SUMMARY OF AMMONIUM-NITROGEN MEASUREMENTS MADE DURING SIX COOPERATIVE U. S.-U. S. S. R. MARMAP SURVEYS

by

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Introduction

During six cooperative U. S.-U. S. S. R. surveys from August 1979 to June 1980, seawater collections were made on the continental shelf of the U. S. from Cape Hatteras to the Gulf of Maine to determine concentrations of nutrients, rates of primary productivity, phytoplankton biomass (chlorophyll a), phytoplankton community structure, and other physical-biological variables. Reported here are ammonium-nitrogen concentrations from samples collected during these cruises. When sample processing is completed, reports will be published describing nitrate, nitrite, urea, ammonium, silicate, and orthophosphate distributions, interrelationships, and their association with various physical-biological factors.

Methods

Samples for ammonium-nitrogen (NH_4-N) analysis were pressure filtered immediately after collection through glass fiber filters (Whatman GF/F, retention 0.7μ) and preserved by the addition of phenol-alcohol (Degobbis, 1973) and freezing. Analyses were completed at the Sandy Hook Laboratory within a week or two of cruise termination following the procedures of Liddicoat et al. (1975).

Results

Presented here are cruise tracks and data listings of NH_4-N concentrations for stations and depths sampled during six cooperative U. S.-U. S. S. R. surveys:

Belogorsk 79-01	11 August to 2 September 1979
Belogorsk 79-03, Part I	12 September to 19 September 1979
Part II	29 September to 9 October 1979
Belogorsk 79-05	22 November to 28 November 1979
Evrika 80-02	18 May to 28 May 1980
Delaware 80-03	23 May to 12 June 1980
Evrika 80-04	25 June to 29 June 1980

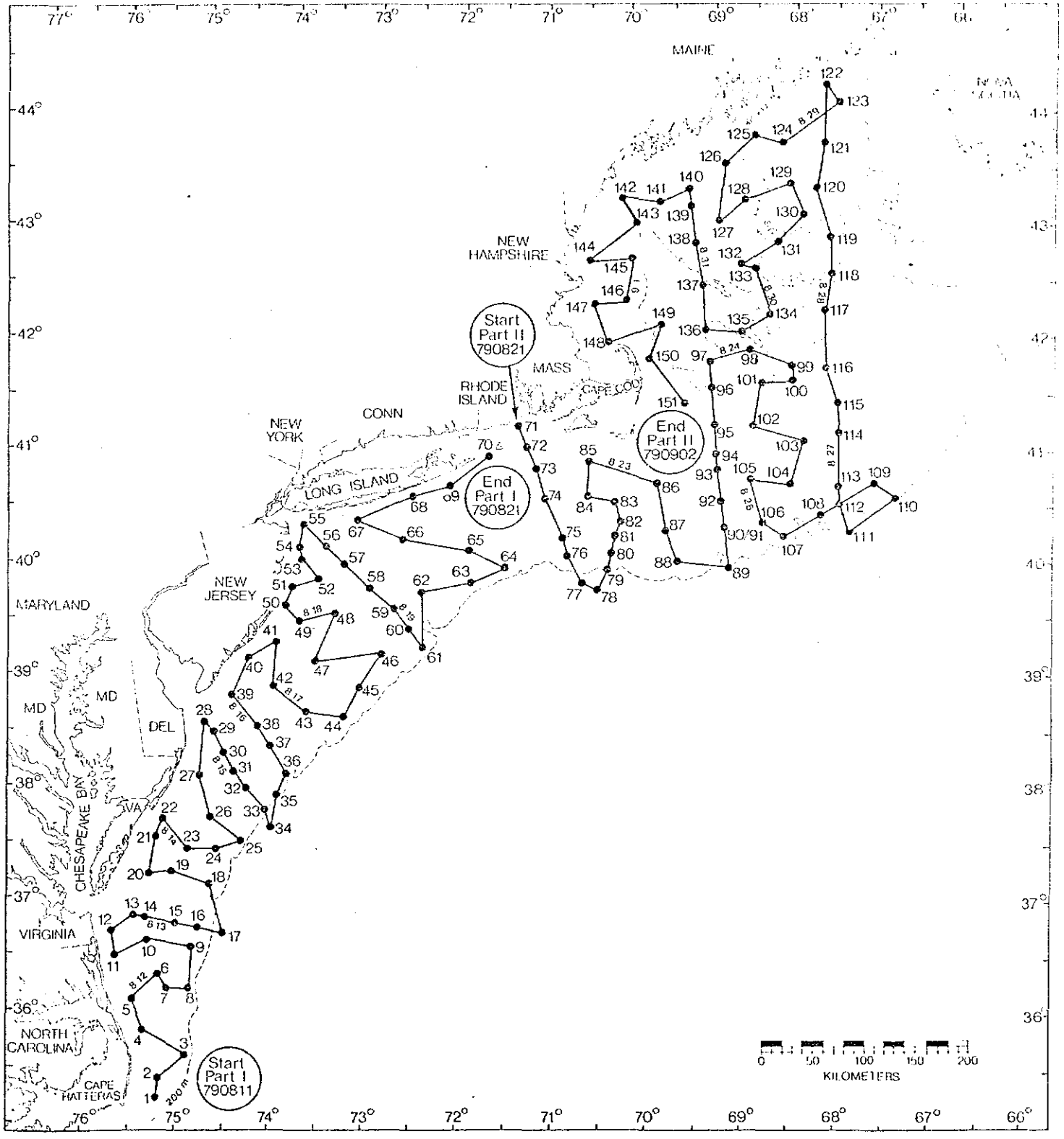
The intent of this program is to establish seasonal nutrient baselines which will provide the basis for a better understanding of factors influencing the productivity of the waters of the U. S. continental shelf from Cape Hatteras to the Gulf of Maine.

The Evrika 80-02 survey departs from the others reported here in that it is more site-specific. Its experimental design was to make as complete a series of physical-biological observations at as frequent intervals as possible in waters on Georges Bank known to contain high members of larval gadids, in order to study factors which contribute to larval survival and year class success. The first four stations sampled for nutrients (12, 17, 32, and 35) were within 70.8 km. Stations 42 through 89 were located as close as possible in a geographically fixed position from 20 to 28 May 1980. Water sample collections for nutrient analysis were made at these last stations twice daily at 0600 and 1100 EST. The difference between the 0600 and 1100 observations over the period sampled will be examined to correlations with other physical and biological data concurrently collected.

References

Degobbis, D. 1973. On the storage of seawater samples for ammonia determination. Limno. and Oceano. 18: 146.

Liddicoat, M. I., S. Tibbits and E. I. Butler. 1975. The determination of ammonia in seawater. Limno. and Oceano. 20: 131.



Cruise track and station locations sampled during Belogorsk 79-01

BELOGORSK 79-01

11 AUGUST 1979 TO 2 SEPTEMBER 1979

AMMONIUM CONCENTRATIONS

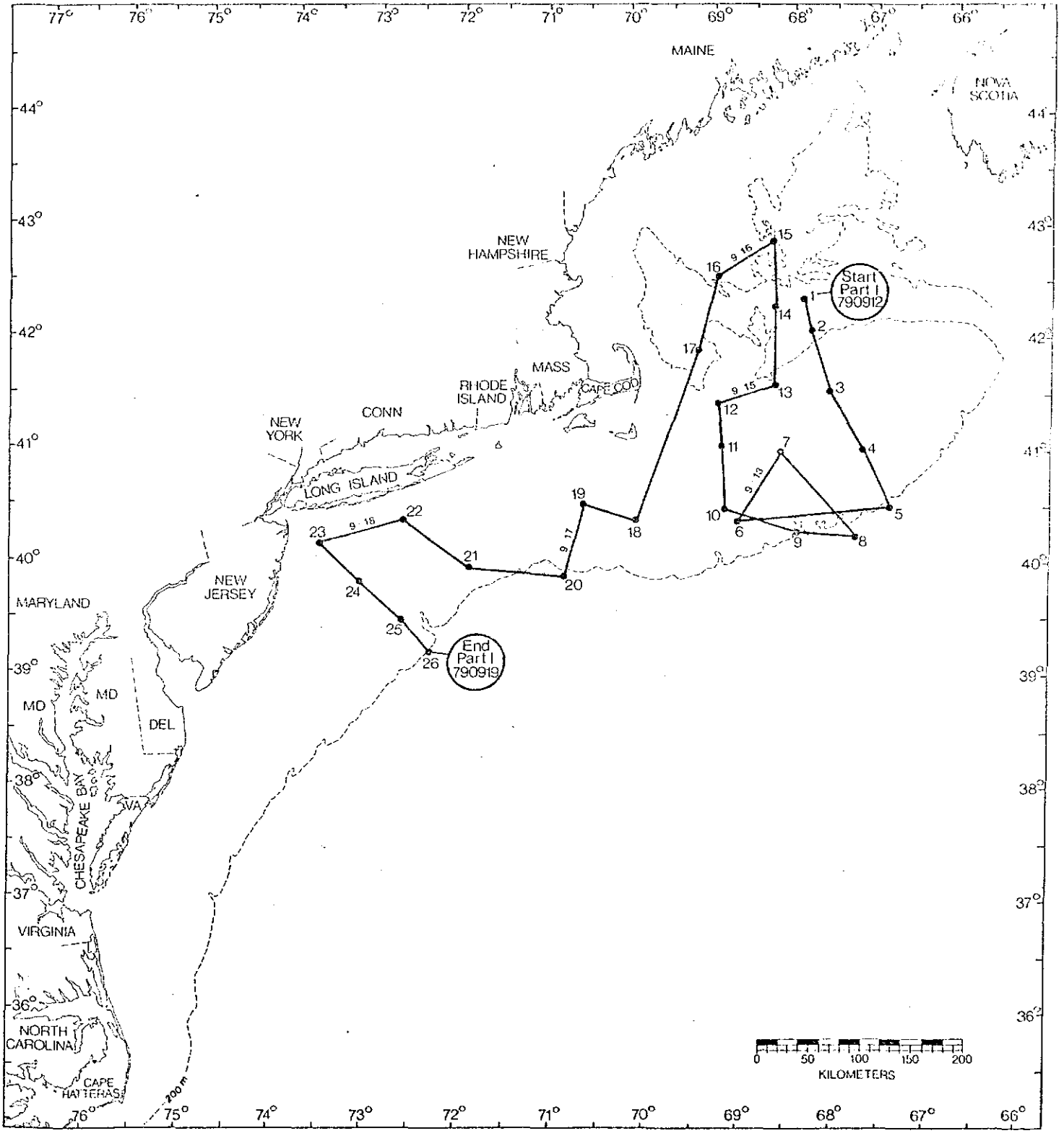
STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
1	1801	1	0.51
1	1803	10	1.14
1	1805	25	2.33
2	1806	1	0.85
2	1808	20	0.78
2	1810	52	1.87
4	1811	1	1.60
4	1813	10	1.12
4	1815	22	2.12
5	1816	1	0.56
5	1818	11	0.82
5	1820	24	0.92
7	1826	1	16.68
7	1828	12	1.37
7	1829	21	0.92
7	1831	38	0.56
11	1837	1	1.08
11	1839	10	B
11	1841	22	1.27
12	1842	1	0.88
12	1843	5	0.85
12	1844	10	1.39
12	1845	15	0.97
14	1846	1	1.00
14	1848	12	1.21
14	1849	17	1.87
14	1850	24	1.87
16	1851	1	0.66
16	1852	10	0.56
16	1853	20	0.80
16	1854	30	0.53
16	1855	48	0.91
17	1856	1	0.70
17	1858	19	0.95
17	1860	46	0.34
17	1861	93	0.03
17	1862	140	0.18
17	1863	284	0.06
17	1864	496	0.11
17	1865	780	0.05
20	1872	1	0.12
20	1874	9	0.12
20	1876	20	0.26
22	1877	1	0.13
22	1879	11	0.16
22	1880	14	0.30
28	1891	1	0.16
28	1892	4	0.15
28	1893	13	0.17
28	1894	19	0.33
28	1895	24	0.13

B=MISSING ANALYSIS, SAMPLE TUBE BROKEN IN TRANSIT

30	1896	1	0.00
30	1898	9	0.10
30	1900	19	0.09
30	1901	25	0.27
30	1902	36	0.31
32	1903	1	0.02
32	1904	10	0.08
32	1905	20	0.13
32	1906	30	0.17
32	1907	39	0.25
34	1915	1	0.11
34	1917	20	0.07
34	1919	50	0.08
34	1920	100	0.05
34	1921	200	0.12
34	1922	300	0.07
34	1923	500	0.08
34	1924	800	0.06
44	1947	1	0.12
44	1948	8	0.61
44	1949	16	0.10
44	1950	27	0.09
44	1951	37	0.07
44	1952	50	0.07
44	1953	81	0.08
48	1960	1	0.08
48	1962	20	0.21
48	1964	42	0.32
185	1970	1	0.12
185	1972	11	0.11
185	1974	20	0.14
53	1975	1	0.13
53	1977	14	0.13
53	1979	28	3.01
54	1980	1	0.60
54	1981	5	0.94
54	1982	10	0.99
54	1983	15	1.08
54	1984	26	1.00
55	1985	1	0.89
55	1986	5	0.56
55	1987	10	1.15
55	1988	20	1.19
55	1989	30	6.62
56	1990	1	0.00
56	1991	5	0.01
56	1992	10	0.74
56	1993	20	0.97
56	1994	26	1.07
57	1995	1	0.41
57	1996	10	0.59
57	1997	20	1.73
57	1998	30	2.40
57	1999	39	1.70
59	2000	1	0.62
59	2001	10	0.31
59	2002	20	0.31
59	2003	30	0.77
59	2004	50	1.19
59	2005	71	1.05

61	2006	1	0.50
61	2008	15	2.52
61	2009	31	0.84
61	2010	55	1.36
61	2012	100	3.53
61	2013	146	4.24
62	2014	1	1.88
62	2016	21	2.85
62	2018	50	1.73
62	2019	66	1.27
63	2020	1	2.38
63	2022	20	0.96
63	2024	50	4.44
63	2026	100	2.17
63	2027	135	1.60
65	2028	1	1.45
65	2030	20	0.91
65	2032	50	0.99
65	2033	65	4.56
67	2040	1	6.57
67	2042	12	1.62
67	2044	26	4.00
69	2045	1	2.21
69	2047	20	1.80
69	2049	39	5.42
71	2050	1	0.47
71	2052	10	0.97
71	2054	30	2.84
79	2062	1	0.30
79	2064	10	5.01
79	2066	30	0.83
79	2068	75	0.43
79	2070	200	0.54
81	2055	1	1.41
81	2057	20	2.18
81	2059	50	0.10
81	2060	75	0.42
81	2061	86	0.01
80	2071	1	0.22
80	2073	20	0.29
80	2075	50	0.43
80	2077	100	0.29
86	2084	1	1.33
86	2086	11	1.38
86	2088	30	1.09
89	2096	1	0.54
89	2098	20	0.36
89	2100	50	0.13
89	2102	100	0.33
89	2104	300	0.22
91	2106	1	1.05
91	2108	6	0.82
91	2110	50	0.89
91	2111	80	0.73
93	2112	1	0.72
93	2114	20	0.60
93	2116	50	2.14
93	2117	71	1.53
94	2118	1	10.80
94	2120	20	1.25

94	2122	50	1.15
94	2124	82	1.10
76	2125	1	0.80
76	2127	20	0.79
76	2130	75	0.27
111	2186	1	0.51
111	2188	20	0.08
111	2190	50	0.91
111	2192	100	0.87
111	2199	50	0.42
113	2195	1	0.49
113	2197	20	0.10
113	2199	50	2.06
113	2200	70	0.62



Cruise track and station locations sampled during Belogorsk 79-03 Part I, September 12-19, 1979.

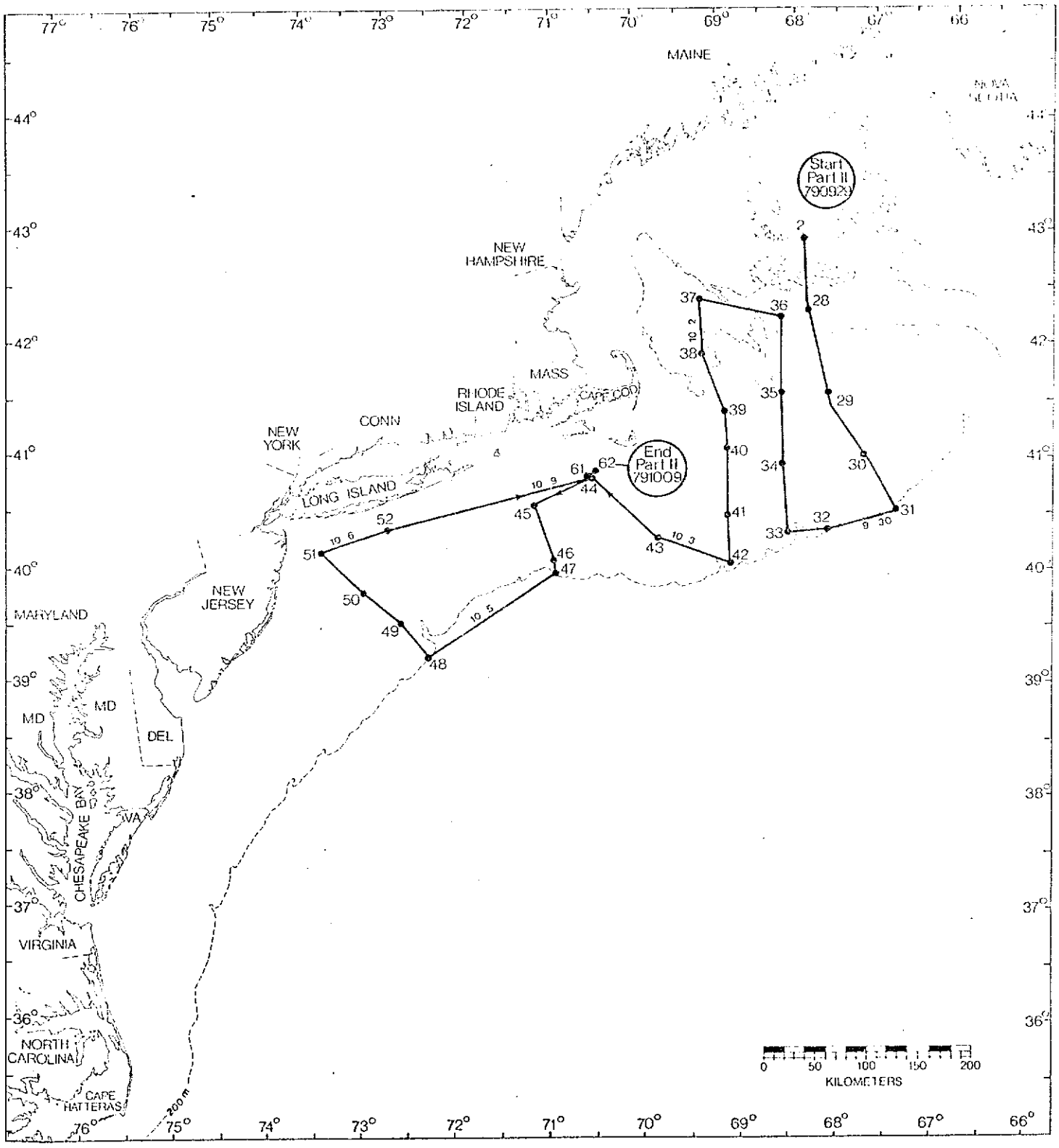
DELOGORSK 79-03 PART I

12 SEPTEMBER 1979 TO 19 SEPTEMBER 1979

AMMONIUM CONCENTRATIONS

STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
1	2400	1	22.19
1	2406	50	1.21
1	2408	100	0.68
1	2409	177	14.63
2	2410	1	1.06
2	2417	50	0.44
2	3419	100	1.05
2	2420	225	0.39
5	2421	1	1.91
5	2426	30	1.51
5	2430	100	1.08
5	2431	255	1.06
6	2432	1	0.83
6	2437	30	1.32
6	2440	75	27.58
6	2442	130	0.45
8	2443	1	0.82
8	2447	38	0.79
8	2450	100	0.30
8	2451	250	0.52
8	2453	500	0.75
9	2454	1	0.58
9	2458	30	1.96
9	2462	100	1.49
9	2463	140	0.46
12	2464	1	3.94
12	2469	26	0.73
12	2473	75	0.39
12	2474	125	1.34
13	2475	1	0.26
13	2479	14	1.04
13	2482	35	2.46
13	2483	50	3.67
15	2484	1	2.60
15	2488	20	9.87
15	2493	100	0.50
15	2494	180	23.27
16	2495	1	1.42
16	2499	19	1.42
16	2503	100	0.56
16	2504	185	0.68
18	2505	1	7.54
18	2508	7	4.77
18	2511	26	1.51
18	2513	68	6.84
19	2514	1	1.32
19	2518	19	1.20
19	2520	35	2.90
19	2522	63	0.99
22	2523	1	18.04
22	2526	15	0.64

22	2528	33	7.43
22	2529	42	11.06
23	2530	1	5.32
23	2532	7	2.34
23	2534	21	0.71
23	2535	28	8.26
26	2536	1	2.03
26	2540	20	1.55
26	2544	100	2.13
26	2545	205	1.61



Cruise track and station locations sampled during Belogorsk 79-03, Part II, September 29-October 9, 1979.

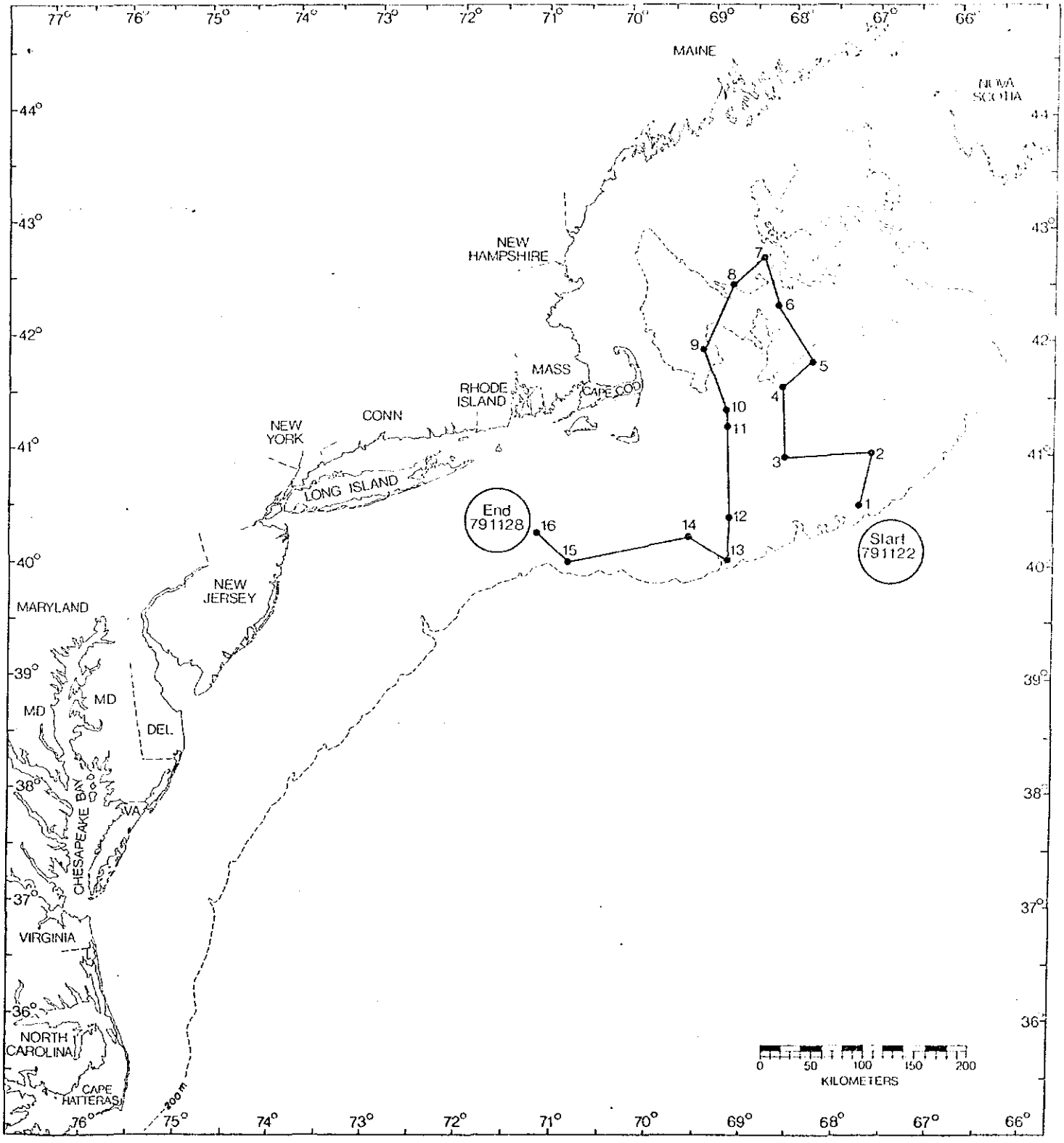
BELGICA 79-07 PART II

29 SEPTEMBER 1979 TO 9 OCTOBER 1979

AMMONIUM CONCENTRATIONS

STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
27	2546	1	0.99
27	2551	25	0.00
27	2553	100	3.12
27	2554	170	2.13
28	2555	1	2.58
28	2559	29	0.04
28	2562	100	2.98
28	2563	170	0.07
31	2564	1	2.09
31	2568	41	7.77
31	2571	150	0.86
31	2572	195	3.75
35	2582	1	0.59
35	2583	3	3.95
35	2587	27	6.07
35	2588	50	0.63
35	2589	56	3.82
36	2590	1	4.03
36	2594	28	5.81
36	2597	100	0.46
36	2598	205	4.13
37	2599	1	31.82
37	2603	27	2.20
37	2606	100	16.34
37	2607	230	0.76
38	2608	1	1.55
38	2613	35	1.96
38	2616	100	1.91
38	2617	205	4.24
39	2618	1	1.63
39	2621	30	1.91
39	2623	75	0.55
39	2625	145	0.34
42	2626	1	3.24
42	2629	26	0.39
42	2633	100	0.81
42	2634	137	0.88
43	2635	1	1.40
43	2640	53	1.31
43	2641	69	2.59
44	2642	1	4.61
44	2643	10	1.20
44	2646	45	0.93
45	2647	1	4.05
45	2651	16	2.78
45	2653	35	1.51
45	2654	61	18.15
46	2655	1	4.73
46	2659	34	1.64
46	2662	100	0.93
46	2663	125	1.88

47	2664	1	0.48
47	2666	20	0.62
47	2668	50	1.20
47	2669	82	2.30
48	2670		
48	2674	[illegible]	5.19
48	2677	100	2.01
48	2678	210	2.30
49	2679	1	2.20
49	2682	20	0.67
49	2685	50	0.24
49	2686	70	0.57
50	2687	1	0.35
50	2689	20	5.59
50	2691	50	1.63
50	2692	65	2.94
51	2693	1	1.69
51	2696	7	1.55
51	2698	15	4.86
51	2699	23	2.26
52	2700	1	2.18
52	2703	16	1.33
52	2705	33	3.79
52	2706	37	1.80
61	2707	1	0.40
61	2711	17	0.05
61	2713	35	0.16
61	2714	49	0.25
62	2715	1	1.05
62	2718	12	0.33
62	2720	23	0.44
62	2721	44	0.10



Cruise track and station locations sampled during Belogorsk 79-05

BELOGORSK 79-05

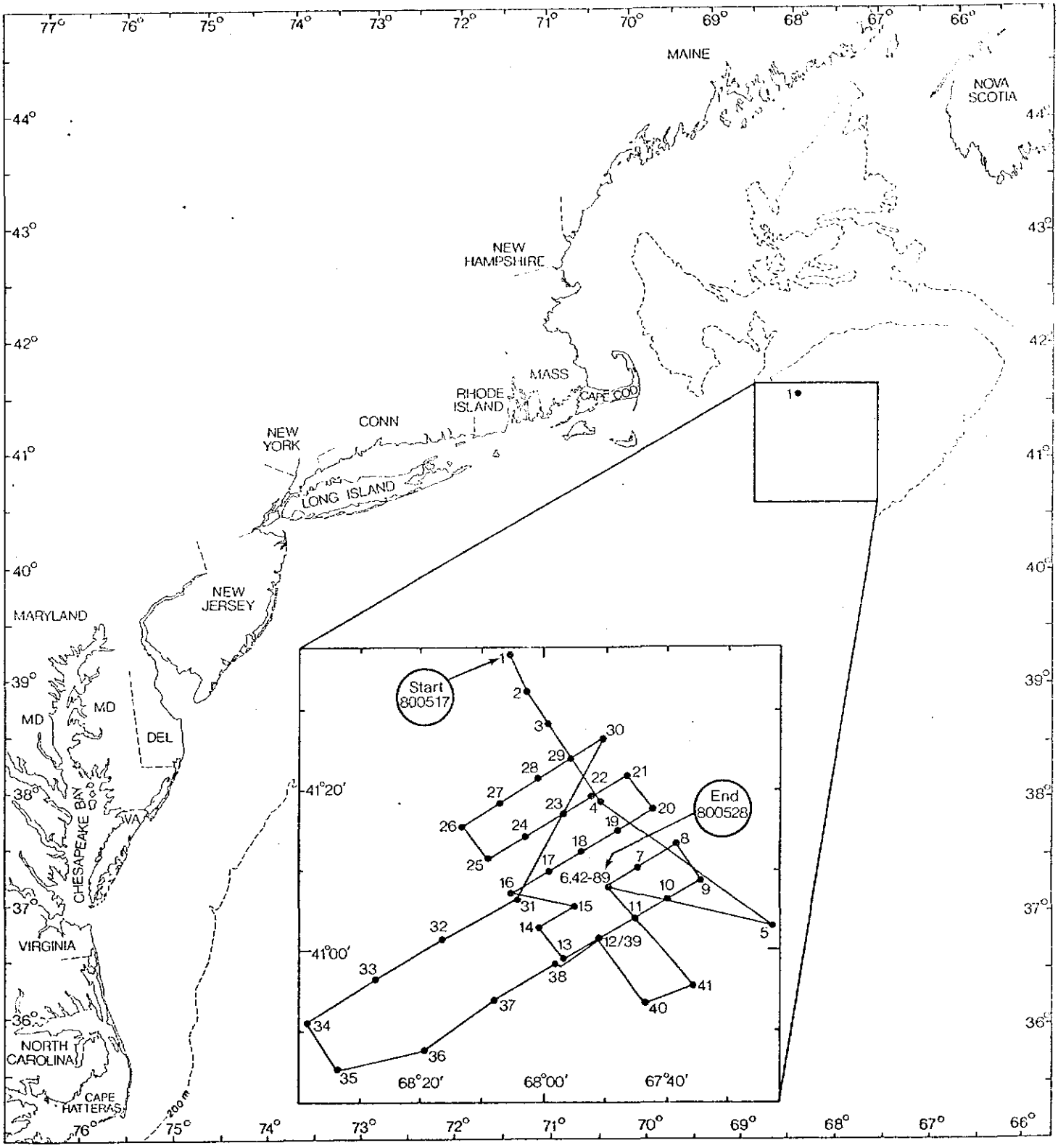
22 NOVEMBER 1979 TO 27 NOVEMBER 1979

AMMONIUM CONCENTRATIONS

STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
1	4520	1	0.45
1	4521	4	0.30
1	4522	7	0.37
1	4523	10	0.25
1	4524	15	0.23
1	4525	22	0.16
1	4526	50	0.32
1	4527	75	0.21
1	4528	100	0.23
1	4529	150	0.18
2	4530	1	0.49
2	4531	10	0.42
2	4532	20	0.44
2	4533	30	0.54
2	4534	50	0.60
2	4535	65	0.49
3	4536	1	0.77
3	4537	10	0.87
3	4538	20	0.77
3	4539	30	0.76
3	4540	42	0.86
4	4541	1	0.52
4	4542	4	0.61
4	4543	8	0.44
4	4544	14	0.60
4	4545	21	0.60
4	4546	27	0.52
4	4547	50	0.50
4	4548	68	0.34
5	4549	1	0.34
5	4550	3	0.35
5	4551	5	0.34
5	4552	10	0.37
5	4553	18	0.39
5	4554	28	0.43
5	4555	38	0.43
5	4556	75	0.60
5	4557	100	0.11
5	4558	175	0.12
6	4559	1	0.41
6	4560	10	0.41
6	4561	20	0.58
6	4562	30	0.61
6	4563	50	0.58
6	4564	75	0.63
6	4565	100	0.39
6	4566	195	0.16
7	4567	1	0.25
7	4568	4	0.42
7	4569	9	0.79
7	4570	18	0.50

7	4571	30	0.70
7	4572	38	0.58
7	4573	50	0.21
7	4574	75	0.64
7	4575	100	0.06
7	4576	175	0.08
8	4577	1	1.04
8	4578	3	0.42
8	4579	6	0.31
8	4580	10	0.32
8	4581	19	0.39
8	4582	32	0.52
8	4583	44	0.39
8	4584	75	0.06
8	4585	100	0.13
8	4586	125	0.29
9	4587	1	0.45
9	4588	10	0.25
9	4589	20	0.33
9	4590	30	0.55
9	4591	50	0.77
9	4592	75	
9	4593	100	0.09
9	4594	190	0.12
10	4595	1	0.16
10	4596	4	0.25
10	4597	7	0.25
10	4598	12	0.20
10	4599	18	0.30
10	4600	22	0.17
10	4601	50	0.43
10	4602	75	0.10
10	4603	100	0.00
10	4604	145	0.17
11	4605	1	0.16
11	4606	4	0.24
11	4607	7	0.16
11	4608	11	0.07
11	4609	21	0.38
11	4610	30	0.17
11	4611	50	0.19
11	4612	75	0.03
11	4613	100	0.48
11	4614	120	0.14
12	4615	1	0.39
12	4616	10	0.32
12	4617	20	0.37
12	4618	30	0.20
12	4619	50	0.10
12	4620	66	0.28
13	4621	1	0.17
13	4622	5	0.37
13	4623	15	0.20
13	4624	29	0.33
13	4625	47	0.16
13	4626	69	0.07
13	4627	100	0.08
13	4628	130	0.14
14	4629	1	0.33
14	4630	4	0.18

14	4631	7	0.13
14	4632	13	0.25
14	4633	22	0.27
14	4634	30	0.37
14	4635	50	0.24
14	4636	60	0.19
15	4637	1	0.29
15	4638	3	0.35
15	4639	5	0.17
15	4640	11	0.24



Cruise track and station locations sampled during Evrika 80-02

EUREKA 80-02

19 MAY 1980 TO 28 MAY 1980

AMMONIUM CONCENTRATIONS

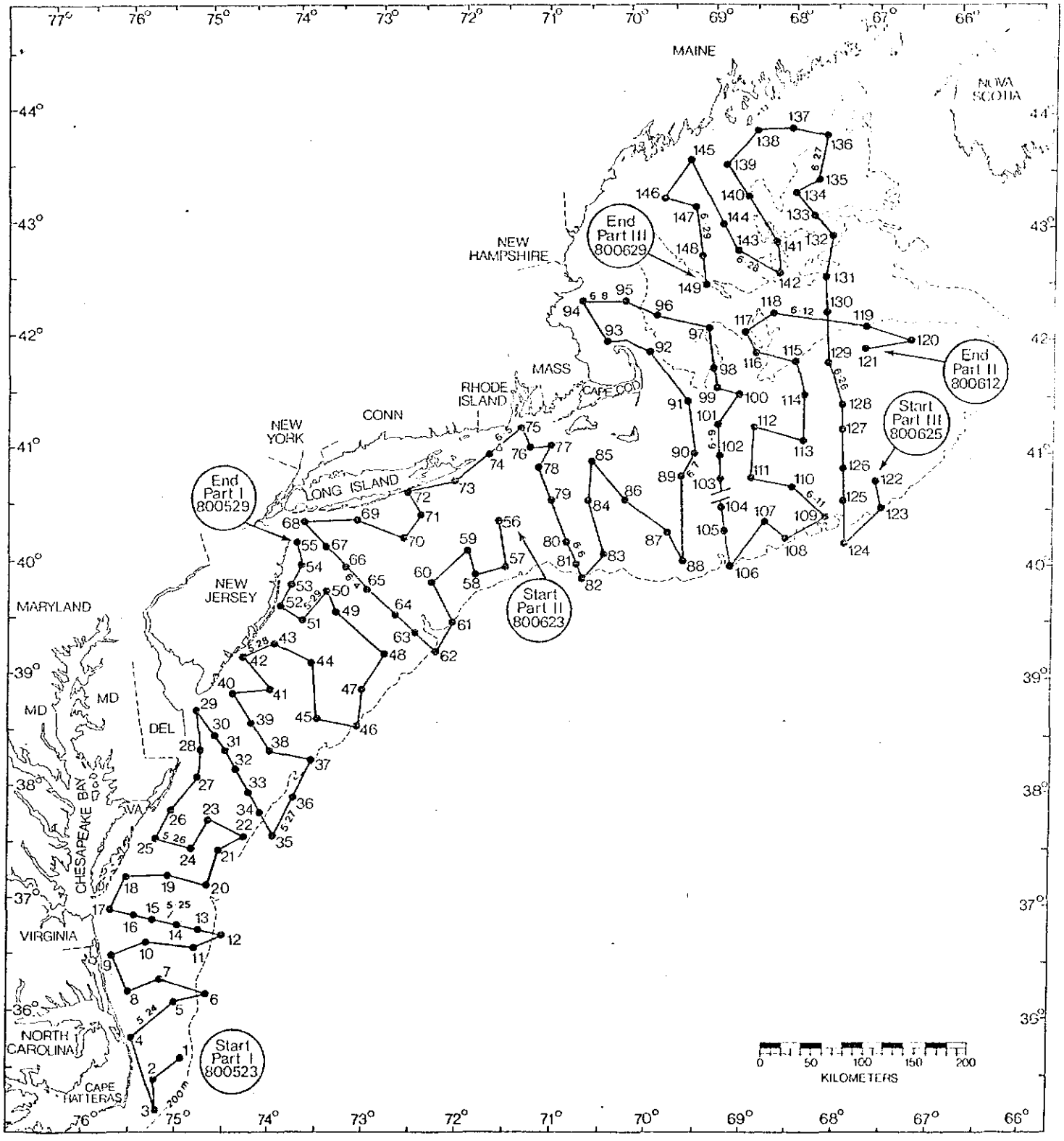
STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
12	1	1	1.20
12	2	12	1.01
12	3	19	2.04
12	4	29	1.43
12	5	45	1.16
12	6	49	0.96
17	7	1	0.49
17	8	8	0.15
17	9	19	4.21
17	10	30	1.28
17	11	45	0.09
17	12	47	0.47
32	28	1	0.04
32	29	9	0.15
32	30	19	0.09
32	31	30	0.10
32	32	48	0.00
32	33	50	0.05
35	34	1	1.02
35	35	10	0.49
35	36	22	0.47
35	37	30	0.53
35	38	48	0.44
42	52	1	0.62
42	53	10	0.70
42	54	21	1.01
42	55	30	0.70
42	56	40	0.57
43	57	1	0.46
43	58	10	0.30
43	59	18	0.35
43	60	30	0.34
43	61	47	0.33
46	75	1	1.40
46	76	12	1.21
46	77	19	1.33
46	78	29	1.24
46	79	39	1.18
46	80	54	1.29
47	81	1	0.83
47	82	11	0.82
47	83	24	0.86
47	84	30	0.85
47	85	40	0.87
50	99	1	1.23
50	100	6	1.61
50	101	11	1.02
50	102	17	1.24
50	103	27	1.48
50	104	36	3.36
50	105	48	2.43

50	106	51	1.21
51	107	1	1.12
51	108	12	1.14
51	109	20	2.41
51	110	32	1.74
51	111	50	4.07
51	112	52	1.59
57	126	1	1.40
57	127	8	1.64
57	128	22	2.01
57	129	33	1.69
57	130	50	1.72
57	131	52	1.55
59	131	1	0.91
59	132	8	0.99
59	133	24	1.59
59	134	30	1.45
59	135	50	1.58
59	136	54	1.73
65	149	1	1.12
65	150	7	1.21
65	151	22	1.62
65	152	30	1.28
65	153	35	1.47
65	154	50	1.43
65	155	54	1.43
67	156	1	0.85
67	157	11	1.16
67	158	19	1.14
67	159	26	1.24
67	160	35	1.19
67	161	50	1.19
67	162	53	1.26
71	176	1	0.47
71	177	9	0.88
71	178	21	1.62
71	179	27	1.58
71	180	50	1.62
71	181	54	0.54
72	182	1	0.67
72	183	12	0.76
72	184	20	0.99
72	185	28	0.97
72	186	50	0.97
72	187	54	1.20
75	202	1	0.80
75	203	11	0.72
75	204	21	0.63
75	205	30	0.61
75	206	47	0.67
75	207	52	0.68
76	208	1	0.44
76	209	11	0.97
76	210	21	1.66
76	211	29	1.52
76	212	50	1.79
76	213	54	2.09
79	227	1	B
79	228	11	1.45
79	229	21	B

B=MISSING ANALYSIS, SAMPLE TUBE BROKEN IN TRANSIT

79	230	30	B
79	231	45	B
79	232	54	B
81	232	1	0.38
81	233	12	1.00
81	234	20	1.11
81	235	28	1.43
81	236	35	1.42
81	237	50	1.39
81	238	51	1.37
87	252	1	0.05
87	253	12	1.02
87	254	17	0.48
87	255	30	2.46
87	256	50	0.51
87	257	52	0.63
89	258	1	0.01
89	259	11	0.29
89	260	19	2.59
89	261	30	1.47
89	262	35	1.47
89	263	50	2.31
89	264	53	1.57

B=MISSING ANALYSIS, SAMPLE TUBE BROKEN IN TRANSIT



Cruise track and station locations sampled during Delaware 80-03 (Part I and Part II) and Evrika 80-04 (Part III).

DELAWARE II 80-05

23 MAY 1980 TO 12 JUNE 1980

AMMONIUM CONCENTRATIONS

STATION	SAMPLE	DEPTH (M)	CONCENTRATION (uM/L)
1	7500	1	0.13
1	7501	10	0.05
1	7502	20	0.00
1	7503	30	0.12
1	7504	45	0.13
1	7505	49	0.23
3	7506	1	0.00
3	7507	5	0.09
3	7508	10	0.02
3	7509	15	0.09
3	7510	25	0.60
4	7511	1	0.12
4	7512	5	0.06
4	7513	10	0.05
4	7514	15	0.12
4	7515	17	0.26
12	7536	1	0.10
12	7537	10	0.10
12	7538	20	0.00
12	7539	30	0.09
12	7540	50	0.00
12	7541	75	0.00
12	7542	100	0.05
12	7543	200	0.09
12	7544	300	0.06
13	7545	1	0.23
13	7546	10	0.02
13	7547	20	0.22
13	7548	30	0.94
13	7549	51	0.55
15	7550	1	0.02
15	7551	5	0.09
15	7552	10	0.07
15	7553	15	0.12
15	7554	25	0.07
15	7555	29	0.12
17	7556	1	0.16
17	7557	6	0.20
17	7558	11	0.11
24	7571	1	0.17
24	7572	5	0.23
24	7573	10	0.33
24	7574	15	0.20
24	7575	25	0.27
24	7576	29	0.37
28	7587	1	0.39
28	7588	5	0.26
28	7589	9	0.16
28	7590	14	0.44
28	7591	18	0.49
29	7592	1	0.31

29	7593	5	0.35
29	7594	10	0.32
29	7595	15	0.72
29	7596	18	0.40
31	7597	1	0.11
31	7598	5	0.15
31	7599	10	0.18
31	7600	20	0.12
31	7601	28	0.14
31	7602	31	0.28
33	7603	1	0.18
33	7604	10	0.10
33	7605	20	0.12
33	7606	30	0.11
33	7607	39	0.10
33	7608	44	0.09
34	7609	1	0.02
34	7610	10	0.11
34	7611	20	0.05
34	7612	30	0.61
34	7613	50	0.16
34	7614	75	0.24
34	7615	100	0.00
35	7616	1	0.06
35	7617	10	0.08
35	7618	20	0.08
35	7619	30	0.22
35	7620	50	0.19
35	7621	75	0.08
35	7622	200	0.57
35	7623	300	0.02
42	7637	1	0.18
42	7638	5	0.66
42	7639	10	0.25
42	7640	13	1.13
42	7641	17	1.16
44	7642	1	0.46
44	7643	10	0.10
44	7644	22	0.08
44	7645	31	0.05
44	7646	37	0.05
44	7647	42	0.08
47	7648	1	0.02
47	7649	10	0.12
47	7650	20	0.23
47	7651	30	2.47
47	7652	50	1.47
47	7653	75	0.76
47	7654	81	0.76
50	7661	1	0.12
50	7662	5	0.06
50	7663	10	0.11
50	7664	20	0.14
50	7665	30	0.25
50	7666	33	0.16
52	7667	1	0.28
52	7668	5	0.28
52	7669	10	0.10
52	7670	15	0.29
55	7681	1	0.22

55	7682	5	0.18
55	7683	10	0.13
55	7684	15	1.11
55	7685	18	1.43
58	7686	1	0.05
58	7687	12	0.16
58	7688	20	0.30
58	7689	30	0.95
58	7690	50	1.17
58	7691	75	0.12
58	7692	83	0.01
59	7693	1	0.11
59	7694	10	0.16
59	7695	20	0.11
59	7696	30	1.04
59	7697	50	2.98
59	7698	59	5.00
59	7699	64	4.98
62	7707	1	0.07
62	7708	10	0.18
62	7709	20	0.17
62	7710	30	0.06
62	7711	50	0.14
62	7712	75	0.12
62	7713	100	0.08
62	7714	200	0.04
62	7715	231	0.06
64	7716	1	0.11
64	7717	10	0.05
64	7718	20	0.10
64	7719	30	0.27
64	7720	50	3.10
64	7721	69	3.07
66	7722	1	0.12
66	7723	9	0.19
66	7724	20	0.14
66	7725	30	0.33
66	7726	37	0.22
66	7727	42	0.29
67	7728	1	0.13
67	7729	5	0.16
67	7730	10	0.19
67	7731	15	0.29
67	7732	22	0.41
67	7733	27	0.34
68	7734	1	0.24
68	7735	5	0.22
68	7736	8	0.36
68	7737	15	0.83
68	7738	20	1.52
73	7751	1	0.39
73	7752	5	0.23
73	7753	10	0.29
73	7754	20	3.08
73	7755	35	2.18
73	7756	38	2.46
76	7757	1	0.16
76	7758	5	0.41
76	7759	10	0.07
76	7760	20	2.61

76	7761	35	3.69
76	7762	36	3.83
77	7763	1	0.13
79	7764	10	0.35
79	7765	20	0.07
79	7766	30	3.47
79	7767	50	4.17
79	7768	57	4.46
79	7769	62	4.43
81	7770	1	0.12
81	7771	10	0.17
81	7772	20	0.47
81	7773	30	0.65
81	7774	50	0.05
81	7775	75	1.37
81	7776	100	0.04
81	7777	125	0.06
86	7784	1	0.27
86	7785	10	0.24
86	7786	20	1.00
86	7787	30	1.27
	7788	40	1.23
86	7789	44	1.22
89	7797	1	0.24
89	7798	10	0.13
89	7799	20	0.31
89	7800	30	0.30
89	7801	40	0.29
92	7809	1	0.05
92	7810	10	0.14
92	7811	20	0.53
92	7812	30	4.69
92	7813	50	3.74
92	7814	75	3.74
92	7815	80	3.77
94	7822	1	1.00
94	7823	10	0.48
94	7824	20	2.01
94	7825	30	2.84
94	7826	50	3.55
94	7827	75	4.71
97	7828	1	0.10
97	7829	8	0.06
97	7830	20	1.90
97	7831	32	2.34
97	7832	50	1.75
97	7833	75	0.01
97	7834	100	0.40
97	7835	150	0.07
97	7836	185	0.17
99	7837	1	0.27
99	7838	10	0.51
99	7839	20	0.10
99	7840	30	0.80
99	7841	50	2.57
99	7842	75	1.29
99	7843	100	2.78
99	7844	150	0.64
99	7845	165	0.45
102	7846	1	2.00

102	7847	10	2.24
102	7848	20	2.44
102	7849	30	2.71
102	7850	50	2.72
102	7851	75	2.81
102	7852	80	2.80
104	7853	1	1.30
104	7854	11	1.08
104	7855	24	0.99
104	7856	30	0.93
104	7857	50	1.74
104	7858	68	2.19
104	7859	73	2.23
106	7860	1	0.10
106	7861	8	0.05
106	7862	23	0.05
106	7863	31	0.10
106	7864	50	0.11
106	7865	75	0.00
106	7866	100	0.11
106	7867	165	0.01