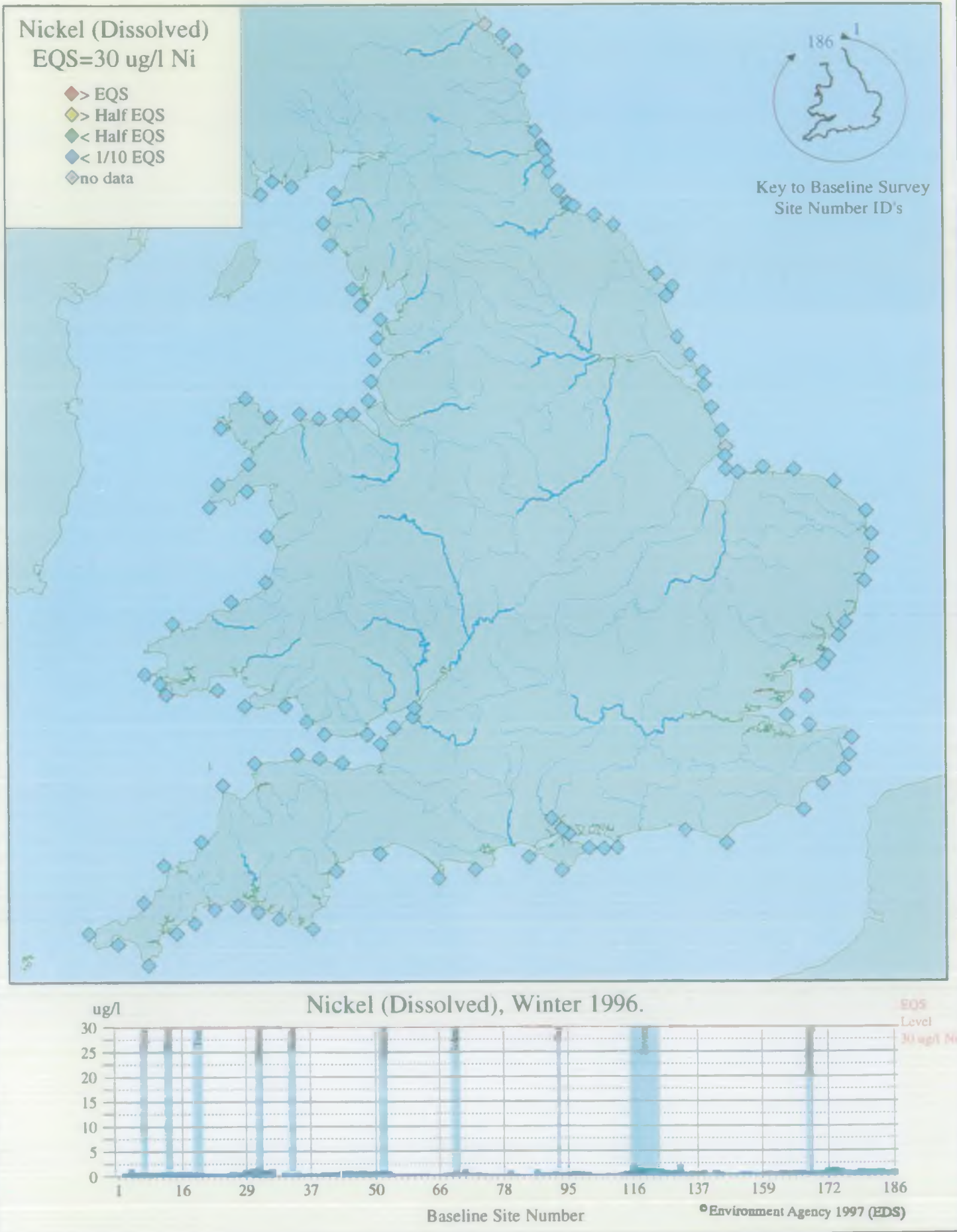
Key to Baseline Survey
Site Number ID's



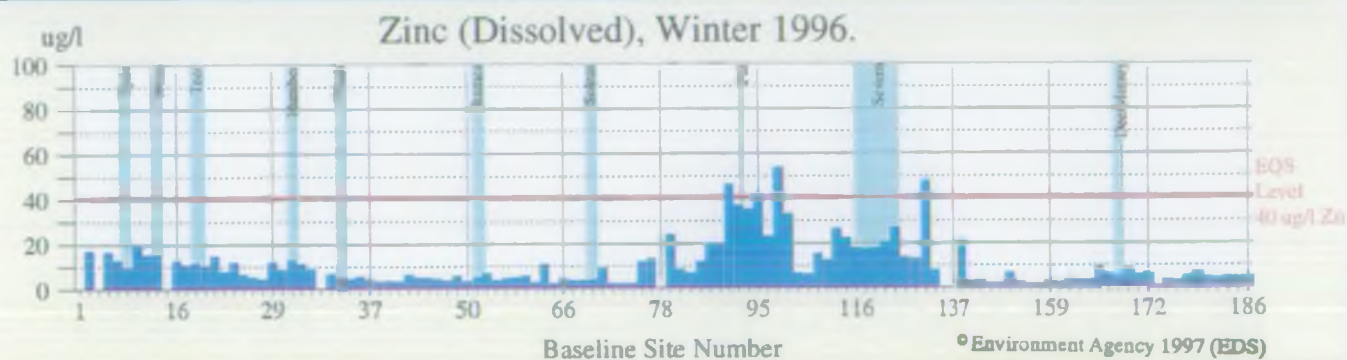
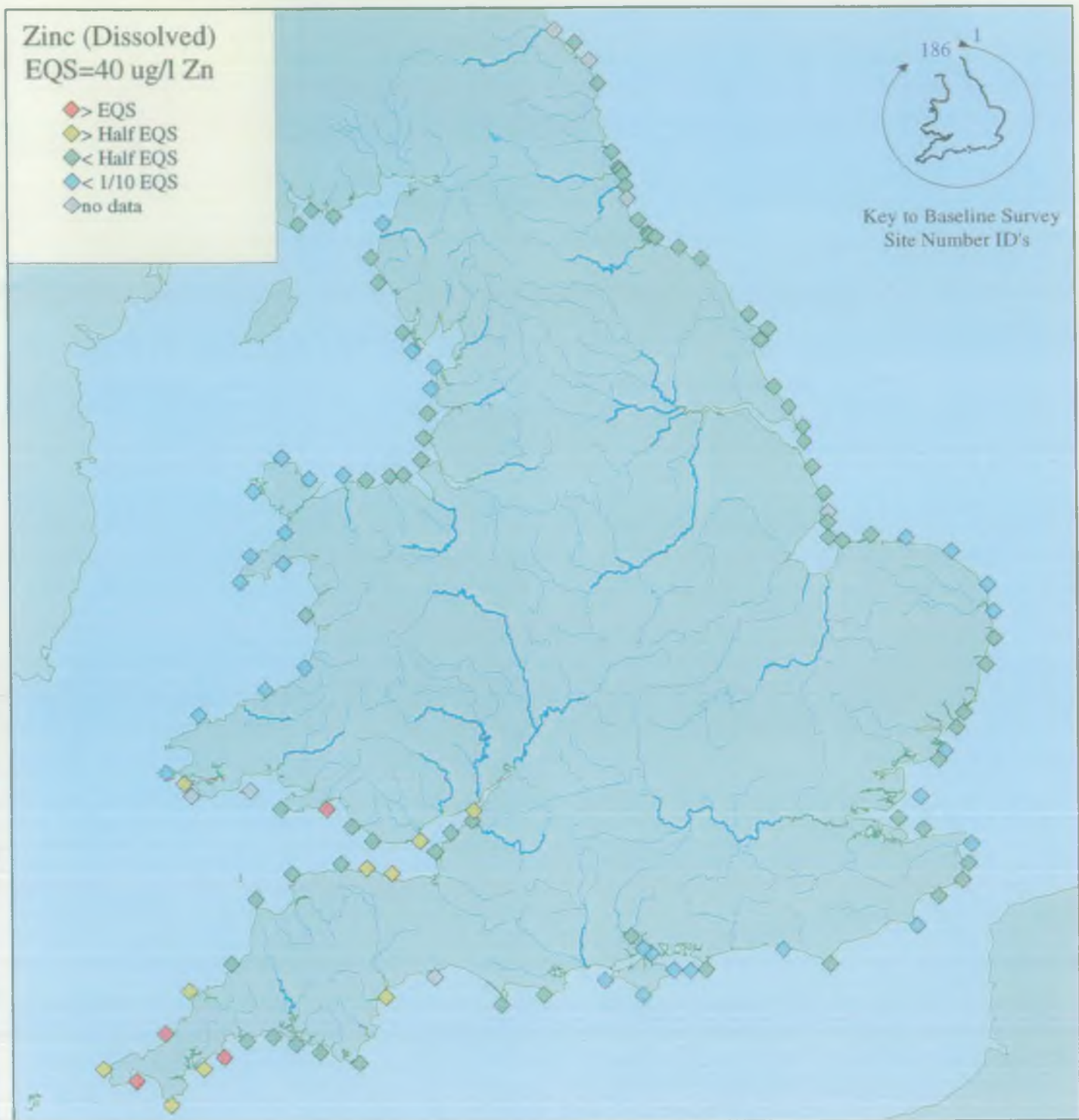
Lead (Dissolved), Winter 1996.



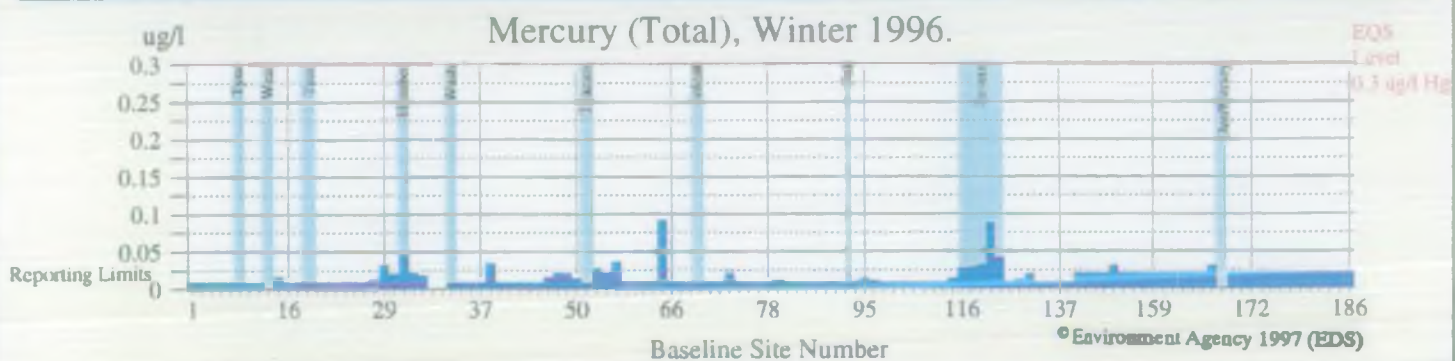
Nickel (Dissolved), National Baseline Survey, Winter 1996.



Zinc (Dissolved), National Baseline Survey, Winter 1996.



Mercury (Total), National Baseline Survey, Winter 1996.



Organic Chemicals, National Baseline Survey, Winter 1996.



Sample Sites Where Organic Chemicals Found Above Limit of Detection

Base 78 : 0.00121 ug/l of HCH-Gamma
Base 119 : 0.00212 ug/l of HCH-Gamma

LABORATORY DATA MAPS

SPRING 1996

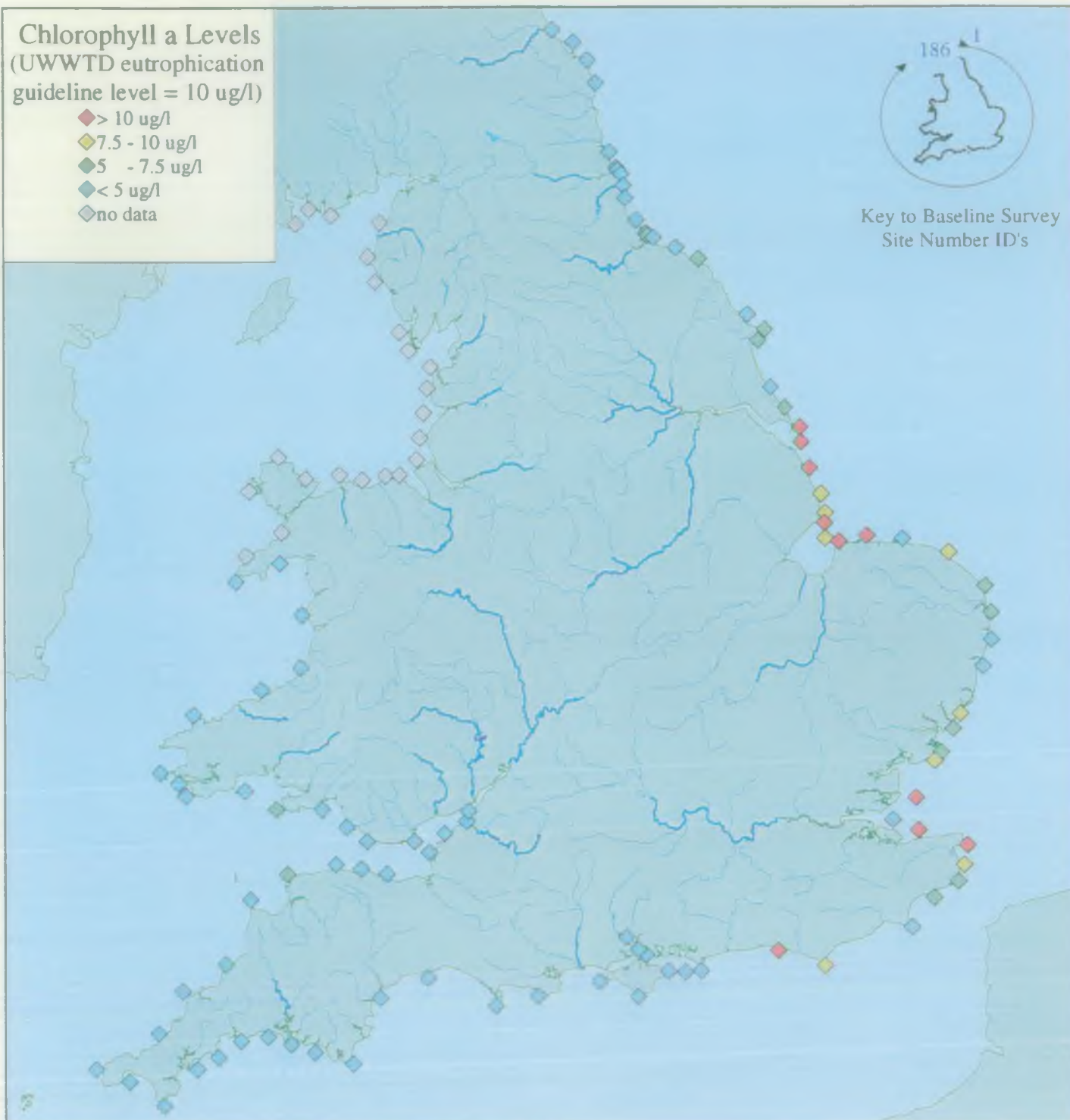
Chlorophyll a Levels, National Baseline Survey, Spring 1996.

Chlorophyll a Levels
(UWWTD eutrophication
guideline level = 10 ug/l)

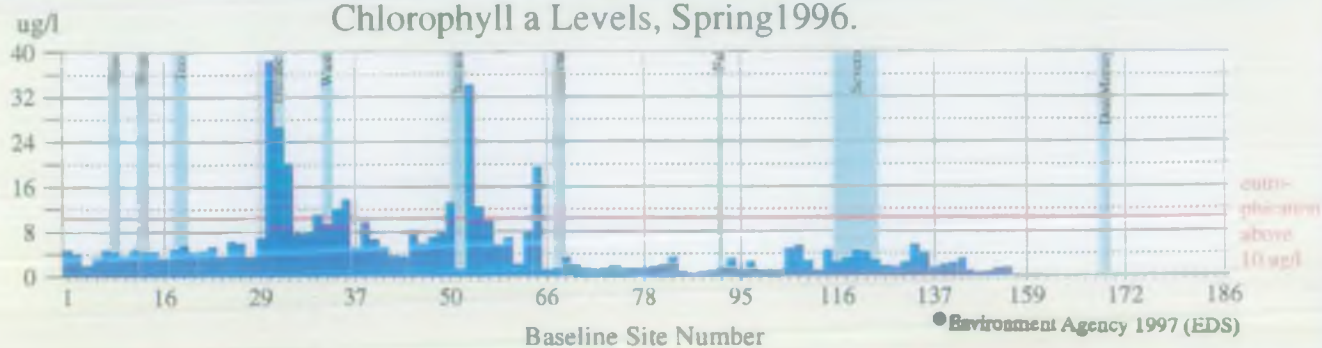
- ◆ > 10 ug/l
- ◆ 7.5 - 10 ug/l
- ◆ 5 - 7.5 ug/l
- ◆ < 5 ug/l
- ◆ no data



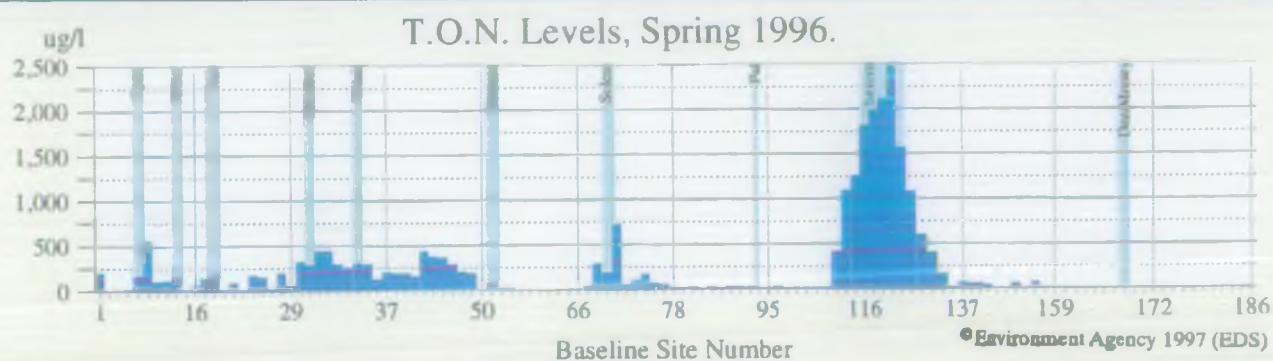
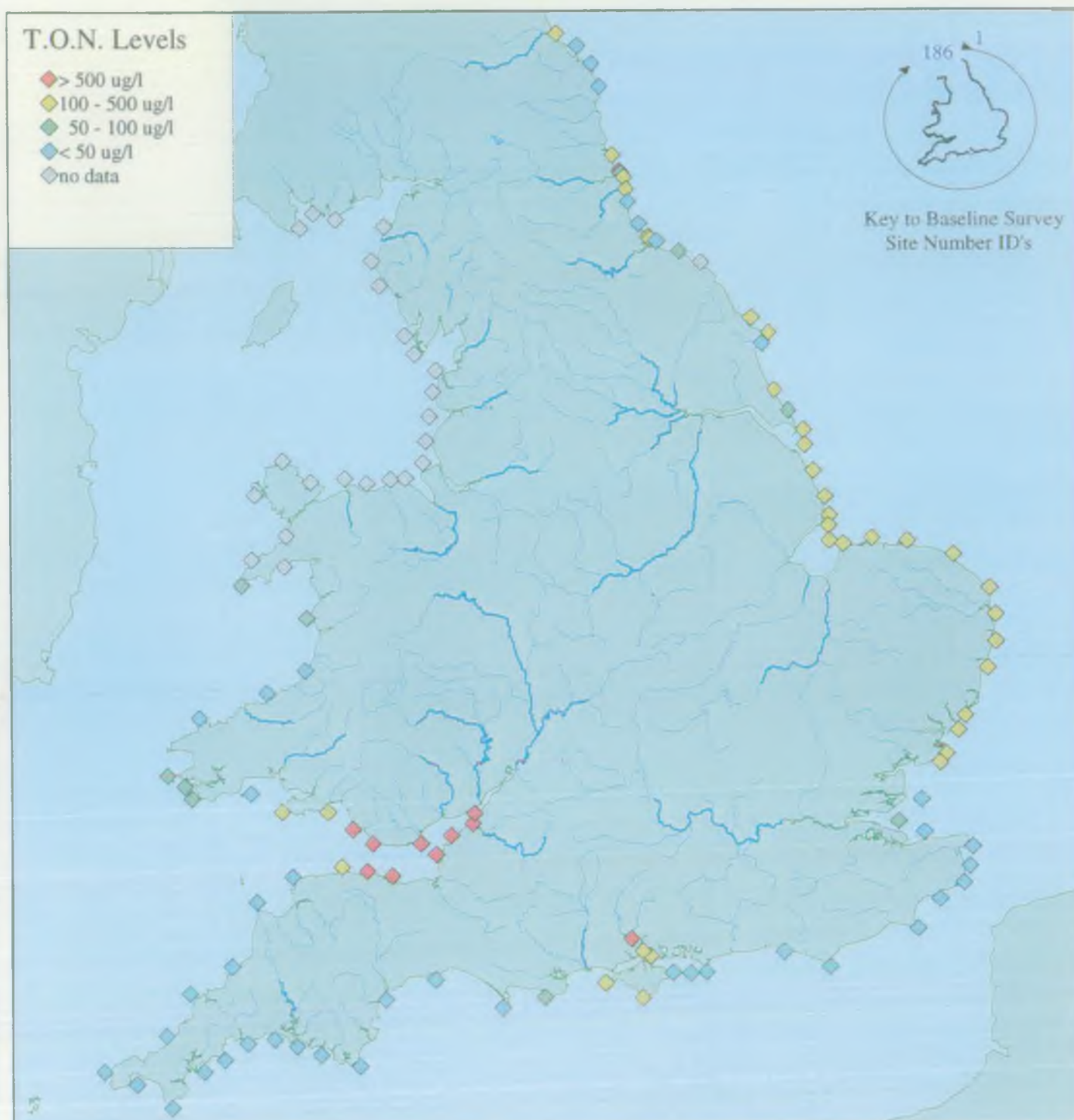
Key to Baseline Survey
Site Number ID's



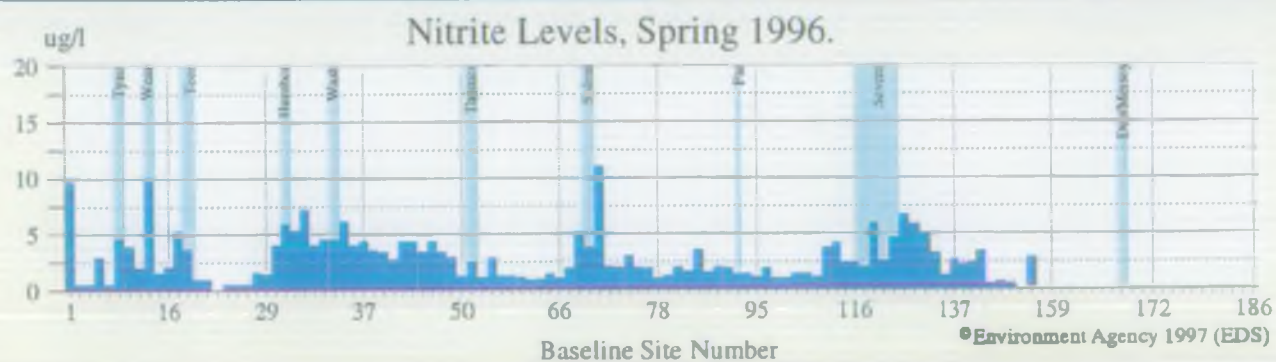
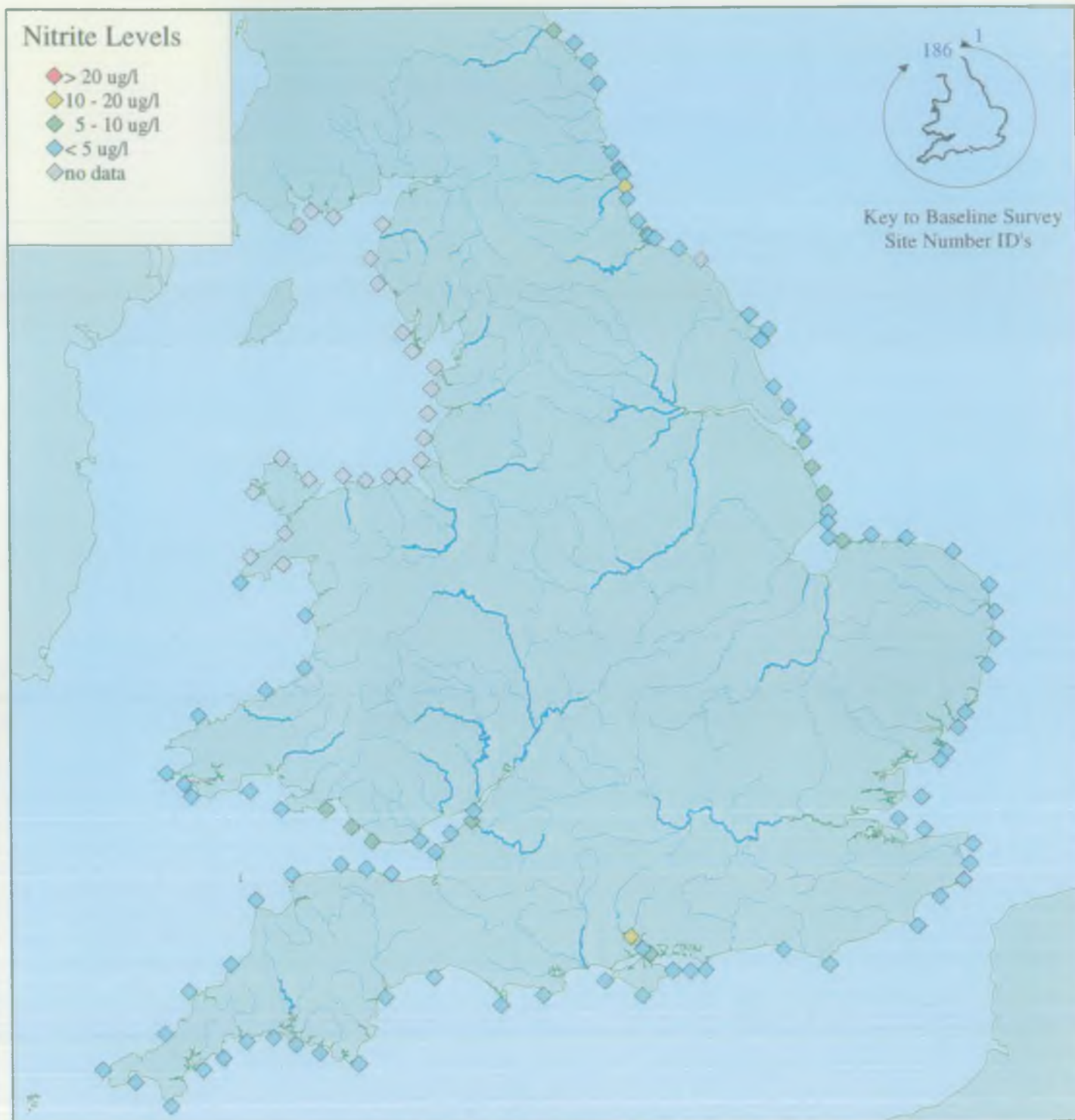
Chlorophyll a Levels, Spring 1996.



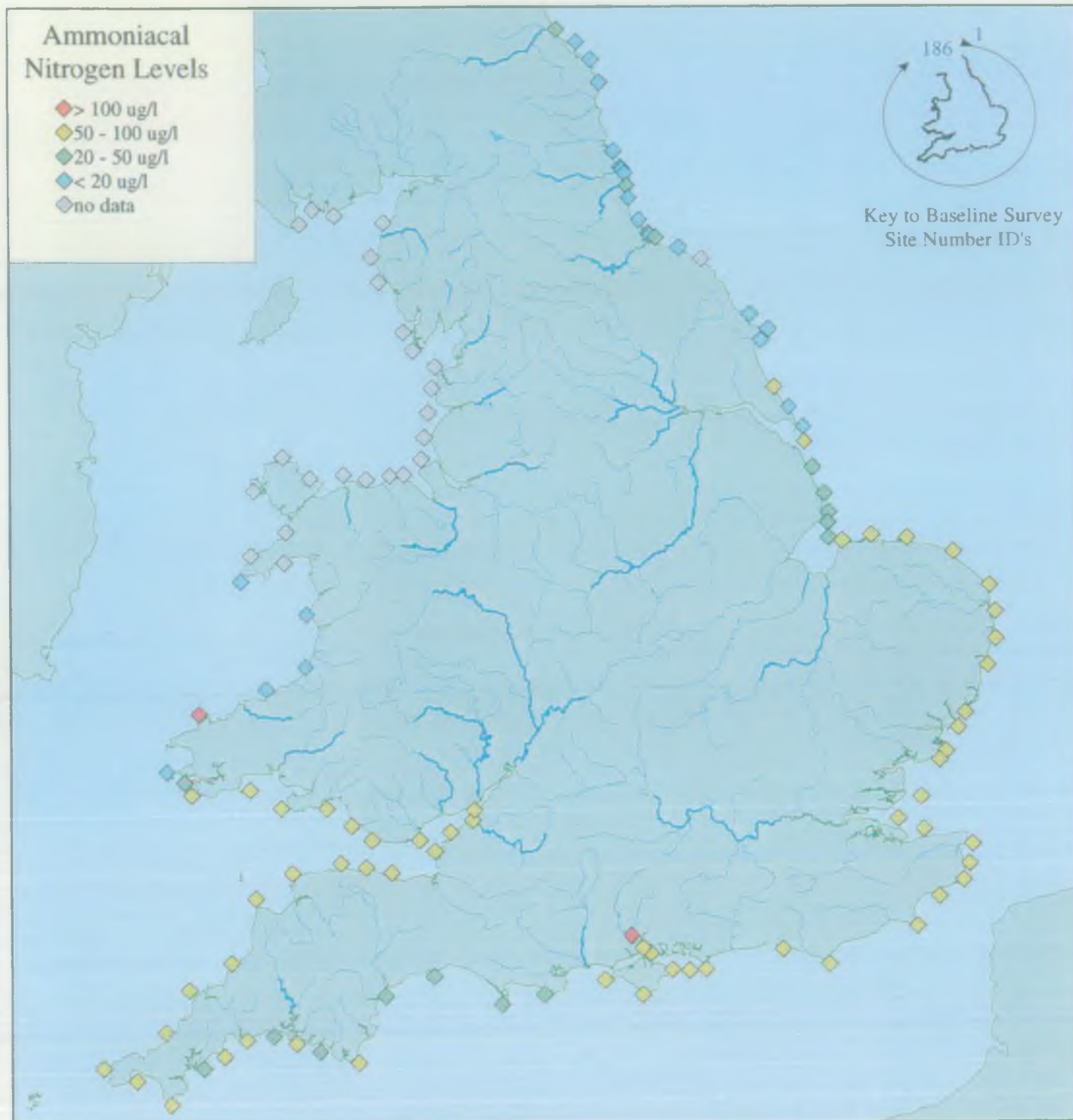
T.O.N. Levels, National Baseline Survey, Spring 1996.



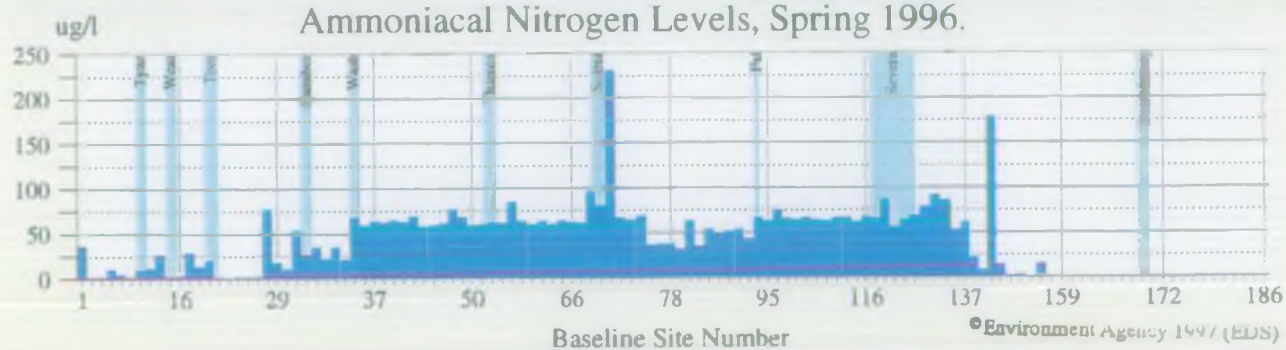
Nitrite Levels, National Baseline Survey, Spring 1996.



Ammoniacal Nitrogen Levels, National Baseline Survey, Spring 1996.



Ammoniacal Nitrogen Levels, Spring 1996.



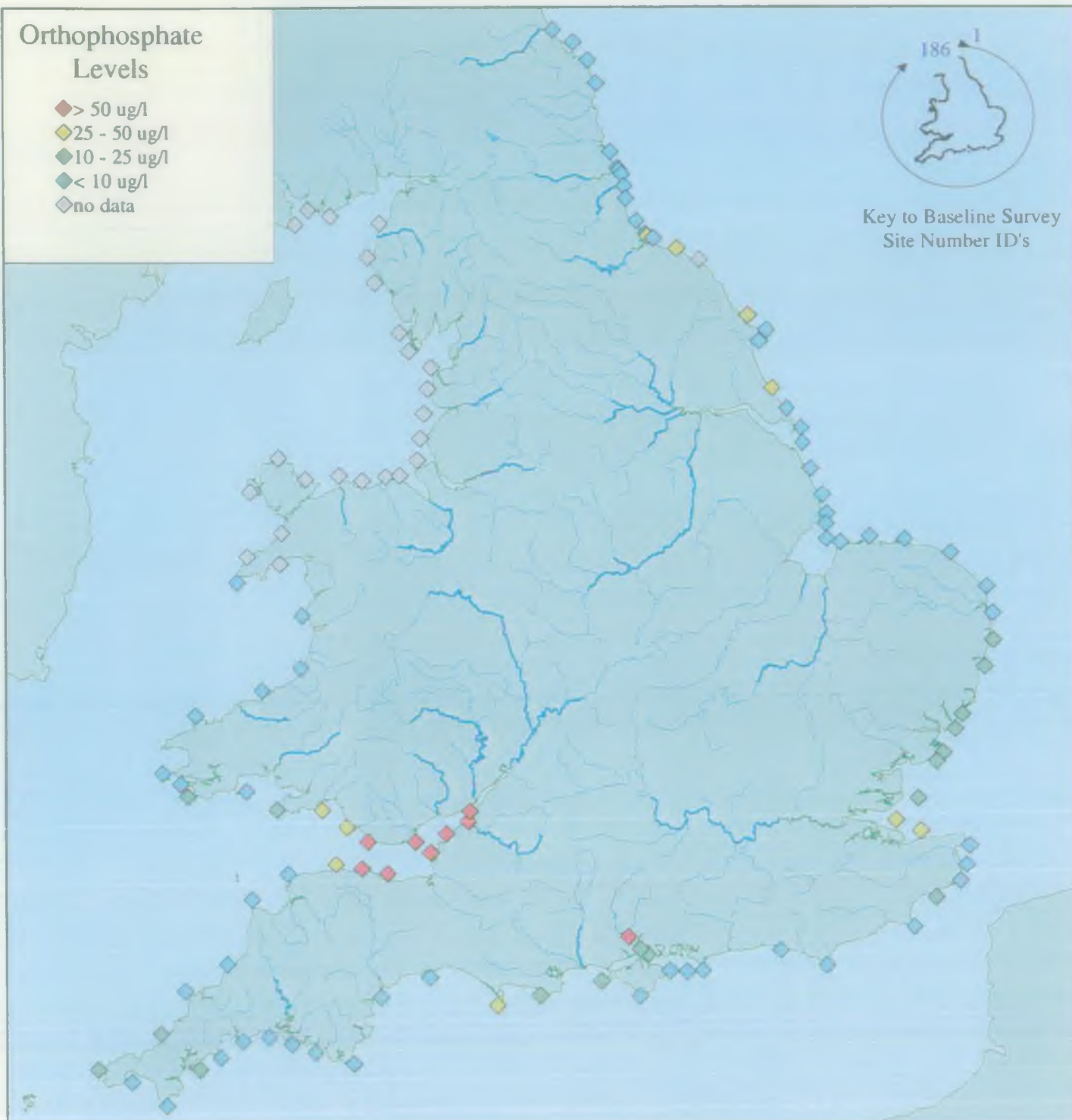
Orthophosphate Levels, National Baseline Survey, Spring 1996.

Orthophosphate Levels

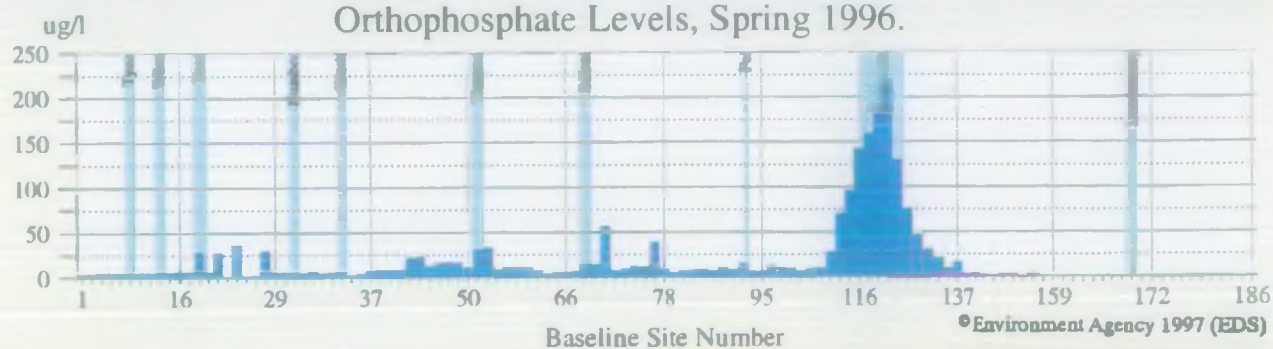
- ◆ > 50 ug/l
- ◆ 25 - 50 ug/l
- ◆ 10 - 25 ug/l
- ◆ < 10 ug/l
- ◆ no data



Key to Baseline Survey
Site Number ID's



Orthophosphate Levels, Spring 1996.



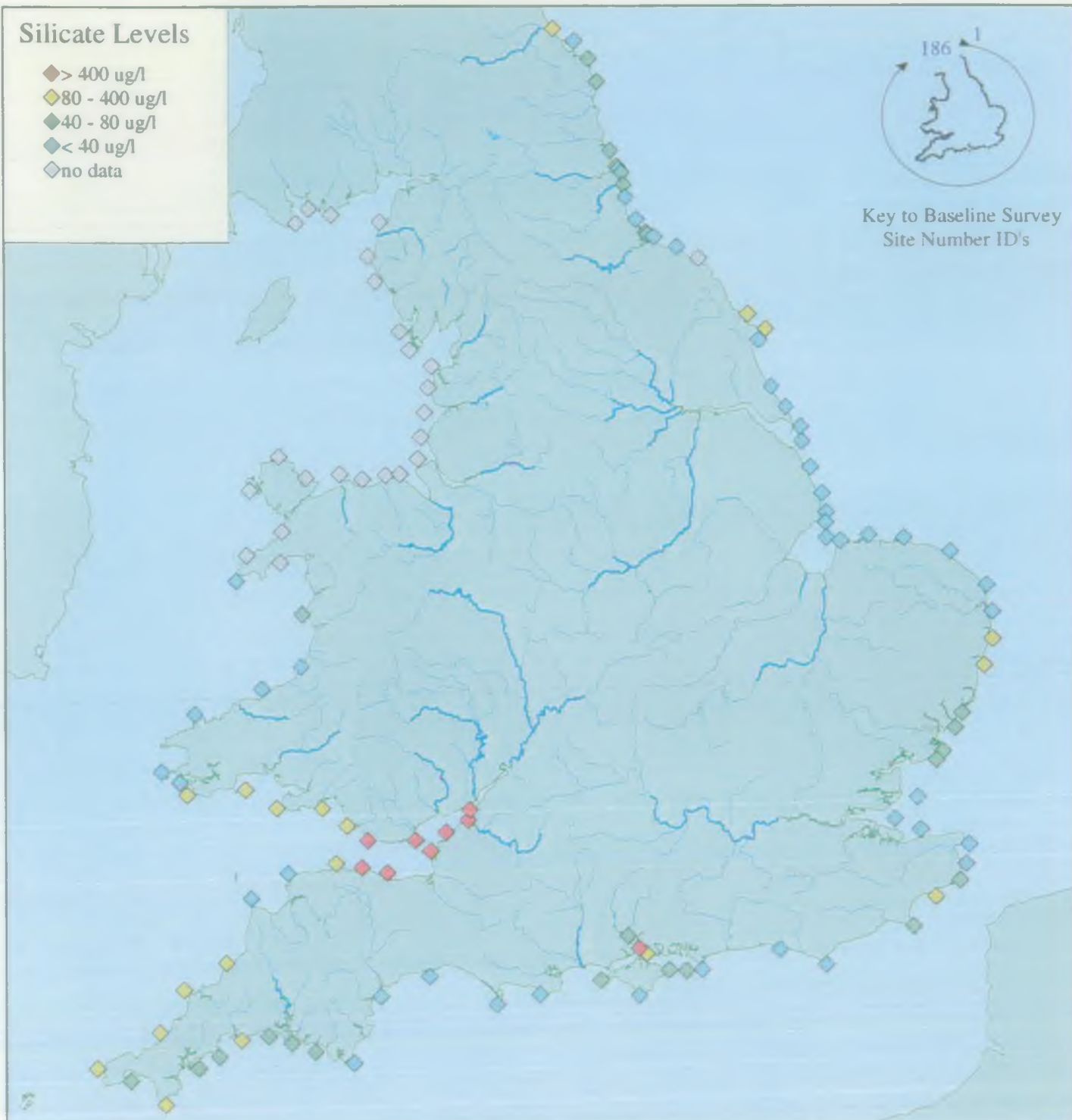
Silicate Levels, National Baseline Survey, Spring 1996.

Silicate Levels

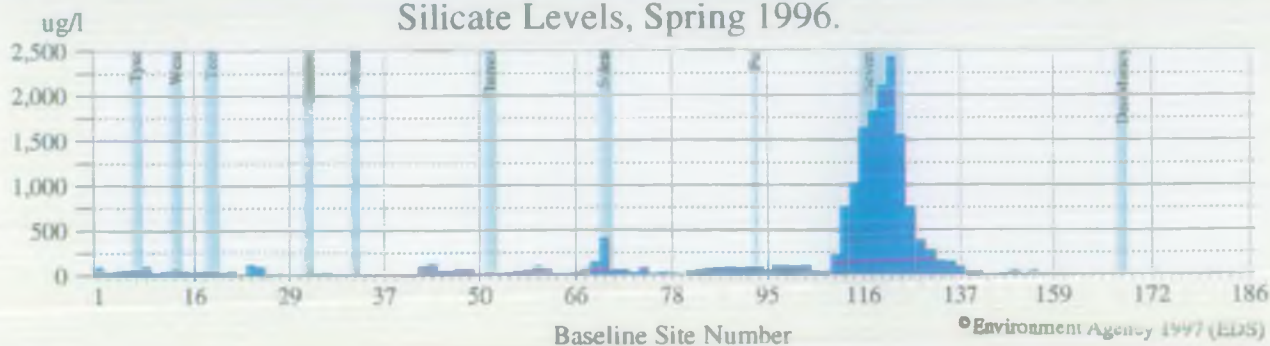
- ◆ > 400 ug/l
- ◆ 80 - 400 ug/l
- ◆ 40 - 80 ug/l
- ◆ < 40 ug/l
- ◆ no data



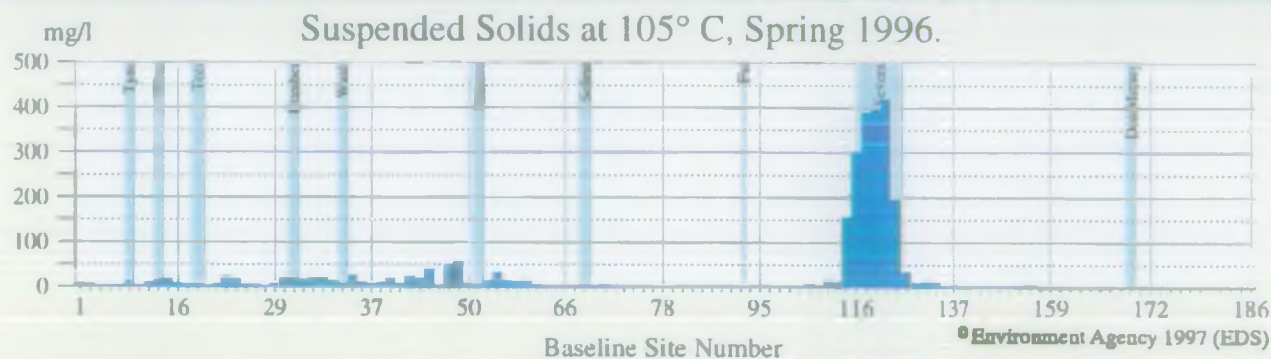
Key to Baseline Survey
Site Number ID's



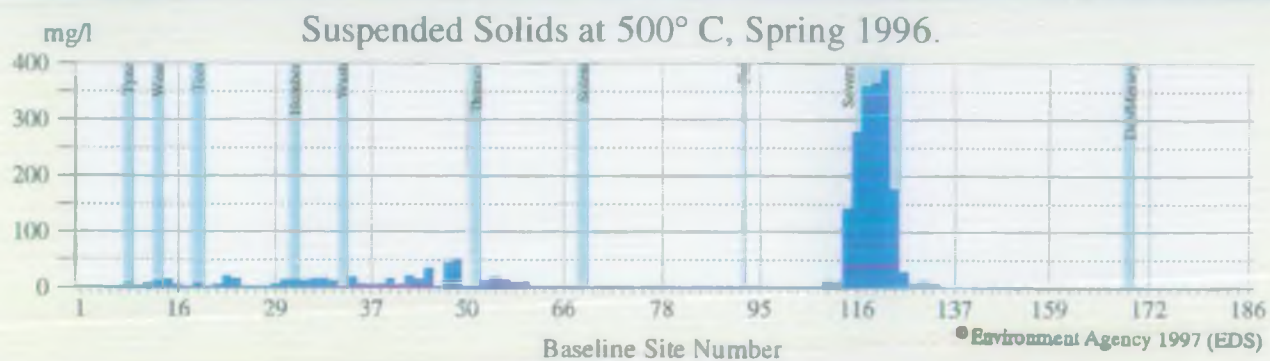
Silicate Levels, Spring 1996.



Suspended Solids at 105°C, National Baseline Survey, Spring 1996.



Suspended Solids at 500°C, National Baseline Survey, Spring 1996.



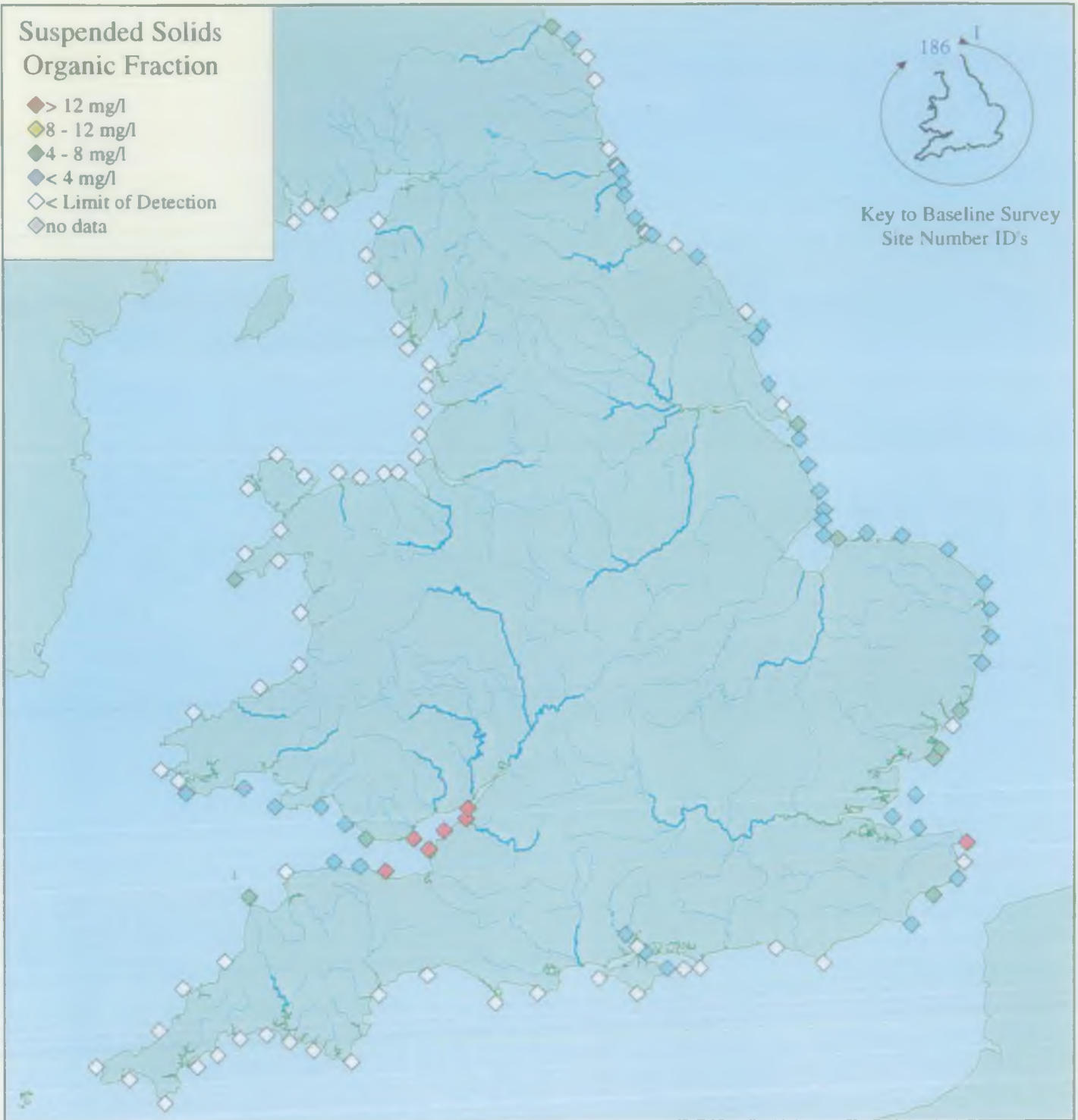
Suspended Solids - Organic Fraction, National Baseline Survey, Spring 1996.

Suspended Solids Organic Fraction

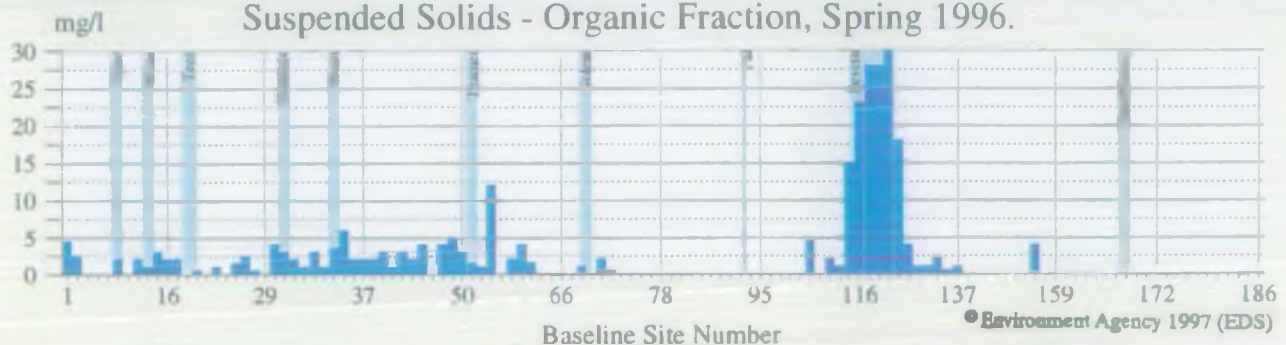
- ◆ > 12 mg/l
- ◆ 8 - 12 mg/l
- ◆ 4 - 8 mg/l
- ◆ < 4 mg/l
- ◇ < Limit of Detection
- ◇ no data



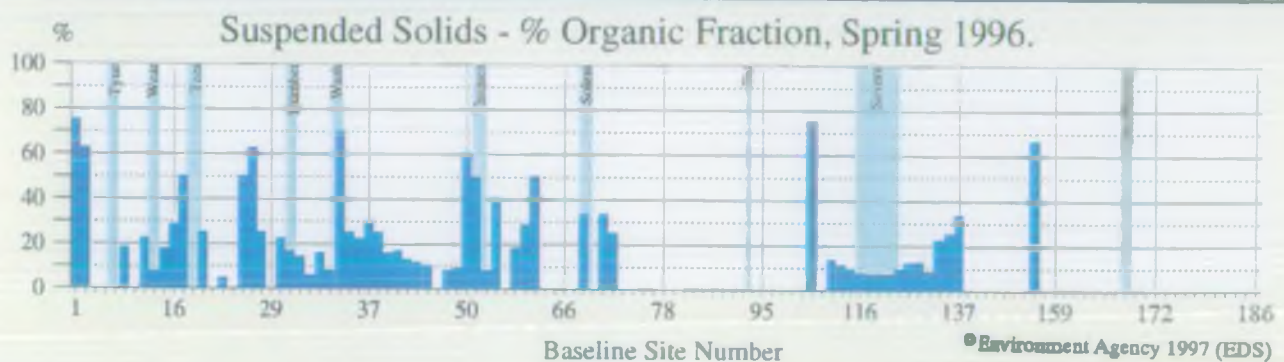
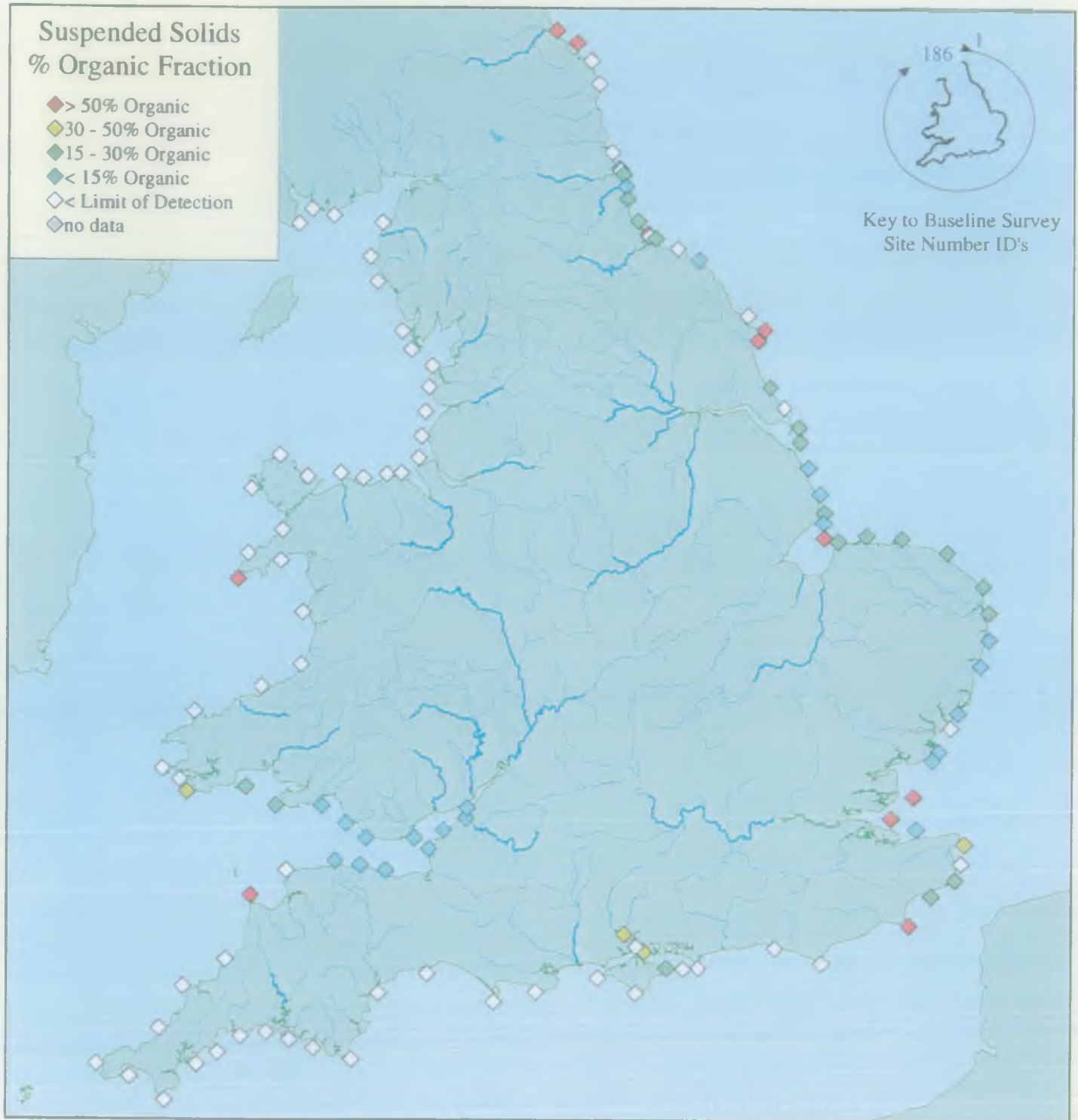
Key to Baseline Survey
Site Number ID's



Suspended Solids - Organic Fraction, Spring 1996.



Suspended Solids - % Organic Fraction, National Baseline Survey, Spring 1996.



Arsenic (Dissolved), National Baseline Survey, Spring 1996.

Arsenic (Dissolved)
EQS=25 ug/l As

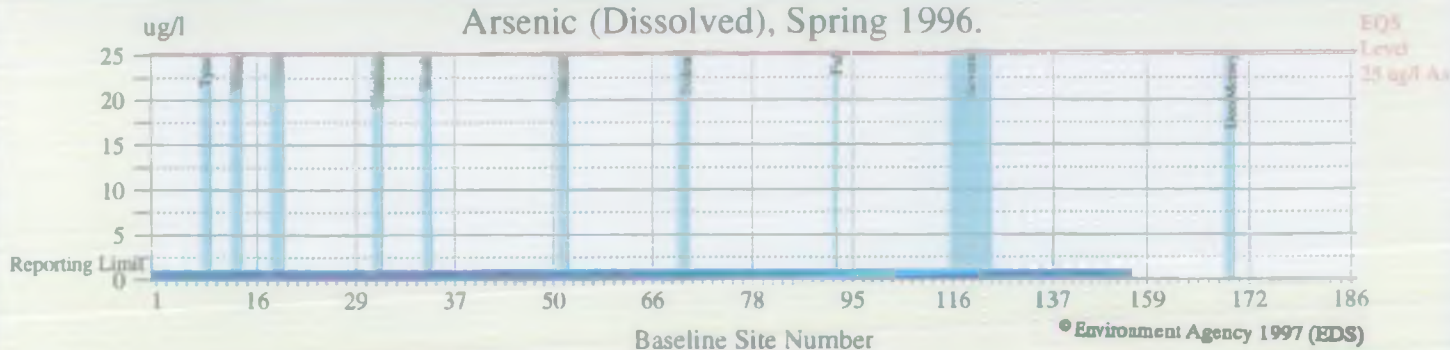
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Arsenic (Dissolved), Spring 1996.



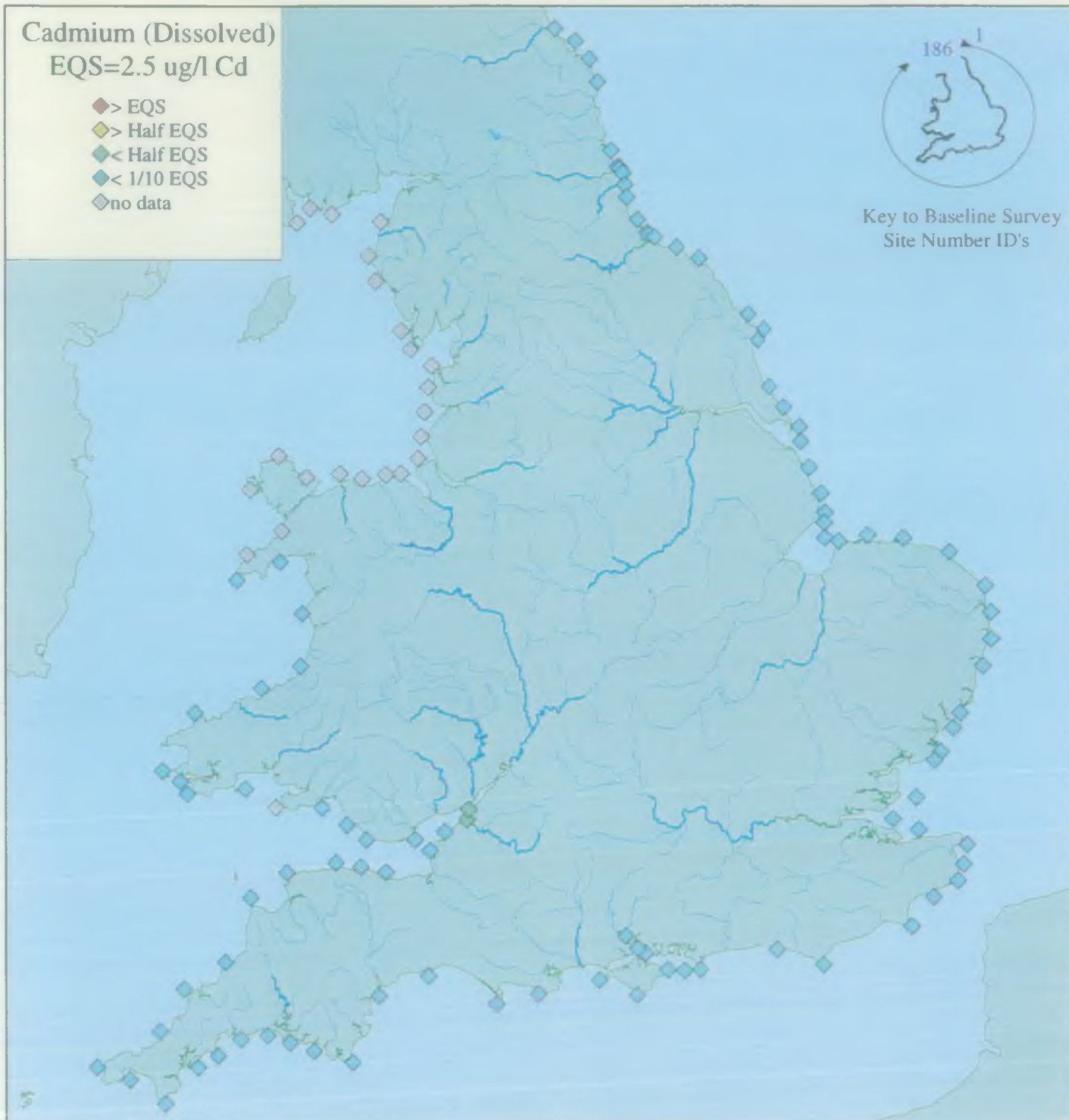
Cadmium (Dissolved), National Baseline Survey, Spring 1996.

Cadmium (Dissolved)
EQS=2.5 ug/l Cd

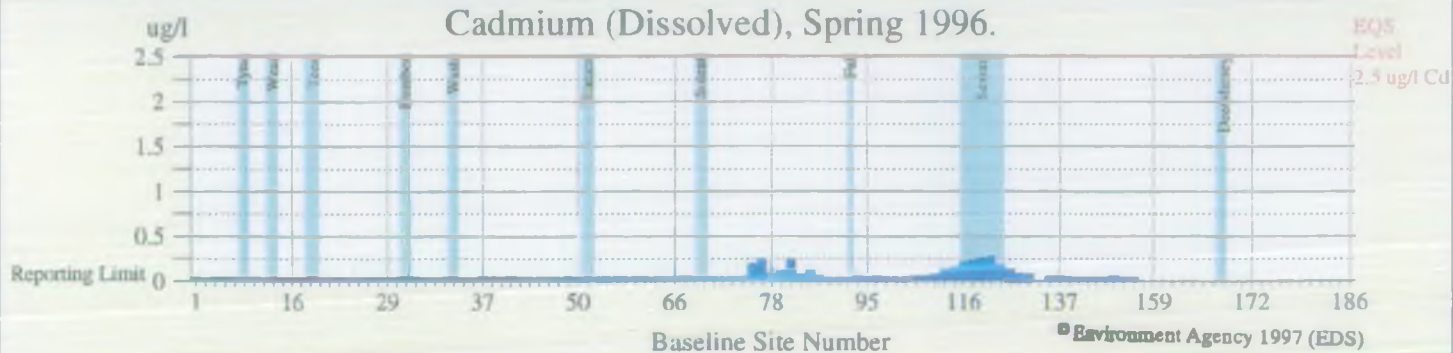
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Cadmium (Dissolved), Spring 1996.



Chromium (Dissolved), National Baseline Survey, Spring 1996.

Chromium (Dissolved)
EQS=15 ug/l Cr

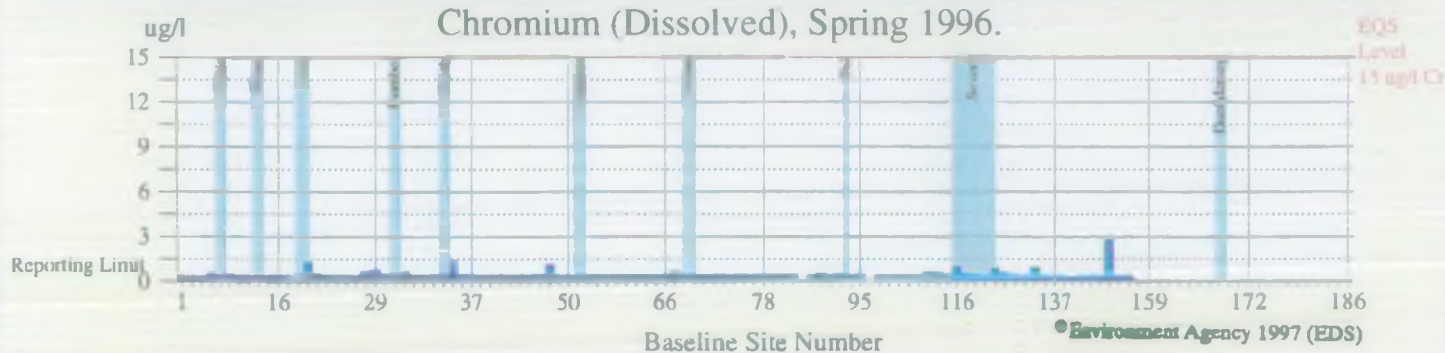
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Chromium (Dissolved), Spring 1996.



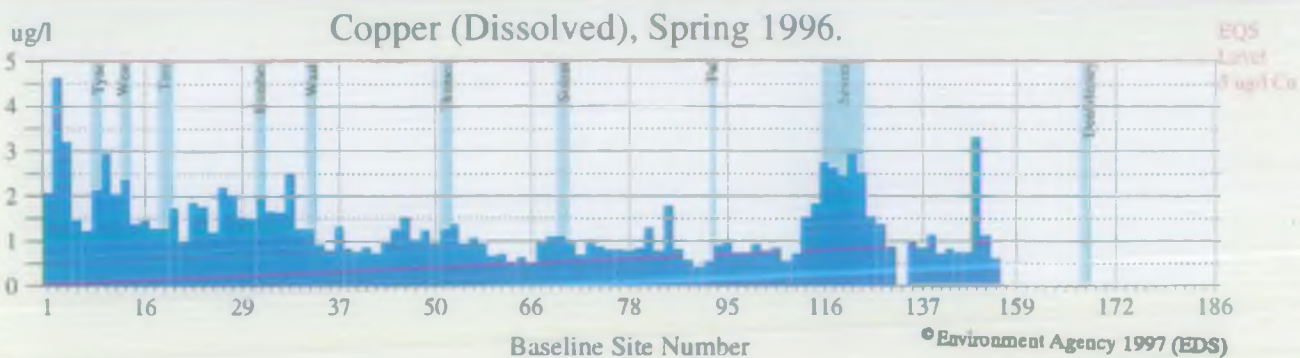
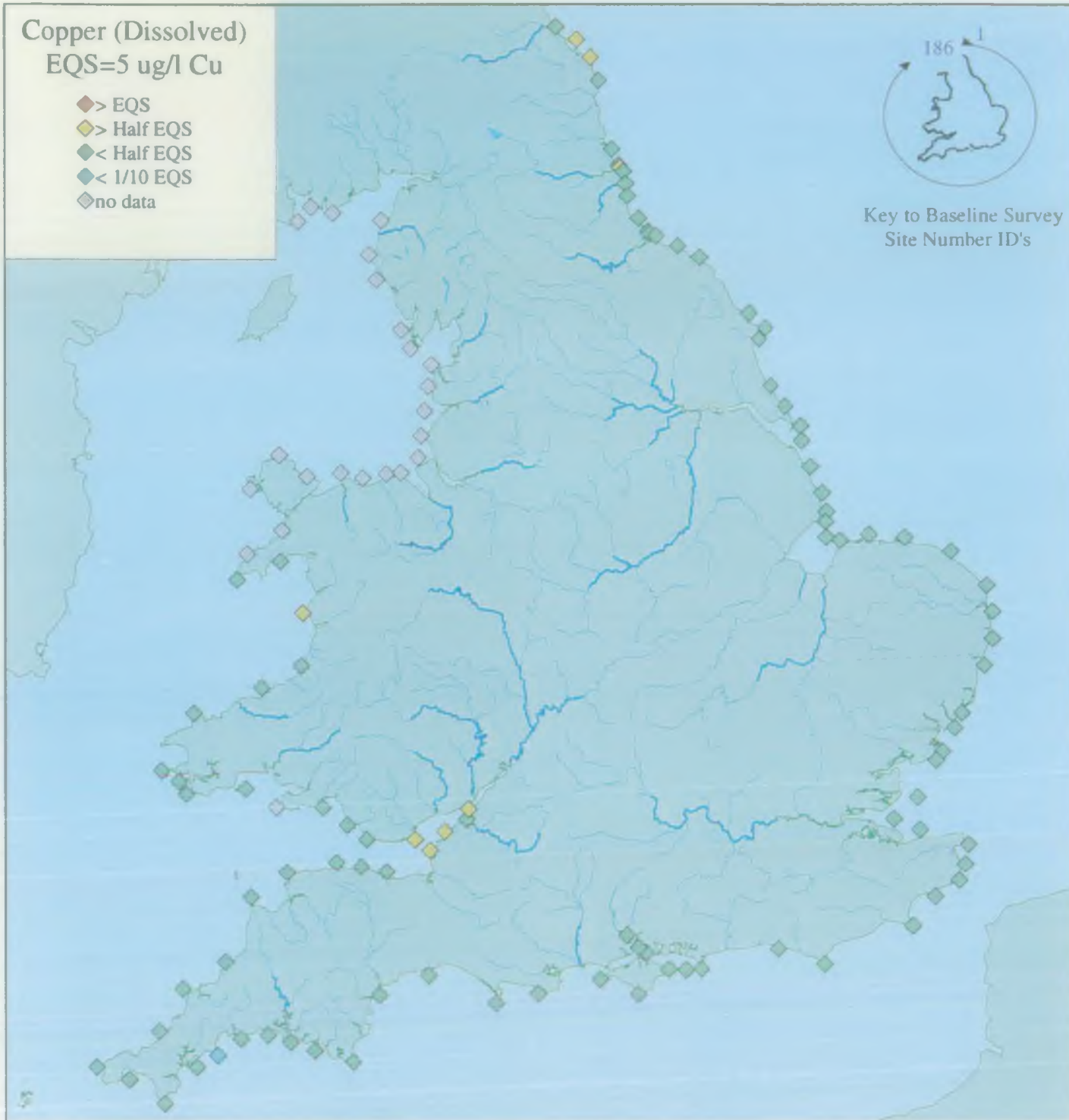
Copper (Dissolved), National Baseline Survey, Spring 1996.

Copper (Dissolved)
EQS=5 ug/l Cu

- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



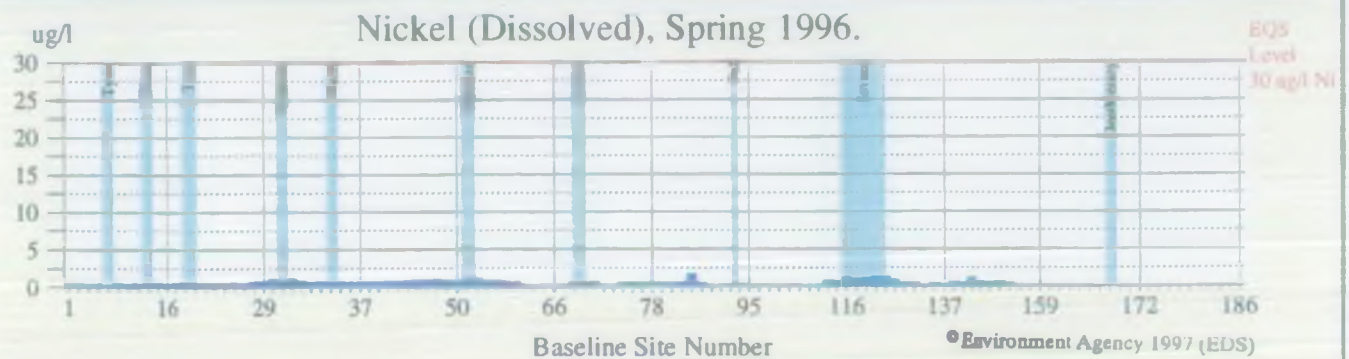
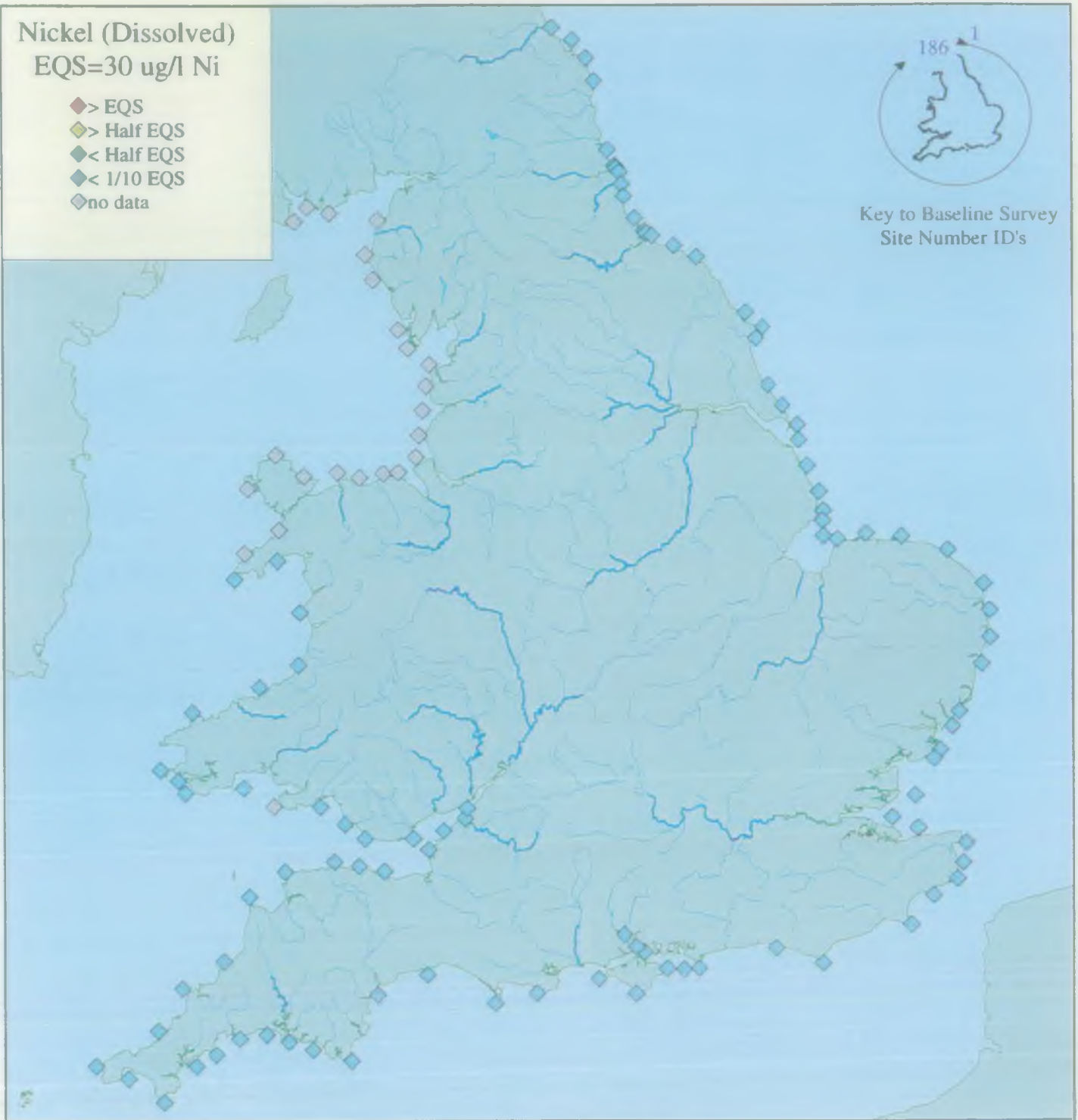
Nickel (Dissolved), National Baseline Survey, Spring 1996.

Nickel (Dissolved)
EQS=30 ug/l Ni

- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



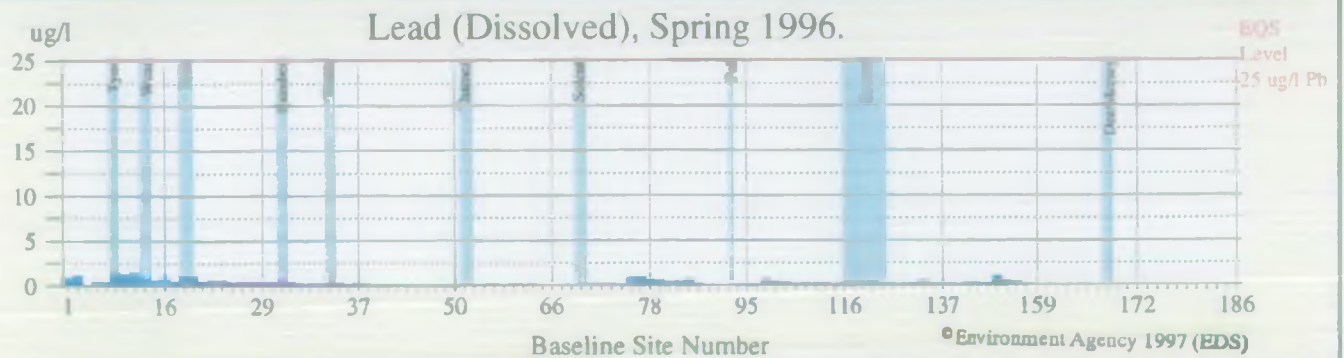
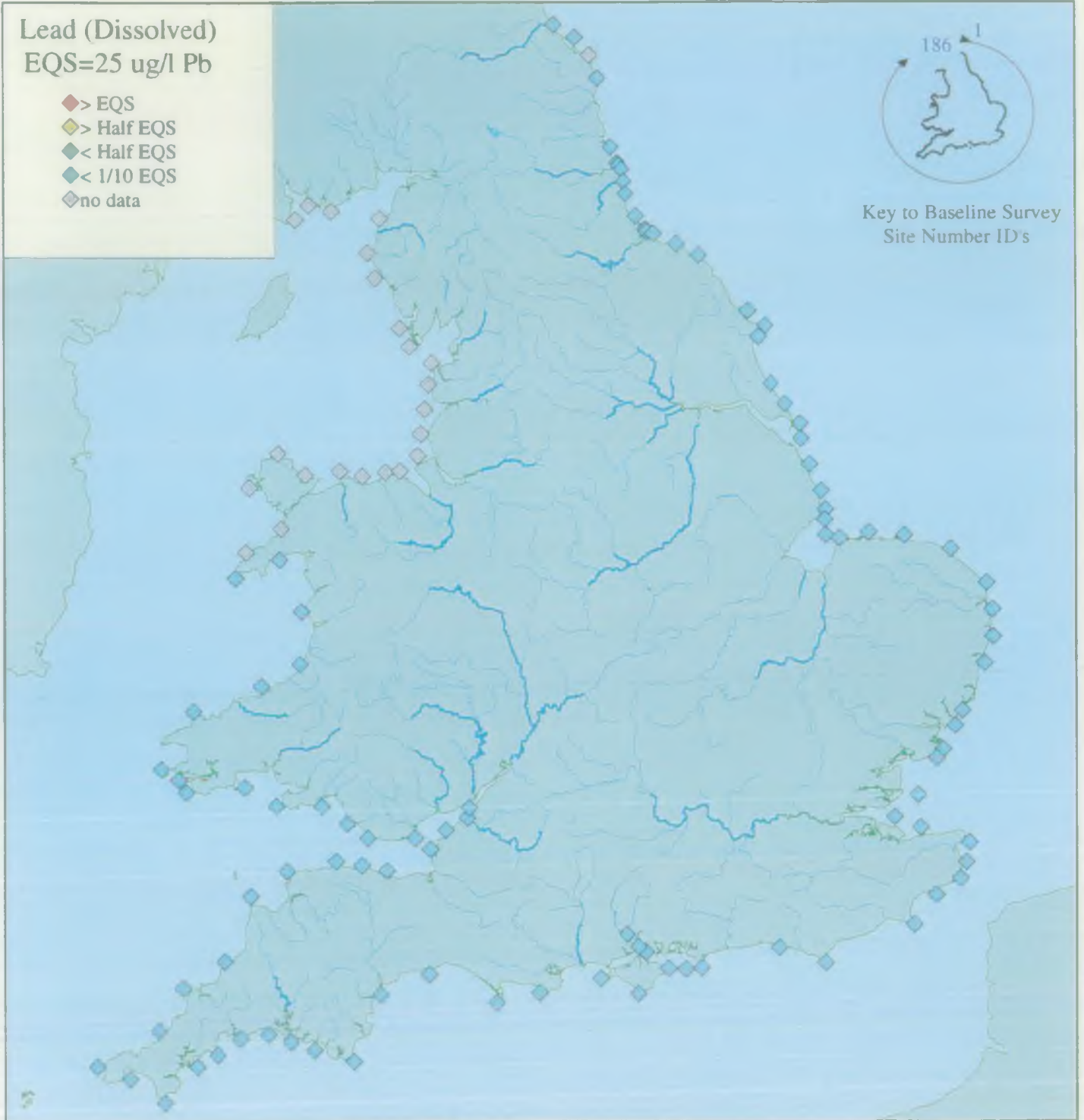
Lead (Dissolved), National Baseline Survey, Spring 1996.

Lead (Dissolved)
EQS=25 ug/l Pb

- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



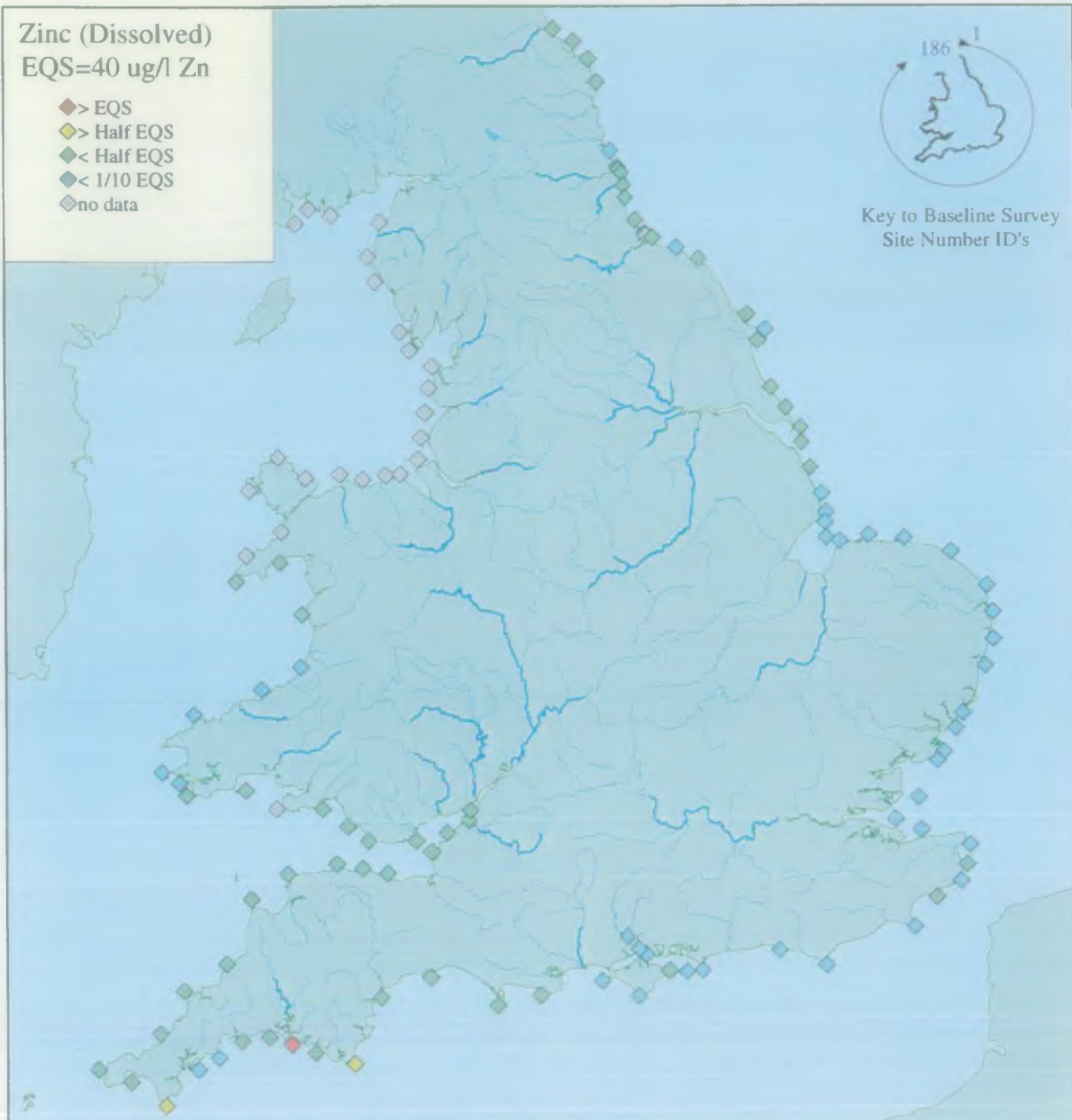
Zinc (Dissolved), National Baseline Survey, Spring 1996.

Zinc (Dissolved)
EQS=40 ug/l Zn

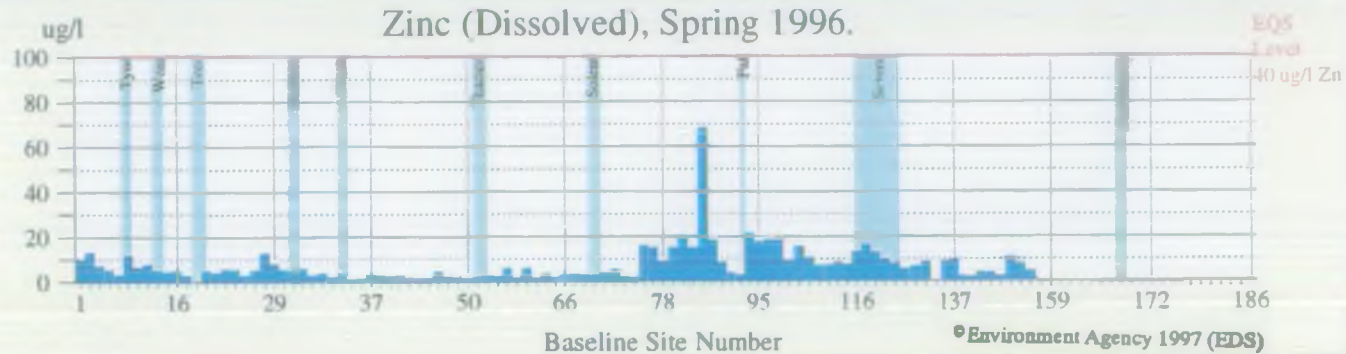
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Zinc (Dissolved), Spring 1996.



Mercury (Total), National Baseline Survey, Spring 1996.

Mercury (Total)
EQS=0.3 ug/l Hg

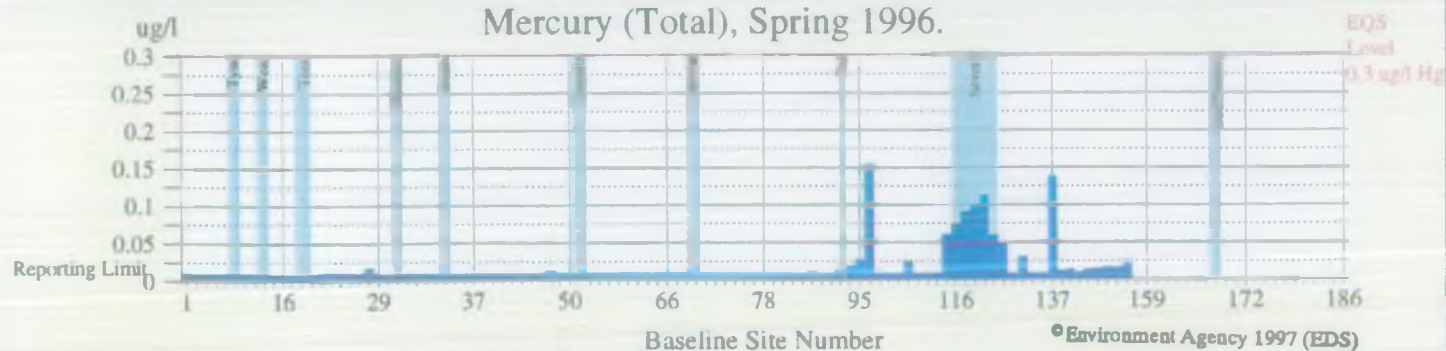
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Mercury (Total), Spring 1996.



Organic Chemicals, National Baseline Survey, Spring 1996.



Sample Sites Where Organic Chemicals Found Above Limit of Detection

Base 1 : 0.002 ug/l of HCH-Gamma
 Base 7 : 0.002 ug/l of HCH-Gamma
 Base 25 : 0.003 ug/l of TDE-PP'
 Base 35 : 0.003 ug/l of HCH-Gamma
 Base 39 : 0.002 ug/l of HCH-Gamma
 Base 43 : 0.002 ug/l of HCH-Gamma
 Base 46.1 : 0.002 ug/l of HCH-Gamma
 Base 51 : 0.003 ug/l of HCH-Gamma

Base 56 : 0.002 ug/l of HCH-Gamma
 Base 61 : 0.002 ug/l of HCH-Gamma
 Base 66 : 0.002 ug/l of HCH-Gamma
 Base 68.2 : 0.001 ug/l of HCH-Gamma
 Base 86 : 0.002 ug/l of HCH-Gamma
 Base 119 : 0.008 ug/l of HCH-Gamma
 Base 154 : 0.001 ug/l of HCH-Gamma

LABORATORY DATA MAPS

SUMMER 1996

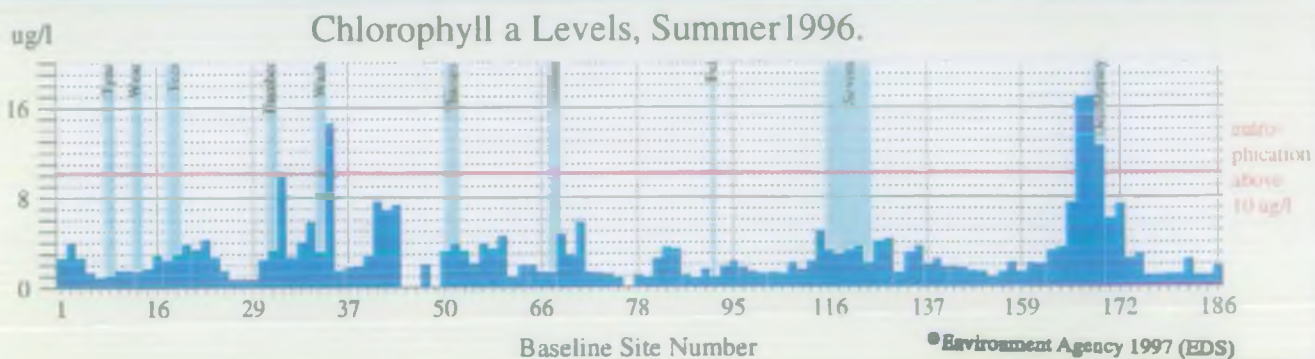
Chlorophyll a Levels, National Baseline Survey, Summer 1996.

Chlorophyll a Levels
(UWWTD eutrophication
guideline level = 10 ug/l)

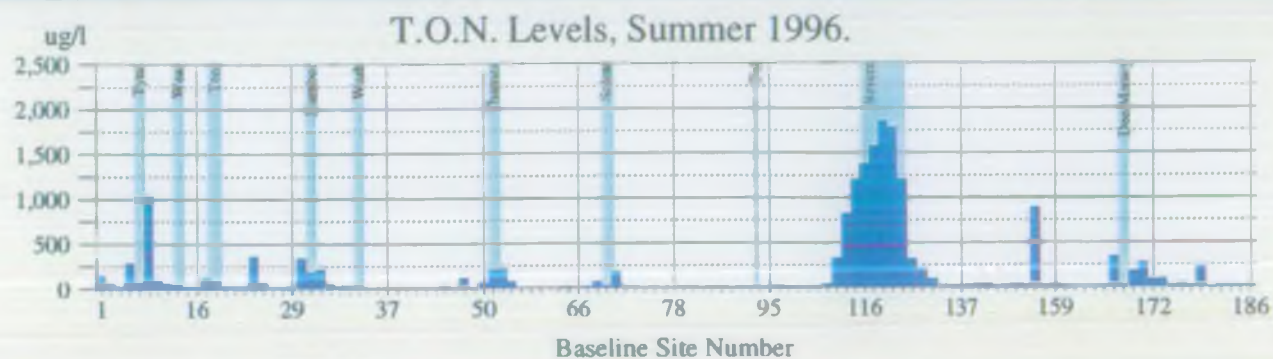
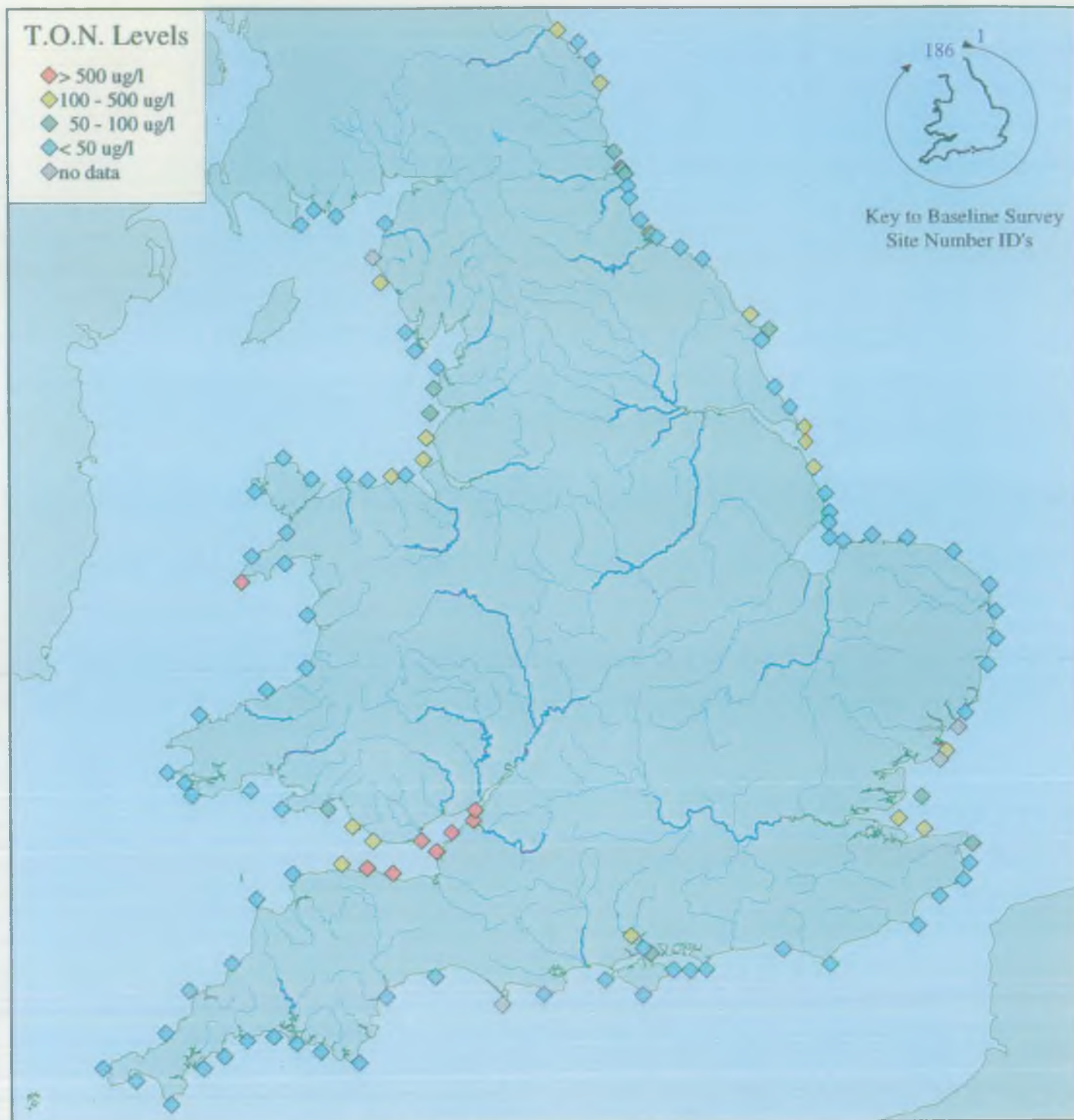
- ◆ > 10 ug/l
- ◆ 7.5 - 10 ug/l
- ◆ 5 - 7.5 ug/l
- ◆ < 5 ug/l
- ◆ no data



Key to Baseline Survey
Site Number ID's



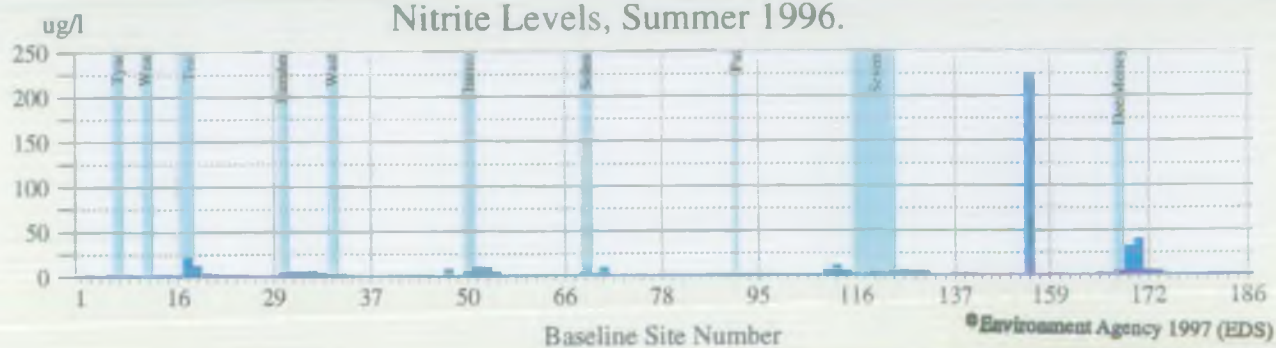
T.O.N. Levels, National Baseline Survey, Summer 1996.



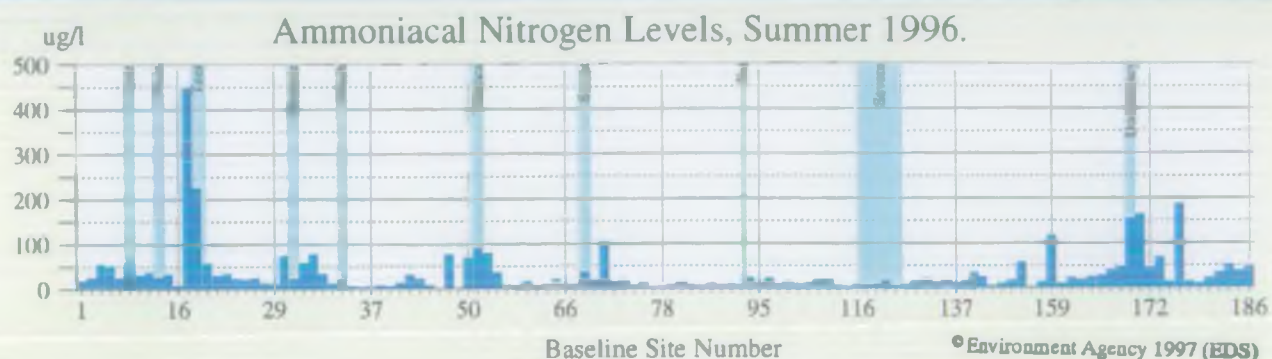
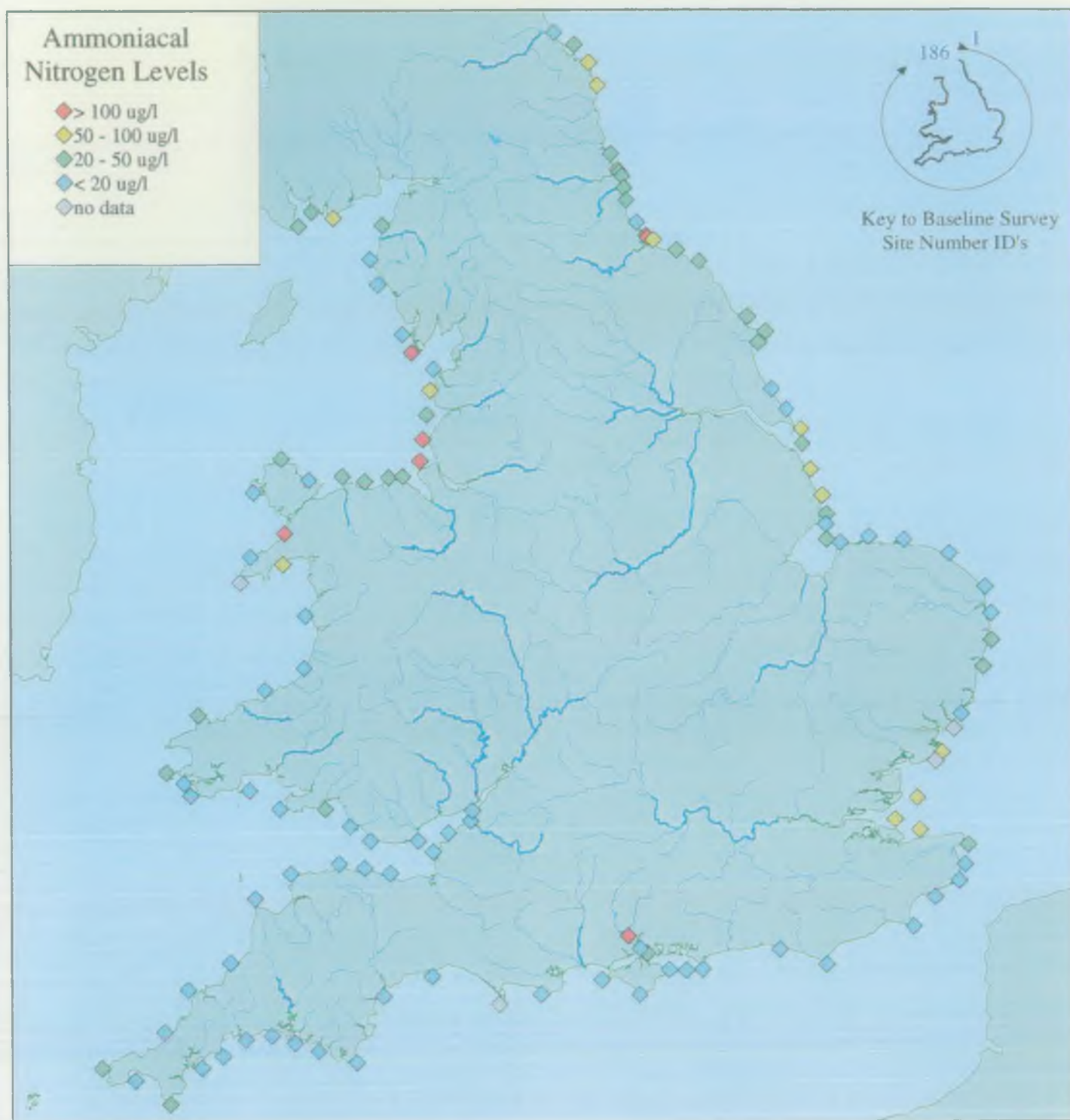
Nitrite Levels, National Baseline Survey, Summer 1996.



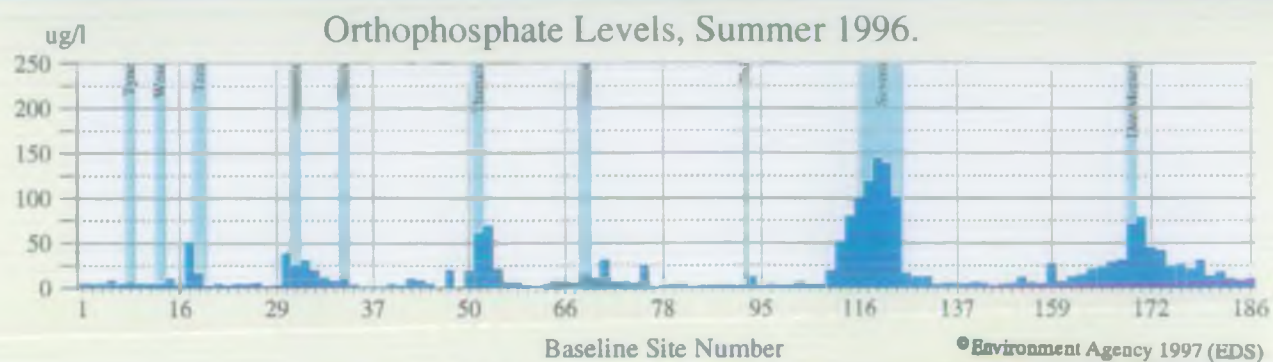
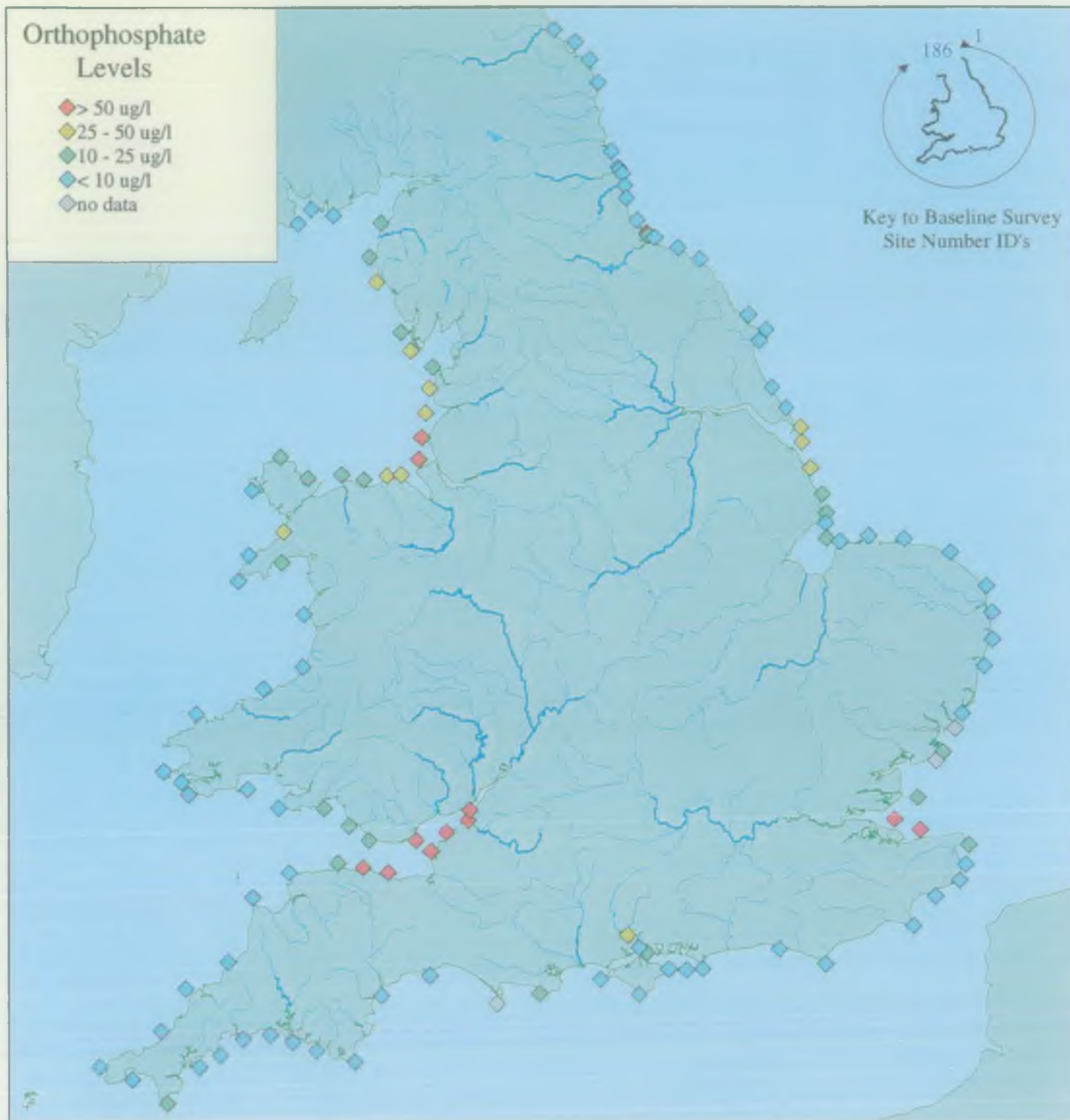
Nitrite Levels, Summer 1996.



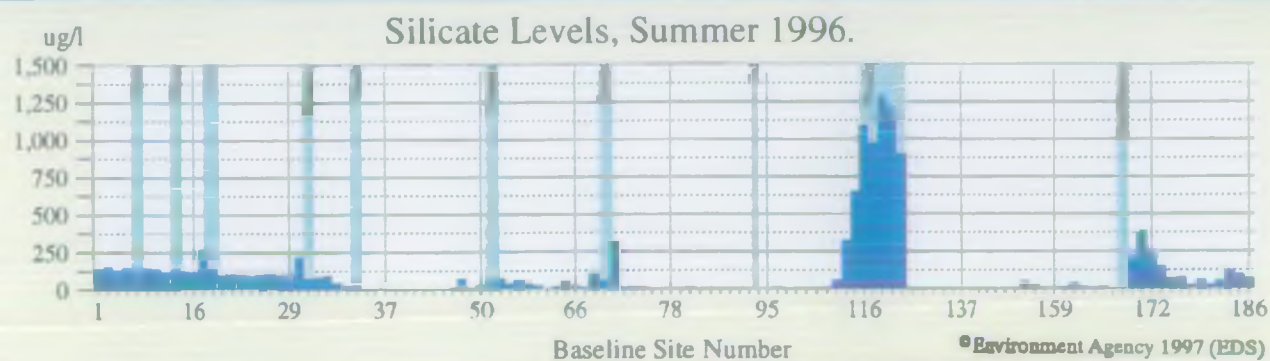
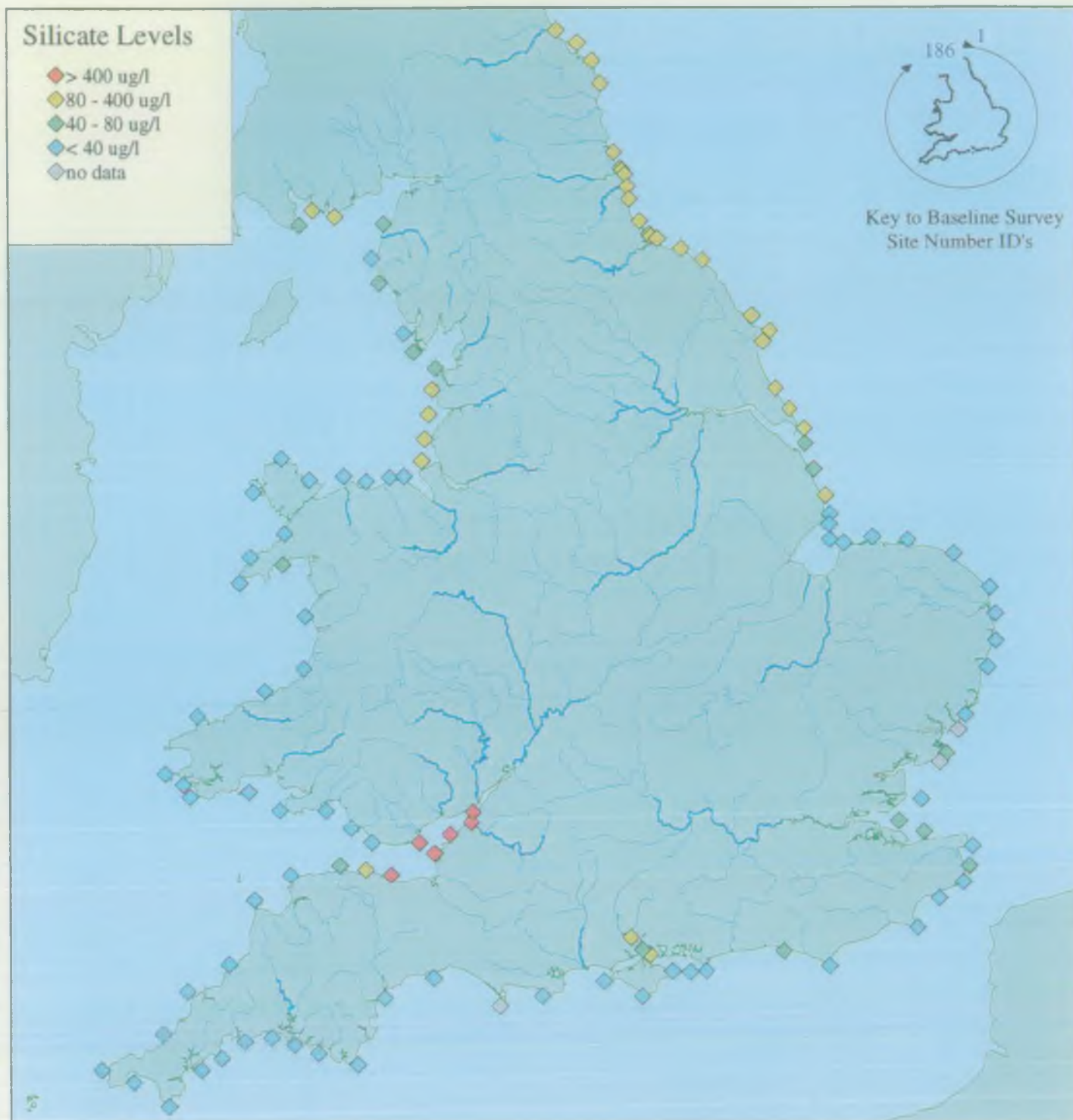
Ammoniacal Nitrogen Levels, National Baseline Survey, Summer 1996.



Orthophosphate Levels, National Baseline Survey, Summer 1996.



Silicate Levels, National Baseline Survey, Summer 1996.



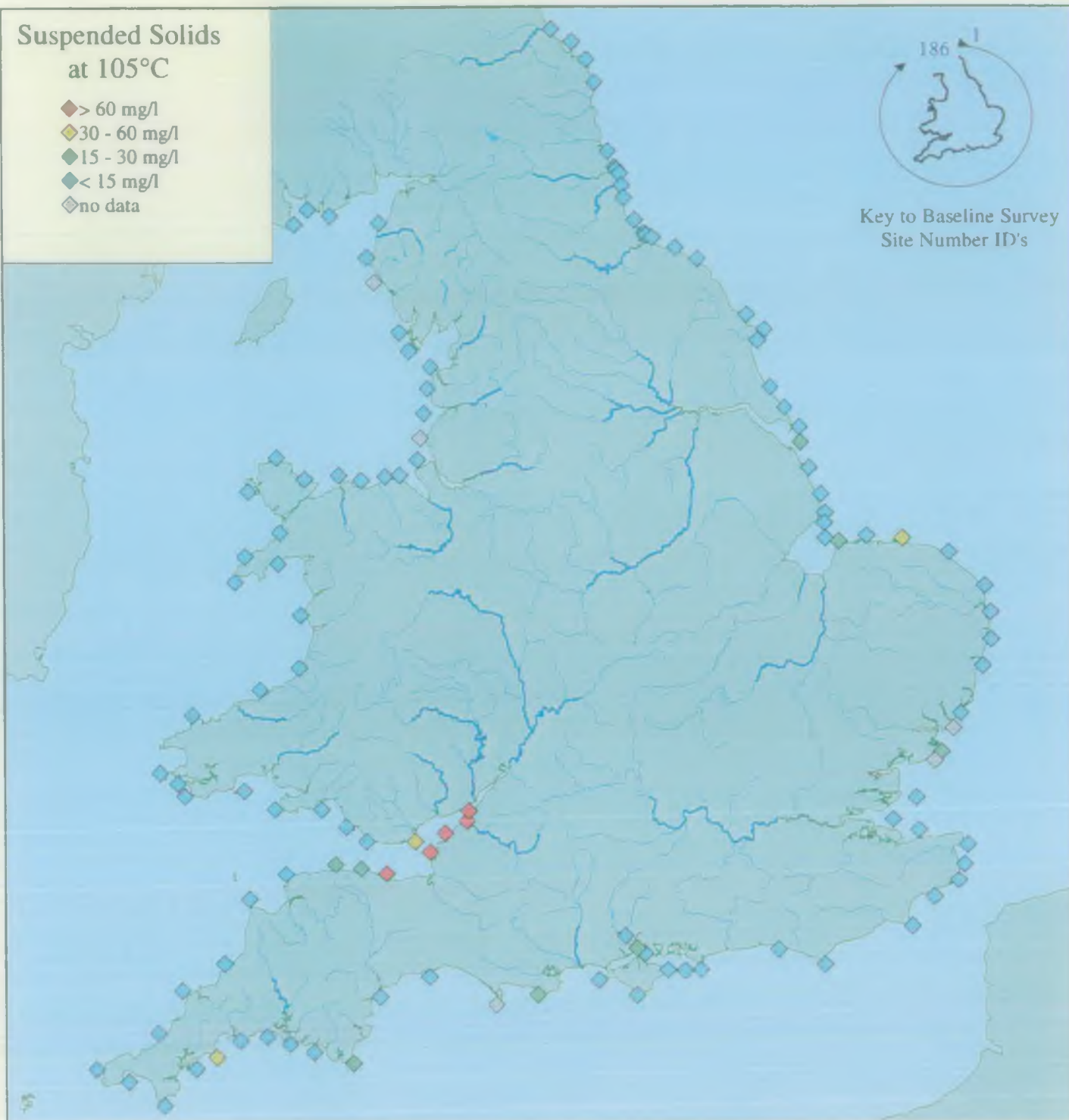
Suspended Solids at 105°C, National Baseline Survey, Summer 1996.

Suspended Solids at 105°C

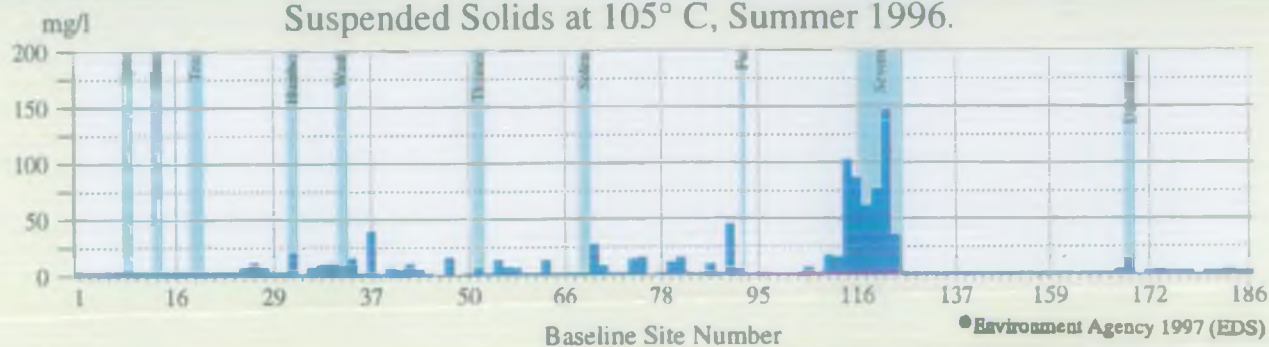
- ◆ > 60 mg/l
- ◆ 30 - 60 mg/l
- ◆ 15 - 30 mg/l
- ◆ < 15 mg/l
- ◆ no data



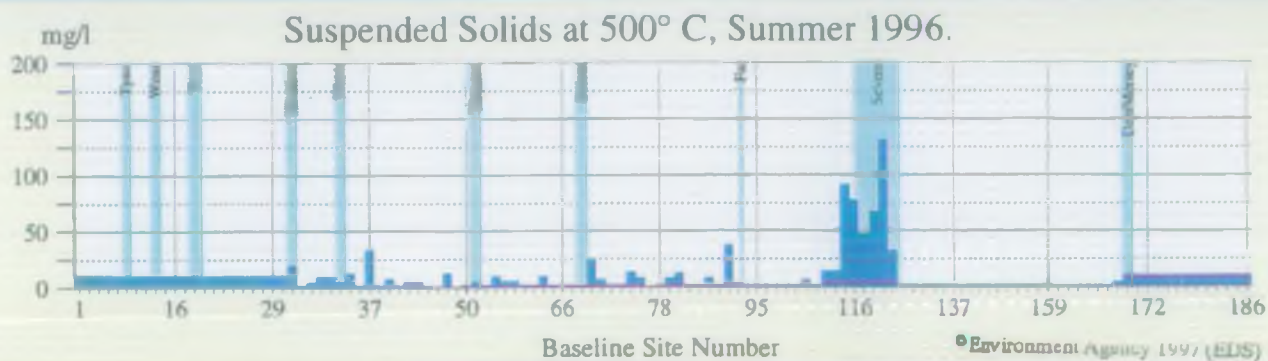
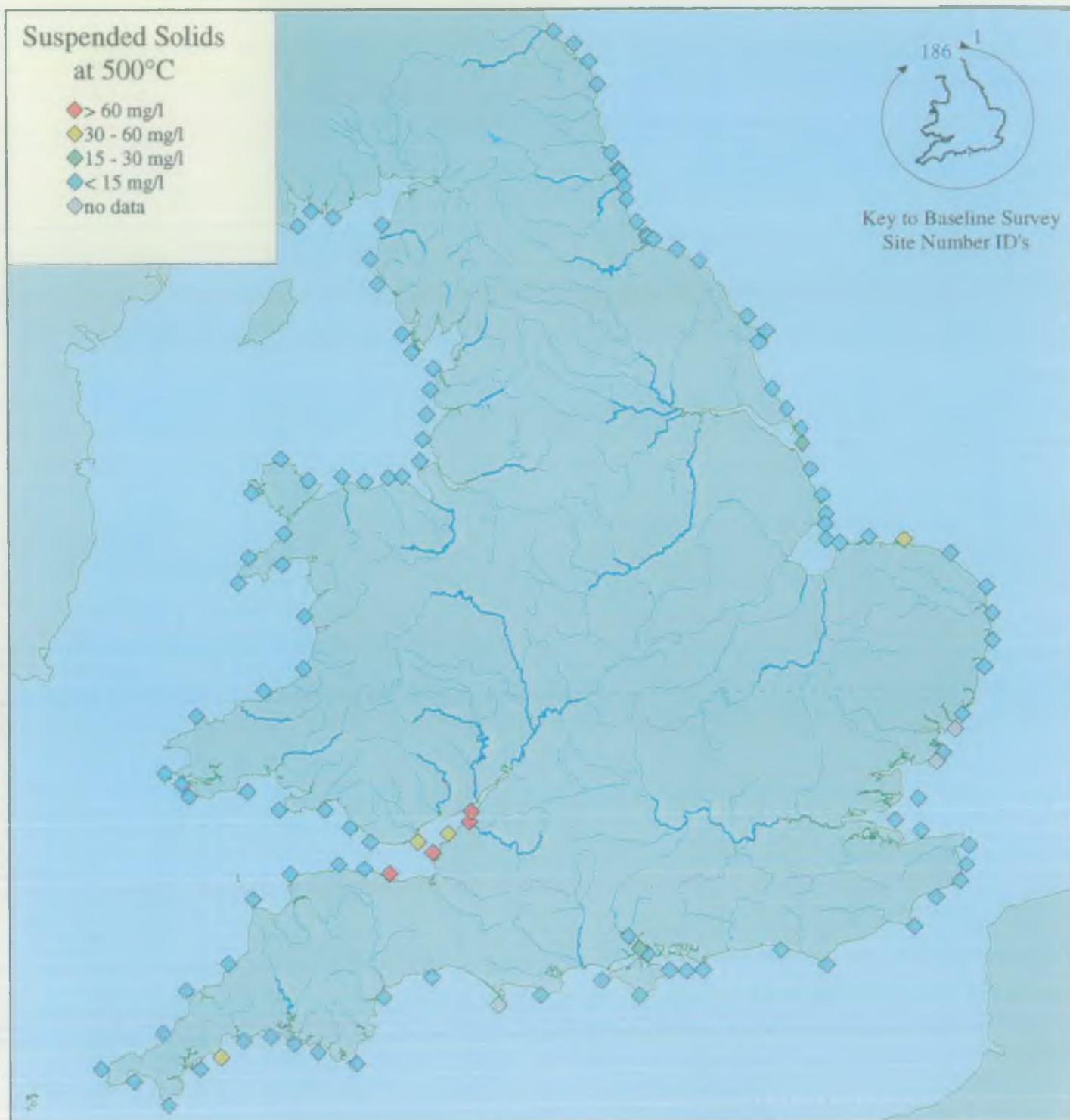
Key to Baseline Survey Site Number ID's



Suspended Solids at 105° C, Summer 1996.



Suspended Solids at 500°C, National Baseline Survey, Summer 1996.



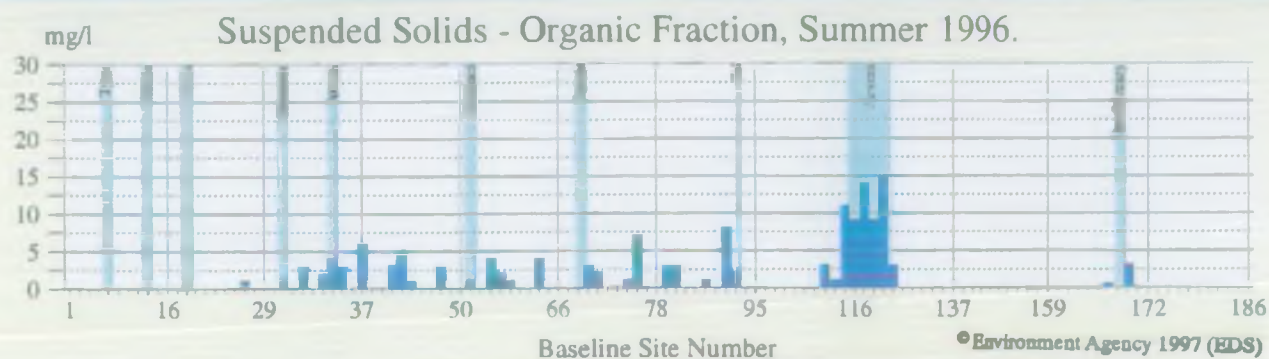
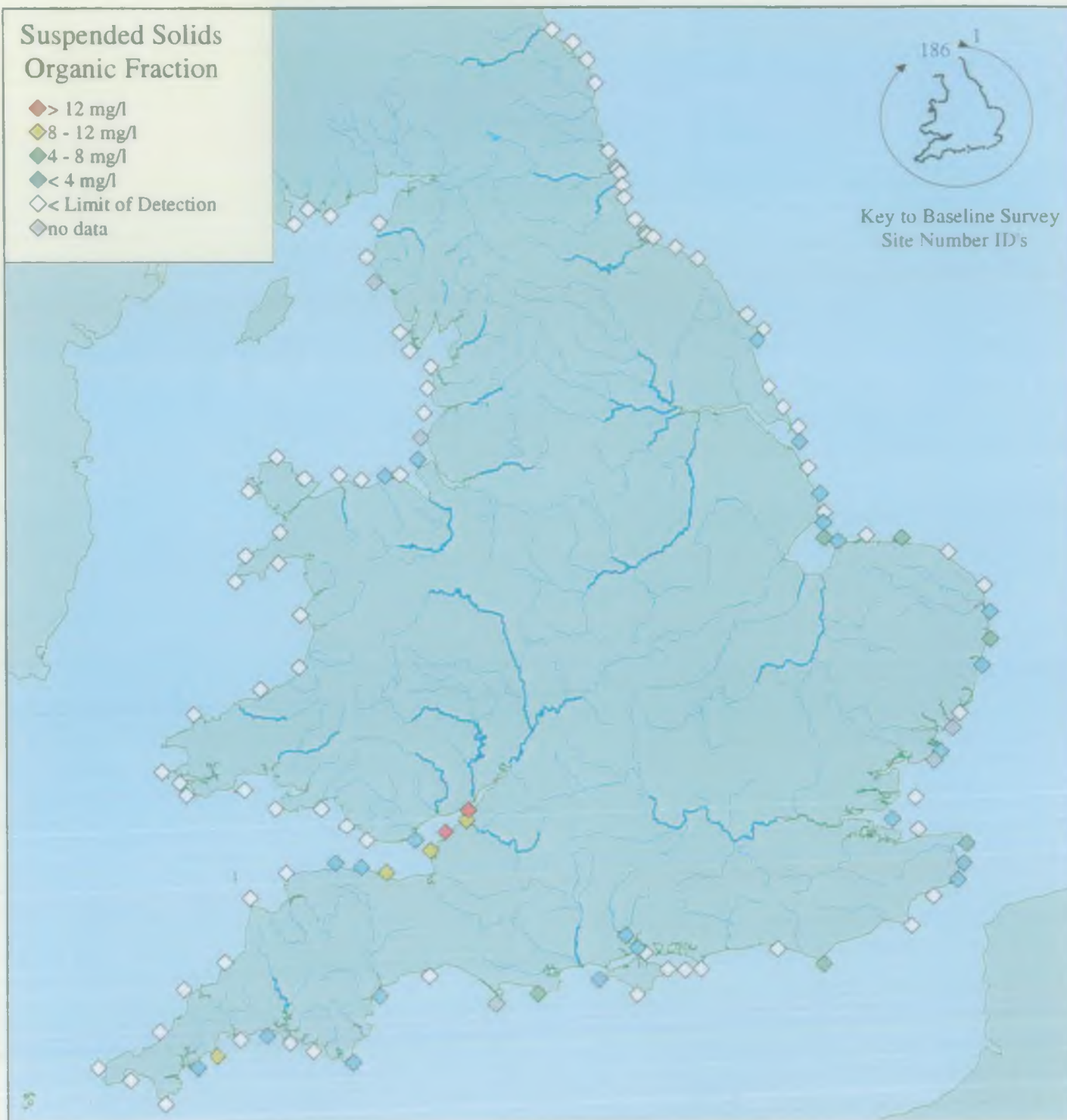
Suspended Solids - Organic Fraction, National Baseline Survey, Summer 1996.

Suspended Solids Organic Fraction

- ◆ > 12 mg/l
- ◆ 8 - 12 mg/l
- ◆ 4 - 8 mg/l
- ◆ < 4 mg/l
- ◇ < Limit of Detection
- ◇ no data

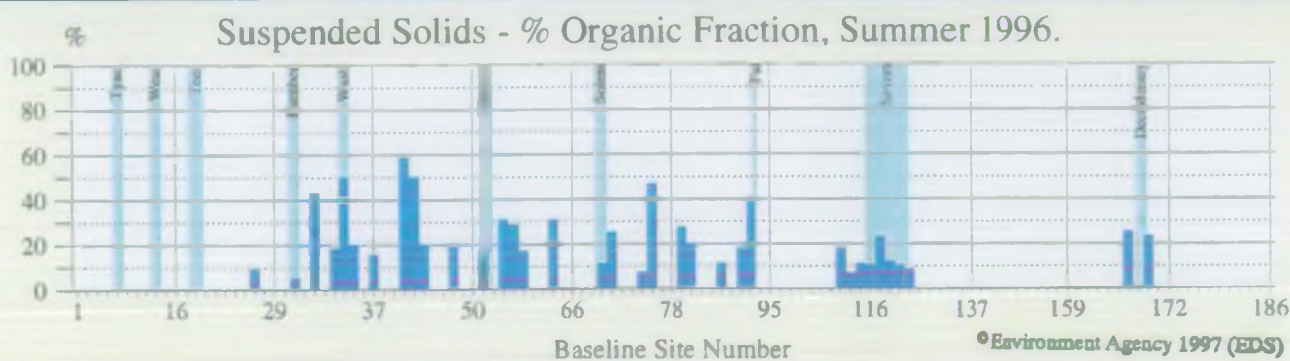


Key to Baseline Survey
Site Number ID's



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Suspended Solids - % Organic Fraction, National Baseline Survey, Summer 1996.



Arsenic (Dissolved), National Baseline Survey, Summer 1996.

Arsenic (Dissolved)
EQS=25 ug/l As

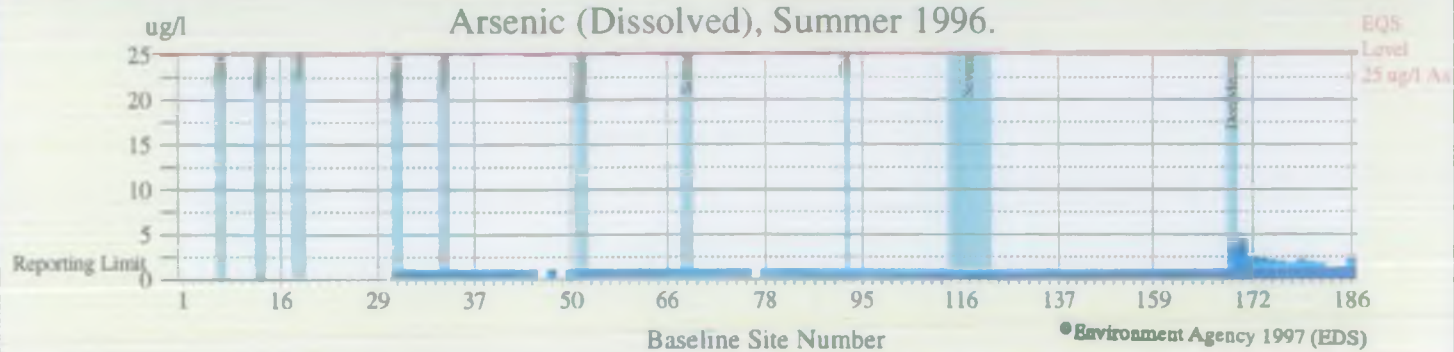
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Arsenic (Dissolved), Summer 1996.



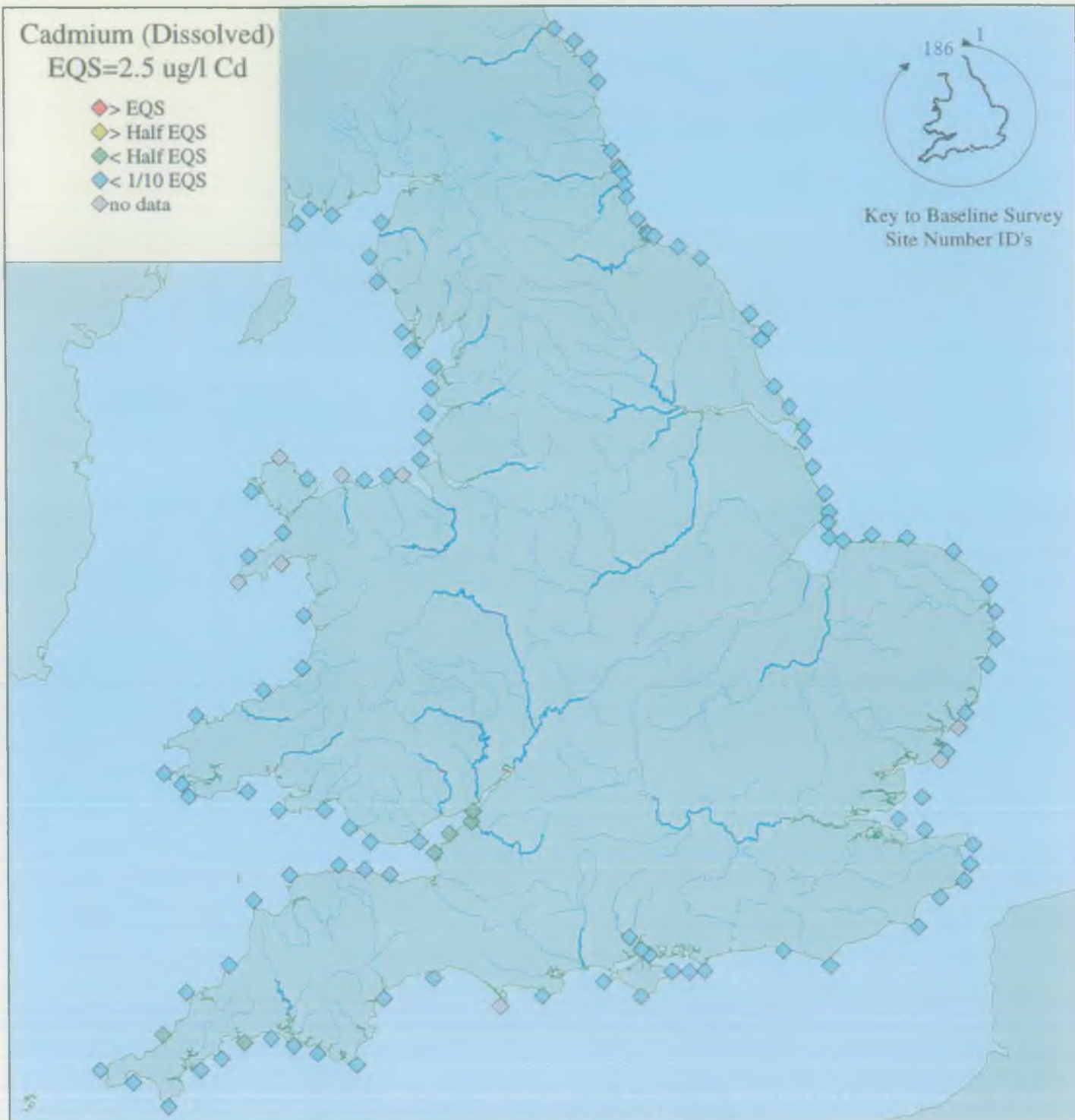
Cadmium (Dissolved), National Baseline Survey, Summer 1996.

Cadmium (Dissolved)
EQS=2.5 ug/l Cd

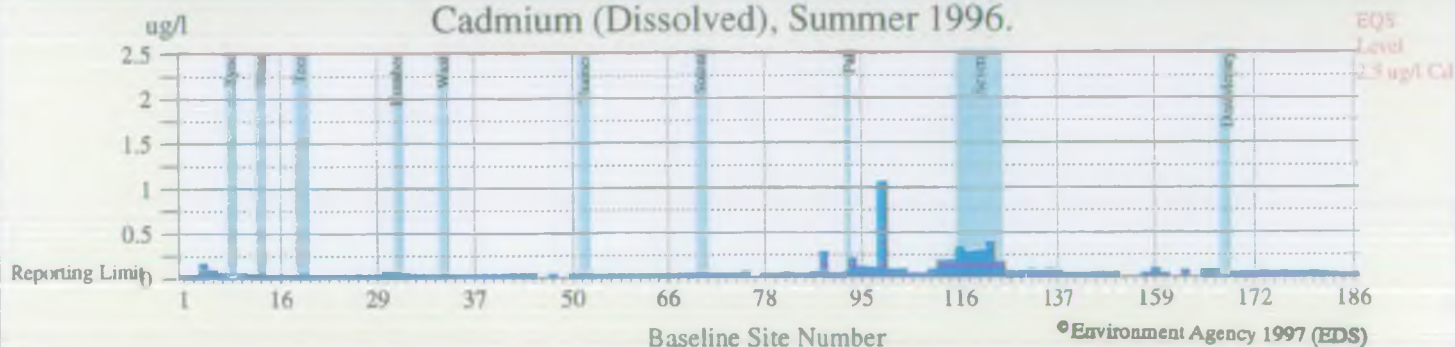
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



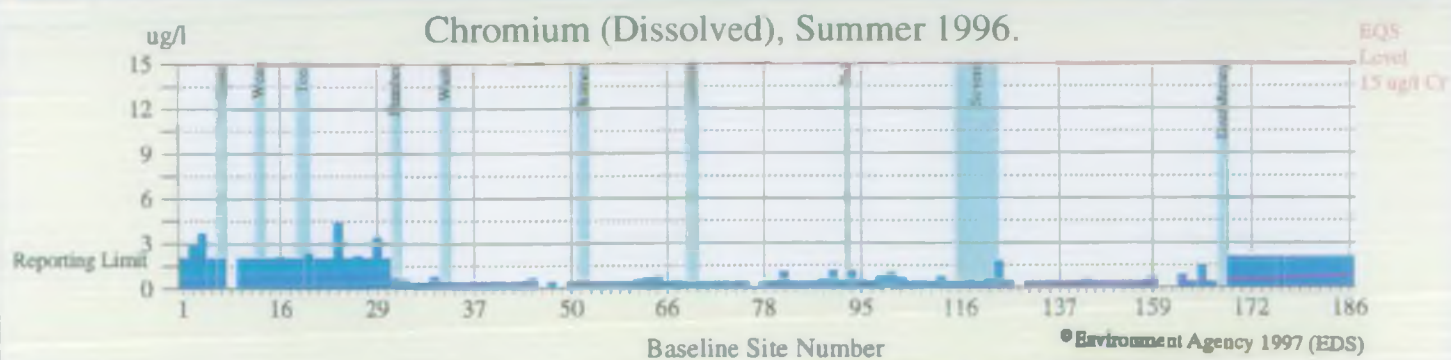
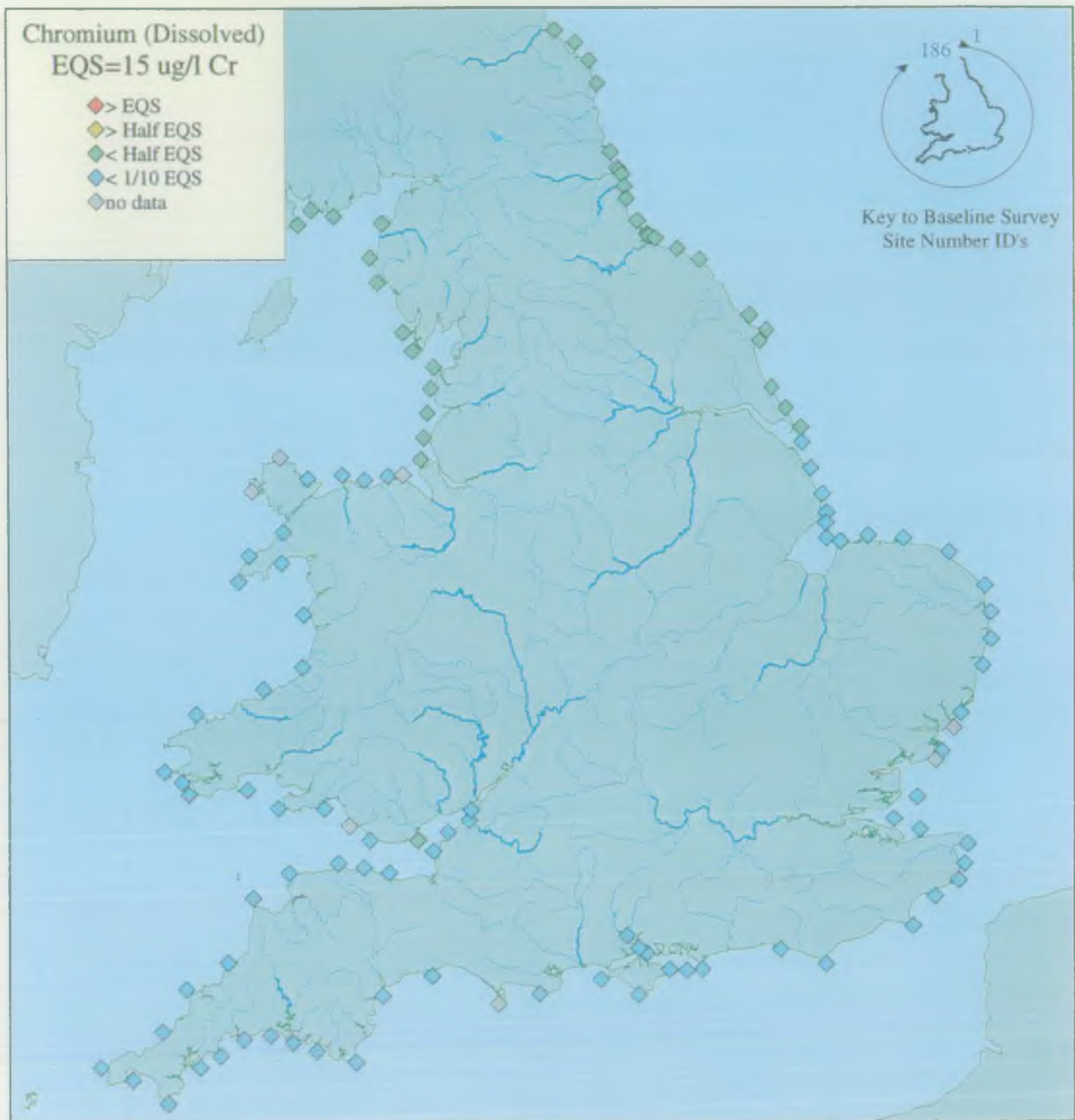
Key to Baseline Survey
Site Number ID's



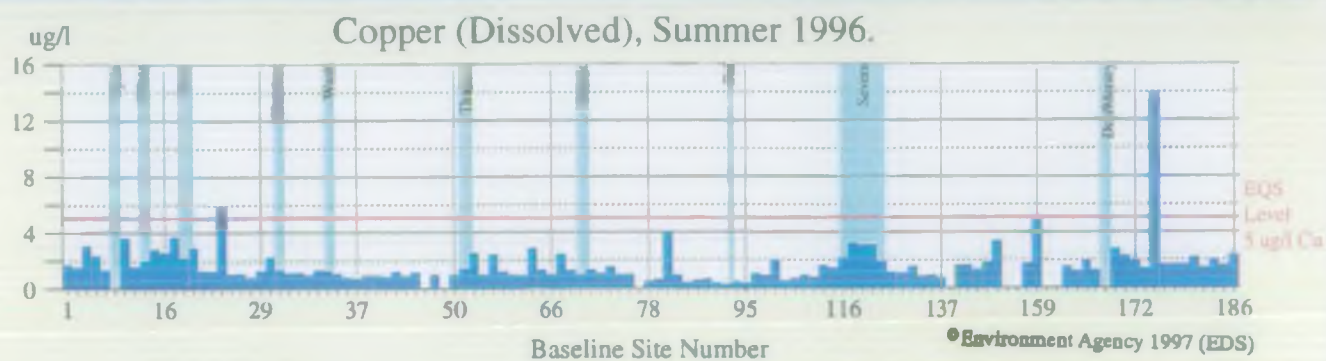
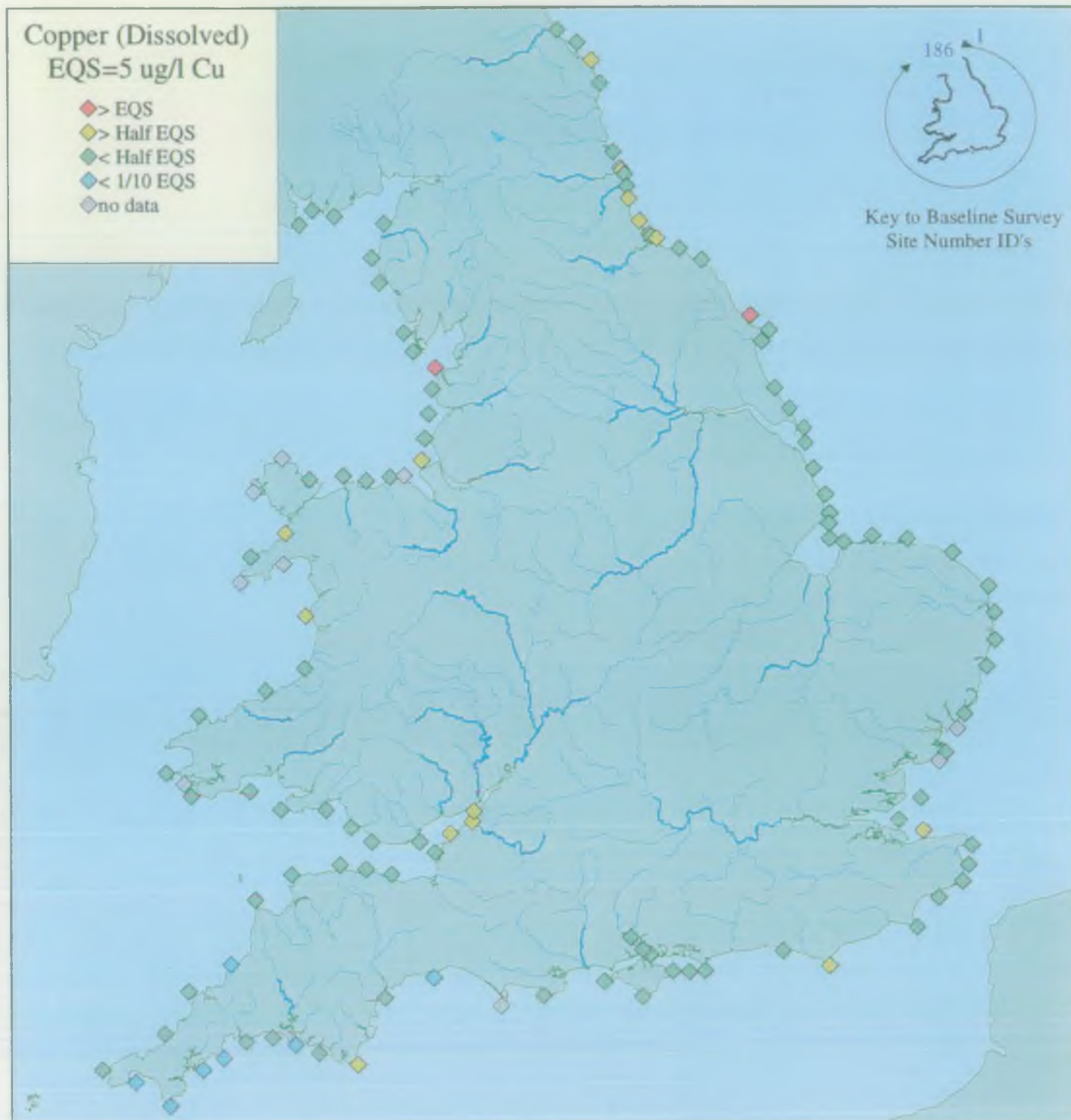
Cadmium (Dissolved), Summer 1996.



Chromium (Dissolved), National Baseline Survey, Summer 1996.



Copper (Dissolved), National Baseline Survey, Summer 1996.



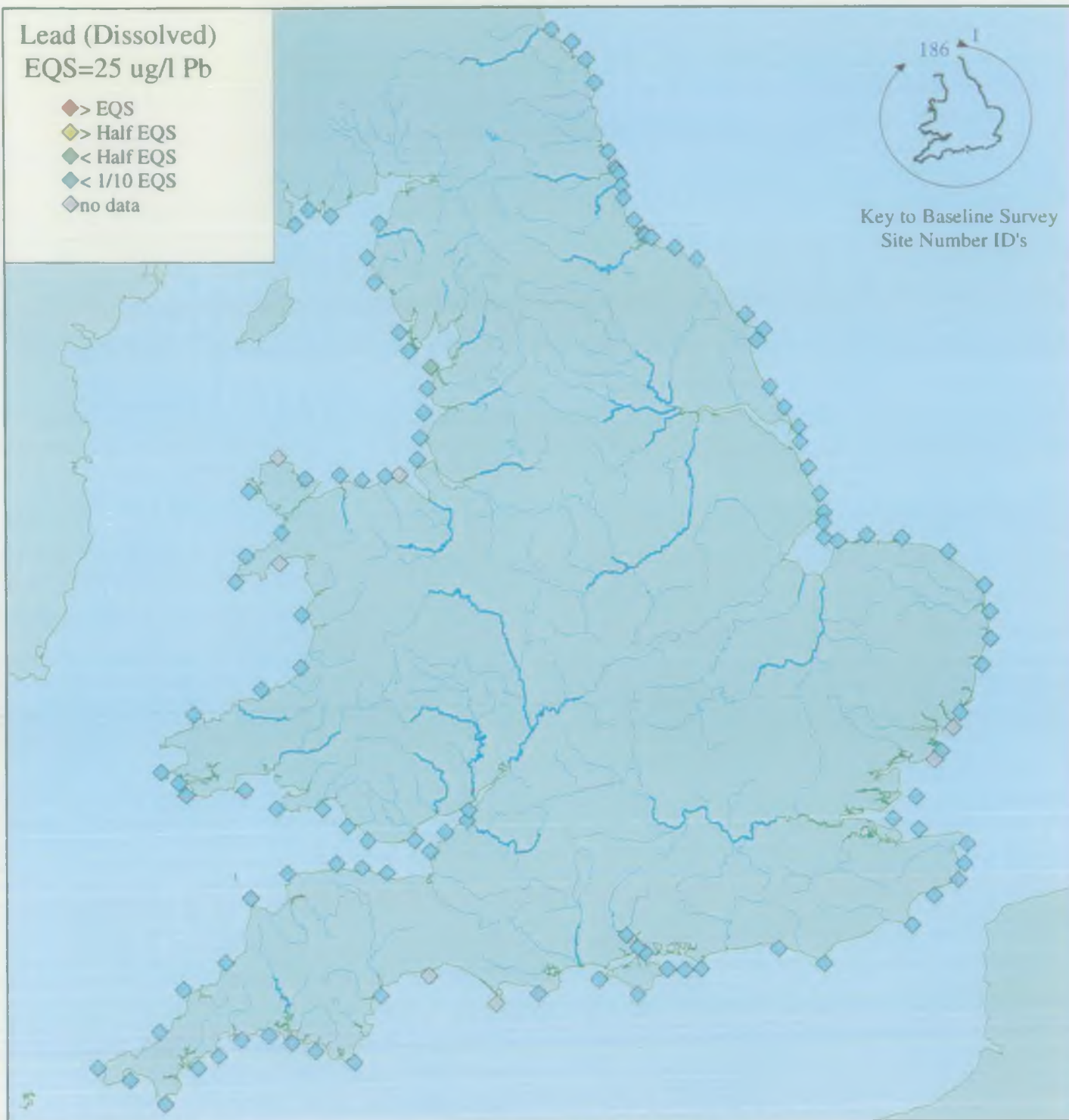
Lead (Dissolved), National Baseline Survey, Summer 1996.

Lead (Dissolved)
EQS=25 ug/l Pb

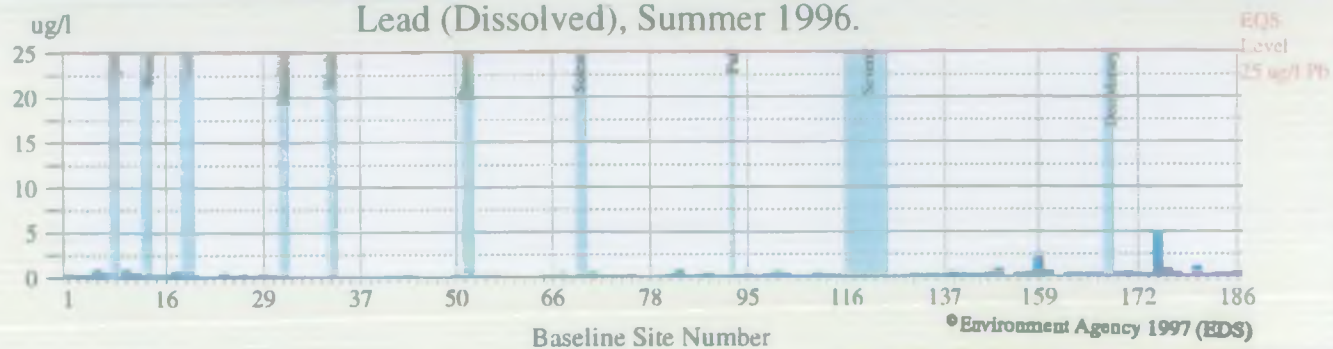
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



Key to Baseline Survey
Site Number ID's



Lead (Dissolved), Summer 1996.



Nickel (Dissolved), National Baseline Survey, Summer 1996.

Nickel (Dissolved)
EQS=30 ug/l Ni

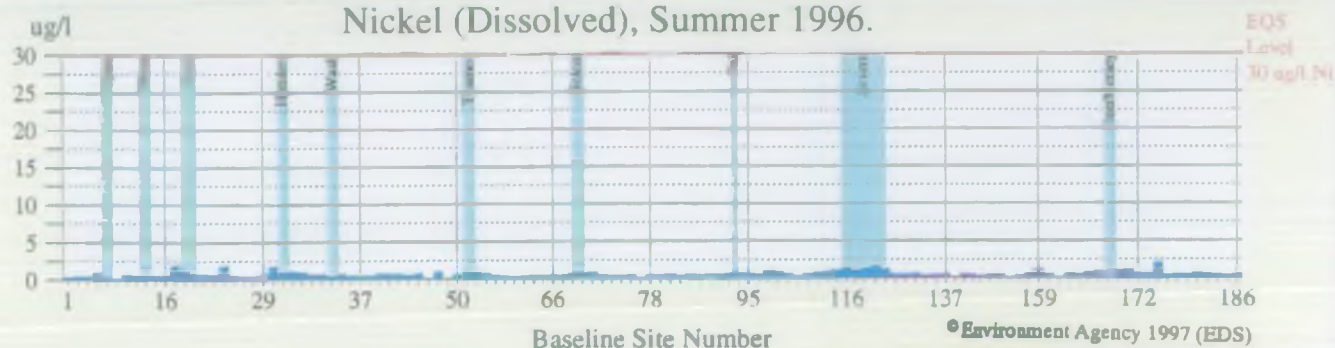
- ◆ > EQS
- ◆ > Half EQS
- ◆ < Half EQS
- ◆ < 1/10 EQS
- ◆ no data



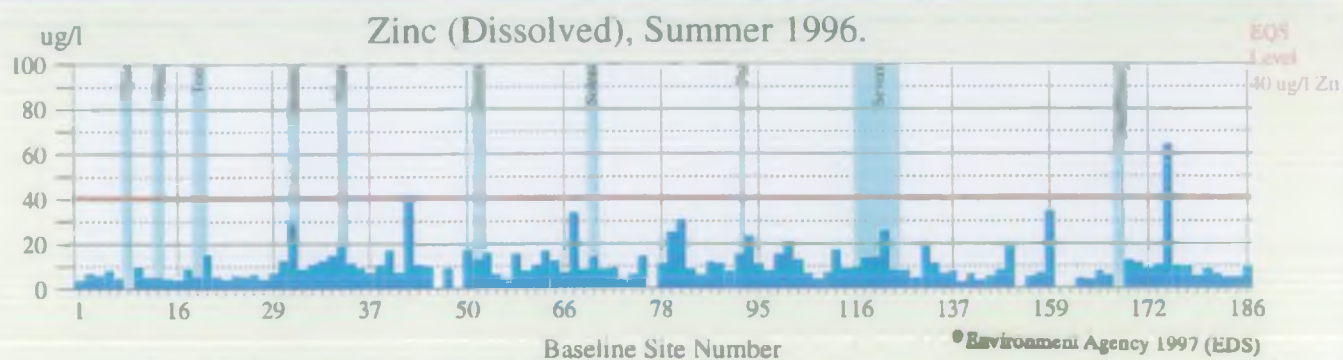
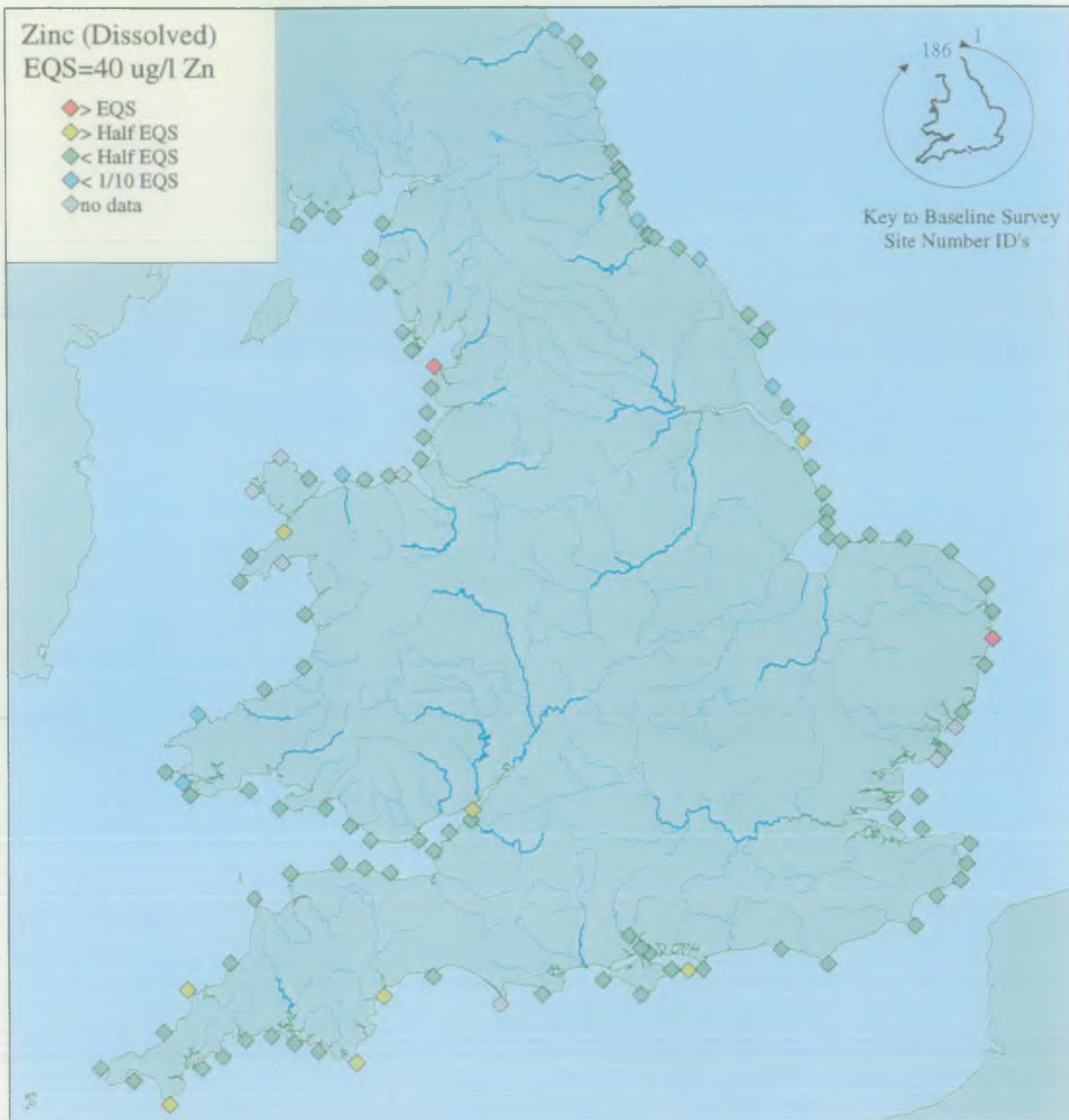
Key to Baseline Survey
Site Number ID's



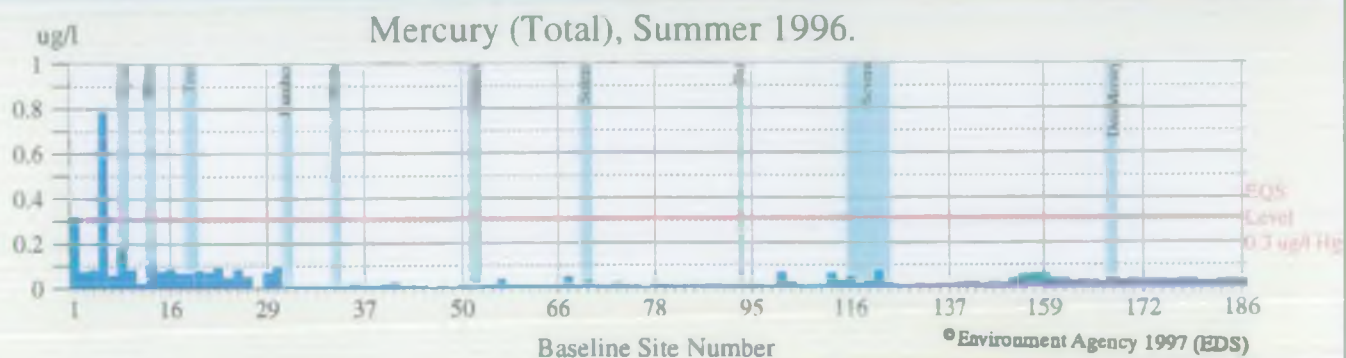
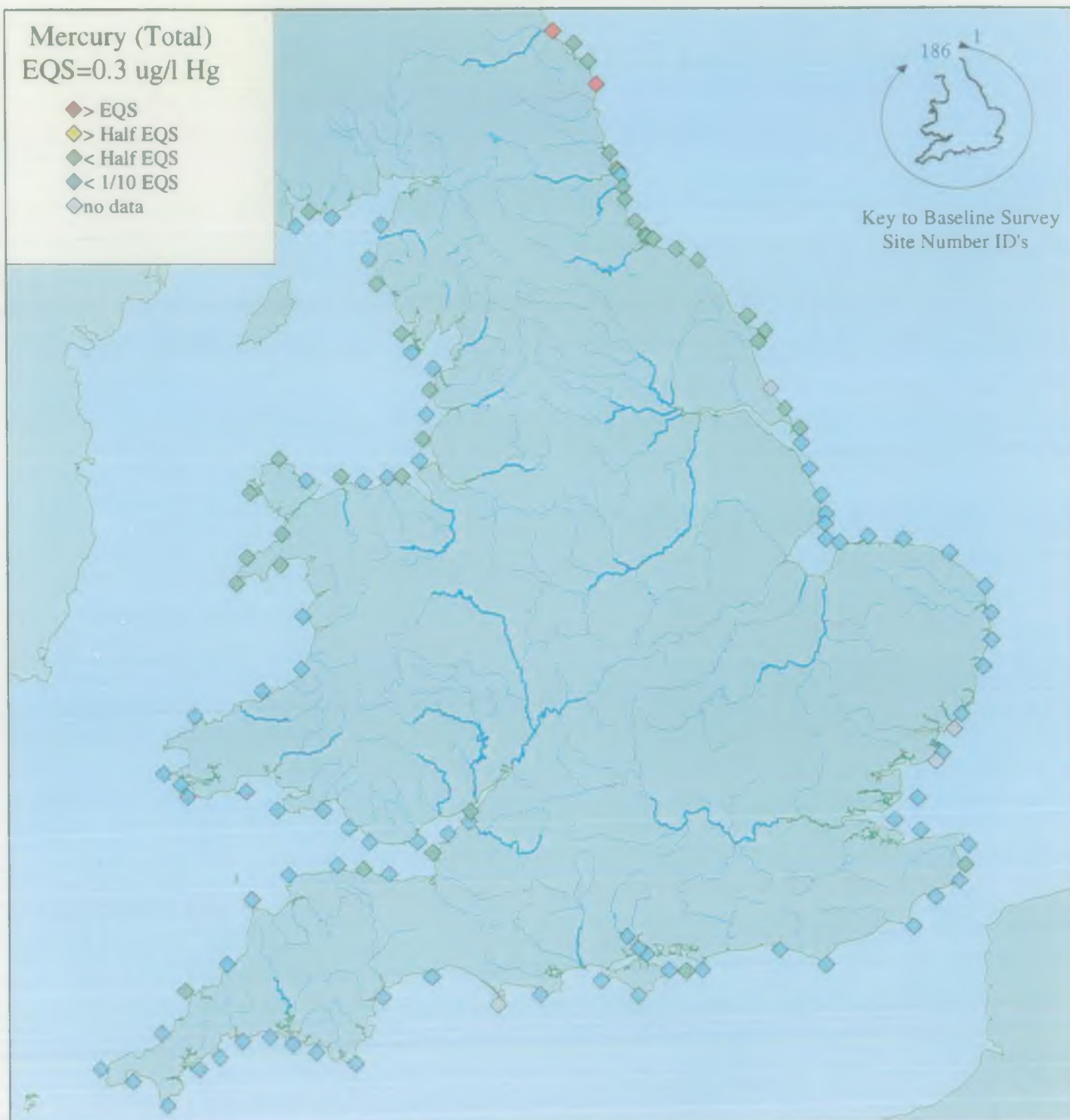
Nickel (Dissolved), Summer 1996.



Zinc (Dissolved), National Baseline Survey, Summer 1996.



Mercury (Total), National Baseline Survey, Summer 1996.



Organic Chemicals, National Baseline Survey, Summer 1996.



Sample Sites Where Organic Chemicals Found Above Limit of Detection

Base 31 : 0.001 ug/l of HCH-Gamma	Base 66 : 0.001 ug/l of HCH-Gamma	Base 130 : 0.001 ug/l of HCH-Gamma
Base 33 : 0.001 ug/l of HCH-Gamma	Base 68.2 : 0.002 ug/l of HCH-Gamma	Base 134 : 0.001 ug/l of HCH-Gamma
Base 35 : 0.001 ug/l of HCH-Gamma	Base 78 : 0.001 ug/l of HCH-Gamma	Base 137 : 0.001 ug/l of HCH-Gamma
Base 39 : 0.001 ug/l of HCH-Gamma	Base 86 : 0.001 ug/l of HCH-Gamma	Base 154 : 0.001 ug/l of HCH-Gamma
Base 41 : 0.001 ug/l of HCH-Gamma	Base 97 : 0.001 ug/l of HCH-Gamma	Base 156 : 0.001 ug/l of HCH-Gamma
Base 43 : 0.001 ug/l of HCH-Gamma	Base 119 : 0.001 ug/l of HCH-Gamma	Base 161 : 0.001 ug/l of HCH-Gamma
Base 51 : 0.002 ug/l of HCH-Gamma	Base 125 : 0.002 ug/l of HCH-Gamma	Base 163 : 0.001 ug/l of HCH-Gamma
Base 56 : 0.002 ug/l of HCH-Gamma		Base 165 : 0.001 ug/l of HCH-Gamma
Base 61 : 0.002 ug/l of HCH-Gamma		Base 168 : 0.001 ug/l of HCH-Gamma

3. NUTRIENT AUTO-ANALYSER (SKALAR) DATA

- 3.1 Data were collected using the Skalar nutrient auto-analyser between laboratory sampling sites. Five determinands were measured: nitrite, T.O.N., silicate, ammoniacal nitrogen and orthophosphate.
- 3.2 The data have been stored digitally as text files on the attached CD-ROM.
- 3.3 Maps have been produced of T.O.N., ammoniacal nitrogen, silicate and orthophosphate levels for each survey and are shown below.

SKALAR NUTRIENT AUTO-ANALYSER DATA MAPS

WINTER 1996

T.O.N. Levels

Coastal Baseline Survey Winter 1996



Ammoniacal Nitrogen Levels

Coastal Baseline Survey Winter 1996



Silicate Levels

Coastal Baseline Survey Winter 1996



Orthophosphate Levels

Coastal Baseline Survey Winter 1996



SKALAR NUTRIENT AUTO-ANALYSER DATA MAPS

SPRING 1996

T.O.N. Levels

Coastal Baseline Survey Spring 1996



Ammoniacal Nitrogen Levels

Coastal Baseline Survey Spring 1996



Silicate Levels

Coastal Baseline Survey Spring 1996



Orthophosphate Levels

Coastal Baseline Survey Spring 1996



SKALAR NUTRIENT AUTO-ANALYSER DATA MAPS

SUMMER 1996

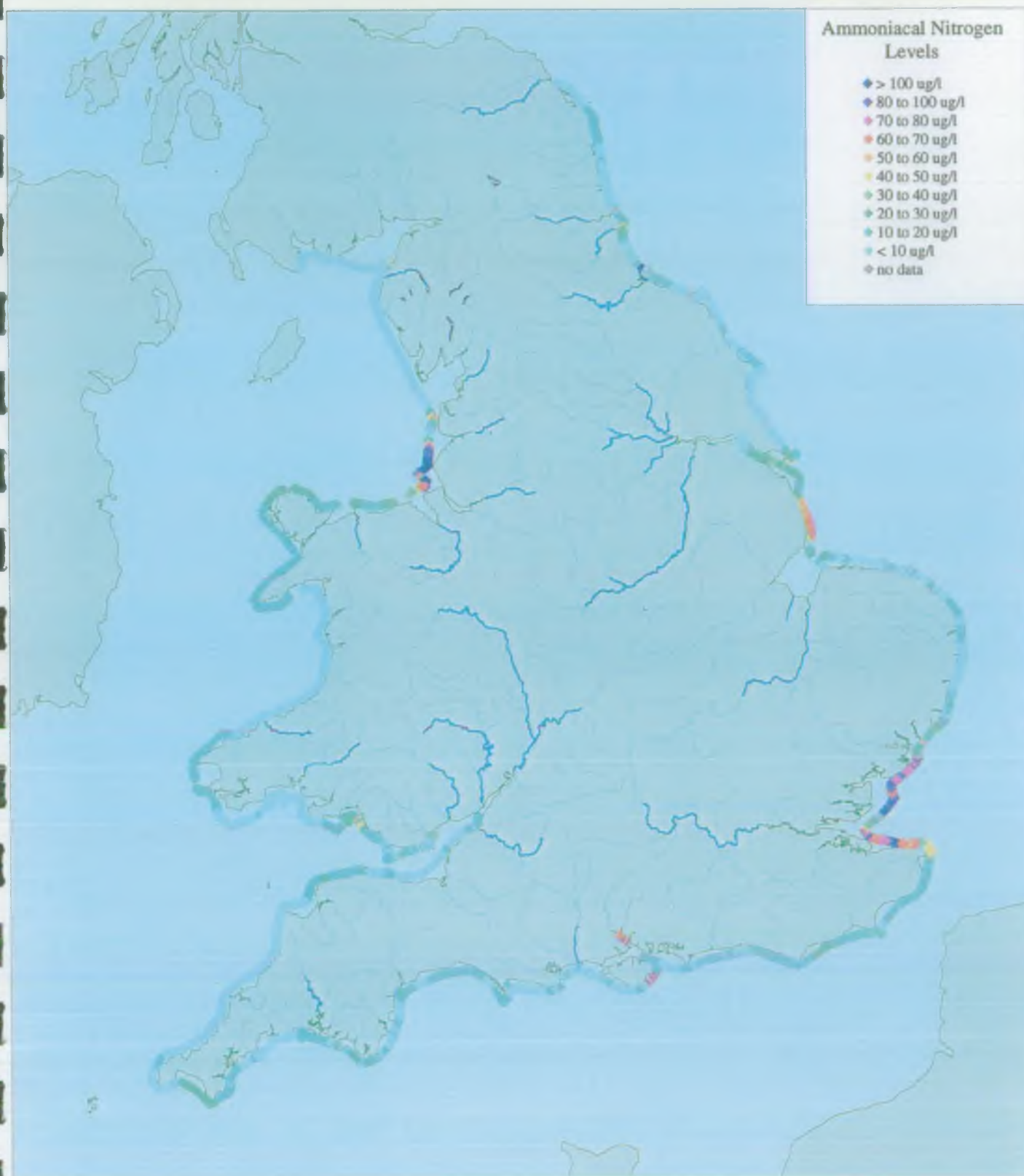
T.O.N. Levels

Coastal Baseline Survey Summer 1996



Ammoniacal Nitrogen Levels

Coastal Baseline Survey Summer 1996



Silicate Levels

Coastal Baseline Survey Summer 1996



Orthophosphate Levels

Coastal Baseline Survey Summer 1996



4. CONTINUOUS MONITORING DATA

- 4.1 Continuous underway data were collected between baseline sampling sites, the data being logged at 10 second intervals using the QUBIT on-board data gathering system. The basic determinands (temperature, salinity, dissolved oxygen, transmission and fluorescence) were measured on all vessels. On some vessels two systems were run, a Towfish system measuring at 4 metres depth, and a pumped system measuring at 1m depth.
- 4.2 The data have been displayed geographically as A3 plots for each of the three surveys. These have been included as a separate document. Digital copies of these EasyCAD plot files have been included on the CD-ROM.
- 4.3 The data have also been stored digitally as text files, known as QUBIT box files. Each contain the digital data for a particular geographical part of the coastline. The key to the file numbering is shown in the following figure. Each box has approximately the same number of QUBIT points. The geolocation information is stored as Eastings/Northings in the British National Grid projection.
- 4.4 The actual determinands measured on each boat vary. The individual determinands in each text file are listed in the first record of the text file. Missing data are not entered, with some variables reserved for future expansion. The column headings are listed below:

1	rec_no	record number from original file (housekeeping)
2	date	date of sample
3	time	time of sample
4	fix	QUBIT fix number (housekeeping)
5	file	QUBIT QPF file name (housekeeping)
6	easting	easting of sample
7	northing	northing of sample
8	tide	reserved for future use
9	temp_fish	temperature from Towfish
10	sal_fish	salinity from Towfish
11	depth_fish	depth of Towfish
12	chloro_fish	fluorescence from Towfish
13	do_fish	dissolved oxygen from Towfish
14	trans_fish	transmission from Towfish
15	temp_prof	temperature from pumped system
16	sal_prof	salinity from the pumped system
17	depth_echo	depth of water from the echo-sounder
18	quality	reserved for future use

HEALTH WARNING

Due to the hostile nature of the environment from which these data are collected there are occasional instrument problems and areas where data collection was not possible due to heavy seas. Any interpretation of these data must bear this in mind. The data have not been extensively quality controlled, but are deemed suitable for release as long as they are used with caution.

National Baseline Survey Qubit Box Data Locations



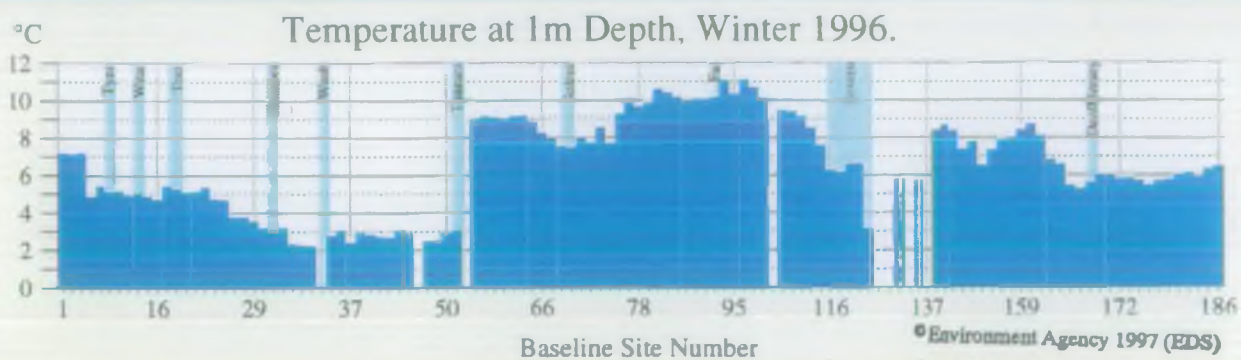
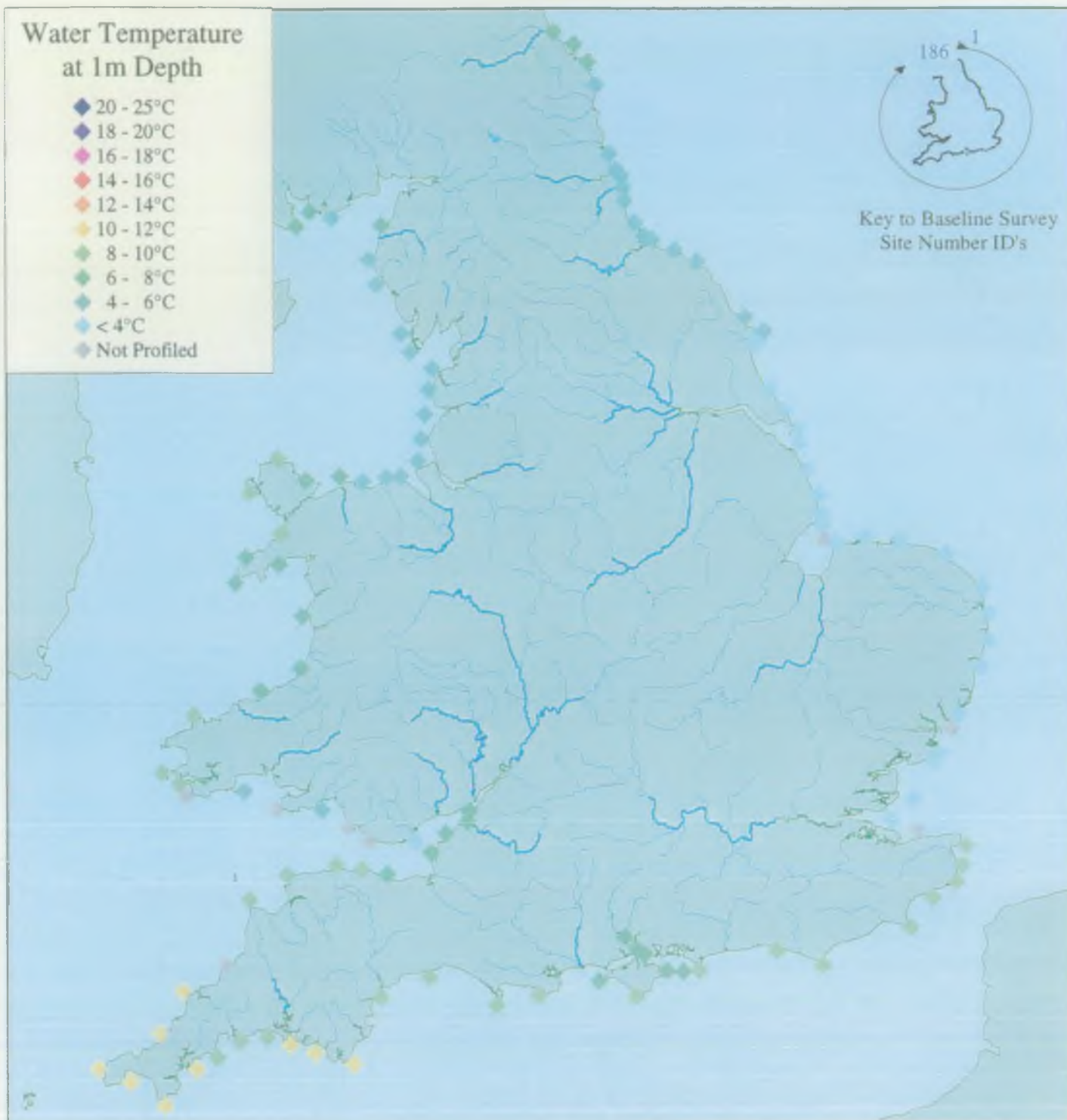
5. VERTICAL PROFILE DATA

- 5.1 Vertical profiles of temperature, salinity, dissolved oxygen were collected at each baseline sampling site. Additionally, profiled measurements of turbidity and fluorescence were collected at some sites.
- 5.2 These data have been stored as Quattro Pro spreadsheets on the enclosed CD-ROM.
- 5.3 The temperature and salinity data collected at 1m depth have been plotted graphically for the Winter and Spring surveys, with the data from 2m depth being plotted for the Summer survey.

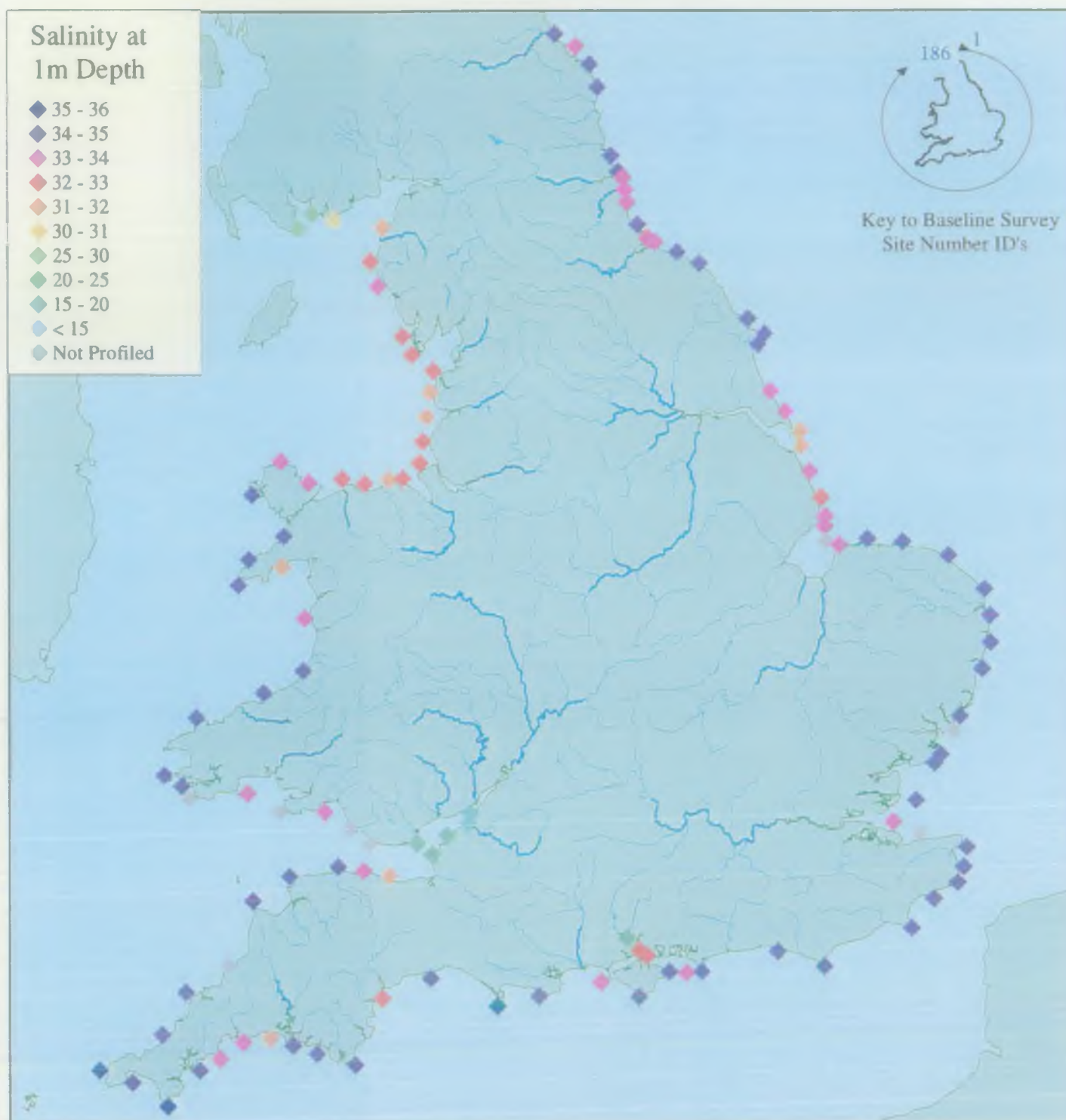
PROFILER DATA MAPS

WINTER 1996

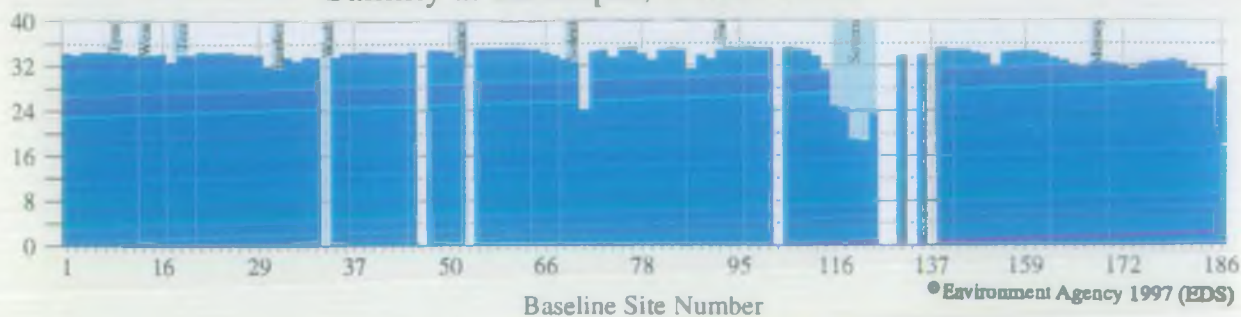
Water Temperature at 1m Depth, National Baseline Survey, Winter 1996.



Salinity at 1m Depth, National Baseline Survey, Winter 1996.



Salinity at 1m Depth, Winter 1996.

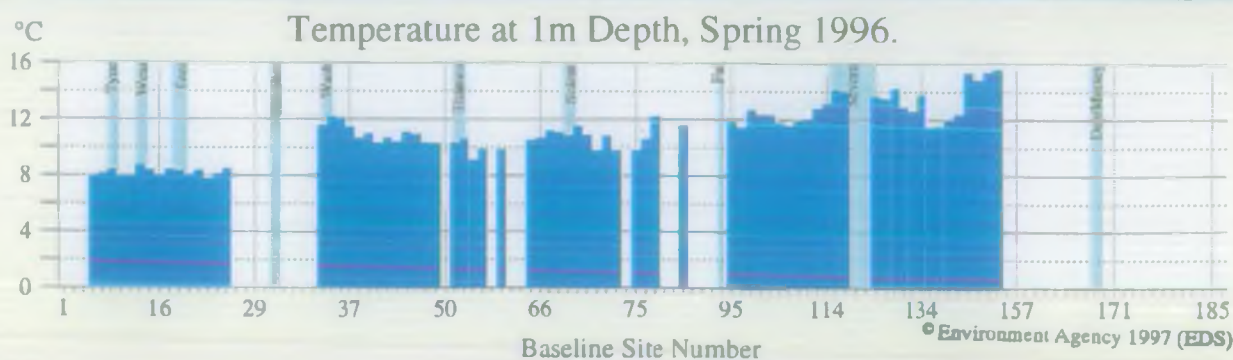
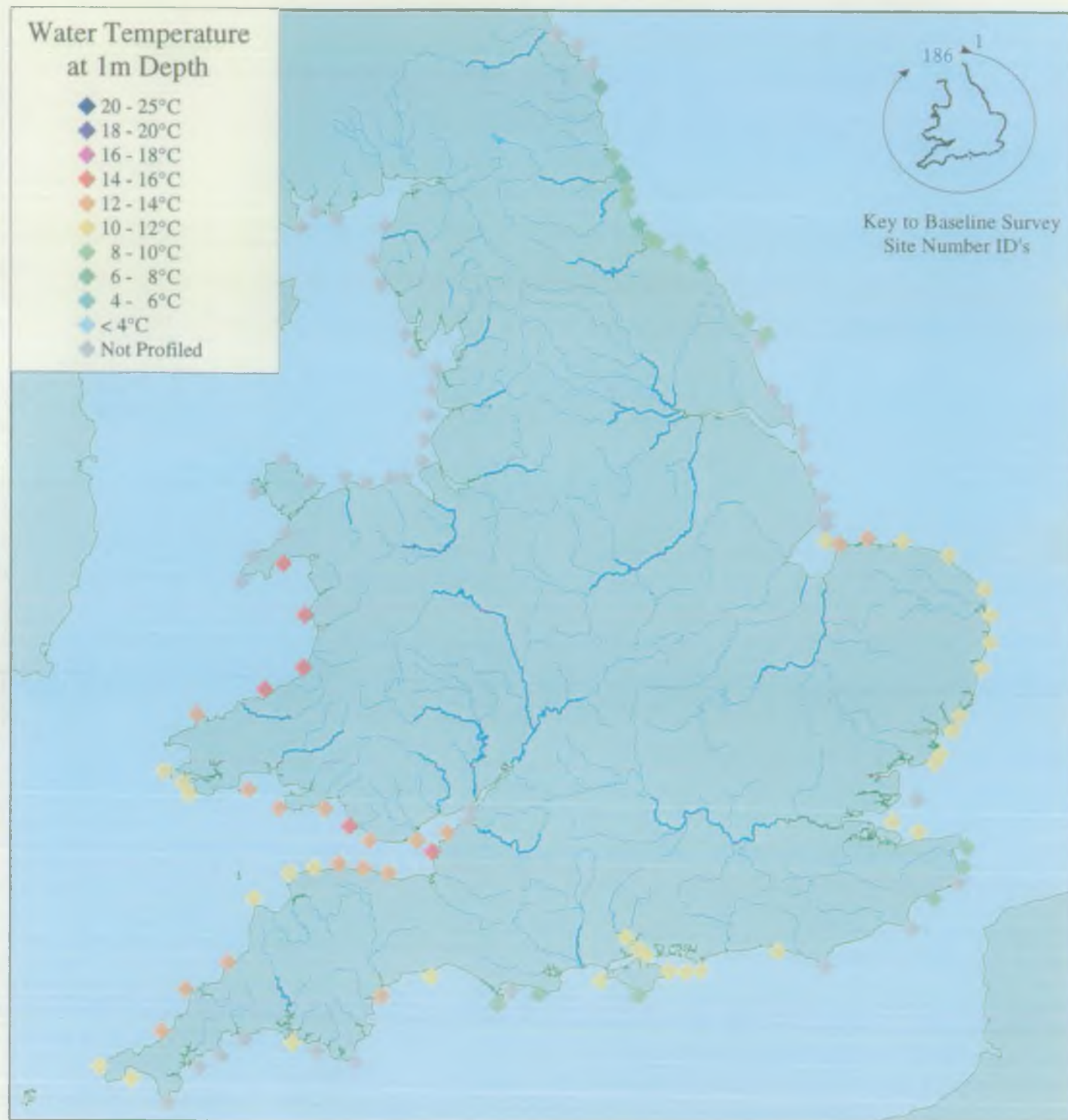


PROFILER DATA MAPS

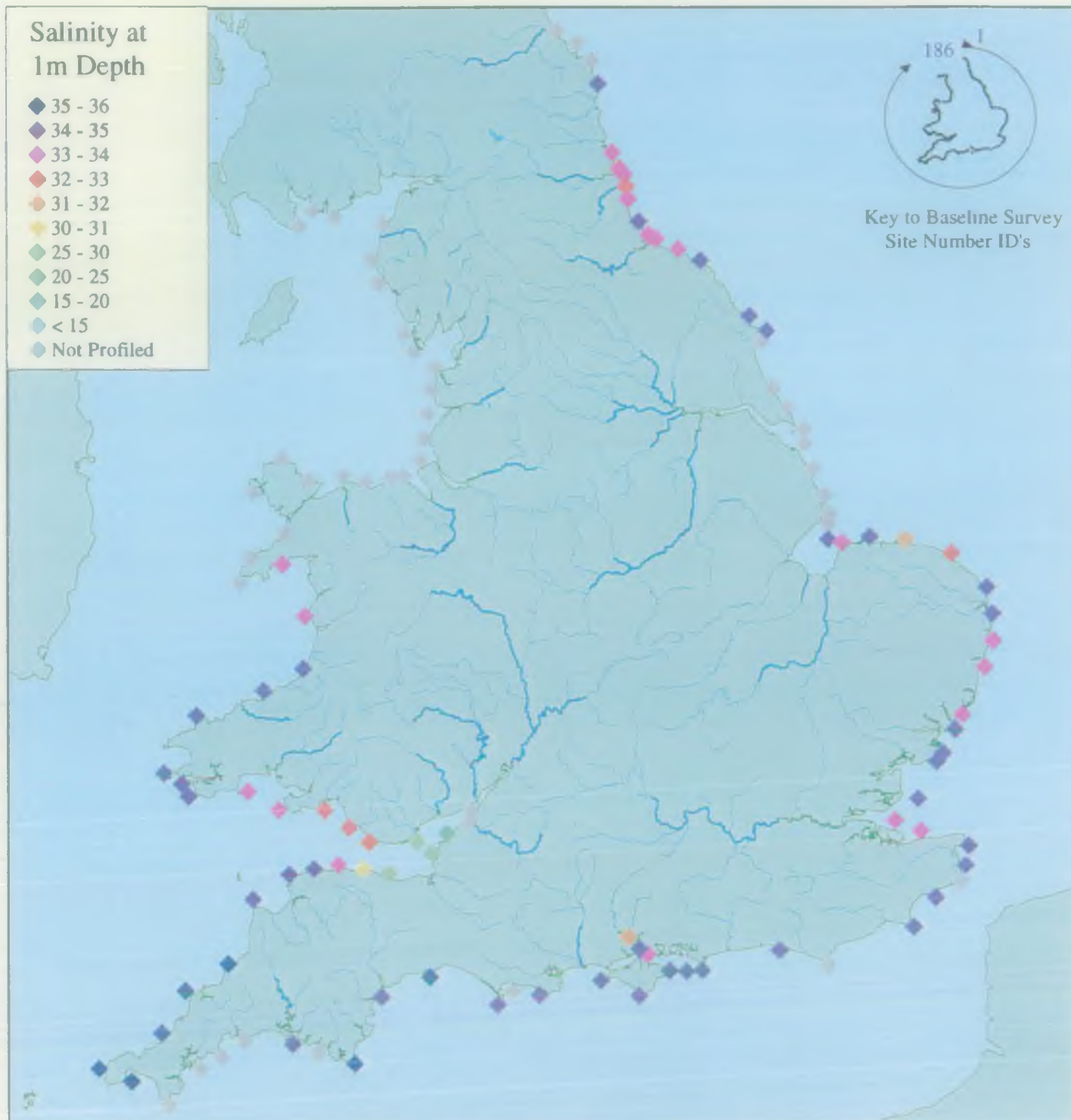
SPRING 1996

61

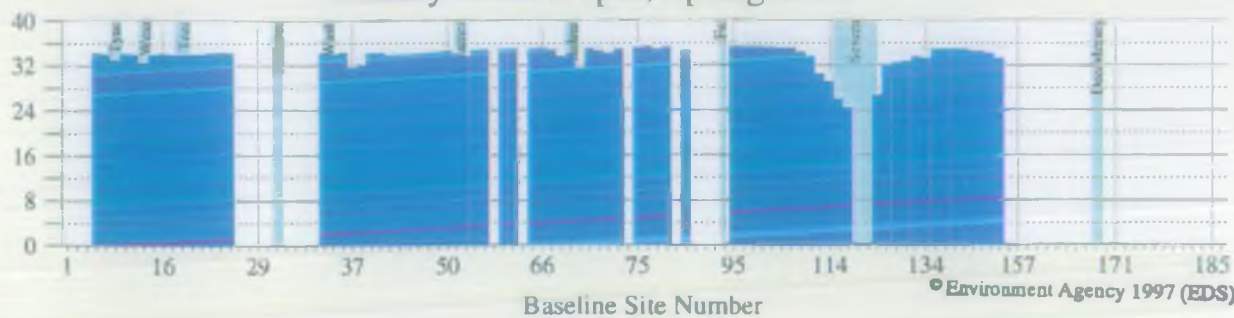
Water Temperature at 1m Depth, National Baseline Survey, Spring 1996.



Salinity at 1m Depth, National Baseline Survey, Spring 1996.



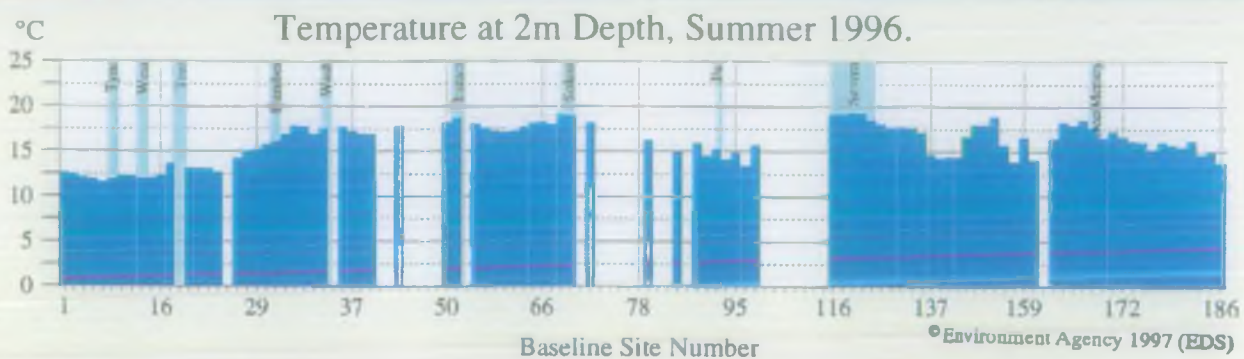
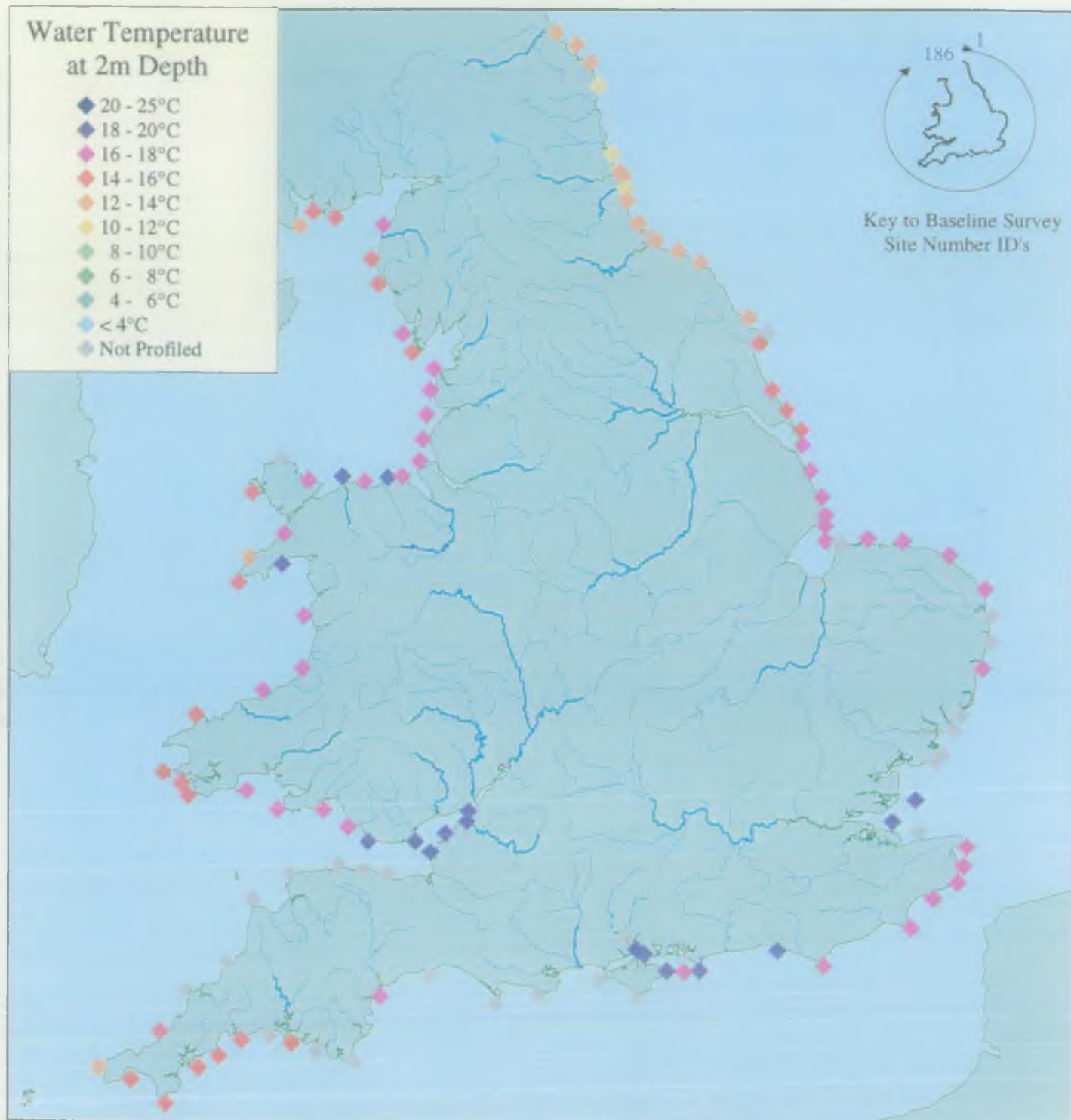
Salinity at 1m Depth, Spring 1996.



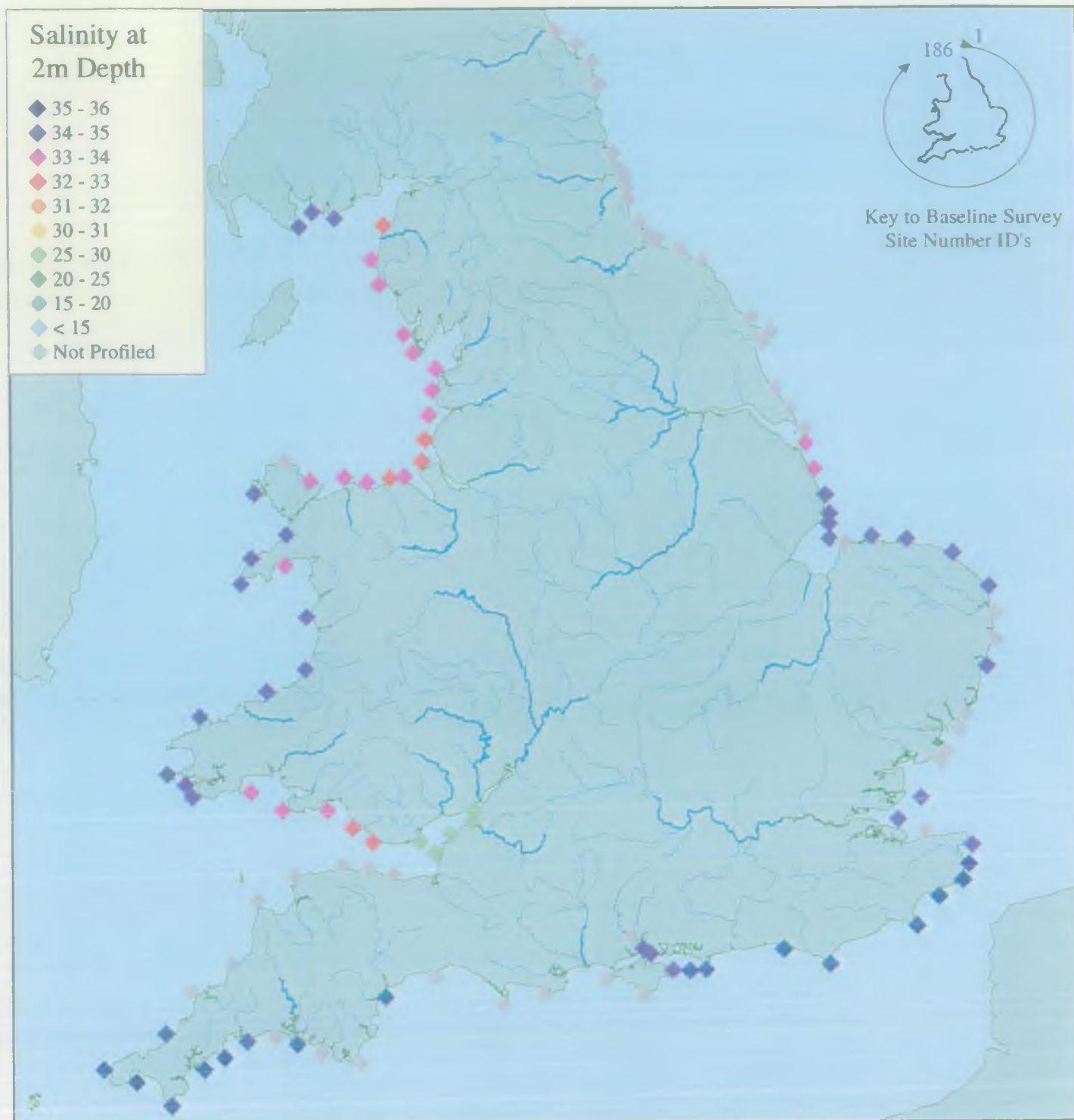
PROFILER DATA MAPS

SUMMER 1996

Water Temperature at 2m Depth, National Baseline Survey, Summer 1996.



Salinity at 2m Depth, National Baseline Survey, Summer 1996.



Salinity at 2m Depth, Summer 1996.

