UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

CalCOFI Cruise 1311
9 – 25 November 2013

CC Reference 14-08
22 Oct 2014

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 1311
9 -25 November 2013

CC Reference 14-08
22 Oct 2013

CONTENTS

INTRODUCTION

The data presented in this report were collected during cruise 1311* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV *New Horizon.* 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 Wildlife, and the Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD 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 Integrative Oceanography Division and the Southwest Fisheries Science Center. CalCOFI data presented in this report and collected on previous cruises can be accessed at http://www.calcofi.org.

STANDARD PROCEDURES

CTD/Rosette Cast Data

A Sea-Bird Electronics, Inc., Conductivity-Temperature-Depth (CTD) instrument (Seabird 911+, Serial number 3161-936) with a rosette was deployed at each station on this cruise. The rosette was equipped with 24 ten-liter plastic (PVC) bottles equipped with epoxy-coated springs and Viton O-rings. Each CTD/rosette cast usually sampled 20 depths to a maximum sampling depth of 515 meters, bottom depth permitting. Occasional stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. Additional bottle depths also appear in combined hydrographic and primary productivity casts. 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 on samples from 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 were 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. Salinity samples were drawn into 200 ml Kimax high-alumina borosilicate bottles that were rinsed three times with sample prior to filling. The results were compared with the CTD salinity to verify that the rosette bottle did not mis-trip or leak. The salinometer was standardized before and after each group of samples with standardized seawater. Periodic checks on the conductivity of the standardized seawater were made by comparison with IAPSO Standard Seawater batch P152. Salinity values were calculated using the algorithms for the Practical Salinity Scale, 1978 (UNESCO, 1981a) and are reported to three decimal places, provided that accepted standards were met.

Dissolved oxygen analyses were performed with an Ocean Data Facility of Scripps Institution of Oceanography designed automated oxygen titrator using photometric end-point detection based on the absorption of 365nm wavelength ultra-violet light. A computer using PC software controlled the titration of the samples and the data logging. The method used a modified Winkler titration following the technique of Carpenter (1965) with modifications by Culberson (1991), but with higher concentrations of thiosulfate solution (50 g/l). Standard KIO3 solutions prepared ashore were run at the beginning of each run. Reagent and sea water blanks were determined to account for presence of oxidizing or reducing materials.

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

Nutrient samples were analyzed at sea using a QuAAtro continuous flow analyzer (SEAL Analytical). Dissolved silicate, nitrate, and nitrite were analyzed using a modification of the method described by Armstrong (1967) and Gordon et al. (1992). Phosphate was measured with a modification of the *Murphy* and *Riley* (1962) protocol and ammonium is analyzed using a modified fluorometric method described by Kerouel and Aminot (1997). Samples were collected in 45ml high-density polypropylene screw top tubes which were acid washed and rinsed with sample three times prior to filling. Standardizations and cadmium-reduction coil efficiency determinations were performed at the beginning of every run. Drift corrections were performed in each run using a high standard inserted before and after sample sets. A sample of reference material for nutrients in seawater (RMNS), produced by KANSO technos (www.kanso.co.jp) was included in every run and those data were used to adjust values for nitrate, nitrite, phosphate, and silicate if appropriate. Samples not analyzed immediately after collection were refrigerated and run the following day.

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 in cold 90% acetone (Venrick and Hayward, 1984) for a minimum of 24 hours. Chlorophyll-*a* and phaeopigment concentrations were determined from fluorescence readings before and after acidification with a Turner Designs Fluorometer Model 10-AU-005-CE (Yentsch and Menzel, 1963; Holm-Hansen *et al*., 1965).

Evaluation of the water sample data involved comparisons with the CTD data, 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). Precision estimates for routine analyses were made on CalCOFI cruise 9003 and are reported in SIO Ref. 91-4.

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 rosette up-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. 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 10.239 µCi of ^{14}C as $NaHCO_3$ (50µl of stock solution) 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 cocktail 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 0.505mm 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).

Ancillary Programs

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

1) Underway Data: Continuous near surface measurements of temperature, salinity and *in vivo* chlorophyll fluorescence were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 3 meters. The data were logged in one-minute averages using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinograph and a Wetlabs Wetstar fluorometer.

2) ADCP: Continuous profiles of ocean currents and acoustic backscatter between 20 and 500 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP raw data are collected and archived for potential data processing ashore.

3) California Current Ecosystem Long Term Ecological Research Program: The CCE-LTER program augments standard CalCOFI measurements to further characterize the lower trophic levels as well as the carbon system. Measurements of particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen, taxon-specific phytoplankton pigments, flow-cytometric counts of bacteria and picoautotrophs and the determination of mesozooplankton size structure using a Laser Optical Plankton Counter are sampled for all CalCOFI stations. On CalCOFI lines 90 and 80 measurements also include microscopic counts of heterotrophic and autotrophic phytoplankton for biomass and abundance and mesozooplankton community structure sampled with the Planktonic Rate Processes in Oligotrophic Ocean Systems (PRPOOS) tow net. (M. Ohman, SIO)

4) Advanced Laser Fluorometer Analyzer (ALFA): Continuous underway analysis of phytoplankton pigment groups and variable fluorescence (F_v/F_m). ALFA, developed by A. Chekalyuk at Lamont-Doherty Earth Observatory, uses laser stimulated emission at 405 and 532 nm together with spectral deconvolution analysis to distinguish fluorescence from three types of phycoerythrin, chlorophyll-*a*, and chromophoric dissolved organic matter (CDOM). The ALFA is useful for differentiating the contribution of cyanobacteria and cryptophytes from other phytoplankton taxa present in natural phytoplankton assemblages, as well as for assessing phytoplankton photophysiological status. (R. Goericke, SIO)

5) Southern California Coastal Ocean Observing System (SCCOOS) Nearshore Observations: The objective of these observations is to extend CalCOFI time series to the nearshore. Nearshore observations consist of 9 stations at the ends and interspersed with current CalCOFI lines on the 20 m isobath with a standard set of CalCOFI hydrographic observations as well as a CalBOBL net tow, particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen and taxon-specific phytoplankton pigments data. (R. Goericke, SIO)

6) Inorganic Carbon System: The CalCOFI group collected samples for the characterization of the inorganic carbon system at 10 selected locations along the cruise track and an additional 6 station transect patterned around 80.55. Total inorganic carbon and alkalinity will be measured which will allow the calculation of pH and pCO_2. The objectives of these measurements are first the long-term characterization of the inorganic carbon system and its response to changing ocean climate and second measurements of pH in the coastal zone in order to monitor the impact of 'corrosive' waters on benthic ecosystems in the Southern California Bight. (R. Goericke, SIO)

7) Marine Mammal Observations: During daylight transits, visual line-transect surveys were conducted by marine mammal observers focusing on cetaceans. Acoustic line-transect surveys were performed using a towed hydrophone array which consists of multiple hydrophone elements that sample sounds up to 100 kHz allowing for localization of calling animals. Acoustic monitoring also takes place on individual stations using sonobuoys. (J. Hildebrand, SIO)

8) Nitrate Isotope: Seawater samples are acquired using the CTD-rosette and shipped frozen to Princeton University. The nitrogen and oxygen isotopic composition of nitrate is measured using strains of denitrifying bacteria that reduce nitrate to N2O. (P. Rafter, Princeton University).

9) eDNA Sample Collection: At each CalCOFI and whenever cetaceans were sighted near the ship, small (500 mL) seawater samples were collected and filtered through 25 mm diameter 0.45-µm pore size nylon filters. At one station per day, a large (20 L) seawater sample was collected and filtered through 47 mm diameter 0.45-µm pore size nylon filters. A total of 155 samples were collected. To prepare samples for next-generation sequencing, DNA will be extracted from these filters and PCR will be performed using vertebrate- and cetacean-specific primers. We hope that this study will serve as a proof-of-concept for large-scale eDNA detection and mapping of cetacean distributions in the California Current. (E. Jacobson, SIO)

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 profile. 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 reported for most daylight stations.

Data values from discreet sampled CTD rosette were interpolated and are 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 that are 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 are reported to two significant digits (values <1.00) or one decimal (values >1.00). 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.

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.

Culberson, C. H. 1991. Dissolved oxygen. WHP Operations and Methods -- July 1991.

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.

Gordon, L. I., J. C. Jennings, Jr., A. A. Ross, and J. M. Krest, 1993. A suggested protocol for continuous flow automated analysis of seawater nutrients (phosphate, nitrate, nitrite and silicic acid) in the WOCE Hydrographic Program and the Joint Global Ocean Fluxes Study. WOCE Operations Manual, Part 3.1.3 "WHP Operations and Methods," *WHP Office Report WHPO 91-1*.

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.

Koroleff, F. 1969. Direct determination of ammonia in natural waters as Indophenol Blue. Int. Con. Explor. Sea, C.M. C: 9.

Koroleff, F. 1970. The above paper revised, Int. Con. Explor. Sea, Information on techniques and methods for sea water analysis. Interlab Report No. 3, 19-22.

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., Y. Maita, C. M. Lalli, 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 1311

1. CalCOFI Cruise 1311 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.

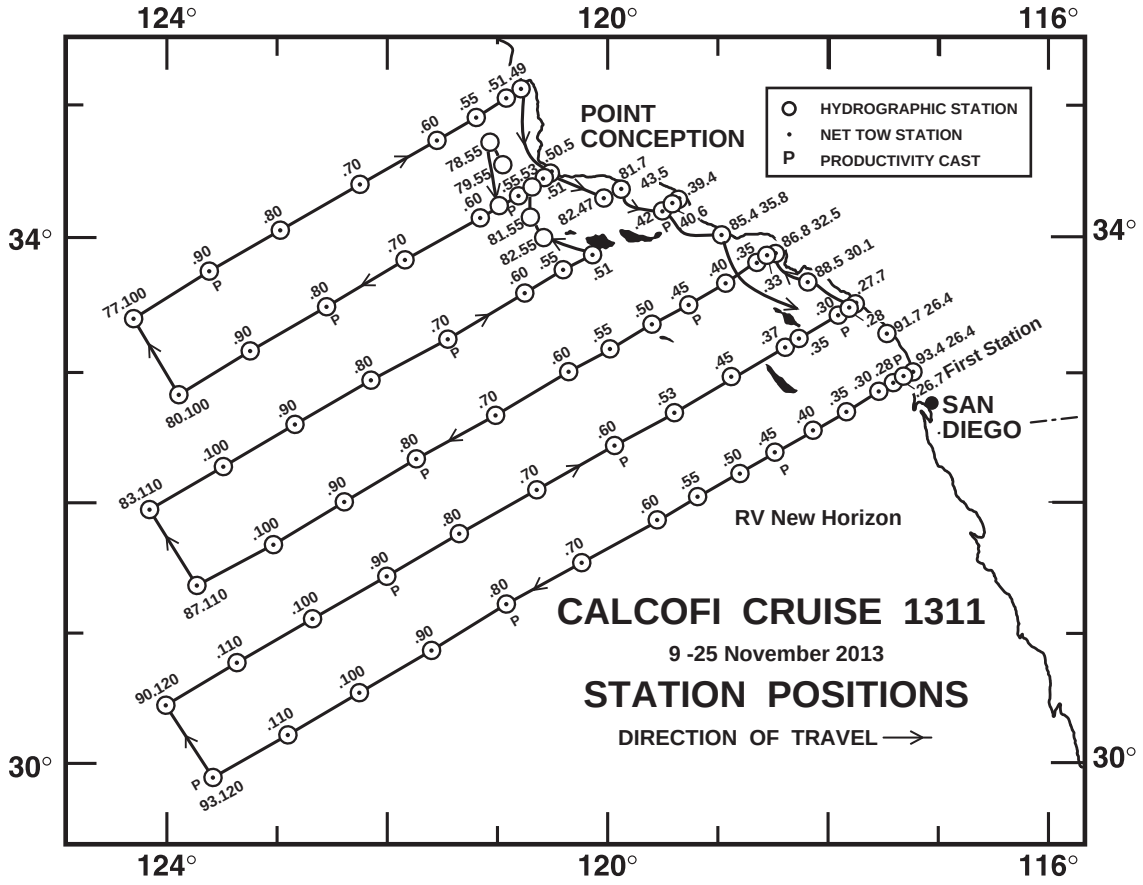

FIGURE 1

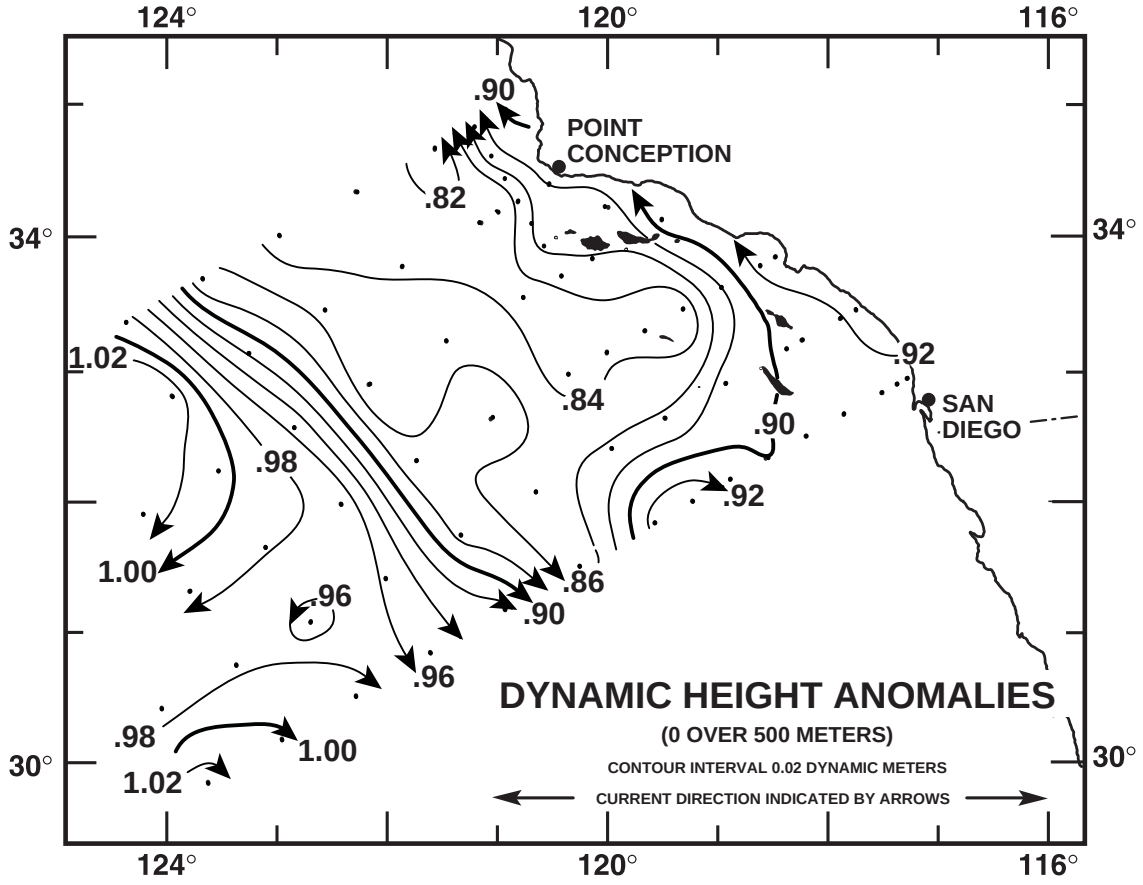

FIGURE 2

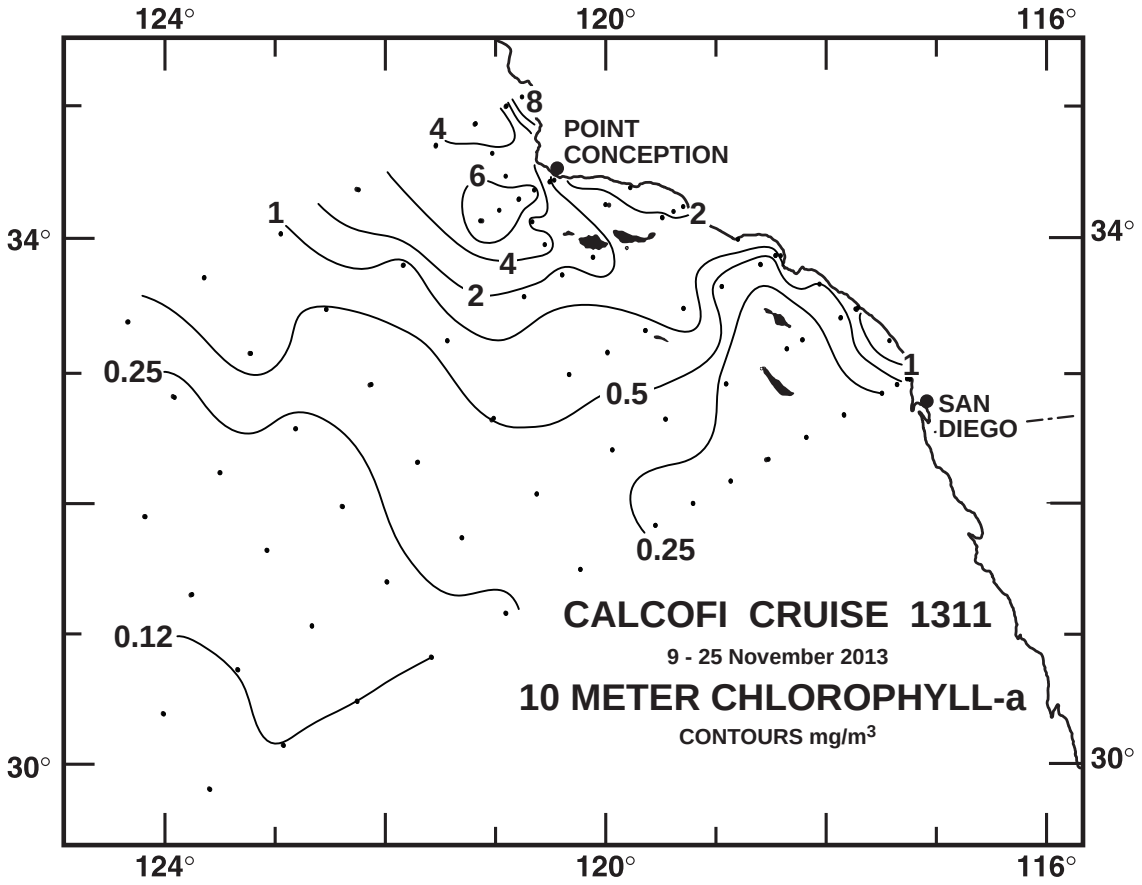

FIGURE 3A

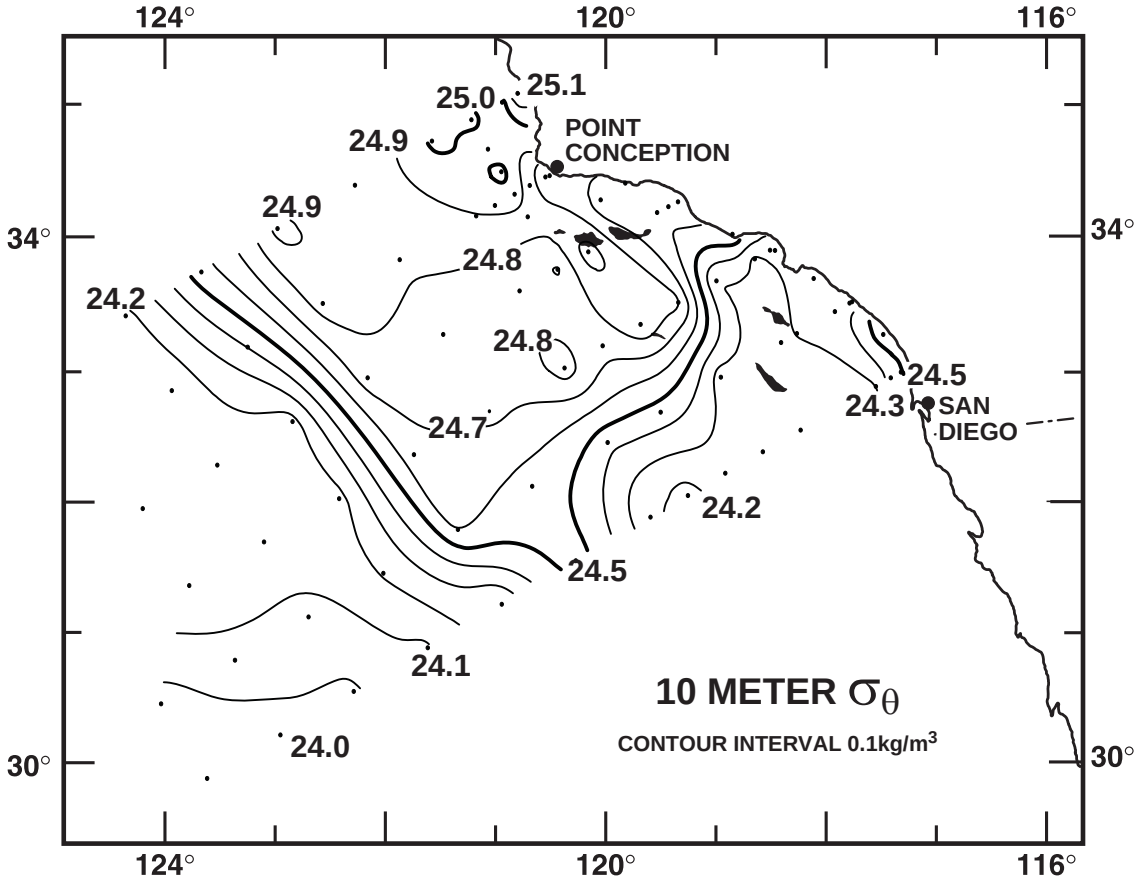

FIGURE 3B

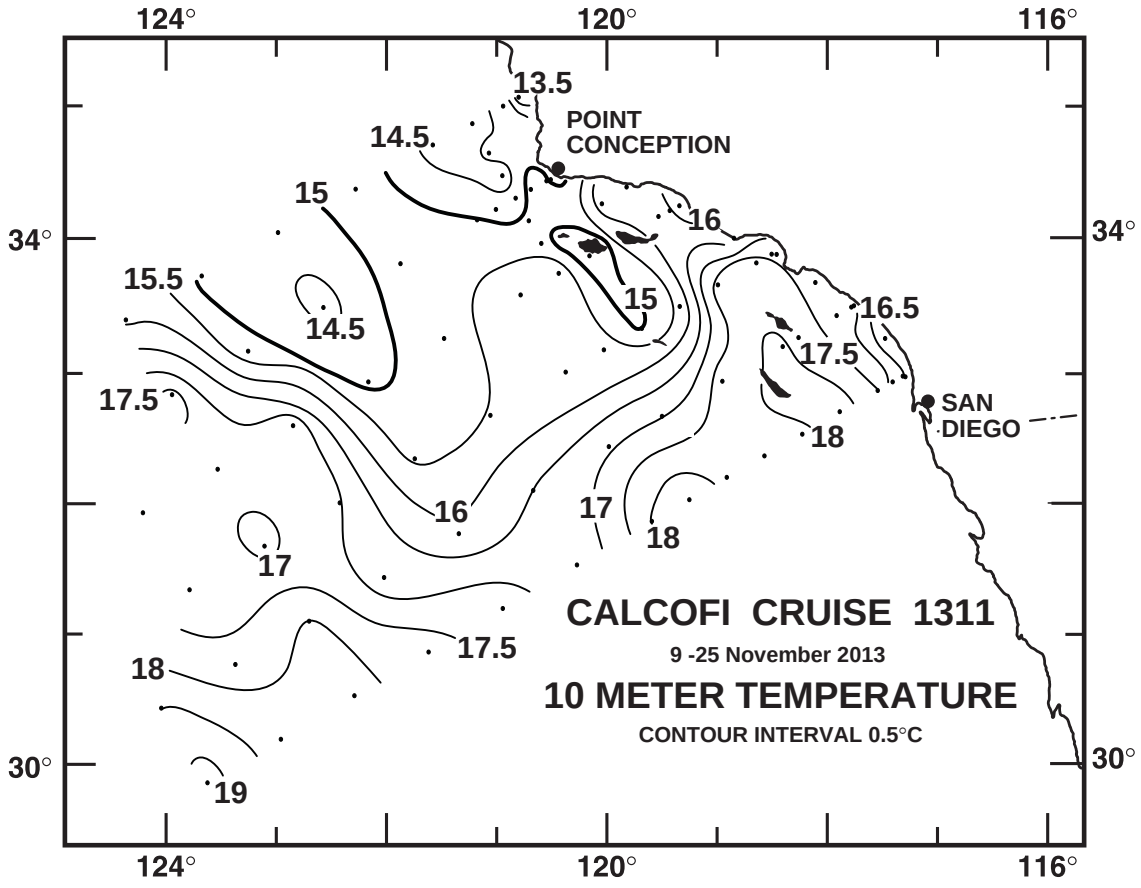

FIGURE 3C

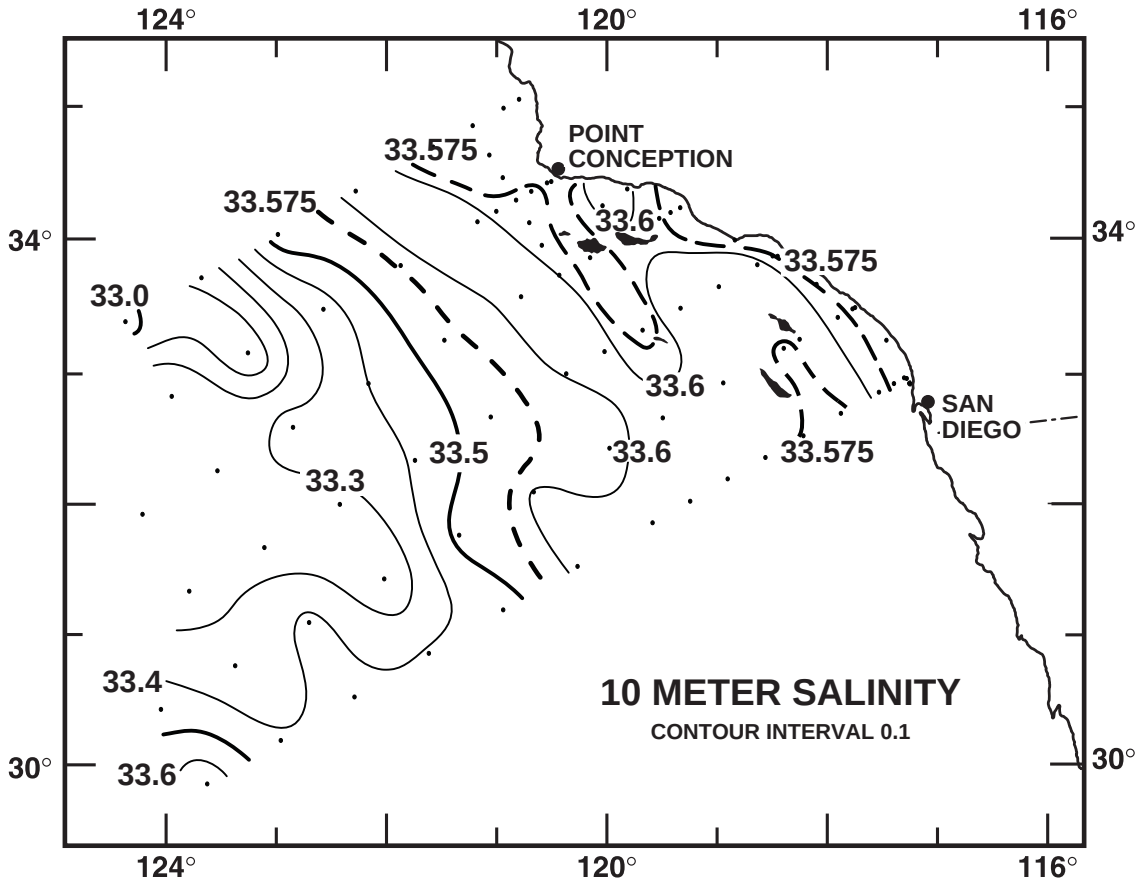

FIGURE 3D

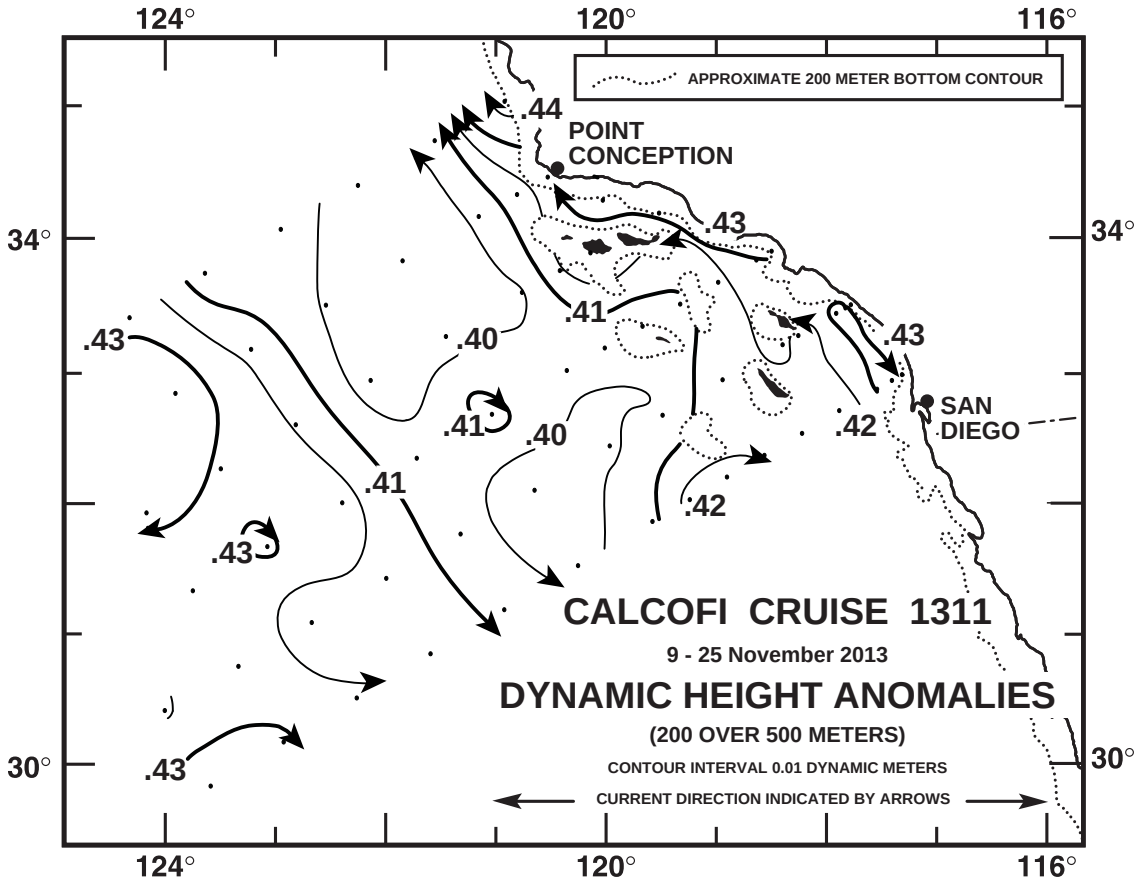

FIGURE 4A

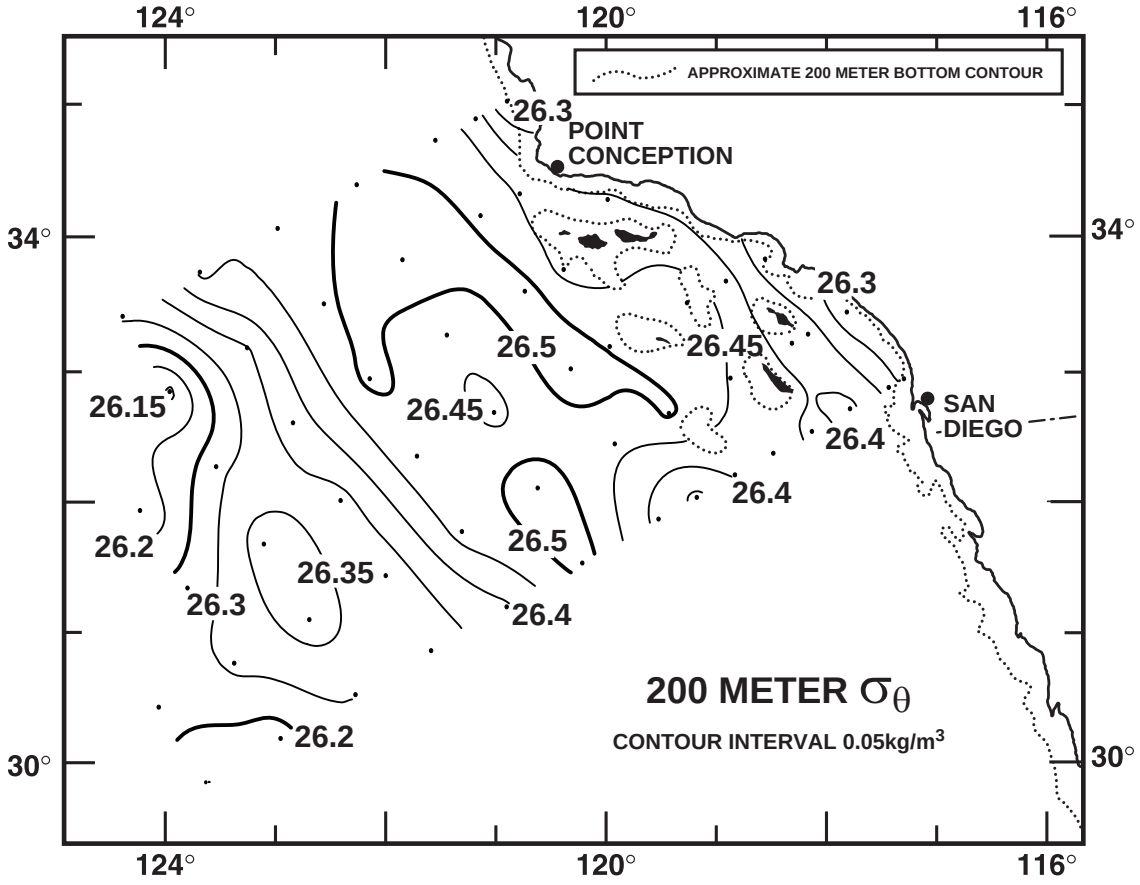

FIGURE 4B

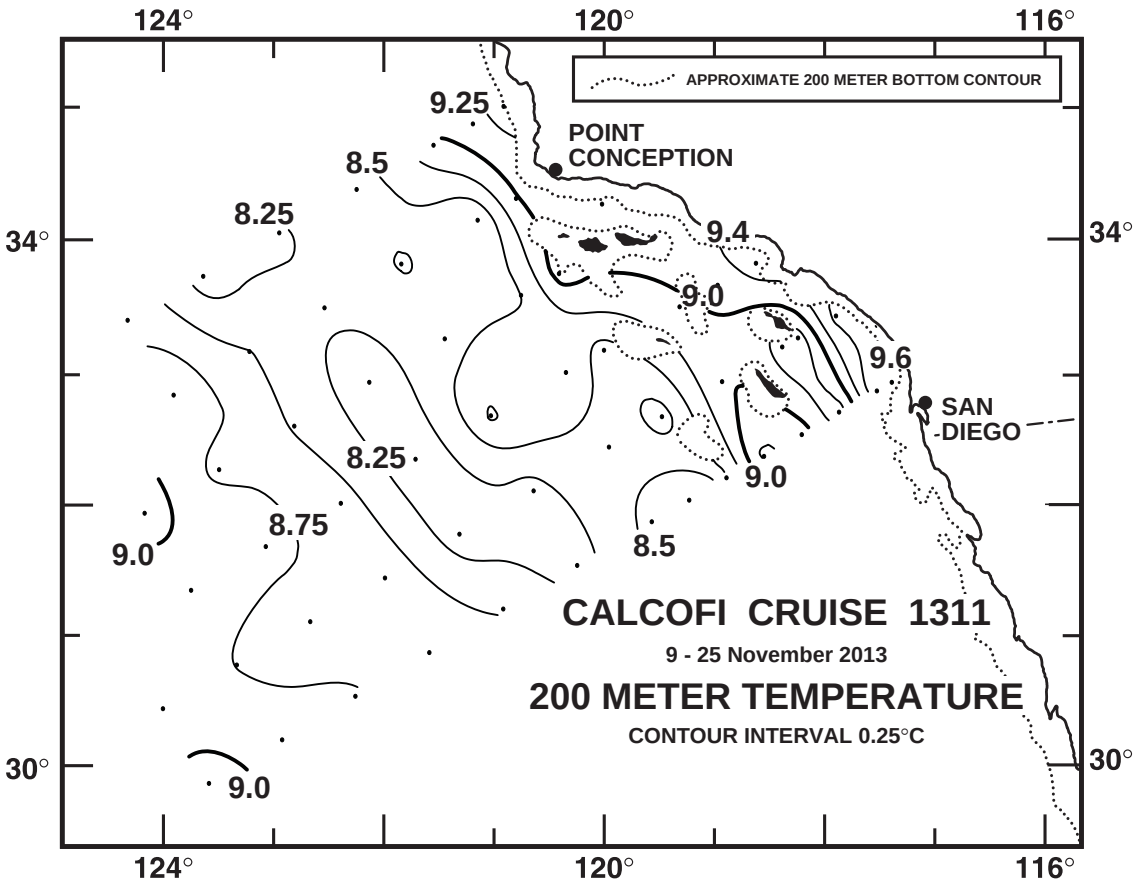

FIGURE 4C

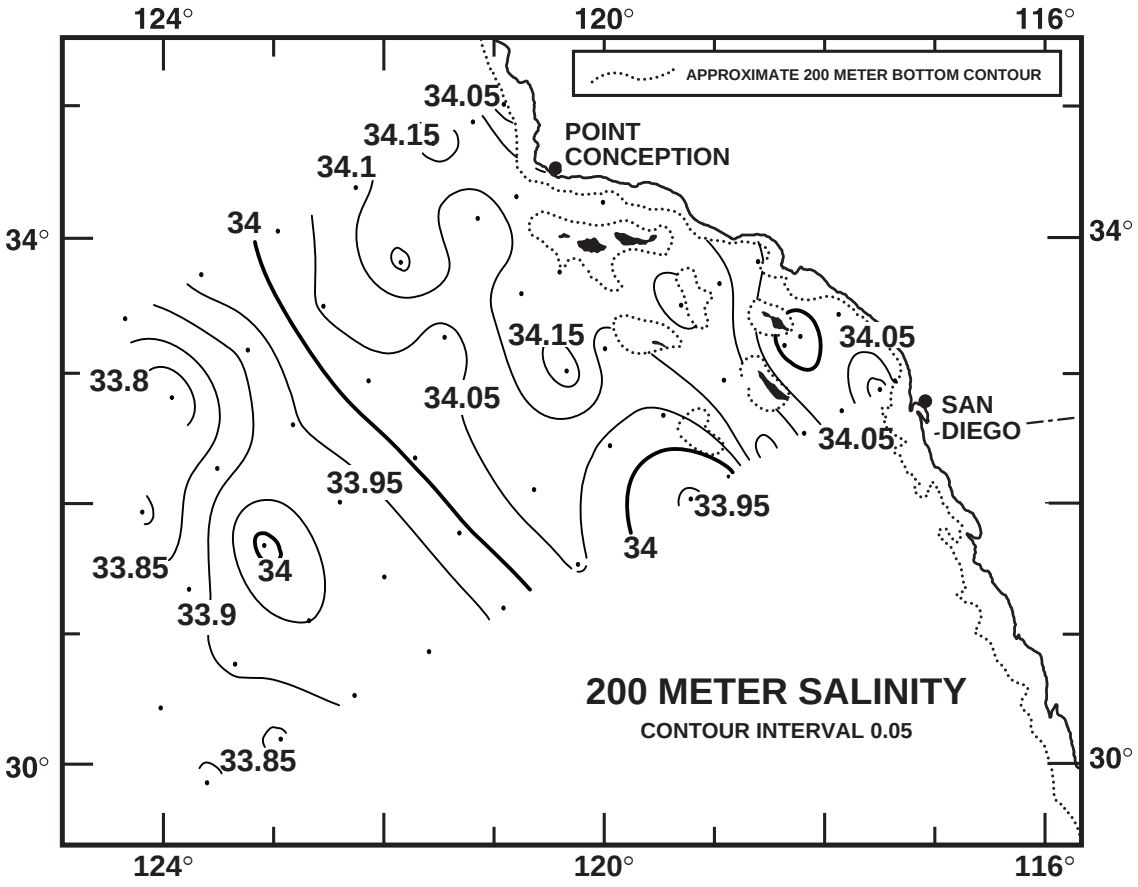

FIGURE 4D

CALCOFI CRUISE 1311

9 - 25 November 2013

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

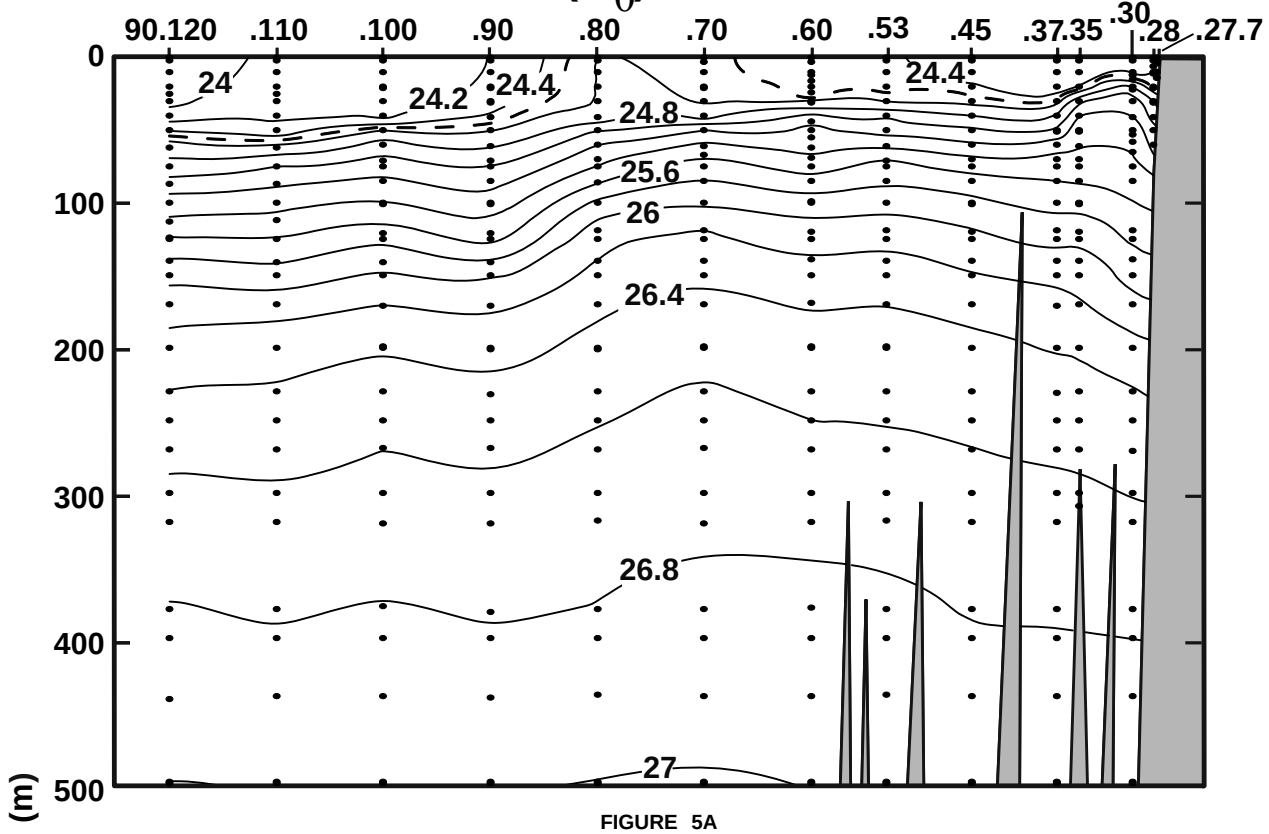

FIGURE 5A

TEMPERATURE (^{o}C) ALONG CALCOFI LINE 90

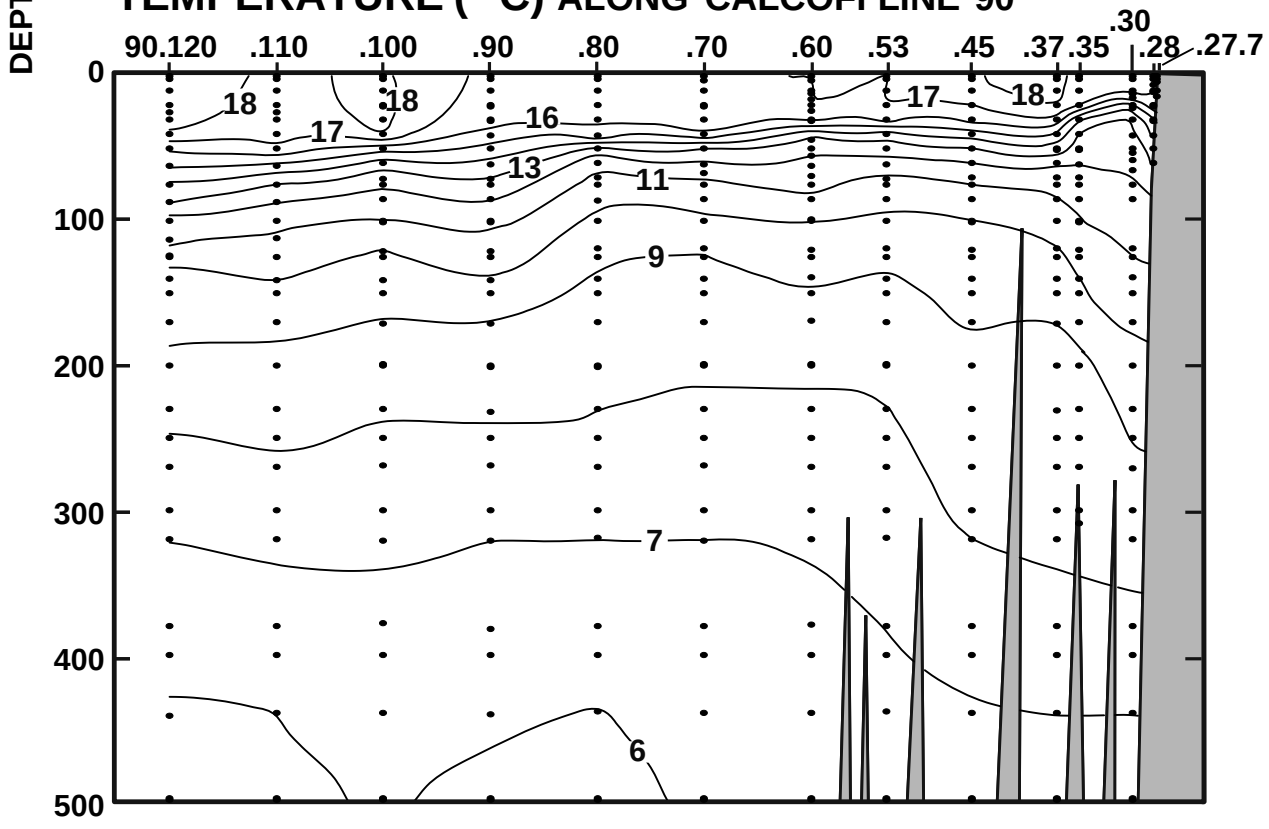

FIGURE 5B

CALCOFI CRUISE 1311

9 - 25 November 2013

SALINITY ALONG CALCOFI LINE 90

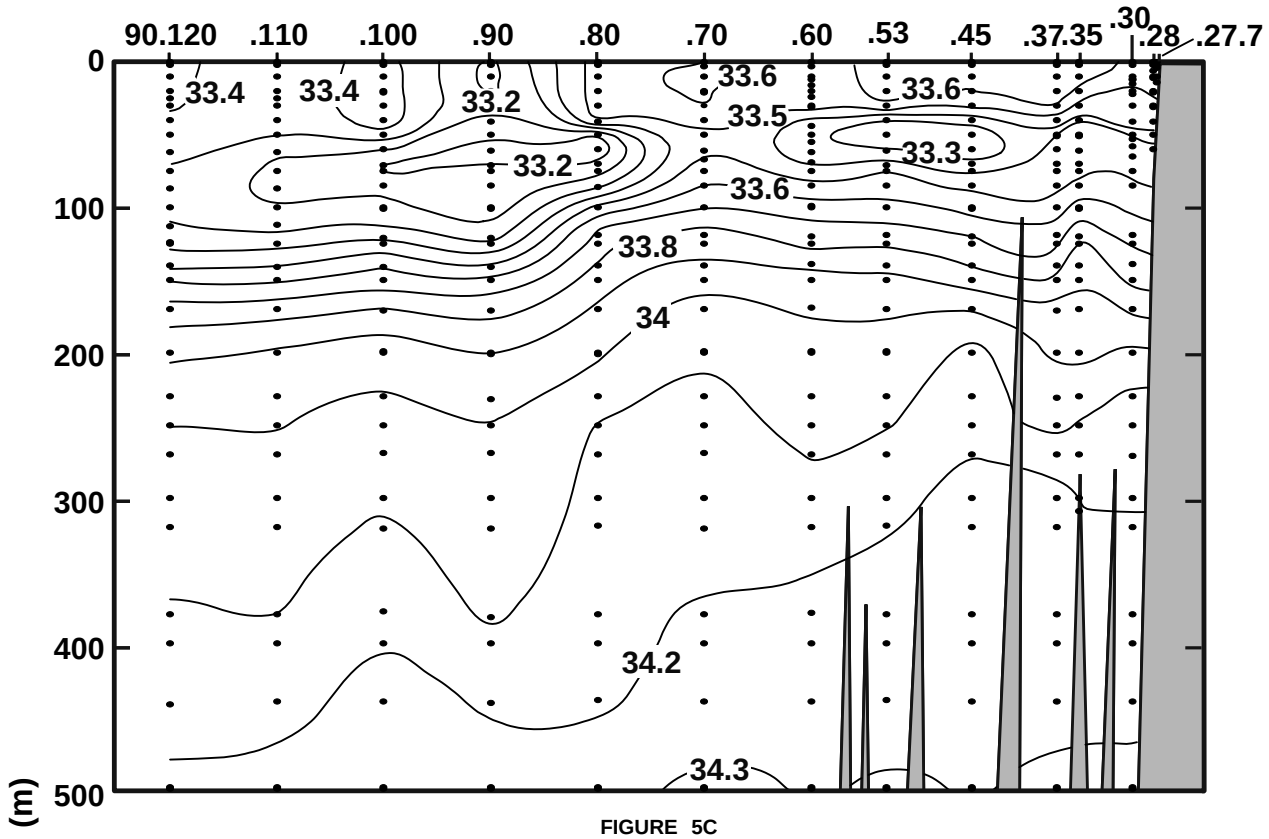

FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

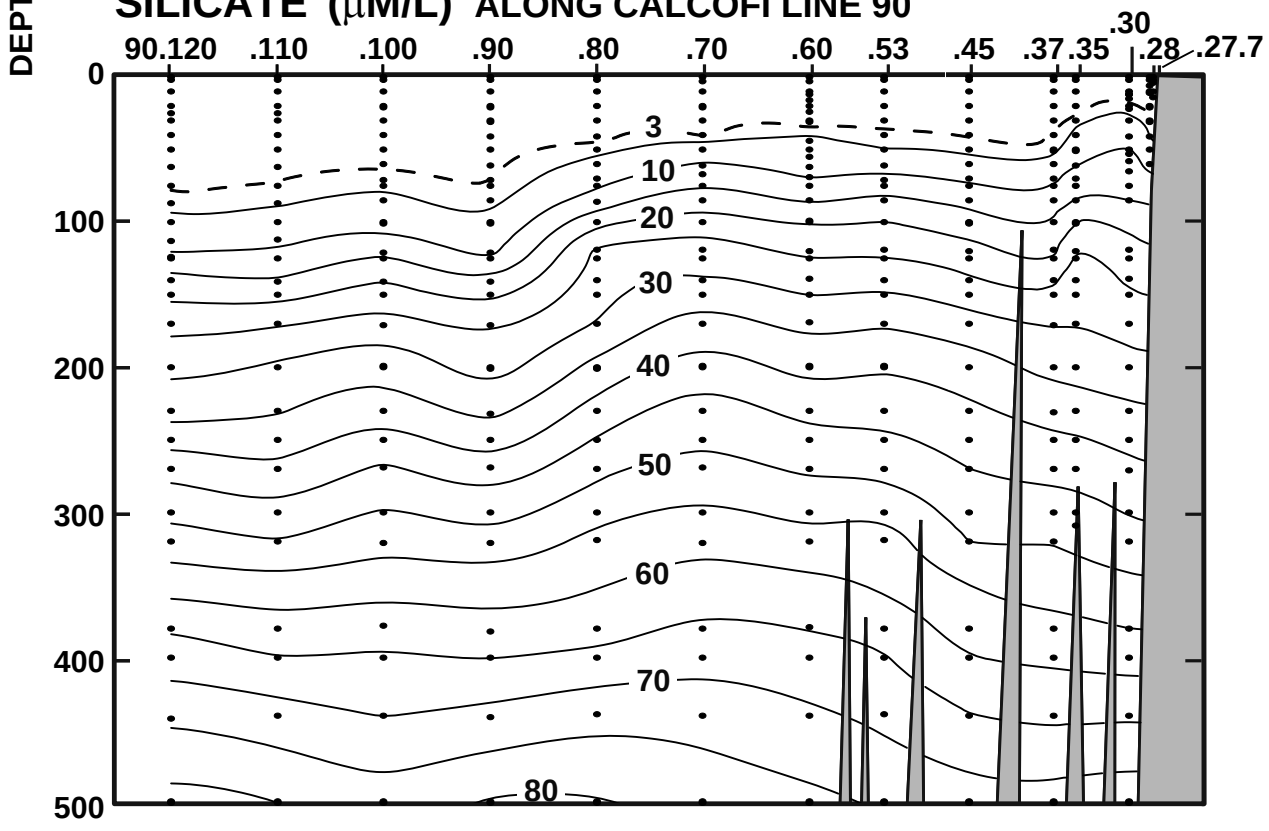

FIGURE 5D

CALCOFI CRUISE 1311

9 - 25 November 2013

NITRATE (μM/L) ALONG CALCOFI LINE 90

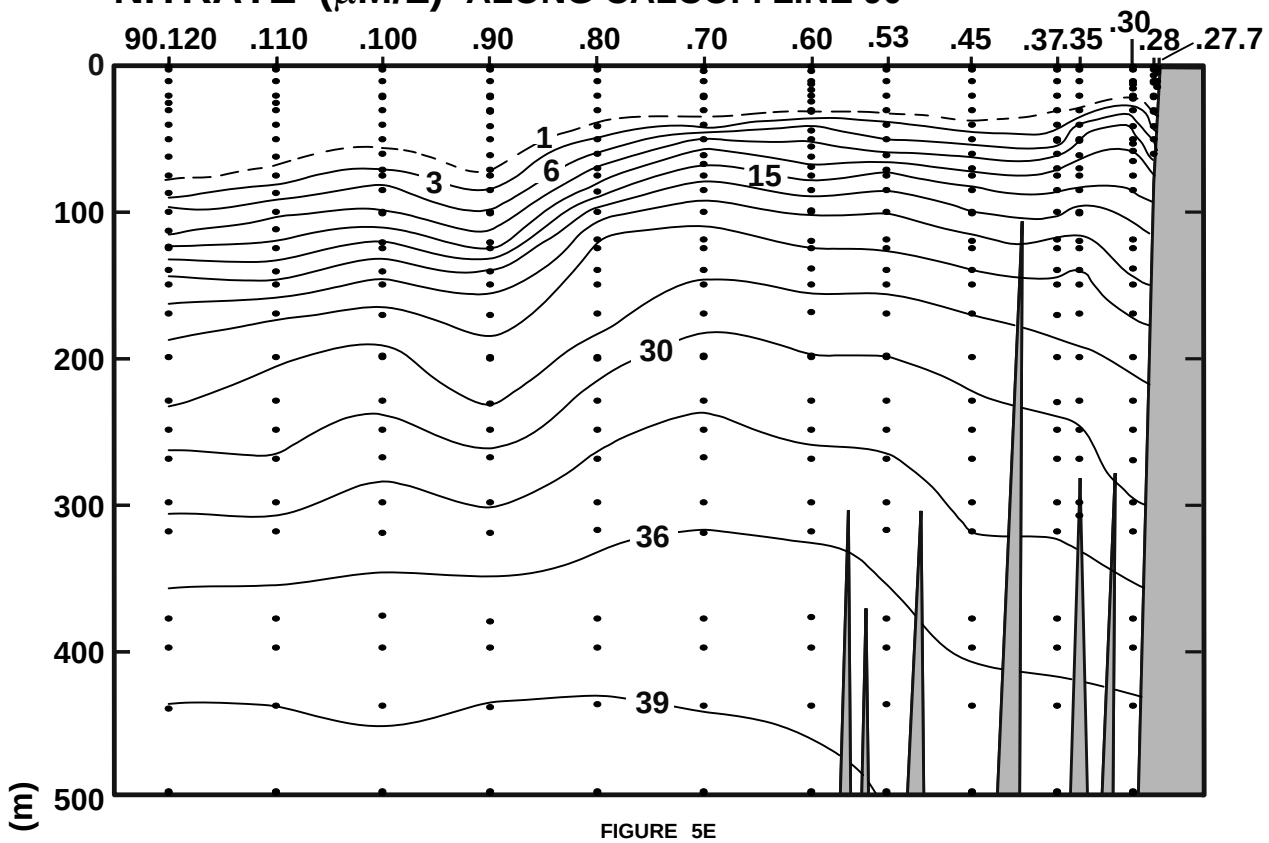

FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

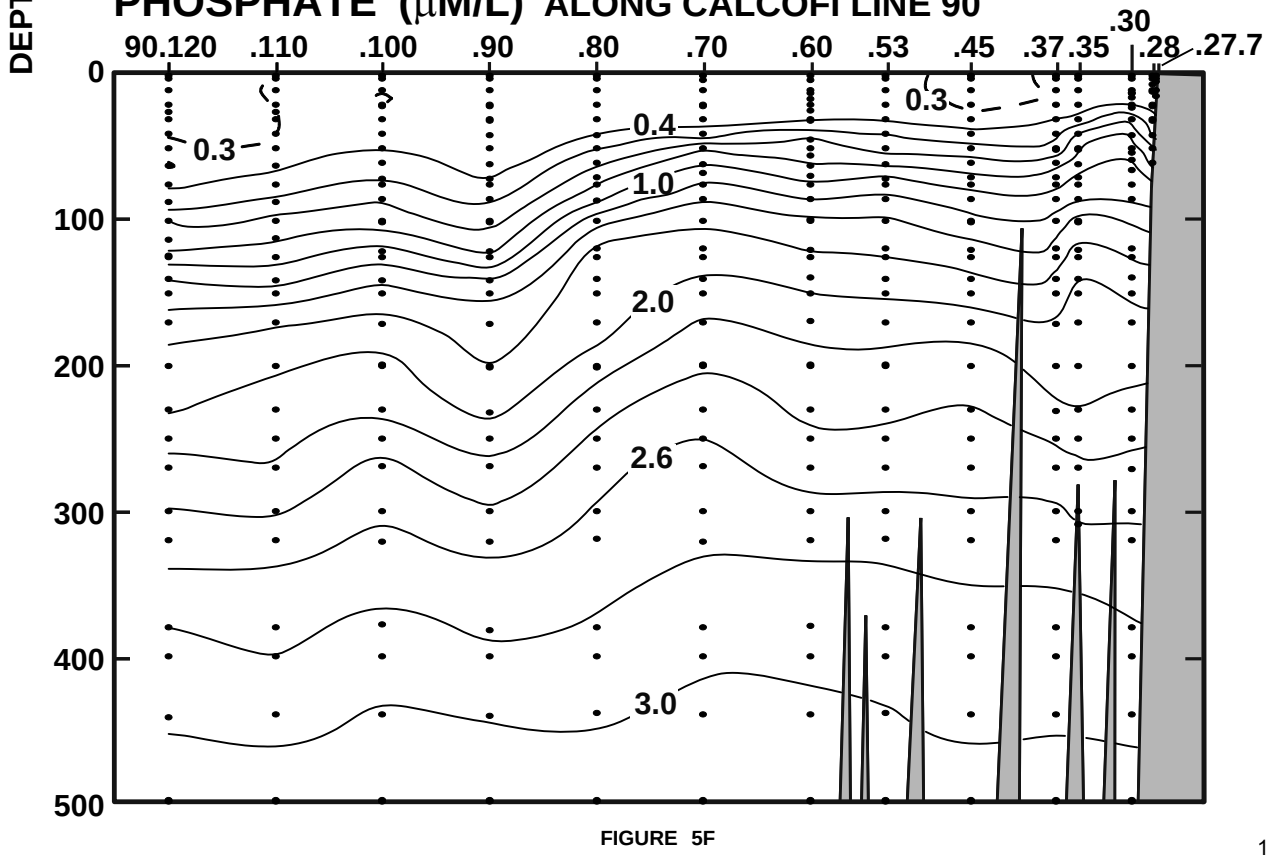

FIGURE 5F

CALCOFI CRUISE 1311

9 - 25 November 2013

CHLOROPHYLL-a (μg/L) ALONG CALCOFI LINE 90

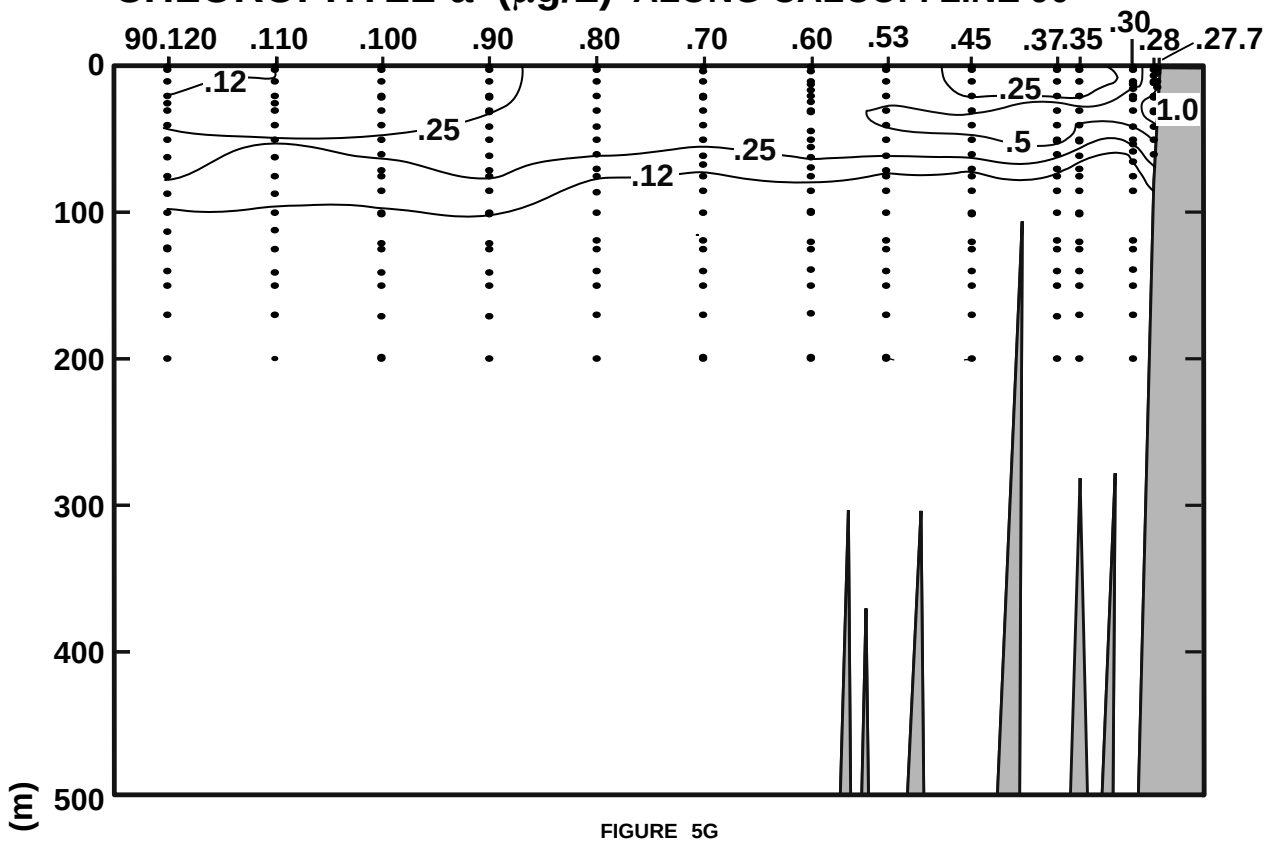

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

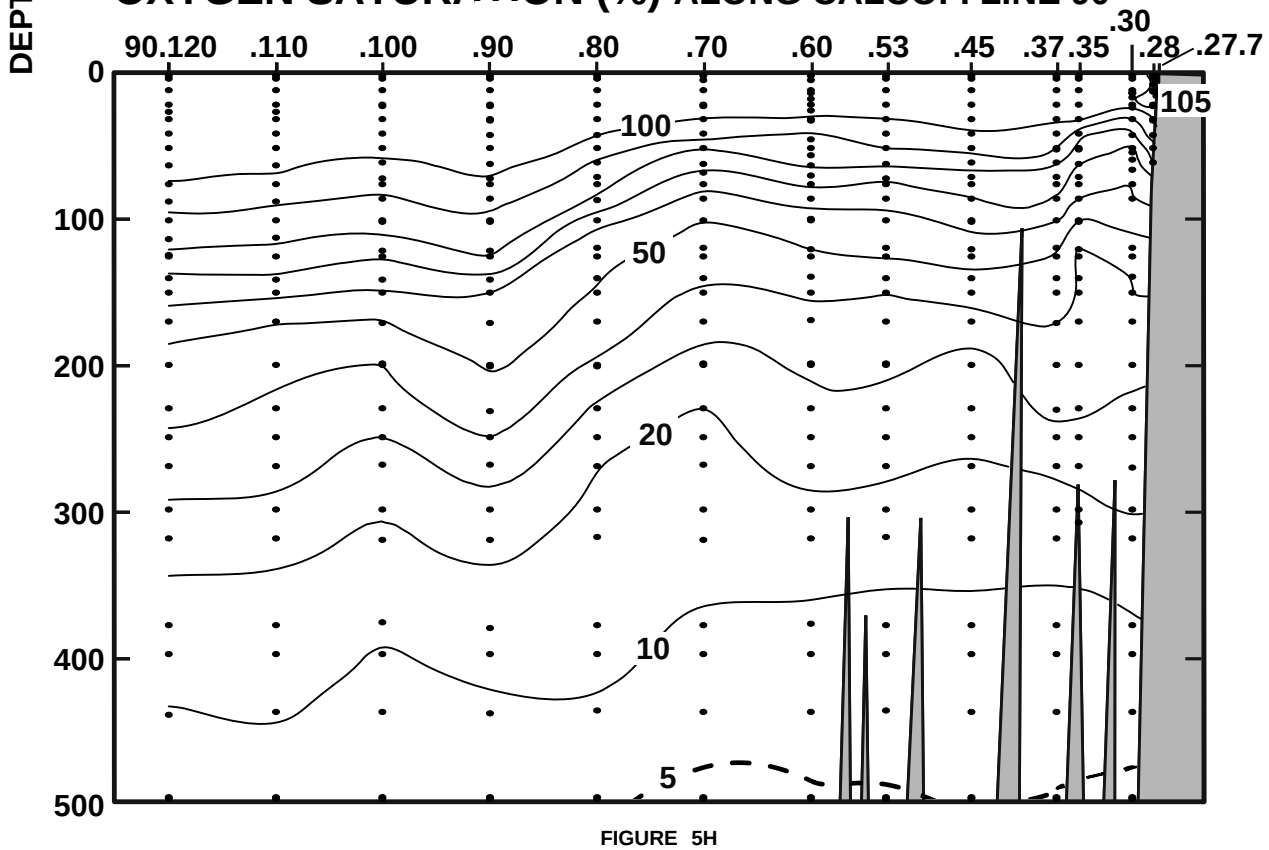

FIGURE 5H

CALCOFI CRUISE 1311

9 - 25 November 2013

OXYGEN (mL/L) ALONG CALCOFI LINE 90

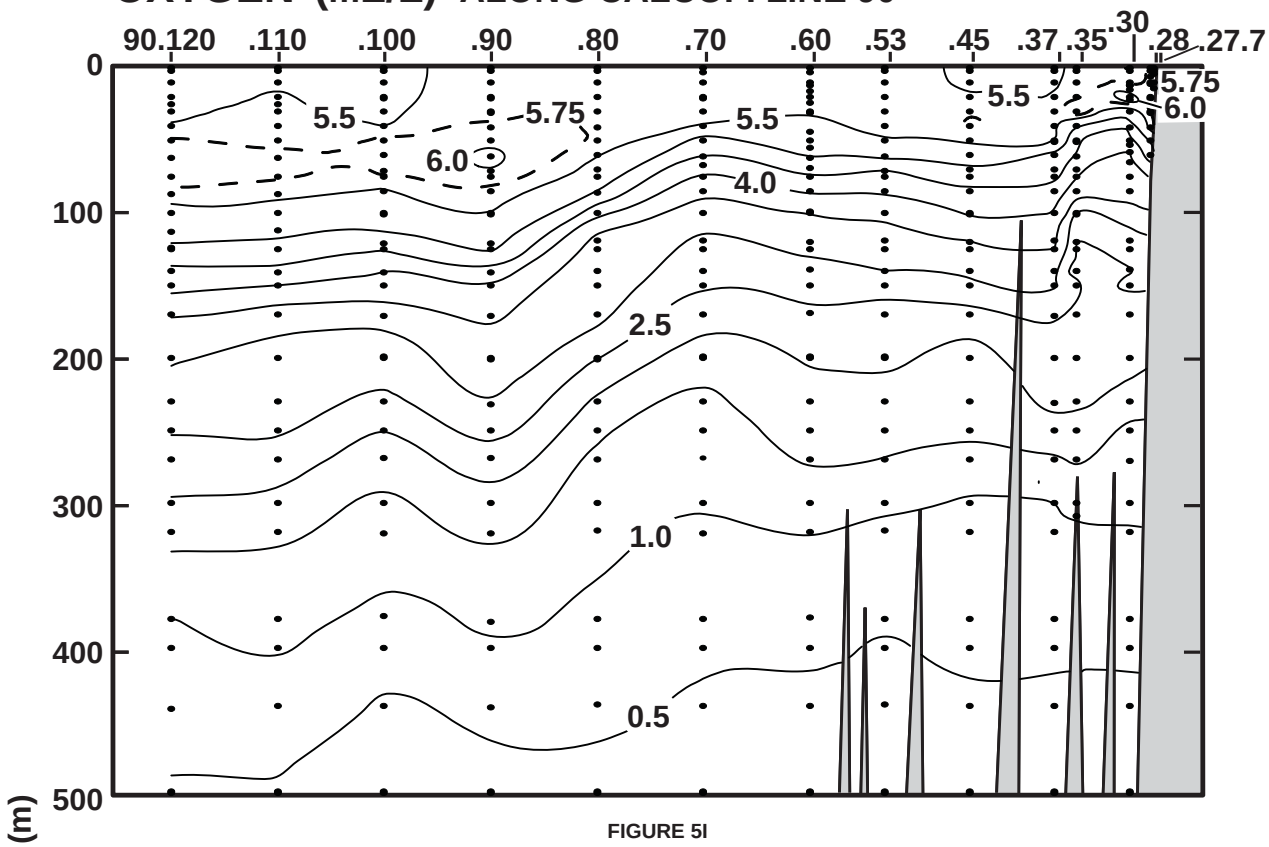

FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

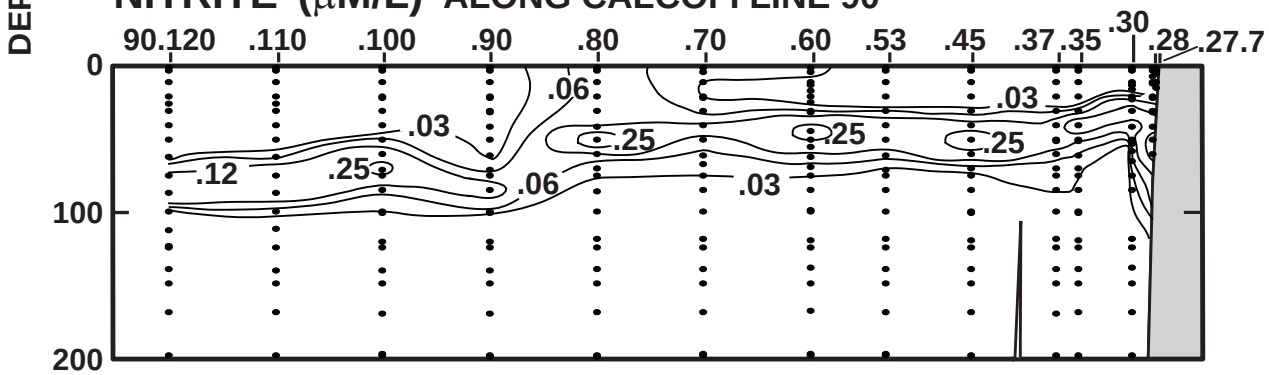

FIGURE 5J

PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90

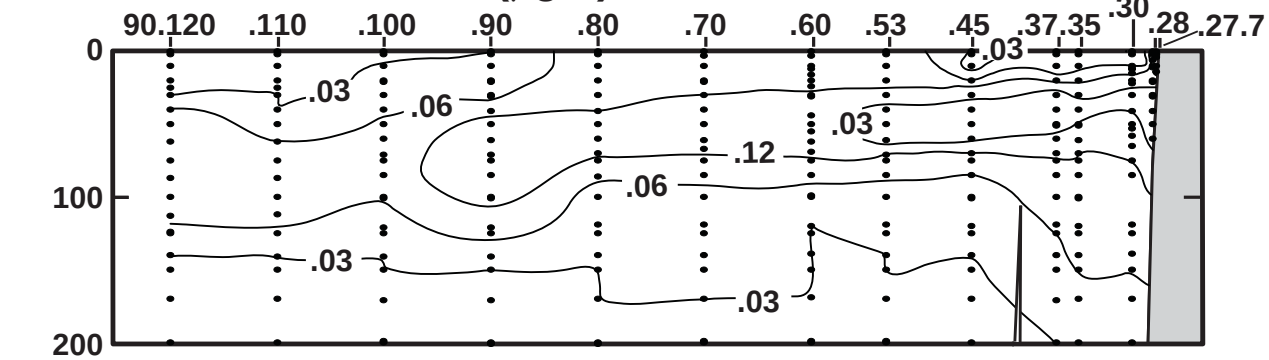

FIGURE 5K

PERSONNEL

CalCOFI Cruise 1311

SHIP'S CAPTAIN

Lawrence, Ian, RV New Horizon

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Leg)
Wilkinson, James (Chief Scientist)	Staff Research Associate, SIO	1-2
Carter, Catherine	Volunteer	1-2
Dovel, Shonna	Staff Research Associate, SIO	1-2
Ekern, Lindsey	Staff Research Associate, SIO	1-2
Faber, David	Staff Research Associate, SIO	1-2
Hays, Amy	Fishery Biologist, NMFS	1-2
Hennes, Lindsay	Volunteer	1-2
Housekeeper, Henry	Volunteer	1-2
Jacobson, Eiren	Graduate Student, SIO	1-2
Jiorle, Ralph	Staff Research Associate, SIO	1-2
Manion, Sue	Fishery Biologist, NMFS	1
Overcash, Bryan	Fishery Biologist, NMFS	2
Rodgers-Wolgast, Jennifer	Staff Research Associate, SIO	1-2
Shultz, Dana	Volunteer	1-2
Roche, Lauren	Marine Mammal Acoustician, MPL	1-2
Whitaker, Katherine	Marine Mammal Observer, MPL	1-2
Wolgast, David	Staff Research Associate, SIO	1-2

San Diego to Dana Point, California, 9 - 15 November 2013
Dana Point to San Diego, California, 15 - 25 November 2013

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 49.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
35 5.4 N	120 46.5 W	23/11/2013	2137	UTC	67 m	280 06 kn	280 01 06	1	1015.6 mb	17.9 C	14.8 C	05 m	3/8	SC	073

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		13.45	13.45	33.548	25.180	277.7	0.000	6.83	297.5	115.3	1.0	0.37	0.0	0.03	0.00	14.90	2.62	0	
2		13.45	13.45	33.548	25.180	277.7	0.006	6.83	297.5	115.3	1.0	0.37	0.0	0.03	0.00	14.90	2.62	2	09
5		13.35	13.35	33.548	25.200	275.9	0.014	6.63	288.6	111.6	1.1	0.38	0.1	0.04	0.00	15.97	3.09	5	08
10		13.28	13.28	33.550	25.215	274.6	0.028	6.15	267.7	103.4	1.9	0.48	0.8	0.09	0.08	14.86	2.43	10	06
10		13.28	13.28	33.549	25.214	274.7	0.029											10	07
20		12.62	12.62	33.549	25.345	262.5	0.055	4.71	205.2	78.2	10.8	1.04	8.1	0.33	0.82	8.12	1.62	20	05
30		12.37	12.36	33.551	25.396	257.9	0.081	4.15	180.9	68.6	16.1	1.26	10.9	0.38	0.95	3.59	1.31	30	04
40		12.36	12.35	33.553	25.400	257.9	0.106	4.33	188.4	71.4	13.8	1.21	10.1	0.36	0.88	5.99	1.78	40	03
50		12.34	12.33	33.552	25.403	257.8	0.132	4.17	181.5	68.7	16.5	1.27	11.1	0.39	0.96	5.01	1.26	50	02
61		12.33	12.33	33.553	25.405	258.0	0.161	4.09	178.0	67.4	17.0	1.31	11.5	0.40	0.84	3.88	1.23	62	01

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
35 1.3 N	120 54.9 W	23/11/2013	1921	UTC	238 m	090 05 kn	300 02 06	1	1016.0 mb	17.0 C	13.5 C	13 m	3/8	SC	072

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.64	14.64	33.586	24.961	298.5	0.000	5.96	259.5	103.1	0.4	0.39	0.1	0.04	0.11	1.92	0.89	0	
2		14.64	14.64	33.586	24.961	298.6	0.006	5.96	259.5	103.1	0.4	0.39	0.1	0.04	0.11	1.92	0.89	2	16
10		14.58	14.58	33.580	24.970	298.0	0.030	5.92	258.0	102.3	0.4	0.39	0.1	0.05	0.19	1.75	1.14	10	14
10		14.58	14.58	33.580	24.970	298.0	0.031											10	15
20		14.57	14.57	33.583	24.974	297.9	0.060	5.90	256.9	101.9	0.4	0.38	0.1	0.04	0.17	2.09	1.09	20	13
30		14.36	14.35	33.571	25.010	294.8	0.089	5.74	250.2	98.8	1.4	0.48	1.2	0.10	0.38	3.23	1.65	30	12
40		13.28	13.28	33.537	25.206	276.4	0.118	5.01	218.4	84.3	6.0	0.84	6.3	0.26	0.59	2.52	1.53	40	11
50		12.43	12.42	33.526	25.366	261.4	0.145	4.54	197.7	75.0	9.6	1.10	10.7	0.27	0.25	1.99	1.06	50	10
60		11.77	11.76	33.534	25.496	249.2	0.170	4.17	181.7	68.0	12.4	1.29	13.8	0.23	0.00	1.83	1.06	60	09
70		11.39	11.38	33.546	25.577	241.7	0.195	4.04	176.1	65.3	13.9	1.38	15.2	0.17	0.00	0.87	0.74	71	08
75	ISL	11.12 D	11.11	33.581 D	25.653	234.6	0.208	3.75	D163.2 D	60.2	15.5	1.48	16.7	0.14	0.00	0.70	0.68	76	
85		10.72	10.71	33.629	25.761	224.5	0.230	3.29	143.3	52.5	18.6	1.68	19.6	0.07	0.00	0.36	0.56	86	07
100		10.52	10.51	33.677	25.834	217.9	0.263	3.05	133.0	48.5	21.1	1.76	20.8	0.05	0.00	0.15	0.35	101	06
121		10.34	10.33	33.728	25.906	211.5	0.308	2.87	124.7	45.3	23.4	1.86	22.0	0.04	0.00	0.13	0.35	122	05
125	ISL	10.23 D	10.22	33.753 D	25.944	208.1	0.318	2.84	D123.5 D	44.8	24.1	1.88	22.4	0.04	0.00	0.11	0.32	126	
140		9.98	9.96	33.823	26.042	199.0	0.347	2.55	110.8	40.0	26.7	1.95	24.0	0.04	0.00	0.06	0.19	141	04
150	ISL	9.84 D	9.82	33.884 D	26.114	192.4	0.369	2.46	D106.9 D	38.4	28.2	2.03	24.5	0.05	0.00	0.06	0.21	151	
169		9.74	9.72	33.926	26.164	188.1	0.403	2.14	93.1	33.4	31.0	2.17	25.5	0.06	0.00	0.08	0.24	170	03
200		9.36	9.33	34.016	26.298	175.9	0.459	1.83	79.8	28.4	35.7	2.32	27.5	0.14	0.00	0.03	0.24	202	02
227		8.75	8.72	34.114	26.472	159.7	0.505	1.56	67.9	23.9	41.2	2.50	29.9	0.09	0.09			229	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 53.3 N	121 11.6 W	23/11/2013	1653	UTC	570 m	230 03 kn	300 03 08	1	1015.7 mb	15.0 C	13.9 C	12 m	2/8	CS	071

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.28	14.28	33.555	25.013	293.5	0.000	6.01	261.9	103.2	0.7	0.40	0.5	0.05	0.07	1.92	0.78	0	
2	A	14.28	14.28	33.555	25.013	293.6	0.006	6.01	261.9	103.2	0.7	0.40	0.5	0.05	0.07	1.92	0.78	2	23
7	A	14.28	14.28	33.555	25.014	293.7	0.021	6.01	261.7	103.1	0.7	0.40	0.4	0.05	0.07	1.87	0.81	7	22
10		14.22	14.22	33.556	25.027	292.5	0.028											10	21
10	A	14.22	14.22	33.556	25.027	292.5	0.029	5.98	260.3	102.5	0.8	0.39	0.6	0.06	0.11	2.07	0.86	10	20
19	A	13.98	13.97	33.555	25.077	288.0	0.056	5.83	254.1	99.5	1.5	0.49	1.7	0.13	0.37	2.71	1.29	19	19
20	ISL	13.97 D	13.97	33.555 D	25.079	287.9	0.059	5.81	D253.3 D	99.2	1.5	0.49	1.7	0.13	0.37	2.73	1.33	20	
26		13.94	13.94	33.555	25.085	287.5	0.076	5.80	252.7	98.9	1.6	0.51	1.9	0.13	0.35	2.80	1.57	26	18
30	ISL	13.93 D	13.92	33.555 D	25.089	287.3	0.088	5.80	D252.6 D	98.8	1.8	0.52	2.1	0.14	0.38	2.76	1.50	30	
34	A	13.89	13.89	33.555	25.095	286.8	0.099	5.75	250.6	98.0	1.9	0.53	2.2	0.14	0.41	2.73	1.42	34	17
40	A	13.83	13.83	33.555	25.108	285.7	0.116	5.69	247.7	96.7	2.3	0.55	2.6	0.15	0.45	2.68	1.55	40	16
50		13.74	13.73	33.555	25.127	284.2	0.144	5.59	243.5	94.9	2.9	0.55	3.2	0.17	0.50	2.55	1.43	50	15
61		12.20	12.19	33.546	25.426	255.9	0.174	4.90	213.2	80.5	7.5	0.93	8.2	0.23	0.46	1.67	1.55	62	14
69		10.97	10.96	33.576	25.675	232.3	0.194	3.87	168.4	61.9	15.8	1.47	17.3	0.08	0.00	0.43	0.60	70	13
75	ISL	10.55 D	10.54	33.625 D	25.787	221.8	0.209	3.82	D166.4 D	60.7	17.8	1.56	18.7	0.06	0.00	0.32	0.51	76	
86		10.24	10.23	33.693	25.894	211.8	0.231	3.20	139.1	50.4	21.6	1.73	21.2	0.03	0.00	0.12	0.36	87	12
100		10.06	10.05	33.799	26.008	201.3	0.260	2.68	116.4	42.1	25.5	1.90	23.3	0.03	0.00	0.06	0.23	101	11
119		9.87	9.86	33.875	26.099	193.1	0.298	2.36	102.8	37.0	28.1	2.02	24.8	0.02	0.00	0.04	0.17	120	10
125	ISL	9.84 D	9.83	33.894 D	26.120	191.2	0.311	2.32	D100.8 D	36.3	29.1	2.07	25.3	0.02	0.00	0.04	0.16	126	
140		9.66	9.64	33.983	26.221	182.0	0.337	1.95	84.8	30.4	31.5	2.18	26.7	0.02	0.00	0.03	0.14	141	09
150	ISL	9.59 D	9.57	34.027 D	26.267	177.9	0.357	1.81	D 78.7 D	28.2	32.8	2.17	27.2	0.02	0.00	0.02	0.13	151	
170		9.38	9.36	34.085	26.346	170.7	0.390	1.64	71.3	25.4	35.3	2.16	28.2	0.02	0.00	0.02	0.12	171	08
200		9.16	9.14	34.140	26.426	163.7	0.440	1.46	63.7	22.6	37.9	2.37	29.4	0.02	0.00	0.02	0.11	202	07
229		9.04	9.02	34.171	26.470	160.1	0.487	1.34	58.4	20.7	39.8	2.45	29.7	0.02	0.00			231	06
250	ISL	8.83 D	8.80	34.186 D	26.516	156.1	0.524	1.27	D 55.2 D	19.4	41.5	2.48	30.4	0.02	0.00			252	
270		8.66	8.63	34.190	26.546	153.6	0.551	1.21	52.4	18.4	43.2	2.50	31.1	0.02	0.00			272	05
300	ISL	8.02 D	7.99	34.157 D	26.618	146.9	0.600	1.27	D 55.1 D	19.1	46.9	2.56	32.4	0.01	0.00			302	
320		7.84	7.81	34.155	26.643	144.9	0.625	1.18	51.5	17.7	49.4	2.60	33.3	0.01	0.00			323	04
381		7.36	7.32	34.177	26.731	137.3	0.711	0.92	39.8	13.6	56.0	2.76	35.3	0.04	0.00			384	03
400	ISL	7.28 D	7.24	34.189 D	26.753	135.5	0.743	0.85	D 36.8 D	12.5	58.1	2.80	35.8	0.03	0.00			403	
441		6.99	6.95	34.215	26.813	130.2	0.792	0.66	28.6	9.7	62.6	2.90	37.0	0.01	0.00			445	02
500	ISL	6.57 D	6.52	34.260 D	26.906	121.9	0.873	0.44	D 19.1 D	6.4	74.5	3.09	37.9	0.07	0.00			504	
517		6.31	6.26	34.279	26.955	117.2	0.886	0.33	14.2	4.7	78.0	3.14	38.2	0.09	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 43.5 N	121 33.0 W	23/11/2013	1146 UTC	933 m	240 05 kn			1013.5 mb	14.9 C	13.9 C				070

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.20		14.20		33.541		25.020	292.9	0.000	6.41		279.1		109.8		0.4	0.31	0.1	0.02	0.00	5.53	1.78	0	
2		14.20		14.20		33.541		25.020	293.0	0.006	6.41		279.1		109.8		0.4	0.31	0.1	0.02	0.00	5.53	1.78	2	20
10		14.20		14.20		33.542		25.020	293.2	0.029	6.41		279.1		109.8		0.4	0.31	0.0	0.02	0.00	5.38	1.75	10	19
20		13.49		13.49		33.543		25.167	279.5	0.058	5.64		245.5		95.2		2.9	0.59	3.2	0.10	0.12	7.82	2.27	20	18
30		11.75		11.75		33.568		25.525	245.6	0.084	4.02		175.0		65.5		12.8	1.32	14.0	0.17	0.07	4.32	1.42	30	17
40		10.82		10.81		33.624		25.739	225.5	0.108	3.40		147.9		54.3		18.3	1.60	18.6	0.08	0.01	1.32	0.77	40	16
50		10.39		10.38		33.714		25.885	211.8	0.130	2.91		126.8		46.1		22.8	1.81	21.5	0.04	0.00	0.59	0.60	50	15
60		10.29		10.29		33.758		25.935	207.3	0.151	2.78		121.2		44.0		24.4	1.88	22.4	0.03	0.00	0.64	0.62	60	14
70		10.10		10.09		33.778		25.984	202.9	0.171	2.65		115.4		41.7		25.2	1.94	22.9	0.03	0.00	0.36	0.50	71	13
75	ISL	9.97	D	9.96		33.797	D	26.020	199.5	0.182	2.70	D	117.7	D	42.4		25.7	1.95	23.3	0.03	0.00	0.30	0.43	76	
85		9.92		9.91		33.830		26.056	196.4	0.201	2.56		111.6		40.2		26.6	1.98	24.0	0.03	0.00	0.16	0.29	86	12
100		9.79		9.78		33.947		26.170	185.9	0.230	2.03		88.4		31.8		30.8	2.10	26.1	0.03	0.00	0.12	0.17	101	11
119		9.70		9.69		33.990		26.218	181.7	0.265	1.84		80.1		28.8		32.5	2.24	26.7	0.03	0.00	0.08	0.13	120	10
125	ISL	9.71	D	9.69		33.999	D	26.225	181.2	0.277	1.85	D	80.5	D	28.9		33.0	2.25	27.0	0.03	0.00	0.07	0.12	126	
140		9.48		9.46		34.042		26.296	174.8	0.302	1.73		75.1		26.8		34.4	2.29	27.8	0.03	0.00	0.04	0.09	141	09
150	ISL	9.44	D	9.42		34.047	D	26.307	174.0	0.321	1.79	D	77.9	D	27.8		34.7	2.29	27.9	0.03	0.00	0.03	0.09	151	
170		8.90		8.88		34.049		26.395	165.9	0.354	1.98		86.2		30.4		35.3	2.29	28.2	0.02	0.00	0.03	0.09	171	08
200		8.98		8.95		34.179	D	26.487	157.9	0.404	1.40	D	60.9	D	21.5									202	07
230		8.01		7.99		34.091		26.566	150.5	0.449	1.64		71.3		24.7		43.6	2.45	31.6	0.02	0.00			232	06
250	ISL	7.76	D	7.73		34.117	D	26.623	145.3	0.481	1.51	D	65.9	D	22.6		46.9	2.54	32.7	0.02	0.00			252	
270		7.62		7.59		34.129		26.653	142.8	0.507	1.26		54.7		18.8		50.2	2.62	33.8	0.02	0.00			272	05
300	ISL	7.58	D	7.55		34.184	D	26.703	138.6	0.552	0.98	D	42.5	D	14.5		53.7	2.74	34.4	0.02	0.00			302	
319		7.45		7.42		34.148		26.694	139.7	0.577	0.79		34.5		11.8		56.0	2.81	34.7	0.02	0.00			322	04
380		7.08		7.04		34.246		26.824	128.2	0.658	0.59		25.6		8.7		61.8	2.93	36.2	0.02	0.00			383	03
400	ISL	6.87	D	6.84		34.258	D	26.862	124.7	0.685	0.56	D	24.4	D	8.2		64.7	2.97	36.9	0.02	0.00			403	
441		6.49		6.45		34.227		26.890	122.4	0.735	0.50		21.7		7.2		70.6	3.06	38.3	0.01	0.00			445	02
500	ISL	6.14	D	6.10		34.279	D	26.976	114.8	0.806	0.37	D	15.9	D	5.3		76.1	3.15	39.3	0.02	0.00			504	
515		6.12		6.08		34.281		26.981	114.6	0.822	0.32		14.0		4.6		77.4	3.17	39.5	0.02	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 23.2 N	122 14.8 W	23/11/2013	0540 UTC	4018 m	340 09 kn			1013.4 mb	14.4 C	12.8 C				069

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.07		15.07		33.618		24.893	304.9	0.000	6.08		264.9		106.1		0.4	0.35	0.3	0.03	0.00	3.85	1.09	0	
2		15.07		15.06		33.618		24.893	305.0	0.006	6.08		264.9		106.1		0.4	0.35	0.3	0.03	0.00	3.85	1.09	2	20
10		15.07		15.06		33.622		24.896	305.0	0.031	6.03		262.7		105.2		0.4	0.35	0.1	0.03	0.00	3.78	1.06	10	19
20		15.03		15.03		33.618		24.902	304.8	0.061	5.93		258.6		103.5		0.5	0.36	0.1	0.03	0.03	4.55	1.35	20	18
30	ISL	15.02	D	15.01		33.617	D	24.905	304.8	0.092	5.89	D	256.5	D	102.7		0.5	0.38	0.1	0.03	0.12	4.89	1.50	30	
31		15.02		15.01		33.617	D	24.905	304.9	0.095	5.86		255.4		102.1		0.5	0.38	0.1	0.03	0.13	4.92	1.52	31	17
41		14.80		14.80		33.615		24.951	300.8	0.126	5.75		250.5		99.8		1.1	0.42	0.6	0.06	0.36	4.29	1.72	41	16
50		11.83		11.83		33.482		25.445	253.8	0.151	4.54		197.6		74.0		9.2	1.19	13.3	0.12	0.00	0.43	0.62	50	15
61		10.39		10.38		33.498		25.717	228.1	0.178	3.99		173.6		63.0		15.7	1.56	18.8	0.04	0.00	0.10	0.25	61	14
71		9.98		9.97		33.550		25.827	217.8	0.200	3.65		159.0		57.2		18.5	1.71	20.8	0.04	0.00	0.07	0.30	72	13
75	ISL	9.89	D	9.88		33.636	D	25.908	210.1	0.208	3.48	D	151.5	D	54.5		20.0	1.76	21.7	0.04	0.00	0.06	0.26	76	
85		9.64		9.63		33.675		25.981	203.5	0.230	3.20		139.2		49.8		23.7	1.87	23.8	0.03	0.00	0.03	0.14	86	12
100		9.41		9.40		33.805		26.120	190.5	0.259	2.61		113.6		40.4		27.9	1.99	26.3	0.03	0.00	0.03	0.22	101	11
120		9.08		9.06		33.870		26.225	180.9	0.296	2.48		107.9		38.2		30.5	2.08	27.1	0.02	0.00	0.01	0.15	121	10
125	ISL	9.04	D	9.03		33.882	D	26.241	179.5	0.305	2.50	D	108.7	D	38.4		31.1	2.09	27.3	0.02	0.00	0.01	0.15	126	
140		8.67		8.65		33.898		26.312	173.0	0.332	2.56		111.4		39.0		32.7	2.10	27.9	0.03	0.00	0.02	0.14	141	09
150	ISL	8.69	D	8.67		33.951	D	26.351	169.5	0.349	2.42	D	105.5	D	37.0		33.9	2.10	28.1	0.03	0.00	0.02	0.13	151	
169		8.28		8.26		33.972		26.430	162.3	0.381	2.52		109.7		38.1		36.1	2.11	28.6	0.02	0.00	0.02	0.10	170	08
200		8.33		8.31		34.087		26.514	155.0	0.430	1.59		69.1		24.1		41.4	2.40	30.9	0.02	0.00	0.01	0.09	202	07
230		7.83		7.80		34.083		26.586	148.5	0.475	1.51		65.9		22.7		45.9	2.46	32.6	0.02	0.00			232	06
250	ISL	7.54	D	7.52		34.103	D	26.643	143.3	0.505	1.38	D	60.1	D	20.6		49.4	2.55	33.6	0.02	0.00			252	
271		7.29		7.27		34.108		26.683	139.8	0.534	1.19		51.8		17.6		53.1	2.64	34.6	0.02	0.00			273	05
300	ISL	7.09	D	7.06		34.134	D	26.733	135.4	0.576	1.01	D	43.8	D	14.8		56.5	2.72	35.5	0.02	0.00			302	
320		7.02		6.99		34.154		26.758	133.4	0.601	0.87		38.0		12.8		58.8	2.78	36.2	0.02	0.00			323	04
381		6.74		6.71		34.213		26.843	126.1	0.680	0.57	D	24.8	D	8.4		65.7	2.84	37.3	0.02	0.00			384	03
400	ISL	6.63	D	6.59		34.230	D	26.872	123.5	0.706	0.52	D	22.4	D	7.5		68.0	2.90	37.7	0.02	0.00			403	
440		6.34		6.30		34.256		26.931	118.4	0.752	0.42	D	18.2	D	6.1		72.9	3.03	38.5	0.02	0.00			444	02
500	ISL	6.01	D	5.97		34.276	D	26.990	113.3	0.825	0.34	D	14.7	D	4.9		79.1	3.11	39.6	0.01	0.00			504	
514		5.88		5.84		34.274		27.005	112.0	0.838	0.29		12.5		4.1		80.6	3.13	39.8	0.01	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 3.3 N	122 56.9 W	22/11/2013	2342 UTC	4233 m	010 09 kn	330 05 06	1	1012.7 mb	15.1 C	12.8 C	11 m	4/8	CS	068

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.82	14.82	33.571	24.910	303.3	0.000	5.78	251.7	100.3	1.9	0.43	1.4	0.13	0.16	0.84	0.14	0	
2	14.82	14.82	33.571	24.910	303.4	0.006	5.78	251.7	100.3	1.9	0.43	1.4	0.13	0.16	0.84	0.14	2	20
10	14.69	14.69	33.565	24.934	301.4	0.030	5.79	252.1	100.2	1.8	0.43	1.3	0.13	0.18	0.80	0.24	10	19
20	14.62	14.62	33.558	24.945	300.7	0.060	5.76	251.0	99.6	1.7	0.45	1.3	0.13	0.16	1.04	0.30	20	18
30	14.56	14.55	33.547	24.950	300.5	0.091	5.71	248.8	98.6	1.7	0.48	1.4	0.14	0.36	0.79	0.36	30	17
40	13.54	13.53	33.422	25.067	289.7	0.120	5.58	243.2	94.3	3.1	0.63	3.3	0.20	0.59	0.38	0.16	40	16
50	10.02	10.01	33.081	25.454	252.7	0.147	5.24	228.3	82.0	9.9	1.10	11.6	0.04	0.00	0.10	0.11	50	15
60	9.55	9.54	33.209	25.631	236.1	0.172	4.84	210.8	75.0	14.4	1.33	15.5	0.03	0.00	0.06	0.07	60	14
71	9.09	9.08	33.352	25.816	218.6	0.197	4.46	194.0	68.4	18.9	1.49	18.5	0.03	0.00	0.03	0.05	72	13
75 ISL	9.39 D	9.39	33.523 D	25.902	210.7	0.207	4.44	D193.3 D	68.7	20.1	1.56	19.6	0.03	0.00	0.03	0.05	76	
85	9.10	9.09	33.576	25.991	202.4	0.226	3.70	161.1	56.9	23.2	1.74	22.4	0.02	0.00	0.03	0.04	86	12
100	9.17	9.16	33.788	26.145	188.1	0.256	2.90	126.2	44.7	27.8	1.98	25.6	0.02	0.00	0.01	0.05	101	11
120	8.95	8.94	33.909	26.276	176.1	0.292	2.38	103.7	36.6	31.7	2.06	27.6	0.02	0.00	0.01	0.06	121	10
125 ISL	8.90 D	8.89	33.938 D	26.306	173.3	0.302	2.33	D101.2 D	35.7	32.2	2.09	27.8	0.02	0.00	0.01	0.06	126	
141	8.69	8.68	33.967	26.363	168.2	0.328	2.24	97.5	34.2	33.9	2.19	28.5	0.02	0.00	0.01	0.06	142	09
150 ISL	8.68 D	8.66	33.981 D	26.375	167.2	0.345	2.38	D103.6 D	36.3	34.4	2.19	28.7	0.02	0.00	0.01	0.05	151	
170	8.46	8.44	34.004	26.428	162.6	0.376	2.21	96.3	33.6	35.6	2.19	29.2	0.02	0.00	0.01	0.05	171	08
200	8.21	8.19	34.008	26.469	159.2	0.425	2.23	97.1	33.7	36.3	2.18	29.0	0.02	0.00	0.00	0.05	202	07
230	8.02	8.00	34.090	26.563	150.7	0.471	1.54	67.0	23.2	44.0	2.47	32.3	0.02	0.00			232	06
250 ISL	7.84 D	7.82	34.112 D	26.607	146.9	0.502	1.36 D	59.0 D	20.3	46.7	2.54	33.0	0.02	0.00			252	
271	7.71	7.69	34.135	26.645	143.6	0.531	1.17	50.8	17.4	49.4	2.61	33.7	0.02	0.00			273	05
300 ISL	7.50 D	7.47	34.158 D	26.695	139.3	0.574	1.01 D	43.7 D	14.9	53.0	2.64	34.7	0.02	0.00			302	
321	7.33	7.30	34.172	26.730	136.2	0.601	0.87	37.9	12.9	55.6	2.67	35.4	0.02	0.00			324	04
381	6.98	6.94	34.218	26.816	128.9	0.681	0.59	25.7	8.7	62.6	2.89	36.6	0.02	0.00			384	03
400 ISL	6.83 D	6.79	34.233 D	26.848	126.0	0.708	0.55 D	24.0 D	8.1	65.0	2.94	37.1	0.02	0.00			403	
441	6.51	6.47	34.246	26.902	121.3	0.756	0.44	19.3	6.4	70.1	3.04	38.3	0.01	0.00			445	02
500 ISL	6.07 D	6.03	34.283 D	26.988	113.6	0.829	0.33 D	14.3 D	4.7	77.9	3.17	39.3	0.03	0.00			504	
515	5.96	5.91	34.294	27.011	111.5	0.842	0.31	13.4	4.4	79.9	3.20	39.6	0.03	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 43.4 N	123 38.2 W	22/11/2013	1738 UTC	4311 m	020 16 kn	330 08 12	0	1014.0 mb	15.1 C	13.8 C	14 m	1/8	CC	067

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.82	14.82	33.117	24.560	336.6	0.000	5.84	254.7	101.1	2.4	0.38	0.8	0.06	0.00	0.58	0.20	0	
2 A	14.82	14.82	33.117	24.560	336.7	0.007	5.84	254.7	101.1	2.4	0.38	0.8	0.06	0.00	0.58	0.20	2	22
9 A	14.81	14.81	33.117	24.563	336.7	0.030	5.86	255.6	101.4	2.4	0.39	0.7	0.06	0.00	0.59	0.19	9	21
10 A	14.81	14.81	33.114	24.561	336.9	0.034	5.88	256.4	101.7	2.4	0.38	0.6	0.06	0.00	0.60	0.20	10	20
20 ISL	14.80 D	14.80	33.114 D	24.564	337.0	0.068	5.87	D255.9 D	101.6	2.4	0.38	0.6	0.06	0.00	0.58	0.20	20	
21 A	14.80	14.80	33.113	24.563	337.1	0.071	5.85	254.9	101.2	2.4	0.38	0.6	0.06	0.00	0.58	0.20	21	19
29	14.76	14.76	33.133	24.587	335.0	0.098	5.85	255.1	101.2	2.4	0.38	0.7	0.06	0.00	0.55	0.21	29	18
30 ISL	14.79 D	14.79	33.195 D	24.628	331.2	0.102	5.74	D250.4 D	99.4	2.6	0.42	1.2	0.12	0.00	0.51	0.21	30	
38 A	12.81	12.80	33.110	24.969	298.8	0.126	5.59	243.7	92.9	4.0	0.72	5.3	0.59	0.00	0.25	0.20	38	17
48 A	11.47	11.47	33.070	25.191	277.8	0.155	5.48	238.8	88.5	5.6	0.89	8.3	0.05	0.00	0.15	0.13	48	16
50 ISL	11.55 D	11.54	33.168 D	25.253	272.0	0.161	5.36	D233.5 D	86.7	5.9	0.91	8.6	0.04	0.00	0.15	0.13	50	
54	11.00	10.99	33.065	25.273	270.2	0.171	5.42	236.0	86.5	6.5	0.95	9.3	0.03	0.00	0.13	0.13	54	15
60	10.61	10.60	33.141	25.399	258.2	0.187	5.15	224.4	81.7	8.8	1.13	12.1	0.03	0.00	0.09	0.10	60	14
70	10.35	10.34	33.243	25.525	246.5	0.212	4.81	209.6	75.9	11.7	1.31	14.8	0.02	0.00	0.05	0.09	71	13
75 ISL	10.06 D	10.05	33.334 D	25.644	235.2	0.225	4.54	D197.9 D	71.2	13.3	1.38	15.9	0.02	0.00	0.05	0.09	76	
86	10.01	10.00	33.378	25.687	231.4	0.250	4.33	188.7	67.9	16.7	1.53	18.4	0.02	0.00	0.04	0.08	87	12
100	9.74	9.73	33.540	25.860	215.3	0.281	3.81	166.0	59.4	20.4	1.73	21.5	0.02	0.00	0.02	0.07	101	11
120	8.90	8.89	33.683	26.106	192.1	0.322	3.48	151.3	53.2	25.8	1.88	24.5	0.02	0.00	0.01	0.05	121	10
125 ISL	8.84 D	8.82	33.706 D	26.135	189.5	0.332	3.60	D156.8 D	55.1	25.8	1.84	24.1	0.02	0.00	0.01	0.04	126	
141	8.60	8.58	33.723	26.185	185.0	0.362	3.89	169.1	59.1	26.0	1.71	23.0	0.02	0.00	0.00	0.03	142	09
150 ISL	8.52 D	8.50	33.822 D	26.276	176.5	0.378	3.81	D165.8 D	57.9	28.2	1.81	24.3	0.02	0.00	0.00	0.03	151	
170	8.37	8.35	33.920	26.376	167.4	0.412	2.87	124.9	43.5	33.0	2.02	27.3	0.02	0.00	0.00	0.04	171	08
200	8.11	8.09	33.977	26.461	159.9	0.461	2.69	117.1	40.6	36.8	2.09	28.4	0.02	0.00	0.00	0.02	202	07
231	7.70	7.67	34.011	26.548	152.0	0.510	2.19	95.4	32.7	42.9	2.30	31.2	0.01	0.00			233	06
250 ISL	7.30 D	7.28	34.005 D	26.600	147.2	0.540	2.31	D100.3 D	34.1	46.7	2.38	32.4	0.01	0.00			252	
270	7.14	7.11	34.024	26.638	143.8	0.567	1.87	81.1	27.5	50.6	2.47	33.6	0.01	0.00			272	05
300 ISL	7.06 D	7.03	34.093 D	26.705	138.0	0.611	1.26 D	54.9 D	18.6	54.9	2.64	35.2	0.02	0.00			302	
321	7.00	6.97	34.108	26.724	136.5	0.638	1.07	46.7	15.8	57.9	2.76	36.3	0.03	0.00			324	04
380	6.51	6.48	34.153	26.827	127.4	0.716	0.74	32.0	10.7	65.9	2.92	38.3	0.01	0.00			383	03
400 ISL	6.15 D	6.11	34.136 D	26.860	124.2	0.744	0.76 D	33.1 D	11.0	69.3	2.96	39.0	0.01	0.00			403	
440	5.74	5.70	34.135	26.912	119.5	0.790	0.69	30.0	9.8	75.9	3.04	40.4	0.01	0.00			444	02
500 ISL	5.41 D	5.37	34.188 D	26.994	112.2	0.863	0.49 D	21.3 D	6.9	84.5	3.15	42.5	0.01	0.00			504	
514	5.33	5.29	34.204	27.015	110.2	0.875	0.41	17.8	5.8	86.5	3.18	43.0	0.01	0.00			518	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 23.2 N	124 19.3 W	22/11/2013	1110 UTC	4609 m	340 22 kn			1013.6 mb	15.0 C	13.0 C				066

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.88		15.88		32.900	24.161	374.7	0.000	5.72	249.3		101.0		2.3	0.34	0.7	0.01	0.00	0.33	0.08	0	
2		15.88		15.88		32.900	24.161	374.8	0.008	5.72	249.3		101.0		2.3	0.34	0.7	0.01	0.00	0.33	0.08	2	20
10		15.89		15.88		32.915	24.171	374.1	0.038	5.74	250.2		101.4		2.3	0.32	0.0	0.01	0.00	0.31	0.10	10	19
20	ISL	15.87	D	15.86	D	32.900	24.165	375.0	0.075	5.71	D248.8	D	100.7		2.3	0.33	0.0	0.01	0.00	0.32	0.09	20	
21		15.86		15.86		32.899	24.166	375.0	0.079	5.70	248.7		100.7		2.3	0.33	0.0	0.01	0.00	0.33	0.09	21	18
30		15.77		15.77		32.899	24.186	373.3	0.112	5.72	249.6		100.9		2.3	0.32	0.0	0.01	0.00	0.33	0.11	30	17
41		15.29		15.29		32.897	24.290	363.7	0.153	5.81	253.1		101.3		2.4	0.34	0.3	0.01	0.00	0.51	0.18	41	16
50	ISL	15.23	D	15.22	D	32.909	24.314	361.8	0.187	5.80	D252.9	D	101.1		2.4	0.34	0.1	0.01	0.00	0.55	0.18	50	
52		15.21		15.21		32.904	24.314	361.8	0.193	5.85	255.0		101.9		2.4	0.34	0.0	0.01	0.00	0.56	0.19	52	15
60		15.07		15.06		32.986	24.409	353.0	0.221	5.85	255.2		101.8		2.4	0.37	0.2	0.03	0.08	0.42	0.14	60	14
70		13.31		13.30		32.978	24.771	318.7	0.255	6.02	262.5		101.0		3.0	0.46	1.1	0.15	0.23	0.36	0.24	71	13
75	ISL	12.95	D	12.94	D	32.966	24.833	312.9	0.272	6.08	D265.0	D	101.2		3.1	0.47	1.3	0.19	0.15	0.33	0.24	76	
84		12.44		12.43		33.011	24.966	300.4	0.298	5.95	259.4		98.1		3.3	0.48	1.6	0.27	0.00	0.27	0.25	85	12
100		11.58		11.57		33.025	25.138	284.2	0.345	5.77	251.2		93.3		3.8	0.58	3.3	0.08	0.00	0.15	0.16	101	11
120		10.26		10.25		32.985	25.340	265.2	0.400	5.51	240.2		86.6		7.8	0.90	8.7	0.02	0.00	0.08	0.09	121	10
125	ISL	9.93	D	9.92	D	33.126	25.505	249.6	0.415	5.31	D231.3	D	82.9		10.0	1.02	10.7	0.02	0.00	0.06	0.07	126	
140		9.52		9.50		33.322	25.727	228.7	0.449	4.79	208.7		74.2		16.6	1.36	16.8	0.02	0.00	0.01	0.03	141	09
150	ISL	9.48	D	9.46	D	33.482	25.858	216.5	0.474	4.57	D198.9	D	70.8		18.2	1.44	18.2	0.02	0.00	0.01	0.03	151	
170		9.19		9.17		33.695	26.073	196.5	0.513	3.88	168.8		59.7		21.6	1.59	20.9	0.01	0.00	0.01	0.02	171	08
200		8.62		8.60		33.883	26.310	174.4	0.569	3.54	154.1		54.0		27.5	1.74	23.7	0.01	0.00	0.00	0.02	202	07
230		8.15		8.13		33.958	26.441	162.4	0.619	3.41	148.2		51.4		32.4	1.82	25.0	0.01	0.00			232	06
250	ISL	7.88	D	7.85	D	33.971	26.491	157.8	0.654	3.15	D137.2	D	47.3		36.4	1.97	27.0	0.01	0.00			252	
272		7.61		7.58		33.986	26.543	153.2	0.685	2.64	115.0		39.4		40.7	2.14	29.3	0.01	0.00			274	05
300	ISL	7.21	D	7.18	D	33.994	26.605	147.5	0.731	2.47	D107.4	D	36.4		45.5	2.26	31.1	0.01	0.00			302	
320		6.91		6.88		33.996	26.649	143.6	0.757	2.22	96.4		32.5		48.9	2.35	32.4	0.01	0.00			323	04
379		6.42		6.39		34.031	26.742	135.3	0.839	1.58	68.8		22.9		59.0	2.63	35.7	0.01	0.00			382	03
400	ISL	6.21	D	6.17	D	34.054	26.788	131.0	0.872	1.35	D 58.7	D	19.5		62.3	2.69	36.7	0.01	0.00			403	
440		6.01		5.97		34.089	26.842	126.3	0.918	1.01	43.8		14.5		68.5	2.79	38.6	0.01	0.00			444	02
500	ISL	5.50	D	5.46	D	34.158	26.959	115.5	0.997	0.64	D 27.7	D	9.0		79.1	3.02	40.8	0.01	0.00			504	
515		5.41		5.37		34.163	26.973	114.3	1.008	0.56	24.5		8.0		81.8	3.08	41.3	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 78.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 39.8 N	121 2.6 W	20/11/2013	2157 UTC	598 m	180 09 kn	260 04 06	2	1010.4 mb	16.8 C	15.6 C		8/8	ST	059

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.94		14.94		33.587	24.897	304.5	0.000	6.60	287.6		114.9		0.6	0.28	0.0	0.02	0.00	6.09	1.29	0	
2		14.94		14.94		33.587	24.898	304.6	0.006	6.60	287.6		114.9		0.6	0.28	0.0	0.02	0.00	6.09	1.29	2	12
10		14.65		14.65		33.546	24.927	302.1	0.030	6.68	290.9		115.5		0.4	0.27	0.0	0.02	0.00	5.59	1.38	10	11
16		14.64		14.63		33.553	24.936	301.3	0.049	6.41	279.1		110.8		0.6	0.28	0.0	0.03	0.14	7.38	1.66	16	10
20	ISL	14.66	D	14.65	D	33.567	24.944	300.8	0.061	6.20	D270.1	D	107.3		1.1	0.34	0.5	0.05	0.21	7.96	1.86	20	
30	ISL	14.33	D	14.33	D	33.556	25.004	295.3	0.091	5.74	D250.1	D	98.7		2.3	0.49	1.7	0.10	0.37	9.41	2.34	30	
31		14.32		14.31		33.554	25.006	295.2	0.094	5.77	251.3		99.1		2.4	0.50	1.8	0.11	0.39	9.55	2.38	31	09
41		13.56		13.55		33.550	25.160	280.8	0.122	5.21	226.9		88.1		5.4	0.75	5.5	0.23	0.48	8.17	2.53	41	08
50	ISL	12.62	D	12.61	D	33.537	25.337	264.2	0.148	4.59	D200.0	D	76.2		9.3	1.03	10.5	0.26	0.10	3.56	1.05	50	
51		12.60		12.60		33.543	25.345	263.4	0.149	4.61	200.9		76.5		9.7	1.06	11.0	0.26	0.06	3.05	0.88	51	07
75	ISL	10.50	D	10.49	D	33.654	25.819	218.7	0.209	3.47	D151.1	D	55.0		18.3	1.56	18.2	0.07	0.00	0.21	0.24	76	
76		10.33		10.32		33.645	25.841	216.6	0.210	3.52	153.4		55.7		18.6	1.58	18.5	0.06	0.00	0.09	0.22	77	06
100	ISL	10.17	D	10.16	D	33.754	25.954	206.5	0.261	2.85	D124.2	D	45.0		22.7	1.82	22.5	0.07	0.00	0.03	0.08	101	
101		10.17		10.16		33.750	25.951	206.8	0.263	2.85	124.1		44.9		22.9	1.83	22.7	0.07	0.00	0.03	0.08	102	05
125	ISL	9.95	D	9.93	D	33.817	26.043	198.6	0.313	2.56	111.5		40.2		25.9	1.94	24.0	0.05	0.00	0.02	0.07	126	
150	ISL	9.61	D	9.59	D	33.978	26.226	181.7	0.360	2.06	D 89.5	D	32.1		29.0	2.05	25.3	0.03	0.00	0.02	0.07	151	
170		9.56		9.54		33.991	26.243	180.5	0.396	2.02	88.0		31.5		31.4	2.14	26.4	0.02	0.00	0.01	0.06	171	04
200	ISL	9.45	D	9.42	D	34.057	26.315	174.3	0.450	1.77	D 77.0	D	27.5		33.8	2.23	27.5	0.02	0.00	0.01	0.04	202	
249		8.86		8.84		34.145	26.479	159.6	0.531	1.54	66.8		23.5		37.5	2.39	29.3	0.02	0.00			251	03
250	ISL	8.85	D	8.82	D	34.148	26.483	159.2	0.535	1.47	D 63.8	D	22.5		37.6	2.39	29.3	0.02	0.00			252	
300	ISL	8.56	D	8.53	D	34.209	26.578	151.2	0.613	1.10	D 47.9	D	16.8		42.2	2.53	31.3	0.02	0.00			302	
319		8.42		8.39		34.210	26.600	149.3	0.639	1.03	44.9		15.7		44.0	2.58	32.1	0.02	0.00			322	02
400	ISL	7.23	D	7.19	D	34.190	26.760	134.8	0.758	0.85	D 36.8	D	12.5		57.8	2.79	35.2	0.03	0.00			403	
500	ISL	6.15	D	6.11	D	34.259	26.959	116.5	0.884	0.39	D 16.9	D	5.6		74.7	3.05	39.0	0.04	0.00			504	
514		6.10		6.06		34.256	26.963	116.2	0.894	0.42	18.3		6.1		77.1	3.09	39.5	0.04	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 79.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 29.4 N	120 55.3 W	20/11/2013	2006	UTC	696 m	170 07 kn	270 03 07	1	1011.7 mb	16.8 C	15.6 C		7/8	SC	058

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.25	14.25	33.551	25.016	293.2	0.000	6.56	285.9	112.6	0.7	0.33	0.2	0.04	0.00	12.93	1.22	0	
2	14.25	14.25	33.551	25.016	293.3	0.006	6.56	285.9	112.6	0.7	0.33	0.2	0.04	0.00	12.93	1.22	2	12
10	14.16	14.16	33.560	25.042	291.1	0.029	6.12	266.4	104.8	1.3	0.43	2.0	0.06	0.09	5.62	1.12	10	11
15	13.97	13.97	33.546	25.072	288.4	0.044	5.47	238.4	93.3	3.3	0.56	2.7	0.13	0.49	9.41	1.03	15	10
20 ISL	13.84 D	13.84	33.545 D	25.098	286.1	0.059	5.39	235.0	91.8	3.6	0.60	3.2	0.14	0.52	9.13	1.26	20	
30 ISL	13.56 D	13.55	33.538 D	25.151	281.4	0.087	5.24	228.2	88.6	4.4	0.68	4.3	0.16	0.58	8.58	1.72	30	
31	13.51	13.50	33.558	25.177	278.9	0.089	5.22	227.5	88.3	4.5	0.69	4.4	0.16	0.59	8.52	1.76	31	09
40	13.33	13.32	33.538	25.198	277.2	0.114	5.20	226.6	87.6	6.0	0.81	6.4	0.21	0.49	7.05	1.05	40	08
50 ISL	13.04 D	13.03	33.537 D	25.256	271.9	0.143	5.00 D	217.6 D	83.6	7.4	0.91	8.0	0.24	0.40	6.04	0.89	50	
51	12.80	12.80	33.537	25.301	267.6	0.145	5.02	218.8	83.7	7.5	0.92	8.2	0.24	0.39	5.94	0.88	51	07
74	10.92	10.91	33.601	25.704	229.7	0.202	3.78	164.7	60.5	16.5	1.47	18.0	0.07	0.00	0.16	0.23	75	06
75 ISL	10.84 D	10.83	33.657 D	25.762	224.2	0.206	3.62 D	157.5 D	57.8	16.8	1.49	18.2	0.07	0.00	0.16	0.22	76	
100 ISL	10.10 D	10.09	33.832 D	26.027	199.5	0.259	2.62	113.8	41.2	25.2	1.88	22.8	0.03	0.00	0.04	0.10	101	
101	10.07	10.06	33.797	26.005	201.6	0.260	2.57	111.9	40.4	25.6	1.90	23.0	0.03	0.00	0.03	0.09	102	05
125 ISL	9.78 D	9.77	33.973 D	26.192	184.4	0.307	2.23	97.1	34.9	29.4	2.05	24.9	0.03	0.00	0.03	0.08	126	
150 ISL	9.55 D	9.54	34.049 D	26.290	175.6	0.353	1.88	81.7	29.2	33.3	2.21	26.8	0.04	0.00	0.02	0.08	151	
170	9.30	9.28	34.080	26.357	169.7	0.388	1.59	69.4	24.7	36.5	2.33	28.4	0.04	0.00	0.01	0.07	171	04
200 ISL	9.05 D	9.03	34.144 D	26.447	161.6	0.437	1.52 D	66.1 D	23.4	38.7	2.40	29.3	0.03	0.00	0.01	0.05	202	
250	8.59	8.57	34.193	26.559	151.9	0.517	1.20	52.3	18.3	42.5	2.51	30.8	0.02	0.00			252	03
300 ISL	8.06 D	8.02	34.217 D	26.660	143.1	0.591	1.02 D	44.5 D	15.4	48.4	2.64	32.9	0.02	0.00			302	
320	7.72	7.69	34.189	26.687	140.6	0.619	1.00	43.6	15.0	50.8	2.69	33.7	0.02	0.00			323	02
400 ISL	6.98 D	6.94	34.226 D	26.822	128.6	0.728	0.65 D	28.2 D	9.5	60.1	2.85	35.9	0.02	0.00			403	
500 ISL	6.37 D	6.33	34.285 D	26.952	117.4	0.852	0.38 D	16.5 D	5.5	71.7	3.06	38.7	0.02	0.00			504	
516	6.33	6.28	34.290	26.961	116.7	0.869	0.35	15.1	5.0	73.5	3.09	39.1	0.02	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 50.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 27.6 N	120 29.1 W	24/11/2013	0308	UTC	19 m	050 04 kn			1016.7 mb	15.1 C	12.6 C				074

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.89	15.89	33.565	24.671	326.1	0.000	5.79	252.3	102.7	2.9	0.40	0.3	0.10	0.08	2.24	0.43	0	
2	15.89	15.88	33.565	24.671	326.2	0.007	5.79	252.3	102.7	2.9	0.40	0.3	0.10	0.08	2.24	0.43	2	05
5	15.85	15.85	33.568	24.682	325.2	0.016	5.75	250.7	101.9	2.9	0.40	0.3	0.11	0.11	2.35	0.36	5	04
10	14.62	14.62	33.506	24.904	304.3	0.032	5.18	225.6	89.5	5.9	0.68	3.7	0.42	0.39	1.43	0.57	10	02
10	14.62	14.62	33.513	24.909	303.7	0.032											10	03
16	14.43	14.43	33.497	24.937	301.3	0.050	5.11	222.6	88.0	6.4	0.74	4.2	0.45	0.38	1.50	0.47	16	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 27.0 N	120 31.4 W	24/11/2013	0353	UTC	71 m	060 03 kn			1017.0 mb	15.8 C	12.3 C				075

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.71	15.71	33.551	24.700	323.4	0.000	5.68	247.3	100.3	3.6	0.46	0.9	0.18	0.09	2.38	0.07	0	
2	15.71	15.71	33.551	24.700	323.4	0.007	5.68	247.3	100.3	3.6	0.46	0.9	0.18	0.09	2.38	0.07	2	08
10	15.68	15.68	33.549	24.706	323.1	0.031											10	07
10	15.68	15.68	33.551	24.707	323.0	0.032	5.65	246.3	99.8	3.6	0.46	0.9	0.21	0.09	1.93	0.52	10	06
20	15.36	15.36	33.534	24.765	317.9	0.064	5.38	234.3	94.4	4.4	0.54	1.6	0.36	0.32	1.87	0.57	20	05
30	15.08	15.08	33.530	24.824	312.5	0.096	5.40	235.2	94.2	4.2	0.56	2.0	0.34	0.30	2.52	0.01	30	04
40	14.46	14.46	33.502	24.935	302.2	0.127	5.15	224.6	88.8	5.8	0.68	3.2	0.55	0.40	1.44	0.44	40	03
50	13.19	13.18	33.437	25.148	282.2	0.156	4.98	216.8	83.5	6.9	0.85	6.6	0.74	0.06	0.91	0.46	50	02
60	12.67	12.66	33.428	25.245	273.2	0.184	4.75	206.9	78.8	8.3	0.98	9.2	0.43	0.00	0.66	0.32	60	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 23.1 N	120 39.9 W	20/11/2013	1458	UTC	447 m	370 07 kn	270 03 08	1	1013.6 mb	15.2 C	14.2 C		7/8	ST	056

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.47	15.47	33.590	24.783	315.5	0.000	6.06	263.9	106.5	0.3	0.27	0.0	0.02	0.00	4.90	1.15	0	
2	15.47	15.47	33.590	24.783	315.5	0.006	6.06	263.9	106.5	0.3	0.27	0.0	0.02	0.00	4.90	1.15	2	12
10	15.16	15.16	33.577	24.842	310.2	0.031	6.10	266.0	106.7	0.4	0.28	0.0	0.02	0.00	6.05	1.36	10	11
15	14.90	14.90	33.564	24.888	305.9	0.047	6.05	263.8	105.3	0.6	0.30	0.1	0.02	0.00	8.80	1.55	15	10
20 ISL	14.79 D	14.78	33.570 D	24.918	303.2	0.062	5.96 D	259.7 D	103.4	2.4	0.45	2.0	0.09	0.17	7.88	1.51	20	
30	13.61	13.61	33.527	25.131	283.3	0.091	5.23	227.9	88.6	5.8	0.76	5.7	0.23	0.51	6.02	1.41	30	09
40	12.27	12.26	33.529	25.398	258.0	0.119	4.44	193.6	73.2	10.9	1.15	11.8	0.22	0.02	2.70	0.82	40	08
50	11.68	11.68	33.542	25.519	246.8	0.144	4.14	180.2	67.3	13.0	1.29	14.2	0.18	0.00	1.38	0.60	50	07
75	10.79	10.79	33.642	25.758	224.6	0.203	3.21	139.6	51.2	19.8	1.61	19.2	0.04	0.00	0.06	0.13	76	06
100	10.54	10.53	33.685	25.838	217.6	0.258	3.00	130.6	47.6	21.9	1.76	21.0	0.05	0.00	0.06	0.11	101	05
125 ISL	10.16 D	10.15	33.751 D	25.954	207.0	0.313	2.82 D	122.8 D	44.4	24.7	1.85	22.5	0.05	0.00	0.04	0.09	126	
150 ISL	9.95 D	9.94	33.898 D	26.106	193.2	0.364	2.48	107.8	38.9	27.5	1.95	24.0	0.05	0.00	0.03	0.07	151	
169	9.67	9.65	33.921	26.171	187.4	0.398	2.28	99.1	35.5	29.6	2.02	25.1	0.05	0.00	0.01	0.06	170	04
200 ISL	9.46 D	9.44	34.024 D	26.287	177.0	0.457	1.95 D	84.7 D	30.2	34.0	2.20	27.0	0.04	0.00	0.01	0.04	202	
250 ISL	8.92 D	8.90	34.176 D	26.494	158.3	0.542	1.26 D	54.7 D	19.3	41.1	2.49	30.0	0.03	0.00			252	
251	8.89	8.86	34.175	26.499	157.8	0.540	1.25	54.4	19.2	41.3	2.50	30.1	0.03	0.00			253	03
300 ISL	7.95 D	7.92	34.204 D	26.665	142.4	0.617	0.93 D	40.6 D	14.0	50.2	2.69	32.7	0.03	0.00			302	
320	7.82	7.79	34.199	26.681	141.2	0.642	0.86	37.6	12.9	53.9	2.77	33.8	0.03	0.00			323	02
400 ISL	6.86 D	6.82	34.202 D	26.819	128.8	0.754	0.65 D	28.4 D	9.6	67.6	2.99	36.6	0.06	0.00			403	
445	6.34	6.30	34.241	26.920	119.5	0.805	0.42	18.3	6.1	75.3	3.12	38.1	0.08	0.00			449	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 19.1 N	120 48.1 W	20/11/2013	1757 UTC	769 m	190 04 kn	300 03 08	1	1013.5 mb	16.0 C	15.3 C	09 m	7/8	ST	057

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.99		14.99		33.580	24.881	306.1	0.000	6.10		265.7		106.2		0.8	0.35	0.3	0.04	0.00	3.35	0.56	0	
2	A	14.99		14.99		33.580	24.881	306.1	0.006	6.10		265.7		106.2		0.8	0.35	0.3	0.04	0.00	3.35	0.56	2	23
6	A	14.80		14.80		33.583	24.923	302.3	0.018	6.10		265.7		105.9		0.9	0.35	0.2	0.03	0.00	3.64	0.60	6	22
7	A	14.74		14.74		33.579	24.933	301.3	0.021	6.19		269.6		107.2		0.6	0.30	0.2	0.03	0.00	6.20	1.10	7	21
10	ISL	14.71	D	14.71		33.583	D 24.944	300.5	0.031	6.02	D	262.1	D	104.2		1.1	0.36	0.5	0.05	0.04	7.30	1.33	10	
15		14.59		14.58		33.592	24.977	297.4	0.044														15	20
15	A	14.59		14.58		33.593	24.978	297.3	0.045	5.91		257.5		102.1		1.8	0.47	1.1	0.08	0.10	9.15	1.72	15	19
20	ISL	14.43	D	14.43		33.579	D 25.001	295.3	0.060	5.88	D	256.0	D	101.2		1.9	0.47	1.3	0.08	0.19	10.16	1.76	20	
26	A	14.10		14.09		33.561	25.058	290.1	0.078	5.90		257.2		101.0		2.1	0.48	1.5	0.09	0.29	11.38	1.80	26	18
30	A	13.58		13.57		33.551	25.157	280.8	0.089	5.49		239.0		92.9		4.4	0.67	4.5	0.17	0.36	10.16	1.62	30	17
40		11.81		11.81		33.524	25.480	250.2	0.116	4.45		193.9		72.6		10.7	1.19	13.2	0.21	0.00	0.96	0.61	40	16
50		11.34		11.33		33.564	D 25.600	239.0	0.141	4.16		181.1		67.0		13.5	1.31	15.4	0.11	0.00	0.25	0.27	50	15
61		11.06		11.06		33.590	25.670	232.7	0.168	3.88		169.1		62.3		15.8	1.44	16.9	0.08	0.00	0.19	0.21	61	14
70		10.66		10.65		33.611	25.757	224.5	0.189	3.68		160.2		58.6		17.6	1.53	18.6	0.07	0.00	0.12	0.16	71	13
75	ISL	10.44	D	10.43		33.656	D 25.831	217.6	0.199	3.62	D	157.5	D	57.3		18.7	1.57	19.4	0.06	0.00	0.11	0.15	76	
86		10.11		10.10		33.672	25.899	211.3	0.224	3.40		148.0		53.5		20.9	1.67	21.0	0.04	0.00	0.08	0.12	87	12
100	ISL	9.78	D	9.77		33.714	D 25.988	203.2	0.251	3.21	D	139.6	D	50.1		22.1	1.74	22.6	0.03	0.00	0.07	0.10	101	
101		9.78		9.77		33.714	25.989	203.0	0.255	3.21		139.7		50.1		22.2	1.75	22.7	0.03	0.00	0.07	0.09	102	11
119		9.53		9.51		33.811	26.107	192.2	0.290	2.84		123.5		44.1		27.2	1.90	24.4	0.03	0.00	0.03	0.09	120	10
125	ISL	9.41	D	9.40		33.798	D 26.116	191.5	0.301	2.88	D	125.5	D	44.7		27.6	1.92	24.8	0.03	0.00	0.03	0.08	126	
140		9.23		9.21		33.877	26.207	183.1	0.329	2.62		114.2		40.5		28.8	1.98	25.9	0.02	0.00	0.02	0.05	141	09
150	ISL	9.20	D	9.18		33.915	D 26.242	180.0	0.347	2.49	D	108.5	D	38.5		30.3	2.01	26.3	0.02	0.00	0.02	0.05	151	
169		9.19		9.17		33.983	26.298	175.1	0.381	2.21		96.3		34.2		33.3	2.07	27.2	0.02	0.00	0.01	0.05	170	08
200		8.98		8.96		34.132	26.449	161.5	0.434	1.58		68.6		24.3		38.9	2.35	29.1	0.02	0.00	0.01	0.05	202	07
231		8.91		8.88		34.165	26.488	158.4	0.483	1.42		61.9		21.9		40.3	2.34	29.7	0.02	0.00			233	06
250	ISL	8.64	D	8.62		34.223	D 26.574	150.5	0.514	1.10	D	47.8	D	16.8		43.0	2.45	30.5	0.02	0.00			252	
270		8.55		8.52		34.228	26.593	149.1	0.543	1.05		45.5		15.9		45.9	2.57	31.4	0.02	0.00			272	05
300	ISL	8.23	D	8.20		34.240	D 26.652	143.9	0.588	0.89	D	38.7	D	13.5		49.7	2.66	32.5	0.02	0.00			302	
320		8.00		7.97		34.239	26.686	140.9	0.615	0.80		34.7		12.0		52.2	2.72	33.3	0.02	0.00			323	04
380		7.20		7.16		34.230	26.795	131.0	0.697	0.63		27.3		9.3		62.4	2.86	35.5	0.02	0.00			383	03
400	ISL	6.86	D	6.82		34.217	D 26.831	127.6	0.725	0.62	D	27.1	D	9.1		64.6	2.90	36.2	0.02	0.00			403	
440		6.63		6.59		34.218	26.864	125.0	0.773	0.55		24.0		8.0		69.0	2.98	37.7	0.01	0.00			444	02
500	ISL	6.01	D	5.97		34.226	D 26.951	117.0	0.849	0.45	D	19.7	D	6.5		77.2	3.00	39.9	0.02	0.00			504	
515		5.98		5.93		34.232	26.960	116.3	0.863	0.40		17.3		5.7		79.2	3.00	40.5	0.02	0.00			519	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 57.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 13.9 N	120 58.8 W	21/11/2013	0122 UTC	949 m	090 03 kn	310 04 06	4	1010.2 mb	16.0 C	15.1 C		8/8	ST	060

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.36		15.36		33.617	24.828	311.2	0.000	6.12		266.6		107.4		1.9	0.39	1.1	0.06	0.00	3.21	0.95	0	
2		15.36		15.36		33.617	24.828	311.2	0.006	6.12		266.6		107.4		1.9	0.39	1.1	0.06	0.00	3.21	0.95	2	12
10		14.77		14.76		33.577	24.927	302.0	0.031	6.27		273.3		108.8		1.1	0.33	2.0	0.04	0.00	7.93	1.53	10	11
15		14.01		14.01		33.554	25.069	288.7	0.046	6.05		263.7		103.4		1.7	0.41	3.0	0.07	0.13	11.39	2.13	15	10
20	ISL	13.97	D	13.96		33.560	D 25.083	287.5	0.060	5.87	D	255.6	D	100.1		2.3	0.48	3.1	0.10	0.26	11.20	2.12	20	
30		13.74		13.73		33.541	25.117	284.6	0.089	5.65		246.1		95.9		3.5	0.61	3.3	0.15	0.52	10.81	2.09	30	09
41		13.35		13.34		33.536	25.193	277.7	0.119	5.35		233.2		90.1		5.2	0.76	5.6	0.15	0.55	10.08	1.90	41	08
50		12.59		12.59		33.527	25.334	264.4	0.144	4.84		211.0		80.3		8.4	0.98	9.4	0.23	0.24	5.93	1.43	50	07
75		10.77		10.76		33.599	25.730	227.3	0.205	3.75		163.3		59.8		17.3	1.48	18.5	0.05	0.00	0.16	0.25	76	06
100		9.66		9.64		33.759	26.044	197.8	0.258	3.04		132.1		47.3		25.1	1.83	23.9	0.03	0.00	0.04	0.08	101	05
125	ISL	9.18	D	9.17		33.890	D 26.225	181.1	0.307	2.69	D	116.9	D	41.4		29.8	1.99	25.8	0.03	0.00	0.03	0.07	126	
150	ISL	8.72	D	8.70		33.988	D 26.375	167.3	0.351	2.33	D	101.5	D	35.6		34.6	2.15	27.7	0.02	0.00	0.02	0.05	151	
170		8.81		8.79		34.082	26.436	162.0	0.383	1.86		80.9		28.5		38.4	2.28	29.2	0.02	0.00	0.01	0.04	171	04
200	ISL	8.66	D	8.63		34.201	D 26.554	151.4	0.432	1.22	D	53.0	D	18.6		41.9	2.42	30.6	0.02	0.00	0.01	0.03	202	
250		8.18		8.16		34.232	26.652	142.9	0.505	0.93		40.6		14.1		47.9	2.64	32.9	0.02	0.00			252	03
300	ISL	7.77	D	7.74		34.255	D 26.732	136.0	0.576	0.71	D	30.9	D	10.6		53.8	2.77	34.9	0.01	0.00			302	
320		7.46		7.43		34.245	26.768	132.8	0.602	0.68		29.5		10.1		56.1	2.82	35.7	0.01	0.00			323	02
400	ISL	6.54	D	6.50		34.214	D 26.871	123.5	0.706	0.57	D	24.6	D	8.2		68.1	2.95	37.5	0.01	0.00			403	
500	ISL	6.03	D	5.99		34.309	D 27.015	111.1	0.825	0.29	D	12.7	D	4.2		83.0	3.12	39.7	0.01	0.00			504	
513		6.00		5.96		34.303	27.013	111.4	0.833	0.29		12.6		4.2		85.0	3.14	40.0	0.01	0.00			517	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 9.1 N	121 9.0 W	21/11/2013	0305	UTC	2167 m	300	09 kn			1011.1 mb	15.9 C	15.1 C				061

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.12	15.12	33.620	24.884	305.8	0.000	6.29	274.2	109.9	0.2	0.29	0.0	0.02	0.00	5.88	1.78	0	
2	15.12	15.12	33.620	24.884	305.9	0.006	6.29	274.2	109.9	0.2	0.29	0.0	0.02	0.00	5.88	1.78	2	21
10	15.05	15.05	33.617	24.896	305.0	0.030											10	20
10	15.05	15.05	33.615	24.894	305.2	0.031	6.25	272.2	109.0	0.4	0.33	0.0	0.02	0.00	6.73	1.86	10	19
20	14.50	14.50	33.585	24.991	296.3	0.061	6.12	266.5	105.5	0.7	0.36	0.2	0.03	0.10	9.56	1.89	20	18
30	14.21	14.20	33.561	25.034	292.5	0.090	5.91	257.6	101.4	2.1	0.50	1.7	0.10	0.35	12.29	2.34	30	17
40	13.10	13.10	33.537	25.242	272.9	0.118	5.32	231.7	89.1	5.8	0.79	6.3	0.26	0.43	6.57	1.30	40	16
50	12.51	12.51	33.524	25.348	263.1	0.145	4.78	208.2	79.1	9.4	1.05	10.7	0.27	0.09	3.39	0.94	50	15
60	11.65	11.65	33.439	25.445	254.1	0.171	4.63	201.5	75.2	10.6	1.21	13.7	0.13	0.00	1.67	0.54	60	14
70	10.81	10.80	33.492	25.639	235.8	0.196	4.26	185.5	68.0	13.6	1.41	17.2	0.04	0.00	0.16	0.17	71	13
75 ISL	10.51 D	10.50	33.550 D	25.737	226.5	0.209	4.08	D177.5 D	64.6	15.8	1.51	18.7	0.04	0.00	0.12	0.14	76	
84	10.05	10.04	33.623	25.871	213.9	0.227	3.65	158.9	57.3	19.7	1.68	21.3	0.03	0.00	0.04	0.08	85	12
100	9.47	9.46	33.729	26.051	197.1	0.260	3.19	138.9	49.5	24.4	1.83	24.0	0.03	0.00	0.02	0.06	101	11
120	9.03	9.02	33.827	26.199	183.4	0.298	2.85	123.9	43.8	26.7	1.94	25.6	0.02	0.00	0.01	0.04	121	10
125 ISL	9.03 D	9.01	33.884 D	26.245	179.1	0.308	2.70	D117.7 D	41.6	28.3	1.99	26.2	0.02	0.00	0.01	0.04	126	
140	8.87	8.85	33.970	26.338	170.6	0.333	2.26	98.3	34.6	33.2	2.12	27.8	0.02	0.00	0.01	0.04	141	09
150 ISL	8.64 D	8.62	33.998 D	26.395	165.3	0.352	2.24	D 97.6 D	34.2	34.1	2.14	28.2	0.03	0.00	0.01	0.04	151	
170	8.45	8.43	34.007	26.432	162.2	0.383	2.17	94.2	32.9	36.1	2.18	29.0	0.04	0.00	0.01	0.05	171	08
200	8.24	8.22	34.045	26.494	156.8	0.431	1.93	83.9	29.2	39.9	2.28	30.4	0.02	0.00	0.02	0.05	202	07
231	7.76	7.74	34.049	26.569	150.1	0.479	1.81	78.8	27.1	41.8	2.39	31.8	0.02	0.00			233	06
250 ISL	7.56 D	7.54	34.073 D	26.617	145.8	0.509	1.62	D 70.3 D	24.0	45.4	2.48	33.0	0.02	0.00			252	
270	7.35	7.32	34.101	26.670	141.0	0.535	1.28	55.9	19.0	49.2	2.58	34.2	0.02	0.00			272	05
300 ISL	7.16 D	7.13	34.132 D	26.721	136.6	0.580	1.07	D 46.5 D	15.8	53.7	2.67	35.1	0.02	0.00			302	
321	7.03	7.00	34.141	26.746	134.4	0.606	0.96	41.8	14.1	56.9	2.73	35.8	0.02	0.00			324	04
381	6.71	6.68	34.186	26.826	127.7	0.684	0.68	29.6	9.9	63.8	2.89	37.4	0.01	0.00			384	03
400 ISL	6.62 D	6.58	34.198 D	26.848	125.8	0.712	0.64	D 27.6 D	9.3	65.5	2.91	37.7	0.01	0.00			403	
441	6.46	6.42	34.212	26.881	123.2	0.759	0.54	23.5	7.8	69.3	2.96	38.3	0.01	0.00			445	02
500 ISL	5.89 D	5.85	34.260 D	26.993	112.9	0.833	0.36	D 15.8 D	5.2	78.4	3.08	39.7	0.01	0.00			504	
515	5.83	5.79	34.270	27.008	111.7	0.846	0.31	13.4	4.4	80.7	3.11	40.1	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.0 N	121 50.5 W	21/11/2013	0912	UTC	3623 m	300	13 kn			1011.5 mb	15.2 C	14.2 C				062

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.28	15.28	33.573	24.813	312.6	0.000	5.72	249.2	100.2	1.8	0.42	2.0	0.14	0.03	0.67	0.27	0	
2	15.28	15.28	33.573	24.813	312.7	0.006	5.72	249.2	100.2	1.8	0.42	2.0	0.14	0.03	0.67	0.27	2	20
10	15.28	15.28	33.573	24.813	313.0	0.031	5.71	248.8	100.1	1.8	0.41	1.7	0.14	0.01	0.66	0.25	10	19
20	15.28	15.28	33.574	24.814	313.1	0.063	5.72	249.4	100.3	1.8	0.40	1.7	0.14	0.02	0.66	0.27	20	18
30	15.28	15.27	33.572	24.813	313.6	0.094	5.68	247.4	99.5	1.8	0.41	1.7	0.15	0.03	0.63	0.28	30	17
40	15.24	15.24	33.576	24.825	312.8	0.125	5.63	245.2	98.5	1.8	0.42	1.8	0.16	0.15	0.46	0.25	40	16
50	15.22	15.22	33.575	24.829	312.8	0.157	5.63	245.3	98.5	1.8	0.44	1.9	0.17	0.25	0.29	0.18	50	15
60	14.01	14.00	33.484	25.019	294.9	0.187	5.25	228.6	89.5	4.1	0.71	6.2	0.16	0.00	0.16	0.14	60	14
70	11.58	11.57	33.442	25.462	252.7	0.214	4.62	201.3	75.0	10.4	1.21	14.0	0.03	0.00	0.06	0.08	71	13
75 ISL	11.20 D	11.19	33.514 D	25.586	241.0	0.229	4.47	D194.5 D	71.9	12.9	1.34	16.0	0.03	0.00	0.05	0.07	76	
86	10.20	10.19	33.608	25.834	217.5	0.252	3.69	160.5	58.1	18.5	1.63	20.5	0.03	0.00	0.03	0.05	87	12
100	9.59	9.58	33.716	26.021	200.0	0.281	3.20	139.5	49.8	23.5	1.80	23.2	0.03	0.00	0.01	0.04	101	11
120	9.13	9.12	33.887	26.230	180.5	0.319	2.56	111.6	39.5	29.3	2.01	26.2	0.02	0.00	0.01	0.03	121	10
125 ISL	9.06 D	9.04	33.905 D	26.256	178.1	0.330	2.55	D110.9 D	39.2	30.0	2.03	26.5	0.02	0.00	0.01	0.03	126	
140	8.90	8.89	33.956	26.321	172.3	0.355	2.33	101.3	35.7	32.1	2.09	27.4	0.03	0.00	0.01	0.03	141	09
150 ISL	8.80 D	8.78	34.020 D	26.388	166.1	0.373	2.12	D 92.1 D	32.4	33.9	2.16	28.0	0.03	0.00	0.01	0.03	151	
171	8.55	8.53	34.068	26.464	159.2	0.406	1.84	80.1	28.1	37.8	2.31	29.4	0.03	0.00	0.01	0.03	172	08
200	8.53	8.51	34.168	26.547	152.0	0.451	1.31	56.8	19.9	42.1	2.46	30.6	0.02	0.00	0.00	0.03	202	07
230	7.98	7.95	34.160	26.625	144.9	0.496	1.18	51.5	17.8	46.7	2.53	32.4	0.02	0.00			232	06
250 ISL	8.02 D	7.99	34.218 D	26.665	141.5	0.526	0.93	D 40.5 D	14.0	48.5	2.58	32.9	0.02	0.00			252	
270	7.76	7.74	34.201	26.689	139.4	0.553	0.90	39.2	13.5	50.2	2.63	33.4	0.02	0.00			272	05
300 ISL	7.41 D	7.38	34.194 D	26.735	135.4	0.596	0.85	D 37.2 D	12.7	54.3	2.71	34.5	0.02	0.00			302	
320	7.16	7.13	34.185	26.763	133.0	0.621	0.81	35.3	12.0	57.0	2.77	35.2	0.02	0.00			323	04
379	6.81	6.77	34.260	26.872	123.4	0.697	0.46	20.0	6.7	65.2	2.93	36.7	0.02	0.00			382	03
400 ISL	6.67 D	6.63	34.283 D	26.909	120.1	0.725	0.41	D 17.7 D	5.9	67.8	2.96	37.1	0.02	0.00			403	
439	6.34	6.30	34.294	26.961	115.5	0.768	0.36	15.7	5.2	72.6	3.01	37.9	0.01	0.00			443	02
500 ISL	6.07 D	6.02	34.314 D	27.013	111.3	0.841	0.29	D 12.7 D	4.2	77.5	3.08	39.0	0.02	0.00			504	
514	5.98	5.94	34.318	27.027	110.0	0.853	0.25	10.9	3.6	78.6	3.09	39.2	0.02	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 28.9 N	122 32.3 W	21/11/2013	1649 UTC	4003 m	330 18 kn	330 05 07	2	1014.1 mb	13.9 C	11.8 C	15 m	8/8	NS	063

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.24		14.24		33.336	24.851	308.9	0.000	5.83		253.9		99.8		3.1	0.51	2.8	0.16	0.10	0.43	0.14	0	
2	A	14.24		14.24		33.336	24.851	309.0	0.006	5.83		253.9		99.8		3.1	0.51	2.8	0.16	0.10	0.43	0.14	2	21
9	A	14.24		14.24		33.336	24.852	309.2	0.028	5.84		254.5		100.1		3.0	0.49	2.5	0.16	0.08	0.46	0.14	9	20
10	ISL	14.24	D	14.24		33.332	D 24.849	309.5	0.031	5.79	D	252.4	D	99.2		3.0	0.50	2.5	0.16	0.08	0.45	0.14	10	
12	A	14.24		14.24		33.337	24.853	309.1	0.037	5.83		254.2		100.0		3.0	0.51	2.5	0.16	0.08	0.42	0.14	12	19
20	ISL	14.24	D	14.24		33.332	D 24.849	309.7	0.062	5.81	D	253.0	D	99.5		3.0	0.51	2.5	0.16	0.08	0.43	0.14	20	
25	A	14.24		14.23		33.333	24.852	309.6	0.077	5.84		254.6		100.1		3.1	0.51	2.5	0.16	0.08	0.44	0.14	25	18
30	ISL	14.21	D	14.21		33.332	D 24.857	309.4	0.094	5.78	D	252.0	D	99.0		3.0	0.50	2.6	0.18	0.10	0.45	0.16	30	
31		14.21		14.20		33.320	24.848	310.2	0.096	5.83		254.1		99.8		3.0	0.50	2.6	0.18	0.10	0.45	0.16	31	17
41	A	13.96		13.96		33.430	24.985	297.5	0.126	5.69		247.8		96.9		3.3	0.60	3.8	0.26	0.47	0.41	0.21	41	16
50	ISL	13.52	D	13.51		33.427	D 25.075	289.2	0.154	5.50	D	239.8	D	93.0		3.8	0.68	4.9	0.33	0.46	0.33	0.20	50	
51	A	13.58		13.57		33.431	25.065	290.2	0.156	5.53		241.1		93.6		3.8	0.69	5.0	0.34	0.46	0.32	0.20	51	15
61		11.61		11.60		33.157	25.235	274.1	0.184	5.50		239.4		89.0		5.8	0.83	7.3	0.24	0.05	0.23	0.15	61	14
70		10.49		10.48		33.048	25.349	263.3	0.208	5.40		235.1		85.3		7.8	0.97	9.7	0.07	0.00	0.17	0.15	71	13
75	ISL	10.58	D	10.57		33.117	D 25.387	259.7	0.222	5.03	D	219.0	D	79.6		10.2	1.14	12.4	0.06	0.00	0.14	0.13	76	
85		10.37		10.36		33.424	25.663	233.7	0.246	4.32		187.9		68.1		15.1	1.49	17.9	0.03	0.00	0.08	0.08	86	12
100	ISL	9.76	D	9.75		33.498	D 25.823	218.8	0.281	4.10	D	178.7	D	64.0		18.8	1.64	20.2	0.03	0.00	0.03	0.06	101	
101		9.72		9.71		33.493	25.826	218.5	0.282	4.09		178.0		63.7		19.0	1.65	20.3	0.03	0.00	0.03	0.06	102	11
119		9.06		9.05		33.644	26.051	197.4	0.319	3.72		161.7		57.1		23.5	1.77	22.9	0.03	0.00	0.01	0.03	120	10
125	ISL	9.01	D	9.00		33.720	D 26.118	191.1	0.333	3.66		159.3		56.2		24.2	1.76	23.1	0.03	0.00	0.01	0.03	126	
140		8.87		8.85		33.820	26.220	181.8	0.359	3.52		153.2		53.9		26.2	1.75	23.5	0.03	0.00	0.01	0.02	141	09
150	ISL	8.76	D	8.75		33.866	D 26.272	177.0	0.379	3.20		139.3		48.9		28.5	1.86	24.9	0.03	0.00	0.01	0.03	151	
170		8.64		8.62		33.957	26.365	168.6	0.411	2.56		111.5		39.1		33.2	2.08	27.8	0.02	0.00	0.01	0.05	171	08
199		8.36		8.34		34.044	26.476	158.6	0.459	1.88		82.0		28.6		39.3	2.33	30.7	0.02	0.00	0.01	0.06	201	07
200	ISL	8.30	D	8.28		34.060	D 26.497	156.6	0.462	1.87	D	81.5	D	28.4		39.4	2.33	30.7	0.02	0.00	0.01	0.05	202	
231		8.03		8.01		34.074	26.549	152.1	0.508	1.65		71.7		24.8		43.5	2.35	32.1	0.02	0.00			233	06
250	ISL	7.85	D	7.82		34.099	D 26.597	147.9	0.539	1.51	D	65.6	D	22.6		46.7	2.47	33.0	0.02	0.00			252	
269		7.57		7.54		34.101	26.639	144.1	0.565	1.37		59.4		20.3		49.8	2.59	33.9	0.02	0.00			271	05
300	ISL	7.26	D	7.23		34.141	D 26.715	137.3	0.611	1.02	D	44.2	D	15.0		54.6	2.71	35.1	0.02	0.00			302	
319		7.09		7.06		34.136	26.734	135.6	0.635	1.00		43.5		14.7		57.5	2.79	35.9	0.02	0.00			322	04
379		6.54		6.51		34.179	26.844	125.8	0.713	0.65		28.4		9.5		66.4	2.98	38.5	0.02	0.00			382	03
400	ISL	6.59	D	6.56		34.233	D 26.880	122.8	0.743	0.50	D	21.8	D	7.3		69.1	3.02	38.9	0.02	0.00			403	
439		6.25		6.21		34.244	26.934	117.9	0.787	0.40		17.5		5.8		74.1	3.09	39.5	0.01	0.00			443	02
500	ISL	5.85	D	5.80		34.267	D 27.004	111.8	0.861	0.32	D	13.8	D	4.6		81.5	3.16	40.8	0.01	0.00			504	
516		5.67		5.62		34.272	27.030	109.4	0.875	0.29		12.7		4.2		83.5	3.18	41.2	0.01	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 8.9 N	123 13.1 W	21/11/2013	2222 UTC	4234 m	330 15 kn	330 06 07	2	1012.7 mb	14.9 C	13.2 C	12 m	8/8	SC	064

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.07		15.07		32.979	24.401	351.8	0.000	5.89		256.6		102.3		2.4	0.35	0.4	0.03	0.00	0.60	0.21	0	
2		15.07		15.06		32.979	24.401	351.9	0.007	5.89		256.6		102.3		2.4	0.35	0.4	0.03	0.00	0.60	0.21	2	20
10	ISL	15.07	D	15.06		32.980	D 24.402	352.1	0.036	5.87	D	255.7	D	102.0		2.4	0.33	0.3	0.03	0.00	0.65	0.11	10	
11		15.07		15.07		32.978	24.400	352.2	0.039	5.87		256.0		102.1		2.4	0.33	0.3	0.03	0.00	0.66	0.10	11	19
20		15.07		15.07		32.978	24.401	352.5	0.070	5.86		255.7		102.0		2.4	0.34	0.1	0.03	0.00	0.59	0.17	20	18
30		14.97		14.96		33.009	24.447	348.4	0.105	5.85		255.1		101.5		2.4	0.35	0.2	0.03	0.01	0.63	0.24	30	17
41		13.62		13.62		32.971	24.700	324.6	0.142	5.91		257.7		99.8		2.8	0.45	0.9	0.12	0.35	0.65A	0.19A	41	16
50	ISL	12.43	D	12.42		32.923	D 24.898	305.9	0.172	5.92	D	257.9	D	97.4		3.7	0.56	2.4	0.45	0.04	0.51	0.13	50	
51		12.42		12.41		32.926	24.903	305.4	0.174	5.90		257.1		97.1		3.8	0.57	2.6	0.49	0.00	0.50	0.12	51	15
60		11.71		11.70		32.915	25.028	293.7	0.201	5.77		251.2		93.4		4.5	0.66	4.1	0.26	0.00	0.27	0.16	60	14
70		11.05		11.04		33.007	25.219	275.7	0.229	5.56		242.1		88.9		6.1	0.87	8.3	0.03	0.00	0.11	0.11	71	13
75	ISL	10.80	D	10.79		33.007	D 25.264	271.5	0.244	5.56	D	242.1	D	88.4		7.5	0.92	9.4	0.03	0.00	0.09	0.09	76	
85		10.18		10.17		33.078	25.424	256.4	0.270	5.29		230.5		83.1		10.2	1.03	11.5	0.03	0.00	0.05	0.06	86	12
100		9.77		9.76		33.197	25.586	241.2	0.307	5.04		219.7		78.5		12.4	1.16	13.7	0.03	0.00	0.03	0.05	101	11
119		9.50		9.48		33.401	25.792	222.1	0.351	4.61		200.6		71.4		17.0	1.39	17.6	0.03	0.00	0.01	0.04	120	10
125	ISL	9.39	D	9.37		33.452	D 25.849	216.8	0.366	4.54	D	197.7	D	70.2		18.4	1.44	18.6	0.03	0.00	0.01	0.03	126	
141		9.07		9.05		33.565	25.989	203.8	0.398	4.17		181.4		64.0		22.0	1.59	21.1	0.02	0.00	0.01	0.02	142	09
150	ISL	9.09	D	9.07		33.700	D 26.092	194.2	0.418	4.01	D	174.5	D	61.7		22.6	1.58	21.2	0.02	0.00	0.01	0.02	151	
169		8.83		8.81		33.818	26.225	181.9	0.451	4.02		175.1		61.6		23.8	1.55	21.4	0.02	0.00	0.00	0.02	170	08
200		8.51		8.49		33.908	26.346	171.0	0.506	3.44		149.7		52.3		29.1	1.75	24.5	0.04	0.00	0.00	0.02	202	07
230		8.14		8.12		33.961	26.444	162.1	0.556	3.25		141.5		49.0		33.4	1.83	26.1	0.01	0.00			232	06
250	ISL	7.88	D	7.85		33.978	D 26.497	157.3	0.591	3.07	D	133.7	D	46.1		38.1	1.98	28.2	0.01	0.00			252	
269		7.43		7.40		33.984	26.566	150.8	0.617	2.60		112.9		38.5		42.6	2.12	30.1	0.01	0.00			271	05
300	ISL	7.11	D	7.08		34.002	D 26.625	145.6	0.667	2.34	D	101.8	D	34.5		48.6	2.29	32.3	0.01	0.00			302	
319		6.80		6.77		34.021	26.682	140.3	0.690	1.95		85.0		28.6		52.2	2.40	33.7	0.01	0.00			322	04
381		6.16		6.13		34.069	26.805	129.1	0.774	1.15		50.2		16.6		65.4	2.75	38.2	0.02	0.00			384	03
400	ISL	5.97	D	5.93		34.089	D 26.845	125.4	0.803	1.01	D	43.8	D	14.5		68.3	2.80	38.8	0.02	0.00			403	
440		5.77		5.73		34.118	26.894	121.1	0.847	0.80		34.6		11.4		74.3	2.90	40.0	0.01	0.00			444	02
500	ISL	5.47	D	5.43		34.180	D 26.979	113.6	0.924	0.52	D	22.7	D	7.4		81.7	3.02	41.3	0.01	0.00			504	
514		5.37		5.33		34.184	26.995	112.2	0.933	0.48		20.9		6.8		83.4	3.05	41.6	0.01	0.00			518	01

A) FIRST FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 48.9 N	123 54.3 W	22/11/2013	0445 UTC	4389 m	330 21 kn			1013.7 mb	15.5 C	12.7 C				065

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.68	17.68	33.390	24.119	378.7	0.000	5.50	240.0	101.0	2.3	0.26	0.0	0.01	0.00	0.16	0.05	0	
2	17.68	17.68	33.390	24.119	378.8	0.008	5.50	240.0	101.0	2.3	0.26	0.0	0.01	0.00	0.16	0.05	2	20
10	17.68	17.68	33.393	24.121	378.9	0.038	5.45	237.7	100.0	2.3	0.25	0.0	0.01	0.00	0.16	0.04	10	19
20 ISL	17.69 D	17.68	33.390 D	24.118	379.6	0.076	5.43	D236.6	D 99.6	2.3	0.26	0.0	0.01	0.00	0.16	0.05	20	
25	17.69	17.68	33.392	24.120	379.6	0.095	5.45	237.9	100.1	2.3	0.26	0.0	0.01	0.00	0.16	0.05	25	18
30 ISL	17.69 D	17.69	33.390 D	24.118	379.9	0.115	5.41	D235.9	D 99.3	2.3	0.26	0.0	0.01	0.00	0.16	0.05	30	
41	17.70	17.69	33.408	24.131	379.1	0.156	5.45	237.8	100.0	2.3	0.25	0.0	0.01	0.00	0.16	0.05	41	17
50	18.39	18.38	33.555	24.074	385.0	0.190	5.42	236.5	101.0	2.4	0.24	0.0	0.01	0.00	0.18	0.05	50	16
62	17.63	17.62	33.566	24.270	366.7	0.235	5.61	244.9	103.0	2.5	0.24	0.0	0.01	0.00	0.26	0.15	62	15
75 ISL	14.50 D	14.49	33.154 D	24.662	329.3	0.281	6.08	D265.1	D104.6	2.6	0.32	0.0	0.03	0.02	0.29	0.14	76	
76	14.61	14.60	33.065	24.570	338.2	0.284	6.14	268.0	105.8	2.6	0.33	0.0	0.03	0.02	0.29	0.14	77	14
86	14.90	14.89	33.481	24.829	313.9	0.316	5.84	254.6	101.4	2.8	0.26	0.0	0.01	0.00	0.20	0.17	87	13
100	13.87	13.85	33.428	25.007	297.3	0.359	5.73	249.8	97.4	3.1	0.32	0.0	0.09	0.00	0.20	0.16	101	12
113	13.35	13.33	33.477	25.151	283.8	0.397	5.48	239.0	92.2	4.0	0.40	1.1	0.25	0.00	0.15	0.16	114	11
123	12.63	12.61	33.492	25.304	269.4	0.424	5.28	230.5	87.6	5.1	0.53	3.9	0.03	0.00	0.11	0.11	124	10
125 ISL	12.38 D	12.36	33.473 D	25.339	266.1	0.431	5.27	D229.4	D 86.9	5.7	0.57	4.7	0.03	0.00	0.10	0.11	126	
141	10.52	10.50	33.380	25.606	240.6	0.470	5.00	218.1	79.2	10.1	0.91	10.9	0.02	0.00	0.05	0.06	142	09
150 ISL	10.19 D	10.17	33.386 D	25.666	235.0	0.493	4.92	D214.4	D 77.4	11.9	1.03	12.6	0.02	0.00	0.04	0.05	151	
171	9.64	9.62	33.481	25.833	219.4	0.539	4.47	195.1	69.5	16.1	1.30	16.7	0.02	0.00	0.01	0.03	172	08
199	9.07	9.04	33.707	26.102	194.3	0.597	4.03	175.7	61.9	21.3	1.49	20.6	0.02	0.00	0.00	0.02	201	07
200 ISL	9.05 D	9.02	33.742 D	26.133	191.4	0.601	4.00	D173.9	D 61.4	21.5	1.49	20.7	0.02	0.00			202	
230	8.68	8.65	33.896	26.312	174.9	0.654	3.72	162.1	56.7	27.0	1.63	23.2	0.02	0.00			232	06
250 ISL	8.36 D	8.34	33.946 D	26.399	166.8	0.691	3.44	D149.8	D 52.1	31.4	1.77	25.3	0.02	0.00			252	
271	7.96	7.93	33.972	26.481	159.3	0.723	3.04	132.4	45.6	36.0	1.91	27.5	0.01	0.00			273	05
300 ISL	7.48 D	7.45	33.988 D	26.562	151.8	0.771	2.66	D115.9	D 39.6	41.7	2.08	29.8	0.02	0.00			302	
320	7.26	7.23	33.993	26.599	148.5	0.798	2.36	102.7	34.8	45.6	2.19	31.4	0.02	0.00			323	04
380	6.66	6.62	34.072	26.743	135.4	0.883	1.32	57.8	19.3	59.0	2.61	36.3	0.01	0.00			383	03
400 ISL	6.47 D	6.44	34.089 D	26.782	131.9	0.914	1.18	D 51.5	D 17.2	61.9	2.66	37.1	0.01	0.00			403	
440	6.18	6.14	34.109	26.837	127.0	0.961	0.93	40.6	13.4	67.8	2.76	38.7	0.01	0.00			444	02
500 ISL	5.58 D	5.54	34.134 D	26.931	118.3	1.041	0.72	D 31.4	D 10.2	78.2	2.89	40.5	0.01	0.00			504	
515	5.47	5.42	34.144	26.952	116.4	1.053	0.67	29.4	9.5	80.8	2.92	40.9	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 81.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 8.7 N	120 41.0 W	20/11/2013	1258 UTC	713 m	320 07 kn			1013.4 mb	15.0 C	14.4 C				055

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.23	15.23	33.606	24.848	309.2	0.000	5.92	257.9	103.6	1.2	0.42	0.4	0.07	0.00	3.34	0.76	0	
2	15.23	15.23	33.606	24.848	309.3	0.006	5.92	257.9	103.6	1.2	0.42	0.4	0.07	0.00	3.34	0.76	2	12
10	15.11	15.11	33.589	24.863	308.2	0.031	5.96	259.8	104.1	1.3	0.42	0.4	0.07	0.00	3.26	0.66	10	11
15	14.59	14.59	33.558	24.951	300.0	0.046	6.05	263.8	104.6	1.3	0.43	0.5	0.08	0.10	4.80	0.85	15	10
20 ISL	14.25 D	14.24	33.540 D	25.009	294.5	0.061	6.02	D262.3	D103.3	2.5	0.53	1.8	0.14	0.19	5.23	0.95	20	
30	13.81	13.81	33.529	25.092	287.0	0.090	5.53	240.9	94.0	4.8	0.72	4.5	0.25	0.38	6.09	1.15	30	09
41	12.86	12.86	33.535	25.288	268.6	0.121	4.76	207.3	79.4	8.6	1.06	10.3	0.31	0.16	4.77	1.36	41	08
50	12.10	12.10	33.552	25.448	253.5	0.144	4.37	190.3	71.7	11.4	1.25	12.7	0.29	0.00	2.27	0.85	50	07
75	10.99	10.98	33.564	25.664	233.6	0.205	3.97	172.8	63.6	15.0	1.40	16.9	0.12	0.00	0.59	0.38	76	06
100	10.15	10.14	33.685	25.903	211.3	0.261	3.20	139.3	50.4	21.5	1.78	21.2	0.07	0.00	0.22	0.15	101	05
125 ISL	9.76 D	9.74	33.861 D	26.109	192.3	0.313	2.52	D109.6	D 39.3	26.2	1.97	23.5	0.07	0.00	0.14	0.11	126	
150 ISL	9.57 D	9.55	33.973 D	26.228	181.5	0.360	2.12	D 92.3	D 33.0	30.9	2.17	25.7	0.06	0.00	0.07	0.08	151	
170	9.40	9.39	34.073	26.333	171.9	0.394	1.73	75.5	26.9	34.6	2.32	27.5	0.06	0.00	0.01	0.06	171	04
200 ISL	9.23 D	9.20	34.157 D	26.429	163.4	0.446	1.48	D 64.4	D 22.9	37.4	2.41	28.6	0.05	0.00	0.01	0.04	202	
250	8.84	8.82	34.222	26.542	153.6	0.524	1.15	49.8	17.6	42.0	2.56	30.4	0.04	0.00			252	03
300 ISL	8.43 D	8.40	34.248 D	26.629	146.3	0.602	0.92	D 40.0	D 14.0	48.0	2.70	32.3	0.04	0.00			302	
321	8.15	8.12	34.254	26.676	142.0	0.630	0.78	33.8	11.7	50.6	2.76	33.1	0.04	0.00			324	02
400 ISL	7.24 D	7.20	34.243 D	26.800	131.0	0.741	0.65	D 28.1	D 9.5	60.3	2.91	35.6	0.04	0.00			403	
500 ISL	6.35 D	6.31	34.279 D	26.950	117.6	0.866	0.39	D 17.0	D 5.7	72.6	3.09	38.9	0.04	0.00			504	
514	6.28	6.24	34.279	26.959	116.8	0.877	0.35	15.3	5.1	74.3	3.12	39.3	0.04	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 81.7 43.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 24.2 N	119 48.0 W	24/11/2013	1200 UTC	21 m	270 02 kn			1017.9 mb	16.2 C	12.2 C				077

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.35	16.35	33.571	24.570	335.7	0.000	5.78	251.9	103.5	1.7	0.33	0.1	0.05	0.02	1.30	0.30	0	
2	16.35	16.35	33.571	24.570	335.8	0.007	5.78	251.9	103.5	1.7	0.33	0.1	0.05	0.02	1.30	0.30	2	03
5	16.35	16.34	33.571	24.572	335.8	0.017	5.77	251.6	103.3	1.6	0.33	0.1	0.05	0.01	1.23	0.34	5	02
10	15.99	15.99	33.610	24.683	325.3	0.033	6.01	261.9	106.9	0.5	0.31	0.0	0.02	0.00	2.84	0.42	10	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 81.8 46.9

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 16.5 N	120 1.4 W	24/11/2013	0817	UTC	579 m	320 03 kn			1017.9 mb	16.0 C	13.0 C				076

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	16.38	16.38	33.612	24.595	333.3	0.000	5.84	254.6	104.7	0.6	0.30	0.0	0.02	0.00	0.85	0.28	0	
2	16.38	16.37	33.612	24.595	333.4	0.007	5.84	254.6	104.7	0.6	0.30	0.0	0.02	0.00	0.85	0.28	2	24
10	16.30	16.30	33.611	24.612	332.1	0.033	5.87	255.7	105.0	0.5	0.33	0.0	0.02	0.00	1.21	0.29	10	23
20	15.29	15.28	33.582	24.818	312.8	0.066	6.20	270.3	108.7	0.3	0.27	0.0	0.02	0.00	6.29	1.29	20	22
30	15.12	15.11	33.586	24.860	309.2	0.097	6.06	264.0	105.8	0.5	0.31	0.0	0.02	0.00	7.39	1.29	30	21
40	13.52	13.51	33.518	25.144	282.3	0.126	5.12	223.1	86.6	6.2	0.79	6.1	0.26	0.03	2.41	0.49	40	20
50	12.20	12.20	33.509	25.396	258.5	0.153	4.39	191.0	72.1	11.5	1.16	12.3	0.12	0.00	0.21	0.21	50	19
60	11.66	11.65	33.533	25.516	247.3	0.179	4.13	180.0	67.2	13.6	1.28	14.4	0.08	0.00	0.15	0.17	60	18
70	10.83	10.82	33.636	25.747	225.5	0.202	3.45	150.3	55.2	19.1	1.59	19.0	0.05	0.00	0.12	0.14	71	17
75 ISL	10.66 D	10.65	33.660 D	25.796	220.9	0.215	3.39 D	147.4 D	53.9	20.9	1.69	20.4	0.04	0.00	0.10	0.12	76	
85	10.15	10.14	33.783	25.980	203.6	0.235	2.72	118.2	42.8	24.4	1.90	23.1	0.03	0.00	0.04	0.09	86	16
100	10.02	10.01	33.849	26.054	197.0	0.265	2.41	104.9	37.9	26.5	2.02	24.6	0.03	0.00	0.03	0.08	101	15
120	9.73	9.71	33.934	26.170	186.3	0.303	2.13 D	92.5 D	33.2	29.2	2.13	26.0	0.03	0.00	0.03	0.08	121	14
125 ISL	9.67 D	9.65	33.952 D	26.194	184.1	0.315	2.13 D	92.6 D	33.2	30.2	2.15	26.3	0.03	0.00	0.03	0.08	126	
140	9.58	9.57	34.003	26.249	179.3	0.339	1.89	82.1	29.4	32.9	2.21	27.2	0.04	0.00	0.02	0.09	141	13
150 ISL	9.60 D	9.58	34.027 D	26.265	178.0	0.360	1.80 D	78.3 D	28.0	33.9	2.25	27.7	0.03	0.00	0.02	0.08	151	
170	9.48	9.46	34.073	26.321	173.1	0.392	1.56	67.9	24.3	35.8	2.34	28.7	0.02	0.00	0.01	0.06	171	12
200	9.25	9.23	34.130	26.404	165.8	0.443	1.25	54.4	19.3	39.6	2.46	30.0	0.02	0.00	0.01	0.04	202	11
230	8.90	8.87	34.164	26.488	158.4	0.492	0.97	42.4	15.0	42.4	2.59	31.3	0.02	0.00			232	10
250 ISL	8.72 D	8.70	34.176 D	26.525	155.2	0.528	0.87 D	37.9 D	13.3	45.7	2.66	32.0	0.02	0.00			252	
270	8.55	8.52	34.183	26.558	152.4	0.554	0.75	32.5	11.4	49.0	2.73	32.7	0.02	0.00			272	09
300 ISL	8.31 D	8.28	34.199 D	26.608	148.1	0.604	0.60 D	26.0 D	9.1	51.8	2.81	33.4	0.02	0.00			302	
320	8.08	8.05	34.207	26.649	144.5	0.628	0.50	21.6	7.5	53.7	2.86	33.8	0.02	0.00			323	08
380	7.53	7.49	34.227	26.747	135.9	0.713	0.30	13.0	4.4	62.8	3.04	34.6	0.02	0.00			383	07
400 ISL	7.41 D	7.37	34.233 D	26.769	134.1	0.746	0.23 D	10.1 D	3.5	70.1	3.14	33.7	0.02	0.00			403	
440	6.94	6.90	34.245	26.844	127.2	0.792	0.06	2.6	0.9	84.5	3.34	31.8	0.02	0.00			444	06
480	6.68	6.64	34.258	26.889	123.3	0.842	0.02	1.0	0.3	98.1	3.65	24.5	1.46	0.00			484	05
500 ISL	6.61 D	6.57	34.253 D	26.895	123.0	0.874	0.03 D	1.1 D	0.4	105.9	3.82	15.7	5.31	0.00			504	
515	6.57	6.52	34.252	26.901	122.7	0.885	0.07	3.0	1.0	111.7	3.94	9.1	8.19	0.00			519	04
532	6.55	6.50	34.256	26.907	122.4	0.906	0.05	2.2	0.7	119.7	4.12	1.4	6.13	0.00			537	03
550	6.55	6.50	34.252	26.904	122.9	0.928	0.03	1.1	0.4	116.9	4.05	0.2	2.81	0.00			555	02
566	6.55	6.50	34.256	26.907	122.9	0.948	0.03	1.1	0.4	121.0	4.21	0.3	1.87	0.09			571	01

A) SANTA BARBARA BASIN STATION.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 39.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 15.6 N	119 19.4 W	24/11/2013	1447	UTC	19 m	030 13 kn	250 01 08	1	1018.8 mb	15.8 C	14.3 C		1/8	AC	078

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	15.85	15.85	33.548	24.666	326.6	0.000	5.59	243.5	99.0	2.6	0.45	0.5	0.12	0.34	2.17	0.43	0	
2	15.85	15.85	33.548	24.666	326.6	0.007	5.59	243.5	99.0	2.6	0.45	0.5	0.12	0.34	2.17	0.43	2	05
5	15.83	15.83	33.545	24.668	326.6	0.016	5.60	244.1	99.2	2.7	0.45	0.5	0.12	0.35	2.10	0.45	5	04
10	15.64	15.64	33.525	24.697	324.0	0.033	5.55	242.0	98.0	3.1	0.50	0.9	0.17	0.50	2.05	0.39	10	02
15	15.43	15.43	33.514	24.734	320.6	0.049	5.52	240.4	96.9	3.5	0.54	1.2	0.21	0.64	2.40	0.45	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 13.4 N	119 24.6 W	24/11/2013	1546	UTC	32 m	090 03 kn	280 01 10	0	1019.8 mb	16.0 C	12.8 C		0/8		079

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	16.13	16.13	33.571	24.619	331.0	0.000	5.82	254.2	103.8	0.9	0.31	0.1	0.02	0.00	2.16	0.33	0	
2	16.13	16.13	33.571	24.620	331.1	0.007	5.82	254.2	103.8	0.9	0.31	0.1	0.02	0.00	2.16	0.33	2	06
5	16.13	16.13	33.571	24.621	331.1	0.017	5.83	254.4	103.9	0.9	0.30	0.1	0.02	0.00	2.06	0.36	5	05
10	16.11	16.11	33.572	24.626	330.7	0.033	5.82	254.2	103.8	1.0	0.32	0.0	0.02	0.03	2.21	0.37	10	03
10	16.11	16.11	33.571	24.625	330.8	0.033											10	04
20	15.96	15.95	33.563	24.654	328.4	0.066	5.69	248.4	101.1	1.5	0.37	0.0	0.04	0.47	2.29	0.38	20	02
30	15.53	15.53	33.540	24.733	321.3	0.098	5.57	243.0	98.1	2.5	0.45	0.6	0.10	0.74	1.88	0.44	30	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 10.7 N	119 30.7 W	24/11/2013	1738 UTC	144 m	050 04 kn	090 01 04	0	1020.7 mb	17.0 C	12.0 C	12 m	0/8		080

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.24	16.24	33.564	24.590	333.8	0.000	5.80	252.7	103.6	1.7	0.34	0.0	0.02	0.00	1.80	0.22	0	
2	A	16.24	16.24	33.564	24.590	333.8	0.007	5.80	252.7	103.6	1.7	0.34	0.0	0.02	0.00	1.80	0.22	2	15
7	A	16.21	16.21	33.566	24.597	333.4	0.023	5.78	252.0	103.2	1.7	0.33	0.0	0.02	0.00	1.80	0.39	7	14
10	A	16.21	16.21	33.565	24.597	333.5	0.033	5.81	253.4	103.8	1.7	0.34	0.0	0.02	0.00	1.83	0.39	10	12
10		16.21	16.21	33.565	24.597	333.5	0.034											10	13
19	A	16.20	16.20	33.564	24.599	333.6	0.064	5.77	251.4	102.9	1.7	0.35	0.0	0.03	0.00	2.05	0.44	19	11
20	ISL	16.20 D	16.20	33.565 D	24.600	333.6	0.067	5.74	D250.3	D102.5	1.7	0.35	0.0	0.03	0.00	2.05	0.43	20	
26		16.20	16.20	33.564	24.600	333.8	0.087	5.76	251.0	102.8	1.7	0.34	0.0	0.03	0.00	2.00	0.39	26	10
30	ISL	16.19 D	16.18	33.563 D	24.603	333.6	0.101	5.77	D251.6	D103.0	1.7	0.35	0.0	0.03	0.01	2.02	0.40	30	
33	A	16.19	16.18	33.561	24.601	333.9	0.110	5.76	251.0	102.8	1.7	0.35	0.0	0.03	0.01	2.03	0.41	33	09
41	A	16.05	16.04	33.545	24.621	332.3	0.137	5.70	248.6	101.5	2.0	0.40	0.2	0.09	0.25	1.50	0.36	41	08
50		15.97	15.96	33.562	24.654	329.5	0.167	5.59	243.6	99.3	2.4	0.43	0.7	0.10	0.17	0.91	0.30	50	07
60		13.27	13.26	33.415	25.116	285.5	0.197	4.97	216.5	83.5	7.5	0.92	6.9	0.47	0.36	0.63	0.33	60	06
70		11.76	11.75	33.473	25.453	253.6	0.224	4.11	178.9	66.9	12.3	1.24	13.4	0.05	0.00	0.17	0.17	71	05
75	ISL	11.59 D	11.58	33.493 D	25.498	249.4	0.239	4.02	D175.0	D 65.2	14.0	1.33	14.6	0.05	0.00	0.13	0.15	76	
85		11.29	11.28	33.573	25.617	238.3	0.261	3.47	151.0	55.9	17.2	1.52	17.0	0.04	0.00	0.07	0.11	86	04
100		10.81	10.80	33.651	25.763	224.7	0.296	3.05	132.6	48.6	20.6	1.69	19.5	0.05	0.00	0.04	0.10	101	03
120		10.58	10.56	33.721	25.860	216.0	0.340	2.75	119.6	43.7	23.4	1.83	21.4	0.04	0.00	0.03	0.08	121	02
125	ISL	10.56 D	10.55	33.726 D	25.866	215.5	0.353	2.78	D120.8	D 44.1	23.6	1.85	21.5	0.05	0.00	0.03	0.08	126	
130		10.55	10.54	33.733	25.874	214.9	0.362	2.70	117.6	42.9	23.8	1.86	21.6	0.05	0.00	0.02	0.08	131	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 52.6 N	120 8.1 W	20/11/2013	0647 UTC	100 m	310 24 kn			1014.2 mb	15.4 C	14.0 C				053

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.62	14.62	33.563	24.947	299.8	0.000	5.41	235.6	93.5	5.0	0.63	4.1	0.11	0.01	3.08	0.57	0	
2		14.62	14.62	33.563	24.947	299.9	0.006	5.41	235.6	93.5	5.0	0.63	4.1	0.11	0.01	3.08	0.57	2	11
10		14.54	14.54	33.555	24.958	299.1	0.030	5.35	233.2	92.4	5.2	0.63	4.3	0.12	0.00	2.85	0.56	10	09
10		14.54	14.54	33.556	24.959	299.0	0.030											10	10
20		13.32	13.32	33.508	25.175	278.7	0.059	5.08	221.1	85.4	6.9	0.80	6.5	0.18	0.00	2.12	0.60	20	08
30		12.69	12.69	33.476	25.275	269.4	0.086	4.71	205.1	78.2	9.3	0.99	9.7	0.21	0.00	1.01	0.45	30	07
40		12.72	12.72	33.498	25.287	268.7	0.113	4.68	203.8	77.8	9.6	0.99	9.8	0.19	0.00	1.22	0.42	40	06
50		12.76	12.75	33.526	25.302	267.5	0.140	4.58	199.4	76.1	10.3	1.04	10.3	0.16	0.00	1.31	0.50	50	05
60		12.49	12.48	33.548	25.372	261.1	0.166	4.41	192.1	73.0	11.6	1.10	11.4	0.14	0.00	1.21	0.40	60	04
70		11.65	11.64	33.569	25.547	244.6	0.192	4.06	176.9	66.0	14.4	1.29	14.4	0.13	0.00	0.63	0.32	71	03
75	ISL	11.18 D	11.17	33.606 D	25.661	233.9	0.205	3.75	D163.4	D 60.4	16.5	1.43	16.5	0.12	0.00	0.40	0.24	76	
80		10.78	10.77	33.618	25.743	226.1	0.215	3.46	150.7	55.2	18.6	1.56	18.5	0.11	0.00	0.18	0.17	81	02
90		10.52	10.51	33.682	25.838	217.3	0.237	3.11	135.3	49.3	21.4	1.70	20.6	0.09	0.00	0.08	0.15	91	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 44.6 N	120 24.8 W	20/11/2013	0249 UTC	1000 m	290 22 kn			1015.0 mb	15.4 C	13.9 C				052

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.00	16.00	33.618	24.686	324.6	0.000	5.63	245.3	100.1	2.8	0.42	1.1	0.05	0.04	0.97	0.19	0	
2		16.00	15.99	33.618	24.686	324.7	0.007	5.63	245.3	100.1	2.8	0.42	1.1	0.05	0.04	0.97	0.19	2	21
10		15.99	15.99	33.618	24.688	324.8	0.033	5.63	245.5	100.1	2.9	0.42	1.1	0.05	0.00	1.01	0.13	10	19
10		15.99	15.99	33.618	24.688	324.8	0.033											10	20
20		15.96	15.96	33.618	24.696	324.4	0.065	5.63	245.3	100.0	2.9	0.42	1.1	0.05	0.00	1.01	0.16	20	18
30		14.32	14.32	33.568	25.016	294.2	0.096	5.25	228.7	90.2	5.6	0.67	5.0	0.16	0.00	1.06	0.15	30	17
40		12.36	12.36	33.506	25.362	261.5	0.124	4.80	209.0	79.1	8.8	0.99	10.0	0.25	0.00	0.72	0.01	40	16
50		11.26	11.26	33.508	25.569	241.9	0.149	4.29	186.9	69.1	12.7	1.28	14.8	0.11	0.00	0.33	0.16	50	15
60		10.82	10.82	33.522	25.659	233.6	0.173	4.13	179.8	65.9	14.1	1.37	16.2	0.07	0.00	0.17	0.15	60	14
70		10.29	10.28	33.620	25.829	217.6	0.195	3.35	D145.6	D 52.8	19.2	1.62	19.8	0.05	0.00	0.07	0.09	71	13
75	ISL	10.12 D	10.11	33.747 D	25.957	205.5	0.206	2.94	D128.2	D 46.3	21.7	1.74	21.3	0.04	0.00	0.06	0.08	76	
86		9.89	9.88	33.836	26.065	195.5	0.228	2.50	108.9	39.2	27.2	1.99	24.5	0.03	0.00	0.02	0.06	87	12
100		9.80	9.79	33.976	26.190	184.0	0.255	1.89	82.0	29.5	31.6	2.20	26.5	0.05	0.00	0.04	0.06	101	11
122		9.57	9.55	34.075	26.307	173.4	0.294	1.68	72.9	26.1	34.4	2.30	27.9	0.02	0.00	0.01	0.06	123	10
125	ISL	9.43 D	9.41	34.077 D	26.332	171.0	0.299	1.73	D 75.2	D 26.8	34.5	2.29	28.0	0.02	0.00	0.01	0.05	126	
139		9.31	9.29	34.061	26.339	170.6	0.323	1.80	78.4	27.9	35.0	2.27	28.2	0.02	0.00	0.00	0.05	140	09
150	ISL	9.24 D	9.22	34.091 D	26.374	167.5	0.342	1.74	D 75.7	D 26.9	35.4	2.29	28.4	0.02	0.00	0.01	0.05	151	
171		9.17	9.15	34.093	26.388	166.7	0.377	1.71	74.5	26.4	36.2	2.32	28.7	0.02	0.00	0.01	0.04	172	08
200	ISL	9.11 D	9.09	34.138 D	26.432	163.1	0.425	1.55	D 67.4	D 23.9	37.6	2.31	29.2	0.02	0.00	0.00	0.04	202	
201		9.11	9.09	34.133	26.428	163.5	0.427	1.55	67.5	23.9	37.7	2.31	29.2	0.02	0.00	0.00	0.04	203	07
229		8.96	8.93	34.184	26.494	157.8	0.472	1.30	56.4	19.9	40.7	2.43	30.2	0.02	0.00			231	06
250	ISL	8.85 D	8.82	34.219 D	26.540	153.9	0.505	1.15	D 49.9	D 17.6	42.0	2.49	30.7	0.02	0.00			252	
272		8.79	8.76	34.222	26.552	153.1	0.538	1.10	47.9	16.9	43.4	2.56	31.2	0.01	0.00			274	05
300	ISL	8.37 D	8.34	34.250 D	26.639	145.2	0.581	0.92	D 40.1	D 14.0	47.5	2.66	32.5	0.01	0.00			302	
321		8.17	8.13	34.249	26.669	142.7	0.611	0.80	34.8	12.1	50.6	2.73	33.4	0.01	0.00			324	04
378		7.45	7.42	34.245	26.772	133.5	0.689	0.68	29.7	10.2	57.7	2.84	35.4	0.01	0.00			381	03
400	ISL	7.25 D	7.21	34.260 D	26.813	129.8	0.720	0.60	D 25.9	D 8.8	60.7	2.89	36.1	0.01	0.00			403	
440		6.89	6.84	34.272	26.872	124.5	0.769	0.47	20.5	6.9	66.3	2.99	37.5	0.01	0.00			444	02
500	ISL	6.26 D	6.21	34.284 D	26.966	115.9	0.844	0.37	D 15.9	D 5.3	75.2	3.11	39.4	0.01	0.00			504	
512		6.19	6.14	34.291	26.980	114.7	0.855	0.33	14.5	4.8	76.9	3.13	39.8	0.01	0.00			516	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 34.7 N	120 45.4 W	19/11/2013	2240 UTC	1362 m	280 15 kn	300 03 06	1	1015.6 mb	15.2 C	14.2 C	08 m	5/8	SC	051

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.80		15.80		33.621		24.734	320.1	0.000	5.71	248.7		101.1		2.7	0.41	1.0	0.06	0.00	1.38	0.32	0	
2		15.80		15.79		33.621		24.735	320.1	0.006	5.71	248.7		101.1		2.7	0.41	1.0	0.06	0.00	1.38	0.32	2	21
10	ISL	15.79	D	15.79	D	33.619	D	24.734	320.4	0.032	5.68	D247.3	D	100.5		2.7	0.41	1.0	0.06	0.00	1.32	0.31	10	
11		15.79		15.79		33.619		24.734	320.4	0.034													10	20
11		15.79		15.79		33.620		24.734	320.5	0.035	5.70	248.5		101.0		2.7	0.41	1.0	0.06	0.00	1.32	0.31	11	19
20	ISL	15.76	D	15.76	D	33.619	D	24.742	320.0	0.064	5.64	D245.9	D	99.9		2.8	0.41	1.1	0.06	0.00	1.28	0.31	20	
21		15.77		15.76		33.618		24.740	320.3	0.067	5.69	248.2		100.8		2.8	0.41	1.1	0.06	0.00	1.28	0.31	21	18
30	ISL	15.72	D	15.71	D	33.619	D	24.752	319.4	0.097	5.58	D243.2	D	98.7		3.0	0.43	1.3	0.06	0.00	1.03	0.29	30	
31		15.72		15.72		33.618		24.751	319.6	0.099	5.63	245.2		99.5		3.1	0.43	1.3	0.06	0.00	1.00	0.29	31	17
41		15.69		15.68		33.617		24.757	319.3	0.131	5.56	242.1		98.2		3.1	0.43	1.4	0.07	0.05	0.91	0.29	41	16
50		14.74		14.74		33.594		24.948	301.4	0.159	5.40	235.1		93.5		3.8	0.54	2.8	0.12	0.33	2.84	0.86	50	15
60		11.48		11.47		33.570		25.578	241.4	0.186	4.11	179.1		66.6		13.4	1.30	14.8	0.11	0.00	0.66	0.52	60	14
70		10.61		10.60		33.605		25.761	224.1	0.209	3.64	158.3		57.8		17.8	1.58	19.0	0.04	0.00	0.15	0.18	71	13
75	ISL	10.40	D	10.39	D	33.638	D	25.825	218.2	0.222	3.52	D153.2	D	55.7		19.5	1.65	20.3	0.04	0.00	0.12	0.15	76	
85		9.83		9.82		33.714		25.980	203.6	0.242	3.17	137.9		49.5		22.9	1.78	22.8	0.03	0.00	0.06	0.09	86	12
100		9.36		9.34		33.790		26.118	190.7	0.271	2.94	128.1		45.6		25.8	1.89	24.3	0.03	0.00	0.05	0.06	101	11
121		9.14		9.12		33.905		26.243	179.3	0.310	2.59	112.6		39.9		30.0	2.03	26.3	0.02	0.00	0.01	0.04	122	10
125	ISL	9.14	D	9.12	D	33.930	D	26.263	177.5	0.319	2.52	D109.5	D	38.8		30.5	2.06	26.4	0.02	0.00	0.01	0.04	126	
140		9.04		9.02		33.986		26.323	172.1	0.344	2.23	97.1		34.3		32.6	2.15	26.6	0.02	0.00	0.01	0.04	141	09
150	ISL	8.83	D	8.81	D	33.978	D	26.350	169.6	0.363	2.37	D103.0	D	36.2		33.9	2.19	27.3	0.02	0.00	0.01	0.04	151	
170		8.84		8.82		34.054		26.408	164.6	0.394	2.00	86.9		30.6		36.4	2.26	28.8	0.02	0.00	0.01	0.04	171	08
200		8.48		8.46		34.127		26.522	154.3	0.442	1.55	67.4		23.6		41.9	2.45	30.8	0.02	0.00	0.01	0.09	202	07
230		8.09		8.07		34.156		26.605	146.9	0.487	1.33	57.7		20.0		46.4	2.55	32.4	0.02	0.00			232	06
250	ISL	7.97	D	7.94	D	34.175	D	26.638	144.1	0.519	1.18	D 51.4	D	17.8		48.8	2.63	33.1	0.02	0.00			252	
270		7.86		7.83		34.202		26.677	140.7	0.544	0.97	42.2		14.6		51.2	2.71	33.8	0.02	0.00			272	05
300	ISL	7.66	D	7.63	D	34.216	D	26.717	137.4	0.590	0.89	D 38.8	D	13.3		53.8	2.76	34.5	0.02	0.00			302	
320		7.54		7.51		34.227		26.743	135.2	0.613	0.81	35.2		12.1		55.5	2.80	35.0	0.02	0.00			323	04
381		7.10		7.06		34.248		26.823	128.4	0.694	0.60	26.3		8.9		61.9	2.93	36.6	0.02	0.00			384	03
400	ISL	6.86	D	6.82	D	34.246	D	26.854	125.5	0.723	0.56	D 24.5	D	8.3		64.5	2.97	37.2	0.02	0.00			403	
440		6.51		6.47		34.280		26.929	118.8	0.766	0.40	17.5		5.8		70.1	3.06	38.6	0.01	0.00			444	02
500	ISL	6.00	D	5.96	D	34.315	D	27.022	110.3	0.841	0.28	D 12.3	D	4.1		79.9	3.16	40.3	0.01	0.00			504	
515		5.87		5.82		34.307		27.033	109.3	0.852	0.27	11.7		3.9		82.3	3.19	40.7	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 14.7 N	121 26.9 W	19/11/2013	1746 UTC	3803 m	310 03 kn	320 05 10	1	1019.0 mb	16.0 C	14.2 C	14 m	5/8	SC	050

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.44		15.44		33.558		24.765	317.1	0.000	5.73	249.5		100.6		2.0	0.39	1.2	0.10	0.00	0.59	0.20	0	
2	A	15.44		15.44		33.558		24.765	317.2	0.006	5.73	249.5		100.6		2.0	0.39	1.2	0.10	0.00	0.59	0.20	2	22
9	A	15.41		15.40		33.559		24.773	316.7	0.029	5.70	248.3		100.1		2.1	0.40	1.2	0.10	0.00	0.62	0.23	9	21
10	ISL	15.41	D	15.40	D	33.559	D	24.774	316.7	0.032	5.66	D246.7	D	99.4		2.1	0.40	1.2	0.10	0.00	0.63	0.23	10	
11	A	15.40		15.40		33.559		24.775	316.6	0.035	5.69	247.9		99.9		2.1	0.40	1.2	0.10	0.00	0.65	0.24	11	20
20	ISL	15.40	D	15.40	D	33.559	D	24.776	316.8	0.064	5.65	D246.3	D	99.3		2.1	0.40	1.2	0.10	0.00	0.61	0.22	20	
22	A	15.40		15.40		33.558		24.775	317.0	0.070	5.68	247.6		99.8		2.1	0.40	1.2	0.10	0.00	0.60	0.21	22	19
30		15.40		15.40		33.565		24.781	316.7	0.095	5.69	248.0		100.0		2.1	0.40	1.2	0.10	0.00	0.62	0.23	30	18
38	A	15.39		15.38		33.560		24.780	317.0	0.120	5.68	247.6		99.8		2.1	0.40	1.2	0.11	0.00	0.60	0.23	38	17
48	A	14.84		14.83		33.571		24.909	305.0	0.151	5.65	246.1		98.1		2.1	0.42	1.5	0.13	0.18	0.46	0.25	48	16
50	ISL	14.46	D	14.45	D	33.514	D	24.947	301.4	0.159	5.45	D237.6	D	93.9		3.4	0.57	3.8	0.17	0.12	0.37	0.25	50	
54		12.83		12.82		33.321		25.130	284.0	0.169	5.20	226.4		86.5		6.0	0.88	8.4	0.25	0.00	0.19	0.23	54	15
60		12.24		12.23		33.286		25.216	275.9	0.186	5.12	222.8		84.0		7.3	0.99	10.2	0.12	0.00	0.19	0.19	60	14
70		11.49		11.48		33.349		25.406	258.0	0.213	4.80	208.8		77.6		10.2	1.20	13.7	0.05	0.00	0.14	0.13	71	13
75	ISL	11.53	D	11.52	D	33.436	D	25.465	252.5	0.227	4.61	D200.9	D	74.7		11.5	1.28	15.0	0.04	0.00	0.12	0.11	76	
86		10.59		10.58		33.501		25.685	231.8	0.252	4.28	186.5		68.0		14.4	1.47	18.0	0.03	0.00	0.07	0.07	87	12
100		9.94		9.93		33.592		25.867	214.7	0.284	3.92	170.5		61.3		19.4	1.66	21.1	0.03	0.00	0.03	0.04	101	11
120		9.49		9.47		33.721		26.043	198.3	0.325	3.36	146.3		52.2		24.0	1.86	24.2	0.02	0.00	0.01	0.03	121	10
125	ISL	9.27	D	9.26	D	33.742	D	26.095	193.4	0.337	3.30	D143.5	D	50.9		24.7	1.86	24.3	0.02	0.00	0.01	0.03	126	
140		8.99		8.97		33.807		26.191	184.6	0.363	3.20	139.4		49.2		26.8	1.86	24.6	0.02	0.00	0.01	0.03	141	09
150	ISL	8.93	D	8.91	D	33.834	D	26.222	181.8	0.384	3.10	D135.0	D	47.6		28.3	1.91	25.5	0.02	0.00	0.00	0.03	151	
170		8.67		8.65		33.922		26.332	171.7	0.417	2.80	121.8		42.7		31.2	2.02	27.2	0.02	0.00	0.00	0.03	171	08
200		8.37		8.35		34.024		26.458	160.3	0.466	2.08	90.5		31.6		37.7	2.25	30.1	0.02	0.00	0.00	0.03	202	07
231		7.71		7.69		34.054		26.579	149.1	0.514	1.88	81.8		28.1		44.5	2.40	32.2	0.02	0.00			233	06
250	ISL	7.41	D	7.39	D	34.061	D	26.629	144.6	0.546	1.64	D 71.2	D	24.3		49.0	2.51	33.6	0.02	0.00			252	
269		7.10		7.07		34.081		26.688	139.1	0.569	1.40	61.1		20.7		53.6	2.62	35.0	0.02	0.00			271	05
300	ISL	6.97	D	6.94	D	34.138	D	26.753	133.4	0.616	0.99	D 42.8	D	14.5		57.7	2.75	36.1	0.02	0.00			302	
320		6.94		6.91		34.173		26.784	130.8	0.638	0.81	35.3		11.9		60.4	2.84	36.8	0.02	0.00			323	04
380		6.61		6.58		34.212		26.860	124.3	0.714	0.58	25.3		8.5		66.6	2.96	38.0	0.02	0.00			383	03
400	ISL	6.42	D	6.38	D	34.216	D	26.889	121.8	0.745	0.54	D 23.4	D	7.8		69.4	3.01	38.5	0.02	0.00			403	
440		6.14		6.10		34.253		26.955	115.8	0.786	0.38	16.4		5.5		75.0	3.10	39.4	0.02	0.00			444	02
500	ISL	5.69	D	5.65	D	34.277	D	27.030	109.1	0.862	0.30	D 13.2	D	4.3		82.3	3.15	40.7	0.02	0.00			504	
514		5.65		5.61		34.287		27.044	108.0	0.869	0.27	11.7		3.8		84.0	3.16	41.0	0.02	0.00			518	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.8 N	122 7.9 W	19/11/2013	1028	UTC	4180 m	360 03 kn			1018.7 mb	15.0 C	13.3 C				049

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		14.95		14.95		33.403	24.753	318.3	0.000	5.75		250.6		100.0		2.5	0.44	1.5	0.12	0.15	0.30	0.09	0	
2		14.95		14.95		33.403	24.753	318.4	0.006	5.75		250.6		100.0		2.5	0.44	1.5	0.12	0.15	0.30	0.09	2	21
10		14.94		14.94		33.403	24.755	318.5	0.032	5.73		249.9		99.7		2.5	0.42	1.5	0.12	0.14	0.29	0.07	10	19
10		14.94		14.94		33.403	24.755	318.5	0.033														10	20
20	ISL	14.91	D	14.91		33.396	D 24.756	318.6	0.064	5.68	D	247.5	D	98.7		2.4	0.44	1.6	0.13	0.19	0.30	0.11	20	
21		14.91		14.91		33.422	24.776	316.8	0.067	5.70		248.4		99.1		2.4	0.44	1.6	0.13	0.20	0.30	0.11	21	18
30	ISL	14.85	D	14.84		33.385	D 24.763	318.3	0.096	5.69	D	248.2	D	98.8		2.5	0.43	1.5	0.12	0.15	0.34	0.11	30	
31		14.85		14.84		33.391	24.767	317.9	0.099	5.72		249.4		99.3		2.5	0.43	1.5	0.12	0.14	0.35	0.11	31	17
41		14.78		14.77		33.386	24.779	317.1	0.130	5.75		250.6		99.6		2.5	0.42	1.4	0.12	0.03	0.50	0.23	41	16
50		14.59		14.58		33.389	24.823	313.2	0.159	5.69		248.1		98.3		2.6	0.44	1.6	0.14	0.10	0.38	0.21	50	15
61		11.17		11.17		33.182	25.332	264.7	0.191	5.22		227.4		83.8		8.0	1.03	10.8	0.06	0.00	0.24	0.19	61	14
70		10.72		10.71		33.279	25.489	249.9	0.214	4.93		214.6		78.4		11.2	1.22	13.9	0.04	0.00	0.15	0.11	71	13
75	ISL	10.50	D	10.49		33.350	D 25.582	241.2	0.228	4.86	D	211.5	D	76.9		13.4	1.31	15.5	0.04	0.00	0.11	0.09	76	
86		9.70		9.69		33.509	25.842	216.7	0.251	4.30		187.0		66.9		18.2	1.52	19.1	0.03	0.00	0.03	0.05	87	12
100		9.20		9.19		33.677	26.054	196.8	0.280	3.70		161.1		57.1		23.5	1.75	22.8	0.02	0.00	0.01	0.04	101	11
120		9.00		8.98		33.795	26.180	185.2	0.318	3.23	D	140.8	D	49.7		27.0	1.88	24.9	0.02	0.00	0.00	0.03	121	10
125	ISL	8.94	D	8.93		33.798	D 26.191	184.2	0.330	3.28	D	142.7	D	50.3		27.9	1.92	25.4	0.02	0.00	0.00	0.03	126	
140		8.76		8.75		33.895	26.295	174.6	0.354	2.78		120.9		42.5		30.5	2.02	27.0	0.02	0.00	0.00	0.03	141	09
150	ISL	8.59	D	8.58		33.941	D 26.358	168.9	0.374	2.73	D	119.0	D	41.6		31.9	2.03	27.3	0.02	0.00	0.00	0.03	151	
170		8.32		8.30		33.960	26.415	163.8	0.405	2.75		119.5		41.6		34.5	2.05	27.9	0.02	0.00	0.00	0.03	171	08
200		8.05		8.03		34.034	26.514	154.8	0.453	2.08		90.3		31.2		40.9	2.33	31.2	0.02	0.00	0.00	0.02	202	07
231		7.79		7.77		34.066	26.578	149.3	0.500	1.65		71.8		24.7		45.4	2.44	32.6	0.02	0.00			233	06
250	ISL	7.51	D	7.48		34.068	D 26.620	145.4	0.531	1.61	D	70.1	D	24.0		48.9	2.52	33.8	0.02	0.00			252	
270		7.15		7.12		34.073	26.676	140.3	0.557	1.41		61.5		20.8		52.6	2.61	35.0	0.02	0.00			272	05
300	ISL	6.91	D	6.88		34.119	D 26.745	134.1	0.602	1.06	D	45.9	D	15.5		58.0	2.74	36.4	0.01	0.00			302	
320		6.78		6.75		34.141	26.781	131.0	0.624	0.87		37.7		12.7		61.6	2.83	37.3	0.01	0.00			323	04
379		6.38		6.34		34.193	26.876	122.6	0.699	0.56		24.4		8.1		69.5	2.99	38.9	0.02	0.00			382	03
400	ISL	6.28	D	6.24		34.211	D 26.903	120.3	0.729	0.51	D	22.4	D	7.4		71.5	3.02	39.0	0.02	0.00			403	
441		6.06		6.02		34.230	26.947	116.6	0.773	0.40		17.6		5.8		75.3	3.09	39.3	0.02	0.00			445	02
500	ISL	5.70	D	5.65		34.252	D 27.010	111.0	0.846	0.37	D	16.1	D	5.3		81.5	3.14	40.7	0.02	0.00			504	
514		5.69		5.64		34.268	27.024	109.9	0.856	0.32	D	14.0	D	4.6		82.9	3.15	41.0	0.02	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 34.7 N	122 48.7 W	19/11/2013	0446	UTC	4262 m	220 05 kn			1020.0 mb	16.0 C	14.9 C				048

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.42		17.42		33.366	24.161	374.7	0.000	5.50		240.0		100.5		2.4	0.28	0.0	0.02	0.00	0.14	0.04	0	
2		17.42		17.42		33.366	24.161	374.7	0.008	5.50		240.0		100.5		2.4	0.28	0.0	0.02	0.00	0.14	0.04	2	21
10		17.42		17.41		33.364	24.162	375.0	0.036														10	20
10		17.42		17.41		33.366	24.164	374.8	0.038	5.51		240.3		100.6		2.4	0.27	0.0	0.00	0.00	0.14	0.03	10	19
20	ISL	17.34	D	17.33		33.351	D 24.172	374.4	0.075	5.55		242.1		101.2		2.4	0.28	0.0	0.00	0.00	0.17	0.03	20	
25		16.93		16.92		33.279	24.213	370.6	0.094	5.57		243.0		100.7		2.4	0.28	0.0	0.00	0.00	0.19	0.03	25	18
30	ISL	16.88	D	16.88		33.280	D 24.225	369.7	0.113	5.59		243.6		100.9		2.4	0.28	0.0	0.01	0.00	0.22	0.05	30	
40		16.60		16.60		33.242	24.262	366.6	0.149	5.62		244.9		100.9		2.4	0.29	0.0	0.02	0.00	0.28	0.09	40	17
50		16.36		16.35		33.236	24.314	361.9	0.186	5.65		246.5		101.0		2.4	0.31	0.0	0.03	0.00	0.30	0.11	50	16
62		14.40		14.39		33.205	24.721	323.3	0.227	6.02		262.2		103.3		2.7	0.31	0.1	0.03	0.00	0.28	0.12	62	15
75		12.00		11.99		32.996	25.037	293.3	0.267	5.81		253.0		94.7		3.8	0.56	2.7	0.71	0.00	0.15	0.13	76	14
87		11.40		11.39		32.999	25.151	282.6	0.301	5.70		248.1		91.7		4.7	0.70	5.1	0.13	0.00	0.14	0.11	88	13
100		10.61		10.60		33.048	25.329	265.9	0.337	5.47		238.2		86.6		6.9	0.84	7.8	0.07	0.00	0.08	0.08	101	12
112		10.08		10.07		33.068	25.435	256.0	0.368	5.28		230.1		82.7		10.1	1.04	11.2	0.08	0.00	0.06	0.06	113	11
125		10.19		10.17		33.415	25.688	232.3	0.400	4.83		210.2		75.9		11.3	1.04	12.2	0.08	0.00	0.06	0.07	126	10
140		9.45		9.43		33.511	25.886	213.6	0.434	4.32		187.9		66.8		17.5	1.41	17.7	0.04	0.00	0.02	0.03	141	09
150	ISL	9.20	D	9.18		33.647	D 26.033	199.8	0.457	4.11	D	179.1	D	63.4		19.9	1.48	19.2	0.04	0.00	0.01	0.02	151	
170		8.88		8.86		33.833	26.229	181.6	0.493	3.84		166.9		58.7		24.6	1.62	22.1	0.03	0.00	0.00	0.02	171	08
200		8.47		8.45		33.946	26.381	167.6	0.545	3.68		160.1		55.9		28.8	1.69	23.6	0.00	0.00	0.00	0.01	202	07
230		8.01		7.99		33.976	26.475	159.0	0.594	3.15		137.1		47.4		34.9	1.91	26.6	0.02	0.00			232	06
250	ISL	7.69	D	7.67		34.001	D 26.541	153.0	0.629	2.59	D	112.5	D	38.6		39.2	2.06	28.6	0.01	0.00			252	
270		7.45		7.43		34.001	26.576	149.9	0.656	2.42		105.3		35.9		43.5	2.21	30.6	0.00	0.00			272	05
300	ISL	7.15	D	7.12		34.019	D 26.633	144.8	0.704	2.05	D	89.3	D	30.2		49.3	2.38	32.9	0.01	0.00			302	
320		6.88		6.85		34.035	26.683	140.3	0.729	1.71		74.4		25.0		53.1	2.50	34.4	0.02	0.00			323	04
380		6.43		6.40		34.091	26.788	131.0	0.810	1.07		46.7		15.6		62.8	2.77	37.5	0.00	0.00			383	03
400	ISL	6.28	D	6.24		34.100	D 26.815	128.6	0.841	1.02	D	44.4	D	14.7		65.8	2.82	38.1	0.00	0.00			403	
440		5.96		5.92		34.122	26.873	123.4	0.886	0.81		35.3		11.6		71.7	2.91	39.4	0.01	0.00			444	02
500	ISL	5.60	D	5.55		34.165	D 26.953	116.2	0.964	0.61	D	26.7	D	8.7		80.1	3.03	40.9	0.01	0.00			504	
514		5.53		5.49		34.178	26.971	114.7	0.974	0.52		22.5		7.4		82.0	3.06	41.2	0.01	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 14.7 N	123 29.6 W	18/11/2013	2300 UTC	4169 m	220 05 kn	340 04 06	2	1019.0 mb	16.0 C	15.0 C	33 m	8/8	NS	047

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.31		17.31		33.307	24.144	376.3	0.000	5.53	240.9		100.6		2.3	0.28	0.0	0.00	0.00	0.17	0.05	0	
1		17.31		17.31		33.307	24.144	376.4	0.004	5.53	240.9		100.6		2.3	0.28	0.0	0.00	0.00	0.17	0.05	1	21
10		17.19		17.19		33.308	24.173	373.9	0.036													10	20
10		17.19		17.19		33.308	24.173	373.9	0.038	5.53	241.1		100.5		2.3	0.28	0.0	0.00	0.00	0.17	0.05	10	19
20	ISL	17.18	D	17.18	D	33.309	D 24.177	373.9	0.075	5.54	241.4		100.6		2.3	0.28	0.0	0.00	0.00	0.19	0.05	20	
26		17.18		17.17		33.318	24.185	373.3	0.097	5.54	241.5		100.6		2.3	0.28	0.0	0.00	0.00	0.21	0.06	26	18
30	ISL	17.18	D	17.17	D	33.310	D 24.179	374.1	0.113	5.54	241.4		100.5		2.3	0.28	0.0	0.00	0.00	0.21	0.06	30	
41		17.17		17.17		33.309	24.180	374.5	0.153	5.52	240.9		100.3		2.3	0.28	0.0	0.01	0.00	0.22	0.06	41	17
50	ISL	17.17	D	17.16	D	33.309	D 24.182	374.5	0.189	5.47	D238.7	D	99.4		2.3	0.29	0.0	0.01	0.32	0.24	0.07	50	
51		17.16		17.15		33.307	24.182	374.6	0.191	5.53	241.1		100.4		2.3	0.29	0.0	0.01	0.36	0.24	0.07	51	16
62		16.46		16.45		33.267	24.315	362.3	0.231	5.66	246.7		101.3		2.4	0.29	0.0	0.00	0.00	0.29	0.07	62	15
75	ISL	13.86	D	13.85	D	33.128	D 24.774	318.6	0.278	5.94	D258.7	D	100.8		2.5	0.36	0.2	0.03	0.09	0.28	0.13	76	
76		13.92		13.91		33.096	24.737	322.2	0.279	5.98	260.6		101.6		2.5	0.37	0.2	0.03	0.10	0.28	0.14	77	14
88		13.15		13.14		33.166	24.948	302.3	0.316	5.91	257.4		98.8		3.0	0.39	0.3	0.08	0.08	0.26	0.16	89	13
100		12.31		12.30		33.147	25.096	288.4	0.352	5.74	250.2		94.4		3.8	0.53	2.4	0.19	0.00	0.18	0.16	101	12
112		11.85		11.83		33.171	25.203	278.5	0.386	5.51	240.2		89.7		5.1	0.70	5.6	0.04	0.00	0.12	0.14	113	11
125	ISL	10.83	D	10.81		33.310	D 25.496	250.7	0.423	5.33	232.0		84.9		7.1	0.77	7.4	0.02	0.00	0.08	0.08	126	
126		11.07		11.05		33.300	25.445	255.6	0.423	5.31	231.4		85.1		7.3	0.78	7.5	0.02	0.00	0.08	0.08	127	10
140		10.23		10.22		33.370	25.645	236.7	0.457	4.86	211.5		76.5		12.6	1.16	13.7	0.02	0.00	0.03	0.04	141	09
150	ISL	9.90	D	9.89	D	33.478	D 25.786	223.5	0.483	4.67	D203.3	D	73.0		14.7	1.29	15.7	0.02	0.00	0.02	0.04	151	
171		9.55		9.53		33.560	25.908	212.2	0.527	4.05	176.4		62.9		19.2	1.55	19.9	0.01	0.00	0.01	0.03	172	08
199		8.77		8.74		33.849	26.261	179.1	0.581	3.50	152.4		53.5		26.5	1.75	23.7	0.01	0.00	0.00	0.02	201	07
200	ISL	8.74	D	8.72	D	33.876	D 26.286	176.7	0.586	3.60	D156.8	D	55.0		26.6	1.75	23.7	0.01	0.00	0.00	0.02	202	
230		8.32		8.30		33.962	26.418	164.7	0.635	3.48	151.4		52.7		30.1	1.78	24.5	0.01	0.00			232	06
250	ISL	8.03	D	8.00	D	33.972	D 26.470	159.9	0.670	3.11	D135.2	D	46.7		34.1	1.92	26.4	0.01	0.00			252	
270		7.74		7.71		33.981	26.520	155.5	0.699	2.86	124.5		42.7		38.1	2.06	28.3	0.01	0.00			272	05
300	ISL	7.44	D	7.41	D	34.007	D 26.583	149.8	0.748	2.36	D102.8	D	35.1		43.7	2.25	30.7	0.01	0.00			302	
320		7.26		7.23		34.025	26.623	146.2	0.774	2.04	88.6		30.1		47.4	2.38	32.3	0.01	0.00			323	04
379		6.55		6.52		34.052	26.742	135.4	0.857	1.44	62.7		21.0		58.3	2.64	36.0	0.01	0.00			382	03
400	ISL	6.35	D	6.32	D	34.074	D 26.785	131.4	0.890	1.21	D 52.6	D	17.5		62.3	2.73	37.0	0.01	0.00			403	
440		6.03		5.99		34.120	26.863	124.4	0.936	0.83	36.3		12.0		70.0	2.91	38.9	0.01	0.00			444	02
500	ISL	5.60	D	5.56	D	34.158	D 26.947	116.8	1.014	0.66	D 28.8	D	9.4		78.4	3.03	40.4	0.01	0.00			504	
515		5.55		5.51		34.171	26.964	115.4	1.026	0.57	24.8		8.1		80.5	3.06	40.8	0.01				519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 54.7 N	124 10.1 W	18/11/2013	1800 UTC	4245 m	280 09 kn	350 08 11	1	1020.7 mb	15.9 C	15.1 C	37 m	7/8	NS	046

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.43		17.43		33.310	24.118	378.8	0.000	5.48	238.9		100.0		2.1	0.30	0.0	0.00	0.00	0.19	0.06	0	
2	A	17.43		17.43		33.310	24.118	378.9	0.008	5.48	238.9		100.0		2.1	0.30	0.0	0.00	0.00	0.19	0.06	2	23
10	ISL	17.42	D	17.41	D	33.309	D 24.120	379.0	0.038	5.45	D237.7	D	99.5		2.1	0.30	0.0	0.00	0.00	0.19	0.06	10	
12		17.41		17.41		33.308	24.121	379.0	0.046	5.48	239.1		100.0		2.1	0.30	0.0	0.00	0.00	0.19	0.06	12	21
12		17.41		17.41		33.312	24.123	378.7	0.046													12	22
20	ISL	17.41	D	17.40	D	33.310	D 24.124	379.0	0.076	5.45	D237.6	D	99.4		2.1	0.30	0.0	0.00	0.00	0.20	0.06	20	
24	A	17.40		17.40		33.308	24.123	379.2	0.091	5.48	238.8		99.9		2.1	0.30	0.0	0.00	0.00	0.20	0.06	24	20
30	ISL	17.40	D	17.40	D	33.310	D 24.125	379.2	0.114	5.43	D236.8	D	99.1		2.1	0.30	0.0	0.00	0.00	0.19	0.06	30	
31	A	17.40		17.40		33.310	24.126	379.2	0.118	5.48	239.0		100.0		2.1	0.30	0.0	0.00	0.00	0.19	0.05	31	19
38		17.40		17.39		33.308	24.125	379.5	0.144	5.48	239.0		100.0		2.0	0.30	0.0	0.00	0.00	0.19	0.06	38	18
48		17.39		17.38		33.305	24.127	379.8	0.182	5.48	239.1		100.0		2.1	0.29	0.0	0.00	0.00	0.20	0.06	48	17
50	ISL	17.39	D	17.38	D	33.309	D 24.129	379.7	0.191	5.42	D236.5	D	98.9		2.1	0.29	0.0	0.00	0.00	0.21	0.07	50	
58	A	17.37		17.36		33.301	24.129	380.0	0.220	5.48	238.9		99.9		2.1	0.29	0.0	0.00	0.00	0.23	0.07	58	16
72		17.26		17.25		33.298	24.153	378.2	0.273	5.49	239.5		99.9		2.1	0.30	0.0	0.00	0.00	0.25	0.08	73	15
75	ISL	15.61	D	15.60	D	33.177	D 24.439	350.8	0.286	5.82	D253.9	D	102.5		2.2	0.31	0.0	0.00	0.01	0.25	0.09	76	
86		13.83		13.82		33.098	24.758	320.4	0.321	6.04	263.1		102.4		2.5	0.36	0.0	0.01	0.03	0.25	0.14	87	14
100	ISL	13.20	D	13.18	D	33.132	D 24.913	306.0	0.367	5.89	D256.4	D	98.5		2.9	0.42	0.4	0.14	0.07	0.21	0.14	101	
101	A	13.23		13.22		33.133	24.907	306.6	0.368	5.90	257.0		98.8		2.9	0.42	0.4	0.15	0.07	0.21	0.14	102	13
110		12.86		12.84		33.182	25.019	296.1	0.395	5.76	250.9		95.8		3.3	0.46	1.3	0.30	0.00	0.17	0.13	111	12
119		12.20		12.18		33.184	25.148	284.0	0.421	5.59	243.7		91.8		4.2	0.57	3.4	0.08	0.00	0.12	0.12	120	11
125	ISL	12.03	D	12.01	D	33.256	D 25.236	275.7	0.441	5.44	D237.1	D	89.0		5.0	0.61	4.4	0.04	0.00	0.09	0.09	126	
126	A	12.07		12.05		33.267	25.237	275.7	0.441	5.47	238.1		89.5		5.1	0.62	4.6	0.03	0.00	0.09	0.09	127	10
145		11.11		11.09		33.397	25.515	249.5	0.491	5.05	219.8		81.0		8.5	0.86	9.0	0.01	0.00	0.05	0.06	146	09
150	ISL	10.70	D	10.68	D	33.425	D 25.609	240.5	0.506	4.94	D215.1	D	78.6		9.8	0.94	10.3	0.01	0.00	0.04	0.05	151	
171		9.79		9.77		33.514	25.833	219.4	0.551	4.46	194.0		69.5		15.2	1.29	16.0	0.01	0.00	0.02	0.03	172	08
200	ISL	9.11	D	9.09	D	33.779	D 26.152	189.6	0.614	3.89	D169.1	D	59.8		22.0	1.55	20.6	0.01	0.00	0.00	0.02	202	
201		9.13		9.11		33.773	26.145	190.3	0.613	3.89	169.3		59.9		22.2	1.56	20.8	0.01	0.00	0.00	0.02	203	07
230		8.50		8.48		33.930	26.366	169.7	0.665	3.51	152.7		53.3		29.1	1.76	24.1	0.01	0.00			232	06
250	ISL	8.23	D	8.20	D	33.960	D 26.431	163.7	0.702	3.29	D143.0	D	49.6		32.8	1.89	25.9	0.01	0.00			252	
270		7.91		7.88		33.983	26.496	157.8	0.730	2.91	126.6		43.6		36.5	2.01	27.6	0.01	0.00			272	05
300	ISL	7.54	D	7.51	D	34.014	D 26.576	150.6	0.781	2.36	D102.6	D	35.1		42.9	2.23	30.3	0.01	0.00			302	
322		7.21		7.18		34.026	26.631	145.5	0.809	2.02	87.7		29.8		47.6	2.39	32.2	0.01	0.00			325	04
382		6.53		6.50		34.094	26.778	132.0	0.893	1.16	50.6		16.9		61.6	2.75	36.7	0.01	0.00			385	03
400	ISL	6.50	D	6.46	D	34.112	D 26.796	130.5	0.922	1.04	D 45.2	D	15.1		63.9	2.80	37.2	0.01	0.00			403	
440		6.14		6.10		34.135	26.862	124.6	0.967	0.84	36.4		12.0		69.3	2.90	38.4	0.00	0.00			444	02
500	ISL	5.55	D	5.50	D	34.158	D 26.953	116.2	1.046	0.71	D 30.7	D	10.0		79.3	3.00	40.2	0.01	0.00			504	
515		5.44		5.40		34.172	26.977	114.0	1.057	0.62	26.8		8.7		81.9	3.02	40.6	0.01	0.00			519	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 85.4 35.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 0.7 N	118 49.8 W	25/11/2013	0138	UTC	18 m	300 04 kn			1019.5 mb	16.8 C	13.0 C				081

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	16.16	16.16	33.543	24.592	333.6	0.000	5.97	260.2	106.5	1.4	0.34	0.2	0.07	0.00	2.15	0.44	0	
2	16.16	16.16	33.543	24.592	333.7	0.007	5.97	260.2	106.5	1.4	0.34	0.2	0.07	0.00	2.15	0.44	2	05
5	16.16	16.16	33.543	24.591	333.9	0.017	5.95	259.3	106.1	1.4	0.34	0.2	0.07	0.00	2.25	0.44	5	04
10	16.13	16.12	33.541	24.599	333.3	0.033	5.93	258.5	105.7	1.4	0.33	0.2	0.08	0.05	2.49	0.50	10	02
10	16.13	16.12	33.541	24.599	333.3	0.034											10	03
14	16.09	16.08	33.547 D	24.612	332.2	0.047	5.96	259.6	106.1	1.4	0.35	0.3	0.08	0.08	2.61	0.41	14	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.4 N	118 29.4 W	16/11/2013	0518	UTC	56 m	200 04 kn			1006.1 mb	17.2 C	15.0 C				034

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.35	17.35	33.589	24.349	356.8	0.000	5.81	253.4	106.1	0.8	0.29	0.0	0.01	0.01	0.36	0.10	0	
1	17.35	17.35	33.589	24.349	356.8	0.004	5.81	253.4	106.1	0.8	0.29	0.0	0.01	0.01	0.36	0.10	1	08
5	17.36	17.36	33.588	24.346	357.2	0.018	5.81	253.1	106.0	0.8	0.27	0.0	0.01	0.00	0.39	0.06	5	07
10	17.35	17.35	33.583	24.346	357.5	0.036	5.82	253.6	106.2	0.8	0.28	0.0	0.01	0.00	0.39	0.06	10	05
10	17.35	17.35	33.588	24.349	357.1	0.037											10	06
20	14.82	14.82	33.414	24.790	315.4	0.070	6.06	264.0	105.1	1.4	0.39	0.3	0.10	0.12	2.33	0.53	20	04
30	13.62	13.61	33.348	24.992	296.4	0.100	5.35	233.0	90.5	5.6	0.72	4.5	0.84	2.56	0.91	0.45	30	03
40	13.27	13.27	33.345	25.059	290.4	0.129	5.26	229.1	88.3	6.2	0.76	5.5	0.90	2.34	0.67	0.35	40	02
50	13.05	13.05	33.348	25.106	286.2	0.158	5.13	223.5	85.8	6.6	0.81	6.4	0.89	1.90	0.56	0.32	50	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.4 N	118 37.7 W	16/11/2013	0724	UTC	645 m	180 02 kn			1006.1 mb	17.0 C	14.9 C				035

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.84	17.84	33.652	24.280	363.4	0.000	5.56	242.5	102.6	1.4	0.29	0.0	0.00	0.00	0.22	0.07	0	
2	17.84	17.84	33.652	24.280	363.4	0.007	5.56	242.5	102.6	1.4	0.29	0.0	0.00	0.00	0.22	0.07	2	21
10	17.85	17.85	33.648	24.276	364.1	0.036											10	20
10	17.85	17.85	33.649	24.277	364.0	0.036	5.57	242.9	102.7	1.4	0.30	0.0	0.00	0.00	0.22	0.09	10	19
20	17.83	17.83	33.647	24.280	364.1	0.073	5.57	243.0	102.7	1.4	0.30	0.0	0.00	0.00	0.22	0.06	20	18
30	15.90	15.89	33.504	24.624	331.7	0.108	5.98	260.7	106.0	2.2	0.36	0.0	0.01	0.00	0.59	0.22	30	17
40	13.12	13.11	33.371	25.111	285.4	0.139	5.37	233.9	89.9	5.6	0.72	5.0	0.64	0.66	0.78	0.35	40	16
50	12.73	12.72	33.384	25.198	277.4	0.167	5.02	218.6	83.3	6.8	0.87	7.8	0.39	0.00	0.72	0.36	50	15
60	12.21	12.20	33.410	25.318	266.2	0.194	4.58	199.5	75.3	9.1	1.04	10.9	0.13	0.00	0.46	0.27	60	14
70	12.03	12.02	33.430	25.369	261.6	0.220	4.40	191.6	72.0	10.2	1.11	11.8	0.06	0.00	0.27	0.23	71	13
75 ISL	11.95 D	11.94	33.439 D	25.391	259.6	0.235	4.41	D191.9 D	72.0	11.1	1.16	12.5	0.05	0.00	0.22	0.20	76	
85	11.62	11.61	33.487	25.489	250.5	0.259	4.01	174.8	65.2	12.9	1.27	13.9	0.03	0.00	0.12	0.15	86	12
100	11.42	11.41	33.528	25.558	244.3	0.296	3.70	161.3	59.9	15.1	1.38	15.5	0.03	0.00	0.08	0.13	101	11
120	11.07	11.05	33.594	25.675	233.7	0.344	3.39	147.4	54.3	17.6	1.53	17.7	0.02	0.00	0.04	0.09	121	10
125 ISL	11.01 D	10.99	33.627 D	25.711	230.4	0.358	3.23	D140.6 D	51.8	18.7	1.59	18.5	0.02	0.00	0.03	0.09	126	
140	10.55	10.53	33.696	25.846	217.8	0.389	2.82	122.6	44.7	22.2	1.77	20.7	0.02	0.00	0.02	0.08	141	09
150 ISL	10.60 D	10.59	33.741 D	25.872	215.6	0.414	2.70	D117.4 D	42.9	23.8	1.84	21.9	0.02	0.00	0.01	0.08	151	
170	9.93	9.91	33.848	26.072	196.9	0.452	2.48	108.1	38.9	26.8	1.97	24.2	0.03	0.00	0.01	0.06	171	08
200	9.41	9.39	34.057	26.322	173.7	0.507	1.84	80.1	28.6	33.4	2.23	27.6	0.04	0.23	0.01	0.07	202	07
230	8.98	8.95	34.146 D	26.461	161.0	0.561	1.61	D 69.9 D	24.7								232	06
250 ISL	8.87 D	8.85	34.197 D	26.518	156.0	0.593	1.34	D 58.3 D	20.6	41.0	2.47	30.2	0.03	0.75			252	
270	8.64	8.62	34.231	26.581	150.2	0.624	1.05	45.9	16.1	44.0	2.57	31.3	0.02	0.96			272	05
300 ISL	8.42 D	8.39	34.254 D	26.634	145.7	0.669	0.90	D 39.3 D	13.7	47.2	2.65	32.1	0.01	0.38			302	
320	8.20	8.17	34.260	26.673	142.3	0.697	0.80	34.6	12.0	49.4	2.70	32.7	0.01	0.00			323	04
380 A	7.62	7.58	34.272	26.769	133.9	0.780	0.60	26.0	8.9	56.4	2.83	34.7	0.01	0.49			383	03
400 ISL	7.49 D	7.45	34.275 D	26.791	132.1	0.808	0.56	D 24.4 D	8.4	59.4	2.87	35.4	0.01	0.33			403	
440	7.01	6.97	34.286	26.867	125.2	0.858	0.41	18.0	6.1	65.2	2.96	36.7	0.01	0.00			444	02
500 ISL	6.59 D	6.54	34.310 D	26.943	118.5	0.934	0.31	D 13.6 D	4.5	73.1	3.06	37.7	0.01	0.00			504	
515	6.44	6.40	34.316	26.967	116.3	0.948	0.26	11.4	3.8	75.0	3.09	37.9	0.01	0.00			519	01

A) UNUSUAL PROFILES AND ODD NO3/PO4 RATIOS MAY BE DUE TO THE PROXIMITY OF THIS STATION TO THE HYPERION WASTE-WATER OUTFALL
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 39.3 N	118 58.5 W	16/11/2013	1144	UTC	763 m	340 08 kn			1007.1 mb	16.0 C	13.2 C				036

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.75		17.75		33.649	24.300	361.4	0.000	5.56		242.5		102.4		1.5	0.31	0.0	0.01	0.00	0.23	0.04	0	
2		17.75		17.75		33.649	24.301	361.5	0.007	5.56		242.5		102.4		1.5	0.31	0.0	0.01	0.00	0.23	0.04	2	24
9		17.76		17.75		33.650	24.300	361.8	0.033	5.59		243.9		103.0		1.3	0.30	0.0	0.00	0.00	0.22	0.05	9	23
10	ISL	17.76	D	17.76	D	33.653	24.301	361.7	0.037	5.54	D	241.6	D	102.0		1.3	0.30	0.0	0.00	0.00	0.22	0.05	10	
20		17.74		17.74		33.649	24.303	361.9	0.072	5.59		243.6		102.8		1.3	0.30	0.0	0.01	0.00	0.22	0.05	20	22
30		15.65		15.65		33.550	24.713	323.2	0.107	5.74		250.0		101.2		1.6	0.33	0.0	0.01	0.00	0.39	0.11	30	21
40		12.84		12.84		33.323	25.127	283.8	0.137	5.45		237.4		90.7		4.9	0.72	5.7	0.22	0.00	0.66	0.32	40	20
50		11.90		11.89		33.360	25.338	263.9	0.164	4.99		217.4		81.4		7.7	0.94	9.6	0.06	0.00	0.31	0.23	50	19
60		11.63		11.62		33.376	25.401	258.2	0.190	4.90		213.4		79.5		8.6	1.00	10.5	0.05	0.00	0.24	0.20	60	18
70		11.03		11.02		33.431	25.551	244.1	0.216	4.58		199.4		73.4		11.4	1.17	13.4	0.04	0.00	0.13	0.14	71	17
75	ISL	10.84	D	10.84		33.463	D 25.610	238.6	0.230	4.48	D	195.1	D	71.5		13.3	1.27	15.0	0.03	0.00	0.10	0.12	76	
85		10.17		10.16		33.559	25.802	220.6	0.250	3.97		173.0		62.5		17.0	1.46	18.2	0.02	0.00	0.04	0.09	86	16
100		9.97		9.96		33.650	25.907	210.9	0.283	3.52		153.4		55.3		20.4	1.63	20.7	0.02	0.00	0.02	0.07	101	15
121		9.56		9.55		33.756	26.059	196.8	0.326	3.30		143.6		51.3		24.1	1.78	22.9	0.02	0.00	0.01	0.09	122	14
125	ISL	9.55	D	9.53	D	33.774	D 26.075	195.4	0.336	3.12	D	135.7	D	48.5		25.0	1.82	23.4	0.02	0.00	0.01	0.08	126	
140		9.35		9.33		33.880	26.190	184.8	0.362	2.63		114.4		40.7		28.2	1.96	25.3	0.01	0.00	0.01	0.05	141	13
150	ISL	9.39	D	9.37	D	33.972	D 26.256	178.8	0.383	2.37	D	103.2	D	36.8		29.9	2.05	26.0	0.02	0.00	0.01	0.05	151	
169		9.45		9.43		34.046	26.305	174.6	0.414	1.88		81.7		29.2		33.0	2.21	27.2	0.04	0.00	0.00	0.05	170	12
200		9.13		9.11		34.128	26.421	164.2	0.467	1.61		70.0		24.8		36.5	2.32	28.7	0.02	0.00	0.00	0.04	202	11
230		8.96		8.93		34.177	26.489	158.3	0.515	1.39		60.4		21.4		39.1	2.41	29.6	0.01	0.00			232	10
250	ISL	8.69	D	8.66	D	34.222	D 26.566	151.3	0.550	1.14	D	49.6	D	17.4		41.7	2.49	30.5	0.01	0.00			252	
270		8.63		8.60		34.241	26.590	149.4	0.576	1.00		43.6		15.3		44.3	2.57	31.3	0.01	0.00			272	09
300	ISL	8.24	D	8.21	D	34.259	D 26.666	142.6	0.624	0.81	D	35.2	D	12.2		47.6	2.65	32.2	0.01	0.00			302	
320		8.15		8.12		34.260	26.680	141.6	0.649	0.78		34.0		11.8		49.8	2.70	32.8	0.01	0.00			323	08
380		7.42		7.38		34.274	26.799	130.9	0.730	0.55		24.0		8.2		59.2	2.85	35.3	0.01	0.00			383	07
400	ISL	7.27	D	7.23	D	34.278	D 26.824	128.8	0.761	0.51	D	22.4	D	7.6		61.5	2.89	35.8	0.01	0.00			403	
440		6.95		6.91		34.289	26.876	124.2	0.807	0.41		17.9		6.0		66.1	2.97	36.7	0.01	0.00			444	06
481		6.58		6.53		34.307	26.942	118.2	0.857	0.32		14.1		4.7		71.8	3.05	37.7	0.01	0.00			485	05
500	ISL	6.48	D	6.43	D	34.313	D 26.960	116.7	0.885	0.31	D	13.6	D	4.5		73.4	3.07	38.0	0.01	0.00			504	
516		6.37		6.32		34.318	26.979	115.1	0.897	0.35		15.3		5.1		74.8	3.08	38.2	0.01	0.00			520	04
600	ISL	5.91	D	5.86	D	34.348	D 27.062	107.9	0.998	0.21	D	9.3	D	3.1		84.6	3.17	39.2	0.01	0.00			605	
620		5.78		5.73		34.356	27.084	105.9	1.013	0.19		8.1		2.7		86.9	3.19	39.4	0.01	0.00			625	03
700	ISL	5.47	D	5.41	D	34.381	D 27.144	100.9	1.103	0.13	D	5.5	D	1.8		97.6	3.28	37.8	0.01	0.00			706	
706		5.44		5.38		34.382	27.148	100.5	1.101	0.10		4.4		1.4		98.4	3.29	37.7	0.01	0.00			712	02
720		5.44		5.37		34.383	27.150	100.6	1.115	0.08		3.7		1.2		99.1	3.30	37.3	0.03	0.00			726	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.4 N	119 19.2 W	16/11/2013	1736	UTC	1636 m	010 04 kn	260 04 07	1	1010.1 mb	16.5 C	14.7 C	09 m	5/8	ST	037

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.55		15.55		33.636	24.801	313.7	0.000	5.67		247.1		100.0		4.5	0.44	1.6	0.06	0.01	1.49	0.29	0	
2	A	15.55		15.55		33.636	24.801	313.8	0.006	5.67		247.1		100.0		4.5	0.44	1.6	0.06	0.01	1.49	0.29	2	23
6	A	15.51		15.51		33.636	24.810	313.1	0.019	5.67		247.2		99.9		4.5	0.43	1.5	0.06	0.00	1.48	0.28	6	22
7	A	15.51		15.51		33.635	24.808	313.3	0.022	5.68		247.5		100.0		4.6	0.44	1.6	0.06	0.00	1.60	0.36	7	21
10	ISL	15.46	D	15.46		33.644	D 24.827	311.6	0.032	5.63	D	245.1	D	99.0		5.3	0.53	2.9	0.12	0.00	1.47	0.36	10	
14	A	14.53		14.53		33.607	25.001	295.2	0.044	5.30		231.1		91.6		6.4	0.64	4.6	0.19	0.00	1.29	0.35	14	19
14		14.53		14.53		33.626	25.016	293.7	0.044														14	20
20	ISL	13.74	D	13.74		33.591	D 25.154	280.7	0.061	4.93	D	214.8	D	83.7		8.0	0.81	7.3	0.30	0.00	0.92	0.33	20	
26	A	13.19		13.18		33.577	25.256	271.2	0.077	4.68		203.8		78.5		9.6	0.97	9.9	0.41	0.00	0.56	0.31	26	18
30	ISL	12.68	D	12.68		33.568	D 25.349	262.5	0.089	4.52	D	197.1	D	75.2		10.6	1.05	11.2	0.42	0.00	0.36	0.24	30	
31	A	12.62		12.61		33.566	25.359	261.5	0.091	4.49		195.4		74.4		10.9	1.07	11.5	0.42	0.00	0.31	0.22	31	17
40		11.91		11.90		33.547	25.480	250.2	0.114	4.32		187.9		70.5		12.2	1.21	13.7	0.24	0.00	0.19	0.15	40	16
50		11.43		11.43		33.546	25.568	242.1	0.138	4.15		180.9		67.2		13.5	1.30	15.5	0.12	0.00	0.14	0.12	50	15
61		10.70		10.70		33.590	25.733	226.6	0.164	3.86		168.1		61.5		16.7	1.46	18.1	0.07	0.00	0.11	0.11	61	14
70		10.23		10.22		33.655	25.867	214.0	0.184	3.36		146.5		53.0		20.0	1.63	20.6	0.04	0.00	0.06	0.19	71	13
75	ISL	10.15	D	10.14		33.694	D 25.910	210.0	0.195	3.24	D	140.9	D	51.0		21.4	1.69	21.4	0.04	0.00	0.04	0.15	76	
85		9.96		9.95		33.763	25.996	202.0	0.215	2.85		123.8		44.6		24.1	1.81	23.1	0.03	0.00	0.02	0.06	86	12
100		9.68		9.66		33.846	26.110	191.6	0.245	2.64		114.8		41.1		27.8	1.92	24.8	0.06	0.00	0.02	0.07	101	11
120		9.59		9.58		33.914	26.177	185.6	0.282	2.38		103.5		37.0		29.5	2.01	25.7	0.04	0.00	0.01	0.06	121	10
125	ISL	9.60	D	9.58	D	33.958	D 26.210	182.6	0.293	2.23	D	97.2	D	34.8		30.0	2.03	26.0	0.04	0.00	0.01	0.06	126	
140		9.32		9.30		33.974	26.269	177.3	0.319	2.23		97.1		34.6		31.3	2.07	26.7	0.02	0.00	0.00	0.05	141	09
150	ISL	9.30	D	9.28	D	34.040	D 26.324	172.3	0.337	2.12	D	92.4	D	32.9		32.8	2.14	27.2	0.02	0.00	0.00	0.04	151	
171		9.25		9.23		34.113	26.390	166.5	0.372	1.65		71.9		25.6		35.9	2.28	28.4	0.01	0.00	0.00	0.04	172	08
200		8.94		8.92		34.174	26.488	157.7	0.419	1.35		58.7		20.8		40.0	2.40	30.0	0.01	0.00	0.00	0.04	202	07
230		8.53		8.51		34.219	26.588	148.7	0.465	1.05		45.6		16.0		45.0	2.53	31.7	0.01	0.00			232	06
250	ISL	8.32	D	8.29	D	34.211	D 26.615	146.5	0.496	1.10	D	48.0	D	16.7		47.0	2.58	32.3	0.01	0.00			252	
269		8.19		8.16		34.241	26.658	142.7	0.522	0.87		37.8		13.1		48.8	2.63	32.8	0.01	0.00			271	05
300	ISL	7.98	D	7.95	D	34.261	D 26.706	138.6	0.568	0.75	D	32.6	D	11.3		52.2	2.70	33.8	0.01	0.00			302	
320		7.79		7.76		34.261	26.735	136.2	0.593	0.66		28.5		9.8		54.4	2.75	34.4	0.01	0.00			323	04
380		7.24		7.20		34.266	26.818	128.9	0.673	0.54		23.4		7.9		61.0	2.86	36.0	0.01	0.00			383	03
400	ISL	7.14	D	7.10	D	34.273	D 26.839	127.3	0.702	0.52	D	22.7	D	7.7		62.5	2.88	36.4	0.01	0.00			403	
439		6.92		6.88		34.278	26.872	124.6	0.747	0.45		19.6		6.6		65.4	2.91	37.1	0.01	0.00			443	02
500	ISL	6.62	D	6.57	D	34.305	D 26.936	119.2	0.826	0.33	D	14.3	D	4.8		71.4	3.00	37.9	0.00	0.00			504	
515		6.57		6.52		34.303	26.941	118.9	0.840	0.31		13.4		4.5		72.9	3.02	38.1	0.00	0.00			519	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 19.3 N	119 39.7 W	16/11/2013	2035	UTC	78 m	310	13 kn	300 04 07	1	1009.8 mb	16.2 C	14.4 C	13 m	6/8	SC	038

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	14.94	14.94	33.568	24.881	306.1	0.000	5.50	239.5	95.7	4.7	0.58	3.7	0.12	0.00	0.76	0.25	0	
2	14.94	14.94	33.568	24.882	306.1	0.006	5.50	239.5	95.7	4.7	0.58	3.7	0.12	0.00	0.76	0.25	2	10
6	14.95	14.95	33.568 D	24.880	306.4	0.018	5.49	D239.3 D	95.6								6	09
10	14.92	14.92	33.567	24.886	305.9	0.031	5.47	238.4	95.2	4.5	0.57	3.7	0.11	0.00	0.74	0.16	10	07
10	14.92	14.92	33.568	24.887	305.8	0.031	5.49	239.4	95.6	4.6	0.59	3.9	0.12	0.01	0.77	0.17	10	08
20	14.84	14.84	33.566	24.903	304.7	0.061	5.45	237.6	94.7	4.6	0.59	3.7	0.11	0.00	0.76	0.17	20	06
30	14.65	14.65	33.572	24.949	300.6	0.091	5.46	237.9	94.5	4.9	0.59	4.0	0.12	0.00	0.83	0.20	30	05
40	11.99	11.98	33.487	25.418	256.1	0.119	4.61	200.9	75.5	10.3	1.10	12.2	0.12	0.00	0.37	0.24	40	04
50	11.44	11.43	33.505	25.534	245.3	0.144	4.39	191.0	70.9	12.1	1.23	14.2	0.08	0.00	0.27	0.21	50	03
60	11.36	11.35	33.520	25.561	243.0	0.169	4.27	186.0	69.0	12.6	1.26	14.6	0.08	0.00	0.22	0.22	60	02
71	10.50	10.49	33.629	25.799	220.6	0.194	3.67	159.8	58.2	17.9	1.50	18.6	0.04	0.00	0.09	0.11	72	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 9.5 N	120 0.3 W	17/11/2013	0117	UTC	1197 m	310	18 kn	310 05 06	1	1010.8 mb	14.8 C	12.2 C		3/8	SC	039

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.79	15.79	33.612	24.729	320.5	0.000	5.62	244.8	99.5	2.9	0.38	0.9	0.05	0.09	0.63	0.18	0	
2	15.79	15.79	33.612	24.729	320.6	0.006	5.62	244.8	99.5	2.9	0.38	0.9	0.05	0.09	0.63	0.18	2	21
10	15.79	15.79	33.613	24.730	320.8	0.031											10	20
10	15.79	15.79	33.615	24.731	320.7	0.032	5.62	245.0	99.6	2.8	0.38	0.8	0.05	0.04	0.61	0.18	10	19
20	15.79	15.78	33.618	24.734	320.8	0.064	5.60	244.2	99.2	2.9	0.38	0.8	0.05	0.07	0.61	0.19	20	18
30	15.56	15.56	33.632	24.797	315.1	0.096	5.58	243.2	98.4	3.3	0.41	1.2	0.08	0.13	0.60	0.20	30	17
40	13.68	13.68	33.545	25.131	283.5	0.126	5.04	219.5	85.5	6.8	0.79	7.0	0.32	0.08	0.34	0.23	40	16
50	11.94	11.94	33.453	25.401	258.0	0.153	4.68	203.6	76.4	9.6	1.08	11.7	0.16	0.00	0.25	0.25	50	15
60	10.96	10.95	33.487	25.609	238.4	0.178	4.30	187.4	68.9	13.0	1.29	15.3	0.03	0.00	0.16	0.17	60	14
72	10.51	10.50	33.595	25.772	223.2	0.206	3.70	161.2	58.7	17.6	1.53	19.0	0.03	0.00	0.07	0.09	73	13
75 ISL	10.40 D	10.39	33.621 D	25.810	219.6	0.214	3.73	D162.4 D	59.0	18.5	1.57	19.6	0.03	0.00	0.06	0.08	76	
85	9.90	9.89	33.704	25.960	205.5	0.233	3.24	140.9	50.7	21.7	1.72	21.8	0.02	0.00	0.03	0.06	86	12
100	9.65	9.64	33.724	26.018	200.2	0.264	3.16	137.5	49.2	23.0	1.75	22.7	0.02	0.00	0.02	0.05	101	11
120	9.19	9.18	33.845	26.188	184.5	0.302	2.80	121.7	43.1	28.0	1.92	25.4	0.01	0.00	0.01	0.03	121	10
125 ISL	9.17 D	9.15	33.857 D	26.201	183.3	0.313	2.78	D121.1 D	42.9	28.0	1.93	25.1	0.01	0.00	0.01	0.03	126	
140	9.02	9.01	33.884	26.246	179.4	0.339	2.68	116.5	41.2						0.01	0.03	141	09
150 ISL	8.91 D	8.90	33.921 D	26.292	175.2	0.359	2.63	D114.6 D	40.4						0.00	0.03	151	
170	8.67	8.65	33.973	26.372	168.0	0.391	2.38	103.7	36.4	33.5	2.09	27.7	0.01	0.00	0.00	0.04	171	08
200 ISL	8.40 D	8.38	34.079 D	26.497	156.6	0.442	1.89	D 82.3 D	28.7	38.8	2.25	29.4	0.01	0.00	0.00	0.03	202	
201	8.36	8.33	34.067	26.494	156.9	0.441	1.94	84.3	29.4	39.0	2.26	29.5	0.01	0.00	0.00	0.03	203	07
231	8.36	8.34	34.163	26.569	150.4	0.488	1.38	59.9	20.9	43.3	2.45	30.7	0.02	0.00			233	06
250 ISL	7.94 D	7.92	34.125 D	26.603	147.3	0.518	1.50	D 65.1 D	22.5	45.4	2.47	31.5	0.02	0.00			252	
271	7.73	7.70	34.130	26.638	144.3	0.546	1.38	60.1	20.7	47.7	2.50	32.4	0.01	0.00			273	05
300 ISL	7.52 D	7.49	34.163 D	26.694	139.4	0.591	1.10	D 48.0 D	16.4	50.0	2.65	33.6	0.01	0.00			302	
320	7.64	7.61	34.224	26.726	136.8	0.614	0.84	36.5	12.5	51.7	2.75	34.5	0.01	0.00			323	04
380	7.10	7.06	34.269	26.840	126.7	0.694	0.54	23.4	7.9	62.2	2.90	36.0	0.01	0.00			383	03
400 ISL	6.96 D	6.93	34.272 D	26.861	125.0	0.723	0.51	D 22.2 D	7.5	63.1	2.92	35.7	0.01	0.00			403	
441	6.72	6.68	34.281	26.901	121.6	0.769	0.47	20.3	6.8	64.8	2.97	35.1	0.01	0.00			445	02
500 ISL	6.38 D	6.33	34.306 D	26.968	115.9	0.845	0.34	D 14.9 D	5.0	72.6	3.05	38.0	0.01	0.00			504	
515	6.30	6.26	34.312	26.982	114.7	0.857	0.33	14.2	4.7	74.5	3.07	38.7	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 59.3 N	120 21.0 W	17/11/2013	0528	UTC	721 m	330	16 kn			1013.0 mb	15.0 C	12.9 C				040

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	15.18	15.18	33.600	24.855	308.5	0.000	5.53	240.8	96.6	4.1	0.49	2.5	0.12	0.08	0.66	0.19	0	
2	15.18	15.17	33.600	24.855	308.6	0.006	5.53	240.8	96.6	4.1	0.49	2.5	0.12	0.08	0.66	0.19	2	21
10	15.18	15.17	33.605	24.860	308.5	0.030											10	20
10	15.18	15.17	33.599	24.855	308.9	0.031	5.53	241.0	96.7	4.0	0.49	2.5	0.12	0.05	0.63	0.17	10	19
20 ISL	15.17 D	15.17	33.599 D	24.856	309.1	0.062	5.51	D240.1 D	96.4	4.1	0.50	2.5	0.12	0.06	0.65	0.17	20	
21	15.17	15.17	33.597	24.856	309.2	0.065	5.52	240.5	96.5	4.1	0.50	2.5	0.12	0.06	0.65	0.17	21	18
30	15.04	15.04	33.590	24.878	307.4	0.093	5.52	240.3	96.2	4.1	0.50	2.6	0.12	0.06	0.63	0.19	30	17
40	11.62	11.61	33.194	25.260	271.1	0.122	5.15	224.5	83.5	8.0	1.02	10.5	0.10	0.00	0.22	0.20	40	16
50 ISL	11.33 D	11.32	33.345 D	25.431	255.0	0.148	4.76	D207.2 D	76.7	10.3	1.17	13.3	0.05	0.00	0.14	0.15	50	
51	11.25	11.24	33.339	25.441	254.2	0.151	4.75	207.1	76.5	10.5	1.19	13.6	0.05	0.00	0.13	0.14	51	15
60	10.94	10.93	33.430	25.567	242.4	0.173	4.48	195.3	71.7	13.0	1.36	16.2	0.04	0.00	0.03	0.02	60	14
70	10.34	10.34	33.496	25.722	227.8	0.196	4.25	184.8	67.0	16.3	1.50	18.7	0.03	0.00	0.02	0.01	71	13
75 ISL	10.10 D	10.09	33.555 D	25.810	219.5	0.208	4.06	D176.5 D	63.7	18.1	1.57	19.7	0.03	0.00	0.02	0.04	76	
85	9.69	9.68	33.656	25.957	205.7	0.229	3.55	154.5	55.3	21.5	1.70	21.7	0.02	0.00	0.02	0.09	86	12
100 ISL	9.56 D	9.55	33.778 D	26.075	194.8	0.259	3.05	D132.9 D	47.5	24.6	1.82	23.5	0.02	0.00	0.01	0.05	101	
101	9.50	9.49	33.767	26.076	194.8	0.261	3.06	133.0	47.4	24.8	1.83	23.6	0.02	0.00	0.01	0.05	102	11
121	9.12	9.10	33.852	26.205	182.9	0.299	2.84	123.5	43.7	28.5	1.93	25.5	0.02	0.00	0.01	0.05	122	10
125 ISL	9.08 D	9.07	33.864 D	26.221	181.4	0.307	2.82	D122.9 D	43.5	28.9	1.95	25.6	0.02	0.00	0.01	0.05	126	
140	9.07	9.06	33.933	26.277	176.5	0.333	2.48	107.8	38.1	30.5	2.04	26.1	0.01	0.00	0.00	0.04	141	09
150 ISL	8.94 D	8.92	33.987 D	26.340	170.6	0.351	2.36	D102.5 D	36.2	32.6	2.11	27.0	0.01	0.00	0.00	0.04	151	
170	8.78	8.76	34.078	26.437	161.8	0.384	1.90	82.6	29.1	37.0	2.25	28.9	0.01	0.00	0.00	0.03	171	08
200 ISL	8.70 D	8.67	34.184 D	26.534	153.3	0.432	1.35	D 58.8 D	20.7	41.3	2.42	30.2	0.01	0.00	0.00	0.03	202	
201	8.70	8.68	34.181	26.531	153.5	0.432	1.38	59.9	21.1	41.5	2.43	30.2	0.01	0.00	0.00	0.03	203	07
231	8.42	8.39	34.208	26.596	147.9	0.478	1.21	52.8	18.4	44.6	2.53	31.2	0.01	0.00			233	06
250 ISL	8.28 D	8.25	34.218 D	26.626	145.4	0.507	1.12	D 48.9 D	17.0	47.5	2.56	32.3	0.01	0.00			252	
270	7.64	7.62	34.158	26.672	141.0	0.535	1.17	51.1	17.5	50.7	2.60	33.5	0.01	0.00			272	05
300 ISL	7.59 D	7.56	34.185 D	26.703	138.7	0.579	1.02	D 44.3 D	15.2	53.3	2.68	34.1	0.01	0.00			302	
321	7.49	7.45	34.203	26.732	136.2	0.605	0.89	38.8	13.3	55.1	2.73	34.5	0.01	0.00			324	04
380	7.02	6.98	34.235	26.824	128.2	0.683	0.64	27.8	9.4	61.9	2.86	36.2	0.01	0.00			383	03
400 ISL	6.97 D	6.94	34.269 D	26.857	125.3	0.711	0.53	D 23.0 D	7.8	63.8	2.90	36.6	0.01	0.00			403	
441	6.72	6.68	34.282	26.902	121.6	0.760	0.44	19.1	6.4	67.8	2.97	37.3	0.01	0.00			445	02
500 ISL	6.24 D	6.19	34.306 D	26.986	114.1	0.833	0.33	D 14.3 D	4.7	75.0	3.07	38.7	0.00	0.00			504	
515	6.19	6.14	34.318	27.002	112.7	0.846	0.28	12.1	4.0	76.9	3.10	39.1	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 39.4 N	121 1.8 W	17/11/2013	1138	UTC	3787 m	010 10 kn			1013.9 mb	15.0 C	13.0 C				041

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.49		15.49		33.530	24.731	320.4	0.000	5.63		245.5		99.1		2.2	0.39	1.2	0.11	0.01	0.54	0.20	0	
2		15.49		15.49		33.530	24.731	320.4	0.006	5.63		245.5		99.1		2.2	0.39	1.2	0.11	0.01	0.54	0.20	2	21
10		15.50		15.50		33.529	24.729	321.0	0.032	5.63		245.4		99.1		2.1	0.39	1.1	0.11	0.02	0.51	0.20	10	19
10		15.50		15.50		33.528	24.729	321.0	0.033														10	20
20		15.51		15.51		33.530	24.729	321.2	0.064	5.63		245.5		99.2		2.2	0.38	1.1	0.11	0.00	0.53	0.20	20	18
30		15.51		15.50		33.531	24.731	321.4	0.096	5.63		245.4		99.1		2.1	0.38	1.1	0.11	0.00	0.52	0.21	30	17
39		15.51		15.50		33.531	24.731	321.8	0.125	5.63		245.4		99.1		2.2	0.38	1.0	0.11	0.00	0.51	0.20	39	16
50		15.50		15.49		33.530	24.734	321.8	0.161	5.64		245.9		99.3		2.1	0.39	1.1	0.11	0.01	0.52	0.21	50	15
60		12.34		12.33		33.287	25.198	277.6	0.191	5.17		225.3		85.1		6.2	0.89	8.6	0.20	0.00	0.16	0.18	60	14
70		11.12		11.11		33.265	25.407	257.8	0.217	4.97		216.5		79.7		9.6	1.09	12.1	0.05	0.00	0.11	0.13	71	13
75	ISL	10.99	D	10.98		33.325	D 25.477	251.3	0.232	4.94	D	215.0	D	79.0		11.0	1.17	13.4	0.04	0.00	0.09	0.11	76	
86		10.85		10.84		33.496	25.634	236.6	0.257	4.17		181.5		66.5		14.1	1.36	16.3	0.02	0.00	0.04	0.06	87	12
100	ISL	10.38	D	10.37		33.585	D 25.786	222.5	0.291	3.83	D	166.6	D	60.5		17.2	1.52	18.9	0.02	0.00	0.03	0.06	101	
101		10.37		10.36		33.583	25.787	222.4	0.291	3.78		164.5		59.7		17.4	1.53	19.1	0.02	0.00	0.03	0.06	102	11
121		9.89		9.88		33.730	D 25.983	204.1	0.337	3.17	D	137.9	D	49.6									122	10
125	ISL	9.82	D	9.80		33.760	D 26.019	200.8	0.345	3.15	D	137.2	D	49.3		22.0	1.71	21.5	0.02	0.00	0.02	0.05	126	
140		9.33		9.31		33.851	D 26.171	186.5	0.374	2.76	D	120.3	D	42.8									141	09
150	ISL	9.27	D	9.25		33.866	D 26.193	184.7	0.393	2.75	D	119.5	D	42.4		26.7	1.89	23.9	0.02	0.00	0.01	0.05	151	
170		9.07		9.05		33.965	D 26.303	174.6	0.429	2.33	D	101.4	D	35.9									171	08
200		8.80		8.78		34.075	26.431	163.0	0.472	1.98		86.0		30.3		36.2	2.26	28.8	0.01	0.00	0.00	0.03	202	07
230		8.37		8.35		34.141	26.551	152.1	0.519	1.50		65.4		22.8		42.2	2.41	31.3	0.01	0.00			232	06
250	ISL	8.16	D	8.13		34.158	D 26.597	148.0	0.558	1.34	D	58.1	D	20.2		44.8	2.49	31.9	0.01	0.00			252	
271		8.01		7.99		34.183	26.639	144.4	0.580	1.17		50.8		17.6		47.5	2.58	32.6	0.01	0.00			273	05
300	ISL	7.73	D	7.70		34.188	D 26.685	140.4	0.630	1.04	D	45.4	D	15.6		51.3	2.64	33.7	0.01	0.00			302	
319		7.41		7.38		34.183	26.727	136.6	0.648	0.97	D	42.1	D	14.4		53.9	2.68	34.4	0.01	0.00			322	04
381		6.87		6.83		34.220	26.832	127.2	0.729	0.67		29.1		9.8		62.2	2.88	37.0	0.00	0.00			384	03
400	ISL	6.86	D	6.82		34.252	D 26.859	125.0	0.764	0.55	D	24.0	D	8.1		63.9	2.91	37.2	0.00	0.00			403	
440		6.72		6.68		34.285	26.905	121.3	0.803	0.43		18.5		6.2		67.5	2.98	37.6	0.01	0.00			444	02
500	ISL	6.22	D	6.17		34.287	D 26.973	115.2	0.885	0.37	D	16.0	D	5.3		73.8	3.07	39.3	0.01	0.00			504	
514		6.21		6.16		34.315	26.997	113.2	0.889	0.30		13.2		4.4		75.2	3.09	39.7	0.01	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 19.5 N	121 42.8 W	17/11/2013	1754	UTC	4025 m	310 08 kn	340 06 08	1	1018.0 mb	15.3 C	15.2 C	24 m	7/8	NS	042

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		15.39		15.39		33.407	24.659	327.2	0.000	5.69		247.8		99.8		2.0	0.38	0.8	0.07	0.26	0.26	0.07	0	
2	A	15.39		15.39		33.407	24.659	327.3	0.007	5.69		247.8		99.8		2.0	0.38	0.8	0.07	0.26	0.26	0.07	2	23
8		15.39		15.39		33.405	24.659	327.5	0.026														8	22
8		15.39		15.39		33.405	24.659	327.5	0.026	5.70		248.2		99.9		2.1	0.37	0.8	0.07	0.25	0.25	0.08	8	21
10	ISL	15.39	D	15.39		33.403	D 24.658	327.7	0.033	5.73	D	249.7	D	100.5		2.1	0.37	0.8	0.07	0.25	0.26	0.08	10	
14	A	15.38		15.38		33.405	24.661	327.5	0.046	5.69		247.9		99.8		2.1	0.37	0.8	0.07	0.26	0.26	0.08	14	20
19	A	15.38		15.38		33.405	24.662	327.6	0.062	5.69		248.0		99.8		2.1	0.38	0.8	0.07	0.24	0.27	0.12	19	19
20	ISL	15.38	D	15.38		33.404	D 24.661	327.8	0.066	5.72	D	249.2	D	100.3		2.1	0.38	0.8	0.07	0.24	0.27	0.12	20	
28		15.38		15.38		33.408	24.664	327.7	0.092	5.68		247.6		99.6		2.0	0.37	0.8	0.10	0.25	0.27	0.08	28	18
30	ISL	15.39	D	15.38		33.408	D 24.663	327.9	0.099	5.71	D	248.9	D	100.2		2.1	0.38	0.9	0.10	0.26	0.27	0.12	30	
38	A	15.43		15.43		33.477	24.706	324.0	0.124	5.66		246.7		99.5							0.29	0.24	38	17
47		13.92		13.91		33.473	25.027	293.7	0.152	5.63		245.4		95.9		2.3	0.43	1.6	0.13	0.38	0.27	0.11	47	16
50	ISL	13.55	D	13.54		33.374	D 25.027	293.7	0.163	5.75	D	250.4	D	97.1		3.7	0.59	4.0	0.16	0.25	0.24	0.12	50	
56		11.69		11.69		33.164	25.224	275.0	0.178	5.33		232.2		86.5		6.5	0.91	8.8	0.22	0.00	0.17	0.16	56	15
66	A	11.08		11.07		33.177	25.346	263.5	0.205	5.19		226.0		83.1		8.4	1.04	10.9	0.07	0.00	0.20	0.16	67	14
74		10.63		10.62		33.280	25.506	248.5	0.225	4.92		214.2		78.1		11.3	1.22	13.9	0.04	0.00	0.14	0.15	75	13
75	ISL	10.59	D	10.58		33.315	D 25.539	245.3	0.230	4.81	D	209.3	D	76.2		11.5	1.23	14.1	0.04	0.00	0.13	0.14	76	
83	A	10.55		10.54		33.365	25.586	241.1	0.247	4.66		203.1		73.9		13.4	1.34	15.9	0.03	0.00	0.10	0.12	84	12
100	ISL	9.76	D	9.74		33.621	D 25.920	209.5	0.288	3.71	D	161.4	D	57.8		20.4	1.70	21.4	0.02	0.00	0.03	0.06	101	
101		9.74		9.73		33.618	25.920	209.6	0.288	3.77		164.2		58.8		20.8	1.72	21.7	0.02	0.00	0.02	0.06	102	11
119		9.25		9.24		33.811	26.152	187.9	0.324	2.79		121.5		43.1		27.6	2.00	26.1	0.02	0.00	0.01	0.06	120	10
125	ISL	9.13	D	9.12		33.843	D 26.196	183.8	0.337	2.81	D	122.2	D	43.2		27.9	1.98	26.0	0.02	0.00	0.01	0.05	126	
140		8.86		8.85		33.865	26.256	178.3	0.362	2.98		129.6		45.6		28.7	1.94	25.6	0.02	0.00	0.01	0.04	141	09
150	ISL	8.77	D	8.75		33.926	D 26.319	172.6	0.382	2.58	D	112.2	D	39.4		30.2	1.98	26.3	0.02	0.00	0.00	0.04	151	
170		8.50		8.48		33.956	26.385	166.7	0.414	2.62		114.0		39.8		33.2	2.07	27.7	0.01	0.00	0.00	0.04	171	08
200		8.08		8.06		34.007	26.489	157.2	0.463	2.31		100.7		34.8		37.8	2.20	29.4	0.01	0.00	0.00	0.03	202	07
230		7.78		7.76		34.042	26.560	150.9	0.509	1.93		84.0		28.9		42.7	2.35	31.3	0.01	0.00			232	06
250	ISL	7.49	D	7.47		34.040	D 26.601	147.3	0.542	1.87	D	81.4	D	27.8		45.0	2.38	31.8	0.01	0.00			252	
270		7.28		7.25		34.029	26.622	145.4	0.568	1.97		85.6		29.1		47.2	2.40	32.3	0.00	0.00			272	05
300	ISL	7.01	D	6.98		34.047	D 26.675	140.8	0.615	1.67	D	72.4	D	24.5		52.9	2.56	34.0	0.00	0.00			302	
320		6.68		6.65		34.065	26.735	135.2	0.639	1.34		58.3		19.5		56.7	2.67	35.1	0.00	0.00			323	04
381		6.23		6.19		34.107	26.827	127.1	0.719	0.96		41.7		13.8		66.6	2.88	38.2	0.01	0.00			384	03
400	ISL	6.08	D	6.05		34.115	D 26.852	124.9	0.748	0.89	D	38.8	D	12.8		69.3	2.94	38.5	0.01	0.00			403	
440		5.88		5.84		34.175	26.926	118.3	0.791	0.59		25.8		8.5		74.8	3.06	39.1	0.00	0.00			444	02
500	ISL	5.53	D	5.49		34.238	D 27.019	109.9	0.866	0.40	D	17.5	D	5.7		78.2	3.11	39.9	0.01	0.00			504	
514		5.54		5.49		34.251	27.029	109.2	0.875	0.35		15.1		4.9		79.0	3.12	40.1	0.01	0.00			518	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 59.3 N	122 23.4 W	17/11/2013	2340 UTC	4090 m	010 05 kn	350 03 07	1	1017.2 mb	16.0 C	14.0 C	27 m	4/8	SC	043

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.13		17.13		33.255	24.147	376.1	0.000	5.54	241.7		100.6		2.2	0.29	0.0	0.00	0.00	0.18	0.06	0	
2		17.13		17.13		33.255	24.147	376.1	0.008	5.54	241.7		100.5		2.2	0.29	0.0	0.00	0.00	0.18	0.06	2	21
10		17.04		17.04		33.251	24.165	374.7	0.037													10	20
10		17.04		17.04		33.252	24.165	374.7	0.038	5.54	241.4		100.3		2.1	0.28	0.0	0.00	0.00	0.17	0.06	10	19
20		17.03		17.03		33.254	24.170	374.6	0.075	5.54	241.4		100.2		2.1	0.28	0.0	0.00	0.00	0.19	0.06	20	18
30	ISL	17.02	D	17.02	D	33.251	24.170	375.0	0.113	5.51	D240.1	D	99.7		2.1	0.28	0.0	0.00	0.00	0.21	0.07	30	
31		17.03		17.02		33.251	24.169	375.0	0.116	5.53	241.3		100.2		2.1	0.28	0.0	0.00	0.00	0.21	0.07	31	17
40		17.01		17.00		33.261	24.182	374.1	0.150	5.53	241.0		100.0		2.1	0.28	0.0	0.00	0.00	0.23	0.07	40	16
50	ISL	16.21	D	16.20		33.155	D 24.286	364.5	0.189	5.63	D245.3		D100.2		2.2	0.31	0.0	0.01	0.00	0.29	0.10	50	
51		16.05		16.04		33.156	24.323	361.1	0.190	5.65	246.2		100.2		2.2	0.31	0.0	0.01	0.00	0.30	0.11	51	15
60		14.19		14.18		33.119	24.699	325.3	0.221	6.02	262.6		103.0		2.3	0.35	0.0	0.01	0.01	0.27	0.15	60	14
70		13.54		13.53		33.091	24.810	314.9	0.253	6.00	261.6		101.2		2.5	0.39	0.2	0.07	0.06	0.27	0.14	71	13
75	ISL	13.33	D	13.32	D	33.175	D 24.918	304.8	0.271	5.95	D259.4		D100.0		2.8	0.40	0.5	0.13	0.04	0.25	0.15	76	
85		13.01		13.00		33.255	25.044	293.1	0.299	5.72	249.4		95.6		3.3	0.43	1.1	0.26	0.00	0.20	0.18	86	12
100	ISL	11.93	D	11.92	D	33.209	D 25.217	276.8	0.344	5.53	D240.9	D	90.2		4.9	0.62	4.4	0.04	0.00	0.11	0.17	101	
101		11.94		11.93		33.216	25.220	276.6	0.344	5.52	240.6		90.1		5.0	0.63	4.6	0.03	0.00	0.10	0.17	102	11
120		10.82		10.81		33.263	25.460	254.0	0.395	5.23	227.9		83.4		8.5	0.91	9.2	0.01	0.00	0.06	0.07	121	10
125	ISL	10.39	D	10.38	D	33.302	D 25.565	244.1	0.410	5.09	D221.4	D	80.3		10.0	1.00	10.6	0.01	0.00	0.05	0.06	126	
141		9.81		9.79		33.430	25.764	225.3	0.445	4.64	202.0		72.4		14.6	1.27	15.1	0.01	0.00	0.02	0.03	142	09
150	ISL	9.46	D	9.45	D	33.546	D 25.911	211.5	0.468	4.46	D194.1	D	69.1		16.4	1.34	16.4	0.01	0.00	0.01	0.03	151	
171		9.12		9.10		33.750	26.127	191.3	0.507	4.21	183.2		64.8		20.8	1.49	19.5	0.01	0.00	0.00	0.02	172	08
200	ISL	8.62	D	8.60	D	33.910	D 26.331	172.5	0.563	3.49	D152.0	D	53.2		27.6	1.75	23.5	0.01	0.00	0.00	0.02	202	
201		8.60		8.57		33.901	26.328	172.7	0.561	3.52	153.0		53.5		27.8	1.76	23.6	0.01	0.00	0.00	0.02	203	07
231		8.32		8.29		33.955	26.414	165.1	0.612	3.31	143.9		50.0		31.7	1.86	25.2	0.00	0.00			233	06
250	ISL	8.01	D	7.98		33.974	D 26.474	159.5	0.647	3.15	D136.9	D	47.3		35.9	2.01	27.1	0.00	0.00			252	
270		7.77		7.75		33.994	26.525	155.0	0.674	2.59	112.7		38.7		40.3	2.16	29.1	0.01	0.00			272	05
300	ISL	7.46	D	7.43	D	34.028	D 26.597	148.5	0.724	2.05	D 89.1	D	30.4		45.8	2.35	31.3	0.01	0.00			302	
320		7.21		7.18		34.036	26.639	144.7	0.749	1.85	80.3		27.2		49.5	2.47	32.8	0.01	0.07			323	04
379		6.61		6.57		34.100	26.772	132.6	0.831	1.08	47.1		15.8		59.9	2.77	36.4	0.01	0.00			382	03
400	ISL	6.37	D	6.34		34.104	D 26.806	129.5	0.864	1.03	D 44.6	D	14.8		63.2	2.83	37.2	0.01	0.00			403	
440		6.07		6.03		34.119	26.858	124.9	0.909	0.85	37.0		12.2		69.6	2.95	38.7	0.00	0.00			444	02
500	ISL	5.59	D	5.55		34.176	D 26.962	115.4	0.988	0.56	D 24.1	D	7.9		79.5	3.06	40.2	0.00	0.00			504	
514		5.52		5.48		34.183	26.976	114.2	0.998	0.51	22.2		7.3		81.8	3.09	40.5	0.00	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 39.4 N	123 4.2 W	18/11/2013	0530 UTC	4134 m	110 03 kn			1018.5 mb	16.0 C	14.0 C				044

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.88		16.88		33.210	24.169	373.9	0.000	5.56	242.6		100.4		2.3	0.31	0.0	0.00	0.02	0.18	0.05	0	
2		16.88		16.88		33.210	24.169	374.0	0.008	5.56	242.6		100.4		2.3	0.31	0.0	0.00	0.02	0.18	0.05	2	21
10		16.85		16.84		33.213	24.181	373.1	0.036													10	20
10		16.85		16.84		33.210	24.179	373.4	0.037	5.57	242.8		100.4		2.3	0.30	0.0	0.01	0.01	0.18	0.06	10	19
20		16.80		16.80		33.211	24.190	372.6	0.075	5.57	242.8		100.3		2.3	0.29	0.0	0.00	0.00	0.20	0.06	20	18
30		16.80		16.79		33.207	24.190	373.1	0.112	5.57	243.0		100.4		2.3	0.30	0.0	0.00	0.03	0.21	0.06	30	17
40		16.79		16.79		33.207	24.191	373.3	0.149	5.55	242.0		100.0		2.3	0.30	0.0	0.00	0.00	0.23	0.07	40	16
50		16.79		16.78		33.206	24.192	373.6	0.187	5.56	242.6		100.2		2.3	0.30	0.0	0.00	0.00	0.23	0.06	50	15
60		16.39		16.38		33.204	24.284	365.1	0.224	5.56	242.3		99.3		2.3	0.30	0.0	0.00	0.00	0.23	0.07	60	14
71		15.10		15.09		33.152	24.532	341.7	0.262	5.87	255.7		102.1		2.4	0.35	0.2	0.03	0.12	0.21	0.08	72	13
75	ISL	14.02	D	14.01		33.122	D 24.737	322.2	0.278	6.07	D264.3		D103.3		2.6	0.37	0.4	0.07	0.09	0.21	0.10	76	
85		12.87		12.86		33.176	25.011	296.2	0.306	5.82	253.5		96.8		3.3	0.43	0.8	0.16	0.00	0.19	0.15	86	12
100	ISL	11.32	D	11.31		33.198	D 25.320	266.9	0.351	5.36	D233.5	D	86.3		6.4	0.75	6.4	0.05	0.00	0.12	0.13	101	
101		11.06		11.04		33.186	25.358	263.3	0.351	5.44	236.9		87.1		6.6	0.77	6.8	0.04	0.00	0.11	0.13	102	11
120		10.29		10.27		33.348	25.618	238.8	0.399	4.97	216.3		78.3		11.7	1.11	12.8	0.02	0.02	0.04	0.05	121	10
125	ISL	10.23	D	10.22	D	33.402	D 25.670	234.0	0.414	4.77	D207.7	D	75.1		13.1	1.19	14.1	0.02	0.02	0.03	0.05	126	
140		9.74		9.72		33.563	25.879	214.4	0.445	4.25	184.8		66.2		17.4	1.41	18.0	0.01	0.00	0.01	0.03	141	09
150	ISL	9.52	D	9.50	D	33.697	D 26.020	201.2	0.468	3.63	D158.1	D	56.4		21.6	1.64	21.1	0.01	0.00	0.01	0.04	151	
170		9.26		9.24		33.864	26.194	185.0	0.504	2.54	110.5		39.2		30.1	2.09	27.2	0.01	0.00	0.00	0.04	171	08
200		8.90		8.88		34.024	26.378	168.2	0.557	1.68	73.1		25.8		36.7	2.35	30.3	0.01	0.00	0.00	0.03	202	07
231		8.51		8.49		34.155	26.540	153.2	0.607	1.07	46.5		16.3		44.1	2.57	32.7	0.01	0.00			233	06
250	ISL	8.40	D	8.37	D	34.174	D 26.573	150.5	0.639	0.99	D 43.0	D	15.0		45.5	2.60	33.1	0.01	0.00			252	
270		8.29		8.26		34.185	26.599	148.3	0.666	0.93	40.3		14.0		47.0	2.64	33.5	0.01	0.00			272	05
300	ISL	8.05	D	8.02	D	34.206	D 26.652	143.7	0.713	0.84	D 36.7	D	12.7		49.7	2.70	34.0	0.01	0.00			302	
320		7.93		7.89		34.211	26.675	141.9	0.738	0.79	34.5		11.9		51.5	2.74	34.4	0.01	0.00			323	04
380		7.69		7.65		34.232	26.728	137.8	0.822	0.67	29.1		10.0		55.5	2.80	35.2	0.01	0.00			383	03
400	ISL	7.59	D	7.55	D	34.241	D 26.749	136.2	0.854	0.64	D 28.0	D	9.6		56.9	2.83	35.5	0.01	0.00			403	
440		7.40		7.35		34.251	26.786	133.2	0.904	0.56	24.3		8.3		59.7	2.89	36.2	0.01	0.02			444	02
500	ISL	7.04	D	6.99	D	34.273	D 26.855	127.4	0.988	0.45	D 19.5	D	6.6		65.3	2.98	37.3	0.01	0.00			504	
515		6.98		6.93		34.274	26.863	126.7	1.001	0.43	18.6		6.3		66.7	3.00	37.6	0.01	0.02			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 19.4 N	123 44.8 W	18/11/2013	1108	UTC	4020 m	260 08 kn			1018.8 mb	17.0 C	14.6 C				045

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.08	17.08	33.278	24.175	373.3	0.000	5.52	240.7	100.1	1.9	0.31	0.0	0.00	0.00	0.19	0.04	0	
2	17.08	17.08	33.278	24.175	373.4	0.008	5.52	240.7	100.1	1.9	0.31	0.0	0.00	0.00	0.19	0.04	2	21
10 ISL	17.09 D	17.09	33.274 D	24.171	374.1	0.038	5.50 D	239.7 D	99.7	1.9	0.31	0.1	0.00	0.00	0.19	0.04	10	
11	17.09	17.09	33.279	24.174	373.8	0.041											11	20
11	17.09	17.09	33.280	24.175	373.7	0.041	5.53	241.2	100.3	1.9	0.31	0.1	0.00	0.00	0.19	0.04	11	19
20 ISL	17.09 D	17.09	33.274 D	24.171	374.5	0.075	5.49 D	239.3 D	99.5	1.9	0.30	0.1	0.00	0.00	0.19	0.05	20	
26	17.09	17.09	33.283	24.178	374.0	0.097	5.52	240.7	100.1	1.9	0.30	0.1	0.00	0.00	0.19	0.05	26	18
30 ISL	17.09 D	17.08	33.273 D	24.172	374.8	0.113	5.48 D	238.9 D	99.3	1.9	0.30	0.1	0.00	0.00	0.20	0.05	30	
41	17.04	17.03	33.280	24.190	373.4	0.153	5.54	241.4	100.3	1.8	0.31	0.0	0.00	0.00	0.22	0.05	41	17
50	16.97	16.96	33.273	24.201	372.8	0.187	5.53	241.3	100.1	1.9	0.31	0.1	0.01	0.00	0.24	0.05	50	16
63	15.14	15.13	33.233	24.585	336.4	0.233	5.78	252.1	100.8	2.1	0.34	0.1	0.02	0.10	0.27	0.07	63	15
75 ISL	13.39 D	13.38	33.109 D	24.854	310.9	0.274	5.99 D	261.0 D	100.7	2.6	0.39	0.2	0.06	0.08	0.24	0.09	76	
76	13.24	13.23	33.118	24.892	307.3	0.275	5.99	261.2	100.5	2.7	0.39	0.2	0.06	0.08	0.23	0.09	77	14
88	12.55	12.54	33.160	25.061	291.5	0.311	5.73	249.7	94.7	3.6	0.55	2.5	0.35	0.00	0.18	0.10	89	13
100	11.69	11.68	33.216	25.266	272.1	0.345	5.41	235.7	87.8	5.8	0.79	7.1	0.04	0.00	0.12	0.13	101	12
112	11.03	11.02	33.227	25.395	260.1	0.377	5.30	230.9	84.8	6.9	0.86	7.8	0.03	0.00	0.11	0.11	113	11
125	10.53	10.51	33.302	25.542	246.2	0.409	5.04	219.4	79.8	9.5	1.06	11.1	0.02	0.00	0.06	0.08	126	10
140	9.88	9.86	33.394	25.724	229.1	0.445	4.62	201.2	72.2	14.5	1.29	15.3	0.02	0.00	0.02	0.04	141	09
150 ISL	9.72 D	9.70	33.514 D	25.844	217.9	0.471	4.38 D	190.6 D	68.2	16.7	1.40	17.1	0.02	0.00	0.02	0.03	151	
170	9.30	9.29	33.662	26.028	200.8	0.510	3.86	168.2	59.7	21.1	1.62	20.7	0.01	0.00	0.01	0.03	171	08
200	8.85	8.83	33.876	26.268	178.5	0.567	3.01	130.8	46.0	28.4	1.92	25.8	0.01	0.00	0.00	0.03	202	07
230	8.43	8.40	33.981	26.417	164.8	0.618	2.47	107.5	37.5	34.4	2.12	28.8	0.00	0.00			232	06
250 ISL	8.02 D	7.99	33.997 D	26.492	157.9	0.656	2.48 D	108.1 D	37.3	37.6	2.19	29.9	0.00	0.00			252	
270	7.81	7.78	34.025	26.544	153.2	0.681	2.18	94.9	32.6	40.8	2.26	31.0	0.00	0.00			272	05
300 ISL	7.52 D	7.49	34.085 D	26.634	145.0	0.732	1.52 D	66.3 D	22.7	47.4	2.49	33.4	0.00	0.00			302	
320	7.33	7.30	34.128	26.694	139.6	0.755	1.17	51.1	17.4	51.8	2.64	35.0	0.00	0.00			323	04
379	6.84	6.81	34.157	26.786	131.6	0.835	0.81	35.1	11.8	60.8	2.83	34.9	0.00	0.00			382	03
400 ISL	6.75 D	6.71	34.190 D	26.825	128.1	0.869	0.70 D	30.6 D	10.3	63.6	2.88	36.3	0.00	0.00			403	
439	6.43	6.39	34.223	26.894	121.9	0.911	0.52	22.7	7.6	68.8	2.98	38.8	0.00	0.00			443	02
500 ISL	5.95 D	5.91	34.252 D	26.979	114.3	0.991	0.38 D	16.5 D	5.5	75.9	3.07	40.1	0.00	0.00			504	
516	5.90	5.85	34.258	26.991	113.4	1.001	0.35	15.2	5.0	77.8	3.09	40.4	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.8 32.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.3 N	118 26.7 W	16/11/2013	0430	UTC	24 m	250 03 kn			1005.6 mb	17.2 C	15.0 C				033

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.35	17.35	33.565	24.332	358.4	0.000	5.91	257.6	107.9	0.7	0.32	0.3	0.10	0.27	1.73	0.27	0	
2	17.35	17.35	33.565	24.332	358.5	0.007	5.91	257.6	107.9	0.7	0.32	0.3	0.10	0.27	1.73	0.27	2	05
5	17.34	17.34	33.564	24.334	358.4	0.018	5.90	257.3	107.7	0.7	0.34	0.3	0.09	0.25	1.75	0.16	5	04
10	17.35	17.35	33.566	24.333	358.7	0.036	5.92	258.1	108.1	0.7	0.29	0.2	0.12	0.22	1.81	0.10	10	03
15	17.25	17.25	33.565	24.356	356.7	0.054	5.88	256.3	107.1	0.8	0.31	0.1	0.06	0.29	1.65	0.13	15	02
20	17.00	17.00	33.549	24.402	352.4	0.072	5.91	257.8	107.2	1.2	0.33	0.1	0.05	0.35	1.67	0.18	20	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 88.5 30.1

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 40.4 N	118 5.7 W	16/11/2013	0100	UTC	19 m	170 02 kn	290 01 06	1	1004.3 mb	18.0 C	15.1 C		4/8	ST	032

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.50	17.50	33.590	24.314	360.1	0.000	5.69	247.9	104.1	1.6	0.31	0.0	0.00	0.00	0.42	0.04	0	
2	17.50	17.50	33.590	24.314	360.2	0.007	5.69	247.9	104.1	1.6	0.31	0.0	0.00	0.00	0.42	0.04	2	04
5	17.51	17.51	33.587	24.311	360.6	0.018	5.70	248.7	104.4	1.7	0.30	0.0	0.00	0.00	0.45	0.07	5	03
10	17.18	17.18	33.573	24.378	354.4	0.036	5.76	251.1	104.8	1.8	0.31	0.0	0.01	0.00	0.42	0.08	10	02
15	17.05	17.05	33.560	24.399	352.5	0.054	5.79	252.6	105.1	1.8	0.32	0.0	0.01	0.00	0.58	0.20	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 27.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.7 N	117 44.8 W	15/11/2013	2231	UTC	17 m	160 10 kn	160 01 07	1	1004.1 mb	19.9 C	17.1 C		4/8	SC	031

DEPTH	TEMP	POTTEMP	SALINITY	SIGMA	SVA	DYN HT	OXYGEN	OXYGEN	OXY	SIO3	PO4	NO3	NO2	NH4	CHL-A	PHAEO	PRES	SAMP
m	DEG C	DEG C		THETA			ml/L	µmol/Kg	PCT	µM	µM	µM	µM	µM	µg/L	µg/L	db	
0	17.10	17.10	33.559	24.387	353.2	0.000	5.80	253.0	105.4	2.3	0.33	0.0	0.02	0.01	0.93	0.23	0	
2	17.10	17.10	33.559	24.387	353.2	0.007	5.80	253.0	105.4	2.3	0.33	0.0	0.02	0.01	0.93	0.23	2	04
4	17.09	17.09	33.563	24.392	352.9	0.014	5.81	D253.3	D105.5	2.3	0.32	0.0	0.02	0.01	0.96	0.26	4	03
10	16.93	16.93	33.571	24.435	348.9	0.035	5.85	254.9	105.9	2.3	0.33	0.1	0.02	0.08	1.02	0.26	10	02
14	16.90	16.90	33.581	24.450	347.7	0.049	5.90	257.1	106.7	2.3	0.35	0.1	0.02	0.12	1.01	0.30	14	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.1 N	117 46.2 W	15/11/2013	2100 UTC	65 m	150 13 kn	160 02 06	1	1004.3 mb	18.1 C	17.1 C	15 m	7/8	ST	030

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.44	17.44	33.589	24.329	358.6	0.000	5.73	250.0	104.9	1.9	0.31	0.0	0.01	0.02	0.70	0.11	0	
2		17.44	17.43	33.589	24.330	358.7	0.007	5.73	250.0	104.9	1.9	0.31	0.0	0.01	0.02	0.70	0.11	2	08
6		17.44	17.44	33.595	24.333	358.5	0.022	5.73	249.6	104.7	1.8	0.30	0.0	0.01	0.00	0.69	0.11	6	07
10	ISL	17.35 D	17.35	33.585 D	24.348	357.3	0.036	5.75 D	250.7 D	105.0	1.8	0.30	0.0	0.01	0.00	0.77	0.09	10	
11		17.38	17.38	33.585	24.341	357.9	0.039	5.74	250.2	104.8	1.8	0.30	0.0	0.01	0.00	0.78	0.08	11	06
20	ISL	16.96 D	16.96	33.560 D	24.421	350.6	0.072	5.82 D	253.6 D	105.4	2.1	0.32	0.0	0.01	0.00	1.05	0.16	20	
21		16.83	16.83	33.564	24.455	347.5	0.075	5.83	253.9	105.3	2.2	0.32	0.0	0.01	0.00	1.08	0.17	21	05
30	ISL	15.09 D	15.08	33.443 D	24.756	319.0	0.106	5.74 D	250.2 D	100.1	3.7	0.45	0.8	0.20	0.29	1.40	0.31	30	
31		14.91	14.90	33.452	24.801	314.7	0.108	5.80	252.5	100.7	3.8	0.46	0.9	0.22	0.32	1.43	0.33	31	04
41		14.32	14.31	33.412	24.897	305.9	0.139	5.76	250.8	98.8	4.5	0.52	1.3	0.30	0.35	0.92	0.30	41	03
50		13.45	13.44	33.385	25.056	291.0	0.166	5.10	222.2	86.0	6.6	0.83	5.4	0.79	0.59	0.51	0.33	50	02
60		13.29	13.28	33.392	25.094	287.6	0.195	4.94	215.2	83.0	7.3	0.88	6.3	0.74	0.29	0.39	0.38	60	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 25.2 N	117 54.2 W	15/11/2013	1807 UTC	616 m	150 11 kn	150 01 05	2	1006.0 mb	17.5 C	15.9 C	19 m	8/8	SC	029

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.19	17.19	33.572	24.375	354.3	0.000	5.76	251.0	104.8	2.3	0.33	0.0	0.01	0.00	0.36	0.03	0	
2	A	17.19	17.18	33.572	24.376	354.3	0.007	5.76	251.0	104.8	2.3	0.33	0.0	0.01	0.00	0.36	0.03	2	23
10	ISL	17.15 D	17.14	33.570 D	24.385	353.8	0.036	5.74 D	250.3 D	104.4	2.2	0.33	0.0	0.01	0.00	0.35	0.07	10	
12		17.05	17.04	33.567	24.406	351.8	0.042											12	22
12	A	17.05	17.04	33.566	24.405	351.8	0.043	5.75	250.7	104.3	2.2	0.33	0.0	0.01	0.00	0.35	0.08	12	21
15	A	16.54	16.53	33.554	24.515	341.5	0.053	5.78	251.9	103.8	2.3	0.33	0.0	0.01	0.00	0.34	0.09	15	20
20	ISL	14.67 D	14.67	33.413 D	24.821	312.5	0.070	6.25 D	272.2 D	108.0	3.6	0.42	0.4	0.07	0.00	0.70	0.21	20	
22		14.12	14.11	33.393	24.923	302.8	0.075	6.04	263.1	103.3	4.1	0.46	0.5	0.09	0.00	0.85	0.25	22	19
30	A	13.05	13.05	33.410	25.154	281.0	0.099	5.23	227.7	87.4	6.5	0.77	5.2	0.40	0.00	0.68	0.27	30	18
41		12.58	12.57	33.434	25.265	270.7	0.129	4.53	197.4	75.1	9.3	1.01	9.1	0.15	0.00	0.43	0.26	41	17
50	ISL	12.34 D	12.33	33.445 D	25.321	265.7	0.154	4.29 D	187.0 D	70.8	10.7	1.10	10.7	0.10	0.01	0.31	0.21	50	
53	A	12.17	12.17	33.451	25.357	262.3	0.161	4.22	183.7	69.3	11.1	1.13	11.2	0.08	0.01	0.27	0.19	53	16
58		12.10	12.09	33.470	25.386	259.7	0.174	3.87	168.6	63.5	13.0	1.26	13.1	0.05	0.00	0.15	0.14	58	15
65	A	12.01	12.00	33.475	25.407	257.9	0.192	3.82	166.6	62.6	13.5	1.30	13.7	0.04	0.00	0.11	0.14	66	14
75		11.84	11.83	33.490	25.451	253.9	0.218	3.68	160.4	60.1	14.4	1.35	14.6	0.03	0.00	0.07	0.11	76	13
85		11.69	11.68	33.507	25.492	250.3	0.243	3.68	160.2	59.8	14.9	1.37	14.7	0.03	0.00	0.06	0.10	86	12
100		11.30	11.28	33.564	25.609	239.5	0.280	3.36	146.1	54.1						0.04	0.10	101	11
119		11.07	11.05	33.668	25.732	228.2	0.324	2.80	121.9	45.0	21.3	1.73	19.2	0.02	0.00	0.02	0.08	120	10
125	ISL	11.00 D	10.98	33.688 D	25.760	225.7	0.340	2.72 D	118.6 D	43.7	22.1	1.78	19.5	0.02	0.00	0.02	0.08	126	
139		10.70	10.68	33.753	25.865	216.1	0.369	2.47	107.6	39.4	24.0	1.90	20.3	0.02	0.00	0.01	0.07	140	09
150	ISL	10.45 D	10.43	33.771 D	25.922	210.8	0.395	2.63 D	114.6 D	41.7	25.6	1.96	21.5	0.02	0.00	0.01	0.06	151	
170		10.18	10.16	33.878	26.052	198.8	0.433	2.06	89.7	32.5	28.4	2.06	23.7	0.02	0.00	0.01	0.05	171	08
200		9.59	9.57	34.019	26.262	179.5	0.489	2.11	91.7	32.8	31.5	2.14	26.2	0.01	0.00	0.01	0.05	202	07
230		9.17	9.15	34.126	26.414	165.5	0.541	1.71	74.2	26.3	36.1	2.31	28.1	0.01	0.00			232	06
250	ISL	9.18 D	9.15	34.184 D	26.459	161.7	0.578	1.38 D	60.0 D	21.3	38.6	2.38	28.0	0.01	0.00			252	
271		8.64	8.61	34.156	26.523	155.8	0.608	1.46	63.5	22.3	41.2	2.45	27.9	0.01	0.00			273	05
300	ISL	8.15 D	8.12	34.147 D	26.591	149.6	0.656	1.41 D	61.4 D	21.3	44.7	2.57	30.1	0.01	0.00			302	
320		8.38	8.35	34.259	26.644	145.2	0.680	0.88	38.2	13.3	47.0	2.65	31.7	0.01	0.00			323	04
380		7.72	7.68	34.276	26.758	135.0	0.764	0.65	28.1	9.7	55.0	2.81	33.9	0.02	0.00			383	03
400	ISL	7.45 D	7.41	34.280 D	26.799	131.3	0.797	0.56 D	24.4 D	8.4	58.1	2.86	34.7	0.02	0.00			403	
440		7.01	6.97	34.289	26.869	124.9	0.842	0.41	18.0	6.1	64.4	2.95	36.3	0.01	0.00			444	02
500	ISL	6.49 D	6.44	34.313 D	26.959	116.9	0.922	0.29 D	12.6 D	4.2	73.7	3.08	37.7	0.01	0.03			504	
516		6.28	6.23	34.321	26.993	113.7	0.933	0.25	10.9	3.6	76.2	3.12	38.1	0.01	0.04			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 15.1 N	118 14.8 W	15/11/2013	1356 UTC	350 m	200 04 kn			1005.2 mb	17.1 C	15.0 C				028

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.85	17.85	33.701	24.316	359.9	0.000	5.54	241.4	102.1	1.4	0.32	0.0	0.01	0.00	0.21	0.05	0	
2		17.85	17.85	33.701	24.316	360.0	0.007	5.54	241.4	102.1	1.4	0.32	0.0	0.01	0.00	0.21	0.05	2	18
10		17.68	17.68	33.642	24.312	360.7	0.036	5.59	243.9	102.8	1.7	0.32	0.0	0.01	0.00	0.22	0.05	10	16
10		17.68	17.68	33.633	24.305	361.4	0.037											10	17
20		17.14	17.14	33.567	24.384	354.2	0.072	5.72	249.2	103.9	2.1	0.33	0.0	0.01	0.00	0.22	0.10	20	15
30		13.84	13.84	33.416	24.998	295.9	0.104	6.07	264.5	103.2	3.6	0.43	0.2	0.04	0.01	0.51	0.20	30	14
40		12.89	12.88	33.398	25.177	279.1	0.133	4.97	216.3	82.8	6.9	0.84	6.8	0.44	0.00	0.48	0.28	40	13
50	ISL	12.52 D	12.51	33.425 D	25.271	270.4	0.162	4.54 D	197.8 D	75.1	8.7	0.99	9.2	0.13	0.00	0.34	0.24	50	
51		12.48	12.47	33.427	25.280	269.6	0.163	4.57	198.9	75.5	8.9	1.00	9.4	0.10	0.00	0.33	0.24	51	12
61		11.99	11.98	33.424	25.371	261.2	0.190	4.44	193.5	72.7	10.0	1.09	11.3	0.06	0.00	0.16	0.17	61	11
70		11.77	11.76	33.469	25.447	254.1	0.213	4.04	176.0	65.8	12.5	1.24	13.5	0.04	0.00	0.09	0.12	71	10
75	ISL	11.73 D	11.72	33.482 D	25.466	252.5	0.228	4.03 D	175.6 D	65.6	13.4	1.29	14.2	0.04	0.00	0.08	0.12	76	
85		11.33	11.32	33.530	25.576	242.2	0.250	3.65	158.9	58.9	15.4	1.39	15.5	0.03	0.00	0.05	0.10	86	09
100	ISL	10.96 D	10.95	33.679 D	25.759	225.2	0.287	2.94 D	128.1 D	47.2	20.5	1.69	19.2	0.03	0.00	0.03	0.10	101	
101		11.01	10.99	33.677	25.749	226.1	0.288	2.91	126.5	46.6	20.8	1.71	19.4	0.03	0.00	0.02	0.10	102	08
120		10.52	10.51	33.805	25.935	208.9	0.329	2.47	107.4	39.2	24.9	1.90	22.2	0.02	0.00	0.01	0.07	121	07
125	ISL	10.47 D	10.46	33.824 D	25.958	206.8	0.342	2.35 D	102.1 D	37.2	25.7	1.94	22.7	0.02	0.00	0.01	0.08	126	
140		10.02	10.01	33.927	26.116	192.0	0.369	2.13	92.5	33.4	28.1	2.05	24.2	0.02	0.00	0.01	0.09	141	06
150	ISL	9.72 D	9.70	33.885 D	26.135	190.4	0.392	2.60 D	113.2 D	40.6	28.7	2.06	24.7	0.02	0.00	0.01	0.07	151	
170		9.72	9.70	33.995	26.222	182.6	0.425	2.18	94.9	34.1	29.8	2.07	25.7	0.02	0.00	0.00	0.04	171	05
200		8.60	8.58	33.972	26.383	167.5	0.478	2.48	107.9	37.8	33.3	2.06	27.6	0.02	0.00	0.00	0.05	202	04
230		8.37	8.35	34.036	26.468	159.9	0.527	2.18	94.9	33.1	37.5	2.19	29.2	0.01	0.00			232	03
250	ISL	8.16 D	8.13	34.110 D	26.560	151.6	0.563	1.65 D	71.9 D	24.9	40.5	2.31	30.3	0.02	0.02			252	
270		8.16	8.13	34.120	26.567	151.2	0.589	1.57	68.2	23.7	43.5	2.42	31.3	0.02	0.04			272	02
300	ISL	8.14 D	8.11	34.195 D	26.630	145.9	0.638	1.19 D	51.6 D	17.9	47.0	2.56	32.4	0.03	0.05			302	
309		8.12	8.09	34.205	26.641	145.0	0.646	1.08	46.9	16.3	48.0	2.60	32.7	0.03	0.05			311	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 37.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 11.0 N	118 23.4 W	15/11/2013	1055	UTC	1176 m	240	11 kn			1005.7 mb	16.1 C	15.4 C				027

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.10		18.10		33.682		24.239	367.3	0.000	5.47		238.3		101.3		1.2	0.32	0.2	0.01	0.00	0.21	0.04	0	
2		18.10		18.10		33.682		24.239	367.3	0.007	5.47		238.3		101.3		1.2	0.32	0.2	0.01	0.00	0.21	0.04	2	20
10		18.10		18.10		33.681		24.238	367.7	0.037	5.47		238.7		101.5		1.2	0.31	0.0	0.00	0.00	0.19	0.04	10	19
20		18.00		17.99		33.689		24.272	364.9	0.073	5.50		239.9		101.8		1.3	0.31	0.1	0.00	0.00	0.22	0.08	20	18
30		16.71		16.70		33.607		24.517	341.9	0.109	5.55		242.1		100.1		2.1	0.40	0.9	0.05	0.09	0.87	0.34	30	17
40		14.91		14.91		33.456		24.804	314.8	0.141	5.58		243.1		97.0		3.1	0.54	2.5	0.14	0.15	0.85	0.35	40	16
50	ISL	13.50	D	13.50		33.359	D	25.024	294.0	0.173	5.64	D	245.9	D	95.2		4.1	0.65	4.0	0.22	0.01	0.60	0.30	50	
51		13.54		13.53		33.366		25.022	294.2	0.175	5.53		240.9		93.4		4.2	0.66	4.2	0.23	0.00	0.57	0.29	51	15
60		12.17		12.16		33.404		25.322	265.8	0.200	4.91		213.7		80.6		6.8	0.93	8.5	0.07	0.08	0.29	0.22	60	14
70		11.47		11.46		33.401		25.450	253.8	0.226	4.75		207.0		76.9		9.2	1.09	11.8	0.05	0.00	0.14	0.13	71	13
75	ISL	11.24	D	11.23		33.428	D	25.512	248.0	0.240	4.68	D	203.8	D	75.3		10.2	1.15	12.8	0.04	0.00	0.11	0.12	76	
85		10.95		10.94		33.473		25.599	239.9	0.263	4.31		187.7		69.0		12.3	1.28	14.7	0.03	0.00	0.06	0.09	86	12
100		10.50		10.49		33.530		25.724	228.4	0.298	4.04		175.8		64.0		15.2	1.43	17.2	0.03	0.00	0.03	0.08	101	11
119		9.92		9.90		33.616		25.890	212.9	0.340	3.67		159.8		57.5		18.9	1.61	20.0	0.02	0.00	0.01	0.07	120	10
125	ISL	9.85	D	9.83		33.653	D	25.931	209.1	0.355	3.61	D	157.1	D	56.4		20.3	1.67	21.0	0.02	0.00	0.01	0.06	126	
140		9.46		9.44		33.752		26.073	195.9	0.383	3.13		136.4		48.6		24.1	1.81	23.5	0.02	0.00	0.00	0.04	141	09
150	ISL	9.29	D	9.27		33.803	D	26.141	189.6	0.405	3.07	D	133.8	D	47.5		25.9	1.87	24.3	0.02	0.00	0.00	0.04	151	
171		8.95		8.93		33.922		26.287	176.1	0.441	2.65		115.5		40.7		29.8	2.01	26.0	0.02	0.00	0.00	0.04	172	08
200		8.64		8.62		33.977		26.381	167.7	0.491	2.50		108.7		38.1		33.4	2.10	27.6	0.01	0.00	0.00	0.03	202	07
231		8.39		8.37		34.053		26.479	159.0	0.541	2.09		90.8		31.7		38.3	2.27	29.5	0.01	0.00			233	06
250	ISL	8.25	D	8.23		34.075	D	26.517	155.6	0.575	1.91	D	83.2	D	28.9		40.8	2.38	30.4	0.01	0.00			252	
270		8.35		8.32		34.157		26.569	151.2	0.601	1.43		62.2		21.7		43.5	2.50	31.4	0.01	0.00			272	05
300	ISL	8.31	D	8.27		34.244	D	26.644	144.8	0.651	0.98	D	42.4	D	14.8		47.3	2.64	32.3	0.01	0.00			302	
320		8.17		8.14		34.262		26.679	141.8	0.675	0.80		34.9		12.1		49.8	2.74	32.9	0.01	0.00			323	04
380		7.57		7.53		34.287		26.788	132.1	0.757	0.57		24.8		8.5		56.7	2.88	34.8	0.01	0.00			383	03
400	ISL	7.44	D	7.40		34.287	D	26.807	130.6	0.789	0.54	D	23.6	D	8.1		59.1	2.91	35.4	0.01	0.00			403	
440		7.02		6.98		34.292		26.870	124.9	0.834	0.45		19.6		6.6		64.0	2.98	36.7	0.01	0.00			444	02
500	ISL	6.51	D	6.47		34.311	D	26.954	117.3	0.914	0.34	D	14.6	D	4.9		71.6	3.10	38.7	0.01	0.00			504	
515		6.41		6.37		34.319		26.974	115.6	0.925	0.30		13.2		4.4		73.5	3.13	39.2	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 55.1 N	118 56.1 W	15/11/2013	0518	UTC	1259 m	300	16 kn			1008.5 mb	16.3 C	15.1 C				026

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.85		17.85		33.610		24.245	366.7	0.000	5.44		237.0		100.2		1.5	0.29	0.0	0.01	0.00	0.16	0.03	0	
2		17.85		17.85		33.610		24.245	366.7	0.007	5.44		237.0		100.2		1.5	0.29	0.0	0.01	0.00	0.16	0.03	2	21
10		17.85		17.85		33.609		24.245	367.0	0.037	5.44		237.4		100.4		1.6	0.29	0.0	0.00	0.00	0.15	0.02	10	19
10		17.85		17.85		33.610		24.246	367.0	0.037														10	20
20		16.94		16.94		33.602		24.457	347.2	0.072	5.53		240.9		100.1		1.5	0.29	0.0	0.01	0.00	0.22	0.05	20	18
30		16.39		16.39		33.527		24.529	340.7	0.107	5.73		249.7		102.6		1.8	0.32	0.0	0.01	0.00	0.48	0.21	30	17
40		14.50		14.49		33.344		24.806	314.5	0.140	5.77		251.6		99.4		2.8	0.44	1.3	0.15	0.03	0.56	0.33	40	16
50		12.90		12.90		33.226		25.041	292.3	0.170	5.56		242.1		92.6		4.3	0.68	4.7	0.41	0.14	0.44	0.28	50	15
60		12.00		11.99		33.231		25.219	275.6	0.198	5.23		227.7		85.4		6.4	0.88	8.3	0.19	0.00	0.29	0.28	60	14
70		11.20		11.19		33.329		25.442	254.5	0.225	4.92		214.3		79.1		9.1	1.04	11.3	0.02	0.00	0.13	0.09	71	13
75	ISL	11.05	D	11.04		33.379	D	25.509	248.3	0.239	4.89	D	212.8	D	78.3		10.6	1.13	12.8	0.02	0.00	0.10	0.08	76	
85		10.45		10.44		33.476		25.689	231.3	0.261	4.36		189.9		69.0		13.7	1.31	15.7	0.02	0.00	0.05	0.06	86	12
100	ISL	9.99	D	9.98		33.573	D	25.844	216.9	0.297	4.04	D	175.8	D	63.3		16.9	1.44	18.0	0.02	0.00	0.03	0.04	101	
101		9.97		9.96		33.568		25.843	217.0	0.297	4.05		176.1		63.4		17.1	1.45	18.2	0.02	0.00	0.02	0.04	102	11
120		9.54		9.53		33.701		26.019	200.6	0.337	3.47		151.2		54.0		22.1	1.69	21.8	0.02	0.00	0.01	0.05	121	10
125	ISL	9.48	D	9.47		33.727	D	26.049	197.8	0.349	3.43	D	149.1	D	53.1		23.0	1.73	22.4	0.02	0.00	0.01	0.05	126	
140		9.24		9.22		33.794		26.141	189.4	0.376	3.09		134.5		47.7		25.6	1.83	24.0	0.02	0.00	0.00	0.03	141	09
150	ISL	9.07	D	9.06		33.855	D	26.216	182.5	0.397	2.90	D	126.0	D	44.5		27.8	1.92	25.0	0.02	0.00	0.00	0.03	151	
170		9.08		9.06		33.995		26.325	172.6	0.430	2.32		100.9		35.7		32.0	2.09	26.9	0.01	0.00	0.00	0.03	171	08
200		8.98		8.96		34.131		26.447	161.6	0.480	1.63		70.9		25.1		37.5	2.34	29.1	0.01	0.00	0.00	0.03	202	07
230		8.54		8.51		34.148		26.531	154.1	0.528	1.52		65.9		23.1		40.9	2.41	30.2	0.01	0.00			232	06
250	ISL	8.18	D	8.16		34.113	D	26.558	151.7	0.562	1.66	D	72.3	D	25.1		43.0	2.48	30.9	0.01	0.00			252	
270		8.32		8.29		34.197		26.604	147.9	0.587	1.19		51.8		18.0		45.0	2.54	31.5	0.01	0.00			272	05
300	ISL	8.28	D	8.25		34.247	D	26.650	144.2	0.636	0.96	D	41.6	D	14.5		48.0	2.62	32.3	0.01	0.00			302	
320		8.00		7.97		34.239		26.686	140.9	0.660	0.88		38.5		13.3		49.9	2.68	32.9	0.01	0.00			323	04
380		7.43		7.39		34.261		26.787	132.0	0.742	0.63		27.3		9.3		57.8	2.84	35.0	0.01	0.00			383	03
400	ISL	7.28	D	7.24		34.268	D	26.815	129.6	0.774	0.57	D	24.9	D	8.5		60.3	2.88	35.6	0.01	0.00			403	
440		6.91		6.87		34.282		26.877	124.1	0.819	0.47		20.5		6.9		65.2	2.95	36.8	0.01	0.00			444	02
500	ISL	6.44	D	6.39		34.296	D	26.952	117.4	0.898	0.37	D	16.0	D	5.3		71.9	3.05	38.2	0.01	0.01			504	
514		6.40		6.35		34.303		26.963	116.6	0.908	0.32		14.1		4.7		73.4	3.07	38.5	0.01	0.01			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 39.0 N	119 28.8 W	14/11/2013	2313 UTC	1315 m	310 20 kn	310 07 07	1	1009.7 mb	18.0 C	15.9 C	15 m	3/8	ST	025

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.96		16.96		33.600		24.450	347.1	0.000	5.64		246.0		102.2		1.5	0.33	0.0	0.02	0.00	0.44	0.10	0	
2		16.96		16.96		33.600		24.451	347.2	0.007	5.64		246.0		102.2		1.5	0.33	0.0	0.02	0.00	0.44	0.10	2	20
10		16.97		16.96		33.612		24.459	346.7	0.035	5.59		243.7		101.3		1.6	0.32	0.0	0.02	0.00	0.45	0.10	10	19
20		16.98		16.97		33.617		24.461	346.9	0.069	5.60		244.0		101.5		1.5	0.32	0.0	0.01	0.00	0.45	0.10	20	18
30		16.51		16.51		33.607		24.562	337.6	0.104	5.59		243.8		100.5		1.7	0.34	0.2	0.03	0.00	0.52	0.14	30	17
40		13.40		13.40		33.273		24.977	298.1	0.135	5.60		243.8		94.2		4.0	0.61	3.9	0.21	0.00	0.51	0.31	40	16
50		12.53		12.52		33.225		25.114	285.4	0.165	5.48		238.6		90.5		5.0	0.72	5.8	0.19	0.00	0.39	0.33	50	15
61		11.54		11.53		33.311		25.366	261.5	0.195	5.09		221.6		82.4		7.5	0.96	9.6	0.07	0.00	0.25	0.31	61	14
71		10.86		10.85		33.446		25.594	240.1	0.220	4.50		196.0		71.9		12.0	1.26	14.7	0.02	0.00	0.13	0.11	72	13
75	ISL	10.47	D	10.46		33.515	D	25.716	228.5	0.230	4.22	D	183.9	D	66.9		13.1	1.31	15.6	0.02	0.00	0.11	0.10	76	
85		10.32		10.31		33.534		25.758	224.8	0.252	4.09		178.1		64.6		15.9	1.44	17.9	0.02	0.00	0.06	0.07	86	12
100		9.80		9.79		33.640		25.928	208.9	0.285	3.60		156.7		56.2		20.1	1.63	20.9	0.01	0.00	0.03	0.04	101	11
119		9.29		9.28		33.745		26.094	193.4	0.323	3.31		144.1		51.1		23.9	1.76	23.2	0.02	0.00	0.01	0.04	120	10
125	ISL	9.19	D	9.18	D	33.789	D	26.144	188.7	0.335	3.28	D	142.9	D	50.6		25.1	1.80	23.8	0.02	0.00	0.01	0.04	126	
140		8.92		8.90		33.860		26.243	179.6	0.362	3.01		130.9		46.1		28.3	1.90	25.3	0.01	0.00	0.00	0.03	141	09
150	ISL	8.79	D	8.77	D	33.933	D	26.321	172.4	0.381	2.64	D	114.7	D	40.3		30.4	1.97	26.3	0.01	0.00	0.00	0.03	151	
170		8.55		8.54		33.979		26.394	165.8	0.414	2.36		102.8		36.0		34.5	2.12	28.4	0.01	0.00	0.00	0.03	171	08
199		8.14		8.12		34.036		26.503	155.9	0.460	2.14		93.2		32.3		39.4	2.24	30.0	0.01	0.00	0.00	0.02	201	07
200	ISL	8.13	D	8.11	D	34.043	D	26.509	155.3	0.463	2.16	D	93.9	D	32.6		39.5	2.24	30.0	0.01	0.00	0.00	0.02	202	
230		7.98		7.96		34.077		26.559	151.1	0.508	1.81		78.7		27.2		43.1	2.36	31.3	0.01	0.00			232	06
250	ISL	7.89	D	7.86	D	34.097	D	26.589	148.7	0.540	1.65	D	71.8	D	24.8		45.9	2.44	32.3	0.01	0.00			252	
270		7.57		7.54		34.104		26.641	143.9	0.567	1.49		64.6		22.1		48.7	2.52	33.2	0.01	0.00			272	05
300	ISL	7.43	D	7.40	D	34.161	D	26.707	138.1	0.612	1.12	D	48.5	D	16.6		53.8	2.67	34.6	0.01	0.00			302	
319		7.24		7.21		34.190		26.757	133.6	0.635	0.87		38.0		12.9		57.0	2.76	35.5	0.01	0.00			322	04
380		7.02		6.98		34.266		26.848	125.9	0.715	0.53		23.0		7.8		63.4	2.92	36.6	0.01	0.00			383	03
400	ISL	6.91	D	6.88	D	34.277	D	26.872	123.9	0.743	0.47	D	20.6	D	6.9		65.3	2.95	37.0	0.01	0.00			403	
439		6.65		6.61		34.288		26.916	120.1	0.787	0.41		17.7		5.9		68.8	3.01	37.8	0.01	0.00			443	02
500	ISL	6.29	D	6.24	D	34.310	D	26.983	114.4	0.863	0.33	D	14.2	D	4.7		74.3	3.07	38.8	0.01	0.00			504	
515		6.26		6.22		34.315		26.990	113.9	0.876	0.31		13.5		4.5		75.6	3.09	39.1	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 25.1 N	119 57.6 W	14/11/2013	1750 UTC	883 m	330 19 kn	330 08 06	0	1013.3 mb	17.1 C	16.8 C	20 m	0/8		024

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.99		16.99		33.581		24.428	349.3	0.000	5.55		241.9		100.6		1.7	0.32	0.4	0.04	0.00	0.34	0.06	0	
3	A	16.99		16.99		33.581		24.428	349.3	0.011	5.55		241.9		100.6		1.7	0.32	0.4	0.04	0.00	0.34	0.06	3	21
10	ISL	16.99	D	16.99	D	33.578	D	24.427	349.7	0.035	5.58	D	243.1	D	101.1		1.7	0.31	0.2	0.02	0.00	0.33	0.08	10	
12	A	16.99		16.99		33.582		24.430	349.5	0.042	5.55		242.1		100.7		1.7	0.31	0.1	0.02	0.00	0.33	0.09	12	20
16	A	16.99		16.99		33.584		24.431	349.5	0.056	5.55		241.7		100.5		1.7	0.32	0.1	0.01	0.00	0.33	0.06	16	19
20	ISL	16.97	D	16.97	D	33.577	D	24.431	349.7	0.070	5.56	D	242.5	D	100.8		1.7	0.32	0.1	0.01	0.00	0.34	0.06	20	
24		16.98		16.97		33.593		24.443	348.7	0.084	5.55		242.0		100.6		1.7	0.31	0.1	0.01	0.00	0.34	0.06	24	18
30	ISL	16.96	D	16.95	D	33.552	D	24.416	351.5	0.106	5.57	D	242.8	D	100.9		1.8	0.34	0.4	0.04	0.00	0.44	0.17	30	
31	A	15.86		15.86		33.532		24.652	329.0	0.108	5.61		244.3		99.4		1.8	0.34	0.5	0.04	0.00	0.46	0.19	31	17
44		12.37		12.36		33.316		25.215	275.6	0.148	5.16		224.7		85.0		6.2	0.87	7.9	0.37	0.00	0.40	0.23	44	16
50	ISL	12.39	D	12.38	D	33.307	D	25.204	276.8	0.166	5.19	D	226.1	D	85.6		6.9	0.91	8.8	0.26	0.00	0.34	0.20	50	
55	A	11.96		11.95		33.317		25.294	268.3	0.178	5.06		220.2		82.6		7.5	0.95	9.5	0.16	0.00	0.29	0.18	55	15
62		11.74		11.74		33.316		25.332	264.8	0.197	5.01		218.2		81.5		8.2	1.00	10.5	0.09	0.00	0.26	0.18	62	14
69	A	11.48		11.47		33.379		25.430	255.7	0.215	4.72		205.6		76.4		9.9	1.13	12.4	0.04	0.00	0.21	0.14	70	13
75	ISL	11.27	D	11.26	D	33.457	D	25.530	246.3	0.232	4.43	D	192.8	D	71.3		11.6	1.23	14.0	0.03	0.00	0.16	0.11	76	
85		10.84		10.83		33.517		25.653	234.8	0.254	4.08		177.8		65.2		14.4	1.39	16.7	0.02	0.00	0.07	0.07	86	12
99		10.05		10.04		33.637		25.883	213.2	0.285	3.50		152.5		55.0		19.4	1.63	20.5	0.02	0.00	0.03	0.05	100	11
100	ISL	10.03	D	10.01		33.644	D	25.893	212.2	0.289	3.53	D	153.5	D	55.4		19.6	1.64	20.6	0.02	0.00	0.03	0.05	101	
120		9.46		9.45		33.758		26.076	195.2	0.328	3.23		140.5		50.1		24.1	1.79	23.4	0.01	0.00	0.01	0.03	121	10
125	ISL	9.44	D	9.43	D	33.766	D	26.086	194.3	0.340	3.17	D	138.1	D	49.2		25.1	1.83	24.0	0.01	0.00	0.01	0.03	126	
139		9.14		9.12		33.883		26.226	181.2	0.364	2.75		119.8		42.4		27.9	1.94	25.5	0.01	0.00	0.00	0.03	140	09
150	ISL	8.92	D	8.91	D	33.928	D	26.296	174.8	0.387	2.72	D	118.2	D	41.7		29.9	2.00	26.4	0.01	0.00	0.00	0.03	151	
169		8.67		8.65		33.978		26.375	167.6	0.416	2.42		105.3		36.9		33.4	2.10	28.0	0.01	0.00	0.00	0.03	170	08
199		8.39		8.37		34.045		26.472	159.0	0.465	2.02		87.9		30.6		38.1	2.26	30.0	0.00	0.00	0.00	0.03	201	07
200	ISL	8.39	D	8.37	D	34.034	D	26.463	159.8	0.471	2.05	D	89.4	D	31.2		38.3	2.26	30.1	0.00	0.00	0.00	0.02	202	
230		7.70		7.68		34.052		26.580	149.0	0.513	1.96		85.4		29.3		43.7	2.35	31.6	0.01	0.00			232	06
250	ISL	7.53	D	7.50	D	34.043	D	26.598	147.5	0.547	1.76		76.7		26.2		46.4	2.43	32.5	0.01	0.00			252	
270		7.48		7.45		34.100		26.650	142.9	0.571	1.56		68.0		23.2		49.2	2.51	33.4	0.01	0.00			272	05
300	ISL	7.10	D	7.07	D	34.108	D	26.710	137.6	0.619	1.24		54.1		18.3		53.7	2.65	34.8	0.00	0.00			302	
320		7.10		7.07		34.154		26.748	134.4	0.640	1.03		44.8		15.2		56.7	2.74	35.7	0.00	0.00			323	04
379		6.73		6.69		34.213		26.845	125.9	0.717	0.62		27.0		9.1		64.7	2.93	37.6	0.00	0.00			382	03
400	ISL	6.59	D	6.55	D	34.235	D	26.882	122.6	0.750	0.58	D	25.3	D	8.5		66.8	2.96	37.9	0.00	0.00			403	
440		6.40		6.36		34.263		26.929	118.6	0.791	0.43		18.7		6.3		70.8	3.03	38.6	0.00	0.00			444	02
500	ISL	6.07	D	6.02	D	34.290	D	26.995	113.0	0.869	0.34	D	14.8	D	4.9		76.3	3.12	40.1	0.01	0.00			504	
517		6.06		6.02		34.311		27.012	111.6	0.880	0.28		12.3		4.1		77.8	3.14	40.5	0.01	0.00			521	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 5.0 N	120 38.6 W	14/11/2013	1114	UTC	3849 m	330 25 kn			1013.5 mb	15.9 C	14.9 C				023

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.53		16.53		33.600	24.551	337.5	0.000	5.57		242.9		100.1		1.7	0.34	0.3	0.04	0.00	0.37	0.11	0	
3		16.53		16.53		33.600	24.552	337.6	0.010	5.57		242.9		100.1		1.7	0.34	0.3	0.04	0.00	0.37	0.11	3	20
10		16.53		16.53		33.604	24.554	337.6	0.034	5.57		242.9		100.1		1.7	0.33	0.3	0.03	0.00	0.35	0.12	10	19
20	ISL	16.53	D	16.52	D	33.600	24.552	338.1	0.068	5.55	D	242.0	D	99.7		1.7	0.32	0.2	0.03	0.00	0.36	0.12	20	
21		16.53		16.52		33.603	24.555	337.9	0.071	5.61		244.5		100.8		1.7	0.32	0.2	0.03	0.00	0.36	0.12	21	18
30		16.50		16.50		33.602	24.561	337.6	0.101	5.58		243.1		100.2		1.7	0.34	0.3	0.03	0.00	0.37	0.11	30	17
40		15.89		15.88		33.559	24.669	327.7	0.135	5.52		240.6		97.9		2.4	0.42	1.3	0.17	0.00	0.45	0.20	40	16
50		12.81		12.81		33.463	25.242	273.2	0.165	4.78		208.2		79.6		7.8	0.99	10.0	0.11	0.00	0.30	0.20	50	15
61		11.83		11.82		33.475	25.441	254.5	0.194	4.50		195.9		73.3		10.5	1.19	13.3	0.03	0.00	0.18	0.14	61	14
67		11.44		11.43		33.511	25.540	245.2	0.209	4.28		186.2		69.1		12.0	1.29	14.7	0.03	0.00	0.14	0.13	68	13
75	ISL	10.65	D	10.64		33.551	25.713	228.8	0.228	3.93	D	171.0	D	62.5		14.5	1.42	16.9	0.03	0.00	0.11	0.11	76	
85		10.37		10.36		33.601	25.800	220.7	0.250	3.63		158.0		57.4		17.8	1.58	19.6	0.03	0.00	0.07	0.08	86	12
100		9.85		9.84		33.693	25.961	205.8	0.282	3.23		140.5		50.5		21.8	1.75	22.5	0.02	0.00	0.01	0.04	101	11
119		9.08		9.07		33.840	26.201	183.2	0.319	2.93		127.6		45.1		27.5	1.91	25.2	0.01	0.00	0.00	0.04	120	10
125	ISL	8.97	D	8.96		33.861	26.235	180.1	0.330	2.89	D	125.8	D	44.4		28.3	1.94	25.5	0.01	0.00	0.01	0.05	126	
140		8.91		8.90		33.913	26.286	175.5	0.357	2.68		116.4		41.0		30.3	2.01	26.4	0.01	0.00	0.03	0.06	141	09
150	ISL	8.72	D	8.71		33.956	D 26.349	169.7	0.376	2.57	D	111.8	D	39.2		32.5	2.08	27.3	0.01	0.00	0.02	0.05	151	
170		8.45		8.43		34.040	26.458	159.7	0.407	2.14		92.9		32.5		36.9	2.22	29.2	0.00	0.00	0.00	0.03	171	08
199		8.09		8.07		34.077	26.541	152.3	0.452	1.77		77.0		26.7		42.0	2.37	31.2	0.00	0.00	0.00	0.02	201	07
200	ISL	8.13	D	8.10	D	34.079	D 26.538	152.6	0.456	1.74	D	75.5	D	26.2		42.2	2.38	31.3	0.00	0.00	0.00	0.02	202	
230		7.88		7.86		34.135	26.619	145.4	0.498	1.34		58.3		20.1		47.2	2.54	32.8	0.00	0.00			232	06
250	ISL	7.75	D	7.73	D	34.153	D 26.653	142.5	0.530	1.23	D	53.4	D	18.4		49.3	2.60	33.3	0.00	0.00			252	
269		7.63		7.60		34.165	26.680	140.2	0.554	1.10		47.7		16.4		51.2	2.66	33.7	0.00	0.00			271	05
300	ISL	7.13	D	7.10	D	34.143	D 26.734	135.4	0.600	1.04	D	45.2	D	15.3		55.8	2.73	35.1	0.00	0.00			302	
321		7.00		6.97		34.162	26.767	132.5	0.624	0.91		39.5		13.4		58.9	2.78	36.1	0.00	0.00			324	04
380		6.55		6.52		34.218	26.873	123.1	0.700	0.60		26.1		8.7		65.9	2.94	37.5	0.00	0.00			383	03
400	ISL	6.42	D	6.38		34.226	D 26.896	121.1	0.729	0.55	D	23.9	D	8.0		68.3	2.98	38.0	0.00	0.00			403	
440		6.26		6.22		34.263	26.948	116.7	0.772	0.41		17.7		5.9		73.0	3.05	38.9	0.00	0.00			444	02
500	ISL	6.14	D	6.09	D	34.325	D 27.013	111.3	0.846	0.28	D	12.0	D	4.0		77.6	3.13	39.9	0.00	0.00			504	
516		6.05		6.01		34.336	27.033	109.6	0.858	0.26		11.1		3.7		78.8	3.15	40.2	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 45.1 N	121 18.9 W	14/11/2013	0421	UTC	3684 m	340 20 kn			1015.6 mb	16.4 C	14.7 C				022

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.06		16.06		33.539	24.610	331.9	0.000	5.68		247.5		101.1		1.8	0.36	0.7	0.08	0.08	0.41	0.09	0	
2		16.06		16.06		33.539	24.610	331.9	0.007	5.68		247.5		101.1		1.8	0.36	0.7	0.08	0.08	0.41	0.09	2	20
10		16.07		16.07		33.538	24.608	332.5	0.033	5.68		247.8		101.2		1.9	0.36	0.7	0.07	0.07	0.39	0.07	10	19
20		16.07		16.07		33.539	24.610	332.7	0.067	5.68		247.6		101.1		1.9	0.36	0.7	0.07	0.06	0.41	0.08	20	18
30		16.07		16.06		33.538	24.611	332.9	0.100	5.68		247.8		101.2		1.9	0.36	0.7	0.07	0.09	0.41	0.08	30	17
41		15.92		15.91		33.523	24.634	331.1	0.136	5.69		247.8		100.9		2.1	0.37	0.8	0.08	0.09	0.40	0.12	41	16
50		12.51		12.50		33.084	25.008	295.4	0.165	5.73		249.5		94.5		4.2	0.60	3.3	0.47	0.18	0.39	0.17	50	15
60		11.32		11.31		33.041	25.197	277.6	0.193	5.53		240.8		88.9		6.1	0.75	6.2	0.07	0.00	0.26	0.21	60	14
70		10.84		10.83		33.122	25.345	263.6	0.220	5.31		231.3		84.6		8.3	0.93	9.4	0.04	0.00	0.16	0.13	71	13
75	ISL	10.75	D	10.74		33.169	D 25.399	258.7	0.235	5.29	D	230.4	D	84.1		9.6	1.00	10.7	0.03	0.00	0.13	0.11	76	
86		10.18		10.17		33.283	25.584	241.2	0.261	4.98		216.9		78.3		12.2	1.16	13.4	0.02	0.00	0.07	0.07	87	12
100		9.81		9.80		33.532	25.841	217.1	0.293	4.13		179.9		64.5		18.5	1.53	19.4	0.01	0.00	0.02	0.03	101	11
119		9.24		9.22		33.749	26.105	192.3	0.332	3.28		142.7		50.6		25.6	1.84	24.2	0.01	0.00	0.01	0.04	120	10
125	ISL	9.18	D	9.16	D	33.756	D 26.121	190.9	0.344	3.35	D	145.6	D	51.6		26.0	1.84	24.3	0.01	0.00	0.01	0.03	126	
140		8.90		8.88		33.810	26.207	183.0	0.371	3.28		142.8		50.3		27.1	1.83	24.5	0.00	0.00	0.01	0.03	141	09
150	ISL	8.76	D	8.74	D	33.851	D 26.262	177.9	0.391	3.36	D	146.4	D	51.4		28.2	1.84	24.8	0.00	0.00	0.00	0.03	151	
170		8.51		8.49		33.915	26.351	169.9	0.424	3.19		138.6		48.4		30.3	1.86	25.4	0.00	0.00	0.00	0.03	171	08
200	ISL	8.10	D	8.07	D	33.990	D 26.472	158.8	0.475	2.53	D	110.2	D	38.2		36.6	2.12	28.8	0.01	0.00	0.01	0.04	202	
201		8.09		8.07		33.988	26.472	158.8	0.475	2.47		107.3		37.1		36.8	2.13	28.9	0.01	0.00	0.01	0.04	203	07
230		8.00		7.98		34.048	26.533	153.6	0.521	1.90		82.4		28.5		42.1	2.33	31.2	0.00	0.00			232	06
250	ISL	7.95	D	7.92	D	34.107	D 26.588	148.8	0.553	1.61	D	70.0	D	24.2		45.4	2.44	32.3	0.00	0.00			252	
270		7.69		7.67		34.122	26.638	144.3	0.580	1.35		58.6		20.1		48.8	2.54	33.3	0.00	0.00			272	05
300	ISL	7.27	D	7.24	D	34.111	D 26.689	139.7	0.625	1.29	D	56.0	D	19.0		53.4	2.62	34.7	0.00	0.00			302	
319		7.01		6.98		34.112	26.726	136.4	0.649	1.16		50.3		17.0		56.3	2.67	35.6	0.00	0.00			322	04
380		6.68		6.64		34.155	26.806	129.5	0.730	0.85		36.9		12.4		62.8	2.82	37.1	0.00	0.00			383	03
400	ISL	6.34	D	6.30	D	34.157	D 26.852	125.1	0.759	0.85	D	36.9	D	12.3		66.4	2.87	37.8	0.00	0.00			403	
439		5.98		5.94		34.179	26.916	119.4	0.803	0.65		28.2		9.3		73.3	2.97	39.2	0.00	0.00			443	02
500	ISL	5.76	D	5.72	D	34.253	D 27.003	111.8	0.878	0.39	D	17.0	D	5.6		80.4	3.07	40.2	0.01	0.00			504	
515		5.66		5.62		34.265	27.025	109.8	0.890	0.36		15.6		5.1		82.1	3.10	40.5	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 25.0 N	121 59.4 W	13/11/2013	2111	UTC	3923 m	340 24 kn	330 06 05	1	1018.6 mb	18.3 C	17.0 C		4/8	ST	021

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.63	16.63	33.185	24.209	370.2	0.007	5.63	245.6	101.1	2.1	0.31	0.1	0.01	0.02	0.18	0.03	0	
2		16.63	16.63	33.185	24.209	370.2	0.007	5.63	245.6	101.1	2.1	0.31	0.1	0.01	0.02	0.18	0.03	2	24
10		16.61	16.61	33.182	24.211	370.3	0.037	5.62	245.2	101.0	2.1	0.31	0.0	0.00	0.13	0.18	0.04	10	23
20	ISL	16.58 D	16.58	33.187 D	24.223	369.5	0.074	5.65	D246.4	D101.4	2.1	0.32	0.0	0.00	0.01	0.19	0.04	20	
21		16.58	16.58	33.180	24.218	370.0	0.078	5.65	246.3	101.3	2.1	0.32	0.0	0.00	0.00	0.19	0.04	21	22
30	ISL	16.62 D	16.62	33.311 D	24.309	361.7	0.111	5.60	D244.3	D100.7	1.9	0.31	0.1	0.01	0.05	0.24	0.05	30	
31		16.43	16.42	33.311	24.355	357.3	0.114	5.60	244.1	100.2	1.9	0.31	0.1	0.01	0.06	0.25	0.05	31	21
41		15.50	15.50	33.115	24.412	352.1	0.150	5.86	255.5	102.9	2.3	0.33	0.0	0.01	0.00	0.27	0.09	41	20
50		14.68	14.67	33.116	24.593	335.2	0.181	5.94	258.7	102.5	2.4	0.36	0.2	0.02	0.03	0.28	0.16	50	19
61		13.64	13.63	33.080	24.783	317.3	0.217	6.06	263.9	102.3	2.7	0.36	0.1	0.02	0.01	0.27	0.16	61	18
71		12.97	12.96	33.098	24.930	303.5	0.248	5.99	261.2	99.9	2.9	0.39	0.1	0.05	0.00	0.28	0.20	72	17
75	ISL	12.67 D	12.66	33.130 D	25.014	295.6	0.261	5.89	D256.7	D 97.6	3.3	0.44	1.0	0.08	0.00	0.26	0.20	76	
85		12.07	12.05	33.141	25.138	284.0	0.289	5.66	246.4	92.5	4.1	0.57	3.1	0.17	0.00	0.20	0.18	86	16
100	ISL	11.37 D	11.36	33.142 D	25.267	272.0	0.332	5.51	D239.8	D 88.7	6.2	0.73	6.2	0.04	0.00	0.13	0.14	101	
101		11.16	11.14	33.146	25.309	267.9	0.333	5.44	236.8	87.2	6.4	0.74	6.4	0.03	0.00	0.12	0.14	102	15
121		10.70	10.68	33.265	25.484	251.7	0.385	5.17	225.1	82.1	9.2	0.96	10.2	0.02	0.00	0.07	0.08	122	14
125	ISL	10.57 D	10.55	33.321 D	25.550	245.5	0.397	5.06	D220.1	D 80.1	10.7	1.06	11.8	0.02	0.00	0.06	0.07	126	
141		9.89	9.87	33.518	25.820	220.1	0.432	4.30	187.0	67.2	16.8	1.48	18.4	0.01	0.00	0.01	0.04	142	13
150	ISL	9.45 D	9.43	33.631 D	25.980	204.9	0.454	3.86	D168.0	D 59.8	19.1	1.55	19.8	0.01	0.00	0.01	0.03	151	
171		8.97	8.95	33.763	26.161	188.1	0.493	3.57	155.2	54.7	24.5	1.71	22.9	0.01	0.00	0.00	0.02	172	12
200	ISL	8.66 D	8.64	33.898 D	26.315	173.9	0.548	3.41	D148.5	D 52.0	28.1	1.79	24.3	0.01	0.00	0.00	0.02	202	
201		8.64	8.62	33.900	26.320	173.5	0.548	3.37	146.7	51.4	28.2	1.79	24.3	0.01	0.00	0.00	0.02	203	11
232		8.12	8.10	33.973	26.456	161.0	0.599	2.99	130.1	45.1	34.3	1.96	26.8	0.01	0.00			234	10
250	ISL	7.85 D	7.82	34.002 D	26.520	155.1	0.631	2.68	D116.5	D 40.1	38.1	2.10	28.6	0.01	0.00			252	
269		7.69	7.66	34.021	26.558	151.8	0.657	2.30	100.2	34.4	42.1	2.24	30.5	0.01	0.00			271	09
300	ISL	7.22 D	7.19	34.036 D	26.637	144.5	0.707	1.91	D 83.0	D 28.2	48.2	2.41	32.7	0.01	0.00			302	
321		7.00	6.97	34.048	26.678	140.9	0.733	1.63	71.0	24.0	52.3	2.53	34.2	0.01	0.00			324	08
382		6.46	6.43	34.090	26.784	131.4	0.816	1.12	48.5	16.2	62.0	2.77	37.2	0.01	0.00			385	07
400	ISL	6.37 D	6.34	34.121 D	26.820	128.2	0.844	0.92	D 39.8	D 13.3	64.9	2.84	37.8	0.01	0.00			403	
441		6.13	6.09	34.185	26.902	120.8	0.891	0.59	25.6	8.5	71.5	2.99	39.1	0.01	0.00			445	06
500	ISL	5.68 D	5.64	34.216 D	26.984	113.5	0.965	0.44	D 19.1	D 6.3	80.5	3.09	40.5	0.00	0.00			504	
515		5.50	5.46	34.214	27.004	111.6	0.977	0.40	17.3	5.7	82.8	3.12	40.9	0.00	0.00			519	05
600	ISL	5.33 D	5.28	34.330 D	27.118	101.8	1.074	0.25	D 10.8	D 3.5								605	
700	ISL	4.92 D	4.87	34.375 D	27.202	94.5	1.173	0.24	D 10.4	D 3.3								706	
800	ISL	4.53 D	4.47	34.419 D	27.281	87.5	1.265	0.31	D 13.4	D 4.3								807	
900	ISL	4.14 D	4.07	34.454 D	27.351	81.2	1.350	0.44	D 19.1	D 6.1								908	
1000	ISL	3.86 D	3.78	34.479 D	27.402	76.8	1.430	0.56	D 24.5	D 7.7								1009	
1100	ISL	3.60 D	3.52	34.501 D	27.446	72.9	1.506	0.70	D 30.6	D 9.5								1111	
1200	ISL	3.35 D	3.26	34.521 D	27.487	69.2	1.578	0.81	D 35.4	D 11.0								1212	
1300	ISL	3.17 D	3.08	34.538 D	27.518	66.6	1.647	0.91	D 39.7	D 12.3								1313	
1400	ISL	2.95 D	2.85	34.555 D	27.552	63.4	1.713	1.04	D 45.0	D 13.8								1415	
1500	ISL	2.78 D	2.67	34.566 D	27.577	61.2	1.776	1.15	D 50.1	D 15.3								1516	
1600	ISL	2.59 D	2.48	34.579 D	27.604	58.5	1.836	1.30	D 56.5	D 17.2								1617	
1800	ISL	2.27 D	2.15	34.604 D	27.653	53.9	1.951	1.60	D 69.6	D 21.0								1820	
1999		2.07	1.93	34.625	27.687	50.8	2.182	1.83	79.4	23.8	162.1	2.94	41.1	0.00	0.00			2023	04
2000	ISL	2.07 D	1.93	34.624 D	27.686	50.9	2.057	1.88	D 81.7	D 24.5								2024	
2200	ISL	1.92 D	1.77	34.638 D	27.711	48.9	2.158	2.14	D 93.1	D 27.8								2227	
2400	ISL	1.82 D	1.65	34.648 D	27.729	47.5	2.257	2.32	D101.0	D 30.1								2431	
2600	ISL	1.74 D	1.55	34.655 D	27.743	46.7	2.353	2.47	D107.3	D 31.9								2635	
2800	ISL	1.68 D	1.48	34.660 D	27.754	46.2	2.447	2.58	D111.9	D 33.2								2839	
3000	ISL	1.64 D	1.42	34.664 D	27.762	46.0	2.542	2.70	D117.5	D 34.8								3043	
3200	ISL	1.59 D	1.35	34.668 D	27.771	45.7	2.635	2.81	D122.0	D 36.1								3247	
3400	ISL	1.56 D	1.30	34.671 D	27.778	45.6	2.729	2.89	D125.6	D 37.1								3452	
3504		1.56	1.29	34.676	27.783	45.5	3.040	2.89	125.4	37.0	169.6	2.67	38.1	0.00	0.00			3558	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 24.9 N	121 59.4 W	13/11/2013	1806	UTC	3896 m	340 26 kn	340 06 05	0	1020.0 mb	17.4 C	16.8 C	21 m	0/8		521

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.60	16.60	33.151	24.190	371.9	0.000	5.63	245.3	101.0	2.1	0.32	0.1	0.00	0.00	0.17	0.03	0	
2	A	16.60	16.60	33.151	24.191	371.9	0.007	5.63	245.3	101.0	2.1	0.32	0.1	0.00	0.00	0.17	0.03	2	15
10	ISL	16.60 D	16.59	33.151 D	24.192	372.1	0.038	5.64	D246.1	D101.3	2.1	0.32	0.1	0.00	0.00	0.16	0.04	10	
13	A	16.59	16.59	33.153	24.195	371.9	0.048	5.63	245.3	100.9	2.1	0.32	0.1	0.00	0.00	0.16	0.04	13	14
18	A	16.59	16.59	33.154	24.195	372.1	0.067	5.64	245.8	101.1	2.1	0.32	0.1	0.01	0.00	0.16	0.03	18	13
20	ISL	16.59 D	16.59	33.157 D	24.198	371.9	0.075	5.65	D246.2	D101.3	2.1	0.32	0.1	0.01	0.00	0.17	0.03	20	
25		16.60	16.60	33.170	24.205	371.4	0.093	5.65	246.2	101.3	2.1	0.32	0.0	0.01	0.00	0.17	0.03	25	12
30	ISL	16.63 D	16.62	33.194 D	24.218	370.3	0.112	5.63	D245.4	D101.1	2.0	0.31	0.0	0.01	0.00	0.18	0.03	30	
33	A	16.55	16.54	33.202	24.244	368.0	0.123	5.63	245.4	100.9	2.0	0.31	0.0	0.01	0.00	0.19	0.03	33	11
41		16.15	16.14	33.163	24.306	362.4	0.152	5.70	248.6	101.4	2.1	0.33	0.1	0.01	0.02	0.23	0.08	41	10
49		15.27	15.27	33.155	24.494	344.6	0.180	5.84	254.6	102.1	2.2	0.34	0.3	0.02	0.02	0.26	0.09	49	09
50	ISL	15.01 D	15.01	33.115 D	24.520	342.1	0.185	5.94	D259.1	D103.3	2.2	0.34	0.3	0.02	0.02	0.26	0.10	50	
58	A	13.91	13.90	33.102	24.742	321.1	0.210	6.16	268.5	104.7	2.6	0.34	0.0	0.01	0.00	0.29	0.15	58	08
72	A	12.79	12.78	33.114	24.978	298.9	0.253	5.96	259.5	98.9	2.9	0.39	0.1	0.05	0.00	0.29	0.22	73	07
75	ISL	12.62 D	12.61	33.143 D	25.032	293.8	0.264	5.87	D255.7	D 97.1	3.1	0.42	0.6	0.08	0.00	0.28	0.21	76	
86		11.82	11.81	33.142	25.185	279.5	0.294	5.66	246.6	92.1	4.0	0.55	2.5	0.20	0.00	0.21	0.18	87	06
100		11.17	11.16	33.148	25.308	268.0	0.332	5.45	237.2	87.3	6.3	0.75	6.4	0.03	0.00	0.13	0.13	101	05
120		10.33	10.31	33.393	25.647	236.1	0.383	4.78	208.0	75.4	12.3	1.22	14.2	0.02	0.00	0.03	0.05	121	04
125	ISL	10.08 D	10.06	33.506 D	25.778	223.7	0.396	4.47	D194.4	D 70.1	13.9	1.31	15.7	0.02	0.00	0.03	0.05	126	
141		9.66	9.64	33.577	25.903	212.1	0.429	3.97	173.0	61.8	19.0	1.59	20.4	0.01	0.00	0.01	0.03	142	03
150	ISL	9.28 D	9.26	33.667 D	26.035	199.7	0.450	3.80	D165.5	D 58.7	20.9	1.64	21.4	0.01	0.00	0.01	0.03	151	
170		8.98	8.96	33.771	26.165	187.7	0.487	3.50	152.2	53.7	25.0	1.75	23.7	0.01	0.00	0.01	0.03	171	02
200		8.54	8.52	33.923	26.353	170.3	0.541	3.39	147.5	51.6	29.1	1.82	25.0	0.01	0.00	0.00	0.03	202	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 5.0 N	122 40.0 W	13/11/2013	1116	UTC	3998 m	350 20 kn			1020.3 mb	17.2 C	16.7 C				020

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.09		18.09		33.431		24.050	385.2	0.000	5.43		236.9		100.5	1.6	0.32	0.6	0.01	0.00	0.16	0.03	0	
2		18.09		18.09		33.431		24.051	385.3	0.008	5.43		236.9		100.5	1.6	0.32	0.6	0.01	0.00	0.16	0.03	2	20
10		18.10		18.10		33.441		24.056	385.1	0.039	5.44		237.1		100.6	1.6	0.30	0.0	0.00	0.00	0.15	0.03	10	19
20	ISL	18.10	D	18.10	D	33.426	D	24.045	386.5	0.078	5.42	D	236.6	D	100.4	1.6	0.30	0.1	0.01	0.00	0.15	0.04	20	
21		18.10		18.10		33.439		24.055	385.6	0.081	5.43		236.9		100.5	1.6	0.30	0.1	0.01	0.00	0.15	0.04	21	18
30		18.10		18.09		33.438		24.056	385.9	0.116	5.44		237.1		100.6	1.6	0.31	0.6	0.00	0.00	0.16	0.03	30	17
40		18.11		18.10		33.463		24.073	384.7	0.154	5.46		237.9		101.0	1.5	0.31	0.2	0.01	0.00	0.18	0.04	40	16
50		15.41		15.41		33.362		24.623	332.4	0.190	5.86		255.6		102.9	1.8	0.39	0.6	0.05	0.12	0.29	0.08	50	15
60		13.58		13.58		33.200		24.886	307.5	0.222	5.84		254.5		98.7	2.6	0.48	1.2	0.19	0.41	0.27	0.07	60	14
71		12.33		12.32		33.089		25.047	292.3	0.255	5.74		249.9		94.3	3.9	0.58	2.9	0.31	0.00	0.18	0.07	72	13
75	ISL	12.14	D	12.13		33.091	D	25.085	288.8	0.269	5.78	D	251.7	D	94.6	4.4	0.64	4.1	0.24	0.00	0.17	0.08	76	
85		11.68		11.67		33.180		25.240	274.2	0.295	5.44		236.9		88.2	5.9	0.79	7.1	0.06	0.00	0.16	0.10	86	12
100	ISL	10.98	D	10.96	D	33.230	D	25.406	258.6	0.338	5.24	D	228.1	D	83.7	8.0	0.90	9.2	0.03	0.00	0.11	0.07	101	
101		10.87		10.86		33.225		25.421	257.2	0.337	5.23		227.6		83.3	8.2	0.91	9.3	0.03	0.00	0.10	0.06	102	11
121		9.96		9.94		33.369		25.691	231.8	0.386	4.79		208.4		74.9	14.2	1.27	15.3	0.02	0.00	0.02	0.04	122	10
125	ISL	9.92	D	9.91	D	33.441	D	25.753	226.1	0.399	4.53	D	197.4	D	70.9	15.3	1.33	16.3	0.02	0.00	0.02	0.04	126	
141		9.48		9.46		33.596		25.948	207.8	0.430	4.00		174.2		62.0	19.9	1.57	20.2	0.01	0.00	0.01	0.03	142	09
150	ISL	9.30	D	9.28	D	33.642	D	26.013	201.8	0.453	3.88	D	168.8	D	59.9	22.0	1.66	21.6	0.01	0.00	0.01	0.03	151	
171		8.94		8.92		33.813		26.205	183.9	0.489	3.18		138.3		48.7	27.1	1.87	24.9	0.01	0.00	0.00	0.03	172	08
199		8.49		8.47		33.956		26.387	167.0	0.538	2.65		115.2		40.2	33.4	2.06	27.8	0.01	0.00	0.00	0.02	201	07
200	ISL	8.50	D	8.47	D	33.951	D	26.382	167.5	0.545	2.61	D	113.6	D	39.7	33.5	2.06	27.9	0.01	0.00	0.00	0.02	202	
230		8.13		8.11		34.006		26.481	158.6	0.589	2.39		103.9		36.0	37.7	2.16	29.4	0.01	0.00			232	06
250	ISL	7.82	D	7.79	D	34.028	D	26.545	152.7	0.626	2.00		87.0		29.9	41.7	2.31	30.9	0.01	0.00			252	
269		7.78		7.75		34.088		26.598	148.0	0.648	1.63		71.0		24.4	45.5	2.45	32.4	0.01	0.00			271	05
300	ISL	7.40	D	7.37	D	34.082	D	26.649	143.6	0.700	1.39		60.4		20.6	50.4	2.57	33.9	0.01	0.00			302	
321		7.23		7.20		34.118		26.700	139.0	0.722	1.22		53.2		18.1	53.7	2.65	34.9	0.01	0.00			324	04
378		6.71		6.68		34.164		26.809	129.2	0.799	0.78		33.9		11.4	63.0	2.86	37.4	0.01	0.00			381	03
400	ISL	6.62	D	6.58	D	34.200	D	26.850	125.6	0.836	0.64	D	27.9	D	9.4	65.5	2.92	37.8	0.01	0.00			403	
440		6.48		6.44		34.255		26.913	120.2	0.876	0.43		18.8		6.3	69.9	3.02	38.5	0.01	0.00			444	02
500	ISL	6.12	D	6.08	D	34.278	D	26.978	114.6	0.957	0.36	D	15.6	D	5.2	76.2	3.08	40.0	0.01	0.00			504	
516		6.03		5.98		34.286		26.996	113.0	0.965	0.30		12.8		4.2	77.9	3.10	40.4	0.01	0.01			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 45.1 N	123 20.0 W	13/11/2013	0501	UTC	4016 m	350 15 kn			1022.8 mb	18.3 C	16.9 C				019

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.70		17.70		33.307		24.050	385.3	0.000	5.49		239.6		100.8	2.0	0.30	0.0	0.01	0.00	0.12	0.02	0	
2		17.70		17.70		33.307		24.050	385.4	0.008	5.49		239.6		100.8	2.0	0.30	0.0	0.01	0.00	0.12	0.02	2	20
10		17.69		17.69		33.309		24.055	385.2	0.039	5.49		239.6		100.8	1.9	0.31	0.0	0.01	0.00	0.12	0.01	10	19
20	ISL	17.56	D	17.56	D	33.309	D	24.086	382.7	0.077	5.51	D	240.4	D	100.9	1.9	0.30	0.0	0.01	0.00	0.14	0.03	20	
25		17.52		17.51		33.323		24.108	380.7	0.096	5.52		240.6		100.9	1.8	0.30	0.0	0.01	0.00	0.16	0.03	25	18
30	ISL	17.46	D	17.45	D	33.343	D	24.138	378.0	0.116	5.53	D	241.3	D	101.1	1.8	0.30	0.0	0.01	0.00	0.17	0.03	30	
40		17.30		17.30		33.326		24.162	376.1	0.153	5.53		241.1		100.7	1.8	0.30	0.0	0.01	0.00	0.21	0.03	40	17
50		16.84		16.83		33.313		24.262	366.9	0.190	5.56		242.5		100.4	1.9	0.31	0.0	0.01	0.00	0.25	0.04	50	16
62		14.66		14.65		33.206		24.667	328.5	0.232	5.95		259.1		102.6	2.5	0.37	0.3	0.04	0.14	0.21	0.06	62	15
75		12.90		12.89		33.187		25.012	295.8	0.272	5.78		251.8		96.2	3.2	0.48	1.3	0.23	0.22	0.19	0.07	76	14
87		12.07		12.06		33.177		25.166	281.4	0.307	5.58		242.9		91.2	4.6	0.65	4.6	0.20	0.00	0.16	0.09	88	13
100		11.19		11.18		33.208		25.352	263.9	0.342	5.31		231.4		85.3	7.1	0.87	8.5	0.03	0.00	0.10	0.09	101	12
112		10.93		10.91		33.256		25.436	256.1	0.374	5.14		224.0		82.1	8.8	0.97	10.3	0.02	0.00	0.07	0.08	113	11
125		10.41		10.40		33.371		25.616	239.2	0.406	4.81		209.3		75.9	11.8	1.12	13.0	0.02	0.00	0.04	0.05	126	10
141		10.00		9.98		33.504		25.790	222.9	0.443	4.37		190.0		68.4	15.6	1.34	16.6	0.02	0.00	0.02	0.03	142	09
150	ISL	9.86	D	9.84	D	33.585	D	25.877	214.8	0.465	3.99	D	173.9	D	62.4	18.4	1.47	18.7	0.02	0.00	0.01	0.03	151	
170		9.28		9.26		33.752		26.103	193.6	0.503	3.28		142.9		50.7	24.5	1.77	23.4	0.01	0.00	0.00	0.03	171	08
200		8.74		8.72		33.912		26.314	174.1	0.559	2.78		121.1		42.5	30.8	1.97	26.6	0.01	0.00	0.00	0.03	202	07
230		8.41		8.39		33.975		26.415	165.0	0.609	2.56		111.3		38.8	34.6	2.08	28.0	0.01	0.00			232	06
250	ISL	8.17	D	8.14	D	33.995	D	26.468	160.3	0.646	2.56	D	111.5	D	38.7	37.8	2.15	29.1	0.01	0.00			252	
270		7.82		7.79		34.016		26.535	154.0	0.673	2.32		101.1		34.8	41.0	2.21	30.1	0.01	0.00			272	05
300	ISL	7.43	D	7.40	D	34.050	D	26.619	146.4	0.723	1.88	D	81.6	D	27.8	46.6	2.38	32.3	0.01	0.00			302	
320		7.23		7.19		34.058		26.654	143.3	0.748	1.65		71.7		24.3	50.3	2.49	33.7	0.01	0.00			323	04
380		6.53		6.50		34.098		26.781	131.8	0.830	1.14		49.4		16.5	61.9	2.74	36.9	0.01	0.00			383	03
400	ISL	6.33	D	6.30	D	34.109	D	26.815	128.6	0.862	1.06	D	45.9	D	15.3	65.2	2.80	37.6	0.01	0.00			403	
440		6.00		5.96		34.149		26.890	121.8	0.906	0.77		33.3		11.0	72.0	2.93	39.0	0.01	0.00			444	02
500	ISL	5.68	D	5.63	D	34.221	D	26.988	113.1	0.984	0.48	D	20.8	D	6.8	80.0	3.06	40.4	0.01	0.00			504	
515		5.63		5.58		34.237		27.006	111.5	0.993	0.39		16.7		5.5	82.0	3.09	40.7	0.01				519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 25.1 N	124 0.1 W	12/11/2013	2252 UTC	4246 m	010 08 kn	350 03 07	1	1021.8 mb	19.3 C	17.1 C	31 m	3/8	CS	018

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.72	18.72	33.439	23.901	399.5	0.000	5.39	235.1	100.9	2.0	0.28	0.1	0.00	0.00	0.11	0.01	0	
2		18.72	18.72	33.439	23.901	399.6	0.008	5.39	235.1	100.9	2.0	0.28	0.1	0.00	0.00	0.11	0.01	2	20
10		18.52	18.52	33.427	23.942	396.0	0.040	5.39	235.2	100.6	2.0	0.27	0.0	0.00	0.00	0.11	0.02	10	19
20	ISL	18.49 D	18.49	33.426 D	23.948	395.8	0.080	5.40 D	235.4 D	100.6	2.0	0.28	0.0	0.00	0.00	0.12	0.02	20	
25		18.47	18.47	33.426	23.953	395.5	0.099	5.40	235.5	100.6	2.0	0.28	0.0	0.00	0.00	0.13	0.02	25	18
30	ISL	18.47 D	18.46	33.425 D	23.956	395.5	0.120	5.39 D	235.1 D	100.5	1.9	0.28	0.0	0.00	0.00	0.16	0.03	30	
40		17.83	17.82	33.360	24.063	385.6	0.158	5.53	241.1	101.7	1.7	0.29	0.0	0.00	0.00	0.21	0.06	40	17
50		16.17	16.17	33.281	24.391	354.6	0.195	5.80	252.8	103.2	1.8	0.33	0.0	0.01	0.00	0.32	0.12	50	16
62		15.13	15.12	33.402	24.716	323.9	0.236	5.89	256.7	102.8	2.6	0.29	0.0	0.01	0.00	0.26	0.09	62	15
75		13.82	13.81	33.232	24.864	310.0	0.277	5.86	255.1	99.4	2.8	0.39	0.5	0.14	0.12	0.26	0.10	76	14
87		13.14	13.13	33.340	25.085	289.3	0.313	5.66	246.6	94.8	3.6	0.44	1.5	0.26	0.00	0.20	0.12	88	13
100		11.55	11.53	33.222	25.297	269.1	0.349	5.35	232.9	86.5	6.4	0.82	7.5	0.01	0.00	0.10	0.08	101	12
113		11.26	11.24	33.327	25.433	256.5	0.384	5.21	227.0	83.9	7.5	0.82	8.0	0.01	0.00	0.08	0.07	114	11
124		10.57	10.55	33.354	25.576	243.0	0.411	4.92	214.2	78.0	11.2	1.08	12.2	0.00	0.00	0.04	0.05	125	10
125	ISL	10.31 D	10.29	33.375 D	25.636	237.2	0.416	4.85 D	211.3 D	76.5	11.6	1.10	12.5	0.00	0.00	0.04	0.05	126	
140		9.68	9.67	33.470	25.815	220.4	0.448	4.39	191.0	68.2	16.7	1.39	17.3	0.00	0.00	0.01	0.03	141	09
150	ISL	9.47 D	9.46	33.593 D	25.946	208.1	0.472	4.18 D	181.9 D	64.8	18.9	1.49	18.9	0.00	0.00	0.01	0.03	151	
170		9.23	9.21	33.736	26.099	194.0	0.510	3.54	153.9	54.5	23.3	1.68	22.0	0.00	0.00	0.00	0.02	171	08
200		8.80	8.78	33.880	26.280	177.4	0.566	3.04	132.3	46.5	28.8	1.90	25.1	0.00	0.00	0.00	0.02	202	07
230		8.39	8.36	33.956	26.404	166.1	0.617	2.87	125.1	43.6	33.0	1.98	26.6	0.00	0.00			232	06
250	ISL	7.93 D	7.90	33.999 D	26.506	156.5	0.653	2.55 D	110.9 D	38.3	38.2	2.13	28.6	0.00	0.00			252	
270		7.58	7.55	34.018	26.572	150.4	0.680	2.22	96.5	33.0	43.4	2.27	30.6	0.00	0.00			272	05
300	ISL	7.28 D	7.26	34.032 D	26.625	145.8	0.729	1.96 D	85.4 D	29.0	48.7	2.41	32.5	0.00	0.00			302	
320		7.02	6.99	34.054	26.679	140.8	0.753	1.64	71.2	24.0	52.3	2.51	33.8	0.00	0.00			323	04
380		6.37	6.33	34.112	26.813	128.5	0.834	0.99	43.1	14.4	64.4	2.80	37.2	0.00	0.00			383	03
400	ISL	6.28 D	6.24	34.124 D	26.834	126.7	0.865	0.93 D	40.5 D	13.5	67.6	2.86	37.8	0.00	0.00			403	
442		5.88	5.84	34.163	26.916	119.3	0.911	0.65	28.2	9.3	74.2	2.98	39.1	0.00	0.00			446	02
500	ISL	5.57 D	5.53	34.223 D	27.002	111.6	0.984	0.45 D	19.4 D	6.3	81.8	3.10	40.3	0.00	0.00			504	
514		5.53	5.48	34.245	27.025	109.6	0.993	0.35	15.1	4.9	83.6	3.13	40.6	0.00	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 91.7 26.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 14.7 N	117 27.9 W	09/11/2013	2331 UTC	21 m	260 01 kn	290 01 06	0	1014.9 mb	17.8 C	15.3 C		3/8	CS	003

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.81	16.81	33.539	24.438	348.3	0.000	6.03	263.3	108.9	3.0	0.34	0.0	0.02	0.00	1.51	0.46	0	
2		16.81	16.81	33.539	24.438	348.4	0.007	6.03	263.3	108.9	3.0	0.34	0.0	0.02	0.00	1.51	0.46	2	04
5		16.55	16.55	33.529	24.491	343.5	0.017	6.10	266.2	109.6	2.9	0.33	0.0	0.02	0.00	1.51	0.55	5	05
10		16.08	16.08	33.507	24.583	334.8	0.034	5.88	256.7	104.7	3.5	0.38	0.2	0.08	0.00	2.10	0.91	10	02
15		15.50	15.50	33.490	24.700	323.8	0.051	5.69	248.2	100.0	4.0	0.45	0.7	0.17	0.00	1.87	0.85	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 57.4 N	117 18.3 W	09/11/2013	1918 UTC	64 m	300 06 kn	280 01 07	0	1015.2 mb	17.8 C	15.0 C	23 m	0/8		001

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.84	17.84	33.612	24.249	366.3	0.000	5.64	245.7	103.9	1.7	0.34	0.1	0.01	0.05	0.19	0.05	0	
1	A	17.84	17.84	33.612	24.249	366.3	0.004	5.64	245.7	103.9	1.7	0.34	0.1	0.01	0.05	0.19	0.05	1	09
8		17.51	17.51	33.607	24.326	359.3	0.029	5.68	247.8	104.1	1.7	0.33	0.0	0.01	0.01	0.23	0.06	8	08
10	ISL	17.39 D	17.39	33.598 D	24.348	357.2	0.037	5.82 D	253.7 D	106.3	1.9	0.34	0.0	0.01	0.01	0.27	0.09	10	
14	A	16.62	16.62	33.516	24.466	346.2	0.050	5.94	259.0	106.9	2.3	0.37	0.1	0.02	0.00	0.36	0.15	14	07
19	A	15.29	15.29	33.440	24.707	323.3	0.067	5.99	260.9	104.9	3.9	0.46	0.4	0.07	0.03	0.89	0.34	19	06
20	ISL	15.20 D	15.20	33.438 D	24.725	321.6	0.071	5.94	258.8	103.8	3.9	0.48	0.7	0.10	0.04	0.89	0.34	20	
28		13.69	13.69	33.385	25.006	295.1	0.095	5.55	241.7	94.0	4.5	0.63	3.0	0.33	0.11	0.83	0.38	28	05
30	ISL	13.22 D	13.21	33.387 D	25.103	285.9	0.102	5.37	234.0	90.1	5.3	0.70	4.2	0.29	0.08	0.74	0.35	30	
36	A	12.70	12.69	33.407	25.221	274.8	0.118	4.84	210.7	80.3	7.5	0.89	7.7	0.15	0.00	0.47	0.28	36	04
45		12.39	12.39	33.431	25.298	267.7	0.142	4.41	192.1	72.8	10.3	1.06	10.0	0.21	0.01	0.22	0.24	45	03
50	ISL	12.24 D	12.23	33.442 D	25.338	264.0	0.157	4.25	185.1	69.9	11.3	1.13	11.2	0.23	0.06	0.16	0.23	50	
54		12.05	12.05	33.459	25.385	259.6	0.166	4.12	179.4	67.5	12.2	1.19	12.1	0.24	0.10	0.12	0.22	54	02
60	A	12.02	12.01	33.474	25.403	258.1	0.181	4.00	174.1	65.4	12.9	1.23	12.7	0.20	0.24	0.10	0.21	60	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.8 N	117 23.8 W	10/11/2013	0216	UTC	643 m	290 02 kn			1015.9 mb	17.9 C	15.6 C				004

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.89		17.89		33.608		24.234	367.8	0.000	5.69		248.1		105.0		1.7	0.31	0.0	0.01	0.00	0.28	0.05	0	
2		17.89		17.89		33.608		24.234	367.8	0.007	5.69		248.1		105.0		1.7	0.31	0.0	0.01	0.00	0.28	0.05	2	20
10		16.81		16.81		33.548		24.447	347.8	0.036	5.86		255.5		105.9		1.9	0.32	0.0	0.01	0.00	0.29	0.08	10	19
20		15.09		15.08		33.416		24.735	320.7	0.069	6.21		270.7		108.3		2.6	0.37	0.0	0.01	0.00	0.42	0.18	20	18
30		13.96		13.95		33.386		24.952	300.3	0.101	5.85		254.9		99.7		3.9	0.50	1.2	0.13	0.00	1.20	0.40	30	17
40		12.77		12.77		33.409		25.208	276.1	0.129	4.89		212.8		81.2		7.4	0.86	7.3	0.12	0.00	0.60	0.34	40	16
50		12.43		12.43		33.434		25.294	268.3	0.157	4.45		194.0		73.5		10.0	1.03	9.8	0.05	0.00	0.33	0.27	50	15
60		12.11		12.10		33.438		25.359	262.3	0.183	4.63		201.8		76.0		9.3	1.03	10.4	0.04	0.00	0.18	0.21	60	14
70		11.81		11.80		33.478		25.446	254.2	0.209	4.20		182.7		68.4		11.5	1.18	12.5	0.03	0.00	0.11	0.17	71	13
75	ISL	11.75	D	11.74		33.491	D	25.468	252.2	0.223	4.08	D	177.9	D	66.5		12.5	1.24	13.2	0.03	0.00	0.09	0.16	76	
85		11.59		11.58		33.515		25.517	247.9	0.247	3.77		164.1		61.2		14.6	1.35	14.7	0.03	0.00	0.06	0.14	86	12
100		11.31		11.29		33.613		25.645	236.1	0.283	3.16		137.4		50.9		18.7	1.58	17.4	0.02	0.00	0.03	0.11	101	11
120		10.96		10.95		33.713		25.786	223.1	0.329	2.61		113.8		41.9		22.7	1.81	20.3	0.02	0.00	0.01	0.09	121	10
125	ISL	10.86	D	10.85		33.736	D	25.822	219.8	0.343	2.50		109.0		40.0		23.7	1.86	20.9	0.02	0.00	0.01	0.08	126	
140		10.66		10.64		33.804		25.912	211.6	0.372	2.17		94.5		34.6		26.7	2.00	22.5	0.02	0.00	0.01	0.07	141	09
150	ISL	10.51	D	10.49		33.846	D	25.970	206.3	0.396	2.10		91.3		33.3		27.7	2.04	23.2	0.02	0.00	0.01	0.06	151	
170		10.21		10.19		33.950		26.104	194.0	0.433	1.95		84.8		30.8		29.6	2.13	24.7	0.01	0.00	0.00	0.06	171	08
200		9.58		9.56		34.038		26.279	177.8	0.489	2.05		89.0		31.9		31.6	2.16	26.4	0.01	0.00	0.00	0.04	202	07
230		9.13		9.10		34.065		26.374	169.3	0.541	2.00		86.9		30.8		34.1	2.20	27.5	0.01	0.00			232	06
250	ISL	8.91	D	8.88		34.117	D	26.450	162.4	0.579	1.84		80.0		28.2		37.5	2.28	28.9	0.01	0.00			252	
270		8.40		8.37		34.111		26.525	155.4	0.606	1.68		73.1		25.5		41.0	2.36	30.2	0.01	0.00			272	05
300	ISL	8.49	D	8.46		34.233	D	26.607	148.4	0.657	1.22		52.9		18.5		45.0	2.53	31.3	0.01	0.00			302	
320		8.31		8.28		34.241		26.641	145.4	0.682	0.91		39.5		13.8		47.6	2.64	32.1	0.01	0.00			323	04
380		7.68		7.64		34.275	D	26.763	134.5	0.771	0.64	D	27.7	D	9.5									383	03
400	ISL	7.35	D	7.31		34.276	D	26.811	130.0	0.798	0.57	D	24.9	D	8.5		58.5	2.85	34.9	0.01	0.00			403	
439		7.04		6.99		34.281		26.859	125.9	0.843	0.45		19.4		6.6		63.8	2.95	36.3	0.01	0.00			443	02
500	ISL	6.46	D	6.42		34.305	D	26.956	117.2	0.923	0.34	D	14.7	D	4.9		71.5	3.05	37.7	0.02	0.00			504	
515		6.45		6.40		34.306		26.959	117.1	0.934	0.32		13.9		4.6		73.4	3.08	38.0	0.02	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 50.8 N	117 31.9 W	10/11/2013	0526	UTC	848 m	060 03 kn			1017.0 mb	17.3 C	15.9 C				005

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.92		17.92		33.608		24.228	368.3	0.000	5.67		247.4		104.7		1.5	0.31	0.1	0.01	0.10	0.21	0.04	0	
2		17.92		17.92		33.608		24.228	368.4	0.007	5.67		247.4		104.7		1.5	0.31	0.1	0.01	0.10	0.21	0.04	2	20
10		17.57		17.57		33.579		24.289	362.8	0.037	5.74		250.1		105.2		1.8	0.31	0.0	0.01	0.01	0.23	0.05	10	19
20		16.93		16.92		33.539		24.413	351.5	0.072	5.80		252.8		105.0		2.5	0.32	0.0	0.01	0.00	0.30	0.11	20	18
30		14.98		14.98		33.413		24.756	319.0	0.106	6.05		263.7		105.3		3.1	0.41	0.1	0.03	0.00	0.68	0.22	30	17
40		13.18		13.18		33.389		25.112	285.3	0.136	5.21		226.8		87.3		5.5	0.73	5.4	0.26	0.01	0.56	0.37	40	16
50		12.33		12.33		33.420		25.302	267.4	0.164	4.72		205.6		77.8		8.0	0.95	9.1	0.06	0.00	0.24	0.21	50	15
60		11.92		11.91		33.507		25.448	253.8	0.190	3.96		172.5		64.7		13.6	1.27	13.2	0.05	0.00	0.10	0.15	60	14
70		11.68		11.67		33.540		25.520	247.2	0.215	3.60		156.6		58.5		15.6	1.40	14.9	0.04	0.00	0.06	0.13	71	13
75	ISL	11.58	D	11.57		33.551	D	25.546	244.8	0.229	3.53		153.6		57.2		16.0	1.43	15.4	0.04	0.00	0.06	0.13	76	
85		11.46		11.45		33.581		25.593	240.7	0.251	3.39		147.5		54.8		17.0	1.50	16.4	0.03	0.00	0.04	0.11	86	12
100		11.28		11.27		33.630	D	25.663	234.4	0.289	3.12	D	135.9	D	50.3									101	11
120		10.61		10.60		33.747		25.874	214.6	0.335	2.52		109.7		40.1		24.3	1.88	21.7	0.02	0.00	0.01	0.06	121	10
125	ISL	10.53	D	10.51		33.750	D	25.891	213.1	0.345	2.46		107.1		39.1		24.9	1.91	22.1	0.02	0.00	0.01	0.05	126	
140		10.40		10.38		33.829	D	25.976	205.4	0.377	2.28	D	99.1	D	36.1									141	09
150	ISL	10.38	D	10.36		33.908	D	26.042	199.4	0.397	2.17		94.2		34.3		27.8	2.04	24.0	0.02	0.00	0.01	0.04	151	
170		10.04		10.02		33.997		26.169	187.7	0.436	1.93		84.0		30.4		30.2	2.14	25.5	0.02	0.00	0.00	0.04	171	08
200		9.72		9.70		34.139		26.334	172.7	0.490	1.52		66.1		23.7		34.4	2.32	27.6	0.02	0.00	0.00	0.06	202	07
230		9.42		9.39		34.191		26.426	164.5	0.541	1.45		63.1		22.5		36.0	2.37	27.9	0.02	0.00			232	06
250	ISL	9.01	D	8.98		34.195		26.496	158.1	0.573	1.34		58.4		20.7		39.1	2.43	29.2	0.02	0.00			252	
270		8.77		8.74		34.199		26.537	154.6	0.605	1.24		53.7		18.9		42.2	2.49	30.4	0.02	0.00			272	05
300	ISL	8.42	D	8.39		34.188	D	26.582	150.6	0.652	1.19		51.9		18.1		45.1	2.54	31.5	0.02	0.00			302	
320		8.16		8.13		34.189		26.623	147.0	0.680	1.17		50.7		17.6		47.0	2.58	32.2	0.02	0.00			323	04
380		7.63		7.60		34.242		26.744	136.3	0.765	0.75		32.6		11.2		54.7	2.77	34.3	0.01	0.00			383	03
400	ISL	7.46	D	7.42		34.251	D	26.776	133.5	0.795	0.71	D	30.7	D	10.5		58.4	2.83	35.3	0.01	0.00			403	
439		6.72		6.68		34.240		26.869	124.6	0.843	0.54		23.5		7.9		65.7	2.94	37.3	0.01	0.00			443	02
500	ISL	6.53	D	6.49		34.303	D	26.946	118.2	0.921	0.35	D	15.1	D	5.1		72.2	3.05	38.4	0.01	0.00			504	
514		6.38		6.33		34.313		26.973	115.6	0.933	0.31		13.4		4.5		73.7	3.07	38.7	0.01	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 41.1 N	117 52.5 W	10/11/2013	0921	UTC	623 m	340 03 kn			1015.9 mb	17.2 C	16.0 C				006

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.33	18.33	33.684	24.184	372.5	0.000	5.50	239.7	102.3	1.3	0.33	0.9	0.01	0.00	0.18	0.03	0	
2	18.33	18.33	33.684	24.184	372.6	0.008	5.50	239.7	102.3	1.3	0.33	0.9	0.01	0.00	0.18	0.03	2	20
10	18.32	18.32	33.684	24.188	372.5	0.037	5.47	238.4	101.8	1.2	0.35	1.7	0.01	0.00	0.20	0.05	10	19
20	18.28	18.27	33.687	24.202	371.6	0.075	5.47	238.6	101.8	1.2	0.33	0.6	0.01	0.00	0.20	0.05	20	18
30	16.39	16.38	33.470	24.485	344.9	0.110	5.93	258.5	106.2	1.7	0.36	0.1	0.01	0.00	0.35	0.13	30	17
40	13.48	13.47	33.335	25.011	294.9	0.142	5.72	249.2	96.5	3.8	0.62	3.0	0.32	0.00	0.87	0.44	40	16
50	12.66	12.65	33.301	25.147	282.2	0.171	5.40	235.4	89.6	4.7	0.76	5.9	0.28	0.00	0.43	0.37	50	15
60	12.14	12.13	33.302	25.248	272.8	0.199	5.23	227.8	85.7	5.8	0.85	7.8	0.12	0.00	0.27	0.23	60	14
70	11.70	11.69	33.342	25.361	262.3	0.226	5.02	218.5	81.5	7.4	0.97	9.8	0.04	0.00	0.19	0.17	71	13
75 ISL	11.64 D	11.63	33.367 D	25.393	259.4	0.241	4.80	209.0	77.9	8.8	1.06	11.2	0.04	0.00	0.16	0.15	76	
85	11.18	11.17	33.458	25.547	245.0	0.264	4.36	189.9	70.1	11.7	1.25	13.9	0.03	0.00	0.10	0.11	86	12
100	10.71	10.70	33.500	25.663	234.2	0.300	4.15	180.7	66.1	13.8	1.36	15.9	0.03	0.00	0.06	0.10	101	11
120	9.87	9.85	33.637	25.916	210.5	0.344	3.57	155.3	55.8	19.7	1.62	20.2	0.03	0.00	0.02	0.05	121	10
125 ISL	9.80 D	9.79	33.663	25.946	207.7	0.355	3.48	151.5	54.4	20.6	1.66	20.7	0.03	0.00	0.02	0.04	126	
150 ISL	9.37 D	9.35	33.790	26.117	191.9	0.404	3.05	132.7	47.2	25.2	1.84	23.4	0.02	0.00	0.01	0.04	151	
170	9.26	9.24	33.892	26.215	183.1	0.441	2.70	117.6	41.8	28.8	1.99	25.5	0.02	0.00	0.01	0.04	171	08
200	8.61	8.59	34.014	26.414	164.5	0.494	2.23	96.8	33.9	35.4	2.18	28.6	0.02	0.00	0.00	0.04	202	07
230	8.17	8.14	34.051	26.510	155.8	0.542	2.00	87.1	30.2	39.5	2.29	30.1	0.01	0.00			232	06
250 ISL	8.00 D	7.97	34.120	26.591	148.5	0.572	1.57	68.1	23.6	43.7	2.45	31.3	0.02	0.00			252	
270	8.04	8.01	34.190	26.640	144.3	0.601	1.13	49.2	17.0	47.9	2.61	32.5	0.02	0.00			272	05
300 ISL	8.06 D	8.03	34.181	26.631	145.8	0.645	1.04	45.1	15.6	51.7	2.68	33.8	0.02	0.00			302	
320	7.39	7.36	34.175	26.723	137.0	0.673	0.97	42.3	14.4	54.3	2.73	34.7	0.02	0.00			323	04
380	7.14	7.11	34.240	26.810	129.6	0.753	0.63	27.5	9.3	60.6	2.88	35.9	0.03	0.00			383	03
400 ISL	7.08 D	7.04	34.259 D	26.835	127.5	0.781	0.55 D	24.1 D	8.2	62.2	2.92	36.2	0.02	0.00			403	
440	6.90	6.86	34.283	26.879	123.9	0.829	0.42	18.4	6.2	65.4	3.00	36.9	0.01	0.00			444	02
500 ISL	6.48 D	6.43	34.313 D	26.961	116.7	0.904	0.33 D	14.5 D	4.8	72.0	3.06	38.2	0.02	0.00			504	
516	6.40	6.35	34.319	26.976	115.4	0.920	0.29	12.4	4.2	73.8	3.08	38.5	0.02	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 30.8 N	118 12.8 W	10/11/2013	1319	UTC	1483 m	290 14 kn			1016.4 mb	16.9 C	15.7 C				007

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.91	17.91	33.673	24.279	363.4	0.000	5.48	239.1	101.3	1.2	0.33	0.5	0.01	0.00	0.19	0.04	0	
2	17.91	17.91	33.673	24.279	363.5	0.007	5.48	239.1	101.3	1.2	0.33	0.5	0.01	0.00	0.19	0.04	2	21
10	17.92	17.91	33.678	24.282	363.5	0.036	5.49	239.2	101.3	1.2	0.32	0.0	0.01	0.00	0.19	0.03	10	19
10	17.92	17.91	33.672	24.278	364.0	0.036											10	20
20	17.91	17.90	33.671	24.280	364.1	0.073	5.48	238.9	101.2	1.2	0.33	0.0	0.00	0.00	0.21	0.03	20	18
30	17.01	17.00	33.569	24.418	351.3	0.109	5.70	248.4	103.3	1.5	0.36	0.0	0.01	0.00	0.55	0.16	30	17
40	14.16	14.15	33.344	24.878	307.7	0.141	5.76	250.9	98.5	3.0	0.52	2.1	0.14	0.02	0.54	0.28	40	16
50	13.08	13.07	33.256	25.029	293.5	0.172	5.60	243.9	93.6	4.2	0.65	4.3	0.25	0.08	0.43	0.27	50	15
60	12.43	12.42	33.316	25.203	277.1	0.200	5.33	232.1	87.9	5.7	0.81	6.9	0.23	0.00	0.33	0.23	60	14
70	11.39	11.38	33.338	25.416	257.1	0.227	5.01	218.0	80.8	8.5	0.99	10.4	0.04	0.00	0.19	0.13	71	13
75 ISL	11.28 D	11.27	33.349 D	25.444	254.5	0.242	4.91	213.7	79.0	9.2	1.04	11.2	0.04	0.00	0.17	0.12	76	
85	11.06	11.05	33.409	25.530	246.5	0.265	4.71	205.2	75.5	10.6	1.14	12.8	0.03	0.00	0.12	0.10	86	12
100	10.37	10.36	33.527	25.744	226.5	0.300	4.11	179.0	65.0	15.5	1.41	17.2	0.03	0.00	0.06	0.07	101	11
121	9.82	9.81	33.683	25.959	206.4	0.346	3.39	147.4	52.9	21.5	1.69	21.4	0.02	0.00	0.02	0.05	122	10
125 ISL	9.81 D	9.79	33.686 D	25.963	206.1	0.357	3.34	145.4	52.2	21.9	1.71	21.7	0.02	0.00	0.02	0.05	126	
140	9.59	9.57	33.746	26.046	198.5	0.384	3.17	137.8	49.2	23.7	1.77	22.9	0.02	0.00	0.01	0.05	141	09
150 ISL	9.39 D	9.37	33.832 D	26.147	189.1	0.407	3.06	133.2	47.4	25.5	1.82	23.8	0.02	0.00	0.01	0.04	151	
170	8.96	8.94	33.898	26.267	178.0	0.441	2.85	124.0	43.8	29.1	1.93	25.6	0.01	0.00	0.00	0.02	171	08
199	9.15	9.12	34.094	26.392	166.9	0.491	2.01	87.3	31.0	34.1	2.19	27.4	0.01	0.00	0.00	0.03	201	07
200 ISL	9.14 D	9.12	34.088 D	26.389	167.2	0.496	2.07 D	89.9 D	31.9	34.3	2.19	27.5	0.01	0.00	0.00	0.03	202	
232	8.38	8.36	34.070	26.494	157.6	0.544	1.99	86.4	30.1	38.9	2.26	29.5	0.01	0.00			234	06
250 ISL	8.34 D	8.32	34.134 D	26.550	152.6	0.576	1.74 D	75.5 D	26.3	41.3	2.37	30.2	0.01	0.00			252	
271	8.36	8.33	34.191	26.593	149.0	0.604	1.31	56.8	19.8	44.2	2.50	31.1	0.01	0.00			273	05
300 ISL	7.63 D	7.60	34.183	26.695	139.4	0.646	1.18	51.2	17.6	48.7	2.59	32.6	0.01	0.00			302	
320	7.62	7.59	34.177	26.692	140.0	0.674	1.09	47.3	16.2	51.8	2.65	33.7	0.01	0.00			323	04
381	7.47	7.44	34.260	26.780	132.8	0.757	0.62	27.0	9.2	58.1	2.84	35.2	0.01	0.00			384	03
400 ISL	7.10 D	7.07	34.244 D	26.819	129.0	0.787	0.64 D	27.7 D	9.4	60.7	2.88	35.9	0.01	0.00			403	
440	6.65	6.61	34.229	26.869	124.5	0.832	0.54	23.4	7.9	66.0	2.95	37.4	0.01	0.00			444	02
500 ISL	6.37 D	6.33	34.269 D	26.939	118.6	0.912	0.43 D	18.7 D	6.2	72.2	3.04	38.7	0.01	0.00			504	
516	6.22	6.17	34.273	26.962	116.5	0.924	0.37	16.0	5.3	73.9	3.06	39.0	0.01	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 20.8 N	118 33.3 W	10/11/2013	1726	UTC	1336 m	070 06 kn	150 02 06	0	1018.2 mb	18.9 C	17.5 C	27 m	0/8		008

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.05		18.05		33.629	24.211	370.0	0.000	5.45	237.7		100.9		1.6	0.29	0.4	0.01	0.00	0.16	0.03	0	
1	A	18.05		18.05		33.629	24.211	370.0	0.004	5.45	237.7		100.9		1.6	0.29	0.4	0.01	0.00	0.16	0.03	1	22
9		18.06		18.05		33.630	24.211	370.3	0.033													9	21
9		18.06		18.05		33.631	24.212	370.2	0.033	5.48	238.8		101.4		1.6	0.29	0.0	0.02	0.00	0.16	0.03	9	20
10	ISL	17.96	D	17.96		33.618	D 24.226	368.9	0.037	5.46	D237.9		D100.8		1.6	0.29	0.0	0.02	0.00	0.17	0.03	10	
17	A	17.79		17.78		33.591	24.248	367.1	0.063	5.47	238.6		100.8		1.5	0.28	0.1	0.02	0.00	0.18	0.05	17	19
20	ISL	17.75	D	17.74		33.590	D 24.257	366.3	0.074	5.50	D239.8		D101.2		1.5	0.28	0.0	0.01	0.00	0.19	0.04	20	
22	A	17.70		17.70		33.594	24.271	365.1	0.081	5.51	240.1		101.2		1.5	0.28	0.0	0.01	0.00	0.20	0.04	22	18
30	ISL	16.48	D	16.48		33.467	D 24.462	347.1	0.110	5.75	D250.8		D103.2		1.8	0.32	0.1	0.03	0.00	0.40	0.17	30	
32		15.91		15.90		33.441	24.572	336.6	0.116	5.76	251.1		102.2		1.9	0.33	0.1	0.04	0.00	0.45	0.20	32	17
43	A	14.55		14.55		33.355	24.803	314.9	0.152	5.85	254.8		100.8		3.0	0.40	0.7	0.10	0.00	0.49	0.34	43	16
50	ISL	13.05	D	13.05		33.205	D 24.995	296.7	0.175	5.80	D252.8		D 96.9		4.0	0.55	3.1	0.18	0.00	0.39	0.28	50	
58		12.23		12.22		33.196	25.148	282.3	0.196	5.50	239.4		90.2		5.2	0.73	5.9	0.28	0.00	0.28	0.22	58	15
74	A	11.53		11.52		33.382	25.424	256.4	0.239	5.03	219.1		81.4		7.9	0.84	8.5	0.04	0.00	0.16	0.14	75	14
75	ISL	11.46	D	11.45		33.386	D 25.439	254.9	0.244	5.03	D219.2		D 81.4		8.2	0.86	8.9	0.04	0.00	0.15	0.14	76	
84		10.86		10.85		33.434	25.585	241.2	0.264	4.72	205.5		75.3		11.0	1.06	12.1	0.03	0.00	0.08	0.08	85	13
93	A	10.64		10.62		33.463	25.647	235.5	0.286	4.56	198.7		72.5		12.5	1.17	13.8	0.02	0.00	0.06	0.06	94	12
100	ISL	10.51	D	10.50		33.472	D 25.676	232.9	0.305	4.53	D197.1		D 71.7		13.5	1.23	14.8	0.02	0.00	0.05	0.05	101	
106		10.37		10.35		33.495	25.719	228.9	0.316	4.36	189.6		68.8		14.3	1.29	15.7	0.02	0.00	0.04	0.05	107	11
120		9.86		9.85		33.608	25.893	212.6	0.347	4.00	174.1		62.5		18.5	1.50	19.2	0.02	0.00	0.02	0.03	121	10
125	ISL	9.77	D	9.76		33.659	D 25.948	207.5	0.361	3.74	162.8		58.4		20.0	1.58	20.1	0.02	0.00	0.02	0.03	126	
140		9.75		9.74		33.816	26.075	195.9	0.388	2.96	128.8		46.2		24.5	1.80	22.9	0.02	0.00	0.01	0.03	141	09
150	ISL	9.44	D	9.43		33.924	D 26.210	183.1	0.410	2.64	114.9		41.0		27.2	1.92	24.2	0.02	0.00	0.00	0.03	151	
170		9.47		9.45		34.080	26.328	172.4	0.442	2.00	87.0		31.1		32.5	2.15	26.7	0.02	0.00	0.00	0.03	171	08
200		9.32		9.30		34.181	26.433	163.2	0.493	1.58	68.7		24.5		36.2	2.31	28.1	0.02	0.00	0.00	0.03	202	07
230		9.23		9.20		34.298	26.541	153.6	0.540	1.03	45.0		16.0		41.0	2.52	29.6	0.02	0.00			232	06
250	ISL	8.96	D	8.93		34.278	D 26.568	151.3	0.575	0.97	D 42.2		D 14.9		42.9	2.56	30.3	0.02	0.00			252	
270		8.75		8.73		34.291	26.611	147.5	0.600	0.91	39.6		13.9		44.9	2.60	30.9	0.02	0.00			272	05
300	ISL	8.31	D	8.28		34.275	D 26.668	142.5	0.649	0.80	34.6		12.1		49.4	2.68	32.3	0.01	0.00			302	
320		7.94		7.90		34.278	26.726	137.1	0.672	0.72	31.3		10.8		52.4	2.73	33.3	0.01	0.00			323	04
380		7.46		7.42		34.278	26.797	131.1	0.752	0.59	25.5		8.7		58.1	2.82	34.9	0.01	0.00			383	03
400	ISL	7.24	D	7.20		34.282	D 26.831	128.1	0.785	0.56	D 24.1		D 8.2		60.9	2.86	35.6	0.01	0.00			403	
440		6.80		6.76		34.301	26.907	121.2	0.828	0.39	16.8		5.7		66.5	2.95	36.9	0.02	0.00			444	02
500	ISL	6.22	D	6.18		34.313	D 26.993	113.3	0.912	0.31	D 13.6		D 4.5		74.9	3.05	38.8	0.01	0.00			504	
514		6.16		6.11		34.319	27.006	112.2	0.914	0.26	11.3		3.7		76.8	3.07	39.3	0.01	0.00			518	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 11.0 N	118 53.7 W	10/11/2013	2126	UTC	1469 m	340 01 kn	330 01 08	1	1017.1 mb	19.2 C	17.2 C	32 m	4/8	SC	009

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.99		17.99		33.639	24.233	367.8	0.000	5.44	237.3		100.6		1.6	0.29	0.1	0.01	0.02	0.15	0.02	0	
2		17.99		17.99		33.639	24.233	367.9	0.007	5.44	237.3		100.6		1.6	0.29	0.1	0.01	0.02	0.15	0.02	2	20
10		17.89		17.89		33.640	24.260	365.6	0.037	5.47	238.4		100.9		1.6	0.29	0.0	0.01	0.00	0.19	0.02	10	19
20		17.58		17.57		33.607	24.311	361.2	0.073	5.53	241.0		101.4		1.4	0.29	0.0	0.01	0.01	0.19	0.03	20	18
30		17.48		17.47		33.591	24.323	360.4	0.109	5.54	241.3		101.3		1.4	0.30	0.0	0.01	0.00	0.23	0.04	30	17
40		16.88		16.87		33.570	24.450	348.6	0.145	5.61	244.4		101.4		1.4	0.30	0.0	0.01	0.00	0.43	0.10	40	16
50		15.19		15.18		33.369	24.678	327.2	0.178	5.75	250.4		100.4		2.2	0.44	1.2	0.11	0.66	0.48	0.16	50	15
60		13.74		13.73		33.246	24.890	307.1	0.210	5.74	250.1		97.3		3.2	0.48	1.3	0.25	0.25	0.45	0.23	60	14
70		12.46		12.45		33.221	25.124	284.9	0.240	5.57	242.8		92.0		4.1	0.62	3.9	0.16	0.00	0.42	0.21	71	13
75	ISL	12.24	D	12.23		33.240	D 25.182	279.5	0.256	5.44	D236.9		D 89.3		5.6	0.75	6.2	0.12	0.00	0.34	0.18	76	
85		11.11		11.10		33.267	25.411	257.9	0.281	5.09	221.7		81.6		8.7	1.02	10.7	0.04	0.00	0.19	0.11	86	12
100		10.67		10.66		33.423	25.611	239.2	0.318	4.49	195.3		71.3		13.0	1.30	15.1	0.02	0.00	0.08	0.07	101	11
119		10.05		10.04		33.564	25.827	219.0	0.361	3.92	170.4		61.5		17.4	1.54	18.8	0.02	0.00	0.04	0.05	120	10
125	ISL	9.77	D	9.76		33.624	D 25.920	210.1	0.374	3.53	D153.4		D 55.0		19.4	1.63	20.1	0.02	0.00	0.03	0.05	126	
140		9.40		9.38		33.774	26.100	193.3	0.405	3.18	138.3		49.2		24.6	1.84	23.5	0.02	0.00	0.01	0.04	141	09
150	ISL	9.21	D	9.19		33.822	D 26.168	187.1	0.426	3.13	D136.1		D 48.3		26.2	1.88	24.1	0.02	0.00	0.01	0.03	151	
171		8.76		8.74		33.891	26.293	175.5	0.462	2.96	128.8		45.2		29.5	1.95	25.5	0.01	0.00	0.00	0.03	172	08
200		8.45		8.43		33.970	26.404	165.4	0.511	2.58	112.3		39.2		34.1	2.09	27.6	0.01	0.00	0.00	0.03	202	07
230		8.06		8.04		34.030	26.511	155.8	0.559	2.13	92.8		32.1		39.1	2.27	29.7	0.01	0.00			232	06
250	ISL	7.71	D	7.68		34.068	D 26.592	148.2	0.593	1.97	85.5		29.3		42.0	2.34	30.7	0.01	0.00			252	
270		7.62		7.59		34.069	26.606	147.2	0.620	1.80	78.2		26.8		44.8	2.41	31.6	0.01	0.00			272	05
300	ISL	7.25	D	7.22		34.101	26.685	140.1	0.670	1.47	64.0		21.7		49.7	2.55	33.2	0.01	0.00			302	
320		7.19		7.15		34.118	26.707	138.3	0.691	1.25	54.5		18.5		53.0	2.64	34.3	0.01	0.00			323	04
380		6.85		6.81		34.220	26.835	126.9	0.770	0.68	29.4		9.9		60.2	2.88	35.8	0.01	0.00			383	03
400	ISL	6.73	D	6.69		34.219	26.851	125.7	0.795	0.58	D 25.1		D 8.4		62.6	2.92	36.5	0.01	0.00			403	
440		6.51		6.47		34.217	26.879	123.5	0.845	0.57	24.8		8.3		67.6	3.00	37.8	0.01	0.00			444	02
500	ISL	6.26	D	6.21		34.314	D 26.989	113.7	0.936	0.29	D 12.7		D 4.2		73.7	3.12	38.6	0.01	0.00			504	
513		6.25		6.21		34.317	26.993	113.6	0.932	0.28	12.1		4.0		75.0	3.15	38.8	0.01	0.00			517	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 0.7 N	119 14.0 W	11/11/2013	0133	UTC	1588 m	340 10 kn	320 02 08	1	1017.0 mb	17.3 C	15.0 C		4/8	SC	010

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.61		18.61		33.700	24.127	377.9	0.000	5.37	234.4		100.6		2.0	0.30	0.1	0.01	0.00	0.11	0.02	0	
2		18.61		18.61		33.700	24.127	378.0	0.008	5.37	234.4		100.6		2.0	0.30	0.1	0.01	0.00	0.11	0.02	2	21
10		18.47		18.47		33.692	24.156	375.6	0.036													10	20
10		18.47		18.47		33.688	24.153	375.8	0.038	5.38	234.6		100.4		1.9	0.28	0.0	0.01	0.00	0.11	0.01	10	19
20		18.41		18.41		33.686	24.167	374.9	0.075	5.40	235.7		100.8		1.9	0.28	0.0	0.00	0.00	0.13	0.02	20	18
30		18.39		18.39		33.682	24.170	375.0	0.113	5.38	234.6		100.3		1.9	0.28	0.0	0.00	0.00	0.15	0.02	30	17
41		16.83		16.82		33.566	24.458	347.9	0.153	5.61	244.4		101.3		1.4	0.30	0.0	0.01	0.00	0.24	0.08	41	16
49		15.54		15.53		33.367	24.599	334.7	0.180	5.94	258.9		104.5		2.4	0.33	0.0	0.01	0.00	0.41	0.16	49	15
50	ISL	14.53	D	14.53		33.264	D 24.738	321.4	0.185	5.95	D259.2		D102.5		2.4	0.35	0.1	0.03	0.02	0.41	0.16	50	
60		12.91		12.90		33.140	24.974	299.0	0.214	5.80	252.6		96.5		2.8	0.50	1.5	0.25	0.24	0.38	0.22	60	14
70		11.91		11.90		33.092	25.128	284.5	0.243	5.63	245.2		91.7		4.2	0.65	3.9	0.32	0.07	0.29	0.17	71	13
75	ISL	11.66	D	11.65		33.107	D 25.186	279.1	0.260	5.62	D244.8	D	91.1		5.2	0.73	5.4	0.23	0.05	0.25	0.15	76	
85		11.14		11.13		33.112	25.285	269.8	0.285	5.40	235.1		86.5		7.1	0.88	8.3	0.06	0.00	0.17	0.11	86	12
100		10.96		10.94		33.341	25.496	250.1	0.324	4.90	213.4		78.3		9.8	1.06	11.7	0.03	0.00	0.08	0.07	101	11
120		10.38		10.37		33.576	25.780	223.5	0.371	3.96	172.5		62.6		16.2	1.40	16.9	0.01	0.00	0.04	0.05	121	10
125	ISL	10.16	D	10.14		33.609	D 25.845	217.4	0.386	3.95	D171.9	D	62.1		17.4	1.45	17.8	0.01	0.00	0.03	0.05	126	
140		9.69		9.68		33.686	25.982	204.6	0.414	3.57	155.2		55.6		21.1	1.61	20.6	0.01	0.00	0.01	0.03	141	09
150	ISL	9.40	D	9.38		33.763	D 26.091	194.4	0.438	3.42	D149.0	D	53.0		22.8	1.69	21.7	0.01	0.00	0.01	0.03	151	
170		9.16		9.14		33.816	26.172	187.1	0.472	3.18	138.6		49.1		26.2	1.84	23.8	0.01	0.00	0.00	0.03	171	08
200		8.74		8.71		33.938	26.335	172.1	0.526	2.74	119.1		41.8		31.3	1.99	26.4	0.01	0.00	0.00	0.03	202	07
231		8.13		8.11		33.968	26.451	161.4	0.578	2.70	117.6		40.7		35.1	2.03	27.4	0.01	0.00			233	06
250	ISL	7.98	D	7.96		34.018	D 26.513	155.9	0.613	2.32	D101.1	D	34.9		39.3	2.19	29.3	0.01	0.00			252	
271		7.84		7.81		34.061	26.568	150.9	0.640	1.84	80.1		27.6		43.9	2.36	31.3	0.01	0.00			273	05
300	ISL	7.48	D	7.45		34.087	D 26.641	144.3	0.688	1.60	D 69.6	D	23.8		48.9	2.49	32.9	0.01	0.00			302	
320		7.29		7.26		34.103	26.681	140.8	0.712	1.34	58.3		19.8		52.3	2.58	34.0	0.01	0.00			323	04
381		6.81		6.77		34.152	26.787	131.4	0.795	0.94	D 40.7	D	13.7		60.9	2.78	36.3	0.01	0.00			384	03
400	ISL	6.68	D	6.64		34.162	D 26.813	129.2	0.826	0.90	D 39.0	D	13.1		63.6	2.85	36.8	0.01	0.00			403	
440		6.46		6.42		34.231	26.897	121.7	0.869	0.49	21.5		7.2		69.3	2.99	37.9	0.01	0.00			444	02
500	ISL	5.96	D	5.92		34.244	D 26.971	115.0	0.948	0.43	D 18.7	D	6.2		77.0	3.07	39.4	0.01	0.00			504	
515		5.89		5.84		34.258	26.992	113.2	0.957	0.34	14.9		4.9		79.0	3.09	39.8	0.01	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 50.8 N	119 34.3 W	11/11/2013	0533	UTC	1892 m	340 09 kn			1018.2 mb	16.3 C	14.1 C				011

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.03		18.03		33.619	24.208	370.3	0.000	5.45	237.6		100.8		1.4	0.31	0.0	0.01	0.02	0.17	0.02	0	
2		18.03		18.03		33.619	24.208	370.3	0.007	5.45	237.6		100.8		1.4	0.31	0.0	0.01	0.02	0.17	0.02	2	20
10		18.04		18.04		33.620	24.207	370.7	0.037	5.46	237.9		101.0		1.4	0.31	0.0	0.01	0.05	0.16	0.02	10	19
20		17.91		17.90		33.626	24.246	367.4	0.074	5.47	238.5		101.0		1.4	0.31	0.0	0.00	0.02	0.19	0.03	20	18
30		17.78		17.77		33.610	24.265	365.9	0.111	5.49	239.5		101.1		1.3	0.31	0.0	0.00	0.01	0.25	0.04	30	17
40		15.93		15.92		33.450	24.575	336.6	0.146	5.77	251.5		102.4		2.0	0.32	0.0	0.01	0.01	0.42	0.12	40	16
50		14.78		14.78		33.369	24.766	318.7	0.179	5.91	257.3		102.3		2.7	0.34	0.0	0.01	0.02	0.45	0.21	50	15
60		13.78		13.78		33.312	24.932	303.1	0.210	5.72	249.2		97.1		3.3	0.44	0.8	0.17	0.05	0.41	0.20	60	14
70		12.05		12.04		33.087	25.099	287.2	0.239	5.63	245.3		92.0		4.2	0.64	3.8	0.33	0.12	0.27	0.14	71	13
75	ISL	11.76	D	11.75		33.106	D 25.167	280.9	0.255	5.59	D243.5	D	90.8		5.0	0.71	5.2	0.24	0.12	0.24	0.13	76	
85		11.33		11.32		33.129	25.264	271.8	0.281	5.33	232.1		85.8		6.7	0.85	7.9	0.06	0.12	0.19	0.11	86	12
100		11.24		11.23		33.337	25.443	255.2	0.321	4.81	209.3		77.3		9.7	1.09	11.9	0.02	0.00	0.10	0.08	101	11
120		10.45		10.43		33.436	25.660	234.9	0.370	4.46	194.0		70.5		13.0	1.28	15.1	0.02	0.01	0.06	0.06	121	10
125	ISL	10.28	D	10.26		33.499	D 25.738	227.6	0.383	4.27	D186.0	D	67.4		14.3	1.34	16.0	0.02	0.01	0.05	0.05	126	
140		9.80		9.78		33.579	25.882	214.2	0.414	3.98	173.3		62.1		18.1	1.51	18.8	0.01	0.02	0.02	0.04	141	09
150	ISL	9.57	D	9.55		33.712	D 26.024	200.8	0.437	3.66	D159.1	D	56.8		21.3	1.63	20.7	0.01	0.01	0.01	0.04	151	
170		9.04		9.02		33.861	26.226	182.0	0.474	2.99	129.9		45.9		27.8	1.88	24.6	0.01	0.00	0.00	0.03	171	08
200		8.57		8.54		33.968	26.384	167.3	0.526	2.64	115.0		40.2		33.2	2.04	26.9	0.01	0.01	0.00	0.02	202	07
230		8.17		8.15		34.017	26.484	158.3	0.575	2.28	99.0		34.3		38.0	2.18	28.7	0.01	0.00			232	06
250	ISL	7.90	D	7.88		34.057	D 26.556	151.8	0.608	2.02	D 88.1	D	30.4		42.4	2.32	30.5	0.01	0.00			252	
270		7.67		7.64		34.082	26.609	146.9	0.636	1.62	70.3		24.1		46.8	2.46	32.2	0.01	0.03			272	05
300	ISL	7.45	D	7.42		34.105	D 26.659	142.6	0.682	1.44	D 62.6	D	21.4		51.3	2.57	33.7	0.01	0.00			302	
320		7.23		7.20		34.122	26.704	138.6	0.708	1.16	50.4		17.1		54.3	2.65	34.7	0.01				323	04
380		6.65		6.61		34.183	26.832	127.0	0.787	0.68	29.5		9.9		64.8	2.90	37.3	0.01	0.01			383	03
400	ISL	6.45	D	6.42		34.199	D 26.871	123.5	0.816	0.64	D 27.8	D	9.3		67.5	2.94	37.8	0.01	0.00			403	
440		6.16		6.12		34.215	26.922	119.0	0.861	0.49	21.1		7.0		72.9	3.02	38.8	0.01	0.00			444	02
500	ISL	5.76	D	5.72		34.266	D 27.013	110.8	0.934	0.40	D 17.2	D	5.6		80.0	3.12	40.0	0.01	0.00			504	
515		5.72		5.68		34.284	27.033	109.1	0.946	0.30	13.2		4.3		81.8	3.15	40.3	0.01	0.01			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 30.8 N	120 14.9 W	11/11/2013	1124	UTC	3940 m	360 05 kn			1017.4 mb	15.1 C	13.9 C				012

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.60	16.60	33.618	24.548	337.8	0.000	5.63	245.5	101.3	1.6	0.30	0.0	0.01	0.01	0.36	0.09	0	
2		16.60	16.60	33.618	24.548	337.9	0.007	5.63	245.5	101.3	1.6	0.30	0.0	0.01	0.01	0.36	0.09	2	21
10		16.61	16.60	33.621	24.550	338.0	0.034	5.68	247.5	102.2	1.6	0.30	0.0	0.01	0.02	0.38	0.10	10	20
20	ISL	16.60 D	16.60	33.614 D	24.546	338.8	0.068	5.65 D	246.3 D	101.7	1.6	0.30	0.0	0.00	0.01	0.38	0.10	20	
21		16.52	16.51	33.624	24.574	336.1	0.071	5.66	246.5	101.6	1.6	0.30	0.0	0.00	0.01	0.38	0.10	21	19
26		15.88	15.88	33.620	24.715	322.8	0.088	5.79	252.5	102.8	2.9	0.32	0.0	0.01	0.03	0.71	0.20	26	18
30		15.77	15.77	33.624	24.743	320.3	0.100	5.64	245.6	99.8	3.3	0.37	0.5	0.06	0.31	0.78	0.28	30	17
40		13.79	13.79	33.507	25.080	288.5	0.131	5.37	233.8	91.2	4.1	0.58	3.3	0.41	0.49	0.43	0.26	40	16
49		12.47	12.47	33.461	25.306	267.0	0.156	4.76	207.5	78.7	8.2	1.03	10.6	0.20	0.03	0.32	0.25	49	15
50	ISL	12.39 D	12.39	33.463 D	25.324	265.3	0.160	4.77 D	207.9 D	78.7	8.4	1.04	10.8	0.19	0.03	0.31	0.25	50	
60		11.89	11.88	33.481	25.434	255.1	0.185	4.53	197.3	74.0	10.1	1.15	12.8	0.06	0.00	0.21	0.21	60	14
70		11.11	11.10	33.535	25.619	237.7	0.209	4.13	179.8	66.3	13.6	1.37	16.2	0.04	0.00	0.13	0.13	71	13
75	ISL	10.78 D	10.78	33.564 D	25.700	230.1	0.223	4.06 D	176.8 D	64.8	15.0	1.43	17.3	0.03	0.00	0.11	0.11	76	
85		10.47	10.46	33.597	25.781	222.6	0.244	3.67	159.7	58.1	17.7	1.56	19.4	0.02	0.00	0.08	0.08	86	12
100		10.01	9.99	33.669	25.916	210.0	0.276	3.33	144.7	52.2	21.1	1.70	21.4	0.02	0.01	0.02	0.05	101	11
120		9.36	9.34	33.803	26.128	190.2	0.316	2.87	124.8	44.4	26.2	1.89	24.6	0.01	0.00	0.01	0.04	121	10
125	ISL	9.36 D	9.35	33.853 D	26.167	186.7	0.328	2.80 D	121.6 D	43.3	27.1	1.92	25.1	0.01	0.00	0.01	0.04	126	
140		8.97	8.96	33.894	26.261	177.9	0.353	2.59	112.8	39.8	30.0	2.01	26.5	0.01	0.00	0.00	0.05	141	09
150	ISL	8.85 D	8.83	33.940 D	26.317	172.8	0.373	2.49 D	108.3 D	38.1	32.0	2.07	27.3	0.01	0.00	0.00	0.04	151	
170		8.57	8.55	34.009	26.416	163.8	0.404	2.08	90.6	31.7	36.0	2.20	29.0	0.01	0.00	0.00	0.03	171	08
200		8.12	8.10	34.058	26.523	154.0	0.452	1.85	80.4	27.9	41.1	2.33	30.7	0.01	0.00	0.00	0.03	202	07
231		7.73	7.71	34.079	26.598	147.4	0.499	1.63	70.9	24.4	45.8	2.43	32.0	0.01	0.00			233	06
250	ISL	7.63 D	7.61	34.106 D	26.632	144.4	0.530	1.46 D	63.5 D	21.8	48.5	2.52	32.9	0.01	0.00			252	
270		7.46	7.44	34.133	26.679	140.3	0.555	1.17	50.9	17.4	51.4	2.62	33.9	0.01	0.00			272	05
300	ISL	7.28 D	7.25	34.167 D	26.731	135.7	0.600	0.96 D	41.7 D	14.2	55.5	2.72	35.0	0.01	0.00			302	
320		7.12	7.08	34.178	26.764	132.8	0.623	0.81	35.2	11.9	58.3	2.78	35.7	0.01	0.00			323	04
380		6.73	6.69	34.222	26.852	125.2	0.701	0.57	24.6	8.3	65.1	2.91	37.1	0.00	0.00			383	03
400	ISL	6.60 D	6.56	34.237 D	26.882	122.6	0.731	0.56 D	24.4 D	8.2	67.8	2.95	37.6	0.00	0.00			403	
441		6.25	6.21	34.257	26.945	117.0	0.775	0.38	16.6	5.5	73.2	3.03	38.6	0.00	0.00			445	02
500	ISL	5.92 D	5.88	34.298 D	27.019	110.5	0.848	0.31 D	13.5 D	4.5	79.2	3.11	39.6	0.01	0.00			504	
514		5.89	5.85	34.315	27.036	109.0	0.857	0.25	10.7	3.5	80.6	3.13	39.8	0.01	0.01			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 10.8 N	120 55.1 W	11/11/2013	1736	UTC	3847 m	230 04 kn	330 01 07	1	1019.7 mb	16.9 C	13.9 C	31 m	7/8	SC	013

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.58	17.58	33.443	24.183	372.6	0.000	5.49	239.4	100.6	1.6	0.30	0.1	0.01	0.01	0.16	0.02	0	
2	A	17.58	17.58	33.443	24.183	372.7	0.008	5.49	239.4	100.6	1.6	0.30	0.1	0.01	0.01	0.16	0.02	2	22
10		17.54	17.54	33.447	24.196	371.7	0.037	5.47	238.6	100.2	1.6	0.30	0.0	0.01	0.01	0.15	0.02	10	21
19	A	17.16	17.16	33.420	24.267	365.3	0.071	5.58	243.1	101.3	1.6	0.31	0.0	0.00	0.01	0.20	0.04	19	19
20	ISL	17.16 D	17.15	33.419 D	24.266	365.4	0.075	5.59 D	243.7 D	101.6	1.6	0.31	0.0	0.00	0.02	0.21	0.04	20	
26	A	17.09	17.09	33.425	24.287	363.6	0.096	5.59	243.9	101.5	1.6	0.31	0.0	0.01	0.07	0.25	0.05	26	18
30	ISL	17.06 D	17.06	33.437 D	24.304	362.2	0.111	5.62 D	244.8 D	101.8	1.6	0.31	0.0	0.01	0.07	0.27	0.06	30	
37		17.03	17.02	33.444	24.316	361.3	0.136	5.59	243.7	101.3	1.6	0.31	0.0	0.01	0.06	0.31	0.08	37	17
49	A	15.70	15.69	33.321	24.528	341.4	0.178	5.71	248.9	100.7	1.9	0.36	0.2	0.03	0.29	0.29	0.09	49	16
50	ISL	15.39 D	15.39	33.288 D	24.571	337.4	0.183	5.80 D	252.9 D	101.7	1.9	0.37	0.2	0.04	0.30	0.29	0.09	50	
60		13.63	13.62	33.139	24.830	312.8	0.214	5.88	256.2	99.4	2.6	0.44	0.6	0.19	0.38	0.26	0.11	60	15
74		12.89	12.88	33.222	25.042	292.9	0.256	5.64	245.8	93.9	3.6	0.54	2.6	0.29	0.04	0.23	0.11	75	14
75	ISL	12.89 D	12.88	33.217	25.038	293.3	0.259	5.62	244.9	93.6	3.8	0.56	3.0	0.27	0.04	0.22	0.11	76	
85	A	11.52	11.51	33.163	25.255	272.7	0.288	5.43	236.4	87.7	5.8	0.79	6.8	0.04	0.01	0.14	0.10	86	13
96		10.75	10.74	33.226	25.443	255.0	0.317	5.13	223.3	81.5	9.4	1.00	10.5	0.02	0.02	0.07	0.07	97	12
100	ISL	10.65 D	10.64	33.256 D	25.484	251.2	0.329	4.98 D	217.0 D	79.1	10.6	1.07	11.8	0.02	0.01	0.06	0.05	101	
107	A	10.17	10.16	33.325	25.620	238.3	0.344	4.81	209.3	75.5	12.8	1.20	14.0	0.01	0.00	0.03	0.03	108	11
124		9.62	9.61	33.528	25.871	214.7	0.382	4.23	183.9	65.7	18.3	1.50	18.7	0.01	0.02	0.01	0.03	125	10
125	ISL	9.61 D	9.59	33.537 D	25.880	213.9	0.387	4.22 D	183.8 D	65.6	18.4	1.51	18.8	0.01	0.02	0.01	0.03	126	
140		9.40	9.38	33.647	26.001	202.7	0.416	3.82	166.4	59.2	21.1	1.62	20.8	0.01	0.04	0.00	0.03	141	09
150	ISL	9.30 D	9.28	33.688 D	26.048	198.4	0.439	3.71	161.5	57.3	22.4	1.66	21.5	0.01	0.04	0.00	0.02	151	
170		8.88	8.87	33.808	26.209	183.4	0.474	3.49	151.8	53.4	25.2	1.73	22.9	0.00	0.03	0.00	0.02	171	08
200		8.48	8.45	33.959	26.392	166.6	0.526	2.60	113.2	39.5	33.5	2.08	27.4	0.00	0.02	0.00	0.02	202	07
230		8.17	8.14	34.023 D	26.489	157.9	0.579	2.17 D	94.4 D	32.7								232	06
250	ISL	7.87 D	7.84	34.038 D	26.546	152.7	0.610	2.07 D	90.2 D	31.1	41.9	2.29	30.3	0.00	0.00			252	
270		7.57	7.55	34.045	26.594	148.3	0.640	1.94	84.3	28.8	45.2	2.37	31.5	0.00	0.01			272	05
300	ISL	7.13 D	7.10	34.055 D	26.664	141.9	0.684	1.68 D	73.1 D	24.8	51.6	2.54	33.5	0.00	0.00			302	
320		6.93	6.90	34.089	26.720	136.8	0.711	1.31	56.9	19.2	55.8	2.65	34.9	0.00	0.03			323	04
380		6.25	6.22	34.146	26.855	124.5	0.790	0.81	35.2	11.7	67.5	2.89	37.8	0.00	0.02			383	03
400	ISL	6.16 D	6.12	34.167 D	26.883	122.0	0.816	0.69 D	30.2 D	10.0	70.3	2.94	38.3	0.00	0.00			403	
440		5.85	5.81	34.196	26.946	116.4	0.862	0.54	23.4	7.7	76.0	3.04	39.4	0.00	0.01			444	02
500	ISL	5.63 D	5.58	34.236 D	27.006	111.3	0.933	0.42 D	18.4 D	6.0	82.1	3.10	40.6	0.00	0.00			504	
514		5.55	5.50	34.253	27.030	109.2	0.946	0.34	15.0	4.9	83.5	3.12	40.9	0.00	0.05			518	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 50.8 N	121 35.3 W	11/11/2013	2339 UTC	4104 m	340 08 kn	330 02 08	1	1018.6 mb	17.0 C	13.8 C	27 m	5/8	SC	014

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.33	18.33	33.429	23.989	391.1	0.000	5.42	236.2	100.7	1.7	0.30	0.0	0.01	0.00	0.12	0.01	0	
2	18.33	18.33	33.429	23.989	391.2	0.008	5.42	236.2	100.7	1.7	0.30	0.0	0.01	0.00	0.12	0.01	2	20
10	17.91	17.91	33.420	24.085	382.3	0.039	5.44	237.1	100.2	1.6	0.30	0.0	0.01	0.00	0.12	0.02	10	19
20	17.20	17.20	33.301	24.166	374.9	0.077	5.55	242.1	100.9	2.0	0.30	0.0	0.00	0.00	0.13	0.02	20	18
30	17.21	17.21	33.383	24.227	369.6	0.114	5.55	242.2	101.0	1.7	0.31	0.0	0.00	0.00	0.15	0.03	30	17
40	17.19	17.18	33.404	24.250	367.7	0.151	5.57	242.8	101.2	1.6	0.31	0.0	0.00	0.00	0.23	0.05	40	16
50	14.41	14.41	33.193	24.708	324.2	0.185	5.88	256.1	101.0	2.3	0.40	0.3	0.09	0.10	0.25	0.07	50	15
60	13.68	13.67	33.146	24.824	313.4	0.217	5.82	253.5	98.4	2.7	0.43	0.6	0.21	0.06	0.25	0.07	60	14
70	13.18	13.17	33.286	25.033	293.7	0.248	5.55	241.6	92.9	3.2	0.60	3.2	0.78	0.00	0.21	0.09	71	13
75 ISL	12.84 D	12.82	33.290 D	25.105	286.9	0.264	5.48	238.5	91.1	3.9	0.66	4.4	0.53	0.00	0.19	0.10	76	
85	12.21	12.19	33.278	25.218	276.4	0.290	5.33	232.4	87.6	5.1	0.78	6.7	0.03	0.00	0.15	0.12	86	12
100	11.25	11.24	33.314	25.423	257.1	0.330	5.09	221.5	81.8	8.1	0.98	10.1	0.02	0.00	0.07	0.06	101	11
121	10.40	10.39	33.399	25.639	236.9	0.382	4.72	205.3	74.5	12.4	1.20	13.8	0.01	0.00	0.03	0.04	122	10
125 ISL	10.34 D	10.33	33.404 D	25.653	235.6	0.395	4.77	D207.8 D	75.3	13.1	1.23	14.4	0.01	0.00	0.02	0.04	126	
140	9.80	9.78	33.512	25.829	219.1	0.426	4.35	189.5	67.9	15.9	1.36	16.7	0.01	0.00	0.01	0.03	141	09
150 ISL	9.71 D	9.69	33.580 D	25.898	212.8	0.450	4.20	D182.6 D	65.4	18.7	1.49	18.8	0.01	0.00	0.01	0.03	151	
170	9.11	9.09	33.763	26.138	190.2	0.487	3.47	150.9	53.4	24.4	1.75	22.9	0.01	0.00	0.00	0.02	171	08
200	8.72	8.70	33.905	26.312	174.3	0.542	2.83	123.2	43.2	30.6	1.98	26.3	0.01	0.00	0.01	0.02	202	07
232	8.14	8.11	34.009	26.483	158.5	0.595	2.32	101.1	35.0	37.9	2.19	29.1	0.01	0.00			234	06
250 ISL	7.96 D	7.93	34.034 D	26.529	154.3	0.628	2.07	D 90.1 D	31.1	40.8	2.28	30.2	0.01	0.00			252	
270	7.77	7.74	34.056	26.575	150.3	0.654	1.84	79.8	27.4	44.1	2.38	31.5	0.01	0.00			272	05
300 ISL	7.64 D	7.61	34.123 D	26.647	143.9	0.704	1.34	D 58.3 D	20.0	48.9	2.55	33.1	0.01	0.00			302	
320	7.45	7.42	34.147	26.692	139.9	0.727	1.11	48.5	16.6	52.1	2.66	34.2	0.01	0.00			323	04
380	6.52	6.48	34.129	26.806	129.3	0.808	0.90	D 39.0 D	13.0	62.9	2.82	37.0	0.01	0.00			383	03
400 ISL	6.42 D	6.38	34.160 D	26.845	125.9	0.840	0.76	D 33.0 D	11.0	65.8	2.87	37.6	0.01	0.00			403	
440	6.07	6.03	34.176	26.902	120.7	0.883	0.62	27.0	8.9	71.7	2.97	38.9	0.01	0.00			444	02
500 ISL	5.76 D	5.72	34.227 D	26.982	113.7	0.960	0.45	D 19.7 D	6.5	79.6	3.07	40.0	0.01	0.00			504	
514	5.68	5.63	34.242	27.005	111.7	0.969	0.37	16.0	5.2	81.5	3.09	40.2	0.01	0.00			518	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 30.8 N	122 15.5 W	12/11/2013	0528 UTC	4163 m	020 07 kn			1020.2 mb	16.9 C	14.1 C				015

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.32	18.32	33.414	23.981	391.9	0.000	5.41	236.0	100.5	1.9	0.32	1.9	0.01	0.02	0.12	0.02	0	
2	18.32	18.32	33.414	23.981	392.0	0.008	5.41	236.0	100.5	1.9	0.32	1.9	0.01	0.02	0.12	0.02	2	20
10	18.31	18.31	33.413	23.982	392.2	0.039	5.39	235.1	100.2	1.9	0.28	0.2	0.00	0.00	0.12	0.01	10	19
20 ISL	18.18 D	18.17	33.391 D	24.000	390.9	0.079	5.41	D235.9 D	100.2	1.8	0.28	0.1	0.00	0.00	0.13	0.02	20	
24	18.15	18.15	33.390	24.005	390.5	0.094	5.41	235.9	100.2	1.8	0.28	0.1	0.00	0.00	0.13	0.02	24	18
30 ISL	18.14 D	18.13	33.389 D	24.008	390.4	0.118	5.42	D236.3 D	100.3	1.8	0.28	0.1	0.00	0.00	0.15	0.04	30	
40	18.09	18.08	33.382	24.017	390.0	0.156	5.43	236.7	100.4	1.8	0.28	0.1	0.01	0.00	0.18	0.08	40	17
50	18.08	18.07	33.378	24.016	390.5	0.195	5.44	237.1	100.5	1.8	0.28	0.0	0.00	0.00	0.19	0.04	50	16
62	15.94	15.93	33.452	24.577	337.3	0.239	5.87	255.7	104.1	2.6	0.25	0.0	0.00	0.00	0.21	0.07	62	15
75	14.64	14.63	33.374	24.802	316.1	0.282	5.85	254.9	101.1	2.7	0.31	0.1	0.03	0.01	0.19	0.07	76	14
87	13.71	13.70	33.392	25.010	296.5	0.318	5.71	248.7	96.8	3.2	0.36	0.6	0.24	0.00	0.20	0.10	88	13
100 ISL	12.55 D	12.54	33.265 D	25.143	284.0	0.359	5.59	D243.5 D	92.4	4.3	0.56	3.4	0.09	0.00	0.15	0.10	101	
101	12.55	12.54	33.266	25.144	284.0	0.359	5.52	240.5	91.3	4.3	0.57	3.6	0.08	0.00	0.15	0.10	102	12
112	12.06	12.05	33.298	25.262	272.9	0.389	5.38	234.1	88.0	5.4	0.66	5.3	0.02	0.00	0.12	0.10	113	11
125	11.16	11.14	33.346	25.466	253.7	0.424	5.02	218.5	80.5	8.6	0.95	10.1	0.02	0.00	0.05	0.05	126	10
140	10.39	10.37	33.428	25.664	234.9	0.460	4.55	198.3	71.9	13.3	1.25	14.9	0.01	0.00	0.01	0.03	141	09
150 ISL	9.91 D	9.90	33.541 D	25.834	219.0	0.487	4.42	192.2	69.1	15.1	1.31	16.0	0.01	0.00	0.01	0.03	151	
170	9.47	9.45	33.662	26.002	203.3	0.526	4.14	180.1	64.2	18.7	1.42	18.3	0.01	0.00	0.01	0.03	171	08
200	8.77	8.75	33.900	26.300	175.4	0.582	3.21	139.5	49.0	28.1	1.81	24.1	0.01	0.00	0.00	0.03	202	07
230	8.27	8.24	33.966	26.429	163.6	0.633	2.95	128.4	44.6	33.1	1.94	26.3	0.01	0.00			232	06
250 ISL	8.10 D	8.07	34.003 D	26.485	158.6	0.669	2.54	D110.4 D	38.2	38.1	2.12	28.6	0.01	0.00			252	
270	7.75	7.73	34.040	26.564	151.3	0.696	2.04	88.8	30.5	43.0	2.30	30.8	0.01	0.00			272	05
300 ISL	7.39 D	7.37	34.033 D	26.610	147.2	0.745	1.86	81.0	27.6	47.4	2.40	32.2	0.01	0.00			302	
321	7.17	7.14	34.049	26.655	143.2	0.771	1.74	75.5	25.6	50.5	2.47	33.2	0.01	0.00			324	04
380	6.65	6.62	34.124	26.785	131.4	0.852	1.01	43.8	14.7	61.3	2.76	36.5	0.01	0.00			383	03
400 ISL	6.42 D	6.38	34.132 D	26.823	128.0	0.883	0.87	37.8	12.6	64.9	2.83	37.3	0.01	0.00			403	
440	6.12	6.08	34.188	26.906	120.4	0.928	0.59	25.8	8.6	72.1	2.97	38.8	0.01	0.00			444	02
500 ISL	5.76 D	5.72	34.235 D	26.988	113.2	1.004	0.43	D 18.7 D	6.2	79.2	3.07	39.9	0.00	0.00			504	
515	5.71	5.66	34.244	27.003	111.9	1.015	0.37	15.9	5.2	80.9	3.10	40.2	0.00	0.00			519	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 10.8 N	122 55.3 W	12/11/2013	1103	UTC	3795 m	060 04 kn			1019.9 mb	17.1 C	15.1 C				016

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.44	18.44	33.404	23.942	395.6	0.000	5.39	235.2	100.4	1.9	0.28	0.1	0.00	0.00	0.14	0.02	0	
2		18.44	18.44	33.404	23.942	395.6	0.008	5.39	235.2	100.4	1.9	0.28	0.1	0.00	0.00	0.14	0.02	2	21
10		18.44	18.44	33.406	23.945	395.7	0.040	5.39	235.1	100.4	2.0	0.28	0.1	0.00	0.00	0.13	0.02	10	19
20	ISL	18.44 D	18.44	33.405 D	23.945	396.1	0.080	5.40 D	235.4 D	100.5	2.0	0.29	0.0	0.00	0.00	0.14	0.03	20	
25		18.33	18.33	33.398	23.967	394.2	0.099	5.43	236.8	100.9	2.0	0.29	0.0	0.00	0.00	0.15	0.03	25	18
30	ISL	18.24 D	18.23	33.390 D	23.985	392.7	0.119	5.42 D	236.6 D	100.6	1.9	0.30	0.0	0.00	0.00	0.16	0.03	30	
40		17.98	17.97	33.391	24.050	386.8	0.158	5.46	238.0	100.7	1.8	0.31	0.0	0.00	0.00	0.20	0.04	40	17
50		17.25	17.24	33.466	24.284	364.9	0.195	5.71	249.1	104.0	2.2	0.27	0.0	0.00	0.00	0.26	0.10	50	16
62		15.42	15.41	33.327	24.597	335.3	0.237	5.76	251.0	101.0	2.2	0.35	0.1	0.02	0.32	0.24	0.31	62	15
75	ISL	14.20 D	14.18	33.298 D	24.837	312.7	0.281	5.84 D	254.4 D	99.9	2.7	0.40	0.4	0.12	0.26	0.22	0.12	76	
76		14.29	14.28	33.250	24.779	318.2	0.283	5.80	252.8	99.4	2.8	0.40	0.4	0.13	0.26	0.22	0.10	77	14
87		13.94	13.93	33.421	24.985	298.9	0.317	5.71	248.9	97.3	3.2	0.35	0.5	0.14	0.00	0.19	0.13	88	13
100		13.27	13.26	33.453 D	25.147	283.8	0.357	5.51 D	240.0 D	92.6								101	12
112		12.37	12.36	33.398	25.280	271.3	0.387	5.27	229.4	86.8	5.7	0.68	5.6	0.02	0.00	0.10	0.09	113	11
125		11.27	11.25	33.393	25.482	252.1	0.421	5.00	217.6	80.4	8.5	0.96	10.0	0.01	0.00	0.06	0.05	126	10
140		10.69	10.67	33.462	25.639	237.5	0.458	4.63	201.6	73.6	12.1	1.18	13.6	0.01	0.00	0.02	0.05	141	09
150	ISL	10.15 D	10.13	33.518 D	25.776	224.6	0.485	4.41 D	191.8 D	69.3	14.9	1.31	15.8	0.01	0.00	0.02	0.04	151	
170		9.49	9.47	33.659	25.996	203.9	0.523	3.82	166.2	59.2	20.4	1.57	20.1	0.00	0.00	0.01	0.02	171	08
200		8.95	8.93	33.836	26.222	182.9	0.581	3.07	133.7	47.1	27.3	1.86	24.6	0.00	0.00	0.00	0.02	202	07
230		8.39	8.37	33.969	26.412	165.2	0.634	2.89	125.6	43.8	33.4	1.98	26.5	0.00	0.00			232	06
250	ISL	8.32 D	8.29	33.980 D	26.433	163.6	0.671	2.68	116.5	40.5	36.4	2.08	27.8	0.00	0.00			252	
270		7.91	7.89	34.007	26.515	156.0	0.698	2.47	107.4	37.0	39.4	2.17	29.0	0.00	0.00			272	05
300	ISL	7.51 D	7.48	34.034 D	26.595	148.8	0.750	2.03 D	88.4 D	30.2	45.5	2.35	31.4	0.00	0.00			302	
320		7.26	7.23	34.052	26.645	144.1	0.773	1.74	75.5	25.6	49.5	2.47	33.0	0.00	0.00			322	04
380		6.68	6.65	34.101	26.763	133.5	0.857	1.16	50.3	16.9	60.0	2.74	36.1	0.00	0.00			383	03
400	ISL	6.53 D	6.50	34.122 D	26.800	130.2	0.889	1.04 D	45.4 D	15.2	62.9	2.80	36.8	0.00	0.00			403	
440		6.22	6.18	34.155	26.867	124.2	0.934	0.77	33.4	11.1	68.7	2.92	38.1	0.00	0.00			444	02
500	ISL	5.69 D	5.65	34.201 D	26.970	114.7	1.013	0.58 D	25.2 D	8.3	78.2	3.06	39.9	0.00	0.00			504	
516		5.65	5.61	34.221	26.991	113.0	1.024	0.44	19.0	6.2	80.7	3.10	40.4	0.00	0.00			520	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
29 50.8 N	123 35.1 W	12/11/2013	1744	UTC	4115 m	020 07 kn	320 02 06	1	1023.0 mb	18.9 C	17.0 C	32 m	7/8	SC	017

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		19.36	19.36	33.695	23.933	396.4	0.000	5.31	231.5	100.8	2.3	0.26	0.2	0.00	0.00	0.09	0.02	0	
2	A	19.36	19.36	33.695	23.933	396.5	0.008	5.31	231.5	100.8	2.3	0.26	0.2	0.00	0.00	0.09	0.02	2	22
10		19.36	19.36	33.695	23.934	396.8	0.040	5.30	231.1	100.6	2.3	0.26	0.0	0.01	0.00	0.10	0.01	10	21
20	A	19.38	19.38	33.713	23.944	396.2	0.079	5.28	230.4	100.3	2.3	0.25	0.0	0.00	0.00	0.09	0.02	20	19
26	A	19.36	19.36	33.711	23.948	396.1	0.103	5.29	230.7	100.4	2.3	0.25	0.0	0.00	0.00	0.10	0.01	26	18
30	ISL	19.51 D	19.50	33.758 D	23.947	396.4	0.120	5.25 D	229.2 D	100.0	2.3	0.25	0.0	0.00	0.00	0.10	0.01	30	
38		19.54	19.53	33.786	23.961	395.3	0.151	5.27	229.9	100.4	2.3	0.24	0.0	0.01	0.00	0.11	0.02	38	17
50	A	19.26	19.25	33.806	24.048	387.5	0.198	5.36	233.6	101.6	2.4	0.24	0.0	0.01	0.00	0.16	0.03	50	16
62		16.83	16.82	33.578	24.469	347.7	0.242	5.83	254.2	105.4	2.6	0.22	0.0	0.00	0.00	0.19	0.05	62	15
75		15.69	15.68	33.539	24.699	326.0	0.286	5.80	252.7	102.4	2.6	0.24	0.0	0.00	0.00	0.20	0.11	76	14
88	A	15.36	15.35	33.627	24.841	313.0	0.327	5.62	245.0	98.7	2.8	0.29	0.0	0.02	0.00	0.21	0.15	89	13
100		14.96	14.95	33.693	24.980	300.1	0.364	5.44	236.8	94.7	3.3	0.34	0.5	0.19	0.00	0.19	0.18	101	12
110	A	14.79	14.77	33.772	25.079	290.9	0.393	5.39	235.0	93.7	3.4	0.32	0.8	0.16	0.00	0.19	0.15	111	11
125		13.45	13.43	33.652	25.266	273.3	0.436	5.22	227.5	88.2	4.8	0.49	3.4	0.02	0.00	0.10	0.14	126	10
140		12.37	12.35	33.544	25.395	261.1	0.476	5.08	221.4	83.9	6.5	0.66	6.1	0.02	0.00	0.08	0.07	141	09
150	ISL	11.40 D	11.38	33.519 D	25.558	245.7	0.505	5.01 D	218.0 D	80.9	9.2	0.85	9.1	0.02	0.00	0.06	0.06	151	
170		9.89	9.87	33.577	25.866	216.4	0.547	4.43	192.8	69.3	14.7	1.22	15.1	0.01	0.00	0.02	0.03	171	08
200		9.14	9.11	33.839	26.195	185.6	0.607	3.54	154.1	54.6	24.6	1.67	22.1	0.01	0.00	0.00	0.01	202	07
232		8.58	8.56	33.963	26.380	168.5	0.664	3.01	130.8	45.8	31.3	1.90	25.4	0.01	0.00			234	06
250	ISL	8.38 D	8.35	33.972 D	26.418	165.1	0.699	2.95 D	128.5 D	44.8	33.7	1.98	26.6	0.01	0.00			252	
269		8.18	8.15	33.995	26.466	160.8	0.725	2.62	114.2	39.6	36.3	2.07	27.9	0.01	0.00			271	05
300	ISL	7.64 D	7.61	34.021 D	26.566	151.6	0.779	2.35 D	102.4 D	35.1	41.9	2.22	29.9	0.01	0.00			302	
320		7.47	7.43	34.033	26.601	148.5	0.803	2.11	91.8	31.3	45.4	2.32	31.2	0.01	0.00			322	04
381		6.64	6.61	34.096	26.764	133.4	0.889	1.30	56.5	18.9	59.6	2.68	35.6	0.01	0.00			384	03
400	ISL	6.58 D	6.55	34.107 D	26.781	132.0	0.922	1.25 D	54.3 D	18.2	62.4	2.74	36.3	0.01	0.00			403	
440		6.17	6.13	34.143	26.864	124.4	0.966	0.90	39.2	13.0	68.5	2.87	37.9	0.01	0.00			444	02
500	ISL	5.68 D	5.64	34.173 D	26.949	116.7	1.046	0.66 D	28.7 D	9.4	78.1	3.01	40.1	0.01	0.00			504	
516		5.55	5.51	34.189	26.978	114.1	1.056	0.56	24.5	8.0	80.7	3.05	40.7	0.01	0.00			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 57.1 N	117 16.9 W	09/11/2013	2051	UTC	71 m	300 04 kn	290 01 07	0	1015.3 mb	19.0 C	16.0 C		0/8		002

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.33	17.33	33.586	24.353	356.4	0.000	5.79	252.8	105.7	2.1	0.35	0.0	0.02	0.00	0.69	0.18	0	
2		17.33	17.33	33.586	24.353	356.5	0.007	5.79	252.8	105.7	2.1	0.35	0.0	0.02	0.00	0.69	0.18	2	04
5		17.17	17.17	33.578	24.385	353.5	0.018	5.76	251.4	104.8	2.1	0.33	0.0	0.02	0.00	0.75	0.19	5	03
10		16.28	16.27	33.523	24.551	337.9	0.035	5.96	260.3	106.5	2.7	0.37	0.1	0.04	0.00	0.82	0.36	10	02
15		15.31	15.30	33.464	24.722	321.7	0.052	5.69	248.3	99.7	4.3	0.51	1.3	0.22	0.30	1.08	0.44	15	01

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 53.3 N	121 11.6 W	23/11/2013	1653 UTC	12 m	1151 - 1735 PST	1151 PST	1721 PST	550.9 mg C/m2	071

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.28	33.555	25.013	6.01	103.2	0.7	0.40	0.5	0.05	0.07	1.92	0.78	77. A	21.6	24.5	23.1	0.36
7	14.28	33.555	25.014	6.01	103.1	0.7	0.40	0.4	0.05	0.07	1.87	0.81	41.	24.0	25.6	24.8	0.28
10	14.22	33.556	25.027	5.98	102.5	0.8	0.39	0.6	0.06	0.11	2.07	0.86	28.	22.4	23.6	23.0	0.34
19	13.98	33.555	25.077	5.83	99.5	1.5	0.49	1.7	0.13	0.37	2.71	1.29	8.8	16.0 B	16.0 B	16.0	0.27
26	13.94	33.555	25.085	5.80	98.9	1.6	0.51	1.9	0.13	0.35	2.80	1.57					
34	13.89	33.555	25.095	5.75	98.0	1.9	0.53	2.2	0.14	0.41	2.73	1.42	1.3	0.57	2.4	1.5	0.19
40	13.83	33.555	25.108	5.69	96.7	2.3	0.55	2.6	0.15	0.45	2.68	1.55	0.60	0.48	0.52	0.50	0.23

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 76.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 43.4 N	123 38.2 W	22/11/2013	1738 UTC	14 m	1200 - 1745 PST	1201 PST	1728 PST	198.0 mg C/m2	067

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.82	33.117	24.560	5.84	101.1	2.4	0.38	0.8	0.06	0.00	0.58	0.20	80. A	6.2	8.0	7.1	0.14
9	14.81	33.117	24.563	5.86	101.4	2.4	0.39	0.7	0.06	0.00	0.59	0.19	37.	8.7	9.1	8.9	0.13
10	14.81	33.114	24.561	5.88	101.7	2.4	0.38	0.6	0.06	0.00	0.60	0.20	33.	8.2	9.1	8.6	0.48
21	14.80	33.113	24.563	5.85	101.2	2.4	0.38	0.6	0.06	0.00	0.58	0.20	10.0	4.7	4.6	4.7	0.12
29	14.76	33.133	24.587	5.85	101.2	2.4	0.38	0.7	0.06	0.00	0.55	0.21					
38	12.81	33.110	24.969	5.59	92.9	4.0	0.72	5.3	0.59	0.00	0.25	0.20	1.6	0.34	0.49	0.42	0.17
48	11.47	33.070	25.191	5.48	88.5	5.6	0.89	8.3	0.05	0.00	0.15	0.13	0.52	0.11	0.12	0.12	0.07

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 19.1 N	120 48.1 W	20/11/2013	1757 UTC	09 m	1147 - 1730 PST	1149 PST	1724 PST	899.6 mg C/m2	057

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.99	33.580	24.881	6.10	106.2	0.8	0.35	0.3	0.04	0.00	3.35	0.56	71. A	48.1	45.3	46.7	0.32
6	14.80	33.583	24.923	6.10	105.9	0.9	0.35	0.2	0.03	0.00	3.64	0.60	36.	44.2	45.2	44.7	0.28
7	14.74	33.579	24.934	6.19	107.2	0.6	0.30	0.2	0.03	0.00	6.20	1.10	30.	42.6	46.5	44.6	0.51
15	14.59	33.593	24.978	5.91	102.1	1.8	0.47	1.1	0.08	0.10	9.15	1.72	7.7	37.0 B	37.0 B	37.0	0.25
26	14.10	33.561	25.058	5.90	101.0	2.1	0.48	1.5	0.09	0.29	11.38	1.80	1.2	6.1	6.2	6.1	0.28
30	13.58	33.551	25.157	5.49	92.9	4.4	0.67	4.5	0.17	0.36	10.16	1.62	0.60	1.3	1.5	1.4	0.19

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 28.9 N	122 32.3 W	21/11/2013	1649 UTC	15 m	1155 - 1740 PST	1156 PST	1736 PST	185.8 mg C/m2	063

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.24	33.336	24.851	5.83	99.8	3.1	0.51	2.8	0.16	0.10	0.43	0.14	81. A	7.4	7.3	7.4	0.12
9	14.24	33.336	24.852	5.84	100.1	3.0	0.49	2.5	0.16	0.08	0.46	0.14	40.	7.3 B	7.3 B	7.3	0.13
12	14.24	33.337	24.853	5.83	100.0	3.0	0.51	2.5	0.16	0.08	0.42	0.14	29.	6.4	6.7	6.5	0.04
25	14.24	33.333	24.852	5.84	100.1	3.1	0.51	2.5	0.16	0.08	0.44	0.14	7.7	3.4 B	3.4 B	3.4	0.22
31	14.21	33.320	24.848	5.83	99.8	3.0	0.50	2.6	0.18	0.10	0.45	0.16					
41	13.96	33.430	24.985	5.69	96.9	3.3	0.60	3.8	0.26	0.47	0.41	0.21	1.5	0.55B	0.55B	0.55	0.12
51	13.58	33.431	25.065	5.53	93.6	3.8	0.69	5.0	0.34	0.46	0.32	0.20	0.54	0.11	0.14	0.13	0.15

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 10.7 N	119 30.7 W	24/11/2013	1738 UTC	12 m	1145 - 1730 PST	1145 PST	1714 PST	628.3 mg C/m2	080

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.24	33.564	24.590	5.80	103.6	1.7	0.34	0.0	0.02	0.00	1.80	0.22	77. A	28.7	30.7	29.7	0.25
7	16.21	33.566	24.597	5.78	103.2	1.7	0.33	0.0	0.02	0.00	1.80	0.39	41.	30.3	30.9	30.6	0.27
10	16.21	33.565	24.597	5.81	103.8	1.7	0.34	0.0	0.02	0.00	1.83	0.39	28.	25.8	27.9	26.9	0.29
19	16.20	33.564	24.599	5.77	102.9	1.7	0.35	0.0	0.03	0.00	2.05	0.44	8.8	16.6 B	16.6 B	16.6	0.20
26	16.20	33.564	24.600	5.76	102.8	1.7	0.34	0.0	0.03	0.00	2.00	0.39					
33	16.19	33.561	24.601	5.76	102.8	1.7	0.35	0.0	0.03	0.01	2.03	0.41	1.5	1.8	1.7	1.7	0.21
41	16.05	33.545	24.621	5.70	101.5	2.0	0.40	0.2	0.09	0.25	1.50	0.36	0.53	0.61	0.19	0.40	0.27

A) INCUBATION LIGHT INTENSITIES WERE 58.5; 38.5; 29.1; 8.9; 1.5; 0.51 PERCENT RESPECTIVELY.
B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 14.7 N	121 26.9 W	19/11/2013	1746 UTC	14 m	1150 - 1730 PST	1151 PST	1723 PST	283.9 mg C/m2	050

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.44	33.558	24.765	5.73	100.6	2.0	0.39	1.2	0.10	0.00	0.59	0.20	80. A	11.7	11.3	11.5	0.58
9	15.41	33.559	24.774	5.70	100.1	2.1	0.40	1.2	0.10	0.00	0.62	0.23	37.	11.6 B	11.6 B	11.6	0.17
11	15.40	33.559	24.775	5.69	99.9	2.1	0.40	1.2	0.10	0.00	0.65	0.24	30.	10.3	11.0	10.7	0.24
22	15.40	33.558	24.775	5.68	99.8	2.1	0.40	1.2	0.10	0.00	0.60	0.21	9.0	6.2 B	6.2 B	6.2	0.22
30	15.40	33.565	24.781	5.69	100.0	2.1	0.40	1.2	0.10	0.00	0.62	0.23					
38	15.39	33.560	24.780	5.68	99.8	2.1	0.40	1.2	0.11	0.00	0.60	0.23	1.6	1.1	0.98	1.0	0.15
48	14.84	33.571	24.909	5.65	98.1	2.1	0.42	1.5	0.13	0.18	0.46	0.25	0.52	0.27	0.37	0.32	0.14

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 83.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 54.7 N	124 10.1 W	18/11/2013	1800 UTC	37 m	1203 - 1745 PST	1202 PST	1735 PST	221.9 mg C/m2	046

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.43	33.310	24.118	5.48	100.0	2.1	0.30	0.0	0.00	0.00	0.19	0.06	92. A	2.9	3.1	3.0	0.14
12	17.41	33.308	24.121	5.48	100.0	2.1	0.30	0.0	0.00	0.00	0.19	0.06					
24	17.40	33.308	24.124	5.48	99.9	2.1	0.30	0.0	0.00	0.00	0.20	0.06	37.	3.0 B	3.0 B	3.0	0.10
31	17.40	33.310	24.126	5.48	100.0	2.1	0.30	0.0	0.00	0.00	0.19	0.05	28.	4.3 B	4.3 B	4.3	0.14
38	17.40	33.308	24.125	5.48	100.0	2.0	0.30	0.0	0.00	0.00	0.19	0.06					
48	17.39	33.305	24.127	5.48	100.0	2.1	0.29	0.0	0.00	0.00	0.20	0.06					
58	17.37	33.301	24.129	5.48	99.9	2.1	0.29	0.0	0.00	0.00	0.23	0.07	9.0	1.5 B	1.5 B	1.5	0.11
72	17.26	33.298	24.153	5.49	99.9	2.1	0.30	0.0	0.00	0.00	0.25	0.08					
86	13.83	33.098	24.758	6.04	102.4	2.5	0.36	0.0	0.01	0.03	0.25	0.14					
101	13.23	33.133	24.907	5.90	98.8	2.9	0.42	0.4	0.15	0.07	0.21	0.14	1.5	0.29	0.27	0.28	0.10
110	12.86	33.182	25.019	5.76	95.8	3.3	0.46	1.3	0.30	0.00	0.17	0.13					
119	12.20	33.184	25.148	5.59	91.8	4.2	0.57	3.4	0.08	0.00	0.12	0.12					
126	12.07	33.267	25.237	5.47	89.5	5.1	0.62	4.6	0.03	0.00	0.09	0.09	0.54	0.05	0.29	0.17	0.08

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 29.4 N	119 19.2 W	16/11/2013	1736 UTC	09 m	1142 - 1755 PST	1142 PST	1742 PST	483.2 mg C/m2	037

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.55	33.636	24.801	5.67	100.0	4.5	0.44	1.6	0.06	0.01	1.49	0.29	71. A	34.5	33.6	34.1	0.25
6	15.51	33.636	24.810	5.67	99.9	4.5	0.43	1.5	0.06	0.00	1.48	0.28	36.	34.0	34.0	34.0	0.31
7	15.51	33.635	24.808	5.68	100.0	4.6	0.44	1.6	0.06	0.00	1.60	0.36	30.	27.6	30.9	29.3	0.34
14	14.53	33.607	25.001	5.30	91.6	6.4	0.64	4.6	0.19	0.00	1.29	0.35	9.2	14.4	14.4	14.4	0.25
26	13.19	33.577	25.256	4.68	78.5	9.6	0.97	9.9	0.41	0.00	0.56	0.31	1.2	0.95	0.95	0.95	0.12
31	12.62	33.566	25.359	4.49	74.4	10.9	1.07	11.5	0.42	0.00	0.31	0.22	0.51	0.18	0.17	0.17	0.11

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 19.5 N	121 42.8 W	17/11/2013	1754 UTC	24 m	1152 - 1740 PST	1152 PST	1738 PST	213.9 mg C/m2	042

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.39	33.407	24.659	5.69	99.8	2.0	0.38	0.8	0.07	0.26	0.26	0.07	88. A	4.9	4.6	4.8	0.16
8	15.39	33.405	24.659	5.70	99.9	2.1	0.37	0.8	0.07	0.25	0.25	0.08					
14	15.38	33.405	24.661	5.69	99.8	2.1	0.37	0.8	0.07	0.26	0.26	0.08	41.	4.9 B	4.9 B	4.9	0.10
19	15.38	33.405	24.662	5.69	99.8	2.1	0.38	0.8	0.07	0.24	0.27	0.12	30.	4.2	4.0	4.1	0.14
28	15.38	33.408	24.664	5.68	99.6	2.0	0.37	0.8	0.10	0.25	0.27	0.08					
38	15.43	33.477	24.706	5.66	99.5						0.29	0.24	8.8	3.1 B	3.1 B	3.1	0.13
47	13.92	33.473	25.027	5.63	95.9	2.3	0.43	1.6	0.13	0.38	0.27	0.11					
56	11.69	33.164	25.224	5.33	86.5	6.5	0.91	8.8	0.22	0.00	0.17	0.16					
66	11.08	33.177	25.346	5.19	83.1	8.4	1.04	10.9	0.07	0.00	0.20	0.16	1.5	0.43B	0.43B	0.43	0.11
74	10.63	33.280	25.506	4.92	78.1	11.3	1.22	13.9	0.04	0.00	0.14	0.15					
83	10.55	33.365	25.586	4.66	73.9	13.4	1.34	15.9	0.03	0.00	0.10	0.12	0.49	0.11	0.16	0.14	0.09

A) INCUBATION LIGHT INTENSITIES WERE 58.5; 38.5; 29.1; 8.9; 1.5; 0.51 PERCENT RESPECTIVELY.
B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 25.2 N	117 54.2 W	15/11/2013	1807 UTC	19 m	1136 - 1735 PST	1136 PST	1717 PST	390.2 mg C/m2	029

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.19	33.572	24.376	5.76	104.8	2.3	0.33	0.0	0.01	0.00	0.36	0.03	85. A	6.5	12.1	9.3	0.19
12	17.05	33.566	24.406	5.75	104.3	2.2	0.33	0.0	0.01	0.00	0.35	0.08	38.	11.1 B	11.1 B	11.1	0.19
15	16.54	33.554	24.515	5.78	103.8	2.3	0.33	0.0	0.01	0.00	0.34	0.09	30.	9.1	10.3	9.7	0.15
22	14.12	33.393	24.923	6.04	103.3	4.1	0.46	0.5	0.09	0.00	0.85	0.25					
30	13.05	33.410	25.154	5.23	87.4	6.5	0.77	5.2	0.40	0.00	0.68	0.27	8.9	8.2 B	8.2 B	8.2	0.20
41	12.58	33.434	25.265	4.53	75.1	9.3	1.01	9.1	0.15	0.00	0.43	0.26					
53	12.17	33.451	25.357	4.22	69.3	11.1	1.13	11.2	0.08	0.01	0.27	0.19	1.4	0.56	0.52	0.54	0.07
58	12.10	33.470	25.386	3.87	63.5	13.0	1.26	13.1	0.05	0.00	0.15	0.14					
65	12.01	33.475	25.407	3.82	62.6	13.5	1.30	13.7	0.04	0.00	0.11	0.14	0.52	0.10	0.10	0.10	0.08

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 25.1 N	119 57.6 W	14/11/2013	1750 UTC	20 m	1146 - 1735 PST	1144 PST	1721 PST	190.1 mg C/m2	024

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	16.99	33.581	24.428	5.55	100.6	1.7	0.32	0.4	0.04	0.00	0.34	0.06	79. A	5.2	5.5	5.3	0.20
12	16.99	33.582	24.430	5.55	100.7	1.7	0.31	0.1	0.02	0.00	0.33	0.09	40.	6.2 B	6.2 B	6.2	0.10
16	16.99	33.584	24.431	5.55	100.5	1.7	0.32	0.1	0.01	0.00	0.33	0.06	29.	5.3	5.7	5.5	0.11
24	16.98	33.593	24.443	5.55	100.6	1.7	0.31	0.1	0.01	0.00	0.34	0.06					
31	15.86	33.532	24.653	5.61	99.4	1.8	0.34	0.5	0.04	0.00	0.46	0.19	9.3	1.9 B	1.9 B	1.9	0.76
44	12.37	33.316	25.215	5.16	85.0	6.2	0.87	7.9	0.37	0.00	0.40	0.23					
55	11.96	33.317	25.294	5.06	82.6	7.5	0.95	9.5	0.16	0.00	0.29	0.18	1.5	1.00	0.88	0.94	0.07
62	11.74	33.316	25.332	5.01	81.5	8.2	1.00	10.5	0.09	0.00	0.26	0.18					
69	11.48	33.379	25.430	4.72	76.4	9.9	1.13	12.4	0.04	0.00	0.21	0.14	0.50	0.21	0.35	0.28	0.08

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 24.9 N	121 59.4 W	13/11/2013	1806 UTC	21 m	1155 - 1800 PST	1152 PST	1729 PST	147.2 mg C/m2	521

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	16.60	33.151	24.191	5.63	101.0	2.1	0.32	0.1	0.00	0.00	0.17	0.03	86. A	3.3	3.6	3.5	0.13
13	16.59	33.153	24.195	5.63	100.9	2.1	0.32	0.1	0.00	0.00	0.16	0.04	39.	4.2 B	4.2 B	4.2	0.09
18	16.59	33.154	24.195	5.64	101.1	2.1	0.32	0.1	0.01	0.00	0.16	0.03	27.	3.3	3.1	3.2	0.09
25	16.60	33.170	24.205	5.65	101.3	2.1	0.32	0.0	0.01	0.00	0.17	0.03					
33	16.55	33.202	24.244	5.63	100.9	2.0	0.31	0.0	0.01	0.00	0.19	0.03	9.0	2.3 B	2.3 B	2.3	0.10
41	16.15	33.163	24.306	5.70	101.4	2.1	0.33	0.1	0.01	0.02	0.23	0.08					
49	15.27	33.155	24.494	5.84	102.1	2.2	0.34	0.3	0.02	0.02	0.26	0.09					
58	13.91	33.102	24.743	6.16	104.7	2.6	0.34	0.0	0.01	0.00	0.29	0.15	1.4	0.10	0.60	0.35	0.09
72	12.79	33.114	24.978	5.96	98.9	2.9	0.39	0.1	0.05	0.00	0.29	0.22	0.52	0.26	0.29	0.28	0.03

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 57.4 N	117 18.3 W	09/11/2013	1918 UTC	23 m	1200 - 1720 PST	1133 PST	1718 PST	388.1 mg C/m2	001

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	17.84	33.612	24.249	5.64	103.9	1.7	0.34	0.1	0.01	0.05	0.19	0.05	94. A	5.2	6.3	5.7	0.10
8	17.51	33.607	24.326	5.68	104.1	1.7	0.33	0.0	0.01	0.01	0.23	0.06					
14	16.62	33.516	24.466	5.94	106.9	2.3	0.37	0.1	0.02	0.00	0.36	0.15	39.	10.1 B	10.1 B	10.1	0.15
19	15.29	33.440	24.707	5.99	104.9	3.9	0.46	0.4	0.07	0.03	0.89	0.34	28.	19.5	20.8	20.2	0.18
28	13.69	33.385	25.006	5.55	94.0	4.5	0.63	3.0	0.33	0.11	0.83	0.38					
36	12.70	33.407	25.221	4.84	80.3	7.5	0.89	7.7	0.15	0.00	0.47	0.28	9.0	0.77	2.6	1.7	0.04
45	12.39	33.431	25.298	4.41	72.8	10.3	1.06	10.0	0.21	0.01	0.22	0.24					
54	12.05	33.459	25.385	4.12	67.5	12.2	1.19	12.1	0.24	0.10	0.12	0.22					
60	12.02	33.474	25.403	4.00	65.4	12.9	1.23	12.7	0.20	0.24	0.10	0.21	1.8	0.03	0.02	0.03	0.06

A) INCUBATION LIGHT INTENSITIES WERE 58.5; 38.5; 29.1; 8.9; 1.5; 0.51 PERCENT RESPECTIVELY.
B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 20.8 N	118 33.3 W	10/11/2013	1726 UTC	27 m	1140 - 1730 PST	1138 PST	1726 PST	228.3 mg C/m2	008

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	18.05	33.629	24.211	5.45	100.9	1.6	0.29	0.4	0.01	0.00	0.16	0.03	94. A	2.5	2.4	2.5	0.14
9	18.06	33.631	24.212	5.48	101.4	1.6	0.29	0.0	0.02	0.00	0.16	0.03					
17	17.79	33.591	24.248	5.47	100.8	1.5	0.28	0.1	0.02	0.00	0.18	0.05	38.	3.3 B	3.3 B	3.3	0.24
22	17.70	33.594	24.271	5.51	101.2	1.5	0.28	0.0	0.01	0.00	0.20	0.04	29.	3.0	3.4	3.2	0.21
32	15.91	33.441	24.572	5.76	102.2	1.9	0.33	0.1	0.04	0.00	0.45	0.20					
43	14.55	33.355	24.803	5.85	100.8	3.0	0.40	0.7	0.10	0.00	0.49	0.34	8.7	5.2	4.1	4.6	0.10
58	12.23	33.196	25.148	5.50	90.2	5.2	0.73	5.9	0.28	0.00	0.28	0.22					
74	11.53	33.382	25.424	5.03	81.4	7.9	0.84	8.5	0.04	0.00	0.16	0.14	1.5	0.26	0.45	0.35	0.13
84	10.86	33.434	25.586	4.72	75.3	11.0	1.06	12.1	0.03	0.00	0.08	0.08					
93	10.64	33.463	25.647	4.56	72.5	12.5	1.17	13.8	0.02	0.00	0.06	0.06	0.51	0.05	0.02	0.03	0.11

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 10.8 N	120 55.1 W	11/11/2013	1736 UTC	31 m	1154 - 1740 PST	1148 PST	1738 PST	174.2 mg C/m2	013

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	17.58	33.443	24.183	5.49	100.6	1.6	0.30	0.1	0.01	0.01	0.16	0.02	91. A	3.2	3.1	3.1	0.08
10	17.54	33.447	24.196	5.47	100.2	1.6	0.30	0.0	0.01	0.01	0.15	0.02					
19	17.16	33.420	24.267	5.58	101.3	1.6	0.31	0.0	0.00	0.01	0.20	0.04	39.	3.4	3.4	3.4	0.11
26	17.09	33.425	24.287	5.59	101.5	1.6	0.31	0.0	0.01	0.07	0.25	0.05	28.	3.1	2.9	3.0	0.13
37	17.03	33.444	24.317	5.59	101.3	1.6	0.31	0.0	0.01	0.06	0.31	0.08					
49	15.70	33.321	24.528	5.71	100.7	1.9	0.36	0.2	0.03	0.29	0.29	0.09	8.8	1.6 B	1.6 B	1.6	0.13
60	13.63	33.139	24.830	5.88	99.4	2.6	0.44	0.6	0.19	0.38	0.26	0.11					
74	12.89	33.222	25.042	5.64	93.9	3.6	0.54	2.6	0.29	0.04	0.23	0.11					
85	11.52	33.163	25.255	5.43	87.7	5.8	0.79	6.8	0.04	0.01	0.14	0.10	1.5	0.13	0.33	0.23	0.09
96	10.75	33.226	25.443	5.13	81.5	9.4	1.00	10.5	0.02	0.02	0.07	0.07					
107	10.17	33.325	25.620	4.81	75.5	12.8	1.20	14.0	0.01	0.00	0.03	0.03	0.50	0.00	0.01	0.01	0.09

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1311 STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
29 50.8 N	123 35.1 W	12/11/2013	1744 UTC	32 m	1202 - 1745 PST	1159 PST	1743 PST	124.0 mg C/m2	017

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3 µM	PO4 µM	NO3 µM	NO2 µM	NH4 µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	19.36	33.695	23.934	5.31	100.8	2.3	0.26	0.2	0.00	0.00	0.09	0.02	91. A	1.5	1.7	1.6	0.15
10	19.36	33.695	23.934	5.30	100.6	2.3	0.26	0.0	0.01	0.00	0.10	0.01					
20	19.38	33.713	23.944	5.28	100.3	2.3	0.25	0.0	0.00	0.00	0.09	0.02	38.	1.6 B	1.6 B	1.6	0.08
26	19.36	33.711	23.948	5.29	100.4	2.3	0.25	0.0	0.00	0.00	0.10	0.01	29.	1.6	1.5	1.5	0.09
38	19.54	33.786	23.961	5.27	100.4	2.3	0.24	0.0	0.01	0.00	0.11	0.02					
50	19.26	33.806	24.048	5.36	101.6	2.4	0.24	0.0	0.01	0.00	0.16	0.03	9.1	1.5	1.1	1.3	0.11
62	16.83	33.578	24.469	5.83	105.4	2.6	0.22	0.0	0.00	0.00	0.19	0.05					
75	15.69	33.539	24.699	5.80	102.4	2.6	0.24	0.0	0.00	0.00	0.20	0.11					
88	15.36	33.627	24.841	5.62	98.7	2.8	0.29	0.0	0.02	0.00	0.21	0.15	1.5	0.69	0.63	0.66	0.11
100	14.96	33.693	24.980	5.44	94.7	3.3	0.34	0.5	0.19	0.00	0.19	0.18					
110	14.79	33.772	25.079	5.39	93.7	3.4	0.32	0.8	0.16	0.00	0.19	0.15	0.51	0.40	0.26	0.33	0.05

A) INCUBATION LIGHT INTENSITIES WERE 58.5; 38.5; 29.1; 8.9; 1.5; 0.51 PERCENT RESPECTIVELY.
B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

CalCOFI Cruise 1311

MACROZOOPLANKTON BIOMASS

Net Mesh Size: 0.505mm

Line	Sta.	Latitude N	Longitude W	Date Mo/Day	Time (PST) Start	Time (PST) End	Water Volume Strained (m^3)	Max. Tow Depth (m)	Volume per 1000 m^3 Strained Total (cm^3)	Volume per 1000 m^3 Strained Small (cm^3)
76.7	49.0	35 05.3	120 46.5	11/23	1432	1438	109	51	422	266
76.7	51.0	35 01.3	120 55.1	11/23	1220	1241	389	198	291	190
76.7	55.0	34 53.3	121 11.8	11/23	753	815	434	208	196	166
76.7	60.0	34 43.3	121 32.8	11/23	458	519	419	210	88	88
76.7	70.0	34 23.3	122 14.7	11/22	2250	2312	442	216	183	183
76.7	80.0	34 03.2	122 56.6	11/22	1644	1706	447	212	112	98
76.7	90.0	33 43.3	123 38.0	11/22	1044	1107	470	215	40	40
76.7	100.0	33 23.3	124 19.4	11/22	420	441	453	211	35	35
80.0	50.5	34 27.7	120 29.1	11/23	1920	1922	47	14	169	169
80.0	51.0	34 27.0	120 31.4	11/23	2046	2053	132	55	61	61
80.0	55.0	34 19.1	120 48.1	11/20	855	918	422	213	90	90
80.0	60.0	34 09.0	121 08.9	11/20	2027	2050	471	208	136	136
80.0	70.0	33 49.0	121 50.5	11/21	238	301	469	206	62	51
80.0	80.0	33 29.0	122 32.1	11/21	748	811	463	215	76	52
80.0	90.0	33 08.9	123 13.1	11/21	1539	1600	426	214	26	26
81.7	43.5	34 24.2	119 48.0	11/24	412	414	47	16	299	299
81.8	46.9	34 16.5	120 01.4	11/24	147	209	426	209	87	87
83.3	39.4	34 15.6	119 19.5	11/24	700	702	41	13	48	48
83.3	40.6	34 13.6	119 24.6	11/24	837	840	74	24	54	54
83.3	42.0	34 10.7	119 30.5	11/24	1045	1059	264	127	30	30
83.3	51.0	33 52.6	120 08.0	11/19	2345	2353	166	71	48	48
83.3	55.0	33 44.7	120 24.6	11/19	2015	2037	429	216	110	110
83.3	60.0	33 34.7	120 45.3	11/19	1603	1623	407	213	113	113
83.3	70.0	33 14.5	121 26.8	11/19	849	912	462	209	52	26
83.3	80.0	32 54.6	122 07.7	11/19	330	353	436	209	94	94
83.3	90.0	32 34.7	122 48.7	11/18	2149	2211	438	210	36	36
83.3	100.0	32 14.6	123 29.6	11/18	1603	1624	426	213	35	35
83.3	110.0	31 54.6	124 10.1	11/18	902	925	452	210	33	33
85.4	35.8	34 00.8	118 49.8	11/24	1751	1753	40	14	202	202
86.7	33.0	33 53.4	118 29.4	11/15	2208	2214	114	49	175	175
86.7	35.0	33 49.4	118 37.7	11/16	48	110	442	200	93	93
86.7	40.0	33 39.4	118 58.5	11/16	513	534	416	213	72	72
86.7	45.0	33 29.4	119 18.9	11/16	826	848	456	213	42	31
86.7	50.0	33 19.3	119 39.7	11/16	1331	1339	147	61	164	164
86.7	55.0	33 09.5	120 00.3	11/16	1838	1859	446	210	135	115
86.7	60.0	32 59.3	120 20.9	11/16	2252	2316	491	214	206	192
86.7	70.0	32 39.4	121 01.8	11/17	502	523	458	210	131	96
86.7	80.0	32 19.4	121 42.8	11/17	1056	1118	434	213	111	62
86.7	90.0	31 59.4	122 23.5	11/17	1645	1706	399	210	40	40
86.7	100.0	31 39.4	123 04.2	11/17	2232	2254	445	209	94	49
86.7	110.0	31 19.4	123 44.6	11/18	411	432	441	210	39	39
86.8	32.5	33 53.3	118 26.7	11/15	2046	2048	38	15	239	239
88.5	30.1	33 40.4	118 05.6	11/15	1712	1714	44	13	205	205
90.0	27.7	33 29.7	117 44.8	11/15	1443	1445	52	12	116	116
90.0	28.0	33 29.1	117 46.2	11/15	1400	1405	101	41	118	118
90.0	30.0	33 25.1	117 54.3	11/15	1134	1156	443	209	75	75
90.0	35.0	33 15.1	118 15.0	11/15	711	734	446	224	175	90
90.0	37.0	33 11.0	118 23.2	11/15	421	442	376	216	88	88
90.0	45.0	32 55.2	118 56.0	11/14	2245	2307	455	216	59	59
90.0	53.0	32 39.0	119 28.9	11/14	1642	1704	453	220	35	35
90.0	60.0	32 25.1	119 57.5	11/14	1106	1128	457	209	53	53
90.0	70.0	32 05.0	120 38.4	11/14	410	432	459	207	57	57
90.0	80.0	31 45.0	121 18.8	11/13	2141	2204	454	214	95	95
90.0	90.0	31 25.0	121 59.3	11/13	1120	1143	451	213	82	42
90.0	100.0	31 05.0	122 39.7	11/13	441	503	447	214	31	31
90.0	110.0	30 45.1	123 20.0	11/12	2220	2242	439	217	62	62
90.0	120.0	30 25.1	123 59.9	11/12	1612	1634	453	211	35	35
91.7	26.4	33 14.7	117 27.8	11/09	1552	1554	49	13	81	81
93.3	26.7	32 57.4	117 18.3	11/09	1210	1215	127	40	150	150
93.3	28.0	32 54.8	117 23.7	11/09	1953	2015	434	213	76	76
93.3	30.0	32 50.8	117 31.9	11/09	2241	2303	430	204	100	100
93.3	35.0	32 40.9	117 52.4	11/10	235	257	449	209	67	56
93.3	40.0	32 30.8	118 12.7	11/10	634	654	417	209	82	65
93.3	45.0	32 20.8	118 33.2	11/10	1045	1107	464	206	34	34
93.3	50.0	32 10.9	118 53.6	11/10	1438	1500	460	208	59	59
93.3	55.0	32 00.7	119 14.0	11/10	1850	1912	450	210	44	44
93.3	60.0	31 50.8	119 34.3	11/10	2245	2307	451	216	44	44
93.3	70.0	31 30.8	120 14.8	11/11	441	501	414	214	85	85
93.3	80.0	31 10.8	120 55.1	11/11	1056	1118	428	216	51	51
93.3	90.0	30 50.7	121 35.3	11/11	1645	1706	415	211	41	41
93.3	100.0	30 30.8	122 15.5	11/11	2228	2250	440	211	32	32
93.3	110.0	30 10.7	122 55.3	11/12	407	428	422	214	43	43
93.3	120.0	29 50.8	123 34.9	11/12	849	911	443	214	16	16
93.4	26.4	32 57.1	117 16.8	11/09	1306	1308	49	12	162	162