UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

CalCOFI Cruise 0903
7– 24 March 2009

CC Reference 10-02
15 September 2010

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

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INTRODUCTION

The data presented in this report were collected during cruise 0903* of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the NOAA ship RV *David Starr Jordan.* The CalCOFI program was organized in the late 1940's to study the causes of variations in population size of fishes of importance to the State of California. It is carried out by NOAA's National Marine Fisheries Service Southwest Fisheries Science Center, the California Department of Fish and Game, and the Integrative Oceanography Division (IOD) at Scripps Institution of Oceanography (SIO). IOD contributes to this program by investigations of the physical, chemical and biological structure of the California Current. Data from the cruises were collected and processed by personnel of the Integrative Oceanography Division and the Southwest Fisheries Science Center. SIO staff members from the Ocean Data Facility participate in the chemical analysis of nutrient samples at sea. 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 1049) with a rosette was deployed at each station on these cruises. 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 525 meters, bottom depth permitting. Occasional stations have multiple bottles tripped at the same depth to provide more water for ancillary programs. The sample spacing was designed to sample depth intervals as close as 10 meters around the sharp upper thermocline features such as the chlorophyll, oxygen, nitrite maxima and the shallow salinity minimum. Salinity, oxygen and nutrients were determined at sea for all depths sampled. Chlorophyll-*a* and phaeopigments were determined at sea 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 have been converted to depths by the Saunders (1981) pressure-to-depth conversion technique. CTD temperatures reported with the bottle data have been rounded to the nearest hundredth of a degree Celsius.

Salinity samples were collected from all rosette bottles and analyzed at sea using a Guildline model 8410 Portasal salinometer. 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 P149. 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.

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

Nutrient samples were analyzed at sea by the Scripps Ocean Data Facility for dissolved silicate, phosphate, nitrate, nitrite, and ammonium using procedures similar to those described in Gordon et al. (1993) and Koroleff (1969, 1970). Samples were collected in 45 ml high-density polypropylene screw-capped tubes which were acid washed and rinsed with sample three times prior to filling. Daily standardizations and drift corrections were accomplished by running freshly prepared mid-range standards at the beginning and end of each group of samples. Samples not analyzed immediately after collection were refrigerated and run the following day. In addition to daily standardizations, periodic full calibrations were performed with sets of six different concentration standards.

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 45.75 µCi of ^{14}C as $NaHCO_3$ (200 µl of 229 µCi/ml stock) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al*., 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation cocktail were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505mm plankton mesh. Bottom depth permitting, the nets were towed obliquely from 210 meters to the surface. The tow time for a standard tow was 21.5 minutes. Volumes filtered were determined from flowmeter readings and the mouth area of the net. Only one sample of each pair was retained and preserved. The biomass, as wet displacement volume, after removal of large (>5 ml) organisms, was determined in the laboratory ashore. These procedures are summarized in greater detail in Kramer *et al*. (1972).

Ancillary Programs

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

1) *Underway Data*: Continuous near surface measurements of temperature and salinity were recorded from seawater pumped through the ship's uncontaminated seawater system. Water was drawn from a depth of approximately 3 meters. The data were logged in one-minute averages using a Sea-Bird Electronics, Inc., SBE-21 Thermosalinograph.

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 data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded. (T. Chereskin, SIO)

3) *California Current Ecosystem Long Term Ecological Research Program*: The CCE-LTER program augments standard CalCOFI measurements to further characterize the lower trophic levels as well as the carbon system. These additional samples, taken at all CalCOFI stations, are for measurements of particulate organic carbon and nitrogen, dissolved organic carbon and nitrogen, taxon-specific phytoplankton pigments, flow-cytometric counts of bacteria and picoautotrophs, microscopic counts of nano- microplankton, determination of mesozooplankton size structure using a Laser Optical Plankton Counter, and mesozooplankton community structure. (M. Ohman, SIO)

4) *Underway pCO_2 System* : The Pacific Marine Environmental Laboratory's underway pCO_2 system measures the partial pressure of CO_2 in the air and surface water while the ship is underway. The pCO_2 values, along with temperature and salinity data from the shipboard TSG are used to calculate the flux of CO_2 at the air-sea interface. The system determines CO_2 content with a Licor infrared detector and is calibrated with 4 gas cylinders provided by the Earth System Research Laboratory.

5) *SCCOOS Nearshore Observations*: The objective of these observations is to extend CalCOFI time series to the nearshore. Nearshore observations consist of 9 stations at the ends and interspersed with current CalCOFI lines on the 20 m isobath with a standard set of CalCOFI observations. (R. Goericke, SIO)

6) *Inorganic Carbon System*: The CalCOFI group collected samples for the characterization of the inorganic carbon system at selected locations along the cruise track. Total inorganic carbon and alkalinity will be measured which will allow the calculation of pH and pCO2. The objectives of these measurements are first the long-term characterization of the inorganic carbon system and its response to changing ocean climate and second measurements of pH in the coastal zone in order to monitor the impact of 'corrosive' waters on benthic ecosystems in the Southern California Bight. (R. Goericke, SIO)

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

8) *Cyanobacterial Diversity*: Samples of seawater were collected for flow sorting of *Synechococcus* and DNA isolation. These DNA samples were analyzed using sequencing and hybridization methods to characterize changes in *Synechococcus* diversity at oligotrophic stations. (Palenik, SIO)

TABULATED DATA

CTD/Rosette Cast Data

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

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

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

Primary Productivity Data

In addition to the normal hydrographic data that are reported in the rosette cast data section, the tabulated data include: the *in situ* light levels at which the samples were collected, the uptake from each of the replicate light bottles, uptake 1 and uptake 2 (which have been corrected for dark uptake by subtracting the dark value), the mean of the two uptake values and the dark uptake. The uptake values are totals for the incubation period. Also shown are the times of LAN, civil twilight, and the value of the mean uptake integrated from the surface to the deepest sample, assuming the shallowest value continues to the surface and that negative values (when dark uptake exceeds light uptake) are zero. The uptake data are reported to two significant digits (values <1.00) or one decimal (values >1.00). Incubation time, LAN, and civil twilight are given in local Pacific Standard Time (PST); to convert to UTC, add eight hours to the PST time. Incubation light intensities are listed in a footnote at the bottom of each page.

Macrozooplankton Data

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

FOOTNOTES

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

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

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FIGURES

Cruise 0903

1. CalCOFI Cruise 0903 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.

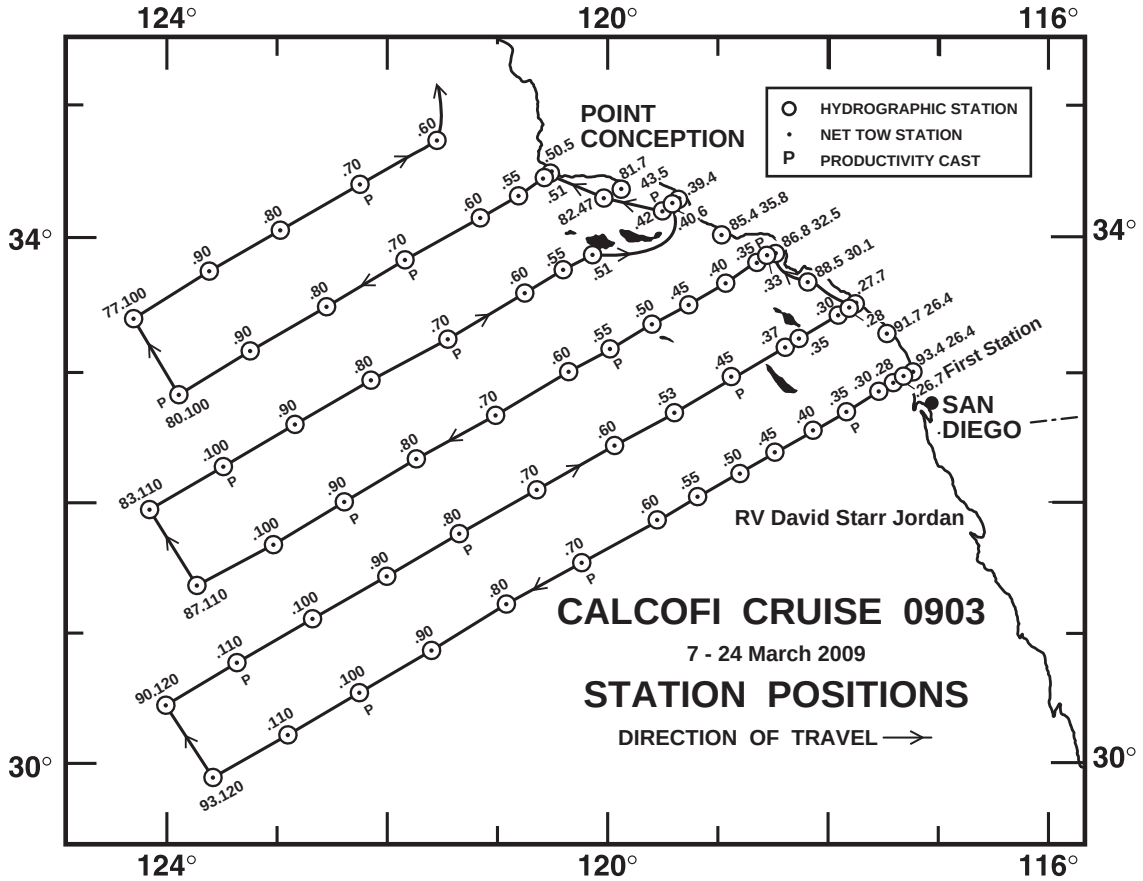


FIGURE 1

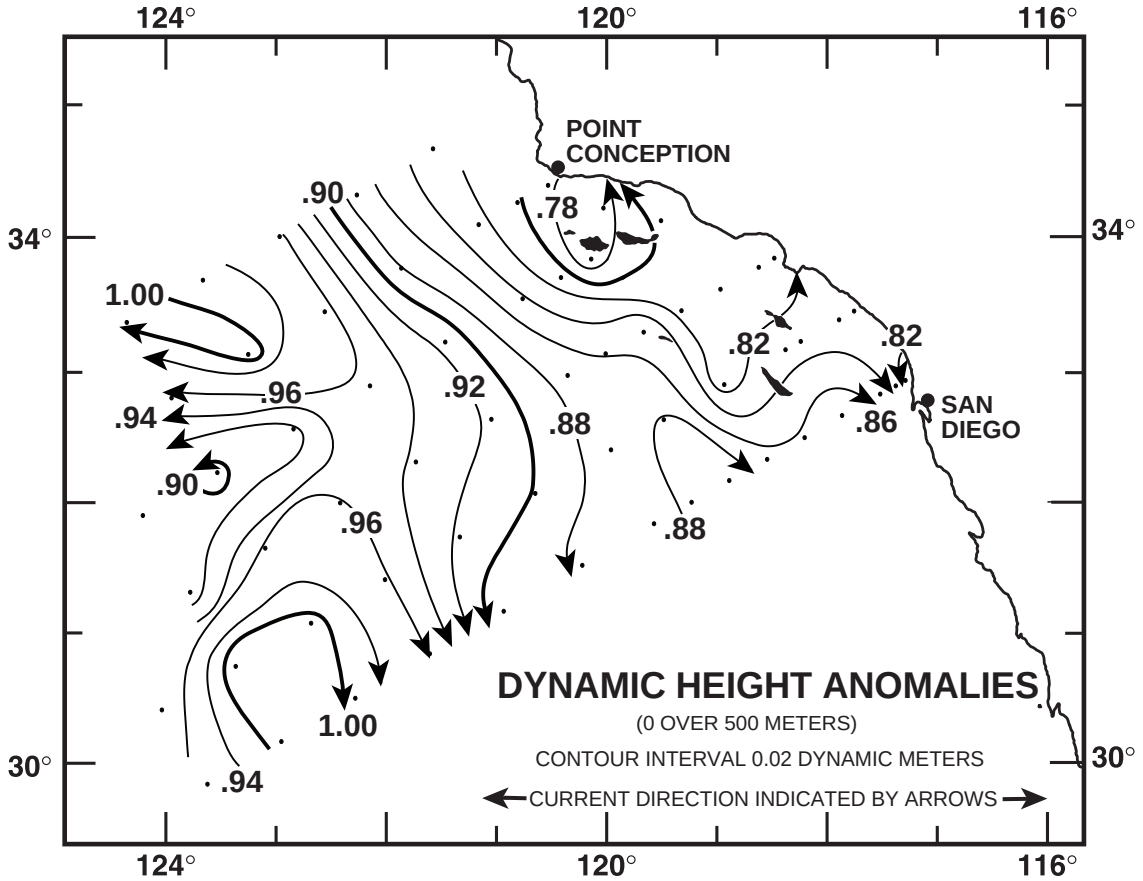


FIGURE 2

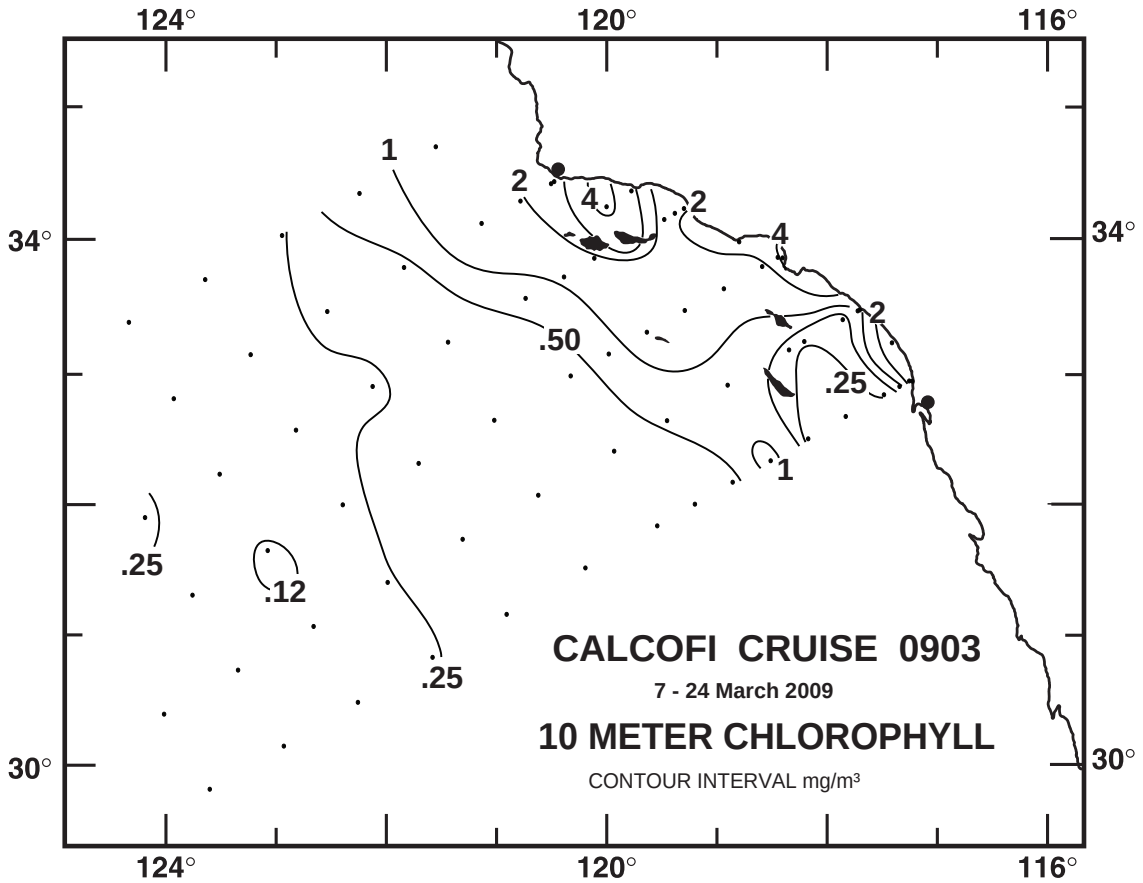


FIGURE 3A

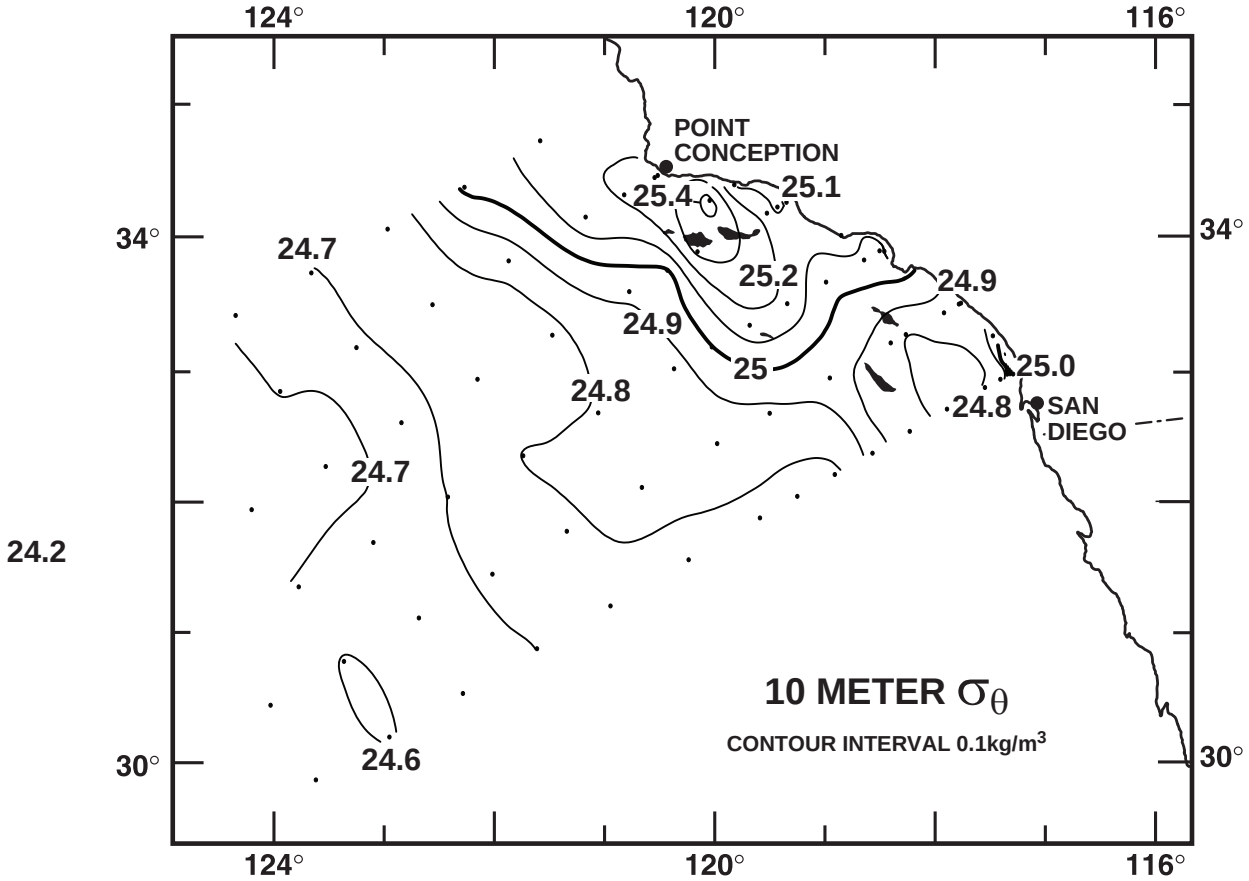
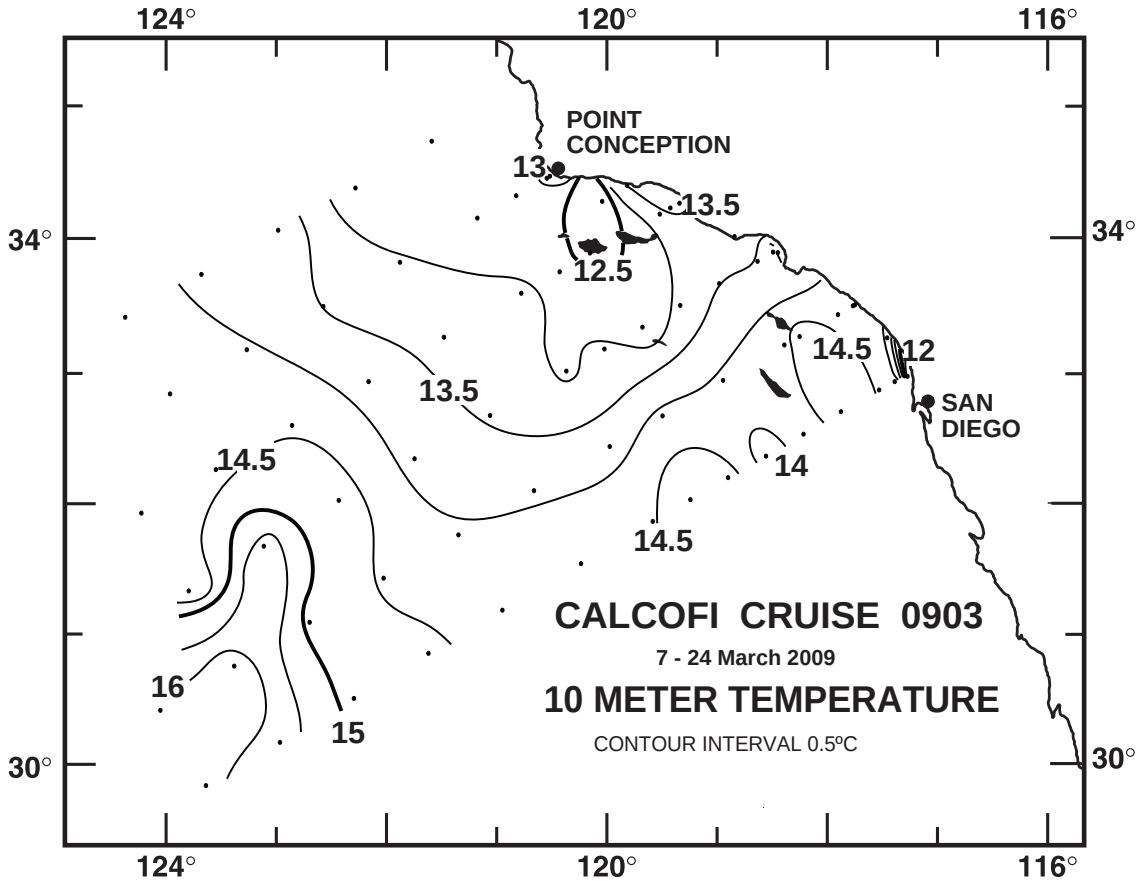
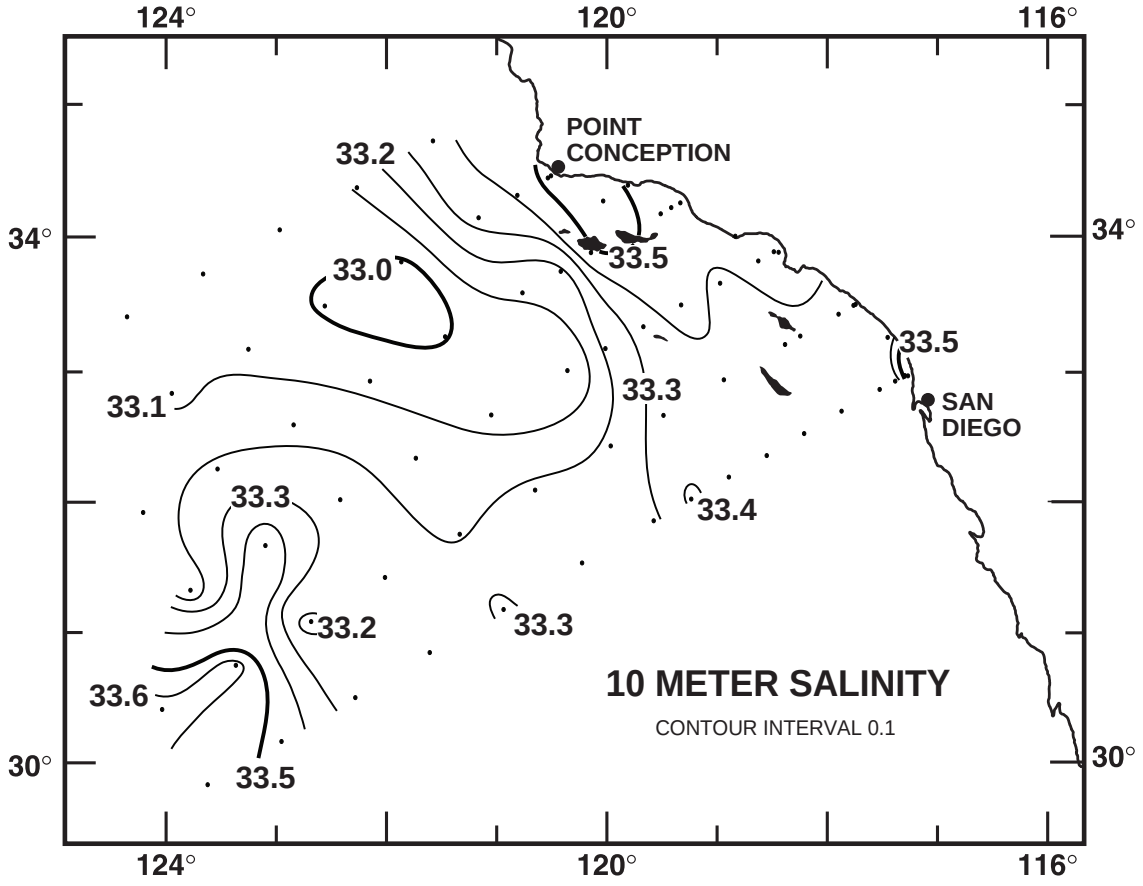


FIGURE 3B


124°
120°
116°
34°
30°
POINT
CONCEPTION
13
13.5
12.5
13.5
14.5
12
SAN
DIEGO
14.5
14
14.5
16
15
CALCOFI CRUISE 0903
7 - 24 March 2009
10 METER TEMPERATURE
CONTOUR INTERVAL 0.5ºC


124°
120°
116°
34°
30°
POINT
CONCEPTION
33.2
33.5
33.0
33.5
33.1
33.3
SAN
DIEGO
33.3
33.4
33.2
33.3
33.6
33.5
10 METER SALINITY
CONTOUR INTERVAL 0.1

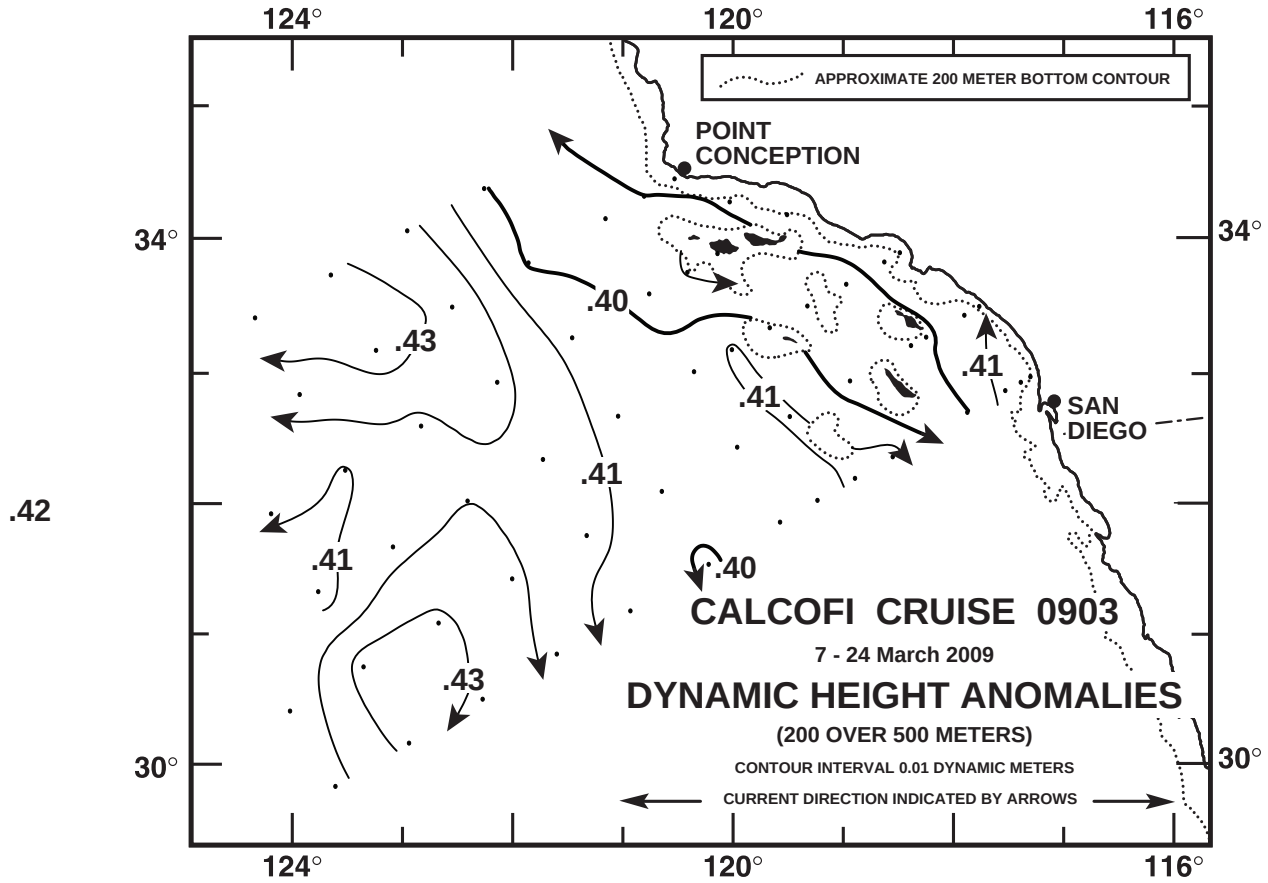


FIGURE 4A

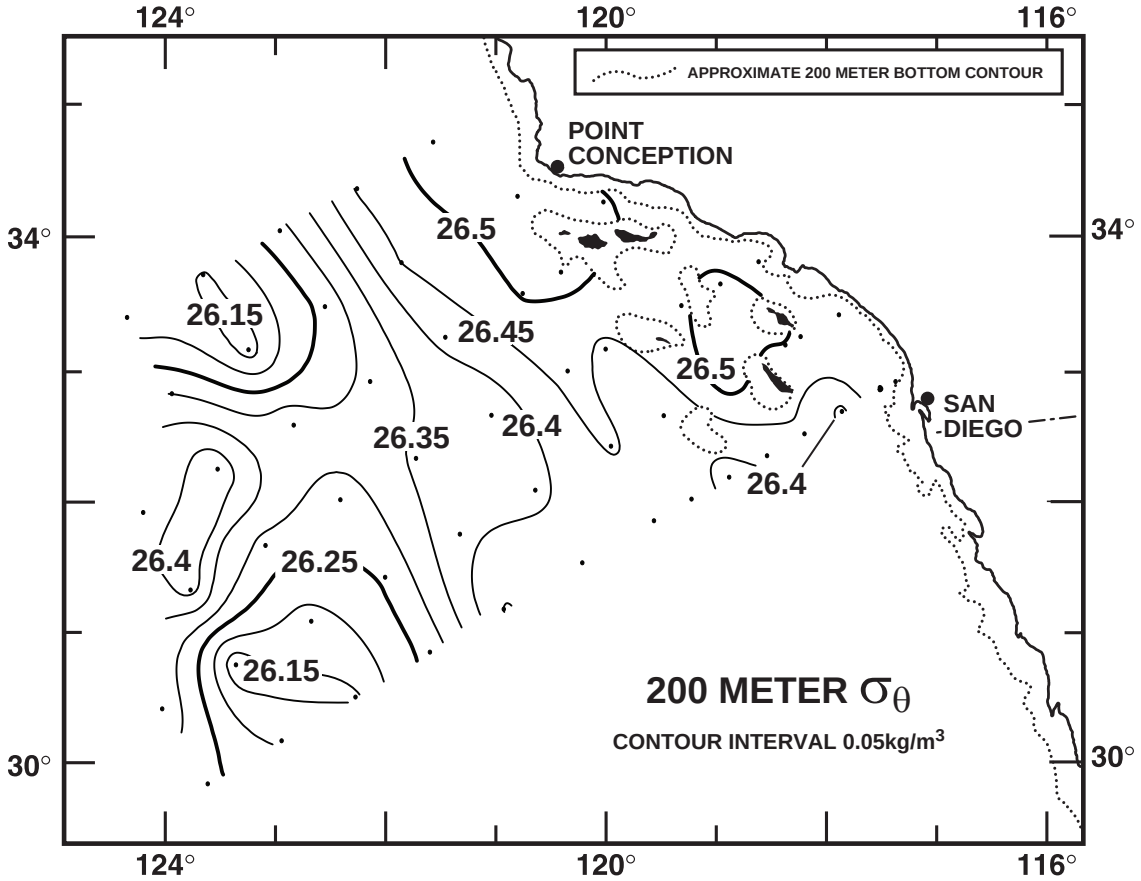


FIGURE 4B

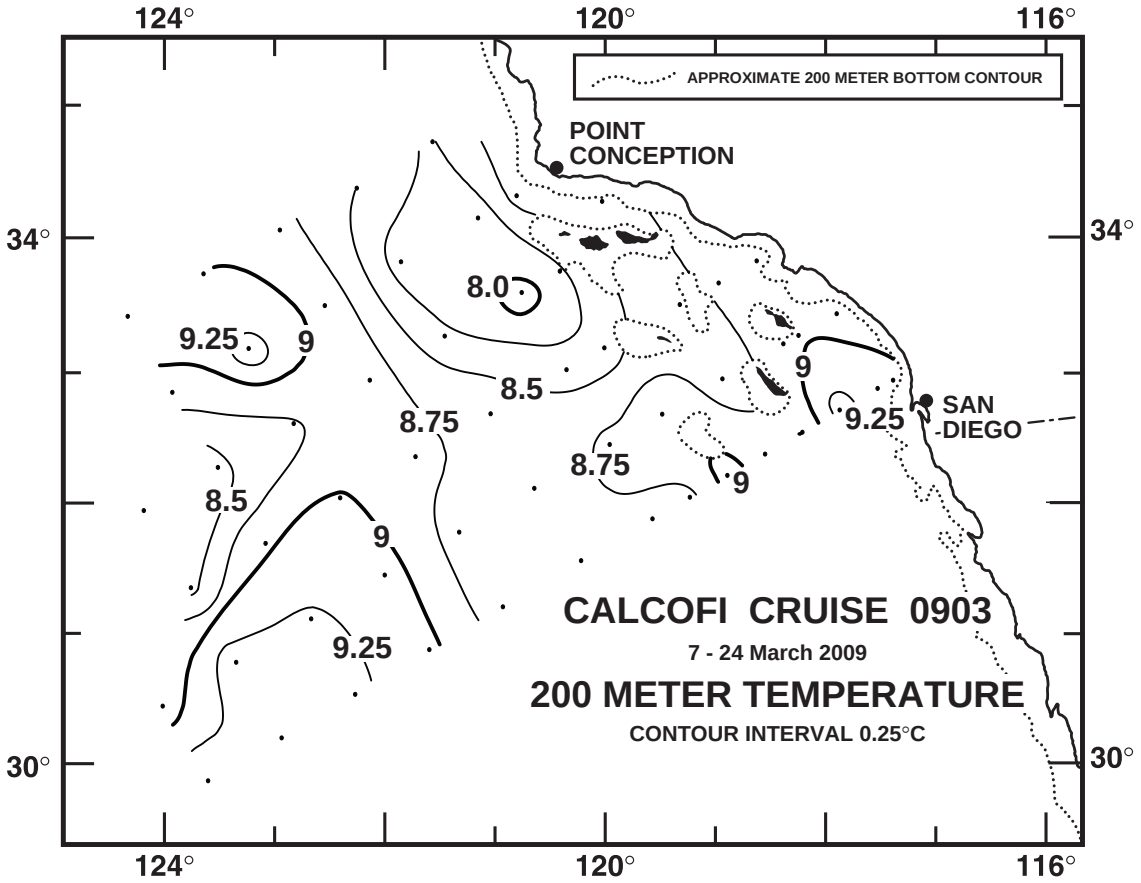


FIGURE 4C

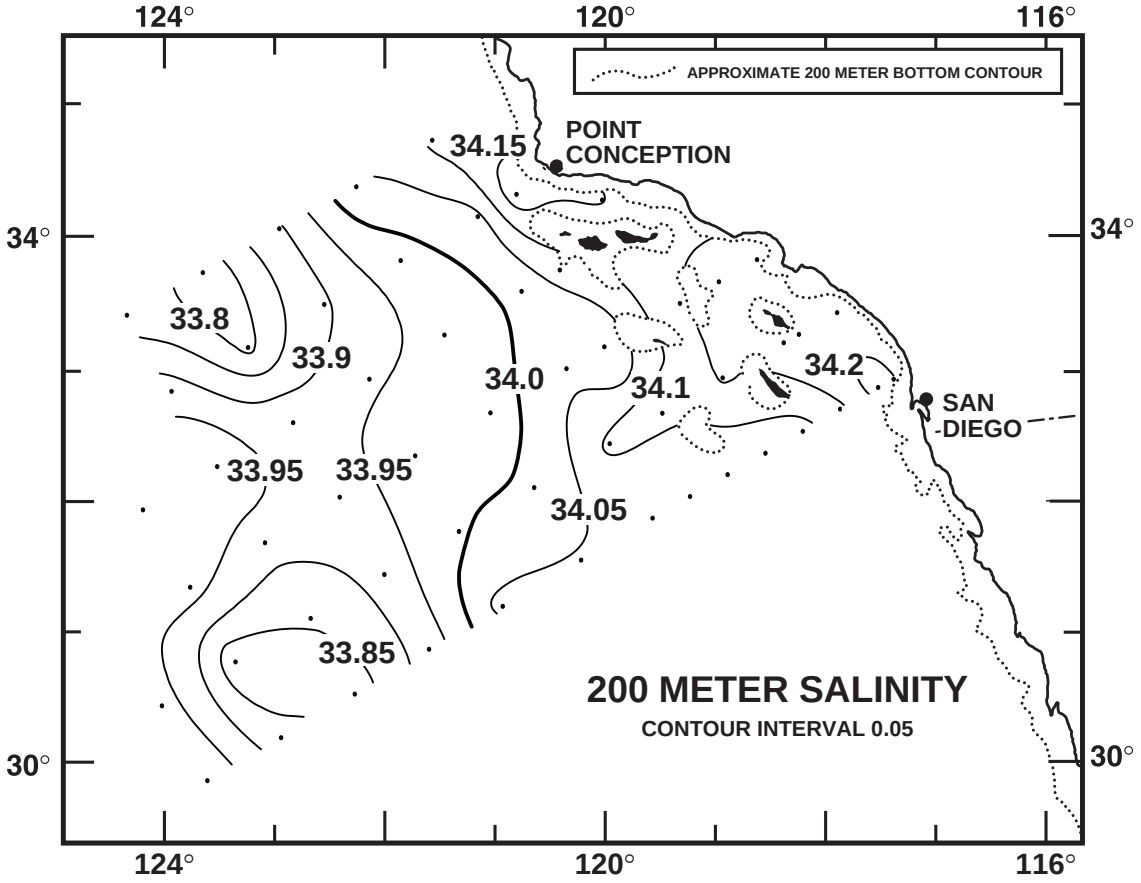


FIGURE 4D

CALCOFI CRUISE 0903

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POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

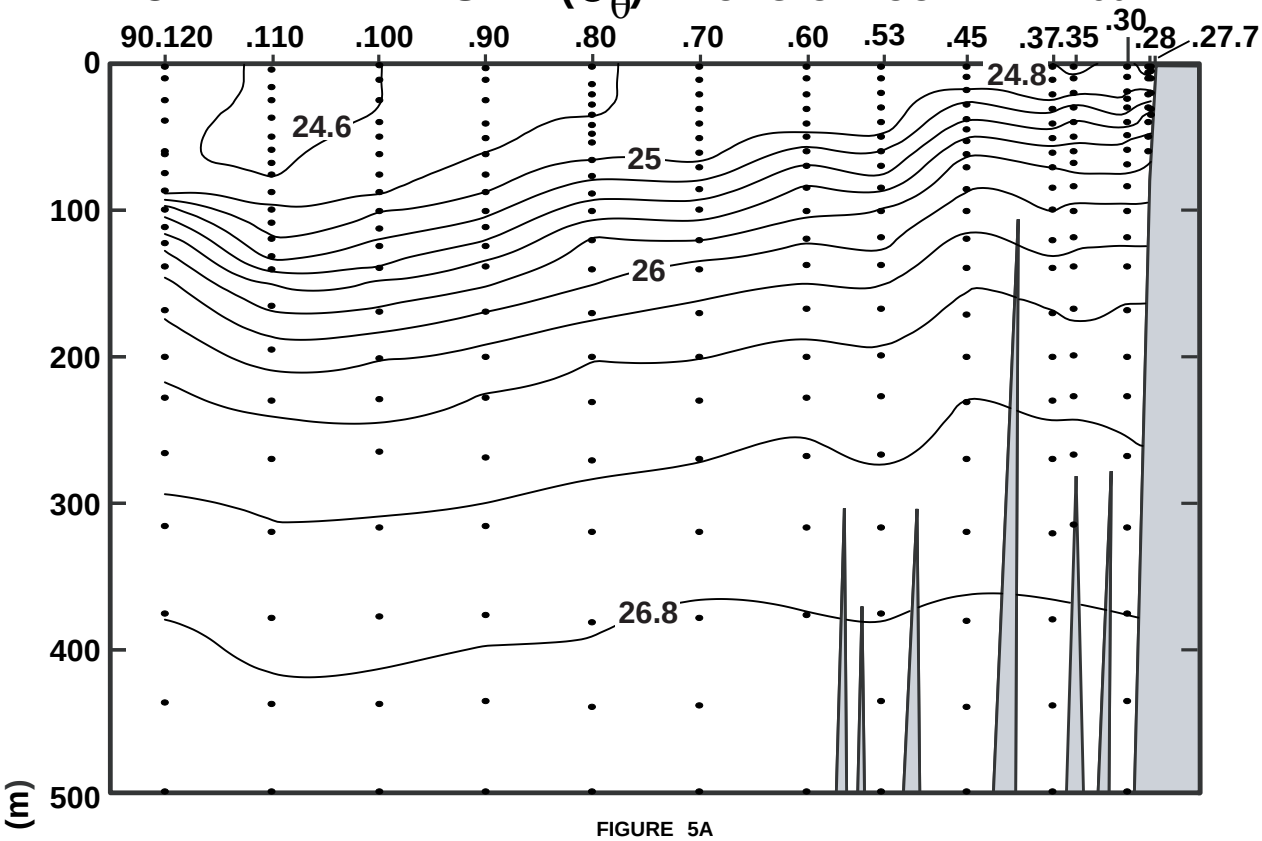

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

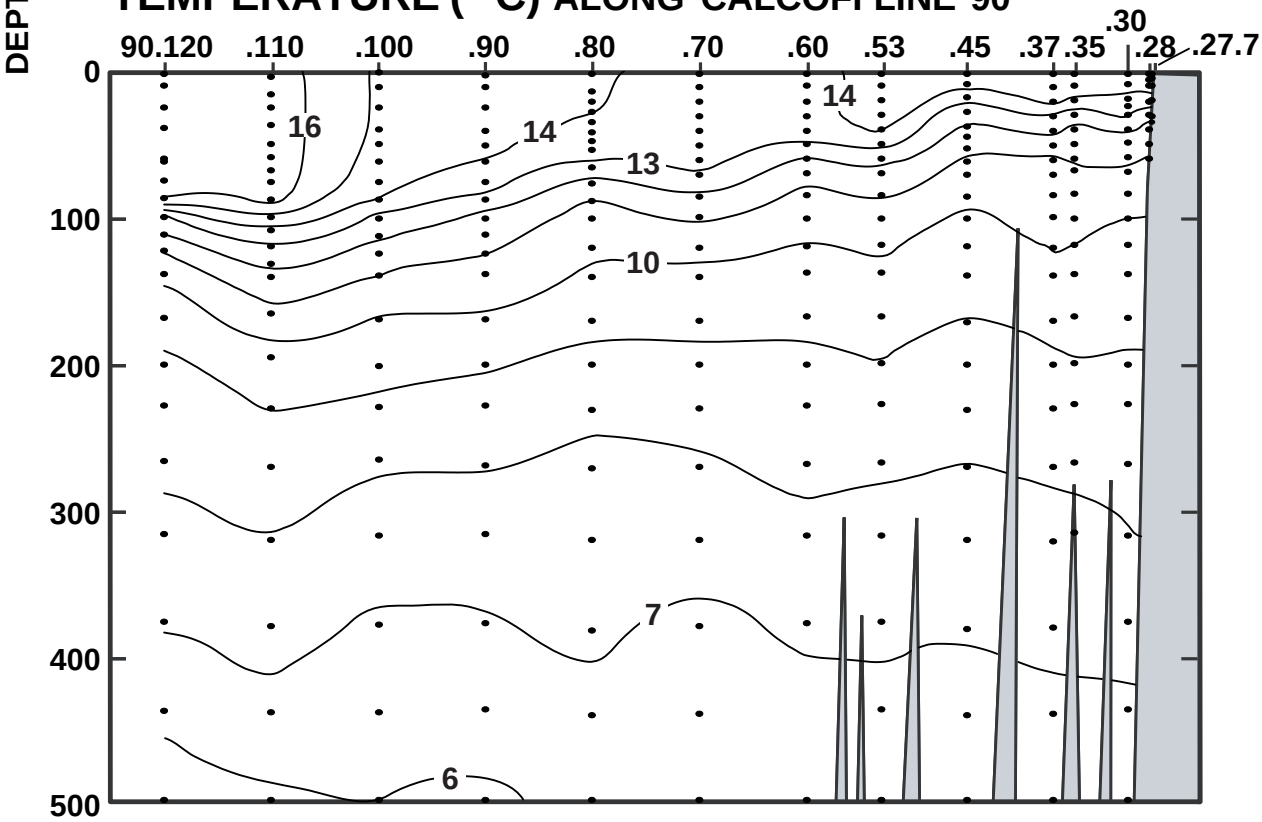

FIGURE 5B

CALCOFI CRUISE 0903

11 - 14 March 2009

SALINITY ALONG CALCOFI LINE 90

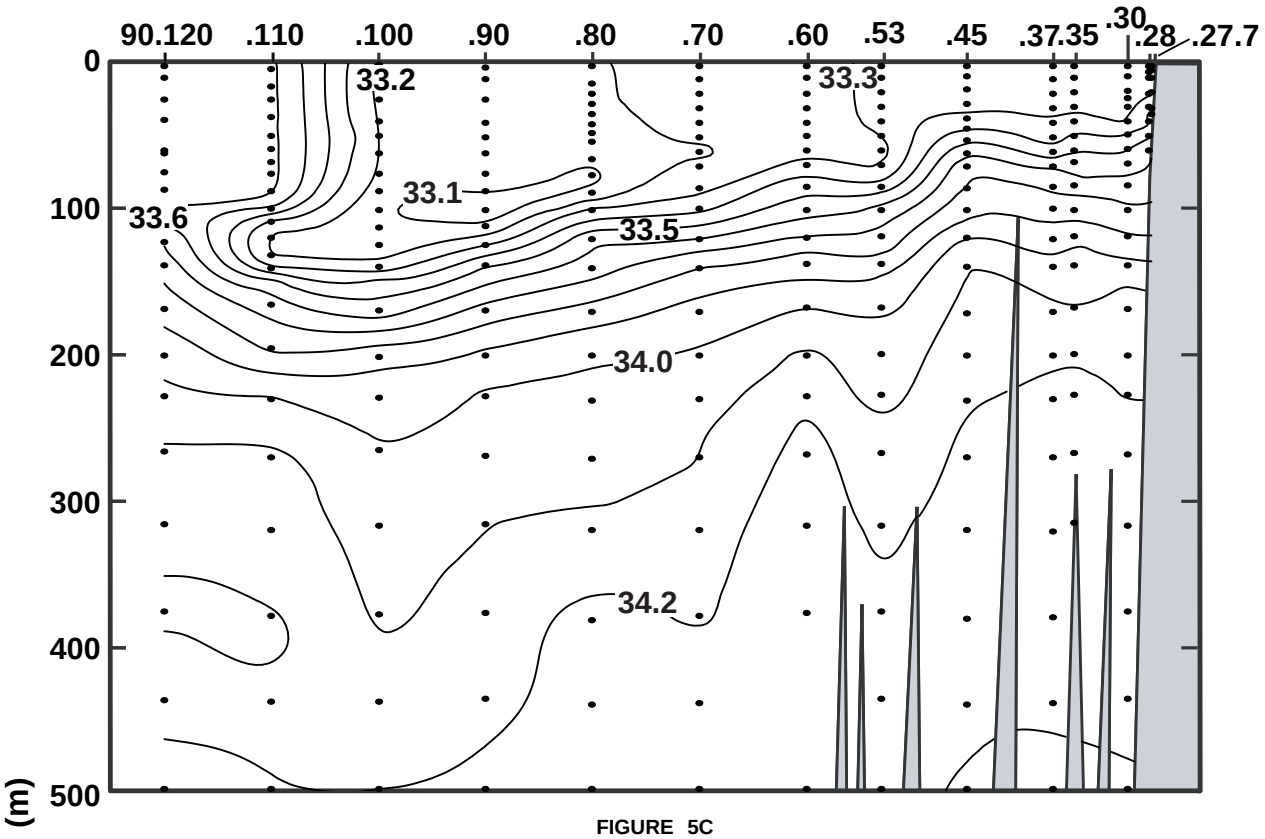

FIGURE 5C

SILICATE (μM/L) ALONG CALCOFI LINE 90

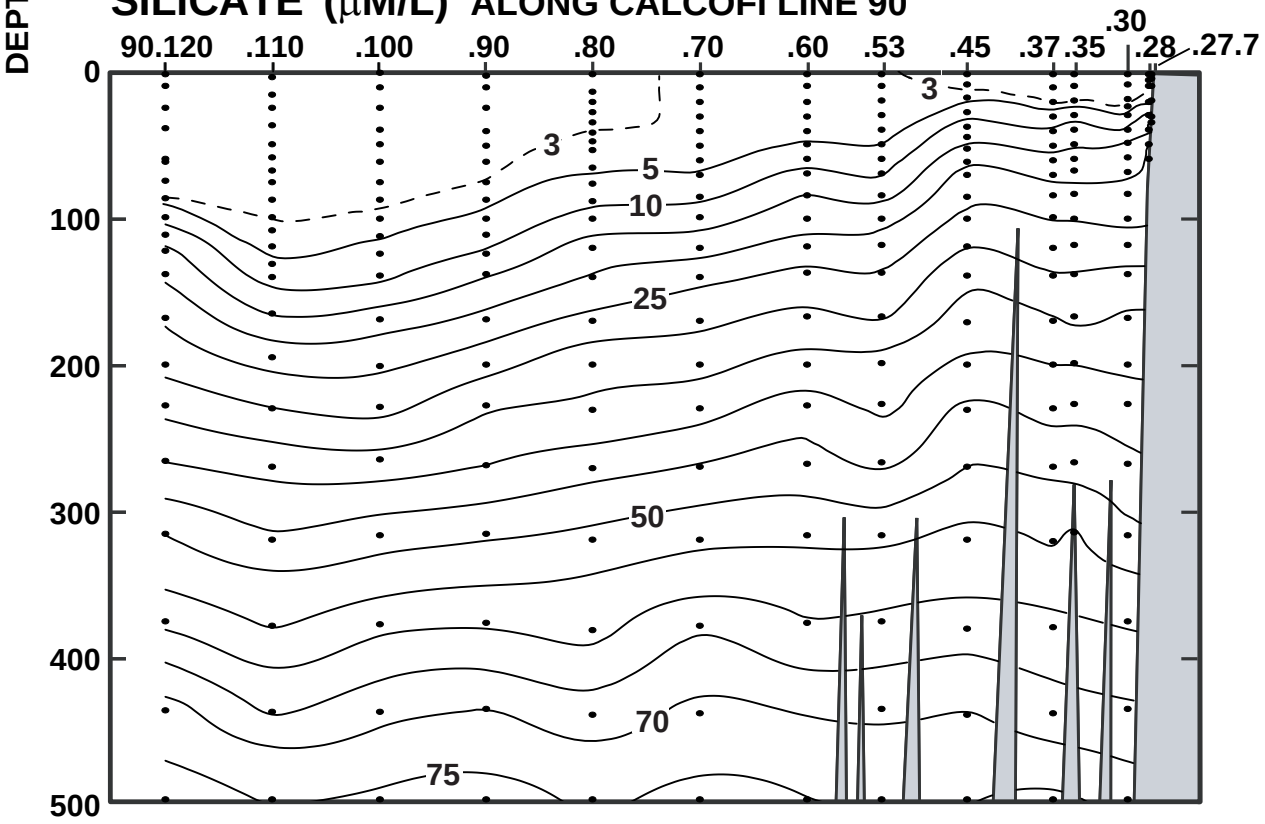

FIGURE 5D

CALCOFI CRUISE 0903

11 - 14 March 2009

NITRATE (μM/L) ALONG CALCOFI LINE 90

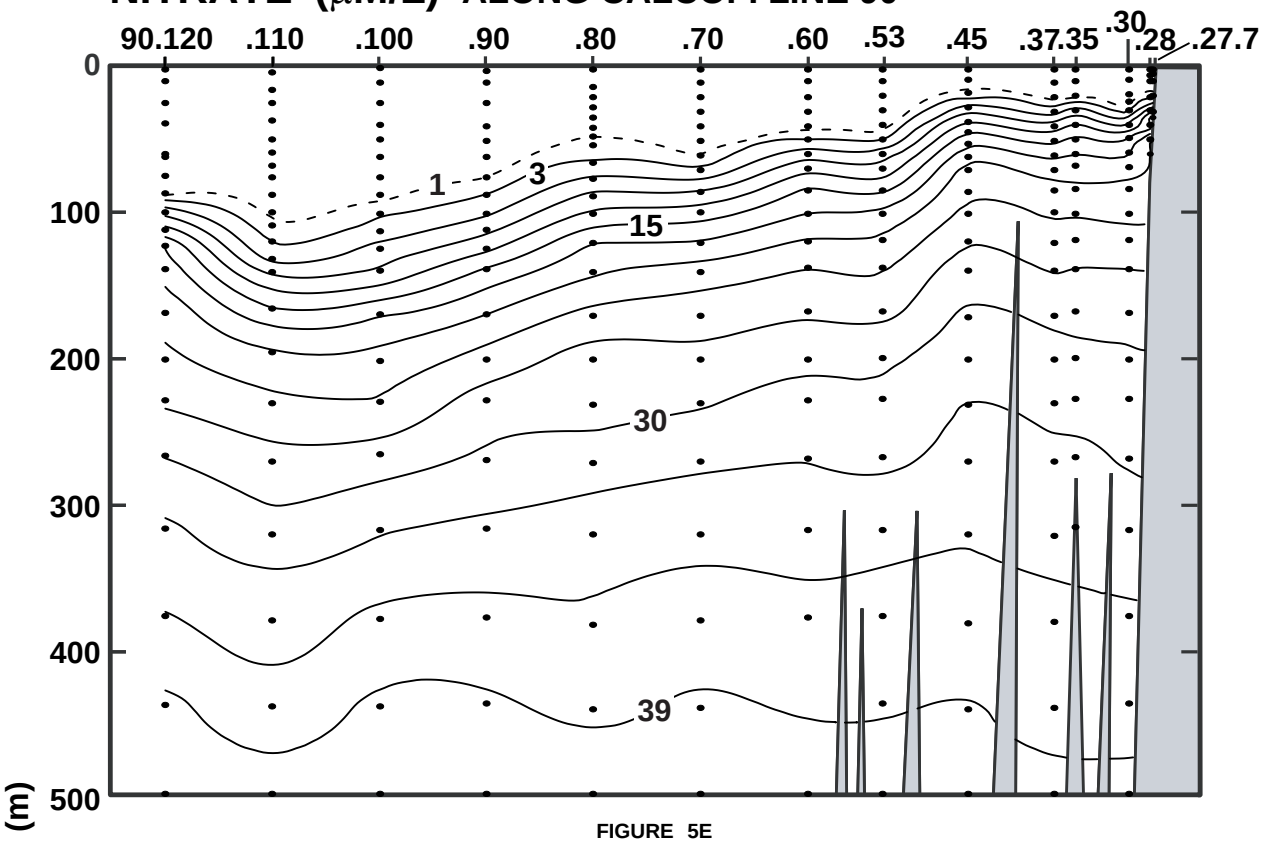

FIGURE 5E

PHOSPHATE (μM/L) ALONG CALCOFI LINE 90

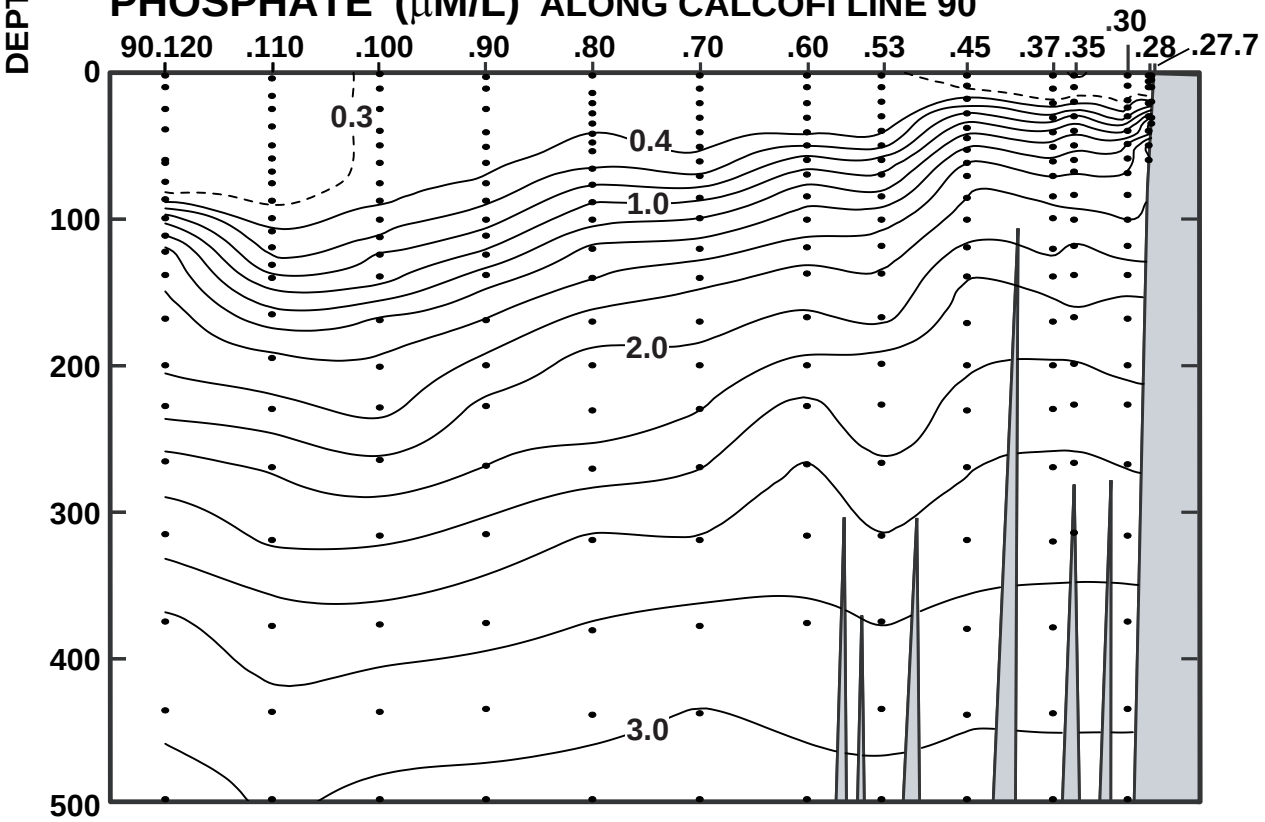

FIGURE 5F

CALCOFI CRUISE 0903

11 - 14 March 2009

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

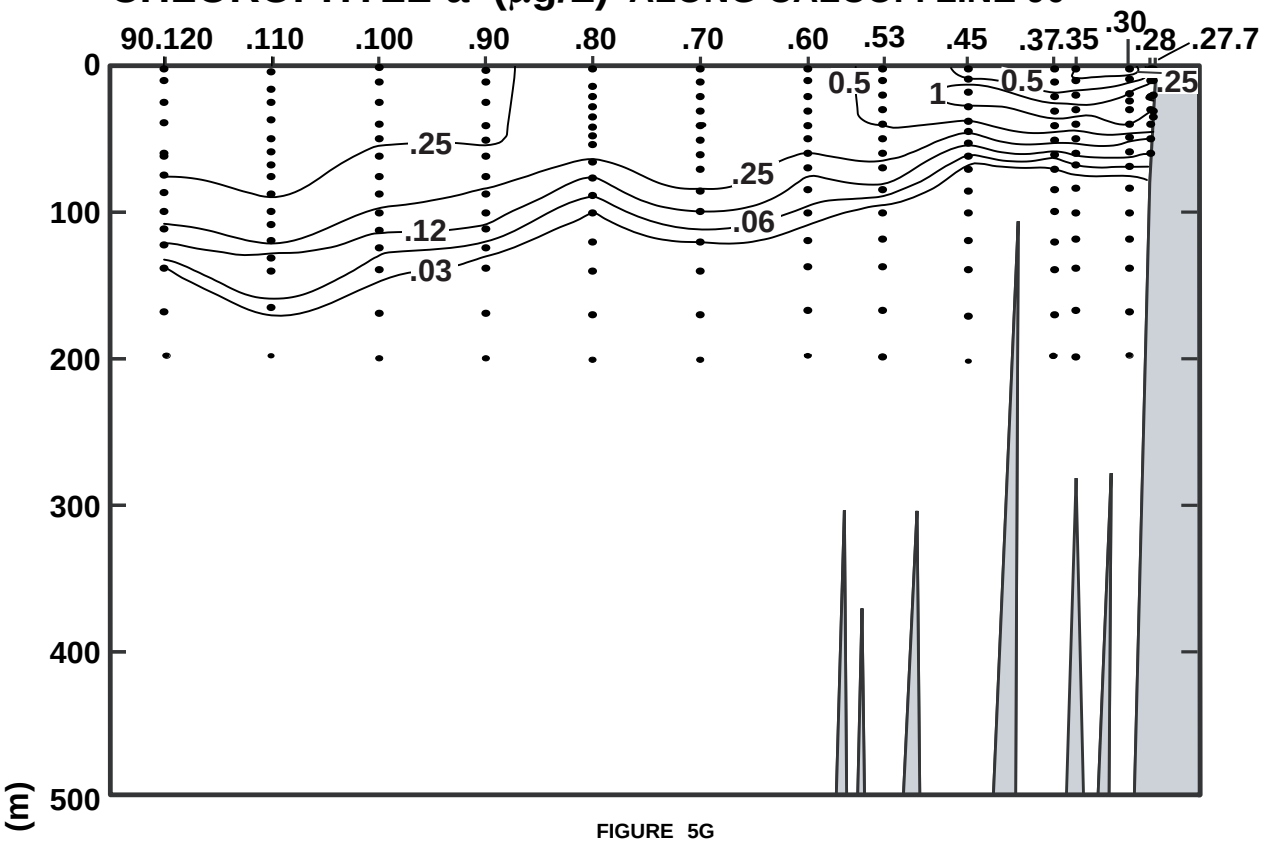

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

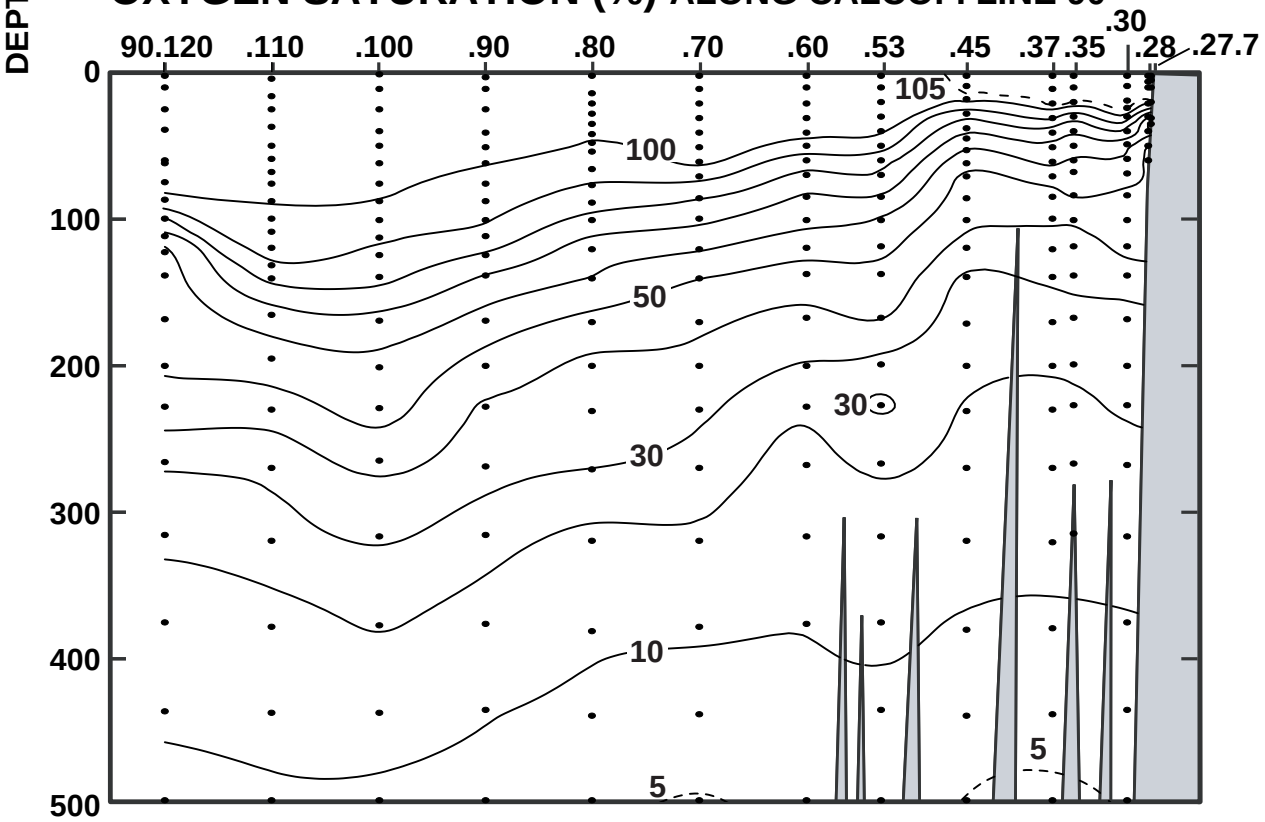

FIGURE 5H

CALCOFI CRUISE 0903

11 - 14 March 2009

OXYGEN (mL/L) ALONG CALCOFI LINE 90

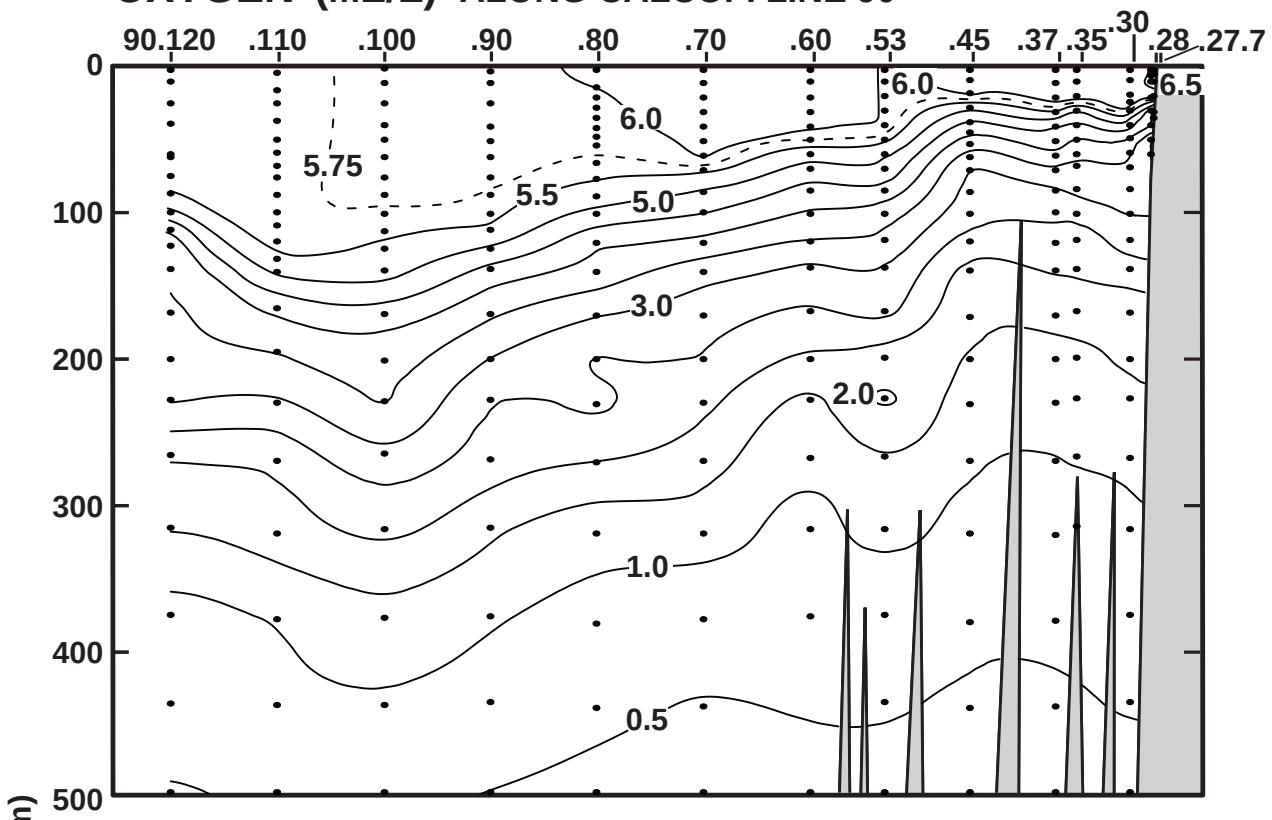

FIGURE 5I

NITRITE (μM/L) ALONG CALCOFI LINE 90

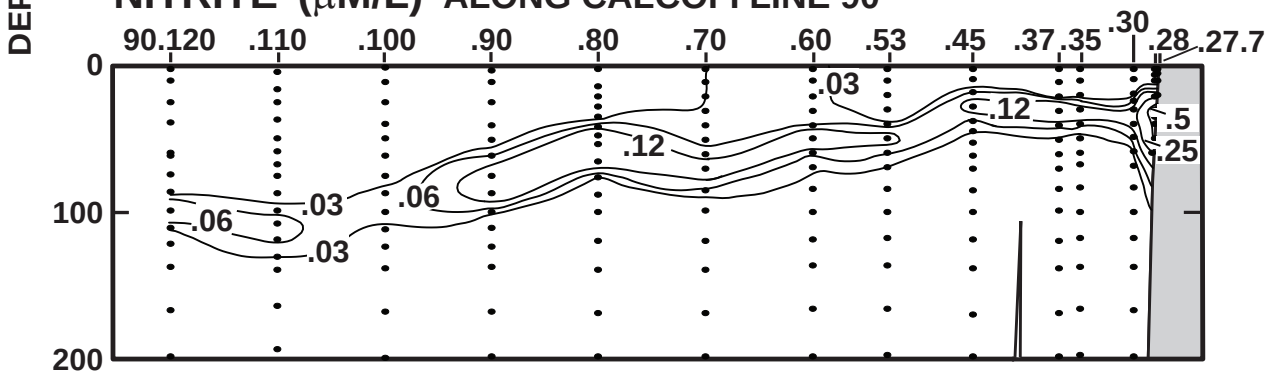

FIGURE 5J

PHAEOPIGMENTS (μg/L) ALONG CALCOFI LINE 90

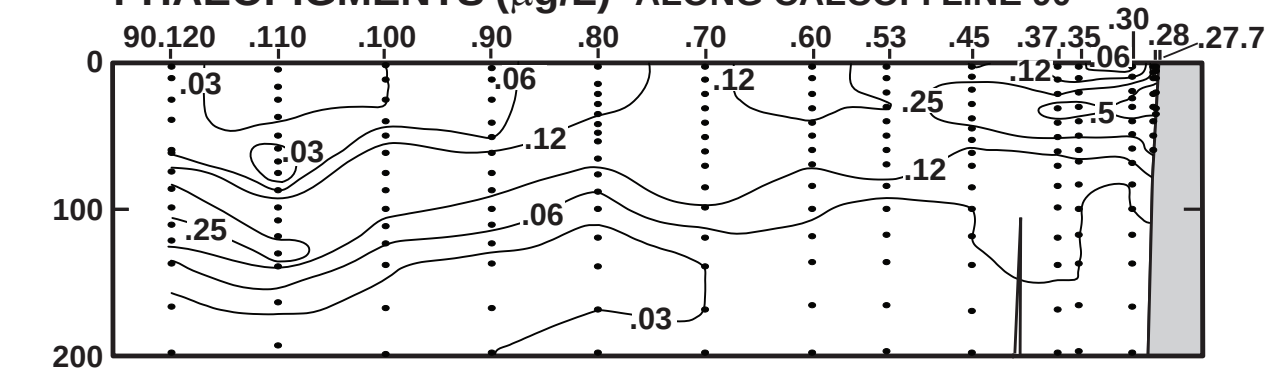

FIGURE 5K

PERSONNEL

CalCOFI Cruise 0903

SHIP'S CAPTAIN

Demien Bailey, RV *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Griffith, David A. (Chief Scientist)	Fishery Biologist, NMFS	1,2
Abramenkoff, Dimitry N.	Fishery Biologist, NMFS	2
Camacho-Wylie, Dominique	Marine Mammal Observer, MPL	1,2
Campbell, Greg S.	Staff Research Associate, SIO	1,2
Dovel, Shonna L.	Staff Research Associate, SIO	1,2
Faber, David N.	Staff Research Associate, SIO	1,2
Havron, Andrea	Marine Mammal Observer, MPL	1,2
Hays, Amy E.	Fishery Biologist, NMFS	1,2
Manion, Sue M	Fishery Biologist, NMFS	1
Munger, Lisa	Post-Doc, SIO	1,2
Overcash, Bryan J.	Staff Research Associate, SIO	1,2
Roadman, Megan J.	Staff Research Associate, SIO	1,2
Rodgers-Wolgast, Jennifer L.	Staff Research Associate, SIO	1,2
Schickenberg, Nina	Volunteer	1,2
Schuller, Daniel G	Staff Research Associate, SIO	1,2
Susner, Michael G.	Staff Research Associate, SIO	1,2
Wilkinson, James A.	Programmer Analyst, SIO	1,2

Leg 1: San Diego to Dana Point, California, 7-13 March, 2009
Leg 2: Dana Point to San Diego, California, 13-22 March, 2009

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 76.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 44.0 N	121 33.5 W	22/03/09	2313 UTC	889 m	320 35 kn	320 08 07	1	1024.9 mb	11.8 C	8.5 C		3/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.79	12.79	33.392	25.189	276.8	0.000	6.18	102.8	5.1	0.52	2.7	0.11	0.30	1.39	0.20	0	
2	12.79	12.79	33.392	25.189	276.8	0.006	6.18	102.8	5.1	0.52	2.7	0.11	0.30	1.39	0.20	2	220
10 ISL	12.78 D	12.78	33.385 D	25.186	277.3	0.028	6.21	103.3	4.9	0.53	2.8	0.11	0.27	1.26	0.30	10	
11	12.78	12.78	33.389	25.189	277.1	0.030	6.21	103.3	4.9	0.53	2.8	0.11	0.27	1.24	0.32	11	219
20 ISL	12.73 D	12.73	33.391 D	25.201	276.2	0.055	6.17	102.5	4.9	0.53	2.9	0.11	0.25	1.24	0.32	20	
21	12.78	12.78	33.389	25.189	277.3	0.058	6.17	102.6	4.9	0.53	2.9	0.11	0.25	1.24	0.32	21	218
30 ISL	12.32 D	12.32	33.436 D	25.315	265.6	0.083	6.04	99.5	8.7	0.70	5.3	0.13	0.28	1.33	0.40	30	
31	12.34	12.34	33.439	25.314	265.7	0.085	6.02	99.2	9.1	0.72	5.6	0.13	0.28	1.33	0.41	31	217
40	12.24	12.23	33.442	25.335	263.9	0.109	5.88	96.7	9.8	0.77	6.4	0.15	0.25	1.12	0.41	40	216
49	11.86	11.85	33.443	25.408	257.2	0.133	5.38	87.8	11.9	0.94	9.0	0.14	0.21	0.68	0.32	49	215
50 ISL	11.74 D	11.73	33.449 D	25.435	254.6	0.135	5.31	86.4	12.1	0.96	9.4	0.14	0.19	0.63	0.31	50	
61	10.87	10.86	33.429	25.577	241.3	0.162	4.56	72.8	15.0	1.23	13.7	0.07	0.03	0.16	0.22	61	214
70	10.27	10.26	33.475	25.717	228.1	0.183	4.15	65.4	17.7	1.44	17.2	0.02	0.01	0.08	0.14	70	213
75 ISL	10.25 D	10.24	33.515 D	25.752	224.9	0.195	3.86	60.8	19.1	1.52	18.4	0.02	0.01	0.06	0.14	75	
85	10.21	10.20	33.667	25.878	213.2	0.217	3.40	53.6	21.6	1.63	20.0	0.01	0.01	0.04	0.15	85	212
100	9.62	9.61	33.685	25.991	202.7	0.248	3.44	53.5	23.6	1.69	21.6	0.01	0.00	0.01	0.12	101	211
123	9.26	9.25	33.799	26.139	189.0	0.293	3.11	48.0	26.8	1.81	23.7	0.01	0.00	0.01	0.09	124	210
125 ISL	9.18 D	9.17	33.834 D	26.179	185.2	0.297	3.07	47.3	27.2	1.83	23.9	0.01	0.00	0.01	0.09	126	
141	8.86	8.84	33.925	26.301	173.9	0.325	2.69	41.2	30.8	1.95	25.9	0.02	0.00	0.00	0.08	142	209
150 ISL	8.67 D	8.65	33.959 D	26.357	168.7	0.341	2.48	37.8	32.7	2.01	26.7	0.02	0.00	0.00	0.08	151	
171	8.61	8.59	34.053	26.441	161.2	0.375	2.02	30.8	37.0	2.13	28.3	0.01	0.00	0.00	0.07	172	208
200	8.23	8.21	34.112	26.545	151.7	0.421	1.56	23.6	43.3	2.32	30.9	0.01	0.00	0.00	0.08	201	207
233	7.86	7.84	34.110	26.599	147.0	0.470	1.50	22.5	46.1	2.38	32.1	0.02	0.00			234	206
250 ISL	7.76 D	7.74	34.110 D	26.614	145.8	0.495	1.37	20.5	48.1	2.44	32.6	0.01	0.00			252	
273	7.64	7.61	34.152	26.665	141.4	0.528	1.17	17.5	50.9	2.53	33.3	0.00	0.00			275	205
300 ISL	7.49 D	7.46	34.165 D	26.697	138.7	0.566	1.02	15.2	53.5	2.59	34.0	0.00	0.00			302	
320	7.43	7.40	34.192	26.727	136.2	0.593	0.93	13.8	55.3	2.63	34.5	0.01	0.00			322	204
380	6.98	6.94	34.221	26.813	128.7	0.673	0.71	10.4	62.3	2.75	36.1	0.01	0.00			383	203
400 ISL	6.88 D	6.84	34.217 D	26.824	127.9	0.698	0.67	9.8	63.9	2.78	36.5	0.01	0.00			403	
439	6.64	6.60	34.226	26.863	124.5	0.748	0.61	8.9	67.2	2.83	37.2	0.00	0.00			442	202
500 ISL	5.95 D	5.91	34.223 D	26.951	116.4	0.821	0.50	7.2	75.7	2.93	38.9	0.00	0.00			504	
512	5.92	5.88	34.233	26.962	115.5	0.835	0.48	6.9	77.4	2.95	39.2	0.00	0.00			516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 22.7 N	122 14.6 W	22/03/09	1608 UTC	4019 m	320 33 kn	320 07 07	1	1023.7 mb	13.3 C	9.1 C	12m	4/8	AC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.54	12.54	33.125	25.031	291.8	0.000	6.20	102.4	4.4	0.47	1.8	0.10	0.23	0.80	0.13	0	
2 A	12.54	12.54	33.125	25.031	291.9	0.006	6.20	102.4	4.4	0.47	1.8	0.10	0.23	0.80	0.13	2	222
9 A	12.53	12.53	33.119	25.028	292.3	0.026	6.21	102.6	4.5	0.49	1.8	0.10	0.20	0.74	0.16	9	221
10 ISL	12.50 D	12.50	33.105 D	25.023	292.8	0.029	6.21	102.5	4.5	0.49	1.8	0.10	0.19	0.74	0.16	10	
17 A	12.51	12.51	33.111	25.026	292.7	0.050	6.23	102.8	4.5	0.49	1.8	0.10	0.16	0.74	0.16	17	220
20 ISL	12.50 D	12.50	33.103 D	25.022	293.2	0.058	6.23	102.8	4.4	0.49	1.8	0.10	0.16	0.76	0.16	20	
26 A	12.55	12.55	33.125	25.030	292.6	0.076	6.24	103.1	4.2	0.49	1.7	0.10	0.16	0.78	0.17	26	219
30 ISL	12.55 D	12.55	33.122 D	25.027	292.9	0.088	6.21	102.6	4.3	0.50	1.7	0.10	0.14	0.76	0.15	30	
34 A	12.52	12.52	33.111	25.025	293.3	0.099	6.19	102.2	4.4	0.50	1.7	0.10	0.13	0.75	0.13	34	218
42	12.80	12.79	33.253	25.081	288.2	0.123	6.21	103.2	2.9	0.46	1.4	0.11	0.19	1.21	0.14	42	217
49	12.88	12.87	33.333	25.127	284.0	0.143	6.15	102.4	5.5	0.50	1.9	0.09	0.30	0.91	0.19	49	216
50 ISL	12.83 D	12.82	33.334 D	25.138	283.0	0.146	6.15	102.3	5.8	0.51	2.0	0.09	0.32	0.86	0.20	50	
55	12.74	12.73	33.337	25.158	281.2	0.160	6.14	102.0	6.7	0.54	2.3	0.12	0.39	0.63	0.24	55	215
61	12.59	12.58	33.322	25.176	279.7	0.177	6.02	99.7	7.3	0.57	2.6	0.20	0.45	0.53	0.28	61	214
71	12.48	12.47	33.357	25.224	275.3	0.204	5.79	95.6	8.7	0.66	3.8	0.41	0.33	0.30	0.24	71	213
75 ISL	12.24 D	12.23	33.317 D	25.239	273.9	0.215	5.65	92.8	9.3	0.73	4.9	0.35	0.24	0.25	0.22	75	
86	11.68	11.67	33.387	25.399	259.0	0.245	5.15	83.7	11.6	0.97	8.8	0.09	0.00	0.16	0.18	86	212
100 ISL	10.84 D	10.83	33.492 D	25.632	237.0	0.279	4.21	67.2	16.6	1.38	14.8	0.03	0.00	0.09	0.15	100	
102	10.70	10.69	33.515	25.675	232.9	0.284	4.09	65.1	17.3	1.43	15.6	0.02	0.00	0.08	0.14	103	211
122	9.56	9.55	33.591	25.927	209.1	0.328	3.94	61.2	21.1	1.58	18.8	0.01	0.00	0.01	0.05	123	210
125 ISL	9.72 D	9.71	33.717 D	26.000	202.4	0.334	3.79	59.1	22.0	1.63	19.5	0.01	0.00	0.01	0.05	126	
142	9.38	9.36	33.829	26.143	189.0	0.368	2.97	46.0	26.8	1.87	23.3	0.00	0.00	0.01	0.07	143	209
150 ISL	8.96 D	8.94	33.851 D	26.228	181.1	0.382	2.99	45.9	28.0	1.88	23.9	0.00	0.00	0.01	0.06	151	
170	8.65	8.63	33.917	26.328	171.8	0.418	3.03	46.2	30.7	1.90	24.8	0.00	0.00	0.00	0.03	171	208
200 ISL	8.50 D	8.48	34.050 D	26.456	160.2	0.468	2.02	30.7	38.0	2.21	28.6	0.00	0.00	0.00	0.05	201	
204	8.42	8.40	34.056	26.473	158.7	0.474	1.87	28.4	38.9	2.25	29.1	0.00	0.00	0.00	0.05	205	207
231	8.19	8.17	34.084	26.530	153.7	0.516	1.63	24.6	42.0	2.35	30.8	0.00	0.00			232	206
250 ISL	7.97 D	7.94	34.111 D	26.584	148.8	0.545	1.48	22.2	44.8	2.42	31.6	0.00	0.00			251	
272	7.76	7.73	34.131	26.631	144.6	0.577	1.33	19.9	48.5	2.50	32.5	0.00	0.00			274	205
300 ISL	7.19 D	7.16	34.100 D	26.688	139.4	0.617	1.18	17.4	53.5	2.60	34.0	0.00	0.00			302	
319	7.09	7.06	34.136	26.730	135.6	0.643	1.09	16.1	56.8	2.66	34.9	0.00	0.00			321	204
382	6.93	6.89	34.225	26.823	127.7	0.726	0.66	9.7	63.8	2.83	36.2	0.00	0.00			384	203
400 ISL	6.70 D	6.66	34.217 D	26.848	125.4	0.749	0.60	8.8	65.9	2.87	36.8	0.00	0.00			403	
439	6.47	6.43	34.245	26.901	120.8	0.797	0.51	7.4	70.8	2.95	38.1	0.00	0.00			442	202
500 ISL	5.90 D	5.86	34.269 D	26.993	112.4	0.868	0.37	5.3	79.0	3.06	39.5	0.00	0.00			503	
519	5.88	5.83	34.292	27.014	110.7	0.889	0.32	4.6	81.6	3.09	40.0	0.00	0.00			523	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 76.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 3.5 N	122 56.3 W	22/03/09	0821 UTC	4229 m	260 23 kn			1019.7 mb	14.0 C	12.5 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.81	13.81	33.032	24.706	322.7	0.000	5.99	101.5	2.2	0.34	0.0	0.00	0.22	0.22	0.04	0	
2	13.81	13.81	33.032	24.706	322.8	0.006	5.99	101.5	2.2	0.34	0.0	0.00	0.22	0.22	0.04	2	220
10	13.81	13.81	33.032	24.707	323.0	0.032	6.00	101.7	2.2	0.35	0.0	0.00	0.18	0.22	0.04	10	219
20 ISL	13.81 D	13.81	33.028 D	24.704	323.5	0.065	6.03	102.2	2.2	0.36	0.0	0.00	0.15	0.23	0.04	20	
25	13.65	13.65	33.019	24.730	321.2	0.081	6.04	102.0	2.2	0.36	0.0	0.00	0.14	0.25	0.05	25	218
30 ISL	13.58 D	13.58	33.007 D	24.735	320.8	0.097	6.04	101.9	2.2	0.36	0.0	0.00	0.14	0.28	0.06	30	
40	13.51	13.50	33.003	24.746	320.0	0.129	6.06	102.1	2.2	0.37	0.0	0.00	0.15	0.36	0.08	40	217
50	13.19	13.18	32.973	24.787	316.4	0.161	6.11	102.2	2.4	0.39	0.1	0.02	0.15	0.47	0.09	50	216
62	12.99	12.98	32.962	24.819	313.7	0.198	6.12	101.9	2.4	0.40	0.3	0.03	0.14	0.48	0.13	62	215
74	12.63	12.62	32.956	24.884	307.7	0.236	6.11	101.0	3.0	0.44	0.8	0.05	0.22	0.48	0.16	74	214
75 ISL	12.59 D	12.58	32.955 D	24.891	307.0	0.239	6.11	100.9	3.0	0.44	0.8	0.05	0.23	0.47	0.16	75	
87	12.42	12.41	32.967	24.934	303.3	0.275	6.04	99.4	3.7	0.49	1.4	0.08	0.31	0.27	0.11	87	213
100	11.68	11.67	32.934	25.047	292.7	0.314	5.89	95.4	5.0	0.65	3.4	0.13	0.25	0.14	0.08	100	212
111	10.69	10.68	32.918	25.212	277.1	0.345	5.69	90.2	6.1	0.78	5.5	0.03	0.08	0.08	0.06	112	211
124	10.11	10.10	33.046	25.411	258.3	0.380	5.41	84.7	9.2	0.95	8.6	0.01	0.04	0.03	0.05	125	210
125 ISL	10.01 D	10.00	33.042 D	25.424	257.0	0.383	5.38	84.1	9.5	0.97	8.9	0.01	0.04	0.03	0.05	126	
139	9.60	9.58	33.217	25.629	237.8	0.418	4.99	77.4	14.3	1.23	13.0	0.00	0.06	0.01	0.03	140	209
150 ISL	9.48 D	9.46	33.353 D	25.755	226.0	0.443	4.67	72.3	16.9	1.34	15.1	0.00	0.06	0.01	0.03	151	
169	9.27	9.25	33.672	26.039	199.5	0.483	4.16	64.2	20.6	1.47	17.8	0.00	0.07	0.00	0.02	170	208
200	8.82	8.80	33.892	26.282	176.8	0.542	3.53	54.0	27.1	1.70	21.9	0.00	0.00	0.00	0.02	201	207
229	8.38	8.36	33.964 D	26.407	165.4	0.591										230	206
250 ISL	7.95 D	7.92	33.989 D	26.491	157.5	0.625	2.73	41.0	36.7	2.00	25.8	0.00	0.04			251	
269	7.70	7.67	33.989	26.528	154.3	0.655	2.48	37.0	40.2	2.10	26.9	0.00	0.06			271	205
300 ISL	7.19 D	7.16	34.009 D	26.616	146.1	0.701	2.11	31.1	46.4	2.28	29.5	0.00	0.02			302	
318	7.08	7.05	34.027	26.646	143.5	0.728	1.94	28.5	49.9	2.37	31.0	0.00	0.00			320	204
378	6.44	6.41	34.041	26.743	134.8	0.811	1.62	23.5	59.1	2.56	34.1	0.00	0.00			380	203
400 ISL	6.19 D	6.15	34.048 D	26.781	131.3	0.840	1.41	20.3	62.8	2.65	35.4	0.00	0.00			403	
437	5.98	5.94	34.093	26.843	125.7	0.888	1.07	15.3	69.0	2.78	37.3	0.00	0.00			440	202
500 ISL	5.61 D	5.57	34.125 D	26.915	119.4	0.965	0.81	11.5	77.6	2.91	39.2	0.00	0.00			503	
511	5.50	5.46	34.133	26.934	117.5	0.978	0.76	10.8	79.1	2.93	39.5	0.00	0.00			514	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 76.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 43.4 N	123 37.7 W	22/03/09	0238 UTC	4322 m	270 12 kn	280 02 06	1	1018.3 mb	14.9 C	13.0 C		3/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.09	14.09	33.052	24.664	326.8	0.000	5.98	102.0	2.2	0.35	0.0	0.00	0.22	0.18	0.06	0	
1	14.09	14.09	33.052	24.664	326.8	0.003	5.98	102.0	2.2	0.35	0.0	0.00	0.22	0.18	0.06	1	220
10	13.96	13.96	33.057	24.695	324.1	0.033	5.99	101.9	2.3	0.36	0.0	0.00	0.23	0.18	0.06	10	219
20 ISL	13.89 D	13.89	33.049 D	24.704	323.5	0.065	5.98	101.6	2.2	0.35	0.0	0.00	0.17	0.19	0.05	20	
25	13.89	13.89	33.051	24.705	323.5	0.081	5.98	101.6	2.2	0.35	0.0	0.00	0.14	0.20	0.05	25	218
30 ISL	13.86 D	13.86	33.048 D	24.709	323.3	0.097	6.01	102.0	2.2	0.36	0.0	0.00	0.16	0.27	0.08	30	
40	13.41	13.40	33.001	24.765	318.3	0.129	6.07	102.0	2.2	0.37	0.0	0.01	0.19	0.39	0.14	40	217
50	13.23	13.22	33.000	24.800	315.1	0.161	6.04	101.1	2.4	0.37	0.1	0.02	0.12	0.39	0.12	50	216
62	13.21	13.20	33.007	24.810	314.5	0.199	6.01	100.6	2.5	0.40	0.1	0.03	0.20	0.31	0.12	62	215
75	13.20	13.19	33.004	24.810	314.9	0.240	5.98	100.1	2.3	0.40	0.1	0.04	0.17	0.27	0.10	75	214
87	12.36	12.35	32.991	24.964	300.4	0.277	5.77	94.9	3.3	0.54	2.0	0.16	0.12	0.19	0.11	87	213
100 ISL	11.36 D	11.35	32.946 D	25.115	286.2	0.315	5.70	91.7	4.5	0.65	3.8	0.04	0.04	0.11	0.09	100	
101	11.37	11.36	32.948	25.114	286.3	0.318	5.70	91.7	4.6	0.66	3.9	0.03	0.03	0.11	0.09	101	212
111	11.28	11.27	32.999	25.171	281.1	0.346	5.62	90.3	5.1	0.69	4.7	0.02	0.03	0.08	0.07	112	211
123	10.62	10.61	32.947	25.247	274.0	0.379	5.67	89.8	6.0	0.77	5.8	0.01	0.00	0.04	0.04	124	210
125 ISL	10.46 D	10.45	32.941 D	25.270	271.8	0.385	5.67	89.4	6.2	0.79	6.1	0.01	0.00	0.04	0.04	126	
139	9.91	9.89	32.963	25.380	261.5	0.422	5.57	86.8	8.3	0.91	8.1	0.00	0.03	0.02	0.04	140	209
150 ISL	9.64 D	9.62	33.122 D	25.548	245.7	0.450	5.35	83.0	10.0	1.00	9.8	0.00	0.05	0.01	0.04	151	
168	9.71	9.69	33.400	25.754	226.5	0.492	4.86	75.6	13.5	1.16	12.9	0.00	0.06	0.01	0.03	169	208
200 ISL	9.00 D	8.98	33.750 D	26.143	190.1	0.559	3.79	58.2	24.0	1.61	20.1	0.00	0.05	0.00	0.02	201	
202	9.00	8.98	33.794	26.178	186.9	0.563	3.74	57.4	24.6	1.63	20.5	0.00	0.05	0.00	0.02	203	207
229	8.57	8.55	33.941	26.360	169.9	0.611	3.81	58.0	27.7	1.64	21.7	0.00	0.05			230	206
250 ISL	8.22 D	8.19	33.949 D	26.420	164.5	0.646	3.64	55.0	30.5	1.70	22.9	0.00	0.02			251	
267	7.99	7.96	33.976	26.475	159.4	0.674	3.50	52.6	33.5	1.80	24.3	0.00	0.00			268	205
300 ISL	7.63 D	7.60	34.002 D	26.549	152.8	0.725	2.26	33.7	42.7	2.22	29.5	0.00	0.00			302	
317	7.49	7.46	34.043	26.601	148.0	0.751	1.61	23.9	47.7	2.44	32.2	0.00	0.00			319	204
381	6.66	6.63	34.069	26.736	135.6	0.842	1.39	20.3	58.8	2.61	35.0	0.00	0.00			383	203
400 ISL	6.33 D	6.29	34.071 D	26.781	131.4	0.867	1.37	19.8	62.4	2.64	35.8	0.00	0.00			402	
437	5.86	5.82	34.062	26.834	126.5	0.915	1.30	18.6	69.2	2.71	37.4	0.00	0.00			440	202
500 ISL	5.55 D	5.51	34.145 D	26.938	117.2	0.991	0.74	10.5	78.7	2.93	39.8	0.00	0.00			503	
512	5.52	5.48	34.155	26.949	116.2	1.005	0.63	8.9	80.5	2.97	40.2	0.00	0.00			515	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 76.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 23.9 N	124 18.8 W	21/03/09	2101 UTC	4502 m	230 16 kn	300 03 05	1	1019.4 mb	16.3 C	15.0 C	30m	6/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.27	14.27	33.065	24.637	329.4	0.000	5.94	101.7	2.2	0.34	0.0	0.00	0.03	0.14	0.04	0	
2	14.27	14.27	33.065	24.637	329.4	0.007	5.94	101.7	2.2	0.34	0.0	0.00	0.03	0.14	0.04	2	220
10 ISL	14.06 D	14.06	33.060 D	24.677	325.8	0.033	5.95	101.4	2.0	0.33	0.0	0.00	0.06	0.15	0.04	10	
11	14.07	14.07	33.064	24.678	325.8	0.036	5.95	101.4	2.0	0.33	0.0	0.00	0.07	0.15	0.04	11	219
20 ISL	14.02 D	14.02	33.058 D	24.684	325.4	0.065	5.96	101.5	1.9	0.33	0.0	0.00	0.06	0.16	0.05	20	
26	14.01	14.01	33.062	24.689	325.1	0.085	5.96	101.5	1.9	0.33	0.0	0.00	0.06	0.16	0.05	26	218
30 ISL	14.00 D	14.00	33.060 D	24.690	325.2	0.098	5.97	101.6	1.9	0.33	0.0	0.00	0.05	0.17	0.05	30	
41	13.97	13.96	33.060	24.696	324.8	0.134	5.98	101.7	1.8	0.34	0.0	0.00	0.04	0.19	0.06	41	217
50 ISL	13.96 D	13.95	33.072 D	24.708	324.0	0.163	5.95	101.2	2.1	0.33	0.0	0.00	0.05	0.27	0.09	50	
51	13.96	13.95	33.076	24.711	323.7	0.166	5.95	101.2	2.1	0.33	0.0	0.00	0.05	0.28	0.09	51	216
63	13.90	13.89	33.076	24.724	322.8	0.205	5.91	100.4	2.1	0.34	0.0	0.00	0.21	0.30	0.11	63	215
75	13.65	13.64	33.034	24.743	321.3	0.244	5.94	100.3	2.0	0.34	0.0	0.02	0.08	0.27	0.12	75	214
88	13.60	13.59	33.027	24.748	321.2	0.285	5.93	100.1	2.1	0.35	0.0	0.03	0.11	0.23	0.10	88	213
100 ISL	12.22 D	12.21	32.977 D	24.980	299.2	0.323	5.76	94.4	3.6	0.54	2.3	0.09	0.06	0.15	0.10	100	
101	12.20	12.19	32.976	24.983	298.9	0.325	5.75	94.2	3.7	0.56	2.5	0.09	0.06	0.14	0.10	101	212
112	11.35	11.34	32.951	25.121	285.9	0.358	5.71	91.8	4.6	0.65	3.9	0.02	0.08	0.09	0.09	113	211
125	10.52	10.51	32.923	25.245	274.2	0.394	5.69	89.9	6.1	0.79	6.0	0.01	0.00	0.04	0.05	126	210
141	10.25	10.23	33.065	25.402	259.5	0.437	5.42	85.2	8.5	0.91	8.3	0.00	0.00	0.01	0.03	142	209
150 ISL	10.42 D	10.40	33.252 D	25.519	248.7	0.460	5.14	81.2	10.9	1.05	10.5	0.00	0.00	0.01	0.03	151	
173	9.76	9.74	33.549	25.863	216.4	0.513	4.40	68.6	17.3	1.39	16.0	0.00	0.00	0.00	0.02	174	208
200 ISL	9.22 D	9.20	33.820 D	26.163	188.3	0.568	3.97	61.3	22.0	1.52	19.1	0.00	0.00	0.00	0.01	201	
203	9.21	9.19	33.828	26.171	187.6	0.573	3.93	60.6	22.5	1.53	19.4	0.00	0.00	0.00	0.01	204	207
232	8.58	8.56	33.935	26.354	170.5	0.625	3.30	50.2	29.8	1.81	23.7	0.00	0.00			233	206
250 ISL	8.37 D	8.34	33.962 D	26.407	165.7	0.656	3.04	46.1	32.7	1.92	25.3	0.00	0.00			251	
270	8.13	8.10	33.975	26.454	161.5	0.688	2.79	42.0	35.4	2.01	26.8	0.00	0.00			271	205
300 ISL	7.72 D	7.69	34.012 D	26.543	153.4	0.736	2.32	34.6	40.8	2.19	29.3	0.00	0.00			302	
320	7.54	7.51	34.025	26.580	150.1	0.766	2.03	30.2	44.7	2.31	30.9	0.00	0.00			322	204
381	6.53	6.50	34.046	26.735	135.6	0.853	1.62	23.5	58.2	2.55	34.5	0.00	0.00			383	203
400 ISL	6.40 D	6.36	34.064 D	26.767	132.8	0.879	1.41	20.4	61.5	2.64	35.6	0.00	0.00			402	
437	6.13	6.09	34.097	26.828	127.3	0.927	1.00	14.4	67.3	2.80	37.6	0.00	0.00			440	202
500 ISL	5.76 D	5.72	34.151 D	26.917	119.4	1.004	0.69	9.8	75.8	2.95	39.4	0.00	0.00			503	
511	5.74	5.70	34.163	26.929	118.3	1.017	0.64	9.1	77.3	2.98	39.7	0.00	0.00			514	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 50.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 28.1 N	120 29.7 W	20/03/09	0356 UTC	29 m	160 09 kn			1012.3 mb	13.0 C	12.2 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.39	13.39	33.512	25.163	279.3	0.000	6.91	116.5	1.4	0.30	0.0	0.02	0.23	2.34	0.57	0	
1	13.39	13.39	33.512	25.163	279.3	0.003	6.91	116.5	1.4	0.30	0.0	0.02	0.23	2.34	0.57	1	205
5	13.38	13.38	33.513	25.166	279.1	0.014	6.90	116.3	1.5	0.31	0.1	0.03	0.08	2.36	0.53	5	204
10 ISL	13.32 D	13.32	33.521 D	25.184	277.5	0.028	6.82	114.8	2.2	0.34	0.5	0.04	0.10	2.47	0.52	10	
11	13.33	13.33	33.521	25.182	277.7	0.031	6.81	114.7	2.3	0.35	0.6	0.04	0.10	2.51	0.52	11	202
12	13.33	13.33	33.521	25.182	277.8	0.033										12	203
20 ISL	11.93 D	11.93	33.606 D	25.521	245.7	0.054	4.89	80.0	11.8	1.06	8.5	0.17	0.67	3.38	1.11	20	
21	11.92	11.92	33.607	25.523	245.5	0.057	4.68	76.5	12.9	1.14	9.4	0.18	0.73	3.48	1.17	21	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 27.1 N	120 31.4 W	20/03/09	0446 UTC	71 m	310 15 kn			1012.2 mb	14.0 C	11.0 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.90	12.90	33.543	25.285	267.7	0.000	6.06	101.1	5.9	0.67	2.9	0.13	0.16	3.55	1.11	0	
2	12.90	12.90	33.543	25.285	267.8	0.005	6.06	101.1	5.9	0.67	2.9	0.13	0.16	3.55	1.11	2	209
5	12.90	12.90	33.543	25.285	267.8	0.013	6.05	101.0	5.8	0.64	2.9	0.13	0.15	3.56	1.13	5	208
10 ISL	12.90 D	12.90	33.538 D	25.281	268.3	0.027	6.07	101.3	5.9	0.67	2.9	0.13	0.17	3.33	1.04	10	
11	12.90	12.90	33.541	25.283	268.1	0.029	6.07	101.3	5.9	0.67	2.9	0.13	0.18	3.31	1.02	11	207
20	12.72	12.72	33.557	25.331	263.8	0.053	5.87	97.6	6.8	0.73	3.7	0.15	0.17	4.52	1.22	20	206
30	11.72	11.72	33.590	25.548	243.4	0.079	4.40	71.6	13.5	1.25	10.2	0.22	0.27	3.49	1.23	30	205
40	10.98	10.98	33.667	25.742	225.1	0.102	3.28	52.6	19.5	1.60	16.6	0.17	0.13	0.88	1.04	40	204
50 ISL	10.58 D	10.57	33.751 D	25.879	212.4	0.124	2.89	46.0	22.8	1.75	19.3	0.12	0.09	0.62	0.74	50	
51	10.63	10.62	33.736	25.858	214.3	0.126	2.87	45.7	23.1	1.76	19.5	0.12	0.09	0.59	0.71	51	203
60	10.23	10.22	33.844	26.012	199.9	0.145	2.41	38.0	27.1	1.94	22.4	0.06	0.17	0.23	0.63	60	202
65	10.04	10.03	33.879	26.072	194.3	0.155	2.20	34.6	29.3	2.02	23.8	0.08	0.08	0.22	0.72	65	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 19.2 N	120 47.9 W	20/03/09	0758 UTC	745 m	330 19 kn			1013.2 mb	13.1 C	11.8 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.71	12.71	33.397	25.209	274.9	0.000	6.18	102.6	2.9	0.52	3.2	0.16	0.21	1.84	0.24	0	
3	12.71	12.71	33.397	25.209	275.0	0.008	6.18	102.6	2.9	0.52	3.2	0.16	0.21	1.84	0.24	3	221
10	12.70	12.70	33.398	25.212	274.9	0.027	6.19	102.8	2.9	0.52	3.1	0.16	0.19	1.81	0.47	10	219
10	12.70	12.70	33.398	25.212	274.9	0.027										10	220
20 ISL	12.61 D	12.61	33.390 D	25.223	274.0	0.055	6.15	101.9	3.0	0.54	3.2	0.16	0.21	1.73	0.52	20	
21	12.62	12.62	33.397	25.227	273.7	0.058	6.15	101.9	3.0	0.54	3.2	0.16	0.21	1.72	0.52	21	218
30 ISL	12.36 D	12.36	33.413 D	25.290	268.0	0.082	5.96	98.3	7.3	0.68	5.1	0.17	0.13	1.46	0.46	30	
31	12.35	12.35	33.419	25.296	267.4	0.085	5.93	97.7	7.8	0.70	5.3	0.17	0.12	1.42	0.45	31	217
41	12.11	12.10	33.438	25.357	261.9	0.111	5.71	93.6	10.6	0.83	7.0	0.19	0.08	0.77	0.40	41	216
50 ISL	10.59 D	10.58	33.507 D	25.687	230.6	0.133	4.27	67.8	15.8	1.30	14.0	0.06	0.01	0.18	0.25	50	
51	10.69	10.68	33.508	25.670	232.2	0.136	4.12	65.6	16.4	1.35	14.8	0.05	0.00	0.13	0.23	51	215
61	9.82	9.81	33.505	25.816	218.4	0.158	4.09	63.9	19.3	1.53	17.9	0.03	0.00	0.05	0.15	61	214
70	9.66	9.65	33.603	25.919	208.8	0.177	3.83	59.6	21.3	1.61	19.7	0.02	0.00	0.03	0.13	70	213
75 ISL	9.61 D	9.60	33.641 D	25.957	205.3	0.188	3.68	57.2	22.3	1.66	20.5	0.02	0.00	0.02	0.12	75	
85	9.52	9.51	33.718	26.033	198.4	0.208	3.38	52.5	24.2	1.75	21.8	0.01	0.00	0.02	0.10	85	212
100 ISL	9.32 D	9.31	33.852 D	26.170	185.6	0.237	2.91	45.0	27.3	1.88	24.0	0.01	0.00	0.02	0.11	101	
102	9.31	9.30	33.857	26.176	185.1	0.240	2.84	43.9	27.8	1.90	24.3	0.01	0.00	0.02	0.11	103	211
121	9.29	9.28	34.015	26.303	173.4	0.275	2.06	31.9	32.9	2.12	26.4	0.01	0.00	0.02	0.16	122	210
125 ISL	9.08 D	9.07	33.997 D	26.323	171.6	0.281	2.06	31.7	33.2	2.12	26.7	0.01	0.00	0.02	0.17	126	
140	9.08	9.06	34.030	26.349	169.4	0.307	2.07	31.9	33.9	2.13	27.4	0.00	0.00	0.01	0.18	141	209
150 ISL	9.19 D	9.17	34.094 D	26.381	166.6	0.324	1.95	30.1	35.0	2.17	28.0	0.00	0.00	0.01	0.17	151	
169	8.91	8.89	34.118	26.445	160.8	0.355	1.65	25.3	37.7	2.28	29.0	0.01	0.00	0.01	0.15	170	208
200 ISL	8.61 D	8.59	34.188 D	26.547	151.7	0.403	1.26	19.2	42.4	2.43	30.6	0.01	0.00	0.00	0.16	201	
201	8.63	8.61	34.186	26.542	152.2	0.405	1.25	19.1	42.6	2.43	30.6	0.01	0.00	0.00	0.16	202	207
229	8.34	8.32	34.211	26.607	146.4	0.447	1.07	16.2	46.4	2.51	31.7	0.01	0.00			230	206
250 ISL	8.02 D	7.99	34.200 D	26.647	142.9	0.477	1.06	16.0	48.3	2.55	32.3	0.02	0.00			252	
268	7.94	7.91	34.200	26.659	142.1	0.503	1.05	15.8	49.9	2.58	32.8	0.02	0.00			270	205
300 ISL	7.55 D	7.52	34.181 D	26.701	138.4	0.548	0.97	14.4	53.6	2.63	33.9	0.02	0.01			302	
320	7.40	7.37	34.200	26.737	135.2	0.575	0.91	13.5	56.2	2.67	34.5	0.01	0.01			322	204
377	7.04	7.00	34.210	26.796	130.3	0.651	0.69	10.2	63.5	2.81	35.5	0.00	0.01			380	203
400 ISL	6.93 D	6.89	34.221 D	26.820	128.3	0.680	0.64	9.4	65.5	2.84	36.2	0.00	0.01			403	
436	6.66	6.62	34.243	26.874	123.5	0.726	0.59	8.6	68.2	2.87	37.3	0.00	0.01			439	202
500 ISL	6.29 D	6.24	34.264 D	26.940	117.9	0.803	0.45	6.5	74.2	2.96	38.6	0.00	0.00			504	
516	6.22	6.17	34.269	26.953	116.8	0.822	0.41	5.9	75.7	2.98	38.9	0.00	0.00			520	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 9.0 N	121 8.8 W	20/03/09	1238 UTC	2149 m	330 25 kn			1013.1 mb	12.8 C	11.7 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.67	12.67	33.365	25.192	276.5	0.000	6.26	103.9	0.5	0.47	2.1	0.14	0.29	2.23	0.38	0	
2	12.67	12.67	33.365	25.192	276.6	0.006	6.26	103.9	0.5	0.47	2.1	0.14	0.29	2.23	0.38	2	220
10 ISL	12.68 D	12.68	33.363 D	25.188	277.1	0.028	6.28	104.2	0.4	0.44	2.0	0.14	0.29	1.96	0.51	10	
11	12.67	12.67	33.365	25.192	276.8	0.030	6.28	104.2	0.4	0.44	2.0	0.14	0.29	1.93	0.52	11	219
20	12.68	12.68	33.366	25.191	277.1	0.055	6.28	104.2	0.3	0.41	2.0	0.14	0.29	2.17	0.36	20	218
29	12.66	12.66	33.366	25.195	277.0	0.080	6.26	103.8	0.4	0.41	2.0	0.14	0.31	2.28	0.37	29	217
30 ISL	12.61 D	12.61	33.364 D	25.203	276.2	0.083	6.25	103.5	0.5	0.42	2.1	0.14	0.32	2.29	0.38	30	
40	12.51	12.50	33.376	25.232	273.7	0.111	6.13	101.3	1.2	0.49	2.8	0.15	0.40	2.38	0.44	40	216
50	12.02	12.01	33.439	25.375	260.4	0.137	5.48	89.7	9.4	0.81	6.6	0.24	0.40	0.85	0.43	50	215
61	11.75	11.74	33.481	25.458	252.7	0.165	5.11	83.2	12.3	0.99	9.4	0.22	0.17	0.73	0.47	61	214
70	10.84	10.83	33.401	25.561	243.0	0.188	4.58	73.1	14.5	1.21	13.0	0.07	0.06	0.25	0.33	70	213
75 ISL	10.89 D	10.88	33.589 D	25.698	230.1	0.200	4.14	66.2	16.6	1.35	15.2	0.05	0.06	0.19	0.28	75	
85	10.43	10.42	33.679	25.849	215.9	0.222	3.34	52.9	20.9	1.60	19.0	0.02	0.07	0.07	0.22	85	212
100 ISL	9.80 D	9.79	33.748 D	26.010	200.9	0.253	3.14	49.1	24.1	1.75	21.6	0.01	0.06	0.02	0.20	101	
101	9.80	9.79	33.749	26.011	200.8	0.255	3.13	48.9	24.2	1.75	21.7	0.01	0.06	0.02	0.20	102	211
120	9.42	9.41	33.847	26.150	187.9	0.292	2.81	43.6	27.6	1.88	24.1	0.02	0.08	0.01	0.19	121	210
125 ISL	9.35 D	9.34	33.862 D	26.173	185.8	0.301	2.69	41.6	28.5	1.92	24.6	0.02	0.06	0.01	0.19	126	
139	9.20	9.18	33.945	26.263	177.6	0.327	2.41	37.2	30.9	2.01	25.9	0.02	0.00	0.00	0.17	140	209
150 ISL	9.02 D	9.00	33.960 D	26.303	173.9	0.346	2.42	37.2	31.8	2.03	26.4	0.02	0.00	0.00	0.16	151	
170	8.71	8.69	33.980	26.368	168.1	0.380	2.44	37.3	33.4	2.04	27.1	0.02	0.00	0.00	0.14	171	208
200 ISL	8.08 D	8.06	34.035 D	26.507	155.2	0.429	2.13	32.1	39.6	2.18	29.2	0.01	0.00	0.00	0.11	201	
201	8.09	8.07	34.038	26.508	155.1	0.430	2.12	31.9	39.8	2.19	29.3	0.01	0.00	0.00	0.11	202	207
228	7.87	7.85	34.055	26.554	151.1	0.472	1.92	28.8	42.9	2.29	30.7	0.00	0.00			229	206
250 ISL	7.74 D	7.72	34.083 D	26.596	147.6	0.505	1.77	26.5	45.3	2.36	31.8	0.00	0.00			252	
269	7.54	7.51	34.077	26.620	145.5	0.533	1.62	24.1	47.8	2.42	32.7	0.00	0.00			271	205
300 ISL	7.14 D	7.11	34.114 D	26.706	137.6	0.576	1.23	18.1	54.2	2.59	34.4	0.00	0.00			302	
319	7.02	6.99	34.158	26.757	133.0	0.602	0.99	14.6	58.3	2.70	35.4	0.00	0.00			321	204
378	6.59	6.56	34.191	26.842	125.6	0.678	0.71	10.3	65.8	2.85	37.2	0.00	0.00			380	203
400 ISL	6.69 D	6.65	34.229 D	26.859	124.4	0.706	0.63	9.2	67.7	2.88	37.4	0.00	0.00			403	
437	6.47	6.43	34.253	26.907	120.2	0.751	0.51	7.4	70.6	2.93	37.6	0.00	0.00			440	202
500 ISL	6.07 D	6.03	34.287 D	26.986	113.3	0.825	0.38	5.5	77.6	3.01	38.8	0.00	0.00			504	
512	6.05	6.00	34.291	26.992	112.8	0.838	0.36	5.2	78.9	3.03	39.0	0.00	0.00			516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 48.9 N	121 50.6 W	20/03/09	1930 UTC	3627 m	330 20 kn	330 06 08	2	1015.8 mb	13.0 C	12.0 C	16m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.06	13.06	32.989	24.824	311.5	0.000	6.20	103.5	3.2	0.45	0.5	0.04	0.12	0.46	0.10	0	
1 A	13.06	13.06	32.989	24.824	311.5	0.003	6.20	103.5	3.2	0.45	0.5	0.04	0.12	0.46	0.10	1	221
10 ISL	13.05 D	13.05	32.986 D	24.824	311.8	0.031	6.16	102.8	3.1	0.40	0.3	0.04	0.17	0.47	0.09	10	
12 A	13.05	13.05	32.990	24.827	311.5	0.037	6.15	102.6	3.1	0.39	0.2	0.04	0.18	0.47	0.09	12	220
20 ISL	13.02 D	13.02	32.986 D	24.830	311.5	0.062	6.14	102.4	3.1	0.40	0.0	0.05	0.13	0.47	0.11	20	
23 A	13.02	13.02	33.000	24.841	310.5	0.072	6.14	102.4	3.1	0.41	0.0	0.05	0.11	0.47	0.12	23	219
29 A	13.02	13.02	32.990	24.833	311.4	0.090	6.14	102.4	3.2	0.39	0.0	0.04	0.09	0.54	0.03	29	218
30 ISL	13.01 D	13.01	32.986 D	24.832	311.5	0.093	6.15	102.5	3.2	0.39	0.0	0.04	0.09	0.54	0.04	30	
35	13.00	13.00	32.986 D	24.835	311.4	0.109										35	217
46 A	12.76	12.75	33.020	24.908	304.7	0.143	6.19	102.7	3.4	0.44	0.3	0.08	0.13	0.59	0.20	46	216
50 ISL	12.71 D	12.70	33.041 D	24.934	302.3	0.155	6.17	102.2	3.6	0.45	0.5	0.09	0.26	0.57	0.19	50	
55	12.46	12.45	33.022	24.968	299.2	0.170	6.12	100.8	3.9	0.49	0.7	0.11	0.38	0.52	0.17	55	215
64 A	11.72	11.71	33.045	25.125	284.4	0.196	5.90	95.7	6.2	0.70	3.3	0.30	0.23	0.34	0.10	64	214
75	10.81	10.80	33.114	25.343	263.9	0.226	5.64	89.8	9.5	0.96	7.7	0.02	0.03	0.13	0.07	75	213
85	10.56	10.55	33.212	25.463	252.6	0.252	5.37	85.0	12.0	1.11	10.1	0.01	0.03	0.08	0.06	85	212
100 ISL	10.07 D	10.06	33.248 D	25.575	242.2	0.289	5.04	79.0	14.4	1.27	12.6	0.01	0.00	0.05	0.06	100	
102	9.98	9.97	33.258	25.598	240.1	0.294	4.99	78.1	14.7	1.29	13.0	0.01	0.00	0.05	0.06	102	211
122	9.39	9.38	33.535	25.911	210.6	0.339	4.05	62.6	21.5	1.60	18.8	0.01	0.00	0.01	0.04	123	210
125 ISL	9.32 D	9.31	33.585 D	25.962	205.9	0.346	3.94	60.9	22.3	1.64	19.6	0.01	0.00	0.01	0.04	126	
140	9.10	9.08	33.703	26.089	194.0	0.376	3.52	54.1	25.7	1.81	22.5	0.00	0.00	0.00	0.04	141	209
150 ISL	8.89 D	8.87	33.783 D	26.185	185.0	0.395	3.55	54.4	26.6	1.80	22.5	0.00	0.00	0.00	0.04	151	
171	8.60	8.58	33.942	26.355	169.2	0.432	3.60	54.8	28.1	1.71	22.5	0.00	0.00	0.00	0.03	172	208
200 ISL	8.10 D	8.08	33.968 D	26.452	160.5	0.480	3.36	50.6	33.3	1.82	24.6	0.00	0.00	0.00	0.01	201	
201	8.09	8.07	33.971	26.456	160.1	0.481	3.34	50.3	33.5	1.83	24.7	0.00	0.00	0.00	0.01	202	207
232	7.68	7.66	34.012	26.548	151.7	0.529	2.51	37.4	40.7	2.14	29.1	0.00	0.00			233	206
250 ISL	7.53 D	7.51	34.025 D	26.580	148.9	0.556	2.08	30.9	44.6	2.29	31.3	0.00	0.00			251	
271	7.30	7.27	34.045	26.629	144.5	0.587	1.67	24.7	48.8	2.44	33.4	0.00	0.00			273	205
300 ISL	7.01 D	6.98	34.048 D	26.672	140.8	0.629	1.40	20.6	53.5	2.56	35.0	0.00	0.00			302	
321	6.87	6.84	34.068	26.707	137.7	0.658	1.31	19.2	56.5	2.62	35.8	0.00	0.00			323	204
382	6.15	6.12	34.082	26.813	128.0	0.739	1.18	17.0	65.7	2.74	38.2	0.00	0.00			384	203
400 ISL	5.97 D	5.94	34.101 D	26.851	124.5	0.762	1.05	15.1	69.1	2.80	39.0	0.00	0.00			403	
440	5.72	5.68	34.150	26.921	118.2	0.810	0.75	10.7	76.2	2.94	40.5	0.00	0.00			443	202
500 ISL	5.72 D	5.68	34.237 D	26.990	112.5	0.879	0.49	7.0	81.9	3.05	41.7	0.00	0.00			503	
518	5.52	5.48	34.235	27.013	110.3	0.899	0.41	5.8	83.6	3.08	42.1	0.00	0.00			522	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 28.8 N	122 31.9 W	21/03/09	0143 UTC	3982 m	330 20 kn	320 04 06	1	1014.5 mb	13.0 C	11.8 C		7/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.44	13.44	32.992	24.751	318.5	0.000	6.09	102.4	2.4	0.36	0.0	0.00	0.08	0.30	0.08	0	
2	13.44	13.44	32.992	24.751	318.6	0.006	6.09	102.4	2.4	0.36	0.0	0.00	0.08	0.30	0.08	2	220
10 ISL	13.42 D	13.42	32.990 D	24.753	318.5	0.032	6.10	102.6	2.4	0.36	0.0	0.00	0.05	0.31	0.08	10	
11	13.42	13.42	32.993	24.756	318.3	0.035	6.10	102.6	2.4	0.36	0.0	0.00	0.05	0.31	0.08	11	219
20 ISL	13.42 D	13.42	32.990 D	24.754	318.8	0.064	6.08	102.2	2.3	0.35	0.0	0.00	0.06	0.32	0.09	20	
25	13.42	13.42	33.013	24.772	317.2	0.080	6.06	101.9	2.3	0.35	0.0	0.00	0.06	0.33	0.10	25	218
30 ISL	13.41 D	13.41	32.989 D	24.755	318.9	0.096	6.06	101.9	2.3	0.35	0.0	0.00	0.04	0.33	0.10	30	
40	13.40	13.39	32.996	24.763	318.4	0.127	6.07	102.0	2.4	0.36	0.0	0.00	0.00	0.33	0.09	40	217
50	13.39	13.38	32.990	24.760	318.9	0.159	6.06	101.8	2.4	0.36	0.0	0.00	0.00	0.35	0.09	50	216
61	13.33	13.32	32.990	24.773	318.1	0.194	6.06	101.7	2.4	0.36	0.0	0.00	0.01	0.33	0.12	61	215
75	13.03	13.02	32.983	24.827	313.2	0.238	5.94	99.0	2.7	0.41	0.4	0.09	0.06	0.27	0.12	75	214
86	12.60	12.59	33.000	24.925	304.2	0.272	5.80	95.8	3.3	0.49	1.4	0.13	0.00	0.23	0.12	86	213
100	11.01	11.00	32.939	25.172	280.7	0.313	5.76	92.0	6.0	0.74	5.0	0.02	0.00	0.07	0.06	100	212
111	10.26	10.25	33.007	25.355	263.4	0.343	5.59	87.8	9.2	0.94	8.3	0.01	0.00	0.03	0.04	112	211
124	10.25	10.24	33.177	25.489	250.9	0.377	5.33	83.8	12.0	1.10	11.0	0.01	0.00	0.02	0.04	125	210
125 ISL	10.21 D	10.20	33.180 D	25.498	250.0	0.379	5.31	83.4	12.2	1.11	11.2	0.01	0.00	0.02	0.04	126	
139	9.89	9.87	33.251	25.608	239.9	0.414	4.94	77.1	14.7	1.26	13.9	0.01	0.02	0.02	0.04	140	209
150 ISL	9.64 D	9.62	33.344 D	25.722	229.2	0.439	4.67	72.5	16.4	1.34	15.4	0.01	0.02	0.01	0.04	151	
169	9.35	9.33	33.591	25.962	206.7	0.481	4.25	65.7	19.5	1.44	17.7	0.00	0.01	0.00	0.04	170	208
200 ISL	8.95 D	8.93	33.891 D	26.261	178.9	0.540	3.65	56.0	25.7	1.64	21.7	0.00	0.02	0.00	0.02	201	
201	8.95	8.93	33.892	26.262	178.8	0.542	3.63	55.7	25.9	1.65	21.8	0.00	0.02	0.00	0.02	202	207
228	8.65	8.63	33.942	26.349	171.0	0.590	3.40	51.8	29.0	1.74	23.5	0.00	0.03			229	206
250 ISL	8.24 D	8.21	33.977 D	26.439	162.7	0.626	3.22	48.6	32.3	1.83	25.0	0.00	0.03			251	
270	8.03	8.00	33.989	26.480	159.0	0.658	2.96	44.5	36.1	1.94	26.6	0.00	0.02			272	205
300 ISL	7.42 D	7.39	34.005 D	26.581	149.6	0.705	2.13	31.6	44.2	2.24	30.6	0.00	0.03			302	
319	7.29	7.26	34.037	26.625	145.7	0.733	1.62	24.0	49.3	2.42	33.0	0.00	0.04			321	204
378	6.69	6.66	34.070	26.733	135.9	0.816	1.32	19.2	58.2	2.59	35.5	0.00	0.06			380	203
400 ISL	6.46 D	6.42	34.090 D	26.779	131.7	0.845	1.15	16.7	62.1	2.68	36.6	0.00	0.07			403	
437	6.16	6.12	34.120	26.842	126.0	0.893	0.88	12.7	68.5	2.81	38.4	0.00	0.09			440	202
500 ISL	5.66 D	5.62	34.141 D	26.921	118.8	0.970	0.73	10.4	76.8	2.92	40.3	0.00	0.11			503	
511	5.64	5.60	34.148	26.929	118.2	0.983	0.70	10.0	78.2	2.94	40.6	0.00	0.11			514	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.1 N	123 13.2 W	21/03/09	0754 UTC	4227 m	310 18 kn			1016.8 mb	12.4 C	10.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.03	14.03	33.076	24.695	323.8	0.000	5.94	101.2	2.2	0.33	0.0	0.00	0.00	0.16	0.05	0	
2	14.03	14.03	33.076	24.695	323.9	0.006	5.94	101.2	2.2	0.33	0.0	0.00	0.00	0.16	0.05	2	220
10	14.03	14.03	33.076	24.695	324.1	0.032	5.94	101.2	2.2	0.33	0.0	0.00	0.00	0.16	0.04	10	219
20 ISL	14.04 D	14.04	33.073 D	24.691	324.7	0.065	5.95	101.4	2.2	0.32	0.0	0.00	0.00	0.15	0.05	20	
25	14.04	14.04	33.075	24.693	324.7	0.081	5.95	101.4	2.2	0.32	0.0	0.00	0.00	0.15	0.05	25	218
30 ISL	14.04 D	14.04	33.073 D	24.692	325.0	0.097	5.95	101.4	2.2	0.32	0.0	0.00	0.00	0.14	0.05	30	
39	14.04	14.03	33.076	24.694	325.0	0.127	5.94	101.2	2.2	0.32	0.0	0.00	0.00	0.14	0.05	39	217
50	14.03	14.02	33.076	24.697	325.1	0.162	5.94	101.2	2.2	0.32	0.0	0.00	0.01	0.16	0.04	50	216
61	13.96	13.95	33.070	24.707	324.4	0.198	5.95	101.2	2.2	0.33	0.0	0.00	0.02	0.21	0.08	61	215
75	13.48	13.47	33.003	24.753	320.3	0.243	6.00	101.0	2.3	0.35	0.0	0.01	0.06	0.32	0.11	75	214
86	13.33	13.32	32.989	24.773	318.7	0.278	5.98	100.3	2.4	0.37	0.2	0.05	0.13	0.29	0.11	86	213
100	12.32	12.31	32.934	24.927	304.2	0.322	5.87	96.4	3.7	0.54	2.0	0.31	0.07	0.17	0.07	100	212
113	11.80	11.79	33.033	25.102	287.8	0.360	5.64	91.6	4.2	0.59	3.4	0.02	0.02	0.13	0.09	114	211
125 ISL	11.23 D	11.21	33.035 D	25.208	277.9	0.394	5.56	89.2	5.4	0.70	4.9	0.01	0.04	0.09	0.06	126	
126	11.24	11.22	33.035	25.206	278.1	0.397	5.55	89.1	5.6	0.71	5.1	0.01	0.04	0.09	0.06	127	210
139	10.19	10.17	33.097	25.437	256.1	0.432	5.32	83.5	9.8	0.98	9.1	0.01	0.00	0.03	0.03	140	209
150 ISL	10.17 D	10.15	33.247 D	25.558	244.9	0.459	5.11	80.2	12.3	1.12	11.3	0.01	0.00	0.02	0.03	151	
168	9.65	9.63	33.363	25.735	228.3	0.502	4.74	73.6	15.5	1.27	13.9	0.00	0.00	0.01	0.02	169	208
200 ISL	9.29 D	9.27	33.785 D	26.124	192.0	0.569	4.06	62.7	20.7	1.46	18.0	0.00	0.00	0.00	0.03	201	
201	9.31	9.29	33.765	26.105	193.8	0.571	4.03	62.3	20.9	1.47	18.1	0.00	0.00	0.00	0.03	202	207
228	8.66	8.64	33.939	26.345	171.4	0.620	2.94	44.8	30.9	1.91	24.2	0.00	0.00			229	206
250 ISL	8.39 D	8.36	33.978 D	26.417	164.8	0.657	2.85	43.2	34.1	1.96	25.7	0.00	0.00			251	
270	8.14	8.11	33.997	26.470	160.1	0.690	2.77	41.8	36.0	2.00	26.2	0.00	0.00			271	205
300 ISL	7.71 D	7.68	34.027 D	26.557	152.1	0.737	2.29	34.2	42.8	2.20	29.0	0.00	0.00			302	
318	7.39	7.36	34.039	26.612	146.9	0.764	1.97	29.2	47.1	2.34	30.7	0.00	0.00			320	204
377	6.78	6.75	34.080	26.729	136.4	0.847	1.42	20.8	57.2	2.59	34.0	0.00	0.00			379	203
400 ISL	6.59 D	6.55	34.088 D	26.761	133.6	0.878	1.23	17.9	60.7	2.68	35.1	0.00	0.00			402	
437	6.31	6.27	34.124	26.826	127.7	0.927	0.98	14.2	66.1	2.81	36.6	0.00	0.00			440	202
500 ISL	5.89 D	5.85	34.162 D	26.910	120.2	1.005	0.71	10.2	74.7	2.95	38.6	0.00	0.00			503	
514	5.79	5.75	34.173	26.931	118.3	1.021	0.65	9.3	76.6	2.98	39.0	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 49.0 N	123 54.6 W	21/03/09	1546 UTC	4356 m	320 11 kn	330 03 05	1	1018.8 mb	13.1 C	12.4 C	28m	6/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.03	14.03	33.073	24.693	324.0	0.000	5.94	101.2	2.4	0.34	0.0	0.00	0.02	0.15	0.03	0	
2 A	14.03	14.03	33.073	24.693	324.1	0.006	5.94	101.2	2.4	0.34	0.0	0.00	0.02	0.15	0.03	2	221
10 ISL	14.02 D	14.02	33.071 D	24.694	324.2	0.032	5.94	101.2	2.4	0.34	0.0	0.00	0.02	0.16	0.03	10	
20 A	14.02	14.02	33.074	24.696	324.3	0.065	5.95	101.3	2.4	0.33	0.0	0.00	0.02	0.16	0.03	20	220
30	14.02	14.02	33.073	24.696	324.6	0.097	5.97	101.7	2.3	0.33	0.0	0.00	0.03	0.15	0.03	30	219
40 A	13.98	13.97	33.072	24.703	324.1	0.130	5.96	101.4	2.3	0.33	0.0	0.00	0.05	0.18	0.05	40	218
50 ISL	13.55 D	13.54	33.073 D	24.792	315.9	0.162	5.96	100.5	2.7	0.37	0.3	0.06	0.16	0.28	0.10	50	
51	13.52	13.51	33.074	24.799	315.3	0.165	5.96	100.4	2.7	0.38	0.3	0.07	0.17	0.29	0.11	51	217
61 A	13.45	13.44	33.085	24.822	313.4	0.196	5.95	100.1	2.8	0.40	0.4	0.10	0.18	0.30	0.14	61	216
71	13.12	13.11	33.051	24.862	309.8	0.227	5.94	99.3	3.1	0.45	0.9	0.18	0.16	0.30	0.13	71	215
75 ISL	12.51 D	12.50	32.994 D	24.937	302.7	0.240	5.94	98.0	3.6	0.50	1.4	0.25	0.14	0.30	0.14	75	
80 A	12.17	12.16	32.958	24.974	299.2	0.255	5.93	97.1	4.2	0.56	2.2	0.32	0.11	0.28	0.14	80	214
91	11.62	11.61	32.946	25.067	290.6	0.287	5.86	94.8	5.1	0.64	3.6	0.24	0.01	0.19	0.10	91	213
100 ISL	11.06 D	11.05	32.957 D	25.177	280.2	0.313	5.76	92.1	6.5	0.76	5.5	0.07	0.00	0.10	0.07	100	
102	10.89	10.88	32.973	25.219	276.2	0.318	5.73	91.3	6.9	0.79	6.0	0.03	0.00	0.08	0.06	102	212
113 A	10.57	10.56	33.073	25.353	263.7	0.348	5.47	86.6	8.6	0.91	8.0	0.01	0.01	0.04	0.05	114	211
125 ISL	10.31 D	10.30	33.298 D	25.573	243.0	0.379	4.97	78.3	11.5	1.07	10.9	0.00	0.04	0.01	0.03	126	
128	10.25	10.24	33.333	25.611	239.4	0.386	4.83	76.0	12.4	1.12	11.7	0.00	0.04	0.01	0.03	129	210
145	9.90	9.88	33.539	25.831	218.8	0.425	4.18	65.4	18.2	1.45	16.8	0.00	0.01	0.01	0.03	146	209
150 ISL	9.67 D	9.65	33.656 D	25.961	206.6	0.435	4.01	62.4	19.7	1.52	18.0	0.00	0.01	0.01	0.03	151	
171	9.28	9.26	33.789	26.129	191.0	0.477	3.46	53.5	24.9	1.72	21.5	0.00	0.00	0.00	0.03	172	208
200 ISL	8.88 D	8.86	33.926 D	26.300	175.2	0.530	3.30	50.6	28.0	1.77	23.1	0.00	0.02	0.00	0.02	201	
201	8.87	8.85	33.929	26.304	174.8	0.532	3.29	50.4	28.1	1.77	23.1	0.00	0.02	0.00	0.02	202	207
228	8.55	8.53	34.032	26.434	162.8	0.578	2.26	34.4	35.8	2.13	27.5	0.00	0.02			229	206
250 ISL	8.35 D	8.32	34.065 D	26.491	157.8	0.613	1.91	28.9	39.1	2.25	29.2	0.00	0.01			251	
270	8.26	8.23	34.087	26.522	155.2	0.644	1.78	26.9	41.2	2.30	30.0	0.00	0.00			272	205
300 ISL	7.88 D	7.85	34.086 D	26.578	150.2	0.690	1.59	23.8	45.3	2.41	31.5	0.00	0.00			302	
319	7.68	7.65	34.107	26.624	146.0	0.718	1.50	22.4	48.0	2.47	32.3	0.00	0.00			321	204
378	7.16	7.12	34.150	26.732	136.4	0.801	1.08	15.9	56.5	2.68	34.7	0.00	0.00			380	203
400 ISL	6.97 D	6.93	34.163 D	26.769	133.1	0.831	0.96	14.1	60.1	2.75	35.7	0.00	0.00			402	
435	6.56	6.52	34.174	26.833	127.2	0.877	0.79	11.5	65.8	2.85	37.2	0.00	0.00			438	202
500 ISL	6.04 D	6.00	34.214 D	26.932	118.3	0.956	0.51	7.3	74.9	3.00	39.1	0.00	0.00			503	
515	6.01	5.96	34.237	26.954	116.4	0.974	0.44	6.3	77.0	3.03	39.6	0.00	0.00			518	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 81.7 43.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 23.8 N	119 48.1 W	19/03/09	2102 UTC	37 m	180 05 kn	220 02 06	2	1013.8 mb	14.9 C	14.0 C		7/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.80	13.80	33.497	25.068	288.3	0.000	7.18	122.0	2.5	0.25	0.0	0.00	0.07	2.90	0.89	0	
2	13.80	13.80	33.497	25.068	288.4	0.006	7.18	122.0	2.5	0.25	0.0	0.00	0.07	2.90	0.89	2	207
6	13.68	13.68	33.491	25.088	286.6	0.017	7.32	124.1	1.5	0.25	0.0	0.00	0.10	3.79	0.72	6	206
10	13.67	13.67	33.486	25.086	286.8	0.029	7.25	122.9	1.1	0.25	0.0	0.00	0.12	4.27	0.89	10	205
16	13.14	13.14	33.487	25.194	276.7	0.046	6.68	112.0	2.7	0.45	0.6	0.08	0.21	5.91	1.93	16	204
20	12.40	12.40	33.504	25.352	261.8	0.056	5.51	91.0	5.8	0.80	4.7	0.26	0.39	6.72	1.67	20	203
29	11.63	11.63	33.560	25.541	244.0	0.079	3.98	64.7	14.0	1.31	11.9	0.32	0.62	1.28	1.00	29	202
30 ISL	11.52 D	11.52	33.577 D	25.574	240.8	0.082	3.88	62.9	14.8	1.36	12.4	0.32	0.69	1.22	1.00	30	
35	11.38	11.38	33.603	25.620	236.6	0.094	3.36	54.3	19.0	1.63	14.7	0.30	1.02	0.92	1.03	35	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 81.8 46.9

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 16.6 N	120 1.5 W	19/03/09	2313 UTC	577 m	250 03 kn	270 03 06	4	1012.9 mb	13.8 C	13.0 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.00	13.00	33.587	25.299	266.3	0.000	7.63	127.6	0.0	0.29	0.0	0.00	0.21	5.89	2.54	0	
1 A	13.00	13.00	33.587	25.299	266.3	0.003	7.63	127.6	0.0	0.29	0.0	0.00	0.21	5.89	2.54	1	224
10	12.23	12.23	33.585	25.447	252.5	0.026	6.66	109.6	0.4	0.52	0.8	0.07	0.34	9.18	3.74	10	223
20 ISL	11.06 D	11.06	33.662 D	25.724	226.4	0.050	4.08	65.5	16.4	1.36	13.1	0.18	0.63	1.74	2.16	20	
21	10.97	10.97	33.667	25.744	224.5	0.052	3.83	61.4	18.1	1.44	14.4	0.19	0.64	0.87	1.95	21	222
30 ISL	10.57 D	10.57	33.719 D	25.855	214.1	0.072	3.26	51.8	22.1	1.63	18.2	0.22	0.11	0.38	1.34	30	
31	10.56	10.56	33.723	25.860	213.7	0.074	3.25	51.6	22.2	1.63	18.4	0.22	0.05	0.33	1.30	31	221
41	10.35	10.35	33.780	25.941	206.2	0.095	2.86	45.3	24.3	1.77	20.9	0.08	0.07	0.15	0.91	41	220
50	10.15	10.14	33.838	26.021	198.8	0.113	2.61	41.1	25.7	1.87	22.6	0.03	0.11	0.12	0.64	50	219
60	9.96	9.95	33.882	26.087	192.7	0.133	2.41	37.8	27.8	1.94	24.1	0.02	0.04	0.10	0.94	60	218
70	9.86	9.85	33.911	26.127	189.2	0.152	2.30	36.0	29.3	2.00	24.9	0.03	0.06	0.07	0.69	70	217
75 ISL	9.81 D	9.80	33.918 D	26.141	187.9	0.161	2.22	34.7	29.8	2.03	25.4	0.03	0.07	0.06	0.61	75	
86	9.62	9.61	33.978	26.219	180.7	0.182	2.05	32.0	30.9	2.08	26.4	0.02	0.09	0.05	0.49	86	216
100 ISL	9.46 D	9.45	34.024 D	26.282	175.0	0.207	1.86	28.9	32.6	2.14	27.4	0.01	0.09	0.03	0.42	101	
101	9.46	9.45	34.028	26.285	174.8	0.208	1.85	28.7	32.7	2.14	27.5	0.01	0.09	0.03	0.42	102	215
121	9.23	9.22	34.066	26.352	168.7	0.243	1.67	25.8	35.0	2.22	28.5	0.00	0.08	0.02	0.38	122	214
125 ISL	9.19 D	9.18	34.074 D	26.365	167.6	0.249	1.67	25.8	35.3	2.23	28.6	0.00	0.07	0.02	0.38	126	
141	9.05	9.03	34.092	26.402	164.4	0.276	1.67	25.7	36.4	2.25	28.9	0.00	0.05	0.02	0.40	142	213
150 ISL	8.98 D	8.96	34.102 D	26.421	162.8	0.291	1.61	24.8	37.3	2.27	29.3	0.00	0.06	0.02	0.36	151	
172	8.79	8.77	34.123	26.468	158.7	0.326	1.38	21.1	39.8	2.35	30.3	0.00	0.09	0.01	0.28	173	212
200 ISL	8.69 D	8.67	34.153 D	26.507	155.5	0.370	1.04	15.9	43.4	2.48	31.4	0.00	0.03	0.01	0.43	201	
201	8.69	8.67	34.154	26.508	155.4	0.372	1.03	15.7	43.5	2.48	31.4	0.00	0.03	0.01	0.44	202	211
231	8.49	8.47	34.175	26.556	151.4	0.418	0.87	13.2	46.7	2.55	32.3	0.00	0.03			232	210
250 ISL	8.12 D	8.09	34.164 D	26.604	147.1	0.446	0.92	13.9	48.5	2.57	32.8	0.00	0.03			252	
271	7.94	7.91	34.176	26.640	143.9	0.477	0.97	14.6	50.8	2.59	33.3	0.00	0.03			273	209
300 ISL	7.87 D	7.84	34.224 D	26.688	139.8	0.518	0.70	10.5	56.2	2.71	34.0	0.00	0.04			302	
321	7.67	7.64	34.233	26.725	136.6	0.547	0.46	6.9	60.5	2.80	34.4	0.00	0.04			323	208
381	7.16	7.12	34.244	26.806	129.5	0.627	0.28	4.1	70.2	2.92	34.6	0.00	0.05			384	207
400 ISL	6.97 D	6.93	34.248 D	26.836	126.8	0.651	0.23	3.4	74.6	2.98	34.3	0.00	0.05			403	
441	6.68	6.64	34.256	26.882	122.9	0.702	0.13	1.9	84.4	3.09	32.8	0.00	0.06			444	206
479	6.59	6.55	34.258	26.896	122.1	0.749	0.07	1.0	92.1	3.16	30.3	0.00	0.00			482	205
500 ISL	6.56 D	6.51	34.257 D	26.899	122.0	0.774	0.06	0.9	94.8	3.18	29.3	0.00	0.00			504	
514	6.54	6.49	34.258	26.903	121.9	0.791	0.06	0.9	97.6	3.22	28.0	0.00	0.00			518	204
535	6.50	6.45	34.257	26.908	121.7	0.817	0.03	0.4	106.7	3.35	23.5	0.00	0.00			539	203
561	6.50	6.45	34.256	26.907	122.1	0.849	0.01	0.1	108.1	3.39	22.5	0.00	0.00			565	202
571	6.50	6.45	34.256	26.907	122.3	0.861	0.03	0.4	108.1	3.38	22.3	0.00	0.00			575	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 13.6 N	119 24.7 W	19/03/09	1457 UTC	32 m	130 11 kn	130 01 03	4	1014.0 mb	13.0 C	13.0 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.10	14.10	33.504	25.011	293.7	0.000	7.01	119.9	0.8	0.26	0.0	0.00	0.01	2.13	0.43	0	
1	14.10	14.10	33.504	25.011	293.7	0.003	7.01	119.9	0.8	0.26	0.0	0.00	0.01	2.13	0.43	1	207
5	14.10	14.10	33.503	25.010	293.9	0.015	6.98	119.4	0.8	0.29	0.0	0.00	0.00	2.09	0.34	5	206
10	13.87	13.87	33.501	25.057	289.7	0.029	7.05	120.0	0.8	0.30	0.0	0.00	0.02	2.41	0.54	10	204
10	13.87	13.87	33.502	25.057	289.6	0.029										10	205
15	13.40	13.40	33.498	25.150	280.9	0.044	7.01	118.2	1.7	0.36	0.1	0.02	0.00	3.72	1.02	15	203
20	12.56	12.56	33.506	25.323	264.6	0.057	6.12	101.4	6.8	0.65	3.6	0.14	0.17	3.15	1.01	20	202
28	12.07	12.07	33.529	25.435	254.1	0.078	4.95	81.2	10.8	0.97	8.1	0.27	0.71	1.31	0.86	28	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 10.8 N	119 30.4 W	19/03/09	1829 UTC	115 m	130 06 kn	320 01 05	2	1015.1 mb	14.8 C	14.5 C	15m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.62	13.62	33.425	25.049	290.1	0.000	6.38	108.0	2.5	0.39	0.7	0.04	0.20	1.15	0.25	0	
1 A	13.62	13.62	33.425	25.049	290.1	0.003	6.38	108.0	2.5	0.39	0.7	0.04	0.20	1.15	0.25	1	211
10 A	13.13	13.13	33.467	25.180	277.9	0.028	6.40	107.3	2.7	0.40	1.4	0.07	0.34	1.38	0.39	10	209
11	13.14	13.14	33.466	25.178	278.2	0.031										11	210
20 ISL	12.70 D	12.70	33.490 D	25.283	268.4	0.056	6.04	100.3	3.8	0.54	2.7	0.11	0.70	1.43	0.65	20	
21 A	12.70	12.70	33.493	25.286	268.2	0.059	5.99	99.5	3.9	0.56	2.9	0.11	0.73	1.43	0.67	21	208
30 ISL	12.50 D	12.50	33.493 D	25.325	264.7	0.082	5.73	94.8	5.3	0.66	4.1	0.13	0.79	1.09	0.60	30	
34 A	12.44	12.44	33.506	25.346	262.7	0.093	5.56	91.9	6.3	0.73	4.9	0.14	0.82	0.88	0.56	34	207
43 A	12.01	12.00	33.552	25.464	251.7	0.116	4.82	78.9	10.3	1.01	8.4	0.19	0.85	0.45	0.72	43	206
50 ISL	11.51 D	11.50	33.599 D	25.594	239.5	0.133	4.15	67.3	14.3	1.27	12.3	0.19	0.56	0.43	0.76	50	
52	11.44	11.43	33.602	25.609	238.1	0.138	3.96	64.1	15.5	1.34	13.5	0.19	0.45	0.43	0.77	52	205
60 A	10.86	10.85	33.685	25.778	222.2	0.157	3.33	53.2	20.1	1.59	18.0	0.12	0.09	0.26	0.62	60	204
70	10.42	10.41	33.817	25.958	205.2	0.178	2.73	43.3	23.8	1.81	21.5	0.04	0.01	0.13	0.40	70	203
75 ISL	10.22 D	10.21	33.887 D	26.047	196.9	0.188	2.52	39.8	25.5	1.89	22.7	0.04	0.01	0.13	0.39	75	
86	9.94	9.93	33.967	26.157	186.6	0.209	2.21	34.7	28.6	2.01	24.4	0.03	0.00	0.14	0.38	86	202
100 ISL	9.74 D	9.73	34.025 D	26.236	179.4	0.235	2.04	31.9	30.5	2.07	25.5	0.03	0.00	0.09	0.32	101	
110	9.68	9.67	34.042	26.260	177.4	0.253	1.92	30.0	31.8	2.12	26.2	0.03	0.00	0.06	0.28	111	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 39.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 15.8 N	119 19.8 W	19/03/09	1339 UTC	18 m	360 05 kn			1014.0 mb	13.1 C	11.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.20	14.20	33.472	24.965	298.1	0.000	6.89	118.1	0.6	0.35	0.9	0.02	0.03	1.82	0.11	0	
1	14.20	14.20	33.472	24.965	298.1	0.003	6.89	118.1	0.6	0.35	0.9	0.02	0.03	1.82	0.11	1	205
5	13.95	13.95	33.474	25.019	293.1	0.015	7.15	121.9	0.2	0.21	0.6	0.01	0.00	1.82	0.52	5	204
10 ISL	13.43 D	13.43	33.474 D	25.126	283.1	0.029	7.16	120.8	0.1	0.23	0.4	0.03	0.00	2.10	0.37	10	
10	13.46	13.46	33.476	25.121	283.5	0.029										10	203
11	13.48	13.48	33.476	25.117	283.9	0.032	7.16	120.9	0.1	0.24	0.4	0.03	0.00	2.15	0.34	11	202
16	12.64	12.64	33.496	25.300	266.7	0.046	5.71	94.7	1.8	0.70	2.1	0.12	0.09	13.28	2.88	16	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 51.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 53.1 N	120 8.1 W	19/03/09	0648 UTC	81 m	130 04 kn			1013.4 mb	14.8 C	13.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.77	12.77	33.488	25.268	269.3	0.000	6.23	103.7	5.7	0.58	3.4	0.12	0.24	2.02	0.40	0	
2	12.77	12.77	33.488	25.268	269.4	0.005	6.23	103.6	5.7	0.58	3.4	0.12	0.24	2.02	0.40	2	210
5	12.72	12.72	33.492	25.281	268.2	0.013	6.23	103.5	5.7	0.62	3.6	0.12	0.17	2.19	0.38	5	209
10	12.51	12.51	33.495	25.324	264.2	0.027	6.03	99.8	7.0	0.67	4.8	0.13	0.22	1.86	0.49	10	207
10	12.52	12.52	33.498	25.324	264.2	0.027										10	208
20	11.98	11.98	33.541	25.461	251.4	0.053	5.23	85.6	10.6	0.94	8.2	0.15	0.27	1.41	0.64	20	206
30	11.08	11.08	33.561	25.642	234.4	0.077	4.58	73.5	14.5	1.21	12.5	0.14	0.21	0.83	0.44	30	205
40	10.62	10.62	33.684	25.819	217.8	0.099	3.59	57.1	20.5	1.55	17.6	0.11	0.08	0.46	0.39	40	204
50	10.02	10.01	33.842	26.046	196.4	0.120	2.74	43.1	26.7	1.86	22.1	0.07	0.06	0.19	0.31	50	203
59	9.80	9.79	33.908	26.134	188.2	0.137	2.45	38.3	29.5	1.99	23.9	0.08	0.16	0.13	0.33	59	202
71	9.60	9.59	33.946	26.197	182.5	0.160	2.25	35.1	31.4	2.06	25.3	0.08	0.05	0.09	0.28	71	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 44.6 N	120 24.4 W	19/03/09	0259 UTC	956 m	320 26 kn			1014.2 mb	13.5 C	12.0 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.98	12.98	33.147	24.962	298.4	0.000	6.26	104.4	2.2	0.45	1.5	0.11	0.08	1.12	0.11	0	
2	12.98	12.98	33.147	24.962	298.4	0.006	6.26	104.4	2.2	0.45	1.5	0.11	0.08	1.12	0.11	2	221
9	12.97	12.97	33.147	24.964	298.4	0.027	6.25	104.2	2.2	0.45	1.5	0.11	0.08	1.06	0.19	9	219
10 ISL	12.88 D	12.88	33.153 D	24.987	296.3	0.030	6.23	103.7	2.6	0.47	1.8	0.12	0.08	1.13	0.20	10	
10	12.99	12.99	33.149	24.962	298.6	0.030										10	220
20	12.10	12.10	33.345	25.286	268.1	0.058	6.00	98.3	7.3	0.71	5.0	0.21	0.10	1.95	0.40	20	218
29	12.02	12.02	33.438	25.374	260.0	0.082	5.88	96.3	8.7	0.80	6.2	0.18	0.16	2.06	0.74	29	217
30 ISL	12.01 D	12.01	33.439 D	25.376	259.7	0.085	5.87	96.1	8.7	0.80	6.3	0.18	0.17	2.09	0.73	30	
39	11.98	11.97	33.445	25.387	259.0	0.108	5.83	95.4	8.8	0.83	6.5	0.18	0.23	2.20	0.65	39	216
50 ISL	11.92 D	11.91	33.447 D	25.400	258.0	0.136	5.73	93.6	9.3	0.85	7.0	0.18	0.20	1.72	0.58	50	
51	11.92	11.91	33.450	25.402	257.8	0.139	5.72	93.4	9.4	0.85	7.1	0.18	0.20	1.68	0.57	51	215
60	11.85	11.84	33.445	25.411	257.1	0.162	5.68	92.6	9.6	0.88	7.4	0.18	0.21	1.74	0.45	60	214
70	10.85	10.84	33.356	25.524	246.5	0.187	5.16	82.3	12.6	1.11	11.0	0.09	0.07	0.67	0.28	70	213
75 ISL	10.44 D	10.43	33.475 D	25.688	231.0	0.199	4.62	73.1	15.4	1.28	13.7	0.07	0.03	0.38	0.29	75	
84	10.10	10.09	33.615	25.856	215.2	0.219	3.69	58.0	20.5	1.57	18.2	0.04	0.00	0.10	0.34	84	212
100	9.73	9.72	33.731	26.008	201.0	0.253	3.30	51.5	23.9	1.74	21.1	0.01	0.04	0.02	0.21	101	211
124	8.90	8.89	33.938	26.305	173.2	0.297	2.70	41.4	30.9	1.95	24.9	0.01	0.00	0.00	0.11	125	210
125 ISL	8.83 D	8.82	33.945 D	26.321	171.7	0.299	2.69	41.2	31.1	1.95	25.0	0.01	0.00	0.00	0.11	126	
140	8.70	8.69	33.972	26.363	168.0	0.325	2.60	39.7	32.9	2.00	25.8	0.00	0.00	0.00	0.10	141	209
150 ISL	8.56 D	8.54	33.997 D	26.404	164.2	0.341	2.49	37.9	34.2	2.04	26.5	0.00	0.00	0.00	0.09	151	
169	8.43	8.41	34.023	26.445	160.7	0.372	2.26	34.3	36.7	2.12	27.9	0.00	0.00	0.00	0.06	170	208
200 ISL	8.19 D	8.17	34.074 D	26.522	153.9	0.421	1.93	29.1	40.9	2.25	29.6	0.00	0.00	0.00	0.05	201	
201	8.15	8.13	34.071	26.525	153.6	0.422	1.92	29.0	41.0	2.26	29.6	0.00	0.00	0.00	0.05	202	207
230	8.31	8.29	34.179	26.586	148.4	0.466	1.26	19.1	45.2	2.46	31.0	0.00	0.08			231	206
250 ISL	8.12 D	8.09	34.221 D	26.648	142.8	0.495	1.05	15.8	48.5	2.55	31.9	0.00	0.05			252	
269	7.85	7.82	34.220	26.688	139.3	0.522	0.95	14.2	51.7	2.61	32.7	0.00	0.00			271	205
300 ISL	7.38 D	7.35	34.242 D	26.773	131.5	0.564	0.79	11.7	57.2	2.71	34.0	0.00	0.00			302	
317	7.25	7.22	34.240	26.790	130.1	0.586	0.73	10.8	59.9	2.76	34.7	0.00	0.00			319	204
377	6.83	6.79	34.247	26.854	124.6	0.663	0.62	9.1	65.2	2.84	36.1	0.00	0.02			379	203
400 ISL	6.72 D	6.68	34.247 D	26.869	123.5	0.691	0.57	8.3	67.2	2.87	36.6	0.00	0.01			403	
438	6.51	6.47	34.264	26.911	120.0	0.738	0.50	7.3	70.5	2.93	37.5	0.00	0.00			441	202
500 ISL	6.15 D	6.11	34.291 D	26.979	114.0	0.810										504	
512	6.13	6.08	34.293 D	26.983	113.7	0.824										516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 34.8 N	120 45.1 W	18/03/09	2231 UTC	1313 m	340 19 kn	340 06 05	2	1016.3 mb	15.1 C	13.2 C		1/8	CI

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.11	13.11	33.117	24.913	303.0	0.000	6.18	103.3	3.0	0.44	1.2	0.08	0.15	0.55	0.09	0	
2	13.11	13.11	33.117	24.913	303.1	0.006	6.18	103.3	3.0	0.44	1.2	0.08	0.15	0.55	0.09	2	221
10 ISL	13.08 D	13.08	33.114 D	24.917	302.9	0.030	6.20	103.6	3.2	0.44	1.2	0.08	0.19	0.54	0.10	10	
11	13.08	13.08	33.123	24.924	302.3	0.033	6.20	103.6	3.2	0.44	1.2	0.08	0.19	0.54	0.10	11	219
11	13.11	13.11	33.117	24.914	303.3	0.033										11	220
20 ISL	13.01 D	13.01	33.114 D	24.931	301.8	0.061	6.21	103.6	3.2	0.44	1.2	0.08	0.09	0.57	0.10	20	
21	13.02	13.02	33.122	24.935	301.5	0.064	6.21	103.6	3.2	0.44	1.2	0.08	0.08	0.58	0.10	21	218
30 ISL	12.98 D	12.98	33.113 D	24.937	301.6	0.091	6.21	103.5	3.0	0.44	1.2	0.08	0.04	0.62	0.13	30	
31	12.98	12.98	33.124	24.945	300.8	0.094	6.21	103.5	3.0	0.44	1.2	0.08	0.04	0.62	0.13	31	217
41	12.90	12.89	33.120	24.958	299.8	0.124	6.17	102.7	3.4	0.44	1.3	0.09	0.02	0.47 A	0.31 A	41	216
50 ISL	11.57 D	11.56	33.242 D	25.305	266.9	0.149	5.71	92.5	8.0	0.80	6.1	0.25	0.00	0.30	0.47	50	
51	11.53	11.52	33.244	25.314	266.1	0.152	5.65	91.4	8.6	0.84	6.7	0.26	0.00	0.28	0.48	51	215
61	10.93	10.92	33.237	25.417	256.5	0.178	5.35	85.4	11.1	1.04	9.8	0.06	0.00	0.26	0.16	61	214
71	10.48	10.47	33.298	25.543	244.7	0.203	4.90	77.5	13.4	1.22	12.9	0.03	0.00	0.16	0.12	71	213
75 ISL	10.04 D	10.03	33.300 D	25.620	237.4	0.213	4.70	73.6	15.1	1.33	14.4	0.03	0.00	0.12	0.10	75	
87	9.59	9.58	33.498	25.849	215.8	0.240	4.09	63.5	20.3	1.63	18.7	0.02	0.02	0.04	0.07	87	212
100 ISL	9.54 D	9.53	33.683 D	26.002	201.6	0.267	3.51	54.5	23.4	1.75	21.4	0.01	0.14	0.01	0.06	101	
102	9.54	9.53	33.692	26.009	200.9	0.271	3.43	53.3	23.7	1.76	21.7	0.01	0.16	0.01	0.06	103	211
121	9.36	9.35	33.814	26.134	189.4	0.308	3.00	46.4	26.8	1.88	23.8	0.00	0.01	0.01	0.06	122	210
125 ISL	9.35 D	9.34	33.821 D	26.141	188.8	0.316	2.96	45.8	27.1	1.89	24.1	0.00	0.04	0.01	0.06	126	
139	9.26	9.24	33.854	26.182	185.3	0.342	2.89	44.7	27.9	1.92	24.7	0.00	0.15	0.00	0.06	140	209
150 ISL	8.86 D	8.84	33.889 D	26.273	176.7	0.362	2.90	44.4	29.0	1.92	25.0	0.00	0.12	0.00	0.05	151	
170	8.52	8.50	33.962	26.383	166.5	0.396	2.92	44.4	31.9	1.92	25.8	0.00	0.03	0.00	0.03	171	208
200	7.97	7.95	34.012	26.506	155.3	0.444	2.49	37.4	38.4	2.11	28.7	0.00	0.06	0.00	0.03	201	207
231	7.72	7.70	34.017	26.546	151.9	0.492	2.30	34.3	41.6	2.19	29.8	0.01	0.00			232	206
250 ISL	7.68 D	7.66	34.098 D	26.616	145.6	0.520	1.90	28.4	44.6	2.32	31.1	0.01	0.00			251	
270	7.64	7.61	34.107	26.629	144.7	0.549	1.46	21.8	48.0	2.47	32.6	0.00	0.00			272	205
300 ISL	7.14 D	7.11	34.103 D	26.697	138.4	0.592	1.26	18.6	53.0	2.58	34.0	0.00	0.01			302	
322	6.95	6.92	34.116	26.734	135.2	0.622	1.21	17.8	56.5	2.63	34.8	0.00	0.01			324	204
382	6.59	6.56	34.170	26.825	127.2	0.701	0.82	11.9	64.5	2.81	36.6	0.00	0.07			384	203
400 ISL	6.47 D	6.43	34.182 D	26.851	125.0	0.723	0.74	10.7	66.8	2.85	37.0	0.00	0.06			403	
441	6.16	6.12	34.202	26.907	120.0	0.774	0.59	8.5	72.0	2.93	38.0	0.00	0.03			444	202
500 ISL	5.69 D	5.65	34.253 D	27.006	110.9	0.842	0.40	5.7	80.1	3.03	39.4	0.00	0.05			503	
515	5.64	5.60	34.260	27.018	109.9	0.858	0.35	5.0	82.2	3.06	39.8	0.00	0.06			519	201

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 S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 14.8 N	121 26.9 W	18/03/09	1617 UTC	3800 m	330 26 kn	340 05 06	0	1019.5 mb	14.1 C	12.7 C	14m	0/8

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.37	13.37	32.996	24.768	316.9	0.000	6.04	101.4	2.5	0.35	0.0	0.00	0.00	0.31	0.09	0	
3 A	13.37	13.37	32.996	24.768	317.0	0.010	6.04	101.4	2.5	0.35	0.0	0.00	0.00	0.31	0.09	3	222
10 ISL	13.36 D	13.36	32.993 D	24.768	317.1	0.032	6.06	101.8	2.6	0.36	0.0	0.00	0.00	0.33	0.10	10	
10	13.37	13.37	32.995	24.767	317.2	0.032										10	221
11 A	13.35	13.35	32.995	24.771	316.8	0.035	6.06	101.7	2.6	0.36	0.0	0.00	0.00	0.33	0.10	11	220
20 ISL	13.36 D	13.36	32.993 D	24.768	317.4	0.063	6.08	102.1	2.5	0.35	0.0	0.00	0.00	0.32	0.10	20	
21 A	13.36	13.36	32.998	24.772	317.1	0.067	6.08	102.1	2.5	0.35	0.0	0.00	0.00	0.32	0.10	21	219
30 A	13.35	13.35	32.997	24.773	317.2	0.095	6.05	101.6	2.5	0.36	0.0	0.00	0.01	0.33	0.09	30	218
40 A	13.34	13.33	32.992	24.772	317.6	0.127	6.04	101.4	2.6	0.36	0.0	0.00	0.02	0.35	0.11	40	217
50 ISL	13.25 D	13.24	32.985 D	24.785	316.6	0.159	6.03	101.0	2.7	0.37	0.1	0.04	0.05	0.35	0.09	50	
51	13.25	13.24	32.986	24.785	316.6	0.162	6.03	101.0	2.7	0.37	0.1	0.04	0.05	0.35	0.09	51	216
57 A	13.15	13.14	32.982	24.802	315.1	0.181	6.01	100.5	2.7	0.40	0.2	0.07	0.08	0.30	0.12	57	215
64	12.64	12.63	32.968	24.892	306.7	0.202	5.89	97.4	3.2	0.48	1.2	0.21	0.14	0.25	0.12	64	214
71	12.27	12.26	32.965	24.960	300.3	0.224	5.80	95.2	3.8	0.54	2.1	0.24	0.08	0.24	0.13	71	213
75 ISL	11.97 D	11.96	32.967 D	25.018	294.9	0.236	5.79	94.4	4.2	0.59	2.8	0.19	0.07	0.21	0.12	75	
84	11.07	11.06	32.902	25.132	284.1	0.262	5.77	92.2	5.4	0.71	4.6	0.04	0.06	0.13	0.09	84	212
100 ISL	10.18 D	10.17	32.944 D	25.319	266.5	0.306	5.61	88.0	8.6	0.93	7.8	0.01	0.03	0.06	0.05	100	
102	10.08	10.07	32.957	25.346	264.0	0.311	5.58	87.3	9.1	0.96	8.2	0.01	0.03	0.05	0.05	102	211
121	9.85	9.84	33.300	25.652	235.3	0.358	4.97	77.5	14.6	1.23	13.0	0.00	0.06	0.02	0.05	122	210
125 ISL	9.84 D	9.83	33.373 D	25.711	229.8	0.368	4.82	75.2	15.9	1.29	14.1	0.00	0.07	0.02	0.04	126	
141	9.24	9.22	33.527	25.929	209.2	0.403	4.26	65.7	20.6	1.51	17.8	0.00	0.08	0.01	0.02	142	209
150 ISL	9.20 D	9.18	33.708 D	26.078	195.3	0.421	4.08	62.9	22.1	1.55	18.9	0.00	0.06	0.01	0.02	151	
172	8.89	8.87	33.887	26.267	177.7	0.462	3.70	56.7	25.8	1.63	21.0	0.00	0.01	0.00	0.02	173	208
200 ISL	8.29 D	8.27	33.961 D	26.418	163.8	0.510	2.85	43.1	34.2	1.97	25.7	0.00	0.04	0.00	0.02	201	
201	8.27	8.25	33.964	26.423	163.2	0.512	2.82	42.6	34.5	1.98	25.9	0.00	0.04	0.00	0.02	202	207
231	7.97	7.95	34.022	26.514	155.1	0.559	2.40	36.0	39.4	2.12	28.2	0.00	0.05			232	206
250 ISL	7.87 D	7.85	34.022 D	26.529	154.0	0.589	2.13	31.9	42.5	2.22	29.7	0.00	0.03			251	
270	7.64	7.61	34.065	26.596	147.8	0.619	1.84	27.4	45.7	2.33	31.1	0.00	0.00			272	205
300 ISL	7.51 D	7.48	34.110 D	26.651	143.1	0.662	1.35	20.1	50.2	2.51	32.7	0.00	0.00			302	
319	7.47	7.44	34.156	26.693	139.4	0.689	1.11	16.5	53.0	2.61	33.5	0.00	0.00			321	204
382	6.36	6.33	34.096	26.797	129.7	0.774	1.19	17.2	63.6	2.71	36.0	0.00	0.00			384	203
400 ISL	6.27 D	6.23	34.129 D	26.835	126.3	0.797	1.04	15.0	66.4	2.77	36.7	0.00	0.00			403	
441	6.17	6.13	34.191	26.897	120.9	0.848	0.64	9.2	72.2	2.92	38.2	0.00	0.00			444	202
500 ISL	5.74 D	5.70	34.221 D	26.975	113.9	0.917	0.48	6.8	79.2	3.02	39.7	0.00	0.00			503	
513	5.71	5.67	34.229	26.985	113.1	0.932	0.44	6.3	80.7	3.04	40.0	0.00	0.00			516	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.6 N	122 7.5 W	18/03/09	0759 UTC	4179 m	350 29 kn			1020.7 mb	13.9 C	12.2 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.86	13.86	33.074	24.729	320.6	0.000	5.99	101.7	2.4	0.32	0.0	0.00	0.08	0.22	0.06	0	
2	13.86	13.86	33.074	24.729	320.7	0.006	5.99	101.7	2.4	0.32	0.0	0.00	0.08	0.22	0.06	2	221
10	13.86	13.86	33.074	24.729	320.9	0.032	5.99	101.7	2.4	0.32	0.0	0.00	0.08	0.20	0.06	10	219
11	13.86	13.86	33.074	24.729	320.9	0.035										11	220
20 ISL	13.86 D	13.86	33.071 D	24.727	321.3	0.064	6.00	101.8	2.4	0.32	0.0	0.00	0.07	0.21	0.05	20	
24	13.86	13.86	33.073	24.729	321.3	0.077	6.00	101.8	2.4	0.32	0.0	0.00	0.06	0.22	0.05	24	218
30 ISL	13.87 D	13.87	33.071 D	24.725	321.8	0.096	5.99	101.7	2.4	0.32	0.0	0.00	0.06	0.23	0.05	30	
39	13.87	13.86	33.077 D	24.730	321.6	0.125										39	217
50	13.87	13.86	33.090	24.740	320.9	0.161	5.97	101.4	2.4	0.33	0.0	0.00	0.05	0.25	0.06	50	216
61	13.81	13.80	33.078	24.744	320.9	0.196	5.97	101.2	2.4	0.33	0.0	0.00	0.10	0.26	0.08	61	215
74	13.59	13.58	33.060	24.775	318.2	0.237	5.92	99.9	2.5	0.36	0.3	0.04	0.16	0.25	0.09	74	214
75 ISL	13.45 D	13.44	33.050 D	24.796	316.3	0.241	5.92	99.6	2.5	0.37	0.3	0.05	0.17	0.26	0.09	75	
86	12.69	12.68	32.992	24.901	306.4	0.275	5.86	97.0	3.3	0.47	1.5	0.18	0.22	0.32	0.11	86	213
100	10.88	10.87	32.937	25.193	278.6	0.316	5.72	91.1	6.2	0.75	5.4	0.06	0.12	0.16	0.07	100	212
112	10.85	10.84	33.057	25.292	269.5	0.349	5.47	87.1	7.6	0.83	7.2	0.01	0.14	0.07	0.05	113	211
125	10.18	10.17	33.170	25.496	250.3	0.383	5.21	81.8	10.5	0.99	10.0	0.01	0.15	0.02	0.03	126	210
141	9.74	9.72	33.357	25.715	229.7	0.421	4.80	74.7	14.7	1.20	13.6	0.00	0.02	0.01	0.02	142	209
150 ISL	9.66 D	9.64	33.572 D	25.897	212.7	0.441	4.35	67.7	18.0	1.36	16.1	0.00	0.03	0.01	0.03	151	
169	9.36	9.34	33.784	26.112	192.6	0.479	3.40	52.6	24.7	1.69	21.0	0.00	0.04	0.00	0.04	170	208
200 ISL	8.88 D	8.86	33.941 D	26.312	174.1	0.536	2.80	42.9	30.4	1.89	24.7	0.00	0.00	0.00	0.03	201	
202	8.88	8.86	33.943	26.313	174.0	0.540	2.78	42.6	30.6	1.90	24.8	0.00	0.00	0.00	0.03	203	207
230	8.48	8.46	34.015	26.432	163.1	0.587	2.56	38.9	34.6	2.00	26.8	0.00	0.00			231	206
250 ISL	8.03 D	8.00	33.990 D	26.480	158.6	0.619	2.35	35.3	37.9	2.09	28.2	0.00	0.00			251	
269	7.98	7.95	34.048	26.533	153.9	0.649	2.13	32.0	41.1	2.19	29.4	0.00	0.01			271	205
300 ISL	7.62 D	7.59	34.053 D	26.590	148.9	0.696	1.80	26.8	46.3	2.33	31.4	0.00	0.02			302	
319	7.42	7.39	34.076	26.637	144.7	0.723	1.60	23.7	49.4	2.42	32.6	0.00	0.03			321	204
381	6.84	6.80	34.127	26.758	133.8	0.810	1.06	15.5	59.4	2.67	35.6	0.00	0.05			383	203
400 ISL	6.57 D	6.53	34.115 D	26.785	131.3	0.835	0.98	14.3	62.5	2.72	36.4	0.00	0.05			402	
437	6.27	6.23	34.144	26.847	125.7	0.883	0.85	12.3	68.2	2.81	37.7	0.00	0.06			440	202
500 ISL	5.91 D	5.87	34.210 D	26.945	116.9	0.959	0.54	7.7	76.9	2.95	39.5	0.00	0.06			503	
512	5.82	5.78	34.217	26.962	115.4	0.973	0.48	6.9	78.5	2.98	39.8	0.00	0.06			515	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 34.7 N	122 48.8 W	18/03/09	0115 UTC	4269 m	340 24 kn	340 08 06	0	1021.7 mb	14.9 C	13.2 C		0/8	

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.45	14.45	33.148	24.663	326.9	0.000	5.96	102.4	2.4	0.32	0.0	0.00	0.03	0.13	0.04	0	
2	14.45	14.45	33.148	24.663	326.9	0.007	5.96	102.4	2.4	0.32	0.0	0.00	0.03	0.13	0.04	2	221
10 ISL	14.45 D	14.45	33.142 D	24.658	327.6	0.033	5.95	102.3	2.6	0.34	0.0	0.00	0.87	0.14	0.03	10	
10	14.45	14.45	33.146	24.661	327.3	0.033										10	220
12	14.45	14.45	33.144	24.660	327.5	0.039	5.95	102.3	2.6	0.34	0.0	0.00	1.05	0.14	0.03	12	219
20	14.38	14.38	33.153	24.682	325.6	0.065	5.95	102.1	2.6	0.33	0.0	0.00	0.19	0.15	0.04	20	218
30 ISL	14.12 D	14.12	33.159 D	24.741	320.2	0.098	5.97	101.9	2.6	0.33	0.0	0.00	0.11	0.19	0.05	30	
31	14.13	14.13	33.163	24.742	320.2	0.101	5.97	102.0	2.6	0.33	0.0	0.00	0.10	0.20	0.05	31	217
40	14.05	14.04	33.169	24.764	318.4	0.130	5.98	102.0	2.6	0.33	0.0	0.00	0.00	0.24	0.08	40	216
50	13.55	13.54	33.164	24.863	309.2	0.161	5.99	101.1	2.9	0.39	0.5	0.10	0.12	0.38	0.17	50	215
61	13.09	13.08	33.138	24.935	302.6	0.195	5.89	98.4	3.4	0.48	1.4	0.27	0.11	0.39	0.18	61	214
70	12.48	12.47	33.129	25.047	292.1	0.221	5.66	93.4	4.6	0.62	3.6	0.14	0.01	0.26	0.13	70	213
75 ISL	11.77 D	11.76	33.110 D	25.167	280.7	0.236	5.48	89.0	6.2	0.75	5.6	0.08	0.02	0.19	0.11	75	
85	10.99	10.98	33.161	25.348	263.6	0.263	5.12	81.8	9.8	1.01	9.7	0.01	0.03	0.09	0.07	85	212
100	10.36	10.35	33.348	25.604	239.6	0.301	4.70	74.2	13.7	1.21	13.3	0.00	0.03	0.03	0.04	100	211
119	9.97	9.96	33.568	25.842	217.3	0.344	4.23	66.3	17.5	1.38	16.5	0.00	0.08	0.01	0.03	120	210
125 ISL	9.87 D	9.86	33.599 D	25.883	213.5	0.357	4.15	64.9	18.1	1.40	17.0	0.00	0.06	0.01	0.03	126	
138	9.73	9.71	33.684	25.972	205.2	0.384	4.03	62.9	19.4	1.44	18.0	0.00	0.02	0.00	0.02	139	209
150 ISL	9.23 D	9.21	33.823 D	26.163	187.3	0.408	3.91	60.4	21.6	1.50	19.2	0.00	0.02	0.00	0.02	151	
169	9.01	8.99	33.887	26.248	179.5	0.443	3.64	55.9	25.6	1.64	21.5	0.00	0.03	0.00	0.02	170	208
200	8.70	8.68	33.947	26.344	170.9	0.497	2.82	43.0	31.6	1.94	25.6	0.00	0.04	0.00	0.03	201	207
229	8.26	8.24	33.979	26.437	162.5	0.545	3.03	45.8	33.9	1.90	25.9	0.00	0.06			230	206
250 ISL	8.07 D	8.04	34.011 D	26.491	157.7	0.579	2.85	42.9	37.2	1.98	27.1	0.00	0.05			251	
268	7.82	7.79	34.017	26.532	153.9	0.607	2.57	38.5	40.7	2.08	28.5	0.00	0.04			270	205
300 ISL	7.32 D	7.29	34.051 D	26.631	144.8	0.655	2.02	29.9	47.4	2.30	31.1	0.00	0.10			302	
319	7.21	7.18	34.069	26.661	142.2	0.682	1.68	24.8	51.4	2.44	32.6	0.00	0.14			321	204
377	6.90	6.86	34.162	26.777	131.9	0.761	0.94	13.8	60.6	2.74	35.5	0.00	0.12			379	203
400 ISL	6.54 D	6.50	34.151 D	26.817	128.2	0.791	0.83	12.1	64.0	2.80	36.3	0.00	0.12			403	
437	6.33	6.29	34.177	26.865	124.0	0.838	0.73	10.6	69.2	2.87	37.4	0.00	0.12			440	202
500 ISL	5.92 D	5.88	34.216 D	26.949	116.6	0.914	0.52	7.5	76.5	2.98	38.8	0.00	0.15			503	
514	5.88	5.84	34.240	26.973	114.5	0.930	0.47	6.7	78.1	3.00	39.1	0.00	0.16			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 14.6 N	123 29.9 W	17/03/09	1823 UTC	4120 m	360 23 kn	360 04 04	1	1025.2 mb	15.0 C	13.9 C	21m	4/8	AC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.27	14.27	33.212	24.750	318.6	0.000	5.95	101.9	2.6	0.33	0.0	0.00	0.00	0.19	0.05	0	
3 A	14.27	14.27	33.212	24.750	318.7	0.010	5.95	101.9	2.6	0.33	0.0	0.00	0.00	0.19	0.05	3	222
10 ISL	14.26 D	14.26	33.210 D	24.751	318.8	0.032	5.97	102.3	2.6	0.33	0.0	0.00	0.01	0.19	0.05	10	
15 A	14.24	14.24	33.212	24.757	318.4	0.048	5.98	102.4	2.6	0.33	0.0	0.00	0.01	0.19	0.05	15	220
16	14.23	14.23	33.212	24.759	318.2	0.051										16	221
20 ISL	14.03 D	14.03	33.204 D	24.794	314.9	0.064	5.98	101.9	2.6	0.33	0.0	0.00	0.01	0.22	0.06	20	
30 A	14.02	14.02	33.210	24.802	314.5	0.095	5.96	101.6	2.5	0.33	0.0	0.00	0.00	0.29	0.08	30	219
40	14.02	14.01	33.214	24.805	314.5	0.127	5.96	101.6	2.4	0.33	0.0	0.00	0.00	0.32	0.09	40	218
47 A	13.97	13.96	33.214	24.815	313.7	0.149	5.92	100.8	2.4	0.35	0.0	0.01	0.03	0.43	0.13	47	217
50 ISL	13.72 D	13.71	33.220 D	24.871	308.4	0.158	5.86	99.3	2.7	0.38	0.3	0.09	0.10	0.44	0.16	50	
53	13.66	13.65	33.235	24.895	306.2	0.167	5.79	98.0	3.1	0.43	0.8	0.17	0.15	0.46	0.18	53	216
61 A	12.81	12.80	33.176	25.020	294.5	0.191	5.56	92.4	4.8	0.62	3.5	0.21	0.04	0.37	0.15	61	215
73	11.27	11.26	33.153	25.291	268.8	0.225	5.14	82.6	9.0	0.97	8.8	0.02	0.02	0.20	0.10	73	214
75 ISL	11.03 D	11.02	33.195 D	25.367	261.6	0.230	5.06	81.0	9.7	1.02	9.6	0.02	0.02	0.18	0.09	75	
84 A	10.79	10.78	33.285	25.479	251.1	0.253	4.71	75.0	12.5	1.21	12.6	0.01	0.04	0.11	0.07	84	213
96	10.40	10.39	33.453	25.678	232.4	0.282	4.30	68.0	16.1	1.38	15.9	0.01	0.00	0.04	0.04	96	212
100 ISL	10.29 D	10.28	33.495 D	25.730	227.6	0.292	4.23	66.7	16.7	1.41	16.5	0.01	0.00	0.03	0.04	100	
110	10.10	10.09	33.560	25.813	219.8	0.314	4.07	64.0	18.2	1.49	17.8	0.00	0.00	0.02	0.04	111	211
125	9.73	9.72	33.668	25.960	206.2	0.346	3.62	56.5	21.9	1.68	20.8	0.00	0.01	0.01	0.03	126	210
146	9.30	9.28	33.816	26.146	188.8	0.387	3.15	48.7	26.3	1.85	23.7	0.00	0.03	0.00	0.03	147	209
150 ISL	9.27 D	9.25	33.827 D	26.159	187.6	0.395	3.07	47.4	27.1	1.87	24.2	0.00	0.03	0.00	0.03	151	
170	8.88	8.86	33.941	26.311	173.5	0.431	2.75	42.2	30.8	1.96	26.0	0.00	0.00	0.00	0.03	171	208
200 ISL	8.35 D	8.33	34.001 D	26.440	161.7	0.481	2.60	39.4	34.9	2.04	27.5	0.00	0.00	0.00	0.03	201	
201	8.34	8.32	34.003	26.443	161.4	0.483	2.60	39.4	35.0	2.04	27.5	0.00	0.00	0.00	0.03	202	207
232	7.92	7.90	34.033	26.530	153.6	0.532	2.16	32.4	41.3	2.23	30.0	0.00	0.00			233	206
250 ISL	7.71 D	7.69	34.054 D	26.577	149.3	0.559	1.96	29.3	44.2	2.32	31.1	0.00	0.01			251	
272	7.51	7.48	34.055	26.607	146.7	0.591	1.77	26.3	47.2	2.41	32.2	0.00	0.02			274	205
300 ISL	7.23 D	7.20	34.068 D	26.657	142.3	0.632	1.63	24.1	50.6	2.48	33.3	0.00	0.03			302	
322	7.07	7.04	34.069	26.680	140.4	0.663	1.52	22.4	53.2	2.53	34.0	0.00	0.03			324	204
382	6.79	6.75	34.155	26.787	131.0	0.744	0.92	13.5	61.7	2.78	36.2	0.00	0.12			384	203
400 ISL	6.68 D	6.64	34.163 D	26.808	129.2	0.768	0.84	12.3	64.1	2.82	36.8	0.00	0.11			403	
438	6.34	6.30	34.178	26.865	124.1	0.816	0.72	10.4	69.2	2.90	37.9	0.00	0.07			441	202
500 ISL	5.72 D	5.68	34.223 D	26.979	113.5	0.890	0.46	6.6	79.5	3.04	39.9	0.00	0.01			503	
515	5.70	5.66	34.239	26.994	112.2	0.907	0.40	5.7	82.0	3.07	40.4	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 83.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 54.8 N	124 10.1 W	17/03/09	1141 UTC	4201 m	340 20 kn			1025.2 mb	14.7 C	13.0 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.12	14.12	33.181	24.757	317.9	0.000	6.00	102.5	2.8	0.34	0.0	0.00	0.00	0.24	0.05	0	
1	14.12	14.12	33.181	24.757	317.9	0.003	6.00	102.5	2.8	0.34	0.0	0.00	0.00	0.24	0.05	1	221
9	14.13	14.13	33.179	24.754	318.5	0.029										9	220
10	14.12	14.12	33.179	24.756	318.3	0.032	6.01	102.6	2.9	0.35	0.0	0.00	0.00	0.25	0.05	10	219
20	13.86	13.86	33.185	24.815	313.0	0.063	6.06	102.9	2.9	0.34	0.0	0.00	0.00	0.28	0.08	20	218
30	13.82	13.82	33.183	24.822	312.6	0.095	6.08	103.2	2.9	0.34	0.0	0.00	0.01	0.31	0.09	30	217
39	13.81	13.80	33.187	24.827	312.3	0.123	6.04	102.5	2.8	0.34	0.0	0.00	0.02	0.37	0.11	39	216
49	13.79	13.78	33.184	24.829	312.4	0.154	6.00	101.8	2.8	0.34	0.0	0.01	0.05	0.38	0.12	49	215
50 ISL	13.78 D	13.77	33.183 D	24.831	312.3	0.157	6.00	101.7	2.9	0.35	0.1	0.04	0.06	0.38	0.13	50	
59	12.79	12.78	33.077	24.947	301.4	0.185	5.93	98.4	4.0	0.53	1.9	0.25	0.15	0.40	0.22	59	214
70	11.68	11.67	33.052	25.138	283.3	0.217	5.65	91.6	6.3	0.75	5.4	0.11	0.02	0.28	0.18	70	213
75 ISL	11.51 D	11.50	33.069 D	25.182	279.2	0.231	5.62	90.8	6.9	0.80	6.2	0.07	0.01	0.23	0.15	75	
86	10.94	10.93	33.096	25.306	267.6	0.261	5.52	88.1	8.4	0.91	8.0	0.02	0.00	0.15	0.10	86	212
100 ISL	10.23 D	10.22	33.287 D	25.578	242.0	0.297	4.97	78.2	12.8	1.17	12.2	0.01	0.01	0.06	0.05	100	
101	10.25	10.24	33.285	25.573	242.4	0.299	4.92	77.4	13.1	1.19	12.5	0.01	0.01	0.06	0.05	101	211
119	9.83	9.82	33.501	25.813	220.0	0.341	4.25	66.4	18.0	1.44	16.7	0.00	0.00	0.02	0.03	120	210
125 ISL	9.67 D	9.66	33.570 D	25.893	212.5	0.354	4.11	64.0	19.2	1.50	17.7	0.00	0.00	0.02	0.03	126	
141	9.51	9.49	33.633	25.969	205.6	0.387	3.83	59.4	22.0	1.63	20.0	0.00	0.00	0.01	0.04	142	209
150 ISL	9.36 D	9.34	33.709 D	26.053	197.8	0.405	3.67	56.8	23.6	1.68	21.1	0.00	0.01	0.01	0.04	151	
168	8.99	8.97	33.839	26.214	182.7	0.440	3.37	51.7	26.8	1.75	22.9	0.00	0.02	0.00	0.03	169	208
200 ISL	8.53 D	8.51	33.957 D	26.378	167.6	0.496	2.84	43.2	32.2	1.93	25.9	0.00	0.03	0.00	0.03	201	
201	8.54	8.52	33.958	26.378	167.7	0.497	2.83	43.0	32.4	1.94	26.0	0.00	0.03	0.00	0.03	202	207
229	8.23	8.21	34.016	26.471	159.3	0.543	2.54	38.4	36.6	2.05	27.5	0.00	0.03			230	206
250 ISL	8.08 D	8.05	34.048 D	26.518	155.1	0.576	2.16	32.5	40.4	2.18	29.1	0.00	0.02			251	
269	7.88	7.85	34.075	26.569	150.5	0.605	1.81	27.1	44.0	2.31	30.6	0.00	0.01			271	205
300 ISL	7.62 D	7.59	34.110 D	26.635	144.7	0.651	1.45	21.6	49.1	2.46	32.3	0.00	0.02			302	
319	7.40	7.37	34.125	26.678	140.7	0.678	1.29	19.1	52.1	2.53	33.1	0.00	0.03			321	204
379	6.74	6.70	34.160	26.797	129.9	0.759	0.91	13.3	62.2	2.75	35.7	0.00	0.04			381	203
400 ISL	6.57 D	6.53	34.160 D	26.820	127.9	0.786	0.85	12.4	65.5	2.80	36.5	0.00	0.05			403	
436	6.09	6.05	34.157	26.880	122.3	0.831	0.76	10.9	71.0	2.86	37.8	0.00	0.08			439	202
500 ISL	5.63 D	5.59	34.202 D	26.973	113.9	0.907	0.49	7.0	80.6	3.00	39.6	0.00	0.10			503	
516	5.60	5.56	34.224	26.995	112.1	0.925	0.42	6.0	83.0	3.03	40.0	0.00	0.11			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 85.4 35.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 0.6 N	118 50.1 W	14/03/09	2238 UTC	34 m	260 15 kn	240 02 06	2	1015.4 mb	14.9 C	13.0 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.42	13.42	33.455	25.113	284.0	0.000	6.58	110.9	3.1	0.44	1.8	0.08	0.14	3.80	1.04	0	
2	13.42	13.42	33.455	25.113	284.1	0.006	6.58	110.9	3.1	0.44	1.8	0.08	0.14	3.80	1.04	2	207
5	13.47	13.47	33.451	25.100	285.4	0.014	6.58	111.1	2.9	0.39	1.3	0.07	0.11	3.77	1.17	5	206
10	13.24	13.24	33.471	25.162	279.7	0.028	6.52	109.5	3.5	0.44	1.8	0.09	0.17	4.34	1.51	10	204
10	13.29	13.29	33.458	25.142	281.6	0.028										10	205
15	13.11	13.11	33.465	25.183	277.8	0.042	6.40	107.2	3.8	0.47	2.2	0.10	0.19	4.88	1.40	15	203
20	13.00	13.00	33.472	25.210	275.3	0.056	6.18	103.3	4.4	0.54	3.0	0.11	0.37	5.31	1.17	20	202
30 ISL	12.77 D	12.77	33.486 D	25.267	270.2	0.083	5.67	94.3	6.1	0.69	4.5	0.16	0.77	3.94	1.37	30	
31	12.78	12.78	33.487	25.266	270.3	0.086	5.62	93.5	6.3	0.71	4.6	0.16	0.81	3.80	1.39	31	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 53.5 N	118 29.3 W	14/03/09	1909 UTC	54 m	230 10 kn	260 02 06	2	1016.8 mb	15.2 C	12.8 C	11m	8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.96	13.96	33.420	24.975	297.1	0.000	6.64	113.2	1.0	0.24	0.1	0.05	0.08	1.71	0.52	0	
2 A	13.96	13.96	33.420	24.975	297.2	0.006	6.64	113.2	1.0	0.24	0.1	0.05	0.08	1.71	0.52	2	209
9 A	13.94	13.94	33.422	24.981	296.8	0.027	6.56	111.8	1.1	0.27	0.3	0.06	0.04	1.88	0.64	9	207
9	13.95	13.95	33.421	24.978	297.1	0.027										9	208
10 ISL	13.73 D	13.73	33.441 D	25.039	291.3	0.030	6.24	105.9	2.6	0.39	1.7	0.11	0.10	1.79	0.70	10	
16 A	12.04	12.04	33.488	25.408	256.3	0.046	4.23	69.3	11.8	1.16	10.9	0.41	0.50	1.14	1.07	16	206
20 ISL	11.90 D	11.90	33.499 D	25.443	253.1	0.056	4.10	67.0	12.7	1.23	12.7	0.44	0.66	1.01	1.06	20	
24 A	11.83	11.83	33.504	25.460	251.6	0.066	3.96	64.6	13.6	1.30	13.5	0.46	0.81	0.92	1.05	24	205
30 ISL	11.38 D	11.38	33.574 D	25.598	238.6	0.081	3.56	57.5	16.7	1.50	16.8	0.46	1.11	0.50	0.78	30	
31 A	11.40	11.40	33.575	25.595	238.9	0.083	3.49	56.4	17.2	1.53	17.3	0.46	1.16	0.43	0.73	31	204
39	11.11	11.11	33.640	25.698	229.3	0.102	3.17	51.0	19.5	1.65	19.4	0.46	1.29	0.28	0.63	39	203
45 A	10.92	10.91	33.687	25.769	222.7	0.116	2.92	46.8	21.7	1.77	20.8	0.48	1.73	0.21	0.62	45	202
50	10.89	10.88	33.692	25.778	221.9	0.127	2.88	46.1	22.2	1.81	21.3	0.48	2.03	0.24	0.63	50	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.3 N	118 37.7 W	15/03/09	0053 UTC	666 m	280 15 kn	270 03 06	1	1015.1 mb	14.8 C	12.1 C		4/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.10	14.10	33.423	24.948	299.7	0.000	6.66	113.9	0.6	0.20	0.0	0.00	0.67	0.97	0.30	0	
2	14.10	14.10	33.423	24.948	299.7	0.006	6.66	113.9	0.6	0.20	0.0	0.00	0.67	0.97	0.30	2	221
10	13.49	13.49	33.429	25.079	287.6	0.029	6.41	108.2	2.2	0.35	0.8	0.06	0.10	1.91	0.78	10	219
10	13.49	13.49	33.422	25.073	288.1	0.029										10	220
20	13.12	13.12	33.437	25.160	280.1	0.058	5.65	94.7	4.5	0.63	3.4	0.17	0.52	1.17	0.74	20	218
30	11.80	11.80	33.496	25.460	251.8	0.084	4.20	68.5	12.8	1.21	12.3	0.10	0.05	0.49	0.54	30	217
40	11.45	11.45	33.581	25.591	239.6	0.109	3.63	58.8	15.8	1.44	16.3	0.23	0.14	0.32	0.53	40	216
50	11.17	11.16	33.619	25.671	232.1	0.133	3.46	55.7	17.2	1.53	18.2	0.14	0.04	0.24	0.40	50	215
60	10.83	10.82	33.694	25.791	221.0	0.155	3.27	52.3	19.2	1.63	20.0	0.02	0.00	0.08	0.27	60	214
71	10.56	10.55	33.759	25.889	211.9	0.179	3.01	47.8	21.1	1.74	21.7	0.01	0.01	0.05	0.21	71	213
75 ISL	10.51 D	10.50	33.771 D	25.907	210.2	0.188	2.89	45.9	22.0	1.79	22.4	0.01	0.01	0.05	0.22	75	
85	10.23	10.22	33.863	26.027	199.0	0.208	2.61	41.2	24.3	1.89	23.9	0.01	0.02	0.04	0.26	85	212
100 ISL	10.06 D	10.05	33.943 D	26.119	190.6	0.237	2.30	36.2	26.7	1.99	25.2	0.01	0.01	0.03	0.19	101	
101	10.06	10.05	33.945	26.120	190.5	0.239	2.28	35.9	26.8	1.99	25.3	0.01	0.01	0.03	0.18	102	211
121	9.81	9.80	34.026	26.226	180.9	0.276	2.07	32.4	29.1	2.08	26.6	0.01	0.01	0.01	0.12	122	210
125 ISL	9.70 D	9.69	34.043 D	26.258	177.9	0.283	2.02	31.6	29.7	2.10	26.9	0.01	0.01	0.01	0.11	126	
140	9.56	9.54	34.094	26.321	172.2	0.310	1.83	28.5	31.8	2.18	27.8	0.01	0.01	0.01	0.10	141	209
150 ISL	9.44 D	9.42	34.099 D	26.345	170.1	0.327	1.72	26.7	33.0	2.23	28.4	0.01	0.01	0.01	0.10	151	
167	9.30	9.28	34.154	26.411	164.2	0.355	1.57	24.3	34.9	2.29	29.2	0.01	0.00	0.01	0.09	168	208
200	8.93	8.91	34.178	26.489	157.3	0.408	1.52	23.4	37.9	2.36	30.2	0.00	0.00	0.00	0.07	201	207
227	8.78	8.76	34.225	26.550	152.0	0.450	1.27	19.5	41.2	2.46	31.3	0.00	0.00			228	206
250 ISL	8.52 D	8.49	34.232 D	26.596	148.0	0.485	1.15	17.5	44.2	2.53	32.2	0.01	0.02			252	
268	8.24	8.21	34.237	26.643	143.7	0.511	1.08	16.3	46.6	2.58	32.9	0.01	0.04			270	205
300 ISL	7.85 D	7.82	34.243 D	26.706	138.1	0.556	0.88	13.2	51.5	2.69	34.3	0.00	0.03			302	
317	7.68	7.65	34.257	26.742	134.9	0.579	0.78	11.7	53.8	2.74	35.0	0.00	0.03			319	204
377	7.43	7.39	34.267	26.787	131.5	0.659	0.66	9.8	57.2	2.82	35.9	0.00	0.00			379	203
400 ISL	7.26 D	7.22	34.274 D	26.816	129.0	0.689	0.58	8.6	60.4	2.87	36.6	0.00	0.00			403	
438	6.88	6.84	34.294	26.885	122.8	0.737	0.44	6.5	65.9	2.95	37.7	0.01	0.00			441	202
500 ISL	6.56 D	6.51	34.313 D	26.943	117.9	0.811	0.34	4.9	71.0	3.03	38.7	0.00	0.00			504	
515	6.51	6.46	34.315	26.952	117.2	0.829	0.31	4.5	72.2	3.05	39.0	0.00	0.00			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 39.2 N	118 58.3 W	15/03/09	0514 UTC	713 m	280 28 kn			1016.4 mb	13.2 C	10.5 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.52	13.52	33.372	25.028	292.1	0.000	6.40	108.1	0.8	0.35	0.4	0.05	0.12	1.31	0.33	0	
2	13.52	13.52	33.372	25.028	292.1	0.006	6.40	108.1	0.8	0.35	0.4	0.05	0.12	1.31	0.33	2	224
10 ISL	13.50 D	13.50	33.367 D	25.029	292.3	0.029	6.40	108.0	0.9	0.32	0.5	0.05	0.16	1.38	0.30	10	
11	13.51	13.51	33.369	25.028	292.4	0.032	6.40	108.1	0.9	0.32	0.5	0.05	0.17	1.39	0.30	11	222
11	13.50	13.50	33.369	25.030	292.2	0.032			0.9	0.34	0.5	0.05	0.25			11	223
20 ISL	13.21 D	13.21	33.368 D	25.088	286.9	0.058	6.19	103.9	2.2	0.44	1.6	0.11	0.15	1.35	0.36	20	
21	13.19	13.19	33.368	25.092	286.6	0.061	6.14	103.0	2.5	0.46	1.8	0.12	0.15	1.35	0.37	21	221
30	12.32	12.32	33.388	25.278	269.1	0.086	5.37	88.4	7.6	0.79	6.0	0.28	0.17	0.80	0.39	30	220
40	11.97	11.96	33.401	25.354	262.0	0.113	5.07	82.9	10.0	0.93	8.2	0.30	0.06	0.50	0.29	40	219
50 ISL	11.11 D	11.10	33.519 D	25.604	238.5	0.138	4.37	70.2	14.6	1.25	12.7	0.13	0.04	0.24	0.20	50	
51	11.12	11.11	33.510	25.595	239.3	0.140	4.29	68.9	15.1	1.28	13.2	0.11	0.04	0.22	0.19	51	218
60	10.73	10.72	33.604	25.738	226.0	0.161	3.77	60.1	18.7	1.49	16.8	0.04	0.07	0.12	0.15	60	217
71	10.33	10.32	33.683	25.869	213.7	0.185	3.39	53.6	21.6	1.66	19.5	0.02	0.06	0.06	0.11	71	216
75 ISL	10.23 D	10.22	33.720 D	25.915	209.4	0.194	3.24	51.1	22.9	1.72	20.4	0.02	0.07	0.05	0.10	75	
85	9.90	9.89	33.805	26.038	198.0	0.214	2.91	45.6	25.7	1.83	22.3	0.01	0.09	0.03	0.09	85	215
100 ISL	9.78 D	9.77	33.856 D	26.098	192.5	0.243	2.71	42.4	27.2	1.91	23.4	0.01	0.07	0.02	0.09	101	
101	9.79	9.78	33.859	26.099	192.5	0.245	2.70	42.2	27.3	1.91	23.4	0.01	0.07	0.02	0.09	102	214
120	9.51	9.50	33.966	26.229	180.5	0.281	2.29	35.6	30.8	2.04	25.3	0.03	0.02	0.01	0.09	121	213
125 ISL	9.33 D	9.32	34.011 D	26.293	174.5	0.290	2.19	33.9	31.8	2.08	25.8	0.03	0.01	0.01	0.09	126	
140	9.22	9.20	34.054	26.345	169.8	0.315	1.91	29.5	34.6	2.18	27.1	0.02	0.00	0.00	0.09	141	212
150 ISL	9.24 D	9.22	34.079 D	26.361	168.5	0.332	1.73	26.8	36.2	2.24	27.8	0.02	0.00	0.00	0.09	151	
169	8.93	8.91	34.147	26.464	159.0	0.363	1.47	22.6	38.8	2.34	29.0	0.02	0.00	0.00	0.08	170	211
200 ISL	8.77 D	8.75	34.168 D	26.507	155.6	0.412	1.38	21.1	41.1	2.41	30.1	0.04	0.02	0.00	0.10	201	
202	8.73	8.71	34.169	26.514	154.9	0.415	1.38	21.1	41.2	2.41	30.2	0.04	0.02	0.00	0.10	203	210
230	8.52	8.50	34.208	26.577	149.4	0.458	1.16	17.7	44.3	2.50	31.2	0.01	0.00			231	209
250 ISL	8.41 D	8.38	34.227 D	26.609	146.7	0.487	1.05	16.0	46.9	2.56	31.9	0.01	0.00			252	
266	8.16	8.13	34.227	26.647	143.2	0.511	0.98	14.8	49.0	2.60	32.4	0.01	0.00			268	208
300 ISL	7.82 D	7.79	34.253 D	26.718	136.9	0.558	0.83	12.4	52.7	2.67	33.3	0.01	0.00			302	
318	7.75	7.72	34.257	26.732	135.9	0.583	0.76	11.4	54.6	2.71	33.8	0.01	0.00			320	207
376	7.25	7.21	34.278	26.821	128.2	0.659	0.56	8.3	61.9	2.84	35.3	0.00	0.00			378	206
400 ISL	7.14 D	7.10	34.283 D	26.840	126.6	0.690	0.49	7.2	64.3	2.88	35.8	0.00	0.00			403	
436	6.85	6.81	34.300	26.894	121.9	0.735	0.41	6.0	68.1	2.94	36.6	0.00	0.00			439	205
500 ISL	6.18 D	6.14	34.338 D	27.012	110.9	0.809	0.28	4.0	78.6	3.07	38.2	0.00	0.00			504	
512	6.14	6.09	34.339	27.019	110.5	0.822	0.26	3.7	80.7	3.09	38.5	0.00	0.00			516	204
600 ISL	5.66 D	5.61	34.369 D	27.103	103.1	0.916	0.16	2.3	91.8	3.19	39.0	0.00	0.00			604	
608	5.62	5.57	34.372	27.110	102.5	0.925	0.15	2.1	92.6	3.20	39.0	0.00	0.00			612	203
700 ISL	5.37 D	5.31	34.388 D	27.154	99.2	1.017	0.11	1.6	100.5	3.24	38.1	0.01	0.00			705	
705	5.36	5.30	34.392	27.158	98.8	1.022	0.11	1.6	100.9	3.24	38.1	0.01	0.00			710	202
709	5.35	5.29	34.389	27.157	98.9	1.026	0.11	1.6	101.3	3.26	38.0	0.01	0.00			714	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.3 N	119 19.4 W	15/03/09	0945 UTC	1681 m	290 24 kn			1016.6 mb	11.9 C	9.7 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.09	13.09	33.460	25.183	277.4	0.000	6.17	103.3	4.0	0.51	2.1	0.11	0.46	1.87	1.01	0	
2	13.09	13.09	33.460	25.183	277.4	0.006	6.17	103.3	4.0	0.51	2.1	0.11	0.46	1.87	1.01	2	221
10	13.09	13.09	33.459	25.182	277.7	0.028	6.16	103.2	4.0	0.49	2.1	0.11	0.34	1.96	0.94	10	219
10	13.09	13.09	33.460	25.183	277.6	0.028										10	220
20	13.09	13.09	33.459	25.182	277.9	0.056	6.16	103.1	3.8	0.52	2.1	0.11	0.39	2.08	0.96	20	218
30	13.06	13.06	33.461	25.190	277.5	0.083	6.10	102.1	4.4	0.53	2.4	0.12	0.41	1.52	0.86	30	217
39	12.57	12.56	33.491	25.310	266.3	0.108	5.40	89.5	8.0	0.85	5.5	0.19	0.60	0.95	0.90	39	216
49	11.49	11.48	33.603	25.601	238.8	0.133	3.85	62.4	16.1	1.38	13.6	0.21	0.22	0.22	0.59	49	215
50 ISL	11.42 D	11.41	33.612 D	25.620	237.0	0.135	3.78	61.2	16.6	1.41	14.1	0.21	0.20	0.22	0.58	50	
59	11.09	11.08	33.680	25.733	226.4	0.156	3.41	54.8	19.4	1.56	17.1	0.19	0.10	0.19	0.51	59	214
69	10.66	10.65	33.716	25.838	216.7	0.178	3.16	50.3	21.7	1.70	19.7	0.08	0.07	0.11	0.40	69	213
75 ISL	10.57 D	10.56	33.718 D	25.855	215.2	0.191	3.18	50.5	22.3	1.73	20.5	0.06	0.06	0.08	0.33	75	
84	10.22	10.21	33.717	25.915	209.6	0.210	3.20	50.5	22.9	1.75	21.3	0.04	0.05	0.06	0.25	84	212
100 ISL	9.94 D	9.93	33.782 D	26.013	200.6	0.243	3.08	48.3	24.1	1.82	22.3	0.02	0.34	0.03	0.16	101	
101	10.01	10.00	33.759	25.984	203.5	0.245	3.07	48.2	24.2	1.83	22.4	0.02	0.35	0.03	0.16	102	211
119	9.63	9.62	33.902	26.159	187.1	0.280	2.53	39.4	28.7	2.00	24.8	0.00	0.05	0.01	0.08	120	210
125 ISL	9.60 D	9.59	33.914 D	26.173	185.9	0.292	2.42	37.7	30.0	2.05	25.4	0.00	0.06	0.01	0.08	126	
139	9.20	9.18	34.003	26.308	173.3	0.317	2.22	34.3	32.8	2.15	26.7	0.00	0.10	0.01	0.07	140	209
150 ISL	9.15 D	9.13	34.037 D	26.343	170.2	0.336	2.04	31.5	34.8	2.22	27.6	0.00	0.09	0.01	0.07	151	
169	8.88	8.86	34.102	26.437	161.6	0.367	1.76	27.0	37.7	2.31	29.0	0.00	0.05	0.00	0.06	170	208
200 ISL	8.73 D	8.71	34.148 D	26.497	156.5	0.417	1.50	22.9	40.5	2.42	30.3	0.00	0.04	0.00	0.06	201	
201	8.73	8.71	34.148	26.497	156.5	0.418	1.49	22.8	40.6	2.42	30.3	0.00	0.04	0.00	0.06	202	207
230	8.52	8.50	34.173	26.550	152.0	0.463	1.33	20.2	43.4	2.54	31.3	0.00	0.09			231	206
250 ISL	8.31 D	8.28	34.191 D	26.596	147.9	0.493	1.19	18.0	46.1	2.59	32.2	0.00	0.08			252	
270	8.12	8.09	34.210	26.640	144.0	0.522	1.04	15.7	48.9	2.64	33.0	0.00	0.06			272	205
300 ISL	7.89 D	7.86	34.243 D	26.700	138.7	0.564	0.86	12.9	52.7	2.73	33.8	0.00	0.07			302	
318	7.72	7.69	34.252	26.732	135.8	0.589	0.77	11.5	55.0	2.78	34.3	0.00	0.07			320	204
379	7.18	7.14	34.285	26.836	126.7	0.669	0.51	7.5	63.2	2.95	36.2	0.00	0.07			381	203
400 ISL	6.99 D	6.95	34.295 D	26.870	123.6	0.695	0.44	6.5	66.3	2.99	36.7	0.00	0.07			403	
445	6.65	6.61	34.316	26.933	118.1	0.750	0.34	5.0	72.3	3.07	37.6	0.00	0.07			448	202
500	6.37	6.32	34.331	26.983	114.0	0.814	0.28	4.1	76.9	3.14	38.7	0.00	0.05			503	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 19.4 N	119 39.8 W	15/03/09	1356 UTC	74 m	310 25 kn	280 03 05	1	1017.8 mb	12.0 C	10.1 C		6/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.58	12.58	33.323	25.177	277.9	0.000	6.00	99.3	2.7	0.58	4.2	0.13	0.00	1.58	0.30	0	
2	12.58	12.58	33.323	25.177	278.0	0.006	6.00	99.3	2.7	0.58	4.2	0.13	0.00	1.58	0.30	2	210
5	12.59	12.59	33.321	25.173	278.4	0.014	5.99	99.2	2.5	0.56	3.8	0.13	0.00	1.59	0.30	5	209
9	12.59	12.59	33.322	25.174	278.4	0.025										9	208
10	12.59	12.59	33.321	25.173	278.5	0.028	6.00	99.3	2.5	0.56	3.5	0.13	0.04	1.58	0.32	10	207
20	12.59	12.59	33.321	25.174	278.8	0.056	6.00	99.3	2.4	0.55	3.4	0.13	0.02	1.58	0.28	20	206
30	12.48	12.48	33.330	25.202	276.3	0.083	5.85	96.6	3.7	0.61	4.2	0.14	0.03	1.48	0.26	30	205
39	11.93	11.93	33.344	25.318	265.5	0.108	5.37	87.7	7.9	0.84	7.2	0.15	0.00	0.77	0.24	39	204
49	11.19	11.18	33.403	25.500	248.4	0.134	4.73	76.0	13.2	1.16	11.8	0.09	0.00	0.25	0.13	49	203
50 ISL	11.08 D	11.07	33.422 D	25.534	245.1	0.136	4.65	74.6	13.8	1.19	12.3	0.09	0.00	0.22	0.12	50	
60	10.44	10.43	33.550	25.746	225.1	0.160	4.04	64.0	18.5	1.46	16.4	0.06	0.00	0.10	0.09	60	202
69	10.41	10.40	33.559	25.759	224.1	0.180	3.99	63.1	18.9	1.50	17.3	0.07	0.00	0.09	0.09	69	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.4 N	120 0.3 W	15/03/09	1756 UTC	1203 m	320 26 kn	300 04 06	1	1020.4 mb	13.2 C	11.5 C	13m	7/8	CU

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.10	13.10	33.222	24.996	295.1	0.000	6.08	101.7	4.8	0.49	1.8	0.09	0.05	0.60	0.13	0	
3 A	13.10	13.10	33.222	24.997	295.2	0.009	6.08	101.7	4.8	0.49	1.8	0.09	0.05	0.60	0.13	3	222
9 A	13.10	13.10	33.220	24.995	295.5	0.027	6.08	101.7	4.6	0.48	1.8	0.09	0.04	0.68	0.09	9	220
10 ISL	13.08 D	13.08	33.218 D	24.998	295.3	0.030	6.08	101.6	4.6	0.48	1.8	0.09	0.04	0.68	0.10	10	
10	13.09	13.09	33.220	24.997	295.3	0.030										10	221
19 A	13.07	13.07	33.219	25.001	295.2	0.056	6.11	102.1	4.8	0.49	1.8	0.09	0.05	0.61	0.18	19	219
20 ISL	13.09 D	13.09	33.218 D	24.996	295.7	0.059	6.11	102.2	4.8	0.49	1.8	0.09	0.05	0.61	0.18	20	
30 A	13.06	13.06	33.220	25.004	295.2	0.089	6.08	101.6	4.7	0.49	1.8	0.09	0.05	0.59	0.19	30	218
38 A	13.05	13.04	33.219	25.005	295.3	0.112	6.07	101.4	4.5	0.48	1.8	0.09	0.05	0.59	0.18	38	217
45	13.05	13.04	33.220	25.006	295.4	0.133	6.07	101.4	4.8	0.49	1.8	0.09	0.05	0.63	0.18	45	216
50 ISL	13.01 D	13.00	33.219 D	25.013	294.8	0.148	6.06	101.1	4.9	0.50	1.9	0.09	0.06	0.63	0.16	50	
53 A	13.00	12.99	33.222	25.018	294.5	0.156	6.06	101.1	4.9	0.50	1.9	0.10	0.06	0.63	0.15	53	215
62	11.56	11.55	33.281	25.338	264.1	0.182	5.32	86.1	9.3	0.92	8.1	0.13	0.03	0.35	0.16	62	214
71	10.83	10.82	33.334	25.510	247.9	0.205	4.78	76.2	12.5	1.19	12.5	0.03	0.01	0.22	0.14	71	213
75 ISL	10.48 D	10.47	33.419 D	25.638	235.8	0.214	4.50	71.2	14.4	1.31	14.4	0.02	0.01	0.16	0.12	75	
86	9.95	9.94	33.606	25.874	213.5	0.239	3.80	59.5	19.5	1.58	19.0	0.01	0.01	0.04	0.05	86	212
100 ISL	9.56 D	9.55	33.768 D	26.065	195.6	0.268	3.23	50.2	23.8	1.79	22.5	0.00	0.05	0.02	0.05	100	
101	9.56	9.55	33.769	26.066	195.5	0.270	3.20	49.8	24.0	1.80	22.7	0.00	0.05	0.02	0.05	102	211
120	9.34	9.33	33.832	26.152	187.8	0.306	3.04	47.0	26.1	1.86	24.0	0.00	0.05	0.01	0.04	121	210
125 ISL	9.32 D	9.31	33.834 D	26.156	187.4	0.315	2.97	45.9	26.7	1.88	24.4	0.00	0.05	0.01	0.04	126	
140	9.14	9.12	33.893	26.232	180.5	0.343	2.79	43.0	28.3	1.94	25.6	0.00	0.06	0.01	0.05	141	209
150 ISL	9.06 D	9.04	33.902 D	26.252	178.8	0.361	2.78	42.8	28.7	1.94	25.9	0.00	0.06	0.01	0.05	151	
171	8.92	8.90	33.931	26.297	174.9	0.398	2.77	42.5	29.5	1.95	26.3	0.00	0.07	0.01	0.04	172	208
200 ISL	8.33 D	8.31	33.994 D	26.438	161.9	0.447	2.69	40.7	33.4	2.01	27.5	0.00	0.04	0.00	0.02	201	
202	8.35	8.33	33.994	26.435	162.2	0.450	2.68	40.6	33.7	2.02	27.6	0.00	0.04	0.00	0.02	203	207
231	7.96	7.94	34.025	26.518	154.7	0.496	2.35	35.3	38.8	2.16	29.7	0.00	0.04			232	206
250 ISL	7.64 D	7.62	34.048 D	26.583	148.7	0.525	2.12	31.6	41.8	2.24	30.9	0.00	0.02			251	
271	7.57	7.54	34.057	26.600	147.4	0.556	1.88	28.0	44.8	2.33	32.1	0.00	0.00			273	205
300 ISL	7.41 D	7.38	34.075 D	26.637	144.3	0.598	1.69	25.1	47.7	2.43	33.2	0.00	0.00			302	
321	7.26	7.23	34.082	26.664	142.0	0.628	1.55	22.9	49.7	2.51	33.9	0.00	0.00			323	204
382	7.10	7.06	34.209	26.787	131.3	0.712	0.78	11.5	58.1	2.77	35.8	0.00	0.00			384	203
400 ISL	6.92 D	6.88	34.214 D	26.816	128.7	0.735	0.70	10.3	60.1	2.82	36.4	0.00	0.00			403	
441	6.64	6.60	34.222	26.860	124.9	0.787	0.62	9.0	64.6	2.89	37.6	0.00	0.00			444	202
500 ISL	6.15 D	6.11	34.248 D	26.945	117.2	0.859	0.47	6.8	71.9	2.97	39.1	0.00	0.00			503	
514	6.11	6.06	34.264	26.963	115.7	0.875	0.43	6.2	73.6	2.99	39.4	0.00	0.00			518	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.4 N	120 20.8 W	15/03/09	2224 UTC	716 m	310 21 kn	320 04 07	1	1020.4 mb	14.0 C	12.0 C	24m	2/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	12.89	12.89	32.991	24.859	308.2	0.000	6.12	101.8	3.7	0.45	1.2	0.09	0.08	0.33	0.09	0	
2	12.89	12.89	32.991	24.859	308.2	0.006	6.12	101.8	3.7	0.45	1.2	0.09	0.08	0.33	0.09	2	221
10 ISL	12.88 D	12.88	32.991 D	24.861	308.2	0.031	6.13	101.9	3.7	0.45	1.2	0.09	0.10	0.35	0.09	10	
12	12.86	12.86	32.992	24.866	307.8	0.037	6.13	101.9	3.7	0.45	1.2	0.09	0.11	0.35	0.09	12	219
12	12.85	12.85	32.994	24.870	307.5	0.037										12	220
20 ISL	12.75 D	12.75	32.996 D	24.891	305.7	0.062	6.13	101.6	3.8	0.47	1.3	0.10	0.21	0.36	0.10	20	
21	12.75	12.75	32.998	24.892	305.6	0.065	6.13	101.6	3.8	0.47	1.3	0.10	0.22	0.36	0.10	21	218
30 ISL	12.72 D	12.72	33.002 D	24.901	304.9	0.092	6.12	101.4	3.9	0.47	1.4	0.10	0.18	0.39	0.11	30	
31	12.72	12.72	33.004	24.903	304.8	0.095	6.12	101.4	3.9	0.47	1.4	0.10	0.17	0.39	0.11	31	217
41	12.68	12.67	33.027	24.929	302.6	0.125	6.12	101.3	4.5	0.48	1.7	0.10	0.15	0.44	0.13	41	216
50 ISL	12.47 D	12.46	33.020 D	24.964	299.5	0.153	6.09	100.4	4.6	0.53	2.2	0.13	0.15	0.40	0.13	50	
51	12.46	12.45	33.022	24.968	299.1	0.156	6.09	100.4	4.6	0.54	2.3	0.13	0.15	0.39	0.13	51	215
61	11.98	11.97	33.001	25.043	292.2	0.185	5.97	97.4	5.3	0.63	3.5	0.17	0.10	0.34	0.13	61	214
71	11.52	11.51	32.996	25.124	284.7	0.214	5.76	93.0	6.2	0.74	5.4	0.14	0.05	0.26	0.14	71	213
75 ISL	11.52 D	11.51	33.001 D	25.128	284.4	0.225	5.66	91.4	6.9	0.80	6.4	0.11	0.05	0.21	0.12	75	
86	10.67	10.66	33.119	25.371	261.4	0.255	5.30	84.1	10.0	1.02	9.8	0.03	0.04	0.09	0.07	86	212
100 ISL	9.93 D	9.92	33.434 D	25.743	226.2	0.289	4.54	71.0	16.9	1.38	15.8	0.01	0.08	0.04	0.06	100	
101	10.00	9.99	33.400	25.705	229.9	0.292	4.48	70.2	17.4	1.41	16.2	0.01	0.08	0.04	0.06	101	211
121	9.55	9.54	33.698	26.013	201.0	0.335	3.46	53.8	24.3	1.73	21.7	0.01	0.06	0.01	0.05	122	210
125 ISL	9.49 D	9.48	33.736 D	26.052	197.3	0.343	3.29	51.1	25.7	1.78	22.5	0.01	0.05	0.01	0.05	126	
141	9.23	9.21	33.880	26.207	182.9	0.373	2.77	42.8	30.4	1.93	25.1	0.00	0.02	0.00	0.06	142	209
150 ISL	9.03 D	9.01	33.932 D	26.280	176.1	0.389	2.74	42.1	31.4	1.95	25.7	0.00	0.01	0.00	0.05	151	
172	8.75	8.73	33.964	26.349	169.9	0.427	2.66	40.7	33.2	1.99	26.6	0.00	0.00	0.00	0.04	173	208
200 ISL	8.37 D	8.35	34.037 D	26.465	159.3	0.474	2.12	32.1	39.3	2.19	29.2	0.00	0.00	0.00	0.05	201	
202	8.37	8.35	34.040	26.468	159.1	0.477	2.08	31.5	39.7	2.21	29.4	0.00	0.00	0.00	0.05	203	207
229	8.07	8.05	34.073	26.539	152.7	0.519	1.89	28.5	43.1	2.31	30.8	0.00	0.00			230	206
250 ISL	7.95 D	7.92	34.122 D	26.596	147.7	0.550	1.63	24.5	46.6	2.42	32.0	0.00	0.00			251	
271	7.64	7.61	34.125	26.643	143.4	0.581	1.37	20.4	50.2	2.52	33.1	0.00	0.00			273	205
300 ISL	7.46 D	7.43	34.149 D	26.688	139.5	0.622	1.15	17.1	53.7	2.61	34.1	0.00	0.00			302	
321	7.41	7.38	34.174	26.715	137.3	0.651	1.03	15.3	56.2	2.67	34.7	0.00	0.00			323	204
381	6.81	6.77	34.219	26.834	126.5	0.730	0.70	10.2	65.8	2.85	36.6	0.00	0.00			383	203
400 ISL	6.73 D	6.69	34.226 D	26.851	125.2	0.754	0.64	9.4	68.1	2.89	37.1	0.00	0.00			403	
441	6.42	6.38	34.236	26.900	120.9	0.804	0.54	7.8	72.2	2.95	38.1	0.00	0.00			444	202
500 ISL	6.01 D	5.97	34.246 D	26.961	115.5	0.874	0.44	6.3	77.1	3.03	39.3	0.00	0.00			503	
511	5.98	5.94	34.245	26.964	115.3	0.887	0.42	6.0	78.0	3.04	39.5	0.00	0.00			515	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.2 N	121 2.0 W	16/03/09	0441 UTC	3805 m	310 21 kn			1023.0 mb	13.0 C	11.5 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.39	13.39	33.049	24.805	313.4	0.000	6.15	103.4	3.1	0.38	0.1	0.02	0.11	0.28	0.04	0	
2	13.39	13.39	33.049	24.805	313.4	0.006	6.15	103.4	3.1	0.38	0.1	0.02	0.11	0.28	0.04	2	222
10	13.39	13.39	33.048	24.804	313.7	0.031	6.07	102.0	3.0	0.38	0.1	0.03	0.20	0.26	0.06	10	220
10	13.39	13.39	33.048	24.804	313.7	0.031										10	221
19	13.37	13.37	33.046	24.807	313.7	0.060	6.09	102.3	3.0	0.38	0.0	0.02	0.30	0.28	0.06	19	219
20 ISL	13.40 D	13.40	33.048 D	24.802	314.1	0.063	6.09	102.4	3.0	0.38	0.0	0.02	0.30	0.28	0.06	20	
29	13.38	13.38	33.046	24.805	314.1	0.091	6.10	102.5	3.0	0.38	0.0	0.02	0.27	0.28	0.05	29	218
30 ISL	13.37 D	13.37	33.041 D	24.803	314.3	0.094	6.10	102.5	3.0	0.38	0.0	0.02	0.27	0.28	0.05	30	
39	13.37	13.36	33.041	24.804	314.5	0.122	6.09	102.3	3.0	0.38	0.0	0.03	0.28	0.28	0.05	39	217
49	13.23	13.22	33.018	24.814	313.8	0.154	6.12	102.5	2.9	0.39	0.0	0.03	0.32	0.31	0.06	49	216
50 ISL	13.23 D	13.22	33.014 D	24.811	314.1	0.157	6.12	102.5	2.9	0.39	0.0	0.03	0.32	0.31	0.06	50	
59	13.10	13.09	33.010	24.834	312.1	0.185	6.07	101.4	3.0	0.40	0.2	0.05	0.30	0.30	0.10	59	215
69	12.18	12.17	32.985	24.993	297.2	0.216	5.95	97.4	4.4	0.58	2.6	0.29	0.23	0.33	0.14	69	214
75 ISL	11.78 D	11.77	33.003 D	25.082	288.8	0.233	5.82	94.5	5.4	0.68	4.2	0.22	0.19	0.27	0.13	75	
84	11.10	11.09	32.987	25.193	278.4	0.259	5.65	90.4	6.7	0.81	6.4	0.04	0.15	0.16	0.09	84	213
100	10.61	10.60	32.999	25.288	269.5	0.303	5.59	88.5	8.2	0.92	8.1	0.03	0.09	0.10	0.06	100	212
120	10.21	10.20	33.361	25.640	236.5	0.353	4.50	70.8	15.0	1.30	14.8	0.01	0.12	0.02	0.04	121	211
125 ISL	10.12 D	10.11	33.437 D	25.714	229.6	0.365	4.36	68.5	16.2	1.36	15.9	0.01	0.12	0.02	0.04	126	
140	9.84	9.82	33.561	25.858	216.1	0.398	4.02	62.8	19.3	1.51	18.4	0.01	0.11	0.01	0.04	141	210
150 ISL	9.78 D	9.76	33.632 D	25.924	210.1	0.420	3.68	57.4	21.9	1.62	20.2	0.01	0.11	0.01	0.04	151	
169	9.34	9.32	33.871	26.183	185.8	0.457	3.08	47.7	26.8	1.82	23.4	0.01	0.11	0.00	0.03	170	209
200 ISL	8.73 D	8.71	33.970 D	26.358	169.6	0.512	2.62	40.0	32.3	2.00	26.7	0.00	0.04	0.00	0.03	201	
201	8.68	8.66	33.972	26.367	168.8	0.514	2.61	39.8	32.5	2.00	26.8	0.00	0.04	0.00	0.03	202	208
229	8.13	8.11	34.019	26.488	157.6	0.560	2.40	36.2	37.9	2.09	28.8	0.01	0.02			230	207
250 ISL	7.79 D	7.77	34.035 D	26.551	151.8	0.592	2.21	33.1	42.1	2.19	30.3	0.01	0.02			251	
268	7.59	7.56	34.054	26.595	147.9	0.619	2.03	30.2	45.5	2.28	31.4	0.00	0.02			270	206
300 ISL	7.26 D	7.23	34.077 D	26.660	142.0	0.666	1.72	25.4	50.6	2.41	33.0	0.00	0.01			302	
319	7.09	7.06	34.085	26.690	139.4	0.692	1.54	22.7	53.7	2.49	33.9	0.00	0.00			321	205
348	6.79	6.76	34.109 D	26.750	133.9	0.732										350	204
378	6.30	6.27	34.121	26.824	127.0	0.771	0.98	14.2	66.3	2.77	37.5	0.00	0.00			380	203
400 ISL	6.16 D	6.12	34.136 D	26.854	124.3	0.799	0.85	12.2	69.3	2.83	38.2	0.00	0.00			403	
440	5.99	5.95	34.174	26.906	119.8	0.847	0.67	9.6	73.6	2.90	39.1	0.00	0.00			443	202
500 ISL	5.73 D	5.69	34.219 D	26.975	113.9	0.918	0.49	7.0	79.4	2.98	40.1	0.00	0.00			503	
514	5.69	5.65	34.221	26.981	113.4	0.934	0.45	6.4	80.8	3.00	40.3	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 19.5 N	121 42.7 W	16/03/09	1037 UTC	4020 m	340 14 kn			1023.8 mb	14.1 C	12.7 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.84	13.84	33.164	24.802	313.6	0.000	5.99	101.7	3.3	0.35	0.0	0.00	0.00	0.35	0.07	0	
1	13.84	13.84	33.164	24.802	313.6	0.003	5.99	101.7	3.3	0.35	0.0	0.00	0.00	0.35	0.07	1	221
10	13.83	13.83	33.164	24.805	313.7	0.031	5.98	101.5	3.6	0.34	0.0	0.00	0.00	0.37	0.04	10	219
10	13.83	13.83	33.164	24.805	313.7	0.031										10	220
20	13.83	13.83	33.165	24.806	313.8	0.063	5.98	101.5	3.7	0.34	0.0	0.00	0.02	0.32	0.09	20	218
30	13.83	13.83	33.165	24.806	314.1	0.094	5.99	101.7	4.0	0.35	0.0	0.00	0.02	0.37	0.04	30	217
40	13.87	13.86	33.177	24.807	314.3	0.126	5.98	101.6	4.3	0.35	0.0	0.00	0.04	0.36	0.09	40	216
50	13.89	13.88	33.184	24.809	314.4	0.157	5.97	101.5	4.6	0.36	0.0	0.00	0.00	0.38	0.09	50	215
61	13.88	13.87	33.186	24.813	314.3	0.192	5.96	101.3	4.8	0.35	0.0	0.00	0.00	0.40	0.07	61	214
70	13.87	13.86	33.185	24.814	314.4	0.220	5.97	101.4	5.2	0.35	0.0	0.00	0.02	0.39	0.09	70	213
75 ISL	13.69 D	13.68	33.197 D	24.861	310.2	0.235	5.89	99.7	5.7	0.41	0.7	0.09	0.02	0.36	0.11	75	
84	12.80	12.79	33.126	24.983	298.6	0.263	5.71	94.8	6.8	0.56	2.6	0.25	0.03	0.29	0.13	84	212
100 ISL	11.30 D	11.29	33.130 D	25.269	271.6	0.308	5.49	88.3	9.6	0.79	6.3	0.04	0.01	0.16	0.10	100	
101	11.43	11.42	33.125	25.241	274.2	0.311	5.47	88.2	9.8	0.80	6.6	0.02	0.01	0.15	0.10	101	211
120	10.55	10.54	33.309	25.541	246.0	0.361	4.86	77.0	14.7	1.12	11.8	0.01	0.02	0.04	0.04	121	210
125 ISL	10.31 D	10.30	33.390 D	25.645	236.1	0.373	4.61	72.7	16.7	1.23	13.6	0.01	0.03	0.03	0.04	126	
139	9.95	9.93	33.597	25.868	215.2	0.404	3.92	61.4	22.0	1.53	18.4	0.00	0.05	0.01	0.03	140	209
150 ISL	9.81 D	9.79	33.673 D	25.951	207.6	0.428	3.64	56.9	24.3	1.64	20.2	0.00	0.05	0.01	0.03	151	
168	9.48	9.46	33.817	26.118	192.0	0.463	3.31	51.4	27.1	1.74	22.1	0.00	0.04	0.00	0.03	169	208
200 ISL	8.81 D	8.79	33.988 D	26.359	169.5	0.521	2.53	38.7	34.3	2.02	26.5	0.00	0.07	0.00	0.03	201	
201	8.84	8.82	33.988	26.355	170.0	0.523	2.51	38.4	34.5	2.03	26.6	0.00	0.07	0.00	0.03	202	207
229	8.38	8.36	34.058	26.481	158.4	0.569	2.10	31.8	40.0	2.19	29.1	0.00	0.07			230	206
250 ISL	8.20 D	8.17	34.079 D	26.525	154.5	0.602	1.89	28.5	42.8	2.28	30.5	0.00	0.05			251	
268	8.01	7.98	34.083	26.556	151.7	0.629	1.75	26.3	44.9	2.35	31.4	0.00	0.03			270	205
300 ISL	7.64 D	7.61	34.093 D	26.619	146.2	0.677	1.53	22.8	49.4	2.45	32.9	0.00	0.03			302	
318	7.43	7.40	34.108	26.661	142.4	0.703	1.42	21.1	51.9	2.51	33.6	0.00	0.03			320	204
376	6.93	6.89	34.143	26.758	133.7	0.783	1.06	15.6	59.5	2.73	35.8	0.00	0.04			378	203
400 ISL	6.68 D	6.64	34.158 D	26.804	129.6	0.815	0.93	13.6	63.4	2.80	36.6	0.00	0.04			402	
437	6.29	6.25	34.167	26.863	124.2	0.862	0.75	10.8	69.1	2.90	37.9	0.00	0.04			440	202
500 ISL	6.00 D	5.96	34.225 D	26.946	116.9	0.938	0.50	7.2	75.2	3.01	40.1	0.00	0.09			503	
515	5.96	5.91	34.239	26.962	115.6	0.955	0.44	6.3	76.6	3.03	40.6	0.00	0.10			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 0.6 N	122 23.6 W	16/03/09	1745 UTC	4065 m	350 18 kn	360 03 05	2	1026.2 mb	16.0 C	14.1 C	25m	5/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.73	14.73	33.265	24.693	324.0	0.000	5.87	101.5	2.3	0.32	0.0	0.00	0.03	0.18	0.05	0	
2 A	14.73	14.73	33.265	24.694	324.0	0.006	5.87	101.5	2.3	0.32	0.0	0.00	0.03	0.18	0.05	2	224
10 ISL	14.80 D	14.80	33.293 D	24.700	323.6	0.032	5.85	101.4	2.3	0.31	0.0	0.00	0.06	0.18	0.04	10	
11	14.75	14.75	33.283	24.703	323.3	0.036	5.85	101.3	2.3	0.31	0.0	0.00	0.06	0.18	0.04	11	222
11	14.75	14.75	33.287	24.707	323.0	0.036			2.3	0.31	0.0	0.00	0.04			11	223
18 A	14.80	14.80	33.300	24.706	323.3	0.058	5.85	101.4	2.2	0.31	0.0	0.00	0.05	0.18	0.04	18	221
20 ISL	14.80 D	14.80	33.298 D	24.705	323.5	0.065	5.85	101.4	2.2	0.31	0.0	0.00	0.05	0.18	0.04	20	
27	14.79	14.79	33.302	24.710	323.2	0.087	5.85	101.3	2.3	0.31	0.0	0.00	0.04	0.18	0.05	27	220
30 ISL	14.81 D	14.81	33.306 D	24.709	323.4	0.097	5.85	101.4	2.3	0.31	0.0	0.00	0.05	0.18	0.05	30	
36 A	14.83	14.82	33.319	24.715	323.0	0.116	5.85	101.4	2.2	0.30	0.0	0.00	0.08	0.17	0.05	36	219
45	14.94	14.93	33.340	24.708	324.0	0.146	5.82	101.1	2.2	0.29	0.0	0.00	0.07	0.18	0.06	45	218
50 ISL	15.35 D	15.34	33.460 D	24.711	323.9	0.162	5.77	101.2	2.2	0.29	0.0	0.00	0.04	0.19	0.06	50	
55 A	15.49	15.48	33.506	24.715	323.6	0.178	5.73	100.8	2.2	0.30	0.0	0.00	0.01	0.21	0.06	55	217
62	15.42	15.41	33.484	24.714	323.9	0.201	5.74	100.8	2.1	0.30	0.0	0.00	0.01	0.23	0.06	62	216
71 A	15.21	15.20	33.441	24.728	322.9	0.230	5.75	100.5	2.1	0.30	0.0	0.00	0.03	0.28	0.08	71	215
75 ISL	14.31 D	14.30	33.314 D	24.823	313.8	0.242	5.77	99.0	2.3	0.34	0.1	0.09	0.03	0.33	0.12	75	
83	13.37	13.36	33.150	24.889	307.6	0.267	5.81	97.7	2.9	0.44	0.7	0.23	0.01	0.40	0.21	83	214
92	12.73	12.72	33.124	24.996	297.6	0.295	5.65	93.7	3.9	0.55	2.3	0.06	0.00	0.34	0.26	92	213
100 ISL	11.64 D	11.63	33.021 D	25.122	285.6	0.318	5.61	90.8	5.0	0.67	3.9	0.01	0.02	0.19	0.14	100	
101 A	11.74	11.73	33.024	25.106	287.1	0.321	5.61	91.0	5.1	0.68	4.1	0.01	0.02	0.17	0.12	101	212
114	11.05	11.04	33.028	25.234	275.1	0.357	5.50	87.9	6.9	0.82	6.4	0.01	0.05	0.09	0.07	115	211
125 ISL	10.67 D	10.66	33.220 D	25.451	254.7	0.386	5.02	79.7	10.6	1.06	10.4	0.00	0.08	0.04	0.04	126	
127	10.62	10.60	33.234	25.470	252.9	0.391	4.92	78.0	11.3	1.11	11.2	0.00	0.08	0.03	0.04	128	210
145	10.10	10.08	33.443	25.723	229.2	0.435	4.45	69.9	15.5	1.33	15.2	0.00	0.00	0.01	0.03	146	209
150 ISL	9.86 D	9.84	33.513 D	25.818	220.2	0.446	4.33	67.6	16.6	1.37	16.0	0.00	0.00	0.01	0.03	151	
172	9.52	9.50	33.793	26.093	194.5	0.492	3.88	60.3	20.9	1.50	18.9	0.00	0.01	0.00	0.01	173	208
200	9.03	9.01	33.915	26.268	178.3	0.544	3.53	54.3	25.7	1.66	22.0	0.00	0.03	0.00	0.01	201	207
232	8.52	8.50	33.981	26.399	166.2	0.599	3.16	48.0	31.4	1.83	24.7	0.00	0.03			233	206
250 ISL	8.07 D	8.04	34.010 D	26.490	157.7	0.628	2.85	42.9	36.1	1.97	26.7	0.00	0.02			251	
272	7.73	7.70	34.026	26.553	152.0	0.662	2.42	36.1	41.9	2.15	29.1	0.00	0.00			274	205
300 ISL	7.64 D	7.61	34.094 D	26.620	146.1	0.704	1.84	27.4	46.8	2.36	31.6	0.00	0.00			302	
321	7.49	7.46	34.105	26.650	143.5	0.734	1.47	21.8	50.0	2.49	33.1	0.00	0.00			323	204
379	6.73	6.70	34.117	26.765	133.0	0.815	1.13	16.5	59.8	2.69	36.3	0.00	0.00			381	203
400 ISL	6.79 D	6.75	34.176 D	26.803	129.7	0.842	0.96	14.0	63.4	2.77	37.2	0.00	0.00			402	
440	6.27	6.23	34.190	26.883	122.3	0.893	0.67	9.7	69.9	2.91	38.7	0.00	0.00			443	202
500 ISL	5.83 D	5.79	34.214 D	26.958	115.6	0.964	0.48	6.9	77.4	3.03	40.4	0.00	0.00			503	
516	5.78	5.74	34.234	26.981	113.6	0.982	0.43	6.1	79.4	3.06	40.9	0.00	0.00			519	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.7 N	123 4.0 W	16/03/09	2316 UTC	4120 m	340 15 kn	320 04 05	1	1025.0 mb	16.8 C	14.0 C		4/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.56	15.56	33.392	24.610	331.9	0.000	5.77	101.6	2.2	0.31	0.0	0.00	0.08	0.10	0.03	0	
2	15.56	15.56	33.392	24.610	331.9	0.007	5.77	101.6	2.2	0.31	0.0	0.00	0.08	0.10	0.03	2	221
10 ISL	15.59 D	15.59	33.448 D	24.647	328.7	0.033	5.75	101.3	2.1	0.31	0.0	0.00	0.03	0.10	0.03	10	
11	15.59	15.59	33.453	24.651	328.3	0.036	5.75	101.3	2.1	0.31	0.0	0.00	0.02	0.10	0.03	11	219
11	15.60	15.60	33.455	24.650	328.4	0.036										11	220
20 ISL	15.58 D	15.58	33.465 D	24.663	327.5	0.066	5.74	101.1	2.1	0.30	0.0	0.00	0.02	0.11	0.03	20	
26	15.57	15.57	33.468	24.667	327.2	0.086	5.74	101.1	2.1	0.30	0.0	0.00	0.02	0.12	0.03	26	218
30 ISL	15.64 D	15.64	33.487 D	24.667	327.5	0.099	5.74	101.3	2.1	0.30	0.0	0.00	0.04	0.12	0.04	30	
41	15.66	15.65	33.503	24.675	327.0	0.135	5.73	101.1	2.0	0.30	0.0	0.00	0.09	0.13	0.05	41	217
50 ISL	15.63 D	15.62	33.494 D	24.675	327.3	0.164	5.74	101.2	2.0	0.30	0.0	0.00	0.05	0.16	0.05	50	
51	15.63	15.62	33.498	24.678	327.0	0.167	5.74	101.2	2.0	0.30	0.0	0.00	0.05	0.16	0.05	51	216
63	15.51	15.50	33.471	24.684	326.8	0.207	5.76	101.3	2.1	0.31	0.0	0.00	0.04	0.19	0.06	63	215
75	13.88	13.87	33.122	24.764	319.4	0.245	5.89	100.0	2.4	0.37	0.1	0.08	0.08	0.56	0.26	75	214
88	13.03	13.02	33.089	24.910	305.7	0.286	5.82	97.1	3.1	0.47	1.3	0.26	0.04	0.37	0.20	88	213
100 ISL	12.44 D	12.43	33.069 D	25.009	296.4	0.322	5.69	93.7	3.8	0.57	2.7	0.07	0.04	0.26	0.15	100	
101	12.45	12.44	33.069	25.007	296.6	0.325	5.68	93.6	3.9	0.58	2.8	0.05	0.04	0.25	0.15	101	212
113	11.71	11.70	33.051	25.133	284.9	0.360	5.60	90.8	5.1	0.68	4.6	0.01	0.06	0.13	0.10	113	211
125 ISL	10.44 D	10.43	33.283 D	25.540	246.2	0.392	4.94	78.1	11.4	1.10	11.2	0.00	0.07	0.03	0.03	126	
126	10.45	10.44	33.271	25.529	247.3	0.394	4.87	77.0	12.0	1.14	11.8	0.00	0.07	0.02	0.03	127	210
140	10.09	10.07	33.507	25.774	224.2	0.427	4.19	65.8	17.6	1.46	17.0	0.00	0.09	0.01	0.03	141	209
150 ISL	9.79 D	9.77	33.588 D	25.888	213.5	0.449	3.87	60.4	20.3	1.59	19.2	0.00	0.09	0.01	0.03	151	
171	9.34	9.32	33.758	26.095	194.2	0.492	3.53	54.6	23.9	1.70	21.5	0.00	0.08	0.00	0.02	172	208
200	8.97	8.95	33.916	26.278	177.3	0.546	3.58	55.0	26.1	1.65	22.0	0.00	0.11	0.00	0.01	201	207
231	8.49	8.47	33.987	26.408	165.3	0.599	3.10	47.1	32.2	1.87	25.1	0.00	0.00			232	206
250 ISL	8.16 D	8.13	33.998 D	26.467	159.9	0.630	2.84	42.8	35.8	1.98	26.8	0.00	0.00			251	
272	7.82	7.79	34.017	26.532	154.0	0.664	2.54	38.0	40.2	2.10	28.7	0.00	0.00			273	205
300 ISL	7.23 D	7.20	34.026 D	26.624	145.4	0.706	2.10	31.0	47.0	2.29	31.3	0.00	0.00			302	
321	7.04	7.01	34.055	26.673	141.0	0.736	1.78	26.2	52.1	2.43	33.1	0.00	0.00			323	204
382	6.57	6.54	34.125	26.792	130.3	0.819	1.03	15.0	62.6	2.73	36.7	0.00	0.00			384	203
400 ISL	6.45 D	6.41	34.155 D	26.832	126.7	0.842	0.89	12.9	65.3	2.80	37.3	0.00	0.00			402	
439	6.20	6.16	34.181	26.885	122.0	0.891	0.66	9.5	71.0	2.91	38.4	0.00	0.00			442	202
500 ISL	5.71 D	5.67	34.217 D	26.975	113.8	0.963	0.49	7.0	79.9	3.02	40.1	0.00	0.00			503	
518	5.55	5.51	34.221	26.998	111.7	0.983	0.44	6.3	82.5	3.05	40.6	0.00	0.00			521	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.7 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 19.4 N	123 44.5 W	17/03/09	0529 UTC	4034 m	350 12 kn			1026.3 mb	14.9 C	12.2 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.43	14.43	33.176	24.689	324.4	0.000	5.96	102.4	2.7	0.33	0.0	0.00	0.00	0.15	0.04	0	
1	14.43	14.43	33.176	24.689	324.4	0.003	5.96	102.4	2.7	0.33	0.0	0.00	0.00	0.15	0.04	1	221
9	14.44	14.44	33.176	24.687	324.9	0.029	5.99	103.0	2.7	0.32	0.0	0.00	0.00	0.14	0.06	9	219
10 ISL	14.42 D	14.42	33.176 D	24.691	324.5	0.032	5.99	102.9	2.7	0.32	0.0	0.00	0.01	0.14	0.06	10	
10	14.44	14.44	33.176	24.687	324.9	0.032										10	220
19	14.13	14.13	33.171	24.748	319.3	0.061	6.02	102.8	2.8	0.33	0.0	0.00	0.13	0.16	0.05	19	218
20 ISL	14.11 D	14.11	33.164 D	24.747	319.4	0.065	6.02	102.8	2.8	0.33	0.0	0.00	0.13	0.16	0.05	20	
30	14.09	14.09	33.165	24.752	319.2	0.097	6.03	102.9	2.7	0.32	0.0	0.00	0.10	0.19	0.08	30	217
39	14.05	14.04	33.165	24.761	318.7	0.125	6.01	102.5	2.7	0.33	0.0	0.00	0.11	0.25	0.07	39	216
49	13.56	13.55	33.134	24.838	311.6	0.157	6.12	103.3	3.0	0.37	0.3	0.03	0.27	0.29	0.18	49	215
50 ISL	13.39 D	13.38	33.115 D	24.857	309.7	0.160	6.11	102.7	3.0	0.38	0.3	0.03	0.27	0.29	0.18	50	
59	13.36	13.35	33.123	24.870	308.8	0.188	6.06	101.8	3.1	0.43	0.7	0.07	0.21	0.32	0.14	59	214
69	13.45	13.44	33.217	24.925	303.9	0.218	5.80	97.7	3.5	0.48	1.2	0.22	0.32	0.31	0.14	69	213
75 ISL	13.21 D	13.20	33.231 D	24.984	298.4	0.236	5.54	92.9	5.5	0.65	4.0	0.17	0.22	0.26	0.14	75	
85	11.33	11.32	33.208	25.323	266.0	0.265	5.09	82.0	9.6	0.98	9.4	0.03	0.00	0.15	0.13	85	212
100 ISL	10.41 D	10.40	33.390 D	25.628	237.3	0.302	4.60	72.7	14.2	1.24	13.7	0.01	0.00	0.05	0.05	100	
101	10.43	10.42	33.391	25.625	237.6	0.305	4.57	72.3	14.5	1.25	13.9	0.01	0.00	0.05	0.05	101	211
119	10.34	10.33	33.523	25.744	226.7	0.347	4.14	65.4	17.4	1.43	17.0	0.01	0.00	0.04	0.08	120	210
125 ISL	10.17 D	10.16	33.617 D	25.846	217.1	0.360	3.96	62.3	19.0	1.50	18.2	0.01	0.00	0.03	0.07	126	
139	9.64	9.62	33.723	26.018	200.9	0.389	3.53	55.0	22.9	1.66	20.9	0.00	0.00	0.01	0.05	140	209
150 ISL	9.48 D	9.46	33.792 D	26.098	193.5	0.411	3.22	50.0	25.5	1.77	22.6	0.00	0.00	0.01	0.05	151	
169	9.05	9.03	33.902	26.254	179.0	0.446	2.80	43.1	29.3	1.91	25.0	0.00	0.01	0.00	0.04	170	208
200 ISL	8.40 D	8.38	33.986 D	26.421	163.5	0.499	2.62	39.7	34.3	2.01	27.1	0.00	0.01	0.00	0.03	201	
202	8.39	8.37	33.988	26.424	163.3	0.503	2.61	39.6	34.6	2.01	27.2	0.00	0.01	0.00	0.03	203	207
229	8.01	7.99	34.029	26.513	155.1	0.546	2.29	34.4	39.4	2.14	29.1	0.00	0.04			230	206
250 ISL	7.71 D	7.69	34.043 D	26.569	150.1	0.578	2.02	30.2	43.4	2.26	30.7	0.00	0.02			251	
268	7.55	7.52	34.063	26.608	146.6	0.604	1.79	26.6	46.9	2.36	32.1	0.00	0.00			270	205
300 ISL	7.18 D	7.15	34.106 D	26.694	138.8	0.650	1.37	20.2	53.1	2.53	34.2	0.00	0.00			302	
318	7.05	7.02	34.123	26.725	136.0	0.675	1.17	17.2	56.3	2.61	35.1	0.00	0.00			320	204
377	6.57	6.54	34.151	26.813	128.3	0.753	0.90	13.1	63.6	2.77	36.8	0.00	0.00			379	203
400 ISL	6.46 D	6.42	34.158 D	26.833	126.6	0.782	0.82	11.9	66.4	2.82	37.5	0.00	0.00			402	
438	6.14	6.10	34.171	26.885	122.0	0.829	0.69	9.9	71.2	2.90	38.5	0.00	0.00			441	202
500 ISL	5.70 D	5.66	34.237 D	26.993	112.2	0.902	0.47	6.7	79.5	3.02	39.8	0.00	0.00			503	
513	5.68	5.64	34.239	26.997	111.9	0.916	0.42	6.0	81.2	3.04	40.1	0.00	0.00			516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 86.8 32.5

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 53.3 N	118 26.7 W	14/03/09	1807 UTC		150 03 kn	290 01 04	2	1016.5 mb	15.0 C	12.8 C		8/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.22	14.22	33.423	24.923	302.1	0.000	6.89	118.1	0.9	0.23	1.0	0.01	0.05	3.62	0.74	0	
2	14.22	14.22	33.423	24.923	302.1	0.006	6.89	118.1	0.9	0.23	1.0	0.01	0.05	3.62	0.74	2	205
6	13.49	13.49	33.435	25.083	287.0	0.018	6.15	103.8	3.0	0.44	2.2	0.11	0.12	5.29	1.25	6	204
10	13.23	13.23	33.462	25.157	280.1	0.029	5.46	91.7						6.26	1.55	10	203
15	12.89	12.89	33.474	25.234	273.0	0.043	4.99	83.2	8.2	0.84	7.1	0.31	0.89	5.05	1.56	15	202
20	11.89	11.89	33.520	25.461	251.4	0.056	3.99	65.2	13.7	1.30	13.0	0.51	2.29	2.05	1.36	20	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 27.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.5 N	117 45.1 W	14/03/09	0414 UTC	37 m	350 03 kn			1015.5 mb	14.0 C	12.4 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.19	15.19	33.364	24.670	326.2	0.000	6.58	115.0	2.4	0.22	0.0	0.00	0.07	1.21	0.42	0	
2	15.19	15.19	33.364	24.670	326.2	0.007	6.58	115.0	2.4	0.22	0.0	0.00	0.07	1.21	0.42	2	206
5	14.87	14.87	33.371	24.745	319.2	0.016	6.61	114.7	2.5	0.23	0.0	0.00	0.09	1.21	0.42	5	205
10	14.52	14.52	33.372	24.821	312.1	0.032	6.73	116.0	2.6	0.22	0.0	0.00	0.06	1.26	0.44	10	204
20	13.77	13.77	33.380	24.984	296.9	0.062	6.55	111.2	1.9	0.27	0.1	0.02	0.05	2.11	0.64	20	203
30 ISL	12.45 D	12.45	33.462 D	25.310	266.0	0.091	4.19	69.2	11.3	1.10	10.8	0.80	0.38	1.15	0.65	30	
31	12.38	12.38	33.466	25.327	264.5	0.093	3.92	64.7	12.6	1.21	12.3	0.85	0.41	1.00	0.65	31	202
35	11.68	11.68	33.543	25.519	246.3	0.103	3.23	52.5	17.1	1.59	18.1	0.69	0.88	0.52	0.49	35	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.1 N	117 46.2 W	14/03/09	0457 UTC	67 m	240 01 kn			1016.0 mb	14.7 C	12.9 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.91	14.91	33.382	24.745	319.1	0.000	6.46	112.2	1.6	0.24	0.0	0.00	0.06	0.52	0.21	0	
2	14.91	14.91	33.382	24.745	319.1	0.006	6.46	112.2	1.6	0.24	0.0	0.00	0.06	0.52	0.21	2	208
6	14.78	14.78	33.374	24.767	317.1	0.019	6.52	113.0	1.6	0.23	0.0	0.00	0.06	0.56	0.24	6	207
10	14.41	14.41	33.364	24.838	310.5	0.032	6.59	113.3	1.7	0.20	0.0	0.00	0.05	0.75	0.28	10	206
20 ISL	13.13 D	13.13	33.403 D	25.131	282.8	0.061	5.68	95.2	4.9	0.54	3.4	0.31	0.30	2.36	0.83	20	
21	13.19	13.19	33.401	25.118	284.1	0.064	5.54	92.9	5.4	0.60	4.0	0.35	0.33	2.48	0.88	21	205
30	12.13	12.13	33.461	25.371	260.3	0.089	4.31	70.7	11.7	1.12	11.3	0.60	0.29	1.14	0.55	30	204
40	11.90	11.89	33.491	25.438	254.2	0.114	4.06	66.3	13.3	1.24	13.6	0.59	0.50	0.85	0.45	40	203
50	11.17	11.16	33.588	25.647	234.4	0.139	2.94	47.3	20.8	1.94	21.5	0.62	3.42	0.19	0.31	50	202
60	10.93	10.92	33.694	25.773	222.7	0.162	2.92	46.8	21.0	1.79	21.3	0.28	0.41	0.12	0.31	60	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 25.1 N	117 54.3 W	14/03/09	0713 UTC	610 m	140 07 kn			1016.2 mb	14.1 C	12.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.52	14.52	33.382	24.828	311.1	0.000	6.25	107.7	1.3	0.29	0.0	0.00	0.04	0.23	0.06	0	
2	14.52	14.52	33.382	24.828	311.2	0.006	6.25	107.7	1.3	0.29	0.0	0.00	0.04	0.23	0.06	2	221
9	14.31	14.31	33.377	24.869	307.5	0.028	6.27	107.6	1.6	0.28	0.0	0.00	0.03	0.33	0.09	9	220
10 ISL	14.30 D	14.30	33.376 D	24.871	307.4	0.031	6.28	107.8	1.7	0.28	0.0	0.00	0.03	0.39	0.12	10	
19	13.77	13.77	33.366	24.973	297.9	0.058	6.36	107.9	2.5	0.31	0.0	0.00	0.02	0.95	0.41	19	219
20 ISL	13.68 D	13.68	33.364 D	24.990	296.3	0.061	6.36	107.7	2.6	0.31	0.0	0.00	0.02	0.98	0.43	20	
24	13.56	13.56	33.362	25.013	294.2	0.073	6.34	107.1	3.1	0.34	0.0	0.01	0.03	1.13	0.50	24	218
30	13.23	13.23	33.361	25.079	288.1	0.090	5.93	99.5	5.1	0.48	1.7	0.12	0.03	1.67	0.61	30	217
40	12.21	12.20	33.392	25.302	267.0	0.118	4.78	78.5	10.1	0.98	8.9	0.11	0.03	0.98	0.48	40	216
49	11.35	11.34	33.506	25.551	243.6	0.141	3.99	64.4	14.7	1.36	15.0	0.01	0.02	0.30	0.26	49	215
50 ISL	11.34 D	11.33	33.511 D	25.557	243.0	0.144	3.94	63.6	14.9	1.38	15.4	0.01	0.02	0.29	0.25	50	
59	11.19	11.18	33.584	25.641	235.3	0.165	3.66	58.9	16.5	1.49	17.4	0.01	0.02	0.17	0.16	59	214
69	10.88	10.87	33.660	25.755	224.5	0.188	3.40	54.4	18.7	1.60	19.4	0.00	0.02	0.06	0.11	69	213
75 ISL	10.80 D	10.79	33.673 D	25.780	222.4	0.202	3.23	51.6	20.3	1.67	20.6	0.00	0.02	0.03	0.09	75	
84	10.34	10.33	33.768	25.934	207.8	0.221	3.02	47.8	22.3	1.76	22.0	0.00	0.01	0.01	0.06	84	212
100 ISL	10.00 D	9.99	33.805 D	26.021	199.9	0.253	3.03	47.6	23.6	1.79	23.1	0.00	0.00	0.01	0.06	101	
101	10.01	10.00	33.804	26.019	200.1	0.255	3.03	47.6	23.7	1.79	23.1	0.00	0.00	0.01	0.06	102	211
119	9.58	9.57	33.909	26.173	185.8	0.290	2.75	42.8	27.3	1.92	25.2	0.00	0.01	0.01	0.04	120	210
125 ISL	9.57 D	9.56	33.942 D	26.200	183.3	0.301	2.62	40.8	28.4	1.97	25.8	0.00	0.01	0.01	0.04	126	
139	9.44	9.42	34.026	26.287	175.3	0.326	2.29	35.6	31.0	2.08	27.0	0.00	0.01	0.00	0.04	140	209
150 ISL	9.46 D	9.44	34.092 D	26.336	171.0	0.345	2.04	31.7	33.0	2.18	27.9	0.00	0.02	0.00	0.04	151	
169	9.15	9.13	34.143	26.426	162.7	0.377	1.71	26.4	36.0	2.31	29.3	0.00	0.03	0.00	0.03	170	208
200 ISL	8.90 D	8.88	34.172 D	26.489	157.3	0.427	1.59	24.4	38.8	2.36	30.3	0.00	0.02	0.00	0.03	201	
201	8.91	8.89	34.167	26.484	157.8	0.428	1.59	24.4	38.9	2.36	30.3	0.00	0.02	0.00	0.03	202	207
228	8.68	8.66	34.195	26.542	152.7	0.470	1.42	21.7	42.1	2.45	31.4	0.01	0.02			229	206
250 ISL	8.56 D	8.53	34.233 D	26.591	148.5	0.503	1.23	18.7	44.2	2.53	32.1	0.01	0.03			252	
269	8.48	8.45	34.248	26.615	146.5	0.531	1.07	16.3	46.0	2.59	32.6	0.00	0.03			271	205
300 ISL	8.08 D	8.05	34.240 D	26.670	141.7	0.576	0.98	14.8	49.2	2.67	33.7	0.00	0.02			302	
318	7.98	7.95	34.250	26.693	139.8	0.601	0.94	14.1	51.3	2.71	34.3	0.00	0.01			320	204
377	7.40	7.36	34.278	26.799	130.3	0.681	0.63	9.4	59.4	2.87	36.4	0.00	0.00			379	203
400 ISL	7.10 D	7.06	34.260 D	26.828	127.8	0.711	0.59	8.7	61.9	2.91	37.2	0.00	0.00			403	
437	6.89	6.85	34.271	26.865	124.6	0.757	0.54	7.9	65.7	2.97	38.3	0.00	0.00			440	202
500 ISL	6.50 D	6.45	34.308 D	26.947	117.4	0.834	0.37	5.4	72.6	3.09	39.7	0.00	0.00			503	
513	6.43	6.38	34.309	26.958	116.6	0.849	0.34	4.9	74.0	3.11	40.0	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.1 N	118 15.0 W	14/03/09	1122 UTC	354 m	270 05 kn			1015.0 mb	14.2 C	12.8 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.73	14.73	33.388	24.788	314.9	0.000	6.18	107.0	2.3	0.31	0.4	0.00	0.02	0.25	0.07	0	
2	14.73	14.73	33.388	24.788	315.0	0.006	6.18	107.0	2.3	0.31	0.4	0.00	0.02	0.25	0.07	2	218
10	14.71	14.71	33.388	24.793	314.8	0.031	6.11	105.7	2.2	0.29	0.1	0.00	0.01	0.24	0.07	10	216
10	14.71	14.71	33.387	24.792	314.9	0.031										10	217
20	13.76	13.76	33.370	24.978	297.4	0.062	6.27	106.4	2.6	0.33	0.0	0.01	0.00	0.65	0.30	20	215
30	12.30	12.30	33.382	25.277	269.2	0.090	4.93	81.2	8.9	0.89	8.0	0.14	0.01	1.08	0.60	30	214
40	11.75	11.74	33.441	25.427	255.2	0.117	4.36	71.0	12.2	1.17	12.6	0.08	0.02	0.63	0.41	40	213
50	11.36	11.35	33.518	25.558	242.9	0.142	3.93	63.5	14.7	1.37	15.9	0.03	0.01	0.32	0.26	50	212
60	11.11	11.10	33.591	25.661	233.4	0.165	3.66	58.8	16.7	1.48	17.9	0.02	0.00	0.14	0.17	60	211
68	10.92	10.91	33.668	25.755	224.6	0.184	3.33	53.3	18.8	1.60	19.8	0.01	0.00	0.06	0.11	68	210
75 ISL	10.76 D	10.75	33.684 D	25.795	220.9	0.199	3.28	52.3	19.8	1.64	20.6	0.01	0.00	0.03	0.08	75	
84	10.46	10.45	33.728	25.882	212.8	0.219	3.24	51.4	21.0	1.68	21.3	0.01	0.00	0.01	0.07	84	209
100 ISL	10.26 D	10.25	33.898 D	26.050	197.2	0.252	2.62	41.4	24.6	1.88	23.6	0.00	0.00	0.00	0.06	101	
101	10.27	10.26	33.869	26.025	199.6	0.254	2.58	40.8	24.8	1.89	23.8	0.00	0.00	0.00	0.06	102	208
119	10.01	10.00	33.971	26.149	188.1	0.288	2.22	34.9	28.0	2.02	25.7	0.00	0.00	0.00	0.06	120	207
125 ISL	9.90 D	9.89	34.004 D	26.194	184.0	0.300	2.16	33.9	28.7	2.05	26.2	0.00	0.00	0.00	0.06	126	
139	9.79	9.77	34.033	26.235	180.4	0.325	2.06	32.2	30.2	2.11	27.1	0.00	0.00	0.00	0.06	140	206
150 ISL	9.68 D	9.66	34.064 D	26.278	176.5	0.345	1.95	30.5	31.1	2.15	27.6	0.00	0.00	0.00	0.06	151	
168	9.56	9.54	34.097	26.324	172.5	0.376	1.76	27.4	33.0	2.21	28.5	0.01	0.00	0.00	0.05	169	205
200	8.97	8.95	34.196	26.497	156.6	0.429	1.37	21.1	39.9	2.41	30.7	0.03	0.04	0.00	0.04	201	204
228	8.66	8.64	34.226	26.570	150.1	0.472	1.18	18.0	43.5	2.50	31.9	0.02	0.02			229	203
250 ISL	8.40 D	8.37	34.236 D	26.618	145.9	0.504	1.10	16.7	46.4	2.57	32.9	0.03	0.01			252	
268	8.15	8.12	34.239	26.658	142.2	0.530	1.05	15.9	48.9	2.63	33.8	0.03	0.00			270	202
300 ISL	7.85 D	7.82	34.243 D	26.706	138.1	0.575	0.88	13.2	53.5	2.72	35.2	0.01	0.00			302	
316	7.62	7.59	34.251	26.746	134.5	0.597	0.79	11.8	55.8	2.77	35.9	0.00	0.00			318	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 37.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 11.3 N	118 23.2 W	13/03/09	2106 UTC	1178 m	270 07 kn	270 03 05	1	1017.7 mb	15.0 C	13.0 C		3/8	ST

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.63	14.63	33.377	24.801	313.7	0.000	6.21	107.3	2.5	0.28	0.0	0.00	0.00	0.34	0.10	0	
2	14.63	14.63	33.377	24.801	313.7	0.006	6.21	107.3	2.5	0.28	0.0	0.00	0.00	0.34	0.10	2	220
10 ISL	14.37 D	14.37	33.371 D	24.852	309.2	0.031	6.24	107.2	2.5	0.28	0.0	0.00	0.01	0.38	0.12	10	
11	14.37	14.37	33.374	24.854	309.0	0.034	6.24	107.2	2.5	0.28	0.0	0.00	0.01	0.38	0.12	11	219
20 ISL	14.29 D	14.29	33.368 D	24.867	308.0	0.062	6.25	107.2	2.6	0.29	0.0	0.00	0.06	0.52	0.18	20	
21	14.29	14.29	33.371	24.869	307.8	0.065	6.25	107.2	2.6	0.29	0.0	0.00	0.07	0.54	0.19	21	218
30 ISL	12.84 D	12.84	33.352 D	25.149	281.4	0.092	5.57	92.7	6.5	0.63	4.1	0.25	0.06	1.37	0.64	30	
31	12.84	12.84	33.355	25.152	281.2	0.094	5.47	91.1	7.0	0.68	4.7	0.27	0.06	1.44	0.68	31	217
41	12.25	12.24	33.436	25.329	264.5	0.122	4.54	74.7	10.7	1.05	10.5	0.07	0.06	0.69	0.43	41	216
50 ISL	11.47 D	11.46	33.453 D	25.488	249.6	0.145	4.25	68.8	13.1	1.24	14.0	0.02	0.04	0.33	0.27	50	
51	11.46	11.45	33.455	25.491	249.3	0.147	4.23	68.4	13.4	1.26	14.3	0.02	0.04	0.30	0.26	51	215
61	10.81	10.80	33.547	25.680	231.5	0.171	3.92	62.6	16.6	1.43	17.4	0.01	0.01	0.07	0.13	61	214
71	10.79	10.78	33.663	25.774	222.8	0.194	3.39	54.1	18.9	1.59	19.7	0.00	0.03	0.03	0.09	71	213
75 ISL	10.59 D	10.58	33.747 D	25.874	213.3	0.203	3.24	51.5	19.8	1.65	20.5	0.00	0.05	0.02	0.08	75	
85	10.55	10.54	33.779	25.906	210.5	0.224	2.94	46.7	22.0	1.76	22.0	0.00	0.11	0.01	0.07	85	212
100	10.42	10.41	33.850	25.985	203.4	0.255	2.63	41.7	24.6	1.86	23.4	0.00	0.27	0.00	0.08	101	211
121	10.00	9.99	33.929 D	26.118	191.1	0.297	2.42	38.0	26.9	1.96	25.1	0.00	0.49	0.00	0.08	122	210
125 ISL	10.00 D	9.99	33.959 D	26.142	189.0	0.304	2.35	36.9	27.6	1.99	25.5	0.00	0.48	0.00	0.08	126	
140	9.72	9.70	34.034	26.248	179.2	0.332	2.05	32.0	30.3	2.12	26.8	0.00	0.39	0.00	0.07	141	209
150 ISL	9.54 D	9.52	34.085 D	26.317	172.8	0.349	1.89	29.4	32.2	2.18	27.7	0.01	0.30	0.00	0.06	151	
171	9.18	9.16	34.139	26.418	163.5	0.385	1.63	25.2	35.9	2.28	29.3	0.02	0.13	0.00	0.05	172	208
200 ISL	8.90 D	8.88	34.186 D	26.500	156.2	0.431	1.37	21.0	39.8	2.41	31.0	0.02	0.07	0.00	0.05	201	
201	8.89	8.87	34.186	26.502	156.1	0.433	1.36	20.9	39.9	2.41	31.0	0.02	0.07	0.00	0.05	202	207
231	8.65	8.63	34.213	26.561	151.0	0.479	1.18	18.0	43.0	2.51	32.2	0.00	0.04			232	206
250 ISL	8.43 D	8.40	34.232 D	26.610	146.6	0.507	1.08	16.4	45.6	2.57	32.9	0.03	0.05			251	
271	8.15	8.12	34.230	26.651	143.0	0.537	0.98	14.8	48.6	2.62	33.6	0.07	0.06			273	205
300 ISL	7.88 D	7.85	34.239 D	26.699	138.8	0.578	0.89	13.4	52.0	2.68	34.5	0.04	0.06			302	
322	7.68	7.65	34.241	26.730	136.1	0.608	0.83	12.4	54.5	2.72	35.1	0.00	0.06			324	204
381	7.22	7.18	34.272	26.820	128.3	0.686	0.58	8.6	61.4	2.87	36.7	0.00	0.07			383	203
400 ISL	7.10 D	7.06	34.279 D	26.843	126.4	0.711	0.53	7.8	63.1	2.90	37.1	0.00				403	
440	6.85	6.81	34.291	26.887	122.6	0.760	0.44	6.4	67.0	2.97	37.8	0.00				443	202
500 ISL	6.32 D	6.27	34.327 D	26.986	113.6	0.831	0.27	3.9	76.4	3.09	39.3	0.00				503	
512	6.23	6.18	34.332	27.001	112.2	0.845	0.24	3.5	78.3	3.11	39.6	0.00				516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 55.2 N	118 56.3 W	13/03/09	1655 UTC	1691 m	270 12 kn	260 03 04	2	1019.5 mb	14.2 C	12.0 C	13m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.20	14.20	33.369	24.886	305.6	0.000	6.16	105.5	2.5	0.27	0.0	0.00	0.07	0.45	0.12	0	
2 A	14.20	14.20	33.369	24.886	305.7	0.006	6.16	105.5	2.5	0.27	0.0	0.00	0.07	0.45	0.12	2	222
9 A	14.20	14.20	33.369	24.886	305.9	0.028	6.17	105.7	2.5	0.28	0.0	0.00	0.04	0.45	0.12	9	220
9	14.20	14.20	33.369	24.886	305.9	0.028										9	221
10 ISL	14.20 D	14.20	33.368 D	24.885	306.0	0.031	6.17	105.7	2.5	0.29	0.1	0.00	0.04	0.60	0.15	10	
18 A	13.63	13.63	33.342	24.983	296.9	0.055	6.18	104.6	3.8	0.37	0.5	0.05	0.06	1.72	0.43	18	219
20 ISL	13.13 D	13.13	33.336 D	25.079	287.8	0.061	5.99	100.3	4.7	0.46	1.7	0.08	0.06	1.63	0.42	20	
28 A	12.39	12.39	33.363	25.245	272.2	0.083	5.10	84.1	8.6	0.84	7.2	0.17	0.04	0.89	0.37	28	218
30 ISL	12.32 D	12.32	33.373 D	25.266	270.2	0.088	4.95	81.5	9.3	0.90	8.2	0.15	0.04	0.79	0.36	30	
38 A	11.91	11.91	33.430	25.388	258.8	0.110	4.45	72.7	11.6	1.11	11.8	0.04	0.04	0.48	0.30	38	217
45	11.55	11.54	33.485	25.498	248.5	0.127	4.09	66.3	13.5	1.27	14.8	0.03	0.04	0.26	0.23	45	216
50 ISL	11.28 D	11.27	33.557 D	25.603	238.6	0.139	3.84	61.9	15.1	1.38	16.5	0.02	0.02	0.17	0.18	50	
53 A	11.23	11.22	33.578	25.629	236.2	0.147	3.70	59.6	16.1	1.44	17.4	0.01	0.00	0.13	0.15	53	215
62	10.83	10.82	33.679	25.779	222.1	0.167	3.29	52.6	19.2	1.61	20.0	0.01	0.00	0.05	0.10	62	214
71	10.55	10.54	33.765	25.895	211.3	0.187	2.98	47.4	21.8	1.73	22.1	0.01	0.00	0.02	0.08	71	213
75 ISL	10.48 D	10.47	33.781 D	25.920	209.0	0.195	2.93	46.5	22.5	1.76	22.6	0.01	0.00	0.02	0.08	75	
86	10.20	10.19	33.812	25.992	202.3	0.218	2.86	45.1	24.0	1.81	23.5	0.00	0.00	0.01	0.07	86	212
100 ISL	9.86 D	9.85	33.870 D	26.095	192.8	0.245	2.72	42.6	26.1	1.88	24.7	0.00	0.00	0.01	0.06	101	
101	9.87	9.86	33.867	26.091	193.2	0.247	2.71	42.4	26.3	1.89	24.8	0.00	0.00	0.01	0.06	102	211
120	9.57	9.56	33.990	26.238	179.7	0.283	2.29	35.7	29.8	2.03	26.7	0.00	0.00	0.00	0.06	121	210
125 ISL	9.53 D	9.52	34.038 D	26.282	175.6	0.292	2.17	33.8	30.8	2.07	27.2	0.00	0.00	0.00	0.06	126	
140	9.37	9.35	34.095	26.353	169.1	0.317	1.84	28.5	33.6	2.19	28.6	0.00	0.00	0.00	0.05	141	209
150 ISL	9.20 D	9.18	34.106 D	26.389	165.9	0.334	1.72	26.6	35.0	2.24	29.4	0.00	0.00	0.00	0.05	151	
172	8.96	8.94	34.139	26.453	160.1	0.370	1.59	24.4	37.5	2.31	30.7	0.00	0.00	0.00	0.05	173	208
200 ISL	8.59 D	8.57	34.157 D	26.526	153.7	0.414	1.46	22.3	41.1	2.38	31.8	0.00	0.00	0.00	0.05	201	
201	8.60	8.58	34.152	26.521	154.2	0.416	1.46	22.3	41.2	2.38	31.8	0.00	0.00	0.00	0.05	202	207
232	8.21	8.19	34.188	26.609	146.3	0.462	1.21	18.3	46.5	2.51	33.2	0.00	0.00			233	206
250 ISL	8.19 D	8.16	34.215 D	26.633	144.3	0.488	1.13	17.1	48.3	2.55	33.7	0.00	0.00			252	
271	7.97	7.94	34.212	26.664	141.6	0.518	1.05	15.8	50.1	2.59	34.2	0.00	0.00			273	205
300 ISL	7.65 D	7.62	34.233 D	26.727	136.0	0.559	0.89	13.3	53.9	2.68	35.2	0.00	0.00			302	
321	7.50	7.47	34.240	26.755	133.6	0.587	0.78	11.6	56.8	2.75	35.9	0.00	0.00			323	204
382	7.09	7.05	34.263	26.831	127.1	0.666	0.59	8.7	62.7	2.86	37.2	0.00	0.00			385	203
400 ISL	6.94 D	6.90	34.273 D	26.860	124.6	0.689	0.53	7.8	65.1	2.90	37.9	0.00	0.00			403	
441	6.62	6.58	34.293	26.919	119.3	0.739	0.41	6.0	70.4	2.99	39.3	0.00	0.00			444	202
500 ISL	6.38 D	6.33	34.310 D	26.965	115.6	0.808	0.34	4.9	74.7	3.06	40.2	0.00	0.00			503	
512	6.31	6.26	34.314	26.977	114.6	0.822	0.32	4.6	75.6	3.07	40.4	0.00	0.00			516	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 53.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 39.0 N	119 28.9 W	13/03/09	0934 UTC	1314 m	300 18 kn			1019.6 mb	13.7 C	11.2 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.18	14.18	33.343	24.870	307.1	0.000	5.96	102.0	3.2	0.32	0.0	0.00	0.08	0.59	0.14	0	
2	14.18	14.18	33.343	24.870	307.2	0.006	5.96	102.0	3.2	0.32	0.0	0.00	0.08	0.59	0.14	2	220
10	14.17	14.17	33.345	24.874	307.1	0.031	5.99	102.5	3.2	0.33	0.0	0.00	0.08	0.55	0.20	10	219
20	14.18	14.18	33.345	24.872	307.5	0.061	5.97	102.2	3.2	0.33	0.0	0.00	0.11	0.53	0.17	20	218
30	14.17	14.17	33.346	24.875	307.5	0.092	5.97	102.1	3.2	0.33	0.0	0.00	0.11	0.61	0.10	30	217
40	14.16	14.15	33.347	24.878	307.5	0.123	5.95	101.8	3.2	0.33	0.0	0.02	0.16	0.50	0.22	40	216
50	13.31	13.30	33.297	25.014	294.8	0.153	5.63	94.6	4.8	0.53	2.6	0.18	0.07	0.48	0.23	50	215
60	12.18	12.17	33.271	25.214	275.9	0.182	5.07	83.2	8.0	0.87	7.8	0.05	0.13	0.29	0.23	60	214
70	11.82	11.81	33.299	25.304	267.6	0.209	4.86	79.1	9.5	1.00	10.1	0.03	0.01	0.22	0.19	70	213
75 ISL	11.63 D	11.62	33.337 D	25.369	261.5	0.222	4.70	76.2	10.7	1.08	11.5	0.02	0.01	0.18	0.16	75	
85	11.11	11.10	33.444	25.547	244.8	0.247	4.32	69.3	13.4	1.26	14.5	0.01	0.01	0.09	0.09	85	212
100 ISL	10.44 D	10.43	33.634 D	25.813	219.7	0.282	3.75	59.4	18.0	1.51	18.6	0.01	0.02	0.01	0.04	100	
101	10.45	10.44	33.627	25.806	220.4	0.284	3.72	58.9	18.3	1.52	18.8	0.01	0.02	0.01	0.04	101	211
119	10.09	10.08	33.733	25.950	207.0	0.323	3.40	53.5	21.5	1.67	21.4	0.01	0.02	0.00	0.03	120	210
125 ISL	10.07 D	10.06	33.746 D	25.964	205.9	0.335	3.26	51.2	22.7	1.72	22.2	0.01	0.03	0.00	0.03	126	
138	9.73	9.71	33.850	26.102	192.9	0.361	2.98	46.5	25.2	1.81	23.7	0.01	0.04	0.00	0.03	139	209
150 ISL	9.53 D	9.51	33.916 D	26.187	185.1	0.384	2.85	44.3	26.8	1.86	24.6	0.01	0.04	0.00	0.03	151	
168	9.30	9.28	33.960	26.259	178.6	0.417	2.66	41.2	29.2	1.94	25.9	0.00	0.05	0.00	0.03	169	208
200	9.00	8.98	34.099	26.416	164.2	0.471	1.82	28.0	36.3	2.26	29.4	0.00	0.03	0.00	0.04	201	207
228	8.43	8.41	34.058	26.473	159.1	0.517	2.12	32.2	38.2	2.20	30.2	0.00	0.04			229	206
250 ISL	8.32 D	8.29	34.108 D	26.530	154.1	0.551	1.82	27.6	40.9	2.30	31.2	0.01	0.02			251	
268	8.31	8.28	34.155	26.568	150.8	0.579	1.47	22.3	43.7	2.42	32.1	0.02	0.00			270	205
300 ISL	7.59 D	7.56	34.151 D	26.672	141.2	0.625	1.28	19.1	50.0	2.54	34.1	0.01	0.00			302	
318	7.38	7.35	34.151	26.702	138.5	0.650	1.22	18.1	53.6	2.60	35.2	0.00	0.00			320	204
377	6.998	6.962	34.198	26.792	130.6	0.730	0.85	12.5	60.8	2.79	37.0	0.00	0.00			379	203
400 ISL	7.06 D	7.02	34.243 D	26.820	128.5	0.760	0.73	10.7	63.9	2.85	37.7	0.00	0.00			403	
437	6.59	6.55	34.246	26.886	122.3	0.806	0.56	8.2	68.6	2.93	38.7	0.00	0.00			440	202
500 ISL	6.33 D	6.28	34.270 D	26.940	118.0	0.882	0.43	6.2	73.6	3.03	39.8	0.00	0.00			503	
514	6.22	6.17	34.270	26.954	116.7	0.898	0.40	5.8	74.7	3.05	40.1	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 25.1 N	119 57.4 W	13/03/09	0425 UTC	882 m	340 22 kn			1019.4 mb	13.2 C	11.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.74	13.74	33.229	24.873	306.9	0.000	6.13	103.9	3.5	0.36	0.1	0.04	0.21	0.38	0.10	0	
2	13.74	13.74	33.229	24.873	306.9	0.006	6.13	103.9	3.5	0.36	0.1	0.04	0.21	0.38	0.10	2	220
10	13.75	13.75	33.228	24.870	307.4	0.031	6.11	103.6	3.6	0.38	0.1	0.04	0.13	0.37	0.08	10	219
20 ISL	13.74 D	13.74	33.227 D	24.872	307.5	0.061	6.10	103.4	3.5	0.37	0.1	0.04	0.11	0.38	0.09	20	
21	13.74	13.74	33.228	24.873	307.5	0.065	6.10	103.4	3.5	0.37	0.1	0.04	0.11	0.38	0.09	21	218
30 ISL	13.73 D	13.73	33.226 D	24.874	307.7	0.092	6.10	103.4	3.5	0.38	0.1	0.04	0.32	0.38	0.09	30	
31	13.74	13.74	33.228	24.873	307.7	0.095	6.10	103.4	3.5	0.38	0.1	0.04	0.34	0.38	0.09	31	217
41	13.69	13.68	33.229	24.884	306.9	0.126	6.06	102.6	3.6	0.37	0.1	0.04	0.18	0.41	0.12	41	216
50	12.84	12.83	33.242	25.065	290.0	0.153	5.80	96.5	5.4	0.59	2.9	0.28	0.12	0.41	0.24	50	215
60	11.89	11.88	33.269	25.267	270.8	0.181	5.19	84.6	8.5	0.89	7.8	0.06	0.29	0.24	0.16	60	214
70	11.39	11.38	33.330	25.407	257.7	0.207	4.82	77.8	11.0	1.07	11.0	0.03	0.14	0.15	0.13	70	213
75 ISL	11.13 D	11.12	33.377 D	25.491	249.9	0.220	4.64	74.5	12.5	1.17	12.6	0.03	0.14	0.12	0.11	75	
85	10.78	10.77	33.466	25.622	237.5	0.244	4.31	68.7	15.3	1.35	15.5	0.02	0.13	0.09	0.08	85	212
100 ISL	10.49 D	10.48	33.557 D	25.744	226.3	0.279	3.96	62.8	17.7	1.47	17.9	0.01	0.11	0.05	0.07	100	
101	10.44	10.43	33.562	25.757	225.1	0.281	3.94	62.4	17.8	1.48	18.0	0.01	0.11	0.05	0.07	101	211
120	9.94	9.93	33.705	25.954	206.7	0.322	3.47	54.4	22.0	1.68	21.3	0.01	0.18	0.01	0.05	121	210
125 ISL	9.79 D	9.78	33.768 D	26.028	199.7	0.333	3.31	51.7	23.1	1.73	22.1	0.01	0.16	0.01	0.05	126	
138	9.68	9.66	33.851	26.111	192.1	0.358	2.92	45.5	26.0	1.86	23.9	0.01	0.10	0.00	0.06	139	209
150 ISL	9.42 D	9.40	33.904 D	26.195	184.3	0.381	2.70	41.9	28.2	1.94	25.1	0.01	0.10	0.00	0.05	151	
168	9.19	9.17	34.002	26.310	173.7	0.413	2.44	37.7	31.2	2.03	26.6	0.00	0.10	0.00	0.04	169	208
200 ISL	8.81 D	8.79	34.109 D	26.454	160.6	0.466	1.92	29.4	37.1	2.25	29.2	0.00	0.04	0.00	0.04	201	
201	8.80	8.78	34.112	26.458	160.2	0.468	1.90	29.1	37.3	2.26	29.3	0.00	0.04	0.00	0.04	202	207
229	8.64	8.62	34.193	26.547	152.3	0.512	1.38	21.1	42.2	2.46	31.3	0.00	0.10			230	206
250 ISL	8.50 D	8.47	34.216 D	26.587	148.8	0.543	1.19	18.1	44.9	2.55	32.2	0.00	0.11			251	
269	8.29	8.26	34.234	26.633	144.7	0.571	1.09	16.5	47.2	2.61	32.9	0.00	0.11			271	205
300 ISL	7.95 D	7.92	34.255 D	26.701	138.7	0.615	0.90	13.5	51.5	2.70	34.1	0.00	0.04			302	
318	7.78	7.75	34.257	26.728	136.3	0.640	0.81	12.1	53.9	2.75	34.7	0.00	0.00			320	204
378	7.26	7.22	34.257	26.803	129.9	0.720	0.69	10.2	60.2	2.85	36.3	0.00	0.00			380	203
400 ISL	7.01 D	6.97	34.255 D	26.836	126.9	0.748	0.64	9.4	62.9	2.89	36.9	0.00	0.00			403	
436	6.60	6.56	34.265 D	26.900	121.1	0.793										439	202
500 ISL	6.16 D	6.12	34.274 D	26.964	115.4	0.868	0.43	6.2	75.2	3.05	39.4	0.00	0.00			503	
514	6.12	6.07	34.274	26.970	115.1	0.884	0.40	5.8	76.9	3.07	39.8	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 5.0 N	120 38.3 W	12/03/09	2153 UTC	3812 m	330 21 kn	340 04 05	2	1019.3 mb	14.0 C	11.1 C	16m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.89	13.89	33.255	24.862	307.9	0.000	6.03	102.5	3.4	0.35	0.0	0.03	0.07	0.47	0.14	0	
2	13.89	13.89	33.255	24.862	307.9	0.006	6.03	102.5	3.4	0.35	0.0	0.03	0.07	0.47	0.14	2	220
10 ISL	13.89 D	13.89	33.254 D	24.862	308.2	0.031	6.03	102.5	3.3	0.36	0.0	0.03	0.06	0.49	0.13	10	
11	13.89	13.89	33.256	24.863	308.1	0.034	6.03	102.5	3.3	0.36	0.0	0.03	0.06	0.49	0.13	11	219
20 ISL	13.90 D	13.90	33.258 D	24.863	308.4	0.062	6.02	102.4	3.3	0.36	0.0	0.03	0.07	0.46	0.12	20	
21	13.90	13.90	33.258	24.863	308.4	0.065	6.02	102.4	3.3	0.36	0.0	0.03	0.07	0.46	0.12	21	218
30 ISL	13.91 D	13.91	33.262 D	24.864	308.5	0.092	6.02	102.4	3.3	0.36	0.0	0.03	0.08	0.48	0.15	30	
31	13.91	13.91	33.264	24.866	308.4	0.096	6.02	102.4	3.3	0.36	0.0	0.03	0.08	0.48	0.15	31	217
41	13.91	13.90	33.266	24.868	308.5	0.126	6.01	102.2	3.3	0.36	0.0	0.03	0.05	0.51	0.12	41	216
50 ISL	13.77 D	13.76	33.242 D	24.878	307.8	0.154	6.01	101.9	3.5	0.38	0.2	0.04	0.08	0.45	0.14	50	
51	13.75	13.74	33.244	24.884	307.3	0.157	6.01	101.9	3.5	0.38	0.2	0.04	0.08	0.44	0.14	51	215
61	13.27	13.26	33.152	24.910	305.0	0.188	6.12	102.7	3.9	0.44	0.9	0.08	0.17	0.41	0.14	61	214
71	12.93	12.92	33.259	25.061	290.9	0.218	5.57	92.8	5.3	0.62	3.6	0.19	0.04	0.47	0.26	71	213
75 ISL	12.69 D	12.68	33.269 D	25.115	285.8	0.229	5.38	89.2	6.2	0.71	5.1	0.16	0.03	0.42	0.24	75	
86	11.75	11.74	33.272	25.296	268.7	0.260	4.93	80.1	9.1	0.97	9.4	0.04	0.02	0.22	0.20	86	212
100	11.14	11.13	33.372	25.485	250.9	0.296	4.53	72.7	12.5	1.20	13.4	0.01	0.03	0.12	0.11	100	211
121	10.43	10.42	33.600	25.788	222.5	0.346	3.85	60.9	17.9	1.49	18.3	0.01	0.03	0.03	0.04	122	210
125 ISL	10.18 D	10.17	33.656 D	25.875	214.3	0.354	3.71	58.4	19.1	1.55	19.2	0.01	0.03	0.02	0.04	126	
141	9.75	9.73	33.803	26.062	196.8	0.387	3.21	50.1	23.6	1.74	22.4	0.00	0.01	0.01	0.03	142	209
150 ISL	9.59 D	9.57	33.842 D	26.119	191.5	0.405	3.02	47.0	25.4	1.81	23.6	0.00	0.01	0.01	0.03	151	
171	9.30	9.28	33.946	26.248	179.7	0.444	2.71	41.9	28.7	1.92	25.5	0.00	0.00	0.00	0.03	172	208
200 ISL	8.73 D	8.71	34.009 D	26.388	166.8	0.494	2.49	38.1	33.1	2.05	27.7	0.01	0.03	0.00	0.03	201	
201	8.72	8.70	34.015	26.394	166.2	0.496	2.48	37.9	33.2	2.05	27.8	0.01	0.03	0.00	0.03	202	207
231	8.44	8.42	34.066	26.478	158.7	0.544	2.13	32.3	37.9	2.19	29.7	0.01	0.05			232	206
250 ISL	8.16 D	8.13	34.088 D	26.538	153.3	0.574	1.93	29.1	41.4	2.29	31.0	0.01	0.03			251	
271	7.82	7.79	34.095	26.594	148.2	0.606	1.72	25.8	45.4	2.39	32.5	0.00	0.00			273	205
300 ISL	7.53 D	7.50	34.120 D	26.656	142.6	0.648	1.43	21.3	50.4	2.52	34.2	0.00	0.00			302	
321	7.25	7.22	34.132	26.705	138.1	0.677	1.23	18.2	54.0	2.61	35.3	0.00	0.00			323	204
380	6.68	6.65	34.189	26.828	127.0	0.756	0.77	11.2	64.3	2.85	37.9	0.00	0.00			382	203
400 ISL	6.56 D	6.52	34.215 D	26.865	123.7	0.781	0.65	9.5	67.1	2.91	38.5	0.00	0.00			403	
440	6.33	6.29	34.246	26.920	118.9	0.829	0.47	6.8	72.0	3.01	39.5	0.00	0.00			443	202
500 ISL	6.05 D	6.01	34.290 D	26.991	112.8	0.899	0.33	4.7	77.2	3.10	40.4	0.00	0.00			503	
515	6.03	5.98	34.297	26.999	112.2	0.916	0.30	4.3	78.5	3.12	40.6	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 44.9 N	121 19.0 W	12/03/09	1633 UTC	3664 m	330 18 kn	350 04 06	2	1019.9 mb	14.0 C	10.0 C	19m	5/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.03	14.03	33.189	24.782	315.5	0.000	6.04	103.0	2.8	0.33	0.0	0.00	0.06	0.32	0.11	0	
2 A	14.03	14.03	33.189	24.782	315.5	0.006	6.04	103.0	2.8	0.33	0.0	0.00	0.06	0.32	0.11	2	222
10 ISL	14.03 D	14.03	33.188 D	24.782	315.8	0.032	6.02	102.6	2.7	0.34	0.0	0.00	0.02	0.34	0.09	10	
14 A	14.03	14.03	33.188	24.782	315.9	0.044	6.00	102.3	2.6	0.34	0.0	0.00	0.00	0.34	0.08	14	221
20 ISL	14.03 D	14.03	33.187 D	24.781	316.2	0.063	5.97	101.8	2.7	0.34	0.0	0.00	0.01	0.31	0.10	20	
21	14.03	14.03	33.188	24.782	316.1	0.066	5.97	101.8	2.7	0.34	0.0	0.00	0.01	0.31	0.10	21	220
28 A	14.03	14.03	33.188	24.782	316.3	0.088	5.98	101.9	2.7	0.34	0.0	0.00	0.00	0.32	0.12	28	219
30 ISL	14.02 D	14.02	33.186 D	24.783	316.3	0.095	5.98	101.9	2.7	0.34	0.0	0.00	0.00	0.32	0.11	30	
35	14.02	14.02	33.188	24.785	316.3	0.111	5.98	101.9	2.7	0.33	0.0	0.00	0.00	0.33	0.09	35	218
42 A	13.47	13.46	33.137	24.858	309.5	0.132	6.00	101.1	3.1	0.41	0.7	0.11	0.11	0.44	0.20	42	217
48	13.46	13.45	33.162	24.879	307.6	0.151	5.90	99.4	3.3	0.44	1.0	0.21	0.13	0.41	0.22	48	216
50 ISL	13.44 D	13.43	33.167 D	24.887	306.9	0.157	5.89	99.2	3.3	0.46	1.1	0.24	0.15	0.40	0.21	50	
54 A	13.31	13.30	33.154	24.904	305.4	0.169	5.86	98.4	3.4	0.49	1.3	0.27	0.17	0.37	0.19	54	215
66	12.78	12.77	33.130	24.990	297.5	0.206	5.65	93.8	4.2	0.60	3.3	0.17	0.04	0.22	0.16	66	214
75 ISL	11.78 D	11.77	33.095 D	25.153	282.0	0.232	5.54	90.0	6.0	0.76	5.9	0.04	0.02	0.13	0.10	75	
77 A	11.71	11.70	33.091	25.163	281.1	0.237	5.52	89.6	6.5	0.80	6.5	0.02	0.02	0.11	0.09	77	213
89	10.82	10.81	33.105	25.334	265.0	0.270	5.28	84.0	9.3	1.00	9.9	0.01	0.02	0.06	0.06	89	212
100 ISL	10.78 D	10.77	33.312 D	25.503	249.2	0.298	4.87	77.5	11.4	1.12	12.3	0.01	0.03	0.03	0.04	100	
101	10.78	10.77	33.311	25.502	249.3	0.301	4.83	76.9	11.6	1.13	12.5	0.01	0.03	0.03	0.04	101	211
121	10.10	10.09	33.582	25.831	218.4	0.348	4.08	64.1	17.7	1.45	18.0	0.00	0.02	0.01	0.02	122	210
125 ISL	10.08 D	10.07	33.587 D	25.838	217.8	0.356	4.02	63.1	18.3	1.48	18.6	0.00	0.03	0.01	0.02	126	
141	9.88	9.86	33.648	25.919	210.4	0.391	3.82	59.8	20.3	1.59	20.5	0.00	0.05	0.01	0.02	142	209
150 ISL	9.77 D	9.75	33.708 D	25.985	204.3	0.409	3.59	56.0	22.0	1.68	21.9	0.00	0.04	0.01	0.02	151	
171	9.34	9.32	33.840	26.159	188.1	0.450	3.02	46.7	26.6	1.88	25.0	0.00	0.02	0.00	0.03	172	208
200 ISL	8.64 D	8.62	33.986 D	26.384	167.1	0.502	2.48	37.8	33.6	2.08	28.3	0.00	0.02	0.00	0.04	201	
201	8.61	8.59	33.990	26.392	166.4	0.504	2.47	37.6	33.8	2.08	28.4	0.00	0.02	0.00	0.04	202	207
232	8.29	8.27	34.003	26.451	161.2	0.554	2.58	39.0	35.8	2.08	28.8	0.00	0.04			233	206
250 ISL	7.99 D	7.96	34.023 D	26.512	155.6	0.583	2.37	35.6	38.9	2.17	30.0	0.00	0.04			251	
272	7.77	7.74	34.053	26.568	150.6	0.617	1.99	29.8	43.3	2.32	31.8	0.00	0.04			274	205
300 ISL	7.44 D	7.41	34.081 D	26.638	144.3	0.658	1.49	22.1	48.2	2.50	33.4	0.00	0.02			302	
321	7.60	7.57	34.171	26.686	140.2	0.688	1.15	17.1	51.5	2.63	34.4	0.00	0.00			323	204
383	7.23	7.19	34.230	26.786	131.5	0.772	0.76	11.2	58.6	2.82	36.2	0.00	0.00			385	203
400 ISL	7.08 D	7.04	34.233 D	26.809	129.5	0.794	0.70	10.3	60.8	2.86	36.8	0.00	0.01			403	
441	6.67	6.63	34.239	26.870	124.0	0.846	0.59	8.6	66.3	2.95	38.4	0.00	0.04			444	202
500 ISL	6.26 D	6.22	34.273 D	26.951	116.8	0.917	0.41	5.9	73.8	3.07	40.1	0.00	0.08			503	
514	6.16	6.11	34.278	26.968	115.3	0.933	0.37	5.3	75.6	3.10	40.5	0.00	0.09			517	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.2 N	121 59.4 W	12/03/09	0810 UTC	3857 m	320 22 kn			1019.6 mb	12.8 C	9.4 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.40	14.40	33.221	24.730	320.5	0.000	5.93	101.9	2.6	0.33	0.0	0.00	0.00	0.22	0.06	0	
3	14.40	14.40	33.221	24.730	320.6	0.010	5.93	101.9	2.6	0.33	0.0	0.00	0.00	0.22	0.06	3	220
10 ISL	14.40 D	14.40	33.219 D	24.728	320.9	0.032	5.94	102.0	2.6	0.33	0.0	0.00	0.00	0.24	0.04	10	
11	14.40	14.40	33.221	24.730	320.8	0.035	5.94	102.0	2.6	0.33	0.0	0.00	0.00	0.24	0.04	11	219
20 ISL	14.41 D	14.41	33.219 D	24.727	321.4	0.064	5.93	101.9	2.6	0.34	0.0	0.00	0.00	0.23	0.05	20	
25	14.41	14.41	33.224	24.731	321.1	0.080	5.92	101.7	2.6	0.34	0.0	0.00	0.00	0.22	0.06	25	218
30 ISL	14.40 D	14.40	33.219 D	24.729	321.4	0.096	5.92	101.7	2.6	0.34	0.0	0.00	0.03	0.22	0.06	30	
41	14.40	14.39	33.222	24.732	321.5	0.132	5.91	101.5	2.6	0.34	0.0	0.00	0.08	0.23	0.05	41	217
50 ISL	14.40 D	14.39	33.218 D	24.729	322.0	0.161	5.91	101.5	2.5	0.34	0.0	0.00	0.02	0.22	0.05	50	
51	14.40	14.39	33.222	24.732	321.8	0.164	5.91	101.5	2.5	0.34	0.0	0.00	0.01	0.22	0.05	51	216
62	13.90	13.89	33.188	24.810	314.6	0.199	5.91	100.5	2.5	0.36	0.2	0.06	0.08	0.31	0.13	62	215
75 ISL	13.37 D	13.36	33.159 D	24.896	306.7	0.239	5.85	98.3	3.0	0.42	0.8	0.15	0.19	0.31	0.15	75	
76	13.55	13.54	33.180	24.876	308.7	0.242	5.84	98.5	3.1	0.43	0.9	0.16	0.19	0.31	0.15	76	214
88	12.64	12.63	33.109	25.001	296.9	0.279	5.70	94.3	4.3	0.57	3.1	0.20	0.00	0.22	0.13	88	213
100 ISL	11.65 D	11.64	33.051 D	25.143	283.5	0.313	5.61	90.9	5.8	0.71	5.4	0.04	0.00	0.18	0.10	100	
101	11.62	11.61	33.052	25.150	282.9	0.316	5.60	90.7	5.9	0.72	5.6	0.03	0.00	0.18	0.10	101	212
112	11.17	11.16	33.118	25.283	270.5	0.347	5.43	87.1	8.0	0.87	8.3	0.01	0.00	0.10	0.07	112	211
125	11.02	11.00	33.298	25.450	254.9	0.381	4.92	78.7	10.7	1.05	11.4	0.01	0.00	0.04	0.04	126	210
139	10.68	10.66	33.489	25.659	235.3	0.415	4.37	69.5	14.5	1.28	15.3	0.00	0.00	0.02	0.02	140	209
150 ISL	10.47 D	10.45	33.580 D	25.766	225.3	0.441	4.04	64.0	17.1	1.42	17.6	0.00	0.00	0.02	0.02	151	
170	9.84	9.82	33.740	25.999	203.5	0.483	3.57	55.8	21.5	1.61	21.0	0.00	0.00	0.01	0.02	171	208
200 ISL	9.12 D	9.10	33.918 D	26.256	179.5	0.541	3.00	46.2	28.0	1.85	25.1	0.00	0.02	0.00	0.03	201	
201	9.13	9.11	33.918	26.254	179.7	0.543	2.98	45.9	28.2	1.86	25.2	0.00	0.02	0.00	0.03	202	207
229	8.57	8.55	34.010	26.414	164.8	0.591	2.52	38.4	34.3	2.05	28.3	0.00	0.01			230	206
250 ISL	8.38 D	8.35	34.019 D	26.451	161.6	0.625	2.37	35.9	37.3	2.13	29.6	0.00	0.00			251	
270	8.07	8.04	34.047	26.519	155.3	0.657	2.25	33.9	40.0	2.20	30.5	0.00	0.00			271	205
300 ISL	7.67 D	7.64	34.071 D	26.597	148.3	0.702	1.84	27.5	45.8	2.37	32.5	0.00	0.01			302	
317	7.53	7.50	34.095	26.636	144.7	0.727	1.59	23.6	49.2	2.47	33.7	0.00	0.01			319	204
378	6.91	6.87	34.136	26.755	134.0	0.812	1.07	15.7	59.3	2.73	36.9	0.00	0.00			380	203
400 ISL	6.69 D	6.65	34.157 D	26.802	129.8	0.841	0.93	13.6	63.4	2.81	37.9	0.00	0.01			402	
437	6.25	6.21	34.172	26.872	123.3	0.888	0.73	10.5	70.0	2.92	39.4	0.00	0.02			440	202
500 ISL	5.85 D	5.81	34.219 D	26.960	115.4	0.963	0.49	7.0	78.2	3.04	41.0	0.00	0.00			503	
515	5.78	5.74	34.231	26.978	113.8	0.981	0.43	6.1	80.1	3.07	41.4	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 5.1 N	122 39.3 W	12/03/09	0146 UTC	4048 m	310 23 kn	320 05 07	2	1019.2 mb	13.2 C	9.8 C		7/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.87	14.87	33.184	24.601	332.8	0.000	5.85	101.4	2.3	0.31	0.0	0.00	0.00	0.13	0.03	0	
1	14.87	14.87	33.184	24.601	332.8	0.003	5.85	101.4	2.3	0.31	0.0	0.00	0.00	0.13	0.03	1	220
10 ISL	14.88 D	14.88	33.182 D	24.598	333.4	0.033	5.86	101.6	2.3	0.32	0.0	0.00	0.01	0.13	0.03	10	
11	14.88	14.88	33.182	24.598	333.4	0.037	5.86	101.6	2.3	0.32	0.0	0.00	0.01	0.13	0.03	11	219
20 ISL	14.88 D	14.88	33.181 D	24.597	333.7	0.067	5.86	101.6	2.3	0.32	0.0	0.00	0.02	0.13	0.03	20	
25	14.88	14.88	33.181	24.597	333.9	0.083	5.86	101.6	2.3	0.32	0.0	0.00	0.02	0.13	0.03	25	218
30 ISL	14.87 D	14.87	33.181 D	24.600	333.8	0.100	5.86	101.6	2.3	0.32	0.0	0.00	0.02	0.14	0.03	30	
40	14.83	14.82	33.187	24.613	332.8	0.133	5.87	101.7	2.4	0.31	0.0	0.00	0.02	0.16	0.04	40	217
50	14.85	14.84	33.243	24.652	329.4	0.166	5.87	101.8	2.3	0.31	0.0	0.00	0.03	0.21	0.09	50	216
62	14.49	14.48	33.200	24.696	325.5	0.206	5.88	101.2	2.3	0.32	0.0	0.00	0.04	0.31	0.16	62	215
75 ISL	14.39 D	14.38	33.186 D	24.707	324.8	0.248	5.89	101.1	2.4	0.33	0.0	0.00	0.01	0.33	0.17	75	
76	14.39	14.38	33.192	24.712	324.4	0.251	5.89	101.1	2.4	0.33	0.0	0.00	0.01	0.33	0.17	76	214
88	13.99	13.98	33.159	24.770	319.2	0.290	5.88	100.1	2.4	0.36	0.1	0.05	0.08	0.33	0.17	88	213
100 ISL	12.68 D	12.67	33.114 D	24.998	297.6	0.327	5.67	93.9	3.7	0.53	2.7	0.05	0.02	0.22	0.14	100	
101	12.66	12.65	33.117	25.004	297.0	0.330	5.65	93.5	3.8	0.55	2.9	0.05	0.01	0.21	0.14	101	212
113	12.23	12.22	33.123	25.092	288.9	0.365	5.60	91.9	4.5	0.60	4.0	0.02	0.00	0.13	0.10	113	211
125	11.31	11.29	33.141	25.276	271.5	0.399	5.38	86.6	7.3	0.83	7.5	0.01	0.00	0.07	0.06	126	210
140	11.04	11.02	33.237	25.399	260.0	0.439	5.20	83.2	8.8	0.91	9.3	0.00	0.00	0.04	0.04	141	209
150 ISL	10.50 D	10.48	33.431 D	25.645	236.8	0.463	4.91	77.8	11.5	1.08	12.0	0.00	0.01	0.03	0.03	151	
170	9.93	9.91	33.541	25.828	219.7	0.509	4.26	66.7	17.8	1.44	17.8	0.00	0.03	0.01	0.02	171	208
200 ISL	9.30 D	9.28	33.855 D	26.177	187.0	0.570	3.74	57.8	23.9	1.63	22.0	0.00	0.00	0.00	0.01	201	
202	9.27	9.25	33.867	26.192	185.6	0.574	3.72	57.5	24.2	1.64	22.2	0.00	0.00	0.00	0.01	203	207
230	8.84	8.82	33.948	26.324	173.5	0.624	3.54	54.2	28.3	1.74	24.2	0.00	0.00			231	206
250 ISL	8.45 D	8.42	33.988 D	26.416	165.0	0.658	3.20	48.6	32.7	1.89	26.4	0.00	0.00			251	
266	8.16	8.13	34.005	26.473	159.7	0.684	2.89	43.6	36.6	2.02	28.3	0.00	0.00			267	205
300 ISL	7.59 D	7.56	34.031 D	26.577	150.1	0.736	2.39	35.6	44.2	2.25	31.4	0.00	0.00			302	
318	7.38	7.35	34.042	26.616	146.6	0.763	2.15	31.9	48.0	2.36	32.8	0.00	0.00			320	204
379	6.79	6.75	34.091	26.736	135.7	0.849	1.42	20.8	58.7	2.67	36.9	0.00	0.00			381	203
400 ISL	6.60 D	6.56	34.103 D	26.771	132.6	0.877	1.23	17.9	62.4	2.77	38.0	0.00	0.02			402	
439	6.25	6.21	34.138	26.845	125.9	0.928	0.94	13.6	68.8	2.92	39.7	0.00	0.05			442	202
500 ISL	6.01 D	5.97	34.201 D	26.926	118.8	1.003	0.61	8.8	76.0	3.05	41.3	0.00	0.01			503	
514	5.93	5.89	34.208	26.941	117.5	1.019	0.54	7.7	77.7	3.08	41.7	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 45.2 N	123 20.0 W	11/03/09	1921 UTC	4025 m	340 17 kn	340 06 07	1	1021.8 mb	14.2 C	11.1 C	35m	7/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.41	16.41	33.618	24.592	333.6	0.000	5.64	101.1	2.3	0.26	0.0	0.00	0.67	0.13	0.03	0	
4 A	16.41	16.41	33.618	24.592	333.7	0.013	5.64	101.1	2.3	0.26	0.0	0.00	0.67	0.13	0.03	4	222
10 ISL	16.41 D	16.41	33.617 D	24.592	334.0	0.033	5.64	101.1	2.2	0.27	0.0	0.00	0.46	0.15	0.01	10	
16	16.41	16.41	33.618	24.593	334.1	0.053	5.64	101.1	2.2	0.29	0.0	0.00	0.20	0.17	0.00	16	221
20 ISL	16.40 D	16.40	33.617 D	24.594	334.1	0.067	5.64	101.1	2.2	0.29	0.0	0.00	0.09	0.16	0.01	20	
25 A	16.40	16.40	33.620	24.597	334.0	0.083	5.63	100.9	2.3	0.29	0.0	0.00	0.01	0.14	0.03	25	220
30 ISL	16.41 D	16.41	33.620 D	24.595	334.4	0.100	5.63	100.9	2.3	0.29	0.0	0.00	0.04	0.14	0.03	30	
37	16.41	16.40	33.622	24.596	334.4	0.124	5.63	100.9	2.3	0.28	0.0	0.00	0.07	0.14	0.02	37	219
50 A	16.41	16.40	33.621	24.596	334.9	0.167	5.63	100.9	2.3	0.29	0.0	0.00	0.12	0.13	0.05	50	218
59	16.41	16.40	33.623	24.598	335.0	0.197	5.61	100.6	2.3	0.28	0.0	0.00	0.11	0.15	0.02	59	217
68	16.41	16.40	33.622	24.598	335.3	0.227	5.62	100.7	2.2	0.28	0.0	0.00	0.04	0.17	0.02	68	216
75 ISL	16.42 D	16.41	33.625 D	24.598	335.5	0.251	5.62	100.8	2.3	0.28	0.0	0.00	0.03	0.18	0.00	75	
76 A	16.42	16.41	33.627	24.599	335.4	0.254	5.62	100.8	2.3	0.28	0.0	0.00	0.03	0.18	0.00	76	215
88	16.39	16.38	33.635	24.613	334.5	0.294	5.63	100.9	2.3	0.28	0.0	0.00	0.03	0.22	0.05	88	214
100 A	14.70	14.69	33.489	24.876	309.6	0.333	5.57	96.4	3.2	0.36	0.6	0.05	0.05	0.37	0.19	100	213
109	13.70	13.68	33.279	24.923	305.2	0.361	5.62	95.2	3.6	0.42	1.4	0.08	0.09	0.35	0.19	109	212
120	12.88	12.86	33.183	25.013	296.7	0.394	5.55	92.3	4.3	0.54	2.9	0.07	0.02	0.30	0.16	121	211
125 ISL	12.60 D	12.58	33.212 D	25.090	289.5	0.409	5.52	91.3	4.8	0.59	3.7	0.05	0.02	0.19	0.33	126	
132	12.24	12.22	33.185	25.138	285.0	0.429	5.41	88.8	5.8	0.67	5.2	0.03	0.02	0.06	0.48	133	210
141 A	11.63	11.61	33.326	25.362	263.8	0.453	5.09	82.5	8.2	0.86	8.5	0.01	0.03	0.11	0.11	142	209
150 ISL	11.28 D	11.26	33.538 D	25.591	242.2	0.476	4.72	76.1	10.5	1.02	11.2	0.01	0.04	0.10	0.08	151	
166	10.85	10.83	33.644	25.750	227.3	0.514	4.12	65.8	14.6	1.26	15.1	0.00	0.05	0.04	0.04	167	208
196	9.63	9.61	33.787	26.071	197.1	0.577	3.52	54.8	22.8	1.64	21.3	0.00	0.06	0.00	0.02	197	207
200 ISL	9.50 D	9.48	33.807 D	26.107	193.7	0.585	3.45	53.6	23.7	1.67	21.8	0.00	0.06			201	
231	9.05	9.02	34.010	26.339	172.2	0.642	2.92	44.9	30.1	1.87	24.7	0.00	0.03			232	206
250 ISL	8.62 D	8.59	34.054 D	26.441	162.7	0.674	2.51	38.3	34.2	2.02	26.4	0.00	0.03			251	
271	8.58	8.55	34.123	26.502	157.3	0.707	2.10	32.0	38.4	2.18	28.0	0.00	0.04			272	205
300 ISL	8.26 D	8.23	34.163 D	26.583	150.1	0.752	1.85	28.0	42.8	2.30	29.9	0.00	0.02			302	
321	7.94	7.91	34.135	26.608	147.8	0.783	1.73	26.0	45.7	2.37	31.1	0.00	0.00			323	204
380	7.47	7.43	34.210	26.736	136.4	0.867	1.03	15.3	54.7	2.68	34.0	0.00	0.00			382	203
400 ISL	7.37 D	7.33	34.219 D	26.758	134.6	0.894	0.95	14.1	57.9	2.74	35.1	0.00	0.00			402	
439	6.60	6.56	34.183	26.835	127.2	0.945	0.88	12.8	64.3	2.82	37.0	0.00	0.00			442	202
500 ISL	5.93 D	5.89	34.206 D	26.940	117.4	1.020	0.62	8.9	74.5	2.97	39.2	0.00	0.02			503	
515	5.90	5.86	34.219	26.954	116.3	1.037	0.56	8.0	77.0	3.01	39.8	0.00	0.03			518	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 90.0 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 25.1 N	123 59.8 W	11/03/09	1228 UTC	4231 m	340 15 kn			1020.8 mb	13.0 C	10.1 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.15	16.15	33.615	24.649	328.2	0.000	5.68	101.3	2.4	0.30	0.0	0.00	0.02	0.13	0.04	0	
2	16.15	16.15	33.615	24.649	328.2	0.007	5.68	101.3	2.4	0.30	0.0	0.00	0.02	0.13	0.04	2	220
10	16.13	16.13	33.611	24.651	328.3	0.033	5.66	100.9	2.3	0.30	0.0	0.00	0.05	0.13	0.04	10	219
20 ISL	16.15 D	16.15	33.612 D	24.648	329.0	0.066	5.66	100.9	2.3	0.30	0.0	0.00	0.04	0.13	0.04	20	
25	16.12	16.12	33.603	24.648	329.1	0.082	5.66	100.9	2.3	0.30	0.0	0.00	0.04	0.13	0.04	25	218
30 ISL	16.12 D	16.12	33.601 D	24.646	329.4	0.099	5.66	100.9	2.3	0.30	0.0	0.00	0.05	0.13	0.04	30	
39	16.11	16.10	33.599	24.647	329.6	0.128	5.66	100.9	2.2	0.29	0.0	0.00	0.06	0.13	0.04	39	217
50 ISL	16.11 D	16.10	33.597 D	24.646	330.1	0.165	5.67	101.0	2.2	0.28	0.0	0.00	0.05	0.13	0.04	50	
60	16.11	16.10	33.601	24.650	330.1	0.198	5.67	101.0	2.3	0.28	0.0	0.00	0.05	0.13	0.04	60	216
62	16.13	16.12	33.611	24.653	329.8	0.204	5.68	101.3	2.3	0.29	0.0	0.00	0.02	0.13	0.05	62	215
75	16.34	16.33	33.682	24.660	329.6	0.247	5.63	100.8	2.4	0.29	0.0	0.00	0.02	0.24	0.14	75	214
87	16.18	16.17	33.698	24.709	325.3	0.286	5.57	99.4	2.6	0.31	0.2	0.01	0.05	0.35	0.28	87	213
100	12.67	12.66	33.524	25.318	267.2	0.325	4.77	79.2	8.7	0.92	8.1	0.13	0.02	0.34	0.30	100	212
112	11.97	11.96	33.604	25.514	248.7	0.356	4.11	67.3	12.0	1.21	13.0	0.03	0.02	0.21	0.22	112	211
123	11.33	11.31	33.717	25.720	229.3	0.382	3.47	56.1	16.3	1.48	17.6	0.01	0.00	0.11	0.14	124	210
125 ISL	10.96 D	10.94	33.696 D	25.770	224.5	0.387	3.48	55.8	16.7	1.49	18.0	0.01	0.00	0.10	0.13	126	
139	10.38	10.36	33.755	25.918	210.6	0.417	3.58	56.7	19.0	1.54	19.5	0.00	0.02	0.03	0.05	140	209
150 ISL	9.85 D	9.83	33.796 D	26.040	199.1	0.440	3.53	55.2	21.0	1.60	20.9	0.00	0.04	0.02	0.04	151	
169	9.35	9.33	33.861	26.173	186.7	0.476	3.39	52.5	24.4	1.71	23.1	0.00	0.06	0.00	0.02	170	208
200 ISL	8.83 D	8.81	33.968 D	26.340	171.3	0.532	3.35	51.3	28.4	1.77	24.6	0.00	0.06	0.00	0.02	201	
201	8.80	8.78	33.971	26.348	170.6	0.533	3.35	51.3	28.5	1.77	24.6	0.00	0.06	0.00	0.02	202	207
229	8.48	8.46	34.019	26.435	162.8	0.580	3.05	46.3	33.5	1.92	26.5	0.00	0.10			230	206
250 ISL	8.44 D	8.41	34.059 D	26.473	159.6	0.614	2.52	38.3	36.9	2.11	28.4	0.00	0.09			251	
267	8.41	8.38	34.117	26.523	155.1	0.641	2.07	31.4	39.8	2.26	29.9	0.00	0.07			268	205
300 ISL	7.76 D	7.73	34.108 D	26.613	146.8	0.691	1.67	25.0	46.5	2.45	32.4	0.00	0.03			302	
317	7.64	7.61	34.142	26.657	142.8	0.715	1.53	22.8	49.9	2.53	33.5	0.00	0.01			319	204
377	7.24	7.20	34.239	26.791	130.9	0.797	0.79	11.7	58.8	2.84	36.2	0.00	0.00			379	203
400 ISL	6.43 D	6.39	34.170 D	26.846	125.3	0.827	0.79	11.5	64.1	2.90	37.6	0.00	0.00			402	
438	6.04	6.00	34.168	26.895	120.9	0.874	0.80	11.5	72.4	2.96	39.7	0.00	0.00			441	202
500 ISL	5.80 D	5.76	34.251 D	26.991	112.4	0.946	0.44	6.3	78.4	3.12	41.2	0.00	0.00			503	
514	5.88	5.84	34.287	27.010	111.0	0.961	0.36	5.2	79.8	3.15	41.5	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 91.7 26.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 14.5 N	117 27.8 W	08/03/09	0634 UTC	20 m	070 06 kn			1017.0 mb	13.5 C	11.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.12	14.12	33.364	24.899	304.4	0.000	6.40	109.4	4.3	0.31	0.8	0.11	0.10	4.07	0.76	0	
2	14.12	14.12	33.364	24.899	304.5	0.006	6.40	109.4	4.3	0.31	0.8	0.11	0.10	4.07	0.76	2	205
6	14.12	14.12	33.367	24.901	304.3	0.018	6.40	109.4	4.2	0.32	0.8	0.10	0.00	3.80	0.89	6	204
10 ISL	13.92 D	13.92	33.371 D	24.946	300.2	0.030	6.20	105.6	4.7	0.38	1.7	0.17	0.03	3.18	0.70	10	
11	13.76	13.76	33.371	24.979	297.1	0.033	6.11	103.7	4.8	0.41	1.9	0.19	0.04	3.02	0.66	11	202
12	13.78	13.78	33.370	24.974	297.6	0.036										12	203
16	12.86	12.86	33.397	25.180	278.1	0.048	5.26	87.6	8.5	0.77	6.7	0.56	0.62	2.52	0.98	16	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 57.1 N	117 18.5 W	08/03/09	0154 UTC	70 m	290 06 kn	280 02 07	0	1016.4 mb	14.9 C	11.2 C		0/8

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.54	14.54	33.363	24.810	312.9	0.000	6.44	111.0	3.9	0.24	0.0	0.02	0.40	1.57	0.65	0	
1	14.54	14.54	33.363	24.810	312.9	0.003	6.44	111.0	3.9	0.24	0.0	0.02	0.40	1.57	0.65	1	209
5	14.23	14.23	33.352	24.867	307.6	0.016	6.62	113.4	3.6	0.24	0.0	0.04	0.02	3.94	1.32	5	208
10	14.18	14.18	33.363	24.886	305.9	0.031	6.59	112.8	3.6	0.22	0.0	0.04	0.48	3.62	1.25	10	207
20	11.97	11.97	33.511	25.439	253.5	0.059	3.84	62.8	15.0	1.28	13.9	0.71	1.14	0.85	0.57	20	206
30	11.07	11.07	33.677	25.734	225.7	0.083	3.10	49.8	20.0	1.62	19.8	0.26	1.36	0.22	0.32	30	205
41	10.76	10.76	33.766	25.859	214.1	0.107	2.68	42.8	23.5	1.80	22.3	0.37	0.79	0.10	0.21	41	204
50 ISL	10.75 D	10.74	33.767 D	25.861	214.0	0.126	2.66	42.5	23.6	1.81	22.8	0.38	0.54	0.11	0.24	50	
51	10.75	10.74	33.766	25.860	214.1	0.128	2.66	42.5	23.6	1.81	22.8	0.38	0.53	0.11	0.25	51	203
61	10.68	10.67	33.782	25.885	212.0	0.150	2.64	42.1	24.0	1.96	23.2	0.32	0.56	0.05	0.25	61	202
66	10.67	10.66	33.786	25.891	211.6	0.160	2.64	42.1	24.0	1.94	23.7	0.30	0.37	0.08	0.23	66	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 28.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.6 N	117 23.7 W	08/03/09	0925 UTC	601 m	130 05 kn			1016.6 mb	12.5 C	14.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.42	14.42	33.353	24.827	311.2	0.000	6.15	105.8	1.9	0.32	0.0	0.00	1.88	0.24	0.05	0	
2	14.42	14.42	33.353	24.827	311.3	0.006	6.15	105.8	1.9	0.32	0.0	0.00	1.88	0.24	0.05	2	220
10	14.25	14.25	33.349	24.860	308.4	0.031	6.20	106.3	2.0	0.34	0.0	0.00	0.43	0.28	0.08	10	219
20	13.52	13.52	33.328	24.995	295.8	0.061	6.25	105.5	3.3	0.40	0.4	0.05	0.54	1.36	0.38	20	218
30	12.13	12.13	33.348	25.283	268.6	0.089	5.07	83.1	9.4	0.94	8.1	0.09	0.08	0.80	0.25	30	217
40	11.38	11.38	33.443	25.496	248.5	0.115	4.35	70.2	13.5	1.27	13.9	0.02	0.00	0.19	0.18	40	216
50	10.81	10.80	33.536	25.671	232.1	0.139	3.98	63.5	16.7	1.48	17.4	0.01	0.01	0.06	0.11	50	215
60	10.63	10.62	33.596	25.749	224.9	0.162	3.80	60.4	18.2	1.56	19.0	0.01	0.21	0.05	0.09	60	214
70	10.54	10.53	33.712	25.856	215.0	0.184	3.31	52.6	20.6	1.71	20.9	0.00	0.16	0.01	0.07	70	213
75 ISL	10.54 D	10.53	33.782 D	25.910	209.9	0.195	3.08	48.9	22.1	1.79	21.9	0.00	0.11	0.01	0.07	75	
85	10.21	10.20	33.858	26.027	199.1	0.215	2.70	42.6	25.0	1.92	23.8	0.00	0.00	0.01	0.06	85	212
100 ISL	9.94 D	9.93	33.942 D	26.138	188.8	0.244	2.45	38.5	27.6	2.03	25.1	0.00	0.00	0.01	0.05	101	
101	9.93	9.92	33.938	26.137	188.9	0.246	2.44	38.3	27.7	2.03	25.2	0.00		0.01	0.05	102	211
119	9.80	9.79	34.008	26.214	182.0	0.280	2.18	34.1	30.1	2.13	26.3	0.00	0.00	0.00	0.05	120	210
125 ISL	9.74 D	9.73	34.052 D	26.258	177.9	0.290	2.03	31.7	31.1	2.18	26.8	0.00	0.00	0.00	0.05	126	
139	9.66	9.64	34.105	26.313	173.0	0.315	1.69	26.4	33.4	2.30	28.0	0.00	0.00	0.00	0.05	140	209
150 ISL	9.54 D	9.52	34.133 D	26.355	169.2	0.334	1.64	25.5	34.8	2.34	28.5	0.00	0.02	0.00	0.05	151	
169	9.30	9.28	34.157	26.413	164.0	0.365	1.56	24.2	36.8	2.39	29.2	0.00	0.04	0.00	0.06	170	208
200 ISL	9.05 D	9.03	34.204 D	26.491	157.2	0.415	1.34	20.7	40.0	2.48	30.4	0.00	0.00	0.00	0.05	201	
202	9.03	9.01	34.204	26.494	157.0	0.418	1.33	20.5	40.2	2.49	30.5	0.00	0.00	0.00	0.05	203	207
228	8.89	8.87	34.216	26.526	154.4	0.459	1.27	19.5	41.8	2.53	31.1	0.00	0.00			229	206
250 ISL	8.72 D	8.69	34.224 D	26.559	151.6	0.493	1.22	18.7	43.1	2.56	31.5	0.01	0.00			252	
267	8.65	8.62	34.228	26.573	150.5	0.518	1.18	18.0	44.3	2.58	31.8	0.01	0.00			269	205
300 ISL	8.30 D	8.27	34.250 D	26.645	144.2	0.567	1.04	15.8	48.4	2.67	32.8	0.00	0.00			302	
318	8.12	8.09	34.250	26.672	141.8	0.593	0.95	14.3	50.8	2.73	33.4	0.00	0.00			320	204
379	7.57	7.53	34.257	26.759	134.3	0.677	0.75	11.2	57.3	2.86	35.3	0.00	0.24			381	203
400 ISL	7.51 D	7.47	34.262 D	26.772	133.4	0.705	0.70	10.4	58.7	2.89	35.6	0.00	0.29			403	
438	7.29	7.25	34.275	26.813	129.9	0.755	0.61	9.0	61.6	2.94	36.3	0.00	0.37			441	202
500 ISL	6.66 D	6.61	34.279 D	26.903	121.7	0.833	0.44	6.4	70.4	3.07	38.5	0.00	0.51			503	
512	6.53	6.48	34.282	26.923	119.9	0.847	0.41	6.0	72.1	3.09	38.9	0.00	0.54			516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 30.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 50.8 N	117 32.1 W	08/03/09	1221 UTC	841 m	090 10 kn			1015.3 mb	11.9 C	14.2 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.53	14.53	33.338	24.792	314.5	0.000	6.14	105.8	2.3	0.34	0.0	0.00	0.15	0.26	0.04	0	
1	14.53	14.53	33.338	24.792	314.5	0.003	6.14	105.8	2.3	0.34	0.0	0.00	0.15	0.26	0.04	1	220
10	14.45	14.45	33.334	24.807	313.5	0.031	6.18	106.3	2.5	0.20	0.0	0.00	0.03	0.28	0.05	10	219
20	13.90	13.90	33.327	24.916	303.3	0.062	6.27	106.7	2.5	0.23	0.0	0.00	0.25	0.55	0.14	20	218
30	13.02	13.02	33.314	25.084	287.5	0.092	5.79	96.7	5.0	0.45	2.7	0.27	0.08	1.10	0.43	30	217
40	12.60	12.59	33.314	25.167	279.9	0.120	5.33	88.3	7.6	0.67	6.1	0.28	0.01	0.51	0.33	40	216
50	12.17	12.16	33.373	25.295	268.0	0.148	4.86	79.8	9.9	0.95	9.7	0.07	0.97	0.31	0.23	50	215
60	11.55	11.54	33.422	25.449	253.5	0.174	4.41	71.5	12.6	1.17	13.6	0.03	0.11	0.18	0.20	60	214
69	10.94	10.93	33.488 D	25.611	238.3	0.196										69	213
75 ISL	10.84 D	10.83	33.517 D	25.651	234.6	0.210	3.78	60.4	16.8	1.43	17.8	0.02	0.07	0.06	0.12	75	
85	10.58	10.57	33.682	25.826	218.2	0.233	3.41	54.2	19.4	1.57	19.8	0.01	0.04	0.02	0.07	85	212
100	10.37	10.36	33.797	25.952	206.5	0.264	2.97	47.0	22.6	1.75	22.2	0.00	0.10	0.01	0.05	100	211
120	10.11	10.10	33.946	26.113	191.6	0.304	2.25	35.4	27.5	2.01	25.1	0.00	0.03	0.01	0.05	121	210
125 ISL	9.99 D	9.98	34.008 D	26.182	185.2	0.314	2.13	33.5	28.6	2.06	25.7	0.00	0.04	0.01	0.05	126	
139	9.76	9.74	34.057	26.259	178.1	0.339	1.91	29.9	31.2	2.16	26.9	0.00	0.05	0.00	0.05	140	209
150 ISL	9.35 D	9.33	34.051 D	26.322	172.3	0.358	1.91	29.6	32.6	2.19	27.5	0.00	0.07	0.00	0.04	151	
169	9.26	9.24	34.131	26.399	165.3	0.390	1.92	29.7	34.9	2.22	28.2	0.00	0.09	0.00	0.03	170	208
200 ISL	9.09 D	9.07	34.225 D	26.501	156.3	0.440	1.35	20.8	39.9	2.44	30.0	0.00	0.10	0.00	0.03	201	
201	9.09	9.07	34.227	26.502	156.2	0.442	1.33	20.5	40.1	2.45	30.1	0.00	0.10	0.00	0.03	202	207
229	8.68	8.66	34.242	26.579	149.3	0.485	1.18	18.0	44.0	2.55	31.5	0.01	0.05			230	206
250 ISL	8.62 D	8.59	34.240 D	26.587	148.9	0.516	1.13	17.2	44.9	2.57	31.8	0.01	0.05			251	
269	8.55	8.52	34.245	26.602	147.8	0.544	1.10	16.8	45.5	2.59	31.9	0.00	0.05			271	205
300 ISL	8.19 D	8.16	34.239 D	26.653	143.4	0.589	0.98	14.8	48.9	2.67	32.9	0.00	0.11			302	
318	8.07	8.04	34.256	26.684	140.6	0.615	0.90	13.6	51.2	2.72	33.5	0.00	0.13			320	204
376	7.63	7.59	34.264	26.756	134.6	0.695	0.76	11.3	56.2	2.82	35.0	0.00	0.00			378	203
400 ISL	7.41 D	7.37	34.262 D	26.786	132.0	0.727	0.68	10.1	59.3	2.88	35.8	0.00	0.07			403	
437	6.99	6.95	34.267	26.849	126.3	0.774	0.56	8.2	64.6	2.97	37.0	0.00	0.19			440	202
500 ISL	6.50 D	6.45	34.290 D	26.933	118.8	0.852	0.41	6.0	72.8	3.10	39.0	0.00	0.04			503	
515	6.31	6.26	34.291	26.959	116.3	0.869	0.37	5.4	74.8	3.13	39.5	0.00	0.00			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 40.9 N	117 52.7 W	08/03/09	1834 UTC	607 m	150 06 kn	270 02 06	1	1017.2 mb	16.5 C	13.0 C	30m	3/8	AC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.83	14.83	33.350	24.738	319.8	0.000	5.97	103.5	3.2	0.33	0.0	0.00	0.00	0.17	0.04	0	
2 A	14.83	14.83	33.350	24.738	319.8	0.006	5.97	103.5	3.2	0.33	0.0	0.00	0.00	0.17	0.04	2	221
10 ISL	14.73 D	14.73	33.347 D	24.757	318.2	0.032	5.98	103.5	3.2	0.32	0.0	0.00	0.02	0.18	0.05	10	
13	14.71	14.71	33.350	24.764	317.7	0.041	5.99	103.6	3.2	0.32	0.0	0.00	0.03	0.19	0.05	13	220
20 ISL	14.68 D	14.68	33.347 D	24.768	317.4	0.064	6.02	104.1	3.2	0.33	0.0	0.00	0.00	0.25	0.07	20	
21 A	14.56	14.56	33.342	24.790	315.4	0.067	6.02	103.8	3.2	0.33	0.0	0.00	0.00	0.26	0.07	21	219
30 ISL	13.62 D	13.62	33.307 D	24.959	299.5	0.095	5.96	100.8	4.0	0.43	0.9	0.13	0.00	0.71	0.29	30	
32	13.54	13.54	33.306	24.974	298.1	0.100	5.95	100.5	4.3	0.46	1.2	0.16	0.00	0.80	0.34	32	218
42 A	13.01	13.00	33.279	25.060	290.2	0.130	5.72	95.5	5.5	0.59	3.3	0.16	0.19	0.57	0.29	42	217
50 ISL	12.54 D	12.53	33.289 D	25.159	280.9	0.153	5.43	89.8	7.1	0.74	5.9	0.10	0.22	0.42	0.25	50	
54	12.32	12.31	33.297	25.208	276.4	0.164	5.26	86.6	8.0	0.83	7.3	0.06	0.24	0.36	0.23	54	216
65 A	11.72	11.71	33.346	25.359	262.2	0.194	4.81	78.2	10.8	1.07	11.2	0.02	0.05	0.24	0.19	65	215
75 ISL	11.45 D	11.44	33.469 D	25.504	248.6	0.219	4.36	70.5	12.9	1.23	13.9	0.01	0.00	0.16	0.14	75	
76	11.46	11.45	33.435	25.476	251.3	0.222	4.31	69.7	13.1	1.25	14.2	0.01	0.00	0.15	0.14	76	214
85 A	11.44	11.43	33.597	25.606	239.2	0.244	3.61	58.4	16.2	1.47	17.2	0.01	0.01	0.08	0.13	85	213
97	11.15	11.14	33.678	25.722	228.4	0.272	3.29	52.9	18.6	1.62	19.4	0.01	0.00	0.03	0.06	97	212
100 ISL	11.08 D	11.07	33.688 D	25.742	226.6	0.279	3.23	51.9	19.1	1.64	19.8	0.01	0.00	0.03	0.06	100	
109	10.93	10.92	33.729	25.801	221.2	0.299	3.10	49.7	20.2	1.70	20.6	0.00	0.00	0.02	0.05	110	211
121 A	10.63	10.62	33.760	25.878	214.0	0.325	3.06	48.7	21.5	1.75	21.5	0.00	0.07	0.01	0.06	122	210
125 ISL	10.61 D	10.60	33.794 D	25.908	211.3	0.333	3.01	47.9	21.9	1.77	21.8	0.00	0.06	0.01	0.06	126	
141	10.48	10.46	33.835	25.963	206.4	0.367	2.74	43.5	23.7	1.88	23.0	0.00	0.00	0.01	0.04	142	209
150 ISL	10.22 D	10.20	33.914 D	26.070	196.4	0.385	2.54	40.1	25.6	1.97	24.1	0.00	0.00	0.01	0.04	151	
170	9.84	9.82	34.032	26.227	181.9	0.423	2.09	32.7	30.3	2.16	26.6	0.00	0.00	0.00	0.04	171	208
200	9.38	9.36	34.139	26.387	167.2	0.475	1.68	26.1	35.4	2.33	28.9	0.00	0.04	0.00	0.04	201	207
231	8.89	8.87	34.195	26.510	156.0	0.525	1.40	21.5	40.7	2.47	30.7	0.01	0.08			232	206
250 ISL	8.73 D	8.70	34.209 D	26.546	152.8	0.554	1.30	19.9	43.2	2.53	31.4	0.01	0.05			251	
270	8.46	8.43	34.221	26.597	148.2	0.585	1.21	18.4	45.6	2.59	32.0	0.00	0.03			272	205
300 ISL	8.17 D	8.14	34.248 D	26.663	142.4	0.628	1.01	15.3	49.8	2.70	33.2	0.00	0.14			302	
320	7.95	7.92	34.255	26.701	139.0	0.656	0.87	13.1	52.7	2.77	34.0	0.00	0.21			322	204
380	7.21	7.17	34.273	26.822	128.0	0.736	0.60	8.9	61.9	2.95	36.3	0.00	0.05			382	203
400 ISL	6.96 D	6.92	34.287 D	26.868	123.8	0.762	0.53	7.8	64.7	3.01	37.0	0.00	0.07			403	
440	6.62	6.58	34.299	26.924	118.9	0.810	0.41	6.0	69.9	3.10	38.3	0.00	0.12			443	202
500 ISL	6.24 D	6.20	34.322 D	26.992	112.9	0.880	0.31	4.5	77.3	3.17	39.9	0.00	0.06			503	
515	6.17	6.12	34.325	27.004	111.9	0.897	0.29	4.2	79.1	3.19	40.3	0.00	0.05			519	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 40.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 30.7 N	118 12.9 W	08/03/09	2200 UTC	1634 m	290 05 kn	250 02 04	1	1015.8 mb	15.0 C	11.2 C	18m	3/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.95	15.95	33.358	24.497	342.7	0.000	6.14	108.9	0.5	0.25	0.0	0.00	0.00	0.17	0.04	0	
2	15.95	15.95	33.358	24.497	342.7	0.007	6.14	108.9	0.5	0.25	0.0	0.00	0.00	0.17	0.04	2	221
10 ISL	14.25 D	14.25	33.349 D	24.860	308.4	0.033	6.16	105.6	0.5	0.26	0.0	0.00	0.00	0.24	0.02	10	
11	14.25	14.25	33.348	24.859	308.5	0.036	6.17	105.8	0.5	0.26	0.0	0.00	0.00	0.25	0.02	11	219
11	14.25	14.25	33.348	24.859	308.5	0.036										11	220
20	14.17	14.17	33.350	24.878	307.0	0.064	6.22	106.4	0.5	0.25	0.0	0.00	0.00	0.36	0.00	20	218
30 ISL	13.88 D	13.88	33.343 D	24.933	302.0	0.094	6.29	107.0	0.4	0.28	0.0	0.00	0.04	0.56	0.10	30	
31	13.90	13.90	33.342	24.928	302.5	0.097	6.29	107.0	0.4	0.28	0.0	0.00	0.04	0.58	0.11	31	217
40	13.31	13.30	33.327	25.037	292.3	0.124	6.19	104.0	1.9	0.46	0.8	0.10	0.18	2.42	0.43	40	216
50	12.82	12.81	33.350	25.152	281.6	0.153	5.79	96.3	6.3	0.65	3.4	0.31	0.38	0.88	0.31	50	215
61	12.10	12.09	33.348	25.289	268.8	0.183	5.21	85.4	9.6	0.96	8.5	0.19	0.02	0.26	0.20	61	214
71	11.15	11.14	33.427	25.526	246.4	0.209	4.45	71.5	14.2	1.33	14.5	0.02	0.03	0.12	0.14	71	213
75 ISL	11.15 D	11.14	33.422 D	25.522	246.9	0.219	4.32	69.4	14.8	1.36	15.4	0.02	0.03	0.10	0.13	75	
86	10.97	10.96	33.504	25.618	238.0	0.245	4.10	65.6	15.8	1.44	16.6	0.01	0.04	0.07	0.12	86	212
100 ISL	10.50 D	10.49	33.650 D	25.815	219.6	0.277	3.59	56.9	19.2	1.63	19.7	0.01	0.00	0.01	0.05	100	
101	10.50	10.49	33.657	25.820	219.1	0.279	3.55	56.3	19.5	1.64	19.9	0.01	0.00	0.01	0.05	101	211
121	9.97	9.96	33.855	26.066	196.1	0.321	2.78	43.6	25.5	1.93	23.9	0.00	0.00	0.01	0.05	122	210
125 ISL	9.98 D	9.97	33.884 D	26.087	194.2	0.329	2.78	43.7	26.2	1.94	24.3	0.00	0.00	0.01	0.05	126	
141	9.40	9.38	33.918	26.209	182.7	0.359	2.78	43.1	28.2	1.97	25.4	0.00	0.00	0.00	0.03	142	209
150 ISL	9.40 D	9.38	33.968 D	26.249	179.2	0.375	2.74	42.5	29.3	1.99	26.0	0.00	0.00	0.00	0.03	151	
171	9.01	8.99	33.989	26.328	172.0	0.412	2.55	39.2	32.1	2.07	27.3	0.00	0.00	0.00	0.03	172	208
200 ISL	8.74 D	8.72	34.080 D	26.442	161.6	0.460	2.15	32.9	36.7	2.23	29.2	0.00	0.00	0.00	0.03	201	
201	8.74	8.72	34.078	26.441	161.8	0.462	2.13	32.6	36.9	2.24	29.3	0.00	0.00	0.00	0.03	202	207
231	8.61	8.59	34.166	26.530	153.9	0.509	1.64	25.0	41.5	2.43	30.8	0.00	0.00			232	206
250 ISL	8.44 D	8.41	34.198 D	26.582	149.3	0.538	1.48	22.5	44.4	2.51	31.7	0.00	0.00			251	
271	8.04	8.01	34.175	26.624	145.4	0.569	1.37	20.6	47.5	2.58	32.7	0.00	0.00			273	205
300 ISL	7.65 D	7.62	34.178 D	26.684	140.0	0.611	1.17	17.5	51.1	2.68	33.8	0.00	0.00			302	
321	7.61	7.58	34.210	26.715	137.4	0.640	1.03	15.4	53.7	2.74	34.5	0.00	0.00			323	204
381	6.92	6.88	34.210	26.813	128.7	0.719	0.78	11.4	62.9	2.92	36.9	0.00	0.12			383	203
400 ISL	6.84 D	6.80	34.243 D	26.850	125.4	0.744	0.68	10.0	65.3	2.97	37.5	0.00	0.09			403	
441	6.57	6.53	34.268	26.906	120.5	0.794	0.48	7.0	70.2	3.07	38.5	0.00	0.00			444	202
500 ISL	6.18 D	6.14	34.305 D	26.986	113.4	0.863	0.34	4.9	77.1	3.17	39.9	0.00	0.00			503	
515	6.10	6.05	34.307	26.998	112.4	0.880	0.30	4.3	78.9	3.19	40.3	0.00	0.00			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 20.7 N	118 33.1 W	09/03/09	0205 UTC	1360 m	260 08 kn	280 01 06	1	1014.9 mb	14.0 C	11.1 C		3/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	13.86	13.86	33.311	24.912	303.2	0.000	6.35	107.9	2.3	0.34	0.0	0.02	0.50	1.00	0.25	0	
1	13.86	13.86	33.311	24.912	303.2	0.003	6.35	107.9	2.3	0.34	0.0	0.02	0.50	1.00	0.25	1	220
10	13.73	13.73	33.308	24.936	301.1	0.030	6.37	108.0	2.3	0.39	0.0	0.02	0.05	1.25	0.30	10	219
20	13.59	13.59	33.301	24.960	299.2	0.060	6.28	106.2	2.7	0.40	0.3	0.04	0.31	1.55	0.39	20	218
29	13.20	13.20	33.290	25.030	292.7	0.087	6.01	100.8	4.8	0.56	2.3	0.15	2.15	1.18	0.37	29	217
30 ISL	13.08 D	13.08	33.293 D	25.056	290.2	0.090	5.98	100.0	5.1	0.58	2.5	0.17	2.10	1.14	0.37	30	
40	12.68	12.67	33.299	25.140	282.5	0.118	5.65	93.7	7.3	0.74	4.8	0.28	0.85	0.79	0.33	40	216
50	12.26	12.25	33.305	25.225	274.6	0.146	5.38	88.4	8.6	0.87	7.0	0.22	0.01	0.38	0.26	50	215
60	11.70	11.69	33.330	25.350	262.9	0.173	5.00	81.2	10.6	1.07	10.2	0.05	0.64	0.28	0.22	60	214
70	11.16	11.15	33.354	25.467	252.0	0.199	4.69	75.3	12.6	1.23	12.8	0.03	0.00	0.22	0.19	70	213
75 ISL	11.06 D	11.05	33.389 D	25.513	247.8	0.211	4.50	72.1	13.7	1.30	14.0	0.03	0.04	0.18	0.17	75	
84	10.85	10.84	33.484	25.624	237.4	0.233	4.12	65.8	15.9	1.44	16.3	0.02	0.10	0.10	0.13	84	212
100 ISL	10.24 D	10.23	33.716 D	25.911	210.4	0.269	3.36	53.0	21.0	1.72	20.6	0.01	0.19	0.02	0.07	100	
101	10.27	10.26	33.702	25.895	211.9	0.271	3.32	52.4	21.3	1.74	20.8	0.01	0.19	0.02	0.07	101	211
120	9.91	9.90	33.829	26.055	197.0	0.310	2.87	45.0	25.1	1.94	23.6	0.01	0.30	0.01	0.08	121	210
125 ISL	9.70 D	9.69	33.857 D	26.112	191.7	0.320	2.76	43.1	26.2	1.98	24.2	0.01	0.22	0.01	0.08	126	
139	9.55	9.53	33.919	26.186	185.0	0.346	2.51	39.0	29.0	2.08	25.6	0.01	0.00	0.00	0.06	140	209
150 ISL	9.53 D	9.51	33.929 D	26.197	184.1	0.366	2.38	37.0	30.0	2.12	26.1	0.01	0.13	0.00	0.06	151	
167	9.49	9.47	33.995	26.255	179.0	0.397	2.23	34.7	31.2	2.15	26.5	0.01	0.40	0.00	0.06	168	208
200 ISL	8.89 D	8.87	34.066 D	26.408	165.0	0.454	1.95	29.9	36.0	2.28	28.5	0.00	0.04	0.00	0.05	201	
203	8.85	8.83	34.073	26.420	163.9	0.459	1.92	29.4	36.5	2.29	28.7	0.00	0.00	0.00	0.05	204	207
230	8.89	8.87	34.183	26.500	156.9	0.502	1.45	22.3	40.1	2.46	29.7	0.00	0.00			231	206
250 ISL	8.64 D	8.61	34.201 D	26.553	152.1	0.533	1.24	18.9	43.4	2.55	30.6	0.00	0.07			251	
270	8.40	8.37	34.227	26.611	146.9	0.563	1.12	17.0	46.5	2.62	31.4	0.00	0.15			272	205
300 ISL	8.11 D	8.08	34.234 D	26.661	142.6	0.606	1.03	15.5	49.5	2.68	32.3	0.00	0.19			302	
319	7.95	7.92	34.224	26.677	141.3	0.633	1.00	15.0	51.0	2.70	32.8	0.00	0.20			321	204
379	7.64	7.60	34.251	26.744	135.8	0.717	0.80	11.9	55.4	2.82	34.2	0.00	0.20			381	203
400 ISL	7.27 D	7.23	34.257 D	26.802	130.4	0.744	0.71	10.5	59.0	2.89	35.1	0.00	0.13			403	
437	6.87	6.83	34.267	26.865	124.6	0.792	0.55	8.1	66.0	3.00	36.7	0.00	0.04			440	202
500 ISL	6.36 D	6.31	34.306 D	26.964	115.7	0.867	0.37	5.4	74.2	3.11	38.4	0.00	0.27			503	
515	6.27	6.22	34.294	26.966	115.6	0.885	0.33	4.8	76.1	3.14	38.8	0.00	0.33			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 50.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 10.9 N	118 53.6 W	09/03/09	0607 UTC	1467 m	300 17 kn			1016.2 mb	14.5 C	11.9 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.76	14.76	33.372	24.770	316.7	0.000	5.99	103.8	2.8	0.33	0.0	0.00	0.21	0.34	0.07	0	
2	14.76	14.76	33.372	24.770	316.8	0.006	5.99	103.8	2.8	0.33	0.0	0.00	0.21	0.34	0.07	2	220
10	14.76	14.76	33.372	24.770	317.0	0.032	5.93	102.7	2.7	0.31	0.0	0.00	0.04	0.34	0.07	10	219
20	14.75	14.75	33.375	24.775	316.8	0.063	5.94	102.9	2.7	0.33	0.0	0.00	0.28	0.36	0.08	20	218
30	14.64	14.64	33.363	24.789	315.7	0.095	5.94	102.6	2.6	0.31	0.0	0.00	0.16	0.49	0.11	30	217
40	14.42	14.41	33.344	24.822	312.9	0.126	6.00	103.2	2.5	0.34	0.0	0.00	0.12	0.74	0.18	40	216
50	14.10	14.09	33.321	24.871	308.5	0.158	6.04	103.2	2.4	0.37	0.2	0.03	0.42	1.04	0.29	50	215
60	13.34	13.33	33.285	24.999	296.5	0.188	5.84	98.2	3.8	0.51	2.1	0.19	0.21	0.97	0.29	60	214
69	12.47	12.46	33.295	25.178	279.6	0.214	5.41	89.3	7.1	0.79	6.3	0.11	1.89	0.33	0.18	69	213
75 ISL	11.93 D	11.92	33.383 D	25.349	263.5	0.230	5.01	81.8	8.7	0.95	8.8	0.07	1.39	0.27	0.18	75	
84	11.75	11.74	33.418	25.410	257.9	0.253	4.42	71.9	11.0	1.17	12.2	0.02	0.03	0.18	0.17	84	212
100	11.17	11.16	33.607	25.663	234.1	0.293	3.73	60.0	16.2	1.47	17.3	0.00	0.03	0.04	0.06	100	211
120	10.69	10.68	33.727	25.842	217.5	0.338	3.28	52.3	19.7	1.70	20.2	0.00	0.10	0.01	0.04	121	210
125 ISL	10.66 D	10.65	33.744 D	25.861	215.8	0.349	3.15	50.2	20.7	1.74	20.9	0.00	0.11	0.01	0.04	126	
139	10.31	10.29	33.861	26.013	201.6	0.378	2.80	44.3	23.7	1.85	22.9	0.00	0.12	0.01	0.03	140	209
150 ISL	9.84 D	9.82	33.910 D	26.131	190.5	0.400	2.57	40.2	25.9	1.94	24.2	0.00	0.08	0.01	0.03	151	
169	9.73	9.71	34.024	26.239	180.7	0.435	2.29	35.8	29.4	2.07	26.0	0.00	0.01	0.00	0.04	170	208
200 ISL	9.10 D	9.08	34.072 D	26.379	167.8	0.489	2.19	33.8	33.3	2.17	27.9	0.00	0.02	0.00	0.02	201	
201	9.06	9.04	34.064	26.379	167.8	0.491	2.19	33.7	33.4	2.17	28.0	0.00	0.02	0.00	0.02	202	207
229	8.76	8.74	34.109	26.462	160.3	0.536	1.92	29.4	37.4	2.30	29.7	0.00	0.16			230	206
250 ISL	8.24 D	8.21	34.089 D	26.527	154.4	0.569	1.80	27.2	41.1	2.38	31.1	0.00	0.13			251	
269	7.98	7.95	34.107	26.580	149.5	0.598	1.67	25.1	44.5	2.46	32.3	0.00	0.11			271	205
300 ISL	8.17 D	8.14	34.247 D	26.662	142.5	0.644	1.24	18.7	49.3	2.63	33.5	0.00	0.09			302	
320	7.78	7.75	34.226	26.703	138.7	0.672	0.97	14.5	52.2	2.73	34.2	0.00	0.07			322	204
381	6.98	6.94	34.196	26.793	130.6	0.754	0.84	12.3	60.4	2.85	36.8	0.00	0.36			383	203
400 ISL	6.78 D	6.74	34.219 D	26.839	126.4	0.778	0.73	10.7	62.7	2.91	37.2	0.00	0.32			403	
439	6.80	6.76	34.275	26.881	123.1	0.827	0.49	7.2	67.2	3.02	37.9	0.00	0.18			442	202
500 ISL	6.31 D	6.26	34.296 D	26.963	115.7	0.900	0.37	5.4	73.6	3.11	39.3	0.00	0.03			503	
511	6.35	6.30	34.304	26.964	115.8	0.912	0.35	5.1	74.7	3.13	39.6	0.00	0.00			514	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 0.9 N	119 13.9 W	09/03/09	1022 UTC	1583 m	300 16 kn			1016.1 mb	13.8 C	11.8 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.89	14.89	33.409	24.770	316.7	0.000	5.91	102.7	2.9	0.31	0.1	0.01	0.05	0.28	0.08	0	
3	14.89	14.89	33.409	24.770	316.7	0.010	5.91	102.7	2.9	0.31	0.1	0.01	0.05	0.28	0.08	3	222
10	14.89	14.89	33.409	24.770	316.9	0.032	5.90	102.5	2.9	0.31	0.1	0.00	0.04	0.29	0.08	10	220
20	14.89	14.89	33.413	24.774	316.9	0.063	5.91	102.7	2.9	0.29	0.0	0.00	0.02	0.27	0.08	20	219
30	14.89	14.89	33.409	24.771	317.5	0.095	5.90	102.5	3.0	0.30	0.0	0.00	0.00	0.29	0.08	30	218
40	14.14	14.13	33.335	24.873	308.0	0.126	5.89	100.7	3.0	0.35	0.1	0.02	0.05	0.83	0.40	40	217
46	13.41	13.40	33.263	24.968	299.1	0.145	5.73	96.5	4.0	0.49	1.6	0.13	0.04	0.61	0.37	46	216
50	13.03	13.02	33.215	25.006	295.5	0.156	5.67	94.7	4.8	0.58	3.1	0.16	0.00	0.43	0.33	50	215
60	12.04	12.03	33.196	25.183	278.9	0.185	5.31	86.8	7.3	0.83	7.4	0.04	0.00	0.23	0.26	60	214
70	11.68	11.67	33.310	25.339	264.3	0.212	4.80	77.9	10.2	1.05	11.0	0.02	0.03	0.15	0.19	70	213
75 ISL	11.47 D	11.46	33.399 D	25.446	254.1	0.225	4.67	75.5	11.2	1.12	12.3	0.01	0.02	0.12	0.15	75	
84	11.08	11.07	33.408	25.524	246.9	0.248	4.47	71.7	13.0	1.23	14.4	0.01	0.00	0.08	0.09	84	212
100 ISL	10.47 D	10.46	33.631 D	25.805	220.5	0.285	3.77	59.7	18.5	1.54	19.4	0.01	0.01	0.02	0.04	100	
101	10.48	10.47	33.628	25.801	220.9	0.287	3.73	59.1	18.9	1.56	19.7	0.01	0.01	0.02	0.04	101	211
120	9.96	9.95	33.768	25.999	202.4	0.328	3.29	51.6	23.0	1.73	22.5	0.01	0.02	0.00	0.03	121	210
125 ISL	9.87 D	9.86	33.789 D	26.031	199.5	0.338	3.23	50.6	23.7	1.75	22.9	0.01	0.02	0.00	0.03	126	
139	9.61	9.59	33.831	26.107	192.5	0.365	3.11	48.4	25.4	1.80	23.9	0.01	0.02	0.00	0.03	140	209
150 ISL	9.41 D	9.39	33.896 D	26.191	184.7	0.386	2.96	45.9	27.4	1.86	24.9	0.01	0.01	0.00	0.03	151	
169	9.03	9.01	33.968	26.308	173.8	0.420	2.66	40.9	31.3	1.99	26.8	0.01	0.00	0.00	0.02	170	208
200 ISL	8.68 D	8.66	34.059 D	26.435	162.3	0.472	2.21	33.7	36.8	2.17	29.3	0.01	0.09	0.00	0.03	201	
202	8.60	8.58	34.060	26.448	161.0	0.475	2.18	33.2	37.1	2.18	29.4	0.01	0.09	0.00	0.03	203	207
229	8.55	8.53	34.152	26.529	154.0	0.518	1.66	25.3	41.8	2.37	30.9	0.01	0.04			230	206
250 ISL	8.34 D	8.31	34.154 D	26.563	151.0	0.550	1.52	23.0	44.5	2.45	31.8	0.01	0.05			251	
268	8.16	8.13	34.168	26.601	147.6	0.577	1.45	21.9	46.6	2.51	32.4	0.01	0.06			270	205
300 ISL	8.13 D	8.10	34.258 D	26.677	141.1	0.623	1.10	16.6	50.5	2.64	33.4	0.01	0.10			302	
318	7.93	7.90	34.252	26.702	138.9	0.648	0.90	13.5	52.7	2.71	33.9	0.01	0.11			320	204
377	7.39	7.35	34.281	26.803	129.9	0.727	0.60	8.9	60.9	2.89	36.0	0.00	0.06			379	203
400 ISL	7.21 D	7.17	34.288 D	26.834	127.2	0.757	0.53	7.8	63.5	2.93	36.7	0.00	0.06			403	
437	6.92	6.88	34.296	26.881	123.1	0.803	0.44	6.5	67.5	2.99	37.7	0.00	0.07			440	202
500 ISL	6.47 D	6.42	34.314 D	26.956	116.6	0.879	0.33	4.8	74.7	3.11	39.5	0.00	0.01			503	
514	6.36	6.31	34.317	26.973	115.1	0.895	0.30	4.3	76.3	3.14	39.9	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 60.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 51.0 N	119 34.2 W	09/03/09	1432 UTC	1952 m	320 22 kn	320 05 06	2	1017.1 mb	13.5 C	10.0 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.47	14.47	33.296	24.773	316.4	0.000	5.98	102.9	3.2	0.35	0.1	0.00	0.04	0.25	0.06	0	
2	14.47	14.47	33.296	24.773	316.5	0.006	5.98	102.9	3.2	0.35	0.1	0.00	0.04	0.25	0.06	2	220
10	14.47	14.47	33.296	24.773	316.7	0.032	5.98	102.9	3.0	0.35	0.0	0.00	0.04	0.25	0.06	10	219
19	14.46	14.46	33.294	24.774	316.9	0.060	6.00	103.2	3.0	0.34	0.0	0.00	0.05	0.26	0.06	19	218
20 ISL	14.46 D	14.46	33.292 D	24.772	317.0	0.063	6.00	103.2	3.0	0.34	0.0	0.00	0.07	0.26	0.06	20	
30	14.47	14.47	33.296	24.774	317.2	0.095	5.98	102.9	3.0	0.31	0.0	0.00	0.22	0.26	0.07	30	217
39	13.48	13.47	33.204	24.908	304.6	0.123	6.05	102.0	3.7	0.42	0.9	0.09	0.03	0.63	0.26	39	216
49	12.68	12.67	33.167	25.038	292.5	0.153	5.87	97.3	4.9	0.57	3.1	0.26	0.02	0.55	0.31	49	215
50 ISL	12.54 D	12.53	33.157 D	25.057	290.6	0.156	5.85	96.6	5.1	0.59	3.4	0.25	0.02	0.53	0.31	50	
59	11.96	11.95	33.154	25.165	280.5	0.181	5.62	91.7	6.6	0.75	6.2	0.10	0.06	0.34	0.25	59	214
69	11.56	11.55	33.150	25.236	274.0	0.209	5.43	87.8	7.7	0.86	8.0	0.04	0.12	0.22	0.16	69	213
75 ISL	11.34 D	11.33	33.199 D	25.314	266.6	0.225	5.25	84.6	8.9	0.95	9.6	0.02	0.09	0.16	0.12	75	
84	10.94	10.93	33.270	25.441	254.7	0.249	4.92	78.6	11.3	1.11	12.3	0.01	0.03	0.10	0.08	84	212
100 ISL	10.44 D	10.43	33.527 D	25.729	227.7	0.287	4.15	65.7	16.6	1.42	17.4	0.01	0.00	0.03	0.04	100	
101	10.45	10.44	33.518	25.721	228.5	0.290	4.10	64.9	16.9	1.44	17.7	0.01	0.00	0.03	0.04	101	211
120	9.99	9.98	33.731	25.965	205.6	0.331	3.42	53.7	21.8	1.68	21.8	0.00	0.17	0.01	0.03	121	210
125 ISL	9.84 D	9.83	33.794 D	26.040	198.6	0.341	3.28	51.3	23.1	1.73	22.6	0.00	0.30	0.01	0.03	126	
139	9.51	9.49	33.875	26.158	187.6	0.368	2.94	45.7	26.6	1.86	24.6	0.00	0.61	0.00	0.03	140	209
150 ISL	9.43 D	9.41	33.961 D	26.238	180.2	0.388	2.76	42.8	28.7	1.93	25.7	0.00	0.44	0.00	0.03	151	
169	9.06	9.04	33.998	26.327	172.1	0.422	2.53	38.9	31.7	2.03	27.0	0.00	0.00	0.00	0.03	170	208
200 ISL	8.71 D	8.69	34.067 D	26.437	162.2	0.474	2.19	33.5	36.2	2.19	28.9	0.00	0.00	0.00	0.02	201	
201	8.72	8.70	34.067	26.435	162.3	0.475	2.18	33.3	36.3	2.19	29.0	0.00	0.00	0.00	0.02	202	207
229	8.45	8.43	34.104	26.506	156.0	0.520	1.91	29.0	40.0	2.30	30.6	0.00	0.02			230	206
250 ISL	8.03 D	8.00	34.093 D	26.561	151.0	0.552	1.83	27.5	43.2	2.36	31.8	0.00	0.02			251	
268	7.90	7.87	34.106	26.591	148.5	0.579	1.73	26.0	45.9	2.42	32.6	0.00	0.02			270	205
300 ISL	8.34 D	8.31	34.276 D	26.659	142.9	0.626	1.12	17.0	49.4	2.64	33.3	0.00	0.04			302	
318	8.15	8.12	34.289	26.698	139.4	0.651	0.80	12.1	51.4	2.75	33.6	0.00	0.05			320	204
378	6.92	6.88	34.166	26.778	131.9	0.732	0.99	14.5	60.8	2.79	36.8	0.00	0.09			380	203
400 ISL	6.64 D	6.60	34.175 D	26.823	127.8	0.761	0.89	13.0	64.1	2.85	37.6	0.00	0.08			403	
437	6.44	6.40	34.209	26.876	123.1	0.807	0.66	9.6	69.3	2.97	38.6	0.00				440	202
500 ISL	6.15 D	6.11	34.287 D	26.976	114.3	0.882	0.38	5.5	77.4	3.12	40.1	0.00	0.01			503	
514	6.06	6.01	34.294	26.993	112.8	0.898	0.32	4.6	79.2	3.15	40.4	0.00	0.00			517	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 31.8 N	120 12.9 W	09/03/09	2044 UTC	3943 m	320 20 kn	320 06 06	2	1019.9 mb	14.0 C	10.4 C	16m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.52	14.52	33.266	24.739	319.6	0.000	6.01	103.5	3.1	0.34	0.0	0.00	0.04	0.29	0.06	0	
2 A	14.52	14.52	33.266	24.739	319.7	0.006	6.01	103.5	3.1	0.34	0.0	0.00	0.04	0.29	0.06	2	221
10 ISL	14.51 D	14.51	33.264 D	24.740	319.8	0.032	6.01	103.5	3.2	0.34	0.0	0.00	0.04	0.29	0.06	10	
12 A	14.51	14.51	33.269	24.744	319.5	0.038	6.01	103.5	3.2	0.34	0.0	0.00	0.04	0.29	0.06	12	220
20 ISL	14.49 D	14.49	33.263 D	24.744	319.8	0.064	6.01	103.5	3.3	0.35	0.0	0.00	0.05	0.30	0.07	20	
23 A	14.49	14.49	33.264	24.745	319.8	0.074	6.01	103.5	3.3	0.35	0.0	0.00	0.05	0.30	0.07	23	219
29	14.48	14.48	33.263	24.746	319.8	0.093	6.02	103.6	3.2	0.34	0.0	0.00	0.03	0.31	0.07	29	218
30 ISL	14.48 D	14.48	33.261 D	24.745	320.0	0.096	6.02	103.6	3.2	0.34	0.0	0.00	0.02	0.31	0.07	30	
36 A	14.47	14.46	33.262	24.748	319.9	0.115	6.02	103.6	3.3	0.33	0.0	0.00	0.00	0.33	0.08	36	217
45 A	13.87	13.86	33.231	24.849	310.4	0.143	6.15	104.5	3.5	0.36	0.3	0.03	0.06	0.73	0.22	45	216
50 ISL	12.78 D	12.77	33.237 D	25.072	289.2	0.158	5.99	99.5	4.6	0.50	2.3	0.17	0.05	0.68	0.27	50	
55	12.43	12.42	33.221	25.128	284.0	0.173	5.79	95.5	5.9	0.66	4.6	0.29	0.04	0.55	0.29	55	215
65 A	11.98	11.97	33.223	25.215	275.9	0.201	5.60	91.5	7.2	0.78	6.9	0.12	0.05	0.34	0.19	65	214
75	11.55	11.54	33.221	25.293	268.7	0.228	5.37	86.9	8.5	0.91	8.9	0.04	0.04	0.20	0.14	75	213
86	10.73	10.72	33.282	25.488	250.3	0.257	4.84	77.0	12.2	1.19	13.6	0.02	0.07	0.11	0.08	86	212
100 ISL	10.23 D	10.22	33.482 D	25.730	227.5	0.290	4.36	68.7	16.0	1.39	17.3	0.01	0.05	0.05	0.05	100	
101	10.26	10.25	33.471	25.717	228.8	0.292	4.33	68.2	16.3	1.40	17.5	0.01	0.05	0.05	0.05	101	211
121	9.90	9.89	33.637	25.907	211.1	0.336	3.70	57.9	21.3	1.69	21.8	0.00	0.00	0.02	0.04	122	210
125 ISL	9.75 D	9.74	33.700 D	25.981	204.1	0.345	3.60	56.2	22.2	1.73	22.4	0.00	0.00	0.02	0.04	126	
142	9.51	9.49	33.780	26.084	194.7	0.379	3.22	50.0	25.7	1.87	24.7	0.00	0.00	0.01	0.04	143	209
150 ISL	9.26 D	9.24	33.841 D	26.172	186.4	0.394	3.07	47.4	27.4	1.91	25.6	0.00	0.00	0.01	0.04	151	
170	8.91	8.89	33.963	26.324	172.4	0.430	2.74	42.0	31.4	2.01	27.4	0.00	0.00	0.00	0.03	171	208
200 ISL	8.68 D	8.66	34.054 D	26.431	162.7	0.480	2.23	34.0	36.0	2.20	29.5	0.00	0.11	0.00	0.03	201	
201	8.69	8.67	34.052	26.428	163.0	0.482	2.21	33.8	36.2	2.21	29.6	0.00	0.11	0.00	0.03	202	207
230	8.54	8.52	34.164	26.540	152.9	0.527	1.55	23.6	42.2	2.45	31.7	0.00	0.00			231	206
250 ISL	8.13 D	8.10	34.169 D	26.606	146.8	0.557	1.45	21.9	45.9	2.54	32.9	0.00	0.02			251	
271	7.85	7.82	34.162	26.642	143.6	0.588	1.34	20.1	49.4	2.60	34.0	0.00	0.06			273	205
300 ISL	7.51 D	7.48	34.156 D	26.687	139.7	0.629	1.22	18.1	53.5	2.68	35.3	0.00	0.04			302	
321	7.22	7.19	34.152	26.725	136.2	0.658	1.14	16.8	56.4	2.74	36.2	0.00	0.02			323	204
381	6.60	6.57	34.177	26.829	126.8	0.737	0.80	11.6	65.6	2.92	38.6	0.00	0.12			383	203
400 ISL	6.42 D	6.38	34.188 D	26.862	123.9	0.761	0.70	10.2	68.5	2.98	39.3	0.00	0.12			403	
442	6.20	6.16	34.235	26.928	118.0	0.811	0.50	7.2	74.5	3.09	40.5	0.00				445	202
500 ISL	5.87 D	5.83	34.280 D	27.006	111.2	0.878	0.33	4.7	81.1	3.20	41.7	0.00	0.12			503	
513	5.86	5.82	34.293	27.017	110.2	0.892	0.29	4.2	82.6	3.22	42.0	0.00	0.12			516	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 10.6 N	120 55.3 W	10/03/09	0422 UTC	4085 m	320 25 kn			1021.1 mb	13.2 C	9.0 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.43	14.43	33.314	24.795	314.3	0.000	6.02	103.5	3.4	0.34	0.0	0.00	0.21	0.29	0.06	0	
2	14.43	14.43	33.314	24.795	314.3	0.006	6.02	103.5	3.4	0.34	0.0	0.00	0.21	0.29	0.06	2	220
10 ISL	14.44 D	14.44	33.309 D	24.789	315.1	0.031	6.00	103.2	3.4	0.33	0.0	0.00	0.25	0.27	0.08	10	
11	14.44	14.44	33.311	24.791	315.0	0.035	6.00	103.2	3.4	0.33	0.0	0.00	0.25	0.27	0.08	11	219
20 ISL	14.44 D	14.44	33.308 D	24.789	315.4	0.063	6.01	103.4	3.4	0.33	0.0	0.00	0.22	0.29	0.06	20	
21	14.44	14.44	33.311	24.791	315.3	0.066	6.01	103.4	3.4	0.33	0.0	0.00	0.22	0.29	0.06	21	218
30 ISL	14.42 D	14.42	33.307 D	24.793	315.4	0.095	6.00	103.2	3.2	0.33	0.0	0.00	0.09	0.29	0.06	30	
31	14.43	14.43	33.308	24.791	315.5	0.098	6.00	103.2	3.2	0.33	0.0	0.00	0.09	0.29	0.06	31	217
40	13.57	13.56	33.218	24.900	305.4	0.126	6.16	104.0	3.6	0.39	0.3	0.04	0.39	0.53	0.18	40	216
50 ISL	13.06 D	13.05	33.200 D	24.989	297.2	0.156	5.96	99.6	4.3	0.50	1.5	0.18	0.32	0.48	0.23	50	
51	13.07	13.06	33.201	24.988	297.3	0.159	5.93	99.1	4.4	0.51	1.6	0.19	0.31	0.47	0.23	51	215
60	12.89	12.88	33.202	25.024	294.1	0.185	5.84	97.2	5.0	0.56	2.4	0.24	0.26	0.43	0.23	60	214
70	12.13	12.12	33.186	25.158	281.5	0.214	5.63	92.2	6.5	0.73	5.2	0.16	0.37	0.27	0.26	70	213
75 ISL	11.93 D	11.92	33.189 D	25.198	277.8	0.228	5.61	91.5	7.1	0.80	6.3	0.11	0.25	0.23	0.22	75	
85	11.34	11.33	33.202	25.317	266.6	0.255	5.49	88.4	8.8	0.94	8.5	0.03	0.00	0.17	0.12	85	212
100 ISL	10.47 D	10.46	33.342 D	25.580	241.8	0.293	4.70	74.3	13.6	1.24	13.7	0.02	0.29	0.07	0.06	100	
101	10.46	10.45	33.355	25.592	240.7	0.296	4.64	73.4	14.0	1.26	14.1	0.02	0.31	0.06	0.06	101	211
120	10.02	10.01	33.633	25.884	213.3	0.339	3.83	60.1	19.8	1.56	19.0	0.01	0.20	0.02	0.04	121	210
125 ISL	9.82 D	9.81	33.729 D	25.992	203.1	0.349	3.62	56.6	21.5	1.64	20.2	0.01	0.17	0.02	0.04	126	
139	9.49	9.47	33.833	26.128	190.4	0.377	3.12	48.4	25.7	1.83	23.2	0.00	0.09	0.01	0.03	140	209
150 ISL	9.28 D	9.26	33.901 D	26.216	182.3	0.397	2.91	45.0	27.6	1.90	24.4	0.00	0.08	0.01	0.03	151	
169	9.08	9.06	33.955	26.290	175.5	0.431	2.68	41.3	30.3	1.98	25.7	0.01	0.06	0.00	0.04	170	208
200 ISL	8.59 D	8.57	34.069 D	26.457	160.2	0.483	2.15	32.8	36.9	2.20	28.4	0.00	0.08	0.00	0.03	201	
202	8.61	8.59	34.070	26.455	160.5	0.487	2.12	32.3	37.3	2.21	28.6	0.00	0.08	0.00	0.03	203	207
229	8.20	8.18	34.108	26.547	152.0	0.529	1.78	26.9	42.7	2.37	30.6	0.00	0.14			230	206
250 ISL	8.29 D	8.26	34.175 D	26.587	148.7	0.560	1.64	24.8	44.9	2.43	31.4	0.00	0.11			251	
270	7.89	7.86	34.129	26.610	146.6	0.590	1.54	23.1	46.7	2.48	32.0	0.00	0.08			272	205
300 ISL	7.67 D	7.64	34.194 D	26.694	139.1	0.633	1.26	18.8	52.0	2.62	33.5	0.00	0.12			302	
316	7.36	7.33	34.167	26.717	137.0	0.655	1.11	16.5	55.0	2.69	34.3	0.00	0.14			318	204
378	6.87	6.83	34.209	26.818	128.0	0.737	0.76	11.1	63.4	2.87	36.4	0.00	0.09			380	203
400 ISL	6.58 D	6.54	34.209 D	26.858	124.4	0.765	0.68	9.9	66.2	2.92	37.0	0.00	0.06			403	
441	6.39	6.35	34.232	26.901	120.8	0.815	0.55	8.0	71.3	3.00	38.1	0.00	0.00			444	202
500 ISL	6.04 D	6.00	34.286 D	26.989	112.9	0.884	0.35	5.0	78.5	3.12	39.4	0.00	0.00			503	
516	5.96	5.91	34.307	27.016	110.5	0.902	0.30	4.3	80.5	3.15	39.7	0.00	0.00			519	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 51.0 N	121 35.2 W	10/03/09	1026 UTC	4145 m	320 22 kn			1021.2 mb	12.1 C	8.3 C		

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.61	14.61	33.240	24.700	323.3	0.000	5.90	101.8	2.6	0.35	0.1	0.00	0.08	0.18	0.07	0	
3	14.61	14.61	33.240	24.700	323.4	0.010	5.90	101.8	2.6	0.35	0.1	0.00	0.08	0.18	0.07	3	220
10	14.62	14.62	33.240	24.698	323.8	0.032	5.90	101.8	2.5	0.36	0.0	0.00	0.09	0.22	0.03	10	219
20 ISL	14.63 D	14.63	33.239 D	24.695	324.4	0.065	5.91	102.0	2.6	0.35	0.0	0.00	0.09	0.20	0.05	20	
25	14.63	14.63	33.240	24.696	324.4	0.081	5.91	102.0	2.7	0.34	0.0	0.00	0.09	0.18	0.06	25	218
30 ISL	14.62 D	14.62	33.238 D	24.697	324.5	0.097	5.91	102.0	2.7	0.34	0.0	0.00	0.06	0.18	0.06	30	
40	14.62	14.61	33.240	24.699	324.6	0.130	5.91	102.0	2.6	0.35	0.0	0.00	0.00	0.19	0.06	40	217
50	14.36	14.35	33.218	24.737	321.2	0.162	5.97	102.5	2.7	0.36	0.0	0.00	0.02	0.39	0.08	50	216
61	14.15	14.14	33.211	24.776	317.8	0.197	5.95	101.7	2.8	0.33	0.0	0.00	0.11	0.38	0.15	61	215
75	14.03	14.02	33.224	24.812	314.8	0.241	5.82	99.2	2.8	0.39	0.1	0.08	0.28	0.28	0.22	75	214
88	13.17	13.16	33.153	24.932	303.7	0.282	5.62	94.1	4.0	0.56	2.5	0.14	0.00	0.19	0.15	88	213
100 ISL	11.96 D	11.95	33.109 D	25.131	284.8	0.317	5.44	88.7	6.2	0.76	6.0	0.03	0.02	0.13	0.08	100	
101	11.98	11.97	33.107	25.126	285.3	0.320	5.42	88.4	6.4	0.78	6.3	0.02	0.02	0.13	0.08	101	212
112	11.40	11.39	33.173	25.284	270.4	0.350	5.17	83.4	8.9	0.95	9.5	0.01	0.03	0.06	0.06	112	211
124	10.89	10.88	33.326	25.495	250.6	0.382	4.76	76.0	12.4	1.17	13.6	0.00	0.04	0.03	0.04	125	210
125 ISL	10.78 D	10.77	33.372 D	25.550	245.3	0.384	4.73	75.3	12.7	1.18	13.9	0.00	0.04	0.03	0.04	126	
140	10.37	10.35	33.460	25.690	232.3	0.420	4.35	68.7	16.2	1.37	17.5	0.00	0.04	0.02	0.04	141	209
150 ISL	10.13 D	10.11	33.525 D	25.782	223.7	0.443	4.11	64.6	18.1	1.47	19.3	0.00	0.04	0.02	0.04	151	
163	9.93	9.91	33.654	25.916	211.2	0.471	3.80	59.5	20.6	1.59	21.4	0.00	0.03	0.01	0.03	164	208
198	9.11	9.09	33.903	26.245	180.4	0.539	2.96	45.6	29.1	1.91	27.0	0.00	0.04	0.00	0.03	199	207
200 ISL	9.06 D	9.04	33.919 D	26.266	178.5	0.543	2.94	45.2	29.4	1.92	27.2	0.00	0.04			201	
228	8.64	8.62	33.992	26.389	167.2	0.591	2.74	41.8	33.5	2.01	28.9	0.00	0.08			229	206
250 ISL	8.19 D	8.16	34.016 D	26.477	159.1	0.627	2.43	36.7	38.3	2.16	31.2	0.00	0.08			251	
269	7.90	7.87	34.051	26.547	152.5	0.657	2.14	32.1	42.6	2.29	33.2	0.00	0.08			270	205
300 ISL	7.62 D	7.59	34.081 D	26.612	146.8	0.703	1.80	26.8	47.7	2.42	35.1	0.00	0.09			302	
317	7.46	7.43	34.098	26.649	143.5	0.728	1.63	24.2	50.4	2.49	36.0	0.00	0.10			319	204
377	6.69	6.66	34.144	26.791	130.4	0.810	0.99	14.4	63.7	2.84	40.0	0.00	0.08			379	203
400 ISL	6.56 D	6.52	34.165 D	26.825	127.4	0.840	0.84	12.2	67.5	2.92	40.8	0.00	0.10			402	
438	6.24	6.20	34.192	26.889	121.7	0.887	0.65	9.4	72.7	3.02	42.0	0.00	0.12			441	202
500 ISL	5.88 D	5.84	34.234 D	26.968	114.7	0.960	0.44	6.3	80.1	3.12	44.6	0.00	0.08			503	
513	5.85	5.81	34.248	26.983	113.5	0.975	0.39	5.6	81.6	3.14	45.2	0.00	0.07			516	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 30.5 N	122 15.4 W	10/03/09	1821 UTC	3518 m	330 22 kn	340 07 06	2	1022.6 mb	13.3 C	10.0 C	25m	8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.85	14.85	33.247	24.654	327.7	0.000	5.95	103.2	2.4	0.36	0.0	0.00	0.26	0.20	0.05	0	
2 A	14.85	14.85	33.247	24.654	327.8	0.007	5.95	103.2	2.4	0.36	0.0	0.00	0.26	0.20	0.05	2	222
10 ISL	14.84 D	14.84	33.243 D	24.653	328.1	0.033	5.93	102.8	2.4	0.36	0.0	0.00	0.30	0.20	0.05	10	
18 A	14.85	14.85	33.246	24.654	328.3	0.059	5.90	102.3	2.4	0.35	0.0	0.00	0.33	0.20	0.05	18	221
20 ISL	14.86 D	14.86	33.246 D	24.652	328.6	0.066	5.89	102.1	2.5	0.35	0.0	0.00	0.26	0.20	0.05	20	
27	14.86	14.86	33.251	24.656	328.4	0.089	5.88	102.0	2.7	0.34	0.0	0.00	0.03	0.20	0.05	27	220
30 ISL	14.87 D	14.87	33.248 D	24.651	328.9	0.098	5.88	102.0	2.7	0.34	0.0	0.00	0.04	0.20	0.05	30	
35 A	14.86	14.85	33.246	24.652	328.9	0.115	5.88	102.0	2.6	0.33	0.0	0.00	0.05	0.21	0.05	35	219
44	14.85	14.84	33.247	24.655	328.9	0.145	5.87	101.8	2.7	0.34	0.0	0.00	0.00	0.20	0.05	44	218
50 ISL	14.84 D	14.83	33.243 D	24.655	329.2	0.164	5.88	101.9	2.6	0.34	0.0	0.00	0.01	0.21	0.05	50	
54 A	14.85	14.84	33.245	24.654	329.3	0.177	5.88	101.9	2.5	0.34	0.0	0.00	0.03	0.21	0.05	54	217
63	14.78	14.77	33.250	24.673	327.8	0.207	5.85	101.3	2.6	0.34	0.0	0.00	0.03	0.25	0.09	63	216
73 A	13.97	13.96	33.196	24.802	315.7	0.239	5.71	97.2	2.9	0.42	0.4	0.17	0.03	0.35	0.22	73	215
75 ISL	13.52 D	13.51	33.172 D	24.876	308.7	0.245	5.72	96.5	3.0	0.44	0.5	0.17	0.04	0.34	0.22	75	
81	13.36	13.35	33.151	24.892	307.3	0.264	5.75	96.6	3.3	0.48	0.9	0.17	0.06	0.30	0.18	81	214
92	12.89	12.88	33.110	24.954	301.6	0.297	5.96	99.1	4.1	0.51	1.2	0.20	0.27	0.24	0.11	92	213
100 ISL	12.62 D	12.61	33.105 D	25.003	297.1	0.321	5.99	99.1	4.7	0.55	1.5	0.22	0.39	0.21	0.09	100	
102 A	12.59	12.58	33.107	25.010	296.5	0.327	6.00	99.2	4.8	0.56	1.6	0.22	0.40	0.20	0.09	102	212
113	12.19	12.18	33.083	25.068	291.1	0.360	5.58	91.4	4.8	0.61	3.0	0.03	0.01	0.16	0.12	113	211
125 ISL	11.51 D	11.49	33.078 D	25.191	279.6	0.394	5.47	88.3	6.0	0.73	4.8	0.02	0.03	0.10	0.10	126	
127	11.50	11.48	33.075	25.190	279.7	0.399	5.46	88.2	6.3	0.75	5.1	0.02	0.03	0.09	0.09	128	210
148	10.92	10.90	33.340	25.501	250.5	0.455	4.98	79.5	10.0	0.99	9.4	0.01	0.04	0.03	0.04	149	209
150 ISL	10.87 D	10.85	33.359 D	25.525	248.3	0.460	4.93	78.7	10.5	1.02	9.8	0.01	0.04	0.03	0.04	151	
172	9.94	9.92	33.605	25.876	215.1	0.511	4.39	68.7	16.1	1.29	14.6	0.00	0.04	0.00	0.02	173	208
200	9.32	9.30	33.813	26.141	190.4	0.568	3.74	57.8	22.9	1.60	19.8	0.00	0.00	0.00	0.02	201	207
232	8.83	8.81	33.986	26.355	170.6	0.626	2.45	37.5	32.7	2.06	26.0	0.00	0.00			233	206
250 ISL	8.54 D	8.51	34.027 D	26.432	163.4	0.656	2.34	35.6	35.8	2.15	27.4	0.00	0.00			251	
271	8.19	8.16	34.041	26.497	157.5	0.689	2.21	33.4	38.8	2.21	28.3	0.00	0.00			272	205
300 ISL	7.72 D	7.69	34.062 D	26.583	149.6	0.734	1.80	26.9	44.6	2.38	30.4	0.00	0.00			302	
323	7.54	7.51	34.104	26.642	144.3	0.768	1.48	22.0	49.3	2.52	32.0	0.00	0.00			325	204
381	6.67	6.64	34.103	26.762	133.2	0.848	1.25	18.2	59.8	2.71	35.0	0.00	0.00			383	203
400 ISL	6.56 D	6.52	34.111 D	26.783	131.4	0.873	1.14	16.6	62.5	2.76	35.8	0.00	0.00			402	
443	6.23	6.19	34.141	26.850	125.4	0.929	0.89	12.8	68.1	2.88	37.3	0.00	0.00			446	202
500 ISL	5.80 D	5.76	34.209 D	26.958	115.5	0.997	0.58	8.3	76.2	3.03	38.8	0.00	0.00			503	
518	5.78	5.74	34.220	26.969	114.7	1.018	0.48	6.9	78.8	3.08	39.3	0.00	0.00			521	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 10.5 N	122 55.3 W	11/03/09	0009 UTC	4128 m	340 17 kn	350 08 09	2	1020.9 mb	12.8 C	10.0 C		8/8	SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	15.89	15.89	33.460	24.589	333.9	0.000	5.72	101.4	2.2	0.29	0.0	0.00	0.41	0.13	0.04	0	
2	15.89	15.89	33.460	24.589	334.0	0.007	5.72	101.4	2.2	0.29	0.0	0.00	0.41	0.13	0.04	2	220
10 ISL	15.88 D	15.88	33.457 D	24.589	334.2	0.033	5.73	101.6	2.2	0.28	0.0	0.00	0.38	0.13	0.04	10	
11	15.88	15.88	33.457	24.589	334.2	0.037	5.73	101.6	2.2	0.28	0.0	0.00	0.37	0.13	0.04	11	219
20 ISL	15.88 D	15.88	33.456 D	24.589	334.6	0.067	5.73	101.6	1.9	0.28	0.0	0.00	0.29	0.13	0.04	20	
26	15.89	15.89	33.457	24.588	334.9	0.087	5.73	101.6	1.8	0.28	0.0	0.00		0.13	0.04	26	218
30 ISL	15.91 D	15.91	33.460 D	24.585	335.2	0.100	5.73	101.6	1.9	0.28	0.0	0.00	0.19	0.13	0.04	30	
40	15.91	15.90	33.461	24.587	335.4	0.134	5.73	101.6	2.2	0.28	0.0	0.00	0.10	0.13	0.04	40	217
50 ISL	15.91 D	15.90	33.458 D	24.585	335.9	0.167	5.73	101.6	2.3	0.29	0.0	0.00	0.08	0.13	0.04	50	
51	15.92	15.91	33.464	24.587	335.7	0.171	5.73	101.6	2.3	0.29	0.0	0.00		0.13	0.04	51	216
62	15.90	15.89	33.459	24.588	336.0	0.208	5.74	101.8	2.3	0.29	0.0	0.00	0.05	0.13	0.04	62	215
75	15.97	15.96	33.496	24.601	335.2	0.251	5.70	101.2	2.3	0.28	0.0	0.00	0.20	0.19	0.08	75	214
88	15.31	15.30	33.404	24.678	328.2	0.294	5.71	100.0	2.2	0.32	0.1	0.00	0.06	0.35	0.21	88	213
100 ISL	13.31 D	13.30	33.178 D	24.923	304.8	0.332	5.66	95.0	3.5	0.47	1.6	0.11	0.07	0.27	0.27	100	
101	13.18	13.17	33.167	24.941	303.1	0.335	5.66	94.8	3.7	0.49	1.8	0.12	0.07	0.26	0.27	101	212
111	12.14	12.13	33.141	25.122	285.9	0.365	5.45	89.3	5.8	0.71	5.5	0.06	0.03	0.18	0.18	111	211
124	11.41	11.39	33.192	25.297	269.4	0.401	5.22	84.2	8.1	0.88	8.8	0.01	0.00	0.11	0.08	125	210
125 ISL	11.38 D	11.36	33.204 D	25.312	268.0	0.404	5.20	83.8	8.3	0.89	9.0	0.01	0.01	0.11	0.08	126	
140	11.06	11.04	33.378	25.505	250.0	0.443	4.85	77.7	11.1	1.08	12.3	0.01		0.05	0.05	141	209
150 ISL	10.68 D	10.66	33.459 D	25.636	237.7	0.467	4.61	73.3	13.0	1.19	14.4	0.01	0.24	0.03	0.04	151	
169	10.23	10.21	33.606	25.828	219.7	0.510	4.15	65.4	17.0	1.40	18.1	0.00	0.40	0.01	0.02	170	208
200 ISL	9.26 D	9.24	33.867 D	26.193	185.4	0.573	3.38	52.2	25.0	1.72	24.1	0.00	0.09	0.00	0.02	201	
202	9.24	9.22	33.867	26.197	185.2	0.577	3.34	51.6	25.5	1.74	24.4	0.00	0.07	0.00	0.02	203	207
230	8.86	8.84	33.959	26.329	173.0	0.627	3.12	47.8	29.5	1.85	26.5	0.00	0.06			231	206
250 ISL	8.50 D	8.47	34.005 D	26.421	164.5	0.661	2.93	44.5	33.2	1.95	28.1	0.00	0.11			251	
269	8.20	8.17	34.014	26.474	159.7	0.692	2.71	40.9	36.9	2.05	29.6	0.00	0.17			270	205
300 ISL	7.79 D	7.76	34.047 D	26.561	151.8	0.740	2.28	34.1	42.3	2.23	32.0	0.00	0.16			302	
319	7.66	7.63	34.068	26.596	148.6	0.768	2.00	29.8	45.7	2.35	33.4	0.00	0.15			321	204
379	6.85	6.81	34.113	26.745	134.9	0.853	1.24	18.2	58.5	2.69	37.9	0.00	0.00			381	203
400 ISL	6.73 D	6.69	34.139 D	26.782	131.6	0.881	1.07	15.6	62.0	2.77	38.9	0.00	0.00			402	
438	6.37	6.33	34.159	26.846	125.9	0.930	0.84	12.2	67.5	2.89	40.2	0.00	0.00			441	202
500 ISL	6.07 D	6.03	34.216 D	26.930	118.5	1.006	0.55	7.9	75.0	3.06	42.0	0.00	0.00			503	
512	5.98	5.94	34.225	26.949	116.8	1.020	0.49	7.0	76.5	3.09	42.4	0.00	0.00			515	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.3 120.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
29 50.8 N	123 35.2 W	11/03/09	0602 UTC	4128 m	330 14 kn			1022.1 mb	12.5 C	9.8 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	16.16	16.16	33.567	24.610	331.9	0.000	5.72	102.0	2.4	0.30	0.0	0.00	0.51	0.14	0.03	0	
3	16.16	16.16	33.567	24.610	332.0	0.010	5.72	102.0	2.4	0.30	0.0	0.00	0.51	0.14	0.03	3	220
10	16.16	16.16	33.565	24.609	332.3	0.033	5.71	101.8	2.4	0.30	0.0	0.00	0.28	0.12	0.03	10	219
20 ISL	16.16 D	16.16	33.562 D	24.607	332.9	0.066	5.69	101.5	2.4	0.29	0.0	0.00	0.13	0.12	0.04	20	
24	16.17	16.17	33.565	24.607	333.0	0.080	5.68	101.3	2.4	0.29	0.0	0.00	0.12	0.12	0.04	24	218
30 ISL	16.17 D	16.17	33.567 D	24.609	333.0	0.100	5.68	101.3	2.4	0.29	0.0	0.00	0.15	0.12	0.04	30	
39	16.16	16.15	33.570	24.614	332.8	0.130	5.68	101.3	2.4	0.29	0.0	0.00	0.19	0.12	0.03	39	217
50	16.19	16.18	33.573	24.610	333.6	0.166	5.68	101.4	2.3	0.29	0.0	0.00	0.67	0.13	0.03	50	216
61	16.68	16.67	33.766	24.646	330.6	0.203	5.63	101.5	2.6	0.29	0.0	0.00	0.32	0.20	0.08	61	215
75	16.69	16.68	33.784	24.657	329.9	0.249	5.59	100.9	2.6	0.27	0.0	0.00	0.06	0.25	0.13	75	214
87	16.46	16.45	33.758	24.691	327.1	0.289	5.57	100.0	2.7	0.29	0.0	0.00	0.09	0.39	0.23	87	213
100	12.97	12.96	33.432	25.188	279.6	0.328	5.13	85.7	7.0	0.77	6.0	0.14	0.17	0.33	0.25	100	212
113	12.10	12.09	33.488	25.399	259.7	0.363	4.72	77.4	9.5	0.99	10.0	0.04	0.55	0.21	0.17	113	211
125 ISL	11.19 D	11.17	33.480 D	25.561	244.4	0.393	4.50	72.4	11.9	1.13	12.7	0.01	0.19	0.11	0.10	126	
127	11.38	11.36	33.510	25.550	245.5	0.398	4.45	71.9	12.3	1.15	13.1	0.01	0.11	0.10	0.09	128	210
140	11.28	11.26	33.702	25.718	229.9	0.429	3.58	57.8	16.0	1.43	16.8	0.01		0.09	0.09	141	209
150 ISL	10.92 D	10.90	33.748 D	25.819	220.5	0.452	3.55	56.8	18.3	1.54	18.7	0.01	0.08	0.06	0.07	151	
173	9.72	9.70	33.796	26.062	197.5	0.500	3.47	54.1	22.8	1.67	21.5	0.00	0.05	0.00	0.03	174	208
200	9.51	9.49	33.994	26.252	180.0	0.551	2.93	45.6	27.3	1.84	23.7	0.00		0.00	0.03	201	207
226	8.74	8.72	34.024	26.399	166.3	0.596	3.11	47.5	31.8	1.86	25.0	0.00	0.00			227	206
250 ISL	8.34 D	8.31	34.077 D	26.502	156.8	0.634	2.82	42.7	36.9	2.01	27.3	0.00	0.01			251	
268	7.89	7.86	34.030	26.532	153.9	0.662	2.45	36.7	41.0	2.17	29.3	0.00	0.03			269	205
300 ISL	7.58 D	7.55	34.096 D	26.630	145.1	0.710	1.72	25.6	48.3	2.45	32.5	0.00	0.04			302	
316	7.43	7.40	34.114	26.665	141.9	0.733	1.37	20.3	51.7	2.58	33.9	0.00	0.04			318	204
378	7.02	6.98	34.179	26.774	132.3	0.818	0.86	12.6	59.5	2.80	36.1	0.00	0.22			380	203
400 ISL	6.62 D	6.58	34.156 D	26.810	128.9	0.847	0.80	11.7	63.1	2.85	37.0	0.00	0.21			402	
437	6.31	6.27	34.172	26.864	124.1	0.894	0.74	10.7	69.1	2.93	38.4	0.00	0.18			440	202
500 ISL	6.12 D	6.08	34.266 D	26.963	115.5	0.969	0.42	6.0	76.5	3.10	39.8	0.00	0.03			503	
515	6.04	5.99	34.286	26.989	113.1	0.986	0.34	4.9	78.3	3.14	40.1	0.00	0.00			518	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

RV DAVID STARR JORDAN CALCOFI CRUISE 0903 STATION 93.4 26.4

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 57.0 N	117 16.8 W	08/03/09	0340 UTC	19 m	250 05 kn			1016.7 mb	15.5 C	12.0 C			

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	NH4 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.91	14.91	33.331	24.706	322.8	0.000	6.92	120.2	5.7	0.25	0.1	0.03	0.12	2.52	0.60	0	
2	14.91	14.91	33.331	24.706	322.9	0.006	6.92	120.2	5.7	0.25	0.1	0.03	0.12	2.52	0.60	2	204
7	14.49	14.49	33.349	24.810	313.1	0.022	6.74	116.1	5.7	0.30	0.5	0.05	0.36	3.43	0.84	7	203
10 ISL	11.55 D	11.55	33.602 D	25.588	239.1	0.031	5.00	81.1	13.3	1.10	10.8	0.35	0.43	1.72	0.64	10	
12	11.47	11.47	33.608	25.607	237.3	0.035	3.81	61.7	18.2	1.60	17.6	0.52	0.48	0.54	0.50	12	202
15	11.69	11.69	33.595 D	25.557	242.2	0.043	3.23	52.6	18.8	1.65	19.4	0.48	0.95	0.45	0.51	15	201

D) CTD DATA USED ON STANDARD LEVELS AND MISSING FIELDS;PRIMARY T; PRIMARY CORRECTED S;

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 76.7 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 22.7 N	122 14.6 W	22/03/09	1608 UTC	12 m	1220 - 1850 PST	1216 PST	1844 PST	260.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	12.54	33.125	25.031	6.20	102.4	4.4	0.47	1.8	0.10	0.80	0.13	77. A	1.2	1.2	1.2	0.05
9	12.53	33.119	25.028	6.21	102.6	4.5	0.49	1.8	0.10	0.74	0.16	32.	12.8	12.8	12.8	0.06
17	12.51	33.111	25.026	6.23	102.8	4.5	0.49	1.8	0.10	0.74	0.16	11.	11.0	10.8	10.9	0.09
26	12.55	33.125	25.030	6.24	103.1	4.2	0.49	1.7	0.10	0.78	0.17	3.6	6.4	6.3	6.4	0.07
34	12.52	33.111	25.025	6.19	102.2	4.4	0.50	1.7	0.10	0.75	0.13	1.3	2.8	2.8	2.8	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 80.0 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 48.9 N	121 50.6 W	20/03/09	1930 UTC	16 m	1220 - 1845 PST	1215 PST	1847 PST	263.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.06	32.989	24.824	6.20	103.5	3.2	0.45	0.5	0.04	0.46	0.10	91. A	7.7	7.3	7.5	0.06
12	13.05	32.990	24.827	6.15	102.6	3.1	0.39	0.2	0.04	0.47	0.09	32.	9.5	8.8	9.1	0.06
23	13.02	33.000	24.841	6.14	102.4	3.1	0.41	0.0	0.05	0.47	0.12	11.	6.2	6.4	6.3	0.07
29	13.02	32.990	24.833	6.14	102.4	3.2	0.39	0.0	0.04	0.54	0.03	6.2	2.7	2.5	2.6	0.06
35	13.00	32.986D	24.835													
46	12.76	33.020	24.908	6.19	102.7	3.4	0.44	0.3	0.08	0.59	0.20	1.2	1.7	1.8	1.7	0.04
55	12.46	33.022	24.968	6.12	100.8	3.9	0.49	0.7	0.11	0.52	0.17					
64	11.72	33.045	25.125	5.90	95.7	6.2	0.70	3.3	0.30	0.34	0.10	0.22	0.17	0.23	0.20	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 80.0 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 49.0 N	123 54.6 W	21/03/09	1546 UTC	28 m	1225 - 1850 PST	1223 PST	1852 PST	208.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.03	33.073	24.693	5.94	101.2	2.4	0.34	0.0	0.00	0.15	0.03	90. A	0.44	0.48	0.46	0.03
20	14.02	33.074	24.696	5.95	101.3	2.4	0.33	0.0	0.00	0.16	0.03	33.	3.1	3.2	3.2	0.03
30	14.02	33.073	24.696	5.97	101.7	2.3	0.33	0.0	0.00	0.15	0.03					
40	13.98	33.072	24.703	5.96	101.4	2.3	0.33	0.0	0.00	0.18	0.05	11.	3.2	3.1	3.2	0.03
51	13.52	33.074	24.799	5.96	100.4	2.7	0.38	0.3	0.07	0.29	0.11					
61	13.45	33.085	24.822	5.95	100.1	2.8	0.40	0.4	0.10	0.30	0.14	3.5	2.3	2.5	2.4	0.02
71	13.12	33.051	24.862	5.94	99.3	3.1	0.45	0.9	0.18	0.30	0.13					
80	12.17	32.958	24.974	5.93	97.1	4.2	0.56	2.2	0.32	0.28	0.14	1.2	1.0	1.1	1.1	0.02
91	11.62	32.946	25.067	5.86	94.8	5.1	0.64	3.6	0.24	0.19	0.10					
102	10.89	32.973	25.219	5.73	91.3	6.9	0.79	6.0	0.03	0.08	0.06					
113	10.57	33.073	25.353	5.47	86.6	8.6	0.91	8.0	0.01	0.04	0.05	0.20	0.05	0.04	0.04	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 83.3 42.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.8 N	119 30.4 W	19/03/09	1829 UTC	15 m	1210 - 1830 PST	1206 PST	1927 PST	620.3 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.62	33.425	25.049	6.38	108.0	2.5	0.39	0.7	0.04	1.15	0.25	90. A	23.4	27.4	25.4	0.13
10	13.13	33.467	25.180	6.40	107.3	2.7	0.40	1.4	0.07	1.38	0.39	36.	26.9	26.7	26.8	0.14
21	12.70	33.493	25.286	5.99	99.5	3.9	0.56	2.9	0.11	1.43	0.67	12.	13.2	13.7	13.4	0.09
34	12.44	33.506	25.346	5.56	91.9	6.3	0.73	4.9	0.14	0.88	0.56	3.1	3.7	3.4	3.6	0.06
43	12.01	33.552	25.464	4.82	78.9	10.3	1.01	8.4	0.19	0.45	0.72	1.2	0.92	0.89	0.90	0.06
52	11.44	33.602	25.609	3.96	64.1	15.5	1.34	13.5	0.19	0.43	0.77					
60	10.86	33.685	25.778	3.33	53.2	20.1	1.59	18.0	0.12	0.26	0.62	0.22	0.06	0.07	0.06	0.05

A) INCUBATION LIGHT INTENSITIES WERE 89, 35, 12, 3.5, 1.3, 0.22 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 83.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.8 N	121 26.9 W	18/03/09	1617 UTC	14 m	1220 - 1840 PST	1211 PST	1837 PST	143.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	13.37	32.996	24.768	6.04	101.4	2.5	0.35	0.0	0.00	0.31	0.09	72. A	0.58	0.50	0.54	0.03
11	13.35	32.995	24.771	6.06	101.7	2.6	0.36	0.0	0.00	0.33	0.10	30.	5.8	5.6	5.7	0.03
21	13.36	32.998	24.772	6.08	102.1	2.5	0.35	0.0	0.00	0.32	0.10	10.	5.1	4.8	4.9	0.04
30	13.35	32.997	24.773	6.05	101.6	2.5	0.36	0.0	0.00	0.33	0.09	3.7	2.6	2.6	2.6	0.04
40	13.34	32.992	24.772	6.04	101.4	2.6	0.36	0.0	0.00	0.35	0.11	1.2	1.2	1.2	1.2	0.03
51	13.25	32.986	24.785	6.03	101.0	2.7	0.37	0.1	0.04	0.35	0.09					
57	13.15	32.982	24.802	6.01	100.5	2.7	0.40	0.2	0.07	0.30	0.12	0.19	0.19	0.13	0.16	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 83.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 14.6 N	123 29.9 W	17/03/09	1823 UTC	21 m	1222 - 1842 PST	1222 PST	1842 PST	233.5 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	14.27	33.212	24.750	5.95	101.9	2.6	0.33	0.0	0.00	0.19	0.05	80. A	2.1	2.2	2.1	0.06
15	14.24	33.212	24.757	5.98	102.4	2.6	0.33	0.0	0.00	0.19	0.05	33.	4.5	4.4	4.4	0.07
30	14.02	33.210	24.802	5.96	101.6	2.5	0.33	0.0	0.00	0.29	0.08	11.	4.2	4.2	4.2	0.06
40	14.02	33.214	24.805	5.96	101.6	2.4	0.33	0.0	0.00	0.32	0.09					
47	13.97	33.214	24.815	5.92	100.8	2.4	0.35	0.0	0.01	0.43	0.13	3.2	3.6	3.8	3.7	0.05
53	13.66	33.235	24.895	5.79	98.0	3.1	0.43	0.8	0.17	0.46	0.18					
61	12.81	33.176	25.020	5.56	92.4	4.8	0.62	3.5	0.21	0.37	0.15	1.2	1.7	1.6	1.6	0.03
73	11.27	33.153	25.291	5.14	82.6	9.0	0.97	8.8	0.02	0.20	0.10					
84	10.79	33.285	25.479	4.71	75.0	12.5	1.21	12.6	0.01	0.11	0.07	0.22	0.10	0.09	0.09	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 86.7 33.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 53.5 N	118 29.3 W	14/03/09	1909 UTC	11 m	1205 - 1829 PST	1203 PST	1827 PST	489.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.96	33.420	24.975	6.64	113.2	1.0	0.24	0.1	0.05	1.71	0.52	76. A	16.9	10.6	13.8	0.36
9	13.94	33.422	24.981	6.56	111.8	1.1	0.27	0.3	0.06	1.88	0.64	28.	39.2	37.8	38.5	0.45
16	12.04	33.488	25.408	4.23	69.3	11.8	1.16	10.9	0.41	1.14	1.07	11.	12.8	12.1	12.4	0.17
24	11.83	33.504	25.460	3.96	64.6	13.6	1.30	13.5	0.46	0.92	1.05	3.5	5.8	5.1	5.4	0.17
31	11.40	33.575	25.595	3.49	56.4	17.2	1.53	17.3	0.46	0.43	0.73	1.3	1.0	1.0	1.0	0.12
39	11.11	33.640	25.698	3.17	51.0	19.5	1.65	19.4	0.46	0.28	0.63					
45	10.92	33.687	25.769	2.92	46.8	21.7	1.77	20.8	0.48	0.21	0.62	0.19	0.05	0.03	0.04	0.15

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 86.7 55.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.4 N	120 0.3 W	15/03/09	1756 UTC	13 m	1210 - 1835 PST	1209 PST	1837 PST	255.7 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
3	13.10	33.222	24.997	6.08	101.7	4.8	0.49	1.8	0.09	0.60	0.13	70. A	2.3	2.5	2.4	0.05
9	13.10	33.220	24.995	6.08	101.7	4.6	0.48	1.8	0.09	0.68	0.09	35.	10.0	9.5	9.8	0.07
19	13.07	33.219	25.001	6.11	102.1	4.8	0.49	1.8	0.09	0.61	0.18	11.	8.8	8.6	8.7	0.07
30	13.06	33.220	25.004	6.08	101.6	4.7	0.49	1.8	0.09	0.59	0.19	2.9	4.6	5.2	4.9	0.06
38	13.05	33.219	25.005	6.07	101.4	4.5	0.48	1.8	0.09	0.59	0.18	1.1	2.1	1.9	2.0	0.06
45	13.05	33.220	25.006	6.07	101.4	4.8	0.49	1.8	0.09	0.63	0.18					
53	13.00	33.222	25.018	6.06	101.1	4.9	0.50	1.9	0.10	0.63	0.15	0.19	0.19	0.34	0.27	0.05

A) INCUBATION LIGHT INTENSITIES WERE 89, 35, 12, 3.5, 1.3, 0.22 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 86.7 90.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 0.6 N	122 23.6 W	16/03/09	1745 UTC	25 m	1218 - 1845 PST	1218 PST	1846 PST	169.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.73	33.265	24.694	5.87	101.5	2.3	0.32	0.0	0.00	0.18	0.05	88. A	0.94	1.1	1.0	0.04
11	14.75	33.283	24.703	5.85	101.3	2.3	0.31	0.0	0.00	0.18	0.04					
18	14.80	33.300	24.706	5.85	101.4	2.2	0.31	0.0	0.00	0.18	0.04	33.	3.3	3.4	3.3	0.06
27	14.79	33.302	24.710	5.85	101.3	2.3	0.31	0.0	0.00	0.18	0.05					
36	14.83	33.319	24.715	5.85	101.4	2.2	0.30	0.0	0.00	0.17	0.05	11.	2.6	2.7	2.6	0.05
45	14.94	33.340	24.708	5.82	101.1	2.2	0.29	0.0	0.00	0.18	0.06					
55	15.49	33.506	24.715	5.73	100.8	2.2	0.30	0.0	0.00	0.21	0.06	3.4	1.8	1.6	1.7	0.04
62	15.42	33.484	24.714	5.74	100.8	2.1	0.30	0.0	0.00	0.23	0.06					
71	15.21	33.441	24.728	5.75	100.5	2.1	0.30	0.0	0.00	0.28	0.08	1.3	0.99	0.96	0.97	0.02
83	13.37	33.150	24.889	5.81	97.7	2.9	0.44	0.7	0.23	0.40	0.21					
92	12.73	33.124	24.996	5.65	93.7	3.9	0.55	2.3	0.06	0.34	0.26					
101	11.74	33.024	25.106	5.61	91.0	5.1	0.68	4.1	0.01	0.17	0.12	0.20	0.20	0.16	0.18	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 90.0 45.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 55.2 N	118 56.3 W	13/03/09	1655 UTC	13 m	1215 - 1825 PST	1205 PST	1822 PST	486.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.20	33.369	24.886	6.16	105.5	2.5	0.27	0.0	0.00	0.45	0.12	79. A	4.0	3.6	3.8	0.14
9	14.20	33.369	24.886	6.17	105.7	2.5	0.28	0.0	0.00	0.45	0.12	35.	10.5	10.6	10.6	0.15
18	13.63	33.342	24.983	6.18	104.6	3.8	0.37	0.5	0.05	1.72	0.43	12.	29.2	29.3	29.3	0.11
28	12.39	33.363	25.245	5.10	84.1	8.6	0.84	7.2	0.17	0.89	0.37	3.7	7.8	7.7	7.7	0.06
38	11.91	33.430	25.388	4.45	72.7	11.6	1.11	11.8	0.04	0.48	0.30	1.1	2.0	1.9	2.0	0.05
45	11.55	33.485	25.498	4.09	66.3	13.5	1.27	14.8	0.03	0.26	0.23					
53	11.23	33.578	25.629	3.70	59.6	16.1	1.44	17.4	0.01	0.13	0.15	0.19	0.11	0.08	0.10	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 90.0 80.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 44.9 N	121 19.0 W	12/03/09	1633 UTC	19 m	1218 - 1835 PST	1215 PST	1830 PST	194.8 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.03	33.189	24.782	6.04	103.0	2.8	0.33	0.0	0.00	0.32	0.11	85. A	2.2	2.2	2.2	0.04
14	14.03	33.188	24.782	6.00	102.3	2.6	0.34	0.0	0.00	0.34	0.08	32.	5.5	5.5	5.5	0.05
21	14.03	33.188	24.782	5.97	101.8	2.7	0.34	0.0	0.00	0.31	0.10					
28	14.03	33.188	24.782	5.98	101.9	2.7	0.34	0.0	0.00	0.32	0.12	10.	4.0	4.0	4.0	0.05
35	14.02	33.188	24.785	5.98	101.9	2.7	0.33	0.0	0.00	0.33	0.09					
42	13.47	33.137	24.858	6.00	101.1	3.1	0.41	0.7	0.11	0.44	0.20	3.4	2.6	2.5	2.5	0.03
48	13.46	33.162	24.879	5.90	99.4	3.3	0.44	1.0	0.21	0.41	0.22					
54	13.31	33.154	24.904	5.86	98.4	3.4	0.49	1.3	0.27	0.37	0.19	1.3	0.92	0.97	0.95	0.03
66	12.78	33.130	24.990	5.65	93.8	4.2	0.60	3.3	0.17	0.22	0.16					
77	11.71	33.091	25.163	5.52	89.6	6.5	0.80	6.5	0.02	0.11	0.09	0.20	0.05	0.04	0.05	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 90.0 110.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 45.2 N	123 20.0 W	11/03/09	1921 UTC	35 m	1230 - 1835 PST	1221 PST	1841 PST	135.9 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
4	16.41	33.618	24.592	5.64	101.1	2.3	0.26	0.0	0.00	0.13	0.03	84. A	0.63	0.62	0.62	0.06
16	16.41	33.618	24.593	5.64	101.1	2.2	0.29	0.0	0.00	0.17	0.00					
25	16.40	33.620	24.597	5.63	100.9	2.3	0.29	0.0	0.00	0.14	0.03	33.	1.8	1.6	1.7	0.05
37	16.41	33.622	24.596	5.63	100.9	2.3	0.28	0.0	0.00	0.14	0.02					
50	16.41	33.621	24.596	5.63	100.9	2.3	0.29	0.0	0.00	0.13	0.05	11.	1.2	1.2	1.2	0.06
59	16.41	33.623	24.598	5.61	100.6	2.3	0.28	0.0	0.00	0.15	0.02					
68	16.41	33.622	24.598	5.62	100.7	2.2	0.28	0.0	0.00	0.17	0.02					
76	16.42	33.627	24.599	5.62	100.8	2.3	0.28	0.0	0.00	0.18	0.00	3.6	0.82	0.77	0.80	0.04
88	16.39	33.635	24.613	5.63	100.9	2.3	0.28	0.0	0.00	0.22	0.05					
100	14.70	33.489	24.876	5.57	96.4	3.2	0.36	0.6	0.05	0.37	0.19	1.2	1.1	1.1	1.1	0.02
109	13.70	33.279	24.923	5.62	95.2	3.6	0.42	1.4	0.08	0.35	0.19					
120	12.88	33.183	25.013	5.55	92.3	4.3	0.54	2.9	0.07	0.30	0.16					
132	12.24	33.185	25.138	5.41	88.8	5.8	0.67	5.2	0.03	0.06	0.48					
141	11.63	33.326	25.362	5.09	82.5	8.2	0.86	8.5	0.01	0.11	0.11	0.21	0.12	0.02	0.07	0.01

A) INCUBATION LIGHT INTENSITIES WERE 89, 35, 12, 3.5, 1.3, 0.22 PERCENT RESPECTIVELY.

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 93.3 35.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 40.9 N	117 52.7 W	08/03/09	1834 UTC	30 m	1205 - 1825 PST	1202 PST	1822 PST	286.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.83	33.350	24.738	5.97	103.5	3.2	0.33	0.0	0.00	0.17	0.04	90. A	2.2	2.4	2.3	0.04
13	14.71	33.350	24.764	5.99	103.6	3.2	0.32	0.0	0.00	0.19	0.05					
21	14.56	33.342	24.790	6.02	103.8	3.2	0.33	0.0	0.00	0.26	0.07	34.	5.1	4.9	5.0	0.13
32	13.54	33.306	24.974	5.95	100.5	4.3	0.46	1.2	0.16	0.80	0.34					
42	13.01	33.279	25.060	5.72	95.5	5.5	0.59	3.3	0.16	0.57	0.29	12.	5.8	6.0	5.9	0.07
54	12.32	33.297	25.208	5.26	86.6	8.0	0.83	7.3	0.06	0.36	0.23					
65	11.72	33.346	25.359	4.81	78.2	10.8	1.07	11.2	0.02	0.24	0.19	3.6	1.1	1.1	1.1	0.06
76	11.46	33.435	25.476	4.31	69.7	13.1	1.25	14.2	0.01	0.15	0.14					
85	11.44	33.597	25.606	3.61	58.4	16.2	1.47	17.2	0.01	0.08	0.13	1.3	0.22	0.23	0.22	0.02
97	11.15	33.678	25.722	3.29	52.9	18.6	1.62	19.4	0.01	0.03	0.06					
109	10.93	33.729	25.801	3.10	49.7	20.2	1.70	20.6	0.00	0.02	0.05					
121	10.63	33.760	25.878	3.06	48.7	21.5	1.75	21.5	0.00	0.01	0.06	0.20	0.00	0.03	0.02	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 93.3 70.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 31.8 N	120 12.9 W	09/03/09	2044 UTC	16 m	1330 - 1835 PST	1211 PST	1832 PST	99.6 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.52	33.266	24.739	6.01	103.5	3.1	0.34	0.0	0.00	0.29	0.06	83. A	3.2	3.1	3.2	0.08
12	14.51	33.269	24.744	6.01	103.5	3.2	0.34	0.0	0.00	0.29	0.06	32.	3.2	3.1	3.2	0.10
23	14.49	33.264	24.745	6.01	103.5	3.3	0.35	0.0	0.00	0.30	0.07	11.	1.7	1.8	1.8	0.08
29	14.48	33.263	24.746	6.02	103.6	3.2	0.34	0.0	0.00	0.31	0.07					
36	14.47	33.262	24.748	6.02	103.6	3.3	0.33	0.0	0.00	0.33	0.08	3.2	0.83	0.77	0.80	0.08
45	13.87	33.231	24.849	6.15	104.5	3.5	0.36	0.3	0.03	0.73	0.22	1.3	0.86	0.87	0.87	0.10
55	12.43	33.221	25.128	5.79	95.5	5.9	0.66	4.6	0.29	0.55	0.29					
65	11.98	33.223	25.215	5.60	91.5	7.2	0.78	6.9	0.12	0.34	0.19	0.20	0.09	0.03	0.06	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0903 — STATION 93.3 100.0

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
30 30.5 N	122 15.4 W	10/03/09	1821 UTC	25 m	1225 - 1845 PST	1219 PST	1841 PST	141.4 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	14.85	33.247	24.654	5.95	103.2	2.4	0.36	0.0	0.00	0.20	0.05	88. A	2.4	2.4	2.4	0.04
18	14.85	33.246	24.654	5.90	102.3	2.4	0.35	0.0	0.00	0.20	0.05	33.	2.7	2.8	2.8	0.03
27	14.86	33.251	24.656	5.88	102.0	2.7	0.34	0.0	0.00	0.20	0.05					
35	14.86	33.246	24.652	5.88	102.0	2.6	0.33	0.0	0.00	0.21	0.05	12.	1.8	1.9	1.8	0.04
44	14.85	33.247	24.655	5.87	101.8	2.7	0.34	0.0	0.00	0.20	0.05					
54	14.85	33.245	24.654	5.88	101.9	2.5	0.34	0.0	0.00	0.21	0.05	3.6	0.90	0.78	0.84	0.03
63	14.78	33.250	24.673	5.85	101.3	2.6	0.34	0.0	0.00	0.25	0.09					
73	13.97	33.196	24.802	5.71	97.2	2.9	0.42	0.4	0.17	0.35	0.22	1.1	0.91	0.93	0.92	0.01
81	13.36	33.151	24.892	5.75	96.6	3.3	0.48	0.9	0.17	0.30	0.18					
92	12.89	33.110	24.954	5.96	99.1	4.1	0.51	1.2	0.20	0.24	0.11					
102	12.59	33.107	25.010	6.00	99.2	4.8	0.56	1.6	0.22	0.20	0.09	0.19	0.08	0.02	0.05	0.01

A) INCUBATION LIGHT INTENSITIES WERE 89, 35, 12, 3.5, 1.3, 0.22 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	100.0	33 23.6	124 19.0	03/21	1412	1433	453	191	44	44
76.7	90.0	33 43.3	123 38.1	03/21	1937	1958	410	210	34	34
76.7	80.0	34 03.3	122 56.5	03/22	0131	0152	454	206	40	40
76.7	70.0	34 23.3	122 14.8	03/22	0631	0652	477	191	105	105
80.0	50.5	34 28.0	120 29.6	03/19	2007	2010	68	25	178	178
80.0	51.0	34 27.0	120 31.4	03/19	2139	2145	111	56	181	181
80.0	55.0	34 19.2	120 48.1	03/20	0122	0143	407	216	88	88
80.0	60.0	34 09.1	121 09.0	03/20	0605	0626	421	213	109	109
80.0	70.0	33 49.0	121 50.6	03/20	1244	1305	440	211	14	14
80.0	80.0	33 29.0	122 32.0	03/20	1856	1917	426	212	28	28
80.0	90.0	33 09.1	123 13.3	03/21	0111	0132	430	216	37	37
80.0	100.0	32 49.0	123 54.4	03/21	0622	0643	437	211	37	37
81.7	43.5	34 23.9	119 48.1	03/19	1317	1321	81	33	99	99
81.8	46.9	34 16.5	120 01.5	03/19	1635	1656	423	207	147	147
83.3	110.0	31 54.7	124 10.2	03/17	0447	0508	421	213	57	57
83.3	100.0	32 14.7	123 29.8	03/17	1135	1156	423	220	14	14
83.3	90.0	32 34.7	122 48.8	03/17	1814	1835	430	211	53	35
83.3	80.0	32 54.8	122 07.8	03/18	0111	0132	434	216	32	32
83.3	70.0	33 14.7	121 26.6	03/18	0707	0728	429	211	19	19
83.3	60.0	33 34.7	120 45.3	03/18	1553	1614	412	215	49	49
83.3	55.0	33 44.7	120 24.6	03/18	2017	2038	422	217	83	83
83.3	51.0	33 53.0	120 08.0	03/18	2347	2354	155	65	129	129
83.3	39.4	34 15.7	119 19.9	03/19	0550	0551	40	10	503	503
83.3	40.6	34 13.5	119 24.7	03/19	0742	0744	60	17	303	303
83.3	42.0	34 11.3	119 30.7	03/19	0940	0948	166	72	144	144
85.4	35.8	34 00.6	118 50.2	03/14	1454	1457	68	28	88	88
86.7	33.0	33 53.4	118 29.4	03/14	1155	1159	99	40	61	61
86.7	35.0	33 49.5	118 38.0	03/14	1811	1832	404	213	329	329
86.7	40.0	33 39.4	118 58.3	03/14	2238	2259	420	212	74	62
86.7	45.0	33 29.5	119 19.2	03/15	0306	0327	443	211	72	72
86.7	50.0	33 19.4	119 39.9	03/15	0652	0658	94	59	1170	1170
86.7	55.0	33 09.4	120 00.4	03/15	1126	1147	448	208	22	22
86.7	60.0	32 59.4	120 20.9	03/15	1544	1605	429	213	19	19
86.7	70.0	32 39.4	121 01.9	03/15	2156	2217	402	215	45	45
86.7	80.0	32 19.5	121 42.7	03/16	0339	0400	433	212	37	37
86.7	90.0	32 00.5	122 23.9	03/16	0842	0903	410	218	24	24
86.7	100.0	31 39.5	123 04.2	03/16	1620	1641	417	214	19	19
86.7	110.0	31 19.4	123 44.5	03/16	2238	2259	410	208	98	63
86.8	32.5	33 53.3	118 26.8	03/14	1021	1023	43	12	139	139
90.0	120.0	30 25.1	123 59.9	03/11	0555	0616	429	215	28	28
90.0	110.0	30 45.1	123 19.9	03/11	1235	1256	431	217	21	21
90.0	100.0	31 05.1	122 39.8	03/11	1902	1923	418	216	53	53
90.0	90.0	31 25.2	121 59.5	03/12	0134	0155	425	214	28	28
90.0	80.0	31 45.1	121 19.0	03/12	0716	0737	419	217	29	29
90.0	70.0	32 05.1	120 38.4	03/12	1512	1533	418	216	29	29
90.0	60.0	32 25.1	119 57.6	03/12	2140	2201	418	212	60	60
90.0	53.0	32 39.0	119 29.0	03/13	0252	0313	435	214	41	41
90.0	45.0	32 55.1	118 56.3	03/13	0735	0756	424	209	76	76
90.0	37.0	33 11.1	118 23.3	03/13	1423	1444	414	213	58	34
90.0	27.7	33 29.4	117 45.2	03/13	2027	2030	72	27	112	112
90.0	28.0	33 29.1	117 46.1	03/13	2146	2207	419	206	91	91
90.0	30.0	33 25.2	117 54.2	03/14	0035	0056	433	195	60	60
90.0	35.0	33 15.1	118 15.1	03/14	0447	0508	433	208	42	42
91.7	26.4	33 14.5	117 27.9	03/07	2250	2252	62	12	97	97
93.3	26.7	32 57.3	117 18.4	03/07	1847	1854	140	63	43	43
93.3	28.0	32 54.7	117 23.7	03/08	0238	0259	429	209	103	56
93.3	30.0	32 50.8	117 32.1	03/08	0527	0550	428	235	89	89
93.3	35.0	32 40.8	117 52.3	03/08	0859	0922	454	197	37	37
93.3	40.0	32 30.8	118 12.9	03/08	1507	1528	365	227	214	214
93.3	45.0	32 20.8	118 33.3	03/08	1910	1931	378	213	180	180
93.3	50.0	32 10.8	118 53.6	03/08	2315	2338	436	232	57	57
93.3	55.0	32 00.9	119 14.0	03/09	0326	0347	416	220	123	38
93.3	60.0	31 50.9	119 34.3	03/09	0738	0800	451	222	62	40
93.3	70.0	31 31.8	120 12.8	03/09	1348	1409	446	215	22	22
93.3	80.0	31 10.7	120 55.0	03/09	2125	2146	435	212	55	55
93.3	90.0	30 51.1	121 35.3	03/10	0341	0402	448	213	31	31
93.3	100.0	30 30.9	122 15.1	03/10	0900	0921	439	213	23	23
93.3	110.0	30 10.8	122 55.4	03/10	1702	1723	438	211	18	18
93.3	120.0	29 50.8	123 35.2	03/10	2300	2321	442	212	25	25
93.4	26.4	32 56.9	117 16.8	03/07	1955	1957	44	13	46	46