

Oceanography Branch CTD Data Report
CTD_REPORT_2010012DE

**For further information, contact Tamara Holzwarth-Davis
National Marine Fisheries Service, Northeast Fisheries
Science Center, Woods Hole, Massachusetts 02543-1097.**

DATE: Revised: March 2, 2011

Oceanography Branch CTD Data Report

CTD_REPORT_2010012DE

NOAA Fisheries Service
Northeast Fisheries Science Center
Woods Hole, MA 02543

DE 10-12
ECOMON/NASA Ground Truth Measurements Survey
Data Coverage: November 5 – December 5, 2010
Mid Atlantic Bight, Georges Bank, Gulf of Maine

This report presents a summary of surface and bottom temperature and salinity data collected during the Northeast Fisheries Science Center's DEL1012 ECOMON/NASA Ground Truth Measurements Survey aboard the NOAA FSV *Delaware II*. Data was obtained with two Seabird Electronics SBE Model 19+ profiling CTD (s/n's 4759 and 4758) and a Seabird Electronics SBE Model 9/11+ CTD (s/n 0420). Sea water samples were taken for the purpose of correcting salinity values for both instruments. No salinity correction was necessary for any instrument.

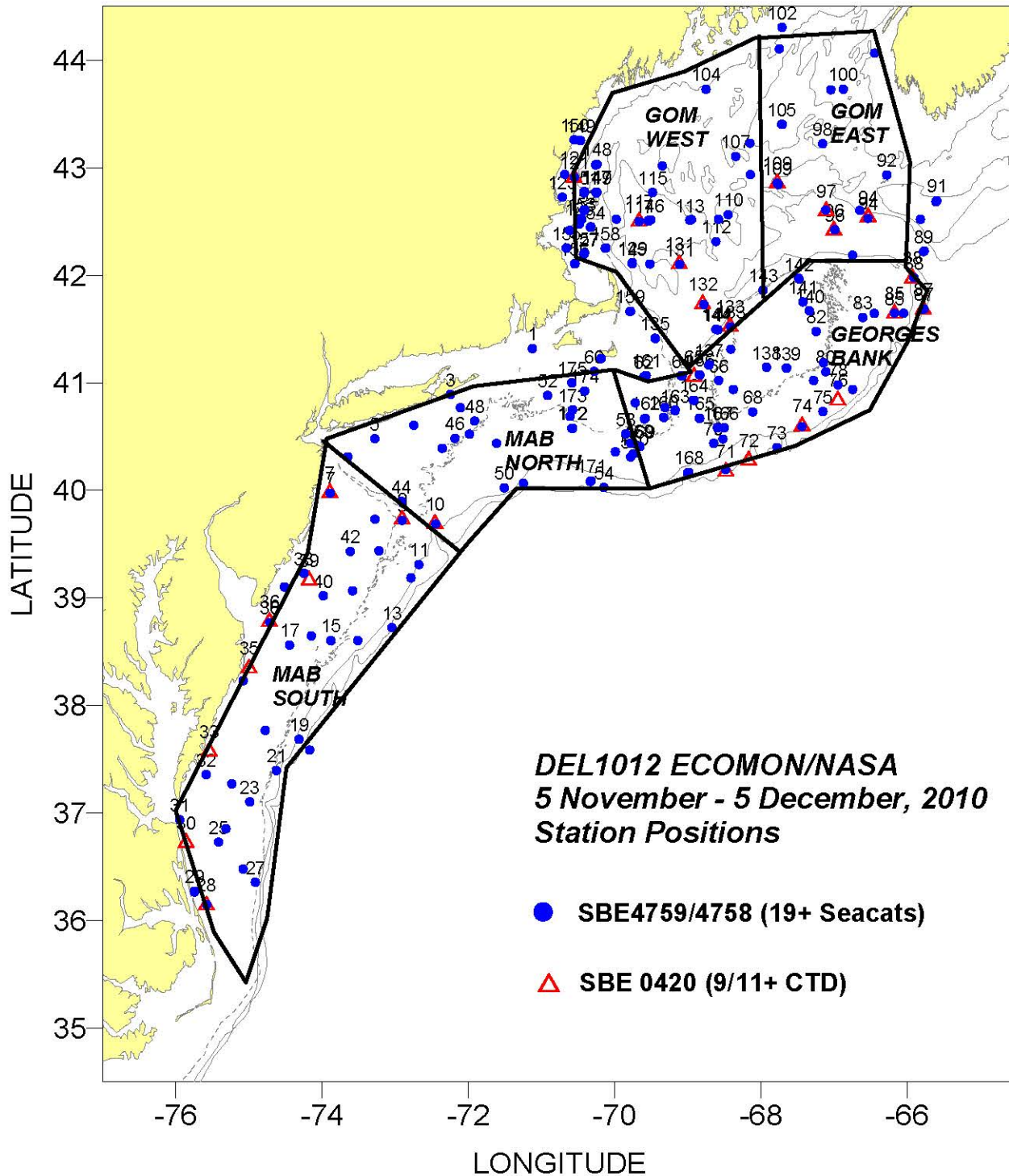
Data presented here have been audited, however, corrections and/or updates may be applied at a later time. The most recent and complete station data can be found in an NODC formatted ASCII file at:
<ftp://ftp.nefsc.noaa.gov/pub/hydro/del1012.dat>

This report may be viewed on the Oceanography Branch website at:

<http://www.nefsc.noaa.gov/HydroAtlas/>

choose: **2010 Cruises**
NOV_ECOMON_DEL1012
CTD_REPORT_2010012DE.pdf

Revised: March 2, 2011



DEL1012 ECOMON/NASA GROUND TRUTH MEASUREMENTS
November 5 - December 5, 2010

CRUISE	CD	SURFACE						BOTTOM						Purpose
		#obs	T/S	Anomaly	SDV1	SDV2	Flag	#obs	T/S	Anomaly	SDV1	SDV2	Flag	
Western Gulf of Maine														
DEL1012	329	54	9.66	0.59	0.15	2.23	1	47	8.88	1.43	0.15	2.22	1	22
DEL1012	329	54	32.76	0	0.1	0.88	1	47	33.45	0.12	0.08	0.79	1	22
Eastern Gulf of Maine														
DEL1012	323	16	10.65	0.67	0.23	0.61	0	12	9.54	1.12	0.26	1.34	0	22
DEL1012	323	16	32.74	0.09	0.16	0.26	0	12	34.12	-0.01	0.15	0.35	0	22
Georges Bank														
DEL1012	326	56	12.32	0.8	0.14	1.73	0	49	11.94	0.98	0.16	1.63	0	22
DEL1012	326	56	33.04	0.2	0.09	0.68	0	49	33.24	0.23	0.09	0.6	0	22
MAB North														
DEL1012	320	41	12.87	-0.2	0.23	0.84	0	36	12.64	-0.02	0.25	1	0	22
DEL1012	320	41	32.57	-0.39	0.15	0.36	0	36	32.94	-0.46	0.15	0.47	0	22
MAB South														
DEL1012	312	43	14.89	-0.34	0.21	0.65	0	38	14.45	-0.03	0.22	0.94	1	22
DEL1012	312	43	32.51	-0.32	0.16	0.92	0	38	32.81	-0.25	0.14	0.57	1	22

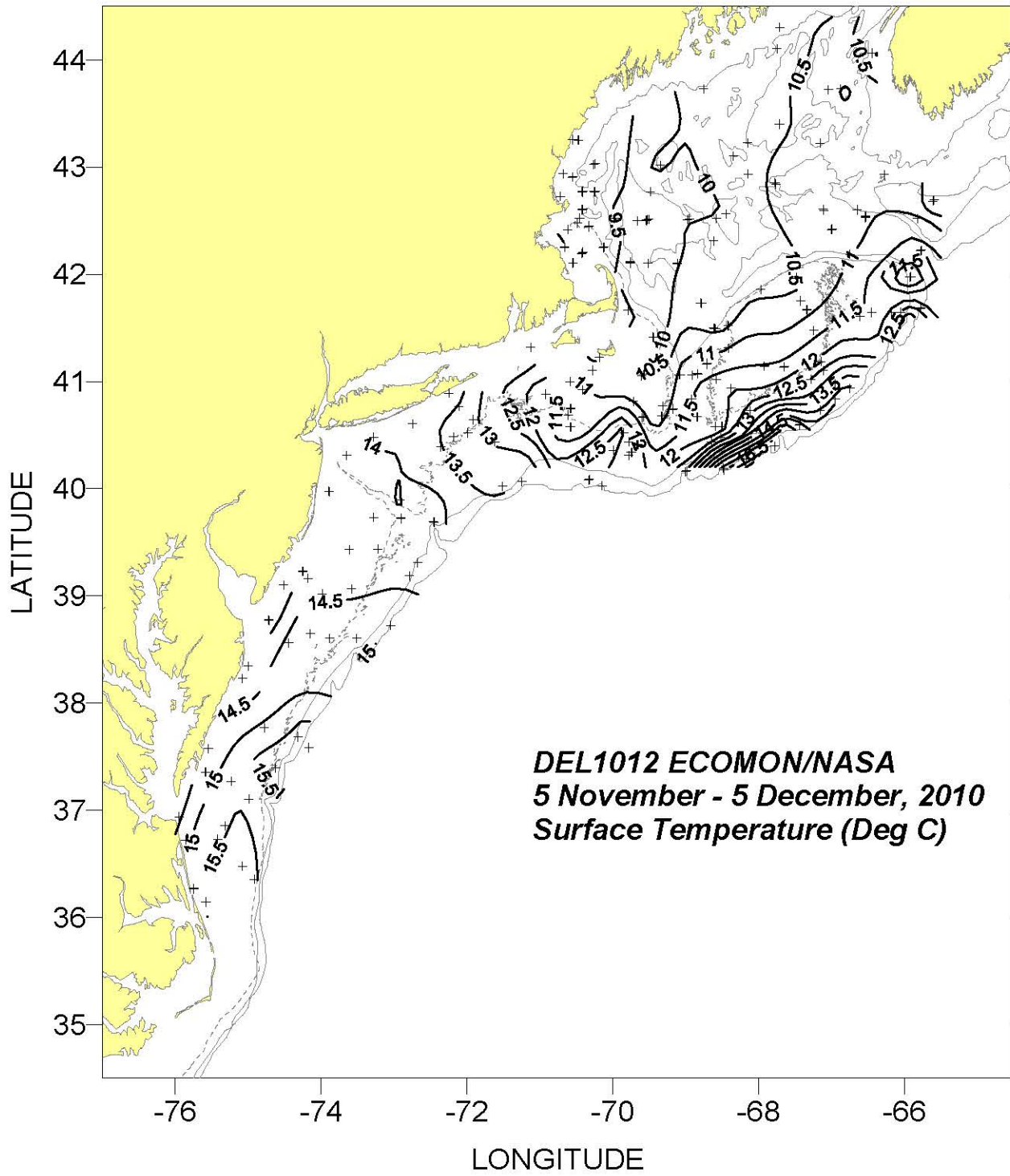
"CRUISE", the code name for a cruise: "CD", the calendar mid-date of all the stations within a region for a cruise:

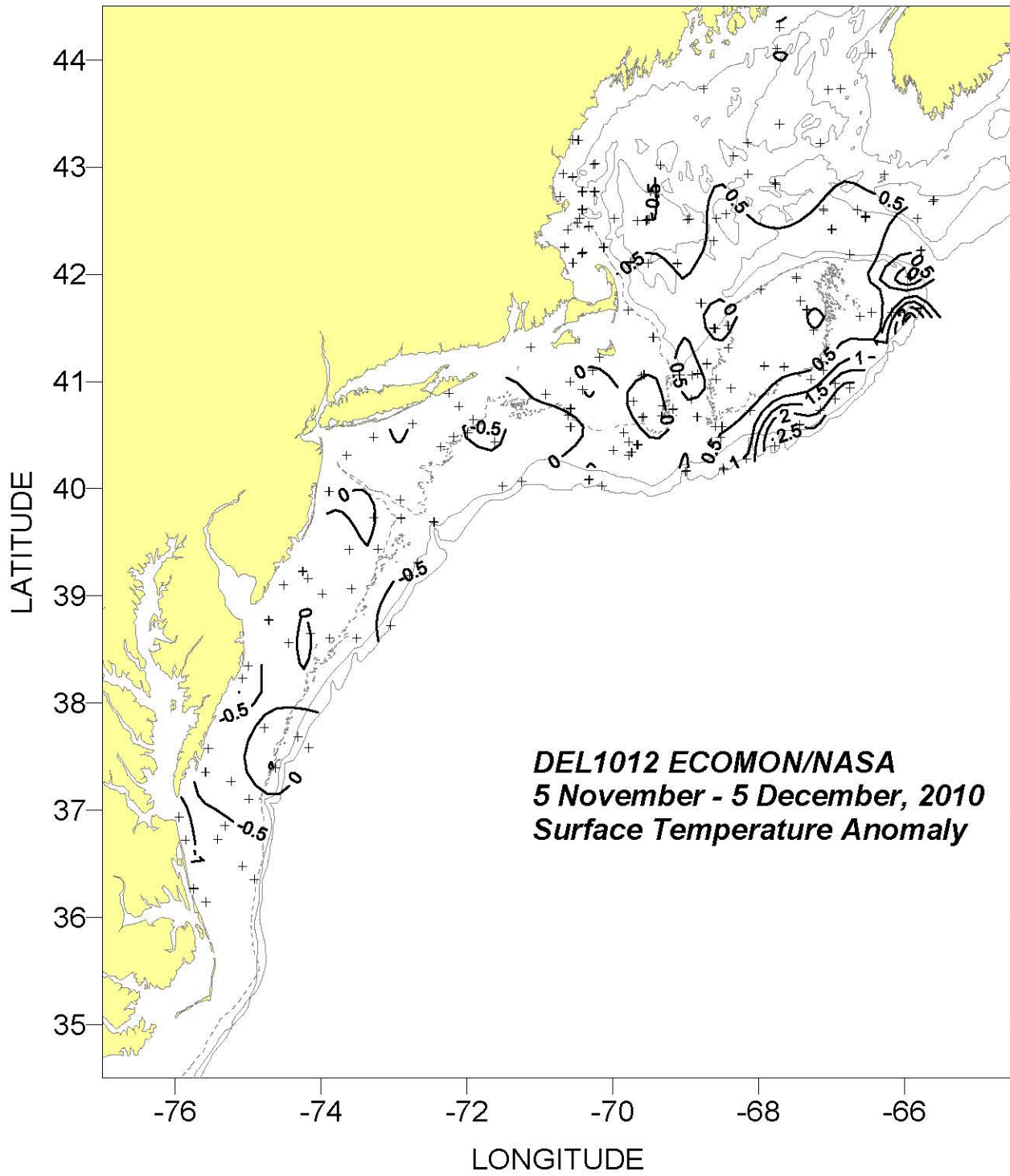
"#obs", the number of observations include in each average: "T/S", the areal average temp/salt: "Anomaly", the areal average temp/salt anomaly:

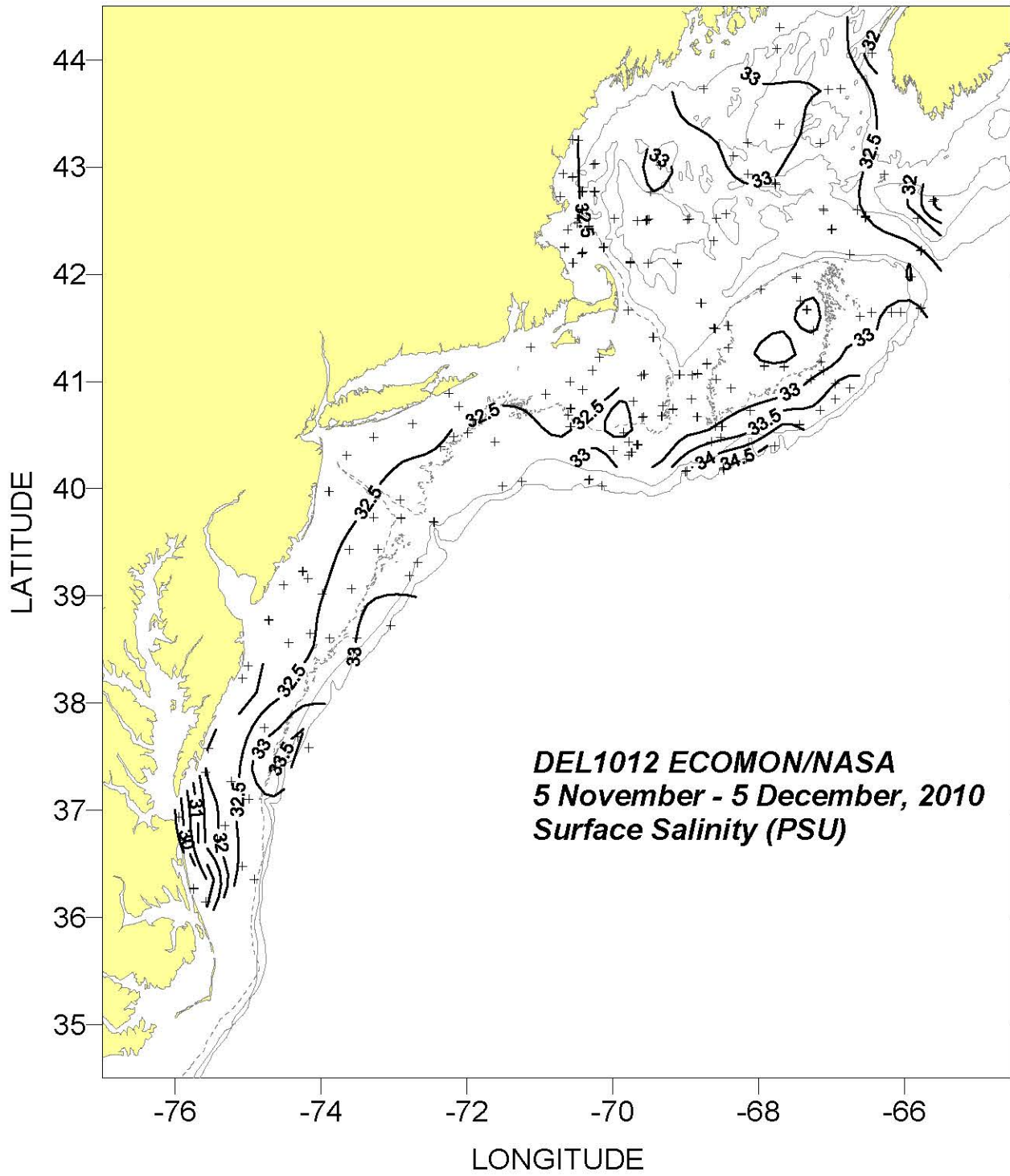
"SDV1", the standard deviation associated with the average temp/salt anomaly: "SDV2", the standard deviation of the individual anomalies from which the average anomaly was derived

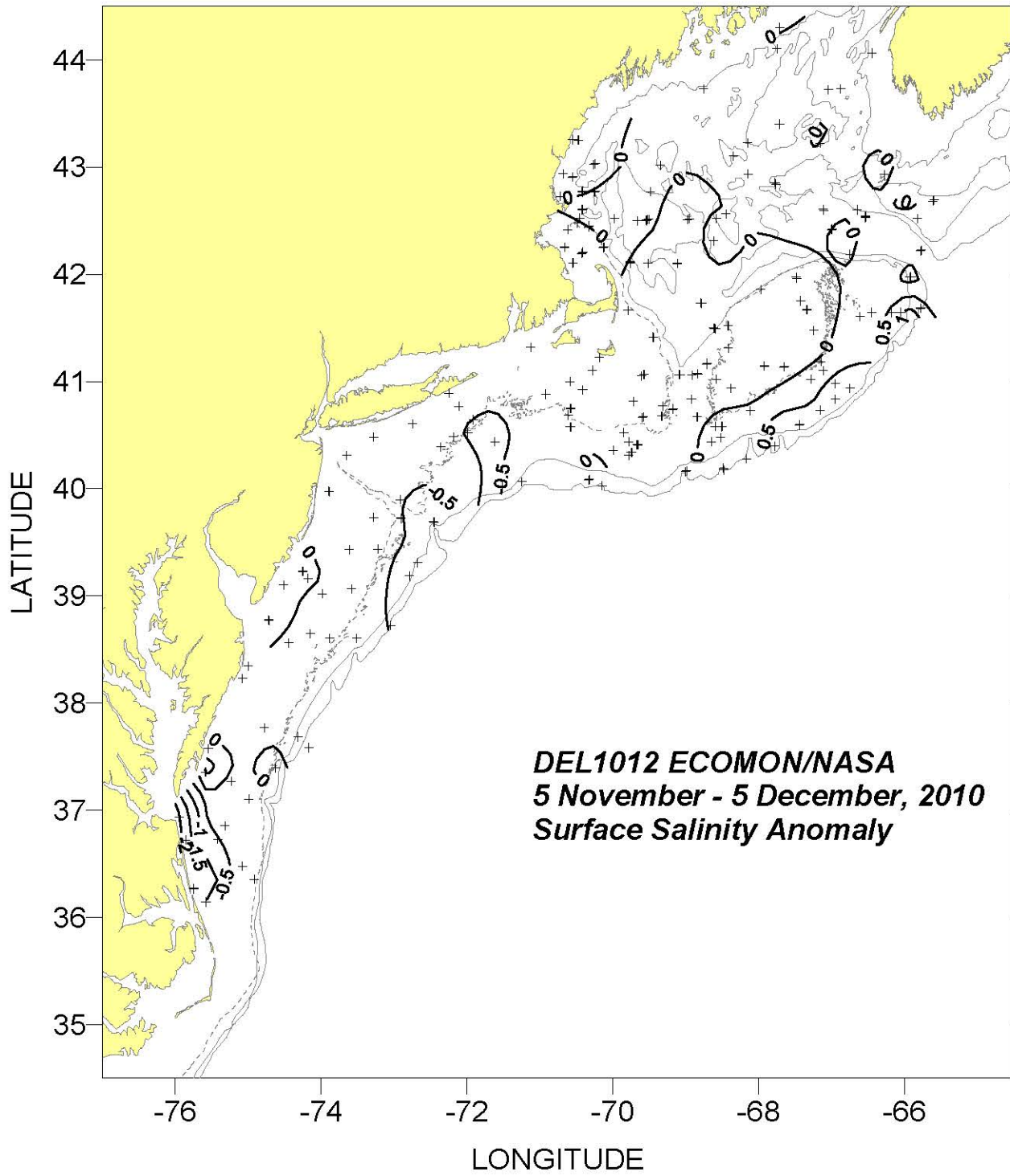
"Flag", a value of "1" indicates that a true areal average could not be calculated due to poor station coverage. The areal averages listed were derived from a simple average of the observations within the region.

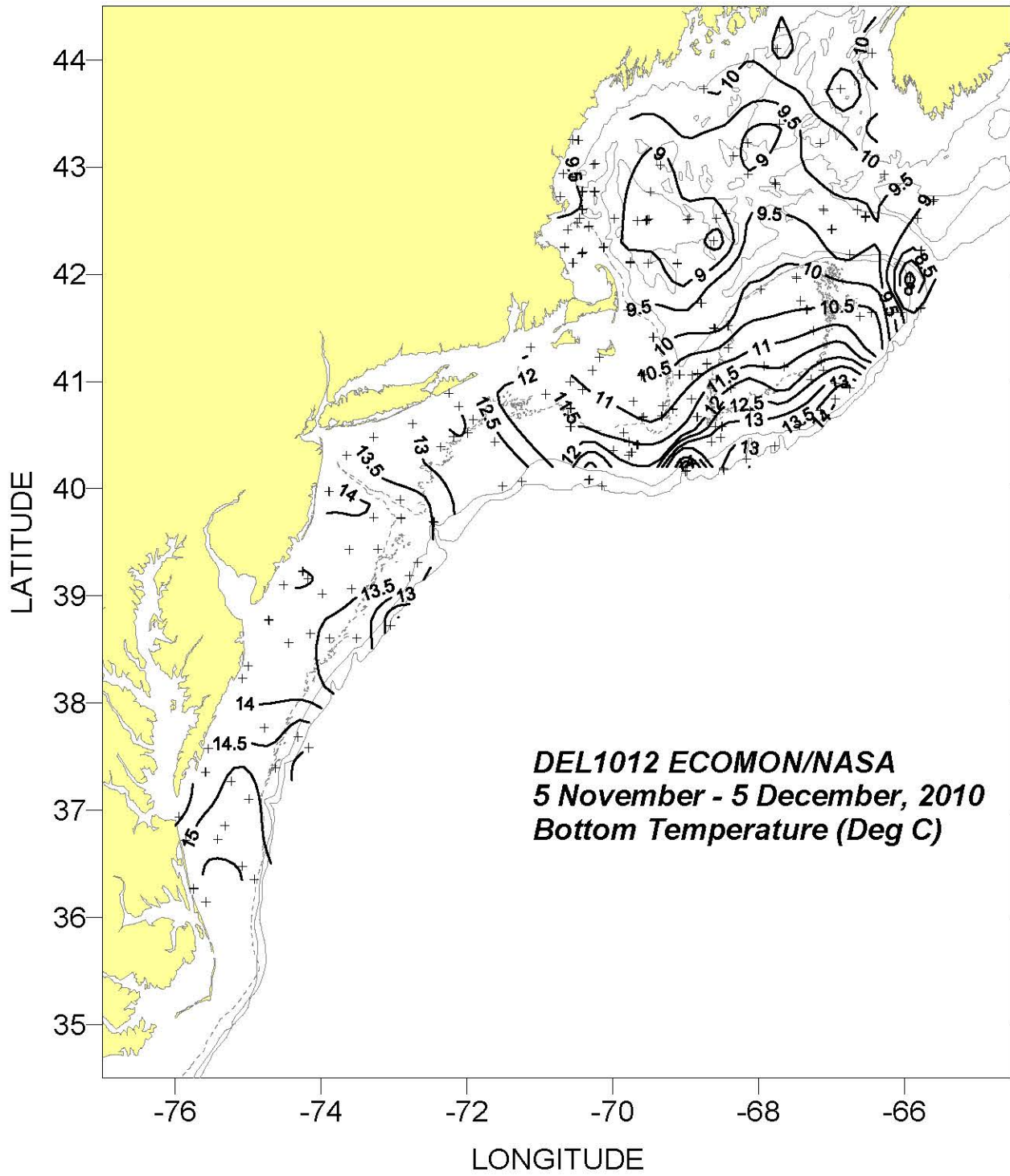
"Purpose", 2 digit code assigned by DMS to identify a unique NEFSC program survey.

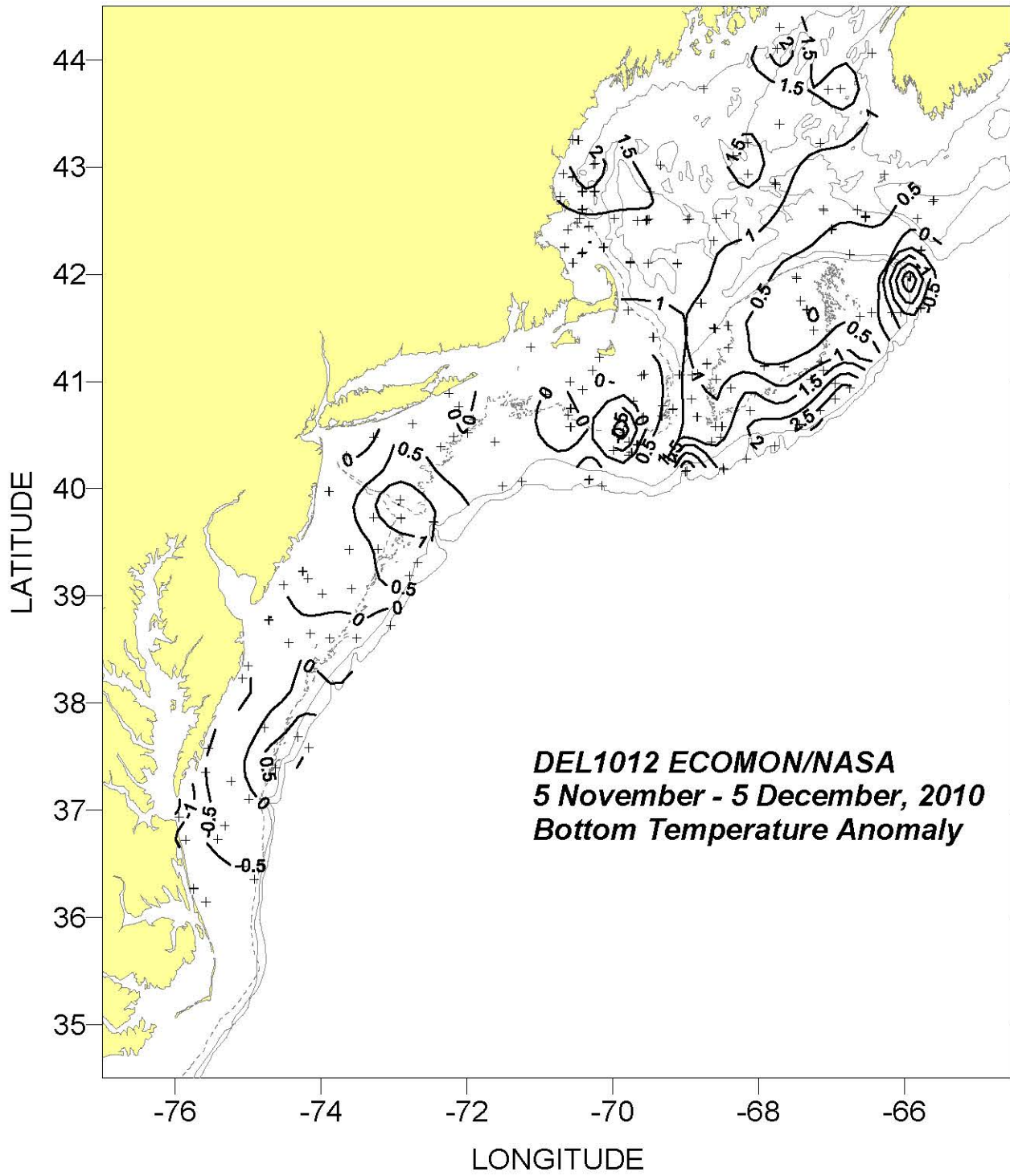


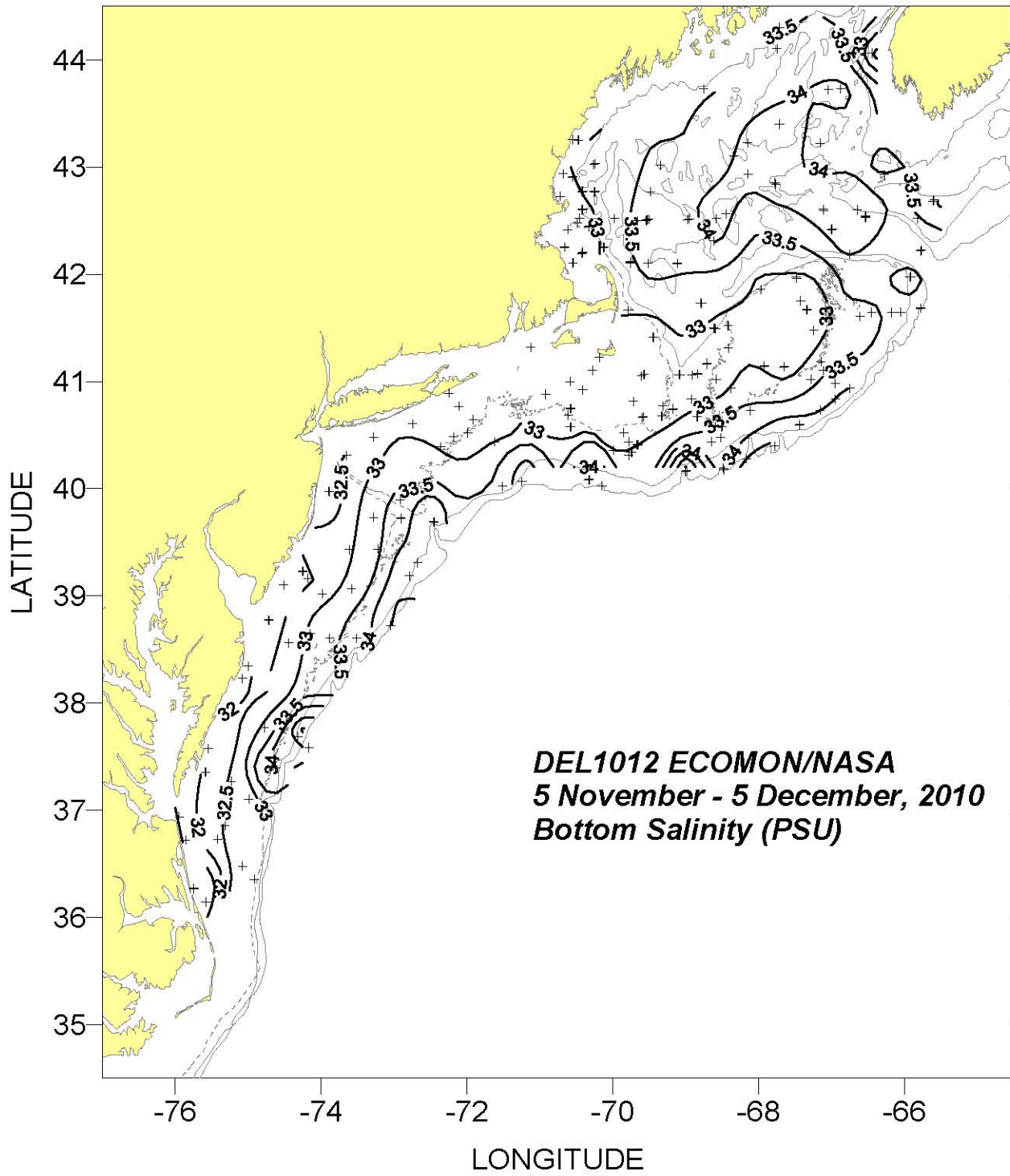


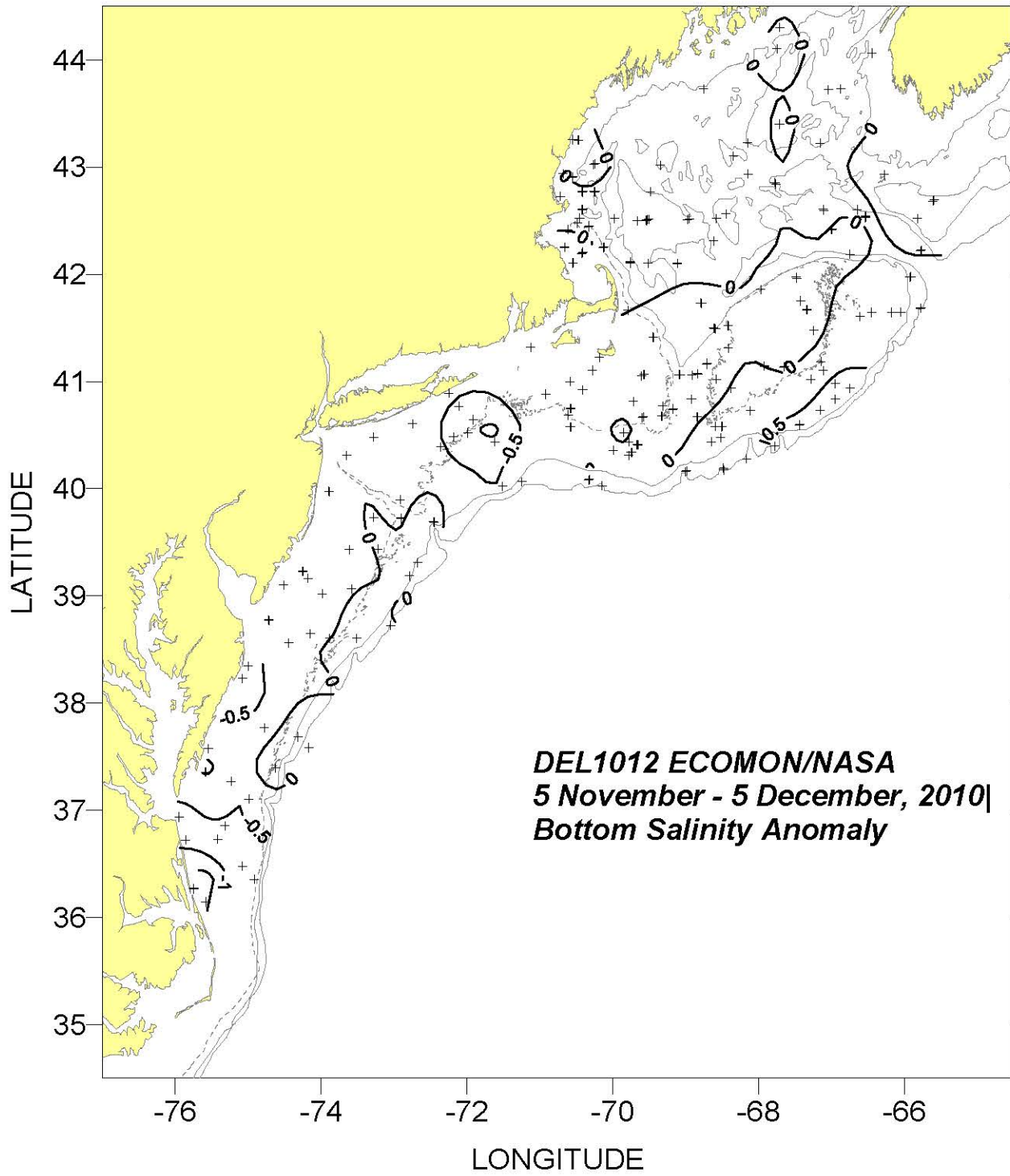












DEL1012 ECOMON/NASA GROUND TRUTH MEASUREMENTS
November 5 - December 5, 2010

<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
1	1	4119.1	7107.4	5	11	2010	17:37	29	13.52	32.35	13.52	32.35	4
2	2	4046.1	7206.5	5	11	2010	23:49	46	14.30	32.01	13.46	32.52	6
3	3	4053.5	7214.6	6	11	2010	1:13	22	13.27	32.05	13.29	32.05	6
4	4	4036.3	7244.7	6	11	2010	4:26	37	14.23	31.95	13.58	32.71	3
5	5	4028.8	7316.7	6	11	2010	7:10	29	13.95	31.99	13.34	32.40	6
6	6	4018.7	7338.9	6	11	2010	9:18	26	13.85	31.89	14.39	32.24	4
7	7	3958.4	7353.3	6	11	2010	11:46	27	14.38	32.04	14.38	32.04	5
1	7	3958.6	7353.5	6	11	2010	12:01	27	14.37	32.02	14.39	32.03	2
8	8	3943.9	7316.6	6	11	2010	15:34	42	14.61	32.50	14.91	33.19	3
9	9	3943.2	7254.1	6	11	2010	17:34	71	14.62	32.85	13.43	34.11	3
2	9	3943.7	7254.2	6	11	2010	17:51	73	14.63	32.85	13.43	34.11	2
10	10	3941.2	7226.7	6	11	2010	20:52	88	14.34	32.71	13.77	34.80	4
3	10	3941.4	7227.3	6	11	2010	21:08	89	14.34	32.71	13.99	35.10	1
11	11	3918.6	7240.6	7	11	2010	0:45	119	14.08	32.77	14.34	35.68	4
12	12	3911.2	7247.0	7	11	2010	1:55	99	14.44	32.88	14.15	35.05	3
13	13	3843.4	7302.7	7	11	2010	5:10	223	15.24	33.58	10.87	35.38	21
14	14	3836.2	7330.7	7	11	2010	7:48	73	15.57	33.74	13.58	34.82	3
15	15	3836.2	7352.8	7	11	2010	9:40	54	14.96	32.64	12.88	33.56	5
16	16	3838.8	7408.8	7	11	2010	11:04	52	15.36	32.36	13.11	33.50	6
17	17	3833.6	7426.7	7	11	2010	12:41	43	15.29	32.38	14.72	32.72	5
18	18	3746.1	7446.6	7	11	2010	18:01	39	15.16	32.93	15.23	32.99	10
19	19	3741.1	7418.9	7	11	2010	20:40	101	15.77	33.66	14.99	35.60	5
20	20	3735.1	7410.2	7	11	2010	22:01	318	15.89	33.82	12.20	35.55	116
21	21	3723.6	7437.5	8	11	2010	0:49	64	16.01	33.98	14.87	34.61	4
22	22	3716.2	7514.0	8	11	2010	4:07	28	15.57	32.60	15.59	32.60	4
23	23	3706.2	7459.3	8	11	2010	5:49	41	15.61	32.92	15.73	32.98	5

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24	24	3651.2	7518.9	8	11	2010	8:08	30	15.80	32.78	15.79	32.78	7
25	25	3643.7	7524.9	8	11	2010	9:16	24	15.78	32.71	15.80	32.72	5
26	26	3628.7	7504.8	8	11	2010	11:43	44	15.88	33.29	15.88	33.30	4
27	27	3621.3	7454.7	8	11	2010	13:04	46	15.31	33.24	15.48	33.43	5
28	28	3608.8	7534.6	8	11	2010	16:52	23	16.33	31.53	16.32	31.58	4
4	28	3608.5	7534.8	8	11	2010	17:04	23	16.33	31.50	16.32	31.58	2
29	29	3616.4	7544.7	8	11	2010	18:36	17	14.99	28.87	15.27	29.56	6
30	29	3615.9	7544.6	8	11	2010	18:47	15	15.00	28.87	15.67	30.07	1
5	30	3643.4	7551.5	8	11	2010	21:57	15	14.38	28.00	14.91	30.90	2
31	31	3656.2	7556.8	8	11	2010	23:43	21	13.83	28.81	13.87	31.26	6
32	32	3721.4	7535.0	9	11	2010	3:24	15	14.76	32.11	14.79	32.11	4
33	32	3721.4	7535.2	9	11	2010	3:31	14	14.77	32.10	14.77	32.11	7
6	33	3734.4	7532.5	9	11	2010	5:26	13	14.28	31.73	14.28	31.74	2
34	34	3813.8	7504.7	9	11	2010	10:26	13	13.83	31.30	13.85	31.31	5
7	35	3820.7	7459.8	9	11	2010	11:34	17	13.59	31.07	13.59	31.07	2
35	36	3846.3	7442.8	9	11	2010	15:16	26	13.66	32.12	13.65	32.12	5
8	36	3846.7	7443.1	9	11	2010	15:31	21	13.68	32.12	13.67	32.12	4
37	37	3906.1	7430.8	9	11	2010	18:25	19	13.93	32.06	13.92	32.07	5
38	38	3913.7	7414.8	9	11	2010	20:10	24	14.13	32.20	14.15	32.21	5
39	38	3913.9	7415.2	9	11	2010	20:22	22	14.11	32.20	13.99	32.17	11
9	39	3909.8	7410.6	9	11	2010	21:01	22	14.18	32.28	14.19	32.28	1
40	40	3901.2	7358.9	9	11	2010	22:34	43	14.26	32.30	14.29	32.31	4
41	41	3903.9	7334.9	10	11	2010	1:01	50	14.09	33.25	14.11	33.25	2
42	42	3925.9	7336.8	10	11	2010	4:09	37	13.81	32.38	13.81	32.38	5
43	43	3926.2	7313.3	10	11	2010	6:28	52	14.08	32.96	14.21	33.11	3
44	44	3953.8	7254.8	10	11	2010	11:34	56	13.71	32.66	13.99	33.54	4

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45	45	4023.5	7221.4	10	11	2010	18:01	54	13.49	32.59	13.05	32.75	5
46	46	4029.0	7210.9	12	11	2010	17:15	58	13.16	32.48	13.16	32.49	7
47	47	4031.3	7159.1	12	11	2010	18:53	62	13.17	32.64	13.17	32.64	6
48	48	4038.7	7154.9	12	11	2010	20:04	53	13.09	32.52	13.10	32.55	5
49	49	4026.2	7136.8	12	11	2010	22:28	78	12.69	32.55	12.75	32.59	4
50	50	4001.4	7130.5	13	11	2010	1:22	97	13.83	33.14	13.16	34.33	5
51	51	4003.9	7114.8	13	11	2010	3:39	161	13.98	33.28	13.35	35.60	3
52	52	4052.9	7055.0	13	11	2010	10:36	56	12.40	32.11	12.44	32.12	3
53	53	4041.3	7036.6	13	11	2010	12:51	60	11.64	32.37	10.95	32.40	5
54	54	4001.6	7008.8	13	11	2010	18:04	182	15.24	34.13	13.04	35.61	9
55	55	4021.5	6959.3	13	11	2010	21:19	83	12.12	32.53	12.59	32.83	2
56	56	4018.6	6946.8	13	11	2010	22:55	79	12.05	32.75	11.64	32.83	4
57	57	4026.3	6946.8	13	11	2010	23:58	75	12.68	32.27	11.38	32.49	6
58	58	4031.5	6950.9	14	11	2010	0:51	69	12.78	32.29	11.12	32.50	5
59	59	4048.8	6943.0	14	11	2010	3:12	33	10.55	32.36	10.55	32.37	6
60	60	4106.3	7016.7	14	11	2010	6:35	33	10.22	32.05	10.37	32.19	5
61	61	4113.6	7011.0	14	11	2010	7:35	17	10.22	31.97	10.12	32.02	5
62	62	4103.2	6936.1	14	11	2010	12:49	47	10.74	32.32	10.77	32.32	4
63	63	4046.2	6918.7	14	11	2010	15:06	53	10.80	32.50	10.80	32.50	4
67	64	4103.9	6905.3	14	11	2010	19:55	87	11.98	32.38	10.55	32.56	2
68	64	4103.9	6904.5	14	11	2010	20:13	87	12.06	32.38	10.43	32.58	4
10	65	4103.5	6854.7	14	11	2010	21:22	77	12.84	32.22	10.19	32.65	3
69	66	4101.3	6834.6	14	11	2010	23:28	54	12.95	32.18	12.63	32.23	6
70	67	4056.3	6822.6	15	11	2010	0:41	57	12.88	32.14	12.71	32.16	5
71	68	4043.7	6806.7	15	11	2010	2:52	75	11.52	32.53	16.69	34.58	1
72	69	4028.7	6831.0	15	11	2010	5:18	91	19.04	35.44	18.45	35.27	2
73	70	4026.2	6838.7	15	11	2010	6:10	87	13.31	33.44	16.53	34.68	6

DEL1012 ECOMON/NASA GROUND TRUTH MEASUREMENTS

November 5 - December 5, 2010

<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
74	71	4011.6	6829.0	15	11	2010	8:19	340	17.08	35.09	12.62	35.51	139
11	71	4010.5	6828.6	15	11	2010	9:03	700	16.27	34.72	6.10	35.04	144
12	72	4016.8	6810.0	15	11	2010	11:34	282	19.73	35.59	12.41	35.57	1
75	73	4023.9	6746.7	15	11	2010	14:30	146	20.86	35.75	15.19	35.94	3
76	74	4035.6	6726.2	15	11	2010	17:01	101	17.50	34.87	16.68	35.29	5
13	74	4035.9	6726.1	15	11	2010	17:23	101	17.25	34.80	15.97	35.24	3
77	75	4043.9	6709.1	15	11	2010	19:34	100	15.28	34.15	15.28	34.72	3
14	76	4050.3	6656.8	15	11	2010	21:04	96	14.25	33.81	14.20	34.19	2
78	77	4056.3	6644.6	15	11	2010	22:47	92	15.12	34.15	14.95	34.34	5
79	78	4058.9	6656.7	16	11	2010	0:04	71	13.97	33.77	14.43	33.94	5
80	79	4101.3	6716.7	16	11	2010	1:55	71	12.42	33.16	12.89	33.37	5
81	80	4106.2	6706.6	16	11	2010	3:02	66	11.20	32.49	11.27	32.57	5
82	81	4111.2	6708.6	16	11	2010	3:52	62	11.51	32.35	11.75	32.87	5
83	82	4128.6	6714.7	16	11	2010	6:04	48	12.14	32.21	11.60	32.33	4
84	82	4128.7	6714.7	16	11	2010	6:13	47	12.15	32.20	11.60	32.33	20
85	83	4136.4	6636.4	16	11	2010	9:37	81	10.48	32.76	10.77	33.38	5
86	84	4138.7	6626.9	16	11	2010	10:37	81	10.84	32.71	10.93	33.28	4
15	85	4138.7	6610.3	16	11	2010	12:03	98	13.10	33.57	10.11	33.76	6
87	85	4138.9	6610.3	16	11	2010	12:22	97	13.09	33.59	10.18	33.77	5
88	86	4138.8	6602.8	16	11	2010	13:04	92	17.15	35.24	8.53	33.51	3
91	87	4141.2	6546.2	16	11	2010	16:07	585	11.42	32.40	7.24	32.93	495
92	87	4141.0	6546.6	16	11	2010	16:28	600	11.49	32.40	9.40	34.39	399
16	87	4141.1	6546.7	16	11	2010	17:17	501	11.37	32.42	5.57	35.00	8
93	88	4158.7	6554.4	16	11	2010	20:00	130	10.47	32.47	7.16	33.31	5
17	88	4158.4	6555.5	16	11	2010	20:28	113	10.45	32.47	7.15	33.25	3
94	89	4213.6	6545.9	16	11	2010	22:49	224	12.36	32.78	9.26	34.36	24

DEL1012 ECOMON/NASA GROUND TRUTH MEASUREMENTS
November 5 - December 5, 2010

Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Surface Temp	Salt	Deepest Observed Temp	Salt	Meters from Bottom
95	89	4213.2	6546.5	16	11	2010	23:19	225	12.32	32.76	8.04	35.02	3
96	90	4231.2	6549.0	17	11	2010	1:27	91	10.62	31.79	9.10	33.36	5
97	91	4241.6	6535.6	17	11	2010	3:19	92	9.88	30.46	8.32	32.67	6
98	91	4241.0	6536.3	17	11	2010	3:35	92	9.88	30.46	10.57	31.96	66
99	92	4256.0	6616.6	17	11	2010	7:04	128	10.64	32.37	10.27	33.12	5
100	93	4236.2	6638.8	17	11	2010	9:58	185	10.96	32.35	9.62	35.09	3
101	94	4231.8	6632.1	17	11	2010	11:10	247	10.94	32.37	9.10	35.11	46
18	94	4232.3	6631.7	17	11	2010	11:38	238	10.94	32.37	8.96	35.10	5
102	95	4211.2	6644.7	17	11	2010	14:43	207	10.78	32.41	8.19	34.35	6
103	96	4225.4	6659.3	17	11	2010	17:19	363	10.58	32.44	9.20	35.10	163
20	96	4225.1	6700.1	17	11	2010	18:02	363	10.47	32.56	8.33	35.12	3
104	97	4236.4	6706.8	17	11	2010	19:46	295	11.09	33.02	9.47	35.18	90
21	97	4235.9	6706.3	17	11	2010	20:13	297	11.10	33.03	8.23	35.12	1
106	98	4313.4	6709.3	18	11	2010	0:10	209	10.95	32.68	11.22	34.45	101
107	99	4343.5	6702.6	18	11	2010	3:46	168	10.80	33.37	10.40	34.69	7
108	100	4343.8	6652.4	18	11	2010	4:58	156	11.13	32.91	11.14	34.17	6
109	101	4403.9	6626.5	18	11	2010	8:13	71	9.91	31.50	9.56	31.62	8
110	102	4418.3	6742.6	18	11	2010	19:08	86	10.25	32.77	10.58	33.17	6
111	103	4406.3	6744.8	18	11	2010	20:38	159	10.07	32.76	10.79	33.87	6
112	104	4343.8	6845.0	19	11	2010	2:16	97	10.35	33.23	10.61	33.36	9
113	105	4324.1	6742.4	19	11	2010	7:24	253	10.40	33.36	8.85	34.49	52
114	105	4324.1	6743.0	19	11	2010	7:48	254	10.40	33.37	8.86	34.49	5
115	106	4313.7	6808.8	19	11	2010	10:22	205	10.22	33.13	8.48	34.29	5
116	107	4306.3	6820.7	19	11	2010	12:01	212	10.20	33.10	8.49	34.25	6
117	108	4256.1	6808.6	19	11	2010	13:55	175	10.24	33.12	8.85	34.38	8
118	109	4251.4	6746.6	19	11	2010	16:00	213	10.78	33.04	8.90	34.48	5

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<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
22	109	4251.4	6746.5	19	11	2010	16:40	215	10.79	33.04	8.86	34.46	18
119	109	4250.6	6745.7	19	11	2010	17:19	193	10.79	33.01	8.95	34.50	7
120	110	4233.8	6826.8	19	11	2010	21:28	214	9.93	32.85	8.59	34.68	10
121	111	4231.2	6834.7	19	11	2010	22:40	207	9.87	32.83	8.61	34.73	7
122	112	4218.8	6836.8	20	11	2010	0:28	171	10.11	32.98	7.91	34.12	6
123	113	4231.1	6856.9	20	11	2010	2:58	205	10.10	32.72	8.34	34.36	9
124	113	4230.7	6858.3	20	11	2010	3:27	212	10.08	32.70	10.07	32.98	159
125	114	4301.0	6920.8	20	11	2010	7:13	194	10.29	33.23	8.09	33.78	7
126	115	4246.2	6928.8	20	11	2010	9:07	176	9.73	33.10	7.96	33.99	7
127	116	4230.1	6932.0	20	11	2010	11:06	268	9.93	32.74	8.10	34.23	66
23	117	4230.0	6939.9	20	11	2010	12:16	250	9.96	32.94	8.31	34.42	6
128	117	4230.0	6939.9	20	11	2010	13:00	258	9.93	32.87	8.18	34.31	57
129	118	4231.3	6958.6	20	11	2010	15:21	160	10.00	33.14	7.72	33.60	5
130	119	4245.9	7014.8	20	11	2010	18:16	103	9.88	32.68	9.29	33.21	2
131	120	4246.4	7025.3	20	11	2010	19:25	90	9.68	32.48	9.76	32.87	6
132	121	4254.7	7032.9	20	11	2010	20:43	83	9.58	32.36	9.68	32.84	7
24	121	4254.5	7033.1	20	11	2010	21:01	83	9.57	32.36	9.70	32.84	7
133	122	4256.3	7040.8	20	11	2010	21:58	42	9.31	32.07	10.06	32.68	7
134	123	4243.6	7042.9	20	11	2010	23:22	28	9.14	31.60	9.90	32.59	7
135	124	4236.4	7025.2	21	11	2010	1:10	122	9.75	32.69	9.93	32.98	8
136	125	4228.6	7028.9	21	11	2010	2:19	87	9.55	32.48	9.96	32.98	5
137	126	4225.0	7037.0	21	11	2010	3:15	85	9.55	32.21	9.58	32.48	8
138	127	4211.6	7025.4	21	11	2010	5:10	66	10.06	32.17	9.98	32.30	7
139	128	4215.0	7007.6	21	11	2010	6:48	73	9.59	32.49	9.66	32.63	6
140	129	4206.6	6945.5	21	11	2010	8:52	208	9.86	32.98	8.08	34.21	6
141	130	4206.3	6931.0	21	11	2010	10:28	213	9.67	32.95	8.17	34.26	7

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<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
25	131	4206.2	6906.8	21	11	2010	12:48	186	10.12	32.45	7.46	33.78	7
143	131	4206.0	6906.6	21	11	2010	13:46	184	10.14	32.45	7.46	33.77	7
144	132	4143.7	6846.7	21	11	2010	17:15	168	10.40	32.45	7.33	33.56	5
26	132	4144.0	6847.7	21	11	2010	17:49	165	10.40	32.45	7.32	33.62	6
145	133	4131.3	6824.9	21	11	2010	20:13	45	11.12	32.43	10.39	32.57	5
27	133	4131.4	6825.2	21	11	2010	20:27	48	11.12	32.43	10.38	32.57	5
146	134	4118.7	6824.7	21	11	2010	21:53	58	11.53	32.37	10.51	32.55	6
147	135	4124.9	6926.8	30	11	2010	0:55	42	9.18	32.64	9.19	32.64	5
148	135	4124.7	6926.5	30	11	2010	1:08	39	9.17	32.65	9.19	32.64	2
149	136	4104.5	6850.3	30	11	2010	4:31	70	10.20	32.71	10.16	32.71	4
150	136	4104.3	6850.0	30	11	2010	4:46	68	10.21	32.71	10.20	32.71	3
151	137	4109.8	6842.7	30	11	2010	6:11	67	10.73	32.66	10.65	32.65	3
152	137	4110.2	6842.4	30	11	2010	6:22	67	10.77	32.66	10.69	32.65	4
153	138	4108.6	6755.4	30	11	2010	10:03	47	11.09	32.18	11.11	32.18	4
154	138	4108.7	6755.3	30	11	2010	10:15	47	11.09	32.18	11.11	32.18	4
155	139	4108.2	6739.2	30	11	2010	11:31	52	11.21	32.22	11.21	32.22	6
156	139	4108.3	6738.7	30	11	2010	11:40	53	11.20	32.22	11.20	32.22	5
157	140	4140.1	6720.1	30	11	2010	15:43	49	10.22	32.41	10.21	32.41	5
158	140	4140.2	6720.3	30	11	2010	15:52	49	10.21	32.41	10.21	32.41	5
159	141	4145.1	6725.4	30	11	2010	16:43	40	9.90	32.52	9.88	32.51	7
160	141	4145.2	6725.5	30	11	2010	16:52	44	9.88	32.52	9.88	32.52	6
161	142	4157.9	6728.7	30	11	2010	18:13	44	9.94	32.49	9.72	32.55	7
162	142	4158.4	6729.0	30	11	2010	18:22	45	9.95	32.50	9.60	32.59	9
163	143	4151.6	6758.2	30	11	2010	20:55	65	9.66	32.61	9.67	32.62	1
164	143	4151.6	6758.2	30	11	2010	21:04	65	9.65	32.61	9.66	32.64	4
165	144	4129.9	6836.9	1	12	2010	1:04	108	9.49	32.73	8.82	33.02	4

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Cast #	Sta #	Lat	Long	Day	Mo	Year	Time (GMT)	Btm Depth	Surface Temp	Salt	Deepest Observed Temp	Salt	Meters from Bottom
166	144	4129.7	6836.1	1	12	2010	1:21	103	9.49	32.73	8.97	32.97	4
167	144	4129.6	6835.3	1	12	2010	1:37	100	9.49	32.73	9.49	32.73	82
168	145	4207.1	6945.5	1	12	2010	8:10	208	9.33	33.13	8.06	34.17	6
170	145	4206.4	6945.6	1	12	2010	9:31	209	9.35	33.12	8.01	34.11	9
171	146	4230.5	6932.3	1	12	2010	12:25	274	9.20	33.01	8.20	34.30	76
172	146	4230.7	6931.5	1	12	2010	13:04	273	9.15	32.98	8.19	34.29	72
173	146	4230.9	6930.3	1	12	2010	13:33	276	9.14	32.98	8.39	34.46	6
174	147	4246.4	7015.3	1	12	2010	17:37	47	9.27	32.77	9.62	32.98	3
175	147	4246.4	7014.9	1	12	2010	17:46	52	9.19	32.77	9.44	32.99	5
176	147	4246.4	7014.5	1	12	2010	17:57	36	9.17	32.78	9.18	32.78	7
177	148	4301.6	7015.5	1	12	2010	19:37	146	8.81	32.60	9.07	33.46	6
178	148	4301.9	7014.4	1	12	2010	20:01	163	8.84	32.61	8.91	33.46	5
179	149	4315.1	7028.4	1	12	2010	22:13	40	8.79	32.63	8.78	32.63	7
180	149	4315.1	7027.9	1	12	2010	22:23	34	8.85	32.63	8.84	32.63	8
181	150	4315.5	7033.2	1	12	2010	23:16	29	8.73	32.60	8.69	32.58	8
182	150	4315.5	7032.7	1	12	2010	23:25	36	8.79	32.62	8.78	32.61	5
183	151	4246.6	7024.5	2	12	2010	11:26	97	9.12	32.59	9.05	33.11	8
184	151	4246.0	7025.0	2	12	2010	11:48	93	9.15	32.60	9.10	33.08	6
185	152	4236.5	7024.4	2	12	2010	13:06	124	9.13	32.71	9.36	33.06	7
186	152	4236.0	7025.1	2	12	2010	13:23	96	9.13	32.72	9.36	33.05	8
187	153	4231.6	7027.4	2	12	2010	15:58	100	9.15	32.69	9.38	33.03	8
188	153	4231.2	7027.0	2	12	2010	16:15	96	9.16	32.70	9.40	33.00	9
189	154	4227.1	7019.6	2	12	2010	17:19	67	9.17	32.60	9.31	32.82	7
190	154	4226.7	7019.8	2	12	2010	17:31	65	9.16	32.59	9.32	32.84	5
191	155	4215.4	7039.4	2	12	2010	19:32	28	8.61	32.17	8.71	32.20	4
192	155	4215.1	7039.6	2	12	2010	19:42	29	8.44	32.14	8.64	32.18	5
193	156	4206.5	7032.4	2	12	2010	20:52	33	8.96	32.12	9.06	32.37	4

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<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
194	156	4206.4	7032.8	2	12	2010	21:02	35	8.92	32.11	9.06	32.36	5
195	157	4212.4	7024.6	2	12	2010	22:16	65	9.06	32.30	9.10	32.59	4
196	157	4212.1	7024.9	2	12	2010	22:25	65	9.06	32.30	9.09	32.57	4
197	158	4215.2	7007.1	3	12	2010	0:10	82	9.12	32.78	9.07	33.18	5
198	158	4215.0	7007.6	3	12	2010	0:22	75	9.11	32.77	9.11	33.09	10
199	159	4139.9	6947.0	3	12	2010	4:05	40	9.07	32.74	9.22	32.93	5
200	159	4139.9	6947.4	3	12	2010	4:15	38	9.06	32.73	9.22	32.92	7
201	160	4040.6	6919.5	3	12	2010	11:37	54	10.36	32.65	10.45	32.66	5
202	160	4040.7	6919.7	3	12	2010	11:48	50	10.14	32.60	10.35	32.64	5
203	160	4040.7	6919.8	3	12	2010	11:58	52	10.14	32.60	10.28	32.63	17
204	161	4104.1	6933.9	3	12	2010	15:07	33	8.90	32.50	8.92	32.51	7
205	161	4104.1	6934.4	3	12	2010	15:16	37	8.85	32.52	8.86	32.52	7
206	162	4040.2	6934.8	3	12	2010	17:37	49	9.80	32.35	9.81	32.35	5
207	162	4039.9	6935.5	3	12	2010	17:46	50	9.80	32.35	9.81	32.35	5
208	163	4044.4	6910.4	3	12	2010	20:19	72	9.62	32.57	9.63	32.56	7
209	163	4044.8	6910.3	3	12	2010	20:38	75	9.61	32.57	9.65	32.57	7
210	164	4050.3	6854.9	3	12	2010	22:17	70	11.52	32.65	11.50	32.70	3
211	164	4050.3	6855.4	3	12	2010	22:28	69	11.53	32.64	11.47	32.71	4
212	165	4040.2	6850.1	4	12	2010	0:00	65	11.19	32.43	11.77	32.84	3
213	165	4040.2	6850.5	4	12	2010	0:12	65	11.18	32.43	11.78	32.84	4
214	166	4034.9	6830.0	4	12	2010	2:15	74	11.04	33.01	12.66	33.59	2
215	166	4034.8	6830.4	4	12	2010	2:25	73	10.99	32.99	12.67	33.58	5
216	167	4034.9	6835.3	4	12	2010	3:01	69	10.72	32.77	12.51	33.48	5
217	167	4034.9	6835.6	4	12	2010	3:13	68	10.70	32.76	12.50	33.48	4
218	168	4010.1	6859.2	4	12	2010	6:25	140	12.73	33.91	15.93	35.70	4
219	168	4009.6	6900.0	4	12	2010	6:46	140	12.70	33.89	15.82	35.69	3
220	169	4024.5	6939.1	4	12	2010	10:51	70	12.38	33.22	14.52	34.38	4

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<i>Cast #</i>	<i>Sta #</i>	<i>Lat</i>	<i>Long</i>	<i>Day</i>	<i>Mo</i>	<i>Year</i>	<i>Time (GMT)</i>	<i>Btm Depth</i>	<i>Surface Temp</i>	<i>Salt</i>	<i>Deepest Observed Temp</i>	<i>Salt</i>	<i>Meters from Bottom</i>
221	169	4024.6	6939.5	4	12	2010	11:00	70	12.44	33.25	13.64	33.88	5
222	169	4024.7	6940.0	4	12	2010	11:13	70	12.43	33.25	12.98	33.52	3
223	169	4024.8	6940.1	4	12	2010	11:22	70	12.43	33.25	12.44	33.25	30
224	170	4020.4	6944.3	4	12	2010	12:08	76	12.10	33.10	12.81	33.32	5
225	170	4020.3	6944.7	4	12	2010	12:22	76	12.09	33.10	12.99	33.39	5
226	171	4005.3	7019.1	4	12	2010	15:56	146	13.28	33.81	14.37	35.53	5
227	171	4004.9	7019.9	4	12	2010	16:16	157	13.21	33.77	14.28	35.57	4
228	172	4034.6	7034.4	4	12	2010	20:16	66	10.55	32.29	11.63	32.92	4
229	172	4034.6	7034.8	4	12	2010	20:25	66	10.56	32.29	11.69	32.95	4
230	172	4034.6	7035.1	4	12	2010	20:34	67	10.58	32.29	10.58	32.29	43
231	173	4045.0	7034.3	4	12	2010	22:16	58	11.42	32.48	11.43	32.47	3
232	173	4044.9	7034.6	4	12	2010	22:27	58	11.42	32.48	11.44	32.48	4
233	174	4055.4	7024.5	4	12	2010	23:55	45	10.98	32.37	10.98	32.37	5
234	174	4055.4	7024.8	5	12	2010	0:06	46	10.98	32.37	11.00	32.37	4
235	175	4059.9	7035.0	5	12	2010	1:16	49	11.14	32.46	11.14	32.46	2
236	175	4100.0	7035.1	5	12	2010	1:25	48	11.11	32.46	11.14	32.46	4

data in bold are from 9/11+CTD (s/n 0420)