STP/HYDROGRAPHIC OBSERVATIONS ALONG LINE P, STATION P, LINE R AND ASSOCIATED LINES AND IN THE "OCEAN STORMS" AREA:

CRUISE I – 22 SEPTEMBER - 16 OCTOBER, 1987
CRUISE III – 24 NOVEMBER - 9 DECEMBER, 1987

by

S. Tabata, L.A.F. Spearing, R.H Bigham, B.G. Minkley, J. Love, D. Yelland, J. Linguanti and P.M. Kimber

Institute of Ocean Sciences
Department of Fisheries and Oceans
Sidney, B.C. V8L 4B2

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Pêches et Océans

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Canadian Data Report Of Hydrography and Ocean Sciences

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Department of Fisheries and Oceans
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ABSTRACT

Tabata, S., L.A.F. Spearing, R.H. Bigham, B.G. Minkley, J. Love, D. Yelland, J. Linguanti and P.M. Kimber. 1988. STP/Hydrographic Observations along Line P, Station P, Line R and Associated Lines and in the OCEAN STORMS Area: Cruise I -- 22 September - 16 October 1987 and Cruise III -- 24 November - 9 December 1987. Can. Data Rep. Hydrogr. Ocean Sci. 70: 134 pp.

This report presents a compilation of oceanographic observations, mainly STP/Hydrographic data observed during the two cruises of Line P, Station P, Line R and associated Lines and the OCEAN STORMS area during 22 September - 16 October and 24 November - 9 December 1987.

Key words: STP/Hydrographic data; Northeast Pacific Ocean; OCEAN STORMS

RESUME

Tabata, S., L.A.F. Spearing, R.H. Bigham, B.G. Minkley, J. Love, D. Yelland, J. Linguanti and P.M. Kimber. 1988.
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Dans le présent rapport, les auteurs rassemblent des observations océanographiques, principalement des données hydrographiques et de STP, faites lors de deux expéditions effectuées le long de la ligne P, à la station P, le long de la ligne R et des lignes connexes et dans le secteur des TEMPÊTES OCÉANIQUES du 22 septembre au 16 octobre et du 24 novembre au 9 decembre 1987.

Mots-clés: données hydrographiques/ de STP; nord-est de l'océan Pacifique; TEMPÊTES OCÉANIQUES.

INTRODUCTION

As part of the ocean climate studies conducted at the Institute of Ocean Sciences, Line P, Station P, Line R, and associated lines are occupied at approximately seasonal intervals to monitor the interannual variability of ocean conditions in the northeast Pacific Ocean. Data from regular oceanographic cruises are available for Station P since 1956; Line P since 1959; Line R since 1981.

The OCEAN STORMS project is primarily a joint U.S. - Canada initiative. The U.S. participants are: Scripps Institution of Oceanography, Applied Physics Laboratory, Department of Oceanography and Department of Atmospheric Sciences of the University of Washington, College of Oceanography of the Oregon State University, National Center for Atmospheric Research, Pacific Environmental Laboratories of NOAA, Jet Propulsion Laboratory of the California Institute of Technology, Chesapeake Bay Institute of the Johns Hopkins University and the National Weather Services of NOAA. One French institute, the Infremer/Centre de Brest, is also represented. The Canadian contributors are the Institute of Ocean Sciences (Department of Fisheries and Oceans), the Atmospheric Environment Service (Department of the Environment), and the Department of Oceanography of the University of British Columbia. A description of the OCEANS STORMS project (goals, objectives, tasks, etc.) can be found in a report prepared by D'Asaro (1985).

In order to fulfill the requirements of the above two studies three oceanographic cruises were scheduled by the Institute of Ocean Sciences for the autumn - winter 1987. There were three cruises: Cruise I (Local designation 87-2) (22 September - 16 October 1987), Cruise II (87-3) (22

October - 10 November 1987) and Cruise III (87-4) (24 November - 9 December 1987). (The depths (m) and coordinates of OCEAN STORMS project are shown in Table 1).

The oceanographic data presented in this report comprise the salinity-temperature-pressure (STP)/hydrographic data and other supplementary data such as sea surface salinity. Only the data for Cruise I and III will be reported. Those for Cruise II are reported separately by W. Crawford and A.E. Gargett of the Institute of Ocean Sciences (Crawford and Gargett, 1988).

OBSERVED DATA

Cruise I (Fig. 1 and 2)

On account of good weather most scheduled observations were made during Cruise I. A total of 117 STP and 8 hydrographic casts were obtained, of which 34 STP's and one hydrographic cast were taken in OCEAN STORMS area. STP temperature/salinity profiles were observed with Guildline 8705 Digital STP probe/87102 Deck Control Unit. The transparency data were obtained with Sea Tech Transmissometer attached to the STP probe. Hydrographic casts were made by the use of Niskin sampling bottles, each fitted with two protected reversing thermometers. For samples at depth ≥ 200m a single unprotected reversing thermometer was also attached to each bottle. Salinities (in duplicate) were determined with Guildline 8400 AUTOSAL salinometer at I.O.S. The dissolved oxygen content was determined aboard the ship using a modified Winkler method (Carpenter, 1965).

The ship has an independent seawater loop system designed to provide continuous (in practice, logged every 2 minutes) temperature and salinity readings from a depth of approximately 3 metres (m). The time/date, ship's

position and meteorological data (air temperature and true wind velocity) are recorded as well. Samples may also be drawn from this system and analyzed for salinity using AUTOSAL salinometer. Salinities observed from this system are considered to represent those of the upper mixed layer quite well (Tabata, 1978).

For calibrating STP values, we used comparable data from hydrographic casts, special calibration samples (sampling bottles placed a few metres above the STP sensor, usually at 1500 decibars) and, in the case of salinity in the upper mixed layer, the 3-metre sample from the ship's seawater loop system. STP temperatures were found to be nearly identical to those obtained from hydrographic casts and calibration samples (STD temperatrue minus that from hydrographic/calibration cast = +0.003 (standard deviation = ± 0.050°C). Therefore, no correction is applied to STP temperatures. On the other hand, an examination of difference of salinities (STP salinities minus that obtained by other methods) (Fig. 3) suggested that there could have been a slight instrumental drift during Cruise I. Corrections to STP salinities were accomplished as follows:

First few days of observations (Stations P01 to P14):

Subtract 0.016^{o}/oo from observed STP salinities.

For bulk of observations during 26 September to 12 October (Stations P15 to R06:

Subtract 0.047^{o}/oo

For last few days of observations (Station J05 to A00):

Subtract 0.081^{o}/oo

The abridged cruise report and log of oceanographic observations for this cruise is shown in Appendix I and II, respectively.

Cruise II

Reported by W. Crawford and A.E. Gargett (1988).

Cruise III (Fig. 4 and 5)

This cruise was plagued by the occurrence of persistent gales and storms with wind speeds reaching as high as 75 knots. As a consequence less than one half of the scheduled number of stations were occupied. Only 32 STP's and 3 hydrographic casts were made. Of this, 18 STP's were taken in the OCEAN STORMS area, all in the northern half of the area (Fig. 4). Station OS16 situated at the centre of the area was unoccupied.

The methods used to sample, calibrate and analyse the data are similar to those employed in Cruise I.

Although the same model of Guildline CTD system was used during this cruise as in the earlier two cruises the sensor used this time was different. Presumably, as a consequence of this, the calibration results are different from that of Cruise I. Here, there is a suggestion that the observed temperature/salinity are either pressure (Fig. 6) or temperature dependent (Fig. 7). The least-squares line fitted for temperature/salinity difference versus depth and versus the observed STP temeprature are shown in Fig. 6 and 7, respectively. Since the regression curves using observed STP temperature possessed slightly less scatter, these have been used to reduce the observed STP temperature/salinity to "correct" temperature/salinity.

The abridged cruise report and log of oceanography observations for this cruise is shown in Appendix III and IV, respectively.

DATA PROCESSING

All conductivity data have been converted to salinity using the formula derived by Perkin and Lewis (1980) which has been recommended for general use (Fofonoff and Millard, 1983).

For hydrographic data, the thermometric depth was obtained by the usual "depth difference" method (e.g. Collins et al., 1969). Missing hydrographic data were obtained using a weighted parabolic interpretation method (Reiniger and Ross, 1968). These data are indicated by an asterisk.

Data values which are considered suspect but are included in the printed data set are flagged with a plus sign. These data are not included in the sets at the National Data Centre (Marine Environment Data Service (MEDS), Ottawa.

The data headings and units are as follows:

PRESS:	pressure in decibars (db)
TEMP:	temperature in degrees Celsius (°C)
SAL:	salinity in parts per thousand
DEPTH:	depth in metres (m)
SIGMA T:	specific gravity anomaly $= (\rho_{T,S,0} - 1)10^3$, where $\rho_{T,S,0}$ = <u>in-situ</u> specific gravity of seawater at pressure = 0 (i.e. at the sea surface)
SVA:	specific volume anomaly ($10^5\delta$, in $10^5 mLg^{-1}$ (or in centilitres ton $^{-1}$)
THETA:	potential temperature in °C
SVA (THETA):	specific volume anomaly ($10^5\delta$, in $10^5 mLg^{-1}$)

	(or in centilitres ton^{-1}) based on a given potential temperature
DELTA D:	geopotential anomaly or dynamic height anomaly in $J\ kg^{-1}$
POT. EN:	potential energy anomaly in 10^8 ergs cm^{-2}
OXY:	concentration of dissolved oxygen in $mL\ L^{-1}$
SOUND:	sound speed in $m\ s^{-1}$

Quantities on standard pressures were obtained by employing the interpolation scheme derived by Reiniger and Ross (1968).

The STP data sets do not include any dissolved oxygen content data but frequently contain information upon the optical quality of the water. It gives the percentage of light radiation of wave-length = 6600 nanometers through a 25 cm of path length. In this report the heading "TRANS" is percentage transmission of light.

The task of data processing was conducted by J. Linguanti and data presentation by P.M. Kimber.

All pertinent data collected on these two cruises are on file at the Marine Environmental Data Services Branch (MEDS), Department of Fisheries and Oceans, 1202 - 200 Kent Street, Ottawa, Ontario, Canada, K1A 0E6.

The original STP data containing temperature and salinity at one-metre averages are held at the Institute of Ocean Sciences. So too are the "Serial ASCII Instrumentation Loop" (SAIL) data which comprise sea surface temperature/salinity, ship's position and speed, and meteorological data including wind velocity at 2-minute intervals during the cruise.

PROCESSED DATA

The processed data are shown as follows:

Table 2:	Cruise I:	Sea surface salinity
Table 3:	"	STP data
Table 4:	"	Hydrographic data
Table 5:	Cruise III:	Sea surface salinity
Table 6:	"	STP data
Table 7:	"	Hydrographic data

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Table 1. Approximate depths (m) and positions of stations in OCEAN STORMS area.

STN. NO.	DEPTH (m) APPROX.	LAT. (° 'N)	LONG. (° 'W)
1	4350	48 34.8	141 46.2
2	4280	"	140 57.4
3	4190	"	140 08.7
4	4160	"	139 20.0
5	3980	"	138 31.3
6	4080	"	137 42.6
7	4370	48 02.4	141 44.8
8	4360	"	140 56.4
9	4240	"	140 08.2
10	3760	"	139 20.0
11	3740	"	138 31.8
12	3890	"	137 43.6
13	4430	47 30 0	141 43.3
14	4260	"	140 55.5
15	4260	"	140 07.8
16	4250	"	139 20.0
17	4180	"	138 32.2
18	4200	"	137 44.5
19	4390	46 57.6	141 42.0
20	4260	"	140 54.6
21	4260	"	140 07.4
22	4240	"	139 20.0
23	4230	"	138 32.6
24	4170	"	137 45.4
25	4460	46 25.3	141 40.7
26	4390	"	140 53.8
27	4270	"	140 06.9
28	4280	"	139 20.0
29	4240	"	138 33.1
30	4200	"	137 46.2
16W	4160	47 30.0	139 43.9
16S	4250	47 13.8	139 20.0
16E	4210	47 30.0	138 56.1
16N	4180	47 46.2	139 20.0
16SW	4250	47 26.0	139 26.0
16SE	4250	47 26.0	139 14.0
16NE	4250	47 34.0	139 14.0
16NW	4250	47 34.0	139 26.0

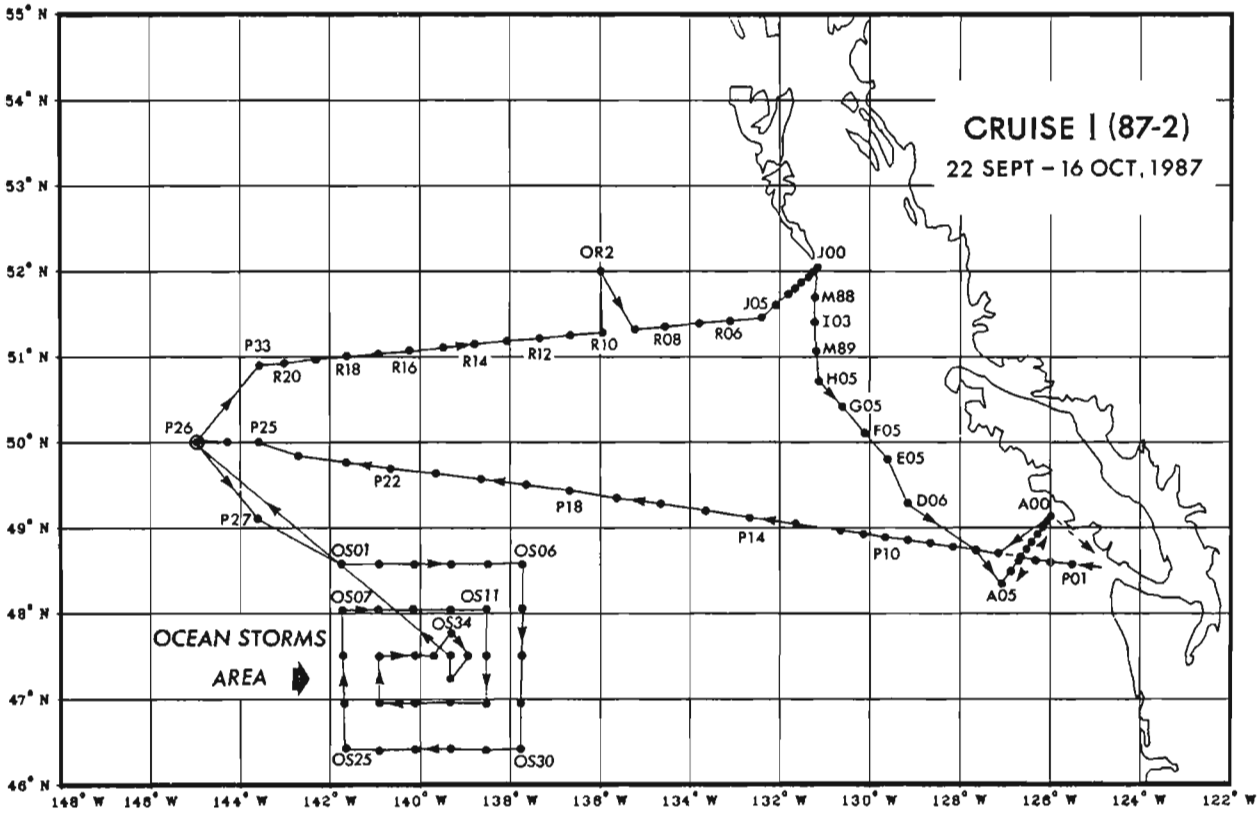


Figure 1. Track chart and location of stations for Cruise I (87-2).

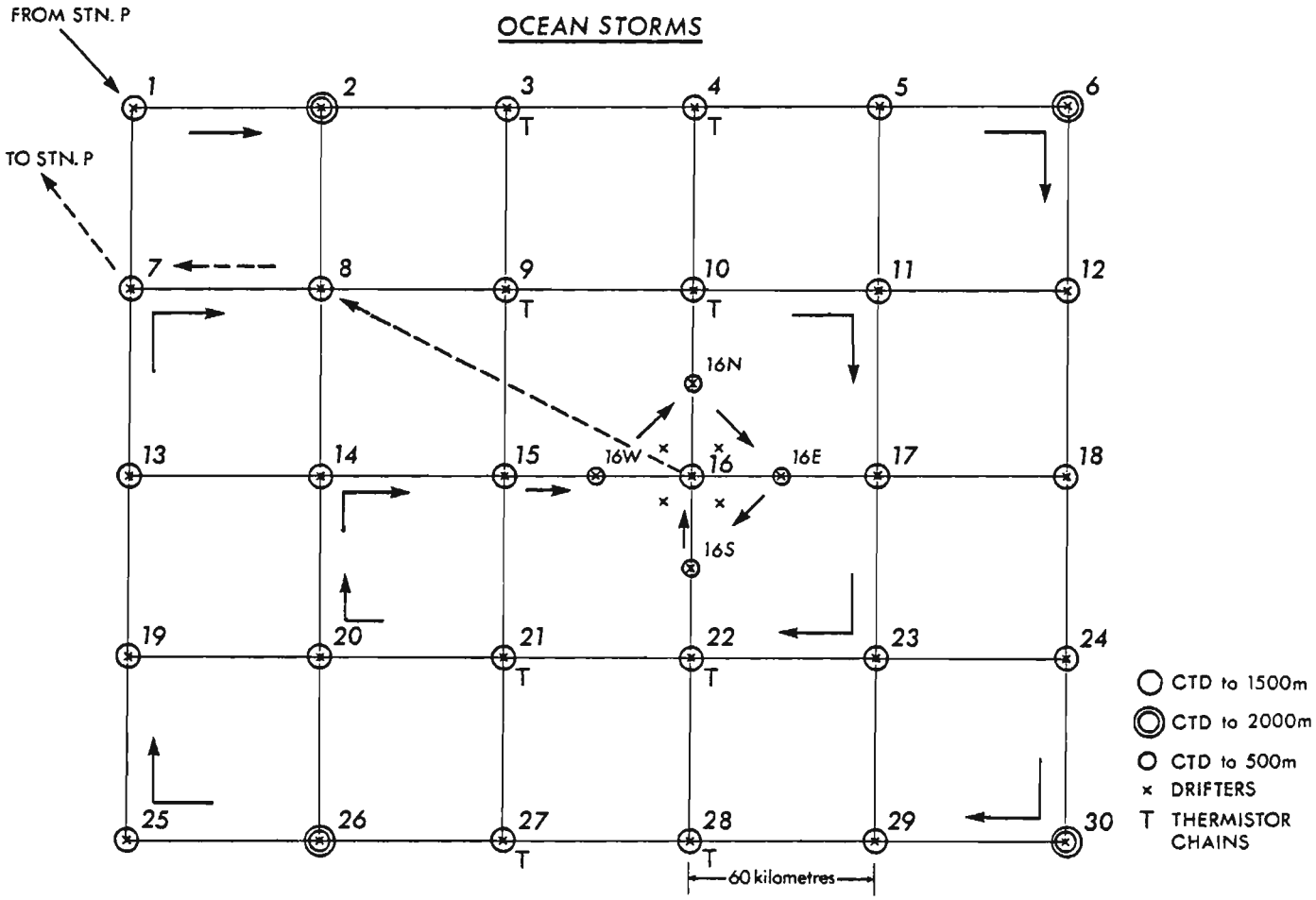


Figure 2. Detailed track chart and location of stations in OCEAN STORMS area for Cruise I.

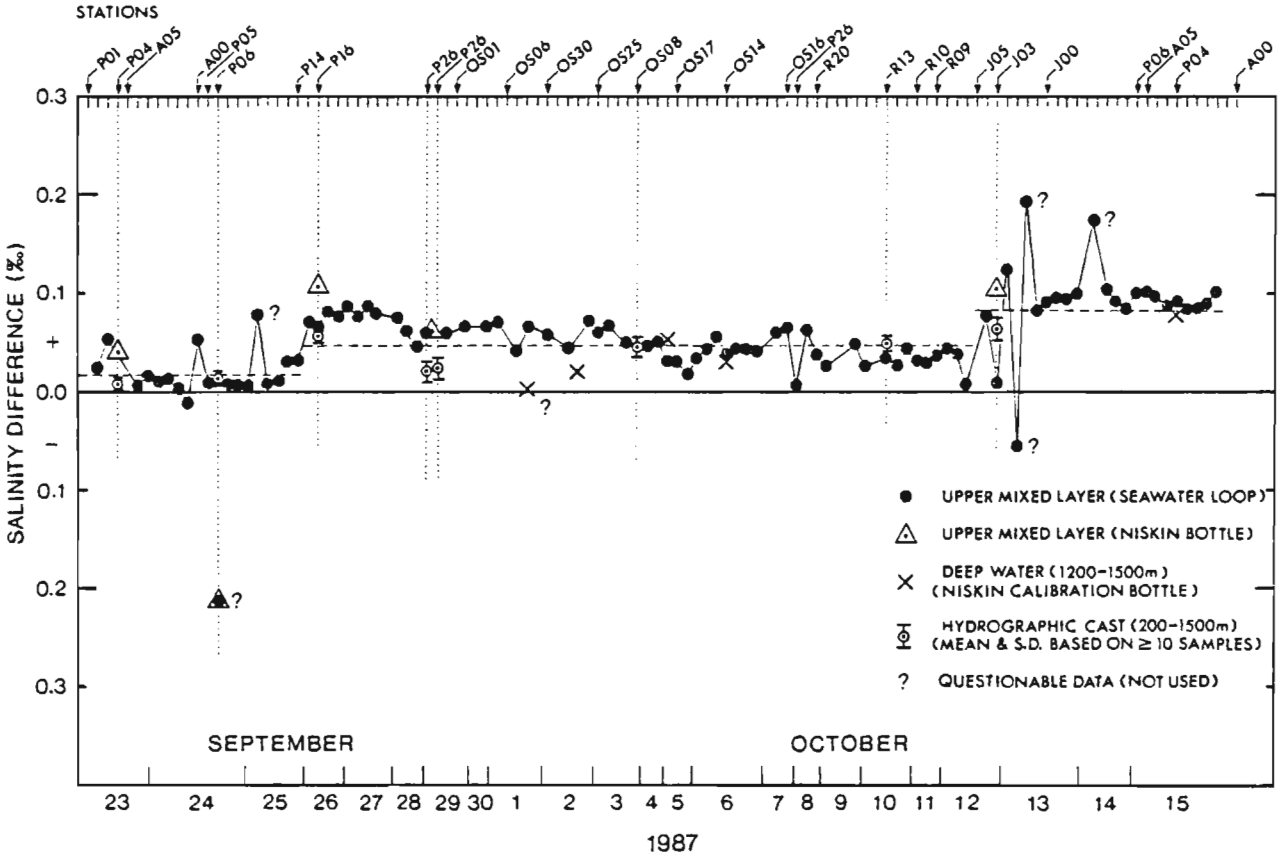


Figure 3. Salinity difference (‰) (STP minus that obtained from corresponding depths with sampling bottles and seawater loop and measured with AUTOSAL salinometer).

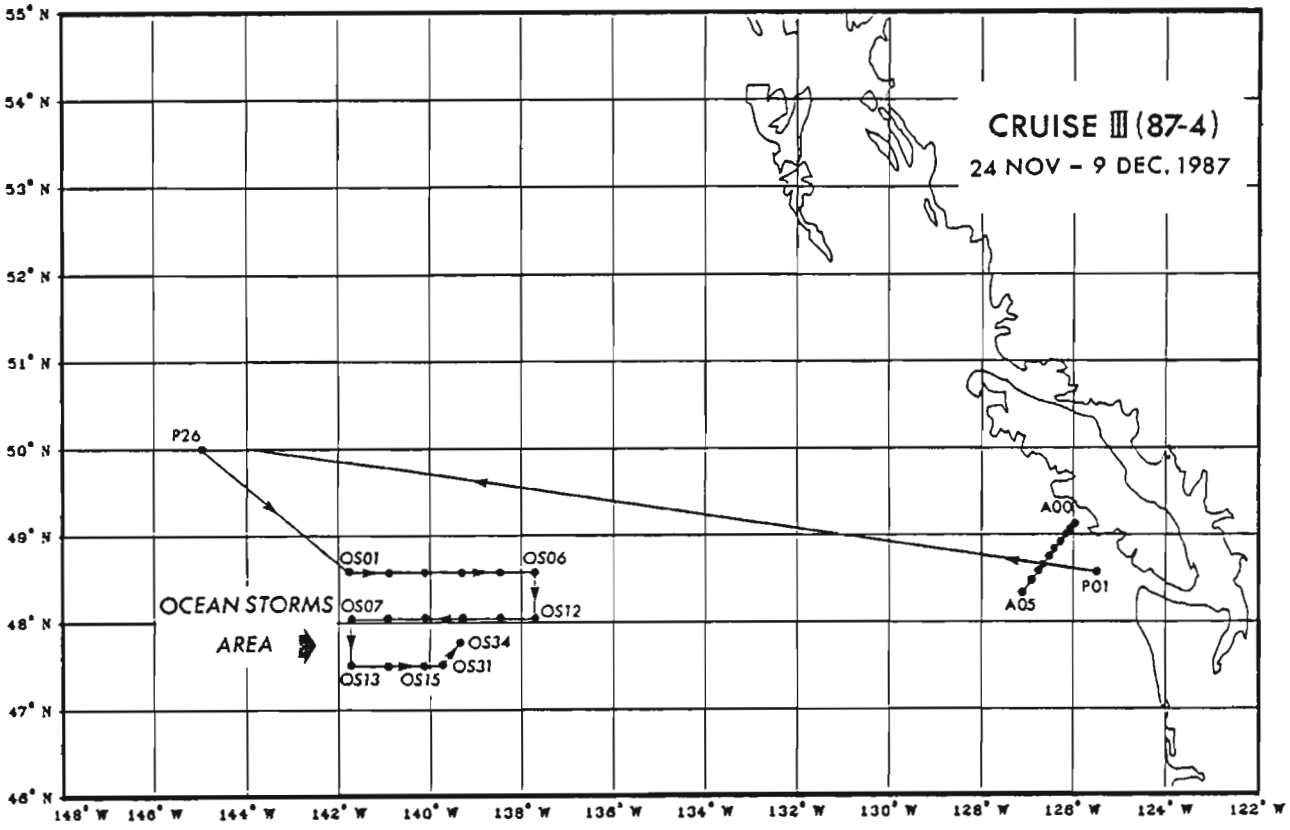


Figure 4. Track chart and location of stations for Cruise III (87-4).

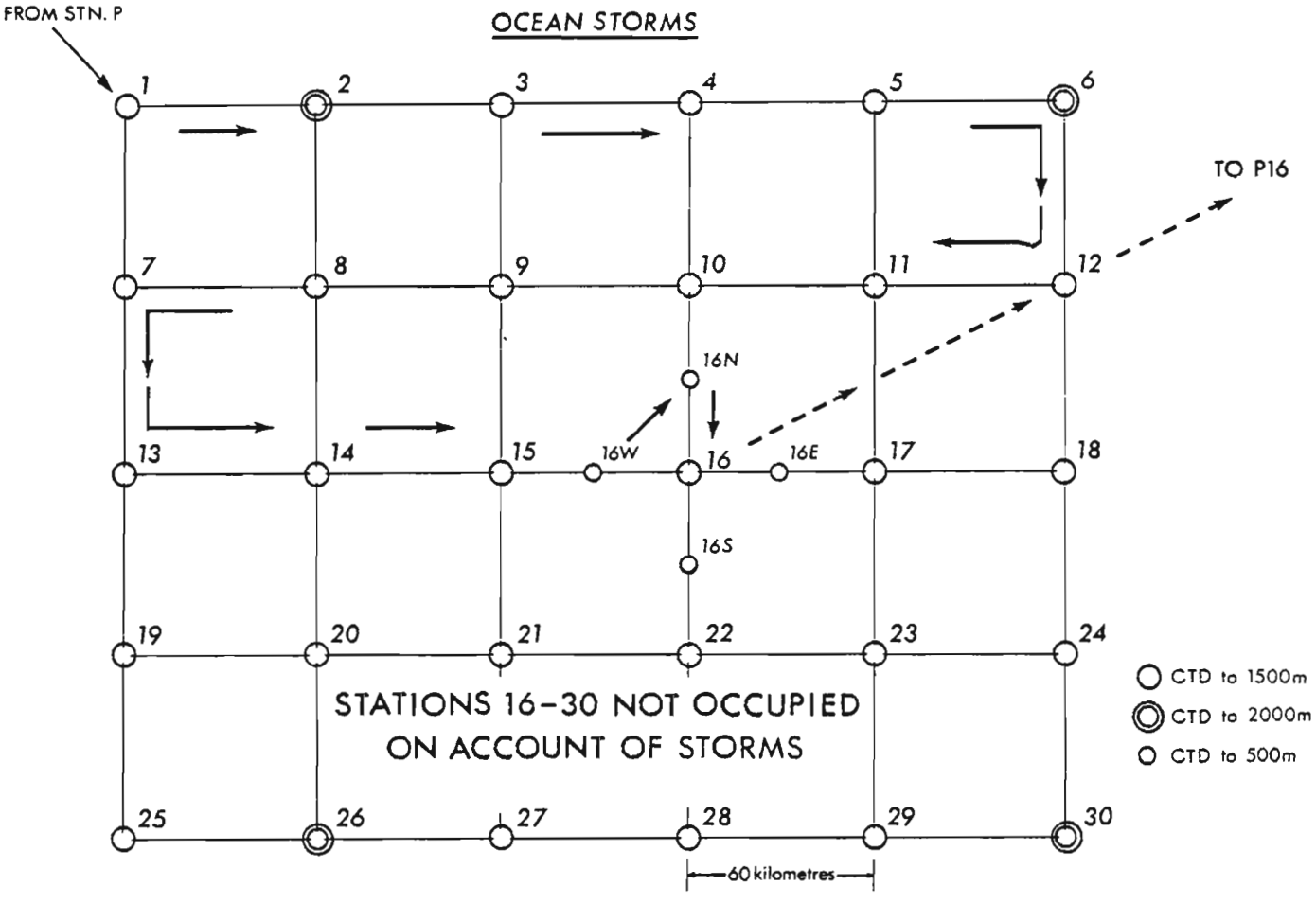


Figure 5. Detailed track chart and location of stations in OCEAN STORMS area for Cruise III.

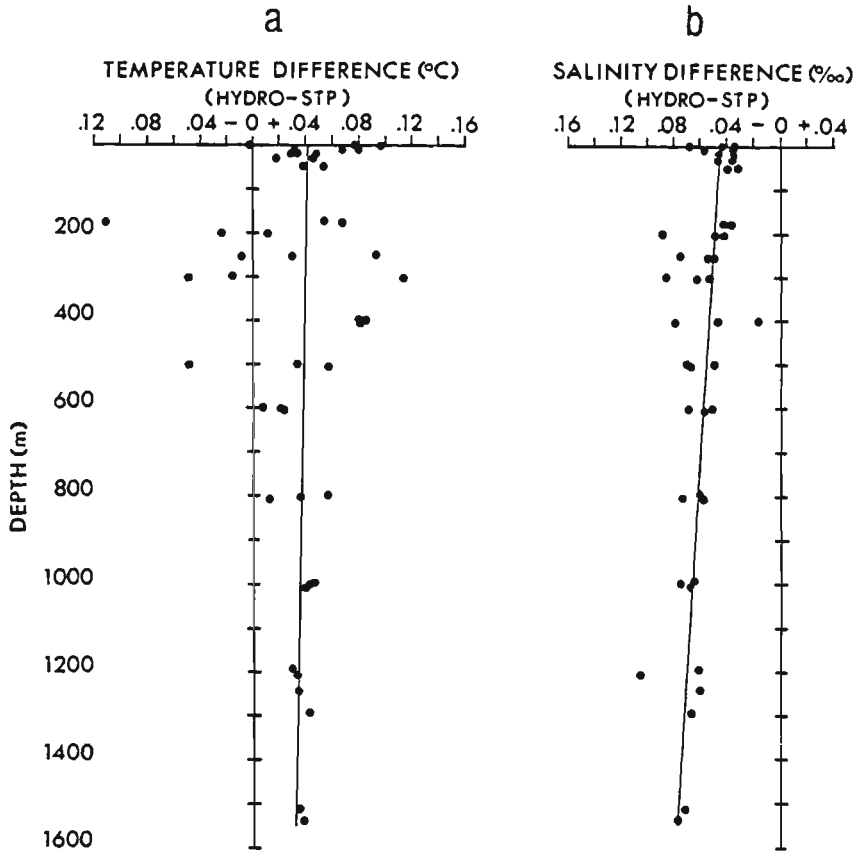


Figure 6 a) Temperature difference (°C) (hydrographic cast-STP) versus depths (m).

b) Salinity difference (‰) (hydro.-STP) versus depth (m).

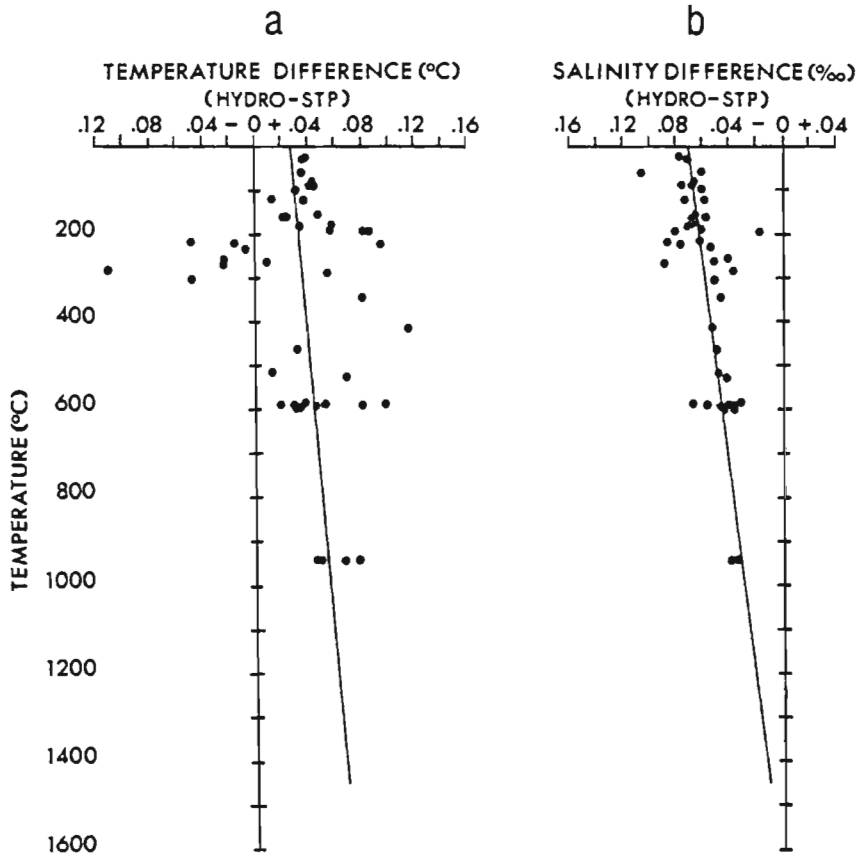


Figure 7 a) Temperature difference (°C) (hydro.-STP) versus observed STP temperature (°C).

b) Salinity difference (‰) (hydro.-STP) versus observed STP temperature (°C).

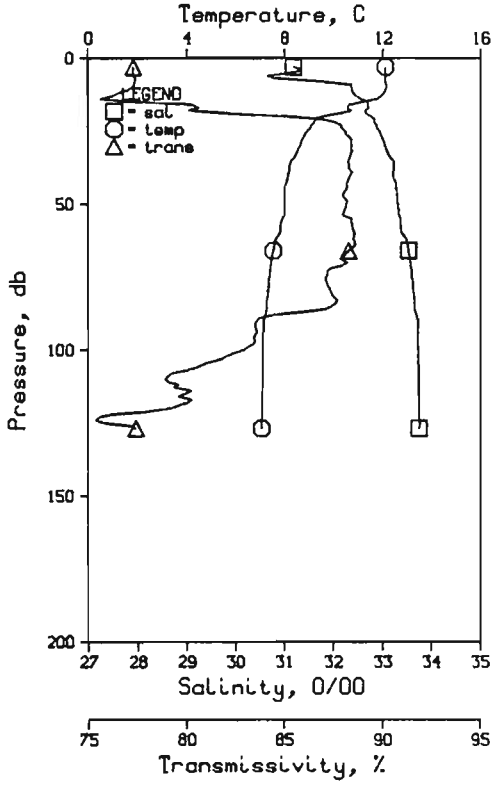
Table 2. Sea surface salinity (3m depth) observed via the sea water loop during Cruise I. (22 September - 16 October 1987).

SURFACE SALINITY DATA CRUISE I (87-2)

STN. NO.	LAT. (° 'N)	LONG. (° 'W)	DATE YR MO DY	TIME (U.T.C)	SALINITY (°/₀₀)
JF01	48 16.0	123 30.0	87 09 23	00:16	31.751
JF02	48 19.2	124 02.7	87 09 23	02:21	31.584
JF03	48 27.2	124 30.4	87 09 23	03:55	31.515
JF04	48 32.4	125 00.0	87 09 23	05:35	32.162
MP01	48 34.5	125 30.1	87 09 23	07:10	32.324
MP02	48 36.0	126 00.0	87 09 23	09:35	32.418
MP03	48 37.5	126 20.0	87 09 23	11:05	32.105
MP04	48 39.0	126 40.0	87 09 23	23:45	31.787
MA05	48 20.2	127 06.0	87 09 24	03:00	32.377
MA04	48 30.2	126 52.5	87 09 24	05:20	32.270
MA3B	48 36.2	126 44.2	87 09 24	07:10	32.192
MA2B	48 45.2	126 32.0	87 09 24	09:30	32.350
MA02	48 50.2	126 25.3	87 09 24	10:00	32.294
MA1B	48 55.2	126 18.0	87 09 24	11:00	32.155
MA01	49 00.0	126 11.7	87 09 24	11:47	31.989
MA0B	49 03.8	126 05.9	87 09 24	12:30	31.895
MA00	49 08.0	126 00.2	87 09 24	13:09	31.741
MP05	48 39.0	126 40.0	87 09 24	20:00	32.197
MP06	48 44.6	127 40.0	87 09 24	23:00	32.223
MP07	48 46.6	128 10.0	87 09 25	03:30	32.139
MP08	48 49.0	128 40.0	87 09 25	06:51	32.242
MP09	48 51.4	129 10.0	87 09 25	10:03	32.303
MP10	48 53.6	129 40.0	87 09 25	13:00	32.316
MP11	48 56.0	130 10.0	87 09 25	16:00	32.107
MP12	48 58.2	130 40.0	87 09 25	10:04	32.257
MP13	49 02.6	131 40.0	87 09 26	00:10	32.533
MP14	49 07.4	132 40.0	87 09 26	05:17	32.406
MP15	49 12.0	133 40.0	87 09 26	10:40	32.421
MP16	49 17.0	134 40.0	87 09 26	16:08	32.316
MP17	49 21.0	135 40.0	87 09 27	00:16	32.291
MP18	49 26.0	136 40.0	87 09 27	05:44	32.276
MP19	49 30.0	137 40.0	87 09 27	11:08	32.416
MP20	49 34.0	138 40.0	87 09 27	15:58	32.376
MP21	49 37.7	139 40.0	87 09 27	20:50	32.383
MP22	49 42.0	140 40.0	87 09 28	01:37	32.403
MP23	49 46.0	141 40.0	87 09 28	06:07	32.418
MP24	49 50.2	142 40.0	87 09 28	10:30	32.373
MP25	50 00.0	143 36.3	87 09 28	15:03	32.385
MP35	50 00.0	144 18.2	87 09 28	18:50	32.361
MP26	50 00.0	145 00.0	87 09 29	00:35	32.459
MP27	49 06.0	143 36.3	87 09 29	05:26	32.347
OS01	48 34.8	141 46.2	87 09 30	14:28	32.444
OS02	48 34.8	140 57.4	87 09 30	18:52	32.429
OS03	48 34.8	140 08.7	87 09 30	23:23	32.428
OS04	48 34.8	139 20.0	87 10 01	04:15	32.376
OS05	48 34.8	138 31.3	87 10 01	08:40	32.390
OS06	48 34.8	137 42.6	87 10 01	12:29	32.400
OS12	48 02.4	137 43.6	87 10 01	17:06	32.373
OS18	47 30.0	141 43.3	87 10 01	22:15	32.492
OS30	46 25.3	137 46.2	87 10 02	07:39	32.563
OS28	46 25.3	139 20.0	87 10 02	17:31	32.669
OS27	46 25.3	140 06.9	87 10 02	22:30	32.655
OS26	46 25.3	140 53.8	87 10 03	03:55	32.562
OS25	46 25.3	141 40.7	87 10 03	09:10	32.558
OS19	46 57.6	141 42.0	87 10 03	13:10	32.542
OS13	47 30.0	141 43.3	87 10 03	17:21	32.487
OS07	48 02.4	141 44.8	87 10 03	20:45	32.497
OS08	48 02.4	140 56.4	87 10 04	00:50	32.433
OS09	48 02.4	140 08.2	87 10 05	02:30	32.459
OS10	48 02.4	139 20.0	87 10 05	06:45	32.451
OS11	48 02.4	138 31.8	87 10 05	20:08	32.447
OS17	47 30.0	138 32.2	87 10 06	00:58	32.584
OS23	46 57.4	138 32.6	87 10 06	04:57	32.539
OS22	46 57.4	139 20.0	87 10 06	08:45	32.571
OS21	46 57.4	140 07.4	87 10 06	12:38	32.589
OS20	46 57.4	140 54.6	87 10 06	16:54	32.571
OS14	47 30.0	140 55.5	87 10 06	21:08	32.556
OS15	47 30.0	140 07.8	87 10 07	01:25	32.461
OS31	47 30.0	139 43.9	87 10 07	03:47	32.559
OS34	47 46.2	139 20.0	87 10 07	06:00	32.466
OS33	47 30.0	138 56.1	87 10 07	08:14	32.592
OS32	47 13.8	138 20.0	87 10 07	10:47	32.525
OS16	47 30.0	139 20.0	87 10 07	12:47	32.552
MP26	50 00.0	145 00.0	87 10 08	15:59	32.464
MP33	50 54.0	143 34.5	87 10 09	01:54	32.459
MR20	50 55.7	143 01.0	87 10 09	04:56	32.467
MR19	50 58.0	142 20.0	87 10 09	08:25	32.401
MR18	51 00.0	141 39.0	87 10 09	12:25	32.377
MR17	51 02.0	140 56.0	87 10 09	17:03	32.365
MR16	51 03.8	140 12.9	87 10 10	05:42	32.375
MR15	51 06.0	139 30.5	87 10 10	10:20	32.348
MR14	51 09.0	138 47.5	87 10 10	13:53	32.347
MR13	51 11.0	138 06.0	87 10 10	17:36	32.357
MR12	51 13.0	137 23.0	87 10 11	00:33	32.343
MR11	51 15.0	136 40.3	87 10 11	05:14	32.336
MR10	51 17.0	135 57.6	87 10 11	09:08	32.330
MO02	52 00.0	136 00.0	87 10 11	14:43	32.355
MR09	51 19.0	135 15.0	87 10 12	05:31	32.279
MR08	51 21.2	134 32.7	87 10 12	09:17	32.328
MR07	51 23.5	133 49.6	87 10 12	12:51	32.316
MR06	51 25.5	133 06.6	87 10 12	16:30	32.363
MJ05	51 27.5	132 24.0	87 10 12	20:40	32.056
MJ04	51 35.6	132 06.5	87 10 12	23:58	32.039
MJ03	51 43.5	131 50.0	87 10 13	02:28	32.045
MJ2A	51 47.5	131 40.7	87 10 13	05:33	31.935
MJ02	51 51.9	131 31.2	87 10 13	07:20	31.963
MJ1A	51 55.7	131 22.7	87 10 13	09:27	31.840
MJ01	52 00.0	131 14.0	87 10 13	11:22	32.014
MJ00	52 02.0	131 10.3	87 10 13	12:10	32.139
M 88	51 41.7	131 13.7	87 10 14	00:15	31.904
MI03	51 23.2	131 13.9	87 10 14	03:04	31.997
M 89	51 03.2	131 11.2	87 10 14	05:52	31.912
MH05	50 43.0	131 08.3	87 10 14	08:40	31.910
MG05	50 25.0	130 36.5	87 10 14	12:19	31.927
MF05	50 06.0	130 06.7	87 10 14	16:04	32.104
ME05	49 47.8	129 36.0	87 10 14	20:19	32.125
MD06	49 16.0	129 10.9	87 10 15	00:38	32.293
MP06	48 44.6	127 40.0	87 10 15	07:40	32.182
MA05	48 20.2	127 06.0	87 10 15	12:23	32.315
MA04	48 30.2	126 52.5	87 10 15	14:39	32.187
MA3B	48 36.2	126 44.2	87 10 15	16:27	32.215
MA03	48 40.2	126 38.8	87 10 15	17:40	32.146
MA2B	48 45.2	126 32.0	87 10 15	19:10	32.166
MA02	48 50.2	126 25.3	87 10 15	20:00	32.294
MA1B	48 55.2	126 18.0	87 10 15	20:56	32.012
MA01	49 00.0	126 11.7	87 10 15	21:39	32.009
MA0B	49 03.8	126 05.9	87 10 15	22:10	32.004
MA00	49 08.0	126 00.2	87 10 15	22:58	31.881
JF04	48 28.0	125 00.0	87 10 16	04:37	32.385
JF03	48 24.0	124 30.0	87 10 16	06:23	31.958
JF02	48 14.2	124 00.0	87 10 16	08:20	32.208
JF01	48 16.0	123 30.0	87 10 16	10:10	31.309

Table 3

STP data taken during Cruise I.

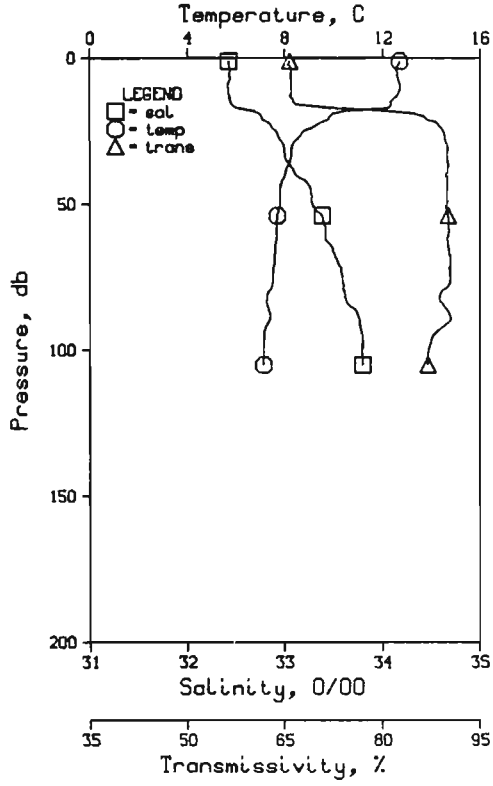


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 1 DATE 23/ 9/87
POSITION 48-34.5N, 125-30.0W GMT 7:41 STATION MP01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	12.09	31.18	0	23.64	0.00	0.00	1493.	77.26
10	12.11	32.35	10	24.54	0.41	0.02	1495.	77.23
20	9.50	32.77	20	25.32	0.72	0.07	1486.	84.95
30	8.61	33.03	30	25.66	0.97	0.13	1483.	88.37
50	8.00	33.30	50	25.96	1.40	0.30	1482.	88.12
75	7.38	33.60	75	26.29	1.88	0.61	1480.	87.12
100	7.11	33.72	99	26.42	2.30	0.98	1479.	82.93
125	7.06	33.75	124	26.45	2.70	1.44	1480.	75.84

DEEPEST MEASUREMENT:

127	7.06	33.74	126	26.44	2.73	1.49	1480.	77.40

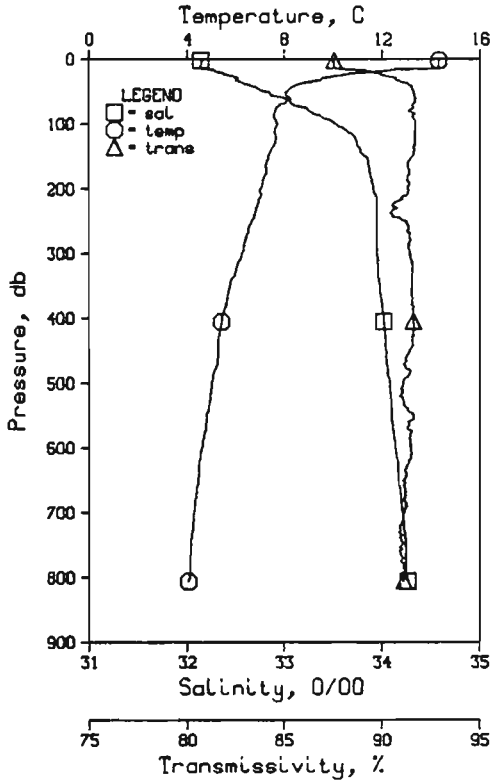


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 2 DATE 23/ 9/87
POSITION 48-36.0N, 126- 0.0W GMT 9:41 STATION MP02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	12.68	32.43	0	24.49	0.00	0.00	1497.	65.74
10	12.68	32.42	10	24.48	0.34	0.02	1497.	65.91
20	9.83	32.75	20	25.25	0.67	0.07	1487.	86.13
30	8.31	32.99	30	25.68	0.92	0.13	1482.	89.99
50	7.79	33.28	50	25.98	1.36	0.31	1481.	89.85
75	7.53	33.59	75	26.26	1.83	0.61	1480.	90.40
100	7.13	33.79	99	26.47	2.25	0.98	1480.	87.02

DEEPEST MEASUREMENT:

105	7.13	33.79	104	26.47	2.33	1.06	1480.	86.92

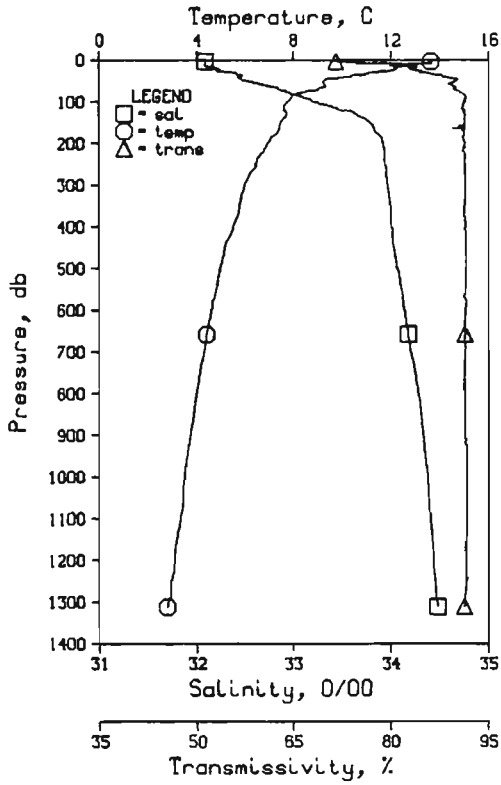


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 3 DATE 23/ 9/87
POSITION 48-37.5N, 126-20.0W GMT 11:12 STATION MP03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.29	32.13	0	23.94	0.00	0.00	1502.	87.54
10	14.30	32.13	10	23.94	0.40	0.02	1502.	87.55
20	11.50	32.32	20	24.63	0.77	0.08	1493.	89.50
30	9.54	32.50	30	25.10	1.08	0.15	1486.	90.70
50	8.08	32.81	50	25.57	1.61	0.37	1481.	91.57
75	7.66	33.22	75	25.95	2.18	0.73	1481.	91.54
100	7.71	33.53	99	26.19	2.67	1.17	1482.	91.66
125	7.64	33.73	124	26.36	3.11	1.67	1482.	91.65
150	7.33	33.83	149	26.47	3.52	2.25	1481.	91.52
175	7.25	33.87	174	26.52	3.91	2.90	1481.	91.35
200	7.02	33.91	199	26.58	4.29	3.62	1481.	91.28
225	6.89	33.94	223	26.62	4.66	4.42	1481.	90.54
250	6.63	33.93	248	26.65	5.02	5.30	1480.	91.18
300	6.23	33.95	298	26.71	5.72	7.27	1480.	91.41
400	5.43	34.02	397	26.87	7.03	11.91	1478.	91.60
500	5.00	34.08	496	26.97	8.23	17.42	1478.	91.09
600	4.60	34.13	595	27.06	9.35	23.67	1478.	91.48
800	4.09	34.26	793	27.21	11.33	37.78	1479.	91.14

DEEPEST MEASUREMENT:

806	4.04	34.26	799	27.22	11.39	38.24	1479.	91.12

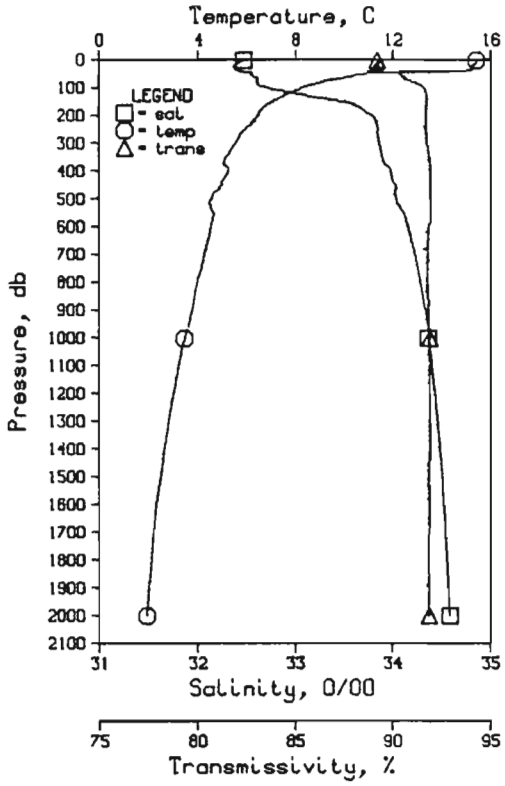


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 4 DATE 23/ 9/87
POSITION 48-39.0N, 126-40.0W GMT 23:47 STATION MP04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	13.61	32.08	0	24.04	0.00	0.00	1499.	71.51
10	12.76	32.08	10	24.20	0.39	0.02	1497.	81.63
20	12.22	32.21	20	24.41	0.75	0.07	1495.	82.77
30	11.17	32.40	30	24.74	1.09	0.16	1492.	85.10
50	9.21	32.51	50	25.16	1.70	0.41	1485.	89.94
75	8.52	32.92	75	25.59	2.36	0.83	1483.	90.38
100	7.76	33.21	99	25.93	2.91	1.32	1481.	91.33
125	7.71	33.62	124	26.25	3.40	1.88	1482.	91.17
150	7.45	33.79	149	26.43	3.83	2.48	1482.	91.20
175	7.30	33.85	174	26.50	4.23	3.15	1482.	91.11
200	6.90	33.92	199	26.60	4.61	3.87	1480.	91.28
225	6.63	33.93	223	26.65	4.97	4.66	1480.	91.27
250	6.42	33.94	248	26.68	5.33	5.51	1479.	91.35
300	5.96	33.96	298	26.76	6.01	7.42	1478.	91.43
400	5.50	34.01	397	26.85	7.30	12.03	1478.	91.45
500	4.93	34.06	496	26.96	8.51	17.54	1478.	91.56
600	4.59	34.14	595	27.06	9.62	23.75	1478.	91.40
800	3.96	34.28	793	27.24	11.59	37.82	1479.	91.35
1000	3.47	34.38	991	27.36	13.30	53.41	1480.	91.65
1200	3.07	34.44	1188	27.45	14.82	70.43	1482.	91.54

DEEPEST MEASUREMENT:

1311	2.76	34.47	1298	27.51	15.59	80.23	1482.	91.27

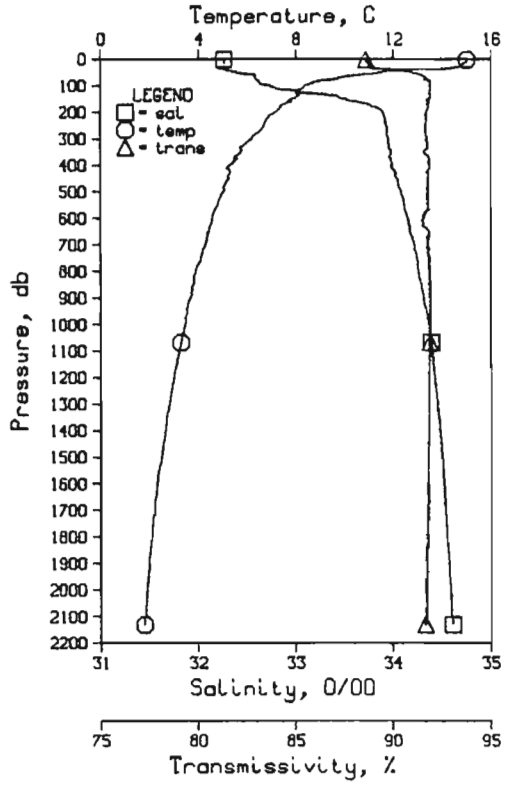


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 5 DATE 24/ 9/87
POSITION 48-20.2N, 127- 6.0W GMT 3: 2 STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	15.40	32.46	0	23.95	0.00	0.00	1506.	89.19
10	15.39	32.42	10	23.92	0.40	0.02	1506.	89.34
20	15.25	32.37	20	23.91	0.80	0.08	1505.	89.05
30	15.27	32.37	30	23.91	1.20	0.18	1506.	89.24
50	10.97	32.53	50	24.88	1.94	0.48	1492.	90.33
75	9.23	32.59	75	25.22	2.67	0.95	1486.	90.87
100	8.25	32.69	99	25.45	3.34	1.54	1483.	91.58
125	7.59	33.05	124	25.82	3.94	2.23	1481.	91.67
150	7.06	33.43	149	26.20	4.44	2.93	1480.	91.72
175	6.61	33.67	174	26.45	4.87	3.64	1479.	91.68
200	6.45	33.78	199	26.56	5.26	4.38	1479.	91.67
225	6.18	33.83	224	26.62	5.63	5.18	1478.	91.65
250	5.92	33.84	248	26.67	5.99	6.05	1477.	91.67
300	5.51	33.85	298	26.73	6.68	7.99	1476.	91.73
400	5.20	33.98	397	26.85	7.97	12.59	1477.	91.90
500	4.54	34.03	496	26.98	9.16	18.02	1476.	91.94
600	4.50	34.15	595	27.08	10.25	24.11	1478.	91.32
800	3.95	34.28	793	27.24	12.20	38.02	1479.	91.76
1000	3.47	34.37	991	27.36	13.91	53.67	1480.	91.39
1200	3.01	34.43	1188	27.45	15.43	70.70	1482.	91.85
1500	2.49	34.50	1484	27.56	17.43	98.13	1484.	91.85
2000	1.93	34.58	1976	27.66	20.26	148.32	1490.	91.83

DEEPEST MEASUREMENT:

2003	1.93	34.58	1979	27.67	20.27	148.64	1490.	91.85

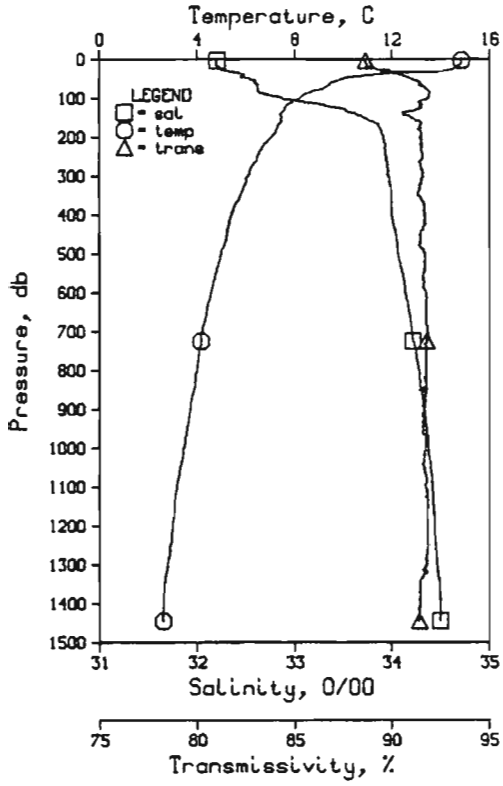


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 6 DATE 24/ 9/87
POSITION 48-30.2N, 126-52.5W GMT 5:22 STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	15.00	32.26	0	23.88	0.00	0.00	1504.	88.58
10	15.00	32.26	10	23.89	0.40	0.02	1504.	88.65
20	14.80	32.26	20	23.93	0.80	0.08	1504.	88.77
30	14.60	32.24	30	23.96	1.20	0.18	1503.	88.95
50	11.46	32.39	50	24.68	1.93	0.48	1493.	90.85
75	9.64	32.59	75	25.15	2.68	0.95	1487.	91.70
100	8.34	32.73	99	25.46	3.35	1.55	1483.	91.85
125	8.01	33.03	124	25.75	3.95	2.24	1482.	91.86
150	7.85	33.47	149	26.12	4.47	2.96	1483.	91.85
175	7.36	33.77	174	26.42	4.91	3.70	1482.	91.78
200	7.13	33.89	199	26.55	5.31	4.45	1481.	91.68
225	6.81	33.92	224	26.61	5.68	5.26	1481.	91.69
250	6.66	33.92	248	26.64	6.04	6.14	1480.	91.66
300	6.15	33.95	298	26.73	6.75	8.10	1479.	91.69
400	5.27	33.98	397	26.86	8.05	12.73	1477.	91.83
500	4.99	34.08	496	26.97	9.25	18.23	1478.	91.79
600	4.55	34.15	595	27.07	10.35	24.39	1478.	91.39
800	3.87	34.26	793	27.23	12.32	38.40	1478.	91.86
1000	3.46	34.37	991	27.36	14.03	54.08	1480.	91.37
1200	3.02	34.42	1188	27.45	15.55	71.08	1482.	91.84
1500	2.51	34.51	1484	27.56	17.55	98.61	1484.	91.83
2000	1.90	34.59	1976	27.67	20.37	148.54	1490.	91.69

DEEPEST MEASUREMENT:

2132	1.79	34.61	2106	27.70	21.02	162.38	1492.	91.66

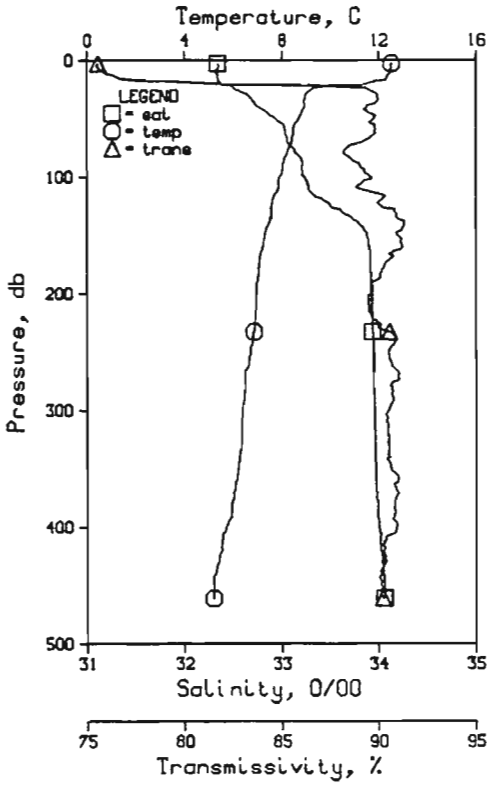


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 7 DATE 24/ 9/87
POSITION 48-36.1N, 126-44.1W GMT 7:12 STATION MA38
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	14.83	32.20	0	23.88	0.00	0.00	1503.	88.64
10	14.82	32.19	10	23.87	0.40	0.02	1504.	88.76
20	14.58	32.22	20	23.95	0.81	0.08	1503.	88.67
30	14.03	32.31	30	24.13	1.20	0.18	1501.	89.73
50	9.99	32.53	50	25.05	1.84	0.44	1488.	91.00
75	9.20	32.61	75	25.24	2.55	0.89	1486.	91.69
100	8.18	32.87	99	25.60	3.20	1.47	1482.	91.83
125	7.61	33.43	124	26.12	3.73	2.08	1481.	91.50
150	7.45	33.71	149	26.36	4.18	2.70	1482.	91.00
175	7.27	33.87	174	26.51	4.58	3.37	1481.	91.41
200	7.01	33.92	199	26.59	4.96	4.10	1481.	91.46
225	6.67	33.93	224	26.64	5.33	4.89	1480.	91.52
250	6.45	33.94	248	26.68	5.69	5.75	1480.	91.58
300	6.05	33.96	298	26.75	6.37	7.68	1479.	91.60
400	5.39	34.00	397	26.86	7.66	12.27	1478.	91.65
500	4.98	34.07	496	26.96	8.86	17.77	1478.	91.68
600	4.56	34.14	595	27.07	9.97	23.97	1478.	91.74
800	3.97	34.28	793	27.24	11.93	37.93	1479.	91.78
1000	3.45	34.38	991	27.37	13.63	53.51	1480.	91.72
1200	2.99	34.44	1188	27.46	15.12	70.17	1482.	91.81

DEEPEST MEASUREMENT:

1445	2.60	34.50	1430	27.54	16.77	92.25	1484.	91.43

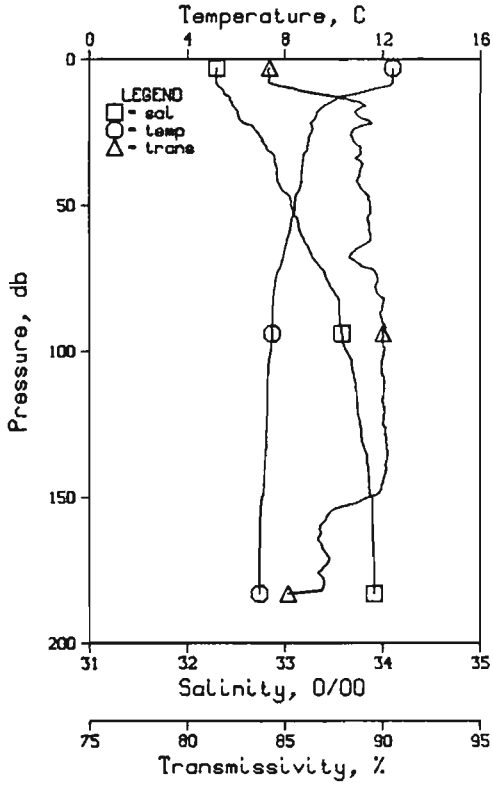


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 8 DATE 24/ 9/87
POSITION 48-45.2N, 126-32.0W GMT 9: 9 STATION MA2B
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	12.52	32.34	0	24.45	0.00	0.00	1496.	75.54
10	12.49	32.35	10	24.46	0.35	0.02	1496.	76.00
20	11.49	32.37	20	24.67	0.69	0.07	1493.	81.38
30	8.97	32.65	30	25.31	0.98	0.14	1484.	89.94
50	8.67	32.93	50	25.57	1.49	0.35	1484.	89.71
75	8.27	33.12	75	25.78	2.08	0.72	1483.	88.39
100	7.87	33.23	99	25.93	2.62	1.20	1482.	89.61
125	7.55	33.50	124	26.19	3.12	1.78	1481.	90.14
150	7.29	33.88	149	26.52	3.54	2.36	1481.	90.96
175	7.05	33.92	174	26.58	3.91	2.99	1481.	90.33
200	6.93	33.93	199	26.61	4.28	3.69	1481.	99.56
225	6.86	33.94	223	26.62	4.65	4.49	1481.	89.96
250	6.69	33.95	248	26.66	5.01	5.36	1481.	90.51
300	6.36	33.96	298	26.71	5.71	7.33	1480.	90.52
400	5.70	34.01	397	26.83	7.07	12.15	1479.	90.90

DEEPEST MEASUREMENT:

461	5.17	34.06	457	26.93	7.82	15.44	1478.	90.22

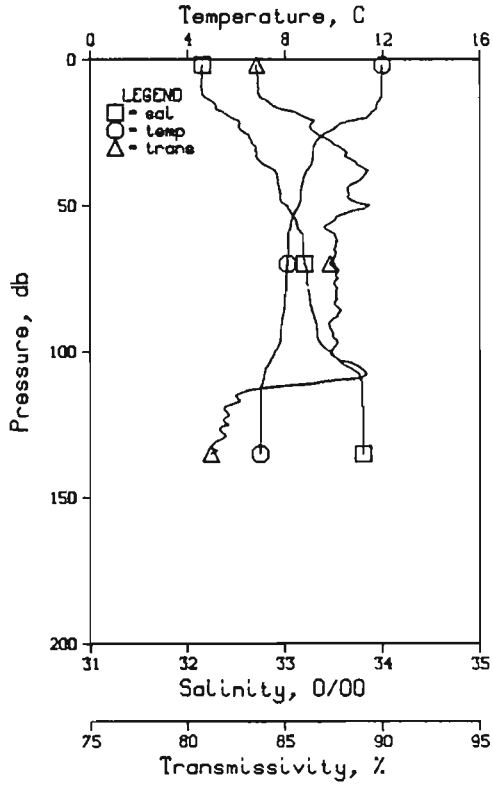


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 9 DATE 24/ 9/87
POSITION 48-50.2N, 126-25.3W GMT 10: 8 STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.38	32.30	0	24.45	0.00	0.00	1495.	84.17
10	11.70	32.35	10	24.61	0.35	0.02	1493.	85.33
20	9.23	32.52	20	25.17	0.65	0.06	1485.	88.81
30	8.90	32.80	30	25.44	0.91	0.13	1484.	88.85
50	8.39	33.06	50	25.72	1.40	0.33	1483.	89.33
75	7.62	33.42	75	26.11	1.93	0.66	1481.	89.71
100	7.39	33.62	99	26.30	2.38	1.07	1480.	90.04
125	7.24	33.76	124	26.43	2.80	1.55	1480.	90.00
150	7.04	33.88	149	26.56	3.19	2.09	1480.	89.24
175	6.95	33.91	174	26.59	3.57	2.71	1480.	86.85

DEEPEST MEASUREMENT:

183	6.95	33.91	182	26.59	3.69	2.93	1480.	85.15

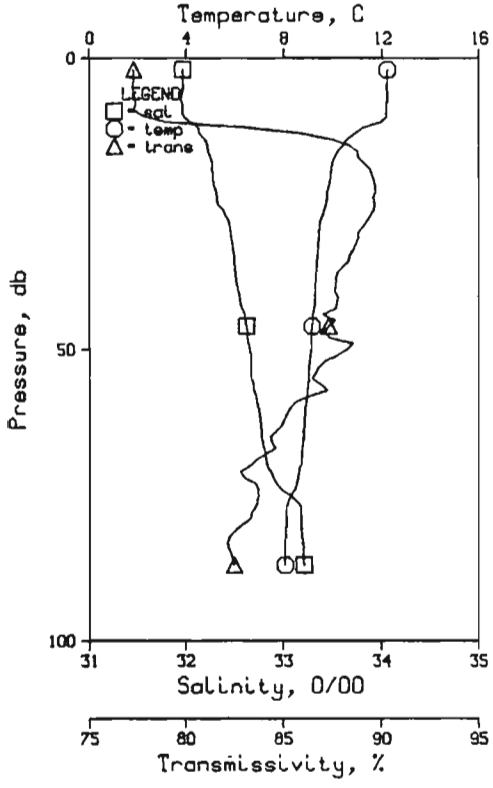


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 10 DATE 24/ 9/87
POSITION 48-55.2N, 126-18.0W GMT 11: 3 STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	11.94	32.15	0	24.41	0.00	0.00	1494.	83.53
10	11.94	32.14	10	24.41	0.35	0.02	1494.	83.61
20	11.31	32.45	20	24.76	0.69	0.07	1492.	86.04
30	9.16	32.69	30	25.31	0.98	0.14	1485.	87.79
50	8.53	33.01	50	25.66	1.48	0.35	1483.	89.29
75	8.04	33.22	75	25.90	2.03	0.69	1482.	87.67
100	7.57	33.46	99	26.15	2.54	1.15	1481.	87.32
125	6.99	33.79	124	26.49	2.95	1.62	1479.	82.08

DEEPEST MEASUREMENT:

135	6.98	33.80	134	26.50	3.11	1.82	1480.	81.20

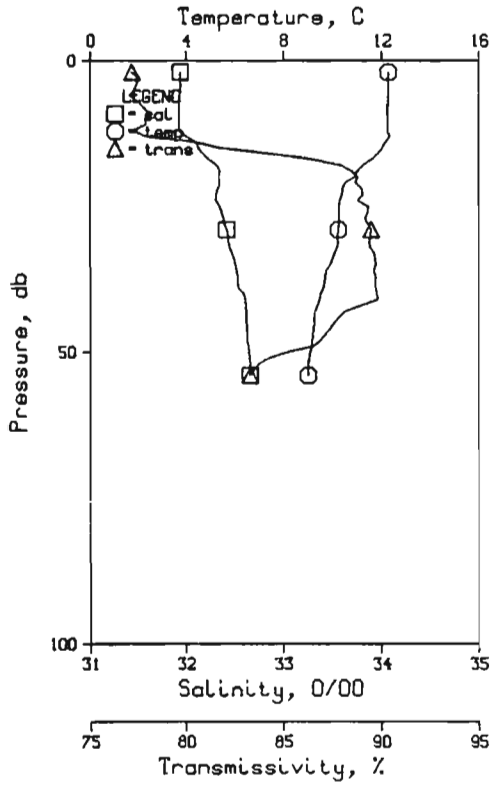


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 11 DATE 24/ 9/87
POSITION 48-60.0N, 126-11.8W GMT 11:52 STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.19	31.97	0	24.23	0.00	0.00	1494.	77.28
10	12.17	31.97	10	24.23	0.37	0.02	1494.	77.84
20	9.90	32.27	20	24.86	0.70	0.07	1487.	89.50
30	9.44	32.46	30	25.08	1.00	0.14	1486.	88.79
50	9.10	32.66	50	25.29	1.56	0.37	1485.	88.25
75	8.32	33.06	75	25.73	2.20	0.78	1483.	83.72

DEEPEST MEASUREMENT:

87	8.06	33.21	86	25.88	2.47	1.00	1482.	82.50

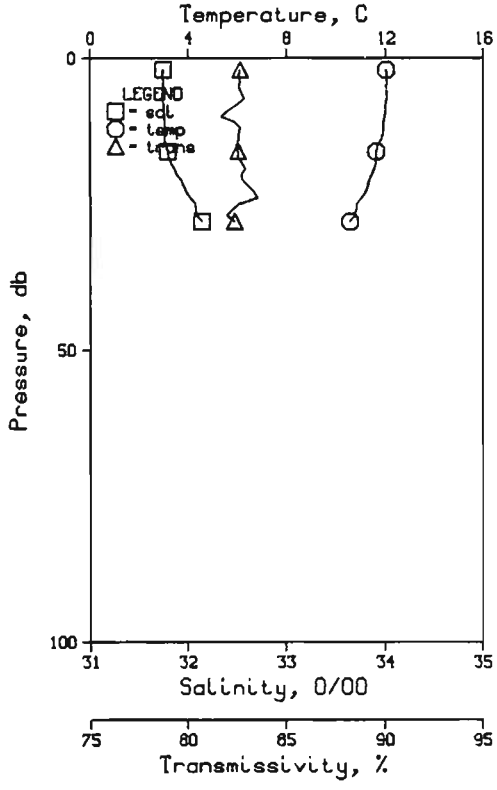


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 12 DATE 24/ 9/87
POSITION 49- 3.8N, 126- 5.9W GMT 12:34 STATION MA08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.25	31.93	0	24.19	0.00	0.00	1494.	77.16
10	12.24	31.92	10	24.18	0.37	0.02	1495.	77.88
20	10.90	32.34	20	24.74	0.73	0.07	1491.	88.74
30	10.20	32.43	30	24.94	1.04	0.15	1488.	89.43
50	9.08	32.64	50	25.29	1.61	0.38	1485.	85.17

DEEPEST MEASUREMENT:

54	9.00	32.65	54	25.31	1.71	0.44	1485.	83.30



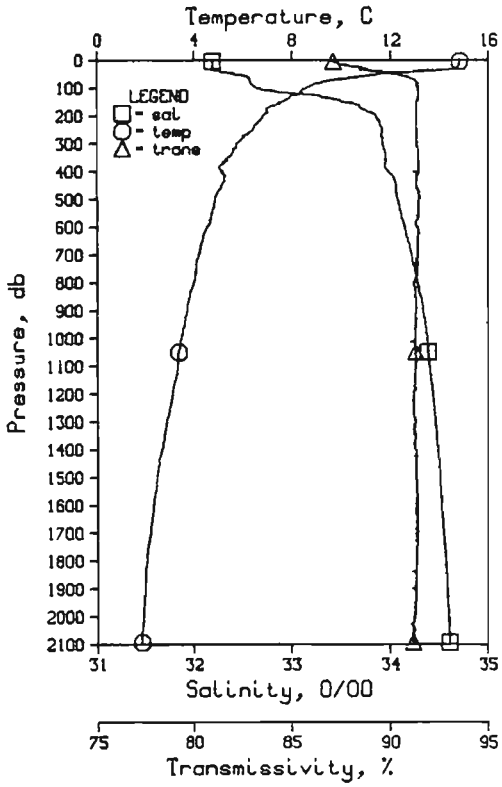
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 13 DATE 24/ 9/87
POSITION 49- 8.0N, 126- 0.2W GMT 13:11 STATION MR00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.02	31.74	0	24.08	0.00	0.00	1493.	82.65
10	11.95	31.75	10	24.10	0.38	0.02	1493.	81.70
20	11.43	31.88	20	24.30	0.76	0.08	1492.	82.73

DEEPEST MEASUREMENT:

28	10.58	32.15	28	24.65	1.04	0.14	1489.	82.38

PRES	DEPTH	TEMP	SAL	PRES	DEPTH	TEMP	SAL
0.		12.024	31.741	16.		11.617	31.791
3.		12.028	31.740	17.		11.614	31.793
4.		12.031	31.744	18.		11.569	31.823
5.		12.015	31.746	19.		11.525	31.858
6.		12.029	31.740	20.		11.431	31.883
7.		12.031	31.739	21.		11.327	31.927
8.		11.987	31.749	22.		11.252	31.957
9.		11.989	31.750	23.		11.177	31.981
10.		11.949	31.753	24.		11.021	32.021
11.		11.915	31.758	25.		10.828	32.078
12.		11.905	31.761	26.		10.804	32.082
13.		11.881	31.763	27.		10.762	32.092
14.		11.792	31.760	28.		10.576	32.146
15.		11.674	31.779				

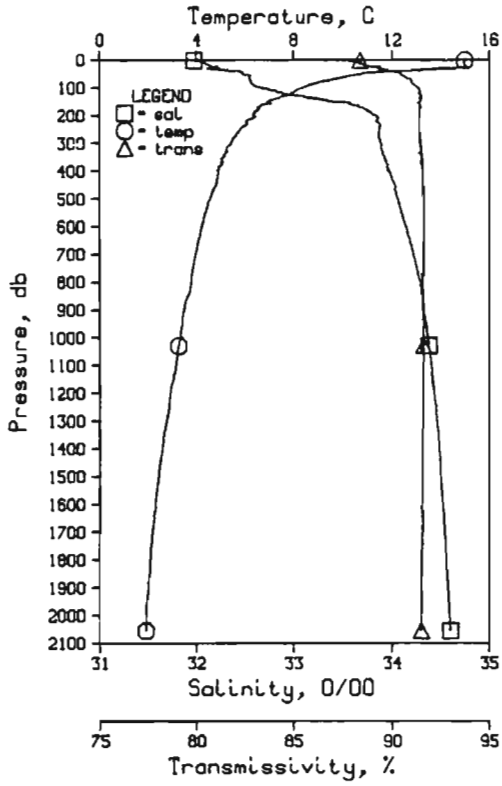


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 14 DATE 24/ 9/87
POSITION 48-41.6N, 127- 9.9W GMT 20: 4 STATION MP05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.81	32.19	0	23.87	0.00	0.00	1503.	87.07
10	14.80	32.19	10	23.88	0.40	0.02	1503.	87.34
20	14.76	32.19	20	23.89	0.81	0.08	1503.	87.82
30	14.62	32.19	30	23.91	1.21	0.18	1503.	88.56
50	11.48	32.41	50	24.70	1.95	0.48	1493.	90.29
75	9.38	32.58	75	25.19	2.70	0.96	1486.	91.28
100	8.58	32.64	99	25.36	3.38	1.56	1484.	91.39
125	8.26	33.18	124	25.83	3.99	2.27	1484.	91.43
150	7.52	33.51	149	26.19	4.49	2.96	1482.	91.33
175	6.97	33.70	174	26.42	4.92	3.67	1480.	91.29
200	6.83	33.84	199	26.55	5.32	4.43	1480.	91.30
225	6.61	33.88	224	26.61	5.69	5.23	1480.	91.29
250	6.41	33.91	248	26.66	6.05	6.11	1479.	91.28
300	5.74	33.91	298	26.74	6.74	8.04	1477.	91.31
400	5.17	33.97	397	26.87	8.02	12.62	1477.	91.40
500	4.86	34.07	496	26.98	9.21	18.04	1477.	91.47
600	4.55	34.14	595	27.07	10.32	24.24	1478.	91.33
800	3.98	34.27	793	27.23	12.28	38.21	1479.	91.19
1000	3.47	34.37	991	27.36	13.98	53.76	1480.	91.30
1200	3.11	34.43	1188	27.44	15.51	70.91	1482.	91.22
1500	2.46	34.51	1484	27.56	17.52	98.46	1484.	91.32
2000	1.88	34.59	1976	27.67	20.29	147.70	1490.	91.16

DEEPEST MEASUREMENT:

2094	1.81	34.61	2069	27.69	20.76	157.49	1492.	91.15

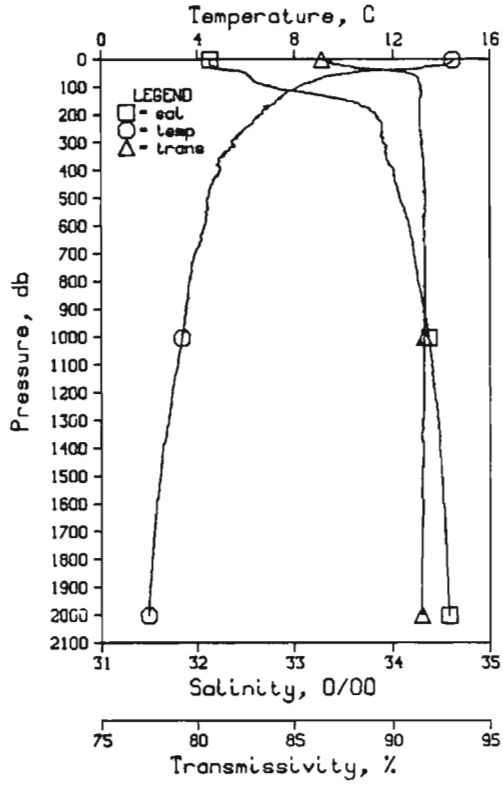


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 15 DATE 24/ 9/87
POSITION 48-44.5N, 127-40.1W GMT 23: 4 STATION MP06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.98	31.97	0	23.67	0.00	0.00	1504.	88.34
10	14.95	32.07	10	23.75	0.42	0.02	1504.	88.34
20	15.01	32.14	20	23.79	0.83	0.08	1504.	88.52
30	14.47	32.14	30	23.90	1.24	0.19	1503.	89.23
50	10.77	32.49	50	24.88	1.94	0.47	1491.	90.43
75	9.37	32.56	75	25.18	2.67	0.93	1486.	90.96
100	8.41	32.66	99	25.40	3.35	1.54	1483.	91.32
125	7.86	32.93	124	25.70	3.96	2.24	1482.	91.45
150	6.94	33.37	149	26.17	4.48	2.96	1479.	91.44
175	6.60	33.71	174	26.48	4.90	3.66	1479.	91.43
200	6.38	33.82	199	26.59	5.28	4.39	1478.	91.40
225	6.10	33.85	224	26.66	5.64	5.17	1478.	91.37
250	5.80	33.86	248	26.70	5.99	6.02	1477.	91.39
300	5.44	33.88	298	26.76	6.67	7.92	1476.	91.45
400	4.87	33.96	397	26.89	7.94	12.44	1476.	91.57
500	4.56	34.05	496	27.00	9.11	17.79	1476.	91.65
600	4.22	34.14	595	27.10	10.18	23.78	1476.	91.66
800	3.78	34.29	793	27.26	12.08	37.26	1478.	91.55
1000	3.32	34.37	991	27.37	13.74	52.51	1480.	91.63
1200	2.92	34.43	1188	27.46	15.23	69.22	1481.	91.62
1500	2.43	34.50	1484	27.56	17.21	96.27	1484.	91.55
2000	1.89	34.59	1976	27.67	20.00	145.95	1490.	91.50

DEEPEST MEASUREMENT:

2055	1.87	34.59	2030	27.68	20.28	151.72	1491.	91.50

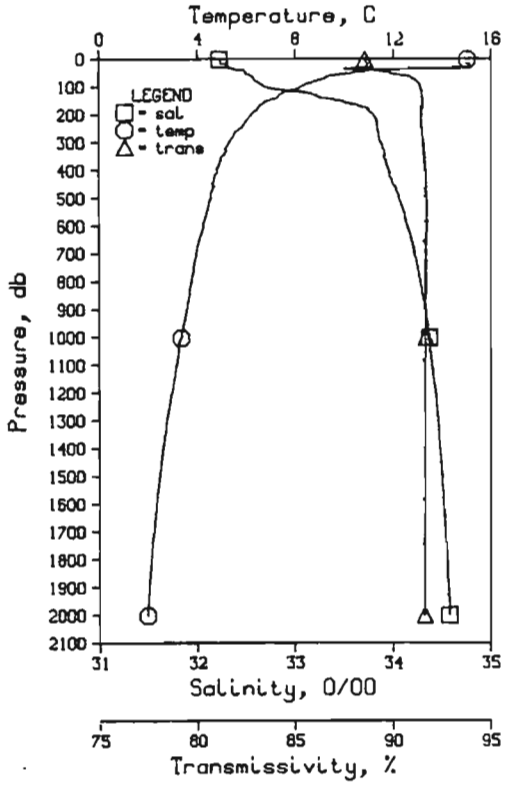


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 16 DATE 25/ 9/87
POSITION 48-46.6N, 128-10.0W GMT 3:38 STATION MP07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.43	32.13	0	23.90	0.00	0.00	1502.	86.38
10	14.42	32.13	10	23.91	0.40	0.02	1502.	86.87
20	14.21	32.13	20	23.95	0.80	0.08	1502.	87.29
30	13.24	32.16	30	24.17	1.18	0.18	1499.	88.01
50	10.31	32.50	50	24.98	1.86	0.45	1489.	90.69
75	8.85	32.58	75	25.27	2.57	0.90	1484.	91.28
100	8.15	32.76	99	25.52	3.22	1.48	1482.	91.43
125	7.58	33.18	124	25.93	3.80	2.15	1481.	91.48
150	7.24	33.53	149	26.25	4.29	2.83	1480.	91.40
175	6.89	33.73	174	26.45	4.71	3.53	1480.	91.38
200	6.62	33.82	199	26.57	5.10	4.27	1479.	91.38
225	6.31	33.88	224	26.65	5.47	5.07	1479.	91.40
250	5.95	33.88	248	26.70	5.82	5.92	1477.	91.38
300	5.41	33.90	298	26.77	6.50	7.81	1476.	91.42
400	4.91	34.01	397	26.92	7.75	12.25	1476.	91.58
500	4.42	34.07	496	27.02	8.88	17.47	1476.	91.67
600	4.26	34.16	595	27.12	9.93	23.35	1477.	91.59
800	3.64	34.26	793	27.26	11.82	36.78	1477.	91.66
1000	3.36	34.37	991	27.37	13.50	52.11	1480.	91.63
1200	2.92	34.43	1188	27.46	14.99	68.85	1481.	91.60
1500	2.44	34.50	1484	27.56	16.96	95.92	1484.	91.50
2000	1.93	34.58	1976	27.66	19.77	145.85	1490.	91.49

DEEPEST MEASUREMENT:

2003	1.93	34.58	1979	27.66	19.79	146.17	1490.	91.49

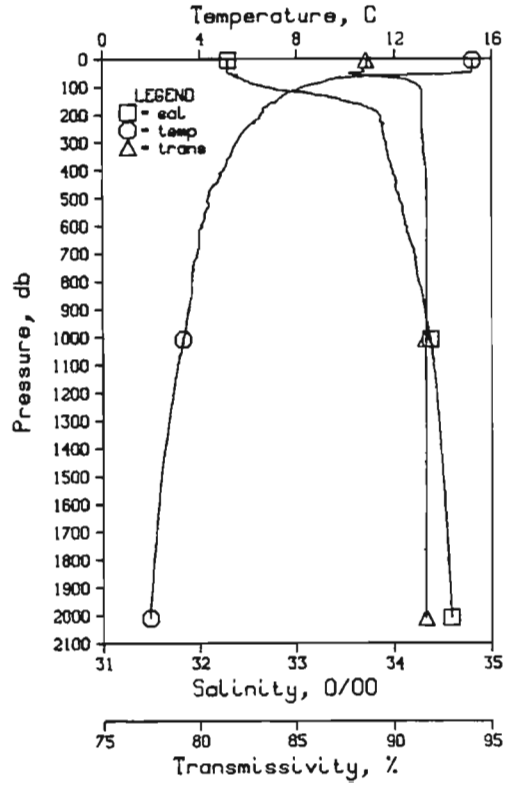


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 17 DATE 25/ 9/87
POSITION 48-49.0N, 128-40.0W GMT 6:53 STATION MP08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	14.99	32.22	0	23.86	0.00	0.00	1504.	88.52
10	14.98	32.24	10	23.87	0.40	0.02	1504.	88.58
20	15.10	32.30	20	23.90	0.81	0.08	1505.	88.64
30	15.10	32.31	30	23.91	1.21	0.18	1505.	88.68
50	10.31	32.49	50	24.97	1.89	0.46	1489.	89.81
75	9.02	32.58	75	25.25	2.60	0.91	1485.	91.09
100	8.23	32.70	99	25.46	3.26	1.50	1482.	91.37
125	7.44	33.15	124	25.92	3.85	2.17	1480.	91.42
150	6.91	33.41	149	26.20	4.35	2.87	1479.	91.48
175	6.49	33.69	174	26.48	4.77	3.57	1478.	91.47
200	6.20	33.79	199	26.59	5.15	4.30	1478.	91.42
225	5.97	33.83	224	26.65	5.52	5.08	1477.	91.42
250	5.75	33.83	248	26.69	5.87	5.94	1477.	91.43
300	5.29	33.86	298	26.76	6.55	7.84	1476.	91.52
400	4.80	33.95	397	26.89	7.81	12.35	1475.	91.64
500	4.54	34.06	496	27.00	8.98	17.68	1476.	91.69
600	4.23	34.14	595	27.10	10.05	23.65	1476.	91.72
800	3.74	34.28	793	27.26	11.94	37.14	1478.	91.67
1000	3.32	34.37	991	27.37	13.61	52.43	1480.	91.66
1200	2.93	34.43	1188	27.46	15.11	69.19	1481.	91.65
1500	2.43	34.50	1484	27.56	17.08	96.20	1484.	91.66
2000	1.93	34.57	1976	27.66	19.89	146.22	1490.	91.61

DEEPEST MEASUREMENT:

2002	1.93	34.57	1978	27.66	19.90	146.44	1490.	91.63

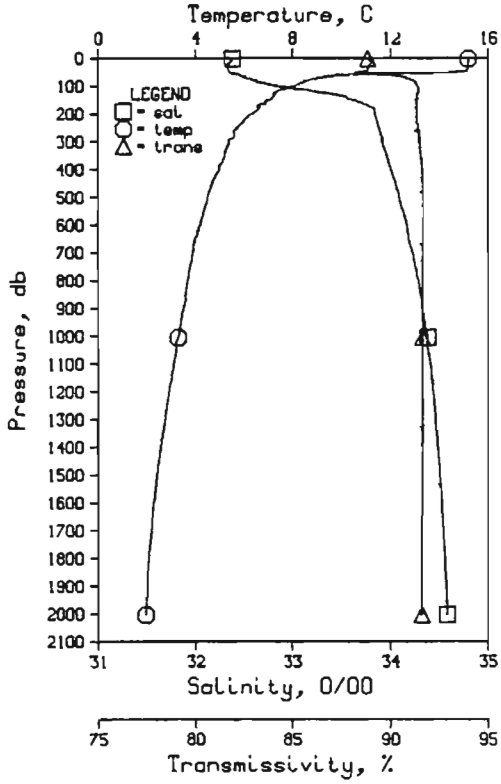


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 18 DATE 25/ 9/87
POSITION 48-51.4N, 129-10.0W GMT 10: 4 STATION MP09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	15.20	32.29	0	23.87	0.00	0.00	1505.	88.53
10	15.20	32.29	10	23.87	0.40	0.02	1505.	88.55
20	15.20	32.29	20	23.87	0.81	0.08	1505.	88.57
30	15.18	32.29	30	23.87	1.21	0.19	1505.	88.50
50	14.89	32.29	50	23.93	2.02	0.52	1505.	87.81
75	9.34	32.45	75	25.10	2.84	1.03	1486.	90.65
100	8.29	32.68	99	25.43	3.53	1.64	1483.	91.30
125	7.60	33.15	124	25.90	4.13	2.33	1481.	91.38
150	7.20	33.46	149	26.20	4.62	3.01	1480.	91.41
175	6.67	33.72	174	26.48	5.05	3.72	1479.	91.39
200	6.51	33.84	199	26.59	5.43	4.45	1479.	91.39
225	6.21	33.85	224	26.64	5.79	5.24	1478.	91.36
250	5.93	33.87	248	26.69	6.15	6.09	1477.	91.41
300	5.53	33.91	298	26.77	6.83	7.99	1477.	91.47
400	5.01	33.98	397	26.89	8.10	12.52	1476.	91.62
500	4.35	34.05	496	27.02	9.25	17.80	1475.	91.72
600	4.03	34.11	595	27.10	10.32	23.77	1476.	91.67
800	3.64	34.25	793	27.25	12.22	37.35	1477.	91.66
1000	3.33	34.37	991	27.37	13.91	52.78	1480.	91.64
1200	2.88	34.43	1188	27.46	15.39	69.35	1481.	91.64
1500	2.39	34.50	1484	27.56	17.35	96.27	1484.	91.65
2000	1.90	34.58	1976	27.67	20.15	146.03	1490.	91.63

DEEPEST MEASUREMENT:

2010	1.89	34.59	1986	27.67	20.20	147.07	1490.	91.63

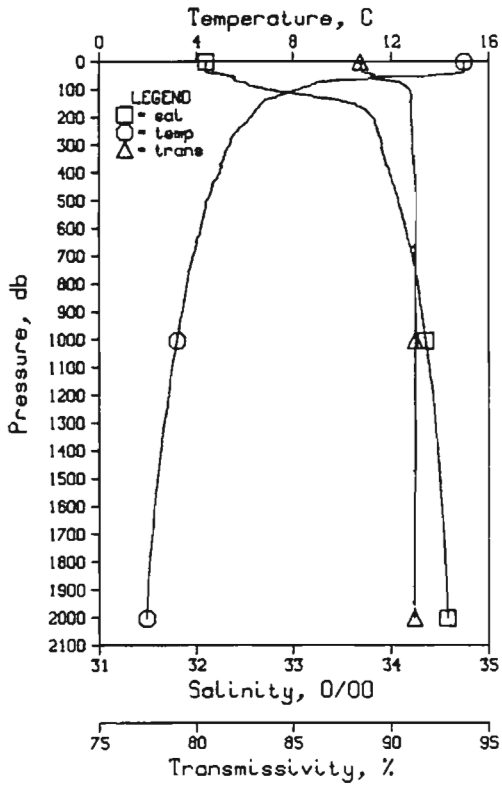


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 19 DATE 25/ 9/87
POSITION 48-53.6N, 129-40.0W GMT 13: 5 STATION MP10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	15.16	32.38	0	23.94	0.00	0.00	1505.	88.83
10	15.17	32.36	10	23.93	0.40	0.02	1505.	88.94
20	15.16	32.35	20	23.92	0.80	0.08	1505.	88.98
30	15.13	32.32	30	23.91	1.20	0.18	1505.	88.86
50	14.83	32.35	50	23.99	2.00	0.51	1504.	88.36
75	8.85	32.55	75	25.25	2.77	1.00	1484.	90.89
100	8.06	32.82	99	25.58	3.42	1.57	1482.	91.32
125	7.24	33.28	124	26.05	3.97	2.20	1480.	91.40
150	7.05	33.61	149	26.34	4.42	2.84	1480.	91.34
175	6.51	33.79	174	26.55	4.83	3.50	1478.	91.31
200	6.36	33.85	199	26.62	5.20	4.21	1478.	91.32
225	5.99	33.85	224	26.67	5.55	4.98	1477.	91.35
250	5.72	33.88	248	26.72	5.90	5.82	1477.	91.38
300	5.34	33.91	298	26.79	6.56	7.68	1476.	91.45
400	4.96	34.00	397	26.91	7.81	12.12	1476.	91.59
500	4.49	34.08	496	27.03	8.95	17.33	1476.	91.68
600	4.18	34.16	595	27.12	10.00	23.20	1476.	91.66
800	3.65	34.28	793	27.27	11.87	36.54	1478.	91.64
1000	3.29	34.37	991	27.38	13.53	51.72	1479.	91.63
1200	2.90	34.43	1188	27.46	15.01	68.28	1481.	91.63
1500	2.39	34.50	1484	27.56	16.98	95.26	1484.	91.62
2000	1.93	34.57	1976	27.66	19.78	145.18	1490.	91.59

DEEPEST MEASUREMENT:

2004	1.92	34.58	1980	27.66	19.81	145.61	1490.	91.57

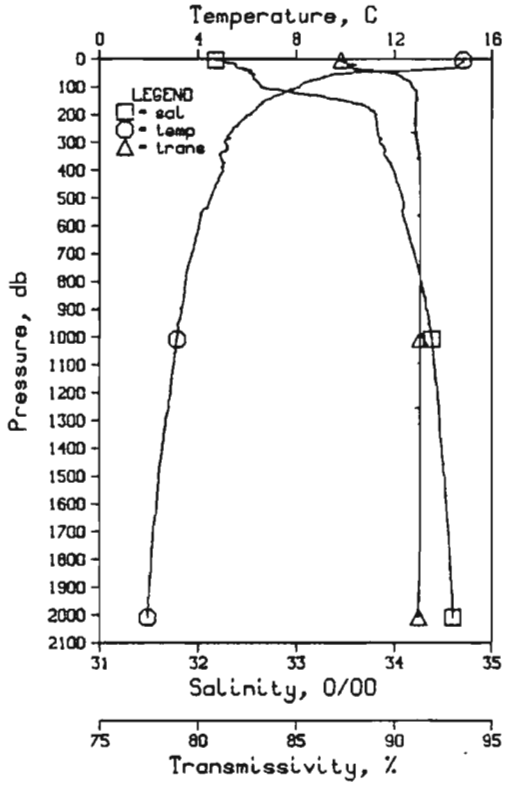


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 20 DATE 25/ 9/87
POSITION 48-56.0N, 130-10.0W GMT 16: 3 STATION MP11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.96	32.10	0	23.77	0.00	0.00	1504.	88.41
10	14.97	32.10	10	23.77	0.41	0.02	1504.	88.49
20	14.97	32.10	20	23.77	0.83	0.08	1504.	88.45
30	14.97	32.10	30	23.77	1.24	0.19	1504.	88.49
50	13.59	32.32	50	24.23	2.05	0.52	1500.	89.16
75	8.98	32.49	75	25.18	2.86	1.03	1485.	90.40
100	8.26	32.70	99	25.46	3.53	1.63	1483.	90.88
125	7.34	33.20	124	25.98	4.10	2.28	1480.	91.04
150	6.69	33.58	149	26.37	4.57	2.93	1478.	91.01
175	6.45	33.74	174	26.53	4.97	3.60	1478.	90.98
200	6.25	33.81	199	26.60	5.35	4.32	1478.	91.03
225	5.99	33.84	224	26.66	5.71	5.10	1477.	91.04
250	5.69	33.86	248	26.71	6.06	5.94	1476.	91.06
300	5.38	33.90	298	26.79	6.72	7.80	1476.	91.09
400	4.97	33.98	397	26.89	7.98	12.28	1476.	91.20
500	4.41	34.07	496	27.02	9.13	17.53	1475.	91.30
600	4.16	34.14	595	27.11	10.18	23.44	1476.	91.29
800	3.59	34.27	793	27.27	12.06	36.81	1477.	91.24
1000	3.19	34.35	991	27.37	13.72	52.00	1479.	91.24
1200	2.83	34.43	1188	27.47	15.20	68.57	1481.	91.23
1500	2.38	34.50	1484	27.56	17.16	95.48	1484.	91.24
2000	1.93	34.58	1976	27.66	19.97	145.37	1490.	91.19

DEEPEST MEASUREMENT:

2005	1.93	34.58	1981	27.66	19.99	145.90	1491.	91.20

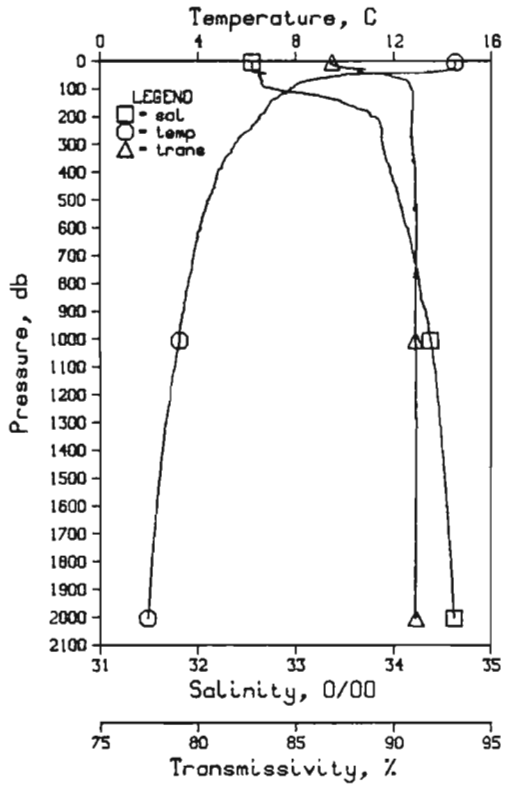


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 21 DATE 25/ 9/87
POSITION 48-58.1N, 130-40.0W GMT 19: 8 STATION MP12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.80	32.17	0	23.86	0.00	0.00	1503.	87.30
10	14.80	32.25	10	23.92	0.40	0.02	1504.	87.41
20	14.61	32.38	20	24.06	0.80	0.08	1503.	87.92
30	14.54	32.39	30	24.08	1.18	0.18	1503.	87.52
50	10.29	32.51	50	24.99	1.87	0.46	1489.	89.63
75	8.78	32.57	75	25.28	2.57	0.90	1484.	90.50
100	8.13	32.63	99	25.42	3.23	1.49	1482.	90.89
125	7.43	33.02	124	25.83	3.83	2.17	1480.	91.11
150	6.71	33.49	149	26.29	4.32	2.86	1478.	91.13
175	6.38	33.73	174	26.53	4.73	3.54	1478.	91.08
200	6.14	33.80	199	26.61	5.10	4.25	1477.	91.01
225	5.74	33.81	224	26.67	5.46	5.03	1476.	91.06
250	5.42	33.82	248	26.72	5.81	5.87	1475.	91.06
300	5.09	33.85	298	26.78	6.48	7.74	1475.	91.14
400	5.01	33.98	397	26.89	7.73	12.22	1476.	91.29
500	4.51	34.08	496	27.02	8.89	17.50	1476.	91.31
600	4.04	34.12	595	27.11	9.94	23.42	1476.	91.33
800	3.47	34.27	793	27.28	11.82	36.74	1477.	91.32
1000	3.13	34.37	991	27.39	13.44	51.56	1479.	91.29
1200	2.86	34.44	1188	27.47	14.90	67.91	1481.	91.29
1500	2.39	34.51	1484	27.57	16.86	94.81	1484.	91.30
2000	1.94	34.60	1976	27.67	19.62	143.89	1490.	91.20

DEEPEST MEASUREMENT:

2009	1.94	34.60	1985	27.67	19.67	144.82	1491.	91.21

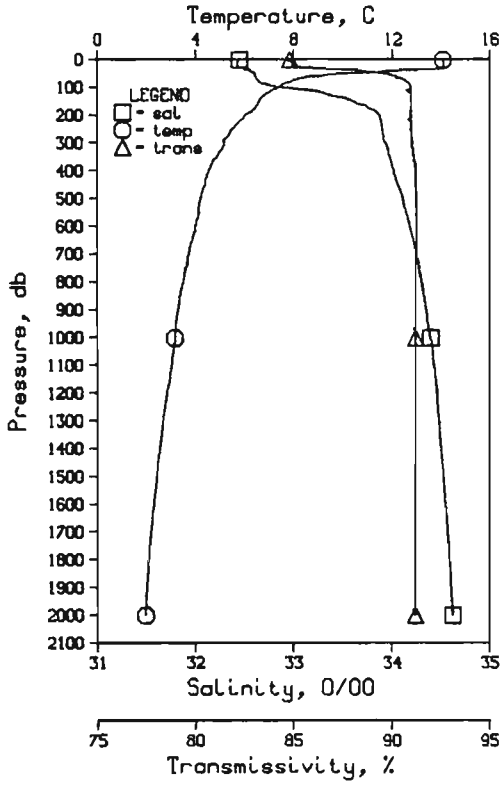


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 22 DATE 26/ 9/87
POSITION 49- 2.5N, 131-40.0W GMT 0:19 STATION MP13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.50	32.55	0	24.21	0.00	0.00	1503.	86.84
10	14.50	32.55	10	24.21	0.37	0.02	1503.	86.85
20	14.48	32.55	20	24.22	0.74	0.08	1503.	87.03
30	14.30	32.55	30	24.26	1.11	0.17	1503.	88.55
50	9.85	32.62	50	25.14	1.79	0.44	1488.	89.54
75	8.33	32.65	75	25.41	2.47	0.87	1482.	90.70
100	7.76	32.76	99	25.57	3.10	1.43	1481.	90.88
125	7.31	33.23	124	26.00	3.66	2.08	1480.	90.97
150	6.95	33.47	149	26.25	4.14	2.74	1479.	90.96
175	6.76	33.67	174	26.43	4.57	3.45	1479.	90.94
200	6.51	33.77	199	26.54	4.96	4.21	1479.	90.91
225	6.30	33.85	224	26.63	5.33	5.00	1478.	90.89
250	6.05	33.87	248	26.68	5.68	5.87	1479.	90.87
300	5.49	33.88	298	26.75	6.37	7.78	1476.	90.90
400	4.79	33.96	397	26.89	7.64	12.31	1475.	91.09
500	4.42	34.05	496	27.01	8.80	17.60	1476.	91.09
600	4.11	34.13	595	27.11	9.86	23.54	1476.	91.14
800	3.59	34.26	793	27.26	11.74	36.98	1477.	91.06
1000	3.24	34.37	991	27.38	13.40	52.08	1479.	91.11
1200	2.87	34.44	1188	27.47	14.86	68.42	1481.	91.15
1500	2.42	34.51	1484	27.57	16.79	94.98	1484.	91.10
2000	1.95	34.62	1976	27.69	19.52	143.41	1491.	91.10

DEEPEST MEASUREMENT:

2005	1.94	34.62	1981	27.69	19.54	143.92	1491.	91.12

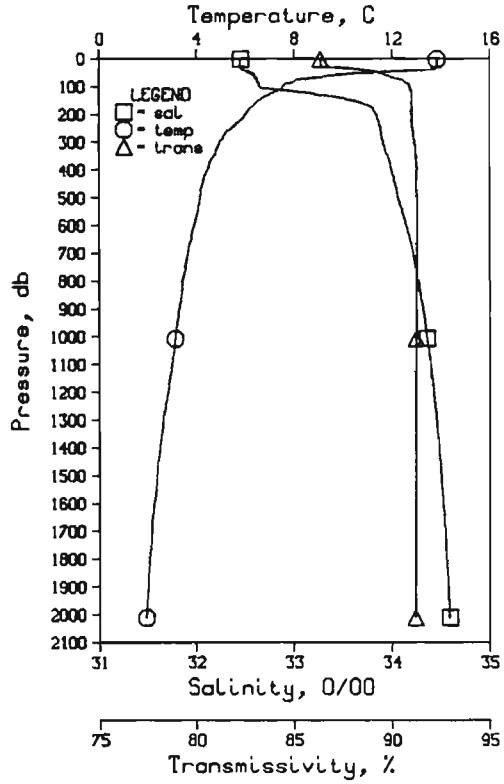


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 2, DATE 26/ 9/87
POSITION 49- 7.4N, 132-40.0W GMT 5:18 STATION MP14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	14.05	32.44	0	24.23	0.00	0.00	1501.	84.78
10	14.05	32.42	10	24.21	0.37	0.02	1501.	84.91
20	14.05	32.42	20	24.21	0.74	0.08	1501.	85.00
30	14.06	32.45	30	24.23	1.12	0.17	1502.	85.40
50	10.31	32.59	50	25.05	1.79	0.44	1489.	89.42
75	8.01	32.63	75	25.44	2.46	0.87	1481.	90.63
100	7.39	32.82	99	25.68	3.08	1.42	1479.	90.94
125	6.82	33.32	124	26.15	3.59	2.01	1478.	90.95
150	6.58	33.59	149	26.39	4.04	2.63	1478.	90.94
175	6.43	33.75	174	26.53	4.44	3.29	1478.	90.95
200	6.04	33.86	199	26.67	4.80	3.99	1477.	90.90
225	5.76	33.88	223	26.72	5.15	4.73	1476.	90.94
250	5.47	33.90	248	26.77	5.48	5.54	1476.	90.93
300	5.17	33.92	298	26.83	6.13	7.35	1475.	90.96
400	4.54	34.01	397	26.97	7.33	11.62	1474.	91.19
500	4.20	34.10	496	27.08	8.42	16.62	1475.	91.24
600	3.99	34.17	595	27.15	9.43	22.27	1476.	91.24
800	3.49	34.30	793	27.30	11.23	35.12	1477.	91.24
1000	3.16	34.39	991	27.40	12.82	49.67	1479.	91.20
1200	2.83	34.45	1188	27.48	14.26	65.71	1481.	91.19
1500	2.43	34.52	1484	27.57	16.18	92.18	1484.	91.19
2000	1.95	34.61	1976	27.69	18.90	140.37	1491.	91.16

DEEPEST MEASUREMENT:

2002	1.95	34.61	1978	27.69	18.91	140.58	1491.	91.18

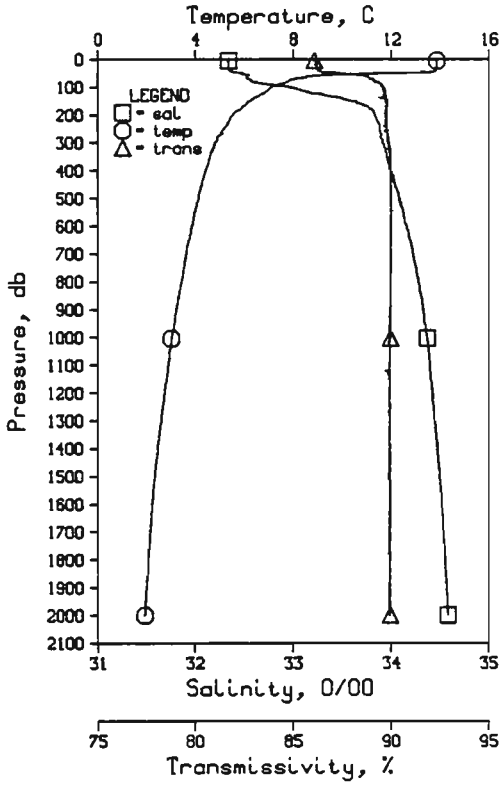


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 24 DATE 26/ 9/87
POSITION 49-12.0N, 133-40.0W GMT 10:45 STATION MP15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	13.80	32.45	0	24.28	0.00	0.00	1500.	86.31
10	13.80	32.44	10	24.28	0.37	0.02	1501.	86.34
20	13.80	32.44	20	24.28	0.73	0.07	1501.	86.35
30	13.80	32.44	30	24.28	1.10	0.17	1501.	86.41
50	11.23	32.55	50	24.85	1.79	0.45	1493.	89.28
75	8.17	32.61	75	25.39	2.50	0.89	1482.	90.38
100	7.53	32.64	99	25.51	3.13	1.46	1480.	90.87
125	7.02	33.18	124	26.01	3.71	2.12	1479.	90.97
150	6.53	33.59	149	26.39	4.17	2.76	1478.	90.97
175	6.24	33.79	174	26.59	4.56	3.41	1477.	90.95
200	5.99	33.83	199	26.65	4.92	4.10	1477.	90.93
225	5.76	33.85	224	26.70	5.27	4.86	1476.	90.96
250	5.43	33.87	248	26.75	5.61	5.68	1475.	91.01
300	4.94	33.90	298	26.84	6.25	7.48	1474.	91.11
400	4.44	33.99	397	26.96	7.45	11.75	1474.	91.25
500	4.14	34.06	496	27.04	8.55	16.79	1474.	91.26
600	3.91	34.14	595	27.13	9.58	22.56	1475.	91.26
800	3.42	34.27	793	27.28	11.42	35.64	1477.	91.26
1000	3.14	34.36	991	27.38	13.05	50.58	1479.	91.23
1200	2.83	34.42	1188	27.46	14.53	67.09	1481.	91.24
1500	2.38	34.50	1484	27.56	16.48	93.94	1484.	91.23
2000	1.94	34.59	1976	27.67	19.28	143.53	1490.	91.20

DEEPEST MEASUREMENT:

2012	1.94	34.59	1988	27.67	19.34	144.80	1491.	91.18

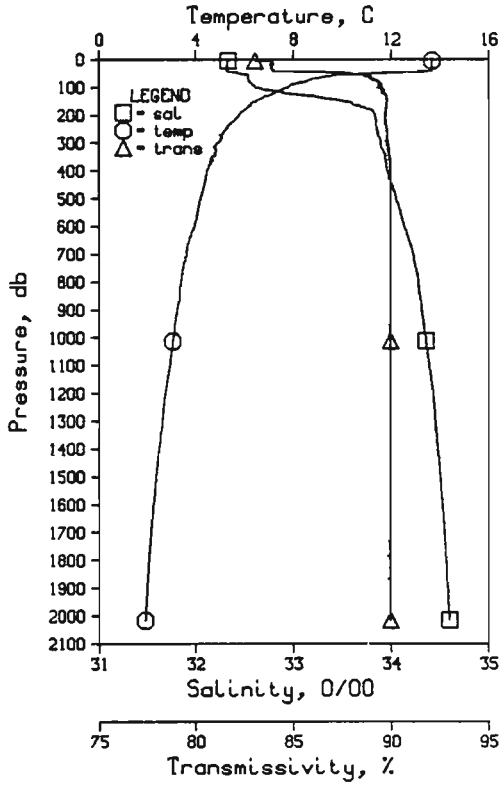


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 25 DATE 26/ 9/87
POSITION 49-17.0N, 134-40.0W GMT 16:15 STATION MP16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	13.84	32.34	0	24.19	0.00	0.00	1500.	86.05
10	13.85	32.34	10	24.19	0.37	0.02	1501.	86.17
20	13.85	32.33	20	24.18	0.75	0.08	1501.	86.10
30	13.85	32.34	30	24.19	1.12	0.17	1501.	86.13
50	11.67	32.47	50	24.71	1.86	0.47	1494.	87.18
75	7.85	32.56	75	25.41	2.56	0.91	1480.	89.11
100	7.08	32.96	99	25.83	3.16	1.45	1478.	89.53
125	6.69	33.25	124	26.11	3.68	2.05	1478.	89.67
150	6.20	33.58	149	26.43	4.13	2.66	1476.	89.67
175	5.88	33.76	174	26.62	4.51	3.30	1476.	89.74
200	5.53	33.82	199	26.70	4.86	3.97	1475.	89.70
225	5.36	33.86	223	26.75	5.20	4.69	1475.	89.75
250	5.16	33.88	248	26.79	5.52	5.49	1474.	89.73
300	4.79	33.91	298	26.86	6.15	7.26	1474.	89.85
400	4.43	33.99	397	26.96	7.34	11.48	1474.	89.97
500	4.13	34.08	496	27.06	8.43	16.48	1474.	89.98
600	3.86	34.15	595	27.15	9.44	22.15	1475.	89.96
800	3.45	34.28	793	27.29	11.26	35.10	1477.	89.96
1000	3.05	34.37	991	27.40	12.87	49.78	1478.	89.83
1200	2.75	34.42	1188	27.47	14.32	66.00	1480.	89.93
1500	2.34	34.50	1484	27.57	16.26	92.74	1484.	89.91
2000	1.94	34.58	1976	27.67	19.07	142.52	1490.	89.94

DEEPEST MEASUREMENT:

2001	1.93	34.58	1977	27.67	19.07	142.63	1490.	89.95

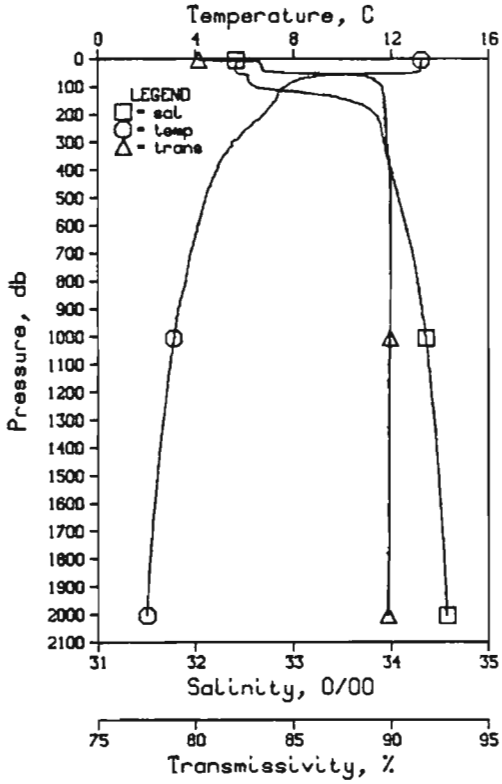


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 26 DATE 27/ 9/87
POSITION 49-20.9N, 135-40.2W GMT 0:20 STATION MP17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	13.66	32.33	0	24.22	0.00	0.00	1500.	83.01
10	13.66	32.33	10	24.22	0.37	0.02	1500.	83.85
20	13.66	32.32	20	24.21	0.74	0.08	1500.	83.94
30	13.66	32.32	30	24.21	1.12	0.17	1500.	83.90
50	11.35	32.43	50	24.74	1.84	0.46	1493.	87.82
75	8.62	32.54	75	25.28	2.55	0.92	1483.	89.14
100	7.77	32.61	99	25.45	3.21	1.50	1481.	89.34
125	7.11	32.99	124	25.84	3.80	2.18	1479.	89.70
150	6.46	33.51	149	26.34	4.28	2.85	1477.	89.75
175	6.07	33.73	174	26.56	4.69	3.51	1477.	89.71
200	5.75	33.83	199	26.68	5.04	4.20	1476.	89.70
225	5.48	33.84	224	26.72	5.39	4.94	1475.	89.66
250	5.23	33.85	248	26.76	5.72	5.76	1475.	89.77
300	4.92	33.89	298	26.83	6.37	7.56	1474.	89.81
400	4.45	33.96	397	26.93	7.58	11.88	1474.	89.95
500	4.19	34.05	496	27.03	8.71	17.04	1475.	89.95
600	3.95	34.13	595	27.12	9.75	22.86	1475.	89.95
800	3.39	34.28	793	27.30	11.57	35.79	1476.	89.95
1000	3.08	34.35	991	27.38	13.19	50.64	1478.	89.95
1200	2.76	34.43	1188	27.47	14.65	67.01	1481.	89.95
1500	2.35	34.51	1484	27.57	16.59	93.68	1484.	89.95
2000	1.92	34.60	1976	27.68	19.36	142.83	1490.	89.96

DEEPEST MEASUREMENT:

2017	1.91	34.60	1993	27.68	19.45	144.60	1491.	89.94

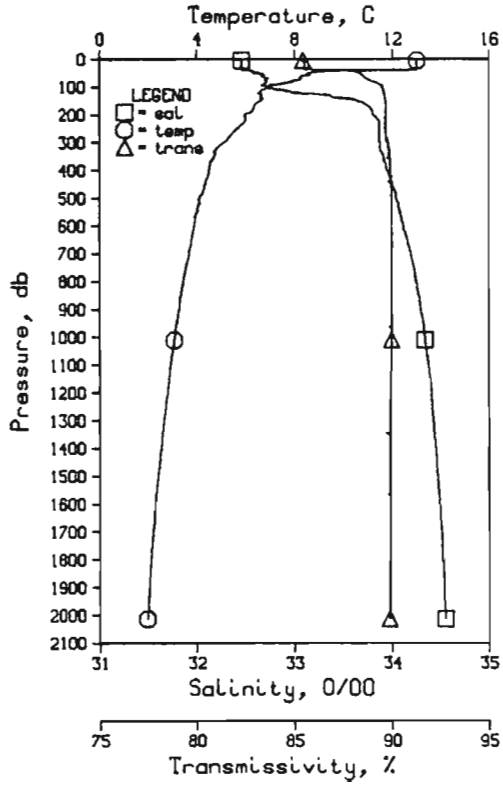


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 27 DATE 27/ 9/87
POSITION 49-26.0N, 136-40.0W GMT 5:48 STATION MP18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	13.20	32.41	0	24.37	0.00	0.00	1498.	80.14
10	13.20	32.41	10	24.37	0.36	0.02	1498.	83.13
20	13.20	32.41	20	24.37	0.71	0.07	1499.	83.25
30	13.20	32.40	30	24.37	1.07	0.16	1499.	83.31
50	12.90	32.41	50	24.43	1.78	0.45	1498.	84.38
75	8.22	32.53	75	25.33	2.51	0.91	1482.	89.09
100	7.65	32.59	99	25.46	3.16	1.49	1480.	89.50
125	7.35	33.16	124	25.95	3.75	2.16	1480.	89.59
150	7.26	33.55	149	26.26	4.23	2.83	1481.	89.59
175	6.99	33.74	174	26.45	4.65	3.53	1480.	89.59
200	6.78	33.83	199	26.55	5.04	4.28	1480.	89.71
225	6.40	33.87	224	26.63	5.41	5.08	1479.	89.74
250	6.11	33.89	248	26.68	5.77	5.94	1478.	89.73
300	5.48	33.91	298	26.78	6.45	7.84	1476.	89.74
400	4.87	33.99	397	26.91	7.69	12.28	1476.	89.89
500	4.40	34.07	496	27.03	8.83	17.49	1475.	89.96
600	4.09	34.14	595	27.12	9.88	23.36	1476.	89.96
800	3.57	34.26	793	27.27	11.75	36.64	1477.	89.95
1000	3.13	34.35	991	27.38	13.38	51.62	1479.	89.89
1200	2.82	34.41	1188	27.45	14.86	68.15	1481.	89.92
1500	2.41	34.49	1484	27.55	16.85	95.42	1484.	89.87
2000	1.98	34.57	1976	27.65	19.71	146.33	1491.	89.81

DEEPEST MEASUREMENT:

2005	1.98	34.58	1981	27.66	19.74	146.88	1491.	89.82

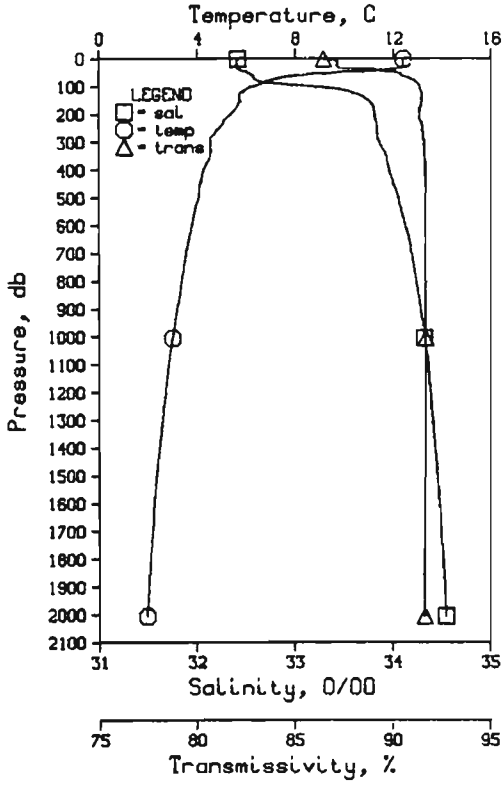


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 28 DATE 27/ 9/87
POSITION 49-30.1N, 137-40.0W GMT 11:12 STATION MP19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA O	POT. EN	SOUND	TRANS
0	13.01	32.46	0	24.45	0.00	0.00	1498.	85.41
10	13.00	32.46	10	24.45	0.35	0.02	1498.	85.51
20	13.01	32.45	20	24.44	0.70	0.07	1498.	85.48
30	13.00	32.45	30	24.44	1.05	0.16	1498.	85.45
50	8.51	32.57	50	25.32	1.68	0.41	1483.	88.31
75	8.06	32.70	75	25.48	2.32	0.82	1481.	88.82
100	7.02	32.71	99	25.64	2.93	1.37	1478.	89.48
125	6.58	33.18	124	26.07	3.48	2.00	1477.	89.55
150	6.60	33.64	149	26.43	3.93	2.62	1478.	89.66
175	6.33	33.77	174	26.56	4.32	3.26	1478.	89.67
200	5.96	33.80	199	26.63	4.69	3.97	1477.	89.69
225	5.95	33.86	223	26.68	5.04	4.74	1477.	89.64
250	5.67	33.86	248	26.72	5.39	5.57	1476.	89.65
300	5.11	33.87	298	26.79	6.05	7.44	1475.	89.78
400	4.50	33.94	397	26.92	7.29	11.83	1474.	89.90
500	4.12	34.04	496	27.04	8.42	17.01	1474.	89.95
600	3.89	34.12	595	27.12	9.46	22.85	1475.	89.96
800	3.43	34.25	793	27.27	11.33	36.16	1477.	89.96
1000	3.08	34.33	991	27.37	12.98	51.26	1478.	89.95
1200	2.78	34.40	1188	27.45	14.47	67.94	1481.	89.92
1500	2.39	34.47	1484	27.54	16.49	95.66	1484.	89.90
2000	1.96	34.55	1976	27.63	19.41	147.60	1491.	89.86

DEEPEST MEASUREMENT:

2014	1.94	34.55	1990	27.64	19.49	149.16	1491.	89.85

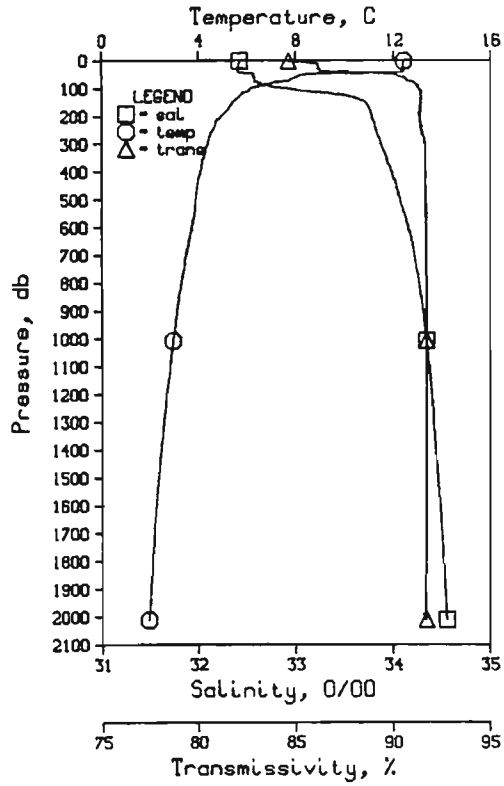


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 29 DATE 27/ 9/87
POSITION 49-34.0N, 138-40.0W GMT 16: 5 STATION MP20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.37	32.41	0	24.53	0.00	0.00	1496.	86.41
10	12.38	32.40	10	24.53	0.34	0.02	1496.	87.09
20	12.38	32.40	20	24.52	0.68	0.07	1496.	87.16
30	12.37	32.40	30	24.52	1.03	0.16	1496.	87.14
50	9.74	32.51	50	25.07	1.68	0.42	1487.	90.11
75	7.10	32.59	75	25.53	2.33	0.84	1478.	90.90
100	6.29	33.15	99	26.08	2.91	1.34	1475.	91.31
125	5.74	33.60	124	26.50	3.33	1.83	1474.	91.45
150	5.70	33.74	149	26.61	3.71	2.35	1475.	91.44
175	5.61	33.79	174	26.67	4.06	2.94	1475.	91.35
200	5.36	33.80	199	26.71	4.41	3.60	1474.	91.36
225	5.06	33.81	223	26.75	4.74	4.33	1473.	91.39
250	4.91	33.83	248	26.78	5.07	5.13	1473.	91.43
300	4.53	33.85	298	26.84	5.71	6.91	1472.	91.59
400	4.25	33.95	397	26.95	6.91	11.18	1473.	91.65
500	4.05	34.05	496	27.05	8.01	16.24	1474.	91.66
600	3.78	34.12	595	27.13	9.04	21.98	1475.	91.67
800	3.37	34.24	793	27.27	10.89	35.15	1476.	91.66
1000	3.01	34.32	990	27.36	12.54	50.31	1478.	91.68
1200	2.71	34.38	1188	27.44	14.04	67.00	1480.	91.65
1500	2.34	34.47	1484	27.54	16.06	94.84	1484.	91.67
2000	1.95	34.55	1976	27.64	19.00	147.00	1490.	91.64

DEEPEST MEASUREMENT:

2006	1.95	34.55	1982	27.64	19.03	147.67	1491.	91.64

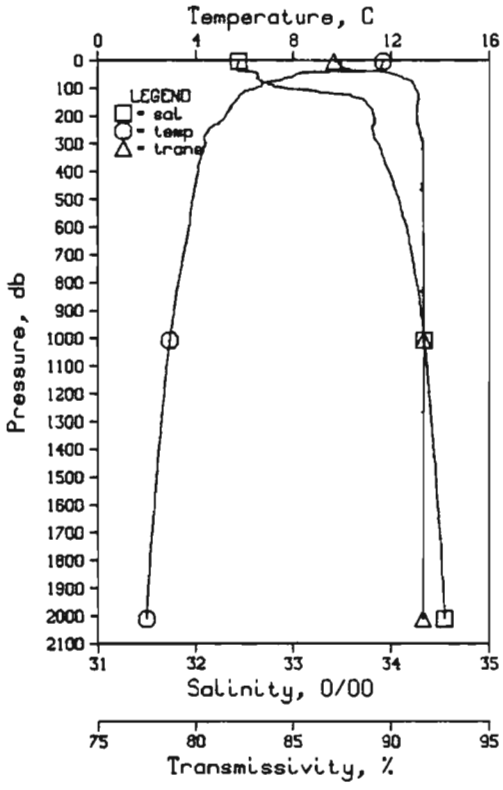


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 30 DATE 27/ 9/87
POSITION 49-38.0N, 139-40.0W GMT 20:54 STATION MP21
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	12.40	32.43	0	24.54	0.00	0.00	1496.	84.61
10	12.40	32.42	10	24.54	0.34	0.02	1496.	85.71
20	12.40	32.41	20	24.53	0.68	0.07	1496.	86.11
30	12.40	32.41	30	24.53	1.02	0.16	1496.	86.09
50	8.44	32.57	50	25.33	1.68	0.42	1482.	89.97
75	7.59	32.57	75	25.45	2.33	0.83	1479.	90.76
100	6.14	32.87	99	25.88	2.92	1.36	1474.	91.30
125	5.76	33.47	124	26.40	3.39	1.90	1474.	91.43
150	5.42	33.71	149	26.63	3.78	2.44	1473.	91.37
175	5.24	33.75	174	26.68	4.13	3.02	1473.	91.38
200	4.93	33.78	199	26.74	4.47	3.67	1472.	91.32
225	4.71	33.81	223	26.78	4.80	4.38	1472.	91.43
250	4.62	33.82	248	26.80	5.12	5.16	1472.	91.45
300	4.39	33.87	298	26.87	5.74	6.90	1472.	91.60
400	4.08	33.98	397	26.99	6.90	11.04	1472.	91.64
500	3.89	34.07	496	27.08	7.97	15.94	1473.	91.67
600	3.73	34.16	595	27.17	8.97	21.52	1474.	91.73
800	3.30	34.27	793	27.30	10.76	34.29	1476.	91.72
1000	2.96	34.34	990	27.39	12.37	48.98	1478.	91.75
1200	2.68	34.40	1188	27.46	13.84	65.42	1480.	91.74
1500	2.35	34.46	1484	27.54	15.84	93.00	1484.	91.73
2000	1.93	34.55	1976	27.64	18.76	144.89	1490.	91.67

DEEPEST MEASUREMENT:

2012	1.92	34.56	1988	27.64	18.83	146.22	1491.	91.71

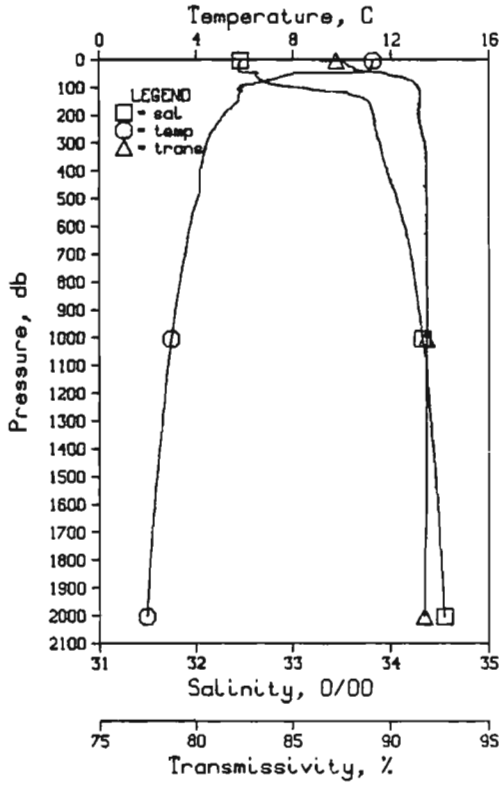


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 31 DATE 28/ 9/87
POSITION 49-41.4N, 140-40.4W GMT 1:38 STATION MP22
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	11.63	32.44	0	24.69	0.00	0.00	1493.	87.06
10	11.62	32.43	10	24.69	0.33	0.02	1493.	87.42
20	11.58	32.43	20	24.69	0.65	0.07	1493.	87.39
30	11.56	32.42	30	24.69	0.98	0.15	1493.	87.68
50	8.12	32.63	50	25.42	1.57	0.39	1481.	90.07
75	7.17	32.66	75	25.58	2.20	0.79	1478.	91.02
100	6.43	32.92	99	25.88	2.78	1.30	1476.	91.19
125	5.80	33.56	124	26.46	3.24	1.83	1474.	91.37
150	5.60	33.73	149	26.62	3.62	2.36	1474.	91.32
175	5.43	33.80	174	26.70	3.97	2.94	1474.	91.31
200	5.23	33.81	199	26.73	4.31	3.59	1474.	91.30
225	4.96	33.82	223	26.77	4.64	4.31	1473.	91.32
250	4.52	33.80	248	26.80	4.96	5.09	1472.	91.41
300	4.38	33.86	298	26.86	5.59	6.84	1472.	91.57
400	4.10	33.98	397	26.99	6.76	10.99	1472.	91.63
500	3.86	34.07	496	27.09	7.83	15.89	1473.	91.62
600	3.71	34.16	595	27.17	8.82	21.45	1474.	91.66
800	3.28	34.26	793	27.29	10.62	34.29	1476.	91.66
1000	2.94	34.34	990	27.38	12.23	49.02	1478.	91.65
1200	2.69	34.38	1188	27.44	13.71	65.58	1480.	91.63
1500	2.39	34.45	1484	27.53	15.74	93.51	1484.	91.66
2000	1.98	34.54	1976	27.63	18.72	146.42	1491.	91.61

DEEPEST MEASUREMENT:

2011	1.98	34.54	1987	27.63	18.78	147.66	1491.	91.62

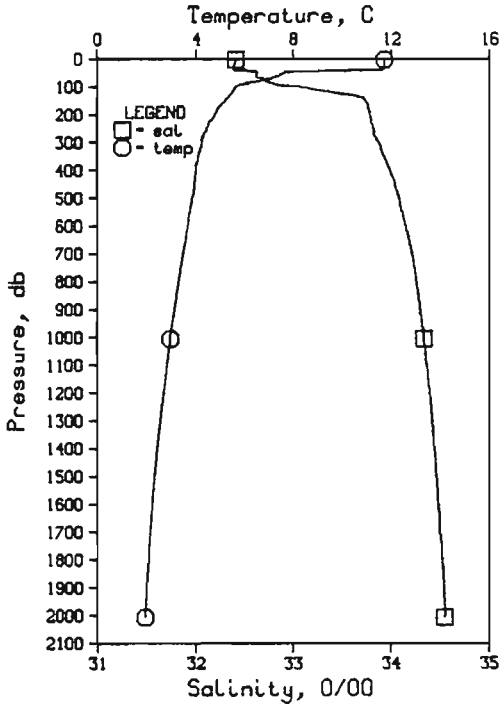


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 32 DATE 28/ 9/87
POSITION 49-46.0N, 141-40.0W GMT 6: 7 STATION MP23
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	DELTA D	POT. EN	SOUND	TRANS
0	11.23	32.46	0	24.78	0.00	0.00	1492.	87.19
10	11.23	32.44	10	24.77	0.32	0.02	1492.	87.58
20	11.21	32.44	20	24.77	0.64	0.06	1492.	87.78
30	11.15	32.44	30	24.78	0.96	0.15	1492.	88.10
50	8.04	32.64	50	25.44	1.57	0.40	1481.	89.69
75	6.90	32.69	75	25.64	2.19	0.79	1477.	90.85
100	5.91	33.01	99	26.02	2.75	1.28	1474.	91.40
125	5.78	33.57	124	26.48	3.19	1.79	1474.	91.49
150	5.72	33.77	149	26.64	3.56	2.31	1475.	91.47
175	5.45	33.80	174	26.69	3.91	2.89	1474.	91.39
200	5.16	33.82	199	26.75	4.25	3.53	1473.	91.39
225	4.92	33.83	223	26.78	4.58	4.24	1473.	91.46
250	4.73	33.84	248	26.81	4.90	5.02	1472.	91.52
300	4.44	33.88	298	26.87	5.52	6.76	1472.	91.72
400	4.15	33.96	397	26.97	6.70	10.95	1473.	91.81
500	4.06	34.05	496	27.05	7.80	15.99	1474.	91.84
600	3.72	34.14	595	27.16	8.81	21.67	1474.	91.82
800	3.33	34.25	793	27.28	10.64	34.65	1476.	91.84
1000	2.99	34.32	990	27.37	12.28	49.70	1478.	91.85
1200	2.73	34.38	1188	27.44	13.78	66.47	1480.	91.83
1500	2.38	34.46	1484	27.53	15.82	94.50	1484.	91.82
2000	1.97	34.54	1976	27.63	18.78	147.14	1491.	91.71

DEEPEST MEASUREMENT:

2005	1.96	34.55	1981	27.63	18.81	147.70	1491.	91.73

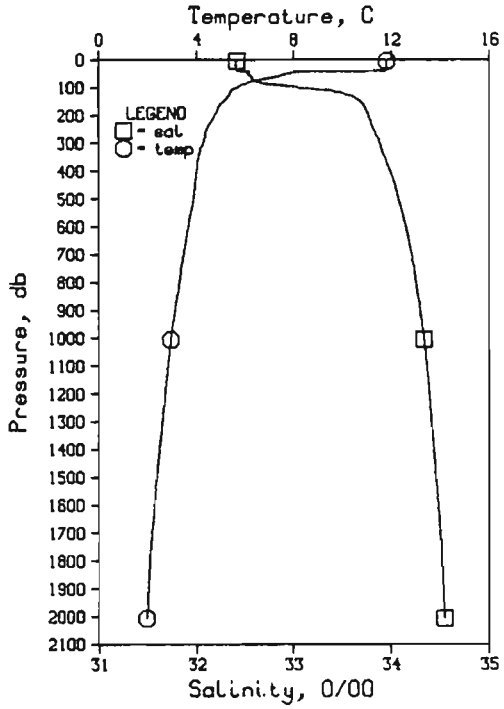


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 33 DATE 28/ 9/87
POSITION 49-50.2N, 142-40.0W GMT 10:37 STATION MP24
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.70	32.40	0	24.66	329.5	0.00	0.00	1493.
10	11.70	32.40	10	24.65	330.0	0.33	0.02	1493.
20	11.70	32.39	20	24.64	331.0	0.66	0.07	1493.
30	11.67	32.39	30	24.65	331.1	0.99	0.15	1494.
50	7.60	32.62	50	25.49	251.0	1.59	0.39	1479.
75	6.70	32.70	75	25.67	233.8	2.21	0.78	1476.
100	5.60	33.05	99	26.09	194.4	2.75	1.27	1472.
125	5.42	33.48	124	26.45	160.6	3.20	1.78	1473.
150	5.18	33.73	149	26.67	139.3	3.56	2.29	1472.
175	4.91	33.76	174	26.72	134.6	3.90	2.85	1472.
200	4.76	33.78	199	26.76	131.9	4.23	3.49	1472.
225	4.52	33.79	223	26.79	128.3	4.56	4.19	1471.
250	4.41	33.81	248	26.82	125.8	4.88	4.96	1471.
300	4.23	33.87	298	26.88	120.4	5.49	6.69	1471.
400	3.98	33.98	397	27.00	109.8	6.64	10.78	1472.
500	3.84	34.08	496	27.09	102.1	7.70	15.64	1473.
600	3.65	34.15	595	27.17	95.7	8.70	21.19	1474.
800	3.28	34.26	793	27.29	84.8	10.49	33.98	1476.
1000	2.95	34.34	990	27.38	76.8	12.11	48.75	1478.
1200	2.67	34.39	1188	27.45	70.9	13.58	65.28	1480.
1500	2.31	34.47	1484	27.54	62.6	15.58	92.64	1484.
2000	1.93	34.55	1976	27.64	54.1	18.48	144.29	1490.

DEEPEST MEASUREMENT:

2006	1.93	34.55	1982	27.64	54.2	18.51	144.95	1490.

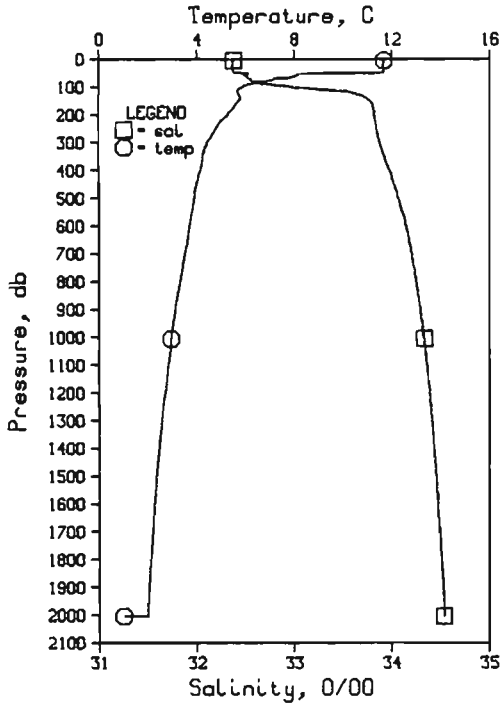


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 34 DATE 28/ 9/87
POSITION 50- 0.0N, 143-36.3W GMT 15: 5 STATION MP25
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.79	32.41	0	24.64	330.9	0.00	0.00	1493.
10	11.78	32.40	10	24.64	331.5	0.33	0.02	1494.
20	11.79	32.40	20	24.63	332.0	0.66	0.07	1494.
30	11.81	32.41	30	24.64	331.8	0.99	0.15	1494.
50	7.69	32.52	50	25.40	259.8	1.60	0.40	1479.
75	6.35	32.62	75	25.66	235.2	2.23	0.79	1475.
100	5.65	33.05	99	26.08	195.4	2.77	1.28	1473.
125	5.35	33.52	124	26.49	156.8	3.20	1.76	1473.
150	5.11	33.68	149	26.64	142.2	3.57	2.28	1472.
175	4.85	33.74	174	26.71	135.7	3.91	2.85	1472.
200	4.73	33.76	199	26.75	132.4	4.25	3.49	1472.
225	4.56	33.79	223	26.79	129.0	4.58	4.20	1471.
250	4.40	33.81	248	26.82	125.6	4.89	4.97	1471.
300	4.25	33.88	298	26.89	119.7	5.50	6.68	1471.
400	3.98	33.99	397	27.01	109.5	6.65	10.75	1472.
500	3.85	34.07	496	27.09	102.6	7.70	15.59	1473.
600	3.64	34.15	595	27.17	95.3	8.69	21.13	1474.
800	3.28	34.26	793	27.29	84.9	10.49	33.90	1476.
1000	2.93	34.34	990	27.39	76.5	12.10	48.65	1478.
1200	2.69	34.39	1188	27.45	71.0	13.57	65.12	1480.
1500	2.35	34.47	1484	27.54	63.2	15.58	92.80	1484.
2000	1.95	34.55	1976	27.63	54.8	18.51	144.78	1490.

DEEPEST MEASUREMENT:

2008	1.94	34.55	1984	27.64	54.5	18.55	145.67	1491.

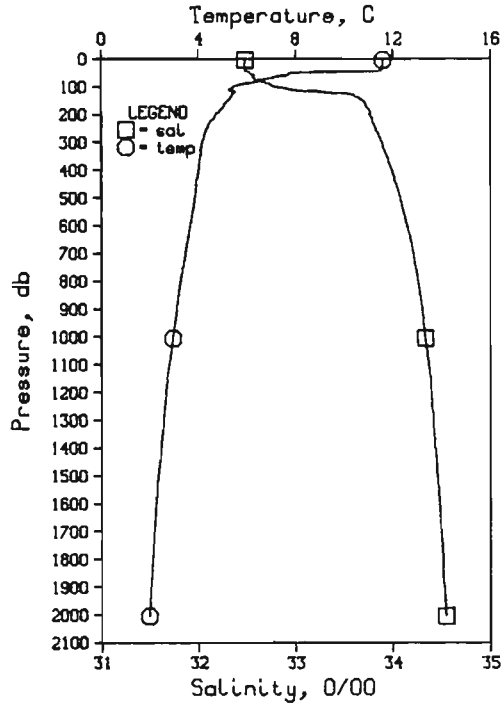


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 35 DATE 28/ 9/87
POSITION 50- 0.0N, 144-18.2W GMT 18:49 STATION MP35
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.65	32.37	0	24.63	331.5	0.00	0.00	1493.
10	11.65	32.36	10	24.63	332.1	0.33	0.02	1493.
20	11.65	32.36	20	24.63	332.3	0.66	0.07	1493.
30	11.65	32.36	30	24.63	332.6	1.00	0.15	1493.
50	9.73	32.43	50	25.01	296.3	1.66	0.42	1487.
75	7.03	32.55	75	25.51	249.4	2.32	0.84	1477.
100	5.83	32.97	99	25.99	203.3	2.89	1.35	1473.
125	5.68	33.64	124	26.54	152.0	3.32	1.84	1474.
150	5.68	33.78	149	26.65	141.6	3.69	2.35	1475.
175	5.48	33.81	174	26.70	137.2	4.04	2.93	1474.
200	5.23	33.82	199	26.74	134.0	4.37	3.58	1474.
225	4.95	33.83	223	26.78	130.1	4.70	4.29	1473.
250	4.76	33.84	248	26.81	127.5	5.03	5.07	1473.
300	4.39	33.88	298	26.88	121.2	5.65	6.82	1472.
400	4.13	33.97	397	26.98	112.0	6.82	10.97	1473.
500	3.88	34.07	496	27.08	103.2	7.89	15.89	1473.
600	3.69	34.14	595	27.16	96.5	8.89	21.46	1474.
800	3.31	34.25	793	27.28	85.6	10.70	34.37	1476.
1000	2.96	34.33	990	27.38	77.5	12.32	49.23	1478.
1200	2.69	34.39	1188	27.45	71.0	13.81	65.88	1480.
1500	2.34	34.46	1484	27.54	63.4	15.83	93.56	1484.
2000	1.98	34.54	1976	27.63	55.5	18.79	146.28	1491.

DEEPEST MEASUREMENT:

2005	0.99	34.54	1981	27.70	44.1	18.82	146.79	1486.

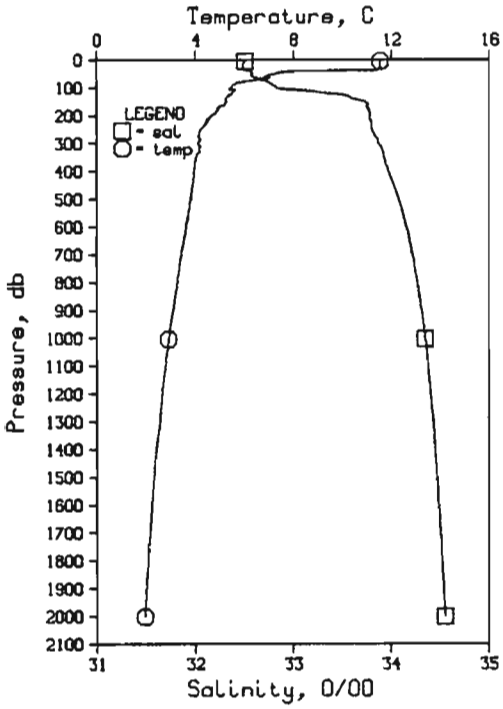


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 36 DATE 29/ 9/87
POSITION 50- 1.5N, 144-56.3W GMT 0:35 STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.58	32.48	0	24.73	321.9	0.00	0.00	1493.
10	11.58	32.47	10	24.73	322.6	0.32	0.02	1493.
20	11.58	32.47	20	24.73	323.1	0.65	0.07	1493.
30	11.56	32.47	30	24.73	322.9	0.97	0.15	1493.
50	7.86	32.52	50	25.38	261.6	1.59	0.40	1480.
75	6.58	32.57	75	25.59	241.6	2.22	0.80	1475.
100	5.44	32.78	99	25.89	213.1	2.79	1.30	1471.
125	5.40	33.47	124	26.44	161.0	3.27	1.85	1473.
150	5.21	33.69	149	26.63	143.0	3.64	2.37	1473.
175	4.98	33.74	174	26.70	136.5	3.99	2.95	1472.
200	4.69	33.76	199	26.75	132.0	4.32	3.59	1471.
225	4.48	33.79	223	26.80	128.1	4.65	4.29	1471.
250	4.34	33.82	248	26.84	124.3	4.96	5.06	1471.
300	4.16	33.89	298	26.91	118.0	5.57	6.75	1471.
400	4.00	33.99	397	27.01	109.5	6.71	10.80	1472.
500	3.84	34.08	496	27.09	102.3	7.76	15.65	1473.
600	3.66	34.15	595	27.17	95.7	8.75	21.19	1474.
800	3.25	34.26	793	27.30	84.1	10.55	33.95	1476.
1000	2.94	34.33	990	27.38	76.9	12.15	48.66	1478.
1200	2.65	34.40	1188	27.46	70.2	13.62	65.06	1480.
1500	2.33	34.46	1484	27.54	63.1	15.63	92.62	1484.
2000	1.96	34.55	1976	27.63	54.8	18.57	144.91	1490.

DEEPEST MEASUREMENT:

2004	1.95	34.55	1980	27.63	54.8	18.59	145.36	1491.

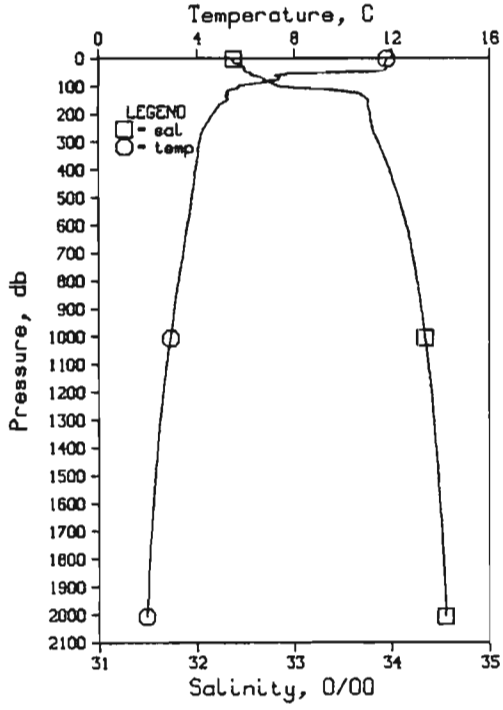


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 37 DATE 29/ 9/87
POSITION 49-59.9N, 144-59.8W GMT 8:11 STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.53	32.49	0	24.76	320.0	0.00	0.00	1493.
10	11.53	32.48	10	24.75	321.0	0.32	0.02	1493.
20	11.53	32.47	20	24.74	321.9	0.64	0.07	1493.
30	11.51	32.48	30	24.74	321.6	0.96	0.15	1493.
50	7.24	32.58	50	25.50	249.5	1.53	0.38	1478.
75	6.20	32.71	75	25.75	226.6	2.14	0.76	1474.
100	5.39	32.82	99	25.93	209.0	2.68	1.24	1471.
125	5.39	33.46	124	26.44	161.5	3.14	1.77	1473.
150	5.24	33.72	149	26.66	140.5	3.52	2.30	1473.
175	4.89	33.76	174	26.73	133.9	3.86	2.87	1472.
200	4.63	33.78	199	26.77	130.0	4.19	3.50	1471.
225	4.44	33.79	223	26.80	127.3	4.52	4.20	1471.
250	4.20	33.80	248	26.83	124.7	4.83	4.96	1470.
300	4.10	33.87	298	26.90	119.1	5.44	6.66	1471.
400	3.93	33.97	397	26.99	110.5	6.58	10.74	1472.
500	3.81	34.07	496	27.09	102.0	7.65	15.61	1473.
600	3.61	34.15	595	27.17	95.1	8.63	21.11	1474.
800	3.25	34.26	793	27.30	84.2	10.41	33.80	1476.
1000	2.91	34.34	990	27.39	75.9	12.01	48.39	1478.
1200	2.64	34.40	1188	27.46	69.8	13.46	64.64	1480.
1500	2.31	34.47	1484	27.54	62.5	15.44	91.87	1484.
2000	1.93	34.55	1976	27.64	54.3	18.36	143.72	1490.

DEEPEST MEASUREMENT:

2003	1.93	34.55	1979	27.64	54.1	18.37	144.06	1490.

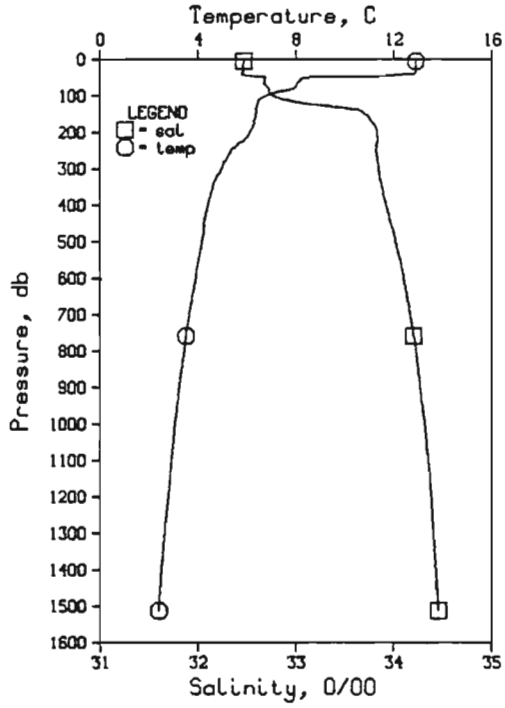


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 38 DATE 30/ 9/87
POSITION 49- 6.0N, 143-36.2W GMT 5:26 STATION MP27
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.77	32.37	0	24.61	333.6	0.00	0.00	1493.
10	11.76	32.36	10	24.61	333.9	0.33	0.02	1493.
20	11.70	32.43	20	24.67	328.1	0.67	0.07	1494.
30	11.78	32.47	30	24.69	326.7	0.99	0.15	1494.
50	10.48	32.52	50	24.96	301.5	1.64	0.41	1490.
75	7.33	32.69	75	25.58	242.7	2.28	0.82	1479.
100	5.66	32.83	99.	25.90	212.0	2.85	1.33	1472.
125	5.19	33.63	124	26.59	146.9	3.29	1.83	1472.
150	5.22	33.75	149	26.68	138.7	3.64	2.32	1473.
175	4.88	33.76	174	26.73	134.1	3.98	2.89	1472.
200	4.64	33.78	199	26.77	130.4	4.31	3.52	1471.
225	4.47	33.78	223	26.79	128.6	4.64	4.22	1471.
250	4.27	33.80	248	26.83	125.4	4.95	4.99	1470.
300	4.08	33.85	298	26.89	119.7	5.57	6.70	1471.
400	3.93	33.97	397	27.00	109.8	6.71	10.79	1472.
500	3.76	34.07	496	27.09	101.9	7.78	15.65	1473.
600	3.60	34.15	595	27.17	95.1	8.76	21.18	1474.
800	3.24	34.26	793	27.29	84.4	10.55	33.92	1476.
1000	2.92	34.33	990	27.38	76.7	12.16	48.59	1478.
1200	2.61	34.40	1188	27.47	69.1	13.61	64.83	1480.
1500	2.29	34.47	1484	27.55	62.1	15.57	91.83	1484.
2000	1.94	34.55	1976	27.64	54.2	18.46	143.14	1490.

DEEPEST MEASUREMENT:

2006	1.94	34.55	1982	27.64	54.3	18.49	143.80	1491.

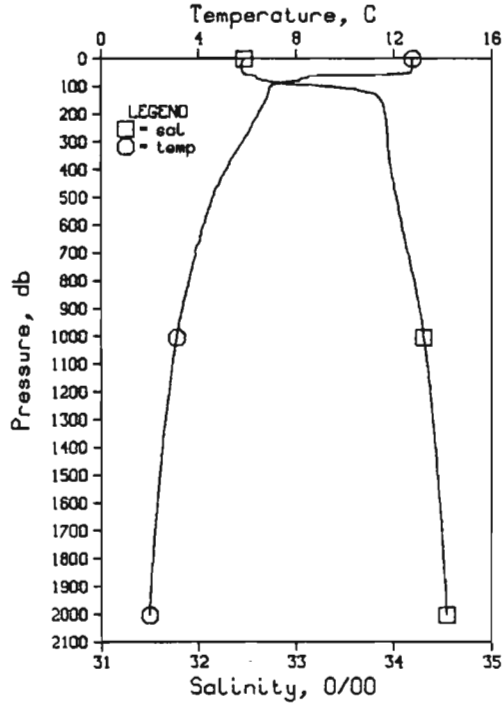


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 39 DATE 30/ 9/87
POSITION 48-34.8N, 141-46.2W GMT 14:32 STATION 0501
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.90	32.46	0	24.47	346.8	0.00	0.00	1497.
10	12.90	32.46	10	24.47	347.1	0.35	0.02	1498.
20	12.90	32.46	20	24.47	347.8	0.69	0.07	1498.
30	12.89	32.46	30	24.47	348.0	1.04	0.16	1498.
50	8.34	32.69	50	25.43	256.5	1.71	0.43	1482.
75	7.95	32.69	75	25.50	250.7	2.34	0.83	1481.
100	6.78	32.76	99	25.71	230.6	2.95	1.37	1477.
125	6.40	33.20	124	26.11	193.1	3.48	1.98	1476.
150	6.34	33.70	149	26.51	155.6	3.90	2.57	1477.
175	6.29	33.79	174	26.58	148.8	4.28	3.20	1477.
200	6.06	33.83	199	26.64	143.2	4.65	3.89	1477.
225	5.82	33.83	223	26.68	140.0	5.00	4.66	1476.
250	5.34	33.82	248	26.72	136.0	5.34	5.50	1475.
300	4.94	33.85	298	26.79	129.7	6.01	7.35	1474.
400	4.39	33.92	397	26.91	118.7	7.25	11.77	1474.
500	4.16	34.02	496	27.01	110.0	8.39	16.99	1474.
600	3.89	34.09	595	27.10	102.2	9.44	22.91	1475.
800	3.42	34.22	793	27.25	88.9	11.35	36.42	1476.
1000	3.05	34.31	991	27.36	79.5	13.03	51.82	1478.
1200	2.78	34.38	1188	27.44	72.5	14.54	68.81	1481.
1500	2.39	34.46	1484	27.53	64.5	16.60	96.99	1484.

DEEPEST MEASUREMENT:

1512	2.38	34.46	1496	27.53	64.1	16.67	98.17	1484.

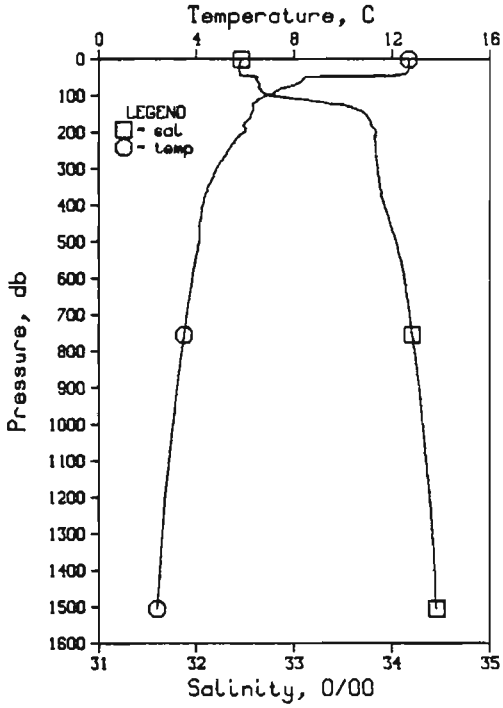


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 40 DATE 30/ 9/87
POSITION 48-34.8N, 140-57.4W GMT 18:51 STATION 0502
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.75	32.46	0	24.50	344.1	0.00	0.00	1497.
10	12.73	32.45	10	24.49	345.3	0.34	0.02	1497.
20	12.73	32.44	20	24.49	345.9	0.69	0.07	1497.
30	12.73	32.44	30	24.49	346.4	1.04	0.16	1497.
50	12.69	32.45	50	24.50	345.1	1.73	0.44	1497.
75	8.14	32.59	75	25.38	261.3	2.47	0.91	1482.
100	6.99	33.24	99	26.06	197.4	3.06	1.43	1478.
125	6.84	33.76	124	26.48	157.4	3.49	1.92	1479.
150	6.74	33.87	149	26.58	148.3	3.87	2.45	1479.
175	6.58	33.90	174	26.63	144.3	4.23	3.06	1479.
200	6.43	33.91	199	26.66	141.7	4.59	3.74	1479.
225	6.26	33.92	223	26.69	139.3	4.94	4.50	1478.
250	6.12	33.93	248	26.71	137.2	5.29	5.34	1478.
300	5.79	33.94	298	26.76	133.1	5.96	7.23	1478.
400	5.11	33.97	397	26.87	123.2	7.25	11.79	1477.
500	4.56	34.03	496	26.98	113.9	8.43	17.22	1476.
600	4.17	34.08	595	27.06	106.5	9.53	23.39	1476.
800	3.60	34.21	793	27.22	92.1	11.52	37.52	1477.
1000	3.11	34.30	991	27.34	81.2	13.24	53.26	1479.
1200	2.79	34.37	1188	27.42	73.9	14.78	70.49	1481.
1500	2.40	34.45	1484	27.52	65.1	16.85	98.96	1484.
2000	1.98	34.54	1976	27.63	55.3	19.84	152.06	1491.

DEEPEST MEASUREMENT:

2005	1.97	34.54	1981	27.63	55.4	19.87	152.63	1491.

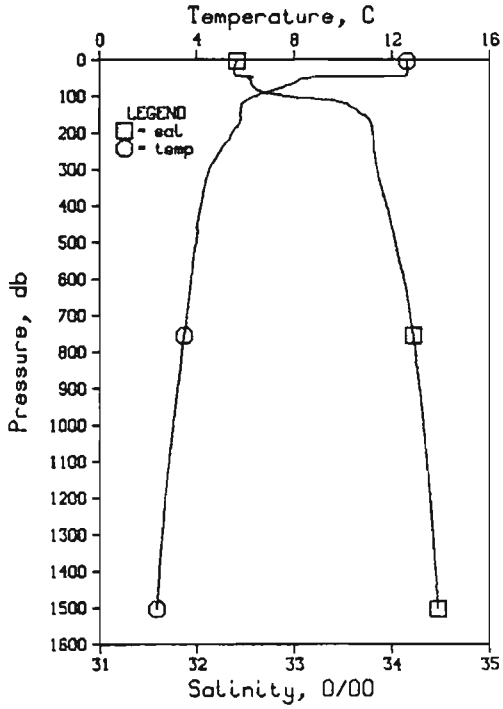


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 41 DATE 30/ 9/87
POSITION 48-34.8N, 140- 8.7W GMT 23:29 STATION 0S03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.65	32.46	0	24.51	342.9	0.00	0.00	1497.
10	12.65	32.44	10	24.50	344.0	0.34	0.02	1497.
20	12.65	32.44	20	24.50	344.7	0.69	0.07	1497.
30	12.63	32.44	30	24.50	344.5	1.03	0.16	1497.
50	8.50	32.61	50	25.35	264.0	1.70	0.43	1483.
75	7.84	32.64	75	25.47	253.0	2.35	0.84	1480.
100	6.85	32.75	99	25.69	232.3	2.96	1.38	1477.
125	6.30	33.46	124	26.32	172.7	3.47	1.96	1476.
150	6.24	33.72	149	26.53	153.0	3.87	2.53	1477.
175	5.95	33.78	174	26.62	145.2	4.24	3.14	1476.
200	5.95	33.83	199	26.66	141.5	4.60	3.83	1477.
225	5.57	33.82	223	26.70	137.9	4.95	4.59	1475.
250	5.29	33.83	248	26.74	134.5	5.29	5.41	1475.
300	4.81	33.85	298	26.81	127.8	5.95	7.25	1474.
400	4.27	33.92	397	26.92	117.9	7.17	11.62	1473.
500	4.10	34.04	496	27.03	107.9	8.30	16.78	1474.
600	3.84	34.12	595	27.12	99.8	9.34	22.58	1475.
800	3.41	34.23	793	27.25	88.6	11.22	35.95	1476.
1000	3.04	34.31	991	27.36	79.5	12.89	51.29	1478.
1200	2.72	34.38	1188	27.44	71.8	14.41	68.25	1480.
1500	2.39	34.45	1484	27.52	64.8	16.45	96.33	1484.

DEEPEST MEASUREMENT:

1506	2.38	34.45	1490	27.53	64.5	16.49	96.93	1484.

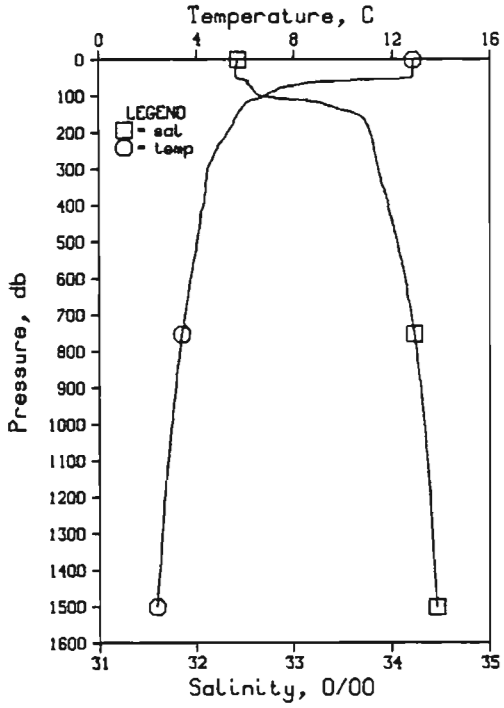


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 42 DATE 1/10/87
POSITION 48-34.8N, 139-20.0W GMT 4:25 STATION 0S04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.60	32.41	0	24.49	345.5	0.00	0.00	1496.
10	12.60	32.40	10	24.48	346.5	0.35	0.02	1496.
20	12.61	32.39	20	24.47	347.2	0.69	0.07	1497.
30	12.61	32.38	30	24.47	347.9	1.04	0.16	1497.
50	8.69	32.56	50	25.28	271.2	1.71	0.43	1483.
75	7.53	32.58	75	25.46	253.6	2.36	0.84	1479.
100	6.40	32.92	99	25.88	213.9	2.96	1.37	1476.
125	5.84	33.56	124	26.46	159.6	3.40	1.88	1475.
150	5.77	33.69	149	26.57	149.0	3.79	2.42	1475.
175	5.74	33.78	174	26.65	142.2	4.15	3.02	1475.
200	5.43	33.80	199	26.70	137.4	4.50	3.69	1474.
225	5.21	33.81	223	26.73	134.4	4.84	4.43	1474.
250	4.95	33.82	248	26.77	131.3	5.17	5.23	1473.
300	4.52	33.85	298	26.84	124.6	5.81	7.02	1472.
400	4.16	33.94	397	26.95	114.9	7.01	11.29	1473.
500	3.97	34.03	496	27.04	106.9	8.11	16.35	1474.
600	3.78	34.12	595	27.13	99.1	9.14	22.12	1475.
800	3.37	34.24	793	27.26	87.4	11.01	35.36	1476.
1000	3.02	34.32	991	27.36	78.6	12.67	50.56	1478.
1200	2.69	34.39	1188	27.45	71.2	14.16	67.30	1480.
1500	2.33	34.47	1484	27.54	62.8	16.17	94.85	1484.

DEEPEST MEASUREMENT:

1505	2.33	34.47	1489	27.54	62.6	16.20	95.33	1484.

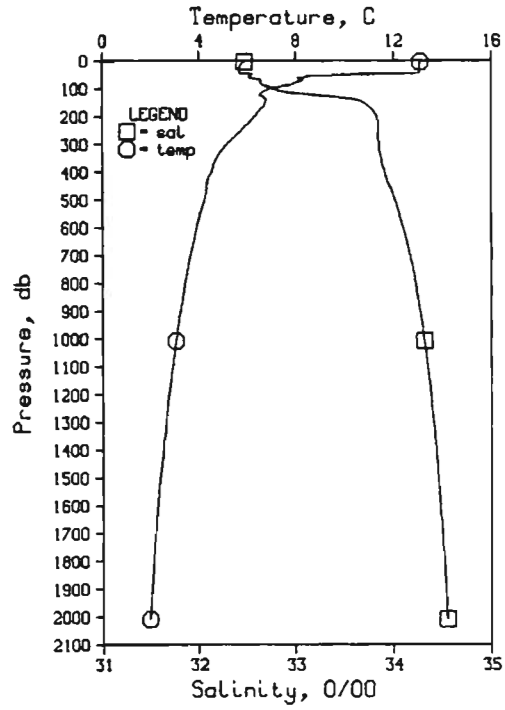


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 43 DATE 1/10/87
POSITION 48-34.8N, 138-31.0W GMT 8:43 STATION OS05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.83	32.42	0	24.46	348.5	0.00	0.00	1497.
10	12.83	32.41	10	24.45	349.4	0.35	0.02	1497.
20	12.83	32.41	20	24.44	350.3	0.70	0.07	1497.
30	12.83	32.40	30	24.44	350.6	1.05	0.16	1498.
50	12.79	32.40	50	24.45	350.3	1.75	0.45	1498.
75	7.69	32.56	75	25.43	256.8	2.47	0.90	1480.
100	6.80	32.66	99	25.63	238.0	3.09	1.45	1477.
125	5.96	33.33	124	26.26	178.4	3.61	2.04	1475.
150	5.70	33.63	149	26.53	152.9	4.02	2.62	1475.
175	5.53	33.74	174	26.64	143.2	4.39	3.22	1474.
200	5.26	33.78	199	26.70	137.3	4.74	3.90	1474.
225	5.02	33.80	224	26.75	132.9	5.08	4.63	1473.
250	4.80	33.82	248	26.79	129.5	5.40	5.42	1473.
300	4.46	33.86	298	26.85	123.4	6.04	7.19	1472.
400	4.27	33.96	397	26.96	114.4	7.23	11.43	1473.
500	4.01	34.05	496	27.05	106.0	8.33	16.48	1474.
600	3.75	34.13	595	27.15	97.6	9.35	22.19	1474.
800	3.31	34.25	793	27.28	85.6	11.18	35.21	1476.
1000	2.99	34.33	991	27.37	78.0	12.81	50.15	1478.
1200	2.68	34.39	1188	27.45	71.0	14.29	66.78	1480.
1500	2.36	34.46	1484	27.53	64.2	16.33	94.71	1484.

DEEPEST MEASUREMENT:

1503	2.36	34.46	1487	27.53	63.9	16.35	95.00	1484.

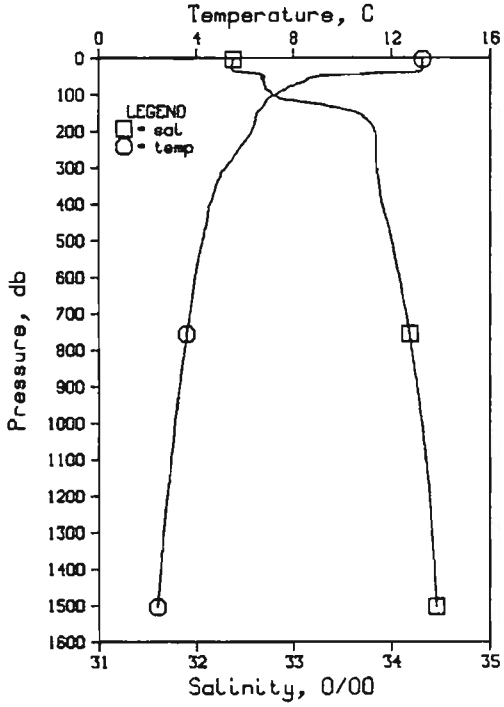


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 44 DATE 1/10/87
POSITION 48-35.0N, 137-42.7W GMT 12:33 STATION OS06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.07	32.47	0	24.44	349.6	0.00	0.00	1498.
10	13.06	32.45	10	24.43	351.4	0.35	0.02	1498.
20	13.06	32.43	20	24.41	352.9	0.70	0.07	1498.
30	13.06	32.42	30	24.41	353.7	1.06	0.16	1498.
50	10.47	32.55	50	24.98	299.2	1.75	0.44	1490.
75	8.13	32.64	75	25.42	257.4	2.42	0.87	1482.
100	7.00	32.78	99	25.70	231.7	3.04	1.42	1478.
125	6.51	33.19	124	26.09	195.0	3.58	2.04	1477.
150	6.76	33.70	149	26.45	161.0	4.02	2.65	1479.
175	6.55	33.78	174	26.54	152.7	4.41	3.30	1478.
200	6.33	33.83	199	26.61	146.7	4.78	4.01	1478.
225	6.05	33.84	224	26.66	142.2	5.14	4.79	1477.
250	5.76	33.84	248	26.69	139.0	5.49	5.64	1477.
300	5.15	33.85	298	26.77	131.5	6.17	7.54	1475.
400	4.53	33.91	397	26.89	121.3	7.43	12.03	1474.
500	4.23	34.01	496	27.00	111.1	8.59	17.34	1475.
600	3.91	34.09	595	27.10	102.5	9.66	23.30	1475.
800	3.43	34.23	793	27.25	88.9	11.56	36.83	1477.
1000	3.08	34.31	991	27.35	80.1	13.24	52.25	1478.
1200	2.75	34.38	1188	27.44	72.3	14.76	69.28	1480.
1500	2.39	34.46	1484	27.53	64.4	16.82	97.48	1484.
2000	1.96	34.55	1976	27.64	54.7	19.78	150.16	1491.

DEEPEST MEASUREMENT:

2010	1.96	34.55	1986	27.64	54.7	19.84	151.28	1491.

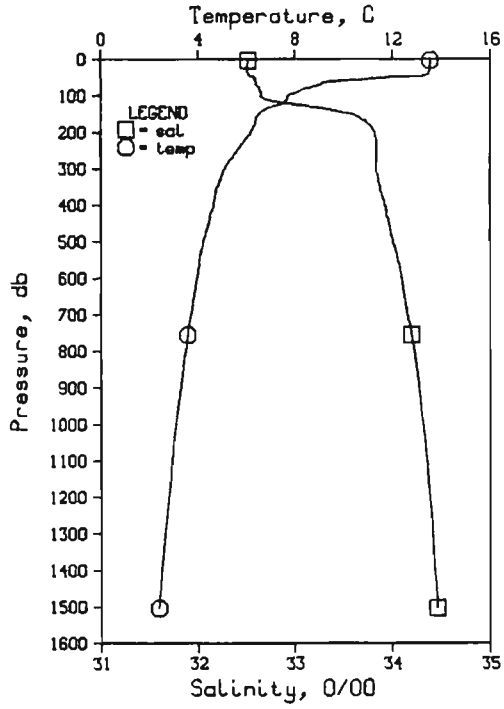


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 45 DATE 1/10/87
POSITION 48- 2.4N, 137-43.6W GMT 17: 9 STATION OS12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.23	32.38	0	24.34	359.5	0.00	0.00	1498.
10	13.23	32.37	10	24.33	360.3	0.36	0.02	1499.
20	13.23	32.36	20	24.33	361.0	0.72	0.07	1499.
30	13.24	32.36	30	24.33	361.4	1.08	0.17	1499.
50	8.95	32.70	50	25.35	264.3	1.73	0.43	1484.
75	8.01	32.70	75	25.49	251.2	2.37	0.84	1481.
100	7.27	32.78	99	25.66	235.3	2.98	1.38	1479.
125	6.81	33.22	124	26.07	196.6	3.53	2.01	1478.
150	6.47	33.64	149	26.44	161.5	3.98	2.63	1478.
175	6.40	33.77	174	26.55	151.5	4.37	3.27	1478.
200	6.26	33.82	199	26.61	146.1	4.74	3.98	1478.
225	6.02	33.83	224	26.65	142.5	5.10	4.76	1477.
250	5.73	33.83	248	26.69	139.3	5.45	5.61	1477.
300	5.19	33.84	298	26.76	132.8	6.13	7.52	1475.
400	4.52	33.90	397	26.88	121.9	7.40	12.04	1474.
500	4.23	34.00	496	26.99	112.3	8.57	17.40	1475.
600	3.94	34.08	595	27.08	104.0	9.65	23.45	1475.
800	3.50	34.20	793	27.22	91.4	11.60	37.30	1477.
1000	3.10	34.31	991	27.35	80.4	13.31	53.00	1478.
1200	2.78	34.38	1188	27.44	72.5	14.84	70.14	1481.
1500	2.40	34.45	1484	27.52	64.7	16.89	98.32	1484.

DEEPEST MEASUREMENT:

1505	2.39	34.46	1489	27.53	64.3	16.93	98.81	1484.

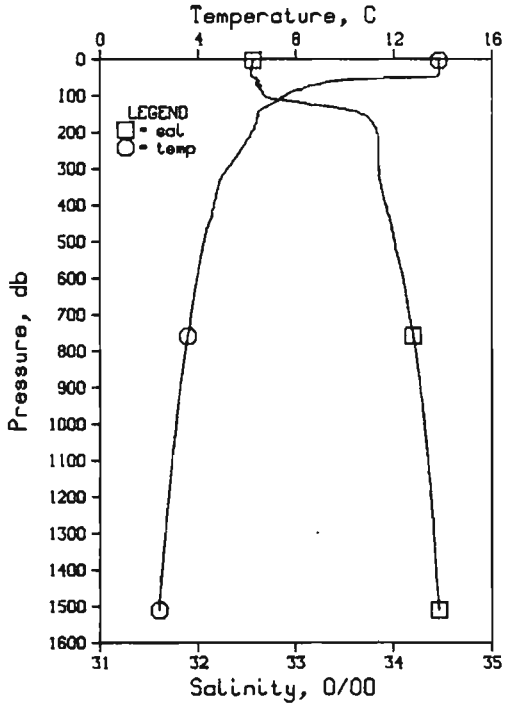


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 46 DATE 1/10/87
POSITION 47-30.0N, 137-44.5W GMT 22:24 STATION OS18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.54	32.52	0	24.39	355.1	0.00	0.00	1500.
10	13.55	32.51	10	24.38	356.0	0.36	0.02	1500.
20	13.52	32.51	20	24.38	355.9	0.71	0.07	1500.
30	13.50	32.51	30	24.39	355.6	1.07	0.16	1500.
50	11.86	32.57	50	24.76	320.9	1.77	0.45	1495.
75	8.75	32.61	75	25.31	268.0	2.48	0.90	1484.
100	7.70	32.64	99	25.49	251.4	3.13	1.48	1480.
125	7.37	33.00	124	25.82	220.7	3.73	2.17	1480.
150	6.49	33.58	149	26.39	166.7	4.21	2.83	1478.
175	6.36	33.74	174	26.53	153.4	4.60	3.48	1478.
200	6.17	33.82	199	26.62	145.4	4.97	4.20	1477.
225	5.90	33.83	224	26.67	141.0	5.33	4.97	1477.
250	5.61	33.83	248	26.70	137.9	5.68	5.81	1476.
300	5.09	33.83	298	26.77	132.2	6.35	7.70	1475.
400	4.62	33.92	397	26.89	121.3	7.62	12.21	1475.
500	4.21	34.01	496	27.00	111.4	8.79	17.55	1475.
600	3.94	34.09	595	27.09	103.2	9.85	23.52	1475.
800	3.47	34.22	793	27.24	89.7	11.77	37.19	1477.
1000	3.07	34.31	991	27.35	79.8	13.46	52.65	1478.
1200	2.77	34.38	1188	27.44	72.5	14.98	69.69	1480.
1500	2.37	34.46	1484	27.53	64.1	17.03	97.78	1484.

DEEPEST MEASUREMENT:

1505	2.36	34.46	1489	27.53	63.8	17.06	98.26	1484.

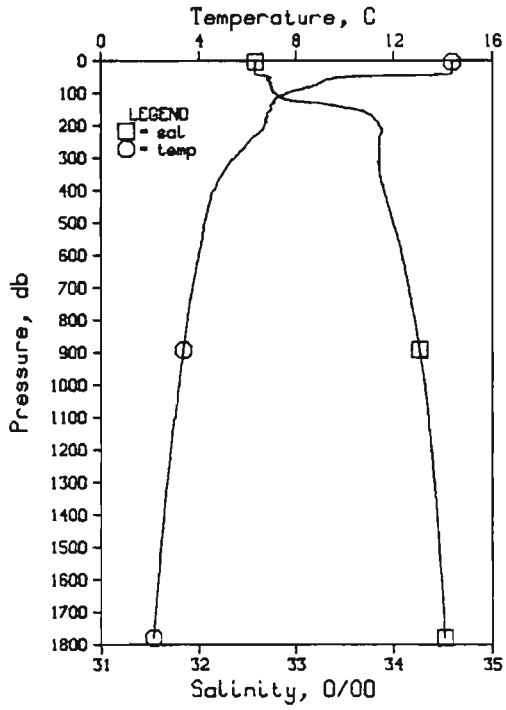


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 47 DATE 2/10/87
POSITION 46-57.6N, 137-45.9W GMT 3: 8 STATION OS24
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.83	32.56	0	24.36	357.7	0.00	0.00	1501.
10	13.83	32.55	10	24.35	358.5	0.36	0.02	1501.
20	13.83	32.54	20	24.35	359.4	0.72	0.07	1501.
30	13.83	32.54	30	24.34	359.8	1.08	0.16	1501.
50	13.22	32.55	50	24.47	348.0	1.79	0.46	1499.
75	8.45	32.62	75	25.36	263.6	2.51	0.91	1483.
100	7.55	32.67	99	25.54	247.1	3.14	1.48	1480.
125	6.94	33.14	124	25.99	204.5	3.72	2.13	1478.
150	6.41	33.66	149	26.46	159.8	4.16	2.75	1477.
175	6.37	33.78	174	26.57	149.9	4.54	3.38	1478.
200	6.16	33.82	199	26.62	145.2	4.91	4.09	1477.
225	5.95	33.84	224	26.66	141.5	5.27	4.86	1477.
250	5.72	33.84	248	26.69	138.9	5.62	5.71	1476.
300	5.17	33.85	298	26.77	132.1	6.30	7.62	1475.
400	4.62	33.92	397	26.88	121.5	7.57	12.14	1475.
500	4.21	34.01	496	27.00	111.2	8.73	17.46	1475.
600	3.94	34.09	595	27.09	102.8	9.80	23.46	1475.
800	3.46	34.22	793	27.24	89.4	11.73	37.13	1477.
1000	3.09	34.31	991	27.35	80.1	13.41	52.57	1478.
1200	2.77	34.38	1188	27.43	73.0	14.93	69.64	1480.
1500	2.38	34.46	1484	27.53	64.1	16.98	97.76	1484.

DEEPEST MEASUREMENT:

1511	2.37	34.46	1495	27.53	63.9	17.05	98.84	1484.

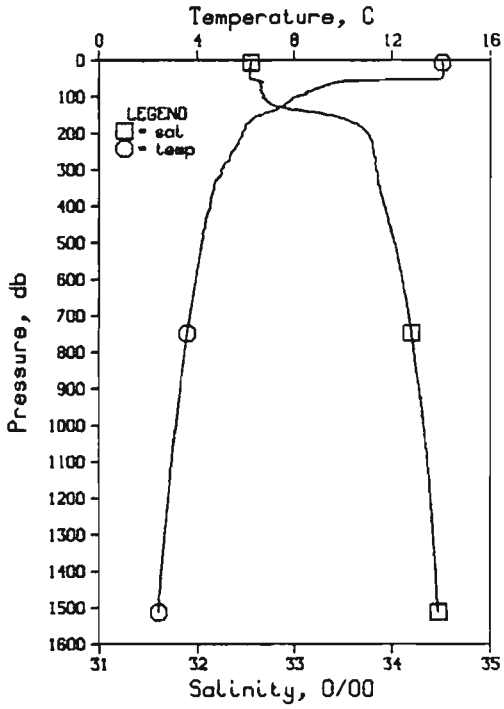


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 48 DATE 2/10/87
POSITION 46-25.3N, 137-46.2W GMT 7:39 STATION OS30
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.35	32.58	0	24.27	366.5	0.00	0.00	1502.
10	14.35	32.58	10	24.27	366.7	0.37	0.02	1502.
20	14.35	32.57	20	24.26	367.3	0.73	0.07	1503.
30	14.35	32.57	30	24.26	368.0	1.10	0.17	1503.
50	10.15	32.71	50	25.16	282.1	1.80	0.45	1489.
75	8.83	32.73	75	25.39	260.6	2.47	0.88	1484.
100	7.63	32.79	99	25.61	239.6	3.09	1.43	1480.
125	7.09	32.99	124	25.85	217.6	3.67	2.09	1479.
150	6.97	33.59	149	26.34	171.7	4.15	2.76	1480.
175	6.79	33.79	174	26.52	154.9	4.55	3.43	1479.
200	6.68	33.85	199	26.58	149.7	4.93	4.15	1480.
225	6.43	33.87	224	26.63	145.1	5.30	4.95	1479.
250	6.04	33.85	248	26.66	141.8	5.66	5.82	1478.
300	5.47	33.85	298	26.73	135.8	6.35	7.76	1476.
400	4.59	33.90	397	26.87	122.8	7.64	12.36	1474.
500	4.21	33.99	496	26.98	112.7	8.82	17.74	1475.
600	3.99	34.08	595	27.08	104.5	9.90	23.80	1475.
800	3.50	34.21	793	27.23	90.8	11.84	37.61	1477.
1000	3.15	34.31	991	27.35	80.6	13.55	53.28	1479.
1200	2.81	34.38	1188	27.43	73.0	15.09	70.46	1481.
1500	2.42	34.46	1484	27.53	64.3	17.14	98.66	1484.

DEEPEST MEASUREMENT:

1779	2.11	34.52	1759	27.60	57.7	18.84	126.96	1487.

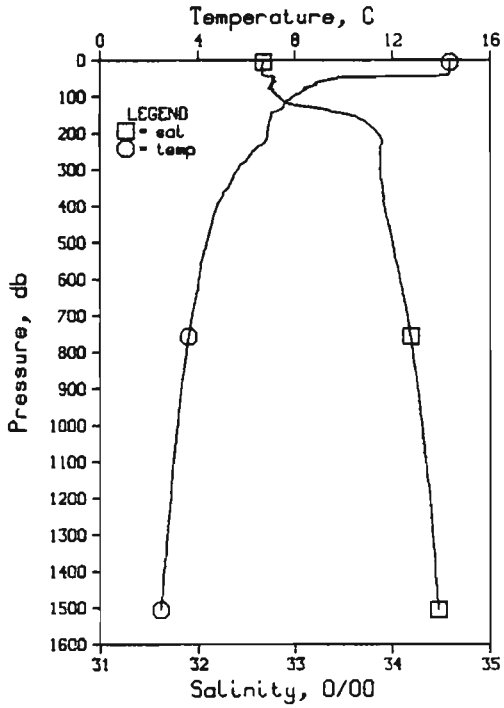


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 49 DATE 2/10/87
POSITION 46-24.6N, 138-33.2W GMT 12:33 STATION OS29
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.05	32.55	0	24.31	362.7	0.00	0.00	1501.
10	14.04	32.55	10	24.31	362.9	0.36	0.02	1501.
20	14.05	32.54	20	24.30	363.7	0.73	0.07	1502.
30	14.06	32.54	30	24.30	364.4	1.09	0.17	1502.
50	13.99	32.53	50	24.31	364.1	1.82	0.46	1502.
75	9.04	32.67	75	25.31	268.6	2.55	0.92	1485.
100	8.08	32.67	99	25.46	254.5	3.20	1.51	1482.
125	7.55	32.78	124	25.62	239.3	3.82	2.22	1480.
150	6.65	33.31	149	26.16	188.5	4.36	2.97	1478.
175	6.01	33.64	174	26.50	156.0	4.78	3.67	1476.
200	5.85	33.75	199	26.61	146.5	5.16	4.39	1476.
225	5.70	33.80	224	26.67	141.1	5.52	5.16	1476.
250	5.44	33.81	248	26.70	137.8	5.87	6.01	1475.
300	4.96	33.84	298	26.78	130.4	6.54	7.89	1474.
400	4.52	33.92	397	26.90	120.1	7.79	12.35	1474.
500	4.16	34.02	496	27.02	109.5	8.94	17.59	1474.
600	3.91	34.10	595	27.11	101.6	9.99	23.50	1475.
800	3.46	34.22	793	27.24	89.9	11.89	37.05	1477.
1000	3.09	34.31	991	27.35	79.9	13.58	52.52	1478.
1200	2.78	34.39	1188	27.44	72.3	15.10	69.47	1481.
1500	2.39	34.46	1484	27.53	63.9	17.14	97.47	1484.

DEEPEST MEASUREMENT:

1512	2.37	34.47	1496	27.54	63.2	17.21	98.64	1484.

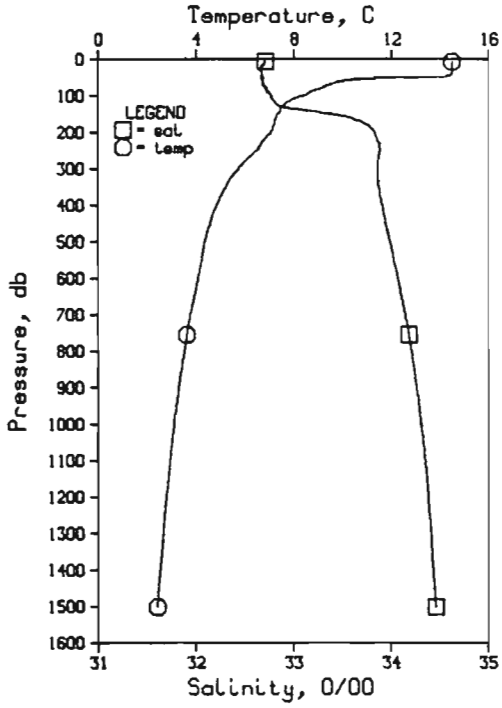


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 50 DATE 2/10/87
POSITION 46-25.3N, 139-20.0W GMT 17:31 STATION OS28
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.33	32.67	0	24.34	359.3	0.00	0.00	1502.
10	14.33	32.67	10	24.34	359.9	0.36	0.02	1503.
20	14.33	32.66	20	24.33	360.6	0.72	0.07	1503.
30	14.33	32.66	30	24.33	361.0	1.08	0.17	1503.
50	9.73	32.77	50	25.28	271.1	1.76	0.44	1487.
75	8.50	32.73	75	25.45	255.5	2.41	0.85	1483.
100	7.90	32.83	99	25.61	239.9	3.03	1.41	1481.
125	7.52	33.04	124	25.83	220.0	3.61	2.07	1481.
150	7.00	33.56	149	26.31	174.6	4.10	2.76	1480.
175	6.92	33.75	174	26.47	159.6	4.51	3.44	1480.
200	6.84	33.85	199	26.56	151.7	4.90	4.18	1480.
225	6.73	33.90	224	26.61	147.0	5.28	4.99	1480.
250	6.24	33.88	248	26.66	142.5	5.64	5.87	1479.
300	5.63	33.87	298	26.73	135.8	6.33	7.82	1477.
400	4.76	33.92	397	26.87	123.3	7.63	12.42	1475.
500	4.34	34.00	496	26.98	113.1	8.81	17.83	1475.
600	4.01	34.08	595	27.07	104.9	9.90	23.93	1475.
800	3.50	34.21	793	27.23	90.7	11.84	37.76	1477.
1000	3.13	34.30	991	27.34	81.5	13.56	53.47	1479.
1200	2.85	34.38	1188	27.43	73.4	15.10	70.75	1481.
1500	2.44	34.47	1484	27.53	64.2	17.16	99.08	1484.

DEEPEST MEASUREMENT:

1506	2.43	34.47	1490	27.54	63.8	17.20	99.67	1484.

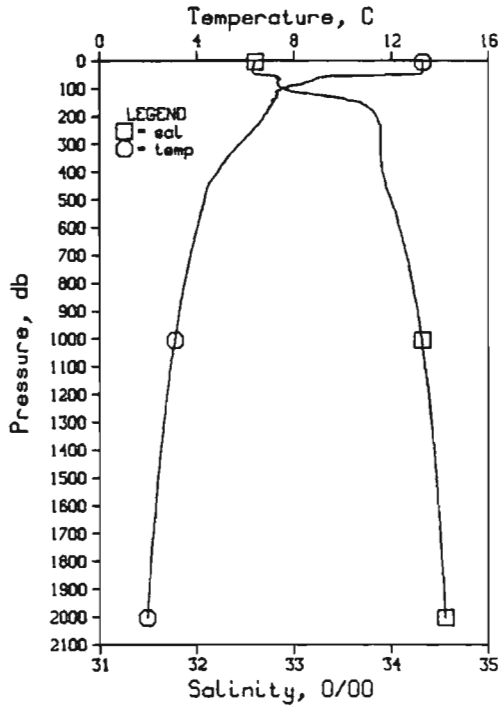


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 51 DATE 2/10/87
POSITION 46-25.3N, 140- 6.9W GMT 22:30 STATION OS27
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.48	32.70	0	24.34	359.9	0.00	0.00	1503.
10	14.47	32.69	10	24.33	360.8	0.36	0.02	1503.
20	14.47	32.67	20	24.31	362.6	0.72	0.07	1503.
30	14.47	32.66	30	24.30	363.7	1.09	0.17	1503.
50	12.45	32.67	50	24.72	324.5	1.81	0.46	1497.
75	9.25	32.69	75	25.29	270.2	2.52	0.91	1486.
100	8.37	32.75	99	25.48	252.6	3.17	1.49	1483.
125	7.58	32.81	124	25.64	237.3	3.78	2.19	1480.
150	7.32	33.33	149	26.08	195.8	4.33	2.96	1481.
175	7.17	33.71	174	26.40	166.1	4.77	3.69	1481.
200	7.03	33.82	199	26.51	156.4	5.17	4.46	1481.
225	6.69	33.85	224	26.58	150.0	5.55	5.29	1480.
250	6.48	33.88	248	26.63	145.5	5.92	6.18	1480.
300	5.70	33.85	298	26.71	138.2	6.63	8.16	1477.
400	4.82	33.90	397	26.85	125.0	7.95	12.85	1475.
500	4.34	33.98	496	26.96	114.6	9.15	18.34	1475.
600	4.07	34.06	595	27.05	106.7	10.25	24.54	1476.
800	3.51	34.20	793	27.22	91.5	12.22	38.56	1477.
1000	3.11	34.30	991	27.34	81.1	13.94	54.29	1479.
1200	2.78	34.38	1188	27.43	73.1	15.48	71.50	1481.
1500	2.41	34.45	1484	27.52	64.8	17.55	99.92	1484.

DEEPEST MEASUREMENT:

1503	2.40	34.46	1487	27.52	64.6	17.57	100.21	1484.

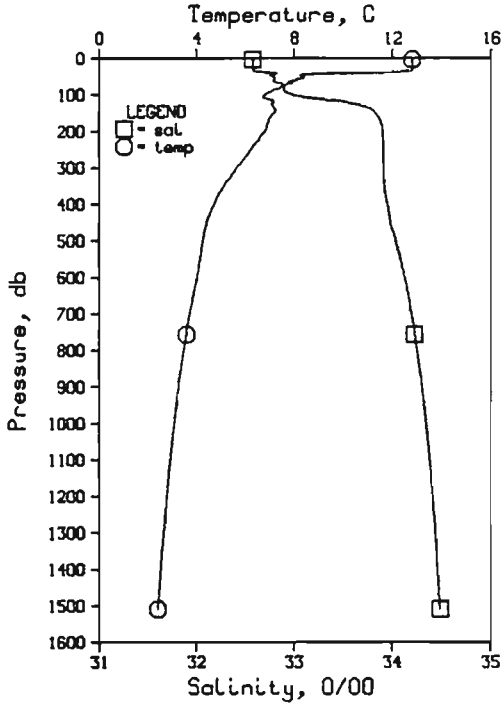


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 52 DATE 3/10/87
POSITION 46-24.6N, 140-54.6W GMT 3:58 STATION OS26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.25	32.59	0	24.50	344.0	0.00	0.00	1499.
10	13.25	32.59	10	24.50	344.5	0.34	0.02	1499.
20	13.26	32.58	20	24.49	345.3	0.69	0.07	1499.
30	13.26	32.57	30	24.48	346.5	1.04	0.16	1499.
50	12.61	32.60	50	24.63	332.7	1.73	0.44	1497.
75	8.64	32.83	75	25.50	250.1	2.40	0.86	1484.
100	7.50	32.89	99	25.71	230.5	3.00	1.40	1480.
125	7.28	33.26	124	26.04	200.0	3.55	2.03	1480.
150	7.15	33.68	149	26.38	167.9	4.00	2.67	1480.
175	6.91	33.78	174	26.49	157.1	4.41	3.34	1480.
200	6.73	33.84	199	26.56	150.9	4.79	4.07	1480.
225	6.57	33.87	224	26.61	147.0	5.17	4.88	1480.
250	6.30	33.89	248	26.66	142.4	5.53	5.75	1479.
300	5.75	33.88	298	26.73	136.4	6.23	7.71	1477.
400	4.85	33.90	397	26.85	125.4	7.53	12.36	1475.
500	4.31	33.99	496	26.97	113.6	8.72	17.80	1475.
600	4.02	34.08	595	27.08	104.5	9.81	23.90	1476.
800	3.49	34.21	793	27.24	90.4	11.75	37.72	1477.
1000	3.11	34.31	991	27.35	80.2	13.45	53.31	1479.
1200	2.77	34.38	1188	27.43	72.6	14.98	70.44	1480.
1500	2.40	34.46	1484	27.53	64.2	17.04	98.63	1484.
2000	1.97	34.55	1976	27.64	54.6	19.99	151.15	1491.

DEEPEST MEASUREMENT:

2005	1.96	34.55	1981	27.64	54.4	20.02	151.71	1491.

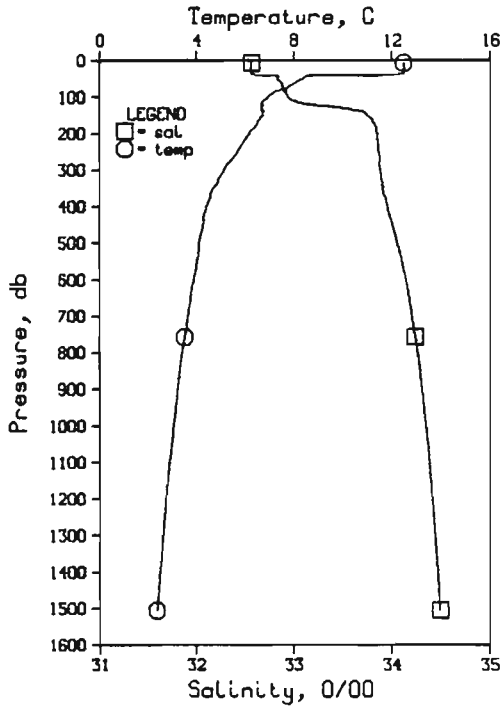


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 53 DATE 3/10/87
POSITION 46-25.3N, 141-40.7W GMT 9:15 STATION OS25
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	12.79	32.57	0	24.58	337.1	0.00	0.00	1497.
10	12.80	32.57	10	24.58	337.3	0.34	0.02	1497.
20	12.80	32.57	20	24.57	337.6	0.67	0.07	1497.
30	12.79	32.57	30	24.58	337.6	1.01	0.15	1498.
50	8.35	32.77	50	25.50	250.1	1.60	0.39	1482.
75	7.50	32.88	75	25.71	230.6	2.20	0.77	1479.
100	6.78	32.97	99	25.88	214.6	2.76	1.27	1477.
125	7.03	33.60	124	26.34	171.4	3.25	1.83	1479.
150	7.15	33.82	149	26.49	156.9	3.65	2.39	1481.
175	6.92	33.88	174	26.57	150.1	4.03	3.03	1480.
200	6.77	33.90	199	26.61	146.9	4.41	3.74	1480.
225	6.52	33.90	224	26.64	143.8	4.77	4.52	1479.
250	6.22	33.91	248	26.68	140.0	5.12	5.38	1479.
300	5.63	33.91	298	26.76	133.3	5.81	7.30	1477.
400	4.72	33.95	397	26.90	120.6	7.08	11.82	1475.
500	4.25	34.03	496	27.01	110.0	8.23	17.10	1475.
600	4.02	34.12	595	27.11	101.5	9.29	23.01	1476.
800	3.48	34.25	793	27.26	87.6	11.16	36.38	1477.
1000	3.08	34.34	991	27.38	77.6	12.81	51.43	1478.
1200	2.78	34.41	1188	27.46	70.4	14.29	68.02	1481.
1500	2.41	34.49	1484	27.55	62.2	16.28	95.35	1484.

DEEPEST MEASUREMENT:

1509	2.40	34.49	1493	27.55	62.0	16.34	96.21	1484.

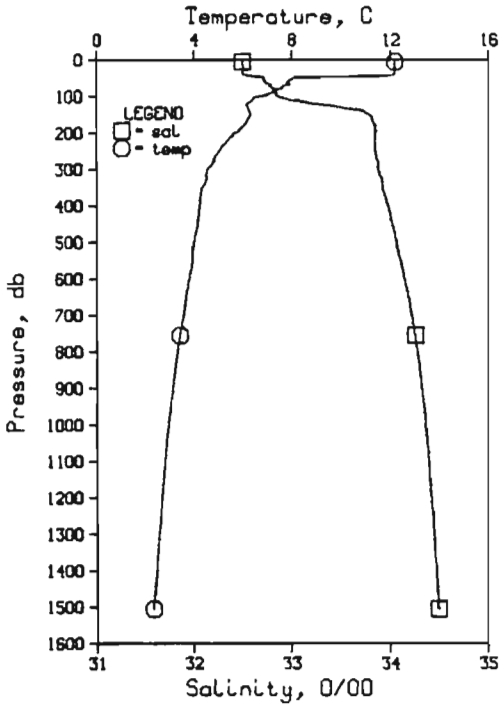


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 54 DATE 3/10/87
POSITION 46-57.6N, 141-42.0W GMT 13:13 STATION OS19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	12.48	32.56	0	24.63	331.7	0.00	0.00	1496.
10	12.48	32.56	10	24.63	332.3	0.33	0.02	1496.
20	12.48	32.56	20	24.63	332.7	0.66	0.07	1496.
30	12.48	32.56	30	24.62	333.1	1.00	0.15	1497.
50	8.37	32.83	50	25.54	246.1	1.58	0.39	1482.
75	7.71	32.88	75	25.68	233.2	2.18	0.77	1480.
100	6.91	32.93	99	25.82	219.7	2.74	1.27	1478.
125	6.64	33.31	124	26.16	188.4	3.26	1.87	1477.
150	6.71	33.74	149	26.49	157.0	3.68	2.45	1479.
175	6.46	33.82	174	26.58	148.7	4.06	3.08	1478.
200	6.16	33.85	199	26.65	142.9	4.42	3.77	1477.
225	5.91	33.85	224	26.68	139.7	4.78	4.54	1477.
250	5.68	33.86	248	26.72	136.4	5.12	5.38	1476.
300	5.12	33.88	298	26.80	129.3	5.79	7.24	1475.
400	4.40	33.95	397	26.93	116.8	7.02	11.61	1474.
500	4.10	34.05	496	27.04	106.9	8.13	16.73	1474.
600	3.90	34.14	595	27.14	98.7	9.16	22.49	1475.
800	3.41	34.26	793	27.28	86.0	11.00	35.60	1476.
1000	3.05	34.34	991	27.38	77.3	12.63	50.51	1478.
1200	2.74	34.41	1188	27.46	69.9	14.10	66.96	1480.
1500	2.37	34.49	1484	27.56	61.4	16.07	93.96	1484.

DEEPEST MEASUREMENT:

1506	2.36	34.49	1490	27.56	61.2	16.11	94.52	1484.

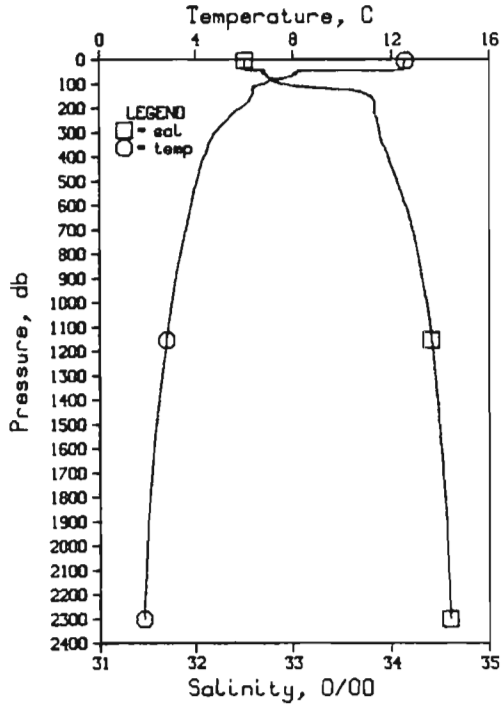


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 55 DATE 3/10/87
POSITION 47-30.0N, 141-43.3W GMT 17:21 STATION 0S13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.17	32.50	0	24.64	331.0	0.00	0.00	1495.
10	12.17	32.50	10	24.64	331.2	0.33	0.02	1495.
20	12.17	32.50	20	24.64	331.1	0.66	0.07	1495.
30	12.17	32.50	30	24.64	331.6	0.99	0.15	1495.
50	8.05	32.71	50	25.49	250.7	1.62	0.41	1481.
75	7.59	32.78	75	25.62	239.0	2.24	0.80	1480.
100	6.70	32.85	99	25.79	222.6	2.81	1.31	1477.
125	6.16	33.39	124	26.28	176.1	3.32	1.89	1476.
150	6.30	33.78	149	26.57	149.5	3.72	2.45	1477.
175	6.11	33.83	174	26.64	143.4	4.09	3.05	1477.
200	5.71	33.84	199	26.69	138.2	4.44	3.72	1476.
225	5.32	33.84	223	26.74	133.7	4.78	4.46	1474.
250	5.03	33.84	248	26.78	130.5	5.11	5.26	1474.
300	4.56	33.87	298	26.85	123.4	5.74	7.03	1473.
400	4.23	33.97	397	26.97	113.2	6.92	11.24	1473.
500	4.00	34.06	496	27.06	105.1	8.01	16.24	1474.
600	3.80	34.15	595	27.15	97.4	9.03	21.92	1475.
800	3.32	34.27	793	27.30	84.1	10.83	34.79	1476.
1000	2.95	34.36	991	27.40	75.0	12.42	49.30	1478.
1200	2.67	34.42	1188	27.47	68.9	13.85	65.35	1480.
1500	2.33	34.49	1484	27.56	61.5	15.80	92.09	1484.

DEEPEST MEASUREMENT:

1506	2.33	34.50	1490	27.56	60.8	15.84	92.65	1484.

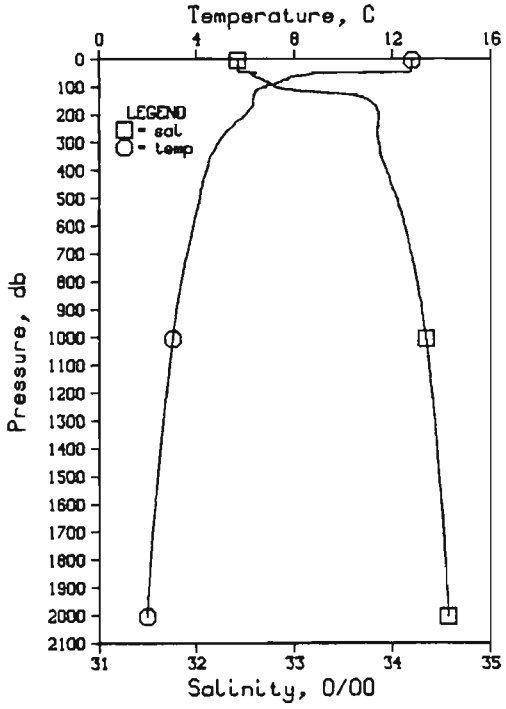


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 56 DATE 3/10/87
POSITION 48- 2.4N, 141-44.8W GMT 20:51 STATION 0S07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.53	32.50	0	24.57	337.2	0.00	0.00	1496.
10	12.53	32.50	10	24.57	337.4	0.34	0.02	1496.
20	12.52	32.50	20	24.58	337.5	0.67	0.07	1496.
30	12.51	32.50	30	24.58	337.7	1.01	0.15	1497.
50	8.19	32.71	50	25.47	252.7	1.64	0.41	1481.
75	7.64	32.75	75	25.59	242.1	2.27	0.81	1480.
100	6.84	32.87	99	25.79	223.0	2.85	1.32	1477.
125	6.34	33.50	124	26.35	170.0	3.34	1.89	1476.
150	6.31	33.77	149	26.56	150.1	3.74	2.44	1477.
175	6.16	33.83	174	26.63	144.1	4.10	3.04	1477.
200	5.84	33.83	199	26.67	140.6	4.46	3.72	1476.
225	5.50	33.83	223	26.72	136.2	4.80	4.47	1475.
250	5.27	33.85	248	26.76	132.6	5.14	5.29	1475.
300	4.80	33.88	298	26.83	125.8	5.79	7.09	1474.
400	4.33	33.96	397	26.95	115.1	6.99	11.39	1473.
500	4.04	34.05	496	27.05	105.9	8.10	16.46	1474.
600	3.82	34.13	595	27.14	98.4	9.12	22.16	1475.
800	3.36	34.26	793	27.29	85.3	10.94	35.11	1476.
1000	3.00	34.36	991	27.39	75.8	12.54	49.83	1478.
1200	2.73	34.42	1188	27.47	69.1	13.99	66.01	1480.
1500	2.35	34.49	1484	27.56	61.5	15.95	92.88	1484.
2000	1.96	34.57	1976	27.65	53.1	18.79	143.40	1491.

DEEPEST MEASUREMENT:

2302	1.82	34.60	2273	27.69	50.4	20.35	177.60	1495.

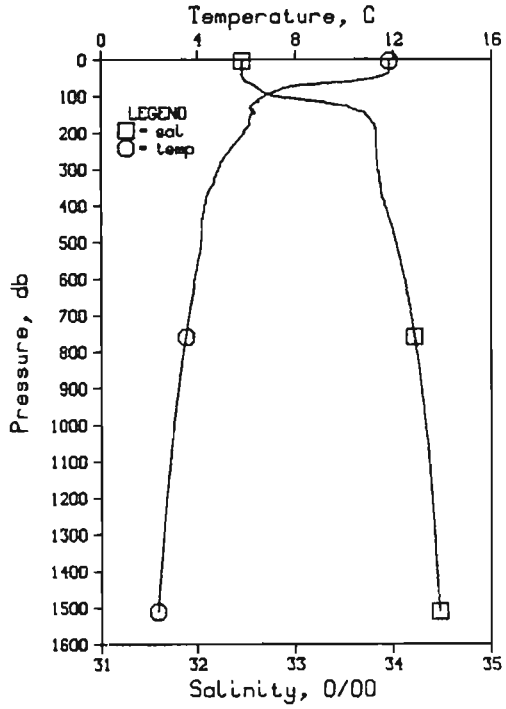


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 57 DATE 4/10/87
POSITION 48- 2.3N, 140-57.0W GMT 0:52 STATION 0S08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.77	32.42	0	24.47	347.5	0.00	0.00	1497.
10	12.77	32.43	10	24.47	347.5	0.35	0.02	1497.
20	12.78	32.43	20	24.47	347.3	0.69	0.07	1497.
30	12.77	32.43	30	24.47	347.6	1.04	0.16	1497.
50	8.88	32.60	50	25.28	270.5	1.73	0.44	1484.
75	7.60	32.69	75	25.54	246.4	2.38	0.85	1480.
100	6.73	32.79	99	25.74	227.6	2.97	1.38	1477.
125	6.36	33.42	124	26.29	176.0	3.49	1.97	1476.
150	6.31	33.76	149	26.56	150.7	3.88	2.52	1477.
175	6.25	33.83	174	26.62	144.9	4.25	3.13	1477.
200	6.03	33.85	199	26.67	141.0	4.61	3.82	1477.
225	5.66	33.85	224	26.71	136.6	4.96	4.57	1476.
250	5.38	33.85	248	26.74	134.3	5.30	5.39	1475.
300	4.92	33.86	298	26.80	128.3	5.95	7.23	1474.
400	4.43	33.94	397	26.92	117.8	7.19	11.62	1474.
500	4.15	34.04	496	27.03	107.8	8.31	16.79	1474.
600	3.89	34.12	595	27.12	100.3	9.35	22.59	1475.
800	3.38	34.25	793	27.28	86.3	11.21	35.80	1476.
1000	3.03	34.34	991	27.38	77.1	12.84	50.74	1478.
1200	2.77	34.41	1188	27.45	70.8	14.32	67.31	1480.
1500	2.40	34.48	1484	27.54	62.9	16.32	94.76	1484.
2000	1.96	34.57	1976	27.65	53.0	19.19	145.80	1491.

DEEPEST MEASUREMENT:

2005	1.95	34.57	1981	27.65	52.9	19.22	146.34	1491.

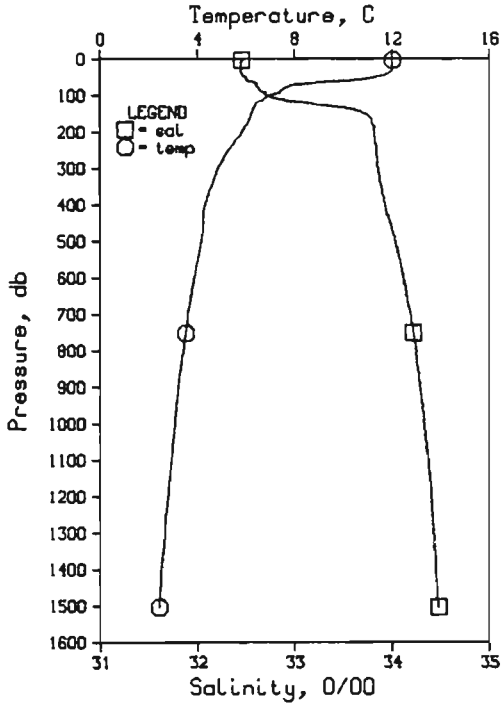


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 58 DATE 5/10/87
POSITION 48- 2.5N, 140- 8.2W GMT 2:38 STATION 0S09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.84	32.46	0	24.67	328.0	0.00	0.00	1494.
10	11.84	32.46	10	24.67	328.1	0.33	0.02	1494.
20	11.82	32.46	20	24.67	328.4	0.66	0.07	1494.
30	11.83	32.46	30	24.67	328.7	0.99	0.15	1494.
50	11.22	32.47	50	24.79	317.5	1.64	0.42	1492.
75	7.76	32.60	75	25.45	255.3	2.36	0.87	1480.
100	6.76	32.78	99	25.72	229.1	2.96	1.41	1477.
125	6.23	33.44	124	26.32	173.1	3.46	1.97	1476.
150	6.20	33.72	149	26.54	152.7	3.86	2.54	1477.
175	6.14	33.80	174	26.61	145.9	4.23	3.15	1477.
200	5.92	33.83	199	26.66	141.6	4.59	3.84	1476.
225	5.59	33.83	223	26.70	138.0	4.94	4.60	1476.
250	5.32	33.83	248	26.73	134.9	5.28	5.42	1475.
300	4.87	33.84	298	26.80	129.1	5.94	7.26	1474.
400	4.28	33.91	397	26.91	118.6	7.18	11.67	1473.
500	4.15	34.03	496	27.02	109.0	8.31	16.87	1474.
600	3.88	34.11	595	27.12	100.7	9.36	22.74	1475.
800	3.42	34.24	793	27.27	87.4	11.24	36.11	1476.
1000	3.02	34.33	991	27.37	77.9	12.89	51.20	1478.
1200	2.72	34.40	1188	27.46	70.4	14.37	67.78	1480.
1500	2.35	34.47	1484	27.54	62.7	16.37	95.24	1484.

DEEPEST MEASUREMENT:

1511	2.34	34.48	1495	27.55	62.4	16.43	96.29	1484.

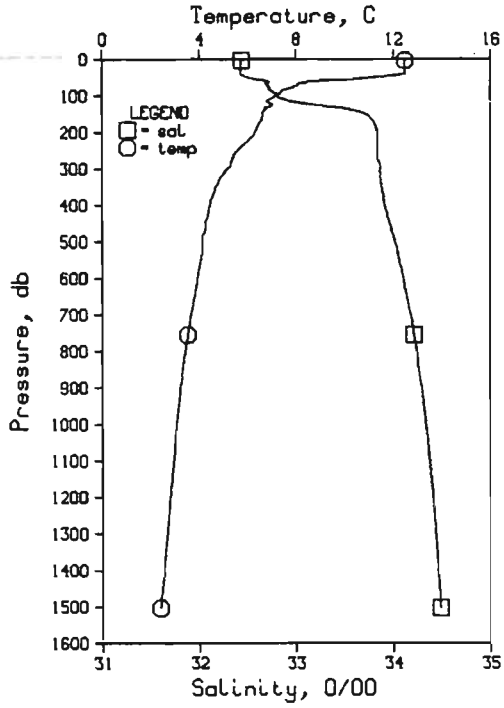


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 59 DATE 5/10/87
POSITION 48- 2.4N, 139-20.3W GMT 6:44 STATION OS10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.00	32.45	0	24.64	331.3	0.00	0.00	1494.
10	12.00	32.45	10	24.64	331.5	0.33	0.02	1494.
20	12.00	32.45	20	24.63	332.0	0.66	0.07	1495.
30	11.98	32.45	30	24.64	331.9	1.00	0.15	1495.
50	11.27	32.49	50	24.80	316.5	1.65	0.42	1493.
75	7.77	32.61	75	25.46	254.3	2.36	0.87	1480.
100	7.03	32.71	99	25.64	237.5	2.98	1.42	1478.
125	6.38	33.22	124	26.12	191.6	3.53	2.04	1476.
150	6.23	33.71	149	26.53	153.7	3.95	2.63	1477.
175	6.09	33.79	174	26.61	145.9	4.32	3.24	1477.
200	5.85	33.82	199	26.66	141.3	4.68	3.93	1476.
225	5.54	33.82	224	26.70	137.8	5.03	4.69	1475.
250	5.27	33.83	248	26.74	133.9	5.36	5.51	1475.
300	4.84	33.85	298	26.81	128.0	6.02	7.34	1474.
400	4.30	33.92	397	26.92	117.8	7.25	11.72	1473.
500	4.14	34.03	496	27.02	109.2	8.38	16.91	1474.
600	3.86	34.11	595	27.12	100.5	9.43	22.76	1475.
800	3.40	34.25	793	27.27	87.0	11.29	36.03	1476.
1000	3.05	34.33	991	27.37	78.3	12.94	51.15	1478.
1200	2.75	34.40	1188	27.45	71.0	14.44	67.86	1480.
1500	2.39	34.47	1484	27.54	63.6	16.45	95.48	1484.

DEEPEST MEASUREMENT:

1504	2.38	34.47	1488	27.54	63.0	16.47	95.87	1484.

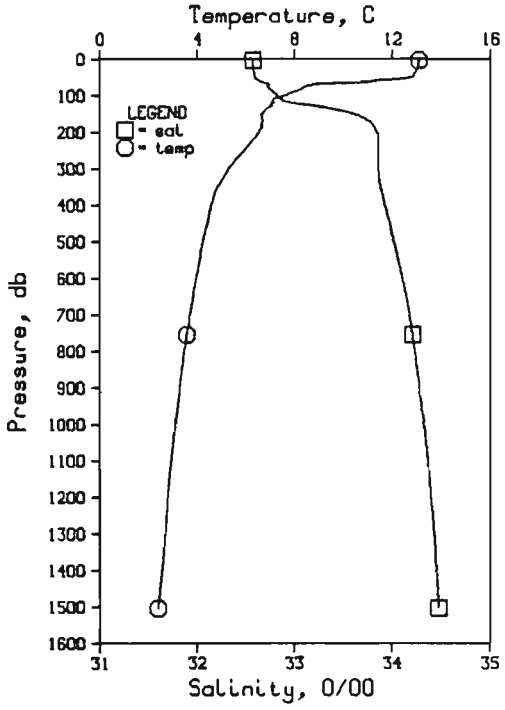


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 60 DATE 5/10/87
POSITION 48- 2.4N, 138-31.8W GMT 20:13 STATION OS11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.45	32.43	0	24.54	340.9	0.00	0.00	1496.
10	12.45	32.43	10	24.54	341.1	0.34	0.02	1496.
20	12.45	32.43	20	24.53	341.6	0.68	0.07	1496.
30	12.45	32.43	30	24.53	341.8	1.02	0.16	1496.
50	11.08	32.50	50	24.84	312.7	1.70	0.43	1492.
75	7.91	32.71	75	25.52	248.7	2.37	0.85	1481.
100	7.13	32.80	99	25.70	231.7	2.97	1.39	1478.
125	7.02	33.18	124	26.01	202.5	3.52	2.02	1479.
150	6.64	33.71	149	26.47	159.0	3.96	2.63	1478.
175	6.49	33.80	174	26.56	150.6	4.34	3.27	1478.
200	6.30	33.83	199	26.61	146.0	4.71	3.98	1478.
225	6.01	33.84	224	26.66	141.9	5.07	4.76	1477.
250	5.60	33.84	248	26.71	137.4	5.42	5.60	1476.
300	5.18	33.87	298	26.78	130.7	6.09	7.48	1475.
400	4.42	33.91	397	26.90	120.0	7.35	11.94	1474.
500	4.11	34.02	496	27.02	109.5	8.49	17.20	1474.
600	3.91	34.10	595	27.10	101.9	9.56	23.14	1475.
800	3.40	34.24	793	27.26	87.9	11.45	36.58	1476.
1000	3.03	34.34	991	27.36	77.6	13.10	51.71	1478.
1200	2.76	34.41	1188	27.45	70.7	14.59	68.36	1480.
1500	2.37	34.48	1484	27.55	62.3	16.58	95.77	1484.

DEEPEST MEASUREMENT:

1504	2.36	34.48	1488	27.55	62.1	16.61	96.15	1484.

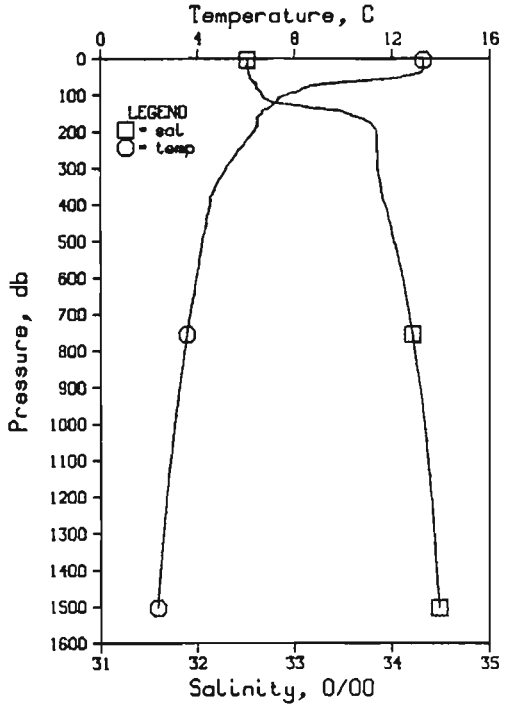


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 61 DATE 6/10/87
POSITION 47-30.0N, 138-32.0W GMT 1: 0 STATION OS17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.08	32.57	0	24.52	342.4	0.00	0.00	1498.
10	13.06	32.57	10	24.52	342.5	0.34	0.02	1498.
20	13.05	32.57	20	24.53	342.3	0.68	0.07	1498.
30	12.98	32.58	30	24.54	340.9	1.03	0.16	1498.
50	12.76	32.59	50	24.60	336.4	1.70	0.43	1498.
75	8.48	32.72	75	25.44	256.2	2.44	0.90	1483.
100	7.57	32.81	99	25.64	237.1	3.06	1.45	1480.
125	7.04	33.09	124	25.93	209.9	3.62	2.09	1479.
150	6.63	33.60	149	26.39	167.0	4.09	2.74	1478.
175	6.66	33.78	174	26.53	153.7	4.48	3.40	1479.
200	6.52	33.84	199	26.59	148.1	4.86	4.12	1479.
225	6.23	33.86	224	26.65	143.3	5.23	4.91	1478.
250	5.92	33.86	248	26.68	139.8	5.58	5.77	1477.
300	5.29	33.85	298	26.76	133.0	6.26	7.68	1476.
400	4.57	33.92	397	26.89	120.8	7.53	12.19	1474.
500	4.24	34.02	496	27.00	111.0	8.69	17.49	1475.
600	3.96	34.10	595	27.10	102.5	9.75	23.46	1475.
800	3.46	34.23	793	27.25	88.7	11.66	36.99	1477.
1000	3.09	34.32	991	27.36	79.6	13.33	52.36	1478.
1200	2.79	34.40	1188	27.45	71.5	14.83	69.16	1481.
1500	2.41	34.48	1484	27.55	62.8	16.85	96.85	1484.

DEEPEST MEASUREMENT:

1505	2.40	34.48	1489	27.54	63.0	16.88	97.33	1484.

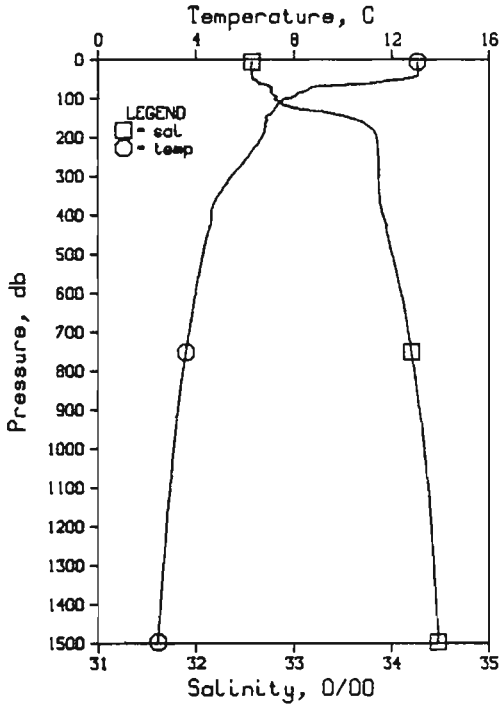


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 62 DATE 6/10/87
POSITION 46-57.3N, 138-32.3W GMT 5: 2 STATION OS23
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.27	32.51	0	24.44	350.3	0.00	0.00	1499.
10	13.26	32.51	10	24.44	350.1	0.35	0.02	1499.
20	13.26	32.51	20	24.44	350.8	0.70	0.07	1499.
30	13.25	32.51	30	24.44	350.3	1.05	0.16	1499.
50	12.37	32.53	50	24.63	333.3	1.74	0.44	1496.
75	8.61	32.60	75	25.33	266.9	2.49	0.91	1483.
100	7.60	32.66	99	25.52	248.6	3.13	1.49	1480.
125	7.13	32.91	124	25.78	223.9	3.73	2.17	1479.
150	6.65	33.54	149	26.34	171.6	4.22	2.85	1478.
175	6.44	33.76	174	26.54	152.4	4.62	3.52	1478.
200	6.32	33.84	199	26.62	145.8	4.99	4.23	1478.
225	5.98	33.85	224	26.67	141.3	5.35	5.00	1477.
250	5.67	33.84	248	26.70	137.9	5.70	5.85	1476.
300	5.15	33.85	298	26.77	132.0	6.37	7.74	1475.
400	4.51	33.93	397	26.90	119.8	7.63	12.21	1474.
500	4.19	34.02	496	27.01	110.3	8.78	17.47	1475.
600	3.95	34.11	595	27.11	101.8	9.84	23.40	1475.
800	3.46	34.23	793	27.25	88.7	11.73	36.90	1477.
1000	3.06	34.34	991	27.37	78.0	13.39	52.11	1478.
1200	2.72	34.40	1188	27.46	70.4	14.88	68.72	1480.
1500	2.36	34.49	1484	27.55	61.9	16.86	95.95	1484.

DEEPEST MEASUREMENT:

1504	2.35	34.49	1488	27.55	61.9	16.89	96.33	1484.

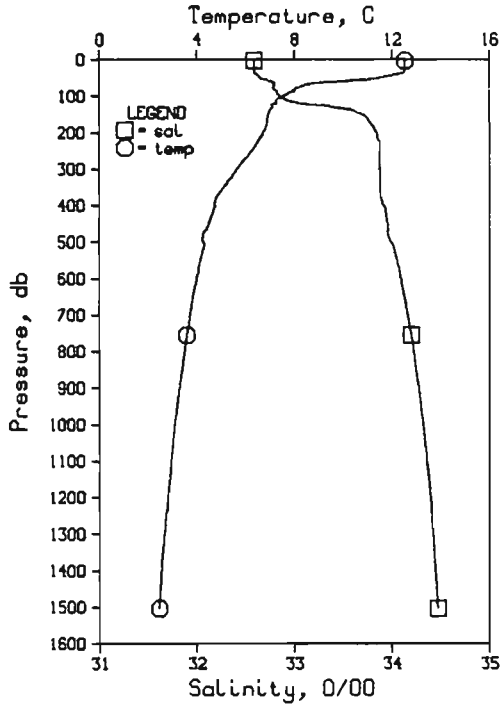


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 63 DATE 6/10/87
POSITION 46-57.7N, 139-21.7W GMT 8:56 STATION OS22
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.06	32.56	0	24.52	342.5	0.00	0.00	1498.
10	13.06	32.56	10	24.52	343.0	0.34	0.02	1498.
20	13.06	32.56	20	24.51	343.4	0.69	0.07	1498.
30	13.07	32.56	30	24.51	343.8	1.03	0.16	1499.
50	12.50	32.58	50	24.64	332.5	1.71	0.44	1497.
75	8.60	32.75	75	25.44	255.6	2.44	0.90	1484.
100	7.74	32.81	99	25.62	239.6	3.06	1.45	1481.
125	7.20	32.99	124	25.83	219.2	3.64	2.11	1479.
150	6.84	33.56	149	26.33	172.6	4.12	2.78	1479.
175	6.79	33.78	174	26.51	156.0	4.53	3.46	1479.
200	6.65	33.84	199	26.57	149.8	4.91	4.18	1479.
225	6.36	33.85	224	26.62	145.4	5.28	4.98	1479.
250	6.12	33.86	248	26.66	142.1	5.64	5.85	1478.
300	5.40	33.86	298	26.75	133.8	6.33	7.79	1476.
400	4.61	33.91	397	26.88	122.2	7.61	12.34	1474.
500	4.28	34.00	496	26.99	112.5	8.78	17.72	1475.
600	3.98	34.10	595	27.09	103.0	9.86	23.74	1475.
800	3.45	34.23	793	27.25	88.8	11.77	37.32	1477.
1000	3.08	34.33	991	27.37	78.3	13.43	52.56	1478.
1200	2.79	34.41	1188	27.45	70.9	14.92	69.23	1481.
1500	2.43	34.47	1484	27.54	63.4	16.93	96.79	1484.

DEEPEST MEASUREMENT:

1496	2.43	34.47	1480	27.54	63.4	16.91	96.40	1484.

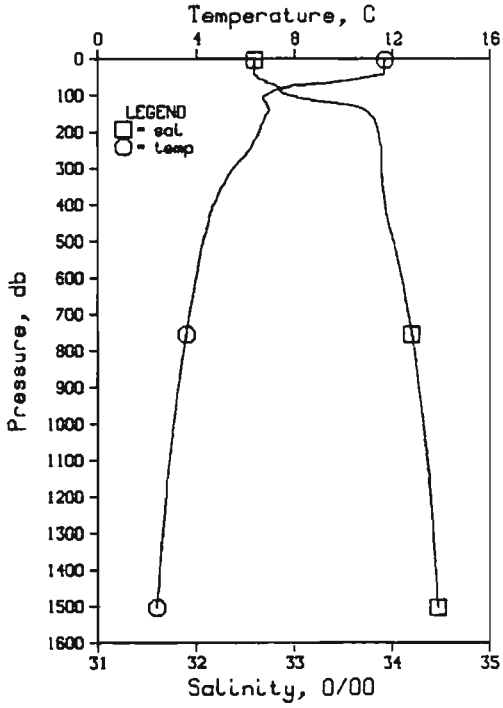


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 64 DATE 6/10/87
POSITION 46-57.6N, 140- 7.4W GMT 12:42 STATION OS21
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.52	32.58	0	24.64	330.9	0.00	0.00	1496.
10	12.51	32.58	10	24.64	331.0	0.33	0.02	1496.
20	12.51	32.58	20	24.64	331.3	0.66	0.07	1497.
30	12.51	32.59	30	24.64	331.3	0.99	0.15	1497.
50	11.48	32.64	50	24.88	309.3	1.64	0.42	1494.
75	8.21	32.78	75	25.53	247.8	2.32	0.84	1482.
100	7.55	32.85	99	25.67	234.1	2.92	1.38	1480.
125	7.05	33.20	124	26.02	201.5	3.48	2.02	1478.
150	6.92	33.68	149	26.41	164.5	3.93	2.64	1479.
175	6.84	33.78	174	26.50	156.7	4.33	3.30	1480.
200	6.70	33.83	199	26.56	150.9	4.71	4.04	1480.
225	6.49	33.87	224	26.62	146.1	5.08	4.84	1479.
250	6.26	33.87	248	26.65	143.4	5.44	5.72	1479.
300	5.62	33.87	298	26.73	136.0	6.14	7.67	1477.
400	4.73	33.92	397	26.87	123.0	7.44	12.29	1475.
500	4.25	33.99	496	26.98	113.2	8.62	17.70	1475.
600	3.98	34.09	595	27.09	103.5	9.70	23.75	1475.
800	3.49	34.22	793	27.24	89.9	11.63	37.45	1477.
1000	3.09	34.32	991	27.36	79.5	13.32	52.94	1478.
1200	2.82	34.40	1188	27.44	72.1	14.83	69.91	1481.
1500	2.43	34.47	1484	27.53	63.9	16.87	97.86	1484.

DEEPEST MEASUREMENT:

1505	2.42	34.47	1489	27.54	63.7	16.90	98.35	1484.

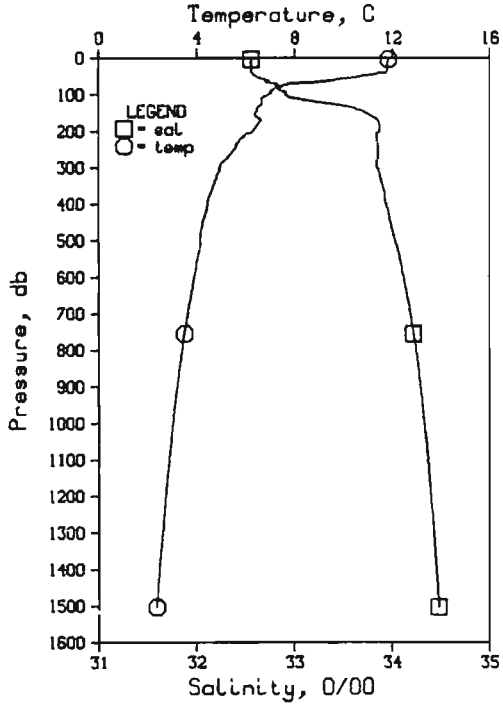


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 65 DATE 6/10/87
POSITION 46-57.5N, 140-54.8W GMT 16:53 STATION OS20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.65	32.58	0	24.80	315.4	0.00	0.00	1493.
10	11.65	32.58	10	24.80	315.9	0.32	0.02	1493.
20	11.64	32.58	20	24.80	316.2	0.63	0.06	1494.
30	11.64	32.58	30	24.80	316.5	0.95	0.15	1494.
50	11.02	32.61	50	24.94	303.5	1.58	0.40	1492.
75	7.84	32.80	75	25.60	241.1	2.26	0.84	1481.
100	6.80	32.92	99	25.83	218.8	2.84	1.35	1477.
125	6.83	33.49	124	26.28	177.1	3.34	1.92	1478.
150	6.85	33.75	149	26.48	158.2	3.75	2.49	1479.
175	6.67	33.82	174	26.56	151.3	4.13	3.13	1479.
200	6.52	33.84	199	26.59	147.9	4.51	3.84	1479.
225	6.31	33.86	224	26.64	144.1	4.87	4.63	1478.
250	6.12	33.88	248	26.68	140.5	5.23	5.50	1478.
300	5.48	33.88	298	26.75	133.8	5.91	7.42	1476.
400	4.67	33.92	397	26.88	121.8	7.19	11.96	1475.
500	4.25	34.01	496	27.00	111.6	8.36	17.33	1475.
600	3.97	34.10	595	27.09	103.0	9.43	23.34	1475.
800	3.47	34.22	793	27.25	89.4	11.35	36.97	1477.
1000	3.07	34.32	991	27.36	79.2	13.03	52.38	1478.
1200	2.75	34.39	1188	27.44	71.7	14.54	69.21	1480.
1500	2.38	34.47	1484	27.54	63.3	16.56	96.96	1484.

DEEPEST MEASUREMENT:

1505	2.38	34.47	1489	27.54	63.1	16.59	97.45	1484.

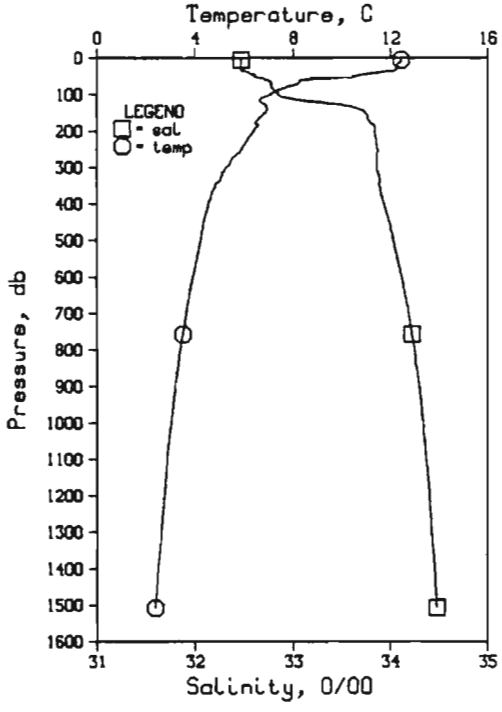


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 66 DATE 6/10/87
POSITION 47-30.0N, 140-55.5W GMT 21: 8 STATION OS14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.83	32.55	0	24.74	321.3	0.00	0.00	1494.
10	11.79	32.55	10	24.75	320.7	0.32	0.02	1494.
20	11.77	32.55	20	24.75	320.7	0.64	0.07	1494.
30	11.77	32.55	30	24.75	320.9	0.96	0.15	1494.
50	10.70	32.60	50	24.99	298.9	1.59	0.40	1491.
75	7.54	32.81	75	25.64	236.7	2.26	0.83	1480.
100	6.93	32.90	99	25.80	221.9	2.83	1.33	1478.
125	6.63	33.37	124	26.20	183.9	3.35	1.92	1477.
150	6.37	33.72	149	26.52	154.1	3.76	2.50	1477.
175	6.54	33.85	174	26.60	147.1	4.14	3.12	1479.
200	6.27	33.86	199	26.64	143.3	4.50	3.82	1478.
225	5.72	33.84	223	26.69	138.5	4.85	4.58	1476.
250	5.51	33.85	248	26.72	135.7	5.20	5.41	1476.
300	4.91	33.84	298	26.79	129.7	5.86	7.27	1474.
400	4.43	33.93	397	26.91	118.5	7.09	11.66	1474.
500	4.13	34.03	496	27.02	109.1	8.23	16.86	1474.
600	3.88	34.12	595	27.12	100.5	9.27	22.72	1475.
800	3.40	34.24	793	27.27	87.3	11.15	36.03	1476.
1000	3.03	34.33	991	27.37	77.9	12.79	51.09	1478.
1200	2.72	34.40	1188	27.45	70.6	14.28	67.72	1480.
1500	2.35	34.48	1484	27.55	62.3	16.27	95.09	1484.

DEEPEST MEASUREMENT:

1505	2.35	34.48	1489	27.55	62.2	16.30	95.55	1484.

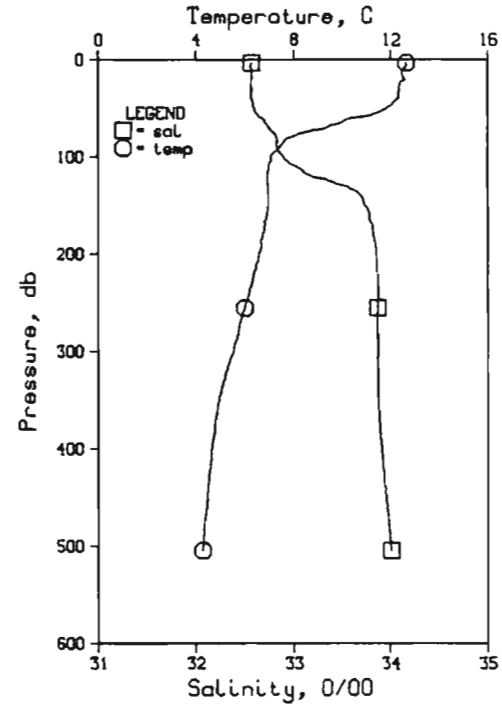


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 67 DATE 7/10/87
POSITION 47-30.9N, 140- 6.6W GMT 1:26 STATION OS15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.42	32.46	0	24.56	338.2	0.00	0.00	1496.
10	12.41	32.46	10	24.56	338.5	0.34	0.02	1496.
20	12.26	32.46	20	24.59	336.1	0.67	0.07	1495.
30	12.24	32.46	30	24.59	336.1	1.01	0.15	1496.
50	10.55	32.61	50	25.01	296.3	1.65	0.41	1490.
75	8.00	32.76	75	25.54	246.2	2.30	0.82	1481.
100	7.07	32.84	99	25.73	228.6	2.89	1.35	1478.
125	6.74	33.36	124	26.19	185.5	3.41	1.95	1478.
150	6.86	33.74	149	26.47	159.3	3.84	2.54	1479.
175	6.45	33.78	174	26.55	151.3	4.22	3.18	1478.
200	6.37	33.84	199	26.61	146.3	4.59	3.89	1478.
225	6.11	33.85	224	26.65	142.5	4.96	4.67	1478.
250	5.86	33.86	248	26.69	138.8	5.31	5.52	1477.
300	5.25	33.86	298	26.77	132.1	5.99	7.42	1475.
400	4.52	33.93	397	26.90	119.5	7.24	11.90	1474.
500	4.21	34.02	496	27.01	110.1	8.39	17.14	1475.
600	3.91	34.11	595	27.11	101.2	9.44	23.05	1475.
800	3.39	34.24	793	27.27	87.1	11.32	36.40	1476.
1000	3.04	34.33	991	27.37	78.2	12.97	51.48	1478.
1200	2.74	34.40	1188	27.45	71.0	14.45	68.15	1480.
1500	2.39	34.47	1484	27.54	63.2	16.47	95.79	1484.

DEEPEST MEASUREMENT:

1508	2.38	34.47	1492	27.54	63.1	16.52	96.56	1484.

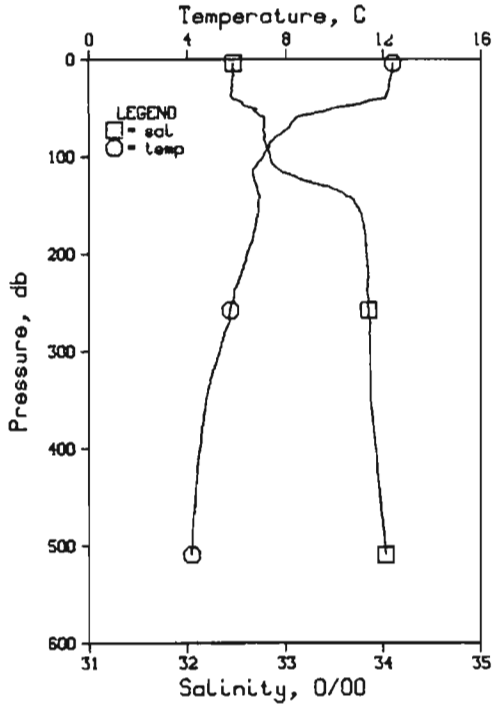


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 68 DATE 7/10/87
POSITION 47-30.2N, 139-43.3W GMT 3:46 STATION OS31
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.61	32.56	0	24.60	334.4	0.00	0.00	1497.
10	12.49	32.56	10	24.63	332.4	0.33	0.02	1496.
20	12.56	32.56	20	24.61	334.2	0.67	0.07	1497.
30	12.33	32.56	30	24.66	329.9	1.00	0.15	1496.
50	11.80	32.59	50	24.78	318.9	1.65	0.42	1495.
75	8.37	32.78	75	25.50	250.0	2.37	0.87	1483.
100	7.04	32.89	99	25.78	224.2	2.95	1.39	1478.
125	6.89	33.37	124	26.17	187.1	3.48	1.99	1478.
150	6.93	33.74	149	26.46	160.3	3.90	2.58	1480.
175	6.77	33.82	174	26.54	152.6	4.29	3.23	1479.
200	6.55	33.86	199	26.60	147.3	4.66	3.94	1479.
225	6.32	33.87	224	26.64	143.7	5.03	4.73	1479.
250	6.03	33.87	248	26.68	140.4	5.38	5.59	1478.
300	5.53	33.87	298	26.74	134.6	6.07	7.52	1477.
400	4.65	33.91	397	26.87	122.7	7.35	12.08	1475.
500	4.29	34.01	496	26.99	112.3	8.53	17.46	1475.

DEEPEST MEASUREMENT:

505	4.27	34.01	501	26.99	112.0	8.58	17.75	1475.

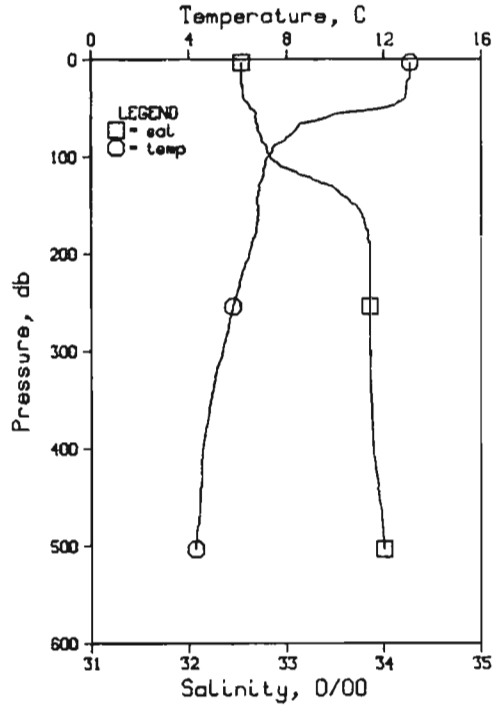


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 69 DATE 7/10/87
POSITION 47-46.2N, 139-20.0W GMT 5:59 STATION OS34
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	12.39	32.47	0	24.57	337.4	0.00	0.00	1496.
10	12.36	32.46	10	24.57	337.7	0.34	0.02	1496.
20	12.27	32.45	20	24.59	336.5	0.67	0.07	1496.
30	12.20	32.45	30	24.59	336.0	1.01	0.15	1495.
50	9.96	32.65	50	25.15	283.2	1.66	0.42	1488.
75	7.85	32.78	75	25.57	243.2	2.29	0.82	1481.
100	7.07	32.84	99	25.74	228.1	2.88	1.34	1478.
125	6.73	33.20	124	26.06	197.4	3.42	1.96	1478.
150	6.88	33.72	149	26.45	161.0	3.86	2.57	1479.
175	6.74	33.81	174	26.54	153.2	4.25	3.22	1479.
200	6.40	33.83	199	26.60	147.4	4.63	3.94	1478.
225	6.11	33.84	224	26.65	142.9	4.99	4.72	1478.
250	5.81	33.84	248	26.69	139.5	5.34	5.58	1477.
300	5.29	33.86	298	26.76	132.4	6.02	7.48	1476.
400	4.50	33.92	397	26.90	119.8	7.28	11.97	1474.
500	4.19	34.02	496	27.01	110.0	8.43	17.23	1474.

DEEPEST MEASUREMENT:

509	4.16	34.03	505	27.02	109.1	8.53	17.74	1475.

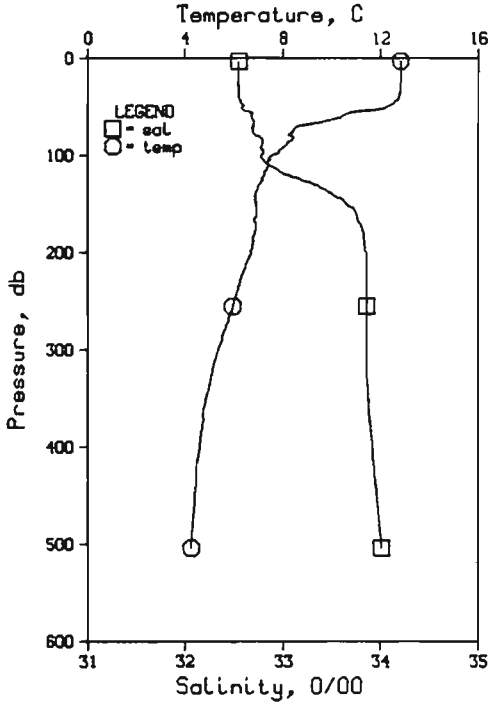


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 70 DATE 7/10/87
POSITION 47-30.0N, 138-56.1W GMT 8:14 STATION OS33
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	13.08	32.54	0	24.49	344.8	0.00	0.00	1498.
10	13.08	32.54	10	24.49	345.1	0.34	0.02	1498.
20	13.04	32.54	20	24.50	344.7	0.69	0.07	1498.
30	12.93	32.55	30	24.53	342.0	1.03	0.16	1498.
50	11.95	32.62	50	24.78	319.0	1.71	0.43	1495.
75	8.28	32.72	75	25.46	253.7	2.39	0.86	1482.
100	7.22	32.83	99	25.70	231.1	2.99	1.40	1479.
125	6.95	33.32	124	26.13	191.3	3.53	2.01	1479.
150	6.83	33.71	149	26.45	161.0	3.96	2.62	1479.
175	6.77	33.83	174	26.55	152.0	4.35	3.27	1479.
200	6.46	33.86	199	26.61	146.0	4.72	3.98	1479.
225	6.12	33.86	224	26.66	142.2	5.08	4.76	1478.
250	5.86	33.86	248	26.69	139.1	5.44	5.61	1477.
300	5.38	33.86	298	26.75	133.7	6.12	7.52	1476.
400	4.56	33.89	397	26.87	122.9	7.40	12.08	1474.
500	4.28	34.01	496	26.99	112.2	8.57	17.46	1475.

DEEPEST MEASUREMENT:

503	4.27	34.00	499	26.99	112.2	8.61	17.64	1475.

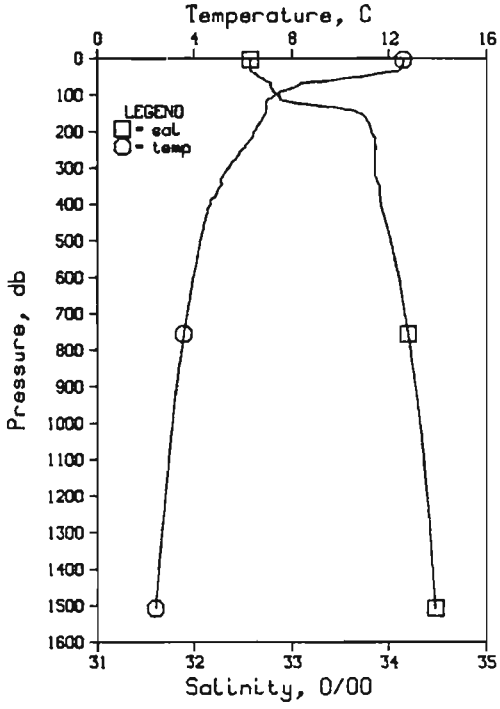


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 71 DATE 7/10/87
POSITION 47-13.8N, 139-20.0W GMT 10:50 STATION OS32
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.82	32.54	0	24.55	339.5	0.00	0.00	1497.
10	12.82	32.54	10	24.55	340.0	0.34	0.02	1497.
20	12.81	32.54	20	24.55	340.3	0.68	0.07	1497.
30	12.78	32.54	30	24.56	339.7	1.02	0.16	1498.
50	12.25	32.58	50	24.69	327.7	1.69	0.43	1496.
75	8.39	32.69	75	25.43	257.3	2.41	0.88	1483.
100	7.50	32.76	99	25.62	239.6	3.03	1.43	1480.
125	7.12	33.18	124	26.00	203.7	3.59	2.08	1479.
150	6.86	33.65	149	26.39	166.2	4.04	2.71	1479.
175	6.86	33.81	174	26.52	154.4	4.44	3.37	1480.
200	6.67	33.85	199	26.58	149.4	4.82	4.09	1479.
225	6.27	33.86	224	26.64	143.7	5.19	4.89	1478.
250	5.98	33.86	248	26.68	140.5	5.54	5.75	1478.
300	5.34	33.85	298	26.75	133.7	6.23	7.67	1476.
400	4.59	33.92	397	26.89	121.4	7.50	12.20	1474.
500	4.25	34.01	496	26.99	111.9	8.67	17.54	1475.

DEEPEST MEASUREMENT:

504	4.25	34.01	500	26.99	111.7	8.71	17.77	1475.

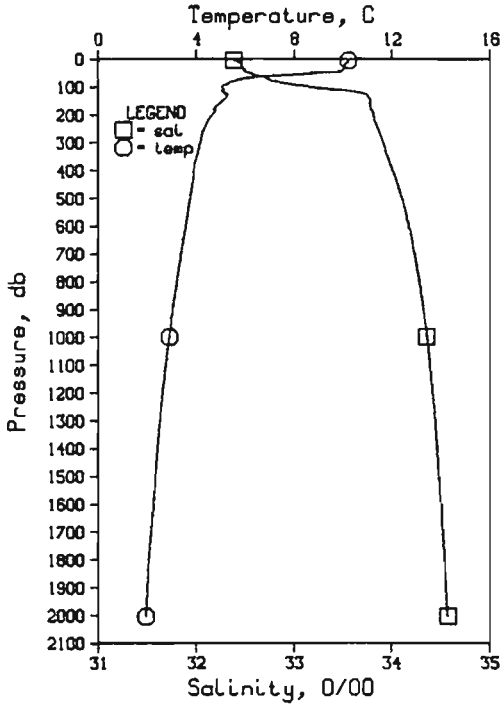


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 72 DATE 7/10/87
POSITION 47-30.0N, 139-20.0W GMT 12:48 STATION OS16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.58	32.57	0	24.62	333.2	0.00	0.00	1496.
10	12.58	32.57	10	24.62	333.4	0.33	0.02	1497.
20	12.54	32.57	20	24.63	332.7	0.67	0.07	1497.
30	12.47	32.57	30	24.64	331.9	1.00	0.15	1497.
50	10.97	32.65	50	24.98	300.1	1.63	0.41	1492.
75	8.21	32.78	75	25.53	247.9	2.30	0.83	1482.
100	7.35	32.85	99	25.71	230.8	2.90	1.37	1479.
125	6.93	33.11	124	25.96	206.8	3.46	2.01	1478.
150	6.90	33.69	149	26.42	163.8	3.91	2.64	1479.
175	6.68	33.78	174	26.53	154.0	4.31	3.29	1479.
200	6.43	33.82	199	26.59	148.6	4.68	4.01	1479.
225	6.24	33.85	224	26.64	143.8	5.05	4.81	1478.
250	5.94	33.86	248	26.68	140.0	5.40	5.66	1477.
300	5.40	33.85	298	26.74	134.4	6.09	7.59	1476.
400	4.66	33.92	397	26.88	122.1	7.37	12.14	1475.
500	4.24	34.02	496	27.00	110.9	8.53	17.47	1475.
600	3.95	34.10	595	27.10	102.5	9.60	23.46	1475.
800	3.47	34.22	793	27.24	89.8	11.52	37.12	1477.
1000	3.10	34.32	991	27.36	79.6	13.21	52.59	1479.
1200	2.80	34.39	1188	27.44	72.3	14.73	69.58	1481.
1500	2.41	34.47	1484	27.54	63.5	16.76	97.42	1484.

DEEPEST MEASUREMENT:

1507	2.40	34.47	1491	27.54	63.1	16.80	98.10	1484.

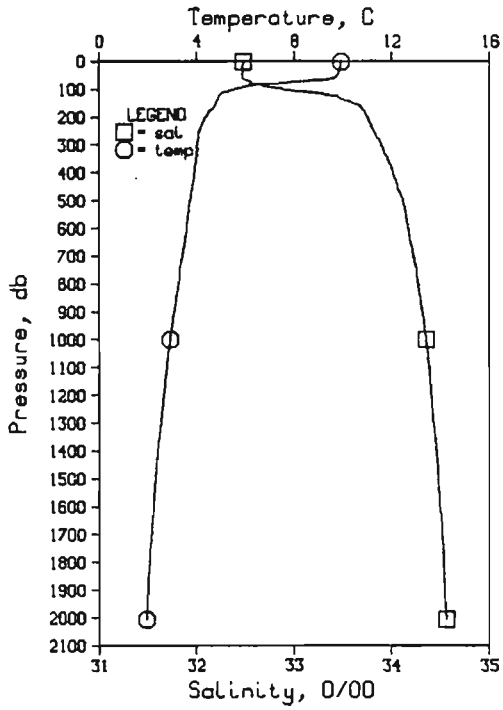


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 73 DATE 8/10/87
POSITION 49-59.3N, 145- 0.2W GMT 15:58 STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.19	32.38	0	24.90	306.0	0.00	0.00	1488.
10	10.19	32.42	10	24.94	302.9	0.31	0.02	1488.
20	10.05	32.45	20	24.98	298.9	0.61	0.06	1488.
30	10.00	32.47	30	25.00	297.3	0.90	0.14	1488.
50	8.89	32.54	50	25.24	275.1	1.49	0.38	1484.
75	5.67	32.74	75	25.83	218.1	2.10	0.76	1472.
100	5.05	33.15	99	26.23	181.0	2.60	1.21	1470.
125	5.21	33.71	124	26.65	141.1	3.00	1.66	1472.
150	5.05	33.77	149	26.72	135.0	3.34	2.14	1472.
175	4.80	33.78	174	26.76	131.4	3.67	2.69	1471.
200	4.64	33.81	199	26.79	128.1	4.00	3.31	1471.
225	4.45	33.82	223	26.83	125.2	4.31	4.00	1471.
250	4.32	33.85	248	26.86	121.9	4.62	4.74	1471.
300	4.17	33.91	298	26.92	116.5	5.22	6.41	1471.
400	3.89	34.01	397	27.03	107.1	6.33	10.39	1472.
500	3.74	34.10	496	27.12	99.2	7.37	15.11	1473.
600	3.56	34.17	595	27.20	92.7	8.32	20.47	1474.
800	3.19	34.28	793	27.32	82.0	10.06	32.86	1476.
1000	2.88	34.36	990	27.41	74.3	11.62	47.14	1478.
1200	2.62	34.42	1188	27.48	68.0	13.05	63.07	1480.
1500	2.32	34.48	1484	27.56	61.5	14.98	89.68	1484.
2000	1.93	34.57	1976	27.65	52.9	17.81	139.98	1490.

DEEPEST MEASUREMENT:

2004	1.93	34.57	1980	27.66	52.6	17.84	140.41	1490.

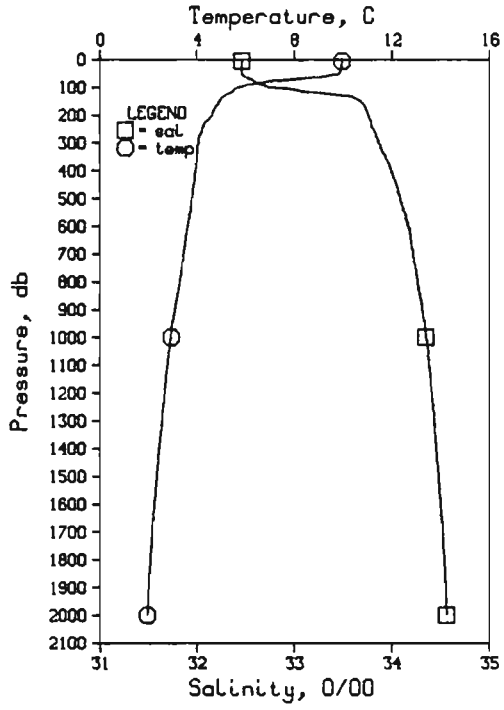


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 74 DATE 9/10/87
POSITION 50-54.1N, 143-34.5W GMT 1:57 STATION MP33
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.89	32.47	0	25.02	294.3	0.00	0.00	1487.
10	9.88	32.47	10	25.03	294.4	0.29	0.02	1487.
20	9.87	32.47	20	25.02	295.0	0.59	0.06	1487.
30	9.82	32.47	30	25.03	293.9	0.88	0.14	1487.
50	9.73	32.47	50	25.05	293.3	1.47	0.37	1487.
75	8.05	32.54	75	25.36	263.2	2.18	0.83	1481.
100	5.55	32.88	99	25.95	207.1	2.77	1.34	1472.
125	4.91	33.44	124	26.47	158.1	3.22	1.87	1471.
150	4.80	33.59	149	26.61	145.4	3.61	2.40	1471.
175	4.59	33.70	174	26.71	135.7	3.95	2.98	1470.
200	4.38	33.75	199	26.77	130.0	4.28	3.61	1470.
225	4.23	33.78	223	26.81	126.3	4.60	4.30	1470.
250	4.11	33.81	248	26.85	123.0	4.92	5.05	1470.
300	4.01	33.89	298	26.93	116.0	5.51	6.72	1470.
400	3.91	34.01	397	27.03	106.8	6.63	10.69	1472.
500	3.71	34.11	496	27.13	98.5	7.65	15.39	1473.
600	3.58	34.17	595	27.19	92.9	8.61	20.73	1474.
800	3.25	34.27	793	27.30	83.4	10.37	33.26	1476.
1000	2.92	34.35	990	27.40	75.1	11.95	47.75	1478.
1200	2.65	34.41	1188	27.47	69.3	13.39	63.87	1480.
1500	2.31	34.48	1483	27.55	61.6	15.35	90.73	1484.
2000	1.93	34.56	1976	27.65	53.2	18.20	141.50	1490.

DEEPEST MEASUREMENT:

2008	1.93	34.56	1983	27.65	53.4	18.25	142.37	1491.

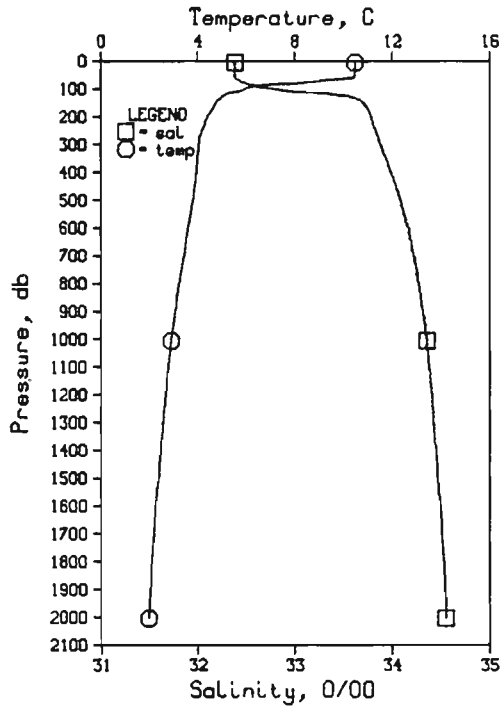


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 75 DATE 9/10/87
POSITION 50-55.5N, 143- 1.2W GMT 5: 0 STATION MR20
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.92	32.46	0	25.01	296.0	0.00	0.00	1487.
10	9.92	32.46	10	25.01	296.3	0.30	0.02	1487.
20	9.92	32.46	20	25.00	296.6	0.59	0.06	1487.
30	9.91	32.45	30	25.00	296.9	0.89	0.14	1487.
50	9.81	32.45	50	25.02	295.6	1.48	0.38	1487.
75	7.27	32.57	75	25.49	250.8	2.18	0.82	1478.
100	5.67	32.74	99	25.83	218.5	2.76	1.34	1472.
125	5.17	33.37	124	26.38	166.4	3.24	1.88	1472.
150	4.90	33.67	149	26.66	140.6	3.61	2.40	1471.
175	4.72	33.72	174	26.72	135.1	3.95	2.97	1471.
200	4.61	33.75	199	26.75	132.4	4.29	3.61	1471.
225	4.32	33.78	223	26.81	126.8	4.61	4.31	1470.
250	4.20	33.81	248	26.84	124.0	4.93	5.07	1470.
300	4.05	33.86	298	26.90	119.1	5.53	6.77	1470.
400	3.93	33.99	397	27.01	108.9	6.67	10.81	1472.
500	3.78	34.08	496	27.10	101.2	7.72	15.62	1473.
600	3.60	34.16	595	27.18	94.2	8.69	21.08	1474.
800	3.27	34.26	793	27.29	84.7	10.48	33.78	1476.
1000	2.91	34.34	990	27.39	75.8	12.07	48.37	1478.
1200	2.65	34.41	1188	27.47	69.3	13.52	64.53	1480.
1500	2.33	34.48	1484	27.55	62.3	15.49	91.62	1484.
2000	1.94	34.56	1976	27.65	53.7	18.36	142.72	1490.

DEEPEST MEASUREMENT:

2001	1.94	34.56	1977	27.65	53.7	18.37	142.82	1490.

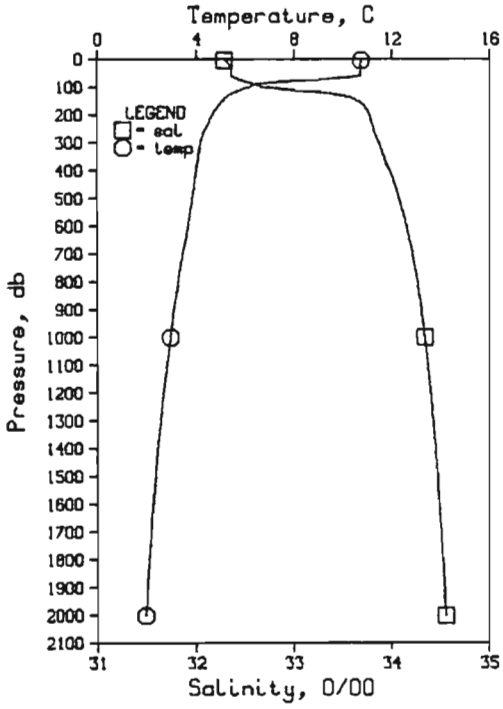


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 76 DATE 9/10/87
POSITION 50-58.0N, 142-20.0W GMT 8:33 STATION MR19
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.48	32.38	0	24.85	310.7	0.00	0.00	1489.
10	10.48	32.38	10	24.85	311.1	0.31	0.02	1489.
20	10.48	32.38	20	24.85	311.0	0.62	0.06	1489.
30	10.48	32.38	30	24.85	311.2	0.93	0.14	1489.
50	10.46	32.38	50	24.85	311.5	1.56	0.40	1490.
75	8.53	32.47	75	25.24	275.3	2.31	0.87	1483.
100	5.93	32.78	99	25.84	218.3	2.92	1.42	1473.
125	5.03	33.52	124	26.52	153.5	3.39	1.95	1471.
150	4.74	33.70	149	26.70	137.1	3.75	2.45	1471.
175	4.58	33.75	174	26.75	131.7	4.08	3.01	1470.
200	4.37	33.78	199	26.80	127.2	4.41	3.63	1470.
225	4.28	33.80	223	26.83	124.9	4.72	4.31	1470.
250	4.16	33.83	248	26.86	121.7	5.03	5.06	1470.
300	4.04	33.87	298	26.91	117.8	5.63	6.73	1470.
400	3.94	33.98	397	27.01	109.5	6.76	10.77	1472.
500	3.80	34.08	496	27.10	101.4	7.81	15.58	1473.
600	3.59	34.17	595	27.19	93.6	8.79	21.05	1474.
800	3.22	34.28	793	27.31	83.0	10.56	33.65	1476.
1000	2.89	34.35	990	27.40	75.0	12.14	48.12	1478.
1200	2.65	34.40	1188	27.46	69.5	13.59	64.33	1480.
1500	2.36	34.47	1484	27.54	63.0	15.58	91.66	1484.
2000	1.96	34.55	1976	27.64	54.4	18.49	143.36	1491.

DEEPEST MEASUREMENT:

2004	1.96	34.55	1979	27.64	54.4	18.51	143.80	1491.

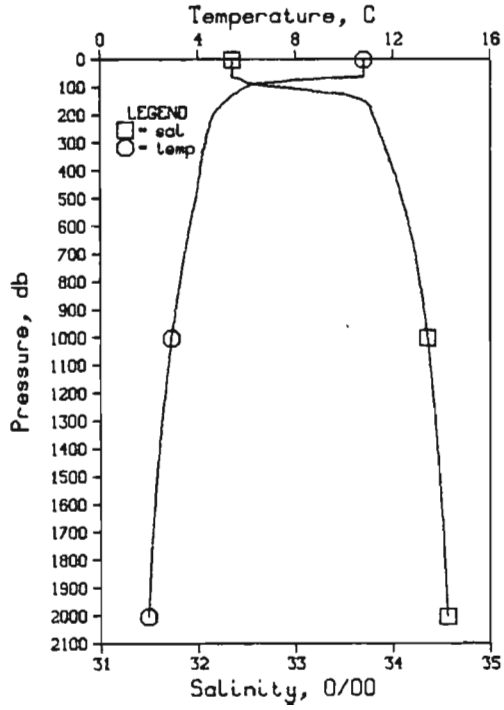


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 77 DATE 9/10/87
POSITION 51- 0.1N, 141-39.7W GMT 12:30 STATION MR18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.74	32.28	0	24.73	322.1	0.00	0.00	1490.
10	10.74	32.31	10	24.75	320.3	0.32	0.02	1490.
20	10.71	32.33	20	24.78	318.4	0.64	0.07	1490.
30	10.71	32.35	30	24.79	317.0	0.96	0.15	1490.
50	10.70	32.36	50	24.80	317.2	1.59	0.40	1490.
75	8.63	32.45	75	25.20	278.7	2.36	0.89	1483.
100	6.18	32.65	99	25.70	230.8	2.98	1.44	1474.
125	5.39	33.37	124	26.36	168.8	3.48	2.01	1472.
150	5.09	33.63	149	26.60	145.8	3.87	2.55	1472.
175	4.84	33.72	174	26.71	136.3	4.22	3.13	1471.
200	4.66	33.77	199	26.76	131.3	4.55	3.77	1471.
225	4.51	33.79	223	26.79	128.3	4.88	4.47	1471.
250	4.37	33.81	248	26.82	125.7	5.19	5.24	1471.
300	4.16	33.87	298	26.89	119.5	5.81	6.96	1471.
400	3.97	33.97	397	26.99	110.6	6.96	11.06	1472.
500	3.83	34.07	496	27.09	102.4	8.02	15.92	1473.
600	3.64	34.15	595	27.17	95.5	9.01	21.46	1474.
800	3.25	34.27	793	27.30	83.9	10.80	34.16	1476.
1000	2.95	34.34	990	27.39	76.4	12.40	48.82	1478.
1200	2.66	34.40	1188	27.46	70.0	13.86	65.20	1480.
1500	2.32	34.47	1484	27.55	62.3	15.84	92.36	1484.
2000	1.93	34.56	1976	27.65	53.4	18.73	143.75	1490.

DEEPEST MEASUREMENT:

2002	1.93	34.56	1978	27.65	53.6	18.74	143.97	1490.

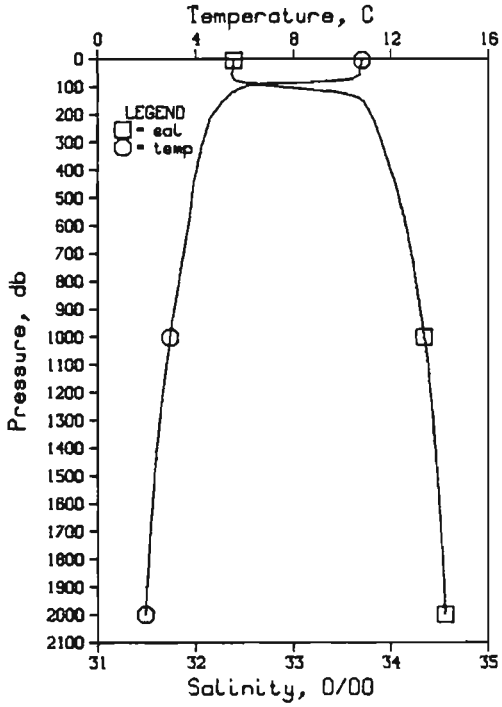


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 78 DATE 9/10/87
POSITION 51- 2.0N, 140-56.0W GMT 17: 5 STATION MR17
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.79	32.35	0	24.77	318.3	0.00	0.00	1490.
10	10.80	32.35	10	24.77	318.5	0.32	0.02	1490.
20	10.79	32.35	20	24.77	318.8	0.64	0.06	1490.
30	10.79	32.35	30	24.77	319.0	0.96	0.15	1490.
50	10.79	32.35	50	24.77	319.2	1.59	0.41	1491.
75	8.00	32.46	75	25.30	269.0	2.36	0.89	1481.
100	5.96	32.81	99	25.85	216.7	2.97	1.44	1474.
125	5.50	33.42	124	26.39	166.0	3.45	1.98	1473.
150	5.14	33.69	149	26.64	142.1	3.83	2.51	1472.
175	4.86	33.77	174	26.74	133.2	4.17	3.07	1472.
200	4.61	33.79	199	26.79	129.0	4.50	3.70	1471.
225	4.50	33.82	223	26.82	126.2	4.82	4.39	1471.
250	4.44	33.85	248	26.85	123.1	5.13	5.14	1471.
300	4.29	33.91	298	26.91	118.0	5.73	6.83	1472.
400	4.09	34.00	397	27.01	109.6	6.87	10.88	1472.
500	3.90	34.09	496	27.09	102.0	7.92	15.70	1473.
600	3.65	34.16	595	27.18	94.5	8.90	21.19	1474.
800	3.25	34.27	793	27.31	83.3	10.67	33.75	1476.
1000	2.90	34.36	990	27.40	74.7	12.24	48.19	1478.
1200	2.64	34.41	1188	27.47	69.0	13.68	64.28	1480.
1500	2.29	34.48	1484	27.56	61.2	15.63	91.00	1484.
2000	1.93	34.56	1976	27.64	53.8	18.48	141.81	1490.

DEEPEST MEASUREMENT:

2005	1.93	34.56	1980	27.65	53.4	18.51	142.36	1490.

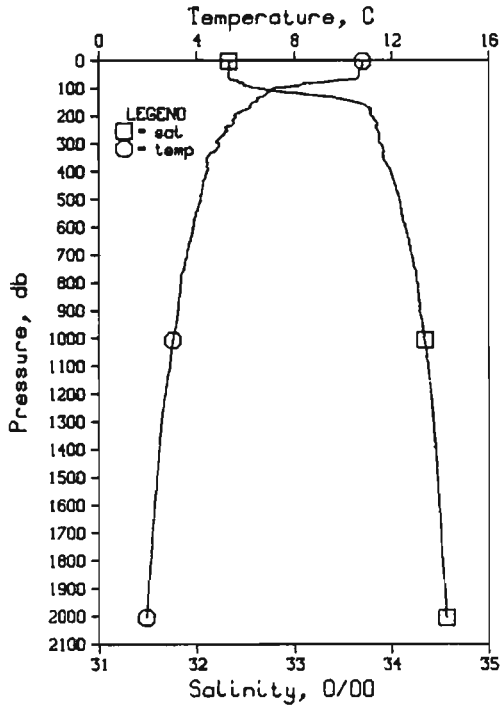


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 79 DATE 10/10/87
POSITION 51- 3.9N, 140-14.2W GMT 5:44 STATION MR16
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.78	32.38	0	24.80	315.4	0.00	0.00	1490.
10	10.78	32.38	10	24.80	315.7	0.32	0.02	1490.
20	10.75	32.38	20	24.80	315.7	0.63	0.06	1490.
30	10.72	32.38	30	24.81	315.5	0.95	0.14	1490.
50	10.71	32.36	50	24.80	316.8	1.58	0.40	1490.
75	10.15	32.40	75	24.92	305.7	2.36	0.90	1489.
100	5.98	32.85	99	25.88	214.2	3.01	1.47	1474.
125	5.41	33.50	124	26.46	158.9	3.47	1.99	1473.
150	5.11	33.70	149	26.65	141.2	3.84	2.51	1472.
175	4.88	33.75	174	26.72	134.6	4.18	3.08	1472.
200	4.68	33.79	199	26.77	130.2	4.51	3.71	1471.
225	4.53	33.83	223	26.82	125.8	4.83	4.40	1471.
250	4.45	33.85	248	26.85	123.3	5.14	5.16	1471.
300	4.28	33.90	298	26.91	118.1	5.75	6.85	1471.
400	4.03	33.99	397	27.00	109.7	6.88	10.90	1472.
500	3.83	34.08	496	27.10	101.5	7.94	15.72	1473.
600	3.69	34.15	595	27.16	96.0	8.92	21.25	1474.
800	3.31	34.25	793	27.28	85.6	10.73	34.08	1476.
1000	2.95	34.34	990	27.39	76.4	12.34	48.82	1478.
1200	2.65	34.41	1188	27.47	69.0	13.79	65.07	1480.
1500	2.31	34.48	1484	27.55	61.7	15.75	91.98	1484.
2000	1.94	34.55	1976	27.64	54.0	18.62	143.08	1490.

DEEPEST MEASUREMENT:

2001	1.94	34.55	1977	27.64	54.0	18.63	143.19	1490.

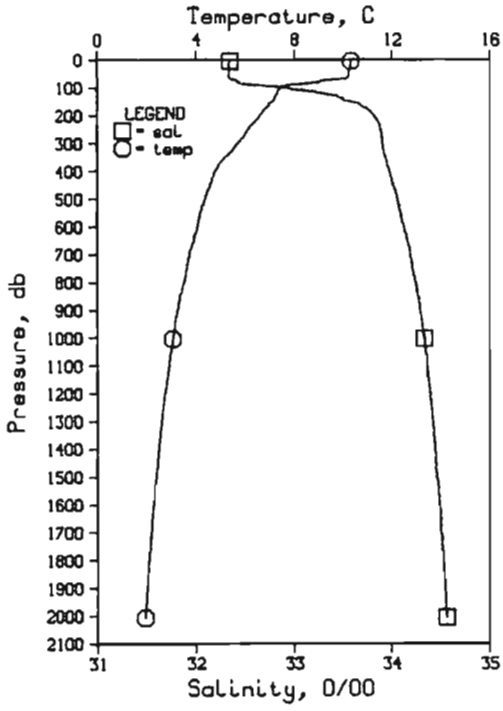


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 80 DATE 10/10/87
POSITION 51- 6.0N, 139-30.0W GMT 10:21 STATION MR15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.78	32.32	0	24.75	320.0	0.00	0.00	1490.
10	10.78	32.33	10	24.76	319.9	0.32	0.02	1490.
20	10.78	32.33	20	24.76	319.9	0.64	0.07	1490.
30	10.67	32.33	30	24.78	318.1	0.96	0.15	1490.
50	10.62	32.32	50	24.78	318.7	1.60	0.41	1490.
75	9.49	32.40	75	25.03	295.0	2.38	0.90	1486.
100	7.12	32.63	99	25.56	244.9	3.06	1.51	1478.
125	6.78	33.16	124	26.02	201.0	3.62	2.15	1478.
150	6.33	33.61	149	36.44	162.1	4.06	2.77	1477.
175	6.02	33.78	174	26.61	145.8	4.45	3.40	1476.
200	5.54	33.79	199	26.67	139.8	4.80	4.08	1475.
225	5.49	33.85	223	26.73	135.0	5.15	4.83	1475.
250	5.19	33.85	248	26.76	132.1	5.48	5.63	1474.
300	4.89	33.89	298	26.83	125.8	6.12	7.43	1474.
400	4.41	33.99	397	26.96	113.9	7.32	11.69	1474.
500	4.14	34.08	496	27.06	105.3	8.41	16.69	1474.
600	3.85	34.14	595	27.14	98.4	9.43	22.40	1475.
800	3.33	34.27	793	27.29	84.8	11.25	35.37	1476.
1000	3.02	34.33	990	27.37	77.7	12.89	50.32	1478.
1200	2.69	34.40	1188	27.46	70.0	14.35	66.76	1480.
1500	2.35	34.47	1484	27.54	63.3	16.33	93.92	1484.
2000	1.92	34.56	1976	27.65	53.2	19.23	145.40	1490.

DEEPEST MEASUREMENT:

2005	1.92	34.56	1981	27.65	53.2	19.26	145.95	1490.

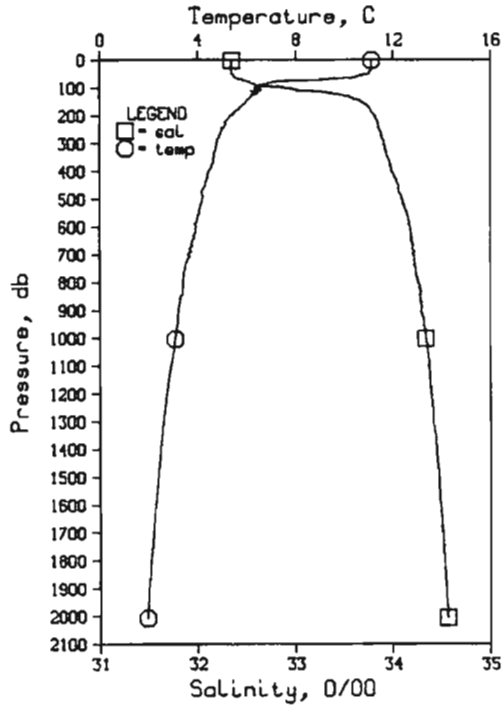


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 81 DATE 10/10/87
POSITION 51- 9.0N, 138-47.7W GMT 13:54 STATION MR14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.30	32.34	0	24.85	310.8	0.00	0.00	1488.
10	10.30	32.33	10	24.85	311.5	0.31	0.02	1488.
20	10.29	32.33	20	24.85	311.4	0.62	0.06	1488.
30	10.27	32.33	30	24.85	311.8	0.93	0.14	1488.
50	10.22	32.33	50	24.86	311.0	1.56	0.40	1489.
75	9.12	32.42	75	25.10	288.2	2.32	0.88	1485.
100	7.43	32.88	99	25.71	230.1	2.99	1.47	1480.
125	7.26	33.32	124	26.09	195.3	3.52	2.08	1480.
150	7.09	33.56	149	26.29	176.1	3.98	2.72	1480.
175	6.80	33.74	174	26.48	158.8	4.39	3.41	1479.
200	6.58	33.81	199	26.56	151.1	4.78	4.15	1479.
225	6.34	33.86	223	26.63	144.8	5.15	4.95	1479.
250	6.11	33.88	248	26.68	140.7	5.50	5.81	1478.
300	5.69	33.90	298	26.75	134.4	6.19	7.73	1477.
400	4.75	33.98	397	26.91	118.8	7.46	12.24	1475.
500	4.36	34.06	496	27.02	109.4	8.60	17.48	1475.
600	4.05	34.11	595	27.10	102.5	9.66	23.40	1476.
800	3.52	34.24	793	27.25	88.9	11.56	36.90	1477.
1000	3.07	34.33	990	27.37	78.3	13.22	52.12	1478.
1200	2.74	34.39	1188	27.45	71.5	14.73	68.97	1480.
1500	2.38	34.46	1484	27.53	63.7	16.75	96.76	1484.
2000	1.93	34.56	1976	27.65	53.4	19.66	148.42	1490.

DEEPEST MEASUREMENT:

2006	1.93	34.56	1982	27.65	53.3	19.69	149.08	1490.

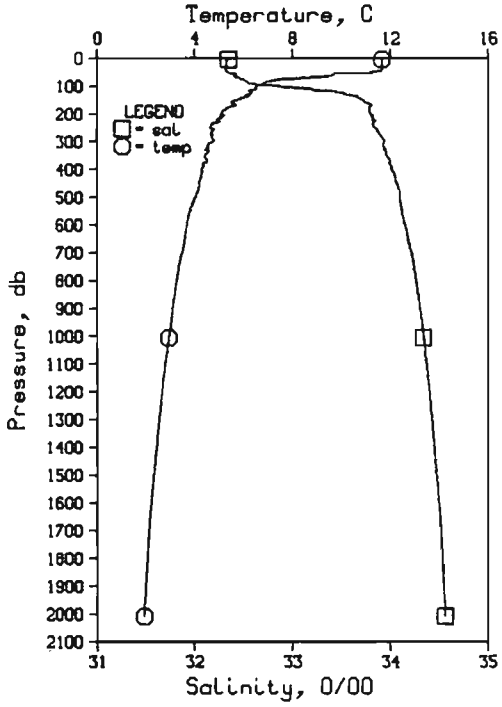


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 82 DATE 10/10/87
POSITION 51-11.0N, 138- 6.0W GMT 17:39 STATION MR13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.11	32.34	0	24.71	323.9	0.00	0.00	1491.
10	11.11	32.34	10	24.71	324.1	0.32	0.02	1491.
20	11.11	32.34	20	24.71	324.6	0.65	0.07	1491.
30	11.11	32.34	30	24.71	324.8	0.97	0.15	1491.
50	11.02	32.34	50	24.73	323.6	1.62	0.41	1492.
75	7.96	32.48	75	25.33	266.6	2.38	0.90	1481.
100	6.29	32.86	99	25.85	216.8	2.99	1.44	1475.
125	6.22	33.43	124	26.31	174.0	3.49	2.00	1476.
150	5.97	33.66	149	26.52	153.9	3.89	2.57	1476.
175	5.68	33.76	174	26.64	143.3	4.26	3.18	1475.
200	5.33	33.81	199	26.72	135.8	4.61	3.85	1474.
225	5.12	33.84	223	26.77	131.2	4.95	4.57	1474.
250	4.98	33.86	248	26.79	128.8	5.27	5.36	1473.
300	4.75	33.90	298	26.86	123.4	5.90	7.12	1473.
400	4.43	33.99	397	26.96	114.4	7.09	11.37	1474.
500	4.18	34.09	496	27.07	104.9	8.18	16.36	1475.
600	3.92	34.17	595	27.16	96.7	9.19	21.98	1475.
800	3.39	34.26	793	27.28	86.1	11.02	35.01	1476.
1000	3.08	34.33	990	27.37	78.4	12.66	50.04	1478.
1200	2.74	34.39	1188	27.45	71.5	14.16	66.78	1480.
1500	2.38	34.47	1484	27.54	62.9	16.17	94.37	1484.
2000	1.93	34.56	1976	27.65	53.7	19.07	145.93	1490.

DEEPEST MEASUREMENT:

2006	1.93	34.56	1981	27.65	53.4	19.10	146.58	1490.

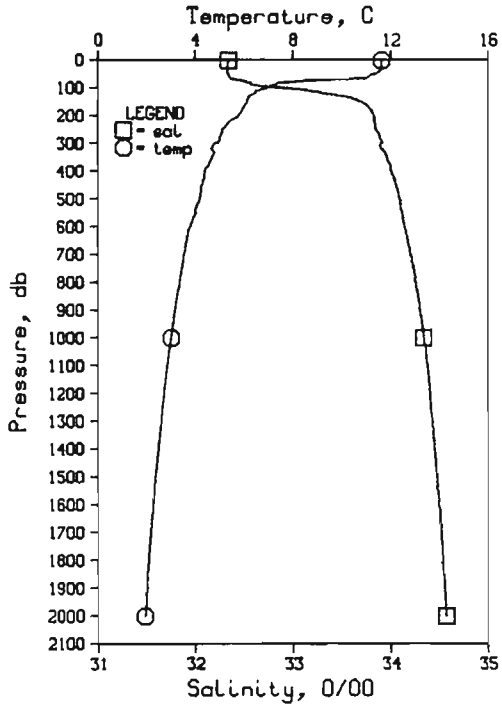


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 83 DATE 11/10/87
POSITION 51-13.0N, 137-23.0W GMT 0:37 STATION MR12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.64	32.34	0	24.62	333.1	0.00	0.00	1493.
10	11.65	32.32	10	24.60	334.8	0.33	0.02	1493.
20	11.65	32.32	20	24.60	335.2	0.67	0.07	1493.
30	11.65	32.32	30	24.60	335.5	1.00	0.15	1493.
50	11.32	32.33	50	24.67	329.2	1.67	0.43	1493.
75	7.76	32.49	75	25.36	263.3	2.41	0.89	1480.
100	6.54	32.83	99	25.80	222.0	3.03	1.44	1476.
125	6.27	33.48	124	26.34	170.9	3.52	2.00	1476.
150	5.73	33.71	149	26.59	147.5	3.91	2.55	1475.
175	5.45	33.79	174	26.69	138.5	4.27	3.14	1474.
200	5.07	33.79	199	26.73	134.5	4.61	3.79	1473.
225	4.99	33.84	223	26.78	129.9	4.94	4.51	1473.
250	4.63	33.83	248	26.81	126.9	5.26	5.28	1472.
300	4.74	33.94	298	26.88	120.6	5.88	7.01	1473.
400	4.27	34.01	397	26.99	111.1	7.04	11.14	1473.
500	4.05	34.10	496	27.09	103.0	8.11	16.03	1474.
600	3.70	34.15	595	27.16	96.0	9.10	21.60	1474.
800	3.27	34.26	793	27.30	84.3	10.90	34.38	1476.
1000	2.96	34.34	990	27.39	76.5	12.50	49.11	1478.
1200	2.67	34.40	1188	27.46	70.0	13.97	65.51	1480.
1500	2.32	34.48	1484	27.55	62.0	15.95	92.69	1484.
2000	1.93	34.56	1976	27.65	53.2	18.80	143.43	1490.

DEEPEST MEASUREMENT:

2010	1.92	34.56	1985	27.65	53.1	18.86	144.51	1491.

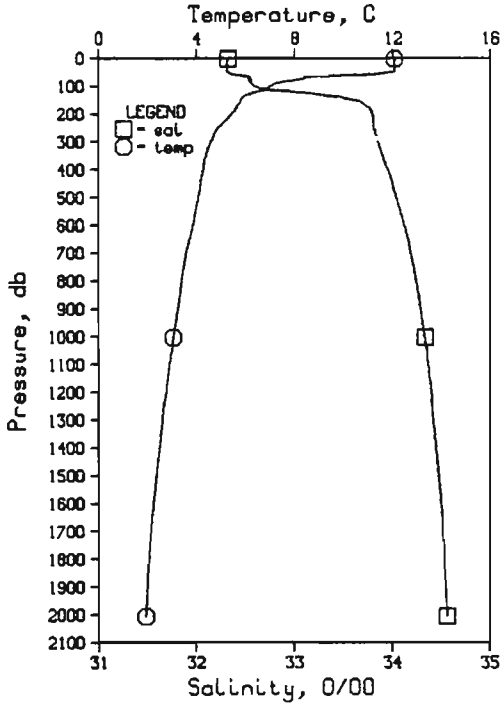


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 84 DATE 11/10/87
POSITION 51-15.0N, 136-40.3W GMT 5:16 STATION MR11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.60	32.33	0	24.62	333.1	0.00	0.00	1493.
10	11.60	32.33	10	24.61	333.6	0.33	0.02	1493.
20	11.60	32.33	20	24.61	334.0	0.67	0.07	1493.
30	11.61	32.32	30	24.61	334.6	1.00	0.15	1493.
50	11.38	32.33	50	24.65	330.7	1.67	0.42	1493.
75	8.72	32.46	75	25.20	278.8	2.46	0.93	1484.
100	6.91	32.85	99	25.76	225.9	3.09	1.49	1477.
125	6.30	33.38	124	26.26	178.4	3.58	2.05	1476.
150	6.09	33.67	149	26.52	154.5	3.99	2.62	1476.
175	5.93	33.78	174	26.62	145.0	4.37	3.24	1476.
200	5.73	33.83	199	26.68	139.3	4.72	3.92	1476.
225	5.36	33.83	223	26.73	134.9	5.06	4.66	1475.
250	5.09	33.84	248	26.77	131.2	5.40	5.47	1474.
300	4.80	33.89	298	26.84	124.5	6.04	7.26	1474.
400	4.39	34.00	397	26.98	112.7	7.23	11.49	1474.
500	4.18	34.08	496	27.06	105.3	8.31	16.47	1475.
600	3.79	34.14	595	27.15	97.6	9.33	22.15	1475.
800	3.35	34.25	793	27.28	86.1	11.15	35.13	1476.
1000	3.00	34.34	990	27.38	77.1	12.78	50.02	1478.
1200	2.70	34.40	1188	27.46	70.3	14.25	66.50	1480.
1500	2.34	34.47	1484	27.54	62.6	16.25	93.90	1484.
2000	1.92	34.57	1976	27.65	53.0	19.11	144.79	1490.

DEEPEST MEASUREMENT:

2002	1.92	34.57	1978	27.65	52.9	19.12	145.01	1490.

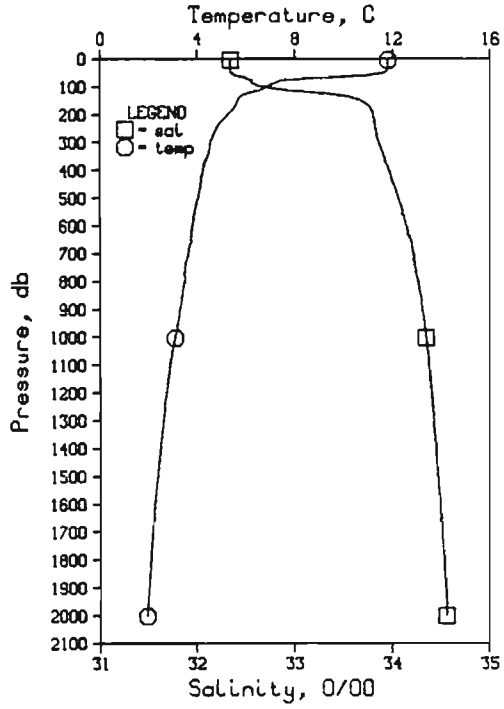


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 85 DATE 11/10/87
POSITION 51-17.0N, 135-57.6W GMT 9:10 STATION MR10
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.07	32.32	0	24.52	342.1	0.00	0.00	1494.
10	12.07	32.31	10	24.52	342.9	0.34	0.02	1494.
20	12.07	32.31	20	24.52	343.1	0.69	0.07	1495.
30	12.07	32.31	30	24.51	343.7	1.03	0.16	1495.
50	11.97	32.32	50	24.54	341.5	1.72	0.44	1495.
75	8.24	32.54	75	25.33	266.4	2.47	0.91	1482.
100	7.03	32.59	99	25.54	246.6	3.10	1.48	1478.
125	6.30	33.09	124	26.03	200.5	3.68	2.13	1476.
150	5.82	33.59	149	26.48	157.4	4.12	2.75	1475.
175	5.66	33.74	174	26.63	144.3	4.49	3.36	1475.
200	5.43	33.79	199	26.69	138.5	4.84	4.04	1474.
225	5.17	33.80	223	26.73	134.8	5.18	4.78	1474.
250	4.87	33.80	248	26.76	131.6	5.52	5.58	1473.
300	4.58	33.85	298	26.83	125.6	6.16	7.39	1473.
400	4.28	33.95	397	26.94	115.6	7.37	11.68	1473.
500	4.07	34.03	496	27.03	108.0	8.48	16.79	1474.
600	3.86	34.12	595	27.12	100.2	9.52	22.60	1475.
800	3.39	34.24	793	27.27	87.2	11.38	35.82	1476.
1000	3.06	34.33	990	27.37	78.6	13.04	50.98	1478.
1200	2.77	34.40	1188	27.45	71.1	14.53	67.69	1481.
1500	2.35	34.48	1484	27.55	62.3	16.53	95.21	1484.
2000	1.92	34.57	1976	27.65	53.0	19.39	145.97	1490.

DEEPEST MEASUREMENT:

2006	1.92	34.56	1981	27.65	53.1	19.42	146.62	1490.

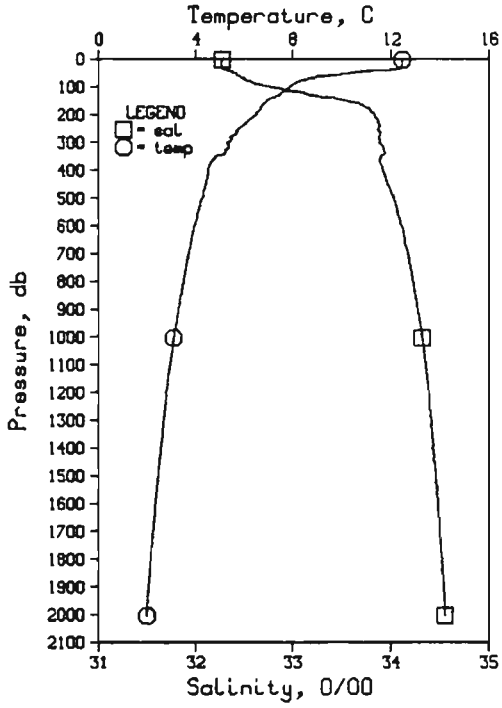


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 86 DATE 11/10/87
POSITION 52- 0.0N, 136- 0.0W GMT 14:46 STATION MOR2
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.79	32.35	0	24.59	335.4	0.00	0.00	1493.
10	11.79	32.34	10	24.59	336.0	0.34	0.02	1494.
20	11.78	32.34	20	24.59	336.3	0.67	0.07	1494.
30	11.79	32.34	30	24.59	336.3	1.01	0.15	1494.
50	11.65	32.35	50	24.62	334.0	1.68	0.43	1494.
75	7.88	32.52	75	25.37	262.6	2.44	0.91	1480.
100	6.82	32.67	99	25.63	238.2	3.06	1.46	1477.
125	6.05	33.31	124	26.24	180.5	3.60	2.07	1475.
150	5.67	33.67	149	26.56	150.0	4.00	2.64	1474.
175	5.51	33.77	174	26.66	140.7	4.36	3.24	1474.
200	5.25	33.79	199	26.71	136.2	4.71	3.90	1474.
225	4.97	33.81	223	26.76	132.2	5.04	4.62	1473.
250	4.80	33.82	248	26.79	129.4	5.37	5.41	1473.
300	4.55	33.85	298	26.84	124.7	6.01	7.19	1473.
400	4.26	33.96	397	26.96	114.2	7.20	11.45	1473.
500	4.04	34.05	496	27.05	106.3	8.30	16.48	1474.
600	3.81	34.14	595	27.14	97.9	9.31	22.16	1475.
800	3.49	34.27	793	27.28	86.3	11.15	35.20	1477.
1000	3.10	34.35	990	27.38	77.6	12.79	50.19	1479.
1200	2.74	34.41	1188	27.46	70.3	14.26	66.71	1480.
1500	2.37	34.47	1483	27.54	63.3	16.26	94.20	1484.
2000	1.93	34.56	1975	27.65	53.7	19.15	145.43	1490.

DEEPEST MEASUREMENT:

2002	1.93	34.56	1977	27.64	53.8	19.16	145.64	1490.

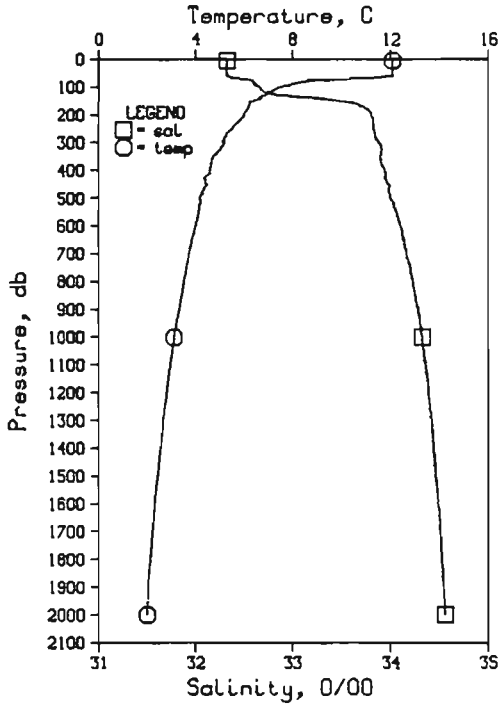


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 87 DATE 12/10/87
POSITION 51-19.0N, 135-15.0W GMT 5:30 STATION MR09
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.43	32.27	0	24.41	352.4	0.00	0.00	1496.
10	12.43	32.26	10	24.41	353.5	0.35	0.02	1496.
20	12.43	32.26	20	24.41	353.3	0.71	0.07	1496.
30	12.42	32.26	30	24.41	353.5	1.06	0.16	1496.
50	10.51	32.39	50	24.86	311.4	1.73	0.43	1490.
75	8.45	32.51	75	25.28	271.1	2.44	0.89	1483.
100	7.89	32.75	99	25.55	245.8	3.09	1.46	1481.
125	7.51	33.13	124	25.90	212.8	3.66	2.12	1481.
150	6.90	33.53	149	26.30	175.0	4.15	2.80	1479.
175	6.66	33.76	174	26.51	155.9	4.56	3.47	1479.
200	6.51	33.83	199	26.58	148.9	4.94	4.20	1479.
225	6.11	33.87	223	26.67	141.2	5.30	4.99	1478.
250	5.78	33.87	248	26.71	137.3	5.65	5.83	1477.
300	5.33	33.88	298	26.77	131.8	6.32	7.71	1476.
400	4.50	33.91	397	26.89	120.7	7.58	12.19	1474.
500	4.26	34.03	496	27.01	110.5	8.74	17.50	1475.
600	3.95	34.10	595	27.10	102.5	9.80	23.45	1475.
800	3.50	34.22	793	27.24	90.0	11.71	37.04	1477.
1000	3.09	34.32	990	27.36	79.6	13.41	52.54	1478.
1200	2.79	34.38	1188	27.44	72.6	14.93	69.59	1481.
1500	2.43	34.46	1484	27.52	64.8	17.00	97.86	1484.
2000	1.97	34.55	1976	27.64	54.6	19.97	150.75	1491.

DEEPEST MEASUREMENT:

2004	1.97	34.55	1980	27.64	54.6	19.99	151.20	1491.

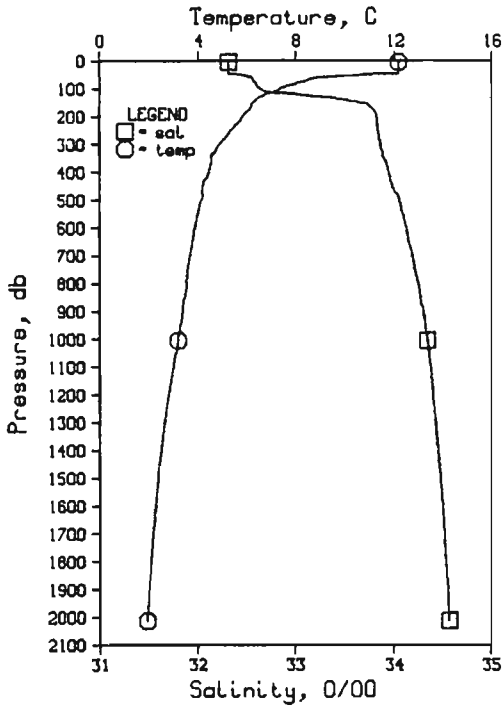


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 88 DATE 12/10/87
POSITION 51-21.2N, 134-32.7W GMT 9:18 STATION MR08
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.07	32.33	0	24.53	341.9	0.00	0.00	1494.
10	12.07	32.32	10	24.52	342.5	0.34	0.02	1494.
20	12.07	32.32	20	24.52	342.6	0.68	0.07	1495.
30	12.07	32.32	30	24.52	343.3	1.03	0.16	1495.
50	12.07	32.32	50	24.52	343.4	1.71	0.44	1495.
75	9.10	32.54	75	25.20	278.8	2.53	0.96	1485.
100	7.54	32.65	99	25.52	248.6	3.18	1.53	1480.
125	6.96	32.78	124	25.70	231.8	3.79	2.22	1478.
150	6.39	33.46	149	26.31	174.2	4.29	2.93	1477.
175	6.17	33.73	174	26.55	151.5	4.69	3.59	1477.
200	5.98	33.80	199	26.63	144.4	5.06	4.29	1477.
225	5.73	33.82	223	26.67	140.2	5.41	5.06	1476.
250	5.50	33.82	248	26.71	137.4	5.76	5.90	1476.
300	5.10	33.87	298	26.79	129.6	6.43	7.77	1475.
400	4.57	33.93	397	26.90	119.9	7.67	12.20	1474.
500	4.17	33.99	496	26.99	111.9	8.83	17.51	1474.
600	3.99	34.09	595	27.09	103.4	9.91	23.53	1475.
800	3.51	34.22	793	27.24	90.0	11.83	37.22	1477.
1000	3.10	34.32	990	27.36	79.7	13.53	52.73	1479.
1200	2.80	34.39	1188	27.44	72.5	15.05	69.77	1481.
1500	2.42	34.45	1484	27.52	64.9	17.10	97.90	1484.
2000	1.97	34.56	1976	27.64	54.3	20.04	150.15	1491.

DEEPEST MEASUREMENT:

2001	1.97	34.56	1977	27.64	54.3	20.04	150.26	1491.

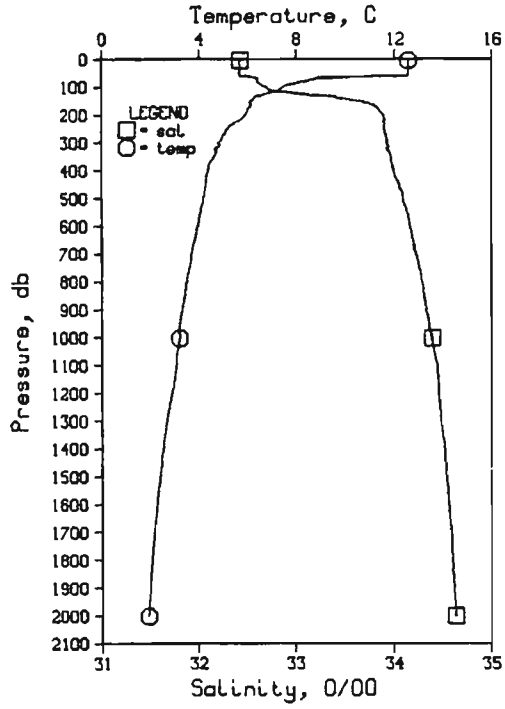


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 89 DATE 12/10/87
POSITION 51-23.5N, 133-49.6W GMT 12:53 STATION MR07
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.15	32.31	0	24.50	344.7	0.00	0.00	1495.
10	12.15	32.31	10	24.50	344.8	0.34	0.02	1495.
20	12.15	32.31	20	24.50	345.1	0.69	0.07	1495.
30	12.15	32.31	30	24.50	345.2	1.03	0.16	1495.
50	10.68	32.42	50	24.85	312.3	1.72	0.44	1490.
75	8.24	32.57	75	25.35	264.2	2.42	0.88	1482.
100	7.35	32.63	99	25.53	247.7	3.05	1.45	1479.
125	6.67	33.10	124	25.99	204.0	3.63	2.11	1477.
150	6.23	33.64	149	26.47	158.7	4.08	2.73	1477.
175	6.08	33.78	174	26.60	146.8	4.46	3.35	1477.
200	5.80	33.81	199	26.66	141.2	4.81	4.04	1476.
225	5.59	33.82	223	26.69	138.6	5.16	4.80	1475.
250	5.33	33.82	248	26.73	135.5	5.51	5.62	1475.
300	4.88	33.85	298	26.80	128.3	6.17	7.47	1474.
400	4.43	33.94	397	26.92	118.1	7.39	11.84	1474.
500	4.14	34.04	496	27.03	107.8	8.52	17.02	1474.
600	3.86	34.12	595	27.12	99.8	9.56	22.83	1475.
800	3.53	34.24	793	27.25	88.9	11.45	36.25	1477.
1000	3.17	34.33	990	27.36	79.6	13.13	51.61	1479.
1200	2.81	34.40	1188	27.45	71.6	14.64	68.51	1481.
1500	2.38	34.47	1484	27.54	62.9	16.65	96.19	1484.
2000	1.94	34.56	1976	27.65	53.3	19.54	147.53	1490.

DEEPEST MEASUREMENT:

2014	1.93	34.57	1989	27.65	53.0	19.62	149.05	1491.

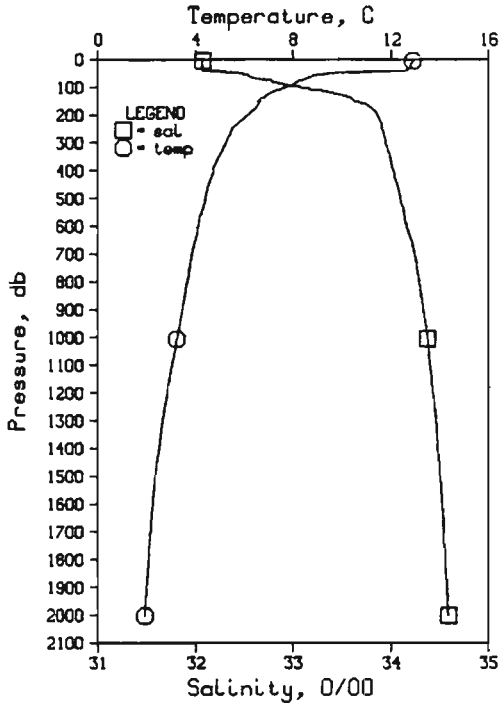


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 90 DATE 12/10/87
POSITION 51-25.5N, 133- 6.6W GMT 16:34 STATION MR06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.55	32.42	0	24.51	343.4	0.00	0.00	1496.
10	12.56	32.42	10	24.50	344.4	0.34	0.02	1496.
20	12.56	32.42	20	24.50	344.3	0.69	0.07	1496.
30	12.56	32.42	30	24.50	344.6	1.03	0.16	1497.
50	12.54	32.41	50	24.50	345.3	1.72	0.44	1497.
75	8.55	32.61	75	25.34	265.6	2.50	0.93	1483.
100	7.45	32.69	99	25.56	244.5	3.14	1.50	1479.
125	6.76	33.02	124	25.92	210.9	3.72	2.17	1478.
150	6.17	33.58	149	26.43	162.7	4.17	2.80	1476.
175	6.05	33.82	174	26.64	143.2	4.55	3.42	1477.
200	5.91	33.88	199	26.70	137.4	4.90	4.09	1477.
225	5.55	33.89	223	26.75	132.8	5.24	4.82	1475.
250	5.18	33.89	248	26.79	128.9	5.56	5.61	1474.
300	4.81	33.92	298	26.86	122.9	6.19	7.36	1474.
400	4.37	33.99	397	26.97	113.6	7.37	11.58	1474.
500	4.18	34.08	496	27.06	105.3	8.47	16.58	1475.
600	3.95	34.15	595	27.14	98.6	9.48	22.27	1475.
800	3.49	34.28	793	27.28	85.8	11.32	35.32	1477.
1000	3.23	34.38	990	27.40	76.2	12.93	50.12	1479.
1200	2.90	34.46	1188	27.48	68.5	14.38	66.25	1481.
1500	2.40	34.53	1484	27.59	58.7	16.28	92.33	1484.
2000	1.91	34.63	1976	27.70	48.3	18.92	139.24	1490.

DEEPEST MEASUREMENT:

2002	1.91	34.63	1977	27.71	48.1	18.93	139.44	1490.

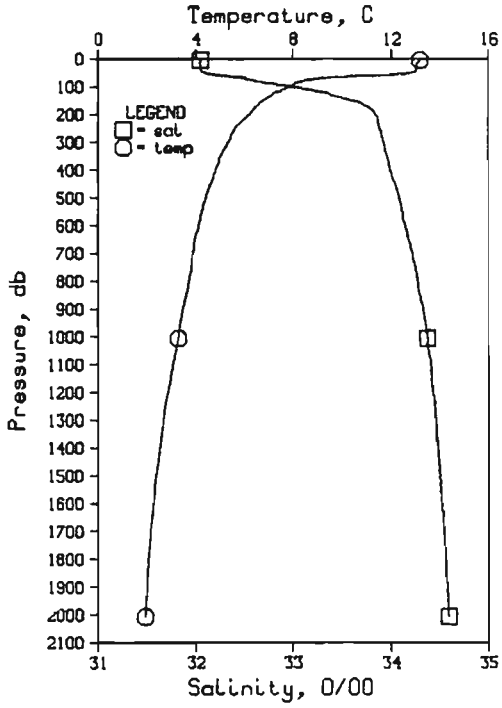


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 91 DATE 12/10/87
POSITION 51-27.5N, 132-24.0W GMT 20:44 STATION MJ05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.88	32.07	0	24.17	375.6	0.00	0.00	1497.
10	12.84	32.06	10	24.17	375.5	0.38	0.02	1497.
20	12.78	32.06	20	24.18	374.8	0.75	0.08	1497.
30	12.75	32.06	30	24.19	374.7	1.13	0.17	1497.
50	9.39	32.47	50	25.10	287.6	1.82	0.45	1486.
75	8.20	32.77	75	25.52	248.4	2.50	0.88	1482.
100	7.67	33.08	99	25.84	218.6	3.09	1.41	1481.
125	6.98	33.43	124	26.21	183.3	3.59	1.98	1479.
150	6.61	33.62	149	26.40	165.2	4.02	2.58	1478.
175	6.44	33.79	174	26.56	150.4	4.41	3.23	1478.
200	6.14	33.85	199	26.65	142.3	4.77	3.92	1477.
225	5.79	33.88	223	26.72	136.0	5.12	4.67	1476.
250	5.48	33.90	248	26.77	131.2	5.45	5.48	1476.
300	5.23	33.94	298	26.83	126.0	6.10	7.28	1475.
400	4.70	34.02	397	26.95	115.1	7.30	11.55	1475.
500	4.39	34.09	496	27.04	107.2	8.41	16.63	1475.
600	4.10	34.16	595	27.13	99.7	9.44	22.41	1476.
800	3.64	34.28	793	27.28	86.9	11.29	35.56	1477.
1000	3.23	34.37	990	27.38	77.6	12.93	50.60	1479.
1200	2.83	34.42	1188	27.46	70.3	14.40	67.06	1481.
1500	2.33	34.50	1484	27.57	60.3	16.35	93.72	1484.
2000	1.90	34.59	1976	27.67	51.2	19.12	143.02	1490.

DEEPEST MEASUREMENT:

2003	1.89	34.59	1978	27.67	51.0	19.13	143.33	1490.

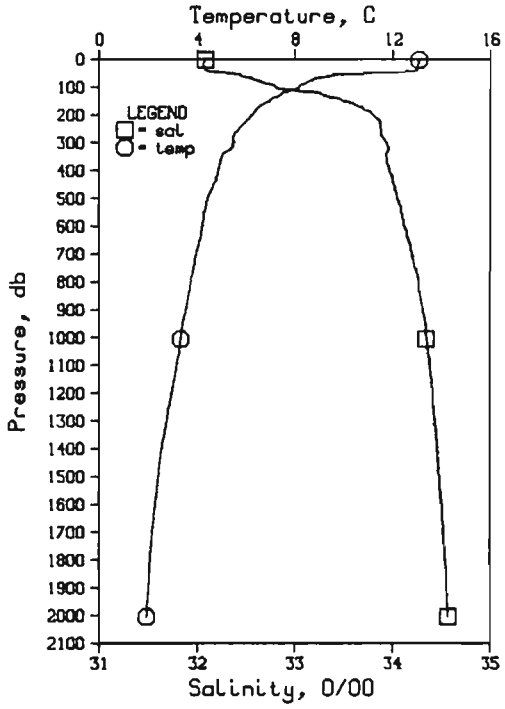


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 92 DATE 13/10/87
POSITION 51-35.5N, 132- 7.0W GMT 0: 0 STATION MJ04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.15	32.04	0	24.10	382.3	0.00	0.00	1498.
10	13.14	32.04	10	24.10	382.8	0.38	0.02	1498.
20	13.02	32.04	20	24.12	380.5	0.76	0.08	1498.
30	13.00	32.04	30	24.13	380.5	1.14	0.17	1498.
50	12.78	32.10	50	24.21	372.6	1.90	0.48	1497.
75	8.69	32.51	75	25.25	274.5	2.70	0.99	1484.
100	7.88	32.95	99	25.70	231.3	3.33	1.54	1481.
125	7.17	33.36	124	26.12	191.5	3.85	2.14	1480.
150	6.76	33.58	149	26.36	169.6	4.31	2.78	1479.
175	6.42	33.77	174	26.55	151.6	4.71	3.44	1478.
200	6.21	33.83	199	26.62	144.9	5.08	4.14	1478.
225	5.89	33.86	223	26.69	138.8	5.43	4.91	1477.
250	5.59	33.88	248	26.74	134.5	5.77	5.73	1476.
300	5.29	33.92	298	26.81	128.3	6.43	7.57	1476.
400	4.80	33.99	397	26.92	118.6	7.66	11.96	1475.
500	4.37	34.07	496	27.03	108.1	8.79	17.14	1475.
600	4.09	34.14	595	27.12	100.9	9.83	22.99	1476.
800	3.69	34.27	793	27.26	88.5	11.72	36.40	1478.
1000	3.28	34.37	990	27.38	78.0	13.38	51.60	1479.
1200	2.84	34.43	1188	27.47	69.8	14.86	68.12	1481.
1500	2.35	34.50	1484	27.56	61.0	16.81	94.91	1484.
2000	1.91	34.58	1976	27.67	51.6	19.59	144.26	1490.

DEEPEST MEASUREMENT:

2006	1.91	34.59	1981	27.67	51.3	19.62	144.89	1490.

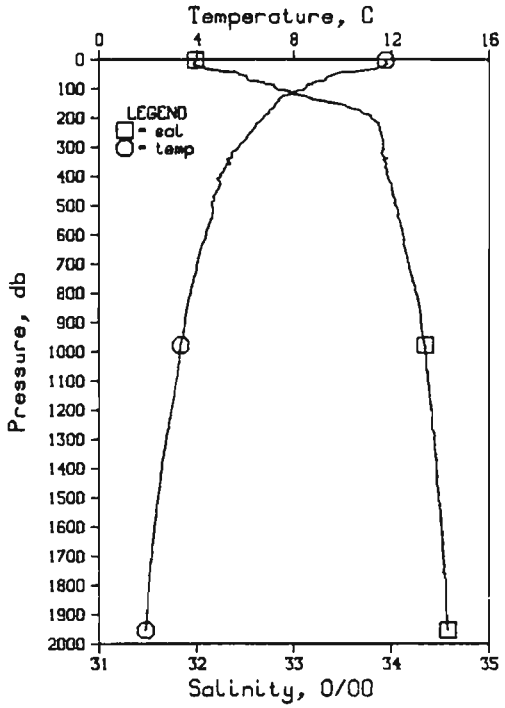


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 93 DATE 13/10/87
POSITION 51-43.6N, 131-50.0W GMT 3:47 STATION MJ03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.05	32.08	0	24.15	377.9	0.00	0.00	1497.
10	13.05	32.06	10	24.14	379.3	0.38	0.02	1498.
20	13.01	32.06	20	24.14	379.2	0.76	0.08	1498.
30	13.00	32.06	30	24.14	379.0	1.14	0.17	1498.
50	10.95	32.29	50	24.70	326.3	1.87	0.47	1491.
75	8.68	32.60	75	25.31	268.4	2.59	0.93	1484.
100	8.15	32.80	99	25.55	246.0	3.23	1.50	1482.
125	7.42	33.26	124	26.02	201.9	3.79	2.14	1480.
150	6.95	33.48	149	26.25	179.6	4.27	2.80	1479.
175	6.45	33.68	174	26.48	158.6	4.68	3.49	1478.
200	6.23	33.80	199	26.60	147.5	5.07	4.22	1478.
225	5.96	33.86	223	26.68	139.8	5.42	5.00	1477.
250	5.68	33.87	248	26.72	135.9	5.77	5.83	1476.
300	5.47	33.94	298	26.80	129.2	6.43	7.69	1476.
400	4.84	33.97	397	26.90	120.5	7.68	12.13	1475.
500	4.41	34.04	496	27.00	111.0	8.84	17.44	1475.
600	4.17	34.12	595	27.09	103.7	9.91	23.43	1476.
800	3.71	34.26	793	27.25	89.3	11.83	37.12	1478.
1000	3.30	34.34	990	27.36	80.2	13.53	52.64	1479.
1200	2.92	34.40	1188	27.44	72.7	15.06	69.82	1481.
1500	2.39	34.48	1484	27.54	62.8	17.10	97.68	1484.
2000	1.92	34.56	1976	27.65	53.3	19.97	148.82	1490.

DEEPEST MEASUREMENT:

2004	1.91	34.56	1980	27.65	53.0	20.00	149.25	1490.

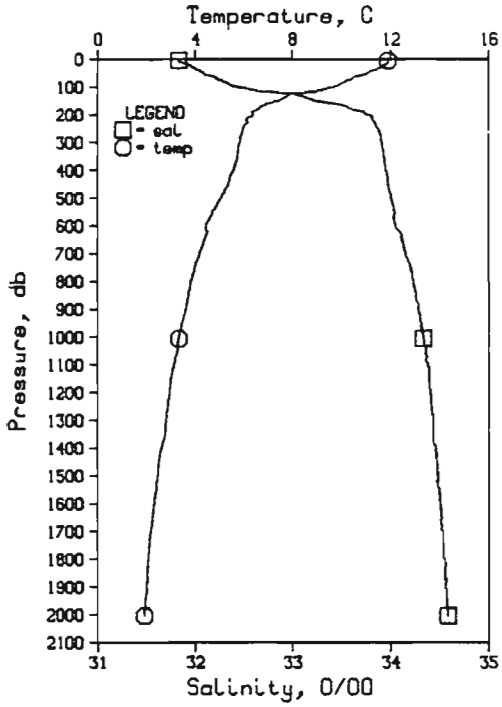


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 94 DATE 13/10/87
POSITION 51-47.5N, 131-40.7W GMT 5:33 STATION MJ2A
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.73	31.98	0	24.32	361.3	0.00	0.00	1493.
10	11.77	31.96	10	24.30	363.9	0.36	0.02	1493.
20	11.66	31.99	20	24.34	360.0	0.72	0.07	1493.
30	11.37	32.08	30	24.46	348.3	1.08	0.16	1492.
50	9.67	32.43	50	25.03	294.8	1.72	0.42	1487.
75	8.90	32.62	75	25.30	269.6	2.44	0.68	1484.
100	8.46	32.81	99	25.51	249.9	3.08	1.45	1483.
125	7.52	33.11	124	25.88	214.4	3.66	2.11	1481.
150	7.27	33.43	149	26.17	187.6	4.17	2.82	1480.
175	6.98	33.68	174	26.40	165.7	4.61	3.55	1480.
200	6.74	33.79	199	26.52	154.6	5.01	4.32	1480.
225	6.41	33.86	223	26.62	145.5	5.38	5.12	1479.
250	6.18	33.89	248	26.67	140.8	5.74	5.99	1479.
300	5.71	33.91	298	26.75	133.9	6.42	7.91	1477.
400	4.97	33.96	397	26.88	122.5	7.70	12.47	1476.
500	4.59	34.04	496	26.98	113.3	8.88	17.86	1476.
600	4.38	34.11	595	27.06	106.2	9.98	24.03	1477.
800	3.73	34.25	793	27.24	90.4	11.95	38.03	1478.
1000	3.30	34.34	990	27.36	80.1	13.65	53.53	1479.
1200	2.93	34.40	1188	27.44	72.9	15.18	70.71	1481.
1500	2.39	34.48	1484	27.54	62.9	17.20	98.46	1484.
2000	1.74	34.62	1976	27.71	46.5	19.94	146.22	1490.

DEEPEST MEASUREMENT:

1953	1.88	34.58	1929	27.66	51.5	19.71	141.58	1489.

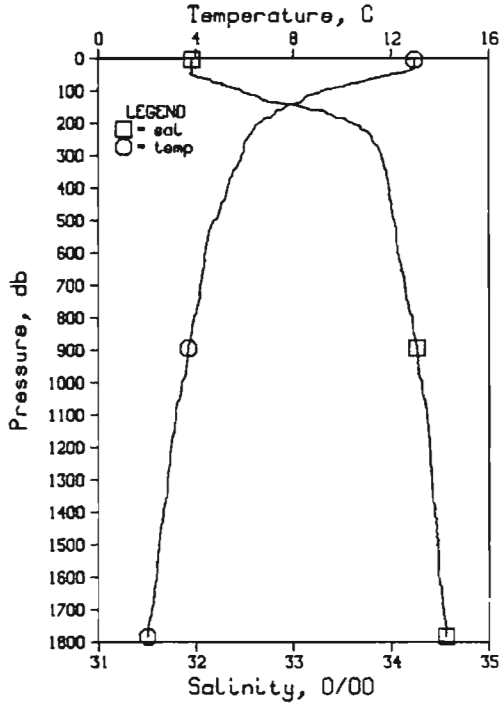


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 95 DATE 13/10/87
POSITION 51-51.6N, 131-32.0W GMT 7:24 STATION MJ02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.87	31.83	0	24.18	374.7	0.00	0.00	1493.
10	11.87	31.83	10	24.18	375.2	0.37	0.02	1493.
20	11.76	31.91	20	24.26	367.2	0.75	0.08	1493.
30	11.58	31.96	30	24.33	360.7	1.11	0.17	1493.
50	11.06	32.08	50	24.52	343.8	1.81	0.45	1491.
75	10.26	32.26	75	24.79	317.8	2.64	0.98	1489.
100	9.66	32.44	99	25.03	295.6	3.41	1.66	1487.
125	7.91	33.02	124	25.76	226.4	4.08	2.43	1482.
150	7.42	33.23	149	25.99	204.8	4.62	3.18	1481.
175	6.63	33.56	174	26.36	169.8	5.08	3.94	1479.
200	6.35	33.76	199	26.55	152.2	5.47	4.70	1478.
225	6.12	33.81	224	26.62	145.2	5.84	5.50	1478.
250	5.96	33.87	248	26.68	139.8	6.20	6.36	1478.
300	5.80	33.91	298	26.74	135.4	6.88	8.28	1478.
400	5.56	33.94	397	26.80	130.8	8.21	13.02	1478.
500	5.04	34.00	496	26.90	121.6	9.47	18.80	1478.
600	4.43	34.05	595	27.01	111.8	10.63	25.29	1477.
800	3.81	34.23	793	27.21	93.0	12.67	39.77	1478.
1000	3.31	34.33	990	27.34	81.3	14.42	55.74	1479.
1200	2.94	34.40	1188	27.43	73.2	15.95	72.94	1481.
1500	2.44	34.48	1484	27.54	63.2	18.01	101.10	1484.
2000	1.89	34.58	1976	27.66	51.7	20.86	151.65	1490.

DEEPEST MEASUREMENT:

2005	1.89	34.58	1981	27.67	51.6	20.88	152.18	1490.

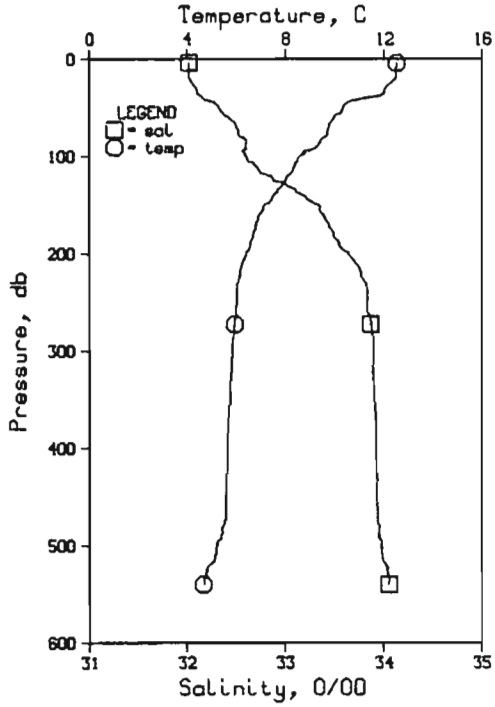


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 96 DATE 13/10/87
POSITION 51-55.7N, 131-22.7W GMT 9:32 STATION MJ1A
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.93	31.95	0	24.07	384.9	0.00	0.00	1497.
10	12.93	31.95	10	24.08	385.0	0.38	0.02	1497.
20	12.92	31.95	20	24.07	385.4	0.77	0.08	1497.
30	12.88	31.95	30	24.08	384.9	1.16	0.18	1497.
50	11.94	31.95	50	24.26	368.6	1.91	0.48	1494.
75	10.57	32.21	75	24.71	326.1	2.78	1.04	1490.
100	9.18	32.47	99	25.13	285.6	3.55	1.72	1486.
125	8.43	32.67	124	25.40	260.4	4.23	2.49	1484.
150	7.66	33.08	149	25.84	219.0	4.83	3.34	1482.
175	7.16	33.39	174	26.16	189.4	5.34	4.18	1480.
200	6.55	33.61	199	26.40	165.9	5.78	5.02	1479.
225	6.28	33.74	224	26.55	152.6	6.18	5.89	1478.
250	6.06	33.81	248	26.63	145.4	6.55	6.79	1478.
300	5.86	33.90	298	26.72	136.9	7.26	8.76	1478.
400	5.28	33.96	397	26.85	125.8	8.56	13.40	1477.
500	4.72	34.03	496	26.96	115.5	9.78	18.98	1477.
600	4.37	34.06	595	27.02	110.4	10.90	25.26	1477.
800	3.90	34.21	793	27.19	95.6	12.97	39.96	1478.
1000	3.39	34.31	990	27.32	83.6	14.78	56.53	1480.
1200	2.96	34.39	1188	27.43	74.0	16.35	74.15	1481.
1500	2.46	34.46	1484	27.52	64.9	18.44	102.82	1484.

DEEPEST MEASUREMENT:

1784	2.00	34.56	1763	27.64	53.7	20.13	130.78	1487.

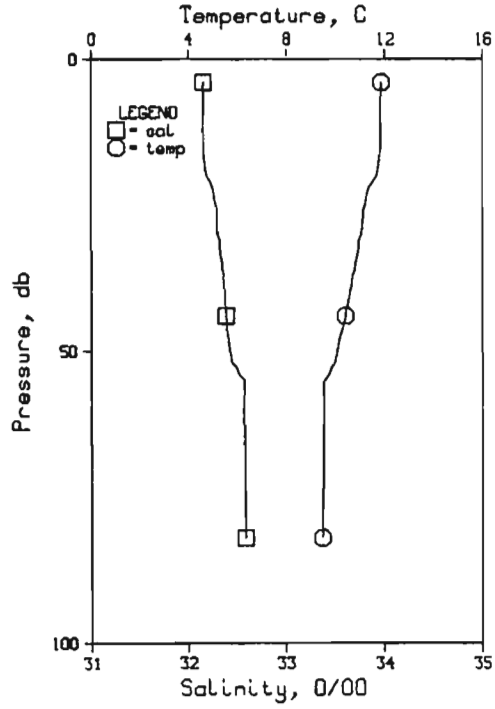


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 97 DATE 13/10/87
POSITION 52- 0.0N, 131-14.0W GMT 11:25 STATION MJ01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.49	32.01	0	24.20	372.5	0.00	0.00	1495.
10	12.48	32.02	10	24.21	372.3	0.37	0.02	1496.
20	12.43	32.02	20	24.22	371.2	0.74	0.08	1496.
30	12.04	32.09	30	24.35	359.5	1.11	0.17	1494.
50	10.32	32.32	50	24.83	313.7	1.79	0.44	1489.
75	9.70	32.51	75	25.09	289.9	2.54	0.92	1487.
100	8.57	32.59	99	25.32	267.7	3.24	1.54	1484.
125	8.00	32.88	124	25.63	238.7	3.87	2.27	1482.
150	7.12	33.35	149	26.12	192.0	4.41	3.02	1480.
175	6.75	33.46	174	26.26	179.3	4.87	3.79	1479.
200	6.39	33.64	199	26.45	161.4	5.30	4.61	1478.
225	6.12	33.77	223	26.59	148.6	5.69	5.43	1478.
250	6.01	33.83	248	26.65	143.1	6.05	6.31	1478.
300	5.81	33.89	298	26.72	136.8	6.74	8.26	1478.
400	5.64	33.92	397	26.77	133.5	8.09	13.08	1479.
500	5.21	33.98	496	26.86	125.2	9.41	19.12	1479.

DEEPEST MEASUREMENT:

540	4.66	34.05	536	26.98	113.5	9.89	21.65	1477.

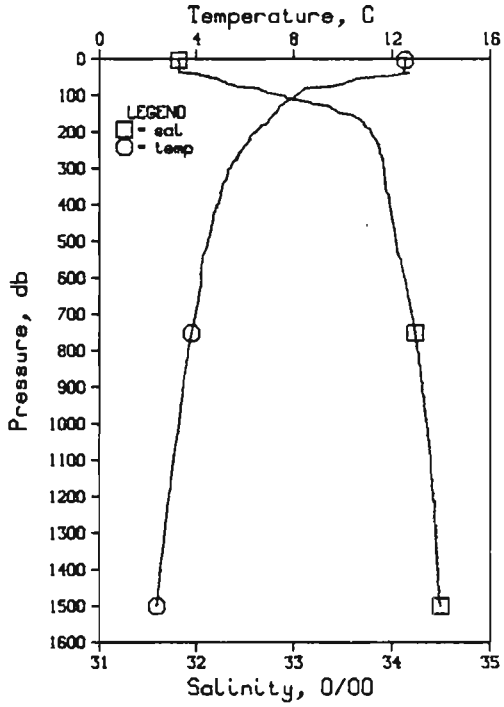


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 98 DATE 13/10/87
POSITION 52- 2.0N, 131-10.3W GMT 12:12 STATION MJ00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.85	32.15	0	24.43	350.8	0.00	0.00	1493.
10	11.84	32.14	10	24.43	351.4	0.35	0.02	1493.
20	11.66	32.18	20	24.49	345.8	0.70	0.07	1493.
30	11.02	32.30	30	24.69	326.4	1.03	0.16	1491.
50	10.09	32.42	50	24.95	302.2	1.66	0.41	1488.
75	9.51	32.57	75	25.16	282.6	2.38	0.87	1487.

DEEPEST MEASUREMENT:

82	9.48	32.59	82	25.18	281.3	2.57	1.02	1487.

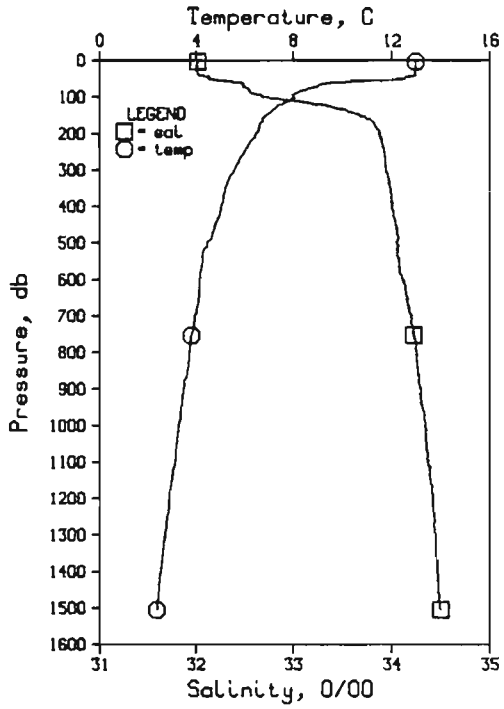


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02- 99 DATE 14/10/87
POSITION 51-41.8N, 131-13.6W GMT 0:17 STATION M88
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.52	31.82	0	24.05	387.2	0.00	0.00	1495.
10	12.52	31.82	10	24.05	387.4	0.39	0.02	1495.
20	12.52	31.82	20	24.05	387.7	0.77	0.08	1496.
30	12.49	31.82	30	24.05	387.7	1.16	0.18	1496.
50	11.23	32.12	50	24.52	343.2	1.91	0.48	1492.
75	9.61	32.40	75	25.01	296.9	2.70	0.98	1487.
100	8.07	32.88	99	25.62	239.2	3.35	1.56	1482.
125	7.53	33.24	124	25.98	205.2	3.91	2.20	1481.
150	7.20	33.50	149	26.24	181.3	4.39	2.87	1480.
175	6.93	33.72	174	26.44	162.1	4.81	3.57	1480.
200	6.44	33.78	199	26.56	151.5	5.21	4.32	1478.
225	6.16	33.84	223	26.64	143.6	5.57	5.12	1478.
250	5.86	33.87	248	26.70	138.0	5.92	5.97	1477.
300	5.40	33.91	298	26.79	130.2	6.59	7.84	1476.
400	4.85	33.98	397	26.90	119.9	7.84	12.28	1476.
500	4.48	34.04	496	26.99	112.0	9.00	17.59	1476.
600	4.19	34.12	595	27.09	103.3	10.07	23.59	1476.
800	3.67	34.26	793	27.25	89.1	11.99	37.24	1478.
1000	3.29	34.35	990	27.36	79.4	13.67	52.59	1479.
1200	2.86	34.42	1188	27.45	71.2	15.16	69.31	1481.
1500	2.37	34.50	1484	27.56	61.0	17.15	96.53	1484.

DEEPEST MEASUREMENT:

1501	2.36	34.50	1485	27.56	60.9	17.15	96.62	1484.

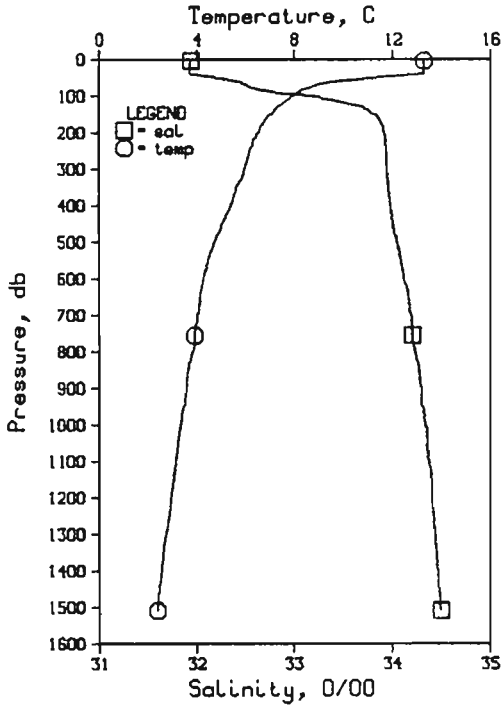


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-100 DATE 14/10/87
POSITION 51-23.5N, 131-13.8W GMT 3: 3 STATION M103
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.97	32.01	0	24.11	381.3	0.00	0.00	1497.
10	12.97	32.01	10	24.11	381.7	0.38	0.02	1497.
20	12.97	32.01	20	24.11	382.0	0.76	0.08	1497.
30	12.95	32.01	30	24.11	382.0	1.15	0.18	1497.
50	12.52	32.13	50	24.29	365.4	1.90	0.48	1496.
75	8.78	32.50	75	25.22	276.7	2.66	0.96	1484.
100	8.01	32.69	99	25.49	252.0	3.32	1.55	1482.
125	7.34	33.35	124	26.10	194.1	3.88	2.18	1480.
150	6.88	33.67	149	26.41	164.7	4.32	2.81	1479.
175	6.62	33.82	174	26.57	150.3	4.71	3.45	1479.
200	6.46	33.88	199	26.63	144.4	5.08	4.15	1479.
225	6.20	33.90	223	26.68	139.9	5.44	4.92	1478.
250	5.99	33.92	248	26.73	135.7	5.78	5.76	1478.
300	5.57	33.94	298	26.79	129.8	6.44	7.61	1477.
400	5.04	34.01	397	26.91	119.7	7.68	12.02	1476.
500	4.45	34.05	496	27.01	110.6	8.83	17.29	1476.
600	4.14	34.11	595	27.09	103.7	9.91	23.31	1476.
800	3.72	34.26	793	27.25	89.6	11.84	37.05	1478.
1000	3.27	34.34	990	27.36	79.7	13.55	52.69	1479.
1200	2.86	34.42	1188	27.46	70.9	15.07	69.73	1481.
1500	2.38	34.49	1484	27.55	61.8	17.06	97.09	1484.

DEEPEST MEASUREMENT:

1506	2.37	34.50	1490	27.56	61.2	17.10	97.66	1484.

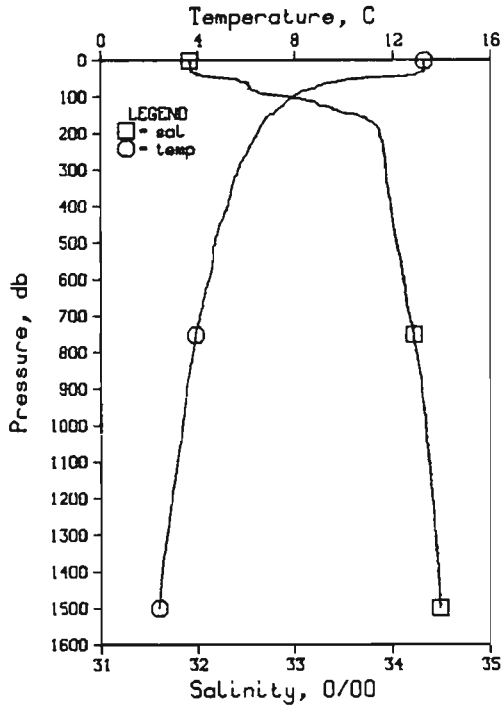


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-101 DATE 14/10/87
POSITION 51- 3.2N, 131-11.2W GMT 5:51 STATION M89
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.26	31.93	0	24.00	392.4	0.00	0.00	1498.
10	13.26	31.93	10	23.99	393.0	0.39	0.02	1498.
20	13.26	31.93	20	23.99	393.5	0.79	0.08	1498.
30	13.25	31.92	30	23.99	393.8	1.18	0.18	1498.
50	11.33	32.19	50	24.56	340.1	1.94	0.49	1492.
75	8.70	32.55	75	25.27	272.4	2.68	0.96	1484.
100	7.92	33.16	99	25.87	216.0	3.30	1.51	1482.
125	7.41	33.62	124	26.30	175.5	3.79	2.07	1481.
150	7.04	33.80	149	26.49	157.3	4.20	2.64	1480.
175	6.71	33.88	174	26.60	147.1	4.58	3.27	1479.
200	6.52	33.91	199	26.65	142.9	4.94	3.96	1479.
225	6.32	33.92	223	26.68	139.8	5.29	4.72	1479.
250	6.18	33.93	248	26.71	137.9	5.64	5.56	1478.
300	5.95	33.94	298	26.75	134.5	6.32	7.47	1478.
400	5.39	33.97	397	26.84	126.6	7.63	12.13	1478.
500	4.71	34.04	496	26.97	114.5	8.84	17.66	1477.
600	4.27	34.11	595	27.08	105.0	9.93	23.78	1477.
800	3.83	34.23	793	27.21	93.3	11.89	37.76	1478.
1000	3.33	34.33	990	27.35	81.1	13.62	53.55	1479.
1200	2.95	34.41	1188	27.44	72.8	15.15	70.68	1481.
1500	2.40	34.49	1484	27.55	62.1	17.16	98.27	1484.

DEEPEST MEASUREMENT:

1509	2.39	34.49	1493	27.56	61.6	17.22	99.13	1484.

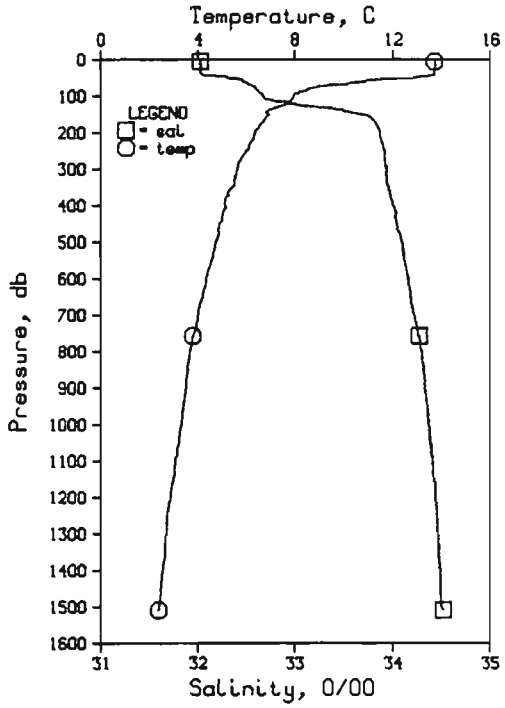


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-102 DATE 14/10/87
POSITION 50-43.0N, 131- 8.3W GMT 8:45 STATION MH05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.27	31.91	0	23.97	394.4	0.00	0.00	1498.
10	13.26	31.93	10	23.99	393.4	0.39	0.02	1498.
20	13.26	31.92	20	23.98	393.8	0.79	0.08	1498.
30	13.27	31.93	30	23.99	393.8	1.18	0.18	1498.
50	10.74	32.30	50	24.75	321.8	1.93	0.48	1490.
75	8.85	32.54	75	25.24	275.4	2.65	0.94	1484.
100	7.88	32.94	99	25.70	231.7	3.30	1.52	1481.
125	7.53	33.25	124	25.99	204.4	3.84	2.13	1481.
150	6.95	33.63	149	26.37	168.8	4.31	2.79	1479.
175	6.66	33.80	174	26.54	152.5	4.71	3.45	1479.
200	6.45	33.86	199	26.62	145.6	5.08	4.16	1479.
225	6.28	33.89	223	26.66	141.9	5.44	4.93	1478.
250	6.06	33.90	248	26.70	138.2	5.78	5.78	1478.
300	5.66	33.93	298	26.77	132.1	6.46	7.67	1477.
400	5.23	33.98	397	26.86	124.4	7.74	12.24	1477.
500	4.69	34.03	496	26.97	114.9	8.94	17.71	1477.
600	4.46	34.10	595	27.05	107.8	10.05	23.94	1477.
800	3.80	34.24	793	27.23	91.9	12.04	38.07	1478.
1000	3.34	34.33	990	27.34	81.2	13.75	53.76	1480.
1200	2.92	34.40	1188	27.44	72.8	15.29	71.02	1481.
1500	2.38	34.48	1484	27.55	62.3	17.30	98.52	1484.

DEEPEST MEASUREMENT:

1501	2.38	34.48	1485	27.55	62.4	17.30	98.61	1484.

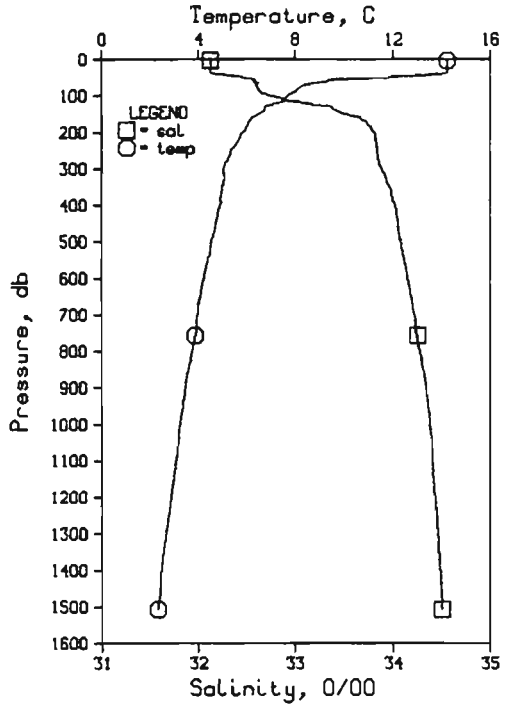


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-103 DATE 14/10/87
POSITION 50-25.0N, 130-36.5W GMT 12:24 STATION MG05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.70	32.02	0	23.97	394.3	0.00	0.00	1500.
10	13.73	32.02	10	23.97	395.4	0.39	0.02	1500.
20	13.73	32.02	20	23.97	395.5	0.79	0.08	1500.
30	13.70	32.02	30	23.97	395.3	1.19	0.18	1500.
50	12.90	32.31	50	24.35	359.5	1.96	0.50	1498.
75	8.89	32.59	75	25.27	272.1	2.72	0.98	1484.
100	7.94	32.67	99	25.48	252.8	3.38	1.56	1481.
125	7.54	33.05	124	25.83	219.4	3.98	2.25	1481.
150	6.88	33.65	149	26.40	166.1	4.45	2.90	1479.
175	6.63	33.83	174	26.57	149.9	4.83	3.54	1479.
200	6.35	33.87	199	26.64	143.9	5.20	4.24	1478.
225	6.20	33.89	224	26.67	140.9	5.56	5.02	1478.
250	5.99	33.91	248	26.72	136.6	5.91	5.86	1478.
300	5.63	33.93	298	26.78	131.6	6.58	7.74	1477.
400	5.11	34.00	397	26.89	121.3	7.85	12.26	1477.
500	4.73	34.09	496	27.01	111.1	9.01	17.60	1477.
600	4.33	34.15	595	27.10	102.7	10.09	23.60	1477.
800	3.65	34.29	793	27.28	86.7	11.98	37.09	1478.
1000	3.31	34.36	991	27.37	78.8	13.63	52.17	1479.
1200	2.85	34.43	1188	27.47	69.8	15.10	68.65	1481.
1500	2.37	34.50	1484	27.56	61.1	17.05	95.39	1484.

DEEPEST MEASUREMENT:

1509	2.37	34.51	1493	27.57	60.0	17.11	96.22	1484.

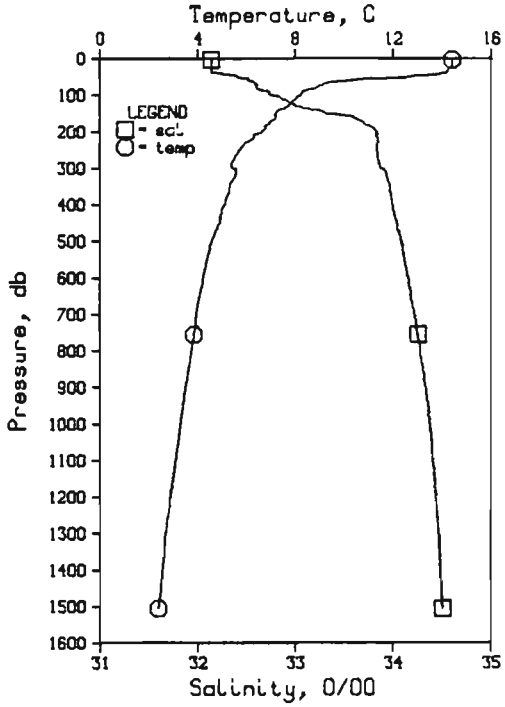


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-104 DATE 14/10/87
POSITION 50- 6.0N, 130- 6.9W GMT 16: 7 STATION MF05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.21	32.12	0	23.95	397.1	0.00	0.00	1501.
10	14.21	32.13	10	23.95	397.1	0.40	0.02	1501.
20	14.22	32.13	20	23.95	397.3	0.79	0.08	1502.
30	14.22	32.12	30	23.95	397.9	1.19	0.18	1502.
50	11.85	32.47	50	24.67	328.8	1.95	0.49	1495.
75	8.25	32.60	75	25.38	261.7	2.65	0.93	1482.
100	7.72	32.74	99	25.56	244.6	3.28	1.50	1481.
125	7.08	33.18	124	26.00	203.7	3.85	2.14	1479.
150	6.55	33.49	149	26.31	174.2	4.31	2.78	1478.
175	6.08	33.74	174	26.57	150.0	4.70	3.44	1477.
200	5.85	33.81	199	26.65	142.1	5.07	4.14	1476.
225	5.64	33.82	224	26.69	138.6	5.42	4.90	1476.
250	5.35	33.84	248	26.74	134.2	5.76	5.72	1475.
300	5.06	33.89	298	26.81	127.8	6.42	7.57	1475.
400	4.89	34.02	397	26.93	117.2	7.65	11.93	1476.
500	4.53	34.08	496	27.02	109.5	8.78	17.14	1476.
600	4.21	34.14	595	27.10	102.3	9.84	23.08	1476.
800	3.72	34.28	793	27.26	88.3	11.74	36.61	1478.
1000	3.23	34.38	991	27.39	76.9	13.38	51.60	1479.
1200	2.87	34.43	1188	27.47	69.8	14.85	68.05	1481.
1500	2.31	34.50	1484	27.57	60.2	16.78	94.55	1484.

DEEPEST MEASUREMENT:

1508	2.31	34.50	1492	27.57	60.2	16.83	95.29	1484.

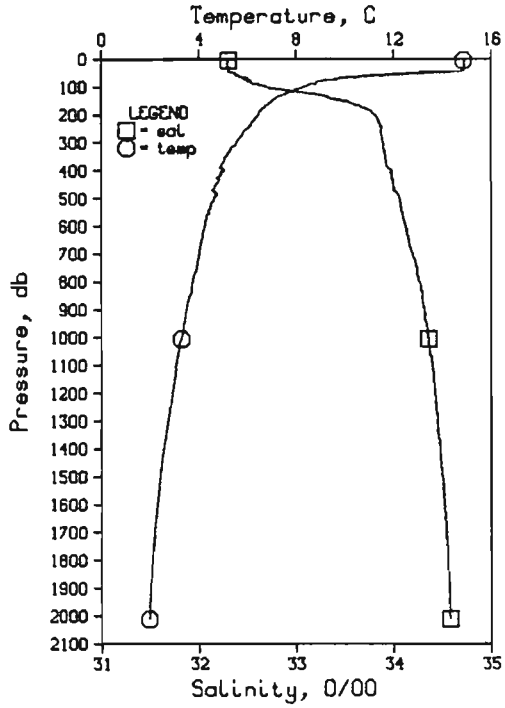


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-105 DATE 14/10/87
POSITION 49-47.8N, 129-36.0W GMT 20:20 STATION MEO5
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.38	32.13	0	23.92	399.5	0.00	0.00	1502.
10	14.39	32.14	10	23.92	399.6	0.40	0.02	1502.
20	14.38	32.13	20	23.92	400.1	0.80	0.08	1502.
30	14.23	32.14	30	23.96	396.9	1.20	0.18	1502.
50	12.69	32.39	50	24.46	349.5	1.96	0.49	1497.
75	9.00	32.60	75	25.26	272.8	2.71	0.96	1485.
100	8.22	32.76	99	25.51	250.0	3.36	1.54	1482.
125	7.79	32.98	124	25.74	228.1	3.95	2.22	1482.
150	7.21	33.31	149	26.08	196.1	4.48	2.96	1480.
175	6.95	33.70	174	26.42	164.0	4.92	3.69	1480.
200	6.64	33.83	199	26.57	150.4	5.32	4.44	1479.
225	6.15	33.84	224	26.64	143.5	5.68	5.24	1478.
250	5.71	33.84	248	26.69	138.8	6.03	6.09	1476.
300	5.39	33.87	298	26.76	132.9	6.71	7.99	1476.
400	5.10	33.99	397	26.89	121.5	7.98	12.49	1477.
500	4.56	34.08	496	27.02	109.8	9.14	17.80	1476.
600	4.21	34.16	595	27.12	101.0	10.19	23.72	1476.
800	3.72	34.27	793	27.26	88.5	12.09	37.19	1478.
1000	3.28	34.37	991	27.38	77.6	13.74	52.32	1479.
1200	2.85	34.43	1188	27.47	70.0	15.21	68.78	1481.
1500	2.37	34.50	1484	27.57	60.6	17.17	95.62	1484.

DEEPEST MEASUREMENT:

1506	2.36	34.50	1490	27.57	60.6	17.20	96.18	1484.

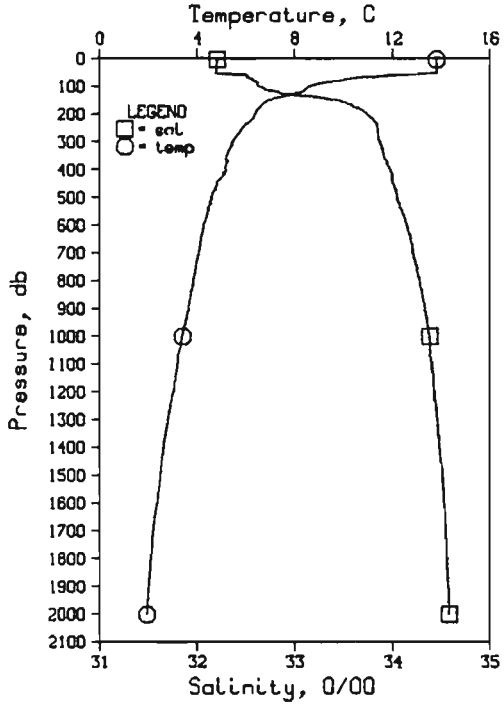


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-106 DATE 15/10/87
POSITION 49-16.0N, 129- 9.4W GMT 0:40 STATION MDO6
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.85	32.30	0	23.95	396.6	0.00	0.00	1504.
10	14.85	32.30	10	23.94	397.5	0.40	0.02	1504.
20	14.86	32.29	20	23.94	398.1	0.79	0.08	1504.
30	14.84	32.30	30	23.95	397.3	1.19	0.18	1504.
50	13.22	32.36	50	24.33	362.0	1.98	0.50	1499.
75	9.39	32.49	75	25.11	287.1	2.76	1.00	1486.
100	8.28	32.70	99	25.45	255.0	3.44	1.60	1483.
125	7.54	33.15	124	25.91	211.7	4.03	2.27	1481.
150	7.02	33.46	149	26.23	181.9	4.51	2.95	1480.
175	6.65	33.69	174	26.45	161.0	4.94	3.66	1479.
200	6.44	33.80	199	26.57	150.0	5.33	4.39	1479.
225	6.21	33.85	224	26.64	144.1	5.69	5.19	1478.
250	5.97	33.87	248	26.68	140.0	6.05	6.04	1478.
300	5.54	33.89	298	26.75	133.8	6.73	7.96	1477.
400	5.03	33.98	397	26.88	122.0	8.01	12.50	1476.
500	4.62	34.06	496	27.00	112.1	9.18	17.88	1476.
600	4.24	34.12	595	27.08	104.1	10.26	23.93	1476.
800	3.73	34.26	793	27.25	89.4	12.20	37.70	1478.
1000	3.26	34.35	991	27.37	79.1	13.87	53.05	1479.
1200	2.90	34.42	1188	27.45	71.2	15.37	69.75	1481.
1500	2.38	34.49	1484	27.56	61.5	17.35	96.97	1484.
2000	1.95	34.57	1976	27.66	52.7	20.16	146.85	1490.

DEEPEST MEASUREMENT:

2012	1.94	34.58	1988	27.66	52.4	20.22	148.14	1491.

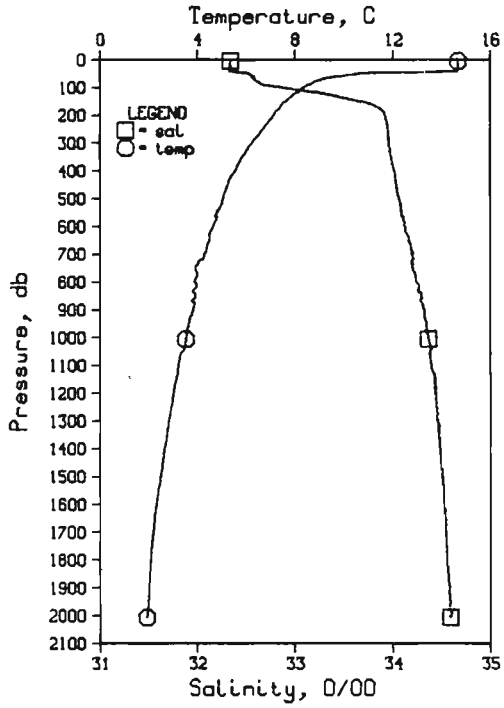


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-107 DATE 15/10/87
POSITION 48-44.6N, 127-40.0W GMT 7:51 STATION MP06
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.78	32.20	0	24.10	382.8	0.00	0.00	1500.
10	13.78	32.20	10	24.10	383.0	0.38	0.02	1500.
20	13.78	32.20	20	24.09	383.7	0.77	0.08	1500.
30	13.78	32.19	30	24.09	384.2	1.15	0.18	1500.
50	13.77	32.19	50	24.09	384.8	1.92	0.49	1501.
75	10.05	32.56	75	25.07	291.8	2.76	1.02	1489.
100	8.61	32.63	99	25.35	265.2	3.45	1.64	1484.
125	8.01	32.85	124	25.61	241.0	4.09	2.37	1482.
150	6.93	33.42	149	26.21	183.7	4.62	3.11	1479.
175	6.57	33.60	174	26.39	166.5	5.06	3.83	1478.
200	6.36	33.73	199	26.53	154.0	5.46	4.59	1478.
225	6.17	33.80	224	26.61	146.9	5.83	5.41	1478.
250	5.85	33.84	248	26.68	140.3	6.19	6.27	1477.
300	5.45	33.86	298	26.75	134.3	6.88	8.20	1476.
400	5.17	33.97	397	26.86	124.2	8.17	12.80	1477.
500	4.58	34.04	496	26.99	112.9	9.35	18.21	1476.
600	4.27	34.14	595	27.10	103.1	10.43	24.26	1477.
800	3.84	34.27	793	27.24	90.3	12.36	37.97	1478.
1000	3.39	34.37	991	27.37	78.9	14.05	53.44	1480.
1200	3.01	34.42	1188	27.44	72.8	15.57	70.42	1482.
1500	2.47	34.49	1484	27.55	62.6	17.57	97.92	1484.
2000	1.95	34.58	1976	27.66	52.5	20.39	148.08	1490.

DEEPEST MEASUREMENT:

2002	1.94	34.58	1978	27.66	52.5	20.40	148.30	1491.

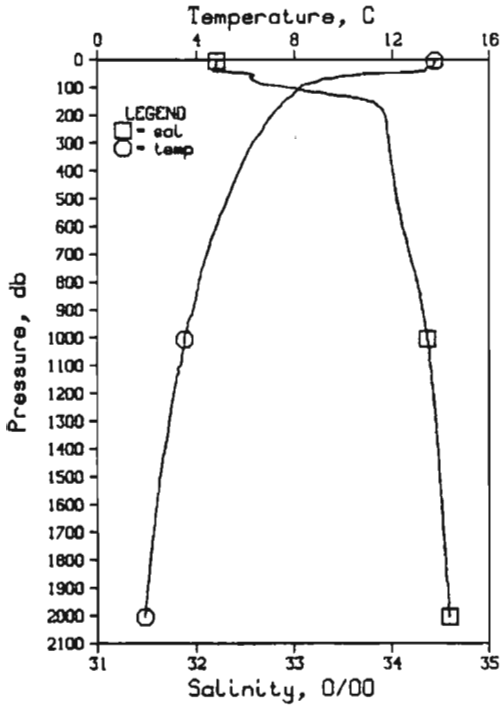


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-108 DATE 15/10/87
POSITION 48-20.2N, 127- 6.1W GMT 12:24 STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.65	32.34	0	24.02	390.0	0.00	0.00	1503.
10	14.65	32.33	10	24.02	390.4	0.39	0.02	1503.
20	14.65	32.34	20	24.02	390.5	0.78	0.08	1503.
30	14.65	32.33	30	24.01	391.5	1.17	0.18	1503.
50	10.68	32.50	50	24.91	305.9	1.91	0.48	1490.
75	8.92	32.60	75	25.28	271.7	2.63	0.93	1485.
100	8.36	32.85	99	25.56	244.9	3.28	1.51	1483.
125	7.91	33.33	124	26.00	204.0	3.84	2.16	1482.
150	7.61	33.64	149	26.29	176.8	4.32	2.82	1482.
175	7.33	33.86	174	26.50	157.1	4.73	3.50	1482.
200	7.14	33.91	199	26.56	151.2	5.11	4.24	1481.
225	6.89	33.93	224	26.62	146.5	5.49	5.04	1481.
250	6.66	33.94	248	26.65	143.4	5.85	5.92	1480.
300	6.20	33.96	298	26.73	136.4	6.55	7.87	1479.
400	5.54	34.01	397	26.85	126.0	7.86	12.55	1478.
500	5.04	34.06	496	26.95	117.2	9.07	18.11	1478.
600	4.64	34.11	595	27.04	109.3	10.20	24.44	1478.
800	3.88	34.23	793	27.21	93.3	12.21	38.72	1478.
1000	3.53	34.36	991	27.34	81.8	13.96	54.71	1480.
1200	3.00	34.43	1188	27.45	72.0	15.49	71.80	1482.
1500	2.48	34.50	1484	27.55	62.5	17.49	99.36	1484.
2000	1.92	34.58	1976	27.67	51.7	20.30	149.26	1490.

DEEPEST MEASUREMENT:

2007	1.92	34.59	1983	27.67	51.5	20.34	150.00	1491.

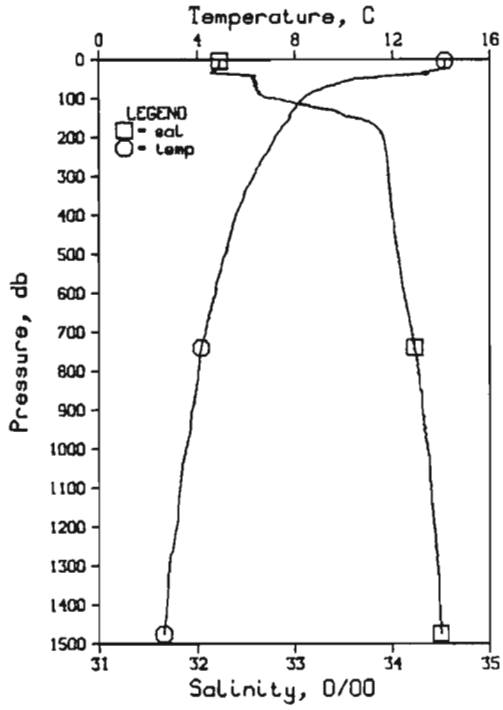


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-109 DATE 15/10/87
POSITION 48-30.2N, 126-52.5W GMT 14:40 STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	13.71	32.20	0	24.11	381.4	0.00	0.00	1500.
10	13.70	32.20	10	24.11	381.4	0.38	0.02	1500.
20	13.67	32.20	20	24.12	381.3	0.76	0.08	1500.
30	13.45	32.18	30	24.14	379.1	1.14	0.17	1499.
50	11.01	32.53	50	24.87	309.9	1.87	0.47	1492.
75	9.02	32.57	75	25.24	275.1	2.60	0.93	1485.
100	8.22	32.93	99	25.64	237.1	3.24	1.50	1483.
125	7.95	33.33	124	26.00	204.0	3.79	2.13	1483.
150	7.59	33.75	149	26.38	168.3	4.25	2.77	1482.
175	7.32	33.88	174	26.52	155.2	4.65	3.43	1482.
200	7.06	33.92	199	26.58	149.1	5.03	4.16	1481.
225	6.86	33.94	224	26.63	145.4	5.40	4.96	1481.
250	6.70	33.94	248	26.65	143.5	5.76	5.83	1481.
300	6.28	33.97	298	26.72	137.0	6.46	7.80	1480.
400	5.72	34.00	397	26.82	128.7	7.79	12.53	1479.
500	5.24	34.04	496	26.91	120.6	9.04	18.25	1479.
600	4.80	34.10	595	27.01	112.3	10.20	24.77	1479.
800	4.09	34.25	793	27.21	94.2	12.26	39.38	1479.
1000	3.49	34.36	991	27.35	81.4	14.02	55.49	1480.
1200	3.06	34.42	1188	27.43	73.5	15.57	72.84	1482.
1500	2.51	34.49	1484	27.54	63.4	17.62	100.96	1484.
2000	1.91	34.59	1976	27.67	51.2	20.48	151.78	1490.

DEEPEST MEASUREMENT:

2005	1.91	34.59	1981	27.67	51.4	20.51	152.30	1490.

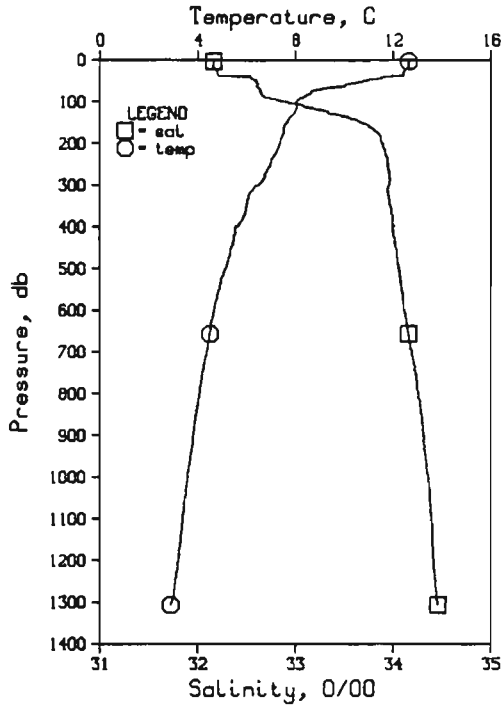


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-110 DATE 15/10/87
POSITION 48-36.2N, 126-44.2W GMT 16:28 STATION MA3B
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	14.13	32.22	0	24.04	388.1	0.00	0.00	1501.
10	14.13	32.22	10	24.04	388.5	0.39	0.02	1501.
20	14.10	32.22	20	24.04	388.4	0.78	0.08	1501.
30	13.51	32.15	30	24.12	381.7	1.16	0.18	1500.
50	10.41	32.58	50	25.02	296.2	1.85	0.45	1490.
75	9.06	32.60	75	25.25	274.1	2.56	0.90	1485.
100	8.32	32.78	99	25.51	249.6	3.22	1.49	1483.
125	8.01	33.24	124	25.91	211.8	3.79	2.15	1483.
150	7.77	33.62	149	26.24	180.8	4.28	2.83	1483.
175	7.45	33.84	174	26.46	160.4	4.70	3.52	1482.
200	7.16	33.91	199	26.56	151.7	5.09	4.27	1481.
225	6.98	33.92	224	26.60	148.2	5.46	5.08	1481.
250	6.70	33.94	248	26.65	143.4	5.83	5.96	1481.
300	6.27	33.96	298	26.72	137.4	6.53	7.93	1480.
400	5.55	34.00	397	26.84	126.8	7.85	12.64	1478.
500	5.12	34.05	496	26.93	118.3	9.08	18.26	1478.
600	4.73	34.12	595	27.03	110.1	10.22	24.65	1479.
800	4.01	34.26	793	27.22	92.9	12.23	38.94	1479.
1000	3.51	34.36	991	27.35	81.5	13.98	54.99	1480.
1200	3.12	34.43	1188	27.44	73.3	15.53	72.27	1482.
1500	2.61	34.32	1484	27.40	76.7	17.78	103.31	1485.

DEEPEST MEASUREMENT:

1476	2.61	34.49	1460	27.54	64.2	17.61	100.74	1485.

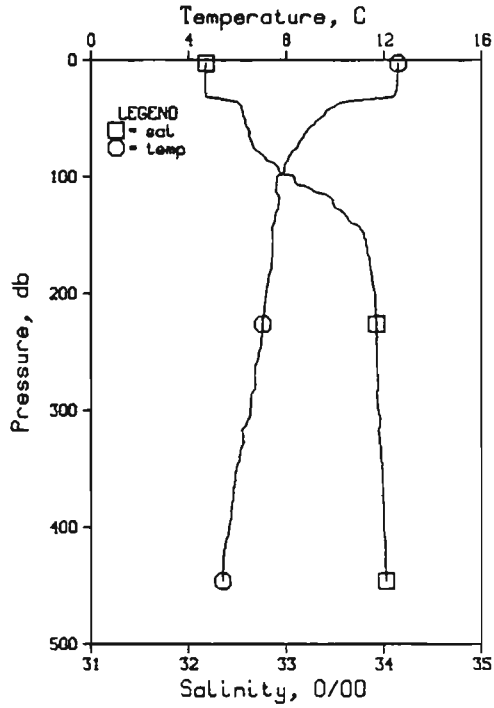


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-111 DATE 15/10/87
POSITION 48-40.1N, 126-38.9W GMT 17:44 STATION MA03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.63	32.16	0	24.29	364.1	0.00	0.00	1496.
10	12.62	32.16	10	24.29	364.4	0.36	0.02	1496.
20	12.58	32.16	20	24.30	363.5	0.73	0.07	1496.
30	12.42	32.20	30	24.36	358.4	1.09	0.17	1496.
50	10.76	32.59	50	24.97	300.6	1.75	0.43	1491.
75	8.65	32.64	75	25.35	265.0	2.46	0.88	1484.
100	8.03	32.89	99	25.64	237.7	3.10	1.45	1482.
125	7.96	33.33	124	25.99	204.1	3.65	2.08	1483.
150	7.62	33.67	149	26.31	174.4	4.12	2.74	1482.
175	7.49	33.84	174	26.46	161.1	4.53	3.42	1482.
200	7.33	33.89	199	26.52	155.4	4.93	4.18	1482.
225	7.16	33.92	224	26.57	151.1	5.31	5.01	1482.
250	6.95	33.94	248	26.61	147.1	5.68	5.90	1482.
300	6.45	33.96	298	26.69	140.1	6.40	7.91	1480.
400	5.49	33.98	397	26.83	127.2	7.73	12.67	1478.
500	5.12	34.06	496	26.94	118.2	8.96	18.30	1478.
600	4.66	34.11	595	27.03	109.5	10.10	24.65	1478.
800	4.05	34.26	793	27.21	93.7	12.12	39.02	1479.
1000	3.57	34.36	991	27.34	82.2	13.87	55.09	1481.
1200	3.20	34.41	1188	27.42	75.4	15.44	72.64	1482.

DEEPEST MEASUREMENT:

1307	2.90	34.46	1294	27.48	69.2	16.21	82.50	1483.

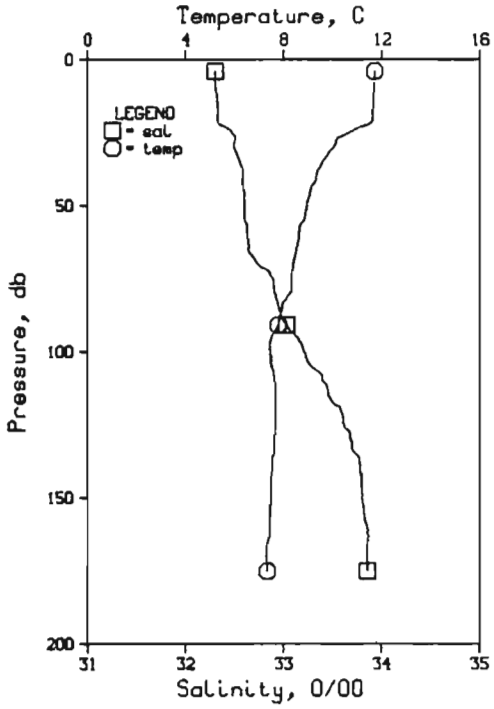


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-112 DATE 15/10/87
POSITION 48-45.2N, 126-32.0W GMT 19:12 STATION MA2B
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	12.58	32.18	0	24.31	362.2	0.00	0.00	1496.
10	12.58	32.17	10	24.31	362.8	0.36	0.02	1496.
20	12.55	32.17	20	24.31	362.6	0.73	0.07	1496.
30	12.45	32.18	30	24.34	360.2	1.09	0.17	1496.
50	9.37	32.57	50	25.18	280.0	1.69	0.41	1486.
75	8.43	32.67	75	25.40	259.6	2.36	0.84	1483.
100	7.62	33.09	99	25.85	217.3	2.97	1.37	1481.
125	7.67	33.49	124	26.16	188.3	3.47	1.95	1482.
150	7.43	33.79	149	26.43	162.9	3.91	2.56	1482.
175	7.37	33.85	174	26.48	158.5	4.31	3.22	1482.
200	7.16	33.90	199	26.56	151.9	4.69	3.96	1482.
225	7.03	33.92	223	26.59	149.0	5.07	4.78	1481.
250	6.87	33.93	248	26.62	146.6	5.44	5.68	1481.
300	6.52	33.94	298	26.67	141.9	6.16	7.70	1481.
400	5.66	34.00	397	26.83	127.7	7.50	12.45	1479.

DEEPEST MEASUREMENT:

446	5.39	34.02	443	26.88	123.3	8.08	14.94	1479.

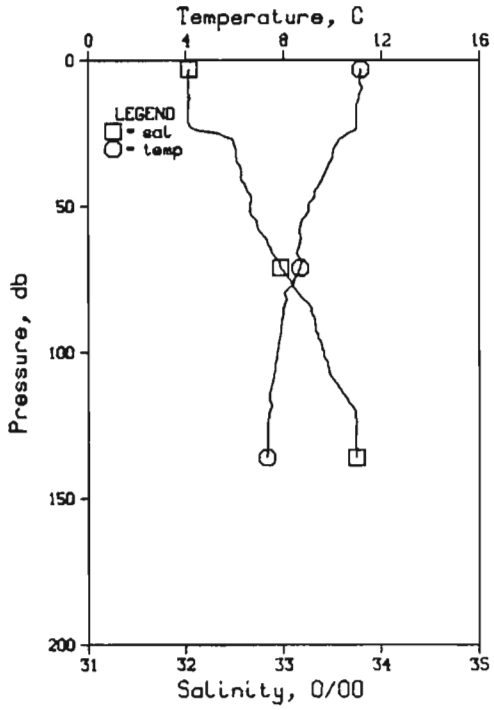


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-113 DATE 15/10/87
POSITION 48-50.2N, 126-25.3W GMT 20: 9 STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.68	32.30	0	24.57	337.2	0.00	0.00	1493.
10	11.67	32.30	10	24.58	336.7	0.34	0.02	1493.
20	11.62	32.33	20	24.61	334.5	0.67	0.07	1493.
30	10.03	32.49	30	25.01	296.1	0.98	0.15	1488.
50	8.94	32.59	50	25.27	271.9	1.54	0.38	1484.
75	8.31	32.89	75	25.59	241.5	2.20	0.79	1483.
100	7.45	33.21	99	25.97	205.7	2.76	1.29	1480.
125	7.66	33.62	124	26.26	178.8	3.24	1.84	1482.
150	7.47	33.80	149	26.43	162.9	3.66	2.43	1482.
175	7.31	33.86	174	26.50	156.7	4.06	3.09	1482.

DEEPEST MEASUREMENT:

175	7.31	33.86	174	26.50	156.7	4.06	3.09	1482.

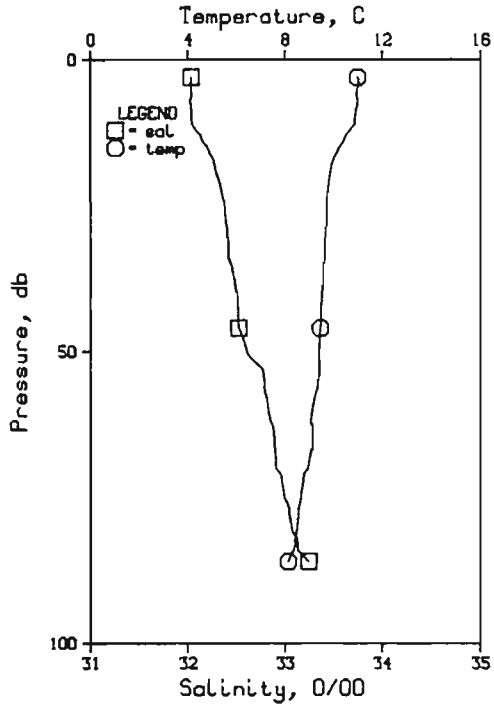


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-114 DATE 15/10/87
POSITION 48-55.2N, 126-18.0W GMT 20:56 STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.14	32.03	0	24.46	347.7	0.00	0.00	1491.
10	11.19	32.02	10	24.45	349.3	0.35	0.02	1491.
20	10.98	32.02	20	24.49	345.9	0.69	0.07	1490.
30	10.06	32.50	30	25.02	295.7	1.02	0.15	1488.
50	9.02	32.65	50	25.30	268.8	1.58	0.38	1485.
75	8.44	33.07	75	25.72	229.6	2.21	0.78	1483.
100	7.75	33.42	99	26.09	194.6	2.73	1.24	1482.
125	7.34	33.75	124	26.41	164.8	3.18	1.75	1481.

DEEPEST MEASUREMENT:

136	7.33	33.75	135	26.41	164.7	3.36	2.00	1481.

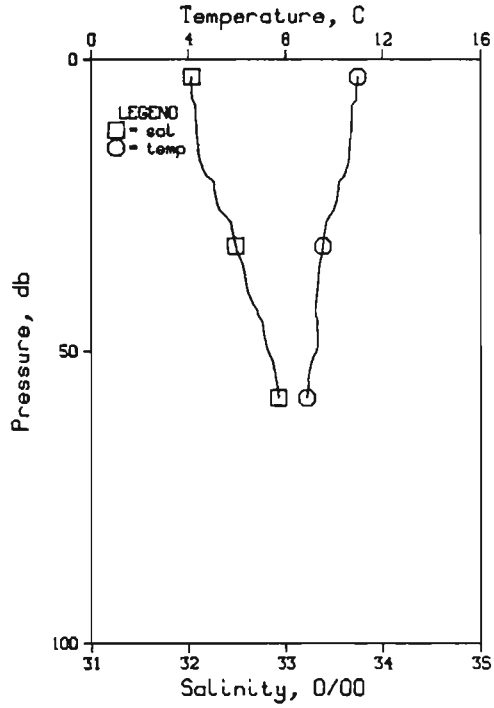


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-115 DATE 15/10/87
POSITION 49- 0.0N, 126-11.7W GMT 21:39 STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.96	32.03	0	24.50	344.6	0.00	0.00	1490.
10	10.87	32.03	10	24.52	343.0	0.34	0.02	1490.
20	9.84	32.30	20	24.90	306.8	0.67	0.07	1487.
30	9.65	32.41	30	25.01	296.4	0.97	0.14	1486.
50	9.38	32.60	50	25.20	278.1	1.54	0.38	1486.
75	8.65	32.99	75	25.62	238.7	2.18	0.78	1484.

DEEPEST MEASUREMENT:

86	8.12	33.24	86	25.90	212.4	2.43	0.99	1482.

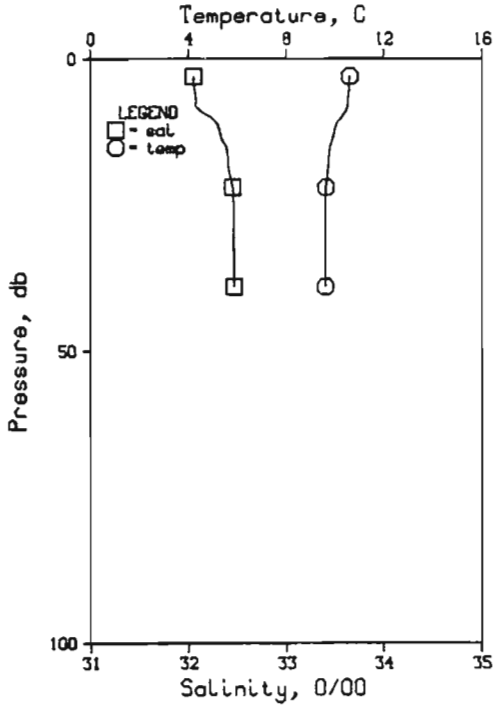


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-116 DATE 15/10/87
POSITION 49- 3.8N, 126- 5.9W GMT 22:17 STATION MA0B
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.96	32.03	0	24.49	344.9	0.00	0.00	1490.
10	10.73	32.07	10	24.57	338.1	0.34	0.02	1489.
20	10.41	32.18	20	24.71	324.7	0.68	0.07	1489.
30	9.59	32.46	30	25.06	291.4	0.98	0.15	1486.
50	9.26	32.82	50	25.39	260.3	1.53	0.37	1486.

DEEPEST MEASUREMENT:

58	8.88	32.92	58	25.54	246.7	1.74	0.48	1485.



OCEAN PHYSICS DIVISION
REFERENCE NO. 87-02-117 DATE 15/10/87
POSITION 49- 8.0N, 126- 0.2W GMT 22:57 STATION MROO
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.60	32.05	0	24.57	337.5	0.00	0.00	1489.
10	10.28	32.23	10	24.77	318.8	0.33	0.02	1488.
20	9.66	32.43	20	25.02	294.9	0.64	0.06	1486.
30	9.59	32.46	30	25.06	291.3	0.93	0.14	1486.

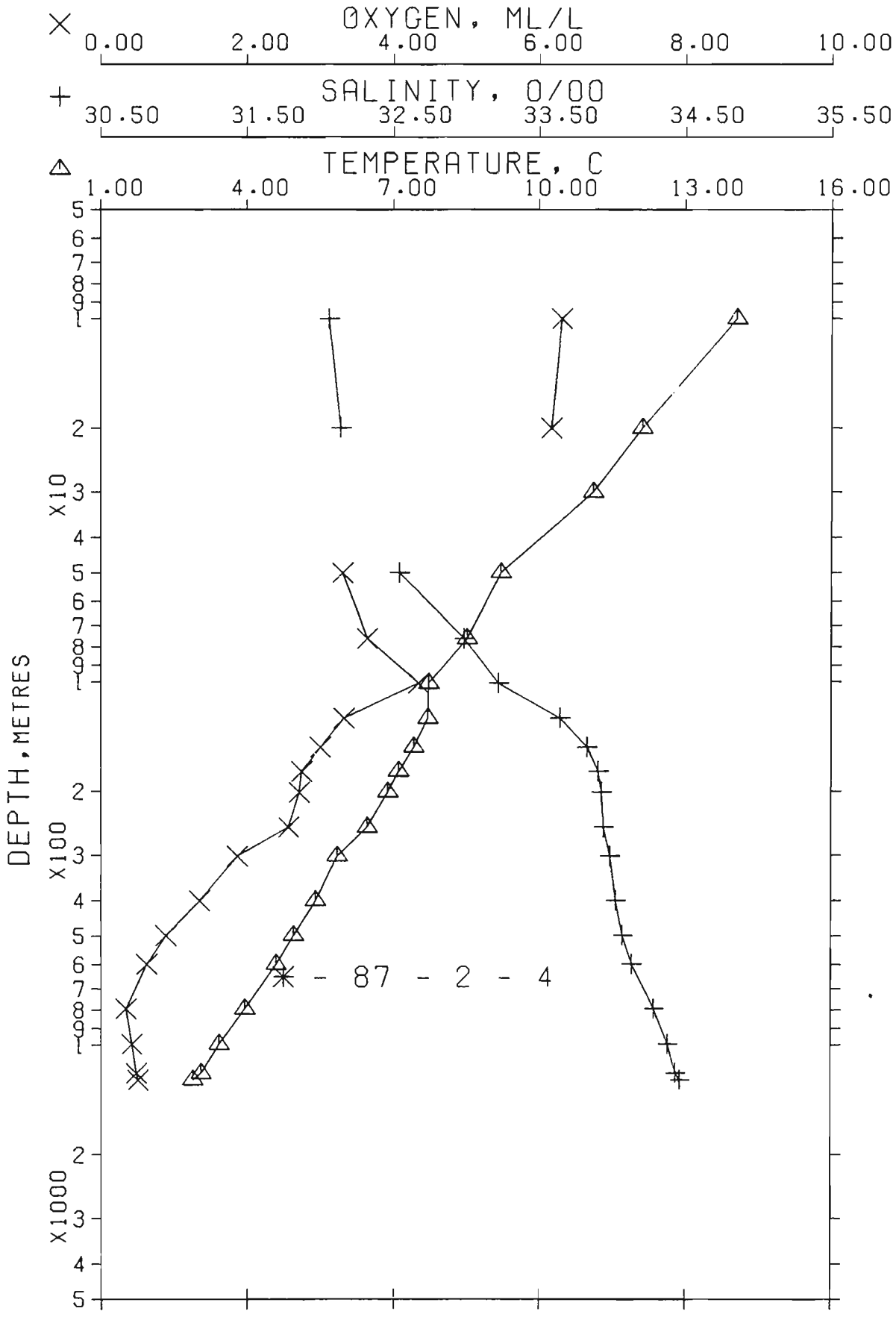
DEEPEST MEASUREMENT:

39	9.59	32.46	39	25.06	291.2	1.19	0.23	1486.

PRES	DEPTH	TEMP	SAL	PRES	DEPTH	TEMP	SAL
0.		10.603	32.046	22.		9.619	32.448
4.		10.569	32.052	23.		9.604	32.456
5.		10.562	32.053	24.		9.597	32.458
6.		10.531	32.069	25.		9.592	32.462
7.		10.509	32.079	26.		9.593	32.461
8.		10.520	32.072	27.		9.591	32.460
9.		10.443	32.131	28.		9.591	32.461
10.		10.276	32.230	29.		9.593	32.460
11.		10.050	32.289	30.		9.591	32.461
12.		9.979	32.310	31.		9.591	32.460
13.		9.936	32.325	32.		9.591	32.460
14.		9.864	32.342	33.		9.588	32.461
15.		9.771	32.381	34.		9.589	32.461
16.		9.741	32.393	35.		9.588	32.461
17.		9.725	32.403	36.		9.589	32.461
18.		9.728	32.400	37.		9.587	32.462
19.		9.703	32.409	38.		9.586	32.462
20.		9.665	32.426	39.		9.586	32.463
21.		9.639	32.438				

Table 4

Hydrographic data taken during Cruise I.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10.00
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32.50
33.50
34.50
35.50
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7.00
10.00
13.00
16.00
DEPTH, METRES
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X100
X1000
- 87 - 2 - 4

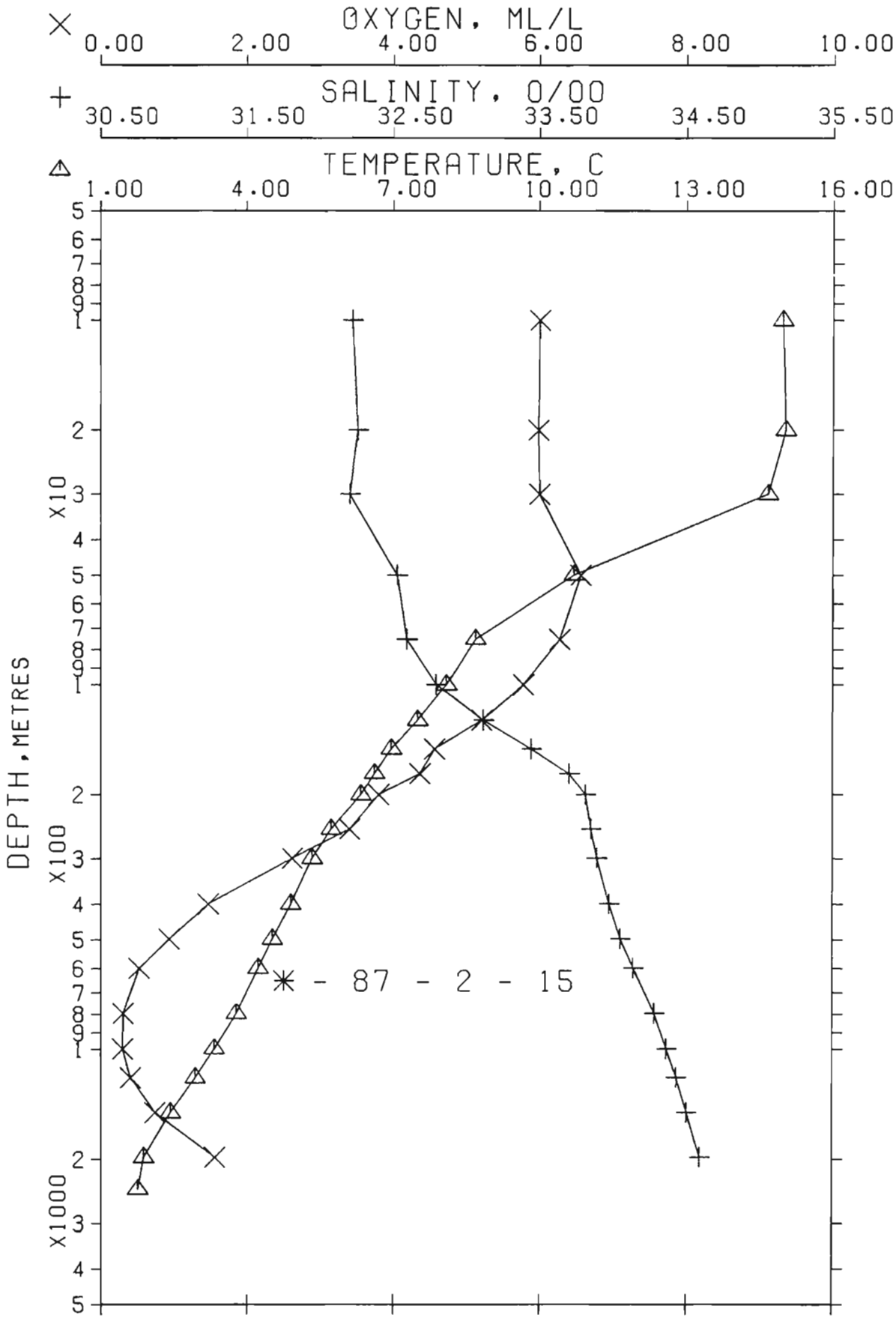
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 4 DATE 23/ 9/87 GMT 23: 0
POSITION 48-38.5 N 126-40.3 W STATION MP04
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	15.38	32.048	0	23.641	426.2	15.38	426.2	0.00	0.00	6.25	1505.
10	14.06	32.062	10	23.931	398.7	14.06	398.5	0.41	0.02	6.31	1501.
20	12.12	32.141	20	24.373	356.8	12.12	356.4	0.79	0.08	6.17	1495.
30	11.11	32.316	30	24.692	326.6	11.11	325.9	1.14	0.17	4.91	1491.
50	9.22	32.539	50	25.182	280.2	9.21	279.2	1.75	0.42	3.30	1485.
76	8.52	32.984	76	25.638	237.3	8.51	235.9	2.42	0.85	3.64	1484.
102	7.72	33.222	101	25.942	208.7	7.71	206.9	2.98	1.36	4.34	1481.
127	7.70	33.641	126	26.273	177.6	7.69	175.5	3.47	1.92	3.32	1482.
152	7.41	33.827	151	26.461	160.2	7.40	157.6	3.89	2.52	3.01	1482.
177	7.10	33.903	176	26.564	150.8	7.08	147.8	4.28	3.18	2.76	1481.
202	6.88	33.927	201	26.613	146.4	6.86	143.2	4.66	3.90	2.72	1480.
253	6.46	33.940	251	26.679	140.6	6.44	136.8	5.38	5.57	2.58	1480.
303	5.85	33.983	301	26.791	130.3	5.82	126.2	6.06	7.51	1.86	1478.
403	5.41	34.023	400	26.876	123.1	5.38	118.1	7.33	12.06	1.35	1478.
503	4.96	34.069	499	26.965	115.4	4.92	109.6	8.52	17.57	0.89	1478.
603	4.60	34.136	598	27.058	107.2	4.55	100.7	9.63	23.83	0.63	1478.
802	3.95	34.285	795	27.245	90.3	3.89	82.8	11.59	37.82	0.34	1479.
1003	3.42	34.380	994	27.374	78.8	3.35	70.6	13.29	53.40	0.43	1480.
1206	3.05	34.435	1194	27.452	71.9	2.96	63.1	14.82	70.56	0.49	1482.
1257	2.88	34.465	1244	27.491	68.0	2.79	59.4	15.17	75.03	0.51	1482.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	15.38	32.048	0	23.641	426.2	15.38	426.2	0.00	0.00	6.25	1505.
10	14.06	32.062	10	23.931	398.7	14.06	398.5	0.41	0.02	6.31	1501.
20	12.12	32.141	20	24.373	356.8	12.12	356.4	0.79	0.08	6.17	1495.
30	11.11	32.316	30	24.692	326.6	11.11	325.9	1.14	0.17	4.91	1491.
50	9.22	32.539	50	25.182	280.2	9.21	279.2	1.75	0.42	3.30	1485.
75	8.55	32.964	75	25.618	239.2	8.54	237.8	2.39	0.82	3.62	1484.
100	7.76	33.209	99	25.926	210.2	7.75	208.5	2.95	1.32	4.30	1481.
125	7.70	33.615	124	26.252	179.6	7.69	177.4	3.44	1.88	3.39	1482.
150	7.43	33.814	149	26.447	161.5	7.42	158.9	3.86	2.47	3.03	1482.
175	7.12	33.897	174	26.555	151.5	7.11	148.6	4.25	3.12	2.78	1481.
200	6.90	33.925	199	26.608	146.8	6.88	143.6	4.62	3.83	2.72	1480.
225	6.68	33.933	223	26.644	143.6	6.66	140.1	4.99	4.62	2.65	1480.
250	6.48	33.939	248	26.676	140.9	6.46	137.2	5.34	5.48	2.58	1480.
300	5.89	33.981	298	26.784	130.9	5.86	126.8	6.02	7.39	1.90	1478.
400	5.42	34.022	397	26.874	123.3	5.39	118.3	7.29	11.91	1.36	1478.
500	4.97	34.068	496	26.962	115.6	4.93	109.8	8.49	17.39	0.90	1478.
600	4.61	34.134	595	27.056	107.4	4.56	100.9	9.60	23.64	0.64	1478.
700	4.26	34.214	694	27.157	98.3	4.21	91.3	10.63	30.45	0.48	1478.
800	3.96	34.284	793	27.244	90.5	3.90	83.0	11.58	37.66	0.35	1479.
900	3.68	34.334	892	27.312	84.4	3.61	76.5	12.45	45.23	0.39	1479.
1000	3.43	34.379	991	27.372	79.0	3.36	70.8	13.26	53.13	0.43	1480.
1200	3.06	34.434	1188	27.450	72.1	2.97	63.3	14.77	70.04	0.49	1482.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X1000
* - 87 - 2 - 15

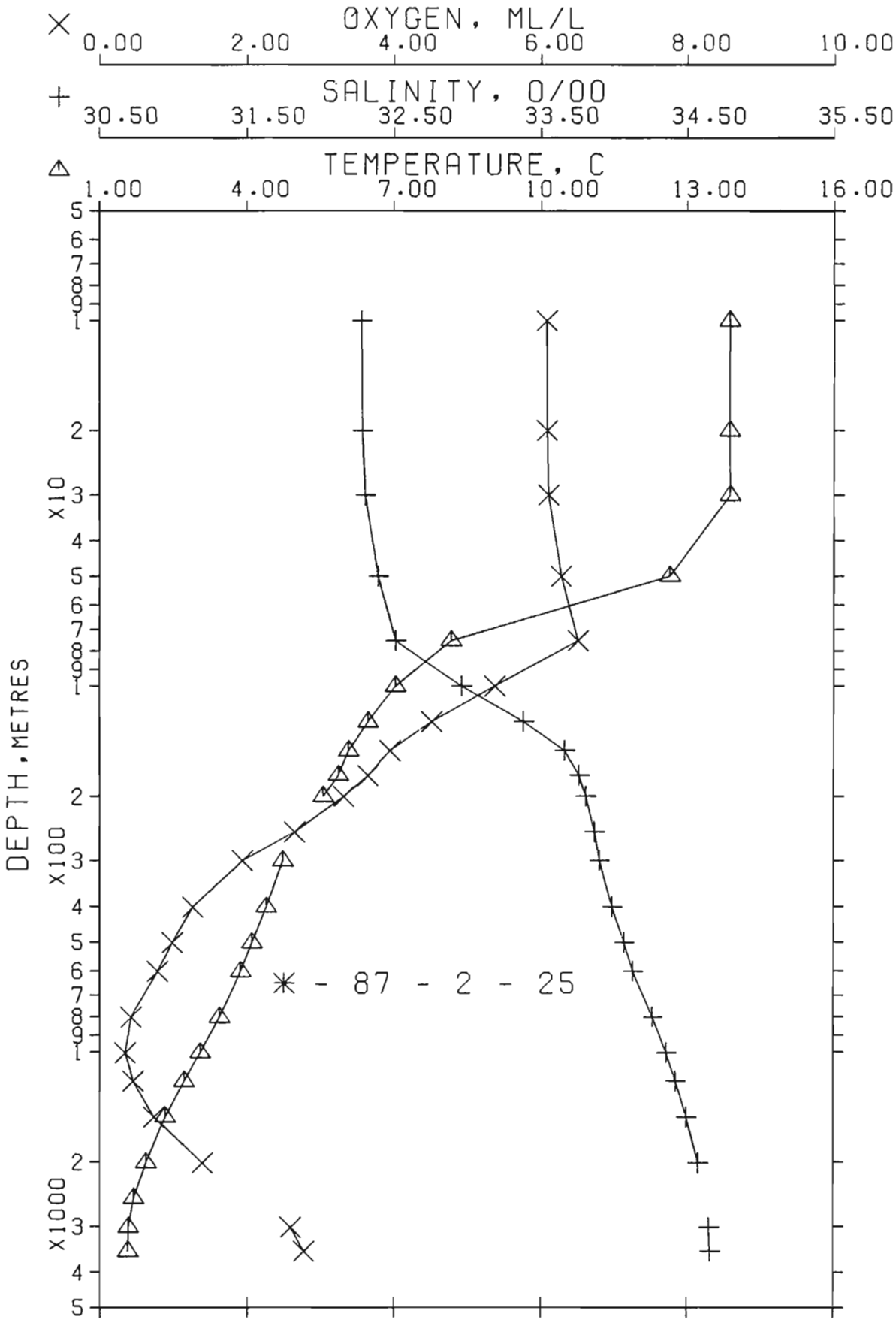
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 15 DATE 25/ 9/87 GMT 0:48
POSITION 48-44.5 N 127-40.1 W STATION MP06
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.93	32.217	0	23.868	404.5	14.93	404.5	0.00	0.00	6.01	1504.
10	14.97	32.223	10	23.864	405.2	14.97	404.9	0.41	0.02	6.01	1504.
20	15.03	32.261	20	23.880	403.9	15.03	403.3	0.81	0.08	5.99	1504.
30	14.67	32.203	30	23.912	401.1	14.67	400.2	1.22	0.19	6.00	1503.
50	10.71	32.528	50	24.927	304.7	10.70	303.6	1.93	0.48	6.57	1491.
75	8.68	32.591	75	25.307	268.7	8.67	267.4	2.65	0.94	6.28	1484.
101	8.08	32.789	100	25.551	245.8	8.07	244.1	3.30	1.51	5.78	1482.
126	7.49	33.114	125	25.890	213.9	7.48	211.8	3.88	2.18	5.21	1481.
151	6.96	33.442	150	26.221	182.8	6.95	180.4	4.38	2.88	4.56	1479.
176	6.62	33.704	175	26.472	159.2	6.60	156.5	4.81	3.60	4.36	1479.
201	6.34	33.818	200	26.599	147.4	6.32	144.5	5.19	4.34	3.81	1478.
251	5.73	33.855	249	26.705	137.7	5.71	134.4	5.89	5.95	3.40	1477.
301	5.34	33.895	299	26.783	130.7	5.32	127.0	6.57	7.85	2.62	1476.
402	4.90	33.977	399	26.899	120.5	4.87	115.9	7.83	12.39	1.47	1476.
502	4.52	34.052	498	27.000	111.5	4.48	106.2	8.99	17.72	0.94	1476.
603	4.23	34.139	598	27.100	102.7	4.18	96.7	10.07	23.81	0.53	1477.
804	3.78	34.283	797	27.261	88.6	3.72	81.4	11.99	37.51	0.31	1478.
1004	3.33	34.368	995	27.373	78.7	3.26	70.7	13.66	52.88	0.30	1480.
1205	2.94	34.432	1193	27.460	70.8	2.86	62.4	15.16	69.74	0.41	1481.
1505	2.43	34.504	1489	27.562	61.4	2.33	52.6	17.14	97.11	0.74	1484.
2003	1.88	34.592	1979	27.676	50.6	1.74	41.6	19.94	146.94	0.00	1490.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	14.93	32.217	0	23.868	404.5	14.93	404.5	0.00	0.00	6.01	1504.
10	14.97	32.223	10	23.864	405.2	14.97	404.9	0.41	0.02	6.01	1504.
20	15.03	32.261	20	23.880	403.9	15.03	403.3	0.81	0.08	5.99	1504.
30	14.67	32.203	30	23.912	401.1	14.67	400.2	1.22	0.19	6.00	1503.
50	10.71	32.528	50	24.927	304.7	10.70	303.6	1.93	0.48	6.57	1491.
75	8.68	32.591	75	25.307	268.7	8.67	267.4	2.65	0.94	6.28	1484.
100	8.09	32.785	99	25.546	246.2	8.08	244.5	3.29	1.50	5.79	1482.
125	7.50	33.106	124	25.882	214.7	7.49	212.7	3.86	2.16	5.23	1481.
150	6.98	33.431	149	26.210	183.7	6.96	181.4	4.36	2.86	4.58	1479.
175	6.63	33.694	174	26.462	160.1	6.62	157.5	4.79	3.57	4.37	1479.
200	6.35	33.813	199	26.593	148.0	6.34	145.1	5.17	4.30	3.84	1478.
225	6.03	33.837	224	26.653	142.5	6.01	139.4	5.53	5.08	3.60	1477.
250	5.74	33.855	248	26.703	137.9	5.72	134.6	5.88	5.93	3.41	1477.
300	5.35	33.894	298	26.782	130.8	5.32	127.1	6.55	7.81	2.63	1476.
400	4.91	33.976	397	26.897	120.6	4.88	116.1	7.81	12.29	1.49	1476.
500	4.53	34.051	496	26.999	111.7	4.49	106.4	8.97	17.61	0.95	1476.
600	4.24	34.137	595	27.098	102.9	4.19	97.0	10.04	23.63	0.54	1476.
700	4.00	34.214	694	27.184	95.3	3.94	88.7	11.03	30.18	0.41	1477.
800	3.79	34.280	793	27.258	88.8	3.73	81.6	11.95	37.21	0.31	1478.
900	3.55	34.326	892	27.318	83.5	3.49	75.9	12.81	44.67	0.30	1479.
1000	3.34	34.366	991	27.370	78.9	3.27	70.9	13.62	52.53	0.30	1480.
1200	2.95	34.431	1188	27.458	71.0	2.86	62.6	15.12	69.31	0.41	1481.
1500	2.44	34.503	1484	27.560	61.5	2.33	52.8	17.11	96.63	0.73	1484.
2000	1.88	34.592	1976	27.676	50.7	1.75	41.7	19.93	146.64	1.56	1490.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TEMPERATURE, C
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DEPTH, METRES
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X100
X1000
* - 87 - 2 - 25

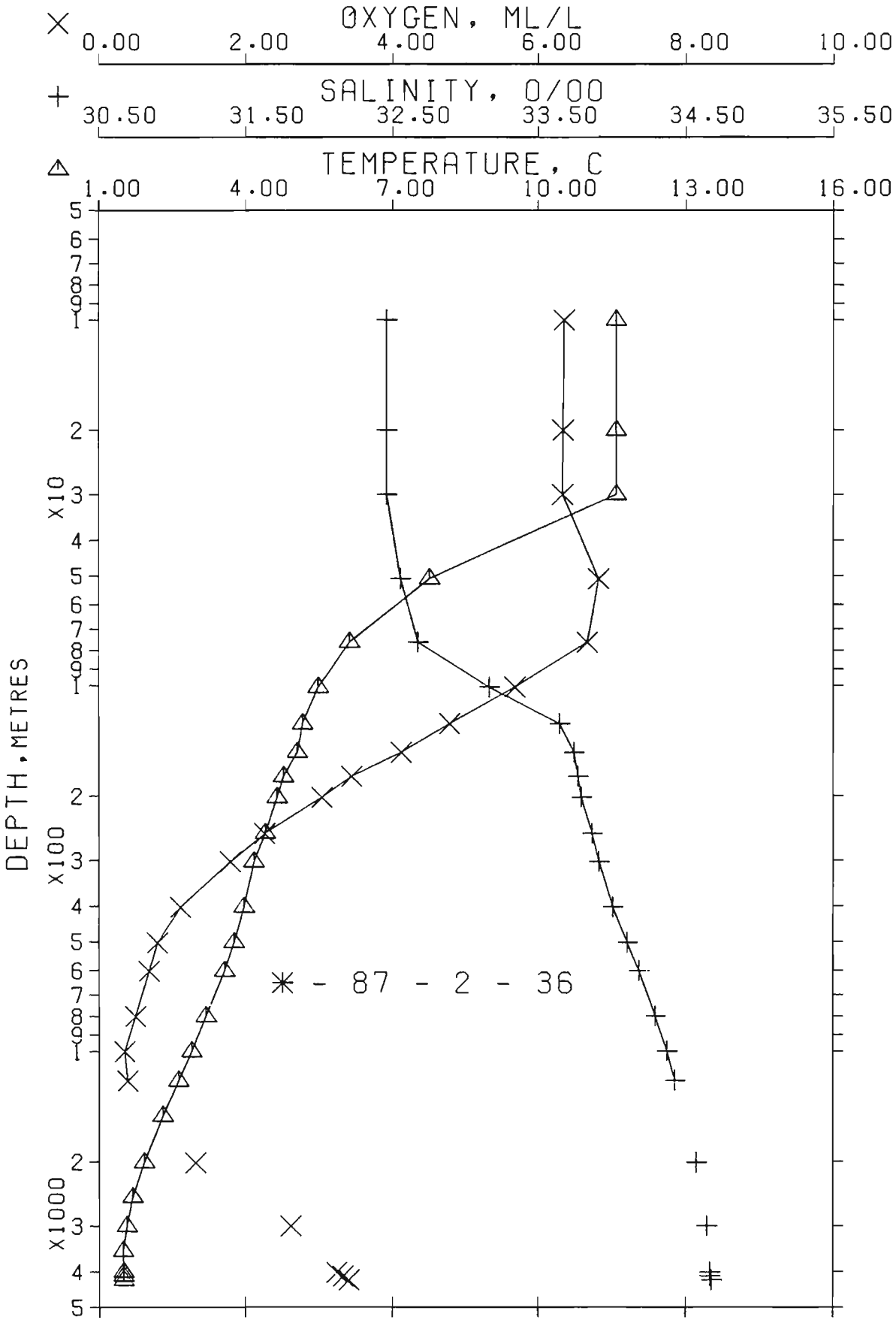
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 25 DATE 26/ 9/87 GMT 17:48
POSITION 49-17.0 N 134-40.0 W STATION MP16
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.83	32.270	0	24.138	378.8	13.83	378.8	0.00	0.00	6.07	1500.
10	13.86	32.278	10	24.138	379.0	13.86	378.7	0.38	0.02	6.08	1501.
20	13.86	32.285	20	24.144	378.7	13.86	378.2	0.76	0.08	6.09	1501.
30	13.87	32.306	30	24.158	377.6	13.87	376.8	1.14	0.18	6.11	1501.
50	12.65	32.395	50	24.468	348.4	12.64	347.2	1.87	0.47	6.28	1497.
75	8.18	32.516	75	25.323	267.1	8.17	265.8	2.65	0.97	6.52	1482.
101	7.04	32.963	100	25.834	218.7	7.03	217.2	3.26	1.51	5.38	1478.
126	6.47	33.383	125	26.239	180.5	6.46	178.7	3.76	2.09	4.52	1477.
151	6.07	33.663	150	26.511	155.0	6.06	152.9	4.18	2.68	3.95	1476.
176	5.86	33.764	175	26.617	145.2	5.85	142.8	4.56	3.31	3.65	1476.
201	5.55	33.809	200	26.690	138.4	5.53	135.9	4.91	3.99	3.32	1475.
252	5.10	33.869	250	26.791	129.2	5.08	126.3	5.59	5.55	2.64	1474.
302	4.73	33.906	300	26.862	122.8	4.71	119.5	6.22	7.34	1.94	1473.
404	4.39	33.990	401	26.965	113.7	4.36	109.7	7.42	11.66	1.26	1474.
506	4.10	34.072	502	27.061	105.3	4.06	100.5	8.54	16.83	0.99	1474.
607	3.87	34.135	602	27.134	99.0	3.83	93.5	9.57	22.68	0.79	1475.
811	3.44	34.267	804	27.282	86.0	3.38	79.4	11.45	36.25	0.42	1477.
1014	3.05	34.361	1004	27.393	76.1	2.98	68.8	13.09	51.44	0.35	1479.
1214	2.72	34.426	1202	27.475	68.9	2.64	61.0	14.54	67.93	0.46	1481.
1522	2.33	34.498	1505	27.565	60.7	2.23	52.3	16.53	95.66	0.73	1484.
2036	1.94	34.577	2011	27.660	52.5	1.80	43.1	19.45	148.46	1.40	1491.
2548	1.69	34.618	2514	27.711	48.2	1.51	38.0	22.03	208.68	2.06	1499.
3057	1.58	34.651	3013	27.746	45.9	1.35	34.4	24.43	277.25	2.59	1507.
3561	1.57	34.658	3505	27.752	46.6	1.29	33.5	26.76	355.81	2.77	1515.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.83	32.270	0	24.138	378.8	13.83	378.8	0.00	0.00	6.07	1500.
10	13.86	32.278	10	24.138	379.0	13.86	378.7	0.38	0.02	6.08	1501.
20	13.86	32.285	20	24.144	378.7	13.86	378.2	0.76	0.08	6.09	1501.
30	13.87	32.306	30	24.158	377.6	13.87	376.8	1.14	0.18	6.11	1501.
50	12.65	32.395	50	24.468	348.4	12.64	347.2	1.87	0.47	6.28	1497.
75	8.18	32.516	75	25.323	267.1	8.17	265.8	2.65	0.97	6.52	1482.
100	7.06	32.955	99	25.824	219.6	7.05	218.2	3.25	1.50	5.40	1478.
125	6.48	33.372	124	26.229	181.5	6.47	179.7	3.75	2.07	4.55	1477.
150	6.08	33.654	149	26.502	155.8	6.07	153.8	4.17	2.66	3.97	1476.
175	5.87	33.760	174	26.613	145.6	5.85	143.2	4.54	3.28	3.66	1476.
200	5.57	33.807	199	26.687	138.7	5.55	136.2	4.90	3.96	3.33	1475.
225	5.33	33.839	224	26.741	133.8	5.31	131.1	5.24	4.69	2.98	1474.
250	5.11	33.867	248	26.788	129.5	5.09	126.6	5.56	5.49	2.66	1474.
300	4.74	33.905	298	26.859	123.1	4.72	119.8	6.20	7.26	1.97	1473.
400	4.40	33.987	397	26.962	114.0	4.37	110.0	7.38	11.47	1.29	1474.
500	4.12	34.068	496	27.056	105.8	4.08	101.0	8.47	16.51	1.00	1474.
600	3.88	34.131	595	27.130	99.4	3.84	94.0	9.50	22.25	0.80	1475.
700	3.66	34.200	694	27.207	92.6	3.61	86.6	10.46	28.62	0.61	1476.
800	3.46	34.261	793	27.275	86.6	3.40	80.1	11.36	35.45	0.44	1477.
900	3.26	34.311	892	27.334	81.4	3.19	74.5	12.20	42.73	0.39	1478.
1000	3.07	34.355	991	27.386	76.7	3.00	69.4	12.98	50.37	0.35	1478.
1200	2.74	34.422	1188	27.469	69.3	2.66	61.5	14.44	66.72	0.45	1480.
1500	2.35	34.493	1484	27.560	61.2	2.25	52.9	16.40	93.64	0.72	1484.
2000	1.96	34.572	1976	27.654	53.0	1.83	43.7	19.27	144.59	1.36	1491.
2500	1.71	34.614	2467	27.707	48.6	1.53	38.4	21.80	202.71	2.00	1498.
3000	1.59	34.648	2957	27.743	46.1	1.37	34.8	24.17	269.11	2.53	1506.
3500	1.57	34.657	3446	27.752	46.5	1.30	33.6	26.48	345.65	2.75	1514.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* - 87 - 2 - 36

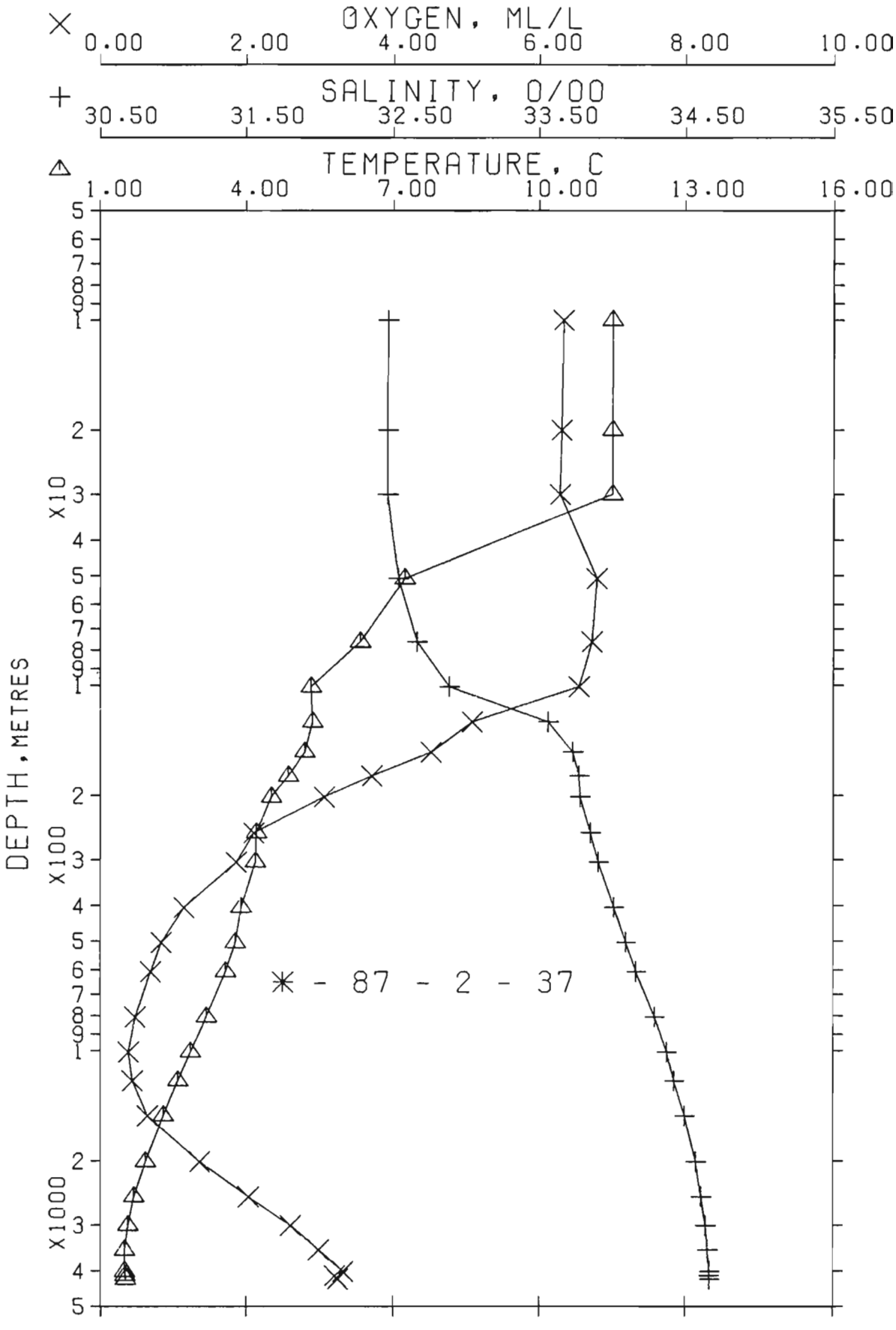
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 36 DATE 29/ 9/87 GMT 4:18
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.58	32.458	0	24.718	323.5	11.58	323.5	0.00	0.00	6.34	1493.
10	11.58	32.460	10	24.719	323.6	11.58	323.4	0.33	0.02	6.34	1493.
20	11.58	32.459	20	24.718	323.9	11.58	323.4	0.65	0.07	6.34	1493.
30	11.58	32.460	30	24.719	324.0	11.58	323.3	0.98	0.15	6.33	1493.
51	7.76	32.554	51	25.413	258.1	7.76	257.3	1.59	0.40	6.82	1480.
76	6.12	32.676	76	25.728	228.3	6.11	227.4	2.20	0.80	6.66	1474.
102	5.48	33.168	101	26.193	184.4	5.47	183.2	2.72	1.27	5.69	1472.
128	5.16	33.642	127	26.604	145.6	5.15	144.1	3.15	1.77	4.79	1472.
153	5.05	33.741	152	26.695	137.2	5.04	135.5	3.50	2.27	4.12	1472.
178	4.77	33.768	177	26.748	132.3	4.76	130.4	3.84	2.84	3.44	1471.
203	4.64	33.790	202	26.780	129.5	4.62	127.4	4.17	3.48	3.04	1471.
255	4.40	33.862	253	26.863	122.0	4.38	119.5	4.82	4.99	2.26	1471.
305	4.17	33.910	303	26.925	116.4	4.15	113.6	5.42	6.71	1.80	1471.
406	3.97	34.004	403	27.020	108.2	3.94	104.5	6.55	10.81	1.12	1472.
507	3.77	34.104	503	27.120	99.4	3.73	95.0	7.60	15.68	0.81	1473.
608	3.58	34.185	603	27.203	92.1	3.54	87.0	8.56	21.17	0.70	1474.
809	3.20	34.296	802	27.328	81.2	3.14	75.1	10.30	33.70	0.51	1476.
1011	2.91	34.372	1001	27.415	73.7	2.84	66.8	11.86	48.13	0.36	1478.
1213	2.64	34.428	1201	27.483	67.8	2.56	60.2	13.29	64.35	0.40	1480.
1518	2.32	34.491	1501	27.561	61.1	2.22	52.7	15.25	91.63	0.80	1484.
2032	1.94	34.574	2007	27.657	52.7	1.80	43.4	18.19	144.60	1.33	1491.
2532	1.70	34.613	2498	27.707	48.6	1.52	38.5	20.72	203.48	2.03	1498.
3045	1.58	34.645	3001	27.741	46.2	1.35	34.9	23.16	272.89	2.61	1507.
3561	1.50	34.655	3505	27.755	45.8	1.22	33.3	25.54	352.90	2.95	1515.
4079	1.51	34.663	4010	27.761	46.6	1.18	32.4	27.93	445.86	3.24	1524.
4184	1.51	34.664	4112	27.762	46.8	1.17	32.2	28.42	466.49	3.33	1526.
4287	1.51	34.672	4213	27.768	46.5	1.15	31.5	28.90	487.39	0.00	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.58	32.458	0	24.718	323.5	11.58	323.5	0.00	0.00	6.34	1493.
10	11.58	32.460	10	24.719	323.6	11.58	323.4	0.33	0.02	6.34	1493.
20	11.58	32.459	20	24.718	323.9	11.58	323.4	0.65	0.07	6.34	1493.
30	11.58	32.460	30	24.719	324.0	11.58	323.3	0.98	0.15	6.33	1493.
50	7.94	32.549	50	25.383	260.9	7.94	260.1	1.56	0.39	6.79	1480.
75	6.20	32.670	75	25.713	229.7	6.19	228.8	2.17	0.77	6.67	1474.
100	5.52	33.140	99	26.167	186.8	5.51	185.7	2.69	1.24	5.74	1472.
125	5.19	33.596	124	26.564	149.3	5.18	147.9	3.11	1.72	4.87	1472.
150	5.06	33.730	149	26.685	138.1	5.05	136.4	3.46	2.21	4.19	1472.
175	4.80	33.765	174	26.742	132.9	4.79	131.0	3.80	2.77	3.52	1471.
200	4.66	33.787	199	26.776	129.9	4.64	127.8	4.13	3.39	3.09	1471.
225	4.53	33.822	223	26.817	126.2	4.52	123.9	4.45	4.09	2.69	1471.
250	4.42	33.856	248	26.856	122.7	4.40	120.2	4.76	4.84	2.33	1471.
300	4.19	33.905	298	26.919	117.0	4.17	114.1	5.36	6.52	1.85	1471.
400	3.98	33.999	397	27.015	108.6	3.95	105.0	6.48	10.53	1.16	1472.
500	3.78	34.098	496	27.114	99.9	3.75	95.6	7.53	15.32	0.83	1473.
600	3.59	34.179	595	27.197	92.7	3.55	87.6	8.49	20.71	0.70	1474.
700	3.39	34.240	694	27.264	86.7	3.34	81.2	9.38	26.64	0.60	1475.
800	3.22	34.291	793	27.323	81.7	3.16	75.6	10.23	33.07	0.51	1476.
900	3.06	34.332	892	27.369	77.6	3.00	71.1	11.02	39.96	0.44	1477.
1000	2.92	34.368	990	27.410	74.1	2.86	67.2	11.78	47.31	0.37	1478.
1200	2.66	34.425	1188	27.479	68.2	2.57	60.6	13.20	63.23	0.40	1480.
1500	2.34	34.488	1484	27.557	61.4	2.24	53.1	15.15	89.97	0.78	1484.
2000	1.96	34.570	1976	27.652	53.2	1.82	43.9	18.02	141.14	1.30	1491.
2500	1.71	34.610	2467	27.704	48.9	1.54	38.8	20.56	199.48	1.99	1498.
3000	1.59	34.642	2957	27.738	46.4	1.37	35.2	22.95	266.40	2.57	1506.
3500	1.51	34.654	3445	27.753	45.8	1.24	33.5	25.26	342.84	2.91	1514.
4000	1.51	34.662	3933	27.760	46.5	1.19	32.5	27.56	430.75	3.20	1523.
4100	1.51	34.663	4031	27.761	46.7	1.18	32.3	28.02	449.98	3.26	1524.
4200	1.51	34.665	4128	27.763	46.8	1.16	32.1	28.49	469.78	3.34	1526.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DEPTH, METRES
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X100
X1000
* - 87 - 2 - 37

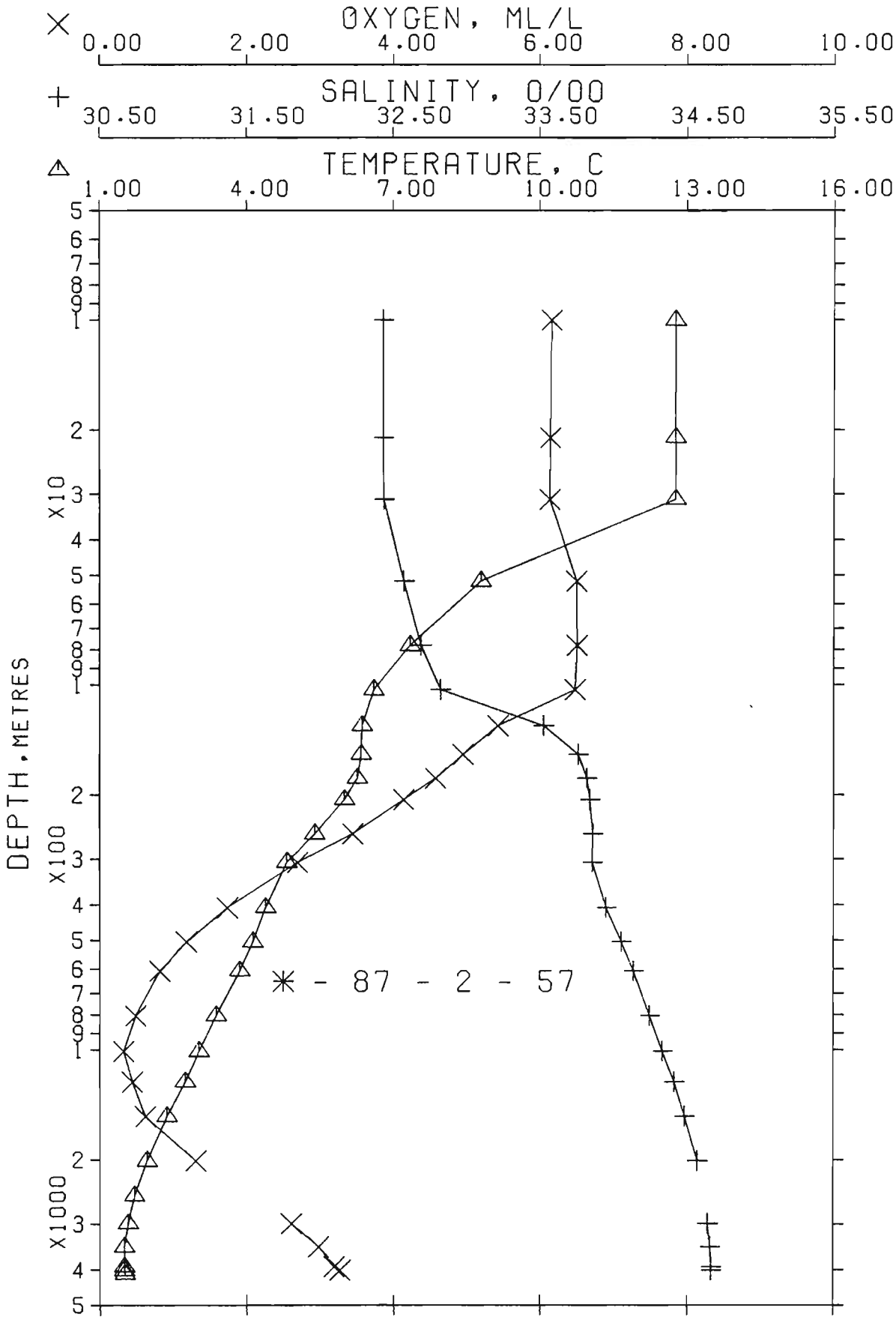
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 37 DATE 29/ 9/87 GMT 9:18
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.49	32.470	0	24.743	321.1	11.49	321.1	0.00	0.00	6.31	1493.
10	11.50	32.462	10	24.735	322.1	11.50	321.8	0.32	0.02	6.34	1493.
20	11.50	32.460	20	24.734	322.4	11.50	322.0	0.65	0.07	6.31	1493.
30	11.50	32.460	30	24.734	322.7	11.50	322.0	0.98	0.15	6.29	1493.
51	7.23	32.534	51	25.471	252.5	7.23	251.7	1.58	0.40	6.79	1478.
76	6.33	32.659	76	25.688	232.1	6.32	231.2	2.19	0.79	6.72	1475.
102	5.33	32.881	101	25.984	204.1	5.32	203.0	2.74	1.29	6.54	1471.
127	5.36	33.563	126	26.519	153.7	5.35	152.2	3.19	1.81	5.08	1473.
153	5.20	33.730	152	26.669	139.7	5.19	137.9	3.57	2.36	4.51	1473.
178	4.87	33.774	177	26.742	133.0	4.86	131.0	3.91	2.93	3.71	1472.
203	4.52	33.780	202	26.785	129.0	4.50	126.9	4.24	3.57	3.06	1471.
255	4.21	33.850	253	26.873	120.9	4.19	118.5	4.88	5.07	2.11	1470.
306	4.19	33.903	304	26.918	117.2	4.17	114.3	5.49	6.82	1.87	1471.
408	3.90	34.010	405	27.032	107.0	3.87	103.3	6.64	10.98	1.15	1472.
510	3.78	34.092	506	27.109	100.4	3.74	96.0	7.69	15.92	0.84	1473.
612	3.58	34.166	607	27.188	93.6	3.54	88.5	8.68	21.58	0.70	1474.
815	3.19	34.290	808	27.324	81.6	3.13	75.5	10.46	34.45	0.48	1476.
1018	2.86	34.372	1008	27.419	73.3	2.79	66.4	12.02	49.04	0.39	1478.
1220	2.60	34.424	1208	27.483	67.7	2.52	60.2	13.44	65.27	0.44	1480.
1525	2.30	34.497	1508	27.567	60.5	2.20	52.2	15.39	92.54	0.65	1484.
2032	1.93	34.573	2007	27.657	52.7	1.79	43.4	18.27	144.60	1.37	1491.
2541	1.69	34.611	2507	27.706	48.7	1.51	38.5	20.85	204.66	2.03	1499.
3052	1.57	34.641	3007	27.739	46.4	1.34	35.1	23.28	273.96	2.61	1507.
3566	1.50	34.656	3510	27.756	45.7	1.22	33.2	25.66	354.03	2.99	1515.
4086	1.50	34.668	4017	27.766	46.2	1.17	31.9	28.05	447.34	3.32	1524.
4191	1.51	34.666	4119	27.763	46.7	1.17	32.1	28.53	467.86	3.21	1526.
4295	1.52	34.667	4221	27.763	47.0	1.16	32.0	29.03	489.10	3.24	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.49	32.470	0	24.743	321.1	11.49	321.1	0.00	0.00	6.31	1493.
10	11.50	32.462	10	24.735	322.1	11.50	321.8	0.32	0.02	6.34	1493.
20	11.50	32.460	20	24.734	322.4	11.50	322.0	0.65	0.07	6.31	1493.
30	11.50	32.460	30	24.734	322.7	11.50	322.0	0.98	0.15	6.29	1493.
50	7.44	32.530	50	25.440	255.5	7.43	254.7	1.55	0.38	6.76	1478.
75	6.37	32.653	75	25.678	233.1	6.37	232.1	2.15	0.77	6.72	1475.
100	5.39	32.868	99	25.967	205.7	5.38	204.6	2.70	1.26	6.55	1471.
125	5.36	33.519	124	26.484	157.0	5.35	155.5	3.16	1.78	5.17	1473.
150	5.22	33.712	149	26.653	141.2	5.20	139.4	3.53	2.29	4.57	1473.
175	4.91	33.769	174	26.733	133.8	4.90	131.8	3.87	2.86	3.81	1472.
200	4.56	33.779	199	26.780	129.5	4.55	127.4	4.20	3.48	3.15	1471.
225	4.38	33.811	223	26.825	125.4	4.36	123.1	4.51	4.17	2.64	1471.
250	4.24	33.844	248	26.866	121.6	4.22	119.2	4.82	4.92	2.19	1470.
300	4.19	33.897	298	26.913	117.6	4.17	114.8	5.42	6.59	1.90	1471.
400	3.92	34.002	397	27.024	107.7	3.89	104.1	6.55	10.61	1.20	1472.
500	3.79	34.085	496	27.102	101.0	3.76	96.6	7.59	15.39	0.87	1473.
600	3.60	34.158	595	27.179	94.3	3.56	89.3	8.57	20.87	0.71	1474.
700	3.40	34.224	694	27.252	87.9	3.35	82.4	9.48	26.90	0.59	1475.
800	3.22	34.282	793	27.315	82.4	3.16	76.4	10.33	33.41	0.49	1476.
900	3.04	34.326	892	27.366	77.9	2.98	71.4	11.13	40.34	0.44	1477.
1000	2.89	34.365	990	27.412	73.9	2.82	67.1	11.89	47.69	0.40	1478.
1200	2.62	34.419	1188	27.477	68.2	2.54	60.8	13.30	63.55	0.43	1480.
1500	2.32	34.492	1484	27.561	61.0	2.22	52.8	15.24	90.22	0.64	1484.
2000	1.95	34.569	1976	27.652	53.1	1.81	43.9	18.11	141.14	1.33	1491.
2500	1.71	34.608	2467	27.702	49.0	1.53	38.9	20.65	199.50	1.99	1498.
3000	1.58	34.638	2957	27.736	46.6	1.36	35.5	23.04	266.56	2.56	1506.
3500	1.51	34.654	3445	27.754	45.8	1.24	33.4	25.35	343.13	2.94	1514.
4000	1.50	34.666	3933	27.764	46.1	1.18	32.1	27.65	431.01	3.27	1523.
4100	1.50	34.668	4031	27.765	46.2	1.17	31.9	28.11	450.04	3.30	1524.
4200	1.51	34.666	4128	27.763	46.7	1.17	32.1	28.58	469.72	3.21	1526.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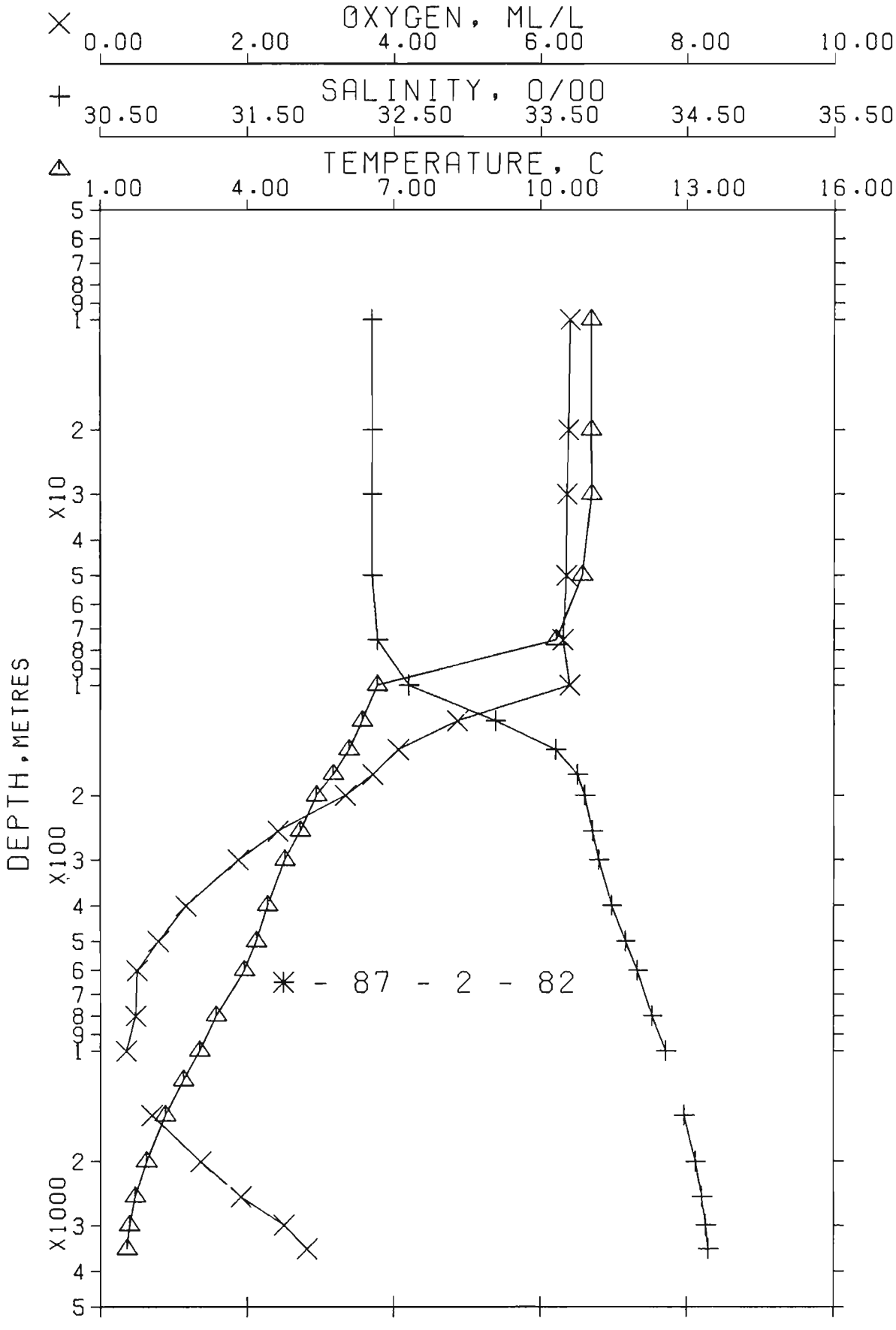
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 57 DATE 4/10/87 GMT 2:36
POSITION 48- 1.9 N 140-55.3 W STATION OS08
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.76	32.432	0	24.476	346.6	12.76	346.6	0.00	0.00	6.16	1497.
10	12.77	32.433	10	24.475	346.9	12.77	346.7	0.35	0.02	6.17	1497.
21	12.77	32.434	21	24.475	347.1	12.77	346.6	0.73	0.08	6.15	1497.
31	12.77	32.437	31	24.478	347.1	12.77	346.3	1.08	0.17	6.14	1497.
52	8.80	32.576	52	25.277	271.2	8.79	270.3	1.73	0.45	6.50	1484.
78	7.35	32.690	78	25.577	242.8	7.34	241.6	2.40	0.89	6.52	1479.
104	6.60	32.825	103	25.784	223.4	6.59	222.0	2.99	1.43	6.48	1476.
130	6.36	33.527	129	26.367	168.4	6.35	166.6	3.50	2.04	5.44	1477.
156	6.34	33.764	155	26.556	150.9	6.33	148.6	3.92	2.65	4.95	1477.
181	6.26	33.823	180	26.613	145.8	6.24	143.2	4.29	3.29	4.58	1478.
207	6.00	33.846	206	26.664	141.2	5.98	138.3	4.66	4.03	4.15	1477.
258	5.39	33.866	256	26.754	132.9	5.37	129.7	5.35	5.66	3.44	1475.
308	4.82	33.859	306	26.815	127.4	4.80	124.0	6.01	7.56	2.70	1474.
410	4.39	33.953	407	26.936	116.5	4.36	112.4	7.25	12.10	1.74	1474.
510	4.13	34.058	506	27.047	106.7	4.09	101.9	8.37	17.32	1.19	1474.
611	3.86	34.141	606	27.140	98.4	3.82	93.0	9.40	23.23	0.83	1475.
813	3.38	34.248	806	27.272	86.8	3.32	80.3	11.27	36.74	0.50	1477.
1019	3.03	34.335	1009	27.374	77.9	2.96	70.6	12.95	52.46	0.33	1479.
1233	2.75	34.412	1221	27.461	70.3	2.66	62.3	14.54	70.69	0.44	1481.
1538	2.38	34.486	1521	27.551	62.3	2.27	53.6	16.56	99.12	0.63	1485.
2039	1.97	34.569	2014	27.651	53.5	1.83	44.0	19.46	151.84	1.30	1491.
2539	1.71	34.609	2505	27.703	49.1	1.53	38.8	22.00	211.12	2.02	1499.
3029	1.58	34.641	2986	27.738	46.5	1.36	35.2	24.35	277.82	2.60	1506.
3515	1.50	34.657	3461	27.757	45.5	1.23	33.2	26.59	352.53	2.98	1514.
3994	1.50	34.663	3928	27.762	46.3	1.18	32.4	28.79	436.75	3.18	1523.
4088	1.50	34.663	4020	27.762	46.5	1.17	32.3	29.23	454.79	3.26	1524.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	12.76	32.432	0	24.476	346.6	12.76	346.6	0.00	0.00	6.16	1497.
10	12.77	32.433	10	24.475	346.9	12.77	346.7	0.35	0.02	6.17	1497.
20	12.77	32.434	20	24.475	347.1	12.77	346.6	0.69	0.07	6.15	1497.
30	12.77	32.437	30	24.477	347.1	12.77	346.4	1.04	0.16	6.14	1497.
50	9.14	32.564	50	25.214	277.2	9.14	276.2	1.67	0.41	6.47	1485.
75	7.51	32.677	75	25.545	245.9	7.50	244.7	2.32	0.82	6.52	1479.
100	6.70	32.808	99	25.758	225.9	6.69	224.5	2.91	1.35	6.49	1477.
125	6.40	33.410	124	26.270	177.6	6.39	175.8	3.42	1.93	5.61	1477.
150	6.34	33.714	149	26.516	154.6	6.33	152.4	3.83	2.50	5.06	1477.
175	6.28	33.809	174	26.600	147.0	6.26	144.5	4.20	3.12	4.67	1477.
200	6.07	33.840	199	26.650	142.4	6.05	139.6	4.56	3.81	4.26	1477.
225	5.77	33.854	223	26.698	138.0	5.75	135.1	4.91	4.57	3.88	1476.
250	5.48	33.863	248	26.742	134.1	5.46	130.9	5.25	5.40	3.54	1476.
300	4.91	33.860	298	26.806	128.2	4.88	124.8	5.90	7.23	2.81	1474.
400	4.43	33.945	397	26.925	117.5	4.40	113.4	7.13	11.61	1.82	1474.
500	4.15	34.048	496	27.037	107.6	4.12	102.8	8.26	16.77	1.24	1474.
600	3.89	34.133	595	27.131	99.3	3.84	93.9	9.29	22.56	0.87	1475.
700	3.63	34.192	694	27.203	92.9	3.58	86.9	10.25	28.92	0.67	1476.
800	3.41	34.242	793	27.265	87.4	3.35	81.1	11.15	35.80	0.52	1476.
900	3.22	34.287	892	27.318	82.7	3.16	75.9	12.00	43.16	0.42	1477.
1000	3.06	34.328	991	27.366	78.6	2.99	71.4	12.81	50.97	0.35	1478.
1200	2.79	34.401	1188	27.448	71.4	2.71	63.5	14.31	67.76	0.43	1481.
1500	2.42	34.478	1484	27.541	63.2	2.32	54.6	16.32	95.47	0.61	1484.
2000	2.00	34.563	1976	27.644	54.1	1.86	44.6	19.25	147.57	1.26	1491.
2500	1.73	34.606	2467	27.699	49.4	1.55	39.2	21.81	206.25	1.97	1498.
3000	1.59	34.639	2957	27.736	46.6	1.37	35.4	24.21	273.61	2.57	1506.
3500	1.50	34.657	3446	27.756	45.5	1.23	33.2	26.52	350.04	2.97	1514.
4000	1.50	34.663	3934	27.762	46.3	1.18	32.4	28.82	437.91	3.19	1523.
4100	1.50	34.663	4031	27.762	46.5	1.17	32.3	29.28	457.07	3.27	1524.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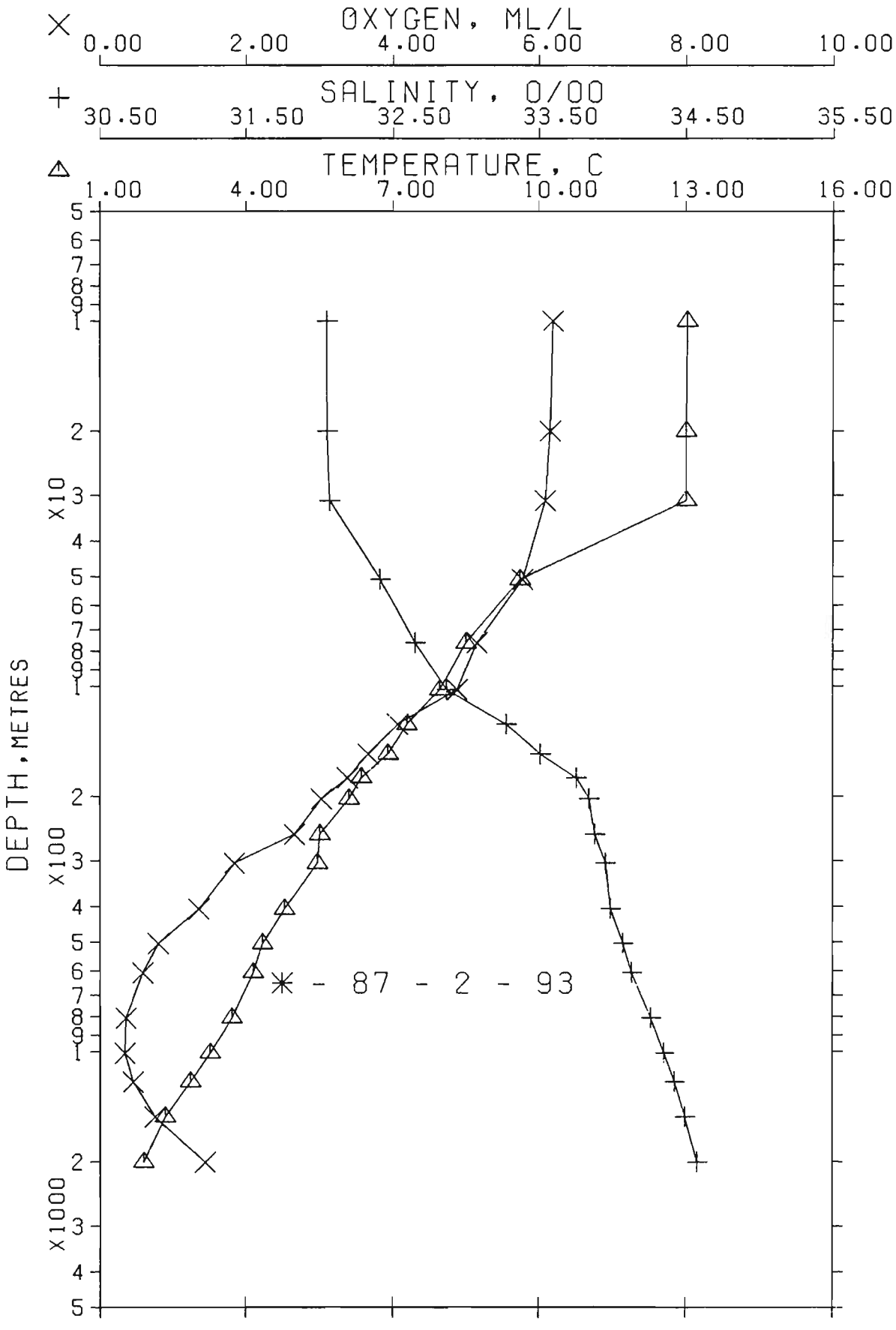
OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 82 DATE 10/10/87 GMT 19:36
POSITION 51-11.0 N 138- 6.0 W STATION MR13
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.04	32.347	0	24.728	322.5	11.04	322.5	0.00	0.00	6.37	1491.
10	11.04	32.349	10	24.730	322.6	11.04	322.4	0.32	0.02	6.40	1491.
20	11.04	32.354	20	24.734	322.4	11.04	322.0	0.65	0.07	6.38	1491.
30	11.05	32.351	30	24.730	323.0	11.05	322.3	0.97	0.15	6.36	1491.
50	10.86	32.353	50	24.765	320.1	10.85	319.0	1.62	0.42	6.35	1491.
75	10.32	32.390	75	24.886	308.9	10.31	307.4	2.42	0.93	6.30	1489.
101	6.67	32.603	100	25.600	240.8	6.66	239.4	3.11	1.54	6.40	1476.
126	6.36	33.198	125	26.108	192.9	6.35	191.2	3.66	2.17	4.87	1476.
151	6.09	33.604	150	26.462	159.6	6.08	157.6	4.10	2.79	4.07	1476.
176	5.77	33.755	175	26.621	144.8	5.76	142.5	4.48	3.43	3.72	1475.
201	5.43	33.805	200	26.701	137.3	5.41	134.8	4.83	4.11	3.34	1474.
252	5.10	33.858	250	26.782	130.1	5.08	127.1	5.50	5.66	2.42	1474.
302	4.78	33.899	300	26.851	123.9	4.76	120.6	6.14	7.47	1.88	1474.
403	4.42	33.990	400	26.962	114.1	4.39	110.0	7.34	11.77	1.17	1474.
505	4.19	34.087	501	27.063	105.2	4.15	100.3	8.46	16.94	0.80	1475.
606	3.94	34.168	601	27.154	97.3	3.90	91.7	9.48	22.72	0.51	1475.
807	3.37	34.267	800	27.288	85.2	3.31	78.8	11.31	35.87	0.49	1476.
1007	3.03	34.359	997	27.393	76.0	2.96	68.8	12.92	50.67	0.36	1478.
1213	2.70	34.416	1201	27.468	69.4	2.62	61.6	14.42	67.65	0.52	1480.
1518	2.33	34.484	1501	27.554	61.7	2.23	53.4	16.41	95.36	0.70	1484.
2031	1.95	34.561	2006	27.646	53.8	1.81	44.4	19.38	148.89	1.37	1491.
2537	1.72	34.602	2503	27.697	49.7	1.54	39.4	22.01	209.97	1.91	1499.
3038	1.60	34.631	2994	27.729	47.5	1.37	36.1	24.45	279.48	2.51	1507.
3533	1.55	34.648	3477	27.746	46.9	1.28	34.2	26.78	357.37	0.00	1515.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.04	32.347	0	24.728	322.5	11.04	322.5	0.00	0.00	6.37	1491.
10	11.04	32.349	10	24.730	322.6	11.04	322.4	0.32	0.02	6.40	1491.
20	11.04	32.354	20	24.734	322.4	11.04	322.0	0.65	0.07	6.38	1491.
30	11.05	32.351	30	24.730	323.0	11.05	322.3	0.97	0.15	6.36	1491.
50	10.86	32.353	50	24.765	320.1	10.85	319.0	1.62	0.42	6.35	1491.
75	10.32	32.390	75	24.886	308.9	10.31	307.4	2.42	0.93	6.30	1489.
100	6.74	32.599	99	25.587	242.1	6.73	240.7	3.10	1.53	6.40	1477.
125	6.37	33.182	124	26.094	194.2	6.36	192.5	3.64	2.15	4.92	1476.
150	6.10	33.590	149	26.450	160.8	6.09	158.7	4.08	2.77	4.09	1476.
175	5.78	33.749	174	26.614	145.4	5.77	143.1	4.46	3.40	3.74	1475.
200	5.45	33.802	199	26.697	137.7	5.43	135.2	4.81	4.07	3.36	1475.
225	5.27	33.831	223	26.742	133.7	5.25	131.0	5.15	4.80	2.89	1474.
250	5.11	33.856	248	26.779	130.3	5.09	127.4	5.48	5.60	2.45	1474.
300	4.79	33.897	298	26.848	124.1	4.77	120.9	6.12	7.38	1.90	1474.
400	4.43	33.988	397	26.959	114.3	4.40	110.2	7.31	11.63	1.19	1474.
500	4.20	34.083	496	27.059	105.6	4.16	100.7	8.41	16.66	0.81	1475.
600	3.95	34.163	595	27.149	97.7	3.91	92.2	9.42	22.36	0.52	1475.
700	3.65	34.218	694	27.222	91.2	3.60	85.2	10.37	28.61	0.50	1476.
800	3.39	34.264	793	27.284	85.6	3.33	79.2	11.25	35.35	0.49	1476.
900	3.20	34.312	892	27.340	80.7	3.14	73.9	12.08	42.55	0.42	1477.
1000	3.04	34.356	990	27.390	76.3	2.97	69.1	12.87	50.14	0.36	1478.
1200	2.72	34.412	1188	27.464	69.8	2.64	62.0	14.32	66.50	0.51	1480.
1500	2.35	34.480	1484	27.550	62.1	2.25	53.8	16.30	93.68	0.69	1484.
2000	1.97	34.557	1976	27.641	54.2	1.83	44.9	19.21	145.46	1.33	1491.
2500	1.74	34.599	2467	27,693	50.0	1.56	39.8	21.82	205.22	1.88	1498.
3000	1.61	34.629	2956	27.726	47.7	1.39	36.3	24.27	273.85	2.47	1506.
3500	1.55	34.647	3445	27.745	47.0	1.28	34.3	26.63	351.89	2.80	1514.


OXYGEN, ML/L
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4.00
6.00
8.00
10.00
SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
* - 87 - 2 - 93

OCEAN PHYSICS GROUP
REFERENCE NO. 87-02- 93 DATE 13/10/87 GMT 3: 6
POSITION 51-43.5 N 131-50.0 W STATION MJ03
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.05	32.051	0	24.125	380.0	13.05	380.0	0.00	0.00	5.92	1497.
10	13.03	32.050	10	24.129	379.9	13.03	379.7	0.38	0.02	6.19	1497.
20	13.01	32.054	20	24.136	379.5	13.01	379.0	0.76	0.08	6.15	1498.
31	13.01	32.071	31	24.149	378.5	13.01	377.7	1.18	0.19	6.09	1498.
51	9.62	32.414	51	25.021	295.6	9.61	294.6	1.86	0.47	5.78	1487.
76	8.51	32.652	76	25.380	261.7	8.50	260.4	2.56	0.92	5.16	1483.
103	7.97	32.871	102	25.631	238.2	7.96	236.5	3.21	1.52	4.89	1482.
128	7.29	33.280	127	26.048	198.9	7.28	196.8	3.76	2.16	4.07	1480.
154	6.90	33.510	153	26.282	176.9	6.89	174.6	4.25	2.86	3.67	1479.
179	6.36	33.753	178	26.545	152.2	6.34	149.7	4.66	3.57	3.39	1478.
204	6.11	33.839	203	26.645	143.0	6.09	140.2	5.04	4.29	3.04	1477.
256	5.52	33.879	254	26.749	133.5	5.50	130.2	5.75	5.95	2.67	1476.
307	5.47	33.953	305	26.813	128.0	5.44	124.1	6.42	7.88	1.85	1477.
409	4.80	33.988	406	26.919	118.6	4.77	114.0	7.67	12.45	1.36	1476.
510	4.35	34.075	506	27.037	107.9	4.31	102.8	8.81	17.81	0.81	1475.
612	4.16	34.135	607	27.105	102.2	4.11	96.3	9.88	23.92	0.59	1476.
814	3.72	34.264	807	27.252	89.4	3.66	82.2	11.82	37.93	0.36	1478.
1017	3.27	34.353	1007	27.366	79.2	3.20	71.3	13.52	53.78	0.35	1480.
1219	2.87	34.427	1207	27.462	70.5	2.78	62.2	15.03	71.03	0.46	1481.
1523	2.35	34.498	1506	27.564	61.0	2.25	52.5	17.03	98.84	0.76	1484.
2029	1.91	34.581	2004	27.665	51.9	1.77	42.6	19.89	150.48	1.45	1491.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	13.05	32.051	0	24.125	380.0	13.05	380.0	0.00	0.00	5.92	1497.
10	13.03	32.050	10	24.129	379.9	13.03	379.7	0.38	0.02	6.19	1497.
20	13.01	32.054	20	24.136	379.5	13.01	379.0	0.76	0.08	6.15	1498.
30	13.01	32.070	30	24.148	378.6	13.01	377.8	1.14	0.17	6.09	1498.
50	9.79	32.397	50	24.980	299.5	9.79	298.5	1.82	0.45	5.80	1487.
75	8.56	32.641	75	25.363	263.3	8.55	262.0	2.52	0.89	5.19	1483.
100	8.02	32.852	99	25.609	240.2	8.01	238.6	3.15	1.45	4.91	1482.
125	7.36	33.239	124	26.007	202.8	7.35	200.8	3.70	2.09	4.15	1480.
150	6.95	33.478	149	26.250	180.0	6.94	177.7	4.18	2.75	3.72	1479.
175	6.44	33.715	174	26.504	156.1	6.43	153.5	4.60	3.45	3.43	1478.
200	6.15	33.825	199	26.628	144.5	6.13	141.7	4.97	4.16	3.09	1477.
225	5.86	33.856	223	26.690	138.9	5.84	135.9	5.33	4.93	2.88	1477.
250	5.58	33.875	248	26.739	134.4	5.56	131.2	5.67	5.75	2.70	1476.
300	5.48	33.943	298	26.805	128.7	5.45	124.9	6.32	7.59	1.95	1476.
400	4.85	33.985	397	26.911	119.3	4.82	114.8	7.56	12.00	1.40	1476.
500	4.39	34.067	496	27.026	108.9	4.35	103.8	8.70	17.24	0.86	1475.
600	4.18	34.128	595	27.097	102.9	4.14	97.0	9.76	23.15	0.62	1476.
700	3.95	34.196	694	27.174	96.2	3.90	89.7	10.75	29.75	0.48	1477.
800	3.75	34.256	793	27.243	90.2	3.69	83.1	11.69	36.86	0.38	1478.
900	3.52	34.304	892	27.304	84.8	3.45	77.3	12.56	44.44	0.36	1479.
1000	3.30	34.346	990	27.358	79.9	3.23	72.1	13.38	52.40	0.35	1479.
1200	2.91	34.420	1188	27.454	71.3	2.82	63.0	14.90	69.33	0.45	1481.
1500	2.39	34.493	1484	27.557	61.6	2.28	53.1	16.89	96.69	0.74	1484.
2000	1.93	34.577	1976	27.660	52.3	1.79	43.1	19.74	147.39	1.42	1490.

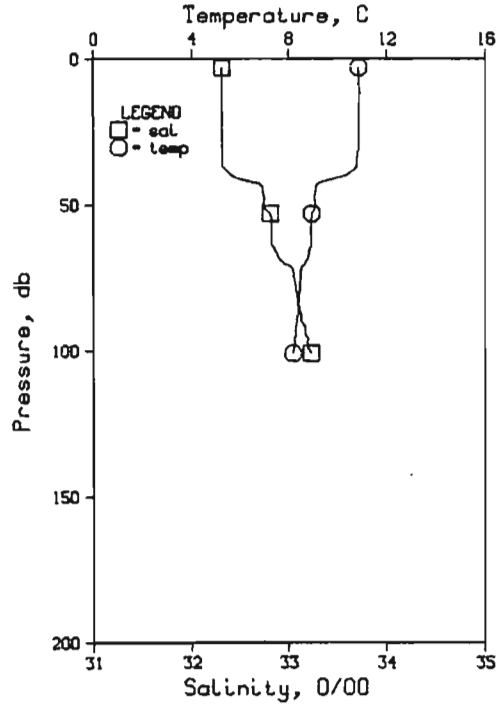
Table 5. Sea surface salinity (3m depth) observed via the seawater loop during Cruise III. (24 November - 9 December 1987).

SURFACE SALINITY DATA CRUISE III (87-4)

STN. NO.	LAT. (° 'N)	LONG. (° 'W)	DATE YR MO DY	TIME (U.T.C.)	SALINITY (°/₀₀)
JF01	48 16.0	123 30.0	87 11 24	22:47	31.931
JF02	48 18.0	124 00.0	87 11 25	01:32	31.978
JF03	48 27.0	124 30.0	87 11 25	03:59	31.216
JF04	48 32.3	125 00.0	87 11 25	06:10	31.857
MP01	48 34.5	125 30.0	87 11 25	08:30	32.299
MP03	48 37.5	126 20.0	87 11 25	12:30	32.249
MP04	48 39.0	126 40.0	87 11 25	13:55	32.239
MA05	48 20.2	127 06.0	87 11 26	23:10	32.238
MA04	48 30.2	126 52.5	87 11 26	01:38	32.239
MA3B	48 36.2	126 44.2	87 11 26	03:35	32.236
MA03	48 40.2	126 38.8	87 11 26	05:20	32.238
MA2B	48 45.2	126 32.0	87 11 26	06:50	32.245
MA02	48 50.2	126 25.3	87 11 26	07:57	32.272
MA1B	48 55.2	126 18.0	87 11 26	08:50	32.304
MA01	49 00.0	126 11.7	87 11 26	09:37	32.168
MA0B	49 03.8	126 05.9	87 11 26	10:17	32.013
MA00	49 08.0	126 00.2	87 11 26	10:57	31.863
MP05	48 41.6	127 10.0	87 11 26	19:09	32.232
MP06	48 44.6	127 40.0	87 11 26	21:10	32.346
MP07	48 46.6	128 10.0	87 11 26	23:21	32.234
MP08	48 49.0	128 40.0	87 11 27	01:28	32.186
MP09	48 51.4	129 10.0	87 11 27	03:31	32.192
MP10	48 53.6	129 40.0	87 11 27	05:32	32.214
MP11	48 56.0	130 10.0	87 11 27	07:29	32.073
MP12	48 58.2	130 40.0	87 11 27	09:28	32.194
MP13	49 02.6	131 40.0	87 11 27	13:30	32.084
MP14	49 07.4	132 40.0	87 11 27	17:31	32.354
MP15	49 12.0	133 40.0	87 11 27	21:30	32.305
MP16	49 17.0	139 40.0	87 11 28	02:00	32.292
MP17	49 21.0	135 40.0	87 11 28	06:43	32.369
MP18	49 26.0	136 40.0	87 11 28	11:26	32.507
MP19	49 30.0	137 40.0	87 11 28	15:55	32.507
MP20	49 34.0	138 40.0	87 11 28	20.09	32.481
MP21	49 38.0	139 40.0	87 11 29	00:28	32.469
MP22	49 42.0	140 40.0	87 11 29	04:17	32.535
MP23	49 46.0	141 40.0	87 11 29	08:16	32.553
MP24	49 50.2	142 40.0	87 11 29	12:17	32.493
MP25	50 00.0	143 36.3	87 11 29	16:02	32.484
MP35	50 00.0	144 18.2	87 11 29	18:49	32.501
OS01	48 34.8	141 46.2	87 12 02	02:05	32.592
OS02	48 34.8	140 57.4	87 12 02	05:58	32.595
OS03	48 34.8	140 08.7	87 12 02	10:24	32.486
OS04	48 34.8	139 20.0	87 12 02	14:22	32.504
OS05	48 31.8	138 31.3	87 12 02	18:15	32.551
OS06	48 34.8	137 42.6	87 12 02	22:25	32.442
OS12	48 02.4	137 43.6	87 12 03	02:40	32.524
OS11	48 02.4	138 31.8	87 12 03	06:40	32.594
OS10	48 02.4	139 20.0	87 12 03	11:33	32.551
OS09	48 02.4	140 08.2	87 12 03	16:07	32.565
OS08	48 02.4	140 56.4	87 12 03	20:42	32.589
OS07	48 02.4	141 44.8	87 12 04	01:32	32.587
OS13	47 30.0	141 43.3	87 12 04	05:37	32.607
OS14	47 30.0	140 55.5	87 12 04	09:50	32.530
OS15	47 30.0	140 07.8	87 12 04	14:09	32.525
OS31	47 30.0	139 43.9	87 12 05	04:45	32.576
OS34	47 46.2	139 20.0	87 12 05	12:30	32.561
OS16	47 27.9	139 16.4	87 12 05	20:13	32.630
	51 44.4	128 00.7	87 12 08	15:19	30.510
	50 26.6	126 00.2	87 12 09	05:00	29.662

Table 6

STP data taken during Cruise III.

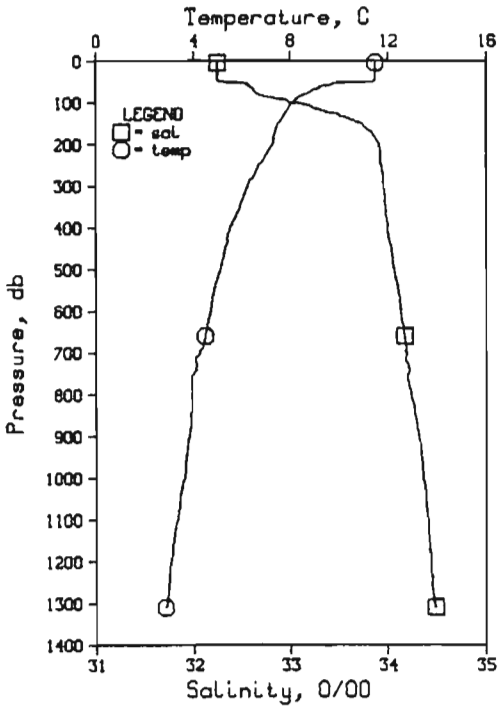


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 1 DATE 25/11/87
POSITION 48-34.5N, 125-30.0W GMT 8:46 STATION MP01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.88	32.31	0	24.73	322.3	0.00	0.00	1490.
10	10.88	32.31	10	24.73	322.7	0.32	0.02	1490.
20	10.88	32.31	20	24.73	322.7	0.65	0.07	1490.
30	10.87	32.31	30	24.73	322.9	0.97	0.15	1491.
50	9.07	32.74	50	25.36	263.2	1.56	0.39	1485.
75	8.48	33.05	75	25.70	231.7	2.18	0.78	1483.
100	8.19	33.22	99	25.87	215.6	2.74	1.28	1483.

DEEPEST MEASUREMENT:

101	8.18	33.23	100	25.88	214.8	2.77	1.30	1483.

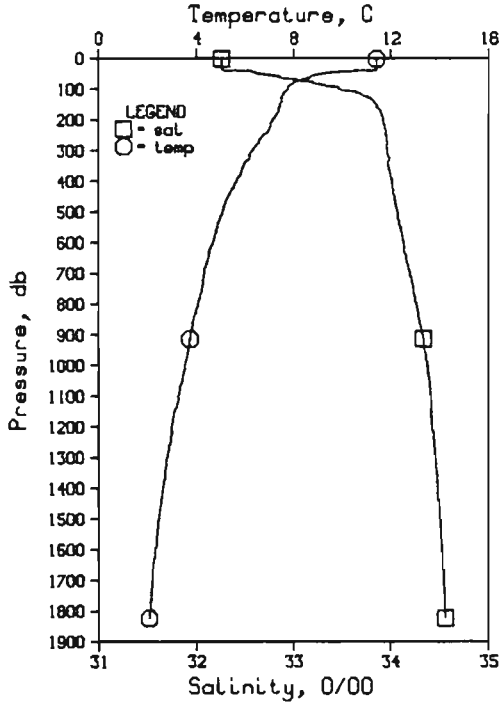


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 2 DATE 25/11/87
POSITION 48-39.0N, 126-40.0W GMT 17:38 STATION MP04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.47	32.25	0	24.57	337.2	0.00	0.00	1492.
10	11.47	32.25	10	24.57	337.4	0.34	0.02	1492.
20	11.47	32.24	20	24.57	337.7	0.67	0.07	1492.
30	11.47	32.25	30	24.57	337.9	1.01	0.15	1493.
50	11.18	32.31	50	24.68	328.6	1.69	0.43	1492.
75	8.81	32.63	75	25.32	267.4	2.39	0.88	1484.
100	8.15	32.98	99	25.69	232.5	3.01	1.43	1482.
125	7.77	33.44	124	26.11	193.4	3.54	2.03	1482.
150	7.49	33.73	149	26.37	168.4	3.99	2.67	1482.
175	7.34	33.84	174	26.48	158.6	4.40	3.34	1482.
200	7.27	33.91	199	26.54	153.2	4.79	4.09	1482.
225	6.99	33.92	224	26.59	148.6	5.17	4.90	1481.
250	6.66	33.93	248	26.65	143.9	5.54	5.79	1480.
300	6.24	33.96	298	26.72	137.0	6.24	7.76	1480.
400	5.50	33.99	397	26.84	126.3	7.56	12.45	1478.
500	5.09	34.06	496	26.94	117.5	8.77	18.03	1478.
600	4.68	34.13	595	27.04	108.7	9.90	24.31	1478.
800	3.93	34.23	793	27.21	93.9	11.91	38.61	1479.
1000	3.60	34.36	991	27.34	82.6	13.66	54.64	1481.
1200	3.04	34.44	1188	27.46	71.4	15.19	71.72	1482.

DEEPEST MEASUREMENT:

1310	2.81	34.48	1297	27.51	66.4	15.94	81.40	1483.

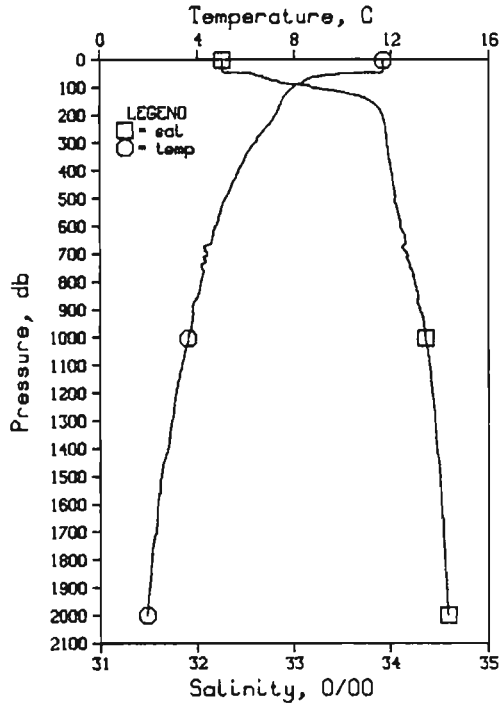


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 3 DATE 25/11/87
POSITION 48-20.2N, 127- 6.0W GMT 23:13 STATION MA05
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.39	32.25	0	24.59	335.7	0.00	0.00	1492.
10	11.39	32.25	10	24.59	335.7	0.34	0.02	1492.
20	11.39	32.25	20	24.59	335.9	0.67	0.07	1492.
30	11.39	32.25	30	24.59	336.2	1.01	0.15	1492.
50	9.22	32.60	50	25.23	275.4	1.63	0.41	1485.
75	8.15	33.11	75	25.79	222.6	2.25	0.80	1482.
100	7.74	33.46	99	26.13	191.1	2.76	1.25	1482.
125	7.52	33.73	124	26.37	168.2	3.20	1.76	1481.
150	7.39	33.83	149	26.47	159.3	3.61	2.32	1481.
175	7.32	33.89	174	26.52	154.6	4.00	2.97	1482.
200	7.09	33.92	199	26.58	149.7	4.38	3.70	1481.
225	6.98	33.94	223	26.61	147.2	4.75	4.51	1481.
250	6.72	33.95	248	26.65	143.5	5.12	5.39	1481.
300	6.27	33.96	298	26.72	137.2	5.82	7.35	1480.
400	5.60	34.01	397	26.84	126.3	7.14	12.05	1479.
500	5.03	34.06	496	26.95	116.6	8.35	17.62	1478.
600	4.64	34.13	595	27.05	108.4	9.48	23.92	1478.
800	4.04	34.25	793	27.21	93.7	11.49	38.25	1479.
1000	3.52	34.37	991	27.36	80.5	13.22	54.09	1480,
1200	2.96	34.42	1188	27.45	71.9	14.74	71.10	1481.
1500	2.44	34.50	1484	27.56	61.7	16.75	98.59	1484.

DEEPEST MEASUREMENT:

1824	2.08	34.56	1803	27.63	54.8	18.63	130.39	1488.

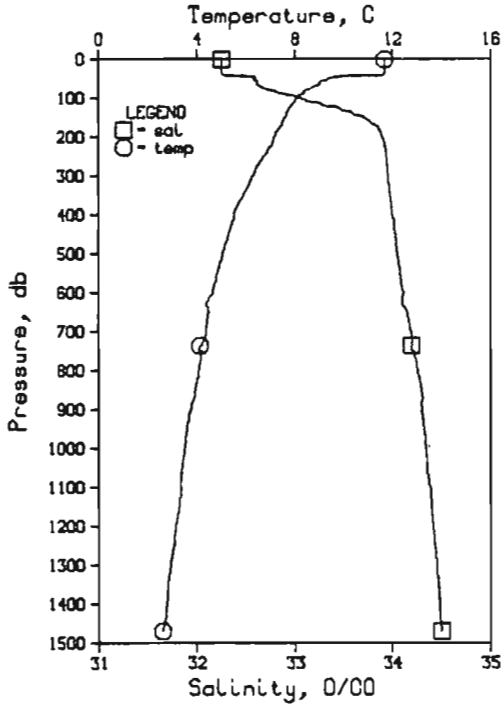


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 4 DATE 26/11/87
POSITION 48-30.2N, 126-52.5W GMT 1:40 STATION MA04
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.67	32.25	0	24.54	340.2	0.00	0.00	1493.
10	11.66	32.25	10	24.54	340.4	0.34	0.02	1493.
20	11.67	32.25	20	24.54	340.8	0.68	0.07	1493.
30	11.67	32.25	30	24.54	341.0	1.02	0.16	1493.
50	9.90	32.54	50	25.07	290.8	1.70	0.43	1488.
75	8.47	32.76	75	25.47	253.3	2.36	0.85	1483.
100	7.97	33.17	99	25.87	215.6	2.95	1.37	1482.
125	7.66	33.58	124	26.23	181.7	3.44	1.93	1482.
150	7.46	33.79	149	26.43	163.5	3.87	2.53	1482.
175	7.35	33.87	174	26.50	156.5	4.26	3.19	1482.
200	7.18	33.91	199	26.56	151.7	4.65	3.93	1482.
225	6.99	33.92	223	26.60	148.3	5.02	4.74	1481.
250	6.74	33.94	248	26.64	144.3	5.39	5.62	1481.
300	6.33	33.96	298	26.71	138.3	6.10	7.60	1480.
400	5.68	34.00	397	26.83	127.9	7.42	12.33	1479.
500	5.13	34.04	496	26.92	119.6	8.66	18.00	1478.
600	4.70	34.10	595	27.02	111.2	9.81	24.45	1478.
800	4.14	34.24	793	27.19	95.8	11.88	39.13	1480.
1000	3.62	34.35	991	27.33	83.2	13.66	55.41	1481.
1200	3.13	34.43	1188	27.44	73.4	15.21	72.83	1482.
1500	2.52	34.50	1484	27.55	62.6	17.26	100.91	1485.
2000	1.93	34.59	1976	27.67	51.5	20.10	151.38	1490.

DEEPEST MEASUREMENT:

2001	1.92	34.59	1977	27.67	51.3	20.11	151.48	1490.

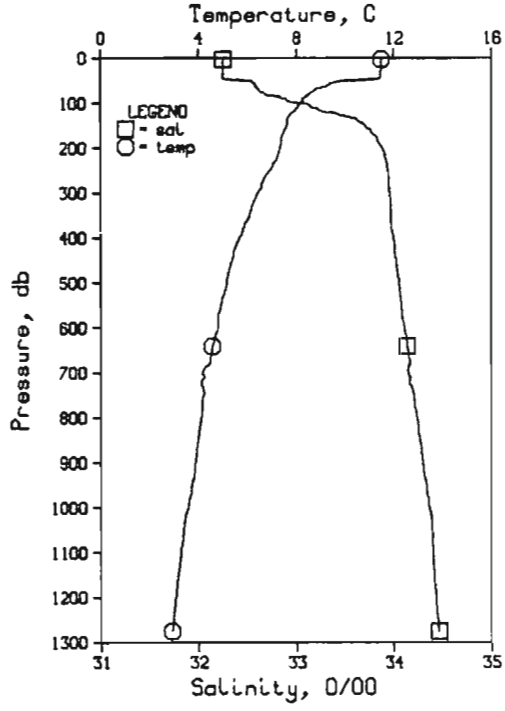


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 5 DATE 26/11/87
POSITION 48-36.2N, 126-44.2W GMT 3:38 STATION MA38
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.66	32.25	0	24.54	340.3	0.00	0.00	1493.
10	11.67	32.25	10	24.54	340.6	0.34	0.02	1493.
20	11.67	32.25	20	24.54	340.9	0.68	0.07	1493.
30	11.67	32.25	30	24.54	341.0	1.02	0.16	1493.
50	9.35	32.58	50	25.20	279.0	1.67	0.42	1486.
75	8.64	32.68	75	25.38	261.8	2.35	0.85	1484.
100	8.04	33.04	99	25.75	226.7	2.96	1.39	1482.
125	7.74	33.43	124	26.10	193.9	3.49	2.00	1482.
150	7.56	33.70	149	26.34	171.7	3.95	2.64	1482.
175	7.37	33.85	174	26.49	158.2	4.36	3.33	1482.
200	7.12	33.89	199	26.55	152.3	4.75	4.07	1481.
225	6.96	33.92	224	26.60	148.2	5.12	4.88	1481.
250	6.70	33.94	248	26.65	143.9	5.49	5.76	1481.
300	6.26	33.95	298	26.72	137.6	6.19	7.73	1480.
400	5.49	33.99	397	26.84	126.2	7.51	12.42	1478.
500	5.03	34.05	496	26.94	117.9	8.73	18.01	1478.
600	4.66	34.12	595	27.03	109.4	9.87	24.38	1478.
800	4.07	34.26	793	27.21	93.7	11.90	38.81	1479.
1000	3.50	34.35	991	27.34	82.2	13.64	54.79	1480.
1200	3.14	34.42	1188	27.43	74.2	15.21	72.33	1482.
1500	2.60	34.53	1484	27.57	61.1	17.24	99.95	1485.

DEEPEST MEASUREMENT:

1470	2.60	34.50	1454	27.55	63.1	17.05	97.13	1484.

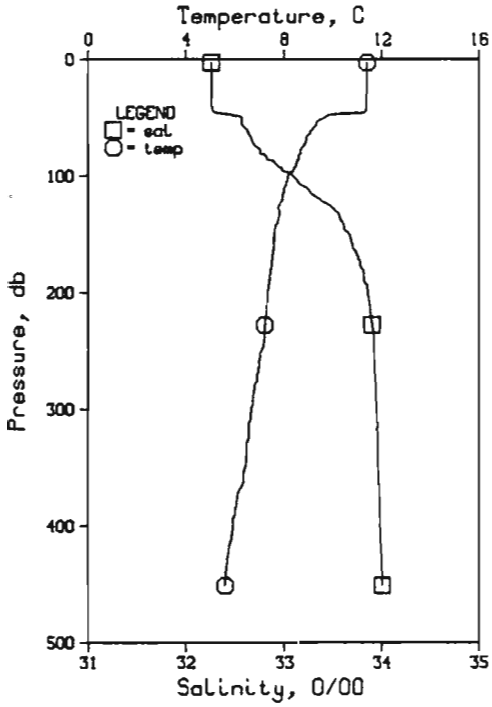


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 6 DATE 26/11/87
POSITION 48-40.2N, 126-38.8W GMT 5:23 STATION MA03
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.47	32.25	0	24.58	337.0	0.00	0.00	1492.
10	11.47	32.25	10	24.58	337.2	0.34	0.02	1492.
20	11.47	32.25	20	24.58	337.4	0.67	0.07	1492.
30	11.46	32.25	30	24.58	337.4	1.01	0.15	1493.
50	10.31	32.48	50	24.96	301.8	1.68	0.43	1489.
75	8.65	32.63	75	25.34	265.4	2.37	0.87	1484.
100	8.17	33.01	99	25.71	230.6	2.99	1.42	1483.
125	7.73	33.42	124	26.10	194.1	3.53	2.03	1482.
150	7.59	33.69	149	26.33	172.5	3.98	2.66	1482.
175	7.38	33.82	174	26.46	160.4	4.40	3.35	1482.
200	7.28	33.88	199	26.52	155.4	4.79	4.11	1482.
225	7.17	33.92	224	26.56	151.5	5.17	4.94	1482.
250	6.90	33.94	248	26.62	146.8	5.55	5.84	1481.
300	6.38	33.96	298	26.70	139.0	6.26	7.84	1480.
400	5.66	34.00	397	26.83	127.9	7.60	12.61	1479.
500	5.15	34.06	496	26.93	118.6	8.83	18.24	1479.
600	4.77	34.11	595	27.02	111.3	9.98	24.67	1479.
800	4.11	34.24	793	27.20	95.3	12.03	39.26	1479.
1000	3.55	34.37	991	27.35	81.3	13.81	55.51	1480.
1200	3.05	34.44	1188	27.45	71.7	15.33	72.55	1482.

DEEPEST MEASUREMENT:

1276	2.89	34.47	1263	27.49	68.2	15.86	79.25	1482.

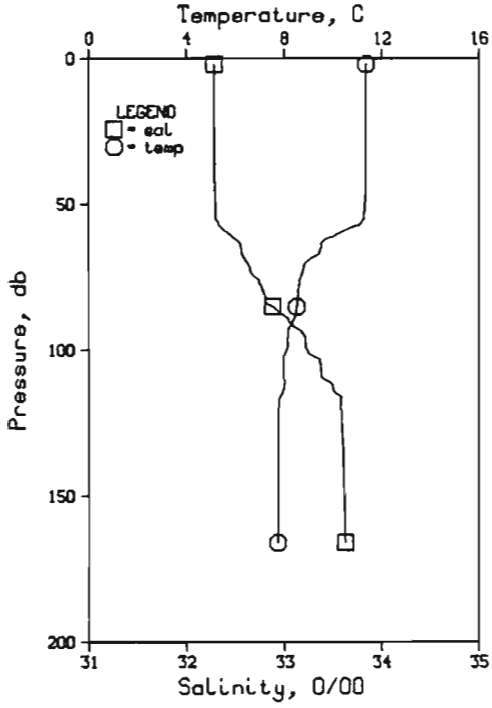


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 7 DATE 26/11/87
POSITION 48-45.2N, 126-32.0W GMT 6:53 STATION MA28
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	11.37	32.25	0	24.60	335.0	0.00	0.00	1492.
10	11.37	32.26	10	24.60	334.9	0.34	0.02	1492.
20	11.37	32.26	20	24.60	335.2	0.67	0.07	1492.
30	11.37	32.26	30	24.60	335.3	1.01	0.15	1492.
50	9.64	32.56	50	25.13	285.1	1.66	0.42	1487.
75	8.74	32.71	75	25.39	260.6	2.34	0.85	1484.
100	8.16	33.09	99	25.77	224.6	2.95	1.40	1483.
125	7.78	33.46	124	26.12	192.3	3.48	2.00	1482.
150	7.57	33.67	149	26.31	174.5	3.94	2.64	1482.
175	7.47	33.78	174	26.41	165.0	4.36	3.34	1482.
200	7.32	33.86	199	26.50	157.6	4.76	4.11	1482.
225	7.21	33.89	224	26.54	153.8	5.15	4.96	1482.
250	7.04	33.92	248	26.58	149.8	5.53	5.88	1482.
300	6.65	33.95	298	26.66	143.2	6.27	7.93	1481.
400	5.89	33.98	397	26.79	132.1	7.65	12.86	1480.

DEEPEST MEASUREMENT:

451	5.57	34.00	448	26.84	127.1	8.31	15.72	1479.

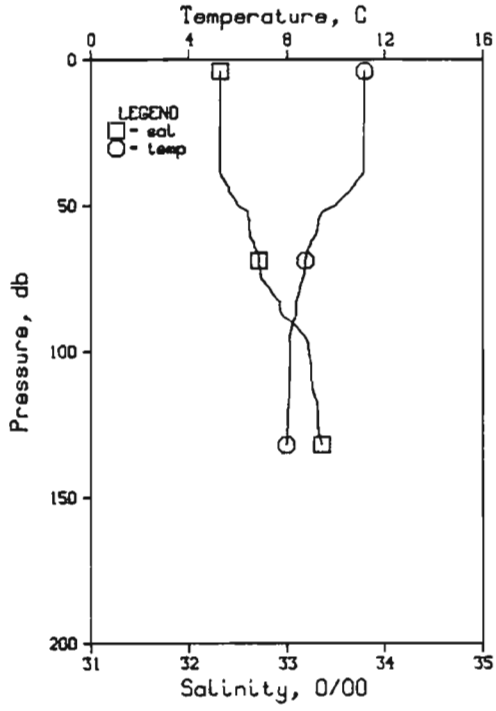


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 8 DATE 26/11/87
POSITION 48-50.2N, 126-25.3W GMT 7:57 STATION MA02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA O	POT. EN	SOUND
0	11.35	32.28	0	24.63	332.4	0.00	0.00	1492.
10	11.35	32.28	10	24.62	332.6	0.33	0.02	1492.
20	11.35	32.28	20	24.62	332.9	0.67	0.07	1492.
30	11.35	32.28	30	24.62	333.2	1.00	0.15	1492.
50	11.30	32.29	50	24.64	331.8	1.66	0.42	1492.
75	8.65	32.70	75	25.40	259.9	2.41	0.89	1484.
100	8.07	33.23	99	25.90	213.2	3.00	1.42	1483.
125	7.72	33.59	124	26.23	182.0	3.48	1.97	1482.
150	7.73	33.61	149	26.25	180.5	3.93	2.60	1483.

DEEPEST MEASUREMENT:

166	7.72	33.62	165	26.26	179.9	4.22	3.07	1483.

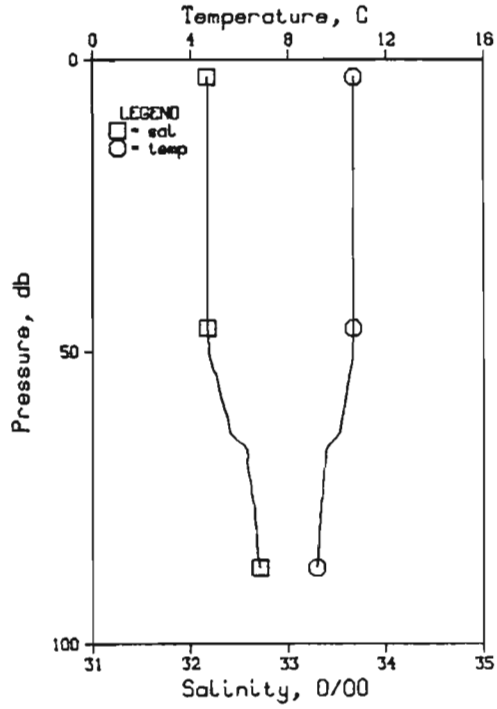


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-U4- 9 DATE 26/11/87
POSITION 48-55.2N, 126-18.0W GMT 8:50 STATION MA18
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	11.16	32.31	0	24.68	327.0	0.00	0.00	1491.
10	11.16	32.31	10	24.68	327.2	0.33	0.02	1491.
20	11.16	32.31	20	24.68	327.5	0.65	0.07	1491.
30	11.16	32.31	30	24.68	327.6	0.98	0.15	1492.
50	9.99	32.50	50	25.02	295.3	1.62	0.41	1488.
75	8.63	32.74	75	25.43	257.1	2.29	0.84	1484.
100	8.12	33.22	99	25.88	214.2	2.88	1.35	1483.
125	8.01	33.31	124	25.97	206.4	3.40	1.96	1483.

DEEPEST MEASUREMENT:

132	7.96	33.35	131	26.01	203.0	3.55	2.14	1483.

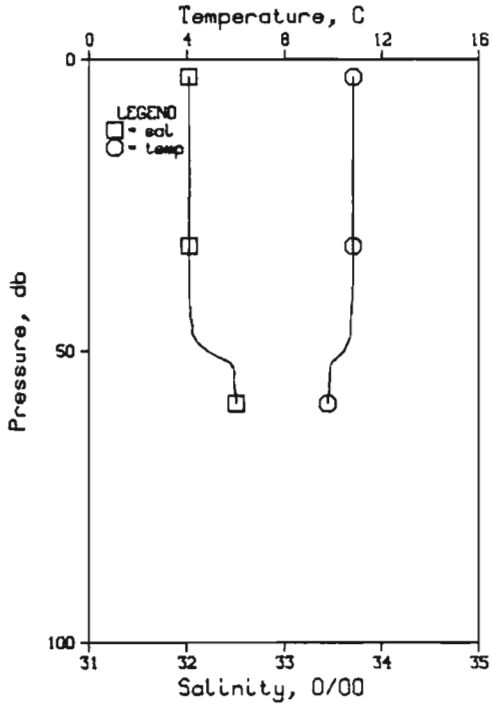


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 10 DATE 26/11/87
POSITION 49- 0.0N, 126-11.7W GMT 9:37 STATION MA01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.65	32.17	0	24.66	329.3	0.00	0.00	1489.
10	10.65	32.17	10	24.66	329.1	0.33	0.02	1489.
20	10.65	32.17	20	24.66	329.3	0.66	0.07	1489.
30	10.65	32.17	30	24.66	329.5	0.99	0.15	1490.
50	10.63	32.19	50	24.68	328.2	1.65	0.42	1490.
75	9.37	32.63	75	25.23	276.1	2.40	0.90	1486.

DEEPEST MEASUREMENT:

87	9.16	32.71	87	25.32	267.4	2.73	1.17	1486.

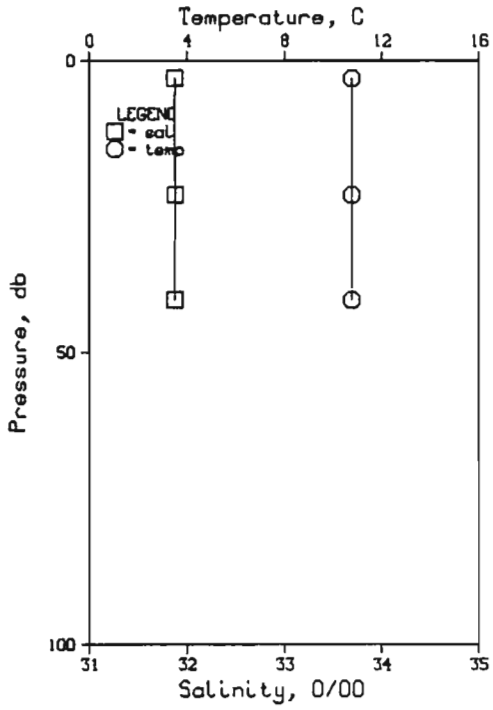


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 11 DATE 26/11/87
POSITION 49- 3.8N, 126- 5.9W GMT 10:16 STATION MA08
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.81	32.02	0	24.52	342.8	0.00	0.00	1489.
10	10.81	32.02	10	24.52	342.9	0.34	0.02	1490.
20	10.81	32.02	20	24.52	343.1	0.69	0.07	1490.
30	10.81	32.02	30	24.52	343.3	1.03	0.16	1490.
50	10.44	32.21	50	24.72	323.8	1.71	0.44	1489.

DEEPEST MEASUREMENT:

59	9.78	32.51	59	25.07	291.5	1.99	0.59	1487.



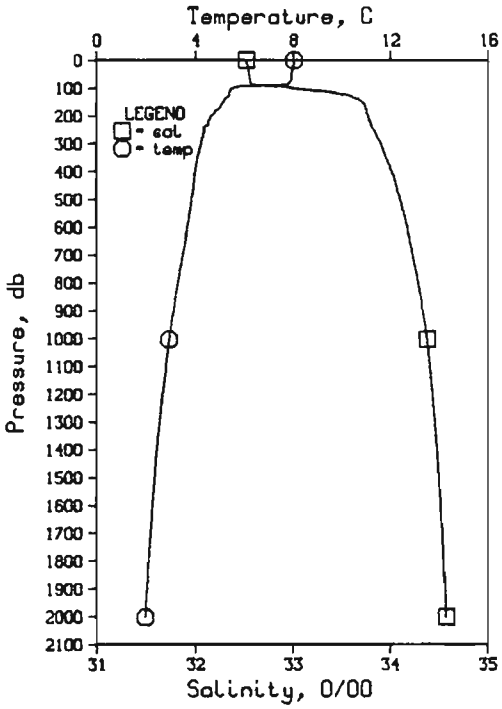
OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 12 DATE 26/11/87
POSITION 49- 8.0N, 126- 0.2W GMT 11: 1 STATION MA00
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.76	31.87	0	24.41	353.0	0.00	0.00	1489.
10	10.76	31.87	10	24.41	353.3	0.35	0.02	1489.
20	10.76	31.87	20	24.41	353.3	0.71	0.07	1489.
30	10.76	31.87	30	24.41	353.5	1.06	0.16	1490.

DEEPEST MEASUREMENT:

41	10.76	31.87	41	24.41	354.0	1.45	0.30	1490.

PRES	DEPTH	TEMP	SAL	PRES	DEPTH	TEMP	SAL
0.		10.761	31.872	23.		10.762	31.873
4.		10.759	31.873	24.		10.762	31.874
5.		10.757	31.873	25.		10.762	31.874
6.		10.758	31.872	26.		10.762	31.873
7.		10.758	31.872	27.		10.761	31.874
8.		10.759	31.871	28.		10.761	31.873
9.		10.758	31.872	29.		10.762	31.873
10.		10.759	31.870	30.		10.762	31.873
11.		10.760	31.870	31.		10.762	31.873
12.		10.760	31.870	32.		10.762	31.873
13.		10.760	31.870	33.		10.762	31.873
14.		10.760	31.870	34.		10.763	31.873
15.		10.759	31.870	35.		10.763	31.872
16.		10.760	31.870	36.		10.763	31.872
17.		10.760	31.870	37.		10.762	31.872
18.		10.760	31.870	38.		10.762	31.872
19.		10.760	31.870	39.		10.760	31.870
20.		10.760	31.872	40.		10.761	31.870
21.		10.762	31.874	41.		10.760	31.869
22.		10.762	31.873				

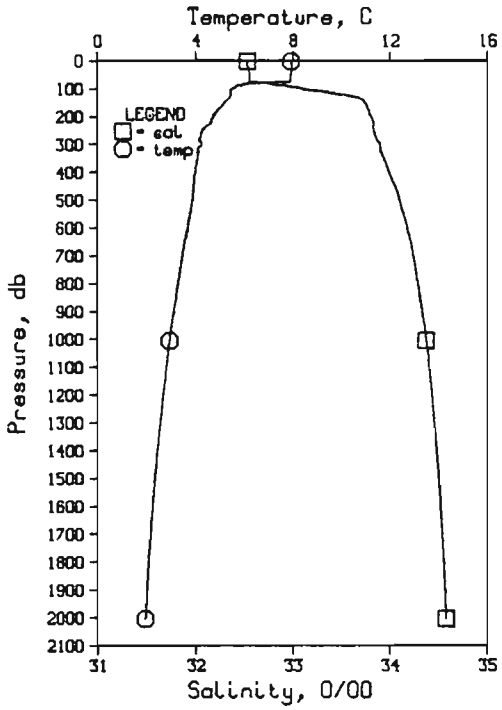


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 13 DATE 30/11/87
POSITION 50- 0.0N, 145- 0.0W GMT 4:56 STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.01	32.52	0	25.35	263.4	0.00	0.00	1480.
10	8.01	32.52	10	25.35	263.5	0.26	0.01	1480.
20	7.99	32.53	20	25.36	262.7	0.53	0.05	1480.
30	7.95	32.54	30	25.37	261.8	0.79	0.12	1480.
50	7.91	32.54	50	25.38	260.8	1.31	0.33	1480.
75	7.87	32.55	75	25.39	260.3	1.96	0.75	1480.
100	5.56	32.98	99	26.03	199.5	2.57	1.28	1472.
125	5.34	33.54	124	26.51	154.9	3.01	1.78	1473.
150	5.13	33.70	149	26.66	140.9	3.37	2.30	1472.
175	4.92	33.75	174	26.72	135.2	3.72	2.87	1472.
200	4.64	33.77	199	26.76	131.1	4.05	3.50	1471.
225	4.52	33.80	223	26.80	127.9	4.37	4.20	1471.
250	4.32	33.82	248	26.84	123.9	4.69	4.97	1471.
300	4.22	33.90	298	26.91	117.8	5.29	6.66	1471.
400	3.98	34.01	397	27.02	107.9	6.42	10.67	1472.
500	3.82	34.10	496	27.11	100.5	7.46	15.44	1473.
600	3.65	34.17	595	27.18	94.0	8.43	20.88	1474.
800	3.28	34.29	793	27.31	83.0	10.20	33.49	1476.
1000	2.93	34.37	990	27.41	73.9	11.77	47.82	1478.
1200	2.66	34.43	1188	27.48	67.8	13.19	63.68	1480.
1500	2.34	34.50	1484	27.56	60.9	15.11	90.10	1484.
2000	1.97	34.57	1976	27.65	53.0	17.94	140.42	1491.

DEEPEST MEASUREMENT:

2002	1.97	34.57	1978	27.65	53.0	17.95	140.64	1491.

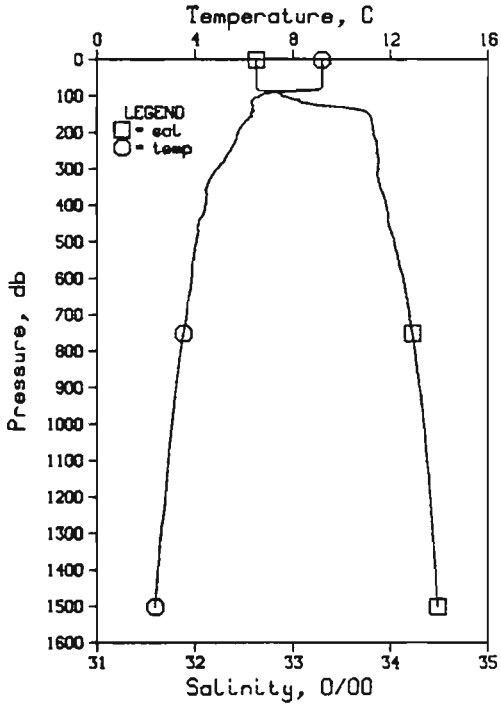


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 14 DATE 30/11/87
POSITION 50- 0.0N, 145- 0.0W GMT 10:30 STATION MP26
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	7.92	32.53	0	25.37	261.3	0.00	0.00	1479.
10	7.92	32.53	10	25.37	261.6	0.26	0.01	1480.
20	7.93	32.53	20	25.37	261.8	0.52	0.05	1480.
30	7.94	32.53	30	25.37	262.0	0.79	0.12	1480.
50	7.89	32.55	50	25.39	260.2	1.31	0.33	1480.
75	7.86	32.56	75	25.40	259.7	1.96	0.75	1480.
100	5.49	33.08	99	26.12	190.9	2.50	1.23	1472.
125	5.44	33.54	124	26.49	156.2	2.93	1.72	1473.
150	5.19	33.74	149	26.68	138.9	3.29	2.23	1473.
175	4.92	33.78	174	26.74	133.3	3.63	2.79	1472.
200	4.72	33.80	199	26.78	129.4	3.96	3.42	1472.
225	4.60	33.83	223	26.82	126.3	4.28	4.11	1471.
250	4.27	33.83	248	26.85	122.9	4.59	4.86	1471.
300	4.22	33.90	298	26.91	118.0	5.19	6.55	1471.
400	3.97	33.99	397	27.01	109.3	6.33	10.60	1472.
500	3.84	34.09	496	27.10	100.9	7.38	15.39	1473.
600	3.65	34.17	595	27.19	93.8	8.35	20.84	1474.
800	3.26	34.28	793	27.31	82.7	10.11	33.33	1476.
1000	2.93	34.37	990	27.41	74.1	11.67	47.54	1478.
1200	2.66	34.43	1188	27.48	67.8	13.09	63.49	1480.
1500	2.32	34.50	1484	27.57	60.4	15.01	89.91	1484.
2000	1.94	34.57	1976	27.66	52.7	17.81	139.69	1490.

DEEPEST MEASUREMENT:

2005	1.94	34.58	1981	27.66	52.4	17.84	140.22	1491.

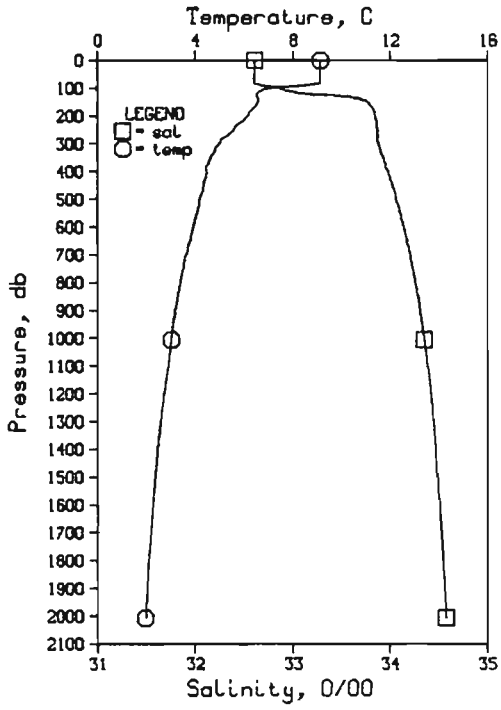


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 15 DATE 2/12/87
POSITION 48-34.8N, 141-46.2W GMT 2: 6 STATION OS01
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.16	32.62	0	25.25	272.4	0.00	0.00	1484.
10	9.16	32.62	10	25.25	272.7	0.27	0.01	1484.
20	9.17	32.62	20	25.25	273.0	0.55	0.06	1485.
30	9.17	32.62	30	25.25	273.5	0.82	0.13	1485.
50	9.16	32.62	50	25.25	273.5	1.37	0.35	1485.
75	9.17	32.62	75	25.25	274.0	2.05	0.78	1485.
100	6.59	32.88	99	25.83	219.4	2.67	1.33	1476.
125	6.32	33.22	124	26.13	190.6	3.18	1.92	1476.
150	6.24	33.76	149	26.57	149.7	3.59	2.49	1477.
175	5.97	33.80	174	26.63	143.6	3.96	3.10	1476.
200	5.73	33.82	199	26.68	139.6	4.31	3.77	1476.
225	5.61	33.85	223	26.72	136.3	4.66	4.52	1476.
250	5.42	33.86	248	26.75	133.4	4.99	5.34	1475.
300	4.89	33.87	298	26.82	127.2	5.65	7.16	1474.
400	4.41	33.95	397	26.93	116.6	6.86	11.49	1474.
500	4.03	34.04	496	27.04	107.2	7.98	16.63	1474.
600	3.86	34.13	595	27.13	99.1	9.01	22.40	1475.
800	3.41	34.25	793	27.27	86.6	10.87	35.60	1476.
1000	3.07	34.34	991	27.38	77.5	12.50	50.57	1478.
1200	2.80	34.41	1188	27.45	70.9	13.98	67.13	1481.
1500	2.38	34.49	1484	27.55	61.9	15.96	94.32	1484.

DEEPEST MEASUREMENT:

1502	2.37	34.49	1486	27.56	61.7	15.98	94.51	1484.

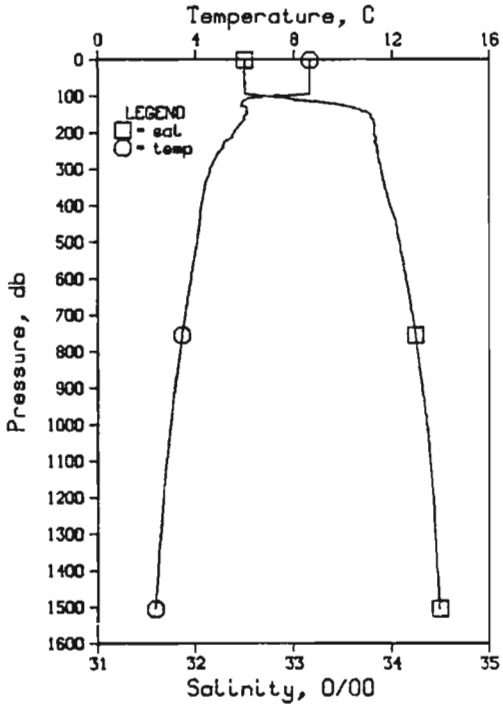


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 16 DATE 2/12/87
POSITION 48-34.8N, 140-57.4W GMT 5:59 STATION OS02
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.09	32.60	0	25.25	272.7	0.00	0.00	1484.
10	9.09	32.60	10	25.25	272.9	0.27	0.01	1484.
20	9.10	32.60	20	25.25	273.2	0.55	0.06	1484.
30	9.10	32.60	30	25.25	273.5	0.82	0.13	1484.
50	9.10	32.60	50	25.25	273.8	1.37	0.35	1485.
75	9.10	32.60	75	25.25	274.4	2.05	0.79	1485.
100	6.99	32.85	99	25.75	226.4	2.70	1.36	1478.
125	6.47	33.33	124	26.20	184.2	3.23	1.96	1477.
150	6.54	33.76	149	26.52	154.0	3.64	2.54	1478.
175	6.33	33.82	174	26.60	146.6	4.01	3.16	1478.
200	6.09	33.85	199	26.65	142.3	4.37	3.85	1477.
225	5.80	33.86	223	26.70	137.9	4.73	4.61	1476.
250	5.54	33.87	248	26.74	134.5	5.07	5.43	1476.
300	4.96	33.88	298	26.81	127.6	5.72	7.27	1474.
400	4.45	33.98	397	26.95	115.2	6.93	11.58	1474.
500	4.16	34.06	496	27.04	107.0	8.04	16.67	1474.
600	3.92	34.14	595	27.13	99.0	9.07	22.43	1475.
800	3.39	34.26	793	27.28	85.9	10.91	35.53	1476.
1000	3.03	34.35	991	27.39	76.6	12.53	50.34	1478.
1200	2.73	34.42	1188	27.47	69.3	13.99	66.70	1480.
1500	2.38	34.49	1484	27.55	61.8	15.95	93.55	1484.
2000	1.97	34.57	1976	27.65	53.4	18.80	144.25	1491.

DEEPEST MEASUREMENT:

2008	1.97	34.57	1984	27.65	53.1	18.84	145.12	1491.

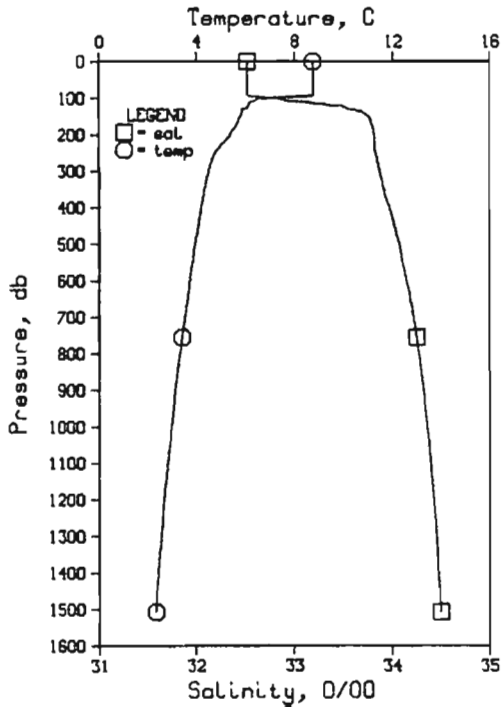


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 17 DATE 2/12/87
POSITION 48-34.8N, 140- 8.7W GMT 10:26 STATION 0503
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.63	32.50	0	25.24	273.8	0.00	0.00	1482.
10	8.63	32.49	10	25.24	274.1	0.27	0.01	1482.
20	8.64	32.49	20	25.24	274.4	0.55	0.06	1482.
30	8.64	32.49	30	25.24	274.7	0.82	0.13	1483.
50	8.64	32.49	50	25.24	275.1	1.37	0.35	1483.
75	8.64	32.49	75	25.24	275.3	2.06	0.79	1483.
100	7.17	32.68	99	25.60	241.3	2.74	1.39	1478.
125	5.84	33.49	124	26.40	165.1	3.23	1.96	1474.
150	6.08	33.77	149	26.59	147.3	3.62	2.50	1476.
175	5.82	33.81	174	26.66	141.2	3.98	3.10	1476.
200	5.58	33.82	199	26.69	138.1	4.33	3.76	1475.
225	5.17	33.82	223	26.74	133.4	4.67	4.50	1474.
250	4.99	33.85	248	26.78	129.7	5.00	5.29	1473.
300	4.57	33.88	298	26.86	122.7	5.63	7.06	1473.
400	4.23	33.98	397	26.97	112.7	6.81	11.26	1473.
500	4.06	34.08	496	27.07	104.6	7.89	16.23	1474.
600	3.81	34.14	595	27.15	97.6	8.91	21.89	1475.
800	3.37	34.26	793	27.29	85.5	10.72	34.83	1476.
1000	2.99	34.36	991	27.40	75.5	12.33	49.51	1478.
1200	2.69	34.43	1188	27.48	68.4	13.76	65.58	1480.
1500	2.37	34.49	1484	27.56	61.5	15.71	92.37	1484.

DEEPEST MEASUREMENT:

1506	2.36	34.49	1490	27.56	61.4	15.75	92.93	1484.

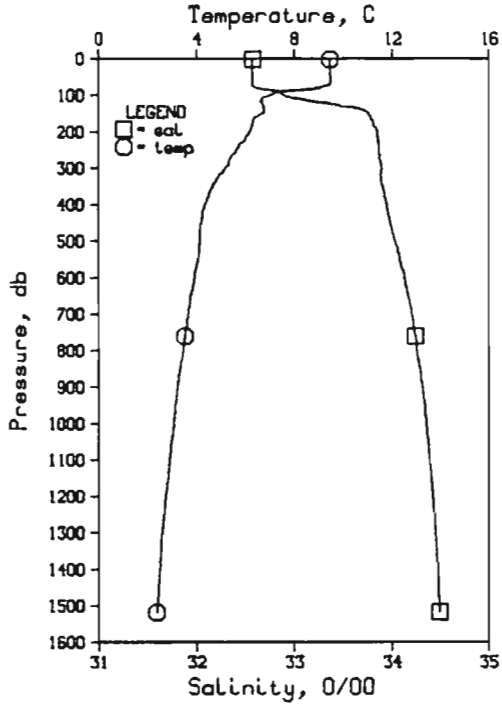


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 18 DATE 2/12/87
POSITION 48-34.8N, 139-20.0W GMT 14:24 STATION 0504
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.74	32.51	0	25.24	274.1	0.00	0.00	1483.
10	8.74	32.52	10	25.24	274.1	0.27	0.01	1483.
20	8.75	32.52	20	25.24	274.4	0.55	0.06	1483.
30	8.75	32.52	30	25.24	274.5	0.82	0.13	1483.
50	8.76	32.52	50	25.24	274.9	1.37	0.35	1483.
75	8.76	32.52	75	25.24	275.4	2.06	0.79	1484.
100	7.14	32.75	99	25.66	234.8	2.74	1.39	1478.
125	6.08	33.50	124	26.38	166.6	3.23	1.95	1475.
150	5.79	33.75	149	26.61	145.4	3.61	2.49	1475.
175	5.63	33.79	174	26.66	140.7	3.97	3.08	1475.
200	5.37	33.81	199	26.71	136.2	4.32	3.74	1474.
225	5.07	33.81	223	26.75	132.8	4.65	4.47	1473.
250	4.77	33.83	248	26.79	128.8	4.98	5.26	1473.
300	4.51	33.87	298	26.85	123.4	5.61	7.02	1472.
400	4.20	33.97	397	26.97	113.4	6.79	11.25	1473.
500	3.95	34.07	496	27.07	103.8	7.88	16.23	1474.
600	3.73	34.14	595	27.15	97.0	8.89	21.86	1474.
800	3.33	34.27	793	27.30	84.5	10.69	34.71	1476.
1000	3.00	34.36	991	27.40	75.7	12.29	49.30	1478.
1200	2.67	34.43	1188	27.48	68.0	13.73	65.41	1480.
1500	2.33	34.50	1484	27.56	60.7	15.66	91.89	1484.

DEEPEST MEASUREMENT:

1507	2.32	34.50	1491	27.57	60.5	15.70	92.54	1484.

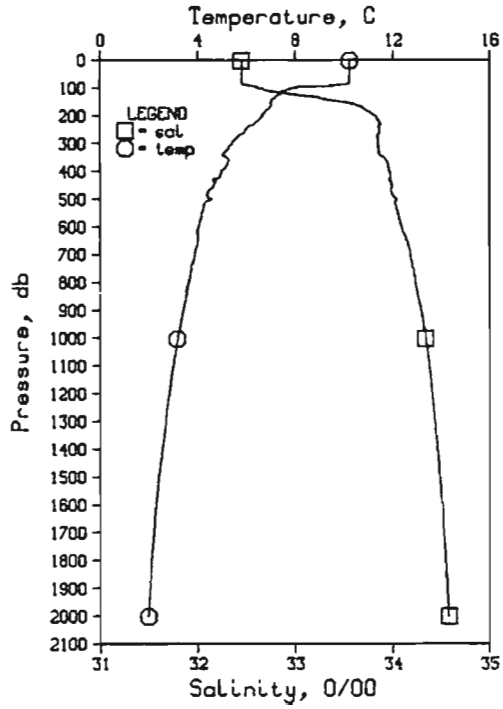


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 19 DATE 2/12/87
POSITION 48-34.8N, 138-31.3W GMT 18:19 STATION 0505
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.43	32.57	0	25.17	280.2	0.00	0.00	1485.
10	9.43	32.56	10	25.17	280.7	0.28	0.01	1485.
20	9.43	32.56	20	25.17	281.0	0.56	0.06	1486.
30	9.44	32.56	30	25.17	281.3	0.84	0.13	1486.
50	9.44	32.56	50	25.17	281.7	1.41	0.36	1486.
75	9.19	32.57	75	25.21	277.7	2.11	0.81	1485.
100	7.00	32.88	99	25.78	224.0	2.73	1.36	1478.
125	6.67	33.40	124	26.23	181.4	3.24	1.94	1478.
150	6.68	33.75	149	26.50	156.4	3.66	2.52	1479.
175	6.27	33.80	174	26.59	147.7	4.04	3.15	1477.
200	6.14	33.84	199	26.64	143.1	4.40	3.84	1477.
225	5.92	33.85	223	26.68	139.8	4.76	4.61	1477.
250	5.62	33.86	248	26.72	136.0	5.10	5.45	1476.
300	5.16	33.88	298	26.80	129.4	5.76	7.31	1475.
400	4.33	33.94	397	26.93	116.7	6.99	11.69	1473.
500	4.11	34.03	496	27.02	108.7	8.12	16.85	1474.
600	3.89	34.13	595	27.13	99.8	9.16	22.69	1475.
800	3.45	34.25	793	27.27	87.2	11.02	35.88	1477.
1000	3.05	34.35	991	27.39	76.8	12.64	50.75	1478.
1200	2.73	34.42	1188	27.47	69.5	14.11	67.14	1480.
1500	2.40	34.49	1484	27.55	62.3	16.07	94.08	1484.

DEEPEST MEASUREMENT:

1519	2.37	34.49	1503	27.56	61.6	16.19	95.89	1484.

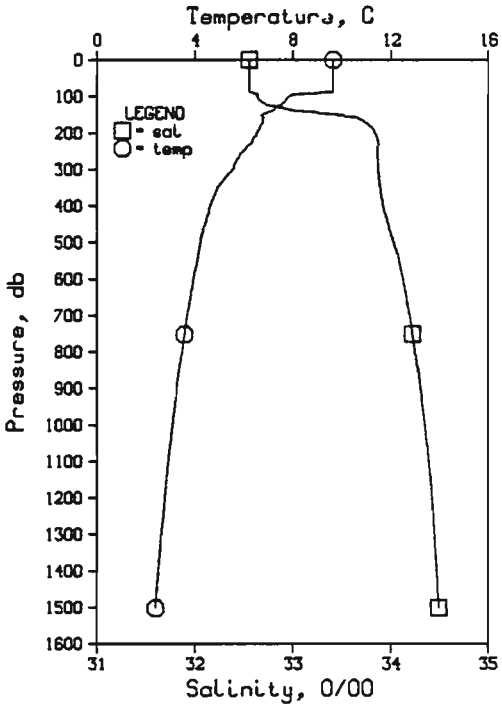


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 20 DATE 2/12/87
POSITION 48-34.8N, 137-42.6W GMT 22:24 STATION 0506
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	10.19	32.44	0	24.95	301.3	0.00	0.00	1488.
10	10.19	32.45	10	24.96	301.1	0.30	0.02	1488.
20	10.19	32.45	20	24.95	301.4	0.60	0.06	1488.
30	10.19	32.45	30	24.95	301.6	0.90	0.14	1488.
50	10.19	32.45	50	24.95	301.9	1.51	0.38	1489.
75	10.19	32.45	75	24.95	302.5	2.26	0.87	1489.
100	7.95	32.61	99	25.43	257.2	2.99	1.51	1481.
125	7.33	33.00	124	25.82	220.4	3.59	2.20	1480.
150	7.03	33.46	149	26.22	182.5	4.09	2.89	1480.
175	6.89	33.69	174	26.42	163.9	4.51	3.60	1480.
200	6.64	33.81	199	26.55	152.3	4.91	4.35	1479.
225	6.35	33.86	224	26.63	144.9	5.28	5.16	1479.
250	5.93	33.85	248	26.68	140.4	5.64	6.02	1477.
300	5.40	33.84	298	26.74	135.2	6.33	7.95	1476.
400	4.97	33.96	397	26.87	122.8	7.62	12.55	1476.
500	4.54	34.03	496	26.98	113.0	8.79	17.94	1476.
600	4.04	34.09	595	27.08	104.3	9.88	24.00	1476.
800	3.62	34.23	793	27.23	90.7	11.81	37.77	1477.
1000	3.18	34.33	991	27.36	79.4	13.51	53.27	1479.
1200	2.83	34.41	1188	27.45	71.2	15.01	70.09	1481.
1500	2.39	34.49	1484	27.55	62.3	17.02	97.64	1484.
2000	1.96	34.57	1976	27.65	53.2	19.88	148.47	1491.

DEEPEST MEASUREMENT:

2002	1.96	34.57	1978	27.65	53.0	19.89	148.69	1491.

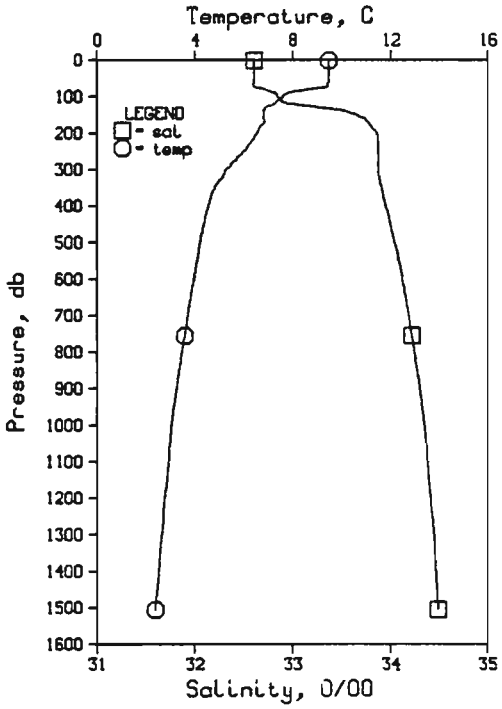


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 21 DATE 3/12/87
POSITION 48- 2.4N, 137-43.6W GMT 2:43 STATION OS12
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.61	32.54	0	25.12	284.8	0.00	0.00	1486.
10	9.60	32.55	10	25.13	284.8	0.29	0.01	1486.
20	9.61	32.54	20	25.12	285.4	0.57	0.06	1486.
30	9.61	32.54	30	25.12	285.6	0.86	0.13	1486.
50	9.62	32.54	50	25.12	286.1	1.43	0.36	1487.
75	9.62	32.54	75	25.12	286.6	2.14	0.82	1487.
100	7.80	32.62	99	25.46	254.2	2.83	1.43	1481.
125	7.48	32.74	124	25.60	241.5	3.46	2.15	1480.
150	6.71	33.41	149	26.23	181.7	4.00	2.90	1478.
175	6.71	33.75	174	26.49	157.1	4.41	3.59	1479.
200	6.49	33.83	199	26.59	148.7	4.79	4.31	1479.
225	6.29	33.86	224	26.64	144.0	5.16	5.10	1478.
250	5.93	33.86	248	26.68	140.2	5.51	5.96	1477.
300	5.51	33.86	298	26.74	135.2	6.20	7.88	1476.
400	4.60	33.91	397	26.88	121.9	7.47	12.43	1474.
500	4.21	34.02	496	27.01	110.0	8.63	17.74	1475.
600	3.92	34.12	595	27.11	100.9	9.69	23.63	1475.
800	3.47	34.24	793	27.26	87.9	11.56	36.99	1477.
1000	3.08	34.35	991	27.38	77.4	13.21	52.06	1478.
1200	2.76	34.42	1188	27.47	69.3	14.68	68.47	1480.
1500	2.38	34.49	1484	27.55	61.8	16.64	95.46	1484.

DEEPEST MEASUREMENT:

1503	2.37	34.49	1487	27.56	61.7	16.66	95.74	1484.

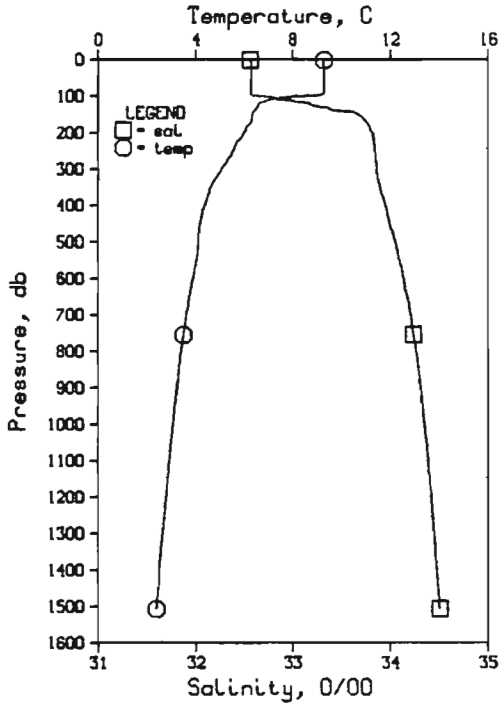


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 22 DATE 3/12/87
POSITION 48- 2.4N, 138-31.8W GMT 6:42 STATION OS11
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.45	32.60	0	25.19	278.4	0.00	0.00	1485.
10	9.46	32.60	10	25.19	278.6	0.28	0.01	1485.
20	9.45	32.60	20	25.19	278.9	0.56	0.06	1486.
30	9.45	32.60	30	25.19	279.0	0.84	0.13	1486.
50	9.44	32.60	50	25.19	279.4	1.39	0.36	1486.
75	9.30	32.61	75	25.22	276.6	2.09	0.80	1486.
100	7.58	32.84	99	25.86	235.3	2.72	1.35	1480.
125	7.05	33.10	124	25.94	208.7	3.28	2.00	1479.
150	6.79	33.64	149	26.40	165.8	3.74	2.64	1479.
175	6.75	33.77	174	26.51	155.7	4.14	3.30	1479.
200	6.49	33.85	199	26.61	146.8	4.52	4.02	1479.
225	6.26	33.87	223	26.65	143.2	4.88	4.81	1478.
250	5.96	33.87	248	26.69	139.4	5.23	5.66	1477.
300	5.24	33.87	298	26.77	131.6	5.91	7.56	1475.
400	4.55	33.94	397	26.91	118.9	7.16	12.01	1474.
500	4.20	34.04	496	27.02	109.0	8.29	17.21	1475.
600	3.96	34.12	595	27.11	101.2	9.34	23.08	1475.
800	3.47	34.24	793	27.26	87.8	11.23	36.51	1477.
1000	3.04	34.35	991	27.38	77.1	12.88	51.58	1478.
1200	2.76	34.41	1188	27.46	70.2	14.35	68.11	1480.
1500	2.39	34.49	1484	27.55	62.0	16.33	95.25	1484.

DEEPEST MEASUREMENT:

1506	2.38	34.49	1490	27.55	61.8	16.37	95.82	1484.

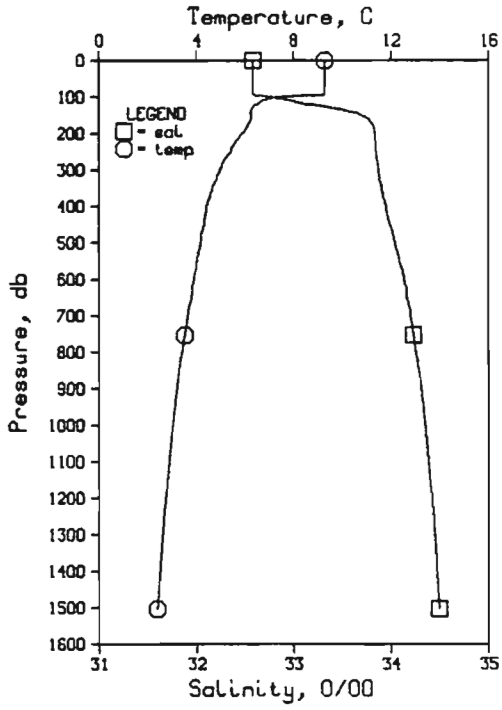


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 23 DATE 3/12/87
POSITION 48- 2.4N, 139-20.0W GMT 11:32 STATION 0S10
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.28	32.55	0	25.18	279.2	0.00	0.00	1485.
10	9.27	32.56	10	25.19	278.6	0.28	0.01	1485.
20	9.29	32.56	20	25.19	279.0	0.56	0.06	1485.
30	9.29	32.56	30	25.19	279.2	0.84	0.13	1485.
50	9.29	32.56	50	25.19	279.6	1.40	0.36	1485.
75	9.29	32.56	75	25.19	280.1	2.10	0.80	1486.
100	8.66	32.63	99	25.34	266.2	2.79	1.42	1484.
125	6.55	33.21	124	26.09	194.8	3.35	2.06	1477.
150	6.32	33.66	149	26.48	158.1	3.79	2.67	1477.
175	6.24	33.76	174	26.57	149.9	4.17	3.31	1477.
200	5.97	33.81	199	26.64	143.2	4.54	4.01	1477.
225	5.68	33.83	223	26.69	138.5	4.89	4.77	1476.
250	5.52	33.84	248	26.72	136.4	5.24	5.60	1476.
300	5.04	33.85	298	26.79	130.2	5.90	7.47	1475.
400	4.35	33.94	397	26.93	116.7	7.14	11.86	1473.
500	4.09	34.05	496	27.04	107.0	8.25	16.96	1474.
600	3.86	34.13	595	27.13	99.1	9.28	22.74	1475.
800	3.38	34.26	793	27.28	85.7	11.12	35.81	1476.
1000	3.05	34.35	991	27.38	77.0	12.74	50.66	1478.
1200	2.75	34.41	1188	27.46	70.1	14.21	67.08	1480.
1500	2.36	34.50	1484	27.56	60.9	16.17	93.97	1484.

DEEPEST MEASUREMENT:

1507	2.35	34.50	1491	27.57	60.5	16.21	94.62	1484.

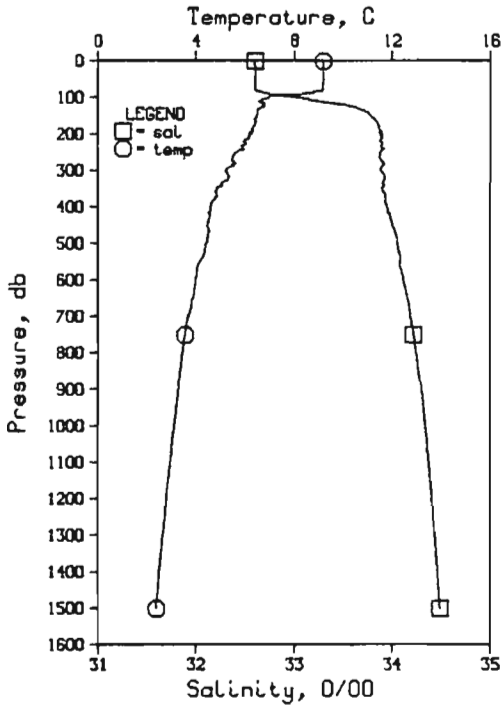


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 24 DATE 3/12/87
POSITION 48- 2.4N, 140- 8.2W GMT 16: 8 STATION 0S09
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.29	32.58	0	25.20	277.6	0.00	0.00	1485.
10	9.29	32.58	10	25.20	277.7	0.28	0.01	1485.
20	9.30	32.58	20	25.20	278.1	0.56	0.06	1485.
30	9.30	32.58	30	25.20	278.2	0.83	0.13	1485.
50	9.30	32.58	50	25.20	278.6	1.39	0.35	1486.
75	9.30	32.58	75	25.20	279.0	2.09	0.80	1486.
100	7.37	32.76	99	25.63	237.8	2.78	1.41	1479.
125	6.34	33.29	124	26.18	185.9	3.30	2.02	1476.
150	6.22	33.69	149	26.52	154.4	3.72	2.60	1477.
175	6.10	33.81	174	26.62	144.8	4.10	3.22	1477.
200	5.86	33.83	199	26.67	140.2	4.45	3.90	1476.
225	5.58	33.84	223	26.71	136.9	4.80	4.65	1476.
250	5.39	33.85	248	26.74	134.3	5.14	5.47	1475.
300	4.94	33.87	298	26.81	128.0	5.79	7.30	1474.
400	4.39	33.95	397	26.93	116.8	7.02	11.67	1474.
500	4.14	34.04	496	27.03	108.1	8.15	16.85	1474.
600	3.87	34.13	595	27.13	99.2	9.18	22.65	1475.
800	3.40	34.25	793	27.27	86.5	11.03	35.80	1476.
1000	3.01	34.35	991	27.39	76.5	12.65	50.59	1478.
1200	2.71	34.42	1188	27.47	69.4	14.11	66.93	1480.
1500	2.37	34.49	1484	27.56	61.6	16.07	93.83	1484.

DEEPEST MEASUREMENT:

1504	2.36	34.49	1488	27.56	61.6	16.09	94.21	1484.

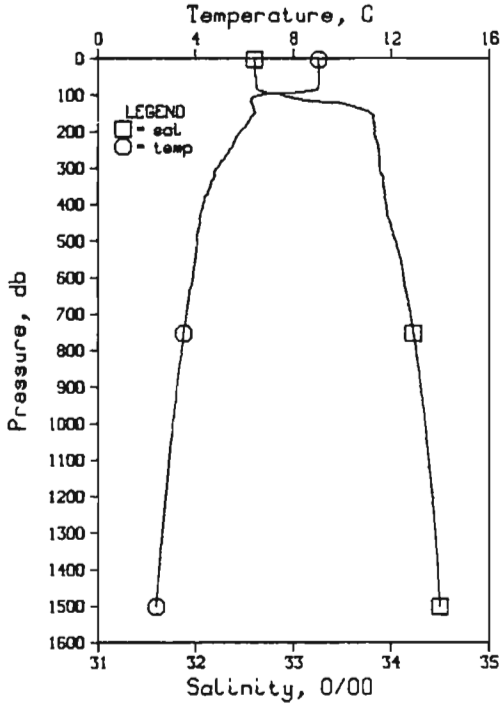


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 25 DATE 3/12/87
POSITION 48- 2.4N, 140-56.4W GMT 20:41 STATION 0508
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.18	32.60	0	25.23	274.5	0.00	0.00	1484.
10	9.18	32.59	10	25.23	275.0	0.27	0.01	1484.
20	9.18	32.59	20	25.23	275.0	0.55	0.06	1485.
30	9.18	32.59	30	25.23	275.1	0.82	0.13	1485.
50	9.18	32.60	50	25.24	275.2	1.38	0.35	1485.
75	9.16	32.60	75	25.24	275.3	2.06	0.79	1485.
100	6.91	33.01	99	25.89	213.8	2.70	1.36	1478.
125	6.75	33.57	124	26.35	169.9	3.18	1.90	1478.
150	6.44	33.78	149	26.55	150.9	3.58	2.45	1478.
175	6.36	33.85	174	26.62	144.7	3.94	3.07	1478.
200	6.22	33.89	199	26.67	140.2	4.30	3.75	1478.
225	6.00	33.90	223	26.70	137.7	4.65	4.50	1477.
250	5.68	33.88	248	26.73	135.2	4.99	5.33	1476.
300	5.23	33.88	298	26.79	130.2	5.65	7.19	1475.
400	4.59	33.95	397	26.91	119.2	6.91	11.64	1474.
500	4.42	34.05	496	27.01	110.3	8.05	16.83	1475.
600	3.99	34.11	595	27.11	101.8	9.11	22.83	1475.
800	3.46	34.24	793	27.26	88.0	11.00	36.24	1477.
1000	3.11	34.34	991	27.37	78.4	12.66	51.43	1479.
1200	2.79	34.41	1188	27.45	71.0	14.15	68.14	1481.
1500	2.38	34.49	1484	27.55	61.9	16.14	95.48	1484.

DEEPEST MEASUREMENT:

1502	2.38	34.49	1486	27.55	61.9	16.15	95.67	1484.

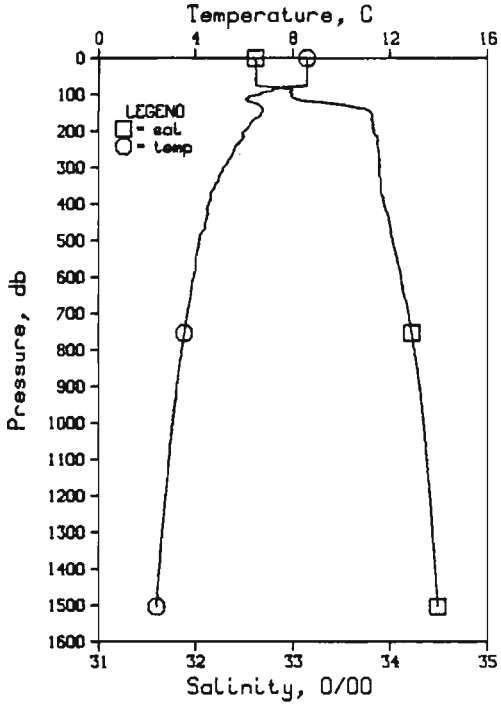


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 26 DATE 4/12/87
POSITION 48- 2.4N, 141-44.8W GMT 1:34 STATION 0507
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.02	32.60	0	25.26	271.8	0.00	0.00	1484.
10	9.01	32.60	10	25.26	271.9	0.27	0.01	1484.
20	9.02	32.60	20	25.26	272.3	0.54	0.06	1484.
30	9.01	32.60	30	25.26	272.4	0.82	0.12	1484.
50	9.03	32.61	50	25.27	272.2	1.36	0.35	1485.
75	9.01	32.61	75	25.27	272.0	2.04	0.78	1485.
100	6.68	32.87	99	25.81	221.1	2.69	1.35	1477.
125	6.29	33.53	124	26.37	167.7	3.18	1.92	1476.
150	6.38	33.79	149	26.57	149.4	3.58	2.47	1477.
175	6.13	33.82	174	26.63	144.1	3.94	3.08	1477.
200	5.81	33.83	199	26.67	140.3	4.30	3.76	1476.
225	5.59	33.85	223	26.72	136.3	4.65	4.51	1476.
250	5.35	33.87	248	26.76	132.3	4.98	5.32	1475.
300	4.87	33.88	298	26.82	126.7	5.63	7.14	1474.
400	4.31	33.95	397	26.94	116.1	6.84	11.44	1473.
500	4.07	34.04	496	27.04	107.2	7.96	16.56	1474.
600	3.89	34.13	595	27.12	99.9	8.99	22.34	1475.
800	3.43	34.25	793	27.27	86.8	10.84	35.55	1477.
1000	3.06	34.34	991	27.38	77.5	12.49	50.58	1478.
1200	2.76	34.42	1188	27.47	69.7	13.96	67.08	1480.
1500	2.38	34.50	1484	27.56	61.3	15.92	93.98	1484.

DEEPEST MEASUREMENT:

1502	2.37	34.50	1486	27.56	61.2	15.93	94.17	1484.

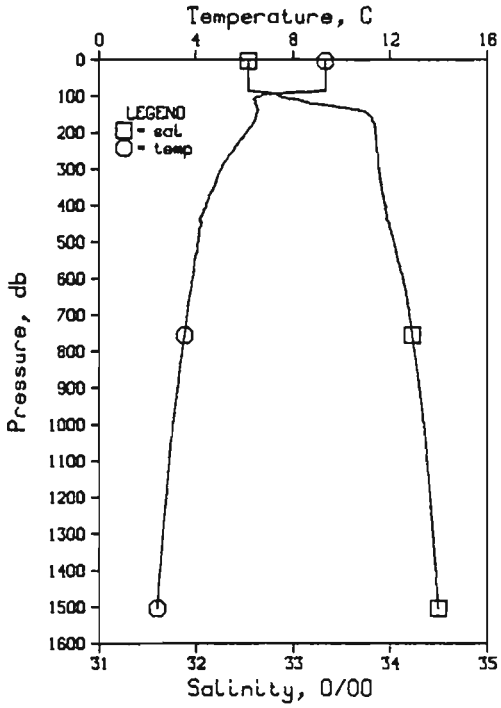


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 27 DATE 4/12/87
POSITION 47-30.0N, 141-43.3W GMT 5:41 STATION OS13
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	8.57	32.61	0	25.34	264.4	0.00	0.00	1482.
10	8.56	32.61	10	25.34	264.4	0.26	0.01	1482.
20	8.57	32.61	20	25.34	264.6	0.53	0.05	1482.
30	8.57	32.61	30	25.34	264.8	0.79	0.12	1482.
50	8.58	32.61	50	25.34	265.2	1.32	0.34	1483.
75	8.56	32.62	75	25.35	264.9	1.99	0.76	1483.
100	6.60	32.99	99	25.91	211.0	2.55	1.26	1476.
125	6.47	33.42	124	26.27	177.8	3.05	1.83	1477.
150	6.67	33.80	149	26.54	152.2	3.46	2.40	1479.
175	6.28	33.82	174	26.61	146.1	3.83	3.02	1477.
200	5.99	33.83	199	26.66	141.9	4.19	3.71	1477.
225	5.88	33.87	223	26.70	137.9	4.54	4.47	1477.
250	5.59	33.88	248	26.74	134.2	4.88	5.29	1476.
300	5.13	33.88	298	26.80	129.0	5.54	7.14	1475.
400	4.53	33.94	397	26.91	119.3	6.78	11.56	1474.
500	4.15	34.03	496	27.02	109.1	7.93	16.79	1474.
600	3.92	34.11	595	27.11	101.4	8.98	22.67	1475.
800	3.43	34.25	793	27.27	87.0	10.85	36.02	1477.
1000	3.05	34.34	991	27.38	77.3	12.49	50.99	1478.
1200	2.76	34.41	1188	27.46	70.3	13.96	67.52	1480.
1500	2.38	34.49	1484	27.56	61.8	15.94	94.68	1484.

DEEPEST MEASUREMENT:

1505	2.38	34.49	1489	27.56	61.7	15.97	95.15	1484.

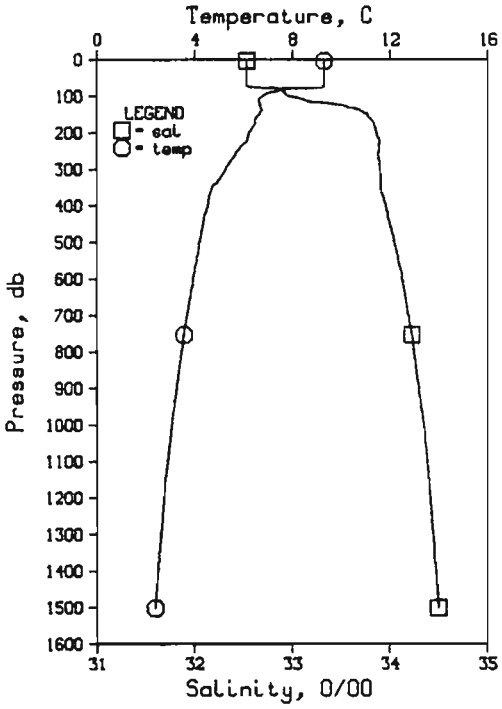


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 28 DATE 4/12/87
POSITION 47-30.0N, 140-55.5W GMT 9:52 STATION OS14
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.32	32.53	0	25.16	281.2	0.00	0.00	1485.
10	9.32	32.53	10	25.16	281.5	0.28	0.01	1485.
20	9.32	32.53	20	25.16	281.8	0.56	0.06	1485.
30	9.33	32.53	30	25.16	282.0	0.84	0.13	1485.
50	9.34	32.53	50	25.16	282.6	1.41	0.36	1486.
75	9.34	32.53	75	25.16	282.9	2.12	0.81	1486.
100	6.66	32.85	99	25.79	222.7	2.76	1.38	1477.
125	6.48	33.33	124	26.20	184.4	3.27	1.97	1477.
150	6.47	33.78	149	26.55	151.2	3.68	2.54	1478.
175	6.33	33.84	174	26.62	145.5	4.05	3.15	1478.
200	6.08	33.85	199	26.66	141.8	4.41	3.84	1477.
225	5.76	33.86	223	26.70	137.7	4.76	4.59	1476.
250	5.54	33.86	248	26.73	135.0	5.10	5.42	1476.
300	5.02	33.88	298	26.81	127.8	5.76	7.25	1475.
400	4.44	33.95	397	26.93	117.1	6.98	11.62	1474.
500	4.09	34.04	496	27.04	107.5	8.10	16.76	1474.
600	3.86	34.13	595	27.13	99.0	9.14	22.54	1475.
800	3.42	34.25	793	27.27	86.8	10.99	35.70	1477.
1000	3.04	34.35	991	27.38	76.8	12.62	50.67	1478.
1200	2.75	34.41	1188	27.46	70.1	14.09	67.12	1480.
1500	2.39	34.49	1484	27.56	61.7	16.06	94.17	1484.

DEEPEST MEASUREMENT:

1504	2.38	34.49	1488	27.56	61.5	16.09	94.55	1484.

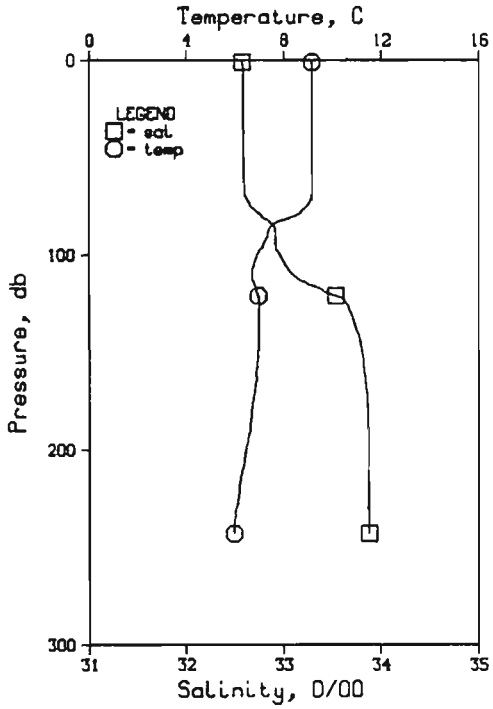


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 29 DATE 4/12/87
POSITION 47-30.0N, 140- 7.8W GMT 14:11 STATION OS15
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.26	32.53	0	25.17	280.7	0.00	0.00	1484.
10	9.27	32.53	10	25.17	280.9	0.28	0.01	1485.
20	9.27	32.53	20	25.17	281.1	0.56	0.06	1485.
30	9.27	32.53	30	25.17	281.4	0.84	0.13	1485.
50	9.27	32.53	50	25.17	281.6	1.41	0.36	1485.
75	9.20	32.56	75	25.20	279.1	2.11	0.81	1486.
100	6.78	32.96	99	25.87	215.7	2.69	1.32	1477.
125	6.66	33.50	124	26.31	174.0	3.18	1.89	1478.
150	6.64	33.77	149	26.52	154.4	3.59	2.46	1478.
175	6.45	33.83	174	26.59	147.5	3.97	3.08	1478.
200	6.21	33.86	199	26.65	142.9	4.33	3.77	1478.
225	6.11	33.89	223	26.68	139.7	4.68	4.54	1478.
250	5.76	33.88	248	26.72	136.1	5.03	5.37	1477.
300	5.25	33.90	298	26.79	129.6	5.69	7.23	1475.
400	4.52	33.95	397	26.92	117.8	6.93	11.63	1474.
500	4.18	34.04	496	27.03	108.5	8.06	16.81	1474.
600	3.93	34.12	595	27.12	100.7	9.10	22.66	1475.
800	3.46	34.24	793	27.26	88.0	10.98	36.02	1477.
1000	3.06	34.34	991	27.38	77.5	12.63	51.15	1478.
1200	2.74	34.42	1188	27.46	69.8	14.10	67.59	1480.
1500	2.38	34.49	1484	27.56	61.4	16.07	94.57	1484.

DEEPEST MEASUREMENT:

1503	2.38	34.50	1487	27.56	61.3	16.09	94.85	1484.

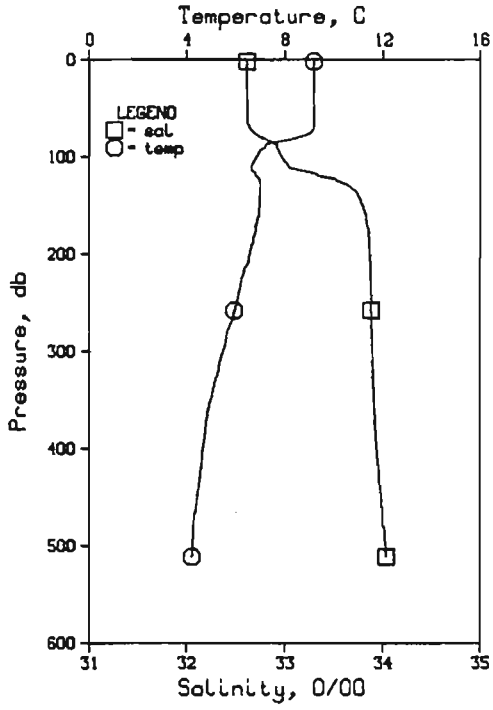


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 30 DATE 5/12/87
POSITION 47-30.0N, 139-43.9W GMT 4:54 STATION OS31
RESULTS OF STP CAST
GUILDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.13	32.57	0	25.22	275.5	0.00	0.00	1484.
10	9.13	32.58	10	25.23	275.0	0.28	0.01	1484.
20	9.13	32.58	20	25.23	275.1	0.55	0.06	1484.
30	9.14	32.58	30	25.23	275.4	0.83	0.13	1485.
50	9.14	32.58	50	25.23	275.8	1.38	0.35	1485.
75	8.93	32.65	75	25.32	267.8	2.06	0.79	1485.
100	6.90	32.96	99	25.85	217.2	2.65	1.31	1478.
125	6.98	33.64	124	26.38	167.7	3.14	1.87	1479.
150	6.95	33.81	149	26.51	155.4	3.54	2.43	1480.
175	6.74	33.85	174	26.58	149.5	3.92	3.06	1479.
200	6.44	33.87	199	26.63	144.8	4.29	3.77	1479.
225	6.13	33.87	223	26.67	141.1	4.65	4.54	1478.

DEEPEST MEASUREMENT:

243	5.97	33.88	241	26.69	139.0	4.90	5.14	1477.

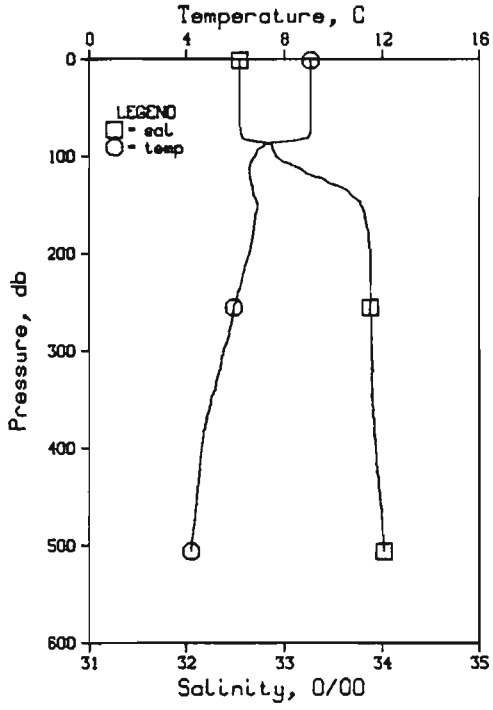


OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 31 DATE 5/12/87
POSITION 47-30.0N, 139-43.9W GMT 10: 4 STATION OS31
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.15	32.61	0	25.25	273.2	0.00	0.00	1484.
10	9.16	32.61	10	25.25	273.4	0.27	0.01	1484.
20	9.16	32.61	20	25.25	273.5	0.55	0.06	1485.
30	9.17	32.61	30	25.25	273.6	0.82	0.13	1485.
50	9.17	32.61	50	25.25	273.9	1.37	0.35	1485.
75	9.05	32.68	75	25.32	267.8	2.05	0.78	1485.
100	6.84	32.96	99	25.86	216.2	2.64	1.30	1477.
125	6.97	33.54	124	26.29	175.4	3.13	1.87	1479.
150	6.93	33.79	149	26.50	156.6	3.54	2.44	1480.
175	6.81	33.85	174	26.56	150.8	3.93	3.08	1480.
200	6.56	33.87	199	26.61	146.8	4.30	3.79	1479.
225	6.24	33.87	223	26.65	142.5	4.66	4.57	1478.
250	6.04	33.88	248	26.68	140.1	5.01	5.43	1478.
300	5.47	33.89	298	26.76	132.7	5.69	7.34	1476.
400	4.66	33.93	397	26.89	121.0	6.96	11.83	1475.
500	4.22	34.03	496	27.01	110.2	8.11	17.13	1475.

DEEPEST MEASUREMENT:

511	4.20	34.03	507	27.02	109.6	8.23	17.75	1475.



OCEAN PHYSICS DIVISION
REFERENCE NO. 87-04- 32 DATE 5/12/87
POSITION 47-46.2N, 139-20.0W GMT 12:35 STATION OS34
RESULTS OF STP CAST
GUIDLINE WAS USED,PRESSURES ARE INPUT

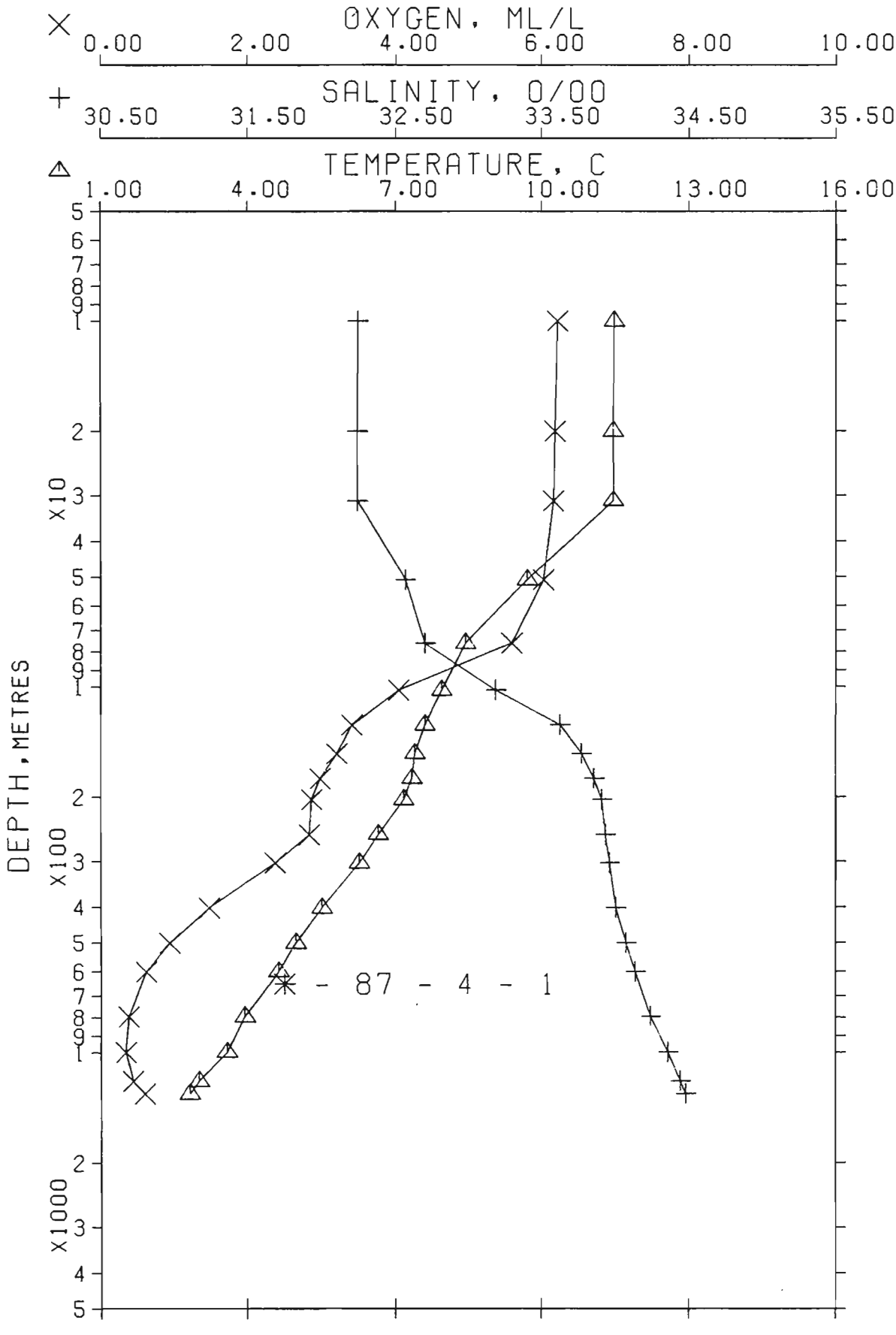
PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	DELTA D	POT. EN	SOUND
0	9.06	32.54	0	25.21	276.7	0.00	0.00	1484.
10	9.06	32.54	10	25.21	277.0	0.28	0.01	1484.
20	9.06	32.54	20	25.21	277.1	0.55	0.06	1484.
30	9.07	32.54	30	25.21	277.2	0.83	0.13	1484.
50	9.07	32.54	50	25.21	277.7	1.39	0.35	1485.
75	9.05	32.55	75	25.22	277.1	2.08	0.80	1485.
100	6.77	32.92	99	25.83	218.6	2.69	1.33	1477.
125	6.62	33.42	124	26.25	179.6	3.19	1.90	1478.
150	6.88	33.78	149	26.49	157.0	3.60	2.48	1479.
175	6.75	33.85	174	26.57	150.2	3.98	3.11	1479.
200	6.57	33.87	199	26.61	146.2	4.35	3.82	1479.
225	6.28	33.88	223	26.65	142.6	4.71	4.60	1478.
250	6.01	33.87	248	26.68	139.9	5.07	5.46	1478.
300	5.52	33.89	298	26.76	133.4	5.75	7.37	1477.
400	4.63	33.93	397	26.89	120.8	7.02	11.90	1475.
500	4.21	34.01	496	27.00	111.0	8.18	17.21	1475.

DEEPEST MEASUREMENT:

506	4.19	34.02	502	27.01	110.3	8.25	17.55	1475.

Table 7

Hydrographic data taken during Cruise III.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4.00
6.00
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10.00
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31.50
32.50
33.50
34.50
35.50
TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
- 87 - 4 - 1

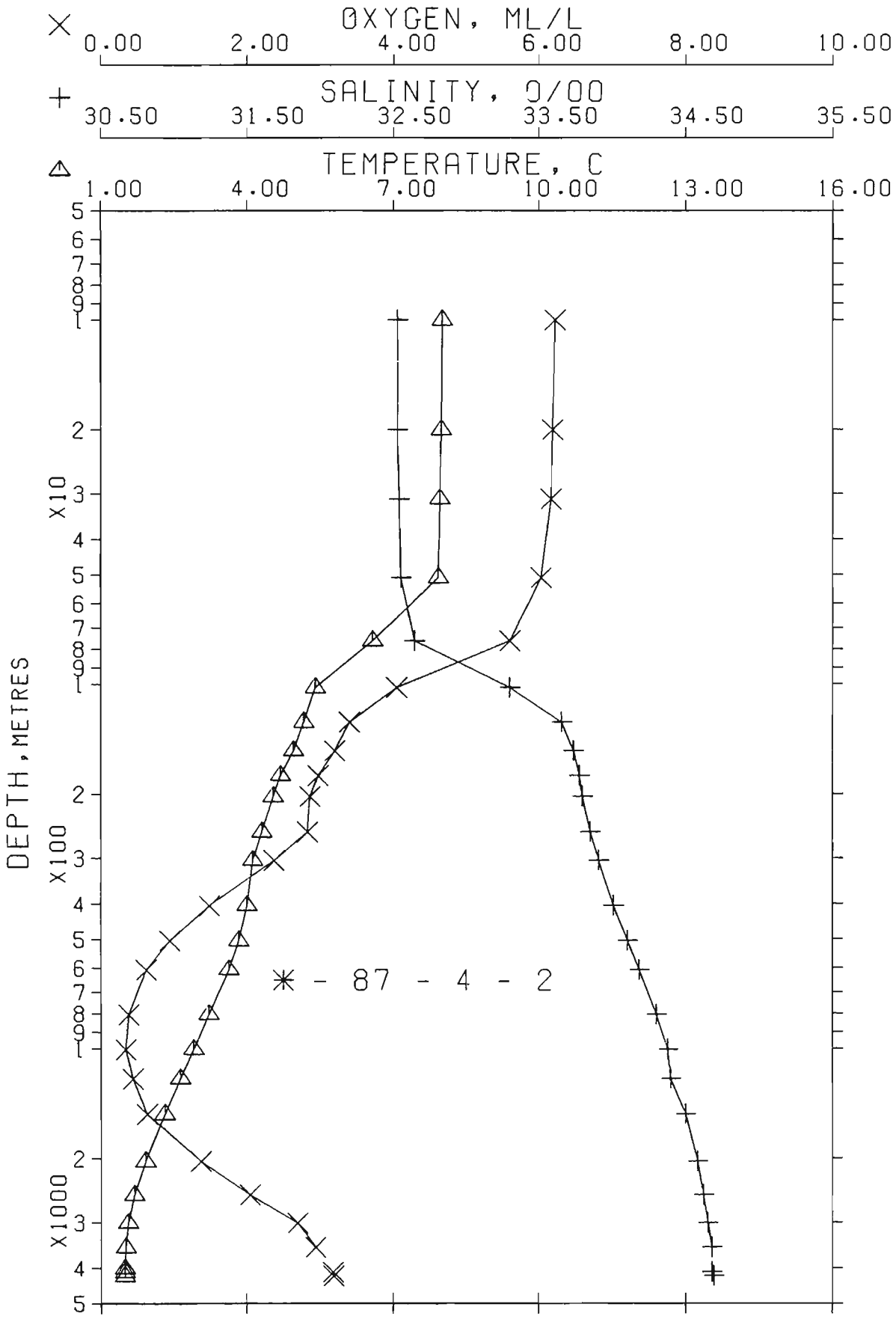
OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 1 DATE 25/11/87 GMT 19: 6
POSITION 48-38.5 N 126-39.1 W STATION MP04
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.47	32.243	0	24.571	337.5	11.47	337.5	0.00	0.00	6.19	1492.
10	11.48	32.242	10	24.569	338.0	11.48	337.7	0.34	0.02	6.22	1492.
20	11.46	32.241	20	24.571	337.9	11.46	337.4	0.68	0.07	6.19	1492.
31	11.46	32.241	31	24.571	338.1	11.46	337.4	1.05	0.17	6.17	1493.
51	9.72	32.569	51	25.125	285.7	9.71	284.7	1.68	0.43	6.03	1487.
76	8.46	32.702	76	25.427	257.3	8.45	256.0	2.36	0.87	5.61	1483.
103	7.96	33.195	102	25.886	214.0	7.95	212.2	2.98	1.43	4.05	1482.
128	7.61	33.627	127	26.275	177.4	7.60	175.3	3.47	2.01	3.41	1482.
153	7.40	33.771	152	26.418	164.3	7.39	161.7	3.90	2.62	3.20	1481.
179	7.34	33.856	178	26.493	157.5	7.32	154.5	4.32	3.33	2.98	1482.
204	7.17	33.908	203	26.558	151.7	7.15	148.4	4.71	4.09	2.86	1482.
255	6.65	33.936	253	26.651	143.4	6.63	139.5	5.45	5.83	2.84	1480.
305	6.26	33.959	303	26.720	137.3	6.23	132.9	6.16	7.84	2.38	1480.
405	5.51	34.006	402	26.850	125.6	5.48	120.5	7.47	12.59	1.49	1478.
505	4.98	34.073	501	26.966	115.4	4.94	109.5	8.67	18.17	0.95	1478.
605	4.63	34.137	600	27.056	107.5	4.58	100.9	9.78	24.46	0.63	1478.
804	3.95	34.240	797	27.210	93.7	3.89	86.2	11.78	38.76	0.39	1479.
1004	3.59	34.361	995	27.342	82.2	3.52	73.6	13.54	54.92	0.34	1481.
1206	3.02	34.444	1194	27.462	70.9	2.93	62.2	15.08	72.27	0.45	1482.
1307	2.83	34.479	1294	27.507	66.7	2.74	57.9	15.78	81.20	0.61	1483.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	11.47	32.243	0	24.571	337.5	11.47	337.5	0.00	0.00	6.19	1492.
10	11.48	32.242	10	24.569	338.0	11.48	337.7	0.34	0.02	6.22	1492.
20	11.46	32.241	20	24.571	337.9	11.46	337.4	0.68	0.07	6.19	1492.
30	11.46	32.241	30	24.571	338.1	11.46	337.4	1.01	0.16	6.17	1493.
50	9.81	32.552	50	25.098	288.3	9.80	287.3	1.64	0.41	6.04	1487.
75	8.52	32.696	75	25.413	258.6	8.51	257.3	2.32	0.84	5.63	1483.
100	8.00	33.152	99	25.846	217.8	7.99	216.0	2.92	1.37	4.18	1482.
125	7.64	33.584	124	26.236	181.1	7.63	179.0	3.42	1.94	3.47	1482.
150	7.42	33.755	149	26.403	165.7	7.41	163.2	3.85	2.54	3.23	1482.
175	7.35	33.843	174	26.482	158.5	7.33	155.6	4.25	3.21	3.01	1482.
200	7.20	33.900	199	26.547	152.7	7.18	149.4	4.64	3.95	2.88	1482.
225	6.94	33.920	223	26.599	148.1	6.92	144.5	5.02	4.77	2.85	1481.
250	6.69	33.934	248	26.643	144.1	6.67	140.3	5.38	5.65	2.84	1481.
300	6.30	33.957	298	26.713	137.9	6.27	133.5	6.08	7.63	2.42	1480.
400	5.54	34.004	397	26.845	126.1	5.51	121.0	7.41	12.33	1.52	1478.
500	5.00	34.070	496	26.961	115.8	4.96	110.0	8.61	17.87	0.97	1478.
600	4.65	34.134	595	27.052	107.8	4.60	101.3	9.73	24.13	0.64	1478.
700	4.28	34.190	694	27.135	100.3	4.23	93.3	10.77	31.02	0.50	1478.
800	3.96	34.238	793	27.207	93.9	3.90	86.5	11.74	38.44	0.40	1479.
900	3.77	34.301	892	27.277	87.8	3.70	79.8	12.65	46.31	0.37	1480.
1000	3.60	34.359	991	27.339	82.4	3.52	73.8	13.50	54.55	0.34	1481.
1200	3.04	34.442	1188	27.459	71.2	2.95	62.5	15.04	71.76	0.44	1482.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SALINITY, 0/00
30.50
31.50
32.50
33.50
34.50
35.50
TEMPERATURE, C
1.00
4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
X10
X100
X1000
* - 87 - 4 - 2

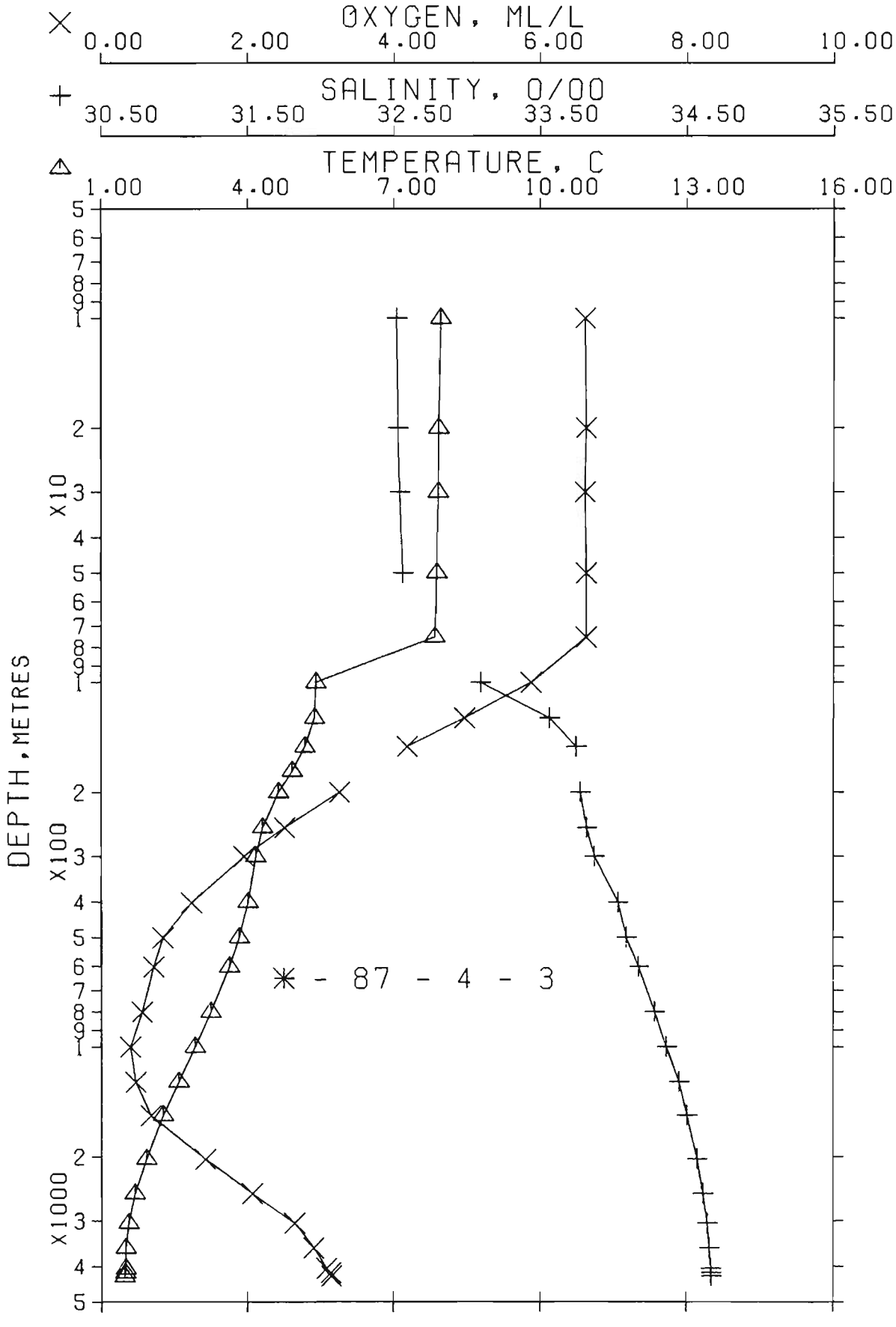
OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 2 DATE 29/11/87 GMT 22:12
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.98	32.527	0	25.361	262.4	7.98	262.4	0.00	0.00	6.19	1480.
10	8.00	32.528	10	25.358	262.7	8.00	262.5	0.26	0.01	6.22	1480.
20	7.98	32.528	20	25.361	262.6	7.98	262.3	0.53	0.05	6.19	1480.
31	7.95	32.537	31	25.373	261.7	7.95	261.2	0.82	0.13	6.17	1480.
51	7.92	32.551	51	25.388	260.5	7.91	259.7	1.34	0.35	6.03	1480.
76	6.58	32.644	76	25.644	236.3	6.57	235.3	1.97	0.76	5.61	1476.
103	5.41	33.303	102	26.308	173.5	5.40	172.3	2.50	1.24	4.05	1472.
128	5.17	33.656	127	26.614	144.6	5.16	143.2	2.90	1.71	3.41	1472.
153	4.96	33.735	152	26.701	136.6	4.95	134.9	3.25	2.21	3.20	1472.
179	4.69	33.774	178	26.762	131.0	4.68	129.1	3.60	2.81	2.98	1471.
204	4.54	33.792	203	26.792	128.3	4.52	126.2	3.93	3.44	2.86	1471.
256	4.31	33.847	254	26.861	122.2	4.29	119.7	4.57	4.95	2.84	1471.
306	4.12	33.903	304	26.925	116.4	4.10	113.6	5.18	6.68	2.38	1471.
408	4.00	34.002	405	27.016	108.6	3.97	104.9	6.32	10.84	1.49	1472.
510	3.83	34.101	506	27.112	100.3	3.79	95.8	7.39	15.83	0.95	1473.
611	3.63	34.181	606	27.195	93.0	3.59	87.8	8.36	21.40	0.63	1474.
813	3.22	34.298	806	27.327	81.3	3.16	75.2	10.12	34.12	0.39	1476.
1015	2.91	34.378	1005	27.419	73.3	2.84	66.3	11.67	48.58	0.34	1478.
1221	2.64	34.397	1208	27.458	70.1	2.56	62.6	13.14	65.30	0.45	1480.
1530	2.32	34.501	1513	27.568	60.4	2.22	52.0	15.16	93.58	0.64	1484.
2063	1.93	34.584	2038	27.666	52.0	1.79	42.5	18.17	148.46	1.38	1491.
2551	1.70	34.626	2517	27.717	47.7	1.52	37.5	20.60	205.67	2.05	1499.
3054	1.57	34.654	3009	27.749	45.5	1.34	34.2	22.95	272.71	2.70	1507.
3560	1.52	34.681	3504	27.775	44.2	1.24	31.4	25.23	349.58	2.95	1515.
4074	1.50	34.679	4005	27.775	45.3	1.17	31.1	27.52	438.75	3.15	1524.
4177	1.50	34.679	4106	27.774	45.6	1.16	31.0	27.99	458.61	3.19	1526.
4280	1.50	34.692	4206	27.785	45.0	1.15	30.0	28.46	478.66	3.20	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.98	32.527	0	25.361	262.4	7.98	262.4	0.00	0.00	6.19	1480.
10	8.00	32.528	10	25.358	262.7	8.00	262.5	0.26	0.01	6.22	1480.
20	7.98	32.528	20	25.361	262.6	7.98	262.3	0.53	0.05	6.19	1480.
30	7.95	32.536	30	25.372	261.7	7.95	261.3	0.79	0.12	6.17	1480.
50	7.92	32.550	50	25.387	260.6	7.92	259.8	1.31	0.33	6.04	1480.
75	6.65	32.639	75	25.632	237.5	6.64	236.5	1.93	0.73	5.63	1476.
100	5.51	33.244	99	26.249	179.0	5.51	177.8	2.46	1.19	4.19	1472.
125	5.19	33.620	124	26.583	147.6	5.18	146.1	2.86	1.66	3.48	1472.
150	4.98	33.726	149	26.691	137.5	4.97	135.9	3.21	2.15	3.23	1472.
175	4.73	33.768	174	26.753	131.9	4.72	130.0	3.55	2.70	3.01	1471.
200	4.57	33.789	199	26.787	128.8	4.55	126.7	3.87	3.33	2.88	1471.
225	4.44	33.815	223	26.822	125.7	4.43	123.4	4.19	4.01	2.85	1471.
250	4.33	33.841	248	26.854	122.8	4.32	120.4	4.50	4.77	2.84	1471.
300	4.14	33.897	298	26.917	117.1	4.12	114.3	5.10	6.45	2.43	1471.
400	4.01	33.995	397	27.009	109.2	3.98	105.5	6.23	10.47	1.55	1472.
500	3.85	34.092	496	27.103	101.0	3.81	96.6	7.28	15.30	0.99	1473.
600	3.65	34.173	595	27.186	93.7	3.61	88.6	8.26	20.76	0.66	1474.
700	3.44	34.237	694	27.258	87.4	3.39	81.8	9.16	26.75	0.51	1475.
800	3.24	34.291	793	27.320	82.0	3.19	75.9	10.01	33.22	0.40	1476.
900	3.08	34.335	892	27.370	77.7	3.02	71.1	10.81	40.12	0.37	1477.
1000	2.93	34.373	990	27.413	73.9	2.86	66.9	11.56	47.46	0.35	1478.
1200	2.66	34.395	1188	27.455	70.4	2.58	62.9	13.00	63.52	0.44	1480.
1500	2.35	34.492	1484	27.559	61.3	2.25	52.9	14.98	90.78	0.62	1484.
2000	1.97	34.575	1976	27.656	52.9	1.83	43.5	17.84	141.57	1.30	1491.
2500	1.72	34.622	2467	27.712	48.2	1.54	37.9	20.36	199.33	1.99	1498.
3000	1.58	34.651	2957	27.746	45.7	1.36	34.5	22.71	265.17	2.64	1506.
3500	1.53	34.678	3445	27.772	44.4	1.26	31.7	24.97	340.01	2.92	1514.
4000	1.50	34.680	3933	27.775	45.2	1.18	31.1	27.19	425.02	3.12	1523.
4100	1.50	34.679	4031	27.775	45.4	1.17	31.1	27.64	443.72	3.16	1524.
4200	1.50	34.682	4128	27.777	45.5	1.15	30.8	28.10	463.00	3.19	1526.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34.50
35.50
TEMPERATURE, C
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4.00
7.00
10.00
13.00
16.00
DEPTH, METRES
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X100
X1000
* - 87 - 4 - 3

OCEAN PHYSICS GROUP
REFERENCE NO. 87-04- 3 DATE 30/11/87 GMT 7:30
POSITION 50- 0.0 N 145- 0.0 W STATION MP26
HYDROGRAPHIC CAST DATA

OBSERVED DATA

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.96	32.515	0	25.354	263.0	7.96	263.0	0.00	0.00	6.61	1480.
10	7.96	32.519	10	25.357	262.8	7.96	262.7	0.26	0.01	6.62	1480.
20	7.92	32.530	20	25.372	261.6	7.92	261.3	0.53	0.05	6.63	1480.
30	7.91	32.541	30	25.382	260.8	7.91	260.3	0.79	0.12	6.61	1480.
50	7.88	32.564	50	25.404	259.0	7.88	258.2	1.31	0.34	6.63	1480.
75	7.84	32.872	75	25.651	235.9	7.83	234.6	1.94	0.74	6.63	1481.
101	5.41	33.092	100	26.141	189.2	5.40	188.1	2.48	1.21	5.88	1472.
126	5.38	33.565	125	26.518	153.8	5.37	152.3	2.91	1.71	4.97	1473.
151	5.18	33.742	150	26.681	138.6	5.17	136.8	3.27	2.23	4.19	1473.
176	4.92	33.759	175	26.724	134.7	4.91	132.7	3.62	2.80	3.69	1472.
201	4.64	33.773	200	26.766	130.8	4.62	128.7	3.95	3.44	3.27	1471.
252	4.31	33.817	250	26.837	124.4	4.29	122.0	4.59	4.92	2.52	1471.
302	4.17	33.870	300	26.893	119.4	4.15	116.6	5.21	6.66	1.96	1471.
404	4.01	34.036	401	27.042	106.2	3.98	102.4	6.36	10.80	1.24	1472.
505	3.83	34.091	501	27.104	101.0	3.79	96.5	7.40	15.62	0.86	1473.
607	3.63	34.173	602	27.189	93.5	3.59	88.4	8.39	21.25	0.73	1474.
809	3.25	34.282	802	27.312	82.8	3.19	76.6	10.17	34.06	0.57	1476.
1009	2.93	34.365	999	27.407	74.5	2.86	67.5	11.73	48.53	0.41	1478.
1257	2.60	34.450	1244	27.504	66.0	2.51	58.2	13.47	68.58	0.48	1481.
1555	2.28	34.503	1538	27.573	59.9	2.17	51.5	15.35	95.41	0.69	1484.
2053	1.94	34.575	2028	27.658	52.7	1.80	43.3	18.22	148.24	1.42	1491.
2561	1.70	34.616	2526	27.709	48.5	1.52	38.2	20.78	208.57	2.07	1499.
3083	1.57	34.646	3038	27.743	46.1	1.34	34.7	23.26	279.82	2.65	1507.
3613	1.51	34.657	3556	27.756	45.9	1.23	33.2	25.71	363.17	2.90	1516.
4128	1.51	34.667	4058	27.764	46.5	1.17	32.0	28.09	457.16	3.09	1525.
4231	1.50	34.667	4158	27.765	46.6	1.15	31.9	28.57	477.51	3.14	1527.
4334	1.49	34.669	4258	27.767	46.5	1.13	31.6	29.04	498.39	3.16	1528.

INTERPOLATED TO STANDARD PRESSURE

PRESS	TEMP	SAL	DEPTH	SIGMA T	SVA	THETA	SVA (THETA)	DELTA D	POT. EN	OXY	SOUND
0	7.96	32.515	0	25.354	263.0	7.96	263.0	0.00	0.00	6.61	1480.
10	7.96	32.519	10	25.357	262.8	7.96	262.7	0.26	0.01	6.62	1480.
20	7.92	32.530	20	25.372	261.6	7.92	261.3	0.53	0.05	6.63	1480.
30	7.91	32.541	30	25.382	260.8	7.91	260.3	0.79	0.12	6.61	1480.
50	7.88	32.564	50	25.404	259.0	7.88	258.2	1.31	0.34	6.63	1480.
75	7.84	32.872	75	25.651	235.9	7.83	234.6	1.94	0.74	6.63	1481.
100	5.46	33.087	99	26.131	190.2	5.46	189.1	2.46	1.20	5.90	1472.
125	5.38	33.551	124	26.507	154.8	5.37	153.3	2.89	1.69	4.99	1473.
150	5.19	33.735	149	26.675	139.1	5.18	137.4	3.26	2.21	4.22	1473.
175	4.93	33.758	174	26.722	134.8	4.92	132.9	3.60	2.77	3.72	1472.
200	4.65	33.772	199	26.764	131.0	4.64	128.9	3.93	3.40	3.29	1471.
225	4.48	33.795	223	26.801	127.6	4.46	125.3	4.25	4.10	2.89	1471.
250	4.32	33.816	248	26.834	124.6	4.30	122.2	4.57	4.87	2.54	1471.
300	4.18	33.868	298	26.891	119.6	4.15	116.8	5.18	6.58	1.98	1471.
400	4.02	34.030	397	27.036	106.7	3.99	102.9	6.31	10.61	1.27	1472.
500	3.84	34.088	496	27.101	101.2	3.80	96.8	7.35	15.35	0.87	1473.
600	3.64	34.168	595	27.183	94.0	3.60	88.9	8.32	20.84	0.74	1474.
700	3.44	34.227	694	27.250	88.2	3.39	82.6	9.24	26.87	0.65	1475.
800	3.27	34.278	793	27.307	83.2	3.21	77.1	10.09	33.42	0.58	1476.
900	3.10	34.322	892	27.358	78.8	3.03	72.2	10.90	40.43	0.49	1477.
1000	2.94	34.362	990	27.404	74.8	2.87	67.8	11.67	47.86	0.41	1478.
1200	2.67	34.432	1188	27.484	67.8	2.59	60.2	13.09	63.81	0.46	1480.
1500	2.33	34.494	1484	27.562	61.0	2.23	52.7	15.01	90.21	0.65	1484.
2000	1.97	34.568	1976	27.650	53.4	1.83	44.1	17.94	142.45	1.35	1491.
2500	1.73	34.612	2467	27.704	49.0	1.55	38.8	20.49	200.96	2.00	1498.
3000	1.59	34.642	2957	27.738	46.5	1.37	35.3	22.88	267.87	2.57	1506.
3500	1.52	34.655	3445	27.753	45.9	1.25	33.5	25.19	344.32	2.85	1514.
4000	1.51	34.665	3933	27.762	46.3	1.19	32.3	27.49	432.53	3.05	1523.
4100	1.51	34.666	4031	27.764	46.5	1.18	32.1	27.96	451.68	3.08	1524.
4200	1.50	34.667	4128	27.765	46.5	1.16	31.9	28.42	471.35	3.13	1526.

APPENDIX I

Abridged Cruise Report

OCEAN STORMS Cruise I (87-2)
(22 September - 16 October 1987)

Scientific Staff

S. Tabata, Chief Scientist
R. Bigham (Ocean Physics Division, I.O.S.)
B. Minkley (Ocean Physics Division, I.O.S.)
J. Love (Ocean Physics Division, I.O.S.)
L. Spearing (Ocean Physics Division, I.O.S.)
R. Bellegay (Ocean Chemistry Division, I.O.S.)
F. Whitney (Ocean Chemistry Division, I.O.S.)
T. Soutar (Ocean Chemistry Division, I.O.S.)
W.E. Bradley (NCAR, U.S.A.)

Ship

CRV Parizeau
J. Anderson, Master

Summary of Log (Times in PDST (+7), 1987

21 September:	Load
22 September:	Depart Esquimalt after fueling Stations: JF01, JF02, JF03, JF04-samples underway
23 September:	Stations: P01, P02, P03, P04, casts for chemistry, A05, A04
24 September:	Stations: A3B, A02, A1B, A01, A0B, A00, P04, P05, P06, P07, P08
25 September:	Stations: P09, P10, P11, P12, P13, P14
26 September:	Stations: P15, P16, P17, P18
27 September:	Stations: P19, P20, P21, P22, P23
28 September:	Stations: P24, P25, P35, P26 (Station P)
29 September:	Casts for chemistry, etc.; rendezvous with "T.G. Thompson"; Launched AES Meteorological drifting buoy (#5316/5311P); Retrieved/deployed sediment traps; Station P27;

In Ocean Storms Area

30 September:	Stations:	0S01;	launched drifter	#7989	
		0S02;	"	" #7995	(damaged and lost), #7994
		0S03;	"	" #7958,	thermistor chain #10061
		0S04;	"	" #7946,	thermistor chain #10063
1 October:	Stations:	0S05;	"	" #7985	
		0S06;	"	" #7951	

1 October:	Stations:	OS12;	"	"	#7922
		OS18;	"	"	#7984
		OS24;	"	"	#7961
2 October:	Stations:	OS30;	"	"	#7978 (very high winds, gusting 50 knots)
		OS29;	"	"	#7947
		OS28;	"	"	#7968, thermistor chain #5637 (French)
		OS27;	"	"	#7953, thermistor chain #10060
		OS26;	"	"	#7988
3 October:	Stations:	OS25;	"	"	#7937 (winds subsided to 15 knots)
		OS19;	"	"	#7962
		OS13;	"	"	#7949
		OS07; drifter not released (saved for later deployment)			
		OS08; drifter not released (saved for later deployment) (Winds up to 70 knots)			
		OS09; launched drifter #7979, thermistor chain #10064			
		OS10;	"	"	#7948, thermistor chain #5633 (French)
		(Winds subsided to 15 knots)			
5 October:	Stations:	OS11; launched drifter #7930			
		OS17;	"	"	#7993
		OS23;	"	"	#7972
6 October:	Stations:	OS22;	"	"	#7974, thermistor chain #10062
		OS21;	"	"	#7977, thermistor chain #10065
		OS20;	"	"	#7965
		OS14;	"	"	#7924
		OS15;	"	"	#7971
		OS31 (OS16W);	"	"	#7992
		OS34 (OS16H);	"	"	#7928
7 October:	Stations:	OS33 (OS16E);	"	"	#7996
		OS32 (OS16S);	"	"	#7957
		OS16;	"	"	#7943
		OS37 (OS16NE);	"	"	#7987
		OS36 (OS16SE);	"	"	#7970
		OS35 (OS16SW);	"	"	#7975
		OS38 (OS16NW);	"	"	#7959
		OS08;(no STP; previously taken) launched drifter #7981			
		OS07;(no STP; previously taken) launched drifter #7945			

Out of OCEAN STORMS area

8 October:	Stations:	P26; launched Hermes drifter #1401F (1332); retrieved sediment traps
		P33; launched Hermes drifter #14DB9 (1334)
		R20
9 October:	Stations:	R19
		R18; launched LCD drifter #1310
		R17; deployed NEPCS mooring #2 (51° 00.04'N/140°35.0'W)
		R16; LCD #3115 launched
10 October:	Stations:	R15;
		R14; LCD #1316 launched
		R13
		R12; 4 drifters launched in one-mile square LCD #1317, Tristar #1188, LCD #1318; Tristar #1197
		R11
11 October:	Stations:	R10; launched LCD #1319 Deployed NEPCS mooring #1 (52°00.0'N/136°00.0'W)
		R09
12 October:	Stations:	R08; launched Tristar drifter #1186
	Stations:	R07; R06; J05; J04; J03; J2A
13 October:	Stations:	J02; J1A, J01; J00; M88, I03, M89
14 October:	Stations:	H05; G05; F05; E05; D06
15 October:	Stations:	P06, A05, A04, A3B, A03 (P06), A2B, A02, A1B, A01, A0B, A00
		Underway samples at JF04, JF03
16 October:	Stations:	Underway samples at JF02, JF02
		Arrived I.O.S. jetty; unload and disembark

Legends for Appendices II and IV

Con. No.	Consecutive number (in chronological order of STP and hydrographic casts).
Stn. No.	Designated station identification number. The I.O.S. Line P - Station P and associated lines have local designation symbol M before station number but this is not printed.
Date:	Year, month, day.
Time:	Time in Universal Time Coordinate (UTC), formerly G.M.T.
STP:	Salinity-temperature-pressure cast - approximate maximum sampling depth in pressure units (decibar) is indicated.
Hydro.:	Hydrographic cast - approximate maximum sampling depth in pressure units (decibar) is indicated.
SSS:	Sea surface salinity from samples collected underway at depth of 3 metres via the ship's seawater loop system.

APPENDIX II

LOG OF OCEANOGRAPHIC OBSERVATIONS

CRUISE I (87-2)

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO	SSS	REMARKS
	JF01	8 09 23	0016	-		x	
	JF02	23	0221	-		x	
	JF03	23	0355	-		x	
	JF04	23	0535	-		x	
1	PO1	23	0741	125		x	
2	PO2	23	0941	100		x	
3	PO3	23	1112	800		x	
4	PO4	23	2300	-	1250	x	
4	PO4	23	2347	1200			
5	A05	24	0302	2000		x	
6	AO4	24	0522	2000		x	
7	A3B	24	0712	1200		x	
8	A2B	24	0909	400		x	
9	A02	24	1008	175		x	
10	A1B	24	1103	125		x	
11	A01	24	1152	75		x	
12	A0B	24	1234	50		x	
13	A00	24	1311	15		x	
14	P05	24	2004	2000		x	
15	P06	24	2304	2000		x	
6	P06	25	0048		2000		
16	P07	25	0338	2000		x	
17	P08	25	0653	2000		x	
18	P09	25	1004	2000		x	
19	P10	25	1305	2000		x	
20	P11	25	1603	2000		x	
21	P12	25	1908	2000		x	
22	P13	26	0019	2000		x	
23	P14	26	0518	2000		x	
24	P15	26	1045	2000		x	
25	P16	26	1615	2000		x	
25	P16	26	1748		3500		
26	P17	27	0020	2000		x	
27	P18	27	0548	2000		x	
28	P19	27	1112	2000		x	
29	P20	27	1605	2000		x	
30	P21	27	2054	2000		x	
31	P22	28	0138	2000		x	
32	P22	28	0607	2000		x	
33	P24	28	1037	2000		x	
34	P25	28	1505	2000		x	
35	P35	28	1849	2000		x	

CON. NO.	STN. NO.	DATE			TIME	STP	HYDRO.	SSS	REMARKS
36	P26	8	09	29	0035	2000		x	Station P
37	P26			29	0418		4300	x	
37	P26			29	0811	2000		x	
37	P26			29	0918		4300	x	
38	P27			30	0526	2000		x	
39	OS01			30	1432	1500		x	
40	OS01			30	1851	2000		x	
41	OS03			30	2329	1500		x	
42	OS04	8	10	01	0425	1500		x	
43	OS05			01	0843	1500		x	
44	OS06			01	1233	2000		x	
45	OS12			01	1709	1500		x	
46	OS18			01	2224	1500		x	
47	OS24			02	0308	1500			
48	OS30			02	0739	1500		x	
49	OS29			02	1233	1500			
50	OS28			02	1731	1500		x	
51	OS27			02	2230	1500		x	
52	OS26			03	0358	2000		x	Nutrient samples
53	OS25			03	0915	1500		x	taken from loop system
54	OS19			03	1313	1500		x	concurrently with SSS.
55	OS13			03	1721	1500		x	Continued to end of cruise
56	OS07			03	2051	2000		x	
57	OS08			04	0052	2000		x	Winds up to 53 knots.
57	OS08			04	0236		4000		Hove to.
58	OS09			05	0238	1500		x	
59	OS10			05	0644	1500		x	
60	OS11			05	2013	1500		x	
61	OS17			06	0100	1500		x	
62	OS23			06	0502	1500		x	
63	OS22			06	0856	1500		x	
64	OS21			06	1242	1500		x	
65	OS20			06	1653	1500		x	
66	OS14			06	2108	1500		x	
67	OS15			07	0126	1500		x	
68	OS31(16W)			07	0346	500		x	
69	OS34(16N)			07	0559	500		x	
70	OS33(16E)			07	0814	500		x	
71	OS32(16S)			07	1050	500		x	
72	OS16			07	1248	1500		x	
73	P26			08	1558	2000		x	Station P
74	P33			09	0157	2000		x	
75	R20			09	0500	2000		x	
76	R19			09	0833	2000		x	
77	R18			09	1230	2000		x	
78	R17			09	1705	2000		x	
79	R16			10	0544	2000		x	

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO.	SSS	REMARKS
80	R15	8 10 10	1021	2000		x	
81	R14	10	1354	2000		x	
82	R13	10	1739	2000		x	
82	R13	10	1936		3500		
83	R12	11	0037	2000		x	
84	R11	11	0516	2000		x	
85	R10	11	0910	2000		x	
86	MOR2	11	1446	2000		x	Mooring station
87	R09	12	0530	2000		x	
88	R08	12	0918	2000		x	
89	R07	12	1253	2000		x	
90	R06	12	1634	2000		x	
91	J05	12	2044	2000		x	
92	J04	13	0001	2000		x	
93	J03	13	0306		2000	x	
93	J03	13	0347	2000			
94	J2A	13	0533	2000		x	
95	J02	13	0724	2000		x	
96	J1A	13	0932	1500		x	
97	J01	13	1125	500		x	
98	J00	13	1212	80		x	
99	88	14	0017	1500		x	
100	I03	14	0303	1500		x	
101	89	14	0551	1500		x	
102	H05	14	0845	1500		x	
103	G05	14	1224	1500		x	
104	F05	14	1607	1500		x	
105	E05	14	2020	1500		x	
106	D06	15	0040	2000		x	
107	P06	15	0751	2000		x	
108	A05	15	1224	2000		x	
109	A04	15	1440	2000		x	
110	A3B	15	1628	1500		x	
111	A03	15	1744	1200		x	
112	A2B	15	1912	450		x	
113	A02	15	2009	175		x	
114	A1B	15	2056	135		x	
115	A01	15	2139	85		x	
116	A0B	15	2217	60		x	
117	A00	15	2257	20		x	
	JF04	15	0437	--		x	
	JF03	16	0623	--		x	
	JF02	16	0820	--		x	
	JF01	16	1010	--		x	

APPENDIX III

Abridged Cruise Report

OCEAN STORMS Cruise II (87-4)
(24 November - 9 December 1987)

Scientific Staff:

L. Spearing, Chief Scientist
B. Minkley (Ocean Physics Division, I.O.S.)
D. Yelland " " "
R. Bellegay (Ocean Chemistry Division, I.O.S.)
F. Whitney " " "
W. Trentin " " "
(Contractor, Oceanetic Measurement Ltd.)
D. Engomoen (Atmospheric Environment Service)
T. Duffy " " "

Ship

CRV Parizeau
P. Frost, Master

Summary of Log (times in P.S.T. (+8), 1987

23 November:	Load	
24	Depart I.O.S.	
	Stations:	JF01, JF02, JF03, JF04 (samples underway)
	Stations:	P01, P04, Casts for chemistry at P04, sediment trap experiment;
	A05, A04,	A3B, A03 (P04), A2B, A02, A1B, A01, A00
26	Stations:	Underway samples at P05, P06, P07, P08, P09, P10, P11
27	Stations:	Underway samples at P12, P13, P14, P15, P16, P17
28	Stations:	Underway samples at P18, P19, P20, P21, P22
29	Stations:	Underway samples at P23, P24, P25, P35, P26 STP and hydro. casts at P26
30	Stations:	Continue obs. at P26 (winds SE 45 knots) Depart (14:30) for OCEAN STORMS area
1 December:	Stations:	OS01, OS02
2	Stations:	OS03, OS04, OS05, OS06, OS12, OS11
3	Stations:	OS10, OS09, OS08, OS07, OS13
4	Stations:	OS14, OS15
		Winds up to 50 knots E; (Hove to) at 09:00
		Winds up to 70 knots SE by 1300
		Maximum winds of 75 knots S at 15:00
		OS16W at 20:45

5 December:	Stations:	OS16W, OS16N OS16 (unable to occupy station - too rough sea) (Hove to) AES drifter (ID5321/5326D launched) at 47°14.3N, 139°22.2W) Commence steaming toward P16 (reported drifting of sediment trap at P04).
6 December:	Stations:	Arrive P16 (12:20) Hove to; winds still up to 45 knots SW. (14:15 weather forecast not promising 45 knots winds to continue for at least 2 days): Searched for drifting sediment trap in Queen Charlotte Sound. Ship decided to head home via Inland passage.
8 December:		Proceed to IOS
9 December:		Arrive IOS (winds 40 SE in Strait of Georgia)
10 December:		Unload.

APPENDIX IV

LOG OF OCEANOGRAPHIC OBSERVATIONS

CRUISE III (87-4)

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO		SSS	REMARKS
	JF01	87 11	24	2247			x	Nutrient samples taken from
	JF02		25	0132			x	ship's seawater loop system
	JF03		25	0359			x	concurrently with SSS.
	JF04		25	0610			x	
1	P01		25	0846	100		x	
	P03		25	1230			x	
2	P04		25	1738	1200		x	
1	P04		25	1906		1300		
3	A05		25	2313	1500		x	
4	A04		26	0140	2000		x	
5	A3B		26	0338	1500		x	
6	A03		26	0523	1200		x	
7	A2B		26	0653	450		x	
8	A02		26	0757	150		x	
9	A1B		26	0850	130		x	
10	A01		26	0937	85		x	
11	A0B		26	1016	60		x	
12	A00		26	1101	40		x	
	P05		26	1909			x	
	P06		26	2110			x	
	P07		26	2321			x	
	P08		27	0128			x	
	P09		27	0331			x	
	P10		27	0532			x	
	P11		27	0729			x	
	P12		27	0928			x	
	P13		27	1330			x	
	P14		27	1731			x	
	P15		27	2130			x	
	P16		28	0200			x	
	P17		28	0643			x	
	P18		28	1126			x	
	P19		28	1555			x	
	P20		28	2009			x	
	P21		29	0028			x	
	P22		29	0417			x	
	P23		29	0816			x	
	P24		29	1217			x	
	P25		29	1602			x	
	P35		29	1849			x	
1	P26		29	2212		4300		Station P
13	P26		30	0456	2000			
2	P26		30	0730		4300		Winds up to SE 45 knots

CON. NO.	STN. NO.	DATE	TIME	STP	HYDRO.	SSS.	REMARKS
14	P26	87 11	30	1030	2000		
15	0S01	87 12	02	0206	1500	x	
16	0S02		02	0559	2000	x	
17	0S03		02	1026	1500	x	
18	0S04		02	1424	1500	x	
19	0S05		02	1819	1500	x	
20	0S06		02	2224	2000	x	
21	0S12		03	0243	1500	x	
22	0S11		03	0642	1500	x	
23	0S10		03	1132	1500	x	
24	0S09		03	1608	1500	x	
25	0S08		03	2041	1500	x	
26	0S07		04	0134	1500	x	
27	0S13		04	0541	1500	x	
28	0S14		04	0952	1500	x	
29	0S15		04	1411	1500	x	Winds up to 70 knots. Hove to.
30	0S31(16W)		05	0454	240	x	
31	0S31(16W)		05	1004	500		
32	0S34(16N)		05	1235	500	x	Unable to occupy station due
	0S16					x	to rough seas.