UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

CalCOFI Cruise 1411
8 – 23 November 2014

CC Reference 15 - 03
12 Sept 2015

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

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CONTENTS

INTRODUCTION

The data presented in this report were collected during cruise 1411* 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 cruise 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 and baseline corrections were performed in each run using a high standard and blank respectively 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 monitored throughout the cruise and available to adjust values for nitrate, nitrite, phosphate, and silicate if appropriate. A separate reference sample was used to monitor ammonium stability throughout the cruise. 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 10.21 µCi of ^{14}C as $NaHCO_3$ (200µl 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).

Avifauna Observations (Farallon Institute of Advanced Ecosystem Research)

Sea birds were counted within a 300-meter wide strip off to one side of the ship. Counts were made while underway between stations during periods of daylight. These counts were summed over 20 nautical mile (nm) intervals, or the distance between consecutive stations, whichever was less.

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. The National Centers for Environmental Information (NCEI) in collaboration with the E.Firing Acoustic Doppler Current Profiler (ADCP) Laboratory at the University of Hawaii have established the Joint Archive for Shipboard ADCP (JASADCP). The JASADCP is responsible for the acquisition, review, documentation, archival, and distribution of shipboard ADCP data sets, data may be accessed through their website (http://ilikai.soest.hawaii.edu/sadcp/index.html). Shipboard ADCP data is acquired by University of Hawaii Data Acquisition System (UDHAS) and uses Common Ocean Data Access System (CODAS) processing to incrementally build a dataset of averaged, edited ocean velocities for each ADCP and ping type specified. Processed data and plots are served on the shipboard network, and daily status summaries are emailed and available online (http://currents.soest.hawaii.edu/uhdas_fromships.html).

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 selected locations along the cruise track with 14 profile and 8 additional surface water stations. 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) Microbial Diversity and Gene Expression: Samples suitable for purification of DNA and RNA from bacterial and microbial eukaryotic biomass are collected for molecular diversity assays targeted to various genetic marker loci (16S and 18S rRNA). DNA samples are collected at every station, in parallel with particulate organic matter (POM) samples, on Whatman GF/F filters. RNA samples are collected in parallel with primary productivity samples on 0.2 µM sterivex filters with a maximum filtration time of 30 min. Additional samples from the mixed layer, chlorophyll max, and two depths below the euphotic zone are collected along lines 80 and 90. (A. Allen, SIO and JCVI)

9) APEX Profiling Float: NAVOCEANO (Naval Oceanographic Office) maintains operational ocean circulation models worldwide. Ocean conditions in the Southern California region can be extracted from the global HYCOM (Hybrid Coordinate Model) or the RNCOM-SOCAL (Regional Navy Coastal Ocean Model for the Southern California area). Output from public domain versions of the various NAVOCEANO models are available at http://www.opc.ncep.noaa.gov/newNCOM/NCOM_currents.shtml. NAVOCEANO uses real-time temperature and temperature-salinity profile data in various ways: Profiles are 1) assimilated into model nowcasts to make them more realistic, 2) used to assess ocean model forecasts, 3) stored in historical observation databases such as the Master Oceanographic Observation Data Set (MOODS), and 4) used in the construction of ocean climatologies such as the Generalized Digital Environmental Model (GDEM). Profiling float data has become a primary source of profile data because it is so well-distributed spatially around the world, provides data on a continuing basis, provides salinity as well as temperature data, and is of high quality. Profiling float trajectories are used to assess the depiction of fronts and eddies in ocean models (e.g., positioning, size, and associated current velocities). NAVOCEANO provided three APEX profiling floats for deployment on this cruise at stations 93.3 45, 90.0 53, and 86.7 45.

10) Fukashima Cesium Radionuclides Sampled. From surface waters, 3 meter uncontaminated underway and 20 meter CTD bottle waters were collected in 2.5 liter and 5 liter cubicontainers. Samples were to be analyzed by both Scripps Oceanography and Woods Hole for cesium radionuclides originating from Fukashima Nuclear facility seawater discharge. Results are posted http://ourradioactiveocean.org/results.html. (G. Mitchell, E. Terrill, SIO; K. Buesseler, WHOI, CMER)

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.

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FIGURES

Cruise 1411

1. CalCOFI Cruise 1411 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.

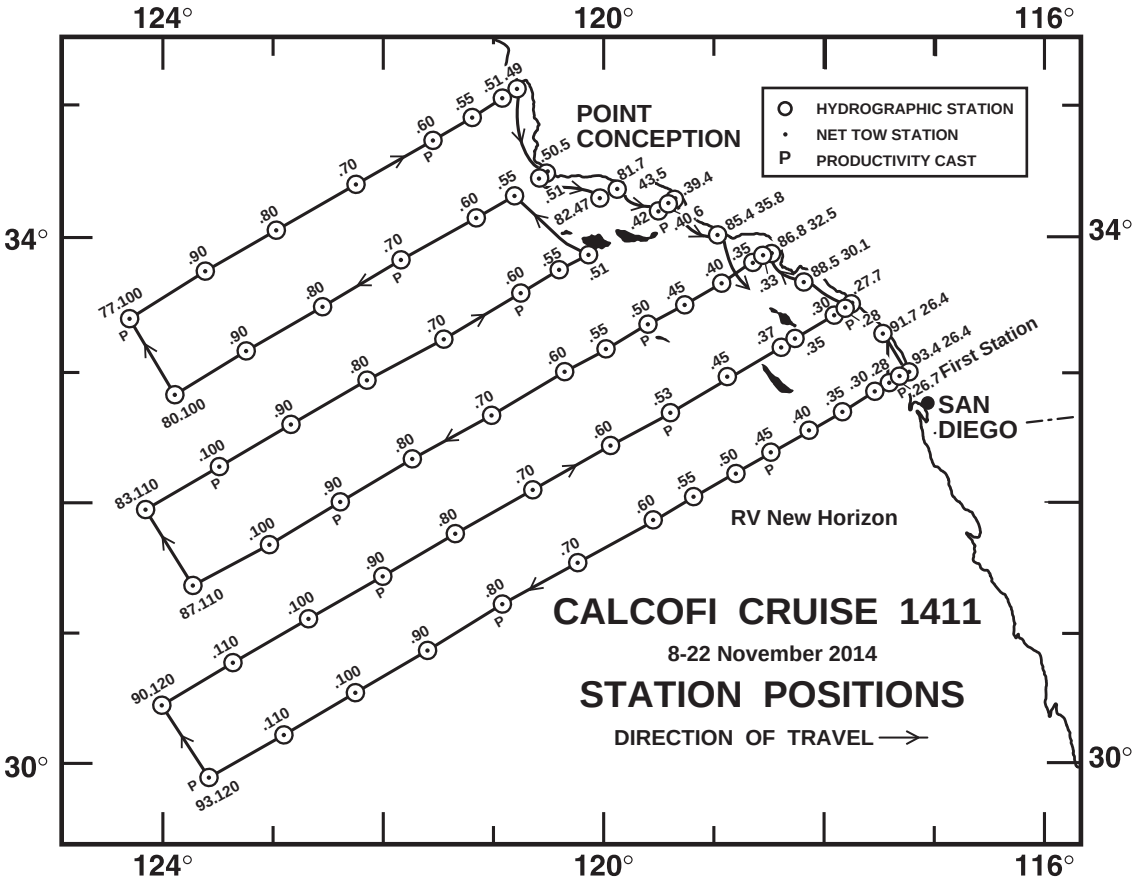
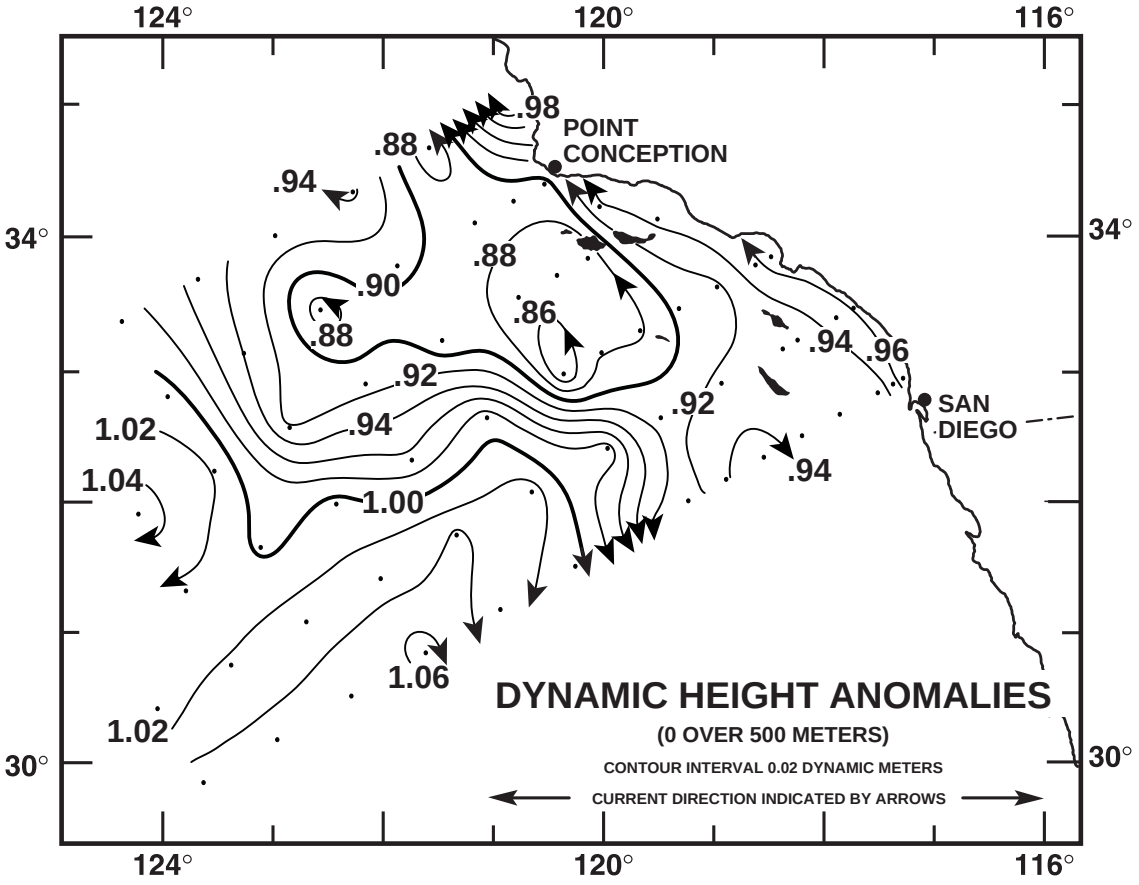


FIGURE 1



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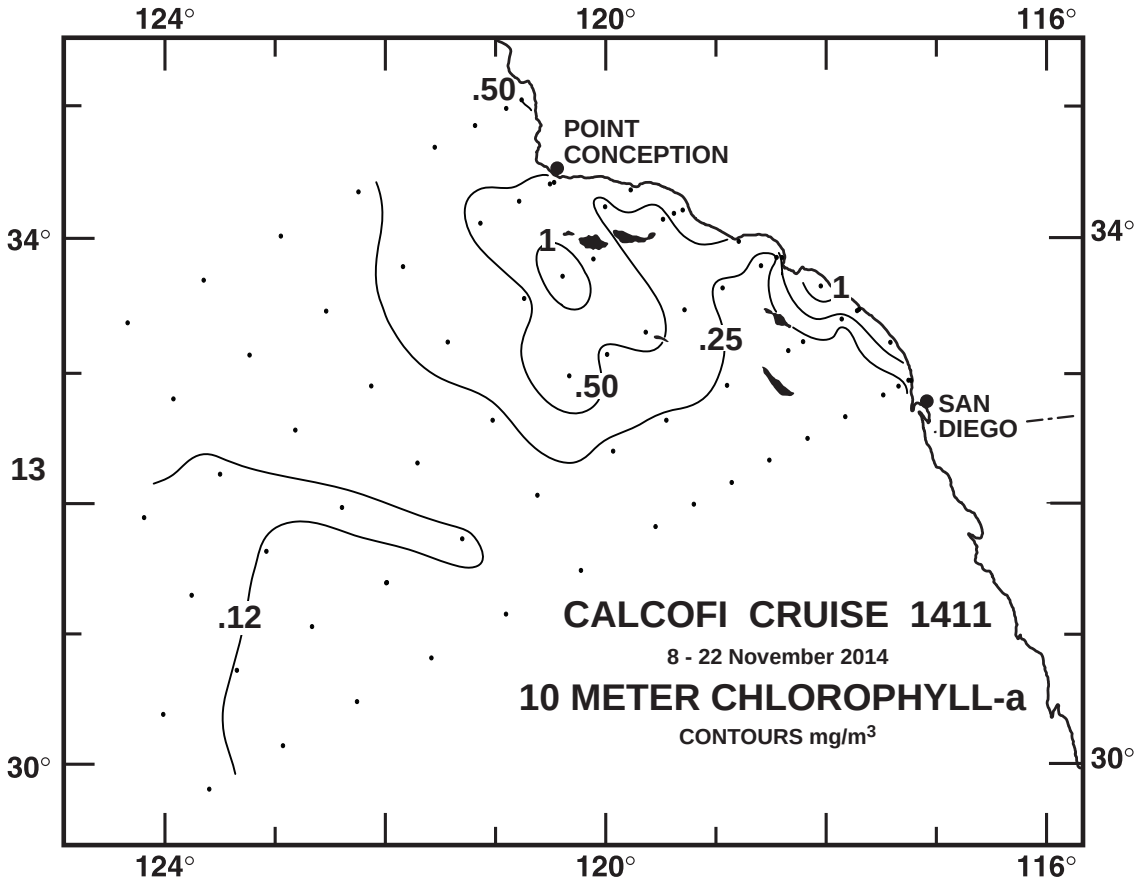

FIGURE 3A

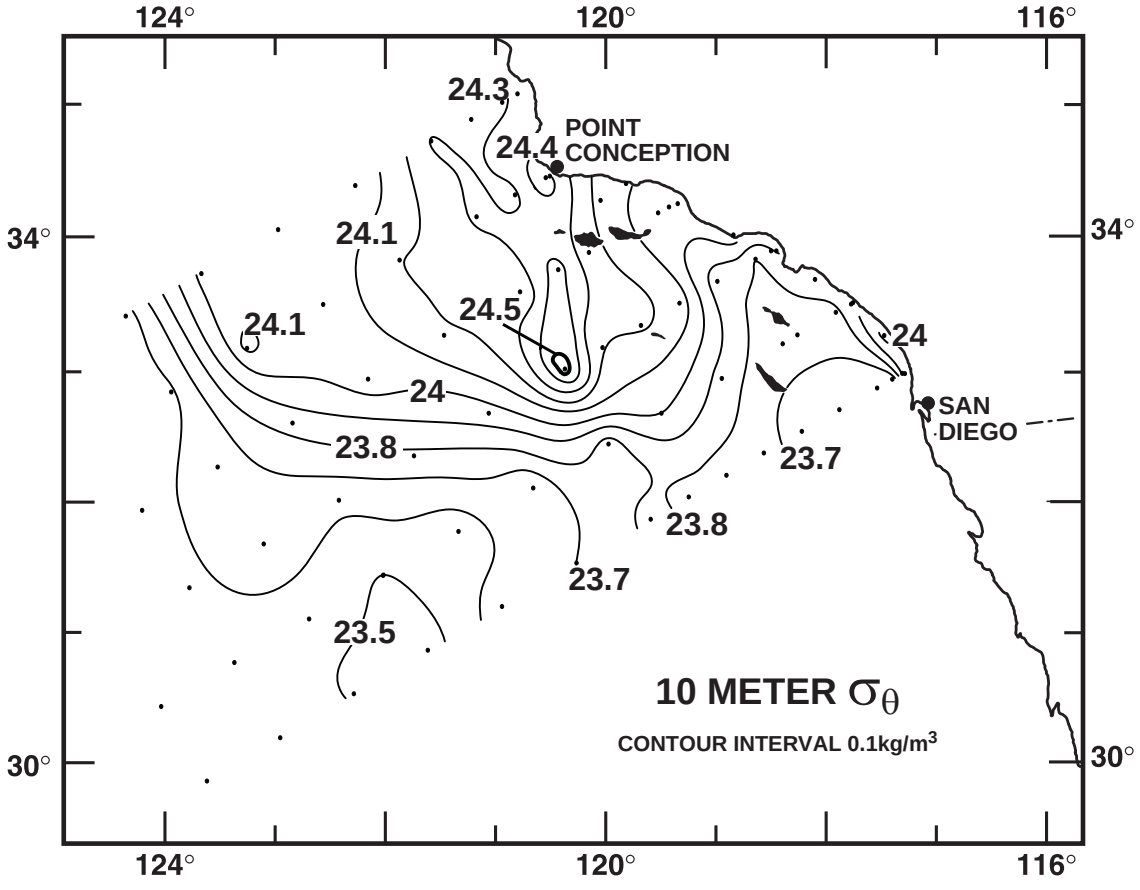

FIGURE 3B

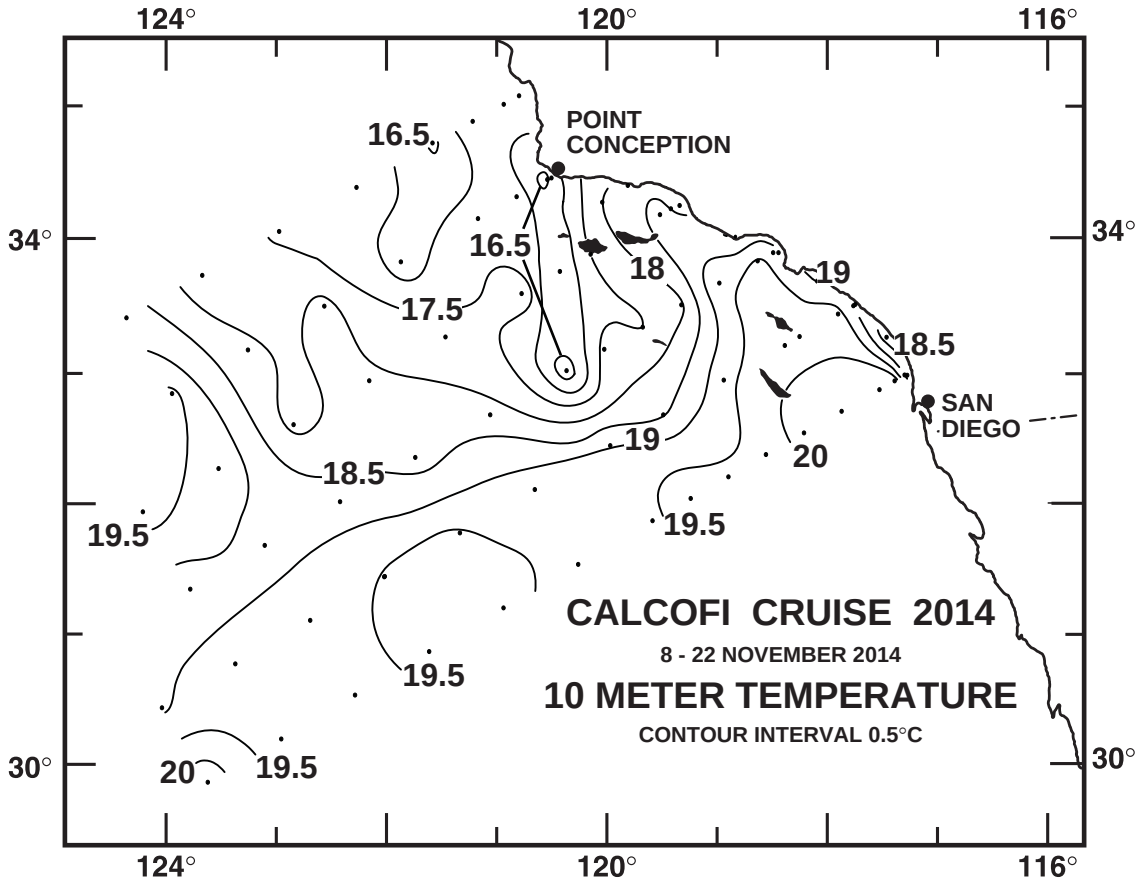

FIGURE 3C

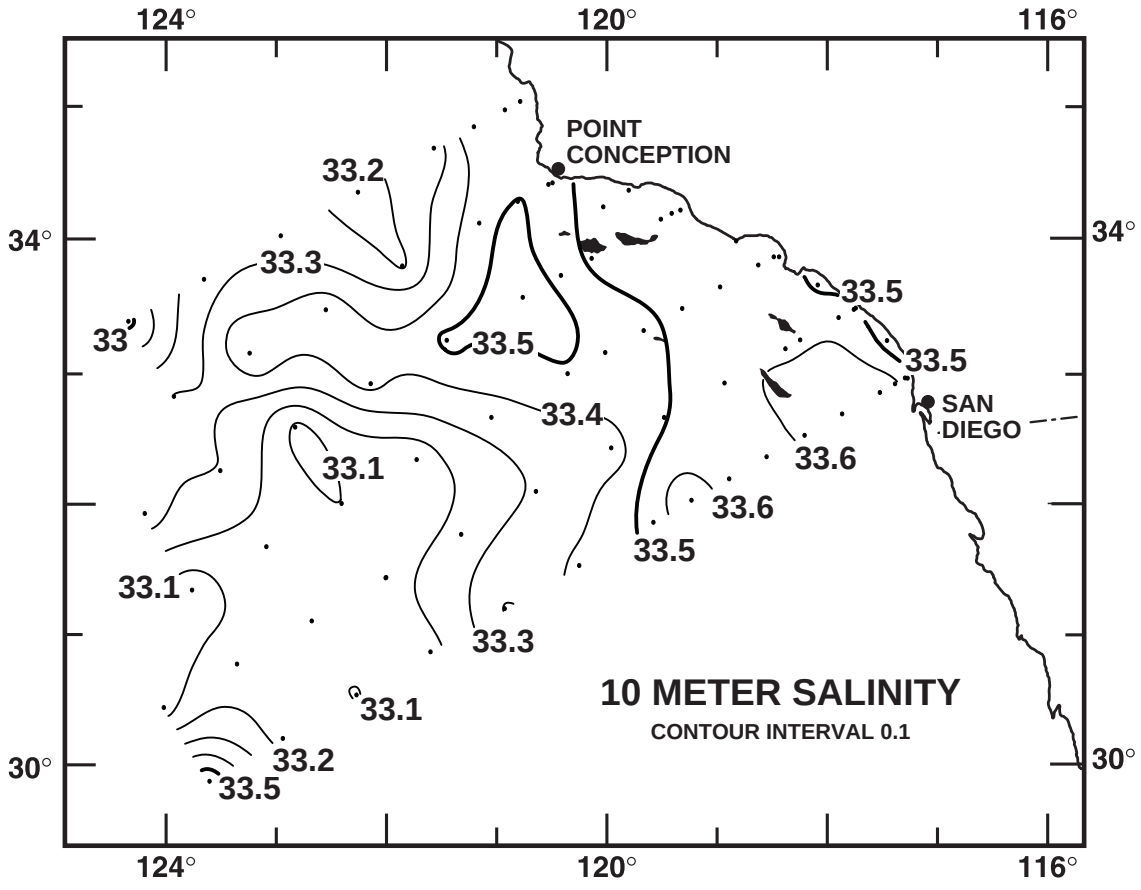

FIGURE 3D

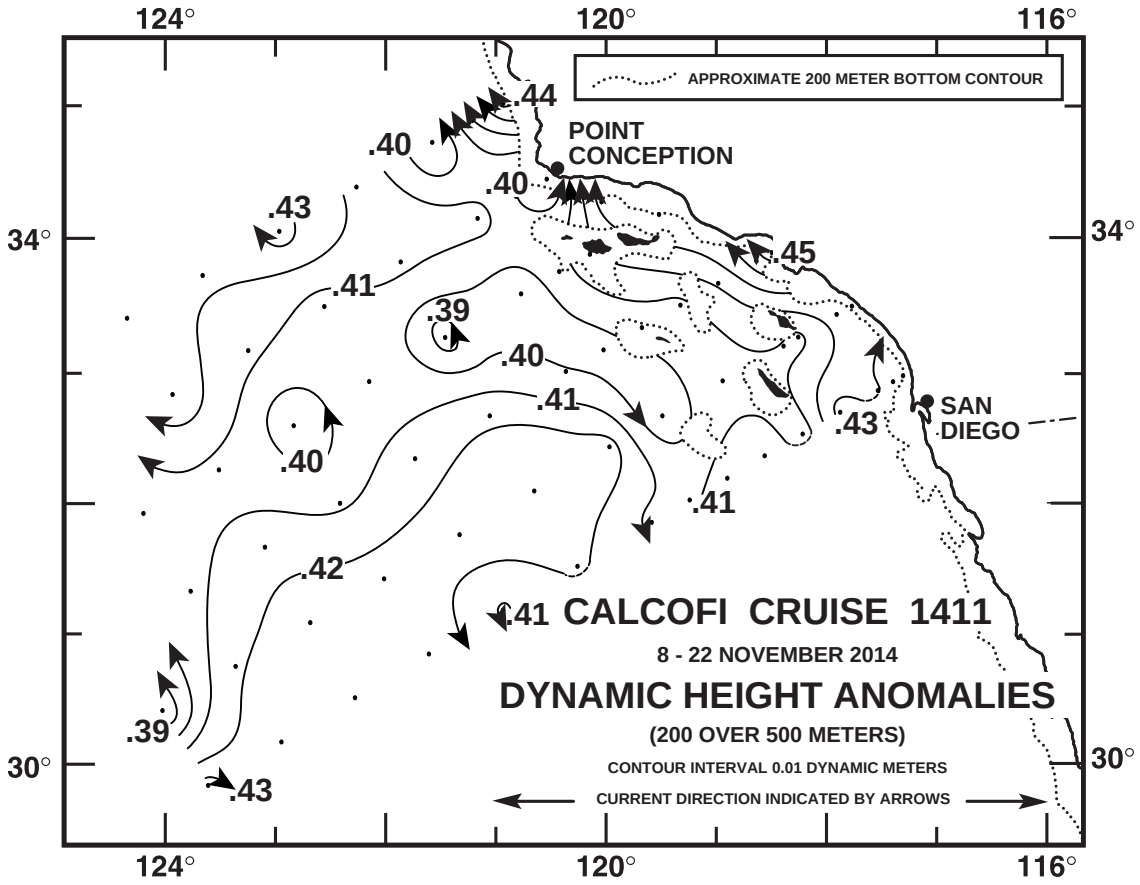

FIGURE 4A

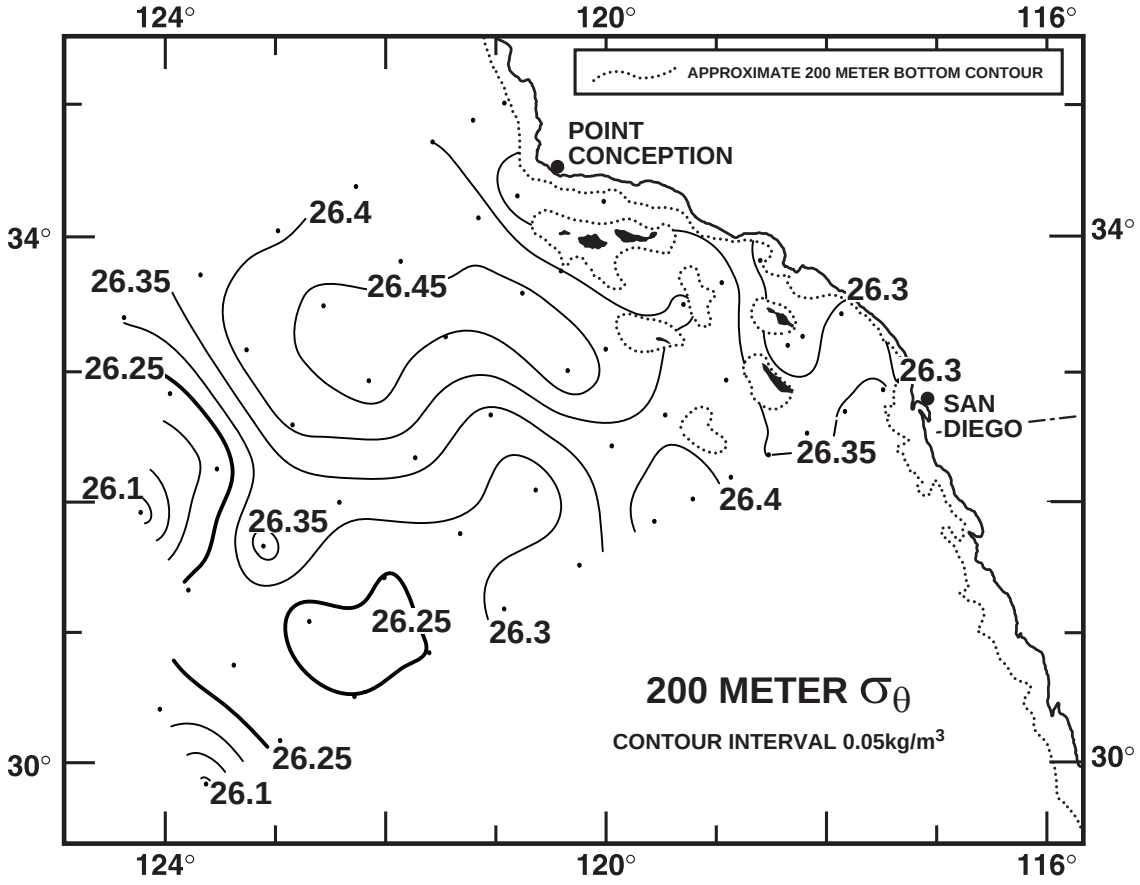

FIGURE 4B

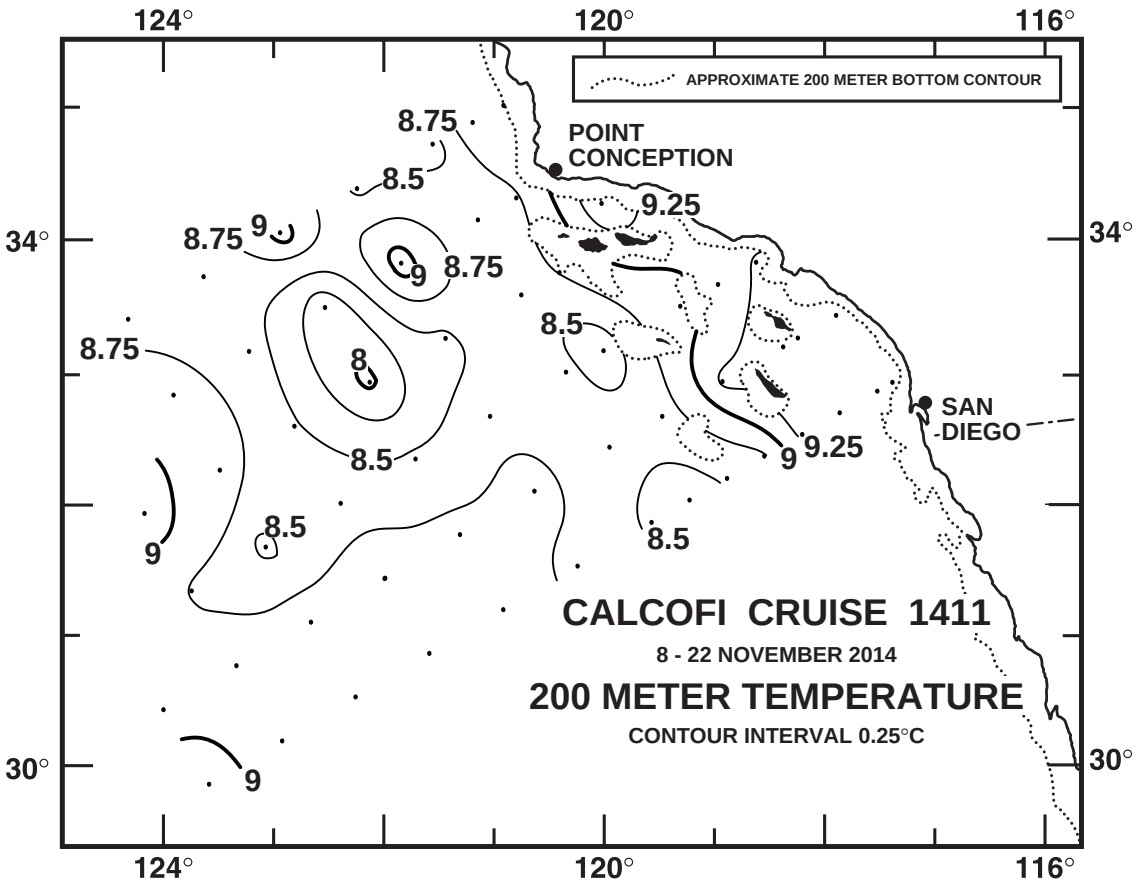

FIGURE 4C

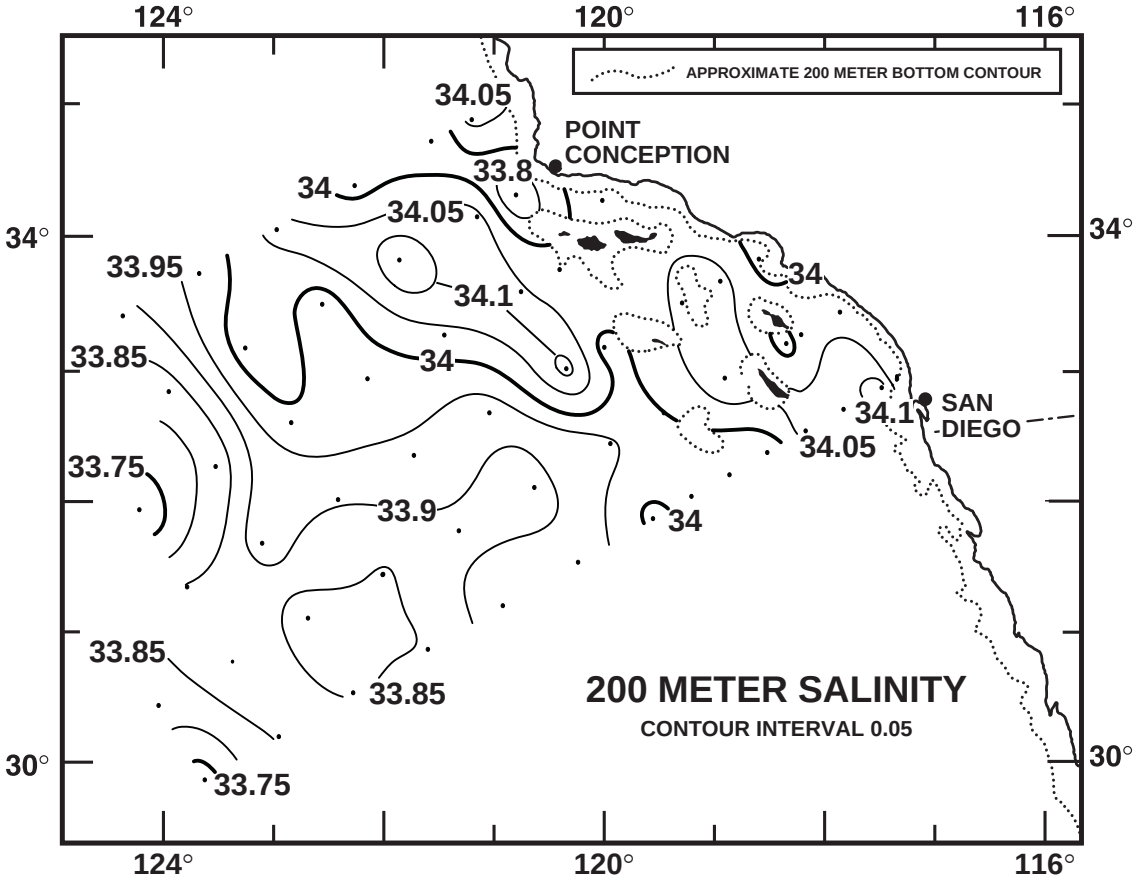

FIGURE 4D

CALCOFI CRUISE 1411

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POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

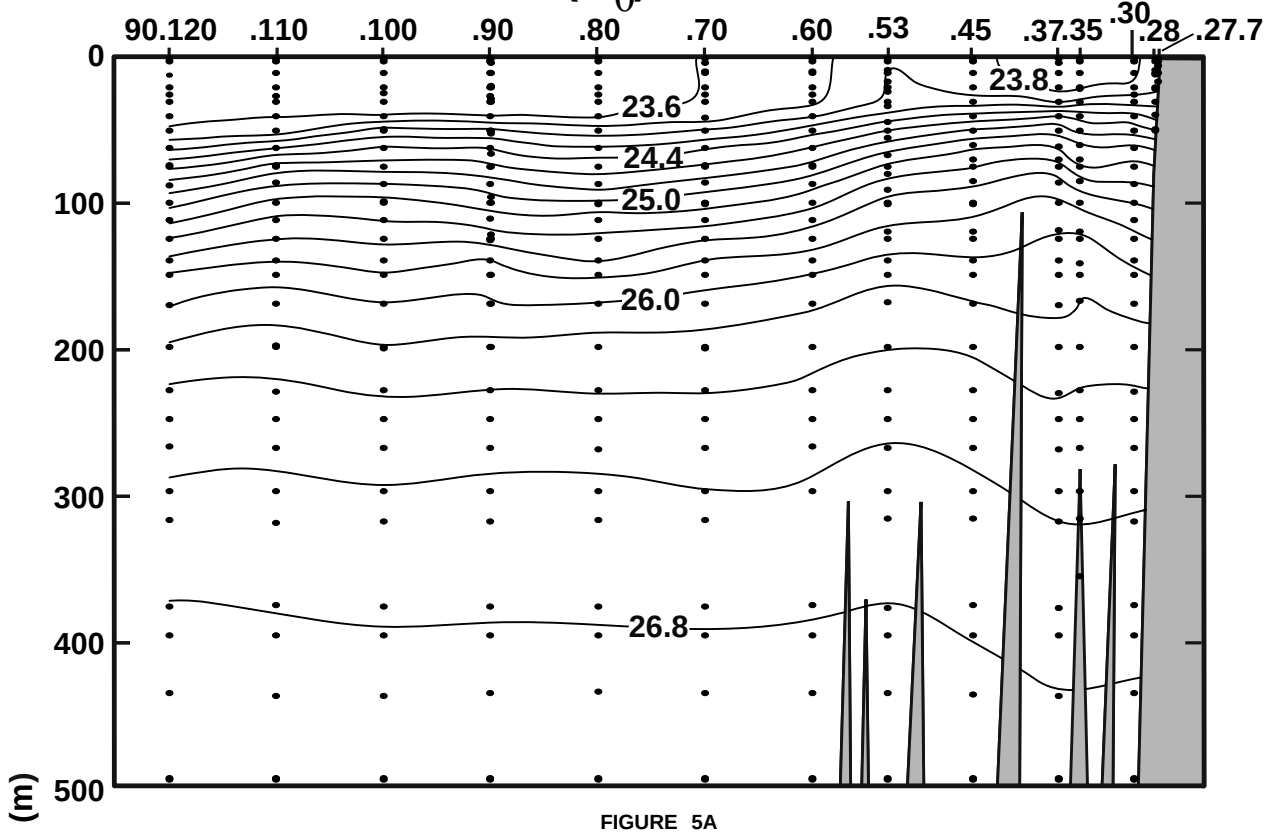

FIGURE 5A

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

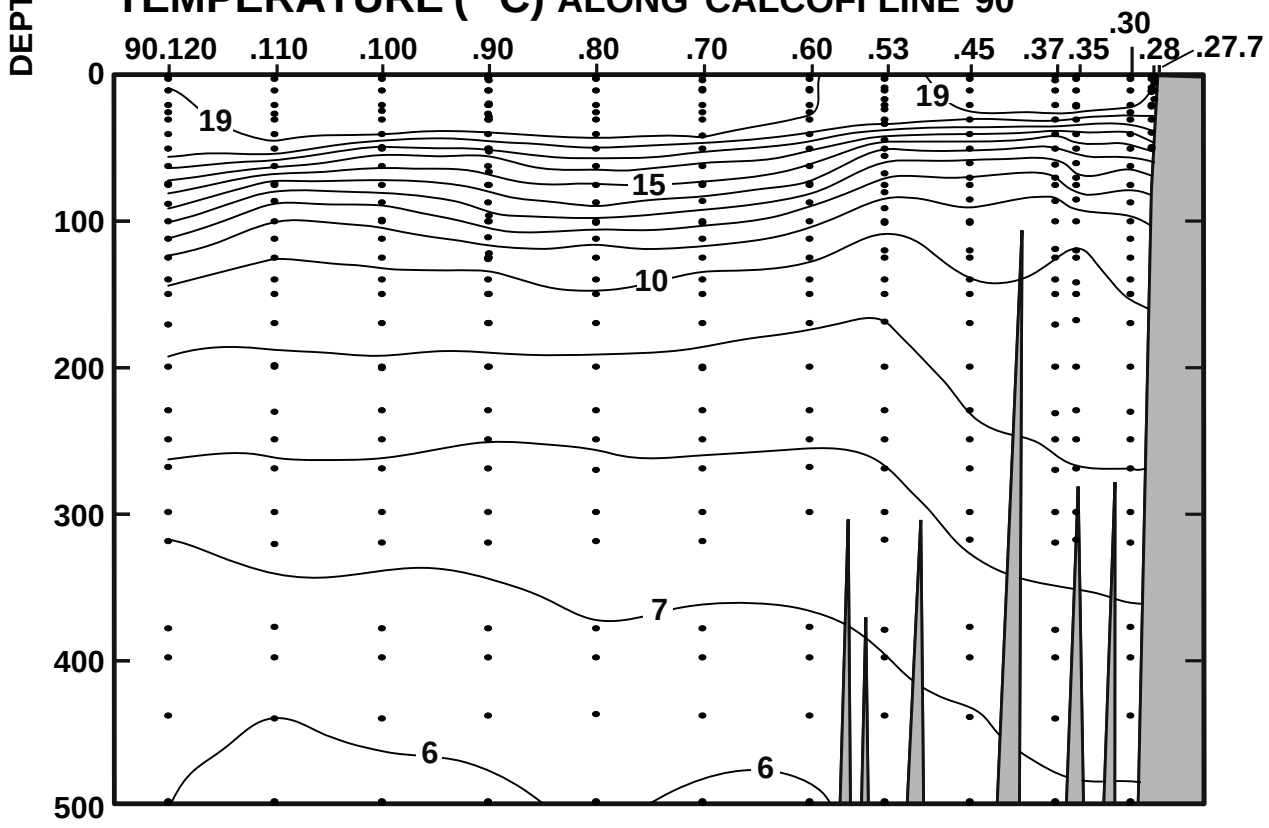

FIGURE 5B

CALCOFI CRUISE 1411

11- 14 November 2014

SALINITY ALONG CALCOFI LINE 90

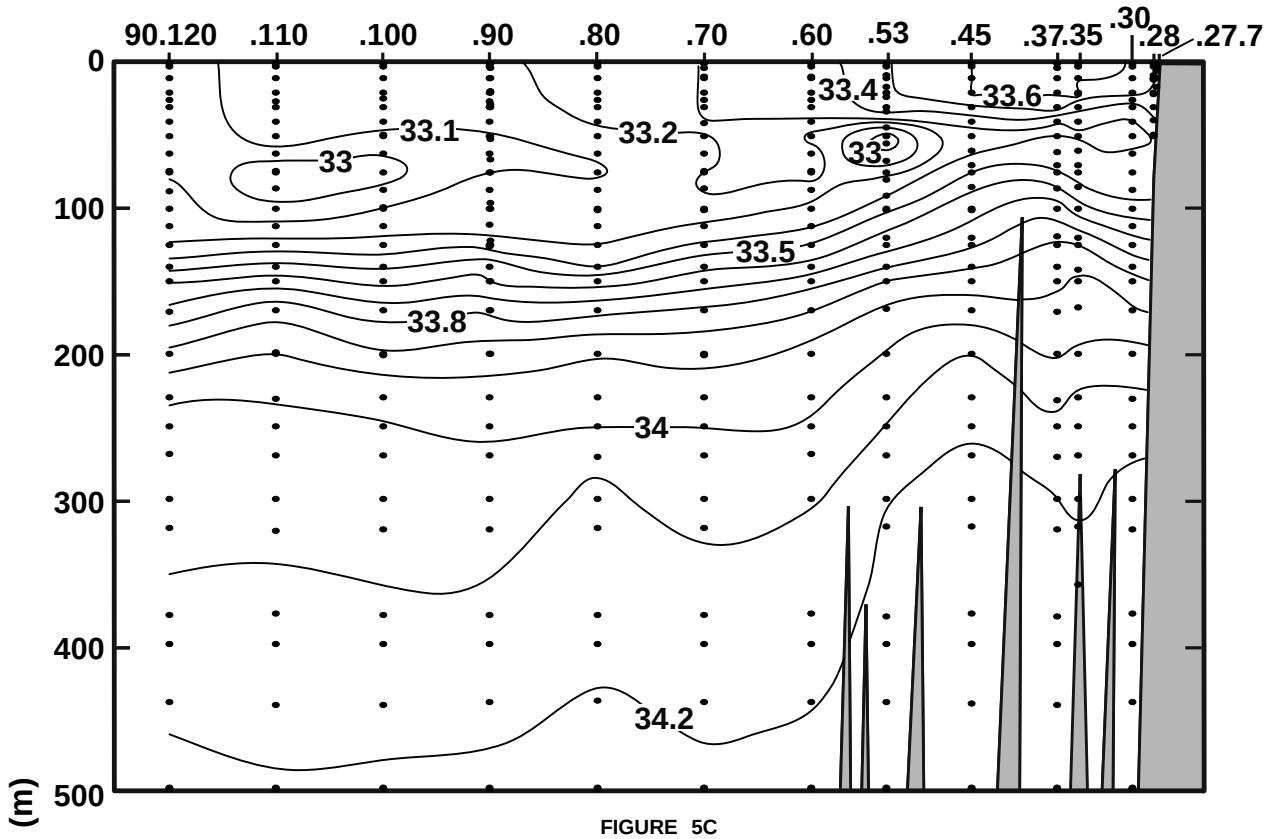

FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

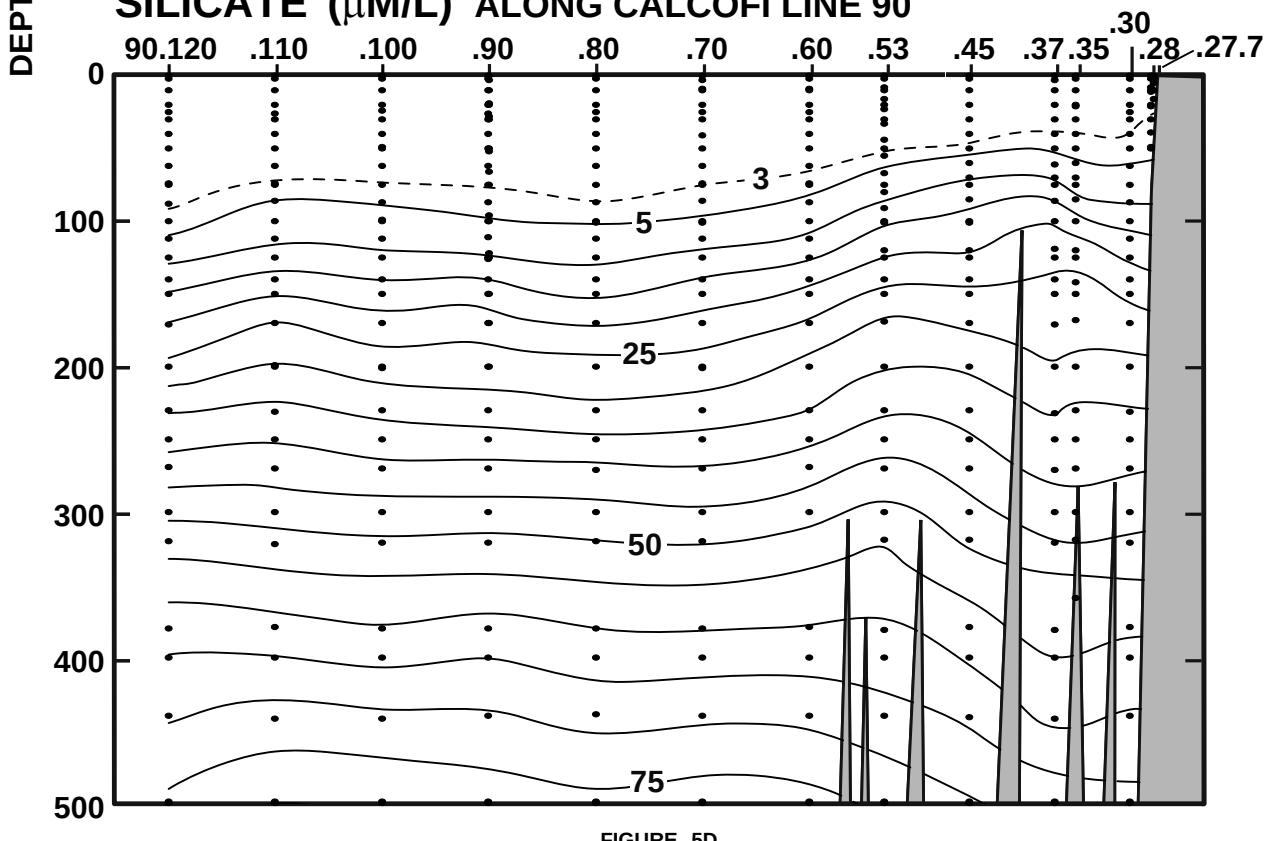

FIGURE 5D

CALCOFI CRUISE 1411

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NITRATE (μM/L) ALONG CALCOFI LINE 90

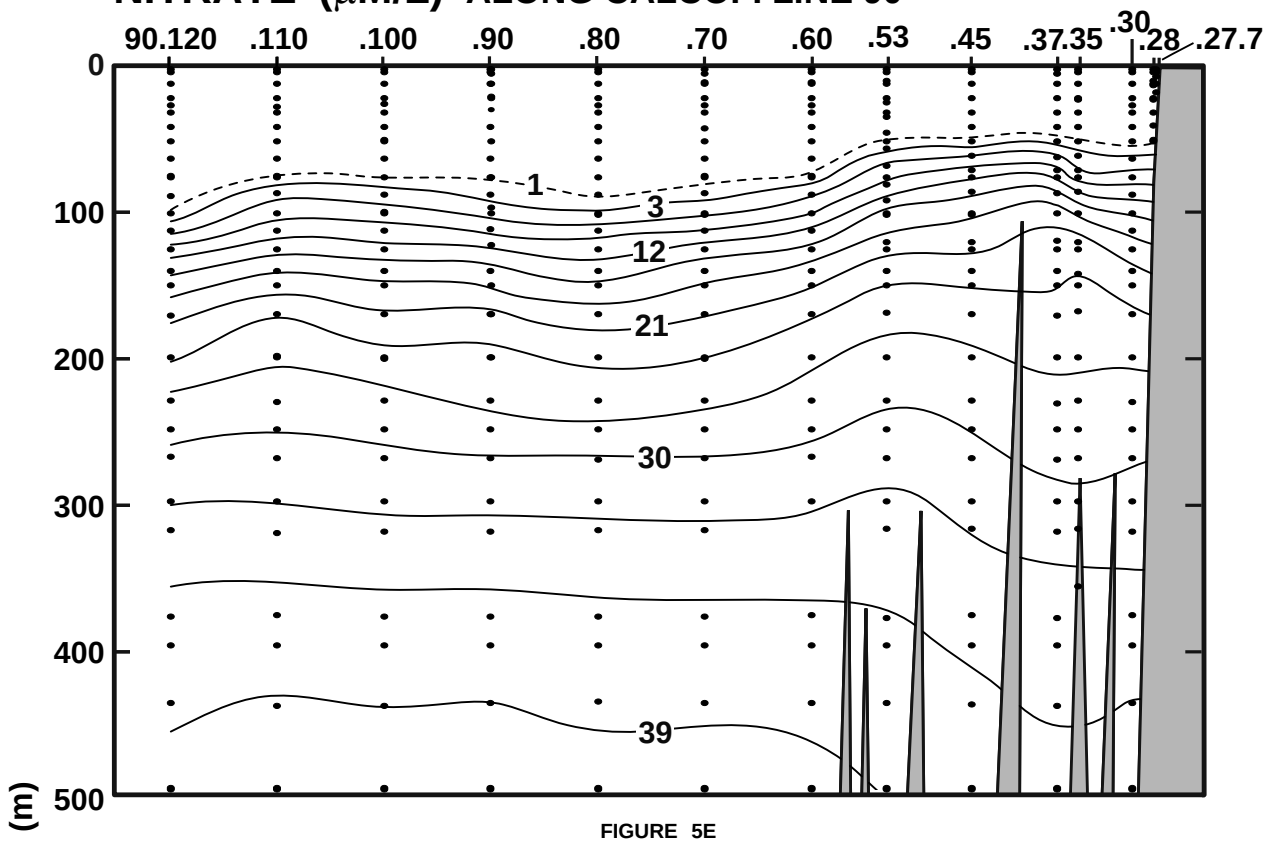

FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

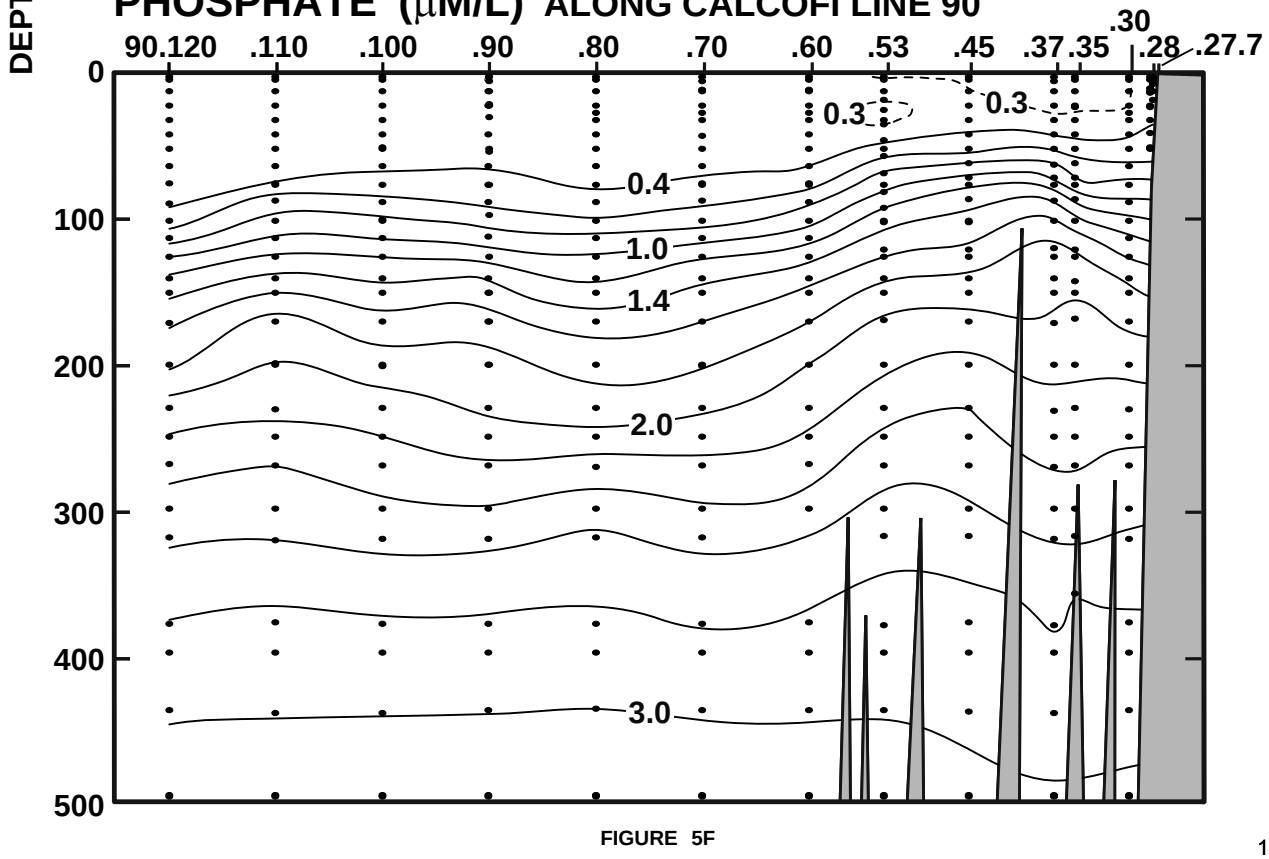

FIGURE 5F

CALCOFI CRUISE 1411

11 - 14 November 2014

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

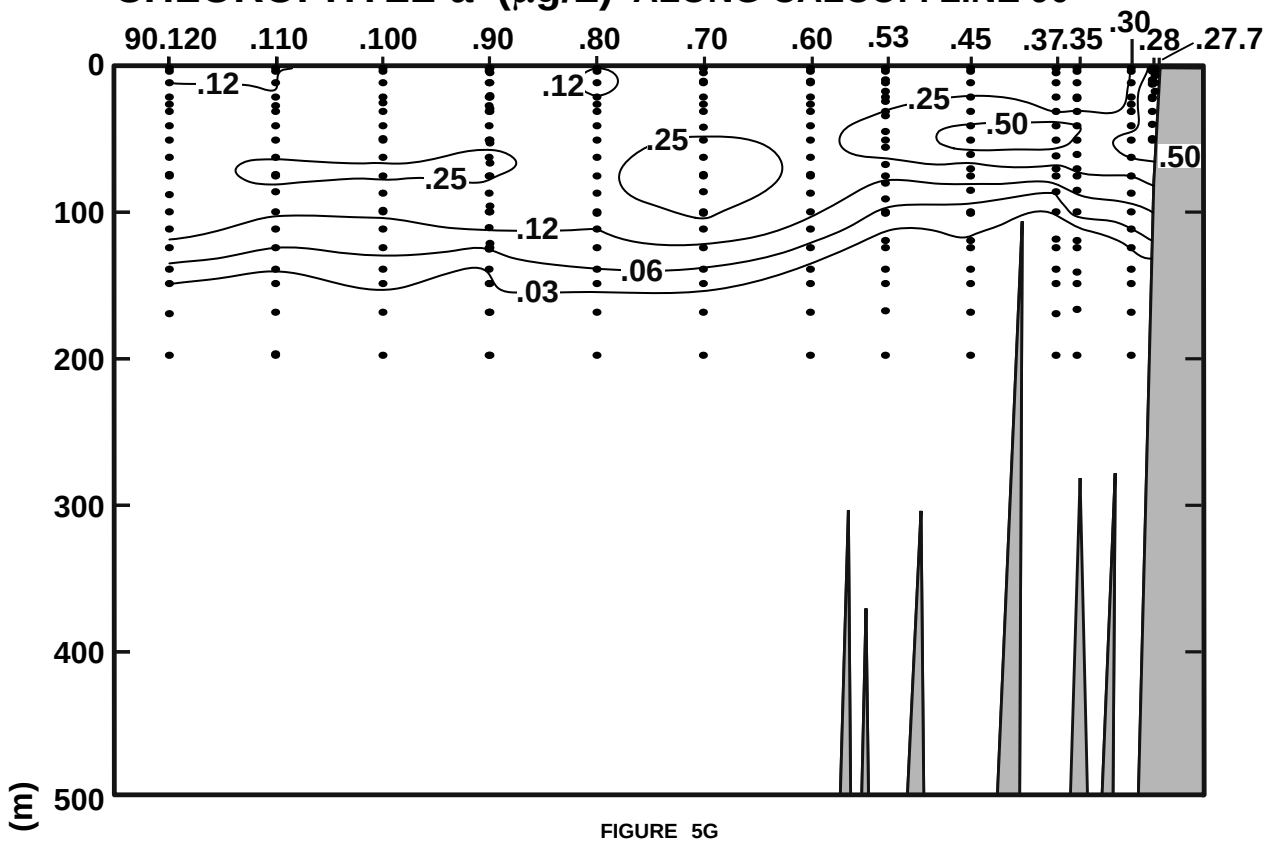

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

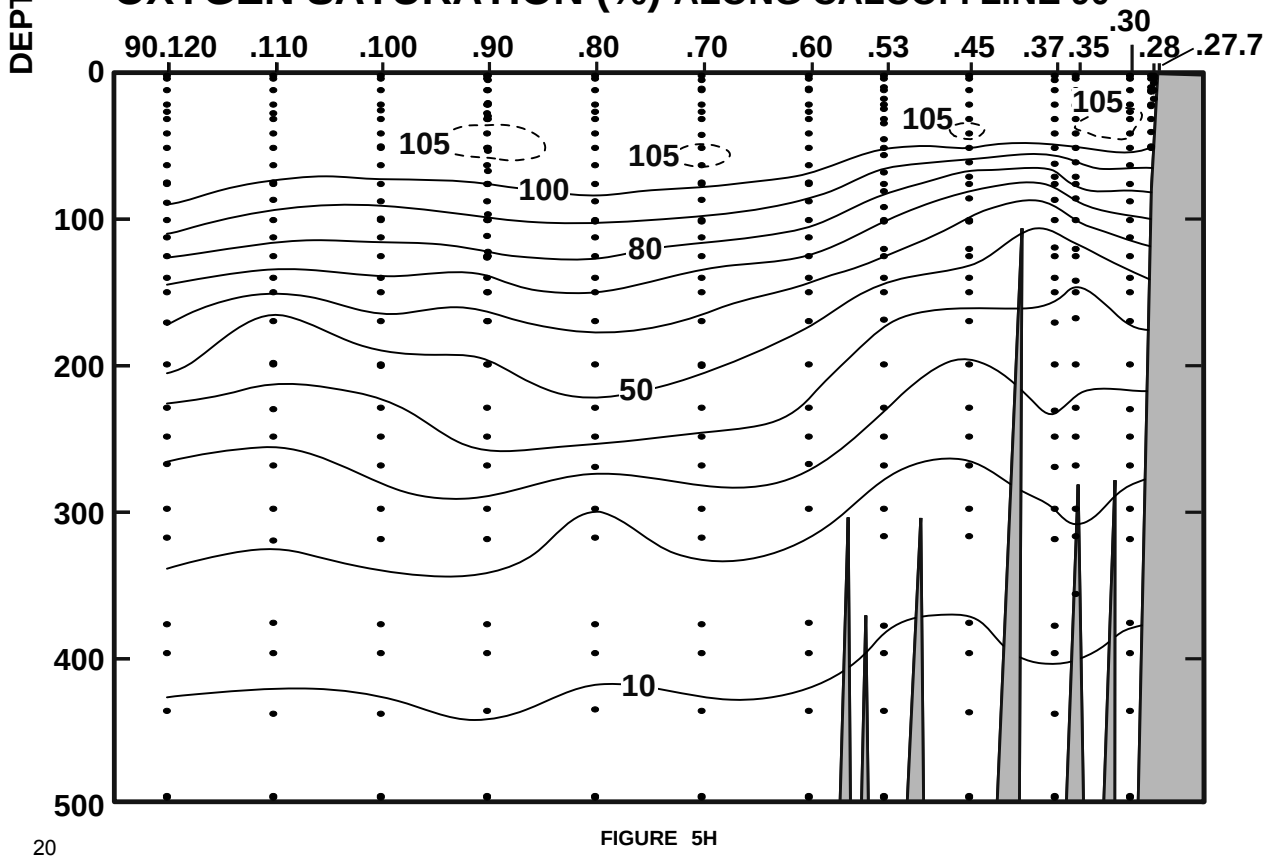

FIGURE 5H

CALCOFI CRUISE 1411

11 - 14 November 2014

OXYGEN (mL/L) ALONG CALCOFI LINE 90

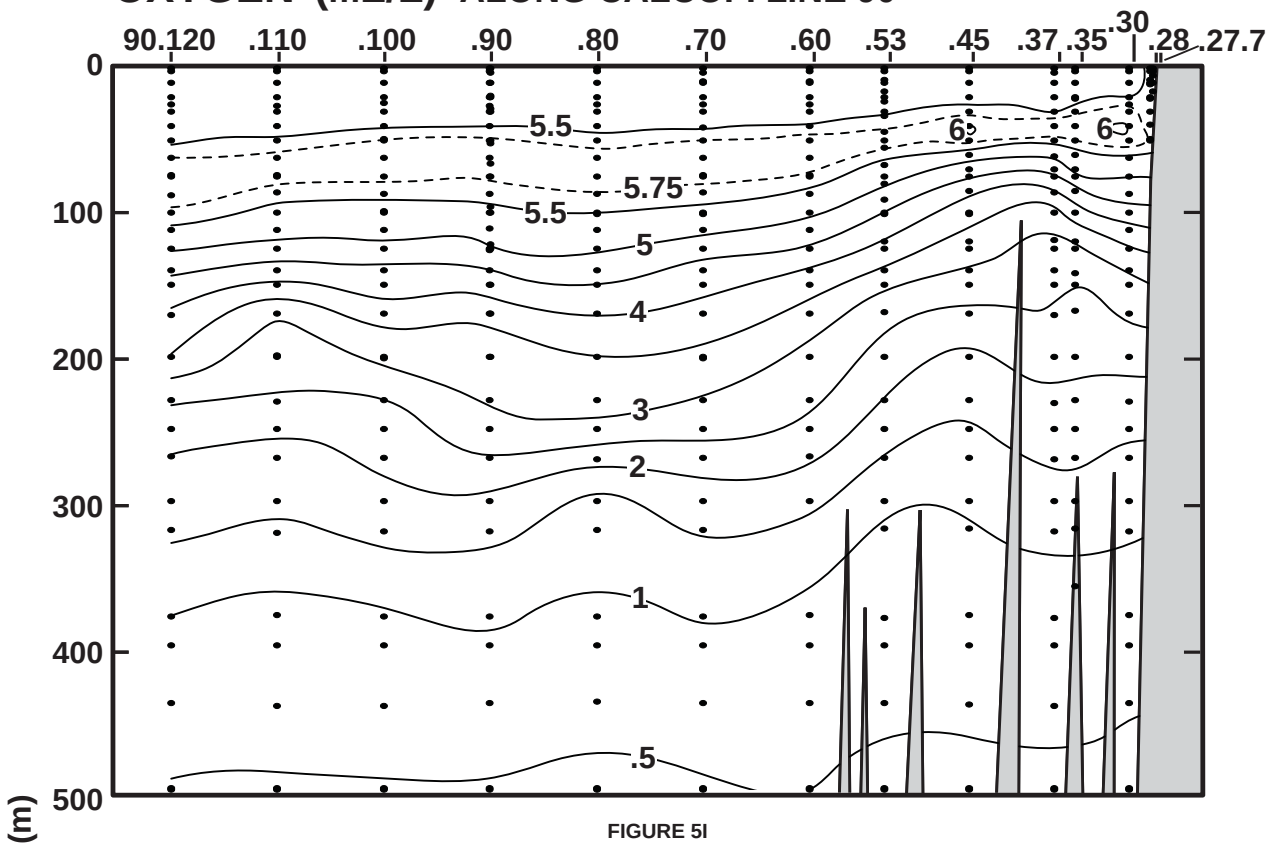

FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

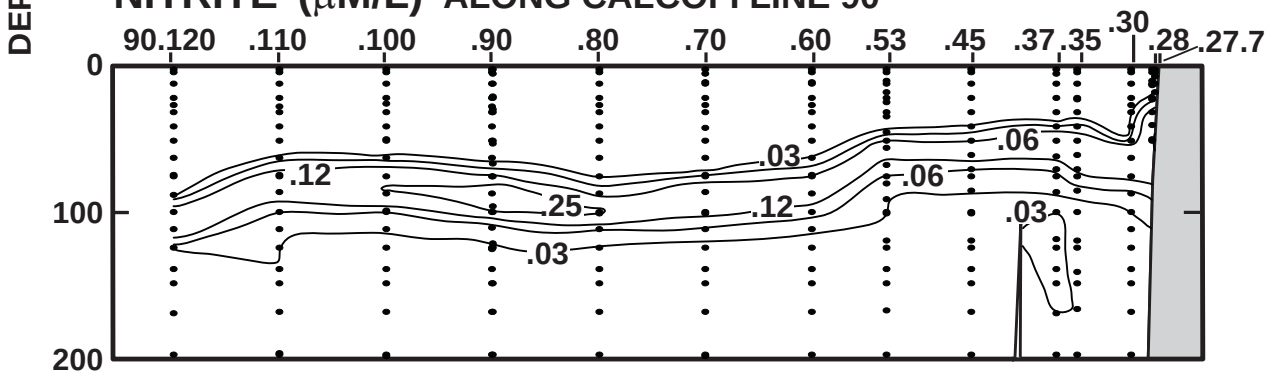

FIGURE 5J

PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90

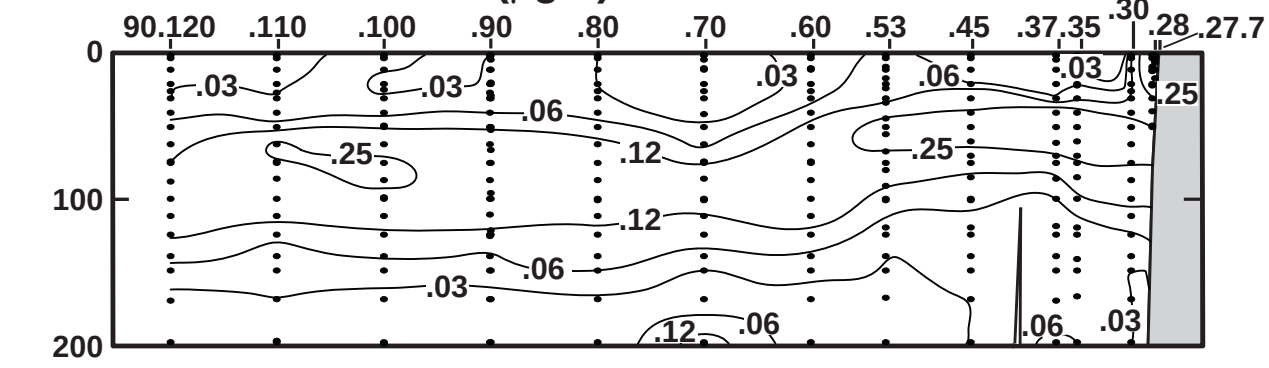

FIGURE 5K

PERSONNEL

CalCOFI Cruise 1411

SHIP'S CAPTAIN

Ian Lawrence, RV *New Horizon*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Wilkinson, James (Chief Scientist)	Programmer Analyst, SIO	1,2
Borowicz, Alex	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
Griffith, David	Fishery Biologist, NMFS	1
Guazzo, Regina	Marine Mammal Observer, MPL	1,2
Hays, Amy	Fishery Biologist, NMFS	1,2
Jiorle, Ralph	Staff Research Associate, SIO	1,2
Johnson, Tom	Bird Observer Trainee, FIAER	1,2
Manion, Sue	Fisheries Biologist, NMFS	2
Morales, Michael	Volunteer	1,2
Schlatter, Emma	Volunteer	1,2
Simonis, Anne	Acoustic Technician, SIO	1,2
Webb, Sophie	Bird Observer, FIAER	1,2
Whitaker, Katherine	Marine Mammal Observer, MPL	1,2
Wolgast, David	Staff Research Associate, SIO	1,2

Leg 1: San Diego to Dana Point, California, 8-14 November, 2014
Leg 2: Dana Point to San Diego, California, 14-22 November, 2014

RV NEW HORIZON CALCOFI CRUISE 1411 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 5.2 N	120 46.8 W	22/11/2014	0217 UTC	69 m	330 16 kn			1018.0 mb	16.9 C	14.8 C				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	17.07	17.07	33.475	24.330	358.6	0.000	5.62	245.7	102.0	1.9	0.40	0.3	0.05	0.12	0.51	0.21	0	
3	17.07	17.06	33.475	24.330	358.7	0.011	5.62	245.7	102.0	1.9	0.40	0.3	0.05	0.12	0.51	0.21	3	09
5	17.07	17.07	33.470	24.325	359.2	0.018	5.64	246.2	102.3	1.9	0.37	0.3	0.05	0.12	0.50	0.19	5	08
10	17.07	17.07	33.471	24.326	359.4	0.036	5.65	246.8	102.5	1.8	0.38	0.2	0.05	0.12	0.51	0.19	10	06
10	17.07	17.07	33.471	24.326	359.4	0.035											10	07
19	17.04	17.04	33.470	24.333	359.0	0.068	5.65	247.0	102.5	1.9	0.38	0.3	0.05	0.05	0.50	0.19	19	05
20 ISL	17.06 D	17.05	33.468 D	24.327	359.6	0.056	5.61	D244.6	D101.8	1.9	0.38	0.3	0.05	0.05	0.50	0.19	20	
30	16.83	16.83	33.468	24.381	354.8	0.108	5.63	246.0	101.7	1.9	0.35	0.3	0.06	0.02	0.50	0.19	30	04
40	14.99	14.98	33.381	24.730	321.8	0.141	5.39	235.6	93.8	5.2	0.60	3.0	0.38	0.14	0.67	0.42	40	03
50	14.44	14.43	33.397	24.861	309.6	0.173	5.08	222.1	87.5	7.7	0.75	4.6	0.41	0.26	0.54	0.54	50	02
60	14.24	14.23	33.405	24.910	305.2	0.204	4.92	214.8	84.2	9.3	0.85	5.6	0.41	0.43	0.42	0.62	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 1411 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 55.1 W	21/11/2014	2349 UTC	236 m	330 16 kn	310 04 06	1	1017.0 mb	17.0 C	14.7 C	14 m	2/8	CS	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	17.29	17.29	33.487	24.285	362.8	0.000	5.68	248.3	103.6	0.7	0.34	0.0	0.03	0.06	0.35	0.13	0	
2	17.29	17.29	33.487	24.285	362.9	0.007	5.68	248.3	103.6	0.7	0.34	0.0	0.03	0.06	0.35	0.13	2	16
10	17.29	17.29	33.486	24.285	363.2	0.036	5.67	247.4	103.2	0.7	0.32	0.0	0.04	0.13	0.36	0.13	10	14
10	17.29	17.29	33.487	24.286	363.1	0.036											10	15
19	17.04	17.04	33.478	24.339	358.5	0.069	5.73	250.3	103.9	0.7	0.34	0.0	0.03	0.07	0.46	0.18	19	13
20 ISL	16.82 D	16.82	33.453 D	24.371	355.4	0.057	5.70	D248.7	D103.0	1.0	0.36	0.2	0.06	0.08	0.57	0.23	20	
30	14.64	14.64	33.381	24.804	314.5	0.106	5.50	240.3	95.1	3.9	0.59	2.1	0.37	0.19	1.77	0.78	30	12
40	14.09	14.09	33.350	24.896	305.9	0.137	5.18	226.1	88.4	6.3	0.74	4.9	0.33	0.14	0.76	0.48	40	11
50	12.64	12.63	33.366	25.200	277.1	0.166	4.83	211.0	80.1	8.6	0.96	8.4	0.09	0.28	0.37	0.28	50	10
60	11.87	11.86	33.398	25.373	260.9	0.193	4.53	197.8	73.9	11.1	1.10	11.0	0.07	0.05	0.21	0.24	60	09
69	11.31	11.30	33.470	25.533	245.9	0.216	4.09	178.8	66.0	14.9	1.30	14.3	0.08	0.03	0.12	0.24	70	08
75 ISL	11.07 D	11.06	33.528 D	25.621	237.6	0.216	3.87	D168.6	D 62.1	16.0	1.37	15.3	0.07	0.06	0.11	0.21	76	
85	10.96	10.95	33.551	25.658	234.4	0.254	3.71	162.2	59.5	17.8	1.48	17.0	0.05	0.11	0.09	0.17	86	07
100	10.62	10.61	33.615	25.768	224.2	0.288	3.44	150.3	54.7	20.2	1.60	18.9	0.05	0.02	0.06	0.14	101	06
124	10.35	10.34	33.670	25.859	216.1	0.341	3.20	139.9	50.6	22.2	1.70	20.4	0.05	0.06	0.06	0.14	125	05
125 ISL	10.37 D	10.35	33.683 D	25.867	215.4	0.329	3.15	D137.0 D	49.8	22.4	1.71	20.5	0.05	0.00	0.06	0.14	126	
140	10.17	10.16	33.736	25.942	208.6	0.375	2.95	129.0	46.5	24.6	1.81	22.0	0.04	0.00	0.05	0.13	141	04
150 ISL	9.84 D	9.82	33.832 D	26.073	196.2	0.382	2.83	D123.3 D	44.3	26.9	1.92	23.6	0.03	0.00	0.04	0.11	151	
170	9.46	9.44	33.951	26.230	181.7	0.433	2.25	98.2	34.9	31.3	2.13	26.8	0.02	0.04	0.03	0.08	171	03
200	8.88	8.86	34.057	26.406	165.5	0.485	1.80	78.5	27.6	38.1	2.33	29.4	0.03	0.02	0.03	0.09	202	02
229	8.14	8.12	34.126	26.574	149.8	0.531	1.38	60.4	20.9	47.6	2.56	32.5	0.06	0.07			231	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 1411 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 53.5 N	121 11.9 W	21/11/2014	2020 UTC	567 m	010 09 kn	330 03 06	1	1018.0 mb	18.1 C	15.9 C	20 m	2/8	CS	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	17.44	17.44	33.490	24.252	366.1	0.000	5.63	245.8	102.8	0.8	0.39	0.0	0.02	0.17	0.36	0.14	0	
3	17.44	17.44	33.490	24.252	366.1	0.011	5.63	245.8	102.8	0.8	0.39	0.0	0.02	0.17	0.36	0.14	3	21
9	17.41	17.41	33.491	24.260	365.6	0.033	5.62	245.5	102.7	0.7	0.34	0.0	0.02	0.03	0.35	0.14	9	19
9	17.41	17.41	33.490	24.259	365.7	0.032											9	20
10 ISL	17.38 D	17.38	33.486 D	24.265	365.1	0.035	5.64	D246.0	D103.0	0.7	0.34	0.0	0.01	0.03	0.36	0.14	10	
20	17.26	17.25	33.494	24.301	362.1	0.073	5.64	246.3	102.7	0.7	0.34	0.0	0.01	0.07	0.45	0.18	20	18
30	16.94	16.94	33.496	24.377	355.2	0.109	5.66	247.0	102.4	0.4	0.32	0.0	0.02	0.06	0.49	0.19	30	17
40	16.54	16.54	33.468	24.449	348.7	0.144	5.59	244.1	100.4	0.7	0.36	0.1	0.04	0.16	0.77	0.37	40	16
50	15.46	15.45	33.404	24.645	330.3	0.178	5.36	233.9	94.1	2.7	0.54	2.1	0.25	0.20	0.83	0.65	50	15
59	15.13	15.12	33.388	24.707	324.7	0.208	5.29	230.9	92.3	3.3	0.59	2.9	0.30	0.10	0.86	0.70	59	14
69	13.03	13.02	33.292	25.068	290.4	0.238	5.10	222.6	85.1	6.4	0.86	7.3	0.22	0.03	0.50	0.60	70	13
75 ISL	12.11 D	12.10	33.274 D	25.233	274.7	0.256	5.05	D219.9 D	82.7	7.8	0.97	9.0	0.16	0.05	0.38	0.49	76	
85	11.60	11.59	33.330	25.371	261.7	0.282	4.70	205.3	76.2	10.2	1.14	11.9	0.06	0.07	0.19	0.29	86	12
99	10.29	10.28	33.368	25.633	236.9	0.317	4.36	190.4	68.7	13.4	1.35	15.6	0.04	0.00	0.11	0.20	100	11
100 ISL	10.23 D	10.22	33.377 D	25.683	232.1	0.319	4.33	188.6	68.2	13.7	1.36	15.8	0.03	0.00	0.10	0.20	101	
119	9.78	9.76	33.549	25.861	215.7	0.362	3.76	164.3	58.7	19.4	1.62	20.2	0.03	0.03	0.03	0.10	120	10
125 ISL	9.61 D	9.59	33.665 D	25.980	204.4	0.375	3.54	D154.2 D	55.1	21.4	1.70	21.4	0.02	0.02	0.03	0.09	126	
139	9.38	9.37	33.771	26.100	193.3	0.402	3.04	132.7	47.0	26.0	1.88	24.3	0.02	0.01	0.02	0.06	140	09
150 ISL	9.59 D	9.57	33.978 D	26.228	181.5	0.424	2.24	D 97.6 D	34.9	28.8	2.02	25.5	0.02	0.06	0.02	0.06	151	
170	9.49	9.47	34.040	26.293	175.7	0.459	1.78	77.5	27.6	33.9	2.28	27.7	0.02	0.14	0.01	0.06	171	08
200	9.00	8.98	34.067	26.395	166.6	0.510	1.80	78.6	27.7	36.8	2.32	29.0	0.02	0.05	0.01	0.06	202	07
228	8.50	8.47	34.058	26.466	160.1	0.556	2.00	87.4	30.4	38.6	2.31	29.7	0.02	0.16			230	06
250 ISL	7.90 D	7.88	34.016 D	26.523	154.8	0.592	2.27 D	98.6 D	34.0	41.8	2.32	30.8	0.02	0.08			252	
267	7.57	7.54	34.013	26.570	150.5	0.616	2.16	94.3	32.2	44.3	2.32	31.7	0.02	0.01			269	05
300 ISL	7.50 D	7.47	34.074 D	26.628	145.6	0.668	1.64 D	71.3 D	24.4	49.3	2.49	33.5	0.02	0.02			302	
319	7.21	7.18	34.071	26.667	142.0	0.692	1.48	64.7	21.9	52.2	2.58	34.6	0.02	0.03			322	04
380	6.95	6.91	34.150	26.766	133.5	0.776	0.91	39.9	13.4	60.0	2.82	36.7	0.02	0.00			383	03
400 ISL	6.95 D	6.91	34.188 D	26.797	131.0	0.807	0.80 D	34.7 D	11.7	62.5	2.88	37.1	0.02	0.00			403	
439	6.70	6.65	34.240	26.873	124.2	0.853	0.50	21.6	7.2	67.4	3.00	38.1	0.02	0.05			443	02
500 ISL	6.10 D	6.05	34.241 D	26.952	117.0	0.930	0.43 D	18.5 D	6.1	78.8	3.12	39.5	0.03	0.03			504	
516	5.94	5.89	34.256	26.984	114.0	0.945	0.33	14.4	4.7	81.8	3.15	39.9	0.03	0.03			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 1411 STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 43.6 N	121 33.6 W	21/11/2014	1719 UTC	905 m	350 09 kn	310 05 07	1	1018.0 mb	17.0 C	15.2 C	17 m	1/8	CU	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		16.35		16.35		33.237	24.312	360.3	0.000	5.70	249.0	101.8	1.4	0.31	0.0	0.01	0.06	0.39	0.12	0	
2	A	16.35		16.35		33.237	24.313	360.3	0.007	5.70	249.0	101.8	1.4	0.31	0.0	0.01	0.06	0.39	0.12	2	22
9	A	16.36		16.35		33.238	24.313	360.5	0.032	5.72	250.0	102.3	1.4	0.32	0.0	0.02	0.08	0.40	0.12	9	20
9		16.36		16.35		33.238	24.313	360.5	0.031											9	21
10	ISL	16.36	D	16.35		33.237	D 24.312	360.6	0.035	5.71	D249.0	D102.0	1.4	0.32	0.0	0.02	0.08	0.40	0.12	10	
14	A	16.34		16.34		33.239	24.318	360.2	0.050	5.71	249.3	101.9	1.4	0.34	0.0	0.02	0.09	0.39	0.12	14	19
20	ISL	16.37	D	16.37		33.293	D 24.353	357.1	0.071	5.70	D248.5	D101.9	1.2	0.35	0.0	0.02	0.10	0.53	0.19	20	
25	A	15.83		15.82		33.319	24.497	343.6	0.089	5.77	252.0	102.1	1.0	0.35	0.0	0.02	0.11	0.64	0.24	25	18
30	ISL	13.65	D	13.65		32.987	D 24.705	323.7	0.105	5.75	D250.4	D 97.1	3.0	0.55	2.5	0.20	0.11	0.53	0.29	30	
36		12.10		12.10		32.912	24.951	300.4	0.125	5.72	249.9	93.5	5.5	0.79	5.4	0.42	0.11	0.40	0.35	36	16
36		12.10		12.10		32.912	24.951	300.4	0.126											36	17
47	A	11.33		11.33		32.920	25.100	286.5	0.157	5.51	240.7	88.6	7.1	0.96	8.4	0.22	0.10	0.23	0.31	47	15
50	ISL	11.25	D	11.24		32.927	D 25.119	284.7	0.149	5.45	D237.4	D 87.4	7.6	1.00	9.1	0.18	0.14	0.21	0.28	50	
59	A	10.66		10.65		32.987	25.271	270.4	0.191	5.30	231.7	84.1	9.2	1.12	11.2	0.05	0.27	0.15	0.19	59	14
69		10.77		10.76		33.183	25.404	258.0	0.217	4.86	212.3	77.3	10.9	1.25	13.0	0.03	0.29	0.10	0.14	70	13
75	ISL	10.62	D	10.61		33.376	D 25.583	241.2	0.215	4.30	D187.2	D 68.2	12.7	1.33	14.5	0.03	0.20	0.08	0.12	76	
85		10.49		10.48		33.443	25.657	234.3	0.256	4.00	174.7	63.3	15.7	1.47	17.0	0.02	0.05	0.04	0.08	86	12
100		10.02		10.01		33.574	25.839	217.3	0.290	3.60	157.3	56.5	19.7	1.67	20.6	0.02	0.26	0.02	0.07	101	11
120		9.32		9.30		33.700	26.054	197.2	0.331	3.35	146.2	51.8	23.9	1.79	23.2	0.02	0.09	0.01	0.05	121	10
125	ISL	9.27	D	9.25		33.728	D 26.084	194.4	0.325	3.35	D145.8	D 51.7	24.9	1.83	23.7	0.02	0.12	0.01	0.05	126	
139		9.03		9.02		33.814	26.189	184.8	0.368	3.07	133.9	47.1	27.8	1.94	24.9	0.02	0.21	0.00	0.04	140	09
150	ISL	8.90	D	8.89		33.852	D 26.240	180.1	0.372	3.03	D131.7	D 46.4	28.9	1.96	25.4	0.02	0.19	0.00	0.04	151	
170		8.65		8.63		33.901	26.319	172.9	0.423	2.87	125.1	43.7	30.8	2.00	26.3	0.02	0.14	0.00	0.03	171	08
200		8.38		8.36		33.951	26.400	165.8	0.474	2.82	122.9	42.7	33.9	2.06	27.7	0.02	0.28	0.00	0.03	202	07
230		8.05		8.02		34.025	26.508	156.0	0.522	2.19	95.4	32.9	40.6	2.30	30.6	0.01	0.17			232	06
250	ISL	7.82	D	7.79		34.049	D 26.561	151.2	0.538	1.90	D 82.4	D 28.4	44.3	2.41	31.9	0.01	0.16			252	
271		7.55		7.52		34.071	26.618	146.1	0.584	1.62	70.8	24.2	48.2	2.53	33.3	0.01	0.14			273	05
300	ISL	7.01	D	6.98		34.089	D 26.707	137.8	0.611	1.36	D 59.2	D 20.0	54.7	2.68	35.3	0.01	0.09			302	
320		6.88		6.85		34.111	26.744	134.5	0.652	1.07	46.8	15.7	59.2	2.79	36.7	0.01	0.06			323	04
380		6.37		6.34		34.159	26.850	125.1	0.730	0.69	30.2	10.0	68.7	2.99	38.8	0.01	0.11			383	03
400	ISL	6.23	D	6.19		34.164	D 26.872	123.1	0.742	0.64	D 28.0	D 9.3	70.7	3.03	38.9	0.01	0.12			403	
441		6.14		6.10		34.207	26.919	119.3	0.805	0.48	20.8	6.9	74.8	3.10	39.1	0.01	0.13			445	02
500	ISL	5.66	D	5.62		34.234	D 27.001	111.9	0.861	0.36	D 15.7	D 5.2	82.5	3.20	41.1	0.01	0.11			504	
516		5.62		5.57		34.249	27.017	110.5	0.891	0.33	14.3	4.7	84.6	3.23	41.7	0.01	0.11			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 1411 STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 23.3 N	122 14.7 W	21/11/2014	1007 UTC	4017 m	340 13 kn			1016.0 mb	16.4 C	15.0 C				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		17.32		17.32		33.144	24.015	388.6	0.000	5.56	242.3	101.1	1.3	0.33	0.0	0.01	0.22	0.20	0.05	0	
2		17.32		17.32		33.144	24.015	388.7	0.008	5.56	242.3	101.1	1.3	0.33	0.0	0.01	0.22	0.20	0.05	2	20
10		17.33		17.33		33.143	24.013	389.2	0.039	5.54	241.7	100.9	1.3	0.34	0.0	0.01	0.07	0.19	0.05	10	19
19		17.33		17.33		33.143	24.013	389.5	0.074	5.55	241.9	100.9	1.3	0.34	0.0	0.02	0.10	0.21	0.05	19	18
20	ISL	17.33	D	17.33		33.141	D 24.012	389.7	0.078	5.53	D241.4	D100.7	1.3	0.34	0.0	0.02	0.10	0.21	0.05	20	
30		17.26		17.25		33.144	24.032	388.1	0.117	5.56	242.3	101.0	1.3	0.34	0.0	0.02	0.14	0.22	0.06	30	17
40		16.27		16.26		33.177	24.288	364.0	0.154	5.73	249.8	102.2	1.2	0.34	0.0	0.03	0.06	0.48	0.15	40	16
50		14.48		14.47		33.073	24.602	334.3	0.189	5.92	258.2	101.8	1.5	0.38	0.2	0.05	0.17	0.69	0.29	50	15
60		13.53		13.52		33.178	24.879	308.1	0.221	5.47	238.1	92.2	4.4	0.73	5.0	0.21	0.08	0.43	0.39	60	14
70		12.76		12.75		33.233	25.077	289.5	0.251	5.19	226.0	86.1	5.9	0.88	7.7	0.10	0.07	0.31	0.29	71	13
75	ISL	12.13	D	12.12		33.267	D 25.222	275.7	0.268	5.02	D218.6	D 82.3	7.0	0.96	9.0	0.08	0.05	0.26	0.25	76	
85		11.20		11.19		33.222	25.360	262.7	0.292	4.91	214.0	78.9	9.2	1.11	11.7	0.05	0.02	0.17	0.18	86	12
99		10.71		10.70		33.384	25.573	242.7	0.328	4.29	186.9	68.3	13.3	1.36	15.5	0.04	0.01	0.10	0.12	100	11
100	ISL	10.67	D	10.66		33.394	D 25.588	241.3	0.333	4.27	D186.1	D 67.9	13.6	1.37	15.6	0.04	0.01	0.09	0.11	101	
120		9.23		9.21		33.418	25.848	216.7	0.376	4.25	185.2	65.5	18.8	1.57	19.5	0.03	0.03	0.01	0.04	121	10
125	ISL	9.09	D	9.07		33.526	D 25.955	206.6	0.390	4.27	D185.8	D 65.6	19.9	1.61	20.3	0.03	0.00	0.01	0.04	126	
140		8.97		8.95		33.628	26.055	197.5	0.417	3.72	162.1	57.1	23.4	1.73	22.6	0.03	0.00	0.00	0.04	141	09
150	ISL	8.93	D	8.91		33.697	D 26.115	191.9	0.440	3.65	D159.0	D 56.0	24.9	1.79	23.4	0.03	0.00	0.00	0.03	151	
170		8.82		8.81		33.816	26.225	181.9	0.474	3.16	137.7	48.4	27.8	1.91	25.0	0.03	0.05	0.00	0.03	171	08
200		8.43		8.41		33.969	26.407	165.2	0.526	2.46	107.1	37.3	34.1	2.14	28.6	0.03	0.04	0.00	0.03	202	07
229		8.06		8.04		34.010	26.494	157.3	0.573	2.25	97.7	33.8	39.1	2.25	30.3	0.03	0.11			231	06
250	ISL	8.02	D	7.99		34.039	D 26.524	154.8	0.610	1.91	D 82.9	D 28.7	42.3	2.35	31.5	0.03	0.07			252	
270		7.57		7.54		34.040	26.590	148.7	0.636	1.84	80.1	27.4	45.4	2.45	32.6	0.03	0.03			272	05
300	ISL	7.19	D	7.16		34.044	D 26.648	143.5	0.685	1.71	D 74.4	D 25.2	50.5	2.55	34.1	0.03	0.04			302	
319		6.91		6.88		34.043	26.685	140.1	0.706	1.53	66.4	22.4	53.8	2.61	35.1	0.03	0.05			322	04
381		6.30		6.26		34.084	26.800	129.7	0.790	1.05	45.5	15.1	64.1	2.84	37.8	0.02	0.00			384	03
400	ISL	6.31	D	6.28		34.122	D 26.828	127.4	0.821	0.91	D 39.5	D 13.1	66.4	2.89	38.3	0.02	0.00			403	
440		6.12		6.08		34.158	26.882	122.7	0.864	0.64	27.8	9.2	71.1	3.01	39.3	0.02	0.00			444	02
500	ISL	5.94	D	5.90		34.233	D 26.965	115.6	0.944	0.43	D 18.7	D 6.2	77.4	3.13	39.9	0.02	0.00			504	
514		5.90		5.86		34.250	26.984	114.0	0.952	0.34	14.8	4.9	78.9	3.16	40.1	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;

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 3.1 N	122 56.5 W	21/11/2014	0408	UTC	4229 m	300 18 kn			1016.0 mb	17.5 C	15.3 C				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		17.37	17.37		33.216	24.059	384.5	0.000	5.58	243.9		101.7	1.2	0.43	0.0	0.00	0.19	0.20	0.04	0	
2		17.37	17.37		33.216	24.059	384.5	0.008	5.58	243.9		101.7	1.2	0.43	0.0	0.00	0.19	0.20	0.04	2	20
10		17.37	17.37		33.220	24.062	384.5	0.039	5.57	243.3		101.5	1.2	0.32	0.0	0.00	0.09	0.20	0.05	10	19
20		17.38	17.37		33.215	24.059	385.2	0.077	5.55	242.5		101.2	1.2	0.34	0.0	0.00	0.11	0.20	0.04	20	18
29		17.19	17.19		33.205	24.095	382.1	0.112	5.60	244.7		101.7	1.2	0.33	0.0	0.01	0.20	0.27	0.07	29	17
30	ISL	17.14	17.13	D	33.201	24.105	381.1	0.116	5.58	D243.4	D	101.3	1.2	0.34	0.0	0.01	0.20	0.29	0.08	30	
40		16.22	16.22		33.205	24.321	360.9	0.152	5.78	252.7		103.1	1.3	0.39	0.0	0.01	0.21	0.48	0.16	40	16
50	ISL	13.70	13.69	D	33.156	24.828	312.7	0.187	5.80	252.9		98.2	3.0	0.62	2.5	0.19	0.39	0.75	0.40	50	
51		13.60	13.59		33.149	24.843	311.3	0.189	5.81	253.7		98.1	3.2	0.64	2.8	0.21	0.41	0.77	0.43	51	15
60		11.62	11.61		33.162	25.237	273.8	0.216	5.14	224.6		83.3	7.6	1.04	10.0	0.06	0.25	0.38	0.28	60	14
69		10.71	10.71		33.235	25.455	253.2	0.239	4.75	207.7		75.5	11.2	1.25	13.7	0.02	0.11	0.16	0.15	70	13
75	ISL	10.58	10.57	D	33.421	25.623	237.4	0.256	4.09	D178.1	D	64.9	13.6	1.38	15.6	0.02	0.11	0.12	0.12	76	
85		10.39	10.38		33.530	25.742	226.2	0.277	3.70	161.5		58.5	17.6	1.59	18.9	0.02	0.10	0.05	0.07	86	12
100	ISL	10.22	10.21	D	33.649	25.865	214.9	0.312	3.20	D139.2	D	50.4	20.7	1.73	21.1	0.02	0.03	0.05	0.08	101	
101		10.22	10.21		33.649	25.864	215.0	0.312	3.19	139.3		50.3	21.0	1.74	21.2	0.02	0.02	0.05	0.08	102	11
120		9.83	9.82		33.797	26.045	198.2	0.352	2.76	120.4		43.1	25.3	1.94	24.1	0.02	0.11	0.01	0.05	121	10
125	ISL	9.77	9.75	D	33.820	26.075	195.5	0.364	2.73	D118.7	D	42.6	26.1	1.97	24.5	0.02	0.11	0.01	0.05	126	
140		9.57	9.55		33.900	26.171	186.7	0.390	2.46	107.5		38.3	28.3	2.04	25.7	0.02	0.12	0.00	0.05	141	09
150	ISL	9.48	9.47	D	33.929	26.207	183.4	0.411	2.42	D105.1	D	37.5	29.5	2.09	26.1	0.02	0.10	0.00	0.04	151	
170		9.30	9.28		34.008	26.299	175.1	0.445	2.13	93.2		33.0	31.9	2.18	27.0	0.01	0.07	0.00	0.04	171	08
200		9.07	9.05		34.076	26.390	167.1	0.496	1.89	82.5		29.1	35.2	2.30	28.5	0.01	0.23	0.00	0.04	202	07
229		8.85	8.83		34.117	26.458	161.2	0.543	1.66	72.6		25.5	38.1	2.37	29.4	0.02	0.09			231	06
250	ISL	8.79	8.77	D	34.140	26.486	158.9	0.581	1.59	D 69.3	D	24.4	40.2	2.44	30.2	0.02	0.10			252	
271		8.55	8.52		34.157	26.538	154.3	0.610	1.39	60.6		21.1	42.2	2.50	31.1	0.02	0.11			273	05
300	ISL	8.38	8.35	D	34.188	26.589	150.0	0.659	1.24	D 53.9	D	18.8	45.2	2.59	32.0	0.02	0.16			302	
321		8.19	8.15		34.202	26.630	146.4	0.685	1.04	45.3		15.7	47.4	2.66	32.7	0.02	0.19			324	04
379		7.69	7.65		34.235	26.730	137.6	0.768	0.72	31.3		10.7	54.6	2.82	34.7	0.02	0.01			382	03
400	ISL	7.53	7.49	D	34.239	26.756	135.4	0.802	0.71	D 31.0	D	10.6	57.1	2.87	35.4	0.02	0.03			403	
440		7.10	7.06		34.238	26.816	130.0	0.849	0.57	24.8		8.4	62.0	2.96	36.8	0.02	0.06			444	02
500	ISL	6.53	6.48	D	34.243	26.898	122.7	0.932	0.47	D 20.6	D	6.9	69.7	3.06	38.6	0.02	0.08			504	
515		6.41	6.36		34.242	26.914	121.3	0.943	0.41	18.0		6.0	71.6	3.08	39.1	0.02	0.09			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
33 43.0 N	123 38.1 W	20/11/2014	2211	UTC	4270 m	270 11 kn	270 05 06	1	1018.0 mb	19.7 C	16.4 C	23 m	3/8	ST	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		17.80	17.80		33.192	23.938	395.9	0.000	5.51	240.7		101.2	1.3	0.39	0.0	0.01	0.08	0.17	0.04	0	
3		17.80	17.80		33.192	23.939	396.0	0.012	5.51	240.7		101.2	1.3	0.39	0.0	0.01	0.08	0.17	0.04	3	20
10		17.54	17.54		33.223	24.025	388.1	0.039	5.56	242.7		101.6	1.2	0.33	0.0	0.01	0.08	0.18	0.04	10	19
20	ISL	17.51	17.51	D	33.300	24.091	382.1	0.078	5.52	D240.7	D	100.9	1.1	0.32	0.0	0.01	0.12	0.22	0.07	20	
21		17.55	17.55		33.305	24.085	382.8	0.082	5.57	243.4		102.0	1.1	0.32	0.0	0.01	0.12	0.23	0.07	21	18
29		17.62	17.62		33.363	24.113	380.3	0.112	5.53	241.5		101.4	1.1	0.29	0.0	0.01	0.06	0.27	0.09	29	17
30	ISL	17.66	17.66	D	33.393	24.126	379.1	0.117	5.49	D239.3	D	100.7	1.1	0.29	0.0	0.01	0.06	0.28	0.09	30	
40		17.81	17.80		33.458	24.142	378.0	0.154	5.49	239.9		101.1	1.1	0.29	0.0	0.01	0.09	0.34	0.12	40	16
49		17.09	17.08		33.397	24.269	366.2	0.187	5.59	244.1		101.4	1.0	0.29	0.0	0.01	0.04	0.52	0.20	49	15
50	ISL	16.80	16.80	D	33.362	24.308	362.5	0.193	5.57	D242.8	D	100.4	1.2	0.31	0.1	0.03	0.06	0.53	0.23	50	
59		13.59	13.58		33.081	24.792	316.4	0.221	5.75	251.0		97.0	2.8	0.52	1.4	0.18	0.22	0.61	0.43	59	14
70		12.23	12.22		33.030	25.019	294.9	0.255	5.52	241.1		90.5	5.3	0.81	6.5	0.16	0.08	0.31	0.34	71	13
75	ISL	11.43	11.42	D	33.058	25.190	278.6	0.272	5.43	D236.5	D	87.5	6.5	0.91	8.3	0.12	0.07	0.25	0.29	76	
84		11.00	10.99		33.074	25.280	270.2	0.294	5.16	225.6		82.5	8.8	1.10	11.5	0.04	0.04	0.14	0.20	85	12
100		10.55	10.54		33.292	25.529	246.9	0.335	4.57	199.6		72.4	12.2	1.30	15.0	0.03	0.04	0.09	0.13	101	11
121		9.77	9.75		33.530	25.848	216.9	0.384	3.78	165.0		58.9	18.3	1.58	19.8	0.02	0.04	0.03	0.06	122	10
125	ISL	9.66	9.65	D	33.576	25.902	211.8	0.395	3.70	D161.2	D	57.6	19.6	1.64	20.8	0.02	0.04	0.02	0.05	126	
140		9.41	9.39		33.722	26.057	197.4	0.423	3.16	138.1		49.0	24.5	1.86	24.5	0.02	0.03	0.01	0.03	141	09
150	ISL	9.27	9.25	D	33.773	26.120	191.6	0.446	2.98	D129.8	D	46.1	26.0	1.90	25.3	0.02	0.04	0.00	0.03	151	
172		8.93	8.91		33.871	26.252	179.5	0.484	2.77	121.0		42.5	29.4	2.00	27.1	0.02	0.05	0.00	0.03	173	08
200		8.57	8.54		33.962	26.380	167.8	0.532	2.74	119.7		41.7	32.7	2.04	27.7	0.02	0.07	0.00	0.03	202	07
229		8.57	8.55		34.068	26.463	160.5	0.580	1.94	84.7		29.6	38.2	2.30	30.3	0.01	0.10			231	06
250	ISL	8.44	8.41	D	34.120	26.525	155.0	0.618	1.81	D 78.6	D	27.4	41.2	2.39	31.3	0.01	0.08			252	
270		8.20	8.17		34.136	26.573	150.7	0.644	1.50	65.3		22.6	44.0	2.48	32.2	0.01	0.06			272	05
300	ISL	7.63	7.60	D	34.100	26.630	145.5	0.693	1.42	D 61.6	D	21.1	48.6	2.55	33.9	0.01	0.15			302	
319		7.44	7.41		34.126	26.678	141.2	0.715	1.29	56.3		19.2	51.5	2.60	35.0	0.01	0.20			322	04
382		7.03	6.99		34.200	26.794	131.0	0.801	0.76	33.0		11.1	60.2	2.85	37.2	0.02	0.13			385	03
400	ISL	6.78	6.74	D	34.194	26.824	128.3	0.831	0.75	D 32.4	D	10.9	63.0	2.90	38.0	0.01	0.13			403	
441		6.41	6.37		34.208	26.885	122.8	0.876	0.54	23.6		7.8	69.3	3.00	39.8	0.01	0.13			445	02
500	ISL	6.03	5.99	D	34.256	26.972	115.1	0.953	0.39	D 16.9	D	5.6	76.7	3.10	40.8	0.01	0.11			504	
515		5.95	5.91		34.267	26.991	113.4	0.963	0.34	14.9		4.9	78.5	3.12	41.1	0.01	0.10			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 1411 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 23.6 N	124 19.1 W	20/11/2014	1643 UTC	4560 m	270 13 kn	280 06 09	1	1020.0 mb	18.1 C	15.0 C	31 m	7/8	SC	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		18.68	18.68	32.961	23.545	433.5	0.000	5.49	239.7	102.4	1.6	0.33	0.0	0.01	0.36	0.13	0.03	0	
3	A	18.68	18.68	32.961	23.545	433.5	0.013	5.49	239.7	102.4	1.6	0.33	0.0	0.01	0.36	0.13	0.03	3	24
10		18.68	18.68	32.960	23.545	433.9	0.043	5.42	236.9	101.2	1.6	0.33	0.0	0.01	0.29	0.13	0.03	10	22
10		18.68	18.68	32.959	23.544	433.9	0.043								0.00			10	23
17	A	18.68	18.68	32.960	23.545	434.1	0.074	5.43	237.2	101.3	1.6	0.34	0.0	0.01	0.14	0.13	0.03	17	21
20	ISL	18.69 D	18.68	32.957 D	23.542	434.5	0.072	5.41 D	236.1 D	101.0	1.6	0.34	0.0	0.01	0.14	0.13	0.03	20	
24	A	18.65	18.65	32.960	23.552	433.7	0.104	5.43	237.0	101.2	1.6	0.34	0.0	0.01	0.14	0.13	0.03	24	20
30	ISL	18.49 D	18.48	32.947 D	23.585	430.8	0.116	5.43 D	237.1 D	101.0	1.5	0.34	0.0	0.01	0.15	0.16	0.05	30	
36		18.00	17.99	32.957	23.713	418.8	0.156	5.61	245.1	103.3	1.5	0.34	0.0	0.01	0.16	0.18	0.06	36	19
45	A	17.33	17.32	32.976	23.887	402.5	0.193	5.68	248.1	103.3	1.6	0.33	0.0	0.01	0.05	0.20	0.08	45	18
50	ISL	15.98 D	15.97	32.966 D	24.192	373.4	0.198	5.82 D	253.7 D	103.0	1.8	0.34	0.0	0.01	0.05	0.22	0.11	50	
60		14.56	14.55	32.878	24.434	350.6	0.248	6.09	266.1	104.8	2.3	0.36	0.0	0.01	0.06	0.26	0.18	60	17
75		13.38	13.37	32.840	24.648	330.5	0.299	5.96	260.2	99.9	2.9	0.45	0.5	0.16	0.11	0.30	0.26	76	15
75		13.38	13.37	32.840	24.648	330.5	0.299								0.00			76	16
84	A	12.78	12.77	32.866	24.788	317.3	0.328	5.90	257.6	97.7	3.7	0.57	2.1	0.31	0.10	0.26	0.23	85	14
97		11.70	11.69	32.861	24.989	298.4	0.368	5.66	247.3	91.7	5.4	0.71	5.0	0.11	0.01	0.20	0.23	98	13
100	ISL	11.38 D	11.36	32.975 D	25.137	284.3	0.349	5.65 D	246.3 D	91.0	6.2	0.79	6.3	0.08	0.02	0.18	0.21	101	
107	A	10.83	10.81	32.976	25.235	275.0	0.397	5.48	239.1	87.1	7.9	0.96	9.3	0.03	0.03	0.12	0.15	108	12
116		10.01	10.00	33.056	25.437	255.8	0.421	5.28	230.6	82.5	9.4	1.12	11.6	0.03	0.05	0.11	0.12	117	11
125		9.66	9.64	33.104	25.533	246.8	0.443	5.20	226.9	80.6	11.8	1.22	13.7	0.02	0.07	0.05	0.07	126	10
140		9.58	9.57	33.394	25.773	224.4	0.479	4.60	201.0	71.4	15.8	1.42	17.2	0.02	0.04	0.03	0.04	141	09
150	ISL	9.41 D	9.40	33.491 D	25.877	214.7	0.473	4.42 D	192.3 D	68.3	18.8	1.55	19.4	0.02	0.04	0.02	0.03	151	
173		8.96	8.94	33.731	26.136	190.5	0.547	3.40	148.5	52.2	25.8	1.84	24.4	0.02	0.04	0.00	0.02	174	08
199		8.66	8.64	33.883	26.303	175.1	0.595	2.81	122.7	42.9	31.3	2.05	27.4	0.02	0.11	0.00	0.02	201	07
200	ISL	8.65 D	8.62	33.884 D	26.307	174.7	0.569	2.81 D	122.4 D	42.9	31.3	2.05	27.4	0.02	0.11			202	
229		8.22	8.20	33.956	26.428	163.6	0.645	3.01	131.5	45.5	33.8	1.99	27.4	0.02	0.05			231	06
250	ISL	7.87 D	7.85	33.980 D	26.499	157.1	0.653	2.88 D	125.3 D	43.2	37.8	2.10	28.8	0.01	0.03			252	
270		7.56	7.53	33.995	26.556	151.9	0.710	2.51	109.7	37.4	41.5	2.21	30.2	0.01	0.02			272	05
300	ISL	7.12 D	7.09	34.015 D	26.635	144.7	0.729	1.91 D	83.3 D	28.2	47.8	2.41	32.8	0.01	0.02			302	
320		6.96	6.93	34.024	26.664	142.1	0.783	1.76	76.9	25.9	52.0	2.54	34.5	0.01	0.02			323	04
380		6.36	6.32	34.071	26.782	131.4	0.865	1.15	50.2	16.6	63.0	2.83	38.0	0.02	0.13			383	03
400	ISL	6.17 D	6.13	34.086 D	26.819	128.1	0.867	1.04 D	45.1 D	14.9	66.2	2.89	38.7	0.01	0.12			403	
439		5.91	5.87	34.122	26.880	122.6	0.940	0.75	32.7	10.7	72.4	3.02	39.9	0.01	0.10			443	02
500	ISL	5.46 D	5.42	34.174 D	26.976	113.9	0.989	0.54 D	23.4 D	7.6	81.4	3.15	41.6	0.01	0.12			504	
518		5.41	5.36	34.188	26.994	112.4	1.033	0.44	19.1	6.2	84.0	3.19	42.1	0.02	0.13			522	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 1411 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 29.3 W	22/11/2014	0749 UTC	24 m	340 16 kn			1018.0 mb	16.9 C	13.7 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	16.81	16.81	33.469	24.385	353.4	0.000	5.42	237.0	97.9	4.1	0.50	1.0	0.19	0.62	0.50	0.40	0	
2	16.81	16.81	33.469	24.385	353.4	0.007	5.42	237.0	97.9	4.1	0.50	1.0	0.19	0.62	0.50	0.40	2	05
5	16.81	16.81	33.468	24.385	353.5	0.018	5.43	237.1	98.0	4.1	0.49	1.0	0.19	0.62	0.58	0.47	5	04
10	16.72	16.72	33.470	24.406	351.7	0.035	5.43	237.1	97.8	4.2	0.50	1.1	0.19	0.65	0.51	0.45	10	02
10	16.72	16.72	33.467	24.404	351.9	0.035											10	03
15	16.64	16.64	33.463	24.421	350.4	0.053	5.40	236.0	97.2	4.5	0.51	1.3	0.21	0.62	0.46	0.43	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 1411 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 26.9 N	120 31.5 W	22/11/2014	0849 UTC	74 m	340 16 kn			1018.0 mb	16.1 C	13.2 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	16.19	16.19	33.417	24.489	343.4	0.000	5.43	237.1	96.8	4.5	0.55	1.6	0.24	0.65	0.50	0.29	0	
2	16.19	16.18	33.417	24.489	343.5	0.007	5.43	237.1	96.8	4.5	0.55	1.6	0.24	0.65	0.50	0.29	2	10
5	16.15	16.15	33.417	24.497	342.9	0.017	5.44	237.6	96.9	4.5	0.53	1.6	0.24	0.54	0.49	0.30	5	09
5	16.15	16.15	33.415	24.496	343.0	0.017											5	08
10	16.17	16.17	33.416	24.493	343.4	0.034	5.44	237.8	97.0	4.6	0.52	1.6	0.24	0.51	0.52	0.32	10	07
10	16.17	16.17	33.416	24.493	343.4	0.033	5.44	237.5	96.9	4.6	0.52	1.6	0.24	0.57	0.54	0.31	10	06
20	16.13	16.12	33.414	24.501	343.0	0.069	5.43	237.3	96.7	4.6	0.52	1.6	0.25	0.46	0.51	0.33	20	05
29	16.12	16.12	33.419	24.507	342.7	0.100	5.42	236.7	96.4	4.6	0.53	1.7	0.25	0.51	0.51	0.30	29	04
30	ISL	16.11 D	16.11	33.410 D	24.502	343.3	0.078	5.37 D	234.1 D	95.6	4.6	0.53	1.7	0.25	0.50	0.51	0.31	30	
41	14.70	14.69	33.308 D	24.736	321.2	0.115	5.56	243.0	96.2	4.6	0.53	1.5	0.28	0.35	0.52	0.35	41	03
50	ISL	13.26 D	13.26	33.294 D	25.023	294.1	0.143	5.12 D	223.1 D	86.0	7.8	0.82	6.6	0.26	0.08	0.26	0.28	50	
51	13.24	13.23	33.295 D	25.029	293.5	0.146	5.07	221.3	85.0	8.1	0.85	7.1	0.26	0.05	0.23	0.28	51	02
64	12.53	12.52	33.331 D	25.196	278.0	0.183	4.99	217.9	82.5	8.4	0.87	7.4	0.25	0.06	0.23	0.30	65	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 1411 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 19.0 N	120 48.1 W	19/11/2014	0451	UTC	830 m	200 04 kn			1019.0 mb	17.7 C	15.1 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		17.37		17.37		33.501	24.277	363.7	0.000	5.68		247.8		103.6		0.4	0.32	0.1	0.00	0.29	0.55	0.25	0	
2		17.37		17.37		33.501	24.277	363.7	0.007	5.68		247.8		103.6		0.4	0.32	0.1	0.00	0.29	0.55	0.25	2	23
10		17.37		17.37		33.500	24.276	364.1	0.036	5.74		250.5		104.8		0.4	0.34	0.1	0.00	0.30	0.54	0.24	10	20
10		17.37		17.37		33.500	24.276	364.1	0.035														10	22
10		17.37		17.37		33.504	24.280	363.8	0.035														10	21
20		17.38		17.38		33.500	24.276	364.5	0.073	5.69		248.5		103.9		0.4	0.35	0.1	0.00	0.12	0.53	0.24	20	19
30		16.41		16.40		33.454	24.469	346.4	0.108	5.51		240.4		98.6		1.8	0.45	0.9	0.09	0.21	1.16	0.61	30	18
40		13.28		13.28		33.264	24.994	296.5	0.141	5.34		233.3		89.7		5.8	0.79	5.6	0.31	0.42	0.84	0.66	40	16
40		13.28		13.28		33.265	24.995	296.4	0.140														40	17
50		12.04		12.04		33.282	25.249	272.4	0.169	4.95		216.3		81.0		8.5	0.99	9.6	0.16	0.07	0.28	0.30	50	15
60		11.56		11.55		33.355	25.397	258.6	0.196	4.62		201.9		74.9		10.9	1.15	12.2	0.07	0.07	0.17	0.23	60	14
70		11.23		11.22		33.416	25.504	248.6	0.221	4.34		189.5		69.8		13.0	1.29	14.1	0.03	0.09	0.14	0.18	71	13
75	ISL	11.19	D	11.18		33.472	D 25.555	243.9	0.202	4.22	D	183.6	D	67.8		14.2	1.35	15.0	0.03	0.08	0.13	0.18	76	
85		10.70		10.69		33.518	25.678	232.4	0.257	3.90		170.4		62.1		16.7	1.46	16.8	0.04	0.07	0.10	0.17	86	12
99		10.56		10.55		33.588	25.759	225.1	0.289	3.61		157.5		57.3		19.3	1.57	18.4	0.06	0.07	0.09	0.16	100	11
100	ISL	10.56	D	10.55		33.591	D 25.761	224.9	0.260	3.62	D	157.8	D	57.5		19.4	1.57	18.5	0.05	0.07	0.09	0.16	101	
120		10.14		10.13		33.639	25.871	214.8	0.335	3.44		150.3		54.2		20.5	1.66	20.2	0.01	0.06	0.06	0.12	121	10
125	ISL	10.06	D	10.04		33.681	D 25.918	210.4	0.315	3.37	D	146.7	D	52.9		21.2	1.70	20.7	0.01	0.09	0.06	0.11	126	
140		9.87		9.85		33.735	25.992	203.7	0.377	3.11		135.8		48.7		23.5	1.83	22.2	0.00	0.19	0.04	0.09	141	09
150	ISL	9.83	D	9.81		33.772	D 26.028	200.5	0.366	3.04	D	132.2	D	47.5		24.8	1.88	23.1	0.00	0.21	0.04	0.08	151	
170		9.24		9.22		33.840	26.178	186.6	0.436	2.86		124.6		44.1		27.4	1.98	24.9	0.00	0.25	0.02	0.06	171	08
200		8.70		8.68		33.890	26.302	175.2	0.490	2.95		128.6		44.9		30.0	1.98	26.0	0.00	0.11	0.02	0.04	202	07
230		8.46		8.44		34.001	26.427	163.9	0.541	2.41		105.3		36.7		35.7	2.17	28.5	0.00	0.04			232	06
250	ISL	8.66	D	8.63		34.104	D 26.479	159.6	0.544	1.78	D	77.4	D	27.2		39.3	2.29	29.7	0.00	0.04			252	
270		8.09		8.07		34.090	26.553	152.5	0.605	1.81		79.1		27.3		42.8	2.41	30.9	0.00	0.04			272	05
300	ISL	7.85	D	7.82		34.115	D 26.610	147.6	0.621	1.56	D	67.8	D	23.4		47.1	2.58	32.2	0.00	0.05			302	
320		7.89		7.86		34.191	26.665	142.8	0.679	1.07		46.9		16.1		49.9	2.69	33.0	0.00	0.06			323	04
380		7.43		7.39		34.199	26.738	136.7	0.762	0.87		37.8		12.8		55.8	2.80	35.1	0.00	0.04			383	03
400	ISL	7.13	D	7.09		34.182	D 26.768	133.9	0.762	0.86	D	37.4	D	12.7		59.0	2.85	36.0	0.00	0.05			403	
440		6.59		6.55		34.166	26.828	128.3	0.842	0.75		32.5		10.9		65.6	2.95	38.0	0.00	0.07			444	02
500	ISL	6.23	D	6.19		34.228	D 26.925	119.8	0.890	0.48	D	20.9	D	6.9		74.9	3.10	39.5	0.00	0.04			504	
515		6.01		5.96		34.237	26.960	116.3	0.934	0.39		17.1		5.6		77.2	3.14	39.9	0.00	0.03			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 1411 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 9.0 N	121 9.0 W	19/11/2014	0849	UTC	2181 m	150 03 kn			1018.0 mb	17.1 C	16.4 C				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		17.13		17.13		33.489	24.324	359.1	0.000	5.76		251.3		104.6		0.3	0.33	0.0	0.01	0.09	0.57	0.26	0	
2		17.13		17.13		33.489	24.324	359.2	0.007	5.76		251.3		104.6		0.3	0.33	0.0	0.01	0.09	0.57	0.26	2	21
9		17.14		17.14		33.488	24.323	359.6	0.032	5.73		250.4		104.2		0.3	0.33	0.1	0.01	0.24	0.58	0.26	9	19
9		17.14		17.14		33.489	24.323	359.6	0.033														9	20
10	ISL	17.14	D	17.14		33.486	D 24.321	359.8	0.035	5.71	D	248.8	D	103.7		0.3	0.33	0.1	0.01	0.22	0.58	0.26	10	
19		17.14		17.14		33.487	24.323	360.0	0.068	5.74		250.8		104.3		0.3	0.31	0.1	0.00	0.05	0.61	0.28	19	18
20	ISL	17.12	D	17.11		33.483	D 24.325	359.8	0.071	5.72	D	249.2	D	103.8		0.3	0.31	0.1	0.00	0.05	0.64	0.29	20	
30		16.85		16.85		33.471	24.379	355.0	0.108	5.71		249.2		103.1		0.5	0.33	0.1	0.01	0.07	1.00	0.45	30	17
40		15.72		15.71		33.427	24.605	333.8	0.142	5.45		238.1		96.3		2.0	0.49	1.5	0.17	0.26	1.40	0.69	40	16
50		12.40		12.39		33.220	25.134	283.4	0.173	5.12		223.5		84.3		6.8	0.92	7.9	0.22	0.10	0.50	0.55	50	15
60		11.61		11.61		33.318	25.358	262.3	0.200	4.63	D	201.6	D	75.1		9.5	1.17	11.8	0.06	0.11	0.18	0.35	60	14
70		10.83		10.83		33.346	25.521	247.0	0.226	4.48		195.7		71.5		12.1	1.30	14.5	0.04	0.04	0.13	0.20	71	13
75	ISL	10.45	D	10.44		33.400	D 25.630	236.7	0.238	4.38	D	190.5	D	69.2		13.7	1.38	15.8	0.04	0.04	0.10	0.17	76	
85		10.07		10.06		33.477	25.755	225.0	0.261	4.02		175.6		63.1		16.9	1.53	18.3	0.03	0.04	0.04	0.09	86	12
100		9.80		9.78		33.542	25.852	216.1	0.294	3.85		168.0		60.1		19.0	1.60	19.7	0.02	0.04	0.02	0.07	101	11
120		9.65		9.64		33.802	26.080	194.9	0.335	2.82		123.0		43.9		25.9	1.93	23.9	0.02	0.01	0.01	0.06	121	10
125	ISL	9.60	D	9.59		33.857	D 26.130	190.2	0.346	2.69	D	117.1	D	41.9		27.1	1.97	24.4	0.02	0.02	0.01	0.06	126	
139		9.40		9.39		33.935	26.225	181.5	0.371	2.37		103.4		36.7		30.2	2.10	26.0	0.02	0.05	0.01	0.05	140	09
150	ISL	9.25	D	9.23		33.960	D 26.270	177.4	0.392	2.35	D	102.2	D	36.3		31.6	2.14	26.6	0.01	0.05	0.01	0.05	151	
170		8.98		8.96		34.022	26.362	169.0	0.425	2.12		92.7		32.6		34.1	2.21	27.7	0.01	0.04	0.00	0.04	171	08
200		8.69		8.67		34.069	26.445	161.7	0.475	1.90		83.1		29.1		37.5	2.31	29.1	0.01	0.06	0.01	0.03	202	07
230		8.42		8.40		34.121	26.528	154.4	0.522	1.58		68.9		24.0		42.0	2.47	30.5	0.01	0.03			232	06
250	ISL	8.40	D	8.37		34.185	D 26.582	149.6	0.555	1.28	D	55.6	D	19.4		44.4	2.56	31.3	0.01	0.04			252	
270		8.28		8.25		34.199	26.611	147.2	0.582	1.13		49.4		17.1		46.7	2.65	32.0	0.01	0.04			272	05
300	ISL	8.10	D	8.07		34.211	D 26.648	144.2	0.629	1.02	D	44.3	D	15.4		49.0	2.70	32.9	0.00	0.03			302	
319		7.97		7.94		34.214	26.670	142.4	0.653	0.95		41.3		14.2		50.4	2.73	33.5	0.00	0.03			322	04
380		6.97		6.93		34.178	26.785	131.7	0.737	0.82		35.7		12.0		60.2	2.88	36.6	0.00	0.04			383	03
400	ISL	6.90	D	6.86		34.215	D 26.825	128.3	0.767	0.65	D	28.3	D	9.5		63.7	2.92	37.4	0.00	0.03			403	
440		6.06		6.02		34.141	26.876	123.2	0.813	0.73		32.0		10.5		70.8	3.00	38.9	0.00	0.01			444	02
500	ISL	5.58	D	5.54		34.183	D 26.969	114.7	0.890	0.52	D	22.5	D	7.4		80.5	3.15	41.3	0.00	0.03			504	
514		5.54		5.49		34.202	26.990	112.9	0.900	0.43		18.8		6.1		82.8	3.18	41.8	0.00	0.04			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 1411 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 49.2 N	121 50.7 W	19/11/2014	1642	UTC	3634 m	180 07 kn	250 04 08	1	1018.0 mb	18.0 C	17.5 C	23 m	1/8	SC	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		16.68		16.68		33.184	24.197	371.3	0.000	5.68	248.0		102.1		1.4	0.32	0.1	0.00	0.16	0.28	0.07	0	
2	A	16.68		16.68		33.184	24.197	371.3	0.007	5.68	248.0		102.1		1.4	0.32	0.1	0.00	0.16	0.28	0.07	2	24
10	ISL	16.65	D	16.65	D	33.184	D 24.204	370.9	0.038	5.69	D248.1	D	102.2		1.4	0.36	0.1	0.00	0.49	0.29	0.08	10	
12		16.64		16.64		33.186	24.207	370.7	0.045													12	23
13	A	16.65		16.64		33.186	24.207	370.8	0.048	5.68	248.2		102.0		1.4	0.37	0.1	0.00	0.61	0.29	0.08	13	22
17	A	16.64		16.63		33.188	24.211	370.6	0.063	5.68	248.3		102.1		1.4	0.33	0.1	0.00	0.06	0.30	0.09	17	21
20	ISL	16.62	D	16.62		33.192	D 24.218	370.0	0.069	5.69	D247.9	D	102.1		1.4	0.33	0.1	0.00	0.09	0.34	0.10	20	
25		16.58		16.58		33.199	24.233	368.7	0.093	5.71	249.2		102.4		1.4	0.34	0.1	0.00	0.13	0.41	0.12	25	20
30	ISL	16.39	D	16.39		33.174	D 24.257	366.6	0.106	5.73	D249.9	D	102.4		1.4	0.33	0.1	0.00	0.13	0.45	0.13	30	
33		16.34		16.33		33.176	24.272	365.3	0.122													33	19
34	A	16.32		16.31		33.181	24.279	364.6	0.126	5.74	250.5		102.4		1.5	0.33	0.1	0.00	0.13	0.48	0.14	34	18
44		13.32		13.31		32.926	24.726	322.1	0.160	6.00	262.1		100.6		2.8	0.47	0.6	0.04	0.18	1.02	0.47	44	17
50	ISL	12.57	D	12.56		32.847	D 24.812	314.0	0.168	5.86	D255.6	D	96.8		3.9	0.60	2.4	0.17	0.20	0.70	0.43	50	
54		12.20		12.19		32.844	24.881	307.6	0.192	5.79	253.1		94.8		4.5	0.69	3.6	0.27	0.22	0.50	0.41	54	16
63	A	11.89		11.88		33.123	25.156	281.6	0.218	5.18	226.5		84.5		7.2	1.00	9.5	0.04	0.07	0.25	0.29	64	15
72		11.00		11.00		33.243	25.410	257.5	0.242	4.79	209.2		76.6		9.7	1.18	12.3	0.01	0.09	0.19	0.22	73	14
75	ISL	10.87	D	10.86		33.272	D 25.457	253.2	0.239	4.79	D208.7	D	76.4		11.0	1.25	13.4	0.01	0.07	0.16	0.19	76	
80	A	10.56		10.55		33.347	25.570	242.5	0.262	4.38	191.3		69.4		13.2	1.36	15.3	0.00	0.04	0.11	0.14	81	13
90		10.43		10.42		33.445	25.669	233.3	0.286	4.01	175.2		63.4		15.7	1.49	17.4	0.00	0.10	0.07	0.10	91	12
100		10.08		10.07		33.643	25.884	213.1	0.309	3.31	144.7		52.0		20.8	1.73	20.9	0.00	0.08	0.02	0.06	101	11
120		9.63		9.62		33.828	26.103	192.7	0.349	2.72	118.7		42.4		26.1	1.96	24.1	0.00	0.06	0.01	0.05	121	10
125	ISL	9.60	D	9.58		33.857	D 26.132	190.0	0.347	2.69	D117.3	D	41.9		26.9	1.99	24.5	0.00	0.06	0.01	0.05	126	
140		9.45		9.43		33.924	26.209	183.1	0.387	2.45	106.9		38.0		29.1	2.07	25.4	0.00	0.06	0.01	0.04	141	09
150	ISL	9.45	D	9.43		34.007	D 26.274	177.1	0.393	2.24	D 97.7	D	34.9		30.7	2.14	26.1	0.00	0.05	0.00	0.04	151	
169		9.36		9.34		34.079	26.345	170.8	0.438	1.86	81.1		28.8		33.8	2.28	27.5	0.00	0.03	0.00	0.03	170	08
200		9.16		9.14		34.164	26.445	161.9	0.489	1.46	63.8		22.6		37.5	2.42	28.9	0.00	0.03	0.00	0.03	202	07
230		8.87		8.85		34.196	26.517	155.6	0.537	1.27	55.4		19.5		40.9	2.53	30.2	0.00	0.25			232	06
250	ISL	8.65	D	8.62		34.201	D 26.556	152.2	0.558	1.20	D 52.1	D	18.3		42.9	2.58	30.8	0.00	0.18			252	
270		8.49		8.47		34.219	26.595	148.9	0.598	1.08	47.1		16.4		44.9	2.63	31.5	0.00	0.11			272	05
300	ISL	8.28	D	8.25		34.225	D 26.633	145.8	0.633	0.97	D 42.0	D	14.6		47.3	2.68	32.3	0.00	0.15			302	
320		8.14		8.11		34.228	26.657	143.8	0.671	0.91	39.6		13.7		48.9	2.72	32.8	0.00	0.18			323	04
380		7.77		7.73		34.248	26.729	137.8	0.756	0.72	31.2		10.7		53.9	2.83	34.0	0.00	0.05			383	03
400	ISL	7.64	D	7.60		34.257	D 26.755	135.6	0.774	0.66	D 28.5	D	9.8		55.6	2.86	34.5	0.00	0.08			403	
440		7.40		7.36		34.264	26.795	132.3	0.836	0.55	24.2		8.2		59.1	2.93	35.5	0.00	0.14			444	02
500	ISL	6.82	D	6.77		34.256	D 26.870	125.7	0.907	0.48	D 20.7	D	7.0		66.2	3.03	36.9	0.00	0.05			504	
516		6.73		6.68		34.268	26.892	123.7	0.934	0.44	19.1		6.4		68.2	3.06	37.3	0.00	0.03			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 1411 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 32.1 W	19/11/2014	2152	UTC	3988 m	270 10 kn	250 05 07	1	1018.0 mb	19.0 C	18.0 C	21 m	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		18.42		18.42		33.457	23.989	391.1	0.000	5.49	239.7		102.2		0.8	0.27	0.1	0.00	0.15	0.19	0.05	0	
2		18.42		18.42		33.457	23.989	391.2	0.008	5.49	239.7		102.2		0.8	0.27	0.1	0.00	0.15	0.19	0.05	2	22
10		18.12		18.11		33.455	24.062	384.5	0.039	5.47	238.9		101.3		0.8	0.32	0.1	0.00	0.08	0.21	0.05	10	20
10		18.12		18.11		33.454	24.062	384.5	0.037													10	21
20		18.10		18.09		33.463	24.075	383.7	0.077	5.49	239.9		101.7		0.8	0.28	0.0	0.00	0.03	0.25	0.06	20	19
30		18.10		18.09		33.489	24.095	382.2	0.116	5.46	238.6		101.1		0.9	0.30	0.0	0.00	0.10	0.32	0.09	30	18
40		18.07		18.06		33.532	24.137	378.6	0.154	5.44	237.6		100.6		1.0	0.31	0.0	0.00	0.10	0.41	0.15	40	17
49		15.77		15.76		33.389	24.566	337.8	0.187													49	16
50		14.72		14.71		33.379	24.787	316.7	0.189	5.47	238.9		94.7		2.0	0.51	1.5	0.19	0.13	0.53	0.38	50	15
60		13.13		13.12		33.320	25.069	290.0	0.220	5.02	219.4		84.1		5.6	0.89	7.6	0.04	0.04	0.31	0.35	60	14
70		10.95		10.94		33.307	25.471	251.8	0.247	4.59	200.4		73.3		10.9	1.24	13.0	0.01	0.08	0.15	0.16	71	13
75	ISL	10.79	D	10.78		33.328	D 25.514	247.7	0.225	4.59	D199.9	D	73.1		12.1	1.29	14.1	0.01	0.06	0.12	0.14	76	
85		10.21		10.20		33.357	25.637	236.2	0.283	4.37	190.8		68.7		14.6	1.40	16.3	0.00	0.03	0.06	0.09	86	12
99		9.42		9.41		33.491	25.874	213.9	0.315	4.00	174.7		61.9		19.0	1.58	19.3	0.00	0.06	0.02	0.05	100	11
100	ISL	9.34	D	9.33		33.495	D 25.889	212.4	0.283	3.98	173.3		61.5		19.2	1.59	19.5	0.00	0.06	0.02	0.04	101	
120		9.08		9.07		33.646	26.049	197.6	0.358	3.59	156.9		55.2		23.4	1.74	22.5	0.00	0.03	0.00	0.03	121	10
125	ISL	9.09	D	9.07		33.711	D 26.100	192.9	0.334	3.54	D154.3	D	54.5		24.2	1.76	22.8	0.00	0.08	0.00	0.03	126	
139		8.77		8.76		33.764	26.191	184.5	0.394	3.43	149.6		52.3		26.5	1.80	23.8	0.00	0.22	0.00	0.03	140	09
150	ISL	8.69	D	8.67		33.819	D 26.248	179.3	0.381	3.40	D148.0	D	51.9		27.9	1.83	24.4	0.00	0.15	0.00	0.03	151	
169		8.48		8.46		33.904	26.347	170.2	0.448	3.19	139.3		48.5		30.4	1.88	25.4	0.00	0.04	0.00	0.02	170	08
199		8.05		8.03		33.968	26.461	159.8	0.497	2.77	121.0		41.7		35.6	2.04	27.5	0.00	0.04	0.00	0.02	201	07
200	ISL	8.03	D	8.01		33.975	D 26.471	158.9	0.465	2.79	D121.2	D	41.9		35.7	2.04	27.6	0.00	0.04			202	
230		7.76		7.74		33.989	26.521	154.6	0.546	2.49	108.6		37.2		39.7	2.16	29.4	0.00	0.05			232	06
250	ISL	7.50	D	7.47		34.001	D 26.570	150.2	0.543	2.27	D 98.8	D	33.8		43.5	2.27	30.7	0.00	0.06			252	
269		7.26		7.23		34.014	26.614	146.2	0.604	1.99	87.1		29.5		47.2	2.38	32.1	0.00	0.06			271	05
300	ISL	6.77	D	6.74		34.044	D 26.705	137.8	0.616	1.61	D 70.2	D	23.6		53.4	2.54	34.0	0.00	0.07			302	
320		6.63		6.60		34.047	26.725	136.1	0.676	1.44	62.9		21.0		57.5	2.65	35.2	0.00	0.08			323	04
380		6.09		6.06		34.100	26.838	125.9	0.755	0.93	40.5		13.4		68.1	2.88	37.8	0.00	0.04			383	03
400	ISL	5.95	D	5.92		34.110	D 26.864	123.6	0.748	0.85	D 37.1	D	12.2		70.5	2.93	38.2	0.00	0.08			403	
440		5.78		5.74		34.138	26.909	119.8	0.828	0.68	29.7		9.7		75.3	3.03	39.1	0.00	0.15			444	02
500	ISL	5.65	D	5.60		34.213	D 26.985	113.3	0.868	0.43	D 18.5	D	6.1		81.0	3.11	40.1	0.00	0.10			504	
517		5.59		5.54		34.225	27.003	111.8	0.917	0.38	16.4		5.3		82.6	3.13	40.4	0.00	0.08			521	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
33 8.9 N	123 13.4 W	20/11/2014	0341	UTC	4231 m	320 09 kn			1020.0 mb	18.1 C	16.1 C				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		18.10		18.10		33.524	24.117	378.8	0.000	5.50	240.4		101.9		1.2	0.29	0.1	0.02	0.18	0.25	0.07	0	
2		18.10		18.10		33.524	24.118	378.9	0.008	5.50	240.4		101.9		1.2	0.29	0.1	0.02	0.18	0.25	0.07	2	20
10		18.10		18.10		33.526	24.120	379.0	0.038	5.50	240.3		101.9		1.2	0.32	0.1	0.02	0.41	0.24	0.07	10	19
20	ISL	18.05	D	18.05	D	33.508	24.119	379.5	0.076	5.49	D239.6	D	101.6		1.2	0.31	0.1	0.01	0.27	0.27	0.08	20	
25		18.03		18.02		33.506	24.124	379.2	0.095	5.51	240.4		101.8		1.2	0.30	0.1	0.01	0.20	0.28	0.08	25	18
30	ISL	18.02	D	18.02	D	33.506	24.126	379.2	0.115	5.47	D238.7	D	101.2		1.2	0.30	0.1	0.01	0.19	0.31	0.09	30	
40		18.03		18.02		33.511	24.129	379.3	0.152	5.50	240.1		101.7		1.2	0.30	0.1	0.01	0.18	0.35	0.11	40	17
50		18.02		18.01		33.513	24.133	379.3	0.190	5.51	240.7		101.9		1.2	0.28	0.1	0.02	0.17	0.37	0.13	50	16
62		16.44		16.43		33.477	24.482	346.3	0.233	5.35	233.4		95.8		2.2	0.44	1.3	0.29	0.11	0.50	0.23	63	15
75		13.12		13.11		33.407	25.141	283.6	0.274	4.80	209.5		80.3		7.5	1.03	9.6	0.08	0.32	0.24	0.25	76	14
86		11.07		11.06		33.435	25.549	244.8	0.303	4.22	184.1		67.6		13.6	1.39	16.0	0.05	0.15	0.13	0.15	87	13
100	ISL	10.31	D	10.30	D	33.523	25.751	225.8	0.339	3.75	D163.4	D	59.2		17.6	1.58	19.0	0.03	0.08	0.05	0.08	101	
101		10.30		10.29		33.530	25.758	225.1	0.338	3.77	164.4		59.4		17.9	1.59	19.3	0.03	0.08	0.05	0.08	102	12
111		9.92		9.90		33.542	25.833	218.2	0.361	3.73	163.1		58.4		19.2	1.68	20.1	0.04	0.22	0.03	0.06	112	11
124		9.85		9.83		33.684	25.955	206.8	0.388	3.24	141.4		50.7		22.4	1.79	22.2	0.03	0.13	0.01	0.05	125	10
125	ISL	9.84	D	9.83	D	33.695	25.965	206.0	0.393	3.24	D140.9	D	50.6		22.6	1.80	22.3	0.03	0.13	0.01	0.05	126	
140		9.49		9.47		33.788	26.096	193.7	0.420	2.92	127.4		45.3		25.7	1.91	24.2	0.04	0.08	0.01	0.04	141	09
150	ISL	9.37	D	9.35	D	33.858	26.170	186.9	0.442	2.80	D121.6	D	43.3		27.9	1.99	25.2	0.03	0.10	0.01	0.04	151	
170		8.96		8.95		33.967	26.321	172.9	0.475	2.33	101.7		35.8		32.3	2.16	27.3	0.03	0.14	0.01	0.04	171	08
200		8.61		8.59		34.039	26.433	162.8	0.526	2.09	91.3		31.9		36.5	2.27	28.8	0.03	0.28	0.00	0.03	202	07
232		8.26		8.23		34.111	26.545	152.6	0.576	1.68	73.2		25.4		42.0	2.54	30.8	0.02	0.17			234	06
250	ISL	8.06	D	8.03	D	34.113	26.577	149.9	0.607	1.63	D 71.0	D	24.6		44.5	2.55	31.6	0.02	0.15			252	
269		7.85		7.82		34.136	26.626	145.5	0.631	1.41	61.5		21.1		47.2	2.57	32.5	0.02	0.13			271	05
300	ISL	7.39	D	7.36	D	34.125	26.684	140.3	0.680	1.29	D 55.9	D	19.1		51.3	2.68	33.8	0.03	0.14			302	
321		7.45		7.42		34.170	26.711	138.1	0.704	1.02	44.6		15.2		54.0	2.76	34.7	0.03	0.15			324	04
379		7.17		7.13		34.227	26.797	130.8	0.782	0.68	29.6		10.0		59.8	2.91	36.0	0.03	0.06			382	03
400	ISL	6.97	D	6.93	D	34.223	26.822	128.7	0.816	0.66	D 28.8	D	9.7		62.3	2.95	36.7	0.02	0.09			403	
440		6.61		6.57		34.223	26.871	124.3	0.860	0.54	23.7		7.9		67.2	3.03	37.9	0.02	0.15			444	02
500	ISL	6.23	D	6.19	D	34.252	26.944	117.9	0.940	0.44	D 19.2	D	6.4		73.4	3.11	39.1	0.02	0.11			504	
515		6.20		6.15		34.266	26.960	116.7	0.950	0.37	16.0		5.3		74.9	3.13	39.4	0.03	0.10			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
32 48.9 N	123 54.4 W	20/11/2014	0949	UTC	4456 m	310 12 kn			1020.0 mb	19.4 C	18.6 C				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		19.61		19.61		33.313	23.577	430.4	0.000	5.31	231.7		101.1		2.1	0.30	0.0	0.01	0.13	0.13	0.03	0	
4		19.61		19.61		33.313	23.578	430.5	0.017	5.31	231.7		101.1		2.1	0.30	0.0	0.01	0.13	0.13	0.03	4	24
10		19.61		19.61		33.312	23.579	430.7	0.043	5.33	232.3		101.3		2.3	0.31	0.0	0.00	0.10	0.13	0.03	10	22
10		19.61		19.61		33.314	23.580	430.5	0.044													10	23
20		19.61		19.61		33.310	D 23.577	431.3	0.065	5.32	D232.3	D	101.3									20	20
20		19.61		19.61		33.320	23.584	430.6	0.088													20	21
25		19.61		19.60		33.312	23.580	431.2	0.108	5.33	232.7		101.5		2.3	0.32	0.0	0.00	0.03	0.13	0.03	25	19
30	ISL	19.61	D	19.60	D	33.308	D 23.578	431.6	0.098	5.33	D232.6	D	101.4		2.3	0.32	0.0	0.00	0.04	0.13	0.03	30	
40		19.61		19.60		33.312	23.581	431.7	0.172	5.33	D232.4	D	101.3		2.3	0.31	0.0	0.01	0.05	0.13	0.03	40	18
50		19.61		19.60		33.312	23.581	432.1	0.216	5.32	231.9		101.1		2.2	0.32	0.0	0.01	0.05	0.13	0.03	50	17
61		19.55		19.54		33.304	23.591	431.6	0.263	5.36	233.8		101.8		2.3	0.31	0.0	0.01	0.04	0.15	0.04	61	16
75		16.09		16.08		33.188	24.340	360.3	0.318	5.98	260.9		106.3		2.6	0.34	0.0	0.01	0.07	0.23	0.15	76	15
87		14.79		14.77		33.128	24.581	337.5	0.360													88	14
88		14.68		14.67		33.129	24.605	335.3	0.364	6.00	261.4		103.5		2.7	0.38	0.0	0.03	0.06	0.25	0.18	89	13
100		12.64		12.63		33.214	25.085	289.5	0.401	5.85	255.0		96.9		4.0	0.52	1.0	0.08	0.13	0.24	0.15	101	12
112		11.85		11.83		33.156	25.191	279.6	0.435	5.41	235.7		88.1		5.9	0.79	5.9	0.16	0.05	0.16	0.14	113	11
125		10.70		10.69		33.196	25.429	257.0	0.470	5.06	220.6		80.4		9.0	1.03	10.8	0.02	0.03	0.10	0.10	126	10
140		10.04		10.03		33.297	25.620	239.0	0.507	4.74	206.2		74.2		11.9	1.19	13.7	0.02	0.02	0.07	0.08	141	09
150	ISL	9.71	D	9.70	D	33.452	D 25.797	222.4	0.480	4.38	D190.5	D	68.1		15.0	1.35	16.1	0.01	0.03	0.05	0.06	151	
170		9.28		9.27		33.606	25.988	204.6	0.574	3.77	164.0		58.1		21.2	1.66	21.0	0.01	0.04	0.01	0.02	171	08
199		8.90		8.88		33.806	26.205	184.4	0.630	3.32	144.4		50.9		26.4	1.83	23.9	0.01	0.08	0.00	0.02	201	07
200	ISL	8.88	D	8.86	D	33.815	D 26.216	183.4	0.581	3.35	D145.8	D	51.3		26.6	1.84	24.0	0.01	0.08			202	
230		8.42		8.39		33.945	26.390	167.3	0.685	2.87	124.8		43.5		32.5	1.99	26.8	0.01	0.01			232	06
250	ISL	8.18	D	8.15	D	33.975	D 26.450	162.0	0.667	2.80	D121.7	D	42.2		35.6	2.07	28.0	0.01	0.03			252	
269		7.91		7.88		33.994	26.506	156.9	0.748	2.53	110.0		37.9		38.6	2.15	29.2	0.01	0.04			271	05
300	ISL	7.54	D	7.51	D	34.023	D 26.582	150.0	0.745	2.15	D 93.5	D	32.0		44.9	2.33	31.4	0.01	0.05			302	
321		7.21		7.18		34.045	26.645	144.1	0.827	1.74	75.9		25.7		49.1	2.46	33.0	0.01	0.05			324	04
381		6.65		6.61		34.089	26.758	134.0	0.910	1.13	49.2		16.5		59.5	2.75	36.5	0.01	0.07			384	03
400	ISL	6.57	D	6.53	D	34.115	D 26.790	131.3	0.886	1.00	D 43.5	D	14.6		62.0	2.81	37.1	0.01	0.05			403	
439		6.31		6.27		34.146	26.848	126.1	0.986	0.75	32.5		10.8		67.3	2.93	38.2	0.01	0.02			443	02
500	ISL	5.89	D	5.85	D	34.192	D 26.938	118.0	1.012	0.55	D 23.8	D	7.9		75.6	3.04	39.7	0.01	0.02			504	
513		5.83		5.79		34.203	26.955	116.5	1.075	0.46	20.1		6.6		77.4	3.06	40.0	0.01	0.02			517	01

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

RV NEW HORIZON CALCOFI CRUISE 1411 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	22/11/2014	1658	UTC	21 m	040 02 kn	260 01 07	1	1018.0 mb	18.0 C	14.8 C		3/8	AS	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	18.19	18.19	33.538	24.107	379.8	0.000	5.46	238.3	101.2	2.3	0.32	0.0	0.04	0.11	0.76	0.27	0	
2	18.19	18.19	33.538	24.107	379.9	0.008	5.46	238.3	101.2	2.3	0.32	0.0	0.04	0.11	0.76	0.27	2	04
5	18.19	18.19	33.534	24.104	380.3	0.019	5.45	238.1	101.1	2.3	0.33	0.0	0.04	0.06	0.71	0.33	5	03
10	18.12	18.12	33.531	24.120	379.0	0.038	5.42	236.9	100.5	2.5	0.35	0.1	0.05	0.16	0.74	0.35	10	02
14	18.05	18.05	33.524	24.132	378.0	0.053	5.36	234.1	99.2	2.9	0.39	0.3	0.07	0.21	0.77	0.40	14	01

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

RV NEW HORIZON CALCOFI CRUISE 1411 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 1.8 W	22/11/2014	1318	UTC	580 m	300 17 kn			1016.0 mb	16.1 C	13.1 C				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	18.03	18.03	33.553	24.157	375.0	0.000	5.51	240.5	101.8	1.7	0.30	0.0	0.02	0.02	0.46	0.14	0	
2	18.03	18.03	33.553	24.158	375.1	0.008	5.51	240.5	101.8	1.7	0.30	0.0	0.02	0.02	0.46	0.14	2	24
10	18.03	18.02	33.553	24.159	375.2	0.038	5.51	240.8	101.9	1.7	0.30	0.0	0.03	0.09	0.46	0.14	10	23
20	18.02	18.02	33.548	24.158	375.7	0.075	5.51	240.8	101.9	1.7	0.30	0.0	0.03	0.07	0.45	0.14	20	22
30	14.47	14.47	33.272	24.755	319.0	0.110	5.72	249.7	98.4	4.1	0.54	1.6	0.52	0.35	0.36	0.25	30	21
40	13.86	13.85	33.284	24.894	306.1	0.141	5.58	243.7	94.8	5.1	0.61	3.1	0.45	0.02	0.33	0.26	40	20
50	13.13	13.13	33.287	25.043	292.2	0.171	5.26	230.0	88.1	6.8	0.77	5.4	0.29	0.02	0.22	0.22	50	19
62	12.32	12.31	33.395	25.286	269.3	0.205	4.60	200.9	75.7	9.4	0.99	9.4	0.08	0.06	0.16	0.18	63	18
68	11.51	11.50	33.336	25.391	259.3	0.221	4.74	207.1	76.7	9.9	1.06	11.2	0.05	0.10	0.12	0.15	69	17
75 ISL	11.27 D	11.26	33.380 D	25.470	252.0	0.241	4.68	D203.7 D	75.3	11.5	1.16	12.8	0.05	0.06	0.10	0.13	76	
84	10.87	10.86	33.415	25.569	242.8	0.261	4.33	189.1	69.1	13.4	1.28	14.8	0.04	0.01	0.08	0.11	85	16
100 ISL	10.67 D	10.66	33.477 D	25.653	235.2	0.301	4.09	D178.2 D	65.1	15.0	1.36	16.1	0.03	0.06	0.06	0.10	101	
101	10.62	10.61	33.475	25.659	234.6	0.301	4.09	178.6	64.9	15.1	1.37	16.2	0.03	0.06	0.06	0.10	102	15
119	10.49	10.48	33.529	25.725	228.8	0.343	3.86	168.8	61.2	16.8	1.48	17.7	0.03	0.14	0.05	0.08	120	14
125 ISL	10.41 D	10.40	33.598 D	25.792	222.5	0.359	3.66	D159.1 D	57.8	18.2	1.55	18.7	0.03	0.11	0.05	0.08	126	
141	10.07	10.05	33.708	25.938	209.0	0.391	3.21	140.0	50.4	22.0	1.73	21.3	0.03	0.02	0.02	0.06	142	13
150 ISL	9.86 D	9.84	33.799 D	26.044	199.1	0.412	2.97	D129.2 D	46.5	23.8	1.80	22.4	0.03	0.00	0.02	0.06	151	
168	9.59	9.57	33.861	26.137	190.5	0.444	2.72	118.9	42.4	27.2	1.94	24.6	0.03	0.00	0.02	0.05	169	12
200	9.48	9.46	34.050	26.304	175.4	0.503	1.75	76.3	27.2	34.2	2.26	28.0	0.03	0.04	0.01	0.05	202	11
230	9.26	9.23	34.117	26.394	167.4	0.554	1.28	56.0	19.9	38.7	2.44	30.1	0.02	0.02			232	10
250 ISL	8.99 D	8.96	34.141 D	26.456	161.9	0.592	1.05 D	45.6 D	16.1	43.9	2.56	31.1	0.02	0.02			252	
273	8.68	8.65	34.171	26.529	155.3	0.624	0.74	32.5	11.4	50.0	2.69	32.2	0.02	0.03			275	09
300 ISL	8.36 D	8.33	34.195 D	26.597	149.2	0.670	0.60 D	26.2 D	9.1	53.5	2.77	33.1	0.03	0.02			302	
318	8.16	8.13	34.204	26.634	145.9	0.691	0.51	22.4	7.7	55.8	2.83	33.8	0.03	0.01			321	08
380	7.37	7.34	34.219	26.762	134.3	0.778	0.34	14.8	5.0	69.1	3.02	33.8	0.03	0.01			383	07
400 ISL	7.19 D	7.15	34.220 D	26.789	132.0	0.812	0.39 D	16.9 D	5.7	74.0	3.10	33.1	0.03	0.03			403	
440	6.82	6.77	34.239	26.856	126.0	0.857	0.19	8.1	2.7	83.7	3.25	31.7	0.03	0.07			444	06
483	6.69	6.65	34.245	26.878	124.4	0.910	0.24	10.5	3.5	98.4	3.54	25.1	0.03	0.05			487	05
500 ISL	6.65 D	6.60	34.249 D	26.887	123.8	0.939	0.06 D	2.7 D	0.9	103.8	3.70	21.3	0.43	0.06			504	
514	6.63	6.58	34.251	26.892	123.6	0.949	0.01	0.4	0.1	108.4	3.83	18.2	0.75	0.06			518	04
543	6.59	6.54	34.251	26.897	123.5	0.985	0.01	0.4	0.1	115.7	3.99	12.2	1.69	0.03			548	03
570	6.55	6.50	34.249	26.902	123.5	1.018	0.06	2.7	0.9	104.0	3.72	22.6	0.06	0.04			575	01
573	6.55	6.50	34.250	26.902	123.5	1.022	0.06	2.5	0.8	104.8	3.73	22.2	0.06	0.03			578	02

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 1411 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 15.0 N	119 20.0 W	22/11/2014	2251	UTC	20 m	090 02 kn	250 03 07	1	1015.0 mb	20.0 C	16.0 C		3/8	SC	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	18.65	18.65	33.559	24.010	389.1	0.000	5.45	237.7	101.9	2.4	0.44	0.1	0.07	0.28	0.49	0.18	0	
2	18.65	18.65	33.559	24.010	389.2	0.008	5.45	237.7	101.9	2.4	0.44	0.1	0.07	0.28	0.49	0.18	2	04
5	18.53	18.53	33.560	24.039	386.5	0.019	5.43	237.0	101.4	2.5	0.42	0.1	0.08	0.18	0.50	0.18	5	03
10	18.44	18.44	33.563	24.066	384.1	0.039	5.36	234.0	99.9	3.1	0.52	0.1	0.09	0.30	0.91	0.27	10	02
14	18.42	18.41	33.564	24.073	383.7	0.054	5.27	229.9	98.1	3.3	0.56	0.1	0.10	0.43	0.98	0.33	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 1411 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 13.5 N	119 24.7 W	22/11/2014	2125	UTC	32 m	210 03 kn	270 02 07	1	1016.0 mb	20.0 C	16.0 C	09 m	2/8	AS	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	18.72	18.72	33.563	23.995	390.6	0.000	5.50	240.2	103.1	1.9	0.35	0.0	0.02	0.09	1.40	0.41	0	
2	18.72	18.72	33.563	23.995	390.6	0.008	5.50	240.2	103.1	1.9	0.35	0.0	0.02	0.09	1.40	0.41	2	06
5	18.51	18.51	33.553	24.039	386.5	0.020	5.53	241.3	103.2	2.0	0.32	0.0	0.03	0.09	0.76	0.24	5	05
9	18.43	18.43	33.549	24.056	385.1	0.035	5.54	241.8	103.2	2.1	0.33	0.0	0.03	0.06	0.72	0.24	9	03
10 ISL	18.43 D	18.43	33.547 D	24.056	385.1	0.039	5.52	D240.8	D102.9	2.1	0.33	0.0	0.03	0.06	0.76	0.26	10	
10	18.43	18.43	33.549	24.058	384.9	0.037											10	04
20	18.39	18.38	33.548	24.068	384.4	0.077	5.48	239.4	102.1	2.1	0.33	0.0	0.03	0.06	1.14	0.47	20	02
25	18.30	18.29	33.539	24.084	383.0	0.097	5.49	239.8	102.1	2.2	0.35	0.1	0.05	0.15	1.11	0.41	25	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 1411 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 10.8 N	119 30.6 W	22/11/2014	1935 UTC	121 m	270 08 kn	290 03 06	1	1018.0 mb	18.9 C	16.0 C	30 m	1/8	AS	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		18.81		18.81		33.579	23.984	391.6	0.000	5.44	237.8	102.2	1.9	0.28	0.0	0.00	0.00	0.22	0.06	0	
2	A	18.81		18.81		33.579	23.984	391.7	0.008	5.44	237.8	102.2	1.9	0.28	0.0	0.00	0.00	0.22	0.06	2	14
9		18.77		18.77		33.580	23.996	390.8	0.035	5.45	237.9	102.2	1.9	0.31	0.0	0.00	0.15	0.22	0.06	9	12
9		18.77		18.77		33.577	23.993	391.1	0.035											9	13
10	ISL	18.78	D	18.78		33.575	D 23.990	391.4	0.038	5.46	D238.0	D102.4	1.9	0.31	0.0	0.00	0.16	0.22	0.06	10	
17	A	18.56		18.56		33.568	24.039	387.0	0.066	5.49	239.7	102.5	1.9	0.32	0.0	0.00	0.22	0.26	0.08	17	11
20	ISL	18.38	D	18.38		33.536	D 24.061	385.1	0.077	5.52	D240.7	D102.7	2.2	0.32	0.0	0.00	0.17	0.27	0.10	20	
24	A	16.76		16.76		33.361	D 24.315	360.9	0.092	5.89	257.1	106.1	2.6	0.32	0.0	0.00	0.11	0.28	0.14	24	10
30	ISL	15.99	D	15.99		33.336	D 24.472	346.1	0.113	5.99	D261.3	D106.4	3.2	0.38	0.0	0.02	0.09	0.46	0.24	30	
34		14.78		14.77		33.317	24.726	322.0	0.127	5.87	256.6	101.7	3.6	0.42	0.1	0.04	0.07	0.58	0.31	34	08
34		14.78		14.77		33.322	24.729	321.7	0.126											34	09
44	A	14.26		14.26		33.301	24.823	313.1	0.159	5.63	246.0	96.5	4.4	0.54	1.8	0.40	0.09	0.58	0.36	44	07
50	ISL	13.38	D	13.37		33.321	D 25.020	294.4	0.161	5.25	D228.8	D 88.4	5.9	0.68	4.4	0.44	0.08	0.41	0.30	50	
58		13.09		13.09		33.325	25.080	288.9	0.201	4.94	216.0	82.7	7.9	0.87	7.8	0.50	0.07	0.19	0.23	58	06
71		12.21		12.20		33.337	25.262	271.8	0.237	4.80	209.5	78.8	8.5	0.93	9.0	0.13	0.04	0.15	0.18	72	05
75	ISL	12.01	D	12.00		33.376	D 25.330	265.5	0.232	4.68	D203.9	D 76.6	9.3	1.00	10.0	0.10	0.05	0.13	0.16	76	
83	A	11.52		11.51		33.404	25.444	254.8	0.269	4.43	193.5	71.7	11.1	1.13	12.1	0.03	0.06	0.10	0.12	84	04
93		11.32		11.31		33.466	25.527	247.1	0.294	4.10	179.1	66.1	13.4	1.28	14.5	0.03	0.02	0.07	0.11	94	03
100	ISL	11.02	D	11.01		33.498	D 25.607	239.6	0.295	4.01	D174.7	D 64.3	14.5	1.34	15.5	0.02	0.06	0.06	0.09	101	
104	A	10.98		10.97		33.504	25.618	238.6	0.320	3.95	172.7	63.3	15.1	1.38	16.1	0.02	0.08	0.05	0.08	105	02
110		10.92		10.91		33.509	25.633	237.3	0.335	3.93	171.9	62.9	15.3	1.38	16.3	0.02	0.11	0.06	0.09	111	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 1411 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 52.7 N	120 8.1 W	18/11/2014	2320 UTC	96 m	100 06 kn	060 02 07	1	1018.0 mb	18.9 C	17.0 C	18 m	3/8	CS	054

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	33.526	24.146	376.1	0.000	5.54	241.8	102.4	1.4	0.35	0.1	0.00	0.14	0.47	0.14	0	
2	17.99	17.99	33.526	24.147	376.2	0.008	5.54	241.8	102.4	1.4	0.35	0.1	0.00	0.14	0.47	0.14	2	12
5	17.82	17.82	33.527	24.189	372.2	0.019	5.54	241.9	102.1	1.4	0.37	0.1	0.00	0.27	0.58	0.18	5	11
10	17.62	17.62	33.514	24.227	368.8	0.037	5.56	242.8	102.0	1.5	0.36	0.2	0.00	0.22	0.69	0.22	10	09
10	17.62	17.62	33.515	24.228	368.7	0.035											10	10
20	15.31	15.30	33.401	24.675	326.4	0.072	5.44	237.4	95.3	3.7	0.56	2.6	0.09	0.21	0.74	0.34	20	08
24	14.74	14.73	33.328	24.741	320.2	0.085	5.56	242.9	96.3	3.8	0.56	2.7	0.15	0.10	0.88	0.47	24	07
30	12.94	12.94	33.253	25.054	290.5	0.103	5.27	230.2	87.9	6.6	0.81	6.4	0.24	0.16	0.51	0.42	30	06
40	12.53	12.53	33.294	25.165	280.2	0.132	5.07	221.4	83.9	7.9	0.91	8.0	0.18	0.23	0.40	0.35	40	05
50	11.88	11.87	33.282	25.281	269.4	0.159	4.93	215.2	80.4	9.0	1.02	9.9	0.13	0.19	0.25	0.24	50	04
60	11.75	11.75	33.303	25.320	265.9	0.186	4.83	210.8	78.5	9.7	1.07	10.7	0.12	0.21	0.24	0.25	60	03
75	11.01	11.00	33.383	25.518	247.4	0.224	4.44	193.7	71.1	12.6	1.26	14.0	0.05	0.19	0.14	0.18	76	02
89	10.66	10.65	33.481	25.658	234.4	0.258	4.05	176.7	64.4	15.8	1.43	16.7	0.07	0.16	0.10	0.19	90	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 1411 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 44.8 N	120 24.7 W	18/11/2014	2003 UTC	985 m	150 10 kn	070 02 05	1	1019.0 mb	18.9 C	18.1 C	09 m	5/8	ST	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		16.67		16.67		33.460	24.409	351.0	0.000	5.98	261.1	107.7	0.2	0.39	0.1	0.00	0.17	1.40	0.61	0	
2		16.67		16.67		33.460	24.409	351.1	0.007	5.98	261.1	107.7	0.2	0.39	0.1	0.00	0.17	1.40	0.61	2	21
10		16.60		16.60		33.471	24.436	348.9	0.035	5.96	260.1	107.1	0.2	0.30	0.0	0.00	0.00	1.57	0.67	10	19
10		16.60		16.60		33.459	24.426	349.8	0.033											10	20
20		16.35		16.34		33.472	24.495	343.5	0.070	5.84	254.8	104.4	0.4	0.34	0.1	0.00	0.05	2.67	0.96	20	18
30		15.75		15.74		33.443	24.610	333.0	0.104	5.62	245.2	99.3	1.8	0.45	1.3	0.04	0.18	2.64	0.81	30	17
39		12.75		12.75		33.347	25.163	280.3	0.131	4.92	214.9	81.8	8.3	0.97	9.2	0.27	0.06	0.43	0.34	39	16
50		11.13		11.13		33.244	25.387	259.2	0.161	4.79	209.2	76.8	10.5	1.18	12.7	0.03	0.12	0.20	0.25	50	15
60		10.38		10.37		33.311	25.572	241.8	0.186	4.51	197.1	71.2	13.2	1.35	15.3	0.01	0.06	0.10	0.16	60	14
69		10.07		10.06		33.436	25.722	227.8	0.207	4.09	178.6	64.2	16.4	1.50	18.1	0.00	0.06	0.06	0.11	70	13
75	ISL	10.02	D	10.01		33.523	D 25.799	220.6	0.204	3.87	D168.7	D 60.8	17.9	1.56	19.0	0.00	0.05	0.04	0.09	76	
85		9.75		9.74		33.592	25.898	211.3	0.242	3.68	160.5	57.3	20.3	1.65	20.6	0.00	0.03	0.03	0.06	86	12
100		9.71		9.70		33.710	25.997	202.3	0.273	3.23	141.0	50.4	23.2	1.77	22.1	0.00	0.02	0.02	0.05	101	11
120		9.49		9.48		33.746	26.061	196.6	0.313	3.16	138.1	49.1	24.7	1.83	23.4	0.00	0.00	0.01	0.05	121	10
125	ISL	9.48	D	9.46		33.755	D 26.071	195.7	0.307	3.16	D137.7	D 49.1	25.3	1.85	23.7	0.00	0.00	0.01	0.05	126	
140		9.38		9.36		33.816	26.136	189.9	0.352	2.92	127.5	45.2	26.9	1.91	24.6	0.00	0.05	0.01	0.05	141	09
150	ISL	9.31	D	9.29		33.873	D 26.192	184.8	0.355	2.79	D121.6	D 43.2	28.3	1.96	25.2	0.00	0.06	0.01	0.04	151	
169		9.03		9.01		33.925	26.278	176.9	0.405	2.60	113.4	40.0	31.0	2.05	26.3	0.00	0.09	0.01	0.04	170	08
200		8.77		8.75		34.031	26.402	165.8	0.458	2.15	94.0	33.0	35.8	2.23	28.4	0.00	0.08	0.01	0.14	202	07
230		8.54		8.52		34.094	26.488	158.2	0.506	1.89	82.5	28.8	39.2	2.33	29.7	0.00	0.02			232	06
250	ISL	8.35	D	8.32		34.127	D 26.544	153.2	0.524	1.64	D 71.1	D 24.8	42.0	2.45	30.8	0.00	0.04			252	
270		8.42		8.39		34.187	26.582	150.1	0.568	1.25	54.6	19.0	44.8	2.56	31.9	0.00	0.06			272	05
300	ISL	8.08	D	8.05		34.207	D 26.648	144.2	0.599	1.06	D 46.1	D 16.0	49.0	2.66	33.1	0.00	0.04			302	
320		7.86		7.83		34.213	26.686	140.8	0.640	0.93	40.7	14.0	51.9	2.73	33.8	0.00	0.02			323	04
380		7.39		7.35		34.232	26.770	133.6	0.723	0.71	31.1	10.6	58.1	2.85	35.6	0.00	0.03			383	03
400	ISL	7.30	D	7.26		34.230	D 26.782	132.8	0.738	0.73	D 31.9	D 10.9	60.1	2.88	36.1	0.00	0.02			403	
439		6.97		6.93		34.244	26.839	127.7	0.800	0.57	24.8	8.3	64.0	2.95	37.0	0.00	0.01			443	02
500	ISL	6.51	D	6.47		34.273	D 26.924	120.2	0.865	0.45	D 19.7	D 6.6	72.6	3.08	38.9	0.00	0.03			504	
515		6.31		6.26		34.271	26.949	117.8	0.894	0.38	16.5	5.5	74.7	3.11	39.3	0.00	0.03			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 1411 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	18/11/2014	1719 UTC	1346 m	140 10 kn	100 02 07	2	1019.0 mb	18.7 C	16.0 C	18 m	8/8	ST	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		17.81		17.81		33.578		24.231	368.1	0.000	5.47		238.9		100.7		1.1	0.28	0.1	0.00	0.17	0.36	0.13	0	
2	A	17.81		17.81		33.578		24.231	368.1	0.007	5.47		238.9		100.7		1.1	0.28	0.1	0.00	0.17	0.36	0.13	2	24
9	A	17.81		17.81		33.573		24.228	368.6	0.033	5.48		239.4		101.0		1.1	0.27	0.1	0.00	0.42	0.36	0.13	9	22
9		17.81		17.81		33.577		24.231	368.4	0.035														9	23
10	ISL	17.81	D	17.81		33.572	D	24.227	368.8	0.035	5.50	D	239.9	D	101.3		1.1	0.27	0.1	0.00	0.43	0.36	0.13	10	
13	A	17.81		17.80		33.574		24.229	368.7	0.048	5.46		238.5		100.6		1.1	0.28	0.1	0.00	0.47	0.36	0.13	13	21
20		17.80		17.80		33.579		24.234	368.5	0.074	5.46		238.4		100.5		1.1	0.28	0.1	0.00	0.17	0.38	0.15	20	20
27	A	17.80		17.79		33.573		24.231	369.0	0.100	5.45		237.9		100.3		1.1	0.28	0.1	0.00	0.17	0.37	0.14	27	19
30	ISL	17.71	D	17.70		33.570	D	24.252	367.2	0.110	5.47	D	238.5	D	100.5		1.7	0.39	1.2	0.04	0.17	0.38	0.19	30	
37		14.71		14.70		33.298		24.726	322.1	0.135	5.37		234.4		92.8		3.2	0.63	3.8	0.14	0.16	0.39	0.29	37	17
37		14.71		14.70		33.321		24.744	320.4	0.133														37	18
50	A	11.13		11.12		33.114		25.288	268.7	0.173	5.13		224.0		82.2		8.6	1.08	10.9	0.03	0.17	0.15	0.23	50	16
56		11.06		11.05		33.113		25.298	267.8	0.189	5.14		224.4		82.2		8.8	1.08	11.0	0.03	0.11	0.17	0.19	56	15
63	A	10.43		10.42		33.144		25.434	255.0	0.207	5.00		218.6		79.0		10.8	1.20	13.1	0.01	0.11	0.12	0.14	64	14
75		9.81		9.80		33.213		25.592	240.2	0.237	4.82		210.7		75.2		14.0	1.35	15.6	0.01	0.08	0.07	0.08	76	13
86		10.04		10.03		33.398		25.699	230.3	0.263	4.24		185.3		66.5		15.8	1.48	17.8	0.00	0.14	0.05	0.07	87	12
100		9.60		9.58		33.551		25.892	212.2	0.294	3.74		163.4		58.2		20.2	1.68	20.7	0.00	0.10	0.02	0.04	101	11
119		9.52		9.51		33.796		26.096	193.3	0.332	2.91		127.2		45.3		25.8	1.92	24.1	0.00	0.09	0.01	0.04	120	10
125	ISL	9.46	D	9.45		33.820	D	26.125	190.7	0.323	2.88	D	125.5	D	44.7		26.6	1.95	24.6	0.00	0.08	0.01	0.04	126	
140		9.36		9.35		33.923		26.222	181.7	0.372	2.62		114.3		40.6		28.8	2.04	25.6	0.00	0.06	0.01	0.04	141	09
150	ISL	9.33	D	9.32		33.952	D	26.250	179.3	0.369	2.44	D	106.2	D	37.8		30.0	2.07	26.3	0.00	0.08	0.01	0.04	151	
169		8.92		8.90		33.963		26.325	172.5	0.423	2.45		107.0		37.6		32.5	2.14	27.5	0.00	0.11	0.01	0.04	170	08
200		8.51		8.49		34.050		26.458	160.4	0.475	2.09		91.2		31.8		37.8	2.36	29.3	0.00	0.11	0.00	0.03	202	07
230		8.51		8.49		34.138		26.527	154.4	0.522	1.54		67.3		23.5		41.6	2.49	30.7	0.00	0.10			232	06
250	ISL	8.51	D	8.48		34.176	D	26.559	151.9	0.533	1.32	D	57.3	D	20.0		43.6	2.55	31.4	0.00	0.08			252	
270		8.34		8.31		34.197		26.601	148.1	0.583	1.18		51.4		17.9		45.6	2.61	32.1	0.00	0.05			272	05
300	ISL	8.01	D	7.97		34.207	D	26.660	143.0	0.607	1.00	D	43.5	D	15.0		49.7	2.68	33.3	0.00	0.06			302	
320		7.67		7.64		34.190		26.696	139.7	0.655	0.97		42.3		14.5		52.5	2.73	34.0	0.00	0.06			323	04
381		7.05		7.01		34.203		26.795	131.0	0.737	0.74		32.2		10.9		60.7	2.89	36.7	0.00	0.02			384	03
400	ISL	6.91	D	6.87		34.211	D	26.821	128.7	0.744	0.70	D	30.3	D	10.2		63.1	2.93	37.1	0.00	0.03			403	
441		6.64		6.60		34.246		26.885	123.0	0.814	0.49		21.2		7.1		68.2	3.03	38.1	0.00	0.05			445	02
500	ISL	6.18	D	6.14		34.270	D	26.964	116.0	0.867	0.37	D	16.1	D	5.3		75.4	3.14	39.6	0.00	0.03			504	
516		6.12		6.07		34.279		26.979	114.7	0.903	0.34		14.7		4.8		77.4	3.17	40.0	0.00	0.02			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 1411 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 14.8 N	121 26.6 W	18/11/2014	1017 UTC	3797 m	080 04 kn			1017.0 mb	17.2 C	15.2 C				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		18.18		18.18		33.350		23.965	393.4	0.000	5.42		236.7		100.4		1.2	0.31	0.1	0.00	0.28	0.15	0.03	0	
2		18.18		18.18		33.350		23.965	393.4	0.008	5.42		236.7		100.4		1.2	0.31	0.1	0.00	0.28	0.15	0.03	2	21
10		17.85		17.84		33.535		24.189	372.4	0.039	5.49		239.8		101.2							0.33	0.09	10	19
10		17.85		17.84		33.538		24.192	372.1	0.037														10	20
19		17.80		17.79		33.547		24.212	370.6	0.072	5.50		239.9		101.2		1.2	0.30	0.1	0.01	0.17	0.44	0.15	19	18
20	ISL	17.76	D	17.76		33.543	D	24.216	370.2	0.059	5.49	D	239.3	D	101.0		1.2	0.30	0.1	0.01	0.16	0.44	0.15	20	
30		17.46		17.45		33.516		24.270	365.4	0.112	5.53		241.3		101.1		0.9	0.29	0.1	0.01	0.06	0.40	0.15	30	17
40		16.88		16.87		33.498		24.395	353.9	0.148	5.41		236.3		97.9		1.6	0.39	1.0	0.08	0.14	0.40	0.21	40	16
50		13.76		13.76		33.407		25.009	295.5	0.181	5.17		225.6		87.7		4.1	0.68	4.9	0.18	0.13	0.34	0.25	50	15
59		12.89		12.88		33.327		25.123	284.8	0.207	4.92		214.9		82.0		7.0	0.99	9.1	0.05	0.13	0.22	0.27	59	14
70		11.06		11.05		33.180		25.352	263.1	0.237	4.96		216.6		79.4		9.3	1.12	11.8	0.03	0.07	0.14	0.19	71	13
75	ISL	10.86	D	10.85		33.234	D	25.428	255.9	0.235	4.80	D	208.9	D	76.5		10.6	1.19	13.1	0.03	0.05	0.12	0.16	76	
85		10.53		10.52		33.354		25.580	241.7	0.275	4.43		193.6		70.2		13.2	1.34	15.7	0.01	0.01	0.07	0.10	86	12
100		9.93		9.92		33.464		25.769	224.0	0.310	4.06		177.4		63.5		16.9	1.53	18.6	0.01	0.04	0.03	0.05	101	11
119		9.38		9.37		33.652		26.006	201.7	0.350	3.65		159.4		56.5		21.9	1.70	22.0	0.01	0.08	0.01	0.03	120	10
125	ISL	9.33	D	9.31		33.691	D	26.046	198.1	0.348	3.57	D	155.4	D	55.2		23.2	1.75	22.7	0.01	0.07	0.01	0.03	126	
141		8.99		8.97		33.803		26.188	184.9	0.393	3.20		139.5		49.1		26.6	1.87	24.8	0.01	0.06	0.00	0.02	142	09
150	ISL	8.90	D	8.88		33.870	D	26.255	178.7	0.395	3.05	D	132.9	D	46.8		28.5	1.94	25.7	0.01	0.05	0.00	0.02	151	
170		8.66		8.64		33.952		26.357	169.3	0.444	2.64	D	114.8	D	40.2		32.5	2.08	27.7	0.01	0.03	0.00	0.03	171	08
200		8.44		8.42		34.035		26.456	160.5	0.494	2.10		91.5		31.8		37.3	2.29	29.7	0.01	0.04	0.00	0.03	202	07
230		8.07		8.05		34.092		26.557	151.3	0.540	1.70		74.3		25.7		43.1	2.45	31.7	0.00	0.03			232	06
250	ISL	7.69	D	7.66		34.081	D	26.605	147.0	0.557	1.74	D	75.7	D	26.0		46.0	2.48	32.8	0.00	0.00			252	
269		7.27		7.24		34.038		26.631	144.6	0.598	1.77		77.1		26.1		48.9	2.51	33.8	0.01	0.00			271	05
300	ISL	7.04	D	7.01		34.085	D	26.701	138.4	0.630	1.36	D	59.1	D	20.0		54.1	2.68	35.2	0.00	0.00			302	
319		7.03		7.00		34.134		26.742	134.8	0.668	1.06		46.1		15.5		57.2	2.78	36.1	0.00	0.00			322	04
381		6.77		6.74		34.220		26.845	126.0	0.749	0.60		26.3		8.8		64.6	2.98	37.8	0.00	0.01			384	03
400	ISL	6.66	D	6.62		34.237	D	26.874	123.4	0.761	0.53	D	22.8	D	7.7		66.9	3.02	38.2	0.00	0.00			403	
440		6.44		6.40		34.279		26.937	117.9	0.821	0.35		15.2		5.1		71.8	3.11	38.9	0.00	0.00			444	02
500	ISL	6.02	D	5.97		34.306	D	27.013	111.1	0.879	0.28	D	12.1	D	4.0		78.2	3.18	40.1	0.00	0.00			504	
514		6.01		5.96		34.316		27.023	110.5	0.905	0.25		10.8		3.6		79.6	3.20	40.3	0.00	0.04			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 54.8 N	122 7.8 W	18/11/2014	0448 UTC	4180 m	120 04 kn			1018.0 mb	17.9 C	15.1 C				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		18.03		18.03	33.421	24.058	384.5	0.000	5.49	239.4	101.4	1.0	0.35	0.1	0.00	0.10	0.18	0.05	0	
2		18.03		18.02	33.421	24.058	384.6	0.008	5.49	239.4	101.4	1.0	0.35	0.1	0.00	0.10	0.18	0.05	2	21
9		18.03		18.03	33.433	24.067	384.0	0.035	5.48	239.2	101.3	1.0	0.31	0.1	0.00	0.15	0.19	0.05	9	19
9		18.03		18.03	33.427	24.063	384.4	0.036											9	20
10	ISL	18.03	D	18.03	33.432	D 24.066	384.2	0.037	5.48	D239.0	D101.3	1.0	0.31	0.1	0.00	0.15	0.19	0.05	10	
20	ISL	18.03	D	18.03	33.439	D 24.072	384.0	0.075	5.45	D237.8	D100.8	0.9	0.30	0.1	0.00	0.14	0.22	0.06	20	
25		18.03		18.03	33.442	24.075	383.9	0.096	5.46	238.2	100.8	0.9	0.30	0.1	0.00	0.14	0.24	0.06	25	18
30	ISL	18.03	D	18.03	33.442	D 24.074	384.2	0.114	5.47	D238.5	D101.1	0.9	0.30	0.1	0.00	0.12	0.25	0.07	30	
40		17.91		17.90	33.416	24.086	383.4	0.154	5.50	240.0	101.4	1.0	0.29	0.1	0.00	0.07	0.28	0.09	40	17
50		14.30		14.29	33.026	24.603	334.2	0.190	5.94	259.2	101.6	2.3	0.41	0.1	0.01	0.19	0.57	0.29	50	16
62		13.12		13.11	33.096	24.899	306.2	0.228	5.63	245.9	94.1	3.7	0.68	3.6	0.27	0.19	0.44	0.29	62	15
75		11.42		11.41	33.156	25.269	271.1	0.266	5.08	221.6	81.9	8.0	1.08	10.5	0.03	0.15	0.17	0.20	76	14
86		10.81		10.80	33.359	25.536	245.9	0.294	4.47	195.1	71.2	12.6	1.31	15.0	0.02	0.07	0.08	0.12	87	13
100		9.74		9.73	33.384	25.737	226.9	0.327	4.41	192.7	68.7	16.0	1.47	17.9	0.01	0.10	0.03	0.04	101	12
111		9.61		9.60	33.465	25.823	219.0	0.352	4.12	179.8	64.0	19.1	1.59	19.8	0.01	0.08	0.01	0.04	112	11
125		9.28		9.27	33.687	26.049	197.8	0.381	3.37	147.2	52.1	23.9	1.81	23.3	0.01	0.10	0.01	0.04	126	10
140		8.98		8.97	33.788	26.177	185.9	0.410	3.04	132.7	46.7	26.7	1.95	25.1	0.01	0.20	0.00	0.03	141	09
150	ISL	8.91	D	8.89	33.861	D 26.246	179.5	0.428	2.97	D129.1	D 45.5	28.4	1.95	25.6	0.01	0.16	0.00	0.03	151	
170		8.35		8.34	33.926	26.383	166.8	0.463	3.11	135.7	47.1	31.9	1.95	26.5	0.01	0.08	0.00	0.02	171	08
199		7.92		7.90	33.972	26.485	157.5	0.510	2.80	122.1	42.0	36.9	2.08	28.6	0.01	0.08	0.00	0.02	201	07
200	ISL	7.93	D	7.91	33.976	D 26.486	157.5	0.511	2.79	D121.3	D 41.8	37.1	2.09	28.7	0.01	0.08			202	
230		7.49		7.47	33.993	26.564	150.4	0.558	2.39	104.3	35.5	43.0	2.27	30.9	0.01	0.08			232	06
250	ISL	7.30	D	7.27	34.007	D 26.602	147.0	0.588	2.14	D 93.1	D 31.7	46.0	2.37	32.1	0.01	0.10			252	
270		7.14		7.11	34.019	26.634	144.2	0.616	1.92	83.7	28.2	49.0	2.47	33.3	0.01	0.11			272	05
300	ISL	6.90	D	6.87	34.039	D 26.683	139.9	0.660	1.63	D 70.7	D 23.8	53.7	2.58	34.9	0.01	0.12			302	
320		6.70		6.67	34.049	26.718	136.8	0.687	1.40	61.2	20.5	56.8	2.66	36.0	0.01	0.12			323	04
380		6.21		6.18	34.095	26.819	127.8	0.766	0.97	42.2	14.0	66.8	2.90	39.0	0.01	0.20			383	03
400	ISL	6.11	D	6.08	34.121	D 26.853	124.8	0.793	0.86	D 37.5	D 12.4	69.4	2.95	39.4	0.01	0.21			403	
440		5.89		5.85	34.155	26.909	119.9	0.840	0.62	27.1	8.9	74.6	3.05	40.3	0.01	0.23			444	02
500	ISL	5.67	D	5.62	34.229	D 26.996	112.4	0.913	0.45	D 19.4	D 6.4	82.8	3.19	41.1	0.01	0.16			504	
515		5.51		5.47	34.243	27.025	109.6	0.927	0.34	14.7	4.8	84.9	3.23	41.3	0.02	0.14			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
32 34.7 N	122 48.7 W	17/11/2014	2324 UTC	4276 m	060 04 kn	300 03 08	1	1018.0 mb	18.3 C	16.7 C	25 m	7/8	ST	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		18.22		18.22	33.037	23.717	417.0	0.000	5.49	239.7	101.6	1.5	0.37	0.0	0.01	0.11	0.12	0.02	0	
2		18.22		18.22	33.037	23.717	417.1	0.008	5.49	239.7	101.6	1.5	0.37	0.0	0.01	0.11	0.12	0.02	2	21
10		17.81		17.81	33.067	23.839	405.7	0.041	5.56	242.7	102.1	1.4	0.38	0.0	0.01	0.08	0.13	0.03	10	19
10		17.81		17.81	33.076	23.846	405.1	0.041											10	20
20	ISL	17.19	D	17.18	33.006	D 23.943	396.2	0.062	5.75	D250.7	D104.2	1.7	0.36	0.0	0.01	0.05	0.15	0.05	20	
25		16.46		16.46	32.909	24.038	387.4	0.101	5.95	259.9	106.3	1.8	0.35	0.0	0.00	0.04	0.17	0.06	25	18
30	ISL	15.87	D	15.86	32.870	D 24.143	377.5	0.101	6.05	D263.9	D106.9	1.9	0.35	0.0	0.00	0.04	0.17	0.08	30	
39		15.59		15.59	32.884	24.215	370.9	0.154	6.09	266.1	107.0	2.1	0.35	0.0	0.01	0.04	0.19	0.10	39	17
50		14.40		14.39	32.887	24.476	346.2	0.193	6.11	266.7	104.7	2.4	0.38	0.1	0.01	0.13	0.27	0.18	50	16
62		12.84		12.83	32.861	24.771	318.3	0.233	5.91	258.2	98.1	3.5	0.53	1.4	0.19	0.07	0.37	0.34	62	15
75		11.99		11.98	33.238	25.226	275.3	0.272	4.96	216.5	81.0	7.9	1.04	10.0	0.04	0.09	0.22	0.24	76	14
87		11.21		11.20	33.324	25.438	255.3	0.303	4.56	199.0	73.3	11.3	1.25	13.6	0.03	0.07	0.11	0.15	88	13
100		10.73		10.71	33.385	25.571	242.9	0.336	4.30	187.8	68.5	13.5	1.37	15.7	0.02	0.07	0.07	0.11	101	12
112		9.98		9.97	33.550	25.828	218.6	0.364	3.69	160.9	57.8	18.6	1.59	19.3	0.02	0.12	0.03	0.06	113	11
125		9.71		9.69	33.693	25.986	203.9	0.391	3.24	141.2	50.4	22.7	1.76	22.0	0.01	0.05	0.02	0.05	126	10
140		9.34		9.33	33.773	26.108	192.5	0.421	2.99	130.6	46.3	25.7	1.89	24.1	0.01	0.08	0.01	0.04	141	09
150	ISL	9.03	D	9.01	33.838	D 26.209	183.1	0.422	2.95	D128.3	D 45.3	27.5	1.94	25.0	0.01	0.08	0.01	0.04	151	
170		8.78		8.76	33.921	26.313	173.6	0.475	2.67	116.4	40.8	31.1	2.04	26.8	0.01	0.07	0.00	0.03	171	08
200		8.52		8.50	33.996	26.414	164.5	0.526	2.34	101.9	35.5	35.7	2.17	28.5	0.01	0.03	0.00	0.02	202	07
230		8.24		8.22	34.070	26.515	155.4	0.574	1.94	84.4	29.3	40.4	2.34	30.1	0.01	0.11			232	06
250	ISL	7.90	D	7.87	34.041	D 26.544	152.9	0.587	2.10	D 91.3	D 31.5	43.2	2.39	31.2	0.01	0.07			252	
270		7.52		7.49	34.048	26.604	147.3	0.635	1.80	78.4	26.7	46.1	2.43	32.3	0.01	0.02			272	05
300	ISL	7.17	D	7.15	34.060	D 26.662	142.1	0.662	1.60	D 69.7	D 23.6	51.8	2.54	34.2	0.01	0.03			302	
320		6.78		6.75	34.051	26.709	137.8	0.706	1.46	63.6	21.3	55.6	2.62	35.5	0.00	0.03			323	04
380		6.19		6.16	34.093	26.820	127.7	0.786	0.97	42.3	14.0	66.9	2.86	38.1	0.01	0.00			383	03
400	ISL	6.03	D	5.99	34.102	D 26.848	125.2	0.796	0.94	D 40.8	D 13.5	69.5	2.91	38.5	0.00	0.00			403	
440		5.78		5.74	34.130	26.902	120.4	0.860	0.71	30.9	10.1	74.9	3.00	39.5	0.00	0.03			444	02
500	ISL	5.58	D	5.53	34.204	D 26.987	113.1	0.916	0.50	D 21.6	D 7.1	81.2	3.09	40.5	0.01	0.03			504	
515		5.55		5.51	34.219	27.001	111.9	0.947	0.40	17.5	5.7	82.7	3.11	40.8	0.01	0.03			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 1411 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 14.6 N	123 29.3 W	17/11/2014	1759	UTC	4169 m	050 06 kn	060 03 06	1	1021.0 mb	19.9 C	16.9 C	43 m	7/8	ST	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	19.47	19.47	33.302 D	23.606	427.6	0.000	5.32	232.2	101.0	2.3	0.32	0.1	0.00	1.03	0.11	0.04	0	
2 A	19.47	19.47	33.302 D	23.606	427.7	0.009	5.32	232.2	101.0	2.3	0.32	0.1	0.00	1.03	0.11	0.04	2	24
10 ISL	19.43 D	19.43	33.301 D	23.615	427.2	0.043	5.34	D233.0	D101.3	2.3	0.31	0.1	0.00	0.35	0.11	0.03	10	
13	19.43	19.43	33.303	23.616	427.2	0.056	5.30	231.5	100.6	2.3	0.31	0.1	0.00	0.10	0.11	0.03	13	21
13	19.43	19.43	33.302	23.616	427.2	0.054											13	23
13	19.43	19.43	33.302	23.616	427.2	0.055											13	22
20 ISL	19.44 D	19.43	33.302 D	23.616	427.5	0.071	5.36	D233.7	D101.6	2.3	0.32	0.1	0.00	0.21	0.12	0.04	20	
24 A	19.44	19.44	33.312	23.623	427.0	0.103	5.30	231.3	100.5	2.3	0.33	0.1	0.00	0.27	0.12	0.04	24	20
30 ISL	19.43 D	19.43	33.302 D	23.617	427.8	0.114	5.34	D233.0	D101.3	2.3	0.32	0.1	0.00	0.17	0.12	0.04	30	
34 A	19.44	19.43	33.303	23.618	427.9	0.145	5.32	232.1	100.8	2.2	0.32	0.1	0.00	0.10	0.12	0.05	34	19
44	19.44	19.43	33.305	23.621	428.1	0.188	5.32	232.4	100.9	2.3	0.32	0.1	0.00	0.23	0.13	0.04	44	18
50 ISL	19.34 D	19.33	33.314 D	23.652	425.3	0.201	5.37	D234.1	D101.6	2.3	0.31	0.1	0.00	0.22	0.18	0.06	50	
54	19.14	19.13	33.283	23.681	422.7	0.231	5.43	237.0	102.3	2.3	0.31	0.1	0.00	0.21	0.21	0.08	54	17
63	16.30	16.29	33.073	24.204	372.9	0.268											64	16
64 A	16.15	16.14	33.075	24.239	369.5	0.270	5.92	258.3	105.1	2.2	0.35	0.1	0.00	0.19	0.22	0.17	65	15
75 ISL	14.85 D	14.84	33.133 D	24.571	338.1	0.277	5.93	D258.3	D102.7	2.8	0.41	0.3	0.06	0.17	0.21	0.18	76	
81	13.85	13.84	33.085	24.744	321.6	0.329	5.81	253.6	98.5	3.1	0.44	0.4	0.10	0.16	0.21	0.18	82	14
100	12.25	12.23	33.115	25.084	289.5	0.387	5.51	240.7	90.5	5.0	0.68	4.4	0.15	0.09	0.16	0.18	101	13
118 A	11.01	11.00	33.164	25.349	264.5	0.437	5.23	228.2	83.6	7.4	0.90	8.5	0.02	0.27	0.10	0.13	119	12
125 ISL	10.79 D	10.77	33.220 D	25.433	256.6	0.424	5.14	D224.0	D 81.9	8.9	1.01	10.4	0.01	0.13	0.09	0.12	126	
130	10.59	10.57	33.228	25.474	252.8	0.468	4.94	215.5	78.2	10.0	1.09	11.8	0.01	0.03	0.08	0.11	131	11
140	9.88	9.86	33.364	25.700	231.4	0.492	4.59	200.3	71.6	13.9	1.28	15.3	0.01	0.08	0.04	0.06	141	10
150 A	9.71	9.69	33.429	25.780	223.9	0.515	4.43	193.4	68.9	15.8	1.37	16.7	0.01	0.07	0.03	0.04	151	09
169	9.24	9.22	33.604	25.994	204.0	0.556	3.96	173.0	61.1	21.0	1.61	20.6	0.00	0.07	0.01	0.02	170	08
200	8.92	8.90	33.809	26.205	184.5	0.616	3.36	146.7	51.5	26.5	1.81	24.3	0.00	0.05	0.00	0.01	202	07
229	8.59	8.56	33.916	26.341	172.0	0.668	3.03	132.4	46.2	30.8	1.93	26.0	0.00	0.05			231	06
250 ISL	8.25 D	8.22	33.967 D	26.433	163.6	0.674	2.83	D123.0	D 42.7	34.6	2.03	27.5	0.00	0.06			252	
270	7.93	7.90	33.988	26.498	157.7	0.735	2.60	113.4	39.0	38.2	2.12	28.9	0.00	0.06			272	05
300 ISL	7.56 D	7.53	34.015 D	26.573	150.8	0.753	2.18	D 94.9	D 32.5	44.2	2.32	31.3	0.00	0.05			302	
320	7.36	7.33	34.045	26.625	146.2	0.811	1.76	76.9	26.1	48.2	2.45	32.9	0.00	0.05			323	04
379	6.74	6.70	34.079	26.738	135.9	0.894	1.29	56.3	18.8	57.8	2.68	35.7	0.00	0.06			382	03
400 ISL	6.55 D	6.51	34.092 D	26.774	132.7	0.895	1.18	D 51.4	D 17.2	61.5	2.75	36.6	0.00	0.11			403	
439	6.19	6.15	34.118	26.842	126.5	0.973	0.89	38.8	12.8	68.3	2.88	38.1	0.01	0.21			443	02
500 ISL	5.73 D	5.69	34.166 D	26.938	117.9	1.021	0.62	D 26.8	D 8.8	77.3	3.02	39.8	0.00	0.06			504	
517	5.63	5.58	34.182	26.964	115.5	1.067	0.53	23.1	7.5	79.9	3.06	40.3	0.00	0.02			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 1411 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 54.8 N	124 10.2 W	17/11/2014	1208	UTC	4226 m	050 06 kn			1020.0 mb	18.2 C	15.9 C				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	19.76	19.76	33.368	23.582	430.0	0.000	5.28	230.5	100.7	2.2	0.30	0.0	0.01	0.09	0.09	0.03	0	
2	19.76	19.76	33.368	23.582	430.0	0.009	5.28	230.5	100.7	2.2	0.30	0.0	0.01	0.09	0.09	0.03	2	23
10	19.77	19.77	33.368	23.580	430.5	0.043	5.31	231.7	101.3	2.2	0.30	0.0	0.01	0.05	0.10	0.02	10	21
10	19.77	19.77	33.370	23.582	430.4	0.043											10	22
19	19.77	19.77	33.369	23.581	430.8	0.083											19	19
20 ISL	19.77 D	19.77	33.366 D	23.579	431.0	0.046	5.30	D231.4	D101.3	2.2	0.30	0.0	0.01	0.09	0.10	0.03	20	
20	19.77	19.77	33.368	23.581	430.9	0.085											20	20
24	19.77	19.77	33.372	23.584	430.7	0.103	5.30	231.2	101.1	2.2	0.30	0.0	0.01	0.11	0.10	0.03	24	18
30 ISL	19.77 D	19.76	33.365 D	23.579	431.4	0.081	5.30	D231.3	D101.2	2.2	0.30	0.0	0.01	0.07	0.10	0.03	30	
40	19.78	19.78	33.369	23.579	431.9	0.172	5.30	231.2	101.1	2.2	0.30	0.0	0.01	0.01	0.10	0.02	40	17
50	19.81	19.80	33.379	23.581	432.1	0.216	5.28	230.4	100.8	2.2	0.29	0.0	0.01	0.06	0.11	0.03	50	16
62	18.37	18.36	33.353	23.926	399.5	0.265	5.76	251.6	107.1	2.3	0.25	0.0	0.01	0.06	0.19	0.06	62	15
75	16.78	16.77	33.250	24.229	371.0	0.316	5.86	255.8	105.5	2.2	0.27	0.0	0.01	0.03	0.18	0.11	76	14
86	16.00	15.99	33.221	24.386	356.3	0.356	5.77	252.1	102.4	2.3	0.29	0.0	0.02	0.05	0.20	0.17	87	13
100	14.87	14.85	33.263	24.669	329.6	0.404	5.73	250.2	99.4	2.5	0.31	0.0	0.02	0.05	0.18	0.17	101	12
112	12.94	12.93	33.164	24.988	299.1	0.441	5.65	246.7	94.1	3.5	0.46	0.8	0.21	0.05	0.18	0.15	113	11
125	11.69	11.68	33.123	25.195	279.5	0.479	5.52	241.1	89.5	4.6	0.62	3.6	0.17	0.01	0.13	0.16	126	10
139	11.06	11.04	33.127	25.314	268.4	0.517	5.35	233.8	85.6	6.3	0.80	7.1	0.03	0.01	0.11	0.12	140	09
150 ISL	10.36 D	10.34	33.245 D	25.528	248.1	0.501	5.14	D223.9	D 81.1	9.0	0.96	9.9	0.03	0.01	0.08	0.09	151	
170	9.80	9.78	33.370	25.719	230.2	0.593	4.69	204.9	73.1	13.7	1.26	14.9	0.02	0.02	0.03	0.05	171	08
200	9.19	9.17	33.686	26.066	197.8	0.658	4.22	184.1	65.0	20.2	1.47	19.3	0.02	0.04	0.01	0.13	202	07
230	8.71	8.69	33.863	26.281	177.9	0.714	3.57	156.0	54.5	27.0	1.73	23.4	0.02	0.04			232	06
250 ISL	8.42 D	8.40	33.937 D	26.384	168.3	0.704	3.38	D147.0	D 51.3	30.8	1.85	25.2	0.02	0.03			252	
270	8.12	8.09	33.966 D	26.452	162.1	0.737	3.00	131.0	45.2	34.6	1.97	27.0	0.02	0.01			272	05
300 ISL	7.77 D	7.74	33.994 D	26.526	155.5	0.785	2.60	D113.0	D 38.8	40.2	2.15	29.4	0.01	0.02			302	
320	7.41	7.38	34.006	26.588	149.6	0.860	2.30	100.2	34.0	44.0	2.27	31.0	0.01	0.02			323	04
379	6.75	6.72	34.050	26.713	138.3	0.945	1.52	66.2	22.1	56.1	2.61	35.1	0.01	0.02			382	03
400 ISL	6.58 D	6.55	34.067 D	26.749	135.1	0.931	1.35	D 58.7	D 19.6	59.6	2.70	36.1	0.01	0.02			403	
440	6.29	6.25	34.125	26.834	127.4	1.026	0.86	37.7	12.5	66.2	2.87	38.0	0.01	0.01			444	02
500 ISL	5.93 D	5.88	34.185 D	26.929	119.0	1.058	0.57	D 24.8	D 8.2	75.0	3.03	38.8	0.01	0.02			504	
514	5.85	5.81	34.196	26.947	117.4	1.116	0.49	21.5	7.0	77.0	3.07	39.0	0.01	0.02			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 1411 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	23/11/2014	0217	UTC	19 m	060 05 kn			1014.0 mb	18.2 C	16.3 C				076

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	18.34	18.34	33.552	24.081	382.3	0.000	5.59	243.9	103.9	2.1	0.30	0.1	0.01	0.04	1.18	0.32	0	
2	18.34	18.34	33.552	24.081	382.4	0.008	5.59	243.9	103.9	2.1	0.30	0.1	0.01	0.04	1.18 A	0.32 A	2	04
5	18.35	18.35	33.552	24.079	382.7	0.019	5.61	245.0	104.4	2.1	0.30	0.1	0.01	0.05	1.82	0.50	5	03
10	18.35	18.35	33.552	24.080	382.8	0.038	5.59	244.1	104.1	2.1	0.29	0.1	0.01	0.04	0.47	0.19	10	02
15	18.35	18.35	33.552	24.080	383.0	0.057	5.58	243.7	103.8	2.1	0.29	0.5	0.01	0.04	0.48	0.18	15	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 1411 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	15/11/2014	0315 UTC	56 m	260 04 kn			1015.0 mb	19.0 C	16.8 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		19.72		19.72		33.593	23.763	412.6	0.000	5.41		236.4		103.4		1.7	0.41	0.1	0.02	0.22	0.21	0.05	0	
2		19.72		19.72		33.593	23.764	412.7	0.008	5.41		236.4		103.4		1.7	0.41	0.1	0.02	0.22	0.21	0.05	2	07
5		19.63		19.63		33.595	23.789	410.4	0.021	5.38		234.8		102.5		1.8	0.36	0.1	0.02	0.21	0.21	0.05	5	06
10		19.19		19.19		33.585	23.894	400.6	0.041	5.42		236.7		102.5		1.7	0.28	0.1	0.01	0.04	0.22	0.07	10	04
10		19.19		19.19		33.563	23.877	402.2	0.040														10	05
20	ISL	18.61	D	18.61		33.526	D 23.995	391.3	0.061	5.60	D	244.4	D	104.8		2.6	0.36	0.4	0.18	0.52	0.65	0.25	20	
30	A	16.33		16.32		33.351	24.408	352.2	0.118	5.97		260.5		106.6		3.5	0.44	0.7	0.35	0.99	1.08	0.44	30	03
40	A	15.85		15.84		33.331	24.502	343.6	0.153	5.90		257.5		104.4		3.8	0.46	0.9	0.52	1.58	0.97	0.45	40	02
50	A	14.84		14.83		33.295	24.697	325.2	0.186	5.59		244.0		96.9		5.2	0.63	2.4	1.22	2.92	0.55	0.41	50	01

A) UNUSUAL HIGH NUTRIENT CONCENTRATIONS 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 1411 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 49.6 N	118 37.8 W	15/11/2014	0520 UTC	644 m	280 01 kn			1015.0 mb	18.9 C	16.9 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		19.66		19.66		33.602	23.786	410.4	0.000	5.35		233.7		102.1		1.7	0.31	0.1	0.01	0.23	0.17	0.06	0	
2		19.66		19.66		33.602	23.786	410.5	0.008	5.35		233.7		102.1		1.7	0.31	0.1	0.01	0.23	0.17	0.06	2	21
10		19.65		19.64		33.599	23.788	410.7	0.041	5.39		235.4		102.8		1.7	0.28	0.0	0.01	0.17	0.17	0.11	10	19
10		19.65		19.64		33.604	23.792	410.3	0.040														10	20
20		19.40		19.40		33.581	23.838	406.3	0.082	5.42		236.8		103.0		1.7	0.29	0.0	0.01	0.13	0.20	0.06	20	18
30	A	17.20		17.20		33.398	24.240	368.2	0.121	5.88		256.9		107.0		2.3	0.35	0.1	0.03	0.28	0.45	0.16	30	17
40	A	15.60		15.59		33.327	24.554	338.6	0.156	5.82		254.2		102.5		3.7	0.46	0.9	0.72	1.22	1.11	0.43	40	16
50	A	14.30		14.29		33.304	24.817	313.8	0.189	5.66		247.3		97.1		4.4	0.56	2.1	0.99	0.35	0.70	0.37	50	15
60		13.19		13.18		33.269	25.018	294.8	0.219	5.39		235.4		90.4		5.7	0.77	5.0	0.39	0.23	0.35	0.37	60	14
70		12.05		12.04		33.303	25.265	271.5	0.247	5.02		219.2		82.1		7.6	0.92	8.1	0.08	0.15	0.22	0.25	71	13
75	ISL	11.55	D	11.54		33.313	D 25.366	261.9	0.242	4.87	D	212.0	D	78.8		8.7	1.00	9.6	0.07	0.15	0.19	0.22	76	
85		11.25		11.24		33.366	25.463	253.0	0.286	4.56		199.0		73.3		11.1	1.16	12.5	0.04	0.16	0.14	0.17	86	12
100		10.92		10.91		33.477	25.608	239.5	0.323	4.08		178.1		65.2		14.3	1.36	15.6	0.03	0.11	0.09	0.14	101	11
120		10.25		10.24		33.560	25.790	222.5	0.369	3.72		162.5		58.7		17.5	1.54	18.4	0.03	0.16	0.05	0.10	121	10
125	ISL	10.23	D	10.21		33.589	D 25.818	220.0	0.362	3.71	D	161.3	D	58.4		18.5	1.59	19.1	0.02	0.17	0.05	0.09	126	
140		9.95		9.93		33.753	D 25.993	203.7	0.395	3.27		142.9		51.3		21.6	1.75	21.3	0.02	0.21	0.02	0.06	141	09
150	ISL	9.97	D	9.95		33.827	D 26.048	198.7	0.415	2.89	D	125.6	D	45.3		23.3	1.82	22.3	0.02	0.18	0.02	0.06	151	
169		9.86		9.84		33.905	26.128	191.6	0.469	2.61		113.8		40.8		26.7	1.96	24.1	0.02	0.11	0.01	0.05	170	08
199		9.25		9.23		33.982	26.289	176.7	0.525	2.37		103.2		36.6		30.9	2.10	26.5	0.02	0.09	0.01	0.04	201	07
200	ISL	9.27	D	9.25		33.985	D 26.288	176.8	0.509	2.35	D	102.4	D	36.4		31.1	2.11	26.5	0.02	0.09			202	
230		8.99		8.96		34.081	26.409	165.9	0.578	1.94		84.9		29.9		35.0	2.26	28.1	0.02	0.07			232	06
250	ISL	8.96	D	8.94		34.126	D 26.448	162.6	0.594	1.74	D	75.5	D	26.7		37.0	2.34	28.8	0.01	0.09			252	
270		8.96		8.93		34.160	26.476	160.5	0.643	1.53		66.9		23.6		39.0	2.41	29.5	0.01	0.10			272	05
300	ISL	8.94	D	8.91		34.230	D 26.535	155.5	0.674	1.16	D	50.6	D	17.9		41.9	2.54	30.4	0.01	0.14			302	
320		8.74		8.70		34.261	26.592	150.4	0.721	0.99		43.2		15.2		43.8	2.62	31.0	0.01	0.16			323	04
380		8.14		8.10		34.267	26.690	141.9	0.809	0.73		31.9		11.0		51.3	2.79	33.1	0.02	0.28			383	03
400	ISL	8.04	D	8.00		34.269	D 26.707	140.6	0.822	0.73	D	31.8	D	11.0		53.2	2.82	33.7	0.01	0.22			403	
441		7.57		7.53		34.272	26.777	134.3	0.893	0.61		26.4		9.0		57.1	2.89	34.8	0.01	0.10			445	02
500	ISL	6.86	D	6.82		34.298	D 26.897	123.2	0.955	0.40	D	17.4	D	5.9		67.8	3.04	37.1	0.02	0.04			504	
515		6.70		6.65		34.303	26.924	120.7	0.987	0.32		14.0		4.7		70.5	3.08	37.6	0.02	0.02			519	01

A) UNUSUAL HIGH NUTRIENT CONCENTRATIONS 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 1411 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 39.5 N	118 58.5 W	15/11/2014	0925 UTC	748 m	150 04 kn			1015.0 mb	17.9 C	0.0 C				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		19.46		19.46		33.603	23.837	405.6	0.000	5.37		234.4		102.1		1.5	0.38	0.1	0.01	0.51	0.18	0.04	0	
3		19.46		19.46		33.603	23.838	405.7	0.012	5.37		234.4		102.1		1.5	0.38	0.1	0.01	0.51	0.18	0.04	3	24
10		19.46		19.46		33.601	23.838	406.0	0.041	5.36		234.0		101.9		1.4	0.29	0.1	0.01	0.14	0.20	0.07	10	22
11		19.46		19.46		33.595	23.834	406.3	0.043														10	23
20		19.28		19.28		33.568	23.859	404.4	0.081	5.41		236.2		102.5		1.5	0.30	0.1	0.01	0.13	0.40	0.17	20	21
30		18.12		18.12		33.413	24.031	388.3	0.121	5.74		250.4		106.2		1.9	0.34	0.1	0.01	0.16	0.33	0.13	30	20
40		15.23		15.23		33.308	24.621	332.2	0.157	6.04		263.9		105.6		3.0	0.38	0.1	0.01	0.08	0.18	0.05	40	19
50		13.68		13.68		33.250	24.904	305.5	0.189	5.64		246.1		95.4		4.6	0.60	3.2	0.24	0.07	0.46	0.37	50	18
60		12.48		12.47		33.253	25.144	282.8	0.218	5.26		229.7		86.8		6.6	0.81	6.9	0.17	0.14	0.24	0.26	60	17
70		12.00		11.99		33.277	25.256	272.4	0.246	5.03		219.8		82.3		8.0	0.93	9.0	0.08	0.05	0.19	0.21	71	16
75	ISL	11.86	D	11.85		33.296	D 25.296	268.6	0.241	4.80	D	209.0	D	78.2		9.6	1.03	10.7	0.07	0.06	0.16	0.19	76	
85		10.89		10.88		33.394	25.548	244.8	0.285	4.44		194.0		71.0		12.7	1.23	14.1	0.04	0.08	0.10	0.13	86	15
99		10.32		10.31		33.421	25.668	233.6	0.319	4.27		186.4		67.3		14.8	1.37	16.4	0.03	0.04	0.07	0.11	100	14
100	ISL	10.29	D	10.28		33.430	D 25.681	232.4	0.302	4.27	D	185.8	D	67.3		15.0	1.38	16.6	0.03	0.04	0.07	0.11	101	
119		9.79		9.78		33.651	D 25.938	208.3	0.345	3.64		158.7		56.8		19.8	1.63	19.9	0.03	0.13	0.03	0.06	120	13
125	ISL	9.76	D	9.75		33.680	D 25.966	205.8	0.357	3.43	D	149.4	D	53.6		21.2	1.68	20.8	0.02	0.11	0.02	0.06	126	
139		9.56		9.55		33.770	26.069	196.3	0.403	3.14		137.0		48.8		24.3	1.80	22.9	0.02	0.07	0.01	0.04	140	12
150	ISL	9.37	D	9.35		33.858	D 26.170	186.9	0.407	2.93	D	127.5	D	45.4		26.6	1.90	24.1	0.02	0.10	0.01	0.04	151	
168		9.27		9.25		33.974	26.278	177.0	0.457	2.47		107.7		38.2		30.5	2.07	26.1	0.02	0.15	0.00	0.04	169	11
199		9.05		9.03		34.069	D 26.389	167.2	0.494	2.01	D	87.5	D	31.0									201	10
200	ISL	9.05	D	9.03		34.071	D 26.390	167.0	0.495	1.99	D	86.7	D	30.7		34.7	2.23	27.8	0.02	0.10			202	
230		8.83		8.80		34.133	26.475	159.6	0.561	1.59		69.4		24.4		38.8	2.38	29.4	0.02	0.06			232	09
250	ISL	8.73	D	8.70		34.171	D 26.521	155.6	0.576	1.43	D	62.3	D	21.9		40.6	2.46	30.0	0.02	0.06			252	
270		8.74		8.71		34.219	26.557	152.6	0.624	1.17		51.2		17.9		42.5	2.53	30.6	0.02	0.06			272	08
300	ISL	8.23	D	8.20		34.241	D 26.653	143.9	0.652	0.93	D	40.6	D	14.1		47.5	2.64	32.2	0.02	0.07			302	
320		8.01		7.97		34.242	26.688	140.8	0.697	0.83		36.3		12.5		50.8	2.71	33.2	0.02	0.07			323	07
380		7.48		7.44		34.270	26.787	132.0	0.778	0.58		25.3		8.6		57.6	2.85	34.9	0.01	0.10			383	06
400	ISL	7.33	D	7.29		34.283	D 26.820	129.2	0.790	0.55	D	23.9	D	8.2		59.2	2.89	35.3	0.02	0.11			403	
440		7.19		7.14		34.284	26.840	127.8	0.856	0.47		20.7		7.0		62.3	2.96	36.1	0.02	0.14			444	05
500	ISL	6.63	D	6.58		34.310	D 26.938	119.0	0.916	0.35	D	15.1	D	5.0		71.7	3.06	37.6	0.02	0.08			504	
515		6.49		6.44		34.313	26.959	117.1	0.948	0.27		11.7		3.9		74.1	3.09	38.0	0.02	0.06			519	04
600	ISL	5.96	D	5.90		34.346	D 27.055	108.7	1.031	0.21	D	9.2	D	3.0		86.0	3.21	37.9	0.01	0.07			605	
678		5.48		5.43		34.376	27.137	101.3	1.125	0.09		4.1		1.3		97.0	3.32	37.8	0.01	0.08			684	03
700	ISL	5.41	D	5.35		34.383	D 27.151	100.1	1.136	0.17	D	7.2	D	2.3		98.0	3.32	37.9	0.02	0.10			706	
740		5.37		5.31		34.386	27.160	99.8	1.188	0.12		5.3		1.7		99.7	3.32	38.1	0.02	0.13			747	01
740		5.37		5.31		34.385	27.159	99.9	1.188	0.12		5.3		1.7		99.1	3.29	38.2	0.02	0.04			747	02

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

RV NEW HORIZON CALCOFI CRUISE 1411 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 29.5 N	119 19.0 W	15/11/2014	1339	UTC	1644 m	310 08 kn			1016.0 mb	17.8 C	0.0 C				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		17.86		17.86		33.531	24.182	372.7	0.000	5.48	239.3	101.0	0.8	0.26	0.0	0.01	0.04	0.43	0.14	0	
2		17.86		17.86		33.531	24.182	372.8	0.008	5.48	239.3	101.0	0.8	0.26	0.0	0.01	0.04	0.43	0.14	2	21
10		17.87		17.87		33.531	24.181	373.2	0.037	5.49	239.6	101.2	0.8	0.27	0.0	0.01	0.04	0.42	0.14	10	19
10		17.87		17.87		33.532	24.181	373.1	0.036											10	20
19		17.86		17.86		33.540	24.190	372.7	0.071	5.53	241.5	101.9	0.8	0.26	0.0	0.01	0.00	0.43	0.15	19	18
20	ISL	17.87	D	17.87		33.529	D 24.180	373.6	0.058	5.49	D239.4	D101.2	0.8	0.26	0.0	0.01	0.00	0.45	0.15	20	
30		17.71		17.70		33.519	24.213	370.9	0.112	5.52	240.8	101.4	0.8	0.27	0.1	0.02	0.00	0.62	0.21	30	17
40		15.31		15.30		33.341	24.630	331.4	0.147	5.45	237.8	95.4	2.5	0.47	2.1	0.15	0.09	0.47	0.35	40	16
50		13.67		13.66		33.236	24.895	306.3	0.179	5.36	233.9	90.6	4.9	0.72	5.3	0.21	0.07	0.61	0.48	50	15
60		12.33		12.32		33.217	25.146	282.5	0.208	5.09	222.1	83.7	7.2	0.92	8.6	0.13	0.02	0.31	0.35	60	14
70		11.57		11.56		33.342	25.386	259.9	0.235	4.67	203.8	75.6	10.3	1.09	11.7	0.08	0.00	0.18	0.22	71	13
75	ISL	11.19	D	11.18		33.362	D 25.470	252.0	0.234	4.51	D196.6	D 72.6	11.7	1.17	13.0	0.07	0.00	0.15	0.19	76	
85		10.81		10.80		33.453	25.609	239.0	0.273	4.17	182.1	66.5	14.6	1.34	15.7	0.05	0.00	0.10	0.14	86	12
100		10.09		10.08		33.515	25.781	222.8	0.307	3.89	170.0	61.2	17.3	1.49	18.3	0.03	0.01	0.01	0.17	101	11
119		9.70		9.69		33.651	25.953	206.9	0.348	3.51	153.2	54.7	21.4	1.66	21.1	0.02	0.00	0.02	0.12	120	10
125	ISL	9.64	D	9.63		33.672	D 25.980	204.5	0.346	3.44	D149.7	D 53.5	22.3	1.69	21.7	0.02	0.00	0.02	0.10	126	
140		9.44		9.42		33.771	26.091	194.2	0.390	3.19	139.0	49.4	24.6	1.78	23.0	0.02	0.03	0.01	0.04	141	09
150	ISL	9.30	D	9.29		33.820	D 26.152	188.6	0.396	3.07	D133.4	D 47.4	26.6	1.85	24.0	0.02	0.03	0.01	0.04	151	
169		9.02		9.00		33.927	26.281	176.7	0.444	2.68	117.0	41.2	30.2	1.98	25.8	0.02	0.03	0.00	0.03	170	08
200		8.86		8.84		34.056	26.407	165.3	0.497	2.03	88.7	31.2	35.6	2.23	28.2	0.01	0.01	0.00	0.04	202	07
230		8.60		8.57		34.115	26.496	157.4	0.546	1.78	77.8	27.2	38.4	2.30	29.1	0.02	0.04			232	06
250	ISL	8.63	D	8.60		34.154	D 26.522	155.4	0.565	1.60	D 69.5	D 24.4	41.2	2.40	30.1	0.01	0.03			252	
269		8.35		8.33		34.151	26.562	151.8	0.606	1.35	59.0	20.5	43.8	2.49	31.0	0.01	0.02			271	05
300	ISL	7.94	D	7.90		34.164	D 26.636	145.2	0.640	1.31	D 57.1	D 19.7	47.7	2.58	32.3	0.01	0.01			302	
319		7.86		7.83		34.200	26.676	141.7	0.679	1.03	45.1	15.5	50.1	2.64	33.1	0.02	0.01			322	04
380		7.32		7.28		34.237	26.784	132.2	0.763	0.69	30.2	10.2	58.0	2.82	35.2	0.02	0.01			383	03
400	ISL	7.24	D	7.20		34.268	D 26.820	129.1	0.778	0.58	D 25.4	D 8.6	59.9	2.86	35.6	0.02	0.01			403	
439		7.04		7.00		34.282	26.859	125.9	0.839	0.47	20.6	6.9	63.7	2.94	36.4	0.02	0.02			443	02
500	ISL	6.76	D	6.71		34.301	D 26.914	121.4	0.904	0.39	D 17.0	D 5.7	68.1	3.01	37.3	0.02	0.01			504	
516		6.67		6.62		34.300	26.925	120.6	0.934	0.33	14.6	4.9	69.2	3.03	37.5	0.02	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 1411 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 39.9 W	15/11/2014	1747	UTC	78 m	310 15 kn	280 04 07	1	1018.0 mb	17.0 C	0.0 C	18 m	2/8	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		17.47		17.47		33.472	24.232	367.9	0.000	5.49	239.6	100.3	1.2	0.32	0.3	0.03	0.21	0.57	0.22	0	
3	A	17.47		17.47		33.472	24.232	368.0	0.011	5.49	239.6	100.3	1.2	0.32	0.3	0.03	0.21	0.57	0.22	3	13
10	A	17.46		17.46		33.471	24.234	368.1	0.037	5.48	239.3	100.2	1.2	0.32	0.3	0.04	0.15	0.62	0.23	10	10
11		17.46		17.46		33.472	24.235	368.0	0.039											11	12
10		17.46		17.46		33.474	24.237	367.9	0.038											10	11
14	A	17.45		17.44		33.471	24.237	368.0	0.052	5.48	239.2	100.1	1.2	0.32	0.3	0.03	0.11	0.62	0.21	14	09
20		17.40		17.39		33.468	24.247	367.3	0.074	5.49	239.6	100.2	1.3	0.32	0.3	0.03	0.12	0.63	0.22	20	08
27	A	16.96		16.96		33.442	24.331	359.5	0.099	5.47	238.9	99.1	1.4	0.35	0.4	0.05	0.16	0.68	0.27	27	07
30	ISL	16.91	D	16.90		33.400	D 24.312	361.4	0.105	5.44	D237.1	D 98.3	1.6	0.36	0.5	0.05	0.15	0.67	0.31	30	
40		15.32		15.31		33.202	24.520	341.9	0.145	5.69	248.5	99.6	2.1	0.39	0.6	0.08	0.13	0.64	0.42	40	05
40		15.32		15.31		33.206	24.523	341.6	0.145											40	06
49	A	14.00		13.99		33.205	24.804	315.0	0.175	5.42	236.6	92.3	4.9	0.70	4.7	0.20	0.12	0.46	0.38	49	04
50	ISL	13.98	D	13.97		33.242	D 24.836	312.0	0.158	5.32	D231.8	D 90.6	5.0	0.71	4.9	0.20	0.13	0.45	0.38	50	
55		13.96		13.95		33.307	24.892	306.8	0.193	5.22	228.0	88.9	5.7	0.76	5.8	0.21	0.17	0.45	0.41	55	03
63	A	12.68		12.67		33.269	D 25.118	285.3	0.198	5.23	228.2	86.6	6.0	0.85	7.0	0.11	0.08	0.27	0.32	64	02
70		12.40		12.39		33.311	25.206	277.2	0.237	4.83	211.0	79.7	9.0	1.04	10.1	0.15	0.24	0.21	0.26	71	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 1411 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 9.2 N	120 0.7 W	15/11/2014	2119	UTC	1204 m	320 24 kn	290 06 06	1	1016.0 mb	17.2 C	15.7 C	12 m	2/8	CS	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		17.71		17.71		33.479	24.179	373.0	0.000	5.59	243.9	102.6	0.6	0.32	0.1	0.02	0.28	0.35	0.13	0	
3		17.71		17.71		33.479	24.179	373.1	0.011	5.59	243.9	102.6	0.6	0.32	0.1	0.02	0.28	0.35	0.13	3	21
9		17.70		17.70		33.486	24.187	372.6	0.034											9	20
10		17.71		17.70		33.488	24.187	372.6	0.037	5.57	243.3	102.4	0.6	0.47	0.0	0.01	0.15	0.38	0.13	10	19
20		17.36		17.36		33.494	24.275	364.6	0.074	5.57	243.3	101.7	0.6	0.32	0.0	0.01	0.08	0.41	0.14	20	18
30		16.15		16.15		33.422	24.503	343.2	0.110	5.71	249.4	101.7	1.3	0.43	0.5	0.06	0.34	2.75	0.89	30	17
40		13.63		13.62		33.311	24.962	299.6	0.142	5.30	231.3	89.6	5.4	0.76	5.3	0.28	0.32	1.11	0.58	40	16
50		12.81		12.81		33.315	25.128	284.0	0.171	5.06	220.8	84.1	7.3	0.90	7.9	0.28	0.17	0.69	0.42	50	15
60		12.29		12.28		33.315	25.230	274.5	0.199	4.97	216.9	81.7	8.1	0.96	9.0	0.25	0.13	0.57	0.38	60	14
71		11.94		11.93		33.343	25.318	266.5	0.229	4.70	205.4	76.8	10.2	1.11	11.5	0.17	0.05	0.32	0.26	72	13
75	ISL	11.78	D	11.77		33.346	D 25.351	263.4	0.228	4.66	D203.0	D 75.8	11.2	1.18	12.6	0.14	0.08	0.27	0.24	76	
83		10.94		10.93		33.401	25.545	245.0	0.260	4.34	189.3	69.3	13.2	1.33	14.9	0.07	0.13	0.18	0.21	84	12
100	ISL	10.11	D	10.09		33.526	D 25.788	222.2	0.288	3.85	D167.6	D 60.5	17.8	1.55	18.8	0.04	0.03	0.07	0.14	101	
101		10.07		10.06		33.527	25.794	221.6	0.301	3.83	167.1	60.1	18.1	1.56	19.0	0.03	0.02	0.06	0.13	102	11
120		9.54		9.53		33.648	25.977	204.6	0.342	3.54	154.7	55.0	21.8	1.70	21.7	0.04	0.03	0.03	0.11	121	10
125	ISL	9.46	D	9.45		33.679	D 26.015	201.1	0.341	3.49	D152.0	D 54.2	23.3	1.76	22.5	0.03	0.04	0.03	0.10	126	
140		9.21		9.19		33.828	26.172	186.4	0.381	2.89	125.9	44.5	27.7	1.95	25.2	0.02	0.08	0.02	0.07	141	09
150	ISL	8.94	D	8.92		33.865	D 26.245	179.6	0.389	2.98	D129.6	D 45.7	28.4	1.96	25.4	0.02	0.15	0.02	0.06	151	
170		8.80		8.78		33.898	26.293	175.4	0.435	2.95	128.9	45.2	29.9	1.97	25.9	0.02	0.29	0.01	0.04	171	08
200		8.32		8.30		33.985	26.435	162.5	0.486	2.57	112.3	39.0	35.8	2.16	28.5	0.02	0.20	0.00	0.03	202	07
230		8.21		8.18		34.075	26.524	154.6	0.533	1.91	83.1	28.8	41.6	2.38	30.5	0.02	0.28			232	06
250	ISL	8.37	D	8.34		34.189	D 26.590	148.9	0.554	1.21	D 52.7	D 18.4	45.4	2.55	31.7	0.02	0.25			252	
270		8.11		8.08		34.215	26.649	143.5	0.593	0.98	42.9	14.8	49.3	2.71	32.9	0.03	0.22			272	05
300	ISL	7.78	D	7.75		34.229	D 26.710	138.1	0.627	0.86	D 37.5	D 12.9	53.2	2.79	34.1	0.02	0.22			302	
319		7.61		7.58		34.237	26.741	135.4	0.661	0.75	32.6	11.2	55.7	2.84	34.8	0.02	0.22			322	04
386		7.05		7.02		34.263	26.841	126.7	0.749	0.52	22.6	7.6	63.8	2.98	36.8	0.03	0.17			389	03
400	ISL	7.04	D	7.00		34.265	D 26.846	126.5	0.759	0.54	D 23.6	D 8.0	64.8	2.99	37.0	0.03	0.15			403	
444		6.74		6.70		34.274	26.893	122.4	0.821	0.44	19.4	6.5	67.9	3.04	37.7	0.02	0.09			448	02
500	ISL	6.40	D	6.35		34.293	D 26.955	117.1	0.882	0.37	D 15.9	D 5.3	72.9	3.11	38.8	0.02	0.19			504	
516		6.35		6.31		34.299	26.965	116.3	0.907	0.33	14.2	4.7	74.3	3.13	39.1	0.02	0.22			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 1411 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 59.4 N	120 21.1 W	16/11/2014	0104 UTC	720 m	320 21 kn	310 07 07	0	1017.0 mb	16.9 C	14.8 C		0/8		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		16.11		16.11		33.486		24.559	336.8	0.000	5.74		250.7		102.2		4.1	0.52	1.3	0.07	0.18	0.93	0.30	0	
3		16.11		16.11		33.486		24.559	336.9	0.010	5.74		250.7		102.2		4.1	0.52	1.3	0.07	0.18	0.93	0.30	3	20
10		16.11		16.11		33.494		24.566	336.5	0.034	5.75		251.1		102.4		4.1	0.47	1.3	0.07	0.10	0.89	0.29	10	19
20		16.07		16.06		33.485		24.570	336.4	0.067	5.74		250.5		102.1		4.2	0.51	1.3	0.07	0.24	0.97	0.29	20	18
30		13.77		13.76		33.434		25.028	293.0	0.099	5.09		222.4		86.5		7.2	0.85	6.9	0.24	0.36	0.88	0.42	30	17
40		12.63		12.62		33.439		25.259	271.2	0.127	4.67		204.1		77.5		10.0	1.14	10.6	0.32	0.96	0.49	0.25	40	16
50		11.59		11.58		33.480		25.489	249.6	0.153	4.22		184.1		68.4		13.4	1.36	14.5	0.24	0.24	0.22	0.18	50	15
60		10.68		10.67		33.542		25.699	229.8	0.177	3.80		165.8		60.4		16.8	1.55	17.9	0.12	0.16	0.13	0.12	60	14
70		10.40		10.39		33.566		25.768	223.5	0.200	3.66		159.7		57.8		18.2	1.61	19.1	0.06	0.16	0.10	0.13	71	13
75	ISL	10.29	D	10.28		33.599	D	25.813	219.3	0.212	3.51	D	152.9	D	55.4		19.4	1.66	19.8	0.05	0.12	0.08	0.12	76	
86		9.94		9.93		33.686		25.939	207.5	0.234	3.25		141.8		50.9		22.1	1.76	21.6	0.05	0.04	0.03	0.09	87	12
100		9.82		9.81		33.730		25.994	202.6	0.263	3.11		135.9		48.7		23.6	1.83	22.5	0.04	0.07	0.03	0.08	101	11
121		9.42		9.41		33.859		26.161	187.1	0.304	2.68		117.2		41.6		28.0	2.00	25.0	0.03	0.14	0.02	0.07	122	10
125	ISL	9.39	D	9.37		33.887	D	26.190	184.5	0.313	2.63	D	114.4	D	40.7		28.7	2.03	25.4	0.03	0.13	0.02	0.07	126	
140		9.17		9.16		33.955		26.278	176.4	0.338	2.42		105.6		37.3		31.4	2.12	26.7	0.03	0.10	0.01	0.07	141	09
150	ISL	9.10	D	9.08		33.968	D	26.300	174.5	0.358	2.36	D	102.9	D	36.4		32.9	2.17	27.4	0.02	0.09	0.01	0.06	151	
170		8.81		8.79		34.051		26.410	164.4	0.390	2.02		88.1		30.9		36.0	2.28	28.6	0.02	0.07	0.01	0.05	171	08
199		8.57		8.55		34.119		26.502	156.2	0.436	1.66		72.3		25.2		40.4	2.45	30.3	0.02	0.07	0.01	0.04	201	07
200	ISL	8.56	D	8.54		34.124	D	26.507	155.7	0.440	1.68	D	72.9	D	25.5		40.6	2.45	30.4	0.02	0.07			202	
231		7.76		7.74		34.087		26.599	147.3	0.485	1.73		75.7		25.9		45.0	2.49	31.8	0.02	0.07			233	06
250	ISL	7.81	D	7.78		34.115	D	26.615	146.2	0.516	1.55	D	67.6	D	23.3		47.7	2.54	32.7	0.02	0.09			252	
271		7.40		7.37		34.090		26.654	142.5	0.543	1.50		65.6		22.3		50.7	2.59	33.7	0.02	0.11			273	05
300	ISL	7.16	D	7.13		34.136	D	26.724	136.3	0.587	1.19	D	51.9	D	17.6		54.6	2.71	34.9	0.02	0.10			302	
321		7.14		7.11		34.169		26.754	133.9	0.612	0.98		43.0		14.5		57.4	2.79	35.7	0.02	0.10			324	04
380		6.84		6.81		34.222		26.837	126.7	0.689	0.60		26.1		8.8		64.3	2.97	37.4	0.02	0.11			383	03
400	ISL	6.72	D	6.68		34.220	D	26.852	125.5	0.719	0.62	D	27.0	D	9.1		66.6	3.00	38.0	0.02	0.12			403	
440		6.23		6.19		34.192		26.895	121.6	0.763	0.59		25.5		8.5		71.3	3.05	39.1	0.02	0.14			444	02
500	ISL	6.03	D	5.98		34.292	D	27.001	112.3	0.840	0.33	D	14.4	D	4.7		78.6	3.17	40.0	0.02	0.15			504	
515		5.96		5.92		34.308		27.022	110.5	0.850	0.26		11.4		3.8		80.4	3.20	40.2	0.02	0.15			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 1411 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 39.2 N	121 2.4 W	16/11/2014	0704 UTC	3769 m	330 25 kn			1019.0 mb	17.8 C	15.2 C				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		18.13		18.13		33.331		23.963	393.6	0.000	5.46		238.4		101.0		0.8	0.29	0.1	0.03	0.13	0.19	0.06	0	
3		18.13		18.13		33.331		23.963	393.7	0.012	5.46		238.4		101.0		0.8	0.29	0.1	0.03	0.13	0.19	0.06	3	20
10		18.14		18.13		33.334		23.965	393.7	0.039	5.46		238.2		101.0		1.0	0.29	0.0	0.02	0.04	0.18	0.06	10	19
20	ISL	18.14	D	18.13		33.329	D	23.962	394.5	0.079	5.45	D	237.8	D	100.9		1.1	0.29	0.0	0.02	0.05	0.19	0.06	20	
24		18.14		18.13		33.343		23.973	393.5	0.095	5.46		238.7		101.1		1.1	0.29	0.0	0.02	0.06	0.19	0.06	24	18
30	ISL	18.14	D	18.13		33.327	D	23.962	394.8	0.119	5.46	D	238.3	D	101.1		1.1	0.30	0.0	0.02	0.08	0.20	0.06	30	
40		18.10		18.10		33.326		23.970	394.5	0.158	5.48		239.3		101.3		1.1	0.31	0.0	0.02	0.11	0.20	0.06	40	17
50		18.03		18.02		33.393		24.039	388.2	0.197	5.55		242.2		102.5		1.0	0.28	0.0	0.02	0.06	0.28	0.10	50	16
62		16.63		16.62		33.210		24.234	370.0	0.242	5.76		251.7		103.5		1.6	0.32	0.1	0.02	0.10	0.38	0.20	62	15
74		13.19		13.18		32.896		24.730	322.6	0.284	5.78		252.6		96.7		3.7	0.59	2.2	0.30	0.08	0.27	0.19	75	14
75	ISL	12.92	D	12.91		32.901	D	24.787	317.2	0.289	5.77	D	251.5	D	95.9		3.9	0.61	2.6	0.28	0.08	0.26	0.19	76	
86		11.74		11.73		32.906		25.016	295.5	0.321	5.54		241.9		89.8		6.0	0.84	6.8	0.11	0.09	0.17	0.19	87	13
100	ISL	10.75	D	10.74		32.968	D	25.242	274.2	0.363	5.38	D	234.3	D	85.4		7.9	1.00	9.6	0.06	0.06	0.13	0.18	101	
101		10.52		10.51		32.993	D	25.301	268.5	0.366	5.42		236.9		85.7		8.0	1.01	9.8	0.06	0.06	0.13	0.18	102	12
112		10.60		10.58		33.306		25.533	246.8	0.392	4.59		200.3		72.7		12.1	1.28	14.6	0.05	0.04	0.07	0.10	113	11
124		10.06		10.05		33.457		25.742	227.1	0.421	4.08		178.1		64.0		16.6	1.52	18.4	0.04	0.06	0.04	0.06	125	10
125	ISL	10.04	D	10.02		33.474	D	25.760	225.5	0.425	4.06	D	176.6	D	63.6		16.8	1.53	18.6	0.04	0.06	0.04	0.06	126	
141		9.54		9.52		33.577		25.923	210.1	0.458	3.70		161.8		57.5		20.9	1.70	21.5	0.04	0.06	0.02	0.04	142	09
150	ISL	9.31	D	9.29		33.688	D	26.047	198.5	0.479	3.55	D	154.6	D	54.9		22.5	1.75	22.3	0.04	0.06	0.01	0.04	151	
169		9.03		9.01		33.766		26.153	188.8	0.513	3.32		144.9		51.0		25.9	1.84	24.2	0.04	0.07	0.00	0.03	170	08
200	ISL	8.65	D	8.63		33.916	D	26.331	172.4	0.572	2.84	D	123.5	D	43.3		31.2	2.01	26.9	0.02	0.04	0.00	0.02	202	
201		8.63		8.61		33.916		26.334	172.1	0.571	2.84		124.1		43.3		31.4	2.02	27.0	0.02	0.04	0.00	0.02	203	07
231		8.23		8.20		33.987		26.452	161.4	0.621	2.67		116.7		40.4		35.7	2.10	28.1	0.02	0.02			233	06
250	ISL	7.99	D	7.96		34.012	D	26.508	156.4	0.655	2.44	D	106.1	D	36.6		39.0	2.19	29.4	0.02	0.02			252	
270		7.74		7.71		34.027		26.556	152.0	0.682	2.20		95.9		32.8		42.5	2.29	30.7	0.02	0.03			272	05
300	ISL	7.36	D	7.33		34.054	D	26.633	145.0	0.731	1.78	D	77.4	D	26.4		49.1	2.49	33.2	0.02	0.04			302	
320		7.05		7.02		34.070		26.688	140.0	0.755	1.49		65.0		21.9		53.5	2.63	34.8	0.02	0.05			323	04
382		6.62		6.58		34.111		26.780	132.0	0.839	1.02		44.6		14.9		61.7	2.83	37.4	0.02	0.05			385	03
400	ISL	6.50	D	6.46		34.115	D	26.798	130.4	0.868	0.99	D	43.1	D	14.4		64.2	2.89	37.6	0.02	0.06			403	
440		6.29		6.25		34.173		26.872	123.8	0.913	0.69		30.0		9.9		69.8	3.02	38.3	0.02	0.08			444	02
500	ISL	5.88	D	5.84		34.227	D	26.968	115.3	0.992	0.47	D	20.4	D	6.7		76.3	3.13	39.3	0.02	0.04			504	
517		5.82		5.78		34.233		26.980	114.3	1.005	0.40		17.4		5.7		78.1	3.16	39.6	0.02	0.03			521	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 1411 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 19.7 N	121 42.9 W	16/11/2014	1258	UTC	4022 m	340 20 kn			1020.0 mb	17.5 C	0.0 C				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		18.21		18.21		33.096	23.765	412.5	0.000	5.45	237.9		100.8		1.4	0.32	0.0	0.03	0.02	0.14	0.05	0	
3		18.21		18.21		33.096	23.765	412.6	0.012	5.45	237.9		100.8		1.4	0.32	0.0	0.03	0.02	0.14	0.05	3	21
10		18.21		18.21		33.102	23.770	412.4	0.041	5.45	238.1		100.9		1.4	0.33	0.0	0.03	0.05	0.19	0.00	10	19
10		18.21		18.21		33.099	23.767	412.7	0.041													10	20
20	ISL	18.21	D	18.21		33.093	D 23.764	413.4	0.062	5.46	D238.3		D101.1		1.4	0.32	0.0	0.03	0.04	0.16	0.03	20	
25		18.21		18.20		33.098	23.768	413.1	0.103	5.45	238.3		100.9		1.4	0.32	0.0	0.03	0.04	0.15	0.04	25	18
30	ISL	18.01	D	18.01		33.109	D 23.825	407.9	0.104	5.52	D240.7		D101.7		1.4	0.31	0.0	0.03	0.00	0.18	0.07	30	
40		17.33		17.32		33.187	24.050	386.8	0.164	5.63	246.1		102.5		1.3	0.30	0.0	0.03	0.00	0.26	0.12	40	17
50	ISL	15.89	D	15.88		33.051	D 24.278	365.3	0.182	5.88	D256.4		D104.0		1.8	0.35	0.0	0.03	0.00	0.43	0.19	50	
51		15.56		15.55		33.050	24.352	358.3	0.205	5.90	257.8		103.6		1.8	0.36	0.0	0.03	0.06	0.45	0.20	51	16
62		13.96		13.95		32.930	24.600	334.8	0.243	6.01	262.6		102.1		2.3	0.39	0.0	0.03	0.05	0.44	0.31	62	15
75		12.83		12.82		32.920	24.820	314.1	0.285	5.79	253.1		96.1		3.4	0.52	1.3	0.19	0.00	0.30	0.32	76	14
87		11.78		11.77		32.935	25.031	294.2	0.322	5.56	243.1		90.3		5.6	0.80	6.0	0.12	0.00	0.19	0.26	88	13
99		11.15		11.14		33.132	D 25.298	268.9	0.337	5.38	235.0		86.2		6.8	0.90	8.1	0.06	0.00	0.13	0.19	100	12
100	ISL	11.12	D	11.11		33.151	D 25.320	266.9	0.339	5.12	D223.2	D	82.1		7.2	0.93	8.6	0.06	0.00	0.13	0.18	101	
112		10.20		10.18		33.295	25.592	241.1	0.389	4.70	205.3		73.9		11.9	1.26	14.1	0.03	0.00	0.06	0.09	113	11
125		9.80		9.78		33.345	D 25.698	231.2	0.401	4.52	197.5		70.5		15.3	1.44	17.2	0.02	0.00	0.03	0.04	126	10
139		9.19		9.18		33.474	25.898	212.4	0.451	4.15	181.1		63.8		19.7	1.59	20.0	0.04	0.00	0.01	0.03	140	09
150	ISL	9.03	D	9.01		33.586	D 26.011	201.8	0.455	3.96	D172.5	D	60.8		22.6	1.70	21.8	0.03	0.00	0.01	0.03	151	
170		8.96		8.94		33.820	26.207	183.7	0.512	3.19	139.2		48.9		27.7	1.89	25.0	0.03	0.01	0.00	0.02	171	08
200	ISL	8.55	D	8.53		33.944	D 26.369	168.8	0.548	2.70	D117.5	D	41.1		32.7	2.06	27.6	0.03	0.00	0.00	0.02	202	
201		8.53		8.51		33.945	26.372	168.5	0.566	2.67	116.5		40.6		32.9	2.07	27.7	0.03	0.00	0.00	0.02	203	07
230		8.19		8.16		33.994	26.463	160.3	0.614	2.62	114.3		39.5		36.5	2.12	28.4	0.03	0.00			232	06
250	ISL	8.04	D	8.02		34.015	D 26.502	157.0	0.629	2.46	D106.9	D	37.0		39.1	2.21	29.4	0.03	0.00			252	
270		7.87		7.84		34.036	26.544	153.3	0.677	2.17	94.9		32.6		41.8	2.29	30.5	0.03	0.00			272	05
300	ISL	7.60	D	7.57		34.069	D 26.611	147.3	0.706	1.83	D 79.6	D	27.3		46.4	2.45	32.1	0.03	0.00			302	
320		7.49		7.46		34.100	26.650	143.9	0.751	1.53	66.8		22.7		49.4	2.55	33.3	0.03	0.01			323	04
379		6.95		6.91		34.176	26.786	131.6	0.832	0.86	37.5		12.6		60.4	2.85	36.5	0.03	0.00			382	03
400	ISL	6.72	D	6.69		34.218	D 26.851	125.7	0.845	0.67	D 29.0	D	9.7		64.7	2.92	37.5	0.03	0.00			403	
439		6.22		6.18		34.224	26.922	119.0	0.907	0.48	20.9		6.9		72.7	3.06	39.2	0.03	0.00			443	02
500	ISL	5.88	D	5.84		34.279	D 27.009	111.4	0.964	0.34	D 15.0	D	4.9		80.6	3.18	40.5	0.03	0.00			504	
514		5.76		5.72		34.286	27.029	109.6	0.993	0.27	12.0		3.9		82.5	3.21	40.8	0.03	0.12			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 1411 STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 59.4 N	122 23.6 W	16/11/2014	1909	UTC	4083 m	020 14 kn	010 04 05	1	1022.0 mb	18.2 C	0.0 C	28 m	7/8	ST	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		18.80		18.80		33.103	23.624	425.9	0.000	5.44	237.7		101.8		2.0	0.35	0.0	0.02	0.12	0.11	0.03	0	
3	A	18.80		18.80		33.103	23.624	426.0	0.013	5.44	237.7		101.8		2.0	0.35	0.0	0.02	0.12	0.11	0.03	3	24
10		18.80		18.79		33.097	23.621	426.6	0.043	5.39	235.5		100.9		2.0	0.34	0.1	0.01	0.12	0.11	0.03	10	22
10		18.80		18.79		33.106	23.627	426.0	0.043													10	23
16	A	18.77		18.76		33.106	23.635	425.5	0.068	5.40	235.7		100.9		2.0	0.35	0.0	0.02	0.12	0.11	0.03	16	21
20	ISL	18.76	D	18.76		33.096	D 23.629	426.3	0.073	5.41	D236.0		D101.2		2.0	0.34	0.0	0.02	0.13	0.11	0.03	20	
22	A	18.76		18.76		33.107	23.638	425.5	0.094	5.40	236.1		101.1		2.0	0.33	0.0	0.02	0.13	0.11	0.03	22	20
30	ISL	18.75	D	18.74		33.095	D 23.632	426.3	0.116	5.41	D236.0		D101.1		1.9	0.35	0.0	0.02	0.12	0.13	0.04	30	
32		18.63		18.63		33.079	23.650	424.7	0.136	5.40	235.9		100.7		1.9	0.35	0.1	0.02	0.12	0.14	0.04	32	19
42	A	17.66		17.65		33.056	23.871	404.0	0.178	5.59	244.3		102.4		1.5	0.33	0.0	0.02	0.08	0.21	0.07	42	18
50	ISL	17.05	D	17.04		33.057	D 24.018	390.2	0.199	5.75	D250.7		D104.0		1.8	0.34	0.1	0.02	0.11	0.23	0.10	50	
54		16.63		16.62		33.026	24.092	383.2	0.225	5.86	256.0		105.1		2.0	0.35	0.1	0.02	0.13	0.24	0.11	54	17
65		15.58		15.57		32.989	24.301	363.5	0.266	5.97	260.8		104.9		2.2	0.37	0.1	0.01	0.19	0.25	0.16	66	16
75	ISL	14.09	D	14.08		32.912	D 24.560	339.0	0.291	6.03	D262.8		D102.7		2.5	0.42	0.1	0.02	0.15	0.22	0.15	76	
77		13.90		13.89		32.899	24.590	336.1	0.306													77	15
77	A	13.90		13.89		32.897	24.588	336.3	0.308	5.95	259.8		100.9		2.5	0.43	0.1	0.02	0.14	0.22	0.15	78	14
87		12.72		12.70		32.907	24.832	313.2	0.340	5.76	251.7		95.4		3.5	0.55	1.4	0.18	0.11	0.22	0.17	88	13
97	A	12.16		12.15		33.044	D 25.045	293.1	0.357	5.63	245.7		92.1		4.4	0.63	2.9	0.26	0.03	0.19	0.19	98	12
100	ISL	11.73	D	11.72		33.064	D 25.141	284.0	0.366	5.54	D241.5	D	90.0		5.0	0.69	4.1	0.22	0.04	0.18	0.19	101	
110		11.20		11.19		33.087	25.255	273.3	0.407	5.36	234.0		86.0		6.8	0.91	7.9	0.06	0.07	0.14	0.18	111	11
125		10.24		10.23		33.171	25.489	251.2	0.447	5.10	222.6		80.1		10.1	1.15	12.1	0.03	0.12	0.09	0.12	126	10
145		9.94		9.92		33.439	25.749	226.9	0.494	4.21	183.8		65.9		16.1	1.48	17.5	0.02	0.09	0.03	0.05	146	09
150	ISL	9.99	D	9.97		33.556	D 25.832	219.2	0.493	3.86	D168.1	D	60.5		17.5	1.53	18.4	0.02	0.10	0.02	0.04	151	
170		9.05		9.03		33.648	26.057	197.9	0.547	3.76	164.1		57.7		23.1	1.75	22.1	0.02	0.15	0.00	0.02	171	08
200		8.68		8.66		33.901	26.314	174.0	0.603	3.03	132.1		46.2		29.9	1.98	26.0	0.02	0.11			202	07
230		8.29		8.27		33.954	26.416	164.8	0.654	3.08	134.2		46.5		32.7	1.99	26.5	0.02	0.10			232	06
250	ISL	7.93	D	7.91		33.991	D 26.499	157.2	0.674	2.66	D115.7	D	39.9		37.1	2.13	28.4	0.02	0.08			252	
270		7.66		7.63		33.996	26.543	153.2	0.717	2.43	106.1		36.2		41.6	2.27	30.3	0.02	0.06			272	05
300	ISL	7.22	D	7.19		34.024	D 26.628	145.4	0.751	2.00	D 87.1	D	29.5		48.1	2.50	32.9	0.02	0.08			302	
320		7.11		7.08		34.061	26.673	141.5	0.791	1.51	65.9		22.2		52.5	2.65	34.7	0.02	0.09			323	04
379		6.58		6.55		34.114	26.787	131.2	0.871	0.97	42.3		14.1		62.6	2.89	37.5	0.02	0.14			382	03
400	ISL	6.42	D	6.39		34.127	D 26.818	128.5	0.888	0.87	D 38.0	D	12.7		65.2	2.95	38.0	0.02	0.14			403	
440		6.30		6.26		34.180	26.876	123.4	0.949	0.60	26.2		8.7		70.0	3.06	39.1	0.03	0.15			444	02
500	ISL	6.00	D	5.96		34.232	D 26.957	116.5	1.011	0.41	D 17.8	D	5.9		77.2	3.19	40.3	0.02	0.09			504	
515		5.89		5.85		34.247	26.983	114.1	1.038	0.36	15.8		5.2		79.0	3.22	40.6	0.02	0.07			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 1411 STATION 86.7 100.0

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 4.3 W	17/11/2014	0049 UTC	4136 m	010 12 kn	020 04 05	1	1021.0 mb	18.8 C	16.3 C		6/8	ST	045

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		18.74		18.74		33.148	23.672	421.4	0.000	5.42	236.6	101.3	1.6	0.39	0.0	0.01	0.10	0.12	0.03	0	
2		18.74		18.74		33.148	23.672	421.4	0.008	5.42	236.6	101.3	1.6	0.39	0.0	0.01	0.10	0.12	0.03	2	21
10		18.73		18.73		33.148	23.676	421.3	0.042	5.41	236.3	101.2	1.5	0.34	0.0	0.01	0.07	0.12	0.03	10	19
10		18.73		18.73		33.144	23.673	421.6	0.043											10	20
20	ISL	18.64	D	18.64		33.131	D 23.685	420.8	0.064	5.43	D237.0	D101.4	1.5	0.34	0.0	0.01	0.04	0.13	0.03	20	
25		18.59		18.59		33.120	23.691	420.5	0.105	5.43	237.3	101.3	1.5	0.34	0.0	0.01	0.03	0.13	0.03	25	18
30	ISL	18.66	D	18.65		33.136	D 23.688	421.0	0.106	5.43	D236.7	D101.3	1.5	0.34	0.0	0.01	0.03	0.16	0.04	30	
40		18.57		18.57		33.143	23.714	419.0	0.168	5.45	237.9	101.5	1.4	0.33	0.0	0.01	0.03	0.21	0.07	40	17
49		18.42		18.41		33.137	23.748	416.0	0.206	5.46	238.5	101.5	1.4	0.33	0.0	0.01	0.11	0.26	0.08	49	16
50	ISL	18.28	D	18.27		33.131	D 23.778	413.1	0.191	5.51	D240.4	D102.1	1.4	0.33	0.0	0.01	0.11	0.26	0.09	50	
62		15.94		15.93		33.014	24.239	369.4	0.257	5.93	259.0	104.9	1.9	0.34	0.0	0.01	0.05	0.30	0.20	62	15
75		13.94		13.93		32.871	24.560	338.9	0.303	6.00	262.3	101.9	2.6	0.44	0.1	0.05	0.06	0.34	0.25	76	14
87		12.62		12.61		32.924	24.864	310.1	0.342	5.68	248.2	93.9	4.1	0.69	3.6	0.25	0.13	0.22	0.21	88	13
100		11.59		11.58		33.009	25.124	285.5	0.381	5.47	239.0	88.5	6.0	0.86	7.1	0.06	0.04	0.15	0.16	101	12
112		10.42		10.41		33.042	25.356	263.5	0.414	5.31	232.1	83.8	8.3	1.03	10.2	0.03	0.00	0.12	0.12	113	11
124		9.91		9.90		33.173	25.545	245.7	0.444	5.04	219.9	78.6	11.7	1.23	13.5	0.03	0.15	0.06	0.07	125	10
125	ISL	9.81	D	9.79		33.196	D 25.581	242.3	0.429	4.95	D215.6	D 77.1	12.0	1.24	13.8	0.02	0.14	0.06	0.07	126	
140		9.61		9.59		33.411	25.782	223.5	0.481	4.40	192.0	68.3	16.1	1.43	17.3	0.02	0.02	0.03	0.04	141	09
150	ISL	9.44	D	9.42		33.550	D 25.918	210.8	0.485	3.98	D173.3	D 61.6	19.2	1.56	19.4	0.02	0.03	0.02	0.03	151	
170		8.99		8.97		33.777	D 26.168	187.3	0.525	3.44	150.1	52.8	25.3	1.83	23.7	0.02	0.06	0.00	0.02	171	08
199		8.40		8.38		33.927	26.377	167.9	0.594	3.17	138.5	48.1	30.9	1.91	25.6	0.02	0.02	0.00	0.02	201	07
200	ISL	8.41	D	8.39		33.934	D 26.382	167.5	0.579	3.18	D138.5	D 48.3	31.0	1.91	25.7	0.01	0.02			202	
230		8.14		8.11		33.963	26.446	161.9	0.646	2.99	130.7	45.1	34.1	2.01	26.9	0.01	0.13			232	06
250	ISL	7.86	D	7.83		33.988	D 26.508	156.3	0.661	2.71	D118.0	D 40.6	37.8	2.12	28.3	0.01	0.08			252	
271		7.61		7.58		34.000	26.553	152.2	0.710	2.47	108.0	36.9	41.6	2.23	29.8	0.02	0.02			273	05
300	ISL	7.20	D	7.17		34.030	D 26.635	144.7	0.737	1.97	D 85.9	D 29.1	48.3	2.44	32.5	0.01	0.02			302	
320		7.00		6.97		34.052	26.681	140.6	0.781	1.60	69.7	23.5	52.9	2.59	34.3	0.01	0.02			323	04
379		6.81		6.78		34.179	26.807	129.5	0.861	0.77	33.6	11.3	62.1	2.91	36.8	0.01	0.02			382	03
400	ISL	6.65	D	6.61		34.173	D 26.825	128.0	0.873	0.77	D 33.6	D 11.3	65.0	2.95	37.5	0.01	0.02			403	
440		6.13		6.10		34.176	26.894	121.6	0.938	0.61	26.6	8.8	70.4	3.03	38.8	0.01	0.02			444	02
500	ISL	5.85	D	5.81		34.228	D 26.972	114.8	0.995	0.44	D 19.2	D 6.3	77.9	3.14	40.0	0.02	0.04			504	
515		5.79		5.74		34.239	26.989	113.4	1.026	0.37	15.9	5.2	79.8	3.17	40.4	0.02	0.04			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 1411 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 44.6 W	17/11/2014	0622 UTC	4022 m	030 10 kn			1022.0 mb	18.8 C	16.8 C				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		18.68		18.68		33.013	23.584	429.7	0.000	5.42	236.5	101.1	1.8	0.35	0.1	0.01	0.06	0.10	0.02	0	
2		18.68		18.68		33.013	23.585	429.8	0.009	5.42	236.5	101.1	1.8	0.35	0.1	0.01	0.06	0.10	0.02	2	21
10		18.68		18.68		33.010	23.583	430.3	0.043	5.42	236.5	101.2	1.8	0.36	0.1	0.01	0.12	0.10	0.02	10	19
10		18.68		18.68		33.012	23.584	430.1	0.043											10	20
20	ISL	18.51	D	18.51		32.987	D 23.608	428.2	0.065	5.43	237.1	101.1	1.7	0.35	0.1	0.01	0.10	0.11	0.03	20	
26		18.47		18.46		32.990	23.622	427.1	0.112	5.44	237.5	101.2	1.7	0.35	0.1	0.01	0.08	0.11	A 0.03 A	26	18
30	ISL	18.39	D	18.39		32.985	D 23.637	425.8	0.108	5.46	D238.2	D101.3	1.7	0.35	0.1	0.01	0.08	0.12	0.03	30	
40		18.05		18.05		32.928	23.677	422.4	0.171	5.50	240.2	101.5	1.6	0.34	0.1	0.01	0.07	0.15	0.04	40	17
50		17.67		17.66		33.160	23.949	396.8	0.212	5.71	249.3	104.7	2.0	0.31	0.1	0.01	0.20	0.20	0.08	50	16
62		16.22		16.21		33.084	24.230	370.3	0.258	5.92	258.5	105.5	2.1	0.33	0.1	0.01	0.12	0.25	0.17	62	15
75		14.56		14.55		33.005	24.535	341.5	0.304	5.94	259.2	102.2	2.5	0.38	0.1	0.04	0.15	0.24	0.19	76	14
87		13.45		13.44		32.923	24.700	325.9	0.344	5.86	255.5	98.4	3.1	0.51	1.0	0.21	0.13	0.25	0.20	88	13
99		12.21		12.20		32.971	24.979	299.4	0.382	5.72	249.8	93.8	4.3	0.65	3.1	0.21	0.15	0.18	0.14	100	12
100	ISL	12.24	D	12.23		32.990	D 24.988	298.6	0.366	5.62	D244.8	D 92.1	4.6	0.68	3.6	0.20	0.14	0.17	0.14	101	
112		10.74		10.72		33.075	25.329	266.2	0.419	5.29	230.7	84.0	8.4	1.01	10.1	0.03	0.05	0.11	0.13	113	11
125		10.19		10.17		33.192	25.514	248.8	0.452	5.01	218.7	78.7	10.2	1.11	12.1	0.03	0.06	0.09	0.10	126	10
140		9.89		9.88		33.409	25.734	228.2	0.488	4.32	188.6	67.5	15.5	1.41	17.0	0.03	0.08	0.04	0.06	141	09
150	ISL	9.57	D	9.56		33.541	D 25.889	213.6	0.491	4.02	D175.2	D 62.5	18.0	1.51	18.8	0.02	0.07	0.03	0.05	151	
170		9.00		8.98		33.676	26.088	195.0	0.551	3.61	157.6	55.4	22.9	1.72	22.3	0.02	0.06	0.01	0.02	171	08
200		8.73		8.71		33.855	26.271	178.1	0.607	3.31	144.3	50.5	28.0	1.83	24.7	0.02	0.04	0.00	0.02	202	07
229		8.32		8.29		33.949	26.408	165.5	0.657	3.15	137.2	47.6	32.1	1.92	26.0	0.02	0.07			231	06
250	ISL	8.06	D	8.04		33.974	D 26.467	160.3	0.672	3.01	D130.7	D 45.2	35.8	2.05	27.8	0.02	0.08			252	
270		7.86		7.83		33.993	26.512	156.2	0.723	2.49	108.8	37.3	39.3	2.17	29.5	0.02	0.09			272	05
300	ISL	7.64	D	7.61		34.064	D 26.601	148.3	0.750	1.78	D 77.6	D 26.6	45.8	2.41	32.0	0.02	0.05			302	
321		7.46		7.42		34.102	26.657	143.3	0.799	1.40	61.1	20.8	50.4	2.58	33.7	0.02	0.03			324	04
380		6.89		6.85		34.147	26.771	133.0	0.881	0.90	39.1	13.2	59.7	2.80	36.4	0.02	0.10			383	03
400	ISL	6.67	D	6.63		34.154	D 26.808	129.7	0.889	0.82	D 35.8	D 12.0	62.3	2.86	37.1	0.02	0.08			403	
441		6.41		6.37		34.181	26.863	124.8	0.959	0.62	27.2	9.1	67.7	2.97	38.5	0.02	0.04			445	02
500	ISL	6.16	D	6.11		34.230	D 26.936	118.6	1.014	0.47	D 20.6	D 6.8	73.4	3.07	39.4	0.02	0.06			504	
516		6.10		6.06		34.239	26.950	117.4	1.050	0.39	17.2	5.7	75.0	3.10	39.7	0.02	0.07			520	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 1411 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 53.4 N	118 26.5 W	15/11/2014	0227	UTC	22 m	240 05 kn			1014.0 mb	18.9 C	16.9 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	19.15	19.15	33.553	23.878	401.7	0.000	5.52	241.1	104.3	1.7	0.33	0.1	0.02	0.07	0.37	0.13	0	
2	19.15	19.15	33.553	23.878	401.7	0.008	5.52	241.1	104.3	1.7	0.33	0.1	0.02	0.07	0.37	0.13	2	04
5	19.13	19.13	33.552	23.884	401.4	0.020	5.54	242.0	104.7	1.8	0.38	0.1	0.02	0.19	0.43	0.17	5	03
10	19.00	19.00	33.544	23.911	399.0	0.040	5.55	242.3	104.5	1.8	0.30	0.1	0.02	0.12	0.53	0.18	10	02
15	18.96	18.96	33.530	23.911	399.2	0.060	5.57	243.3	104.9	1.9	0.29	0.0	0.02	0.08	0.61	0.23	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 1411 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 5.6 W	14/11/2014	2308	UTC	19 m	260 09 kn	240 01 06	1	1014.0 mb	19.1 C	17.3 C		2/8	CU	033

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	19.16	19.16	33.505	23.841	405.3	0.000	5.70	248.7	107.6	1.2	0.29	0.0	0.03	0.21	0.85	0.22	0	
2	19.16	19.16	33.505	23.841	405.3	0.008	5.70	248.7	107.6	1.2	0.29	0.0	0.03	0.21	0.85	0.22	2	04
5	19.16	19.16	33.493	23.831	406.3	0.020	5.75	250.8	108.5	1.1	0.26	0.0	0.03	0.12	0.92	0.26	5	03
10	18.94	18.94	33.469	23.869	402.9	0.041	5.81	253.7	109.3	0.8	0.25	0.0	0.03	0.24	1.67	0.51	10	02
15	18.82	18.81	33.470	23.901	400.1	0.061	5.76	251.3	108.0	1.1	0.27	0.2	0.03	0.26	1.95	0.58	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 1411 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 45.0 W	14/11/2014	2042	UTC	20 m	160 04 kn	260 01 04	1	1014.0 mb	20.1 C	18.0 C		4/8	SC	032

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	19.21	19.21	33.514	23.834	405.8	0.000	5.58	243.6	105.5	2.0	0.36	0.0	0.02	0.17	0.63	0.14	0	
2	19.21	19.21	33.514	23.835	405.9	0.008	5.58	243.6	105.5	2.0	0.36	0.0	0.02	0.17	0.63	0.14	2	04
5	19.07	19.07	33.511	23.867	403.0	0.020	5.56	242.6	104.8	2.0	0.36	0.0	0.03	0.21	0.67	0.17	5	03
10	18.92	18.92	33.499	23.897	400.3	0.040	5.59	244.0	105.1	2.0	0.32	0.0	0.03	0.09	0.70	0.22	10	02
16	18.68	18.67	33.487	23.949	395.5	0.064	5.61	245.0	105.0	2.2	0.34	0.0	0.03	0.16	0.83	0.31	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 1411 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 46.0 W	14/11/2014	1917	UTC	59 m	160 05 kn	140 02 05	1	1015.0 mb	19.1 C	0.0 C	14 m	7/8	SC	031

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		18.95	18.95	33.508	23.895	400.0	0.000	5.56	242.7	104.6	2.1	0.35	0.0	0.02	0.13	0.57	0.45	0	
2	A	18.95	18.95	33.508	23.896	400.1	0.008	5.56	242.7	104.6	2.1	0.35	0.0	0.02	0.13	0.57	0.45	2	09
8	A	18.93	18.92	33.507	23.901	399.8	0.032	5.57	243.1	104.7	2.1	0.34	0.1	0.02	0.24	0.72	0.47	8	08
10	ISL	18.92 D	18.92	33.505 D	23.901	399.9	0.040	5.59 D	243.8 D	105.1	2.1	0.37	0.0	0.02	0.20	0.79	0.47	10	
11	A	18.91	18.91	33.506	23.904	399.6	0.044	5.56	242.9	104.6	2.1	0.38	0.0	0.02	0.18	0.83	0.46	11	06
11		18.91	18.91	33.507	23.905	399.5	0.043											11	07
20	ISL	18.67 D	18.67	33.488 D	23.951	395.5	0.062	5.58 D	243.4 D	104.4	2.3	0.33	0.0	0.04	0.10	1.05	0.38	20	
21	A	18.70	18.70	33.494	23.948	395.8	0.084	5.57	243.1	104.2	2.4	0.32	0.0	0.04	0.09	1.08	0.37	21	05
30		17.73	17.73	33.438	24.145	377.4	0.119	5.56	242.6	102.1	3.5	0.38	0.3	0.16	0.34	0.82	0.25	30	03
30		17.73	17.73	33.443	24.148	377.1	0.118											30	04
39	A	17.04	17.03	33.409	24.289	363.9	0.152	5.53	241.4	100.2	3.9	0.43	0.5	0.24	0.42	0.73	0.23	39	02
49	A	15.61	15.60	33.311	24.541	340.2	0.187	5.73	250.3	100.9	4.0	0.46	0.6	0.26	0.13	0.68	0.20	49	01
50	ISL	15.28 D	15.27	33.299 D	24.605	334.1	0.157	5.75 D	250.8 D	100.6								50	

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 1411 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 25.3 N	117 54.3 W	14/11/2014	1610	UTC	613 m	260 08 kn	220 02 05	5	1016.0 mb	18.5 C	17.5 C	26 m	8/8	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		19.76	19.76	33.591	23.750	413.9	0.000	5.36	234.1	102.5	1.9	0.29	0.1	0.01	0.16	0.24	0.06	0	
2		19.76	19.76	33.591	23.750	414.0	0.008	5.36	234.1	102.5	1.9	0.29	0.1	0.01	0.16	0.24	0.06	2	21
10		19.75	19.75	33.592	23.756	413.7	0.041	5.38	235.0	102.8	1.9	0.28	0.1	0.01	0.12	0.23	0.06	10	19
10		19.75	19.75	33.590	23.755	413.9	0.041											10	20
20	ISL	19.41 D	19.41	33.546 D	23.809	409.1	0.062	5.45 D	237.9 D	103.5	1.9	0.30	0.1	0.01	0.14	0.29	0.08	20	
25		18.21	18.20	33.423	24.018	389.4	0.103	5.75	251.0	106.6	2.0	0.31	0.1	0.01	0.15	0.32	0.09	25	18
30	ISL	17.71 D	17.71	33.362 D	24.092	382.4	0.102	5.88 D	256.5 D	108.0	2.3	0.34	0.1	0.01	0.16	0.34	0.12	30	
40		15.58	15.58	33.267	24.512	342.6	0.158	6.03	263.1	106.0	2.9	0.39	0.1	0.01	0.17	0.37	0.17	40	17
50		14.69	14.68	33.282	24.718	323.2	0.192	5.94	259.5	102.7	3.5	0.45	0.1	0.03	0.22	0.64	0.51	50	16
62		13.13	13.12	33.318	25.069	290.1	0.228	5.41	236.2	90.6	5.3	0.65	3.7	0.25	0.13	0.51	0.49	63	15
75		12.21	12.20	33.339	25.263	271.8	0.265	4.97	217.1	81.7	7.5	0.88	7.9	0.14	0.10	0.24	0.25	76	14
87		11.41	11.40	33.340	25.413	257.7	0.297	4.76	207.8	76.8	9.7	1.04	11.0	0.04	0.26	0.16	0.19	88	13
100		10.85	10.84	33.449	25.600	240.2	0.329	4.25	185.5	67.8	13.3	1.26	14.7	0.03	0.05	0.09	0.15	101	12
112		10.50	10.48	33.546	25.737	227.4	0.357	3.85	168.1	61.0	16.3	1.43	17.2	0.02	0.03	0.06	0.09	113	11
125		10.36	10.34	33.645	25.838	218.1	0.386	3.46	151.1	54.7	19.1	1.58	19.3	0.02	0.01	0.03	0.06	126	10
140		10.15	10.13	33.749	25.956	207.3	0.418	3.05	133.2	48.1	22.3	1.77	21.6	0.01	0.08	0.01	0.04	141	09
150	ISL	10.07 D	10.05	33.838 D	26.039	199.5	0.420	2.87 D	124.9 D	45.1	23.8	1.83	22.5	0.01	0.07	0.01	0.03	151	
170		9.75	9.73	33.904	26.144	190.0	0.477	2.60	113.6	40.7	26.9	1.95	24.4	0.01	0.04	0.00	0.03	171	08
200		9.41	9.39	34.033	26.302	175.6	0.532	2.16	94.3	33.5	31.5	2.15	26.6	0.01	0.17	0.00	0.03	202	07
231		9.13	9.11	34.120	26.417	165.3	0.585	1.77	77.3	27.3	35.4	2.29	28.3	0.01	0.08			233	06
250	ISL	9.15 D	9.12	34.160 D	26.446	162.9	0.600	1.59 D	69.4 D	24.6	37.5	2.37	29.1	0.01	0.09			252	
270		8.99	8.96	34.196	26.500	158.2	0.648	1.38	60.2	21.2	39.7	2.46	29.9	0.01	0.11			272	05
300	ISL	8.78 D	8.74	34.248 D	26.575	151.6	0.679	1.11 D	48.3 D	17.0	43.4	2.56	31.1	0.01	0.07			302	
321		8.44	8.41	34.237	26.619	147.6	0.726	1.05	46.0	16.0	45.9	2.63	31.9	0.01	0.04			324	04
379		7.84	7.80	34.273	26.739	137.0	0.809	0.67	29.2	10.0	54.4	2.82	34.3	0.01	0.08			382	03
400	ISL	7.67 D	7.63	34.276 D	26.765	134.8	0.823	0.63 D	27.5 D	9.5	56.5	2.86	34.9	0.01	0.15			403	
440		7.35	7.31	34.282	26.817	130.2	0.890	0.51	22.2	7.6	60.6	2.95	36.1	0.01	0.29			444	02
500	ISL	6.85 D	6.80	34.298 D	26.899	123.0	0.953	0.40 D	17.4 D	5.9	66.8	3.05	37.5	0.00	0.13			504	
514		6.82	6.77	34.299	26.905	122.6	0.983	0.36	15.8	5.3	68.2	3.07	37.9	0.00	0.09			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 1411 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 15.0 N	118 15.1 W	14/11/2014	1154	UTC	374 m	290 10 kn			1014.0 mb	18.0 C	16.7 C				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		19.71		19.71		33.600	23.772	411.8	0.000	5.34		233.3		102.0		1.8	0.29	0.1	0.02	0.21	0.17	0.05	0	
2		19.71		19.71		33.600	23.772	411.9	0.008	5.34		233.3		102.0		1.8	0.29	0.1	0.02	0.21	0.17	0.05	2	19
10		19.72		19.72		33.596	23.766	412.8	0.041	5.35		233.4		102.1		1.8	0.30	0.1	0.01	0.28	0.17	0.05	10	17
10		19.72		19.72		33.599	23.769	412.5	0.040														10	18
20	ISL	19.72	D	19.72		33.593	D 23.764	413.4	0.062	5.34	D	232.7	D	101.9		1.8	0.30	0.1	0.01	0.33	0.17	0.06	20	
21		19.73		19.72		33.597	23.767	413.2	0.087	5.35		233.3		102.1		1.8	0.30	0.1	0.01	0.33	0.17	0.06	21	16
30		17.68		17.67		33.402	D 24.130	378.8	0.102	5.70		248.7		104.6		2.2	0.31	0.1	0.01	0.10	0.26	0.13	30	14
40		15.73		15.73		33.317	24.517	342.1	0.158	5.92		258.5		104.5		3.3	0.38	0.2	0.08	0.14	0.52	0.30	40	13
50		14.84		14.83		33.302	24.701	324.9	0.191	5.79		252.7		100.3		3.8	0.46	0.8	0.17	0.07	0.44	0.25	50	12
60		13.31		13.30		33.316	25.031	293.7	0.222	5.27		230.2		88.6		5.6	0.69	4.4	0.20	0.03	0.32	0.28	60	11
70		13.10		13.09		33.327	25.081	289.1	0.251	5.17		225.8		86.5		6.2	0.75	5.3	0.14	0.05	0.27	0.27	71	10
75	ISL	12.67	D	12.66		33.349	D 25.183	279.5	0.247	4.99	D	217.3	D	82.7		7.7	0.86	7.3	0.11	0.07	0.23	0.25	76	
85		11.63		11.62		33.412	25.430	256.2	0.292	4.46		194.8		72.4		10.6	1.09	11.2	0.04	0.10	0.15	0.21	86	15
100		10.53		10.51		33.522	25.713	229.4	0.329	3.88		169.5		61.6		16.0	1.44	16.9	0.03	0.02	0.08	0.11	101	09
120		9.94		9.93		33.753	25.993	203.2	0.372	3.06		133.7		48.0		23.1	1.79	22.1	0.02	0.10	0.01	0.04	121	08
125	ISL	9.94	D	9.92		33.805	D 26.035	199.3	0.364	2.94	D	128.1	D	46.2		23.9	1.83	22.5	0.02	0.09	0.01	0.04	126	
142		9.82		9.80		33.885	26.117	191.9	0.416	2.62		114.2		41.0		26.5	1.96	24.0	0.02	0.07	0.01	0.04	143	07
150	ISL	9.74	D	9.72		33.932	D 26.168	187.3	0.413	2.47	D	107.5	D	38.6		27.4	2.00	24.4	0.03	0.05	0.01	0.04	151	
168		9.66		9.64		33.976	26.215	183.2	0.464	2.30		100.4		35.9		29.4	2.08	25.4	0.03	0.01	0.01	0.04	169	06
200		9.49		9.47		34.030	26.287	177.0	0.522	2.15		93.7		33.4		31.5	2.16	26.4	0.03	0.05	0.00	0.06	202	05
230		9.19		9.16		34.124	26.411	165.8	0.573	1.76		76.6		27.1		36.0	2.32	28.2	0.03	0.05			232	04
250	ISL	9.16	D	9.13		34.153	D 26.439	163.6	0.590	1.68	D	73.0	D	25.9		37.1	2.35	28.6	0.03	0.03			252	
270		8.99		8.96		34.152	26.465	161.5	0.638	1.60		69.7		24.6		38.1	2.38	29.0	0.03	0.01			272	03
300	ISL	8.80	D	8.77		34.170	D 26.510	157.8	0.671	1.51	D	65.5	D	23.1		41.9	2.49	30.3	0.03	0.03			302	
319		8.49		8.46		34.198	26.581	151.2	0.716	1.22		53.3		18.6		44.3	2.56	31.1	0.03	0.05			322	02
359		7.92		7.89		34.258	26.713	139.0	0.774	0.73		31.8		11.0		53.2	2.80	33.7	0.03	0.15			362	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 1411 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 10.9 N	118 23.1 W	14/11/2014	0841	UTC	1180 m	250 13 kn			1015.0 mb	18.1 C	17.5 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		19.84		19.84		33.594	23.733	415.6	0.000	5.35		233.4		102.3		1.9	0.27	0.1	0.02	0.26	0.20	0.04	0	
3		19.84		19.84		33.594	23.733	415.7	0.013	5.35		233.4		102.3		1.9	0.27	0.1	0.02	0.26	0.20	0.04	3	22
10		19.84		19.84		33.594	23.734	415.8	0.042	5.33		232.8		102.1		1.9	0.29	0.1	0.02	0.16	0.20	A 0.04 A	10	20
10		19.84		19.84		33.594	23.734	415.8	0.042														10	21
20		19.79		19.78		33.597	23.751	414.7	0.083	5.33		232.7		101.9		1.9	0.29	0.1	0.02	0.24	0.19	0.05	20	19
30		19.00		19.00		33.563	23.927	398.2	0.124	5.42		236.6		102.1		1.9	0.31	0.2	0.03	0.30	0.23	0.06	30	18
40		14.97		14.97		33.284	24.659	328.6	0.160	6.03		263.3		104.8		3.2	0.38	0.1	0.03	0.13	0.59	0.36	40	16
40		14.97		14.97		33.283	24.658	328.7	0.160														40	17
50		13.78		13.77		33.309	24.929	303.0	0.192	5.59		244.2		94.9		4.8	0.59	2.3	0.28	0.29	0.70	0.43	50	15
61		12.61		12.60		33.328	25.178	279.6	0.224	5.04		220.0		83.4		7.2	0.83	6.8	0.14	0.23	0.35	0.33	61	14
70		12.04		12.03		33.363	25.314	266.8	0.248	4.68		204.4		76.6		9.3	1.01	10.0	0.06	0.07	0.21	0.24	71	13
75	ISL	11.26	D	11.25		33.429	D 25.510	248.2	0.226	4.40	D	191.5	D	70.8		11.3	1.14	12.1	0.05	0.07	0.16	0.19	76	
86		10.75		10.74		33.521	25.672	233.0	0.288	3.86		168.4		61.5		15.6	1.42	16.5	0.03	0.08	0.06	0.09	87	12
100		10.43		10.41		33.674	25.849	216.5	0.319	3.28		143.0		51.9		19.9	1.64	19.7	0.03	0.06	0.03	0.06	101	11
119		10.14		10.13		33.776	25.977	204.7	0.359	2.86		125.0		45.1		23.3	1.87	22.4	0.04	0.20	0.01	0.05	120	10
125	ISL	10.01	D	10.00		33.814	D 26.029	199.9	0.336	2.88	D	125.3	D	45.2		23.9	1.88	22.7	0.03	0.17	0.01	0.05	126	
140		9.92		9.91		33.844	26.069	196.5	0.401	2.71		118.4		42.5		25.4	1.90	23.4	0.03	0.10	0.01	0.04	141	09
150	ISL	9.88	D	9.86		33.860	D 26.088	194.9	0.386	2.70	D	117.3	D	42.2		26.1	1.93	23.8	0.03	0.11	0.01	0.04	151	
171		9.73		9.71		33.911	26.154	189.1	0.461	2.51		109.4		39.1		27.6	1.99	24.6	0.03	0.12	0.00	0.03	172	08
200		9.48		9.46		33.974	26.245	181.0	0.515	2.35		102.7		36.6		30.0	2.08	25.9	0.03	0.14	0.01	0.07	202	07
232		9.09		9.07		34.069	26.382	168.5	0.570	2.01		87.8		31.0		34.6	2.23	27.9	0.03	0.16			234	06
250	ISL	9.02	D	8.99		34.110	D 26.427	164.6	0.567	1.84	D	80.2	D	28.4		36.5	2.30	28.6	0.02	0.10			252	
271		8.93		8.90		34.154	26.476	160.4	0.635	1.57		68.5		24.1		38.6	2.39	29.4	0.02	0.04			273	05
300	ISL	8.65	D	8.61		34.206	D 26.563	152.7	0.648	1.28	D	55.7	D	19.6		42.5	2.50	30.6	0.02	0.06			302	
321		8.44		8.41		34.214	26.600	149.4	0.712	1.25		54.4		18.9		45.3	2.58	31.6	0.02	0.08			324	04
381		7.84		7.80		34.247	26.718	139.0	0.798	0.77		33.7		11.6		53.1	2.79	33.9	0.02	0.09			384	03
400	ISL	7.66	D	7.62		34.259	D 26.753	135.9	0.793	0.70	D	30.6	D	10.5		54.8	2.81	34.3	0.02	0.09			403	
442		7.42		7.37		34.270	26.798	132.1	0.881	0.61		26.5		9.0		58.6	2.85	35.2	0.02	0.08			446	02
500	ISL	6.93	D	6.88		34.292	D 26.885	124.4	0.925	0.44	D	19.0	D	6.4		67.0	3.01	37.2	0.02	0.09			504	
514		6.74		6.70		34.300	26.915	121.6	0.972	0.35		15.2		5.1		69.0	3.05	37.7	0.02	0.09			518	01

A) MEASURED VALUE LOST, CHL-A AND PHAEO VALUES INTERPOLATED;
D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS; PRIMARY T; PRIMARY CORRECTED SALINITY; PRIMARY CRUISE-CORRECTED O2;

RV NEW HORIZON CALCOFI CRUISE 1411 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	14/11/2014	0322	UTC	1696 m	250 13 kn			1015.0 mb	19.0 C	18.1 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		19.37		19.37		33.598	23.856	403.8	0.000	5.36	234.1		101.7		1.8	0.30	0.1	0.02	0.18	0.22	0.05	0	
2		19.37		19.37		33.598	23.856	403.8	0.008	5.36	234.1		101.7		1.8	0.30	0.1	0.02	0.18	0.22	0.05	2	21
10		19.37		19.37		33.598	23.857	404.1	0.040	5.37	234.4		101.9		1.8	0.30	0.1	0.02	0.05	0.22	0.05	10	19
10		19.37		19.37		33.598	23.857	404.1	0.040													10	20
20		19.37		19.36		33.597	23.859	404.3	0.081	5.38	234.9		102.1		1.8	0.32	0.1	0.01	0.11	0.25	0.05	20	18
30		18.13		18.12		33.499	24.094	382.2	0.120	5.61	245.1		104.0		2.1	0.31	0.0	0.02	0.02	0.32	0.23	30	17
40		15.99		15.98		33.329	24.470	346.7	0.157	6.05	264.0		107.3		2.3	0.40	0.1	0.02	0.12	0.51	0.23	40	16
50		14.10		14.09		33.268	24.831	312.4	0.190	5.95	259.8		101.6		3.2	0.52	0.9	0.12	0.17	0.81	0.48	50	15
60		12.71		12.70		33.294	25.132	283.9	0.219	5.23	228.2		86.7		6.4	0.79	6.0	0.19	0.03	0.35	0.28	60	14
70		11.96		11.95		33.382	25.344	263.9	0.247	4.62	201.8		75.5		9.7	1.08	10.3	0.04	0.10	0.18	0.16	71	13
75	ISL	11.90	D	11.89	D	33.401	25.370	261.6	0.242	4.60	D200.2	D	75.0		11.0	1.15	11.6	0.04	0.08	0.15	0.14	76	
85		11.26		11.25		33.476	25.547	245.0	0.285	4.10	179.1		66.1		13.5	1.30	14.3	0.03	0.04	0.09	0.11	86	12
100	ISL	10.70	D	10.69	D	33.566	25.717	229.1	0.303	3.71	D161.7	D	59.1		16.6	1.47	17.2	0.03	0.04	0.05	0.07	101	
101		10.64		10.63		33.564	25.725	228.3	0.323	3.73	162.7		59.3		16.8	1.48	17.4	0.03	0.04	0.05	0.07	102	11
120		10.38		10.37		33.642	25.831	218.6	0.366	3.42	149.2		54.1		19.5	1.62	19.5	0.02	0.04	0.03	0.06	121	10
125	ISL	10.25	D	10.24	D	33.686	25.888	213.4	0.359	3.39	D147.4	D	53.4		20.6	1.68	20.3	0.02	0.04	0.03	0.05	126	
140		10.00		9.98		33.793	26.016	201.5	0.407	2.88	125.8		45.2		24.1	1.85	22.8	0.02	0.02	0.01	0.04	141	09
150	ISL	9.88	D	9.86	D	33.852	26.082	195.5	0.410	2.75	D119.9	D	43.1		25.8	1.92	23.7	0.02	0.03	0.01	0.04	151	
170		9.61		9.59		33.953	26.207	184.0	0.465	2.40	104.6		37.3		29.0	2.05	25.4	0.02	0.04	0.00	0.03	171	08
200		9.30		9.27		34.107	26.379	168.2	0.518	1.85	80.6		28.6		34.4	2.27	27.6	0.02	0.03	0.00	0.03	202	07
230		9.04		9.01		34.172	26.472	159.9	0.567	1.54	67.1		23.7		38.4	2.40	29.1	0.02	0.07			232	06
250	ISL	8.89	D	8.86	D	34.189	26.510	156.8	0.583	1.46	D 63.6	D	22.4		40.5	2.46	29.9	0.02	0.06			252	
270		8.71		8.68		34.218	26.561	152.3	0.630	1.27	55.3		19.4		42.7	2.52	30.6	0.02	0.04			272	05
300	ISL	8.30	D	8.27	D	34.231	26.634	145.7	0.659	1.07	D 46.4	D	16.2		46.5	2.62	31.9	0.02	0.08			302	
319		8.14		8.11		34.232	26.659	143.5	0.702	0.97	42.3		14.6		48.9	2.69	32.7	0.02	0.10			322	04
379		7.56		7.53		34.263	26.770	133.8	0.785	0.64	28.1		9.6		56.8	2.87	34.9	0.02	0.03			382	03
400	ISL	7.40	D	7.36	D	34.262	26.792	131.9	0.799	0.64	D 27.9	D	9.5		59.5	2.90	35.6	0.02	0.03			403	
441		6.90		6.86		34.254	26.856	126.1	0.866	0.53	23.2		7.8		64.7	2.97	37.0	0.02	0.02			445	02
500	ISL	6.47	D	6.43	D	34.278	26.933	119.3	0.925	0.43	D 18.9	D	6.3		70.6	3.06	38.2	0.02	0.05			504	
515		6.46		6.41		34.284	26.941	118.8	0.956	0.38	16.4		5.5		72.1	3.08	38.5	0.02	0.06			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 1411 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 39.2 N	119 28.8 W	13/11/2014	1929	UTC	1316 m	310 05 kn	280 02 05	2	1018.0 mb	17.5 C	17.1 C	29 m	8/8	ST	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		18.54		18.54		33.491	23.984	391.6	0.000	5.44	237.5		101.5		1.2	0.29	0.1	0.02	0.24	0.21	0.07	0	
2	A	18.54		18.54		33.491	23.984	391.6	0.008	5.44	237.5		101.5		1.2	0.29	0.1	0.02	0.24	0.21	0.07	2	23
8		18.44		18.44		33.489	24.008	389.6	0.031	5.44	237.4		101.3		1.2	0.37	0.1	0.02	0.38	0.22	0.07	8	21
8		18.44		18.44		33.488	24.007	389.7	0.030													8	22
10	ISL	18.44	D	18.44	D	33.488	24.008	389.6	0.036	5.46	D238.3	D	101.8		1.2	0.35	0.1	0.01	0.34	0.22	0.07	10	
16	A	18.43		18.43		33.489	24.011	389.6	0.062	5.44	237.4		101.3		1.2	0.30	0.1	0.01	0.23	0.23	0.08	16	20
20	ISL	18.43	D	18.42	D	33.487	24.012	389.7	0.075	5.44	D237.2	D	101.3		1.2	0.29	0.1	0.01	0.27	0.24	0.08	20	
23	A	18.42		18.41		33.488	24.015	389.5	0.090	5.43	237.3		101.2		1.2	0.28	0.1	0.02	0.30	0.24	0.08	23	19
30	ISL	18.41	D	18.40	D	33.482	24.014	389.9	0.114	5.44	D237.3	D	101.3		1.2	0.29	0.1	0.01	0.23	0.25	0.09	30	
33		18.37		18.36		33.480	24.022	389.3	0.129	5.45	237.7		101.3		1.2	0.30	0.1	0.01	0.20	0.25	0.09	33	18
43		16.04		16.04		33.134	24.307	362.3	0.167													43	17
44	A	15.29		15.29		33.072	24.426	350.9	0.147	5.81	253.6		101.5		1.8	0.34	0.1	0.02	0.13	0.37	0.26	44	16
50	ISL	13.86	D	13.86	D	32.952	24.636	330.9	0.168	5.96	D259.6	D	101.0		2.7	0.47	1.3	0.12	0.14	0.37	0.31	50	
55		13.42		13.41		32.946	24.723	322.8	0.207	5.81	253.7		97.6		3.5	0.58	2.3	0.21	0.15	0.38	0.36	55	15
67		12.21		12.20		33.078	25.061	290.8	0.244	5.34	233.5		87.6		5.8	0.85	7.1	0.08	0.05	0.17	0.24	68	14
75	ISL	11.65	D	11.64	D	33.187	25.251	272.9	0.244	5.20	D226.3	D	84.2		7.1	0.94	8.6	0.06	0.15	0.13	0.21	76	
80	A	11.41		11.40		33.215	25.317	266.7	0.280	5.07	221.6		81.8		7.9	1.00	9.6	0.04	0.21	0.11	0.20	81	13
91		10.39		10.38		33.313	25.572	242.5	0.308	4.71	205.5		74.3		11.6	1.20	13.5	0.03	0.13	0.08	0.12	92	12
100	ISL	10.26	D	10.25	D	33.352	25.625	237.7	0.307	4.51	D196.4	D	71.0		14.5	1.35	16.0	0.03	0.09	0.05	0.08	101	
101	A	10.18		10.17		33.395	25.673	233.2	0.332	4.43	193.4		69.7		14.8	1.37	16.3	0.03	0.08	0.05	0.08	102	11
120		9.66		9.65		33.539	25.873	214.5	0.374	3.98	173.7		61.9		18.8	1.54	19.4	0.03	0.05	0.02	0.04	121	10
125	ISL	9.65	D	9.63	D	33.552	25.885	213.5	0.364	3.93	D171.0	D	61.1		20.1	1.60	20.3	0.02	0.05	0.02	0.04	126	
140		9.42		9.40		33.712	26.048	198.2	0.416	3.30	144.1		51.1		23.9	1.79	23.0	0.02	0.06	0.01	0.03	141	09
150	ISL	9.27	D	9.25	D	33.803	26.144	189.3	0.414	3.08	D134.0	D	47.6		26.3	1.88	24.2	0.02	0.06	0.01	0.03	151	
169		8.98		8.96		33.930	26.291	175.8	0.470	2.64	D114.7	D	40.5		30.9	2.04	26.3	0.02	0.05	0.00	0.03	170	08
200		8.68		8.65		33.999	26.392	166.7	0.523	2.35	102.8		35.9		34.7	2.14	27.8	0.02	0.03	0.00	0.02	202	07
230		8.30		8.28		34.059	26.497	157.2	0.571	2.01	87.8		30.5		39.4	2.33	29.7	0.02	0.05			232	06
250	ISL	8.17	D	8.14	D	34.103	26.552	152.3	0.583	1.72	D 74.7	D	25.9		43.0	2.44	30.9	0.02	0.09			252	
270		7.96		7.93		34.138	26.612	146.9	0.632	1.43	62.2		21.4		46.6	2.54	32.2	0.02	0.13			272	05
300	ISL	7.63	D	7.60	D	34.198	26.707	138.3	0.656	1.02	D 44.5	D	15.3		51.7	2.68	33.7	0.02	0.11			302	
319		7.52		7.48		34.208	26.732	136.2	0.701	0.91	39.9		13.6		55.0	2.77	34.7	0.02	0.10			322	04
381		7.09		7.05		34.228	26.809	129.6	0.784	0.68	29.5		10.0		61.3	2.90	36.3	0.02	0.04			384	03
400	ISL	6.99	D	6.96	D	34.238	26.830	127.9	0.790	0.62	D 27.0	D	9.1		62.9	2.93	36.6	0.02	0.04			403	
440		6.79		6.75		34.267	26.881	123.6	0.858	0.55	23.8		8.0		66.3	2.99	37.3	0.02	0.04			444	02
500	ISL	6.42	D	6.37	D	34.300	26.958	116.9	0.913	0.33	D 14.4	D	4.8		73.6	3.11	38.8	0.02	0.10			504	
517		6.29		6.24		34.307	26.980	114.9	0.950	0.29	12.8		4.3		75.6	3.15	39.2	0.02	0.12			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 1411 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 57.5 W	13/11/2014	1430 UTC	887 m	310 03 kn	280 02 05	2	1017.0 mb	17.0 C	16.0 C		8/8	SC	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		19.05		19.05		33.337	23.739	415.0	0.000	5.37	234.5		101.2		2.1	0.32	0.1	0.02	0.10	0.15	0.04	0	
2		19.05		19.05		33.337	23.739	415.0	0.008	5.37	234.5		101.2		2.1	0.32	0.1	0.02	0.10	0.15	0.04	2	20
9		19.06		19.06		33.337	23.738	415.5	0.037	5.34	233.3		100.6		2.1	0.32	0.1	0.01	0.07	0.15	0.05	9	19
10	ISL	19.06	D	19.06		33.334	D 23.734	415.8	0.042	5.34	D233.1		D100.6		2.1	0.32	0.1	0.01	0.07	0.15	0.05	10	
20	ISL	19.07	D	19.06		33.334	D 23.735	416.2	0.084	5.34	D232.8		D100.5		2.0	0.32	0.0	0.02	0.04	0.15	0.04	20	
25		19.06		19.06		33.338	23.740	415.9	0.104	5.34	233.2		100.6		2.0	0.32	0.0	0.02	0.02	0.15	0.04	25	18
30	ISL	18.98	D	18.98		33.324	D 23.749	415.2	0.126	5.35	D233.3		D100.6		2.0	0.32	0.0	0.02	0.04	0.16	0.05	30	
40		17.99		17.99		33.280	23.961	395.3	0.165	5.49	239.7		101.3		1.8	0.33	0.0	0.02	0.09	0.19	0.08	40	17
50		16.10		16.09		33.170	24.324	361.0	0.203	5.96	260.2		105.8		2.3	0.35	0.0	0.02	0.03	0.21	0.14	50	16
62		14.93		14.92		33.238	24.633	331.8	0.245	5.90	257.5		102.4		2.7	0.39	0.1	0.02	0.07	0.23	0.19	62	15
74		13.91		13.90		33.216	24.833	313.0	0.283	5.75	251.2		97.8		3.5	0.50	0.9	0.11	0.11	0.23	0.22	75	14
75	ISL	13.86	D	13.85		33.219	D 24.845	311.8	0.289	5.70	D248.3	D	96.8		3.7	0.52	1.3	0.12	0.12	0.23	0.22	76	
87		12.21		12.19		33.184	25.145	283.4	0.322	5.39	235.5		88.4		5.8	0.79	6.0	0.20	0.21	0.18	0.24	88	13
100		11.34		11.33		33.207	25.323	266.6	0.358	5.15	225.1		83.0		7.5	0.92	8.8	0.07	0.01	0.14	0.23	101	12
112		10.53		10.51		33.302	25.541	246.0	0.389	4.77	208.3		75.5		11.0	1.14	12.7	0.03	0.02	0.09	0.16	113	11
125		10.13		10.12		33.400	25.685	232.5	0.420	4.45	194.5		70.0		14.2	1.32	15.7	0.03	0.02	0.05	0.10	126	10
140		9.66		9.65		33.537	25.871	215.1	0.453	3.96	172.8		61.6		18.7	1.55	19.4	0.02	0.01	0.02	0.05	141	09
150	ISL	9.35	D	9.34		33.656	D 26.015	201.5	0.477	3.70	D161.1	D	57.2		21.0	1.63	20.7	0.02	0.01	0.02	0.04	151	
170		9.09		9.07		33.788	26.161	188.1	0.513	3.35	146.2		51.5		25.5	1.79	23.4	0.02	0.02	0.00	0.02	171	08
200		8.63		8.61		33.939	26.352	170.4	0.567	2.82	123.2		43.0		31.7	2.01	26.6	0.02	0.07	0.00	0.02	202	07
230		8.39		8.36		33.980	26.422	164.3	0.617	2.61	114.1		39.6		34.8	2.10	27.8	0.02	0.02			232	06
250	ISL	8.10	D	8.07		34.008	D 26.488	158.3	0.654	2.42	D105.4	D	36.5		38.8	2.21	29.3	0.02	0.03			252	
269		7.82		7.79		34.034	26.550	152.7	0.679	2.11	92.1		31.6		42.6	2.31	30.8	0.02	0.03			271	05
300	ISL	7.66	D	7.63		34.083	D 26.612	147.2	0.730	1.68	D 73.1	D	25.1		47.6	2.45	32.3	0.02	0.02			302	
320		7.58		7.55		34.126	D 26.658	143.3	0.760	1.34	D 58.4	D	20.0									323	04
379		6.87		6.84		34.152	26.778	132.3	0.837	0.91	39.8		13.4		60.1	2.82	36.3	0.02	0.01			382	03
400	ISL	6.68	D	6.65		34.172	D 26.820	128.5	0.869	0.80	D 34.6	D	11.6		63.1	2.88	37.1	0.02	0.01			403	
440		6.25		6.21		34.178	26.881	123.0	0.915	0.64	28.0		9.3		68.9	2.98	38.6	0.02	0.01			444	02
500	ISL	5.84	D	5.80		34.206	D 26.957	116.2	0.992	0.52	D 22.4	D	7.4		76.9	3.10	39.9	0.02	0.00			504	
513		5.83		5.79		34.220	26.969	115.3	1.002	0.42	18.4		6.0		78.6	3.13	40.2	0.02	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 1411 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 38.3 W	13/11/2014	0828 UTC	3816 m	310 07 kn			1017.0 mb	18.2 C	16.0 C				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		19.45		19.45		33.303	23.612	427.1	0.000	5.31	231.9		100.8		2.4	0.33	0.2	0.02	0.22	0.15	0.02	0	
3		19.45		19.45		33.303	23.612	427.2	0.013	5.31	231.9		100.8		2.4	0.33	0.2	0.02	0.22	0.15	0.02	3	20
9		19.45		19.45		33.303	23.612	427.4	0.038	5.31	231.9		100.8		2.3	0.32	0.1	0.02	0.21	0.17	0.02	9	19
10	ISL	19.46	D	19.45		33.302	D 23.610	427.6	0.043	5.30	D231.2		D100.6		2.3	0.32	0.1	0.02	0.22	0.17	0.02	10	
20	ISL	19.46	D	19.46		33.302	D 23.610	428.0	0.086	5.29	D230.9		D100.4		2.3	0.33	0.1	0.02	0.29	0.17	0.01	20	
25		19.46		19.46		33.305	23.612	428.1	0.107	5.32	232.3		100.9		2.3	0.34	0.1	0.02	0.32	0.17	0.00	25	18
30	ISL	19.46	D	19.45		33.306	D 23.614	428.1	0.129	5.28	D230.3		D100.2		2.3	0.34	0.1	0.02	0.31	0.18	0.00	30	
41		19.37		19.36		33.310	23.640	426.1	0.175	5.33	232.9		101.0		2.3	0.34	0.1	0.02	0.29	0.20	0.00	41	17
50		17.14		17.14		33.141	24.059	386.3	0.212	5.89	257.3		106.8		2.4	0.34	0.2	0.02	0.18	0.27	0.05	50	16
62		15.74		15.73		33.161	24.396	354.4	0.256	5.97	260.7		105.3		2.5	0.37	0.2	0.02	0.19	0.38	0.04	62	15
74		14.95		14.94		33.203	24.603	335.0	0.298	5.87	256.4		101.9		2.9	0.43	0.2	0.03	0.17	0.34	0.11	75	14
75	ISL	14.92	D	14.91		33.206	D 24.611	334.3	0.303	5.84	D254.6		D101.4		3.0	0.44	0.3	0.05	0.17	0.33	0.12	76	
86		13.65		13.64		33.213	24.884	308.4	0.336	5.65	246.6		95.5		3.8	0.54	1.6	0.23	0.14	0.29	0.16	87	13
100	ISL	12.15	D	12.14		33.172	D 25.146	283.6	0.381	5.35	D232.9	D	87.6		5.6	0.75	5.6	0.15	0.16	0.28	0.12	101	
101		12.14		12.13		33.176	25.152	283.1	0.381	5.37	234.4		87.9		5.7	0.76	5.9	0.14	0.16	0.28	0.12	102	12
112		11.42		11.41		33.203	25.306	268.6	0.411	5.15	224.7		83.0		7.5	0.92	8.8	0.04	0.17	0.19	0.12	113	11
125		10.40		10.38		33.328	25.585	242.1	0.444	4.64	202.8		73.3		12.2	1.24	14.1	0.02	0.32	0.08	0.09	126	10
140		9.81		9.79		33.488	D 25.809	221.0	0.482	4.35	190.2		67.9		15.3	1.38	16.8	0.02	0.20	0.06	0.04	141	09
150	ISL	9.58	D	9.57		33.555	D 25.899	212.6	0.504	4.06	D176.5	D	63.0		17.5	1.45	18.2	0.02	0.17	0.04	0.03	151	
170		9.23		9.21		33.718	26.083	195.5	0.541	3.85	168.1		59.4		21.9	1.60	21.0	0.02	0.11	0.01	0.02	171	08
200	ISL	8.85	D	8.83		33.867	D 26.261	179.2	0.602	3.37	D146.5	D	51.6		26.9	1.78	23.9	0.01	0.05	0.01	0.15	202	
201		8.84		8.81		33.863	26.261	179.2	0.599	3.37	147.0		51.5		27.1	1.79	24.0	0.01	0.05	0.01	0.16	203	07
230		8.47		8.45		33.956	26.391	167.3	0.649	2.95	128.6		44.7		32.3	1.97	26.5	0.01	0.08			232	06
250	ISL	8.15	D	8.13		34.000	D 26.473	159.7	0.687	2.60	D113.2	D	39.2		36.3	2.11	28.3	0.02	0.07			252	
270		7.89		7.86		34.025	26.533	154.3	0.714	2.24	97.9		33.6		40.3	2.25	30.1	0.02	0.06			272	05
300	ISL	7.63	D	7.60		34.065	D 26.602	148.2	0.765	1.82	D 79.2	D	27.1		45.7	2.42	32.1	0.01	0.07			302	
320		7.41		7.38		34.083	26.649	144.0	0.788	1.59	69.2		23.5		49.4	2.53	33.4	0.01	0.07			323	04
380		6.79		6.76		34.119	26.763	133.7	0.871	1.04	45.4		15.2		59.7	2.78	36.6	0.01	0.03			383	03
400	ISL	6.62	D	6.58		34.145	D 26.807	129.7	0.905	0.89	D 38.9	D	13.0		62.9	2.85	37.3	0.01	0.03			403	
440		6.30		6.26		34.175	26.874	123.7	0.948	0.64	27.9		9.3		69.2	2.98	38.6	0.01	0.04			444	02
500	ISL	5.89	D	5.84		34.213	D 26.956	116.4	1.028	0.48	D 20.8	D	6.8		77.8	3.09	40.0	0.01	0.03			504	
516		5.75		5.70		34.217	26.977	114.5	1.039	0.41	17.8		5.8		80.0	3.12	40.4	0.02	0.03			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 1411 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 18.8 W	13/11/2014	0241	UTC	3675 m	330 13 kn			1017.0 mb	18.7 C	15.8 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		19.58	19.58	33.232	23.525	435.4	0.000	5.30	231.4	100.7	2.0	0.32	0.1	0.01	0.13	0.12	0.03	0	
2		19.58	19.57	33.232	23.525	435.5	0.009	5.30	231.4	100.7	2.0	0.32	0.1	0.01	0.13	0.12	0.03	2	20
10		19.58	19.58	33.233	23.526	435.7	0.044	5.30	231.5	100.8	2.0	0.33	0.1	0.01	0.05	0.11	0.03	10	19
20	ISL	19.58 D	19.57	33.229 D	23.524	436.3	0.088	5.32 D	232.0 D	101.1	2.0	0.32	0.1	0.01	0.07	0.12	0.03	20	
25		19.56	19.55	33.228	23.529	436.0	0.109	5.30	231.5	100.7	2.0	0.32	0.1	0.01	0.08	0.13	0.03	25	18
30	ISL	19.55 D	19.54	33.225 D	23.529	436.2	0.132	5.33 D	232.6 D	101.3	2.0	0.32	0.1	0.01	0.07	0.13	0.04	30	
40		19.48	19.47	33.221	23.545	435.1	0.174	5.32	232.5	101.0	2.0	0.32	0.1	0.01	0.06	0.15	0.04	40	17
50		17.87	17.86	33.163	23.902	401.3	0.216	5.64	246.3	103.7	2.1	0.33	0.1	0.02	0.31	0.19	0.08	50	16
62		16.26	16.25	33.128	24.254	368.0	0.262	5.91	258.2	105.3	2.2	0.34	0.1	0.01	0.11	0.21	0.14	62	15
75		14.80	14.79	33.069	24.531	341.9	0.308	5.90	257.5	102.0	2.5	0.36	0.1	0.02	0.11	0.23	0.23	76	14
87		14.41	14.40	33.157	24.683	327.7	0.349	5.77	252.0	99.1	2.9	0.43	0.3	0.08	0.14	0.24	0.21	88	13
100	ISL	12.72 D	12.71	33.175 D	25.040	293.8	0.392	5.48 D	238.5 D	90.8	4.5	0.63	3.4	0.29	0.06	0.20	0.19	101	
101		12.60	12.58	33.176	25.065	291.5	0.392	5.50	240.0	90.9	4.6	0.64	3.7	0.31	0.05	0.20	0.19	102	12
112		11.15	11.14	33.173	25.331	266.1	0.423	5.20	227.0	83.4	7.4	0.89	8.5	0.03	0.11	0.12	0.13	113	11
125		10.68	10.67	33.188	25.426	257.3	0.457	5.09	222.4	80.8	9.0	1.01	10.7	0.03	0.05	0.09	0.11	126	10
140		10.37	10.35	33.295	25.565	244.4	0.494	4.77	208.2	75.2	11.6	1.16	13.3	0.02	0.03	0.06	0.09	141	09
150	ISL	9.88 D	9.87	33.468 D	25.781	223.9	0.521	4.48 D	195.0 D	70.0	14.2	1.27	15.3	0.02	0.06	0.04	0.06	151	
170		9.49	9.47	33.675	26.008	202.7	0.560	4.05	177.0	62.9	19.4	1.49	19.2	0.02	0.12	0.01	0.02	171	08
200		8.81	8.79	33.892	26.287	176.7	0.617	3.48	152.1	53.3	27.2	1.74	23.4	0.02	0.08	0.00	0.01	202	07
230		8.46	8.43	33.945	26.384	167.9	0.669	3.26	142.1	49.4	30.7	1.86	25.1	0.02	0.06			232	06
250	ISL	8.04 D	8.01	33.999 D	26.490	158.1	0.706	2.83 D	123.2 D	42.6	35.9	2.07	27.7	0.02	0.09			252	
271		7.94	7.91	34.047	26.542	153.5	0.734	2.11	92.0	31.6	41.4	2.30	30.4	0.02	0.12			273	05
300	ISL	7.86 D	7.83	34.154 D	26.640	144.8	0.783	1.33 D	57.6 D	19.9	46.5	2.50	32.2	0.02	0.08			302	
320		7.71	7.67	34.157	26.664	142.7	0.806	1.20	52.5	18.0	50.1	2.64	33.5	0.02	0.06			323	04
380		6.98	6.95	34.176	26.782	132.1	0.889	0.84	36.8	12.4	59.9	2.86	36.4	0.02	0.17			383	03
400	ISL	6.82 D	6.78	34.184 D	26.812	129.4	0.921	0.78 D	34.1 D	11.5	62.6	2.91	37.0	0.02	0.18			403	
439		6.52	6.48	34.212	26.873	124.0	0.964	0.57	25.1	8.3	67.7	3.00	38.3	0.02	0.20			443	02
500	ISL	6.13 D	6.08	34.269 D	26.971	115.3	1.045	0.39 D	17.0 D	5.6	75.7	3.14	39.8	0.02	0.39			504	
516		6.01	5.96	34.268	26.985	114.0	1.056	0.34	14.7	4.8	77.8	3.18	40.2	0.02	0.44			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 1411 STATION 90.0 90.0

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 59.7 W	12/11/2014	2102	UTC	3857 m	350 06 kn	330 03 06	2	1016.0 mb	19.8 C	16.1 C		8/8	ST	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		19.58	19.58	33.187	23.491	438.7	0.000	5.30	231.4	100.7	2.0	0.34	0.1	0.01	0.02	0.14	0.03	0	
2		19.58	19.57	33.187	23.491	438.7	0.009	5.30	231.4	100.7	2.0	0.34	0.1	0.01	0.02	0.14	0.03	2	24
10		19.57	19.56	33.186	23.494	438.8	0.044	5.28	230.7	100.3	2.0	0.33	0.1	0.01	0.05	0.14	0.03	10	23
20	ISL	19.53 D	19.53	33.183 D	23.501	438.5	0.088	5.30 D	231.2 D	100.6	2.0	0.33	0.1	0.01	0.03	0.14	0.03	20	
26		19.53	19.52	33.188	23.506	438.2	0.114	5.30	231.6	100.7	2.0	0.33	0.1	0.01	0.02	0.15	0.04	26	22
30	ISL	19.53 D	19.52	33.182 D	23.502	438.8	0.133	5.30 D	231.3 D	100.6	2.0	0.33	0.1	0.01	0.02	0.15	0.04	30	
40		19.47	19.46	33.178	23.516	437.9	0.175	5.30 D	231.4 D	100.5	1.9	0.33	0.1	0.01	0.01	0.17	0.04	40	21
50		16.76	16.75	33.067	24.092	383.1	0.216	5.99	261.7	107.8	2.2	0.35	0.1	0.01	0.09	0.23	0.12	50	20
62		15.21	15.20	33.028	24.411	352.9	0.261	5.95	260.0	103.8	2.3	0.40	0.2	0.01	0.09	0.27	0.20	62	19
75		14.23	14.22	33.108	24.683	327.3	0.305	5.78	252.3	98.8	2.9	0.44	0.4	0.09	0.08	0.27	0.22	76	18
87		13.35	13.34	33.190	24.926	304.4	0.343	5.58	243.6	93.7	3.9	0.56	2.7	0.39	0.14	0.22	0.18	88	17
100		12.30	12.29	33.165	25.113	286.8	0.381	5.39	235.6	88.6	5.3	0.75	5.7	0.15	0.11	0.17	0.16	101	16
111		11.43	11.41	33.168	25.278	271.2	0.412	5.25	229.3	84.7	6.9	0.87	8.1	0.03	0.07	0.13	0.15	112	15
125	ISL	10.30 D	10.28	33.285 D	25.568	243.7	0.451	4.80 D	208.9 D	75.6	10.4	1.12	12.2	0.02	0.04	0.06	0.12	126	
126		10.38	10.37	33.273 D	25.545	246.0	0.453	4.88	213.1	77.0	10.7	1.14	12.5	0.02	0.04	0.06	0.11	127	14
140		9.71	9.69	33.475 D	25.815	220.4	0.486	4.43	193.7	69.0	15.3	1.40	16.8	0.01	0.08	0.03	0.05	141	13
150	ISL	9.62 D	9.60	33.519 D	25.865	215.9	0.508	4.17 D	181.7 D	64.9	18.0	1.52	18.7	0.01	0.07	0.02	0.04	151	
170		9.20	9.18	33.701	26.076	196.2	0.546	3.57	155.8	55.0	23.4	1.75	22.7	0.01	0.06	0.00	0.02	171	12
200		8.85	8.83	33.856	26.252	180.0	0.603	3.19	139.4	48.9	27.9	1.89	25.0	0.01	0.06	0.00	0.02	202	11
230		8.38	8.36	33.955	26.403	166.1	0.654	3.07	134.0	46.5	32.5	1.96	26.3	0.01	0.04			232	10
250	ISL	8.02 D	8.00	33.987 D	26.483	158.8	0.691	2.93 D	127.3 D	44.0	36.9	2.09	28.2	0.01	0.06			252	
270		7.67	7.65	34.008	26.551	152.5	0.718	2.47	107.7	36.8	41.4	2.22	30.1	0.02	0.08			272	09
300	ISL	7.33 D	7.30	34.050 D	26.633	145.1	0.768	1.90 D	82.5 D	28.1	47.2	2.41	32.3	0.02	0.07			302	
321		7.18	7.15	34.059	26.661	142.6	0.793	1.67	73.0	24.7	51.3	2.55	33.8	0.02	0.06			324	08
380		6.55	6.51	34.108	26.786	131.2	0.874	1.05	46.0	15.3	62.2	2.82	37.1	0.02	0.02			383	07
400	ISL	6.42 D	6.39	34.121 D	26.813	128.9	0.906	0.98 D	42.8 D	14.3	65.0	2.88	37.8	0.02	0.03			403	
440		6.09	6.05	34.153	26.882	122.7	0.950	0.75	32.8	10.8	70.7	2.99	39.1	0.02	0.06			444	06
500	ISL	5.87 D	5.82	34.225 D	26.968	115.2	1.029	0.49 D	21.1 D	7.0	78.0	3.12	40.1	0.02	0.05			504	
515		5.78	5.74	34.246	26.995	112.8	1.038											519	05
516		5.78	5.73	34.241	26.992	113.0	1.040	0.36	15.8	5.2	79.9	3.15	40.4	0.02	0.05			520	04
600	ISL	5.29 D	5.24	34.297 D	27.096	103.7	1.134	0.28 D	12.3 D	4.0	89.1	3.23	41.6	0.02	0.07			605	
671		4.99	4.94	34.339	27.164	97.8	1.202	0.20	8.7	2.8	96.9	3.29	42.7	0.02	0.08			677	03
700	ISL	4.87 D	4.81	34.363 D	27.199	94.7	1.235	0.26 D	11.4 D	3.7								706	
800	ISL	4.47 D	4.40	34.411 D	27.281	87.3	1.327	0.33 D	14.4 D	4.6								807	
900	ISL	4.24 D	4.17	34.448 D	27.337	82.8	1.413	0.42 D	18.2 D	5.8								908	
1000	ISL	3.94 D	3.87	34.478 D	27.392	77.9	1.494	0.54 D	23.6 D	7.4								1009	
1100	ISL	3.71 D	3.63	34.499 D	27.433	74.4	1.571	0.66 D	28.5 D	8.9								1111	
1200	ISL	3.47 D	3.39	34.518 D	27.473	70.9	1.644	0.76 D	33.2 D	10.3								1212	
1300	ISL	3.24 D	3.15	34.536 D	27.510	67.6	1.715	0.88 D	38.2 D	11.8								1313	
1400	ISL	3.06 D	2.96	34.550 D	27.539	65.0	1.782	0.99 D	43.1 D	13.3								1415	
1500	ISL	2.87 D	2.76	34.563 D	27.567	62.5	1.846	1.10 D	47.9 D	14.7								1516	
1600	ISL	2.71 D	2.59	34.574 D	27.591	60.3	1.909	1.20 D	52.2 D	15.9								1617	
1800	ISL	2.39 D	2.27	34.600 D	27.640	55.7	2.026	1.48 D	64.5 D	19.5								1820	
2000	ISL	2.14 D	2.00	34.620 D	27.678	52.0	2.136	1.77 D	76.8 D	23.1								2024	
2200	ISL	1.99 D	1.83	34.636 D	27.705	49.8	2.239	2.01 D	87.4 D	26.2								2227	
2400	ISL	1.87 D	1.70	34.646 D	27.724	48.4	2.339	2.20 D	95.4 D	28.5								2431	
2600	ISL	1.79 D	1.60	34.654 D	27.738	47.5	2.437	2.34 D	101.7 D	30.3								2635	
2800	ISL	1.70 D	1.50	34.660 D	27.752	46.5	2.533	2.49 D	108.1 D	32.1								2839	
3000	ISL	1.65 D	1.42	34.665 D	27.762	46.1	2.628	2.58 D	112.2 D	33.2								3043	
3200	ISL	1.61 D	1.36	34.669 D	27.771	45.8	2.722	2.68 D	116.6 D	34.5								3247	
3400	ISL	1.57 D	1.31	34.673 D	27.779	45.6	2.815	2.77 D	120.5 D	35.6								3452	
3499		1.55	1.28	34.655	27.767	46.9	3.248	2.87	125.2	36.8	170.9	2.74	38.4	0.02	0.07			3553	01
3500		1.55	1.28	34.671	27.780	45.7	3.249											3554	02

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

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 25.2 N	121 59.4 W	12/11/2014	1815	UTC	3852 m	340 10 kn	300 03 05	2	1017.0 mb	19.3 C	16.0 C	35 m	8/8	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		19.54		19.54		33.184	23.498	437.9	0.000	5.30	231.6	100.7	2.0	0.35	0.1	0.01	0.15	0.15	0.04	0	
3	A	19.54		19.54		33.184	23.498	438.0	0.013	5.30	231.6	100.7	2.0	0.35	0.1	0.01	0.15	0.15	0.04	3	11
10		19.54		19.54		33.183	23.498	438.4	0.044	5.31	231.8	100.8	2.0	0.34	0.1	0.02	0.10	0.15	0.04	10	10
19	A	19.53		19.53		33.186	23.502	438.3	0.083	5.29	231.0	100.4	2.0	0.37	0.1	0.02	0.34	0.16	0.04	19	09
20	ISL	19.53	D	19.53		33.181	D 23.500	438.6	0.088	5.32	D232.3	D101.1	2.0	0.37	0.1	0.02	0.31	0.16	0.04	20	
28	A	19.53		19.53		33.184	23.502	438.7	0.123	5.29	231.1	100.4	1.9	0.34	0.0	0.02	0.06	0.16	0.04	28	08
30	ISL	19.53	D	19.52		33.179	D 23.499	439.0	0.132	5.32	D232.1	D101.0	2.0	0.34	0.0	0.02	0.07	0.17	0.04	30	
50	ISL	16.99	D	16.98		33.099	D 24.062	386.0	0.216	5.99	D261.0	D108.2	2.3	0.34	0.1	0.02	0.12	0.23	0.11	50	
52	A	16.31		16.30		33.050	D 24.182	374.5	0.223	5.94	259.4	105.9	2.3	0.34	0.1	0.02	0.13	0.23	0.11	52	07
66		15.18		15.17		33.031	24.421	352.1	0.273	5.92	258.5	103.1	2.3	0.41	0.1	0.03	0.13	0.29	0.23	67	06
75	ISL	14.57	D	14.56		33.113	D 24.616	333.8	0.305	5.85	D254.9	D100.7	3.0	0.49	1.1	0.13	0.13	0.25	0.23	76	
96	A	12.85		12.84		33.189	25.026	295.1	0.369	5.48	239.3	91.1	4.5	0.66	3.4	0.37	0.12	0.16	0.21	97	05
100		12.60		12.58		33.178	25.066	291.3	0.381	5.41	236.3	89.5	5.1	0.71	4.8	0.22	0.07	0.13	0.17	101	04
122	A	10.61		10.60		33.213	25.457	254.2	0.441	5.03	219.6	79.7	9.3	1.04	11.0	0.03	0.07	0.08	0.11	123	03
125	ISL	10.52	D	10.51		33.235	D 25.491	251.1	0.452	5.00	D217.5	D 79.1	10.1	1.08	11.6	0.03	0.07	0.08	0.11	126	
150	ISL	9.70	D	9.68		33.485	D 25.826	219.7	0.511	4.35	D189.4	D 67.7	16.5	1.41	17.1	0.02	0.06	0.04	0.06	151	
170		9.38		9.36		33.643	26.001	203.3	0.550	3.72	162.6	57.6	21.7	1.68	21.5	0.02	0.06	0.01	0.02	171	02
200		8.88		8.86		33.840	26.236	181.6	0.608	3.22	140.8	49.4	27.5	1.88	25.0	0.02	0.11	0.00	0.02	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 1411 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 5.1 N	122 39.7 W	12/11/2014	1212	UTC	4022 m	340 09 kn			1015.0 mb	18.0 C	15.7 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		19.39		19.39		33.172	23.527	435.2	0.000	5.32	232.2	100.6	1.9	0.33	0.1	0.02	0.14	0.13	0.04	0	
2		19.39		19.39		33.172	23.527	435.2	0.009	5.32	232.2	100.6	1.9	0.33	0.1	0.02	0.14	0.13	0.04	2	20
10		19.39		19.39		33.174	23.530	435.3	0.044	5.31	231.9	100.5	1.8	0.33	0.1	0.02	0.04	0.13	0.03	10	19
20	ISL	19.39	D	19.39		33.170	D 23.527	436.0	0.088	5.33	D232.4	D100.9	1.8	0.33	0.0	0.02	0.02	0.14	0.03	20	
24		19.39		19.38		33.173	23.530	435.9	0.105	5.31	232.0	100.6	1.8	0.33	0.0	0.02	0.01	0.14	0.03	24	18
30	ISL	19.39	D	19.38		33.170	D 23.528	436.3	0.132	5.31	D231.8	D100.6	1.9	0.33	0.0	0.02	0.05	0.14	0.03	30	
40		19.39		19.38		33.173	23.532	436.3	0.174	5.31	231.7	100.4	1.9	0.32	0.0	0.02	0.12	0.13	0.04	40	17
49		16.79		16.78		33.081	24.096	382.6	0.211	5.89	257.5	106.1	2.2	0.32	0.0	0.02	0.21	0.21	0.10	49	16
50	ISL	16.48	D	16.48		33.023	D 24.122	380.2	0.217	5.85	D255.1	D104.6	2.2	0.32	0.0	0.02	0.21	0.21	0.11	50	
62		15.08		15.07		33.013	24.428	351.3	0.259	5.98	261.0	103.9	2.3	0.35	0.1	0.02	0.18	0.24	0.17	62	15
75		13.68		13.67		32.946	24.671	328.4	0.303	5.84	255.2	98.7	2.9	0.46	0.7	0.22	0.09	0.27	0.28	76	14
87		12.14		12.13		33.026	25.034	293.9	0.340	5.57	243.3	91.1	4.6	0.66	4.4	0.27	0.08	0.19	0.30	88	13
99		11.38		11.37		33.110	25.241	274.4	0.375	5.35	233.6	86.2	6.5	0.83	7.4	0.05	0.01	0.14	0.20	100	12
100	ISL	11.14	D	11.12		33.125	D 25.297	269.1	0.380	5.24	D228.4	D 84.0	6.6	0.84	7.6	0.05	0.01	0.13	0.20	101	
112		10.73		10.71		33.139	25.380	261.4	0.409	5.19	226.6	82.4	8.3	0.98	9.9	0.03	0.02	0.10	0.16	113	11
125		10.19		10.17		33.238	25.550	245.4	0.442	4.88	213.0	76.6	11.1	1.20	13.0	0.03	0.07	0.07	0.11	126	10
140		9.87		9.86		33.390	D 25.721	229.4	0.481	4.44	193.8	69.3	14.8	1.37	16.4	0.03	0.04	0.05	0.06	141	09
150	ISL	9.69	D	9.67		33.461	D 25.808	221.3	0.503	4.27	D186.1	D 66.5	17.1	1.46	18.0	0.03	0.05	0.04	0.05	151	
170		9.29		9.27		33.630	26.006	202.9	0.542	3.79	165.2	58.4	21.6	1.65	21.3	0.02	0.07	0.01	0.02	171	08
200	ISL	8.93	D	8.90		33.810	D 26.205	184.5	0.605	3.10	D134.8	D 47.5	27.0	1.86	24.6	0.02	0.07	0.00	0.02	202	
201		8.90		8.87		33.801	26.203	184.7	0.602	3.15	137.5	48.2	27.2	1.87	24.8	0.02	0.07	0.00	0.02	203	07
230		8.57		8.55		33.959	26.378	168.6	0.654	2.46	107.3	37.4	33.7	2.11	28.1	0.02	0.02			232	06
250	ISL	8.30	D	8.27		34.010	D 26.460	161.1	0.691	2.17	D 94.2	D 32.8	37.4	2.20	29.3	0.02	0.06			252	
270		7.87		7.84		34.020	26.532	154.4	0.718	2.13	92.9	31.9	41.1	2.29	30.5	0.02	0.10			272	05
300	ISL	7.44	D	7.41		34.038	D 26.608	147.4	0.768	1.86	D 81.1	D 27.7	46.8	2.44	32.4	0.02	0.11			302	
321		7.13		7.10		34.043	26.656	143.1	0.794	1.68	73.2	24.7	50.8	2.54	33.7	0.02	0.11			324	04
380		6.79		6.75		34.126	26.769	133.1	0.875	0.94	40.9	13.7	60.2	2.82	36.7	0.03	0.02			383	03
400	ISL	6.53	D	6.49		34.132	D 26.809	129.4	0.908	0.86	D 37.5	D 12.5	63.6	2.88	37.4	0.02	0.03			403	
442		6.18		6.14		34.174	26.887	122.4	0.955	0.62	26.9	8.9	70.9	3.00	38.8	0.02	0.04			446	02
500	ISL	5.89	D	5.85		34.222	D 26.963	115.8	1.031	0.47	D 20.4	D 6.7	78.4	3.11	40.0	0.02	0.02			504	
516		5.74		5.70		34.227	26.984	113.7	1.042	0.38	16.4	5.4	80.5	3.14	40.4	0.02	0.02			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 1411 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 45.2 N	123 20.2 W	12/11/2014	0617	UTC	4029 m	360 14 kn			1015.0 mb	18.2 C	16.0 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		19.26		19.26		33.176	23.564	431.6	0.000	5.33	232.8	100.7	1.6	0.31	0.1	0.02	0.03	0.12	0.03	0	
2		19.26		19.25		33.176	23.564	431.7	0.009	5.33	232.8	100.7	1.6	0.31	0.1	0.02	0.03	0.12	0.03	2	20
10		19.20		19.20		33.176	23.578	430.7	0.043	5.34	233.3	100.8	1.6	0.31	0.1	0.02	0.03	0.12	0.03	10	19
20	ISL	19.17	D	19.17		33.173	D 23.585	430.4	0.087	5.34	D232.9	D100.6	1.6	0.31	0.1	0.02	0.03	0.12	0.03	20	
26		19.17		19.16		33.179	23.591	430.1	0.112	5.33	232.9	100.5	1.6	0.31	0.1	0.02	0.03	0.13	0.03	26	18
30	ISL	19.16	D	19.16		33.174	D 23.589	430.5	0.130	5.33	D232.4	D100.4	1.6	0.31	0.1	0.02	0.04	0.13	0.03	30	
40		19.14		19.13		33.175	23.597	430.1	0.172	5.35	233.7	100.8	1.6	0.32	0.1	0.02	0.05	0.14	0.04	40	17
50		18.85		18.84		33.149	23.650	425.5	0.215	5.42	236.8	101.6	1.5	0.32	0.1	0.02	0.08	0.18	0.06	50	16
62		16.16		16.15		33.072	24.233	370.0	0.263	5.97	261.0	106.2	2.3	0.33	0.1	0.02	0.07	0.24	0.29	62	15
74		13.63		13.62		32.907	24.651	330.3	0.305	5.88	256.9	99.3	3.0	0.45	0.7	0.16	0.23	0.32	0.24	75	14
75	ISL	13.40	D	13.39		32.900	D 24.692	326.3	0.310	5.87	D255.9	D 98.6	3.2	0.47	1.0	0.16	0.21	0.31	0.24	76	
86		12.14		12.13		32.928	24.959	301.0	0.343	5.61	244.8	91.7	5.1	0.70	4.8	0.19	0.04	0.20	0.20	87	13
100		10.99		10.97		33.040	25.257	272.8	0.383	5.38	234.9	85.9	7.4	0.90	8.6	0.05	0.03	0.13	0.18	101	12
112		10.24		10.23		33.113	25.442	255.3	0.414	5.21	227.5	81.9	9.0	1.01	10.5	0.03	0.05	0.09	0.14	113	11
125		10.04		10.02		33.261	25.593	241.2	0.447	4.80	209.4	75.1	12.4	1.23	14.2	0.03	0.05	0.06	0.07	126	10
140		9.64		9.63		33.429	25.790	222.8	0.482	4.28	187.0	66.6	16.7	1.46	17.9	0.03	0.07	0.03	0.04	141	09
150	ISL	9.49	D	9.47		33.551	D 25.911	211.5	0.506	3.92	D170.5	D 60.7	19.6	1.60	19.9	0.03	0.06	0.02	0.04	151	
170		9.28		9.26		33.768	26.115	192.6	0.544	3.02	131.9	46.7	25.5	1.88	23.9	0.02	0.04	0.01	0.03	171	08
199		8.86		8.83		33.897	26.284	177.0	0.597	2.70	118.0	41.4	30.3	2.01	26.5	0.03	0.04	0.00	0.02	201	07
200	ISL	8.83	D	8.81		33.902	D 26.292	176.2	0.602	2.72	D118.4	D 41.6	30.5	2.01	26.6	0.03	0.04			202	
231		8.28		8.26		33.987	26.443	162.3	0.652	2.44	106.3	36.8	36.5	2.14	28.8	0.02	0.05			233	06
250	ISL	8.05	D	8.03		34.029	D 26.511	156.1	0.686	2.10	D 91.3	D 31.6	39.7	2.27	29.9	0.02	0.05			252	
270		7.97		7.94		34.073	26.559	151.9	0.713	1.82	79.3	27.3	43.0	2.40	31.1	0.02	0.05			272	05
300	ISL	7.43	D	7.40		34.068	D 26.633	145.1	0.762	1.59	D 69.2	D 23.6	48.1	2.52	33.0	0.02	0.05			302	
322		7.22		7.19		34.076	26.670	141.9	0.789	1.39	60.8	20.6	51.8	2.60	34.4	0.03	0.05			325	04
379		6.78		6.74		34.150	26.789	131.1	0.867	0.82	36.0	12.1	61.6	2.85	36.9	0.03	0.03			382	03
400	ISL	6.53	D	6.49		34.157	D 26.828	127.6	0.899	0.76	D 32.8	D 11.0	65.2	2.90	37.7	0.02	0.06			403	
442		5.97		5.93		34.148	26.893	121.5	0.946	0.65	28.5	9.4	72.5	2.99	39.3	0.02	0.12			446	02
500	ISL	5.70	D	5.66		34.209	D 26.975	114.3	1.021	0.47	D 20.5	D 6.7	80.0	3.13	40.5	0.02	0.14			504	
515		5.64		5.59		34.231	27.001	112.0	1.031	0.37	16.3	5.3	81.9	3.16	40.8	0.02	0.15			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 1411 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	123 59.9 W	12/11/2014	0011	UTC	4323 m	340 08 kn	300 03 07	1	1013.0 mb	19.6 C	16.9 C	31 m	6/8	SC	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		19.37		19.37		33.036	23.427	444.7	0.000	5.38	234.9	101.7	1.4	0.35	0.2	0.01	0.05	0.11	0.02	0	
2		19.37		19.37		33.036	23.427	444.8	0.009	5.38	234.9	101.7	1.4	0.35	0.2	0.01	0.05	0.11	0.02	2	22
10		18.89		18.89		33.035	23.549	433.5	0.044	5.41	236.4	101.4	1.4	0.35	0.1	0.01	0.12	0.12	0.03	10	20
10		18.89		18.89		33.036	23.550	433.4	0.044											10	21
20	ISL	18.86	D	18.86		33.033	D 23.556	433.2	0.066	5.39	D235.3	D101.0	1.4	0.34	0.0	0.01	0.07	0.13	0.03	20	
25		18.86		18.85		33.034	23.559	433.2	0.109	5.40	235.9	101.2	1.4	0.34	0.0	0.02	0.05	0.14	0.03	25	19
30	ISL	18.85	D	18.84		33.032	D 23.559	433.3	0.110	5.39	D235.4	D101.0	1.4	0.34	0.0	0.01	0.05	0.14	0.03	30	
40		18.84		18.84		33.034	23.563	433.3	0.174	5.39	235.3	100.8	1.4	0.33	0.0	0.01	0.04	0.16	0.04	40	18
50		18.74		18.73		33.068	23.617	428.6	0.217	5.41	236.4	101.1	1.4	0.34	0.0	0.02	0.08	0.23	0.08	50	17
62		17.17		17.16		33.021	23.961	396.0	0.267	5.76	251.5	104.4	2.0	0.33	0.1	0.02	0.17	0.22	0.10	62	16
74		15.76		15.75		33.059	24.315	362.6	0.312	5.96	260.3	105.1	2.3	0.36	0.1	0.01	0.09	0.22	0.12	75	14
75	ISL	15.56	D	15.54		33.077	D 24.374	356.9	0.296	5.96	D259.8	D104.7	2.3	0.36	0.1	0.01	0.09	0.22	0.12	76	
75		15.56		15.54		33.060	24.361	358.2	0.314											76	15
88		14.36		14.34		33.146	24.687	327.4	0.360	5.86	256.2	100.6	2.7	0.37	0.1	0.02	0.07	0.19	0.13	89	13
100		13.08		13.06		33.124	24.931	304.3	0.398	5.70	248.8	95.1	3.7	0.50	1.2	0.17	0.08	0.18	0.16	101	12
112		11.99		11.97		33.135	25.150	283.6	0.433	5.43	237.3	88.7	5.3	0.71	5.0	0.20	0.05	0.16	0.17	113	11
125		10.88		10.86		33.211	25.411	258.8	0.469	5.05	220.7	80.6	8.8	1.00	10.3	0.03	0.06	0.09	0.13	126	10
140		10.23		10.22		33.362	25.639	237.3	0.506	4.60	201.0	72.4	12.9	1.24	14.4	0.03	0.06	0.05	0.07	141	09
150	ISL	9.71	D	9.69		33.494	D 25.831	219.2	0.487	4.31	D187.5	D 67.1	15.3	1.35	16.3	0.02	0.05	0.03	0.05	151	
171		9.36		9.34		33.626	25.990	204.4	0.573	3.92	171.2	60.6	20.3	1.57	20.3	0.01	0.03	0.01	0.02	172	08
200		8.88		8.86		33.825	26.224	182.7	0.629	3.48	151.7	53.2	26.0	1.76	23.5	0.02	0.07	0.00	0.01	202	07
230		8.39		8.37		33.987	26.427	163.9	0.681	2.55	111.3	38.7	34.6	2.09	27.8	0.01	0.04			232	06
250	ISL	8.21	D	8.18		34.031	D 26.490	158.2	0.673	2.24	D 97.4	D 33.8	38.3	2.21	29.2	0.01	0.04			252	
269		7.92		7.89		34.054	26.551	152.6	0.743	1.97	85.8	29.5	41.9	2.33	30.6	0.01	0.04			271	05
300	ISL	7.28	D	7.25		34.028	D 26.622	146.0	0.749	1.95	D 84.8	D 28.8	48.7	2.48	32.8	0.02	0.00			302	
320		6.98		6.95		34.058	26.688	139.9	0.818	1.61	70.4	23.7	53.1	2.57	34.3	0.02	0.00			323	04
380		6.53		6.49		34.134	26.809	129.1	0.899	0.99	43.4	14.5	63.2	2.81	36.9	0.01	0.03			383	03
400	ISL	6.44	D	6.41		34.135	D 26.821	128.1	0.885	0.94	D 41.1	D 13.7	65.2	2.87	37.4	0.02	0.03			403	
440		6.29		6.25		34.189	26.885	122.7	0.975	0.60	26.2	8.7	69.3	2.98	38.5	0.02	0.04			444	02
500	ISL	6.01	D	5.97		34.237	D 26.960	116.2	1.008	0.43	D 18.8	D 6.2	75.7	3.10	39.7	0.01	0.10			504	
516		5.99		5.94		34.258	26.980	114.5	1.065	0.35	15.3	5.0	77.4	3.13	40.0	0.01	0.11			520	01

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

A) INCUBATION LIGHT INTENSITIES WERE PERCENT RESPECTIVELY.

RV NEW HORIZON CALCOFI CRUISE 1411 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 28.1 W	09/11/2014	0116	UTC	20 m	240 04 kn	220 01 06		1013.0 mb	20.2 C	19.4 C				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		19.14		19.14		33.498	23.839	405.4	0.000	5.62	245.2	106.0	2.5	0.31	0.2	0.01	0.06	0.34	0.11	0	
2		19.14		19.14		33.498	23.839	405.5	0.008	5.62	245.2	106.0	2.5	0.31	0.2	0.01	0.06	0.34	0.11	2	04
5		18.64		18.64		33.481	23.951	394.9	0.020	5.72	249.8	107.0	2.8	0.34	0.1	0.01	0.10	0.38	0.17	5	03
10		18.19		18.19		33.452	24.041	386.5	0.040	5.64	246.3	104.6	3.2	0.35	0.1	0.03	0.14	0.69	0.31	10	02
17		17.49		17.49		33.431	24.196	372.0	0.066	5.62	245.2	102.7	4.0	0.43	0.4	0.10	0.20	0.76	0.42	17	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 1411 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	08/11/2014	2032	UTC	60 m	310 04 kn	280 01 07	0	1014.8 mb	20.1 C	18.1 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		19.60		19.60		33.576	23.781	411.0	0.000	5.44	237.7	103.7	2.2	0.30	0.1	0.02	0.29	0.20	0.04	0	
2	A	19.60		19.60		33.576	23.781	411.0	0.008	5.44	237.7	103.7	2.2	0.30	0.1	0.02	0.29	0.20	0.04	2	09
10	ISL	18.89	D	18.89		33.524	D 23.924	397.7	0.041	5.58	D243.6	D105.0	2.7	0.31	0.1	0.02	0.20	0.30	0.11	10	
13	A	18.77		18.76		33.523	23.954	395.0	0.052	5.63	245.8	105.5	2.9	0.32	0.1	0.02	0.16	0.34	0.13	13	07
13		18.77		18.76		33.524	23.955	394.9	0.052											13	08
18	A	18.22		18.21		33.515	24.084	382.7	0.072	5.68	247.9	105.4	3.1	0.34	0.1	0.02	0.35	0.73	0.34	18	06
20	ISL	17.03	D	17.03		33.377	D 24.264	365.6	0.070	5.82	D253.7	D105.5	3.3	0.37	0.2	0.06	0.33	0.81	0.39	20	
26		16.17		16.16		33.354	24.446	348.4	0.101	5.76	251.4	102.5	4.2	0.44	0.5	0.18	0.28	1.04	0.56	26	05
30	ISL	15.35	D	15.34		33.386	D 24.654	328.7	0.105	5.48	D238.8	D 96.0	5.5	0.57	2.0	0.40	0.26	0.81	0.52	30	
34	A	14.89		14.89		33.391	24.758	318.9	0.127	5.08	221.6	88.1	6.9	0.69	3.4	0.62	0.24	0.58	0.47	34	04
44		13.66		13.66		33.414	25.035	292.8	0.158	4.57	199.4	77.4	9.3	0.97	7.8	0.65	0.17	0.25	0.28	44	03
50	ISL	13.51	D	13.50		33.415	D 25.067	290.0	0.167	4.54	D197.6	D 76.6	10.0	1.03	8.6	0.71	0.52	0.20	0.25	50	
55		13.24		13.23		33.419	25.123	284.7	0.190	4.39	191.6	73.7	10.5	1.08	9.3	0.76	0.81	0.16	0.22	55	02
58	A	13.22		13.22		33.421	25.129	284.2	0.198	4.39	191.5	73.6	10.6	1.07	9.4	0.75	0.86	0.16	0.22	58	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 54.7 N	117 23.7 W	09/11/2014	0403	UTC	622 m	260 04 kn			1015.0 mb	19.2 C	18.8 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		20.61		20.61	33.633		23.560	432.1	0.000	5.28		230.4		102.5		1.7	0.29	0.2	0.01	0.19	0.16	0.03	0	
2		20.61		20.61	33.633		23.560	432.1	0.009	5.28		230.4		102.4		1.7	0.29	0.2	0.01	0.19	0.16	0.03	2	20
9		20.38		20.38	33.639		23.626	426.1	0.039	5.29		231.0		102.3		1.7	0.28	0.1	0.00	0.04	0.15	0.04	9	19
10	ISL	20.39	D	20.39	33.635	D	23.621	426.7	0.043	5.31	D	231.8	D	102.7		1.7	0.28	0.1	0.00	0.04	0.15	0.04	10	
19		18.82		18.81	33.559		23.969	393.7	0.080	5.46		238.5		102.5		2.1	0.30	0.1	0.00	0.04	0.19	0.05	19	18
20	ISL	19.10	D	19.10	33.533	D	23.924	398.1	0.084	5.48	D	239.0	D	103.4		2.2	0.31	0.1	0.00	0.04	0.19	0.05	20	
29		16.30		16.29	33.303		24.378	355.0	0.118	6.08		265.6		108.6		2.8	0.36	0.1	0.00	0.04	0.24	0.07	29	17
30	ISL	15.61	D	15.61	33.308	D	24.537	339.9	0.122	6.04	D	263.3	D	106.4		2.9	0.37	0.1	0.01	0.05	0.29	0.10	30	
39		13.96		13.95	33.266		24.859	309.4	0.150	5.83		254.5		99.2		4.1	0.50	0.8	0.12	0.12	0.76	0.43	39	16
49		13.68		13.68	33.286		24.931	302.8	0.181	5.70		249.0		96.5		4.5	0.55	1.8	0.19	0.09	0.68	0.43	49	15
50	ISL	13.32	D	13.31	33.328	D	25.037	292.7	0.186	5.72	D	249.0	D	96.1		4.8	0.58	2.3	0.18	0.10	0.64	0.42	50	
60		12.50		12.49	33.369		25.230	274.6	0.212	4.97		217.2		82.2		7.5	0.86	7.4	0.10	0.20	0.31	0.30	60	14
70		11.68		11.67	33.370		25.387	259.8	0.239	4.74		207.1		77.0		9.2	1.01	9.9	0.07	0.09	0.22	0.22	71	13
75	ISL	11.63	D	11.62	33.364	D	25.392	259.5	0.254	4.76	D	207.2	D	77.2		9.8	1.06	10.8	0.06	0.10	0.19	0.20	76	
84		11.19		11.18	33.392		25.493	250.0	0.275	4.56		199.0		73.3		11.0	1.14	12.3	0.04	0.12	0.14	0.17	85	12
99		10.82		10.80	33.480		25.629	237.4	0.312	4.06		177.3		64.8		14.9	1.40	16.2	0.02	0.05	0.10	0.15	100	11
100	ISL	10.79	D	10.78	33.479	D	25.633	237.1	0.317	4.08	D	177.8	D	65.1		15.1	1.41	16.3	0.02	0.05	0.09	0.14	101	
119		10.41		10.40	33.612		25.803	221.3	0.358	3.58		156.2		56.6		18.8	1.61	19.3	0.02	0.05	0.05	0.07	120	10
125	ISL	10.28	D	10.27	33.675	D	25.875	214.6	0.374	3.45	D	150.2	D	54.5		20.2	1.68	20.2	0.02	0.05	0.04	0.07	126	
140		10.08		10.06	33.779		25.991	203.9	0.402	2.94		128.5		46.3		23.7	1.86	22.6	0.02	0.06	0.01	0.05	141	09
150	ISL	9.80	D	9.78	33.830	D	26.079	195.7	0.425	2.88	D	125.3	D	45.0		25.5	1.94	23.7	0.02	0.09	0.01	0.05	151	
170		9.66		9.64	33.943		26.190	185.6	0.460	2.43		106.1		37.9		29.1	2.10	25.9	0.02	0.14	0.00	0.05	171	08
200		9.34		9.32	33.999		26.288	176.9	0.515	2.30		100.5		35.6		31.6	2.17	27.1	0.02	0.10	0.00	0.04	202	07
230		9.05		9.03	34.161		26.461	161.0	0.565	1.63		71.0		25.1		38.5	2.45	29.9	0.02	0.08			232	06
250	ISL	8.96	D	8.93	34.208	D	26.513	156.5	0.602	1.36	D	59.3	D	21.0		40.8	2.54	30.6	0.02	0.11			252	
270		8.82		8.79	34.226		26.550	153.4	0.628	1.17		51.2		18.0		43.1	2.63	31.4	0.02	0.14			272	05
300	ISL	8.63	D	8.60	34.249	D	26.599	149.2	0.679	1.04	D	45.4	D	15.9		45.6	2.68	32.1	0.02	0.10			302	
320		8.44		8.41	34.238		26.619	147.6	0.703	1.01		44.2		15.4		47.3	2.72	32.7	0.02	0.08			323	04
379		7.99		7.95	34.267		26.712	139.6	0.788	0.74		32.1		11.1		53.2	2.88	34.5	0.01	0.09			382	03
400	ISL	7.73	D	7.69	34.269	D	26.751	136.1	0.823	0.70	D	30.6	D	10.5		56.6	2.95	35.3	0.02	0.10			403	
440		7.28		7.24	34.283		26.827	129.2	0.870	0.48		21.1		7.2		63.1	3.09	37.0	0.02	0.12			444	02
500	ISL	6.63	D	6.58	34.308	D	26.936	119.2	0.952	0.36	D	15.4	D	5.2		73.3	3.22	39.2	0.02	0.09			504	
513		6.48		6.44	34.316		26.962	116.8	0.960	0.27		11.9		4.0		75.6	3.25	39.7	0.02	0.08			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 50.7 N	117 31.9 W	09/11/2014	0657	UTC	851 m	320 03 kn			1015.0 mb	19.2 C	18.3 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		20.50		20.50	33.634		23.589	429.3	0.000	5.34		233.0		103.4		1.7	0.33	0.1	0.02	0.22	0.15	0.04	0	
2		20.50		20.50	33.634		23.589	429.3	0.009	5.34		233.0		103.4		1.7	0.33	0.1	0.02	0.22	0.15	0.04	2	20
10		20.41		20.41	33.639		23.618	426.9	0.043	5.35		233.6		103.5		1.8	0.31	0.1	0.02	0.31	0.14	0.03	10	19
20		17.11		17.10	33.434		24.290	363.1	0.082	5.92		258.5		107.5		2.4	0.34	0.1	0.02	0.10	0.24	0.06	20	18
29		15.39		15.39	33.285		24.567	337.0	0.114	6.10		266.3		106.9		3.1	0.41	0.1	0.04	0.09	0.48	0.17	29	17
30	ISL	14.85	D	14.84	33.248	D	24.657	328.4	0.118	6.10	D	266.0	D	105.8		3.2	0.43	0.4	0.04	0.10	0.49	0.18	30	
40		13.47		13.46	33.181	D	24.894	306.1	0.150	5.79	D	252.2	D	97.5									40	16
50		12.37		12.36	33.136		25.075	289.1	0.179	5.49		239.7		90.4		5.6	0.78	5.9	0.15	0.35	0.54	0.42	50	15
59		12.37		12.36	33.322		25.219	275.6	0.204	5.14		224.3		84.6		7.2	0.85	7.3	0.13	0.09	0.38	0.37	59	14
69		11.29		11.28	33.373		25.460	252.8	0.230	4.77		208.4		76.9		9.4	1.03	10.5	0.06	0.09	0.23	0.29	70	13
75	ISL	11.07	D	11.06	33.410	D	25.530	246.3	0.247	4.52	D	197.0	D	72.5		11.5	1.16	12.6	0.05	0.09	0.17	0.23	76	
85		10.73		10.72	33.497		25.657	234.4	0.269	4.13		180.3		65.8		14.9	1.37	16.0	0.04	0.09	0.09	0.13	86	12
99		10.40		10.39	33.569		25.771	223.9	0.302	3.83		167.2		60.6		17.5	1.52	18.2	0.04	0.19	0.05	0.08	100	11
100	ISL	10.37	D	10.35	33.583	D	25.787	222.3	0.306	3.77	D	164.1	D	59.6		17.8	1.53	18.3	0.03	0.19	0.05	0.08	101	
121		9.93		9.92	33.734		25.980	204.4	0.349	3.17	D	137.9	D	49.7		22.9	1.78	22.0	0.03	0.27	0.01	0.04	122	10
125	ISL	9.90	D	9.89	33.781	D	26.022	200.6	0.359	3.08	D	133.9	D	48.2		23.7	1.82	22.5	0.03	0.27	0.01	0.04	126	
139		9.83		9.82	33.860		26.096	193.9	0.384	2.78		121.3		43.5		26.4	1.97	24.2	0.03	0.26	0.00	0.04	140	09
150	ISL	9.90	D	9.88	33.934	D	26.143	189.7	0.409	2.44	D	106.2	D	38.3		28.0	2.04	25.0	0.03	0.31	0.00	0.04	151	
169		9.71		9.69	34.025	D	26.247	180.2	0.444	2.16	D	94.0	D	33.7									170	08
200		9.45		9.42	34.126		26.370	169.2	0.495	1.78		77.9		27.7		35.4	2.37	28.4	0.03	0.54	0.00	0.03	202	07
229		9.13		9.11	34.148		26.438	163.2	0.543	1.69		73.8		26.1		37.7	2.42	29.3	0.03	0.43			231	06
250	ISL	8.97	D	8.95	34.200	D	26.505	157.3	0.581	1.36	D	59.1	D	20.9		40.6	2.52	30.3	0.03	0.29			252	
269		8.81		8.78	34.215		26.543	154.0	0.606	1.21		52.7		18.5		43.2	2.61	31.3	0.03	0.19			271	05
300	ISL	8.46	D	8.42	34.236	D	26.615	147.6	0.658	1.07	D	46.3	D	16.2		47.1	2.71	32.4	0.03	0.20			302	
320		8.25		8.22	34.250		26.657	143.8	0.682	0.90		39.3		13.6		49.6	2.78	33.2	0.03	0.20			323	04
379		7.56		7.53	34.274		26.778	133.0	0.764	0.59		25.8		8.8		58.6	2.97	35.8	0.02	0.22			382	03
400	ISL	7.38	D	7.34	34.278	D	26.808	130.4	0.798	0.54	D	23.6	D	8.0		61.3	3.01	36.5	0.02	0.23			403	
439		7.04		6.99	34.289		26.865	125.3	0.841	0.45		19.8		6.7		66.2	3.09	37.7	0.02	0.26			443	02
500	ISL	6.70	D	6.65	34.306	D	26.925	120.3	0.924	0.34	D	14.9	D	5.0		72.6	3.19	39.0	0.02	0.18			504	
514		6.57		6.52	34.311		26.948	118.3	0.933	0.28		12.4		4.1		74.1	3.21	39.3	0.02	0.16			518	01

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

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 93.3 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 40.8 N	117 52.4 W	09/11/2014	1100	UTC	617 m	010 05 kn			1013.0 mb	18.9 C	18.6 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	20.25	20.25	33.606	23.636	424.8	0.000	5.34	233.3	103.1	1.6	0.28	0.1	0.01	0.11	0.17	0.04	0	
2	20.25	20.25	33.606	23.636	424.9	0.009	5.34	233.3	103.1	1.6	0.28	0.1	0.01	0.11	0.17	0.04	2	20
10	20.23	20.23	33.610	23.644	424.4	0.043	5.35	233.4	103.1	1.6	0.26	0.1	0.01	0.10	0.17	0.04	10	19
20	19.75	19.75	33.550	23.724	417.2	0.085	5.56	242.9	106.3	1.7	0.27	0.1	0.01	0.05	0.22	0.06	20	18
30	15.02	15.01	33.305	24.664	327.7	0.122	6.29	274.9	109.5	2.7	0.39	0.1	0.01	0.09	0.34	0.11	30	17
40	12.85	12.84	33.256	25.074	288.9	0.153	5.60	244.8	93.3	5.5	0.69	4.2	0.20	0.22	0.91	0.46	40	16
50	11.74	11.73	33.330	25.344	263.4	0.180	4.77	208.4	77.6	9.4	1.06	10.7	0.09	0.21	0.32	0.26	50	15
59	11.48	11.48	33.353	25.409	257.4	0.204	4.62	201.8	74.7	10.4	1.13	11.9	0.07	0.08	0.25	0.24	59	14
70	11.27	11.26	33.396	25.482	250.7	0.232	4.39	191.8	70.7	12.0	1.24	13.8	0.05	0.15	0.18	0.18	71	13
75 ISL	10.87 D	10.86	33.462 D	25.604	239.2	0.246	4.44	D193.3 D	70.9	13.5	1.33	15.1	0.04	0.15	0.14	0.15	76	
84	10.62	10.61	33.510	25.686	231.6	0.265	3.89	169.9	61.8	16.2	1.49	17.6	0.03	0.14	0.07	0.10	85	12
100	10.29	10.28	33.603	25.816	219.6	0.301	3.58	156.3	56.5						0.04	0.07	101	11
120	9.80	9.79	33.712	25.984	204.0	0.343	3.32	144.9	51.9						0.01	0.04	121	10
125 ISL	9.69 D	9.68	33.795 D	26.068	196.2	0.356	3.23	D140.4 D	50.3						0.01	0.04	126	
140	9.62	9.60	33.899 D	26.161	187.6	0.385	2.73	119.1	42.5	27.2	2.01	24.7	0.02	0.17	0.00	0.05	141	09
150 ISL	9.57 D	9.55	33.964 D	26.221	182.1	0.404	2.42	D105.3 D	37.7	29.1	2.09	25.6	0.02	0.24	0.00	0.04	151	
170	9.47	9.45	34.041	26.298	175.2	0.436	2.06	90.0	32.0	33.0	2.26	27.5	0.02	0.39	0.00	0.03	171	08
200	9.34	9.31	34.086	26.356	170.5	0.488	1.89	82.6	29.3	34.8	2.33	28.2	0.02	0.15	0.00	0.03	202	07
229	9.25	9.22	34.127	26.403	166.6	0.537	1.69	74.0	26.2	36.8	2.41	29.0	0.02	0.15			231	06
250 ISL	9.18 D	9.15	34.172 D	26.450	162.6	0.576	1.56	D 67.7 D	24.0	39.4	2.50	29.9	0.02	0.15			252	
269	8.93	8.90	34.207	26.518	156.4	0.602	1.29	56.1	19.8	41.8	2.58	30.8	0.02	0.15			271	05
300 ISL	8.65 D	8.61	34.243 D	26.591	149.9	0.654	1.07	D 46.5 D	16.3	45.8	2.70	32.0	0.02	0.16			302	
320	8.45	8.42	34.265	26.639	145.7	0.679	0.87	37.9	13.2	48.5	2.78	32.8	0.02	0.16			323	04
379	7.65	7.61	34.275	26.767	134.1	0.762	0.60	26.1	8.9	57.8	2.97	35.6	0.02	0.14			382	03
400 ISL	7.42 D	7.38	34.284 D	26.808	130.4	0.795	0.56	D 24.4 D	8.4	60.3	3.01	36.2	0.02	0.12			403	
440	7.14	7.10	34.294	26.856	126.4	0.841	0.43	18.6	6.3	65.1	3.09	37.4	0.02	0.07			444	02
500 ISL	6.83 D	6.79	34.304 D	26.906	122.3	0.923	0.40	D 17.2 D	5.8	70.3	3.16	38.7	0.02	0.09			504	
515	6.71	6.66	34.306	26.925	120.6	0.934	0.33	14.3	4.8	71.6	3.18	39.0	0.02	0.09			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 1411 STATION 93.3 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 30.9 N	118 12.7 W	09/11/2014	1501	UTC	1652 m	350 05 kn	310 02 05	2	1014.0 mb	17.1 C	17.0 C	26 m	8/8	ST	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	20.32	20.32	33.634	23.638	424.6	0.000	5.29	230.9	102.2	1.6	0.27	0.1	0.01	0.01	0.18	0.04	0	
2	20.32	20.32	33.634	23.638	424.6	0.009	5.29	230.9	102.2	1.6	0.27	0.1	0.01	0.01	0.18	0.04	2	21
10	20.29	20.29	33.625	23.638	425.0	0.043	5.28	230.7	102.0	1.6	0.27	0.1	0.01	0.04	0.18	0.04	10	19
10	20.29	20.29	33.628	23.641	424.8	0.042											10	20
20	19.16	19.16	33.514	23.848	405.4	0.084	5.62	245.2	106.1	1.9	0.30	0.1	0.01	0.02	0.23	0.06	20	18
30 ISL	16.36 D	16.35	33.320 D	24.377	355.2	0.102	6.06	D264.3 D	108.4	2.6	0.35	0.0	0.01	0.01	0.30	0.10	30	
31	16.26	16.26	33.322	24.401	353.0	0.126	6.10	266.3	108.8	2.7	0.36	0.0	0.01	0.01	0.30	0.11	31	17
40	15.31	15.31	33.293	24.591	335.1	0.157	6.09	266.0	106.6	3.1	0.39	0.1	0.02	0.03	0.50	0.20	40	16
50 ISL	14.46 D	14.45	33.339 D	24.811	314.4	0.169	5.65	D246.2 D	97.2	4.4	0.51	1.6	0.23	0.04	0.83	0.54	50	
51	14.46	14.45	33.350	24.820	313.6	0.192	5.62	245.2	96.7	4.6	0.52	1.7	0.25	0.04	0.87	0.58	51	15
60	13.48	13.47	33.323	25.002	296.4	0.220	5.39	235.5	91.0	5.6	0.66	3.8	0.22	0.03	0.67	0.48	60	14
70	12.22	12.21	33.328 D	25.253	272.7	0.229	5.27	230.2	86.6	6.5	0.79	6.0	0.25	0.00	0.46	0.41	71	13
75 ISL	11.95 D	11.94	33.352 D	25.322	266.2	0.242	4.84	D210.8 D	79.1	7.9	0.91	8.1	0.18	0.00	0.36	0.35	76	
85	11.47	11.46	33.377	25.431	256.0	0.288	4.54	198.4	73.5	10.8	1.15	12.3	0.04	0.00	0.15	0.23	86	12
100	10.89	10.88	33.446	25.590	241.2	0.325	4.17	182.2	66.7	13.9	1.35	15.5	0.03	0.02	0.08	0.13	101	11
120	10.25	10.24	33.659 D	25.867	215.3	0.352	3.52	153.8	55.6	19.8	1.65	20.0	0.02	0.00	0.03	0.06	121	10
125 ISL	10.24 D	10.23	33.677 D	25.883	213.8	0.363	3.35	D145.6 D	52.8	20.7	1.69	20.6	0.02	0.00	0.02	0.06	126	
140	9.92	9.90	33.766	26.007	202.3	0.413	3.12	136.1	48.8	23.5	1.82	22.4	0.02	0.01	0.01	0.05	141	09
150 ISL	9.71 D	9.69	33.812 D	26.079	195.6	0.414	3.09	D134.7 D	48.3	25.2	1.90	23.4	0.02	0.01	0.01	0.05	151	
170	9.66	9.64	33.942	26.189	185.6	0.471	2.55	111.4	39.8	28.7	2.06	25.3	0.02	0.01	0.00	0.03	171	08
200	9.31	9.29	34.075	26.351	170.9	0.524	2.06	90.0	32.0	34.2	2.27	27.8	0.02	0.00	0.00	0.03	202	07
230	8.94	8.92	34.151	26.471	160.0	0.574	1.67	73.0	25.7	38.6	2.43	29.5	0.02	0.00			232	06
250 ISL	8.76 D	8.73	34.202 D	26.541	153.8	0.588	1.69	D 73.6 D	25.9	41.7	2.52	30.6	0.02	0.00			252	
269	8.52	8.49	34.204	26.579	150.4	0.634	1.31	57.3	20.0	44.7	2.61	31.6	0.02	0.00			271	05
300 ISL	8.31 D	8.27	34.232 D	26.635	145.6	0.664	1.04	D 45.3 D	15.8	48.4	2.71	32.7	0.02	0.00			302	
320	8.12	8.09	34.249 D	26.676	142.0	0.693	0.92	D 39.9 D	13.9								323	04
380	7.60	7.56	34.284	26.782	132.7	0.791	0.59	25.5	8.7	58.0	2.96	35.6	0.01	0.01			383	03
400 ISL	7.39 D	7.35	34.285 D	26.813	129.9	0.803	0.55	D 23.7 D	8.1	60.7	3.01	36.3	0.01	0.02			403	
441	6.94	6.90	34.279	26.870	124.8	0.870	0.45	19.6	6.6	66.3	3.10	37.7	0.01	0.03			445	02
500 ISL	6.60 D	6.55	34.316 D	26.947	118.1	0.928	0.34	D 15.0 D	5.0	73.5	3.20	39.2	0.01	0.01			504	
515	6.45	6.41	34.321	26.970	116.0	0.959	0.27	11.7	3.9	75.3	3.23	39.6	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 1411 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 21.0 N	118 33.3 W	09/11/2014	1902 UTC	1328 m	320 04 kn	290 03 05	2	1013.0 mb	16.9 C	17.2 C	35 m	8/8	ST	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		19.70		19.70		33.542		23.730	415.8	0.000	5.49	239.6		104.7		1.5	0.31	0.1	0.00	0.12	0.15	0.03	0	
2		19.70		19.70		33.542		23.730	415.9	0.008	5.49	239.6		104.7		1.5	0.31	0.1	0.00	0.12	0.15	0.03	2	24
10	A	19.64		19.64		33.536		23.740	415.2	0.042	5.36	234.2		102.3		1.5	0.31	0.1	0.00	0.10	0.15	0.04	10	22
10		19.64		19.64		33.533		23.738	415.5	0.042													10	23
18		19.64		19.64		33.536		23.742	415.4	0.075	5.31	231.8		101.2		1.5	0.31	0.1	0.00	0.25	0.15	0.03	18	21
20	ISL	19.65	D	19.64		33.535	D	23.740	415.7	0.067	5.33	D232.6	D	101.7		1.5	0.32	0.1	0.00	0.22	0.15	0.04	20	
28	A	19.64		19.63		33.544		23.749	415.2	0.116	5.32	232.0		101.3		1.5	0.34	0.1	0.00	0.10	0.17	0.04	28	20
30	ISL	19.64	D	19.63		33.536	D	23.743	415.8	0.109	5.33	D232.4	D	101.5		1.5	0.34	0.1	0.00	0.10	0.18	0.04	30	
41	A	19.62		19.61		33.537		23.750	415.6	0.170	5.34	232.8		101.7		1.5	0.31	0.1	0.00	0.09	0.19	0.05	41	19
50	ISL	19.33	D	19.32		33.505	D	23.800	411.2	0.193	5.39	D235.1	D	102.1		1.5	0.33	0.1	0.00	0.11	0.27	0.10	50	
52	A	18.72		18.71		33.449		23.913	400.4	0.216	5.58	243.5		104.4		1.5	0.33	0.1	0.00	0.11	0.29	0.11	52	18
66		15.57		15.56		33.065		24.361	357.9	0.270													67	17
67		15.09		15.08		33.065		24.465	347.9	0.272	6.02	263.1		104.8		2.3	0.39	0.1	0.00	0.09	0.32	0.18	68	16
75	ISL	13.95	D	13.94		33.163	D	24.782	317.8	0.257	5.75	D250.5	D	97.8		3.6	0.56	2.3	0.13	0.14	0.34	0.26	76	
81		13.04		13.03		33.154		24.961	300.9	0.317	5.60	244.4		93.4		4.6	0.68	3.9	0.22	0.17	0.35	0.32	82	15
96	A	11.31		11.30		33.235		25.351	263.9	0.360	5.01	218.7		80.6		8.7	1.04	10.2	0.03	0.04	0.16	0.23	97	14
100	ISL	11.03	D	11.02		33.283	D	25.438	255.7	0.329	4.81	D209.6	D	77.0		10.1	1.13	11.8	0.02	0.00	0.14	0.19	101	
105		10.68		10.67		33.316		25.525	247.4	0.383	4.65	203.1		73.9		11.9	1.25	13.8	0.02	0.00	0.11	0.15	106	13
114		10.17		10.16		33.434		25.706	230.3	0.404	4.25	185.5		66.8		15.9	1.47	17.4	0.01	0.02	0.05	0.09	115	12
123	A	10.02		10.01		33.473		25.761	225.2	0.425	4.14	180.6		64.9		17.1	1.52	18.2	0.01	0.03	0.04	0.07	124	11
125	ISL	10.00	D	9.99		33.484	D	25.773	224.2	0.389	4.16	D180.9	D	65.1		17.5	1.53	18.5	0.01	0.03	0.04	0.07	126	
133		9.73		9.71		33.546		25.868	215.3	0.447	3.97	173.5		61.9		19.3	1.59	19.6	0.01	0.02	0.03	0.06	134	10
145		9.27		9.25		33.732		26.088	194.5	0.472	3.41	148.9		52.7		25.2	1.85	23.5	0.01	0.10	0.01	0.03	146	09
150	ISL	9.21	D	9.20		33.739	D	26.102	193.2	0.441	3.42	D148.6	D	52.7		25.6	1.86	23.7	0.01	0.10	0.01	0.03	151	
170		9.10		9.08		33.786		26.159	188.3	0.519	3.24	141.3		49.8		27.1	1.91	24.6	0.01	0.09	0.00	0.02	171	08
199		8.68		8.66		33.940		26.345	171.1	0.572	2.65	115.5		40.4		33.4	2.13	27.7	0.00	0.04	0.00	0.02	201	07
200	ISL	8.69	D	8.67		33.944	D	26.347	171.0	0.534	2.65	D115.4	D	40.5		33.7	2.14	27.7	0.00	0.04			202	
230		8.18		8.16		34.015		26.481	158.6	0.623	2.31	100.7		34.8		39.8	2.31	29.9	0.00	0.09			232	06
250	ISL	8.11	D	8.09		34.022	D	26.497	157.5	0.615	2.29	D 99.8	D	34.6		42.6	2.39	30.9	0.00	0.07			252	
270		7.78		7.75		34.050		26.568	150.9	0.685	1.99	86.7		29.7		45.4	2.46	31.8	0.00	0.05			272	05
300	ISL	7.59	D	7.56		34.096	D	26.632	145.3	0.691	1.63	D 71.1	D	24.3		49.9	2.61	33.4	0.00	0.04			302	
320		7.42		7.39		34.115		26.672	141.8	0.758	1.37	60.0		20.4		52.9	2.71	34.5	0.00	0.03			323	04
381		6.81		6.77		34.174		26.804	129.8	0.841	0.84	36.5		12.2		64.3	2.99	37.6	0.00	0.07			384	03
400	ISL	6.79	D	6.75		34.189	D	26.818	128.8	0.828	0.76	D 33.1	D	11.1		66.2	3.03	38.0	0.00	0.06			403	
438		6.56		6.52		34.218		26.874	124.0	0.914	0.62	27.0		9.0		70.0	3.10	38.7	0.00	0.04			442	02
500	ISL	6.31	D	6.27		34.277	D	26.953	117.2	0.952	0.37	D 16.1	D	5.4		76.3	3.26	39.8	0.00	0.12			504	
515		6.27		6.22		34.285		26.965	116.2	1.006	0.35	15.1		5.0		77.8	3.30	40.1	0.00	0.14			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 1411 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 10.8 N	118 53.6 W	09/11/2014	2302 UTC	1465 m	290 09 kn	270 03 07	2	1010.0 mb	18.0 C	16.0 C	27 m	5/8	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		19.63		19.63		33.543		23.748	414.1	0.000	5.29	230.9		100.9		1.5	0.29	0.1	0.00	0.14	0.13	0.03	0	
2		19.63		19.63		33.543		23.748	414.2	0.008	5.29	230.9		100.9		1.5	0.29	0.1	0.00	0.14	0.13	0.03	2	20
10		19.63		19.63		33.538		23.745	414.8	0.042	5.29	231.0		100.9		1.5	0.29	0.1	0.00	0.06	0.13	0.03	10	19
20		19.58		19.58		33.534		23.756	414.1	0.083	5.29	231.0		100.8		1.5	0.29	0.1	0.00	0.05	0.15	0.04	20	18
30		19.34		19.34		33.522		23.809	409.5	0.124	5.35	233.3		101.3		1.5	0.29	0.1	0.00	0.05	0.18	0.04	30	17
40		16.99		16.98		33.253		24.180	374.3	0.163	5.81	253.4		105.0		2.2	0.36	0.1	0.00	0.18	0.32	0.15	40	16
50		15.27		15.26		33.194		24.526	341.6	0.199	5.96	260.1		104.2		2.6	0.39	0.2	0.01	0.22	0.42	0.19	50	15
60		12.87		12.86		33.279		25.088	288.1	0.231	5.67	247.6		94.5		5.2	0.67	4.3	0.11	0.12	0.36	0.18	60	14
70		11.44		11.43		33.250		25.337	264.5	0.258	4.99	218.0		80.6		9.0	1.08	11.2	0.08	0.09	0.24	0.17	71	13
75	ISL	11.36	D	11.35		33.252	D	25.354	263.0	0.273	5.02	D218.7	D	80.9		10.3	1.15	12.5	0.06	0.08	0.21	0.16	76	
85		10.60		10.59		33.348		25.564	243.2	0.297	4.56	199.1		72.4		12.8	1.29	15.0	0.03	0.06	0.13	0.14	86	12
100	ISL	10.20	D	10.18		33.450	D	25.713	229.3	0.334	4.21	D183.2	D	66.2		15.9	1.45	17.5	0.01	0.04	0.07	0.09	101	
101		10.18		10.17		33.461	D	25.724	228.3	0.337	4.18	182.6		65.8		16.1	1.46	17.6	0.01	0.04	0.06	0.09	102	11
120		9.82		9.80		33.578		25.877	214.1	0.376	3.74	163.1		58.4		20.0	1.64	20.7	0.01	0.08	0.03	0.05	121	10
125	ISL	9.77	D	9.75		33.613	D	25.913	210.8	0.390	3.66	D159.1	D	57.0		21.2	1.69	21.5	0.01	0.07	0.03	0.05	126	
140		9.25		9.23		33.715		26.078	195.3	0.418	3.32	144.8		51.2		24.7	1.84	23.8	0.01	0.04	0.01	0.03	141	09
150	ISL	9.12	D	9.11		33.785	D	26.152	188.5	0.439	3.27	D142.1	D	50.3		26.8	1.89	24.8	0.01	0.08	0.01	0.03	151	
170		8.78		8.76		33.898		26.296	175.1	0.473	2.96	129.3		45.3		30.9	2.00	26.8	0.01	0.15	0.00	0.02	171	08
200		8.52		8.50		33.964		26.389	166.9	0.524	2.67	116.7		40.7		34.7	2.12	28.1	0.01	0.06	0.00	0.02	202	07
230		8.21		8.18		34.045	D	26.501	156.8	0.577	2.08	90.7		31.4		41.1	2.36	31.1	0.01	0.07			232	06
250	ISL	8.00	D	7.98		34.084	D	26.562	151.3	0.608	1.81	D 78.6	D	27.2		44.8	2.46	32.2	0.01	0.07			252	
270		7.65		7.62		34.078	D	26.609	146.9	0.638	1.70	74.3		25.4		48.5	2.55	33.4	0.01	0.07			272	05
300	ISL	7.36	D	7.33		34.109	D	26.675	141.1	0.681	1.42	D 61.7	D	21.0		52.2	2.66	34.5	0.01	0.06			302	
321		7.28		7.25		34.126		26.700	139.0	0.707	1.25	54.5		18.5		54.7	2.73	35.3	0.01	0.05			324	04
380		6.93		6.89		34.207		26.814	129.0	0.786	0.70	30.5		10.3		64.3	3.00	38.1	0.01	0.07			383	03
400	ISL	6.92	D	6.88		34.242	D	26.843	126.6	0.816	0.61	D 26.6	D	9.0		66.3	3.04	38.5	0.01	0.07			403	
441		6.73		6.69		34.264		26.887	123.0	0.863	0.44	19.4		6.5		70.2	3.13	39.2	0.01	0.06			445	02
500	ISL	6.30	D	6.26		34.295	D	26.969	115.7	0.939	0.36	D 15.8	D	5.3		76.7	3.24	40.7	0.01	0.14			504	
515		6.21		6.17		34.295		26.980	114.8	0.950	0.31	13.5		4.5		78.4	3.27	41.1	0.01	0.16			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 1411 STATION 93.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 0.9 N	119 14.0 W	10/11/2014	0300 UTC	1584 m	270 11 kn			1011.0 mb	17.3 C	15.5 C				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		19.97		19.97		33.692	23.772	411.8	0.000	5.25		229.1		100.8		1.6	0.30		0.00	0.05	0.16	0.04	0	
2		19.97		19.97		33.692	23.772	411.9	0.008	5.25		229.1		100.8		1.6	0.30		0.00	0.05	0.16	0.04	2	21
10		19.99		19.98		33.699	23.775	411.9	0.041	5.25		229.0		100.8		1.5	0.30	0.1	0.00	0.01	0.16	0.04	10	19
10		19.99		19.98		33.692	23.770	412.4	0.042														10	20
20		19.99		19.99		33.697	23.773	412.5	0.082	5.26		229.5		101.0		1.5	0.30	0.1	0.00	0.04	0.18	0.04	20	18
30		20.02		20.02		33.710	23.777	412.6	0.124	5.25		229.1		100.8		1.5	0.30	0.1	0.00	0.09	0.22	0.04	30	17
40		17.01		17.00		33.449	D 24.327	360.4	0.143	5.54		241.9		100.4		2.1	0.33	0.1	0.00	0.09	0.40	0.13	40	16
50		14.46		14.45		33.304	24.784	316.9	0.196	5.87		256.4		101.0		4.3	0.58	2.7	0.08	0.08	0.52	0.25	50	15
60		12.91		12.90		33.280	25.082	288.7	0.227	5.44		237.5		90.6		6.3	0.82	6.6	0.16	0.09	0.48	0.35	60	14
70		11.77		11.76		33.359	25.362	262.2	0.254	4.88		212.9		79.3		10.0	1.12	11.5	0.18	0.06	0.27	0.24	71	13
75	ISL	10.98	D	10.97		33.416	D 25.550	244.3	0.248	4.59	D	199.7	D	73.4		11.8	1.23	13.3	0.13	0.05	0.22	0.21	76	
85		10.46		10.45		33.437	25.658	234.3	0.291	4.22		184.4		66.8		15.3	1.45	17.0	0.02	0.03	0.13	0.14	86	12
100		9.99		9.98		33.513	D 25.796	221.4	0.306	3.90		170.2		61.1		18.6	1.61	19.8	0.01	0.04	0.06	0.09	101	11
120		9.64		9.62		33.676	25.983	204.0	0.367	3.37		147.2		52.5		23.5	1.82	23.0	0.00	0.04	0.03	0.04	121	10
125	ISL	9.50	D	9.48		33.700	D 26.025	200.1	0.360	3.33	D	145.1	D	51.7		24.3	1.85	23.4	0.00	0.04	0.02	0.04	126	
140		9.20		9.18		33.782	26.138	189.7	0.407	3.09		135.0		47.7		26.7	1.93	24.7	0.01	0.04	0.01	0.03	141	09
150	ISL	8.99	D	8.97		33.867	D 26.237	180.4	0.408	3.02	D	131.5	D	46.4		28.4	1.98	25.5	0.01	0.04	0.01	0.03	151	
170		8.76		8.74		33.919	26.315	173.3	0.461	2.80		122.3		42.8		31.9	2.07	27.1	0.00	0.05	0.00	0.03	171	08
199		8.32		8.30		33.986	26.436	162.3	0.509	2.55		111.2		38.6		36.8	2.19	28.8	0.00	0.02	0.00	0.02	201	07
200	ISL	8.34	D	8.32		33.986	D 26.433	162.6	0.494	2.58	D	112.0	D	39.0		36.9	2.20	28.9	0.00	0.02			202	
230		8.09		8.06		34.048	26.521	154.8	0.559	2.08		90.7		31.3		42.0	2.38	31.0	0.00	0.03			232	06
250	ISL	7.91	D	7.88		34.062	D 26.558	151.6	0.573	1.95	D	85.0	D	29.3		44.7	2.48	32.0	0.00	0.04			252	
270		7.71		7.68		34.091	26.610	146.9	0.619	1.64		71.4		24.4		47.4	2.57	33.1	0.00	0.05			272	05
300	ISL	7.33	D	7.30		34.123	D 26.691	139.6	0.646	1.31	D	56.9	D	19.4		53.9	2.74	34.9	0.00	0.04			302	
320		7.24		7.21		34.164	26.736	135.5	0.689	0.99		43.1		14.6		58.2	2.86	36.1	0.00	0.04			323	04
379		7.15		7.11		34.243	26.812	129.4	0.768	0.61		26.7		9.0		63.2	3.02	37.0	0.00	0.12			382	03
400	ISL	7.06	D	7.02		34.275	D 26.850	126.1	0.780	0.53	D	22.9	D	7.8		65.0	3.05	37.4	0.00	0.09			403	
440		6.85		6.80		34.275	26.880	123.7	0.844	0.44		19.1		6.4		68.7	3.12	38.2	0.00	0.02			444	02
500	ISL	6.29	D	6.24		34.299	D 26.973	115.3	0.903	0.36	D	15.7	D	5.2		77.4	3.25	40.2	0.00	0.10			504	
514		6.19		6.15		34.308	26.993	113.5	0.932	0.29		12.5		4.1		79.4	3.28	40.6	0.00	0.12			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 1411 STATION 93.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 50.7 N	119 34.6 W	10/11/2014	0645 UTC	1878 m	340 10 kn			1010.0 mb	18.0 C	15.5 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		19.36		19.36		33.570	23.837	405.6	0.000	5.44		237.3		103.1		1.7	0.30	0.1	0.00	0.06	0.20	0.06	0	
2		19.36		19.36		33.570	23.837	405.6	0.008	5.44		237.3		103.1		1.7	0.30	0.1	0.00	0.06	0.20	0.06	2	20
9		19.36		19.36		33.570	23.838	405.8	0.037	5.37	D	234.3	D	101.9		1.7	0.30	0.1	0.01	0.16	0.19	0.06	9	19
10	ISL	19.37	D	19.37		33.568	D 23.836	406.1	0.041	5.36	D	233.6	D	101.6		1.7	0.30	0.1	0.01	0.15	0.19	0.06	10	
20		19.10		19.09		33.539	23.883	402.0	0.081	5.38		234.9		101.5		1.5	0.29	0.1	0.01	0.05	0.21	0.07	20	18
29		19.01		19.00		33.509	23.884	402.3	0.117	5.38		234.8		101.3		1.2	0.29	0.1	0.00	0.10	0.20	0.06	29	17
30	ISL	18.97	D	18.96		33.502	D 23.890	401.8	0.122	5.37	D	234.3	D	101.1		1.2	0.29	0.1	0.00	0.12	0.21	0.07	30	
40		15.56		15.55		33.353	24.583	335.8	0.158	5.62		245.3		98.9		1.5	0.34	0.1	0.01	0.30	0.35	0.18	40	16
50		13.78		13.77		33.092	24.762	319.0	0.191	5.76		251.6		97.6		3.6	0.59	2.3	0.21	0.26	0.49	0.44	50	15
60		12.70		12.70		33.161	25.030	293.6	0.221	5.52		241.2		91.5		5.1	0.71	4.4	0.19	0.16	0.26	0.33	60	14
70		11.06		11.05		33.248	25.404	258.1	0.249	4.90		214.0		78.5		10.1	1.13	12.0	0.03	0.18	0.12	0.16	71	13
75	ISL	11.03	D	11.02		33.244	D 25.406	258.0	0.265	4.89	D	213.2	D	78.3		11.0	1.19	13.0	0.02	0.19	0.11	0.14	76	
84		10.60		10.59		33.324	25.545	244.9	0.285	4.60		201.0		73.0		12.7	1.30	14.8	0.02	0.22	0.08	0.12	85	12
100		9.94		9.93		33.446	25.752	225.6	0.322	4.16		181.5		65.1		17.2	1.53	18.7	0.02	0.19	0.04	0.07	101	11
120		9.36		9.34		33.644	26.004	202.0	0.365	3.67		160.0		56.7		22.6	1.73	22.3	0.01	0.13	0.01	0.02	121	10
125	ISL	9.27	D	9.26		33.705	D 26.066	196.2	0.379	3.56	D	154.8	D	54.9		24.1	1.80	23.3	0.01	0.13	0.01	0.02	126	
139		9.07		9.06		33.824	26.190	184.6	0.402	3.01		131.2		46.2		28.5	1.98	25.9	0.01	0.12	0.00	0.02	140	09
150	ISL	8.97	D	8.95		33.864	D 26.239	180.2	0.426	2.94	D	127.8	D	45.1		30.0	2.02	26.6	0.01	0.17	0.00	0.02	151	
169		8.75		8.74		33.926	26.322	172.7	0.455	2.73		119.3		41.8		32.5	2.10	27.7	0.01	0.26	0.00	0.02	170	08
199		8.46		8.44		34.020	26.441	161.9	0.505	2.38		103.8		36.1		37.2	2.24	29.4	0.01	0.10	0.00	0.02	201	07
200	ISL	8.44	D	8.42		34.018	D 26.444	161.7	0.512	2.40	D	104.4	D	36.4		37.3	2.24	29.5	0.01	0.10			202	
230		8.18		8.16		34.071	26.525	154.5	0.554	2.00		87.1		30.1		42.1	2.39	31.2	0.00	0.09			232	06
250	ISL	7.98	D	7.96		34.102	D 26.579	149.6	0.590	1.74	D	75.7	D	26.1		45.3	2.51	32.3	0.00	0.18			252	
273		7.92		7.89		34.149	26.625	145.7	0.619	1.37		59.7		20.5		49.0	2.64	33.5	0.00	0.28			275	05
300	ISL	7.36	D	7.33		34.139	D 26.699	138.8	0.663	1.23	D	53.3	D	18.2		54.1	2.75	35.2	0.00	0.24			302	
318		7.26		7.23		34.159	26.728	136.3	0.682	1.03		45.1		15.3		57.6	2.82	36.3	0.01	0.21			321	04
380		6.83		6.80		34.197	26.819	128.5	0.764	0.73		31.9		10.7		65.1	2.99	38.2	0.01	0.14			383	03
400	ISL	6.76	D	6.72		34.222	D 26.849	125.9	0.797	0.67	D	28.9	D	9.7		67.0	3.03	38.6	0.01	0.14			403	
438		6.68		6.64		34.266	26.894	122.2	0.837	0.43		18.8		6.3		70.6	3.11	39.2	0.01	0.15			442	02
500	ISL	6.33	D	6.28		34.291	D 26.962	116.4	0.919	0.38	D	16.4	D	5.4		76.7	3.22	40.5	0.00	0.26			504	
516		6.25		6.20		34.304	26.983	114.6	0.929	0.29		12.6		4.2		78.3	3.25	40.8	0.00	0.29			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 1411 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 30.7 N	120 14.8 W	10/11/2014	1219 UTC	3940 m	310 10 kn			1010.0 mb	17.7 C	17.7 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		19.44		19.44		33.421	23.705	418.2	0.000	5.33	232.6		101.1		2.2	0.32	0.1	0.00	0.11	0.13	0.04	0	
2		19.44		19.44		33.421	23.705	418.3	0.008	5.33	232.6		101.1		2.2	0.32	0.1	0.00	0.11	0.13	0.04	2	20
10		19.45		19.45		33.419	23.701	418.9	0.042	5.30	231.5		100.6		2.2	0.33	0.1	0.00	0.10	0.13	0.04	10	19
20	ISL	19.45	D	19.45	D	33.417	23.701	419.4	0.084	5.31	D231.7	D	100.8		2.2	0.32	0.1	0.00	0.05	0.13	0.04	20	
25		19.45		19.44		33.426	23.708	418.9	0.105	5.29	230.9		100.4		2.2	0.32	0.1	0.00	0.02	0.14	0.04	25	18
30	ISL	19.45	D	19.44	D	33.416	23.702	419.7	0.127	5.32	D232.1	D	101.0		2.2	0.32	0.1	0.00	0.02	0.14	0.04	30	
40		19.45		19.44		33.419	23.704	419.9	0.168	5.29	231.1		100.4		2.2	0.32	0.1	0.00	0.03	0.13	0.04	40	17
49		17.11		17.11		33.289	24.180	374.7	0.204	5.71	249.5		103.6		2.3	0.34	0.1	0.00	0.06	0.23	0.11	49	16
50	ISL	16.92	D	16.91	D	33.252	24.196	373.2	0.209	5.75	D250.9	D	103.9		2.3	0.34	0.1	0.00	0.06	0.23	0.12	50	
62		15.69		15.68		33.238	24.468	347.6	0.251	5.97	260.7		105.3		2.7	0.37	0.1	0.00	0.09	0.24	0.20	62	15
74		14.28		14.27		33.190	24.735	322.3	0.291	5.86	256.1		100.4		3.2	0.45	0.4	0.03	0.05	0.31	0.33	75	14
75	ISL	14.27	D	14.26	D	33.187	24.736	322.3	0.296	5.80	D252.6	D	99.3		3.4	0.47	0.7	0.04	0.05	0.30	0.33	76	
87		12.51		12.50		33.152	25.062	291.3	0.331	5.47	238.9		90.3		5.4	0.74	5.2	0.17	0.02	0.23	0.32	88	13
100	ISL	11.51	D	11.49	D	33.230	25.311	267.8	0.370	5.02	D218.5	D	81.1		8.6	1.04	10.5	0.03	0.01	0.14	0.18	101	
101		11.42		11.40		33.233	25.330	266.0	0.370	5.00	218.3		80.7		8.8	1.06	10.9	0.02	0.01	0.13	0.17	102	12
114		10.81		10.80		33.308	25.497	250.4	0.403	4.66	203.6		74.3		11.7	1.25	14.0	0.01	0.00	0.08	0.13	115	11
124		10.50		10.48		33.335	25.573	243.2	0.428	4.54	198.1		71.8		13.1	1.34	15.4	0.01	0.00	0.06	0.10	125	10
125	ISL	10.48	D	10.46	D	33.348	25.587	242.0	0.434	4.52	D196.9	D	71.5		13.4	1.35	15.6	0.01	0.00	0.06	0.10	126	
140		9.83		9.81		33.483	25.802	221.7	0.465	4.11	179.6		64.2		17.6	1.53	18.9	0.01	0.00	0.03	0.05	141	09
150	ISL	9.68	D	9.67	D	33.560	25.886	213.9	0.490	3.89	D169.3	D	60.5		20.6	1.67	20.9	0.01	0.00	0.02	0.04	151	
170		9.26		9.24		33.774	26.123	191.8	0.528	3.15	137.6		48.7		26.4	1.95	24.9	0.01	0.11	0.00	0.03	171	08
199		8.70		8.68		33.920	26.327	172.9	0.581	2.88	125.5		43.9		31.9	2.06	27.3	0.00	0.03	0.00	0.02	201	07
200	ISL	8.68	D	8.66	D	33.928	26.335	172.1	0.586	2.89	D125.7	D	44.1		32.1	2.06	27.3	0.00	0.03			202	
230		8.43		8.40		34.005	26.435	163.1	0.633	2.44	106.7		37.1		36.8	2.20	29.3	0.00	0.04			232	06
250	ISL	8.25	D	8.22	D	34.028	26.482	159.0	0.669	2.37	D102.9	D	35.8		40.3	2.33	30.6	0.00	0.03			252	
269		8.09		8.06		34.078	26.545	153.3	0.694	1.86	81.4		28.1		43.7	2.45	32.0	0.00	0.03			271	05
300	ISL	7.78	D	7.75	D	34.116	26.621	146.5	0.746	1.53	D 66.6	D	22.9		49.4	2.62	33.8	0.00	0.06			302	
321		7.39		7.36		34.129	26.688	140.2	0.771	1.32	57.8		19.6		53.3	2.73	35.1	0.00	0.08			324	04
382		6.69		6.65		34.138	26.792	130.9	0.854	0.92	40.1		13.4		64.1	2.95	38.4	0.00	0.01			385	03
400	ISL	6.57	D	6.54	D	34.150	26.817	128.7	0.884	0.87	D 37.7	D	12.6		66.4	2.99	38.9	0.00	0.01			403	
440		6.32		6.28		34.183	26.877	123.4	0.928	0.63	27.6		9.2		71.5	3.09	39.9	0.00	0.02			444	02
500	ISL	5.83	D	5.79	D	34.206	26.957	116.2	1.007	0.51	D 22.3	D	7.3		80.2	3.21	41.6	0.00	0.11			504	
515		5.77		5.73		34.216	26.973	114.9	1.017	0.43	18.8		6.1		82.3	3.24	42.0	0.00	0.13			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 1411 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 55.2 W	10/11/2014	1820 UTC	3822 m	260 08 kn	270 02 05	2	1012.0 mb	18.0 C	16.2 C	36 m	8/8	ST	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		19.61		19.61		33.414	23.655	423.0	0.000	5.33	232.8		101.5		2.5	0.33	0.1	0.00		0.12	0.03	0	
2	A	19.61		19.61		33.414	23.655	423.0	0.009	5.33	232.8		101.5		2.5	0.33	0.1	0.00		0.12	0.03	2	24
10	ISL	19.61	D	19.61	D	33.410	23.652	423.6	0.043	5.30	D231.1	D	100.9		2.5	0.33	0.1	0.00		0.13	0.04	10	
10		19.61		19.61		33.412	23.654	423.5	0.042													10	23
11		19.61		19.61		33.413	23.654	423.5	0.047	5.31	231.7		101.0		2.5	0.33	0.1	0.00		0.13	0.04	11	22
20	A	19.62		19.61		33.412	23.654	423.9	0.085	5.30	231.4		100.9		2.5	0.33	0.1	0.00		0.13	0.03	20	21
29	A	19.62		19.61		33.412	23.654	424.3	0.123	5.31	231.8		101.1		2.5	0.34	0.1	0.00		0.13	0.04	29	20
30	ISL	19.62	D	19.61	D	33.410	23.652	424.5	0.126	5.29	D230.8	D	100.7		2.5	0.34	0.1	0.00		0.13	0.04	30	
37		19.62		19.61		33.416	23.657	424.3	0.157	5.30	231.5		100.9		2.5	0.33	0.1	0.00		0.12	0.03	37	19
45		19.62		19.61		33.412	23.656	424.8	0.191	5.29	231.2		100.8		2.5	0.32	0.1	0.00		0.13	0.03	45	18
50	ISL	19.62	D	19.61	D	33.410	23.653	425.2	0.212	5.30	D231.1	D	100.8		2.5	0.32	0.1	0.00		0.13	0.04	50	
53	A	19.35		19.34		33.410	23.724	418.5	0.225	5.28	230.7		100.1		2.5	0.32	0.1	0.00		0.13	0.04	53	17
69		16.25		16.24		33.164	24.285	365.4	0.288	5.91	258.1		105.3		2.4	0.31	0.1	0.00		0.19	0.12	70	16
75	ISL	15.83	D	15.82	D	33.181	24.392	355.2	0.309	5.91	D257.5	D	104.4		2.5	0.34	0.1	0.00		0.19	0.14	76	
85		15.14		15.13		33.219	24.575	338.1	0.344	5.78	252.6		100.8		2.6	0.39	0.1	0.00		0.19	0.17	86	14
86		14.77		14.76		33.219	24.654	330.5	0.346													87	15
100	A	12.96		12.95		33.145	24.969	300.6	0.391	5.64	246.5		94.0		3.8	0.52	1.2	0.15		0.17	0.19	101	13
108		12.02		12.01		33.156	25.158	282.7	0.415	5.44	237.7		88.9		5.3	0.70	4.9	0.11		0.16	0.21	109	12
117		11.43		11.41		33.175	25.283	270.9	0.439	5.31	232.0		85.7		6.6	0.82	7.2	0.02		0.12	0.20	118	11
125	A	11.08		11.07		33.224	25.384	261.4	0.461	5.17	225.7		82.8		7.8	0.91	8.8	0.01		0.11	0.17	126	10
144		10.27		10.26		33.443	25.696	232.0	0.508	4.41	192.5		69.5		14.6	1.33	15.9	0.00		0.04	0.07	145	09
150	ISL	10.03	D	10.01	D	33.506	25.786	223.5	0.498	4.36	D189.9	D	68.4		16.4	1.42	17.3	0.00		0.04	0.06	151	
170		9.53		9.51		33.672	26.000	203.5	0.564	3.59	156.7		55.7		22.4	1.73	21.9	0.00		0.01	0.02	171	08
200		8.84		8.82		33.935	26.316	174.0	0.621	2.75	120.1		42.1		31.8	2.06	27.0	0.00		0.00	0.02	202	07
230		8.56		8.53		34.000	26.412	165.4	0.672	2.44	106.6		37.2		35.7	2.20	28.6	0.00				232	06
250	ISL	8.31	D	8.28	D	34.069	26.505	156.8	0.682	2.07	D 89.9	D	31.3		39.3	2.33	30.0	0.00				252	
270		8.22		8.19		34.092	26.537	154.2	0.735	1.78	77.7		26.9		42.9	2.46	31.4	0.00				272	05
300	ISL	8.07	D	8.04	D	34.153	26.607	148.0	0.759	1.39	D 60.3	D	20.9		46.5	2.59	32.7	0.00				302	
319		8.02		7.99		34.184	26.640	145.2	0.808	1.22	53.3		18.4		48.9	2.68	33.4	0.00				322	04
380		7.60		7.57		34.241	26.747	136.0	0.894	0.72	31.6		10.8		56.6	2.91	35.5	0.00				383	03
400	ISL	7.42	D	7.38	D	34.253	26.783	132.8	0.901	0.64	D 27.9	D	9.5		59.1	2.96	36.2	0.00				403	
441		7.09		7.05		34.263	26.838	128.0	0.974	0.51	22.4		7.5		64.0	3.05	37.5	0.00				445	02
500	ISL	6.64	D	6.59	D	34.292	26.923	120.5	1.029	0.36	D 15.5	D	5.2		72.2	3.20	39.4	0.01				504	
516		6.47		6.42		34.299	26.950	118.0	1.067	0.31	13.4		4.5		74.5	3.24	39.9	0.01				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 1411 STATION 93.3 90.0

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 35.4 W	11/11/2014	0005	UTC	4090 m	300 11 kn	300 03 06	2	1011.0 mb	19.0 C	15.8 C	31 m	8/8	ST	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		19.72		19.72		33.166	23.438	443.6	0.000	5.30	231.3	100.9	2.1	0.32	0.1	0.00		0.13	0.04	0	
2		19.72		19.71		33.166	23.439	443.7	0.009	5.30	231.3	100.9	2.1	0.32	0.1	0.00		0.13	0.04	2	20
10		19.71		19.71		33.164	23.439	444.0	0.044	5.30	231.3	100.9	2.1	0.32	0.1	0.00		0.13	0.03	10	19
20	ISL	19.72	D	19.71		33.163	D 23.438	444.5	0.089	5.31	D231.5	D101.1	2.1	0.32	0.1	0.00		0.13	0.03	20	
24		19.72		19.71		33.170	23.444	444.1	0.107	5.28	230.7	100.6	2.1	0.32	0.1	0.00		0.13	0.03	24	18
30	ISL	19.72	D	19.71		33.162	D 23.438	444.9	0.134	5.30	D231.1	D100.9	2.1	0.32	0.1	0.00		0.14	0.03	30	
40		19.73		19.72		33.169	23.441	445.0	0.178	5.29	231.0	100.7	2.1	0.32	0.1	0.00		0.15	0.04	40	17
50		18.99		18.98		33.166	23.629	427.5	0.221	5.31	231.9	99.7	2.1	0.32	0.1	0.00		0.16	0.04	50	16
63		17.24		17.23		33.174	24.063	386.4	0.274	5.88	256.8	106.8	2.4	0.31	0.1	0.00		0.23	0.09	63	15
75		15.98		15.97		33.162	24.344	359.9	0.319	5.91	258.0	104.7	2.3	0.32	0.1	0.00		0.24	0.15	76	14
87		15.06		15.04		33.193	24.574	338.2	0.361	5.86	255.9	102.0	2.5	0.37	0.1	0.00		0.24	0.17	88	13
100	ISL	12.66	D	12.65		33.001	D 24.916	305.6	0.406	5.59	D243.7	D 92.5	3.7	0.55	2.0	0.27		0.23	0.19	101	
101		12.66		12.65		33.027	24.937	303.6	0.406	5.70	248.8	94.3	3.8	0.56	2.2	0.29		0.23	0.19	102	12
112		12.03		12.02		33.069	25.090	289.3	0.438	5.49	239.7	89.6	5.4	0.73	5.4	0.12		0.18	0.16	113	11
125		10.83		10.81		33.102	25.335	266.0	0.475	5.27	230.0	83.8	7.8	0.96	9.5	0.01		0.11	0.12	126	10
140		10.32		10.31		33.240	25.529	247.8	0.513	4.90	214.1	77.3	11.2	1.17	13.2	0.01		0.07	0.09	141	09
150	ISL	10.21	D	10.20		33.352	D 25.635	237.9	0.541	4.69	D204.2	D 73.8	13.8	1.29	15.3	0.01		0.05	0.07	151	
170		9.55		9.53		33.536	25.890	214.0	0.583	4.13	180.2	64.0	18.9	1.54	19.4	0.01		0.02	0.02	171	08
199		8.89		8.87		33.833	26.229	182.2	0.640	3.16	137.8	48.3	28.3	1.92	25.5	0.00		0.00	0.01	201	07
200	ISL	8.85	D	8.82		33.850	D 26.249	180.3	0.647	3.14	D136.5	D 48.0	28.5	1.93	25.6	0.00				202	
230		8.48		8.45		33.950	26.385	167.8	0.694	2.78	121.1	42.2	33.6	2.08	27.8	0.00				232	06
250	ISL	8.13	D	8.11		33.992	D 26.470	160.0	0.732	2.52	D109.7	D 38.0	37.4	2.18	29.1	0.00				252	
269		7.88		7.85		34.012	26.523	155.2	0.757	2.37	103.6	35.6	41.0	2.27	30.5	0.00				271	05
300	ISL	7.54	D	7.51		34.040	D 26.596	148.6	0.810	2.00	D 87.1	D 29.8	47.1	2.45	32.6	0.00				302	
320		7.19		7.16		34.055	26.657	143.0	0.833	1.70	74.4	25.1	51.1	2.56	34.0	0.00				323	04
379		6.53		6.50		34.093	26.777	132.1	0.914	1.14	49.8	16.6	62.8	2.84	37.6	0.00				382	03
400	ISL	6.40	D	6.37		34.111	D 26.808	129.4	0.949	1.03	D 45.0	D 15.0	65.7	2.91	38.3	0.00				403	
439		6.14		6.10		34.135	26.861	124.7	0.991	0.80	35.1	11.6	71.2	3.04	39.6	0.00				443	02
500	ISL	5.75	D	5.71		34.197	D 26.960	115.8	1.073	0.57	D 24.7	D 8.1	79.6	3.17	40.9	0.00				504	
516		5.68		5.64		34.207	26.977	114.4	1.083	0.49	21.2	6.9	81.8	3.20	41.3	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 1411 STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 30.9 N	122 15.5 W	11/11/2014	0556	UTC	4156 m	020 02 kn			1012.0 mb	17.8 C	15.7 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		19.33		19.33		33.084	23.475	440.1	0.000	5.31	231.8	100.4	1.7	0.35	0.1	0.02	0.14	0.15	0.04	0	
2		19.33		19.33		33.084	23.475	440.2	0.009	5.31	231.8	100.4	1.7	0.35	0.1	0.02	0.14	0.15	0.04	2	20
10		19.33		19.33		33.088	23.479	440.2	0.044	5.32	232.3	100.6	1.7	0.35	0.1	0.02	0.09	0.14	0.03	10	19
20	ISL	19.33	D	19.33		33.081	D 23.474	441.0	0.089	5.34	D232.8	D100.8	1.7	0.35	0.1	0.02	0.12	0.15	0.03	20	
24		19.33		19.33		33.084	23.477	441.0	0.106	5.32	232.5	100.6	1.7	0.35	0.1	0.02	0.13	0.15	0.04	24	18
30	ISL	19.33	D	19.33		33.081	D 23.475	441.4	0.133	5.33	D232.8	D100.8	1.7	0.35	0.1	0.02	0.14	0.15	0.04	30	
39		19.34		19.33		33.084	23.477	441.5	0.172	5.32	232.3	100.5	1.7	0.35	0.1	0.03	0.16	0.15	0.04	39	17
50	ISL	17.69	D	17.68		33.063	D 23.869	404.5	0.220	5.84	D254.5	D106.9	1.8	0.34	0.1	0.02	0.12	0.21	0.07	50	
51		17.70		17.69		33.093	23.891	402.4	0.222	5.50	240.3	100.8	1.8	0.34	0.1	0.02	0.12	0.21	0.07	51	16
62		16.01		16.00		32.991	24.207	372.5	0.265	5.93	259.0	105.1	2.2	0.35	0.1	0.03	0.16	0.21	0.12	62	15
75	ISL	15.07	D	15.06		33.102	D 24.500	344.9	0.314	5.85	D254.8	D101.7	2.5	0.37	0.1	0.02	0.19	0.22	0.20	76	
76		14.58		14.56		33.095	24.600	335.3	0.315	5.92	258.5	102.0	2.5	0.37	0.1	0.02	0.19	0.23	0.20	77	14
87		13.21		13.20		32.863	24.702	325.7	0.351	5.90	257.6	98.6	3.0	0.49	0.5	0.15	0.17	0.27	0.22	88	13
100		12.50		12.49		33.102	25.026	295.1	0.392	5.57	243.3	91.9	4.8	0.69	3.8	0.28	0.22	0.17	0.24	101	12
111		11.88		11.86		33.100	25.142	284.2	0.424	5.44	237.7	88.6	5.7	0.79	5.9	0.09	0.15	0.14	0.21	112	11
124		10.73		10.72		33.110	25.357	263.9	0.459	5.25	229.4	83.5	8.6	1.04	10.5	0.04	0.13	0.09	0.15	125	10
125	ISL	10.66	D	10.64		33.126	D 25.382	261.4	0.466	5.20	D226.7	D 82.5	8.8	1.05	10.7	0.03	0.13	0.09	0.15	126	
139		10.01		10.00		33.247	25.587	242.1	0.497	4.87	212.9	76.3	12.2	1.25	14.1	0.03	0.13	0.06	0.08	140	09
150	ISL	9.87	D	9.86		33.442	D 25.763	225.6	0.527	4.54	D197.7	D 70.9	15.5	1.41	16.8	0.03	0.12	0.04	0.06	151	
169		9.32		9.30		33.588	25.967	206.5	0.564	3.85	168.2	59.5	21.2	1.68	21.4	0.03	0.10	0.01	0.02	170	08
200		8.82		8.79		33.847	26.251	180.1	0.624	3.26	142.5	49.9	28.0	1.90	25.0	0.02	0.15	0.00	0.02	202	07
229		8.42		8.39		33.956	26.399	166.5	0.674	2.78	121.3	42.2	34.2	2.09	27.9	0.03	0.07			231	06
250	ISL	8.13	D	8.10		33.979	D 26.461	160.9	0.713	2.83	D123.0	D 42.6	37.9	2.18	29.0	0.02	0.09			252	
270		7.82		7.79		34.011	26.532	154.3	0.740	2.44	106.4	36.5	41.4	2.26	30.2	0.02	0.11			272	05
300	ISL	7.42	D	7.39		34.039	D 26.611	147.1	0.790	2.06	D 89.7	D 30.6	47.8	2.45	32.5	0.02	0.12			302	
320		7.10		7.07		34.046	26.662	142.4	0.814	1.78	77.6	26.2	52.1	2.58	34.1	0.02	0.13			323	04
380		6.57		6.53		34.109	26.785	131.4	0.896	1.09	47.7	15.9	63.1	2.88	37.5	0.02	0.15			383	03
400	ISL	6.49	D	6.46		34.121	D 26.804	129.8	0.929	1.00	D 43.5	D 14.5	65.8	2.94	38.2	0.02	0.15			403	
440		6.36		6.32		34.194	26.880	123.2	0.973	0.55	23.8	7.9	71.1	3.07	39.6	0.03	0.15			444	02
500	ISL	5.98	D	5.94		34.253	D 26.976	114.6	1.052	0.39	D 16.9	D 5.6	79.2	3.22	41.1	0.03	0.14			504	
514		5.91		5.87		34.265	26.994	113.0	1.060	0.31	13.7	4.5	81.1	3.26	41.4	0.03	0.14			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 10.8 N	122 55.4 W	11/11/2014	1152	UTC	3863 m	300 06 kn			1012.0 mb	18.7 C	16.5 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		19.25		19.25		33.160	23.554	432.6	0.000	5.33		232.7		100.6		1.9	0.33	0.1	0.02	0.35	0.14	0.04	0	
2		19.25		19.25		33.160	23.554	432.7	0.009	5.33		232.7		100.6		1.9	0.33	0.1	0.02	0.35	0.14	0.04	2	20
9		19.26		19.25		33.161	23.553	433.0	0.039	5.32		232.3		100.4		1.9	0.34	0.0	0.02	0.15	0.14	0.04	9	19
10	ISL	19.25	D	19.25		33.157	D 23.551	433.3	0.044	5.31	D	231.8	D	100.3		1.9	0.34	0.0	0.02	0.15	0.14	0.04	10	
20	ISL	19.26	D	19.25		33.157	D 23.552	433.6	0.087	5.32	D	232.1	D	100.4		1.9	0.35	0.0	0.02	0.14	0.14	0.04	20	
24		19.26		19.25		33.161	23.554	433.6	0.104	5.34		233.2		100.8		1.9	0.35	0.0	0.02	0.13	0.14	0.04	24	18
30	ISL	19.26	D	19.25		33.156	D 23.551	434.1	0.131	5.31	D	231.5	D	100.2		1.9	0.34	0.0	0.02	0.12	0.15	0.04	30	
40		19.25		19.24		33.165	23.561	433.6	0.173	5.32		232.6		100.5		1.9	0.33	0.0	0.02	0.09	0.15	0.04	40	17
50		19.11		19.10		33.159	23.592	431.0	0.217	5.33		232.7		100.3		1.9	0.33	0.0	0.02	0.10	0.17	0.05	50	16
62		16.67		16.66		33.096	24.135	379.4	0.265	5.90		257.6		105.9		2.4	0.32	0.0	0.02	0.14	0.21	0.14	62	15
74		15.50		15.49		33.094	24.400	354.4	0.309	5.90		257.9		103.6		2.5	0.33	0.0	0.02	0.05	0.22	0.23	75	14
75	ISL	15.39	D	15.38		33.109	D 24.435	351.1	0.315	5.87	D	255.7	D	102.7		2.5	0.34	0.0	0.03	0.06	0.22	0.23	76	
87		13.71		13.70		33.074	24.764	319.9	0.353	5.84		255.2		98.8		3.0	0.42	0.3	0.10	0.12	0.22	0.24	88	13
100		12.23		12.22		33.077	25.057	292.1	0.393	5.64		246.3		92.5		4.3	0.62	2.7	0.34	0.05	0.18	0.26	101	12
113		11.29		11.28		33.130	25.272	271.8	0.429	5.32		232.4		85.6		6.6	0.85	7.3	0.07	0.08	0.12	0.20	114	11
125		10.56		10.55		33.146	25.414	258.4	0.461	5.13		224.3		81.3		9.5	1.07	11.2	0.03	0.07	0.08	0.12	126	10
140		9.86		9.84		33.334	25.681	233.2	0.498	4.62		201.9		72.1		14.1	1.33	15.7	0.03	0.04	0.04	0.06	141	09
150	ISL	9.66	D	9.64		33.444	D 25.800	222.0	0.524	4.38	D	190.5	D	68.0		16.6	1.43	17.5	0.03	0.05	0.03	0.05	151	
170		9.18		9.16		33.604	26.003	203.0	0.563	4.01		175.0		61.7		21.6	1.64	21.2	0.02	0.06	0.01	0.02	171	08
200		8.74		8.71		33.853	26.268	178.4	0.621	3.27		143.0		50.0		28.5	1.91	25.2	0.02	0.14	0.00	0.01	202	07
232		8.41		8.39		33.939	26.386	167.7	0.676	3.01		131.5		45.7		32.4	2.00	26.9	0.02	0.07			234	06
250	ISL	8.24	D	8.21		33.981	D 26.446	162.4	0.710	2.66	D	115.6	D	40.1		36.2	2.14	28.7	0.02	0.07			252	
270		7.96		7.93		34.008	26.510	156.6	0.738	2.23		97.2		33.4		40.4	2.30	30.8	0.02	0.08			272	05
300	ISL	7.63	D	7.60		34.047	D 26.589	149.4	0.788	1.81	D	78.7	D	26.9		46.0	2.47	32.9	0.02	0.06			302	
320		7.25		7.22		34.055	26.648	143.9	0.813	1.65		71.9		24.4		49.7	2.58	34.3	0.03	0.04			322	04
380		6.79		6.75		34.130	26.772	132.8	0.896	0.98		42.8		14.3		61.6	2.87	37.4	0.02	0.03			383	03
400	ISL	6.60	D	6.56		34.146	D 26.811	129.3	0.927	0.89	D	38.6	D	12.9		65.0	2.94	38.1	0.02	0.03			403	
439		6.34		6.30		34.195	26.884	122.8	0.971	0.58		25.2		8.4		71.5	3.08	39.5	0.02	0.04			443	02
500	ISL	6.05	D	6.01		34.255	D 26.969	115.4	1.050	0.40	D	17.2	D	5.7		78.3	3.20	40.5	0.02	0.06			504	
514		6.00		5.95		34.266	26.984	114.1	1.060	0.32		13.9		4.6		79.8	3.23	40.8	0.02	0.07			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
29 51.0 N	123 35.1 W	11/11/2014	1825	UTC	4078 m	270 08 kn	330 04 07	2	1015.0 mb	19.0 C	17.5 C	41 m	8/8	ST	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		20.35		20.35		33.516	23.540	434.0	0.000	5.19		226.7		100.2		2.4	0.30	0.1	0.01	0.57	0.09	0.02	0	
2	A	20.35		20.35		33.516	23.540	434.0	0.009	5.19		226.7		100.2		2.4	0.30	0.1	0.01	0.57	0.09	0.02	2	24
10	ISL	20.46	D	20.46		33.595	D 23.572	431.3	0.044	5.19	D	226.5	D	100.5		2.3	0.29	0.2	0.01	0.43	0.09	0.02	10	
12		20.52		20.51		33.614	23.571	431.5	0.052	5.18		226.0		100.3		2.3	0.29	0.2	0.01	0.39	0.09	0.02	12	22
12		20.52		20.51		33.611	23.569	431.7	0.050														12	23
20	ISL	20.72	D	20.72		33.726	D 23.602	428.9	0.070	5.20	D	226.8	D	101.2		2.3	0.27	0.1	0.01	0.29	0.10	0.02	20	
22	A	20.77		20.76		33.749	23.608	428.4	0.095	5.19	D	226.2	D	101.0		2.3	0.27	0.1	0.01	0.26	0.10	0.02	22	21
30	ISL	20.90	D	20.89		33.796	D 23.609	428.6	0.113	5.18	D	225.9	D	101.2		2.3	0.27	0.1	0.01	0.11	0.11	0.03	30	
33	A	20.90		20.89		33.806	23.618	428.0	0.142	5.23		228.3		102.2		2.3	0.27	0.1	0.01	0.05	0.11	0.03	33	20
42		21.19		21.18		33.913	23.622	428.0	0.181	5.11		223.0		100.4		2.2	0.26	0.1	0.01	0.06	0.12	0.03	42	19
50	ISL	21.23	D	21.22		33.933	D 23.627	427.8	0.199	5.13	D	223.9	D	101.0		2.2	0.26	0.1	0.01	0.07	0.14	0.03	50	
51		21.23		21.22		33.936	23.629	427.7	0.219	5.09		222.4		100.2		2.2	0.26	0.1	0.01	0.07	0.14	0.03	51	18
61		21.26		21.25		33.977	D 23.653	425.9	0.246	5.12	D	223.5	D	100.8									61	17
75	ISL	17.18	D	17.16		33.293	D 24.170	376.6	0.303	5.87	D	255.9	D	106.6		2.3	0.31	0.1	0.01	0.13	0.17	0.08	76	
77	A	17.05		17.04		33.296	24.202	373.6	0.325	5.82		254.1		105.4		2.3	0.31	0.1	0.01	0.13	0.17	0.09	78	16
94		15.89		15.88		33.322	24.489	346.7	0.388														95	15
95		15.79		15.77		33.321	24.512	344.6	0.390	5.75		251.0		101.6		2.5	0.30	0.1	0.01	0.11	0.18	0.16	96	14
100	ISL	15.20	D	15.18		33.281	D 24.611	335.1	0.361	5.71	D	248.8	D	99.7		2.7	0.33	0.2	0.04	0.10	0.17	0.17	101	
113	A	13.82		13.80		33.269	24.895	308.3	0.449	5.63		245.8		95.5		3.2	0.41	0.4	0.13	0.06	0.17	0.19	114	13
123		13.07		13.05		33.259	25.038	294.8	0.479	5.56		242.6		92.8		4.0	0.50	1.9	0.24	0.05	0.16	0.19	124	12
125	ISL	12.77	D	12.75		33.235	D 25.079	290.8	0.440	5.58	D	243.2	D	92.7		4.2	0.53	2.4	0.20	0.05	0.16	0.19	126	
131		12.08		12.06		33.253	25.226	276.9	0.502	5.42		236.8		88.7		4.9	0.61	3.9	0.09	0.04	0.14	0.18	132	11
143	A	11.18		11.16		33.229	25.371	263.1	0.535	5.27		230.4		84.7		6.6	0.78	7.0	0.03	0.05	0.10	0.13	144	10
150	ISL	11.08	D	11.06		33.296	D 25.442	256.5	0.508	5.23	D	227.8	D	83.8		8.2	0.88	9.0	0.02	0.05	0.07	0.11	151	
155		10.70		10.68		33.331	25.536	247.6	0.565	5.04		220.2		80.1		9.4	0.95	10.4	0.02	0.05	0.05	0.09	156	09
169		9.71		9.69		33.498	25.834	219.3	0.598	4.59		200.6		71.5		14.9	1.26	15.5	0.02	0.04	0.02	0.03	170	08
200	ISL	9.24	D	9.21		33.714	D 26.081	196.4	0.618	3.93	D	171.2	D	60.7		21.3	1.56	20.3	0.02	0.07	0.00	0.02	202	
201		9.24		9.21		33.720	26.085	196.0	0.664	3.94		171.9		60.8		21.5	1.57	20.5	0.02	0.07	0.00	0.02	203	07
230		8.68		8.66		33.889	26.306	175.5	0.718	3.36		146.5		51.2		28.2	1.80	24.2	0.01	0.04			232	06
250	ISL	8.42	D	8.40		33.952	D 26.395	167.3	0.709	3.06	D	133.3	D	46.5		32.1	1.94	26.2	0.01	0.05			252	
269		8.15		8.12		33.983	26.461	161.2	0.784	2.68		117.2		40.5		35.9	2.07	28.0	0.01	0.05			271	05
300	ISL	7.66	D	7.63		34.026	D 26.567	151.5	0.789	2.13	D	92.8	D	31.8		42.6	2.28	30.6	0.01	0.05			302	
320		7.36		7.33		34.037	26.619	146.7	0.862	1.91		83.3		28.3		46.8	2.41	32.3	0.02	0.05			322	04
380		6.71		6.68		34.116	26.771	132.8	0.946	1.04		45.4		15.2		59.9	2.77	36.5	0.01	0.04			383	03
400	ISL	6.52	D	6.48		34.133	D 26.810	129.3	0.930	0.88	D	38.1	D	12.7		63.1	2.83	37.2	0.01	0.04			403	
440		6.24		6.20		34.158	26.867	124.3	1.023	0.69		30.3		10.0		69.6	2.94	38.7	0.01	0.05			444	02
500	ISL	5.71	D	5.67		34.186	D 26.957	116.1	1.053	0.56	D	24.5	D	8.0		77.8	3.07	40.3	0.01	0.05			504	
516		5.67		5.63		34.207	26.977	114.3	1.113	0.50		21.7		7.1		80.0	3.10	40.7	0.01	0.05			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 57.3 N	117 16.9 W	08/11/2014	2232	UTC	18 m	110 01 kn	300 01 07	0	1014.0 mb	22.1 C	19.9 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		19.67		19.67		33.556	23.747	414.2	0.000	5.55		242.1		105.8		3.0	0.33	0.0	0.02	0.12	0.61	0.21	0	
2		19.67		19.67		33.556	23.747	414.3	0.008	5.55		242.1		105.8		3.0	0.33	0.0	0.02	0.12	0.61	0.21	2	04
5		19.02		19.02		33.550	23.909	398.9	0.021	5.47		239.0		103.2		3.0	0.33	0.1	0.01	0.21	0.36	0.15	5	03
10		18.72		18.72		33.531	23.971	393.2	0.040	5.58		243.4		104.5		3.1	0.34	0.1	0.01	0.12	0.49	0.23	10	02
15		18.29		18.29		33.510	24.062	384.7	0.060	5.54		241.7		102.9		3.5	0.38	0.3	0.07	0.21	0.74	0.42	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 1411 — STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 43.6 N	121 33.6 W	21/11/2014	1719 UTC	17 m	1152 - 1725 PST	1152 PST	1725 PST	250.6 mg C/m2	065

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	16.35	33.237	24.313	5.70	101.8	1.4	0.31	0.0	0.01	0.06	0.39	0.12	83. A	7.6	7.5	7.6	0.03
9	16.36	33.238	24.313	5.72	102.3	1.4	0.32	0.0	0.02	0.08	0.40	0.12	44.	6.3	6.8	6.5	0.30
14	16.34	33.239	24.318	5.71	101.9	1.4	0.34	0.0	0.02	0.09	0.39	0.12	28.	5.9	6.3	6.1	0.30
25	15.83	33.319	24.497	5.77	102.1	1.0	0.35	0.0	0.02	0.11	0.64	0.24	10.	6.8	6.7	6.8	0.25
36	12.10	32.912	24.951	5.72	93.5	5.5	0.79	5.4	0.42	0.11	0.40	0.35					
47	11.33	32.920	25.100	5.51	88.6	7.1	0.96	8.4	0.22	0.10	0.23	0.31	1.4	0.52	0.45	0.48	0.18
59	10.66	32.987	25.271	5.30	84.1	9.2	1.12	11.2	0.05	0.27	0.15	0.19	0.49	0.18	0.12	0.15	0.18

RV NEW HORIZON — CALCOFI CRUISE 1411 — STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 23.6 N	124 19.1 W	20/11/2014	1643 UTC	31 m	1203 - 1741 PST	1203 PST	1739 PST	138.5 mg C/m2	061

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	18.68	32.961	23.545	5.49	102.4	1.6	0.33	0.0	0.01	0.36	0.13	0.03	86. A	1.9	2.1	2.0	0.03
10	18.68	32.960	23.545	5.42	101.2	1.6	0.33	0.0	0.01	0.29	0.13	0.03					
17	18.68	32.960	23.545	5.43	101.3	1.6	0.34	0.0	0.01	0.14	0.13	0.03	43.	2.0	1.9	2.0	0.15
24	18.65	32.960	23.552	5.43	101.2	1.6	0.34	0.0	0.01	0.14	0.13	0.03	30.	1.9	1.9	1.9	0.12
36	18.00	32.957	23.713	5.61	103.3	1.5	0.34	0.0	0.01	0.16	0.18	0.06					
45	17.33	32.976	23.887	5.68	103.3	1.6	0.33	0.0	0.01	0.05	0.20	0.08	11.	1.7	1.7	1.7	0.17
60	14.56	32.878	24.434	6.09	104.8	2.3	0.36	0.0	0.01	0.06	0.26	0.18					
75	13.38	32.840	24.648	5.96	99.9	2.9	0.45	0.5	0.16	0.11	0.30	0.26					
84	12.78	32.866	24.788	5.90	97.7	3.7	0.57	2.1	0.31	0.10	0.26	0.23	1.6	0.58	0.57	0.57	0.13
97	11.70	32.861	24.989	5.66	91.7	5.4	0.71	5.0	0.11	0.01	0.20	0.23					
107	10.83	32.976	25.235	5.48	87.1	7.9	0.96	9.3	0.03	0.03	0.12	0.15	0.50	0.13	0.14	0.14	0.15

RV NEW HORIZON — CALCOFI CRUISE 1411 — STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 49.2 N	121 50.7 W	19/11/2014	1642 UTC	23 m	1153 - 1730 PST	1153 PST	1729 PST	269.2 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	16.68	33.184	24.197	5.68	102.1	1.4	0.32	0.1	0.00	0.16	0.28	0.07	88. A	5.5	5.6	5.5	0.04
13	16.65	33.186	24.207	5.68	102.0	1.4	0.37	0.1	0.00	0.61	0.29	0.08	42.	5.5	5.8	5.6	0.20
17	16.64	33.188	24.211	5.68	102.1	1.4	0.33	0.1	0.00	0.06	0.30	0.09	32.	5.2	5.1	5.2	0.21
25	16.58	33.199	24.233	5.71	102.4	1.4	0.34	0.1	0.00	0.13	0.41	0.12					
34	16.32	33.181	24.279	5.74	102.4	1.5	0.33	0.1	0.00	0.13	0.48	0.14	10.	5.2	5.1	5.1	0.23
44	13.32	32.926	24.726	6.00	100.6	2.8	0.47	0.6	0.04	0.18	1.02	0.47					
54	12.20	32.844	24.881	5.79	94.8	4.5	0.69	3.6	0.27	0.22	0.50	0.41					
63	11.89	33.123	25.156	5.18	84.5	7.2	1.00	9.5	0.04	0.07	0.25	0.29	1.5	0.63	0.48	0.55	0.15
72	11.00	33.243	25.410	4.79	76.6	9.7	1.18	12.3	0.01	0.09	0.19	0.22					
80	10.56	33.347	25.570	4.38	69.4	13.2	1.36	15.3	0.00	0.04	0.11	0.14	0.48	0.14	0.12	0.13	0.14

RV NEW HORIZON — CALCOFI CRUISE 1411 — STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 10.8 N	119 30.6 W	22/11/2014	1935 UTC	30 m	1222 - 1718 PST	1144 PST	1718 PST	237.1 mg C/m2	073

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	18.81	33.579	23.984	5.44	102.2	1.9	0.28	0.0	0.00	0.00	0.22	0.06	90. A	3.5	3.3	3.4	0.11
9	18.77	33.580	23.996	5.45	102.2	1.9	0.31	0.0	0.00	0.15	0.22	0.06					
17	18.56	33.568	24.039	5.49	102.5	1.9	0.32	0.0	0.00	0.22	0.26	0.08	42.	3.8	3.7	3.7	0.37
24	16.76	33.361D	24.315	5.89	106.1	2.6	0.32	0.0	0.00	0.11	0.28	0.14	29.	3.4	3.3	3.3	0.42
34	14.78	33.317	24.726	5.87	101.7	3.6	0.42	0.1	0.04	0.07	0.58	0.31					
44	14.26	33.301	24.823	5.63	96.5	4.4	0.54	1.8	0.40	0.09	0.58	0.36	11.	3.7	4.0	3.8	0.37
58	13.09	33.325	25.080	4.94	82.7	7.9	0.87	7.8	0.50	0.07	0.19	0.23					
71	12.21	33.337	25.262	4.80	78.8	8.5	0.93	9.0	0.13	0.04	0.15	0.18					
83	11.52	33.404	25.444	4.43	71.7	11.1	1.13	12.1	0.03	0.06	0.10	0.12	1.4	0.19	0.19	0.19	0.25
93	11.32	33.466	25.527	4.10	66.1	13.4	1.28	14.5	0.03	0.02	0.07	0.11					
104	10.98	33.504	25.618	3.95	63.3	15.1	1.38	16.1	0.02	0.08	0.05	0.08	0.49	0.06	0.01	0.04	0.27

A) INCUBATION LIGHT INTENSITIES WERE 59.5; 42.6; 29.4; 10.1; 1.5; 0.48 PERCENT RESPECTIVELY.

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 83.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 34.7 N	120 45.4 W	18/11/2014	1719 UTC	18 m	1148 - 1725 PST	1148 PST	1725 PST	237.2 mg C/m2	052

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	17.81	33.578	24.231	5.47	100.7	1.1	0.28	0.1	0.00	0.17	0.36	0.13	84. A	6.9	6.7	6.8	0.08
9	17.81	33.573	24.228	5.48	101.0	1.1	0.27	0.1	0.00	0.42	0.36	0.13	46.	6.7	7.0	6.9	0.16
13	17.81	33.574	24.229	5.46	100.6	1.1	0.28	0.1	0.00	0.47	0.36	0.13	33.	6.4	6.2	6.3	0.17
20	17.80	33.579	24.234	5.46	100.5	1.1	0.28	0.1	0.00	0.17	0.38	0.15					
27	17.80	33.573	24.231	5.45	100.3	1.1	0.28	0.1	0.00	0.17	0.37	0.14	10.0	5.5	5.0	5.2	0.14
37	14.71	33.298	24.726	5.37	92.8	3.2	0.63	3.8	0.14	0.16	0.39	0.29					
50	11.13	33.114	25.288	5.13	82.2	8.6	1.08	10.9	0.03	0.17	0.15	0.23	1.4	0.45	0.35	0.40	0.09
56	11.06	33.113	25.298	5.14	82.2	8.8	1.08	11.0	0.03	0.11	0.17	0.19					
63	10.43	33.144	25.434	5.00	79.0	10.8	1.20	13.1	0.01	0.11	0.12	0.14	0.46	0.14	0.16	0.15	0.06

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 14.6 N	123 29.3 W	17/11/2014	1759 UTC	43 m	1159 - 1739 PST	1159 PST	1739 PST	173.8 mg C/m2	048

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	19.47	33.302D	23.606	5.32	101.6	2.3	0.32	0.1	0.00	1.03	0.11	0.04	93. A	1.6	1.7	1.6	0.04
13	19.43	33.303	23.616	5.30	100.6	2.3	0.31	0.1	0.00	0.10	0.11	0.03					
24	19.44	33.312	23.623	5.30	100.5	2.3	0.33	0.1	0.00	0.27	0.12	0.04	42.	1.8	2.1	2.0	0.10
34	19.44	33.303	23.618	5.32	100.8	2.2	0.32	0.1	0.00	0.10	0.12	0.05	30.	1.6	1.5	1.5	0.10
44	19.44	33.305	23.621	5.32	100.9	2.3	0.32	0.1	0.00	0.23	0.13	0.04					
54	19.14	33.283	23.681	5.43	102.3	2.3	0.31	0.1	0.00	0.21	0.21	0.08					
64	16.15	33.075	24.239	5.92	105.1	2.2	0.35	0.1	0.00	0.19	0.22	0.17	10.	1.8	2.1	2.0	0.08
81	13.85	33.085	24.744	5.81	98.5	3.1	0.44	0.4	0.10	0.16	0.21	0.18					
100	12.25	33.115	25.084	5.51	90.5	5.0	0.68	4.4	0.15	0.09	0.16	0.18					
118	11.01	33.164	25.349	5.23	83.6	7.4	0.90	8.5	0.02	0.27	0.10	0.13	1.5	0.17	0.20	0.19	0.09
130	10.59	33.228	25.474	4.94	78.2	10.0	1.09	11.8	0.01	0.03	0.08	0.11					
140	9.88	33.364	25.700	4.59	71.6	13.9	1.28	15.3	0.01	0.08	0.04	0.06					
150	9.71	33.429	25.780	4.43	68.9	15.8	1.37	16.7	0.01	0.07	0.03	0.04	0.47	0.01	0.00	0.01	0.10

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 19.3 N	119 39.9 W	15/11/2014	1747 UTC	18 m	1145 - 1723 PST	1143 PST	1723 PST	444.4 mg C/m2	039

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	17.47	33.472	24.232	5.49	100.3	1.2	0.32	0.3	0.03	0.21	0.57	0.22	77. A	12.8	12.8	12.8	0.05
10	17.46	33.471	24.234	5.48	100.2	1.2	0.32	0.3	0.04	0.15	0.62	0.23	43.	11.7	14.0	12.9	0.11
14	17.45	33.471	24.237	5.48	100.1	1.2	0.32	0.3	0.03	0.11	0.62	0.21	30.	11.6	11.7	11.7	0.12
20	17.40	33.468	24.247	5.49	100.2	1.3	0.32	0.3	0.03	0.12	0.63	0.22					
27	16.96	33.442	24.331	5.47	99.1	1.4	0.35	0.4	0.05	0.16	0.68	0.27	10.0	9.7	9.9	9.8	0.12
40	15.32	33.202	24.520	5.69	99.6	2.1	0.39	0.6	0.08	0.13	0.64	0.42					
49	14.00	33.205	24.804	5.42	92.3	4.9	0.70	4.7	0.20	0.12	0.46	0.38	1.5	1.0	0.89	0.97	0.07
55	13.96	33.307	24.892	5.22	88.9	5.7	0.76	5.8	0.21	0.17	0.45	0.41					
63	12.68	33.269D	25.118	5.23	86.6	6.0	0.85	7.0	0.11	0.08	0.27	0.32	0.46	0.38	0.37	0.37	0.07

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 59.4 N	122 23.6 W	16/11/2014	1909 UTC	28 m	1725 - 1214 PST	1154 PST	1709 PST	128.7 mg C/m2	044

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	18.80	33.103	23.624	5.44	101.8	2.0	0.35	0.0	0.02	0.12	0.11	0.03	85. A	1.9	1.9	1.9	0.04
10	18.80	33.097	23.621	5.39	100.9	2.0	0.34	0.1	0.01	0.12	0.11	0.03					
16	18.77	33.106	23.635	5.40	100.9	2.0	0.35	0.0	0.02	0.12	0.11	0.03	42.	1.6	1.6	1.6	0.11
22	18.76	33.107	23.638	5.40	101.1	2.0	0.33	0.0	0.02	0.13	0.11	0.03	30.	1.6	1.6	1.6	0.11
32	18.63	33.079	23.650	5.40	100.7	1.9	0.35	0.1	0.02	0.12	0.14	0.04					
42	17.66	33.056	23.871	5.59	102.4	1.5	0.33	0.0	0.02	0.08	0.21	0.07	10.0	2.3	2.0	2.1	0.17
54	16.63	33.026	24.092	5.86	105.1	2.0	0.35	0.1	0.02	0.13	0.24	0.11					
65	15.58	32.989	24.301	5.97	104.9	2.2	0.37	0.1	0.01	0.19	0.25	0.16					
77	13.90	32.897	24.588	5.95	100.9	2.5	0.43	0.1	0.02	0.14	0.22	0.15	1.5	0.54	0.46	0.50	0.06
87	12.72	32.907	24.832	5.76	95.4	3.5	0.55	1.4	0.18	0.11	0.22	0.17					
97	12.16	33.044D	25.045	5.63	92.1	4.4	0.63	2.9	0.26	0.03	0.19	0.19	0.49	0.30	0.28	0.29	0.05

A) INCUBATION LIGHT INTENSITIES WERE 59.5; 42.6; 29.4; 10.1; 1.5; 0.48 PERCENT RESPECTIVELY.

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 29.1 N	117 46.0 W	14/11/2014	1917 UTC	14 m	1144 - 1720 PST	1136 PST	1715 PST	519.2 mg C/m2	031

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	18.95	33.508	23.896	5.56	104.6	2.1	0.35	0.0	0.02	0.13	0.57	0.45	80. A	17.6	16.4	17.0	0.08
8	18.93	33.507	23.901	5.57	104.7	2.1	0.34	0.1	0.02	0.24	0.72	0.47	42.	17.5	19.0	18.2	0.13
11	18.91	33.506	23.904	5.56	104.6	2.1	0.38	0.0	0.02	0.18	0.83	0.46	30.	16.7	17.8	17.2	0.16
21	18.70	33.494	23.948	5.57	104.2	2.4	0.32	0.0	0.04	0.09	1.08	0.37	10.0	15.5	15.4	15.5	0.15
30	17.73	33.438	24.145	5.56	102.1	3.5	0.38	0.3	0.16	0.34	0.82	0.25					
39	17.04	33.409	24.289	5.53	100.2	3.9	0.43	0.5	0.24	0.42	0.73	0.23	1.4	1.6	1.4	1.5	0.08
49	15.61	33.311	24.541	5.73	100.9	4.0	0.46	0.6	0.26	0.13	0.68	0.20	0.46	0.64	0.61	0.62	0.05

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 39.2 N	119 28.8 W	13/11/2014	1929 UTC	29 m	1244 - 1727 PST	1142 PST	1724 PST	216.5 mg C/m2	026

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	18.54	33.491	23.984	5.44	101.5	1.2	0.29	0.1	0.02	0.24	0.21	0.07	90. A	4.3	4.2	4.3	0.04
8	18.44	33.489	24.008	5.44	101.3	1.2	0.37	0.1	0.02	0.38	0.22	0.07					
16	18.43	33.489	24.011	5.44	101.3	1.2	0.30	0.1	0.01	0.23	0.23	0.08	43.	3.6	4.1	3.8	0.08
23	18.42	33.488	24.015	5.43	101.2	1.2	0.28	0.1	0.02	0.30	0.24	0.08	30.	3.5	3.7	3.6	0.08
33	18.37	33.480	24.022	5.45	101.3	1.2	0.30	0.1	0.01	0.20	0.25	0.09					
44	15.29	33.072D	24.426	5.81	101.5	1.8	0.34	0.1	0.02	0.13	0.37	0.26	9.7	3.0	2.7	2.8	0.09
55	13.42	32.946	24.723	5.81	97.6	3.5	0.58	2.3	0.21	0.15	0.38	0.36					
67	12.21	33.078	25.061	5.34	87.6	5.8	0.85	7.1	0.08	0.05	0.17	0.24					
80	11.41	33.215	25.317	5.07	81.8	7.9	1.00	9.6	0.04	0.21	0.11	0.20	1.4	0.22	0.19	0.21	0.00
91	10.39	33.313	25.572	4.71	74.3	11.6	1.20	13.5	0.03	0.13	0.08	0.12					
101	10.18	33.395	25.673	4.43	69.7	14.8	1.37	16.3	0.03	0.08	0.05	0.08	0.48	0.03	0.05	0.04	0.02

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
31 25.2 N	121 59.4 W	12/11/2014	1815 UTC	35 m	1153 - 1735 PST	1152 PST	1736 PST	177.4 mg C/m2	021

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	19.54	33.184	23.498	5.30	100.7	2.0	0.35	0.1	0.01	0.15	0.15	0.04	88. A	2.7	2.5	2.6	0.05
10	19.54	33.183	23.498	5.31	100.8	2.0	0.34	0.1	0.02	0.10	0.15	0.04					
19	19.53	33.186	23.502	5.29	100.4	2.0	0.37	0.1	0.02	0.34	0.16	0.04	43.	2.4	2.3	2.3	0.07
28	19.53	33.184	23.502	5.29	100.4	1.9	0.34	0.0	0.02	0.06	0.16	0.04	29.	2.1	2.2	2.1	0.08
52	16.31	33.050D	24.182	5.94	105.9	2.3	0.34	0.1	0.02	0.13	0.23	0.11	10.	2.0	2.0	2.0	0.10
66	15.18	33.031	24.421	5.92	103.1	2.3	0.41	0.1	0.03	0.13	0.29	0.23					
96	12.85	33.189	25.026	5.48	91.1	4.5	0.66	3.4	0.37	0.12	0.16	0.21	1.5	0.43	0.45	0.44	0.01
100	12.60	33.178	25.066	5.41	89.5	5.1	0.71	4.8	0.22	0.07	0.13	0.17					
122	10.61	33.213	25.457	5.03	79.7	9.3	1.04	11.0	0.03	0.07	0.08	0.11	0.47	0.10	0.09	0.10	0.01

RV NEW HORIZON CALCOFI CRUISE 1411 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	08/11/2014	2032 UTC	23 m	1330 - 1718 PST	1133 PST	1718 PST	351.9 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
2	19.60	33.576	23.781	5.44	103.7	2.2	0.30	0.1	0.02	0.29	0.20	0.04	88. A	3.3 B	3.3 B	3.3	0.08
13	18.77	33.523	23.954	5.63	105.5	2.9	0.32	0.1	0.02	0.16	0.34	0.13	42.	9.9 B	9.9 B	9.9	0.25
18	18.22	33.515	24.084	5.68	105.4	3.1	0.34	0.1	0.02	0.35	0.73	0.34	30.	12.9	12.5	12.7	0.28
26	16.17	33.354	24.446	5.76	102.5	4.2	0.44	0.5	0.18	0.28	1.04	0.56					
34	14.89	33.391	24.758	5.08	88.1	6.9	0.69	3.4	0.62	0.24	0.58	0.47	10.	5.9	5.5	5.7	0.05
44	13.66	33.414	25.035	4.57	77.4	9.3	0.97	7.8	0.65	0.17	0.25	0.28					
55	13.24	33.419	25.123	4.39	73.7	10.5	1.08	9.3	0.76	0.81	0.16	0.22					
58	13.22	33.421	25.129	4.39	73.6	10.6	1.07	9.4	0.75	0.86	0.16	0.22	2.1	0.34	0.41	0.37	0.07

B)PRODUCTIVITY REPLICATES POOR. UNCERTAIN VALUE ELIMINATED

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 21.0 N	118 33.3 W	09/11/2014	1902 UTC	35 m	1220 - 1728 PST	1138 PST	1723 PST	173.6 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
2	19.70	33.542	23.730	5.49	104.7	1.5	0.31	0.1	0.00	0.12	0.15	0.03					
10	19.64	33.536	23.740	5.36	102.3	1.5	0.31	0.1	0.00	0.10	0.15	0.04	64. A	3.2	3.3	3.3	0.08
18	19.64	33.536	23.742	5.31	101.2	1.5	0.31	0.1	0.00	0.25	0.15	0.03					
28	19.64	33.544	23.749	5.32	101.3	1.5	0.34	0.1	0.00	0.10	0.17	0.04	29.	3.4	3.4	3.4	0.09
41	19.62	33.537	23.750	5.34	101.7	1.5	0.31	0.1	0.00	0.09	0.19	0.05	17.	3.3	3.3	3.3	0.09
52	18.72	33.449	23.913	5.58	104.4	1.5	0.33	0.1	0.00	0.11	0.29	0.11	10.				
67	15.09	33.065	24.465	6.02	104.8	2.3	0.39	0.1	0.00	0.09	0.32	0.18					
81	13.04	33.154	24.961	5.60	93.4	4.6	0.68	3.9	0.22	0.17	0.35	0.32					
96	11.31	33.235	25.351	5.01	80.6	8.7	1.04	10.2	0.03	0.04	0.16	0.23	1.5	0.50	0.51	0.51	0.02
105	10.68	33.316	25.525	4.65	73.9	11.9	1.25	13.8	0.02	0.00	0.11	0.15					
114	10.17	33.434	25.706	4.25	66.8	15.9	1.47	17.4	0.01	0.02	0.05	0.09					
123	10.02	33.473	25.761	4.14	64.9	17.1	1.52	18.2	0.01	0.03	0.04	0.07	0.45	0.12	0.12	0.12	0.01

A) INCUBATION LIGHT INTENSITIES WERE 59.5; 42.6; 29.4; 10.1; 1.5; 0.48 PERCENT RESPECTIVELY.

RV NEW HORIZON CALCOFI CRUISE 1411 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 55.2 W	10/11/2014	1820 UTC	36 m	1137 - 1738 PST	1148 PST	1734 PST	111.8 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	19.61	33.414	23.655	5.33	101.5	2.5	0.33	0.1	0.00		0.12	0.03	92. A	2.3	2.3	2.3	0.04
11	19.61	33.413	23.654	5.31	101.0	2.5	0.33	0.1	0.00		0.13	0.04					
20	19.62	33.412	23.654	5.30	100.9	2.5	0.33	0.1	0.00		0.13	0.03	43.	1.8	1.9	1.9	0.03
29	19.62	33.412	23.654	5.31	101.1	2.5	0.34	0.1	0.00		0.13	0.04	29.	1.7	1.7	1.7	0.04
37	19.62	33.416	23.657	5.30	100.9	2.5	0.33	0.1	0.00		0.12	0.03					
45	19.62	33.412	23.656	5.29	100.8	2.5	0.32	0.1	0.00		0.13	0.03					
53	19.35	33.410	23.724	5.28	100.1	2.5	0.32	0.1	0.00		0.13	0.04	10.	0.72	0.64	0.68	0.05
69	16.25	33.164	24.285	5.91	105.3	2.4	0.31	0.1	0.00		0.19	0.12					
85	15.14	33.219	24.575	5.78	100.8	2.6	0.39	0.1	0.00		0.19	0.17					
100	12.96	33.145	24.969	5.64	94.0	3.8	0.52	1.2	0.15		0.17	0.19	1.4	0.25	0.19	0.22	0.03
108	12.02	33.156	25.158	5.44	88.9	5.3	0.70	4.9	0.11		0.16	0.21					
117	11.43	33.175	25.283	5.31	85.7	6.6	0.82	7.2	0.02		0.12	0.20					
125	11.08	33.224	25.384	5.17	82.8	7.8	0.91	8.8	0.01		0.11	0.17	0.48	0.08	0.10	0.09	0.02

RV NEW HORIZON CALCOFI CRUISE 1411 STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
29 51.0 N	123 35.1 W	11/11/2014	1825 UTC	41 m	1156 - 1746 PST	1158 PST	1746 PST	205.4 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	20.35	33.516	23.540	5.19	100.2	2.4	0.30	0.1	0.01	0.57	0.09	0.02	93. A	1.9	1.6	1.7	0.02
12	20.52	33.614	23.571	5.18	100.3	2.3	0.29	0.2	0.01	0.39	0.09	0.02					
22	20.77	33.749	23.608	5.18D	101.0	2.3	0.27	0.1	0.01	0.26	0.10	0.02	44.	1.9	1.9	1.9	0.05
33	20.90	33.806	23.618	5.23	102.2	2.3	0.27	0.1	0.01	0.05	0.11	0.03	29.	1.8	2.0	1.9	0.06
42	21.19	33.913	23.622	5.11	100.4	2.2	0.26	0.1	0.01	0.06	0.12	0.03					
51	21.23	33.936	23.629	5.09	100.2	2.2	0.26	0.1	0.01	0.07	0.14	0.03					
77	17.05	33.296	24.202	5.82	105.4	2.3	0.31	0.1	0.01	0.13	0.17	0.09	5.6	2.0	2.0	2.0	0.03
95	15.79	33.321	24.512	5.75	101.6	2.5	0.30	0.1	0.01	0.11	0.18	0.16					
113	13.82	33.269	24.895	5.63	95.5	3.2	0.41	0.4	0.13	0.06	0.17	0.19	1.5	0.56	0.68	0.62	0.00
123	13.07	33.259	25.038	5.56	92.8	4.0	0.50	1.9	0.24	0.05	0.16	0.19					
131	12.08	33.253	25.226	5.42	88.7	4.9	0.61	3.9	0.09	0.04	0.14	0.18					
143	11.18	33.229	25.371	5.27	84.7	6.6	0.78	7.0	0.03	0.05	0.10	0.13	0.47	0.14	0.18	0.16	0.01

A) INCUBATION LIGHT INTENSITIES WERE 59.5; 42.6; 29.4; 10.1; 1.5; 0.48 PERCENT RESPECTIVELY.

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 05.2	120 46.8	11/21	1859	1905	125	58	144	144
76.7	51.0	35 01.3	120 55.1	11/21	1645	1706	457	203	42	42
76.7	55.0	34 53.3	121 11.9	11/21	1329	1350	412	212	75	53
76.7	60.0	34 42.7	121 32.5	11/21	0827	0848	448	213	551	29
76.7	70.0	34 23.3	122 14.7	11/21	0318	0339	422	207	47	47
76.7	80.0	34 03.2	122 56.5	11/20	2107	2128	441	217	227	30
76.7	90.0	33 43.2	123 38.0	11/20	1511	1533	469	211	60	15
76.7	100.0	33 23.1	124 18.5	11/20	0759	0820	454	219	9	9
80.0	50.5	34 27.7	120 29.2	11/22	0005	0007	57	12	70	70
80.0	51.0	34 27.0	120 31.5	11/22	0148	0154	151	52	53	53
80.0	55.0	34 18.9	120 48.1	11/18	2212	2233	431	208	107	93
80.0	60.0	34 09.0	121 09.0	11/19	0212	0233	444	202	106	106
80.0	70.0	33 49.9	121 51.3	11/19	0748	0809	460	212	30	30
80.0	80.0	33 29.0	122 32.0	11/19	1510	1532	450	209	27	27
80.0	90.0	33 08.9	123 13.3	11/19	2103	2124	418	219	120	96
80.0	100.0	32 48.9	123 54.3	11/20	0313	0335	460	206	119	24
81.7	43.5	34 24.2	119 48.0	11/22	0913	0914	42	13	48	48
81.8	46.9	34 16.5	120 01.6	11/22	0655	0717	443	213	23	23
83.3	39.4	34 15.1	119 20.1	11/22	1503	1505	50	14	40	40
83.3	40.6	34 13.5	119 24.7	11/22	1412	1414	63	18	32	32
83.3	42.0	34 10.7	119 30.6	11/22	1234	1242	190	65	147	63
83.3	51.0	33 52.7	120 08.0	11/18	1621	1628	155	70	32	32
83.3	55.0	33 44.7	120 24.6	11/18	1318	1338	400	210	57	57
83.3	60.0	33 34.7	120 45.3	11/18	0830	0851	435	205	37	37
83.3	70.0	33 14.7	121 26.5	11/18	0347	0409	439	209	55	55
83.3	80.0	32 54.8	122 07.7	11/17	2150	2211	429	211	49	49
83.3	90.0	32 34.7	122 48.6	11/17	1620	1644	469	210	19	19
83.3	100.0	32 14.7	123 29.5	11/17	1059	1120	445	206	45	16
83.3	110.0	31 54.8	124 10.1	11/17	0513	0535	417	214	43	14
85.4	35.8	34 00.7	118 49.8	11/22	1827	1829	45	15	22	22
86.7	33.0	33 53.4	118 29.4	11/14	2004	2009	107	47	56	56
86.7	35.0	33 49.5	118 37.8	11/14	2238	2259	400	218	58	58
86.7	40.0	33 39.4	118 58.5	11/15	0305	0326	423	211	109	85
86.7	45.0	33 29.5	119 19.1	11/15	0700	0722	415	217	26	26
86.7	80.0	32 19.5	121 42.9	11/16	0605	0629	487	213	16	16
86.7	90.0	31 59.4	122 23.6	11/16	1212	1234	440	207	11	11
86.7	100.0	31 39.4	123 04.2	11/16	1751	1815	497	213	32	32
86.7	110.0	31 19.4	123 44.6	11/16	2323	2344	437	202	25	25
86.8	32.5	33 53.4	118 26.5	11/14	1838	1840	43	14	70	70
88.5	30.1	33 40.4	118 05.6	11/14	1524	1525	37	15	108	108
90.0	27.7	33 29.7	117 44.9	11/14	1254	1256	47	13	43	43
90.0	28.0	33 29.1	117 46.0	11/14	1210	1215	127	44	39	39
90.0	30.0	33 25.2	117 54.3	11/14	0935	0956	416	212	10	10
90.0	35.0	33 15.1	118 15.0	11/14	0517	0539	403	213	32	32
90.0	37.0	33 11.1	118 23.1	11/14	0204	0225	440	207	207	57
90.0	45.0	32 55.1	118 56.1	11/13	2042	2103	417	215	46	46
90.0	53.0	32 39.2	119 28.9	11/13	1300	1321	445	199	76	70
90.0	60.0	32 25.1	119 57.5	11/13	0741	0802	443	207	18	18
90.0	70.0	32 05.0	120 38.3	11/13	0155	0217	440	206	16	16
90.0	80.0	31 45.1	121 18.8	11/12	1957	2018	437	213	21	21
90.0	90.0	31 25.1	121 59.3	11/12	1114	1135	447	211	11	11
90.0	100.0	31 05.2	122 39.7	11/12	0531	0554	459	222	15	15
90.0	110.0	30 45.2	123 20.0	11/11	2336	2357	451	201	42	35
90.0	120.0	30 25.1	123 59.9	11/11	1732	1755	445	215	29	29
91.7	26.4	33 14.7	117 27.9	11/08	1731	1733	55	12	54	54
93.3	26.7	32 57.4	117 18.3	11/08	1332	1356	476	237	17	17
93.3	28.0	32 54.7	117 23.8	11/08	2131	2152	430	208	44	44
93.3	30.0	32 50.7	117 31.9	11/09	0013	0034	436	201	273	39
93.3	35.0	32 40.8	117 52.4	11/09	0415	0437	422	213	135	59
93.3	40.0	32 30.8	118 12.7	11/09	0817	0838	440	207	102	48
93.3	45.0	32 20.9	118 33.4	11/09	1219	1241	449	207	60	36
93.3	50.0	32 10.8	118 53.6	11/09	1618	1639	401	220	52	52
93.3	55.0	32 00.9	119 14.0	11/09	2008	2029	432	213	151	118
93.3	60.0	31 50.8	119 34.4	11/09	2357	0018	469	201	241	38
93.3	70.0	31 30.8	120 14.7	11/10	0530	0552	436	212	25	25
93.3	80.0	31 10.8	120 55.2	11/10	1122	1144	455	214	18	18
93.3	90.0	30 50.9	121 35.4	11/10	1710	1732	468	214	30	30
93.3	100.0	30 30.9	122 15.5	11/10	2259	2320	424	213	66	52
93.3	110.0	30 10.8	122 55.3	11/11	0502	0524	461	213	24	24
93.3	120.0	29 50.8	123 35.2	11/11	1131	1152	440	213	11	11
93.4	26.4	32 57.2	117 16.9	11/08	1450	1453	66	13	45	45