UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

CalCOFI Cruise 1507
8 -25 July 2015

CC Reference 16 - 03
1 Sept 2016

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 1507
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CONTENTS

INTRODUCTION

The data presented in this report were collected during cruise 1507* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the RV Oceanus. 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 P155. 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 30ml 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 a cruise average of 11.64 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 5 meters. The data were logged in one-second increments using a Sea-Bird Electronics, Inc., SBE 45 MicroTSG Thermosalinograph for internal, SBE 38 Thermosalinograph for external, and a WetLabs WETstar fluorometer. The data has been processed to show 10 minute averages.

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) Underway Sea Surface pCO2 and pH measurements: Automated shipboard analysis of the partial pressure of CO2 and pH were made from the ship's underway flow-through system. pCO2 measurements were taken with the Shipboard Underway pCO2 Environmental Recorder (SUPER-CO2) sold by Sunburst Sensors designed with a showered equilibrator and a LI-COR 840A CO2/H2O non-dispersive infrared gas analyzer. pH measurements were taken with a Honeywell Durafet based on Ion Selective Field Effect Transistor (ISFET) technology. The Durafet pH sensor was calibrated before and after the cruise. pCO2 was calibrated with standard gases traceable to NIST every 4 hours, along with an atmospheric sample. Temperature and salinity were also sampled using a SeaBird Thermosalinograph (SBE45). Measurements were recorded every 4 seconds. (T. Martz, SIO)

4) *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)

5) *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)

6) *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 8 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)

7) *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)

8) *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)

9) *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)

10) *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 five APEX profiling floats for deployment on this cruise at stations 86.7 70, 83.3 60, 80.0 70, 76.7 60, and 76.7 80.

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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PERSONNEL

CalCOFI Cruise 1507

SHIP'S CAPTAIN

Jeff Crews, R/V *Oceanus*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Wilkinson, James (Chief Scientist)	Programmer Analyst, SIO	1
Debich, Amanda	Acoustic Technician, SIO	1
Dovel, Shonna	Staff Research Associate, SIO	1
Ekern, Lindsey	Staff Research Associate, SIO	1
Faber, David	Staff Research Associate, SIO	1
Hays, Amy	Fishery Biologist, NMFS	1
Jorlie, RJ	Staff Research Associate, SIO	1
Mckeown, Zach	Volunteer	1
Overcash, Bryan	Fishery Biologist, NMFS	1
Pyda, Patricia	Volunteer	1
Roadman, Megan	Staff Research Associate, SIO	1
Webb, Sophie	Bird Observer, FAIER	1
Whitaker, Katherine	Marine Mammal Observer, MPL	1

Leg 1: San Diego to San Diego, California, 8-25 July, 2015

FIGURES

Cruise 1507

1. CalCOFI Cruise 1507 track and station positions.

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

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

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

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

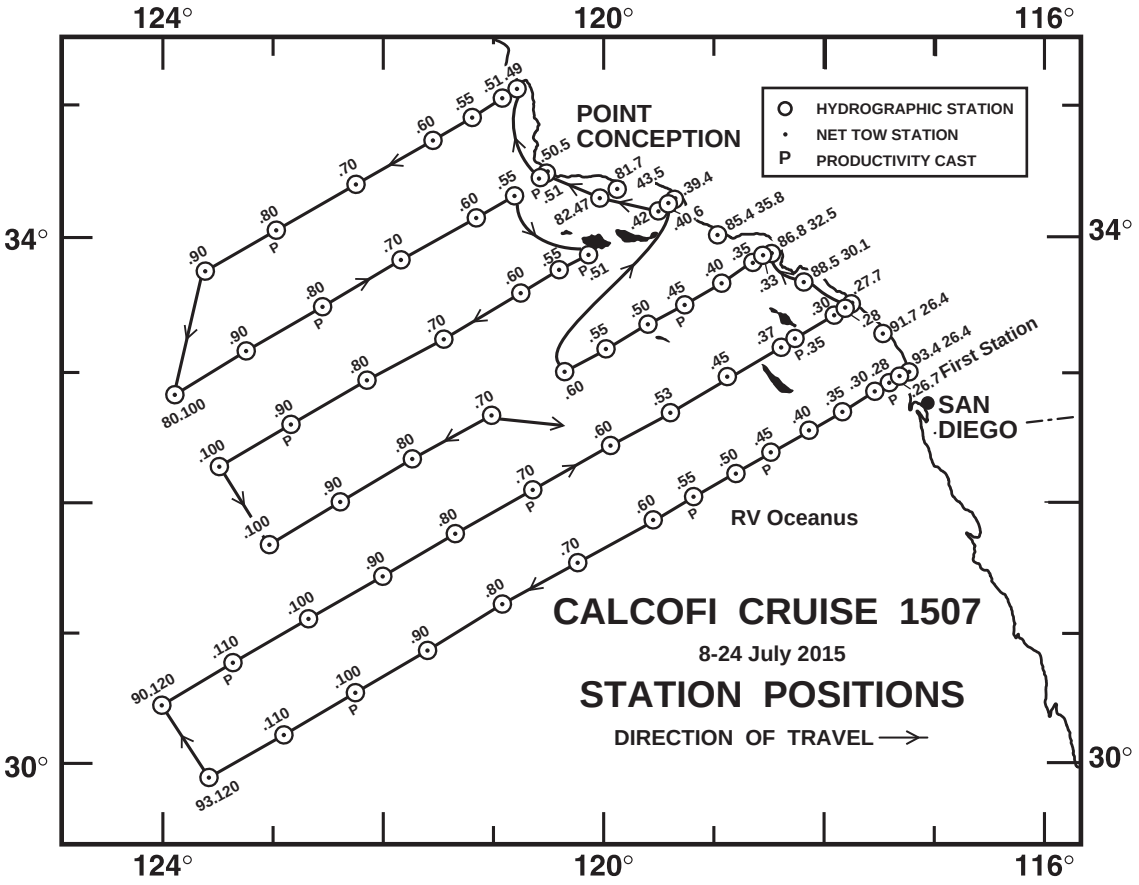

FIGURE 1

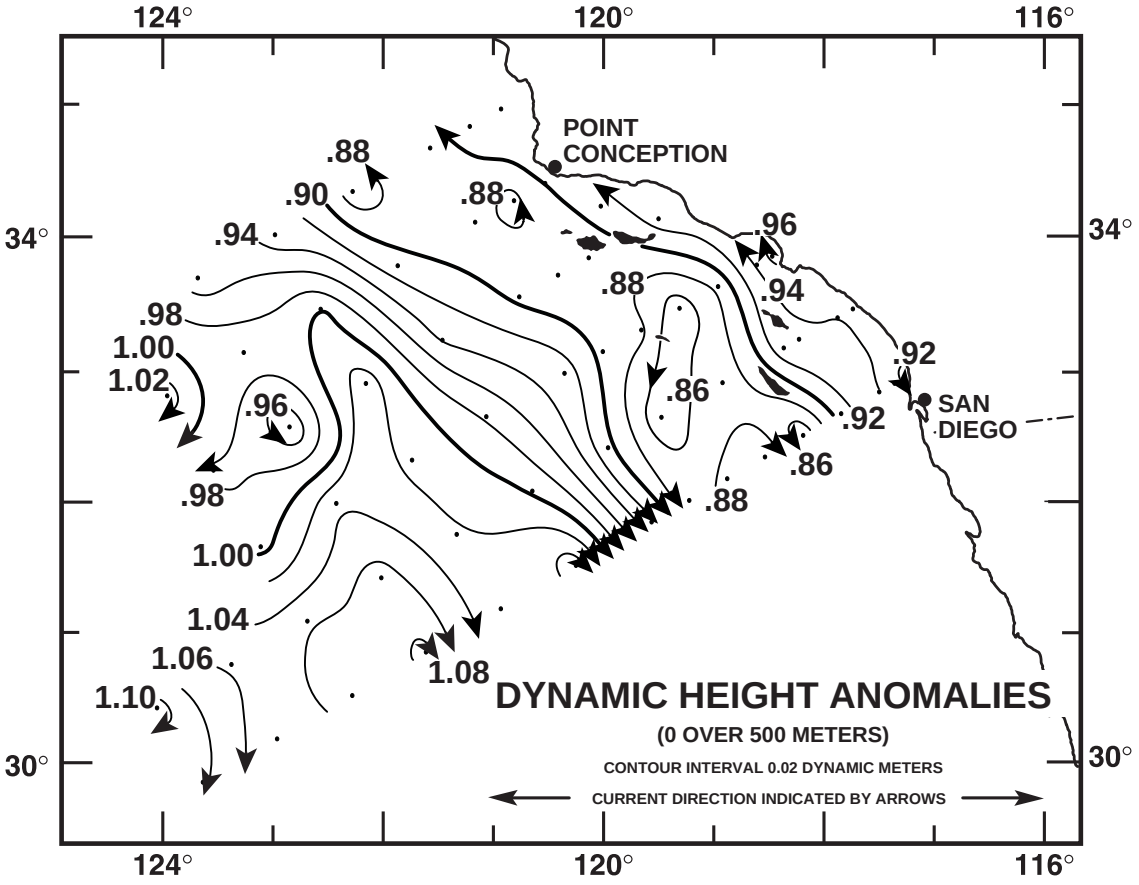

FIGURE 2

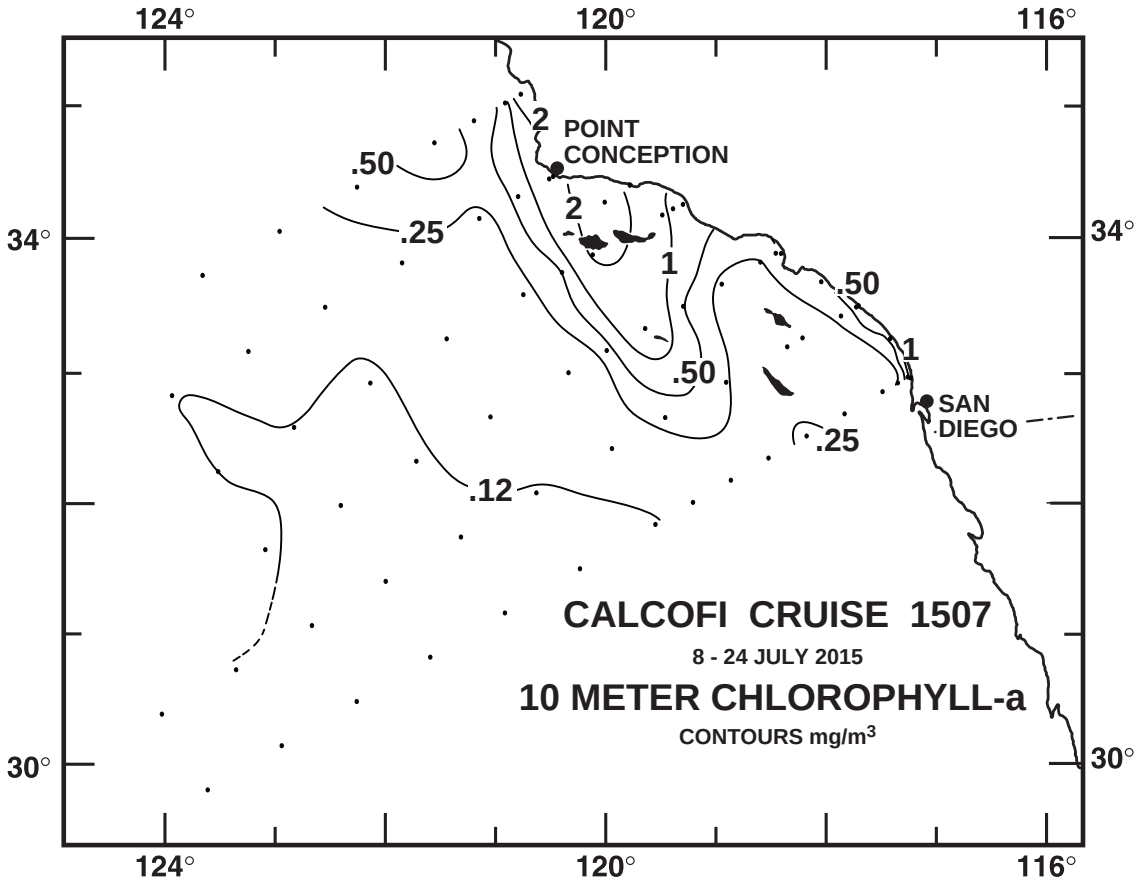

FIGURE 3A

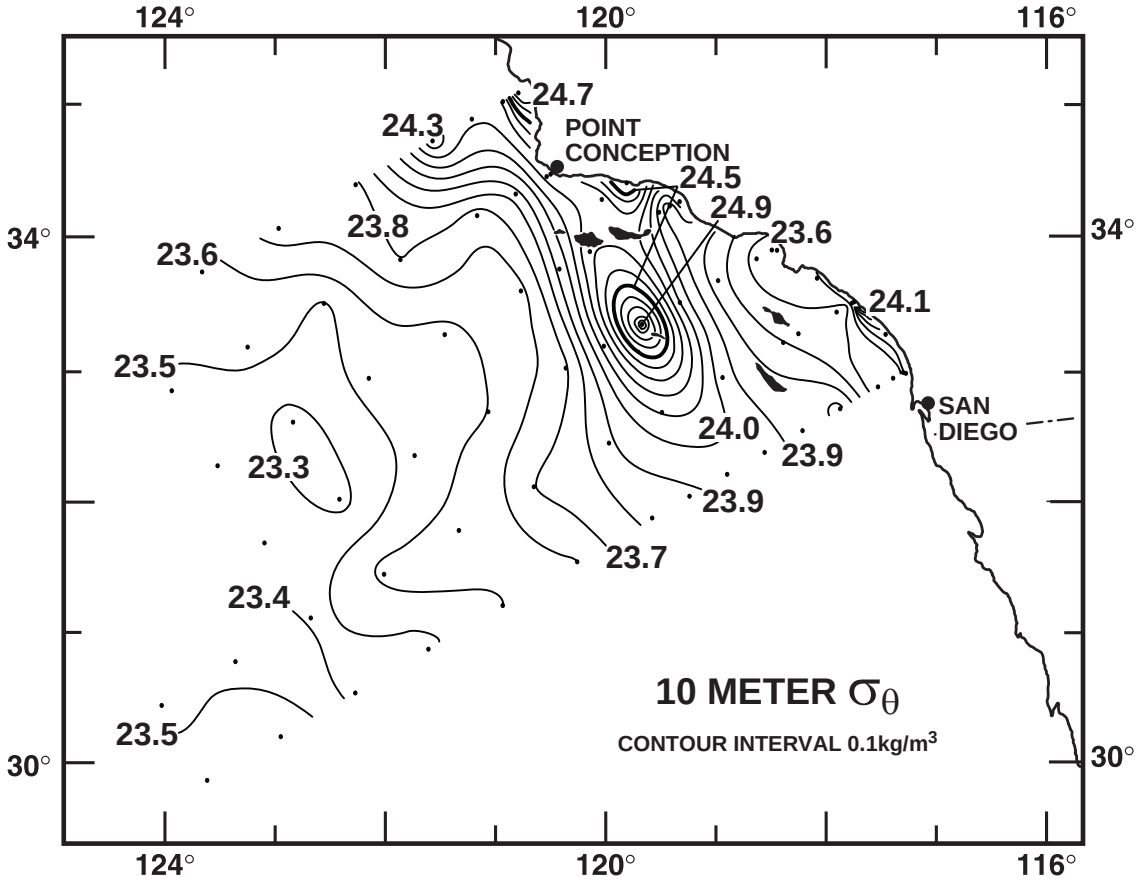

FIGURE 3B

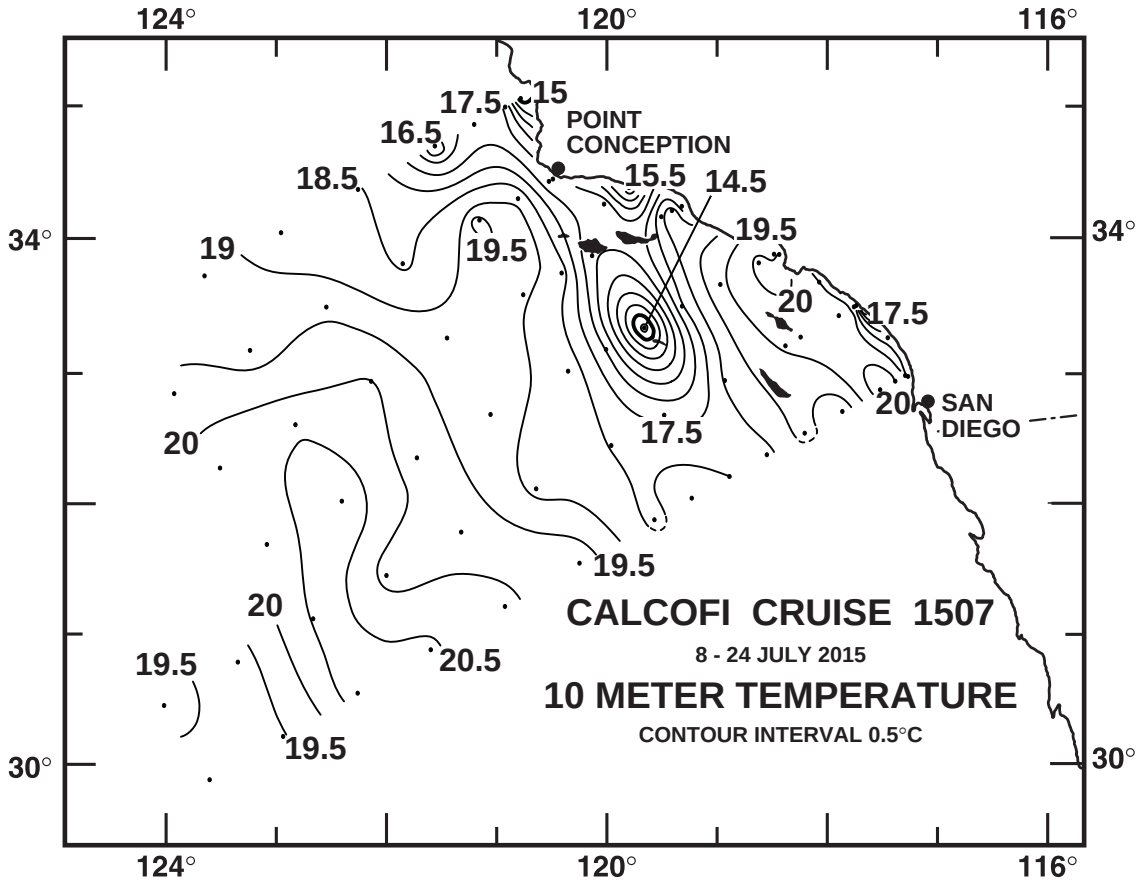

FIGURE 3C

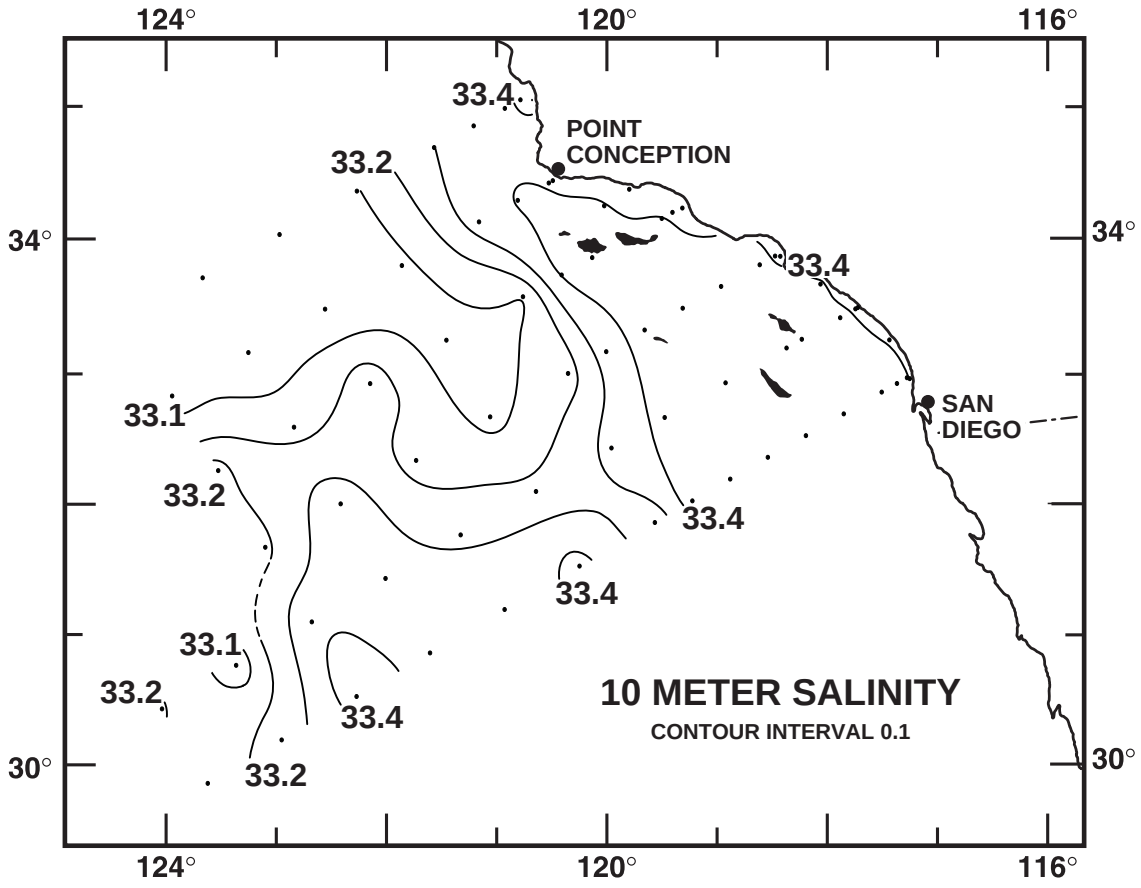

FIGURE 3D

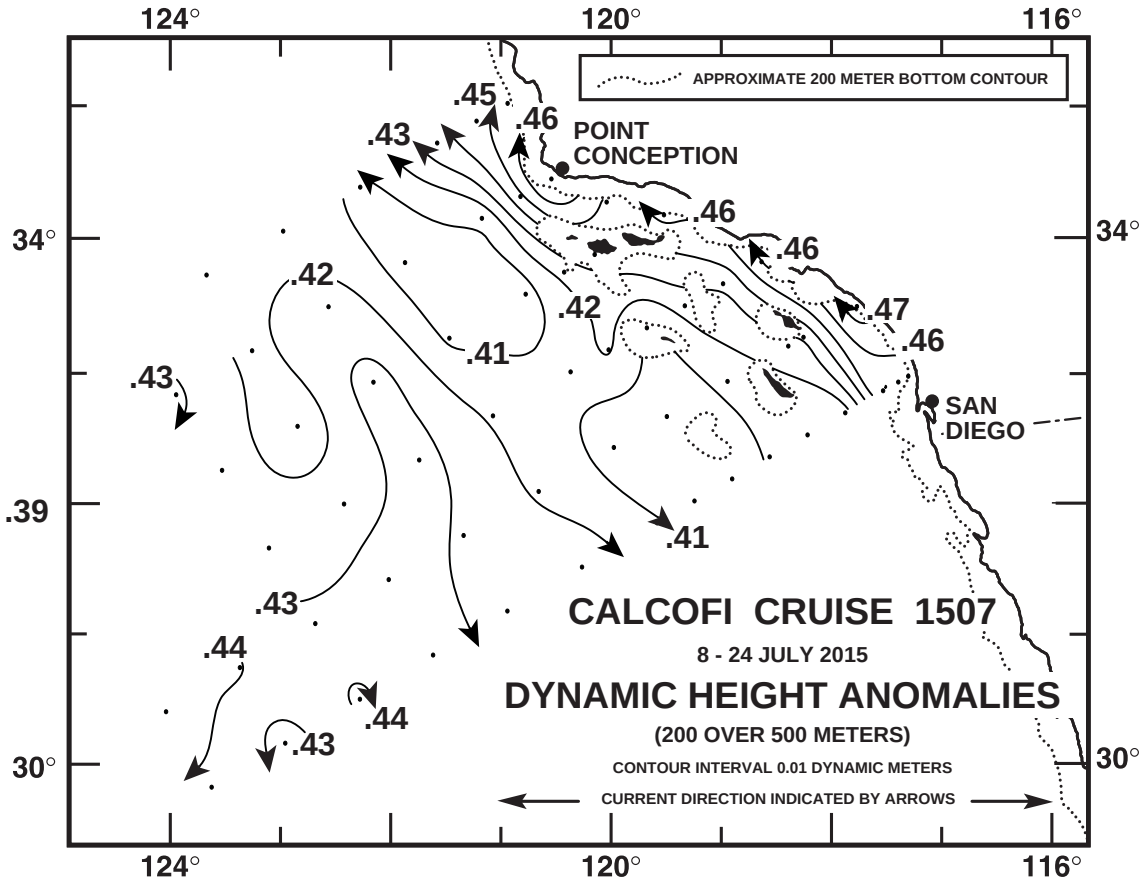

FIGURE 4A

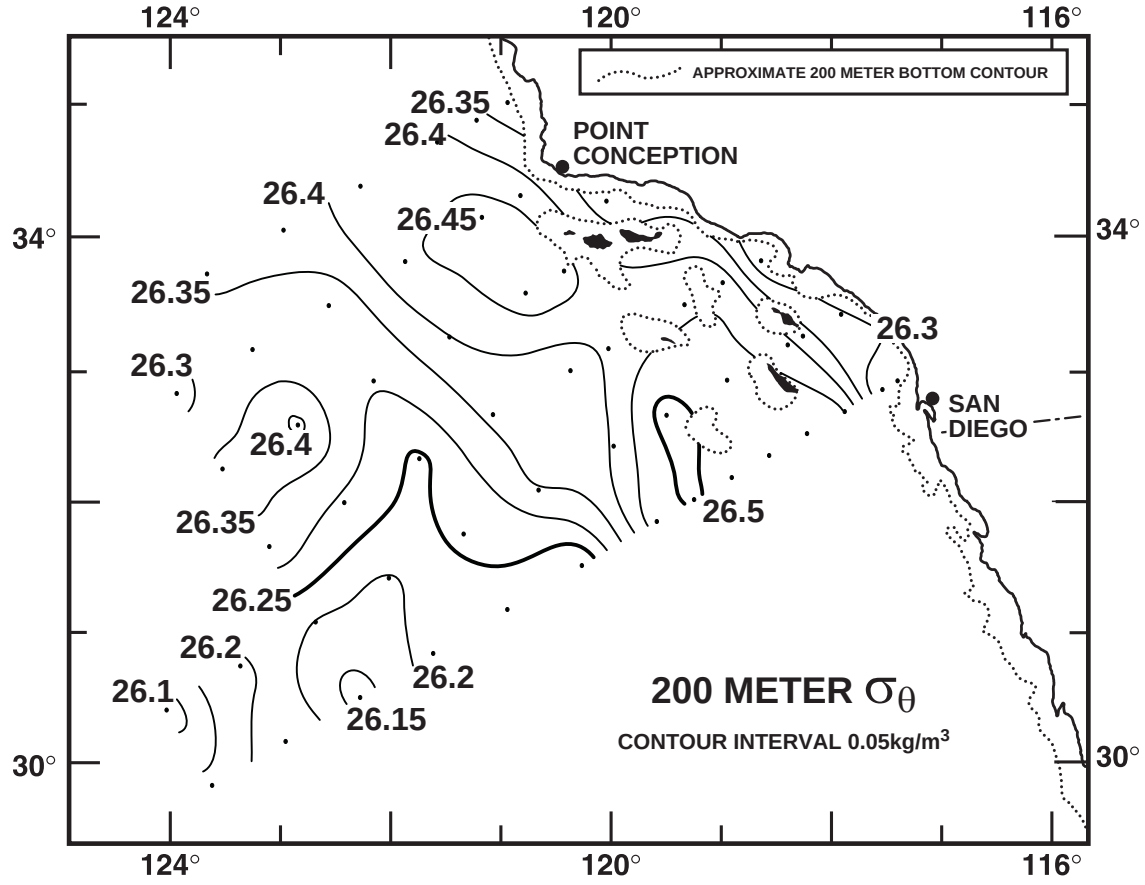

FIGURE 4B

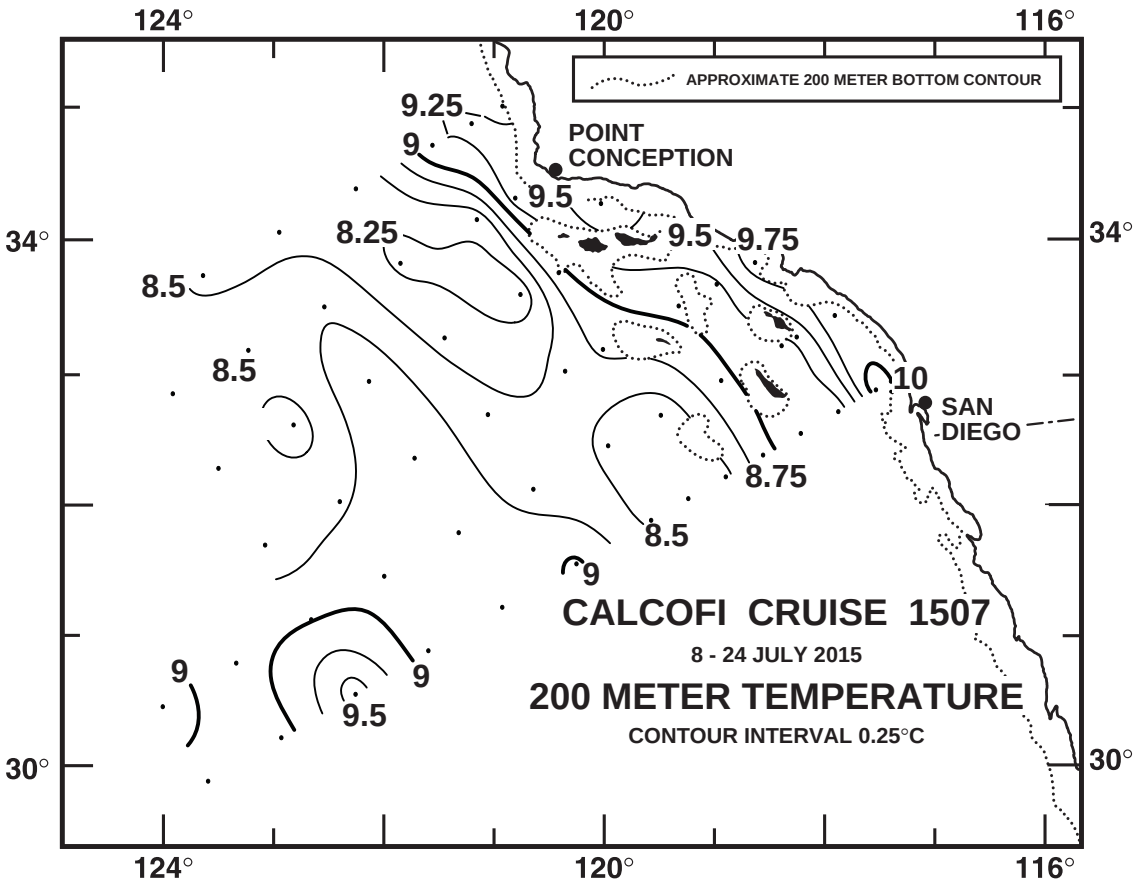

FIGURE 4C

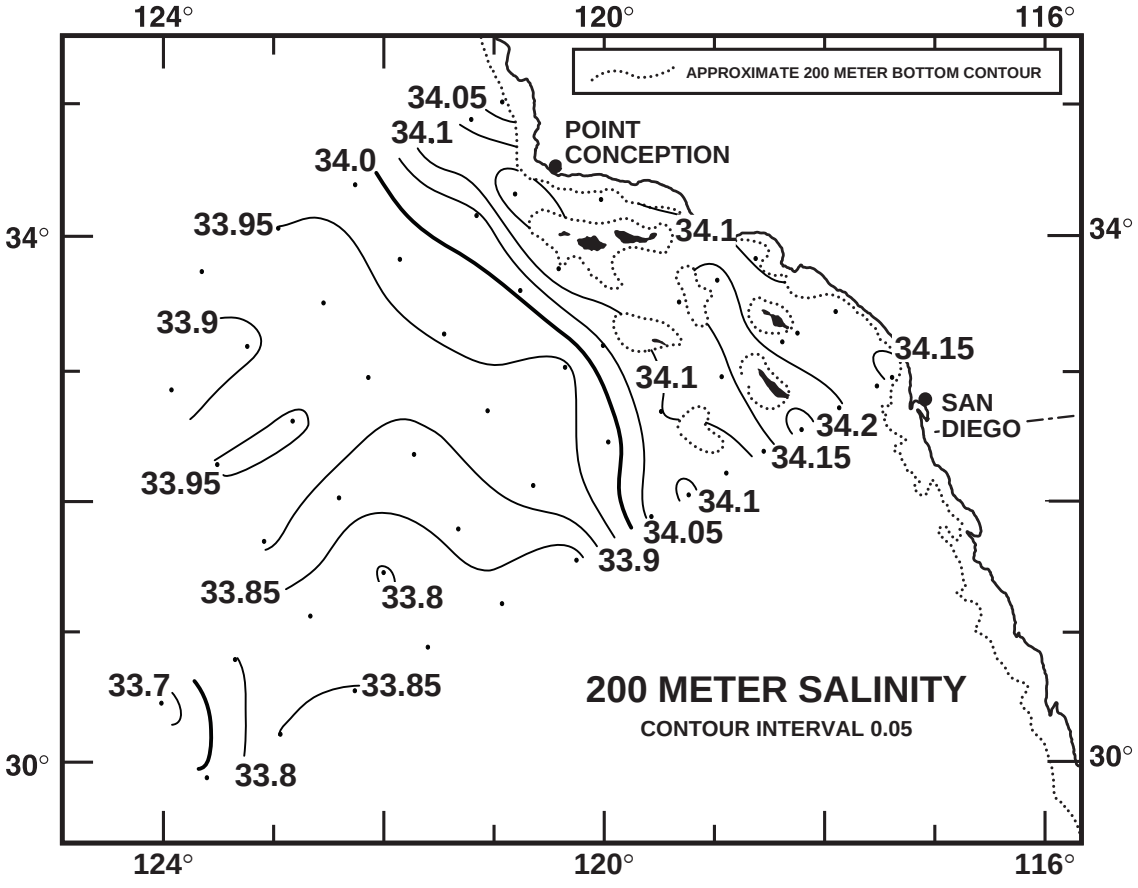

FIGURE 4D

CALCOFI CRUISE 1507

13 - 15 July 2015

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

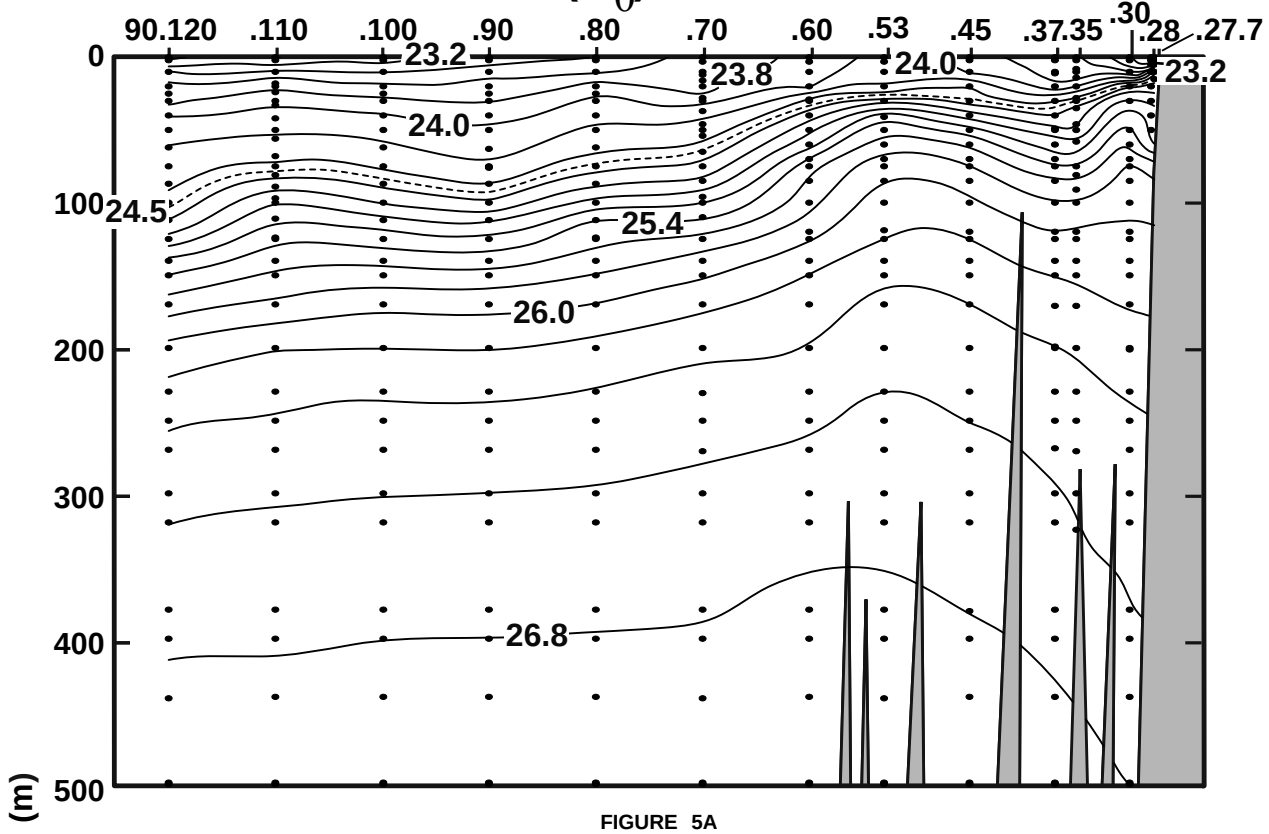

FIGURE 5A

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

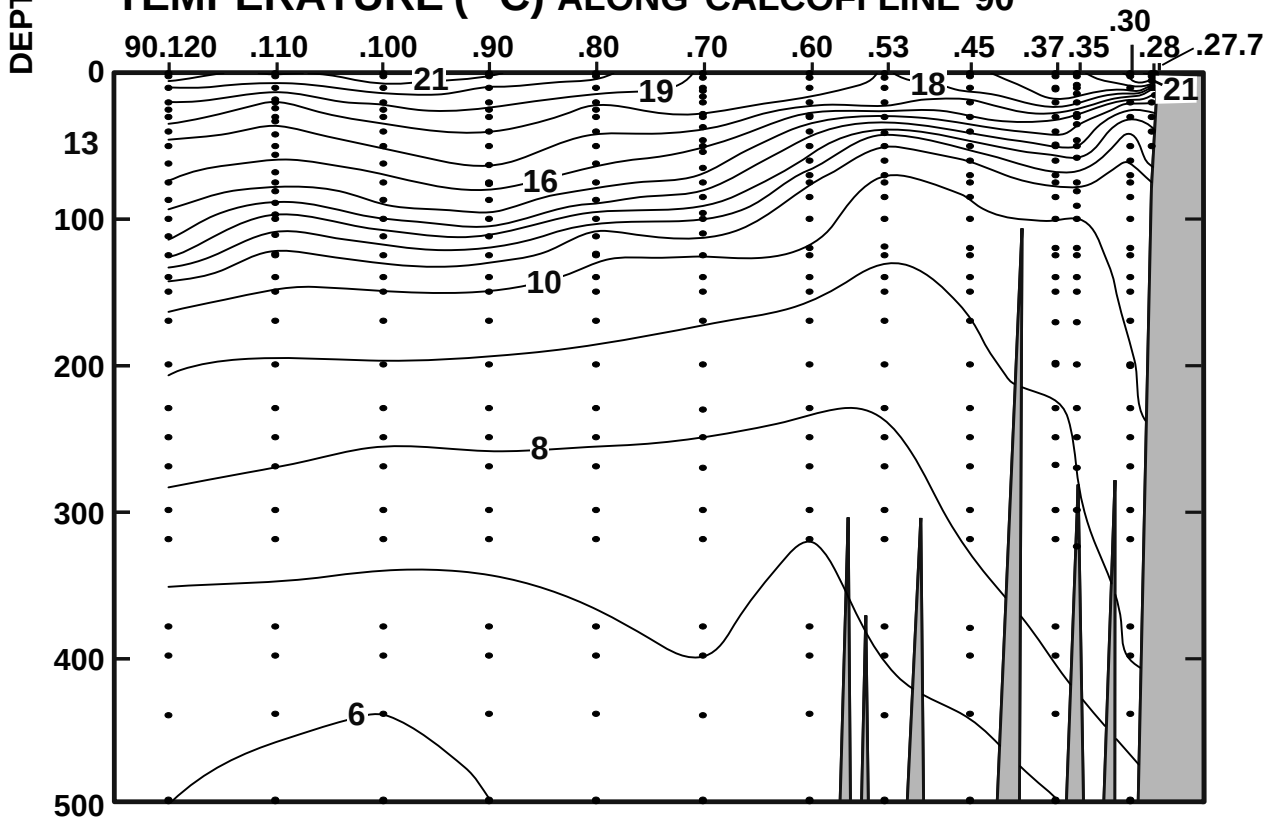

FIGURE 5B

CALCOFI CRUISE 1507

13- 15 July 2015

SALINITY ALONG CALCOFI LINE 90

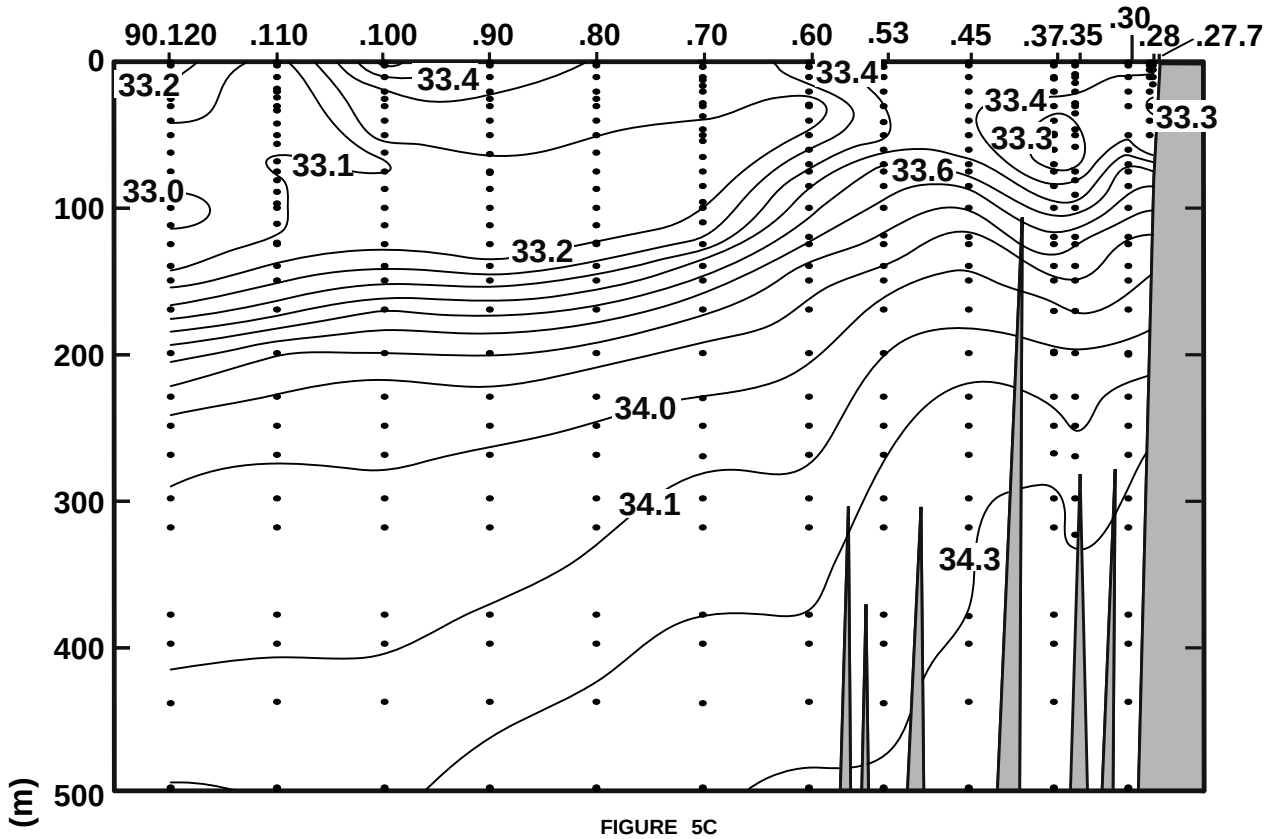

FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

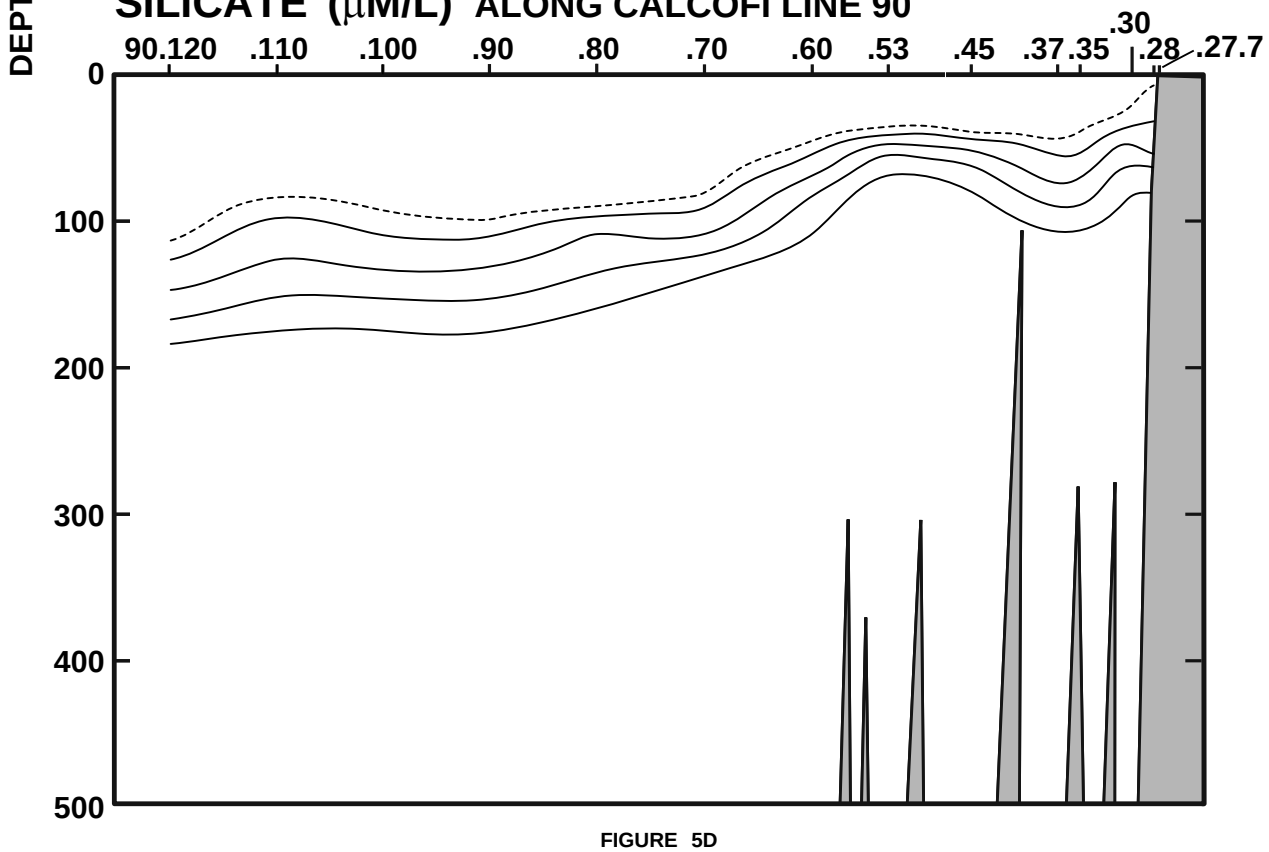

FIGURE 5D

CALCOFI CRUISE 1507

13 - 15 July 2015

NITRATE (μM/L) ALONG CALCOFI LINE 90

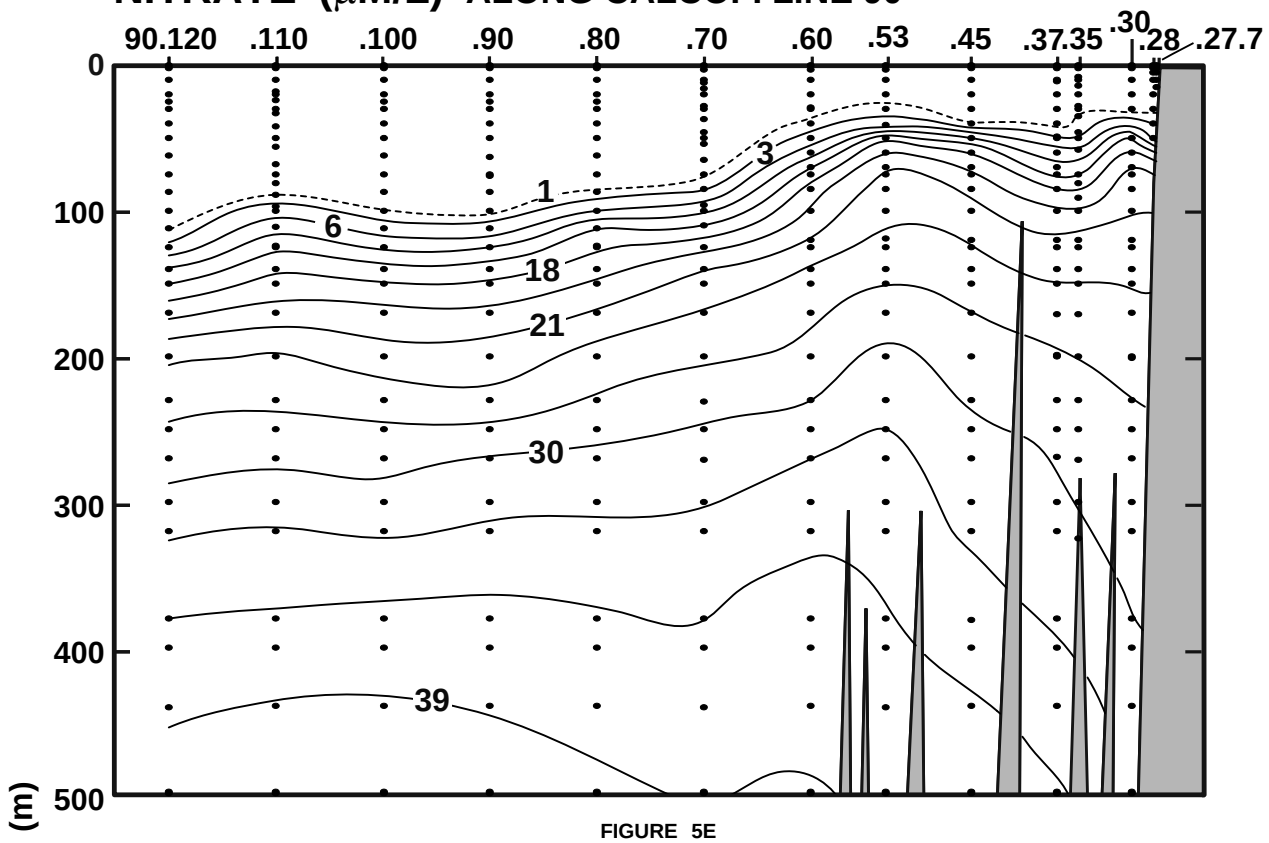

FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

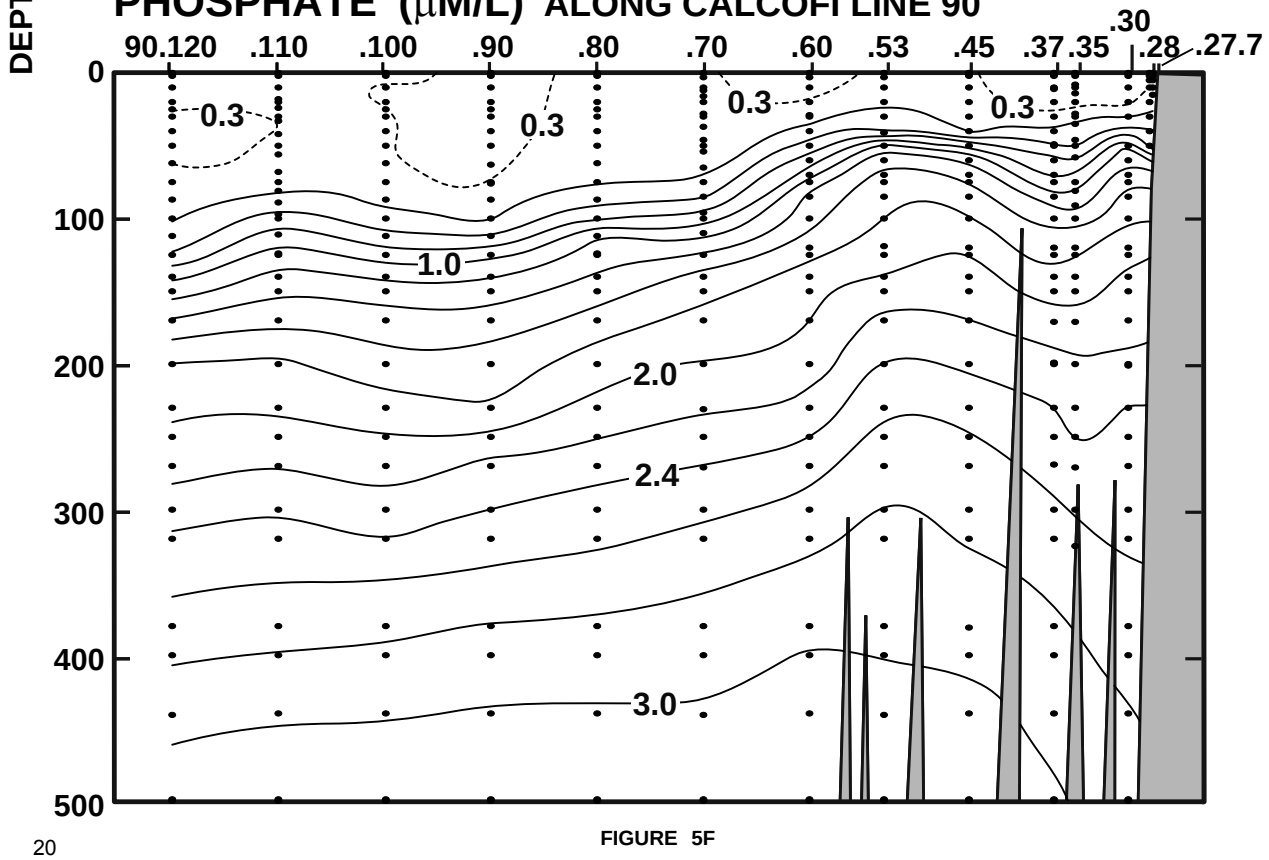

FIGURE 5F

CALCOFI CRUISE 1507

13 - 15 July 2015

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

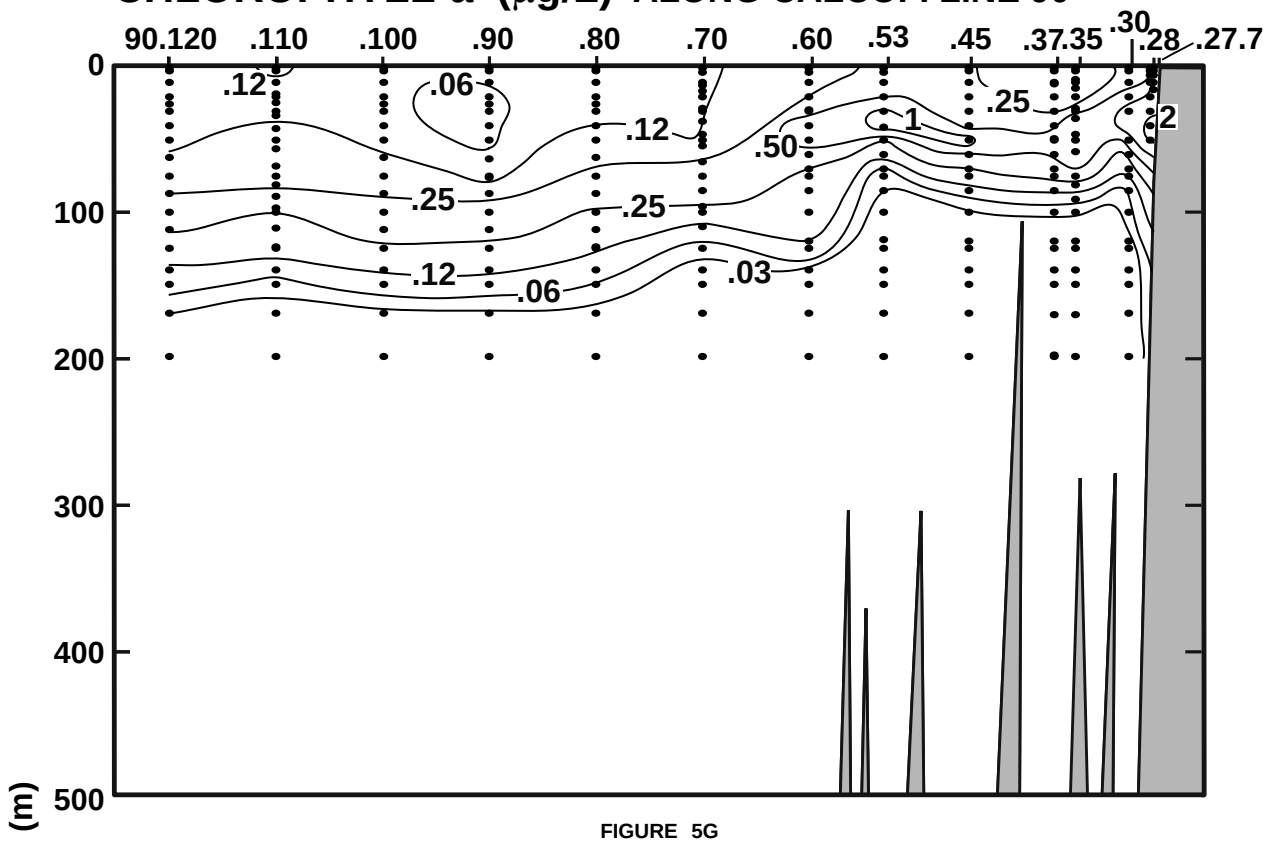

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

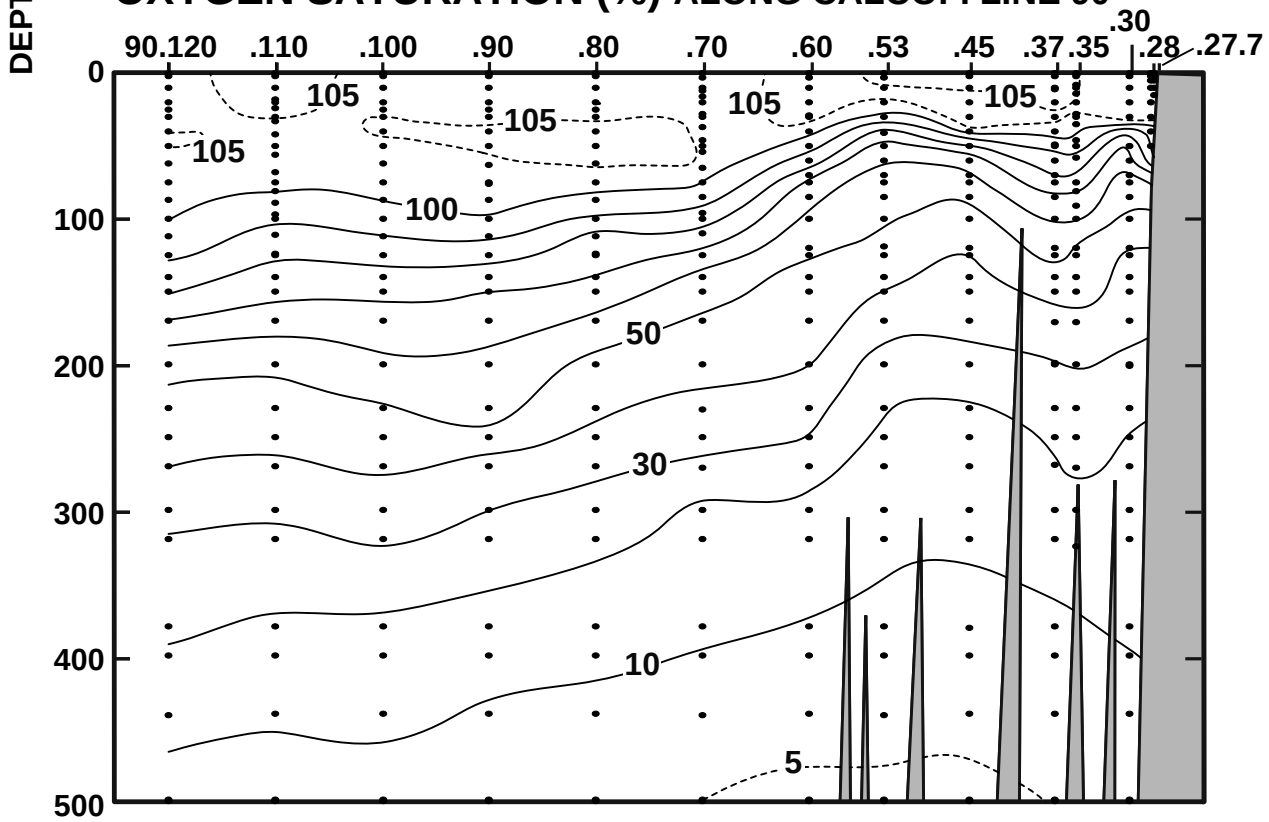

FIGURE 5H

CALCOFI CRUISE 1507

13 - 15 July 2015

OXYGEN (mL/L) ALONG CALCOFI LINE 90

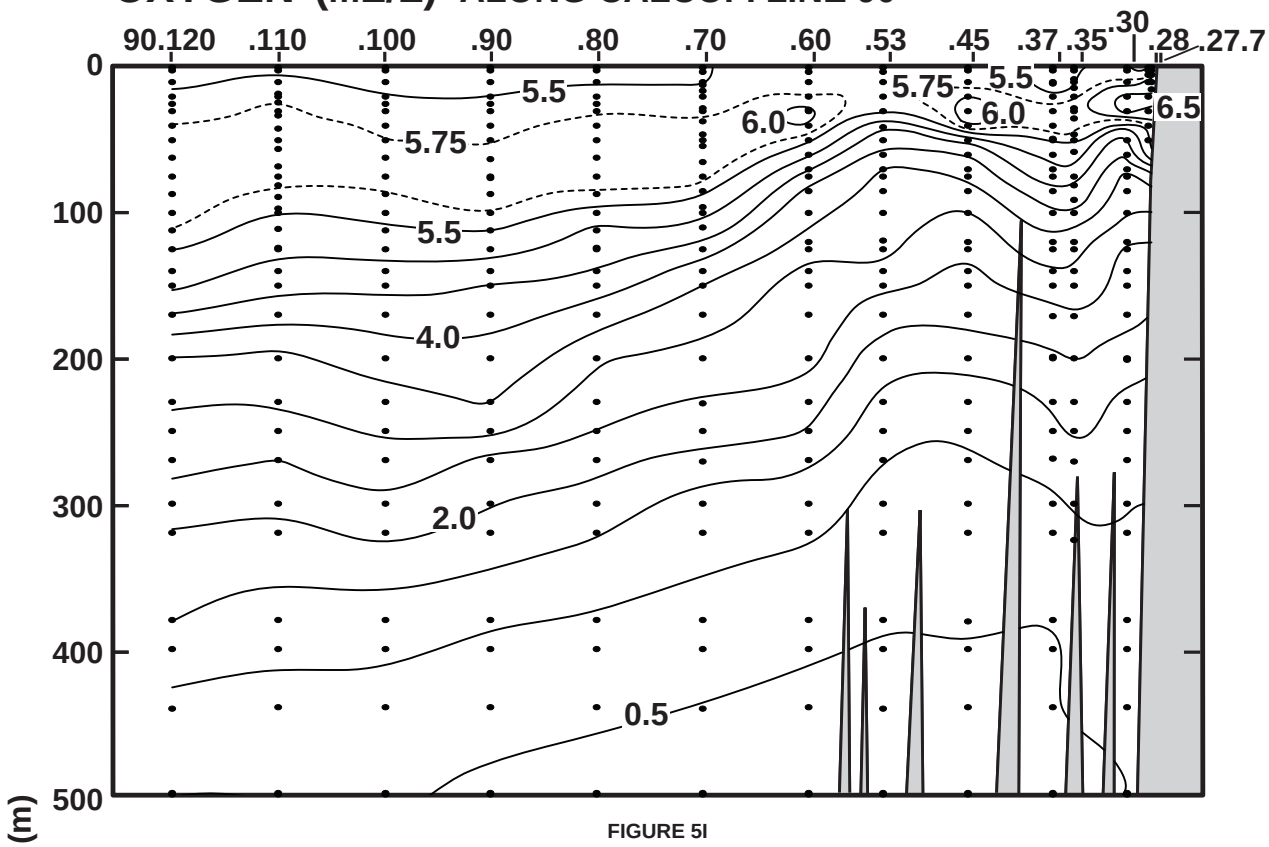

FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

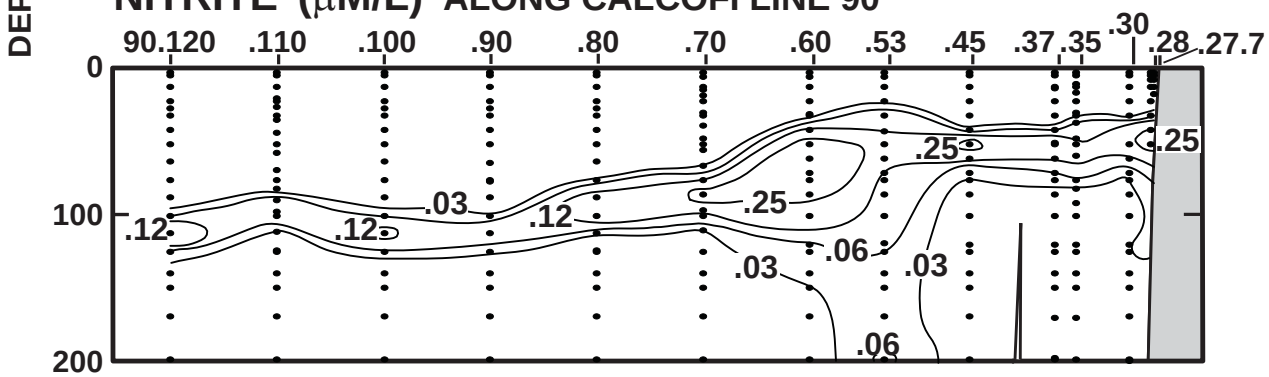

FIGURE 5J

PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90

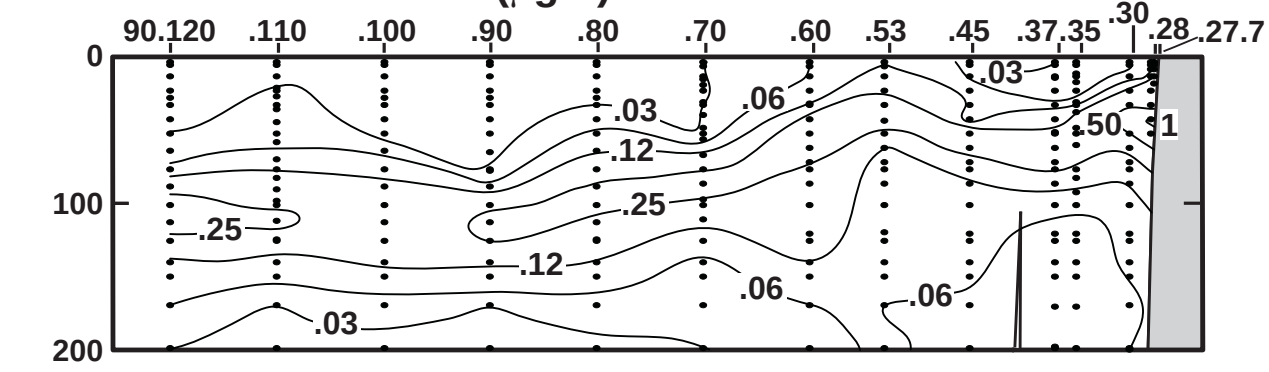

FIGURE 5K

RV OCEANUS CALCOFI CRUISE 1507 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 5.3 N	120 46.7 W	19/07/2015	2322 UTC	71 m	060 12 kn	310 03 10	1	1014.0 mb	23.4 C	19.8 C	09 m	4/8	CU	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	14.94	14.94	33.356	24.718	321.6	0.000	6.20	270.7	107.7	0.6	0.32	1.2	0.14	0.75	3.14	0.73	0	
2	14.94	14.94	33.356	24.718	321.7	0.006	6.20	270.7	107.7	0.6	0.32	1.2	0.14	0.75	3.14	0.73	2	09
6	14.70	14.70	33.368	24.779	316.0	0.019	6.20	270.6	107.2	0.6	0.32	1.2	0.14	0.75	3.26	0.78	6	08
10	14.62	14.61	33.416	24.835	310.8	0.032	6.17	269.4	106.6	0.7	0.33	1.4	0.14	0.81	3.42	0.78	10	06
11	14.62	14.61	33.414	24.833	311.0	0.033											10	07
20 ISL	12.90 D	12.90	33.470 D	25.228	273.7	0.061	4.88 D	212.6 D	81.4	6.5	0.86	7.2	0.32	1.28	2.56	0.77	20	
21	12.82	12.82	33.473	25.247	271.9	0.064	4.85	211.9	80.8	7.0	0.91	7.8	0.34	1.33	2.48	0.77	21	05
30	12.10	12.10	33.522	25.424	255.2	0.088	4.00	174.7	65.6	14.2	1.34	11.9	0.35	2.01	1.35	1.23	30	04
40	11.82	11.82	33.542	25.493	249.0	0.113	3.76	164.4	61.4	16.3	1.45	13.3	0.36	2.03	1.09	1.46	40	03
50	11.58	11.57	33.544	25.540	244.8	0.137	3.64	158.8	59.0	17.8	1.52	14.2	0.36	1.92	0.89	1.21	50	02
60	11.42	11.41	33.549	25.573	241.9	0.162	3.44	150.2	55.6	20.4	1.63	15.1	0.36	1.90	0.91	1.15	60	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	20/07/2015	0120 UTC	240 m	320 14 kn	310 04 09	1	1014.0 mb	19.3 C	18.5 C	14 m	4/8	CU	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	18.09	18.09	33.063	23.767	412.2	0.000	5.86	256.1	108.2	0.2	0.28	0.1	0.01	0.15	0.41	0.11	0	
3	18.09	18.09	33.063	23.768	412.3	0.012	5.86	256.1	108.2	0.2	0.28	0.1	0.01	0.15	0.41	0.11	3	16
10	16.98	16.97	33.375	24.275	364.2	0.040	6.03	263.5	109.2	0.1	0.28	0.0	0.01	0.07	0.53	0.16	10	14
11	16.79	16.79	33.375	24.318	360.1	0.043											11	15
20	15.97	15.96	33.408	24.533	340.0	0.075	6.24	272.6	110.8	0.0	0.28	0.0	0.02	0.04	0.74	0.34	20	13
30	13.78	13.77	33.413	25.009	294.8	0.106	6.09	266.2	103.5	0.1	0.38	1.1	0.10	0.65	0.95	0.45	30	12
40	12.29	12.29	33.399	25.293	268.0	0.135	4.63	202.2	76.2	7.1	1.04	10.0	0.58	0.45	0.72	0.56	40	11
50	11.44	11.43	33.346	25.411	257.0	0.161	4.49	196.0	72.5	10.3	1.22	13.7	0.13	0.00	0.36	0.31	50	10
60	10.29	10.28	33.301	25.579	241.1	0.186	4.44	194.1	70.0	13.4	1.35	15.8	0.11	0.00	0.19	0.21	60	09
70	10.14	10.14	33.417	25.695	230.4	0.209	3.97	173.6	62.4	16.5	1.52	18.3	0.07	0.00	0.08	0.12	71	08
75 ISL	9.83 D	9.82	33.436 D	25.763	223.9	0.222	4.00 D	174.0 D	62.4	17.3	1.55	18.9	0.07	0.00	0.07	0.12	76	
84	9.77	9.76	33.482	25.808	219.8	0.241	3.82	166.8	59.5	18.8	1.61	19.9	0.07	0.00	0.04	0.10	85	07
100	9.88	9.87	33.690	25.953	206.5	0.275	3.19	139.2	49.9	22.7	1.77	22.1	0.04	0.00	0.04	0.10	101	06
120	9.62	9.61	33.858	26.129	190.2	0.314	2.63	114.8	41.0	27.3	1.96	24.4	0.03	0.00	0.03	0.11	121	05
125 ISL	9.69 D	9.67	33.916 D	26.162	187.2	0.326	2.55 D	110.9 D	39.8	28.1	2.00	24.9	0.03	0.00	0.03	0.10	126	
140	9.59	9.58	33.974	26.224	181.6	0.352	2.19	95.5	34.1	30.4	2.13	26.3	0.05	0.00	0.02	0.10	141	04
150 ISL	9.51 D	9.49	34.021 D	26.275	177.1	0.372	2.00 D	87.1 D	31.1	31.0	2.14	26.6	0.05	0.00	0.02	0.11	151	
171	9.29	9.27	33.996	26.291	175.9	0.407	2.16	94.5	33.5	32.2	2.16	27.1	0.07	0.04	0.02	0.13	172	03
199	9.13	9.11	34.010	26.329	172.8	0.456	2.10	91.5	32.3	34.1	2.21	27.5	0.10	0.21	0.02	0.22	201	02
200 ISL	9.15 D	9.13	34.010 D	26.326	173.2	0.460	2.09 D	91.0 D	32.2	34.2	2.21	27.6	0.10	0.21			202	
231	8.75	8.72	34.068	26.436	163.2	0.510	1.91	83.5	29.2	38.1	2.31	29.0	0.06	0.29			233	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 76.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 53.3 N	121 11.9 W	20/07/2015	0431 UTC	562 m	060 07 kn			1016.0 mb	19.0 C	18.1 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	17.99	17.99	33.122	23.838	405.5	0.000	5.80	253.3	106.9	0.0	0.27	0.1	0.01	0.15	0.30	0.08	0	
2	17.99	17.99	33.122	23.838	405.6	0.008	5.80	253.3	106.9	0.0	0.27	0.1	0.01	0.15	0.30	0.08	2	22
10	17.17	17.16	33.359	24.218	369.7	0.039	5.94	259.3	107.8	0.0	0.26	0.0	0.01	0.05	0.35	0.13	10	20
10	17.17	17.16	33.352	24.212	370.2	0.038											10	21
20	16.99	16.98	33.405	24.296	362.6	0.076	5.97	260.8	108.1	0.0	0.26	0.0	0.01	0.04	0.41	0.16	20	18
30	15.69	15.69	33.408	24.596	334.3	0.111	6.09	265.9	107.4	0.2	0.28	0.1	0.03	0.06	0.70	0.29	30	17
40	12.45	12.44	33.402	25.265	270.7	0.141	4.91	214.4	81.1	6.1	0.91	8.4	0.57	0.30	2.84	1.08	40	16
50	11.63	11.62	33.439	25.448	253.5	0.167	4.04	176.6	65.7	12.1	1.29	13.6	0.45	0.37	1.13	0.58	50	15
60	11.50	11.49	33.465	25.493	249.4	0.192	3.80	166.1	61.6	13.2	1.38	15.0	0.37	0.47	0.96	0.50	60	14
71	10.99	10.98	33.524	25.632	236.5	0.219	3.59	157.0	57.6	15.9	1.51	17.5	0.25	0.01	0.69	0.40	72	13
75 ISL	10.95 D	10.94	33.529 D	25.644	235.5	0.230	3.56 D	155.0 D	57.0	16.3	1.53	17.8	0.21	0.00	0.63	0.38	76	
85	10.83	10.82	33.554	25.684	231.9	0.252	3.47	151.4	55.3	17.1	1.58	18.6	0.11	0.00	0.47	0.34	86	12
100	10.54	10.53	33.606	25.775	223.6	0.286	3.31	144.3	52.5	18.8	1.64	19.5	0.10	0.00	0.37	0.35	101	11
120	10.05	10.04	33.812	26.021	200.6	0.328	2.81	122.8	44.2	24.3	1.87	22.9	0.04	0.00	0.07	0.14	121	10
125 ISL	9.99 D	9.98	33.850 D	26.060	196.9	0.340	2.69 D	117.0 D	42.2	25.1	1.91	23.3	0.04	0.00	0.07	0.14	126	
140	9.85	9.83	33.907	26.130	190.7	0.367	2.46	107.4	38.5	27.5	2.01	24.6	0.04	0.00	0.06	0.14	141	09
150 ISL	9.64 D	9.62	33.964 D	26.209	183.3	0.388	2.36 D	102.6 D	36.8	28.7	2.05	25.2	0.03	0.00	0.05	0.13	151	
170	9.50	9.48	34.002	26.262	178.7	0.423	2.24	97.7	34.8	30.9	2.14	26.3	0.02	0.00	0.02	0.10	171	08
200	9.29	9.27	34.082	26.360	170.0	0.475	1.92	83.8	29.7	34.3	2.26	27.8	0.02	0.00	0.02	0.11	202	07
230	9.17	9.15	34.145	26.429	164.1	0.525	1.59	69.5	24.6	37.2	2.38	28.9	0.02	0.00			232	06
250 ISL	9.06 D	9.03	34.174 D	26.471	160.6	0.561	1.36 D	59.0 D	20.9	39.0	2.42	29.5	0.02	0.00			252	
270	8.78	8.75	34.162	26.507	157.4	0.590	1.45	63.1	22.1	40.7	2.46	30.1	0.02	0.00			272	05
300 ISL	8.49 D	8.46	34.168 D	26.556	153.2	0.640	1.40 D	61.0 D	21.3	43.5	2.50	31.2	0.02	0.00			302	
320	8.14	8.11	34.148	26.594	149.7	0.667	1.46	63.5	22.0	45.4	2.52	31.9	0.02	0.00			323	04
380	7.90	7.86	34.212	26.681	142.5	0.754	0.98	42.7	14.7	51.5	2.72	33.7	0.01	0.00			383	03
400 ISL	7.71 D	7.67	34.222 D	26.718	139.2	0.788	0.85 D	36.9 D	12.7	53.9	2.77	34.2	0.01	0.00			403	
440	7.39	7.35	34.233	26.772	134.5	0.837	0.73	31.7	10.8	58.6	2.86	35.3	0.02	0.00			444	02
500 ISL	6.94 D	6.89	34.251 D	26.851	127.6	0.922	0.54 D	23.3 D	7.9	68.0	3.01	37.2	0.03	0.00			504	
516	6.69	6.64	34.256	26.888	124.0	0.936	0.48	21.0	7.0	70.5	3.05	37.7	0.04	0.01			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 43.3 N	121 33.2 W	20/07/2015	0835	UTC	943 m	040 14 kn			1015.0 mb	18.7 C	18.0 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		16.81		16.81		33.158	24.147	376.0	0.000	6.19		270.7		111.6		0.0	0.25	0.1	0.01	0.18	0.48	0.19	0	
3		16.81		16.80		33.158	24.147	376.1	0.011	6.19		270.7		111.6		0.0	0.25	0.1	0.01	0.18	0.48	0.19	3	20
10		16.25		16.24		33.297	24.384	353.8	0.037	6.38		278.7		113.8		0.0	0.25	0.1	0.01	0.12	0.82	0.33	10	19
20		15.02		15.02		33.422	24.753	318.9	0.070	7.12		311.2		124.1		0.0	0.26	0.0	0.01	0.08	1.53	0.40	20	18
30		13.33		13.33		33.434	25.116	284.7	0.101	6.25		272.9		105.1		1.1	0.43	2.5	0.09	0.56	9.88	1.60	30	17
40		12.28		12.28		33.444	25.330	264.5	0.128	4.88		213.4		80.4		7.1	0.93	9.2	0.26	0.96	4.08	1.29	40	16
50		11.69		11.68		33.453	25.449	253.4	0.154	4.23		184.7		68.7		11.4	1.24	13.4	0.34	0.54	2.84	0.81	50	15
60		10.97		10.96		33.516	25.628	236.5	0.179	3.74		163.5		59.9		15.5	1.51	17.5	0.26	0.03	1.60	0.82	60	14
70		10.47		10.46		33.616	25.795	220.9	0.201	3.41		148.9		54.0		18.7	1.62	20.5	0.07	0.02	0.81	0.33	71	13
75	ISL	10.34	D	10.33	D	33.687	25.873	213.6	0.213	3.23	D	140.5	D	51.0		19.8	1.68	21.2	0.07	0.02	0.71	0.33	76	
86		10.22		10.21		33.742	25.935	207.9	0.236	3.02		131.7		47.6		22.1	1.80	22.7	0.07	0.02	0.50	0.35	87	12
100		10.03		10.02		33.877	26.075	195.0	0.264	2.59		113.2		40.8		25.8	1.99	24.8	0.03	0.01	0.39	0.29	101	11
120		9.93		9.92		33.932	26.135	189.7	0.302	2.43		106.1		38.1		27.4	2.06	25.5	0.03	0.04	0.50	0.34	121	10
125	ISL	9.88	D	9.86	D	33.956	26.163	187.2	0.313	2.34	D	102.0	D	36.7		28.0	2.08	25.8	0.03	0.03	0.43	0.30	126	
140		9.77		9.75		34.007	26.221	182.0	0.339	2.20		96.1		34.4		29.8	2.14	26.5	0.02	0.01	0.23	0.17	141	09
150	ISL	9.64	D	9.62	D	34.050	26.277	176.9	0.359	2.07	D	90.2	D	32.3		31.4	2.21	27.4	0.02	0.00	0.18	0.15	151	
169		9.40		9.38		34.094	26.350	170.3	0.391	1.74		76.2		27.1		34.6	2.33	29.0	0.01	0.00	0.07	0.13	170	08
200		9.27		9.25		34.147	26.414	164.9	0.443	1.53		66.6		23.6		37.1	2.42	29.8	0.01	0.02	0.27	0.34	202	07
230		9.21		9.18		34.184	26.454	161.8	0.492	1.40		61.3		21.7		38.4	2.46	30.1	0.01	0.01			232	06
250	ISL	9.12	D	9.10	D	34.193	26.476	160.1	0.527	1.35	D	58.7	D	20.8		40.1	2.51	30.5	0.01	0.01			252	
270		8.95		8.92		34.224	26.528	155.5	0.555	1.19		52.0		18.3		41.7	2.55	31.0	0.01	0.01			272	05
300	ISL	8.60	D	8.57	D	34.212	26.574	151.6	0.605	1.13	D	49.0	D	17.2		44.7	2.58	32.1	0.01	0.00			302	
321		8.12		8.09		34.169	26.613	147.9	0.633	1.28		56.1		19.4		46.8	2.60	32.9	0.01	0.00			324	04
381		7.44		7.40		34.194	26.733	137.1	0.719	0.95		41.3		14.1		55.6	2.78	35.5	0.00	0.01			384	03
400	ISL	7.33	D	7.29	D	34.195	26.750	135.8	0.749	0.88	D	38.3	D	13.1		57.2	2.82	35.9	0.01	0.01			403	
441		7.12		7.07		34.223	26.802	131.4	0.799	0.71		31.1		10.5		60.7	2.91	36.6	0.01	0.01			445	02
500	ISL	6.71	D	6.67	D	34.241	26.873	125.3	0.881	0.52	D	22.4	D	7.5		68.6	3.03	38.2	0.01	0.00			504	
514		6.62		6.57		34.261	26.901	122.7	0.892	0.45		19.7		6.6		70.5	3.06	38.6	0.01	0.00			518	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 14.8 W	20/07/2015	1354	UTC	4020 m	020 09 kn	180 04 06	1	1015.0 mb	19.4 C	18.2 C		4/8	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		18.60		18.60		33.087	23.660	422.5	0.000	5.68		248.1		105.9		0.7	0.31	0.0	0.01	0.02	0.38	0.10	0	
2		18.60		18.60		33.087	23.660	422.5	0.009	5.68		248.1		105.9		0.7	0.31	0.0	0.01	0.02	0.38	0.10	2	20
10		18.57		18.56		33.092	23.674	421.5	0.042	5.67		247.8		105.7		0.7	0.31	0.0	0.01	0.01	0.35	0.15	10	19
20		14.39		14.39		33.160	24.685	325.4	0.080	6.61		288.9		113.5		1.3	0.34	0.1	0.02	0.03	0.79	0.34	20	18
30		12.74		12.73		33.116	24.988	296.8	0.111	5.57		243.2		92.3		4.2	0.81	6.7	0.49	0.04	0.75	0.65	30	17
41		11.76		11.76		33.187	25.228	274.1	0.142	5.18		226.3		84.2		6.7	1.05	11.0	0.19	0.01	0.56	0.28	41	16
50	ISL	11.19	D	11.18	D	33.248	25.380	259.9	0.168	4.81	D	209.6	D	77.3		9.5	1.19	13.3	0.05	0.01	0.25	0.17	50	
51		11.25		11.25		33.246	25.368	261.1	0.169	4.82		210.6		77.5		9.8	1.21	13.6	0.04	0.01	0.22	0.16	51	15
61		10.40		10.39		33.286	25.549	244.0	0.194	4.52		197.3		71.3		14.0	1.39	16.5	0.04	0.00	0.15	0.11	62	14
70		10.09		10.08		33.358	25.657	233.9	0.216	4.22		184.4		66.2		16.0	1.50	18.2	0.04	0.00	0.09	0.08	71	13
75	ISL	9.97	D	9.96	D	33.414	25.722	227.8	0.229	3.94	D	171.5	D	61.7		17.2	1.55	19.0	0.04	0.00	0.07	0.07	76	
85		9.72		9.71		33.489	25.823	218.5	0.250	3.82		166.7		59.4		19.5	1.64	20.6	0.03	0.00	0.04	0.05	86	12
99		9.57		9.56		33.594	25.930	208.6	0.280	3.49		152.7		54.3		21.9	1.74	22.3	0.02	0.01	0.01	0.06	100	11
100	ISL	9.56	D	9.55	D	33.588	25.926	209.0	0.284	3.47	D	151.2	D	53.9		22.1	1.75	22.4	0.02	0.01	0.01	0.06	101	
120		9.17		9.16		33.746	26.113	191.5	0.322	3.08		134.7		47.5		26.4	1.90	24.9	0.02	0.01	0.01	0.04	121	10
125	ISL	9.13	D	9.12	D	33.751	26.124	190.6	0.334	3.10	D	135.0	D	47.7		27.2	1.92	25.2	0.02	0.00	0.01	0.04	126	
139		8.78		8.76		33.844	26.253	178.6	0.357	2.93		127.8		44.7		29.3	1.98	26.2	0.01	0.00	0.00	0.04	140	09
150	ISL	8.62	D	8.60	D	33.885	26.310	173.4	0.379	2.96	D	128.7	D	45.1		30.4	2.00	26.7	0.01	0.00	0.01	0.04	151	
171		8.41		8.39		33.924	26.373	167.8	0.412	2.85		124.3		43.1		32.7	2.03	27.6	0.01	0.01	0.01	0.04	172	08
200		8.26		8.24		33.961	26.426	163.3	0.460	2.72		118.7		41.1		35.2	2.09	28.5	0.02	0.00	0.00	0.03	202	07
230		7.84		7.82		33.993	26.513	155.4	0.508	2.51		109.4		37.5		39.9	2.21	30.2	0.01	0.00			232	06
250	ISL	7.58	D	7.55	D	34.017	26.570	150.2	0.543	2.14	D	93.0	D	31.8		44.2	2.34	31.8	0.01	0.00			252	
269		7.34		7.32		34.032	26.617	146.0	0.567	1.87		81.6		27.7		48.3	2.46	33.4	0.01	0.00			271	05
300	ISL	6.99	D	6.96	D	34.055	26.683	140.0	0.616	1.51	D	65.6	D	22.1		54.2	2.62	35.3	0.01	0.00			302	
321		6.81		6.78		34.081	26.729	135.9	0.640	1.25		54.6		18.3		58.1	2.73	36.6	0.01	0.00			324	04
381		6.39		6.36		34.157	26.846	125.5	0.718	0.71		31.1		10.3		67.9	2.97	38.9	0.01	0.00			384	03
400	ISL	6.28	D	6.25	D	34.171	26.870	123.4	0.748	0.63	D	27.2	D	9.0		70.3	3.00	39.3	0.01	0.00			403	
441		6.01		5.97		34.196	26.926	118.5	0.792	0.50		21.8		7.2		75.4	3.08	40.3	0.01	0.00			445	02
500	ISL	5.64	D	5.60	D	34.220	26.991	112.8	0.867	0.38	D	16.5	D	5.4		82.6	3.16	41.4	0.00	0.00			504	
514		5.54		5.50		34.227	27.009	111.2	0.876	0.37		16.0		5.2		84.3	3.18	41.7	0.00	0.01			518	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 3.3 N	122 56.5 W	20/07/2015	1912	UTC	4230 m	020 10 kn	130 05 09	1	1015.0 mb	19.3 C	18.2 C	25 m	7/8	NS	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		18.84		18.84		33.075	23.592	429.0	0.000	5.53	241.7	103.6	1.2	0.31	0.0	0.01	0.02	0.12	0.02	0	
2	A	18.84		18.84		33.075	23.592	429.0	0.009	5.53	241.7	103.6	1.2	0.31	0.0	0.01	0.02	0.12	0.02	2	24
8		18.73		18.73		33.077	23.621	426.5	0.034	5.52	241.0	103.1	1.2	0.31	0.0	0.01	0.01	0.12	0.02	8	22
9		18.73		18.73		33.077	23.621	426.5	0.036											8	23
10	ISL	18.56	D	18.56		33.074	D 23.663	422.6	0.043	5.53	D241.4	D103.1	1.2	0.31	0.0	0.01	0.01	0.12	0.03	10	
15	A	18.34		18.34		33.072	23.715	417.8	0.064	5.58	244.0	103.6	1.2	0.31	0.0	0.01	0.01	0.14	0.04	15	21
20	A	18.04		18.03		33.065	23.785	411.4	0.085	5.65	246.7	104.1	1.2	0.31	0.0	0.01	0.00	0.18	0.05	20	20
28		16.23		16.22		33.002	24.162	375.6	0.116	5.95	260.1	105.9	1.0	0.31	0.0	0.01	0.01	0.23	0.08	28	19
30	ISL	15.87	D	15.86		33.008	D 24.248	367.4	0.124	6.13	D267.3	D108.3	1.1	0.32	0.0	0.01	0.01	0.29	0.11	30	
35	A	15.20		15.19		33.070	24.444	348.9	0.141	6.20	271.0	108.1	1.3	0.34	0.0	0.01	0.01	0.44	0.19	35	18
46		13.14		13.14		33.089	24.887	306.8	0.177	5.88	257.0	98.4	2.8	0.54	1.7	0.27	0.08	0.85	0.73	46	16
47		13.14		13.14		33.088	24.887	306.9	0.179											46	17
50	ISL	12.91	D	12.90		33.048	D 24.902	305.5	0.191	5.74	D250.2	D 95.5	3.7	0.64	3.6	0.24	0.05	0.67	0.60	50	
57		12.64		12.64		33.070	24.971	299.1	0.211	5.44	237.9	90.1	5.2	0.82	7.0	0.19	0.01	0.36	0.36	57	15
68	A	11.20		11.19		33.109	25.271	270.7	0.242	5.21	227.5	83.5	7.0	0.99	9.8	0.06	0.01	0.26	0.25	69	14
75	ISL	10.85	D	10.84		33.151	D 25.366	261.8	0.263	5.04	D219.3	D 80.2	9.1	1.13	12.1	0.04	0.00	0.18	0.17	76	
81	A	10.93		10.92		33.215	25.402	258.5	0.276	4.81	210.1	76.8	10.9	1.25	14.1	0.03	0.00	0.10	0.11	82	13
91		10.46		10.45		33.394	25.624	237.6	0.301	4.19	182.9	66.2	13.4	1.42	16.8	0.04	0.00	0.05	0.07	92	12
100	ISL	10.23	D	10.22		33.452	D 25.708	229.8	0.324	3.89	D169.4	D 61.3	16.4	1.56	18.9	0.04	0.00	0.03	0.07	101	
101		10.18		10.17		33.455	25.719	228.8	0.324	3.88	169.4	61.0	16.8	1.57	19.1	0.05	0.00	0.03	0.07	102	11
120		9.33		9.31		33.523	25.914	210.5	0.366	3.75	163.7	57.9	20.7	1.69	21.3	0.02	0.00	0.01	0.04	121	10
125	ISL	9.09	D	9.07		33.583	D 26.000	202.4	0.379	3.80	D165.2	D 58.3	21.8	1.72	21.9	0.02	0.00	0.01	0.04	126	
140		8.97		8.95		33.689	26.102	193.0	0.406	3.48	152.1	53.4	25.2	1.81	23.6	0.02	0.00	0.00	0.03	141	09
150	ISL	8.87	D	8.86		33.760	D 26.172	186.5	0.428	3.39	D147.4	D 51.9	26.7	1.87	24.6	0.01	0.00	0.00	0.03	151	
170		8.71		8.69		33.861	26.278	176.8	0.462	2.94	128.6	44.9	29.9	2.00	26.5	0.01	0.00	0.00	0.03	171	08
200		8.41		8.39		33.951	26.395	166.3	0.513	2.61	113.9	39.6	33.9	2.11	28.3	0.01	0.00	0.00	0.03	202	07
231		7.89		7.87		33.982	26.497	156.9	0.563	2.69	117.5	40.3	38.2	2.13	29.2	0.01	0.00			233	06
250	ISL	7.61	D	7.59		33.987	D 26.542	152.8	0.596	2.66	D115.6	D 39.6	41.8	2.24	30.5	0.01	0.00			252	
270		7.41		7.39		34.011	26.590	148.6	0.623	2.23	97.4	33.1	45.6	2.35	31.9	0.01	0.00			272	05
300	ISL	7.14	D	7.11		34.045	D 26.655	142.8	0.671	1.69	D 73.7	D 25.0	51.0	2.52	34.0	0.01	0.00			302	
320		6.89		6.86		34.058	26.699	138.7	0.695	1.50	65.3	21.9	54.5	2.63	35.4	0.01	0.00			323	04
380		6.36		6.33		34.106	26.809	128.9	0.775	0.96	41.8	13.9	65.4	2.90	38.4	0.01	0.01			383	03
400	ISL	6.24	D	6.20		34.127	D 26.842	126.0	0.806	0.81	D 35.2	D 11.7	68.2	2.95	38.9	0.01	0.00			403	
440		5.97		5.93		34.156	26.899	120.9	0.850	0.65	28.4	9.3	73.7	3.06	40.0	0.01	0.00			444	02
500	ISL	5.63	D	5.59		34.206	D 26.981	113.7	0.927	0.43	D 18.7	D 6.1	82.0	3.15	41.2	0.01	0.00			504	
515		5.52		5.48		34.220	27.006	111.4	0.937	0.39	17.1	5.6	84.1	3.17	41.5	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 76.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 43.4 N	123 38.0 W	21/07/2015	0031	UTC	4233 m	020 18 kn	360 04 05	2	1014.0 mb	18.8 C	18.3 C	20 m	8/8	NS	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		19.35		19.35		33.038	23.434	444.1	0.000	5.44	237.7	102.8	1.1	0.31	0.0	0.00	0.04	0.18	0.07	0	
4		19.35		19.35		33.038	23.434	444.2	0.018	5.44	237.7	102.8	1.1	0.31	0.0	0.00	0.04	0.18	0.07	4	20
10		19.34		19.34		33.041	23.441	443.8	0.044	5.43	237.4	102.6	1.1	0.30	0.0	0.00	0.03	0.17	0.03	10	19
20	ISL	17.10	D	17.09		33.067	D 24.011	389.7	0.087	5.84	D254.7	D105.7	1.0	0.31	0.0	0.00	0.04	0.18	0.05	20	
26		16.59		16.59		33.030	24.100	381.4	0.109	5.96	260.5	106.9	0.9	0.32	0.0	0.00	0.04	0.19	0.07	26	18
30	ISL	16.19	D	16.18		33.021	D 24.186	373.4	0.125	6.01	D262.2	D106.9	1.0	0.33	0.0	0.00	0.06	0.24	0.10	30	
40		15.14		15.13		33.051	24.443	349.1	0.161	6.12	267.7	106.7	1.1	0.35	0.0	0.00	0.10	0.38	0.16	40	17
50		13.19		13.18		33.023	24.828	312.7	0.194	5.99	262.0	100.3	2.5	0.54	1.7	0.23	0.29	0.61	0.38	50	16
62		12.27		12.26		33.046	25.025	294.1	0.230	5.52	241.1	90.5	4.6	0.83	6.9	0.29	0.01	0.45	0.36	63	15
75		11.19		11.18		33.093	25.260	271.9	0.267	5.23	228.6	83.9	8.1	1.10	11.6	0.02	0.01	0.20	0.17	76	14
87		10.35		10.34		33.106	25.418	257.0	0.299	5.06	D220.2	D 79.6	10.8	1.20	13.3	0.02	0.00	0.11	0.11	88	13
100		10.05		10.03		33.180	25.528	246.9	0.331	4.91	214.7	76.9	12.1	1.23	14.1	0.02	0.00	0.10	0.12	101	12
112		9.46		9.44		33.286	25.708	229.9	0.360	4.66	203.6	72.0	16.4	1.44	17.4	0.01	0.00	0.03	0.05	113	11
124		9.22		9.20		33.394	25.831	218.4	0.387	4.36	190.7	67.2	19.5	1.57	19.7	0.01	0.00	0.01	0.05	125	10
125	ISL	9.17	D	9.16		33.410	D 25.851	216.5	0.391	4.33	D188.6	D 66.6	19.7	1.58	19.8	0.01	0.00	0.01	0.05	126	
139		9.13		9.11		33.584	25.995	203.2	0.419	3.65	159.3	56.1	23.3	1.76	22.6	0.01	0.00	0.01	0.04	140	09
150	ISL	9.09	D	9.07		33.665	D 26.064	196.8	0.443	3.37	D146.8	D 51.8	25.2	1.82	23.6	0.01	0.00	0.01	0.04	151	
170		8.88		8.86		33.793	26.198	184.5	0.479	3.05	133.4	46.8	28.8	1.94	25.4	0.01	0.00	0.01	0.04	171	08
200		8.43		8.41		33.925	26.371	168.5	0.532	2.90	126.7	44.0	33.1	2.03	27.0	0.01	0.00	0.01	0.05	202	07
230		8.00		7.98		33.987	D 26.485	158.1	0.584	2.52	110.0	37.9	38.5	2.19	29.5	0.01	0.00			232	06
250	ISL	7.74	D	7.72		34.010	D 26.541	153.0	0.616	2.28	D 99.3	D 34.1	42.1	2.32	30.9	0.01	0.00			252	
270		7.60		7.58		34.042	26.587	149.0	0.642	1.92	83.6	28.5	45.7	2.44	32.4	0.01	0.00			272	05
300	ISL	7.21	D	7.18		34.060	D 26.658	142.6	0.690	1.57	D 68.2	D 23.1	51.1	2.58	34.2	0.01	0.00			302	
320		7.00		6.97		34.078	26.701	138.7	0.714	1.35	59.0	19.9	54.7	2.68	35.4	0.01	0.00			323	04
380		6.44		6.41		34.119	26.809	129.0	0.794	0.90	39.2	13.0	65.7	2.92	38.3	0.01	0.00			383	03
400	ISL	6.16	D	6.13		34.102	D 26.831	126.9	0.826	0.89	D 38.7	D 12.8	69.3	2.97	39.0	0.01	0.00			403	
440		5.84		5.80		34.163	D 26.921	118.7	0.875	0.68	29.5	9.7	76.4	3.08	40.4	0.00	0.00			444	02
500	ISL	5.55	D	5.51		34.177	D 26.968	114.8	0.946	0.48	D 21.0	D 6.9	83.2	3.17	41.5	0.00	0.00			504	
515		5.44		5.40		34.192	26.993	112.5	0.955	0.45	19.6	6.4	84.9	3.19	41.7	0.00	0.01			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 28.1 N	120 29.2 W	19/07/2015	1731	UTC	21 m	030 09 kn	160 01 06	2	1015.0 mb	25.6 C	20.8 C		8/8	SC	046

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		17.39		17.39		33.390	24.187	372.2	0.000	6.33	276.5	115.5	0.8	0.21	0.0	0.01	0.00	1.46	0.42	0	
2		17.39		17.39		33.390	24.187	372.3	0.007	6.33	276.5	115.5	0.8	0.21	0.0	0.01	0.00	1.46	0.42	2	05
5		17.28		17.28		33.389	24.214	369.8	0.019	6.33	276.7	115.3	0.8	0.23	0.0	0.01	0.00	1.56	0.35	5	04
10		17.13		17.13		33.385	24.246	367.0	0.037	6.33	276.7	115.0	0.9	0.22	0.0	0.01	0.00	1.65	0.38	10	02
10		17.13		17.13		33.385	24.246	366.9	0.038											10	03
14		16.16		16.16		33.382	24.469	345.8	0.051	6.19	270.3	110.2	2.0	0.33	0.4	0.04	0.16	3.10	0.08	14	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 27.0 N	120 31.4 W	19/07/2015	1820 UTC	75 m	020 05 kn	220 01 08	2	1015.0 mb	23.8 C	19.8 C	10 m	8/8	SC	047

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	17.24	17.24	33.400	24.232	368.0	0.000	6.35	277.7	115.6	0.5	0.20	0.0	0.01	0.00	1.25	0.74	0	
2 A	17.24	17.24	33.400	24.232	368.0	0.007	6.35	277.7	115.6	0.5	0.20	0.0	0.01	0.00	1.25	0.74	2	13
6 A	17.15	17.15	33.395	24.248	366.6	0.022	6.38	278.7	115.9	0.6	0.20	0.0	0.01	0.00	1.58	0.32	6	12
8 A	17.15	17.15	33.395	24.250	366.5	0.029	6.38	278.6	115.8	0.5	0.21	0.0	0.01	0.00	1.37	0.33	8	10
9	17.15	17.15	33.402	24.255	366.1	0.031											8	11
10 ISL	17.12 D	17.12	33.394 D	24.256	366.0	0.037	6.35 D	277.1 D	115.4	0.8	0.24	0.0	0.01	0.00	1.63	0.38	10	
14 A	15.90	15.90	33.383	24.528	340.3	0.051	6.39	279.2	113.2	1.4	0.30	0.1	0.02	0.04	2.15	0.47	14	09
20	14.14	14.14	33.380	24.908	304.2	0.070	6.04	263.7	103.2	2.7	0.43	1.2	0.09	0.28	3.86	0.87	20	08
27 A	14.15	14.14	33.382	24.909	304.3	0.091	6.05	264.2	103.4	2.6	0.45	1.1	0.09	0.27	3.65	0.82	27	06
27	14.15	14.14	33.380	24.907	304.5	0.091											27	07
30 ISL	13.86 D	13.86	33.384 D	24.969	298.6	0.101	5.90 D	256.9 D	100.3	4.3	0.59	3.2	0.18	0.43	3.34	0.87	30	
32 A	13.38	13.37	33.391	25.074	288.7	0.106	5.36	234.3	90.3	5.4	0.69	4.5	0.24	0.53	3.14	0.90	32	05
41	11.34	11.33	33.456	25.514	246.9	0.130	3.93	171.5	63.3	13.9	1.37	15.0	0.31	0.07	0.75	0.54	41	04
50	11.29	11.28	33.463	25.529	245.7	0.153	3.90	170.4	62.9	14.1	1.36	15.2	0.25	0.09	0.78	0.54	50	03
60	10.97	10.96	33.500	25.616	237.7	0.177	3.70	161.6	59.2	15.5	1.46	17.0	0.13	0.00	0.56	0.51	60	02
70	10.96	10.95	33.506	25.624	237.2	0.201	3.66	159.7	58.5	15.9	1.48	17.3	0.12	0.02	0.52	0.52	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 OCEANUS CALCOFI CRUISE 1507 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	22/07/2015	1034 UTC	814 m	320 14 kn			0101.4 mb	17.0 C	16.4 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	19.04	19.04	33.407	23.795	409.6	0.000	5.90	257.8	111.1	2.1	0.27	0.0	0.03	0.00	0.58	0.20	0	
2	19.04	19.04	33.407	23.795	409.7	0.008	5.90	257.8	111.1	2.1	0.27	0.0	0.03	0.00	0.58	0.20	2	23
10	18.94	18.94	33.405	23.819	407.7	0.041	5.90	257.8	110.9	2.2	0.27	0.0	0.02	0.00	0.57	0.18	10	21
10	18.94	18.94	33.410	23.823	407.4	0.042											10	22
15	15.88	15.88	33.366	24.520	341.0	0.060	6.35	277.3	112.4	3.6	0.37	0.0	0.02	0.00	1.24	0.48	15	20
20	14.78	14.77	33.357	24.756	318.7	0.076	6.24	272.8	108.2	4.4	0.46	0.4	0.04	0.00	2.83	0.85	20	18
20	14.78	14.77	33.355	24.754	318.8	0.078											20	19
30	12.36	12.35	33.426	25.301	267.0	0.106	4.93	215.3	81.2	9.8	0.99	9.1	0.16	0.02	1.66	0.66	30	17
40	11.00	11.00	33.502	25.611	237.7	0.131	3.90	170.2	62.4	15.3	1.40	15.9	0.14	0.00	0.55	0.36	40	16
50	10.53	10.52	33.624	25.790	220.9	0.154	3.44	150.4	54.6	18.9	1.60	18.8	0.08	0.00	0.22	0.23	50	15
60	10.38	10.37	33.696	25.872	213.3	0.175	3.19	139.4	50.5	21.0	1.70	20.0	0.06	0.00	0.14	0.16	60	14
70	10.31	10.30	33.730	25.910	209.9	0.197	3.09	135.1	48.9	21.8	1.74	20.6	0.05	0.00	0.12	0.13	71	13
75 ISL	10.25 D	10.24	33.764 D	25.947	206.5	0.209	3.02 D	131.5 D	47.7	23.4	1.82	21.5	0.05	0.00	0.09	0.12	76	
86	10.03	10.02	33.930	26.116	190.8	0.229	2.46	107.3	38.6	27.0	2.01	23.5	0.04	0.00	0.03	0.08	87	12
100	9.94	9.93	34.006	26.190	184.0	0.255	2.19	95.4	34.3	29.1	2.11	24.5	0.04	0.00	0.01	0.11	101	11
120	9.75	9.74	34.057	26.262	177.6	0.291	2.01	88.0	31.5	31.5	2.19	25.6	0.04	0.00	0.01	0.06	121	10
125 ISL	9.74 D	9.73	34.073 D	26.276	176.4	0.302	1.90 D	82.6 D	29.7	32.1	2.22	25.8	0.04	0.00	0.01	0.06	126	
140	9.70	9.69	34.137	26.333	171.3	0.326	1.71	74.5	26.7	33.8	2.31	26.5	0.03	0.00	0.01	0.06	141	09
150 ISL	9.65 D	9.63	34.137 D	26.343	170.6	0.345	1.68 D	73.2 D	26.3	34.4	2.33	26.8	0.03	0.00	0.01	0.06	151	
170	9.52	9.50	34.168	26.389	166.7	0.377	1.58	69.0	24.6	35.5	2.36	27.2	0.03	0.00	0.01	0.06	171	08
200 ISL	9.39 D	9.37	34.203 D	26.438	162.7	0.429	1.40 D	61.0 D	21.8	37.3	2.42	27.8	0.03	0.00			202	
200	9.39	9.37	34.203 D	26.438	162.7	0.429	1.40 D	61.0 D	21.8								202	07
230	9.31	9.28	34.229	26.473	160.0	0.475	1.30	56.8	20.2	39.0	2.47	28.4	0.03	0.00			232	06
250 ISL	9.22 D	9.19	34.239 D	26.497	158.2	0.510	1.24 D	53.9 D	19.2	40.0	2.51	28.7	0.03	0.00			252	
270	9.12	9.09	34.243	26.517	156.7	0.538	1.20	52.2	18.4	41.0	2.54	29.1	0.02	0.00			272	05
300 ISL	8.96 D	8.93	34.245 D	26.544	154.6	0.589	1.13 D	49.2 D	17.4	43.1	2.59	29.8	0.02	0.00			302	
320	8.72	8.68	34.250	26.586	151.0	0.615	1.07	46.6	16.3	44.5	2.62	30.3	0.03	0.00			323	04
380	8.31	8.27	34.261	26.659	145.0	0.704	0.88	38.3	13.3	49.3	2.72	31.8	0.03	0.00			383	03
400 ISL	8.19 D	8.15	34.258 D	26.675	143.7	0.739	0.83 D	36.3 D	12.6	51.0	2.75	32.3	0.04	0.00			403	
440	7.80	7.75	34.240	26.720	139.8	0.790	0.78	34.1	11.7	54.4	2.80	33.5	0.07	0.00			444	02
500 ISL	7.16 D	7.11	34.266 D	26.832	129.7	0.877	0.54 D	23.3 D	7.9	61.7	2.93	35.2	0.04	0.00			504	
516	6.85	6.80	34.266	26.874	125.6	0.891	0.53	23.3	7.8	63.6	2.97	35.7	0.03	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 80.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 9.1 N	121 9.0 W	22/07/2015	0630 UTC	2178 m	330 12 kn			1011.2 mb	17.9 C	16.9 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	19.75	19.75	33.372	23.587	429.4	0.000	5.52	241.2	105.3	0.5	0.30	0.0	0.00	0.03	0.19	0.04	0	
2	19.75	19.75	33.372	23.588	429.5	0.009	5.52	241.2	105.3	0.5	0.30	0.0	0.00	0.03	0.19	0.04	2	21
10	19.59	19.58	33.372	23.630	425.8	0.043	5.52	241.3	105.0	0.5	0.28	0.0	0.00	0.00	0.17	0.05	10	19
10	19.59	19.58	33.371	23.629	425.9	0.042											10	20
20	17.02	17.02	33.325	24.226	369.2	0.083	5.98	261.4	108.3	0.7	0.29	0.0	0.01	0.00	0.30	0.10	20	18
30	14.71	14.70	33.342	24.760	318.6	0.117	6.28	274.5	108.7	1.1	0.34	0.2	0.05	0.01	0.68	0.32	30	17
40	13.82	13.82	33.354	24.955	300.3	0.148	5.79	253.2	98.4	1.6	0.54	2.6	0.42	0.58	0.97	0.52	40	16
50	12.45	12.44	33.388	25.255	271.9	0.177	4.73	206.7	78.1	6.3	1.05	9.9	0.97	0.00	0.26	0.25	50	15
60	11.61	11.60	33.463	25.472	251.5	0.203	4.11	179.4	66.6	11.8	1.32	14.2	0.14	0.00	0.09	0.12	60	14
70	10.70	10.69	33.528	25.686	231.3	0.227	3.67	160.6	58.5	16.7	1.51	17.3	0.05	0.00	0.06	0.11	71	13
75 ISL	10.48 D	10.47	33.555 D	25.746	225.6	0.240	3.60 D	156.6 D	57.0	18.0	1.57	18.2	0.05	0.00	0.05	0.10	76	
85	9.86	9.85	33.561	25.855	215.4	0.260	3.55	155.3	55.5	20.5	1.68	20.0	0.03	0.00	0.02	0.07	86	12
100	9.27	9.26	33.571	25.960	205.7	0.292	3.61	157.7	55.7	22.0	1.74	20.9	0.03	0.04	0.01	0.06	101	11
120	9.17	9.15	33.757	26.123	190.6	0.332	3.09	135.1	47.7	26.7	1.91	23.4	0.02	0.00	0.01	0.05	121	10
125 ISL	9.16 D	9.14	33.807 D	26.163	186.9	0.343	2.95 D	128.3 D	45.5	27.4	1.94	23.8	0.02	0.00	0.01	0.05	126	
140	9.10	9.08	33.858	26.214	182.4	0.369	2.74	119.6	42.2	29.5	2.01	25.0	0.02	0.01	0.00	0.05	141	09
150 ISL	8.98 D	8.96	33.901 D	26.266	177.7	0.389	2.58 D	112.4 D	39.7	31.0	2.06	25.6	0.02	0.01	0.00	0.06	151	
170	8.76	8.74	33.969	26.354	169.7	0.422	2.35	102.8	36.0	34.1	2.15	26.9	0.02	0.02	0.00	0.06	171	08
200	8.29	8.27	34.026	26.471	159.0	0.471	2.19	95.5	33.1	38.5	2.25	28.4	0.03	0.00	0.01	0.06	202	07
230	7.97	7.94	34.049 D	26.539	153.0	0.521	2.02 D	87.7 D	30.3								232	06
250 ISL	7.56 D	7.53	34.038 D	26.590	148.3	0.552	1.95 D	84.9 D	29.1	45.7	2.43	30.8	0.03	0.00			252	
270	7.37	7.35	34.054 D	26.629	144.9	0.581	1.73 D	75.3 D	25.7								272	05
300 ISL	7.14 D	7.11	34.074 D	26.678	140.6	0.625	1.46 D	63.6 D	21.6	52.9	2.60	33.3	0.02	0.00			302	
320	7.01	6.98	34.086	26.706	138.2	0.648	1.34	58.6	19.7	55.8	2.67	34.2	0.02	0.00			323	04
381	6.60	6.57	34.135	26.800	130.0	0.730	0.90	39.3	13.1	63.5	2.86	36.4	0.01	0.00			384	03
400 ISL	6.47 D	6.43	34.154 D	26.833	127.1	0.760	0.76 D	33.2 D	11.1	66.1	2.91	36.9	0.01	0.00			403	
440	6.22	6.18	34.172	26.881	122.9	0.804	0.61	26.5	8.8	71.4	3.01	37.9	0.01	0.00			444	02
500 ISL	6.12 D	6.07	34.263 D	26.967	115.6	0.882	0.36 D	15.7 D	5.2	77.4	3.12	38.9	0.01	0.00			504	
516	5.98	5.93	34.259	26.981	114.4	0.895	0.36	15.6	5.1	79.0	3.15	39.1	0.01	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.0 N	121 50.6 W	22/07/2015	0044 UTC	3622 m	340 09 kn	330 04 08	1	1011.8 mb	19.0 C	17.4 C	21 m	6/8	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		19.74		19.74		33.084		23.369	450.3	0.000	5.46		238.8		104.1		1.5	0.31	0.0	0.01	0.00	0.14	0.03	0	
3		19.74		19.74		33.084		23.369	450.4	0.014	5.46		238.8		104.1		1.5	0.31	0.0	0.01	0.00	0.14	0.03	3	23
9		19.58		19.58		33.070		23.401	447.5	0.040	5.51		240.9		104.7		1.5	0.30	0.0	0.00	0.01	0.15	0.03	9	22
10	ISL	18.39	D	18.39		33.077	D	23.706	418.4	0.045	5.60	D	244.3	D	104.0		1.5	0.30	0.0	0.00	0.00	0.15	0.04	10	
20		17.34		17.33		33.055		23.945	396.0	0.085	5.88		257.2		107.0		1.5	0.31	0.0	0.00	0.00	0.22	0.07	20	20
30		15.11		15.10		33.025		24.428	350.2	0.123	6.23		272.2		108.4		1.5	0.35	0.0	0.01	0.00	0.46	0.22	30	19
40		13.53		13.53		33.006		24.745	320.3	0.156	5.87		256.8		99.0		3.1	0.56	1.9	0.27	0.52	0.60	0.49	40	17
40		13.53		13.53		33.007		24.746	320.2	0.157														40	18
50		12.62		12.62		33.017		24.934	302.5	0.187	5.66		247.3		93.6		4.4	0.75	5.5	0.53	0.16	0.47	0.37	50	16
60		11.77		11.76		33.077		25.143	282.7	0.217	5.27		230.5		85.7		7.2	0.99	9.8	0.05	0.01	0.23	0.27	60	15
70		11.08		11.07		33.171		25.341	264.1	0.244	4.99		218.2		79.9		9.9	1.17	12.5	0.03	0.00	0.11	0.11	71	14
75	ISL	10.78	D	10.77		33.204	D	25.419	256.8	0.259	4.91	D	213.7	D	78.1		11.6	1.25	13.9	0.03	0.00	0.08	0.09	76	
85		10.02		10.01		33.305		25.629	236.9	0.282	4.49		196.1		70.3		15.1	1.42	16.8	0.02	0.00	0.03	0.06	86	13
100		9.49		9.48		33.405		25.794	221.4	0.316	4.21		183.8		65.1		18.9	1.56	19.2	0.02	0.00	0.03	0.06	101	12
120		9.57		9.56		33.652		25.976	204.7	0.359	3.27		142.9		50.8		23.6	1.81	22.7	0.01	0.00	0.01	0.05	121	11
125	ISL	9.41	D	9.39		33.680	D	26.024	200.2	0.371	3.26	D	142.0	D	50.5		24.2	1.84	23.0	0.01	0.00	0.01	0.05	126	
140		9.46		9.44		33.767		26.084	194.9	0.398	2.92		127.7		45.3		26.3	1.91	24.0	0.01	0.00	0.01	0.06	141	10
150	ISL	9.29	D	9.27		33.840	D	26.169	187.0	0.420	2.80	D	122.0	D	43.3		27.5	1.91	24.5	0.01	0.00	0.00	0.05	151	
171		8.63		8.61		33.882		26.306	174.2	0.456	3.19		139.3		48.6		29.9	1.92	25.4	0.02	0.00	0.00	0.03	172	09
200		8.19		8.17		33.981		26.451	160.8	0.504	2.54		111.1		38.4		36.7	2.15	28.6	0.01	0.00	0.00	0.02	202	08
230		7.87		7.84		34.017		26.528	153.9	0.552	2.21		96.7		33.2		41.7	2.29	30.5	0.01	0.00			232	07
250	ISL	7.85	D	7.83		34.076	D	26.577	149.7	0.585	1.78	D	77.3	D	26.6		45.6	2.42	31.8	0.01	0.00			252	
270		7.43		7.40		34.075		26.638	144.1	0.612	1.62		70.8		24.1		49.5	2.54	33.1	0.01	0.00			272	06
300	ISL	6.98	D	6.95		34.086	D	26.710	137.5	0.658	1.31	D	56.9	D	19.2		54.8	2.68	34.7	0.01	0.00			302	
320		7.05		7.02		34.130		26.735	135.5	0.681	1.05		45.8		15.4		58.4	2.78	35.7	0.01	0.00			323	05
380		6.47		6.44		34.160		26.838	126.3	0.759	0.77		33.4		11.1		66.6	2.94	37.8	0.01	0.00			383	04
400	ISL	6.28	D	6.25		34.157	D	26.860	124.4	0.790	0.69	D	29.9	D	9.9		69.5	2.99	38.4	0.01	0.00			403	
440		6.02		5.98		34.186		26.917	119.3	0.833	0.54		23.4		7.7		75.4	3.08	39.5	0.01	0.00			444	03
500	ISL	5.82	D	5.78		34.253	D	26.996	112.5	0.909	0.35	D	15.1	D	5.0		81.1	3.18	40.0	0.01	0.00			504	
514		5.83		5.79		34.275		27.012	111.2	0.918														518	02
515		5.83		5.78		34.275		27.013	111.2	0.919	0.30		13.3		4.4		82.6	3.20	40.2	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 29.0 N	122 32.0 W	21/07/2015	1918 UTC	3992 m	010 10 kn	330 04 08	1	1013.6 mb	19.1 C	17.8 C	22 m	7/8	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		19.66		19.66		32.992		23.320	455.0	0.000	5.41		236.7		102.9		1.6	0.30	0.0	0.01	0.01	0.12	0.03	0	
3	A	19.66		19.66		32.992		23.320	455.0	0.014	5.41		236.7		102.9		1.6	0.30	0.0	0.01	0.01	0.12	0.03	3	24
10		19.41		19.41		32.990		23.383	449.3	0.045	5.44		237.7		102.9		1.6	0.30	0.0	0.01	0.00	0.14	0.03	10	23
13	A	18.58		18.57		32.969		23.578	430.9	0.059	5.58		243.8		103.9		1.8	0.30	0.0	0.01	0.00	0.15	0.04	13	22
17	A	17.61		17.61		32.979		23.821	407.8	0.075	5.78		252.8		105.7		2.0	0.30	0.0	0.01	0.00	0.14	0.04	17	21
20	ISL	17.21	D	17.20		32.988	D	23.925	397.9	0.088	5.79	D	252.3	D	104.9		1.9	0.29	0.0	0.01	0.00	0.14	0.04	20	
30	ISL	17.08	D	17.08		33.209	D	24.123	379.4	0.127	5.75	D	250.6	D	104.1		1.8	0.27	0.0	0.01	0.00	0.14	0.04	30	
31	A	16.99		16.99		33.210		24.146	377.2	0.130	5.78		252.5		104.5		1.8	0.27	0.0	0.01	0.00	0.14	0.04	31	20
40		16.37		16.36		33.158		24.251	367.6	0.163	5.79		253.2		103.5		1.9	0.28	0.0	0.01	0.00	0.20	0.06	40	19
49		15.29		15.28		32.952		24.334	359.8	0.196	5.98		261.3		104.4		1.9	0.31	0.0	0.01	0.00	0.28	0.13	49	18
50	ISL	15.22	D	15.21		32.926	D	24.330	360.3	0.202	5.96	D	260.0	D	104.0		2.0	0.32	0.0	0.01	0.00	0.30	0.15	50	
59	A	14.16		14.15		32.826		24.478	346.3	0.232	5.99		261.9		102.1		2.2	0.36	0.0	0.02	0.01	0.46	0.31	59	17
65		13.93		13.92		32.803		24.508	343.6	0.252	5.92		259.0		100.5		2.4	0.40	0.2	0.12	0.06	0.60	0.50	66	16
71	A	13.51		13.50		32.876		24.650	330.2	0.272	5.77		252.0		97.0		2.9	0.47	1.1	0.17	0.02	0.46	0.37	72	15
75	ISL	13.22	D	13.21		32.849	D	24.688	326.7	0.288	5.68	D	247.6	D	95.0		3.3	0.54	2.3	0.14	0.05	0.40	0.34	76	
78		13.02		13.01		32.840		24.720	323.7	0.295	5.64		246.7		94.0		3.6	0.59	3.2	0.11	0.08	0.36	0.31	79	14
85		12.26		12.25		32.894		24.909	305.8	0.317	5.46		238.8		89.6		5.3	0.77	6.3	0.05	0.03	0.25	0.22	86	13
95		11.35		11.33		33.012		25.171	281.0	0.347	5.31		232.2		85.5		7.6	0.96	9.5	0.06	0.00	0.16	0.16	96	12
100	ISL	11.03	D	11.01		33.066	D	25.270	271.6	0.364	5.27	D	229.4	D	84.2		8.7	1.03	10.5	0.05	0.00	0.14	0.15	101	
110		10.39		10.38		33.126		25.428	256.7	0.387	4.99		217.9		78.6		10.9	1.16	12.6	0.04	0.00	0.09	0.13	111	11
125		10.11		10.10		33.256		25.577	242.8	0.424	4.71		205.8		73.9		14.4	1.36	15.8	0.02	0.00	0.04	0.06	126	10
140		9.51		9.49		33.427		25.810	220.8	0.459	4.08		178.2		63.2		18.5	1.56	19.1	0.02	0.04	0.02	0.05	141	09
150	ISL	9.32	D	9.30		33.541	D	25.930	209.6	0.484	3.85	D	167.6	D	59.5		21.0	1.66	20.8	0.02	0.03	0.02	0.04	151	
170		9.00		8.98		33.753		26.148	189.3	0.521	3.30		144.2		50.7		26.2	1.86	24.1	0.02	0.01	0.00	0.03	171	08
200		8.73		8.71		33.899		26.305	174.9	0.575	2.83		123.5		43.2		31.0	2.01	26.5	0.02	0.00	0.00	0.03	202	07
230		8.27		8.25		33.997		26.453	161.3	0.626	2.42		105.6		36.6		37.0	2.18	28.9	0.01	0.00			232	06
250	ISL	8.07	D	8.04		34.019	D	26.502	157.0	0.663	2.24	D	97.5	D	33.7		40.3	2.27	30.0	0.01	0.00			252	
270		7.74		7.71		34.033		26.561	151.6	0.688	2.05		89.4		30.6		43.7	2.35	31.2	0.01	0.00			272	05
300	ISL	7.36	D	7.33		34.053	D	26.630	145.3	0.739	1.73	D	75.0	D	25.6		48.8	2.49	32.9	0.01	0.00			302	
320		7.15		7.12		34.060		26.666	142.1	0.762	1.57		68.7		23.2		52.2	2.58	34.1	0.01	0.00			323	04
380		6.69		6.65		34.122		26.780	132.0	0.844	0.99		43.1		14.4		61.7	2.84	36.9	0.01	0.00			383	03
400	ISL	6.56	D	6.52		34.133	D	26.806	129.7	0.877	0.85	D	37.1	D	12.4		64.8	2.90	37.5	0.01	0.00			403	
440		6.23		6.19		34.176		26.882	122.8	0.920	0.64		28.0		9.3		71.1	3.02	38.8	0.01	0.05			444	02
500	ISL	5.97	D	5.92		34.222	D	26.953	116.7	1.001	0.43	D	18.7	D	6.2		78.2	3.11	40.0	0.01	0.00			504	
515		5.84		5.79		34.212		26.961	116.0	1.010	0.43		18.6		6.1		79.9	3.13	40.3	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 80.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 9.0 N	123 13.3 W	21/07/2015	1336 UTC	4236 m	030 18 kn	330 04 06	2	1013.0 mb	18.9 C	18.3 C		8/8	SC	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		19.34		19.34		32.995		23.404	447.0	0.000	5.45		238.4		103.0		1.8	0.30	0.0	0.01	0.01	0.20	0.03	0	
2		19.34		19.34		32.995		23.404	447.0	0.009	5.45		238.4		103.0		1.8	0.30	0.0	0.01	0.01	0.20	0.03	2	20
10		19.18		19.18		33.000		23.449	443.0	0.045	5.46		238.5		102.8		1.8	0.30	0.0	0.01	0.01	0.20	0.01	10	19
20	ISL	17.85	D	17.84		33.160	D	23.903	400.1	0.087	5.69	D	248.2	D	104.6		1.8	0.29	0.0	0.01	0.01	0.19	0.02	20	
26		17.57		17.57		33.139	D	23.954	395.5	0.111	5.68	D	247.5	D	103.8									26	18
30	ISL	16.97	D	16.96		33.095	D	24.063	385.1	0.127	5.78	D	252.2	D	104.5		1.9	0.29	0.0	0.00	0.02	0.19	0.04	30	
40		16.49		16.48		33.055		24.145	377.7	0.166	5.92		258.7		105.9		2.0	0.28	0.0	0.00	0.02	0.18	0.05	40	17
50		15.70		15.69		33.023		24.300	363.2	0.203	5.92		258.7		104.2		2.1	0.30	0.0	0.00	0.02	0.23	0.11	50	16
62		14.36		14.35		32.854		24.459	348.3	0.245	5.96		260.4		102.0		2.3	0.36	0.0	0.02	0.01	0.41	0.38	63	15
75		13.12		13.10		32.833		24.696	325.9	0.289	5.64		246.8		94.2		3.4	0.57	2.9	0.07	0.00	0.54	0.18	76	14
86		12.44		12.43		32.934		24.906	306.1	0.324	5.48		239.4		90.2		5.3	0.75	5.9	0.05	0.03	0.25	0.24	87	13
100		11.08		11.07		33.060		25.256	272.9	0.364	5.32		232.6		85.2		8.4	1.04	10.6	0.02	0.00	0.12	0.14	101	12
112		10.09		10.08		33.149		25.497	250.1	0.396	4.90		214.2		76.8		12.9	1.27	14.4	0.02	0.00	0.05	0.07	113	11
125	ISL	9.84	D	9.82		33.323	D	25.675	233.4	0.428	4.46	D	194.2	D	69.6		15.7	1.43	16.9	0.02	0.00	0.03	0.06	126	
126		9.80		9.79		33.296		25.659	234.9	0.430	4.52		197.4		70.4		15.9	1.44	17.1	0.02	0.00	0.03	0.05	127	10
140		9.35		9.33		33.441		25.847	217.3	0.461	4.20		183.4		64.8		19.4	1.57	19.3	0.02	0.00	0.01	0.04	141	09
150	ISL	9.24	D	9.23		33.586	D	25.978	205.1	0.484	3.86	D	168.2	D	59.6		21.7	1.66	20.9	0.01	0.00	0.01	0.04	151	
170		8.96		8.94		33.725		26.132	190.8	0.523	3.33		145.7		51.1		26.2	1.85	24.0	0.01	0.00	0.00	0.03	171	08
200		8.66		8.64		33.885		26.305	174.9	0.578	3.16		137.8		48.1		30.1	1.91	25.5	0.01	0.00	0.00	0.03	202	07
231		8.16		8.14		33.976		26.453	161.3	0.630	2.82		123.3		42.6		35.6	2.08	27.6	0.01	0.00			233	06
250	ISL	7.95	D	7.93		33.994	D	26.499	157.2	0.662	2.62	D	113.8	D	39.3		39.1	2.17	28.9	0.01	0.00			252	
270		7.67		7.65		34.012		26.554	152.2	0.691	2.34		102.3		34.9		42.7	2.27	30.4	0.02	0.00			272	05
300	ISL	7.28	D	7.25		34.036	D	26.629	145.3	0.738	1.85	D	80.7	D	27.4		48.5	2.44	32.5	0.01	0.00			302	
320		7.10		7.07		34.049		26.664	142.2	0.764	1.66		72.3		24.4		52.3	2.55	34.0	0.01	0.00			323	04
380		6.40		6.37		34.093		26.793	130.4	0.846	1.07		46.6		15.5		64.1	2.84	37.3	0.01	0.00			383	03
400	ISL	6.24	D	6.20		34.114	D	26.832	127.0	0.876	0.88	D	38.2	D	12.7		67.4	2.89	38.0	0.01	0.00			403	
440		5.96		5.92		34.134		26.883	122.4	0.922	0.72		31.4		10.3		74.0	3.00	39.3	0.01	0.00			444	02
500	ISL	5.85	D	5.81		34.220	D	26.966	115.4	0.998	0.42	D	18.1	D	6.0		80.0	3.12	40.2	0.01	0.00			504	
515		5.73		5.68		34.223		26.983	113.8	1.011	0.41		17.7		5.8		81.5	3.15	40.4	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 49.0 N	123 54.4 W	21/07/2015	0736 UTC	4270 m	010 18 kn			1013.0 mb	18.8 C	18.8 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		19.68		19.68		33.018		23.334	453.6	0.000	5.43		237.3		103.3		2.2	0.29	0.0	0.00	0.01	0.11	0.03	0	
3		19.68		19.68		33.018		23.334	453.7	0.014	5.43		237.3		103.3		2.2	0.29	0.0	0.00	0.01	0.11	0.03	3	23
10		19.63		19.63		33.021		23.350	452.5	0.045	5.43		237.3		103.2		2.2	0.30	0.0	0.00	0.01	0.11	0.03	10	21
10		19.63		19.63		33.020		23.350	452.5	0.047														10	22
20	ISL	19.29	D	19.28		33.117	D	23.513	437.3	0.090	5.51		240.5		104.1		2.1	0.29	0.0	0.00	0.01	0.10	0.03	20	
25		18.77		18.76		33.154		23.673	422.3	0.111	5.56		242.8		103.9		2.1	0.29	0.0	0.00	0.01	0.10	0.03	25	20
30	ISL	18.07	D	18.07		33.229	D	23.902	400.6	0.133	5.62	D	245.0	D	103.8		2.0	0.28	0.0	0.00	0.01	0.11	0.03	30	
40		17.73		17.73		33.305		24.043	387.4	0.171	5.74		250.7		105.3		2.0	0.27	0.0	0.00	0.02	0.12	0.04	40	19
50		17.65		17.64		33.447		24.174	375.4	0.210	5.68		248.3		104.2		2.1	0.25	0.0	0.00	0.06	0.12	0.04	50	18
62		16.82		16.81		33.278		24.241	369.3	0.254	5.77		252.3		104.1		2.2	0.31	0.0	0.00	0.03	0.17	0.06	62	17
74		15.14		15.13		33.142		24.515	343.5	0.297	5.81		254.1		101.3		2.6	0.30	0.0	0.00	0.01	0.26	0.19	75	16
75	ISL	14.83	D	14.82		33.148	D	24.586	336.6	0.302	5.76	D	250.9	D	99.7		2.7	0.31	0.1	0.00	0.01	0.27	0.20	76	
87		13.51		13.50		33.100		24.825	314.0	0.340	5.72		250.2		96.5		3.6	0.43	0.7	0.04	0.03	0.34	0.34	88	14
87		13.51		13.50		33.100		24.825	314.0	0.341														88	15
100		11.17		11.16		33.048		25.230	275.4	0.378	5.29		231.0		84.7		7.5	0.88	7.8	0.07	0.02	0.22	0.27	101	13
112		10.68		10.66		33.119		25.373	262.0	0.410	5.05		220.5		80.1		11.0	1.17	12.5	0.01	0.00	0.09	0.09	113	12
125		9.96		9.94		33.210		25.566	243.7	0.443	4.82		210.8		75.4		13.5	1.32	14.7	0.01	0.02	0.06	0.07	126	11
140		9.50		9.48		33.328		25.735	227.9	0.478	4.50		196.7		69.7		16.3	1.45	17.0	0.01	0.01	0.05	0.06	141	10
150	ISL	9.33	D	9.31		33.494	D	25.893	213.1	0.503	4.14	D	180.2	D	63.9		18.7	1.55	18.6	0.01	0.00	0.04	0.05	151	
170		9.11		9.09		33.632		26.036	199.9	0.543	3.68		160.6		56.5		23.3	1.74	21.9	0.00	0.00	0.01	0.03	171	09
200		8.71		8.69		33.856		26.275	177.8	0.599	3.18		138.9		48.5		29.4	1.93	25.0	0.00	0.00	0.00	0.02	202	08
230		8.31		8.29		33.960		26.418	164.6	0.651	2.91		127.3		44.1		34.0	2.04	26.8	0.00	0.00			232	07
250	ISL	8.11	D	8.08		33.978	D	26.463	160.7	0.686	2.74	D	119.0	D	41.2		36.9	2.11	27.9	0.00	0.00			252	
270		7.85		7.83		33.998		26.517	155.8	0.715	2.56		111.7		38.3		39.9	2.18	29.0	0.00	0.00			272	06
300	ISL	7.56	D	7.53		34.018	D	26.575	150.7	0.764	2.20	D	95.7	D	32.7		45.5	2.35	31.1	0.00	0.00			302	
320		7.31		7.28		34.037		26.626	146.0	0.790	1.88		82.3		27.9		49.2	2.47	32.5	0.00	0.00			323	05
380		6.52		6.49		34.072		26.761	133.6	0.874	1.26		55.0		18.3		61.4	2.78	36.3	0.00	0.00			383	04
400	ISL	6.33	D	6.30		34.083	D	26.794	130.6	0.905	1.11	D	48.3	D	16.1		64.5	2.83	37.0	0.00	0.00			403	
441		6.04		6.00		34.106		26.852	125.5	0.953	0.92		40.2		13.2		70.9	2.94	38.5	0.00	0.00			445	03
500	ISL	5.58	D	5.54		34.139	D	26.934	118.0	1.031	0.65	D	28.2	D	9.2		79.1	3.09	40.0	0.00	0.00			504	
515		5.61		5.56		34.172		26.957	116.1	1.042														519	02
516		5.61		5.57		34.177		26.962	115.7	1.043	0.55		24.1		7.9		81.3	3.13	40.4	0.00	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 24.1 N	119 48.0 W	19/07/2015	1053 UTC	26 m	340 04 kn			1013.0 mb	20.8 C	18.4 C				044

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		16.31		16.31		33.378		24.431	349.0	0.000	6.30		275.2		112.6		1.7	0.28	0.0	0.02	0.08	1.94	0.45	0	
2		16.31		16.31		33.378		24.431	349.1	0.007	6.30		275.2		112.6		1.7	0.28	0.0	0.02	0.08	1.94	0.45	2	05
5		16.04		16.04		33.343		24.465	345.9	0.017	6.22		272.0		110.6		3.6	0.32	0.0	0.03	0.18	1.83	0.50	5	04
10		14.92		14.92		33.318		24.694	324.3	0.034	6.14		268.2		106.6		5.2	0.38	0.1	0.04	0.38	1.73	0.43	10	03
15		14.75		14.75		33.316		24.729	321.0	0.050	6.06		264.7		104.9		5.6	0.41	0.1	0.05	0.57	1.46	0.47	15	02
20		14.59		14.58		33.316		24.765	317.8	0.066	6.02		263.2		103.9		6.1	0.43	0.2	0.07	0.77	1.17	0.47	20	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 1.5 W	19/07/2015	1250 UTC	577 m	200 07 kn	180 01 06	9	1013.0 mb	19.9 C	18.4 C		5/8	SC	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	17.90	17.90	33.412	24.081	382.4	0.000	6.15	268.7	113.3	1.2	0.21	0.0	0.01	0.00	1.52	0.79	0	
2	17.90	17.90	33.412	24.081	382.4	0.008	6.15	268.7	113.3	1.2	0.21	0.0	0.01	0.00	1.52	0.79	2	24
10	17.37	17.37	33.415	24.212	370.2	0.038	6.05	264.3	110.4	2.0	0.28	0.2	0.02	0.02	2.75	0.30	10	23
20	16.36	16.35	33.412	24.448	348.1	0.074	6.28	274.5	112.3	0.4	0.21	0.0	0.01	0.00	1.69	0.49	20	22
30	15.12	15.11	33.427	24.737	320.8	0.107	6.31	275.8	110.1	1.5	0.33	0.6	0.04	0.05	5.33	0.17	30	21
40	13.66	13.65	33.414	25.035	292.7	0.138	5.16	225.3	87.3	6.4	0.75	5.5	0.25	0.53	2.89	0.41	40	20
50	12.19	12.18	33.396	25.310	266.6	0.166	4.68	204.7	76.9	9.5	1.02	9.4	0.37	0.11	0.85	0.33	50	19
60	11.38	11.37	33.446	25.501	248.7	0.192	4.15	181.2	66.9	12.7	1.27	13.9	0.18	0.00	0.49	0.39	60	18
70	10.79	10.78	33.564	25.698	230.1	0.215	3.60	157.3	57.4	17.2	1.54	18.1	0.14	0.00	0.30	0.30	71	17
75 ISL	10.56 D	10.55	33.649 D	25.805	220.0	0.229	3.26	D142.1 D	51.8	19.2	1.64	19.4	0.12	0.00	0.23	0.24	76	
85	10.25	10.24	33.776	25.957	205.8	0.248	2.87	125.4	45.3	23.2	1.85	22.1	0.08	0.00	0.10	0.13	86	16
100	10.15	10.14	33.854	26.036	198.7	0.278	2.65	115.8	41.8	24.9	1.93	23.2	0.05	0.00	0.04	0.11	101	15
120	10.11	10.10	33.941	26.111	192.1	0.317	2.34	102.0	36.8	27.1	2.05	24.5	0.03	0.00	0.02	0.10	121	14
125 ISL	10.11 D	10.09	33.946 D	26.116	191.7	0.329	2.32	D101.2 D	36.6	27.4	2.07	24.6	0.04	0.00	0.02	0.10	126	
140	10.06	10.04	34.000	26.168	187.2	0.355	2.15	94.0	33.9	28.6	2.12	25.2	0.07	0.00	0.02	0.11	141	13
150 ISL	10.01 D	9.99	34.014 D	26.187	185.6	0.377	2.10	D 91.5 D	33.1	29.2	2.14	25.4	0.07	0.00	0.02	0.11	151	
170	9.97	9.95	34.050	26.223	182.6	0.411	1.99	86.9	31.3	30.2	2.19	25.8	0.06	0.00	0.02	0.11	171	12
200	9.74	9.71	34.116	26.314	174.6	0.464	1.68	73.5	26.3	33.3	2.33	27.5	0.02	0.00	0.11	0.14	202	11
230	9.54	9.52	34.173	26.391	167.9	0.516	1.41	61.6	22.0	36.5	2.43	28.5	0.07	0.00			232	10
250 ISL	9.40 D	9.37	34.189 D	26.428	164.8	0.553	1.23	D 53.7 D	19.2	39.8	2.52	29.6	0.05	0.00			252	
270	8.96	8.93	34.183	26.495	158.7	0.582	1.07	46.6	16.4	43.1	2.60	30.6	0.03	0.00			272	09
300 ISL	8.44 D	8.41	34.181 D	26.574	151.4	0.633	0.70	D 30.5 D	10.7	50.0	2.74	32.0	0.03	0.00			302	
320	8.23	8.20	34.179	26.604	148.8	0.658	0.73	32.0	11.1	54.6	2.84	32.9	0.04	0.00			323	08
380	7.72	7.68	34.193	26.692	141.3	0.745	0.56	24.6	8.4	61.0	2.91	33.9	0.01	0.00			383	07
400 ISL	7.54 D	7.50	34.208 D	26.730	137.9	0.779	0.46	D 20.2 D	6.9	65.4	2.98	33.7	0.01	0.00			403	
440	7.21	7.16	34.219	26.787	132.9	0.827	0.30	12.9	4.4	74.2	3.13	33.3	0.01	0.00			444	06
480	6.87	6.82	34.237	26.848	127.4	0.879	0.12	5.4	1.8	87.2	3.36	30.5	0.01	0.00			484	05
500 ISL	6.76 D	6.71	34.238 D	26.865	126.1	0.912	0.04	D 1.7 D	0.6	94.8	3.50	27.2	0.01	0.00			504	
515	6.69	6.64	34.244	26.879	124.9	0.924	0.04	1.6	0.5	100.5	3.61	24.8	0.01	0.00			519	04
540	6.63	6.58	34.247	26.890	124.2	0.955	0.02	1.0	0.3	109.5	3.82	17.9	0.58	0.00			545	03
563	6.62	6.57	34.246	26.890	124.6	0.983	0.03	1.4	0.5	116.9	4.03	11.4	2.18	0.00			568	02
568	6.62	6.57	34.249	26.892	124.4	0.989	0.03	1.4	0.5	117.5	4.04	11.2	2.20	0.00			573	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 15.5 N	119 19.4 W	19/07/2015	0455 UTC	21 m	040 09 kn			1013.0 mb	22.8 C	19.9 C				041

DEPTH m	TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.37	18.37	33.333	23.907	398.9	0.000	6.12	267.4	113.7	3.5	0.25	0.0	0.01	0.00	0.65	0.18	0	
2	18.37	18.36	33.333	23.907	399.0	0.008	6.12	267.4	113.7	3.5	0.25	0.0	0.01	0.00	0.65	0.18	2	05
5	18.35	18.35	33.335	23.913	398.5	0.020	6.14	268.1	114.0	3.4	0.26	0.0	0.01	0.02	0.63	0.19	5	04
10	17.53	17.53	33.342	24.119	379.1	0.039	6.23	272.4	114.0	3.6	0.26	0.0	0.01	0.00	0.79	0.30	10	02
10	17.53	17.53	33.348	24.124	378.6	0.041											10	03
15	16.79	16.79	33.329	24.283	363.6	0.058	6.18	270.2	111.5	4.4	0.32	0.0	0.03	0.12	1.52	0.65	15	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	19/07/2015	0557 UTC	36 m	360 05 kn			1013.0 mb	19.3 C	18.6 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	18.85	18.85	33.367	23.813	407.9	0.000	5.97	260.7	111.9	3.0	0.25	0.0	0.01	0.01	0.72	0.19	0	
2	18.85	18.85	33.367	23.813	407.9	0.008	5.97	260.7	111.9	3.0	0.25	0.0	0.01	0.01	0.72	0.19	2	06
6	18.84	18.84	33.366	23.814	408.1	0.025	5.97	261.0	112.1	3.0	0.25	0.0	0.01	0.02	0.72	0.20	6	05
10	18.96	18.96	33.365	23.784	411.0	0.041	5.98	261.3	112.4	2.9	0.26	0.0	0.01	0.01	0.76	0.20	10	03
11	18.28	18.27	33.367	23.956	394.6	0.043											11	04
20	15.14	15.14	33.327	24.655	328.3	0.077	6.25	273.0	109.0	5.1	0.39	0.4	0.10	0.22	3.01	0.92	20	02
30	14.93	14.92	33.326	24.700	324.4	0.110	6.23	272.2	108.2	5.2	0.41	0.4	0.11	0.19	2.83	0.93	30	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
34 10.7 N	119 30.5 W	19/07/2015	0742 UTC	133 m	330 06 kn			1013.0 mb	19.8 C	18.9 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	18.66	18.66	33.401	23.887	400.9	0.000	6.11	266.8	114.2	0.4	0.17	0.0	0.01	0.00	1.12	0.34	0	
2	18.66	18.66	33.401	23.887	400.9	0.008	6.11	266.8	114.2	0.4	0.17	0.0	0.01	0.00	1.12	0.34	2	12
10	18.41	18.41	33.419	23.963	394.0	0.040	6.21	271.4	115.6	0.0	0.16	0.0	0.01	0.00	1.23	0.35	10	10
10	18.41	18.41	33.415	23.959	394.3	0.041											10	11
20	17.03	17.03	33.406	24.287	363.5	0.078	6.14	268.1	111.2	0.7	0.24	0.0	0.01	0.02	2.13	0.81	20	09
30	15.10	15.10	33.378	24.703	324.1	0.112	5.69	248.6	99.2	4.9	0.54	3.0	0.15	0.29	1.69	0.67	30	08
40	13.80	13.79	33.338	24.947	301.0	0.144	5.92	258.7	100.5	4.1	0.57	2.1	0.06	0.10	1.69	0.53	40	07
50	12.16	12.16	33.402	25.320	265.7	0.172	4.67	204.1	76.7	9.7	1.06	10.3	0.25	0.16	0.79	0.51	50	06
60	11.13	11.12	33.477	25.569	242.2	0.197	3.93	171.9	63.2	14.1	1.37	15.7	0.10	0.00	0.35	0.35	60	05
70	10.80	10.79	33.537	25.675	232.3	0.221	3.71	161.9	59.1	16.2	1.49	17.6	0.06	0.00	0.22	0.21	71	04
75 ISL	10.68 D	10.67	33.569 D	25.722	228.0	0.234	3.62	D157.8 D	57.7	17.3	1.55	18.5	0.05	0.00	0.17	0.19	76	
85	10.40	10.39	33.645	25.831	217.9	0.255	3.31	144.8	52.4	19.5	1.66	20.2	0.03	0.00	0.07	0.16	86	03
100	10.26	10.24	33.784	25.964	205.6	0.287	2.82	123.1	44.5	23.1	1.86	22.5	0.02	0.00	0.03	0.11	101	02
120	10.14	10.13	33.911	26.083	194.7	0.327	2.44	106.5	38.4	26.2	2.01	24.1	0.03	0.00	0.02	0.09	121	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 8.0 W	22/07/2015	1712	UTC	100 m	300 05 kn	310 02 08	2	1011.5 mb	18.4 C	17.5 C	11 m	8/8	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		18.52	18.52	33.438	23.950	394.8	0.000	5.84	255.3	109.0	2.9	0.31	0.4	0.04	0.06	1.25	0.46	0	
2	A	18.52	18.52	33.438	23.950	394.9	0.008	5.84	255.3	109.0	2.9	0.31	0.4	0.04	0.06	1.25	0.46	2	13
6	A	17.66	17.65	33.418	24.146	376.4	0.023	5.90	257.8	108.2	3.5	0.34	0.7	0.04	0.06	1.56	0.68	6	12
9	A	17.52	17.51	33.419	24.180	373.2	0.035	5.90	257.7	107.9	4.0	0.42	1.0	0.05	0.05	2.17	0.63	9	10
9		17.52	17.51	33.419	24.180	373.2	0.034											9	11
10	ISL	17.07	D 17.06	33.414	D 24.283	363.4	0.039	5.93	D258.5	D107.5	4.1	0.42	1.1	0.05	0.06	2.16	0.62	10	
15	A	17.06	17.06	33.420	24.289	363.0	0.056	5.78	252.7	104.9	4.7	0.42	1.7	0.07	0.09	2.07	0.57	15	09
20	ISL	17.16	D 17.15	33.411	D 24.260	366.0	0.075	5.79	D252.3	D105.1	4.1	0.38	1.3	0.05	0.07	1.68	0.72	20	
22		17.55	17.54	33.422	24.177	374.0	0.082	5.82	254.3	106.6	3.8	0.37	1.1	0.05	0.06	1.52	0.78	22	08
30	A	13.35	13.35	33.315	25.020	293.8	0.109	5.47	238.9	92.0	6.3	0.73	5.6	0.12	0.03	1.13	0.54	30	07
36	A	12.19	12.19	33.300	25.235	273.4	0.126	4.98	217.5	81.7	8.6	0.97	9.5	0.15	0.01	0.92	0.64	36	06
43		11.63	11.63	33.395	25.414	256.6	0.144	4.42	193.2	71.7	11.5	1.17	12.7	0.23	0.00	0.89	0.42	43	05
50		11.40	11.39	33.495	25.535	245.2	0.162	4.03	176.1	65.1	14.5	1.32	15.0	0.20	0.04	0.53	0.48	50	04
60		11.29	11.28	33.540	25.590	240.2	0.186	3.88	169.6	62.6	15.8	1.39	15.9	0.17	0.07	0.54	0.38	60	03
70		10.74	10.73	33.613	25.744	225.7	0.209	3.52	153.6	56.1	18.4	1.55	18.5	0.12	0.04	0.31	0.36	71	02
75	ISL	10.39	D 10.39	33.703	D 25.875	213.4	0.222	3.22	D140.3	D 51.0	20.5	1.66	19.9	0.11	0.04	0.24	0.30	76	
90		10.07	10.06	33.906	26.090	193.3	0.251	2.55	111.4	40.1	26.7	1.97	24.2	0.06	0.02	0.02	0.11	91	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 OCEANUS CALCOFI CRUISE 1507 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 44.7 N	120 24.5 W	22/07/2015	1956	UTC	979 m	320 08 kn	310 03 07	2	1012.1 mb	18.1 C	17.3 C	13 m	8/8	SC	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		19.53	19.53	33.449	23.702	418.4	0.000	5.59	244.4	106.4	2.4	0.30	0.0	0.01	0.02	0.48	0.02	0	
3		19.53	19.53	33.449	23.703	418.5	0.013	5.59	244.4	106.4	2.4	0.30	0.0	0.01	0.02	0.48	0.02	3	21
10		18.75	18.75	33.438	23.892	400.7	0.041	5.77	252.1	108.1	2.6	0.31	0.0	0.01	0.03	0.46	0.14	10	19
11		18.75	18.75	33.439	23.893	400.7	0.043											10	20
20		17.96	17.95	33.440	24.090	382.2	0.081	5.93	259.3	109.5	2.8	0.33	0.1	0.02	0.06	0.58	0.14	20	18
30		15.62	15.62	33.416	24.617	332.3	0.116	5.84	255.2	103.0	4.7	0.47	1.7	0.05	0.12	1.44	0.41	30	17
40		13.24	13.24	33.449	25.146	282.1	0.147	5.00	218.5	84.0	8.8	0.90	7.9	0.18	0.35	1.28	0.39	40	16
50		12.34	12.33	33.455	25.328	265.0	0.174	4.75	207.6	78.3	10.5	1.03	10.0	0.22	0.28	1.15	0.27	50	15
60		10.47	10.46	33.549	25.743	225.6	0.199	3.71	162.0	58.8	16.8	1.48	17.7	0.20	0.00	0.46	0.32	60	14
70		10.27	10.26	33.683	25.881	212.7	0.221	3.26	142.4	51.5	20.7	1.69	21.0	0.05	0.00	0.11	0.23	71	13
75	ISL	10.23	D 10.22	33.698	D 25.900	211.0	0.233	3.21	D139.6	D 50.6	21.4	1.72	21.5	0.05	0.00	0.10	0.20	76	
85		10.08	10.07	33.753	25.968	204.7	0.252	3.03	132.3	47.6	23.0	1.79	22.5	0.05	0.00	0.08	0.13	86	12
100		9.91	9.90	33.793	26.029	199.3	0.282	2.90	126.6	45.4	24.5	1.86	23.4	0.06	0.00	0.07	0.13	101	11
120		9.70	9.69	33.922	26.165	186.8	0.321	2.65	115.7	41.4	27.3	1.97	24.9	0.02	0.00	0.01	0.07	121	10
125	ISL	9.69	D 9.68	33.942	D 26.183	185.2	0.332	2.52	D109.7	D 39.3	28.1	2.00	25.3	0.02	0.00	0.01	0.07	126	
140		9.57	9.56	33.986	26.237	180.4	0.358	2.31	100.7	35.9	30.3	2.10	26.5	0.03	0.00	0.01	0.08	141	09
150	ISL	9.55	D 9.53	34.034	D 26.280	176.6	0.378	2.21	D 96.0	D 34.4	31.5	2.15	27.0	0.03	0.00	0.01	0.08	151	
170		9.33	9.31	34.070	26.343	171.0	0.411	1.98	86.2	30.6	33.9	2.24	28.0	0.04	0.00	0.01	0.08	171	08
200		8.92	8.90	34.150	26.472	159.2	0.460	1.54	67.0	23.6	39.4	2.43	30.0	0.07	0.00	0.01	0.09	202	07
230		8.91	8.89	34.241	26.546	152.9	0.507	1.18	51.7	18.2	42.2	2.56	30.9	0.02	0.00			232	06
250	ISL	8.66	D 8.63	34.228	D 26.575	150.4	0.540	1.12	D 48.6	D 17.1	44.0	2.60	31.5	0.03	0.00			252	
270		8.57	8.54	34.245	26.603	148.1	0.567	1.05	45.9	16.0	45.8	2.64	32.1	0.04	0.00			272	05
300	ISL	8.39	D 8.36	34.271	D 26.652	144.0	0.614	0.90	D 39.0	D 13.6	48.4	2.71	32.9	0.02	0.00			302	
320		8.24	8.20	34.278	26.682	141.5	0.639	0.82	36.0	12.5	50.1	2.75	33.4	0.02	0.00			323	04
379		7.69	7.65	34.276	26.762	134.6	0.721	0.66	28.9	9.9	57.1	2.87	35.4	0.01	0.00			382	03
400	ISL	7.57	D 7.53	34.271	D 26.776	133.6	0.754	0.63	D 27.5	D 9.4	59.2	2.90	36.0	0.01	0.00			403	
440		7.16	7.12	34.264	26.828	128.9	0.802	0.56	24.5	8.3	63.2	2.97	37.2	0.01	0.00			444	02
500	ISL	6.77	D 6.73	34.283	D 26.897	123.0	0.883	0.43	D 18.6	D 6.3	68.8	3.06	38.4	0.01	0.00			504	
516		6.71	6.66	34.288	26.910	122.1	0.897	0.40	17.5	5.8	70.3	3.08	38.8	0.01	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 45.3 W	22/07/2015	2329	UTC	1382 m	330 10 kn	290 03 08	2	1011.3 mb	18.8 C	16.9 C	19 m	8/8	SC	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		19.93	19.93	33.056	23.300	456.9	0.000	5.53	241.7	105.7	1.0	0.30	0.0	0.01	0.00	0.19	0.03	0	
2		19.93	19.93	33.056	23.300	456.9	0.009	5.53	241.7	105.7	1.0	0.30	0.0	0.01	0.00	0.19	0.03	2	21
10		18.99	18.99	33.091	23.566	431.8	0.045	5.66	247.3	106.3	1.0	0.30	0.0	0.01	0.00	0.23	0.07	10	19
10		18.99	18.99	33.091	23.567	431.8	0.043											10	20
20		16.62	16.62	33.033	24.096	381.7	0.085	6.12	267.4	109.7	1.2	0.31	0.0	0.01	0.00	0.34	0.13	20	18
30		13.75	13.74	32.974	24.676	326.5	0.121	6.42	280.6	108.6	2.3	0.38	0.1	0.03	0.00	0.87	0.49	30	17
41		13.00	13.00	33.030	24.869	308.4	0.156	5.89	257.4	98.2	3.6	0.63	3.5	0.27	0.05	0.84	0.76	41	16
50		12.47	12.46	33.083	25.015	294.7	0.183	5.47	239.0	90.2	5.1	0.86	7.9	0.09	0.00	0.41	0.55	50	15
61		11.92	11.92	33.080	25.116	285.4	0.215	5.37	234.9	87.6	6.3	0.95	9.3	0.06	0.00	0.38	0.36	61	14
70		11.23	11.22	33.124	25.279	270.1	0.240	5.08	222.0	81.6	9.3	1.11	12.0	0.04	0.00	0.16	0.25	71	13
75	ISL	11.00	D 10.99	33.207	D 25.383	260.3	0.255	4.81	D209.6	D 76.9	11.3	1.23	14.0	0.04	0.00	0.12	0.19	76	
85		10.52	10.51	33.413	25.628	237.1	0.278	4.09	178.5	64.7	15.1	1.47	18.0	0.03	0.00	0.05	0.07	86	12
100		9.43	9.42	33.501	25.879	213.4	0.311	3.93	171.9	60.9	19.9	1.63	20.8	0.02	0.00	0.02	0.05	101	11
120		9.05	9.04	33.701	26.097	193.0	0.352	3.39	148.2	52.1	25.4	1.84	24.4	0.02	0.00	0.00	0.03	121	10
125	ISL	9.04	D 9.02	33.750	D 26.138	189.2	0.364	3.19	D138.6	D 48.9	26.7	1.89	25.1	0.02	0.00	0.00	0.04	126	
140		8.91	8.89	33.887	26.266	177.4	0.389	2.68	117.2	41.1	30.6	2.05	27.1	0.02	0.00	0.01	0.05	141	09
150	ISL	8.72	D 8.70	33.929	D 26.328	171.7	0.410	2.59	D112.8	D 39.6	31.7	2.07	27.6	0.02	0.00	0.00	0.04	151	
170		8.46	8.44	33.954	26.388	166.3	0.441	2.64	115.1	40.0	34.0	2.10	28.5	0.02	0.00	0.00	0.03	171	08
200		8.09	8.07	34.009	26.489	157.2	0.489	2.33	102.0	35.2	39.0	2.23	30.4	0.02	0.00	0.00	0.03	202	07
231		7.71	7.69	34.042	26.570	149.9	0.537	1.96	85.7	29.3	44.6	2.39	32.5	0.02	0.00			233	06
250	ISL	7.58	D 7.56	34.053	D 26.598	147.6	0.569	1.82	D 79.3	D 27.1	47.0	2.46	33.3	0.02	0.00			252	
270		7.37	7.34	34.063	26.637	144.1	0.594	1.68	73.2	24.8	49.6	2.53	34.2	0.02	0.00			272	05
300	ISL	7.09	D 7.06	34.086	D 26.694	139.1	0.641	1.41	D 61.4	D 20.8	54.5	2.66	35.7	0.01	0.00			302	
320		6.92	6.89	34.097	26.727	136.2	0.664	1.22	53.3	17.9	57.7	2.74	36.7	0.01	0.00			323	04
381		6.52	6.48	34.156	26.828	127.3	0.745	0.77	33.8	11.2	66.2	2.94	38.9	0.01	0.00			384	03
400	ISL	6.37	D 6.33	34.165	D 26.855	124.9	0.775	0.69	D 29.9	D 10.0	68.8	2.99	39.4	0.01	0.00			403	
440		6.11	6.07	34.201	26.917	119.4	0.817	0.53	23.0	7.6	74.2	3.08	40.3	0.01	0.00			444	02
500	ISL	5.88	D 5.83	34.249	D 26.985	113.6	0.894	0.36	D 15.8	D 5.2	80.0	3.16	41.1	0.01	0.00			504	
515		5.84	5.80	34.274	27.010	111.5	0.904	0.32	14.0	4.6	81.4	3.18	41.3	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 14.7 N	121 26.6 W	23/07/2015	0502 UTC	3802 m	340 15 kn			1012.6 mb	18.2 C	16.1 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		19.48		19.48		33.050		23.410	446.4	0.000	5.46		238.5		103.4		1.4	0.30	0.0	0.01	0.01	0.15	0.03	0	
3		19.48		19.48		33.050		23.410	446.5	0.013	5.46		238.5		103.4		1.4	0.30	0.0	0.01	0.01	0.15	0.03	3	21
10		19.29		19.29		33.050		23.460	442.0	0.045	5.48		239.7		103.6		1.5	0.30	0.0	0.00	0.01	0.15	0.04	10	19
10		19.29		19.29		33.050		23.460	442.0	0.045														10	20
20	ISL	17.29	D	17.29		33.067	D	23.965	394.1	0.087	5.83	D	254.1	D	105.9		1.8	0.32	0.0	0.00	0.00	0.19	0.05	20	
21		17.22		17.22		33.070		23.984	392.4	0.090	5.87		256.7		106.6		1.9	0.32	0.0	0.00	0.00	0.20	0.06	21	18
30		16.16		16.15		33.037		24.205	371.5	0.125	6.13		268.0		109.0		1.8	0.33	0.0	0.01	0.01	0.35	0.14	30	17
40		14.87		14.87		32.949		24.422	351.1	0.161	6.17		269.9		106.9		2.1	0.35	0.0	0.01	0.01	0.32	0.16	40	16
50		13.99		13.98		32.981		24.633	331.3	0.195	6.20		271.0		105.4		2.7	0.43	0.3	0.06	0.03	1.17	0.67	50	15
60		13.18		13.17		33.022		24.830	312.7	0.227	5.66		247.5		94.7		3.8	0.69	4.5	0.47	0.02	0.51	0.46	60	14
71		12.00		11.99		33.142		25.150	282.4	0.260	5.26		229.9		85.9		6.2	1.00	10.2	0.03	0.01	0.20	0.20	72	13
75	ISL	12.01	D	12.00		33.258	D	25.239	274.1	0.273	5.05	D	219.9	D	82.5		7.0	1.07	11.2	0.03	0.01	0.17	0.17	76	
85		11.53		11.52		33.344		25.394	259.5	0.298	4.59		200.5		74.3		9.1	1.23	13.8	0.04	0.01	0.08	0.09	86	12
100	ISL	10.26	D	10.25		33.350	D	25.623	237.8	0.337	4.30	D	187.4	D	67.8		14.9	1.45	17.6	0.02	0.00	0.05	0.07	101	
101		10.24		10.23		33.345		25.623	237.9	0.338	4.27		186.5		67.2		15.3	1.46	17.9	0.02	0.00	0.05	0.07	102	11
119		9.52		9.51		33.544		25.899	212.0	0.378	3.64		159.0		56.5		21.3	1.71	22.0	0.02	0.00	0.01	0.05	120	10
125	ISL	9.36	D	9.35		33.602	D	25.971	205.2	0.393	3.52	D	153.3	D	54.4		22.6	1.75	22.7	0.02	0.00	0.01	0.04	126	
140		9.01		8.99		33.699		26.104	192.8	0.420	3.37		147.0		51.7		25.9	1.86	24.6	0.02	0.01	0.00	0.03	141	09
150	ISL	8.85	D	8.83		33.780	D	26.192	184.6	0.442	3.25	D	141.5	D	49.8		27.3	1.90	25.3	0.02	0.00	0.00	0.03	151	
171		8.70		8.68		33.865		26.283	176.4	0.478	2.96		129.4		45.2		30.1	1.99	26.9	0.02	0.00	0.00	0.03	172	08
199		8.38		8.36		33.954		26.402	165.5	0.525	2.64		115.3		40.0		34.6	2.11	28.8	0.01	0.01	0.00	0.02	201	07
200	ISL	8.40	D	8.37		33.954	D	26.400	165.8	0.530	2.64	D	115.0	D	40.1		34.7	2.12	28.9	0.01	0.00			202	
230		8.00		7.98		34.014		26.506	156.1	0.575	2.29		99.9		34.4		40.0	2.27	30.8	0.01	0.00			232	06
250	ISL	7.76	D	7.73		34.030	D	26.555	151.8	0.610	2.07	D	90.2	D	31.0		43.5	2.37	32.1	0.01	0.00			252	
271		7.54		7.51		34.050		26.602	147.5	0.638	1.83		79.7		27.1		47.1	2.47	33.4	0.01	0.00			273	05
300	ISL	7.09	D	7.06		34.076	D	26.686	139.8	0.684	1.43	D	62.2	D	21.1		53.0	2.62	35.3	0.01	0.00			302	
320		6.93		6.90		34.089		26.720	136.9	0.707	1.27		55.4		18.6		57.1	2.72	36.6	0.01	0.00			323	04
381		6.45		6.41		34.150		26.832	126.8	0.787	0.78		34.1		11.3		66.2	2.94	39.0	0.01	0.00			384	03
400	ISL	6.36	D	6.33		34.156	D	26.849	125.5	0.817	0.72	D	31.4	D	10.5		68.3	2.97	39.4	0.01	0.00			403	
440		6.13		6.09		34.169		26.889	122.0	0.861	0.61		26.5		8.7		72.6	3.04	40.3	0.01	0.00			444	02
500	ISL	5.74	D	5.70		34.222	D	26.981	113.8	0.938	0.38	D	16.7	D	5.5		80.8	3.17	41.6	0.00	0.00			504	
515		5.68		5.64		34.235		26.999	112.3	0.949	0.38		16.7		5.4		82.9	3.20	42.0	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 83.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.7 N	122 7.7 W	23/07/2015	1036 UTC	4183 m	330 11 kn			1013.7 mb	18.0 C	15.4 C				065

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		20.07		20.07		33.269		23.425	444.9	0.000	5.33		232.9		102.3		2.0	0.31	0.0	0.01	0.00	0.10	0.02	0	
2		20.07		20.07		33.269		23.425	445.0	0.009	5.33		232.9		102.3		2.0	0.31	0.0	0.01	0.00	0.10	0.02	2	21
10		20.07		20.07		33.276		23.431	444.7	0.045	5.33		233.0		102.3		2.0	0.31	0.0	0.00	0.00	0.10	0.03	10	19
10		20.07		20.07		33.267		23.425	445.4	0.043														10	20
20	ISL	20.05	D	20.05		33.268	D	23.431	445.1	0.090	5.24	D	228.5	D	100.4		2.0	0.31	0.0	0.00	0.00	0.11	0.03	20	
25		18.95		18.95		33.250		23.700	419.7	0.111	5.54		242.3		104.1		2.0	0.31	0.0	0.00	0.01	0.11	0.03	25	18
30	ISL	18.31	D	18.30		33.226	D	23.841	406.4	0.132	5.57	D	242.8	D	103.3		2.0	0.31	0.0	0.00	0.00	0.12	0.03	30	
40		16.97		16.96		33.137		24.097	382.3	0.171	5.88		256.9		106.2		2.0	0.32	0.0	0.01	0.00	0.13	0.04	40	17
50		16.59		16.58		33.204		24.237	369.3	0.208	5.91		258.2		106.0		1.9	0.31	0.0	0.01	0.00	0.20	0.06	50	16
62		15.34		15.33		33.164		24.487	345.7	0.251	6.05		264.5		105.9		1.7	0.35	0.0	0.01	0.00	0.31	0.17	62	15
74		14.96		14.95		33.210		24.607	334.6	0.292	5.85		255.9		101.7		1.9	0.42	0.3	0.07	0.03	0.55	0.48	75	14
75	ISL	14.89	D	14.88		33.215	D	24.625	332.9	0.298	5.78	D	251.8	D	100.2		2.0	0.44	0.5	0.07	0.03	0.54	0.47	76	
87		13.99		13.97		33.213		24.815	315.1	0.334	5.53		241.7		94.2		3.4	0.62	3.4	0.10	0.02	0.41	0.32	88	13
100		13.15		13.14		33.216		24.988	298.9	0.374	5.30		231.8		88.8		5.0	0.76	6.1	0.03	0.00	0.19	0.24	101	12
113		12.36		12.35		33.214		25.139	284.7	0.412	5.09		222.5		83.8		7.1	0.93	8.7	0.03	0.00	0.13	0.18	114	11
125		10.78		10.76		33.290		25.489	251.3	0.444	4.59		200.6		73.1		12.3	1.24	14.2	0.02	0.00	0.08	0.11	126	10
139		10.00		9.98		33.451		25.749	226.8	0.478	4.12		179.9		64.5		16.8	1.48	18.3	0.01	0.00	0.03	0.06	140	09
150	ISL	9.54	D	9.53		33.625	D	25.960	206.8	0.505	3.61	D	157.2	D	56.1		20.3	1.63	20.6	0.01	0.00	0.02	0.05	151	
170		9.24		9.23		33.772		26.124	191.6	0.542	3.09		134.8		47.6		26.6	1.90	24.7	0.01	0.00	0.01	0.03	171	08
200		8.94		8.92		33.939		26.303	175.2	0.597	2.51		109.7		38.5		32.3	2.10	27.5	0.01	0.00	0.00	0.03	202	07
230		8.72		8.70		34.051		26.427	164.0	0.648	2.01		87.7		30.7		37.4	2.30	29.6	0.01	0.00			232	06
250	ISL	8.56	D	8.54		34.114	D	26.501	157.3	0.684	1.65	D	71.9	D	25.2		40.6	2.41	30.7	0.01	0.00			252	
271		8.37		8.34		34.151		26.561	152.0	0.713	1.45		63.2		22.0		44.0	2.53	31.9	0.01	0.00			273	05
300	ISL	8.14	D	8.11		34.183	D	26.621	146.8	0.761	1.19	D	51.6	D	17.9		47.9	2.63	33.1	0.01	0.00			302	
319		7.97		7.93		34.198		26.659	143.4	0.784	1.06		46.4		16.0		50.4	2.70	33.9	0.01	0.00			322	04
380		7.44		7.40		34.199		26.737	136.8	0.869	0.89		39.0		13.3		56.6	2.85	35.8	0.01	0.00			383	03
400	ISL	7.30	D	7.26		34.205	D	26.762	134.7	0.902	0.82	D	35.5	D	12.1		59.0	2.88	36.4	0.01	0.00			403	
440		6.93		6.89		34.233		26.836	128.0	0.949	0.63		27.3		9.2		63.9	2.95	37.6	0.01	0.00			444	02
500	ISL	6.36	D	6.31		34.236	D	26.915	120.8	1.031	0.48	D	20.8	D	6.9		71.8	3.08	39.6	0.01	0.00			504	
516		6.28		6.24		34.246		26.933	119.3	1.043	0.44		19.1		6.3		74.0	3.11	40.1	0.01	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 34.7 N	122 48.7 W	23/07/2015	1659	UTC	4271 m	010 05 kn	010 03 06	2	1016.3 mb	18.8 C	15.7 C	23 m	7/8	SC	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		20.43		20.43		33.169	23.253	461.3	0.000	5.28	231.0	102.0	1.7	0.30	0.0	0.00	0.00	0.11	0.04	0	
2	A	20.43		20.43		33.169	23.253	461.4	0.009	5.28	231.0	102.0	1.7	0.30	0.0	0.00	0.00	0.11	0.04	2	24
10		20.43		20.42		33.161	23.250	462.1	0.046	5.28	230.9	101.9	1.7	0.31	0.0	0.00	0.00	0.11	0.04	10	22
10		20.43		20.42		33.159	23.249	462.1	0.045											10	23
13	A	20.39		20.38		33.174	23.271	460.2	0.060	5.29	231.4	102.1	1.8	0.31	0.0	0.00	0.00	0.12	0.07	13	21
18	A	20.24		20.24		33.233	23.353	452.5	0.083	5.36	234.3	103.2	1.8	0.30	0.0	0.00	0.00	0.13	0.04	18	20
20	ISL	18.41	D	18.40		33.287	D 23.863	403.9	0.092	5.67	D247.2	D105.4	1.7	0.30	0.0	0.00	0.00	0.14	0.05	20	
30	ISL	16.91	D	16.90		33.247	D 24.194	372.6	0.131	5.87	D256.1	D106.1	1.4	0.32	0.0	0.00	0.00	0.20	0.08	30	
32	A	16.59		16.58		33.238	24.261	366.3	0.138	6.00	262.2	107.7	1.4	0.32	0.0	0.00	0.00	0.21	0.09	32	19
43		15.29		15.28		33.288	24.593	335.0	0.176	6.08	265.5	106.3	1.3	0.36	0.0	0.00	0.03	0.29	0.15	43	18
50	ISL	14.46	D	14.46		33.234	D 24.729	322.2	0.201	5.85	D255.0	D100.6	2.5	0.48	1.3	0.17	0.03	0.46	0.23	50	
53		13.99		13.99		33.187	24.792	316.3	0.209	5.72	250.2	97.5	3.1	0.53	1.8	0.24	0.03	0.54	0.27	53	17
62	A	13.25		13.24		33.242	24.986	297.9	0.237	5.31	232.0	89.1	4.3	0.75	5.7	0.11	0.01	0.47	0.46	62	16
68		12.96		12.95		33.270	25.065	290.6	0.254	5.10	223.1	85.1	5.4	0.88	8.1	0.08	0.00	0.50	0.39	69	15
74	A	12.26		12.25		33.290	25.216	276.3	0.271	4.91	214.5	80.7	6.9	1.01	10.2	0.05	0.00	0.32	0.40	75	14
75	ISL	12.03	D	12.02		33.285	D 25.256	272.5	0.275	4.85	D211.2	D 79.3	7.2	1.03	10.4	0.05	0.00	0.32	0.38	76	
86		11.28		11.27		33.278	25.388	260.0	0.303	4.69	205.0	75.5	10.1	1.19	13.1	0.03	0.01	0.23	0.18	87	13
95		10.41		10.40		33.280	25.543	245.4	0.326	4.53	198.0	71.6	12.6	1.30	15.2	0.02	0.00	0.15	0.15	96	12
100	ISL	10.28	D	10.27		33.391	D 25.653	235.1	0.340	4.26	D185.3	D 67.1	14.5	1.39	16.7	0.02	0.00	0.12	0.12	101	
110		9.55		9.54		33.446	25.817	219.5	0.361	4.07	178.0	63.2	18.2	1.56	19.7	0.02	0.00	0.05	0.07	111	11
125	ISL	9.27	D	9.25		33.587	D 25.974	204.9	0.395	3.83	D166.7	D 59.1	21.2	1.66	21.6	0.02	0.00	0.02	0.05	126	
126		9.26		9.25		33.584	25.972	205.1	0.395	3.84	167.6	59.2	21.4	1.67	21.7	0.02	0.00	0.02	0.05	127	10
140		8.99		8.97		33.707	26.113	192.0	0.423	3.50	152.7	53.6	25.0	1.80	23.9	0.01	0.02	0.01	0.03	141	09
150	ISL	8.91	D	8.89		33.764	D 26.171	186.7	0.444	3.41	D148.5	D 52.3	26.8	1.85	24.9	0.01	0.00	0.01	0.03	151	
170		8.63		8.61		33.889	26.312	173.6	0.478	3.01	131.4	45.8	30.4	1.96	26.7	0.01	0.00	0.00	0.03	171	08
200		8.35		8.33		33.966	26.416	164.2	0.528	2.73	119.2	41.4	34.6	2.07	28.5	0.01	0.00	0.00	0.03	202	07
229		8.08		8.06		34.033	26.510	155.8	0.575	2.15	93.9	32.4	40.4	2.29	30.7	0.01	0.00			231	06
250	ISL	7.91	D	7.88		34.057	D 26.554	151.9	0.610	1.91	D 83.1	D 28.7	43.5	2.38	31.9	0.01	0.00			252	
270		7.65		7.63		34.060	26.594	148.3	0.637	1.80	78.7	26.9	46.5	2.46	33.1	0.01	0.00			272	05
300	ISL	7.35	D	7.32		34.089	D 26.660	142.5	0.684	1.47	D 63.8	D 21.7	52.3	2.62	35.0	0.01	0.00			302	
320		7.09		7.06		34.112	26.715	137.4	0.709	1.21	52.7	17.8	56.2	2.72	36.3	0.01	0.00			323	04
380		6.59		6.55		34.165	26.826	127.6	0.788	0.75	32.9	11.0	65.6	2.93	38.7	0.00	0.00			383	03
400	ISL	6.62	D	6.58		34.200	D 26.850	125.6	0.818	0.65	D 28.3	D 9.5	67.6	2.97	39.0	0.00	0.00			403	
440		6.41		6.37		34.240	26.910	120.4	0.863	0.50	21.9	7.3	71.4	3.05	39.4	0.01	0.00			444	02
500	ISL	6.12	D	6.07		34.280	D 26.980	114.4	0.939	0.34	D 14.9	D 4.9	77.4	3.15	40.6	0.00	0.00			504	
515		6.06		6.01		34.287	26.993	113.3	0.951	0.32	14.0	4.6	78.9	3.18	40.9	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 14.7 N	123 29.6 W	23/07/2015	2144	UTC	4156 m	010 11 kn	340 04 09	2	1016.9 mb	19.1 C	16.2 C	22 m	7/8	SC	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		20.59		20.59		33.340	23.342	452.9	0.000	5.31	232.0	102.9	1.2	0.31	0.0	0.00	0.00	0.12	0.03	0	
3		20.59		20.59		33.340	23.342	453.0	0.014	5.31	232.0	102.9	1.2	0.31	0.0	0.00	0.00	0.12	0.03	3	21
10		20.42		20.41		33.335	23.385	449.2	0.045	5.31	231.8	102.5	1.2	0.32	0.0	0.01	0.02	0.12	0.03	10	19
10		20.42		20.41		33.335	23.385	449.1	0.046											10	20
20	ISL	18.32	D	18.32		33.299	D 23.894	400.9	0.088	5.66	D246.8	D105.1	1.3	0.31	0.0	0.00	0.00	0.14	0.04	20	
25		17.89		17.89		33.281	23.985	392.4	0.108	5.77	252.1	106.3	1.4	0.31	0.0	0.00	0.00	0.15	0.05	25	18
30	ISL	17.48	D	17.47		33.219	D 24.038	387.5	0.128	5.78	D251.9	D105.5	1.4	0.32	0.0	0.00	0.00	0.16	0.05	30	
41		16.30		16.29		33.206	24.304	362.5	0.168	5.96	260.2	106.3	1.5	0.33	0.0	0.00	0.00	0.20	0.07	41	17
50		15.56		15.55		33.214	24.476	346.4	0.200	5.98	261.1	105.1	1.7	0.35	0.0	0.00	0.02	0.26	0.11	50	16
62		14.66		14.65		33.214	24.673	327.9	0.241	5.80	253.2	100.1	2.3	0.46	0.6	0.12	0.18	0.33	0.21	62	15
75		13.13		13.12		33.194	24.972	299.7	0.281	5.40	235.8	90.3	3.9	0.70	4.8	0.17	0.01	0.33	0.18	76	14
87		11.90		11.89		33.236	25.243	274.0	0.316	5.04	219.9	82.1	6.4	0.93	8.8	0.05	0.00	0.15	0.20	88	13
100		10.57		10.55		33.245	25.490	250.6	0.350	4.71	205.7	74.6	11.3	1.21	13.8	0.04	0.00	0.04	0.06	101	12
112		10.29		10.28		33.352	25.621	238.4	0.379	4.34	189.3	68.3	14.4	1.38	16.5	0.03	0.00	0.06	0.10	113	11
125		9.57		9.55		33.482	25.843	217.4	0.409	4.07	177.7	63.2	18.5	1.54	19.6	0.02	0.00	0.03	0.07	126	10
140		9.39		9.37		33.586	25.954	207.2	0.441	3.72	162.2	57.5	21.4	1.68	21.7	0.02	0.00	0.01	0.05	141	09
150	ISL	9.20	D	9.19		33.646	D 26.031	200.0	0.464	3.65	D159.0	D 56.3	23.7	1.76	23.1	0.02	0.00	0.01	0.07	151	
171		8.98		8.96		33.833	26.214	183.1	0.501	2.99	130.5	45.9	28.4	1.94	25.8	0.01	0.00	0.01	0.12	172	08
200		8.64		8.62		33.956	26.364	169.3	0.552	2.59	113.1	39.5	33.6	2.08	28.1	0.01	0.00	0.00	0.04	202	07
230		8.27		8.24		33.997	26.454	161.2	0.602	2.42	105.6	36.6	37.0	2.17	29.5	0.01	0.00			232	06
250	ISL	8.09	D	8.06		34.025	D 26.503	156.9	0.638	2.24	D 97.5	D 33.7	39.6	2.25	30.5	0.01	0.00			252	
271		7.96		7.93		34.045	26.538	153.9	0.666	2.02	88.1	30.3	42.4	2.34	31.6	0.01	0.00			273	05
300	ISL	7.60	D	7.57		34.078	D 26.616	146.8	0.714	1.65	D 71.6	D 24.5	48.2	2.51	33.5	0.01	0.00			302	
320		7.37		7.34		34.111	26.675	141.4	0.738	1.33	58.2	19.8	52.2	2.63	34.8	0.01	0.00			323	04
380		6.47		6.44		34.082	26.776	132.1	0.821	1.15	50.3	16.7	62.5	2.79	38.1	0.01	0.00			383	03
400	ISL	6.31	D	6.28		34.094	D 26.806	129.5	0.853	1.00	D 43.3	D 14.4	65.1	2.86	38.6	0.01	0.00			403	
441		6.29		6.25		34.168	26.868	124.2	0.898	0.68	29.7	9.8	70.5	3.00	39.8	0.01	0.00			445	02
500	ISL	5.83	D	5.78		34.211	D 26.962	115.7	0.976	0.47	D 20.4	D 6.7	78.6	3.12	41.1	0.01	0.00			504	
515		5.77		5.72		34.224	26.980	114.2	0.986	0.42	18.2	6.0	80.7	3.15	41.5	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.4 N	118 29.4 W	16/07/2015	0825	UTC	58 m	190 04 kn			1013.0 mb	18.8 C	17.6 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		20.12		20.12		33.388	23.503	437.5	0.000	5.80	253.5	111.5	3.0	0.22	0.0	0.01	0.00	0.37	0.08	0	
2		20.12		20.12		33.388	23.503	437.6	0.009	5.80	253.5	111.5	3.0	0.22	0.0	0.01	0.00	0.37	0.08	2	08
5		20.06		20.06		33.388	23.518	436.2	0.022	5.81	253.9	111.6	3.0	0.24	0.0	0.01	0.00	0.39	0.09	5	07
10		19.88		19.88		33.379	23.560	432.5	0.044	5.93	259.0	113.4	3.0	0.24	0.0	0.01	0.00	0.48	0.12	10	05
10		19.88		19.88		33.381	23.562	432.3	0.045											10	06
20		14.65		14.64		33.300	24.740	320.2	0.081	6.19	270.2	106.8	2.6	0.40	0.6	0.05	0.00	1.56	0.53	20	04
30		13.96		13.96		33.285	24.872	307.9	0.113	5.92	258.5	100.8	4.0	0.52	2.2	0.12	0.21	1.92	0.58	30	03
40		12.92		12.91		33.258	25.062	290.0	0.143	5.44	237.5	90.6	5.5	0.75	5.4	0.14	0.05	1.11	0.46	40	02
50		12.48		12.48		33.292	25.174	279.7	0.171	5.14	224.5	84.8	7.4	0.90	7.7	0.28	0.87	1.13	0.57	50	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.7 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 49.4 N	118 37.7 W	16/07/2015	1024 UTC	663 m	210 04 kn			1013.0 mb	18.9 C	17.6 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	20.37	20.37	33.471	23.499	437.8	0.000	5.50	240.3	106.2	1.5	0.26	0.0	0.01	0.01	0.23	0.05	0	
2	20.37	20.37	33.471	23.499	437.9	0.009	5.50	240.3	106.2	1.5	0.26	0.0	0.01	0.01	0.23	0.05	2	21
10	20.16	20.16	33.467	23.553	433.2	0.044	5.54	241.9	106.5	1.5	0.25	0.0	0.01	0.00	0.22	0.06	10	19
10	20.16	20.16	33.471	23.556	432.8	0.045											10	20
20	16.47	16.46	33.363	24.385	354.1	0.083	6.17	269.6	110.6	1.7	0.32	0.0	0.01	0.00	0.28	0.10	20	18
30 ISL	13.22 D	13.21	33.296 D	25.032	292.6	0.116	5.98	D260.4	D100.2	4.7	0.64	4.4	0.15	0.00	0.75	0.44	30	
31	12.98	12.98	33.308 D	25.088	287.3	0.119	5.73	D249.8	D 95.7								31	17
40	12.17	12.16	33.343	25.273	269.9	0.143	4.90	214.1	80.4	7.8	0.95	8.7	0.29	0.18	1.22	0.79	40	16
50	11.03	11.02	33.342	25.483	250.1	0.169	4.51	197.2	72.3	11.8	1.20	13.7	0.09	0.00	0.37	0.35	50	15
60	10.80	10.79	33.449	25.606	238.6	0.194	4.07	177.8	64.9	14.4	1.36	16.0	0.03	0.00	0.23	0.25	60	14
70	10.69	10.68	33.550	25.704	229.5	0.217	3.62	158.3	57.7	17.0	1.51	18.4	0.05	0.00	0.15	0.20	71	13
75 ISL	10.59 D	10.58	33.592 D	25.756	224.7	0.230	3.49	D151.9	D 55.4	17.5	1.54	18.7	0.04	0.00	0.13	0.18	76	
86	10.51	10.49	33.613	25.787	222.1	0.253	3.45	150.8	54.8	18.6	1.59	19.5	0.02	0.00	0.09	0.14	87	12
100	10.36	10.35	33.668	25.855	215.9	0.284	3.34	145.9	52.8	19.9	1.65	20.3	0.02	0.00	0.05	0.11	101	11
120	10.25	10.24	33.751	25.939	208.4	0.326	3.08	134.3	48.6	22.0	1.76	21.5	0.01	0.00	0.02	0.10	121	10
125 ISL	10.24 D	10.23	33.792 D	25.973	205.3	0.339	2.94	D127.9	D 46.4	22.5	1.79	21.9	0.01	0.00	0.02	0.10	126	
140	10.22	10.21	33.831	26.007	202.4	0.367	2.69	117.4	42.4	24.2	1.89	23.2	0.01	0.00	0.02	0.09	141	09
150 ISL	10.20 D	10.18	33.871 D	26.043	199.2	0.390	2.62	D114.0	D 41.3	25.3	1.94	23.7	0.01	0.00	0.01	0.08	151	
170	10.10	10.08	33.960	26.130	191.5	0.426	2.32	101.3	36.5	27.3	2.04	24.7	0.01	0.00	0.01	0.07	171	08
200	9.98	9.95	34.091	26.254	180.4	0.482	1.84	80.4	28.9	31.2	2.24	26.7	0.01	0.00	0.00	0.07	202	07
230	9.81	9.78	34.196	26.366	170.4	0.535	1.50	65.3	23.4	34.6	2.37	27.9	0.01	0.00			232	06
250 ISL	9.88 D	9.85	34.278 D	26.418	166.0	0.572	1.21	D 52.5	D 19.0	36.3	2.45	28.4	0.01	0.00			252	
270	9.74	9.71	34.299	26.459	162.5	0.602	1.11	48.6	17.4	37.9	2.52	28.8	0.01	0.00			272	05
300 ISL	9.45 D	9.42	34.320 D	26.524	156.9	0.654	0.98	D 42.8	D 15.3	40.7	2.59	29.8	0.00	0.00			302	
320	9.10	9.06	34.317	26.579	151.9	0.681	0.91	39.7	14.0	42.6	2.64	30.5	0.00	0.01			323	04
380	8.43	8.39	34.299	26.671	144.0	0.770	0.78	34.0	11.8	49.0	2.77	32.7	0.00	0.00			383	03
400 ISL	8.28 D	8.24	34.286 D	26.684	143.0	0.803	0.77	D 33.5	D 11.7	50.7	2.80	33.3	0.00	0.00			403	
440	7.95	7.90	34.287	26.735	138.6	0.854	0.68	29.7	10.2	54.2	2.85	34.4	0.01	0.00			444	02
500 ISL	7.51 D	7.46	34.287 D	26.800	133.1	0.942	0.55	D 24.1	D 8.2								504	
515	7.40	7.34	34.286 D	26.815	131.8	0.962	0.53	D 22.8	D 7.8								519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 39.4 N	118 58.5 W	16/07/2015	1421 UTC	749 m	210 05 kn	210 03 06	2	1013.0 mb	18.0 C	16.3 C	22 m	8/8	SC	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	19.42	19.42	33.457	23.738	415.1	0.000	5.50	240.4	104.4	1.7	0.27	0.0	0.00	0.01	0.18	0.05	0	
3	19.42	19.41	33.457	23.738	415.2	0.013	5.50	240.4	104.4	1.7	0.27	0.0	0.00	0.01	0.18	0.05	3	24
10	19.41	19.41	33.456	23.738	415.4	0.042	5.51	240.9	104.6	1.7	0.29	0.0	0.01	0.01	0.19	0.05	10	23
20	15.60	15.59	33.353	24.574	336.1	0.079	6.18	269.9	108.8	2.3	0.35	0.0	0.00	0.04	0.35	0.13	20	22
30	12.79	12.78	33.360	25.167	279.8	0.110	5.32	232.2	88.4	6.2	0.77	5.9	0.16	0.21	1.09	0.65	30	21
40	11.38	11.38	33.367	25.438	254.1	0.137	4.51	196.8	72.7	11.5	1.17	13.0	0.13	0.00	0.62	0.49	40	20
50 ISL	10.92 D	10.91	33.458 D	25.592	239.7	0.162	4.08	D177.8	D 65.3	13.9	1.32	15.5	0.05	0.00	0.31	0.33	50	
51	10.88	10.87	33.455	25.597	239.3	0.164	4.08	178.3	65.2	14.2	1.33	15.8	0.04	0.00	0.28	0.31	51	19
60	10.60	10.60	33.592	25.752	224.7	0.185	3.53	154.1	56.1	17.9	1.55	19.0	0.03	0.00	0.12	0.17	60	18
70	10.52	10.51	33.624	25.792	221.2	0.207	3.43	149.7	54.4	18.6	1.59	19.6	0.03	0.00	0.09	0.13	71	17
75 ISL	10.50 D	10.49	33.636 D	25.806	220.0	0.219	3.42	D148.8	D 54.2	19.3	1.62	20.1	0.03	0.00	0.08	0.12	76	
85	10.31	10.30	33.691 D	25.880	213.1	0.241	3.27	D142.5	D 51.7								86	16
100	10.01	10.00	33.761	25.986	203.4	0.271	3.08	134.5	48.4	22.5	1.77	22.2	0.02	0.00	0.02	0.08	101	15
121	9.73	9.72	33.861	26.112	191.8	0.312	2.85	124.7	44.6	25.6	1.87	24.0	0.02	0.00	0.01	0.06	122	14
125 ISL	9.67 D	9.65	33.889 D	26.146	188.8	0.321	2.82	D122.9	D 44.0	26.2	1.90	24.2	0.01	0.00	0.01	0.06	126	
140	9.82	9.80	33.988	26.198	184.2	0.348	2.43	106.2	38.1	28.6	2.03	25.3	0.01	0.00	0.00	0.06	141	13
150 ISL	9.81 D	9.79	34.063 D	26.259	178.7	0.368	2.16	D 94.2	D 33.9	30.2	2.10	26.0	0.01	0.00	0.00	0.06	151	
171	9.49	9.47	34.117	26.354	170.0	0.403	1.89	82.6	29.4	33.7	2.24	27.5	0.00	0.00	0.00	0.06	172	12
200	9.20	9.18	34.173	26.446	161.8	0.451	1.61	70.1	24.8	37.3	2.36	28.9	0.01	0.00	0.01	0.06	202	11
231	9.06	9.04	34.199	26.490	158.3	0.501	1.46	63.8	22.5	39.3	2.43	29.6	0.01	0.00			233	10
250 ISL	8.78 D	8.75	34.242 D	26.568	151.1	0.533	1.23	D 53.6	D 18.9	41.6	2.51	30.4	0.01	0.00			252	
269	8.73	8.70	34.247	26.581	150.3	0.559	1.14	49.6	17.4	43.9	2.58	31.3	0.00	0.00			271	09
300 ISL	8.68 D	8.65	34.253 D	26.593	149.8	0.609	1.10	D 47.8	D 16.8	45.3	2.62	31.7	0.00	0.00			302	
321	8.58	8.55	34.272	26.625	147.2	0.637	0.96	41.7	14.6	46.2	2.65	31.9	0.00	0.00			324	08
380	7.92	7.88	34.299	26.747	136.3	0.720	0.63	27.5	9.5	54.4	2.83	34.5	0.00	0.00			383	07
400 ISL	7.79 D	7.75	34.298 D	26.766	134.8	0.752	0.59	D 25.5	D 8.8	56.6	2.86	35.1	0.00	0.00			403	
440	7.37	7.33	34.297	26.826	129.4	0.800	0.50	21.7	7.4	60.9	2.93	36.4	0.00	0.00			444	06
500 ISL	6.89 D	6.84	34.293 D	26.890	123.9	0.882	0.40	D 17.2	D 5.8	67.6	3.03	37.8	0.00	0.00			504	
515	6.75	6.70	34.296	26.911	121.9	0.895	0.37	16.3	5.5	69.3	3.05	38.2	0.00	0.00			519	05
580	6.31	6.26	34.318	26.988	115.2	0.972	0.27	11.6	3.9	76.9	3.14	39.3	0.00	0.00			585	04
600 ISL	6.25 D	6.20	34.326 D	27.001	114.2	1.001	0.24	D 10.3	D 3.4	79.4	3.17	39.3	0.00	0.00			605	
650	5.91	5.85	34.346	27.062	108.7	1.050	0.19	8.1	2.7	85.8	3.23	39.5	0.00	0.00			656	03
700 ISL	5.53 D	5.47	34.375 D	27.132	102.2	1.111	0.10	D 4.4	D 1.4	96.5	3.33	37.4	0.00	0.00			706	
730	5.42	5.35	34.383	27.152	100.5	1.134	0.07	3.0	1.0	103.0	3.39	36.2	0.01	0.00			737	02
735	5.42	5.35	34.373	27.145	101.3	1.139	0.10	4.2	1.4	97.1	3.33	38.5	0.00	0.00			742	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.4 N	119 19.2 W	16/07/2015	1831	UTC	1637 m	240 06 kn	290 03 07	1	1014.0 mb	18.2 C	15.4 C	19 m	7/8	ST	037

DEPTH m		TEMP DEG C	POTTEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.89	18.89	33.457	23.872	402.2	0.000	5.58	243.9	104.9	1.4	0.30	0.0	0.00	0.00	0.35	0.05	0	
2	A	18.89	18.88	33.457	23.872	402.3	0.008	5.58	243.9	104.9	1.4	0.30	0.0	0.00	0.00	0.35	0.05	2	23
10	ISL	17.99 D	17.99	33.438 D	24.080	382.8	0.040	5.68 D	247.8 D	104.9	0.9	0.32	0.1	0.01	0.00	0.46	0.10	10	
11	A	17.34	17.34	33.448	24.245	367.1	0.043	5.75	251.2	104.9	0.9	0.32	0.1	0.01	0.06	0.47	0.11	11	20
11		17.34	17.34	33.448	24.245	367.1	0.042				0.9	0.32	0.1	0.01	0.06			11	22
11		17.34	17.34	33.450	24.246	367.0	0.042				0.9	0.33	0.1	0.01	0.06			11	21
15	A	15.95	15.94	33.456	24.575	335.8	0.057	6.11	266.9	108.4	0.5	0.41	0.6	0.04	0.28	0.84	0.16	15	19
20	ISL	13.71 D	13.71	33.496 D	25.086	287.2	0.073	6.11 D	266.0 D	103.6	0.5	0.55	2.8	0.07	0.49	2.70	0.58	20	
27	A	12.48	12.47	33.495	25.331	264.0	0.092	5.44	237.8	90.0	0.5	0.75	5.8	0.11	0.78	5.29	1.18	27	24
27		12.48	12.47	33.503	25.337	263.5	0.092				2.2	0.90	7.9	0.13	0.99			27	18
30	ISL	12.03 D	12.03	33.524 D	25.439	253.8	0.101	4.60 D	200.2 D	75.3	3.0	0.87	7.6	0.13	0.00	4.68	1.08	30	
39		10.88	10.87	33.576 D	25.691	230.1	0.123	3.59 D	156.5 D	57.5								39	16
50	ISL	10.31 D	10.30	33.635 D	25.836	216.5	0.147	3.36 D	146.4 D	53.1	19.7	1.63	20.0	0.27	0.00	0.58	0.44	50	
51	A	10.27	10.26	33.637	25.844	215.7	0.149	3.32	144.9	52.4	20.6	1.67	20.6	0.28	0.00	0.37	0.41	51	15
61	A	10.17	10.16	33.680	25.895	211.1	0.170	3.25	142.1	51.2	21.1	1.68	21.1	0.07	0.01	0.24	0.34	61	14
70		10.01	10.00	33.722	25.955	205.6	0.189	3.17	138.2	49.7	21.9	1.72	21.8	0.04	0.00	0.20	0.30	71	13
75	ISL	9.98 D	9.97	33.753 D	25.985	202.9	0.200	3.12 D	135.9 D	49.0	22.7	1.76	22.2	0.04	0.00	0.16	0.25	76	
85		9.83	9.82	33.798	26.045	197.4	0.219	2.97	129.6	46.4	24.4	1.83	23.2	0.03	0.00	0.09	0.15	86	12
100		9.83	9.82	33.911	26.134	189.3	0.248	2.55	111.3	39.9	27.1	1.97	24.7	0.03	0.00	0.19	0.34	101	11
120		9.60	9.59	33.949	26.202	183.3	0.285	2.46	107.4	38.3	28.8	2.02	25.4	0.05	0.00	0.04	0.09	121	10
125	ISL	9.54 D	9.53	33.961 D	26.222	181.5	0.296	2.44 D	106.4 D	38.0	29.7	2.06	25.9	0.04	0.00	0.03	0.09	126	
140		9.32	9.31	34.020	26.304	174.0	0.321	2.16	94.1	33.4	32.4	2.16	27.2	0.03	0.00	0.02	0.09	141	09
150	ISL	9.27 D	9.26	34.047 D	26.334	171.4	0.340	2.02 D	88.0 D	31.3	33.1	2.19	27.5	0.02	0.00	0.01	0.08	151	
170		9.38	9.36	34.120	26.374	168.1	0.372	1.85	80.7	28.7	34.5	2.26	28.0	0.02	0.00	0.01	0.07	171	08
200		9.05	9.03	34.141	26.444	162.0	0.421	1.67	72.8	25.7	37.5	2.35	29.3	0.01	0.00	0.02	0.09	202	07
230		8.98	8.96	34.192	26.497	157.6	0.469	1.40	61.2	21.6	39.9	2.44	30.0	0.01	0.00			232	06
250	ISL	8.73 D	8.70	34.207 D	26.548	153.0	0.504	1.25 D	54.5 D	19.2	42.5	2.51	30.9	0.01	0.00			252	
270		8.50	8.47	34.217	26.593	149.1	0.531	1.14	49.6	17.3	45.1	2.58	31.8	0.01	0.00			272	05
300	ISL	8.26 D	8.23	34.231 D	26.641	145.0	0.579	0.96 D	41.9 D	14.6	48.2	2.66	32.9	0.01	0.00			302	
320		8.11	8.08	34.241	26.671	142.4	0.603	0.89	38.8	13.4	50.3	2.71	33.6	0.01	0.00			323	04
380		7.63	7.59	34.256	26.754	135.3	0.687	0.69	30.3	10.3	55.8	2.82	35.2	0.01	0.00			383	03
400	ISL	7.52 D	7.48	34.272 D	26.783	132.8	0.719	0.59 D	25.8 D	8.8	58.5	2.87	35.8	0.01	0.00			403	
440		7.15	7.10	34.280	26.843	127.6	0.766	0.48	21.0	7.1	64.0	2.98	36.9	0.01	0.00			444	02
500	ISL	6.79 D	6.75	34.296 D	26.905	122.3	0.847	0.37 D	16.0 D	5.4								504	
515		6.69	6.64	34.301 D	26.923	120.7	0.865	0.34 D	14.9 D	5.0								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 OCEANUS CALCOFI CRUISE 1507 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 19.4 N	119 39.7 W	17/07/2015	0215	UTC	81 m	280 11 kn	220 03 07	1	1011.0 mb	17.4 C	15.3 C		7/8	ST	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		17.67	17.67	33.453	24.169	373.9	0.000	5.89	257.0	108.0	1.6	0.32	0.1	0.02	0.05	1.00	0.19	0	
2		17.67	17.67	33.453	24.169	374.0	0.008	5.89	257.0	108.0	1.6	0.32	0.1	0.02	0.05	1.00	0.19	2	09
10		14.22	14.22	33.435	24.934	301.4	0.035	5.30	231.6	90.9	5.1	0.72	5.4	0.20	0.21	1.75	0.52	10	07
10		14.22	14.22	33.438	24.936	301.2	0.035											10	08
20		13.01	13.01	33.441	25.185	277.8	0.064	4.80	209.5	80.2	8.6	0.98	9.4	0.29	0.24	1.11	0.53	20	06
30	ISL	11.77 D	11.77	33.459 D	25.437	254.0	0.091	4.26 D	185.5 D	69.3	12.1	1.22	13.2	0.31	0.15	0.69	0.48	30	
31		11.13	11.12	33.467	25.561	242.2	0.093	4.22	184.2	67.7	12.5	1.24	13.6	0.31	0.14	0.65	0.47	31	05
41		10.80	10.80	33.604	25.726	226.8	0.116	3.54	154.8	56.6	18.6	1.57	18.6	0.22	0.26	0.32	0.31	41	04
50		10.72	10.71	33.630	25.762	223.6	0.136	3.45	150.5	54.9	19.4	1.61	19.1	0.23	0.32	0.27	0.33	50	03
60		10.67	10.67	33.648	25.783	221.8	0.159	3.38	147.5	53.8	20.0	1.63	19.3	0.23	0.33	0.24	0.31	60	02
70		10.51	10.50	33.675	25.834	217.2	0.181	3.29	143.7	52.2	20.9	1.68	20.1	0.21	0.27	0.20	0.30	71	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 9.4 N	120 0.4 W	17/07/2015	0520	UTC	1214 m	290 10 kn			1012.0 mb	17.4 C	15.3 C				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		17.50	17.50	33.343	24.124	378.2	0.000	5.82	254.1	106.4	1.8	0.32	0.0	0.00	0.01	0.29	0.09	0	
2		17.61	17.61	33.348 D	24.102	380.4	0.008	5.81	254.0	106.5	1.8	0.31	0.0	0.00	0.01	0.29	0.09	2	21
10		17.50	17.50	33.343	24.125	378.5	0.038	5.82	254.1	106.4	1.8	0.32	0.0	0.00	0.01	0.29	0.09	10	19
10		17.50	17.50	33.343	24.125	378.5	0.038											10	20
20		17.27	17.27	33.340	24.179	373.7	0.076	5.83	254.8	106.2	1.8	0.31	0.0	0.00	0.01	0.31	0.11	20	18
30		17.09	17.08	33.322	24.209	371.2	0.113	5.88	256.9	106.6	1.7	0.32	0.0	0.00	0.00	0.44	0.17	30	17
41		14.07	14.06	33.188	24.777	317.3	0.151	6.11	266.8	104.2	2.0	0.44	1.3	0.14	0.06	1.03	0.49	41	16
50		13.00	12.99	33.173	24.981	298.0	0.178	5.50	240.5	91.8	4.3	0.76	5.5	0.41	0.31	0.69	0.47	50	15
60		10.94	10.93	33.221	25.404	257.8	0.206	4.72	206.2	75.4	10.7	1.21	13.3	0.09	0.01	0.20	0.18	60	14
70		10.09	10.09	33.358	25.657	233.9	0.231	4.28	186.9	67.1	15.1	1.44	17.2	0.03	0.01	0.08	0.09	71	13
75	ISL	9.89 D	9.88	33.515 D	25.815	219.0	0.243	3.75 D	163.2 D	58.6	17.1	1.53	18.5	0.04	0.00	0.07	0.09	76	
86		10.00	9.99	33.655	25.906	210.7	0.266	3.31	144.3	51.9	21.4	1.72	21.4	0.04	0.00	0.05	0.09	87	12
100		9.66	9.65	33.758	26.043	197.9	0.295	3.05	133.3	47.6	24.4	1.84	23.1	0.03	0.00	0.04	0.09	101	11
120		9.36	9.35	33.856	26.169	186.4	0.333	2.78	121.4	43.1	27.7	1.97	25.0	0.02	0.00	0.02	0.08	121	10
125	ISL	9.35 D	9.33	33.862 D	26.177	185.7	0.344	2.76 D	120.3 D	42.8	28.2	1.99	25.2	0.02	0.00	0.02	0.08	126	
140		9.18	9.17	33.900	26.233	180.6	0.370	2.66	115.9	41.0	29.8	2.03	26.0	0.02	0.00	0.02	0.08	141	09
150	ISL	9.14 D	9.12	33.935 D	26.268	177.5	0.389	2.59 D	112.6 D	39.9	31.0	2.08	26.6	0.02	0.00	0.01	0.08	151	
170		9.00	8.98	34.008	26.348	170.4	0.423	2.27	99.2	34.9	33.6	2.18	27.7	0.01	0.00	0.01	0.09	171	08
200		8.81	8.79	34.040	26.404	165.7	0.473	2.15	93.9	32.9	35.6	2.24	28.5	0.01	0.00	0.01	0.08	202	07
230		8.36	8.34	34.049	26.480	158.8	0.522	2.10	91.5	31.8	38.4	2.29	29.7	0.01	0.00			232	06
250	ISL	8.18 D	8.16	34.071 D	26.525	154.9	0.556	1.90 D	82.6 D	28.7	41.5	2.40	30.8	0.01	0.00			252	
270		8.06	8.04	34.115	26.578	150.2	0.583	1.61	70.3	24.3	44.6	2.50	31.9	0.01	0.00			272	05
300	ISL	7.89 D	7.86	34.171 D	26.648	144.1	0.631	1.21 D	52.7 D	18.2	47.9	2.62	32.9	0.01	0.00			302	
320		7.85	7.81	34.183	26.664	142.8	0.657	1.13	49.2	16.9	50.1	2.70	33.7	0.01	0.00			323	04
380		7.33	7.29	34.256	26.798	131.0	0.739	0.64	28.0	9.5	59.7	2.94	36.2	0.01	0.00			383	03
400	ISL	7.19 D	7.15	34.259 D	26.819	129.1	0.769	0.57 D	24.6 D	8.4	61.5	2.97	36.6	0.01	0.00			403	
440		6.96	6.92	34.270	26.861	125.7	0.816	0.49	21.5	7.2	65.1	3.03	37.5	0.00	0.00			444	02
500	ISL	6.61 D	6.56	34.294 D	26.928	119.9	0.895	0.36 D	15.7 D	5.3	72.1	3.14	38.9	0.00	0.00			504	
514		6.47	6.42	34.301	26.952	117.8	0.906	0.34	14.7	4.9	73.7	3.16	39.2	0.00	0.00			518	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 21.0 W	18/07/2015	0409 UTC	722 m	250 07 kn			1009.0 mb	18.7 C	15.9 C				040

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		19.35		19.35		33.180		23.543	433.7	0.000	5.52	241.2		104.5		0.8	0.31	0.0	0.01	0.02	0.14	0.03	0	
2		19.35		19.35		33.180		23.543	433.7	0.009	5.52	241.2		104.5		0.8	0.31	0.0	0.01	0.02	0.14	0.03	2	22
10		18.82		18.82		33.159		23.662	422.7	0.043	5.56	242.8		104.1		0.7	0.31	0.0	0.01	0.01	0.17	0.04	10	20
10		18.82		18.82		33.159		23.663	422.6	0.043													10	21
20	ISL	18.05	D	18.04		33.137	D	23.837	406.4	0.085	5.78	D252.0	D	106.6		0.7	0.31	0.0	0.01	0.01	0.24	0.08	20	
21		17.07		17.07		33.135		24.068	384.3	0.088	5.80	253.5		105.1		0.7	0.31	0.0	0.01	0.01	0.25	0.08	21	19
30	ISL	14.54	D	14.53		32.914	D	24.466	346.5	0.122	6.31	D275.1	D	108.5		1.6	0.40	1.0	0.07	0.02	0.34	0.19	30	
30		14.54		14.53		32.914	D	24.466	346.5	0.122	6.31	D275.1	D	108.5									30	18
41		14.75		14.74		33.230	D	24.665	328.0	0.160	5.95	D259.4	D	103.0									41	17
50		13.15		13.14		33.046		24.853	310.2	0.187	5.69	248.6		95.2		3.5	0.61	3.3	0.22	0.03	0.55	0.43	50	16
60		12.92		12.91		33.180		25.002	296.3	0.217	5.34	233.0		88.9		5.1	0.78	6.3	0.04	0.01	0.30	0.32	60	15
70		12.13		12.12		33.178		25.154	282.0	0.246	5.15	224.9		84.3		6.8	0.91	8.6	0.03	0.02	0.19	0.22	71	14
75	ISL	12.01	D	12.00		33.166	D	25.167	280.9	0.262	5.12	D223.1	D	83.7		7.7	0.98	9.7	0.03	0.02	0.18	0.21	76	
85		11.09		11.07		33.166		25.336	264.9	0.287	4.96	216.7		79.5		9.4	1.11	11.9	0.04	0.01	0.17	0.19	86	13
100		9.96		9.95		33.246		25.592	240.7	0.325	4.60	201.0		72.0		13.4	1.34	15.8	0.03	0.01	0.10	0.14	101	12
120		9.31		9.30		33.539	D	25.929	209.0	0.373	3.89	169.6		60.0		20.6	1.67	21.4	0.02	0.00	0.02	0.05	121	11
125	ISL	9.33	D	9.32		33.551	D	25.935	208.6	0.383	3.79	D165.0	D	58.6		21.6	1.72	22.0	0.02	0.00	0.02	0.05	126	
140		9.34		9.32		33.706		26.056	197.5	0.410	3.21	140.0		49.6		24.7	1.85	23.9	0.01	0.00	0.01	0.05	141	10
150	ISL	9.05	D	9.03		33.759	D	26.144	189.3	0.433	3.23	D140.5	D	49.6		25.7	1.87	24.4	0.01	0.00	0.01	0.05	151	
170		8.86		8.84		33.820		26.222	182.2	0.467	3.07	134.0		47.0		27.8	1.91	25.5	0.01	0.00	0.00	0.04	171	09
200		8.60		8.58		33.938		26.356	170.1	0.520	2.70	117.9		41.2		32.4	2.06	27.5	0.01	0.00	0.00	0.03	202	08
230		8.11		8.09		34.022		26.496	157.2	0.569	2.23	97.2		33.6		39.1	2.26	30.1	0.01	0.00			232	07
250	ISL	7.75	D	7.73		34.040	D	26.564	150.9	0.604	2.02	D 88.0	D	30.2		42.2	2.33	31.2	0.01	0.00			252	
269		7.63		7.60		34.044		26.585	149.2	0.628	1.94	84.8		29.0		45.1	2.40	32.3	0.01	0.00			271	06
300	ISL	7.34	D	7.31		34.092	D	26.664	142.1	0.678	1.50	D 65.3	D	22.2		51.7	2.59	34.4	0.01	0.00			302	
320		7.11		7.07		34.116		26.717	137.3	0.702	1.19	51.9		17.5		55.9	2.71	35.7	0.01	0.00			323	05
380		6.68		6.65		34.163		26.812	128.9	0.782	0.83	36.4		12.2		63.7	2.89	37.7	0.01	0.00			383	03
400	ISL	6.57	D	6.53		34.171	D	26.835	127.0	0.813	0.74	D 32.3	D	10.8		66.5	2.94	38.3	0.01	0.00			403	
441		6.21		6.17		34.199		26.902	120.9	0.858	0.55	24.1		8.0		72.3	3.04	39.6	0.01	0.00			445	02
500	ISL	5.94	D	5.89		34.268	D	26.993	112.9	0.933	0.35	D 15.1	D	5.0		78.9	3.15	40.5	0.01	0.00			504	
516		5.90		5.85		34.281		27.009	111.7	0.945	0.33	14.3		4.7		80.7	3.18	40.8	0.01	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 39.4 N	121 3.0 W	24/07/2015	1932 UTC	3741 m	340 15 kn	350 02 06	1	1018.7 mb	18.7 C	17.0 C	20 m	3/8	SC	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		19.39		19.39		33.063		23.443	443.2	0.000	5.50	240.3		104.1		1.4	0.30	0.0	0.01	0.00	0.17	0.02	0	
2		19.39		19.39		33.063		23.443	443.3	0.009	5.50	240.3		104.1		1.4	0.30	0.0	0.01	0.00	0.17	0.02	2	22
10		19.20		19.20		33.066		23.495	438.6	0.044	5.53	241.7		104.3		1.3	0.30	0.0	0.00	0.00	0.20	0.04	10	19
10		19.20		19.20		33.068		23.496	438.5	0.043													10	20
20	ISL	18.37	D	18.37		33.063	D	23.702	419.3	0.088	5.60	D244.2	D	103.9		1.5	0.31	0.0	0.00	0.00	0.23	0.06	20	
25		17.20		17.19		33.090		24.005	390.5	0.107	5.93	259.1		107.6		1.7	0.32	0.0	0.00	0.01	0.24	0.07	25	18
30	ISL	16.20	D	16.19		33.021	D	24.184	373.5	0.127	5.99	D261.3	D	106.6		1.8	0.33	0.0	0.00	0.00	0.26	0.08	30	
40		15.03		15.02		32.889		24.343	358.7	0.163	6.15	268.8		106.8		2.0	0.34	0.0	0.00	0.00	0.28	0.11	40	17
50		14.55		14.54		32.882		24.441	349.6	0.198	6.17	269.7		106.1		2.1	0.36	0.0	0.01	0.01	0.44	0.18	50	16
62		13.66		13.65		32.937		24.667	328.3	0.239	5.99	261.6		101.1		2.9	0.46	0.9	0.08	0.02	0.60	0.46	62	15
75		12.74		12.73		33.048		24.935	303.1	0.280	5.60	244.7		92.8		4.2	0.74	5.6	0.28	0.01	0.40	0.33	76	14
87		12.40		12.39		33.120		25.059	291.6	0.316	5.38	235.2		88.6		5.2	0.89	8.2	0.13	0.01	0.27	0.18	88	13
100		10.83		10.82		33.136		25.358	263.2	0.352	5.01	218.7		79.7		10.1	1.15	12.5	0.03	0.00	0.11	0.16	101	12
112		10.53		10.52		33.280		25.523	247.7	0.383	4.56	199.1		72.2		13.4	1.35	16.0	0.02	0.00	0.04	0.06	113	11
125		9.58		9.57		33.318		25.713	229.8	0.414	4.48	195.8		69.5		16.6	1.46	17.9	0.02	0.00	0.02	0.05	126	10
140		9.22		9.20		33.532		25.939	208.5	0.446	3.88	169.5		59.8		21.3	1.67	21.4	0.02	0.01	0.01	0.04	141	09
150	ISL	9.14	D	9.12		33.630	D	26.028	200.2	0.469	3.64	D158.5	D	56.0		23.2	1.75	22.7	0.02	0.00	0.01	0.03	151	
170		8.98		8.96		33.788		26.179	186.4	0.506	3.11	135.9		47.7		27.2	1.90	25.3	0.02	0.00	0.01	0.03	171	08
200		8.58		8.56		33.943		26.362	169.4	0.559	2.66	116.2		40.5		33.1	2.08	28.0	0.01	0.01	0.00	0.03	202	07
230		8.19		8.17		33.992		26.460	160.6	0.609	2.43	106.2		36.7		37.1	2.19	29.7	0.01	0.00			232	06
250	ISL	7.98	D	7.95		34.018	D	26.514	155.7	0.643	2.21	D 96.1	D	33.2		40.7	2.29	31.0	0.01	0.00			252	
270		7.69		7.66		34.035		26.569	150.7	0.671	1.99	86.8		29.7		44.3	2.39	32.3	0.01	0.00			272	05
300	ISL	7.42	D	7.39		34.060	D	26.628	145.5	0.719	1.67	D 72.6	D	24.7		49.4	2.53	34.1	0.01	0.00			302	
320		7.17		7.14		34.079		26.678	141.0	0.744	1.44	62.9		21.3		52.9	2.63	35.2	0.01	0.00			323	04
380		6.60		6.57		34.125		26.792	130.7	0.826	0.92	40.2		13.4		63.2	2.87	38.2	0.01	0.01			383	03
400	ISL	6.41	D	6.38		34.139	D	26.829	127.4	0.856	0.79	D 34.4	D	11.5		66.0	2.93	38.7	0.01	0.00			403	
440		6.27		6.23		34.195		26.893	121.9	0.901	0.56	24.4		8.1		71.6	3.05	39.8	0.01	0.00			444	02
500	ISL	5.81	D	5.77		34.229	D	26.978	114.2	0.978	0.40	D 17.3	D	5.7		79.1	3.14	41.0	0.01	0.00			504	
516		5.78		5.73		34.240		26.991	113.2	0.990	0.36	15.9		5.2		81.1	3.17	41.4	0.01	0.01			520	01

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

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 19.4 N	121 42.9 W	24/07/2015	1401	UTC	4063 m	360 12 kn	010 03 07	1	1017.5 mb	18.4 C	16.2 C		4/8	SC	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	19.93	19.93	33.145	23.368	450.3	0.000	5.37	234.7	102.7	1.7	0.31	0.0	0.01	0.00	0.10	0.03	0	
2	19.93	19.92	33.145	23.368	450.4	0.009	5.37	234.7	102.7	1.7	0.31	0.0	0.01	0.00	0.10	0.03	2	21
10	19.77	19.77	33.148	23.412	446.6	0.045	5.37	234.6	102.4	1.7	0.32	0.0	0.01	0.01	0.10	0.02	10	19
10	19.77	19.77	33.147	23.411	446.7	0.044											10	20
20 ISL	18.33 D	18.33	33.211 D	23.824	407.6	0.088	5.61	D244.7	D104.1	1.8	0.31	0.0	0.01	0.00	0.12	0.03	20	
25	17.89	17.89	33.232	23.948	396.0	0.108	5.74	250.8	105.7	1.9	0.31	0.0	0.01	0.00	0.13	0.04	25	22
30 ISL	17.53 D	17.53	33.218 D	24.024	388.9	0.128	5.71	D248.9	D104.3	1.9	0.31	0.0	0.01	0.00	0.14	0.04	30	
40	17.13	17.12	33.252	24.147	377.6	0.166	5.84	255.2	106.0	1.9	0.31	0.0	0.01	0.00	0.16	0.05	40	17
50	16.23	16.22	33.204	24.320	361.3	0.202	5.95	259.8	106.0	1.8	0.33	0.0	0.01	0.00	0.19	0.08	50	16
62	15.25	15.24	33.185	24.524	342.2	0.245	5.96	260.5	104.2	1.9	0.37	0.0	0.01	0.00	0.30	0.19	62	15
75	14.58	14.57	33.223	24.697	326.1	0.288	5.75	251.4	99.2	2.7	0.47	0.6	0.19	0.03	0.55	0.43	76	14
87	13.82	13.81	33.223	24.857	311.0	0.326	5.49	239.9	93.2	3.7	0.66	3.9	0.12	0.00	0.37	0.34	88	13
100 ISL	12.22 D	12.21	33.193 D	25.150	283.2	0.368	5.08	D221.2	D 83.3	7.0	0.91	8.3	0.04	0.00	0.17	0.19	101	
101	12.14	12.12	33.192	25.165	281.8	0.368	5.12	223.9	83.9	7.2	0.93	8.7	0.04	0.00	0.15	0.17	102	12
112	11.02	11.01	33.253	25.417	257.9	0.397	4.73	206.7	75.7	11.1	1.20	13.3	0.03	0.00	0.07	0.10	113	11
125	10.37	10.35	33.361	25.616	239.2	0.430	4.34	189.6	68.5	14.4	1.37	16.3	0.02	0.00	0.04	0.06	126	10
140	9.81	9.79	33.520	25.834	218.6	0.464	3.87	169.1	60.4	19.0	1.60	20.1	0.02	0.00	0.02	0.04	141	09
150 ISL	9.59 D	9.57	33.599 D	25.932	209.5	0.489	3.66	D159.1	D 56.8	21.1	1.68	21.4	0.02	0.00	0.01	0.04	151	
170	9.31	9.29	33.744	26.091	194.8	0.526	3.21	140.1	49.6	25.3	1.84	24.1	0.01	0.00	0.00	0.04	171	08
200	8.95	8.93	33.860	26.240	181.2	0.582	2.92	127.7	44.9	29.2	1.96	26.2	0.01	0.00	0.00	0.03	202	07
230	8.50	8.48	33.973	26.400	166.5	0.634	2.55	111.1	38.7	34.7	2.13	28.4	0.02	0.00			232	06
250 ISL	8.34 D	8.31	34.014 D	26.457	161.4	0.672	2.33	D101.2	D 35.2	37.9	2.23	29.7	0.01	0.00			252	
270	8.08	8.06	34.042	26.518	155.9	0.699	2.09	91.2	31.5	41.2	2.32	31.0	0.01	0.00			272	05
300 ISL	7.74 D	7.71	34.069 D	26.590	149.4	0.751	1.80	D 78.2	D 26.9	46.4	2.48	32.9	0.01	0.00			302	
320	7.49	7.46	34.094	26.646	144.3	0.774	1.52	66.3	22.6	49.9	2.58	34.2	0.01	0.00			323	04
380	6.90	6.86	34.133	26.760	134.0	0.857	1.04	45.5	15.3	59.6	2.81	37.2	0.01	0.00			383	03
400 ISL	6.77 D	6.73	34.149 D	26.790	131.5	0.891	0.87	D 38.0	D 12.8	62.6	2.87	37.9	0.01	0.00			403	
440	6.40	6.36	34.178	26.862	124.9	0.935	0.68	29.6	9.8	68.8	3.00	39.3	0.01	0.00			444	02
500 ISL	5.98 D	5.94	34.219 D	26.949	117.1	1.016	0.44	D 19.3	D 6.4	77.3	3.14	40.8	0.01	0.00			504	
515	5.87	5.83	34.233	26.973	114.9	1.025	0.39	17.2	5.6	79.4	3.17	41.2	0.01	0.00			519	01

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

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	24/07/2015	0844	UTC	4097 m	010 11 kn			1017.2 mb	18.8 C	16.1 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	21.00	21.00	33.362	23.249	461.8	0.000	5.24	228.7	102.3	1.8	0.29	0.0	0.01	0.01	0.07	0.01	0	
2	21.00	21.00	33.362	23.249	461.8	0.009	5.24	228.7	102.3	1.8	0.29	0.0	0.01	0.01	0.07	0.01	2	21
10	20.99	20.99	33.367	23.256	461.5	0.046	5.23	228.2	102.0	1.8	0.29	0.0	0.00	0.01	0.08	0.01	10	19
10	20.99	20.99	33.361	23.251	461.9	0.046											10	20
20 ISL	19.65 D	19.65	33.282 D	23.545	434.3	0.091	5.41	D235.9	D102.9	1.8	0.30	0.0	0.00	0.00	0.08	0.02	20	
25	19.10	19.09	33.217	23.638	425.6	0.112	5.57	243.1	104.8	1.8	0.30	0.0	0.00	0.00	0.09	0.02	25	18
30 ISL	17.97 D	17.96	33.044 D	23.786	411.6	0.134	5.65	D246.5	D104.1	1.8	0.30	0.0	0.00	0.00	0.09	0.02	30	
40	17.76	17.75	33.191	23.949	396.4	0.173	5.74	250.8	105.4	1.8	0.30	0.0	0.01	0.00	0.11	0.02	40	17
50	17.02	17.01	33.195	24.130	379.5	0.212	5.84	255.0	105.6	1.9	0.30	0.0	0.01	0.00	0.12	0.04	50	16
62	16.06	16.05	33.136	24.305	363.1	0.256	5.89	257.3	104.5	2.0	0.33	0.0	0.00	0.00	0.17	0.06	62	15
75	15.30	15.28	33.101	24.450	349.7	0.303	5.91	258.2	103.3	2.2	0.35	0.0	0.01	0.04	0.22	0.11	76	14
87	14.37	14.35	33.092	24.643	331.6	0.343	5.87	256.3	100.6	2.9	0.41	0.0	0.01	0.02	0.26	0.23	88	13
100	12.51	12.50	33.081	25.007	296.9	0.384	5.52	240.9	91.0	5.1	0.69	4.1	0.15	0.03	0.28	0.34	101	12
112	11.27	11.26	33.080	25.238	275.0	0.419	5.08	222.1	81.7	8.5	1.01	10.1	0.07	0.00	0.25	0.22	113	11
125	10.35	10.33	33.163	25.464	253.5	0.453	4.80	209.7	75.7	11.9	1.25	14.2	0.03	0.01	0.16	0.16	126	10
140	9.76	9.74	33.328	25.692	232.1	0.489	4.48	195.8	69.8	15.2	1.40	17.0	0.02	0.00	0.08	0.10	141	09
150 ISL	9.48 D	9.47	33.489 D	25.863	216.0	0.516	4.18	D181.9	D 64.7	17.0	1.45	18.1	0.02	0.00	0.06	0.08	151	
170	9.25	9.23	33.656	26.032	200.4	0.554	4.03	176.1	62.2	20.5	1.55	20.4	0.01	0.00	0.01	0.03	171	08
200	8.72	8.70	33.872	26.286	176.7	0.611	3.53	154.0	53.8	27.6	1.78	24.4	0.01	0.00	0.00	0.02	202	07
230	8.27	8.24	33.965	26.429	163.6	0.662	3.15	137.4	47.6	33.6	1.95	26.9	0.01	0.00			232	06
250 ISL	8.11 D	8.08	33.974 D	26.460	160.9	0.699	3.06	D133.1	D 46.1	36.9	2.04	28.2	0.01	0.00			252	
270	7.72	7.69	33.993	26.532	154.3	0.726	2.78	121.5	41.6	40.2	2.12	29.4	0.01	0.00			272	05
300 ISL	7.23 D	7.20	34.026 D	26.627	145.5	0.776	2.09	D 90.7	D 30.8	47.6	2.36	32.5	0.01	0.00			302	
319	6.99	6.96	34.038	26.670	141.5	0.798	1.87	81.5	27.4	52.3	2.52	34.4	0.01	0.00			322	04
380	6.37	6.33	34.066	26.776	132.0	0.881	1.32	57.7	19.1	62.4	2.76	37.6	0.01	0.00			383	03
400 ISL	6.24 D	6.20	34.081 D	26.806	129.4	0.914	1.11	D 48.2	D 16.0	66.0	2.83	38.4	0.01	0.00			403	
440	5.90	5.86	34.115	26.875	123.1	0.958	0.85	37.1	12.2	73.2	2.98	40.1	0.01	0.00			444	02
500 ISL	5.71 D	5.67	34.188 D	26.957	116.0	1.038	0.53	D 22.9	D 7.5	80.0	3.11	41.2	0.01	0.00			504	
515	5.59	5.55	34.192	26.976	114.3	1.047	0.50	21.8	7.1	81.7	3.14	41.5	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 4.2 W	24/07/2015	0317	UTC	4004 m	030 09 kn	330 02 08	2	1016.3 mb	19.5 C	16.7 C		8/8	SC	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	20.69	20.69	33.129	23.155	470.7	0.000	5.26	229.6	101.9	1.7	0.22	0.0	0.00	0.00	0.11	0.03	0	
2	20.69	20.69	33.129	23.155	470.8	0.009	5.26	229.6	101.9	1.7	0.22	0.0	0.00	0.00	0.11	0.03	2	21
10	20.13	20.13	33.165	23.332	454.3	0.046	5.52	241.2	106.0	1.7	0.31	0.0	0.01	0.00	0.13	0.03	10	19
10	20.13	20.13	33.161	23.329	454.5	0.046											10	20
20 ISL	16.61 D	16.61	32.880 D	23.980	392.7	0.089	5.97 D	260.5 D	107.0	1.8	0.31	0.0	0.01	0.00	0.15	0.04	20	
25	16.28	16.27	32.863 D	24.044	386.7	0.109	5.92	258.6	105.4	1.9	0.30	0.0	0.02	0.00	0.20	0.07	25	18
30 ISL	15.94 D	15.93	32.853 D	24.114	380.2	0.128	5.98 D	260.8 D	105.7	1.9	0.30	0.0	0.01	0.00	0.18	0.06	30	
40	16.43	16.42	33.024	24.135	378.6	0.163	5.89	257.2	105.2	1.9	0.30	0.0	0.02	0.00	0.21	0.07	40	17
50	15.19	15.18	33.013	24.404	353.2	0.199	5.90	257.9	102.9	2.1	0.32	0.0	0.02	0.00	0.31	0.18	50	16
62	13.91	13.90	32.975	24.646	330.4	0.240	5.90	257.7	100.1	2.9	0.47	1.0	0.17	0.04	0.46	0.32	62	15
75	13.28	13.27	33.113	24.880	308.4	0.282	5.46	238.5	91.6	4.4	0.67	4.6	0.16	0.00	0.30	0.25	76	14
88	12.60	12.59	33.176	25.063	291.2	0.321	5.19	226.5	85.8	6.2	0.85	7.7	0.05	0.00	0.20	0.21	89	13
100 ISL	11.19 D	11.18	33.167 D	25.320	266.9	0.359	4.91 D	213.7 D	78.7	9.5	1.07	11.4	0.03	0.00	0.14	0.16	101	
101	11.06	11.05	33.167 D	25.342	264.8	0.361	4.88 D	212.5 D	78.1								102	12
111	10.61	10.59	33.232	25.473	252.4	0.383	4.62	201.7	73.2	12.6	1.28	14.9	0.02	0.00	0.08	0.12	112	11
125	9.80	9.78	33.328	25.685	232.4	0.417	4.45	194.5	69.4	15.7	1.42	17.5	0.02	0.00	0.03	0.06	126	10
140	9.39	9.37	33.433	25.835	218.4	0.450	4.09	178.7	63.2	20.2	1.60	20.5	0.02	0.00	0.01	0.05	141	09
150 ISL	9.19 D	9.18	33.525 D	25.938	208.8	0.477	3.89 D	169.4 D	59.9	22.2	1.68	21.9	0.01	0.00	0.01	0.05	151	
171	8.93	8.91	33.717	26.130	191.0	0.514	3.34	145.8	51.2	26.3	1.85	24.8	0.01	0.00	0.00	0.04	172	08
200 ISL	8.56 D	8.53	33.912 D	26.343	171.3	0.572	3.09 D	134.5 D	47.0	31.2	1.96	26.8	0.01	0.00			202	
200	8.56	8.53	33.912 D	26.343	171.3	0.572	3.09 D	134.5 D	47.0								202	07
230	8.18	8.16	33.980	26.453	161.3	0.617	2.70	117.9	40.8	36.2	2.08	29.0	0.01	0.00			232	06
250 ISL	7.97 D	7.94	34.003 D	26.503	156.8	0.655	2.43 D	105.8 D	36.5	39.6	2.18	30.2	0.01	0.00			252	
270	7.69	7.66	34.013	26.552	152.4	0.680	2.31	100.9	34.5	42.9	2.27	31.5	0.01	0.00			272	05
300 ISL	7.24 D	7.21	34.022 D	26.624	145.8	0.731	2.07 D	90.1 D	30.6	48.1	2.40	33.2	0.01	0.00			302	
320	7.03	7.00	34.033	26.662	142.4	0.753	1.86	81.3	27.4	51.6	2.48	34.3	0.01	0.00			323	04
380	6.61	6.58	34.101	26.772	132.6	0.836	1.07	46.7	15.6	61.7	2.80	37.9	0.00	0.00			383	03
400 ISL	6.43 D	6.40	34.112 D	26.805	129.7	0.870	0.96 D	41.5 D	13.9	65.3	2.86	38.7	0.00	0.00			403	
440	6.03	5.99	34.144	26.883	122.5	0.912	0.75	32.7	10.8	72.4	2.98	40.2	0.00	0.00			444	02
500 ISL	5.74 D	5.70	34.207 D	26.969	115.0	0.993	0.44 D	19.3 D	6.3	81.2	3.10	41.5	0.00	0.00			504	
515	5.56	5.52	34.208	26.992	112.7	1.001	0.45	19.8	6.4	83.4	3.13	41.9	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.8 32.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 53.3 N	118 26.6 W	16/07/2015	0723	UTC	26 m	210 05 kn			1013.0 mb	18.5 C	17.3 C				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	20.20	20.20	33.383	23.477	439.9	0.000	5.82	254.2	112.0	3.4	0.23	0.0	0.01	0.00	0.43	0.09	0	
2	20.20	20.20	33.383	23.477	440.0	0.009	5.82	254.2	112.0	3.4	0.23	0.0	0.01	0.00	0.43	0.09	2	04
5	20.20	20.20	33.382	23.478	440.1	0.022	5.82	254.3	112.0	3.3	0.24	0.0	0.01	0.00	0.44	0.10	5	03
10	20.11	20.11	33.381	23.500	438.2	0.044	5.85	255.7	112.4	3.3	0.23	0.0	0.01	0.00	0.48	0.11	10	02
15	19.92	19.91	33.383	23.554	433.3	0.066	5.89	257.2	112.7	3.3	0.23	0.0	0.01	0.00	0.46	0.11	15	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 40.5 N	118 4.9 W	16/07/2015	0417	UTC	21 m	250 12 kn			1012.0 mb	19.1 C	17.9 C				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	19.87	19.87	33.418	23.592	429.0	0.000	5.67	247.6	108.4	2.1	0.24	0.0	0.01	0.00	0.37	0.09	0	
2	19.87	19.87	33.418	23.592	429.1	0.009	5.67	247.6	108.4	2.1	0.24	0.0	0.01	0.00	0.37	0.09	2	04
6	19.85	19.84	33.415	23.595	428.9	0.026	5.68	248.1	108.6	2.1	0.24	0.0	0.01	0.00	0.39	0.10	6	03
10	19.50	19.50	33.407	23.679	421.1	0.043	5.71	249.4	108.5	2.3	0.26	0.0	0.01	0.00	0.42	0.11	10	02
15	18.95	18.94	33.410	23.822	407.7	0.064	5.73	250.5	107.8	2.3	0.25	0.0	0.01	0.00	0.40	0.10	15	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 27.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 29.7 N	117 44.8 W	16/07/2015	0152	UTC	23 m	200 04 kn	290 03 07	0	1011.0 mb	20.4 C	17.6 C		0/8		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	22.25	22.25	33.487 D	23.002	485.3	0.000	5.51	240.6	110.1	2.5	0.16	0.0	0.02	0.00	0.52	0.02	0	
2	22.25	22.24	33.487 D	23.002	485.4	0.010	5.51	240.6	110.1	2.5	0.16	0.0	0.02	0.00	0.52	0.02	2	04
5	20.77	20.77	33.451	23.377	449.7	0.024	5.73	250.5	111.6	2.7	0.20	0.0	0.01	0.00	0.49	0.16	5	03
10	16.21	16.21	33.334	24.420	350.4	0.044	6.41	280.0	114.3	3.7	0.34	0.0	0.02	0.00	1.23	0.32	10	02
15	15.74	15.73	33.339	24.531	339.9	0.061	6.39	279.3	112.9	3.7	0.35	0.0	0.03	0.00	1.09	0.36	15	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 46.1 W	16/07/2015	0019	UTC	67 m	230 05 kn	270 03 08	0	1011.0 mb	20.1 C	17.3 C	14 m	0/8		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	22.32	22.32	33.488	22.983	487.1	0.000	5.45	238.2	109.1	2.5	0.13	0.0	0.01	0.00	0.31	0.15	0	
2	22.32	22.31	33.488	22.983	487.2	0.010	5.45	238.2	109.1	2.5	0.13	0.0	0.01	0.00	0.31	0.15	2	08
5	21.43	21.42	33.471	23.217	465.0	0.024	5.57	243.2	109.7	2.5	0.15	0.0	0.00	0.00	0.33	0.08	5	07
10	19.99	19.98	33.427	23.569	431.6	0.046	5.83	254.6	111.8	2.5	0.21	0.0	0.01	0.00	0.56	0.06	10	06
20	15.21	15.21	33.309	24.625	331.2	0.085	6.62	289.1	115.6	4.2	0.34	0.0	0.02	0.00	1.08	0.48	20	05
30	13.68	13.68	33.295	24.938	301.6	0.116	6.36	278.0	107.8	4.5	0.44	0.3	0.03	0.00	1.83	0.21	30	04
40	12.88	12.87	33.307	25.108	285.7	0.146	5.70	248.8	94.8	7.1	0.63	3.0	0.28	0.36	2.18	1.14	40	03
50	12.75	12.74	33.310	25.136	283.3	0.174	5.60	244.5	92.9	7.3	0.66	3.6	0.32	0.31	2.23	0.88	50	02
60	12.66	12.65	33.313 D	25.156	281.6	0.204	5.44 D	236.8 D	90.1								60	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 25.0 N	117 54.3 W	15/07/2015	2118 UTC	614 m	230 05 kn	320 03 08	0	1012.0 mb	19.9 C	17.1 C	17 m	0/8		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	21.17	21.17	33.442 D	23.264	460.2	0.000	5.54	242.1	108.6	2.1	0.22	0.0	0.00	0.01	0.31	0.05	0	
2	21.17	21.17	33.442 D	23.265	460.3	0.009	5.54	242.1	108.6	2.1	0.22	0.0	0.00	0.01	0.31	0.05	2	21
10	19.79	19.78	33.391	23.593	429.3	0.045	5.79	252.8	110.5	2.7	0.24	0.0	0.00	0.07	0.31	0.09	10	19
10	19.79	19.78	33.392	23.593	429.3	0.044											10	20
20	15.00	14.99	33.334	24.690	324.9	0.083	6.69	292.2	116.4	2.6	0.29	0.0	0.01	0.00	0.79	0.27	20	18
30	13.12	13.12	33.314	25.065	289.5	0.113	6.73	294.0	112.7	3.6	0.36	0.0	0.01	0.00	1.15	0.47	30	17
40	11.90	11.90	33.350 D	25.328	264.6	0.142	5.10	D222.1 D	83.2								40	16
50	11.26	11.25	33.400	25.486	249.8	0.167	4.25	185.8	68.5	12.5	1.24	13.6	0.22	0.00	0.43	0.42	50	15
60	10.90	10.89	33.480	25.612	238.0	0.191	3.95	172.4	63.1	14.9	1.36	15.7	0.09	0.00	0.23	0.28	60	14
70	10.52	10.51	33.583	25.760	224.2	0.214	3.58	156.1	56.7	17.8	1.53	18.3	0.03	0.00	0.13	0.20	71	13
75 ISL	10.47 D	10.46	33.658 D	25.828	217.9	0.226	3.36	D146.1 D	53.2	18.7	1.58	18.8	0.03	0.00	0.11	0.17	76	
85	10.36	10.35	33.689	25.872	214.0	0.247	3.27	143.0	51.8	20.5	1.67	20.0	0.02	0.00	0.05	0.12	86	12
100	10.38	10.37	33.763	25.926	209.2	0.279	3.00	130.9	47.5	22.2	1.76	20.8	0.02	0.00	0.04	0.09	101	11
120	10.28	10.27	33.897	26.048	198.1	0.319	2.56	111.8	40.5	25.4	1.94	22.8	0.03	0.00	0.02	0.07	121	10
125 ISL	10.31 D	10.29	33.932 D	26.071	196.0	0.331	2.43	D105.6 D	38.4	25.9	1.96	23.0	0.03	0.00	0.01	0.07	126	
140	10.23	10.21	33.961	26.108	192.9	0.359	2.32	101.4	36.7	27.2	2.03	23.6	0.02	0.00	0.01	0.07	141	09
150 ISL	10.23 D	10.21	33.988 D	26.129	191.1	0.380	2.28	D 99.1 D	36.0	27.8	2.06	23.9	0.02	0.00	0.01	0.06	151	
170	10.17	10.15	34.039	26.180	186.7	0.416	2.12	92.7	33.5	28.9	2.11	24.5	0.02	0.01	0.01	0.05	171	08
200 ISL	9.98 D	9.96	34.150 D	26.299	176.1	0.473	1.67	D 72.5 D	26.2	32.1	2.27	26.2	0.01	0.00	0.01	0.06	202	
201	9.96	9.93	34.142	26.297	176.3	0.472	1.67	72.9	26.3	32.2	2.28	26.2	0.01	0.00	0.01	0.06	203	07
230	9.96	9.93	34.246	26.380	169.2	0.522	1.33	58.1	20.9	35.2	2.41	27.1	0.01	0.00			232	06
250 ISL	9.80 D	9.77	34.272 D	26.427	165.1	0.559	1.24	D 54.1 D	19.5	36.7	2.46	27.6	0.01	0.00			252	
270	9.72	9.69	34.297	26.461	162.3	0.588	1.10	47.9	17.2	38.1	2.51	28.1	0.00	0.00			272	05
300 ISL	9.54 D	9.50	34.320 D	26.511	158.2	0.640	1.00	D 43.3 D	15.5	39.6	2.55	28.5	0.00	0.00			302	
320	9.48	9.44	34.318	26.519	157.9	0.668	0.97	42.4	15.1	40.7	2.58	28.8	0.01	0.00			323	04
380	9.09	9.05	34.344	26.603	150.9	0.761	0.78	34.0	12.0	44.5	2.68	30.0	0.00	0.00			383	03
400 ISL	9.08 D	9.03	34.376 D	26.631	148.8	0.796	0.62	D 27.1 D	9.6	46.3	2.72	30.6	0.00	0.00			403	
440	8.52	8.47	34.347	26.697	142.8	0.850	0.60	26.1	9.1	49.9	2.81	31.7	0.00	0.00			444	02
500 ISL	7.74 D	7.69	34.318 D	26.792	134.2	0.939	0.50	D 21.9 D	7.5	50.1	2.81	31.8	0.00	0.00			504	
516	7.64	7.58	34.347	26.829	130.8	0.953	0.59	25.7	8.8	50.1	2.81	31.9	0.00	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 15.1 N	118 15.0 W	15/07/2015	1719 UTC	333 m	140 02 kn	230 04 05	2	1013.0 mb	19.3 C	16.3 C	25 m	7/8	SC	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	19.72	19.72	33.447	23.651	423.3	0.000	5.48	239.5	104.6	1.7	0.27	0.0	0.00	0.00	0.15	0.04	0	
2 A	19.72	19.72	33.447	23.651	423.4	0.009	5.48	239.5	104.6	1.7	0.27	0.0	0.00	0.00	0.15	0.04	2	24
8	19.71	19.71	33.446	23.655	423.3	0.034	5.49	240.0	104.8	1.6	0.27	0.0	0.00	0.00	0.15	0.03	8	19
8	19.71	19.71	33.446	23.655	423.3	0.034											8	21
8	19.71	19.71	33.445	23.654	423.4	0.033											8	20
10 ISL	19.68 D	19.68	33.447 D	23.663	422.7	0.043	5.46	D238.0 D	104.0	1.6	0.27	0.0	0.00	0.00	0.15	0.04	10	
14 A	19.41	19.40	33.452	23.737	415.7	0.059	5.49	240.0	104.2	1.6	0.27	0.0	0.00	0.00	0.16	0.04	14	18
20 A	18.29	18.28	33.407	23.985	392.2	0.083	5.70	249.1	105.8	1.6	0.29	0.0	0.00	0.00	0.18	0.05	20	17
28	16.16	16.15	33.360	24.453	347.8	0.113	5.89	257.4	104.9	1.7	0.32	0.0	0.00	0.00	0.22	0.08	28	23
30 ISL	15.91 D	15.90	33.329 D	24.486	344.7	0.121	5.93	D258.5 D	105.1	2.1	0.36	0.4	0.02	0.00	0.39	0.13	30	
35 A	15.03	15.02	33.314	24.670	327.4	0.137	5.79	253.2	100.9	3.0	0.45	1.3	0.08	0.01	0.81	0.26	35	15
46	14.72	14.71	33.295	24.722	322.8	0.172	5.79	252.9	100.1	3.1	0.48	1.5	0.10	0.01	0.80	0.29	46	13
46	14.72	14.71	33.288 D	24.715	323.3	0.174											46	14
50 ISL	14.21 D	14.20	33.284 D	24.821	313.4	0.187	5.55	D241.9 D	95.0	3.8	0.57	2.9	0.13		0.79	0.31	50	
58	13.16	13.16	33.260	25.017	294.9	0.209	5.28	230.8	88.5	5.3	0.75	5.8	0.17	0.01	0.77	0.36	58	12
68 A	12.00	11.99	33.250	25.235	274.3	0.238	4.98	217.7	81.4						0.57	0.28	69	11
75 ISL	11.33 D	11.32	33.328 D	25.418	256.9	0.259	4.65	D202.4 D	74.9	10.6	1.08	11.6	0.06		0.37	0.22	76	
81 A	10.85	10.84	33.380	25.545	244.9	0.272	4.48	195.6	71.4	12.4	1.20	13.6	0.02	0.00	0.20	0.16	82	10
91	10.26	10.25	33.451	25.703	230.1	0.295	4.24	185.0	66.7	14.9	1.34	15.8	0.01	0.00	0.09	0.12	92	09
100	9.97	9.96	33.538	25.820	219.1	0.316	3.92	171.3	61.4	17.8	1.49	18.2	0.01	0.00	0.04	0.07	101	08
120	9.81	9.80	33.777	26.033	199.4	0.357	3.14	137.1	49.1	23.6	1.77	22.1	0.01	0.00	0.01	0.05	121	07
125 ISL	9.77 D	9.76	33.799 D	26.058	197.1	0.369	3.11	D135.3 D	48.6	24.1	1.79	22.4	0.00	0.00	0.01	0.05	126	
140	9.55	9.53	33.843	26.129	190.7	0.396	2.98	130.2	46.3	25.7	1.86	23.3	0.00	0.00	0.00	0.04	141	06
150 ISL	9.51 D	9.49	33.883 D	26.167	187.3	0.418	2.90	D126.1 D	45.0	27.0	1.92	23.9	0.00	0.00	0.00	0.04	151	
171	9.47	9.45	33.981	26.251	179.7	0.454	2.48	108.2	38.5	29.8	2.05	25.3	0.00	0.00	0.00	0.04	172	05
200	9.27	9.25	34.095	26.373	168.8	0.504	2.06	90.0	31.9	34.1	2.21	26.9	0.00	0.00	0.00	0.04	202	04
230	9.06	9.03	34.146	26.449	162.1	0.554	1.80	78.5	27.7	37.2	2.32	28.1	0.00	0.00			232	03
250 ISL	9.03 D	9.00	34.183 D	26.483	159.3	0.590	1.60	D 69.6 D	24.6	38.5	2.37	28.5	0.00	0.00			252	
271	9.00	8.97	34.207	26.507	157.6	0.619	1.47	64.1	22.6	39.9	2.43	29.0	0.00	0.00			273	02
300 ISL	8.85 D	8.81	34.251 D	26.566	152.5	0.669	1.15	D 49.9 D	17.6	42.6	2.54	29.8	0.00	0.00			302	
325	8.78	8.75	34.284	26.603	149.5	0.702	1.00	43.5	15.3	44.9	2.63	30.5	0.00	0.00			328	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 OCEANUS CALCOFI CRUISE 1507 STATION 90.0 37.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
33 11.1 N	118 23.2 W	15/07/2015	1417	UTC	1176 m	180 05 kn	230 03 06	2	1012.0 mb	18.0 C	16.3 C	26 m	8/8	SC	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		19.60		19.60		33.461		23.694	419.2	0.000	5.41		236.4		103.0		1.7	0.27	0.0	0.00	0.06	0.13	0.03	0	
2		19.60		19.60		33.461		23.694	419.3	0.008	5.41		236.4		103.0		1.7	0.27	0.0	0.00	0.06	0.13	0.03	2	22
10	ISL	19.58	D	19.58	D	33.459	D	23.698	419.3	0.042	5.41	D	236.1	D	103.0		1.7	0.28	0.0	0.00	0.00	0.14	0.04	10	
11		19.53		19.53		33.460		23.712	418.0	0.046	5.42		236.9		103.1		1.7	0.28	0.0	0.00	0.00	0.14	0.04	11	20
11		19.53		19.53		33.460		23.712	418.0	0.045														11	21
20		18.90		18.90		33.445		23.861	404.1	0.083	5.50		240.2		103.3		1.6	0.27	0.0	0.00	0.00	0.15	0.04	20	19
30		16.27		16.26		33.334		24.408	352.2	0.121	5.94		259.3		105.9		1.7	0.33	0.0	0.00	0.00	0.21	0.09	30	18
40		15.32		15.31		33.279		24.579	336.2	0.155	5.93		259.1		103.8		2.4	0.39	0.2	0.03	0.01	0.40	0.17	40	17
49		14.02		14.01		33.277		24.855	310.1	0.184	5.55		242.4		94.6		3.9	0.61	3.4	0.23	0.02	0.67	0.30	49	15
50	ISL	13.79	D	13.78	D	33.275	D	24.902	305.7	0.189	5.49	D	239.3	D	93.2		4.2	0.63	3.8	0.22	0.00	0.66	0.30	50	
50		13.79		13.78		33.277		24.903	305.5	0.188														50	16
60		12.49		12.48		33.239		25.132	283.9	0.217	5.09		222.5		84.1		7.0	0.88	7.8	0.12	0.00	0.51	0.32	60	14
70		11.83		11.82		33.247		25.265	271.5	0.245	4.94		216.0		80.5		8.5	0.97	9.5	0.05	0.00	0.40	0.34	71	13
75	ISL	11.12	D	11.11	D	33.325	D	25.454	253.5	0.260	4.84	D	210.9	D	77.7		10.5	1.09	11.5	0.04	0.00	0.30	0.27	76	
85		10.53		10.52		33.421		25.633	236.7	0.283	4.26		186.1		67.5		14.6	1.34	15.6	0.02	0.00	0.11	0.14	86	12
100		10.03		10.02		33.540		25.811	220.0	0.317	3.91		171.0		61.4		18.0	1.50	18.3	0.02	0.00	0.04	0.09	101	11
120		9.72		9.70		33.715		26.001	202.3	0.359	3.44		150.1		53.6		22.2	1.69	21.2	0.01	0.00	0.01	0.04	121	10
125	ISL	9.70	D	9.69	D	33.748	D	26.029	199.8	0.372	3.38	D	147.0	D	52.7		23.0	1.73	21.6	0.01	0.00	0.01	0.04	126	
140		9.69		9.67		33.837		26.101	193.3	0.399	2.94		128.3		45.8		25.3	1.85	22.9	0.01	0.00	0.01	0.04	141	09
150	ISL	9.63	D	9.61	D	33.949	D	26.200	184.2	0.420	2.72	D	118.4	D	42.4		27.2	1.93	23.9	0.01	0.00	0.01	0.04	151	
171		9.45		9.43		34.027		26.291	176.0	0.456	2.28		99.4		35.4		31.3	2.11	25.9	0.01	0.00	0.00	0.04	172	08
199		9.20		9.18		34.113		26.399	166.3	0.504	1.92		84.0		29.7		35.4	2.26	27.5	0.01	0.00	0.00	0.04	201	07
200	ISL	9.21	D	9.19	D	34.136	D	26.415	164.8	0.508	1.80	D	78.3	D	27.8		35.6	2.26	27.6	0.01	0.00			202	
230		8.93		8.91		34.189		26.502	157.1	0.554	1.52		66.4		23.4		39.5	2.41	29.0	0.01	0.00			232	06
250	ISL	8.88	D	8.85	D	34.229	D	26.543	153.6	0.588	1.35	D	58.9	D	20.8		41.3	2.48	29.5	0.01	0.00			252	
269		8.77		8.74		34.235		26.565	151.9	0.614	1.24		54.0		19.0		43.0	2.54	30.0	0.01	0.00			271	05
300	ISL	8.86	D	8.83	D	34.331	D	26.627	146.8	0.664	0.79	D	34.5	D	12.2		46.0	2.66	30.7	0.00	0.00			302	
320		8.55		8.52		34.324		26.670	142.9	0.690	0.73		31.6		11.1		48.0	2.74	31.2	0.00	0.00			323	04
380		8.19		8.15		34.352		26.748	136.5	0.774	0.51		22.1		7.7		52.5	2.85	32.5	0.01	0.00			383	03
400	ISL	8.05	D	8.01	D	34.347	D	26.766	135.1	0.806	0.48	D	20.8	D	7.2		55.0	2.88	33.4	0.00	0.00			403	
440		7.42		7.38		34.301		26.822	129.8	0.855	0.50		21.8		7.4		59.9	2.93	35.0	0.00	0.00			444	02
500	ISL	6.96	D	6.91	D	34.320	D	26.901	122.9	0.936	0.35	D	15.4	D	5.2		67.0	3.04	36.7	0.00	0.00			504	
516		6.81		6.76		34.319		26.922	121.0	0.950	0.33		14.4		4.8		68.9	3.07	37.2	0.00	0.00			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 55.1 N	118 56.1 W	15/07/2015	0906	UTC	1693 m	320 15 kn			1011.0 mb	16.5 C	15.6 C				026

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.63		18.63		33.446		23.927	397.0	0.000	5.55		242.6		103.8		1.9	0.31	0.0	0.00	0.00	0.27	0.05	0	
2		18.63		18.63		33.446		23.927	397.1	0.008	5.55		242.6		103.8		1.9	0.31	0.0	0.00	0.00	0.27	0.05	2	21
10		18.59		18.59		33.445		23.939	396.3	0.040	5.55		242.6		103.8		1.9	0.31	0.0	0.00	0.00	0.26	0.05	10	19
10		18.59		18.59		33.446		23.939	396.3	0.040														10	20
20		16.52		16.52		33.416		24.413	351.4	0.077	6.02		262.9		108.0		2.0	0.34	0.0	0.00	0.02	0.37	0.09	20	18
30		16.14		16.13		33.412		24.498	343.6	0.112	6.11	D	266.4	D	108.8		2.3	0.36	0.1	0.01	0.03	0.48	0.12	30	17
40		14.34		14.34		33.410	D	24.890	306.5	0.145	5.85	D	254.8	D	100.4									40	16
50		12.38		12.38		33.425		25.296	268.0	0.173	4.64		202.5		76.5		9.9	0.99	9.5	0.38	0.17	1.25	0.52	50	15
60		10.94		10.93		33.436		25.572	241.9	0.198	4.03		176.0		64.4		14.7	1.37	15.5	0.07	0.00	0.43	0.27	60	14
70		10.46		10.45		33.541		25.737	226.3	0.222	3.70		161.7		58.6		17.7	1.51	17.6	0.04	0.00	0.24	0.20	71	13
75	ISL	10.15	D	10.14	D	33.562	D	25.807	219.8	0.235	3.66	D	159.1	D	57.5		18.9	1.58	18.5	0.03	0.00	0.19	0.16	76	
85		10.10		10.09		33.694		25.920	209.3	0.254	3.28		143.1		51.5		21.5	1.71	20.3	0.01	0.00	0.08	0.09	86	12
100		9.89		9.88		33.792		26.031	199.1	0.285	2.97		129.5		46.5		23.6	1.81	21.7	0.01	0.00	0.03	0.08	101	11
120		9.67		9.66		33.929		26.175	185.8	0.323	2.56		111.7		39.9		27.5	1.98	23.8	0.01	0.00	0.01	0.07	121	10
125	ISL	9.61	D	9.60	D	33.949	D	26.201	183.5	0.335	2.55	D	111.1	D	39.8		28.2	2.00	24.1	0.00	0.00	0.01	0.07	126	
140		9.29		9.28		33.993		26.288	175.5	0.359	2.43		105.9		37.5		30.4	2.06	25.1	0.00	0.00	0.01	0.08	141	09
150	ISL	9.19	D	9.17	D	34.019	D	26.325	172.2	0.379	2.40	D	104.2	D	37.0		31.9	2.11	25.7	0.01	0.00	0.01	0.07	151	
170		8.98		8.96		34.068		26.397	165.7	0.411	2.16		94.5		33.3		34.8	2.20	26.9	0.01	0.00	0.01	0.05	171	08
200		8.95		8.92		34.144		26.464	160.0	0.459	1.74		76.1		26.8		37.5	2.34	27.9	0.01	0.00	0.00	0.04	202	07
230		8.82		8.80		34.232		26.553	152.2	0.506	1.24		54.3		19.1		42.3	2.53	29.6	0.01	0.00			232	06
250	ISL	8.67	D	8.64	D	34.256	D	26.596	148.4	0.539	1.08	D	46.8	D	16.4		44.6	2.60	30.3	0.01	0.00			252	
270		8.47		8.44		34.263		26.633	145.3	0.566	0.96		42.1		14.7		46.8	2.67	31.0	0.01	0.00			272	05
300	ISL	8.28	D	8.25	D	34.279	D	26.675	141.8	0.612	0.83	D	36.0	D	12.5		49.4	2.74	31.8	0.01	0.00			302	
320		8.12		8.09		34.291		26.708	138.9	0.637	0.74		32.1		11.1		51.2	2.78	32.3	0.01	0.00			323	04
381		7.56		7.52		34.297		26.797	131.2	0.719	0.54		23.5		8.0		58.0	2.91	34.3	0.01	0.00			384	03
400	ISL	7.46	D	7.42	D	34.305	D	26.819	129.4	0.749	0.49	D	21.4	D	7.3		60.7	2.96	34.9	0.01	0.00			403	
440		7.01		6.97		34.321		26.894	122.6	0.794	0.35		15.2		5.1		66.4	3.07	36.4	0.00	0.00			444	02
500	ISL	6.61	D	6.57	D	34.328	D	26.954	117.5	0.872	0.29	D	12.8	D	4.3		72.2	3.13	37.8	0.00	0.00			504	
515		6.49		6.45		34.323		26.967	116.4	0.884	0.30		12.9		4.3		73.7	3.15	38.1	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 39.1 N	119 28.9 W	15/07/2015	0345 UTC	1324 m	310 17 kn			1011.0 mb	17.1 C	16.0 C				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		17.89		17.89		33.430	D	24.099	380.6	0.000	5.65		247.0		104.2		0.8	0.32	0.0	0.00	0.01	0.29	0.12	0	
3		17.89		17.89		33.430	D	24.099	380.7	0.011	5.65		247.0		104.2		0.8	0.32	0.0	0.00	0.01	0.29	0.12	3	22
10		17.88		17.87		33.433		24.104	380.5	0.038	5.71		249.6		105.3		0.8	0.32	0.0	0.01	0.01	0.28	0.14	10	20
10		17.88		17.87		33.431		24.103	380.6	0.040														10	21
20		17.69		17.69		33.436		24.151	376.4	0.076	5.70		249.1		104.7		0.8	0.32	0.0	0.01	0.01	0.28	0.14	20	19
30		15.03		15.02		33.401		24.736	320.9	0.111	5.69		248.4		99.0		2.6	0.52	2.3	0.12	0.30	1.11	0.50	30	17
31		15.03		15.02		33.401		24.736	320.9	0.112														30	18
41		12.02		12.01		33.402	D	25.347	262.9	0.144	4.49	D	195.5	D	73.5									41	16
50		10.80		10.80		33.375		25.548	243.9	0.166	4.22		184.5		67.3		13.8	1.35	15.5	0.24	0.00	0.18	0.13	50	15
60		10.55		10.54		33.465		25.663	233.2	0.190	3.90		170.2		61.8		16.5	1.48	17.7	0.17	0.00	0.14	0.12	60	14
70		9.95		9.95		33.615		25.881	212.6	0.212	3.45		150.5		54.0		20.9	1.67	20.9	0.10	0.00	0.05	0.09	71	13
75	ISL	9.92	D	9.91	D	33.627	D	25.896	211.3	0.224	3.42	D	149.0	D	53.6		21.6	1.70	21.3	0.10	0.00	0.04	0.09	76	
85		9.56		9.55		33.673		25.993	202.3	0.243	3.35		146.3		52.1		22.9	1.75	22.1	0.09	0.00	0.03	0.08	86	12
100		9.20		9.19		33.718		26.086	193.7	0.273	3.33		145.5		51.4		24.7	1.80	23.2	0.08	0.00	0.02	0.08	101	11
119		9.04		9.02		33.817		26.190	184.2	0.309	3.14		137.0		48.2		27.3	1.87	24.6	0.07	0.01	0.02	0.08	120	10
125	ISL	9.04	D	9.02		33.818	D	26.191	184.2	0.322	3.13	D	136.4	D	48.2		28.2	1.90	24.9	0.06	0.00	0.02	0.07	126	
140		8.80		8.78		33.893		26.289	175.3	0.347	2.90		126.6		44.3		30.3	1.99	25.9	0.05	0.00	0.01	0.07	141	09
150	ISL	8.65	D	8.64		33.967	D	26.369	167.8	0.366	2.63	D	114.4	D	40.1		32.9	2.08	26.9	0.04	0.00	0.01	0.07	151	
170		8.43		8.41		34.033		26.455	160.0	0.397	2.17		94.9		33.0		38.1	2.25	29.1	0.03	0.00	0.01	0.06	171	08
200		8.30		8.27		34.102		26.530	153.4	0.444	1.64		71.6		24.8		42.8	2.44	30.9	0.07	0.00	0.01	0.07	202	07
230		8.00		7.97		34.147		26.611	146.2	0.489	1.35		58.9		20.3		47.4	2.57	32.3	0.03	0.00			232	06
250	ISL	7.90	D	7.87	D	34.174	D	26.648	143.1	0.521	1.19	D	51.9	D	17.9		50.2	2.66	33.1	0.03	0.00			252	
270		7.67		7.65		34.199		26.701	138.3	0.546	0.97		42.5		14.6		53.0	2.74	33.9	0.02	0.00			272	05
300	ISL	7.55	D	7.52	D	34.221	D	26.737	135.3	0.591	0.83	D	36.0	D	12.3		56.0	2.81	34.7	0.02	0.00			302	
320		7.40		7.37		34.239		26.772	132.3	0.614	0.72		31.6		10.7		58.1	2.86	35.3	0.01	0.00			323	04
380		7.18		7.14		34.275		26.834	127.4	0.692	0.53		23.1		7.8		62.5	2.96	36.1	0.02	0.00			383	03
400	ISL	7.04	D	7.00	D	34.285	D	26.861	125.1	0.722	0.47	D	20.2	D	6.9		64.3	2.99	36.5	0.01	0.00			403	
441		6.85		6.81		34.286		26.888	123.0	0.768	0.43		18.6		6.2		67.9	3.04	37.3	0.01	0.00			445	02
500	ISL	6.60	D	6.55	D	34.299	D	26.933	119.4	0.845	0.35	D	15.0	D	5.0		72.7	3.11	38.2	0.01	0.00			504	
515		6.51		6.46		34.306		26.951	117.9	0.857	0.32		14.2		4.7		73.9	3.13	38.4	0.01	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 25.1 N	119 57.6 W	14/07/2015	2158 UTC	882 m	320 18 kn	300 05 08	2	1012.0 mb	18.1 C	16.5 C		8/8	SC	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		18.49		18.49		33.352		23.891	400.4	0.000	5.66		247.1		105.4		0.8	0.29	0.0	0.00	0.00	0.20	0.06	0	
3		18.49		18.49		33.352		23.892	400.5	0.012	5.66		247.1		105.4		0.8	0.29	0.0	0.00	0.00	0.20	0.06	3	20
10		18.47		18.46		33.349		23.895	400.4	0.040	5.65		246.6		105.2		0.8	0.29	0.0	0.00	0.00	0.18	0.06	10	19
20		18.02		18.02		33.290		23.959	394.7	0.080	5.73		250.4		105.9		0.9	0.31	0.0	0.00	0.00	0.25	0.09	20	18
29		15.34		15.34		33.097		24.433	349.7	0.113	6.09		265.8		106.5		2.0	0.33	0.0	0.00	0.00	0.31	0.11	29	17
30	ISL	15.34	D	15.34		33.103	D	24.438	349.3	0.118	6.11	D	266.5	D	106.9		2.0	0.34	0.1	0.01	0.00	0.35	0.13	30	
40		14.34		14.33		33.156		24.694	325.1	0.151	5.99		261.8		102.8		2.5	0.46	1.1	0.12	0.10	0.78	0.41	40	16
50		13.41		13.41		33.249		24.958	300.3	0.182	5.60		244.6		94.3		3.2	0.67	3.9	0.33	0.75	0.62	0.44	50	15
60		12.82		12.81		33.299		25.115	285.5	0.211	5.14		224.4		85.4		6.1	0.90	7.4	0.50	0.58	0.40	0.35	60	14
70		11.56		11.55		33.366		25.405	258.1	0.238	4.60		200.8		74.5		9.8	1.15	11.8	0.47	0.26	0.24	0.27	71	13
75	ISL	10.84	D	10.83	D	33.405	D	25.566	242.8	0.252	4.23	D	184.2	D	67.5		11.8	1.25	13.4	0.40	0.18	0.21	0.24	76	
85		10.92		10.91		33.500		25.625	237.4	0.275	3.89		169.9		62.2		15.9	1.45	16.6	0.28	0.01	0.14	0.18	86	12
100		10.66		10.65		33.569		25.726	228.2	0.310	3.65		159.2		58.0		18.1	1.52	18.2	0.19	0.00	0.19	0.20	101	11
120		9.98		9.97		33.678		25.928	209.3	0.354	3.31		144.6		51.9		22.1	1.71	21.2	0.05	0.00	0.12	0.16	121	10
125	ISL	9.82	D	9.81		33.713	D	25.982	204.3	0.366	3.27	D	142.5	D	51.2		23.4	1.77	22.0	0.05	0.00	0.10	0.15	126	
140		9.41		9.39		33.827		26.139	189.7	0.393	2.85		124.3		44.1		27.4	1.93	24.4	0.04	0.00	0.02	0.12	141	09
150	ISL	9.28	D	9.27	D	33.872	D	26.196	184.5	0.415	2.83	D	122.9	D	43.7		28.6	1.95	25.0	0.03	0.00	0.02	0.10	151	
170		8.67		8.66		33.912		26.323	172.5	0.448	2.93		127.7		44.6		31.1	1.98	26.3	0.02	0.00	0.01	0.06	171	08
200		8.45		8.43		33.967		26.402	165.6	0.499	2.70		118.0		41.0		34.4	2.07	27.5	0.01	0.00	0.01	0.04	202	07
230		8.10		8.07		34.040		26.513	155.5	0.547	2.20		96.2		33.2		40.3	2.26	29.8	0.01	0.00			232	06
250	ISL	7.87	D	7.84	D	34.059	D	26.562	151.2	0.581	1.99	D	86.7	D	29.9		44.7	2.39	31.4	0.00	0.00			252	
270		7.54		7.52		34.085		26.630	144.9	0.607	1.61		70.3		24.0		49.0	2.52	33.0	0.00	0.00			272	05
300	ISL	7.12	D	7.09	D	34.114	D	26.712	137.3	0.654	1.25	D	54.6	D	18.5		54.3	2.66	34.6	0.00	0.00			302	
320		6.97		6.94		34.125		26.743	134.7	0.677	1.11		48.4		16.3		57.9	2.75	35.7	0.00	0.00			323	04
380		6.53		6.49		34.194		26.857	124.6	0.754	0.67		29.2		9.7		67.1	2.96	37.9	0.00	0.00			383	03
400	ISL	6.68	D	6.64	D	34.247	D	26.880	122.9	0.785	0.54	D	23.3	D	7.8		68.9	3.01	38.1	0.00	0.00			403	
440		6.36		6.32		34.259		26.932	118.3	0.828	0.44		19.3		6.4		72.5	3.10	38.6	0.00	0.00			444	02
500	ISL	6.23	D	6.18	D	34.313	D	26.992	113.4	0.903	0.28	D	12.2	D	4.0		77.2	3.17	39.4	0.00	0.00			504	
515		6.13		6.08		34.305		26.999	112.8	0.915	0.29		12.6		4.2		78.4	3.19	39.6	0.00	0.00			519	01

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

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 5.1 N	120 38.3 W	14/07/2015	1706 UTC	3814 m	330 18 kn	020 05 05	2	1014.0 mb	18.5 C	16.7 C	20 m	8/8	SC	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		18.85		18.85		33.223	23.702	418.5	0.000	5.48	239.4	102.7	1.9	0.31	0.0	0.00	0.00	0.11	0.03	0	
3	A	18.85		18.85		33.223	23.702	418.6	0.013	5.48	239.4	102.7	1.9	0.31	0.0	0.00	0.00	0.11	0.03	3	24
10	ISL	18.84	D	18.84		33.222	D 23.704	418.7	0.042	5.49	D239.7	D103.0	1.9	0.31	0.0	0.00	0.00	0.11	0.03	10	
12	A	18.84		18.84		33.222	23.705	418.7	0.050	5.51	240.6	103.3	1.9	0.31	0.0	0.00	0.02	0.11	0.03	12	22
12		18.84		18.84		33.222	23.705	418.7	0.051											12	23
16	A	18.82		18.82		33.228	23.714	418.0	0.067	5.49	239.9	102.9	1.9	0.31	0.0	0.00	0.00	0.11	0.02	16	21
20	ISL	18.80	D	18.80		33.220	D 23.713	418.2	0.084	5.50	D239.9	D103.0	1.9	0.31	0.0	0.00	0.00	0.11	0.02	20	
28	A	18.32		18.32		33.223	23.836	406.8	0.117	5.67	247.7	105.2	1.8	0.31	0.0	0.00	0.00	0.11	0.03	28	20
30	ISL	17.87	D	17.87		33.231	D 23.952	395.7	0.126	5.69	D248.3	D104.8	1.9	0.31	0.0	0.00	0.00	0.11	0.03	30	
37		17.09		17.09		33.209	24.122	379.8	0.152	5.78	252.4	104.7	1.9	0.31	0.0	0.00	0.00	0.12	0.03	37	19
46		16.38		16.37		33.184	24.269	366.0	0.186	5.81	253.9	103.9	2.0	0.31	0.0	0.00	0.00	0.12	0.03	46	18
50	ISL	15.98	D	15.97		33.107	D 24.302	363.0	0.202	5.94	D258.8	D105.2	2.1	0.32	0.0	0.00	0.00	0.13	0.04	50	
54	A	15.77		15.76		33.095	24.340	359.5	0.214	5.92	258.6	104.5	2.1	0.32	0.0	0.00	0.00	0.13	0.04	54	17
65	A	15.38		15.37		33.194	24.503	344.3	0.253	5.97	260.7	104.5	1.8	0.36	0.0	0.00	0.00	0.25	0.12	66	16
75		14.66		14.65		33.192	24.656	330.0	0.287	5.83	254.7	100.7	2.4	0.44	0.5	0.10	0.22	0.41	0.24	76	15
85		13.73		13.72		33.179	24.842	312.4	0.319	5.61	245.1	95.0	3.5	0.58	2.4	0.37	0.18	0.40	0.34	86	13
85		13.73		13.72		33.182	24.844	312.2	0.320											86	14
96		12.31		12.30		33.170	25.114	286.6	0.352	5.25	229.2	86.3	6.0	0.83	7.0	0.13	0.00	0.23	0.24	97	12
100	ISL	12.09	D	12.08		33.183	D 25.167	281.6	0.366	5.10	D222.0	D 83.4	7.2	0.91	8.4	0.10	0.00	0.19	0.21	101	
110		11.14		11.12		33.206	25.360	263.4	0.391	4.84	211.3	77.6	10.1	1.12	11.9	0.02	0.00	0.10	0.14	111	11
125		9.98		9.97		33.335	25.659	234.9	0.428	4.30	187.7	67.3	15.5	1.43	17.1	0.02	0.00	0.04	0.08	126	10
140		9.54		9.52		33.578	25.924	210.1	0.461	3.62	158.2	56.2	21.1	1.67	21.0	0.01	0.00	0.01	0.05	141	09
150	ISL	9.45	D	9.44		33.621	D 25.971	205.7	0.485	3.56	D155.0	D 55.2	23.0	1.74	22.1	0.01	0.00	0.01	0.04	151	
170		9.06		9.05		33.782	26.160	188.1	0.521	3.13	136.6	48.1	26.8	1.87	24.3	0.01	0.00	0.00	0.04	171	08
200	ISL	8.60	D	8.58		33.935	D 26.353	170.4	0.579	2.85	D123.9	D 43.4	32.4	2.02	26.6	0.01	0.00			202	
200		8.60		8.58		33.935	D 26.353	170.4	0.579	2.85	D123.9	D 43.4								202	07
231		8.17		8.15		34.008	26.477	159.0	0.627	2.43	106.0	36.7	38.2	2.18	29.0	0.01	0.00			233	06
250	ISL	8.03	D	8.00		34.037	D 26.521	155.1	0.660	2.21	D 96.2	D 33.3	41.5	2.29	30.3	0.00	0.00			252	
271		7.80		7.77		34.065	26.578	150.0	0.689	1.84	80.5	27.6	45.1	2.42	31.7	0.00	0.00			273	05
300	ISL	8.00	D	7.97		34.186	D 26.644	144.5	0.735	1.17	D 51.1	D 17.7	48.7	2.56	32.7	0.00	0.00			302	
320		7.72		7.68		34.168	26.672	142.0	0.761	1.17	50.8	17.4	51.1	2.66	33.4	0.00	0.00			323	04
380		7.16		7.13		34.202	26.778	132.7	0.843	0.79	34.5	11.7	59.7	2.86	35.9	0.00	0.00			383	03
400	ISL	7.03	D	6.99		34.238	D 26.825	128.4	0.873	0.64	D 27.7	D 9.4	62.2	2.91	36.4	0.00	0.00			403	
441		6.81		6.76		34.264	26.877	124.0	0.922	0.48	21.0	7.1	67.2	3.02	37.4	0.00	0.00			445	02
500	ISL	6.31	D	6.26		34.289	D 26.963	116.2	0.997	0.34	D 14.9	D 5.0	74.7	3.12	38.8	0.00	0.00			504	
515		6.22		6.17		34.296	26.981	114.7	1.010	0.31	13.6	4.5	76.6	3.14	39.2	0.00	0.00			519	01

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

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 45.1 N	121 18.9 W	14/07/2015	0931 UTC	3672 m	330 22 kn			1013.0 mb	19.5 C	17.2 C				022

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		20.18		20.18		33.294	23.415	445.9	0.000	5.38	235.0	103.5	1.8	0.31	0.0	0.01	0.02	0.10	0.02	0	
2		20.18		20.18		33.294	23.415	446.0	0.009	5.38	235.0	103.5	1.8	0.31	0.0	0.01	0.02	0.10	0.02	2	20
10		19.81		19.81		33.280	23.501	438.0	0.044	5.42	236.8	103.5	1.8	0.32	0.0	0.00	0.03	0.09	0.03	10	19
20	ISL	17.87	D	17.87		33.219	D 23.942	396.3	0.086	5.72	D249.6	D105.3	1.9	0.32	0.0	0.00	0.02	0.09	0.03	20	
25		17.71		17.70		33.223	23.986	392.4	0.106	5.69	248.3	104.3	2.0	0.32	0.0	0.00	0.02	0.09	0.03	25	18
30	ISL	17.53	D	17.53		33.214	D 24.022	389.1	0.126	5.73	D250.0	D104.8	2.0	0.32	0.0	0.00	0.02	0.10	0.03	30	
40		17.13		17.12		33.215	24.118	380.2	0.164	5.80	253.2	105.2	1.9	0.31	0.0	0.00	0.02	0.12	0.04	40	17
50		16.48		16.47		33.190	24.252	367.8	0.201	5.89	257.4	105.5	1.7	0.32	0.0	0.00	0.04	0.16	0.07	50	16
62		16.01		16.00		33.179	24.351	358.7	0.245	5.94	259.6	105.4	1.6	0.33	0.0	0.00	0.03	0.20	0.10	62	15
75		15.32		15.31		33.205	24.524	342.6	0.290	5.89	257.1	103.0	1.7	0.38	0.0	0.01	0.14	0.30	0.24	76	14
87		14.47		14.46		33.260	24.750	321.4	0.330	5.70	248.7	98.0	2.0	0.50	0.9	0.23	0.64	0.29	0.25	88	13
100		12.13		12.12		33.079	25.079	290.0	0.370	5.40	235.8	88.4	5.6	0.75	5.4	0.18	0.02	0.24	0.32	101	12
112		10.52		10.50		33.153	25.427	256.8	0.402	4.86	212.3	76.9	11.5	1.20	13.1	0.03	0.01	0.16	0.17	113	11
124		10.03		10.02		33.199	25.546	245.7	0.433	4.76	208.0	74.6	13.0	1.28	14.5	0.02	0.01	0.13	0.16	125	10
125	ISL	10.15	D	10.13		33.200	D 25.526	247.6	0.438	4.80	D208.9	D 75.3	13.2	1.29	14.6	0.02	0.01	0.13	0.16	126	
140		9.78		9.76		33.337	25.696	231.8	0.471	4.47	195.3	69.7	15.8	1.42	16.9	0.02	0.01	0.08	0.12	141	09
150	ISL	9.55	D	9.54		33.448	D 25.820	220.1	0.497	4.25	D185.0	D 65.9	17.9	1.51	18.4	0.02	0.01	0.06	0.09	151	
170		9.26		9.24		33.622	26.005	203.0	0.536	3.75	163.7	57.9	22.2	1.68	21.4	0.01	0.01	0.02	0.04	171	08
200		8.83		8.80		33.866	26.264	178.9	0.593	3.05	133.3	46.7	29.3	1.93	25.3	0.01	0.00	0.00	0.03	202	07
230		8.37		8.35		33.967	26.414	165.1	0.645	2.76	120.2	41.8	34.4	2.05	27.3	0.00	0.01			232	06
250	ISL	8.10	D	8.08		34.009	D 26.488	158.3	0.683	2.47	D107.4	D 37.2	38.4	2.19	29.0	0.00	0.00			252	
270		7.79		7.76		34.032	26.553	152.4	0.709	2.14	93.5	32.1	42.5	2.33	30.6	0.00	0.00			272	05
300	ISL	7.57	D	7.54		34.059	D 26.606	147.7	0.759	1.84	D 80.1	D 27.4	47.7	2.47	32.4	0.00	0.00			302	
320		7.33		7.30		34.080	26.658	143.0	0.783	1.53	66.7	22.6	51.2	2.56	33.7	0.00	0.00			323	04
380		6.90		6.86		34.150	26.773	132.8	0.865	0.95	41.5	13.9	60.5	2.82	36.3	0.00	0.00			383	03
400	ISL	6.72	D	6.69		34.167	D 26.811	129.5	0.898	0.81	D 35.4	D 11.9	63.5	2.89	37.0	0.00	0.00			403	
440		6.45		6.41		34.207	26.879	123.3	0.942	0.57	24.8	8.2	69.6	3.03	38.3	0.00	0.00			444	02
500	ISL	6.12	D	6.08		34.240	D 26.948	117.4	1.022	0.42	D 18.1	D 6.0	75.6	3.12	39.4	0.00	0.00			504	
516		6.07		6.02		34.254	26.966	115.9	1.033	0.37	16.1	5.3	77.2	3.14	39.8	0.00	0.01			520	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 25.1 N	121 59.4 W	14/07/2015	0326 UTC	3889 m	340 16 kn	330 03 04	1	1015.0 mb	20.1 C	17.7 C		5/8	SC	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	21.21	21.21	33.387	23.212	465.2	0.000	5.26	229.5	103.0	1.9	0.28	0.0	0.00	0.01	0.07	0.01	0	
2	21.21	21.20	33.387	23.212	465.3	0.009	5.26	229.5	103.0	1.9	0.28	0.0	0.00	0.01	0.07	0.01	2	22
2	21.21	21.20	33.389	23.214	465.1	0.008											2	24
10	19.82	19.82	33.322	23.532	435.1	0.045	5.42	236.8	103.6	1.9	0.28	0.0	0.00	0.01	0.06	0.01	10	20
10	19.82	19.82	33.321	23.532	435.2	0.046											10	21
20 ISL	19.21 D	19.21	33.308 D	23.678	421.6	0.089	5.51 D	240.5 D	104.1	1.9	0.29	0.0	0.00	0.01	0.06	0.01	20	
25	18.97	18.96	33.284	23.722	417.6	0.109	5.52	241.2	103.8	1.9	0.29	0.0	0.00	0.01	0.05	0.01	25	19
30 ISL	18.60 D	18.60	33.240 D	23.780	412.2	0.131	5.61 D	244.5 D	104.6	1.9	0.29	0.0	0.00	0.00	0.05	0.01	30	
40	18.00	17.99	33.263	23.947	396.7	0.170	5.71	249.5	105.4	1.8	0.29	0.0	0.00	0.00	0.06	0.01	40	18
50	17.67	17.66	33.261	24.025	389.5	0.209	5.74	250.5	105.2	1.9	0.29	0.0	0.00	0.00	0.05	0.01	50	17
63	17.06	17.05	33.215	24.137	379.3	0.259	5.77	252.0	104.5	1.9	0.30	0.0	0.00	0.00	0.07	0.02	63	16
75 ISL	16.50 D	16.48	33.157 D	24.224	371.4	0.307	5.85 D	255.2 D	104.8	2.0	0.30	0.0	0.00	0.00	0.10	0.03	76	
76	16.27	16.25	33.153	24.274	366.6	0.308	5.85	255.7	104.3	2.0	0.30	0.0	0.00	0.00	0.10	0.03	77	15
87	15.54	15.52	33.095	24.392	355.6	0.348	5.90	257.6	103.6	2.3	0.33	0.0	0.00	0.00	0.16	0.06	88	14
100	14.83	14.81	33.204	24.632	333.1	0.393	5.73	250.1	99.2	3.0	0.38	0.2	0.03	0.00	0.35	0.24	101	12
100	14.83	14.81	33.205	24.633	333.0	0.394											101	13
112	12.95	12.94	33.117	24.950	302.8	0.431	5.52	241.1	92.0	4.7	0.61	3.5	0.11	0.01	0.32	0.26	113	11
125	11.33	11.31	33.143	25.277	271.6	0.468	5.15	224.7	82.8	8.2	0.95	9.2	0.03	0.01	0.18	0.26	126	10
140	10.48	10.46	33.212	25.482	252.3	0.507	4.75	207.5	75.1	12.1	1.23	13.8	0.01	0.00	0.13	0.12	141	09
150 ISL	9.96 D	9.94	33.353 D	25.680	233.6	0.536	4.45 D	193.9 D	69.7	14.2	1.31	15.4	0.01	0.00	0.09	0.09	151	
170	9.45	9.43	33.562	25.927	210.4	0.576	4.27	186.3	66.1	18.5	1.47	18.6	0.00	0.00	0.02	0.03	171	08
200	8.93	8.90	33.792	26.191	185.8	0.636	3.71	161.7	56.8	24.8	1.70	22.5	0.00	0.00	0.00	0.02	202	07
230	8.57	8.54	33.921	26.349	171.3	0.689	3.51	153.3	53.5	29.4	1.81	24.5	0.00	0.00			232	06
250 ISL	8.25 D	8.23	33.967 D	26.433	163.6	0.728	3.17 D	137.8 D	47.9	35.6	2.04	27.5	0.00	0.00			252	
270	7.75	7.72	34.013	26.543	153.3	0.755	2.31	100.8	34.5	41.8	2.26	30.6	0.00	0.00			272	05
300 ISL	7.50 D	7.47	34.032 D	26.596	148.7	0.805	2.02 D	87.8 D	30.0	47.2	2.41	32.4	0.00	0.00			302	
320	7.18	7.15	34.041	26.647	144.0	0.829	1.81	78.9	26.7	50.8	2.51	33.7	0.00	0.00			323	04
380	6.77	6.73	34.111	26.760	133.9	0.913	1.06	46.0	15.4	60.4	2.81	36.9	0.00	0.00			383	03
400 ISL	6.67 D	6.63	34.143 D	26.799	130.5	0.945	0.87 D	37.7 D	12.6	63.5	2.88	37.5	0.00	0.00			403	
440	6.38	6.34	34.190	26.874	123.8	0.990	0.63	27.5	9.1	69.5	3.02	38.8	0.00	0.00			444	02
500 ISL	6.01 D	5.97	34.238 D	26.960	116.1	1.069	0.41 D	17.9 D	5.9	76.7	3.13	40.0	0.00	0.00			504	
515	5.96	5.92	34.249	26.975	114.9	1.079	0.40	17.4	5.7	78.5	3.16	40.3	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 39.1 W	13/07/2015	2113 UTC	4044 m	340 09 kn	330 01 07	1	1017.0 mb	20.8 C	17.8 C	33 m	1/8	SC	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	22.02	22.02	33.531	23.099	476.0	0.000	5.25	229.1	104.5	1.8	0.33	0.0	0.00	0.02	0.07	0.02	0	
2	22.02	22.02	33.531	23.099	476.1	0.010	5.25	229.1	104.5	1.8	0.33	0.0	0.00	0.02	0.07	0.02	2	20
10	20.55	20.54	33.393	23.395	448.2	0.047	5.35	233.6	103.6	1.9	0.29	0.0	0.00	0.00	0.07	0.01	10	19
20 ISL	19.06 D	19.06	33.274 D	23.690	420.5	0.091	5.55 D	242.2 D	104.5	1.9	0.30	0.0	0.00	0.00	0.07	0.01	20	
25	18.80	18.79	33.264	23.750	414.9	0.111	5.55	242.6	104.0	1.9	0.30	0.0	0.00	0.00	0.07	0.02	25	18
30 ISL	18.34 D	18.33	33.229 D	23.837	406.8	0.132	5.67 D	247.2 D	105.2	1.9	0.30	0.0	0.00	0.00	0.07	0.02	30	
40	17.58	17.58	33.249	24.036	388.1	0.171	5.75	251.0	105.2	1.8	0.31	0.0	0.00	0.02	0.08	0.02	40	17
50	17.15	17.14	33.245	24.139	378.7	0.209	5.74	250.9	104.2	1.9	0.30	0.0	0.00	0.00	0.09	0.02	50	16
62	16.34	16.33	33.122	24.231	370.2	0.254	5.82	254.2	103.9	2.0	0.31	0.0	0.00	0.02	0.13	0.04	62	15
75	15.63	15.62	33.074	24.356	358.7	0.301	5.85	255.7	103.0	2.1	0.33	0.0	0.00	0.00	0.18	0.08	76	14
87	15.38	15.36	33.258	24.554	340.2	0.343	5.72	249.8	100.2	2.5	0.35	0.0	0.00	0.01	0.22	0.15	88	13
100	14.10	14.08	33.167	24.758	321.0	0.386	5.67	247.6	96.7	3.5	0.45	0.8	0.05	0.01	0.36	0.26	101	12
112	12.38	12.37	33.160	25.094	288.9	0.423	5.42	236.9	89.3	5.3	0.67	4.4	0.16	0.00	0.31	0.22	113	11
125	11.42	11.40	33.177	25.288	270.6	0.459	5.21	227.4	84.0	7.5	0.89	8.3	0.04	0.00	0.23	0.18	126	10
140	10.39	10.37	33.279	25.548	246.0	0.498	4.83	210.9	76.2	11.8	1.18	13.3	0.01	0.01	0.12	0.13	141	09
150 ISL	10.01 D	9.99	33.374 D	25.688	232.8	0.527	4.66 D	203.0 D	73.0	14.2	1.29	15.2	0.01	0.00	0.09	0.10	151	
170	9.48	9.46	33.598	25.951	208.2	0.566	4.18	182.5	64.8	19.1	1.50	19.0	0.00	0.00	0.02	0.04	171	08
200	8.98	8.96	33.809	26.196	185.4	0.625	3.83	167.0	58.7	24.2	1.65	21.9	0.00	0.00	0.00	0.03	202	07
230	8.41	8.39	33.947	26.393	167.1	0.678	3.23	140.9	48.9	31.7	1.90	25.8	0.00	0.00			232	06
250 ISL	8.08 D	8.05	33.979 D	26.469	160.1	0.716	3.08 D	134.1 D	46.4	35.6	2.01	27.3	0.00	0.00			252	
270	7.81	7.79	33.992	26.518	155.7	0.742	2.79	121.7	41.7	39.5	2.11	28.8	0.00	0.00			272	05
300 ISL	7.30 D	7.27	34.004 D	26.601	148.0	0.794	2.42 D	105.2 D	35.8	45.0	2.28	30.9	0.00	0.00			302	
320	7.21	7.18	34.019	26.626	145.9	0.817	2.13	93.2	31.5	48.6	2.40	32.3	0.00	0.01			323	04
380	6.54	6.50	34.077	26.763	133.4	0.901	1.29	56.1	18.7	61.1	2.76	36.7	0.00	0.00			383	03
400 ISL	6.33 D	6.29	34.089 D	26.800	130.0	0.935	1.12 D	48.8 D	16.2	64.9	2.83	37.6	0.00	0.00			403	
440	5.99	5.95	34.129	26.876	123.1	0.978	0.84	36.8	12.1	72.5	2.98	39.3	0.00	0.00			444	02
500 ISL	5.55 D	5.50	34.174 D	26.967	114.9	1.058	0.56 D	24.4 D	8.0	81.3	3.12	40.8	0.00	0.00			504	
515	5.52	5.48	34.196	26.987	113.2	1.066	0.50	21.9	7.1	83.5	3.15	41.1	0.00	0.01			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
30 45.1 N	123 19.9 W	13/07/2015	1640 UTC	4023 m	010 07 kn	350 01 07	1	1018.0 mb	20.9 C	18.7 C	30 m	7/8	SC	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		21.10		21.10		33.063	22.994	486.1	0.000	5.42	236.9	105.9	1.9	0.31	0.0	0.00	0.01	0.13	0.03	0	
2	A	21.10		21.10		33.063	22.994	486.2	0.010	5.42	236.9	105.9	1.9	0.31	0.0	0.00	0.01	0.13	0.03	2	24
10		19.23		19.23		33.031	23.460	442.0	0.047	5.61	245.2	105.9	2.0	0.31	0.0	0.00	0.01	0.11	0.03	10	22
10		19.23		19.23		33.036	23.464	441.6	0.047											10	23
18	A	17.96		17.96		33.007	23.759	413.8	0.081	5.70	248.8	104.8	2.0	0.31	0.0	0.00	0.00	0.09	0.03	18	21
20	ISL	17.88	D	17.88		32.997	D 23.770	412.7	0.090	5.73	D250.1	D105.4	2.0	0.31	0.0	0.00	0.00	0.10	0.03	20	
24	A	17.72		17.71		33.024	23.831	407.1	0.106	5.73	250.4	105.0	1.9	0.31	0.0	0.00	0.00	0.10	0.04	24	20
30	ISL	17.22	D	17.21		33.017	D 23.945	396.4	0.131	5.81	D253.3	D105.4	2.0	0.30	0.0	0.00	0.00	0.11	0.04	30	
33		17.06		17.05		33.017	23.983	392.9	0.142	5.78	252.6	104.6	2.0	0.30	0.0	0.00	0.00	0.11	0.03	33	19
42	A	16.86		16.85		33.121	24.110	381.1	0.176	5.79	252.9	104.4	1.9	0.30	0.0	0.00	0.01	0.13	0.04	42	18
50	ISL	16.43	D	16.42		33.071	D 24.171	375.5	0.208	5.86	D255.5	D104.7	2.0	0.31	0.0	0.00	0.00	0.16	0.05	50	
56		16.00		15.99		33.008	24.220	371.0	0.229	5.87	256.6	104.1	2.1	0.31	0.0	0.00	0.00	0.18	0.05	56	17
68		15.92		15.91		33.161	24.358	358.3	0.273	5.77	252.1	102.2	2.3	0.31	0.0	0.00	0.00	0.22	0.07	69	16
75	ISL	15.47	D	15.45		33.120	D 24.427	351.9	0.300	5.85	D255.0	D102.6	2.5	0.35	0.0	0.00	0.00	0.22	0.12	76	
81	A	14.82		14.81		33.089	24.544	340.8	0.319	5.80	253.2	100.3	2.7	0.38	0.0	0.00	0.01	0.23	0.15	82	15
89		13.93		13.92		33.094	24.735	322.8	0.345	5.70	248.9	96.8	3.4	0.46	0.7	0.09	0.04	0.29	0.14	90	13
89		13.93		13.92		33.094	24.735	322.8	0.346											90	14
97	A	13.03		13.01		33.109	24.929	304.4	0.370	5.48	239.3	91.4	4.9	0.64	3.9	0.11	0.02	0.26	0.20	98	12
100	ISL	12.61	D	12.59		33.087	D 24.994	298.2	0.382	5.56	D242.3	D 92.0	5.4	0.69	4.7	0.09	0.00	0.25	0.22	101	
111		11.79		11.77		33.083	25.146	283.8	0.411	5.30	231.6	86.1	7.1	0.87	7.8	0.02	0.00	0.22	0.31	112	11
124		10.82		10.80		33.119	25.349	264.6	0.447	5.09	222.4	81.0	9.6	1.07	11.2	0.01	0.00	0.16	0.17	125	10
125	ISL	10.83	D	10.81		33.120	D 25.348	264.8	0.453	5.12	D222.9	D 81.5	9.8	1.08	11.4	0.01	0.00	0.16	0.16	126	
140		10.24		10.22		33.218	25.526	248.0	0.488	4.82	210.3	75.7	12.7	1.27	14.5	0.01	0.00	0.07	0.09	141	09
150	ISL	9.94	D	9.93		33.285	D 25.629	238.4	0.516	4.66	D202.7	D 72.8	14.7	1.36	16.1	0.01	0.00	0.05	0.07	151	
170		9.47		9.45		33.451	25.836	219.0	0.558	4.18	182.5	64.7	18.6	1.54	19.3	0.00	0.00	0.00	0.03	171	08
200		8.94		8.92		33.795	26.190	185.9	0.618	3.36	146.9	51.6	26.9	1.84	24.4	0.00	0.00	0.00	0.03	202	07
230		8.61		8.59		33.904	26.328	173.3	0.672	3.03	132.3	46.2	31.1	1.96	26.4	0.00	0.00			232	06
250	ISL	8.34	D	8.32		33.959	D 26.413	165.5	0.712	2.90	D126.1	D 43.9	34.8	2.08	27.9	0.00	0.00			252	
270		8.01		7.99		33.995	26.491	158.3	0.739	2.49	108.8	37.5	38.5	2.19	29.5	0.00	0.00			272	05
300	ISL	7.63	D	7.60		34.022	D 26.569	151.3	0.791	2.21	D 96.0	D 32.9	45.1	2.37	31.8	0.00	0.00			302	
320		7.35		7.32		34.044	26.626	146.0	0.815	1.79	78.2	26.5	49.5	2.49	33.4	0.00	0.00			323	04
380		6.80		6.76		34.077	26.729	136.9	0.900	1.27	55.6	18.6	58.2	2.72	36.3	0.00	0.00			383	03
400	ISL	6.60	D	6.56		34.093	D 26.769	133.3	0.934	1.13	D 49.3	D 16.5	62.3	2.81	37.2	0.00	0.00			403	
440		6.17		6.14		34.140	26.861	124.8	0.978	0.74	32.4	10.7	70.5	2.98	39.2	0.00	0.01			444	02
500	ISL	5.75	D	5.70		34.189	D 26.955	116.3	1.059	0.53	D 22.8	D 7.5	79.5	3.12	40.7	0.00	0.00			504	
515		5.68		5.64		34.207	26.977	114.4	1.068	0.44	19.3	6.3	81.8	3.15	41.0	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	13/07/2015	0946 UTC	4053 m	310 04 kn			1017.0 mb	21.8 C	19.2 C				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		21.83		21.83		33.250	22.938	491.4	0.000	5.26	229.9	104.3	1.9	0.32	0.0	0.01	0.01	0.09	0.02	0	
2		21.83		21.83		33.250	22.939	491.5	0.010	5.26	229.9	104.3	1.9	0.32	0.0	0.01	0.01	0.09	0.02	2	22
10		19.89		19.89		33.209	23.428	445.0	0.047	5.44	237.7	104.0	1.9	0.33	0.0	0.00	0.00	0.07	0.02	10	20
10		19.89		19.89		33.210	23.428	445.0	0.047											10	21
20	ISL	18.93	D	18.92		33.207	D 23.673	422.1	0.091	5.56	D242.4	D104.3	1.9	0.31	0.0	0.01	0.00	0.06	0.02	20	
25		18.83		18.82		33.203	23.694	420.2	0.112	5.53	241.5	103.6	1.8	0.30	0.0	0.01	0.01	0.06	0.02	25	19
30	ISL	18.69	D	18.69		33.199	D 23.726	417.4	0.134	5.57	D243.1	D104.2	1.9	0.30	0.0	0.01	0.00	0.07	0.02	30	
40		17.26		17.25		33.103	24.002	391.4	0.173	5.78	252.5	105.0	2.0	0.29	0.0	0.00	0.00	0.09	0.03	40	18
50		16.81		16.80		33.085	24.095	382.8	0.212	5.84	255.0	105.1	2.0	0.29	0.0	0.01	0.00	0.10	0.03	50	17
62		16.33		16.32		33.098	24.215	371.8	0.257	5.85	255.4	104.3	2.0	0.30	0.0	0.00	0.00	0.13	0.04	62	16
75		15.98		15.97		33.079	24.282	365.8	0.305	5.84	255.1	103.5	2.0	0.31	0.0	0.00	0.00	0.17	0.07	76	15
87		15.38		15.37		33.015	24.365	358.1	0.349	5.80	253.3	101.4	2.1	0.33	0.0	0.00	0.00	0.25	0.19	88	14
100		14.65		14.63		32.931	24.460	349.4	0.395	5.82	254.2	100.2	2.3	0.39	0.1	0.05	0.02	0.31	0.33	101	12
100		14.65		14.63		32.936	24.464	349.0	0.394											101	13
112		14.21		14.19		32.984	24.593	337.0	0.436	5.75	251.0	98.2	2.7	0.44	0.5	0.27	0.00	0.26	0.39	113	11
125		13.17		13.16		33.069	24.870	310.8	0.478	5.51	240.8	92.2	4.6	0.63	3.8	0.05	0.00	0.19	0.17	126	10
140		11.14		11.12		33.072	25.257	273.9	0.522	5.22	227.9	83.6	8.2	0.96	9.4	0.01	0.00	0.10	0.11	141	09
150	ISL	10.69	D	10.67		33.160	D 25.404	260.0	0.552	5.10	D222.0	D 80.9	10.6	1.11	11.9	0.01	0.00	0.08	0.09	151	
170		9.72		9.70		33.323	25.695	232.5	0.598	4.48	195.6	69.7	15.5	1.42	17.0	0.01	0.00	0.03	0.06	171	08
200		9.10		9.08		33.658	26.059	198.4	0.662	3.47	151.4	53.3	24.5	1.81	23.4	0.00	0.00	0.00	0.03	202	07
230		8.69		8.67		33.838	26.265	179.4	0.719	3.06	133.5	46.7	29.6	1.96	26.1	0.00	0.00			232	06
250	ISL	8.44	D	8.41		33.933	D 26.379	168.8	0.758	2.85	D123.8	D 43.2	32.9	2.04	27.3	0.00	0.00			252	
270		8.23		8.20		33.969	26.438	163.5	0.788	2.65	115.8	40.1	36.2	2.12	28.6	0.00	0.00			272	05
300	ISL	7.75	D	7.72		34.011	D 26.543	153.8	0.840	2.31	D100.3	D 34.5	42.9	2.31	31.0	0.00	0.00			302	
320		7.48		7.45		34.031	26.597	148.8	0.866	1.96	85.5	29.1	47.4	2.43	32.6	0.00	0.00			323	04
380		6.57		6.53		34.048	26.737	135.9	0.951	1.51	66.1	22.0	59.2	2.68	36.0	0.00	0.00			383	03
400	ISL	6.41	D	6.37		34.073	D 26.777	132.2	0.983	1.30	D 56.5	D 18.8	62.3	2.77	36.8	0.00	0.00			403	
441		6.26		6.22		34.135	26.846	126.3	1.031	0.85	37.0	12.2	68.6	2.94	38.6	0.00	0.00			445	02
500	ISL	6.01	D	5.97		34.206	D 26.935	118.5	1.110	0.51	D 22.2	D 7.3	76.5	3.10	40.0	0.00	0.00			504	
515		5.93		5.89		34.231	26.966	115.7	1.120	0.41	17.9	5.9	78.5	3.14	40.4	0.00	0.01			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 14.8 N	117 27.8 W	08/07/2015	2302 UTC	21 m	230 07 kn	260 03 07	1		19.7 C	16.8 C		6/8	ST	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		20.47		20.47		33.429	23.442	443.3	0.000	5.61	245.1	108.5	2.2	0.23	0.1	0.01	0.01	0.30	0.08	0	
2		20.47		20.47		33.429	23.442	443.4	0.009	5.61	245.1	108.5	2.2	0.23	0.1	0.01	0.01	0.30	0.08	2	05
5		20.32		20.32		33.426	23.479	440.0	0.022	5.63	245.8	108.6	2.3	0.24	0.1	0.00	0.01	0.31	0.10	5	04
10		18.73		18.73		33.394	23.864	403.5	0.043	5.91	258.3	110.7	2.6	0.28	0.1	0.01	0.02	0.48	0.15	10	02
10		18.73		18.73		33.397	23.866	403.2	0.044											10	03
15		17.00		16.99		33.345	24.248	367.0	0.063	6.26	273.7	113.4	3.3	0.35	0.1	0.02	0.04	0.71	0.22	15	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	08/07/2015	1835	UTC	64 m	220 10 kn	270 02 07	1		21.2 C	19.7 C	18 m	6/8	ST	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		20.75		20.75		33.444	23.380	449.3	0.000	5.57		243.1		108.2		2.3	0.21	0.1	0.01	0.01	0.32	0.11	0	
2	A	20.75		20.75		33.444	23.380	449.3	0.009	5.57		243.1		108.2		2.3	0.21	0.1	0.01	0.01	0.32	0.11	2	08
10	A	19.45		19.45		33.412	23.696	419.5	0.044	5.79		253.1		109.9		2.2	0.23	0.0	0.02	0.11	0.39	0.13	10	06
10		19.45		19.45		33.412	23.696	419.4	0.044														10	07
14	A	16.81		16.81		33.349	24.293	362.6	0.059	6.31		275.9		113.9		2.7	0.28	0.1	0.02	0.06	0.54	0.21	14	05
20	ISL	13.36	D	13.35		33.297	D 25.005	294.9	0.080	6.25	D	272.3	D	105.1		4.9	0.50	1.8	0.09	0.13	1.16	0.46	20	
25	A	12.90		12.89		33.302	25.101	285.9	0.094	5.66		247.5		94.4		6.7	0.68	3.3	0.15	0.18	1.68	0.66	25	04
30	ISL	12.30	D	12.29		33.325	D 25.235	273.3	0.109	5.25	D	228.7	D	86.4		8.3	0.87	6.7	0.24	0.23	1.26	0.65	30	
36	A	11.80		11.79		33.343	25.342	263.2	0.124	4.66		203.6		75.9		10.2	1.10	10.8	0.36	0.30	0.75	0.64	36	03
48	A	11.12		11.11		33.453	25.553	243.4	0.154	3.93		171.7		63.1		14.8	1.40	15.3	0.51	0.31	0.31	0.41	48	02
50	ISL	11.05	D	11.04		33.481	D 25.587	240.2	0.160	3.84	D	167.2	D	61.6		15.1	1.42	15.6	0.50	0.37	0.29	0.39	50	
58		10.99		10.98		33.494	25.608	238.4	0.178	3.72		162.6		59.6		16.3	1.51	16.9	0.45	0.60	0.19	0.32	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;

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 54.8 N	117 23.7 W	09/07/2015	0152	UTC	648 m	230 06 kn	260 02 07	1		19.4 C	16.8 C		6/8	CS	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		20.67		20.67		33.452	23.407	446.7	0.000	5.54	D	241.7	D	107.6		2.3	0.22	0.0	0.01	0.03	0.25	0.07	0	
1		20.67		20.67		33.452	23.407	446.7	0.005	5.54		241.9		107.6		2.3	0.22	0.0	0.01	0.03	0.25	0.07	1	20
10		20.09		20.09		33.437	23.547	433.7	0.044	5.56		242.8		106.8		2.1	0.24	0.0	0.01	0.00	0.25	0.08	10	19
20		16.73		16.73		33.348	24.312	361.1	0.084	6.17		269.6		111.1		1.8	0.32	0.0	0.01	0.01	0.41	0.15	20	18
30		13.39		13.38		33.292	24.995	296.1	0.117	6.23		272.0		104.8		3.8	0.48	0.4	0.03	0.11	0.95	0.38	30	17
40		12.42		12.41		33.304	25.196	277.3	0.145	5.53		241.6		91.2		4.2	0.76	4.0	0.14	0.47	0.88	0.57	40	16
50		11.79		11.78		33.338	25.341	263.6	0.172	4.78		208.9		77.8		9.2	1.05	9.7	0.28	0.28	0.76	0.59	50	15
60		11.13		11.13		33.404	25.512	247.6	0.198	4.24		185.4		68.1		13.4	1.30	14.6	0.13	0.06	0.38	0.37	60	14
71		10.79		10.79		33.481	25.632	236.4	0.225	3.97		173.6		63.4		15.4	1.42	16.5	0.07	0.01	0.21	0.28	72	13
75	ISL	10.78	D	10.78		33.548	D 25.687	231.3	0.236	3.84	D	167.4	D	61.3		16.7	1.50	17.5	0.06	0.02	0.18	0.26	76	
85		10.47		10.46		33.653	25.824	218.5	0.257	3.37		147.3		53.5		19.8	1.69	19.9	0.03	0.05	0.12	0.21	86	12
100		10.33		10.31		33.741	25.918	209.9	0.289	3.10		135.4		49.0		22.2	1.79	21.5	0.03	0.09	0.07	0.17	101	11
120		10.21		10.19		33.901	26.064	196.5	0.329	2.50		109.3		39.5		26.4	2.03	24.1	0.03	0.02	0.02	0.09	121	10
125	ISL	10.22	D	10.20		33.933	D 26.087	194.5	0.341	2.43	D	105.6	D	38.3		27.1	2.07	24.4	0.03	0.02	0.02	0.09	126	
140		10.17		10.15		34.000	26.149	189.0	0.368	2.21		96.6		34.9		28.9	2.17	25.4	0.02	0.02	0.01	0.08	141	09
150	ISL	10.15	D	10.13		34.037	D 26.181	186.2	0.389	2.09	D	91.1	D	33.0		29.5	2.20	25.7	0.02	0.03	0.01	0.07	151	
170		10.09		10.07		34.078	26.224	182.5	0.424	1.93		84.4		30.4		30.8	2.27	26.3	0.03	0.05	0.01	0.07	171	08
200		10.01		9.98		34.184	26.322	174.0	0.477	1.58		69.1		24.9		34.0	2.41	27.5	0.01	0.02	0.00	0.06	202	07
231		9.71		9.68		34.226	26.406	166.6	0.530	1.41		61.7		22.1		36.5	2.49	28.7	0.01	0.03			233	06
250	ISL	9.85	D	9.82		34.294	D 26.436	164.3	0.565	1.19	D	51.8	D	18.7		37.7	2.53	29.0	0.01	0.03			252	
270		9.57		9.54		34.271	26.465	161.9	0.595	1.23		53.8		19.2		38.9	2.57	29.2	0.01	0.02			272	05
300	ISL	9.53	D	9.50		34.350	D 26.534	156.0	0.646	0.91	D	39.4	D	14.1		41.3	2.67	30.0	0.01	0.00			302	
320		9.35		9.31		34.333	26.552	154.6	0.674	0.88		38.3		13.6		43.0	2.73	30.4	0.01	0.00			323	04
380		8.70		8.65		34.345	26.666	144.6	0.764	0.69		30.0		10.5		48.6	2.86	32.5	0.01	0.00			383	03
400	ISL	8.44	D	8.39		34.324	D 26.690	142.5	0.797	0.69	D	30.1	D	10.5		51.6	2.91	33.4	0.01	0.00			403	
440		7.86		7.82		34.305	26.762	136.0	0.848	0.56		24.4		8.4		57.5	3.00	35.2	0.02	0.01			444	02
500	ISL	7.31	D	7.26		34.308	D 26.845	128.7	0.933	0.45	D	19.8	D	6.7		65.1	3.12	37.3	0.02	0.03			504	
515		7.04		6.99		34.304	26.878	125.4	0.947	0.40		17.5		5.9		66.9	3.15	37.9	0.01	0.04			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 50.8 N	117 31.9 W	09/07/2015	0454	UTC	847 m	270 08 kn				19.0 C	17.4 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		20.44		20.44		33.459	23.472	440.5	0.000	5.47	D	238.5	D	105.7		2.0	0.23	0.1	0.00	0.07	0.17	0.07	0	
2		20.44		20.44		33.459	23.472	440.5	0.009	5.43		237.2		105.0		2.0	0.23	0.1	0.00	0.07	0.17	0.07	2	20
10		20.31		20.31		33.452	23.502	438.0	0.044	5.49		239.9		105.9		1.9	0.24	0.1	0.00	0.05	0.18	0.07	10	19
20		16.69		16.69		33.356	24.327	359.6	0.084	6.01		262.6		108.2		2.0	0.32	0.1	0.00	0.07	0.29	0.13	20	18
30		13.95		13.95		33.288	24.876	307.5	0.117	5.94		259.4		101.1		3.5	0.49	0.8	0.04	0.05	0.98	0.46	30	17
40		12.38		12.37		33.266	25.174	279.4	0.147	5.08		221.7		83.6		7.4	0.89	8.0	0.17	0.01	0.68	0.56	40	16
50		11.58		11.57		33.330	25.373	260.6	0.174	4.58		200.1		74.2		10.5	1.11	11.8	0.07	0.12	0.28	0.31	50	15
60		11.19		11.18		33.440	25.531	245.8	0.199	4.16		181.5		66.8		13.2	1.28	14.5	0.05	0.09	0.22	0.24	60	14
70		10.86		10.86		33.517	25.648	234.9	0.223	3.89		169.8		62.1		15.4	1.40	16.4	0.03	0.01	0.08	0.16	71	13
75	ISL	10.82	D	10.82		33.579	D 25.704	229.7	0.236	3.59	D	156.1	D	57.3		16.6	1.47	17.2	0.03	0.01	0.10	0.18	76	
85		10.67		10.66		33.642	25.781	222.7	0.257	3.32		145.1		52.9		19.0	1.61	18.9	0.02	0.01	0.15	0.23	86	12
100		10.56		10.55		33.703	25.848	216.6	0.290	3.12		136.3		49.6		20.6	1.69	20.1	0.02	0.00	0.05	0.16	101	11
120		10.41		10.40		33.789	25.942	208.2	0.333	2.82		123.2		44.7		22.8	1.81	21.6	0.02	0.00	0.03	0.11	121	10
125	ISL	10.36	D	10.34		33.858	D 26.004	202.4	0.345	2.70	D	117.6	D	42.8		23.8	1.86	22.2	0.02	0.00	0.03	0.10	126	
140		10.22		10.21		33.960	26.108	192.9	0.373	2.31		100.8		36.5		26.8	2.02	24.0	0.02	0.03	0.01	0.07	141	09
150	ISL	10.21	D	10.20		34.022	D 26.158	188.3	0.394	2.22	D	96.6	D	35.1		27.5	2.06	24.3	0.02	0.00	0.01	0.06	151	
170		10.23		10.21		34.059	26.185	186.3	0.430	1.99		87.0		31.5		29.0	2.14	25.0	0.02	0.00	0.01	0.05	171	08
200		10.12		10.10		34.110	26.245	181.3	0.485	1.79		77.9		28.2		30.7	2.22	26.2	0.02	0.03	0.01	0.05	202	07
230		10.03		10.01		34.267	26.383	168.9	0.537	1.24		54.3		19.6		34.9	2.43	27.5	0.03	0.02			232	06
250	ISL	9.98	D	9.95		34.300	D 26.419	166.0	0.574	1.15	D	50.2	D	18.2		35.9	2.47	27.8	0.02	0.04			252	
270		9.90		9.87		34.322	26.451	163.4	0.604	1.00		43.6		15.7		37.0	2.50	28.1	0.01	0.06			272	05
300	ISL	9.75	D	9.71		34.353	D 26.501	159.3	0.656	0.92	D	40.0	D	14.4		39.4	2.58	28.9	0.01	0.00			302	
320		9.40		9.37		34.341	26.549	154.9	0.684	0.92		40.3		14.4		41.0	2.63	29.4	0.01	0.00			323	04
380		8.89		8.85		34.348	26.638	147.5	0.775	0.72		31.6		11.1		45.3	2.72	30.9	0.01	0.00			383	03
400	ISL	8.58	D	8.54		34.336	D 26.678	143.8	0.808	0.67	D	29.3	D	10.3		47.8	2.76	31.7	0.01	0.00			403	
441		8.00		7.95		34.314	D 26.749	137.4	0.867	0.60	D	26.1	D	9.0									445	02
500	ISL	7.37	D	7.32		34.300	D 26.829	130.2	0.946	0.49	D	21.5	D	7.3		60.2	2.99	35.7	0.01	0.00			504	
515		7.25		7.20		34.299	26.846	128.7	0.960	0.47		20.6		7.0		62.1	3.02	36.3	0.01	0.06			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	09/07/2015	0858 UTC	622 m	310 12 kn				18.3 C	16.7 C				006

DEPTH m	TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0	18.57		18.57		33.442		23.939	395.9	0.000	5.50		240.3		102.7		1.8	0.28	0.1	0.00	0.03	0.19	0.06	0	
2	18.57		18.57		33.442		23.939	395.9	0.008	5.50		240.3		102.7		1.8	0.28	0.1	0.00	0.03	0.19	0.06	2	20
10	18.58		18.58		33.442		23.939	396.3	0.040	5.50		240.4		102.7		1.8	0.28	0.0	0.00	0.03	0.19	0.06	10	19
20	18.08		18.08		33.424		24.048	386.3	0.079	5.58		243.9		103.3		1.6	0.29	0.0	0.01	0.01	0.22	0.07	20	18
30	17.45		17.44		33.399		24.184	373.6	0.117	5.68		248.3		103.8		1.5	0.32	0.1	0.01	0.01	0.29	0.11	30	17
40	16.02		16.02		33.362		24.486	345.1	0.153	5.69		248.6		101.1		2.2	0.40	1.0	0.09	0.10	0.46	0.18	40	16
50	13.94		13.93		33.320		24.905	305.4	0.185	5.38		235.0		91.6		4.3	0.64	4.2	0.17	0.20	0.43	0.21	50	15
60	11.74		11.73		33.334		25.348	263.3	0.214	4.63		202.4		75.3		9.8	1.08	11.3	0.14	0.07	0.39	0.33	60	14
71	10.79		10.79		33.378		25.552	244.0	0.241	4.32		188.8		68.9		13.4	1.30	15.1	0.03	0.01	0.18A	0.19A	72	13
75 ISL	10.72	D	10.71		33.387	D	25.572	242.2	0.253	4.38		D190.9	D	69.7		14.2	1.34	15.7	0.03	0.00	0.16	0.17	76	
85	10.33		10.32		33.452	D	25.690	231.1	0.277	4.15		D180.6	D	65.5									86	12
100	9.91		9.90		33.588		25.869	214.5	0.308	3.73		162.9		58.4		19.3	1.58	19.8	0.02	0.00	0.04	0.07	101	11
120	9.63		9.62		33.757		26.048	197.9	0.349	3.20		139.9		49.9		23.8	1.78	22.5	0.01	0.00	0.02	0.06	121	10
125 ISL	9.62	D	9.61		33.796	D	26.080	195.0	0.362	3.15		D137.0	D	49.0		24.4	1.81	22.9	0.01	0.00	0.01	0.05	126	
140	9.56		9.55		33.867		26.146	189.1	0.388	2.83		123.6		44.0		26.5	1.91	24.1	0.01	0.00	0.01	0.04	141	09
150 ISL	9.55	D	9.54		33.953	D	26.215	182.7	0.409	2.60		D113.0	D	40.4		28.0	1.96	24.9	0.01	0.00	0.01	0.04	151	
170	9.13		9.12		34.005		26.324	172.7	0.443	2.44		106.4		37.6		31.1	2.07	26.4	0.01	0.00	0.00	0.04	171	08
200	9.06		9.04		34.158		26.457	160.8	0.493	1.67		73.0		25.8		37.3	2.36	28.8	0.01	0.00	0.00	0.04	202	07
230	8.80		8.78		34.215		26.542	153.2	0.540	1.34		58.5		20.5		41.2	2.50	30.3	0.01	0.00			232	06
250 ISL	8.70	D	8.67		34.231	D	26.572	150.8	0.573	1.23	D	53.7	D	18.9		43.1	2.57	30.9	0.01	0.00			252	
270	8.52		8.49		34.254		26.619	146.6	0.600	1.03		45.1		15.7		45.0	2.63	31.6	0.01	0.02			272	05
300 ISL	8.21	D	8.18		34.275	D	26.682	141.1	0.647	0.85	D	37.1	D	12.9		49.1	2.74	32.7	0.01	0.00			302	
320	8.07		8.03		34.295		26.720	137.7	0.671	0.66		28.7		9.9		51.7	2.81	33.4	0.01	0.00			323	04
380	7.61		7.57		34.301		26.793	131.7	0.752	0.52		22.8		7.8		57.1	2.91	35.0	0.01	0.01			383	03
400 ISL	7.52	D	7.48		34.321	D	26.823	129.1	0.782	0.45	D	19.6	D	6.7		59.0	2.94	35.5	0.01	0.01			403	
440	7.19		7.15		34.316		26.865	125.5	0.829	0.41		17.7		6.0		62.9	3.00	36.4	0.01	0.01			444	02
500 ISL	6.74	D	6.69		34.309	D	26.922	120.6	0.908	0.35	D	15.1	D	5.1		68.6	3.07	37.8	0.01	0.03			504	
515	6.66		6.61		34.309		26.934	119.7	0.921	0.35		15.1		5.1		70.1	3.09	38.1	0.01	0.04			519	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 OCEANUS CALCOFI CRUISE 1507 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 30.8 N	118 12.8 W	09/07/2015	1256 UTC	1654 m	290 09 kn	290 02 07	1		18.0 C	16.3 C	20 m	5/8	SC	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	19.51		19.51		33.500		23.747	414.2	0.000	5.39		235.7		102.6		3.3	0.21	0.1	0.00	0.02	0.26	0.09	0	
2	19.51		19.51		33.500		23.747	414.3	0.008	5.39		235.7		102.6		3.3	0.21	0.1	0.00	0.02	0.26	0.09	2	21
10	19.14		19.14		33.500		23.842	405.5	0.041	5.39		235.5		101.8		3.2	0.21	0.1	0.01	0.07	0.29	0.09	10	19
10	19.14		19.14		33.500		23.842	405.6	0.041														10	20
20	13.82		13.81		33.343		24.947	300.4	0.076	6.22		271.9		105.7		4.4	0.43	0.3	0.02	0.17	1.12	0.66	20	18
30	11.51		11.51		33.410		25.448	253.0	0.104	4.26		186.0		68.9		11.5	1.17	12.1	0.16	0.05	0.78	0.61	30	17
40	11.31		11.30		33.441		25.508	247.5	0.129	4.00		174.6		64.4		13.1	1.28	14.6	0.10	0.00	0.47	0.42	40	16
50	10.82		10.81		33.502		25.644	234.8	0.153	3.74		163.6		59.8		15.3	1.42	17.1	0.04	0.01	0.19	0.27	50	15
60	10.50		10.49		33.617		25.790	221.1	0.176	3.40		148.4		53.9		18.4	1.58	19.5	0.02	0.04	0.07	0.13	60	14
70	10.36		10.35		33.674		25.858	214.8	0.198	3.27		143.0		51.8		19.7	1.64	20.5	0.02	0.03	0.04	0.10	71	13
75 ISL	10.23	D	10.22		33.721	D	25.917	209.4	0.210	3.24		D141.0	D	51.1		20.5	1.68	21.0	0.02	0.03	0.04	0.09	76	
85	10.10		10.09		33.763		25.974	204.2	0.229	3.04		132.8		47.8		22.1	1.77	22.0	0.01	0.04	0.02	0.07	86	12
100	9.83		9.82		33.849		26.086	193.9	0.259	2.83		123.6		44.3		24.8	1.86	23.7	0.01	0.06	0.01	0.06	101	11
120	9.48		9.47		33.916		26.196	183.8	0.297	2.72		118.9		42.3		27.4	1.95	25.2	0.01	0.01	0.01	0.06	121	10
125 ISL	9.43	D	9.42		33.942	D	26.225	181.2	0.308	2.71		D118.0	D	42.1		28.1	1.97	25.5	0.01	0.01	0.01	0.06	126	
141	9.25		9.24		33.992		26.294	174.9	0.334	2.52		110.1		39.0		30.3	2.04	26.5	0.01	0.02	0.01	0.05	142	09
150 ISL	9.26	D	9.24		34.050	D	26.339	170.9	0.352	2.28	D	99.2	D	35.3		31.7	2.10	27.1	0.01	0.02	0.01	0.05	151	
170	9.05		9.03		34.097		26.409	164.6	0.384	2.02		88.2		31.1		34.8	2.24	28.4	0.01	0.01	0.00	0.04	171	08
200	9.14		9.12		34.229		26.499	156.8	0.432	1.36		59.2		20.9		39.0	2.46	29.9	0.00	0.01	0.00	0.04	202	07
229	9.27		9.25		34.320		26.550	152.7	0.477	0.95		41.2		14.7		41.1	2.58	30.0	0.00	0.03			231	06
250 ISL	8.76	D	8.74		34.268	D	26.591	149.0	0.511	1.11	D	48.4	D	17.0		43.1	2.62	30.8	0.00	0.00			252	
270	8.70		8.67		34.307		26.632	145.5	0.537	0.88		38.2		13.4		45.0	2.66	31.5	0.00	0.00			272	05
300 ISL	8.48	D	8.45		34.330	D	26.685	141.0	0.584	0.66	D	28.6	D	10.0		49.1	2.74	33.1	0.00	0.00			302	
320	8.06		8.03		34.295		26.722	137.6	0.609	0.68		29.5		10.2		51.8	2.79	34.2	0.00	0.01			323	04
380	7.67		7.63		34.324		26.803	130.8	0.689	0.48		20.8		7.1		57.0	2.91	35.4	0.00	0.02			383	03
400 ISL	7.51	D	7.47		34.320	D	26.823	129.1	0.720	0.46	D	20.1	D	6.9		59.1	2.94	36.1	0.00	0.00			403	
440	7.16		7.12		34.327		26.878	124.3	0.766	0.36		15.9		5.4		63.3	3.01	37.4	0.00	0.00			444	02
500 ISL	6.71	D	6.66		34.333	D	26.945	118.4	0.844	0.29	D	12.7	D	4.3		69.6	3.10	39.0	0.00	0.00			504	
515	6.61		6.56		34.331		26.958	117.4	0.856	0.28		12.4		4.1		71.2	3.12	39.4	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 20.8 N	118 33.3 W	09/07/2015	1711	UTC	1345 m	290 08 kn	300 02 05	1		17.9 C	16.3 C	25 m	1/8	SC	008

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY		SIGMA THETA	SVA	DYN HT	OXYGEN ml/L	OXYGEN µmol/Kg	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.53		18.53		33.424		23.936	396.2	0.000	5.60	244.7	104.5	1.4	0.29	0.1	0.00	0.04	0.15	0.04	0	
2	A	18.53		18.53		33.424		23.936	396.2	0.008	5.60	244.7	104.5	1.4	0.29	0.1	0.00	0.04	0.15	0.04	2	24
8		18.36		18.36		33.421		23.976	392.6	0.032	5.56	242.8	103.4	1.4	0.29	0.0	0.00	0.02	0.16	0.05	8	22
9		18.36		18.36		33.427		23.982	392.1	0.034											8	23
10	ISL	18.35	D	18.35		33.422	D	23.980	392.4	0.040	5.56	242.6	103.4	1.4	0.29	0.0	0.00	0.02	0.16	0.05	10	
14	A	18.34		18.34		33.420		23.982	392.3	0.055	5.57	243.2	103.5	1.4	0.29	0.0	0.00	0.02	0.16	0.05	14	21
20		17.81		17.81		33.410		24.102	381.1	0.078	5.68	248.1	104.5	1.4	0.30	0.0	0.00	0.10	0.21	0.05	20	20
28	A	16.40		16.40		33.365		24.402	352.7	0.108	5.89	257.2	105.4	1.3	0.32	0.0	0.00	0.01	0.29	0.12	28	19
30	ISL	16.35	D	16.35		33.352	D	24.403	352.7	0.116	5.97	D260.1	D106.7	1.4	0.33	0.0	0.00	0.02	0.35	0.18	30	
35	A	15.26		15.25		33.306		24.613	332.8	0.132	6.07	265.1	106.2	1.6	0.35	0.0	0.01	0.03	0.50	0.31	35	18
46		13.58		13.57		33.285		24.952	300.8	0.167	5.23	228.5	88.4	4.6	0.72	5.4	0.22	0.00	0.50	0.56	46	16
46		13.58		13.57		33.285		24.952	300.8	0.167											46	17
50	ISL	12.79	D	12.78		33.303	D	25.123	284.5	0.180	5.02	D218.5	D 83.4	5.6	0.81	7.0	0.16	0.00	0.41	0.45	50	
58		12.15		12.14		33.291		25.237	273.8	0.201	4.80	209.8	78.8	7.8	0.99	10.2	0.04	0.11	0.22	0.24	58	15
67	A	11.23		11.22		33.265		25.387	259.7	0.225	4.68	204.3	75.2	10.5	1.15	12.8	0.03	0.01	0.15	0.23	68	14
75	ISL	10.78	D	10.77		33.329	D	25.517	247.5	0.247	4.51	D196.4	D 71.8	12.8	1.27	14.9	0.02	0.00	0.11	0.16	76	
82	A	10.47		10.46		33.397		25.624	237.4	0.262	4.20	183.3	66.4	14.7	1.37	16.7	0.02	0.00	0.07	0.09	83	13
91		10.07		10.06		33.498		25.771	223.6	0.283	3.90	170.4	61.3	17.6	1.50	18.9	0.01	0.01	0.04	0.07	92	12
100		9.84		9.82		33.575		25.871	214.3	0.303	3.74	163.5	58.5	19.4	1.58	20.3	0.01	0.00	0.03	0.06	101	11
120		9.53		9.51		33.752		26.061	196.6	0.344	3.26	142.4	50.7	23.7	1.76	23.0	0.01	0.01	0.01	0.05	121	10
125	ISL	9.48	D	9.47		33.781	D	26.091	193.9	0.356	3.31	D144.2	D 51.4	24.6	1.80	23.5	0.01	0.12	0.01	0.05	126	
139		9.36		9.34		33.881		26.190	184.8	0.380	2.87	125.2	44.4	27.1	1.90	24.9	0.01	0.41	0.00	0.04	140	09
150	ISL	9.31	D	9.29		33.954	D	26.255	178.8	0.403	2.67	D116.3	D 41.4	29.0	1.99	25.8	0.00	0.00	0.00	0.04	151	
170		9.28		9.26		34.060		26.343	170.9	0.435	2.15	93.7	33.2	32.4	2.16	27.4	0.00	0.00	0.00	0.03	171	08
200		8.94		8.91		34.124		26.450	161.4	0.485	1.84	80.1	28.2	36.8	2.30	28.8	0.00	0.00	0.00	0.03	202	07
230		8.67		8.65		34.177		26.533	154.0	0.532	1.54	67.0	23.5	40.6	2.42	30.6	0.00	0.00			232	06
250	ISL	8.40	D	8.38		34.202	D	26.594	148.5	0.566	1.30	D 56.6	D 19.7	43.4	2.52	31.5	0.00	0.00			252	
270		8.34		8.32		34.230		26.626	145.8	0.592	1.10	48.2	16.7	46.2	2.61	32.4	0.00	0.02			272	05
300	ISL	8.18	D	8.15		34.294	D	26.702	139.1	0.639	0.74	D 32.3	D 11.2	49.8	2.72	33.3	0.00	0.00			302	
320		8.03		8.00		34.296		26.726	137.1	0.663	0.66	28.6	9.9	52.3	2.80	34.0	0.00	0.00			323	04
380		7.57		7.54		34.317		26.811	129.9	0.743	0.48	21.1	7.2	58.0	2.91	35.7	0.00	0.02			383	03
400	ISL	7.42	D	7.38		34.317	D	26.833	128.1	0.774	0.45	D 19.8	D 6.7	60.4	2.95	36.4	0.00	0.03			403	
440		7.00		6.96		34.313		26.889	123.1	0.819	0.38	16.7	5.6	65.0	3.03	37.8	0.00	0.05			444	02
500	ISL	6.43	D	6.39		34.332	D	26.981	114.8	0.896	0.28	D 12.1	D 4.0	73.0	3.13	39.0	0.00	0.00			504	
515		6.29		6.25		34.331		26.999	113.1	0.907	0.28	12.3	4.1	75.0	3.15	39.3	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	11/07/2015	1116	UTC	1469 m	330 07 kn			1013.0 mb	18.3 C	16.6 C				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		19.38		19.38		33.450		23.741	414.7	0.000	5.43	237.4	103.0	1.6	0.33	0.0	0.00	0.01	0.18	0.04	0	
2		19.38		19.38		33.450		23.742	414.8	0.008	5.43	237.4	103.0	1.6	0.33	0.0	0.00	0.01	0.18	0.04	2	20
10		18.50		18.50		33.427		23.947	395.5	0.041	5.57	243.4	103.9	1.5	0.36	0.0	0.00	0.03	0.17	0.04	10	19
20		16.45		16.45		33.359		24.385	354.0	0.078	5.98	261.4	107.2	1.2	0.34	0.0	0.00	0.01	0.27	0.09	20	18
30		15.72		15.72		33.331		24.529	340.7	0.113	6.05	264.3	106.8	1.2	0.35	0.0	0.00	0.01	0.39	0.19	30	17
40		14.74		14.73		33.322		24.738	321.0	0.146	5.81	253.8	100.5	2.0	0.48	0.7	0.13	0.26	0.96	0.47	40	16
50		13.51		13.51		33.321		24.993	296.9	0.177	5.09	222.5	86.0	4.9	0.85	5.2	0.46	1.20	0.58	0.36	50	15
61		11.98		11.97		33.271		25.254	272.2	0.208	4.73	206.5	77.2	9.1	1.10	11.2	0.07	0.03	0.22	0.21	61	14
70		11.43		11.42		33.351		25.417	256.9	0.232	4.42	193.1	71.4	11.5	1.24	13.7	0.03	0.02	0.10	0.12	71	13
75	ISL	11.37	D	11.36		33.390	D	25.459	253.0	0.246	4.31	D187.7	D 69.5	13.0	1.32	15.0	0.03	0.02	0.09	0.11	76	
85		10.43		10.42		33.442		25.666	233.5	0.269	4.04	176.5	63.9	16.1	1.47	17.6	0.02	0.02	0.06	0.08	86	12
100		9.86		9.85		33.555		25.851	216.2	0.303	3.74	163.4	58.5	19.8	1.62	20.3	0.01	0.00	0.03	0.05	101	11
120		9.36		9.35		33.729		26.070	195.7	0.344	3.29	143.5	50.9	24.9	1.82	23.4	0.01	0.01	0.01	0.04	121	10
125	ISL	9.27	D	9.26		33.785	D	26.128	190.3	0.356	3.23	D140.5	D 49.9	25.8	1.85	23.9	0.01	0.00	0.00	0.04	126	
140		9.08		9.07		33.884		26.236	180.3	0.382	2.92	127.6	45.0	28.6	1.95	25.4	0.00	0.00	0.00	0.03	141	09
150	ISL	8.94	D	8.93		33.944	D	26.305	173.9	0.401	2.81	D122.5	D 43.2	30.0	2.00	26.0	0.00	0.00	0.00	0.03	151	
170		8.78		8.76		33.971		26.354	169.7	0.434	2.63	115.0	40.3	32.9	2.09	27.4	0.00	0.02	0.00	0.03	171	08
200		8.42		8.40		34.043		26.466	159.5	0.484	2.22	96.9	33.7	38.3	2.27	29.5	0.00	0.05	0.00	0.02	202	07
230		8.74		8.71		34.224		26.560	151.4	0.530	1.27	55.4	19.4	43.0	2.57	31.0	0.00	0.02			232	06
250	ISL	8.51	D	8.48		34.261	D	26.625	145.6	0.563	1.07	D 46.6	D 16.3	46.1	2.68	31.9	0.00	0.02			252	
270		8.35		8.32		34.281		26.665	142.1	0.589	0.84	36.8	12.8	49.1	2.78	32.9	0.00	0.01			272	05
300	ISL	8.03	D	8.00		34.283	D	26.715	137.8	0.634	0.73	D 31.9	D 11.1	52.7	2.85	33.9	0.00	0.00			302	
320		7.89		7.86		34.298		26.749	134.9	0.658	0.62	27.0	9.3	55.1	2.89	34.6	0.00	0.00			323	04
381		7.27		7.23		34.298		26.839	127.0	0.738	0.49	21.2	7.2	61.8	3.02	36.5	0.00	0.17			384	03
400	ISL	7.11	D	7.07		34.297	D	26.860	125.2	0.766	0.45	D 19.8	D 6.7	64.1	3.05	37.1	0.00	0.12			403	
440		6.81		6.77		34.317		26.918	120.2	0.811	0.36	15.7	5.3	68.9	3.12	38.2	0.00	0.01			444	02
500	ISL	6.36	D	6.32		34.318	D	26.979	114.8	0.887	0.29	D 12.7	D 4.2	75.7	3.20	39.8	0.00	0.00			504	
515		6.24		6.19		34.322		26.998	113.1	0.898	0.28	12.2	4.1	77.4	3.22	40.1	0.00	0.00			519	01

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

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 0.8 N	119 14.0 W	11/07/2015	1608 UTC	1588 m	340 11 kn	330 01 06	1	1014.0 mb	17.3 C	16.6 C	23 m	4/8	SC	010

DEPTH m		TEMP DEG C		POTTEMP DEG C		SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/L		OXYGEN µmol/Kg		OXY PCT		SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	PRES db	SAMP
0		18.96		18.96		33.450	23.847	404.6	0.000	5.51		240.5		103.6		1.3	0.33	0.0	0.00	0.01	0.18	0.05	0	
2	A	18.96		18.96		33.450	23.847	404.7	0.008	5.51		240.5		103.6		1.3	0.33	0.0	0.00	0.01	0.18	0.05	2	24
10	ISL	18.88	D	18.87	D	33.448	23.869	403.0	0.041	5.55	D	241.9	D	104.2		1.3	0.32	0.0	0.00	0.00	0.18	0.04	10	
13	A	18.78		18.77		33.448	23.894	400.7	0.053	5.54		241.9		103.8		1.3	0.32	0.0	0.00	0.00	0.18	0.04	13	21
13		18.78		18.77		33.450	23.895	400.5	0.054														13	23
13		18.78		18.77		33.448	23.894	400.7	0.053														13	22
18	A	18.56		18.55		33.446	23.948	395.8	0.072	5.61		245.2		104.8		1.3	0.32	0.0	0.00	0.01	0.19	0.07	18	20
20	ISL	18.40	D	18.40	D	33.458	23.996	391.3	0.081	5.60	D	244.2	D	104.2		1.5	0.32	0.0	0.00	0.01	0.22	0.08	20	
25		16.78		16.77		33.418	24.355	357.1	0.099	5.92		258.8		106.8		2.0	0.33	0.0	0.00	0.01	0.29	0.13	25	19
30	ISL	16.13	D	16.13	D	33.413	24.500	343.5	0.117	6.12	D	267.0	D	109.1		2.5	0.37	0.2	0.02	0.03	0.49	0.21	30	
32	A	15.49		15.48		33.410	24.643	329.9	0.123	6.06		264.5		106.5		2.7	0.38	0.3	0.02	0.04	0.57	0.24	32	18
42		13.57		13.57		33.392	25.036	292.7	0.154														42	17
43		13.60		13.60		33.395	D 25.032	293.1	0.158	5.38	D	234.4	D	91.0									43	16
50	ISL	12.70	D	12.69	D	33.409	D 25.223	275.0	0.179	5.08	D	221.3	D	84.3		9.7	1.02	9.9	0.47	0.07	0.91	0.47	50	
52		11.97		11.97		33.403	25.357	262.2	0.183	4.46		194.9		73.0		10.4	1.09	11.0	0.52	0.07	0.95	0.50	52	15
62	A	11.20		11.19		33.453	25.539	245.1	0.208	3.97		173.3		63.8		14.2	1.35	15.8	0.13	0.01	0.33	0.26	62	14
74	A	9.97		9.96		33.562	25.837	216.9	0.236	3.66		160.0		57.4		19.9	1.62	20.3	0.01	0.01	0.07	0.07	75	13
75	ISL	9.95	D	9.94		33.575	D 25.852	215.5	0.239	3.70	D	160.9	D	57.9		20.1	1.63	20.4	0.01	0.00	0.06	0.07	76	
87		9.65		9.64		33.668	25.974	204.1	0.263	3.41		149.1		53.1		23.0	1.75	22.2	0.01	0.00	0.02	0.05	88	12
100		9.48		9.47		33.703	26.030	199.1	0.289	3.36		146.6		52.1		23.8	1.78	22.8	0.01	0.00	0.01	0.04	101	11
120		9.26		9.25		33.819	26.156	187.5	0.328	3.09		135.0		47.8		26.7	1.88	24.5	0.01	0.00	0.00	0.04	121	10
125	ISL	9.16	D	9.15	D	33.863	D 26.207	182.8	0.340	2.99	D	130.3	D	46.2		27.7	1.92	24.9	0.00	0.00	0.00	0.04	126	
140		9.02		9.00		33.931	26.283	175.9	0.364	2.72		119.0		41.9		30.6	2.03	26.4	0.00	0.01	0.00	0.03	141	09
150	ISL	8.86	D	8.85	D	33.974	D 26.342	170.4	0.384	2.58	D	112.2	D	39.5		32.7	2.10	27.2	0.00	0.00	0.00	0.03	151	
170		8.69		8.67		34.066	26.441	161.4	0.415	2.16		94.2		33.0		36.9	2.25	29.0	0.00	0.00	0.00	0.03	171	08
200		8.51		8.49		34.117	26.510	155.4	0.462	1.81		79.2		27.6		40.4	2.39	30.3	0.00	0.00	0.00	0.03	202	07
230		8.27		8.25		34.196	26.610	146.5	0.508	1.35		58.9		20.4		44.7	2.57	31.7	0.00	0.01			232	06
250	ISL	8.39	D	8.36	D	34.236	D 26.624	145.7	0.541	1.13	D	49.1	D	17.1		47.1	2.63	32.5	0.00	0.01			252	
270		8.01		7.98		34.206	26.658	142.6	0.566	1.11		48.6		16.8		49.6	2.68	33.3	0.00	0.01			272	05
300	ISL	8.03	D	8.00	D	34.294	D 26.724	137.0	0.612	0.68	D	29.5	D	10.2		52.7	2.80	34.1	0.00	0.00			302	
320		7.87		7.84		34.297	26.751	134.7	0.636	0.61		26.7		9.2		54.7	2.88	34.6	0.00	0.00			323	04
380		7.45		7.41		34.309	26.823	128.7	0.715	0.47		20.5		7.0		60.5	3.00	36.1	0.00	0.04			383	03
400	ISL	7.23	D	7.19	D	34.316	D 26.859	125.4	0.745	0.41	D	17.7	D	6.0		63.5	3.04	36.8	0.00	0.00			403	
441		6.82		6.78		34.322	26.921	119.9	0.791	0.33		14.3		4.8		69.7	3.11	38.3	0.00	0.00			445	02
500	ISL	6.43	D	6.38	D	34.325	D 26.977	115.1	0.865	0.28	D	12.0	D	4.0		74.3	3.17	39.3	0.00	0.00			504	
515		6.37		6.32		34.328	26.986	114.4	0.877	0.27		11.8		3.9		75.5	3.18	39.6	0.00	0.00			519	01

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

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 50.8 N	119 34.2 W	11/07/2015	1903 UTC	1906 m	340 04 kn	260 03 12	1	1016.0 mb	19.3 C	17.5 C	29 m	3/8	SC	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		19.38		19.38		33.240	23.580	430.1	0.000	5.49		239.9		104.0		1.6	0.34	0.0	0.00	0.05	0.12	0.03	0	
2		19.38		19.38		33.240	23.580	430.2	0.009	5.49		239.9		104.0		1.6	0.34	0.0	0.00	0.05	0.12	0.03	2	20
10		18.36		18.36		33.235	23.834	406.2	0.042	5.62		245.6		104.4		1.6	0.33	0.0	0.00	0.07	0.11	0.03	10	19
20		16.33		16.33		33.186	24.280	364.0	0.081	5.79		253.2		103.4		2.0	0.33	0.0	0.00	0.01	0.11	0.03	20	18
30		15.50		15.50		33.095	24.396	353.3	0.117	5.97		260.7		104.7		2.3	0.34	0.0	0.00	0.00	0.14	0.06	30	17
40		14.72		14.72		33.152	24.610	333.2	0.151	5.95		260.1		102.9		2.5	0.39	0.0	0.00	0.11	0.23	0.16	40	21
50		13.95		13.94		33.117	24.747	320.4	0.184	5.80		253.5		98.6		3.4	0.49	0.8	0.09	0.02	0.66	0.32	50	15
60		13.27		13.26		33.204	24.951	301.2	0.215	5.35		233.7		89.7		4.3	0.76	5.3	0.43	0.00	0.40	0.29	60	14
70		12.72		12.71		33.206	25.062	290.9	0.244	5.21		227.8		86.5		5.4	0.90	7.5	0.45	0.00	0.21	0.16	71	13
75	ISL	12.43	D	12.42		33.195	D 25.110	286.4	0.261	5.23	D	227.8	D	86.2		6.2	0.96	8.7	0.31	0.00	0.17	0.14	76	
85		11.94		11.93		33.257	25.252	273.1	0.287	4.92		215.0		80.3		7.8	1.07	11.0	0.02	0.00	0.09	0.11	86	12
100		10.72		10.71		33.309	25.513	248.4	0.326	4.49		196.2		71.4		12.4	1.31	14.9	0.02	0.01	0.07	0.09	101	11
120		9.42		9.41		33.448	25.840	217.5	0.372	4.09		178.7		63.2		18.9	1.60	19.9	0.03	0.00	0.06	0.07	121	10
125	ISL	9.37	D	9.35	D	33.551	D 25.930	209.1	0.385	3.98	D	173.3	D	61.5		20.5	1.66	20.9	0.03	0.00	0.04	0.07	126	
140		9.14		9.13		33.765	26.133	190.1	0.413	3.40		148.6		52.4		25.3	1.82	23.7	0.01	0.00	0.01	0.04	141	09
150	ISL	8.94	D	8.92	D	33.848	D 26.231	181.0	0.434	3.28	D	142.7	D	50.3		28.1	1.92	25.0	0.01	0.00	0.01	0.04	151	
170		8.58		8.56		33.957	26.374	167.7	0.467	2.62		114.4		39.9		33.7	2.13	27.8	0.01	0.01	0.01	0.04	171	08
200		8.43		8.41		34.069	26.484	157.9	0.515	1.95		85.1		29.6		39.9	2.37	30.3	0.01	0.01	0.01	0.06	202	07
230		8.26		8.24		34.113	26.546	152.6	0.562	1.66		72.6		25.2		43.3	2.49	31.5	0.01	0.00			232	06
250	ISL	8.07	D	8.05	D	34.131	D 26.588	148.8	0.595	1.52	D	66.1	D	22.9		46.1	2.57	32.5	0.01	0.00			252	
270		7.82		7.80		34.151	26.642	144.0	0.621	1.30		56.8		19.5		48.8	2.65	33.4	0.01	0.00			272	05
300	ISL	7.79	D	7.76	D	34.197	D 26.683	140.6	0.668	1.10	D	47.8	D	16.5		52.4	2.76	34.4	0.00	0.00			302	
320		7.61		7.58		34.217	26.724	137.0	0.692	0.88		38.4		13.1		54.7	2.83	35.1	0.00	0.01			323	04
381		7.25		7.22		34.251	26.804	130.3	0.774	0.64		27.8		9.4		60.8	2.98	36.6	0.01	0.06			384	03
400	ISL	7.16	D	7.12	D	34.260	D 26.825	128.6	0.803	0.57	D	24.8	D	8.4		63.3	3.02	37.2	0.01	0.00			403	
441		6.79		6.75		34.281	26.893	122.5	0.850	0.43	D	18.5	D	6.2		68.6	3.12	38.3	0.00	0.00			445	02
500	ISL	6.43	D	6.39	D	34.311	D 26.965	116.2	0.926	0.31	D	13.4	D	4.5		74.7	3.19	39.4	0.00	0.00			504	
515		6.36		6.31		34.314	26.977	115.2	0.938	0.28		12.4		4.1		76.3	3.21	39.7	0.00	0.04			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
31 30.8 N	120 14.8 W	12/07/2015	0035	UTC	3936 m	350 08 kn	270 03 10	1	1015.0 mb	19.0 C	17.5 C	31 m	5/8	SC	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		20.48		20.48		33.462	23.464	441.2	0.000	5.33	232.9	103.2	1.8	0.29	0.0	0.00	0.01	0.08	0.02	0	
2		20.48		20.48		33.462	23.464	441.3	0.009	5.33	232.9	103.2	1.8	0.29	0.0	0.00	0.01	0.08	0.02	2	20
10		19.94		19.94		33.445	23.593	429.3	0.044	5.39	235.3	103.2	1.8	0.30	0.0	0.00	0.01	0.07	0.02	10	19
20	ISL	19.17	D	19.17		33.432	D 23.782	411.6	0.086	5.47	D238.5	D103.3	1.8	0.30	0.0	0.00	0.00	0.07	0.02	20	
26		18.77		18.77		33.419	23.874	403.1	0.110	5.50	240.2	103.0	1.8	0.30	0.0	0.00	0.00	0.07	0.02	26	18
30	ISL	18.74	D	18.73		33.419	D 23.884	402.3	0.127	5.51	D240.3	D103.2	1.8	0.30	0.0	0.00	0.00	0.07	0.02	30	
40		18.13		18.13		33.374	23.999	391.7	0.166	5.60	244.9	103.7	1.9	0.30	0.0	0.00	0.00	0.09	0.02	40	17
50		17.63		17.62		33.373	24.121	380.4	0.205	5.66	247.5	103.8	1.9	0.31	0.0	0.00	0.01	0.11	0.03	50	16
62		16.75		16.74		33.185	24.187	374.5	0.250	5.81	253.9	104.6	1.9	0.31	0.0	0.00	0.00	0.13	0.04	62	15
75	ISL	16.44	D	16.42		33.241	D 24.302	363.9	0.300	5.79	D252.5	D103.6	1.9	0.31	0.0	0.00	0.00	0.13	0.05	76	
76		16.45		16.43		33.187	24.258	368.2	0.302	5.78	252.6	103.4	1.9	0.31	0.0	0.00	0.02	0.13	0.05	77	14
87		15.24		15.23		33.167	24.513	344.1	0.341	5.81	253.9	101.5	2.3	0.35	0.0	0.00	0.00	0.23	0.16	88	13
100		13.43		13.42		33.127	24.863	310.8	0.384	5.62	245.5	94.5	3.8	0.54	1.6	0.15	0.03	0.36	0.30	101	12
112		12.64		12.62		33.160	25.044	293.7	0.420	5.35	233.9	88.6	5.6	0.74	5.2	0.14	0.01	0.27	0.26	113	11
125		11.56		11.55		33.251	25.319	267.7	0.457	5.07	221.5	82.0	7.8	0.93	8.7	0.03	0.01	0.17	0.13	126	10
140		10.66		10.64		33.351	25.559	245.1	0.495	4.67	204.1	74.2	11.7	1.21	13.3	0.01	0.07	0.09	0.12	141	09
150	ISL	9.98	D	9.96		33.490	D 25.782	223.9	0.522	4.24	D184.5	D 66.4	14.9	1.36	15.9	0.01	0.05	0.06	0.09	151	
170		9.55		9.53		33.640	25.972	206.2	0.562	3.69	161.3	57.3	21.4	1.67	21.2	0.00	0.01	0.01	0.03	171	08
200	ISL	9.05	D	9.02		33.827	D 26.199	185.1	0.625	3.34	D145.4	D 51.4	26.6	1.85	24.1	0.00	0.05	0.00	0.02	202	
201		9.01		8.99		33.829	26.207	184.4	0.622	3.29	143.7	50.5	26.8	1.86	24.2	0.01	0.05	0.00	0.02	203	07
231		8.50		8.47		33.965	26.393	167.1	0.675	2.77	120.9	42.1	33.7	2.07	27.5	0.00	0.02			233	06
250	ISL	8.28	D	8.25		34.001	D 26.456	161.5	0.711	2.58	D112.1	D 39.0	37.7	2.21	29.2	0.00	0.03			252	
270		8.02		7.99		34.046	26.529	154.7	0.738	2.08	90.9	31.3	42.0	2.36	30.9	0.00	0.04			272	05
300	ISL	7.81	D	7.78		34.112	D 26.613	147.3	0.788	1.60	D 69.7	D 24.0	47.5	2.53	32.8	0.00	0.00			302	
320		7.58		7.55		34.128	26.659	143.1	0.813	1.37	59.6	20.3	51.2	2.65	34.1	0.00	0.00			323	04
379		7.01		6.97		34.142	26.752	134.9	0.895	1.04	45.3	15.2	58.6	2.83	36.4	0.00	0.00			382	03
400	ISL	6.76	D	6.73		34.160	D 26.800	130.5	0.928	0.89	D 38.6	D 13.0	62.3	2.91	37.2	0.00	0.00			403	
440		6.45		6.41		34.200	26.873	123.9	0.973	0.62	27.1	9.0	69.3	3.05	38.8	0.00	0.01			444	02
500	ISL	6.04	D	5.99		34.251	D 26.968	115.5	1.052	0.39	D 16.8	D 5.6	77.1	3.18	40.2	0.00	0.08			504	
515		5.98		5.93		34.260	26.982	114.3	1.063	0.36	15.8	5.2	79.0	3.21	40.6	0.00	0.10			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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	12/07/2015	0608	UTC	3836 m	030 04 kn									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		20.69		20.69		33.404	23.363	450.8	0.000	5.31	232.1	103.2	1.9	0.30	0.0	0.00	0.01	0.08	0.02	0	
2		20.69		20.69		33.404	23.363	450.9	0.009	5.31	232.1	103.2	1.9	0.30	0.0	0.00	0.01	0.08	0.02	2	20
10		20.17		20.17		33.392	23.493	438.9	0.045	5.34	233.5	102.8	1.8	0.30	0.0	0.00	0.01	0.07	0.02	10	19
20	ISL	19.15	D	19.14		33.349	D 23.725	417.1	0.088	5.49	D239.6	D103.6	1.8	0.30	0.0	0.00	0.00	0.07	0.02	20	
25		18.89		18.89		33.351	23.792	410.9	0.108	5.49	240.0	103.1	1.8	0.30	0.0	0.00	0.00	0.07	0.02	25	18
30	ISL	18.65	D	18.65		33.331	D 23.837	406.8	0.129	5.55	D242.2	D103.8	1.8	0.30	0.0	0.00	0.00	0.08	0.02	30	
40		17.97		17.96		33.302	23.984	393.1	0.168	5.62	245.7	103.7	1.9	0.31	0.0	0.00	0.01	0.10	0.02	40	17
50		17.03		17.02		33.192	24.125	380.0	0.207	5.82	254.2	105.3	1.9	0.32	0.0	0.00	0.07	0.12	0.04	50	16
62		15.74		15.73		33.143	24.383	355.7	0.251	5.90	257.7	104.0	2.1	0.34	0.0	0.00	0.01	0.16	0.06	62	15
75		14.89		14.88		33.112	24.546	340.4	0.296	5.87	256.5	101.8	2.5	0.39	0.0	0.00	0.00	0.22	0.14	76	14
87		13.40		13.39		33.088	24.838	312.8	0.336	5.73	250.5	96.4	3.6	0.50	1.0	0.05	0.03	0.36	0.27	88	13
100		11.84		11.83		33.106	25.153	282.9	0.374	5.31	231.9	86.3	6.6	0.83	6.7	0.16	0.01	0.27	0.26	101	12
112		10.66		10.64		33.126	25.382	261.1	0.407	4.94	215.7	78.3	10.6	1.16	12.5	0.05	0.02	0.14	0.15	113	11
125		10.11		10.10		33.224	25.552	245.2	0.440	4.72	206.3	74.0	13.1	1.30	14.9	0.03	0.01	0.11	0.11	126	10
140		9.60		9.59		33.362	25.744	227.1	0.475	4.42	193.1	68.6	16.5	1.46	17.8	0.01	0.01	0.06	0.09	141	09
150	ISL	9.40	D	9.39		33.453	D 25.848	217.4	0.501	4.22	D183.5	D 65.2	18.6	1.55	19.2	0.01	0.00	0.05	0.07	151	
170		9.21		9.19		33.608	26.001	203.3	0.540	3.74	163.3	57.6	22.8	1.72	22.2	0.00	0.00	0.01	0.04	171	08
200	ISL	8.91	D	8.89		33.842	D 26.233	181.8	0.601	3.23	D140.5	D 49.5	27.4	1.85	24.3	0.00	0.00			202	
200		8.91		8.89		33.842	D 26.233	181.8	0.601	3.23	D140.5	D 49.5								202	07
230		8.58		8.56		33.943	26.364	169.9	0.651	2.93	128.0	44.6	31.9	1.98	26.5	0.00	0.00			232	06
250	ISL	8.41	D	8.38		33.989	D 26.427	164.2	0.688	2.65	D115.3	D 40.2	36.0	2.13	28.3	0.00	0.00			252	
270		8.06		8.03		34.033	26.513	156.3	0.716	2.23	97.4	33.6	40.1	2.27	30.0	0.00	0.00			272	05
300	ISL	7.76	D	7.73		34.067	D 26.586	149.8	0.766	1.86	D 81.0	D 27.8	46.3	2.47	32.3	0.00	0.00			302	
320		7.55		7.51		34.113	26.652	143.7	0.792	1.43	62.3	21.2	50.4	2.60	33.8	0.00	0.00			323	04
380		6.81		6.77		34.155	26.789	131.2	0.874	0.92	40.1	13.5	61.3	2.86	36.9	0.00	0.01			383	03
400	ISL	6.69	D	6.65		34.173	D 26.819	128.6	0.905	0.80	D 34.6	D 11.6	64.2	2.91	37.5	0.00	0.00			403	
440		6.36		6.32		34.201	26.885	122.7	0.950	0.62	27.0	9.0	70.0	3.00	38.8	0.00	0.00			444	02
500	ISL	5.95	D	5.90		34.232	D 26.964	115.7	1.028	0.44	D 19.2	D 6.3	78.0	3.13	40.3	0.00	0.00			504	
515		5.86		5.82		34.244	26.983	114.0	1.039	0.40	17.3	5.7	80.0	3.16	40.7	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 OCEANUS CALCOFI CRUISE 1507 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	12/07/2015	1131	UTC	4091 m	300 04 kn			1016.0 mb	19.7 C	17.3 C				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		20.86		20.86		33.354		23.281	458.6	0.000	5.27		230.4		102.7		1.9	0.30	0.0	0.00	0.02	0.08	0.02	0	
2		20.86		20.86		33.354		23.282	458.7	0.009	5.27		230.4		102.7		1.9	0.30	0.0	0.00	0.02	0.08	0.02	2	20
10		20.67		20.67		33.385		23.356	452.0	0.046	5.31		232.1		103.1		1.9	0.28	0.0	0.00	0.00	0.07	0.02	10	19
20	ISL	19.77	D	19.76		33.403	D	23.607	428.3	0.090	5.43	D	236.9	D	103.7		1.8	0.28	0.0	0.00	0.00	0.06	0.02	20	
25		19.40		19.39		33.367		23.675	422.1	0.111	5.46		238.4		103.4		1.8	0.28	0.0	0.00	0.01	0.06	0.02	25	18
30	ISL	19.34	D	19.34		33.378	D	23.699	420.0	0.133	5.48	D	239.2	D	103.8		1.8	0.28	0.0	0.00	0.01	0.07	0.02	30	
40		18.62		18.62		33.409		23.905	400.7	0.173	5.56		243.0		103.9		1.9	0.28	0.0	0.00	0.01	0.08	0.02	40	17
50		17.81		17.80		33.269		23.997	392.3	0.213	5.71		249.6		105.0		1.8	0.28	0.0	0.00	0.00	0.08	0.02	50	16
62		17.51		17.50		33.271		24.073	385.4	0.259	5.74		250.8		104.9		1.8	0.28	0.0	0.00	0.00	0.09	0.03	62	15
75		17.70		17.69		33.448		24.163	377.4	0.309	5.61		244.9		102.9		2.0	0.28	0.0	0.00	0.00	0.11	0.04	76	14
87		16.48		16.46		33.205		24.266	367.8	0.354	5.80		253.3		103.8		2.0	0.30	0.0	0.00	0.00	0.16	0.06	88	13
100		14.91		14.89		33.181		24.598	336.4	0.399	5.74		250.8		99.6		2.8	0.38	0.0	0.00	0.01	0.23	0.17	101	12
112		14.01		13.99		33.285		24.868	310.9	0.438	5.55		242.5		94.6		3.7	0.45	1.2	0.09	0.02	0.28	0.23	113	11
125		11.73		11.71		33.189		25.240	275.3	0.476	5.32		232.4		86.3		6.2	0.76	6.2	0.10	0.01	0.23	0.18	126	10
140		10.46		10.44		33.185		25.463	254.1	0.516	4.97		217.1		78.5		10.8	1.14	12.5	0.02	0.01	0.13	0.14	141	09
150	ISL	9.92	D	9.90		33.282	D	25.630	238.3	0.545	4.75	D	207.0	D	74.2		13.3	1.27	14.6	0.02	0.00	0.09	0.11	151	
171		9.45		9.43		33.491		25.870	215.8	0.588	4.17		182.2		64.6		18.5	1.53	19.2	0.01	0.00	0.02	0.04	172	08
200	ISL	8.85	D	8.83		33.812	D	26.219	183.2	0.651	3.36	D	146.1	D	51.4		25.0	1.76	22.9	0.01	0.00			202	
200		8.85		8.83		33.812	D	26.219	183.2	0.651	3.36	D	146.1	D	51.4									202	07
230		8.54		8.51		33.925		26.356	170.6	0.700	2.96		129.4		45.0		31.8	1.99	26.8	0.00	0.00			232	06
250	ISL	8.36	D	8.33		33.971	D	26.420	164.9	0.738	2.74	D	119.4	D	41.6		34.6	2.07	27.9	0.00	0.00			252	
270		8.08		8.06		33.989		26.475	159.9	0.767	2.59		113.0		39.0		37.3	2.15	29.0	0.00	0.00			272	05
300	ISL	7.65	D	7.62		34.031	D	26.574	150.9	0.817	2.13	D	92.5	D	31.7		44.7	2.37	31.8	0.00	0.00			302	
320		7.36		7.33		34.054		26.632	145.5	0.843	1.70		74.0		25.1		49.6	2.52	33.7	0.00	0.00			323	04
380		6.84		6.81		34.109		26.748	135.1	0.927	1.10		48.1		16.1		59.2	2.79	36.7	0.00	0.00			383	03
400	ISL	6.68	D	6.65		34.136	D	26.791	131.3	0.959	0.91	D	39.7	D	13.3		62.6	2.86	37.5	0.00	0.00			403	
440		6.35		6.31		34.176		26.867	124.4	1.005	0.65		28.3		9.4		69.5	3.01	39.1	0.00	0.00			444	02
500	ISL	5.98	D	5.94		34.226	D	26.954	116.6	1.083	0.43	D	18.6	D	6.1		76.3	3.11	40.2	0.00	0.00			504	
515		5.96		5.91		34.231		26.962	116.1	1.095	0.42		18.5		6.1		78.0	3.14	40.5	0.00	0.02			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 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 30.8 N	122 15.0 W	12/07/2015	1714	UTC	4120 m	010 05 kn	040 01 07	1	1018.0 mb	20.6 C	17.9 C	42 m	3/8	SC	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		21.11		21.11		33.478		23.306	456.3	0.000	5.23		228.5		102.4		1.9	0.28	0.0	0.00	0.02	0.08	0.02	0	
2	A	21.11		21.11		33.478		23.306	456.3	0.009	5.23		228.5		102.4		1.9	0.28	0.0	0.00	0.02	0.08	0.02	2	23
10	ISL	20.85	D	20.85		33.451	D	23.358	451.7	0.046	5.31	D	231.5	D	103.4		1.9	0.28	0.0	0.00	0.00	0.07	0.02	10	
13		20.49		20.49		33.451		23.454	442.7	0.059	5.32		232.4		102.9		1.9	0.28	0.0	0.00	0.00	0.07	0.02	13	21
13		20.49		20.49		33.447		23.450	443.0	0.058														13	22
20	ISL	19.52	D	19.52		33.478	D	23.729	416.7	0.089	5.46	D	238.3	D	103.9		1.9	0.28	0.0	0.00	0.00	0.06	0.02	20	
24	A	19.35		19.34		33.480		23.774	412.6	0.106	5.48		239.4		103.8		1.9	0.28	0.0	0.00	0.01	0.06	0.02	24	20
30	ISL	19.13	D	19.13		33.509	D	23.852	405.4	0.131	5.53	D	241.0	D	104.3		1.9	0.28	0.0	0.00	0.00	0.06	0.02	30	
33	A	19.10		19.10		33.558		23.898	401.2	0.142	5.47		239.2		103.3		1.9	0.28	0.0	0.00	0.00	0.07	0.02	33	19
42		18.91		18.90		33.634		24.006	391.2	0.178	5.49		239.9		103.3		2.0	0.27	0.0	0.01	0.00	0.08	0.03	42	18
50	ISL	18.72	D	18.71		33.633	D	24.052	387.1	0.211	5.53	D	241.2	D	103.7		2.0	0.27	0.0	0.00	0.00	0.08	0.03	50	
51		18.71		18.70		33.632		24.054	387.0	0.213	5.51		240.8		103.3		2.0	0.27	0.0	0.00	0.02	0.08	0.03	51	17
60	A	18.36		18.35		33.615		24.128	380.2	0.247	5.52		241.2		102.7		2.0	0.27	0.0	0.00	0.01	0.10	0.04	60	16
75	ISL	17.20	D	17.18		33.361	D	24.217	372.1	0.306	5.68	D	247.8	D	103.3		2.0	0.29	0.0	0.00	0.01	0.16	0.10	76	
77		17.02		17.00		33.317		24.226	371.4	0.311	5.68		248.2		102.8		2.0	0.29	0.0	0.00	0.01	0.17B	0.11B	78	15
96		15.86		15.85		33.451		24.595	336.7	0.379	5.58		243.9		98.8		2.8	0.33	0.0	0.00	0.00	0.20	0.22	97	14
100	ISL	15.55	D	15.54		33.446	D	24.660	330.6	0.395	5.59	D	243.6	D	98.4		3.3	0.39	0.7	0.03	0.00	0.22	0.23	101	
112	A	13.12		13.10		33.385		25.126	286.1	0.429	5.30		231.8		88.8		4.8	0.57	2.9	0.13	0.00	0.29	0.25	113	12
113		13.12		13.10		33.391		25.130	285.7	0.430														113	13
124		12.34		12.33		33.354		25.253	274.2	0.463	5.03		220.0		82.9		7.0	0.81	7.1	0.05	0.00	0.17	0.24	125	11
125	ISL	12.13	D	12.11		33.332	D	25.276	271.9	0.469	5.08	D	221.3	D	83.3		7.1	0.82	7.2	0.05	0.00	0.17	0.24	126	
136	A	11.72		11.70		33.341		25.360	264.2	0.495	4.93		215.4		80.1		8.3	0.94	9.0	0.03	0.02	0.14	0.22	137	10
150	ISL	11.58	D	11.56		33.632	D	25.612	240.6	0.534	3.95	D	172.0	D	64.1		13.5	1.30	14.2	0.01	0.00	0.09	0.15	151	
153		11.40		11.38		33.644		25.654	236.6	0.537	3.79		165.5		61.3		14.6	1.38	15.3	0.01	0.00	0.07	0.13	154	09
170		10.57		10.55		33.713		25.857	217.5	0.576	3.54		154.6		56.2		18.4	1.57	18.6	0.01	0.00	0.02	0.06	171	08
200		9.67		9.65		33.854		26.119	193.0	0.638	3.20		139.8		49.9		24.3	1.79	22.4	0.01	0.00	0.00	0.02	202	07
230		8.78		8.75		33.910		26.308	175.3	0.693	3.22		140.5		49.2		28.7	1.86	24.8	0.01	0.00			232	06
250	ISL	8.56	D	8.53		33.986	D	26.402	166.7	0.731	2.90	D	126.2	D	44.1		33.5	2.01	26.8	0.01	0.00			252	
270		8.23		8.20		34.029		26.486	159.0	0.760	2.49		108.6		37.6		38.2	2.16	28.8	0.01	0.00			272	05
300	ISL	7.91	D	7.88		34.050	D	26.550	153.2	0.812	2.24	D	97.4	D	33.6		42.9	2.30	30.6	0.01	0.00			302	
320		7.62		7.59		34.062		26.602	148.5	0.837	1.97		86.0		29.3		45.9	2.40	31.9	0.01	0.00			323	04
380		6.92		6.89		34.106		26.735	136.4	0.922	1.27		55.3		18.6		58.0	2.72	35.9	0.00	0.01			383	03
400	ISL	6.68	D	6.64		34.123	D	26.782	132.1	0.955	1.09	D	47.6	D	16.0		62.3	2.80	36.8	0.00	0.00			403	
440		6.22		6.18		34.163		26.874	123.6	1.000	0.78		34.2		11.3		70.9	2.97	38.8	0.00	0.00			444	02
500	ISL	5.88	D	5.84		34.206	D	26.951	116.8	1.080	0.55	D	24.1	D	7.9		77.7	3.10	40.2	0.00	0.00			504	
516		5.86		5.81		34.236		26.978	114.4	1.090	0.44		19.4		6.3		79.6	3.13	40.6	0.00	0.02			520	01

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.
B) SECOND 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 OCEANUS CALCOFI CRUISE 1507 STATION 93.3 110.0

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	12/07/2015	2233	UTC	3848 m	040 05 kn	310 03 10	1	1018.0 mb	21.1 C	18.0 C	38 m	2/8	SC	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	21.40	21.40	33.284	23.080	477.8	0.000	5.33	233.0	104.8	1.9	0.32	0.0	0.00	0.01	0.08	0.02	0	
3	21.40	21.40	33.284	23.081	477.9	0.014	5.33	233.0	104.8	1.9	0.32	0.0	0.00	0.01	0.08	0.02	3	20
10	19.47	19.46	33.269	23.583	430.3	0.046	5.49	239.8	104.1	1.9	0.30	0.0	0.00	0.00	0.07	0.01	10	19
20 ISL	19.06 D	19.06	33.284 D	23.697	419.7	0.089	5.52 D	240.9 D	104.0	1.9	0.30	0.0	0.00	0.00	0.07	0.02	20	
25	18.87	18.86	33.277	23.742	415.7	0.110	5.53	241.8	103.8	1.9	0.30	0.0	0.00	0.00	0.08	0.02	25	18
30 ISL	18.46 D	18.45	33.258 D	23.829	407.5	0.131	5.60 D	244.1 D	104.2	1.9	0.30	0.0	0.00	0.00	0.09	0.02	30	
40	17.35	17.34	33.172	24.034	388.3	0.170	5.77	252.3	105.1	1.9	0.30	0.0	0.00	0.00	0.11	0.02	40	17
50	16.63	16.62	33.129	24.170	375.7	0.208	5.84	255.4	104.8	2.0	0.31	0.0	0.00	0.00	0.14	0.04	50	16
62	15.81	15.80	32.996	24.255	367.9	0.253	5.94	259.9	104.9	2.1	0.33	0.0	0.00	0.00	0.17	0.06	62	15
75	15.34	15.32	33.024	24.382	356.2	0.300	5.91	258.3	103.3	2.2	0.35	0.0	0.00	0.00	0.24	0.11	76	14
87	14.76	14.75	33.090	24.558	339.7	0.342	5.87	256.4	101.4	2.7	0.39	0.0	0.01	0.00	0.32	0.27	88	13
100	13.32	13.30	33.053	24.828	314.1	0.384	5.61	245.2	94.1	4.3	0.59	2.5	0.17	0.01	0.39	0.31	101	12
112	11.94	11.92	33.052	25.094	288.8	0.420	5.25	229.7	85.6	7.0	0.90	7.7	0.09	0.00	0.24	0.18	113	11
125	10.71	10.70	33.135	25.380	261.6	0.456	4.86	212.4	77.1	11.0	1.21	13.1	0.03	0.00	0.15	0.14	126	10
139	10.11	10.10	33.212	25.543	246.4	0.492	4.65	203.5	73.0	13.8	1.36	15.7	0.02	0.00	0.10	0.12	140	09
150 ISL	9.74 D	9.72	33.344 D	25.708	230.9	0.521	4.46 D	194.2 D	69.4	16.3	1.45	17.4	0.02	0.00	0.07	0.09	151	
170	9.32	9.30	33.636	26.005	202.9	0.561	3.94	172.1	60.8	20.8	1.60	20.5	0.01	0.00	0.02	0.03	171	08
200 ISL	8.88 D	8.86	33.852 D	26.246	180.6	0.623	3.67 D	159.8 D	56.2	26.0	1.73	23.2	0.01	0.00	0.00	0.02	202	
202	8.85	8.82	33.857	26.255	179.8	0.622	3.63	158.6	55.6	26.4	1.74	23.4	0.01	0.00	0.00	0.02	204	07
230	8.39	8.36	33.951	26.399	166.5	0.671	3.31	144.7	50.2	31.8	1.88	25.7	0.01	0.00			232	06
250 ISL	8.10 D	8.07	33.986 D	26.471	159.9	0.708	2.89 D	125.8 D	43.5	36.0	2.04	27.6	0.01	0.00			252	
271	7.80	7.77	34.004	26.530	154.6	0.737	2.55	111.6	38.2	40.4	2.20	29.7	0.00	0.00			273	05
300 ISL	7.35 D	7.32	34.009 D	26.598	148.3	0.786	2.39 D	104.0 D	35.4	46.6	2.36	31.9	0.00	0.00			302	
319	7.07	7.04	34.026	26.649	143.6	0.808	1.99	86.9	29.3	50.7	2.46	33.3	0.00	0.00			321	04
380	6.44	6.41	34.063	26.765	133.2	0.893	1.41	61.5	20.4	62.0	2.76	37.1	0.00	0.00			383	03
400 ISL	6.32 D	6.28	34.104 D	26.813	128.8	0.925	1.06 D	46.2 D	15.4	65.6	2.84	37.9	0.00	0.00			403	
440	5.99	5.95	34.126	26.873	123.4	0.970	0.81	35.4	11.6	72.8	3.01	39.6	0.00	0.00			444	02
500 ISL	5.74 D	5.69	34.204 D	26.967	115.1	1.048	0.51 D	22.2 D	7.3	80.3	3.13	40.8	0.00	0.00			504	
515	5.65	5.61	34.213	26.985	113.5	1.059	0.47	20.4	6.7	82.1	3.16	41.1	0.00	0.00			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
29 50.8 N	123 35.2 W	13/07/2015	0417	UTC	4060 m	040 03 kn			1017.0 mb	21.2 C	18.2 C				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	21.45	21.45	33.142	22.959	489.4	0.000	5.30	231.4	104.2	1.9	0.30	0.0	0.00	0.01	0.10	0.02	0	
2	21.45	21.45	33.142	22.959	489.5	0.010	5.30	231.4	104.2	1.9	0.30	0.0	0.00	0.01	0.10	0.02	2	20
10	19.03	19.03	33.146	23.600	428.7	0.047	5.55	242.4	104.3	1.9	0.29	0.0	0.00	0.00	0.08	0.01	10	19
20 ISL	18.17 D	18.16	33.030 D	23.726	417.0	0.089	5.64	246.1	104.3	1.9	0.30	0.0	0.00	0.00	0.08	0.02	20	
25	17.95	17.95	33.030	23.779	412.0	0.109	5.69	248.4	104.6	1.9	0.31	0.0	0.00	0.00	0.08	0.02	25	18
30 ISL	17.85 D	17.84	33.088 D	23.848	405.7	0.131	5.75 D	250.9 D	105.7	1.9	0.30	0.0	0.00	0.00	0.08	0.02	30	
40	17.70	17.69	33.248	24.008	390.8	0.170	5.76	251.7	105.7	1.8	0.28	0.0	0.00	0.00	0.09	0.03	40	17
50	16.46	16.45	33.068	24.162	376.4	0.208	5.84	255.0	104.4	1.9	0.29	0.0	0.00	0.00	0.13	0.04	50	16
62	16.40	16.39	33.118	24.215	371.7	0.253	5.81	253.7	103.8	2.0	0.30	0.0	0.00	0.00	0.10	0.03	62	15
75	15.89	15.88	33.087	24.308	363.3	0.301	5.79	252.9	102.4	2.1	0.32	0.0	0.00	0.02	0.15	0.07	76	14
89	15.09	15.08	33.037	24.446	350.5	0.351	5.79	252.9	100.7	2.3	0.35	0.0	0.00	0.00	0.20	0.17	90	13
100	14.71	14.70	33.063	24.548	341.1	0.389	5.74	250.5	99.0	2.6	0.39	0.1	0.06	0.01	0.35	0.30	101	12
111	13.81	13.79	33.083	24.752	321.8	0.425	5.62	245.5	95.3	3.5	0.49	1.2	0.23	0.00	0.32	0.30	112	11
125	12.27	12.25	33.125	25.090	289.7	0.468	5.36	233.9	87.9	5.9	0.73	5.7	0.04	0.00	0.21	0.19	126	10
140	10.49	10.47	33.164	25.442	256.1	0.509	4.96	216.7	78.4	11.1	1.17	12.8	0.02	0.00	0.08	0.11	141	09
150 ISL	9.98 D	9.96	33.260 D	25.603	240.9	0.538	4.84 D	210.9 D	75.7	13.6	1.29	14.9	0.01	0.00	0.06	0.08	151	
169	9.50	9.48	33.439	25.822	220.3	0.578	4.23	184.7	65.5	18.2	1.52	18.9	0.01	0.00	0.02	0.04	170	08
200 ISL	8.93 D	8.91	33.755 D	26.161	188.7	0.646	3.40 D	147.9 D	52.1	24.9	1.78	22.9	0.01	0.00			202	
200	8.93	8.91	33.755 D	26.161	188.7	0.646	3.40 D	147.9 D	52.1								202	07
230	8.72	8.69	33.898	26.308	175.3	0.696	2.78	121.5	42.5	31.4	2.03	26.9	0.00	0.00			232	06
250 ISL	8.48 D	8.45	33.963 D	26.396	167.3	0.736	2.64 D	114.9 D	40.1	34.6	2.10	28.0	0.00	0.00			252	
270	8.08	8.05	33.988	26.476	159.8	0.764	2.55	111.3	38.4	37.7	2.16	29.1	0.00	0.00			272	05
300 ISL	7.63 D	7.60	34.009 D	26.559	152.2	0.816	2.39 D	103.9 D	35.6	43.9	2.32	31.1	0.00	0.00			302	
320	7.37	7.34	34.042	26.621	146.5	0.840	1.97	86.2	29.2	48.0	2.42	32.5	0.00	0.00			322	04
380	6.85	6.82	34.102	26.741	135.8	0.925	1.22	53.3	17.9	58.8	2.74	36.1	0.00	0.01			383	03
400 ISL	6.76 D	6.72	34.142 D	26.786	131.8	0.958	1.00 D	43.5 D	14.6	61.8	2.81	36.8	0.00	0.00			403	
440	6.43	6.39	34.165	26.849	126.2	1.004	0.75	32.5	10.8	67.9	2.95	38.3	0.00	0.00			444	02
500 ISL	6.08 D	6.04	34.220 D	26.937	118.4	1.084	0.47 D	20.2 D	6.7	75.9	3.10	39.9	0.00	0.00			504	
515	5.96	5.91	34.223	26.956	116.7	1.095	0.44	19.2	6.3	77.9	3.14	40.3	0.00	0.01			519	01

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

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.4 26.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE	ORD
32 57.0 N	117 16.8 W	08/07/2015	2033	UTC	20 m	230 11 kn	270 02 07	1		21.3 C	19.0 C		6/8	ST	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	20.78	20.78	33.422	23.354	451.7	0.000	5.70	249.0	110.9	2.8	0.24	0.1	0.03	0.11	1.01	0.31	0	
2	20.78	20.78	33.422	23.354	451.8	0.009	5.70	249.0	110.9	2.8	0.24	0.1	0.03	0.11	1.01	0.31	2	04
5	19.96	19.96	33.422	23.571	431.2	0.022	5.78	252.6	110.8	3.1	0.27	0.1	0.02	0.20	1.24	0.44	5	03
10	18.36	18.35	33.390	23.954	394.8	0.043	5.93	259.2	110.3	3.8	0.34	0.1	0.03	0.18	1.72	0.72	10	02
15	16.41	16.41	33.353	24.389	353.5	0.062	6.10	266.5	109.2	4.6	0.44	0.3	0.05	0.33	2.39	0.92	15	01

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

RV OCEANUS — CALCOFI CRUISE 1507 — STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 3.3 N	122 56.5 W	20/07/2015	1912 UTC	25 m	1220 - 1945 PST	1218 PST	1950 PST	132.1 mg C/m2	053

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	18.84	33.075	23.592	5.53	103.6	1.2	0.31	0.0	0.01	0.02	0.12	0.02	88. A	2.9	2.7	2.8	0.24
8	18.73	33.077	23.621	5.52	103.1	1.2	0.31	0.0	0.01	0.01	0.12	0.02					
15	18.34	33.072	23.715	5.58	103.6	1.2	0.31	0.0	0.01	0.01	0.14	0.04	40.	2.0	2.2	2.1	0.32
20	18.04	33.065	23.785	5.65	104.1	1.2	0.31	0.0	0.01	0.00	0.18	0.05	29.	2.0	2.2	2.1	0.31
28	16.23	33.002	24.162	5.95	105.9	1.0	0.31	0.0	0.01	0.01	0.23	0.08					
35	15.20	33.070	24.444	6.20	108.1	1.3	0.34	0.0	0.01	0.01	0.44	0.19	12.	2.3	2.5	2.4	0.39
46	13.14	33.089	24.887	5.88	98.4	2.8	0.54	1.7	0.27	0.08	0.85	0.73					
57	12.64	33.070	24.971	5.44	90.1	5.2	0.82	7.0	0.19	0.01	0.36	0.36					
68	11.20	33.109	25.271	5.21	83.5	7.0	0.99	9.8	0.06	0.01	0.26	0.25	1.5	0.33	0.45	0.39	0.20
81	10.93	33.215	25.402	4.81	76.8	10.9	1.25	14.1	0.03	0.00	0.10	0.11	0.69	0.16	0.15	0.16	0.19

RV OCEANUS — CALCOFI CRUISE 1507 — STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
34 27.0 N	120 31.4 W	19/07/2015	1820 UTC	10 m	1205 - 1948 PST	1208 PST	1945 PST	1291.7 mg C/m2	047

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	17.24	33.400	24.232	6.35	115.6	0.5	0.20	0.0	0.01	0.00	1.25	0.74	74. A	77.9	46.9	62.4	0.80
6	17.15	33.395	24.248	6.38	115.9	0.6	0.20	0.0	0.01	0.00	1.58	0.32	40.	70.0	44.2	57.1	0.78
8	17.15	33.395	24.250	6.38	115.8	0.5	0.21	0.0	0.01	0.00	1.37	0.33	29.	61.2	62.1	61.7	0.75
14	15.90	33.383	24.528	6.39	113.2	1.4	0.30	0.1	0.02	0.04	2.15	0.47	12.	52.0	52.4	52.2	0.70
20	14.14	33.380	24.908	6.04	103.2	2.7	0.43	1.2	0.09	0.28	3.86	0.87					
27	14.15	33.382	24.909	6.05	103.4	2.6	0.45	1.1	0.09	0.27	3.65	0.82	1.6	10.6	15.7	13.1	0.53
32	13.38	33.391	25.074	5.36	90.3	5.4	0.69	4.5	0.24	0.53	3.14	0.90	0.74	3.6	4.2	3.9	0.43

RV OCEANUS — CALCOFI CRUISE 1507 — STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 29.0 N	122 32.0 W	21/07/2015	1918 UTC	22 m	1222 - 1945 PST	1217 PST	1942 PST	214.9 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
3	19.66	32.992	23.320	5.41	102.9	1.6	0.30	0.0	0.01	0.01	0.12	0.03	81. A	4.9	4.6	4.7	0.27
10	19.41	32.990	23.383	5.44	102.9	1.6	0.30	0.0	0.01	0.00	0.14	0.03					
13	18.58	32.969	23.578	5.58	103.9	1.8	0.30	0.0	0.01	0.00	0.15	0.04	40.	5.1	5.2	5.1	0.32
17	17.61	32.979	23.821	5.78	105.7	2.0	0.30	0.0	0.01	0.00	0.14	0.04	31.	3.8	4.0	3.9	0.35
31	16.99	33.210	24.146	5.78	104.5	1.8	0.27	0.0	0.01	0.00	0.14	0.04	11.	2.5	2.6	2.6	0.29
40	16.37	33.158	24.251	5.79	103.5	1.9	0.28	0.0	0.01	0.00	0.20	0.06					
49	15.29	32.952	24.334	5.98	104.4	1.9	0.31	0.0	0.01	0.00	0.28	0.13					
59	14.16	32.826	24.478	5.99	102.1	2.2	0.36	0.0	0.02	0.01	0.46	0.31	1.6	2.5	2.1	2.3	0.33
65	13.93	32.803	24.508	5.92	100.5	2.4	0.40	0.2	0.12	0.06	0.60	0.50					
71	13.51	32.876	24.650	5.77	97.0	2.9	0.47	1.1	0.17	0.02	0.46	0.37	0.71	1.1	1.1	1.1	0.25

RV OCEANUS — CALCOFI CRUISE 1507 — STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 52.7 N	120 8.0 W	22/07/2015	1712 UTC	11 m	1205 - 1945 PST	1207 PST	1944 PST	1642.7 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
2	18.52	33.438	23.950	5.84	109.0	2.9	0.31	0.4	0.04	0.06	1.25	0.46	76. A	82.7	68.5	75.6	0.59
6	17.66	33.418	24.146	5.90	108.2	3.5	0.34	0.7	0.04	0.06	1.56	0.68	43.	125.3	88.2	106.7	0.62
9	17.52	33.419	24.180	5.90	107.9	4.0	0.42	1.0	0.05	0.05	2.17	0.63	28.	84.9	114.9	99.9	0.68
15	17.06	33.420	24.289	5.78	104.9	4.7	0.42	1.7	0.07	0.09	2.07	0.57	12.	47.3	45.4	46.3	0.65
22	17.55	33.422	24.177	5.82	106.6	3.8	0.37	1.1	0.05	0.06	1.52	0.78					
30	13.35	33.315	25.020	5.47	92.0	6.3	0.73	5.6	0.12	0.03	1.13	0.54	1.5	3.0	2.4	2.7	0.36
36	12.19	33.300	25.235	4.98	81.7	8.6	0.97	9.5	0.15	0.01	0.92	0.64	0.66	0.83	0.87	0.85	0.34

RV OCEANUS — CALCOFI CRUISE 1507 — STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 34.7 N	122 48.7 W	23/07/2015	1659 UTC	23 m	1218 - 1945 PST	1218 PST	1942 PST	229.4 mg C/m2	066

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	20.43	33.169	23.253	5.28	102.0	1.7	0.30	0.0	0.00	0.00	0.11	0.04	88. A	4.1	4.2	4.2	0.35
10	20.43	33.161	23.250	5.28	101.9	1.7	0.31	0.0	0.00	0.00	0.11	0.04					
13	20.39	33.174	23.271	5.29	102.1	1.8	0.31	0.0	0.00	0.00	0.12	0.07	42.	4.3	4.0	4.1	0.37
18	20.24	33.233	23.353	5.36	103.2	1.8	0.30	0.0	0.00	0.00	0.13	0.04	30.	4.7	4.0	4.3	0.40
32	16.59	33.238	24.261	6.00	107.7	1.4	0.32	0.0	0.00	0.00	0.21	0.09	12.	3.7	3.9	3.8	0.33
43	15.29	33.288	24.593	6.08	106.3	1.3	0.36	0.0	0.00	0.03	0.29	0.15					
53	13.99	33.187	24.792	5.72	97.5	3.1	0.53	1.8	0.24	0.03	0.54	0.27					
62	13.25	33.242	24.986	5.31	89.1	4.3	0.75	5.7	0.11	0.01	0.47	0.46	1.6	1.9	1.6	1.8	0.32
68	12.96	33.270	25.065	5.10	85.1	5.4	0.88	8.1	0.08	0.00	0.50	0.39					
74	12.26	33.290	25.216	4.91	80.7	6.9	1.01	10.2	0.05	0.00	0.32	0.40	0.72	0.48	0.60	0.54	0.31

A) INCUBATION LIGHT INTENSITIES WERE 62.7, 41.1, 29.5, 11.5, 1.62, 0.70 PERCENT RESPECTIVELY.

RV OCEANUS CALCOFI CRUISE 1507 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 29.4 N	119 19.2 W	16/07/2015	1831 UTC	19 m	1205 - 1937 PST	1203 PST	1937 PST	1528.0 mg C/m2	037

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/L	OXY PCT	SIO3* µM	PO4* µM	NO3* µM	NO2* µM	NH4* µM	CHL-A µg/L	PHAEO µg/L	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
27	12.48	33.495	25.331	5.44	90.0	0.5	0.75	5.8	0.11	0.78	5.29	1.18	11.	74.1	66.1	70.1	0.90
2	18.89	33.457	23.872	5.58	104.9	1.4	0.30	0.0	0.00	0.00	0.35	0.05	85.	12.9	12.8	12.8	0.54
11	17.34	33.448	24.245	5.75	104.9	0.9	0.32	0.1	0.01	0.06	0.47	0.11	41.	19.3	17.8	18.5	0.56
15	15.95	33.456	24.575	6.11	108.4	0.5	0.41	0.6	0.04	0.28	0.84	0.16	30.	23.1	24.1	23.6	0.56
51	10.27	33.637	25.844	3.32	52.4	20.6	1.67	20.6	0.28	0.00	0.37	0.41	1.6	0.89	0.91	0.90	0.39
61	10.17	33.680	25.895	3.25	51.2	21.1	1.68	21.1	0.07	0.01	0.24	0.34	0.72	0.22	0.21	0.22	0.41

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
33 15.1 N	118 15.0 W	15/07/2015	1719 UTC	25 m	1158 - 1935 PST	1159 PST	1934 PST	528.1 mg C/m2	028

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	19.72	33.447	23.651	5.48	104.6	1.7	0.27	0.0	0.00	0.00	0.15	0.04	88. A				
28	16.16	33.360	24.453	5.89	104.9	1.7	0.32	0.0	0.00	0.00	0.22	0.08					
8	19.71	33.446	23.655	5.49	104.8	1.6	0.27	0.0	0.00	0.00	0.15	0.03					
14	19.41	33.452	23.737	5.49	104.2	1.6	0.27	0.0	0.00	0.00	0.16	0.04	42.	5.4	5.9	5.7	0.39
20	18.29	33.407	23.985	5.70	105.8	1.6	0.29	0.0	0.00	0.00	0.18	0.05	29.	4.9	5.0	5.0	0.40
35	15.03	33.314	24.670	5.79	100.9	3.0	0.45	1.3	0.08	0.01	0.81	0.26	12.	15.2	15.6	15.4	0.38
46	14.72	33.295	24.722	5.79	100.1	3.1	0.48	1.5	0.10	0.01	0.80	0.29					
58	13.16	33.260	25.017	5.28	88.5	5.3	0.75	5.8	0.17	0.01	0.77	0.36					
68	12.00	33.250	25.235	4.98	81.4						0.57	0.28	1.5	2.6	2.0	2.3	0.27
81	10.85	33.380	25.545	4.48	71.4	12.4	1.20	13.6	0.02	0.00	0.20	0.16	0.69	0.46	0.41	0.43	0.25

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 5.1 N	120 38.3 W	14/07/2015	1706 UTC	20 m	1210 - 1950 PST	1208 PST	1935 PST	105.5 mg C/m2	023

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	18.85	33.223	23.702	5.48	102.7	1.9	0.31	0.0	0.00	0.00	0.11	0.03	79. A	3.6	3.5	3.6	0.29
12	18.84	33.222	23.705	5.51	103.3	1.9	0.31	0.0	0.00	0.02	0.11	0.03	40.	3.3	3.3	3.3	0.29
16	18.82	33.228	23.714	5.49	102.9	1.9	0.31	0.0	0.00	0.00	0.11	0.02	29.	3.1	2.9	3.0	0.26
28	18.32	33.223	23.836	5.67	105.2	1.8	0.31	0.0	0.00	0.00	0.11	0.03	12.	1.5	1.6	1.6	0.25
37	17.09	33.209	24.122	5.78	104.7	1.9	0.31	0.0	0.00	0.00	0.12	0.03					
46	16.38	33.184	24.269	5.81	103.9	2.0	0.31	0.0	0.00	0.00	0.12	0.03					
54	15.77	33.095	24.340	5.92	104.5	2.1	0.32	0.0	0.00	0.00	0.13	0.04	1.6	0.18	0.11	0.14	0.22
65	15.38	33.194	24.503	5.97	104.5	1.8	0.36	0.0	0.00	0.00	0.25	0.12	0.68	0.21	0.26	0.23	0.23

RV OCEANUS CALCOFI CRUISE 1507 STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
30 45.1 N	123 19.9 W	13/07/2015	1640 UTC	30 m	1220 - 1950 PST	1219 PST	1942 PST	241.4 mg C/m2	019

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	21.10	33.063	22.994	5.42	105.9	1.9	0.31	0.0	0.00	0.01	0.13	0.03	90. A	4.2	4.3	4.3	0.22
10	19.23	33.031	23.460	5.61	105.9	2.0	0.31	0.0	0.00	0.01	0.11	0.03					
18	17.96	33.007	23.759	5.70	104.8	2.0	0.31	0.0	0.00	0.00	0.09	0.03	40.	3.2	3.2	3.2	0.20
24	17.72	33.024	23.831	5.73	105.0	1.9	0.31	0.0	0.00	0.00	0.10	0.04	29.	3.3	3.3	3.3	0.24
33	17.06	33.017	23.983	5.78	104.6	2.0	0.30	0.0	0.00	0.00	0.11	0.03					
42	16.86	33.121	24.110	5.79	104.4	1.9	0.30	0.0	0.00	0.01	0.13	0.04	12.	3.1	3.2	3.1	0.18
56	16.00	33.008	24.220	5.87	104.1	2.1	0.31	0.0	0.00	0.00	0.18	0.05					
68	15.92	33.161	24.358	5.77	102.2	2.3	0.31	0.0	0.00	0.00	0.22	0.07					
81	14.82	33.089	24.544	5.80	100.3	2.7	0.38	0.0	0.00	0.01	0.23	0.15	1.6	1.2	0.97	1.1	0.17
89	13.93	33.094	24.735	5.70	96.8	3.4	0.46	0.7	0.09	0.04	0.29	0.14					
97	13.03	33.109	24.929	5.48	91.4	4.9	0.64	3.9	0.11	0.02	0.26	0.20	0.70	0.63	0.66	0.64	0.17

RV OCEANUS CALCOFI CRUISE 1507 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	08/07/2015	1835 UTC	18 m	1200 - 1930 PST	1154 PST	1929 PST	743.0 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	20.75	33.444	23.380	5.57	108.2	2.3	0.21	0.1	0.01	0.01	0.32	0.11	84. A	16.2	16.1	16.1	0.39
10	19.45	33.412	23.696	5.79	109.9	2.2	0.23	0.0	0.02	0.11	0.39	0.13	43.	16.3	16.7	16.5	0.42
14	16.81	33.349	24.293	6.31	113.9	2.7	0.28	0.1	0.02	0.06	0.54	0.21	30.	19.3	18.8	19.0	0.42
25	12.90	33.302	25.101	5.66	94.4	6.7	0.68	3.3	0.15	0.18	1.68	0.66	12.	34.9	34.3	34.6	0.40
36	11.80	33.343	25.342	4.66	75.9	10.2	1.10	10.8	0.36	0.30	0.75	0.64	4.6	1.9	1.6	1.7	0.28
48	11.12	33.453	25.553	3.93	63.1	14.8	1.40	15.3	0.51	0.31	0.31	0.41	1.7	0.58	0.62	0.60	0.25

A) INCUBATION LIGHT INTENSITIES WERE 62.7, 41.1, 29.5, 11.5, 1.62, 0.70 PERCENT RESPECTIVELY.

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 20.8 N	118 33.3 W	09/07/2015	1711 UTC	25 m	1202 - 1920 PST	1159 PST	1934 PST	486.4 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	18.53	33.424	23.936	5.60	104.5	1.4	0.29	0.1	0.00	0.04	0.15	0.04	88. A	2.8	5.4	4.1	0.22
8	18.36	33.421	23.976	5.56	103.4	1.4	0.29	0.0	0.00	0.02	0.16	0.05					
14	18.34	33.420	23.982	5.57	103.5	1.4	0.29	0.0	0.00	0.02	0.16	0.05	42.	6.4 C	6.4 C	6.4	0.29
20	17.81	33.410	24.102	5.68	104.5	1.4	0.30	0.0	0.00	0.10	0.21	0.05					
28	16.40	33.365	24.402	5.89	105.4	1.3	0.32	0.0	0.00	0.01	0.29	0.12	18.	6.6 B	6.6 B	6.6	0.28
35	15.26	33.306	24.613	6.07	106.2	1.6	0.35	0.0	0.01	0.03	0.50	0.31	12.	13.9	13.8	13.8	0.36
46	13.58	33.285	24.952	5.23	88.4	4.6	0.72	5.4	0.22	0.00	0.50	0.56					
58	12.15	33.291	25.237	4.80	78.8	7.8	0.99	10.2	0.04	0.11	0.22	0.24					
67	11.23	33.265	25.387	4.68	75.2	10.5	1.15	12.8	0.03	0.01	0.15	0.23	1.6	1.1	1.3	1.2	0.17
82	10.47	33.397	25.624	4.20	66.4	14.7	1.37	16.7	0.02	0.00	0.07	0.09	0.65	0.30	0.31	0.31	0.13

B) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED
C) PRODUCTIVITY REPLICATES POOR UNCERTAIN VALUE ELIMINATED

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
32 0.8 N	119 14.0 W	11/07/2015	1608 UTC	23 m	1205 - 1940 PST	1202 PST	1936 PST	485.9 mg C/m2	010

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	18.96	33.450	23.847	5.51	103.6	1.3	0.33	0.0	0.00	0.01	0.18	0.05	88. A	6.8	7.3	7.1	0.29
13	18.78	33.448	23.894	5.54	103.8	1.3	0.32	0.0	0.00	0.00	0.18	0.04	42.	7.6	7.7	7.6	0.32
18	18.56	33.446	23.948	5.61	104.8	1.3	0.32	0.0	0.00	0.01	0.19	0.07	30.	7.3	6.8	7.0	0.26
25	16.78	33.418	24.355	5.92	106.8	2.0	0.33	0.0	0.00	0.01	0.29	0.13					
32	15.49	33.410	24.643	6.06	106.5	2.7	0.38	0.3	0.02	0.04	0.57	0.24	12.	12.5	12.5	12.5	0.32
52	11.97	33.403	25.357	4.46	73.0	10.4	1.09	11.0	0.52	0.07	0.95	0.50					
62	11.20	33.453	25.539	3.97	63.8	14.2	1.35	15.8	0.13	0.01	0.33	0.26	1.6	1.5	1.3	1.4	0.21
74	9.97	33.562	25.837	3.66	57.4	19.9	1.62	20.3	0.01	0.01	0.07	0.07	0.72	0.03	0.04	0.04	0.23

RV OCEANUS CALCOFI CRUISE 1507 STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE	ORD
30 30.8 N	122 15.0 W	12/07/2015	1714 UTC	42 m	1210 - 1945 PST	1215 PST	1945 PST	224.0 mg C/m2	015

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	21.11	33.478	23.306	5.23	102.4	1.9	0.28	0.0	0.00	0.02	0.08	0.02	93. A	2.7	2.6	2.6	0.21
13	20.49	33.451	23.454	5.32	102.9	1.9	0.28	0.0	0.00	0.00	0.07	0.02					
24	19.35	33.480	23.774	5.48	103.8	1.9	0.28	0.0	0.00	0.01	0.06	0.02	42.	1.9	1.8	1.8	0.20
33	19.10	33.558	23.898	5.47	103.3	1.9	0.28	0.0	0.00	0.00	0.07	0.02	30.	1.7	1.9	1.8	0.16
42	18.91	33.634	24.006	5.49	103.3	2.0	0.27	0.0	0.01	0.00	0.08	0.03					
51	18.71	33.632	24.054	5.51	103.3	2.0	0.27	0.0	0.00	0.02	0.08	0.03					
60	18.36	33.615	24.128	5.52	102.7	2.0	0.27	0.0	0.00	0.01	0.10	0.04	11.	2.0	2.0	2.0	0.16
77	17.02	33.317	24.226	5.68	102.8	2.0	0.29	0.0	0.00	0.01	0.17B	0.11B					
96	15.86	33.451	24.595	5.58	98.8	2.8	0.33	0.0	0.00	0.00	0.20	0.22					
112	13.12	33.385	25.126	5.30	88.8	4.8	0.57	2.9	0.13	0.00	0.29	0.25	1.7	1.0	1.3	1.2	0.16
124	12.34	33.354	25.253	5.03	82.9	7.0	0.81	7.1	0.05	0.00	0.17	0.24					
136	11.72	33.341	25.360	4.93	80.1	8.3	0.94	9.0	0.03	0.02	0.14	0.22	0.69	0.42	0.45	0.44	0.14

B) SECOND FLUOROMETER READING NOT RECORDED CHLOROPHYLL AND PHAEOPIGMENT CALCULATED WITH ASSUMED ACID RATIO INTERPOLATED FROM ADJACENT LEVELS
A) INCUBATION LIGHT INTENSITIES WERE 62.7, 41.1, 29.5, 11.5, 1.62, 0.70 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 05.3	120 46.6	11/08	0649	0654	129	41	109	109
76.7	51.0	35 01.3	120 55.1	11/08	0420	0441	462	171	89	43
76.7	55.0	34 53.3	121 11.9	11/08	0103	0125	409	210	56	56
76.7	60.0	34 43.3	121 32.9	11/07	2109	2131	422	214	69	69
76.7	70.0	34 23.3	122 14.7	11/07	1518	1540	478	202	46	36
76.7	80.0	34 03.3	122 56.5	11/07	0833	0855	378	218	21	21
76.7	90.0	33 43.3	123 38.0	11/07	0341	0404	413	207	56	56
76.7	100.0	33 23.3	124 19.4	11/06	2151	2213	453	208	35	35
80.0	51.0	34 27.0	120 31.5	11/05	0746	0752	124	40	64	64
80.0	55.0	34 19.0	120 48.1	11/05	1129	1151	448	199	13	13
80.0	60.0	34 09.1	121 09.0	11/05	1546	1608	457	208	35	35
80.0	70.0	33 49.0	121 50.6	11/05	2137	2159	504	211	48	48
80.0	80.0	33 29.0	122 32.0	11/06	0328	0350	446	205	45	45
80.0	90.0	33 09.0	123 13.3	11/06	0843	0905	409	211	27	27
80.0	100.0	32 49.0	123 54.4	11/06	1558	1619	455	207	51	51
81.7	43.5	34 24.2	119 48.0	11/04	0717	0719	51	12	20	20
81.8	46.9	34 16.4	120 01.6	11/04	1839	1901	417	212	26	26
83.3	39.4	34 15.9	119 19.7	11/04	0404	0406	56	10	36	36
83.3	40.6	34 13.0	119 24.6	11/04	1318	1321	70	28	28	28
83.3	42.0	34 10.7	119 30.5	11/04	1112	1124	236	114	8	8
83.3	51.0	33 52.7	120 08.0	11/08	1605	1614	182	88	22	22
83.3	55.0	33 44.7	120 24.6	11/08	1944	2006	417	211	34	34
83.3	60.0	33 34.7	120 45.3	11/08	2342	0004	380	213	66	66
83.3	70.0	33 14.7	121 26.5	11/09	0550	0612	439	209	46	46
83.3	80.0	32 54.7	122 07.7	11/09	1142	1204	431	206	42	19
83.3	90.0	32 34.7	122 48.9	11/09	1720	1742	442	210	104	27
83.3	100.0	32 14.7	123 29.5	11/09	2303	2325	422	213	90	52
83.3	110.0	31 54.7	124 10.2	11/10	0448	0510	412	204	46	29
86.7	33.0	33 53.4	118 29.4	11/03	1054	1058	82	34	49	49
86.7	35.0	33 49.4	118 37.7	11/03	1332	1354	458	204	15	4
86.7	40.0	33 39.3	118 58.4	11/03	1758	1820	413	218	24	24
86.7	45.0	33 29.4	119 19.1	11/12	0511	0533	395	208	28	28
86.7	50.0	33 19.4	119 39.8	11/12	0128	0134	120	54	75	50
86.7	55.0	33 09.4	120 00.4	11/11	2158	2219	397	212	50	50
86.7	60.0	32 59.4	120 20.9	11/11	1749	1811	394	213	51	46
86.7	70.0	32 39.4	121 02.0	11/11	1142	1204	433	204	23	23
86.7	80.0	32 19.4	121 42.9	11/11	0447	0508	422	207	38	38
86.7	90.0	31 59.4	122 23.6	11/10	2238	2259	464	210	19	19
86.7	100.0	31 39.4	123 04.2	11/10	1644	1705	455	206	11	11
86.7	110.0	31 19.4	123 44.6	11/10	1052	1114	422	211	9	9
86.8	32.5	33 53.3	118 26.7	11/03	0847	0849	43	14	47	47
88.5	30.1	33 40.4	118 05.1	11/03	0445	0446	38	14	186	186
90.0	27.7	33 29.6	117 44.8	11/03	0212	0213	38	15	160	160
90.0	28.0	33 29.1	117 46.1	11/03	0100	0109	226	87	27	27
90.0	30.0	33 25.1	117 54.3	11/02	2233	2255	426	209	91	28
90.0	35.0	33 15.1	118 15.0	11/02	1813	1834	475	202	97	17
90.0	37.0	33 11.0	118 23.2	11/02	1511	1532	412	214	12	12
90.0	45.0	32 55.1	118 56.3	11/02	0824	0846	432	206	32	32
90.0	53.0	32 39.1	119 28.9	11/02	0306	0328	510	207	77	77
90.0	60.0	32 25.1	119 57.5	11/01	1753	1814	423	212	31	31
90.0	70.0	32 05.1	120 38.3	11/01	1028	1050	413	201	22	22
90.0	80.0	31 45.1	121 18.9	11/01	0411	0432	444	188	29	29
90.0	90.0	31 25.1	121 59.4	10/31	2223	2244	402	211	30	30
90.0	100.0	31 05.1	122 39.1	10/31	1409	1431	422	212	26	26
91.7	26.4	33 14.8	117 27.8	10/28	1643	1645	44	15	45	45
93.3	26.7	32 57.4	117 18.3	10/28	2106	2117	268	104	37	37
93.3	28.0	32 54.8	117 23.7	10/28	2324	2346	460	216	63	22
93.3	30.0	32 50.8	117 31.9	10/29	0221	0242	480	201	94	17
93.3	35.0	32 40.7	117 52.4	10/29	0707	0729	443	206	5	5
93.3	40.0	32 30.8	118 12.8	10/29	1150	1211	497	191	14	10
93.3	45.0	32 20.8	118 33.2	11/12	1922	1944	431	214	49	49
93.3	50.0	32 10.8	118 53.6	11/12	1546	1607	440	203	34	34
93.3	55.0	32 00.8	119 14.1	10/30	0830	0852	433	212	14	14
93.3	60.0	31 50.8	119 34.3	10/30	1238	1300	475	192	21	21
93.3	70.0	31 30.8	120 14.8	10/30	1852	1913	384	226	31	31
93.3	80.0	31 10.8	120 55.2	10/31	0047	0108	431	199	33	33
93.3	90.0	30 50.8	121 35.3	10/31	0640	0701	377	213	21	21
93.4	26.4	32 57.0	117 16.8	10/28	1930	1932	53	14	38	38