UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 9908
7 – 29 August 1999

CalCOFI Cruise 9910
3 – 21 October 1999

SIO Reference 00-10
29 June 2000

Approved for distribution:

_____
Charles F. Kennel, Director

CONTENTS

INTRODUCTION

The data in this report were collected during cruises 9908* and 9910 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *New Horizon* of Scripps Institution of Oceanography, University of California, San Diego. The CalCOFI program was organized in the late 1940's to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Game, and the Marine Life Research Group (MLRG) at Scripps Institution of Oceanography (SIO). MLRG contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruises were collected and processed by personnel of the Marine Life Research Group and the Southwest Fisheries Science Center. Volunteers and other SIO staff members also assisted in the collection of data and chemical analyses at sea. CalCOFI data presented in this report and collected on previous cruises can be accessed via the World Wide Web (http://www-mlrg.ucsd.edu/calcofi.html).

STANDARD PROCEDURES

CTD/Rosette Cast Data

At each station on these cruises a Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument was deployed with a 24-place rosette. The rosette was equipped with 24 ten-liter plastic (PVC) bottles. The CTD/rosette cast usually sampled 20 depths to a maximum sampling depth of 525 meters, bottom depth permitting. Occasional stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. The sample spacing was designed to sample depth intervals as close as 10 meters around the sharp upper thermocline features such as the chlorophyll, oxygen, nitrite maxima and the shallow salinity minimum. Salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea within the top 200 meters, bottom depth permitting.

Pressures and temperatures assigned to the water sample data were derived from the CTD signals recorded just prior to the bottle trip. Pressures have been converted to depths by the Saunders (1981) pressure-to-depth conversion technique. CTD temperatures reported with the bottle data have been rounded to the nearest hundredth of a degree Celsius.

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. The results were compared with the CTD salinity in order to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with substandard seawater. Periodic checks on the conductivity of the substandard were made by comparison with IAPSO Standard Seawater batch P134 on both cruises. Salinity values have been calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and were reported to three decimal places, provided that accepted standards were met. If there was doubt concerning the accuracy of the analytical results the salinities were reported to two decimal places.

Dissolved oxygen samples were collected in calibrated 100 ml iodine flasks, allowing at least 200% overflow. The dissolved oxygen samples were analyzed at sea by the Winkler method, as modified by Carpenter (1965), using the equipment and procedure outlined by Anderson (1971). Percent oxygen saturation was calculated from the equations of Weiss (1970).

Silicate, phosphate, nitrate and nitrite nutrients were determined at sea using an automated analyzer. The procedures used are similar to those described in Atlas *et al*. (1971).

* The first two digits represent the year and the last digits the month of the cruise.

Samples for chlorophyll-*a* and phaeopigments were collected in calibrated 138 ml polyethylene bottles and filtered onto Whatman GF/F filters. The pigments were extracted with a cold extraction technique in 90% acetone (Venrick and Hayward, 1984), and the fluorescence determined before and after acidification with a Turner Designs fluorometer (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965).

Evaluation of the water sample data involved comparisons with the CTD cast profiles, adjacent stations and consideration of the variation of a property as a function of density or depth and the relationships with other properties (Klein, 1973). Estimates of precision of the standard techniques are given in SIO (1991).

Primary Productivity Sampling

Primary productivity samples were taken each day shortly before local apparent noon (LAN). Primary production was estimated from ^{14}C uptake using a simulated *in situ* technique. Light penetration was estimated from the Secchi depth (assuming that the 1% light level is three times the Secchi depth). The depths with ambient light intensities corresponding to light levels simulated by the on-deck incubators were identified and sampled on the up rosette cast. Occasionally an extra bottle or two were tripped in addition to the usual 20 levels sampled in the combined rosette-productivity cast in order to maintain the normal sampling depth resolution. The ten-liter bottles were equipped with epoxy-coated springs and Viton O-rings. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were inoculated with 10 µCi of ^{14}C as $NaHCO_3$ (200 µl of 50 µCi/ml stock) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al*., 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation fluor were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505µm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 meters to the surface. The tow time for a standard tow was 21.5 minutes. Volumes filtered were determined from flowmeter readings and the mouth area of the net. Only one sample of each pair was retained and preserved. The biomass, as wet displacement volume, after removal of large (>5 ml) organisms, was determined in the laboratory ashore. These procedures are summarized in greater detail in Kramer *et al*. (1972). An Optical Plankton Counter (OPC) was routinely used in one side of the paired bongo net frame. The purpose of the OPC is to obtain information on the vertical distributions of size categories of zooplankton, using data from the counter, without affecting the ongoing time series of data obtained from the catches of the integrative bongo net.

Avifauna Observations

On cruises 9908 and 9910 sea birds were counted within a 300 meter wide strip off to one side of the ship. Counts were made while underway between stations during periods of daylight. These counts were summed over 20 nautical mile (nm) intervals, or the distance between consecutive stations, whichever was less. Included at the end of this report are individual maps of the most numerous bird species (individuals/nm).

Ancillary Programs

Several ancillary programs produced data on these cruises which are not presented in this report. These programs include:

1) *Underway Data*. On cruises 9908 and 9910 water was pumped onboard the ship at two separate locations using two different systems. Continuous near surface measurements of temperature, salinity and chlorophyll fluorescence were recorded from water pumped through the ship's uncomtaminated seawater system. The data were logged at one-minute intervals. Pelagic fish eggs were collected underway throughout the entire CalCOFI pattern with a separate large volume pump system hung over the side of the ship. This pump drew a continuous subsurface sample of approximately 640 liters per minute, which was concentrated and then collected by a 505µm sieve. Subsamples were taken at intervals ranging from 10 to 30 minutes, depending on the egg concentration, for enumeration of all retained fish eggs. In an attempt to automate the analysis of egg pump samples, a video camera and computer were added to the system to count and classify sardine and anchovy eggs.

2) *ADCP*. Continuous profiles of ocean currents and acoustic backscatter between 20 and 400 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded.

3) *Bio-optics.* On cruise 9908 and 9910 *in-situ* measurements of apparent and inherent optical properties of seawater were obtained daily in the top 100 meters of the water column using a free-falling multi-channel environmental radiometer (MER). Daily on-deck measurements of polarized sky radiance were performed in support of NASA sponsored research using a SIMBAD radiometer. Water samples obtained from the CTD/Rosette casts, with concomitant MER deployments, were collected to determine particulate, detrital, and soluble absorption, particulate organic carbon concentrations and phytoplankton pigment concentrations using HPLC. Phycoerythrin concentrations and cyanobacteria samples collected from six depths on each station of line 83 and seven depths once per day on all other lines were analyzed using epifluorescence microscopy. Underway samples were obtained every two hours to determine both colored dissolved organic matter fluorescence and to collect additional cyanobacteria samples.

4) *MOCNESS net tows.* Vertically stratified zooplankton samples were collected on cruise 9908 and 9910 using a Multiple Opening and Closing Net and Environmental Sensing System (MOCNESS) in the Santa Barbara Basin and other basin and non-basin locations to study the distribution of deep-dwelling, dormant copepods, *Calanus pacificus*.

TABULATED DATA

CTD/Rosette Cast Data

The time reported is the Coordinated Universal Time (UTC) of the first rosette bottle trip on the up cast. The rosette bottles tripped on the up cast are reported as cast 2, where cast 1 is considered to be the down CTD cast. The sample number reported is the cast number followed by a two digit rosette bottle number. Bottom depths, determined acoustically, have been corrected using British Admiralty Tables (Carter, 1980) and are reported in meters. Weather conditions have been coded using WMO code 4501. Secchi depths are also reported for most daylight stations on both cruises.

Observed data from individual CTD/rosette trip levels are interpolated and reported for standard depths. Interpolated or extrapolated standard level data are noted by the footnote "ISL" printed after the depth. Multiple bottles tripped at the same depth to provide water for ancillary programs are not used in the calculation of standard depth data. Density-related parameters have been calculated from the International Equation of State of Seawater 1980 (UNESCO, 1981b). Computed values of potential temperature, sigma-theta, specific volume anomaly (SVA), and dynamic height or geopotential anomaly are included with both observed and interpolated standard depth levels.

On stations where primary productivity samples were drawn a footnote appears after each productivity depth sampled. The corresponding primary productivity data are reported in a separate section following the tabulated rosette cast data.

Primary Productivity Data

In addition to the normal hydrographic data also reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample,

assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data have been presented to two significant digits (values <1.00) or one decimal (values >1.00). Precision of the higher production values may not warrant all of the digits presented. Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

Macrozooplankton biomass volumes are tabulated as total biomass volume ($cm^3/1000m^3$ strained) and as the total volume minus the volume of larger organisms under the heading "Small." Tow times are given in local PST (+8) time.

FOOTNOTES

In addition to footnotes, special notations are used without footnotes because the meaning is always the same:

D: CTD salinity value listed in place of normal shipboard salinity analysis.
ISL: After a depth value indicates that this is an interpolated or extrapolated standard level.
U: Uncertain value. Values which are not used in interpolation because they seem to be in error without apparent reason.

LITERATURE CITED

Anderson, G. C., compiler, 1971. "Oxygen Analysis," Marine Technician's Handbook, SIO Ref. No. 71-8, Sea Grant Pub. No. 9.

Atlas, E. L., J. C. Callaway, R. D. Tomlinson, L. I. Gordon, L. Barstow and P. K. Park, 1971. *A Practical Manual for Use of the Technicon™ AutoAnalyzer™ in Sea Water Nutrient Analysis*; Revised. Oregon State University Technical Report 215, Reference No. 71-22.

Carpenter, J. H., 1965. The Chesapeake Bay Institute technique for the Winkler dissolved oxygen method. *Limnol. Oceanogr., 10*: 141-143.

Carter, D. J. T., 1980. Echo-sounding correction tables. Third Edition. Hydrographic Department, Ministry of Defence, Taunton, U.K., NP 139: 150 pp.

Fitzwater, S. E., G. A. Knauer and J. H. Martin, 1982. Metal contamination and its effect on primary production measurements. *Limnol. Oceanogr*., *27*: 544-551.

Holm-Hansen, O., C. J. Lorenzen, R. W. Holmes and J. D. H. Strickland, 1965. Fluorometric determination of chlorophyll. *J. Cons. perm. int. Explor. Mer, 30*: 3-15.

Klein, H. T., 1973. A new technique for processing physical oceanographic data. SIO Ref. No. 73-14.

Kramer, D., M. J. Kalin, E. G. Stevens, J. R. Thrailkill and J. R. Zweifel, 1972. Collecting and processing data on fish eggs and larvae in the California Current region. *NOAA Technical Report NMFS CIRC-370:* 38 pp.

Lean, D. R. S. and B. K. Burnison, 1979. An evaluation of errors in the ^{14}C method of primary production measurement. *Limnol. Oceanogr., 24*: 917-928.

Reid, J. L. and A. W. Mantyla, 1976. The effect of the geostrophic flow upon coastal sea elevations in the northern North Pacific Ocean. *J. Geophys. Res., 81:* 3100-3110.

Parsons, T. R., Maita, Y., Lalli, C. M., 1984. *A Manual of Chemical and Biological Methods for Seawater Analysis*. Pergamon Press Ltd., 3-28.

Saunders, P. M., 1981. Practical conversion of pressure to depth. *J. Phys. Oceanogr., 11*: 573-574.

Scripps Institution of Oceanography, University of California, 1991. Physical, Chemical and Biological Data, CalCOFI Cruises 9003 and 9004. SIO Ref. 91-4, 96 pp.

UNESCO, 1981, a. Background papers and supporting data on the Practical Salinity Scale, 1978. *UNESCO Tech. Pap. in Mar. Sci., No. 37*.

UNESCO, 1981, b. Background papers and supporting data on the International Equation of State 1980. *UNESCO Tech. Pap. in Mar. Sci., No. 38.*

Venrick, E. L. and T. L. Hayward, 1984. Determining chlorophyll on the 1984 CalCOFI surveys. *CalCOFI Rep., Vol. XXV*: 74-79.

Weiss, R. F., 1970. The solubility of nitrogen, oxygen and argon in water and seawater. *Deep-Sea Res., 17:* 721-735.

Yentsch, C. S. and D. W. Menzel, 1963. A method for the determination of phytoplankton, chlorophyll and phaeophytin by fluorescence. *Deep-Sea Res., 10:* 221-231.

FIGURES

Cruise 9908

1. CalCOFI Cruise 9908, track and station positions.

2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).

3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.

4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.

5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential density; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

PERSONNEL

CalCOFI Cruise 9908

SHIP'S CAPTAIN

John P. Manion, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Leg)
Renger, Edward H. (Chief Scientist)	Staff Research Associate, SIO	1,2,3
Becker, Susan M.	Staff Research Associate, SIO	1,2,3
Carter, Melissa L.	Staff Research Associate, SIO	1,2,3
Chiaramonte, Nicolas	Technician, Instituto Nacional de Investigacion y Desarollo Pesquero, Argentina	1,2,3
Comer, Ronald L.	Resident Technician, SIO	2
Curtis, K. Alexandra	Graduate Student, SIO	2,3
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2,3
Griffith, David A.	Fishery Biologist, NMFS	1,2,3
Gruber, Dennis W.	Staff Research Associate, SIO	1,2,3
Horimoto, Naho	Visiting Scholar, SIO	1
Hyrenbach, K. David	Graduate Student, SIO	1,2,3
Johnson, Catherine L.	Graduate Student, SIO	2,3
Ramirez, Fernando	Staff Research Associate, SIO	1,2,3
Slanina, Ray	Programmer, NMFS	1,2,3
Storms, Scott A.	Staff Research Associate, SIO	1,2,3
Wieland, John D.	Staff Research Associate, SIO	1
Wolgast, David M.	Staff Research Associate, SIO	1,2,3

Leg 1: San Diego to Dana Point, Ca., 8 – 13 August, 1999
Leg 2: Dana Point to Ventura, Ca., 13 – 19 August, 1999
Leg 3: Ventura to San Diego, Ca., 19 – 29 August, 1999

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 5.2 N	120 47.2 W	23/08/99	2100 UTC	74 m	280 06 kn	130 02 07	4	1013.2 mb	13.8 C	12.8 C	08m	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.53	13.53	33.699	25.279	268.2	0.000	7.02	118.8	1.4	0.39	0.4	0.05	2.88	1.47	0	
2		13.53	13.53	33.699	25.279	268.3	0.005	7.02	118.8	1.4	0.39	0.4	0.05	2.88	1.47	2	208
5		12.72	12.72	33.707	25.447	252.4	0.013	6.20	103.2	3.9	0.68	4.2	0.14	7.73	4.20	5	207
10		12.19	12.19	33.716	25.557	242.1	0.026	5.29	87.1	8.3	1.01	9.1	0.21	6.97	3.69	10	206
20		11.04	11.04	33.744	25.791	220.0	0.049	4.00	64.2	17.8	1.52	18.0	0.24	1.02	1.84	20	205
30		10.65	10.65	33.780	25.889	211.0	0.070	3.61	57.5	20.9	1.64	20.3	0.22	0.43	0.85	30	204
40		10.63	10.63	33.789	25.899	210.2	0.091	3.58	57.0	21.5	1.66	20.3	0.24	0.48	1.14	40	203
50	ISL	10.59	10.58	33.812	25.924	208.0	0.112	3.49	55.5	22.9	1.71	20.2	0.24	0.51	1.33	50	
51		10.59	10.58	33.814	25.926	207.9	0.114	3.48	55.4	23.0	1.71	20.2	0.24	0.51	1.36	51	202
62		10.59	10.58	33.807	25.921	208.6	0.137	3.48	55.4	23.0	1.70	20.1	0.23	0.62	2.01	62	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 2.2 N	120 55.5 W	23/08/99	1758 UTC	246 m	330 05 kn	130 02 07	4	1012.8 mb	13.1 C	12.2 C	11m	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.91	13.91	33.706	25.207	275.1	0.000	6.57	112.1	1.5	0.46	1.2	0.09	1.19	0.54	0	
1	B	13.91	13.91	33.706	25.207	275.1	0.003	6.57	112.1	1.5	0.46	1.2	0.09	1.19	0.54	1	216
1		13.91	13.91	33.706	25.207	275.1	0.003									1	217
7	B	13.84	13.84	33.706	25.221	273.9	0.019	6.64	113.1	1.4	0.43	0.8	0.07	1.47	0.92	7	215
10	ISL	13.71	13.71	33.705	25.247	271.5	0.027	6.60	112.1	1.5	0.45	0.8	0.06	1.39	0.86	10	
14	B	13.51	13.51	33.704	25.287	267.8	0.038	6.48	109.6	1.8	0.47	0.8	0.05	1.33	0.81	14	214
20	ISL	13.24	13.24	33.704	25.342	262.8	0.054	6.12	103.0	2.9	0.62	2.3	0.09	1.93	1.45	20	
23	B	13.12	13.12	33.705	25.367	260.5	0.062	5.91	99.2	3.6	0.71	3.3	0.12	2.43	1.94	23	213
30	ISL	12.88	12.88	33.708	25.417	255.9	0.080	5.56	92.8	4.9	0.87	5.2	0.17	3.95	3.33	30	
31	B	12.83	12.83	33.708	25.427	255.0	0.083	5.51	91.9	5.2	0.89	5.5	0.18	4.16	3.51	31	212
43	B	11.69	11.68	33.713	25.649	234.1	0.112	4.45	72.5	12.9	1.37	13.7	0.35	4.69 A	3.97 A	43	211
50	ISL	11.28	11.27	33.721	25.731	226.5	0.128	4.10	66.2	16.5	1.48	17.1	0.29	1.53	2.10	50	
52		11.17	11.16	33.725	25.754	224.3	0.133	4.02	64.7	17.4	1.50	17.9	0.26	0.63	1.50	52	210
59		10.73	10.72	33.759	25.859	214.5	0.148	3.64	58.1	20.5	1.60	20.0	0.10	0.17	0.45	59	209
69		10.31	10.30	33.799	25.963	204.7	0.169	3.36	53.1	22.8	1.71	21.7	0.05	0.12	0.34	69	208
75	ISL	10.08	10.07	33.825	26.023	199.2	0.181	3.21	50.5	24.3	1.77	22.7	0.05	0.09	0.27	75	
84		9.78	9.77	33.868	26.107	191.3	0.199	2.99	46.7	26.5	1.86	24.0	0.04	0.05	0.19	84	207
99		9.49	9.48	33.942	26.213	181.6	0.227	2.64	41.0	29.4	1.99	25.6	0.03	0.04	0.19	100	206
100	ISL	9.48	9.47	33.945	26.217	181.2	0.228	2.63	40.9	29.5	1.99	25.7	0.03	0.04	0.19	101	
118		9.32	9.31	33.984	26.274	176.1	0.261	2.49	38.6	31.1	2.05	26.4	0.03	0.03	0.19	119	205
125	ISL	9.25	9.24	33.995	26.294	174.4	0.273	2.46	38.0	31.8	2.07	26.7	0.03	0.03	0.19	126	
138		9.11	9.10	34.014	26.331	171.1	0.295	2.41	37.1	33.1	2.11	27.2	0.03	0.02	0.18	139	204
150	ISL	9.01	8.99	34.037	26.365	168.0	0.316	2.29	35.2	34.3	2.16	27.8	0.03	0.01	0.17	151	
169		8.88	8.86	34.070	26.412	163.9	0.347	2.07	31.8	36.2	2.24	28.8	0.04	0.01	0.15	170	203
200	ISL	8.66	8.64	34.099	26.470	159.0	0.397	1.82	27.8	39.6	2.35	30.0	0.09	0.02	0.20	201	
203		8.64	8.62	34.101	26.474	158.6	0.402	1.80	27.5	39.9	2.36	30.1	0.09	0.02	0.20	204	202
233		8.45	8.43	34.113	26.513	155.4	0.449	1.67	25.4	42.4	2.44	30.9	0.11			234	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO ESTIMATED FROM ADJACENT LEVELS.
B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 53.4 N	121 12.2 W	23/08/99	1155 UTC	565 m	240 02 kn			1011.3 mb	14.8 C	14.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.68	14.68	33.684	25.027	292.2	0.000	5.91	102.4	5.2	0.62	4.5	0.29	0.81	0.34	0	
1		14.68	14.68	33.684	25.027	292.2	0.003	5.91	102.4	5.2	0.62	4.5	0.29	0.81	0.34	1	220
10	ISL	14.33	14.33	33.686	25.104	285.2	0.029	5.85	100.6	5.7	0.67	5.2	0.33	1.15	0.47	10	
15		14.03	14.03	33.690	25.170	279.1	0.043	5.81	99.3	6.1	0.72	5.8	0.36	1.46	0.58	15	219
20	ISL	13.83	13.83	33.696	25.216	274.8	0.057	5.82	99.1	6.1	0.74	6.2	0.36	1.88	0.69	20	
30		13.32	13.32	33.708	25.329	264.2	0.084	5.83	98.2	6.2	0.83	7.0	0.37	2.40	0.86	30	218
46		11.94	11.93	33.720	25.608	238.1	0.124	4.51	73.8	14.3	1.30	14.9	0.40	1.06	0.79	46	217
50	ISL	11.43	11.42	33.704	25.690	230.3	0.133	4.36	70.6	16.1	1.40	16.9	0.26	0.65	0.54	50	
56		10.73	10.72	33.698	25.811	218.9	0.147	4.15	66.2	18.8	1.55	19.6	0.06	0.16	0.19	56	216
65		10.24	10.23	33.785	25.964	204.5	0.166	3.54	55.9	23.2	1.74	22.5	0.02	0.08	0.12	65	215
74		10.11	10.10	33.816	26.011	200.3	0.184	3.32	52.3	24.3	1.79	23.3	0.02	0.06	0.12	74	214
75	ISL	10.11	10.10	33.817	26.011	200.3	0.186	3.31	52.1	24.3	1.79	23.3	0.02	0.06	0.12	75	
84		10.06	10.05	33.827	26.028	198.9	0.204	3.25	51.1	24.7	1.81	23.5	0.02	0.06	0.12	84	213
94		9.81	9.80	33.872	26.105	191.7	0.224	2.96	46.3	26.7	1.89	24.6	0.02	0.04	0.11	95	212
100	ISL	9.70	9.69	33.886	26.135	189.1	0.235	2.88	44.9	27.6	1.92	25.1	0.02	0.03	0.11	101	
110		9.54	9.53	33.900	26.172	185.7	0.254	2.81	43.7	28.7	1.96	25.7	0.02	0.03	0.12	111	211
124		9.33	9.32	33.920	26.222	181.2	0.279	2.72	42.1	30.1	2.01	26.5	0.02	0.02	0.10	125	210
125	ISL	9.31	9.30	33.925	26.229	180.5	0.281	2.70	41.8	30.3	2.02	26.6	0.02	0.02	0.10	126	
146		8.89	8.87	34.029	26.378	166.7	0.318	2.19	33.6	34.9	2.19	28.6	0.01	0.01	0.10	147	209
150	ISL	8.86	8.84	34.036	26.388	165.8	0.324	2.15	33.0	35.2	2.20	28.7	0.01	0.01	0.10	151	
171		8.79	8.77	34.053	26.413	163.9	0.359	2.05	31.4	36.3	2.25	29.2	0.01	0.01	0.09	172	208
200	ISL	8.51	8.49	34.097	26.491	156.9	0.406	1.82	27.7	39.8	2.35	30.5	0.01	0.01	0.08	201	
201		8.50	8.48	34.099	26.494	156.6	0.407	1.81	27.5	39.9	2.35	30.5	0.01	0.01	0.08	202	207
231		8.25	8.23	34.114	26.544	152.3	0.453	1.67	25.3	42.6	2.44	31.6	0.01			232	206
250	ISL	8.11	8.08	34.134	26.581	149.1	0.482	1.55	23.4	44.6	2.50	32.2	0.01			252	
270		7.96	7.93	34.155	26.620	145.7	0.512	1.41	21.2	47.1	2.57	32.9	0.01			272	205
300	ISL	7.62	7.59	34.170	26.682	140.2	0.554	1.23	18.3	51.7	2.67	34.1	0.01			302	
319		7.40	7.37	34.178	26.720	136.8	0.581	1.13	16.8	54.7	2.73	34.9	0.01			321	204
377		7.00	6.96	34.214	26.805	129.4	0.658	0.85	12.5	61.7	2.88	36.5	0.02			380	203
400	ISL	6.89	6.85	34.217	26.822	128.0	0.688	0.81	11.9	63.3	2.91	36.9	0.02			403	
438		6.70	6.66	34.217	26.848	126.0	0.736	0.75	10.9	66.0	2.95	37.6	0.02			441	202

500 ISL	6.18	6.14	34.237	26.933	118.4	0.812	0.56	8.1	74.1	3.07	39.4	0.01		504	
513	6.07	6.02	34.242	26.951	116.8	0.827	0.52	7.5	75.8	3.09	39.8	0.01		517	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 43.2 N	121 33.0 W	23/08/99	0747 UTC	945 m	270 02 kn			1011.4 mb	14.8 C	14.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.38	15.38	33.661	24.857	308.4	0.000	5.93	104.2	3.8	0.47	2.4	0.18	1.11	0.36	0	
2		15.38	15.38	33.661	24.857	308.4	0.006	5.93	104.2	3.8	0.47	2.4	0.18	1.11	0.36	2	220
10	ISL	14.99	14.99	33.658	24.941	300.7	0.031	5.88	102.5	4.2	0.56	3.4	0.25	1.07	0.41	10	
11		14.93	14.93	33.658	24.954	299.5	0.034	5.87	102.2	4.2	0.57	3.6	0.26	1.06	0.41	11	219
20	ISL	14.92	14.92	33.660	24.958	299.4	0.060	5.87	102.2	4.0	0.57	3.6	0.27	0.93	0.34	20	
21		14.92	14.92	33.660	24.958	299.4	0.063	5.87	102.2	4.0	0.57	3.6	0.27	0.92	0.33	21	218
29		14.92	14.92	33.666	24.963	299.2	0.087	5.85	101.8	3.8	0.57	3.6	0.26	0.93	0.33	29	217
30	ISL	14.87	14.87	33.668	24.975	298.1	0.090	5.84	101.6	3.8	0.58	3.7	0.26	0.93	0.35	30	
41		13.97	13.96	33.690	25.183	278.6	0.122	5.75	98.2	5.3	0.74	5.8	0.36	0.79	0.52	41	216
50		13.15	13.14	33.691	25.351	262.8	0.146	5.29	88.8	8.6	0.96	9.1	0.58	0.49	0.42	50	215
60		11.58	11.57	33.723	25.678	231.8	0.171	4.21	68.4	16.1	1.38	16.4	0.24	0.23	0.18	60	214
71		10.27	10.26	33.830	25.994	201.8	0.195	3.16	49.9	23.9	1.76	22.3	0.02	0.09	0.13	71	213
75	ISL	10.05	10.04	33.852	26.049	196.7	0.203	3.01	47.3	25.3	1.82	23.2	0.02	0.07	0.12	75	
84		9.81	9.80	33.887	26.117	190.4	0.220	2.87	44.9	27.1	1.90	24.1	0.01	0.05	0.10	84	212
100		9.52	9.51	33.955	26.218	181.1	0.250	2.57	40.0	30.1	2.02	25.9	0.01	0.03	0.11	101	211
119		9.27	9.26	34.008	26.301	173.6	0.284	2.25	34.8	32.8	2.15	27.4	0.01	0.02	0.11	120	210
125	ISL	9.21	9.20	34.016	26.317	172.2	0.294	2.24	34.6	33.2	2.17	27.6	0.01	0.02	0.10	126	
139		9.08	9.06	34.031	26.349	169.4	0.318	2.22	34.2	34.0	2.19	28.0	0.01	0.01	0.09	140	209
150	ISL	8.98	8.96	34.048	26.379	166.8	0.337	2.12	32.6	35.1	2.23	28.5	0.01	0.01	0.08	151	
169		8.82	8.80	34.079	26.428	162.4	0.368	1.92	29.4	37.3	2.31	29.5	0.01	0.01	0.08	170	208
197		8.61	8.59	34.117	26.491	156.9	0.413	1.74	26.5	39.9	2.39	30.5	0.01	0.00	0.07	198	207
200	ISL	8.59	8.57	34.119	26.496	156.5	0.417	1.73	26.4	40.1	2.40	30.6	0.01			201	
228		8.45	8.43	34.141	26.535	153.3	0.461	1.61	24.5	42.0	2.46	31.3	0.01			229	206
250	ISL	8.27	8.24	34.164	26.581	149.3	0.494	1.47	22.3	44.5	2.53	32.1	0.01			252	
268		8.11	8.08	34.181	26.619	146.0	0.521	1.35	20.4	46.6	2.59	32.7	0.01			270	205
300	ISL	7.90	7.87	34.197	26.663	142.2	0.567	1.21	18.2	49.5	2.66	33.5	0.01			302	
317		7.80	7.77	34.203	26.682	140.6	0.591	1.15	17.2	51.0	2.70	33.9	0.01			319	204
377		7.36	7.32	34.229	26.767	133.4	0.673	0.87	12.9	57.7	2.85	35.7	0.01			380	203
400	ISL	7.24	7.20	34.235	26.788	131.6	0.703	0.81	12.0	59.5	2.88	36.2	0.01			403	
437		7.06	7.02	34.243	26.820	129.0	0.752	0.74	10.9	62.1	2.93	36.8	0.01			440	202
500	ISL	6.67	6.62	34.259	26.886	123.3	0.831	0.61	8.9	68.1	3.04	38.2	0.01			504	
520		6.54	6.49	34.265	26.908	121.4	0.856	0.57	8.3	70.0	3.07	38.6	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 23.7 N	122 14.7 W	23/08/99	0201 UTC	4023 m	330 12 kn	340 03 05	2	1010.4 mb	16.1 C	15.5 C		8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.51	16.51	33.651	24.594	333.4	0.000	5.81	104.4	2.5	0.35	0.4	0.04	0.66	0.18	0	
2		16.51	16.51	33.651	24.594	333.5	0.007	5.81	104.4	2.5	0.35	0.4	0.04	0.66	0.18	2	220
10		16.51	16.51	33.651	24.595	333.7	0.033	5.79	104.0	2.5	0.34	0.4	0.04	0.68	0.21	10	219
20		16.31	16.31	33.661	24.649	328.9	0.066	5.87	105.1	2.4	0.42 U	0.7	0.04	0.90	0.26	20	218
30		16.05	16.05	33.667	24.713	323.1	0.099	5.83	103.8	2.2	0.36	0.6	0.05	0.87	0.29	30	217
40		12.50	12.49	33.618	25.422	255.7	0.128	5.32	88.1	9.9	1.04	10.7	1.06	0.78	0.46	40	216
50	ISL	11.44	11.43	33.551	25.569	241.8	0.153	4.97	80.4	12.5	1.23	14.4	0.31	0.36	0.26	50	
51		11.40	11.39	33.546	25.573	241.5	0.155	4.93	79.7	12.7	1.24	14.7	0.21	0.32	0.23	51	215
60		10.64	10.63	33.637	25.780	222.0	0.176	4.34	69.0	18.5	1.57	19.8	0.17	0.19	0.15	60	214
70		10.37	10.36	33.753	25.917	209.2	0.198	3.90	61.7	22.2	1.76	22.7	0.06	0.09	0.08	70	213
75	ISL	10.13	10.12	33.798	25.993	202.0	0.208	3.60	56.7	24.4	1.84	23.9	0.05	0.06	0.07	75	
87		9.57	9.56	33.882	26.153	187.0	0.231	2.95	45.9	28.9	1.99	26.2	0.01	0.02	0.06	87	212
96		9.34	9.33	33.926	26.225	180.4	0.248	2.68	41.5	30.7	2.06	27.1	0.01	0.02	0.06	96	211
100	ISL	9.25	9.24	33.939	26.249	178.1	0.255	2.61	40.3	31.3	2.08	27.4	0.01	0.02	0.06	101	
122		8.86	8.85	33.987	26.349	168.9	0.293	2.39	36.6	34.3	2.16	28.6	0.01	0.01	0.05	123	210
125	ISL	8.81	8.80	33.993	26.362	167.8	0.298	2.37	36.3	34.7	2.17	28.8	0.01	0.01	0.05	126	
140		8.57	8.56	34.019	26.420	162.5	0.323	2.29	34.9	36.8	2.22	29.5	0.01	0.01	0.05	141	209
150	ISL	8.43	8.41	34.034	26.453	159.5	0.339	2.21	33.6	38.1	2.25	30.0	0.01	0.01	0.05	151	
166		8.24	8.22	34.053	26.497	155.6	0.364	2.10	31.7	40.0	2.30	30.6	0.01	0.00	0.04	167	208
197		7.97	7.95	34.065	26.547	151.3	0.412	2.03	30.5	42.7	2.36	31.4	0.01	0.00	0.04	198	207
200	ISL	7.92	7.90	34.065	26.555	150.6	0.416	2.04	30.6	43.0	2.36	31.5	0.01			201	
227		7.47	7.45	34.059	26.615	145.2	0.456	2.12	31.5	46.0	2.40	32.2	0.01			228	206
250	ISL	7.16	7.14	34.060	26.660	141.2	0.489	1.98	29.2	49.6	2.48	33.2	0.01			252	
269		6.93	6.90	34.061	26.692	138.2	0.516	1.82	26.7	52.8	2.56	34.2	0.01			271	205
300	ISL	6.53	6.50	34.055	26.741	133.8	0.558	1.73	25.1	57.6	2.66	35.6	0.01			302	
321		6.30	6.27	34.057	26.773	131.0	0.586	1.65	23.8	60.9	2.73	36.6	0.01			323	204
380		6.05	6.02	34.138	26.870	122.5	0.661	0.87	12.5	70.9	2.97	39.3	0.01			383	203
400	ISL	5.88	5.85	34.158	26.907	119.1	0.685	0.73	10.4	74.6	3.03	40.0	0.01			403	
436		5.63	5.59	34.197	26.969	113.5	0.727	0.56	8.0	80.2	3.13	41.0	0.01			439	202
500	ISL	5.76	5.72	34.311	27.044	107.5	0.797	0.31	4.4	83.0	3.23	41.1	0.00			504	
506		5.77	5.73	34.322	27.051	106.8	0.804	0.29	4.1	83.3	3.24	41.1	0.00			510	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 3.5 N	122 56.8 W	22/08/99	1946 UTC	4233 m	340 17 kn	340 08 06	2	1012.3 mb	18.3 C	16.2 C	12m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.83	16.83	33.637	24.509	341.5	0.000	5.77	104.3	1.9	0.32	0.2	0.01	0.54	0.14	0	
1	A	16.83	16.83	33.637	24.509	341.5	0.003	5.77	104.3	1.9	0.32	0.2	0.01	0.54	0.14	1	222
2		16.83	16.83	33.632	24.505	341.9	0.007									2	223
8	A	16.83	16.83	33.632	24.506	342.1	0.027	5.75	103.9	1.8	0.32	0.2	0.01	0.52	0.14	8	221
10	ISL	16.83	16.83	33.632	24.506	342.2	0.034	5.75	103.9	1.8	0.32	0.2	0.01	0.52	0.14	10	
18	A	16.81	16.81	33.632	24.511	342.0	0.062	5.75	103.9	1.8	0.32	0.2	0.01	0.52	0.15	18	220
20	ISL	16.81	16.81	33.632	24.511	342.0	0.068	5.75	103.9	1.8	0.32	0.2	0.01	0.53	0.15	20	
26	A	16.80	16.80	33.633	24.514	341.9	0.089	5.76	104.1	1.8	0.32	0.2	0.01	0.55	0.14	26	219
30	ISL	15.78	15.78	33.647	24.759	318.7	0.102	5.85	103.6	2.3	0.41	1.1	0.09	0.83	0.32	30	
32	A	15.20	15.20	33.659	24.896	305.6	0.108	5.88	102.9	2.7	0.47	1.7	0.15	0.97	0.41	32	218
43		13.44	13.43	33.654	25.264	270.9	0.140	5.41	91.4	7.9	0.87	7.0	0.76	0.67	0.36	43	217
49	A	12.53	12.52	33.620	25.418	256.3	0.156	5.19	86.0	9.8	1.03	10.3	0.84	0.36	0.26	49	216
50	ISL	12.39	12.38	33.612	25.439	254.4	0.158	5.14	84.9	10.3	1.06	11.0	0.73	0.32	0.24	50	
55		11.74	11.73	33.577	25.534	245.3	0.171	4.93	80.3	12.4	1.20	14.1	0.13	0.17	0.17	55	215
62		11.14	11.13	33.563	25.633	236.0	0.188	4.81	77.3	13.9	1.32	16.0	0.05	0.12	0.13	62	214
73		10.76	10.75	33.619	25.745	225.6	0.213	4.43	70.7	17.2	1.47	18.4	0.03	0.10	0.11	73	213
75	ISL	10.71	10.70	33.649	25.777	222.6	0.218	4.26	67.9	18.1	1.51	19.0	0.03	0.09	0.11	75	
86		10.33	10.32	33.788	25.952	206.2	0.241	3.45	54.6	22.9	1.72	22.3	0.02	0.06	0.11	86	212
100		9.22	9.21	33.726	26.088	193.4	0.269	3.57	55.1	26.9	1.82	24.1	0.02	0.03	0.09	101	211
121		8.88	8.87	33.858	26.245	178.8	0.308	3.07	47.0	31.4	2.00	26.8	0.02	0.01	0.08	122	210
125	ISL	8.84	8.83	33.878	26.267	176.8	0.315	3.03	46.4	31.8	2.01	27.0	0.02	0.01	0.08	126	
140		8.73	8.72	33.945	26.337	170.4	0.341	2.87	43.8	33.0	2.05	27.7	0.01	0.01	0.07	141	209
150	ISL	8.69	8.67	33.990	26.379	166.7	0.358	2.58	39.4	34.5	2.13	28.5	0.01	0.01	0.07	151	
171		8.53	8.51	34.055	26.455	159.8	0.393	2.05	31.2	38.0	2.28	30.1	0.01	0.00	0.08	172	208
200	ISL	7.95	7.93	34.035	26.526	153.3	0.438	2.23	33.5	41.4	2.30	30.9	0.01	0.00	0.05	201	
202		7.90	7.88	34.032	26.532	152.9	0.441	2.25	33.7	41.6	2.30	31.0	0.01	0.00	0.05	203	207
229		7.39	7.37	34.037	26.609	145.7	0.481	2.11	31.3	46.5	2.41	32.6	0.02			230	206
250	ISL	7.08	7.06	34.037	26.653	141.8	0.512	2.03	29.9	49.8	2.47	33.5	0.02			252	
271		6.82	6.80	34.041	26.691	138.3	0.541	1.91	27.9	53.1	2.54	34.3	0.02			273	205
300	ISL	6.52	6.49	34.063	26.749	133.1	0.580	1.60	23.2	58.3	2.66	35.9	0.02			302	
314		6.43	6.40	34.081	26.775	130.8	0.599	1.42	20.6	60.7	2.73	36.7	0.02			316	204
373		6.58	6.55	34.222	26.867	123.1	0.674	0.68	9.9	67.9	3.00	38.3	0.01			375	203
400	ISL	6.44	6.40	34.232	26.894	120.9	0.707	0.62	9.0	70.6	3.04	38.9	0.01			403	
435		6.20	6.16	34.232	26.925	118.2	0.748	0.54	7.8	73.8	3.07	39.6	0.01			438	202
500	ISL	5.98	5.94	34.307	27.013	110.6	0.823	0.36	5.2	80.1	3.18	40.5	0.01			504	
518		5.92	5.87	34.328	27.038	108.5	0.843	0.31	4.4	81.8	3.21	40.8	0.01			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 43.3 N	123 38.1 W	22/08/99	1204 UTC	4348 m	340 20 kn			1013.0 mb	17.0 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.99	15.99	33.171	24.344	357.2	0.000	5.96	105.7	2.5	0.36	0.7	0.02	0.38	0.09	0	
1		15.99	15.99	33.171	24.344	357.2	0.004	5.96	105.7	2.5	0.36	0.7	0.02	0.38	0.09	1	220
10	ISL	15.99	15.99	33.170	24.344	357.6	0.036	5.96	105.7	2.5	0.36	0.7	0.02	0.37	0.10	10	
16		15.99	15.99	33.170	24.344	357.8	0.057	5.96	105.7	2.5	0.35	0.7	0.02	0.37	0.10	16	219
20	ISL	15.86	15.86	33.148	24.356	356.7	0.071	5.97	105.6	2.5	0.34	0.6	0.02	0.33	0.09	20	
30		15.28	15.28	33.023	24.389	353.9	0.107	6.04	105.5	2.5	0.33	0.3	0.01	0.24	0.07	30	218
46		13.59	13.58	32.998	24.726	322.1	0.161	6.27	105.8	2.5	0.33	0.1	0.00	0.24	0.08	46	217
50	ISL	13.17	13.16	32.975	24.793	315.8	0.174	6.29	105.2	2.6	0.34	0.1	0.00	0.29	0.12	50	
56		12.61	12.60	32.945	24.879	307.7	0.193	6.31	104.3	2.7	0.36	0.1	0.00	0.38	0.20	56	216
66		12.03	12.02	32.953	24.996	296.8	0.223	6.26	102.2	3.2	0.39	0.3	0.05	0.58	0.32	66	215
75	ISL	11.83	11.82	33.015	25.082	288.8	0.249	6.09	99.0	3.6	0.45	1.2	0.09	0.54	0.36	75	
77		11.80	11.79	33.028	25.097	287.4	0.255	6.05	98.3	3.7	0.46	1.4	0.10	0.53	0.37	77	214
86		11.50	11.49	33.029	25.153	282.2	0.281	5.98	96.5	4.4	0.51	2.3	0.09	0.43	0.29	86	213
94		11.10	11.09	33.075	25.261	272.1	0.303	5.80	92.9	5.5	0.62	4.4	0.02	0.23	0.19	94	212
100	ISL	10.81	10.80	33.123	25.350	263.7	0.319	5.62	89.4	7.3	0.75	6.6	0.02	0.14	0.13	100	
109		10.48	10.47	33.217	25.481	251.4	0.342	5.28	83.5	10.4	0.95	10.1	0.01	0.07	0.06	109	211
125		10.44	10.43	33.454	25.673	233.5	0.381	4.48	70.9	14.8	1.23	14.9	0.01	0.03	0.04	126	210
143		9.61	9.59	33.678	25.988	203.9	0.420	3.76	58.5	22.2	1.62	21.2	0.01	0.01	0.02	144	209
150	ISL	9.43	9.41	33.740	26.066	196.6	0.434	3.48	53.9	24.8	1.75	23.2	0.01	0.01	0.03	151	
168		9.11	9.09	33.854	26.207	183.5	0.468	2.90	44.7	30.4	2.02	26.9	0.01	0.01	0.05	169	208
197		8.61	8.59	33.961	26.369	168.4	0.519	2.75	41.9	35.0	2.13	28.5	0.01	0.01	0.05	198	207
200	ISL	8.55	8.53	33.966	26.382	167.2	0.524	2.74	41.7	35.3	2.14	28.6	0.01			201	
226		8.07	8.05	33.995	26.478	158.4	0.567	2.70	40.6	38.0	2.17	29.4	0.01			227	206
250	ISL	7.74	7.72	34.015	26.542	152.6	0.604	2.68	40.0	40.4	2.19	29.7	0.01			251	
267		7.52	7.49	34.021	26.579	149.3	0.630	2.66	39.5	42.4	2.21	30.1	0.01			269	205
300	ISL	6.90	6.87	34.002	26.650	142.7	0.678	2.52	36.9	48.3	2.34	32.0	0.01			302	
317		6.60	6.57	33.995	26.685	139.4	0.702	2.38	34.6	51.7	2.42	33.2	0.01			319	204
376		6.19	6.16	34.064	26.793	129.8	0.781	1.43	20.6	63.5	2.75	37.2	0.01			378	203
400	ISL	6.03	6.00	34.094	26.838	125.8	0.812	1.14	16.4	68.0	2.87	38.5	0.01			403	
440		5.78	5.74	34.134	26.901	120.1	0.861	0.80	11.4	74.7	3.02	40.2	0.01			443	202
500	ISL	5.39	5.35	34.144	26.956	115.2	0.932	0.68	9.6	82.4	3.10	41.6	0.01			503	
519		5.27	5.23	34.147	26.973	113.7	0.954	0.64	9.0	84.8	3.13	42.0	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.3 N	124 20.1 W	22/08/99	0405	UTC	4510 m	330	28 kn			1016.2 mb	18.0 C	17.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.44	18.44	33.201	23.788	410.3	0.000	5.53	102.9	2.8	0.30	0.0	0.00	0.08	0.02	0	
2		18.44	18.44	33.201	23.788	410.4	0.008	5.53	102.9	2.8	0.30	0.0	0.00	0.08	0.02	2	220
10	ISL	18.44	18.44	33.202	23.789	410.5	0.041	5.52	102.7	2.8	0.29	0.0	0.00	0.08	0.02	10	
16		18.44	18.44	33.202	23.789	410.7	0.066	5.52	102.7	2.8	0.29	0.0	0.00	0.08	0.02	16	219
20	ISL	18.01	18.01	33.192	23.887	401.5	0.082	5.61	103.5	2.8	0.29	0.0	0.00	0.08	0.02	20	
30		16.65	16.65	33.170	24.194	372.6	0.121	5.88	105.6	2.7	0.29	0.0	0.00	0.08	0.02	30	218
44		15.02	15.01	33.156	24.548	339.1	0.170	6.12	106.4	2.8	0.28	0.0	0.00	0.21	0.02	44	217
50	ISL	14.57	14.56	33.160	24.648	329.7	0.191	6.12	105.4	2.8	0.28	0.0	0.00	0.18	0.02	50	
59		14.09	14.08	33.170	24.757	319.6	0.220	6.13	104.6	2.7	0.29	0.0	0.00	0.11	0.03	59	216
74		13.56	13.55	33.195	24.885	307.7	0.267	6.04	101.9	2.8	0.30	0.0	0.00	0.15	0.04	74	215
75	ISL	13.56	13.55	33.204	24.892	307.1	0.270	6.03	101.8	2.8	0.30	0.0	0.00	0.15	0.04	75	
85		13.45	13.44	33.271	24.967	300.3	0.300	5.98	100.8	2.9	0.30	0.0	0.00	0.18	0.08	85	214
93		12.99	12.98	33.238	25.033	294.1	0.324	6.05	100.9	2.9	0.32	0.1	0.01	0.21	0.11	93	213
100	ISL	12.41	12.40	33.173	25.096	288.2	0.344	6.05	99.7	3.1	0.36	0.3	0.07	0.20	0.11	100	
104		12.12	12.11	33.141	25.126	285.4	0.356	6.05	99.0	3.2	0.38	0.5	0.11	0.20	0.11	104	212
116		11.97	11.96	33.155	25.165	281.9	0.390	6.02	98.2	3.4	0.41	1.1	0.12	0.20	0.11	117	211
125		11.75	11.73	33.208	25.248	274.3	0.415	5.83	94.7	4.3	0.50	2.7	0.06	0.20	0.12	126	210
136		11.30	11.28	33.222	25.341	265.6	0.445	5.71	91.9	5.2	0.59	4.2	0.04	0.18	0.11	137	209
150	ISL	10.57	10.55	33.372	25.587	242.3	0.480	5.05	80.1	10.7	0.94	10.2	0.02	0.10	0.08	151	
165		9.85	9.83	33.582	25.873	215.2	0.514	4.22	65.9	17.7	1.36	17.3	0.01	0.01	0.04	166	208
195		9.26	9.24	33.844	26.175	187.1	0.575	3.51	54.2	25.0	1.71	22.9	0.01	0.00	0.03	196	207
200	ISL	9.18	9.16	33.876	26.213	183.5	0.584	3.56	54.9	25.5	1.71	22.9	0.01			201	
229		8.72	8.70	34.003	26.385	167.6	0.635	3.89	59.4	28.1	1.66	22.9	0.01			230	206
250	ISL	8.27	8.24	34.020	26.468	159.9	0.669	3.55	53.7	33.0	1.83	25.3	0.01			251	
269		7.86	7.83	34.014	26.524	154.7	0.699	3.11	46.6	37.9	2.03	27.9	0.01			270	205
300	ISL	7.39	7.36	34.023	26.599	147.9	0.746	2.70	40.0	43.8	2.23	30.3	0.01			302	
319		7.16	7.13	34.030	26.637	144.4	0.774	2.48	36.6	47.0	2.33	31.5	0.01			321	204
380		6.59	6.56	34.065	26.742	135.0	0.859	1.70	24.7	57.4	2.64	35.3	0.00			382	203
400	ISL	6.29	6.25	34.058	26.776	131.8	0.886	1.59	23.0	61.2	2.70	36.4	0.00			402	
439		5.80	5.76	34.061	26.840	125.8	0.936	1.38	19.7	68.4	2.82	38.3	0.01			442	202
500	ISL	5.86	5.82	34.194	26.939	117.4	1.010	0.67	9.6	76.3	3.07	40.1	0.01			503	
512		5.87	5.83	34.220	26.958	115.8	1.024	0.53	7.6	77.8	3.12	40.5	0.01			515	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 26.7 N	120 31.3 W	20/08/99	0444	UTC	77 m	310	21 kn			1011.6 mb	14.5 C	13.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.48	13.48	33.726	25.310	265.3	0.000	5.90	99.8	7.2	0.73	5.4	0.19	10.32	1.30	0	
1		13.48	13.48	33.726	25.310	265.3	0.003	5.90	99.8	7.2	0.73	5.4	0.19	10.32	1.30	1	208
10		13.47	13.47	33.726	25.313	265.3	0.027	5.90	99.7	7.3	0.74	5.4	0.19	8.58	1.63	10	207
20		13.22	13.22	33.726	25.363	260.8	0.053	5.82	97.9	7.7	0.77	6.0	0.20	9.18	1.65	20	206
30		11.29	11.29	33.766	25.763	222.9	0.077	3.86	62.3	18.6	1.51	17.0	0.34	1.31	0.74	30	205
40		11.12	11.12	33.781	25.806	219.1	0.099	3.62	58.2	19.9	1.58	18.4	0.37	1.01	0.56	40	204
50		11.07	11.06	33.783	25.817	218.3	0.121	3.60	57.9	20.0	1.60	18.5	0.36	1.13	0.72	50	203
60		10.86	10.85	33.810	25.876	212.9	0.143	3.41	54.6	21.4	1.67	19.7	0.34	0.89	0.54	60	202
72		10.71	10.70	33.822	25.912	209.8	0.168	3.23	51.5	23.2	1.74	20.7	0.29	0.57	0.45	72	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 18.9 N	120 48.4 W	20/08/99	0743	UTC	825 m	320	15 kn			1013.5 mb	14.5 C	13.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.35	12.35	33.727	25.534	243.9	0.000	5.95	98.3	6.7	0.83	7.1	0.31	12.79	3.16	0	
2		12.35	12.35	33.727	25.534	244.0	0.005	5.95	98.3	6.7	0.83	7.1	0.31	12.79	3.16	2	220
10	ISL	12.35	12.35	33.729	25.536	244.0	0.024	5.95	98.3	6.8	0.83	7.2	0.30	12.30	3.07	10	
15		12.34	12.34	33.729	25.538	244.0	0.037	5.95	98.2	6.8	0.83	7.2	0.29	11.98	2.95	15	219
20	ISL	12.33	12.33	33.730	25.541	243.8	0.049	5.91	97.6	7.1	0.83	7.4	0.29	12.16	2.80	20	
30		12.31	12.31	33.744	25.556	242.7	0.073	5.84	96.4	7.6	0.83	7.8	0.30	12.52	2.36	30	218
45		12.02	12.01	33.754	25.619	237.0	0.109	5.07	83.2	12.1	1.08	11.7	0.30	8.72	1.33	45	217
50	ISL	12.02	12.01	33.756	25.621	237.0	0.121	5.01	82.2	12.4	1.11	12.0	0.30	7.84	1.15	50	
55		12.01	12.00	33.757	25.624	236.9	0.133	4.87	79.9	13.1	1.16	12.4	0.29	6.66	1.00	55	216
65		11.20	11.19	33.785	25.795	220.7	0.156	3.79	61.1	18.6	1.53	17.6	0.35	1.82	0.63	65	215
75		10.38	10.37	33.812	25.961	205.1	0.177	3.35	53.1	22.3	1.69	21.3	0.13	0.25	0.38	75	214
85		9.94	9.93	33.860	26.074	194.5	0.197	3.11	48.8	24.6	1.80	23.2	0.03	0.09	0.22	85	213
96		9.86	9.85	33.883	26.105	191.8	0.218	2.99	46.8	25.4	1.84	23.7	0.03	0.08	0.25	97	212
100	ISL	9.81	9.80	33.895	26.123	190.2	0.226	2.93	45.8	26.0	1.87	24.0	0.02	0.07	0.24	101	
110		9.65	9.64	33.926	26.174	185.5	0.245	2.79	43.5	27.8	1.94	24.8	0.01	0.04	0.21	111	211
125	ISL	9.27	9.26	33.955	26.259	177.7	0.272	2.67	41.3	30.5	2.03	26.2	0.01	0.04	0.21	126	
126		9.25	9.24	33.957	26.264	177.2	0.274	2.66	41.1	30.7	2.03	26.3	0.01			127	210
144		9.17	9.15	34.002	26.312	173.0	0.305	2.51	38.7	31.8	2.09	26.8	0.01	0.03	A 0.21	A 145	209
150	ISL	9.12	9.10	34.014	26.330	171.4	0.315	2.47	38.1	32.3	2.11	27.0	0.01	0.02	0.19	151	
171		8.87	8.85	34.050	26.398	165.3	0.351	2.31	35.4	34.7	2.19	28.2	0.01	0.01	0.13	172	208
199		8.44	8.42	34.100	26.504	155.6	0.396	1.86	28.3	40.3	2.39	30.6	0.07	0.02	0.12	200	207
200	ISL	8.43	8.41	34.101	26.506	155.4	0.397	1.85	28.1	40.4	2.39	30.6	0.07			201	
228		8.15	8.13	34.126	26.569	149.9	0.440	1.71	25.8	43.6	2.47	31.7	0.01			229	206
250	ISL	8.01	7.98	34.160	26.617	145.7	0.473	1.48	22.3	46.4	2.57	32.6	0.02			252	
271		7.91	7.88	34.192	26.657	142.3	0.503	1.25	18.8	49.1	2.66	33.4	0.02			273	205
300	ISL	7.77	7.74	34.219	26.699	138.7	0.544	1.06	15.9	52.0	2.74	34.2	0.02			302	
324		7.64	7.61	34.233	26.729	136.2	0.577	0.95	14.2	54.4	2.80	34.8	0.01			326	204
380		7.13	7.09	34.240	26.807	129.4	0.651	0.76	11.2	61.0	2.92	36.6	0.01			383	203
400	ISL	6.78	6.74	34.215	26.836	126.7	0.677	0.76	11.1	64.6	2.95	37.6	0.01			403	
439		6.20	6.16	34.185	26.888	121.7	0.725	0.73	10.5	71.1	3.02	39.4	0.01			442	202
500	ISL	6.29	6.24	34.294	26.964	115.6	0.797	0.41	5.9	75.1	3.16	39.7	0.01			504	
501		6.29	6.24	34.296	26.965	115.5	0.799	0.40	5.8	75.2	3.16	39.7	0.01			505	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 9.5 N	121 10.0 W	20/08/99	1755	UTC	2298 m	330	18 kn	340 04 06	2	1016.5 mb	14.9 C	14.0 C	06m	8/8	AS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.40	13.40	33.685	25.295	266.7	0.000	6.38	107.7	3.8	0.57	3.2	0.20	12.34	2.21	0	
2	A	13.40	13.40	33.685	25.295	266.8	0.005	6.38	107.7	3.8	0.57	3.2	0.20	12.34	2.21	2	223
4	A	13.40	13.40	33.685	25.295	266.8	0.011	6.39	107.8	3.7	0.56	3.1	0.19	11.98	2.18	4	222
8	A	13.12	13.12	33.685	25.351	261.6	0.021	6.10	102.4	5.0	0.67	4.8	0.22	11.53	2.29	8	221
10	ISL	13.01	13.01	33.692	25.379	259.0	0.026	6.02	100.8	4.9	0.72	5.0	0.22	10.73	2.73	10	
13	A	12.90	12.90	33.705	25.411	256.1	0.034	5.97	99.7	4.8	0.76	5.4	0.23	9.75	3.53	13	220
17	A	12.88	12.88	33.712	25.420	255.3	0.044	5.96	99.5	4.7	0.75	5.3	0.22	10.33	4.33	17	219
20	ISL	12.88	12.88	33.710	25.418	255.5	0.052	5.97	99.7	4.7	0.76	5.3	0.22	10.86	4.20	20	
24	A	12.87	12.87	33.708	25.419	255.6	0.062	5.97	99.7	4.6	0.77	5.2	0.22	11.35	4.03	24	218
30	ISL	12.83	12.83	33.710	25.429	254.8	0.078	5.94	99.1	4.9	0.75	5.5	0.23	10.82	3.41	30	
32		12.82	12.82	33.710	25.431	254.7	0.083	5.92	98.7	5.0	0.75	5.6	0.23	10.64	3.19	32	217
40		12.78	12.77	33.699	25.430	254.9	0.103	5.85	97.5	5.7	0.78	6.0	0.24	8.81	2.69	40	216
50		12.36	12.35	33.669	25.489	249.6	0.128	5.21	86.0	9.8	1.05	10.0	0.27	5.10	1.79	50	215
60		11.78	11.77	33.719	25.637	235.6	0.153	4.35	71.0	15.1	1.32	14.4	0.35	1.40	0.94	60	214
70		10.60	10.59	33.647	25.795	220.8	0.175	4.20	66.8	18.4	1.55	19.2	0.07	0.18	0.54	70	213
75	ISL	10.29	10.28	33.691	25.882	212.5	0.186	3.95	62.4	20.8	1.66	21.1	0.06	0.13	0.42	75	
84		9.98	9.97	33.799	26.020	199.7	0.205	3.46	54.3	24.8	1.83	23.6	0.03	0.05	0.28	84	212
99		9.63	9.62	33.851	26.119	190.5	0.234	3.16	49.2	27.0	1.90	24.7	0.02	0.02	0.20	100	211
100	ISL	9.60	9.59	33.855	26.127	189.8	0.236	3.14	48.9	27.2	1.90	24.8	0.02	0.02	0.20	101	
121		8.97	8.96	33.933	26.290	174.6	0.274	2.85	43.8	30.8	1.99	26.5	0.02	0.02	0.28	122	210
125	ISL	8.93	8.92	33.939	26.301	173.6	0.281	2.83	43.4	31.1	2.00	26.7	0.02	0.02	0.25	126	
141		8.83	8.82	33.957	26.331	171.1	0.309	2.78	42.6	32.3	2.03	27.2	0.02	0.01	0.13	142	209
150	ISL	8.73	8.71	33.975	26.361	168.4	0.324	2.71	41.4	33.3	2.06	27.6	0.02	0.01	0.13	151	
170		8.45	8.43	34.014	26.435	161.7	0.357	2.53	38.4	36.0	2.14	28.5	0.02	0.01	0.14	171	208
198		8.01	7.99	34.038	26.520	153.9	0.401	2.35	35.3	40.3	2.32	30.2	0.03	0.00	0.07	199	207
200	ISL	7.97	7.95	34.038	26.526	153.4	0.404	2.35	35.3	40.6	2.32	30.3	0.03			201	
228		7.56	7.54	34.049	26.594	147.2	0.446	2.23	33.2	44.7	2.36	31.6	0.02			229	206
250	ISL	7.63	7.61	34.114	26.636	143.7	0.478	1.75	26.1	47.7	2.52	32.8	0.01			252	
271		7.73	7.70	34.178	26.672	140.7	0.508	1.27	19.0	50.7	2.68	33.9	0.01			273	205
300	ISL	7.45	7.42	34.191	26.723	136.2	0.548	1.14	16.9	55.3	2.78	35.0	0.01			302	
322		7.14	7.11	34.180	26.758	133.1	0.578	1.04	15.3	58.9	2.82	35.8	0.01			324	204
376		6.38	6.35	34.148	26.835	126.0	0.648	0.96	13.9	66.8	2.92	38.2	0.01			379	203
400	ISL	6.39	6.35	34.187	26.865	123.5	0.678	0.80	11.6	69.2	2.98	38.6	0.01			403	
443		6.40	6.36	34.251	26.915	119.5	0.730	0.51	7.4	73.0	3.09	38.9	0.01			446	202
500	ISL	6.10	6.06	34.282	26.978	114.0	0.797	0.40	5.8	78.8	3.17	39.9	0.01			504	
506		6.07	6.03	34.285	26.985	113.5	0.804	0.39	5.6	79.4	3.18	40.0	0.01			510	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.6 N	121 51.4 W	21/08/99	0000	UTC	3650 m	330	22 kn	330 06 07	2	1016.1 mb	16.8 C	15.7 C	12m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.42	16.42	33.499	24.498	342.5	0.000	5.90	105.7	1.3	0.36	0.4	0.02	0.62	0.16	0	
2		16.42	16.42	33.499	24.498	342.6	0.007	5.90	105.7	1.3	0.36	0.4	0.02	0.62	0.16	2	220
10	ISL	16.41	16.41	33.502	24.503	342.4	0.034	5.92	106.1	1.2	0.35	0.4	0.02	0.63	0.14	10	
11		16.41	16.41	33.502	24.503	342.4	0.038	5.92	106.1	1.2	0.35	0.4	0.02	0.63	0.14	11	219
20	ISL	16.41	16.41	33.500	24.502	342.8	0.069	5.91	105.9	1.2	0.35	0.4	0.02	0.57	0.16	20	
21		16.41	16.41	33.500	24.502	342.9	0.072	5.91	105.9	1.2	0.35	0.4	0.02	0.56	0.16	21	218
30	ISL	16.36	16.36	33.496	24.511	342.3	0.103	5.89	105.4	1.2	0.35	0.5	0.02	0.62	0.14	30	
31		16.36	16.36	33.496	24.511	342.4	0.106	5.89	105.4	1.2	0.35	0.5	0.02	0.63	0.14	31	217
41		14.02	14.01	33.357	24.915	304.0	0.139	6.18	105.4	3.5	0.59	3.5	0.17	0.55	0.22	41	216
50	ISL	12.35	12.34	33.376	25.263	271.0	0.164	5.84	96.2	6.7	0.86	7.5	0.55	0.48	0.27	50	
52		12.08	12.07	33.391	25.326	265.0	0.170	5.73	93.9	7.4	0.91	8.4	0.63	0.46	0.28	52	215
61		11.74	11.73	33.454	25.439	254.5	0.193	5.47	89.0	9.3	1.03	10.6	0.62	0.36	0.27	61	214
70		10.81	10.80	33.412	25.575	241.7	0.215	4.90	78.1	13.2	1.23	14.3	0.07	0.27	0.20	70	213
75	ISL	10.61	10.60	33.473	25.657	233.9	0.227	4.67	74.2	15.2	1.35	16.2	0.06	0.21	0.15	75	
84		10.43	10.42	33.629	25.810	219.6	0.248	4.28	67.8	18.9	1.56	19.5	0.03	0.10	0.08	84	212
100		9.70	9.69	33.837	26.096	192.7	0.281	3.35	52.3	27.2	1.92	25.3	0.02	0.03	0.06	100	211
120		9.16	9.15	33.896	26.231	180.2	0.318	2.90	44.7	29.6	1.98	26.4	0.02	0.01	0.04	121	210
125	ISL	9.04	9.03	33.918	26.267	176.8	0.327	2.81	43.2	30.6	2.01	26.8	0.02	0.01	0.04	126	
139		8.76	8.75	33.977	26.357	168.5	0.351	2.60	39.8	33.6	2.09	27.9	0.02	0.03	0.05	140	209
150	ISL	8.65	8.63	34.001	26.394	165.2	0.369	2.49	38.0	34.9	2.14	28.4	0.02	0.03	0.05	151	
168		8.47	8.45	34.022	26.438	161.3	0.399	2.36	35.9	36.7	2.20	29.2	0.02	0.03	0.05	169	208
198		7.85	7.83	34.052	26.555	150.6	0.446	2.26	33.9	41.9	2.31	30.8	0.02	0.03	0.04	199	207
200	ISL	7.82	7.80	34.052	26.559	150.2	0.449	2.26	33.8	42.2	2.31	30.9	0.02			201	
229		7.45	7.43	34.056	26.616	145.1	0.492	2.14	31.8	46.1	2.39	32.1	0.02			230	206
250	ISL	7.29	7.27	34.074	26.653	141.9	0.522	1.90	28.1	49.3	2.49	33.2	0.03			251	
270		7.14	7.11	34.093	26.689	138.7	0.550	1.64	24.2	52.6	2.60	34.3	0.04			272	205
300	ISL	6.78	6.75	34.104	26.747	133.5	0.591	1.37	20.0	58.1	2.73	36.0	0.04			302	
319		6.55	6.52	34.111	26.783	130.2	0.616	1.23	17.9	61.6	2.80	37.0	0.03			321	204
380		6.19	6.16	34.168	26.875	122.1	0.693	0.82	11.8	70.3	2.98	39.0	0.02			382	203
400	ISL	6.07	6.04	34.184	26.904	119.6	0.717	0.72	10.4	72.9	3.03	39.6	0.02			403	
436		5.85	5.81	34.209	26.951	115.4	0.759	0.57	8.2	77.3	3.10	40.5	0.01			439	202
500	ISL	5.53	5.49	34.245	27.019	109.5	0.831	0.44	6.2	84.2	3.20	41.7	0.02			503	
508		5.49	5.45	34.250	27.028	108.7	0.840	0.42	6.0	85.1	3.21	41.8	0.02			512	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.0 N	122 31.9 W	21/08/99	0643 UTC	3985 m	350 20 kn			1017.9 mb	16.9 C	15.6 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.42	17.42	33.669	24.394	352.5	0.000	5.75	105.2	2.0	0.34	0.2	0.01	0.34	0.09	0	
3		17.42	17.42	33.669	24.394	352.6	0.011	5.75	105.2	2.0	0.34	0.2	0.01	0.34	0.09	3	220
10	ISL	17.42	17.42	33.664	24.391	353.1	0.035	5.76	105.4	2.0	0.33	0.2	0.01	0.35	0.11	10	
15		17.42	17.42	33.661	24.389	353.5	0.053	5.77	105.5	2.0	0.33	0.2	0.01	0.36	0.12	15	219
20	ISL	17.34	17.34	33.661	24.408	351.8	0.071	5.81	106.1	2.1	0.33	0.2	0.01	0.37	0.11	20	
29		17.21	17.21	33.661	24.439	349.2	0.102	5.88	107.1	2.2	0.34	0.3	0.02	0.38	0.10	29	218
30	ISL	16.98	16.98	33.655	24.489	344.5	0.106	5.88	106.6	2.4	0.37	0.6	0.11	0.41	0.12	30	
45		13.19	13.18	33.638	25.302	267.3	0.151	5.85	98.3	7.3	0.91	7.9	0.95	0.73	0.34	45	217
50	ISL	12.52	12.51	33.643	25.438	254.5	0.165	5.52	91.4	9.5	1.08	11.3	0.45	0.57	0.29	50	
54		12.11	12.10	33.647	25.519	246.8	0.175	5.23	85.9	11.3	1.20	13.9	0.03	0.42	0.24	54	216
65		11.25	11.24	33.671	25.698	230.0	0.201	4.67	75.3	15.2	1.43	17.5	0.02	0.19	0.13	65	215
75		10.87	10.86	33.688	25.779	222.4	0.223	4.50	72.0	17.5	1.54	19.2	0.02	0.13	0.09	75	214
86		10.62	10.61	33.726	25.853	215.7	0.247	4.20	66.8	19.7	1.63	20.7	0.02	0.08	0.08	86	213
95		10.05	10.04	33.761	25.978	203.8	0.266	3.65	57.4	23.2	1.78	23.1	0.01	0.04	0.07	95	212
100	ISL	9.90	9.89	33.794	26.029	199.1	0.276	3.41	53.4	24.9	1.85	24.2	0.01	0.04	0.06	100	
111		9.69	9.68	33.864	26.119	190.7	0.298	3.03	47.3	28.0	1.98	26.0	0.01	0.03	0.05	112	211
125	ISL	9.32	9.31	33.910	26.216	181.8	0.324	2.82	43.6	30.3	2.06	27.2	0.01	0.01	0.05	126	
126		9.29	9.28	33.912	26.222	181.2	0.326	2.81	43.5	30.4	2.06	27.2	0.01	0.01	0.05	127	210
145		8.78	8.76	33.963	26.344	169.9	0.359	2.77	42.4	33.2	2.09	28.0	0.01	0.01	0.06	146	209
150	ISL	8.66	8.64	33.975	26.372	167.3	0.368	2.75	42.0	33.9	2.10	28.1	0.01	0.01	0.06	151	
169		8.30	8.28	34.014	26.458	159.4	0.399	2.67	40.4	36.5	2.12	28.6	0.01	0.01	0.05	170	208
199		8.02	8.00	34.067	26.541	151.9	0.445	2.05	30.8	42.1	2.36	31.4	0.01	0.01	0.05	200	207
200	ISL	8.01	7.99	34.068	26.544	151.7	0.447	2.04	30.7	42.2	2.36	31.4	0.01			201	
227		7.76	7.74	34.095	26.602	146.6	0.487	1.90	28.4	45.4	2.45	32.4	0.01			228	206
250	ISL	7.50	7.48	34.108	26.650	142.3	0.520	1.74	25.9	48.7	2.52	33.3	0.01			251	
270		7.25	7.22	34.113	26.689	138.8	0.548	1.61	23.8	51.8	2.59	34.2	0.01			272	205
300	ISL	6.81	6.78	34.109	26.747	133.5	0.589	1.50	21.9	57.0	2.69	35.6	0.02			302	
317		6.57	6.54	34.106	26.776	130.8	0.612	1.44	20.9	60.1	2.75	36.4	0.02			319	204
379		5.90	5.87	34.121	26.875	121.8	0.690	1.06	15.2	70.8	2.92	39.2	0.01			381	203
400	ISL	5.71	5.68	34.130	26.906	119.1	0.715	0.91	13.0	74.4	2.98	40.1	0.01			403	
433		5.47	5.43	34.151	26.951	114.9	0.754	0.70	9.9	79.6	3.08	41.2	0.01			436	202
500	ISL	5.31	5.27	34.238	27.040	107.2	0.828	0.45	6.4	86.5	3.20	42.1	0.01			503	
519		5.27	5.23	34.263	27.065	105.1	0.849	0.38	5.4	88.5	3.23	42.4	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 8.7 N	123 13.0 W	21/08/99	1320 UTC	4236 m	340 18 kn			1017.2 mb	16.2 C	15.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.41	16.41	33.114	24.205	370.5	0.000	5.88	105.1	2.4	0.34	0.4	0.01	0.09	0.02	0	
2		16.41	16.41	33.114	24.205	370.6	0.007	5.88	105.1	2.4	0.34	0.4	0.01	0.09	0.02	2	220
10	ISL	16.41	16.41	33.114	24.205	370.8	0.037	5.89	105.3	2.4	0.34	0.4	0.01	0.09	0.02	10	
15		16.41	16.41	33.114	24.205	370.9	0.056	5.90	105.5	2.4	0.34	0.4	0.01	0.09	0.02	15	219
20	ISL	16.22	16.22	33.098	24.237	368.1	0.074	5.93	105.6	2.4	0.33	0.4	0.01	0.13	0.03	20	
30	ISL	15.84	15.84	33.068	24.300	362.4	0.111	5.97	105.5	2.5	0.32	0.3	0.01	0.23	0.07	30	
31		15.80	15.80	33.065	24.306	361.8	0.114	5.98	105.6	2.5	0.32	0.3	0.01	0.24	0.07	31	218
46		13.55	13.54	32.927	24.679	326.6	0.166	6.30	106.1	2.4	0.34	0.1	0.01	0.31	0.12	46	217
50	ISL	13.05	13.04	32.973	24.815	313.7	0.179	6.24	104.1	2.7	0.35	0.1	0.03	0.41	0.22	50	
55		12.53	12.52	33.035	24.964	299.6	0.194	6.15	101.5	3.0	0.37	0.2	0.05	0.53	0.34	55	216
65		12.02	12.01	33.028	25.056	291.0	0.224	6.10	99.6	3.4	0.42	0.8	0.11	0.51	0.38	65	215
75		11.67	11.66	33.037	25.128	284.4	0.252	5.97	96.7	4.3	0.52	2.4	0.06	0.46	0.35	75	214
84		11.49	11.48	33.046	25.168	280.7	0.278	5.85	94.4	5.0	0.59	3.7	0.02	0.34	0.24	84	213
95		11.05	11.04	33.071	25.267	271.5	0.308	5.72	91.5	6.5	0.70	5.6	0.02	0.19	0.14	95	212
100	ISL	10.89	10.88	33.087	25.308	267.7	0.322	5.67	90.4	7.2	0.75	6.4	0.02	0.15	0.11	100	
111		10.55	10.54	33.151	25.417	257.5	0.350	5.48	86.7	9.2	0.87	8.5	0.01	0.08	0.06	111	211
125	ISL	10.09	10.08	33.316	25.625	238.0	0.385	4.92	77.2	12.9	1.09	12.5	0.01	0.03	0.03	126	
126		10.06	10.05	33.330	25.641	236.5	0.388	4.87	76.3	13.2	1.11	12.8	0.01	0.03	0.03	127	210
146		9.63	9.61	33.620	25.939	208.5	0.432	3.79	59.0	22.4	1.65	21.4	0.01	0.01	0.03	147	209
150	ISL	9.54	9.52	33.652	25.979	204.8	0.440	3.71	57.6	23.4	1.70	22.2	0.01	0.01	0.03	151	
169		9.09	9.07	33.761	26.137	190.1	0.478	3.51	54.0	27.1	1.83	24.3	0.01	0.01	0.04	170	208
200		8.25	8.23	33.941	26.408	164.6	0.533	2.96	44.7	35.2	2.05	28.0	0.01	0.01	0.03	201	207
229		7.75	7.73	33.989	26.520	154.3	0.579	2.82	42.1	39.6	2.12	29.3	0.01			230	206
250	ISL	7.39	7.37	33.999	26.580	148.9	0.611	2.73	40.5	42.8	2.19	30.3	0.01			251	
269		7.11	7.08	34.003	26.622	145.0	0.639	2.61	38.4	45.8	2.27	31.2	0.01			271	205
300	ISL	6.83	6.80	34.019	26.673	140.5	0.683	2.22	32.5	50.7	2.43	33.1	0.01			302	
319		6.70	6.67	34.030	26.699	138.2	0.710	1.95	28.4	53.7	2.53	34.3	0.01			321	204
384		6.22	6.19	34.084	26.805	128.8	0.796	1.27	18.3	64.5	2.81	37.7	0.01			386	203
400	ISL	6.13	6.09	34.098	26.828	126.8	0.817	1.14	16.4	66.7	2.86	38.3	0.01			403	
443		5.88	5.84	34.128	26.884	121.9	0.870	0.85	12.2	72.6	2.98	39.7	0.01			446	202
500	ISL	5.34	5.30	34.144	26.962	114.6	0.938	0.68	9.6	81.9	3.08	41.4	0.01			503	
515		5.20	5.16	34.149	26.982	112.7	0.955	0.63	8.9	84.4	3.11	41.9	0.01			518	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 49.0 N	123 53.0 W	21/08/99	1940 UTC	4353 m	340 26 kn	340 12 07	1	1018.5 mb	20.5 C	18.3 C	22m	6/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.62	18.62	33.265	23.792	409.9	0.000	5.48	102.3	2.3	0.31	0.1	0.00	0.09	0.01	0	
2	B	18.62	18.62	33.265	23.792	410.0	0.008	5.48	102.3	2.3	0.31	0.1	0.00	0.09	0.01	2	221
2		18.62	18.62	33.267	23.794	409.8	0.008									2	222
10	ISL	18.62	18.62	33.265	23.792	410.2	0.041	5.48	102.3	2.4	0.30	0.1	0.00	0.09	0.01	10	
14	B	18.62	18.62	33.265	23.793	410.3	0.057	5.48	102.3	2.4	0.29	0.1	0.00	0.09	0.01	14	220
20	ISL	18.13	18.13	33.278	23.924	398.0	0.082	5.57	103.0	2.4	0.28	0.1	0.00	0.09	0.01	20	
30	ISL	17.16	17.16	33.308	24.180	373.9	0.120	5.74	104.2	2.4	0.27	0.1	0.00	0.09	0.02	30	
33	B	16.83	16.82	33.319	24.266	365.7	0.131	5.80	104.6	2.4	0.27	0.1	0.00	0.09	0.02	33	219
47	B	16.08	16.07	33.331	24.448	348.8	0.181	5.91	105.1	2.4	0.26	0.1	0.00	0.11	0.02	47	218
50	ISL	16.01	16.00	33.396	24.514	342.6	0.192	5.93	105.3	2.4	0.25	0.1	0.00	0.11	0.02	50	
61	B	15.74	15.73	33.611	24.741	321.4	0.228	6.00	106.1	2.5	0.23	0.1	0.00	0.13	0.03	61	217
71	B	14.29	14.28	33.319	24.831	313.0	0.260	6.09	104.4	2.5	0.27	0.1	0.00	0.15	0.04	71	216
75	ISL	14.62	14.61	33.457	24.867	309.6	0.272	6.04	104.4	2.6	0.26	0.1	0.00	0.17	0.05	75	
77		14.82	14.81	33.534	24.884	308.1	0.279	6.01	104.3	2.6	0.25	0.1	0.00	0.18	0.06	77	215
87		14.16	14.15	33.463	24.969	300.2	0.309	6.00	102.7	2.6	0.26	0.1	0.00	0.20	0.09	87	214
97		13.67	13.66	33.413	25.032	294.4	0.339	6.00	101.6	2.8	0.29	0.2	0.01	0.30 A	0.15 A	97	213
100	ISL	13.50	13.49	33.397	25.054	292.4	0.348	5.99	101.1	2.8	0.30	0.3	0.02	0.29	0.15	100	
106		13.09	13.08	33.357	25.106	287.6	0.365	5.95	99.5	2.9	0.33	0.4	0.06	0.26	0.14	106	212
114		12.31	12.30	33.280	25.198	278.9	0.388	5.87	96.6	3.5	0.41	1.4	0.10	0.28	0.14	114	211
125		12.08	12.06	33.303	25.260	273.2	0.418	5.74	94.0	4.1	0.48	2.6	0.07	0.20	0.11	126	210
142		11.72	11.70	33.487	25.470	253.6	0.463	5.31	86.4	6.5	0.66	5.9	0.03	0.10	0.09	143	209
150	ISL	11.34	11.32	33.571	25.605	240.8	0.483	4.90	79.1	9.6	0.87	9.4	0.02	0.07	0.07	151	
160		10.83	10.81	33.670	25.774	224.9	0.506	4.41	70.4	13.6	1.13	13.9	0.01	0.04	0.04	161	208
192		10.09	10.07	33.886	26.071	197.2	0.573	4.32	68.0	17.5	1.28	17.1	0.01	0.01	0.02	193	207
200	ISL	9.88	9.86	33.907	26.123	192.4	0.589	4.21	66.0	19.0	1.36	18.2	0.01			201	
232		9.08	9.05	33.949	26.287	177.2	0.648	3.78	58.2	25.4	1.65	22.2	0.01			233	206
250	ISL	8.77	8.74	33.982	26.362	170.3	0.679	3.73	57.0	27.7	1.70	23.2	0.01			251	
270		8.46	8.43	34.012	26.433	163.7	0.713	3.66	55.6	30.5	1.75	24.2	0.01			271	205
300	ISL	7.86	7.83	34.023	26.532	154.6	0.760	3.09	46.3	37.7	2.01	27.6	0.01			302	
322		7.43	7.40	34.025	26.595	148.6	0.794	2.61	38.7	43.4	2.23	30.3	0.01			324	204
381		6.70	6.66	34.053	26.718	137.4	0.878	1.88	27.4	54.6	2.55	34.3	0.01			383	203
400	ISL	6.57	6.53	34.071	26.750	134.6	0.904	1.63	23.7	57.8	2.65	35.5	0.01			402	
440		6.36	6.32	34.115	26.813	129.0	0.957	1.14	16.5	64.2	2.83	37.6	0.01			443	202
500	ISL	6.07	6.03	34.180	26.902	121.2	1.032	0.74	10.6	72.4	3.01	39.4	0.01			503	
524		5.95	5.90	34.206	26.938	118.0	1.060	0.58	8.3	75.7	3.08	40.1	0.01			527	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.
B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 16.5 N	120 1.0 W	19/08/99	1923 UTC	577 m	290 03 kn	270 01 04	4	1013.7 mb	15.9 C	15.2 C	06m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.28	13.28	33.790	25.400	256.7	0.000	5.61	94.5	13.9	1.03	10.9	0.27	2.47	0.44	0	
1	A,B	13.28	13.28	33.790	25.400	256.7	0.003	5.61	94.5	13.9	1.03	10.9	0.27	2.47	0.44	1	224
4	B	12.85	12.85	33.789	25.485	248.7	0.010	5.59	93.3	13.9	1.04	10.9	0.28	2.71	0.52	4	223
8	B	12.62	12.62	33.793	25.533	244.2	0.020	5.42	90.1	14.7	1.09	11.6	0.29	3.18	0.59	8	222
10	ISL	12.52	12.52	33.790	25.551	242.7	0.025	5.23	86.7	15.1	1.13	12.3	0.31	3.03	0.67	10	
13	B	12.21	12.21	33.778	25.601	237.9	0.032	4.77	78.6	16.1	1.25	13.9	0.36	2.40	0.74	13	221
17	B	11.27	11.27	33.757	25.760	222.9	0.041	3.72	60.0	18.5	1.54	17.7	0.41	0.92	0.56	17	220
20	ISL	11.17	11.17	33.770	25.788	220.3	0.048	3.59	57.8	19.6	1.59	18.3	0.38	0.76	0.47	20	
24	B	11.03	11.03	33.787	25.827	216.7	0.057	3.41	54.8	20.7	1.66	19.2	0.31	0.54	0.41	24	219
30	ISL	10.93	10.93	33.821	25.871	212.6	0.070	3.25	52.1	22.3	1.74	19.8	0.32	0.48	0.42	30	
32		10.88	10.88	33.830	25.887	211.2	0.074	3.21	51.4	22.7	1.76	20.1	0.32	0.48	0.42	32	218
39		10.39	10.39	33.832	25.974	203.0	0.088	3.07	48.6	23.8	1.78	22.1	0.19	0.28	0.31	39	217
49		9.98	9.97	33.896	26.095	191.8	0.108	2.71	42.6	26.8	1.93	24.1	0.13	0.11	0.30	49	216
50	ISL	9.96	9.95	33.899	26.100	191.3	0.110	2.69	42.2	26.9	1.94	24.2	0.13	0.11	0.32	50	
59		9.85	9.84	33.915	26.131	188.5	0.127	2.62	41.0	27.7	1.97	24.5	0.09	0.13	0.42	59	215
70		9.76	9.75	33.937	26.164	185.6	0.148	2.55	39.9	28.5	2.00	25.1	0.07	0.09	0.22	70	214
75	ISL	9.72	9.71	33.953	26.183	183.9	0.157	2.48	38.7	29.0	2.03	25.5	0.06	0.08	0.21	75	
85		9.64	9.63	33.983	26.220	180.6	0.175	2.33	36.3	30.2	2.09	26.2	0.04	0.07	0.20	85	213
100		9.48	9.47	34.007	26.265	176.6	0.202	2.22	34.5	31.6	2.14	27.0	0.03	0.09	0.20	101	212
119		9.32	9.31	34.054	26.328	171.0	0.235	2.01	31.1	33.6	2.23	28.0	0.03	0.09	0.18	120	211
125	ISL	9.25	9.24	34.067	26.350	169.1	0.245	1.93	29.9	34.4	2.26	28.4	0.03	0.09	0.17	126	
139		9.07	9.05	34.093	26.400	164.6	0.268	1.77	27.3	36.4	2.33	29.3	0.02	0.09	0.16	140	210
150	ISL	8.95	8.93	34.104	26.427	162.1	0.286	1.68	25.8	37.6	2.37	29.9	0.02	0.07	0.15	151	
170		8.78	8.76	34.115	26.463	159.1	0.319	1.55	23.7	39.4	2.43	30.7	0.02	0.04	0.15	171	209
200		8.66	8.64	34.131	26.495	156.7	0.366	1.41	21.5	41.0	2.49	31.5	0.02	0.02	0.15	201	208
229		8.55	8.53	34.143	26.522	154.6	0.411	1.30	19.8	42.8	2.53	31.9	0.02			230	207
250	ISL	8.45	8.42	34.153	26.545	152.8	0.443	1.21	18.4	44.6	2.57	32.3	0.02			252	
270		8.31	8.28	34.164	26.575	150.2	0.474	1.12	17.0	46.9	2.63	32.9	0.02			272	206
300	ISL	7.92	7.89	34.183	26.649	143.6	0.518	0.98	14.7	52.3	2.74	34.0	0.02			302	
313		7.73	7.70	34.192	26.684	140.4	0.536	0.92	13.8	54.9	2.79	34.5	0.02			315	205
400	ISL	7.01	6.97	34.216	26.805	129.8	0.654	0.60	8.8	67.5	3.02	36.0	0.02			403	
403		6.99	6.95	34.216	26.808	129.5	0.658	0.59	8.7	68.0	3.03	36.1	0.02			406	204
500	ISL	6.41	6.36	34.232	26.899	121.8	0.779	0.13	1.9	90.4	3.35	32.4	0.02			504	
514		6.36	6.31	34.233	26.907	121.3	0.796	0.08	1.2	93.9	3.41	31.4	0.02			518	203
558		6.29	6.24	34.234	26.917	120.9	0.850	0.02	0.3	103.4	3.67	27.3	0.11			562	202
572		6.29	6.24	34.235	26.918	121.0	0.867	0.01	0.1	106.5	3.85	26.1	0.21			576	201

A) SANTA BARBARA BASIN STATION.
B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.6 N	119 24.8 W	19/08/99	1346	UTC	34 m	00	kn	280 02 07	1	1013.3 mb	14.8 C	13.0 C		7/8	AS

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	15.62	15.62	33.715	24.846	309.5	0.000	6.96	122.9	0.9	0.16	0.1	0.01	2.40	0.70	0	
1		15.62	15.62	33.715	24.846	309.5	0.003	6.96	122.9	0.9	0.16	0.1	0.01	2.40	0.70	1	205
5		14.44	14.44	33.719	25.106	284.9	0.015	7.13	123.0	1.3	0.24	0.3	0.03	3.42	1.09	5	204
10		13.59	13.59	33.716	25.280	268.4	0.029	6.07	102.9	4.7	0.68	5.0	0.17	10.37	2.23	10	203
19		12.95	12.95	33.716	25.409	256.4	0.052	5.05	84.5	11.2	1.07	9.7	0.24	2.23	1.01	19	202
20	ISL	12.86	12.86	33.716	25.427	254.7	0.055	4.95	82.6	11.8	1.12	10.2	0.25	2.11	0.99	20	
29		12.09	12.09	33.719	25.578	240.5	0.077	4.06	66.7	17.2	1.53	14.3	0.31	0.99	0.78	29	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.8 N	119 30.5 W	19/08/99	1202	UTC	115 m	260	10 kn			1011.0 mb	15.2 C	14.5 C			

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	15.04	15.04	33.722	24.979	296.8	0.000	7.01	122.4	1.1	0.22	0.1	0.02	3.57	1.51	0	
1		15.04	15.04	33.722	24.979	296.8	0.003	7.01	122.4	1.1	0.22	0.1	0.02	3.57	1.51	1	211
10		14.97	14.97	33.721	24.994	295.7	0.030	6.96	121.3	1.4	0.27	0.2	0.03	3.63	2.04	10	210
20		13.45	13.45	33.710	25.305	266.4	0.058	5.30	89.6	10.1	0.95	8.0	0.20	0.94	0.86	20	209
30		13.24	13.24	33.718	25.353	262.0	0.084	5.25	88.3	10.8	1.02	8.5	0.18	0.98	0.71	30	208
39		12.51	12.50	33.705	25.487	249.5	0.107	4.71	78.0	13.4	1.20	11.8	0.26	0.97	0.82	39	207
50		11.53	11.52	33.698	25.667	232.5	0.134	4.01	65.1	15.9	1.38	16.6	0.16	0.24	0.28	50	206
60		11.12	11.11	33.700	25.744	225.5	0.157	3.91	62.9	16.2	1.43	17.2	0.09	0.22	0.26	60	205
70		10.71	10.70	33.764	25.866	214.0	0.179	3.48	55.5	20.0	1.60	20.1	0.03	0.10	0.37	70	204
75	ISL	10.52	10.51	33.788	25.918	209.2	0.189	3.34	53.0	21.2	1.66	21.0	0.03	0.09	0.34	75	
85		10.21	10.20	33.824	26.000	201.6	0.210	3.14	49.5	23.0	1.75	22.1	0.02	0.06	0.23	85	203
99		10.04	10.03	33.855	26.053	196.8	0.238	2.91	45.8	25.4	1.84	23.4	0.04	0.04	0.15	100	202
100	ISL	10.03	10.02	33.860	26.059	196.3	0.240	2.89	45.4	25.5	1.85	23.5	0.04	0.04	0.16	101	
108		9.94	9.93	33.896	26.103	192.3	0.255	2.71	42.5	26.5	1.92	24.1	0.05	0.03	0.23	109	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 51.9 N	120 8.7 W	19/08/99	0435	UTC		330	38 kn			1012.5 mb	14.8 C	13.9 C			

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	14.02	14.02	33.634	25.128	282.6	0.000	5.77	98.6	6.8	0.65	4.6	0.09	0.67	0.39	0	
1		14.02	14.02	33.634	25.128	282.6	0.003	5.77	98.6	6.8	0.65	4.6	0.09	0.67	0.39	1	210
10		13.67	13.67	33.633	25.200	276.0	0.028	5.66	96.0	7.4	0.69	5.5	0.10	0.67	0.29	10	209
20		11.81	11.81	33.632	25.563	241.7	0.054	4.79	78.2	12.7	1.14	12.9	0.12	0.68	0.31	20	208
30		11.16	11.16	33.678	25.719	227.1	0.077	4.29	69.0	16.3	1.34	16.1	0.06	0.58	0.26	30	207
40		10.92	10.92	33.706	25.783	221.2	0.100	4.05	64.9	17.4	1.43	17.6	0.04	0.37	0.19	40	206
50		10.69	10.68	33.733	25.845	215.5	0.122	3.85	61.4	19.1	1.51	18.7	0.04	0.25	0.14	50	205
59		10.46	10.45	33.780	25.922	208.4	0.141	3.62	57.4	20.9	1.60	20.1	0.03	0.17	0.11	59	204
71		9.96	9.95	33.883	26.088	192.9	0.165	2.94	46.2	26.1	1.85	23.4	0.03	0.08	0.10	71	203
75	ISL	9.90	9.89	33.891	26.105	191.4	0.172	2.93	45.9	26.3	1.86	23.5	0.03	0.06	0.10	75	
80		9.87	9.86	33.894	26.112	190.8	0.182	2.91	45.6	26.6	1.87	23.7	0.03	0.05	0.09	80	202
100	ISL	9.70	9.69	33.928	26.167	185.9	0.220	2.77	43.2	28.1	1.93	24.6	0.03	0.03	0.08	101	
105		9.66	9.65	33.937	26.181	184.7	0.229	2.74	42.7	28.5	1.95	24.8	0.03	0.03	0.08	106	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 44.7 N	120 25.2 W	19/08/99	0037	UTC	1129 m	320	24 kn	320 05 05	2	1014.4 mb	15.1 C	14.2 C	08m	8/8	SC

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	14.56	14.56	33.631	25.012	293.6	0.000	6.00	103.7	7.0	0.58	4.3	0.08	1.26	0.38	0	
1		14.56	14.56	33.631	25.012	293.6	0.003	6.00	103.7	7.0	0.58	4.3	0.08	1.26	0.38	1	220
10		14.55	14.55	33.634	25.017	293.5	0.029	5.95	102.8	7.0	0.58	4.3	0.08	1.45	0.35	10	219
20		14.42	14.42	33.636	25.046	291.0	0.059	5.90	101.7	7.6	0.60	4.6	0.09	1.50	0.44	20	218
30		11.84	11.84	33.705	25.615	237.1	0.085	4.51	73.7	15.0	1.22	14.0	0.13	1.22	0.42	30	217
40		11.25	11.25	33.729	25.742	225.2	0.108	4.13	66.6	17.2	1.37	16.5	0.13	1.04	0.37	40	216
50		10.92	10.91	33.750	25.818	218.2	0.130	3.95	63.3	18.6	1.46	17.8	0.12	0.84	0.34	50	215
61		10.15	10.14	33.850	26.030	198.2	0.153	3.19	50.3	24.0	1.75	22.0	0.04	0.27	0.19	61	214
70		10.10	10.09	33.856	26.043	197.1	0.171	3.16	49.8	24.3	1.77	22.3	0.04	0.19	0.13	70	213
75	ISL	9.95	9.94	33.875	26.084	193.4	0.181	3.08	48.3	25.4	1.82	23.0	0.03	0.13	0.11	75	
84		9.67	9.66	33.918	26.164	185.9	0.198	2.88	44.9	27.6	1.92	24.3	0.02	0.05	0.08	84	212
99		9.59	9.58	33.971	26.219	181.0	0.225	2.59	40.3	29.4	2.00	25.3	0.02	0.04	0.09	100	211
100	ISL	9.58	9.57	33.974	26.223	180.6	0.227	2.57	40.0	29.6	2.01	25.4	0.02	0.04	0.09	101	
120		9.25	9.24	34.034	26.324	171.4	0.262	2.28	35.3	32.9	2.14	27.2	0.02	0.01	0.08	121	210
125	ISL	9.20	9.19	34.045	26.341	169.9	0.271	2.23	34.5	33.5	2.17	27.5	0.02	0.01	0.08	126	
139		9.07	9.05	34.068	26.380	166.5	0.294	2.11	32.5	35.0	2.23	28.3	0.02	0.02	0.08	140	209
150	ISL	8.98	8.96	34.081	26.405	164.3	0.313	2.05	31.5	35.9	2.26	28.7	0.02	0.02	0.08	151	
170		8.85	8.83	34.100	26.440	161.3	0.345	1.94	29.7	37.4	2.31	29.3	0.03	0.01	0.09	171	208
199		8.68	8.66	34.136	26.495	156.6	0.391	1.70	26.0	40.1	2.40	30.4	0.03	0.01	0.09	200	207
200	ISL	8.67	8.65	34.137	26.498	156.4	0.393	1.69	25.8	40.2	2.40	30.4	0.03			201	
230		8.46	8.44	34.154	26.544	152.5	0.439	1.54	23.4	43.2	2.48	31.3	0.03			231	206
250	ISL	8.32	8.29	34.174	26.581	149.3	0.469	1.43	21.7	45.0	2.54	31.9	0.02			252	
269		8.19	8.16	34.192	26.615	146.3	0.497	1.33	20.1	46.8	2.59	32.4	0.01			271	205
300	ISL	7.96	7.93	34.205	26.660	142.5	0.542	1.20	18.0	49.9	2.66	33.3	0.01			302	
317		7.82	7.79	34.209	26.684	140.5	0.566	1.14	17.1	51.7	2.70	33.8	0.01			319	204
381		7.23	7.19	34.222	26.779	132.1	0.653	0.89	13.2	59.3	2.85	35.9	0.01			384	203
400	ISL	6.98	6.94	34.228	26.819	128.5	0.678	0.78	11.5	62.9	2.91	36.8	0.01			403	
435		6.54	6.50	34.244	26.891	121.8	0.722	0.60	8.7	69.5	3.02	38.3	0.01			438	202

500 ISL	6.14	6.10	34.292	26.981	113.8	0.799	0.45	6.5	77.4	3.15	39.8	0.01		504	
509	6.08	6.03	34.299	26.995	112.6	0.809	0.43	6.2	78.5	3.17	40.0	0.01		513	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.5 N	120 45.3 W	18/08/99	1846	UTC	1384 m	320	20 kn	330 04 05	2	1017.7 mb	16.2 C	14.3 C	09m	8/8	AS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.33	14.33	33.645	25.072	288.0	0.000	6.04	103.9	6.6	0.58	3.9	0.11	2.22	0.76	0	
2	A	14.33	14.33	33.645	25.072	288.0	0.006	6.04	103.9	6.6	0.58	3.9	0.11	2.22	0.76	2	223
2		14.33	14.33	33.645	25.072	288.0	0.006									2	224
7	A	14.32	14.32	33.646	25.075	287.9	0.020	6.05	104.0	6.6	0.58	3.9	0.11	2.11	0.69	7	222
10	ISL	14.32	14.32	33.646	25.075	287.9	0.029	6.05	104.0	6.6	0.58	3.9	0.11	2.09	0.72	10	
13	A	14.31	14.31	33.645	25.076	287.9	0.037	6.04	103.8	6.7	0.58	4.0	0.11	2.08	0.75	13	221
19	A	14.29	14.29	33.644	25.080	287.7	0.055	6.02	103.5	6.7	0.59	4.0	0.11	2.02	0.72	19	220
20	ISL	14.28	14.28	33.644	25.082	287.6	0.058	6.00	103.1	6.7	0.59	4.1	0.11	1.98	0.71	20	
24	A	14.24	14.24	33.643	25.090	286.9	0.069	5.93	101.8	6.9	0.61	4.5	0.12	1.79	0.68	24	219
30	ISL	14.21	14.21	33.643	25.096	286.5	0.086	5.87	100.7	7.0	0.63	4.8	0.13	1.54	0.61	30	
34	A	14.18	14.18	33.644	25.103	285.9	0.098	5.83	100.0	7.1	0.65	5.0	0.13	1.38	0.56	34	218
41		14.00	13.99	33.648	25.144	282.2	0.118	5.65	96.5	7.8	0.72	5.9	0.15	1.11	0.50	41	217
49		12.66	12.65	33.693	25.449	253.3	0.139	4.80	79.8	12.2	1.08	11.1	0.30	0.58	0.33	49	216
50	ISL	12.47	12.46	33.702	25.493	249.2	0.142	4.68	77.5	13.0	1.13	12.0	0.31	0.54	0.32	50	
59		10.99	10.98	33.790	25.837	216.6	0.162	3.69	59.2	20.1	1.55	19.0	0.35	0.36	0.23	59	215
70		10.22	10.21	33.847	26.016	199.7	0.185	3.23	51.0	24.1	1.76	22.0	0.28	0.26	0.18	70	214
75	ISL	9.97	9.96	33.869	26.076	194.2	0.195	3.06	48.0	25.5	1.83	23.0	0.21	0.19	0.15	75	
84		9.66	9.65	33.902	26.153	186.9	0.212	2.84	44.3	27.3	1.91	24.4	0.10	0.08	0.10	84	212
100	ISL	9.49	9.48	33.941	26.212	181.7	0.242	2.71	42.1	28.6	1.97	25.4	0.06	0.02	0.09	101	
102		9.49	9.48	33.945	26.215	181.4	0.246	2.71	42.1	28.7	1.97	25.5	0.05	0.02	0.09	103	211
125	ISL	9.26	9.25	33.993	26.291	174.7	0.286	2.52	39.0	31.0	2.06	26.4	0.03	0.01	0.08	126	
128		9.22	9.21	34.001	26.303	173.5	0.292	2.48	38.3	31.5	2.08	26.6	0.03	0.01	0.08	129	210
139		9.01	9.00	34.046	26.372	167.2	0.310	2.24	34.5	34.1	2.19	27.8	0.02	0.01	0.07	140	209
150	ISL	8.85	8.83	34.056	26.405	164.2	0.329	2.22	34.0	35.4	2.21	28.4	0.02	0.01	0.07	151	
168		8.61	8.59	34.048	26.437	161.5	0.358	2.19	33.4	36.7	2.24	29.0	0.02	0.01	0.07	169	208
198		8.10	8.08	34.061	26.525	153.5	0.405	2.17	32.7	40.7	2.30	30.2	0.01	0.01	0.06	199	207
200	ISL	8.09	8.07	34.065	26.529	153.1	0.408	2.15	32.4	40.9	2.31	30.3	0.01			201	
229		8.00	7.98	34.118	26.585	148.4	0.452	1.76	26.5	44.2	2.45	31.6	0.01			230	206
250	ISL	7.86	7.83	34.132	26.617	145.6	0.483	1.61	24.1	46.3	2.52	32.4	0.01			252	
266		7.73	7.70	34.138	26.641	143.6	0.506	1.51	22.6	48.0	2.57	32.9	0.01			268	205
300	ISL	7.46	7.43	34.165	26.701	138.3	0.554	1.23	18.3	52.8	2.69	34.3	0.02			302	
319		7.30	7.27	34.184	26.739	135.0	0.580	1.07	15.8	55.9	2.77	35.1	0.02			321	204
373		6.78	6.75	34.256	26.868	123.3	0.650	0.61	8.9	66.4	3.00	37.5	0.01			375	203
400	ISL	6.67	6.63	34.267	26.891	121.3	0.683	0.57	8.3	68.2	3.04	37.9	0.01			403	
434		6.57	6.53	34.274	26.911	119.9	0.724	0.51	7.4	69.8	3.07	38.3	0.01			437	202
500	ISL	6.10	6.06	34.312	27.002	111.8	0.800	0.36	5.2	78.6	3.18	39.8	0.01			504	
521		5.95	5.90	34.325	27.031	109.1	0.823	0.31	4.4	81.4	3.21	40.3	0.01			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.5 N	121 27.0 W	18/08/99	0658	UTC	3802 m	330	19 kn			1018.2 mb	16.5 C	14.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.03	17.03	33.455	24.323	359.3	0.000	5.75	104.2	2.1	0.37	0.7	0.02	0.23	0.06	0	
1		17.03	17.03	33.455	24.323	359.3	0.004	5.75	104.2	2.1	0.37	0.7	0.02	0.23	0.06	1	220
10	ISL	17.03	17.03	33.456	24.324	359.5	0.036	5.76	104.4	2.0	0.37	0.6	0.02	0.24	0.05	10	
15		17.03	17.03	33.456	24.324	359.7	0.054	5.76	104.4	2.0	0.37	0.6	0.02	0.25	0.05	15	219
20	ISL	16.98	16.98	33.451	24.332	359.1	0.072	5.78	104.7	2.0	0.37	0.6	0.02	0.25	0.05	20	
30		16.87	16.87	33.440	24.350	357.7	0.108	5.81	105.0	2.0	0.38	0.7	0.02	0.24	0.05	30	218
45		14.40	14.39	33.461	24.916	304.1	0.157	6.17	106.1	3.4	0.58	3.3	0.14	0.45	0.17	45	217
50	ISL	13.67	13.66	33.422	25.038	292.6	0.172	6.12	103.7	4.3	0.66	4.4	0.26	0.53	0.21	50	
55		12.93	12.92	33.363	25.141	282.8	0.187	5.99	99.9	5.4	0.75	5.7	0.37	0.60	0.24	55	216
65		11.24	11.23	33.208	25.339	264.0	0.214	5.58	89.7	8.3	0.90	8.5	0.42	0.65	0.29	65	215
75	ISL	11.33	11.32	33.396	25.469	251.9	0.240	5.35	86.3	10.1	1.07	11.3	0.50	0.41	0.24	75	
76		11.34	11.33	33.415	25.482	250.7	0.242	5.32	85.8	10.4	1.09	11.7	0.51	0.38	0.23	76	214
84		10.38	10.37	33.414	25.651	234.7	0.262	4.73	74.7	16.1	1.35	16.1	0.04	0.20	0.11	84	213
94		10.01	10.00	33.532	25.806	220.1	0.284	4.25	66.6	20.5	1.58	19.8	0.03	0.08	0.07	94	212
100	ISL	9.79	9.78	33.615	25.908	210.6	0.297	3.96	61.8	22.6	1.67	21.4	0.02	0.05	0.05	100	
109		9.51	9.50	33.729	26.043	197.8	0.316	3.60	55.9	25.1	1.77	23.1	0.01	0.03	0.04	110	211
125		9.21	9.20	33.834	26.174	185.7	0.346	3.32	51.2	27.7	1.88	24.8	0.02	0.01	0.04	126	210
146		8.87	8.85	33.911	26.289	175.2	0.384	3.09	47.3	31.4	2.00	26.6	0.01	0.01	0.04	147	209
150	ISL	8.81	8.79	33.927	26.311	173.1	0.391	3.03	46.4	31.9	2.01	26.9	0.01	0.01	0.04	151	
170		8.51	8.49	33.995	26.411	164.0	0.425	2.69	40.9	34.6	2.08	28.1	0.01	0.01	0.04	171	208
198		8.07	8.05	34.042	26.514	154.5	0.470	2.33	35.1	40.1	2.26	30.0	0.01	0.01	0.04	199	207
200	ISL	8.03	8.01	34.042	26.520	153.9	0.473	2.33	35.1	40.3	2.26	30.1	0.01			201	
226		7.59	7.57	34.032	26.577	148.8	0.512	2.38	35.4	43.0	2.29	30.8	0.01			227	206
250	ISL	7.28	7.26	34.058	26.641	143.0	0.547	2.05	30.3	47.9	2.43	32.5	0.01			251	
267		7.09	7.06	34.080	26.685	139.0	0.571	1.76	25.9	51.7	2.55	33.8	0.01			269	205
300	ISL	6.75	6.72	34.081	26.733	134.8	0.616	1.56	22.8	56.2	2.65	35.3	0.01			302	
320		6.56	6.53	34.078	26.756	132.8	0.643	1.48	21.5	58.7	2.69	36.0	0.01			322	204
378		6.05	6.02	34.119	26.854	123.9	0.717	0.98	14.1	69.1	2.91	38.8	0.00			380	203
400	ISL	5.89	5.86	34.128	26.882	121.5	0.744	0.88	12.6	72.0	2.96	39.4	0.00			403	
435		5.67	5.63	34.142	26.920	118.1	0.786	0.76	10.8	76.2	3.02	40.2	0.01			438	202
500	ISL	5.29	5.25	34.193	27.007	110.4	0.861	0.51	7.2	85.6	3.15	41.7	0.00			503	
515		5.20	5.16	34.205	27.027	108.5	0.877	0.45	6.3	87.8	3.18	42.1	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.9 N	122 7.6 W	18/08/99	0107	UTC	4181 m	340	16 kn	340 04 04	1	1018.8 mb	19.0 C	16.1 C		2/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.84	17.84	33.657	24.284	363.0	0.000	5.69	104.9	2.1	0.34	0.3	0.01	0.27	0.05	0	
1		17.84	17.84	33.657	24.284	363.0	0.004	5.69	104.9	2.1	0.34	0.3	0.01	0.27	0.05	1	220
10	ISL	17.66	17.66	33.646	24.319	360.0	0.036	5.72	105.1	2.1	0.34	0.2	0.01	0.24	0.05	10	
15		17.56	17.56	33.640	24.339	358.2	0.054	5.73	105.1	2.1	0.34	0.2	0.01	0.24	0.05	15	219
20	ISL	16.37	16.37	33.400	24.434	349.3	0.072	5.97	106.8	2.1	0.35	0.2	0.01	0.28	0.07	20	
30		13.80	13.80	32.963	24.656	328.4	0.106	6.44	109.1	2.3	0.39	0.2	0.01	0.39	0.15	30	218
45		12.50	12.49	32.928	24.887	306.7	0.153	6.41	105.7	2.9	0.42	0.5	0.03	0.59	0.33	45	217
50	ISL	12.19	12.18	32.971	24.979	298.0	0.168	6.32	103.5	3.5	0.49	1.4	0.09	0.57	0.38	50	
54		11.97	11.96	33.009	25.051	291.3	0.180	6.22	101.4	4.1	0.55	2.3	0.14	0.56	0.41	54	216
65		11.32	11.31	33.058	25.208	276.5	0.211	5.91	95.1	5.9	0.73	5.4	0.18	0.50	0.37	65	215
75		10.70	10.69	33.070	25.328	265.3	0.239	5.73	90.9	7.9	0.82	7.2	0.06	0.38	0.30	75	214
85		10.77	10.76	33.325	25.514	247.8	0.264	5.35	85.2	10.9	1.10	12.3	0.06	0.17	0.12	85	213
94		10.56	10.55	33.434	25.636	236.4	0.286	4.90	77.7	14.6	1.30	15.4	0.01	0.10	0.08	94	212
100	ISL	10.38	10.37	33.483	25.705	229.9	0.300	4.63	73.2	16.8	1.41	17.1	0.01	0.09	0.08	100	
109		10.06	10.05	33.542	25.806	220.5	0.320	4.25	66.7	19.9	1.55	19.4	0.01	0.08	0.08	110	211
124		9.48	9.47	33.641	25.980	204.2	0.352	3.66	56.8	24.3	1.74	22.4	0.01	0.02	0.04	125	210
125	ISL	9.45	9.44	33.648	25.990	203.2	0.354	3.66	56.7	24.6	1.75	22.6	0.01	0.02	0.04	126	
144		9.04	9.02	33.777	26.157	187.7	0.391	3.79	58.2	29.5	1.90	25.1	0.01	0.01	0.03	145	209
150	ISL	8.97	8.95	33.827	26.207	183.0	0.402	3.65	56.0	29.9	1.90	25.3	0.01	0.01	0.03	151	
169		8.79	8.77	33.962	26.342	170.6	0.436	3.11	47.6	30.8	1.92	25.7	0.01	0.00	0.03	170	208
199		8.25	8.23	34.014	26.465	159.2	0.485	2.86	43.2	36.1	2.07	27.9	0.01	0.01	0.03	200	207
200	ISL	8.23	8.21	34.015	26.469	158.8	0.487	2.85	43.1	36.3	2.08	28.0	0.01			201	
229		7.74	7.72	34.033	26.556	150.9	0.532	2.58	38.6	41.6	2.23	30.0	0.01			230	206
250	ISL	7.46	7.44	34.033	26.596	147.3	0.563	2.49	37.0	44.3	2.29	30.9	0.01			251	
268		7.25	7.22	34.034	26.627	144.6	0.590	2.39	35.3	46.8	2.35	31.6	0.01			270	205
300	ISL	6.85	6.82	34.061	26.703	137.6	0.635	1.89	27.7	54.0	2.56	34.0	0.00			302	
318		6.64	6.61	34.079	26.746	133.8	0.659	1.59	23.2	58.3	2.68	35.5	0.00			320	204
377		6.14	6.11	34.115	26.840	125.3	0.736	1.08	15.6	68.2	2.92	38.5	0.01			379	203
400	ISL	6.05	6.02	34.144	26.875	122.3	0.764	0.90	12.9	71.4	2.99	39.2	0.01			403	
437		5.92	5.88	34.192	26.929	117.6	0.808	0.66	9.5	76.2	3.09	40.1	0.00			440	202
500	ISL	5.53	5.49	34.242	27.017	109.7	0.880	0.43	6.1	84.8	3.21	41.5	0.01			503	
515		5.44	5.40	34.254	27.037	107.8	0.896	0.37	5.2	86.8	3.24	41.8	0.01			519	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 34.5 N	122 48.6 W	17/08/99	1827	UTC	4282 m	340	10 kn	010 02 06	1	1022.8 mb	18.9 C	17.6 C	29m	1/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.29	17.29	33.067	23.964	393.5	0.000	5.74	104.3	2.6	0.32	0.1	0.00	0.11	0.03	0	
1		17.29	17.29	33.067	23.964	393.5	0.004	5.74	104.3	2.6	0.32	0.1	0.00	0.11	0.03	1	223
2		17.29	17.29	33.067	23.964	393.6	0.008									2	224
10		17.13	17.13	33.065	24.000	390.3	0.039	5.72	103.7	2.6	0.32	0.1	0.00	0.13	0.03	10	222
19		16.87	16.87	33.049	24.049	386.0	0.074	5.65	101.9	2.5	0.32	0.1	0.00	0.14	0.03	19	220
20	ISL	16.83	16.83	33.045	24.056	385.4	0.078	5.67	102.1	2.5	0.32	0.1	0.00	0.14	0.03	20	
30		16.27	16.27	32.998	24.149	376.8	0.116	5.92	105.4	2.4	0.31	0.1	0.00	0.17	0.04	30	219
40		15.20	15.19	32.981	24.375	355.5	0.153	6.19	107.9	2.4	0.32	0.1	0.00	0.27	0.09	40	218
50		14.84	14.83	32.996	24.464	347.3	0.188	6.27	108.5	2.5	0.33	0.1	0.00	0.43	0.14	50	217
61		13.81	13.80	32.993	24.678	327.1	0.225	6.36	107.8	2.7	0.37	0.3	0.01	0.51	0.25	61	216
71		12.97	12.96	32.979	24.836	312.3	0.257	6.40	106.6	2.9	0.39	0.6	0.02	0.55	0.28	71	215
75	ISL	12.63	12.62	32.997	24.916	304.7	0.269	6.38	105.5	3.1	0.42	0.8	0.04	0.52	0.32	75	
81		12.14	12.13	33.025	25.032	293.8	0.287	6.32	103.4	3.4	0.46	1.2	0.07	0.47	0.37	81	214
92		11.37	11.36	33.012	25.164	281.3	0.319	6.17	99.3	3.8	0.48	1.5	0.16	0.44	0.37	92	213
100	ISL	11.10	11.09	33.031	25.227	275.4	0.341	5.94	95.1	5.1	0.58	3.5	0.07	0.28	0.24	100	
103		11.05	11.04	33.050	25.251	273.2	0.349	5.85	93.5	5.6	0.63	4.4	0.03	0.22	0.18	103	212
112		11.02	11.01	33.180	25.358	263.3	0.374	5.66	90.5	6.6	0.73	6.2	0.04	0.17	0.11	112	211
125	ISL	10.75	10.74	33.301	25.500	250.1	0.407	5.16	82.1	9.5	0.93	9.6	0.03	0.13	0.07	126	
128		10.66	10.64	33.326	25.535	246.8	0.414	5.02	79.7	10.4	0.98	10.5	0.03	0.12	0.07	129	210
144		10.09	10.07	33.526	25.789	222.9	0.452	4.34	68.2	15.9	1.29	15.8	0.02	0.03	0.05	145	209
150	ISL	9.95	9.93	33.591	25.863	215.9	0.465	4.11	64.4	17.8	1.39	17.5	0.02	0.03	0.05	151	
169		9.62	9.60	33.761	26.051	198.4	0.504	3.63	56.5	22.3	1.62	21.3	0.01	0.01	0.04	170	208
199		9.23	9.21	33.933	26.250	180.1	0.561	3.91	60.4	23.8	1.57	21.3	0.01	0.00	0.02	200	207
200	ISL	9.21	9.19	33.936	26.255	179.5	0.563	3.90	60.2	24.0	1.57	21.4	0.01			201	
228		8.65	8.63	33.985	26.382	167.8	0.612	3.52	53.7	29.8	1.78	24.4	0.01			229	206
250	ISL	8.40	8.37	34.013	26.443	162.4	0.648	2.99	45.3	34.3	1.99	27.1	0.00			251	
268		8.23	8.20	34.030	26.482	158.9	0.677	2.54	38.4	37.8	2.16	29.1	0.00			269	205
300	ISL	7.82	7.79	34.064	26.570	150.9	0.726	2.05	30.7	43.8	2.37	31.6	0.00			302	
319		7.54	7.51	34.076	26.620	146.3	0.755	1.90	28.3	47.1	2.45	32.7	0.00			321	204
378		6.46	6.43	34.028	26.730	136.0	0.838	2.09	30.3	55.8	2.51	34.3	0.00			380	203
400	ISL	6.34	6.30	34.062	26.773	132.2	0.867	1.74	25.2	60.0	2.64	35.7	0.00			402	
442		6.19	6.15	34.137	26.852	125.2	0.922	0.99	14.3	68.6	2.90	38.5	0.00			445	202
500	ISL	5.49	5.45	34.140	26.941	116.8	0.992	0.75	10.6	80.2	3.05	40.9	0.00			503	
512		5.34	5.30	34.142	26.961	114.9	1.006	0.70	9.9	82.6	3.08	41.4	0.00			515	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.7 N	123 29.7 W	17/08/99	1229 UTC	4149 m	340 11 kn			1021.9 mb	19.5 C	15.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.42	18.42	33.277	23.851	404.3	0.000	5.52	102.7	2.5	0.29	0.1	0.00	0.08	0.01	0	
1		18.42	18.42	33.277	23.851	404.3	0.004	5.52	102.7	2.5	0.29	0.1	0.00	0.08	0.01	1	220
10	ISL	18.41	18.41	33.278	23.854	404.3	0.040	5.51	102.5	2.5	0.29	0.1	0.00	0.08	0.01	10	
15		18.41	18.41	33.278	23.855	404.4	0.061	5.50	102.3	2.5	0.29	0.1	0.00	0.08	0.01	15	219
20	ISL	18.17	18.17	33.260	23.900	400.3	0.081	5.56	102.9	2.5	0.29	0.1	0.00	0.08	0.01	20	
29		17.56	17.56	33.219	24.017	389.4	0.116	5.69	104.1	2.5	0.29	0.1	0.00	0.09	0.02	29	218
30	ISL	17.48	17.47	33.215	24.033	387.9	0.120	5.70	104.1	2.5	0.29	0.1	0.00	0.09	0.02	30	
46		16.16	16.15	33.160	24.299	363.0	0.180	5.89	104.8	2.4	0.30	0.1	0.00	0.11	0.03	46	217
50	ISL	15.85	15.84	33.146	24.358	357.5	0.195	5.96	105.4	2.4	0.30	0.1	0.00	0.12	0.03	50	
59		15.10	15.09	33.126	24.509	343.3	0.226	6.10	106.2	2.5	0.30	0.1	0.00	0.14	0.04	59	216
75		13.41	13.40	33.165	24.893	307.1	0.278	6.17	103.8	2.7	0.30	0.1	0.00	0.24	0.08	75	215
85		12.86	12.85	33.115	24.963	300.5	0.309	6.25	103.9	2.8	0.32	0.1	0.00	0.28	0.13	85	214
95		12.61	12.60	33.172	25.056	291.9	0.338	6.10	100.9	3.1	0.35	0.3	0.03	0.35	0.19	95	213
100	ISL	12.55	12.54	33.202	25.091	288.7	0.353	6.00	99.2	3.2	0.38	0.7	0.08	0.34	0.19	100	
106		12.42	12.41	33.222	25.132	285.0	0.370	5.90	97.2	3.4	0.41	1.1	0.13	0.33	0.18	106	212
115		11.89	11.88	33.183	25.202	278.4	0.395	5.93	96.6	3.6	0.43	1.4	0.15	0.28	0.16	115	211
125		11.41	11.39	33.192	25.297	269.5	0.423	5.72	92.3	4.9	0.57	3.8	0.06	0.19	0.12	126	210
139		11.49	11.47	33.526	25.543	246.5	0.459	4.65	75.3	10.5	0.98	10.8	0.02	0.11	0.11	140	209
150	ISL	11.26	11.24	33.639	25.673	234.4	0.485	4.53	73.0	12.5	1.10	13.0	0.02	0.07	0.08	151	
164		10.77	10.75	33.702	25.810	221.6	0.517	4.37	69.7	14.2	1.16	14.4	0.01	0.04	0.05	165	208
193		9.59	9.57	33.861	26.135	191.0	0.577	3.92	61.0	21.4	1.52	20.1	0.01	0.01	0.02	194	207
200	ISL	9.43	9.41	33.885	26.180	186.8	0.590	3.72	57.7	23.3	1.62	21.4	0.01			201	
229		8.97	8.95	33.949	26.304	175.4	0.643	3.05	46.8	29.8	1.92	25.6	0.00			230	206
250	ISL	8.63	8.60	33.985	26.386	167.9	0.679	3.20	48.8	31.6	1.89	25.7	0.00			251	
268		8.34	8.31	34.006	26.447	162.3	0.709	3.38	51.2	32.9	1.87	25.7	0.00			269	205
300	ISL	7.76	7.73	34.013	26.539	153.8	0.759	2.96	44.2	38.7	2.08	28.3	0.00			302	
318		7.46	7.43	34.014	26.582	149.8	0.786	2.61	38.7	42.6	2.23	30.2	0.00			320	204
379		6.79	6.75	34.064	26.715	137.7	0.874	1.74	25.4	54.9	2.61	34.8	0.00			381	203
400	ISL	6.67	6.63	34.104	26.763	133.5	0.903	1.41	20.6	59.1	2.73	36.1	0.00			402	
437		6.48	6.44	34.172	26.842	126.4	0.951	0.89	12.9	66.0	2.92	38.1	0.00			440	202
500	ISL	6.01	5.97	34.204	26.928	118.6	1.028	0.60	8.6	74.7	3.06	40.2	0.00			503	
518		5.87	5.83	34.214	26.954	116.3	1.049	0.52	7.4	77.2	3.10	40.8	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 54.3 N	124 10.1 W	17/08/99	0622 UTC	4193 m	350 10 kn			1021.9 mb	18.3 C	15.7 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.19	18.19	33.316	23.937	396.0	0.000	5.57	103.2	2.7	0.31	0.1	0.00	0.08	0.01	0	
1		18.19	18.19	33.316	23.937	396.1	0.004	5.57	103.2	2.7	0.31	0.1	0.00	0.08	0.01	1	220
10	ISL	18.14	18.14	33.312	23.947	395.5	0.040	5.58	103.3	2.7	0.31	0.1	0.00	0.08	0.01	10	
15		18.11	18.11	33.309	23.952	395.1	0.059	5.58	103.2	2.7	0.31	0.1	0.00	0.08	0.01	15	219
20	ISL	17.71	17.71	33.305	24.046	386.3	0.079	5.68	104.2	2.7	0.31	0.1	0.00	0.09	0.01	20	
30		16.68	16.68	33.304	24.290	363.4	0.116	5.94	106.9	2.8	0.31	0.1	0.00	0.11	0.03	30	218
45		15.27	15.26	33.324	24.623	332.0	0.169	6.21	108.6	2.7	0.32	0.1	0.00	0.19	0.07	45	217
50	ISL	14.26	14.25	33.251	24.784	316.8	0.185	6.18	105.9	2.9	0.36	0.3	0.03	0.33	0.14	50	
55		13.43	13.42	33.219	24.930	303.0	0.200	6.14	103.4	3.2	0.40	0.7	0.08	0.47	0.22	55	216
65		13.72	13.71	33.460	25.057	291.1	0.230	5.87	99.6	3.5	0.44	1.7	0.22	0.51	0.35	65	215
73		13.02	13.01	33.441	25.184	279.2	0.253	5.84	97.6	4.2	0.67	4.7	0.28	0.47	0.37	73	214
75	ISL	12.99	12.98	33.450	25.197	278.1	0.258	5.82	97.2	4.3	0.69	5.0	0.27	0.47	0.37	75	
84		12.84	12.83	33.462	25.236	274.6	0.283	5.73	95.4	4.5	0.73	5.8	0.24	0.45	0.35	84	213
94		12.55	12.54	33.493	25.317	267.1	0.310	5.60	92.7	5.5	0.84	7.9	0.03	0.34	0.26	94	212
100	ISL	12.46	12.45	33.502	25.341	264.9	0.326	5.57	92.0	5.9	0.87	8.4	0.03	0.25	0.20	100	
109		12.37	12.36	33.511	25.366	262.8	0.350	5.55	91.5	6.6	0.90	8.7	0.02	0.13	0.11	109	211
124		12.16	12.14	33.540	25.429	257.2	0.389	5.49	90.2	8.2	0.97	9.9	0.01	0.05	0.06	125	210
125	ISL	12.15	12.13	33.542	25.432	256.9	0.392	5.49	90.2	8.3	0.97	10.0	0.01	0.05	0.06	126	
145		11.95	11.93	33.577	25.497	251.1	0.442	5.40	88.3	9.8	1.04	11.1	0.01	0.02	0.06	146	209
150	ISL	11.91	11.89	33.587	25.513	249.8	0.455	5.39	88.1	10.1	1.06	11.5	0.01	0.02	0.06	151	
169		11.61	11.59	33.634	25.605	241.4	0.502	5.20	84.5	12.1	1.19	13.5	0.01	0.01	0.04	170	208
198		10.44	10.42	33.756	25.910	212.7	0.567	4.06	64.3	20.1	1.54	19.5	0.00	0.01	0.03	199	207
200	ISL	10.36	10.34	33.764	25.930	210.9	0.572	3.99	63.1	20.6	1.56	19.8	0.00			201	
229		9.40	9.37	33.866	26.170	188.3	0.629	3.25	50.4	26.6	1.81	23.9	0.00			230	206
250	ISL	8.93	8.90	33.931	26.297	176.5	0.668	3.03	46.5	30.2	1.92	25.7	0.00			251	
269		8.60	8.57	33.979	26.386	168.2	0.701	2.91	44.3	33.2	2.01	27.0	0.00			270	205
300	ISL	8.15	8.12	34.028	26.493	158.4	0.751	2.54	38.3	38.4	2.18	29.2	0.00			302	
318		7.91	7.88	34.046	26.543	153.9	0.779	2.32	34.8	41.5	2.28	30.4	0.00			320	204
377		7.06	7.02	34.086	26.696	139.8	0.866	1.77	26.0	52.8	2.56	34.1	0.00			379	203
400	ISL	6.85	6.81	34.109	26.743	135.5	0.898	1.50	22.0	56.9	2.68	35.5	0.00			402	
437		6.59	6.55	34.147	26.808	129.7	0.947	1.08	15.7	63.1	2.86	37.4	0.01			440	202
500	ISL	6.22	6.18	34.197	26.896	121.9	1.026	0.71	10.2	71.6	3.02	39.2	0.01			503	
518		6.11	6.06	34.211	26.921	119.6	1.048	0.60	8.6	74.0	3.06	39.7	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 53.5 N	118 29.4 W	14/08/99	0817 UTC	54 m	180 02 kn			1012.5 mb	18.0 C	17.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.59	18.59	33.638	24.085	382.0	0.000	6.10	114.1	3.5	0.15	0.1	0.00	0.69	0.13	0	
2		18.59	18.59	33.638	24.085	382.0	0.008	6.10	114.1	3.5	0.15	0.1	0.00	0.69	0.13	2	207
6		18.24	18.24	33.634	24.169	374.2	0.023	6.17	114.6	3.6	0.16	0.1	0.00	0.80	0.15	6	206
10		16.05	16.05	33.608	24.667	326.8	0.037	6.62	117.8	4.4	0.24	0.1	0.01	1.28	0.36	10	205
20		13.22	13.22	33.575	25.246	271.9	0.067	6.09	102.3	7.6	0.59	3.2	0.20	3.23	0.76	20	204
30		12.43	12.43	33.559	25.389	258.5	0.093	4.89	80.8	11.4	1.15	9.9	0.56	1.24	0.54	30	203
40		12.00	11.99	33.588	25.494	248.8	0.119	4.27	69.9	14.5	1.39	12.9	0.67	0.68	0.46	40	202
50		11.43	11.42	33.669	25.663	232.9	0.143	3.60	58.3	19.6	1.62	16.7	0.59	0.26	0.48	50	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.2 N	118 37.5 W	14/08/99	1025 UTC	650 m	150 07 kn			1012.3 mb	18.6 C	17.1 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.19	18.19	33.561	24.125	378.1	0.000	5.94	110.2	3.4	0.26	0.1	0.00	0.20	0.03	0	
1		18.19	18.19	33.561	24.125	378.2	0.004	5.94	110.2	3.4	0.26	0.1	0.00	0.20	0.03	1	220
10		17.75	17.75	33.564	24.235	368.0	0.037	6.15	113.1	3.6	0.28	0.1	0.00	0.40	0.08	10	219
20		16.28	16.28	33.555	24.574	336.0	0.073	6.42	114.8	3.8	0.29	0.1	0.00	0.52	0.14	20	218
30		14.01	14.01	33.542	25.060	289.9	0.104	6.58	112.4	4.7	0.38	0.2	0.01	0.98	0.35	30	217
40		12.90	12.89	33.603	25.332	264.3	0.132	5.51	92.0	8.0	0.76	6.4	0.18	0.85	0.46	40	216
50		12.31	12.30	33.627	25.466	251.8	0.157	4.98	82.1	10.3	0.99	10.1	0.19	0.18	0.20	50	215
60		11.51	11.50	33.680	25.657	233.8	0.182	4.08	66.2	14.9	1.35	15.9	0.05	0.07	0.10	60	213
70		11.05	11.04	33.713	25.766	223.6	0.205	3.81	61.2	17.3	1.46	17.7	0.03			70	214
75	ISL	10.89	10.88	33.726	25.805	220.0	0.216	3.72	59.5	18.1	1.50	18.4	0.02	0.04	0.08	75	
85		10.60	10.59	33.760	25.883	212.8	0.237	3.51	55.8	19.9	1.59	19.8	0.01	0.02	0.07	85	212
100		10.03	10.02	33.859	26.058	196.4	0.268	2.90	45.6	25.0	1.86	23.3	0.01	0.00	0.08	101	211
120		9.70	9.69	33.989	26.215	181.8	0.306	2.27	35.4	30.3	2.12	26.4	0.01	0.01 A	0.10 A	121	210
125	ISL	9.63	9.62	34.012	26.245	179.1	0.315	2.20	34.3	31.1	2.15	26.9	0.01	0.01	0.09	126	
139		9.47	9.45	34.063	26.311	173.1	0.339	2.07	32.2	32.9	2.22	27.8	0.01	0.01	0.05	140	209
150	ISL	9.36	9.34	34.094	26.354	169.2	0.358	1.97	30.6	34.2	2.26	28.3	0.01	0.02	0.07	151	
169		9.21	9.19	34.136	26.411	164.1	0.390	1.82	28.1	36.3	2.33	29.0	0.01	0.03	0.10	170	208
200		9.00	8.98	34.196	26.492	157.0	0.440	1.55	23.9	39.8	2.46	30.2	0.01	0.01	0.04	201	207
230		8.95	8.93	34.230	26.527	154.3	0.486	1.33	20.5	41.6	2.55	30.8	0.01			231	206
250	ISL	8.85	8.82	34.239	26.551	152.5	0.517	1.28	19.6	42.6	2.58	31.1	0.01			251	
269		8.70	8.67	34.243	26.577	150.2	0.546	1.25	19.1	43.9	2.60	31.4	0.01			271	205
300	ISL	8.36	8.33	34.247	26.633	145.3	0.592	1.14	17.3	47.4	2.67	32.4	0.01			302	
319		8.12	8.09	34.249	26.671	141.9	0.619	1.06	16.0	50.0	2.72	33.1	0.01			321	204
379		7.38	7.34	34.258	26.787	131.5	0.701	0.79	11.7	59.3	2.91	35.7	0.01			381	203
400	ISL	7.18	7.14	34.261	26.817	128.8	0.728	0.71	10.5	62.0	2.96	36.5	0.01			403	
441		6.84	6.80	34.271	26.872	124.0	0.780	0.55	8.1	66.9	3.05	37.9	0.01			444	202
500	ISL	6.49	6.44	34.301	26.943	117.8	0.851			73.6	3.16	39.0	0.01			503	
512		6.42	6.37	34.307	26.957	116.6	0.865	0.62 U	9.0U	75.0	3.18	39.2	0.01			516	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 39.7 N	118 58.1 W	14/08/99	1813 UTC	832 m	160 09 kn	240 03 07	2	1013.4 mb	18.8 C	17.1 C	14m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.58	17.58	33.618	24.317	359.8	0.000	5.83	106.9	3.7	0.35	0.5	0.02	0.40	0.08	0	
1		17.58	17.58	33.619	24.318	359.8	0.004									1	222
1	A	17.58	17.58	33.618	24.317	359.9	0.004	5.83	106.9	3.7	0.35	0.5	0.02	0.40	0.08	1	221
8	A	15.54	15.54	33.591	24.768	317.1	0.027	6.03	106.2	5.1	0.48	2.3	0.07	0.77	0.17	8	220
10	ISL	15.03	15.03	33.588	24.878	306.7	0.034	5.97	104.1	5.7	0.54	3.2	0.08	0.78	0.20	10	
19	A	13.23	13.23	33.594	25.259	270.6	0.060	5.48	92.1	8.4	0.81	7.5	0.13	0.81	0.34	19	219
20	ISL	13.08	13.08	33.596	25.291	267.7	0.062	5.43	91.0	8.7	0.84	7.9	0.13	0.81	0.34	20	
30	A	12.15	12.15	33.609	25.482	249.7	0.088	5.01	82.3	11.0	1.04	11.2	0.14	0.78	0.37	30	218
39	A	12.06	12.05	33.609	25.499	248.3	0.110	4.98	81.7	10.9	1.06	11.4	0.14	0.79	0.39	39	217
46		12.03	12.02	33.610	25.506	247.8	0.128	4.97	81.5	11.0	1.07	11.6	0.13	0.77	0.40	46	216
50	ISL	11.88	11.87	33.621	25.542	244.4	0.138	4.84	79.1	11.8	1.12	12.5	0.10	0.67	0.37	50	
55	A	11.62	11.61	33.641	25.606	238.4	0.150	4.62	75.1	13.2	1.20	13.9	0.07	0.51	0.31	55	215
61		11.29	11.28	33.668	25.688	230.8	0.164	4.33	69.9	15.1	1.31	15.6	0.06	0.30	0.20	61	214
68		11.10	11.09	33.681	25.732	226.7	0.180	4.20	67.5	15.8	1.36	16.4	0.04	0.22	0.16	68	213
75	ISL	10.83	10.82	33.713	25.806	219.9	0.195	3.98	63.6	17.6	1.45	17.7	0.04	0.17	0.13	75	
84		10.46	10.45	33.763	25.910	210.2	0.215	3.67	58.2	20.4	1.57	19.6	0.03	0.13	0.10	84	212
100		9.95	9.94	33.838	26.055	196.6	0.247	3.30	51.8	24.2	1.73	22.2	0.02	0.06	0.06	101	211
119		9.49	9.48	33.948	26.218	181.5	0.283	2.80	43.5	28.3	1.93	24.8	0.00	0.01	0.04	120	210
125	ISL	9.42	9.41	33.974	26.250	178.6	0.294	2.67	41.4	29.4	1.98	25.4	0.00	0.01	0.04	126	
140		9.30	9.28	34.027	26.311	173.1	0.320	2.39	37.0	31.9	2.10	26.8	0.00	0.00	0.06	141	209
150	ISL	9.23	9.21	34.061	26.349	169.7	0.338	2.22	34.3	33.3	2.17	27.6	0.00	0.00	0.06	151	
169		9.07	9.05	34.115	26.417	163.5	0.369	1.95	30.0	35.9	2.29	28.9	0.00	0.00	0.06	170	208
199		8.69	8.67	34.170	26.521	154.2	0.417	1.63	24.9	40.4	2.43	30.4	0.02	0.00	0.05	200	207
200	ISL	8.68	8.66	34.171	26.523	154.0	0.418	1.62	24.8	40.5	2.43	30.4	0.02			201	
230		8.36	8.34	34.204	26.598	147.3	0.464	1.40	21.2	44.7	2.56	31.7	0.01			231	206
250	ISL	8.20	8.17	34.217	26.633	144.3	0.493	1.28	19.4	46.9	2.62	32.3	0.01			252	
268		8.07	8.04	34.225	26.659	142.1	0.519	1.18	17.8	48.8	2.67	32.8	0.02			270	205
300	ISL	7.83	7.80	34.237	26.704	138.3	0.563	1.04	15.6	52.2	2.74	33.9	0.01			302	
319		7.68	7.65	34.243	26.731	136.0	0.590	0.96	14.3	54.3	2.78	34.5	0.01			321	204
377		7.16	7.12	34.259	26.818	128.3	0.666	0.69	10.2	62.0	2.94	36.4	0.01			379	203
400	ISL	6.98	6.94	34.268	26.850	125.5	0.695	0.61	9.0	64.6	2.99	37.1	0.01			403	
442		6.68	6.64	34.285	26.905	120.8	0.747	0.49	7.2	69.3	3.06	38.2	0.01			445	202
500	ISL	6.32	6.27	34.312	26.974	114.7	0.815	0.36	5.2	76.1	3.16	39.2	0.01			504	
509		6.26	6.21	34.316	26.985	113.7	0.826	0.34	4.9	77.1	3.17	39.4	0.01			513	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.5 N	119 19.5 W	14/08/99	2331 UTC	589 m	310 08 kn	290 02 10	2	1012.1 mb	17.9 C	16.1 C	11m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.54	16.54	33.643	24.581	334.7	0.000	6.06	108.9	1.9	0.31	0.6	0.04	1.46	0.28	0	
1		16.54	16.54	33.643	24.581	334.7	0.003	6.06	108.9	1.9	0.31	0.6	0.04	1.46	0.28	1	220
10		15.27	15.27	33.663	24.883	306.2	0.032	6.02	105.5	3.6	0.48	2.7	0.11	1.49	0.34	10	219
20		13.22	13.22	33.576	25.247	271.8	0.061	5.87	98.6	6.1	0.73	6.1	0.23	1.23	0.37	20	218
30		12.27	12.27	33.566	25.426	255.1	0.087	5.35	88.1	9.2	0.98	9.9	0.29	1.05	0.45	30	217
40		11.68	11.67	33.605	25.567	241.8	0.112	4.92	80.0	12.3	1.18	13.3	0.13	0.76	0.36	40	216
50		11.11	11.10	33.687	25.735	226.1	0.136	4.31	69.3	16.2	1.36	16.3	0.08	0.31	0.25	50	215
59		10.86	10.85	33.764	25.840	216.3	0.156	3.86	61.8	19.8	1.53	18.4	0.19	0.38	0.27	59	214
70		10.64	10.63	33.803	25.909	210.0	0.179	3.60	57.3	21.8	1.63	19.8	0.21	0.34	0.23	70	213
75	ISL	10.49	10.48	33.816	25.945	206.6	0.189	3.50	55.6	22.7	1.67	20.5	0.20	0.31	0.24	75	
84		10.24	10.23	33.835	26.004	201.2	0.208	3.36	53.1	24.1	1.73	21.7	0.17	0.25	0.25	84	212
100		10.13	10.12	33.851	26.035	198.6	0.240	3.29	51.8	24.9	1.77	22.2	0.14	0.25	0.21	101	211
119		9.49	9.48	33.923	26.198	183.4	0.276	2.87	44.6	29.5	1.96	25.1	0.07	0.10	0.14	120	210
125	ISL	9.33	9.32	33.950	26.246	179.0	0.287	2.78	43.0	30.4	2.00	25.7	0.06	0.07	0.11	126	
139		9.02	9.01	34.008	26.341	170.1	0.311	2.61	40.2	32.3	2.07	26.7	0.04	0.01	0.06	140	209
150	ISL	8.81	8.79	34.031	26.392	165.4	0.330	2.45	37.5	34.3	2.14	27.7	0.03	0.01	0.07	151	
169		8.50	8.48	34.055	26.459	159.3	0.361	2.20	33.5	37.9	2.26	29.3	0.02	0.01	0.08	170	208
197		8.11	8.09	34.092	26.548	151.3	0.404	1.96	29.5	42.2	2.38	30.8	0.02	0.00	0.06	198	207
200	ISL	8.09	8.07	34.098	26.555	150.7	0.409	1.92	28.9	42.6	2.39	31.0	0.02			201	
227		7.96	7.94	34.156	26.620	144.9	0.449	1.57	23.6	46.4	2.54	32.3	0.02			228	206
250	ISL	7.79	7.77	34.200	26.680	139.6	0.481	1.21	18.1	50.7	2.68	33.5	0.04			252	
268		7.65	7.62	34.226	26.721	136.0	0.506	0.98	14.6	53.9	2.78	34.3	0.05			270	205
300	ISL	7.49	7.46	34.239	26.755	133.2	0.549	0.94	14.0	56.6	2.84	35.0	0.03			302	
318		7.42	7.39	34.238	26.764	132.6	0.573	0.92	13.7	57.5	2.85	35.2	0.01			320	204
381		7.19	7.15	34.251	26.808	129.4	0.656	0.76	11.2	60.9	2.92	36.0	0.01			384	203
400	ISL	7.15	7.11	34.253	26.815	129.0	0.680	0.74	10.9	61.5	2.93	36.2	0.01			403	
443		7.03	6.99	34.260	26.838	127.4	0.735	0.68	10.0	63.5	2.96	36.7	0.01			446	202
500	ISL	6.69	6.64	34.285	26.904	121.7	0.806	0.51	7.4	69.7	3.08	37.9	0.01			504	
506		6.65	6.60	34.288	26.912	121.0	0.814	0.49	7.1	70.3	3.09	38.0	0.01			510	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 19.3 N	119 39.7 W	15/08/99	0321 UTC	78 m	310 19 kn			1011.6 mb	16.0 C	14.1 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.47	15.47	33.680	24.852	308.9	0.000	5.83	102.6	6.1	0.54	3.4	0.12	1.67	0.32	0	
1		15.47	15.47	33.680	24.852	308.9	0.003	5.83	102.6	6.1	0.54	3.4	0.12	1.67	0.32	1	208
10		14.99	14.99	33.677	24.955	299.3	0.030	5.70	99.4	7.2	0.62	4.6	0.17	1.52	0.41	10	207
20		13.21	13.21	33.676	25.327	264.2	0.059	5.17	86.9	11.6	0.97	9.6	0.33	0.77	0.36	20	206
30	ISL	13.04	13.04	33.677	25.361	261.2	0.085	5.11	85.6	12.1	1.00	10.2	0.31	0.84	0.37	30	
31		13.02	13.02	33.677	25.365	260.8	0.088	5.10	85.4	12.1	1.00	10.3	0.31	0.85	0.37	31	205
39		12.82	12.81	33.674	25.403	257.5	0.108	5.02	83.7	12.1	1.03	10.7	0.27	1.02	0.41	39	204
48		12.76	12.75	33.672	25.413	256.7	0.131	5.02	83.6	12.1	1.03	10.8	0.26	1.16	0.47	48	203
50	ISL	12.69	12.68	33.673	25.428	255.4	0.137	5.00	83.1	12.2	1.04	11.0	0.25	1.25	0.48	50	
57		12.24	12.23	33.686	25.525	246.3	0.154	4.77	78.6	13.5	1.13	12.5	0.19	1.42	0.50	57	202
70		10.37	10.36	33.798	25.952	205.8	0.183	3.60	57.0	22.4	1.63	20.4	0.07	0.23	0.23	70	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.6 N	119 59.9 W	15/08/99	0706 UTC	1192 m	320 24 kn			1014.1 mb	15.6 C	14.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.85	15.85	33.637	24.734	320.1	0.000	5.99	106.2	3.6	0.37	0.7	0.06	1.30	0.34	0	
1		15.85	15.85	33.637	24.734	320.1	0.003	5.99	106.2	3.6	0.37	0.7	0.06	1.30	0.34	1	220
10		15.84	15.84	33.636	24.736	320.2	0.032	5.97	105.8	3.6	0.38	0.8	0.06	1.33	0.34	10	219
19		15.84	15.84	33.635	24.735	320.6	0.061	5.97	105.8	3.5	0.39	0.8	0.06	1.34	0.35	19	218
20	ISL	15.82	15.82	33.632	24.738	320.4	0.064	5.97	105.8	3.5	0.39	0.8	0.06	1.35	0.36	20	
29		15.46	15.46	33.610	24.801	314.6	0.093	5.96	104.8	4.0	0.44	1.5	0.10	1.42	0.42	29	217
30	ISL	15.41	15.41	33.617	24.818	313.1	0.096	5.94	104.4	4.2	0.45	1.7	0.11	1.40	0.42	30	
40		14.44	14.43	33.631	25.039	292.3	0.126	5.63	97.0	6.5	0.67	4.4	0.28	1.04	0.42	40	216
50		12.20	12.19	33.447	25.347	263.0	0.154	5.40	88.7	9.5	0.98	9.8	0.44	0.32	0.24	50	215
60		11.79	11.78	33.515	25.477	250.9	0.179	5.03	82.0	12.0	1.14	12.5	0.30	0.21	0.19	60	214
70		11.40	11.39	33.716	25.705	229.4	0.204	4.24	68.6	17.1	1.43	17.2	0.06	0.14	0.16	70	213
75	ISL	10.91	10.90	33.761	25.829	217.7	0.215	3.94	63.1	19.9	1.57	19.6	0.04	0.10	0.13	75	
85		9.94	9.93	33.809	26.034	198.3	0.235	3.50	54.9	24.6	1.80	23.3	0.01	0.04	0.09	85	212
100		9.63	9.62	33.860	26.126	189.9	0.265	3.13	48.8	27.1	1.89	24.7	0.01	0.04	0.09	101	211
120		9.08	9.07	33.947	26.283	175.2	0.301	2.95	45.4	31.3	2.04	27.0	0.01	0.02	0.08	121	210
125	ISL	9.00	8.99	33.957	26.304	173.3	0.310	2.87	44.1	31.9	2.05	27.2	0.01	0.02	0.08	126	
139		8.83	8.82	33.974	26.344	169.8	0.334	2.64	40.4	33.3	2.08	27.6	0.01	0.01	0.08	140	209
150	ISL	8.72	8.70	33.988	26.372	167.3	0.352	2.57	39.3	34.3	2.11	28.0	0.01	0.01	0.08	151	
168		8.56	8.54	34.009	26.414	163.6	0.382	2.49	37.9	35.9	2.16	28.8	0.01	0.01	0.07	169	208
198		8.32	8.30	34.051	26.484	157.5	0.430	2.24	33.9	39.0	2.27	29.9	0.02	0.01	0.06	199	207
200	ISL	8.30	8.28	34.054	26.489	157.0	0.433	2.22	33.6	39.3	2.28	30.0	0.02			201	
229		7.99	7.97	34.097	26.570	149.8	0.478	1.83	27.5	44.1	2.44	31.9	0.03			230	206
250	ISL	7.75	7.73	34.128	26.630	144.4	0.509	1.55	23.2	48.1	2.57	33.3	0.02			251	
269		7.55	7.52	34.156	26.681	139.7	0.536	1.31	19.5	51.8	2.68	34.4	0.01			271	205
300	ISL	7.30	7.27	34.199	26.750	133.5	0.578	1.01	15.0	57.2	2.83	35.8	0.00			302	
317		7.19	7.16	34.219	26.782	130.8	0.601	0.88	13.0	59.7	2.89	36.4	0.00			319	204
376		6.87	6.83	34.252	26.852	124.8	0.676	0.68	10.0	65.2	3.00	37.7	0.00			378	203
400	ISL	6.73	6.69	34.265	26.882	122.3	0.706	0.59	8.6	67.7	3.04	38.2	0.00			403	
436		6.53	6.49	34.282	26.922	118.9	0.749	0.47	6.8	71.5	3.10	38.9	0.00			439	202

500	ISL	6.22	6.18	34.303	26.980	114.0	0.824	0.38	5.5	76.7	3.18	40.0	0.00	503	
521		6.12	6.07	34.310	26.998	112.5	0.847	0.35	5.0	78.4	3.20	40.3	0.00	525	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.4 N	120 21.9 W	15/08/99	1146 UTC	777 m	330 24 kn			1014.0 mb	15.3 C	14.1 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.78	15.78	33.618	24.735	320.0	0.000	5.93	105.0	3.9	0.39	1.1	0.05	0.60	0.20	0	
1		15.78	15.78	33.618	24.735	320.0	0.003	5.93	105.0	3.9	0.39	1.1	0.05	0.60	0.20	1	220
10	ISL	15.79	15.79	33.618	24.733	320.5	0.032	5.93	105.0	3.9	0.40	1.1	0.05	0.60	0.21	10	
11		15.79	15.79	33.618	24.733	320.5	0.035	5.93	105.0	3.9	0.40	1.1	0.05	0.60	0.21	11	219
20	ISL	15.80	15.80	33.620	24.733	320.8	0.064	5.93	105.0	3.9	0.40	1.1	0.05	0.60	0.19	20	
21		15.80	15.80	33.620	24.733	320.9	0.067	5.93	105.0	3.9	0.40	1.1	0.05	0.60	0.19	21	218
30		15.77	15.77	33.616	24.737	320.8	0.096	5.93	105.0	3.9	0.40	1.2	0.05	0.62	0.21	30	217
41		14.49	14.48	33.514	24.938	301.9	0.130	5.88	101.4	4.6	0.56	2.7	0.17	0.82	0.38	41	216
50	ISL	13.21	13.20	33.434	25.140	282.8	0.157	5.67	95.2	6.6	0.74	5.3	0.36	0.40	0.30	50	
51		13.06	13.05	33.424	25.162	280.7	0.160	5.65	94.5	6.8	0.76	5.6	0.38	0.35	0.29	51	215
62		11.52	11.51	33.270	25.337	264.2	0.190	5.52	89.3	8.5	0.90	8.5	0.32	0.32	0.24	62	214
72		11.86	11.85	33.538	25.482	250.7	0.215	5.04	82.3	10.2	1.09	11.9	0.05	0.18	0.18	72	213
75	ISL	11.82	11.81	33.570	25.515	247.7	0.223	4.96	80.9	10.7	1.13	12.5	0.04	0.15	0.16	75	
86		11.37	11.36	33.614	25.632	236.7	0.249	4.69	75.8	13.1	1.25	14.5	0.02	0.09	0.09	86	212
98		10.68	10.67	33.669	25.798	221.1	0.277	4.26	67.8	17.3	1.45	17.9	0.02	0.05	0.06	98	211
100	ISL	10.57	10.56	33.679	25.825	218.6	0.281	4.19	66.6	17.9	1.48	18.4	0.02	0.05	0.06	100	
120		9.66	9.65	33.785	26.063	196.3	0.323	3.56	55.5	23.3	1.71	22.3	0.01	0.02	0.05	121	210
125	ISL	9.50	9.49	33.814	26.112	191.7	0.332	3.46	53.7	24.5	1.75	23.0	0.01	0.02	0.04	126	
139		9.14	9.12	33.889	26.229	180.8	0.359	3.21	49.5	27.7	1.84	24.6	0.02	0.01	0.03	140	209
150	ISL	8.94	8.92	33.935	26.297	174.5	0.378	2.95	45.3	30.3	1.94	26.0	0.02	0.01	0.04	151	
170		8.64	8.62	33.994	26.390	166.0	0.412	2.56	39.0	34.5	2.11	28.1	0.01	0.01	0.05	171	208
200	ISL	8.19	8.17	34.024	26.482	157.6	0.461	2.52	38.0	37.9	2.17	29.1	0.02	0.00	0.03	201	
201		8.18	8.16	34.024	26.484	157.5	0.462	2.52	38.0	38.0	2.17	29.1	0.02	0.00	0.03	202	207
232		7.81	7.79	34.057	26.565	150.2	0.510	2.20	32.9	42.9	2.32	31.0	0.02			233	206
250	ISL	7.45	7.43	34.043	26.606	146.4	0.537	2.23	33.1	45.5	2.35	31.7	0.02			251	
267		7.11	7.08	34.029	26.642	143.1	0.561	2.25	33.1	48.1	2.38	32.3	0.02			269	205
300	ISL	6.83	6.80	34.059	26.705	137.5	0.608	1.81	26.5	54.0	2.55	34.5	0.02			302	
323		6.72	6.69	34.096	26.749	133.6	0.639	1.41	20.6	58.4	2.70	36.1	0.02			325	204
373		6.37	6.34	34.179	26.861	123.5	0.703	0.81	11.7	68.5	2.95	38.5	0.01			375	203
400	ISL	6.23	6.19	34.204	26.899	120.2	0.736	0.64	9.2	72.1	3.02	39.3	0.01			403	
442		6.04	6.00	34.232	26.946	116.2	0.786	0.50	7.2	76.3	3.09	40.1	0.01			445	202
500	ISL	5.82	5.78	34.276	27.009	110.8	0.851	0.35	5.0	81.1	3.18	41.0	0.01			503	
509		5.79	5.75	34.283	27.018	110.0	0.861	0.33	4.7	81.8	3.19	41.1	0.01			513	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 40.6 N	121 1.6 W	15/08/99	1745 UTC	3764 m	360 17 kn	330 04 12	2	1017.0 mb	17.1 C	15.1 C	14m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.61	16.61	33.626	24.552	337.4	0.000	5.82	104.8	1.7	0.31	0.2	0.00	0.35	0.09	0	
1		16.61	16.61	33.626	24.552	337.5	0.003									1	223
1	A	16.61	16.61	33.626	24.552	337.5	0.003	5.82	104.8	1.7	0.31	0.2	0.00	0.35	0.09	1	222
9	A	16.60	16.60	33.626	24.555	337.5	0.030	5.81	104.6	1.7	0.31	0.2	0.00	0.35	0.10	9	221
10	ISL	16.60	16.60	33.626	24.555	337.5	0.034	5.81	104.6	1.7	0.31	0.2	0.00	0.35	0.10	10	
18	A	16.60	16.60	33.628	24.557	337.6	0.061	5.82	104.7	1.6	0.30	0.2	0.00	0.39	0.13	18	220
20	ISL	16.54	16.54	33.630	24.572	336.2	0.067	5.83	104.8	1.7	0.31	0.3	0.00	0.40	0.13	20	
29	A	15.57	15.57	33.533	24.718	322.6	0.097	5.91	104.1	2.0	0.35	0.5	0.02	0.43	0.14	29	219
30	ISL	15.28	15.28	33.493	24.751	319.4	0.100	5.94	104.0	2.2	0.37	0.7	0.04	0.44	0.16	30	
38	A	13.02	13.01	33.206	25.001	295.7	0.125	6.11	102.0	3.6	0.56	2.9	0.20	0.49	0.29	38	218
45		12.15	12.14	33.134	25.113	285.1	0.145	6.00	98.3	4.8	0.67	4.6	0.36	0.52	0.32	45	217
50	ISL	12.19	12.18	33.230	25.181	278.9	0.159	5.83	95.6	5.5	0.75	5.9	0.43	0.49	0.31	50	
54	A	12.24	12.23	33.318	25.239	273.4	0.170	5.67	93.2	6.3	0.83	7.1	0.48	0.44	0.30	54	216
66		10.51	10.50	33.250	25.501	248.6	0.202	5.15	81.5	12.2	1.12	12.5	0.02	0.19	0.12	66	215
75	ISL	10.20	10.19	33.383	25.658	233.9	0.223	4.69	73.8	16.2	1.34	16.1	0.02	0.11	0.08	75	
76		10.19	10.18	33.403	25.675	232.2	0.226	4.64	73.0	16.7	1.37	16.5	0.02	0.10	0.08	76	214
87		9.81	9.80	33.597	25.890	212.0	0.250	4.01	62.6	22.6	1.67	21.4	0.01	0.03	0.06	87	213
97		9.68	9.67	33.655	25.957	205.8	0.271	3.87	60.3	23.8	1.73	22.2	0.01	0.03	0.05	97	212
100	ISL	9.61	9.60	33.679	25.988	203.0	0.277	3.78	58.8	24.2	1.74	22.5	0.01	0.03	0.05	100	
110		9.38	9.37	33.757	26.086	193.8	0.297	3.48	53.9	25.5	1.79	23.5	0.01	0.02	0.05	111	211
125	ISL	9.12	9.11	33.825	26.182	185.0	0.325	3.27	50.4	27.8	1.87	24.8	0.02	0.01	0.04	126	
126		9.11	9.10	33.829	26.186	184.6	0.327	3.26	50.2	28.0	1.87	24.9	0.02	0.01	0.04	127	210
147		8.85	8.83	33.911	26.292	174.9	0.365	3.09	47.3	30.4	1.94	26.1	0.01	0.01	0.04	148	209
150	ISL	8.83	8.81	33.925	26.306	173.6	0.370	3.04	46.5	30.8	1.96	26.3	0.01	0.01	0.04	151	
171		8.65	8.63	34.002	26.395	165.5	0.406	2.71	41.3	34.1	2.07	27.6	0.01	0.01	0.06	172	208
200	ISL	7.93	7.91	34.011	26.511	154.8	0.452	2.85	42.8	38.5	2.10	28.6	0.01	0.00	0.04	201	
201		7.90	7.88	34.010	26.514	154.5	0.454	2.86	42.9	38.7	2.10	28.6	0.01	0.00	0.04	202	207
228		7.40	7.38	34.007	26.584	148.1	0.495	2.79	41.4	42.8	2.19	30.0	0.01			229	206
250	ISL	7.13	7.11	34.018	26.631	143.9	0.527	2.52	37.1	46.5	2.31	31.5	0.01			251	
274		6.90	6.87	34.034	26.675	139.9	0.561	2.15	31.5	50.9	2.45	33.3	0.01			276	205
300	ISL	6.59	6.56	34.045	26.726	135.4	0.597	1.83	26.6	56.1	2.58	35.0	0.01			302	
318		6.40	6.37	34.054	26.758	132.5	0.621	1.63	23.6	59.6	2.67	36.1	0.01			320	204
373		6.18	6.15	34.113	26.833	126.0	0.692	1.09	15.7	67.1	2.88	38.2	0.01			375	203
400	ISL	6.03	6.00	34.139	26.873	122.4	0.725	0.89	12.8	71.1	2.98	39.1	0.01			403	
430		5.84	5.80	34.164	26.917	118.5	0.762	0.71	10.2	75.6	3.08	40.1	0.01			433	202
500	ISL	5.30	5.26	34.207	27.017	109.4	0.841	0.46	6.5	86.7	3.19	42.0	0.01			503	
513		5.20	5.16	34.215	27.035	107.7	0.855	0.41	5.8	88.8	3.21	42.4	0.01			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 19.4 N	121 42.6 W	16/08/99	0555 UTC	4035 m	350 17 kn			1018.3 mb	15.0 C	14.4 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.49	16.49	33.246	24.288	362.6	0.000	5.95	106.6	2.9	0.33	0.2	0.00	0.28	0.06	0	
1		16.49	16.49	33.246	24.288	362.6	0.004	5.95	106.6	2.9	0.33	0.2	0.00	0.28	0.06	1	220
10	ISL	16.50	16.50	33.255	24.293	362.4	0.036	5.92	106.1	2.8	0.32	0.2	0.00	0.27	0.06	10	
16		16.50	16.50	33.261	24.298	362.2	0.058	5.91	105.9	2.8	0.32	0.2	0.00	0.27	0.06	16	219
20	ISL	16.37	16.37	33.246	24.316	360.5	0.072	5.93	106.0	2.8	0.32	0.2	0.00	0.28	0.06	20	
30		16.03	16.03	33.208	24.365	356.2	0.108	6.04	107.2	2.8	0.32	0.1	0.00	0.32	0.10	30	218
45		13.02	13.01	33.001	24.842	311.0	0.158	6.41	106.9	3.1	0.37	0.3	0.00	0.54	0.26	45	217
50	ISL	13.01	13.00	33.101	24.922	303.5	0.174	6.37	106.2	3.4	0.46	1.8	0.03	0.53	0.29	50	
55		12.99	12.98	33.176	24.984	297.7	0.189	6.33	105.6	3.7	0.55	3.4	0.07	0.53	0.32	55	216
65		12.57	12.56	33.234	25.111	285.9	0.218	6.18	102.2	4.4	0.67	4.8	0.18	0.52	0.35	65	215
75		11.86	11.85	33.199	25.219	275.8	0.246	5.92	96.4	5.7	0.74	6.1	0.29	0.35	0.20	75	214
84		10.83	10.82	33.127	25.349	263.4	0.270	5.61	89.3	9.2	0.95	9.6	0.01	0.14	0.09	84	213
95		10.52	10.51	33.182	25.446	254.4	0.299	5.28	83.5	11.9	1.08	11.8	0.00	0.09	0.08	95	212
100	ISL	10.44	10.43	33.273	25.531	246.4	0.311	4.96	78.4	13.2	1.14	13.0	0.00	0.07	0.07	100	
109		10.30	10.29	33.454	25.697	230.9	0.333	4.38	69.1	15.6	1.27	15.3	0.01	0.03	0.05	109	211
125		9.77	9.76	33.616	25.912	210.7	0.368	3.89	60.7	20.5	1.52	19.4	0.01	0.01	0.04	126	210
143		9.37	9.35	33.754	26.086	194.4	0.405	3.51	54.3	27.9	1.89	24.9	0.00	0.02	0.05	144	209
150	ISL	9.18	9.16	33.794	26.148	188.7	0.418	3.37	52.0	29.6	1.93	25.9	0.00	0.02	0.05	151	
168		8.74	8.72	33.875	26.281	176.3	0.451	3.09	47.2	32.4	2.03	27.1	0.00	0.01	0.04	169	208
199		8.45	8.43	33.973	26.403	165.2	0.504	3.03	46.0	33.9	2.00	27.0	0.00	0.00	0.03	200	207
200	ISL	8.44	8.42	33.975	26.406	164.9	0.505	3.03	46.0	34.0	2.00	27.0	0.00			201	
229		7.98	7.96	34.014	26.506	155.8	0.552	2.85	42.8	38.2	2.10	28.4	0.01			230	206
250	ISL	7.48	7.46	34.019	26.583	148.6	0.584	2.64	39.2	43.3	2.23	30.2	0.01			251	
270		7.04	7.01	34.017	26.643	143.0	0.613	2.40	35.3	48.4	2.36	32.1	0.01			272	205
300	ISL	6.84	6.81	34.010	26.665	141.3	0.656	1.93	28.2	53.3	2.53	34.1	0.01			302	
318		6.78	6.75	34.008 D	26.671	140.9	0.681	1.66	24.3	55.9	2.62	35.1	0.01			320	204
377		6.04	6.01	34.076	26.822	127.0	0.760	1.32	19.0	66.6	2.82	38.0	0.00			379	203
400	ISL	5.92	5.89	34.102	26.858	123.8	0.789	1.12	16.0	70.2	2.89	38.9	0.00			403	
438		5.81	5.77	34.145	26.906	119.7	0.835	0.80	11.4	75.5	3.01	40.0	0.00			441	202
500	ISL	5.60	5.56	34.231	27.000	111.4	0.907	0.48	6.8	82.8	3.16	41.1	0.01			503	
519		5.54	5.50	34.257	27.028	108.9	0.928	0.38	5.4	85.0	3.21	41.4	0.01			523	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 59.5 N	122 23.9 W	16/08/99	1152 UTC	4120 m	360 15 kn			1019.0 mb	17.2 C	15.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.89	17.89	33.194	23.917	398.0	0.000	5.59	102.9	2.6	0.29	0.1	0.00	0.10	0.02	0	
1		17.89	17.89	33.194	23.917	398.0	0.004	5.59	102.9	2.6	0.29	0.1	0.00	0.10	0.02	1	220
10	ISL	17.89	17.89	33.195	23.918	398.2	0.040	5.58	102.7	2.6	0.29	0.1	0.00	0.10	0.02	10	
16		17.89	17.89	33.195	23.919	398.4	0.064	5.58	102.7	2.6	0.29	0.1	0.00	0.10	0.02	16	219
20	ISL	17.72	17.72	33.224	23.982	392.4	0.080	5.62	103.1	2.6	0.28	0.1	0.00	0.10	0.02	20	
30	ISL	17.11	17.11	33.303	24.188	373.1	0.118	5.75	104.3	2.6	0.26	0.1	0.00	0.09	0.02	30	
31		17.03	17.02	33.312	24.214	370.7	0.122	5.77	104.5	2.6	0.26	0.1	0.00	0.09	0.02	31	218
46		15.76	15.75	33.364	24.546	339.5	0.175	5.96	105.3	2.6	0.25	0.1	0.00	0.12	0.03	46	217
50	ISL	15.14	15.13	33.272	24.612	333.2	0.188	6.07	105.9	2.6	0.26	0.1	0.00	0.12	0.03	50	
60		13.70	13.69	33.067	24.758	319.5	0.221	6.29	106.4	2.6	0.30	0.1	0.00	0.12	0.03	60	216
75	ISL	13.21	13.20	33.201	24.960	300.6	0.267	6.14	102.9	2.9	0.30	0.1	0.00	0.18	0.07	75	
76		13.18	13.17	33.206	24.970	299.6	0.270	6.12	102.5	2.9	0.30	0.1	0.00	0.19	0.08	76	215
86		13.06	13.05	33.249	25.028	294.4	0.300	6.05	101.1	3.1	0.32	0.2	0.01	0.33	0.15	86	214
95		12.79	12.78	33.292	25.114	286.4	0.326	5.92	98.4	3.5	0.36	0.8	0.05	0.33	0.18	95	213
100	ISL	12.82	12.81	33.314	25.126	285.5	0.341	5.85	97.3	3.8	0.39	1.2	0.07	0.33	0.18	100	
106		12.86	12.85	33.338	25.137	284.6	0.358	5.73	95.4	4.2	0.43	1.9	0.09	0.34	0.19	106	212
114		13.28	13.26	33.526	25.199	279.0	0.380	5.46	91.8	5.1	0.50	3.4	0.08	0.36	0.19	114	211
125		13.32	13.30	33.741	25.358	264.2	0.410	5.28	89.0	5.5	0.51	4.2	0.08	0.27	0.16	126	210
141		11.38	11.36	33.463	25.514	249.3	0.451	4.99	80.6	9.1	0.85	8.9	0.04	0.17	0.12	142	209
150	ISL	10.89	10.87	33.516	25.643	237.1	0.473	4.67	74.6	12.4	1.09	12.6	0.02	0.11	0.10	151	
164		10.46	10.44	33.694	25.857	217.0	0.505	4.15	65.8	17.8	1.42	18.0	0.01	0.03	0.07	165	208
193		9.31	9.29	33.887	26.201	184.6	0.563	3.60	55.7	25.0	1.67	22.5	0.01	0.00	0.06	194	207
200	ISL	9.12	9.10	33.913	26.252	179.9	0.576	3.49	53.8	26.7	1.73	23.5	0.01			201	
227		8.53	8.51	33.976	26.394	166.7	0.623	3.09	47.0	33.1	1.95	26.6	0.01			228	206
250	ISL	8.14	8.11	34.009	26.479	158.8	0.660	2.79	42.1	37.4	2.09	28.5	0.01			251	
271		7.84	7.81	34.032	26.541	153.1	0.693	2.50	37.4	41.2	2.22	29.9	0.01			272	205
300	ISL	7.49	7.46	34.079	26.629	145.1	0.736	1.97	29.3	47.6	2.43	32.2	0.01			302	
316		7.32	7.29	34.106	26.675	141.0	0.759	1.67	24.7	51.2	2.55	33.4	0.01			318	204
385		6.81	6.77	34.216	26.832	126.8	0.851	0.80	11.7	64.6	2.92	37.1	0.01			387	203
400	ISL	6.71	6.67	34.230	26.857	124.6	0.870	0.69	10.1	66.9	2.97	37.7	0.01			402	
435		6.48	6.44	34.257	26.909	120.0	0.913	0.52	7.6	71.7	3.05	38.7	0.01			438	202
500	ISL	6.08	6.04	34.298	26.994	112.6	0.989	0.41	5.9	79.0	3.17	39.9	0.01			503	
508		6.03	5.99	34.303	27.004	111.6	0.997	0.40	5.8	79.9	3.18	40.1	0.01			511	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 39.9 N	123 4.2 W	16/08/99	1748 UTC	4141 m	320 06 kn	350 05 08	1	1023.0 mb	19.7 C	16.5 C	24m	7/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.34	17.34	33.202	24.055	384.8	0.000	5.74	104.5	2.9	0.35	0.3	0.01	0.17	0.03	0	
2		17.34	17.34													2	223
2	A	17.34	17.34	33.202	24.055	384.8	0.008	5.74	104.5	2.9	0.35	0.3	0.01	0.17	0.03	2	222
8		17.31	17.31	33.203	24.063	384.3	0.031	5.75	104.7	2.7	0.37	0.3	0.01	0.17	0.03	8	221
10	ISL	17.30	17.30	33.204	24.067	384.0	0.038	5.74	104.5	2.7	0.36	0.3	0.01	0.17	0.03	10	
15	A	17.29	17.29	33.206	24.071	383.8	0.058	5.73	104.2	2.8	0.35	0.3	0.01	0.18	0.03	15	220
20	ISL	17.08	17.08	33.327	24.214	370.4	0.077	5.77	104.6	2.7	0.29	0.1	0.00	0.17	0.03	20	
24		16.90	16.90	33.435	24.339	358.6	0.091	5.80	104.9	2.6	0.25	0.0	0.00	0.16	0.03	24	219
30	ISL	16.84	16.84	33.488	24.394	353.5	0.112	5.81	105.0	2.5	0.24	0.0	0.00	0.14	0.03	30	
33	A	16.81	16.80	33.511	24.418	351.3	0.123	5.82	105.1	2.5	0.23	0.0	0.00	0.13	0.03	33	218
42		14.44	14.43	33.128	24.651	329.2	0.154	6.27	107.7	2.4	0.32	0.0	0.00	0.24	0.08	42	217
50	A	13.67	13.66	33.072	24.767	318.3	0.180	6.36	107.5	2.4	0.36	0.2	0.02	0.46	0.19	50	216
57		13.41	13.40	33.075	24.822	313.2	0.202	6.27	105.4	2.5	0.36	0.3	0.02	0.52	0.20	57	215
66	A	12.91	12.90	33.081	24.927	303.5	0.229	6.10	101.5	3.0	0.42	0.9	0.12	0.52	0.26	66	214
75	ISL	11.91	11.90	33.053	25.096	287.4	0.256	5.89	95.9	4.4	0.55	3.0	0.11	0.37	0.21	75	
79		11.49	11.48	33.044	25.167	280.8	0.267	5.81	93.8	5.0	0.61	4.0	0.11	0.30	0.18	79	213
93	A	11.22	11.21	33.066	25.233	274.8	0.306	5.73	92.0	6.0	0.67	5.0	0.04	0.22	0.11	93	212
100	ISL	10.94	10.93	33.092	25.303	268.2	0.325	5.65	90.2	7.0	0.73	6.0	0.03	0.15	0.09	100	
106		10.72	10.71	33.133	25.374	261.6	0.341	5.52	87.7	8.2	0.81	7.3	0.03	0.10	0.08	106	211
120		10.65	10.64	33.328	25.538	246.3	0.377	4.92	78.1	12.5	1.10	12.2	0.03	0.07	0.09	121	210
125	ISL	10.59	10.58	33.398	25.603	240.2	0.389	4.73	75.0	13.9	1.20	13.9	0.03	0.06	0.08	126	
139		10.32	10.30	33.571	25.785	223.2	0.421	4.27	67.4	17.7	1.45	18.0	0.02	0.03	0.05	140	209
150	ISL	10.01	9.99	33.650	25.899	212.5	0.445	4.07	63.9	20.9	1.60	20.4	0.02	0.02	0.05	151	
169		9.41	9.39	33.755	26.081	195.5	0.484	3.80	58.9	26.2	1.78	23.5	0.02	0.01	0.04	170	208
198		8.52	8.50	33.979	26.397	165.8	0.536	3.16	48.1	32.5	1.93	26.1	0.01	0.00	0.03	199	207
200	ISL	8.48	8.46	33.985	26.408	164.8	0.540	3.12	47.4	32.9	1.94	26.3	0.01			201	
229		8.02	8.00	34.018	26.503	156.1	0.586	2.63	39.5	39.0	2.16	29.1	0.01			230	206
250	ISL	7.71	7.69	34.032	26.560	150.9	0.618	2.43	36.3	42.6	2.26	30.5	0.01			251	
268		7.49	7.46	34.043	26.600	147.3	0.645	2.29	34.0	45.3	2.34	31.5	0.01			269	205
300	ISL	7.30	7.27	34.083	26.659	142.2	0.692	1.88	27.8	49.7	2.49	33.1	0.01			302	
319		7.22	7.19	34.106	26.688	139.6	0.718	1.63	24.1	52.2	2.58	33.9	0.01			321	204
378		6.68	6.65	34.140	26.790	130.6	0.798	1.18	17.2	61.0	2.79	36.6	0.01			380	203
400	ISL	6.59	6.55	34.168	26.824	127.6	0.826	0.99	14.4	64.0	2.87	37.3	0.01			402	
437		6.46	6.42	34.218	26.881	122.7	0.873	0.68	9.9	68.9	3.00	38.4	0.01			440	202
500	ISL	6.09	6.05	34.269	26.969	114.8	0.948			76.8	3.12	40.1	0.01			503	
512		6.02	5.97	34.279	26.986	113.3	0.961			78.3	3.14	40.4	0.01			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 19.4 N	123 44.7 W	17/08/99	0024 UTC	4023 m	330 09 kn	340 02 06	1	1021.1 mb	18.6 C	17.1 C	27m	1/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.58	18.58	33.241	23.784	410.7	0.000	5.72	106.7	2.8	0.36	0.5	0.01	0.11	0.01	0	
2		18.58	18.58	33.241	23.784	410.8	0.008	5.72	106.7	2.8	0.36	0.5	0.01	0.11	0.01	2	220
10	ISL	18.08	18.08	33.245	23.910	398.9	0.041	5.76	106.4	2.8	0.36	0.6	0.01	0.12	0.03	10	
15		17.59	17.59	33.256	24.038	387.0	0.060	5.78	105.8	2.8	0.36	0.6	0.01	0.14	0.04	15	219
20	ISL	17.22	17.22	33.293	24.154	376.0	0.079	5.89	107.1	2.8	0.36	0.6	0.01	0.17	0.05	20	
30		16.39	16.39	33.344	24.387	354.1	0.116	6.14	109.8	2.7	0.36	0.6	0.02	0.22	0.06	30	218
45		14.78	14.77	33.230	24.657	328.7	0.167	6.34	109.8	3.0	0.38	0.7	0.02	0.27	0.09	45	217
50	ISL	14.33	14.32	33.201	24.730	321.9	0.183	6.32	108.4	3.0	0.42	1.0	0.03	0.30	0.10	50	
55		13.92	13.91	33.175	24.796	315.8	0.199	6.28	106.8	3.0	0.45	1.4	0.05	0.33	0.11	55	216
65		13.21	13.20	33.123	24.900	306.1	0.230	6.21	104.0	3.2	0.47	1.6	0.09	0.41	0.20	65	215
74		12.76	12.75	33.122	24.988	297.9	0.258	6.07	100.7	4.1	0.54	2.5	0.29	0.49	0.32	74	214
75	ISL	12.70	12.69	33.122	25.000	296.8	0.260	6.04	100.1	4.2	0.55	2.7	0.29	0.48	0.32	75	
84		12.24	12.23	33.153	25.112	286.2	0.287	5.79	95.0	5.0	0.65	4.7	0.25	0.38	0.28	84	213
95		12.08	12.07	33.307	25.262	272.2	0.317	5.54	90.7	6.6	0.79	7.4	0.05	0.21	0.17	95	212
100	ISL	11.74	11.73	33.315	25.332	265.6	0.331	5.46	88.8	7.9	0.87	8.7	0.04	0.16	0.13	100	
110		11.00	10.99	33.319	25.469	252.7	0.357	5.24	83.8	11.0	1.05	11.4	0.02	0.09	0.08	110	211
125		10.54	10.53	33.467	25.666	234.3	0.393	4.52	71.7	15.1	1.30	15.6	0.01	0.06	0.10	126	210
144		9.93	9.91	33.688	25.943	208.3	0.435	3.84	60.2	21.8	1.63	21.0	0.01	0.02	0.04	145	209
150	ISL	9.80	9.78	33.734	26.000	202.9	0.448	3.68	57.5	23.0	1.68	21.9	0.01	0.02	0.04	151	
170		9.45	9.43	33.841	26.142	189.8	0.487	3.28	50.9	25.9	1.79	23.7	0.01	0.01	0.04	171	208
198		9.05	9.03	33.926	26.273	177.8	0.538	2.91	44.8	30.2	1.96	26.1	0.01	0.00	0.03	199	207
200	ISL	9.02	9.00	33.930	26.281	177.0	0.542	2.92	44.9	30.4	1.96	26.1	0.01			201	
228		8.61	8.59	33.971	26.377	168.3	0.590	3.06	46.6	32.3	1.97	26.5	0.01			229	206
250	ISL	8.36	8.33	34.003	26.441	162.5	0.627	2.92	44.2	34.8	2.04	27.5	0.01			251	
268		8.15	8.12	34.023	26.489	158.3	0.656	2.73	41.2	37.4	2.12	28.5	0.01			269	205
300	ISL	7.56	7.53	34.032	26.582	149.6	0.705	2.49	37.0	43.4	2.27	30.5	0.01			302	
318		7.23	7.20	34.038	26.634	144.8	0.731	2.32	34.3	47.2	2.36	31.8	0.01			320	204
376		6.72	6.69	34.116	26.765	132.9	0.812	1.37	20.0	59.1	2.74	36.0	0.01			378	203
400	ISL	6.46	6.42	34.135	26.815	128.3	0.843	1.11	16.1	64.1	2.85	37.4	0.01			402	
435		6.11	6.07	34.160	26.880	122.4	0.887	0.83	11.9	71.0	2.98	39.1	0.01			438	202
500	ISL	5.76	5.72	34.231	26.980	113.4	0.964	0.50	7.1	80.1	3.14	40.8	0.01			503	
521		5.65	5.61	34.254	27.012	110.5	0.987	0.40	5.7	83.0	3.19	41.4	0.01			524	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 28.9 N	117 46.0 W	13/08/99	2301	UTC	64 m	240	02 kn	270 01 09	2	1013.3 mb	18.8 C	17.7 C	12m	8/8	ST

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	19.25	19.25	33.616	23.901	399.5	0.000	6.06	114.7	3.3	0.22	0.1	0.00	0.55	0.08	0	
1		19.25	19.25	33.616	23.901	399.5	0.004	6.06	114.7	3.3	0.22	0.1	0.00	0.55	0.08	1	207
6		18.43	18.43	33.610	24.103	380.4	0.023	6.23	116.1	3.4	0.20	0.1	0.00	0.74	0.11	6	206
10		17.84	17.84	33.606	24.245	367.0	0.038	6.33	116.7	3.4	0.20	0.1	0.00	0.74	0.15	10	205
20	ISL	13.59	13.59	33.568	25.166	279.5	0.071	6.08	102.9	5.8	0.50	1.4	0.06	1.42	0.33	20	
21		13.15	13.15	33.575	25.260	270.6	0.074	6.05	101.5	6.2	0.55	1.5	0.07	1.47	0.35	21	204
30		12.15	12.15	33.605	25.479	250.0	0.097	4.73	77.7	11.4	1.11	11.2	0.35	0.61	0.45	30	203
40		11.51	11.50	33.664	25.644	234.5	0.121	4.28	69.4	13.6	1.28	14.8	0.11	0.41	0.34	40	202
50	ISL	10.96	10.95	33.709	25.779	221.9	0.144	3.86	61.9	16.9	1.45	17.6	0.06	0.19	0.23	50	
52		10.85	10.84	33.718	25.806	219.4	0.148	3.77	60.3	17.5	1.48	18.2	0.05	0.14	0.21	52	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 25.1 N	117 54.3 W	14/08/99	0138	UTC	613 m	180	01 kn	250 01 10	4	1012.0 mb	19.2 C	18.1 C		1/8	ST

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	19.97	19.97	33.576	23.685	420.1	0.000	5.68	109.0	3.1	0.21	0.1	0.00	0.23	0.06	0	
1		19.97	19.97	33.576	23.685	420.1	0.004	5.68	109.0	3.1	0.21	0.1	0.00	0.23	0.06	1	220
10		19.11	19.11	33.572	23.904	399.6	0.041	5.66	106.9	3.1	0.22	0.1	0.00	0.22	0.06	10	219
19		16.16	16.16	33.576	24.618	331.8	0.074	6.25	111.5	3.6	0.29	0.2	0.01	0.44	0.11	19	218
20	ISL	15.90	15.90	33.575	24.676	326.3	0.077	6.25	110.9	3.7	0.31	0.3	0.02	0.47	0.11	20	
30		13.92	13.92	33.566	25.097	286.4	0.108	6.25	106.5	5.1	0.50	2.3	0.10	0.74	0.18	30	217
40		12.89	12.88	33.554	25.296	267.7	0.136	5.76	96.1	6.8	0.71	5.8	0.21	0.85	0.32	40	216
49		12.28	12.27	33.596	25.447	253.5	0.159	5.00	82.4	9.6	0.98	10.2	0.19	0.60	0.36	49	215
50	ISL	12.25	12.24	33.599	25.455	252.7	0.162	4.97	81.8	9.8	1.00	10.5	0.18	0.59	0.36	50	
60		11.97	11.96	33.620	25.525	246.4	0.187	4.74	77.6	11.2	1.11	12.4	0.06	0.46	0.32	60	214
70		11.52	11.51	33.655	25.636	236.0	0.211	4.33	70.2	13.7	1.25	14.7	0.03	0.24	0.22	70	213
75	ISL	11.24	11.23	33.686	25.711	228.9	0.222	4.09	65.9	15.5	1.34	16.1	0.03	0.16	0.18	75	
85		10.75	10.74	33.752	25.850	215.9	0.245	3.64	58.1	18.9	1.50	18.6	0.02	0.06	0.12	85	212
99		10.48	10.47	33.804	25.938	207.8	0.274	3.30	52.4	21.6	1.65	20.7	0.03	0.03	0.09	99	211
100	ISL	10.46	10.45	33.808	25.945	207.2	0.276	3.28	52.0	21.8	1.66	20.8	0.03	0.03	0.09	100	
119		10.07	10.06	33.874	26.064	196.3	0.315	3.02	47.5	24.7	1.79	22.7	0.01	0.01	0.10	120	210
125	ISL	9.94	9.93	33.889	26.097	193.2	0.326	2.98	46.8	25.5	1.83	23.2	0.01	0.01	0.09	126	
139		9.65	9.63	33.928	26.176	185.9	0.353	2.88	44.9	27.4	1.91	24.3	0.01	0.00	0.05	140	209
150	ISL	9.47	9.45	33.977	26.244	179.6	0.373	2.70	41.9	29.3	1.99	25.4	0.01	0.00	0.05	151	
170		9.20	9.18	34.065	26.357	169.3	0.408	2.35	36.3	33.0	2.14	27.2	0.02	0.00	0.05	171	208
200		8.82	8.80	34.133	26.471	158.9	0.457	2.05	31.4	37.5	2.30	28.9	0.02	0.00	0.03	201	207
228		8.75	8.73	34.179	26.519	155.0	0.501	1.71	26.2	40.3	2.42	29.9	0.02			229	206
250	ISL	8.68	8.65	34.233	26.572	150.3	0.535	1.33	20.3	43.5	2.56	31.0	0.02			251	
269		8.61	8.58	34.276	26.617	146.4	0.563	1.03	15.7	46.2	2.68	31.8	0.02			271	205
300	ISL	8.46	8.43	34.298	26.658	143.1	0.608	0.87	13.2	48.8	2.76	32.4	0.01			302	
317		8.35	8.32	34.300	26.677	141.5	0.632	0.84	12.7	50.1	2.78	32.7	0.01			319	204
377		7.74	7.70	34.300	26.768	133.6	0.714	0.68	10.2	56.6	2.90	34.7	0.00			379	203
400	ISL	7.49	7.45	34.294	26.800	130.7	0.745	0.65	9.7	59.2	2.95	35.4	0.00			403	
436		7.09	7.05	34.289	26.852	126.0	0.791	0.59	8.7	63.6	3.03	36.5	0.00			439	202
500	ISL	6.45	6.40	34.316	26.960	116.2	0.868	0.37	5.4	74.1	3.16	38.8	0.00			503	
522		6.23	6.18	34.326	26.997	112.7	0.894	0.30	4.3	77.7	3.20	39.6	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 15.3 N	118 15.4 W	13/08/99	1831	UTC	296 m	360	07 kn	280 04 06	1	1015.0 mb	23.0 C	19.0 C	22m	2/8	CI

DEPTH		TEMP	POT TEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	PRES	SAMP
m		DEG C	DEG C		THETA			ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	db	
0	ISL	19.45	19.45	33.606	23.843	405.1	0.000	5.56	105.7	3.0	0.23	0.1	0.01	0.19	0.04	0	
1	A	19.45	19.45	33.606	23.843	405.1	0.004	5.56	105.7	3.0	0.23	0.1	0.01	0.19	0.04	1	218
1		19.33	19.33	33.610	23.876	401.9	0.004									1	219
9		19.10	19.10	33.597	23.925	397.5	0.036	5.57	105.2	2.9	0.24	0.1	0.01			9	217
10	ISL	19.09	19.09	33.597	23.928	397.3	0.040	5.57	105.1	2.9	0.24	0.1	0.01	0.22	0.05	10	
15	A	19.03	19.03	33.594	23.941	396.2	0.060	5.59	105.4	2.9	0.23	0.1	0.01	0.23	0.05	15	216
20	ISL	18.49	18.49	33.595	24.077	383.4	0.079	5.79	108.0	2.8	0.23	0.1	0.01	0.28	0.07	20	
23		17.90	17.90	33.589	24.218	370.1	0.091	5.97	110.2	2.7	0.23	0.1	0.01	0.32	0.08	23	215
30	ISL	15.40	15.40	33.553	24.771	317.5	0.115	6.57	115.4	3.5	0.30	0.1	0.01	0.45	0.11	30	
31	A	15.04	15.04	33.553	24.850	310.0	0.118	6.63	115.6	3.6	0.32	0.1	0.01	0.48	0.12	31	214
38		14.00	13.99	33.559	25.075	288.7	0.139	6.39	109.1	4.6	0.44	1.2	0.06	1.00	0.29	38	213
45	A	13.33	13.32	33.565	25.217	275.4	0.159	6.11	102.9	5.7	0.55	2.8	0.13	0.99	0.36	45	212
50	ISL	12.87	12.86	33.573	25.315	266.1	0.172	5.63	93.9	7.1	0.74	6.1	0.24	0.84	0.37	50	
53		12.63	12.62	33.579	25.367	261.3	0.180	5.34	88.6	8.0	0.86	8.2	0.29	0.73	0.37	53	211
60	A	12.30	12.29	33.600	25.447	253.8	0.198	5.07	83.6	9.4	0.99	10.4	0.15	0.56	0.39	60	210
73		11.63	11.62	33.646	25.609	238.7	0.230	4.56	74.1	12.7	1.21	13.9	0.06	0.30	0.24	73	209
75	ISL	11.54	11.53	33.654	25.632	236.5	0.235	4.48	72.7	13.3	1.24	14.4	0.05	0.26	0.22	75	
85	A	11.09	11.08	33.702	25.751	225.4	0.258	4.05	65.1	16.5	1.40	17.1	0.04	0.12	0.14	85	208
100		10.32	10.31	33.807	25.968	205.0	0.290	3.32	52.5	21.5	1.64	20.7	0.03	0.03	0.06	100	207
119		9.84	9.83	33.878	26.105	192.3	0.328	3.07	48.1	24.9	1.80	23.0	0.02	0.01	0.04	120	206
125	ISL	9.69	9.68	33.904	26.151	188.1	0.339	2.98	46.5	26.2	1.85	23.7	0.02	0.01	0.04	126	
138		9.40	9.38	33.956	26.239	179.9	0.363	2.83	43.9	28.7	1.94	25.0	0.02	0.00	0.04	139	205
150	ISL	9.23	9.21	33.978	26.284	175.8	0.385	2.80	43.3	29.9	1.97	25.6	0.02	0.00	0.03	151	
168		9.06	9.04	33.999	26.328	172.0	0.416	2.78	42.8	31.1	2.01	26.2	0.02	0.00	0.02	169	204
198		8.85	8.83	34.068	26.416	164.2	0.466	2.43	37.2	34.6	2.16	27.6	0.03	0.00	0.03	199	203
200	ISL	8.85	8.83	34.074	26.420	163.8	0.470	2.39	36.6	34.8	2.17	27.7	0.03			201	
229		8.84	8.82	34.159	26.489	157.9	0.516	1.84	28.2	38.1	2.36	29.3	0.03			230	202
250	ISL	8.70	8.67	34.193	26.538	153.6	0.549	1.62	24.8	41.0	2.46	30.2	0.03			251	
275		8.53	8.50	34.233	26.596	148.5	0.587	1.35	20.6	44.5	2.59	31.3	0.04			277	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 11.4 N	118 23.1 W	13/08/99	1312	UTC	1175 m	260	05 kn	290 03 06	1	1014.5 mb	17.5 C	16.5 C		2/8	CI

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.03	19.03	33.616	23.957	394.1	0.000	5.58	105.2	3.2	0.23	0.1	0.00	0.21	0.05	0	
2		19.03	19.03	33.616	23.957	394.2	0.008	5.58	105.2	3.2	0.23	0.1	0.00	0.21	0.05	2	220
10		19.02	19.02	33.617	23.961	394.1	0.039	5.58	105.2	3.1	0.23	0.1	0.00	0.23	0.05	10	219
20		18.12	18.12	33.601	24.173	374.2	0.078	5.92	109.7	2.7	0.23	0.1	0.00	0.27	0.07	20	218
30		13.84	13.84	33.561	25.110	285.2	0.111	6.23	106.0	5.3	0.50	2.2	0.09	0.67	0.17	30	217
40		12.75	12.74	33.586	25.348	262.7	0.138	5.45	90.7	8.0	0.84	7.6	0.29	0.66	0.30	40	216
50		12.19	12.18	33.607	25.473	251.1	0.164	5.01	82.4	10.1	1.04	11.1	0.11	0.54	0.31	50	215
61		11.63	11.62	33.646	25.609	238.4	0.191	4.53	73.6	13.0	1.21	13.9	0.05	0.38	0.30	61	214
71		11.37	11.36	33.674	25.678	232.0	0.214	4.20	67.9	14.8	1.31	15.6	0.04	0.27	0.25	71	213
75	ISL	11.17	11.16	33.693	25.729	227.2	0.224	4.04	65.0	16.0	1.37	16.6	0.03	0.20	0.20	75	
85		10.64	10.63	33.750	25.868	214.2	0.246	3.66	58.3	19.2	1.53	19.0	0.02	0.06	0.10	85	212
100		10.21	10.20	33.830	26.005	201.4	0.277	3.23	51.0	22.5	1.69	21.4	0.02	0.03	0.09	100	211
121		9.90	9.89	33.871	26.090	193.8	0.318	3.03	47.5	25.0	1.81	23.1	0.02	0.01	0.05	122	210
125	ISL	9.80	9.79	33.895	26.125	190.5	0.326	2.94	46.0	26.0	1.85	23.7	0.02	0.01	0.05	126	
141		9.38	9.36	33.995	26.273	176.7	0.355	2.57	39.9	30.3	2.03	25.9	0.02	0.00	0.07	142	209
150	ISL	9.24	9.22	34.018	26.314	173.0	0.371	2.50	38.6	31.6	2.07	26.5	0.02	0.00	0.07	151	
171		9.01	8.99	34.047	26.374	167.7	0.407	2.40	36.9	33.7	2.14	27.3	0.02	0.00	0.06	172	208
200	ISL	8.75	8.73	34.118	26.471	159.0	0.454	2.04	31.2	37.7	2.29	28.9	0.03	0.00	0.03	201	
203		8.72	8.70	34.125	26.481	158.1	0.459	2.00	30.6	38.2	2.31	29.1	0.03	0.00	0.03	204	207
231		8.34	8.32	34.162	26.569	150.1	0.502	1.72	26.1	42.7	2.46	30.6	0.05			232	206
250	ISL	8.14	8.11	34.167	26.603	147.1	0.530	1.62	24.4	44.8	2.52	31.5	0.04			251	
268		7.98	7.95	34.169	26.628	144.9	0.557	1.54	23.2	46.7	2.56	32.2	0.03			270	205
300	ISL	7.69	7.66	34.198	26.694	139.1	0.602	1.28	19.1	51.3	2.67	33.5	0.02			302	
315		7.58	7.55	34.216	26.724	136.5	0.623	1.14	17.0	53.4	2.73	34.1	0.02			317	204
375		7.44	7.40	34.290	26.803	129.9	0.703	0.63	9.4	59.3	2.93	35.6	0.02			377	203
400	ISL	7.21	7.17	34.288	26.834	127.2	0.735	0.59	8.7	62.2	2.98	36.3	0.02			403	
435		6.86	6.82	34.278	26.875	123.6	0.779	0.54	7.9	66.2	3.03	37.4	0.01			438	202
500	ISL	6.47	6.42	34.299	26.944	117.7	0.857	0.40	5.8	72.3	3.13	39.0	0.01			503	
517		6.37	6.32	34.305	26.962	116.1	0.877	0.36	5.2	73.9	3.15	39.4	0.01			521	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.9 N	118 56.7 W	13/08/99	0717	UTC	1691 m	300	12 kn			1015.4 mb	17.0 C	15.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.41	17.41	33.657	24.387	353.1	0.000	5.73	104.8	2.0	0.31	0.1	0.00	0.24	0.04	0	
2		17.41	17.41	33.657	24.387	353.2	0.007	5.73	104.8	2.0	0.31	0.1	0.00	0.24	0.04	2	220
10	ISL	17.31	17.31	33.661	24.415	350.9	0.035	5.74	104.8	1.8	0.30	0.1	0.00	0.27	0.05	10	
15		17.25	17.25	33.663	24.431	349.5	0.053	5.74	104.6	1.7	0.29	0.1	0.00	0.29	0.06	15	219
20	ISL	16.42	16.42	33.658	24.621	331.5	0.070	5.73	102.8	2.5	0.38	1.0	0.05	0.55	0.14	20	
30	ISL	14.47	14.47	33.664	25.058	290.2	0.101	5.71	98.5	5.1	0.64	4.1	0.17	1.05	0.33	30	
31		14.25	14.25	33.667	25.106	285.6	0.104	5.71	98.1	5.5	0.67	4.5	0.19	1.10	0.35	31	218
45		12.46	12.45	33.669	25.469	251.3	0.141	4.88	80.7	11.6	1.11	11.4	0.38	1.00	0.47	45	217
50	ISL	11.96	11.95	33.670	25.565	242.3	0.154	4.61	75.5	13.4	1.22	13.4	0.35	0.69	0.38	50	
55		11.54	11.53	33.674	25.647	234.6	0.166	4.37	70.9	15.0	1.31	15.2	0.28	0.37	0.28	55	216
65		11.01	11.00	33.703	25.766	223.5	0.188	4.00	64.2	17.5	1.45	17.6	0.11	0.20	0.19	65	215
75		10.70	10.69	33.727	25.839	216.7	0.210	3.83	61.0	19.2	1.52	18.9	0.06	0.15	0.17	75	214
86		10.13	10.12	33.807	26.000	201.6	0.233	3.40	53.5	22.8	1.70	21.6	0.04	0.06	0.11	86	213
95		9.73	9.72	33.883	26.127	189.7	0.251	3.07	47.9	26.1	1.83	23.5	0.04	0.03	0.09	95	212
100	ISL	9.58	9.57	33.904	26.168	185.8	0.260	2.99	46.5	27.1	1.87	24.0	0.04	0.03	0.09	101	
109		9.39	9.38	33.926	26.217	181.4	0.277	2.92	45.3	28.3	1.91	24.7	0.03	0.02	0.08	110	211
122		9.14	9.13	33.954	26.279	175.7	0.300	2.78	42.9	30.6	1.99	26.1	0.02	0.02	0.09	123	210
125	ISL	9.09	9.08	33.960	26.292	174.5	0.305	2.76	42.5	31.1	2.00	26.3	0.02	0.02	0.09	126	
145		8.75	8.73	34.007	26.383	166.2	0.340	2.58	39.4	34.1	2.10	27.6	0.01	0.01	0.08	146	209
150	ISL	8.67	8.65	34.021	26.406	164.1	0.348	2.52	38.5	35.0	2.13	27.9	0.01	0.01	0.08	151	
168		8.42	8.40	34.068	26.482	157.2	0.377	2.28	34.6	38.4	2.24	29.2	0.01	0.01	0.06	169	208
198		8.04	8.02	34.117	26.578	148.5	0.423	1.73	26.0	44.5	2.47	31.9	0.01	0.00	0.04	199	207
200	ISL	8.02	8.00	34.121	26.584	147.9	0.426	1.69	25.4	44.9	2.48	32.0	0.01			201	
230		7.78	7.76	34.166	26.655	141.6	0.469	1.30	19.5	49.9	2.65	33.7	0.01			231	206
250	ISL	7.49	7.47	34.159	26.691	138.4	0.497	1.31	19.5	52.4	2.68	34.4	0.01			252	
268		7.23	7.20	34.148	26.719	135.9	0.522	1.31	19.4	54.6	2.70	34.9	0.01			270	205
300	ISL	6.95	6.92	34.170	26.776	130.9	0.564	1.10	16.2	59.3	2.81	36.0	0.01			302	
319		6.84	6.81	34.191	26.808	128.1	0.589	0.93	13.6	62.1	2.88	36.7	0.01			321	204
380		6.66	6.63	34.262	26.888	121.3	0.665	0.53	7.7	68.8	3.06	38.3	0.01			382	203
400	ISL	6.56	6.52	34.272	26.910	119.5	0.689	0.48	7.0	70.7	3.09	38.7	0.01			403	
436		6.38	6.34	34.283	26.943	116.8	0.732	0.42	6.1	73.8	3.14	39.3	0.01			439	202
500	ISL	6.09	6.05	34.314	27.005	111.5	0.805	0.31	4.5	78.7	3.21	40.4	0.01			503	
509		6.05	6.01	34.318	27.013	110.8	0.815	0.30	4.3	79.4	3.22	40.5	0.01			513	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.1 N	119 29.1 W	13/08/99	0144	UTC	1315 m	310	20 kn	330 04 06	1	1015.5 mb	17.0 C	15.5 C		1/8	CU

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.63	16.63	33.676	24.586	334.2	0.000			1.8	0.30	0.2	0.01	0.62	0.13	0	
1		16.63	16.63	33.676	24.586	334.3	0.003			1.8	0.30	0.2	0.01	0.62	0.13	1	220
10		16.62	16.62	33.675	24.588	334.4	0.033	5.93	106.8	1.8	0.30	0.2	0.01	0.66	0.14	10	219
20		15.83	15.83	33.666	24.762	318.1	0.066	5.86	103.9	2.9	0.40	0.8	0.04	0.68	0.21	20	218
30		14.91	14.91	33.665	24.964	299.1	0.097	5.86	102.0	3.7	0.52	1.8	0.09	0.87	0.34	30	217
40		14.44	14.43	33.667	25.067	289.6	0.126	5.50	94.8	6.8	0.70	4.2	0.20	0.49	0.30	40	216
50		13.43	13.42	33.707	25.307	267.0	0.154	5.10	86.1	9.9	0.97	8.5	0.30	0.35	0.29	50	215
59		11.39	11.38	33.770	25.749	225.0	0.176	4.17	67.5	17.8	1.42	16.9	0.33	0.19	0.18	59	214
70		10.66	10.65	33.780	25.888	212.0	0.200	3.77	60.1	20.7	1.59	20.0	0.06	0.13	0.16	70	213
75	ISL	10.36	10.35	33.783	25.942	206.9	0.211	3.67	58.1	21.9	1.66	21.1	0.05	0.10	0.13	75	
85		9.88	9.87	33.797	26.035	198.2	0.231	3.53	55.3	24.1	1.77	22.8	0.02	0.04	0.08	85	212
100		9.57	9.56	33.857	26.133	189.1	0.260	3.23	50.3	27.1	1.88	24.5	0.02	0.02	0.07	101	211
118		8.92	8.91	33.942	26.305	173.1	0.293	2.96	45.4	30.9	1.96	26.1	0.02	0.01	0.06	119	210
125	ISL	8.83	8.82	33.956	26.330	170.8	0.305	2.91	44.6	31.6	1.98	26.4	0.02	0.01	0.06	126	
139		8.71	8.70	33.972	26.361	168.1	0.328	2.83	43.2	33.0	2.03	27.1	0.01	0.01	0.06	140	209
150	ISL	8.44	8.42	33.993	26.419	162.7	0.347	2.72	41.3	35.5	2.09	28.1	0.01	0.01	0.06	151	
169		7.98	7.96	34.027	26.515	153.8	0.377	2.51	37.7	39.9	2.21	29.7	0.01	0.00	0.05	170	208
200		7.74	7.72	34.048	26.568	149.3	0.424	2.28	34.1	43.4	2.33	30.9	0.01	0.01	0.04	201	207
229		7.61	7.59	34.093	26.622	144.6	0.466	1.86	27.7	47.1	2.47	32.4	0.01			230	206
250	ISL	7.54	7.52	34.123	26.656	141.8	0.496	1.62	24.1	49.5	2.56	33.2	0.01			251	
270		7.47	7.44	34.148	26.686	139.2	0.525	1.43	21.2	51.9	2.64	33.9	0.01			272	205
300	ISL	7.25	7.22	34.178	26.741	134.4	0.566	1.18	17.4	56.4	2.76	35.2	0.01			302	
318		7.11	7.08	34.193	26.772	131.6	0.590	1.05	15.5	59.2	2.82	35.9	0.01			320	204
378		6.75	6.71	34.241 D	26.860	124.0	0.666	0.73	10.7	66.2	2.98	37.6	0.01			380	203
400	ISL	6.64	6.60	34.249	26.881	122.3	0.693	0.65	9.5	68.2	3.02	38.1	0.01			403	
436		6.46	6.42	34.262	26.916	119.4	0.737	0.53	7.7	71.5	3.07	38.8	0.01			439	202
500	ISL	6.01	5.97	34.314	27.015	110.5	0.810	0.34	4.9	80.3	3.20	40.3	0.01			503	
512		5.93	5.89	34.324	27.033	108.8	0.824	0.30	4.3	81.9	3.23	40.6	0.01			516	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 24.7 N	119 58.2 W	12/08/99	1935	UTC	818 m	320	17 kn	330 04 06	2	1018.6 mb	17.5 C	16.8 C	15m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.96	16.96	33.671	24.505	341.9	0.000	5.79	105.0	1.8	0.30	0.2	0.00	0.49	0.10	0	
2	A	16.96	16.96	33.671	24.505	342.0	0.007	5.79	105.0	1.8	0.30	0.2	0.00	0.49	0.10	2	220
2		16.96	16.96	33.671	24.505	342.0	0.007									2	221
10	ISL	16.94	16.94	33.671	24.510	341.8	0.034	5.80	105.1	1.7	0.30	0.1	0.00	0.50	0.09	10	
11	A	16.94	16.94	33.671	24.510	341.8	0.038	5.80	105.1	1.7	0.38 U	0.1	0.00	0.50	0.09	11	219
20	ISL	16.63	16.63	33.669	24.581	335.3	0.068	5.84	105.2	1.9	0.31	0.2	0.01	0.66	0.16	20	
22	A	16.53	16.53	33.668	24.604	333.2	0.075	5.85	105.2	2.0	0.31	0.2	0.01	0.71	0.18	22	218
30	ISL	15.94	15.94	33.660	24.733	321.2	0.101	5.86	104.1	3.1	0.37	0.5	0.02	0.89	0.28	30	
33	A	15.74	15.73	33.657	24.775	317.2	0.111	5.86	103.7	3.5	0.39	0.7	0.03	0.94	0.32	33	217
40	A	15.56	15.55	33.654	24.813	313.8	0.133	5.78	101.9	4.2	0.43	1.2	0.05	0.93	0.36	40	216
50	ISL	15.37	15.36	33.650	24.853	310.3	0.164	5.71	100.3	5.2	0.48	1.7	0.08	1.00	0.52	50	
51		15.35	15.34	33.650	24.857	310.0	0.167	5.70	100.1	5.3	0.49	1.8	0.08	1.01	0.53	51	215
57	A	15.11	15.10	33.649	24.909	305.2	0.185	5.67	99.1	6.1	0.54	2.6	0.12	0.73	0.38	57	214
72		13.75	13.74	33.651	25.199	277.9	0.229	5.25	89.2	8.3	0.82	6.8	0.33	0.35	0.25	72	213
75	ISL	13.47	13.46	33.655	25.259	272.2	0.237	5.16	87.2	9.0	0.88	7.8	0.34	0.31	0.24	75	
86		12.41	12.40	33.683	25.491	250.3	0.266	4.76	78.7	12.2	1.12	12.0	0.38	0.21	0.21	86	212
100	ISL	11.04	11.03	33.765	25.809	220.2	0.299	3.99	64.1	18.6	1.48	18.3	0.14	0.16	0.17	100	
101		10.95	10.94	33.772	25.831	218.1	0.301	3.93	63.0	19.1	1.50	18.7	0.12	0.16	0.17	101	211
121		9.99	9.98	33.853	26.061	196.6	0.343	3.24	50.9	25.4	1.81	23.4	0.02	0.06	0.10	122	210
125	ISL	9.83	9.82	33.857	26.091	193.8	0.350	3.20	50.1	25.9	1.83	23.8	0.02	0.05	0.09	126	
142		9.29	9.27	33.870	26.190	184.6	0.383	3.13	48.4	27.5	1.87	24.7	0.02	0.01	0.06	143	209
150	ISL	9.14	9.12	33.900	26.237	180.2	0.397	2.97	45.8	29.0	1.93	25.6	0.02	0.01	0.06	151	
175		8.75	8.73	33.995	26.374	167.6	0.441	2.47	37.8	34.4	2.14	28.3	0.01	0.01	0.08	176	208
200	ISL	8.18	8.16	34.021	26.481	157.7	0.481	2.46	37.1	38.6	2.21	29.7	0.02	0.01	0.06	201	
206		8.05	8.03	34.022	26.502	155.8	0.491	2.46	37.0	39.4	2.22	29.9	0.02	0.01	0.05	207	207
229		7.80	7.78	34.027	26.543	152.2	0.526	2.46	36.8	41.4	2.25	30.4	0.01			230	206
250	ISL	7.52	7.50	34.038	26.592	147.8	0.558	2.30	34.2	44.7	2.34	31.6	0.01			251	
258		7.41	7.39	34.044	26.612	145.9	0.569	2.21	32.8	46.2	2.38	32.1	0.01			259	205
300	ISL	7.05	7.02	34.097	26.705	137.7	0.629	1.65	24.3	53.6	2.61	34.5	0.01			302	
324		6.88	6.85	34.128	26.753	133.4	0.662	1.32	19.3	57.8	2.73	35.7	0.01			326	204
389		6.29	6.26	34.168	26.863	123.5	0.745	0.85	12.3	68.6	2.96	38.6	0.01			391	203
400	ISL	6.24	6.20	34.175	26.875	122.5	0.759	0.79	11.4	69.7	2.98	38.9	0.01			403	
443		6.09	6.05	34.205	26.918	118.9	0.810	0.62	8.9	73.4	3.06	39.7	0.01			446	202
500	ISL	5.86	5.82	34.246	26.980	113.6	0.877	0.44	6.3	79.2	3.16	40.8	0.01			503	
501		5.86	5.82	34.247	26.981	113.5	0.878	0.44	6.3	79.3	3.16	40.8	0.01			504	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 5.3 N	120 38.2 W	12/08/99	1326	UTC	3822 m	330	18 kn	330 03 06	1	1018.9 mb	17.8 C	15.8 C		4/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.45	17.45	33.694	24.406	351.3	0.000	5.73	104.9	1.8	0.32	0.1	0.00	0.29	0.05	0	
2		17.45	17.45	33.694	24.406	351.4	0.007	5.73	104.9	1.8	0.32	0.1	0.00	0.29	0.05	2	220
10	ISL	17.45	17.45	33.695	24.407	351.6	0.035	5.72	104.7	1.7	0.32	0.1	0.01	0.28	0.06	10	
15		17.45	17.45	33.695	24.407	351.7	0.053	5.72	104.7	1.7	0.32	0.1	0.01	0.27 A	0.07 A	15	219
20	ISL	17.38	17.38	33.695	24.424	350.3	0.070	5.77	105.5	1.7	0.32	0.1	0.01	0.28	0.07	20	
30		17.09	17.09	33.694	24.493	344.1	0.105	5.85	106.3	1.8	0.33	0.2	0.01	0.29	0.09	30	218
45		16.23	16.22	33.685	24.686	326.1	0.155	5.74	102.6	2.0	0.42	1.0	0.06	0.47	0.15	45	217
50	ISL	14.88	14.87	33.681	24.984	297.9	0.171	5.63	97.9	4.6	0.64	3.9	0.29	0.47	0.20	50	
55		13.51	13.50	33.692	25.279	269.7	0.185	5.48	92.7	7.5	0.88	7.2	0.51	0.48	0.25	55	216
65		12.30	12.29	33.677	25.507	248.3	0.211	5.02	82.8	11.0	1.13	12.2	0.55	0.44	0.27	65	215
75		11.64	11.63	33.678	25.632	236.5	0.235	4.66	75.8	13.8	1.30	15.2	0.06	0.25	0.17	75	214
84		11.10	11.09	33.710	25.755	224.9	0.256	4.30	69.1	17.2	1.44	17.8	0.02	0.13	0.11	84	213
94		10.69	10.68	33.744	25.855	215.6	0.278	4.00	63.7	19.9	1.57	19.6	0.02	0.08	0.08	94	212
100	ISL	10.46	10.45	33.771	25.916	209.9	0.291	3.79	60.1	21.6	1.65	20.8	0.02	0.06	0.07	100	
110		10.13	10.12	33.812	26.005	201.7	0.311	3.49	55.0	24.0	1.75	22.4	0.01	0.04	0.06	111	211
125		9.85	9.84	33.839	26.073	195.4	0.341	3.33	52.1	25.5	1.81	23.5	0.01	0.03	0.07	126	210
143		9.13	9.11	33.934	26.266	177.4	0.375	2.83	43.6	30.5	1.98	26.2	0.01	0.01	0.06	144	209
150	ISL	8.99	8.97	33.952	26.302	174.0	0.387	2.79	42.9	31.4	2.01	26.6	0.01	0.01	0.06	151	
169		8.78	8.76	33.978	26.356	169.2	0.420	2.69	41.1	33.1	2.05	27.1	0.01	0.01	0.05	170	208
199		8.41	8.39	34.027	26.452	160.6	0.469	2.49	37.8	36.9	2.15	28.6	0.01	0.00	0.04	200	207
200	ISL	8.39	8.37	34.028	26.455	160.3	0.471	2.49	37.8	37.0	2.15	28.6	0.01			201	
229		7.89	7.87	34.046	26.544	152.1	0.516	2.40	36.0	41.1	2.25	30.0	0.01			230	206
250	ISL	7.49	7.47	34.042	26.599	147.1	0.547	2.36	35.1	44.5	2.31	31.0	0.01			251	
268		7.17	7.14	34.035	26.639	143.4	0.574	2.32	34.2	47.6	2.37	31.8	0.01			270	205
300	ISL	6.76	6.73	34.032	26.693	138.6	0.619	2.15	31.4	52.5	2.48	33.3	0.01			302	
317		6.58	6.55	34.035	26.719	136.2	0.642	2.01	29.2	55.3	2.54	34.2	0.01			319	204
378		6.07	6.04	34.103	26.839	125.3	0.722	1.14	16.4	68.0	2.87	38.3	0.01			380	203
400	ISL	5.93	5.90	34.127	26.876	122.0	0.749	0.93	13.3	71.8	2.95	39.2	0.01			403	
436		5.74	5.70	34.167	26.932	117.1	0.792	0.68	9.7	77.2	3.06	40.3	0.01			439	202
500	ISL	5.53	5.49	34.235	27.011	110.2	0.865	0.43	6.1	84.1	3.18	41.5	0.01			503	
517		5.47	5.43	34.253	27.033	108.3	0.883	0.36	5.1	85.9	3.21	41.8	0.01			521	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 44.5 N	121 19.5 W	12/08/99	0637	UTC	3641 m	320	10 kn			1019.2 mb	16.0 C	17.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.66	17.66	33.344	24.088	381.7	0.000	5.82	106.7	3.3	0.38	0.8	0.00	0.23	0.04	0	
1		17.66	17.66	33.344	24.088	381.7	0.004	5.82	106.7	3.3	0.38	0.8	0.00	0.23	0.04	1	220
10	ISL	16.93	16.93	33.369	24.281	363.6	0.037	6.00	108.5	3.1	0.36	0.5	0.01	0.26	0.05	10	
15		16.29	16.29	33.374	24.433	349.3	0.055	6.13	109.5	2.9	0.34	0.3	0.02	0.30	0.07	15	219
20	ISL	15.78	15.78	33.334	24.517	341.4	0.072	6.18	109.2	2.9	0.34	0.3	0.02	0.34	0.08	20	
29		14.78	14.78	33.229	24.656	328.4	0.103	6.21	107.5	2.9	0.34	0.3	0.01	0.44	0.12	29	218
30	ISL	14.63	14.63	33.213	24.676	326.5	0.106	6.21	107.2	2.9	0.35	0.4	0.02	0.46	0.13	30	
44		12.77	12.76	33.039	24.921	303.5	0.150	6.22	103.2	3.3	0.46	1.4	0.14	0.65 A	0.29 A	44	217
50	ISL	12.30	12.29	33.025	25.001	296.0	0.168	6.15	101.0	3.8	0.50	1.6	0.35	0.64	0.37	50	
54		12.06	12.05	33.025	25.046	291.7	0.180	6.08	99.3	4.1	0.52	1.8	0.45	0.63	0.40	54	216
64		11.66	11.65	33.029	25.124	284.6	0.209	5.89	95.4	4.8	0.59	3.3	0.22	0.63	0.32	64	215
75		11.37	11.36	33.062	25.203	277.3	0.239	5.82	93.7	5.7	0.77	6.1	0.37	0.47	0.23	75	214
84		10.94	10.93	33.093	25.304	267.8	0.264	5.59	89.2	7.5	0.81	7.3	0.02	0.24	0.14	84	213
94		10.70	10.69	33.185	25.418	257.1	0.290	5.47	86.9	9.9	0.97	9.9	0.02	0.19	0.11	94	212
100	ISL	10.52	10.51	33.233	25.486	250.7	0.305	5.24	82.9	11.9	1.09	11.8	0.02	0.15	0.10	100	
110		10.24	10.23	33.330	25.610	239.1	0.330	4.75	74.8	15.3	1.28	14.9	0.01	0.09	0.08	111	211
125		10.06	10.05	33.563	25.823	219.3	0.364	4.11	64.5	19.1	1.50	18.8	0.01	0.04	0.06	126	210
145		9.64	9.62	33.688	25.991	203.6	0.407	3.74	58.2	23.0	1.70	22.1	0.01	0.02	0.04	146	209
150	ISL	9.54	9.52	33.733	26.042	198.8	0.417	3.60	55.9	24.1	1.74	22.8	0.01	0.02	0.04	151	
169		9.18	9.16	33.892 D	26.225	181.8	0.453	3.09	47.7	28.1	1.89	25.0	0.01	0.01	0.03	170	208
199		8.62	8.60	33.989	26.390	166.6	0.505	2.73	41.6	33.4	2.05	27.4	0.00	0.00	0.04	200	207
200	ISL	8.60	8.58	33.992	26.395	166.1	0.507	2.72	41.4	33.6	2.06	27.5	0.00			201	
228		8.16	8.14	34.051	26.508	155.6	0.552	2.31	34.9	39.1	2.25	29.7	0.00			229	206
250	ISL	7.87	7.84	34.078	26.573	149.8	0.585	2.06	30.9	43.0	2.37	31.1	0.01			251	
269		7.63	7.60	34.089	26.616	145.9	0.613	1.90	28.3	46.2	2.46	32.2	0.01			271	205
300	ISL	7.12	7.09	34.085	26.686	139.5	0.658	1.75	25.8	51.8	2.57	33.9	0.01			302	
319		6.82	6.79	34.082	26.724	135.9	0.684	1.66	24.3	55.2	2.64	34.9	0.01			321	204
379		6.34	6.31	34.141	26.835	126.0	0.762	1.01	14.6	65.9	2.90	38.0	0.00			381	203
400	ISL	6.18	6.14	34.151	26.864	123.5	0.789	0.89	12.8	68.9	2.96	38.7	0.00			403	
439		5.90	5.86	34.169	26.913	119.0	0.836	0.73	10.5	74.2	3.06	39.9	0.01			442	202
500	ISL	5.50	5.46	34.221	27.004	110.9	0.906	0.49	7.0	83.0	3.18	41.6	0.01			503	
503		5.48	5.44	34.224	27.009	110.4	0.909	0.48	6.8	83.4	3.19	41.7	0.01			506	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 25.5 N	121 59.2 W	12/08/99	0019	UTC	3908 m	010	10 kn	010 01 06	2	1019.0 mb	19.0 C	17.0 C		8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.22	18.22	33.274	23.898	399.8	0.000	5.82	107.9	3.0	0.37	0.7	0.02	0.25	0.06	0	
2		18.22	18.22	33.274	23.898	399.9	0.008	5.82	107.8	3.0	0.37	0.7	0.02	0.25	0.06	2	220
2		18.21	18.21	33.275	23.901	399.6	0.008									2	221
10	ISL	17.31	17.31	33.296	24.135	377.5	0.039	5.91	107.6	2.5	0.34	0.3	0.01	0.24	0.05	10	
14		16.70	16.70	33.311	24.290	362.9	0.054	5.98	107.6	2.3	0.33	0.1	0.01	0.24	0.05	14	219
20	ISL	16.30	16.30	33.304	24.377	354.8	0.075	6.08	108.6	2.4	0.35	0.2	0.02	0.34	0.08	20	
29		15.75	15.75	33.277	24.481	345.1	0.107	6.20	109.5	2.7	0.37	0.8	0.04	0.52	0.15	29	218
30	ISL	15.67	15.67	33.280	24.501	343.2	0.110	6.20	109.3	2.7	0.38	0.9	0.04	0.53	0.16	30	
44		14.16	14.15	33.261	24.812	313.9	0.156	6.25	106.9	3.0	0.48	2.1	0.09	0.63	0.26	44	217
50	ISL	13.20	13.19	33.151	24.923	303.5	0.175	6.14	102.8	3.5	0.49	2.0	0.18	0.71	0.35	50	
54		12.70	12.69	33.105	24.986	297.5	0.187	6.06	100.4	3.9	0.50	1.9	0.25	0.75	0.40	54	216
64		12.98	12.97	33.304	25.085	288.3	0.216	5.90	98.5	4.5	0.62	3.8	0.37	0.62	0.42	64	215
74		13.14	13.13	33.463	25.177	279.9	0.245	5.77	96.7	5.1	0.71	4.6	0.51	0.54	0.38	74	214
75	ISL	13.13	13.12	33.479	25.192	278.6	0.247	5.73	96.0	5.3	0.73	4.9	0.52	0.51	0.36	75	
84		12.82	12.81	33.580	25.331	265.5	0.272	5.41	90.1	7.1	0.90	8.2	0.64	0.23	0.21	84	213
95		12.05	12.04	33.524	25.436	255.7	0.301	5.25	86.0	8.6	1.01	10.6	0.02	0.14	0.13	95	212
100	ISL	11.83	11.82	33.556	25.502	249.5	0.313	5.10	83.2	10.1	1.09	12.0	0.02	0.11	0.11	100	
110		11.43	11.42	33.643	25.644	236.2	0.337	4.72	76.4	13.4	1.26	14.8	0.02	0.08	0.08	110	211
125		10.61	10.60	33.682	25.821	219.5	0.372	4.07	64.7	17.6	1.44	18.0	0.02	0.05	0.05	126	210
145		9.84	9.82	33.776	26.026	200.3	0.414	3.55	55.5	22.6	1.66	21.6	0.01	0.02	0.03	146	209
150	ISL	9.66	9.64	33.807	26.080	195.2	0.424	3.52	54.9	23.9	1.71	22.4	0.01	0.02	0.03	151	
169		9.10	9.08	33.915	26.256	178.8	0.459			28.2	1.84	24.6	0.01	0.01	0.02	170	208
200		8.69	8.67	33.968	26.362	169.2	0.513	3.19	48.7	30.9	1.90	25.5	0.01	0.00	0.03	201	207
227		8.29	8.27	34.002	26.450	161.2	0.558	2.98	45.1	34.9	2.01	27.1	0.02			228	206
250	ISL	7.97	7.94	34.024	26.516	155.3	0.594	2.71	40.7	38.8	2.13	28.7	0.02			251	
270		7.67	7.64	34.036	26.569	150.4	0.625	2.47	36.8	42.5	2.25	30.2	0.02			272	205
300	ISL	7.13	7.10	34.040	26.649	143.0	0.669	2.20	32.4	48.8	2.41	32.2	0.01			302	
317		6.84	6.81	34.042	26.690	139.1	0.693	2.06	30.1	52.3	2.50	33.3	0.01			319	204
378		6.34	6.31	34.070	26.779	131.3	0.775	1.53	22.1	61.6	2.72	36.3	0.01			380	203
400	ISL	6.16	6.12	34.093	26.820	127.5	0.803	1.27	18.3	66.0	2.82	37.5	0.01			402	
440		5.85	5.81	34.145	26.901	120.2	0.853	0.83	11.9	74.2	3.00	39.6	0.00			443	202
500	ISL	5.48	5.44	34.226	27.010	110.2	0.922	0.44	6.2	84.1	3.18	41.4	0.00			503	
504		5.46	5.42	34.231	27.017	109.7	0.927	0.41	5.8	84.8	3.19	41.5	0.00			507	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 6.8 N	122 39.4 W	11/08/99	1734	UTC	3992 m	070	07 kn	330 03 02	1	1018.0 mb	19.0 C	18.5 C	27m	7/8	CB

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.80	18.80	33.484	23.914	398.2	0.000	5.57	104.5	2.3	0.31	0.1	0.00	0.12	0.01	0	
1		18.78	18.78	33.482	23.918	397.9	0.004									1	223
1	A	18.80	18.80	33.484	23.914	398.2	0.004	5.57	104.5	2.3	0.31	0.1	0.00	0.12	0.01	1	222
10	ISL	18.38	18.38	33.485	24.020	388.5	0.039	5.64	105.0	2.4	0.31	0.1	0.00	0.09	0.01	10	
16	A	17.76	17.76	33.477	24.166	374.8	0.062	5.68	104.5	2.5	0.31	0.1	0.00	0.08	0.01	16	221
20	ISL	17.19	17.19	33.461	24.290	363.1	0.077	5.84	106.2	2.6	0.32	0.1	0.00	0.12	0.02	20	
27		16.09	16.09	33.440	24.529	340.5	0.102	6.17	109.8	2.8	0.33	0.1	0.00	0.19	0.04	27	220
30	ISL	15.63	15.63	33.444	24.636	330.4	0.112	6.33	111.6	2.9	0.34	0.2	0.01	0.32	0.09	30	
37	A	14.63	14.62	33.453	24.861	309.1	0.134	6.55	113.2	3.1	0.35	0.3	0.03	0.67	0.21	37	219
46		13.65	13.64	33.418	25.039	292.4	0.161	6.21	105.2	3.9	0.50	2.3	0.15	0.96	0.34	46	218
50	ISL	13.65	13.64	33.469	25.078	288.7	0.173	6.10	103.3	4.2	0.55	3.0	0.23	0.90	0.37	50	
56	A	13.65	13.64	33.523	25.120	284.9	0.190	5.95	100.8	4.7	0.61	4.0	0.34	0.75	0.40	56	217
66		13.03	13.02	33.483	25.214	276.2	0.218	5.69	95.2	5.2	0.72	5.6	0.39	0.62	0.46	66	216
74	A	12.53	12.52	33.525	25.345	263.9	0.240	5.46	90.4	6.1	0.87	8.4	0.05	0.49	0.37	74	215
75	ISL	12.51	12.50	33.532	25.354	263.1	0.242	5.44	90.0	6.2	0.88	8.6	0.05	0.47	0.35	75	
84		12.37	12.36	33.586	25.423	256.7	0.266	5.22	86.2	7.5	0.96	9.9	0.03	0.26	0.18	84	214
94		11.91	11.90	33.594	25.517	248.0	0.291	4.96	81.1	9.7	1.07	11.8	0.02	0.12	0.11	94	213
100	ISL	11.57	11.56	33.620	25.600	240.1	0.306	4.73	76.8	12.0	1.18	13.6	0.02	0.07	0.08	100	
105	A	11.30	11.29	33.645	25.669	233.7	0.317	4.54	73.3	13.9	1.28	15.1	0.02	0.05	0.06	105	212
115		10.95	10.94	33.676	25.756	225.5	0.340	4.28	68.6	16.3	1.40	17.1	0.01	0.03	0.05	116	211
125		10.62	10.61	33.710	25.841	217.6	0.363	4.05	64.4	18.5	1.50	18.8	0.01	0.03	0.05	126	210
144		9.69	9.67	33.796	26.067	196.4	0.402	3.54	55.2	22.9	1.66	21.7	0.01	0.02	0.03	145	209
150	ISL	9.53	9.51	33.817	26.109	192.4	0.414	3.52	54.7	23.7	1.68	22.1	0.01	0.01	0.03	151	
169		9.20	9.18	33.876	26.209	183.3	0.449	3.46	53.4	25.8	1.74	23.1	0.01	0.00	0.02	170	208
199		8.62	8.60	33.971	26.375	167.9	0.502	3.22	49.1	31.1	1.88	25.5	0.01	0.00	0.02	200	207
200	ISL	8.60	8.58	33.973	26.380	167.5	0.504	3.21	48.9	31.3	1.89	25.6	0.01			201	
227		8.18	8.16	34.016	26.478	158.5	0.548	2.79	42.1	36.7	2.08	28.0	0.01			228	206
250	ISL	7.90	7.87	34.037	26.536	153.3	0.583	2.53	37.9	40.2	2.20	29.5	0.01			251	
266		7.72	7.69	34.046	26.570	150.3	0.608	2.37	35.4	42.6	2.27	30.4	0.01			267	205
300	ISL	7.24	7.21	34.062	26.651	142.9	0.658	2.02	29.8	49.0	2.43	32.6	0.01			302	
318		6.99	6.96	34.072	26.693	139.0	0.683	1.83	26.9	52.6	2.52	33.7	0.01			320	204
378		6.38	6.35	34.130	26.821	127.3	0.763	1.10	15.9	64.9	2.84	37.4	0.00			380	203
400	ISL	6.18	6.14	34.142	26.856	124.1	0.790	0.94	13.6	68.7	2.92	38.4	0.00			402	
440		5.82	5.78	34.159	26.915	118.8	0.839	0.74	10.6	75.4	3.03	39.8	0.00			443	202
500	ISL	5.30	5.26	34.191	27.004	110.6	0.908	0.53	7.5	85.7	3.15	41.6	0.00			503	
509		5.22	5.18	34.196	27.017	109.4	0.918	0.50	7.0	87.3	3.17	41.9	0.00			512	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 45.3 N	123 19.8 W	11/08/99	0819 UTC	4029 m	00 kn			1017.2 mb	20.1 C	18.2 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.10	19.10	33.361	23.745	414.4	0.000	5.63	106.1	2.9	0.35	0.3	0.01	0.16	0.03	0	
1		19.10	19.10	33.361	23.745	414.4	0.004	5.63	106.1	2.9	0.35	0.3	0.01	0.16	0.03	1	220
10	ISL	17.68	17.68	33.321	24.066	384.1	0.040	5.84	107.1	2.8	0.36	0.6	0.02	0.22	0.04	10	
15		16.68	16.68	33.314	24.297	362.2	0.059	5.99	107.8	2.8	0.36	0.7	0.03	0.26	0.05	15	219
20	ISL	16.64	16.64	33.358	24.340	358.3	0.077	5.99	107.7	2.8	0.35	0.5	0.02	0.28	0.07	20	
30		16.55	16.55	33.400	24.393	353.5	0.112	5.99	107.5	2.7	0.33	0.1	0.01	0.33	0.11	30	218
45		15.03	15.02	33.465	24.784	316.7	0.163	6.19	107.9	3.1	0.36	0.4	0.02	0.46	0.18	45	217
50	ISL	14.20	14.19	33.451	24.951	300.9	0.178	6.15	105.4	3.6	0.45	1.6	0.12	0.60	0.29	50	
54		13.61	13.60	33.444	25.067	289.9	0.190	6.09	103.1	4.1	0.53	2.6	0.22	0.69	0.38	54	216
64		13.31	13.30	33.480	25.156	281.7	0.218	5.89	99.1	4.7	0.64	4.2	0.39	0.63	0.41	64	215
75		12.69	12.68	33.494	25.290	269.2	0.249	5.53	91.8	6.1	0.82	7.3	0.17	0.38	0.30	75	214
85		12.36	12.35	33.522	25.375	261.3	0.275	5.34	88.1	7.3	0.91	9.1	0.04	0.27	0.19	85	213
93		12.18	12.17	33.539	25.423	256.9	0.296	5.25	86.3	8.0	0.97	10.0	0.03	0.22	0.16	93	212
100	ISL	12.01	12.00	33.570	25.480	251.7	0.314	5.14	84.2	9.1	1.04	11.1	0.02	0.16	0.13	100	
109		11.75	11.74	33.612	25.561	244.1	0.336	4.98	81.1	10.8	1.13	12.7	0.02	0.09	0.08	109	211
124		11.23	11.21	33.640	25.678	233.2	0.372	4.66	75.1	13.7	1.27	14.9	0.02	0.11	0.01	125	210
125	ISL	11.18	11.16	33.643	25.690	232.2	0.374	4.62	74.4	14.0	1.28	15.1	0.02	0.11	0.01	126	
144		10.26	10.24	33.726	25.916	210.8	0.416	3.81	60.1	20.3	1.57	19.9	0.01	0.03	0.04	145	209
150	ISL	10.06	10.04	33.755	25.973	205.6	0.429	3.63	57.1	21.9	1.64	21.1	0.01	0.03	0.04	151	
170		9.51	9.49	33.849	26.138	190.2	0.468	3.21	49.9	26.5	1.83	24.0	0.01	0.01	0.05	171	208
199		8.82	8.80	33.962	26.337	171.6	0.521	2.98	45.6	31.1	1.95	26.0	0.01	0.00	0.04	200	207
200	ISL	8.81	8.79	33.964	26.340	171.3	0.523	2.97	45.5	31.2	1.95	26.1	0.01			201	
229		8.49	8.47	33.991	26.411	165.0	0.571	2.81	42.7	34.2	2.04	27.5	0.01			230	206
250	ISL	8.12	8.09	34.015	26.486	158.1	0.605	2.60	39.2	37.5	2.13	28.8	0.01			251	
268		7.79	7.76	34.034	26.550	152.2	0.633	2.41	36.1							269	205
300	ISL	7.34	7.31	34.048	26.626	145.3	0.681	2.20	32.6	46.0	2.36	31.6	0.01			302	
317		7.14	7.11	34.051	26.656	142.6	0.705	2.11	31.1	49.1	2.44	32.6	0.01			319	204
377		6.63	6.60	34.063	26.735	135.6	0.789	1.68	24.5	56.9	2.63	35.0	0.01			379	203
400	ISL	6.49	6.45	34.077	26.765	133.0	0.820	1.49	21.6	59.9	2.71	35.9	0.01			402	
437		6.37	6.33	34.122	26.817	128.6	0.868	1.16	16.8	64.6	2.85	37.2	0.00			440	202
500	ISL	6.54	6.49	34.309	26.943	117.9	0.946	0.43	6.3	70.9	3.11	38.4	0.00			503	
522		6.60	6.55	34.375	26.987	114.1	0.971	0.18	2.6	73.1	3.20	38.8	0.00			525	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 24.9 N	123 59.9 W	11/08/99	0158 UTC	4230 m	300 03 kn	300 01 06	1	1015.5 mb	20.0 C	18.5 C	43m	4/8	CU

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	20.63	20.63	33.311	23.309	456.0	0.000	5.47	106.1	2.6	0.29	0.1	0.00	0.07	0.01	0	
1		20.63	20.63	33.311	23.309	456.0	0.005	5.47	106.1	2.6	0.29	0.1	0.00	0.07	0.01	1	220
10	ISL	19.01	19.01	33.307	23.727	416.5	0.044	5.59	105.2	2.6	0.28	0.1	0.00	0.08	0.01	10	
15		17.81	17.81	33.331	24.042	386.6	0.064	5.69	104.6	2.6	0.27	0.1	0.00	0.08	0.01	15	219
20	ISL	17.35	17.35	33.372	24.184	373.2	0.083	5.74	104.7	2.6	0.26	0.1	0.00	0.08	0.01	20	
29		16.88	16.88	33.445	24.351	357.5	0.116	5.80	104.8	2.6	0.24	0.1	0.00	0.08	0.01	29	218
30	ISL	16.83	16.83	33.449	24.366	356.1	0.119	5.81	104.9	2.6	0.24	0.1	0.00	0.08	0.01	30	
44		16.22	16.21	33.501	24.547	339.3	0.168	5.89	105.1	2.6	0.23	0.1	0.00	0.10	0.02	44	217
50	ISL	16.05	16.04	33.544	24.619	332.7	0.188	5.91	105.1	2.6	0.22	0.1	0.00	0.10	0.02	50	
59		15.78	15.77	33.592	24.717	323.6	0.218	5.94	105.1	2.6	0.21	0.1	0.00	0.11	0.02	59	216
74		15.02	15.01	33.542	24.847	311.6	0.265	5.96	103.9	2.7	0.24	0.1	0.00	0.13	0.04	74	215
75	ISL	15.06	15.05	33.569	24.859	310.5	0.268	5.95	103.8	2.7	0.24	0.1	0.00	0.13	0.04	75	
85		15.51	15.50	33.857	24.982	299.2	0.299	5.86	103.3	2.7	0.20	0.1	0.00	0.17	0.06	85	214
94		15.51	15.50	33.951	25.055	292.5	0.326	5.76	101.6	2.9	0.20	0.1	0.00	0.27	0.16	94	213
100	ISL	15.60	15.58	34.019	25.088	289.6	0.343	5.72	101.1	3.0	0.20	0.2	0.01	0.32	0.22	100	
105		15.63	15.61	34.058	25.111	287.6	0.357	5.69	100.7	3.0	0.20	0.2	0.02	0.34	0.25	105	212
115		15.26	15.24	34.025	25.168	282.4	0.386	5.60	98.3	3.2	0.26	0.7	0.09	0.31	0.23	115	211
124		14.56	14.54	33.918	25.237	275.9	0.411	5.49	95.0	3.7	0.34	1.9	0.08	0.26	0.21	125	210
125	ISL	14.50	14.48	33.909	25.243	275.4	0.414	5.48	94.7	3.7	0.35	2.0	0.08	0.25	0.21	126	
139		13.59	13.57	33.799	25.348	265.6	0.452	5.29	89.7	5.0	0.50	4.1	0.02	0.16	0.14	140	209
150	ISL	12.54	12.52	33.717	25.494	251.8	0.480	5.06	83.9	7.6	0.72	7.4	0.02	0.10	0.10	151	
164		11.23	11.21	33.667	25.700	232.1	0.514	4.70	75.7	11.9	1.03	12.2	0.01	0.05	0.06	165	208
194		9.86	9.84	33.820	26.058	198.4	0.579	3.85	60.3	21.2	1.53	20.1	0.01	0.00	0.02	195	207
200	ISL	9.67	9.65	33.847	26.111	193.4	0.590	3.73	58.1	22.6	1.59	21.1	0.01			201	
228		8.97	8.95	33.949	26.304	175.4	0.642	3.37	51.8	28.1	1.78	24.0	0.00			229	206
250	ISL	8.57	8.54	33.989	26.398	166.7	0.680	3.40	51.8	30.8	1.82	24.8	0.00			251	
268		8.28	8.25	34.005	26.455	161.5	0.709	3.43	51.9	33.0	1.85	25.3	0.01			269	205
300	ISL	7.72	7.69	34.020	26.550	152.8	0.759	2.99	44.6	39.3	2.07	28.1	0.01			302	
317		7.44	7.41	34.024	26.593	148.8	0.785	2.69	39.9	43.0	2.20	29.8	0.01			319	204
378		6.69	6.66	34.052	26.719	137.3	0.872	1.96	28.6	54.6	2.52	34.2	0.00			380	203
400	ISL	6.42	6.38	34.062	26.762	133.2	0.902	1.70	24.6	59.3	2.63	35.7	0.00			402	
438		6.00	5.96	34.081	26.831	126.8	0.951	1.28	18.4	67.2	2.81	37.9	0.00			441	202
500	ISL	5.55	5.51	34.126	26.923	118.6	1.028	0.86	12.2	77.9	3.01	40.3	0.00			503	
520		5.40	5.36	34.141	26.953	115.8	1.051	0.72	10.2	81.4	3.07	41.1	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 57.7 N	117 18.5 W	07/08/99	1835 UTC	65 m	270 07 kn	270 01 03	1	1016.9 mb	20.1 C	17.5 C	11m	1/8	CU

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.75	19.75	33.636	23.788	410.3	0.000	6.18	118.1	4.0	0.18	0.1	0.00	0.97	0.15	0	
1	A	19.75	19.75	33.636	23.788	410.3	0.004	6.18	118.1	4.0	0.18	0.1	0.00	0.97	0.15	1	209
1		19.75	19.75	33.637	23.789	410.2	0.004									1	210
1		19.74	19.74	33.636	23.791	410.1	0.004									1	211
7	A	19.08	19.08	33.628	23.954	394.7	0.028	6.25	118.0	3.9	0.18	0.1	0.00	0.74	0.16	7	208
10	ISL	17.00	17.00	33.578	24.424	349.9	0.039	6.53	118.4	4.5	0.24	0.1	0.00	0.83	0.22	10	
14	A	14.08	14.08	33.588	25.080	287.5	0.052	6.80	116.3	5.7	0.36	0.1	0.00	0.96	0.33	14	207
20	ISL	13.27	13.27	33.597	25.253	271.2	0.069	6.20	104.3	7.5	0.57	1.2	0.09	1.94	0.59	20	
23	A	12.87	12.87	33.605	25.339	263.1	0.077	5.76	96.1	8.4	0.68	2.5	0.16	2.30	0.70	23	206
30	ISL	12.33	12.33	33.622	25.457	252.0	0.095	5.08	83.8	9.9	0.94	8.7	0.35	1.35	0.62	30	
31	A	12.28	12.28	33.624	25.469	251.0	0.097	5.00	82.4	10.1	0.97	9.6	0.38	1.17	0.61	31	205
43		12.11	12.10	33.627	25.504	248.0	0.127									43	204
43	A	12.00	11.99	33.632	25.528	245.6	0.127	4.67	76.5	11.4	1.08	11.6	0.41	0.72	0.43	43	203
50		11.69	11.68	33.662	25.610	238.0	0.144	4.12	67.1	14.7	1.28	14.5	0.40	0.40	0.35	50	202
60		11.18	11.17	33.712	25.742	225.6	0.168	3.62	58.3	18.0	1.46	17.8	0.19	0.19	0.24	60	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 53.1 N	117 24.4 W	07/08/99	2228 UTC	533 m	270 09 kn	270 01 02	1	1017.0 mb	19.6 C	17.2 C	17m	2/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	20.12	20.12	33.616	23.676	420.9	0.000	5.77	111.0	3.0	0.17	0.1	0.00	0.24	0.08	0	
1		20.12	20.12	33.616	23.676	421.0	0.004	5.77	111.0	3.0	0.17	0.1	0.00	0.24	0.08	1	221
1		20.12	20.12	33.616	23.676	421.0	0.004									1	222
10	ISL	18.87	18.87	33.601	23.987	391.7	0.041	6.40	120.3	2.4	0.16	0.1	0.00	0.48	0.11	10	
11		18.71	18.71	33.598	24.025	388.1	0.045	6.48	121.4	2.4	0.16	0.1	0.00	0.52	0.11	11	220
20	ISL	14.52	14.52	33.576	24.979	297.4	0.076	6.60	113.9	4.3	0.33	0.1	0.01	0.70	0.23	20	
21		14.01	14.01	33.584	25.092	286.6	0.078									21	219
21		14.01	14.01	33.587	25.094	286.4	0.078	6.61	112.9	4.6	0.36	0.1	0.01	0.73	0.25	21	218
30	ISL	13.15	13.15	33.622	25.297	267.3	0.103	5.67	95.2	6.8	0.66	4.7	0.19	1.30	0.54	30	
31		13.14	13.14	33.623	25.300	267.1	0.106	5.54	93.0	7.1	0.70	5.4	0.21	1.34	0.57	31	217
41		11.92	11.91	33.644	25.553	243.2	0.132	4.66	76.2	11.3	1.11	12.6	0.10	0.56	0.46	41	216
50	ISL	11.59	11.58	33.676	25.639	235.2	0.153	4.15	67.4	13.9	1.29	15.2	0.05	0.41	0.36	50	
51		11.57	11.56	33.679	25.645	234.7	0.155	4.11	66.7	14.1	1.30	15.4	0.05	0.41	0.35	51	215
61		11.23	11.22	33.699	25.723	227.5	0.179	3.77	60.8	16.4	1.43	17.5	0.04	0.21 A	0.23 A	61	214
71		10.88	10.87	33.733	25.812	219.2	0.201	3.45	55.2	18.9	1.53	19.3	0.03	0.09	0.13	71	213
75	ISL	10.77	10.76	33.743	25.840	216.7	0.210	3.47	55.4	19.1	1.53	19.3	0.03	0.08	0.11	75	
86		10.53	10.52	33.764	25.898	211.3	0.233	3.52	55.9	19.7	1.54	19.4	0.02	0.05	0.09	86	212
100		10.34	10.33	33.789	25.951	206.6	0.262	3.46	54.7	20.7	1.58	20.1	0.02	0.03	0.06	101	211
119		9.94	9.93	33.881	26.091	193.7	0.300	3.03	47.5	24.7	1.77	22.7	0.01	0.01	0.05	120	210
125	ISL	9.84	9.83	33.909	26.130	190.1	0.312	2.86	44.8	26.0	1.84	23.5	0.01	0.01	0.05	126	
139		9.64	9.62	33.966	26.208	182.9	0.338	2.54	39.6	28.6	1.97	25.2	0.01	0.01	0.06	140	209
150	ISL	9.48	9.46	33.988	26.251	179.0	0.358	2.55	39.6	29.6	1.98	25.7	0.01	0.01	0.05	151	
169		9.24	9.22	34.016	26.313	173.5	0.391	2.57	39.7	30.7	2.01	26.0	0.02	0.00	0.04	170	208
199		8.98	8.96	34.087	26.410	164.8	0.442	2.32	35.7	34.1	2.14	27.4	0.02	0.00	0.03	200	207
200	ISL	8.97	8.95	34.088	26.412	164.6	0.444	2.31	35.5	34.2	2.14	27.5	0.02			201	
232		8.54	8.52	34.131	26.514	155.4	0.495	2.03	30.9	38.8	2.29	29.1	0.01			233	206
250	ISL	8.39	8.36	34.164	26.563	151.0	0.523	1.80	27.3	41.4	2.38	30.0	0.01			251	
273		8.27	8.24	34.208	26.616	146.4	0.557	1.49	22.6	44.5	2.50	31.1	0.02			275	205
300	ISL	8.29	8.26	34.257	26.652	143.5	0.596	1.16	17.6	47.0	2.61	31.9	0.01			302	
319		8.30	8.27	34.283	26.671	142.1	0.623	0.97	14.7	48.4	2.68	32.4	0.01			321	204
382		7.81	7.77	34.279	26.742	136.2	0.711	0.83	12.4	53.7	2.78	33.9	0.01			384	203
400	ISL	7.72	7.68	34.294	26.767	134.1	0.735	0.72	10.8	55.4	2.83	34.4	0.01			403	
439		7.49	7.45	34.324	26.824	129.2	0.786	0.50	7.4	59.5	2.93	35.4	0.01			442	202
500	ISL	6.88	6.83	34.314	26.901	122.2	0.863	0.42	6.2	66.8	3.03	37.1	0.02			503	
503		6.85	6.80	34.314	26.906	121.8	0.867	0.42	6.2	67.2	3.04	37.2	0.02			506	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.7 N	117 31.9 W	08/08/99	0235 UTC	869 m	310 11 kn	310 02 02	1	1016.0 mb	18.9 C	17.1 C		2/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	20.63	20.63	33.650	23.567	431.3	0.000	5.53	107.4	3.1	0.16	0.1	0.00	0.18	0.06	0	
1		20.63	20.63	33.650	23.567	431.4	0.004	5.53	107.4	3.1	0.16	0.1	0.00	0.18	0.06	1	220
10		20.11	20.11	33.616	23.679	421.0	0.043	5.75	110.6	3.0	0.17	0.1	0.00	0.22	0.07	10	219
20		15.20	15.20	33.507	24.779	316.4	0.080	6.65	116.3	3.2	0.29	0.1	0.00	0.24	0.06	20	218
30		13.97	13.97	33.494	25.031	292.7	0.110	6.57	112.1	3.4	0.37	0.1	0.01	0.48	0.19	30	217
40		13.02	13.01	33.504	25.232	273.8	0.138	5.83	97.5	5.6	0.62	4.5	0.16	0.77	0.47	40	216
50	ISL	12.44	12.43	33.555	25.385	259.5	0.165	5.26	86.9	8.1	0.88	8.8	0.10	0.60	0.43	50	
51		12.39	12.38	33.561	25.399	258.1	0.168	5.22	86.2	8.3	0.90	9.2	0.09	0.57	0.43	51	215
59		12.00	11.99	33.601	25.505	248.3	0.188	5.06	82.9	10.1	1.04	11.4	0.03	0.33 A	0.29 A	59	214
71		11.32	11.31	33.666	25.681	231.7	0.217	4.42	71.4	14.1	1.26	15.0	0.02	0.12	0.12	71	213
75	ISL	11.17	11.16	33.689	25.726	227.5	0.226	4.27	68.7	15.2	1.31	15.8	0.02	0.09	0.11	75	
84		10.92	10.91	33.732	25.805	220.2	0.246	3.98	63.7	17.1	1.41	17.3	0.01	0.06	0.08	84	212
100		10.69	10.68	33.758	25.866	214.7	0.281	3.58	57.1	19.2	1.53	19.1	0.01	0.05	0.08	100	211
120		10.24	10.23	33.847	26.014	201.1	0.322	3.02	47.7	23.6	1.75	22.0	0.01	0.02	0.07	121	210
125	ISL	10.08	10.07	33.864	26.054	197.3	0.332	3.00	47.2	24.4	1.78	22.5	0.01	0.02	0.06	126	
140		9.66	9.64	33.927	26.174	186.2	0.361	2.92	45.5	26.7	1.86	23.9	0.01	0.01	0.04	141	209
150	ISL	9.64	9.62	34.014	26.245	179.6	0.379	2.57	40.1	29.2	1.99	25.2	0.01	0.01	0.04	151	
169		9.60	9.58	34.150	26.359	169.3	0.412	1.85	28.9	34.0	2.25	27.5	0.01	0.00	0.04	170	208
199		9.29	9.27	34.209	26.456	160.6	0.462	1.58	24.5	37.5	2.39	29.0	0.01	0.00	0.05	200	207
200	ISL	9.28	9.26	34.210	26.458	160.4	0.464	1.57	24.3	37.6	2.40	29.0	0.01			201	
229		8.98	8.96	34.234	26.526	154.5	0.509	1.39	21.4	40.9	2.57	30.2	0.01			230	206
250	ISL	8.96	8.93	34.272	26.559	151.7	0.541	1.21	18.6	42.3	2.59	30.6	0.01			251	
268		8.94	8.91	34.299	26.584	149.8	0.569	1.07	16.5	43.4	2.61	30.9	0.01			270	205
300	ISL	8.78	8.75	34.321	26.627	146.2	0.616	0.93	14.3	45.9	2.68	31.6	0.01			302	
318		8.62	8.59	34.320	26.651	144.2	0.642	0.90	13.7	47.5	2.72	32.0	0.01			320	204
377		7.64	7.60	34.244	26.739	136.2	0.725	1.03	15.4	53.5	2.75	33.8	0.01			379	203
400	ISL	7.55	7.51	34.269	26.771	133.5	0.756	0.86	12.8	55.8	2.82	34.5	0.01			403	
438		7.47	7.43	34.322	26.825	129.0	0.806	0.53	7.9	60.0	2.95	35.6	0.01			441	202
500	ISL	6.78	6.73	34.309	26.911	121.2	0.883	0.42	6.1	68.6	3.07	37.9	0.01			503	
517		6.59	6.54	34.306	26.934	119.0	0.904	0.39	5.7	70.9	3.10	38.5	0.01			521	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 40.8 N	117 52.2 W	08/08/99	0649 UTC	622 m	300 11 kn			1017.3 mb	17.5 C	16.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.88	19.88	33.591	23.720	416.8	0.000	5.46	104.6	3.4	0.24	0.1	0.00	0.20	0.05	0	
1		19.88	19.88	33.591	23.720	416.8	0.004	5.46	104.6	3.4	0.24	0.1	0.00	0.20	0.05	1	220
10	ISL	19.09	19.09	33.558	23.898	400.1	0.041	5.58	105.3	3.3	0.25	0.1	0.00	0.19	0.05	10	
15		18.17	18.17	33.524	24.102	380.9	0.060	5.65	104.8	3.2	0.27	0.1	0.00	0.19	0.05	15	219
20	ISL	16.71	16.71	33.478	24.416	351.1	0.079	5.93	106.8	3.3	0.29	0.2	0.01	0.40	0.21	20	
29		14.23	14.23	33.461	24.952	300.2	0.108	6.34	108.7	3.5	0.36	0.4	0.02	0.80	0.51	29	218
30	ISL	14.18	14.18	33.464	24.964	299.0	0.111	6.33	108.4	3.6	0.37	0.5	0.03	0.79	0.51	30	
45		13.50	13.49	33.512	25.142	282.5	0.155	5.84	98.7	5.0	0.55	3.3	0.20	0.62 U	0.28 U	45	217
50	ISL	13.36	13.35	33.517	25.174	279.6	0.169	5.66	95.3	5.4	0.60	4.0	0.29	0.64	0.49	50	
55		13.17	13.16	33.527	25.220	275.3	0.183	5.47	91.8	6.1	0.68	5.1	0.34	0.60	0.48	55	216
64		12.44	12.43	33.590	25.412	257.2	0.207	5.05	83.5	9.2	0.93	9.5	0.14	0.33	0.32	64	215
75		12.12	12.11	33.630	25.505	248.7	0.234	5.00	82.1	11.1	1.08	11.9	0.06	0.23	0.24	75	214
84		11.46	11.45	33.666	25.656	234.4	0.256	4.58	74.2	14.3	1.25	14.8	0.02	0.12	0.13	84	213
95		10.99	10.98	33.700	25.768	224.0	0.281	4.16	66.7	16.8	1.38	16.9	0.02	0.07	0.09	95	212
100	ISL	10.85	10.84	33.710	25.800	221.0	0.292	4.04	64.6	17.4	1.41	17.4	0.02	0.06	0.08	100	
108		10.63	10.62	33.730	25.855	216.0	0.310	3.86	61.4	18.5	1.47	18.3	0.02	0.04	0.07	109	211
124		9.90	9.89	33.827	26.056	197.1	0.343	3.38	53.0	23.3	1.68	21.6	0.02	0.01	0.03	125	210
125	ISL	9.88	9.87	33.831	26.062	196.5	0.345	3.36	52.6	23.5	1.69	21.7	0.02	0.01	0.03	126	
145		9.58	9.56	33.907	26.172	186.5	0.383	3.07	47.8	26.5	1.83	23.6	0.01	0.00	0.03	146	209
150	ISL	9.50	9.48	33.931	26.203	183.5	0.393	2.97	46.2	27.5	1.87	24.2	0.01	0.00	0.03	151	
170		9.18	9.16	34.012	26.319	172.9	0.428	2.64	40.8	31.4	2.03	26.1	0.01	0.00	0.03	171	208
199		8.67	8.65	34.039	26.421	163.6	0.477	2.63	40.1	34.7	2.09	27.2	0.01	0.00	0.03	200	207
200	ISL	8.66	8.64	34.041	26.424	163.3	0.479	2.62	40.0	34.9	2.10	27.3	0.01			201	
230		8.40	8.38	34.115	26.523	154.5	0.526	2.12	32.2	39.8	2.30	29.5	0.01			231	206
250	ISL	8.31	8.28	34.140	26.556	151.6	0.557	1.94	29.4	41.6	2.38	30.2	0.01			251	
272		8.18	8.15	34.152	26.585	149.2	0.590	1.81	27.3	43.5	2.44	30.8	0.01			274	205
300	ISL	7.79	7.76	34.147	26.640	144.3	0.631	1.65	24.7	47.5	2.52	32.1	0.01			302	
319		7.53	7.50	34.150	26.680	140.7	0.658	1.51	22.5	50.5	2.58	33.1	0.01			321	204
379		7.45	7.41	34.287	26.800	130.4	0.739	0.68	10.1	58.9	2.90	35.4	0.01			381	203
400	ISL	7.17	7.13	34.281	26.834	127.2	0.766	0.64	9.5	62.5	2.95	36.3	0.01			403	
439		6.62	6.58	34.260	26.893	121.7	0.815	0.58	8.5	68.6	3.02	37.9	0.01			442	202
500	ISL	6.39	6.34	34.321	26.972	115.0	0.887	0.34	4.9	74.0	3.14	39.0	0.01			503	
503		6.38	6.33	34.324	26.976	114.7	0.891	0.33	4.8	74.3	3.15	39.1	0.01			506	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 30.7 N	118 13.0 W	08/08/99	1100 UTC	1631 m	320 17 kn			1016.2 mb	17.8 C	15.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.61	18.61	33.607	24.056	384.7	0.000	5.53	103.4	3.1	0.24	0.5	0.00	0.23	0.05	0	
1		18.61	18.61	33.607	24.056	384.7	0.004	5.53	103.4	3.1	0.24	0.5	0.00	0.23	0.05	1	220
10		18.62	18.62	33.608	24.055	385.2	0.038	5.53	103.5	3.1	0.24	0.2	0.00	0.22	0.05	10	219
20		18.33	18.33	33.592	24.115	379.8	0.077	5.64	104.9	3.1	0.25	0.2	0.00	0.24	0.07	20	218
30	ISL	15.34	15.34	33.553	24.784	316.3	0.112	6.24	109.5	3.9	0.37	0.7	0.05	0.48	0.21	30	
31		15.01	15.01	33.554	24.857	309.3	0.115	6.29	109.6	4.0	0.39	0.8	0.05	0.51	0.23	31	217
41		13.47	13.46	33.555	25.181	278.7	0.144	5.86	99.0	5.6	0.63	4.2	0.25	0.05 U	0.05 U	41	216
50		12.83	12.82	33.550	25.305	267.1	0.169	5.46	91.0	6.9	0.79	7.0	0.35	0.43	0.36	50	215
61		12.47	12.46	33.572	25.393	259.0	0.198	5.31	87.8	8.1	0.91	9.0	0.22	0.46	0.41	61	214
69		12.16	12.15	33.605	25.478	251.1	0.218	5.09	83.6	9.7	1.02	11.0	0.06	0.27	0.36	69	213
75	ISL	11.89	11.88	33.627	25.546	244.8	0.233	4.85	79.3	11.2	1.11	12.6	0.04	0.19	0.28	75	
85		11.44	11.43	33.663	25.657	234.3	0.257	4.42	71.6	14.0	1.28	15.1	0.02	0.12	0.15	85	212
100		10.85	10.84	33.726	25.813	219.8	0.291	3.86	61.7	17.7	1.57	18.2	0.02	0.07	0.10	100	211
120		10.23	10.22	33.786	25.968	205.4	0.333	3.50	55.2	21.3	1.68	20.6	0.01	0.01	0.04	121	210
125	ISL	10.06	10.05	33.814	26.019	200.7	0.344	3.39	53.3	22.5	1.71	21.3	0.01	0.01	0.04	126	
140		9.61	9.59	33.899	26.160	187.4	0.373	3.10	48.3	26.0	1.81	23.4	0.01	0.01	0.03	141	209
150	ISL	9.45	9.43	33.932	26.213	182.7	0.391	2.98	46.3	27.4	1.86	24.2	0.01	0.01	0.03	151	
170		9.21	9.19	33.979	26.288	175.8	0.427	2.80	43.2	29.9	1.96	25.4	0.01	0.01	0.03	171	208
198		8.66	8.64	34.045	26.427	163.0	0.474	2.51	38.3	35.1	2.11	27.6	0.01	0.00	0.03	199	207
200	ISL	8.63	8.61	34.048	26.434	162.4	0.478	2.49	38.0	35.4	2.12	27.7	0.01			201	
228		8.19	8.17	34.076	26.524	154.2	0.522	2.22	33.5	40.0	2.25	29.6	0.01			229	206
250	ISL	7.83	7.81	34.090	26.588	148.3	0.555	2.01	30.1	44.2	2.37	31.1	0.00			251	
268		7.57	7.54	34.102	26.635	144.0	0.582	1.83	27.2	47.6	2.46	32.2	0.00			270	205
300	ISL	7.32	7.29	34.138	26.700	138.3	0.627	1.45	21.5	52.8	2.62	33.9	0.00			302	
319		7.22	7.19	34.160	26.731	135.6	0.653	1.24	18.3	55.6	2.70	34.7	0.00			321	204
380		6.89	6.85	34.215	26.821	127.9	0.733	0.83	12.2	63.0	2.99 U	36.3	0.00			382	203
400	ISL	6.71	6.67	34.224	26.852	125.1	0.758	0.72	10.5	65.9	2.91	37.1	0.00			403	
435		6.39	6.35	34.239	26.906	120.2	0.801	0.57	8.3	70.9	2.97	38.6	0.00			438	202
500	ISL	6.02	5.98	34.285	26.991	112.8	0.877	0.38	5.5	78.0	3.10	40.1	0.00			503	
519		5.91	5.86	34.299	27.016	110.5	0.898	0.33	4.7	80.1	3.14	40.5	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 20.9 N	118 33.7 W	08/08/99	1454 UTC	1664 m	310 16 kn	310 02 03	1	1017.2 mb	16.6 C	15.1 C		6/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.08	18.08	33.583	24.169	374.0	0.000	5.58	103.3	3.1	0.29	0.1	0.00	0.19	0.05	0	
1		18.08	18.08	33.583	24.169	374.0	0.004	5.58	103.3	3.1	0.29	0.1	0.00	0.19	0.05	1	220
10		18.07	18.07	33.582	24.171	374.1	0.037	5.56	102.9	3.1	0.26	0.1	0.00	0.11 U	0.03 U	10	219
20		15.58	15.58	33.559	24.735	320.6	0.072	6.23	109.8	3.7	0.38	0.2	0.02	0.63	0.19	20	218
30		13.84	13.84	33.571	25.118	284.4	0.102	6.38	108.6	4.2	0.45	1.8	0.06	0.64	0.30	30	217
40		13.24	13.23	33.579	25.246	272.5	0.130	5.92	99.5	5.8	0.65	4.7	0.18	0.67	0.41	40	216
50	ISL	12.61	12.60	33.591	25.380	259.9	0.157	5.37	89.1	8.0	0.86	8.2	0.26	0.62	0.46	50	
51		12.55	12.54	33.593	25.393	258.7	0.159	5.32	88.1	8.3	0.88	8.6	0.27	0.62	0.47	51	215
61		11.95	11.94	33.623	25.531	245.8	0.185	4.88	79.8	11.1	1.09	12.3	0.06	0.32	0.32	61	214
71		11.52	11.51	33.651	25.633	236.3	0.209	4.62	74.9	13.6	1.23	14.4	0.03	0.17	0.20	71	213
75	ISL	11.47	11.46	33.655	25.645	235.2	0.218	4.61	74.7	13.9	1.25	14.7	0.03	0.16	0.18	75	
86		11.34	11.33	33.666	25.678	232.4	0.244	4.54	73.3	14.5	1.28	15.3	0.02	0.14	0.15	86	212
100	ISL	10.70	10.69	33.715	25.831	218.1	0.275	3.97	63.3	18.0	1.46	18.1	0.01	0.07	0.08	100	
101		10.65	10.64	33.720	25.843	216.9	0.278	3.92	62.4	18.3	1.47	18.3	0.01	0.06	0.07	101	211
121		9.95	9.94	33.842	26.059	196.7	0.319	3.25	51.0	23.5	1.72	22.0	0.01			122	210
125	ISL	9.84	9.83	33.852	26.085	194.3	0.327	3.26	51.0	23.9	1.72	22.2	0.01	0.03	0.05	126	
140		9.45	9.43	33.879	26.171	186.4	0.355	3.39	52.6	25.1	1.71	22.7	0.01	0.01	0.04	141	209
150	ISL	9.19	9.17	33.920	26.245	179.5	0.374	3.27	50.5	27.3	1.79	23.8	0.01	0.00	0.04	151	
170		8.72	8.70	34.001	26.383	166.6	0.408	2.91	44.5	32.4	1.98	26.2	0.01	0.00	0.03	171	208
200	ISL	8.24	8.22	34.030	26.479	157.9	0.457	2.64	39.9	37.2	2.12	28.1	0.04	0.00	0.03	201	
201		8.23	8.21	34.030	26.481	157.8	0.459	2.63	39.7	37.3	2.12	28.2	0.04	0.00	0.03	202	207
229		7.97	7.95	34.087	26.565	150.2	0.502	2.06	31.0	42.9	2.34	30.6	0.06			230	206
250	ISL	7.84	7.82	34.132	26.620	145.4	0.533	1.64	24.6	46.9	2.50	32.2	0.04			251	
270		7.72	7.69	34.168	26.666	141.3	0.561	1.32	19.7	50.3	2.62	33.4	0.01			272	205
300	ISL	7.49	7.46	34.186	26.713	137.2	0.603	1.14	17.0	53.8	2.71	34.5	0.01			302	
319		7.33	7.30	34.190	26.739	134.9	0.629	1.09	16.1	55.8	2.75	35.0	0.01			321	204
376		6.90	6.86	34.227	26.829	127.1	0.704	0.79	11.6	63.2	2.91	36.7	0.01			378	203
400	ISL	6.74	6.70	34.244	26.864	124.0	0.734	0.67	9.8	66.2	2.97	37.4	0.01			403	
441		6.49	6.45	34.271	26.919	119.2	0.784	0.50	7.3	70.9	3.06	38.5	0.01			444	202
500	ISL	6.23	6.19	34.306	26.981	114.0	0.852	0.35	5.1	76.6	3.15	39.6	0.01			503	
502		6.22	6.18	34.307	26.983	113.8	0.855	0.35	5.1	76.8	3.15	39.6	0.01			505	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 11.2 N	118 53.2 W	08/08/99	1913	UTC	1429 m	030	13 kn	300 02 03	2	1018.0 mb	19.0 C	17.0 C	20m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.33	17.33	33.599	24.362	355.5	0.000	5.67	103.5	3.0	0.31	0.0	0.00	0.19	0.04	0	
1	A	17.33	17.33	33.599	24.362	355.6	0.004	5.67	103.5	3.0	0.31	0.0	0.00	0.19	0.04	1	222
1		17.34	17.34	33.600	24.360	355.7	0.004									1	223
1		17.34	17.34	33.600	24.360	355.7	0.004									1	224
10	ISL	17.23	17.23	33.599	24.386	353.6	0.035	5.68	103.5	2.9	0.31	0.0	0.00	0.20	0.04	10	
12	A	17.20	17.20	33.599	24.393	353.0	0.043	5.68	103.4	2.9	0.31	0.0	0.00	0.21	0.04	12	221
20	ISL	17.14	17.14	33.598	24.407	351.9	0.071	5.69	103.5	2.9	0.31	0.1	0.00	0.24	0.05	20	
27	A	17.08	17.08	33.598	24.422	350.8	0.095	5.70	103.5	2.9	0.31	0.1	0.00	0.26	0.06	27	220
30	ISL	16.33	16.33	33.576	24.579	335.8	0.106	5.76	103.1	3.2	0.36	0.7	0.02	0.32	0.10	30	
42	A	13.31	13.30	33.553	25.212	275.8	0.142	6.00	101.0	5.3	0.61	4.1	0.15	0.59	0.31	42	219
49		12.76	12.75	33.557	25.324	265.2	0.161	5.59	93.0	6.8	0.75	6.7	0.24	0.68	0.45	49	217
49		12.76	12.75	33.557	25.324	265.2	0.161									49	218
50	ISL	12.71	12.70	33.559	25.336	264.2	0.164	5.54	92.1	7.0	0.77	7.0	0.24	0.68	0.47	50	
56	A	12.44	12.43	33.574 D	25.400	258.2	0.180	5.28	87.3	8.4	0.90	9.0	0.22	0.66	0.52	56	216
69		11.69	11.68	33.645	25.597	239.7	0.212	4.80	78.1	12.8	1.19	13.7	0.03	0.30	0.25	69	215
75	ISL	11.36	11.35	33.677	25.682	231.7	0.226	4.59	74.2	15.0	1.30	15.5	0.02	0.19	0.14	75	
77	A	11.25	11.24	33.687	25.710	229.1	0.231	4.52	72.9	15.7	1.34	16.1	0.02	0.16	0.11	77	214
87		10.73	10.72	33.737	25.842	216.7	0.253	4.11	65.6	19.1	1.51	18.9	0.01	0.06	0.05	87	213
94		10.25	10.24	33.775	25.955	206.0	0.268	3.59	56.7	21.3	1.62	20.6	0.01	0.03	0.04	94	212
100	ISL	10.02	10.01	33.807	26.019	200.0	0.280	3.37	52.9	22.7	1.68	21.6	0.01	0.03	0.04	100	
109		9.81	9.80	33.853	26.091	193.4	0.298	3.21	50.2	24.5	1.74	22.6	0.01	0.04	0.04	110	211
124		9.52	9.51	33.926	26.196	183.7	0.326	2.93	45.6	27.5	1.87	24.3	0.01	0.01	0.03	125	210
125	ISL	9.51	9.50	33.932	26.202	183.1	0.328	2.90	45.1	27.7	1.88	24.4	0.01	0.01	0.03	126	
143		9.41	9.39	34.038	26.302	174.1	0.360	2.36	36.6	31.6	2.09	26.5	0.01	0.00	0.03	144	209
150	ISL	9.35	9.33	34.061	26.330	171.5	0.372	2.26	35.0	32.6	2.14	27.0	0.01	0.00	0.03	151	
168		9.15	9.13	34.094	26.388	166.3	0.402	2.14	33.0	34.6	2.20	27.7	0.01	0.00	0.03	169	208
197		8.69	8.67	34.104	26.469	159.0	0.450	2.17	33.2	37.3	2.23	28.6	0.01	0.00	0.04	198	207
200	ISL	8.62	8.60	34.102	26.478	158.2	0.454	2.16	32.9	37.8	2.24	28.8	0.01			201	
227		8.02	8.00	34.097	26.565	150.2	0.496	2.06	31.0	42.6	2.36	30.5	0.01			228	206
250	ISL	7.72	7.70	34.125	26.632	144.2	0.530	1.71	25.6	47.5	2.50	32.3	0.01			251	
268		7.56	7.53	34.156	26.679	139.9	0.555	1.40	20.8	51.3	2.61	33.6	0.01			270	205
300	ISL	7.33	7.30	34.208	26.753	133.3	0.599	1.05	15.6	56.5	2.76	35.0	0.01			302	
317		7.23	7.20	34.232	26.786	130.4	0.622	0.91	13.5	58.7	2.83	35.5	0.01			319	204
378		6.91	6.87	34.261	26.854	124.7	0.699	0.64	9.4	64.5	2.96	37.1	0.01			380	203
400	ISL	6.84	6.80	34.274	26.874	123.1	0.727	0.56	8.2	66.1	3.00	37.4	0.01			403	
437		6.72	6.68	34.294	26.906	120.5	0.772	0.46	6.7	68.7	3.07	37.9	0.01			440	202
500	ISL	6.31	6.26	34.302	26.967	115.3	0.846	0.38	5.5	75.0	3.13	39.2	0.01			503	
513		6.22	6.17	34.304	26.981	114.1	0.861	0.36	5.2	76.3	3.14	39.5	0.01			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 1.0 N	119 14.1 W	09/08/99	0022	UTC	1582 m	300	13 kn	300 02 02	1	1017.6 mb	18.9 C	16.8 C	21m	1/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.72	17.72	33.600	24.269	364.4	0.000	5.66	104.1	3.1	0.31	0.1	0.00	0.18	0.04	0	
1		17.72	17.72	33.600	24.269	364.4	0.004	5.66	104.1	3.1	0.31	0.1	0.00	0.18	0.04	1	220
10	ISL	17.56	17.56	33.596	24.305	361.3	0.036	5.64	103.4	3.0	0.30	0.0	0.00	0.18	0.05	10	
11		17.53	17.53	33.596	24.312	360.6	0.040	5.64	103.3	3.0	0.30	0.0	0.00	0.18	0.05	11	219
19		17.42	17.42	33.596	24.339	358.4	0.069	5.65	103.3	3.0	0.30	0.0	0.00	0.22	0.04	19	218
20	ISL	17.19	17.19	33.582	24.383	354.2	0.072	5.70	103.7	3.0	0.31	0.0	0.01	0.25	0.05	20	
30		14.50	14.50	33.475	24.905	304.7	0.105	6.11	105.3	3.5	0.44	1.7	0.11	0.56	0.16	30	217
40		13.04	13.03	33.515	25.236	273.4	0.134	5.65	94.5	5.8	0.73	6.0	0.30	0.69	0.33	40	216
49		12.35	12.34	33.534	25.386	259.3	0.158	5.36	88.4	7.8	0.90	8.9	0.21	0.65	0.38	49	215
50	ISL	12.32	12.31	33.536	25.393	258.7	0.161	5.34	88.0	7.9	0.91	9.1	0.20	0.65	0.38	50	
60		12.15	12.14	33.555	25.441	254.4	0.186	5.20	85.4	8.7	0.98	10.2	0.12	0.66 A	0.43 A	60	214
71		12.01	12.00	33.578	25.485	250.4	0.214	5.03	82.4	9.8	1.04	11.4	0.08	0.32	0.25	71	213
75	ISL	11.88	11.87	33.602	25.528	246.4	0.224	4.93	80.5	10.9	1.10	12.4	0.06	0.25	0.20	75	
84		11.55	11.54	33.660	25.635	236.5	0.246	4.69	76.1	13.6	1.26	14.8	0.03	0.16	0.12	84	212
99		11.03	11.02	33.713	25.771	223.8	0.280	4.29	68.9	17.3	1.43	17.6	0.02	0.08	0.08	99	211
100	ISL	10.99	10.98	33.717	25.781	222.9	0.282	4.26	68.3	17.6	1.44	17.8	0.02	0.08	0.08	100	
119		10.14	10.13	33.800	25.994	202.9	0.323	3.65	57.5	22.9	1.68	21.7	0.01	0.02	0.05	120	210
125	ISL	9.91	9.90	33.821	26.049	197.7	0.335	3.49	54.7	24.2	1.73	22.5	0.01	0.02	0.05	126	
138		9.48	9.46	33.865	26.155	187.9	0.360	3.20	49.7	26.6	1.82	24.0	0.01	0.01	0.04	139	209
150	ISL	9.17	9.15	33.909	26.240	180.0	0.382	3.02	46.6	28.9	1.90	25.2	0.01	0.00	0.04	151	
168		8.79	8.77	33.968	26.346	170.1	0.414	2.81	43.0	32.5	2.00	26.7	0.01	0.00	0.04	169	208
199		8.15	8.13	34.034	26.496	156.3	0.464	2.46	37.1	38.8	2.18	29.2	0.01	0.00	0.03	200	207
200	ISL	8.14	8.12	34.035	26.498	156.1	0.466	2.46	37.1	38.9	2.18	29.2	0.01			201	
228		7.91	7.89	34.044	26.540	152.5	0.509	2.40	36.0	41.1	2.23	29.9	0.01			229	206
250	ISL	7.77	7.75	34.058	26.572	149.9	0.542	2.29	34.2	43.1	2.29	30.6	0.01			251	
268		7.64	7.61	34.075	26.604	147.0	0.569	2.13	31.8	45.4	2.36	31.3	0.01			270	205
300	ISL	7.28	7.25	34.121	26.692	139.0	0.615	1.62	24.0	52.3	2.57	33.5	0.01			302	
318		7.10	7.07	34.151	26.741	134.6	0.639	1.32	19.4	56.2	2.69	34.8	0.01			320	204
377		7.04	7.00	34.244	26.823	127.8	0.717	0.76	11.2	61.8	2.90	36.3	0.01			379	203
400	ISL	6.83	6.79	34.261	26.865	123.9	0.746	0.62	9.1	65.5	2.97	37.3	0.01			403	
438		6.44	6.40	34.279	26.932	117.9	0.792	0.46	6.7	71.8	3.08	38.8	0.01			441	202
500	ISL	6.09	6.05	34.297	26.992	112.8	0.863	0.36	5.2	77.5	3.17	40.0	0.01			503	
521		5.97	5.92	34.304	27.012	111.0	0.887	0.33	4.7	79.4	3.20	40.4	0.01			525	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 51.1 N	119 34.0 W	09/08/99	0419	UTC	1995 m	300 19 kn			1016.9 mb	17.5 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.37	17.37	33.538	24.306	360.9	0.000	5.69	103.9	3.0	0.31	0.1	0.00	0.14	0.03	0	
1		17.37	17.37	33.538	24.306	360.9	0.004	5.69	103.9	3.0	0.31	0.1	0.00	0.14	0.03	1	220
10	ISL	17.36	17.36	33.535	24.306	361.2	0.036	5.69	103.9	2.9	0.31	0.1	0.00	0.14	0.03	10	
14		17.35	17.35	33.534	24.308	361.2	0.051	5.69	103.8	2.8	0.31	0.1	0.00	0.14	0.03	14	219
20	ISL	17.23	17.23	33.529	24.333	359.0	0.072	5.71	104.0	2.8	0.31	0.1	0.00	0.14	0.03	20	
29		17.05	17.05	33.521	24.370	355.8	0.104	5.73	104.0	2.8	0.31	0.1	0.00	0.15	0.03	29	218
30	ISL	16.85	16.85	33.512	24.410	352.0	0.108	5.78	104.4	2.9	0.32	0.2	0.01	0.17	0.04	30	
44		13.91	13.90	33.421	24.988	297.2	0.153	6.24	106.2	4.1	0.46	1.8	0.11	0.51	0.22	44	217
50	ISL	13.29	13.28	33.402	25.099	286.7	0.171	6.05	101.7	4.5	0.54	3.0	0.28	0.56	0.29	50	
54		13.03	13.02	33.399	25.149	282.1	0.182	5.88	98.3	4.8	0.60	3.9	0.39	0.58	0.34	54	216
64		12.66	12.65	33.462	25.271	270.7	0.210	5.62	93.3	6.0	0.76	6.3	0.39	0.60	0.42	64	215
74		12.28	12.27	33.503	25.376	260.9	0.236	5.31	87.4	7.6	0.90	9.0	0.06	0.52	0.34	74	214
75	ISL	12.26	12.25	33.503	25.380	260.6	0.239	5.29	87.1	7.7	0.90	9.1	0.06	0.52	0.34	75	
85		12.03	12.02	33.525	25.441	255.0	0.265	5.08	83.2	9.0	0.97	10.3	0.06	0.43	0.31	85	213
94		11.67	11.66	33.618	25.580	241.9	0.287	4.85	78.9	12.2	1.18	13.6	0.07	0.24	0.18	94	212
100	ISL	11.38	11.37	33.631	25.644	236.0	0.302	4.70	76.0	13.6	1.25	14.8	0.05	0.16	0.12	100	
110		10.87	10.86	33.647	25.748	226.2	0.325	4.37	69.9	16.1	1.37	16.7	0.02	0.08	0.06	111	211
123		10.27	10.26	33.776	25.953	206.9	0.353	3.70	58.4	22.1	1.66	21.2	0.02	0.03	0.04	124	210
125	ISL	10.18	10.17	33.790	25.979	204.4	0.357	3.62	57.1	22.8	1.69	21.7	0.02	0.03	0.04	126	
145		9.38	9.36	33.884	26.186	185.0	0.396	3.10	48.0	27.7	1.87	24.7	0.01	0.01	0.04	146	209
150	ISL	9.27	9.25	33.898	26.215	182.3	0.405	3.08	47.6	28.3	1.89	25.1	0.01	0.01	0.04	151	
169		8.98	8.96	33.936	26.291	175.4	0.439	3.02	46.4	30.3	1.93	25.9	0.01	0.00	0.03	170	208
199		8.40	8.38	34.000	26.432	162.5	0.490	2.82	42.8	35.3	2.05	27.6	0.01	0.00	0.03	200	207
200	ISL	8.38	8.36	34.001	26.436	162.1	0.491	2.81	42.6	35.5	2.05	27.7	0.01			201	
229		7.89	7.87	34.036	26.537	152.9	0.537	2.50	37.5	40.9	2.22	29.8	0.01			230	206
250	ISL	7.70	7.68	34.079	26.598	147.3	0.568	2.13	31.8	45.0	2.37	31.3	0.01			251	
269		7.58	7.55	34.116	26.645	143.1	0.596	1.79	26.7	48.5	2.50	32.6	0.01			271	205
300	ISL	7.31	7.28	34.143	26.705	137.8	0.640	1.48	21.9	53.2	2.64	34.1	0.01			302	
319		7.15	7.12	34.152	26.734	135.2	0.666	1.34	19.8	55.8	2.70	34.9	0.01			321	204
378		6.73	6.70	34.186	26.819	127.9	0.743	0.93	13.6	63.7	2.89	37.2	0.00			380	203
400	ISL	6.56	6.52	34.200	26.853	124.8	0.771	0.79	11.5	66.8	2.96	38.0	0.00			403	
440		6.28	6.24	34.228	26.912	119.6	0.820	0.58	8.4	72.3	3.06	39.2	0.01			443	202
500	ISL	5.95	5.91	34.272	26.989	112.8	0.890	0.39	5.6	79.7	3.17	40.5	0.00			503	
508		5.91	5.87	34.278	26.999	111.9	0.899	0.37	5.3	80.7	3.18	40.7	0.00			511	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 30.5 N	120 15.0 W	09/08/99	1016	UTC	3928 m	210 14 kn			1015.9 mb	17.6 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.70	17.70	33.677	24.333	358.3	0.000	5.64	103.7	1.9	0.30	0.1	0.00	0.18	0.03	0	
1		17.70	17.70	33.677	24.333	358.3	0.004	5.64	103.7	1.9	0.30	0.1	0.00	0.18	0.03	1	220
10	ISL	17.46	17.46	33.650	24.370	355.1	0.036	5.67	103.8	2.2	0.30	0.1	0.00	0.18	0.04	10	
16		17.23	17.23	33.627	24.408	351.7	0.057	5.70	103.8	2.4	0.31	0.1	0.00	0.18	0.04	16	219
20	ISL	17.16	17.16	33.622	24.421	350.6	0.071	5.71	103.9	2.4	0.31	0.1	0.00	0.20	0.05	20	
30	ISL	16.98	16.98	33.609	24.454	347.8	0.106	5.74	104.1	2.4	0.32	0.1	0.00	0.30	0.08	30	
31		16.96	16.95	33.608	24.458	347.5	0.109	5.74	104.0	2.4	0.32	0.1	0.00	0.31	0.09	31	218
46		13.91	13.90	33.674	25.183	278.7	0.156	5.91	100.8	5.3	0.70	5.2	0.31	0.61	0.25	46	217
50	ISL	13.41	13.40	33.656	25.272	270.3	0.167	5.76	97.2	6.2	0.78	6.4	0.42	0.60	0.29	50	
55		12.84	12.83	33.625	25.361	261.9	0.181	5.50	91.7	7.5	0.88	8.2	0.47	0.59	0.33	55	216
64		11.63	11.62	33.599	25.572	241.9	0.203	4.93	80.1	11.4	1.15	13.0	0.10	0.47	0.30	64	215
75	ISL	11.17	11.16	33.615	25.669	233.0	0.229	4.55	73.2	13.8	1.24	14.8	0.05	0.32	0.20	75	
77		11.10	11.09	33.630	25.693	230.7	0.234	4.47	71.8	14.6	1.27	15.3	0.04	0.28	0.17	77	214
85		10.22	10.21	33.784	25.967	204.7	0.251	3.79	59.8	22.2	1.64	21.1	0.01	0.07	0.06	85	213
95		10.10	10.09	33.808	26.006	201.2	0.272	3.62	57.0	23.2	1.69	21.7	0.01	0.05	0.05	95	212
100	ISL	10.06	10.05	33.815	26.019	200.1	0.282	3.57	56.1	23.5	1.71	21.9	0.01	0.04	0.05	100	
112		9.80	9.79	33.849	26.089	193.6	0.305	3.36	52.5	25.4	1.78	23.1	0.01	0.03	0.05	113	211
125	ISL	8.95	8.94	33.956	26.311	172.7	0.329	2.80	43.0	31.7	1.98	26.4	0.01	0.01	0.04	126	
126		8.88	8.87	33.965	26.329	171.0	0.331	2.76	42.3	32.2	2.00	26.7	0.01	0.01	0.04	127	210
145		8.58	8.56	34.018	26.418	162.8	0.363	2.48	37.8	35.5	2.13	27.9	0.00	0.00	0.04	146	209
150	ISL	8.52	8.50	34.027	26.434	161.4	0.371	2.42	36.8	36.2	2.15	28.2	0.00	0.00	0.05	151	
169		8.31	8.29	34.056	26.489	156.5	0.401	2.19	33.2	39.0	2.24	29.6	0.01	0.00	0.07	170	208
200	ISL	7.94	7.92	34.129	26.602	146.2	0.448	1.63	24.5	45.8	2.46	32.0	0.01	0.00	0.03	201	
201		7.93	7.91	34.131	26.605	145.9	0.449	1.61	24.2	46.0	2.47	32.1	0.01	0.00	0.03	202	207
229		7.62	7.60	34.170	26.681	139.1	0.489	1.05	15.7	51.2	2.63	33.7	0.01			230	206
250	ISL	7.43	7.41	34.193	26.727	135.0	0.518	0.97	14.4	54.6	2.73	34.7	0.01			251	
267		7.28	7.25	34.210	26.761	131.9	0.541	0.91	13.5	57.4	2.80	35.5	0.01			269	205
300	ISL	6.93	6.90	34.243	26.836	125.2	0.583	0.68	10.0	63.7	2.95	36.9	0.01			302	
317		6.75	6.72	34.258	26.872	121.9	0.604	0.56	8.2	66.8	3.01	37.6	0.01			319	204
378		6.33	6.30	34.296	26.959	114.4	0.676	0.38	5.5	74.5	3.11	39.2	0.00			380	203
400	ISL	6.24	6.20	34.306	26.978	112.7	0.701	0.34	4.9	76.1	3.14	39.4	0.00			403	
435		6.14	6.10	34.317	27.000	111.1	0.740	0.30	4.3	78.0	3.17	39.6	0.00			438	202
500	ISL	5.98	5.94	34.330	27.031	108.9	0.812	0.27	3.9	80.9	3.20	40.2	0.00			503	
506		5.97	5.93	34.331	27.034	108.8	0.818	0.27	3.9	81.2	3.20	40.3	0.00			509	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 11.0 N	120 56.1 W	09/08/99	1747 UTC	3884 m	320 12 kn	320 02 02	1	1015.9 mb	18.1 C	16.1 C	25m	7/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.58	17.58	33.476	24.208	370.2	0.000	5.68	104.1	2.5	0.31	0.0	0.00	0.14	0.03	0	
1		17.59	17.59	33.476	24.206	370.5	0.004									1	224
2	A	17.58	17.58	33.476	24.208	370.3	0.007	5.68	104.1	2.5	0.31	0.0	0.00	0.14	0.03	2	223
10	ISL	17.40	17.40	33.466	24.244	367.2	0.037	5.71	104.3	2.5	0.30	0.0	0.00	0.12	0.02	10	
16	A	17.21	17.21	33.456	24.281	363.7	0.059	5.73	104.2	2.5	0.30	0.0	0.00	0.11	0.02	16	222
20	ISL	17.13	17.13	33.452	24.297	362.3	0.073	5.73	104.1	2.5	0.30	0.0	0.00	0.11	0.02	20	
26		17.00	17.00	33.446	24.324	360.0	0.095	5.74	104.0	2.5	0.30	0.0	0.00	0.11	0.03	26	221
30	ISL	16.39	16.39	33.415	24.442	348.9	0.109	5.90	105.6	2.5	0.30	0.0	0.00	0.14	0.04	30	
35	A	15.56	15.55	33.382	24.604	333.6	0.126	6.12	107.7	2.6	0.30	0.0	0.00	0.18	0.05	35	220
45		14.86	14.85	33.385	24.760	319.0	0.159	6.25	108.5	2.8	0.33	0.1	0.01	0.27	0.10	45	219
50	ISL	14.38	14.37	33.419	24.888	306.9	0.175	6.14	105.6	3.3	0.42	1.3	0.10	0.34	0.15	50	
53	A	14.11	14.10	33.442	24.963	299.9	0.184	6.05	103.4	3.6	0.48	2.1	0.17	0.39	0.19	53	218
62		13.66	13.65	33.482	25.087	288.3	0.210	5.86	99.3	4.4	0.59	3.4	0.42	0.50	0.31	62	217
70		13.22	13.21	33.481	25.175	280.0	0.233									70	216
70	A	13.21	13.20	33.480	25.176	279.9	0.233	5.70	95.7	4.9	0.69	4.9	0.71	0.49	0.39	70	215
75	ISL	12.84	12.83	33.483	25.252	272.8	0.247	5.56	92.6	5.4	0.77	6.6	0.41	0.30	0.25	75	
78		12.63	12.62	33.491	25.299	268.4	0.255	5.48	90.9	5.7	0.82	7.6	0.19	0.18	0.15	78	214
89		12.34	12.33	33.596	25.437	255.5	0.284	5.22	86.1	7.5	0.96	10.0	0.02	0.09	0.08	89	213
99	A	11.75	11.74	33.597	25.549	245.0	0.309	4.96	80.8	10.8	1.11	12.6	0.02	0.05	0.05	99	212
100	ISL	11.68	11.67	33.591	25.557	244.2	0.311	4.94	80.3	11.0	1.12	12.8	0.02	0.05	0.05	100	
111		11.06	11.05	33.551	25.639	236.6	0.338	4.67	74.9	12.7	1.22	14.5	0.02	0.04	0.04	111	211
125		10.78	10.76	33.674	25.785	223.0	0.370	4.26	68.0	15.7	1.31	16.2	0.02	0.03	0.04	126	210
143		9.98	9.96	33.767	25.996	203.2	0.408	3.58	56.2	21.7	1.61	21.1	0.01	0.01	0.02	144	209
150	ISL	9.75	9.73	33.800	26.060	197.2	0.422	3.44	53.7	23.3	1.68	22.2	0.01	0.01	0.02	151	
168		9.29	9.27	33.874	26.193	184.8	0.456	3.25	50.3	26.4	1.78	23.8	0.01	0.00	0.02	169	208
198		8.73	8.71	33.966	26.354	169.9	0.510	3.16	48.3	30.5	1.88	25.5	0.01	0.00	0.02	199	207
200	ISL	8.70	8.68	33.970	26.362	169.2	0.513	3.15	48.1	30.8	1.89	25.6	0.01			201	
228		8.28	8.26	34.004	26.454	160.9	0.559	2.99	45.2	34.8	2.00	27.1	0.01			229	206
250	ISL	7.89	7.86	34.013	26.519	154.9	0.594	2.90	43.5	38.2	2.07	28.3	0.01			251	
269		7.56	7.53	34.017	26.570	150.2	0.623	2.78	41.4	41.5	2.15	29.4	0.01			270	205
300	ISL	7.09	7.06	34.037	26.652	142.7	0.668	2.29	33.7	48.4	2.36	32.0	0.00			302	
318		6.85	6.82	34.049	26.694	138.8	0.694	1.98	29.0	52.4	2.49	33.5	0.00			320	204
378		6.28	6.25	34.072	26.788	130.4	0.774	1.44	20.8	62.4	2.73	36.8	0.00			380	203
400	ISL	6.12	6.08	34.094	26.826	126.9	0.803	1.21	17.4	66.4	2.82	37.8	0.00			402	
439		5.84	5.80	34.137	26.896	120.7	0.851	0.84	12.0	73.4	2.96	39.5	0.00			442	202
500	ISL	5.36	5.32	34.177	26.986	112.4	0.922	0.58	8.2	83.7	3.11	41.5	0.00			503	
514		5.25	5.21	34.186	27.006	110.5	0.938	0.52	7.3	86.1	3.14	42.0	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 51.0 N	121 34.2 W	10/08/99	0054 UTC	4116 m	290 10 kn	320 01 02	1	1014.3 mb	20.0 C	18.0 C		6/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.73	18.73	33.407	23.873	402.2	0.000	5.63	105.4	2.6	0.32	0.6	0.00	0.10	0.01	0	
1		18.73	18.73	33.407	23.873	402.2	0.004	5.63	105.4	2.6	0.32	0.6	0.00	0.10	0.01	1	220
10	ISL	18.18	18.18	33.334	23.954	394.8	0.040	5.67	105.0	2.6	0.32	0.6	0.00	0.11	0.01	10	
15		17.62	17.62	33.279	24.048	386.0	0.059	5.70	104.4	2.7	0.32	0.6	0.00	0.11	0.02	15	219
20	ISL	16.95	16.95	33.248	24.183	373.2	0.078	5.85	105.8	2.8	0.32	0.6	0.00	0.12	0.02	20	
29		15.77	15.77	33.231	24.441	348.9	0.111	6.12	108.1	3.0	0.32	0.6	0.00	0.15	0.04	29	218
30	ISL	15.70	15.70	33.237	24.461	347.0	0.114	6.14	108.3	3.0	0.32	0.6	0.00	0.15	0.04	30	
45		14.85	14.84	33.307	24.702	324.5	0.165	6.25	108.4	3.0	0.31	0.6	0.00	0.28	0.10	45	217
50	ISL	14.41	14.40	33.291	24.783	316.9	0.181	6.26	107.6	3.1	0.32	0.7	0.01	0.37	0.13	50	
55		13.98	13.97	33.275	24.861	309.6	0.196	6.26	106.6	3.2	0.35	0.8	0.02	0.45	0.17	55	216
65		13.42	13.41	33.299	24.994	297.1	0.227	6.07	102.2	3.9	0.50	2.0	0.16	0.54	0.27	65	215
75		13.19	13.18	33.388	25.109	286.4	0.256	5.87	98.4	4.2	0.62	3.4	0.41	0.68	0.44	75	214
85		12.85	12.84	33.467	25.238	274.4	0.284	5.64	94.0	5.8	0.78	5.9	0.57	0.41	0.30	85	213
94		12.49	12.48	33.532	25.359	263.1	0.308	5.43	89.8	7.0	0.89	8.3	0.06	0.19	0.21	94	212
100	ISL	12.29	12.28	33.550	25.411	258.2	0.324	5.33	87.8	7.6	0.93	9.1	0.04	0.12	0.15	100	
110		11.95	11.94	33.567	25.489	251.1	0.349	5.15	84.2	9.0	1.01	10.4	0.02	0.08	0.08	110	211
124		11.35	11.33	33.623	25.643	236.6	0.383	4.76	76.9	13.1	1.23	14.2	0.01	0.04	0.05	125	210
125	ISL	11.30	11.28	33.627	25.656	235.4	0.386	4.72	76.2	13.4	1.25	14.5	0.01	0.04	0.05	126	
143		10.47	10.45	33.710	25.868	215.5	0.426	4.00	63.4	19.3	1.52	19.2	0.01	0.02	0.04	144	209
150	ISL	10.18	10.16	33.745	25.945	208.3	0.441	3.78	59.6	21.1	1.60	20.6	0.01	0.02	0.05	151	
170		9.48	9.46	33.844	26.139	190.0	0.481	3.30	51.2	25.6	1.77	23.7	0.01	0.01	0.08	171	208
199		8.74	8.72	33.964	26.351	170.2	0.533	3.04	46.5	31.0	1.93	26.4	0.01	0.00	0.02	200	207
200	ISL	8.72	8.70	33.966	26.356	169.8	0.535	3.03	46.3	31.2	1.93	26.5	0.01			201	
229		8.15	8.13	34.013	26.480	158.3	0.583	2.90	43.7	36.3	2.05	28.1	0.01			230	206
250	ISL	7.90	7.87	34.023	26.525	154.3	0.615	2.84	42.6	38.6	2.10	28.9	0.01			251	
268		7.70	7.67	34.023	26.555	151.7	0.643	2.78	41.5	40.5	2.14	29.7	0.01			269	205
300	ISL	7.13	7.10	34.019	26.632	144.6	0.690	2.54	37.4	46.7	2.29	31.9	0.00			302	
318		6.82	6.79	34.020	26.675	140.5	0.716	2.35	34.4	50.6	2.39	33.3	0.00			320	204
379		6.27	6.24	34.071	26.789	130.3	0.799	1.49	21.5	62.3	2.72	37.8	0.00			381	203
400	ISL	6.16	6.12	34.107	26.831	126.5	0.826	1.19	17.1	66.5	2.83	39.1	0.00			402	
440		5.97	5.93	34.176	26.910	119.4	0.875	0.71	10.2	74.0	3.02	41.0	0.00			443	202
500	ISL	5.60	5.56	34.231	27.000	111.4	0.944	0.46	6.5	82.5	3.15	42.7	0.00			503	
516		5.50	5.46	34.246	27.024	109.2	0.962	0.39	5.5	84.8	3.19	43.1	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 31.2 N	122 15.0 W	10/08/99	0652	UTC	4197 m	00 kn			1014.9 mb	18.8 C	17.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.50	18.50	33.391	23.918	397.9	0.000	5.63	105.0	2.9	0.32	0.0	0.00	0.10	0.03	0	
1		18.50	18.50	33.391	23.918	397.9	0.004	5.63	105.0	2.9	0.32	0.0	0.00	0.10 A	0.03 A	1	220
10	ISL	17.73	17.73	33.322	24.054	385.2	0.039	5.72	105.0	3.0	0.32	0.0	0.00	0.11	0.03	10	
15		17.06	17.06	33.276	24.179	373.5	0.058	5.82	105.5	3.1	0.32	0.0	0.00	0.11 A	0.03 A	15	219
20	ISL	16.50	16.50	33.263	24.299	362.2	0.077	5.95	106.6	3.1	0.32	0.0	0.00	0.14	0.04	20	
29		15.58	15.58	33.264	24.508	342.5	0.108	6.18	108.7	3.1	0.32	0.0	0.00	0.22 A	0.06 A	29	218
30	ISL	15.52	15.52	33.269	24.526	340.9	0.112	6.19	108.8	3.1	0.32	0.0	0.00	0.23	0.06	30	
45		14.61	14.60	33.294	24.743	320.6	0.161	6.27	108.2	3.2	0.34	0.0	0.00	0.46 A	0.21 A	45	217
50	ISL	14.05	14.04	33.242	24.821	313.3	0.177	6.24	106.4	3.4	0.37	0.3	0.02	0.61	0.33	50	
55		13.53	13.52	33.204	24.898	306.0	0.193	6.18	104.3	3.7	0.41	0.8	0.07	0.72 A	0.44 A	55	216
65		13.18	13.17	33.288	25.033	293.4	0.223	6.03	101.0	4.8	0.57	2.9	0.27	0.61 A	0.44 A	65	215
75	ISL	12.98	12.97	33.320	25.098	287.4	0.252	5.92	98.8	5.4	0.66	4.1	0.47	0.42	0.37	75	
76		12.96	12.95	33.322	25.104	286.9	0.255	5.91	98.6	5.4	0.67	4.2	0.48	0.40 A	0.36 A	76	214
85		12.70	12.69	33.348	25.175	280.4	0.280	5.73	95.1	5.5	0.70	5.1	0.41	0.28 A	0.25 A	85	213
96		12.23	12.22	33.354	25.270	271.5	0.310	5.50	90.4	6.0	0.79	6.9	0.03	0.17 A	0.14 A	96	212
100	ISL	12.24	12.23	33.393	25.299	268.9	0.321	5.47	89.9	6.2	0.82	7.4	0.02	0.14	0.12	100	
108		12.26	12.25	33.479	25.362	263.1	0.342	5.42	89.2	7.0	0.89	8.6	0.01	0.09 A	0.10 A	108	211
123		11.69	11.67	33.569	25.539	246.5	0.381	5.04	82.0	10.3	1.09	11.9	0.01	0.04 A	0.04 A	124	210
125	ISL	11.61	11.59	33.581	25.563	244.3	0.386	4.97	80.7	11.0	1.12	12.5	0.01	0.04	0.04	126	
144		10.79	10.77	33.690	25.796	222.4	0.430	4.27	68.2	17.5	1.44	17.6	0.01	0.02 A	0.03 A	145	209
150	ISL	10.52	10.50	33.718	25.865	215.9	0.443	4.06	64.4	19.2	1.52	19.0	0.01	0.02	0.03	151	
169		9.78	9.76	33.805	26.059	197.7	0.482	3.61	56.4	23.3	1.69	22.0	0.01	0.01 A	0.02 A	170	208
199		9.25	9.23	33.951	26.261	179.0	0.539	3.97	61.4	24.2	1.55	20.9	0.01	0.00 A	0.01 A	200	207
200	ISL	9.23	9.21	33.954	26.266	178.5	0.541	3.96	61.2	24.3	1.55	20.9	0.01			201	
229		8.69	8.67	34.010	26.396	166.6	0.591	3.79	57.9	29.2	1.70	23.3	0.01			230	206
250	ISL	8.27	8.24	34.016	26.465	160.2	0.625	3.42	51.7	33.8	1.88	25.7	0.00			251	
270		7.89	7.86	34.014	26.520	155.2	0.657	3.01	45.1	38.4	2.06	28.1	0.00			271	205
300	ISL	7.51	7.48	34.033	26.590	148.8	0.702	2.55	37.9	43.8	2.26	30.5	0.01			302	
317		7.32	7.29	34.045	26.627	145.5	0.727	2.31	34.2	46.9	2.36	31.7	0.01			319	204
375		6.45	6.42	34.073	26.767	132.5	0.808	1.56	22.6	60.3	2.70	36.3	0.00			377	203
400	ISL	6.25	6.21	34.106	26.819	127.7	0.840	1.25	18.0	65.3	2.82	37.7	0.00			402	
438		6.01	5.97	34.156	26.889	121.4	0.888	0.85	12.2	72.4	2.98	39.5	0.00			441	202
500	ISL	5.41	5.37	34.185	26.986	112.4	0.960	0.58	8.2	84.1	3.13	41.8	0.00			503	
519		5.22	5.18	34.195	27.017	109.6	0.981	0.50	7.0	87.7	3.18	42.5	0.00			522	201

A) CHLOROPHYLL AND PHAEOPIGMENT SAMPLES APPEAR TO HAVE BEEN LISTED OUT OF ORDER ON THE ORIGINAL DATA SHEET. THE SAMPLE ORDER PRESENTED HERE IS CONFIRMED BY THE CTD IN SITU FLUOROMETER.

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 10.9 N	122 55.5 W	10/08/99	1309	UTC	3761 m	00 kn			1013.9 mb	18.8 C	17.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.16	19.16	33.284	23.671	421.5	0.000	5.51	103.9	2.9	0.31	0.1	0.00	0.08	0.01	0	
2		19.16	19.16	33.284	23.671	421.5	0.008	5.51	103.9	2.9	0.31	0.1	0.00	0.08	0.01	2	220
10	ISL	18.45	18.45	33.253	23.825	407.0	0.042	5.62	104.6	2.9	0.31	0.1	0.00	0.09	0.01	10	
16		17.70	17.70	33.240	23.999	390.7	0.066	5.73	105.1	2.8	0.30	0.1	0.00	0.10	0.01	16	219
20	ISL	17.37	17.37	33.265	24.097	381.5	0.081	5.75	104.8	2.8	0.29	0.1	0.00	0.09	0.01	20	
30		16.69	16.69	33.336	24.312	361.3	0.118	5.78	104.0	2.7	0.27	0.1	0.00	0.08	0.01	30	218
46		16.07	16.06	33.338	24.456	348.0	0.175	5.88	104.5	2.7	0.26	0.1	0.00	0.09	0.02	46	217
50	ISL	15.78	15.77	33.352	24.532	340.9	0.189	5.93	104.8	2.7	0.26	0.1	0.00	0.09	0.02	50	
60		15.02	15.01	33.381	24.722	323.0	0.222	6.05	105.3	2.8	0.25	0.1	0.00	0.10	0.03	60	216
75		14.10	14.09	33.326	24.876	308.8	0.269	6.02	102.8	2.9	0.27	0.1	0.00	0.04 U	0.01 U	75	215
84		14.16	14.15	33.468	24.973	299.8	0.297	5.93	101.5	3.0	0.26	0.1	0.00	0.01 U	0.04 U	84	214
95		14.83	14.82	33.763	25.059	292.1	0.329	5.77	100.3	3.0	0.23	0.0	0.01	0.02 U	0.02 U	95	213
100	ISL	15.15	15.13	33.892	25.089	289.4	0.344	5.71	100.0	3.0	0.22	0.0	0.01	0.24	0.22	100	
105		15.36	15.34	33.989	25.118	286.9	0.358	5.65	99.4	3.1	0.21	0.0	0.01	0.26	0.25	105	212
115		15.08	15.06	33.989	25.180	281.3	0.386	5.57	97.4	3.3	0.25	0.4	0.12	0.29	0.31	115	211
125	ISL	14.75	14.73	33.953	25.224	277.3	0.414	5.48	95.2	3.8	0.31	1.2	0.14	0.25	0.24	126	
126		14.69	14.67	33.944	25.230	276.8	0.417	5.47	94.9	3.8	0.32	1.4	0.14	0.24	0.23	127	210
140		12.43	12.41	33.653	25.465	254.2	0.454	4.97	82.2	7.4	0.72	7.1	0.02	0.12	0.14	141	209
150	ISL	11.58	11.56	33.632	25.609	240.6	0.479	4.70	76.3	10.1	0.92	10.3	0.02	0.07	0.09	151	
164		10.90	10.88	33.701	25.786	223.9	0.512	4.40	70.4	13.8	1.14	14.0	0.01	0.04	0.04	165	208
195		9.74	9.72	33.858	26.108	193.6	0.576	3.80	59.3	21.5	1.52	20.1	0.01	0.00	0.02	196	207
200	ISL	9.62	9.60	33.875	26.141	190.6	0.586	3.76	58.6	22.3	1.55	20.6	0.01			201	
230		9.04	9.02	33.950	26.294	176.4	0.641	3.59	55.2	26.6	1.69	22.9	0.01			231	206
250	ISL	8.67	8.64	33.982	26.377	168.7	0.675	3.40	51.9	30.0	1.80	24.7	0.01			251	
270		8.32	8.29	34.003	26.447	162.3	0.709	3.18	48.1	33.7	1.92	26.4	0.00			271	205
300	ISL	7.77	7.74	34.018	26.541	153.6	0.756	2.88	43.1	39.4	2.09	28.7	0.00			302	
319		7.44	7.41	34.023	26.592	148.9	0.785	2.68	39.8	43.1	2.20	30.1	0.00			321	204
378		6.65	6.62	34.044	26.718	137.3	0.869	1.99	29.0	54.7	2.52	34.1	0.00			380	203
400	ISL	6.47	6.43	34.063	26.757	133.8	0.899	1.70	24.7	58.7	2.64	35.4	0.00			402	
441		6.18	6.14	34.102	26.825	127.7	0.953	1.21	17.4	65.8	2.83	37.7	0.00			444	202
500	ISL	5.66	5.62	34.139	26.920	119.0	1.025	0.83	11.8	76.2	3.00	40.2	0.00			503	
513		5.55	5.51	34.147	26.940	117.2	1.041	0.75	10.6	78.5	3.04	40.8	0.00			516	201

RV NEW HORIZON CALCOFI CRUISE 9908 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
29 51.3 N	123 35.0 W	10/08/99	1900 UTC	4160 m	200 03 kn	290 02 08	5	1015.9 mb	19.0 C	18.5 C	36m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.57	19.57	33.358	23.622	426.1	0.000	5.47	104.0	2.7	0.28	0.2	0.00	0.07	0.01	0	
1	A	19.57	19.57	33.358	23.622	426.1	0.004	5.47	104.0	2.7	0.28	0.2	0.00	0.07	0.01	1	223
2		19.59	19.59	33.357	23.617	426.7	0.009									2	224
10	ISL	18.50	18.50	33.392	23.919	398.1	0.042	5.56	103.7	2.7	0.26	0.2	0.00	0.07	0.01	10	
11		18.31	18.31	33.399	23.972	393.1	0.045	5.57	103.5	2.7	0.26	0.2	0.00	0.07	0.01	11	222
20	ISL	17.96	17.96	33.409	24.066	384.5	0.080	5.63	103.9	2.7	0.26	0.2	0.00	0.07	0.01	20	
22	A	17.91	17.91	33.407	24.076	383.6	0.088	5.64	104.0	2.7	0.26	0.2	0.00	0.07	0.01	22	221
30	ISL	17.11	17.11	33.401	24.263	365.9	0.118	5.75	104.4	2.6	0.27	0.2	0.00	0.07	0.01	30	
35		16.58	16.57	33.396	24.384	354.6	0.136	5.82	104.5	2.5	0.27	0.2	0.00	0.07	0.01	35	220
49	A	15.86	15.85	33.363	24.523	341.8	0.185	5.93	105.0	2.6	0.25	0.2	0.00	0.09	0.02	49	219
50	ISL	15.81	15.80	33.365	24.536	340.6	0.188	5.94	105.1	2.6	0.25	0.2	0.00	0.09	0.02	50	
58		15.40	15.39	33.378	24.637	331.1	0.215	5.98	104.9	2.6	0.27	0.1	0.00	0.10	0.02	58	218
68		14.98	14.97	33.358	24.714	324.1	0.248	6.02	104.7	2.6	0.26	0.1	0.00	0.10	0.03	68	217
75	A	14.65	14.64	33.354	24.781	317.8	0.270	6.00	103.7	2.6	0.27	0.1	0.00	0.14	0.06	75	216
88		14.41	14.40	33.387	24.858	310.8	0.311	5.94	102.1	2.7	0.28	0.1	0.00	0.22	0.13	88	215
99	A	14.11	14.10	33.370	24.908	306.3	0.345	5.91	101.0	2.8	0.31	0.2	0.03	0.32	0.30	99	214
100	ISL	14.11	14.10	33.375	24.912	306.0	0.348	5.90	100.8	2.8	0.31	0.2	0.05	0.32	0.30	100	
109		14.07	14.05	33.443	24.973	300.4	0.376									109	213
110		14.06	14.04	33.442	24.975	300.3	0.379	5.77	98.5	3.1	0.36	0.7	0.25	0.34	0.33	110	212
120		14.24	14.22	33.632	25.084	290.3	0.408	5.60	96.1	3.4	0.38	1.4	0.18	0.27	0.29	120	211
125	ISL	14.18	14.16	33.685	25.138	285.3	0.422	5.50	94.3	3.7	0.41	2.0	0.12	0.24	0.27	126	
131		14.10	14.08	33.745	25.201	279.5	0.439	5.37	92.0	4.2	0.46	3.0	0.06	0.20	0.25	132	210
141	A	13.41	13.39	33.682	25.294	270.7	0.467	5.20	87.7	5.4	0.57	5.0	0.02	0.14	0.17	142	209
150	ISL	12.84	12.82	33.681	25.407	260.1	0.491	4.99	83.2	7.0	0.69	6.9	0.02	0.10	0.13	151	
162		12.13	12.11	33.713	25.569	244.8	0.521	4.70	77.2	9.5	0.86	9.6	0.01	0.07	0.09	163	208
192		10.45	10.43	33.793	25.937	210.1	0.589	4.17	66.1	16.6	1.27	16.4	0.01	0.02	0.02	193	207
200	ISL	10.17	10.15	33.825	26.010	203.2	0.606	4.12	64.9	18.0	1.33	17.5	0.01			201	
228		9.47	9.44	33.927	26.207	184.8	0.660	4.00	62.1	22.2	1.48	20.2	0.00			229	206
250	ISL	9.03	9.00	33.969	26.311	175.2	0.700	3.81	58.6	25.9	1.61	22.2	0.00			251	
268		8.70	8.67	33.990	26.379	168.9	0.731	3.60	55.0	29.2	1.73	23.9	0.00			269	205
300	ISL	8.02	7.99	34.017	26.504	157.3	0.783	3.01	45.3	36.9	2.01	27.7	0.00			302	
319		7.65	7.62	34.030	26.568	151.3	0.812	2.64	39.4	41.6	2.18	29.8	0.00			321	204
375		7.04	7.00	34.070	26.686	140.7	0.894	1.96	28.8	51.4	2.48	33.4	0.00			377	203
400	ISL	6.78	6.74	34.095	26.741	135.6	0.929	1.61	23.5	56.4	2.62	35.0	0.00			402	
435		6.42	6.38	34.129	26.816	128.7	0.975	1.17	17.0	63.5	2.80	37.2	0.00			438	202
500	ISL	5.80	5.76	34.161	26.920	119.1	1.055	0.75	10.7	75.5	3.00	40.1	0.00			503	
510		5.70	5.66	34.166	26.936	117.6	1.067	0.69	9.8	77.4	3.03	40.6	0.00			513	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 2.2 N	120 55.5 W	23/08/99	1758 UTC	11 m		1207 - 1910 PST	1207 PST	1903 PST	407.5 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	13.91	33.706	25.207	6.57	112.1	1.5	0.46	1.2	0.09	1.19	0.54	87. A	16.3	19.7	18.0	0.41
7	13.84	33.706	25.221	6.64	113.1	1.4	0.43	0.8	0.07	1.47	0.92	38.	18.9	18.8	18.8	0.42
14	13.51	33.704	25.287	6.48	109.6	1.8	0.47	0.8	0.05	1.33	0.81	14.	11.5	13.8	12.6	0.48
23	13.12	33.705	25.367	5.91	99.2	3.6	0.71	3.3	0.12	2.43	1.94	4.0	8.8	8.9	8.9	0.47
31	12.83	33.708	25.427	5.51	91.9	5.2	0.89	5.5	0.18	4.16	3.51	1.3	3.9	3.3	3.6	0.49
43	11.69	33.713	25.649	4.45	72.5	12.9	1.37	13.7	0.35	4.69 B	3.97 B	0.25	0.18	0.13	0.15	0.37

B) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO ESTIMATED FROM ADJACENT LEVELS.

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 3.5 N	122 56.8 W	22/08/99	1946 UTC	12 m		1245 - 1920 PST	1215 PST	1916 PST	200.9 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	16.83	33.637	24.509	5.77	104.3	1.9	0.32	0.2	0.01	0.54	0.14	88. A	9.4	9.9	9.7	0.15
8	16.83	33.632	24.506	5.75	103.9	1.8	0.32	0.2	0.01	0.52	0.14	36.	10.0	9.4	9.7	0.13
18	16.81	33.632	24.511	5.75	103.9	1.8	0.32	0.2	0.01	0.52	0.15	10.	5.4	4.9	5.1	0.16
26	16.80	33.633	24.514	5.76	104.1	1.8	0.32	0.2	0.01	0.55	0.14	3.6	1.8	1.8	1.8	0.11
32	15.20	33.659	24.896	5.88	102.9	2.7	0.47	1.7	0.15	0.97	0.41	1.7	1.5	1.3	1.4	0.12
43	13.44	33.654	25.264	5.41	91.4	7.9	0.87	7.0	0.76	0.67	0.36					
49	12.53	33.620	25.418	5.19	86.0	9.8	1.03	10.3	0.84	0.36	0.26	0.19	0.02	0.02	0.02	0.12

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 9.5 N	121 10.0 W	20/08/99	1755 UTC	6 m		1210 - 1915 PST	1208 PST	1913 PST	2096.4 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	13.40	33.685	25.295	6.38	107.7	3.8	0.57	3.2	0.20	12.34	2.21	60. A	208.3	210.3	209.3	0.74
4	13.40	33.685	25.295	6.39	107.8	3.7	0.56	3.1	0.19	11.98	2.18	36.	226.4	212.3	219.4	0.65
8	13.12	33.685	25.351	6.10	102.4	5.0	0.67	4.8	0.22	11.53	2.29	13.	122.4	119.3	120.9	0.55
13	12.90	33.705	25.411	5.97	99.7	4.8	0.76	5.4	0.23	9.75	3.53	3.6	41.9	45.8	43.9	0.46
17	12.88	33.712	25.420	5.96	99.5	4.7	0.75	5.3	0.22	10.33	4.33	1.3	12.7	11.4	12.0	0.34
24	12.87	33.708	25.419	5.97	99.7	4.6	0.77	5.2	0.22	11.35	4.03	0.22	0.78	0.76	0.77	0.28

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 49.0 N	123 53.0 W	21/08/99	1940 UTC	22 m		1240 - 1930 PST	1219 PST	1922 PST	65.2 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	18.62	33.265	23.792	5.48	102.3	2.3	0.31	0.1	0.00	0.09	0.01	87. A	1.8	1.9	1.9	0.10
14	18.62	33.265	23.793	5.48	102.3	2.4	0.29	0.1	0.00	0.09	0.01	38.	1.9	1.8	1.9	0.13
33	16.83	33.319	24.266	5.80	104.6	2.4	0.27	0.1	0.00	0.09	0.02	10.	0.80	0.88	0.84	0.14
47	16.08	33.331	24.448	5.91	105.1	2.4	0.26	0.1	0.00	0.11	0.02	3.8	0.27	0.28	0.28	0.18
61	15.74	33.611	24.741	6.00	106.1	2.5	0.23	0.1	0.00	0.13	0.03	1.4	0.16	0.11	0.13	0.12
71	14.29	33.319	24.831	6.09	104.4	2.5	0.27	0.1	0.00	0.15	0.04					
77	14.82	33.534	24.884	6.01	104.3	2.6	0.25	0.1	0.00	0.18	0.06					
87	14.16	33.463	24.969	6.00	102.7	2.6	0.26	0.1	0.00	0.20	0.09	0.23	0.01	0.02	0.01	0.06

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 16.5 N	120 1.0 W	19/08/99	1923 UTC	6 m		1218 - 1917 PST	1204 PST	1913 PST	946.1 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	13.28	33.790	25.400	5.61	94.5	13.9	1.03	10.9	0.27	2.47	0.44	77. A	77.0	71.1	74.1	0.39
4	12.85	33.789	25.485	5.59	93.3	13.9	1.04	10.9	0.28	2.71	0.52	36.	91.1	90.2	90.6	0.52
8	12.62	33.793	25.533	5.42	90.1	14.7	1.09	11.6	0.29	3.18	0.59	13.	67.3	74.4	70.8	0.65
13	12.21	33.778	25.601	4.77	78.6	16.1	1.25	13.9	0.36	2.40	0.74	3.6	22.6	23.5	23.0	0.40
17	11.27	33.757	25.760	3.72	60.0	18.5	1.54	17.7	0.41	0.92	0.56	1.3	3.9	3.8	3.9	0.18
24	11.03	33.787	25.827	3.41	54.8	20.7	1.66	19.2	0.31	0.54	0.41	0.22	0.08	0.06	0.07	0.11

A) INCUBATION LIGHT INTENSITIES WERE 95, 37, 12, 3.9, 1.4, 0.24 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 34.5 N	120 45.3 W	18/08/99	1846 UTC	9 m		1210 - 1910 PST	1207 PST	1911 PST	747.6 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	14.33	33.645	25.072	6.04	103.9	6.6	0.58	3.9	0.11	2.22	0.76	71. A	25.1	22.4	23.8	0.25
7	14.32	33.646	25.075	6.05	104.0	6.6	0.58	3.9	0.11	2.11	0.69	30.	49.2	51.0	50.1	0.26
13	14.31	33.645	25.076	6.04	103.8	6.7	0.58	4.0	0.11	2.08	0.75	11.	38.2	38.0	38.1	0.24
19	14.29	33.644	25.080	6.02	103.5	6.7	0.59	4.0	0.11	2.02	0.72	3.9	16.5	17.1	16.8	0.14
24	14.24	33.643	25.090	5.93	101.8	6.9	0.61	4.5	0.12	1.79	0.68	1.7	5.6	5.9	5.7	0.19
34	14.18	33.644	25.103	5.83	100.0	7.1	0.65	5.0	0.13	1.38	0.56	0.30	0.23	0.26	0.25	0.11

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 39.7 N	118 58.1 W	14/08/99	1813 UTC	14 m		1205 - 1911 PST	1201 PST	1911 PST	490.5 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	17.58	33.618	24.317	5.83	106.9	3.7	0.35	0.5	0.02	0.40	0.08	90. A	13.7	13.7	13.7	0.15
8	15.54	33.591	24.768	6.03	106.2	5.1	0.48	2.3	0.07	0.77	0.17	42.	24.9	23.5	24.2	0.13
19	13.23	33.594	25.259	5.48	92.1	8.4	0.81	7.5	0.13	0.81	0.34	12.	12.3	12.1	12.2	0.14
30	12.15	33.609	25.482	5.01	82.3	11.0	1.04	11.2	0.14	0.78	0.37	3.7	4.9	5.0	5.0	0.09
39	12.06	33.609	25.499	4.98	81.7	10.9	1.06	11.4	0.14	0.79	0.39	1.4	2.1	2.1	2.1	0.07
46	12.03	33.610	25.506	4.97	81.5	11.0	1.07	11.6	0.13	0.77	0.40					
55	11.62	33.641	25.606	4.62	75.1	13.2	1.20	13.9	0.07	0.51	0.31	0.24	0.09	0.08	0.08	0.05

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 40.6 N	121 1.6 W	15/08/99	1745 UTC	14 m		1213 - 1920 PST	1209 PST	1918 PST	253.4 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	16.61	33.626	24.552	5.82	104.8	1.7	0.31	0.2	0.00	0.35	0.09	90. A	4.5	4.0	4.3	0.15
9	16.60	33.626	24.555	5.81	104.6	1.7	0.31	0.2	0.00	0.35	0.10	37.	11.1	10.6	10.9	0.12
18	16.60	33.628	24.557	5.82	104.7	1.6	0.30	0.2	0.00	0.39	0.13	14.	8.2	7.6	7.9	0.18
29	15.57	33.533	24.718	5.91	104.1	2.0	0.35	0.5	0.02	0.43	0.14	4.2	3.7	3.8	3.8	0.11
38	13.02	33.206	25.001	6.11	102.0	3.6	0.56	2.9	0.20	0.49	0.29	1.6	1.6	1.7	1.7	0.07
45	12.15	33.134	25.113	6.00	98.3	4.8	0.67	4.6	0.36	0.52	0.32					
54	12.24	33.318	25.239	5.67	93.2	6.3	0.83	7.1	0.48	0.44	0.30	0.27	0.10	0.14	0.12	0.05

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 39.9 N	123 4.2 W	16/08/99	1748 UTC	24 m		1230 - 1924 PST	1216 PST	1924 PST	224.9 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	17.34	33.202	24.055	5.74	104.5	2.9	0.35	0.3	0.01	0.17	0.03	88. A	2.6	2.6	2.6	0.06
8	17.31	33.203	24.063	5.75	104.7	2.7	0.37	0.3	0.01	0.17	0.03					
15	17.29	33.206	24.071	5.73	104.2	2.8	0.35	0.3	0.01	0.18	0.03	38.	4.9	4.9	4.9	0.06
24	16.90	33.435	24.339	5.80	104.9	2.6	0.25	0.0	0.00	0.16	0.03					
33	16.81	33.511	24.418	5.82	105.1	2.5	0.23	0.0	0.00	0.13	0.03	12.	2.3	2.2	2.3	0.06
42	14.44	33.128	24.651	6.27	107.7	2.4	0.32	0.0	0.00	0.24	0.08					
50	13.67	33.072	24.767	6.36	107.5	2.4	0.36	0.2	0.02	0.46	0.19	4.1	3.0	3.2	3.1	0.08
57	13.41	33.075	24.822	6.27	105.4	2.5	0.36	0.3	0.02	0.52	0.20					
66	12.91	33.081	24.927	6.10	101.5	3.0	0.42	0.9	0.12	0.52	0.26	1.5	1.7	1.5	1.6	0.05
79	11.49	33.044	25.167	5.81	93.8	5.0	0.61	4.0	0.11	0.30	0.18					
93	11.22	33.066	25.233	5.73	92.0	6.0	0.67	5.0	0.04	0.22	0.11	0.26	0.07	0.10	0.08	0.03

A) INCUBATION LIGHT INTENSITIES WERE 95, 37, 12, 3.9, 1.4, 0.24 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON — CALCOFI CRUISE 9908 — STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 15.3 N	118 15.4 W	13/08/99	1831 UTC	22 m		1158 - 1908 PST	1158 PST	1908 PST	474.0 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	19.45	33.606	23.843	5.56	105.7	3.0	0.23	0.1	0.01	0.19	0.04	93. A	7.9	7.5	7.7	0.12
9	19.10	33.597	23.925	5.57	105.2	2.9	0.24	0.1	0.01							
15	19.03	33.594	23.941	5.59	105.4	2.9	0.23	0.1	0.01	0.23	0.05	35.	9.1	9.3	9.2	0.13
23	17.90	33.589	24.218	5.97	110.2	2.7	0.23	0.1	0.01	0.32	0.08					
31	15.04	33.553	24.850	6.63	115.6	3.6	0.32	0.1	0.01	0.48	0.12	11.	9.0	8.8	8.9	0.16
38	14.00	33.559	25.075	6.39	109.1	4.6	0.44	1.2	0.06	1.00	0.29					
45	13.33	33.565	25.217	6.11	102.9	5.7	0.55	2.8	0.13	0.99	0.36	4.3	7.0	7.3	7.2	0.14
53	12.63	33.579	25.367	5.34	88.6	8.0	0.86	8.2	0.29	0.73	0.37					
60	12.30	33.600	25.447	5.07	83.6	9.4	0.99	10.4	0.15	0.56	0.39	1.5	1.7	1.8	1.8	0.05
73	11.63	33.646	25.609	4.56	74.1	12.7	1.21	13.9	0.06	0.30	0.24					
85	11.09	33.702	25.751	4.05	65.1	16.5	1.40	17.1	0.04	0.12	0.14	0.27	0.04	0.04	0.04	0.03

RV NEW HORIZON — CALCOFI CRUISE 9908 — STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 24.7 N	119 58.2 W	12/08/99	1935 UTC	15 m		1225 - 1913 PST	1205 PST	1913 PST	459.4 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	16.96	33.671	24.505	5.79	105.0	1.8	0.30	0.2	0.00	0.49	0.10	81. A	10.6	10.5	10.6	0.14
11	16.94	33.671	24.510	5.80	105.1	1.7	0.38 U	0.1	0.00	0.50	0.09	32.	13.8	13.6	13.7	0.18
22	16.53	33.668	24.604	5.85	105.2	2.0	0.31	0.2	0.01	0.71	0.18	11.	13.8	13.4	13.6	0.18
33	15.74	33.657	24.775	5.86	103.7	3.5	0.39	0.7	0.03	0.94	0.32	3.4	7.2	7.4	7.3	0.22
40	15.56	33.654	24.813	5.78	101.9	4.2	0.43	1.2	0.05	0.93	0.36	1.7	3.1	3.1	3.1	0.10
51	15.35	33.650	24.857	5.70	100.1	5.3	0.49	1.8	0.08	1.01	0.53					
57	15.11	33.649	24.909	5.67	99.1	6.1	0.54	2.6	0.12	0.73	0.38	0.29	0.12	0.13	0.12	0.05

RV NEW HORIZON — CALCOFI CRUISE 9908 — STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 6.8 N	122 39.4 W	11/08/99	1734 UTC	27 m		1216 - 1917 PST	1216 PST	1921 PST	384.2 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	18.80	33.484	23.914	5.57	104.5	2.3	0.31	0.1	0.00	0.12	0.01	94. A	3.1	3.2	3.2	0.06
16	17.76	33.477	24.166	5.68	104.5	2.5	0.31	0.1	0.00	0.08	0.01	40.	2.5	2.5	2.5	0.05
27	16.09	33.440	24.529	6.17	109.8	2.8	0.33	0.1	0.00	0.19	0.04					
37	14.63	33.453	24.861	6.55	113.2	3.1	0.35	0.3	0.03	0.67	0.21	12.	8.8	8.9	8.8	0.10
46	13.65	33.418	25.039	6.21	105.2	3.9	0.50	2.3	0.15	0.96	0.34					
56	13.65	33.523	25.120	5.95	100.8	4.7	0.61	4.0	0.34	0.75	0.40	4.1	4.9	5.3	5.1	0.06
66	13.03	33.483	25.214	5.69	95.2	5.2	0.72	5.6	0.39	0.62	0.46					
74	12.53	33.525	25.345	5.46	90.4	6.1	0.87	8.4	0.05	0.49	0.37	1.5	1.8	1.7	1.7	0.04
84	12.37	33.586	25.423	5.22	86.2	7.5	0.96	9.9	0.03	0.26	0.18					
94	11.91	33.594	25.517	4.96	81.1	9.7	1.07	11.8	0.02	0.12	0.11					
105	11.30	33.645	25.669	4.54	73.3	13.9	1.28	15.1	0.02	0.05	0.06	0.26	0.00	0.00	0.00	0.02

RV NEW HORIZON — CALCOFI CRUISE 9908 — STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.7 N	117 18.5 W	07/08/99	1835 UTC	11 m		1155 - 1915 PST	1155 PST	1910 PST	817.9 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	19.75	33.636	23.788	6.18	118.1	4.0	0.18	0.1	0.00	0.97	0.15	87. A	51.8	56.9	54.3	0.57
7	19.08	33.628	23.954	6.25	118.0	3.9	0.18	0.1	0.00	0.74	0.16	38.	32.2	31.7	32.0	0.48
14	14.08	33.588	25.080	6.80	116.3	5.7	0.36	0.1	0.00	0.96	0.33	14.	21.0	21.0	21.0	0.53
23	12.87	33.605	25.339	5.76	96.1	8.4	0.68	2.5	0.16	2.30	0.70	4.0	20.7	21.7	21.2	0.33
31	12.28	33.624	25.469	5.00	82.4	10.1	0.97	9.6	0.38	1.17	0.61	1.3	4.3	4.1	4.2	0.12
43	12.00	33.632	25.528	4.67	76.5	11.4	1.08	11.6	0.41	0.72	0.43	0.25	0.42	0.42	0.42	0.10

A) INCUBATION LIGHT INTENSITIES WERE 95, 37, 12, 3.9, 1.4, 0.24 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 11.2 N	118 53.2 W	08/08/99	1913 UTC	20 m		1215 - 1912 PST	1202 PST	1912 PST	297.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	17.33	33.599	24.362	5.67	103.5	3.0	0.31	0.0	0.00	0.19	0.04	93. A	2.9	2.7	2.8	0.12
12	17.20	33.599	24.393	5.68	103.4	2.9	0.31	0.0	0.00	0.21	0.04	40.	5.3	5.3	5.3	0.15
27	17.08	33.598	24.422	5.70	103.5	2.9	0.31	0.1	0.00	0.26	0.06	13.	5.6	5.3	5.4	0.15
42	13.31	33.553	25.212	6.00	101.0	5.3	0.61	4.1	0.15	0.59	0.31	4.0	5.5	5.5	5.5	0.17
49	12.76	33.557	25.324	5.59	93.0	6.8	0.75	6.7	0.24	0.68	0.45					
56	12.44	33.574 D	25.400	5.28	87.3	8.4	0.90	9.0	0.22	0.66	0.52	1.4	3.0	2.5	2.8	0.08
69	11.69	33.645	25.597	4.80	78.1	12.8	1.19	13.7	0.03	0.30	0.25					
77	11.25	33.687	25.710	4.52	72.9	15.7	1.34	16.1	0.02	0.16	0.11	0.27	0.09	0.09	0.09	0.03

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.0 N	120 56.1 W	09/08/99	1747 UTC	25 m		1210 - 1920 PST	1210 PST	1921 PST	261.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.58	33.476	24.208	5.68	104.1	2.5	0.31	0.0	0.00	0.14	0.03	88. A	2.7	2.6	2.6	0.05
16	17.21	33.456	24.281	5.73	104.2	2.5	0.30	0.0	0.00	0.11	0.02	37.	3.3	3.4	3.3	0.04
26	17.00	33.446	24.324	5.74	104.0	2.5	0.30	0.0	0.00	0.11	0.03					
35	15.56	33.382	24.604	6.12	107.7	2.6	0.30	0.0	0.00	0.18	0.05	12.	3.8	3.7	3.7	0.07
45	14.86	33.385	24.760	6.25	108.5	2.8	0.33	0.1	0.01	0.27	0.10					
53	14.11	33.442	24.963	6.05	103.4	3.6	0.48	2.1	0.17	0.39	0.19	3.9	3.7	4.1	3.9	0.06
62	13.66	33.482	25.087	5.86	99.3	4.4	0.59	3.4	0.42	0.50	0.31					
70	13.21	33.480	25.176	5.70	95.7	4.9	0.69	4.9	0.71	0.49	0.39	1.4	2.0	1.9	2.0	0.04
78	12.63	33.491	25.299	5.48	90.9	5.7	0.82	7.6	0.19	0.18	0.15					
89	12.34	33.596	25.437	5.22	86.1	7.5	0.96	10.0	0.02	0.09	0.08					
99	11.75	33.597	25.549	4.96	80.8	10.8	1.11	12.6	0.02	0.05	0.05	0.23	0.03	0.03	0.03	0.02

RV NEW HORIZON | CALCOFI CRUISE 9908 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 51.3 N	123 35.0 W	10/08/99	1900 UTC	36 m		1218 - 1930 PST	1220 PST	1928 PST	182.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	19.57	33.358	23.622	5.47	104.0	2.7	0.28	0.2	0.00	0.07	0.01	96. A	2.3	2.4	2.4	0.06
2	19.59	33.357	23.617													
11	18.31	33.399	23.972	5.57	103.5	2.7	0.26	0.2	0.00	0.07	0.01					
22	17.91	33.407	24.076	5.64	104.0	2.7	0.26	0.2	0.00	0.07	0.01	39.	2.4	2.4	2.4	0.08
35	16.58	33.396	24.384	5.82	104.5	2.5	0.27	0.2	0.00	0.07	0.01					
49	15.86	33.363	24.523	5.93	105.0	2.6	0.25	0.2	0.00	0.09	0.02	12.	1.2	1.3	1.3	0.10
58	15.40	33.378	24.637	5.98	104.9	2.6	0.27	0.1	0.00	0.10	0.02					
68	14.98	33.358	24.714	6.02	104.7	2.6	0.26	0.1	0.00	0.10	0.03					
75	14.65	33.354	24.781	6.00	103.7	2.6	0.27	0.1	0.00	0.14	0.06	4.1	0.89	0.82	0.85	0.08
88	14.41	33.387	24.858	5.94	102.1	2.7	0.28	0.1	0.00	0.22	0.13					
99	14.11	33.370	24.908	5.91	101.0	2.8	0.31	0.2	0.03	0.32	0.30	1.5	1.3	1.2	1.2	0.02
110	14.06	33.442	24.975	5.77	98.5	3.1	0.36	0.7	0.25	0.34	0.33					
120	14.24	33.632	25.084	5.60	96.1	3.4	0.38	1.4	0.18	0.27	0.29					
131	14.10	33.745	25.201	5.37	92.0	4.2	0.46	3.0	0.06	0.20	0.25					
141	13.41	33.682	25.294	5.20	87.7	5.4	0.57	5.0	0.02	0.14	0.17	0.24	0.07	0.06	0.07	0.02

A) INCUBATION LIGHT INTENSITIES WERE 95, 37, 12, 3.9, 1.4, 0.24 PERCENT RESPECTIVELY.

PERSONNEL

CalCOFI Cruise 9910

SHIP'S CAPTAIN

David B. Murline, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participation (Legs)
Wilkinson, James R. (Chief Scientist)	Programmer/Analyst, SIO	1,2
Becker, Susan M.	Staff Research Associate, SIO	1,2
Bograd, Steven J.	Post Graduate Researcher, SIO	1
Griffith, David A.	Fishery Biologist, NMFS	1,2
Gruber, Dennis W.	Staff Research Associate, SIO	1,2
Johnson, Catherine L.	Graduate Student, SIO	2
Harrald, Ingrid	Volunteer	1,2
Hays, Amy E.	Fishery Biologist, NMFS	1,2
Hovey, Tim E.	California Dept. of Fish and Game	1,2
Hyrenbach, K. David	Graduate Student, SIO	1
Low, Jason C.	Graduate Student, UCI	1,2
Mendez, Maria E.	Graduate Student, SIO	1
Nelson, Jessica K.	Graduate Student, SIO	1,2
Poteau, Antoine	Visiting Scientist, SIO	1,2
Ramirez, Fernando	Staff Research Associate, SIO	1,2
Storms, Scott A.	Staff Research Associate, SIO	1,2
Thimgan, Michael P.	Staff Research Associate, SIO	1,2
Wolgast, David M.	Staff Research Associate, SIO	1,2

Leg 1: San Diego, Ca. to Dana Point, Ca., 3 – 9 October, 1999
Leg 2: Dana Point, Ca. to San Diego, Ca., 9 – 21 October, 1999

FIGURES

Cruise 9910

1. CalCOFI Cruise 9910, track and station positions.

2. Horizontal distribution of dynamic height anomaly (0 over 500m). In areas shallower than 500 m, the dynamic heights were extrapolated on the basis of the offshore deeper steric height as described in Reid and Mantyla (1976).

3. Horizontal distributions at 10 meters: A) chlorophyll-*a*; B) potential density; C) temperature; and D) salinity.

4. Horizontal distributions at 200 meters: A) dynamic height anomaly (200 over 500 m); B) potential density; C) temperature; and D) salinity.

5. Sections along CalCOFI line 90 (vertical exaggeration, 1000): A) potential; B) temperature; C) salinity; D) silicate; E) nitrate; F) phosphate; G) chlorophyll-*a*; H) oxygen saturation; I) oxygen; J) nitrite; and K) phaeopigments.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 5.2 N	120 46.5 W	19/10/99	1218 UTC	68 m	020 02 kn			1018.3 mb	12.5 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.51	13.51	33.644	25.241	271.9	0.000	5.30	89.6	11.7	0.94	8.7	0.33	1.79	0.71	0	
1		13.54	13.54	33.644	25.235	272.5	0.003									1	210
1		13.54	13.54	33.645	25.235	272.4	0.003									1	211
1		13.51	13.51	33.644	25.241	271.9	0.003	5.30	89.6	11.7	0.94	8.7	0.33	1.79	0.71	1	208
1		13.51	13.51	33.644	25.241	271.9	0.003									1	209
1		13.49	13.49	33.642	25.243	271.6	0.003									1	212
6		12.93	12.93	33.661	25.370	259.7	0.016	4.79	80.0	13.9	1.12	11.1	0.40	1.27	0.90	6	207
10	ISL	12.61	12.61	33.675	25.444	252.8	0.026	4.61	76.5	15.1	1.17	12.0	0.47	1.51	1.15	10	
11		12.54	12.54	33.679	25.461	251.2	0.029	4.58	75.9	15.4	1.18	12.2	0.48	1.59	1.20	11	206
20	ISL	11.96	11.96	33.725	25.607	237.5	0.051	4.07	66.7	19.4	1.40	15.2	0.52	1.02	0.94	20	
21		11.92	11.92	33.729	25.618	236.5	0.053	4.02	65.8	19.8	1.43	15.5	0.52	0.93	0.89	21	205
30		11.84	11.84	33.734	25.637	234.9	0.074	3.94	64.4	20.4	1.51	16.0	0.51	0.72	0.87	30	204
39		11.74	11.74	33.739	25.660	233.0	0.095	3.88	63.3	21.5	1.51	16.5	0.52	0.67	0.83	39	203
50	ISL	11.59	11.58	33.746	25.693	230.1	0.121	3.67	59.6	23.5	1.58	17.2	0.54	0.55	0.78	50	
51		11.57	11.56	33.747	25.698	229.7	0.123	3.65	59.3	23.6	1.59	17.3	0.54	0.54	0.78	51	202
62		11.34	11.33	33.759	25.750	225.0	0.148	3.62	58.5	22.7	1.60	18.0	0.46	0.55	0.86	62	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
35 1.1 N	120 54.9 W	19/10/99	0930 UTC	232 m	320 16 kn			1018.5 mb	13.9 C	12.9 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.01	14.01	33.634	25.130	282.4	0.000	6.50	111.1	2.7	0.49	1.8	0.15	3.54	1.46	0	
2		14.01	14.01	33.634	25.130	282.4	0.006	6.50	111.1	2.7	0.49	1.8	0.15	3.54	1.46	2	215
10	ISL	13.92	13.92	33.632	25.148	281.0	0.028	6.34	108.1	3.4	0.55	2.6	0.18	2.41	1.83	10	
11		13.90	13.90	33.632	25.152	280.7	0.031	6.31	107.6	3.5	0.56	2.8	0.18	2.25	1.89	11	214
20		13.58	13.58	33.626	25.213	275.1	0.056	6.04	102.3	4.5	0.67	4.7	0.22	2.54	2.03	20	213
29		12.97	12.97	33.620	25.331	264.0	0.080	5.51	92.1	7.3	0.85	7.1	0.27	2.05	1.13	29	212
30	ISL	12.86	12.86	33.623	25.355	261.8	0.083	5.40	90.1	8.0	0.89	7.8	0.28	1.92	1.10	30	
40		11.85	11.84	33.671	25.587	240.0	0.108	4.30	70.2	14.7	1.32	14.7	0.37	0.69	0.85	40	211
49		11.46	11.45	33.702	25.683	231.0	0.129	3.94	63.8	17.3	1.44	17.1	0.27	0.42	0.86	49	210
50	ISL	11.44	11.43	33.703	25.688	230.6	0.131	3.92	63.5	17.3	1.44	17.1	0.26	0.41	0.86	50	
59		11.35	11.34	33.712	25.711	228.6	0.152	3.85	62.2	17.8	1.47	17.5	0.22	0.37	0.89	59	209
69		11.21	11.20	33.727	25.749	225.3	0.175	3.75	60.4	18.7	1.52	18.2	0.17	0.43	1.05	69	208
75	ISL	10.97	10.96	33.750	25.810	219.5	0.188	3.56	57.1	20.1	1.59	19.3	0.12	0.36	0.93	75	
85		10.51	10.50	33.800	25.930	208.3	0.210	3.20	50.8	22.9	1.73	21.3	0.04	0.19	0.61	85	207
98		10.13	10.12	33.867	26.047	197.4	0.236	2.85	44.9	25.9	1.87	23.4	0.03	0.08	0.34	99	206
100	ISL	10.08	10.07	33.874	26.062	196.1	0.240	2.82	44.4	26.2	1.88	23.6	0.03	0.08	0.34	101	
118		9.75	9.74	33.923	26.156	187.5	0.274	2.68	41.9	28.8	1.98	24.9	0.03	0.06	0.29	119	205
125	ISL	9.64	9.63	33.941	26.188	184.5	0.287	2.60	40.5	29.7	2.02	25.4	0.03	0.05	0.28	126	
139		9.47	9.45	33.973	26.241	179.7	0.313	2.43	37.7	31.4	2.10	26.4	0.03	0.04	0.26	140	204
150	ISL	9.39	9.37	33.991	26.268	177.4	0.333	2.34	36.3	32.3	2.14	26.9	0.03	0.04	0.25	151	
169		9.29	9.27	34.014	26.303	174.4	0.366	2.22	34.4	33.5	2.20	27.6	0.04	0.03	0.22	170	203
199		9.01	8.99	34.042	26.370	168.6	0.417	2.08	32.0	36.0	2.28	28.7	0.06	0.05	0.34	200	202
200	ISL	9.00	8.98	34.044	26.373	168.3	0.419	2.07	31.8	36.2	2.29	28.8	0.06			201	
224		8.64	8.62	34.094	26.469	159.5	0.458	1.74	26.5	40.9	2.44	30.5	0.11			225	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT TYPE
34 53.6 N	121 11.9 W	19/10/99	0543 UTC	570 m	340 13 kn			1018.2 mb	15.5 C	14.5 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.53	15.53	33.646	24.813	312.6	0.000	6.08	107.1	3.4	0.38	1.0	0.08	0.75	0.31	0	
2		15.53	15.53	33.646	24.813	312.7	0.006	6.08	107.1	3.4	0.38	1.0	0.08	0.75	0.31	2	220
10	ISL	15.45	15.45	33.641	24.827	311.6	0.031	6.10	107.3	3.6	0.41	1.3	0.11	0.77	0.34	10	
11		15.44	15.44	33.640	24.828	311.5	0.034	6.10	107.3	3.6	0.41	1.3	0.11	0.77	0.35	11	219
20	ISL	14.67	14.67	33.628	24.987	296.6	0.062	5.99	103.7	4.0	0.54	2.6	0.21	0.90	0.42	20	
21		14.57	14.57	33.627	25.008	294.7	0.065	5.98	103.3	4.0	0.56	2.8	0.23	0.91	0.43	21	218
30		14.07	14.07	33.618	25.106	285.5	0.091	5.56	95.1	6.3	0.75	5.3	0.42	0.73	0.39	30	217
40		12.86	12.85	33.629	25.360	261.6	0.118	4.77	79.6	10.4	1.09	10.8	0.65	0.41	0.31	40	216
50		11.89	11.88	33.662	25.572	241.6	0.143	4.10	67.0	14.9	1.38	16.5	0.25	0.26	0.25	50	215
60		11.10	11.09	33.716	25.760	224.0	0.167	3.60	57.9	19.0	1.61	20.2	0.03	0.16	0.19	60	214
69		10.78	10.77	33.760	25.851	215.5	0.186	3.30	52.7	21.1	1.73	21.7	0.04	0.09	0.17	69	213
75	ISL	10.54	10.53	33.785	25.913	209.7	0.199	3.17	50.4	22.5	1.79	22.7	0.03	0.07	0.17	75	
85		10.16	10.15	33.822	26.007	200.9	0.220	3.02	47.6	24.9	1.88	24.1	0.02	0.05	0.16	85	212
99		9.72	9.71	33.870	26.119	190.5	0.247	2.82	44.0	27.9	1.98	25.6	0.01	0.03	0.14	100	211
100	ISL	9.68	9.67	33.873	26.128	189.7	0.249	2.81	43.8	28.1	1.99	25.7	0.01	0.03	0.14	101	
120		9.03	9.02	33.938	26.284	175.1	0.285	2.61	40.1	32.0	2.09	27.6	0.01	0.01	0.13	121	210
125	ISL	8.91	8.90	33.960	26.320	171.8	0.294	2.52	38.7	33.2	2.12	28.0	0.01	0.01	0.12	126	
139		8.65	8.64	34.017	26.406	163.9	0.318	2.28	34.8	36.2	2.21	29.1	0.01	0.01	0.10	140	209
150	ISL	8.52	8.50	34.037	26.442	160.6	0.335	2.18	33.2	37.6	2.25	29.7	0.01	0.01	0.09	151	
169		8.32	8.30	34.051	26.484	157.0	0.366	2.10	31.8	39.5	2.30	30.4	0.01	0.01	0.08	170	208
198		7.79	7.77	34.062	26.571	149.0	0.410	2.05	30.7	43.9	2.38	31.6	0.01	0.01	0.07	199	207
200	ISL	7.75	7.73	34.061	26.576	148.5	0.413	2.06	30.8	44.2	2.38	31.7	0.01			201	
228		7.25	7.23	34.049	26.638	142.9	0.454	2.15	31.8	47.9	2.41	32.4	0.01			229	206
250	ISL	7.10	7.08	34.057	26.666	140.6	0.485	2.00	29.5	50.2	2.48	33.3	0.01			252	
269		7.04	7.01	34.070	26.684	139.1	0.511	1.79	26.3	52.2	2.55	34.2	0.01			271	205
300	ISL	6.83	6.80	34.091	26.730	135.1	0.554	1.48	21.7	56.6	2.68	35.6	0.01			302	
318		6.72	6.69	34.108	26.758	132.7	0.578	1.30	19.0	59.3	2.76	36.3	0.01			320	204
383		6.67	6.63	34.225	26.858	124.2	0.662	0.67	9.8	67.1	2.96	37.9	0.01			386	203
400	ISL	6.53	6.49	34.224	26.876	122.7	0.683	0.66	9.6	69.2	2.99	38.3	0.01			403	
435		6.21	6.17	34.209	26.906	120.0	0.725	0.63	9.1	73.3	3.05	39.2	0.02			438	202
500	ISL	5.89	5.85	34.226	26.960	115.4	0.802	0.51	7.3	79.1	3.12	40.2	0.02			504	
516		5.81	5.77	34.230	26.974	114.3	0.820	0.48	6.9	80.5	3.14	40.5	0.02			520	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 43.3 N	121 33.0 W	19/10/99	0148	UTC	937 m	330	18 kn	350 02 05	1	1017.5 mb	16.0 C	14.5 C		5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.13	16.13	33.592	24.636	329.4	0.000	6.03	107.5	3.9	0.39	1.0	0.06	0.98	0.17	0	
1		16.13	16.13	33.592	24.636	329.4	0.003	6.03	107.5	3.9	0.39	1.0	0.06	0.98	0.17	1	220
10		16.14	16.14	33.593	24.635	329.8	0.033	6.05	107.9	3.9	0.39	1.0	0.06	1.00	0.19	10	219
20		15.76	15.76	33.557	24.693	324.6	0.066	6.00	106.2	4.1	0.44	1.7	0.11	1.00	0.25	20	218
30		13.75	13.75	33.497	25.079	288.1	0.096	5.72	97.1	6.3	0.71	5.8	0.43	0.93	0.39	30	217
40		12.91	12.90	33.553	25.292	268.1	0.124	5.16	86.1	8.9	0.97	10.1	0.45	0.67	0.39	40	216
50		11.78	11.77	33.651	25.584	240.4	0.150	4.32	70.4	14.2	1.36	16.6	0.03	0.38	0.27	50	215
60		11.07	11.06	33.665	25.725	227.2	0.173	3.99	64.1	17.7	1.53	19.2	0.02	0.23	0.17	60	214
70		10.39	10.38	33.700	25.872	213.4	0.195	3.72	58.9	21.2	1.68	21.4	0.01	0.11	0.10	70	213
75	ISL	10.25	10.24	33.719	25.911	209.8	0.206	3.60	56.8	22.2	1.72	22.0	0.01	0.08	0.10	75	
84		10.11	10.10	33.761	25.968	204.6	0.224	3.37	53.0	23.8	1.78	22.9	0.01	0.06	0.09	84	212
100		9.59	9.58	33.877	26.146	188.0	0.256	2.86	44.5	28.0	1.95	25.3	0.02	0.01	0.07	101	211
121		9.12	9.11	33.962	26.289	174.8	0.294	2.53	39.0	32.1	2.08	27.2	0.01	0.01	0.07	122	210
125	ISL	9.07	9.06	33.972	26.305	173.3	0.301	2.50	38.5	32.6	2.10	27.4	0.01	0.01	0.07	126	
143		8.90	8.88	34.005	26.358	168.6	0.331	2.39	36.7	34.3	2.16	28.2	0.01	0.00	0.07	144	209
150	ISL	8.83	8.81	34.017	26.378	166.8	0.343	2.34	35.8	35.1	2.19	28.5	0.01	0.00	0.07	151	
168		8.64	8.62	34.045	26.430	162.1	0.373	2.19	33.4	37.2	2.25	29.3	0.01	0.01	0.06	169	208
198		8.34	8.32	34.081	26.505	155.6	0.420	1.94	29.4	40.5	2.36	30.7	0.01	0.00	0.05	199	207
200	ISL	8.29	8.27	34.081	26.512	154.8	0.424	1.94	29.4	40.9	2.37	30.8	0.01			201	
228		7.66	7.64	34.083	26.607	146.1	0.466	1.86	27.8	46.5	2.47	32.4	0.01			229	206
250	ISL	7.62	7.60	34.133	26.652	142.1	0.497	1.52	22.7	49.6	2.59	33.4	0.01			252	
269		7.59	7.56	34.165	26.682	139.6	0.524	1.23	18.3	52.1	2.68	34.2	0.01			271	205
300	ISL	7.04	7.01	34.140	26.740	134.3	0.567	1.22	17.9	57.1	2.74	35.7	0.01			302	
318		6.68	6.65	34.119	26.772	131.3	0.591	1.22	17.8	60.2	2.77	36.5	0.01			320	204
379		6.20	6.17	34.160	26.868	122.8	0.668	0.83	12.0	70.0	2.97	38.9	0.01			382	203
400	ISL	6.08	6.04	34.181	26.900	120.0	0.693	0.70	10.1	72.9	3.03	39.5	0.01			403	
436		5.90	5.86	34.217	26.951	115.4	0.736	0.52	7.4	77.4	3.11	40.3	0.01			439	202
500	ISL	5.63	5.59	34.256	27.016	109.9	0.808	0.40	5.7	83.6	3.19	41.2	0.01			504	
518		5.56	5.52	34.267	27.033	108.4	0.828	0.36	5.1	85.3	3.21	41.4	0.01			522	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 23.5 N	122 14.9 W	18/10/99	1847	UTC	4020 m	360	11 kn	350 01 04	1	1020.1 mb	18.0 C	16.0 C	22m	3/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.47	17.47	33.594	24.325	359.1	0.000	5.68	103.9	2.4	0.31	0.0	0.00	0.24	0.05	0	
1	A	17.47	17.47	33.594	24.325	359.1	0.004	5.68	103.9	2.4	0.31	0.0	0.00	0.24	0.05	1	221
1		17.48	17.48	33.594	24.322	359.4	0.004									1	222
1		17.48	17.48	33.593	24.322	359.4	0.004									1	223
10	ISL	17.42	17.42	33.598	24.340	358.0	0.036	5.68	103.8	2.3	0.30	0.0	0.00	0.25	0.06	10	
16	A	17.39	17.39	33.591	24.342	358.0	0.057	5.69	104.0	2.2	0.30	0.0	0.00	0.26	0.06	16	220
20	ISL	17.35	17.35	33.591	24.352	357.2	0.072	5.70	104.1	2.2	0.30	0.0	0.00	0.35	0.08	20	
30	ISL	17.16	17.16	33.585	24.393	353.6	0.107	5.72	104.0	2.3	0.30	0.0	0.00	0.61	0.17	30	
32	A	17.11	17.10	33.583	24.403	352.7	0.114	5.72	103.9	2.3	0.30	0.0	0.00	0.66	0.19	32	219
40		16.81	16.80	33.566	24.461	347.4	0.142	5.79	104.6	2.5	0.31	0.1	0.01	0.77	0.27	40	218
48	A	15.64	15.63	33.482	24.663	328.3	0.169	5.86	103.4	3.1	0.42	1.1	0.13	0.72	0.34	48	217
50	ISL	15.27	15.26	33.460	24.728	322.2	0.176	5.86	102.6	3.3	0.46	1.6	0.21	0.69	0.35	50	
56		14.04	14.03	33.393	24.939	302.2	0.195	5.85	99.9	4.1	0.61	3.6	0.42	0.55	0.37	56	216
65	A	12.10	12.09	33.279	25.236	274.0	0.220	5.62	92.1	6.9	0.84	7.7	0.34	0.29	0.26	65	215
75	ISL	11.38	11.37	33.356	25.429	255.7	0.247	5.16	83.3	10.1	1.05	11.4	0.05	0.15	0.15	75	
76		11.35	11.34	33.368	25.444	254.3	0.249	5.11	82.4	10.5	1.07	11.7	0.02	0.14	0.14	76	214
85	A	10.74	10.73	33.449	25.616	238.1	0.272	4.67	74.4	14.4	1.30	15.2	0.01	0.08	0.08	85	213
94		10.49	10.48	33.534	25.726	227.8	0.293	4.37	69.2	17.2	1.45	17.8	0.01	0.05	0.08	94	212
100	ISL	10.33	10.32	33.581	25.790	221.8	0.306	4.19	66.2	19.0	1.54	19.3	0.01	0.04	0.07	100	
110		10.08	10.07	33.658	25.893	212.2	0.328	3.87	60.8	22.0	1.69	21.6	0.01	0.03	0.05	111	211
125		9.69	9.68	33.807	26.075	195.2	0.358	3.26	50.8	26.2	1.89	24.5	0.01	0.02	0.05	126	210
143		9.22	9.20	33.909	26.232	180.6	0.392	2.85	44.0	29.8	2.00	26.1	0.01	0.01	0.04	144	209
150	ISL	9.14	9.12	33.935	26.265	177.6	0.405	2.73	42.1	30.7	2.04	26.5	0.01	0.01	0.04	151	
169		8.95	8.93	33.979	26.330	171.8	0.438	2.54	39.0	32.7	2.11	27.5	0.01	0.00	0.04	170	208
199		8.31	8.29	34.000	26.445	161.1	0.488	2.62	39.7	36.9	2.16	28.9	0.01	0.00	0.03	200	207
200	ISL	8.29	8.27	34.001	26.449	160.8	0.489	2.61	39.5	37.1	2.16	29.0	0.01			201	
228		7.75	7.73	34.030	26.552	151.3	0.533	2.42	36.2	42.1	2.27	30.6	0.01			229	206
250	ISL	7.38	7.36	34.030	26.605	146.4	0.566	2.41	35.7	45.2	2.32	31.3	0.01			251	
267		7.14	7.11	34.027	26.637	143.6	0.591	2.38	35.1	47.5	2.37	31.8	0.01			269	205
300	ISL	6.80	6.77	34.044	26.697	138.2	0.637	1.99	29.1	53.1	2.54	33.9	0.01			302	
318		6.65	6.62	34.058	26.728	135.4	0.662	1.72	25.1	56.4	2.64	35.2	0.01			320	204
377		6.17	6.14	34.121	26.841	125.3	0.739	1.02	14.7	67.6	2.91	38.5	0.01			379	203
400	ISL	6.01	5.98	34.142	26.878	122.0	0.767	0.84	12.1	71.4	2.99	39.4	0.01			403	
435		5.81	5.77	34.174	26.928	117.5	0.809	0.64	9.1	76.6	3.09	40.5	0.01			438	202
500	ISL	5.61	5.57	34.247	27.011	110.3	0.883	0.40	5.7	83.4	3.21	41.3	0.00			503	
520		5.55	5.51	34.269	27.036	108.2	0.905	0.33	4.7	85.5	3.25	41.6	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 3.4 N	122 56.3 W	18/10/99	1247	UTC	4228 m	360	04 kn			1019.0 mb	15.0 C	13.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.42	17.42	33.555	24.307	360.8	0.000	5.69	104.0	1.9	0.32	0.0	0.00	0.29	0.05	0	
1		17.42	17.42	33.555	24.307	360.8	0.004	5.69	104.0	1.9	0.32	0.0	0.00	0.29	0.05	1	214
10	ISL	17.42	17.42	33.554	24.306	361.2	0.036	5.68	103.8	1.9	0.31	0.0	0.00	0.28	0.05	10	
15		17.42	17.42	33.553	24.306	361.4	0.054	5.68	103.8	1.9	0.31	0.0	0.00	0.27	0.05	15	213
20	ISL	17.23	17.23	33.553	24.351	357.2	0.072	5.79	105.4	2.0	0.33	0.2	0.01	0.42	0.09	20	
30		16.33	16.33	33.520	24.536	339.9	0.107	5.98	107.0	2.2	0.36	0.5	0.03	0.76	0.23	30	212
45		13.16	13.15	33.384	25.111	285.4	0.154	5.83	97.7	4.9	0.75	6.1	0.58	0.92	0.53	45	211
50	ISL	12.41	12.40	33.406	25.275	269.9	0.168	5.50	90.8	7.2	0.94	9.4	0.32	0.72	0.46	50	
54		11.91	11.90	33.434	25.392	258.9	0.178	5.21	85.1	9.2	1.09	12.0	0.08	0.54	0.38	54	210
65		11.05	11.04	33.495	25.597	239.6	0.206	4.71	75.5	13.7	1.34	16.0	0.03	0.27	0.20	65	209
74		10.51	10.50	33.607	25.779	222.4	0.227	4.18	66.3	18.5	1.58	19.8	0.01	0.12	0.09	74	208
75	ISL	10.46	10.45	33.621	25.799	220.5	0.229	4.12	65.3	19.0	1.60	20.2	0.01	0.11	0.09	75	
85		10.11	10.10	33.728	25.942	207.1	0.250	3.62	57.0	22.8	1.77	22.8	0.01	0.05	0.05	85	207
94		10.05	10.04	33.736	25.959	205.7	0.269	3.56	55.9	23.0	1.78	22.9	0.01	0.04	0.07	94	420
100	ISL	9.92	9.91	33.768	26.006	201.3	0.281	3.39	53.1	24.3	1.83	23.7	0.01	0.03	0.07	100	
110		9.65	9.64	33.829	26.098	192.7	0.301	3.09	48.2	26.8	1.93	25.2	0.01	0.02	0.07	111	419
123		9.32	9.31	33.871	26.185	184.6	0.325	2.98	46.1	28.6	1.98	26.0	0.01	0.01	0.04	124	418
125	ISL	9.26	9.25	33.879	26.201	183.1	0.329	2.99	46.2	28.7	1.98	26.0	0.01	0.01	0.04	126	
143		8.81	8.79	33.941	26.322	172.0	0.361	3.18	48.7	29.7	1.91	25.5	0.01	0.01	0.03	144	417
150	ISL	8.70	8.68	33.949	26.345	169.9	0.373	3.19	48.7	30.0	1.91	25.7	0.01	0.01	0.03	151	
168		8.45	8.43	33.958	26.391	165.8	0.403	3.23	49.0	31.8	1.92	26.1	0.01	0.01	0.02	169	416
198		7.87	7.85	34.007	26.516	154.2	0.451	2.65	39.7	39.6	2.18	29.5	0.01	0.00	0.02	199	415
200	ISL	7.85	7.83	34.011	26.522	153.6	0.454	2.60	38.9	40.0	2.20	29.7	0.01			201	
229		7.65	7.63	34.058	26.589	147.8	0.498	2.05	30.6	44.7	2.40	31.9	0.00			230	206
250	ISL	7.34	7.32	34.060	26.635	143.6	0.528	1.92	28.4	48.2	2.48	32.9	0.00			251	
267		7.06	7.03	34.055	26.670	140.4	0.552	1.89	27.8	50.9	2.52	33.6	0.01			269	205
300	ISL	6.66	6.63	34.055	26.724	135.5	0.598	1.74	25.4	55.8	2.61	34.9	0.00			302	
317		6.49	6.46	34.057	26.748	133.4	0.621	1.65	24.0	58.2	2.66	35.6	0.00			319	204
377		6.05	6.02	34.091	26.832	126.0	0.699	1.23	17.7	66.7	2.84	38.0	0.00			379	203
400	ISL	5.94	5.91	34.119	26.869	122.8	0.727	1.03	14.8	70.4	2.93	38.9	0.00			403	
440		5.75	5.71	34.169	26.932	117.1	0.775	0.70	10.0	76.9	3.07	40.3	0.00			443	202
500	ISL	5.37	5.33	34.218	27.017	109.5	0.843	0.45	6.4	85.8	3.19	41.8	0.00			503	
516		5.27	5.23	34.232	27.040	107.4	0.861	0.38	5.4	88.2	3.22	42.2	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 43.2 N	123 38.0 W	18/10/99	0714	UTC	4265 m	320	03 kn			1020.0 mb	15.5 C	14.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.61	16.61	33.641	24.563	336.3	0.000	5.82	104.8	2.2	0.34	0.3	0.02	0.42	0.10	0	
3		16.61	16.61	33.641	24.564	336.4	0.010	5.82	104.8	2.2	0.34	0.3	0.02	0.42	0.10	3	220
10		16.57	16.57	33.636	24.569	336.1	0.034	5.85	105.2	2.2	0.33	0.2	0.02	0.59	0.16	10	219
20	ISL	16.54	16.54	33.634	24.575	335.9	0.067	5.84	105.0	2.2	0.33	0.2	0.02	0.63	0.19	20	
21		16.54	16.54	33.634	24.575	335.9	0.071	5.84	105.0	2.2	0.33	0.2	0.02	0.63	0.19	21	218
30		16.45	16.45	33.629	24.592	334.6	0.101	5.83	104.6	2.4	0.34	0.4	0.03	0.71	0.16	30	217
41		14.91	14.90	33.621	24.931	302.6	0.136	5.76	100.2	3.7	0.49	2.5	0.24	0.74	0.22	41	216
50		13.25	13.24	33.617	25.274	270.1	0.162	5.40	90.8	7.8	0.94	9.0	0.81	0.65	0.30	50	215
60		12.39	12.38	33.579	25.413	257.0	0.188	5.16	85.2	8.9	1.08	11.6	0.64	0.68	0.42	60	214
70		10.93	10.92	33.597	25.698	230.1	0.212	4.42	70.7	15.3	1.47	18.0	0.03	0.31	0.19	70	213
75	ISL	10.54	10.53	33.649	25.807	219.8	0.224	4.06	64.5	18.4	1.61	20.3	0.03	0.21	0.14	75	
84		10.15	10.14	33.748	25.951	206.2	0.243	3.52	55.4	22.8	1.79	23.2	0.02	0.12	0.10	84	212
100		9.84	9.83	33.804	26.047	197.4	0.275	3.18	49.8	25.3	1.90	24.5	0.01	0.06	0.07	100	211
119		9.24	9.23	33.910	26.229	180.4	0.311	2.64	40.8	30.5	2.07	27.0	0.01	0.01	0.05	120	210
125	ISL	9.10	9.09	33.924	26.262	177.3	0.322	2.65	40.8	31.4	2.09	27.4	0.01	0.01	0.05	126	
139		8.79	8.78	33.940	26.324	171.7	0.346	2.68	41.0	33.0	2.12	28.0	0.01	0.01	0.05	140	209
150	ISL	8.50	8.48	33.955	26.380	166.4	0.365	2.77	42.1	34.3	2.11	28.1	0.01	0.01	0.04	151	
169		8.06	8.04	33.980	26.467	158.5	0.396	2.86	43.0	36.5	2.09	28.3	0.01	0.01	0.03	170	208
198		7.85	7.83	34.020	26.529	153.0	0.441	2.54	38.0	40.0	2.22	29.8	0.01	0.01	0.02	199	207
200	ISL	7.82	7.80	34.020	26.534	152.6	0.444	2.53	37.9	40.3	2.23	29.9	0.01			201	
228		7.34	7.32	34.028	26.609	145.7	0.485	2.32	34.3	45.0	2.35	31.5	0.01			229	206
250	ISL	7.21	7.19	34.076	26.665	140.7	0.517	1.84	27.2	49.6	2.52	33.3	0.01			251	
268		7.14	7.11	34.118	26.708	136.9	0.542	1.43	21.1	53.5	2.66	34.7	0.01			270	205
300	ISL	6.85	6.82	34.138	26.764	131.9	0.585	1.17	17.1	59.0	2.79	36.2	0.01			302	
317		6.67	6.64	34.138	26.788	129.7	0.607	1.12	16.3	61.7	2.84	36.8	0.01			319	204
377		5.94	5.91	34.134	26.880	121.4	0.683	0.89	12.8	71.8	2.99	39.2	0.01			379	203
400	ISL	5.84	5.81	34.151	26.906	119.1	0.710	0.78	11.2	74.3	3.04	39.8	0.01			403	
438		5.72	5.68	34.182	26.946	115.8	0.755	0.60	8.6	78.1	3.11	40.5	0.01			441	202
500	ISL	5.30	5.26	34.202	27.013	109.8	0.825	0.46	6.5	86.3	3.18	41.8	0.00			503	
522		5.15	5.11	34.210	27.037	107.6	0.849	0.41	5.8	89.2	3.21	42.3	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 23.5 N	124 19.6 W	18/10/99	0124	UTC	4550 m	130	01 kn	340 06 06	1	1019.1 mb	17.3 C	15.1 C		7/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.41	16.41	33.246	24.306	360.8	0.000	5.83	104.3	2.7	0.33	0.0	0.00	0.17	0.03	0	
2		16.41	16.41	33.246	24.306	360.9	0.007	5.83	104.3	2.7	0.33	0.0	0.00	0.17	0.03	2	220
2		16.41	16.41	33.245	24.306	361.0	0.007									2	221
10	ISL	16.31	16.31	33.250	24.333	358.6	0.036	5.84	104.3	2.6	0.33	0.0	0.00	0.20	0.04	10	
15		16.25	16.25	33.252	24.348	357.4	0.054	5.85	104.3	2.5	0.33	0.0	0.00	0.22	0.05	15	219
20	ISL	16.10	16.10	33.256	24.385	354.0	0.072	5.90	104.9	2.5	0.33	0.0	0.00	0.28	0.07	20	
29		15.47	15.47	33.234	24.510	342.4	0.103	6.04	106.0	2.6	0.34	0.0	0.00	0.41	0.13	29	218
30	ISL	15.30	15.30	33.220	24.536	339.8	0.106	6.07	106.2	2.6	0.34	0.0	0.00	0.43	0.14	30	
45		12.69	12.68	33.063	24.955	300.2	0.154	6.33	104.8	3.2	0.43	0.6	0.05	0.60	0.26	45	217
50	ISL	12.26	12.25	33.071	25.044	291.9	0.169	6.19	101.6	3.7	0.49	1.6	0.09	0.57	0.30	50	
55		11.95	11.94	33.092	25.119	284.8	0.184	6.01	98.0	4.2	0.56	2.8	0.12	0.52	0.34	55	216
66		11.37	11.36	33.141	25.264	271.2	0.214	5.78	93.1	5.6	0.72	5.7	0.09	0.49	0.39	66	215
75		10.69	10.68	33.152	25.393	259.0	0.238	5.74	91.1	6.4	0.74	6.1	0.03	0.31	0.25	75	214
85		10.44	10.43	33.183	25.461	252.8	0.264	5.64	89.1	7.5	0.81	7.4	0.02	0.20	0.16	85	213
94		10.28	10.27	33.246	25.537	245.7	0.286	5.45	85.8	9.5	0.93	9.6	0.01	0.13	0.13	94	212
100	ISL	10.23	10.22	33.342	25.621	237.9	0.301	5.12	80.6	12.2	1.13	12.8	0.01	0.10	0.11	100	
110		10.11	10.10	33.526	25.785	222.5	0.324	4.44	69.8	17.7	1.50	18.6	0.01	0.07	0.07	111	211
124		9.63	9.62	33.726	26.021	200.2	0.353	3.60	56.0	24.7	1.81	23.5	0.01	0.03	0.05	125	210
125	ISL	9.60	9.59	33.735	26.033	199.1	0.355	3.57	55.5	25.0	1.82	23.7	0.01	0.03	0.05	126	
143		9.07	9.05	33.845	26.205	183.1	0.390	3.20	49.2	28.3	1.91	25.2	0.01	0.01	0.04	144	209
150	ISL	8.92	8.90	33.877	26.254	178.5	0.402	3.15	48.3	29.2	1.93	25.6	0.01	0.01	0.04	151	
169		8.61	8.59	33.939	26.351	169.6	0.435	3.04	46.3	31.7	1.98	26.5	0.00	0.01	0.03	170	208
198		8.26	8.24	33.991	26.446	161.0	0.483	2.55	38.6	36.8	2.16	29.3	0.00	0.00	0.04	199	207
200	ISL	8.23	8.21	33.994	26.453	160.4	0.487	2.53	38.2	37.2	2.17	29.4	0.00			201	
228		7.72	7.70	34.024	26.552	151.3	0.530	2.32	34.6	42.2	2.31	31.0	0.00			229	206
250	ISL	7.39	7.37	34.038	26.610	146.0	0.563	2.13	31.6	45.8	2.41	32.1	0.00			251	
268		7.15	7.12	34.045	26.650	142.4	0.589	1.98	29.2	48.6	2.48	33.0	0.00			270	205
300	ISL	6.81	6.78	34.051	26.701	137.8	0.634	1.81	26.5	53.3	2.57	34.3	0.01			302	
317		6.66	6.63	34.056	26.725	135.7	0.657	1.71	24.9	55.8	2.62	35.0	0.01			319	204
378		6.33	6.30	34.134	26.831	126.4	0.737	1.02	14.8	65.9	2.89	37.9	0.01			380	203
400	ISL	6.23	6.19	34.153	26.859	124.0	0.764	0.87	12.6	68.7	2.96	38.6	0.01			403	
436		6.06	6.02	34.180	26.902	120.2	0.808	0.69	9.9	72.8	3.05	39.4	0.00			439	202
500	ISL	5.76	5.72	34.244	26.991	112.4	0.883	0.44	6.3	80.7	3.16	40.7	0.00			503	
522		5.66	5.62	34.267	27.021	109.7	0.907	0.35	5.0	83.4	3.20	41.1	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 27.0 N	120 31.4 W	16/10/99	0616	UTC	72 m	340	05 kn			1012.2 mb	14.6 C	13.8 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.37	14.37	33.640	25.059	289.1	0.000	6.60	113.6	2.4	0.33	0.4	0.07	6.80	1.56	0	
2		14.37	14.37	33.640	25.059	289.2	0.006	6.60	113.6	2.4	0.33	0.4	0.07	6.80	1.56	2	209
5		14.19	14.19	33.640	25.097	285.7	0.014	6.45	110.6	2.9	0.40	0.9	0.10	6.80	1.62	5	208
10	ISL	13.93	13.93	33.639	25.151	280.7	0.029	6.10	104.1	4.2	0.51	2.6	0.20	6.91	1.81	10	
11		13.88	13.88	33.639	25.161	279.7	0.031	6.01	102.4	4.6	0.54	3.0	0.22	6.93	1.83	11	207
20	ISL	13.16	13.16	33.643	25.311	265.7	0.056	5.00	83.9	10.4	0.95	8.4	0.47	1.79	0.90	20	
21		13.09	13.09	33.644	25.326	264.4	0.059	4.90	82.1	11.0	0.99	8.9	0.49	1.17	0.78	21	206
30		12.85	12.85	33.643	25.373	260.1	0.082	4.71	78.6	12.0	1.06	10.0	0.54	0.78	0.80	30	205
41		12.67	12.66	33.651	25.415	256.4	0.111	4.58	76.1	13.1	1.13	11.2	0.45	0.58	0.60	41	204
50	ISL	11.94	11.93	33.661	25.562	242.5	0.133	4.20	68.7	14.9	1.29	14.1	0.29	0.35	0.42	50	
51		11.85	11.84	33.663	25.581	240.8	0.135	4.15	67.8	15.1	1.31	14.5	0.27	0.33	0.40	51	203
61		11.44	11.43	33.688	25.676	232.0	0.159	3.86	62.5	17.0	1.44	16.8	0.11	0.19	0.33	61	202
64		11.15	11.14	33.728	25.760	224.0	0.166	3.58	57.6	19.5	1.54	18.4	0.11	0.24	0.38	64	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 19.1 N	120 47.9 W	16/10/99	0911	UTC	742 m	180	02 kn			1013.1 mb	15.0 C	14.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.68	13.68	33.650	25.211	274.7	0.000	5.81	98.6	7.4	0.75	5.4	0.29	0.85	0.23	0	
1		13.68	13.68	33.650	25.211	274.7	0.003	5.81	98.6	7.4	0.75	5.4	0.29	0.85	0.23	1	220
2		13.67	13.67	33.651	25.214	274.5	0.005									2	222
2		13.67	13.67	33.656	25.217	274.1	0.005									2	223
2		13.66	13.66	33.652	25.216	274.2	0.005									2	224
2		13.67	13.67	33.650	25.213	274.6	0.005									2	221
10		13.32	13.32	33.653	25.286	267.8	0.027	5.53	93.2	8.7	0.86	7.2	0.30	1.43	0.52	10	219
20	ISL	12.90	12.90	33.654	25.371	260.0	0.054	5.16	86.2	10.6	0.99	9.3	0.26	1.05	0.42	20	
21		12.86	12.86	33.655	25.380	259.2	0.056	5.12	85.4	10.8	1.00	9.5	0.26	0.99	0.41	21	218
30	ISL	12.63	12.63	33.668	25.435	254.2	0.079	4.84	80.4	11.9	1.10	10.8	0.25	0.70	0.35	30	
31		12.60	12.60	33.670	25.443	253.5	0.082	4.80	79.7	12.0	1.11	11.0	0.25	0.67	0.34	31	217
40		12.03	12.02	33.689	25.567	241.9	0.104	4.28	70.2	14.7	1.31	14.0	0.26	0.31	0.28	40	216
50	ISL	11.06	11.05	33.740	25.785	221.3	0.127	3.62	58.2	19.4	1.56	18.7	0.17	0.22	0.28	50	
51		10.97	10.96	33.746	25.806	219.3	0.129	3.56	57.1	19.9	1.58	19.1	0.16	0.22	0.28	51	215
59		10.68	10.67	33.784	25.887	211.8	0.147	3.35	53.4	21.8	1.68	20.5	0.05	0.13	0.30	59	214
70		10.65	10.64	33.786	25.894	211.4	0.170	3.32	52.9	22.0	1.68	20.7	0.05	0.09	0.38	70	213
75	ISL	10.62	10.61	33.789	25.902	210.8	0.181	3.30	52.5	22.1	1.69	20.8	0.05	0.09	0.35	75	
83		10.56	10.55	33.798	25.919	209.3	0.197	3.24	51.5	22.5	1.70	21.0	0.06	0.09	0.28	83	212
100		10.29	10.28	33.843	26.002	201.8	0.232	2.94	46.5	25.0	1.82	22.6	0.04	0.06	0.23	101	211
120		10.01	10.00	33.895	26.090	193.8	0.272	2.72	42.7	27.0	1.92	23.9	0.04	0.05	0.23	121	210
125	ISL	9.93	9.92	33.911	26.116	191.4	0.281	2.65	41.6	27.7	1.95	24.3	0.05	0.05	0.25	126	
141		9.71	9.69	33.956	26.188	184.8	0.312	2.45	38.3	29.7	2.05	25.6	0.06	0.04	0.30	142	209
150	ISL	9.64	9.62	33.967	26.209	183.1	0.328	2.45	38.2	30.2	2.07	25.9	0.05	0.04	0.28	151	
168		9.52	9.50	33.982	26.240	180.4	0.361	2.46	38.3	31.0	2.09	26.3	0.03	0.04	0.23	169	208
197		9.21	9.19	34.026	26.326	172.8	0.412	2.27	35.1	33.3	2.16	27.5	0.01	0.03	0.22	198	207
200	ISL	9.19	9.17	34.030	26.332	172.3	0.417	2.25	34.7	33.5	2.17	27.6	0.01			201	
229		8.94	8.92	34.063	26.398	166.5	0.466	2.07	31.8	36.0	2.25	28.6	0.02			230	206
250	ISL	8.49	8.46	34.074	26.477	159.2	0.501	2.06	31.3	39.1	2.31	29.7	0.02			252	
268		8.12	8.09	34.087	26.543	153.1	0.529	2.05	30.9	42.1	2.38	30.8	0.01			270	205
300	ISL	8.02	7.99	34.152	26.610	147.3	0.577	1.47	22.1	47.1	2.57	32.7	0.01			302	
318		7.97	7.94	34.175	26.635	145.2	0.603	1.12	16.8	49.7	2.68	33.7	0.01			320	204
379		7.31	7.27	34.175	26.731	136.7	0.689	1.11	16.4	56.4	2.78	35.3	0.01			381	203
400	ISL	7.01	6.97	34.173	26.771	133.0	0.717	1.02	15.0	59.9	2.84	36.3	0.01			403	
439		6.50	6.46	34.178	26.844	126.2	0.768	0.82	11.9	66.8	2.95	38.1	0.01			442	202

```
500 ISL   6.12      6.08      34.225    26.931   118.5   0.843    0.56     8.1  75.1   3.09   39.6   0.00              504
515       6.03      5.98      34.237    26.952   116.6   0.860    0.49     7.0  77.1   3.12   40.0   0.00              519  201
```

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.1 N	121 9.9 W	16/10/99	1842	UTC	2272 m	180	03 kn	290 06 07	2	1016.0 mb	15.0 C	14.5 C	23m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.86	16.86	33.608	24.480	344.3	0.000	5.70	103.1	3.0	0.33	0.0	0.01	0.25	0.08	0	
1		16.86	16.86	33.606	24.478	344.5	0.003									1	223
1	A	16.86	16.86	33.608	24.480	344.3	0.003	5.70	103.1	3.0	0.33	0.0	0.01	0.25	0.08	1	222
2		16.86	16.86	33.607	24.479	344.4	0.007									2	224
10		16.85	16.85	33.608	24.483	344.4	0.034	5.68	102.7	3.0	0.33	0.0	0.01	0.31	0.12	10	221
18	A	16.85	16.85	33.613	24.487	344.3	0.062	5.73	103.6	2.8	0.32	0.0	0.01	0.44	0.15	18	220
20	ISL	16.83	16.83	33.617	24.495	343.6	0.069	5.74	103.8	2.8	0.31	0.0	0.01	0.48	0.19	20	
26		16.77	16.77	33.630	24.519	341.5	0.089	5.78	104.4	2.7	0.30	0.0	0.01	0.60	0.28	26	219
30	ISL	16.48	16.48	33.629	24.585	335.2	0.103	5.80	104.1	3.2	0.32	0.2	0.05	0.69	0.27	30	
33	A	16.16	16.15	33.626	24.657	328.5	0.113	5.82	103.8	3.8	0.36	0.6	0.13	0.75	0.26	33	218
43		14.61	14.60	33.615	24.990	297.0	0.144	5.47	94.6	6.4	0.64	4.6	0.89	0.79	0.45	43	217
50	ISL	13.73	13.72	33.577	25.145	282.4	0.164	5.24	89.0	7.5	0.84	8.0	0.38	0.53	0.38	50	
51	A	13.61	13.60	33.572	25.166	280.4	0.167	5.21	88.2	7.7	0.87	8.5	0.28	0.49	0.36	51	216
60		12.31	12.30	33.572	25.423	256.1	0.191	4.82	79.4	11.3	1.16	13.4	0.02	0.20	0.22	60	215
67	A	11.13	11.12	33.563	25.635	235.9	0.209	4.50	72.3	15.2	1.37	16.4	0.02	0.08	0.12	67	214
75	ISL	10.47	10.46	33.621	25.797	220.7	0.227	4.13	65.5	19.1	1.57	19.4	0.01	0.05	0.09	75	
79		10.31	10.30	33.657	25.853	215.4	0.236	3.97	62.7	20.6	1.64	20.6	0.01	0.03	0.08	79	213
90	A	10.08	10.07	33.711	25.934	207.9	0.259	3.67	57.7	22.5	1.71	21.9	0.01	0.03	0.08	90	212
100	ISL	9.84	9.83	33.781	26.029	199.1	0.279	3.37	52.7	24.7	1.81	23.3	0.01	0.02	0.07	100	
104		9.74	9.73	33.807	26.066	195.6	0.287	3.26	50.9	25.5	1.85	23.8	0.01	0.01	0.07	105	211
119		9.43	9.42	33.853	26.153	187.6	0.316	3.08	47.8	27.5	1.91	24.8	0.01	0.01	0.05	120	210
125	ISL	9.25	9.24	33.879	26.203	183.0	0.327	3.01	46.5	28.8	1.95	25.5	0.01	0.01	0.05	126	
139		8.84	8.83	33.939	26.315	172.5	0.352	2.84	43.5	32.0	2.04	27.0	0.01	0.00	0.04	140	209
150	ISL	8.62	8.60	33.971	26.375	167.0	0.371	2.72	41.5	33.9	2.09	27.8	0.01	0.00	0.04	151	
169		8.36	8.34	34.006	26.442	160.9	0.402	2.58	39.1	36.5	2.15	28.7	0.01	0.00	0.03	170	208
199		8.13	8.11	34.021	26.489	156.9	0.449	2.54	38.3	38.6	2.21	29.4	0.01	0.00	0.03	200	207
200	ISL	8.13	8.11	34.024	26.491	156.7	0.451	2.51	37.8	38.8	2.22	29.5	0.01			201	
228		8.11	8.09	34.120	26.570	149.8	0.494	1.70	25.6	43.9	2.49	32.0	0.00			229	206
250	ISL	7.95	7.92	34.153	26.620	145.4	0.526	1.45	21.8	47.2	2.60	33.0	0.00			251	
268		7.76	7.73	34.164	26.657	142.1	0.552	1.36	20.3	49.8	2.66	33.5	0.01			270	205
300	ISL	7.38	7.35	34.174	26.719	136.5	0.597	1.17	17.4	55.0	2.77	34.9	0.01			302	
318		7.17	7.14	34.177	26.751	133.6	0.621	1.08	15.9	57.7	2.82	35.6	0.01			320	204
378		6.85	6.81	34.205	26.818	128.1	0.700	0.85	12.5	63.3	2.94	37.1	0.01			380	203
400	ISL	6.72	6.68	34.217	26.845	125.7	0.728	0.75	11.0	65.8	2.99	37.7	0.01			403	
437		6.50	6.46	34.239	26.892	121.7	0.773	0.60	8.7	70.0	3.06	38.6	0.01			440	202
500	ISL	6.16	6.12	34.276	26.966	115.3	0.848	0.43	6.2	76.5	3.16	39.9	0.00			503	
515		6.08	6.03	34.285	26.984	113.7	0.865	0.39	5.6	78.0	3.19	40.2	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.1 N	121 50.6 W	17/10/99	0100	UTC	3628 m	180	05 kn	310 06 08	2	1015.9 mb	16.0 C	14.5 C		8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.05	17.05	33.577	24.411	350.8	0.000	5.72	103.8	2.5	0.31	0.1	0.01	0.50	0.18	0	
2		17.05	17.05	33.577	24.412	350.9	0.007	5.72	103.8	2.5	0.31	0.1	0.01	0.50	0.18	2	220
10		16.96	16.96	33.566	24.425	349.9	0.035	5.74	104.0	2.5	0.31	0.1	0.01	0.49	0.16	10	219
20		16.81	16.81	33.547	24.446	348.2	0.070	5.75	103.9	2.6	0.32	0.2	0.03	0.46	0.16	20	218
30	ISL	16.67	16.67	33.537	24.471	346.1	0.105	5.75	103.6	2.7	0.34	0.2	0.05	0.33	0.16	30	
31		16.66	16.65	33.536	24.472	346.0	0.108	5.75	103.5	2.7	0.34	0.2	0.05	0.32 A	0.16 A	31	217
39		14.80	14.79	33.544	24.895	306.0	0.134	5.48	95.1	4.9	0.59	3.8	0.49	0.52	0.37	39	216
50		13.04	13.03	33.593	25.297	267.9	0.166	4.94	82.7	9.2	0.99	10.6	0.14	0.40	0.35	50	215
59		12.20	12.19	33.589	25.457	252.8	0.189	4.61	75.8	11.7	1.19	13.8	0.03	0.27	0.23	59	214
69		11.13	11.12	33.565	25.637	235.8	0.214	4.41	70.9	15.1	1.38	16.5	0.02	0.09	0.10	69	213
75	ISL	10.82	10.81	33.606	25.724	227.7	0.228	4.18	66.7	17.0	1.48	18.1	0.02	0.08	0.10	75	
84		10.53	10.52	33.687	25.838	217.0	0.248	3.81	60.5	19.8	1.62	20.2	0.01	0.07	0.09	84	212
100		9.90	9.89	33.778	26.017	200.2	0.281	3.38	52.9	24.4	1.82	23.3	0.01	0.02	0.06	100	211
120		9.59	9.58	33.916	26.177	185.5	0.319	2.71	42.2	28.4	1.98	25.3	0.01	0.01	0.06	121	210
125	ISL	9.55	9.54	33.935	26.198	183.5	0.329	2.62	40.8	29.0	2.01	25.6	0.01	0.01	0.06	126	
140		9.43	9.41	33.974	26.248	179.0	0.356	2.43	37.7	30.4	2.08	26.5	0.01	0.01	0.06	141	209
150	ISL	9.32	9.30	33.998	26.285	175.7	0.374	2.34	36.2	31.6	2.12	27.0	0.01	0.01	0.06	151	
170		9.07	9.05	34.036	26.355	169.4	0.408	2.20	33.9	34.0	2.20	28.0	0.01	0.00	0.05	171	208
200		8.69	8.67	34.073	26.445	161.4	0.458	2.05	31.3	37.2	2.29	29.4	0.01	0.00	0.02	201	207
228		8.32	8.30	34.098	26.521	154.5	0.502	1.86	28.2	41.2	2.40	30.8	0.01			229	206
250	ISL	8.18	8.15	34.136	26.573	150.0	0.536	1.49	22.5	44.8	2.53	32.1	0.01			251	
268		8.09	8.06	34.163	26.607	147.0	0.562	1.22	18.4	47.5	2.62	33.1	0.01			270	205
300	ISL	7.73	7.70	34.157	26.656	142.7	0.609	1.30	19.4	50.0	2.66	33.7	0.01			302	
317		7.52	7.49	34.151	26.682	140.5	0.633	1.34	19.9	51.4	2.67	34.0	0.01			319	204
377		6.98	6.94	34.218	26.811	128.9	0.713	0.80	11.8	62.1	2.91	36.7	0.01			379	203
400	ISL	6.81	6.77	34.236	26.848	125.5	0.743	0.68	10.0	65.3	2.98	37.4	0.01			403	
437		6.53	6.49	34.255	26.901	120.9	0.788	0.56	8.1	70.0	3.06	38.4	0.00			440	202
500	ISL	5.97	5.93	34.245	26.966	115.1	0.863	0.45	6.5	78.0	3.14	40.1	0.00			503	
520		5.79	5.75	34.243	26.986	113.1	0.885	0.42	6.0	80.5	3.17	40.7	0.00			524	201

A) SECOND FLUOROMETER READING NOT RECORDED, CHLOROPHYLL AND PHAEOPIGMENT
CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.1 N	122 32.3 W	17/10/99	0642 UTC	3999 m	140 06 kn			1018.7 mb	15.7 C	14.2 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.40	17.40	33.575	24.327	358.9	0.000	5.66	103.4	2.0	0.31	0.1	0.00	0.23	0.07	0	
2		17.40	17.40	33.575	24.327	358.9	0.007	5.66	103.4	2.0	0.31	0.1	0.00	0.23	0.07	2	220
10		17.39	17.39	33.576	24.330	358.9	0.036	5.68	103.8	2.0	0.30	0.1	0.00	0.24	0.07	10	219
20	ISL	17.35	17.35	33.580	24.344	358.0	0.072	5.75	105.0	1.9	0.30	0.1	0.00	0.32	0.09	20	
21		17.35	17.35	33.581	24.344	357.9	0.075	5.76	105.2	1.9	0.30	0.1	0.00	0.33	0.09	21	218
30		16.21	16.21	33.565	24.598	334.0	0.106	5.98	106.7	2.4	0.33	0.3	0.03	1.07	0.46	30	217
40		14.06	14.05	33.505	25.021	293.9	0.138	5.64	96.4	4.9	0.66	4.9	0.59	0.97	0.55	40	216
50	ISL	12.70	12.69	33.544	25.326	265.1	0.166	4.92	81.8	9.4	1.04	11.1	0.10	0.49	0.35	50	
51		12.60	12.59	33.551	25.351	262.7	0.168	4.85	80.4	9.9	1.07	11.7	0.04	0.44	0.32	51	215
60		12.05	12.04	33.614	25.505	248.2	0.191	4.48	73.5	12.8	1.24	14.5	0.03	0.28	0.22	60	214
70		11.25	11.24	33.693	25.715	228.5	0.215	3.95	63.7	17.2	1.48	18.3	0.01	0.16	0.15	70	213
75	ISL	10.90	10.89	33.715	25.795	221.0	0.227	3.79	60.7	19.0	1.57	19.6	0.01	0.12	0.13	75	
85		10.32	10.31	33.751	25.924	208.8	0.248	3.54	56.0	22.0	1.70	21.7	0.01	0.06	0.10	85	212
100		9.71	9.70	33.830	26.089	193.4	0.278	3.16	49.3	25.9	1.86	24.0	0.01	0.03	0.07	100	211
121		9.35	9.34	33.900	26.203	182.9	0.318	2.91	45.1	28.7	1.95	25.4	0.01	0.01	0.05	122	210
125	ISL	9.28	9.27	33.912	26.224	181.0	0.325	2.87	44.4	29.3	1.97	25.7	0.01	0.01	0.05	126	
138		9.04	9.03	33.946	26.289	175.0	0.348	2.74	42.2	31.1	2.03	26.6	0.01	0.01	0.06	139	209
150	ISL	8.85	8.83	33.971	26.339	170.5	0.369	2.67	40.9	32.6	2.07	27.3	0.01	0.01	0.05	151	
170		8.54	8.52	34.002	26.411	163.9	0.402	2.59	39.4	35.0	2.12	28.3	0.01	0.00	0.04	171	208
200		8.05	8.03	34.029	26.507	155.2	0.450	2.47	37.2	39.3	2.22	29.6	0.01	0.00	0.04	201	207
230		7.57	7.55	34.036	26.583	148.3	0.496	2.45	36.5	43.4	2.26	30.7	0.01			231	206
250	ISL	7.33	7.31	34.054	26.631	143.9	0.525	2.18	32.3	47.2	2.39	32.0	0.01			251	
269		7.13	7.10	34.071	26.673	140.2	0.552	1.87	27.6	51.0	2.53	33.4	0.01			271	205
300	ISL	6.77	6.74	34.075	26.725	135.5	0.595	1.62	23.7	56.1	2.64	35.0	0.01			302	
320		6.54	6.51	34.077	26.758	132.6	0.621	1.50	21.8	59.4	2.70	36.0	0.01			322	204
383		5.96	5.93	34.129	26.874	122.1	0.702	0.91	13.0	71.6	2.96	39.1	0.01			385	203
400	ISL	5.89	5.86	34.140	26.891	120.6	0.722	0.83	11.9	73.3	3.00	39.5	0.01			403	
433		5.80	5.76	34.162	26.920	118.2	0.762	0.71	10.1	76.1	3.05	40.2	0.00			436	202
500	ISL	5.47	5.43	34.229	27.014	109.9	0.838	0.44	6.2	85.0	3.19	41.6	0.00			503	
517		5.38	5.34	34.246	27.038	107.7	0.857	0.37	5.2	87.3	3.22	42.0	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.1 N	123 13.2 W	17/10/99	1227 UTC	4233 m	190 07 kn			1019.0 mb	16.0 C	14.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.58	17.58	33.572	24.281	363.2	0.000	5.65	103.6	2.0	0.31	0.1	0.00	0.23	0.05	0	
2		17.58	17.58	33.572	24.281	363.3	0.007	5.65	103.6	2.0	0.31	0.1	0.00	0.23	0.05	2	220
10	ISL	17.56	17.56	33.572	24.287	363.1	0.036	5.65	103.6	2.0	0.30	0.1	0.00	0.24	0.06	10	
15		17.54	17.54	33.573	24.292	362.7	0.054			2.0	0.30	0.1	0.00	0.25	0.06	15	219
20	ISL	17.49	17.49	33.574	24.305	361.6	0.073	5.65	103.4	2.0	0.30	0.1	0.00	0.28	0.07	20	
30		17.38	17.38	33.575	24.333	359.3	0.109	5.65	103.2	1.9	0.31	0.1	0.01	0.39	0.10	30	218
45		13.21	13.20	33.457	25.158	281.0	0.157	5.58	93.7	5.8	0.83	7.4	0.64	0.75	0.45	45	217
50	ISL	12.47	12.46	33.459	25.305	267.1	0.170	5.39	89.1	7.7	0.98	10.0	0.36	0.66	0.43	50	
55		11.97	11.96	33.469	25.408	257.4	0.183	5.17	84.6	9.6	1.11	12.3	0.05	0.52	0.41	55	216
64		11.38	11.37	33.503	25.543	244.6	0.206	4.85	78.3	12.8	1.29	15.2	0.03	0.27	0.21	64	215
73		10.68	10.67	33.606	25.749	225.2	0.227	4.27	68.0	17.6	1.53	19.0	0.02	0.15	0.10	73	214
75	ISL	10.57	10.56	33.615	25.775	222.8	0.232	4.20	66.7	18.3	1.56	19.5	0.02	0.13	0.09	75	
84		10.16	10.15	33.644	25.868	214.1	0.251	3.98	62.7	20.9	1.68	21.3	0.01	0.07	0.06	84	213
95		9.81	9.80	33.721	25.987	202.9	0.274	3.60	56.3	24.3	1.81	23.4	0.01	0.03	0.05	95	212
100	ISL	9.70	9.69	33.763	26.038	198.2	0.284	3.43	53.5	25.4	1.85	24.1	0.01	0.03	0.05	100	
109		9.55	9.54	33.831	26.116	190.9	0.302	3.17	49.3	27.1	1.92	25.2	0.01	0.02	0.05	110	211
125		9.31	9.30	33.886	26.199	183.4	0.332	2.85	44.1	29.3	2.02	26.4	0.01	0.01	0.03	126	210
144		8.69	8.67	33.936	26.336	170.6	0.365	2.91	44.4	32.8	2.05	27.4	0.00	0.00	0.04	145	209
150	ISL	8.60	8.58	33.955	26.365	167.9	0.376	2.82	43.0	33.7	2.08	27.8	0.00	0.00	0.04	151	
171		8.40	8.38	34.015	26.443	160.9	0.410	2.40	36.4	36.9	2.19	29.3	0.01	0.00	0.04	172	208
199		8.06	8.04	34.058	26.528	153.2	0.454	2.03	30.6	41.5	2.35	31.1	0.00	0.00	0.03	200	207
200	ISL	8.05	8.03	34.059	26.531	153.0	0.456	2.02	30.4	41.6	2.35	31.1	0.00			201	
228		7.78	7.76	34.081	26.588	147.9	0.498	1.82	27.2	45.1	2.45	32.2	0.00			229	206
250	ISL	7.55	7.53	34.097	26.634	143.8	0.530	1.67	24.9	48.2	2.53	33.2	0.01			251	
268		7.35	7.32	34.107	26.670	140.6	0.555	1.55	23.0	50.8	2.60	34.0	0.01			270	205
300	ISL	6.96	6.93	34.111	26.728	135.4	0.600	1.39	20.4	55.7	2.69	35.3	0.01			302	
317		6.76	6.73	34.112	26.756	132.9	0.622	1.31	19.1	58.4	2.74	36.0	0.01			319	204
375		6.22	6.19	34.140	26.849	124.5	0.697	0.93	13.4	68.1	2.93	38.4	0.01			377	203
400	ISL	6.00	5.97	34.148	26.884	121.4	0.728	0.82	11.8	72.1	2.99	39.3	0.01			403	
436		5.73	5.69	34.164	26.930	117.2	0.771	0.69	9.8	77.3	3.07	40.4	0.01			439	202
500	ISL	5.51	5.47	34.228	27.008	110.5	0.843	0.49	7.0	84.1	3.18	41.4	0.00			503	
522		5.43	5.39	34.250	27.036	108.1	0.868	0.42	6.0	86.5	3.22	41.7	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 49.1 N	123 54.4 W	17/10/99	1815 UTC	4424 m	140 07 kn	350 05 05	2	1021.4 mb	18.0 C	15.5 C	32m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.75	17.75	33.172	23.934	396.3	0.000	5.65	103.7	2.6	0.31	0.1	0.00	0.09	0.02	0	
1		17.75	17.75	33.171	23.933	396.4	0.004									1	223
1		17.75	17.75	33.170	23.933	396.5	0.004									1	224
2	A	17.75	17.75	33.172	23.934	396.4	0.008	5.65	103.7	2.6	0.31	0.1	0.00	0.09	0.02	2	222
10	ISL	17.68	17.68	33.166	23.947	395.4	0.040	5.64	103.4	2.5	0.32	0.0	0.00	0.10	0.02	10	
12		17.64	17.64	33.159	23.951	395.1	0.048	5.64	103.3	2.5	0.32	0.0	0.00	0.10	0.02	12	221
20	ISL	17.43	17.43	33.169	24.009	389.8	0.079	5.67	103.4	2.5	0.31	0.0	0.00	0.15	0.03	20	
24	A	17.32	17.32	33.179	24.043	386.7	0.094	5.70	103.7	2.5	0.31	0.0	0.00	0.17	0.03	24	220
30	ISL	17.22	17.22	33.199	24.083	383.2	0.118	5.77	104.8	2.4	0.31	0.0	0.00	0.17	0.04	30	
32		17.18	17.17	33.205	24.097	381.9	0.125	5.79	105.1	2.4	0.31	0.0	0.00	0.17	0.04	32	219
39		15.54	15.53	33.106	24.396	353.5	0.151	6.17	108.4	2.2	0.32	0.1	0.00	0.21	0.06	39	218
48	A	14.09	14.08	33.097	24.700	324.7	0.181	6.38	108.8	2.3	0.33	0.1	0.00	0.20	0.08	48	217
50	ISL	13.84	13.83	33.082	24.740	320.9	0.188	6.36	107.9	2.3	0.34	0.1	0.00	0.21	0.09	50	
58		13.08	13.07	33.039	24.860	309.6	0.213	6.30	105.2	2.6	0.36	0.0	0.00	0.29	0.15	58	216
69	A	12.48	12.47	33.144	25.059	290.9	0.246	6.11	100.8	3.6	0.51	2.1	0.16	0.36	0.22	69	215
75	ISL	12.05	12.04	33.178	25.167	280.7	0.263	5.92	96.8	4.6	0.60	3.8	0.12	0.33	0.22	75	
82		11.61	11.60	33.211	25.275	270.6	0.283	5.72	92.7	5.6	0.69	5.5	0.04	0.28	0.22	82	214
95	A	11.31	11.30	33.274	25.379	261.0	0.317	5.60	90.2	6.1	0.71	6.0	0.02	0.19	0.17	95	213
100	ISL	11.00	10.99	33.276	25.436	255.6	0.330	5.57	89.1	6.4	0.72	6.3	0.01	0.16	0.14	100	
104		10.78	10.77	33.283	25.480	251.5	0.340	5.55	88.4	6.9	0.73	6.5	0.01	0.13	0.11	104	212
114		10.74	10.73	33.384	25.566	243.5	0.365	5.08	80.9	10.3	1.00	10.8	0.01	0.08	0.08	115	211
125	A	10.58	10.57	33.518	25.699	231.2	0.391	4.55	72.2	13.4	1.20	14.2	0.01	0.05	0.06	126	210
143		10.00	9.98	33.701	25.941	208.4	0.431	4.04	63.4	19.3	1.52	19.4	0.00	0.01	0.03	144	209
150	ISL	9.76	9.74	33.748	26.018	201.2	0.445	3.92	61.2	20.9	1.58	20.4	0.00	0.01	0.02	151	
169		9.18	9.16	33.841	26.185	185.5	0.482	3.73	57.5	24.2	1.65	22.0	0.00	0.00	0.01	170	208
199		8.73	8.71	33.949	26.341	171.2	0.535	3.55	54.2	28.8	1.78	24.2	0.00	0.00	0.02	200	207
200	ISL	8.71	8.69	33.952	26.347	170.7	0.537	3.54	54.1	29.0	1.79	24.3	0.00			201	
228		8.21	8.19	34.003	26.463	159.9	0.583	3.11	47.0	34.9	1.99	27.0	0.00			229	206
250	ISL	7.86	7.84	34.012	26.522	154.5	0.618	2.96	44.3	38.4	2.08	28.3	0.00			251	
268		7.60	7.57	34.012	26.560	151.1	0.645	2.85	42.4	41.1	2.15	29.3	0.00			270	205
300	ISL	7.20	7.17	34.028	26.630	144.9	0.693	2.40	35.4	46.8	2.35	31.5	0.00			302	
318		6.99	6.96	34.038	26.667	141.5	0.718	2.13	31.3	50.2	2.47	32.8	0.00			320	204
377		6.24	6.21	34.060	26.784	130.7	0.799	1.64	23.7	61.4	2.70	36.5	0.00			379	203
400	ISL	6.03	6.00	34.073	26.821	127.3	0.828	1.41	20.2	65.8	2.80	37.8	0.00			403	
437		5.74	5.70	34.099	26.878	122.2	0.875	1.05	15.0	72.6	2.94	39.5	0.00			440	202
500	ISL	5.34	5.30	34.154	26.970	113.9	0.949	0.69	9.7	82.9	3.10	41.3	0.00			503	
520		5.21	5.17	34.172	27.000	111.2	0.971	0.57	8.0	86.2	3.15	41.9	0.00			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 16.5 N	120 1.5 W	16/10/99	0246 UTC	575 m	280 05 kn			1011.0 mb	15.2 C	14.3 C	07m		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.65	14.65	33.661	25.016	293.2	0.000	6.79	117.6	1.9	0.30	0.4	0.08	5.62	1.43	0	
1	A	14.65	14.65	33.661	25.016	293.3	0.003	6.79	117.6	1.9	0.30	0.4	0.08	5.62	1.43	1	224
10		13.91	13.91	33.678	25.185	277.4	0.029	6.03	102.8	6.7	0.63	5.1	0.14	5.67	1.05	10	223
20		13.24	13.24	33.670	25.316	265.3	0.056	5.40	90.8	8.8	0.84	8.1	0.17	3.41	0.73	20	222
30		12.20	12.20	33.678	25.526	245.5	0.081	4.45	73.2	14.2	1.23	13.2	0.28	0.73	0.65	30	221
41		11.67	11.66	33.700	25.643	234.7	0.108	4.10	66.7	16.3	1.36	15.6	0.31	0.46	0.52	41	220
50		11.20	11.19	33.731	25.753	224.4	0.128	3.75	60.4	19.1	1.50	18.0	0.23	0.38	0.46	50	219
61		10.94	10.93	33.752	25.816	218.6	0.153	3.51	56.2	20.4	1.59	19.4	0.08	0.23	0.48	61	218
71		10.68	10.67	33.787	25.890	211.8	0.174	3.28	52.3	22.2	1.67	20.7	0.03	0.14	0.29	71	217
75	ISL	10.58	10.57	33.801	25.918	209.2	0.183	3.21	51.1	23.0	1.70	21.2	0.03	0.14	0.29	75	
86		10.29	10.28	33.839	25.998	201.8	0.205	3.05	48.2	24.9	1.79	22.3	0.02	0.14	0.30	86	216
99		9.90	9.89	33.886	26.101	192.2	0.231	2.90	45.5	26.5	1.87	23.6	0.01	0.04	0.20	100	215
100	ISL	9.89	9.88	33.890	26.106	191.8	0.233	2.88	45.1	26.7	1.88	23.7	0.01	0.04	0.20	101	
119		9.75	9.74	33.961	26.185	184.7	0.269	2.48	38.8	29.5	2.02	25.4	0.01	0.05	0.22	120	214
125	ISL	9.70	9.69	33.976	26.205	182.9	0.280	2.40	37.5	30.1	2.05	25.8	0.01	0.05	0.22	126	
139		9.58	9.56	34.004	26.247	179.2	0.305	2.25	35.0	31.2	2.11	26.5	0.01	0.05	0.21	140	213
150	ISL	9.50	9.48	34.027	26.279	176.4	0.324	2.14	33.3	32.3	2.15	27.0	0.01	0.03	0.16	151	
170		9.35	9.33	34.065	26.333	171.6	0.359	1.93	29.9	34.5	2.24	28.1	0.01	0.01	0.07	171	212
198		9.08	9.06	34.106	26.409	164.9	0.406	1.54	23.7	37.6	2.39	30.1	0.01	0.03	0.15	199	211
200	ISL	9.07	9.05	34.108	26.412	164.6	0.410	1.52	23.4	37.8	2.40	30.2	0.01			201	
228		8.86	8.84	34.139	26.470	159.6	0.455	1.23	18.9	40.6	2.50	31.7	0.01			229	210
250	ISL	8.63	8.60	34.155	26.519	155.3	0.490	1.04	15.9	43.7	2.59	32.8	0.01			252	
268		8.41	8.38	34.165	26.561	151.6	0.517	0.92	14.0	46.6	2.66	33.5	0.01			270	209
300	ISL	7.96	7.93	34.179	26.640	144.4	0.565	0.84	12.6	52.9	2.77	34.4	0.01			302	
317		7.73	7.70	34.186	26.679	140.9	0.589	0.82	12.3	56.1	2.82	34.8	0.01			319	208
377		7.31	7.27	34.201	26.752	134.7	0.672	0.67	9.9	63.2	2.95	35.6	0.01			379	207
400	ISL	7.14	7.10	34.208	26.781	132.2	0.702	0.60	8.8	66.2	3.00	35.7	0.01			403	
436		6.89	6.85	34.219	26.824	128.4	0.749	0.46	6.7	71.9	3.10	35.9	0.01			439	206
500	ISL	6.52	6.47	34.231	26.884	123.4	0.830	0.16	2.3	87.4	3.32	33.1	0.01			504	
512		6.46	6.41	34.232	26.893	122.7	0.845	0.11	1.6	90.6	3.36	32.3	0.01			516	205
532		6.39	6.34	34.233	26.903	121.9	0.869	0.04	0.6	95.6	3.42	30.7	0.01			536	204
547		6.34	6.29	34.232	26.909	121.5	0.887	0.02	0.3	98.2	3.45	29.9	0.01			551	203
555		6.33	6.28	34.240	26.917	120.9	0.897	0.09	1.3	99.4	3.51	28.7	0.03			559	202
569		6.34	6.29	34.244	26.919	120.9	0.914	0.16	2.3	96.9	3.48	29.2	0.06			573	201

A) SANTA BARBARA BASIN STATION.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 13.5 N	119 24.6 W	15/10/99	1531 UTC	33 m	210 02 kn	250 01 04	4	1011.1 mb	16.0 C	15.4 C		4/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.90	15.90	33.635	24.721	321.3	0.000	6.25	110.9	2.4	0.20	0.1	0.01	2.11	0.52	0	
2	15.90	15.90	33.635	24.721	321.4	0.006	6.25	110.9	2.4	0.20	0.1	0.01	2.11	0.52	2	206
7	15.76	15.76	33.634	24.752	318.6	0.022	6.28	111.2	2.3	0.21	0.1	0.01	2.68	0.67	7	205
10 ISL	15.05	15.05	33.616	24.895	305.1	0.032	6.16	107.5	3.2	0.31	0.6	0.04	3.80	0.95	10	
11	14.79	14.79	33.609	24.946	300.2	0.035	6.10	105.9	3.6	0.35	0.9	0.06	4.14	1.04	11	204
16	14.03	14.03	33.571	25.078	287.8	0.050	5.70	97.4	5.7	0.60	3.9	0.24	3.87	1.04	16	203
20 ISL	13.39	13.39	33.557	25.198	276.5	0.061	5.31	89.5	8.2	0.82	6.1	0.38	2.64	0.93	20	
21	13.23	13.23	33.555	25.229	273.6	0.064	5.21	87.5	8.8	0.87	6.6	0.40	2.29	0.89	21	202
30	12.16	12.16	33.567	25.447	253.0	0.087	4.72	77.6	11.3	1.11	11.7	0.27	0.64	0.34	30	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
34 10.9 N	119 30.6 W	15/10/99	1804 UTC	115 m	070 02 kn	260 02 04	4	1011.4 mb	17.5 C	16.0 C	15m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.80	16.80	33.639	24.518	340.7	0.000	5.99	108.2	4.1	0.27	0.1	0.01	0.90	0.24	0	
2 A	16.80	16.80	33.639	24.518	340.8	0.007	5.99	108.2	4.1	0.27	0.1	0.01	0.90	0.24	2	211
2	16.82	16.82	33.639	24.513	341.2	0.007									2	213
2	16.79	16.79	33.639	24.520	340.5	0.007									2	212
10 ISL	16.51	16.51	33.640	24.586	334.5	0.034	6.00	107.8	3.8	0.28	0.1	0.01	1.09	0.28	10	
11 A	16.45	16.45	33.640	24.600	333.2	0.037	6.00	107.7	3.8	0.28	0.1	0.01	1.13	0.29	11	210
20 ISL	16.01	16.01	33.632	24.695	324.5	0.067	6.03	107.3	4.0	0.31	0.3	0.03	1.41	0.42	20	
22 A	15.91	15.91	33.631	24.717	322.4	0.073	6.04	107.2	4.1	0.32	0.4	0.03	1.42	0.45	22	209
30 ISL	13.30	13.30	33.535	25.200	276.6	0.097	5.30	89.2	8.4	0.80	7.4	0.21	0.82	0.41	30	
33 A	12.32	12.32	33.525	25.384	259.1	0.105	4.98	82.1	10.2	1.00	10.3	0.27	0.56	0.40	33	208
44 A	11.73	11.72	33.604	25.557	242.9	0.133	4.45	72.5	13.5	1.24	14.2	0.11	0.37	0.36	44	207
50 ISL	11.50	11.49	33.615	25.608	238.1	0.147	4.35	70.5	14.3	1.31	15.3	0.05	0.29	0.30	50	
52	11.42	11.41	33.620	25.627	236.4	0.152	4.31	69.7	14.6	1.33	15.6	0.03	0.27	0.29	52	206
59 A	11.11	11.10	33.676	25.727	227.1	0.168	3.94	63.3	17.0	1.45	17.5	0.02	0.17	0.33	59	205
70	10.75	10.74	33.747	25.846	215.9	0.193	3.62	57.8	19.9	1.59	19.5	0.01	0.07	0.15	70	204
75 ISL	10.67	10.66	33.754	25.866	214.2	0.203	3.60	57.4	20.1	1.60	19.7	0.01	0.07	0.16	75	
85	10.53	10.52	33.767	25.901	211.1	0.225	3.56	56.5	20.6	1.63	20.1	0.02	0.07	0.17	85	203
100	10.05	10.04	33.868	26.062	196.0	0.255	3.02	47.5	25.2	1.82	22.8	0.02	0.02	0.10	101	202
110	10.01	10.00	33.877	26.076	194.9	0.275	3.02	47.5	25.6	1.84	23.0	0.03	0.01	0.11	111	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.7 N	120 8.0 W	15/10/99	0223 UTC	100 m	300 16 kn			1011.0 mb	15.8 C	14.6 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.99	14.99	33.616	24.908	303.5	0.000	6.24	108.8	3.4	0.34	0.9	0.06	6.03	1.25	0	
1	14.99	14.99	33.616	24.908	303.5	0.003	6.24	108.8	3.4	0.34	0.9	0.06	6.03	1.25	1	209
10	14.51	14.51	33.623	25.017	293.5	0.030	5.96	102.9	4.7	0.48	2.3	0.10	5.80	1.42	10	208
20	13.28	13.28	33.676	25.313	265.6	0.058	5.29	89.1	8.9	0.81	7.4	0.09	5.94	1.51	20	207
30	12.88	12.88	33.682	25.397	257.8	0.084	5.01	83.6	10.6	0.95	9.1	0.10	4.71	1.54	30	206
40	11.24	11.24	33.754	25.763	223.1	0.108	3.82	61.6	18.8	1.46	17.1	0.12	1.12	0.60	40	205
50	10.53	10.52	33.812	25.935	207.0	0.130	3.30	52.4	22.7	1.70	20.6	0.09	0.25	0.38	50	204
60	10.24	10.23	33.857	26.020	199.1	0.150	3.04	48.0	24.9	1.81	22.2	0.07	0.10	0.26	60	203
70	10.10	10.09	33.885	26.066	195.0	0.170	2.89	45.5	26.3	1.88	23.1	0.07	0.09	0.22	70	202
75 ISL	10.05	10.04	33.893	26.081	193.7	0.179	2.85	44.8	26.7	1.90	23.3	0.07	0.09	0.22	75	
83	9.97	9.96	33.905	26.104	191.6	0.195	2.79	43.8	27.4	1.92	23.7	0.07	0.08	0.22	83	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 44.6 N	120 24.9 W	14/10/99	2357	UTC	1043 m	300 20 kn	310 03 08	1	1011.3 mb	17.0 C	15.5 C	15m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.57	15.57	33.620	24.784	315.4	0.000	6.04	106.5	2.1	0.33	0.6	0.08	0.90	0.37	0	
1		15.58	15.58	33.618	24.780	315.8	0.003									1	221
1		15.57	15.57	33.620	24.784	315.4	0.003	6.04	106.5	2.1	0.33	0.6	0.08	0.90	0.37	1	220
10		15.57	15.57	33.616	24.781	315.9	0.032	6.05	106.7	2.1	0.33	0.6	0.08	0.87	0.36	10	219
20		15.40	15.40	33.605	24.810	313.4	0.063	5.74	100.9	3.0	0.42	1.7	0.19	0.73	0.45	20	218
30		14.11	14.11	33.591	25.077	288.3	0.093	5.40	92.4	7.1	0.76	6.6	0.44	0.53	0.43	30	217
41		12.14	12.13	33.589	25.468	251.3	0.123	4.58	75.2	12.5	1.21	14.0	0.04	0.23	0.22	41	216
50	ISL	11.64	11.63	33.632	25.596	239.3	0.145	4.25	69.1	15.1	1.36	16.2	0.02	0.14	0.17	50	
51		11.61	11.60	33.637	25.605	238.5	0.147	4.22	68.6	15.3	1.37	16.4	0.02	0.14	0.17	51	215
60		11.05	11.04	33.686	25.745	225.3	0.168	3.87	62.1	18.2	1.52	18.7	0.02	0.08	0.14	60	214
71		10.27	10.26	33.719	25.908	210.1	0.192	3.63	57.3	21.8	1.68	21.3	0.01	0.03	0.10	71	213
75	ISL	10.18	10.17	33.725	25.928	208.2	0.200	3.60	56.7	22.2	1.70	21.6	0.01	0.03	0.09	75	
85		10.09	10.08	33.741	25.956	205.8	0.221	3.53	55.5	22.9	1.74	22.1	0.01	0.02	0.08	85	212
100		9.66	9.65	33.813	26.084	193.8	0.251	3.26	50.8	26.0	1.85	23.9	0.01	0.01	0.06	101	211
119		9.23	9.22	33.861	26.192	183.9	0.287	3.05	47.1	29.0	1.95	25.6	0.01	0.01	0.05	120	210
125	ISL	9.11	9.10	33.889	26.233	180.1	0.298	2.95	45.4	30.1	1.98	26.1	0.01	0.01	0.05	126	
139		8.92	8.91	33.963	26.321	171.9	0.323	2.67	41.0	32.6	2.07	27.1	0.01	0.00	0.05	140	209
150	ISL	8.94	8.92	34.024	26.366	167.9	0.341	2.40	36.9	34.3	2.15	27.8	0.01	0.00	0.06	151	
168		8.98	8.96	34.093	26.414	163.8	0.371	2.00	30.8	36.5	2.28	28.7	0.01	0.00	0.07	169	208
199		8.87	8.85	34.128	26.460	160.1	0.421	1.80	27.6	38.4	2.37	29.6	0.01	0.01	0.06	200	207
200	ISL	8.86	8.84	34.130	26.463	159.8	0.423	1.79	27.5	38.5	2.37	29.6	0.01			201	
228		8.65	8.63	34.176	26.532	153.7	0.467	1.50	22.9	42.1	2.49	30.9	0.04 U			229	206
250	ISL	8.47	8.44	34.206	26.584	149.1	0.500	1.29	19.6	44.8	2.58	31.8	0.01			252	
267		8.32	8.29	34.224	26.621	145.9	0.525	1.15	17.4	46.8	2.65	32.5	0.08 U			269	205
300	ISL	8.08	8.05	34.236	26.667	142.0	0.573	0.95	14.3	50.1	2.75	33.7	0.01			302	
319		7.90	7.87	34.234	26.692	139.8	0.599	0.87	13.1	52.2	2.79	34.4	0.30 U			321	204
377		6.93	6.89	34.208	26.810	128.9	0.677	0.84	12.3	62.6	2.91	36.8	0.01			379	203
400	ISL	6.77	6.73	34.217	26.839	126.4	0.707	0.76	11.1	65.1	2.96	37.4	0.01			403	
438		6.61	6.57	34.242	26.880	122.9	0.754	0.60	8.7	68.7	3.03	38.2	0.01			441	202
500	ISL	6.21	6.17	34.280	26.963	115.6	0.828	0.42	6.1	76.4	3.15	39.6	0.01			503	
522		6.07	6.02	34.294	26.992	113.0	0.853	0.35	5.0	79.2	3.19	40.1	0.01			526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 34.6 N	120 46.0 W	14/10/99	1814	UTC	1529 m	280 14 kn	310 03 04	2	1015.1 mb	16.5 C	15.5 C	16m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.73	15.73	33.617	24.746	319.0	0.000	6.03	106.7	3.0	0.41	1.2	0.12	0.68	0.25	0	
1		15.73	15.73	33.614	24.743	319.2	0.003									1	221
1	A	15.73	15.73	33.617	24.746	319.0	0.003	6.03	106.7	3.0	0.41	1.2	0.12	0.68	0.25	1	220
1		15.73	15.73	33.614	24.743	319.2	0.003									1	222
10	ISL	15.71	15.71	33.614	24.748	319.1	0.032	6.04	106.8	3.0	0.42	1.2	0.12	0.69	0.28	10	
12	A	15.71	15.71	33.613	24.747	319.2	0.038	6.04	106.8	3.0	0.42	1.2	0.12	0.69	0.29	12	219
20	ISL	15.64	15.64	33.609	24.760	318.2	0.064	6.05	106.8	2.9	0.42	1.2	0.12	0.64	0.28	20	
23	A	15.60	15.60	33.608	24.769	317.5	0.073	6.05	106.7	2.8	0.42	1.2	0.12	0.63	0.27	23	218
30	ISL	15.42	15.42	33.610	24.810	313.8	0.095	6.01	105.6	3.3	0.44	1.7	0.16	0.75	0.38	30	
35	A	15.28	15.27	33.613	24.844	310.7	0.111	5.99	105.0	4.0	0.46	2.1	0.22	0.81	0.45	35	217
47	A	13.74	13.73	33.574	25.141	282.7	0.147	5.30	90.0	7.3	0.82	7.3	0.57	0.48	0.37	47	216
50	ISL	13.30	13.29	33.563	25.222	275.0	0.155	5.15	86.7	8.3	0.93	9.2	0.37	0.45	0.35	50	
54		12.73	12.72	33.557	25.330	264.8	0.166	4.95	82.3	9.8	1.06	11.7	0.09	0.41	0.32	54	215
62	A	11.89	11.88	33.588	25.515	247.3	0.186	4.54	74.2	12.8	1.26	14.8	0.02	0.27	0.24	62	214
74		10.68	10.67	33.621	25.760	224.2	0.215	4.20	66.9	18.4	1.55	19.2	0.01	0.09	0.12	74	213
75	ISL	10.63	10.62	33.624	25.771	223.1	0.217	4.18	66.5	18.7	1.56	19.4	0.01	0.08	0.12	75	
86		10.28	10.27	33.675	25.872	213.8	0.241	3.89	61.4	21.6	1.68	21.3	0.01	0.04	0.09	86	212
99		9.88	9.87	33.798	26.036	198.4	0.268	3.32	52.0	25.1	1.84	23.7	0.00	0.02	0.07	99	211
100	ISL	9.85	9.84	33.804	26.046	197.5	0.270	3.31	51.8	25.3	1.85	23.8	0.00	0.02	0.07	100	
120		9.34	9.33	33.886	26.194	183.8	0.308			28.7	1.94	25.4	0.00	0.01	0.05	121	210
125	ISL	9.23	9.22	33.899	26.222	181.2	0.317	3.10	47.9	29.4	1.96	25.7	0.00	0.01	0.05	126	
140		8.92	8.91	33.932	26.297	174.3	0.344	2.97	45.6	31.4	2.00	26.5	0.00	0.00	0.04	141	209
150	ISL	8.70	8.68	33.960	26.354	169.0	0.361	2.91	44.4	32.8	2.02	27.0	0.00	0.00	0.04	151	
168		8.30	8.28	34.006	26.451	160.0	0.390			35.6	2.06	27.8	0.00	0.00	0.03	169	208
200		7.67	7.65	34.032	26.565	149.5	0.440	2.60	38.8	42.0	2.23	29.9	0.01	0.00	0.02	201	207
230		7.38	7.36	34.042	26.615	145.2	0.484	2.36	35.0	46.0	2.35	31.5	0.00			231	206
250	ISL	7.13	7.11	34.054	26.659	141.2	0.513	2.13	31.4	49.9	2.46	32.8	0.00			251	
270		6.88	6.86	34.065	26.702	137.3	0.541	1.91	28.0	53.7	2.56	34.1	0.00			272	205
300	ISL	6.58	6.55	34.061	26.740	134.0	0.581	1.75	25.5	57.3	2.63	35.2	0.00			302	
315		6.47	6.44	34.064	26.756	132.6	0.601	1.67	24.2	58.9	2.66	35.7	0.00			317	204
376		6.51	6.48	34.204	26.862	123.5	0.679	0.79	11.5	67.7	2.96	38.1	0.00			378	203
400	ISL	6.45	6.41	34.229	26.890	121.2	0.709	0.64	9.3	70.0	3.02	38.7	0.00			403	
438		6.31	6.27	34.254	26.929	118.0	0.754	0.52	7.5	73.1	3.08	39.3	0.00			441	202
500	ISL	6.06	6.02	34.295	26.994	112.5	0.826	0.39	5.6	78.9	3.17	40.2	0.00			503	
517		5.99	5.94	34.306	27.011	111.0	0.845	0.36	5.2	80.5	3.19	40.5	0.00			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 14.8 N	121 27.1 W	14/10/99	0649 UTC	3802 m	330 17 kn			1016.6 mb	17.0 C	15.4 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.21	17.21	33.572	24.370	354.8	0.000	5.74	104.5	2.6	0.31	0.0	0.00	0.30	0.09	0	
2		17.21	17.21	33.572	24.370	354.9	0.007	5.74	104.5	2.6	0.31	0.0	0.00	0.30	0.09	2	220
10	ISL	17.20	17.20	33.571	24.372	354.9	0.035	5.75	104.7	2.6	0.30	0.0	0.00	0.31	0.09	10	
15		17.19	17.19	33.570	24.374	354.9	0.053	5.75	104.6	2.6	0.30	0.0	0.00	0.31	0.09	15	219
20	ISL	17.19	17.19	33.570	24.374	355.1	0.071	5.75	104.6	2.6	0.30	0.0	0.00	0.31	0.09	20	
30		17.19	17.19	33.569	24.373	355.5	0.107	5.75	104.6	2.6	0.30	0.0	0.00	0.31	0.10	30	218
45		15.23	15.22	33.465	24.741	320.8	0.157	6.16	107.8	3.3	0.39	0.8	0.10	0.92	0.40	45	217
50	ISL	13.69	13.68	33.378	25.000	296.2	0.173	5.83	98.8	5.3	0.62	4.4	0.14	0.76	0.39	50	
55		12.31	12.30	33.332	25.237	273.6	0.187	5.45	89.7	7.4	0.86	8.2	0.16	0.54	0.38	55	216
65		11.97	11.96	33.410	25.362	262.0	0.214	5.12	83.7	9.8	1.04	11.1	0.04	0.33	0.21	65	215
75	ISL	11.24	11.23	33.395	25.485	250.4	0.239	4.96	79.8	11.8	1.15	12.9	0.02	0.23	0.17	75	
76		11.17	11.16	33.394	25.497	249.3	0.242	4.94	79.4	12.0	1.16	13.1	0.02	0.22	0.17	76	214
85		10.83	10.82	33.468	25.615	238.2	0.264	4.63	73.9	14.8	1.31	15.5	0.02	0.13	0.10	85	213
95		10.34	10.33	33.572	25.781	222.6	0.287	4.16	65.7	18.9	1.52	18.9	0.02	0.06	0.07	95	212
100	ISL	10.00	9.99	33.646	25.897	211.6	0.298	3.85	60.4	21.9	1.65	21.0	0.02	0.04	0.06	100	
110		9.41	9.40	33.781	26.100	192.5	0.318	3.32	51.4	27.1	1.86	24.5	0.01	0.02	0.05	111	211
125		9.25	9.24	33.836	26.169	186.2	0.346	3.15	48.7	28.8	1.93	25.4	0.01	0.01	0.04	126	210
147		9.23	9.21	33.942	26.256	178.4	0.386	2.75	42.5	30.6	2.00	26.0	0.01	0.01	0.05	148	209
150	ISL	9.17	9.15	33.948	26.270	177.1	0.392	2.76	42.6	30.9	2.00	26.1	0.01	0.01	0.05	151	
171		8.63	8.61	33.979	26.380	166.9	0.428	2.87	43.8	33.3	2.02	27.0	0.01	0.00	0.03	172	208
200		8.22	8.20	34.036	26.487	157.1	0.475	2.38	36.0	38.9	2.22	29.4	0.01	0.00	0.04	201	207
234		7.86	7.84	34.049	26.551	151.5	0.527	2.23	33.4	42.6	2.31	30.6	0.01			235	206
250	ISL	7.62	7.60	34.047	26.585	148.5	0.551	2.24	33.4	44.5	2.33	31.1	0.01			251	
265		7.37	7.34	34.044	26.618	145.5	0.573	2.24	33.2	46.5	2.36	31.6	0.01			267	205
300	ISL	6.80	6.77	34.040	26.694	138.5	0.623	2.03	29.7	52.9	2.48	33.5	0.01			302	
318		6.54	6.51	34.043	26.731	135.1	0.648	1.86	27.0	56.6	2.56	34.6	0.01			320	204
372		6.05	6.02	34.085	26.828	126.3	0.718	1.24	17.8	67.2	2.83	37.9	0.01			374	203
400	ISL	5.91	5.88	34.105	26.861	123.4	0.753	1.03	14.7	70.9	2.92	38.9	0.01			403	
435		5.78	5.74	34.133	26.900	120.1	0.796	0.83	11.9	75.0	3.00	39.9	0.01			438	202
500	ISL	5.46	5.42	34.212	27.002	111.0	0.871	0.48	6.8	83.9	3.15	41.5	0.00			503	
516		5.38	5.34	34.231	27.026	108.8	0.889	0.39	5.5	86.1	3.19	41.9	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.8 N	122 7.8 W	14/10/99	0052 UTC	4178 m	320 15 kn	320 02 06	1	1017.0 mb	18.0 C	16.0 C		2/8	CC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.50	17.50	33.594	24.318	359.8	0.000	5.71	104.6	2.5	0.31	0.0	0.00	0.21	0.04	0	
2		17.50	17.50	33.594	24.318	359.8	0.007	5.71	104.6	2.5	0.31	0.0	0.00	0.21	0.04	2	220
2		17.50	17.50	33.594	24.318	359.8	0.007									2	221
10		17.37	17.37	33.591	24.347	357.3	0.036	5.74	104.8	2.5	0.30	0.0	0.00	0.24	0.07	10	219
20		17.10	17.10	33.586	24.407	351.9	0.071	5.81	105.6	2.6	0.31	0.1	0.00	0.36	0.10	20	218
30	ISL	15.61	15.61	33.472	24.662	327.9	0.105	6.06	106.8	3.2	0.42	1.2	0.06	0.46	0.15	30	
31		15.44	15.44	33.460	24.690	325.2	0.109	6.08	106.8	3.3	0.43	1.4	0.07	0.47	0.16	31	217
40		14.46	14.45	33.397	24.854	309.8	0.137	6.10	105.0	3.8	0.54	2.7	0.18	0.52	0.22	40	216
50		12.14	12.13	33.326	25.264	270.9	0.166	5.59	91.7	7.8	0.91	8.8	0.42	0.54	0.35	50	215
61		11.66	11.65	33.473	25.469	251.7	0.195	4.99	81.1	11.7	1.19	13.7	0.03	0.32	0.23	61	214
70		11.22	11.21	33.598	25.646	235.0	0.217	4.44	71.5	15.9	1.42	17.3	0.02	0.16	0.16	70	213
75	ISL	11.06	11.05	33.646	25.713	228.8	0.228	4.21	67.6	17.6	1.50	18.6	0.02	0.12	0.14	75	
86		10.65	10.64	33.732	25.852	215.7	0.253	3.73	59.4	21.4	1.67	21.2	0.02	0.07	0.10	86	212
100	ISL	9.71	9.70	33.852	26.106	191.7	0.281	3.01	47.0	28.6	1.98	25.8	0.01	0.02	0.06	100	
101		9.64	9.63	33.860	26.124	190.0	0.283	2.96	46.1	29.1	2.00	26.1	0.01	0.02	0.06	101	211
122		9.15	9.14	33.937	26.264	177.1	0.322	2.52	38.9	32.5	2.11	28.1	0.02	0.01	0.06	123	210
125	ISL	9.10	9.09	33.945	26.279	175.8	0.327	2.48	38.2	32.9	2.12	28.2	0.02	0.01	0.06	126	
141		8.87	8.85	33.979	26.342	170.0	0.355	2.31	35.4	34.9	2.18	28.8	0.01	0.01	0.05	142	209
150	ISL	8.74	8.72	33.998	26.377	166.8	0.370	2.23	34.1	36.1	2.22	29.2	0.01	0.01	0.05	151	
171		8.41	8.39	34.032	26.455	159.7	0.404	2.10	31.9	39.0	2.29	30.3	0.01	0.01 U	0.18 U	172	208
200	ISL	7.88	7.86	34.037	26.538	152.2	0.450	2.16	32.4	42.8	2.34	31.5	0.01	0.00	0.03	201	
201		7.86	7.84	34.037	26.541	151.9	0.451	2.16	32.4	42.9	2.34	31.5	0.01	0.00	0.03	202	207
231		7.66	7.64	34.081	26.605	146.3	0.496	1.76	26.3	46.8	2.48	32.7	0.01			232	206
250	ISL	7.43	7.41	34.089	26.645	142.7	0.523	1.70	25.2	49.6	2.54	33.5	0.01			251	
271		7.13	7.10	34.086	26.685	139.1	0.553	1.64	24.2	52.7	2.59	34.4	0.01			273	205
300	ISL	6.66	6.63	34.058	26.727	135.3	0.593	1.65	24.0	56.8	2.63	35.3	0.02			302	
319		6.37	6.34	34.044	26.754	132.8	0.618	1.66	24.0	59.8	2.67	35.9	0.02			321	204
375		5.95	5.92	34.116	26.865	122.8	0.690	0.91	13.0	72.0	2.96	39.2	0.01			377	203
400	ISL	5.74	5.71	34.128	26.900	119.6	0.720	0.78	11.1	76.0	3.02	40.1	0.01			403	
438		5.46	5.42	34.144	26.947	115.4	0.765	0.68	9.6	81.3	3.09	41.0	0.01			441	202
500	ISL	5.24	5.20	34.223	27.036	107.5	0.834	0.41	5.8	89.1	3.21	42.1	0.01			503	
521		5.16	5.12	34.250	27.067	104.8	0.856	0.32	4.5	91.8	3.25	42.5	0.01			525	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 34.5 N	122 47.9 W	13/10/99	1743 UTC	4161 m	350 08 kn	340 01 05	1	1019.9 mb	18.5 C	16.5 C	24m	7/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.57	17.57	33.181	23.984	391.5	0.000	5.66	103.5	3.2	0.33	0.0	0.00	0.13	0.03	0	
1	A	17.57	17.57	33.181	23.984	391.6	0.004	5.66	103.5	3.2	0.33	0.0	0.00	0.13	0.03	1	221
2		17.57	17.57	33.178	23.982	391.8	0.008									2	222
2		17.57	17.57	33.179	23.983	391.8	0.008									2	223
10	ISL	17.45	17.45	33.191	24.021	388.4	0.039	5.68	103.7	3.3	0.32	0.0	0.00	0.15	0.03	10	
17	A	17.36	17.36	33.198	24.048	386.0	0.066	5.69	103.7	3.3	0.32	0.0	0.00	0.16	0.03	17	220
20	ISL	17.22	17.22	33.237	24.111	380.1	0.078	5.75	104.5	3.2	0.32	0.1	0.00	0.19	0.04	20	
25		16.78	16.78	33.293	24.258	366.3	0.096	5.89	106.2	3.2	0.33	0.2	0.00	0.24	0.05	25	219
30	ISL	15.89	15.89	33.303	24.469	346.3	0.114	6.13	108.6	3.4	0.36	0.3	0.01	0.50	0.14	30	
35	A	14.76	14.75	33.270	24.692	325.1	0.131	6.33	109.6	3.7	0.40	0.4	0.03	0.75	0.25	35	218
43		12.80	12.79	33.110	24.970	298.8	0.156	6.32	105.0	4.1	0.48	1.2	0.11	0.78	0.42	43	217
50	ISL	12.23	12.22	33.095	25.068	289.5	0.176	6.03	98.9	4.5	0.53	1.8	0.13	0.73	0.44	50	
52	A	12.16	12.15	33.099	25.085	288.0	0.182	5.95	97.5	4.6	0.55	2.1	0.13	0.70	0.45	52	216
61		11.59	11.58	33.094	25.187	278.5	0.208	5.90	95.5	5.8	0.64	4.2	0.10	0.48	0.34	61	215
71	A	11.18	11.17	33.131	25.290	268.8	0.235	5.76	92.4	7.0	0.74	6.0	0.04	0.30	0.23	71	214
75	ISL	11.10	11.09	33.168	25.333	264.8	0.246	5.67	90.8	7.7	0.81	7.0	0.04	0.25	0.20	75	
81		10.98	10.97	33.228	25.402	258.4	0.261	5.50	87.9	8.9	0.91	8.7	0.04	0.20	0.17	81	213
93	A	10.48	10.47	33.315	25.557	243.9	0.292	5.14	81.3	12.1	1.07	11.6	0.03	0.10	0.09	93	212
100	ISL	10.38	10.37	33.411	25.649	235.2	0.308	4.85	76.6	14.1	1.22	14.0	0.02	0.08	0.07	100	
109		10.27	10.26	33.541	25.770	224.0	0.329	4.44	70.0	17.1	1.42	17.2	0.01	0.06	0.06	110	211
124		9.73	9.72	33.692	25.979	204.4	0.361	3.76	58.6	23.6	1.71	22.0	0.01	0.02	0.04	125	210
125	ISL	9.70	9.69	33.700	25.990	203.3	0.363	3.73	58.1	23.9	1.72	22.2	0.01	0.02	0.04	126	
144		9.26	9.24	33.827	26.161	187.3	0.400	3.32	51.3	27.7	1.88	24.6	0.00	0.01	0.03	145	209
150	ISL	9.14	9.12	33.857	26.204	183.4	0.411	3.34	51.5	28.3	1.87	24.6	0.00	0.01	0.02	151	
169		8.81	8.79	33.930	26.313	173.3	0.445	3.51	53.7	29.8	1.82	24.4	0.01	0.01	0.01	170	208
199		8.29	8.27	33.993	26.443	161.4	0.495	3.32	50.2	34.4	1.94	26.3	0.00	0.00	0.01	200	207
200	ISL	8.28	8.26	33.994	26.445	161.1	0.497	3.32	50.2	34.5	1.94	26.3	0.00			201	
228		7.89	7.87	34.008	26.515	154.9	0.541	3.15	47.2	38.4	2.04	27.7	0.00			229	206
250	ISL	7.52	7.50	34.012	26.571	149.7	0.575	2.92	43.4	42.5	2.16	29.4	0.00			251	
268		7.23	7.20	34.016	26.616	145.7	0.601	2.68	39.6	46.2	2.28	30.9	0.00			270	205
300	ISL	6.85	6.82	34.040	26.687	139.2	0.647	2.14	31.3	53.0	2.51	33.6	0.00			302	
317		6.70	6.67	34.056	26.720	136.2	0.670	1.84	26.8	56.5	2.62	34.9	0.00			319	204
377		6.39	6.36	34.124	26.815	127.9	0.750	1.12	16.2	65.7	2.89	37.8	0.01			379	203
400	ISL	6.21	6.17	34.135	26.847	125.1	0.779	0.97	14.0	69.3	2.96	38.7	0.01			403	
435		5.92	5.88	34.148	26.894	120.8	0.822	0.81	11.6	74.7	3.05	40.0	0.01			438	202
500	ISL	5.50	5.46	34.197	26.985	112.7	0.898	0.52	7.4	84.4	3.19	41.7	0.00			503	
521		5.36	5.32	34.213	27.015	110.0	0.921	0.42	5.9	87.5	3.24	42.3	0.00			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 14.5 N	123 29.5 W	13/10/99	1055 UTC	4175 m	310 08 kn			1018.1 mb	18.0 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.97	18.97	33.427	23.828	406.5	0.000	5.44	102.3	2.7	0.27	0.1	0.00	0.08	0.01	0	
1		18.97	18.97	33.427	23.828	406.5	0.004	5.44	102.3	2.7	0.27	0.1	0.00	0.08	0.01	1	220
10	ISL	18.83	18.83	33.420	23.858	403.9	0.041	5.46	102.4	2.7	0.27	0.0	0.00	0.08	0.01	10	
15		18.73	18.73	33.415	23.880	402.0	0.061	5.47	102.4	2.7	0.27	0.0	0.00	0.08	0.01	15	219
20	ISL	18.71	18.71	33.415	23.885	401.7	0.081	5.47	102.4	2.7	0.27	0.0	0.00	0.08	0.01	20	
30		18.66	18.65	33.415	23.898	400.9	0.121	5.47	102.3	2.7	0.27	0.1	0.00	0.09	0.02	30	218
46		16.49	16.48	33.430	24.431	350.5	0.181	6.01	107.8	2.6	0.25	0.1	0.00	0.11	0.02	46	217
50	ISL	15.97	15.96	33.385	24.515	342.5	0.195	6.04	107.2	2.6	0.25	0.1	0.00	0.11	0.02	50	
60		14.94	14.93	33.307	24.683	326.8	0.228	6.12	106.3	2.7	0.26	0.0	0.00	0.13	0.04	60	216
75		14.61	14.60	33.501	24.903	306.2	0.276	5.99	103.5	2.8	0.25	0.1	0.00	0.19	0.10	75	215
84		14.52	14.51	33.567	24.974	299.8	0.303	5.92	102.1	2.9	0.25	0.0	0.00	0.23	0.17	84	214
94		14.42	14.41	33.683	25.085	289.5	0.333	5.83	100.5	3.1	0.27	0.2	0.04	0.28	0.25	94	213
100	ISL	14.18	14.17	33.674	25.129	285.5	0.350	5.80	99.4	3.2	0.29	0.5	0.07	0.24	0.25	100	
104		13.94	13.93	33.641	25.153	283.2	0.361	5.78	98.6	3.3	0.31	0.7	0.08	0.21	0.25	104	212
114		13.11	13.09	33.489	25.204	278.4	0.389	5.76	96.5	3.6	0.38	1.2	0.10	0.19	0.23	114	211
124		12.89	12.87	33.578	25.317	268.0	0.417	5.51	91.9	4.7	0.48	3.2	0.02	0.11	0.14	125	210
125	ISL	12.85	12.83	33.581	25.327	267.0	0.419	5.49	91.5	4.8	0.49	3.4	0.02	0.11	0.13	126	
139		12.10	12.08	33.601	25.488	251.9	0.456	5.18	85.0	7.0	0.67	6.3	0.01	0.06	0.08	140	209
150	ISL	11.46	11.44	33.618	25.620	239.4	0.483	4.88	79.0	9.7	0.87	9.5	0.00	0.04	0.05	151	
164		10.69	10.67	33.661	25.792	223.3	0.515	4.50	71.7	13.7	1.12	13.7	0.00	0.02	0.03	165	208
193		9.59	9.57	33.868	26.140	190.4	0.575	4.00	62.3	21.2	1.47	19.6	0.00	0.00	0.01	194	207
200	ISL	9.43	9.41	33.901	26.192	185.6	0.588	3.93	61.0	22.6	1.52	20.4	0.00			201	
229		8.94	8.92	33.983	26.336	172.4	0.640	3.69	56.6	27.9	1.69	23.1	0.00			230	206
250	ISL	8.53	8.50	33.996	26.410	165.6	0.676	3.38	51.4	32.0	1.85	25.3	0.00			251	
268		8.19	8.16	33.995	26.461	160.9	0.705	3.11	46.9	35.4	1.98	27.1	0.00			269	205
300	ISL	7.72	7.69	34.011	26.543	153.4	0.755	2.80	41.8	40.4	2.14	29.2	0.00			302	
318		7.47	7.44	34.018	26.584	149.6	0.782	2.67	39.6	43.2	2.21	30.1	0.00			320	204
377		6.48	6.45	34.008	26.712	137.7	0.867	2.32	33.7	54.3	2.45	33.4	0.00			379	203
400	ISL	6.32	6.28	34.032	26.752	134.1	0.899	1.96	28.3	58.7	2.58	35.0	0.00			402	
437		6.14	6.10	34.079	26.812	128.8	0.947	1.35	19.4	65.8	2.79	37.6	0.00			440	202
500	ISL	5.64	5.60	34.138	26.922	118.8	1.025	0.82	11.7	77.6	3.01	40.4	0.00			503	
521		5.48	5.44	34.158	26.957	115.5	1.050	0.65	9.2	81.5	3.09	41.3	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 54.6 N	124 10.5 W	13/10/99	0511	UTC	4170 m	290	02 kn			1018.3 mb	18.8 C	15.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.17	19.17	33.424	23.775	411.5	0.000	5.44	102.7	2.8	0.28	0.1	0.00	0.08	0.01	0	
1		19.17	19.17	33.424	23.775	411.5	0.004	5.44	102.7	2.8	0.28	0.1	0.00	0.08	0.01	1	220
10	ISL	18.95	18.95	33.414	23.824	407.2	0.041	5.46	102.7	2.8	0.27	0.1	0.00	0.08	0.01	10	
15		18.79	18.79	33.408	23.859	404.0	0.061	5.47	102.5	2.8	0.27	0.1	0.00	0.08	0.01	15	219
20	ISL	18.77	18.77	33.408	23.865	403.7	0.081	5.47	102.5	2.8	0.27	0.1	0.00	0.08	0.01	20	
30		18.73	18.72	33.407	23.874	403.1	0.122	5.47	102.4	2.7	0.27	0.1	0.00	0.08	0.01	30	218
45		16.77	16.76	33.416	24.355	357.7	0.179	6.00	108.2	2.8	0.24	0.1	0.00	0.10	0.02	45	217
50	ISL	15.99	15.98	33.368	24.497	344.2	0.196	6.05	107.4	2.8	0.25	0.1	0.00	0.11	0.02	50	
60		14.63	14.62	33.280	24.728	322.4	0.230	6.14	106.0	2.9	0.27	0.1	0.00	0.14	0.04	60	216
74		13.91	13.90	33.276	24.876	308.6	0.274	6.03	102.6	3.0	0.28	0.1	0.00	0.16	0.08	74	215
75	ISL	13.89	13.88	33.284	24.887	307.7	0.277	6.02	102.4	3.0	0.28	0.1	0.00	0.16	0.09	75	
84		13.76	13.75	33.380	24.988	298.3	0.304	5.95	101.0	3.1	0.29	0.1	0.00	0.23	0.18	84	214
93		13.62	13.61	33.473	25.089	288.9	0.331	5.85	99.0	3.4	0.33	0.6	0.08	0.34	0.27	93	213
100	ISL	13.55	13.54	33.500	25.124	285.8	0.351	5.79	97.9	3.6	0.38	1.3	0.08	0.31	0.28	100	
105		13.53	13.52	33.515	25.140	284.4	0.365	5.75	97.2	3.8	0.41	1.8	0.08	0.27	0.28	105	212
115		13.55	13.53	33.588	25.193	279.7	0.393	5.65	95.6	4.0	0.46	2.5	0.07	0.22	0.27	115	211
124		13.36	13.34	33.634	25.267	272.8	0.418	5.54	93.4	4.5	0.51	3.5	0.03	0.15	0.19	125	210
125	ISL	13.29	13.27	33.629	25.277	271.9	0.421	5.53	93.1	4.6	0.52	3.6	0.03	0.14	0.18	126	
145		12.09	12.07	33.551	25.451	255.6	0.474	5.39	88.4	6.5	0.69	6.1	0.01	0.06	0.08	146	209
150	ISL	12.16	12.14	33.604	25.479	253.1	0.486	5.32	87.4	6.9	0.71	6.6	0.01	0.05	0.07	151	
163		12.41	12.39	33.765	25.556	246.1	0.519	5.10	84.3	8.1	0.76	7.9	0.01	0.04	0.06	164	208
193		10.94	10.92	33.858	25.902	213.6	0.588	4.69	75.2	12.8	1.01	12.5	0.00	0.01	0.02	194	207
200	ISL	10.62	10.60	33.879	25.975	206.8	0.602	4.59	73.1	14.4	1.09	13.9	0.00			201	
228		9.52	9.49	33.955	26.220	183.6	0.657	4.19	65.1	21.6	1.42	19.3	0.00			229	206
250	ISL	8.88	8.85	33.992	26.352	171.2	0.696	3.92	60.1	27.0	1.61	22.2	0.00			251	
267		8.49	8.46	34.012	26.429	164.1	0.725	3.65	55.5	31.2	1.76	24.1	0.00			268	205
300	ISL	7.88	7.85	34.042	26.544	153.4	0.777	2.70	40.5	40.3	2.15	28.8	0.00			302	
317		7.63	7.60	34.052	26.588	149.4	0.803	2.21	32.9	44.6	2.34	31.0	0.00			319	204
377		7.03	6.99	34.086	26.700	139.4	0.889	1.69	24.8	53.5	2.59	34.2	0.00			379	203
400	ISL	6.87	6.83	34.123	26.751	134.7	0.921	1.36	19.9	58.0	2.71	35.5	0.00			402	
436		6.63	6.59	34.179	26.828	127.8	0.968	0.88	12.8	65.0	2.89	37.5	0.00			439	202
500	ISL	6.07	6.03	34.191	26.910	120.4	1.048	0.66	9.5	74.2	3.04	39.7	0.00			503	
519		5.90	5.85	34.195	26.935	118.1	1.070	0.59	8.4	76.9	3.08	40.3	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 52.9 N	118 29.4 W	10/10/99	0321	UTC	59 m	190	02 kn			1010.6 mb	19.0 C	18.2 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.68	17.68	33.613	24.289	362.5	0.000	6.01	110.4	4.0	0.26	0.1	0.00	0.34	0.07	0	
1		17.68	17.68	33.613	24.289	362.5	0.004	6.01	110.4	4.0	0.26	0.1	0.00	0.34	0.07	1	207
6		17.42	17.42	33.613	24.351	356.8	0.022	6.01	109.9	3.9	0.26	0.1	0.00	0.38	0.08	6	206
10	ISL	16.58	16.58	33.589	24.531	339.8	0.036	6.17	111.0	3.9	0.25	0.1	0.00	0.54	0.12	10	
11		16.31	16.31	33.581	24.587	334.5	0.039	6.20	110.9	3.9	0.25	0.1	0.00	0.59	0.13	11	205
20		13.34	13.34	33.507	25.170	279.2	0.067	5.75	96.8	7.2	0.66	5.0	0.40	1.09	0.37	20	204
30		12.22	12.22	33.375	25.287	268.2	0.094	5.35	87.9	7.8	0.89	8.3	0.34	0.71	0.34	30	203
40		12.28	12.27	33.497	25.370	260.6	0.120	5.07	83.5	8.7	0.95	9.5	0.18	0.66	0.45	40	202
50	ISL	11.81	11.80	33.563	25.510	247.5	0.146	4.58	74.7	11.8	1.17	13.0	0.13	0.38	0.35	50	
52		11.71	11.70	33.576	25.539	244.8	0.151	4.48	72.9	12.4	1.21	13.7	0.12	0.32	0.33	52	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 49.3 N	118 37.5 W	10/10/99	0524	UTC	631 m	180	08 kn			1011.4 mb	18.6 C	17.7 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.55	16.55	33.593	24.541	338.5	0.000	6.17	110.9	4.4	0.26	0.0	0.01	1.11	0.22	0	
2		16.55	16.55	33.593	24.541	338.6	0.007	6.17	110.9	4.4	0.26	0.0	0.01	1.11	0.22	2	220
10		16.13	16.13	33.582	24.629	330.4	0.034	6.26	111.6	4.2	0.26	0.1	0.02	1.79	0.42	10	219
20		14.11	14.11	33.517	25.020	293.5	0.065	5.70	97.5	6.8	0.64	4.5	0.30	1.16	0.46	20	218
30		11.87	11.87	33.554	25.492	248.7	0.092	4.58	74.8	11.7	1.17	13.2	0.41	0.42	0.38	30	217
41		11.64	11.63	33.598	25.569	241.7	0.119	4.29	69.7	13.5	1.30	15.2	0.07	0.19	0.27	41	216
50	ISL	11.22	11.21	33.599	25.647	234.5	0.140	4.22	68.0	15.0	1.35	15.9	0.03	0.15	0.23	50	
51		11.17	11.16	33.600	25.656	233.5	0.143	4.21	67.7	15.2	1.36	16.0	0.02	0.15	0.23	51	215
60		11.00	10.99	33.663	25.736	226.2	0.163	4.03	64.6	16.9	1.45	17.5	0.02	0.10	0.15	60	214
69		10.81	10.80	33.697	25.797	220.6	0.183	3.87	61.8	18.4	1.52	18.5	0.02	0.07	0.15	69	213
75	ISL	10.73	10.72	33.715	25.825	218.1	0.197	3.79	60.4	18.8	1.53	18.8	0.02	0.06	0.13	75	
85		10.59	10.58	33.748	25.875	213.5	0.218	3.64	57.9	19.7	1.58	19.4	0.01	0.04	0.10	85	212
99		10.19	10.18	33.825	26.005	201.5	0.247	3.24	51.1	23.1	1.83	21.4	0.01	0.02	0.08	100	211
100	ISL	10.17	10.16	33.832	26.014	200.6	0.249	3.21	50.6	23.4	1.84	21.6	0.01	0.02	0.08	101	
119		9.84	9.83	33.953	26.164	186.7	0.286	2.68	42.0	27.9	1.92	24.3	0.00	0.01	0.08	120	210
125	ISL	9.75	9.74	33.978	26.199	183.5	0.297	2.57	40.2	29.0	1.97	25.0	0.00	0.01	0.08	126	
138		9.60	9.58	34.019	26.256	178.4	0.321	2.38	37.1	30.8	2.08	26.1	0.00	0.01	0.07	139	209
150	ISL	9.54	9.52	34.050	26.290	175.3	0.342	2.24	34.9	32.0	2.14	26.7	0.00	0.01	0.06	151	
169		9.45	9.43	34.082	26.330	171.9	0.375	2.11	32.8	33.4	2.19	27.3	0.00	0.01	0.05	170	208
198		9.14	9.12	34.099	26.394	166.4	0.424	2.11	32.6	35.0	2.24	27.9	0.00	0.01	0.03	199	207
200	ISL	9.13	9.11	34.101	26.397	166.1	0.427	2.10	32.4	35.1	2.25	28.0	0.00			201	
229		9.03	9.01	34.140	26.444	162.2	0.475	1.83	28.2	37.7	2.36	29.1	0.01			230	206
250	ISL	8.87	8.84	34.175	26.497	157.5	0.508	1.62	24.9	40.1	2.45	30.1	0.01			252	
267		8.72	8.69	34.201	26.541	153.6	0.535	1.46	22.3	42.1	2.52	30.8	0.00			269	205
300	ISL	8.44	8.41	34.223	26.602	148.3	0.585	1.27	19.3	45.5	2.62	31.8	0.00			302	
318		8.29	8.26	34.230	26.631	145.9	0.611	1.19	18.0	47.3	2.66	32.2	0.00			320	204
378		7.89	7.85	34.264	26.718	138.4	0.696	0.87	13.1	53.6	2.82	34.0	0.00			380	203
400	ISL	7.68	7.64	34.270	26.754	135.3	0.726	0.77	11.5	56.4	2.88	34.7	0.00			403	
439		7.26	7.22	34.278	26.820	129.3	0.778	0.61	9.0	61.9	2.98	36.1	0.00			442	202

500 ISL	6.60	6.55	34.303	26.930	119.1	0.854	0.40	5.8	72.9	3.14	38.3	0.00		503	
522	6.36	6.31	34.314	26.971	115.4	0.880	0.32	4.6	76.8	3.20	39.1	0.00		526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 39.7 N	118 58.7 W	10/10/99	1353 UTC	802 m	230 05 kn	00	0	1012.6 mb	18.0 C	17.0 C		0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.74	18.74	33.667	24.069	383.4	0.000	5.57	104.5	3.0	0.25	0.1	0.00	0.24	0.05	0	
2		18.74	18.74	33.667	24.069	383.5	0.008	5.57	104.5	3.0	0.25	0.1	0.00	0.24	0.05	2	220
10		18.63	18.63	33.662	24.093	381.5	0.038	5.63	105.4	3.0	0.25	0.0	0.00	0.28	0.06	10	219
20		15.37	15.37	33.566	24.787	315.7	0.073	6.13	107.6	5.2	0.36	0.7	0.04	1.08	0.40	20	218
30		12.48	12.48	33.369	25.232	273.4	0.103	5.57	92.0	7.0	0.78	6.7	0.29	0.97	0.34	30	217
40		12.02	12.01	33.449	25.382	259.4	0.129	5.06	82.8	9.4	1.02	10.4	0.10	0.52	0.41	40	216
49		11.78	11.77	33.557	25.511	247.4	0.152	4.68	76.3	11.4	1.14	12.5	0.03	0.41	0.38	49	215
50	ISL	11.74	11.73	33.569	25.528	245.8	0.154	4.61	75.1	11.8	1.17	12.9	0.03	0.39	0.36	50	
59		11.30	11.29	33.660	25.680	231.5	0.176	4.06	65.5	15.6	1.39	16.5	0.04	0.17	0.19	59	214
70		10.86	10.85	33.715	25.802	220.2	0.201	3.81	60.9	18.0	1.49	18.1	0.01	0.09	0.14	70	213
75	ISL	10.68	10.67	33.738	25.851	215.5	0.212	3.74	59.6	19.0	1.54	18.9	0.01	0.06	0.12	75	
84		10.37	10.36	33.785	25.942	207.1	0.231	3.57	56.5	21.1	1.63	20.4	0.01	0.03	0.08	84	212
98		9.95	9.94	33.883	26.090	193.2	0.259	2.97	46.6	25.4	1.84	23.1	0.01	0.01	0.06	98	211
100	ISL	9.91	9.90	33.889	26.102	192.2	0.263	2.94	46.1	25.7	1.85	23.3	0.01	0.01	0.06	101	
119		9.63	9.62	33.927	26.178	185.3	0.298	2.80	43.6	27.9	1.94	24.7	0.01	0.01	0.07	120	210
125	ISL	9.51	9.50	33.950	26.216	181.8	0.309	2.71	42.1	29.0	1.99	25.3	0.01	0.01	0.07	126	
138		9.30	9.28	34.004	26.293	174.7	0.333	2.47	38.2	31.4	2.09	26.7	0.01	0.01	0.06	139	209
150	ISL	9.31	9.29	34.059	26.334	171.1	0.353	2.23	34.5	33.0	2.17	27.5	0.01	0.01	0.06	151	
168		9.33	9.31	34.117	26.377	167.4	0.384	1.93	29.9	34.9	2.27	28.3	0.00	0.00	0.06	169	208
198		9.06	9.04	34.155	26.451	161.0	0.433	1.75	27.0	37.7	2.38	29.5	0.01	0.00	0.05	199	207
200	ISL	9.04	9.02	34.158	26.456	160.5	0.436	1.73	26.6	38.0	2.39	29.6	0.01			201	
228		8.75	8.73	34.202	26.537	153.3	0.480	1.43	21.9	42.1	2.52	31.0	0.01			229	206
250	ISL	8.47	8.44	34.217	26.592	148.3	0.513	1.29	19.6	44.9	2.59	31.9	0.01			252	
267		8.26	8.23	34.222	26.628	145.1	0.538	1.21	18.3	46.9	2.64	32.5	0.01			269	205
300	ISL	8.00	7.97	34.226	26.671	141.6	0.586	1.12	16.9	49.8	2.70	33.3	0.01			302	
318		7.88	7.85	34.228	26.690	140.0	0.611	1.07	16.1	51.4	2.73	33.7	0.01			320	204
378		7.33	7.29	34.258	26.794	130.8	0.692	0.72	10.7	60.0	2.91	36.0	0.04			380	203
400	ISL	7.16	7.12	34.269	26.826	127.9	0.721	0.63	9.3	62.7	2.97	36.7	0.03			403	
437		6.88	6.84	34.287	26.879	123.3	0.767	0.50	7.3	67.1	3.05	37.7	0.01			440	202
500	ISL	6.37	6.32	34.310	26.966	115.5	0.842	0.36	5.2	75.9	3.17	39.2	0.00			503	
519		6.22	6.17	34.318	26.992	113.2	0.864	0.32	4.6	78.6	3.20	39.6	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.7 N	119 19.0 W	10/10/99	1754 UTC	1652 m	00 kn	300 01 04	0	1014.1 mb	18.0 C	17.5 C	17m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.40	16.40	33.569	24.557	337.0	0.000	6.00	107.5	4.3	0.34	0.5	0.05	0.77	0.19	0	
1	A	16.40	16.40	33.569	24.557	337.0	0.003	6.00	107.5	4.3	0.34	0.5	0.05	0.77	0.19	1	222
1		16.40	16.40	33.567	24.555	337.1	0.003									1	223
1		16.39	16.39	33.567	24.557	336.9	0.003									1	224
10	ISL	16.19	16.19	33.567	24.604	332.8	0.034	5.95	106.2	4.5	0.35	0.8	0.07	0.89	0.29	10	
12	A	16.12	16.12	33.567	24.620	331.4	0.040	5.93	105.7	4.5	0.35	0.9	0.08	0.92	0.31	12	221
18		15.97	15.97	33.570	24.656	328.1	0.060	5.89	104.7	4.8	0.38	1.2	0.09	0.97	0.30	18	220
20	ISL	15.93	15.93	33.570	24.665	327.3	0.066	5.89	104.6	4.9	0.38	1.3	0.10	0.99	0.32	20	
25	A	15.80	15.80	33.569	24.694	324.7	0.083	5.88	104.1	5.0	0.39	1.5	0.11	1.05	0.38	25	219
30	ISL	15.55	15.55	33.560	24.743	320.2	0.099	5.86	103.2	5.2	0.43	2.0	0.12	1.07	0.39	30	
37	A	15.21	15.20	33.548	24.809	314.1	0.121	5.83	102.0	5.5	0.48	2.6	0.15	1.09	0.40	37	218
44		12.82	12.81	33.390	25.183	278.5	0.142	5.46	90.9	7.8	0.82	7.6	0.22	0.55	0.32	44	217
50	ISL	11.82	11.81	33.365	25.355	262.3	0.158	5.22	85.0	9.8	0.99	10.2	0.20	0.38	0.18	50	
51	A	11.73	11.72	33.367	25.373	260.5	0.161	5.18	84.2	10.1	1.01	10.5	0.20	0.37	0.16	51	216
57		11.43	11.42	33.400	25.454	253.0	0.176	4.97	80.3	11.7	1.11	12.1	0.16	0.34	0.23	57	215
65	A	11.11	11.10	33.576	25.649	234.6	0.196	4.31	69.2	15.6	1.36	16.0	0.04	0.23	0.15	65	214
75	ISL	10.85	10.84	33.667	25.766	223.7	0.219	3.97	63.5	18.0	1.48	18.1	0.02	0.16	0.20	75	
76		10.82	10.81	33.673	25.776	222.7	0.221	3.95	63.1	18.2	1.49	18.3	0.02	0.15	0.20	76	213
85		10.38	10.37	33.773	25.931	208.2	0.240	3.51	55.6	21.7	1.66	21.0	0.01	0.05	0.10	85	212
99		10.28	10.27	33.793	25.964	205.3	0.269	3.41	53.9	22.4	1.70	21.5	0.01	0.04	0.09	99	211
100	ISL	10.26	10.25	33.796	25.970	204.8	0.271	3.40	53.7	22.5	1.71	21.6	0.01	0.04	0.09	100	
119		9.78	9.77	33.872	26.111	191.7	0.309	3.06	47.8	26.0	1.86	23.8	0.01	0.01	0.07	120	210
125	ISL	9.65	9.64	33.901	26.155	187.6	0.320	2.94	45.8	27.3	1.91	24.5	0.01	0.01	0.07	126	
140		9.38	9.36	33.970	26.253	178.6	0.348	2.64	40.9	30.2	2.01	25.9	0.01	0.00	0.07	141	209
150	ISL	9.27	9.25	34.000	26.295	174.8	0.365	2.52	39.0	31.5	2.06	26.6	0.01	0.00	0.07	151	
168		9.12	9.10	34.047	26.356	169.3	0.396	2.31	35.6	33.6	2.15	27.6	0.01	0.00	0.06	169	208
199		8.82	8.80	34.151	26.485	157.6	0.447	1.74	26.7	39.0	2.37	29.9	0.01	0.00	0.05	200	207
200	ISL	8.81	8.79	34.152	26.488	157.4	0.449	1.73	26.5	39.1	2.37	30.0	0.01			201	
228		8.44	8.42	34.163	26.554	151.5	0.492	1.59	24.2	42.8	2.47	31.4	0.01			229	206
250	ISL	8.36	8.33	34.205	26.599	147.6	0.525	1.32	20.0	45.3	2.57	32.1	0.01			251	
268		8.29	8.26	34.236	26.635	144.5	0.551	1.11	16.8	47.3	2.64	32.7	0.01			270	205
300	ISL	7.82	7.79	34.222	26.694	139.2	0.596	1.07	16.0	51.6	2.72	34.1	0.01			302	
318		7.54	7.51	34.209	26.724	136.5	0.621	1.04	15.5	54.1	2.75	34.8	0.01			320	204
377		7.22	7.18	34.259	26.810	129.2	0.700	0.68	10.1	61.3	2.90	36.4	0.01			379	203
400	ISL	7.01	6.97	34.271	26.849	125.7	0.729	0.59	8.7	64.7	2.96	37.2	0.01			403	
437		6.67	6.63	34.287	26.908	120.4	0.774	0.49	7.2	70.1	3.04	38.3	0.01			440	202
500	ISL	6.30	6.25	34.311	26.976	114.5	0.848	0.35	5.1	76.9	3.15	39.4	0.01			503	
520		6.18	6.13	34.319	26.998	112.6	0.871	0.30	4.3	79.0	3.18	39.7	0.01			524	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 19.5 N	119 39.6 W	11/10/99	0035	UTC	77 m	230	08 kn	260 01 08	4	1013.5 mb	16.0 C	15.7 C	14m	8/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.98	16.98	33.627	24.466	345.6	0.000	5.78	104.8	3.9	0.40	1.6	0.11	0.72	0.16	0	
1		16.98	16.98	33.627	24.466	345.6	0.003	5.78	104.8	3.9	0.40	1.6	0.11	0.72	0.16	1	209
5		16.55	16.55	33.656	24.589	334.1	0.017	5.78	103.9	3.5	0.36	1.3	0.10	0.63	0.19	5	208
10	ISL	16.36	16.36	33.628	24.612	332.1	0.034	5.76	103.2	3.7	0.39	1.7	0.12	0.63	0.25	10	
11		16.34	16.34	33.630	24.618	331.5	0.037	5.76	103.1	3.8	0.40	1.8	0.13	0.63	0.26	11	207
20	ISL	16.13	16.13	33.625	24.662	327.6	0.067	5.70	101.6	4.0	0.43	2.2	0.16	0.63	0.27	20	
21		16.10	16.10	33.626	24.670	326.9	0.070	5.69	101.4	4.0	0.43	2.2	0.16	0.63	0.27	21	206
30		15.69	15.69	33.631	24.766	318.0	0.099	5.56	98.3	4.5	0.48	2.8	0.23	0.47	0.32	30	205
40		14.90	14.89	33.592	24.910	304.5	0.130	5.47	95.1	5.3	0.61	4.4	0.40	0.49	0.36	40	204
50		14.38	14.37	33.568	25.003	295.9	0.160	5.39	92.7	6.2	0.70	5.7	0.47	0.51	0.40	50	203
60		13.03	13.02	33.563	25.276	270.1	0.188	5.06	84.7	9.3	0.91	9.1	0.27	0.47	0.31	60	202
69		11.07	11.06	33.521	25.613	238.1	0.211	4.46	71.6	15.7	1.33	15.7	0.10	0.13	0.19	69	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 9.4 N	120 0.7 W	11/10/99	0356	UTC	1195 m	240	09 kn			1013.4 mb	15.5 C	15.3 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.67	16.67	33.559	24.487	343.7	0.000	5.93	106.8	3.3	0.31	0.2	0.04	0.72	0.18	0	
1		16.67	16.67	33.559	24.487	343.7	0.003	5.93	106.8	3.3	0.31	0.2	0.04	0.72	0.18	1	220
10	ISL	16.03	16.03	33.555	24.631	330.2	0.034	5.95	105.8	3.2	0.33	0.4	0.07	0.84	0.29	10	
11		15.94	15.94	33.555	24.651	328.3	0.037	5.95	105.6	3.2	0.33	0.4	0.08	0.86	0.31	11	219
20	ISL	15.74	15.74	33.549	24.692	324.8	0.066	5.89	104.2	3.2	0.36	0.7	0.13	0.88	0.36	20	
21		15.71	15.71	33.547	24.697	324.3	0.070	5.88	103.9	3.2	0.36	0.7	0.14	0.88	0.36	21	218
30		14.84	14.84	33.489	24.844	310.6	0.098	5.71	99.1	3.9	0.51	2.5	0.54	0.67	0.35	30	217
40		13.72	13.71	33.431	25.034	292.6	0.128	5.55	94.1	5.3	0.70	5.5	0.61	0.46	0.29	40	216
50		13.01	13.00	33.417	25.167	280.3	0.157	5.47	91.4	6.2	0.78	7.0	0.33	0.37	0.23	50	215
60		12.36	12.35	33.414	25.291	268.6	0.185	5.27	86.9	8.4	0.96	10.1	0.03	0.22	0.18	60	214
69		11.88	11.87	33.432	25.396	258.8	0.208	5.11	83.4	10.2	1.07	11.8	0.02	0.14	0.13	69	213
75	ISL	11.57	11.56	33.456	25.472	251.7	0.224	4.95	80.3	11.6	1.15	13.1	0.02	0.10	0.10	75	
86		10.98	10.97	33.528	25.635	236.4	0.250	4.55	72.9	14.9	1.33	15.9	0.01	0.06	0.07	86	212
99		10.24	10.23	33.669	25.874	213.8	0.280	3.89	61.4	20.7	1.60	20.3	0.01	0.03	0.06	99	211
100	ISL	10.19	10.18	33.680	25.891	212.2	0.282	3.84	60.5	21.1	1.62	20.6	0.01	0.03	0.06	100	
120		9.49	9.48	33.853	26.144	188.6	0.322	3.15	48.9	27.3	1.86	24.4	0.01	0.01	0.04	121	210
125	ISL	9.36	9.35	33.876	26.183	184.9	0.331	3.06	47.4	28.3	1.89	25.0	0.01	0.01	0.04	126	
139		9.07	9.05	33.919	26.263	177.5	0.357	2.89	44.5	30.5	1.96	26.2	0.01	0.00	0.05	140	209
150	ISL	8.88	8.86	33.947	26.315	172.7	0.376	2.78	42.6	32.3	2.01	27.0	0.01	0.00	0.05	151	
170		8.57	8.55	33.984	26.393	165.7	0.410	2.64	40.2					0.01	0.04	171	208
199		8.15	8.13	34.022	26.487	157.2	0.456	2.52	38.0	43.8 U	2.31 U	31.0 U	0.01 U	0.00	0.03	200	207
200	ISL	8.13	8.11	34.023	26.490	156.8	0.458	2.51	37.8	39.9	2.21	30.0	0.01			201	
228		7.70	7.68	34.048	26.574	149.2	0.501	2.25	33.6	43.8	2.31	31.1	0.01			229	206
250	ISL	7.50	7.48	34.064	26.615	145.6	0.533	2.05	30.5	46.5	2.40	32.0	0.00			251	
269		7.39	7.36	34.079	26.643	143.2	0.561	1.88	27.9	48.8	2.47	32.8	0.00			271	205
300	ISL	7.25	7.22	34.112	26.689	139.3	0.605	1.55	22.9	52.6	2.59	34.1	0.01			302	
318		7.19	7.16	34.132	26.713	137.3	0.629	1.37	20.2	54.7	2.66	34.8	0.01			320	204
378		6.97	6.93	34.184	26.785	131.3	0.710	0.97	14.2	60.6	2.83	36.4	0.01			380	203
400	ISL	6.85	6.81	34.209	26.821	128.1	0.739	0.82	12.0	63.7	2.90	37.1	0.01			403	
441		6.58	6.54	34.250	26.890	122.0	0.790	0.57	8.3	69.7	3.02	38.4	0.00			444	202
500	ISL	6.14	6.10	34.270	26.964	115.4	0.860	0.42	6.1	76.6	3.12	39.9	0.00			503	
515		6.03	5.98	34.276	26.983	113.7	0.877	0.38	5.5	78.4	3.14	40.3	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 59.4 N	120 21.3 W	11/10/99	0756	UTC	733 m	280	07 kn			1014.5 mb	15.2 C	14.8 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.64	17.64	33.510	24.219	369.1	0.000	5.65	103.7	2.2	0.30	0.0	0.00	0.13	0.03	0	
2		17.64	17.64	33.510	24.220	369.2	0.007	5.65	103.7	2.2	0.30	0.0	0.00	0.13	0.03	2	220
10		17.62	17.62	33.507	24.222	369.2	0.037	5.66	103.8	2.2	0.30	0.0	0.00	0.12	0.03	10	219
20		16.84	16.84	33.461	24.373	355.2	0.073	5.80	104.8	2.3	0.30	0.0	0.00	0.20	0.06	20	218
29		14.44	14.44	33.303	24.785	316.1	0.103	6.27	107.8	3.0	0.37	0.5	0.04	0.56	0.26	29	217
30	ISL	14.29	14.29	33.299	24.814	313.4	0.106	6.26	107.3	3.1	0.39	0.7	0.08	0.57	0.29	30	
41		13.23	13.22	33.299	25.031	292.9	0.140	5.92	99.3	4.4	0.59	3.2	0.47	0.63	0.52	41	216
49		12.72	12.71	33.303	25.135	283.2	0.163	5.69	94.4	5.6	0.72	5.5	0.32	0.62	0.39	49	215
50	ISL	12.65	12.64	33.304	25.150	281.8	0.166	5.66	93.8	5.8	0.74	5.8	0.29	0.60	0.38	50	
61		11.84	11.83	33.326	25.321	265.7	0.196	5.34	87.0	8.3	0.93	9.3	0.03	0.34	0.24	61	214
70		11.26	11.25	33.356	25.451	253.5	0.219	5.09	81.9	10.8	1.08	11.8	0.02	0.17	0.15	70	213
75	ISL	11.12	11.11	33.413	25.521	247.0	0.232	4.91	78.8	12.0	1.16	13.1	0.02	0.13	0.12	75	
86		10.96	10.95	33.550	25.656	234.4	0.258	4.53	72.5	14.4	1.31	15.5	0.01	0.08	0.07	86	212
100	ISL	10.64	10.63	33.632	25.776	223.2	0.290	4.19	66.7	17.2	1.45	17.8	0.01	0.04	0.05	100	
103		10.55	10.54	33.646	25.803	220.7	0.297	4.11	65.3	17.9	1.48	18.3	0.01	0.03	0.05	103	211
121		9.67	9.66	33.794	26.068	195.8	0.334	3.41	53.2	24.5	1.76	22.8	0.01	0.01	0.03	122	210
125	ISL	9.55	9.54	33.815	26.104	192.4	0.342	3.34	51.9	25.4	1.79	23.4	0.01	0.01	0.03	126	
141		9.23	9.21	33.879	26.206	183.0	0.372	3.16	48.8	28.2	1.88	24.9	0.01	0.01	0.03	142	209
150	ISL	9.08	9.06	33.910	26.255	178.5	0.388	3.07	47.3	29.4	1.92	25.5	0.01	0.01	0.03	151	
166		8.84	8.82	33.960	26.332	171.4	0.416	2.89	44.3	31.8	2.00	26.4	0.01	0.00	0.03	167	208
200		8.18	8.16	34.068	26.518	154.2	0.472	2.21	33.4	40.6	2.29	30.0	0.01	0.00	0.03	201	207
230		7.84	7.82	34.101	26.595	147.3	0.517	1.89	28.3	45.2	2.44	31.6	0.01			231	206
250	ISL	7.61	7.59	34.112	26.637	143.6	0.546	1.75	26.1	48.1	2.52	32.5	0.01			251	
270		7.42	7.39	34.126	26.676	140.2	0.574	1.61	23.9	50.9	2.59	33.4	0.01			272	205
300	ISL	7.31	7.28	34.178	26.732	135.2	0.616	1.20	17.8	55.4	2.74	34.7	0.00			302	
320		7.27	7.24	34.212	26.765	132.5	0.643	0.94	13.9	58.1	2.84	35.5	0.00			322	204
378		7.04	7.00	34.238	26.818	128.2	0.718	0.72	10.6	62.7	2.94	36.6	0.01			380	203
400	ISL	6.84	6.80	34.252	26.857	124.8	0.746	0.62	9.1	66.3	3.00	37.4	0.01			403	
433		6.51	6.47	34.273	26.918	119.2	0.786	0.47	6.8	72.0	3.09	38.7	0.00			436	202
500	ISL	6.13	6.09	34.302	26.990	112.9	0.864	0.35	5.0	78.9	3.18	40.0	0.00			503	

517	6.03	5.98	34.310	27.010	111.2	0.883	0.32	4.6	80.7	3.20	40.3	0.00	521	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 39.8 N	121 2.1 W	11/10/99	1827	UTC	3767 m	300	04 kn	320 04 08	1	1017.1 mb	17.5 C	16.5 C	29m	5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.17	18.17	33.511	24.091	381.3	0.000	5.62	104.2	3.2	0.31	0.0	0.00	0.14	0.03	0	
1		18.20	18.20	33.508	24.082	382.3	0.004									1	222
1		18.22	18.22	33.510	24.078	382.6	0.004									1	223
2	A	18.17	18.17	33.511	24.091	381.4	0.008	5.62	104.2	3.2	0.31	0.0	0.00	0.14	0.03	2	221
10	ISL	18.02	18.02	33.552	24.160	375.1	0.038	5.61	103.7	3.1	0.31	0.0	0.00	0.15	0.04	10	
13		17.94	17.94	33.571	24.194	372.0	0.049	5.60	103.4	3.1	0.31	0.0	0.00	0.15	0.04	13	220
20	ISL	17.83	17.83	33.585	24.232	368.6	0.075	5.66	104.3	3.0	0.31	0.0	0.00	0.17	0.04	20	
21	A	17.81	17.81	33.590	24.241	367.8	0.079	5.68	104.6	3.0	0.31	0.0	0.00	0.17	0.04	21	219
30	ISL	16.88	16.88	33.523	24.411	351.8	0.111	6.04	109.2	3.3	0.33	0.0	0.00	0.30	0.10	30	
32		16.56	16.55	33.500	24.468	346.5	0.118	6.12	110.0	3.4	0.33	0.0	0.00	0.34	0.12	32	218
42	A	14.23	14.22	33.395	24.901	305.4	0.151	6.15	105.4	4.5	0.51	2.3	0.18	0.60	0.32	42	217
50	ISL	12.09	12.08	33.235	25.203	276.7	0.174	5.85	95.8	6.6	0.69	5.3	0.10	0.53	0.39	50	
54		11.27	11.26	33.192	25.321	265.5	0.185	5.65	90.9	7.8	0.79	7.0	0.04	0.50	0.42	54	216
64	A	11.25	11.24	33.343	25.442	254.2	0.211	5.28	85.0	10.8	1.06	11.5	0.02	0.25	0.22	64	215
75		10.42	10.41	33.496	25.708	229.1	0.237	4.47	70.7	17.8	1.43	17.6	0.02	0.10	0.09	75	214
85	A	10.20	10.19	33.574	25.807	219.9	0.260	4.20	66.1	20.6	1.59	19.9	0.01	0.07	0.10	85	213
98		9.72	9.71	33.713	25.996	202.2	0.287	3.81	59.4	24.0	1.70	22.0	0.01	0.03	0.04	98	212
100	ISL	9.66	9.65	33.731	26.020	199.9	0.291	3.77	58.7	24.3	1.70	22.1	0.01	0.03	0.04	100	
113	A	9.36	9.35	33.821	26.140	188.8	0.317	3.62	56.0	25.8	1.72	22.6	0.01	0.01	0.02	114	211
125		9.19	9.18	33.860	26.198	183.5	0.339	3.53	54.5	26.9	1.75	23.2	0.00	0.01	0.02	126	210
139		8.76	8.75	33.951	26.337	170.4	0.364	3.05	46.6	32.5	1.97	26.3	0.00	0.00	0.03	140	209
150	ISL	8.58	8.56	33.979	26.387	165.8	0.382	3.00	45.7	34.5	2.01	26.9	0.00	0.00	0.03	151	
169		8.36	8.34	33.989	26.429	162.2	0.413	2.92	44.2	36.4	2.08	27.9	0.00	0.00	0.02	170	208
198		7.78	7.76	33.999	26.523	153.5	0.459	2.81	42.0	41.1	2.16	29.4	0.00	0.00	0.02	199	207
200	ISL	7.76	7.74	34.001	26.528	153.1	0.462	2.79	41.7	41.4	2.17	29.5	0.00			201	
227		7.51	7.49	34.026	26.584	148.2	0.503	2.49	37.0	45.1	2.30	30.9	0.00			228	206
250	ISL	7.28	7.26	34.046	26.632	143.9	0.536	2.18	32.2	48.9	2.42	32.4	0.00			251	
268		7.11	7.08	34.062	26.668	140.6	0.562	1.94	28.6	51.9	2.52	33.5	0.00			270	205
300	ISL	6.92	6.89	34.093	26.719	136.2	0.606	1.59	23.3	56.2	2.66	35.0	0.00			302	
318		6.81	6.78	34.105	26.744	134.1	0.631	1.44	21.1	58.6	2.73	35.7	0.00			320	204
379		6.00	5.97	34.091	26.839	125.3	0.710	1.18	16.9	69.9	2.90	38.6	0.00			381	203
400	ISL	5.84	5.81	34.108	26.872	122.3	0.736	1.02	14.6	73.6	2.97	39.5	0.00			403	
438		5.63	5.59	34.151	26.932	117.0	0.781	0.72	10.2	79.8	3.09	40.8	0.00			441	202
500	ISL	5.37	5.33	34.215	27.015	109.7	0.851	0.46	6.5	87.4	3.20	42.1	0.00			503	
515		5.31	5.27	34.231	27.035	107.9	0.868	0.40	5.7	89.2	3.23	42.4	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 19.4 N	121 42.8 W	12/10/99	0305	UTC	4031 m	310	06 kn			1015.6 mb	17.4 C	15.3 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.46	18.46	33.549	24.049	385.4	0.000	5.58	104.0	2.8	0.32	0.0	0.00	0.14	0.02	0	
1		18.46	18.46	33.549	24.049	385.4	0.004	5.58	104.0	2.8	0.32	0.0	0.00	0.14	0.02	1	220
10	ISL	18.14	18.14	33.538	24.120	379.0	0.038	5.60	103.8	2.8	0.31	0.0	0.00	0.13	0.02	10	
15		17.90	17.90	33.530	24.172	374.1	0.057	5.62	103.7	2.8	0.31	0.0	0.00	0.13	0.03	15	219
20	ISL	17.81	17.81	33.526	24.192	372.5	0.076	5.63	103.7	2.8	0.31	0.0	0.00	0.16	0.04	20	
29		17.66	17.66	33.520	24.224	369.7	0.109	5.65	103.7	2.8	0.31	0.0	0.00	0.20	0.05	29	218
30	ISL	17.51	17.50	33.521	24.260	366.2	0.113	5.66	103.6	2.8	0.32	0.1	0.03	0.23	0.06	30	
45		14.65	14.64	33.568	24.946	301.3	0.163	5.75	99.5	5.1	0.63	4.2	0.39	0.68	0.29	45	217
50	ISL	13.71	13.70	33.578	25.150	281.9	0.177	5.41	91.8	7.4	0.84	7.7	0.27	0.63	0.33	50	
56		12.70	12.69	33.591	25.363	261.8	0.194	4.95	82.3	10.5	1.09	12.1	0.09	0.58	0.38	56	216
65		11.63	11.62	33.609	25.580	241.2	0.216	4.53	73.6	14.6	1.37	16.5	0.02	0.35	0.23	65	215
75		10.73	10.72	33.680	25.798	220.7	0.240	3.99	63.6	20.1	1.63	20.6	0.01	0.15	0.10	75	214
86		9.91	9.90	33.710	25.962	205.2	0.263	3.68	57.6	23.6	1.74	22.4	0.01	0.04	0.05	86	213
95		9.60	9.59	33.734	26.032	198.6	0.281	3.73	58.0	23.2	1.66	21.4	0.01	0.02	0.04	95	212
100	ISL	9.47	9.46	33.775	26.086	193.6	0.291	3.62	56.2	24.2	1.69	22.0	0.01	0.01	0.04	100	
109		9.26	9.25	33.855	26.182	184.6	0.308	3.33	51.5	27.0	1.80	23.8	0.01	0.01	0.04	110	211
125		8.94	8.93	33.924	26.287	174.9	0.337	2.87	44.0	31.7	2.01	26.6	0.00	0.00	0.04	126	210
144		8.63	8.61	33.974	26.375	166.8	0.369	2.71	41.3	34.3	2.08	27.7	0.00	0.00	0.03	145	209
150	ISL	8.55	8.53	33.984	26.396	165.0	0.379	2.72	41.4	34.9	2.09	27.8	0.00	0.00	0.03	151	
168		8.32	8.30	34.004	26.447	160.4	0.408	2.75	41.6	36.5	2.10	28.1	0.01	0.00	0.02	169	208
199		7.86	7.84	34.018	26.526	153.3	0.457	2.80	42.0	39.8	2.13	28.7	0.01	0.00	0.02	200	207
200	ISL	7.85	7.83	34.018	26.528	153.1	0.459	2.80	41.9	39.9	2.13	28.7	0.01			201	
229		7.44	7.42	34.025	26.593	147.3	0.502	2.65	39.3	43.7	2.23	30.1	0.01			230	206
250	ISL	7.11	7.09	34.034	26.646	142.4	0.533	2.34	34.5	48.5	2.37	31.9	0.01			251	
271		6.82	6.80	34.051	26.699	137.6	0.562	1.95	28.5	53.7	2.53	33.8	0.01			273	205
300	ISL	6.67	6.64	34.095	26.754	132.7	0.601	1.43	20.9	59.4	2.72	35.9	0.01			302	
318		6.62	6.59	34.125	26.785	130.1	0.625	1.15	16.8	62.6	2.82	37.0	0.01			320	204
379		6.22	6.19	34.186	26.886	121.1	0.701	0.69	10.0	71.6	3.02	39.2	0.00			381	203
400	ISL	6.03	6.00	34.189	26.913	118.7	0.727	0.61	8.8	74.8	3.06	39.9	0.00			403	
439		5.66	5.62	34.189	26.959	114.5	0.772	0.53	7.5	80.8	3.13	41.0	0.00			442	202
500	ISL	5.12	5.08	34.205	27.036	107.4	0.840	0.42	5.9	90.7	3.21	42.5	0.00			503	
519		4.95	4.91	34.211	27.060	105.1	0.860	0.39	5.5	93.8	3.24	43.0	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 59.2 N	122 23.3 W	12/10/99	0848 UTC	4087 m	310 04 kn			1017.0 mb	17.0 C	15.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.70	18.70	33.331	23.822	407.0	0.000	5.47	102.3	3.0	0.29	0.0	0.00	0.09	0.02	0	
1		18.70	18.70	33.328	23.820	407.2	0.004									1	221
2		18.70	18.70	33.331	23.823	407.1	0.008	5.47	102.3	3.0	0.29	0.0	0.00	0.09	0.02	2	220
2		18.70	18.70	33.328	23.820	407.3	0.008									2	222
2		18.70	18.70	33.329	23.821	407.2	0.008									2	223
2		18.71	18.71	33.333	23.822	407.1	0.008									2	224
10	ISL	18.63	18.63	33.329	23.839	405.8	0.041	5.48	102.4	2.9	0.28	0.0	0.00	0.09	0.01	10	
15		18.58	18.58	33.345	23.864	403.6	0.061	5.49	102.5	2.9	0.28	0.0	0.00	0.09	0.01	15	219
20	ISL	18.40	18.40	33.347	23.910	399.3	0.081	5.51	102.5	2.9	0.28	0.0	0.00	0.10	0.02	20	
30		18.04	18.03	33.351	24.002	390.9	0.120	5.65	104.4	2.9	0.27	0.0	0.00	0.12	0.03	30	218
45		14.99	14.98	33.244	24.623	332.0	0.175	6.27	109.0	3.0	0.28	0.0	0.00	0.13	0.04	45	217
50	ISL	14.63	14.62	33.294	24.739	321.1	0.191	6.24	107.7	3.1	0.27	0.0	0.00	0.14	0.05	50	
54		14.44	14.43	33.331	24.808	314.7	0.204	6.21	106.8	3.2	0.27	0.0	0.00	0.15	0.05	54	216
64		13.66	13.65	33.301	24.947	301.6	0.235	6.24	105.6	3.4	0.30	0.0	0.00	0.24	0.13	64	215
74		13.59	13.58	33.329	24.983	298.5	0.265	6.18	104.5	3.4	0.30	0.0	0.00	0.25	0.14	74	214
75	ISL	13.54	13.53	33.330	24.994	297.4	0.268	6.17	104.2	3.4	0.30	0.0	0.00	0.26	0.15	75	
83		13.07	13.06	33.334	25.091	288.3	0.291	6.08	101.7	3.6	0.33	0.2	0.03	0.32	0.27	83	213
95		12.57	12.56	33.337	25.192	279.0	0.325	5.96	98.6	3.8	0.37	0.7	0.10	0.30	0.27	95	212
100	ISL	12.28	12.27	33.326	25.239	274.6	0.339	5.91	97.2	3.9	0.41	1.3	0.08	0.25	0.25	100	
110		11.73	11.72	33.336	25.350	264.1	0.366	5.71	92.8	4.9	0.52	3.2	0.02	0.15	0.18	110	211
123		11.34	11.32	33.491	25.543	246.1	0.399	5.17	83.4	8.4	0.77	7.5	0.01	0.06	0.08	124	210
125	ISL	11.27	11.25	33.506	25.567	243.8	0.404	5.10	82.2	8.9	0.81	8.1	0.01	0.06	0.07	126	
143		10.57	10.55	33.610	25.772	224.6	0.446	4.57	72.6	13.7	1.12	13.3	0.00	0.03	0.04	144	209
150	ISL	10.29	10.27	33.654	25.855	216.8	0.461	4.33	68.4	16.1	1.26	15.5	0.00	0.02	0.03	151	
168		9.62	9.60	33.768	26.057	197.8	0.499	3.82	59.5	22.0	1.56	20.3	0.00	0.00	0.01	169	208
198		8.81	8.79	33.949	26.329	172.4	0.554	3.70	56.6	28.0	1.71	23.1	0.00	0.00	0.01	199	207
200	ISL	8.78	8.76	33.956	26.339	171.4	0.558	3.70	56.6	28.3	1.71	23.2	0.00			201	
227		8.44	8.42	34.010	26.434	162.8	0.603	3.63	55.1	31.7	1.78	24.2	0.00			228	206
250	ISL	8.11	8.08	34.016	26.489	157.9	0.640	3.34	50.3	35.4	1.92	26.1	0.00			251	
267		7.85	7.82	34.013	26.525	154.6	0.666	3.05	45.7	38.6	2.05	27.7	0.00			268	205
300	ISL	7.37	7.34	34.032	26.609	146.9	0.716	2.47	36.6	45.8	2.30	30.8	0.00			302	
318		7.12	7.09	34.047	26.656	142.6	0.742	2.15	31.7	49.8	2.43	32.4	0.00			320	204
377		6.51	6.48	34.098	26.779	131.4	0.823	1.37	19.9	61.5	2.75	36.3	0.00			379	203
400	ISL	6.37	6.33	34.118	26.813	128.4	0.853	1.16	16.8	64.9	2.84	37.3	0.00			402	
439		6.17	6.13	34.151	26.865	123.8	0.902	0.88	12.7	70.2	2.96	38.7	0.00			442	202
500	ISL	5.78	5.74	34.196	26.950	116.3	0.975	0.60	8.6	78.7	3.10	40.4	0.00			503	
518		5.67	5.63	34.210	26.975	114.0	0.996	0.52	7.4	81.2	3.14	40.9	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 39.7 N	123 4.0 W	12/10/99	1736 UTC	4011 m	340 05 kn	310 02 05	1	1018.9 mb	19.0 C	16.0 C	36m	4/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.33	19.33	33.562	23.840	405.3	0.000	5.41	102.6	3.4	0.28	0.0	0.00	0.09	0.02	0	
1		19.33	19.33	33.562	23.840	405.4	0.004									1	224
2	A	19.33	19.33	33.562	23.840	405.4	0.008	5.41	102.6	3.4	0.28	0.0	0.00	0.09	0.02	2	223
10	ISL	19.31	19.31	33.562	23.845	405.2	0.041	5.42	102.7	3.3	0.27	0.0	0.00	0.09	0.02	10	
14		19.29	19.29	33.562	23.851	404.8	0.057	5.42	102.7	3.3	0.27	0.0	0.00	0.09	0.02	14	222
20	ISL	19.28	19.28	33.564	23.855	404.6	0.081	5.42	102.6	3.3	0.27	0.0	0.00	0.09	0.02	20	
26	A	19.26	19.26	33.567	23.863	404.1	0.105	5.42	102.6	3.3	0.27	0.0	0.00	0.09	0.02	26	221
30	ISL	19.25	19.24	33.567	23.865	404.0	0.121	5.42	102.6	3.3	0.27	0.0	0.00	0.10	0.02	30	
40		19.21	19.20	33.568	23.877	403.3	0.162	5.41	102.3	3.2	0.27	0.0	0.00	0.12	0.03	40	220
50	ISL	17.32	17.31	33.421	24.230	369.8	0.200	5.89	107.4	3.2	0.28	0.0	0.00	0.14	0.05	50	
54	A	16.47	16.46	33.381	24.398	353.9	0.215	6.09	109.1	3.2	0.28	0.0	0.00	0.15	0.05	54	219
61		15.59	15.58	33.403	24.614	333.4	0.239	6.19	109.0	3.2	0.29	0.0	0.00	0.19	0.04	61	218
70		14.52	14.51	33.336	24.795	316.3	0.268	6.21	107.0	3.3	0.32	0.0	0.00	0.19	0.10	70	217
75	ISL	14.25	14.24	33.343	24.858	310.5	0.284	6.18	105.9	3.3	0.33	0.0	0.00	0.23	0.14	75	
79	A	14.12	14.11	33.359	24.897	306.8	0.296	6.14	104.9	3.4	0.34	0.0	0.00	0.26	0.17	79	216
88		13.87	13.86	33.394	24.976	299.5	0.324	5.95	101.2	3.7	0.41	0.8	0.13	0.32	0.25	88	215
96		13.91	13.90	33.579	25.111	286.9	0.347	5.66	96.5	4.1	0.46	2.2	0.21	0.29	0.25	96	214
100	ISL	13.84	13.83	33.609	25.149	283.5	0.358	5.57	94.8	4.4	0.50	2.9	0.17	0.27	0.24	100	
105	A	13.77	13.76	33.636	25.184	280.2	0.372	5.49	93.3	4.7	0.53	3.5	0.10	0.25	0.23	105	213
114		13.90	13.88	33.778	25.268	272.6	0.397	5.40	92.1	5.0	0.51	3.7	0.05	0.21	0.21	114	212
124		13.22	13.20	33.718	25.360	264.0	0.424	5.25	88.3	6.0	0.62	5.5	0.02	0.16	0.17	125	211
125	ISL	13.16	13.14	33.718	25.372	262.8	0.427	5.23	87.8	6.2	0.63	5.7	0.02	0.15	0.17	126	
131		12.82	12.80	33.727	25.446	255.8	0.442	5.08	84.7	7.3	0.71	6.9	0.02	0.12	0.14	132	210
140	A	12.48	12.46	33.728	25.514	249.6	0.465	4.89	81.0	8.5	0.79	8.4	0.01	0.09	0.10	141	209
150	ISL	12.02	12.00	33.728	25.602	241.4	0.490	4.76	78.0	10.0	0.89	10.0	0.01	0.07	0.07	151	
164		11.33	11.31	33.741	25.740	228.4	0.523	4.62	74.6	12.5	1.04	12.3	0.01	0.04	0.04	165	208
194		9.85	9.83	33.865	26.095	194.9	0.586	4.09	64.0	20.0	1.42	18.7	0.00	0.01	0.01	195	207
200	ISL	9.60	9.58	33.892	26.158	189.0	0.598	3.99	62.1	21.8	1.49	19.8	0.00			201	
228		8.70	8.68	33.993	26.381	168.0	0.648	3.54	54.0	29.7	1.77	24.1	0.01			229	206
250	ISL	8.33	8.30	34.016	26.456	161.1	0.684	3.21	48.6	34.0	1.93	26.3	0.01			251	
269		8.11	8.08	34.017	26.490	158.1	0.714	2.96	44.6	37.0	2.04	27.7	0.01			270	205
300	ISL	7.71	7.68	34.030	26.559	151.9	0.762	2.63	39.3	41.8	2.20	29.8	0.00			302	
317		7.49	7.46	34.037	26.596	148.5	0.788	2.45	36.4	44.6	2.29	30.8	0.00			319	204
378		6.62	6.59	34.072	26.744	134.8	0.874	1.67	24.3	57.6	2.64	35.2	0.00			380	203
400	ISL	6.46	6.42	34.094	26.782	131.4	0.903	1.42	20.6	61.3	2.74	36.4	0.00			402	
440		6.22	6.18	34.127	26.840	126.3	0.955	1.07	15.4	67.6	2.88	38.1	0.00			443	202
500	ISL	5.60	5.56	34.123	26.914	119.4	1.029	0.89	12.7	77.3	3.00	40.3	0.00			503	
516		5.44	5.40	34.123	26.934	117.6	1.048	0.84	11.9	79.9	3.03	40.9	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 19.5 N	123 44.6 W	12/10/99	2323	UTC	4015 m	330	02 kn	320 01 07	1	1017.6 mb	19.3 C	16.4 C	36m	3/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.25	19.25	33.378	23.720	416.8	0.000	5.48	103.6	2.8	0.31	0.0	0.00	0.12	0.03	0	
1		19.25	19.25	33.378	23.720	416.8	0.004	5.48	103.6	2.8	0.31	0.0	0.00	0.12	0.03	1	220
10	ISL	19.08	19.08	33.374	23.760	413.3	0.042	5.47	103.1	2.8	0.31	0.0	0.00	0.11	0.02	10	
15		18.95	18.95	33.368	23.789	410.8	0.062	5.47	102.8	2.8	0.31	0.0	0.00	0.11	0.02	15	219
20	ISL	18.87	18.87	33.357	23.801	409.8	0.083	5.49	103.0	2.8	0.30	0.0	0.00	0.12	0.02	20	
30		18.72	18.71	33.336	23.823	408.0	0.124	5.54	103.7	2.7	0.30	0.0	0.00	0.15	0.03	30	218
44		14.95	14.94	33.164	24.570	337.1	0.176	6.34	110.1	2.8	0.33	0.0	0.00	0.25	0.10	44	217
50	ISL	14.16	14.15	33.133	24.714	323.5	0.196	6.35	108.5	3.0	0.35	0.0	0.00	0.31	0.16	50	
55		13.74	13.73	33.114	24.786	316.7	0.212	6.35	107.5	3.1	0.36	0.0	0.00	0.37	0.22	55	216
65		13.06	13.05	33.107	24.917	304.4	0.243	6.24	104.2	3.2	0.37	0.2	0.02	0.49	0.33	65	215
75		12.87	12.86	33.210	25.035	293.5	0.272	6.03	100.3	3.5	0.37	0.3	0.09	0.37	0.35	75	214
84		12.54	12.53	33.221	25.108	286.7	0.299	5.94	98.2	3.7	0.40	0.5	0.19	0.34	0.30	84	213
95		12.14	12.13	33.221	25.184	279.6	0.330	5.85	95.9	4.2	0.46	1.6	0.18	0.26	0.23	95	212
100	ISL	12.02	12.01	33.225	25.210	277.3	0.344	5.80	94.8	4.5	0.49	2.3	0.14	0.23	0.22	100	
111		11.78	11.77	33.257	25.280	270.9	0.374	5.61	91.2	5.7	0.62	4.7	0.04	0.18	0.19	111	211
124		11.36	11.34	33.358	25.436	256.3	0.408	5.22	84.2	8.9	0.91	9.2	0.01	0.09	0.10	125	210
125	ISL	11.35	11.33	33.371	25.448	255.2	0.411	5.18	83.5	9.2	0.93	9.6	0.01	0.09	0.10	126	
145		10.97	10.95	33.623	25.712	230.4	0.459	4.45	71.3	15.0	1.33	16.0	0.01	0.03	0.04	146	209
150	ISL	10.70	10.68	33.649	25.780	224.0	0.471	4.28	68.2	16.7	1.41	17.4	0.01	0.02	0.04	151	
168		9.68	9.66	33.718	26.008	202.5	0.509	3.71	57.8	22.6	1.66	21.4	0.00	0.01	0.03	169	208
199		9.06	9.04	33.919	26.266	178.5	0.568	3.04	46.8	29.4	1.92	25.4	0.00	0.00	0.03	200	207
200	ISL	9.04	9.02	33.923	26.272	177.9	0.570	3.03	46.6	29.6	1.92	25.5	0.00			201	
229		8.46	8.44	33.994	26.418	164.3	0.619	2.89	43.9	34.2	2.02	27.1	0.00			230	206
250	ISL	8.20	8.17	34.017	26.476	159.1	0.653	2.78	42.0	36.6	2.09	28.0	0.00			251	
269		7.99	7.96	34.027	26.515	155.6	0.683	2.65	39.8	38.9	2.17	28.9	0.00			270	205
300	ISL	7.49	7.46	34.051	26.607	147.2	0.730	2.24	33.3	45.6	2.36	31.4	0.00			302	
318		7.21	7.18	34.064	26.657	142.6	0.756	1.98	29.2	49.8	2.48	32.9	0.00			320	204
375		6.67	6.64	34.090	26.751	134.1	0.835	1.48	21.6	58.7	2.70	35.7	0.00			377	203
400	ISL	6.49	6.45	34.110	26.791	130.6	0.868	1.25	18.1	62.7	2.80	36.9	0.00			402	
437		6.25	6.21	34.145	26.850	125.3	0.916	0.93	13.4	68.7	2.94	38.5	0.00			440	202
500	ISL	5.82	5.78	34.205	26.953	116.1	0.992	0.56	8.0	78.8	3.11	40.4	0.00			503	
521		5.67	5.63	34.226	26.988	112.9	1.016	0.44	6.3	82.1	3.17	41.1	0.00			524	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 29.0 N	117 45.9 W	09/10/99	2114	UTC	592 m	320	08 kn	00	0	1011.6 mb	23.5 C	20.8 C	17m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.58	18.58	33.603	24.060	384.3	0.000	5.96	111.4	3.7	0.24	0.1	0.01	0.41	0.08	0	
1		18.58	18.58	33.603	24.060	384.3	0.004	5.96	111.4	3.7	0.24	0.1	0.01	0.41	0.08	1	208
5		17.70	17.70	33.584	24.262	365.2	0.019	6.09	111.9	3.5	0.22	0.0	0.00	0.48	0.09	5	207
10		17.46	17.46	33.583	24.319	360.0	0.037	6.15	112.5	3.6	0.22	0.0	0.00	0.56	0.11	10	206
20		14.13	14.13	33.486	24.991	296.2	0.070	5.74	98.2	6.2	0.63	4.1	0.25	1.36	0.47	20	205
30	ISL	12.57	12.57	33.487	25.307	266.4	0.098	5.22	86.5	8.1	0.89	8.2	0.35	0.80	0.39	30	
31		12.48	12.48	33.490	25.326	264.5	0.101	5.16	85.3	8.4	0.91	8.6	0.36	0.72	0.37	31	204
40		11.72	11.71	33.559	25.524	245.9	0.124	4.49	73.1	13.1	1.25	13.3	0.21	0.44	0.42	40	203
48		11.30	11.29	33.606	25.638	235.3	0.143	4.22	68.1	15.6	1.39	15.7	0.08	0.26	0.31	48	202
50	ISL	11.27	11.26	33.628	25.660	233.2	0.147	4.10	66.1	16.2	1.42	16.2	0.07	0.24	0.30	50	
55		11.19	11.18	33.682	25.717	227.9	0.159	3.79	61.0	17.6	1.49	17.5	0.05	0.18	0.27	55	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 25.3 N	117 54.7 W	09/10/99	1744	UTC	612 m	310	01 kn	00	0	1013.6 mb	21.1 C	18.9 C	34m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.50	19.50	33.713	23.911	398.5	0.000	5.51	104.9	2.8	0.24	0.0	0.00	0.19	0.03	0	
1		19.55	19.55	33.713	23.898	399.8	0.004									1	222
2	A	19.50	19.50	33.713	23.911	398.6	0.008	5.51	104.9	2.8	0.24	0.0	0.00	0.19	0.03	2	221
2		19.55	19.55	33.713	23.899	399.8	0.008									2	223
10	ISL	18.87	18.87	33.664	24.035	387.1	0.039	5.67	106.6	2.9	0.25	0.1	0.00	0.26	0.04	10	
14		18.56	18.56	33.641	24.095	381.5	0.055	5.82	108.8	2.9	0.26	0.1	0.00	0.29	0.06	14	220
20	ISL	17.00	17.00	33.560	24.411	351.5	0.077	6.14	111.3	3.2	0.30	0.1	0.00	0.27	0.11	20	
25	A	15.63	15.63	33.514	24.690	325.1	0.094	6.35	112.0	3.5	0.34	0.1	0.00	0.25	0.14	25	219
30	ISL	14.79	14.79	33.494	24.858	309.2	0.110	6.30	109.3	3.7	0.36	0.1	0.00	0.28	0.11	30	
34		14.27	14.27	33.491	24.966	299.0	0.122	6.26	107.4	4.0	0.37	0.1	0.00	0.30	0.10	34	218
42		13.47	13.46	33.535	25.166	280.2	0.145	5.79	97.8	5.4	0.55	2.5	0.15	0.60	0.22	42	217
50	ISL	12.89	12.88	33.562	25.303	267.3	0.167	5.30	88.4	7.2	0.79	6.6	0.22	0.60	0.34	50	
51	A	12.83	12.82	33.565	25.317	266.0	0.169	5.24	87.3	7.5	0.82	7.1	0.22	0.60	0.35	51	216
63		11.98	11.97	33.597	25.505	248.3	0.200	4.67	76.4	11.1	1.08	11.7	0.05	0.43	0.32	63	215
75	A	11.47	11.46	33.638	25.632	236.5	0.229	4.34	70.3	13.6	1.24	14.4	0.03	0.22	0.24	75	214
87		10.96	10.95	33.650	25.734	227.0	0.257	4.24	67.9	15.8	1.37	16.3	0.01	0.12	0.15	87	213
99	A	10.44	10.43	33.730	25.888	212.6	0.284	3.82	60.5	19.7	1.56	19.4	0.01	0.04	0.08	99	212
100	ISL	10.41	10.40	33.737	25.898	211.6	0.286	3.79	60.0	19.9	1.57	19.6	0.01	0.04	0.08	100	
115		10.06	10.05	33.832	26.032	199.2	0.317	3.36	52.8	23.1	1.70	21.5	0.01	0.02	0.05	116	211
125	ISL	9.80	9.79	33.859	26.097	193.1	0.336	3.25	50.8	24.9	1.78	22.7	0.00	0.01	0.05	126	
133	A	9.58	9.57	33.875	26.146	188.6	0.351	3.19	49.6	26.5	1.84	23.7	0.00	0.01	0.06	134	210
150	ISL	9.06	9.04	33.938	26.280	176.1	0.382	2.87	44.2	31.0	2.00	26.0	0.00	0.00	0.05	151	
151		9.03	9.01	33.942	26.288	175.4	0.384	2.85	43.8	31.3	2.01	26.1	0.00	0.00	0.05	152	209
168		8.83	8.81	33.991	26.358	169.0	0.413	2.60	39.8	33.7	2.11	27.4	0.00	0.00	0.05	169	208
200		8.64	8.62	34.104	26.477	158.4	0.466	2.08	31.7	38.6	2.32	29.3	0.01	0.00	0.04	201	207
229		8.62	8.60	34.187	26.545	152.4	0.511	1.58	24.1	42.2	2.50	30.8	0.01			230	206
250	ISL	8.51	8.48	34.237	26.602	147.4	0.542	1.25	19.0	45.4	2.63	31.8	0.01			251	
269		8.34	8.31	34.264	26.649	143.2	0.570	1.02	15.5	48.5	2.73	32.6	0.01			271	205
300	ISL	7.80	7.77	34.239	26.710	137.7	0.614	1.00	15.0	53.4	2.80	34.1	0.01			302	
318		7.48	7.45	34.220	26.742	134.8	0.638	0.99	14.7	56.1	2.82	34.9	0.01			320	204
379		7.15	7.11	34.282	26.838	126.5	0.718	0.58	8.6	63.3	3.01	36.6	0.00			381	203
400	ISL	7.04	7.00	34.289	26.859	124.8	0.744	0.51	7.5	65.1	3.05	37.0	0.00			403	
437		6.82	6.78	34.296	26.895	121.8	0.790	0.44	6.4	68.4	3.11	37.8	0.01			440	202
500	ISL	6.30	6.25	34.321	26.984	113.8	0.864	0.30	4.3	77.0	3.23	39.5	0.01			503	
518		6.15	6.10	34.329	27.009	111.4	0.884	0.26	3.7	79.5	3.26	40.0	0.01			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 15.1 N	118 14.9 W	09/10/99	1226	UTC	419 m	250	01 kn			1011.6 mb	19.0 C	17.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.37	18.37	33.681	24.172	373.6	0.000	5.64	105.1	3.6	0.22	0.1	0.00	0.29	0.07	0	
1		18.37	18.37	33.681	24.172	373.7	0.004	5.64	105.1	3.6	0.22	0.1	0.00	0.29	0.07	1	217
10		18.22	18.22	33.676	24.206	370.8	0.037	5.70	105.9	3.7	0.23	0.1	0.00	0.29	0.08	10	216
20		15.24	15.24	33.553	24.806	313.9	0.071	6.27	109.8	5.0	0.34	0.5	0.04	0.70	0.26	20	215
29		13.21	13.21	33.515	25.202	276.3	0.098	5.71	95.9	7.0	0.69	5.4	0.26	0.94	0.46	29	214
30	ISL	13.04	13.04	33.513	25.234	273.3	0.101	5.64	94.4	7.2	0.73	6.0	0.26	0.94	0.46	30	
39		11.98	11.97	33.510	25.437	254.2	0.125	5.07	83.0	9.3	0.99	10.2	0.31	0.79	0.49	39	213
49		11.65	11.64	33.527 D	25.512	247.3	0.150	4.79	77.8	11.0	1.12	12.5	0.14	0.54	0.43	49	212
50	ISL	11.63	11.62	33.538	25.524	246.1	0.152	4.74	77.0	11.4	1.14	12.9	0.13	0.52	0.42	50	
60		11.31	11.30	33.658	25.677	231.9	0.176	4.15	67.0	16.0	1.41	17.2	0.02	0.33	0.34	60	211
69		10.50	10.49	33.720	25.869	213.7	0.196	3.74	59.3	20.3	1.63	20.5	0.00	0.08	0.18	69	210
75	ISL	10.26	10.25	33.754	25.937	207.4	0.209	3.57	56.4	21.7	1.70	21.5	0.00	0.06	0.12	75	
86		10.03	10.02	33.805	26.016	200.1	0.231	3.35	52.6	23.4	1.76	22.5	0.00	0.03	0.07	86	209
99		9.62	9.61	33.864	26.130	189.4	0.256	3.12	48.6	26.1	1.85	24.0	0.00	0.01	0.08	100	208
100	ISL	9.59	9.58	33.868	26.139	188.6	0.258	3.10	48.3	26.3	1.86	24.1	0.00	0.01	0.08	101	
118		9.19	9.18	33.924	26.248	178.6	0.291	2.86	44.1	29.5	1.97	25.9	0.00	0.00	0.06	119	207
125	ISL	9.14	9.13	33.935	26.264	177.1	0.304	2.83	43.6	29.8	1.98	26.1	0.00	0.00	0.05	126	
139		9.09	9.07	33.957	26.290	175.0	0.328	2.79	43.0	30.3	2.00	26.3	0.00	0.01	0.04	140	206
150	ISL	8.98	8.96	33.989	26.333	171.1	0.347	2.67	41.0	31.8	2.05	26.9	0.00	0.01	0.04	151	
167		8.80	8.78	34.048	26.407	164.3	0.376	2.40	36.7	34.7	2.15	28.0	0.00	0.01	0.05	168	205
197		8.65	8.63	34.147	26.509	155.3	0.424	1.74	26.6	39.4	2.39	30.1	0.09	0.00	0.05	198	204
200	ISL	8.63	8.61	34.154	26.517	154.5	0.429	1.69	25.8	39.8	2.41	30.3	0.10			201	
228		8.41	8.39	34.202	26.589	148.1	0.471	1.37	20.8	43.9	2.55	31.7	0.15			229	203
250	ISL	8.09	8.06	34.213	26.646	143.0	0.503	1.19	17.9	47.6	2.64	32.9	0.12			252	
268		7.83	7.80	34.216	26.687	139.3	0.528	1.09	16.3	50.5	2.70	33.8	0.08			270	202
300	ISL	7.56	7.53	34.228	26.736	135.0	0.572	0.96	14.3	54.4	2.78	34.9	0.03			302	
304		7.53	7.50	34.229	26.741	134.6	0.578	0.94	14.0	54.9	2.79	35.0	0.02			306	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
33 10.8 N	118 23.9 W	09/10/99	0925	UTC	1182 m	270	08 kn			1011.9 mb	18.5 C	17.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.82	18.82	33.687	24.064	383.9	0.000	5.54	104.1	2.7	0.24	0.1	0.00	0.22	0.04	0	
1		18.82	18.82	33.687	24.064	383.9	0.004	5.54	104.1	2.7	0.24	0.1	0.00	0.22	0.04	1	220
10		18.76	18.76	33.684	24.078	383.0	0.038	5.57	104.5	2.6	0.24	0.1	0.00	0.22	0.05	10	219
20		18.19	18.19	33.670	24.209	370.8	0.076	5.71	106.0	3.1	0.23	0.1	0.00	0.27	0.09	20	218
29		15.65	15.65	33.566	24.725	321.8	0.107	6.19	109.3	4.2	0.33	0.1	0.03	0.75	0.22	29	217
30	ISL	15.32	15.32	33.551	24.787	316.0	0.110	6.15	107.8	4.5	0.37	0.6	0.05	0.74	0.23	30	
40		12.44	12.43	33.472	25.320	265.3	0.139	5.42	89.5	7.9	0.83	7.7	0.26	0.60	0.32	40	216
50		11.38	11.37	33.526	25.561	242.6	0.165	4.66	75.3	12.6	1.20	13.5	0.31	0.38	0.28	50	215
60		11.22	11.21	33.593	25.642	235.1	0.189	4.46	71.8	13.7	1.30	15.3	0.03	0.26	0.24	60	214
69		10.93	10.92	33.664	25.750	225.1	0.209	4.02	64.4	17.2	1.49	18.2	0.02	0.21	0.26	69	213
75	ISL	10.75	10.74	33.714	25.821	218.5	0.223	3.76	60.0	18.7	1.56	19.3	0.02	0.14	0.21	75	
84		10.47	10.46	33.780	25.921	209.1	0.242	3.43	54.4	20.6	1.64	20.6	0.02	0.05	0.12	84	212
97		10.04	10.03	33.839	26.041	197.9	0.268	3.16	49.7	23.8	1.76	22.6	0.01	0.02	0.10	97	211
100	ISL	9.98	9.97	33.851	26.060	196.1	0.274	3.11	48.8	24.3	1.78	22.9	0.01	0.02	0.10	100	
119		9.68	9.67	33.918	26.163	186.7	0.311	2.82	44.0	27.0	1.91	24.3	0.01	0.01	0.07	120	210
125	ISL	9.58	9.57	33.935	26.193	184.0	0.322	2.75	42.8	27.9	1.95	24.8	0.01	0.01	0.07	126	
139		9.35	9.33	33.975	26.262	177.7	0.347	2.60	40.3	30.1	2.03	26.1	0.01	0.01	0.06	140	209
150	ISL	9.17	9.15	34.014	26.322	172.2	0.366	2.42	37.4	32.2	2.11	27.1	0.01	0.01	0.06	151	
169		8.90	8.88	34.079	26.416	163.6	0.398	2.11	32.4	35.7	2.24	28.7	0.01	0.00	0.07	170	208
199		8.72	8.70	34.149	26.500	156.2	0.446	1.74	26.6	39.1	2.38	30.1	0.01	0.00	0.04	200	207
200	ISL	8.72	8.70	34.151	26.501	156.1	0.448	1.73	26.5	39.2	2.38	30.1	0.01			201	
229		8.61	8.59	34.200	26.557	151.3	0.492	1.44	22.0	42.1	2.50	31.1	0.00			230	206
250	ISL	8.28	8.25	34.190	26.600	147.5	0.524	1.38	20.9	44.8	2.55	32.1	0.00			251	
267		7.97	7.94	34.175	26.635	144.3	0.549	1.36	20.4	47.2	2.59	32.9	0.01			269	205
300	ISL	7.60	7.57	34.182	26.694	139.0	0.595	1.19	17.7	51.6	2.68	34.3	0.01			302	
318		7.45	7.42	34.193	26.725	136.4	0.620	1.08	16.0	54.1	2.74	34.9	0.01			320	204
378		7.04	7.00	34.253	26.830	127.1	0.699	0.66	9.7	62.9	2.94	36.6	0.01			380	203
400	ISL	6.91	6.87	34.270	26.861	124.4	0.727	0.56	8.2	65.2	2.99	37.3	0.01			403	
439		6.69	6.65	34.295	26.911	120.1	0.775	0.43	6.3	69.1	3.07	38.4	0.00			442	202
500	ISL	6.24	6.20	34.314	26.986	113.5	0.846	0.32	4.6	76.2	3.16	39.8	0.00			503	
515		6.13	6.08	34.319	27.004	111.9	0.863	0.29	4.2	78.0	3.18	40.1	0.00			519	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 55.0 N	118 56.2 W	09/10/99	0412 UTC	1692 m	290 07 kn			1011.9 mb	19.1 C	17.1 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.88	17.88	33.643	24.263	364.9	0.000	5.77	106.5	3.9	0.25	0.0	0.00	0.25	0.08	0	
1		17.88	17.88	33.643	24.263	365.0	0.004	5.77	106.5	3.9	0.25	0.0	0.00	0.25	0.08	1	220
10		17.29	17.29	33.638	24.402	352.1	0.036	5.83	106.3	3.8	0.25	0.0	0.00	0.23	0.10	10	219
20		16.60	16.60	33.620	24.550	338.2	0.070	5.96	107.3	4.0	0.28	0.1	0.01	0.82	0.30	20	218
29		13.33	13.33	33.559	25.212	275.4	0.098	5.41	91.1	7.9	0.79	7.1	0.35	1.13	0.45	29	217
30	ISL	13.23	13.23	33.561	25.234	273.4	0.101	5.35	89.9	8.2	0.82	7.6	0.34	1.10	0.45	30	
40		12.35	12.34	33.585	25.425	255.4	0.127	4.90	80.8	10.3	1.03	11.0	0.28	0.63	0.37	40	216
50		12.18	12.17	33.598	25.468	251.5	0.153	4.78	78.6	10.8	1.08	11.9	0.17	0.55	0.37	50	215
60		11.75	11.74	33.638	25.580	241.1	0.177	4.38	71.4	14.1	1.27	15.1	0.03	0.31	0.34	60	214
70		10.66	10.65	33.704	25.828	217.6	0.200	3.77	60.0	19.6	1.57	19.8	0.02	0.14	0.17	70	213
75	ISL	10.37	10.36	33.738	25.905	210.4	0.211	3.58	56.7	21.4	1.65	21.1	0.02	0.09	0.13	75	
84		10.04	10.03	33.793	26.005	201.1	0.229	3.33	52.3	23.7	1.74	22.5	0.01	0.04	0.10	84	212
100		9.58	9.57	33.874	26.145	188.0	0.260	2.99	46.5	27.1	1.88	24.8	0.01	0.02	0.07	101	211
120		9.16	9.15	33.930	26.257	177.7	0.297	2.79	43.0	30.0	1.96	26.0	0.01	0.01	0.08	121	210
125	ISL	9.06	9.05	33.940	26.281	175.5	0.306	2.82	43.4	30.4	1.96	26.1	0.01	0.01	0.07	126	
141		8.77	8.76	33.970	26.350	169.2	0.333	2.91	44.5	31.6	1.96	26.4	0.01	0.00	0.05	142	209
150	ISL	8.68	8.66	33.993	26.383	166.3	0.349	2.74	41.8	33.1	2.02	27.2	0.01	0.00	0.05	151	
170		8.51	8.49	34.041	26.447	160.5	0.381	2.29	34.8	36.9	2.18	29.1	0.00	0.00	0.05	171	208
199		8.07	8.05	34.076	26.541	152.0	0.427	2.11	31.8	41.4	2.30	30.5	0.01	0.00	0.04	200	207
200	ISL	8.06	8.04	34.078	26.544	151.7	0.428	2.09	31.5	41.6	2.31	30.6	0.01			201	
230		7.92	7.90	34.148	26.620	145.0	0.473	1.53	23.0	46.3	2.49	32.4	0.01			231	206
250	ISL	7.78	7.76	34.171	26.659	141.6	0.501	1.32	19.8	49.0	2.57	33.3	0.00			251	
269		7.64	7.61	34.186	26.691	138.8	0.528	1.19	17.8	51.4	2.64	34.0	0.00			271	205
300	ISL	7.40	7.37	34.211	26.746	134.1	0.570	0.98	14.5	55.6	2.75	35.2	0.01			302	
318		7.26	7.23	34.223	26.775	131.5	0.594	0.87	12.9	58.1	2.81	35.8	0.01			320	204
376		6.80	6.77	34.251	26.861	123.9	0.668	0.60	8.8	65.5	2.94	37.6	0.00			378	203
400	ISL	6.61	6.57	34.260	26.894	121.0	0.698	0.52	7.6	67.8	2.97	38.1	0.00			403	
433		6.38	6.34	34.273	26.935	117.5	0.737	0.44	6.4	78.7 U	3.14 U	40.4 U	0.00 U			436	202
500	ISL	6.11	6.07	34.308	26.998	112.2	0.814	0.32	4.6	77.2	3.12	40.2	0.00			503	
517		6.04	5.99	34.317	27.014	110.9	0.833	0.29	4.2	78.8	3.14	40.5	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 38.8 N	119 28.7 W	08/10/99	2251 UTC	1314 m	330 06 kn	300 03 07	0	1012.6 mb	19.8 C	18.0 C	18m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.75	16.75	33.451	24.385	353.3	0.000	5.86	105.7	2.5	0.34	0.1	0.00	0.26	0.06	0	
2		16.75	16.75	33.451	24.385	353.4	0.007	5.86	105.7	2.5	0.34	0.1	0.00	0.26	0.06	2	220
10		16.29	16.29	33.440	24.483	344.3	0.035	5.90	105.4	2.6	0.33	0.1	0.00	0.46	0.14	10	219
20		15.91	15.91	33.474	24.596	333.9	0.069	5.92	105.0	2.9	0.34	0.4	0.03	0.73	0.25	20	218
30		15.54	15.54	33.417	24.635	330.5	0.102	6.00	105.6	2.9	0.36	0.5	0.04	0.73	0.32	30	217
40		14.45	14.44	33.285	24.770	317.9	0.135	6.02	103.6	3.2	0.42	1.2	0.09	0.72	0.31	40	216
49		12.22	12.21	33.117	25.087	287.7	0.162	5.93	97.3	4.7	0.62	3.8	0.27	0.67	0.45	49	215
50	ISL	12.10	12.09	33.110	25.104	286.1	0.165	5.92	96.9	4.8	0.63	3.9	0.26	0.65	0.44	50	
60		11.44	11.43	33.111	25.228	274.6	0.193	5.73	92.4	6.0	0.71	5.3	0.10	0.45	0.38	60	214
69		10.98	10.97	33.217	25.393	259.0	0.217	5.33	85.2	9.0	0.91	9.1	0.03	0.23	0.22	69	213
75	ISL	10.86	10.85	33.275	25.459	252.8	0.232	5.16	82.3	10.3	1.01	10.8	0.03	0.17	0.17	75	
83		10.76	10.75	33.346	25.532	246.0	0.252	4.96	79.0	12.1	1.13	12.7	0.02	0.14	0.13	83	212
99		10.23	10.22	33.499	25.743	226.2	0.290	4.35	68.5	17.7	1.45	17.8	0.02	0.05	0.07	99	211
100	ISL	10.20	10.19	33.512	25.759	224.8	0.292	4.30	67.7	18.1	1.47	18.1	0.02	0.05	0.07	100	
119		9.62	9.61	33.742	26.036	198.8	0.332	3.49	54.3	24.9	1.78	23.1	0.01	0.01	0.04	120	210
125	ISL	9.52	9.51	33.787	26.087	194.0	0.344	3.36	52.2	25.9	1.82	23.8	0.01	0.01	0.04	126	
139		9.33	9.31	33.864	26.179	185.6	0.371	3.16	48.9	27.6	1.86	24.6	0.01	0.01	0.03	140	209
150	ISL	9.10	9.08	33.910	26.252	178.8	0.391	3.04	46.8	29.3	1.91	25.4	0.01	0.01	0.03	151	
169		8.72	8.70	33.964	26.354	169.4	0.424	2.89	44.1	32.0	2.00	26.7	0.00	0.00	0.03	170	208
198		8.50	8.48	33.997	26.414	164.2	0.472	2.69	40.9	34.5	2.08	27.7	0.01	0.00	0.03	199	207
200	ISL	8.48	8.46	33.999	26.419	163.7	0.475	2.68	40.7	34.7	2.08	27.8	0.01			201	
229		8.19	8.17	34.024	26.483	158.1	0.522	2.57	38.8	37.6	2.16	28.8	0.01			230	206
250	ISL	7.86	7.84	34.042	26.546	152.3	0.555	2.41	36.1	40.9	2.26	30.0	0.00			251	
268		7.57	7.54	34.059	26.602	147.2	0.582	2.23	33.2	44.2	2.35	31.2	0.00			270	205
300	ISL	7.24	7.21	34.090	26.673	140.8	0.628	1.84	27.2	49.9	2.51	33.2	0.01			302	
321		7.08	7.05	34.114	26.714	137.1	0.657	1.56	23.0	53.7	2.62	34.4	0.01			323	204
377		6.81	6.77	34.214	26.830	126.8	0.731	0.79	11.6	63.3	2.91	37.0	0.00			379	203
400	ISL	6.67	6.63	34.238	26.868	123.5	0.760	0.63	9.2	66.7	2.98	37.8	0.00			403	
438		6.43	6.39	34.268	26.924	118.6	0.806	0.47	6.8	71.7	3.07	38.9	0.00			441	202
500	ISL	6.12	6.08	34.307	26.996	112.4	0.877	0.33	4.8	77.3	3.16	40.1	0.00			503	
516		6.04	5.99	34.317	27.014	110.8	0.895	0.29	4.2	78.8	3.18	40.4	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 26.1 N	119 58.6 W	08/10/99	1811	UTC	1092 m	330	08 kn	310 04 07	0	1014.6 mb	19.4 C	17.7 C	27m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.48	17.48	33.444	24.207	370.3	0.000	5.65	103.3	2.4	0.31	0.0	0.00	0.13	0.03	0	
2	A	17.48	17.48	33.444	24.207	370.3	0.007	5.65	103.3	2.4	0.31	0.0	0.00	0.13	0.03	2	223
2		17.48	17.48	33.444	24.207	370.3	0.007									2	224
10		17.35	17.35	33.442	24.237	367.8	0.037	5.67	103.4	2.4	0.31	0.0	0.00	0.14	0.04	10	222
20	ISL	17.31	17.31	33.439	24.245	367.4	0.074	5.67	103.3	2.2	0.31	0.0	0.00	0.16	0.04	20	
21	A	17.31	17.31	33.440	24.246	367.3	0.077	5.67	103.3	2.2	0.31	0.0	0.00	0.16	0.04	21	221
30		17.28	17.28	33.443	24.255	366.7	0.110	5.68	103.5	2.2	0.30	0.0	0.00	0.20	0.05	30	220
39	A	16.94	16.93	33.487	24.370	356.1	0.143	5.81	105.2	2.4	0.32	0.0	0.00	0.26	0.09	39	219
49		15.59	15.58	33.445	24.646	330.0	0.177	6.12	107.8	2.7	0.33	0.0	0.00	0.51	0.23	49	218
50	ISL	15.44	15.43	33.441	24.676	327.1	0.181	6.11	107.3	2.8	0.34	0.1	0.00	0.54	0.26	50	
59	A	14.28	14.27	33.430	24.918	304.3	0.209	6.04	103.6	3.6	0.43	1.3	0.08	0.76	0.46	59	217
69		13.58	13.57	33.469	25.093	287.9	0.239	5.73	96.9	4.5	0.61	3.6	0.26	0.59	0.50	69	216
75	ISL	13.15	13.14	33.511	25.212	276.6	0.255	5.51	92.4	5.4	0.72	5.8	0.18	0.44	0.43	75	
77	A	13.00	12.99	33.525	25.253	272.8	0.261	5.44	90.9	5.8	0.75	6.6	0.14	0.39	0.40	77	215
87		12.30	12.29	33.560	25.417	257.4	0.287	5.09	83.9	8.2	0.93	9.8	0.04	0.18	0.24	87	214
96		11.96	11.95	33.579	25.496	250.0	0.310	4.89	80.0	9.8	1.03	11.3	0.02	0.12	0.17	96	213
100	ISL	11.73	11.72	33.583	25.542	245.7	0.320	4.80	78.1	10.8	1.10	12.3	0.02	0.10	0.14	100	
105	A	11.43	11.42	33.590	25.603	240.0	0.332	4.67	75.5	12.1	1.18	13.7	0.02	0.08	0.10	105	212
115		11.05	11.04	33.632	25.704	230.5	0.356	4.39	70.5	14.8	1.31	15.9	0.02	0.06	0.09	116	211
123		10.54	10.53	33.707	25.853	216.5	0.374	3.96	62.9	18.8	1.52	19.2	0.01	0.03	0.05	124	210
125	ISL	10.45	10.44	33.720	25.879	214.1	0.378	3.89	61.7	19.4	1.53	19.7	0.01	0.03	0.05	126	
143		9.93	9.91	33.793	26.024	200.5	0.415	3.53	55.3	22.6	1.67	21.7	0.01	0.01	0.05	144	209
150	ISL	9.80	9.78	33.811	26.060	197.2	0.429	3.45	53.9	23.3	1.70	22.2	0.01	0.01	0.05	151	
168		9.50	9.48	33.853	26.143	189.6	0.464	3.31	51.4	25.0	1.75	23.3	0.01	0.00	0.04	169	208
197		8.71	8.69	33.978	26.367	168.7	0.516	3.08	47.0	30.8	1.90	25.7	0.01	0.00	0.03	198	207
200	ISL	8.63	8.61	33.985	26.385	167.0	0.521	3.05	46.5	31.5	1.92	26.0	0.01			201	
228		8.03	8.01	34.028	26.510	155.4	0.566	2.72	40.9	37.5	2.10	28.5	0.01			229	206
250	ISL	7.77	7.75	34.038	26.556	151.3	0.600	2.55	38.1	40.6	2.20	29.8	0.01			251	
267		7.63	7.60	34.045	26.582	149.1	0.626	2.39	35.6	42.9	2.28	30.7	0.01			269	205
300	ISL	7.36	7.33	34.109	26.671	141.0	0.673	1.79	26.5	49.2	2.50	32.9	0.01			302	
316		7.24	7.21	34.143	26.715	137.1	0.696	1.49	22.0	52.3	2.60	34.0	0.01			318	204
377		6.89	6.85	34.210	26.817	128.2	0.777	0.87	12.8	60.7	2.85	36.6	0.01			379	203
400	ISL	6.70	6.66	34.221	26.851	125.2	0.806	0.74	10.8	63.9	2.93	37.5	0.01			403	
441		6.35	6.31	34.232	26.906	120.2	0.856	0.60	8.7	69.4	3.04	38.8	0.01			444	202
500	ISL	5.96	5.92	34.250	26.971	114.6	0.925	0.45	6.5	75.6	3.10	40.1	0.01			503	
511		5.89	5.85	34.253	26.982	113.6	0.938	0.42	6.0	76.7	3.11	40.4	0.01			514	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 5.1 N	120 38.3 W	08/10/99	0751	UTC	3819 m	320	17 kn			1014.8 mb	17.6 C	15.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.68	17.68	33.408	24.132	377.5	0.000	5.61	103.0	2.5	0.32	0.0	0.00	0.13	0.03	0	
2		17.68	17.68	33.408	24.132	377.5	0.008	5.61	103.0	2.5	0.32	0.0	0.00	0.13	0.03	2	220
10	ISL	17.69	17.69	33.410	24.131	377.9	0.038	5.61	103.0	2.5	0.32	0.0	0.00	0.13	0.03	10	
15		17.69	17.69	33.411	24.132	378.0	0.057	5.61	103.0	2.5	0.32	0.0	0.00	0.13	0.03	15	219
20	ISL	17.69	17.69	33.414	24.135	377.9	0.076	5.61	103.0	2.4	0.32	0.0	0.00	0.13	0.03	20	
30		17.70	17.69	33.419	24.137	378.1	0.113	5.61	103.0	2.3	0.32	0.0	0.00	0.13	0.03	30	218
43		14.19	14.18	33.013	24.615	332.7	0.160	6.38	109.0	2.6	0.34	0.0	0.00	0.20	0.07	43	217
50	ISL	13.63	13.62	32.994	24.715	323.3	0.183	6.39	107.9	2.6	0.35	0.0	0.00	0.22	0.08	50	
54		13.49	13.48	33.010	24.756	319.5	0.195	6.39	107.6	2.7	0.35	0.0	0.00	0.24	0.10	54	216
64		12.72	12.71	33.053	24.942	302.0	0.226	6.28	104.1	3.2	0.38	0.0	0.00	0.36	0.21	64	215
74		12.05	12.04	33.069	25.083	288.7	0.256	6.05	98.9	4.0	0.48	1.2	0.14	0.56	0.43	74	214
75	ISL	12.02	12.01	33.076	25.094	287.7	0.259	6.03	98.5	4.1	0.50	1.6	0.15	0.55	0.42	75	
84		11.87	11.86	33.145	25.175	280.1	0.284	5.85	95.3	5.3	0.67	4.5	0.22	0.40	0.31	84	213
93		11.73	11.72	33.190	25.237	274.5	0.309	5.73	93.1	5.3	0.57	3.8	0.04	0.24	0.26	93	212
100	ISL	11.84	11.83	33.258	25.269	271.6	0.328	5.70	92.8	5.3	0.57	3.8	0.04	0.22	0.26	100	
110		11.99	11.98	33.389	25.343	264.9	0.355	5.57	91.1	5.3	0.58	3.8	0.04	0.19	0.26	110	211
124		10.88	10.87	33.420	25.570	243.4	0.391	4.96	79.2	10.3	0.97	10.3	0.01	0.10	0.14	125	210
125	ISL	10.83	10.81	33.427	25.584	242.1	0.393	4.92	78.5	10.7	0.99	10.7	0.01	0.10	0.13	126	
143		10.12	10.10	33.588	25.832	218.7	0.435	4.18	65.7	17.0	1.37	16.9	0.00	0.04	0.03	144	209
150	ISL	9.89	9.87	33.660	25.927	209.8	0.450	3.97	62.1	19.2	1.48	18.7	0.00	0.03	0.03	151	
168		9.40	9.38	33.826	26.138	190.1	0.486	3.54	54.9	24.2	1.70	22.3	0.00	0.01	0.02	169	208
198		8.77	8.75	33.952	26.337	171.6	0.540	2.99	45.7	31.5	1.96	26.4	0.00	0.00	0.02	199	207
200	ISL	8.72	8.70	33.956	26.348	170.5	0.543	2.98	45.5	31.9	1.97	26.6	0.00			201	
228		8.05	8.03	33.991	26.478	158.5	0.590	2.87	43.2	37.4	2.09	28.4	0.00			229	206
250	ISL	7.68	7.66	34.008	26.545	152.3	0.624	2.70	40.3	41.2	2.19	29.7	0.00			251	
268		7.44	7.41	34.020	26.589	148.3	0.651	2.51	37.2	44.2	2.27	30.8	0.00			269	205
300	ISL	7.09	7.06	34.050	26.662	141.7	0.697	2.03	29.9	50.1	2.46	33.1	0.00			302	
316		6.95	6.92	34.065	26.693	138.9	0.720	1.78	26.1	52.9	2.55	34.2	0.00			318	204
377		6.53	6.50	34.105	26.782	131.2	0.802	1.24	18.0	61.4	2.77	36.9	0.00			379	203
400	ISL	6.38	6.34	34.131	26.822	127.6	0.832	1.03	14.9	65.2	2.86	37.9	0.00			402	
438		6.13	6.09	34.174	26.889	121.6	0.879	0.73	10.5	71.4	2.99	39.3	0.00			441	202
500	ISL	5.65	5.61	34.218	26.984	113.0	0.952	0.51	7.3	79.9	3.17	41.1	0.00			503	
518		5.51	5.47	34.232	27.012	110.4	0.972	0.44	6.2	82.4	3.22	41.6	0.00			521	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 44.8 N	121 18.5 W	08/10/99	0212	UTC	3601 m	340	17 kn	330 06 07		1014.6 mb	18.1 C	16.2 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.03	18.03	33.229	23.910	398.6	0.000	5.54	102.3	2.4	0.31	0.0	0.00	0.09	0.02	0	
1		18.03	18.03	33.229	23.910	398.7	0.004	5.54	102.3	2.4	0.31	0.0	0.00	0.09	0.02	1	220
10	ISL	18.03	18.03	33.230	23.911	398.9	0.040	5.54	102.3	2.5	0.30	0.0	0.00	0.09	0.01	10	
16		18.03	18.03	33.230	23.911	399.1	0.064	5.54	102.3	2.5	0.30	0.0	0.00	0.09	0.01	16	219
20	ISL	17.98	17.98	33.239	23.931	397.4	0.080	5.56	102.5	2.4	0.30	0.0	0.00	0.09	0.01	20	
30		17.85	17.84	33.262	23.980	393.0	0.119	5.62	103.4	2.3	0.30	0.0	0.00	0.10	0.02	30	218
46		15.41	15.40	33.315	24.586	335.6	0.178	6.15	107.9	2.4	0.27	0.0	0.00	0.11	0.03	46	217
50	ISL	15.01	15.00	33.317	24.675	327.2	0.191	6.16	107.2	2.4	0.28	0.0	0.00	0.11	0.04	50	
61		14.08	14.07	33.287	24.849	310.9	0.226	6.20	105.8	2.4	0.29	0.0	0.00	0.14	0.06	61	216
75		12.79	12.78	33.186	25.032	293.7	0.268	6.19	102.8	2.7	0.34	0.0	0.00	0.25	0.18	75	215
85		12.50	12.49	33.240	25.130	284.6	0.297	6.08	100.4	3.0	0.36	0.2	0.04	0.30	0.26	85	214
96		12.28	12.27	33.293	25.213	276.9	0.328	5.94	97.7	3.3	0.40	0.8	0.11	0.29	0.26	96	213
100	ISL	12.23	12.22	33.319	25.243	274.2	0.339	5.86	96.3	3.6	0.43	1.5	0.08	0.27	0.23	100	
105		12.16	12.15	33.356	25.285	270.3	0.353	5.74	94.2	4.0	0.47	2.4	0.03	0.23	0.20	105	212
115		11.99	11.98	33.436	25.380	261.5	0.379	5.53	90.4	4.9	0.54	3.8	0.02	0.16	0.17	115	211
125		11.41	11.39	33.388	25.450	255.0	0.405	5.41	87.4	6.4	0.68	5.9	0.01	0.13	0.12	126	210
139		10.78	10.76	33.446	25.608	240.1	0.440	4.91	78.2	10.3	0.96	10.4	0.01	0.08	0.07	140	209
150	ISL	10.29	10.27	33.548	25.772	224.6	0.465	4.48	70.7	14.2	1.19	14.4	0.01	0.05	0.04	151	
165		9.71	9.69	33.707	25.994	203.7	0.497	3.93	61.3	19.7	1.48	19.3	0.01	0.02	0.01	166	208
193		9.05	9.03	33.906	26.257	179.2	0.551	3.27	50.3	27.8	1.83	24.5	0.00	0.00	0.00	194	207
200	ISL	8.89	8.87	33.935	26.305	174.7	0.563	3.14	48.1	29.6	1.89	25.4	0.00			201	
227		8.34	8.32	34.001	26.442	162.0	0.609	2.79	42.3	35.2	2.06	27.9	0.00			228	206
250	ISL	7.98	7.95	34.019	26.510	155.8	0.645	2.78	41.8	37.9	2.11	28.7	0.00			251	
267		7.73	7.70	34.021	26.549	152.3	0.672	2.78	41.5	39.8	2.13	29.1	0.00			268	205
300	ISL	7.19	7.16	34.029	26.632	144.6	0.721	2.43	35.8	46.2	2.31	31.4	0.00			302	
318		6.92	6.89	34.035	26.674	140.8	0.746	2.17	31.8	50.1	2.42	32.9	0.00			320	204
377		6.39	6.36	34.087	26.786	130.7	0.826	1.41	20.4	61.3	2.73	36.7	0.00			379	203
400	ISL	6.27	6.23	34.110	26.820	127.7	0.856	1.17	16.9	64.8	2.82	37.7	0.00			402	
437		6.09	6.05	34.144	26.870	123.3	0.903	0.86	12.4	69.9	2.95	39.1	0.00			440	202
500	ISL	5.64	5.60	34.184	26.958	115.4	0.978	0.60	8.5	79.2	3.09	40.9	0.00			503	
520		5.50	5.46	34.197	26.985	112.9	1.001	0.52	7.4	82.1	3.13	41.5	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 24.2 N	122 1.6 W	07/10/99	1951	UTC	3886 m	340	24 kn	350 04 06	1	1017.9 mb	18.9 C	16.7 C	30m	5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.50	18.50	33.379	23.909	398.7	0.000	5.49	102.3	2.9	0.29	0.1	0.00	0.08	0.01	0	
2		18.51	18.51	33.370	23.900	399.7	0.008									2	224
2		18.50	18.50	33.370	23.902	399.5	0.008									2	223
2	A	18.50	18.50	33.379	23.909	398.8	0.008	5.49	102.3	2.9	0.29	0.1	0.00	0.08	0.01	2	222
10	ISL	18.50	18.50	33.372	23.904	399.5	0.040	5.47	102.0	2.8	0.28	0.1	0.00	0.08	0.01	10	
12		18.50	18.50	33.370	23.903	399.8	0.048	5.47	102.0	2.8	0.28	0.1	0.00	0.08	0.01	12	221
20	ISL	18.50	18.50	33.370	23.903	400.0	0.080	5.49	102.3	2.8	0.28	0.1	0.00	0.08	0.01	20	
22	A	18.50	18.50	33.370	23.903	400.1	0.088	5.49	102.3	2.8	0.28	0.1	0.00	0.08	0.01	22	220
30	ISL	18.48	18.47	33.371	23.909	399.8	0.120	5.49	102.3	2.9	0.28	0.1	0.00	0.09	0.02	30	
35		18.46	18.45	33.371	23.914	399.5	0.140	5.49	102.2	2.9	0.28	0.1	0.00	0.09	0.02	35	219
46	A	16.54	16.53	33.401	24.397	353.7	0.181	6.01	107.9	2.9	0.26	0.1	0.00	0.13	0.03	46	218
50	ISL	15.87	15.86	33.389	24.541	340.1	0.195	6.08	107.7	2.9	0.26	0.1	0.00	0.13	0.03	50	
56		15.05	15.04	33.370	24.707	324.3	0.215	6.13	106.8	3.0	0.26	0.1	0.00	0.13	0.04	56	217
67	A	14.58	14.57	33.366	24.805	315.3	0.250	6.14	105.9	3.0	0.27	0.1	0.00	0.14	0.04	67	216
75	ISL	14.34	14.33	33.436	24.911	305.5	0.275	6.07	104.3	3.1	0.27	0.1	0.00	0.17	0.06	75	
76		14.30	14.29	33.444	24.925	304.1	0.278	6.06	104.0	3.1	0.27	0.1	0.00	0.17	0.07	76	215
88	A	13.53	13.52	33.428	25.072	290.4	0.314	5.99	101.2	3.3	0.29	0.1	0.00	0.28	0.23	88	214
97		12.89	12.88	33.381	25.164	281.8	0.340	5.91	98.5	3.6	0.36	0.5	0.08	0.35	0.28	97	213
100	ISL	12.71	12.70	33.366	25.187	279.6	0.348	5.88	97.6	3.7	0.38	0.8	0.09	0.33	0.27	100	
108		12.36	12.35	33.344	25.238	274.9	0.370	5.81	95.7	4.1	0.43	1.5	0.10	0.26	0.24	108	212
117	A	12.20	12.18	33.363	25.283	270.8	0.395	5.74	94.3	4.2	0.43	1.5	0.10	0.22	0.22	117	211
125	ISL	11.94	11.92	33.343	25.317	267.7	0.416	5.71	93.2	4.9	0.50	2.9	0.03	0.17	0.17	126	
127		11.84	11.82	33.334	25.329	266.6	0.422	5.70	92.9	5.2	0.53	3.3	0.01	0.16	0.16	128	210
139		10.74	10.72	33.276	25.482	252.0	0.453	5.67	90.2	7.0	0.68	5.8	0.01	0.08	0.06	140	209
150	ISL	10.61	10.59	33.453	25.643	237.0	0.480	5.20	82.6	10.4	0.91	9.8	0.01	0.05	0.05	151	
165		10.43	10.41	33.685	25.856	217.1	0.514	4.41	69.8	15.7	1.23	15.5	0.00	0.03	0.03	166	208
195		9.46	9.44	33.862	26.157	188.9	0.575	3.73	57.9	23.4	1.60	21.5	0.00	0.00	0.02	196	207
200	ISL	9.35	9.33	33.885	26.193	185.5	0.584	3.73	57.7	24.2	1.62	21.9	0.00			201	
227		8.89	8.87	33.980	26.341	171.8	0.632	3.71	56.9	28.2	1.71	23.4	0.00			228	206
250	ISL	8.47	8.44	34.018	26.436	163.1	0.671	3.13	47.5	34.2	1.96	26.7	0.00			251	
268		8.17	8.14	34.032	26.493	157.9	0.700	2.62	39.5	39.0	2.17	29.3	0.00			269	205
300	ISL	7.76	7.73	34.051	26.568	151.0	0.749	2.28	34.1	44.1	2.34	31.4	0.00			302	
318		7.54	7.51	34.057	26.605	147.7	0.776	2.17	32.3	46.6	2.40	32.2	0.00			320	204
377		6.67	6.64	34.079	26.743	135.0	0.859	1.62	23.6	58.7	2.71	35.9	0.00			379	203
400	ISL	6.51	6.47	34.112	26.790	130.7	0.890	1.32	19.2	63.1	2.82	37.3	0.00			402	
436		6.32	6.28	34.162	26.855	125.0	0.936	0.90	13.0	69.3	2.96	39.2	0.00			439	202
500	ISL	5.77	5.73	34.167	26.929	118.3	1.014	0.70	10.0	77.9	3.08	41.1	0.00			503	
522		5.58	5.54	34.170	26.954	115.9	1.039	0.63	9.0	80.8	3.12	41.7	0.00			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 5.2 N	122 40.1 W	07/10/99	1337	UTC	3973 m	350	20 kn			1018.1 mb	17.4 C	15.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.07	19.07	33.541	23.890	400.6	0.000	5.41	102.0	2.6	0.27	0.0	0.00	0.10	0.02	0	
1		19.07	19.07	33.541	23.890	400.6	0.004	5.41	102.0	2.6	0.27	0.0	0.00	0.10	0.02	1	220
10	ISL	19.08	19.08	33.541	23.888	401.1	0.040	5.42	102.2	2.6	0.27	0.0	0.00	0.10	0.01	10	
16		19.09	19.09	33.541	23.885	401.6	0.064	5.42	102.3	2.6	0.27	0.0	0.00	0.10	0.01	16	219
20	ISL	19.08	19.08	33.542	23.889	401.4	0.080	5.42	102.2	2.6	0.27	0.0	0.00	0.10	0.01	20	
30	ISL	19.06	19.05	33.544	23.896	401.1	0.120	5.42	102.2	2.5	0.26	0.0	0.00	0.10	0.02	30	
31		19.06	19.05	33.544	23.896	401.1	0.124	5.42	102.2	2.5	0.26	0.0	0.00	0.10	0.02	31	218
46		16.92	16.91	33.558	24.429	350.7	0.181	5.94	107.5	2.5	0.23	0.0	0.00	0.12	0.03	46	217
50	ISL	16.42	16.41	33.517	24.514	342.7	0.195	5.97	107.0	2.5	0.24	0.0	0.00	0.13	0.04	50	
61		15.34	15.33	33.413	24.677	327.4	0.231	6.04	105.9	2.4	0.27	0.0	0.00	0.16	0.05	61	216
75	ISL	14.86	14.85	33.452	24.812	314.9	0.276	5.97	103.6	2.6	0.27	0.0	0.00	0.22	0.14	75	
76		14.85	14.84	33.458	24.819	314.3	0.280	5.96	103.5	2.6	0.27	0.0	0.00	0.22	0.15	76	215
86		14.70	14.69	33.509	24.891	307.7	0.311	5.88	101.8	2.7	0.28	0.0	0.00	0.23	0.26	86	214
95		14.69	14.68	33.590	24.956	301.8	0.338	5.82	100.8	2.7	0.28	0.0	0.03	0.24	0.29	95	213
100	ISL	14.65	14.64	33.649	25.010	296.8	0.353	5.74	99.3	2.9	0.30	0.3	0.07	0.22	0.29	100	
108		14.59	14.57	33.749	25.100	288.5	0.376	5.59	96.7	3.3	0.34	1.1	0.11	0.19	0.29	108	212
118		14.29	14.27	33.784	25.191	280.1	0.405	5.45	93.7	3.9	0.41	2.3	0.07	0.16	0.25	118	211
125	ISL	14.02	14.00	33.786	25.249	274.7	0.424	5.36	91.7	4.4	0.47	3.3	0.04			126	
128		13.85	13.83	33.780	25.280	271.8	0.433	5.31	90.5	4.7	0.51	3.9	0.03			129	210
143		12.26	12.24	33.676	25.516	249.4	0.472	4.89	80.5	8.6	0.84	9.0	0.01			144	209
150	ISL	11.83	11.81	33.681	25.601	241.4	0.489	4.72	77.0	10.1	0.94	10.7	0.01			151	
171		10.98	10.96	33.760	25.818	221.1	0.537	4.27	68.5	14.5	1.18	14.6	0.01			172	208
200	ISL	9.81	9.79	33.859	26.097	194.8	0.598	3.85	60.2	21.0	1.49	19.7	0.01			201	
202		9.74	9.72	33.865	26.113	193.3	0.602	3.83	59.8	21.4	1.51	20.0	0.01			203	207
234		9.23	9.20	33.931	26.249	180.9	0.661	3.71	57.3	25.2	1.66	22.3	0.01			235	206
250	ISL	8.84	8.81	33.965	26.337	172.6	0.690	3.47	53.1	28.8	1.79	24.1	0.01			251	
273		8.24	8.21	34.007	26.463	160.8	0.728	3.07	46.4	34.8	1.98	26.9	0.00			274	205
300	ISL	7.61	7.58	34.023	26.568	151.0	0.770	2.70	40.2	41.4	2.17	29.5	0.00			302	
320		7.22	7.19	34.028	26.627	145.4	0.800	2.45	36.2	46.0	2.29	31.1	0.00			322	204
377		6.65	6.62	34.058	26.729	136.3	0.880	1.81	26.4	55.8	2.57	34.6	0.00			379	203
400	ISL	6.46	6.42	34.074	26.767	132.9	0.911	1.56	22.6	59.8	2.67	35.9	0.00			402	
437		6.20	6.16	34.104	26.824	127.7	0.959	1.18	17.0	65.9	2.82	37.8	0.00			440	202
500	ISL	5.88	5.84	34.174	26.921	119.2	1.037	0.73	10.4	75.1	3.02	39.9	0.00			503	
511		5.83	5.79	34.187	26.937	117.7	1.050	0.65	9.3	76.7	3.05	40.3	0.00			514	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 45.5 N	123 20.1 W	07/10/99	0653	UTC	4446 m	350	24 kn			1019.0 mb	18.0 C	15.6 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.84	18.84	33.248	23.724	416.4	0.000	5.47	102.6	2.4	0.29	0.0	0.00	0.09	0.01	0	
2		18.84	18.84	33.248	23.724	416.4	0.008	5.47	102.5	2.4	0.29	0.0	0.00	0.09	0.01	2	220
10	ISL	18.85	18.85	33.247	23.721	417.0	0.042	5.46	102.4	2.3	0.28	0.0	0.00	0.08	0.01	10	
16		18.85	18.85	33.247	23.721	417.2	0.067	5.46	102.4	2.2	0.28	0.0	0.00	0.08	0.01	16	219
20	ISL	18.78	18.78	33.250	23.741	415.4	0.083	5.49	102.8	2.2	0.28	0.0	0.00	0.08	0.01	20	
30	ISL	18.62	18.61	33.259	23.789	411.3	0.125	5.55	103.6	2.2	0.29	0.0	0.00	0.09	0.02	30	
31		18.60	18.59	33.260	23.794	410.7	0.129	5.56	103.8	2.2	0.29	0.0	0.00	0.09	0.02	31	218
45		16.82	16.81	33.274	24.235	369.2	0.183	5.97	107.7	2.1	0.30	0.0	0.00	0.17	0.07	45	217
50	ISL	16.09	16.08	33.213	24.356	357.7	0.202	6.11	108.6	2.2	0.31	0.0	0.00	0.18	0.08	50	
55		15.32	15.31	33.150	24.479	346.1	0.219	6.21	108.6	2.3	0.31	0.0	0.00	0.20	0.10	55	216
65		13.69	13.68	33.119	24.800	315.6	0.252	6.22	105.2	2.5	0.31	0.0	0.00	0.26	0.18	65	215
75		13.75	13.74	33.304	24.931	303.4	0.283	6.07	102.9	2.5	0.30	0.0	0.00	0.27	0.28	75	214
86		13.17	13.16	33.312	25.055	291.9	0.316	5.97	100.0	3.0	0.33	0.1	0.05	0.26	0.27	86	213
96		12.33	12.32	33.230	25.155	282.5	0.345	5.90	97.1	3.3	0.40	0.9	0.19	0.22	0.25	96	212
100	ISL	12.13	12.12	33.205	25.174	280.8	0.356	5.89	96.5	3.4	0.42	1.1	0.18	0.21	0.24	100	
110		11.90	11.89	33.203	25.215	277.0	0.384	5.82	94.9	3.8	0.47	2.0	0.10	0.17	0.22	110	211
125		12.18	12.16	33.443	25.349	264.7	0.424	5.50	90.3	5.4	0.62	5.0	0.02	0.10	0.15	126	210
146		11.29	11.27	33.665	25.688	232.9	0.477	4.60	74.2	11.2	0.99	11.6	0.01	0.05	0.09	147	209
150	ISL	11.04	11.02	33.682	25.746	227.4	0.486	4.43	71.1	13.0	1.10	13.3	0.01	0.04	0.08	151	
170		9.86	9.84	33.747	26.001	203.3	0.529	3.73	58.4	21.5	1.59	20.9	0.00	0.01	0.03	171	208
196		9.25	9.23	33.885	26.209	183.9	0.579	3.39	52.4	26.1	1.75	23.5	0.00	0.00	0.02	197	207
200	ISL	9.19	9.17	33.901	26.231	181.8	0.587	3.41	52.6	26.3	1.75	23.5	0.00			201	
231		8.74	8.72	33.989	26.371	168.9	0.641	3.60	55.0	28.6	1.73	23.6	0.00			232	206
250	ISL	8.28	8.25	34.008	26.457	161.0	0.672	3.36	50.8	33.0	1.86	25.5	0.00			251	
265		7.90	7.87	34.014	26.518	155.2	0.696	3.11	46.6	36.9	1.99	27.3	0.00			266	205
300	ISL	7.29	7.26	34.019	26.610	146.8	0.749	2.69	39.8	43.8	2.20	30.1	0.00			302	
317		7.06	7.03	34.019	26.642	143.8	0.774	2.51	36.9	46.8	2.28	31.2	0.00			319	204
374		6.45	6.42	34.033	26.735	135.4	0.853	1.95	28.3	56.4	2.53	34.6	0.00			376	203
400	ISL	6.21	6.17	34.055	26.784	131.0	0.888	1.61	23.2	61.7	2.66	36.3	0.00			402	
443		5.88	5.84	34.104	26.865	123.7	0.943	1.08	15.5	70.4	2.87	38.8	0.00			446	202
500	ISL	5.60	5.56	34.180	26.959	115.2	1.011	0.63	9.0	79.4	3.05	40.4	0.00			503	
509		5.55	5.51	34.192	26.975	113.8	1.021	0.56	8.0	80.8	3.08	40.7	0.00			512	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 24.8 N	123 59.4 W	07/10/99	0019 UTC	4212 m	340 19 kn	320 03 06	1	1019.2 mb	19.0 C	16.0 C	15m	4/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	18.98	18.98	33.314	23.739	414.9	0.000	5.47	102.9	2.6	0.30	0.0	0.00	0.09	0.01	0	
1	18.98	18.98	33.316	23.741	414.8	0.004									1	221
1	18.98	18.98	33.314	23.739	415.0	0.004	5.47	102.9	2.6	0.30	0.0	0.00	0.09	0.01	1	220
10 ISL	18.97	18.97	33.317	23.744	414.8	0.041	5.48	103.0	2.6	0.30	0.0	0.00	0.09	0.02	10	
15	18.97	18.97	33.319	23.746	414.8	0.062	5.49	103.2	2.6	0.30	0.0	0.00	0.09	0.02	15	219
20 ISL	18.91	18.91	33.317	23.760	413.7	0.083	5.50	103.3	2.6	0.30	0.0	0.00	0.10	0.02	20	
30	18.78	18.77	33.313	23.790	411.2	0.124	5.53	103.6	2.6	0.29	0.0	0.00	0.12	0.02	30	218
45	16.97	16.96	33.274	24.200	372.5	0.183	5.99	108.3	2.3	0.30	0.0	0.00	0.20	0.05	45	217
50 ISL	15.65	15.64	33.202	24.446	349.1	0.201	6.17	108.7	2.4	0.31	0.0	0.00	0.23	0.08	50	
55	14.43	14.42	33.154	24.673	327.5	0.218	6.31	108.4	2.5	0.32	0.0	0.00	0.28	0.13	55	216
64	13.76	13.75	33.174	24.828	312.9	0.247	6.25	105.9	2.5	0.34	0.0	0.01	0.50	0.34	64	215
75	13.52	13.51	33.254	24.939	302.6	0.281	6.11	103.1	2.9	0.39	0.5	0.06	0.59	0.42	75	214
86	12.81	12.80	33.240	25.070	290.4	0.313	5.88	97.7	3.8	0.52	2.3	0.32	0.40	0.34	86	213
96	12.53	12.52	33.284	25.159	282.2	0.342	5.70	94.2	4.6	0.64	4.3	0.27	0.29	0.27	96	212
100 ISL	12.32	12.31	33.303	25.214	277.0	0.353	5.59	92.0	5.4	0.72	5.7	0.20	0.24	0.22	100	
112	11.53	11.52	33.374	25.417	257.8	0.385	5.17	83.7	8.8	0.97	10.1	0.01	0.10	0.09	112	211
123	10.74	10.73	33.466	25.630	237.7	0.412	4.71	75.0	12.2	1.11	12.6	0.01	0.06	0.06	124	210
125 ISL	10.67	10.66	33.489	25.660	234.8	0.417	4.64	73.8	12.7	1.14	13.1	0.01	0.06	0.06	126	
144	10.27	10.25	33.702	25.896	212.8	0.460	4.11	64.9	17.3	1.37	17.3	0.01	0.03	0.03	145	209
150 ISL	10.08	10.06	33.748	25.964	206.4	0.472	3.97	62.4	18.9	1.44	18.6	0.01	0.02	0.03	151	
169	9.50	9.48	33.851	26.141	189.8	0.510	3.60	55.9	23.5	1.66	22.0	0.01	0.01	0.02	170	208
197	8.93	8.91	33.918	26.286	176.5	0.561	3.25	49.9	28.6	1.89	25.0	0.01	0.00	0.03	198	207
200 ISL	8.88	8.86	33.925	26.299	175.3	0.566	3.23	49.5	29.0	1.90	25.2	0.01			201	
229	8.42	8.40	33.987	26.419	164.2	0.616	3.09	46.9	33.3	1.98	26.7	0.01			230	206
250 ISL	8.09	8.06	34.012	26.489	157.9	0.649	2.82	42.5	37.1	2.10	28.3	0.00			251	
269	7.80	7.77	34.027	26.543	152.9	0.679	2.54	38.0	40.8	2.22	29.9	0.00			270	205
300 ISL	7.38	7.35	34.047	26.620	145.9	0.725	2.18	32.3	46.3	2.39	32.0	0.01			302	
320	7.13	7.10	34.059	26.664	141.9	0.754	1.96	28.9	50.0	2.50	33.2	0.01			322	204
379	6.47	6.44	34.106	26.790	130.3	0.834	1.25	18.1	62.1	2.79	37.0	0.01			381	203
400 ISL	6.27	6.23	34.119	26.827	127.0	0.861	1.08	15.6	65.8	2.87	38.0	0.01			402	
440	5.92	5.88	34.143	26.890	121.2	0.911	0.84	12.0	72.4	2.99	39.6	0.01			443	202
500 ISL	5.50	5.46	34.187	26.977	113.4	0.981	0.57	8.1	82.0	3.11	41.3	0.00			503	
519	5.37	5.33	34.201	27.004	111.0	1.003	0.49	6.9	85.0	3.15	41.9	0.00			522	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 26.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 57.1 N	117 18.5 W	03/10/99	2220 UTC	75 m	280 10 kn	330 01 03	1	1015.6 mb	19.1 C	17.0 C	18m	1/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	19.30	19.30	33.705	23.956	394.2	0.000	5.59	106.0	2.8	0.28	0.1	0.00	0.19	0.04	0	
2	19.31	19.31	33.702	23.952	394.7	0.008									2	210
2	19.30	19.30	33.700	23.953	394.6	0.008									2	211
2	19.29	19.29	33.700	23.955	394.4	0.008									2	212
2	19.32	19.32	33.700	23.948	395.1	0.008									2	213
2	19.30	19.30	33.705	23.957	394.3	0.008	5.59	106.0	2.8	0.28	0.1	0.00	0.19	0.04	2	209
5	19.29	19.29	33.701	23.956	394.4	0.020	5.61	106.4	2.7	0.30	0.0	0.00	0.18	0.06	5	208
10	18.74	18.74	33.682	24.081	382.7	0.039	5.71	107.1	2.8	0.26	0.0	0.00	0.20	0.08	10	207
19	15.47	15.47	33.540	24.745	319.7	0.071	6.22	109.4	4.3	0.39	0.7	0.05	1.38	0.55	19	206
20 ISL	15.27	15.27	33.536	24.786	315.8	0.074	6.21	108.8	4.5	0.42	1.0	0.07	1.40	0.56	20	
30	13.93	13.93	33.515	25.056	290.3	0.104	5.78	98.5	6.6	0.69	4.3	0.24	1.60	0.68	30	205
40	12.77	12.76	33.504	25.281	269.1	0.132	5.29	88.0	8.4	0.88	7.6	0.36	1.08	0.66	40	204
49	12.31	12.30	33.541	25.399	258.1	0.156	4.94	81.4	10.3	1.04	10.1	0.62	0.84	0.63	49	203
50 ISL	12.24	12.23	33.551	25.420	256.1	0.158	4.86	80.0	10.7	1.07	10.6	0.57	0.77	0.59	50	
58	11.74	11.73	33.634	25.579	241.2	0.178	4.21	68.6	14.1	1.28	14.3	0.11	0.23	0.31	58	202
67	11.37	11.36	33.682	25.684	231.3	0.200	3.74	60.5	17.6	1.45	16.9	0.09	0.14	0.27	67	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 54.2 N	117 23.9 W	03/10/99	1923	UTC	568 m	320	08 kn	290 01 06	1	1016.5 mb	18.0 C	17.0 C	27m	5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.47	19.47	33.678	23.892	400.3	0.000	5.48	104.2	2.7	0.26	0.1	0.00	0.18	0.03	0	
1		19.46	19.46	33.679	23.896	400.0	0.004									1	223
1		19.47	19.47	33.681	23.895	400.1	0.004									1	222
1	A	19.47	19.47	33.678	23.892	400.3	0.004	5.48	104.2	2.7	0.26	0.1	0.00	0.18	0.03	1	221
10		18.68	18.68	33.645	24.068	383.9	0.039	5.55	104.0	2.6	0.26	0.1	0.00	0.19	0.03	10	220
20	A	16.81	16.81	33.581	24.472	345.8	0.076	5.88	106.2	2.7	0.29	0.0	0.00	0.26	0.08	20	219
30		14.55	14.55	33.460	24.883	306.8	0.108	5.97	103.0	4.1	0.49	2.1	0.17	0.49	0.24	30	218
40	A	13.10	13.09	33.408	25.142	282.4	0.138	5.73	95.9	5.7	0.71	5.3	0.41	0.63	0.40	40	217
50		12.59	12.58	33.517	25.326	265.0	0.165	5.31	88.0	7.5	0.92	8.7	0.31	0.44	0.45	50	216
59	A	12.11	12.10	33.521	25.422	256.2	0.189	5.06	83.0	9.5	1.05	11.1	0.04	0.32	0.38	59	215
69		11.78	11.77	33.606	25.550	244.2	0.214	4.55	74.2	12.1	1.18	13.1	0.03	0.21	0.26	69	214
75	ISL	11.47	11.46	33.613	25.613	238.3	0.228	4.39	71.1	13.9	1.29	14.7	0.02	0.16	0.20	75	
80	A	11.21	11.20	33.611	25.658	234.0	0.240	4.31	69.4	15.3	1.38	16.0	0.02	0.12	0.15	80	213
92		10.77	10.76	33.643	25.762	224.4	0.267	4.12	65.7	17.7	1.49	18.1	0.01	0.06	0.08	92	212
100	ISL	10.48	10.47	33.697	25.855	215.7	0.285	3.90	61.8	19.8	1.58	19.7	0.01	0.03	0.06	100	
105	A	10.31	10.30	33.734	25.913	210.3	0.296	3.76	59.4	21.2	1.64	20.6	0.01	0.02	0.06	106	211
118		9.94	9.93	33.796	26.025	199.9	0.322	3.48	54.6	23.9	1.75	22.6	0.01	0.01	0.06	119	210
125	ISL	9.76	9.75	33.826	26.078	195.0	0.336	3.34	52.2	25.2	1.79	23.4	0.01	0.01	0.05	126	
139		9.44	9.42	33.880	26.173	186.2	0.363	3.11	48.3	27.5	1.87	24.8	0.01	0.01	0.04	140	209
150	ISL	9.23	9.21	33.913	26.233	180.6	0.383	2.99	46.2	29.1	1.92	25.6	0.01	0.01	0.04	151	
169		8.93	8.91	33.965	26.322	172.5	0.417	2.79	42.8	31.9	2.02	26.9	0.01	0.00	0.04	170	208
199		8.64	8.62	34.054	26.438	162.0	0.467	2.29	34.9	36.9	2.22	29.3	0.01	0.00	0.04	200	207
200	ISL	8.64	8.62	34.058	26.441	161.8	0.468	2.27	34.6	37.0	2.23	29.3	0.01			201	
229		8.75	8.73	34.162	26.505	156.2	0.515	1.81	27.7	39.7	2.38	30.2	0.01			230	206
250	ISL	8.49	8.46	34.181	26.561	151.3	0.547	1.62	24.6	42.9	2.47	31.3	0.02			251	
270		8.18	8.15	34.188	26.614	146.5	0.577	1.48	22.4	46.1	2.55	32.4	0.03			272	205
300	ISL	8.05	8.02	34.243	26.677	141.0	0.620	1.13	17.0	50.0	2.70	33.6	0.02			302	
319		7.99	7.96	34.273	26.709	138.2	0.646	0.93	14.0	52.2	2.78	34.2	0.01			321	204
378		7.35	7.31	34.239	26.776	132.5	0.726	0.86	12.7	58.4	2.84	36.0	0.01			380	203
400	ISL	7.16	7.12	34.253	26.814	129.1	0.755	0.75	11.1	61.6	2.91	36.7	0.01			403	
436		6.87	6.83	34.286	26.880	123.2	0.800	0.55	8.1	66.9	3.03	37.9	0.00			439	202
500	ISL	6.43	6.38	34.311	26.959	116.3	0.877	0.38	5.5	74.2	3.14	39.5	0.00			503	
513		6.34	6.29	34.316	26.975	114.9	0.892	0.34	4.9	75.7	3.16	39.8	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 50.6 N	117 31.8 W	04/10/99	0107	UTC	854 m	300	09 kn	260 01 06	1	1015.5 mb	18.5 C	17.1 C		7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.03	19.03	33.637	23.973	392.6	0.000	5.52	104.1	2.0	0.28	0.1	0.00	0.14	0.02	0	
1		19.03	19.03	33.637	23.973	392.6	0.004	5.52	104.1	2.0	0.28	0.1	0.00	0.14	0.02	1	220
10	ISL	18.68	18.68	33.631	24.057	384.9	0.039	5.57	104.3	1.8	0.29	0.2	0.00	0.14	0.03	10	
15		18.30	18.30	33.620	24.143	376.9	0.058	5.59	104.0	1.8	0.29	0.3	0.00	0.14	0.03	15	219
20	ISL	17.93	17.93	33.600	24.219	369.9	0.077	5.70	105.2	1.9	0.32	0.4	0.02	0.25	0.08	20	
30		16.79	16.79	33.541	24.446	348.5	0.113	5.88	106.2	2.5	0.38	0.7	0.06	0.51	0.20	30	218
44		13.97	13.96	33.455	25.001	295.9	0.158	5.76	98.2	4.6	0.72	3.8	0.29	0.68	0.36	44	217
50	ISL	13.28	13.27	33.455	25.142	282.6	0.175	5.65	95.0	5.8	0.76	5.3	0.29	0.83	0.49	50	
55		12.83	12.82	33.471	25.244	273.0	0.189	5.47	91.1	7.1	0.80	6.9	0.29	0.88	0.56	55	216
65		11.99	11.98	33.571	25.483	250.4	0.215	4.71	77.1	11.3	1.11	12.0	0.13	0.42	0.44	65	215
75		11.32	11.31	33.674	25.688	231.2	0.239	4.01	64.8	15.9	1.38	16.6	0.04	0.14	0.22	75	214
85		10.92	10.91	33.735	25.807	220.0	0.262	3.65	58.5	18.5	1.50	18.3	0.10	0.08	0.19	85	213
95		10.81	10.80	33.764	25.849	216.2	0.284	3.41	54.5	20.1	1.59	19.3	0.01	0.09	0.18	95	212
100	ISL	10.70	10.69	33.776	25.878	213.6	0.294	3.38	53.9	20.5	1.61	19.6	0.01	0.07	0.15	100	
110		10.48	10.47	33.801	25.936	208.3	0.315	3.34	53.0	21.2	1.63	20.2	0.01	0.03	0.09	111	211
125		10.28	10.27	33.854	26.012	201.3	0.346	3.07	48.5	23.6	1.74	21.8	0.01	0.01	0.07	126	210
144		9.92	9.90	33.905	26.114	192.0	0.383	3.06	48.0	24.9	1.79	22.8	0.01	0.01	0.05	145	209
150	ISL	9.79	9.77	33.914	26.142	189.4	0.395	3.03	47.4	25.4	1.80	23.1	0.01	0.01	0.04	151	
168		9.44	9.42	33.947	26.226	181.7	0.428	2.96	45.9	27.7	1.88	24.3	0.01	0.00	0.03	169	208
199		9.02	9.00	34.097	26.412	164.7	0.482	2.22	34.2	34.9	2.19	27.8	0.01	0.00	0.03	200	207
200	ISL	9.01	8.99	34.102	26.417	164.1	0.484	2.20	33.9	35.1	2.20	27.9	0.01			201	
229		8.90	8.88	34.203	26.514	155.5	0.530	1.81	27.8	40.2	2.44	30.0	0.02			230	206
250	ISL	8.71	8.68	34.225	26.561	151.4	0.562	1.54	23.6	42.4	2.51	30.8	0.02			251	
268		8.52	8.49	34.230	26.595	148.4	0.589	1.34	20.4	44.0	2.54	31.3	0.02			270	205
300	ISL	8.22	8.19	34.260	26.665	142.3	0.636	1.07	16.2	48.3	2.68	32.5	0.01			302	
318		8.04	8.01	34.272	26.701	139.0	0.661	0.96	14.5	50.9	2.75	33.2	0.01			320	204
377		7.32	7.28	34.242	26.782	131.8	0.741	0.85	12.6	58.0	2.84	35.4	0.00			379	203
400	ISL	7.18	7.14	34.255	26.813	129.2	0.771	0.74	10.9	60.4	2.90	36.1	0.00			403	
436		7.00	6.96	34.283	26.860	125.2	0.817	0.56	8.2	64.2	2.99	37.0	0.01			439	202
500	ISL	6.52	6.47	34.307	26.944	117.8	0.895	0.37	5.4	71.9	3.11	38.8	0.00			503	
522		6.36	6.31	34.316	26.972	115.2	0.920	0.31	4.5	74.6	3.15	39.4	0.00			526	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 40.8 N	117 52.5 W	04/10/99	0502 UTC	614 m	330 09 kn			1016.9 mb	17.3 C	15.6 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.95	18.95	33.665	24.015	388.6	0.000	5.54	104.3	2.4	0.25	0.0	0.00	0.13	0.04	0	
1		18.95	18.95	33.665	24.015	388.7	0.004	5.54	104.3	2.4	0.25	0.0	0.00	0.13	0.04	1	220
10	ISL	18.48	18.48	33.652	24.123	378.7	0.038	5.65	105.5	2.4	0.26	0.1	0.00	0.15	0.06	10	
14		18.01	18.01	33.632	24.224	369.2	0.053	5.73	106.0	2.4	0.26	0.1	0.00	0.16	0.07	14	219
20	ISL	16.73	16.73	33.566	24.479	345.1	0.075	5.84	105.3	2.9	0.35	0.9	0.09	0.28	0.14	20	
30		14.49	14.49	33.483	24.914	303.9	0.107	5.92	102.0	4.1	0.53	2.8	0.26	0.49	0.28	30	218
45		12.89	12.88	33.424	25.196	277.4	0.151	5.49	91.5	6.5	0.77	6.4	0.37	0.63	0.38	45	217
50	ISL	12.58	12.57	33.442	25.270	270.4	0.165	5.32	88.1	7.4	0.85	7.7	0.25	0.59	0.38	50	
54		12.38	12.37	33.467	25.328	264.9	0.175	5.17	85.3	8.1	0.91	8.8	0.14	0.54	0.38	54	216
65		11.90	11.89	33.567	25.497	249.1	0.204	4.69	76.6	10.6	1.07	11.7	0.02	0.33	0.27	65	215
75		11.53	11.52	33.613	25.602	239.4	0.228	4.40	71.3	13.4	1.24	14.3	0.02	0.27	0.23	75	214
85		11.04	11.03	33.695	25.755	225.0	0.251	3.88	62.3	17.0	1.44	17.5	0.02	0.17	0.18	85	213
95		10.83	10.82	33.766	25.847	216.4	0.273	3.32	53.1	20.6	1.61	19.8	0.01	0.06	0.11	95	212
100	ISL	10.72	10.71	33.784	25.881	213.3	0.284	3.28	52.3	21.4	1.65	20.3	0.01	0.05	0.10	100	
110		10.52	10.51	33.810	25.936	208.2	0.305	3.19	50.7	22.3	1.69	20.9	0.01	0.03	0.09	111	211
125		10.33	10.32	33.869	26.016	201.1	0.336	2.91	46.0	24.4	1.80	22.2	0.01	0.02	0.08	126	210
143		10.03	10.01	33.975	26.150	188.6	0.371	2.40	37.7	28.5	1.99	24.9	0.01	0.01	0.06	144	209
150	ISL	9.95	9.93	34.008	26.189	185.1	0.384	2.26	35.5	29.7	2.05	25.7	0.01	0.01	0.06	151	
168		9.80	9.78	34.080	26.271	177.7	0.417	1.99	31.2	32.1	2.18	27.1	0.01	0.01	0.05	169	208
199		9.56	9.54	34.169	26.381	167.8	0.470	1.66	25.9	35.3	2.33	28.6	0.01	0.00	0.05	200	207
200	ISL	9.55	9.53	34.171	26.384	167.5	0.472	1.65	25.7	35.4	2.33	28.6	0.01			201	
229		9.33	9.30	34.210	26.451	161.7	0.520	1.50	23.3	37.8	2.41	29.3	0.01			230	206
250	ISL	8.94	8.91	34.202	26.507	156.6	0.553	1.55	23.8	40.0	2.43	29.9	0.00			251	
268		8.60	8.57	34.197	26.557	152.1	0.581	1.58	24.1	42.0	2.45	30.5	0.00			270	205
300	ISL	8.41	8.38	34.262	26.637	145.0	0.628	1.18	17.9	45.6	2.60	31.6	0.00			302	
318		8.31	8.28	34.295	26.679	141.3	0.654	0.93	14.1	48.0	2.70	32.3	0.00			320	204
377		7.13	7.09	34.212	26.785	131.4	0.734	0.91	13.4	59.2	2.84	36.1	0.00			379	203
400	ISL	6.96	6.92	34.231	26.824	128.0	0.764	0.78	11.5	62.2	2.90	36.8	0.00			403	
442		6.80	6.76	34.282	26.886	122.6	0.817	0.53	7.8	66.6	3.01	37.7	0.01			445	202
500	ISL	6.49	6.44	34.296	26.939	118.2	0.887	0.40	5.8	71.9	3.09	38.8	0.01			503	
518		6.39	6.34	34.301	26.956	116.7	0.908	0.36	5.2	73.5	3.11	39.2	0.01			522	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 30.9 N	118 12.6 W	04/10/99	0856 UTC	1669 m	310 12 kn			1017.0 mb	18.0 C	15.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.11	18.11	33.664	24.223	368.8	0.000	5.68	105.3	2.8	0.26	0.0	0.00	0.19	0.06	0	
1		18.11	18.11	33.664	24.223	368.8	0.004	5.68	105.3	2.8	0.26	0.0	0.00	0.19	0.06	1	220
10		18.08	18.08	33.656	24.225	369.0	0.037	5.63	104.3	2.8	0.25	0.0	0.00	0.18	0.06	10	219
20		16.34	16.34	33.565	24.568	336.5	0.072	6.03	107.9	2.5	0.32	0.0	0.01	0.23	0.13	20	218
30		14.87	14.87	33.509	24.853	309.7	0.104	5.80	100.8	3.8	0.52	2.5	0.25	0.32	0.23	30	217
40		13.25	13.24	33.315	25.040	292.1	0.135	5.76	96.7	4.7	0.68	3.6	0.42	0.34	0.23	40	216
50		12.95	12.94	33.569	25.296	267.9	0.163	5.05	84.4	9.3	0.95	9.2	0.46	0.54	0.41	50	215
60		12.03	12.02	33.587	25.488	249.9	0.188	4.64	76.0	12.5	1.18	13.1	0.11	0.32	0.30	60	214
69		11.92	11.91	33.592	25.513	247.7	0.211	4.60	75.2	12.7	1.20	13.4	0.09	0.32	0.28	69	213
75	ISL	11.71	11.70	33.611	25.567	242.7	0.226	4.47	72.8	13.6	1.26	14.4	0.07	0.30	0.27	75	
85		11.19	11.18	33.657	25.698	230.4	0.249	4.15	66.8	16.2	1.41	16.9	0.04	0.23	0.24	85	212
100		10.13	10.12	33.744	25.952	206.5	0.282	3.61	56.8	22.2	1.68	21.2	0.02	0.04	0.08	100	211
120		9.38	9.37	33.877	26.180	185.1	0.321	3.29	51.0	26.5	1.80	23.6	0.01	0.01	0.05	121	210
125	ISL	9.34	9.33	33.886	26.194	183.9	0.330	3.27	50.6	26.8	1.81	23.8	0.01	0.01	0.05	126	
139		9.27	9.25	33.897	26.214	182.2	0.356	3.23	49.9	27.4	1.83	24.0	0.01	0.01	0.04	140	209
150	ISL	9.03	9.01	33.929	26.278	176.3	0.376	3.18	48.9	29.1	1.87	24.7	0.01	0.01	0.03	151	
169		8.57	8.55	33.992	26.399	165.1	0.408	3.01	45.8	32.7	1.97	26.3	0.01	0.00	0.02	170	208
198		8.25	8.23	34.054	26.497	156.2	0.455	2.51	38.0	37.8	2.16	28.5	0.01	0.00	0.03	199	207
200	ISL	8.24	8.22	34.058	26.501	155.8	0.458	2.48	37.5	38.0	2.17	28.6	0.01			201	
229		8.19	8.17	34.102	26.544	152.3	0.503	2.02	30.5	41.3	2.34	30.3	0.01			230	206
250	ISL	8.02	7.99	34.127	26.589	148.3	0.534	1.72	25.9	44.5	2.46	31.6	0.00			251	
269		7.82	7.79	34.148	26.635	144.2	0.562	1.48	22.2	47.7	2.56	32.7	0.00			271	205
300	ISL	7.53	7.50	34.193	26.713	137.2	0.606	1.13	16.8	53.2	2.70	34.2	0.00			302	
319		7.36	7.33	34.218	26.757	133.3	0.631	0.95	14.1	56.4	2.78	35.0	0.00			321	204
374		6.98	6.94	34.247	26.833	126.7	0.703	0.68	10.0	62.7	2.93	36.8	0.00			376	203
400	ISL	6.81	6.77	34.260	26.867	123.8	0.735	0.58	8.5	65.6	2.98	37.5	0.00			403	
434		6.60	6.56	34.276	26.908	120.2	0.777	0.48	7.0	69.3	3.04	38.3	0.01			437	202
500	ISL	6.26	6.22	34.305	26.976	114.4	0.854	0.35	5.1	75.2	3.14	39.5	0.00			503	
516		6.18	6.13	34.312	26.992	113.1	0.872	0.32	4.6	76.6	3.16	39.8	0.00			520	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 20.6 N	118 33.2 W	04/10/99	1255	UTC	1376 m	310	12 kn			1016.7 mb	16.0 C	15.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	17.34	17.34	33.607	24.366	355.2	0.000	5.75	105.0	3.3	0.26	0.0	0.00	0.23	0.11	0	
1		17.34	17.34	33.607	24.366	355.2	0.004	5.75	105.0	3.3	0.26	0.0	0.00	0.23	0.11	1	220
10	ISL	17.34	17.34	33.605	24.365	355.6	0.036	5.75	105.0	3.3	0.26	0.0	0.00	0.23	0.08	10	
11		17.34	17.34	33.605	24.365	355.7	0.039	5.75	105.0	3.3	0.26	0.0	0.00	0.23	0.08	11	219
20		16.83	16.83	33.482	24.391	353.4	0.071	5.90	106.6	2.5	0.30	0.0	0.00	0.26	0.14	20	218
30	ISL	14.20	14.20	33.212	24.766	318.0	0.105	6.11	104.5	2.9	0.40	0.8	0.09	0.67	0.41	30	
31		13.91	13.91	33.189	24.808	313.9	0.108	6.12	104.1	2.9	0.41	0.9	0.10	0.71	0.44	31	217
41		12.35	12.34	33.079	25.033	292.7	0.138	5.97	98.2	4.1	0.56	2.4	0.32	0.54	0.46	41	216
48		11.51	11.50	33.041	25.160	280.7	0.158	5.88	95.0	5.1	0.64	4.0	0.20	0.49	0.41	48	215
50	ISL	11.47	11.46	33.067	25.188	278.1	0.164	5.83	94.1	5.4	0.67	4.6	0.17	0.46	0.39	50	
59		11.29	11.28	33.162	25.294	268.2	0.188	5.57	89.6	7.1	0.83	7.5	0.08	0.29	0.30	59	214
69		10.94	10.93	33.239	25.417	256.7	0.215	5.26	84.0	9.7	1.00	10.2	0.04	0.20	0.19	69	213
75	ISL	10.78	10.77	33.290	25.485	250.4	0.230	5.05	80.4	11.3	1.09	11.8	0.03	0.15	0.15	75	
84		10.60	10.59	33.390	25.594	240.1	0.252	4.70	74.6	13.9	1.24	14.4	0.02	0.10	0.11	84	212
99		10.44	10.43	33.652	25.827	218.4	0.286	3.95	62.6	19.3	1.55	19.2	0.02	0.05	0.08	99	211
100	ISL	10.41	10.40	33.663	25.841	217.1	0.288	3.92	62.1	19.6	1.56	19.4	0.02	0.05	0.08	100	
120		9.78	9.77	33.813	26.065	196.1	0.330	3.42	53.4	24.1	1.75	22.7	0.01	0.01	0.04	121	210
125	ISL	9.64	9.63	33.847	26.114	191.5	0.339	3.25	50.6	25.5	1.81	23.6	0.01	0.01	0.04	126	
138		9.32	9.30	33.924	26.227	181.0	0.364	2.85	44.1	29.2	1.96	25.6	0.01	0.01	0.06	139	209
150	ISL	9.03	9.01	33.966	26.307	173.6	0.385	2.75	42.3	31.7	2.03	26.7	0.01	0.01	0.06	151	
168		8.67	8.65	34.001	26.391	165.9	0.415	2.59	39.5	34.3	2.09	27.7	0.01	0.00	0.04	169	208
199		8.35	8.33	34.021	26.456	160.2	0.466	2.63	39.8	36.1	2.12	28.3	0.01	0.00	0.03	200	207
200	ISL	8.34	8.32	34.021	26.457	160.0	0.468	2.63	39.8	36.2	2.12	28.3	0.01			201	
228		7.97	7.95	34.041	26.529	153.6	0.511	2.55	38.3	39.6	2.19	29.3	0.01			229	206
250	ISL	7.77	7.75	34.089	26.596	147.5	0.545	2.11	31.6	44.1	2.36	31.0	0.02			251	
268		7.64	7.61	34.131	26.648	142.9	0.571	1.71	25.5	47.9	2.51	32.5	0.03			270	205
300	ISL	7.42	7.39	34.158	26.701	138.3	0.616	1.40	20.8	52.2	2.63	33.9	0.02			302	
317		7.32	7.29	34.166	26.722	136.5	0.639	1.30	19.3	54.1	2.68	34.4	0.01			319	204
378		7.05	7.01	34.232	26.812	128.8	0.720	0.78	11.5	61.5	2.90	36.6	0.01			380	203
400	ISL	6.97	6.93	34.251	26.838	126.6	0.748	0.66	9.7	63.7	2.95	37.1	0.01			403	
438		6.80	6.76	34.278	26.883	122.8	0.796	0.51	7.5	67.3	3.03	37.8	0.00			441	202
500	ISL	6.34	6.29	34.295	26.958	116.2	0.870	0.38	5.5	74.3	3.12	39.4	0.00			503	
519		6.20	6.15	34.301	26.981	114.2	0.892	0.34	4.9	76.4	3.15	39.9	0.00			523	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 11.0 N	118 53.3 W	04/10/99	1812	UTC	1455 m	320	14 kn	320 02 05	1	1018.0 mb	18.0 C	16.5 C	21m	6/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.90	18.90	33.701	24.055	384.8	0.000	5.45	102.6	2.8	0.32	0.0	0.00	0.20	0.04	0	
2	A	18.90	18.90	33.701	24.055	384.9	0.008	5.45	102.6	2.8	0.32	0.0	0.00	0.20	0.04	2	222
2		18.89	18.89	33.701	24.058	384.6	0.008									2	223
2		18.89	18.89	33.702	24.058	384.6	0.008									2	224
10	ISL	18.89	18.89	33.701	24.058	384.9	0.038	5.46	102.7	2.7	0.29	0.0	0.00	0.20	0.04	10	
14	A	18.89	18.89	33.701	24.058	385.0	0.054	5.47	102.9	2.7	0.27	0.0	0.00	0.20	0.04	14	221
20	ISL	18.59	18.59	33.680	24.118	379.6	0.077	5.55	103.8	2.7	0.28	0.0	0.00	0.22	0.05	20	
30	ISL	18.09	18.08	33.648	24.217	370.4	0.114	5.68	105.2	2.6	0.31	0.0	0.00	0.26	0.08	30	
31	A	18.04	18.03	33.645	24.227	369.5	0.118	5.69	105.3	2.6	0.31	0.0	0.00	0.26	0.08	31	220
37		16.93	16.92	33.607	24.464	347.0	0.140	5.96	107.9	3.1	0.31	0.0	0.00	0.35	0.14	37	219
46	A	15.30	15.29	33.565	24.802	315.0	0.169	6.15	107.8	4.1	0.39	0.0	0.01	0.75	0.34	46	218
50	ISL	14.70	14.69	33.553	24.924	303.6	0.182	6.08	105.3	4.4	0.41	0.3	0.02	0.77	0.39	50	
54		14.16	14.15	33.545	25.032	293.3	0.194	6.01	102.9	4.9	0.46	0.6	0.04	0.80	0.43	54	217
62	A	13.16	13.15	33.550	25.240	273.6	0.216	5.44	91.3	6.8	0.70	5.0	0.20	0.76	0.56	62	216
71		12.42	12.41	33.591	25.417	256.9	0.240	4.89	80.8	9.3	0.96	9.1	0.11	0.52	0.50	71	215
75	ISL	12.09	12.08	33.592	25.481	250.9	0.250	4.78	78.4	10.3	1.07	10.7	0.07	0.39	0.42	75	
81	A	11.63	11.62	33.603	25.576	242.0	0.265	4.61	74.9	12.1	1.21	12.9	0.02	0.21	0.27	81	214
87		11.24	11.23	33.654	25.687	231.6	0.279	4.26	68.7	14.9	1.31	15.3	0.01	0.12	0.14	87	213
94		10.93	10.92	33.688	25.769	223.9	0.295	4.08	65.3	16.5	1.40	16.8	0.01	0.08	0.10	94	212
100	ISL	10.69	10.68	33.726	25.841	217.1	0.308	3.85	61.3	18.3	1.49	18.1	0.01	0.06	0.08	100	
109		10.37	10.36	33.785	25.943	207.6	0.328	3.48	55.1	21.0	1.63	20.1	0.01	0.04	0.06	109	211
124		9.93	9.92	33.871	26.085	194.3	0.358	3.02	47.4	24.7	1.82	22.8	0.00	0.02	0.05	125	210
125	ISL	9.91	9.90	33.875	26.091	193.7	0.360	3.00	47.0	24.9	1.83	22.9	0.00	0.02	0.05	126	
144		9.58	9.56	33.941	26.198	183.9	0.396	2.76	43.0	27.9	1.94	24.7	0.00	0.01	0.03	145	209
150	ISL	9.44	9.42	33.966	26.241	180.0	0.406	2.71	42.1	29.1	1.98	25.2	0.00	0.01	0.03	151	
169		9.00	8.98	34.034	26.365	168.4	0.440	2.57	39.5	32.7	2.08	26.6	0.00	0.00	0.02	170	208
199		8.49	8.47	34.064	26.468	159.1	0.489	2.38	36.2	36.9	2.19	28.4	0.00	0.00	0.02	200	207
200	ISL	8.48	8.46	34.065	26.471	158.8	0.490	2.37	36.0	37.1	2.19	28.5	0.00			201	
228		8.12	8.10	34.102	26.554	151.3	0.534	2.07	31.2	41.8	2.34	30.3	0.00			229	206
250	ISL	7.87	7.84	34.122	26.607	146.5	0.566	1.85	27.7	45.2	2.45	31.6	0.01			251	
267		7.69	7.66	34.135	26.644	143.3	0.591	1.68	25.1	47.8	2.53	32.6	0.01			269	205
300	ISL	7.41	7.38	34.165	26.708	137.6	0.637	1.34	19.9	52.8	2.67	34.2	0.00			302	
319		7.26	7.23	34.183	26.744	134.5	0.663	1.16	17.2	55.7	2.74	35.0	0.00			321	204
377		6.75	6.72	34.236	26.856	124.4	0.738	0.71	10.4	64.7	2.95	37.5	0.00			379	203
400	ISL	6.61	6.57	34.247	26.884	122.0	0.767	0.61	8.9	67.3	3.00	38.2	0.00			403	
436		6.43	6.39	34.262	26.919	119.0	0.810	0.50	7.3	70.8	3.06	39.0	0.00			439	202
500	ISL	6.17	6.13	34.306	26.988	113.2	0.884	0.36	5.2	76.4	3.16	40.1	0.00			503	
521		6.09	6.04	34.321	27.011	111.3	0.908	0.31	4.5	78.3	3.19	40.4	0.00			525	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
32 0.8 N	119 13.9 W	04/10/99	2232 UTC	1585 m	310 18 kn	310 04 07	1	1016.1 mb	17.7 C	16.2 C	16m	4/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.99	18.99	33.710	24.039	386.3	0.000	5.44	102.6	2.5	0.26	0.0	0.00	0.17	0.03	0	
2		18.99	18.99	33.710	24.039	386.4	0.008	5.44	102.6	2.5	0.26	0.0	0.00	0.17	0.03	2	220
10	ISL	18.99	18.99	33.710	24.040	386.6	0.039	5.44	102.6	2.4	0.25	0.0	0.00	0.19	0.03	10	
15		18.99	18.99	33.710	24.040	386.8	0.058	5.44	102.6	2.4	0.25	0.0	0.00	0.19	0.03	15	219
20	ISL	18.89	18.89	33.704	24.061	385.0	0.077	5.47	102.9	2.4	0.25	0.0	0.00	0.16	0.03	20	
30		18.69	18.68	33.691	24.101	381.5	0.116	5.53	103.6	2.4	0.26	0.0	0.00	0.09	0.03	30	218
45		14.65	14.64	33.611	24.979	298.1	0.167	6.09	105.4	4.9	0.41	0.5	0.02	0.82	0.45	45	217
50	ISL	13.43	13.42	33.632	25.249	272.5	0.181	5.47	92.3	7.8	0.69	5.0	0.08	0.74	0.56	50	
56		12.34	12.33	33.667	25.491	249.5	0.196	4.69	77.4	11.1	1.02	10.3	0.13	0.57	0.62	56	216
65		12.02	12.01	33.673	25.557	243.5	0.219	4.44	72.8	12.4	1.12	12.1	0.08	0.44	0.47	65	215
74		11.44	11.43	33.703	25.688	231.1	0.240	3.98	64.4	15.2	1.33	15.7	0.02	0.19	0.34	74	214
75	ISL	11.37	11.36	33.709	25.706	229.5	0.242	3.93	63.5	15.6	1.35	16.1	0.02	0.17	0.32	75	
84		10.80	10.79	33.758	25.846	216.3	0.262	3.55	56.7	19.0	1.54	18.9	0.01	0.08	0.13	84	213
95		10.48	10.47	33.775	25.916	209.9	0.286	3.52	55.8	20.3	1.62	20.0	0.01	0.05	0.10	95	212
100	ISL	10.32	10.31	33.802	25.964	205.3	0.296	3.41	53.9	21.5	1.67	20.8	0.01	0.03	0.08	100	
110		10.03	10.02	33.863	26.062	196.3	0.316	3.15	49.5	24.0	1.78	22.4	0.01	0.01	0.05	111	211
125	ISL	9.71	9.70	33.924	26.163	186.9	0.345	2.88	45.0	26.7	1.90	24.1	0.01	0.01	0.04	126	
126		9.69	9.68	33.927	26.169	186.4	0.347	2.86	44.6	26.9	1.91	24.2	0.01	0.01	0.04	127	210
143		9.41	9.39	33.980	26.256	178.3	0.378	2.57	39.9	29.8	2.06	26.1	0.01	0.00	0.03	144	209
150	ISL	9.32	9.30	33.994	26.282	176.0	0.390	2.53	39.2	30.6	2.08	26.4	0.01	0.00	0.03	151	
171		9.04	9.02	34.030	26.355	169.4	0.427	2.48	38.2	32.8	2.12	27.1	0.01	0.00	0.03	172	208
200	ISL	8.53	8.51	34.091	26.483	157.7	0.474	2.18	33.2	38.1	2.26	29.2	0.01	0.00	0.02	201	
201		8.51	8.49	34.093	26.488	157.2	0.476	2.17	33.0	38.3	2.27	29.3	0.01	0.00	0.02	202	207
231		8.22	8.20	34.129	26.561	150.8	0.522	1.88	28.4	42.4	2.40	30.8	0.01			232	206
250	ISL	8.02	7.99	34.146	26.604	146.9	0.550	1.71	25.7	45.2	2.48	31.7	0.01			251	
268		7.83	7.80	34.160	26.643	143.4	0.576	1.55	23.2	47.8	2.55	32.5	0.01			270	205
300	ISL	7.54	7.51	34.178	26.700	138.5	0.621	1.32	19.6	52.3	2.66	33.9	0.00			302	
320		7.38	7.35	34.190	26.732	135.6	0.649	1.18	17.5	54.9	2.73	34.7	0.00			322	204
374		7.09	7.05	34.238	26.811	128.9	0.720	0.79	11.6	60.9	2.90	36.3	0.00			376	203
400	ISL	6.87	6.83	34.251	26.852	125.2	0.753	0.66	9.7	64.4	2.97	37.3	0.00			403	
437		6.54	6.50	34.268	26.910	120.0	0.799	0.51	7.4	69.7	3.05	38.6	0.00			440	202
500	ISL	6.03	5.99	34.306	27.006	111.3	0.871	0.34	4.9	78.4	3.17	40.3	0.00			503	
509		5.96	5.92	34.312	27.020	110.1	0.881	0.31	4.4	79.6	3.19	40.5	0.00			512	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 50.4 N	119 34.9 W	05/10/99	0225 UTC	2108 m	310 21 kn			1015.8 mb	17.1 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.83	18.83	33.676	24.054	384.9	0.000	5.48	103.0	2.4	0.25	0.0	0.00	0.15	0.03	0	
2		18.83	18.83	33.676	24.054	385.0	0.008	5.48	103.0	2.4	0.25	0.0	0.00	0.15	0.03	2	220
10	ISL	18.80	18.80	33.666	24.054	385.3	0.039	5.48	102.9	2.4	0.26	0.1	0.00	0.15	0.03	10	
14		18.78	18.78	33.661	24.055	385.3	0.054	5.48	102.9	2.4	0.27	0.1	0.00	0.15	0.03	14	219
20	ISL	18.01	18.01	33.584	24.187	372.9	0.077	5.66	104.7	2.5	0.28	0.2	0.01	0.24	0.05	20	
30	ISL	16.40	16.40	33.463	24.476	345.6	0.113	5.97	106.9	2.6	0.32	0.3	0.02	0.43	0.15	30	
35		15.44	15.43	33.412	24.653	328.9	0.129	6.12	107.5	2.7	0.35	0.3	0.03	0.55	0.23	35	218
44		14.18	14.17	33.389	24.907	304.9	0.158	6.16	105.4	3.5	0.43	0.9	0.05	0.71	0.44	44	217
50	ISL	13.34	13.33	33.407	25.093	287.3	0.176	5.84	98.3	4.5	0.65	3.7	0.20	0.58	0.43	50	
55		12.78	12.77	33.447	25.235	273.8	0.190	5.48	91.2	5.7	0.83	6.4	0.29	0.43	0.42	55	216
65		12.48	12.47	33.591	25.405	257.9	0.216	4.89	80.9	8.7	0.92	9.2	0.08	0.31	0.42	65	215
75		11.89	11.88	33.650	25.564	243.0	0.241	4.39	71.7	11.9	1.14	12.8	0.05	0.19	0.29	75	214
86		11.25	11.24	33.710	25.728	227.6	0.267	3.86	62.3	16.0	1.37	16.6	0.02	0.11	0.19	86	213
96		10.87	10.86	33.747	25.825	218.5	0.290	3.58	57.3	18.2	1.50	18.6	0.02	0.07	0.14	96	212
100	ISL	10.66	10.65	33.772	25.882	213.2	0.298	3.42	54.5	19.6	1.58	19.7	0.02	0.06	0.12	100	
111		10.08	10.07	33.849	26.042	198.1	0.321	2.99	47.0	23.5	1.78	22.8	0.01	0.03	0.08	112	211
125		9.64	9.63	33.931	26.180	185.3	0.348	2.72	42.4	27.3	1.93	25.0	0.01	0.03	0.08	126	210
145		9.49	9.47	34.024	26.278	176.4	0.384	2.56	39.8	30.0	2.02	25.9	0.01	0.00	0.04	146	209
150	ISL	9.45	9.43	34.034	26.292	175.1	0.393	2.55	39.6	30.4	2.03	26.0	0.01	0.00	0.04	151	
169		9.24	9.22	34.053	26.341	170.8	0.425	2.49	38.5	31.9	2.07	26.5	0.01	0.00	0.04	170	208
200	ISL	8.66	8.64	34.097	26.468	159.2	0.477	2.21	33.7	37.1	2.23	28.7	0.01	0.00	0.03	201	
202		8.62	8.60	34.100	26.477	158.4	0.480	2.19	33.4	37.5	2.24	28.9	0.01	0.00	0.03	203	207
232		8.26	8.24	34.130	26.556	151.3	0.526	1.85	28.0	41.8	2.39	30.9	0.01			233	206
250	ISL	8.02	7.99	34.135	26.596	147.7	0.553	1.75	26.3	44.3	2.45	31.7	0.01			251	
273		7.73	7.70	34.139	26.641	143.6	0.587	1.65	24.7	47.4	2.52	32.5	0.00			275	205
300	ISL	7.48	7.45	34.152	26.688	139.6	0.625	1.45	21.6	51.1	2.62	33.6	0.00			302	
325		7.28	7.25	34.169	26.730	135.9	0.659	1.23	18.2	54.8	2.72	34.6	0.01			327	204
381		6.78	6.74	34.233	26.850	125.1	0.732	0.69	10.1	64.5	2.95	37.4	0.01			383	203
400	ISL	6.68	6.64	34.251	26.877	122.7	0.756	0.58	8.5	66.7	3.00	38.0	0.01			403	
436		6.51	6.47	34.280	26.923	118.7	0.799	0.45	6.5	70.3	3.06	38.8	0.01			439	202
500	ISL	6.13	6.09	34.308	26.995	112.5	0.873	0.34	4.9	77.0	3.16	40.1	0.01			503	
508		6.08	6.04	34.312	27.005	111.6	0.882	0.33	4.8	77.8	3.17	40.3	0.01			511	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 30.6 N	120 14.9 W	05/10/99	0811	UTC	3935 m	310	15 kn			1016.7 mb	17.3 C	16.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.18	18.18	33.567	24.132	377.5	0.000	5.57	103.3	2.1	0.30	0.0	0.00	0.13	0.03	0	
2		18.18	18.18	33.567	24.132	377.5	0.008	5.57	103.3	2.1	0.30	0.0	0.00	0.13	0.03	2	220
10	ISL	18.18	18.18	33.566	24.131	377.9	0.038	5.58	103.5	2.1	0.29	0.0	0.00	0.13	0.03	10	
16		18.18	18.18	33.566	24.132	378.1	0.060	5.60	103.9	2.0	0.29	0.0	0.00	0.13	0.03	16	219
20	ISL	18.15	18.15	33.564	24.138	377.6	0.076	5.61	104.0	2.0	0.29	0.0	0.00	0.14	0.03	20	
30	ISL	18.06	18.05	33.559	24.156	376.2	0.113	5.64	104.4	1.9	0.29	0.0	0.00	0.17	0.04	30	
31		18.05	18.04	33.559	24.159	376.0	0.117	5.64	104.3	1.9	0.29	0.0	0.00	0.17	0.04	31	218
45		16.96	16.95	33.518	24.389	354.5	0.168	5.92	107.2	2.0	0.30	0.0	0.00	0.26	0.09	45	217
50	ISL	16.03	16.02	33.471	24.568	337.6	0.185	6.07	107.9	2.3	0.33	0.1	0.01	0.32	0.11	50	
55		15.12	15.11	33.434	24.741	321.1	0.202	6.19	108.0	2.7	0.37	0.2	0.02	0.37	0.14	55	216
65		14.31	14.30	33.426	24.909	305.4	0.233	6.11	104.9	3.4	0.46	1.4	0.11	0.34	0.22	65	215
75	ISL	13.45	13.44	33.431	25.090	288.3	0.263	5.81	98.0	4.5	0.63	3.7	0.39	0.32	0.24	75	
77		13.29	13.28	33.434	25.125	285.0	0.269	5.74	96.5	4.8	0.67	4.3	0.43	0.32	0.24	77	214
86		12.68	12.67	33.451	25.259	272.4	0.294	5.48	91.0	6.1	0.80	6.7	0.33	0.28	0.32	86	213
97		12.05	12.04	33.519	25.432	256.1	0.323	5.08	83.2	8.8	1.03	10.8	0.03	0.16	0.26	97	212
100	ISL	11.93	11.92	33.540	25.471	252.5	0.330	4.99	81.6	9.4	1.06	11.4	0.03	0.14	0.23	100	
111		11.53	11.52	33.615	25.604	240.0	0.358	4.68	75.9	11.8	1.16	13.2	0.02	0.08	0.12	111	211
125	ISL	10.84	10.82	33.685	25.783	223.2	0.390	4.23	67.6	16.7	1.43	17.6	0.02	0.05	0.06	126	
126		10.79	10.77	33.690	25.796	222.0	0.392	4.20	67.0	17.1	1.45	17.9	0.02	0.05	0.06	127	210
148		10.06	10.04	33.785	25.996	203.3	0.439	3.65	57.4	21.7	1.65	21.2	0.01	0.01	0.04	149	209
150	ISL	9.98	9.96	33.796	26.018	201.2	0.443	3.62	56.8	22.2	1.66	21.5	0.01	0.01	0.04	151	
170		9.20	9.18	33.903	26.231	181.3	0.481	3.44	53.1	26.5	1.78	23.7	0.01	0.01	0.03	171	208
200	ISL	8.78	8.76	33.969	26.349	170.5	0.534	3.32	50.8	29.8	1.85	25.2	0.01	0.00	0.03	201	
203		8.76	8.74	33.972	26.355	170.0	0.539	3.31	50.6	30.1	1.86	25.3	0.01	0.00	0.03	204	207
238		8.19	8.17	34.009	26.471	159.4	0.597	3.21	48.5	34.9	1.98	27.1	0.00			239	206
250	ISL	7.89	7.86	34.011	26.517	155.1	0.616	3.10	46.5	37.8	2.06	28.1	0.00			251	
274		7.33	7.30	34.018	26.603	147.0	0.652	2.78	41.1	43.9	2.24	30.4	0.01			276	205
300	ISL	7.14	7.11	34.054	26.658	142.1	0.689	2.20	32.4	49.0	2.44	32.7	0.00			302	
315		7.08	7.05	34.075	26.683	139.9	0.711	1.87	27.5	51.7	2.54	33.9	0.00			317	204
366		6.40	6.37	34.092	26.788	130.3	0.780	1.42	20.6	62.2	2.76	37.3	0.01			368	203
400	ISL	6.09	6.06	34.126	26.855	124.2	0.823	1.09	15.7	68.9	2.90	39.0	0.01			402	
432		5.87	5.83	34.163	26.912	119.0	0.862	0.83	11.9	74.5	3.02	40.3	0.00			435	202
500	ISL	5.61	5.57	34.232	27.000	111.4	0.940	0.64	9.1	82.1	3.16	41.7	0.00			503	
504		5.60	5.56	34.236	27.004	111.1	0.944	0.63	9.0	82.5	3.17	41.8	0.00			507	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
31 10.9 N	120 56.4 W	05/10/99	1748	UTC	3863 m	330	18 kn	340 04 05	0	1019.0 mb	19.0 C	17.0 C	30m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.19	18.19	33.286	23.914	398.2	0.000	5.52	102.2	3.5	0.31	0.0	0.00	0.13	0.03	0	
1		18.19	18.19	33.285	23.914	398.3	0.004									1	223
2		18.19	18.19	33.285	23.914	398.4	0.008									2	224
3	A	18.19	18.19	33.286	23.914	398.3	0.012	5.52	102.2	3.5	0.31	0.0	0.00	0.13	0.03	3	222
10	ISL	18.18	18.18	33.285	23.916	398.4	0.040	5.53	102.4	3.5	0.30	0.0	0.00	0.13	0.03	10	
12		18.18	18.18	33.285	23.917	398.4	0.048	5.53	102.4	3.5	0.30	0.0	0.00	0.13	0.03	12	221
20	ISL	18.16	18.16	33.284	23.921	398.3	0.080	5.52	102.2	3.3	0.30	0.0	0.00	0.13	0.03	20	
22	A	18.15	18.15	33.284	23.924	398.1	0.088	5.52	102.2	3.3	0.30	0.0	0.00	0.13	0.03	22	220
30	ISL	18.04	18.03	33.279	23.947	396.2	0.119	5.57	102.9	3.4	0.30	0.0	0.00	0.15	0.03	30	
34		17.98	17.97	33.277	23.960	395.0	0.135	5.59	103.1	3.4	0.30	0.0	0.00	0.16	0.03	34	219
45	A	15.65	15.64	33.166	24.418	351.6	0.176	6.16	108.5	3.2	0.30	0.0	0.00	0.21	0.06	45	218
50	ISL	15.08	15.07	33.147	24.529	341.2	0.194	6.22	108.3	3.2	0.32	0.0	0.00	0.23	0.07	50	
56		14.57	14.56	33.139	24.632	331.4	0.214	6.30	108.5	3.3	0.34	0.0	0.00	0.25	0.09	56	217
66	A	13.63	13.62	33.160	24.844	311.5	0.246	6.25	105.6	3.3	0.30	0.0	0.00	0.27	0.10	66	216
75	ISL	13.27	13.26	33.210	24.955	301.0	0.273	6.18	103.7	3.5	0.31	0.0	0.00	0.30	0.20	75	
76		13.24	13.23	33.215	24.965	300.1	0.277	6.17	103.5	3.5	0.31	0.0	0.00	0.30	0.21	76	215
87	A	12.65	12.64	33.212	25.079	289.5	0.309	6.06	100.4	3.8	0.38	0.3	0.04	0.35	0.30	87	214
97		12.10	12.09	33.242	25.208	277.4	0.337	5.83	95.5	4.5	0.49	2.0	0.14	0.25	0.25	97	213
100	ISL	11.99	11.98	33.252	25.236	274.8	0.346	5.76	94.1	4.8	0.52	2.6	0.12	0.22	0.24	100	
107		11.79	11.78	33.273	25.290	269.8	0.365	5.62	91.4	5.6	0.59	3.9	0.05	0.17	0.23	107	212
116	A	11.56	11.55	33.286	25.343	264.9	0.389	5.56	90.0	6.3	0.64	4.9	0.03	0.16	0.19	116	211
125	ISL	11.38	11.36	33.332	25.412	258.6	0.412	5.35	86.3	7.6	0.74	6.6	0.02	0.13	0.15	126	
128		11.28	11.26	33.352	25.445	255.4	0.420	5.24	84.4	8.4	0.80	7.6	0.02	0.11	0.14	129	210
139		10.50	10.48	33.429	25.643	236.7	0.447	4.62	73.2	14.7	1.24	14.6	0.01	0.05	0.05	140	209
150	ISL	9.99	9.97	33.537	25.815	220.5	0.472	4.14	64.9	19.7	1.52	19.0	0.01	0.03	0.04	151	
164		9.56	9.54	33.673	25.992	203.9	0.502	3.69	57.3	24.5	1.74	22.5	0.01	0.01	0.02	165	208
193		8.90	8.88	33.837	26.227	182.0	0.558	3.22	49.3	30.1	1.94	25.9	0.01	0.00	0.02	194	207
200	ISL	8.81	8.79	33.869	26.266	178.4	0.570	3.14	48.0	31.1	1.97	26.4	0.01			201	
228		8.50	8.48	33.968	26.392	166.8	0.619	2.89	43.9	34.8	2.07	28.0	0.01			229	206
250	ISL	8.08	8.05	34.009	26.488	158.0	0.654	2.75	41.4	38.7	2.15	29.1	0.01			251	
268		7.72	7.69	34.028	26.556	151.6	0.682	2.63	39.3	42.2	2.22	30.1	0.01			269	205
300	ISL	7.26	7.23	34.048	26.637	144.2	0.730	2.23	33.0	48.2	2.41	32.5	0.01			302	
320		7.01	6.98	34.054	26.677	140.6	0.758	1.96	28.8	52.0	2.54	34.1	0.01			322	204
378		6.20	6.17	34.068	26.795	129.6	0.837	1.44	20.8	64.1	2.77	37.5	0.01			380	203
400	ISL	6.09	6.06	34.101	26.835	126.0	0.865	1.18	17.0	68.0	2.88	38.5	0.01			402	
439		5.97	5.93	34.164	26.901	120.3	0.913	0.77	11.0	74.2	3.05	39.9	0.01			442	202
500	ISL	5.57	5.53	34.203	26.981	113.1	0.984	0.52	7.4	82.7	3.16	41.4	0.01			503	
510		5.50	5.46	34.210	26.995	111.8	0.995	0.48	6.8	84.1	3.18	41.7	0.01			513	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 51.0 N	121 35.4 W	05/10/99	2329	UTC	4092 m	320	14 kn	320 03 07	0	1017.8 mb	18.8 C	16.9 C	29m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.47	18.47	33.270	23.833	406.0	0.000	5.52	102.8	2.7	0.30	0.1	0.00	0.09	0.02	0	
1		18.47	18.47	33.270	23.833	406.0	0.004	5.52	102.8	2.7	0.30	0.1	0.00	0.09	0.02	1	220
10	ISL	18.45	18.45	33.269	23.838	405.9	0.041	5.52	102.7	2.6	0.30	0.0	0.00	0.08	0.01	10	
15		18.44	18.44	33.273	23.843	405.5	0.061	5.52	102.7	2.6	0.30	0.0	0.00	0.08	0.01	15	219
20	ISL	18.40	18.40	33.272	23.853	404.8	0.081	5.52	102.6	2.6	0.30	0.0	0.00	0.08	0.01	20	
29		18.33	18.32	33.270	23.869	403.6	0.118	5.53	102.7	2.6	0.30	0.0	0.00	0.10	0.02	29	218
30	ISL	18.31	18.30	33.271	23.875	403.1	0.122	5.54	102.8	2.6	0.30	0.0	0.00	0.10	0.02	30	
45		17.44	17.43	33.254	24.073	384.6	0.181	5.84	106.6	2.4	0.30	0.0	0.00	0.17	0.05	45	217
50	ISL	16.74	16.73	33.219	24.211	371.6	0.200	5.96	107.3	2.4	0.31	0.0	0.00	0.20	0.07	50	
60		15.26	15.25	33.150	24.492	344.9	0.235	6.18	108.0	2.5	0.32	0.0	0.00	0.24	0.11	60	216
75		13.91	13.90	33.067	24.715	324.0	0.286	6.27	106.5	2.7	0.33	0.0	0.00	0.27	0.22	75	215
85		12.79	12.78	33.074	24.945	302.2	0.317	6.18	102.6	3.3	0.39	0.2	0.05	0.29	0.22	85	214
95		12.26	12.25	33.101	25.068	290.7	0.346	5.99	98.3	3.8	0.47	1.4	0.22	0.25	0.24	95	213
100	ISL	11.95	11.94	33.097	25.124	285.5	0.361	5.92	96.5	4.1	0.52	2.3	0.15	0.22	0.22	100	
105		11.66	11.65	33.094	25.175	280.6	0.375	5.85	94.8	4.6	0.58	3.2	0.06	0.18	0.18	105	212
115		11.23	11.22	33.125	25.278	271.1	0.403	5.71	91.7	6.0	0.67	5.0	0.02	0.10	0.11	115	211
125		10.85	10.83	33.190	25.396	259.9	0.429	5.41	86.2	8.6	0.87	8.3	0.01	0.06	0.07	126	210
141		10.65	10.63	33.309	25.524	248.1	0.470	5.04	80.0	11.2	1.05	11.5	0.01	0.04	0.05	142	209
150	ISL	10.36	10.34	33.425	25.665	234.9	0.492	4.63	73.1	14.5	1.24	14.7	0.01	0.03	0.04	151	
165		9.83	9.81	33.628	25.913	211.5	0.525	3.95	61.7	20.4	1.55	19.9	0.01	0.01	0.03	166	208
197		9.25	9.23	33.878	26.203	184.4	0.588	3.42	52.8	26.6	1.78	23.9	0.01	0.00	0.02	198	207
200	ISL	9.21	9.19	33.892	26.221	182.8	0.594	3.42	52.8	26.9	1.78	24.0	0.01			201	
233		8.71	8.69	33.991	26.378	168.4	0.652	3.42	52.2	30.1	1.83	24.9	0.01			234	206
250	ISL	8.36	8.33	34.013	26.449	161.8	0.680	3.14	47.6	33.9	1.96	26.8	0.00			251	
266		8.03	8.00	34.026	26.509	156.2	0.705	2.81	42.3	38.0	2.11	28.8	0.00			267	205
300	ISL	7.52	7.49	34.054	26.605	147.4	0.757	2.22	33.0	45.3	2.37	32.0	0.01			302	
315		7.33	7.30	34.064	26.640	144.2	0.779	1.99	29.5	48.3	2.47	33.2	0.01			317	204
380		6.59	6.56	34.095	26.766	132.8	0.869	1.40	20.4	59.8	2.77	36.8	0.00			382	203
400	ISL	6.36	6.32	34.091	26.793	130.3	0.895	1.31	19.0	63.0	2.82	37.8	0.00			402	
438		6.00	5.96	34.093	26.841	125.9	0.944	1.14	16.4	68.6	2.89	39.5	0.01			441	202
500	ISL	5.81	5.77	34.196	26.947	116.6	1.019	0.62	8.9	77.1	3.10	41.0	0.00			503	
506		5.79	5.75	34.206	26.957	115.7	1.026	0.57	8.1	77.9	3.12	41.2	0.00			509	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 30.9 N	122 15.7 W	06/10/99	0511	UTC	4156 m	340	16 kn			1018.4 mb	18.9 C	16.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.20	19.20	33.466	23.800	409.2	0.000	5.41	102.2	2.8	0.29	0.1	0.00	0.07	0.01	0	
2		19.20	19.20	33.466	23.800	409.2	0.008	5.41	102.2	2.8	0.29	0.1	0.00	0.07	0.01	2	220
10	ISL	19.21	19.21	33.467	23.798	409.7	0.041	5.41	102.3	2.7	0.29	0.0	0.00	0.08	0.01	10	
16		19.21	19.21	33.467	23.799	409.9	0.066	5.41	102.3	2.6	0.29	0.0	0.00	0.08	0.01	16	219
20	ISL	19.19	19.19	33.466	23.803	409.6	0.082	5.42	102.4	2.6	0.29	0.0	0.00	0.08	0.01	20	
30	ISL	19.14	19.13	33.465	23.815	408.8	0.123	5.43	102.5	2.6	0.29	0.0	0.00	0.08	0.02	30	
31		19.13	19.12	33.465	23.818	408.5	0.127	5.43	102.5	2.6	0.29	0.0	0.00	0.08	0.02	31	218
45		17.11	17.10	33.496	24.337	359.4	0.181	5.92	107.5	2.6	0.24	0.0	0.00	0.12	0.03	45	217
50	ISL	16.56	16.55	33.490	24.461	347.8	0.198	5.96	107.1	2.6	0.25	0.0	0.00	0.13	0.04	50	
61		15.66	15.65	33.469	24.650	330.1	0.236	6.04	106.6	2.7	0.27	0.0	0.00	0.16	0.05	61	216
74		15.19	15.18	33.464	24.750	320.9	0.278	5.99	104.7	2.6	0.27	0.0	0.00	0.23	0.12	74	215
75	ISL	15.15	15.14	33.463	24.758	320.1	0.281	5.98	104.4	2.6	0.27	0.0	0.00	0.24	0.13	75	
84		14.82	14.81	33.475	24.839	312.6	0.310	5.91	102.5	2.7	0.30	0.1	0.00	0.29	0.24	84	214
95		14.78	14.77	33.559	24.912	306.0	0.344	5.78	100.2	2.8	0.30	0.1	0.04	0.27	0.29	95	213
100	ISL	14.77	14.76	33.613	24.956	301.9	0.359	5.73	99.4	2.9	0.31	0.2	0.09	0.24	0.26	100	
105		14.76	14.74	33.676	25.007	297.3	0.374	5.68	98.5	3.0	0.31	0.4	0.14	0.21	0.22	105	212
116		15.11	15.09	33.946	25.140	285.1	0.406	5.58	97.6	3.1	0.28	0.7	0.18	0.13	0.16	116	211
125		14.96	14.94	33.996	25.212	278.5	0.431	5.45	95.1	3.5	0.34	1.7	0.14	0.03	0.03	126	210
140		13.17	13.15	33.751	25.396	261.0	0.472	5.01	84.2	6.4	0.65	6.5	0.01	0.03	0.03	141	209
150	ISL	12.44	12.42	33.706	25.505	250.7	0.497	4.79	79.2	8.2	0.80	8.7	0.01	0.02	0.02	151	
166		11.59	11.57	33.723	25.678	234.4	0.536	4.50	73.1	11.3	1.00	11.7	0.01	0.01	0.01	167	208
195		10.08	10.06	33.833	26.031	201.0	0.599	4.00	62.9	19.2	1.41	18.3	0.01	0.01	0.01	196	207
200	ISL	9.89	9.87	33.852	26.078	196.6	0.609	3.94	61.7	20.4	1.46	19.1	0.01			201	
230		8.99	8.97	33.950	26.302	175.7	0.665	3.61	55.5	26.8	1.70	23.0	0.00			231	206
250	ISL	8.60	8.57	33.983	26.389	167.6	0.699	3.42	52.1	30.3	1.81	24.8	0.00			251	
270		8.28	8.25	34.001	26.452	161.8	0.732	3.22	48.7	33.7	1.92	26.3	0.00			271	205
300	ISL	7.72	7.69	34.021	26.551	152.7	0.779	2.79	41.7	40.2	2.13	29.0	0.00			302	
320		7.37	7.34	34.031	26.609	147.3	0.809	2.48	36.7	44.7	2.28	30.8	0.00			322	204
379		6.64	6.61	34.070	26.740	135.3	0.893	1.70	24.8	56.8	2.61	35.1	0.00			381	203
400	ISL	6.45	6.41	34.088	26.779	131.7	0.921	1.44	20.9	60.8	2.72	36.5	0.00			402	
435		6.19	6.15	34.121	26.839	126.3	0.966	1.06	15.3	67.1	2.87	38.4	0.00			438	202
500	ISL	5.83	5.79	34.191	26.940	117.3	1.045	0.64	9.2	76.6	3.06	40.4	0.00			503	
512		5.76	5.72	34.204	26.959	115.5	1.059	0.56	8.0	78.4	3.09	40.8	0.00			515	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
30 11.1 N	122 54.9 W	06/10/99	1054	UTC	3978 m	320	10 kn			1018.1 mb	18.0 C	16.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	19.00	19.00	33.296	23.720	416.7	0.000	5.43	102.1	2.7	0.30	0.1	0.00	0.08	0.02	0	
2		19.00	19.00	33.296	23.721	416.8	0.008	5.43	102.1	2.7	0.30	0.1	0.00	0.08	0.02	2	220
10	ISL	19.00	19.00	33.296	23.721	417.0	0.042	5.43	102.1	2.7	0.29	0.0	0.00	0.08	0.02	10	
16		19.00	19.00	33.296	23.721	417.2	0.067	5.43	102.1	2.6	0.29	0.0	0.00	0.08	0.02	16	219
20	ISL	18.88	18.88	33.282	23.741	415.5	0.083	5.44	102.1	2.6	0.29	0.0	0.00	0.08	0.02	20	
30	ISL	18.58	18.57	33.248	23.790	411.1	0.125	5.53	103.2	2.5	0.29	0.0	0.00	0.10	0.02	30	
31		18.55	18.54	33.245	23.795	410.7	0.129	5.55	103.5	2.5	0.29	0.0	0.00	0.10	0.02	31	218
44		17.07	17.06	33.475	24.330	360.0	0.179	5.94	107.8	2.6	0.24	0.0	0.00	0.11	0.03	44	217
50	ISL	16.84	16.83	33.578	24.463	347.5	0.200	5.96	107.7	2.6	0.22	0.0	0.00	0.12	0.03	50	
60		16.57	16.56	33.694 D	24.616	333.4	0.234	5.99	107.8	2.6	0.20	0.0	0.00	0.14	0.04	60	216
75		15.37	15.36	33.667	24.867	309.8	0.282	5.98	105.0	2.7	0.22	0.0	0.00	0.19	0.07	75	215
85		15.25	15.24	33.723	24.937	303.5	0.313	5.92	103.8	2.7	0.22	0.0	0.00	0.20	0.11	85	214
95		15.28	15.27	33.820	25.005	297.3	0.343	5.85	102.7	2.8	0.21	0.0	0.00	0.22	0.17	95	213
100	ISL	15.28	15.26	33.880	25.051	293.0	0.358	5.79	101.6	2.8	0.21	0.0	0.00	0.22	0.19	100	
105		15.28	15.26	33.942	25.099	288.6	0.372	5.72	100.4	2.9	0.21	0.0	0.01	0.22	0.21	105	212
116		15.23	15.21	34.051	25.195	279.9	0.404	5.53	97.1	3.1	0.24	0.5	0.15	0.20	0.19	116	211
124		14.92	14.90	34.005	25.227	277.0	0.426	5.51	96.1	3.2	0.27	1.0	0.12	0.18	0.18	124	210
125	ISL	14.89	14.87	34.004	25.233	276.5	0.429	5.50	95.9	3.2	0.27	1.1	0.11	0.18	0.18	126	
139		14.40	14.38	33.991	25.328	267.7	0.467	5.34	92.1	3.9	0.36	2.4	0.03	0.13	0.18	140	209
150	ISL	13.49	13.47	33.886	25.436	257.5	0.496	5.21	88.2	5.3	0.52	4.6	0.02	0.10	0.14	151	
164		12.17	12.15	33.755	25.595	242.5	0.531	4.96	81.6	8.3	0.78	8.4	0.01	0.06	0.08	165	208
193		10.31	10.29	33.751	25.928	210.8	0.596	3.90	61.6	18.5	1.45	18.7	0.00	0.00	0.02	194	207
200	ISL	10.05	10.03	33.777	25.993	204.8	0.611	3.80	59.7	20.0	1.52	19.9	0.00			201	
229		9.31	9.28	33.903	26.214	184.1	0.667	3.51	54.3	25.2	1.69	22.9	0.00			230	206
250	ISL	8.90	8.87	33.970	26.332	173.1	0.705	3.07	47.1	30.0	1.89	25.5	0.00			251	
269		8.57	8.54	34.012	26.417	165.3	0.737	2.69	41.0	34.3	2.05	27.6	0.00			270	205
300	ISL	7.95	7.92	34.032	26.526	155.2	0.787	2.55	38.3	39.5	2.16	29.5	0.00			302	
320		7.58	7.55	34.035	26.582	150.0	0.817	2.50	37.2	42.7	2.22	30.4	0.00			322	204
374		6.92	6.88	34.082	26.712	138.1	0.895	1.72	25.2	54.1	2.56	34.5	0.00			376	203
400	ISL	6.54	6.50	34.086	26.766	133.0	0.930	1.47	21.4	59.4	2.68	36.1	0.00			402	
435		6.07	6.03	34.095	26.834	126.7	0.976	1.19	17.1	66.3	2.81	38.1	0.00			438	202
500	ISL	5.68	5.64	34.176	26.947	116.5	1.055	0.66	9.4	77.6	3.05	41.0	0.00			503	
510		5.62	5.58	34.189	26.964	114.9	1.066	0.58	8.3	79.3	3.09	41.5	0.00			513	201

RV NEW HORIZON CALCOFI CRUISE 9910 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI/FOREL	CLD AMT	TYPE
29 50.9 N	123 35.9 W	06/10/99	1747	UTC	4103 m	300	13 kn	330 01 04	1	1020.6 mb	20.8 C	18.7 C	32m	5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	18.93	18.93	33.210	23.672	421.3	0.000	5.48	102.9	2.9	0.32	0.0	0.00	0.08	0.01	0	
2		18.93	18.93	33.210	23.672	421.4	0.008									2	222
2		18.93	18.93	33.210	23.672	421.4	0.008									2	223
2	A	18.93	18.93	33.210	23.672	421.4	0.008	5.48	102.9	2.9	0.32	0.0	0.00	0.08	0.01	2	221
10	ISL	18.87	18.87	33.209	23.687	420.2	0.042	5.46	102.4	2.9	0.34	0.0	0.01	0.09	0.01	10	
12		18.85	18.85	33.209	23.692	419.8	0.050	5.46	102.4	2.9	0.34	0.0	0.01	0.09	0.01	12	220
20	ISL	18.47	18.47	33.164	23.753	414.3	0.084	5.58	103.8	2.9	0.31	0.0	0.00	0.10	0.02	20	
22	A	18.36	18.36	33.164	23.780	411.8	0.092	5.62	104.3	2.9	0.30	0.0	0.00	0.10	0.02	22	219
30	ISL	18.06	18.05	33.368	24.010	390.1	0.124	5.77	106.6	2.8	0.28	0.0	0.00	0.12	0.03	30	
36		17.85	17.84	33.555	24.205	371.8	0.147	5.87	108.2	2.8	0.26	0.0	0.00	0.13	0.03	36	218
48	A	17.35	17.34	33.720	24.452	348.6	0.190	5.92	108.2	2.8	0.22	0.0	0.00	0.14	0.03	48	217
50	ISL	17.13	17.12	33.710	24.497	344.4	0.197	5.94	108.1	2.8	0.22	0.0	0.00	0.15	0.03	50	
58		16.22	16.21	33.663	24.672	327.9	0.224	6.00	107.2	2.9	0.22	0.0	0.00	0.19	0.05	58	216
70	A	15.57	15.56	33.764	24.897	306.8	0.262	5.92	104.5	3.0	0.23	0.0	0.00	0.24	0.10	70	215
75	ISL	15.54	15.53	33.812	24.941	302.8	0.277	5.88	103.7	3.0	0.24	0.0	0.00	0.25	0.12	75	
82		15.49	15.48	33.855	24.985	298.8	0.298	5.81	102.4	2.9	0.24	0.0	0.00	0.26	0.16	82	214
94	A	15.50	15.49	33.990	25.087	289.5	0.334	5.71	100.7	3.1	0.22	0.0	0.01	0.33	0.30	94	213
100	ISL	15.40	15.38	34.025	25.137	284.9	0.351	5.64	99.3	3.2	0.24	0.2	0.07	0.30	0.27	100	
104		15.23	15.21	34.017	25.168	282.1	0.362	5.60	98.3	3.3	0.25	0.4	0.11	0.27	0.23	104	212
114		14.14	14.12	33.821	25.251	274.2	0.390	5.59	95.8	3.8	0.36	1.5	0.10	0.18	0.18	114	211
124	A	14.30	14.28	33.916	25.291	270.8	0.417	5.50	94.7	3.9	0.38	1.8	0.06	0.16	0.15	125	210
125	ISL	14.25	14.23	33.913	25.299	270.0	0.420	5.49	94.4	4.0	0.39	1.9	0.06	0.16	0.15	126	
139		13.25	13.23	33.797	25.416	259.1	0.457	5.29	89.0	5.5	0.53	4.3	0.02	0.09	0.09	140	209
150	ISL	12.41	12.39	33.706	25.510	250.2	0.485	5.09	84.1	7.6	0.71	7.2	0.02	0.07	0.07	151	
164		11.39	11.37	33.632	25.644	237.5	0.519	4.77	77.1	11.2	0.99	11.4	0.01	0.05	0.05	165	208
194		9.84	9.82	33.750	26.007	203.2	0.585	3.81	59.6	21.7	1.58	20.8	0.01	0.01	0.02	195	207
200	ISL	9.68	9.66	33.788	26.063	197.9	0.597	3.83	59.7	22.5	1.58	20.9	0.01			201	
229		9.20	9.17	33.954	26.271	178.6	0.652	3.91	60.4	24.7	1.58	21.5	0.00			230	206
250	ISL	8.84	8.81	33.993	26.359	170.5	0.689	3.75	57.4	27.8	1.68	22.9	0.00			251	
269		8.50	8.47	34.000	26.418	165.2	0.721	3.51	53.3	31.4	1.81	24.7	0.00			270	205
300	ISL	7.76	7.73	34.010	26.536	154.1	0.770	3.01	45.0	39.2	2.06	28.2	0.00			302	
321		7.27	7.24	34.014	26.609	147.2	0.802	2.66	39.3	44.7	2.23	30.6	0.00			323	204
378		6.55	6.52	34.040	26.728	136.3	0.882	1.99	28.9	55.7	2.55	34.5	0.00			380	203
400	ISL	6.30	6.26	34.048	26.767	132.7	0.912	1.75	25.3	60.0	2.65	35.9	0.00			402	
441		5.91	5.87	34.070	26.834	126.5	0.965	1.33	19.0	67.8	2.81	38.3	0.00			444	202
500	ISL	5.53	5.49	34.135	26.932	117.6	1.037	0.79	11.2	78.4	3.03	40.8	0.00			503	
508		5.48	5.44	34.144	26.946	116.4	1.047	0.72	10.2	79.8	3.06	41.1	0.00			511	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 23.5 N	122 14.9 W	18/10/99	1847 UTC	22 m		1152 - 1755 PST	1154 PST	1755 PST	307.1 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	17.47	33.594	24.325	5.68	103.9	2.4	0.31	0.0	0.00	0.24	0.05	93. A	2.2	2.0	2.1	0.06
16	17.39	33.591	24.342	5.69	104.0	2.2	0.30	0.0	0.00	0.26	0.06	33.	5.2	5.3	5.3	0.10
32	17.11	33.583	24.403	5.72	103.9	2.3	0.30	0.0	0.00	0.66	0.19	11.	7.2	7.5	7.3	0.08
40	16.81	33.566	24.461	5.79	104.6	2.5	0.31	0.1	0.01	0.77	0.27					
48	15.64	33.482	24.663	5.86	103.4	3.1	0.42	1.1	0.13	0.72	0.34	3.5	4.6	4.7	4.6	0.05
56	14.04	33.393	24.939	5.85	99.9	4.1	0.61	3.6	0.42	0.55	0.37					
65	12.10	33.279	25.236	5.62	92.1	6.9	0.84	7.7	0.34	0.29	0.26	1.1	0.77	0.75	0.76	0.03
76	11.35	33.368	25.444	5.11	82.4	10.5	1.07	11.7	0.02	0.14	0.14					
85	10.74	33.449	25.616	4.67	74.4	14.4	1.30	15.2	0.01	0.08	0.08	0.27	0.02	0.03	0.03	0.02

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.1 N	121 9.9 W	16/10/99	1842 UTC	23 m		1151 - 1757 PST	1151 PST	1757 PST	285.6 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	16.86	33.608	24.480	5.70	103.1	3.0	0.33	0.0	0.01	0.25	0.08	94. A	6.1	6.0	6.1	0.09
10	16.85	33.608	24.483	5.68	102.7	3.0	0.33	0.0	0.01	0.31	0.12					
18	16.85	33.613	24.487	5.73	103.6	2.8	0.32	0.0	0.01	0.44	0.15	30.	7.4	7.6	7.5	0.10
26	16.77	33.630	24.519	5.78	104.4	2.7	0.30	0.0	0.01	0.60	0.28					
33	16.16	33.626	24.657	5.82	103.8	3.8	0.36	0.6	0.13	0.75	0.26	11.	5.0	5.3	5.1	0.08
43	14.61	33.615	24.990	5.47	94.6	6.4	0.64	4.6	0.89	0.79	0.45					
51	13.61	33.572	25.166	5.21	88.2	7.7	0.87	8.5	0.28	0.49	0.36	3.3	1.3	1.3	1.3	0.08
60	12.31	33.572	25.423	4.82	79.4	11.3	1.16	13.4	0.02	0.20	0.22					
67	11.13	33.563	25.635	4.50	72.3	15.2	1.37	16.4	0.02	0.08	0.12	1.1	0.09	0.06	0.07	0.02
79	10.31	33.657	25.853	3.97	62.7	20.6	1.64	20.6	0.01	0.03	0.08					
90	10.08	33.711	25.934	3.67	57.7	22.5	1.71	21.9	0.01	0.03	0.08	0.25	0.00	0.00	0.00	0.02

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 49.1 N	123 54.4 W	17/10/99	1815 UTC	32 m		1156 - 1807 PST	1201 PST	1807 PST	164.9 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	17.75	33.172	23.934	5.65	103.7	2.6	0.31	0.1	0.00	0.09	0.02	91. A	2.0	2.0	2.0	0.06
12	17.64	33.159	23.951	5.64	103.3	2.5	0.32	0.0	0.00	0.10	0.02					
24	17.32	33.179	24.043	5.70	103.7	2.5	0.31	0.0	0.00	0.17	0.03	32.	2.8	2.8	2.8	0.08
32	17.18	33.205	24.097	5.79	105.1	2.4	0.31	0.0	0.00	0.17	0.04					
39	15.54	33.106	24.396	6.17	108.4	2.2	0.32	0.1	0.00	0.21	0.06					
48	14.09	33.097	24.700	6.38	108.8	2.3	0.33	0.1	0.00	0.20	0.08	10.	1.6	1.6	1.6	0.04
58	13.08	33.039	24.860	6.30	105.2	2.6	0.36	0.0	0.00	0.29	0.15					
69	12.48	33.144	25.059	6.11	100.8	3.6	0.51	2.1	0.16	0.36	0.22	3.7	1.3	1.4	1.3	0.04
82	11.61	33.211	25.275	5.72	92.7	5.6	0.69	5.5	0.04	0.28	0.22					
95	11.31	33.274	25.379	5.60	90.2	6.1	0.71	6.0	0.02	0.19	0.17	1.0	0.31	0.26	0.28	0.02
104	10.78	33.283	25.480	5.55	88.4	6.9	0.73	6.5	0.01	0.13	0.11					
114	10.74	33.384	25.566	5.08	80.9	10.3	1.00	10.8	0.01	0.08	0.08					
125	10.58	33.518	25.699	4.55	72.2	13.4	1.20	14.2	0.01	0.05	0.06	0.25	0.01	0.01	0.01	0.01

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.9 N	119 30.6 W	15/10/99	1804 UTC	15 m		1144 - 1754 PST	1144 PST	1754 PST	703.6 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	16.80	33.639	24.518	5.99	108.2	4.1	0.27	0.1	0.01	0.90	0.24	81. A	32.3	32.4	32.3	0.17
11	16.45	33.640	24.600	6.00	107.7	3.8	0.28	0.1	0.01	1.13	0.29	32.	31.0	29.6	30.3	0.17
22	15.91	33.631	24.717	6.04	107.2	4.1	0.32	0.4	0.03	1.42	0.45	11.	14.3	14.4	14.3	0.13
33	12.32	33.525	25.384	4.98	82.1	10.2	1.00	10.3	0.27	0.56	0.40	3.4	2.2	2.4	2.3	0.07
44	11.73	33.604	25.557	4.45	72.5	13.5	1.24	14.2	0.11	0.37	0.36	1.1	0.64	0.59	0.61	0.03
52	11.42	33.620	25.627	4.31	69.7	14.6	1.33	15.6	0.03	0.27	0.29					
59	11.11	33.676	25.727	3.94	63.3	17.0	1.45	17.5	0.02	0.17	0.33	0.24	0.02	0.02	0.02	0.02

A) INCUBATION LIGHT INTENSITIES WERE 92, 33, 10, 3.4, 1.1, 0.25 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 34.6 N	120 46.0 W	14/10/99	1814 UTC	16 m		1149 - 1755 PST	1149 PST	1755 PST	380.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	15.73	33.617	24.746	6.03	106.7	3.0	0.41	1.2	0.12	0.68	0.25	91. A	18.1	19.8	18.9	0.10
12	15.71	33.613	24.747	6.04	106.8	3.0	0.42	1.2	0.12	0.69	0.29	32.	15.9	15.0	15.4	0.11
23	15.60	33.608	24.769	6.05	106.7	2.8	0.42	1.2	0.12	0.63	0.27	11.	4.7	5.1	4.9	0.07
35	15.28	33.613	24.844	5.99	105.0	4.0	0.46	2.1	0.22	0.81	0.45	3.5	2.0	2.1	2.1	0.08
47	13.74	33.574	25.141	5.30	90.0	7.3	0.82	7.3	0.57	0.48	0.37	1.1	0.53	0.46	0.49	0.07
54	12.73	33.557	25.330	4.95	82.3	9.8	1.06	11.7	0.09	0.41	0.32					
62	11.89	33.588	25.515	4.54	74.2	12.8	1.26	14.8	0.02	0.27	0.24	0.26	0.01	0.02	0.02	0.03

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 34.5 N	122 47.9 W	13/10/99	1743 UTC	24 m		1157 - 1803 PST	1157 PST	1803 PST	294.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	17.57	33.181	23.984	5.66	103.5	3.2	0.33	0.0	0.00	0.13	0.03	94. A	2.5	2.5	2.5	0.06
17	17.36	33.198	24.048	5.69	103.7	3.3	0.32	0.0	0.00	0.16	0.03	34.	3.5	3.5	3.5	0.08
25	16.78	33.293	24.258	5.89	106.2	3.2	0.33	0.2	0.00	0.24	0.05					
35	14.76	33.270	24.692	6.33	109.6	3.7	0.40	0.4	0.03	0.75	0.25	11.	7.4	8.0	7.7	0.08
43	12.80	33.110	24.970	6.32	105.0	4.1	0.48	1.2	0.11	0.78	0.42					
52	12.16	33.099	25.085	5.95	97.5	4.6	0.55	2.1	0.13	0.70	0.45	3.6	3.7	3.6	3.6	0.05
61	11.59	33.094	25.187	5.90	95.5	5.8	0.64	4.2	0.10	0.48	0.34					
71	11.18	33.131	25.290	5.76	92.4	7.0	0.74	6.0	0.04	0.30	0.23	1.1	0.69	0.58	0.63	0.02
81	10.98	33.228	25.402	5.50	87.9	8.9	0.91	8.7	0.04	0.20	0.17					
93	10.48	33.315	25.557	5.14	81.3	12.1	1.07	11.6	0.03	0.10	0.09	0.26	0.02	0.03	0.03	0.02

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 29.7 N	119 19.0 W	10/10/99	1754 UTC	17 m		1144 - 1756 PST	1144 PST	1756 PST	852.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	16.40	33.569	24.557	6.00	107.5	4.3	0.34	0.5	0.05	0.77	0.19	91. A	23.9	25.0	24.4	0.10
12	16.12	33.567	24.620	5.93	105.7	4.5	0.35	0.9	0.08	0.92	0.31	34.	26.7	27.1	26.9	0.18
18	15.97	33.570	24.656	5.89	104.7	4.8	0.38	1.2	0.09	0.97	0.30					
25	15.80	33.569	24.694	5.88	104.1	5.0	0.39	1.5	0.11	1.05	0.38	10.	19.2	20.6	19.9	0.12
37	15.21	33.548	24.809	5.83	102.0	5.5	0.48	2.6	0.15	1.09	0.40	3.5	8.0	8.6	8.3	0.09
44	12.82	33.390	25.183	5.46	90.9	7.8	0.82	7.6	0.22	0.55	0.32					
51	11.73	33.367	25.373	5.18	84.2	10.1	1.01	10.5	0.20	0.37	0.16	1.00	1.1	0.88	0.98	0.04
57	11.43	33.400	25.454	4.97	80.3	11.7	1.11	12.1	0.16	0.34	0.23					
65	11.11	33.576	25.649	4.31	69.2	15.6	1.36	16.0	0.04	0.23	0.15	0.28	0.04	0.04	0.04	0.03

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.8 N	121 2.1 W	11/10/99	1827 UTC	29 m		1151 - 1804 PST	1151 PST	1804 PST	279.2 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	18.17	33.511	24.091	5.62	104.2	3.2	0.31	0.0	0.00	0.14	0.03	90. A	3.2	3.4	3.3	0.07
13	17.94	33.571	24.194	5.60	103.4	3.1	0.31	0.0	0.00	0.15	0.04					
21	17.81	33.590	24.241	5.68	104.6	3.0	0.31	0.0	0.00	0.17	0.04	33.	3.7	3.6	3.6	0.10
32	16.56	33.500	24.468	6.12	110.0	3.4	0.33	0.0	0.00	0.34	0.12					
42	14.23	33.395	24.901	6.15	105.4	4.5	0.51	2.3	0.18	0.60	0.32	11.	6.2	6.6	6.4	0.07
54	11.27	33.192	25.321	5.65	90.9	7.8	0.79	7.0	0.04	0.50	0.42					
64	11.25	33.343	25.442	5.28	85.0	10.8	1.06	11.5	0.02	0.25	0.22	3.4	1.3	1.3	1.3	0.05
75	10.42	33.496	25.708	4.47	70.7	17.8	1.43	17.6	0.02	0.10	0.09					
85	10.20	33.574	25.807	4.20	66.1	20.6	1.59	19.9	0.01	0.07	0.10	1.1	0.15	0.14	0.15	0.02
98	9.72	33.713	25.996	3.81	59.4	24.0	1.70	22.0	0.01	0.03	0.04					
113	9.36	33.821	26.140	3.62	56.0	25.8	1.72	22.6	0.01	0.01	0.02	0.25	0.00	0.00	0.00	0.01

A) INCUBATION LIGHT INTENSITIES WERE 92, 33, 10, 3.4, 1.1, 0.25 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 39.7 N	123 4.0 W	12/10/99	1736 UTC	36 m		1158 - 1814 PST	1159 PST	1814 PST	204.6 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	19.33	33.562	23.840	5.41	102.6	3.4	0.28	0.0	0.00	0.09	0.02	92. A	1.4	1.4	1.4	0.07
14	19.29	33.562	23.851	5.42	102.7	3.3	0.27	0.0	0.00	0.09	0.02					
26	19.26	33.567	23.863	5.42	102.6	3.3	0.27	0.0	0.00	0.09	0.02	33.	2.2	2.1	2.1	0.09
40	19.21	33.568	23.877	5.41	102.3	3.2	0.27	0.0	0.00	0.12	0.03					
54	16.47	33.381	24.398	6.09	109.1	3.2	0.28	0.0	0.00	0.15	0.05	10.	2.1	2.2	2.1	0.07
61	15.59	33.403	24.614	6.19	109.0	3.2	0.29	0.0	0.00	0.19	0.04					
70	14.52	33.336	24.795	6.21	107.0	3.3	0.32	0.0	0.00	0.19	0.10					
79	14.12	33.359	24.897	6.14	104.9	3.4	0.34	0.0	0.00	0.26	0.17	3.4	1.7	1.7	1.7	0.03
88	13.87	33.394	24.976	5.95	101.2	3.7	0.41	0.8	0.13	0.32	0.25					
96	13.91	33.579	25.111	5.66	96.5	4.1	0.46	2.2	0.21	0.29	0.25					
105	13.77	33.636	25.184	5.49	93.3	4.7	0.53	3.5	0.10	0.25	0.23	1.1	1.0	1.0	1.0	0.01
114	13.90	33.778	25.268	5.40	92.1	5.0	0.51	3.7	0.05	0.21	0.21					
124	13.22	33.718	25.360	5.25	88.3	6.0	0.62	5.5	0.02	0.16	0.17					
131	12.82	33.727	25.446	5.08	84.7	7.3	0.71	6.9	0.02	0.12	0.14					
140	12.48	33.728	25.514	4.89	81.0	8.5	0.79	8.4	0.01	0.09	0.10	0.26	0.05	0.06	0.05	0.01

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 25.3 N	117 54.7 W	9/10/99	1744 UTC	34 m		1139 - 1758 PST	1139 PST	1758 PST	458.4 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	19.50	33.713	23.911	5.51	104.9	2.8	0.24	0.0	0.00	0.19	0.03	91. A	6.0	5.7	5.8	0.08
14	18.56	33.641	24.095	5.82	108.8	2.9	0.26	0.1	0.00	0.29	0.06					
25	15.63	33.514	24.690	6.35	112.0	3.5	0.34	0.1	0.00	0.25	0.14	32.	8.4	8.0	8.2	0.08
34	14.27	33.491	24.966	6.26	107.4	4.0	0.37	0.1	0.00	0.30	0.10					
42	13.47	33.535	25.166	5.79	97.8	5.4	0.55	2.5	0.15	0.60	0.22					
51	12.83	33.565	25.317	5.24	87.3	7.5	0.82	7.1	0.22	0.60	0.35	10.	5.9	6.1	6.0	0.06
63	11.98	33.597	25.505	4.67	76.4	11.1	1.08	11.7	0.05	0.43	0.32					
75	11.47	33.638	25.632	4.34	70.3	13.6	1.24	14.4	0.03	0.22	0.24	3.4	1.1	1.1	1.1	0.04
87	10.96	33.650	25.734	4.24	67.9	15.8	1.37	16.3	0.01	0.12	0.15					
99	10.44	33.730	25.888	3.82	60.5	19.7	1.56	19.4	0.01	0.04	0.08	1.1	0.09	0.09	0.09	0.02
115	10.06	33.832	26.032	3.36	52.8	23.1	1.70	21.5	0.01	0.02	0.05					
133	9.58	33.875	26.146	3.19	49.6	26.5	1.84	23.7	0.00	0.01	0.06	0.25	0.01	0.00	0.01	0.01

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 26.1 N	119 58.6 W	8/10/99	1811 UTC	27 m		1147 - 1758 PST	1148 PST	1758 PST	276.5 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	17.48	33.444	24.207	5.65	103.3	2.4	0.31	0.0	0.00	0.13	0.03	89. A	1.7	1.8	1.8	0.08
10	17.35	33.442	24.237	5.67	103.4	2.4	0.31	0.0	0.00	0.14	0.04					
21	17.31	33.440	24.246	5.67	103.3	2.2	0.31	0.0	0.00	0.16	0.04	30.	3.5	3.6	3.5	0.10
30	17.28	33.443	24.255	5.68	103.5	2.2	0.30	0.0	0.00	0.20	0.05					
39	16.94	33.487	24.370	5.81	105.2	2.4	0.32	0.0	0.00	0.26	0.09	11.	3.7	4.0	3.8	0.08
49	15.59	33.445	24.646	6.12	107.8	2.7	0.33	0.0	0.00	0.51	0.23					
59	14.28	33.430	24.918	6.04	103.6	3.6	0.43	1.3	0.08	0.76	0.46	3.5	4.7	5.2	4.9	0.07
69	13.58	33.469	25.093	5.73	96.9	4.5	0.61	3.6	0.26	0.59	0.50					
77	13.00	33.525	25.253	5.44	90.9	5.8	0.75	6.6	0.14	0.39	0.40	1.3	1.1	1.1	1.1	0.02
87	12.30	33.560	25.417	5.09	83.9	8.2	0.93	9.8	0.04	0.18	0.24					
96	11.96	33.579	25.496	4.89	80.0	9.8	1.03	11.3	0.02	0.12	0.17					
105	11.43	33.590	25.603	4.67	75.5	12.1	1.18	13.7	0.02	0.08	0.10	0.26	0.03	0.03	0.03	0.02

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 24.2 N	122 1.6 W	7/10/99	1951 UTC	30 m		1240 - 1807 PST	1156 PST	1806 PST	92.6 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	18.50	33.379	23.909	5.49	102.3	2.9	0.29	0.1	0.00	0.08	0.01	90. A	0.81	1.0	0.92	0.06
12	18.50	33.370	23.903	5.47	102.0	2.8	0.28	0.1	0.00	0.08	0.01					
22	18.50	33.370	23.903	5.49	102.3	2.8	0.28	0.1	0.00	0.08	0.01	32.	1.5	1.5	1.5	0.08
35	18.46	33.371	23.914	5.49	102.2	2.9	0.28	0.1	0.00	0.09	0.02					
46	16.54	33.401	24.397	6.01	107.9	2.9	0.26	0.1	0.00	0.13	0.03	9.5	1.0	1.2	1.1	0.10
56	15.05	33.370	24.707	6.13	106.8	3.0	0.26	0.1	0.00	0.13	0.04					
67	14.58	33.366	24.805	6.14	105.9	3.0	0.27	0.1	0.00	0.14	0.04	3.2	0.54	0.56	0.55	0.08
76	14.30	33.444	24.925	6.06	104.0	3.1	0.27	0.1	0.00	0.17	0.07					
88	13.53	33.428	25.072	5.99	101.2	3.3	0.29	0.1	0.00	0.28	0.23	1.1	0.49	0.40	0.44	0.04
97	12.89	33.381	25.164	5.91	98.5	3.6	0.36	0.5	0.08	0.35	0.28					
108	12.36	33.344	25.238	5.81	95.7	4.1	0.43	1.5	0.10	0.26	0.24					
117	12.20	33.363	25.283	5.74	94.3	4.2	0.43	1.5	0.10	0.22	0.22	0.25	0.09	0.10	0.09	0.01

A) INCUBATION LIGHT INTENSITIES WERE 92, 33, 10, 3.4, 1.1, 0.25 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 54.2 N	117 23.9 W	3/10/99	1923 UTC	27 m		1222 - 1803 PST	1139 PST	1758 PST	309.2 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
1	19.47	33.678	23.892	5.48	104.2	2.7	0.26	0.1	0.00	0.18	0.03	94. A	3.3	3.3	3.3	0.09
10	18.68	33.645	24.068	5.55	104.0	2.6	0.26	0.1	0.00	0.19	0.03					
20	16.81	33.581	24.472	5.88	106.2	2.7	0.29	0.0	0.00	0.26	0.08	32.	5.4	5.5	5.5	0.13
30	14.55	33.460	24.883	5.97	103.0	4.1	0.49	2.1	0.17	0.49	0.24					
40	13.10	33.408	25.142	5.73	95.9	5.7	0.71	5.3	0.41	0.63	0.40	10.	6.4	6.2	6.3	0.13
50	12.59	33.517	25.326	5.31	88.0	7.5	0.92	8.7	0.31	0.44	0.45					
59	12.11	33.521	25.422	5.06	83.0	9.5	1.05	11.1	0.04	0.32	0.38	3.5	1.7	1.8	1.8	0.05
69	11.78	33.606	25.550	4.55	74.2	12.1	1.18	13.1	0.03	0.21	0.26					
80	11.21	33.611	25.658	4.31	69.4	15.3	1.38	16.0	0.02	0.12	0.15	1.1	0.37	0.34	0.36	0.01
92	10.77	33.643	25.762	4.12	65.7	17.7	1.49	18.1	0.01	0.06	0.08					
105	10.31	33.734	25.913	3.76	59.4	21.2	1.64	20.6	0.01	0.02	0.06	0.26	0.01	0.01	0.01	0.01

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 11.0 N	118 53.3 W	4/10/99	1812 UTC	21 m		1142 - 1804 PST	1144 PST	1803 PST	287.5 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	18.90	33.701	24.055	5.45	102.6	2.8	0.32	0.0	0.00	0.20	0.04	86. A	3.1	3.2	3.1	0.10
14	18.89	33.701	24.058	5.47	102.9	2.7	0.27	0.0	0.00	0.20	0.04	36.	5.2	5.3	5.2	0.08
31	18.04	33.645	24.227	5.69	105.3	2.6	0.31	0.0	0.00	0.26	0.08	10.	4.0	4.4	4.2	0.12
37	16.93	33.607	24.464	5.96	107.9	3.1	0.31	0.0	0.00	0.35	0.14					
46	15.30	33.565	24.802	6.15	107.8	4.1	0.39	0.0	0.01	0.75	0.34	3.5	5.4	4.8	5.1	0.10
54	14.16	33.545	25.032	6.01	102.9	4.9	0.46	0.6	0.04	0.80	0.43					
62	13.16	33.550	25.240	5.44	91.3	6.8	0.70	5.0	0.20	0.76	0.56	1.1	2.4	2.3	2.3	0.05
71	12.42	33.591	25.417	4.89	80.8	9.3	0.96	9.1	0.11	0.52	0.50					
81	11.63	33.603	25.576	4.61	74.9	12.1	1.21	12.9	0.02	0.21	0.27	0.27	0.08	0.08	0.08	0.02

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.9 N	120 56.4 W	5/10/99	1748 UTC	30 m		1153 - 1812 PST	1153 PST	1812 PST	191.9 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
3	18.19	33.286	23.914	5.52	102.2	3.5	0.31	0.0	0.00	0.13	0.03	86. A	1.2	1.2	1.2	0.10
12	18.18	33.285	23.917	5.53	102.4	3.5	0.30	0.0	0.00	0.13	0.03					
22	18.15	33.284	23.924	5.52	102.2	3.3	0.30	0.0	0.00	0.13	0.03	32.	3.0	3.1	3.0	0.12
34	17.98	33.277	23.960	5.59	103.1	3.4	0.30	0.0	0.00	0.16	0.03					
45	15.65	33.166	24.418	6.16	108.5	3.2	0.30	0.0	0.00	0.21	0.06	10.	2.1	2.3	2.2	0.08
56	14.57	33.139	24.632	6.30	108.5	3.3	0.34	0.0	0.00	0.25	0.09					
66	13.63	33.160	24.844	6.25	105.6	3.3	0.30	0.0	0.00	0.27	0.10	3.4	1.5	1.5	1.5	0.07
76	13.24	33.215	24.965	6.17	103.5	3.5	0.31	0.0	0.00	0.30	0.21					
87	12.65	33.212	25.079	6.06	100.4	3.8	0.38	0.3	0.04	0.35	0.30	1.2	1.3	1.3	1.3	0.02
97	12.10	33.242	25.208	5.83	95.5	4.5	0.49	2.0	0.14	0.25	0.25					
107	11.79	33.273	25.290	5.62	91.4	5.6	0.59	3.9	0.05	0.17	0.23					
116	11.56	33.286	25.343	5.56	90.0	6.3	0.64	4.9	0.03	0.16	0.19	0.26	0.10	0.10	0.10	0.01

RV NEW HORIZON | CALCOFI CRUISE 9910 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 50.9 N	123 35.9 W	6/10/99	1747 UTC	32 m		1202 - 1820 PST	1202 PST	1820 PST	133.8 mg C/m2

DEPTH	TEMP	SALINITY	SIGMA	OXYGEN	OXY	SIO3	PO4	NO3	NO2	CHL-A	PHAEO	LIGHT	UPTAKE (mg C/m3)			
m	DEG C		THETA	ml/l	PCT	uM/l	uM/l	uM/l	uM/l	ug/l	ug/l	PCT	1	2	MEAN	DARK
2	18.93	33.210	23.672	5.48	102.9	2.9	0.32	0.0	0.00	0.08	0.01	91. A	1.5	1.4	1.5	0.06
12	18.85	33.209	23.692	5.46	102.4	2.9	0.34	0.0	0.01	0.09	0.01					
22	18.36	33.164	23.780	5.62	104.3	2.9	0.30	0.0	0.00	0.10	0.02	35.	1.9	2.0	2.0	0.13
36	17.85	33.555	24.205	5.87	108.2	2.8	0.26	0.0	0.00	0.13	0.03					
48	17.35	33.720	24.452	5.92	108.2	2.8	0.22	0.0	0.00	0.14	0.03	10.	1.4	1.4	1.4	0.09
58	16.22	33.663	24.672	6.00	107.2	2.9	0.22	0.0	0.00	0.19	0.05					
70	15.57	33.764	24.897	5.92	104.5	3.0	0.23	0.0	0.00	0.24	0.10	3.5	0.90	0.93	0.91	0.08
82	15.49	33.855	24.985	5.81	102.4	2.9	0.24	0.0	0.00	0.26	0.16					
94	15.50	33.990	25.087	5.71	100.7	3.1	0.22	0.0	0.01	0.33	0.30	1.1	0.62	0.49	0.55	0.02
104	15.23	34.017	25.168	5.60	98.3	3.3	0.25	0.4	0.11	0.27	0.23					
114	14.14	33.821	25.251	5.59	95.8	3.8	0.36	1.5	0.10	0.18	0.18					
124	14.30	33.916	25.291	5.50	94.7	3.9	0.38	1.8	0.06	0.16	0.15	0.26	0.03	0.04	0.03	0.01

A) INCUBATION LIGHT INTENSITIES WERE 92, 33, 10, 3.4, 1.1, 0.25 PERCENT RESPECTIVELY.

FIGURES

Avifauna Observations

CalCOFI Cruise 9908

1a. Leach's Storm-Petrel distribution.

1b. Brown Pelican distribution.

1c. Sooty Shearwater distribution.

1d. Buller's Shearwater distribution.

1e. Red and Red-necked Phalarope distribution.

1f. Western Gull distribution.

CalCOFI Cruise 9910

2a. Leach's Storm-Petrel distribution.

2b. Brown Pelican distribution.

2c. Heermann's Gull distribution.

2d. Pink-footed Shearwater distribution.

2e. Red and Red-necked Phalarope distribution.

2f. Western Gull distribution.