UNIVERSITY OF CALIFORNIA, SAN DIEGO SCRIPPS INSTITUTION OF OCEANOGRAPHY

data report

PHYSICAL, CHEMICAL AND BIOLOGICAL DATA

CalCOFI Cruise 0201
24 January – 11 February 2002

CalCOFI Cruise 0204
28 March – 12 April 2002

CC Reference 03-01
31 July 2003

UNIVERSITY OF CALIFORNIA, SAN DIEGO

SCRIPPS INSTITUTION OF OCEANOGRAPHY

LA JOLLA, CALIFORNIA 92093-0227

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CONTENTS

INTRODUCTION

The data in this report were collected during cruises 0201* and 0204 of the California Cooperative Oceanic Fisheries Investigations (CalCOFI) program aboard the 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. Volunteers and other SIO staff members also assisted in the collection of data and chemical analyses at sea. CalCOFI data presented in this report and collected on previous cruises can be accessed at http://www.calcofi.org.

STANDARD PROCEDURES

CTD/Rosette Cast Data

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

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

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

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

Nutrient samples were analyzed at sea for dissolved silicate, phosphate, nitrate and nitrite using procedures similar to those described in Gordon et al., 1993. Samples were collected in 45 ml high-density polypropylene screw-capped tubes which were rinsed three times prior to filling. Standardizations were done at the beginning and end of each group of samples with a set of mid-concentration range standards prepared fresh for each run. Samples

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

not analyzed immediately after collection were refrigerated and run the following day. Sets of six different concentration standards were analyzed periodically to determine the deviation from linearity as a function of concentration, primarily for the silicate and nitrate analyses. Final sample concentrations were corrected for deviations from linearity.

Samples for chlorophyll-*a* and phaeopigments were collected in calibrated 138 ml polyethylene bottles and filtered onto Whatman GF/F filters. The pigments were extracted with a cold extraction technique in 90% acetone (Venrick and Hayward, 1984), and the fluorescence determined before and after acidification with a Turner Designs Fluorometer 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 cast profiles, adjacent stations and consideration of the variation of a property as a function of density or depth and the relationships with other properties (Klein, 1973). Precision estimates for the 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 up rosette cast. Occasionally an extra bottle or two were tripped in addition to the usual 20 levels sampled in the combined rosette-productivity cast in order to maintain the normal sampling depth resolution. The ten-liter bottles were equipped with epoxy-coated springs and Viton O-rings. Triplicate samples (two light and one dark control) were drawn from each productivity sample depth into 250 ml polycarbonate incubation bottles. Samples were inoculated with 10 µCi of ^{14}C as $NaHCO_3$ (200 µl of 50 µCi/ml stock) prepared in a 0.3 g/liter solution of sodium carbonate (Fitzwater *et al*., 1982). Samples were incubated from LAN to civil twilight in seawater-cooled incubators with neutral-density screens which simulate *in situ* light levels. At the end of the incubation, the samples were filtered onto Millipore HA filters and placed in scintillation vials. One half ml of 10% HCl was added to each sample. The sample was then allowed to sit, without a cap, at room temperature for 12 hours (after Lean and Burnison, 1979). Following this, 10 ml of scintillation fluor were added to each sample and the samples were returned to SIO where the radioactivity was determined with a scintillation counter. Salinity, oxygen, nutrients, chlorophyll-*a* and phaeopigments were determined from all rosette productivity bottles.

Macrozooplankton Net Tows

Macrozooplankton was sampled with a 71 cm mouth diameter paired net (bongo net) equipped with 0.505mm 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). An Optical Plankton Counter (OPC) was routinely used in one side of the paired bongo net frame. The purpose of the OPC is to obtain information on the vertical distributions of size categories of zooplankton, using data from the counter, without affecting the ongoing time series of data obtained from the catches of the integrative bongo net.

Avifauna Observations

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

Ancillary Programs

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

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

2) *ADCP*. Continuous profiles of ocean currents and acoustic backscatter between 20 and 500 meters deep were measured along the shiptrack from a hull-mounted 150 kHz Acoustic Doppler Current Profiler (ADCP). The ADCP data were averaged over 3-minute intervals. Sixty 8-meter depth bins were recorded.

3) *Bio-optics.* On cruise 0204 phytoplankton pigment concentrations were made using HPLC and absorption coefficients of particles soluble material were determined.

4) *Atmospheric and Marine Optics*. On cruises 0201 and 0204 datasets of spectral water leaving radiance and aerosol optical thickness were acquired during daylight hours en route and on stations using hand held SIMBAD radiometers. The SIMBAD radiometer measures both variables in typical spectral bands of satellite ocean color sensors, namely bands centered at 443, 490, 560, 670 and 870 nm. The instrument was designed for evaluation of satellite derived ocean color. In sun viewing mode the instrument operates like a classic sun photometer. In sea viewing mode a vertical polarizer reduces sky light reflection in the instrument's field of view.

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.

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

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

Primary Productivity Data

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

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

Macrozooplankton Data

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

FOOTNOTES

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

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

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FIGURES

Cruise 0201

1. CalCOFI Cruise 0201 track and station positions.

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

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

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

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

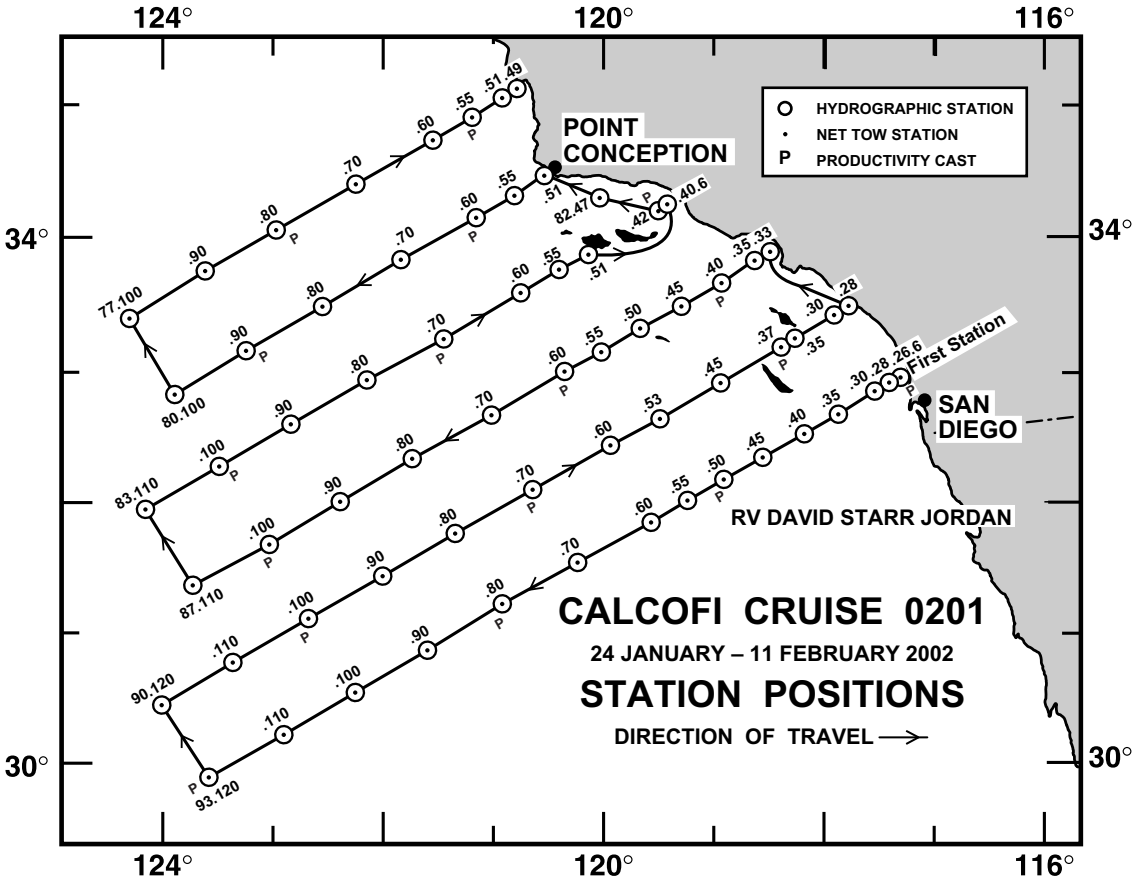

FIGURE 1

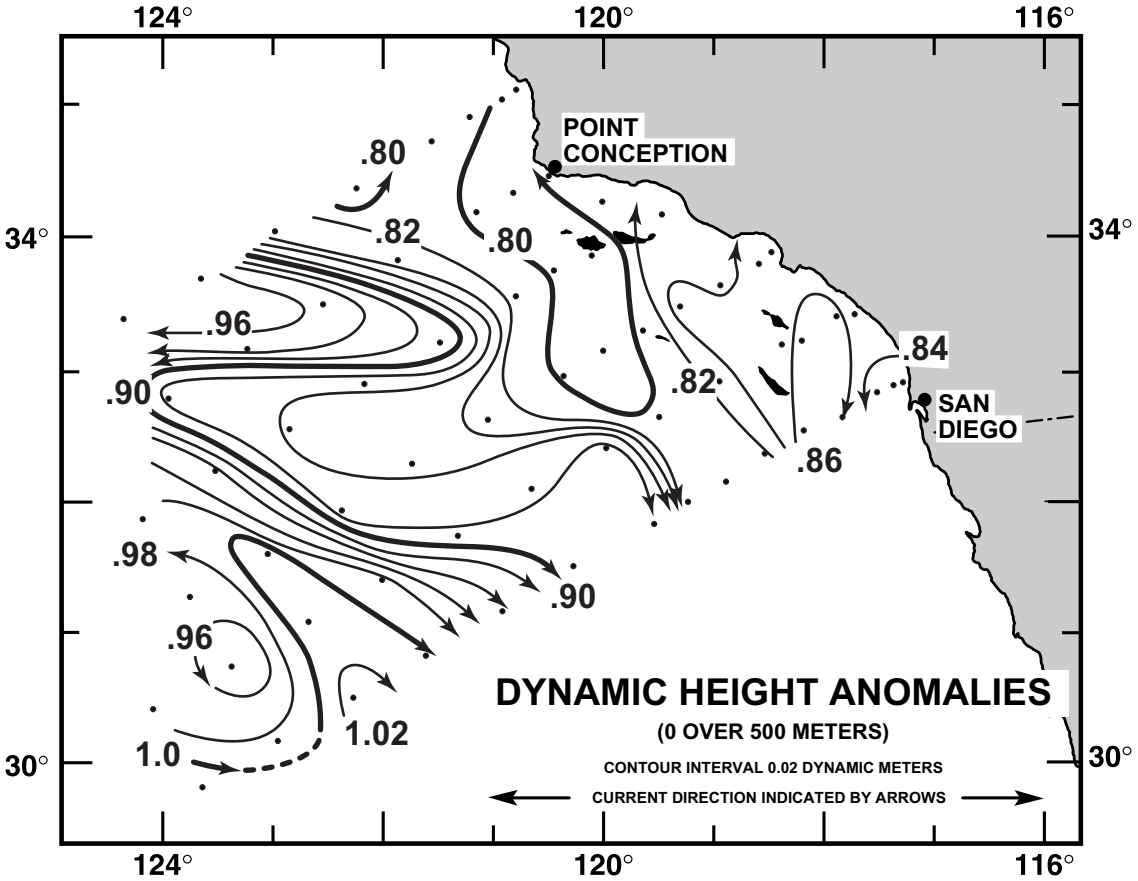

FIGURE 2

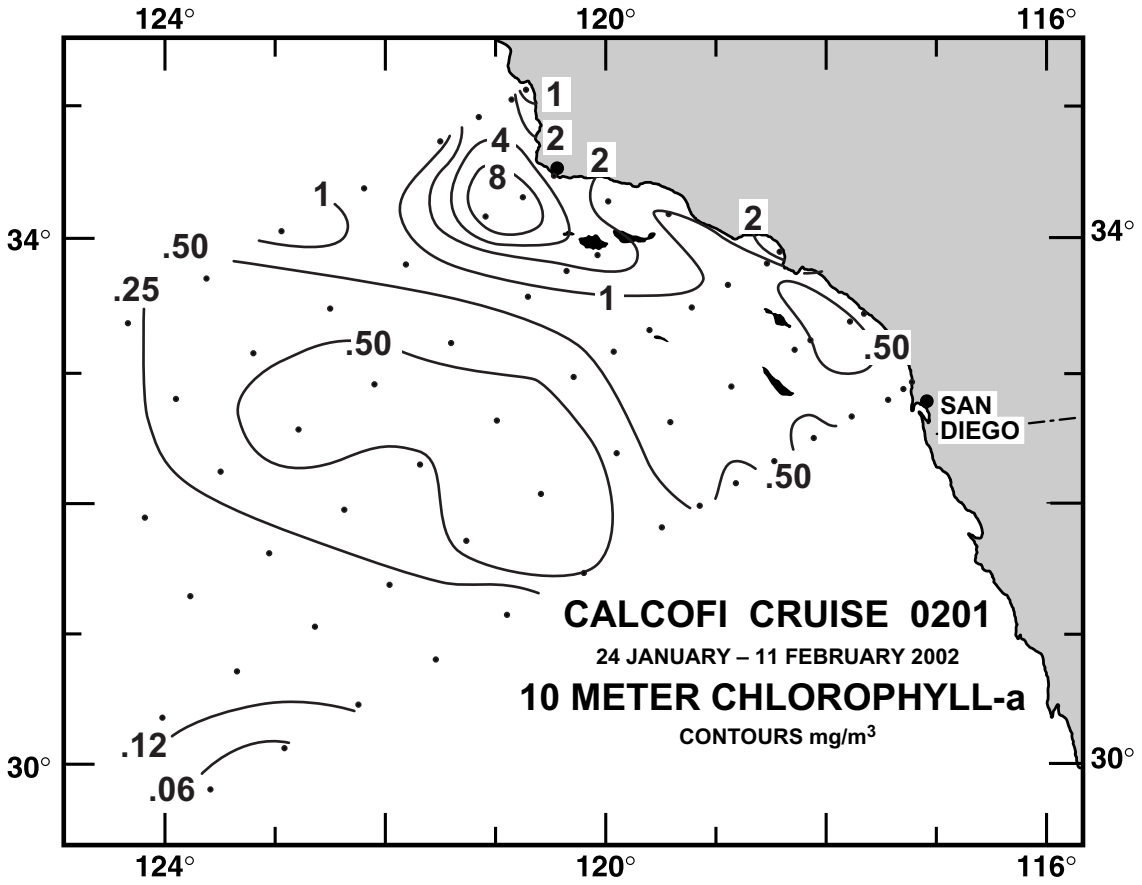

FIGURE 3A

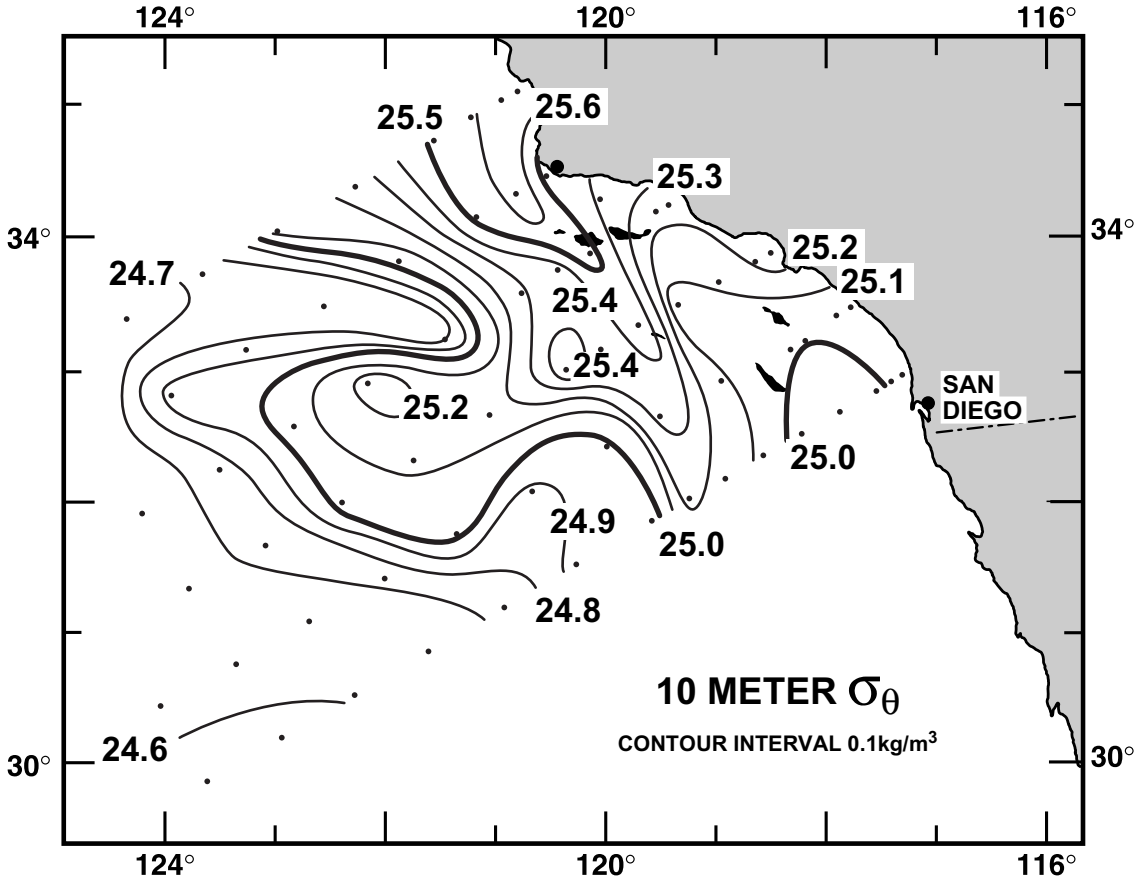

FIGURE 3B

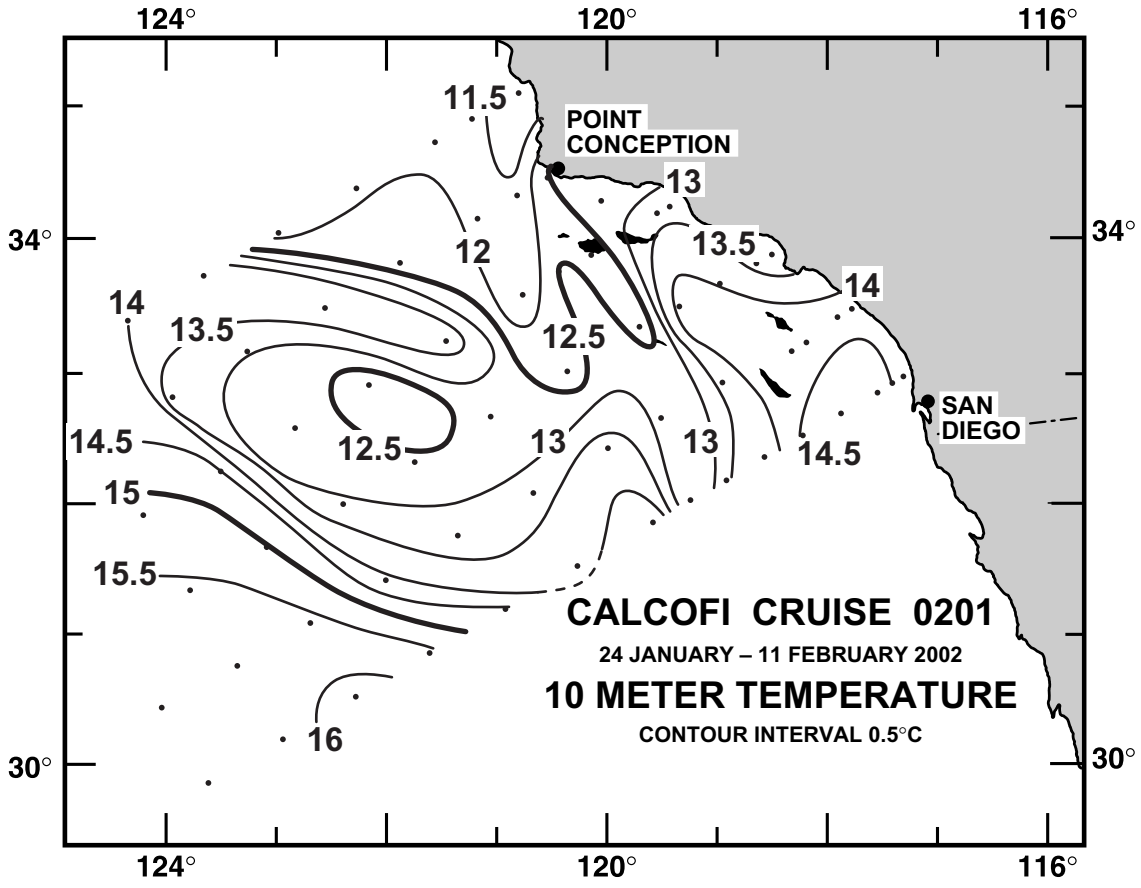

FIGURE 3C

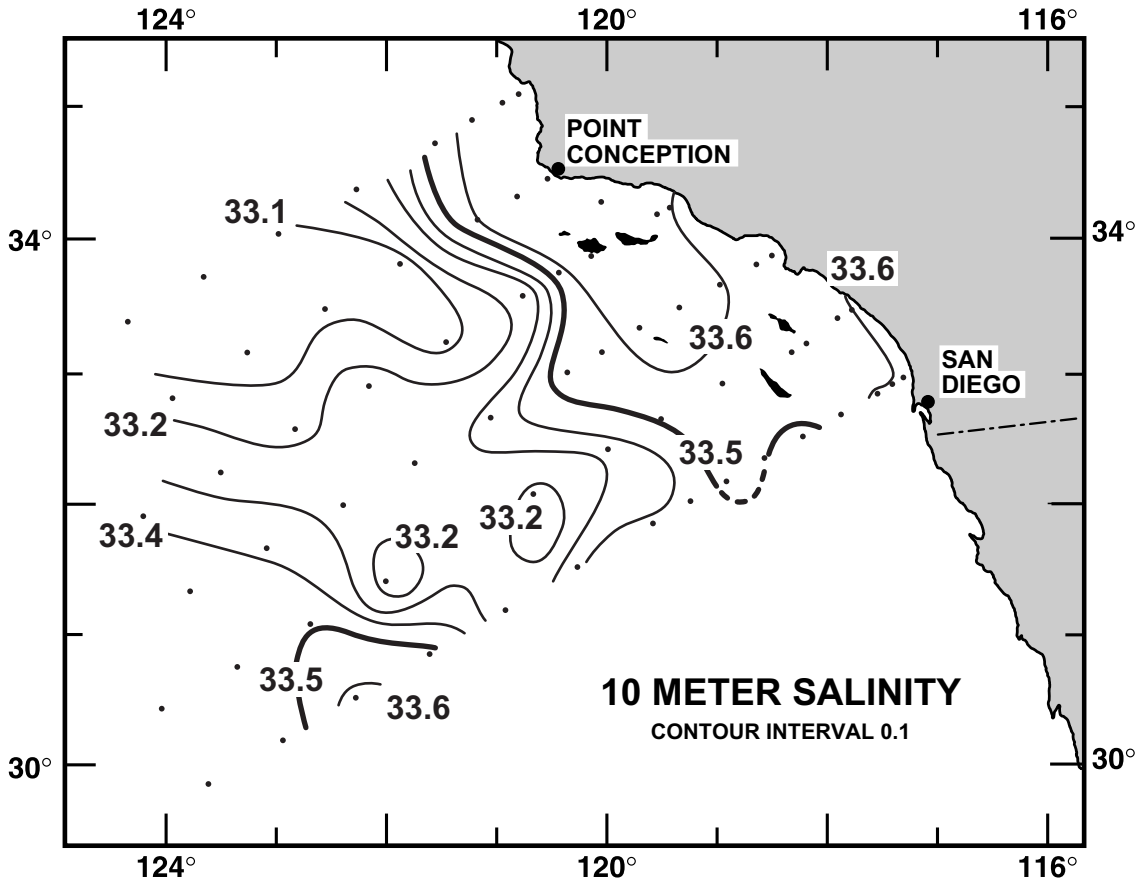

FIGURE 3D

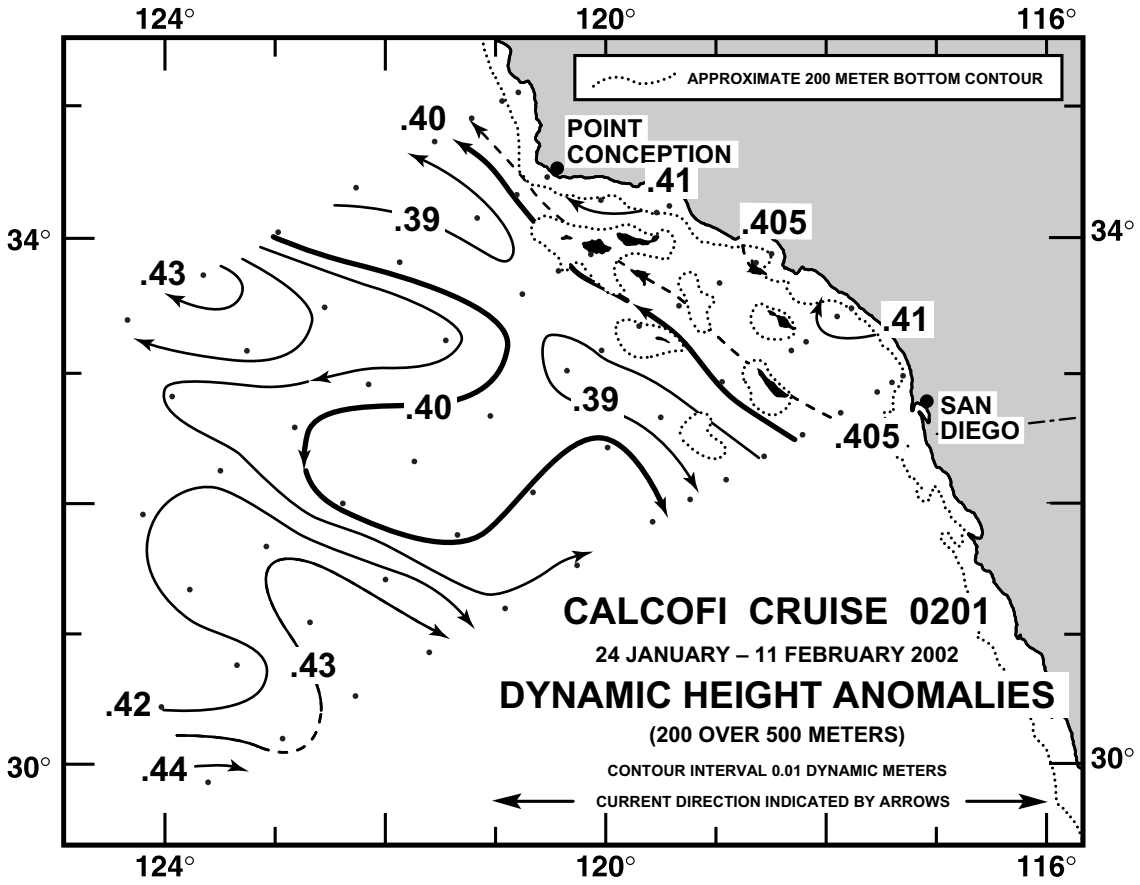

FIGURE 4A

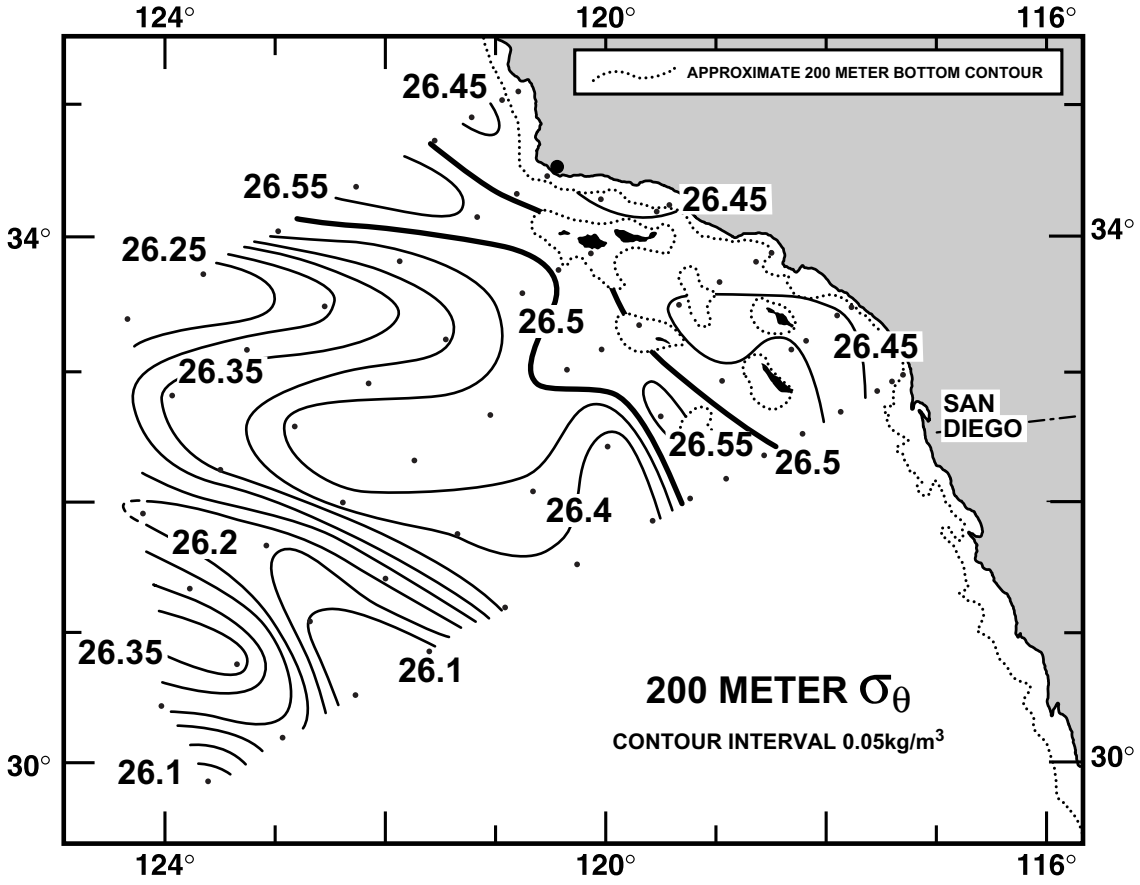

FIGURE 4B

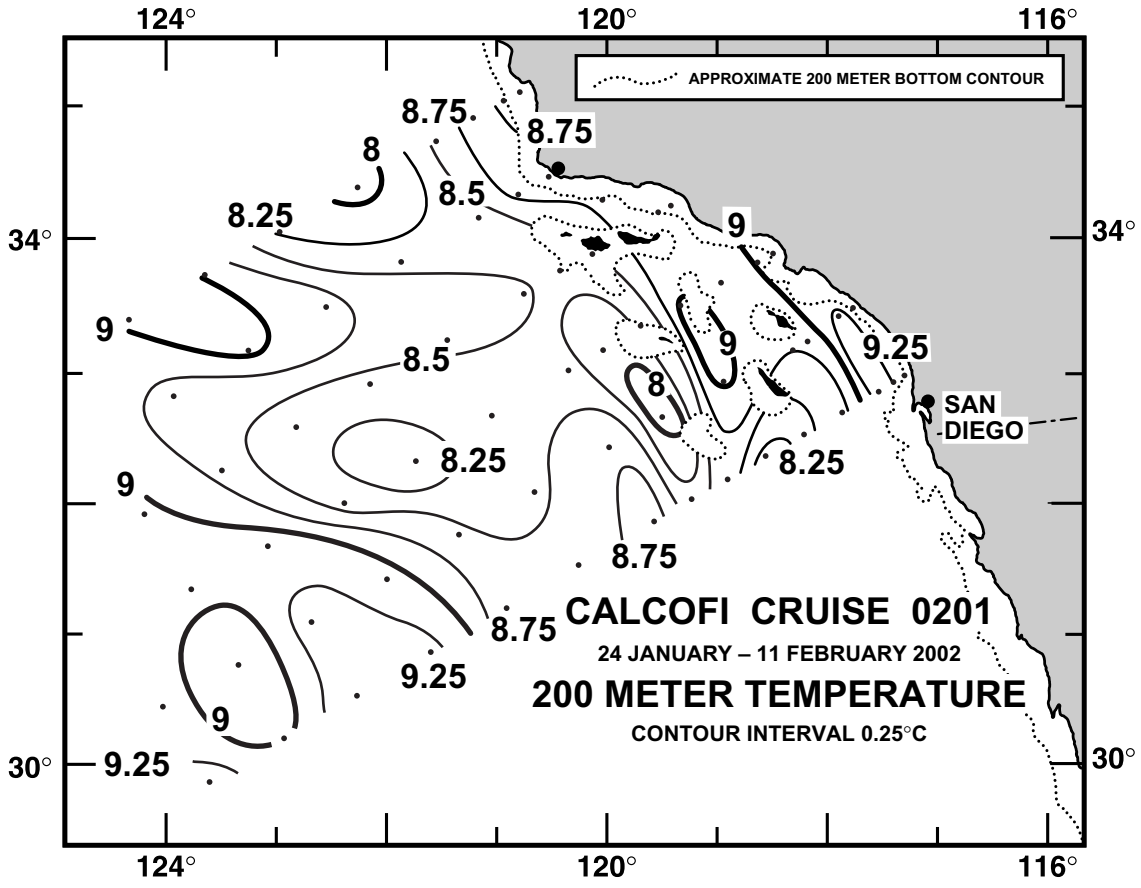

FIGURE 4C

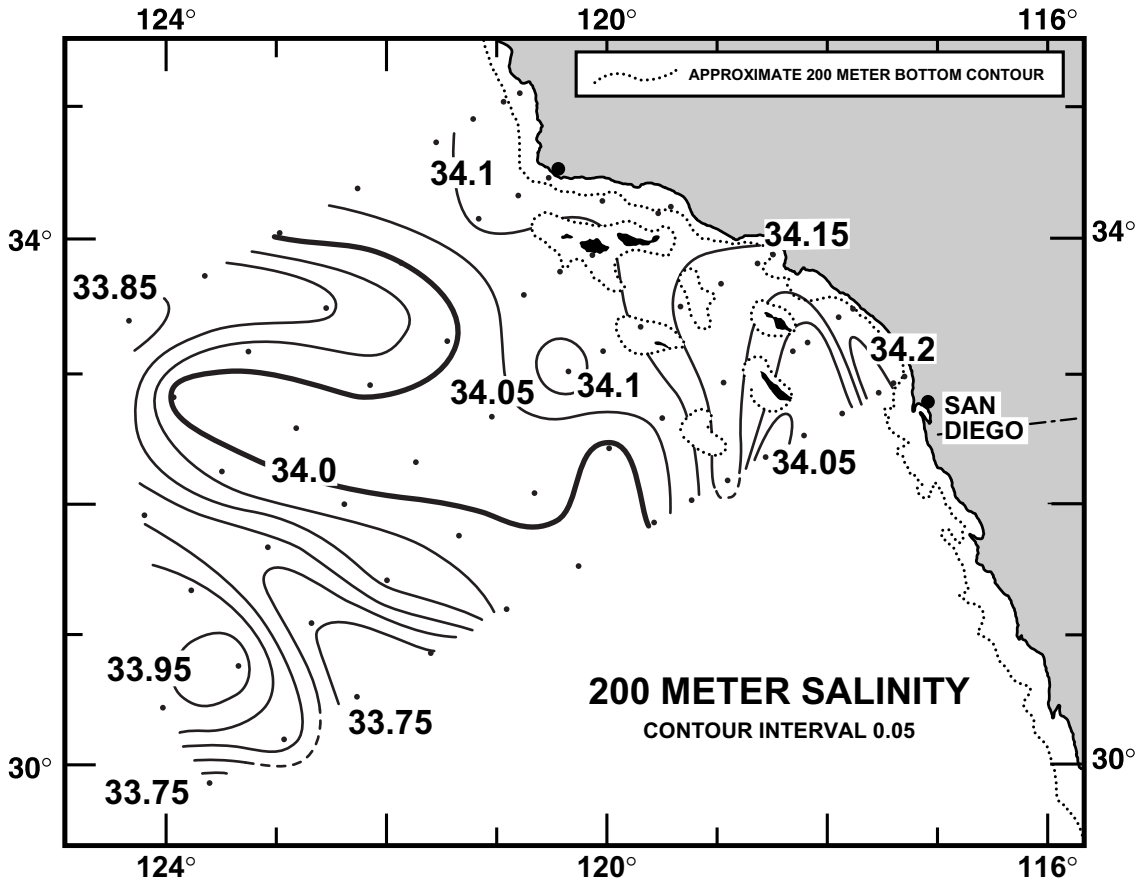

FIGURE 4D

CALCOFI CRUISE 0201

28 – 31 JANUARY 2002

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

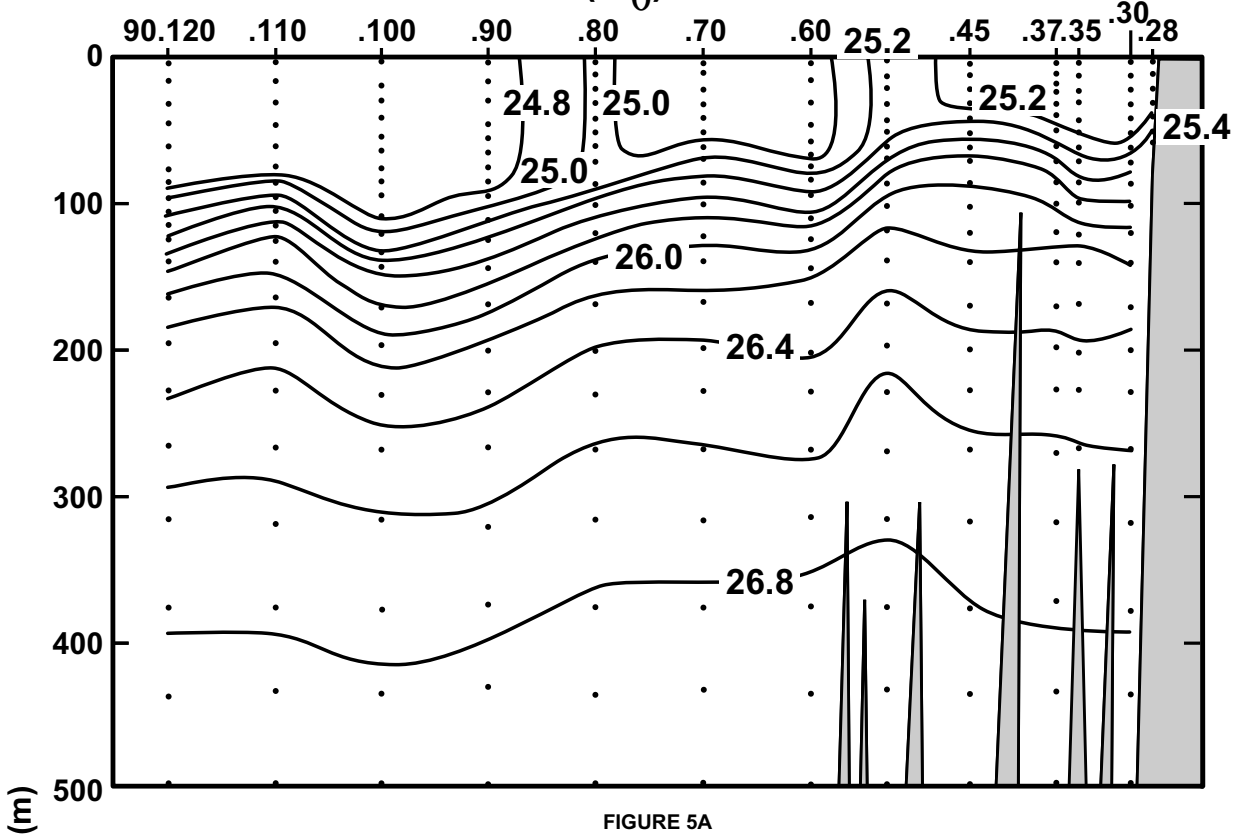

FIGURE 5A

TEMPERATURE (∝C) ALONG CALCOFI LINE 90

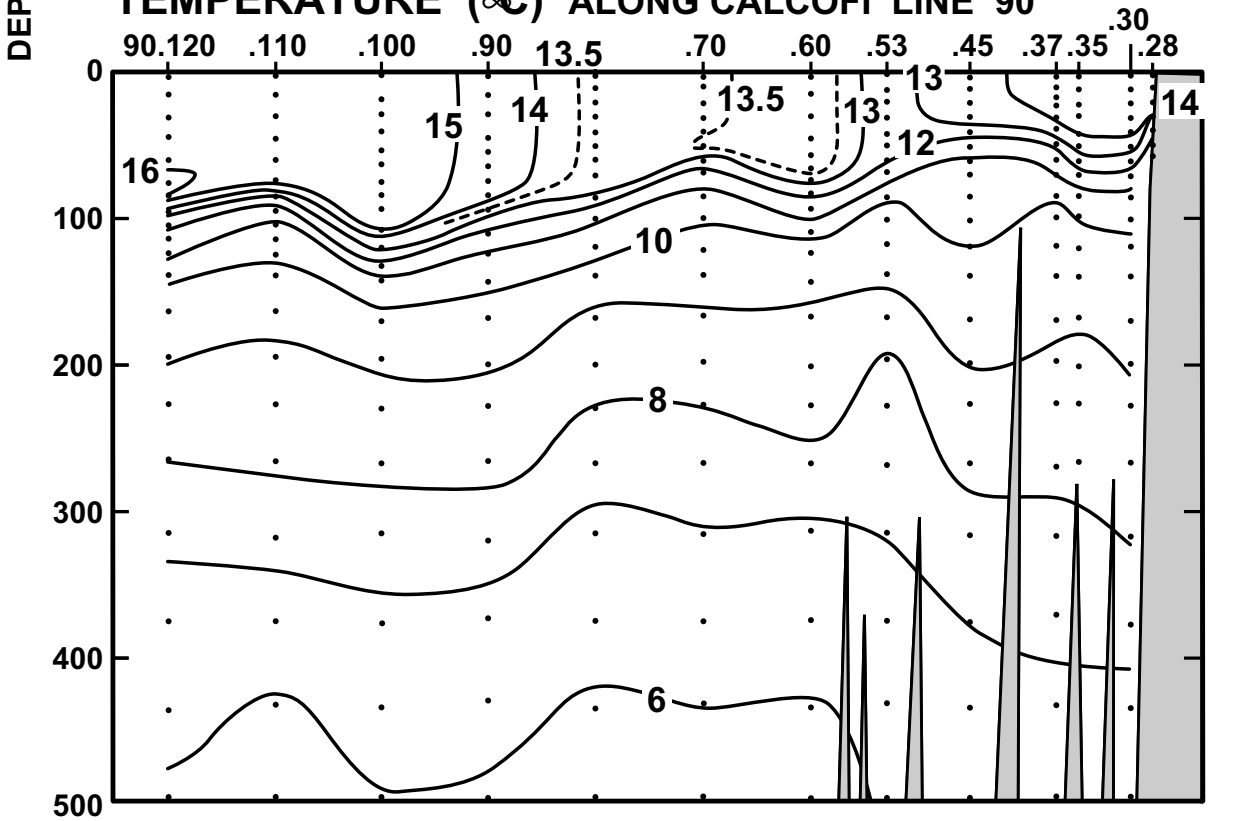

FIGURE 5B

CALCOFI CRUISE 0201

28 – 31 JANUARY 2002

SALINITY ALONG CALCOFI LINE 90

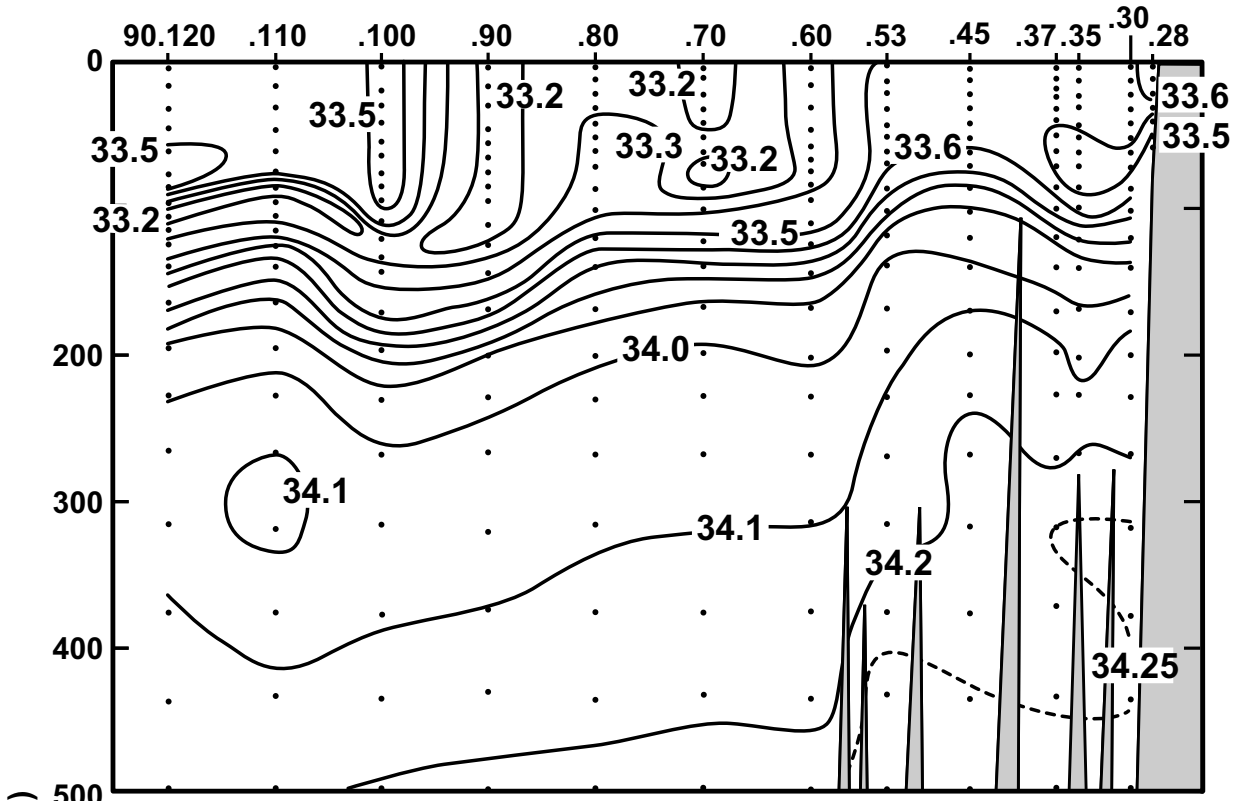

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

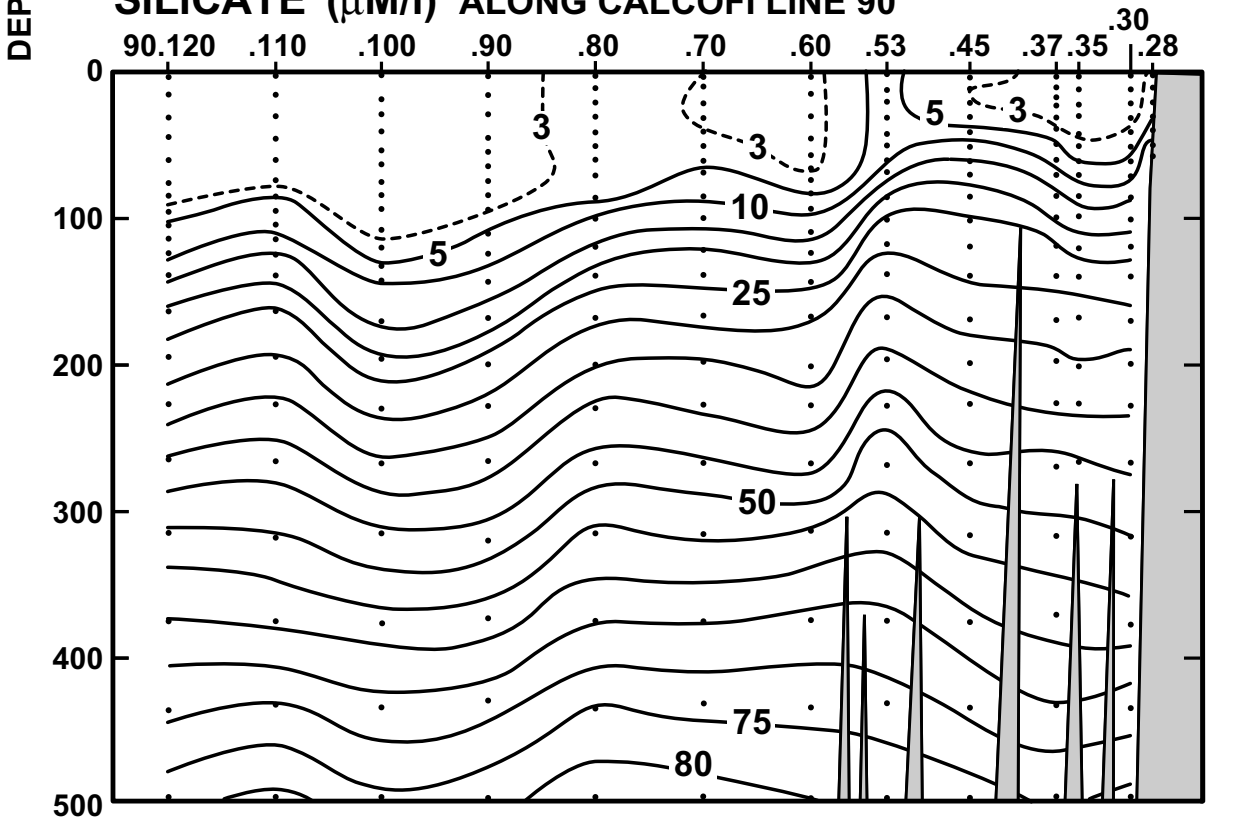

FIGURE 5D

CALCOFI CRUISE 0201

28 – 31 JANUARY 2002

NITRATE (μM/l) ALONG CALCOFI LINE 90

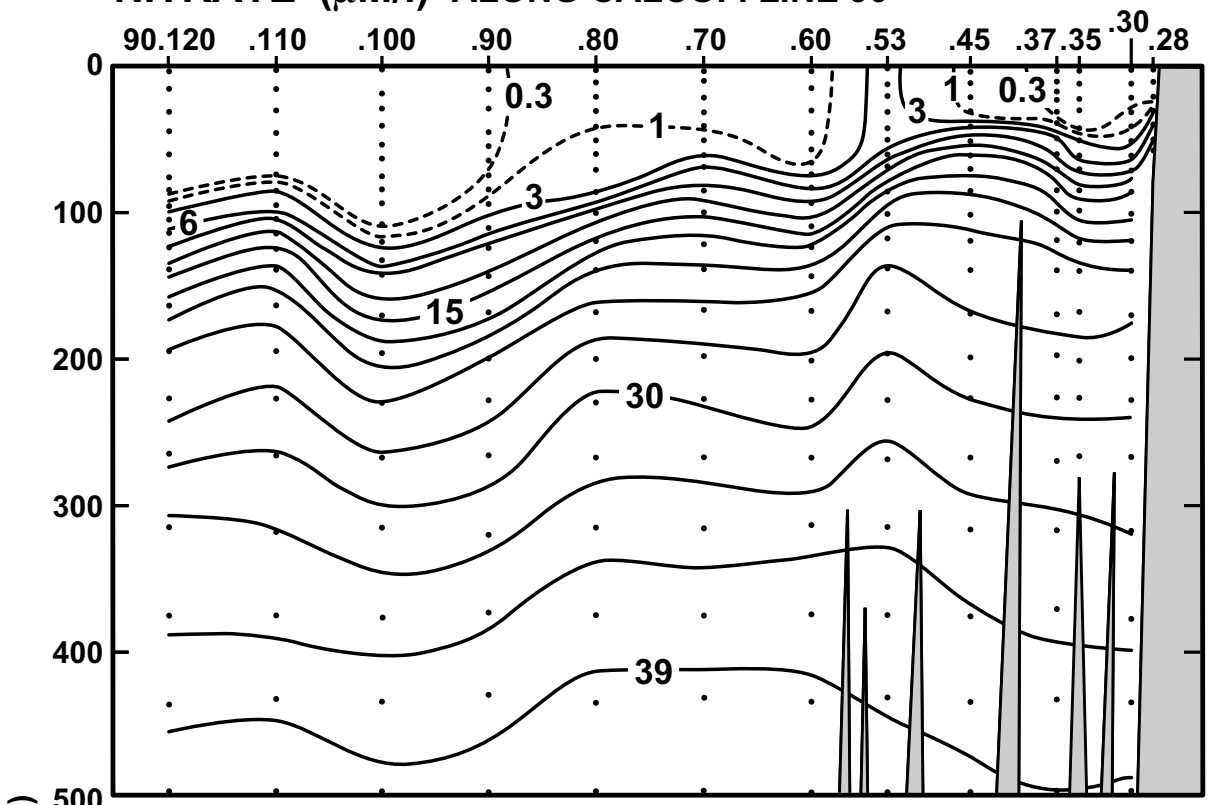

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

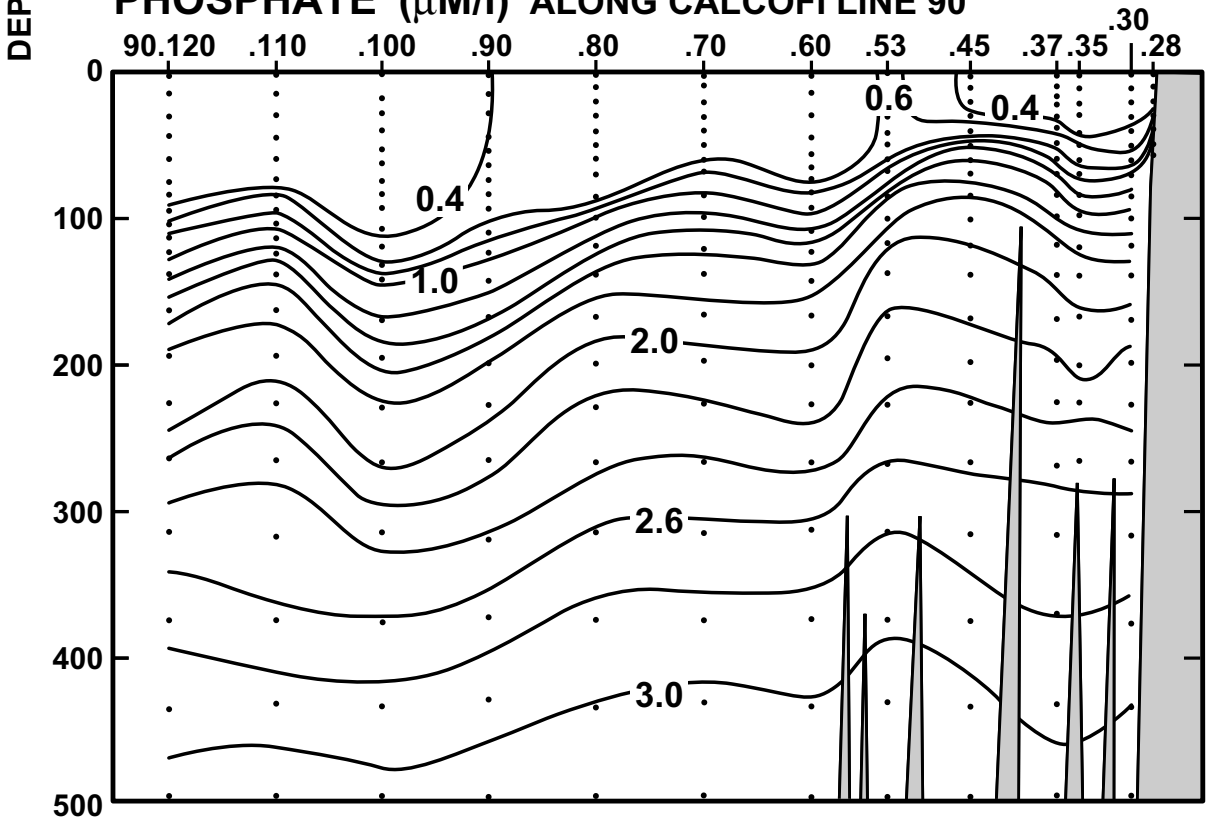

FIGURE 5F

CALCOFI CRUISE 0201

28 – 31 JANUARY 2002

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

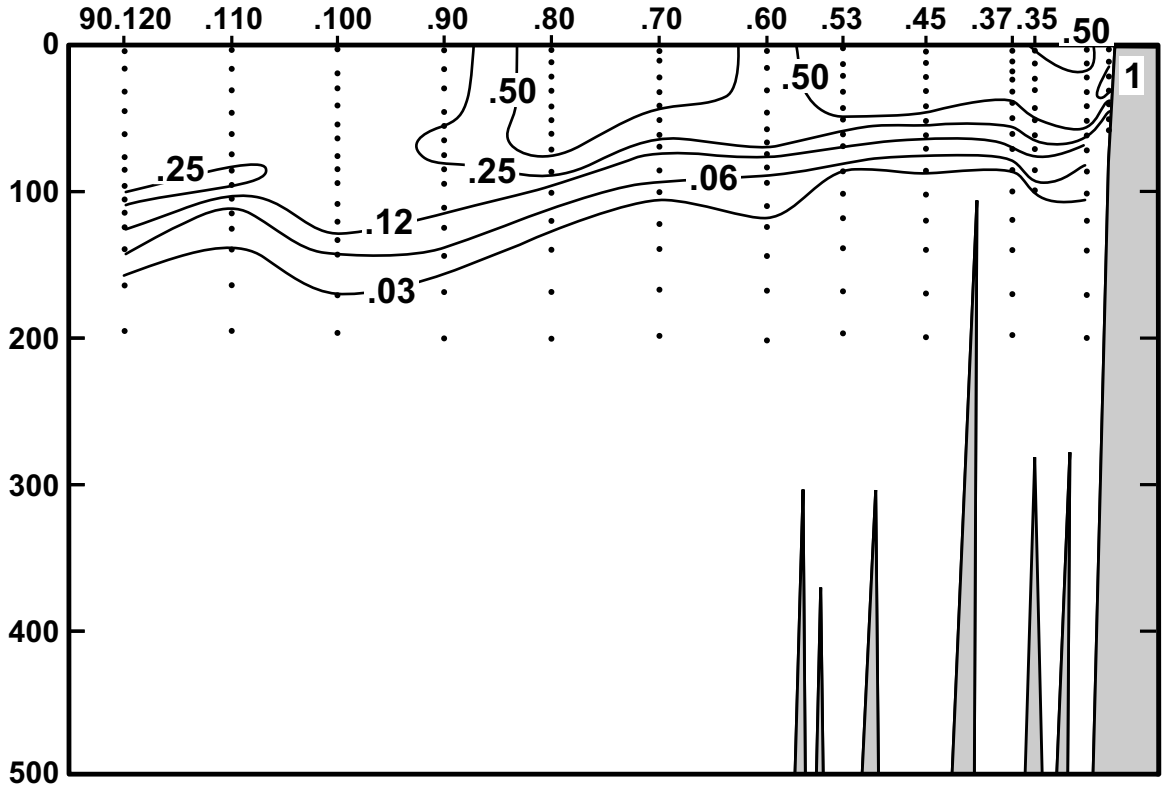

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

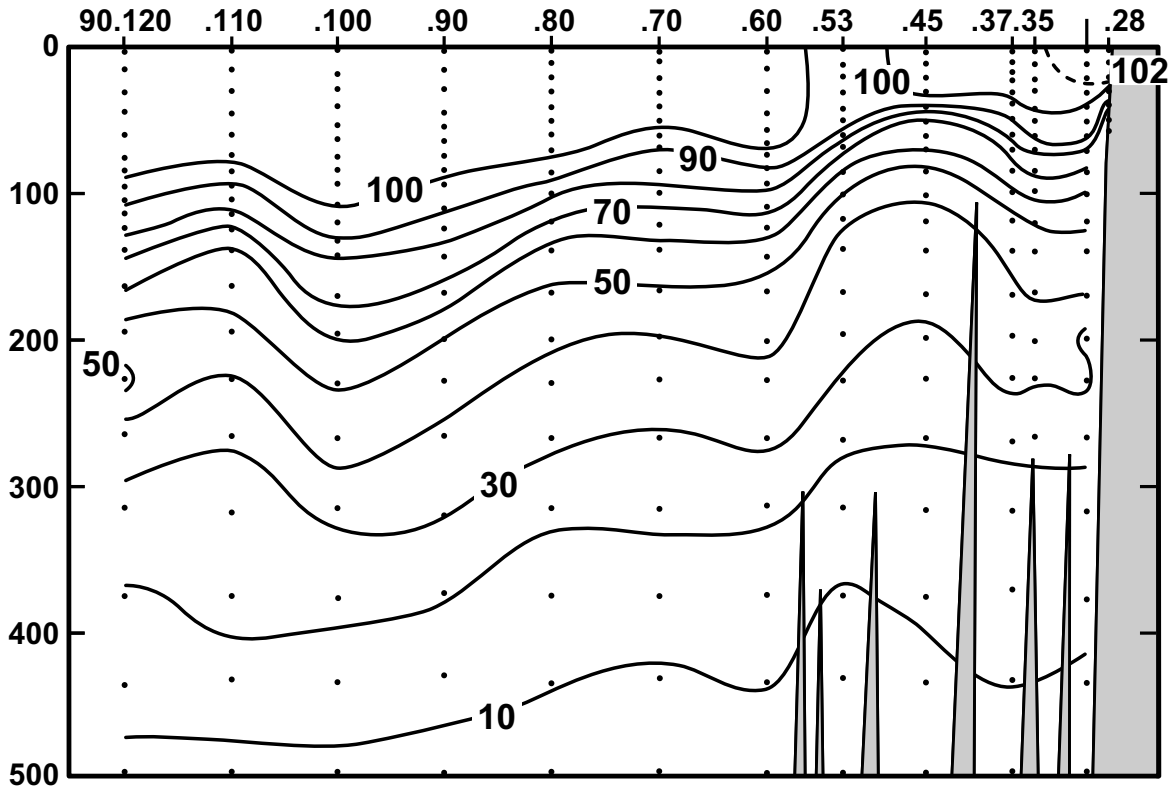

FIGURE 5H

CALCOFI CRUISE 0201

28 – 31 JANUARY 2002

OXYGEN (ml/l) ALONG CALCOFI LINE 90

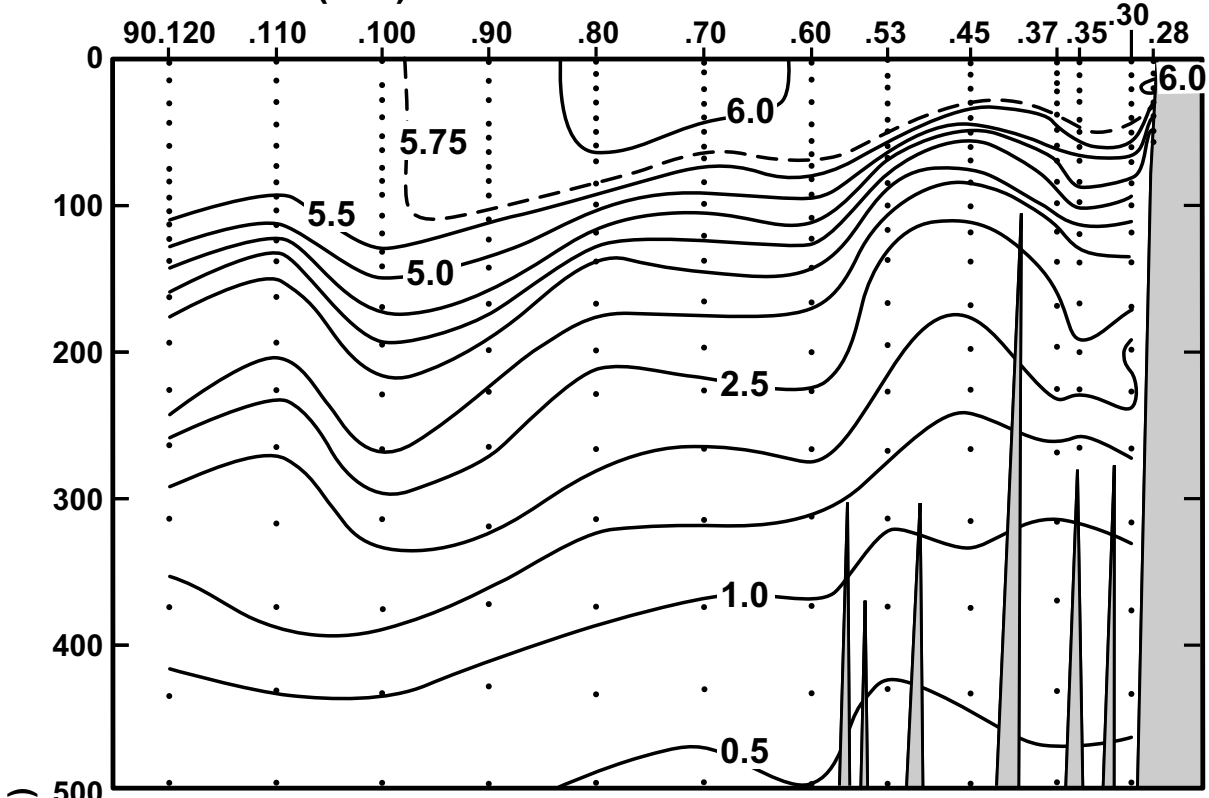

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

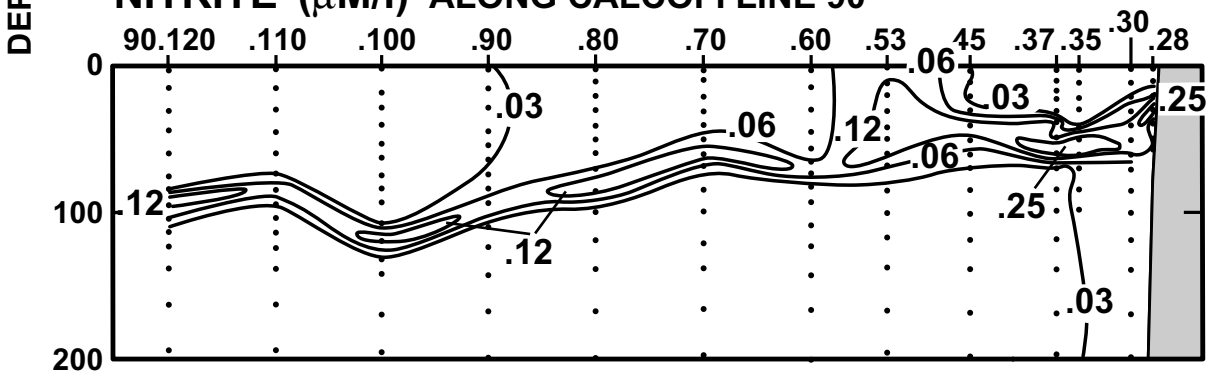

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

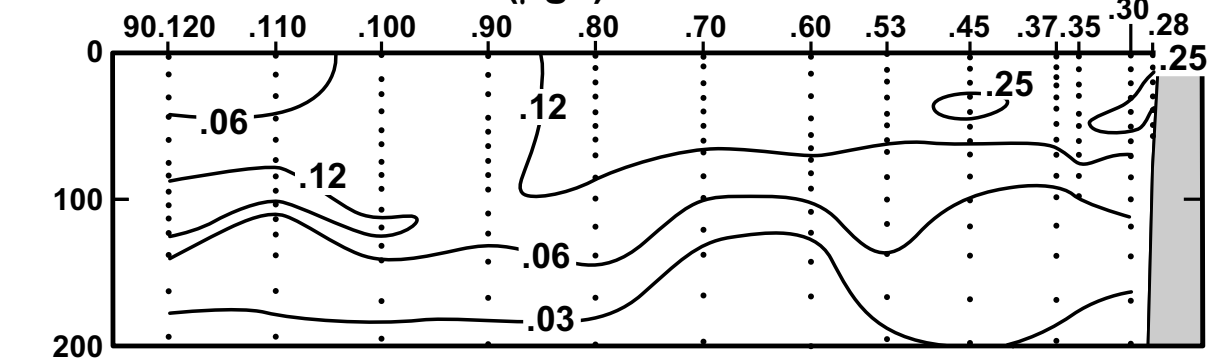

FIGURE 5K

PERSONNEL

CalCOFI Cruise 0201

SHIP'S CAPTAIN

Peter Fischel, *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
Becker, Susan M.	Staff Research Associate, SIO	1,2
Dotson, Ronald C.	Fishery Biologist, NMFS	1
Field, David B.	Graduate Student, SIO	1,2
Gruber, Dennis W.	Staff Research Associate, SIO	1,2
Hays, Amy E.	Fishery Biologist, NMFS	1
Holtermann, Karie E.	Staff Research Associate, SIO	1,2
Marrari, Marina	Staff Research Associate, SIO	1,2
Oedekoven, Cornelia S.	Seabird Biologist, Pt. Reyes Bird Observatory	1,2
Poteau, Antoine	Marine Technician, SIO	1,2
Ramirez, Fernando	Staff Research Associate, SIO	2
Velez, Jose A.	Volunteer	2
Wilkinson, James R.	Programmer Analyst, SIO	1,2
Wolgast, David M.	Staff Research Associate, SIO	1,2

Leg 1: San Diego to Ventura, California, 24 January – 5 February, 2002
Leg 2: Ventura to San Diego, California, 5 – 11 February, 2002

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 5.3 N	120 46.7 W	09/02/02	2347 UTC	67 m	170 02 kn	290 02 09	0	1024.1 mb	16.1 C	11.9 C		0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.73	11.73	33.622	25.570	240.6	0.000	5.46	88.9	13.7	1.14	11.7	0.28	0.96	0.39	0	
1		11.73	11.73	33.622	25.570	240.6	0.002	5.46	88.9	13.7	1.14	11.7	0.28	0.96	0.39	1	208
5		11.60	11.60	33.622	25.594	238.4	0.012	5.39	87.6	13.6	1.13	11.7	0.28	0.88	0.41	5	207
10	ISL	11.31	11.31	33.625	25.650	233.2	0.024	5.32	85.9	13.8	1.15	12.0	0.28	0.90	0.36	10	
11		11.25	11.25	33.626	25.661	232.1	0.026	5.31	85.6	13.8	1.16	12.1	0.28	0.90	0.35	11	206
20	ISL	11.19	11.19	33.630	25.676	231.0	0.047	5.17	83.2	14.0	1.19	12.4	0.29	0.95	0.45	20	
21		11.18	11.18	33.630	25.677	230.9	0.049	5.15	82.9	14.0	1.19	12.4	0.29	0.95	0.46	21	205
30		11.15	11.15	33.640	25.691	229.8	0.070	5.06	81.4	14.6	1.21	12.8	0.29	0.95	0.48	30	204
40		10.83	10.83	33.726	25.815	218.2	0.092	4.10	65.5	18.9	1.48	16.7	0.27	0.40	0.34	40	203
50	ISL	10.61	10.60	33.767	25.886	211.7	0.114	3.78	60.1	21.1	1.58	18.3	0.22	0.28	0.28	50	
51		10.59	10.58	33.770	25.892	211.2	0.116	3.76	59.8	21.3	1.59	18.4	0.21	0.27	0.28	51	202
60		10.41	10.40	33.820	25.962	204.6	0.135	3.34	52.9	24.3	1.74	20.4	0.19	0.20	0.30	60	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
35 1.3 N	120 55.2 W	09/02/02	2101 UTC	242 m	290 06 kn	300 04 09	0	1024.5 mb	14.8 C	12.9 C	11m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.55	11.55	33.664	25.636	234.3	0.000	5.56	90.2	13.6	1.08	10.8	0.45	2.52	0.66	0	
1		11.55	11.55	33.664	25.636	234.3	0.002	5.56	90.2	13.6	1.08	10.8	0.45	2.52	0.66	1	215
10		11.41	11.41	33.670	25.667	231.6	0.023	5.46	88.4	13.6	1.08	10.9	0.45	2.90	0.59	10	214
20		11.38	11.38	33.677	25.678	230.8	0.046	5.33	86.2	13.7	1.10	11.3	0.46	3.02	0.46	20	213
30		11.30	11.30	33.686	25.699	229.0	0.069	5.14	83.0	14.6	1.18	12.1	0.47	1.94	0.64	30	212
40		11.12	11.12	33.702	25.745	224.9	0.092	4.74	76.2	16.6	1.30	13.9	0.45	1.30	0.37	40	211
50		10.79	10.78	33.757	25.846	215.4	0.114	3.83	61.2	20.8	1.56	17.5	0.31	0.31	0.33	50	210
60		10.72	10.71	33.775	25.873	213.2	0.136	3.76	60.0	21.6	1.60	18.1	0.28	0.28	0.29	60	209
70		10.59	10.58	33.806	25.920	208.9	0.157	3.52	56.0	23.1	1.67	19.2	0.26	0.31	0.29	70	208
75	ISL	10.44	10.43	33.842	25.974	203.8	0.167	3.18	50.4	24.7	1.77	20.7	0.19	0.25	0.29	75	
85		10.12	10.11	33.920	26.090	193.0	0.187	2.49	39.2	28.1	1.98	23.7	0.05	0.12	0.29	85	207
100		9.79	9.78	33.983	26.195	183.3	0.215	2.19	34.3	31.8	2.12	25.5	0.10	0.09	0.26	101	206
119		9.44	9.43	34.028	26.289	174.8	0.249	2.05	31.8	34.8	2.21	27.1	0.10	0.05	0.20	120	205
125	ISL	9.36	9.35	34.039	26.310	172.8	0.259	2.01	31.2	35.6	2.23	27.5	0.10	0.05	0.20	126	
139		9.21	9.19	34.058	26.350	169.4	0.283	1.93	29.8	37.0	2.28	28.1	0.09	0.04	0.22	140	204
150	ISL	9.14	9.12	34.063	26.365	168.1	0.302	1.91	29.5	37.6	2.29	28.3	0.09	0.05	0.21	151	
169		9.02	9.00	34.069	26.389	166.2	0.334	1.88	28.9	38.7	2.32	28.6	0.10	0.06	0.18	170	203
198		8.63	8.61	34.111	26.484	157.7	0.381	1.65	25.2	42.8	2.44	30.2	0.09	0.03	0.20	199	202
200	ISL	8.61	8.59	34.113	26.488	157.2	0.384	1.64	25.0	43.1	2.45	30.3	0.09			201	
229		8.29	8.27	34.141	26.560	150.9	0.429	1.48	22.4	46.7	2.54	31.5	0.07			230	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 53.5 N	121 11.9 W	09/02/02	1821 UTC	536 m	350 10 kn	350 05 05	0	1024.2 mb	16.0 C	12.0 C	15m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.66	11.66	33.631	25.590	238.7	0.000	5.85	95.2	10.6	0.93	8.7	0.39	2.63	0.49	0	
2	A	11.66	11.66	33.631	25.590	238.7	0.005	5.85	95.2	10.6	0.93	8.7	0.39	2.63	0.49	2	221
9	A	11.63	11.63	33.629	25.594	238.5	0.021	5.85	95.1	10.4	0.90	8.6	0.41	2.95	0.58	9	220
10	ISL	11.63	11.63	33.629	25.594	238.5	0.024	5.84	94.9	10.4	0.90	8.6	0.41	2.92	0.58	10	
19	A	11.61	11.61	33.630	25.599	238.3	0.045	5.80	94.2	10.6	0.93	8.8	0.39	2.69	0.59	19	219
20	ISL	11.61	11.61	33.630	25.599	238.3	0.048	5.79	94.1	10.6	0.93	8.8	0.39	2.66	0.58	20	
30	A	11.54	11.54	33.633	25.614	237.1	0.071	5.58	90.5	11.4	1.00	9.7	0.41	2.10	0.50	30	218
40	A	11.37	11.37	33.657	25.664	232.6	0.095	5.08	82.1	13.5	1.15	11.8	0.41	1.02	0.50	40	217
48		11.21	11.20	33.678	25.710	228.4	0.113	4.67	75.2	15.2	1.27	13.6	0.34	0.66	0.46	48	216
50	ISL	11.17	11.16	33.683	25.721	227.4	0.118	4.56	73.4	15.6	1.30	14.1	0.31	0.57	0.42	50	
57	A	11.05	11.04	33.705	25.760	223.9	0.134	4.28	68.7	17.1	1.39	15.4	0.23	0.34	0.34	57	215
63		11.04	11.03	33.734	25.784	221.7	0.147	4.24	68.1	18.2	1.43	15.8	0.27	0.37	0.44	63	214
70		10.81	10.80	33.777	25.859	214.7	0.162	3.67	58.7	20.7	1.58	18.1	0.12	0.27	0.30	70	213
75	ISL	10.69	10.68	33.804	25.901	210.8	0.173	3.36	53.6	22.1	1.67	19.3	0.09	0.24	0.25	75	
85		10.48	10.47	33.852	25.975	204.0	0.194	2.91	46.2	24.4	1.81	21.3	0.04	0.19	0.21	85	212
100		10.15	10.14	33.918	26.084	193.9	0.224	2.51	39.6	27.4	1.96	23.7	0.02	0.07	0.15	101	211
120		9.87	9.86	33.958	26.163	186.8	0.262	2.37	37.1	30.0	2.05	25.0	0.01	0.06	0.15	121	210
125	ISL	9.78	9.77	33.972	26.189	184.5	0.271	2.33	36.4	30.5	2.07	25.4	0.01	0.05	0.14	126	
140		9.52	9.50	34.014	26.265	177.5	0.298	2.21	34.4	32.2	2.14	26.6	0.01	0.03	0.12	141	209
150	ISL	9.41	9.39	34.031	26.296	174.7	0.316	2.12	32.9	33.7	2.18	27.2	0.01	0.03	0.13	151	
169		9.23	9.21	34.058	26.347	170.2	0.348	1.98	30.6	36.2	2.25	28.0	0.01	0.03	0.15	170	208
199		8.91	8.89	34.116	26.444	161.6	0.398	1.86	28.6	38.0	2.33	29.1	0.01	0.02	0.09	200	207
200	ISL	8.90	8.88	34.117	26.446	161.3	0.400	1.86	28.6	38.1	2.33	29.1	0.01			201	
229		8.63	8.61	34.135	26.503	156.4	0.446	1.72	26.2	40.9	2.40	30.1	0.00			230	206
250	ISL	8.43	8.40	34.146	26.543	153.0	0.478	1.62	24.6	43.0	2.46	30.9	0.00			252	
268		8.23	8.20	34.155	26.580	149.7	0.506	1.52	23.0	45.3	2.52	31.7	0.00			270	205
300	ISL	7.72	7.69	34.172	26.669	141.5	0.552	1.24	18.5	52.5	2.67	33.4	0.00			302	
318		7.43	7.40	34.182	26.719	136.9	0.577	1.07	15.9	56.8	2.76	34.4	0.00			320	204
378		6.82	6.78	34.211	26.827	127.2	0.657	0.73	10.7	66.3	2.95	36.6	0.00			381	203
400	ISL	6.70	6.66	34.219	26.849	125.3	0.684	0.66	9.6	68.2	2.99	37.1	0.00			403	
440		6.51	6.47	34.231	26.885	122.4	0.734	0.58	8.4	71.5	3.04	37.8	0.00			443	202
500	ISL	6.05	6.01	34.257	26.965	115.2	0.805	0.45	6.5	79.7	3.12	39.3	0.01			504	
512		5.96	5.92	34.263	26.981	113.7	0.819	0.42	6.0	81.3	3.14	39.6	0.01			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 43.2 N	121 32.3 W	09/02/02	1155 UTC	948 m	020 17 kn			1024.5 mb	12.5 C	9.5 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.80	11.80	33.587	25.530	244.4	0.000	5.62	91.7	10.3	0.95	8.5	0.38	0.77	0.40	0	
2		11.80	11.80	33.587	25.530	244.4	0.005	5.62	91.7	10.3	0.95	8.5	0.38	0.77	0.40	2	220
10	ISL	11.81	11.81	33.589	25.530	244.6	0.024	5.62	91.7	10.3	0.95	8.5	0.38	0.76	0.41	10	
11		11.81	11.81	33.589	25.530	244.6	0.027	5.62	91.7	10.3	0.95	8.5	0.38	0.76	0.41	11	219
20	ISL	11.81	11.81	33.592	25.532	244.6	0.049	5.59	91.2	10.5	0.95	8.6	0.39	0.79	0.43	20	
22		11.81	11.81	33.592	25.532	244.7	0.054	5.58	91.0	10.5	0.95	8.6	0.39	0.80	0.43	22	218
30	ISL	11.82	11.82	33.590	25.529	245.2	0.073	5.57	90.9	10.3	0.95	8.7	0.39	0.84	0.43	30	
32		11.82	11.82	33.589	25.528	245.3	0.078	5.57	90.9	10.3	0.95	8.7	0.39	0.85	0.43	32	217
42		11.82	11.81	33.591	25.530	245.4	0.103	5.53	90.2	10.5	0.96	8.7	0.39	0.79	0.41	42	216
50	ISL	11.82	11.81	33.591	25.530	245.6	0.122	5.54	90.4	10.5	1.01	8.7	0.40	0.79	0.34	50	
51		11.82	11.81	33.591	25.530	245.6	0.125	5.54	90.4	10.5	1.01	8.7	0.40	0.79	0.34	51	215
60		11.80	11.79	33.596	25.538	245.1	0.147	5.52	90.0	10.4	0.98	8.8	0.40	0.76	0.51	60	214
72		11.52	11.51	33.648	25.631	236.6	0.176	4.84	78.5	13.2	1.17	11.9	0.40	0.46	0.36	72	213
75	ISL	11.37	11.36	33.674	25.678	232.1	0.183	4.51	72.9	14.7	1.27	13.4	0.35	0.48	0.36	75	
86		10.82	10.81	33.771	25.853	215.7	0.208	3.38	54.0	20.3	1.61	18.8	0.14	0.56	0.41	86	212
100	ISL	10.55	10.54	33.825	25.943	207.4	0.237	2.96	47.0	23.1	1.77	21.1	0.04	0.22	0.35	101	
102		10.52	10.51	33.829	25.951	206.7	0.241	2.95	46.9	23.3	1.78	21.2	0.03	0.16	0.34	103	211
122		9.93	9.92	33.858	26.075	195.2	0.282	2.85	44.7	25.5	1.87	23.2	0.02	0.08	0.31	123	210
125	ISL	9.89	9.88	33.877	26.096	193.3	0.287	2.79	43.7	26.1	1.90	23.6	0.02	0.07	0.30	126	
140		9.70	9.68	33.972	26.203	183.5	0.316	2.49	38.9	29.0	2.02	25.4	0.01	0.03	0.22	141	209
150	ISL	9.40	9.38	33.981	26.259	178.3	0.334	2.50	38.8	30.5	2.05	26.3	0.01	0.03	0.19	151	
169		8.83	8.81	33.980	26.349	169.9	0.367	2.53	38.7	33.1	2.10	27.8	0.01	0.02	0.15	170	208
200		8.57	8.55	34.094	26.480	158.1	0.418	2.03	30.9	38.8	2.30	29.7	0.00	0.02	0.14	201	207
228		7.93	7.91	34.089	26.572	149.5	0.461	1.94	29.1	43.8	2.40	31.6	0.00			229	206
250	ISL	7.67	7.65	34.090	26.611	146.0	0.493	1.85	27.6	46.3	2.45	32.5	0.00			252	
270		7.53	7.50	34.092	26.633	144.2	0.522	1.77	26.3	48.1	2.49	33.0	0.00			272	205
300	ISL	7.32	7.29	34.090	26.662	141.9	0.565	1.68	24.9	50.4	2.55	33.7	0.00			302	
322		7.17	7.14	34.098	26.689	139.6	0.596	1.57	23.2	52.7	2.61	34.4	0.00			324	204
373		6.76	6.73	34.184	26.813	128.3	0.664	0.89	13.0	63.2	2.88	37.1	0.00			375	203
400	ISL	6.50	6.46	34.197	26.859	124.3	0.698	0.70	10.2	67.8	2.97	38.3	0.00			403	
436		6.16	6.12	34.204	26.908	119.7	0.742	0.56	8.1	73.2	3.05	39.5	0.00			439	202
500	ISL	5.80	5.76	34.248	26.989	112.6	0.817	0.40	5.7	81.0	3.16	40.7	0.00			504	
513		5.73	5.69	34.257	27.005	111.2	0.831	0.37	5.3	82.6	3.18	40.9	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 23.4 N	122 14.6 W	09/02/02	0523 UTC	4018 m	340 20 kn			1026.5 mb	12.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.99	11.99	33.253	25.235	272.4	0.000	6.30	103.0	5.3	0.61	3.6	0.12	0.67	0.22	0	
3		11.99	11.99	33.253	25.235	272.5	0.008	6.30	102.9	5.3	0.61	3.6	0.12	0.67	0.22	3	220
10		11.99	11.99	33.251	25.234	272.8	0.027	6.30	102.9	5.3	0.61	3.5	0.12	0.66	0.22	10	219
20		11.99	11.99	33.251	25.234	273.0	0.055	6.31	103.1	5.2	0.60	3.5	0.12	0.65	0.23	20	218
30		11.99	11.99	33.252	25.235	273.2	0.082	6.28	102.6	5.3	0.61	3.6	0.13	0.71	0.19	30	217
41		11.99	11.98	33.254	25.237	273.3	0.112	6.27	102.4	5.3	0.61	3.7	0.14	0.66	0.23	41	216
50	ISL	11.67	11.66	33.323	25.350	262.7	0.136	5.85	95.0	7.2	0.79	6.5	0.33	0.50	0.25	50	
51		11.63	11.62	33.334	25.366	261.2	0.139	5.79	93.9	7.5	0.82	6.9	0.35	0.48	0.25	51	215
61		11.27	11.26	33.464	25.533	245.5	0.164	5.34	86.0	10.4	1.03	10.7	0.14	0.20	0.16	61	214
71		10.60	10.59	33.470	25.657	233.9	0.188	4.76	75.6	13.8	1.28	14.8	0.03	0.16	0.14	71	213
75	ISL	10.27	10.26	33.441	25.691	230.7	0.197	4.54	71.6	15.5	1.38	16.5	0.03	0.13	0.13	75	
88		9.34	9.33	33.438	25.843	216.4	0.226	3.88	59.9	21.3	1.67	21.3	0.01	0.03	0.09	88	212
100	ISL	8.98	8.97	33.731	26.130	189.4	0.251	3.41	52.3	26.2	1.85	24.2	0.00	0.00	0.06	101	
101		8.96	8.95	33.757	26.153	187.1	0.253	3.38	51.8	26.6	1.86	24.4	0.00	0.00	0.06	102	211
117		8.82	8.81	33.855	26.252	178.0	0.282	3.10	47.4	29.4	1.94	25.8	0.00	0.00	0.06	118	210
125	ISL	8.83	8.82	33.904	26.289	174.7	0.296	2.89	44.2	30.7	1.99	26.4	0.00	0.00	0.06	126	
141		8.84	8.82	33.990	26.355	168.8	0.323	2.50	38.3	33.2	2.10	27.7	0.00	0.01	0.06	142	209
150	ISL	8.68	8.66	34.013	26.398	164.8	0.338	2.42	36.9	34.8	2.14	28.4	0.00	0.01	0.06	151	
171		8.24	8.22	34.044	26.490	156.4	0.372	2.28	34.5	38.8	2.24	30.0	0.00	0.01	0.05	172	208
200		7.89	7.87	34.092 D	26.580	148.2	0.416	1.74	26.1	44.7	2.45	32.3	0.00	0.00	0.04	201	207
231		7.36	7.34	34.073	26.642	142.7	0.461	1.73	25.6	49.0	2.52	33.9	0.00			232	206
250	ISL	7.21	7.19	34.100	26.684	138.9	0.488	1.50	22.2	52.4	2.62	34.8	0.00			252	
268		7.11	7.08	34.132	26.724	135.4	0.513	1.24	18.3	55.6	2.72	35.5	0.00			270	205
300	ISL	6.89	6.86	34.154	26.771	131.3	0.555	1.03	15.1	59.8	2.82	36.5	0.00			302	
320		6.73	6.70	34.158	26.796	129.1	0.581	0.96	14.0	62.2	2.86	37.1	0.00			322	204
379		6.08	6.05	34.136	26.864	123.0	0.656	0.85	12.2	70.4	2.96	39.1	0.00			382	203
400	ISL	5.90	5.87	34.140	26.890	120.7	0.681	0.79	11.3	73.3	3.00	39.7	0.00			403	
436		5.64	5.60	34.157	26.936	116.6	0.724	0.67	9.5	78.2	3.06	40.7	0.00			439	202
500	ISL	5.30	5.26	34.203	27.013	109.7	0.797	0.45	6.4	86.9	3.17	42.1	0.00			504	
507		5.26	5.22	34.208	27.022	109.0	0.804	0.43	6.1	87.9	3.18	42.2	0.00			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 3.1 N	122 56.7 W	08/02/02	1839 UTC	4233 m	330 17 kn	320 05 09	1	1030.0 mb	13.2 C	10.0 C	13m	2/8	CI

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.93	11.93	33.082	25.113	284.0	0.000	6.34	103.4	5.3	0.60	3.2	0.10	1.13	0.24	0	
2	A	11.93	11.93	33.082	25.113	284.0	0.006	6.34	103.4	5.3	0.60	3.2	0.10	1.13	0.24	2	222
8	A	11.92	11.92	33.083	25.116	283.9	0.023	6.33	103.2	5.3	0.60	3.2	0.10	1.18	0.24	8	221
10	ISL	11.91	11.91	33.086	25.120	283.6	0.028	6.33	103.2	5.3	0.60	3.3	0.10	1.19	0.25	10	
17	A	11.89	11.89	33.124	25.154	280.6	0.048	6.33	103.1	5.4	0.61	3.5	0.11	1.21	0.27	17	220
20	ISL	11.81	11.81	33.147	25.187	277.5	0.057	6.28	102.2	5.7	0.64	4.0	0.11	1.12	0.26	20	
26	A	11.63	11.63	33.190	25.253	271.3	0.073	6.12	99.2	6.4	0.71	5.2	0.10	0.88	0.22	26	219
30	ISL	11.52	11.52	33.196	25.278	269.0	0.084	5.95	96.2	7.2	0.78	6.4	0.10	0.73	0.21	30	
35	A	11.42	11.42	33.208	25.306	266.5	0.097	5.78	93.3	8.0	0.85	7.6	0.09	0.57	0.20	35	218
42		11.45	11.44	33.281	25.357	261.8	0.116	5.78	93.4	8.2	0.84	7.6	0.17	0.42	0.20	42	217
48	A	11.42	11.41	33.298	25.376	260.1	0.131	5.68	91.7	8.6	0.89	8.2	0.16	0.27	0.19	48	216
50	ISL	11.50	11.49	33.332	25.388	259.0	0.137	5.69	92.0	8.4	0.87	7.9	0.24	0.27	0.20	50	
55		11.69	11.68	33.416	25.419	256.3	0.149	5.73	93.1	7.9	0.83	7.1	0.43	0.27	0.22	55	215
60		11.59	11.58	33.433	25.450	253.4	0.162	5.65	91.6	8.4	0.88	7.9	0.36	0.23	0.21	60	214
70		11.25	11.24	33.451	25.526	246.4	0.187	5.44	87.6	10.0	0.99	9.9	0.21	0.16	0.16	70	213
75	ISL	10.80	10.79	33.437	25.596	239.8	0.199	5.19	82.7	11.9	1.11	12.0	0.14	0.13	0.15	75	
86		9.84	9.83	33.438	25.761	224.2	0.225	4.54	70.9	16.5	1.41	17.0	0.02	0.07	0.13	86	212
100		9.58	9.57	33.583	25.917	209.6	0.255	3.88	60.3	20.7	1.63	20.6	0.01	0.04	0.10	101	211
120		9.06	9.05	33.820	26.187	184.3	0.295	3.07	47.2	28.3	1.91	25.3	0.01	0.01	0.05	121	210
125	ISL	9.01	9.00	33.860	26.226	180.7	0.304	2.90	44.6	29.6	1.96	26.1	0.01	0.01	0.05	126	
140		8.90	8.89	33.948	26.313	172.8	0.330	2.54	39.0	32.7	2.08	27.7	0.00	0.01	0.06	141	209
150	ISL	8.79	8.77	33.978	26.354	169.1	0.347	2.54	38.9	33.8	2.09	28.1	0.00	0.01	0.06	151	
170		8.53	8.51	34.005	26.415	163.5	0.381	2.54	38.6	35.5	2.11	28.5	0.00	0.00	0.04	171	208
199		8.17	8.15	34.024	26.485	157.3	0.427	2.46	37.1	39.1	2.18	29.7	0.00	0.00	0.03	200	207
200	ISL	8.16	8.14	34.025	26.488	157.1	0.429	2.46	37.1	39.2	2.18	29.7	0.00			201	
229		7.75	7.73	34.035	26.556	150.9	0.473	2.40	35.9	43.1	2.24	30.5	0.00			230	206
250	ISL	7.42	7.40	34.024	26.595	147.4	0.505	2.37	35.2	45.7	2.28	31.3	0.00			252	
269		7.14	7.11	34.014	26.626	144.6	0.532	2.34	34.5	48.2	2.33	32.2	0.00			271	205
300	ISL	6.84	6.81	34.028	26.679	139.9	0.576	1.99	29.1	52.9	2.48	34.0	0.00			302	
320		6.66	6.63	34.040	26.713	136.9	0.604	1.73	25.2	56.2	2.59	35.2	0.00			322	204
377		5.88	5.85	34.040	26.813	127.6	0.680	1.39	19.9	67.3	2.78	38.3	0.00			379	203
400	ISL	5.92	5.89	34.087	26.846	124.9	0.709	1.14	16.3	70.3	2.87	38.9	0.00			403	
438		5.98	5.94	34.160	26.896	120.7	0.755	0.74	10.6	74.4	3.00	39.6	0.00			441	202
500	ISL	5.75	5.71	34.230	26.981	113.4	0.828	0.45	6.4	81.6	3.12	40.7	0.00			504	
515		5.70	5.66	34.247	27.001	111.7	0.845	0.38	5.4	83.3	3.15	41.0	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 43.5 N	123 37.7 W	08/02/02	1234 UTC	3560 m	360 13 kn			1027.2 mb	14.5 C	13.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.72	13.72	33.071	24.755	318.1	0.000	6.01	101.7	2.4	0.41	0.2	0.02	0.34	0.09	0	
2		13.72	13.72	33.071	24.755	318.1	0.006	6.01	101.7	2.4	0.41	0.2	0.02	0.34	0.09	2	220
10	ISL	13.71	13.71	33.068	24.755	318.4	0.032	6.02	101.9	2.4	0.41	0.2	0.01	0.35	0.08	10	
16		13.71	13.71	33.066	24.754	318.7	0.051	6.02	101.9	2.4	0.41	0.2	0.01	0.35	0.08	16	219
20	ISL	13.74	13.74	33.080	24.758	318.3	0.064	6.01	101.8	2.3	0.41	0.2	0.01	0.34	0.08	20	
30		13.81	13.81	33.116	24.772	317.3	0.095	6.00	101.8	2.2	0.40	0.2	0.01	0.33	0.09	30	218
45		13.76	13.75	33.116	24.783	316.7	0.143	6.00	101.7	2.1	0.40	0.2	0.01	0.35	0.10	45	217
50	ISL	13.75	13.74	33.118	24.787	316.5	0.159	5.99	101.5	2.2	0.40	0.2	0.01	0.33	0.12	50	
55		13.74	13.73	33.119	24.790	316.3	0.175	5.98	101.3	2.2	0.41	0.2	0.01	0.32	0.13	55	216
65		13.31	13.30	33.058	24.830	312.8	0.206	5.99	100.5	2.6	0.44	0.7	0.04	0.36	0.13	65	215
75		12.69	12.68	32.949	24.868	309.3	0.237	6.06	100.3	3.4	0.50	1.3	0.08	0.33	0.15	75	214
86		12.34	12.33	32.978	24.957	301.0	0.271	5.84	96.0	4.2	0.62	3.1	0.09			86	213
97		11.82	11.81	32.972	25.051	292.3	0.303	5.86	95.2					0.23	0.18	97	212
100	ISL	11.67	11.66	32.978	25.083	289.3	0.312	5.80	93.9	5.5	0.75	5.4	0.05	0.20	0.16	100	
110		11.17	11.16	33.014	25.202	278.1	0.341	5.57	89.3	6.8	0.85	7.1	0.02	0.11	0.09	111	211
124		10.57	10.56	33.098	25.373	262.0	0.378	5.34	84.5	9.1	1.01	10.0	0.02	0.06	0.06	125	210
125	ISL	10.53	10.52	33.109	25.388	260.6	0.381	5.32	84.1	9.3	1.02	10.2	0.02	0.06	0.06	126	
146		9.73	9.71	33.371	25.728	228.6	0.432	4.76	74.1	14.1	1.28	15.0	0.01	0.03	0.03	147	209
150	ISL	9.63	9.61	33.418	25.781	223.6	0.441	4.63	71.9	15.2	1.33	16.0	0.01	0.03	0.03	151	
170		9.30	9.28	33.630	26.001	203.0	0.484	3.96	61.1	20.9	1.59	20.3	0.00	0.01	0.02	171	208
200	ISL	9.00	8.98	33.853	26.224	182.4	0.542	3.26	50.1	27.2	1.84	24.4	0.00	0.00	0.01	201	
201		8.99	8.97	33.859	26.230	181.9	0.544	3.24	49.8	27.4	1.85	24.5	0.00	0.00	0.01	202	207
231		8.55	8.53	33.994	26.405	165.7	0.596	2.84	43.2	33.6	2.03	27.4	0.00			232	206
250	ISL	8.38	8.35	34.026	26.456	161.1	0.627	2.66	40.3	36.1	2.11	28.4	0.00			251	
270		8.23	8.20	34.037	26.488	158.4	0.659	2.51	37.9	38.1	2.18	29.1	0.00			272	205
300	ISL	7.98	7.95	34.056	26.540	153.9	0.706	2.33	35.0	41.1	2.28	30.3	0.00			302	
318		7.82	7.79	34.067	26.573	151.0	0.733	2.20	32.9	43.2	2.34	31.0	0.00			320	204
378		7.20	7.16	34.134	26.714	138.2	0.820	1.45	21.4	54.0	2.65	34.2	0.00			380	203
400	ISL	6.97	6.93	34.149	26.758	134.2	0.850	1.23	18.1	57.9	2.75	35.4	0.00			403	
440		6.61	6.57	34.186	26.836	127.1	0.902	0.88	12.8	64.8	2.91	37.4	0.00			443	202
500	ISL	6.39	6.34	34.313	26.966	115.6	0.975	0.37	5.4	74.5	3.14	39.0	0.00			503	
513		6.34	6.29	34.341	26.994	113.0	0.990	0.26	3.8	76.6	3.19	39.4	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 23.3 N	124 19.0 W	08/02/02	0623 UTC	4573 m	260 10 kn			1027.6 mb	15.0 C	13.8 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.01	14.01	33.030	24.664	326.8	0.000	6.00	102.1	2.1	0.39	0.1	0.00	0.22	0.06	0	
3		14.01	14.01	33.030	24.664	326.9	0.010	6.00	102.1	2.1	0.39	0.1	0.00	0.22	0.06	3	220
10	ISL	14.00	14.00	33.031	24.667	326.8	0.033	6.00	102.1	2.0	0.39	0.1	0.00	0.23	0.07	10	
14		14.00	14.00	33.031	24.667	326.9	0.046	6.00	102.1	1.9	0.39	0.1	0.00	0.23	0.07	14	219
20	ISL	13.99	13.99	33.029	24.668	327.0	0.065	6.00	102.1	2.0	0.39	0.1	0.00	0.23	0.08	20	
29		13.98	13.98	33.027	24.668	327.2	0.095	6.00	102.1	2.1	0.38	0.1	0.00	0.24	0.09	29	218
30	ISL	13.97	13.97	33.028	24.671	326.9	0.098	6.00	102.0	2.1	0.38	0.1	0.00	0.25	0.09	30	
44		13.87	13.86	33.043	24.704	324.2	0.144	6.00	101.8	2.1	0.39	0.1	0.00	0.33	0.10	44	217
50	ISL	13.81	13.80	33.045	24.718	323.0	0.163	5.99	101.5	2.1	0.40	0.1	0.00	0.34	0.12	50	
55		13.76	13.75	33.044	24.727	322.2	0.179	5.98	101.3	2.1	0.40	0.1	0.01	0.35	0.14	55	216
63		13.67	13.66	33.034	24.738	321.4	0.205	5.98	101.1	2.1	0.41	0.2	0.03	0.31	0.13	63	215
75		13.31	13.30	32.991	24.778	317.9	0.243	5.99	100.5	2.9	0.46	0.8	0.12	0.25	0.14	75	214
84		12.96	12.95	32.971	24.832	313.0	0.272	6.00	99.9	3.4	0.51	1.4	0.15	0.17	0.09	84	213
95		12.56	12.55	32.961	24.902	306.5	0.306	5.91	97.5	4.0	0.58	2.4	0.15	0.17	0.12	95	212
100	ISL	12.24	12.23	32.957	24.960	301.0	0.321	5.85	95.9	4.4	0.64	3.3	0.11	0.16	0.12	100	
109		11.58	11.57	32.989	25.108	287.1	0.347	5.68	91.8	5.7	0.77	5.6	0.02	0.12	0.11	109	211
123		10.65	10.64	33.202	25.440	255.7	0.385	5.19	82.3	9.7	1.07	11.2	0.01	0.07	0.08	124	210
125	ISL	10.54	10.53	33.224	25.476	252.2	0.390	5.14	81.4	10.2	1.10	11.8	0.01	0.07	0.08	126	
142		9.81	9.79	33.371	25.715	229.8	0.431	4.78	74.5	14.2	1.31	15.4	0.01	0.04	0.04	143	209
150	ISL	9.63	9.61	33.420	25.783	223.4	0.450	4.64	72.1	15.6	1.38	16.6	0.01	0.03	0.03	151	
167		9.39	9.37	33.524	25.903	212.3	0.487	4.30	66.5	18.6	1.50	18.8	0.00	0.02	0.02	168	208
199		9.05	9.03	33.838	26.204	184.3	0.550	3.29	50.6	26.7	1.83	24.2	0.00	0.01	0.02	200	207
200	ISL	9.03	9.01	33.845	26.213	183.5	0.552	3.27	50.3	26.9	1.84	24.3	0.00			201	
230		8.55	8.53	33.980	26.394	166.7	0.604	2.83	43.1	33.3	2.03	27.5	0.00			231	206
250	ISL	8.24	8.21	34.013	26.467	160.0	0.637	2.68	40.5	36.5	2.11	28.8	0.00			251	
268		7.97	7.94	34.023	26.515	155.6	0.666	2.57	38.6	39.2	2.17	29.7	0.00			269	205
300	ISL	7.49	7.46	34.041	26.599	147.9	0.714	2.24	33.3	45.0	2.33	31.8	0.00			302	
319		7.22	7.19	34.049	26.644	143.9	0.742	2.02	29.8	48.6	2.44	33.0	0.00			321	204
377		6.54	6.51	34.084	26.764	132.9	0.822	1.36	19.8	59.7	2.73	36.5	0.00			379	203
400	ISL	6.33	6.29	34.103	26.806	129.0	0.852	1.15	16.6	64.1	2.83	37.6	0.00			402	
437		6.04	6.00	34.137	26.871	123.2	0.899	0.86	12.4	70.9	2.96	39.2	0.00			440	202
500	ISL	5.67	5.63	34.196	26.964	114.9	0.974	0.53	7.5	80.2	3.10	40.9	0.00			503	
516		5.57	5.53	34.211	26.988	112.7	0.992	0.45	6.4	82.6	3.14	41.3	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 27.3 N	120 31.3 W	06/02/02	0954 UTC	69 m	310 16 kn			1021.2 mb	12.0 C	10.3 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.49	12.49	33.634	25.435	253.4	0.000	5.78	95.7	5.6	0.58	4.1	0.12	3.78	0.55	0	
2		12.49	12.49	33.634	25.435	253.4	0.005	5.78	95.7	5.6	0.58	4.1	0.12	3.78	0.55	2	208
6		12.49	12.49	33.634	25.435	253.5	0.015	5.77	95.5	5.4	0.57	4.1	0.12	3.59	0.75	6	207
10	ISL	12.50	12.50	33.635	25.434	253.7	0.025	5.76	95.4	5.5	0.58	4.2	0.12	3.79	0.63	10	
11		12.50	12.50	33.635	25.434	253.7	0.028	5.76	95.4	5.6	0.58	4.2	0.12	3.85	0.58	11	206
20	ISL	12.47	12.47	33.636	25.441	253.3	0.051	5.63	93.2	6.3	0.65	4.8	0.14	3.54	0.78	20	
21		12.47	12.47	33.636	25.441	253.4	0.053	5.61	92.8	6.4	0.66	4.9	0.14	3.51	0.81	21	205
30	ISL	11.63	11.63	33.648	25.609	237.5	0.075	4.12	67.0	13.8	1.22	12.8	0.10	1.59	0.45	30	
31		11.53	11.53	33.650	25.629	235.7	0.078	3.95	64.1	14.7	1.28	13.7	0.09	1.38	0.40	31	204
41		11.36	11.35	33.668	25.675	231.6	0.101	3.68	59.5	16.4	1.39	15.2	0.07	1.02	0.24	41	203
50	ISL	11.32	11.31	33.674	25.687	230.7	0.122	3.63	58.6	16.7	1.43	15.6	0.07	0.93	0.31	50	
51		11.31	11.30	33.675	25.689	230.4	0.124	3.63	58.6	16.7	1.43	15.6	0.07	0.92	0.32	51	202
63		11.07	11.06	33.712	25.762	223.8	0.151	3.35	53.8	18.8	1.55	17.4	0.05	0.68	0.26	63	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 19.3 N	120 47.7 W	06/02/02	1320 UTC	738 m	320 18 kn			1022.0 mb	12.0 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.55	11.55	33.693	25.658	232.1	0.000	6.00	97.4	6.8	0.66	6.7	0.23	10.50	0.12	0	
2		11.55	11.55	33.693	25.659	232.2	0.005	6.00	97.4	6.8	0.66	6.7	0.23	10.50	0.12	2	220
10		11.55	11.55	33.692	25.658	232.4	0.023	6.02	97.7	6.7	0.65	6.8	0.23	10.45	0.50	10	219
20		11.54	11.54	33.694	25.662	232.3	0.046	6.01	97.5	6.8	0.65	7.0	0.22	9.90	0.57	20	218
30		11.53	11.53	33.695	25.664	232.3	0.070	5.92	96.1	6.9	0.68	7.2	0.22	10.80	0.98	30	217
40		11.01	11.01	33.736	25.791	220.5	0.092	3.99	64.0	17.5	1.42	15.9	0.15	1.67	0.37	40	216
50		10.56	10.55	33.839	25.951	205.5	0.114	2.82	44.8	24.1	1.80	21.2	0.03	0.25	0.20	50	215
60		10.42	10.41	33.856	25.988	202.1	0.134	2.72	43.1	24.6	1.84	22.0	0.01	0.20	0.20	60	214
70		10.29	10.28	33.916	26.058	195.8	0.154	2.46	38.9	26.7	1.95	23.4	0.01	0.19	0.13	70	213
75	ISL	10.20	10.19	33.935	26.088	193.0	0.164	2.44	38.5	27.4	1.98	23.9	0.01	0.14	0.13	75	
85		10.02	10.01	33.962	26.140	188.3	0.183	2.40	37.7	28.5	2.01	24.6	0.01	0.05	0.13	85	212
100	ISL	9.80	9.79	34.002	26.209	182.1	0.210	2.28	35.7	30.3	2.07	25.5	0.00	0.05	0.12	101	
101		9.79	9.78	34.004	26.212	181.8	0.212	2.27	35.5	30.4	2.07	25.6	0.00	0.05	0.12	102	211
121		9.70	9.69	34.038	26.254	178.2	0.248	2.18	34.1	31.7	2.13	26.3	0.00	0.03	0.10	122	210
125	ISL	9.65	9.64	34.046	26.268	176.9	0.255	2.16	33.7	32.1	2.14	26.5	0.00	0.03	0.10	126	
140		9.43	9.41	34.075	26.327	171.6	0.282	2.07	32.1	33.7	2.18	27.3	0.00	0.03	0.09	141	209
150	ISL	9.33	9.31	34.090	26.355	169.1	0.299	2.03	31.5	34.6	2.21	27.7	0.00	0.03	0.09	151	
170		9.17	9.15	34.113	26.400	165.3	0.332	1.94	30.0	36.2	2.26	28.3	0.00	0.02	0.08	171	208
199		8.87	8.85	34.138	26.467	159.3	0.379	1.79	27.5	38.8	2.34	29.4	0.00	0.02	0.07	200	207
200	ISL	8.86	8.84	34.138	26.469	159.2	0.381	1.79	27.5	38.9	2.34	29.4	0.00			201	
230		8.48	8.46	34.151	26.539	153.0	0.427	1.69	25.7	42.3	2.42	30.6	0.00			231	206
250	ISL	8.24	8.21	34.160	26.582	149.1	0.458	1.58	23.9	44.8	2.48	31.4	0.00			252	
269		8.02	7.99	34.167	26.621	145.7	0.486	1.46	22.0	47.4	2.54	32.1	0.00			271	205
300	ISL	7.64	7.61	34.174	26.682	140.2	0.530	1.29	19.2	51.9	2.70	33.5	0.00			302	
320		7.41	7.38	34.178	26.719	136.9	0.558	1.19	17.7	54.9	2.79	34.4	0.00			322	204
380		6.84	6.80	34.198	26.814	128.5	0.637	0.87	12.7	63.1	2.87	36.6	0.00			383	203
400	ISL	6.63	6.59	34.200	26.844	125.8	0.663	0.79	11.5	66.1	2.92	37.3	0.00			403	
437		6.30	6.26	34.208	26.894	121.3	0.708	0.66	9.5	71.2	3.01	38.5	0.00			440	202
500	ISL	6.08	6.04	34.249	26.955	116.2	0.783	0.48	6.9	77.0	3.11	39.4	0.00			504	
514		6.03	5.98	34.258	26.968	115.1	0.799	0.44	6.3	78.3	3.13	39.6	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 9.2 N	121 9.1 W	06/02/02	1815	UTC	2183 m	340	17 kn	330 05 07	1	1024.9 mb	11.5 C	10.5 C	8m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.86	11.86	33.648	25.566	240.9	0.000	6.26	102.3	4.6	0.51	4.2	0.22	9.66	1.10	0	
1	A	11.86	11.86	33.648	25.566	241.0	0.002	6.26	102.3	4.6	0.51	4.2	0.22	9.66	1.10	1	222
5	A	11.85	11.85	33.648	25.568	240.9	0.012	6.26	102.2	4.6	0.51	4.2	0.22	10.11	0.55	5	221
10	A	11.85	11.85	33.649	25.569	240.9	0.024	6.25	102.1	4.5	0.51	4.2	0.22	10.91	0.77	10	220
17	A	11.84	11.84	33.647	25.569	241.0	0.041	6.21	101.4	4.7	0.50	4.4	0.23	10.45	0.71	17	219
20	ISL	11.84	11.84	33.648	25.570	241.0	0.048	6.19	101.1	4.9	0.54	4.6	0.23	9.73	0.55	20	
21	A	11.84	11.84	33.648	25.570	241.1	0.051	6.18	100.9	4.9	0.55	4.6	0.23	9.50	0.50	21	218
30	A	11.84	11.84	33.648	25.570	241.3	0.072	6.16	100.6	4.9	0.55	4.6	0.23	9.63	0.74	30	217
40		11.83	11.82	33.650	25.574	241.2	0.096	6.09	99.4	5.3	0.63	4.9	0.23	8.76	0.60	40	216
50		11.61	11.60	33.661	25.624	236.7	0.120	5.21	84.7	11.6	1.08	9.5	0.24	1.69	0.69	50	215
60		11.05	11.04	33.661	25.726	227.2	0.144	4.43	71.1	15.6	1.33	14.3	0.26	0.33	0.37	60	214
70		10.08	10.07	33.692	25.919	208.9	0.165	3.56	56.0	20.9	1.65	20.0	0.03	0.09	0.17	70	213
75	ISL	10.00	9.99	33.734	25.965	204.6	0.176	3.38	53.1	22.1	1.71	21.1	0.03	0.08	0.18	75	
85		9.85	9.84	33.774	26.022	199.5	0.196	3.20	50.1	23.6	1.77	22.1	0.02	0.06	0.24	85	212
100		9.60	9.59	33.878	26.145	188.1	0.225	2.86	44.5	27.1	1.91	24.2	0.01	0.05	0.12	101	211
119		9.56	9.55	33.987	26.237	179.7	0.260	2.43	37.8	30.2	2.05	26.0	0.01	0.07	0.12	120	210
125	ISL	9.51	9.50	34.009	26.262	177.4	0.271	2.35	36.5	31.0	2.09	26.4	0.01	0.06	0.11	126	
141		9.34	9.32	34.051	26.323	171.9	0.299	2.20	34.1	33.1	2.18	27.3	0.01	0.02	0.10	142	209
150	ISL	9.24	9.22	34.070	26.354	169.1	0.314	2.13	32.9	34.2	2.21	27.8	0.01	0.02	0.13	151	
171		8.96	8.94	34.103	26.425	162.8	0.349	1.99	30.6	36.9	2.28	29.1	0.01	0.01	0.19	172	208
200		8.45	8.43	34.139	26.533	152.9	0.395	1.74	26.4	41.9	2.41	31.0	0.01	0.02	0.06	201	207
229		7.99	7.97	34.166	26.624	144.6	0.438	1.47	22.1	47.7	2.56	32.8	0.01			230	206
250	ISL	7.79	7.77	34.180	26.665	141.1	0.468	1.32	19.8	50.5	2.63	33.7	0.01			252	
270		7.66	7.63	34.190	26.692	138.8	0.496	1.20	17.9	52.6	2.69	34.3	0.00			272	205
300	ISL	7.50	7.47	34.205	26.727	135.9	0.537	1.06	15.8	55.3	2.76	35.2	0.00			302	
318		7.39	7.36	34.213	26.749	134.0	0.561	0.98	14.5	57.0	2.80	35.7	0.00			320	204
377		6.77	6.74	34.235	26.852	124.7	0.637	0.69	10.1	66.3	2.97	38.0	0.00			380	203
400	ISL	6.52	6.48	34.227	26.880	122.3	0.666	0.64	9.3	69.3	3.01	38.9	0.00			403	
439		6.16	6.12	34.220	26.921	118.6	0.713	0.57	8.2	73.9	3.06	40.1	0.00			442	202
500	ISL	5.94	5.90	34.278	26.995	112.2	0.783	0.37	5.3	80.2	3.17	41.1	0.00			504	
504		5.93	5.89	34.282	27.000	111.8	0.788	0.36	5.2	80.6	3.18	41.2	0.00			508	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.1 N	121 50.5 W	07/02/02	0312	UTC	3627 m	330	04 kn			1024.8 mb	12.8 C	12.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.39	12.39	33.067	25.015	293.4	0.000	6.21	102.2	4.1	0.54	2.1	0.06	0.66	0.19	0	
1		12.39	12.39	33.067 D	25.015	293.4	0.003	6.21	102.2	4.1	0.54	2.1	0.06	0.66	0.19	1	220
10		12.39	12.39	33.067	25.015	293.6	0.029	6.22	102.4	4.1	0.53	2.1	0.06	0.62	0.19	10	219
20	ISL	12.37	12.37	33.071	25.022	293.2	0.059	6.21	102.2	4.0	0.54	2.1	0.06	0.66	0.16	20	
21		12.37	12.37	33.071	25.022	293.2	0.062	6.21	102.2	4.0	0.54	2.1	0.06	0.66	0.16	21	218
30		11.90	11.90	33.108	25.140	282.2	0.088	6.09	99.2	5.5	0.65	4.0	0.12	0.63	0.23	30	217
41		11.79	11.78	33.251	25.272	269.9	0.118	5.98	97.3	6.3	0.71	5.1	0.22	0.56	0.23	41	216
50		10.93	10.92	33.200	25.388	259.0	0.142	5.54	88.5	9.0	0.98	9.4	0.15	0.27	0.14	50	215
60		10.36	10.35	33.257	25.532	245.5	0.167	5.10	80.4	12.2	1.20	13.1	0.02	0.11	0.09	60	214
70		10.38	10.37	33.428	25.662	233.4	0.191	4.62	73.0	14.6	1.35	15.6	0.01	0.09	0.10	70	213
75	ISL	10.30	10.29	33.466	25.705	229.4	0.202	4.47	70.5	15.5	1.41	16.5	0.01	0.08	0.10	75	
84		10.07	10.06	33.502	25.773	223.1	0.223	4.27	67.0	17.0	1.49	18.0	0.01	0.08 U	0.42 U	84	212
100	ISL	9.51	9.50	33.571	25.920	209.4	0.257	4.01	62.2	20.2	1.63	20.4	0.01	0.04	0.08	101	
108		9.30	9.29	33.626	25.997	202.2	0.274	3.81	58.8	22.2	1.70	21.7	0.01	0.03	0.08	109	211
118		9.29	9.28	33.750	26.095	193.0	0.294	3.32	51.3	25.2	1.82	23.5	0.01	0.02	0.09	119	210
125	ISL	9.26	9.25	33.826	26.160	187.1	0.307	3.03	46.8	27.3	1.91	24.6	0.01			126	
138		9.19	9.17	33.936	26.257	178.1	0.331	2.61	40.3	30.5	2.04	26.3	0.00	0.29 U	0.09 U	139	209
150	ISL	9.14	9.12	33.981	26.301	174.2	0.352	2.52	38.9	32.1	2.08	27.1	0.00			151	
169		8.98	8.96	33.999	26.341	170.7	0.385	2.37	36.4	33.4	2.14	27.6	0.01	0.18 U	0.08 U	170	208
198		8.38	8.36	33.995	26.431	162.5	0.433	2.74	41.5	35.3	2.09	28.3	0.00	0.21 U	0.09 U	199	207
200	ISL	8.35	8.33	33.996	26.436	162.0	0.436	2.74	41.5	35.6	2.09	28.4	0.00			201	
228		7.92	7.90	34.017	26.517	154.7	0.480	2.56	38.4	40.0	2.19	30.0	0.00			229	206
250	ISL	7.52	7.50	34.022	26.579	149.0	0.514	2.39	35.5	44.1	2.29	31.4	0.00			252	
267		7.23	7.20	34.025	26.623	145.0	0.539	2.24	33.1	47.5	2.38	32.5	0.00			269	205
300	ISL	6.82	6.79	34.048	26.697	138.2	0.586	1.84	26.9	53.8	2.56	34.5	0.00			302	
318		6.65	6.62	34.064	26.733	135.0	0.610	1.61	23.5	57.1	2.65	35.5	0.00			320	204
376		6.27	6.24	34.111	26.820	127.3	0.686	1.08	15.6	65.9	2.88	38.1	0.00			378	203
400	ISL	6.20	6.16	34.145	26.856	124.2	0.716	0.86	12.4	68.9	2.96	38.7	0.00			403	
437		6.09	6.05	34.194	26.909	119.6	0.761	0.58	8.3	73.3	3.06	39.4	0.00			440	202
500	ISL	5.63	5.59	34.217	26.985	112.8	0.835	0.44	6.3	82.0	3.16	41.3	0.00			503	
515		5.52	5.48	34.223	27.003	111.2	0.851	0.41	5.8	84.1	3.18	41.8	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.0 N	122 32.1 W	07/02/02	1002 UTC	3990 m	280 09 kn			1025.1 mb	14.2 C	13.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.82	13.82	33.099	24.756	318.0	0.000	5.98	101.4	2.0	0.40	0.1	0.01	0.33	0.08	0	
2		13.82	13.82	33.099	24.756	318.0	0.006	5.98	101.4	2.0	0.40	0.1	0.01	0.33	0.08	2	220
10		13.81	13.81	33.103	24.761	317.8	0.032	5.98	101.4	2.0	0.40	0.1	0.01	0.33	0.08	10	219
20		13.85	13.85	33.126	24.771	317.1	0.064	5.96	101.2	2.1	0.39	0.2	0.01	0.33	0.10	20	218
30		13.93	13.93	33.152	24.775	317.0	0.095	5.94	101.0	2.1	0.39	0.2	0.01	0.35	0.09	30	217
40		13.96	13.95	33.161	24.776	317.2	0.127	5.93	100.9	1.9	0.40	0.2	0.01	0.35	0.10	40	216
50		14.01	14.00	33.175	24.777	317.4	0.159	5.92	100.9	2.0	0.39	0.2	0.01	0.33	0.10	50	215
60		14.05	14.04	33.189	24.780	317.4	0.190	5.91	100.8	1.9	0.40	0.2	0.01	0.32	0.10	60	214
70		14.07	14.06	33.196	24.781	317.6	0.222	5.90	100.6	2.1	0.39	0.2	0.01	0.32	0.10	70	213
75	ISL	14.07	14.06	33.197	24.782	317.6	0.238	5.90	100.6	2.1	0.39	0.2	0.01	0.32	0.10	75	
85		14.07	14.06	33.198	24.783	317.8	0.270	5.90	100.6	2.0	0.39	0.2	0.01	0.31	0.10	85	212
100		11.76	11.75	33.034	25.110	286.7	0.315	5.64	91.6	5.5	0.75	5.3	0.04	0.19	U 0.17 U	100	211
120		10.63	10.62	33.208	25.448	254.8	0.369	5.19	82.3	9.7	1.07	11.2	0.01	0.07	0.06	121	210
125	ISL	10.39	10.38	33.247	25.520	248.0	0.382	5.08	80.2	10.8	1.13	12.3	0.01	0.06	0.05	126	
140		9.78	9.76	33.368	25.717	229.5	0.418	4.74	73.9	14.3	1.31	15.4	0.01	0.05	0.03	141	209
150	ISL	9.49	9.47	33.468	25.843	217.7	0.440	4.43	68.6	17.2	1.44	17.6	0.01	0.06	0.03	151	
170		9.10	9.08	33.664	26.059	197.4	0.482	3.81	58.6	22.8	1.68	21.7	0.00	0.07	0.03	171	208
200		8.86	8.84	33.875	26.263	178.7	0.538	3.13	47.9	29.0	1.90	25.6	0.00	0.05	0.02	201	207
229		8.35	8.33	33.999	26.439	162.3	0.587	2.65	40.1	35.8	2.11	28.8	0.00			230	206
250	ISL	8.01	7.98	34.032	26.516	155.2	0.621	2.47	37.1	39.6	2.21	30.1	0.00			251	
269		7.72	7.69	34.041	26.566	150.7	0.650	2.35	35.1	42.6	2.28	31.0	0.00			271	205
300	ISL	7.30	7.27	34.051	26.634	144.5	0.696	2.13	31.5	47.5	2.40	32.5	0.00			302	
318		7.09	7.06	34.054	26.666	141.7	0.721	1.99	29.3	50.3	2.47	33.3	0.00			320	204
378		6.56	6.53	34.088	26.764	132.8	0.804	1.45	21.1	59.4	2.70	36.2	0.00			380	203
400	ISL	6.39	6.35	34.100	26.796	130.0	0.833	1.27	18.4	62.9	2.78	37.2	0.00			403	
439		6.10	6.06	34.124	26.853	125.0	0.882	0.97	14.0	69.3	2.92	38.9	0.00			442	202
500	ISL	5.71	5.67	34.181	26.947	116.5	0.956	0.60	8.6	79.2	3.08	40.8	0.00			503	
514		5.62	5.58	34.195	26.969	114.5	0.972	0.51	7.3	81.5	3.12	41.2	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 9.0 N	123 13.8 W	07/02/02	1816 UTC	4212 m	260 08 kn	270 06 11	2	1026.0 mb	15.0 C	13.0 C	27m	8/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.23	13.23	33.009	24.806	313.3	0.000	6.10	102.2	2.7	0.44	0.6	0.03	0.40	0.10	0	
2	A	13.23	13.23	33.009	24.806	313.3	0.006	6.10	102.2	2.7	0.44	0.6	0.03	0.40	0.10	2	221
9		13.10	13.10	32.997	24.823	311.9	0.028	6.11	102.0	2.7	0.44	0.6	0.03	0.33	0.09	9	220
10	ISL	13.10	13.10	32.997	24.823	311.9	0.031	6.11	102.0	2.7	0.44	0.6	0.03	0.33	0.09	10	
17	A	13.07	13.07	32.996	24.828	311.6	0.053	6.11	102.0	2.7	0.44	0.6	0.04	0.32	0.08	17	219
20	ISL	13.08	13.08	33.001	24.830	311.5	0.062	6.11	102.0	2.7	0.44	0.6	0.04	0.35	0.09	20	
25		13.10	13.10	33.013	24.835	311.1	0.078	6.11	102.0	2.7	0.44	0.6	0.03	0.40	0.12	25	218
30	ISL	13.13	13.13	33.031	24.844	310.5	0.094	6.10	102.0	2.7	0.44	0.6	0.03	0.43	0.15	30	
35	A	13.16	13.16	33.053	24.855	309.5	0.109	6.08	101.7	2.7	0.44	0.7	0.04	0.46	0.16	35	217
44		12.98	12.97	33.044	24.884	307.0	0.137	6.07	101.1	3.0	0.47	1.0	0.05	0.51	0.13	44	216
50	ISL	12.65	12.64	33.006	24.919	303.8	0.155	6.06	100.3	3.5	0.51	1.6	0.08	0.50	0.15	50	
55	A	12.41	12.40	32.991	24.953	300.6	0.170	6.05	99.6	3.8	0.54	2.1	0.10	0.50	0.18	55	215
63		12.46	12.45	33.069	25.005	296.0	0.194	6.08	100.2	3.8	0.55	2.3	0.10	0.55	0.20	63	214
71	A	12.38	12.37	33.111	25.053	291.6	0.218	6.08	100.1	4.1	0.56	2.6	0.11	0.54	0.19	71	213
75	ISL	12.42	12.41	33.146	25.072	289.8	0.229	6.08	100.2	4.1	0.55	2.6	0.11	0.53	0.19	75	
86		12.52	12.51	33.232	25.120	285.6	0.261	6.09	100.6	3.9	0.54	2.4	0.10	0.50	0.19	86	212
99	A	12.35	12.34	33.248	25.165	281.6	0.298	6.08	100.1	4.4	0.57	2.8	0.13	0.49	0.22	99	211
100	ISL	12.25	12.24	33.246	25.183	279.9	0.301	6.04	99.2	4.7	0.60	3.2	0.13	0.47	0.21	100	
121		10.00	9.99	33.259	25.595	240.7	0.355	5.03	78.7	12.0	1.17	13.2	0.01	0.05	0.04	122	210
125	ISL	9.85	9.84	33.269	25.628	237.6	0.365	4.99	77.8	12.5	1.21	13.8	0.01	0.05	0.04	126	
138		9.62	9.60	33.325	25.710	230.1	0.395	4.87	75.6	14.0	1.28	14.9	0.01	0.05	0.05	139	209
150	ISL	9.48	9.46	33.460	25.839	218.1	0.422	4.42	68.5	17.2	1.44	17.5	0.00	0.04	0.05	151	
168		9.35	9.33	33.699	26.047	198.7	0.460	3.57	55.2	23.1	1.72	22.0	0.00	0.02	0.04	169	208
196		9.06	9.04	33.976	26.310	174.2	0.512	2.53	38.9	31.5	2.08	27.1	0.02	0.01	0.05	197	207
200	ISL	9.04	9.02	33.995	26.329	172.5	0.519	2.45	37.7	32.2	2.11	27.4	0.02			201	
227		8.85	8.83	34.055	26.406	165.7	0.564	2.19	33.6	35.4	2.21	28.7	0.00			228	206
250	ISL	8.40	8.37	34.046	26.469	159.9	0.602	2.32	35.2	37.7	2.21	29.5	0.00			251	
270		7.97	7.94	34.026	26.518	155.4	0.633	2.46	36.9	39.8	2.21	30.2	0.00			272	205
300	ISL	7.56	7.53	34.036	26.585	149.3	0.679	2.22	33.0	44.4	2.34	31.9	0.00			302	
318		7.35	7.32	34.048	26.625	145.7	0.706	1.99	29.5	47.6	2.44	33.1	0.00			320	204
379		6.63	6.60	34.096	26.761	133.2	0.791	1.29	18.8	59.3	2.75	36.8	0.00			381	203
400	ISL	6.45	6.41	34.114	26.800	129.8	0.818	1.10	16.0	63.1	2.83	37.7	0.00			403	
435		6.23	6.19	34.147	26.854	124.9	0.863	0.84	12.1	68.7	2.95	38.9	0.00			438	202
500	ISL	6.12	6.08	34.215	26.923	119.3	0.942	0.55	7.9	74.2	3.07	39.8	0.00			503	
511		6.10	6.05	34.227	26.935	118.2	0.955	0.50	7.2	75.1	3.09	39.9	0.00			514	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 49.1 N	123 54.5 W	07/02/02	2323	UTC	4293 m	260	13 kn	270 07 09	2	1026.9 mb	13.9 C	12.8 C	21m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.34	13.34	33.146	24.890	305.3	0.000	6.15	103.3	3.0	0.44	0.8	0.04	0.39	0.07	0	
2		13.34	13.34	33.146	24.890	305.3	0.006	6.15	103.3	3.0	0.44	0.8	0.04	0.39	0.07	2	220
10		13.22	13.22	33.147	24.915	303.1	0.030	6.17	103.4	3.0	0.45	0.9	0.04	0.42	0.07	10	219
20		12.70	12.70	33.194	25.054	290.2	0.060	6.22	103.1	3.4	0.48	1.4	0.06	0.51	0.14	20	218
30		12.53	12.53	33.207	25.097	286.3	0.089	6.16	101.8	3.7	0.52	2.0	0.10	0.59	0.19	30	217
41		12.30	12.29	33.241	25.168	279.8	0.120	6.06	99.7	4.5	0.60	3.2	0.19	0.53	0.25	41	216
50		12.20	12.19	33.294	25.228	274.3	0.145	5.95	97.7	5.0	0.66	4.2	0.35	0.40	0.21	50	215
60		12.18	12.17	33.360	25.284	269.3	0.172	5.88	96.5	5.3	0.70	4.7	0.52	0.26	0.21	60	214
70		12.06	12.05	33.385	25.326	265.5	0.199	5.80	95.0	5.7	0.74	5.5	0.41	0.20	0.15	70	213
75	ISL	11.88	11.87	33.368	25.347	263.7	0.212	5.70	93.0	6.2	0.79	6.4	0.30	0.17	0.13	75	
85		11.32	11.31	33.338	25.426	256.2	0.238	5.38	86.7	8.2	0.94	9.1	0.09	0.10	0.10	85	212
100		10.14	10.13	33.424	25.700	230.3	0.275	4.60	72.3	14.5	1.33	15.5	0.01	0.04	0.06	100	211
120		9.89	9.88	33.589	25.871	214.5	0.319	3.97	62.1	18.7	1.53	18.8	0.01	0.02	0.06	121	210
125	ISL	9.69	9.68	33.610	25.921	209.8	0.330	3.92	61.1	19.8	1.57	19.6	0.01	0.02	0.07	126	
139		9.15	9.13	33.670	26.056	197.2	0.358	3.79	58.3	23.0	1.69	21.8	0.00	0.02	0.10	140	209
150	ISL	9.15	9.13	33.776	26.139	189.5	0.380	3.42	52.7	25.6	1.80	23.4	0.00	0.02	0.09	151	
170		9.16	9.14	33.929	26.257	178.7	0.416	2.75	42.4	30.0	1.98	25.9	0.00	0.01	0.05	171	208
199		8.70	8.68	33.996	26.383	167.3	0.467	2.58	39.4	34.2	2.10	28.0	0.00	0.01	0.03	200	207
200	ISL	8.69	8.67	34.000	26.387	166.8	0.468	2.56	39.1	34.4	2.11	28.1	0.00			201	
229		8.55	8.53	34.109	26.495	157.1	0.515	1.89	28.8	40.0	2.35	30.2	0.00			230	206
250	ISL	8.22	8.19	34.115	26.550	152.2	0.548	1.84	27.8	43.0	2.41	31.3	0.00			251	
269		7.87	7.84	34.102	26.592	148.3	0.576	1.80	27.0	45.5	2.44	32.1	0.00			271	205
300	ISL	7.41	7.38	34.116	26.670	141.2	0.621	1.56	23.1	51.0	2.57	33.7	0.00			302	
318		7.18	7.15	34.127	26.711	137.5	0.646	1.40	20.7	54.3	2.66	34.7	0.00			320	204
378		6.61	6.58	34.159	26.814	128.2	0.726	0.97	14.1	64.3	2.87	37.4	0.00			380	203
400	ISL	6.36	6.32	34.158	26.846	125.3	0.754	0.86	12.5	68.0	2.93	38.3	0.00			403	
437		6.01	5.97	34.163	26.895	120.9	0.799	0.71	10.2	73.6	3.01	39.6	0.00			440	202
500	ISL	5.90	5.86	34.239	26.969	114.6	0.873	0.44	6.3	79.6	3.12	40.4	0.00			503	
514		5.88	5.84	34.256	26.986	113.3	0.889	0.38	5.4	80.9	3.15	40.6	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 16.8 N	120 1.6 W	06/02/02	0123	UTC	573 m	280	08 kn	270 03 05	1	1019.0 mb	15.3 C	13.0 C		1/8	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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.23	13.23	33.625	25.282	267.9	0.000	7.10	119.4	0.8	0.19	0.1	0.00	1.39	0.17	0	
2	A	13.23	13.23	33.625	25.283	267.9	0.005	7.10	119.4	0.8	0.19	0.1	0.00	1.39	0.17	2	224
10		12.72	12.72	33.621	25.381	258.8	0.026	7.29	121.3	0.8	0.19	0.1	0.00	1.62	0.27	10	223
20		11.84	11.84	33.656	25.576	240.4	0.051	5.00	81.6	10.4	0.96	9.4	0.20	7.42	0.51	20	222
30		11.29	11.29	33.698	25.711	227.9	0.075	3.89	62.8	16.7	1.42	15.5	0.15	1.79	0.35	30	221
40		11.00	11.00	33.748	25.802	219.5	0.097	3.41	54.7	19.8	1.60	18.1	0.07	1.02	0.30	40	220
50		10.74	10.73	33.781	25.874	212.8	0.119	3.36	53.6	20.9	1.65	19.1	0.05	0.77	0.28	50	219
60		10.61	10.60	33.812	25.921	208.6	0.140	3.09	49.2	22.4	1.74	20.3	0.03	0.83	0.31	60	218
70		10.51	10.50	33.842	25.962	204.9	0.161	2.82	44.8	23.8	1.80	21.4	0.02	0.71	0.21	70	217
75	ISL	10.43	10.42	33.869	25.997	201.7	0.171	2.70	42.8	24.9	1.85	22.1	0.02	0.56	0.18	75	
85		10.26	10.25	33.922	26.068	195.2	0.191	2.49	39.4	27.1	1.95	23.5	0.02	0.28	0.15	85	216
100	ISL	10.10	10.09	33.959	26.125	190.1	0.219	2.33	36.7	28.6	2.03	24.5	0.01	0.23	0.15	101	
101		10.09	10.08	33.961	26.128	189.8	0.221	2.32	36.5	28.7	2.03	24.6	0.01	0.23	0.15	102	215
119		9.78	9.77	34.003	26.213	182.0	0.255	2.20	34.4	31.4	2.11	25.8	0.02	0.15	0.15	120	214
125	ISL	9.71	9.70	34.016	26.235	180.1	0.266	2.16	33.7	31.9	2.13	26.1	0.02	0.15	0.14	126	
140		9.56	9.54	34.044	26.282	175.9	0.292	2.08	32.4	33.0	2.18	26.8	0.01	0.14	0.12	141	213
150	ISL	9.45	9.43	34.059	26.312	173.3	0.310	2.04	31.7	33.8	2.20	27.3	0.01	0.12	0.12	151	
170		9.23	9.21	34.082	26.366	168.5	0.344	1.92	29.7	35.8	2.26	28.2	0.00	0.09	0.11	171	212
200		8.88	8.86	34.111	26.445	161.5	0.393	1.59	24.4	40.6	2.41	29.9	0.00	0.09	0.14	201	211
230		8.55	8.53	34.143	26.522	154.7	0.441	1.37	20.9	44.5	2.52	31.3	0.00			231	210
250	ISL	8.38	8.35	34.155	26.557	151.6	0.472	1.23	18.7	47.1	2.60	32.0	0.00			252	
269		8.22	8.19	34.163	26.588	148.9	0.500	1.10	16.6	49.6	2.67	32.6	0.00			271	209
300	ISL	7.93	7.90	34.177	26.643	144.2	0.546	0.94	14.1	53.4	2.76	33.7	0.00			302	
318		7.76	7.73	34.184	26.673	141.5	0.571	0.85	12.7	55.8	2.82	34.3	0.00			320	208
377		7.25	7.21	34.207	26.765	133.4	0.652	0.48	7.1	67.1	3.06	35.1	0.00			380	207
400	ISL	7.07	7.03	34.215	26.796	130.7	0.683	0.36	5.3	72.0	3.16	34.7	0.00			403	
437		6.81	6.77	34.226	26.841	126.8	0.730	0.20	2.9	80.5	3.31	34.0	0.00			440	206
478		6.55	6.51	34.236	26.884	123.1	0.782	0.12	1.7	91.1	3.47	31.4	0.00			481	205
500	ISL	6.49	6.44	34.238	26.893	122.5	0.809	0.10	1.5	94.2	3.55	29.8	0.00			504	
512		6.47	6.42	34.238	26.896	122.4	0.823	0.08	1.2	97.4	3.59	29.0	0.00			516	204
536		6.43	6.38	34.239	26.902	122.1	0.853	0.02	0.3	113.5	4.03	20.5	0.03			540	203
561		6.43	6.38	34.240	26.904	122.3	0.883	0.01	0.1	118.1	4.18	17.3	0.12			565	202
567		6.43	6.38	34.242	26.905	122.3	0.890	0.01	0.1	118.1	4.21	17.1	0.13			571	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 40.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 13.7 N	119 24.8 W	05/02/02	1353	UTC	33 m		00 kn			1020.2 mb	12.6 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.33	13.33	33.601	25.244	271.6	0.000	5.80	97.7	4.9	0.51	2.4	0.06	1.33	0.32	0	
1		13.33	13.33	33.601	25.244	271.6	0.003	5.80	97.7	4.9	0.51	2.4	0.06	1.33	0.32	1	205
5		13.32	13.32	33.600	25.245	271.6	0.014	5.79	97.5	4.9	0.52	2.4	0.06	1.36	0.31	5	204
10		13.32	13.32	33.600	25.245	271.7	0.027	5.78	97.3	4.9	0.52	2.5	0.06	1.33	0.29	10	203
20		13.31	13.31	33.601	25.248	271.7	0.054	5.46	91.9	5.9	0.64	3.9	0.08	1.17	0.38	20	202
29		13.06	13.06	33.602	25.299	267.1	0.079	5.49	92.0	6.0	0.63	3.9	0.08	1.26	0.32	29	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 10.6 N	119 30.8 W	05/02/02	1859 UTC	166 m	250 11 kn	270 02 04	0	1019.9 mb	14.2 C	13.0 C	23m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.59	13.59	33.603	25.193	276.4	0.000	5.87	99.4	4.3	0.46	1.8	0.05	0.93	0.22	0	
1	A	13.59	13.59	33.603	25.193	276.5	0.003	5.87	99.4	4.3	0.46	1.8	0.05	0.93	0.22	1	214
10	ISL	13.44	13.44	33.603	25.223	273.8	0.028	5.85	98.8	4.4	0.48	1.9	0.06	0.91	0.29	10	
12	A	13.39	13.39	33.603	25.234	272.9	0.033	5.85	98.7	4.4	0.48	1.9	0.06	0.90	0.31	12	213
20		13.30	13.30	33.602	25.251	271.4	0.055	5.79	97.5	4.6	0.49	2.2	0.06	1.13	0.30	20	212
28	A	13.25	13.25	33.598	25.258	271.0	0.076	5.73	96.4	4.9	0.53	2.7	0.06	1.10	0.37	28	211
30	ISL	13.01	13.01	33.582	25.294	267.6	0.082	5.54	92.7	5.8	0.62	4.1	0.07	0.96	0.34	30	
37		12.11	12.11	33.538	25.434	254.4	0.100	4.78	78.4	9.6	0.98	9.4	0.09	0.43	0.19	37	210
46	A	11.70	11.69	33.575	25.540	244.5	0.123	4.39	71.4	12.1	1.15	12.0	0.09	0.31	0.16	46	209
50	ISL	11.44	11.43	33.562	25.578	241.0	0.132	4.24	68.6	13.1	1.23	13.3	0.06	0.24	0.15	50	
52		11.32	11.31	33.559	25.597	239.2	0.137	4.15	67.0	13.6	1.27	13.9	0.05	0.20	0.14	52	208
59	A	11.12	11.11	33.636	25.694	230.2	0.154	3.65	58.7	16.6	1.44	16.2	0.03	0.12	0.11	59	207
75	ISL	11.00	10.99	33.740	25.796	220.8	0.190	3.53	56.6	18.9	1.51	17.1	0.09	0.15	0.13	75	
77	A	10.98	10.97	33.748	25.806	219.9	0.194	3.52	56.5	19.1	1.51	17.2	0.10	0.16	0.13	77	206
87		10.53	10.52	33.786	25.915	209.7	0.215	3.10	49.2	21.8	1.70	20.1	0.03	0.05	0.13	87	205
100		10.36	10.35	33.814	25.967	205.1	0.242	3.02	47.8	23.0	1.75	20.9	0.03	0.05	0.10	101	204
120		9.91	9.90	33.946	26.147	188.4	0.282	2.60	40.8	27.6	1.96	24.0	0.02	0.02	0.08	121	203
125	ISL	9.87	9.86	33.964	26.168	186.5	0.291	2.53	39.7	28.2	1.99	24.4	0.02	0.02	0.08	126	
139		9.73	9.71	34.010	26.227	181.1	0.317	2.33	36.4	30.3	2.07	25.4	0.02	0.02	0.07	140	202
150	ISL	9.41	9.39	34.067	26.325	172.0	0.336	2.04	31.7	34.4	2.21	27.1	0.03	0.01	0.08	151	
161		9.09	9.07	34.126	26.422	162.9	0.355	1.75	27.0	38.6	2.35	28.9	0.04	0.01	0.09	162	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 52.6 N	120 7.9 W	05/02/02	0726 UTC	101 m	300 11 kn			1021.1 mb	14.8 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.11	12.11	33.648	25.519	245.4	0.000	5.47	89.8	9.3	0.87	7.4	0.13	2.65	0.29	0	
2		12.11	12.11	33.648	25.519	245.5	0.005	5.47	89.8	9.3	0.87	7.4	0.13	2.65	0.29	2	210
10		12.10	12.10	33.649	25.522	245.4	0.025	5.47	89.8	9.2	0.87	7.4	0.12	2.59	0.23	10	209
20		12.06	12.06	33.654	25.533	244.5	0.049	5.37	88.1	9.6	0.89	7.8	0.13	2.59	0.31	20	208
30		11.73	11.73	33.685	25.620	236.6	0.073	4.84	78.9	12.6	1.06	10.5	0.12	1.75	0.28	30	207
39		11.32	11.32	33.721	25.723	226.9	0.094	4.37	70.6	15.5	1.25	13.2	0.13	1.14	0.28	39	206
50		11.16	11.15	33.744	25.770	222.7	0.119	4.05	65.2	17.4	1.37	14.9	0.12	0.83	0.21	50	205
61		10.77	10.76	33.799	25.883	212.2	0.143	3.53	56.4	20.9	1.57	17.9	0.10	0.48	0.17	61	204
71		10.34	10.33	33.851	25.999	201.4	0.163	3.04	48.1	24.1	1.76	21.0	0.06	0.15	0.10	71	203
75	ISL	10.26	10.25	33.869	26.026	198.9	0.171	2.95	46.6	25.0	1.81	21.6	0.06	0.13	0.10	75	
81		10.18	10.17	33.895	26.061	195.8	0.183	2.84	44.8	26.1	1.86	22.3	0.06	0.10	0.12	81	202
96		9.84	9.83	33.967	26.174	185.2	0.212	2.45	38.4	29.7	2.02	24.5	0.05	0.05	0.09	97	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 44.9 N	120 24.8 W	05/02/02	0352 UTC	1003 m	310 18 kn			1021.4 mb	13.5 C	11.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.78	12.78	33.609	25.359	260.6	0.000	6.12	101.9	4.7	0.55	3.0	0.09	1.49	0.28	0	
2		12.78	12.78	33.609	25.359	260.6	0.005	6.12	101.9	4.7	0.55	3.0	0.09	1.49	0.28	2	220
10		12.75	12.75	33.608	25.365	260.3	0.026	6.12	101.9	4.7	0.55	3.0	0.09	1.46	0.24	10	219
20		12.62	12.62	33.607	25.390	258.2	0.052	6.06	100.6	5.2	0.58	3.4	0.09	1.41	0.30	20	218
30		12.45	12.45	33.608	25.423	255.3	0.078	5.92	97.9	6.3	0.65	3.7	0.10	1.30	0.32	30	217
39		12.36	12.35	33.610	25.443	253.7	0.101	5.76	95.1	7.0	0.69	5.1	0.11	1.02	0.24	39	216
49		11.96	11.95	33.614	25.522	246.4	0.126	5.34	87.4	9.4	0.87	7.7	0.14	0.54	0.22	49	215
50	ISL	11.85	11.84	33.616	25.544	244.3	0.128	5.22	85.2	10.1	0.92	8.5	0.14	0.50	0.21	50	
59		10.85	10.84	33.652	25.754	224.4	0.149	4.17	66.7	16.3	1.35	15.7	0.11	0.26	0.15	59	214
70		10.41	10.40	33.697	25.866	214.0	0.173	3.70	58.6	19.4	1.54	18.8	0.04	0.16	0.10	70	213
75	ISL	10.17	10.16	33.749	25.948	206.3	0.184	3.44	54.2	21.6	1.65	20.4	0.03	0.11	0.10	75	
84		9.80	9.79	33.847	26.087	193.2	0.202	3.02	47.2	25.4	1.82	22.9	0.02	0.03	0.10	84	212
99		9.67	9.66	33.914	26.161	186.5	0.230	2.80	43.7	27.6	1.92	24.1	0.01	0.01	0.07	100	211
100	ISL	9.66	9.65	33.919	26.167	186.0	0.232	2.78	43.4	27.8	1.93	24.2	0.01	0.01	0.07	101	
119		9.45	9.44	34.008	26.271	176.4	0.266	2.47	38.4	30.8	2.05	26.0	0.01	0.01	0.06	120	210
125	ISL	9.40	9.39	34.036	26.302	173.7	0.277	2.37	36.8	31.9	2.09	26.5	0.01	0.01	0.07	126	
139		9.25	9.23	34.083	26.363	168.1	0.301	2.20	34.0	34.3	2.17	27.4	0.01	0.01	0.08	140	209
150	ISL	8.99	8.97	34.077	26.400	164.8	0.319	2.25	34.6	35.5	2.17	27.9	0.01	0.01	0.07	151	
170		8.53	8.51	34.048	26.449	160.3	0.352	2.42	36.8	37.1	2.17	28.6	0.00	0.01 U	0.25 U	171	208
200		8.30	8.28	34.067	26.500	156.0	0.399	2.28	34.5	39.5	2.24	29.4	0.00	0.00	0.04	201	207
229		8.14	8.12	34.112	26.559	150.8	0.444	1.94	29.3	43.2	2.38	30.7	0.01			230	206
250	ISL	7.86	7.83	34.128	26.614	145.9	0.475	1.76	26.4	46.6	2.47	31.9	0.01			252	
269		7.61	7.58	34.142	26.661	141.6	0.502	1.61	24.0	49.7	2.55	33.0	0.01			271	205
300	ISL	7.45	7.42	34.183	26.717	136.8	0.545	1.25	18.6	54.0	2.69	34.2	0.00			302	
319		7.39	7.36	34.206	26.743	134.6	0.571	1.05	15.6	56.3	2.77	34.8	0.00			321	204
378		7.01	6.97	34.229	26.815	128.5	0.649	0.81	11.9	62.4	2.90	36.4	0.00			381	203
400	ISL	6.83	6.79	34.234	26.844	126.0	0.677	0.73	10.7	65.1	2.95	37.1	0.00			403	
437		6.54	6.50	34.243	26.890	121.9	0.723	0.60	8.7	69.5	3.02	38.2	0.00			440	202
500	ISL	6.27	6.23	34.278	26.954	116.6	0.798	0.45	6.5	75.3	3.10	39.3	0.00			504	
515		6.20	6.15	34.286	26.969	115.2	0.815	0.42	6.1	76.7	3.12	39.6	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 34.7 N	120 45.3 W	04/02/02	2342	UTC	1379 m	320	09 kn	300 04 08	0	1020.8 mb	14.8 C	12.9 C	19m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.94	11.94	33.255	25.246	271.4	0.000	6.06	98.9	7.0	0.78	6.3	0.14	0.56	0.12	0	
1		11.94	11.94	33.255	25.246	271.4	0.003	6.06	98.9	7.0	0.78	6.3	0.14	0.56	0.12	1	220
10		11.66	11.66	33.237	25.284	268.0	0.027	5.84	94.8	7.1	0.80	6.6	0.14	0.55	0.14	10	219
19		11.84	11.84	33.412	25.387	258.4	0.051	5.82	94.9	6.9	0.78	6.3	0.24	0.66	0.24	19	218
20	ISL	11.86	11.86	33.424	25.392	257.9	0.053	5.83	95.1	6.8	0.77	6.2	0.25	0.66	0.24	20	
30		12.00	12.00	33.493	25.420	255.6	0.079	5.92	96.9	6.3	0.73	5.6	0.31	0.65	0.27	30	217
40		11.99	11.98	33.510	25.435	254.4	0.104	5.83	95.4	6.6	0.75	5.9	0.33	0.54	0.27	40	216
49		11.89	11.88	33.522	25.464	251.9	0.127	5.78	94.4	7.8	0.81	6.7	0.25	0.47	0.28	49	215
50	ISL	11.88	11.87	33.524	25.467	251.6	0.130	5.76	94.1	7.9	0.82	6.8	0.25	0.46	0.28	50	
60		11.68	11.67	33.515	25.497	248.9	0.155	5.60	91.0	8.7	0.88	8.0	0.26	0.33	0.21	60	214
69		11.16	11.15	33.586	25.648	234.8	0.177	4.76	76.6	12.6	1.16	12.7	0.17	0.19	0.16	69	213
75	ISL	10.80	10.79	33.659	25.769	223.4	0.190	4.13	65.9	16.1	1.38	16.0	0.11	0.12	0.14	75	
84		10.35	10.34	33.764	25.929	208.3	0.210	3.35	53.0	21.0	1.65	20.0	0.04	0.06	0.11	84	212
99		10.02	10.01	33.826	26.034	198.6	0.240	3.07	48.2	23.9	1.78	22.1	0.02	0.04	0.10	100	211
100	ISL	9.99	9.98	33.832	26.044	197.7	0.242	3.05	47.9	24.2	1.79	22.3	0.02	0.04	0.10	101	
119		9.47	9.46	33.931	26.208	182.5	0.278	2.73	42.4	28.7	1.96	25.1	0.02	0.01	0.09	120	210
125	ISL	9.35	9.34	33.947	26.240	179.5	0.289	2.68	41.5	29.7	1.99	25.6	0.02	0.01	0.10	126	
139		9.12	9.10	33.975	26.299	174.1	0.314	2.58	39.8	31.5	2.05	26.6	0.01	0.01	0.11	140	209
150	ISL	9.02	9.00	34.005	26.339	170.6	0.333	2.47	38.0	32.8	2.10	27.3	0.01	0.01	0.10	151	
169		8.88	8.86	34.050	26.396	165.4	0.365	2.30	35.3	34.9	2.17	28.2	0.01	0.01	0.07	170	208
199		8.56	8.54	34.083	26.472	158.7	0.413	2.15	32.7	38.1	2.25	29.3	0.02	0.01	0.07	200	207
200	ISL	8.55	8.53	34.084	26.475	158.5	0.415	2.14	32.6	38.3	2.26	29.4	0.02			201	
229		8.12	8.10	34.119	26.568	150.0	0.460	1.83	27.6	43.5	2.40	31.2	0.01			230	206
250	ISL	7.74	7.72	34.106	26.614	145.9	0.491	1.82	27.2	46.5	2.44	32.1	0.01			252	
268		7.43	7.40	34.094	26.649	142.7	0.517	1.82	27.0	49.0	2.48	32.8	0.01			270	205
300	ISL	7.13	7.10	34.133	26.722	136.1	0.561	1.43	21.1	54.9	2.65	34.6	0.01			302	
318		7.02	6.99	34.164	26.762	132.5	0.586	1.17	17.2	58.2	2.76	35.6	0.01			320	204
378		6.77	6.73	34.230	26.849	125.1	0.663	0.74	10.8	65.6	2.95	37.3	0.00			380	203
400	ISL	6.65	6.61	34.245	26.877	122.7	0.690	0.64	9.3	68.0	3.00	37.9	0.00			403	
441		6.43	6.39	34.266	26.923	118.8	0.740	0.52	7.5	72.2	3.06	38.8	0.00			444	202
500	ISL	6.14	6.10	34.289	26.979	114.0	0.808	0.41	5.9	77.7	3.13	39.8	0.00			504	
513		6.08	6.03	34.294	26.991	113.0	0.823	0.38	5.5	78.9	3.15	40.0	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 14.3 N	121 26.6 W	04/02/02	1822	UTC	3797 m	330	13 kn	330 03 04	0	1024.1 mb	14.0 C	11.5 C	24m	0/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.69	13.69	33.092	24.777	316.0	0.000	5.99	101.3	2.2	0.40	0.3	0.02	0.29	0.09	0	
2	A	13.69	13.69	33.092	24.777	316.0	0.006	5.99	101.3	2.2	0.40	0.3	0.02	0.29	0.09	2	221
10	ISL	13.67	13.67	33.093	24.782	315.8	0.032	5.99	101.3	2.1	0.40	0.3	0.01	0.31	0.09	10	
14	A	13.65	13.65	33.093	24.787	315.5	0.044	5.99	101.2	2.1	0.40	0.3	0.01	0.32	0.09	14	220
20	ISL	13.64	13.64	33.093	24.789	315.4	0.063	5.99	101.2	2.1	0.40	0.3	0.01	0.30	0.08	20	
23		13.64	13.64	33.093	24.789	315.5	0.073	5.99	101.2	2.1	0.40	0.3	0.01	0.30	0.08	23	219
30	ISL	13.63	13.63	33.095	24.793	315.3	0.095	5.99	101.2	2.1	0.40	0.3	0.02	0.35	0.09	30	
31	A	13.63	13.63	33.095	24.793	315.4	0.098	5.99	101.2	2.1	0.40	0.3	0.02	0.36	0.09	31	218
40		13.52	13.51	33.117	24.832	311.8	0.126	5.99	101.0	2.4	0.42	0.5	0.02	0.46	0.12	40	217
49	A	13.24	13.23	33.102	24.877	307.8	0.154	6.03	101.1	2.7	0.45	1.0	0.04	0.48	0.14	49	216
50	ISL	13.24	13.23	33.102	24.877	307.8	0.157	6.03	101.1	2.7	0.45	1.0	0.04	0.47	0.14	50	
55		13.18	13.17	33.094	24.883	307.4	0.172	6.01	100.6	2.8	0.45	1.1	0.04	0.45	0.16	55	215
62	A	12.76	12.75	33.098	24.969	299.3	0.194	6.06	100.5	3.4	0.50	1.7	0.06	0.51	0.17	62	214
75	ISL	11.84	11.83	33.069	25.122	285.0	0.232	5.93	96.5	5.4	0.69	4.5	0.11	0.29	0.18	75	
76		11.79	11.78	33.069	25.131	284.1	0.234	5.92	96.2	5.5	0.70	4.7	0.11	0.27	0.18	76	213
88	A	11.94	11.93	33.200	25.205	277.4	0.268	6.04	98.5	5.9	0.69	4.6	0.31	0.21	0.14	88	212
100	ISL	11.23	11.22	33.221	25.352	263.6	0.301	5.59	89.8	8.2	0.90	8.3	0.14	0.12	0.09	100	
103		10.98	10.97	33.222	25.397	259.3	0.308	5.44	86.9	9.0	0.97	9.5	0.08	0.10	0.08	103	211
120		9.62	9.61	33.310	25.698	230.8	0.350	4.94	76.7	13.4	1.24	14.4	0.01	0.03	0.05	121	210
125	ISL	9.38	9.37	33.364	25.779	223.2	0.361	4.80	74.1	15.0	1.31	15.7	0.01	0.02	0.04	126	
139		8.96	8.95	33.537	25.982	204.1	0.391	4.37	66.9	19.8	1.50	19.0	0.01	0.01	0.03	140	209
150	ISL	8.92	8.90	33.684	26.103	192.8	0.413	3.89	59.6	23.6	1.67	21.7	0.01	0.00	0.03	151	
169		8.85	8.83	33.867	26.258	178.6	0.449	3.11	47.6	29.1	1.91	25.6	0.02	0.00	0.04	170	208
199		8.54	8.52	33.980	26.395	166.0	0.500	2.67	40.6	33.5	2.05	27.8	0.03	0.00	0.05	200	207
200	ISL	8.54	8.52	33.984	26.398	165.8	0.502	2.65	40.3	33.7	2.06	27.9	0.03			201	
229		8.49	8.47	34.090	26.489	157.7	0.549	1.99	30.3	39.2	2.32	29.9	0.00			230	206
250	ISL	8.31	8.28	34.126	26.545	152.7	0.581	1.74	26.4	42.2	2.43	31.0	0.00			251	
268		8.11	8.08	34.142	26.588	148.8	0.608	1.60	24.1	44.6	2.49	31.9	0.00			270	205
300	ISL	7.83	7.80	34.168	26.650	143.4	0.655	1.35	20.2	49.1	2.61	33.3	0.00			302	
318		7.67	7.64	34.178	26.682	140.6	0.681	1.23	18.4	51.6	2.67	34.0	0.00			320	204
378		7.11	7.07	34.191	26.771	132.7	0.763	0.97	14.3	59.0	2.82	35.9	0.00			380	203
400	ISL	6.91	6.87	34.196	26.803	129.9	0.792	0.87	12.8	62.0	2.87	36.7	0.00			403	
437		6.58	6.54	34.205	26.855	125.3	0.839	0.72	10.5	67.3	2.95	38.0	0.00			440	202
500	ISL	5.96	5.92	34.219	26.946	116.9	0.915	0.52	7.5	77.4	3.09	40.2	0.00			503	
515		5.81	5.77	34.223	26.968	114.8	0.933	0.47	6.7	79.8	3.12	40.7	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.3 N	122 7.8 W	04/02/02	0636 UTC	4180 m	350 13 kn			1025.1 mb	12.5 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.31	12.31	33.294	25.206	275.2	0.000	6.15	101.2	4.8	0.58	3.1	0.13	0.64	0.21	0	
2		12.31	12.31	33.294	25.206	275.2	0.006	6.15	101.2	4.8	0.58	3.1	0.13	0.64	0.21	2	220
10	ISL	12.31	12.31	33.291	25.204	275.6	0.028	6.15	101.2	4.7	0.58	3.0	0.13	0.64	0.19	10	
11		12.31	12.31	33.291	25.204	275.6	0.030	6.15	101.2	4.7	0.58	3.0	0.13	0.64	0.19	11	219
20		12.11	12.11	33.269	25.225	273.8	0.055	6.12	100.3	5.2	0.62	3.7	0.18	0.68	0.26	20	218
30	ISL	11.98	11.98	33.268	25.249	271.8	0.082	5.99	97.9	5.6	0.68	4.5	0.21	0.49	0.23	30	
31		11.97	11.97	33.270	25.253	271.5	0.085	5.98	97.7	5.6	0.68	4.6	0.21	0.47	0.22	31	217
40		11.95	11.94	33.307	25.285	268.6	0.109	5.94	97.0	5.7	0.69	4.8	0.25	0.42	0.19	40	216
50	ISL	12.16	12.15	33.461	25.365	261.3	0.136	5.82	95.6	5.9	0.73	5.3	0.46	0.27	0.19	50	
51		12.18	12.17	33.477	25.374	260.5	0.138	5.81	95.4	5.9	0.74	5.4	0.48	0.25	0.19	51	215
60		12.21	12.20	33.545	25.421	256.2	0.162	5.71	93.9	6.1	0.77	6.0	0.48	0.17	0.17	60	214
70		12.20	12.19	33.550	25.427	255.9	0.187	5.70	93.7	6.2	0.79	6.3	0.42	0.17	0.17	70	213
75	ISL	12.21	12.20	33.558	25.432	255.6	0.200	5.70	93.7	6.2	0.78	6.2	0.43	0.16	0.16	75	
85		12.23	12.22	33.573	25.440	255.1	0.226	5.70	93.8	6.1	0.77	6.1	0.45	0.13	0.15	85	212
100	ISL	10.82	10.81	33.464	25.614	238.7	0.263	4.98	79.4	10.9	1.13	12.3	0.08	0.08	0.13	101	
101		10.71	10.70	33.458	25.629	237.3	0.265	4.92	78.3	11.3	1.16	12.8	0.05	0.08	0.13	102	211
119		9.45	9.44	33.568	25.927	209.0	0.305	4.06	62.9	19.2	1.57	19.8	0.01	0.01	0.10	120	210
125	ISL	9.21	9.20	33.589	25.982	203.9	0.318	4.07	62.7	20.1	1.58	20.1	0.01	0.01	0.08	126	
140		8.86	8.85	33.649	26.085	194.3	0.347	4.10	62.7	21.7	1.59	20.7	0.00	0.01	0.05	141	209
150	ISL	8.85	8.83	33.749	26.165	187.0	0.367	3.66	56.0	24.8	1.74	22.9	0.00	0.01	0.05	151	
168		8.84	8.82	33.909	26.292	175.3	0.399	2.81	43.0	30.5	2.02	27.0	0.00	0.00	0.04	169	208
198		8.49	8.47	33.985	26.406	164.9	0.450	2.64	40.1	34.1	2.09	28.5	0.00	0.00	0.03	199	207
200	ISL	8.46	8.44	33.989	26.414	164.2	0.453	2.63	39.9	34.4	2.10	28.6	0.00			201	
228		8.04	8.02	34.024	26.505	155.9	0.498	2.53	38.1	38.2	2.18	29.7	0.00			229	206
250	ISL	7.75	7.73	34.025	26.549	152.0	0.532	2.47	36.9	41.0	2.23	30.6	0.00			251	
269		7.52	7.49	34.022	26.579	149.3	0.561	2.39	35.5	43.5	2.28	31.4	0.00			271	205
300	ISL	7.17	7.14	34.041	26.644	143.5	0.606	2.06	30.4	48.4	2.43	33.1	0.00			302	
319		6.98	6.95	34.057	26.683	140.0	0.633	1.81	26.6	51.7	2.53	34.2	0.00			321	204
378		6.46	6.43	34.114	26.798	129.6	0.713	1.06	15.4	62.7	2.84	37.7	0.00			380	203
400	ISL	6.30	6.26	34.134	26.835	126.3	0.741	0.90	13.0	66.4	2.91	38.5	0.00			403	
434		6.07	6.03	34.165	26.889	121.4	0.783	0.71	10.2	71.7	3.00	39.5	0.00			437	202
500	ISL	5.73	5.69	34.232	26.985	112.9	0.860	0.45	6.4	80.2	3.13	40.8	0.00			503	
513		5.66	5.62	34.245	27.004	111.2	0.875	0.40	5.7	81.9	3.15	41.1	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 34.8 N	122 48.5 W	03/02/02	2346 UTC	4268 m	350 17 kn	360 04 07	1	1024.3 mb	12.6 C	10.9 C	14m	1/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.68	12.68	33.177	25.044	290.6	0.000	6.19	102.6	3.7	0.48	1.5	0.05	0.69	0.13	0	
2		12.68	12.68	33.177	25.044	290.6	0.006	6.19	102.6	3.7	0.48	1.5	0.05	0.69	0.13	2	220
10		12.68	12.68	33.177	25.044	290.8	0.029	6.18	102.4	3.6	0.48	1.5	0.05	0.65	0.10	10	219
20		12.67	12.67	33.215	25.076	288.1	0.058	6.20	102.8	3.6	0.48	1.5	0.05	0.78	0.15	20	218
30	ISL	12.78	12.78	33.307	25.126	283.6	0.087	6.18	102.7	3.7	0.45	1.2	0.06	1.00	0.21	30	
31		12.79	12.79	33.315	25.130	283.2	0.089	6.18	102.7	3.7	0.45	1.2	0.06	1.02	0.22	31	217
41		12.77	12.76	33.315	25.135	283.1	0.118	6.15	102.2	3.6	0.46	1.3	0.07	0.95	0.22	41	216
50		12.67	12.66	33.317	25.156	281.3	0.143	6.10	101.2	3.7	0.49	1.7	0.10	0.68	0.21	50	215
59		12.61	12.60	33.320	25.170	280.1	0.168	5.99	99.2	4.2	0.55	2.5	0.12	0.44	0.17	59	214
70		11.69	11.68	33.411	25.415	257.0	0.198	5.20	84.5	8.3	0.96	9.6	0.01	0.13	0.12	70	213
75	ISL	11.42	11.41	33.465	25.507	248.4	0.211	4.87	78.7	10.2	1.10	11.7	0.01	0.11	0.12	75	
85		10.95	10.94	33.560	25.665	233.5	0.235	4.33	69.3	13.8	1.31	15.0	0.01	0.06	0.11	85	212
99		10.12	10.11	33.607	25.846	216.5	0.266	3.89	61.2	18.6	1.54	19.0	0.01	0.04	0.09	99	211
100	ISL	10.08	10.07	33.614	25.859	215.3	0.268	3.85	60.5	18.9	1.56	19.2	0.01	0.04	0.09	100	
119		9.48	9.47	33.753	26.067	195.8	0.307	3.29	51.1	24.4	1.79	23.0	0.00	0.01	0.07	120	210
125	ISL	9.36	9.35	33.778	26.106	192.2	0.319	3.22	49.8	25.5	1.83	23.7	0.00	0.01	0.06	126	
139		9.14	9.12	33.825	26.179	185.5	0.345	3.13	48.2	27.5	1.90	25.0	0.00	0.01	0.05	140	209
150	ISL	8.99	8.97	33.876	26.242	179.7	0.366	2.97	45.6	29.4	1.96	26.1	0.00	0.01	0.05	151	
171		8.74	8.72	33.965	26.352	169.7	0.402	2.65	40.5	33.0	2.07	27.8	0.00	0.01	0.05	172	208
200		8.35	8.33	34.017	26.453	160.5	0.450	2.45	37.1	37.0	2.17	29.4	0.00	0.01	0.03	201	207
230		8.13	8.11	34.072	26.529	153.7	0.497	2.10	31.7	41.3	2.32	30.8	0.00			231	206
250	ISL	7.84	7.82	34.077	26.576	149.4	0.528	2.00	30.0	44.1	2.39	31.7	0.00			251	
268		7.55	7.52	34.073	26.615	145.9	0.554	1.94	28.9	46.7	2.44	32.6	0.00			270	205
300	ISL	7.14	7.11	34.075	26.675	140.5	0.600	1.73	25.5	51.7	2.56	34.3	0.00			302	
321		6.91	6.88	34.079	26.710	137.4	0.629	1.56	22.9	55.1	2.64	35.3	0.00			323	204
376		6.48	6.45	34.115	26.796	129.8	0.703	1.10	16.0	63.4	2.83	37.5	0.00			378	203
400	ISL	6.28	6.24	34.146	26.847	125.2	0.733	0.87	12.6	68.2	2.93	38.6	0.00			403	
433		6.01	5.97	34.188	26.915	119.0	0.773	0.59	8.5	74.8	3.05	40.0	0.00			436	202
500	ISL	5.53	5.49	34.224	27.003	111.0	0.851	0.45	6.4	84.4	3.16	41.4	0.00			503	
507		5.48	5.44	34.228	27.012	110.2	0.858	0.43	6.1	85.4	3.17	41.6	0.00			510	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 14.6 N	123 29.3 W	03/02/02	1810 UTC	4191 m	010 13 kn	010 02 05	1	1027.2 mb	15.6 C	11.5 C	23m	3/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.52	14.52	33.228	24.710	322.4	0.000	5.86	100.9	1.8	0.38	0.1	0.01	0.27	0.09	0	
1	A	14.52	14.52	33.228	24.710	322.4	0.003	5.86	100.9	1.8	0.38	0.1	0.01	0.27	0.09	1	222
10	ISL	14.53	14.53	33.232	24.711	322.6	0.032	5.87	101.1	1.8	0.38	0.2	0.01	0.26	0.10	10	
13	A	14.53	14.53	33.233	24.712	322.6	0.042	5.88	101.3	1.8	0.38	0.2	0.01	0.26	0.10	13	221
20	ISL	14.50	14.50	33.227	24.714	322.6	0.065	5.87	101.0	1.9	0.38	0.1	0.01	0.27	0.09	20	
29	A	14.48	14.48	33.223	24.715	322.7	0.094	5.86	100.8	1.9	0.38	0.1	0.01	0.27	0.09	29	220
30	ISL	14.49	14.49	33.224	24.714	322.9	0.097	5.86	100.8	1.9	0.38	0.1	0.01	0.27	0.09	30	
37		14.52	14.51	33.235	24.716	322.9	0.119	5.85	100.7	1.8	0.38	0.2	0.01	0.26	0.10	37	219
46	A	14.51	14.50	33.237	24.720	322.8	0.148	5.84	100.5	2.1	0.38	0.3	0.02	0.25	0.10	46	218
50	ISL	14.42	14.41	33.220	24.726	322.3	0.161	5.85	100.5	2.0	0.39	0.3	0.02	0.27	0.10	50	
53		14.35	14.34	33.208	24.732	321.9	0.171	5.86	100.5	2.0	0.39	0.3	0.02	0.28	0.10	53	217
60	A	14.32	14.31	33.207	24.738	321.5	0.194	5.85	100.3	2.3	0.40	0.4	0.03	0.25	0.12	60	216
68		14.06	14.05	33.168	24.762	319.4	0.219	5.85	99.8	2.4	0.43	0.6	0.06	0.23	0.13	68	215
75	ISL	13.17	13.16	33.051	24.852	310.9	0.241	5.89	98.5	3.2	0.51	1.5	0.08	0.21	0.15	75	
77		12.92	12.91	33.021	24.879	308.4	0.247	5.90	98.2	3.4	0.53	1.8	0.09	0.20	0.15	77	214
87	A	12.76	12.75	33.017	24.907	305.9	0.278	5.86	97.2	3.6	0.56	2.2	0.09	0.19	0.15	87	213
94		11.75	11.74	32.992	25.079	289.5	0.299	5.71	92.7	5.4	0.74	5.0	0.05	0.17	0.15	94	212
100	ISL	11.28	11.27	33.052	25.211	277.0	0.316	5.54	89.0	6.8	0.85	7.1	0.03	0.13	0.12	100	
111		10.76	10.75	33.201	25.420	257.3	0.345	5.23	83.2	9.3	1.02	10.4	0.01	0.07	0.06	111	211
124		10.02	10.01	33.287	25.614	239.0	0.378	4.96	77.7	12.3	1.20	13.6	0.01	0.04	0.04	125	210
125	ISL	9.98	9.97	33.296	25.628	237.7	0.380	4.94	77.3	12.6	1.21	13.8	0.01	0.04	0.04	126	
146		9.36	9.34	33.510	25.897	212.4	0.427	4.32	66.7	18.5	1.48	18.5	0.01	0.01	0.03	147	209
150	ISL	9.29	9.27	33.558	25.946	207.9	0.436	4.15	64.0	19.9	1.54	19.5	0.01	0.01	0.03	151	
171		9.04	9.02	33.789	26.167	187.3	0.477	3.35	51.5	26.5	1.82	24.1	0.00	0.00	0.03	172	208
200	ISL	8.65	8.63	33.969	26.369	168.5	0.529	3.10	47.3	31.4	1.92	26.1	0.00	0.00	0.02	201	
201		8.64	8.62	33.973	26.374	168.1	0.530	3.09	47.1	31.5	1.92	26.1	0.00	0.00	0.02	202	207
228		8.33	8.31	34.009	26.450	161.3	0.575	2.95	44.7	34.9	2.00	27.4	0.00			229	206
250	ISL	8.01	7.98	34.027	26.512	155.6	0.610	2.68	40.3	38.8	2.12	29.0	0.00			251	
271		7.70	7.67	34.037	26.566	150.8	0.642	2.41	36.0	42.7	2.24	30.6	0.00			273	205
300	ISL	7.33	7.30	34.040	26.621	145.8	0.685	2.20	32.6	46.8	2.36	32.1	0.00			302	
321		7.09	7.06	34.041	26.655	142.7	0.715	2.07	30.5	49.7	2.43	33.0	0.00			323	204
381		6.47	6.44	34.069	26.761	133.1	0.798	1.56	22.6	59.7	2.66	36.0	0.00			383	203
400	ISL	6.33	6.29	34.089	26.795	130.0	0.823	1.36	19.7	63.0	2.75	36.9	0.00			402	
439		6.07	6.03	34.131	26.862	124.0	0.872	0.97	13.9	69.8	2.91	38.7	0.00			442	202
500	ISL	5.56	5.52	34.157	26.946	116.4	0.946	0.70	9.9	80.1	3.03	40.7	0.00			503	
513		5.45	5.41	34.163	26.964	114.7	0.961	0.64	9.1	82.3	3.06	41.1	0.00			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 54.7 N	124 10.3 W	03/02/02	0754 UTC	4195 m	000 13 kn			1026.2 mb	15.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.20	15.20	33.379	24.680	325.3	0.000	5.78	101.0	2.0	0.35	0.1	0.00	0.21	0.06	0	
2		15.20	15.20	33.379	24.680	325.3	0.007	5.78	101.0	2.0	0.35	0.1	0.00	0.21	0.06	2	220
10	ISL	15.20	15.20	33.380	24.681	325.5	0.033	5.77	100.8	2.0	0.35	0.1	0.00	0.20	0.06	10	
16		15.20	15.20	33.381	24.682	325.6	0.052	5.77	100.8	2.0	0.35	0.1	0.00	0.19	0.06	16	219
20	ISL	15.21	15.21	33.384	24.682	325.7	0.065	5.77	100.9	2.0	0.35	0.1	0.00	0.19	0.06	20	
30	ISL	15.24	15.24	33.392	24.682	326.0	0.098	5.77	100.9	1.9	0.35	0.1	0.00	0.20	0.07	30	
31		15.24	15.24	33.393	24.683	325.9	0.101	5.77	100.9	1.9	0.35	0.1	0.00	0.20	0.07	31	218
45		15.27	15.26	33.402	24.683	326.3	0.147	5.76	100.8	2.0	0.35	0.1	0.00	0.20	0.07	45	217
50	ISL	15.27	15.26	33.405	24.686	326.2	0.163	5.76	100.8	2.0	0.35	0.1	0.00	0.20	0.07	50	
60		15.27	15.26	33.415	24.694	325.8	0.196	5.76	100.8	2.0	0.35	0.1	0.00	0.19	0.07	60	216
75		15.27	15.26	33.445	24.718	324.0	0.244	5.74	100.5	2.0	0.35	0.1	0.00	0.20	0.07	75	215
85		15.26	15.25	33.447	24.722	323.9	0.277	5.75	100.6	2.0	0.35	0.1	0.00	0.22	0.07	85	214
95		15.24	15.23	33.458	24.735	322.9	0.309	5.77	100.9	2.0	0.35	0.1	0.00	0.22	0.08	95	213
100	ISL	15.21	15.19	33.454	24.739	322.7	0.325	5.76	100.7	2.0	0.35	0.2	0.00	0.21	0.08	100	
105		15.18	15.16	33.450	24.742	322.5	0.341	5.75	100.5	2.0	0.35	0.2	0.01	0.20	0.08	105	212
115		11.68	11.67	33.001	25.099	288.1	0.372	5.70	92.4	5.5	0.75	5.2	0.02	0.14	0.14	115	211
125		11.30	11.28	33.123	25.264	272.6	0.400	5.46	87.8	7.0	0.87	7.7	0.01	0.09	0.08	126	210
139		10.75	10.73	33.251	25.461	254.0	0.437	5.18	82.4	9.4	1.05	11.0	0.01	0.05	0.06	140	209
150	ISL	10.20	10.18	33.332	25.619	239.1	0.464	4.94	77.7	12.1	1.20	13.6	0.01	0.03	0.05	151	
165		9.52	9.50	33.447	25.822	220.0	0.498	4.57	70.8	16.2	1.39	16.9	0.00	0.01	0.03	166	208
195		9.10	9.08	33.764	26.138	190.5	0.560	3.58	55.1	24.4	1.72	22.6	0.00	0.00	0.02	196	207
200	ISL	9.02	9.00	33.806	26.184	186.2	0.569	3.47	53.3	25.7	1.76	23.3	0.00			201	
229		8.52	8.50	33.983	26.401	166.0	0.620	3.00	45.6	32.6	1.97	26.8	0.00			230	206
250	ISL	8.13	8.10	34.022	26.490	157.7	0.654	2.78	41.9	37.0	2.09	28.6	0.00			251	
269		7.78	7.75	34.026	26.545	152.7	0.684	2.62	39.2	40.7	2.18	29.9	0.00			270	205
300	ISL	7.30	7.27	34.033	26.620	145.9	0.730	2.36	34.9	46.0	2.32	31.7	0.00			302	
319		7.04	7.01	34.034	26.657	142.5	0.757	2.19	32.2	49.2	2.41	32.8	0.00			321	204
378		6.30	6.27	34.059	26.775	131.6	0.838	1.53	22.1	61.3	2.70	36.5	0.00			380	203
400	ISL	6.12	6.08	34.071	26.808	128.7	0.867	1.37	19.7	64.8	2.77	37.5	0.00			402	
437		5.88	5.84	34.096	26.858	124.2	0.914	1.13	16.2	70.4	2.88	38.9	0.00			440	202
500	ISL	5.46	5.42	34.158	26.959	115.1	0.989	0.71	10.1	81.3	3.06	41.0	0.00			503	
517		5.35	5.31	34.175	26.985	112.6	1.008	0.60	8.5	84.3	3.11	41.6	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 53.2 N	118 29.2 W	31/01/02	0936 UTC	56 m	060 07 kn			1023.9 mb	10.5 C	5.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.35	13.35	33.574	25.219	273.9	0.000	5.65	95.2	4.6	0.51	2.5	0.24	2.26	0.57	0	
2		13.35	13.35	33.574	25.219	274.0	0.005	5.65	95.2	4.6	0.51	2.5	0.24	2.26	0.57	2	207
6		13.34	13.34	33.574	25.221	273.9	0.016	5.68	95.7	4.5	0.50	2.5	0.24	2.29	0.60	6	206
10		13.34	13.34	33.574	25.221	274.0	0.027	5.70	96.0	4.4	0.50	2.4	0.24	2.38	0.60	10	205
20		13.32	13.32	33.573	25.225	273.9	0.055	5.64	95.0	4.5	0.53	2.8	0.25	2.25	0.65	20	204
30		13.26	13.26	33.574	25.238	273.0	0.082	5.61	94.3	4.4	0.54	2.9	0.25	2.36	0.69	30	203
40		11.98	11.97	33.582	25.493	248.9	0.108	4.04	66.1	12.9	1.23	12.7	0.25	0.38	0.20	40	202
50		11.51	11.50	33.653	25.636	235.5	0.132	3.49	56.6	16.7	1.45	15.9	0.07	0.08	0.16	50	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 49.3 N	118 37.5 W	31/01/02	1148 UTC	638 m	080 10 kn			1024.2 mb	11.0 C	6.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.32	13.32	33.589	25.237	272.3	0.000	5.71	96.2	4.6	0.51	2.4	0.16	0.50	0.21	0	
2		13.32	13.32	33.589	25.237	272.3	0.005	5.71	96.2	4.6	0.51	2.4	0.16	0.50	0.21	2	220
10		13.33	13.33	33.589	25.235	272.7	0.027	5.70	96.0	4.7	0.52	2.5	0.17	0.54	0.20	10	219
20	ISL	13.33	13.33	33.589	25.235	273.0	0.055	5.70	96.0	4.6	0.53	2.5	0.17	0.54	0.19	20	
21		13.33	13.33	33.589	25.235	273.0	0.057	5.70	96.0	4.6	0.53	2.5	0.17	0.54	0.19	21	218
30		13.31	13.31	33.587	25.238	273.0	0.082	5.68	95.6	4.7	0.54	2.6	0.16	0.54	0.19	30	217
41		13.32	13.31	33.588	25.237	273.4	0.112	5.68	95.6	4.7	0.53	2.6	0.17	0.60	0.22	41	216
50		12.92	12.91	33.555	25.291	268.4	0.136	5.26	87.8	6.8	0.72	5.3	0.13	0.45	0.20	50	215
60		11.73	11.72	33.535	25.504	248.3	0.162	4.29	69.8	12.4	1.18	12.2	0.05	0.23	0.17	60	214
70		11.39	11.38	33.593	25.612	238.3	0.186	3.97	64.2	14.6	1.32	14.3	0.02	0.13	0.13	70	213
75	ISL	11.44	11.43	33.666	25.659	233.9	0.198	3.44	55.7	17.2	1.49	16.2	0.02	0.10	0.13	75	
85		11.61	11.60	33.804	25.736	226.9	0.221	2.44	39.7	22.3	1.82	19.6	0.01	0.06	0.13	85	212
100		11.36	11.35	33.817	25.792	221.9	0.255	2.45	39.6	23.3	1.84	20.1	0.01	0.04	0.08	101	211
120		10.58	10.57	33.836	25.946	207.6	0.298	2.79	44.4	23.5	1.81	21.1	0.00	0.02	0.07	121	210
125	ISL	10.46	10.45	33.861	25.987	203.8	0.308	2.74	43.5	24.3	1.85	21.7	0.00	0.02	0.07	126	
140		10.14	10.12	33.951	26.112	192.2	0.338	2.47	38.9	27.7	2.00	23.9	0.02	0.02	0.07	141	209
150	ISL	9.88	9.86	34.011	26.203	183.7	0.357	2.28	35.8	30.2	2.10	25.4	0.02	0.02	0.07	151	
170		9.41	9.39	34.111	26.359	169.2	0.392	1.96	30.4	34.7	2.26	27.8	0.01	0.01	0.06	171	208
200		9.02	9.00	34.158	26.459	160.2	0.441	1.92	29.6	37.7	2.32	28.8	0.00	0.01	0.06	201	207
230		8.86	8.84	34.213	26.528	154.2	0.488	1.53	23.5	41.4	2.48	30.1	0.00			231	206
250	ISL	8.59	8.56	34.226	26.581	149.5	0.519	1.38	21.0	44.3	2.56	31.0	0.00			251	
269		8.30	8.27	34.230	26.629	145.1	0.547	1.27	19.2	47.1	2.62	31.9	0.00			271	205
300	ISL	7.94	7.91	34.240	26.691	139.6	0.591	1.07	16.1	51.6	2.72	33.2	0.00			302	
319		7.74	7.71	34.243	26.722	136.8	0.617	0.97	14.5	54.2	2.78	33.9	0.00			321	204
378		7.20	7.16	34.232	26.791	130.9	0.696	0.82	12.1	60.3	2.88	35.8	0.00			380	203
400	ISL	6.99	6.95	34.235	26.823	128.1	0.725	0.74	10.9	63.5	2.93	36.6	0.00			403	
439		6.63	6.59	34.248	26.882	122.8	0.774	0.60	8.7	69.4	3.03	38.0	0.00			442	202
500	ISL	6.24	6.20	34.292	26.969	115.1	0.846	0.38	5.5	77.4	3.15	39.3	0.00			503	
513		6.16	6.11	34.301	26.986	113.6	0.861	0.33	4.8	79.1	3.18	39.6	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 39.7 N	118 58.3 W	31/01/02	1824 UTC	807 m	100 10 kn	220 02 08	1	1027.4 mb	14.5 C	11.1 C	16m	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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.00	14.00	33.605	25.110	284.3	0.000	5.87	100.3	3.1	0.40	0.8	0.03	0.92	0.23	0	
2	A	14.00	14.00	33.605	25.110	284.4	0.006	5.87	100.3	3.1	0.40	0.8	0.03	0.92	0.23	2	220
9	A	13.98	13.98	33.605	25.114	284.2	0.026	5.88	100.4	3.2	0.40	0.8	0.03	0.90	0.24	9	219
10	ISL	13.98	13.98	33.605	25.114	284.2	0.028	5.88	100.4	3.2	0.40	0.8	0.03	0.90	0.25	10	
20	A	13.96	13.96	33.605	25.119	284.0	0.057	5.88	100.3	3.2	0.40	0.8	0.03	0.85	0.34	20	218
30	ISL	13.64	13.64	33.569	25.157	280.7	0.085	5.63	95.4	4.2	0.52	2.6	0.08	0.61	0.30	30	
32	A	13.52	13.52	33.558	25.173	279.2	0.091	5.55	93.8	4.6	0.56	3.2	0.09	0.56	0.29	32	217
41	A	12.59	12.58	33.502	25.315	265.9	0.115	5.11	84.7	7.2	0.82	7.1	0.12	0.38	0.25	41	216
50		11.74	11.73	33.479	25.458	252.4	0.139	4.71	76.7	10.0	1.06	10.8	0.07	0.24	0.18	50	215
60	A	11.39	11.38	33.527	25.560	242.9	0.163	4.38	70.8	12.3	1.19	12.8	0.04	0.18	0.16	60	214
70		10.97	10.96	33.640	25.724	227.6	0.187	3.78	60.6	16.2	1.42	16.1	0.03	0.10	0.12	70	213
75	ISL	10.87	10.86	33.678	25.771	223.2	0.198	3.60	57.6	17.4	1.49	17.0	0.03	0.08	0.12	75	
85		10.74	10.73	33.737	25.840	216.8	0.220	3.36	53.6	19.2	1.58	18.4	0.02	0.06	0.11	85	212
100		10.50	10.49	33.815	25.943	207.4	0.252	3.01	47.8	22.0	1.72	20.6	0.01	0.02	0.08	101	211
120		10.16	10.15	33.906	26.073	195.4	0.292	2.74	43.2	25.2	1.87	22.8	0.01	0.01	0.06	121	210
125	ISL	10.13	10.12	33.928	26.096	193.4	0.302	2.69	42.4	25.7	1.90	23.2	0.01	0.01	0.06	126	
139		10.02	10.00	33.987	26.161	187.5	0.329	2.53	39.8	27.2	1.97	24.2	0.01	0.01	0.05	140	209
150	ISL	9.79	9.77	34.034	26.236	180.5	0.349	2.30	36.0	30.1	2.07	25.5	0.01	0.01	0.05	151	
169		9.34	9.32	34.106	26.367	168.4	0.382	1.91	29.6	35.6	2.25	27.9	0.00	0.01	0.06	170	208
199		8.81	8.79	34.164	26.497	156.5	0.431	1.66	25.4	40.4	2.40	29.9	0.01	0.01	0.06	200	207
200	ISL	8.81	8.79	34.167	26.500	156.3	0.432	1.65	25.3	40.5	2.40	29.9	0.01			201	
229		8.75	8.73	34.226	26.556	151.5	0.477	1.43	21.9	42.3	2.49	30.4	0.00			230	206
250	ISL	8.61	8.58	34.236	26.586	149.0	0.508	1.36	20.8	43.6	2.53	30.8	0.00			252	
268		8.44	8.41	34.232	26.609	147.1	0.535	1.32	20.1	45.1	2.56	31.3	0.00			270	205
300	ISL	7.96	7.93	34.206	26.661	142.4	0.581	1.26	18.9	49.3	2.63	32.8	0.00			302	
318		7.68	7.65	34.193	26.692	139.7	0.607	1.21	18.1	52.0	2.67	33.7	0.00			320	204
378		7.22	7.18	34.225	26.783	131.7	0.688	0.84	12.4	59.6	2.85	35.7	0.00			380	203
400	ISL	7.07	7.03	34.238	26.814	129.0	0.717	0.73	10.8	62.2	2.91	36.4	0.00			403	
439		6.79	6.75	34.262	26.872	123.9	0.766	0.55	8.0	67.4	3.01	37.5	0.00			442	202
500	ISL	6.26	6.22	34.312	26.982	113.9	0.839	0.33	4.8	78.8	3.15	39.0	0.00			503	
515		6.13	6.08	34.325	27.009	111.4	0.856	0.27	3.9	81.6	3.19	39.4	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.4 N	119 19.0 W	31/01/02	2133 UTC	1639 m	100 04 kn	270 03 07	1	1026.1 mb	17.4 C	12.1 C	16m	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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.42	14.42	33.613	25.028	292.1	0.000	5.95	102.5	2.9	0.35	0.2	0.01	0.82	0.25	0	
2		14.42	14.42	33.613	25.028	292.2	0.006	5.95	102.5	2.9	0.35	0.2	0.01	0.82	0.25	2	220
10	ISL	14.33	14.33	33.614	25.048	290.5	0.029	5.95	102.3	2.8	0.35	0.2	0.01	0.88	0.20	10	
11		14.31	14.31	33.614	25.052	290.1	0.032	5.95	102.3	2.8	0.35	0.2	0.01	0.90	0.20	11	219
20		14.19	14.19	33.609	25.074	288.3	0.058	5.97	102.4	2.8	0.34	0.2	0.00	1.13	0.35	20	218
30	ISL	14.16	14.16	33.609	25.080	288.0	0.087	5.93	101.6	2.8	0.34	0.2	0.01	1.18	0.41	30	
31		14.16	14.16	33.609	25.080	288.0	0.090	5.93	101.6	2.8	0.34	0.2	0.01	1.19	0.42	31	217
40		13.09	13.08	33.514	25.226	274.4	0.115	5.41	90.6	5.5	0.68	5.1	0.12	0.45	0.24	40	216
50	ISL	12.01	12.00	33.503	25.426	255.5	0.142	4.70	76.9	9.6	1.01	10.1	0.07	0.36	0.17	50	
51		11.92	11.91	33.506	25.446	253.7	0.144	4.63	75.7	10.0	1.04	10.5	0.07	0.35	0.17	51	215
60		11.36	11.35	33.553	25.586	240.5	0.166	4.29	69.3	12.7	1.21	13.1	0.03	0.20	0.15	60	214
70		11.09	11.08	33.579	25.655	234.1	0.190	4.10	65.8	14.3	1.29	14.6	0.02	0.14	0.13	70	213
75	ISL	10.99	10.98	33.617	25.703	229.7	0.202	3.90	62.5	15.6	1.37	15.7	0.02	0.11	0.12	75	
85		10.82	10.81	33.705	25.801	220.5	0.224	3.46	55.3	18.5	1.54	17.9	0.02	0.07	0.09	85	212
100		10.64	10.63	33.799	25.907	210.9	0.257	2.99	47.6	21.8	1.73	20.4	0.01	0.03	0.07	101	211
120		10.21	10.20	33.912	26.069	195.8	0.297	2.66	42.0	25.7	1.90	23.1	0.01	0.01	0.06	121	210
125	ISL	10.16	10.15	33.934	26.095	193.4	0.307	2.58	40.7	26.5	1.94	23.6	0.01	0.01	0.06	126	
139		10.01	9.99	33.991	26.166	187.1	0.334	2.35	36.9	28.7	2.03	24.8	0.01	0.01	0.06	140	209
150	ISL	9.77	9.75	34.044	26.247	179.5	0.354	2.19	34.3	31.1	2.12	26.0	0.01	0.01	0.06	151	
169		9.36	9.34	34.123	26.377	167.5	0.387	1.97	30.6	34.8	2.25	27.9	0.00	0.00	0.06	170	208
199		9.11	9.09	34.153	26.441	161.9	0.436	1.82	28.1	37.2	2.32	28.9	0.00	0.00	0.04	200	207
200	ISL	9.10	9.08	34.154	26.443	161.7	0.438	1.81	27.9	37.4	2.33	29.0	0.00			201	
228		8.64	8.62	34.177	26.534	153.4	0.482	1.54	23.5	43.4	2.48	31.0	0.00			229	206
250	ISL	8.34	8.31	34.183	26.585	148.9	0.515	1.44	21.8	45.8	2.54	31.9	0.00			251	
269		8.11	8.08	34.185	26.622	145.7	0.543	1.38	20.8	47.4	2.58	32.4	0.00			271	205
300	ISL	7.81	7.78	34.197	26.676	140.9	0.588	1.22	18.3	50.9	2.66	33.4	0.00			302	
319		7.64	7.61	34.207	26.709	138.1	0.614	1.10	16.4	53.3	2.72	34.1	0.00			321	204
378		7.07	7.03	34.249	26.823	127.8	0.692	0.70	10.3	63.0	2.93	36.5	0.00			380	203
400	ISL	6.96	6.92	34.258	26.845	126.0	0.720	0.63	9.3	65.0	2.97	36.9	0.00			403	
438		6.81	6.77	34.271	26.876	123.5	0.768	0.54	7.9	68.0	3.02	37.5	0.00			441	202
500	ISL	6.47	6.42	34.299	26.944	117.7	0.843	0.38	5.5	74.7	3.11	38.7	0.00			503	
517		6.38	6.33	34.307	26.962	116.1	0.862	0.34	4.9	76.5	3.14	39.0	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 19.8 N	119 39.6 W	01/02/02	0141 UTC	71 m	00 kn	300 02 07	1	1026.1 mb	14.1 C	8.1 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.44	12.44	33.627	25.439	253.0	0.000	5.42	89.6	8.7	0.83	7.0	0.11	0.81	0.19	0	
2		12.44	12.44	33.627	25.439	253.0	0.005	5.42	89.6	8.7	0.83	7.0	0.11	0.81	0.19	2	208
10		12.38	12.38	33.629	25.453	251.9	0.025	5.37	88.7	8.9	0.85	7.3	0.12	0.88	0.19	10	207
20		12.35	12.35	33.629	25.459	251.6	0.050	5.31	87.6	9.1	0.86	7.5	0.12	0.78	0.21	20	206
30		12.31	12.31	33.628	25.466	251.2	0.076	5.28	87.1	9.1	0.87	7.7	0.12	0.77	0.24	30	205
40		12.26	12.25	33.627	25.475	250.6	0.101	5.25	86.5	9.3	0.88	7.9	0.12	0.79	0.20	40	204
50		11.58	11.57	33.645	25.617	237.3	0.125	4.73	76.8	11.8	1.06	10.6	0.13	0.50	0.19	50	203
59		10.92	10.91	33.744	25.813	218.8	0.146	3.39	54.3	19.4	1.57	18.2	0.09	0.14	0.13	59	202
68		10.57	10.56	33.815	25.931	207.8	0.165	3.04	48.3	22.7	1.73	20.5	0.07	0.07	0.10	68	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.4 N	120 0.9 W	01/02/02	0742 UTC	1187 m	340 06 kn			1026.0 mb	13.0 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.88	12.88	33.589	25.324	263.9	0.000	5.75	95.9	6.3	0.62	4.0	0.08	0.65	0.21	0	
1		12.88	12.88	33.589	25.324	263.9	0.003	5.75	95.9	6.3	0.62	4.0	0.08	0.65	0.21	1	220
10		12.87	12.87	33.588	25.326	264.0	0.026	5.74	95.8	6.4	0.62	4.0	0.08	0.60	0.20	10	219
19		12.82	12.82	33.589	25.337	263.3	0.050	5.69	94.8	6.5	0.65	4.3	0.08	0.66	0.21	19	218
20	ISL	12.80	12.80	33.584	25.337	263.3	0.053	5.67	94.4	6.5	0.66	4.4	0.08	0.66	0.21	20	
29		12.60	12.60	33.584	25.376	259.8	0.076	5.38	89.2	7.8	0.76	6.1	0.09	0.61	0.21	29	217
30	ISL	12.52	12.52	33.580	25.388	258.6	0.079	5.33	88.3	8.1	0.78	6.5	0.10	0.57	0.20	30	
40		11.53	11.52	33.566	25.564	242.1	0.104	4.73	76.7	12.0	1.09	11.6	0.12	0.20	0.14	40	216
50		10.49	10.48	33.651	25.816	218.3	0.127	3.84	60.9	18.7	1.49	18.2	0.03	0.07	0.12	50	215
60		9.74	9.73	33.691	25.975	203.3	0.148	3.54	55.2	22.2	1.67	21.2	0.02	0.03	0.11	60	214
69		9.61	9.60	33.786	26.071	194.4	0.166	3.18	49.5	25.1	1.80	22.9	0.01	0.01	0.10	69	213
75	ISL	9.58	9.57	33.821	26.103	191.5	0.177	3.05	47.5	26.2	1.85	23.5	0.01	0.01	0.10	75	
84		9.55	9.54	33.856	26.135	188.6	0.195	2.92	45.4	27.4	1.89	24.2	0.01	0.01	0.10	84	212
99		9.39	9.38	33.912	26.206	182.2	0.222	2.73	42.3	29.4	1.97	25.4	0.01	0.01	0.09	100	211
100	ISL	9.38	9.37	33.915	26.210	181.9	0.224	2.72	42.2	29.5	1.97	25.5	0.01	0.01	0.09	101	
119		9.23	9.22	33.966	26.274	176.1	0.258	2.53	39.1	31.5	2.05	26.4	0.01	0.01	0.08	120	210
125	ISL	9.15	9.14	33.984	26.301	173.7	0.269	2.49	38.4	32.3	2.07	26.8	0.01	0.01	0.08	126	
139		8.96	8.95	34.024	26.363	168.0	0.293	2.40	36.9	34.2	2.13	27.6	0.01	0.01	0.07	140	209
150	ISL	8.85	8.83	34.057	26.406	164.1	0.311	2.30	35.3	35.7	2.18	28.1	0.01	0.01	0.07	151	
169		8.66	8.64	34.095	26.466	158.8	0.342	2.16	33.0	38.1	2.24	28.9	0.00	0.01	0.06	170	208
199		8.16	8.14	34.069	26.522	153.8	0.388	2.24	33.8	40.8	2.26	30.0	0.00	0.00	0.05	200	207
200	ISL	8.15	8.13	34.071	26.525	153.5	0.390	2.22	33.5	41.0	2.27	30.1	0.00			201	
229		7.97	7.95	34.135	26.603	146.6	0.434	1.73	26.0	46.0	2.46	31.6	0.00			230	206
250	ISL	7.80	7.78	34.138	26.630	144.3	0.464	1.70	25.5	47.7	2.50	32.1	0.01			252	
268		7.65	7.62	34.134	26.649	142.8	0.490	1.67	24.9	48.9	2.52	32.5	0.01			270	205
300	ISL	7.41	7.38	34.168	26.710	137.4	0.535	1.32	19.6	53.7	2.66	34.0	0.01			302	
318		7.28	7.25	34.192	26.748	134.1	0.559	1.10	16.3	56.6	2.75	34.9	0.01			320	204
379		6.96	6.92	34.238	26.829	127.1	0.639	0.74	10.9	64.0	2.92	36.7	0.00			382	203
400	ISL	6.80	6.76	34.252	26.862	124.2	0.665	0.63	9.2	66.9	2.98	37.4	0.00			403	
438		6.52	6.48	34.273	26.916	119.4	0.712	0.48	7.0	71.7	3.06	38.5	0.00			441	202
500	ISL	6.31	6.26	34.292	26.959	116.1	0.785	0.39	5.6	75.5	3.12	39.4	0.00			504	
510		6.28	6.23	34.295	26.966	115.6	0.796	0.37	5.4	76.1	3.13	39.5	0.00			514	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.8 N	120 20.5 W	01/02/02	1810 UTC	713 m	340 10 kn	360 02 06	1	1024.7 mb	14.0 C	10.6 C	22m	7/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.35	12.35	33.574	25.416	255.2	0.000	5.88	97.0	6.7	0.69	5.2	0.15	0.39	0.14	0	
2	A	12.35	12.35	33.574	25.416	255.3	0.005	5.88	97.0	6.7	0.69	5.2	0.15	0.39	0.14	2	222
10	ISL	12.34	12.34	33.573	25.417	255.4	0.026	5.87	96.8	6.6	0.70	5.2	0.16	0.39	0.15	10	
13	A	12.33	12.33	33.573	25.419	255.2	0.033	5.86	96.6	6.6	0.70	5.2	0.16	0.39	0.15	13	221
20		12.33	12.33	33.573	25.419	255.4	0.051	5.86	96.6	6.6	0.70	5.2	0.16	0.42	0.15	20	220
27	A	12.32	12.32	33.572	25.421	255.5	0.069	5.88	96.9	6.5	0.70	5.3	0.16	0.41	0.15	27	219
30	ISL	12.32	12.32	33.572	25.421	255.5	0.077	5.87	96.8	6.5	0.70	5.3	0.16	0.41	0.16	30	
36		12.31	12.31	33.572	25.423	255.5	0.092	5.85	96.4	6.5	0.70	5.4	0.16	0.40	0.17	36	218
44	A	12.31	12.30	33.571	25.422	255.8	0.112	5.84	96.3	6.5	0.70	5.3	0.16	0.44	0.16	44	217
50		12.31	12.30	33.574	25.425	255.7	0.128	5.84	96.3	6.5	0.70	5.4	0.16	0.40	0.17	50	216
57	A	12.31	12.30	33.571	25.422	256.1	0.146	5.82	95.9	6.5	0.71	5.4	0.16	0.42	0.22	57	215
71		11.33	11.32	33.578	25.611	238.4	0.180	4.80	77.5	12.1	1.12	11.9	0.13	0.16	0.16	71	214
75	ISL	10.77	10.76	33.613	25.738	226.3	0.190	4.31	68.7	15.7	1.33	15.3	0.09	0.11	0.14	75	
82	A	9.88	9.87	33.688	25.950	206.2	0.205	3.57	55.9	21.5	1.66	20.7	0.03	0.05	0.11	82	213
91		9.58	9.57	33.739	26.039	197.9	0.223	3.34	51.9	23.7	1.75	22.3	0.01	0.02	0.10	91	212
100		9.47	9.46	33.820	26.121	190.3	0.240	3.06	47.5	26.2	1.86	23.8	0.01	0.02	0.09	101	211
119		9.04	9.03	33.960	26.300	173.6	0.275	2.65	40.8	31.5	2.04	26.5	0.00	0.01	0.07	120	210
125	ISL	8.97	8.96	33.979	26.326	171.3	0.285	2.60	39.9	32.2	2.06	26.9	0.00	0.01	0.07	126	
142		8.81	8.79	34.007	26.373	167.1	0.314	2.50	38.3	33.8	2.10	27.6	0.01	0.00	0.07	143	209
150	ISL	8.71	8.69	34.028	26.405	164.2	0.327	2.40	36.7	35.2	2.15	28.2	0.01	0.00	0.07	151	
172		8.44	8.42	34.080	26.488	156.6	0.363	2.11	32.0	39.1	2.28	29.7	0.01	0.01	0.06	173	208
200	ISL	8.29	8.27	34.110	26.535	152.7	0.406	1.90	28.8	41.8	2.39	30.8	0.01	0.01	0.05	201	
201		8.28	8.26	34.111	26.537	152.5	0.407	1.89	28.6	41.9	2.39	30.8	0.01	0.01	0.05	202	207
227		7.85	7.83	34.131	26.617	145.2	0.446	1.67	25.0	47.0	2.50	32.2	0.00			228	206
250	ISL	7.54	7.52	34.146	26.674	140.1	0.479	1.49	22.2	51.0	2.59	33.3	0.00			252	
271		7.33	7.30	34.159	26.714	136.5	0.508	1.34	19.8	54.1	2.67	34.2	0.00			273	205
300	ISL	7.19	7.16	34.183	26.753	133.2	0.547	1.13	16.7	57.3	2.76	35.2	0.00			302	
324		7.11	7.08	34.202	26.779	131.0	0.579	0.98	14.4	59.5	2.82	35.8	0.00			326	204
378		6.83	6.79	34.232	26.842	125.8	0.648	0.71	10.4	64.9	2.94	37.1	0.00			380	203
400	ISL	6.68	6.64	34.246	26.873	123.1	0.675	0.61	8.9	67.8	3.00	37.8	0.00			403	
436		6.42	6.38	34.269	26.926	118.3	0.719	0.47	6.8	72.7	3.08	38.9	0.00			439	202
500	ISL	5.97	5.93	34.301	27.010	110.9	0.792	0.35	5.0	80.7	3.17	40.3	0.00			503	
511		5.89	5.85	34.307	27.025	109.6	0.804	0.33	4.7	82.1	3.18	40.5	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.5 N	121 1.5 W	01/02/02	2337 UTC	3786 m	350 11 kn	350 03 05	1	1021.5 mb	10.1 C	9.9 C	18m	2/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.66	12.66	33.326	25.163	279.2	0.000	6.11	101.3	4.6	0.53	2.4	0.11	0.62	0.14	0	
2		12.66	12.66	33.326	25.164	279.3	0.006	6.11	101.3	4.6	0.53	2.4	0.11	0.62	0.14	2	220
10	ISL	12.63	12.63	33.327	25.170	278.8	0.028	6.10	101.1	4.6	0.53	2.4	0.11	0.63	0.15	10	
15		12.61	12.61	33.327	25.174	278.6	0.042	6.10	101.0	4.6	0.53	2.4	0.11	0.64	0.15	15	219
20	ISL	12.54	12.54	33.349	25.205	275.8	0.056	6.08	100.6	4.8	0.55	2.7	0.12	0.58	0.16	20	
30		12.39	12.39	33.404	25.277	269.2	0.083	6.02	99.3	5.2	0.61	3.6	0.15	0.50	0.19	30	218
46		12.25	12.24	33.472	25.357	262.0	0.125	5.95	97.9	5.9	0.66	4.5	0.20	0.71	0.23	46	217
50	ISL	12.23	12.22	33.477	25.365	261.4	0.136	5.94	97.7	6.0	0.67	4.7	0.21	0.66	0.20	50	
56		12.19	12.18	33.483	25.377	260.3	0.152	5.92	97.3	6.1	0.69	5.0	0.22	0.54	0.16	56	216
65		12.13	12.12	33.503	25.404	258.0	0.175	5.80	95.2	6.5	0.73	5.6	0.25	0.36	0.18	65	215
74		11.91	11.90	33.507	25.449	253.9	0.198	5.51	90.0	8.2	0.85	7.6	0.25	0.20	0.17	74	214
75	ISL	11.83	11.82	33.501	25.459	253.0	0.200	5.46	89.0	8.5	0.87	8.0	0.24	0.19	0.16	75	
84		10.94	10.93	33.474	25.600	239.6	0.223	4.91	78.5	12.0	1.13	12.3	0.16	0.09	0.11	84	213
94		9.83	9.82	33.582	25.875	213.5	0.245	4.07	63.6	18.5	1.49	18.5	0.02	0.03	0.06	94	212
100	ISL	9.74	9.73	33.665	25.955	206.1	0.258	3.80	59.3	20.5	1.59	20.2	0.02	0.03	0.06	101	
110		9.58	9.57	33.710	26.017	200.4	0.278	3.58	55.7	22.2	1.67	21.3	0.01	0.02	0.05	111	211
125		9.50	9.49	33.745	26.058	196.8	0.308	3.51	54.5	23.8	1.71	22.1	0.02	0.01	0.04	126	210
144		9.18	9.16	33.877	26.213	182.4	0.344	3.09	47.7	27.7	1.87	24.7	0.01	0.00	0.05	145	209
150	ISL	9.11	9.09	33.905	26.246	179.4	0.355	3.01	46.4	28.6	1.90	25.2	0.01	0.00	0.05	151	
170		8.88	8.86	33.974	26.337	171.1	0.390	2.84	43.5	31.4	1.99	26.5	0.01	0.00	0.03	171	208
200		8.41	8.39	34.037	26.459	159.9	0.440	2.57	39.0	36.5	2.14	28.5	0.01	0.00	0.03	201	207
229		8.09	8.07	34.058	26.524	154.1	0.485	2.36	35.6	40.5	2.25	30.0	0.00			230	206
250	ISL	7.87	7.84	34.085	26.578	149.3	0.517	2.08	31.2	44.2	2.37	31.3	0.00			251	
279		7.54	7.51	34.118	26.652	142.6	0.559	1.69	25.1	49.5	2.54	33.0	0.00			281	205
300	ISL	7.26	7.23	34.123	26.696	138.6	0.589	1.55	22.9	53.1	2.61	34.0	0.00			302	
323		6.97	6.94	34.125	26.738	134.8	0.620	1.44	21.1	56.9	2.68	35.0	0.00			325	204
378		6.50	6.47	34.146	26.818	127.7	0.692	1.08	15.7	64.8	2.85	37.1	0.00			380	203
400	ISL	6.34	6.30	34.167	26.856	124.4	0.720	0.92	13.3	68.5	2.93	38.0	0.00			403	
434		6.11	6.07	34.203	26.914	119.1	0.762	0.69	9.9	74.1	3.04	39.3	0.00			437	202
500	ISL	5.80	5.76	34.263	27.001	111.5	0.838	0.43	6.1	81.7	3.16	40.7	0.00			503	
518		5.72	5.68	34.279	27.023	109.5	0.858	0.36	5.1	83.8	3.19	41.1	0.00			522	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 19.4 N	121 42.6 W	02/02/02	0632 UTC	4030 m	350 16 kn			1021.6 mb	13.1 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.52	12.52	33.272	25.149	280.6	0.000	6.09	100.7	4.3	0.55	2.6	0.12	0.44	0.16	0	
2		12.52	12.52	33.272	25.149	280.7	0.006	6.09	100.7	4.3	0.55	2.6	0.12	0.44	0.16	2	220
10	ISL	12.53	12.53	33.273	25.148	281.0	0.028	6.08	100.5	4.2	0.55	2.6	0.12	0.47	0.13	10	
14		12.53	12.53	33.274	25.149	281.0	0.039	6.07	100.3	4.2	0.55	2.6	0.12	0.49	0.12	14	219
20	ISL	12.54	12.54	33.276	25.148	281.2	0.056	6.06	100.2	4.2	0.55	2.6	0.12	0.48	0.12	20	
29		12.54	12.54	33.279	25.151	281.2	0.081	6.05	100.0	4.2	0.55	2.6	0.12	0.45	0.13	29	218
30	ISL	12.54	12.54	33.280	25.152	281.1	0.084	6.04	99.9	4.2	0.55	2.7	0.12	0.45	0.13	30	
44		12.52	12.51	33.299	25.171	279.7	0.124	5.93	98.0	4.6	0.60	3.4	0.12	0.41	0.14	44	217
50	ISL	12.57	12.56	33.327	25.183	278.7	0.140	5.95	98.5	4.5	0.58	3.2	0.13	0.39	0.15	50	
54		12.60	12.59	33.346	25.192	277.9	0.151	5.96	98.7	4.4	0.57	3.0	0.14	0.38	0.16	54	216
64		12.58	12.57	33.367	25.212	276.2	0.179	6.04	100.0	4.1	0.56	2.8	0.15	0.40	0.14	64	215
73		12.44	12.43	33.360	25.234	274.4	0.204	5.84	96.4	5.0	0.64	4.3	0.11	0.24	0.13	73	214
75	ISL	12.34	12.33	33.355	25.250	273.0	0.209	5.78	95.2	5.4	0.68	5.0	0.09	0.21	0.13	75	
85		11.56	11.55	33.362	25.401	258.7	0.236	5.29	85.7	8.5	0.97	9.6	0.02	0.11	0.10	85	213
94		10.55	10.54	33.456	25.655	234.6	0.258	4.58	72.6	13.8	1.28	14.8	0.01	0.05	0.07	94	212
100	ISL	10.03	10.02	33.504	25.781	222.6	0.272	4.32	67.8	16.6	1.42	17.2	0.01	0.03	0.06	100	
109		9.52	9.51	33.578	25.924	209.2	0.291	4.02	62.4	20.1	1.57	19.8	0.01	0.01	0.05	110	211
123		9.47	9.46	33.743	26.061	196.5	0.320	3.38	52.4	24.2	1.77	22.7	0.01	0.01	0.05	124	210
125	ISL	9.44	9.43	33.757	26.077	195.0	0.324	3.33	51.6	24.7	1.79	23.0	0.01	0.01	0.05	126	
144		9.05	9.03	33.852	26.214	182.2	0.359	3.04	46.7	28.5	1.92	25.3	0.00	0.00	0.04	145	209
150	ISL	8.97	8.95	33.882	26.250	178.9	0.370	2.97	45.6	29.5	1.95	25.8	0.00	0.00	0.04	151	
168		8.73	8.71	33.957	26.347	170.0	0.402	2.83	43.2	32.2	2.03	27.1	0.00	0.01	0.04	169	208
198		8.24	8.22	34.019	26.471	158.7	0.451	2.69	40.7	36.7	2.10	28.4	0.01	0.01	0.03	199	207
200	ISL	8.21	8.19	34.021	26.477	158.1	0.454	2.67	40.3	37.0	2.11	28.5	0.01			201	
229		7.83	7.81	34.041	26.549	151.6	0.499	2.40	35.9	41.6	2.24	30.3	0.00			230	206
250	ISL	7.55	7.53	34.048	26.595	147.5	0.530	2.23	33.2	44.9	2.33	31.5	0.00			251	
269		7.31	7.28	34.054	26.634	144.0	0.558	2.07	30.6	47.8	2.41	32.5	0.00			271	205
300	ISL	7.03	7.00	34.074	26.689	139.1	0.602	1.75	25.7	52.2	2.54	34.0	0.00			302	
318		6.89	6.86	34.088	26.720	136.4	0.627	1.55	22.7	55.0	2.61	34.8	0.00			320	204
379		6.34	6.31	34.153	26.844	125.1	0.707	0.90	13.0	67.3	2.90	38.1	0.00			381	203
400	ISL	6.20	6.16	34.168	26.875	122.5	0.733	0.79	11.4	70.2	2.96	38.7	0.00			403	
437		6.00	5.96	34.194	26.921	118.4	0.777	0.66	9.5	74.6	3.03	39.4	0.00			440	202
500	ISL	5.69	5.65	34.257	27.010	110.6	0.849	0.40	5.7	82.8	3.16	40.8	0.00			503	
511		5.64	5.60	34.268	27.024	109.3	0.861	0.35	5.0	84.2	3.18	41.1	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 59.4 N	122 23.1 W	02/02/02	1224 UTC	4072 m	010 20 kn			1020.2 mb	12.0 C	10.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.13	13.13	33.272	25.029	292.0	0.000	6.04	101.1	3.2	0.44	0.9	0.05	0.38	0.08	0	
2		13.13	13.13	33.272	25.029	292.0	0.006	6.04	101.1	3.2	0.44	0.9	0.05	0.38	0.08	2	220
10		13.13	13.13	33.273	25.030	292.2	0.029	6.04	101.1	3.2	0.44	0.9	0.05	0.38	0.10	10	219
20	ISL	13.12	13.12	33.277	25.036	291.9	0.058	6.03	100.9	3.3	0.44	0.9	0.06	0.39	0.09	20	
21		13.12	13.12	33.277	25.036	291.9	0.061	6.03	100.9	3.3	0.44	0.9	0.06	0.39	0.09	21	218
30		13.09	13.09	33.274	25.040	291.8	0.088	6.02	100.7	3.4	0.45	1.1	0.07	0.39	0.10	30	217
40		12.98	12.97	33.271	25.059	290.2	0.117	5.99	100.0	3.6	0.49	1.5	0.10	0.45	0.14	40	216
50		12.91	12.90	33.288	25.087	287.9	0.146	6.00	100.0	3.7	0.50	1.6	0.11	0.47	0.17	50	215
60		12.79	12.78	33.287	25.109	285.9	0.174	5.93	98.6	4.1	0.55	2.4	0.17	0.34	0.16	60	214
70		12.63	12.62	33.331	25.175	280.0	0.203	5.85	96.9	4.9	0.64	3.9	0.34	0.21	0.12	70	213
75	ISL	12.38	12.37	33.335	25.226	275.2	0.216	5.73	94.4	5.6	0.72	5.2	0.26	0.17	0.12	75	
85		11.77	11.76	33.342	25.347	263.8	0.243	5.42	88.2	7.5	0.89	8.2	0.04	0.13	0.11	85	212
100		11.01	11.00	33.400	25.531	246.6	0.282	5.00	80.1	10.7	1.12	12.1	0.01	0.09	0.11	100	211
120		9.64	9.63	33.434	25.792	222.0	0.329	4.60	71.5	16.0	1.37	16.5	0.01	0.02	0.04	121	210
125	ISL	9.50	9.49	33.484	25.854	216.2	0.340	4.43	68.7	17.3	1.43	17.6	0.01	0.02	0.04	126	
141		9.25	9.23	33.670	26.040	198.8	0.373	3.84	59.2	21.7	1.62	20.8	0.00	0.01	0.03	142	209
150	ISL	9.11	9.09	33.753	26.127	190.6	0.390	3.55	54.6	24.5	1.73	22.7	0.00	0.01	0.03	151	
170		8.82	8.80	33.894	26.284	176.1	0.427	3.03	46.4	30.3	1.95	26.2	0.00	0.00	0.04	171	208
200		8.31	8.29	33.995	26.442	161.5	0.478	2.68	40.6	36.0	2.11	28.7	0.00	0.00	0.02	201	207
230		8.01	7.99	34.021	26.507	155.7	0.525	2.53	38.0	39.5	2.19	29.9	0.00			231	206
250	ISL	7.72	7.70	34.030	26.557	151.2	0.556	2.39	35.7	42.7	2.27	30.8	0.03			251	
271		7.39	7.36	34.036	26.609	146.4	0.587	2.22	32.9	46.3	2.36	31.9	0.06			273	205
300	ISL	7.00	6.97	34.045	26.671	140.8	0.629	1.95	28.6	51.0	2.50	33.6	0.03			302	
320		6.75	6.72	34.053	26.711	137.2	0.657	1.74	25.4	54.5	2.60	34.9	0.00			322	204
381		6.14	6.11	34.102	26.830	126.3	0.737	1.06	15.3	67.2	2.88	38.3	0.00			383	203
400	ISL	6.05	6.02	34.133	26.866	123.1	0.761	0.86	12.4	70.6	2.96	39.0	0.00			403	
439		5.89	5.85	34.194	26.934	117.0	0.807	0.54	7.7	77.0	3.09	40.2	0.00			442	202
500	ISL	5.48	5.44	34.235	27.017	109.6	0.877	0.40	5.7	85.5	3.19	41.5	0.00			503	
508		5.43	5.39	34.241	27.028	108.6	0.885	0.38	5.4	86.6	3.20	41.7	0.00			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.6 N	123 3.6 W	02/02/02	1848 UTC	2036 m	350 11 kn	360 04 07	1	1023.8 mb	15.1 C	12.1 C	26m	6/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.06	15.06	33.395	24.723	321.2	0.000	5.78	100.7	2.2	0.36	0.1	0.01	0.21	0.07	0	
2	A	15.06	15.06	33.395	24.723	321.3	0.006	5.78	100.7	2.2	0.36	0.1	0.01	0.21	0.07	2	222
10	ISL	15.04	15.04	33.394	24.726	321.1	0.032	5.78	100.7	2.1	0.36	0.2	0.01	0.20	0.07	10	
15	A	15.03	15.03	33.394	24.729	321.1	0.048	5.78	100.7	2.1	0.36	0.2	0.01	0.20	0.07	15	221
20	ISL	15.02	15.02	33.398	24.734	320.7	0.064	5.77	100.5	2.1	0.36	0.1	0.01	0.21	0.07	20	
23		15.02	15.02	33.400	24.736	320.6	0.074	5.77	100.5	2.1	0.36	0.1	0.01	0.22	0.07	23	220
30	ISL	15.02	15.02	33.396	24.733	321.1	0.096	5.78	100.7	2.1	0.36	0.2	0.01	0.22	0.09	30	
32	A	15.02	15.02	33.394	24.731	321.3	0.103	5.78	100.7	2.1	0.36	0.2	0.01	0.22	0.09	32	219
42		15.02	15.01	33.394	24.732	321.6	0.135	5.78	100.6	2.1	0.36	0.2	0.01	0.22	0.08	42	218
50	ISL	15.02	15.01	33.394	24.732	321.8	0.161	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.08	50	
52	A	15.02	15.01	33.394	24.732	321.8	0.167	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.08	52	217
68	A	15.02	15.01	33.395	24.733	322.2	0.219	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.08	68	216
75	ISL	15.03	15.02	33.394	24.731	322.7	0.241	5.78	100.7	2.0	0.36	0.1	0.01	0.22	0.08	75	
77		15.03	15.02	33.394	24.731	322.7	0.248	5.78	100.7	2.0	0.36	0.1	0.01	0.22	0.08	77	215
87		15.03	15.02	33.395	24.732	322.9	0.280	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.09	87	214
97	A	15.03	15.02	33.399	24.735	322.9	0.312	5.77	100.5	2.1	0.36	0.2	0.01	0.22	0.08	97	213
100	ISL	15.03	15.01	33.397	24.734	323.2	0.322	5.77	100.5	2.1	0.36	0.2	0.01	0.22	0.08	100	
105		15.03	15.01	33.394	24.732	323.5	0.338	5.77	100.5	2.1	0.36	0.2	0.01	0.22	0.08	105	212
115		15.00	14.98	33.390	24.735	323.4	0.370	5.77	100.4	2.1	0.36	0.2	0.01	0.20	0.08	115	211
124		12.67	12.65	33.111	24.998	298.2	0.398	5.74	95.0	4.2	0.60	2.9	0.07	0.12	0.10	125	210
125	ISL	12.55	12.53	33.109	25.020	296.1	0.401	5.72	94.5	4.4	0.62	3.2	0.07	0.12	0.10	126	
140		11.63	11.61	33.247	25.300	269.6	0.444	5.37	87.0	7.0	0.81	6.9	0.02	0.08	0.07	141	209
150	ISL	10.92	10.90	33.325	25.489	251.7	0.470	5.13	81.9	9.3	0.95	9.6	0.02	0.06	0.06	151	
164		10.05	10.03	33.442	25.731	228.8	0.503	4.73	74.2	13.1	1.17	13.6	0.01	0.04	0.05	165	208
198		9.24	9.22	33.794	26.139	190.5	0.575	3.36	51.9	25.1	1.77	23.2	0.00	0.00	0.03	199	207
200	ISL	9.20	9.18	33.810	26.158	188.7	0.579	3.30	50.9	25.7	1.80	23.6	0.00			201	
229		8.67	8.65	33.988	26.381	167.9	0.630	2.67	40.7	33.5	2.07	27.5	0.00			230	206
250	ISL	8.38	8.35	34.037	26.465	160.3	0.665	2.43	36.8	37.4	2.18	29.1	0.00			251	
269		8.14	8.11	34.052	26.513	156.0	0.695	2.28	34.4	40.3	2.25	30.1	0.00			270	205
300	ISL	7.69	7.66	34.071	26.594	148.5	0.742	2.05	30.6	45.3	2.38	31.8	0.00			302	
321		7.40	7.37	34.078	26.641	144.2	0.773	1.89	28.0	48.7	2.47	32.8	0.00			323	204
369		6.96	6.93	34.111	26.729	136.4	0.840	1.40	20.6	56.4	2.67	35.2	0.00			371	203
400	ISL	6.66	6.62	34.125	26.781	131.8	0.882	1.19	17.3	61.3	2.77	36.5	0.00			402	
440		6.31	6.27	34.146	26.844	126.1	0.933	0.98	14.2	67.4	2.88	38.0	0.00			443	202
500	ISL	5.97	5.93	34.199	26.929	118.5	1.007	0.63	9.0	75.7	3.04	39.7	0.00			503	
516		5.88	5.84	34.214	26.952	116.4	1.025	0.54	7.7	77.9	3.08	40.2	0.00			519	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 87 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 19.7 N	123 44.6 W	03/02/02	0135 UTC	4003 m	350 14 kn	350 04 06	1	1023.0 mb	13.9 C	11.0 C		7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.60	15.60	33.497	24.682	325.0	0.000	5.74	101.2	1.8	0.34	0.1	0.00	0.17	0.05	0	
1		15.60	15.60	33.497	24.682	325.0	0.003	5.74	101.2	1.8	0.34	0.1	0.00	0.17	0.05	1	220
10	ISL	15.61	15.61	33.497	24.680	325.5	0.033	5.75	101.4	1.8	0.34	0.1	0.00	0.17	0.05	10	
15		15.61	15.61	33.497	24.681	325.7	0.049	5.75	101.4	1.8	0.34	0.1	0.00	0.17	0.05	15	219
20	ISL	15.59	15.59	33.496	24.684	325.5	0.065	5.75	101.3	1.8	0.34	0.1	0.00	0.17	0.05	20	
30		15.54	15.54	33.494	24.694	324.8	0.098	5.76	101.4	1.8	0.34	0.1	0.00	0.18	0.06	30	218
45		15.49	15.48	33.498	24.709	323.9	0.146	5.75	101.1	1.9	0.34	0.1	0.00	0.20	0.07	45	217
50	ISL	15.47	15.46	33.494	24.711	323.9	0.162	5.74	100.9	1.9	0.34	0.1	0.00	0.21	0.08	50	
54		15.46	15.45	33.491	24.711	324.0	0.175	5.74	100.9	1.9	0.34	0.1	0.00	0.21	0.08	54	216
64		15.45	15.44	33.489	24.712	324.2	0.208	5.75	101.0	1.9	0.34	0.1	0.00	0.22	0.08	64	215
74		15.45	15.44	33.487	24.710	324.6	0.240	5.74	100.9	1.9	0.35	0.1	0.00	0.21	0.07	74	214
75	ISL	15.45	15.44	33.487	24.710	324.7	0.244	5.74	100.9	1.9	0.35	0.1	0.00	0.21	0.07	75	
85		15.42	15.41	33.483	24.714	324.6	0.276	5.71	100.3	2.0	0.35	0.1	0.00	0.22	0.08	85	213
92		12.84	12.83	33.171	25.011	296.2	0.298	5.74	95.4	4.3	0.60	2.8	0.11	0.20	0.18	92	212
100	ISL	12.37	12.36	33.277	25.184	279.8	0.321	5.63	92.7	5.3	0.65	4.3	0.07	0.16	0.15	100	
109		11.85	11.84	33.286	25.289	269.9	0.345	5.45	88.8	5.9	0.71	5.4	0.02	0.12	0.11	109	211
124		10.70	10.69	33.300	25.508	249.3	0.384	5.23	83.1	8.9	0.93	9.3	0.01	0.08	0.07	125	210
125	ISL	10.64	10.63	33.306	25.523	247.8	0.387	5.22	82.9	9.1	0.94	9.5	0.01	0.08	0.07	126	
144		9.70	9.68	33.465	25.806	221.1	0.431	5.04	78.4	12.3	1.09	12.5	0.00	0.03	0.04	145	209
150	ISL	9.55	9.53	33.514	25.869	215.2	0.445	4.93	76.5	13.6	1.15	13.6	0.00	0.02	0.03	151	
169		9.30	9.28	33.667	26.030	200.3	0.484	4.42	68.3	18.3	1.38	17.4	0.00	0.01	0.02	170	208
198		9.08	9.06	33.904	26.251	179.9	0.539	3.29	50.6	27.6	1.82	24.2	0.00	0.00	0.02	199	207
200	ISL	9.05	9.03	33.914	26.264	178.7	0.543	3.23	49.7	28.2	1.84	24.6	0.00			201	
228		8.60	8.58	34.013	26.412	165.0	0.591	2.58	39.3	35.0	2.11	28.2	0.00			229	206
250	ISL	8.46	8.43	34.061	26.471	159.7	0.627	2.34	35.5	37.7	2.21	29.2	0.00			251	
268		8.38	8.35	34.088	26.505	156.8	0.655	2.21	33.5	39.4	2.26	29.6	0.00			269	205
300	ISL	8.03	8.00	34.125	26.587	149.5	0.704	1.89	28.4	44.4	2.43	31.3	0.00			302	
317		7.81	7.78	34.136	26.628	145.7	0.729	1.74	26.1	47.3	2.52	32.2	0.00			319	204
376		6.95	6.91	34.117	26.735	135.9	0.812	1.51	22.2	56.4	2.66	34.9	0.00			378	203
400	ISL	6.59	6.55	34.105	26.774	132.3	0.844	1.41	20.5	60.9	2.73	36.2	0.00			402	
439		6.08	6.04	34.099	26.836	126.6	0.895	1.21	17.4	68.2	2.85	38.2	0.00			442	202
500	ISL	5.74	5.70	34.156	26.924	118.7	0.970	0.79	11.3	77.1	3.02	40.2	0.00			503	
514		5.66	5.62	34.169	26.944	116.9	0.986	0.69	9.8	79.1	3.06	40.7	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.2 N	117 46.1 W	31/01/02	0329 UTC	62 m	310 12 kn			1021.9 mb	13.5 C	8.9 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.42	14.42	33.619	25.032	291.7	0.000	5.98	103.0	3.3	0.35	0.1	0.02	0.73	0.24	0	
2		14.42	14.42	33.619	25.033	291.7	0.006	5.98	103.0	3.3	0.35	0.1	0.02	0.73	0.24	2	207
10		14.41	14.41	33.618	25.034	291.8	0.029	5.98	103.0	3.2	0.34	0.1	0.02	0.74	0.21	10	206
20		14.30	14.30	33.610	25.052	290.5	0.058	6.01	103.3	3.2	0.35	0.2	0.04	1.07	0.35	20	205
30		14.01	14.01	33.588	25.095	286.5	0.087	5.79	98.9	4.2	0.44	1.6	0.27	1.07	0.46	30	204
40		12.64	12.63	33.477	25.285	268.7	0.115	4.96	82.3	8.1	0.88	7.9	0.11	0.39	0.22	40	203
50		11.96	11.95	33.520	25.449	253.3	0.141	4.47	73.1	11.5	1.11	11.2	0.15	0.17	0.18	50	202
57		11.70	11.69	33.520	25.498	248.8	0.159	4.42	71.9	11.9	1.17	11.9	0.12	0.14	0.16	57	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 25.3 N	117 54.1 W	31/01/02	0033 UTC	1614 m	300 16 kn	300 01 05	0	1020.9 mb	14.0 C	7.6 C	17m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.43	14.43	33.593	25.010	293.8	0.000	5.98	103.0	2.5	0.34	0.1	0.00	0.42	0.12	0	
1		14.43	14.43	33.593	25.010	293.8	0.003	5.98	103.0	2.5	0.34	0.1	0.00	0.42	0.12	1	220
10		14.43	14.43	33.592	25.010	294.1	0.029	5.96	102.7	2.5	0.33	0.1	0.00	0.41	0.13	10	219
20		14.31	14.31	33.576	25.023	293.1	0.059	5.98	102.8	2.6	0.34	0.2	0.01	0.57	0.17	20	218
30		14.16	14.16	33.563	25.045	291.4	0.088	5.89	100.9	2.9	0.39	0.7	0.08	0.65	0.21	30	217
40		14.08	14.07	33.562	25.061	290.1	0.117	5.84	99.9	3.1	0.41	1.0	0.13	0.72	0.30	40	216
50		13.70	13.69	33.535	25.119	284.9	0.146	5.59	94.8	4.5	0.55	2.8	0.20	0.60	0.28	50	215
60		12.62	12.61	33.477	25.290	268.8	0.173	5.45	90.4	5.1	0.74	5.9	0.22	0.28	0.17	60	214
70		11.53	11.52	33.498	25.512	247.8	0.199	4.87	78.9	9.6	1.05	11.0	0.04	0.08	0.10	70	213
75	ISL	11.22	11.21	33.507	25.576	241.8	0.212	4.68	75.3	11.3	1.15	12.7	0.04	0.07	0.10	75	
85		10.85	10.84	33.539	25.667	233.3	0.235	4.36	69.6	14.1	1.29	15.0	0.04	0.05	0.09	85	212
100		10.53	10.52	33.671	25.826	218.5	0.269	3.77	59.8	17.7	1.47	17.4	0.04	0.04	0.08	100	211
119		9.79	9.78	33.761	26.022	200.1	0.309	3.41	53.3	22.6	1.69	21.4	0.04	0.01	0.05	120	210
125	ISL	9.68	9.67	33.804	26.074	195.3	0.321	3.26	50.8	24.0	1.76	22.4	0.04	0.01	0.04	126	
139		9.51	9.49	33.906	26.182	185.3	0.347	2.91	45.2	27.1	1.89	24.3	0.03	0.01	0.03	140	209
150	ISL	9.37	9.35	33.967	26.253	178.8	0.367	2.78	43.1	29.0	1.95	25.3	0.03	0.01	0.03	151	
170		9.21	9.19	34.059	26.351	169.9	0.402	2.56	39.6	31.9	2.06	26.5	0.03	0.01	0.03	171	208
200		9.26	9.24	34.181	26.439	162.2	0.452	1.86	28.8	36.4	2.31	28.4	0.03	0.00	0.03	201	207
229		8.49	8.47	34.119	26.512	155.5	0.498	2.09	31.8	39.5	2.30	29.5	0.03			230	206
250	ISL	8.42	8.39	34.165	26.559	151.4	0.530	1.84	27.9	42.1	2.40	30.4	0.03			251	
268		8.36	8.33	34.199	26.595	148.3	0.557	1.54	23.4	44.4	2.51	31.2	0.03			270	205
300	ISL	8.19	8.16	34.238	26.652	143.5	0.604	1.21	18.3	48.1	2.64	32.3	0.03			302	
320		8.05	8.02	34.252	26.684	140.7	0.633	1.06	16.0	50.4	2.71	33.0	0.03			322	204
380		7.44	7.40	34.258	26.778	132.4	0.714	0.81	12.0	57.7	2.86	35.3	0.03			382	203
400	ISL	7.15	7.11	34.252	26.814	129.1	0.741	0.74	10.9	61.3	2.91	36.2	0.03			403	
438		6.64	6.60	34.247	26.880	123.0	0.788	0.61	8.9	68.2	3.00	37.9	0.03			441	202
500	ISL	6.30	6.25	34.292	26.961	115.9	0.863	0.38	5.5	75.6	3.13	39.2	0.03			503	
505		6.27	6.22	34.296	26.968	115.3	0.868	0.36	5.2	76.2	3.14	39.3	0.03			508	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.3 N	118 14.9 W	30/01/02	2023 UTC	282 m	350 17 kn	310 03 06	0	1021.1 mb	13.9 C	8.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.33	14.33	33.555	25.002	294.6	0.000	5.91	101.6	2.9	0.36	0.2	0.02	0.50	0.12	0	
2		14.33	14.33	33.555	25.002	294.6	0.006	5.91	101.6	2.9	0.36	0.2	0.02	0.50	0.12	2	216
10		14.31	14.31	33.554	25.006	294.5	0.029	5.91	101.5	2.8	0.36	0.2	0.02	0.55	0.12	10	215
20	ISL	14.30	14.30	33.554	25.008	294.6	0.059	5.91	101.5	2.8	0.36	0.2	0.02	0.53	0.14	20	
21		14.30	14.30	33.554	25.008	294.6	0.062	5.91	101.5	2.8	0.36	0.2	0.02	0.53	0.14	21	214
30		14.31	14.31	33.579	25.026	293.2	0.088	5.93	101.9	2.8	0.34	0.1	0.01	0.59	0.16	30	213
40		14.29	14.28	33.579	25.030	293.1	0.118	5.95	102.2	2.5	0.34	0.1	0.01	0.64	0.16	40	212
50	ISL	13.26	13.25	33.479	25.165	280.5	0.146	5.63	94.6	4.0	0.59	3.4	0.31	0.46	0.23	50	
51		13.14	13.13	33.470	25.182	278.9	0.149	5.59	93.7	4.2	0.62	3.8	0.34	0.44	0.24	51	211
60		12.62	12.61	33.481	25.293	268.5	0.174	5.44	90.2	5.0	0.73	5.6	0.32	0.31	0.21	60	210
70		11.71	11.70	33.457	25.447	254.0	0.200	4.95	80.5	9.0	0.99	9.9	0.03	0.14	0.14	70	209
75	ISL	11.38	11.37	33.455	25.506	248.4	0.212	4.79	77.3	10.4	1.07	11.3	0.03	0.12	0.12	75	
85		10.84	10.83	33.476	25.620	237.8	0.237	4.51	72.0	12.9	1.21	13.7	0.04	0.09	0.10	85	208
99		10.11	10.10	33.578	25.825	218.4	0.269	4.05	63.7	17.5	1.45	17.6	0.03	0.03	0.06	99	207
100	ISL	10.08	10.07	33.588	25.838	217.2	0.271	4.01	63.0	17.8	1.47	17.8	0.03			100	
120		9.70	9.69	33.792	26.061	196.4	0.312	3.28	51.2	23.6	1.74	22.0	0.03			121	206
125	ISL	9.61	9.60	33.841	26.115	191.4	0.322	3.13	48.7	25.1	1.80	22.9	0.03			126	
140		9.37	9.35	33.960	26.247	179.1	0.350	2.78	43.1	29.1	1.95	25.2	0.03			141	205
150	ISL	9.30	9.28	33.990	26.282	176.0	0.367	2.74	42.4	30.1	1.99	25.5	0.03			151	
169		9.20	9.18	34.007	26.312	173.6	0.401	2.66	41.1	31.0	2.02	26.1	0.03			170	204
200	ISL	8.77	8.75	34.051	26.415	164.2	0.453	2.47	37.8	35.1	2.12	27.8	0.03			201	
202		8.74	8.72	34.055	26.423	163.5	0.456	2.45	37.5	35.4	2.13	27.9	0.03			203	203
227		8.57	8.55	34.127	26.506	156.1	0.496	2.03	30.9	39.4	2.31	29.4	0.03			228	202
250	ISL	8.44	8.41	34.174	26.563	151.1	0.532	1.68	25.5	42.8	2.44	30.5	0.04			251	
271		8.33	8.30	34.216	26.613	146.7	0.563	1.37	20.8	45.9	2.56	31.5	0.04			273	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 11.8 N	118 23.6 W	30/01/02	1832 UTC	1182 m	330 19 kn	300 05 06	0	1022.0 mb	13.2 C	7.8 C	19m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.35	14.35	33.582	25.019	293.0	0.000	5.92	101.8	3.0	0.35	0.2	0.00	0.55	0.14	0	
2	A	14.35	14.35	33.582	25.019	293.0	0.006	5.92	101.8	3.0	0.35	0.2	0.00	0.55	0.14	2	221
10	A	14.35	14.35	33.583	25.020	293.2	0.029	5.91	101.6	2.8	0.35	0.2	0.00	0.55	0.16	10	220
16		14.35	14.35	33.588	25.024	293.0	0.047	5.92	101.8	2.8	0.35	0.2	0.00	0.56	0.16	16	219
20	ISL	14.36	14.36	33.589	25.023	293.2	0.059	5.92	101.8	2.8	0.34	0.2	0.00	0.56	0.16	20	
23	A	14.36	14.36	33.590	25.024	293.2	0.067	5.91	101.7	2.8	0.34	0.2	0.00	0.56	0.17	23	218
30	ISL	14.36	14.36	33.585	25.020	293.8	0.088	5.90	101.5	2.8	0.36	0.3	0.01	0.58	0.19	30	
31		14.36	14.36	33.584	25.019	293.9	0.091	5.90	101.5	2.8	0.36	0.3	0.01	0.58	0.19	31	217
39	A	13.63	13.62	33.504	25.109	285.5	0.114	5.76	97.6	3.4	0.48	1.9	0.13	0.43	0.20	39	216
49	A	12.55	12.54	33.456	25.287	268.8	0.142	5.33	88.2	5.8	0.77	6.4	0.11	0.29	0.19	49	215
50	ISL	12.47	12.46	33.454	25.301	267.5	0.144	5.31	87.8	6.0	0.79	6.6	0.14	0.28	0.19	50	
60		11.74	11.73	33.450	25.436	254.8	0.171	5.07	82.5	8.1	0.95	9.1	0.38	0.18	0.14	60	214
71	A	10.79	10.78	33.500	25.647	234.9	0.198	4.47	71.3	13.2	1.25	14.2	0.01	0.09	0.10	71	213
75	ISL	10.55	10.54	33.521	25.705	229.4	0.207	4.32	68.5	14.6	1.32	15.4	0.01	0.07	0.09	75	
85		10.11	10.10	33.580	25.827	218.0	0.229	4.03	63.3	17.4	1.45	17.6	0.01	0.03	0.07	85	212
100		9.81	9.80	33.686	25.960	205.6	0.261	3.68	57.5	20.7	1.60	20.0	0.01	0.02	0.05	101	211
119		9.60	9.59	33.882	26.148	188.1	0.298	2.98	46.4	26.3	1.85	23.7	0.01	0.01	0.04	120	210
125	ISL	9.52	9.51	33.910	26.183	184.9	0.310	2.89	44.9	27.3	1.89	24.3	0.01	0.01	0.04	126	
140		9.33	9.31	33.950	26.246	179.3	0.337	2.76	42.7	29.2	1.96	25.4	0.01	0.00	0.04	141	209
150	ISL	9.29	9.27	33.981	26.277	176.5	0.355	2.67	41.3	30.1	2.00	25.9	0.01	0.00	0.04	151	
170		9.21	9.19	34.038	26.335	171.4	0.389	2.47	38.2	32.1	2.07	26.7	0.01	0.00	0.03	171	208
198		8.85	8.83	34.109	26.448	161.1	0.436	2.09	32.0	36.9	2.24	28.7	0.00	0.00	0.03	199	207
200	ISL	8.82	8.80	34.110	26.453	160.6	0.439	2.09	32.0	37.1	2.24	28.8	0.00			201	
228		8.44	8.42	34.120	26.520	154.7	0.483	2.08	31.6	39.8	2.30	29.5	0.01			229	206
250	ISL	8.24	8.21	34.155	26.578	149.5	0.517	1.78	26.9	43.3	2.42	30.7	0.01			251	
270		8.11	8.08	34.192	26.627	145.2	0.546	1.45	21.9	46.7	2.55	31.8	0.01			272	205
300	ISL	7.98	7.95	34.235	26.681	140.6	0.589	1.13	17.0	50.1	2.67	33.0	0.00			302	
320		7.88	7.85	34.251	26.708	138.3	0.617	0.99	14.9	52.1	2.72	33.7	0.00			322	204
374		7.27	7.23	34.218	26.771	132.9	0.690	0.93	13.8	57.9	2.80	35.3	0.00			376	203
400	ISL	7.06	7.02	34.221	26.802	130.1	0.724	0.84	12.4	60.8	2.85	36.0	0.00			403	
437		6.81	6.77	34.237	26.849	126.0	0.772	0.69	10.1	65.3	2.93	37.1	0.00			440	202
500	ISL	6.33	6.28	34.279	26.947	117.3	0.848	0.43	6.2	74.4	3.09	39.0	0.01			503	
518		6.19	6.14	34.291	26.974	114.8	0.869	0.36	5.2	77.0	3.14	39.5	0.01			522	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 55.1 N	118 56.0 W	30/01/02	1055 UTC	1699 m	360 18 kn			1019.4 mb	10.5 C	6.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.81	13.81	33.562	25.116	283.7	0.000	5.96	101.4	3.2	0.37	0.5	0.03	0.58	0.20	0	
3		13.81	13.81	33.562	25.116	283.8	0.009	5.96	101.4	3.2	0.37	0.5	0.03	0.58	0.20	3	220
10	ISL	13.81	13.81	33.561	25.115	284.1	0.028	5.95	101.2	3.0	0.37	0.5	0.03	0.59	0.21	10	
11		13.81	13.81	33.561	25.115	284.1	0.031	5.95	101.2	3.0	0.37	0.5	0.03	0.59	0.21	11	219
20	ISL	13.82	13.82	33.561	25.114	284.5	0.057	5.95	101.2	3.1	0.37	0.5	0.02	0.60	0.19	20	
21		13.82	13.82	33.561	25.114	284.5	0.060	5.95	101.2	3.1	0.37	0.5	0.02	0.60	0.19	21	218
30		13.65	13.65	33.560	25.148	281.5	0.085	5.92	100.3	3.8	0.42	1.2	0.04	0.68	0.26	30	217
41		12.66	12.65	33.557	25.344	263.2	0.115	5.19	86.2	7.5	0.78	6.5	0.14	0.53	0.27	41	216
50	ISL	11.51	11.50	33.557	25.561	242.6	0.138	4.21	68.2	12.8	1.21	13.0	0.10	0.30	0.20	50	
51		11.39	11.38	33.559	25.585	240.4	0.140	4.11	66.4	13.4	1.25	13.7	0.09	0.28	0.19	51	215
61		10.83	10.82	33.616	25.730	226.8	0.164	3.79	60.5	16.5	1.43	16.5	0.05	0.14	0.13	61	214
70		10.44	10.43	33.633	25.811	219.2	0.184	3.79	60.0	17.6	1.48	17.8	0.03	0.07	0.09	70	213
75	ISL	10.41	10.40	33.702	25.870	213.7	0.195	3.53	55.9	19.4	1.58	19.0	0.03	0.05	0.08	75	
86		10.35	10.34	33.845	25.993	202.4	0.217	2.88	45.6	23.5	1.80	21.7	0.02	0.03	0.07	86	212
100	ISL	10.17	10.16	33.911	26.075	194.8	0.245	2.65	41.8	25.8	1.90	23.1	0.02	0.01	0.06	101	
101		10.16	10.15	33.914	26.079	194.4	0.247	2.64	41.6	25.9	1.90	23.2	0.02	0.01	0.06	102	211
120		10.00	9.99	33.992	26.168	186.4	0.283	2.40	37.7	28.3	2.01	24.8	0.01	0.01	0.05	121	210
125	ISL	9.96	9.95	34.004	26.184	185.0	0.293	2.37	37.2	28.7	2.03	25.1	0.01	0.01	0.05	126	
140		9.85	9.83	34.033	26.225	181.4	0.320	2.29	35.9	29.7	2.07	25.7	0.01	0.01	0.05	141	209
150	ISL	9.74	9.72	34.056	26.262	178.1	0.338	2.23	34.9	30.7	2.11	26.2	0.01	0.01	0.05	151	
170		9.49	9.47	34.100	26.338	171.3	0.373	2.09	32.5	33.1	2.19	27.3	0.01	0.01	0.05	171	208
200		9.06	9.04	34.157	26.452	160.8	0.423	1.83	28.2	37.5	2.32	29.0	0.01	0.01	0.04	201	207
228		8.79	8.77	34.189	26.520	154.8	0.467	1.63	25.0	40.7	2.42	30.1	0.01			229	206
250	ISL	8.54	8.51	34.207	26.574	150.1	0.501	1.47	22.4	43.5	2.51	31.0	0.00			251	
269		8.30	8.27	34.215	26.617	146.3	0.529	1.35	20.5	46.1	2.58	31.8	0.00			271	205
300	ISL	7.84	7.81	34.208	26.680	140.6	0.573	1.20	18.0	51.0	2.67	33.3	0.00			302	
318		7.58	7.55	34.203	26.714	137.5	0.598	1.12	16.7	53.8	2.72	34.1	0.00			320	204
379		7.06	7.02	34.227	26.807	129.3	0.680	0.79	11.6	61.8	2.89	36.3	0.00			381	203
400	ISL	6.88	6.84	34.237	26.839	126.4	0.706	0.70	10.3	64.6	2.94	37.0	0.00			403	
437		6.59	6.55	34.256	26.894	121.6	0.752	0.55	8.0	69.4	3.03	38.2	0.00			440	202
500	ISL	6.20	6.16	34.298	26.978	114.1	0.827	0.35	5.1	77.1	3.15	39.6	0.00			503	
517		6.09	6.04	34.309	27.001	112.1	0.846	0.30	4.3	79.2	3.18	40.0	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.4 N	119 28.8 W	30/01/02	0500 UTC	1316 m	320 25 kn			1017.9 mb	10.0 C	7.5 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.58	12.58	33.515	25.326	263.8	0.000	5.94	98.4	5.6	0.61	3.8	0.12	0.56	0.16	0	
2		12.58	12.58	33.515	25.326	263.8	0.005	5.94	98.4	5.6	0.61	3.8	0.12	0.56	0.16	2	220
10	ISL	12.60	12.60	33.520	25.326	264.0	0.026	5.92	98.2	5.5	0.60	3.8	0.12	0.57	0.18	10	
11		12.60	12.60	33.521	25.327	264.0	0.029	5.92	98.2	5.5	0.60	3.8	0.12	0.57	0.18	11	219
20	ISL	12.62	12.62	33.528	25.328	264.1	0.053	5.91	98.0	5.5	0.60	3.8	0.13	0.59	0.15	20	
21		12.62	12.62	33.529	25.329	264.0	0.055	5.91	98.0	5.5	0.60	3.8	0.13	0.59	0.15	21	218
30	ISL	12.63	12.63	33.531	25.329	264.3	0.079	5.88	97.6	5.4	0.60	3.8	0.13	0.56	0.19	30	
31		12.63	12.63	33.531	25.329	264.3	0.082	5.88	97.6	5.4	0.60	3.8	0.13	0.56	0.19	31	217
41		12.64	12.63	33.540	25.334	264.0	0.108	5.89	97.7	5.4	0.60	3.8	0.13	0.57	0.15	41	216
50		12.68	12.67	33.559	25.341	263.6	0.132	5.78	96.0	5.7	0.64	4.3	0.17	0.44	0.17	50	215
60		12.06	12.05	33.527	25.436	254.8	0.158	5.32	87.2	8.2	0.84	7.6	0.16	0.21	0.14	60	214
68		11.43	11.42	33.575	25.590	240.3	0.178	4.64	75.1	12.2	1.13	12.3	0.07	0.12	0.11	68	213
75	ISL	10.82	10.81	33.613	25.729	227.1	0.194	4.15	66.3	15.8	1.35	15.8	0.05	0.07	0.11	75	
86		10.01	10.00	33.681	25.922	208.9	0.218	3.57	56.0	20.8	1.62	20.1	0.01	0.03	0.10	86	212
100	ISL	9.55	9.54	33.790	26.084	193.8	0.246	3.22	50.1	24.9	1.78	22.9	0.01	0.01	0.08	101	
101		9.53	9.52	33.798	26.094	192.9	0.248	3.20	49.7	25.1	1.79	23.0	0.01	0.01	0.08	102	211
119		9.36	9.35	33.934	26.228	180.5	0.282	2.68	41.5	29.6	2.00	25.5	0.01	0.01	0.07	120	210
125	ISL	9.29	9.28	33.966	26.265	177.2	0.293	2.56	39.6	30.8	2.05	26.1	0.01	0.01	0.07	126	
139		9.13	9.11	34.021	26.333	170.9	0.317	2.36	36.4	33.3	2.13	27.2	0.01	0.00	0.06	140	209
150	ISL	9.04	9.02	34.052	26.372	167.4	0.336	2.23	34.3	34.8	2.18	27.9	0.01	0.00	0.06	151	
169		8.80	8.78	34.078	26.431	162.1	0.367	2.11	32.3	37.1	2.24	28.8	0.01	0.00	0.05	170	208
198		7.97	7.95	34.061	26.544	151.6	0.412	2.26	34.0	41.5	2.27	30.2	0.02	0.00	0.02	199	207
200	ISL	7.94	7.92	34.063	26.550	151.1	0.415	2.25	33.8	41.9	2.28	30.3	0.02			201	
229		7.61	7.59	34.105	26.631	143.7	0.458	1.92	28.6	47.2	2.44	31.8	0.01			230	206
250	ISL	7.41	7.39	34.121	26.673	140.1	0.488	1.72	25.5	50.3	2.53	32.9	0.01			252	
270		7.26	7.23	34.135	26.705	137.3	0.516	1.54	22.8	53.0	2.61	33.8	0.01			272	205
300	ISL	7.12	7.09	34.170	26.752	133.2	0.556	1.21	17.8	57.0	2.73	35.0	0.00			302	
317		7.05	7.02	34.190	26.778	131.0	0.579	1.03	15.2	59.2	2.80	35.6	0.00			319	204
377		6.68	6.65	34.233	26.863	123.7	0.655	0.66	9.6	66.8	2.97	37.7	0.00			379	203
400	ISL	6.55	6.51	34.248	26.892	121.1	0.683	0.57	8.3	69.3	3.02	38.2	0.00			403	
434		6.38	6.34	34.267	26.930	117.9	0.724	0.48	7.0	72.6	3.07	38.9	0.00			437	202
500	ISL	6.11	6.07	34.298	26.990	113.0	0.800	0.36	5.2	78.1	3.15	39.9	0.00			503	
517		6.04	5.99	34.306	27.005	111.7	0.819	0.33	4.7	79.5	3.17	40.2	0.00			521	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 25.2 N	119 57.5 W	29/01/02	2335 UTC	1518 m	310 22 kn	300 05 07	2	1017.5 mb	10.0 C	8.5 C	15m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.92	13.92	33.354	24.932	301.2	0.000	5.98	101.8	2.6	0.40	0.4	0.04	0.45	0.13	0	
2		13.92	13.92	33.354	24.933	301.2	0.006	5.98	101.8	2.6	0.40	0.4	0.04	0.45	0.13	2	220
10	ISL	13.91	13.91	33.356	24.936	301.1	0.030	5.98	101.8	2.6	0.40	0.5	0.04	0.44	0.14	10	
15		13.90	13.90	33.358	24.940	300.9	0.045	5.98	101.8	2.6	0.40	0.5	0.04	0.44	0.14	15	219
20	ISL	13.91	13.91	33.358	24.938	301.2	0.060	5.98	101.8	2.6	0.40	0.5	0.04	0.44	0.14	20	
30		13.92	13.92	33.359	24.937	301.6	0.090	5.97	101.6	2.6	0.40	0.5	0.04	0.45	0.13	30	218
45		13.92	13.91	33.370	24.946	301.2	0.136	5.93	101.0	2.5	0.41	0.5	0.04	0.44	0.14	45	217
50	ISL	13.92	13.91	33.367	24.944	301.5	0.151	5.93	101.0	2.5	0.40	0.5	0.04	0.44	0.15	50	
56		13.92	13.91	33.362	24.940	302.0	0.169	5.93	100.9	2.5	0.40	0.5	0.04	0.45	0.15	56	216
65		13.93	13.92	33.365	24.941	302.3	0.196	5.94	101.1	2.5	0.41	0.5	0.05	0.41	0.14	65	215
74		13.13	13.12	33.336	25.081	289.1	0.223	5.69	95.3	3.8	0.59	3.3	0.10	0.14	0.11	74	214
75	ISL	13.04	13.03	33.341	25.103	287.0	0.225	5.66	94.6	4.0	0.61	3.7	0.09	0.13	0.11	75	
84		12.23	12.22	33.397	25.303	268.1	0.250	5.40	88.8	5.8	0.80	7.0	0.02	0.07	0.08	84	213
94		11.51	11.50	33.424	25.459	253.4	0.276	5.06	81.9	8.7	0.99	10.1	0.01	0.05	0.07	94	212
100	ISL	11.07	11.06	33.427	25.541	245.7	0.291	4.89	78.4	10.3	1.08	11.7	0.01	0.05	0.06	100	
110		10.37	10.36	33.451	25.682	232.3	0.315	4.61	72.8	13.3	1.24	14.4	0.01	0.04	0.05	111	211
125		9.52	9.51	33.597	25.939	208.1	0.348	4.07	63.1	19.2	1.53	19.2	0.01	0.02	0.03	126	210
144		9.21	9.19	33.784	26.135	189.8	0.386	3.57	55.1	24.0	1.71	22.4	0.01	0.01	0.02	145	209
150	ISL	9.12	9.10	33.828	26.184	185.2	0.397	3.42	52.7	25.6	1.77	23.3	0.01	0.01	0.02	151	
169		8.88	8.86	33.932	26.304	174.2	0.432	3.03	46.4	29.8	1.92	25.8	0.00	0.00	0.02	170	208
200	ISL	8.71	8.69	33.993	26.379	167.6	0.485	2.75	42.0	32.9	2.04	27.3	0.01	0.00	0.02	201	
201		8.71	8.69	33.994	26.380	167.6	0.486	2.74	41.8	33.0	2.04	27.3	0.01	0.00	0.02	202	207
229		8.38	8.36	34.043	26.469	159.5	0.532	2.49	37.8	36.7	2.15	28.7	0.01			230	206
250	ISL	8.09	8.06	34.064	26.529	154.0	0.565	2.29	34.5	40.2	2.25	30.0	0.00			251	
269		7.80	7.77	34.076	26.582	149.3	0.594	2.09	31.3	43.8	2.36	31.3	0.00			271	205
300	ISL	7.22	7.19	34.091	26.677	140.4	0.639	1.69	25.0	51.2	2.55	33.8	0.00			302	
316		6.94	6.91	34.099	26.721	136.3	0.661	1.49	21.9	55.1	2.65	35.1	0.00			318	204
378		6.34	6.31	34.143	26.836	125.9	0.742	0.99	14.3	66.5	2.88	38.0	0.00			380	203
400	ISL	6.18	6.14	34.157	26.868	123.0	0.769	0.87	12.5	69.6	2.94	38.7	0.00			403	
438		5.97	5.93	34.182	26.915	118.9	0.815	0.71	10.2	74.2	3.02	39.6	0.00			441	202
500	ISL	5.75	5.71	34.226	26.978	113.6	0.888	0.50	7.1	80.2	3.12	40.7	0.00			503	
516		5.69	5.65	34.237	26.994	112.3	0.906	0.45	6.4	81.7	3.14	41.0	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 5.4 N	120 38.6 W	29/01/02	1815 UTC	3800 m	310 11 kn	320 05 08	1	1019.6 mb	10.0 C	8.7 C	16m	2/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.38	13.38	33.163	24.895	304.8	0.000	6.07	102.1	3.0	0.43	0.7	0.03	0.59	0.13	0	
3	A	13.38	13.38	33.163	24.895	304.8	0.009	6.07	102.1	3.0	0.43	0.7	0.03	0.59	0.13	3	220
10	A	13.37	13.37	33.163	24.897	304.8	0.030	6.07	102.1	2.9	0.43	0.7	0.03	0.59	0.12	10	219
20	ISL	13.36	13.36	33.163	24.900	304.9	0.061	6.06	101.9	2.9	0.43	0.7	0.03	0.62	0.12	20	
21	A	13.36	13.36	33.163	24.900	304.9	0.064	6.06	101.9	2.9	0.43	0.7	0.03	0.62	0.12	21	218
30	ISL	13.36	13.36	33.169	24.904	304.7	0.091	6.05	101.7	2.9	0.44	0.8	0.03	0.60	0.13	30	
32	A	13.36	13.36	33.172	24.907	304.5	0.098	6.05	101.7	2.9	0.44	0.8	0.03	0.60	0.13	32	217
41	A	13.38	13.37	33.199	24.924	303.1	0.125	6.01	101.1	3.1	0.45	1.0	0.05	0.50	0.15	41	216
50	ISL	13.55	13.54	33.267	24.942	301.6	0.152	5.95	100.5	3.0	0.46	1.1	0.07	0.41	0.16	50	
51	A	13.57	13.56	33.274	24.944	301.5	0.155	5.94	100.3	3.0	0.46	1.1	0.07	0.40	0.16	51	215
61		12.70	12.69	33.216	25.072	289.5	0.185	5.87	97.3	4.6	0.62	3.4	0.25	0.26	0.16	61	214
70		11.53	11.52	33.119	25.218	275.7	0.210	5.56	89.9	6.8	0.86	7.4	0.04	0.13	0.10	70	213
75	ISL	11.15	11.14	33.124	25.290	268.9	0.224	5.46	87.5	7.6	0.94	8.7	0.03	0.11	0.09	75	
85		10.70	10.69	33.202	25.431	255.7	0.250	5.26	83.6	9.4	1.05	10.7	0.01	0.08	0.08	85	212
100		10.26	10.25	33.399	25.660	234.2	0.287	4.72	74.4	13.8	1.29	15.0	0.01	0.04	0.06	100	211
121		9.22	9.21	33.538	25.941	207.7	0.333	4.19	64.6	20.2	1.58	19.9	0.00	0.01	0.03	122	210
125	ISL	9.23	9.22	33.586	25.977	204.4	0.341	4.07	62.7	20.9	1.61	20.4	0.00	0.01	0.03	126	
139		9.27	9.25	33.725	26.079	195.0	0.369	3.67	56.7	23.1	1.68	21.8	0.01	0.00	0.03	140	209
150	ISL	9.19	9.17	33.810	26.159	187.6	0.390	3.48	53.7	24.9	1.74	22.8	0.01	0.00	0.03	151	
167		8.98	8.96	33.909	26.270	177.4	0.421	3.25	49.9	28.0	1.84	24.5	0.01	0.00	0.02	168	208
199		8.47	8.45	34.012	26.431	162.6	0.476	2.61	39.7	35.3	2.11	28.3	0.01	0.00	0.02	200	207
200	ISL	8.45	8.43	34.013	26.434	162.2	0.477	2.60	39.5	35.5	2.11	28.4	0.01			201	
229		8.05	8.03	34.036	26.513	155.2	0.523	2.44	36.7	39.6	2.22	29.9	0.01			230	206
250	ISL	7.82	7.80	34.056	26.563	150.7	0.556	2.20	32.9	42.9	2.32	31.1	0.00			251	
269		7.61	7.58	34.073	26.607	146.8	0.584	1.97	29.4	46.1	2.42	32.2	0.00			271	205
300	ISL	7.20	7.17	34.089	26.678	140.3	0.628	1.68	24.8	51.5	2.56	33.9	0.00			302	
318		6.97	6.94	34.098	26.717	136.8	0.653	1.52	22.3	54.7	2.64	34.8	0.00			320	204
379		6.48	6.45	34.149	26.823	127.3	0.734	0.97	14.1	65.0	2.88	37.6	0.00			381	203
400	ISL	6.30	6.26	34.163	26.858	124.1	0.760	0.83	12.0	68.5	2.94	38.5	0.00			403	
434		6.02	5.98	34.185	26.911	119.3	0.802	0.65	9.3	74.0	3.03	39.7	0.00			437	202
500	ISL	5.62	5.58	34.229	26.996	111.8	0.878	0.43	6.1	82.8	3.15	41.2	0.00			503	
514		5.53	5.49	34.239	27.015	110.1	0.893	0.38	5.4	84.7	3.18	41.5	0.00			517	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 45.1 N	121 18.8 W	29/01/02	0801 UTC	3669 m	340 08 kn			1019.2 mb	11.4 C	8.9 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.29	13.29	33.291	25.012	293.6	0.000	6.07	102.0	3.8	0.44	1.0	0.05	0.65	0.15	0	
2		13.29	13.29	33.291	25.012	293.7	0.006	6.07	102.0	3.8	0.44	1.0	0.05	0.65	0.15	2	220
10		13.26	13.26	33.292	25.019	293.2	0.029	6.08	102.1	3.7	0.44	1.0	0.05	0.69	0.17	10	219
20	ISL	13.26	13.26	33.293	25.020	293.4	0.059	6.07	101.9	3.7	0.44	0.9	0.05	0.66	0.14	20	
21		13.26	13.26	33.293	25.020	293.4	0.062	6.07	101.9	3.7	0.44	0.9	0.05	0.66	0.14	21	218
30		13.26	13.26	33.293	25.020	293.6	0.088	6.06	101.7	4.0	0.44	0.9	0.05	0.65	0.15	30	217
41		13.31	13.30	33.314	25.027	293.3	0.120	6.07	102.0	3.8	0.44	1.0	0.05	0.66	0.13	41	216
50		13.37	13.36	33.346	25.040	292.4	0.147	6.01	101.1	3.8	0.45	1.2	0.05	0.62	0.19	50	215
60		13.37	13.36	33.347	25.041	292.5	0.176	6.01	101.1	3.5	0.46	1.1	0.05	0.58	0.19	60	214
70		13.37	13.36	33.346	25.040	292.8	0.205	5.99	100.8	3.6	0.45	1.2	0.06	0.55	0.17	70	213
75	ISL	13.24	13.23	33.339	25.061	291.0	0.220	5.97	100.2	3.9	0.49	1.8	0.09	0.47	0.16	75	
85		12.99	12.98	33.326	25.101	287.4	0.249	5.80	96.8	4.5	0.58	3.0	0.13	0.28	0.13	85	212
100		11.13	11.12	33.383	25.496	249.9	0.289	5.09	81.7	10.4	1.08	11.3	0.01	0.08	0.09	100	211
120		10.30	10.29	33.513	25.743	226.8	0.337	4.31	68.0	16.0	1.39	16.4	0.01	0.04	0.07	121	210
125	ISL	10.15	10.14	33.565	25.809	220.6	0.348	4.08	64.2	17.7	1.47	17.7	0.01	0.03	0.07	126	
140		9.73	9.71	33.720	26.001	202.6	0.380	3.47	54.1	22.8	1.69	21.4	0.01	0.01	0.08	141	209
150	ISL	9.37	9.35	33.784	26.110	192.4	0.399	3.31	51.2	25.6	1.78	23.2	0.01	0.01	0.06	151	
169		8.78	8.76	33.873	26.273	177.0	0.434	3.16	48.3	29.9	1.91	25.7	0.01	0.01	0.03	170	208
200	ISL	8.52	8.50	33.983	26.400	165.5	0.488	2.69	40.9	34.8	2.08	28.2	0.01	0.00	0.03	201	
201		8.52	8.50	33.986	26.403	165.3	0.489	2.67	40.6	35.0	2.09	28.3	0.01	0.00	0.03	202	207
231		7.96	7.94	34.038	26.528	153.7	0.537	2.31	34.7	41.3	2.26	30.6	0.01			232	206
250	ISL	7.64	7.62	34.040	26.576	149.3	0.566	2.24	33.4	44.1	2.32	31.4	0.01			251	
270		7.34	7.31	34.038	26.618	145.6	0.595	2.18	32.3	46.9	2.38	32.2	0.00			272	205
300	ISL	7.00	6.97	34.065	26.686	139.4	0.638	1.81	26.6	52.7	2.53	34.0	0.00			302	
318		6.83	6.80	34.085	26.725	135.8	0.663	1.56	22.8	56.2	2.63	35.1	0.00			320	204
378		6.38	6.35	34.128	26.819	127.5	0.742	1.07	15.5	65.0	2.85	37.6	0.00			380	203
400	ISL	6.20	6.16	34.143	26.855	124.3	0.770	0.93	13.4	68.7	2.92	38.5	0.00			403	
438		5.90	5.86	34.171	26.915	118.9	0.816	0.72	10.3	75.1	3.02	39.9	0.00			441	202
500	ISL	5.55	5.51	34.224	27.000	111.3	0.887	0.47	6.7	83.8	3.15	41.4	0.00			503	
510		5.49	5.45	34.233	27.015	110.0	0.898	0.43	6.1	85.2	3.17	41.6	0.00			513	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.1 N	121 59.0 W	29/01/02	0152	UTC	3860 m	340	18 kn	340 06 07	1	1019.2 mb	12.2 C	10.2 C		5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.41	14.41	33.189	24.703	323.1	0.000	5.90	101.4	2.4	0.40	0.2	0.03	0.23	0.08	0	
2		14.41	14.41	33.189	24.703	323.1	0.006	5.90	101.4	2.4	0.40	0.2	0.03	0.23	0.08	2	220
10	ISL	14.42	14.42	33.189	24.701	323.5	0.032	5.90	101.4	2.3	0.40	0.2	0.02	0.24	0.07	10	
15		14.42	14.42	33.189	24.701	323.7	0.049	5.90	101.4	2.3	0.40	0.2	0.02	0.24	0.07	15	219
20	ISL	14.42	14.42	33.189	24.701	323.8	0.065	5.91	101.5	2.3	0.40	0.2	0.02	0.24	0.08	20	
30		14.42	14.42	33.189	24.702	324.1	0.097	5.92	101.7	2.2	0.40	0.2	0.02	0.23	0.09	30	218
45		14.41	14.40	33.184	24.700	324.6	0.146	5.91	101.5	2.2	0.40	0.2	0.03	0.24	0.08	45	217
50	ISL	14.39	14.38	33.181	24.702	324.6	0.162	5.91	101.5	2.2	0.40	0.3	0.03	0.24	0.08	50	
55		14.36	14.35	33.179	24.707	324.2	0.178	5.92	101.6	2.1	0.40	0.3	0.03	0.25	0.09	55	216
65		14.34	14.33	33.177	24.710	324.2	0.211	5.87	100.7	2.0	0.41	0.3	0.03	0.26	0.09	65	215
75		14.32	14.31	33.167	24.707	324.8	0.243	5.88	100.8	2.0	0.41	0.3	0.03	0.26	0.09	75	214
85		14.30	14.29	33.165	24.710	324.8	0.276	5.90	101.1	2.0	0.42	0.3	0.03	0.23	0.08	85	213
95		13.33	13.32	33.159	24.905	306.4	0.307	5.88	98.7	3.3	0.53	1.7	0.11	0.17	0.09	95	212
100	ISL	12.83	12.82	33.144	24.992	298.2	0.322	5.80	96.4	4.0	0.60	2.8	0.09	0.15	0.09	100	
110		11.90	11.89	33.134	25.162	282.1	0.351	5.59	91.1	5.7	0.75	5.5	0.02	0.13	0.09	110	211
124		10.99	10.97	33.219	25.394	260.2	0.389	5.31	84.9	8.3	0.95	9.2	0.01	0.09	0.07	125	210
125	ISL	10.94	10.92	33.227	25.409	258.7	0.392	5.29	84.5	8.5	0.96	9.4	0.01	0.09	0.07	126	
144		10.20	10.18	33.380	25.657	235.5	0.439	4.90	77.1	11.7	1.13	12.6	0.00	0.04	0.05	145	209
150	ISL	10.00	9.98	33.426	25.726	228.9	0.453	4.77	74.7	12.9	1.19	13.7	0.00	0.03	0.04	151	
169		9.50	9.48	33.580	25.929	209.9	0.494	4.30	66.7	17.4	1.40	17.3	0.00	0.02	0.03	170	208
200	ISL	9.12	9.10	33.902	26.243	180.7	0.555	3.25	50.1	27.2	1.82	23.9	0.00	0.00	0.03	201	
201		9.11	9.09	33.911	26.252	179.9	0.557	3.22	49.6	27.5	1.83	24.1	0.00	0.00	0.03	202	207
230		8.80	8.78	33.985	26.359	170.1	0.607	2.95	45.1	31.4	1.96	26.0	0.00			231	206
250	ISL	8.55	8.52	34.021	26.426	164.0	0.641	2.74	41.7	34.5	2.06	27.2	0.00			251	
267		8.31	8.28	34.042	26.479	159.2	0.668	2.56	38.8	37.3	2.14	28.2	0.00			268	205
300	ISL	7.77	7.74	34.058	26.572	150.7	0.719	2.25	33.6	43.2	2.31	30.6	0.00			302	
322		7.41	7.38	34.063	26.628	145.5	0.752	2.04	30.3	47.3	2.42	32.3	0.00			324	204
377		6.72	6.69	34.101	26.753	134.0	0.829	1.40	20.4	58.1	2.70	35.6	0.00			379	203
400	ISL	6.53	6.49	34.123	26.796	130.2	0.859	1.17	17.0	62.2	2.80	36.7	0.00			402	
433		6.30	6.26	34.156	26.853	125.1	0.901	0.88	12.7	67.6	2.93	38.1	0.00			436	202
500	ISL	5.88	5.84	34.213	26.951	116.3	0.982	0.55	7.9	77.2	3.10	39.9	0.00			503	
508		5.83	5.79	34.220	26.963	115.2	0.992	0.51	7.3	78.4	3.12	40.1	0.00			511	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 5.4 N	122 40.0 W	28/01/02	1926	UTC	3977 m	300	12 kn	300 06 10	1	1020.7 mb	14.2 C	11.1 C	32m	5/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.73	15.73	33.505	24.659	327.2	0.000	5.72	101.1	2.3	0.34	0.1	0.00	0.19	0.07	0	
2	A	15.73	15.73	33.505	24.660	327.3	0.007	5.72	101.1	2.3	0.34	0.1	0.00	0.19	0.07	2	221
10	ISL	15.71	15.71	33.505	24.664	327.1	0.033	5.72	101.1	2.3	0.34	0.1	0.00	0.19	0.07	10	
18	A	15.68	15.68	33.505	24.671	326.6	0.059	5.72	101.0	2.2	0.33	0.1	0.00	0.19	0.07	18	220
20	ISL	15.68	15.68	33.505	24.671	326.7	0.065	5.72	101.0	2.2	0.33	0.1	0.00	0.19	0.07	20	
28		15.68	15.68	33.504	24.671	327.0	0.092	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.06	28	219
30	ISL	15.68	15.68	33.504	24.671	327.1	0.098	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.06	30	
40	A	15.68	15.67	33.503	24.670	327.4	0.131	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.07	40	218
50	ISL	15.68	15.67	33.504	24.672	327.6	0.164	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.07	50	
53		15.68	15.67	33.504	24.672	327.7	0.173	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.07	53	217
63	A	15.68	15.67	33.505	24.673	327.9	0.206	5.70	100.6	2.0	0.34	0.1	0.00	0.20	0.07	63	216
75		15.68	15.67	33.504	24.672	328.3	0.246	5.71	100.8	2.0	0.33	0.1	0.00	0.21	0.06	75	215
83	A	15.68	15.67	33.505	24.673	328.5	0.272	5.70	100.6	2.0	0.33	0.1	0.00	0.20	0.08	83	214
95		15.68	15.67	33.505	24.674	328.8	0.311	5.71	100.8	2.1	0.33	0.1	0.00	0.21	0.06	95	213
100	ISL	15.64	15.62	33.499	24.678	328.5	0.328	5.71	100.7	2.1	0.33	0.1	0.00	0.21	0.06	100	
107		15.59	15.57	33.491	24.684	328.2	0.351	5.70	100.4	2.1	0.34	0.1	0.01	0.20	0.07	107	212
120	A	13.14	13.12	33.241	25.007	297.4	0.391	5.72	95.7	3.8	0.48	1.3	0.16	0.17	0.13	121	211
125	ISL	12.62	12.60	33.240	25.108	287.8	0.406	5.65	93.5	4.4	0.54	2.4	0.12	0.15	0.12	126	
133		11.91	11.89	33.279	25.273	272.1	0.428	5.46	89.1	5.8	0.68	5.0	0.02	0.11	0.10	134	210
144		10.48	10.46	33.328	25.568	243.9	0.457	5.11	80.8	10.0	0.99	10.4	0.01	0.06	0.06	145	209
150	ISL	10.32	10.30	33.396	25.649	236.4	0.471	5.00	78.9	11.2	1.07	11.8	0.01	0.05	0.06	151	
171		9.76	9.74	33.476	25.806	221.7	0.519	4.69	73.1	14.2	1.22	14.4	0.00	0.03	0.05	172	208
197		9.32	9.30	33.726	26.073	196.8	0.574	3.96	61.2	21.3	1.53	19.8	0.00	0.01	0.02	198	207
200	ISL	9.28	9.26	33.752	26.100	194.3	0.580	3.89	60.1	22.1	1.56	20.3	0.00			201	
231		8.86	8.84	33.951	26.323	173.6	0.637	3.30	50.6	29.2	1.82	24.6	0.00			232	206
250	ISL	8.55	8.52	33.994	26.405	166.0	0.669	3.17	48.2	32.4	1.90	26.0	0.00			251	
268		8.26	8.23	34.010	26.462	160.8	0.698	3.06	46.3	35.3	1.97	27.1	0.00			269	205
300	ISL	7.82	7.79	34.052	26.560	151.8	0.748	2.50	37.4	41.9	2.21	29.8	0.00			302	
318		7.59	7.56	34.069	26.607	147.6	0.775	2.17	32.3	45.8	2.35	31.3	0.00			320	204
379		6.77	6.73	34.085	26.734	135.9	0.862	1.65	24.1	56.8	2.61	34.8	0.00			381	203
400	ISL	6.62	6.58	34.105	26.770	132.7	0.890	1.41	20.5	60.3	2.70	35.8	0.00			402	
437		6.42	6.38	34.147	26.830	127.4	0.938	1.01	14.6	66.2	2.85	37.5	0.00			440	202
500	ISL	5.99	5.95	34.206	26.932	118.2	1.015	0.62	8.9	75.8	3.04	39.6	0.00			503	
518		5.87	5.83	34.223	26.961	115.6	1.036	0.51	7.3	78.5	3.09	40.2	0.00			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 45.4 N	123 19.9 W	28/01/02	1304 UTC	4019 m	290 10 kn			1018.9 mb	13.5 C	10.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.72	15.72	33.465	24.631	329.9	0.000	5.70	100.7	2.0	0.35	0.1	0.00	0.20	0.06	0	
2		15.72	15.72	33.465	24.631	330.0	0.007	5.70	100.7	2.0	0.35	0.1	0.00	0.20	0.06	2	220
10	ISL	15.73	15.73	33.465	24.629	330.4	0.033	5.71	100.9	2.0	0.34	0.1	0.00	0.19	0.05	10	
15		15.74	15.74	33.465	24.627	330.8	0.050	5.71	100.9	2.0	0.34	0.1	0.00	0.19	0.05	15	219
20	ISL	15.74	15.74	33.465	24.627	330.9	0.066	5.71	100.9	2.0	0.34	0.1	0.00	0.19	0.05	20	
30		15.74	15.74	33.465	24.627	331.2	0.099	5.70	100.7	2.0	0.35	0.1	0.00	0.19	0.06	30	218
45		15.74	15.73	33.465	24.628	331.6	0.149	5.70	100.7	1.9	0.34	0.1	0.00	0.19	0.06	45	217
50	ISL	15.74	15.73	33.465	24.628	331.8	0.165	5.70	100.7	1.9	0.34	0.1	0.00	0.19	0.06	50	
60		15.75	15.74	33.464	24.625	332.3	0.199	5.69	100.6	2.0	0.34	0.1	0.00	0.19	0.06	60	216
75		15.45	15.44	33.424	24.662	329.3	0.248	5.70	100.1	2.2	0.37	0.3	0.03	0.19	0.08	75	215
85		12.34	12.33	33.186	25.119	285.6	0.279	5.59	92.0	5.3	0.67	4.1	0.06	0.28	0.19	85	214
94		11.93	11.92	33.215	25.219	276.3	0.304	5.46	89.1	6.3	0.77	5.8	0.03	0.23	0.18	94	213
100	ISL	11.22	11.21	33.234	25.364	262.5	0.321	5.32	85.5	7.9	0.88	7.9	0.02	0.15	0.12	100	
105		10.61	10.60	33.261	25.493	250.3	0.333	5.19	82.3	9.5	0.98	9.8	0.01	0.08	0.07	105	212
114		10.06	10.05	33.342	25.650	235.4	0.355	4.98	78.1	12.0	1.13	12.6	0.01	0.04	0.05	114	211
125		10.05	10.04	33.541	25.807	220.7	0.380	4.28	67.2	16.0	1.36	16.3	0.00	0.05	0.05	126	210
139		9.92	9.90	33.677	25.935	208.8	0.410	3.70	57.9	19.9	1.56	19.6	0.00	0.03	0.05	140	209
150	ISL	9.67	9.65	33.751	26.035	199.6	0.433	3.47	54.1	22.6	1.67	21.4	0.00	0.02	0.04	151	
165		9.28	9.26	33.830	26.161	187.8	0.462	3.33	51.5	25.8	1.77	23.2	0.00	0.00	0.03	166	208
196		8.84	8.82	33.968	26.339	171.4	0.518	3.18	48.7	30.3	1.88	25.1	0.00	0.00	0.03	197	207
200	ISL	8.79	8.77	33.981	26.357	169.7	0.524	3.11	47.6	31.1	1.91	25.5	0.00			201	
229		8.45	8.43	34.053	26.466	159.8	0.572	2.55	38.7	37.1	2.13	28.3	0.00			230	206
250	ISL	8.27	8.24	34.083	26.517	155.3	0.605	2.25	34.0	40.2	2.25	29.6	0.00			251	
269		8.10	8.07	34.100	26.557	151.8	0.634	2.04	30.7	42.7	2.35	30.6	0.00			270	205
300	ISL	7.73	7.70	34.119	26.626	145.6	0.680	1.77	26.5	47.6	2.48	32.1	0.00			302	
321		7.43	7.40	34.119	26.669	141.6	0.711	1.66	24.6	51.0	2.55	33.1	0.00			323	204
378		6.36	6.33	34.044	26.756	133.5	0.789	1.77	25.6	59.6	2.62	35.5	0.00			380	203
400	ISL	6.16	6.12	34.065	26.798	129.6	0.818	1.51	21.7	64.1	2.73	36.8	0.00			402	
437		5.96	5.92	34.121	26.868	123.3	0.865	1.00	14.3	71.5	2.92	38.8	0.00			440	202
500	ISL	5.67	5.63	34.187	26.957	115.5	0.940	0.61	8.7	80.3	3.08	40.5	0.00			503	
509		5.63	5.59	34.196	26.969	114.4	0.950	0.55	7.8	81.5	3.10	40.8	0.00			512	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 26.2 N	124 0.6 W	28/01/02	0616 UTC	4210 m	320 12 kn			1019.8 mb	14.8 C	11.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.87	15.87	33.495	24.620	330.9	0.000	5.72	101.4	2.3	0.34	0.1	0.00	0.17	0.06	0	
2		15.87	15.87	33.495	24.620	331.0	0.007	5.72	101.4	2.3	0.34	0.1	0.00	0.17	0.06	2	220
10	ISL	15.86	15.86	33.491	24.620	331.3	0.033	5.73	101.5	2.2	0.34	0.1	0.00	0.18	0.05	10	
15		15.86	15.86	33.489	24.619	331.6	0.050	5.73	101.5	2.2	0.34	0.1	0.00	0.18	0.05	15	219
20	ISL	15.86	15.86	33.490	24.619	331.6	0.066	5.72	101.4	2.2	0.34	0.1	0.00	0.18	0.05	20	
30		15.86	15.86	33.491	24.621	331.9	0.099	5.71	101.2	2.2	0.34	0.1	0.00	0.18	0.05	30	218
44		15.87	15.86	33.492	24.620	332.4	0.146	5.70	101.0	2.2	0.34	0.1	0.00	0.18	0.06	44	217
50	ISL	15.88	15.87	33.494	24.619	332.6	0.166	5.69	100.9	2.1	0.34	0.1	0.00	0.18	0.07	50	
59		15.91	15.90	33.503	24.620	332.9	0.196	5.69	100.9	2.1	0.34	0.1	0.00	0.17	0.09	59	216
75		16.04	16.03	33.549	24.626	332.8	0.249	5.70	101.4	2.3	0.33	0.1	0.00	0.22	0.08	75	215
85		16.00	15.99	33.549	24.636	332.2	0.282	5.68	100.9	2.3	0.33	0.1	0.01	0.20	0.09	85	214
95		13.49	13.48	33.285	24.970	300.3	0.314	5.74	96.8	3.9	0.51	1.7	0.14	0.23	0.15	95	213
100	ISL	12.68	12.67	33.205	25.068	290.9	0.329	5.68	94.1	4.8	0.61	3.1	0.09	0.25	0.17	100	
104		12.20	12.19	33.170	25.133	284.7	0.340	5.61	92.0	5.5	0.69	4.4	0.04	0.26	0.18	104	212
115		11.46	11.45	33.258	25.339	265.2	0.370	5.31	85.8	7.8	0.86	7.8	0.02	0.17	0.13	115	211
125		11.19	11.17	33.332	25.446	255.3	0.397	5.08	81.6	9.3	0.96	9.6	0.02	0.14	0.13	126	210
138		10.21	10.19	33.421	25.687	232.5	0.428	4.73	74.4	13.2	1.19	13.7	0.01	0.07	0.07	139	209
150	ISL	9.73	9.71	33.542	25.862	216.0	0.455	4.35	67.8	16.7	1.37	16.7	0.01	0.04	0.06	151	
163		9.45	9.43	33.678	26.014	201.7	0.482	3.93	60.9	20.4	1.53	19.3	0.01	0.02	0.04	164	208
195		9.10	9.08	33.923	26.263	178.7	0.543	3.16	48.7	28.5	1.84	24.4	0.00	0.00	0.02	196	207
200	ISL	9.03	9.01	33.940	26.287	176.5	0.552	3.20	49.2	28.9	1.84	24.4	0.00			201	
228		8.62	8.60	33.994	26.394	166.7	0.600	3.42	52.1	30.7	1.81	24.6	0.00			229	206
250	ISL	8.28	8.25	34.035	26.478	159.0	0.636	2.89	43.7	35.8	2.02	27.2	0.00			251	
266		8.03	8.00	34.058	26.534	153.9	0.661	2.41	36.3	40.1	2.21	29.4	0.00			267	205
300	ISL	7.52	7.49	34.078	26.624	145.6	0.712	1.92	28.5	47.7	2.44	32.4	0.00			302	
317		7.28	7.25	34.082	26.661	142.2	0.736	1.77	26.2	51.1	2.52	33.5	0.00			319	204
378		6.60	6.57	34.103	26.771	132.3	0.820	1.35	19.6	60.4	2.74	35.7	0.00			380	203
400	ISL	6.44	6.40	34.119	26.805	129.3	0.849	1.18	17.1	63.6	2.81	36.7	0.00			402	
439		6.22	6.18	34.152	26.860	124.4	0.898	0.89	12.8	69.1	2.92	38.3	0.00			442	202
500	ISL	5.87	5.83	34.198	26.941	117.3	0.972	0.58	8.3	77.5	3.06	40.1	0.00			503	
513		5.79	5.75	34.208	26.959	115.7	0.987	0.52	7.4	79.3	3.09	40.5	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 26.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 57.6 N	117 18.0 W	24/01/02	1929 UTC	52 m	270 02 kn	300 02 08	0	1027.2 mb	15.0 C	11.0 C	17m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.53	14.53	33.612	25.004	294.4	0.000	5.93	102.4	3.2	0.38	0.3	0.03	0.86	0.28	0	
2	A	14.53	14.53	33.612	25.004	294.5	0.006	5.93	102.4	3.2	0.38	0.3	0.03	0.86	0.28	2	207
4		14.45	14.45	33.612	25.021	292.9	0.012	5.89	101.5	3.1	0.37	0.4	0.03	0.91	0.31	4	206
8	A	14.36	14.36	33.611	25.039	291.3	0.023	5.92	101.9	3.1	0.37	0.4	0.03	0.94	0.32	8	205
10	ISL	14.35	14.35	33.612	25.042	291.0	0.029	5.91	101.7	3.1	0.37	0.4	0.03	0.93	0.34	10	
20	A	14.25	14.25	33.603	25.057	290.0	0.058	5.86	100.6	3.3	0.39	0.7	0.05	0.86	0.44	20	204
27		13.98	13.98	33.575	25.092	286.8	0.079	5.60	95.6	4.7	0.53	2.3	0.18	0.72	0.51	27	203
30	ISL	13.89	13.89	33.568	25.105	285.7	0.087	5.55	94.5	4.9	0.55	2.6	0.19	0.73	0.50	30	
33	A	13.79	13.79	33.562	25.121	284.2	0.096	5.49	93.3	5.2	0.57	3.0	0.20	0.74	0.49	33	202
43	A	13.16	13.15	33.536	25.229	274.2	0.124	5.04	84.6	7.5	0.78	5.9	0.31	0.63	0.58	43	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.9 N	117 23.7 W	24/01/02	2158 UTC	633 m	330 10 kn	290 02 07	0	1025.1 mb	16.2 C	11.1 C	20m	0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.48	14.48	33.608	25.011	293.7	0.000	5.92	102.1	3.1	0.37	0.5	0.06	0.39	0.14	0	
2		14.48	14.48	33.608	25.011	293.7	0.006	5.92	102.1	3.1	0.37	0.5	0.06	0.39	0.14	2	220
10		14.28	14.28	33.604	25.051	290.2	0.029	5.92	101.7	3.1	0.37	0.5	0.07	0.53	0.13	10	219
20		14.18	14.18	33.601	25.070	288.7	0.058	5.87	100.6	3.3	0.39	0.7	0.10	0.44	0.28	20	218
30		13.24	13.24	33.525	25.204	276.2	0.086	5.19	87.2	6.4	0.73	5.4	0.41	0.55	0.27	30	217
39		12.29	12.28	33.505	25.375	260.1	0.111	4.74	78.1	9.3	0.95	8.8	0.08	0.35	0.28	39	216
49		11.74	11.73	33.522	25.492	249.2	0.136	4.50	73.3	11.3	1.09	11.1	0.04	0.16	0.19	49	215
50	ISL	11.68	11.67	33.526	25.506	247.9	0.139	4.48	72.8	11.4	1.10	11.3	0.04	0.15	0.18	50	
59		11.23	11.22	33.584	25.633	235.9	0.160	4.27	68.8	12.9	1.19	13.1	0.03	0.09	0.13	59	214
69		11.01	11.00	33.694	25.759	224.2	0.183	3.77	60.5	16.1	1.39	15.8	0.02	0.05	0.08	69	213
75	ISL	10.96	10.95	33.749	25.811	219.5	0.197	3.51	56.3	17.8	1.49	17.2	0.02	0.04	0.06	75	
84		10.89	10.88	33.810	25.871	214.0	0.216	3.22	51.6	19.9	1.61	18.8	0.01	0.03	0.05	84	212
99		10.54	10.53	33.838	25.954	206.3	0.248	3.16	50.2	21.5	1.67	20.0	0.01	0.01	0.05	100	211
100	ISL	10.51	10.50	33.842	25.963	205.5	0.250	3.14	49.9	21.7	1.68	20.2	0.01	0.01	0.05	101	
119		10.06	10.05	33.937	26.115	191.5	0.287	2.74	43.1	26.0	1.89	23.3	0.01	0.01	0.03	120	210
125	ISL	9.99	9.98	33.973	26.155	187.8	0.299	2.61	41.0	27.3	1.95	24.0	0.01	0.01	0.03	126	
139		9.86	9.84	34.050	26.237	180.3	0.325	2.34	36.7	29.9	2.06	25.4	0.00	0.01	0.04	140	209
150	ISL	9.68	9.66	34.087	26.296	174.9	0.344	2.25	35.1	31.5	2.11	26.2	0.00	0.01	0.03	151	
168		9.39	9.37	34.129	26.377	167.5	0.375	2.14	33.2	33.9	2.18	27.3	0.00	0.00	0.02	169	208
198		9.08	9.06	34.187	26.473	158.9	0.424	1.74	26.8	38.3	2.35	29.1	0.00	0.00	0.03	199	207
200	ISL	9.07	9.05	34.191	26.477	158.5	0.427	1.72	26.5	38.5	2.36	29.2	0.00			201	
228		8.94	8.92	34.227	26.527	154.3	0.471	1.46	22.4	41.2	2.46	30.1	0.00			229	206
250	ISL	8.73	8.70	34.233	26.565	151.1	0.504	1.37	21.0	43.2	2.51	30.8	0.00			251	
268		8.50	8.47	34.230	26.598	148.1	0.531	1.32	20.1	45.0	2.55	31.4	0.00			270	205
300	ISL	7.98	7.95	34.218	26.667	141.8	0.578	1.20	18.0	49.9	2.64	32.9	0.00			302	
318		7.71	7.68	34.215	26.705	138.4	0.603	1.12	16.7	52.8	2.70	33.7	0.00			320	204
377		7.40	7.36	34.274	26.796	130.6	0.682	0.71	10.5	59.6	2.89	35.5	0.00			379	203
400	ISL	7.17	7.13	34.278	26.832	127.4	0.712	0.62	9.2	62.8	2.94	36.4	0.00			403	
437		6.76	6.72	34.278	26.888	122.3	0.758	0.51	7.5	68.2	3.02	37.7	0.00			440	202
500	ISL	6.24	6.20	34.296	26.972	114.8	0.833	0.36	5.2	77.2	3.13	39.2	0.00			503	
514		6.12	6.07	34.301	26.991	113.0	0.849	0.33	4.8	79.2	3.16	39.5	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 51.1 N	117 31.8 W	25/01/02	0106 UTC	831 m	320 11 kn	300 02 07	0	1024.7 mb	15.2 C	11.8 C		0/8

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.80	14.80	33.623	24.954	299.1	0.000	5.94	103.1	2.7	0.34	0.3	0.03	0.68	0.24	0	
2		14.80	14.80	33.623	24.955	299.2	0.006	5.94	103.1	2.7	0.34	0.3	0.03	0.68	0.24	2	220
9		14.73	14.73	33.623	24.970	297.9	0.027	5.91	102.5	2.7	0.34	0.2	0.03	0.72	0.28	9	219
10	ISL	14.71	14.71	33.618	24.970	297.9	0.030	5.91	102.4	2.7	0.34	0.2	0.03	0.74	0.30	10	
19		14.49	14.49	33.611	25.012	294.2	0.057	5.93	102.3	2.8	0.34	0.4	0.05	0.85	0.42	19	218
20	ISL	14.40	14.40	33.599	25.022	293.3	0.059	5.89	101.4	3.0	0.36	0.7	0.07	0.84	0.41	20	
29		13.34	13.34	33.491	25.157	280.6	0.085	5.42	91.2	5.3	0.65	4.2	0.23	0.63	0.26	29	217
30	ISL	13.21	13.21	33.486	25.180	278.5	0.088	5.36	90.0	5.7	0.68	4.7	0.21	0.60	0.25	30	
38		12.28	12.28	33.483	25.359	261.6	0.110	4.88	80.3	8.8	0.92	8.5	0.04	0.35	0.21	38	216
48		11.58	11.57	33.546	25.540	244.6	0.135	4.38	71.1	12.1	1.14	12.0	0.02	0.16	0.18	48	215
50	ISL	11.50	11.49	33.553	25.560	242.7	0.140	4.34	70.3	12.4	1.16	12.3	0.02	0.14	0.18	50	
58		11.28	11.27	33.576	25.618	237.4	0.159	4.24	68.4	13.3	1.21	13.3	0.01	0.10	0.17	58	214
68		10.96	10.95	33.616	25.707	229.1	0.182	4.05	64.9	14.9	1.31	15.0	0.01	0.06	0.11	68	213
75	ISL	10.76	10.75	33.673	25.787	221.7	0.198	3.81	60.8	16.8	1.42	16.7	0.01	0.04	0.08	75	
83		10.55	10.54	33.747	25.881	212.9	0.216	3.50	55.6	19.3	1.56	18.7	0.01	0.03	0.06	83	212
98		10.19	10.18	33.862	26.033	198.7	0.246	3.05	48.1	23.5	1.76	21.7	0.00	0.02	0.05	99	211
100	ISL	10.18	10.17	33.883	26.052	197.0	0.250	2.97	46.8	24.1	1.79	22.1	0.00	0.02	0.05	101	
117		10.14	10.13	34.024	26.169	186.3	0.283	2.39	37.7	28.2	2.01	24.6	0.00	0.01	0.04	118	210
125	ISL	10.08	10.07	34.059	26.206	182.9	0.298	2.33	36.7	29.2	2.06	25.2	0.00	0.01	0.04	126	
138		9.93	9.91	34.087	26.254	178.6	0.321	2.23	35.0	30.3	2.09	25.7	0.00	0.00	0.04	139	209
150	ISL	9.62	9.60	34.083	26.303	174.2	0.342	2.30	35.9	31.5	2.10	26.3	0.00	0.00	0.04	151	
167		9.22	9.20	34.083	26.368	168.2	0.371	2.35	36.3	33.4	2.12	27.2	0.00	0.00	0.03	168	208
198		9.34	9.32	34.227	26.462	160.0	0.422	1.59	24.7	38.0	2.39	29.0	0.00	0.00	0.02	199	207
200	ISL	9.32	9.30	34.229	26.467	159.6	0.426	1.59	24.7	38.2	2.39	29.1	0.00			201	
227		8.87	8.85	34.216	26.529	154.1	0.468	1.58	24.3	40.9	2.43	29.9	0.00			228	206
250	ISL	8.54	8.51	34.191	26.561	151.3	0.503	1.63	24.8	42.5	2.45	30.5	0.00			251	
267		8.33	8.30	34.179	26.584	149.3	0.529	1.66	25.2	43.9	2.46	31.0	0.00			269	205
300	ISL	8.04	8.01	34.218	26.659	142.7	0.577	1.29	19.4	48.9	2.62	32.6	0.00			302	
317		7.91	7.88	34.246	26.700	139.0	0.601	1.05	15.8	51.7	2.72	33.4	0.00			319	204
377		7.41	7.37	34.279	26.799	130.3	0.682	0.70	10.4	59.3	2.89	35.5	0.00			379	203
400	ISL	7.20	7.16	34.281	26.830	127.6	0.711	0.63	9.3	62.2	2.94	36.3	0.00			403	
436		6.86	6.82	34.282	26.878	123.3	0.756	0.55	8.1	66.8	3.00	37.5	0.00			439	202
500	ISL	6.33	6.28	34.299	26.962	115.8	0.833	0.36	5.2	75.3	3.11	39.4	0.00			503	
515		6.21	6.16	34.304	26.982	114.0	0.850	0.32	4.6	77.3	3.14	39.8	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 40.6 N	117 52.0 W	25/01/02	0537 UTC	627 m	340 12 kn			1024.7 mb	18.2 C	13.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.58	14.58	33.559	24.952	299.3	0.000	5.95	102.8	2.7	0.34	0.1	0.00	0.51	0.12	0	
2		14.58	14.58	33.559	24.952	299.4	0.006	5.95	102.8	2.7	0.34	0.1	0.00	0.51	0.12	2	221
10	ISL	14.57	14.57	33.560	24.955	299.3	0.030	5.97	103.1	2.7	0.34	0.1	0.00	0.52	0.12	10	
15		14.55	14.55	33.559	24.959	299.1	0.045	5.98	103.3	2.7	0.34	0.1	0.00	0.53	0.12	15	220
20	ISL	14.52	14.52	33.556	24.963	298.9	0.060	5.97	103.0	2.7	0.34	0.1	0.00	0.57	0.14	20	
28		14.48	14.48	33.550	24.967	298.7	0.084	5.95	102.6	2.7	0.34	0.1	0.01	0.61	0.17	28	219
30	ISL	14.35	14.35	33.539	24.987	296.9	0.090	5.91	101.6	2.9	0.37	0.5	0.07	0.60	0.18	30	
44		13.26	13.25	33.469	25.157	281.0	0.130	5.62	94.4	4.3	0.62	3.7	0.38	0.50	0.24	44	218
50	ISL	12.90	12.89	33.467	25.227	274.5	0.147	5.54	92.4	4.8	0.68	4.8	0.31	0.32	0.18	50	
53		12.74	12.73	33.469	25.260	271.4	0.155	5.50	91.4	5.1	0.71	5.4	0.25	0.23	0.15	53	217
63		12.23	12.22	33.474	25.363	261.9	0.182	5.25	86.3	6.8	0.84	7.7	0.08	0.13	0.11	63	216
73		11.53	11.52	33.486	25.503	248.7	0.207	4.85	78.6	10.2	1.06	11.2	0.01	0.09	0.09	73	215
75	ISL	11.37	11.36	33.488	25.534	245.8	0.212	4.76	76.9	11.0	1.10	11.9	0.01	0.08	0.09	75	
83		10.79	10.78	33.508	25.653	234.6	0.231	4.44	70.8	13.9	1.26	14.5	0.01	0.05	0.07	83	214
93		10.48	10.47	33.573	25.758	224.8	0.254	4.13	65.4	16.5	1.40	16.8	0.01	0.03	0.07	93	213
100	ISL	10.30	10.29	33.599	25.810	220.0	0.270	4.00	63.1	17.8	1.46	17.8	0.01	0.02	0.06	100	
108		10.10	10.09	33.630	25.868	214.6	0.287	3.87	60.8	19.1	1.52	18.7	0.01	0.02	0.05	109	212
123		9.70	9.69	33.740	26.021	200.3	0.318	3.57	55.7	22.2	1.64	20.9	0.00	0.01	0.04	124	211
125	ISL	9.66	9.65	33.749	26.035	199.1	0.322	3.55	55.3	22.5	1.65	21.1	0.00	0.01	0.04	126	
143		9.45	9.43	33.825	26.129	190.5	0.357	3.33	51.7	25.1	1.74	22.6	0.00	0.01	0.04	144	210
150	ISL	9.42	9.40	33.871	26.170	186.7	0.371	3.16	49.0	26.4	1.80	23.4	0.00	0.01	0.04	151	
168		9.32	9.30	33.983	26.274	177.2	0.403	2.72	42.1	30.0	1.97	25.6	0.00	0.00	0.03	169	209
199		8.73	8.71	34.054	26.423	163.4	0.456	2.47	37.8	35.2	2.13	28.0	0.00	0.00	0.03	200	208
200	ISL	8.72	8.70	34.057	26.427	163.0	0.458	2.45	37.4	35.4	2.14	28.1	0.00			201	
229		8.59	8.57	34.125	26.501	156.6	0.504	1.97	30.0	39.5	2.31	29.6	0.00			230	207
250	ISL	8.37	8.34	34.149	26.554	151.8	0.537	1.78	27.0	42.3	2.40	30.6	0.00			251	
270		8.14	8.11	34.166	26.602	147.5	0.567	1.64	24.7	45.0	2.47	31.4	0.00			272	206
300	ISL	7.97	7.94	34.213	26.665	142.1	0.610	1.29	19.4	48.9	2.61	32.6	0.00			302	
319		7.87	7.84	34.239	26.700	139.0	0.637	1.07	16.1	51.5	2.70	33.3	0.00			321	205
376		7.23	7.19	34.252	26.803	129.8	0.713	0.77	11.4	60.4	2.88	35.8	0.00			378	204
400	ISL	6.96	6.92	34.251	26.840	126.5	0.744	0.68	10.0	63.8	2.94	36.8	0.00			403	
437		6.61	6.57	34.255	26.890	122.0	0.790	0.55	8.0	68.6	3.02	38.0	0.00			440	203
500	ISL	6.34	6.29	34.299	26.961	115.9	0.865	0.36	5.2	74.5	3.11	39.0	0.00			503	
505		6.32	6.27	34.302	26.966	115.5	0.871	0.34	4.9	75.0	3.12	39.1	0.00			508	202

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 31.2 N	118 12.4 W	25/01/02	1026 UTC	1684 m	010 09 kn			1023.0 mb	14.0 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.55	14.55	33.490	24.905	303.8	0.000	5.91	102.0	2.7	0.36	0.1	0.00	0.49	0.13	0	
3		14.55	14.55	33.490	24.906	303.9	0.009	5.91	102.0	2.7	0.36	0.1	0.00	0.49	0.13	3	220
10		14.53	14.53	33.490	24.910	303.6	0.030	5.91	102.0	2.7	0.36	0.1	0.00	0.47	0.13	10	219
20		14.53	14.53	33.494	24.913	303.6	0.061	5.91	102.0	2.7	0.36	0.1	0.00	0.47	0.16	20	218
30		14.53	14.53	33.489	24.910	304.2	0.091	5.91	102.0	2.6	0.36	0.1	0.00	0.50	0.13	30	217
40		14.53	14.52	33.492	24.912	304.3	0.122	5.89	101.6	2.6	0.37	0.1	0.00	0.50	0.16	40	216
50	ISL	14.12	14.11	33.554	25.047	291.8	0.151	5.67	97.0	4.3	0.49	1.3	0.26	0.84	0.39	50	
51		14.06	14.05	33.558	25.063	290.3	0.154	5.65	96.6	4.5	0.51	1.5	0.29	0.86	0.41	51	215
61		13.14	13.13	33.470	25.182	279.1	0.183	5.55	93.0	4.4	0.64	3.7	0.51	0.26	0.26	61	214
70		12.06	12.05	33.451	25.377	260.7	0.207	5.18	84.9	7.4	0.88	8.4	0.02	0.08	0.10	70	213
75	ISL	11.75	11.74	33.459	25.441	254.7	0.220	4.98	81.1	8.8	0.97	9.9	0.02	0.09	0.12	75	
86		11.28	11.27	33.502	25.561	243.5	0.247	4.54	73.2	11.7	1.14	12.3	0.02	0.12	0.15	86	212
100		10.45	10.44	33.601	25.785	222.3	0.280	3.98	63.0	16.4	1.40	16.7	0.00	0.07	0.07	100	211
120		9.84	9.83	33.720	25.982	204.0	0.323	3.54	55.4	21.1	1.63	20.5	0.00	0.02	0.03	121	210
125	ISL	9.74	9.73	33.751	26.023	200.2	0.333	3.46	54.0	22.1	1.67	21.2	0.00	0.02	0.03	126	
140		9.48	9.46	33.841	26.136	189.7	0.362	3.25	50.5	25.2	1.77	22.9	0.00	0.01	0.03	141	209
150	ISL	9.29	9.27	33.898	26.212	182.7	0.381	3.10	47.9	27.4	1.84	24.0	0.00	0.01	0.03	151	
170		8.92	8.90	33.994	26.346	170.2	0.416	2.80	43.0	31.6	1.98	26.1	0.00	0.00	0.03	171	208
200		8.49	8.47	34.066	26.470	158.9	0.465	2.40	36.5	37.3	2.18	28.5	0.00	0.00	0.02	201	207
230		8.36	8.34	34.113	26.527	154.0	0.512	2.05	31.1	40.5	2.31	30.0	0.00			231	206
250	ISL	8.34	8.31	34.174	26.578	149.6	0.542	1.65	25.0	43.3	2.45	30.9	0.00			251	
269		8.33	8.30	34.234	26.627	145.3	0.570	1.27	19.3	46.3	2.58	31.8	0.00			271	205
300	ISL	8.01	7.98	34.260	26.696	139.2	0.615	0.97	14.6	51.4	2.72	33.3	0.00			302	
319		7.77	7.74	34.261	26.732	135.9	0.641	0.88	13.2	54.4	2.79	34.2	0.00			321	204
377		7.20	7.16	34.271	26.822	128.0	0.717	0.72	10.6	61.9	2.93	36.2	0.00			379	203
400	ISL	6.98	6.94	34.270	26.852	125.4	0.746	0.64	9.4	64.7	2.97	37.0	0.00			403	
440		6.63	6.59	34.270	26.900	121.1	0.796	0.51	7.4	69.4	3.04	38.2	0.00			443	202
500	ISL	6.19	6.15	34.292	26.975	114.5	0.866	0.35	5.1	76.6	3.13	39.8	0.00			503	
513		6.10	6.05	34.297	26.990	113.1	0.881	0.32	4.6	78.1	3.15	40.1	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 21.2 N	118 33.3 W	25/01/02	1442 UTC	1305 m	360 04 kn			1020.1 mb	13.2 C	12.0 C	15m	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.64	13.64	33.491	25.096	285.6	0.000	5.97	101.1	3.0	0.43	1.0	0.12	0.58	0.18	0	
2		13.64	13.64	33.491	25.096	285.7	0.006	5.97	101.1	3.0	0.43	1.0	0.12	0.58	0.18	2	220
10		13.63	13.63	33.490	25.098	285.8	0.029	5.97	101.1	3.0	0.43	1.1	0.12	0.58	0.19	10	219
20		13.64	13.64	33.498	25.102	285.6	0.057	5.96	101.0	3.0	0.43	1.1	0.12	0.59	0.19	20	218
30	ISL	13.58	13.58	33.510	25.124	283.8	0.086	5.94	100.5	2.8	0.43	1.2	0.15	0.59	0.21	30	
31		13.57	13.57	33.511	25.127	283.6	0.088	5.94	100.5	2.8	0.43	1.2	0.15	0.59	0.21	31	217
40		13.55	13.54	33.514	25.133	283.2	0.114	5.93	100.3	2.8	0.44	1.3	0.16	0.54	0.22	40	216
50		12.11	12.10	33.540	25.436	254.5	0.141	5.06	83.0	7.7	0.92	8.9	0.10	0.17	0.13	50	215
60		11.57	11.56	33.554	25.548	244.1	0.166	4.68	75.9	10.9	1.11	11.9	0.02	0.09	0.10	60	214
69		10.99	10.98	33.572	25.667	232.9	0.187	4.31	69.1	14.2	1.30	14.9	0.01	0.06	0.07	69	213
75	ISL	10.66	10.65	33.614	25.758	224.4	0.201	4.01	63.8	16.8	1.43	17.0	0.01	0.04	0.08	75	
85		10.17	10.16	33.701	25.911	210.0	0.223	3.56	56.1	20.9	1.61	20.0	0.01	0.02	0.09	85	212
100		9.51	9.50	33.808	26.105	191.8	0.253	3.31	51.4	24.5	1.75	22.7	0.00	0.02	0.05	101	211
119		9.27	9.26	33.865	26.189	184.2	0.289	3.22	49.8	26.6	1.81	23.6	0.00	0.01	0.03	120	210
125	ISL	9.22	9.21	33.886	26.213	182.0	0.300	3.19	49.3	27.1	1.82	23.8	0.00	0.01	0.03	126	
139		9.10	9.08	33.935	26.271	176.8	0.325	3.13	48.2	28.5	1.86	24.5	0.00	0.00	0.03	140	209
150	ISL	8.93	8.91	33.967	26.323	172.0	0.344	3.06	47.0	30.2	1.90	25.3	0.00	0.00	0.03	151	
171		8.56	8.54	34.015	26.419	163.2	0.379	2.90	44.2	33.9	2.00	26.9	0.00	0.00	0.02	172	208
199		8.06	8.04	34.046	26.519	154.1	0.423	2.60	39.1	39.0	2.17	29.0	0.00	0.00	0.02	200	207
200	ISL	8.04	8.02	34.047	26.523	153.7	0.425	2.59	39.0	39.2	2.18	29.1	0.00			201	
229		7.64	7.62	34.075	26.604	146.4	0.469	2.18	32.5	45.1	2.34	31.1	0.00			230	206
250	ISL	7.55	7.53	34.114	26.647	142.6	0.499	1.81	26.9	48.4	2.48	32.4	0.00			251	
268		7.52	7.49	34.147	26.678	140.0	0.524	1.52	22.6	50.9	2.59	33.3	0.00			270	205
300	ISL	7.32	7.29	34.173	26.727	135.7	0.568	1.24	18.4	54.9	2.70	34.6	0.00			302	
319		7.18	7.15	34.182	26.754	133.4	0.594	1.14	16.8	57.1	2.75	35.2	0.00			321	204
377		6.81	6.77	34.208	26.826	127.3	0.670	0.84	12.3	63.5	2.90	36.9	0.00			379	203
400	ISL	6.67	6.63	34.228	26.861	124.2	0.698	0.70	10.2	66.5	2.96	37.6	0.00			403	
437		6.45	6.41	34.261	26.916	119.4	0.744	0.51	7.4	71.3	3.05	38.7	0.00			440	202
500	ISL	6.09	6.05	34.292	26.988	113.1	0.817	0.36	5.2	78.2	3.14	40.1	0.00			503	
511		6.03	5.98	34.298	27.000	112.1	0.829	0.33	4.7	79.4	3.16	40.3	0.00			515	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0201 | STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 10.9 N	118 53.8 W	25/01/02	1906 UTC	1468 m	340 10 kn	330 02 06	1	1021.2 mb	16.5 C	14.0 C	19m	3/8 CI

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.76	13.76	33.550	25.117	283.6	0.000	5.86	99.6	3.4	0.48	2.0	0.07	0.43	0.13	0	
2	B	13.76	13.76	33.550	25.117	283.7	0.006	5.86	99.6	3.4	0.48	2.0	0.07	0.43	0.13	2	221
10	B	13.67	13.67	33.548	25.134	282.3	0.028	5.86	99.4	3.3	0.48	1.9	0.08	0.47	0.16	10	220
16		13.61	13.61	33.547	25.146	281.3	0.045	5.86	99.2	3.3	0.48	1.9	0.09	0.53	0.10	16	219
20	ISL	13.61	13.61	33.547	25.146	281.4	0.056	5.86	99.2	3.3	0.47	1.9	0.09	0.50	0.12	20	
23	B	13.61	13.61	33.547	25.146	281.5	0.065	5.86	99.2	3.3	0.47	1.9	0.09	0.47	0.15	23	218
30		13.60	13.60	33.547	25.148	281.5	0.085	5.85	99.1	3.4	0.49	2.0	0.09	0.51	0.13	30	217
38	B	12.41	12.41	33.483	25.334	263.9	0.106	5.14	84.9	7.7	0.85	7.6	0.07	0.35 A	0.17 A	38	216
49	B	10.81	10.80	33.523	25.661	233.1	0.134	4.27	68.1	14.3	1.29	14.9	0.02	0.17	0.14	49	215
50	ISL	10.74	10.73	33.528	25.677	231.5	0.136	4.24	67.6	14.6	1.31	15.2	0.02	0.16	0.14	50	
59		10.40	10.39	33.566	25.766	223.3	0.157	4.09	64.7	16.5	1.40	16.8	0.02	0.10	0.11	59	214
71	B	10.05	10.04	33.601	25.853	215.2	0.183	3.96	62.2	18.5	1.49	18.4	0.01	0.04	0.08	71	213
75	ISL	9.97	9.96	33.614	25.877	213.0	0.191	3.91	61.3	19.0	1.51	18.8	0.01	0.03	0.08	75	
85		9.82	9.81	33.659	25.937	207.5	0.212	3.75	58.6	20.4	1.58	19.8	0.01	0.02	0.07	85	212
100		9.68	9.67	33.772	26.049	197.2	0.243	3.38	52.7	23.3	1.71	21.8	0.00	0.02	0.04	101	211
120		9.55	9.54	33.910	26.178	185.3	0.281	2.96	46.0	26.9	1.86	23.9	0.00	0.01	0.04	121	210
125	ISL	9.49	9.48	33.938	26.210	182.4	0.290	2.89	44.9	27.8	1.89	24.4	0.00	0.01	0.04	126	
140		9.28	9.26	34.009	26.300	174.1	0.317	2.71	41.9	30.4	1.99	25.7	0.00	0.00	0.03	141	209
150	ISL	9.15	9.13	34.046	26.350	169.5	0.334	2.56	39.5	32.3	2.06	26.6	0.00	0.00	0.03	151	
169		8.93	8.91	34.101	26.428	162.4	0.366	2.26	34.7	35.7	2.18	28.1	0.00	0.00	0.03	170	208
199		8.73	8.71	34.168	26.513	155.0	0.413	1.83	28.0	39.8	2.35	29.6	0.00	0.00	0.03	200	207
200	ISL	8.71	8.69	34.168	26.516	154.7	0.415	1.82	27.8	40.0	2.35	29.7	0.00			201	
230		8.20	8.18	34.168	26.594	147.6	0.460	1.67	25.2	45.1	2.47	31.3	0.00			231	206
250	ISL	7.97	7.94	34.194	26.649	142.6	0.489	1.40	21.1	48.9	2.59	32.5	0.00			251	
270		7.76	7.73	34.221	26.702	137.9	0.517	1.13	16.9	52.5	2.70	33.6	0.00			272	205
300	ISL	7.39	7.36	34.216	26.751	133.5	0.558	1.00	14.8	56.8	2.78	35.0	0.00			302	
319		7.16	7.13	34.209	26.778	131.1	0.583	0.96	14.2	59.4	2.82	35.8	0.00			321	204
377		6.69	6.66	34.244	26.870	123.0	0.657	0.61	8.9	68.0	2.99	37.8	0.00			379	203
400	ISL	6.54	6.50	34.262	26.905	120.0	0.685	0.51	7.4	71.1	3.05	38.4	0.00			403	
436		6.35	6.31	34.286	26.949	116.2	0.727	0.41	5.9	74.9	3.11	39.1	0.00			439	202
500	ISL	6.28	6.24	34.296	26.966	115.4	0.801	0.38	5.5	76.7	3.13	39.4	0.00			503	
514		6.26	6.21	34.298	26.971	115.1	0.818	0.37	5.3	77.1	3.13	39.5	0.00			518	201

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

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 0.8 N	119 13.7 W	25/01/02	2331 UTC	1592 m	330 16 kn	330 02 06	1	1017.9 mb	14.2 C	12.7 C	15m	3/8	CI

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.83	12.83	33.408	25.194	276.3	0.000	5.89	98.1	5.0	0.61	4.0	0.11	0.51	0.14	0	
2		12.83	12.83	33.408	25.194	276.4	0.006	5.89	98.1	5.0	0.61	4.0	0.11	0.51	0.14	2	220
10		12.81	12.81	33.416	25.204	275.6	0.028	5.89	98.0	4.9	0.61	4.0	0.11	0.53	0.13	10	219
20		12.71	12.71	33.423	25.229	273.5	0.055	5.87	97.5	4.8	0.62	4.1	0.11	0.52	0.17	20	218
29		12.73	12.73	33.430	25.231	273.5	0.080	5.85	97.2	4.8	0.61	4.0	0.11	0.56	0.21	29	217
30	ISL	12.73	12.73	33.430	25.231	273.6	0.082	5.85	97.2	4.8	0.61	4.0	0.11	0.55	0.21	30	
39		12.68	12.67	33.428	25.240	273.0	0.107	5.80	96.3	4.8	0.62	4.2	0.12	0.45	0.17	39	216
50		12.56	12.55	33.431	25.266	270.8	0.137	5.70	94.4	5.1	0.66	4.9	0.13	0.32	0.17	50	215
59		11.57	11.56	33.334	25.377	260.3	0.161	5.20	84.2	8.1	0.93	9.1	0.03	0.10	0.10	59	214
70		11.00	10.99	33.391	25.525	246.5	0.189	4.85	77.6	11.0	1.12	12.3	0.02	0.09	0.09	70	213
75	ISL	10.72	10.71	33.455	25.624	237.1	0.201	4.55	72.4	13.4	1.25	14.4	0.02	0.07	0.09	75	
85		10.22	10.21	33.595	25.820	218.7	0.224	3.95	62.2	18.1	1.49	18.3	0.01	0.04	0.09	85	212
99		9.78	9.77	33.714	25.987	203.0	0.253	3.53	55.1	21.7	1.66	21.1	0.00	0.02	0.07	99	211
100	ISL	9.75	9.74	33.721	25.997	202.1	0.255	3.51	54.8	21.9	1.67	21.3	0.00	0.02	0.07	101	
120		9.32	9.31	33.846	26.166	186.4	0.294	3.16	48.9	26.3	1.83	24.2	0.00	0.01	0.03	121	210
125	ISL	9.23	9.22	33.875	26.203	183.0	0.303	3.09	47.7	27.2	1.86	24.7	0.00	0.01	0.03	126	
140		8.98	8.96	33.949	26.301	173.9	0.330	2.92	44.9	30.0	1.94	25.9	0.00	0.00	0.02	141	209
150	ISL	8.78	8.76	33.983	26.359	168.5	0.347	2.83	43.3	32.0	1.99	26.7	0.00	0.00	0.02	151	
170		8.44	8.42	34.033	26.451	160.1	0.380	2.64	40.1	35.8	2.10	28.1	0.00	0.00	0.02	171	208
200		8.26	8.24	34.092	26.525	153.6	0.427	2.27	34.3	39.9	2.26	29.6	0.00	0.00	0.03	201	207
230		7.91	7.89	34.116	26.597	147.2	0.472	1.98	29.7	44.5	2.39	31.2	0.00			231	206
250	ISL	7.83	7.81	34.151	26.636	143.8	0.501	1.66	24.9	47.3	2.51	32.2	0.00			251	
269		7.78	7.75	34.183	26.669	141.0	0.528	1.36	20.4	49.8	2.62	33.1	0.00			271	205
300	ISL	7.52	7.49	34.202	26.722	136.4	0.571	1.14	17.0	53.7	2.72	34.3	0.00			302	
319		7.33	7.30	34.207	26.753	133.7	0.597	1.06	15.7	56.1	2.76	34.9	0.00			321	204
376		6.84	6.80	34.231	26.840	126.0	0.671	0.73	10.7	64.3	2.93	37.1	0.00			378	203
400	ISL	6.65	6.61	34.249	26.880	122.4	0.701	0.62	9.0	67.9	2.99	37.9	0.00			403	
439		6.38	6.34	34.278	26.939	117.2	0.747	0.47	6.8	73.2	3.07	39.1	0.00			442	202
500	ISL	6.10	6.06	34.298	26.991	112.8	0.818	0.34	4.9	78.4	3.14	40.0	0.00			503	
506		6.07	6.03	34.300	26.996	112.4	0.824	0.33	4.7	78.9	3.15	40.1	0.00			509	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 50.8 N	119 34.1 W	26/01/02	0345 UTC	1916 m	330 12 kn			1017.4 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.11	14.11	33.437	24.957	298.9	0.000	5.92	101.2	2.6	0.42	0.7	0.10	0.43	0.14	0	
2		14.11	14.11	33.437	24.957	298.9	0.006	5.92	101.2	2.6	0.42	0.7	0.10	0.43	0.14	2	220
10	ISL	14.10	14.10	33.436	24.959	299.0	0.030	5.91	101.0	2.6	0.42	0.7	0.11	0.42	0.14	10	
14		14.10	14.10	33.436	24.959	299.1	0.042	5.91	101.0	2.6	0.42	0.7	0.11	0.41	0.14	14	219
20	ISL	14.10	14.10	33.436	24.959	299.3	0.060	5.90	100.9	2.6	0.42	0.7	0.11	0.41	0.14	20	
29		14.10	14.10	33.436	24.959	299.5	0.087	5.90	100.9	2.6	0.42	0.7	0.11	0.43	0.15	29	218
30	ISL	14.10	14.10	33.436	24.959	299.5	0.090	5.90	100.9	2.6	0.42	0.7	0.11	0.43	0.15	30	
44		14.10	14.09	33.436	24.960	299.9	0.132	5.91	101.0	2.5	0.42	0.7	0.11	0.45	0.14	44	217
50	ISL	14.10	14.09	33.436	24.960	300.0	0.150	5.89	100.7	2.5	0.42	0.7	0.11	0.44	0.14	50	
55		14.10	14.09	33.436	24.960	300.2	0.165	5.88	100.5	2.5	0.42	0.7	0.11	0.43	0.14	55	216
65		13.75	13.74	33.418	25.019	294.8	0.194	5.75	97.6	3.2	0.52	2.1	0.23	0.21	0.11	65	215
74		12.76	12.75	33.377	25.185	279.1	0.220	5.57	92.6	4.6	0.68	4.9	0.11	0.09	0.08	74	214
75	ISL	12.69	12.68	33.376	25.198	277.9	0.223	5.55	92.1	4.8	0.69	5.2	0.10	0.09	0.08	75	
85		12.05	12.04	33.375	25.320	266.4	0.250	5.32	87.1	6.8	0.84	7.6	0.01	0.06	0.07	85	213
94		11.39	11.38	33.383	25.449	254.3	0.274	5.06	81.7	9.0	0.99	9.9	0.01	0.06	0.07	94	212
100	ISL	10.81	10.80	33.431	25.590	240.9	0.289	4.74	75.6	11.9	1.15	12.7	0.01	0.05	0.06	100	
109		10.06	10.05	33.533	25.799	221.1	0.309	4.22	66.2	16.5	1.40	16.9	0.01	0.03	0.04	110	211
124		9.77	9.76	33.683	25.965	205.7	0.341	3.68	57.4	21.0	1.60	20.1	0.01	0.02	0.05	125	210
125	ISL	9.75	9.74	33.690	25.974	204.9	0.343	3.67	57.3	21.2	1.61	20.2	0.01	0.02	0.05	126	
144		9.43	9.41	33.795	26.108	192.4	0.381	3.57	55.3	23.6	1.66	21.5	0.01	0.01	0.03	145	209
150	ISL	9.36	9.34	33.824	26.143	189.3	0.393	3.53	54.7	24.3	1.68	21.9	0.01	0.01	0.03	151	
169		9.16	9.14	33.906	26.239	180.4	0.428	3.37	52.0	26.7	1.76	23.2	0.01	0.01	0.02	170	208
200		8.79	8.77	34.003	26.374	168.1	0.482	2.98	45.6	31.6	1.94	25.7	0.01	0.00	0.02	201	207
229		8.38	8.36	34.065	26.486	157.9	0.529	2.51	38.1	37.6	2.15	28.3	0.00			230	206
250	ISL	8.08	8.05	34.081	26.544	152.6	0.562	2.33	35.1	41.0	2.25	29.5	0.00			251	
268		7.86	7.83	34.092	26.586	148.9	0.589	2.18	32.7	43.7	2.32	30.4	0.00			270	205
300	ISL	7.66	7.63	34.150	26.661	142.3	0.635	1.64	24.5	49.1	2.53	32.3	0.00			302	
319		7.56	7.53	34.183	26.701	138.7	0.662	1.32	19.7	52.3	2.65	33.4	0.00			321	204
376		6.92	6.88	34.195	26.801	129.7	0.739	0.98	14.4	61.1	2.83	36.0	0.00			378	203
400	ISL	6.68	6.64	34.200	26.837	126.5	0.769	0.87	12.7	64.7	2.90	37.0	0.00			403	
438		6.36	6.32	34.215	26.891	121.6	0.816	0.71	10.3	70.1	2.99	38.3	0.00			441	202
500	ISL	5.99	5.95	34.266	26.980	113.8	0.889	0.45	6.5	78.5	3.12	39.9	0.00			503	
504		5.97	5.93	34.269	26.984	113.3	0.894	0.43	6.2	79.0	3.13	40.0	0.00			507	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 30.8 N	120 14.8 W	26/01/02	0957 UTC	3929 m	330 09 kn			1017.2 mb	12.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.95	13.95	33.440	24.993	295.5	0.000	5.93	101.1	2.8	0.41	0.7	0.06	0.51	0.15	0	
2		13.95	13.95	33.440	24.993	295.5	0.006	5.93	101.1	2.8	0.41	0.7	0.06	0.51	0.15	2	220
10		13.95	13.95	33.441	24.994	295.7	0.030	5.93	101.1	2.8	0.41	0.7	0.06	0.50	0.16	10	219
20		13.92	13.92	33.436	24.996	295.7	0.059	5.94	101.2	2.8	0.42	0.8	0.07	0.51	0.15	20	218
30		13.79	13.79	33.425	25.015	294.2	0.089	5.97	101.4	2.9	0.42	1.0	0.08	0.65	0.16	30	217
40		13.69	13.68	33.417	25.030	293.1	0.118	5.98	101.4	3.0	0.44	1.1	0.10	0.61	0.15	40	216
50		13.67	13.66	33.414	25.032	293.2	0.147	5.99	101.5	3.0	0.44	1.2	0.10	0.60	0.16	50	215
60		13.65	13.64	33.412	25.035	293.2	0.177	6.04	102.3	3.1	0.45	1.2	0.11	0.63	0.14	60	214
70		13.45	13.44	33.399	25.065	290.5	0.206	5.91	99.7	3.4	0.48	1.7	0.16	0.43	0.15	70	213
75	ISL	12.85	12.84	33.369	25.162	281.4	0.220	5.66	94.2	4.9	0.61	3.9	0.12	0.31	0.14	75	
85		11.51	11.50	33.330	25.386	260.1	0.247	5.14	83.2	8.3	0.92	9.0	0.03	0.10	0.11	85	212
100		10.72	10.71	33.376	25.563	243.5	0.285	4.87	77.5	11.1	1.10	12.1	0.02	0.06	0.08	100	211
120		10.08	10.07	33.450	25.731	227.8	0.332	4.56	71.6	14.5	1.29	15.3	0.01	0.03	0.04	121	210
125	ISL	9.88	9.87	33.499	25.803	221.1	0.343	4.38	68.5	16.1	1.37	16.6	0.01	0.02	0.03	126	
140		9.34	9.32	33.668	26.024	200.3	0.375	3.81	58.9	21.5	1.61	20.7	0.00	0.01	0.02	141	209
150	ISL	9.14	9.12	33.767	26.133	190.0	0.394	3.49	53.7	24.7	1.74	22.8	0.00	0.00	0.02	151	
169		8.90	8.88	33.913	26.286	175.9	0.429	3.04	46.6	29.7	1.91	25.8	0.00	0.00	0.02	170	208
200		8.60	8.58	33.984	26.389	166.7	0.482	2.80	42.7	33.0	2.02	27.3	0.00	0.00	0.01	201	207
229		8.30	8.28	34.036	26.476	158.8	0.529	2.44	36.9	37.7	2.17	29.2	0.00			230	206
250	ISL	8.03	8.00	34.053	26.530	154.0	0.562	2.29	34.4	40.7	2.26	30.3	0.00			251	
270		7.77	7.74	34.062	26.575	149.9	0.593	2.17	32.5	43.5	2.33	31.2	0.00			272	205
300	ISL	7.43	7.40	34.077	26.636	144.4	0.637	1.92	28.5	47.8	2.45	32.6	0.00			302	
319		7.23	7.20	34.086	26.671	141.2	0.664	1.74	25.7	50.8	2.53	33.6	0.00			321	204
377		6.59	6.56	34.124	26.789	130.6	0.743	1.17	17.0	61.9	2.79	36.9	0.00			379	203
400	ISL	6.41	6.37	34.144	26.828	127.0	0.772	0.97	14.1	65.8	2.87	37.9	0.00			403	
437		6.16	6.12	34.176	26.886	121.8	0.818	0.71	10.2	71.6	2.99	39.3	0.00			440	202
500	ISL	5.73	5.69	34.225	26.979	113.5	0.893	0.45	6.4	80.9	3.12	41.0	0.00			503	
516		5.62	5.58	34.238	27.003	111.3	0.911	0.39	5.6	83.2	3.15	41.4	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 11.0 N	120 53.9 W	26/01/02	1822 UTC	3881 m	340 08 kn	360 02 06	1	1018.9 mb	15.1 C	12.0 C	30m	6/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.60	14.60	33.225	24.690	324.2	0.000	5.87	101.3	2.1	0.38	0.2	0.02	0.10	0.11	0	
2	B	14.60	14.60	33.225	24.690	324.3	0.006	5.87	101.3	2.1	0.38	0.2	0.02	0.10	0.11	2	222
9		14.54	14.54	33.227	24.705	323.1	0.029	5.87	101.1	2.1	0.38	0.2	0.02	0.17	0.06	9	221
10	ISL	14.54	14.54	33.226	24.704	323.2	0.032	5.87	101.1	2.1	0.38	0.2	0.02	0.17	0.06	10	
16	B	14.52	14.52	33.224	24.707	323.1	0.052	5.86	100.9	2.1	0.39	0.2	0.02	0.14	0.08	16	220
20	ISL	14.51	14.51	33.224	24.709	323.0	0.065	5.86	100.9	2.0	0.39	0.2	0.02	0.13	0.07	20	
26		14.51	14.51	33.224	24.709	323.2	0.084	5.85	100.7	1.9	0.39	0.2	0.02	0.11	0.05	26	219
30	ISL	14.51	14.51	33.224	24.710	323.3	0.097	5.85	100.7	1.9	0.39	0.2	0.02	0.11	0.05	30	
38	B	14.52	14.51	33.224	24.708	323.7	0.123	5.85	100.7	2.0	0.39	0.2	0.02	0.12	0.04	38	218
48		14.51	14.50	33.223	24.709	323.8	0.155	5.86	100.9	2.0	0.38	0.2	0.02	0.13	0.03	48	217
50	ISL	14.51	14.50	33.224	24.710	323.8	0.162	5.86	100.9	2.0	0.38	0.2	0.02	0.13	0.03	50	
60	B	14.50	14.49	33.227	24.715	323.7	0.194	5.85	100.7	2.1	0.39	0.2	0.02	0.15	0.03	60	216
68		14.48	14.47	33.222	24.716	323.8	0.220	5.86	100.8	2.1	0.39	0.3	0.02	0.16	0.05	68	215
75	ISL	14.38	14.37	33.214	24.731	322.6	0.243	5.85	100.4	2.3	0.41	0.5	0.03	0.14	0.07	75	
77	B	14.35	14.34	33.212	24.736	322.2	0.249	5.84	100.2	2.3	0.42	0.6	0.04	0.13	0.08	77	214
89		12.37	12.36	33.028	24.991	297.9	0.286	5.79	95.2	4.6	0.66	3.7	0.08	0.13	0.13	89	213
100	ISL	11.40	11.39	33.008	25.156	282.3	0.318	5.65	91.0	6.4	0.82	6.4	0.03	0.05	0.12	100	
101		11.35	11.34	33.012	25.168	281.2	0.321	5.63	90.6	6.5	0.83	6.6	0.02	0.04	0.12	101	212
113	B	11.01	11.00	33.115	25.309	268.0	0.354	5.43	86.8	8.3	0.95	9.1	0.01	0.03	0.05	113	211
125	ISL	10.11	10.10	33.264	25.581	242.2	0.385	5.05	79.2	12.0	1.19	13.1	0.00	0.01	0.03	126	
126		10.03	10.02	33.278	25.605	239.9	0.387	5.01	78.5	12.4	1.21	13.5	0.00	0.01 A	0.03 A	127	210
140		9.47	9.45	33.465	25.844	217.4	0.419	4.43	68.6	17.8	1.45	17.9	0.00	0.00	0.02	141	209
150	ISL	9.21	9.19	33.584	25.979	204.7	0.440	4.06	62.6	21.3	1.59	20.4	0.00	0.00	0.02	151	
169		8.89	8.87	33.776	26.180	185.9	0.477	3.45	52.8	27.0	1.82	24.1	0.00	0.00	0.01	170	208
198		8.59	8.57	33.976	26.384	167.1	0.528	2.73	41.6	33.7	2.07	27.8	0.00	0.00	0.01	199	207
200	ISL	8.56	8.54	33.982	26.393	166.2	0.532	2.73	41.6	34.0	2.07	27.9	0.00			201	
229		8.06	8.04	34.025	26.503	156.1	0.578	2.73	41.1	38.1	2.10	28.9	0.00			230	206
250	ISL	7.87	7.85	34.054	26.554	151.6	0.611	2.52	37.8	41.0	2.19	29.7	0.00			251	
268		7.75	7.72	34.073	26.587	148.7	0.638	2.29	34.2	43.5	2.29	30.5	0.00			269	205
300	ISL	7.42	7.39	34.081	26.641	144.0	0.685	1.96	29.1	48.3	2.44	32.3	0.00			302	
321		7.20	7.17	34.084	26.674	141.0	0.715	1.75	25.8	51.6	2.53	33.5	0.00			323	204
381		6.74	6.70	34.145	26.786	131.1	0.796	1.16	16.9	60.7	2.78	36.5	0.00			383	203
400	ISL	6.59	6.55	34.162	26.819	128.1	0.821	0.98	14.3	63.8	2.86	37.3	0.00			402	
436		6.34	6.30	34.195	26.878	122.8	0.866	0.69	10.0	69.6	2.99	38.7	0.00			439	202
500	ISL	6.01	5.97	34.256	26.969	114.8	0.942	0.40	5.7	78.1	3.12	40.2	0.00			503	
510		5.96	5.92	34.266	26.983	113.5	0.953	0.35	5.0	79.4	3.14	40.4	0.00			513	201

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

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 50.8 N	121 35.5 W	26/01/02	2345 UTC	4105 m	330 08 kn	360 02 05	2	1016.8 mb	14.0 C	11.5 C	35m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.65	15.65	33.518	24.687	324.5	0.000	5.76	101.7	2.3	0.33	0.1	0.00	0.17	0.05	0	
2		15.65	15.65	33.518	24.687	324.6	0.006	5.76	101.7	2.3	0.33	0.1	0.00	0.17	0.05	2	220
10		15.63	15.63	33.516	24.691	324.6	0.032	5.75	101.4	2.3	0.33	0.1	0.00	0.17	0.05	10	219
20		15.57	15.57	33.512	24.701	323.8	0.065	5.78	101.8	2.2	0.33	0.1	0.00	0.18	0.05	20	218
30		15.55	15.55	33.508	24.703	324.0	0.097	5.77	101.6	2.2	0.33	0.1	0.00	0.21	0.06	30	217
40		14.95	14.94	33.375	24.732	321.5	0.130	5.82	101.2	2.3	0.36	0.3	0.02	0.29	0.09	40	216
50		14.01	14.00	33.152	24.759	319.1	0.162	5.88	100.2	2.4	0.42	0.6	0.05	0.30	0.10	50	215
60		13.93	13.92	33.147	24.772	318.1	0.193	5.93	100.8	2.5	0.43	0.7	0.06	0.29	0.11	60	214
70		13.82	13.81	33.144	24.793	316.4	0.225	5.92	100.4	2.7	0.45	0.9	0.08	0.23	0.09	70	213
75	ISL	13.76	13.75	33.157	24.815	314.4	0.241	5.93	100.5	2.8	0.45	0.9	0.08	0.26	0.10	75	
85		13.60	13.59	33.184	24.869	309.6	0.272	5.95	100.5	3.1	0.46	1.0	0.08	0.33	0.13	85	212
100		13.20	13.19	33.185	24.951	302.2	0.318	5.97	100.0	3.7	0.50	1.7	0.11	0.33	0.17	100	211
120		12.47	12.45	33.224	25.124	286.0	0.377	5.82	96.0	5.1	0.64	4.0	0.16	0.13	0.11	121	210
125	ISL	12.21	12.19	33.237	25.184	280.4	0.391	5.71	93.7	5.6	0.68	4.8	0.13	0.11	0.10	126	
140		11.39	11.37	33.290	25.378	262.2	0.432	5.32	85.8	7.6	0.83	7.6	0.01	0.08	0.07	141	209
150	ISL	10.83	10.81	33.339	25.516	249.1	0.457	5.12	81.6	9.4	0.95	9.7	0.01	0.06	0.06	151	
169		9.93	9.91	33.464	25.768	225.3	0.502	4.76	74.5	13.3	1.18	13.8	0.00	0.03	0.04	170	208
199		9.37	9.35	33.728	26.067	197.4	0.566	4.04	62.5	20.6	1.51	19.4	0.00	0.01	0.03	200	207
200	ISL	9.35	9.33	33.737	26.077	196.5	0.568	4.01	62.0	20.9	1.52	19.6	0.00			201	
230		8.78	8.76	33.963	26.345	171.5	0.623	3.21	49.1	30.4	1.87	25.4	0.00			231	206
250	ISL	8.46	8.43	34.021	26.440	162.7	0.656	2.85	43.3	34.9	2.03	27.6	0.00			251	
268		8.20	8.17	34.038	26.493	157.9	0.685	2.64	39.9	38.1	2.13	28.8	0.00			269	205
300	ISL	7.72	7.69	34.043	26.568	151.0	0.735	2.54	37.9	42.4	2.22	30.0	0.00			302	
318		7.47	7.44	34.041	26.602	147.9	0.762	2.49	37.0	44.7	2.26	30.6	0.00			320	204
378		6.95	6.91	34.114	26.733	136.2	0.847	1.51	22.2	55.9	2.64	34.8	0.00			380	203
400	ISL	6.67	6.63	34.118	26.774	132.4	0.876	1.33	19.4	60.4	2.73	36.1	0.00			402	
438		6.19	6.15	34.122	26.840	126.3	0.925	1.12	16.1	67.9	2.86	38.1	0.00			441	202
500	ISL	5.77	5.73	34.175	26.935	117.7	1.001	0.73	10.4	77.6	3.03	40.1	0.00			503	
514		5.68	5.64	34.187	26.956	115.8	1.017	0.64	9.1	79.8	3.07	40.6	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 30.6 N	122 15.4 W	27/01/02	0542 UTC	4157 m	00 kn			1017.2 mb	15.8 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.36	16.36	33.617	24.603	332.6	0.000	5.64	101.0	2.6	0.31	0.1	0.00	0.13	0.04	0	
1		16.36	16.36	33.617	24.603	332.6	0.003	5.64	101.0	2.6	0.31	0.1	0.00	0.13	0.04	1	220
10	ISL	16.35	16.35	33.617	24.605	332.7	0.033	5.63	100.8	2.5	0.31	0.1	0.00	0.13	0.04	10	
15		16.35	16.35	33.617	24.606	332.8	0.050	5.63	100.8	2.5	0.31	0.1	0.00	0.13	0.04	15	219
20	ISL	16.35	16.35	33.617	24.606	333.0	0.067	5.63	100.8	2.5	0.31	0.1	0.00	0.13	0.04	20	
29		16.35	16.35	33.617	24.606	333.2	0.097	5.63	100.8	2.5	0.31	0.1	0.00	0.12	0.04	29	218
30	ISL	16.35	16.35	33.617	24.606	333.3	0.100	5.63	100.8	2.5	0.31	0.1	0.00	0.12	0.04	30	
44		16.35	16.34	33.618	24.607	333.6	0.147	5.65	101.2	2.5	0.31	0.1	0.00	0.13	0.05	44	217
50	ISL	16.35	16.34	33.618	24.608	333.8	0.167	5.65	101.2	2.5	0.31	0.1	0.00	0.13	0.05	50	
60		16.35	16.34	33.619	24.609	334.0	0.200	5.64	101.0	2.4	0.31	0.1	0.00	0.13	0.05	60	216
74		16.22	16.21	33.587	24.614	333.9	0.247	5.65	100.9	2.3	0.32	0.1	0.00	0.17	0.05	74	215
75	ISL	16.21	16.20	33.585	24.615	333.9	0.250	5.65	100.9	2.3	0.32	0.1	0.00	0.17	0.05	75	
83		16.10	16.09	33.560	24.621	333.5	0.277	5.67	101.0	2.3	0.33	0.1	0.00	0.19	0.07	83	214
94		15.80	15.79	33.497	24.641	332.0	0.313	5.68	100.5	2.2	0.34	0.1	0.00	0.21	0.09	94	213
100	ISL	15.19	15.17	33.408	24.708	325.7	0.333	5.77	100.8	2.6	0.36	0.1	0.02	0.19	0.11	100	
104		14.69	14.67	33.347	24.769	319.9	0.346	5.83	100.8	3.0	0.38	0.1	0.04	0.18	0.13	104	212
113		13.58	13.56	33.261	24.933	304.2	0.374	5.81	98.1	3.6	0.43	0.5	0.15	0.21	0.17	113	211
124		12.83	12.81	33.289	25.105	288.1	0.407	5.64	93.8	4.4	0.53	2.4	0.06	0.17	0.14	125	210
125	ISL	12.76	12.74	33.287	25.117	286.9	0.410	5.63	93.5	4.5	0.54	2.6	0.05	0.17	0.14	126	
139		11.76	11.74	33.256	25.283	271.2	0.449	5.47	88.9	6.2	0.71	5.4	0.01	0.12	0.10	140	209
150	ISL	10.85	10.83	33.302	25.484	252.2	0.477	5.36	85.5	8.1	0.84	7.9	0.01	0.08	0.07	151	
164		9.87	9.85	33.410	25.736	228.3	0.511	5.20	81.2	10.7	0.99	10.9	0.00	0.03	0.04	165	208
193		9.36	9.34	33.653	26.010	202.7	0.573	4.76	73.6	15.9	1.23	15.2	0.00	0.01	0.02	194	207
200	ISL	9.27	9.25	33.717	26.074	196.7	0.587	4.58	70.7	17.8	1.31	16.6	0.00			201	
229		8.90	8.88	33.935	26.304	175.4	0.641	3.87	59.3	25.9	1.62	21.9	0.00			230	206
250	ISL	8.60	8.57	33.989	26.393	167.2	0.677	3.70	56.4	29.5	1.72	23.7	0.00			251	
267		8.36	8.33	34.007	26.444	162.5	0.705	3.55	53.8	32.3	1.80	24.9	0.00			268	205
300	ISL	7.93	7.90	34.070	26.558	152.1	0.757	2.60	39.0	40.3	2.17	29.0	0.00			302	
317		7.69	7.66	34.092	26.611	147.3	0.783	2.10	31.3	44.7	2.37	31.1	0.00			319	204
378		6.44	6.41	34.058	26.756	133.5	0.868	1.70	24.6	59.2	2.63	35.5	0.00			380	203
400	ISL	6.28	6.24	34.077	26.792	130.3	0.897	1.46	21.1	62.9	2.73	36.7	0.00			402	
437		6.15	6.11	34.120	26.843	125.9	0.945	1.05	15.1	68.2	2.88	38.3	0.00			440	202
500	ISL	5.81	5.77	34.181	26.935	117.7	1.022	0.65	9.3	77.2	3.04	40.2	0.00			503	
515		5.73	5.69	34.196	26.957	115.8	1.039	0.56	8.0	79.4	3.08	40.6	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 11.0 N	122 55.3 W	27/01/02	1134 UTC	3973 m	270 04 kn			1016.2 mb	15.0 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.85	15.85	33.433	24.577	335.0	0.000	5.69	100.8	1.7	0.35	0.1	0.00	0.06	0.01	0	
1		15.85	15.85	33.433	24.577	335.1	0.003	5.69	100.8	1.7	0.35	0.1	0.00	0.06	0.01	1	220
10	ISL	15.85	15.85	33.434	24.578	335.2	0.034	5.70	101.0	1.7	0.35	0.1	0.00	0.07	0.02	10	
16		15.85	15.85	33.434	24.578	335.4	0.054	5.71	101.1	1.7	0.35	0.1	0.00	0.08	0.02	16	219
20	ISL	15.85	15.85	33.434	24.579	335.5	0.067	5.71	101.1	1.7	0.35	0.1	0.00	0.08	0.02	20	
30	ISL	15.86	15.86	33.434	24.577	336.0	0.101	5.70	101.0	1.7	0.34	0.1	0.00	0.08	0.00	30	
31		15.86	15.86	33.434	24.577	336.1	0.104	5.70	101.0	1.7	0.34	0.1	0.00	0.08	0.00	31	218
45		15.83	15.82	33.428	24.579	336.3	0.151	5.70	100.9	1.7	0.34	0.1	0.00	0.14	0.00	45	217
50	ISL	15.82	15.81	33.425	24.579	336.4	0.168	5.70	100.9	1.7	0.34	0.1	0.00	0.14	0.01	50	
60		15.80	15.79	33.421	24.581	336.5	0.202	5.69	100.7	1.7	0.35	0.1	0.00	0.14	0.02	60	216
75		15.79	15.78	33.422	24.585	336.7	0.252	5.69	100.6	1.7	0.35	0.1	0.00	0.12	0.02	75	215
85		15.70	15.69	33.409	24.595	336.0	0.286	5.69	100.4	1.7	0.35	0.1	0.01	0.09	0.04	85	214
95		12.70	12.69	33.071	24.961	301.0	0.317	5.80	96.1	3.8	0.55	2.0	0.07	0.18	0.06	95	213
100	ISL	11.92	11.91	33.028	25.076	290.0	0.332	5.74	93.5	4.9	0.67	3.8	0.04	0.14	0.08	100	
105		11.52	11.51	33.050	25.167	281.4	0.347	5.62	90.8	5.9	0.77	5.7	0.01	0.09	0.10	105	212
115		11.53	11.52	33.276	25.341	265.1	0.374	5.29	85.6	7.4	0.86	7.8	0.02	0.06	0.07	115	211
124		11.06	11.04	33.339	25.475	252.5	0.397	5.07	81.2	9.2	0.98	10.0	0.01	0.05	0.06	125	210
125	ISL	11.00	10.98	33.341	25.487	251.4	0.400	5.06	81.0	9.4	0.99	10.2	0.01	0.05	0.06	126	
140		10.12	10.10	33.361	25.655	235.5	0.436	4.96	77.9	11.7	1.11	12.4	0.01	0.02	0.03	141	209
150	ISL	9.76	9.74	33.420	25.761	225.5	0.459	4.73	73.7	14.1	1.25	14.6	0.01	0.02	0.02	151	
165		9.40	9.38	33.543	25.917	211.0	0.492	4.31	66.7	18.1	1.46	18.1	0.00	0.01	0.01	166	208
194		9.02	9.00	33.837	26.208	183.8	0.549	3.66	56.2	25.1	1.69	22.5	0.00	0.00	0.01	195	207
200	ISL	8.98	8.96	33.873	26.243	180.7	0.560	3.67	56.3	25.7	1.70	22.7	0.00			201	
229		8.72	8.70	33.979	26.367	169.4	0.611	3.69	56.4	28.5	1.71	23.4	0.00			230	206
250	ISL	8.29	8.26	34.005	26.453	161.3	0.646	3.43	51.9	33.2	1.85	25.5	0.00			251	
269		7.89	7.86	34.016	26.521	155.0	0.676	3.06	45.9	38.1	2.02	27.9	0.00			270	205
300	ISL	7.58	7.55	34.061	26.602	147.7	0.723	2.24	33.3	45.1	2.33	31.5	0.00			302	
318		7.46	7.43	34.086	26.639	144.4	0.749	1.79	26.6	48.8	2.49	33.2	0.00			320	204
379		6.97	6.93	34.137	26.748	134.8	0.834	1.35	19.8	57.2	2.70	35.3	0.00			381	203
400	ISL	6.79	6.75	34.150	26.783	131.7	0.862	1.18	17.3	60.5	2.77	36.2	0.00			402	
438		6.48	6.44	34.173	26.843	126.3	0.911	0.88	12.8	66.6	2.90	37.9	0.00			441	202
500	ISL	6.04	6.00	34.225	26.941	117.5	0.987	0.55	7.9	76.0	3.07	39.8	0.00			503	
516		5.93	5.88	34.239	26.966	115.2	1.005	0.47	6.7	78.4	3.11	40.3	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0201 STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
29 49.8 N	123 35.2 W	27/01/02	1905 UTC	3987 m	290 07 kn	300 04 09	1	1017.9 mb	17.0 C	10.5 C	35m	6/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	16.11	16.11	33.451	24.532	339.3	0.000	5.69	101.3	1.6	0.33	0.1	0.00	0.04	0.01	0	
1	A	16.11	16.11	33.451	24.532	339.3	0.003	5.69	101.3	1.6	0.33	0.1	0.00	0.04	0.01	1	222
10		15.93	15.93	33.446	24.569	336.1	0.034	5.70	101.1	1.7	0.33	0.0	0.00	0.06 U	0.00 U	10	221
19	A	15.90	15.90	33.445	24.576	335.8	0.064	5.70	101.1	1.7	0.33	0.0	0.00	0.06 U	0.00 U	19	220
20	ISL	15.90	15.90	33.445	24.576	335.8	0.067	5.70	101.1	1.7	0.33	0.0	0.00	0.06	0.02	20	
30	ISL	15.85	15.85	33.440	24.584	335.4	0.101	5.72	101.3	1.7	0.33	0.1	0.00	0.06	0.02	30	
32		15.84	15.84	33.439	24.585	335.3	0.108	5.72	101.3	1.7	0.33	0.1	0.00	0.06	0.02	32	219
43	A	15.82	15.81	33.436	24.588	335.4	0.145	5.74	101.6	1.7	0.33	0.1	0.00	0.04	0.03	43	218
50	ISL	15.81	15.80	33.437	24.591	335.3	0.168	5.73	101.4	1.7	0.33	0.1	0.00	0.06	0.02	50	
56		15.81	15.80	33.438	24.592	335.4	0.188	5.71	101.0	1.7	0.33	0.1	0.00	0.07	0.01	56	217
70	A	15.79	15.78	33.442	24.600	335.1	0.235	5.70	100.8	1.8	0.34	0.1	0.00	0.04	0.02	70	216
75	ISL	15.68	15.67	33.439	24.622	333.1	0.252	5.70	100.6	1.8	0.34	0.1	0.00	0.05	0.01	75	
80		15.58	15.57	33.436	24.643	331.3	0.268	5.70	100.4	1.9	0.34	0.1	0.01	0.07	0.00	80	215
90	A	13.95	13.94	33.246	24.846	312.0	0.301	5.86	99.7	3.2	0.42	0.5	0.12	0.06	0.05	90	214
99		12.95	12.94	33.124	24.953	301.9	0.328	5.78	96.3	3.8	0.52	1.8	0.08	0.04	0.06	99	213
100	ISL	12.91	12.90	33.123	24.960	301.2	0.331	5.77	96.0	3.9	0.53	1.9	0.07	0.04	0.06	100	
110		12.60	12.59	33.138	25.032	294.5	0.361	5.69	94.1	4.5	0.59	2.9	0.03	0.07 U	0.00 U	110	212
120		11.91	11.89	33.116	25.146	283.8	0.390	5.58	90.9	5.5	0.71	4.9	0.01	0.02 U	0.08 U	120	211
125	ISL	11.61	11.59	33.150	25.228	276.1	0.404	5.49	88.9	6.4	0.78	6.3	0.01	0.04	0.03	126	
130	A	11.33	11.31	33.198	25.317	267.7	0.417	5.40	86.9	7.3	0.85	7.6	0.01	0.04	0.02	131	210
148		10.50	10.48	33.384	25.608	240.2	0.463	5.30	83.9	8.6	0.87	8.7	0.01	0.02	0.01	149	209
150	ISL	10.45	10.43	33.410	25.637	237.5	0.468	5.29	83.7	8.7	0.87	8.8	0.01	0.02	0.01	151	
164		10.20	10.18	33.573	25.807	221.6	0.500	5.24	82.5	9.8	0.89	9.7	0.00	0.01	0.01	165	208
194		9.34	9.32	33.672	26.028	201.0	0.563	4.81	74.4	15.9	1.20	15.0	0.00	0.00	0.01	195	207
200	ISL	9.27	9.25	33.713	26.071	197.0	0.575	4.67	72.1	17.4	1.27	16.1	0.00			201	
229		9.04	9.02	33.906	26.259	179.7	0.630	4.02	61.8	24.2	1.55	20.9	0.00			230	206
250	ISL	8.79	8.76	33.977	26.355	170.9	0.667	3.85	58.9	27.7	1.65	22.7	0.00			251	
268		8.52	8.49	34.008	26.421	164.9	0.697	3.75	57.0	30.6	1.72	23.8	0.00			269	205
300	ISL	7.90	7.87	34.022	26.525	155.2	0.748	3.37	50.5	37.2	1.92	26.7	0.00			302	
319		7.51	7.48	34.018	26.578	150.2	0.777	3.10	46.1	41.5	2.05	28.5	0.00			321	204
378		6.56	6.53	34.027	26.716	137.4	0.862	2.09	30.4	55.6	2.49	34.1	0.00			380	203
400	ISL	6.36	6.32	34.044	26.756	133.8	0.892	1.77	25.6	60.0	2.62	35.5	0.00			402	
437		6.10	6.06	34.081	26.819	128.1	0.940	1.32	19.0	66.9	2.80	37.4	0.00			440	202
500	ISL	5.70	5.66	34.149	26.923	118.7	1.018	0.79	11.3	77.7	3.02	40.2	0.00			503	
512		5.62	5.58	34.162	26.943	116.9	1.032	0.69	9.8	79.8	3.06	40.7	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 53.5 N	121 11.9 W	09/02/02	1821 UTC	15 m		1219 - 1808 PST	1219 PST	1808 PST	973.6 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	11.66	33.631	25.590	5.85	95.2	10.6	0.93	8.7	0.39	2.63	0.49	81. A		31.5	31.5	0.14
9	11.63	33.629	25.594	5.85	95.1	10.4	0.90	8.6	0.41	2.95	0.58	40.	53.2	49.7	51.4	0.21
19	11.61	33.630	25.599	5.80	94.2	10.6	0.93	8.8	0.39	2.69	0.59	14.	24.8	23.9	24.3	0.28
30	11.54	33.633	25.614	5.58	90.5	11.4	1.00	9.7	0.41	2.10	0.50	4.6	8.1	9.3	8.7	0.07
40	11.37	33.657	25.664	5.08	82.1	13.5	1.15	11.8	0.41	1.02	0.50	1.7	1.2	1.3	1.2	0.16
48	11.21	33.678	25.710	4.67	75.2	15.2	1.27	13.6	0.34	0.66	0.46					
57	11.05	33.705	25.760	4.28	68.7	17.1	1.39	15.4	0.23	0.34	0.34	0.29	0.11	0.07	0.09	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 3.1 N	122 56.7 W	08/02/02	1839 UTC	13 m		1224 - 1810 PST	1226 PST	1811 PST	283.0 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	11.93	33.082	25.113	6.34	103.4	5.3	0.60	3.2	0.10	1.13	0.24	79. A	6.1	5.6	5.9	0.08
8	11.92	33.083	25.116	6.33	103.2	5.3	0.60	3.2	0.10	1.18	0.24	39.	14.9	15.6	15.3	0.11
17	11.89	33.124	25.154	6.33	103.1	5.4	0.61	3.5	0.11	1.21	0.27	13.	10.5	10.7	10.6	0.09
26	11.63	33.190	25.253	6.12	99.2	6.4	0.71	5.2	0.10	0.88	0.22	4.6	4.1	3.7	3.9	0.07
35	11.42	33.208	25.306	5.78	93.3	8.0	0.85	7.6	0.09	0.57	0.20	1.6	0.77	0.69	0.73	0.04
42	11.45	33.281	25.357	5.78	93.4	8.2	0.84	7.6	0.17	0.42	0.20					
48	11.42	33.298	25.376	5.68	91.7	8.6	0.89	8.2	0.16	0.27	0.19	0.35	0.05	0.03	0.04	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 9.2 N	121 9.1 W	06/02/02	1815 UTC	8 m		1219 - 1810 PST	1219 PST	1810 PST	2250.7 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
1	11.86	33.648	25.566	6.26	102.3	4.6	0.51	4.2	0.22	9.66	1.10	83. A	169.0	160.2	164.6	0.27
5	11.85	33.648	25.568	6.26	102.2	4.6	0.51	4.2	0.22	10.11	0.55	38.	177.3	184.4	180.9	0.13
10	11.85	33.649	25.569	6.25	102.1	4.5	0.51	4.2	0.22	10.91	0.77	15.	110.1	106.3	108.2	0.46
17	11.84	33.647	25.569	6.21	101.4	4.7	0.50	4.4	0.23	10.45	0.71	3.8	41.1	39.8	40.5	0.12
21	11.84	33.648	25.570	6.18	100.9	4.9	0.55	4.6	0.23	9.50	0.50	1.8	11.1	9.9	10.4	0.09
30	11.84	33.648	25.570	6.16	100.6	4.9	0.55	4.6	0.23	9.63	0.74	0.32	0.76	0.70	0.73	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.0 N	123 13.8 W	07/02/02	1816 UTC	27 m		1226 - 1822 PST	1227 PST	1822 PST	208.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	13.23	33.009	24.806	6.10	102.2	2.7	0.44	0.6	0.03	0.40	0.10	89. A	4.5	4.4	4.4	0.05
9	13.10	32.997	24.823	6.11	102.0	2.7	0.44	0.6	0.03	0.33	0.09					
17	13.07	32.996	24.828	6.11	102.0	2.7	0.44	0.6	0.04	0.32	0.08	38.	4.3	4.2	4.2	0.06
25	13.10	33.013	24.835	6.11	102.0	2.7	0.44	0.6	0.03	0.40	0.12					
35	13.16	33.053	24.855	6.08	101.7	2.7	0.44	0.7	0.04	0.46	0.16	14.	3.0	3.0	3.0	0.04
44	12.98	33.044	24.884	6.07	101.1	3.0	0.47	1.0	0.05	0.51	0.13					
55	12.41	32.991	24.953	6.05	99.6	3.8	0.54	2.1	0.10	0.50	0.18	4.4	1.7	1.6	1.6	0.05
63	12.46	33.069	25.005	6.08	100.2	3.8	0.55	2.3	0.10	0.55	0.20					
71	12.38	33.111	25.053	6.08	100.1	4.1	0.56	2.6	0.11	0.54	0.19	1.8	0.42	0.53	0.47	0.10
86	12.52	33.232	25.120	6.09	100.6	3.9	0.54	2.4	0.10	0.50	0.19					
99	12.35	33.248	25.165	6.08	100.1	4.4	0.57	2.8	0.13	0.49	0.22	0.36	0.09	0.02	0.06	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 10.6 N	119 30.8 W	05/02/02	1859 UTC	23 m		1212 - 1759 PST	1212 PST	1759 PST	631.0 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.59	33.603	25.193	5.87	99.4	4.3	0.46	1.8	0.05	0.93	0.22	94. A	15.3	16.6	15.9	0.10
12	13.39	33.603	25.234	5.85	98.7	4.4	0.48	1.9	0.06	0.90	0.31	45.	19.8	20.6	20.2	0.23
20	13.30	33.602	25.251	5.79	97.5	4.6	0.49	2.2	0.06	1.13	0.30					
28	13.25	33.598	25.258	5.73	96.4	4.9	0.53	2.7	0.06	1.10	0.37	15.	12.5	14.5	13.5	0.11
37	12.11	33.538	25.434	4.78	78.4	9.6	0.98	9.4	0.09	0.43	0.19					
46	11.70	33.575	25.540	4.39	71.4	12.1	1.15	12.0	0.09	0.31	0.16	4.6	1.5	1.5	1.5	0.05
52	11.32	33.559	25.597	4.15	67.0	13.6	1.27	13.9	0.05	0.20	0.14					
59	11.12	33.636	25.694	3.65	58.7	16.6	1.44	16.2	0.03	0.12	0.11	1.9	0.17	0.11	0.14	0.05
77	10.98	33.748	25.806	3.52	56.5	19.1	1.51	17.2	0.10	0.16	0.13	0.59	0.00	0.00	0.00	0.03

A) INCUBATION LIGHT INTENSITIES WERE 96, 44, 15, 4.7, 1.9, 0.33 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.3 N	121 26.6 W	04/02/02	1822 UTC	24 m		1223 - 1804 PST	1220 PST	1805 PST	160.7 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	13.69	33.092	24.777	5.99	101.3	2.2	0.40	0.3	0.02	0.29	0.09	88. A	0.81	0.85	0.83	0.02
14	13.65	33.093	24.787	5.99	101.2	2.1	0.40	0.3	0.01	0.32	0.09	41.	3.3	3.3	3.3	0.04
23	13.64	33.093	24.789	5.99	101.2	2.1	0.40	0.3	0.01	0.30	0.08					
31	13.63	33.095	24.793	5.99	101.2	2.1	0.40	0.3	0.02	0.36	0.09	14.	3.0	2.9	2.9	0.03
40	13.52	33.117	24.832	5.99	101.0	2.4	0.42	0.5	0.02	0.46	0.12					
49	13.24	33.102	24.877	6.03	101.1	2.7	0.45	1.0	0.04	0.48	0.14	4.4	2.5	2.3	2.4	0.03
55	13.18	33.094	24.883	6.01	100.6	2.8	0.45	1.1	0.04	0.45	0.16					
62	12.76	33.098	24.969	6.06	100.5	3.4	0.50	1.7	0.06	0.51	0.17	1.9	0.86	0.92	0.89	0.03
76	11.79	33.069	25.131	5.92	96.2	5.5	0.70	4.7	0.11	0.27	0.18					
88	11.94	33.200	25.205	6.04	98.5	5.9	0.69	4.6	0.31	0.21	0.14	0.36	0.08	0.06	0.07	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 14.6 N	123 29.3 W	03/02/02	1810 UTC	23 m		1229 - 1810 PST	1228 PST	1811 PST	98.3 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	14.52	33.228	24.710	5.86	100.9	1.8	0.38	0.1	0.01	0.27	0.09	94. A	0.59	0.54	0.56	0.02
13	14.53	33.233	24.712	5.88	101.3	1.8	0.38	0.2	0.01	0.26	0.10	42.	2.4	2.5	2.4	0.03
29	14.48	33.223	24.715	5.86	100.8	1.9	0.38	0.1	0.01	0.27	0.09	14.	2.1	2.0	2.0	0.03
37	14.52	33.235	24.716	5.85	100.7	1.8	0.38	0.2	0.01	0.26	0.10					
46	14.51	33.237	24.720	5.84	100.5	2.1	0.38	0.3	0.02	0.25	0.10	4.6	1.3	1.2	1.2	0.03
53	14.35	33.208	24.732	5.86	100.5	2.0	0.39	0.3	0.02	0.28	0.10					
60	14.32	33.207	24.738	5.85	100.3	2.3	0.40	0.4	0.03	0.25	0.12	1.8	0.38	0.42	0.40	0.03
68	14.06	33.168	24.762	5.85	99.8	2.4	0.43	0.6	0.06	0.23	0.13					
77	12.92	33.021	24.879	5.90	98.2	3.4	0.53	1.8	0.09	0.20	0.15					
87	12.76	33.017	24.907	5.86	97.2	3.6	0.56	2.2	0.09	0.19	0.15	0.30	0.08	0.06	0.07	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 39.7 N	118 58.3 W	31/01/02	1824 UTC	16 m		1217 - 1756 PST	1217 PST	1756 PST	398.0 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	14.00	33.605	25.110	5.87	100.3	3.1	0.40	0.8	0.03	0.92	0.23	83. A	9.2	10.0	9.6	0.11
9	13.98	33.605	25.114	5.88	100.4	3.2	0.40	0.8	0.03	0.90	0.24	42.	19.0	18.2	18.6	0.08
20	13.96	33.605	25.119	5.88	100.3	3.2	0.40	0.8	0.03	0.85	0.34	15.	10.1	11.9	11.0	0.14
32	13.52	33.558	25.173	5.55	93.8	4.6	0.56	3.2	0.09	0.56	0.29	4.6	3.9	4.2	4.0	0.07
41	12.59	33.502	25.315	5.11	84.7	7.2	0.82	7.1	0.12	0.38	0.25	2.0	0.65	0.64	0.64	0.03
50	11.74	33.479	25.458	4.71	76.7	10.0	1.06	10.8	0.07	0.24	0.18					
60	11.39	33.527	25.560	4.38	70.8	12.3	1.19	12.8	0.04	0.18	0.16	0.32	0.05	0.04	0.04	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 59.8 N	120 20.5 W	01/02/02	1810 UTC	22 m		1214 - 1803 PST	1215 PST	1804 PST	236.9 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	12.35	33.574	25.416	5.88	97.0	6.7	0.69	5.2	0.15	0.39	0.14	87. A	3.6	3.7	3.6	0.07
13	12.33	33.573	25.419	5.86	96.6	6.6	0.70	5.2	0.16	0.39	0.15	40.	6.5	6.3	6.4	0.05
20	12.33	33.573	25.419	5.86	96.6	6.6	0.70	5.2	0.16	0.42	0.15					
27	12.32	33.572	25.421	5.88	96.9	6.5	0.70	5.3	0.16	0.41	0.15	15.	5.2	4.8	5.0	0.06
36	12.31	33.572	25.423	5.85	96.4	6.5	0.70	5.4	0.16	0.40	0.17					
44	12.31	33.571	25.422	5.84	96.3	6.5	0.70	5.3	0.16	0.44	0.16	4.6	2.7	2.4	2.5	0.08
50	12.31	33.574	25.425	5.84	96.3	6.5	0.70	5.4	0.16	0.40	0.17					
57	12.31	33.571	25.422	5.82	95.9	6.5	0.71	5.4	0.16	0.42	0.22	1.9	0.74	0.84	0.79	0.04
71	11.33	33.578	25.611	4.80	77.5	12.1	1.12	11.9	0.13	0.16	0.16					
82	9.88	33.688	25.950	3.57	55.9	21.5	1.66	20.7	0.03	0.05	0.11	0.33		-0.01	-0.01	0.04

A) INCUBATION LIGHT INTENSITIES WERE 96, 44, 15, 4.7, 1.9, 0.33 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 39.6 N	123 3.6 W	02/02/02	1848 UTC	26 m		1226 - 1816 PST	1226 PST	1816 PST	107.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.06	33.395	24.723	5.78	100.7	2.2	0.36	0.1	0.01	0.21	0.07	89. A	0.38	0.37	0.37	0.02
15	15.03	33.394	24.729	5.78	100.7	2.1	0.36	0.2	0.01	0.20	0.07	41.	2.4	2.4	2.4	0.03
23	15.02	33.400	24.736	5.77	100.5	2.1	0.36	0.1	0.01	0.22	0.07					
32	15.02	33.394	24.731	5.78	100.7	2.1	0.36	0.2	0.01	0.22	0.09	15.	2.2	2.1	2.2	0.02
42	15.02	33.394	24.732	5.78	100.6	2.1	0.36	0.2	0.01	0.22	0.08					
52	15.02	33.394	24.732	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.08	4.6	1.1	1.1	1.1	0.02
68	15.02	33.395	24.733	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.08	1.8	0.28	0.35	0.32	0.02
77	15.03	33.394	24.731	5.78	100.7	2.0	0.36	0.1	0.01	0.22	0.08					
87	15.03	33.395	24.732	5.77	100.5	2.1	0.36	0.2	0.01	0.21	0.09					
97	15.03	33.399	24.735	5.77	100.5	2.1	0.36	0.2	0.01	0.22	0.08	0.33	0.02	0.01	0.02	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 11.8 N	118 23.6 W	30/01/02	1832 UTC	19 m		1209 - 1750 PST	1209 PST	1749 PST	278.0 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	14.35	33.582	25.019	5.92	101.8	3.0	0.35	0.2	0.00	0.55	0.14	85. A	2.9	2.8	2.8	0.06
10	14.35	33.583	25.020	5.91	101.6	2.8	0.35	0.2	0.00	0.55	0.16	45.	11.7	11.6	11.6	0.07
16	14.35	33.588	25.024	5.92	101.8	2.8	0.35	0.2	0.00	0.56	0.16					
23	14.36	33.590	25.024	5.91	101.7	2.8	0.34	0.2	0.00	0.56	0.17	16.	6.4	6.0	6.2	0.06
31	14.36	33.584	25.019	5.90	101.5	2.8	0.36	0.3	0.01	0.58	0.19					
39	13.63	33.504	25.109	5.76	97.6	3.4	0.48	1.9	0.13	0.43	0.20	4.3	3.1	3.2	3.1	0.02
49	12.55	33.456	25.287	5.33	88.2	5.8	0.77	6.4	0.11	0.29	0.19	1.9	0.53	0.58	0.56	0.02
60	11.74	33.450	25.436	5.07	82.5	8.1	0.95	9.1	0.38	0.18	0.14					
71	10.79	33.500	25.647	4.47	71.3	13.2	1.25	14.2	0.01	0.09	0.10	0.32	0.03	0.01	0.02	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 5.4 N	120 38.6 W	29/01/02	1815 UTC	16 m		1216 - 1800 PST	1216 PST	1801 PST	192.5 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	13.38	33.163	24.895	6.07	102.1	3.0	0.43	0.7	0.03	0.59	0.13	75. A	3.4	3.4	3.4	0.03
10	13.37	33.163	24.897	6.07	102.1	2.9	0.43	0.7	0.03	0.59	0.12	38.	7.8	7.9	7.9	0.04
21	13.36	33.163	24.900	6.06	101.9	2.9	0.43	0.7	0.03	0.62	0.12	13.	5.5	5.3	5.4	0.04
32	13.36	33.172	24.907	6.05	101.7	2.9	0.44	0.8	0.03	0.60	0.13	4.6	2.8	2.6	2.7	0.04
41	13.38	33.199	24.924	6.01	101.1	3.1	0.45	1.0	0.05	0.50	0.15	2.0	0.81	0.84	0.82	0.04
51	13.57	33.274	24.944	5.94	100.3	3.0	0.46	1.1	0.07	0.40	0.16					
61	12.70	33.216	25.072	5.87	97.3	4.6	0.62	3.4	0.25	0.26	0.16	0.29	0.11	0.09	0.10	0.02

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 5.4 N	122 40.0 W	28/01/02	1926 UTC	32 m		1228 - 1804 PST	1224 PST	1801 PST	132.9 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	15.73	33.505	24.660	5.72	101.1	2.3	0.34	0.1	0.00	0.19	0.07	91. A	1.4	1.2	1.3	0.02
18	15.68	33.505	24.671	5.72	101.0	2.2	0.33	0.1	0.00	0.19	0.07	42.	2.7	2.7	2.7	0.02
28	15.68	33.504	24.671	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.06					
40	15.68	33.503	24.670	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.07	15.	1.9	1.8	1.8	0.03
53	15.68	33.504	24.672	5.71	100.8	2.0	0.33	0.1	0.00	0.20	0.07					
63	15.68	33.505	24.673	5.70	100.6	2.0	0.34	0.1	0.00	0.20	0.07					
75	15.68	33.504	24.672	5.71	100.8	2.0	0.33	0.1	0.00	0.21	0.06					
83	15.68	33.505	24.673	5.70	100.6	2.0	0.33	0.1	0.00	0.20	0.08	1.9	0.20	0.25	0.23	0.01
95	15.68	33.505	24.674	5.71	100.8	2.1	0.33	0.1	0.00	0.21	0.06					
107	15.59	33.491	24.684	5.70	100.4	2.1	0.34	0.1	0.01	0.20	0.07					
120	13.14	33.241	25.007	5.72	95.7	3.8	0.48	1.3	0.16	0.17	0.13	0.32	0.06	0.05	0.05	0.00

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 93 26.6

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.6 N	117 18.0 W	24/01/02	1929 UTC	17 m		1206 - 1742 PST	1201 PST	1742 PST	413.6 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	14.53	33.612	25.004	5.93	102.4	3.2	0.38	0.3	0.03	0.86	0.28	83. A		10.6	10.6	0.14
4	14.45	33.612	25.021	5.89	101.5	3.1	0.37	0.4	0.03	0.91	0.31					
8	14.36	33.611	25.039	5.92	101.9	3.1	0.37	0.4	0.03	0.94	0.32	49.	15.8	15.8	15.8	0.14
20	14.25	33.603	25.057	5.86	100.6	3.3	0.39	0.7	0.05	0.86	0.44	16.	12.1	11.7	11.9	0.06
27	13.98	33.575	25.092	5.60	95.6	4.7	0.53	2.3	0.18	0.72	0.51					
33	13.79	33.562	25.121	5.49	93.3	5.2	0.57	3.0	0.20	0.74	0.49	5.1	5.5	5.4	5.4	0.06
43	13.16	33.536	25.229	5.04	84.6	7.5	0.78	5.9	0.31	0.63	0.58	2.1	1.6	1.5	1.5	0.05

A) INCUBATION LIGHT INTENSITIES WERE 96, 44, 15, 4.7, 1.9, 0.33 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.9 N	118 53.8 W	25/01/02	1906 UTC	19 m		1207 - 1752 PST	1207 PST	1752 PST	195.6 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	13.76	33.550	25.117	5.86	99.6	3.4	0.48	2.0	0.07	0.43	0.13	85. A	3.2	2.8	3.0	0.06
10	13.67	33.548	25.134	5.86	99.4	3.3	0.48	1.9	0.08	0.47	0.16	45.	6.7	6.0	6.4	0.08
16	13.61	33.547	25.146	5.86	99.2	3.3	0.48	1.9	0.09	0.53	0.10					
23	13.61	33.547	25.146	5.86	99.2	3.3	0.47	1.9	0.09	0.47	0.15	16.	5.3	5.4	5.3	0.07
30	13.60	33.547	25.148	5.85	99.1	3.4	0.49	2.0	0.09	0.51	0.13					
38	12.41	33.483	25.334	5.14	84.9	7.7	0.85	7.6	0.07	0.35 B	0.17 B	4.6	2.4	2.3	2.3	0.02
49	10.81	33.523	25.661	4.27	68.1	14.3	1.29	14.9	0.02	0.17	0.14	1.9	0.37	0.36	0.37	0.05
59	10.40	33.566	25.766	4.09	64.7	16.5	1.40	16.8	0.02	0.10	0.11					
71	10.05	33.601	25.853	3.96	62.2	18.5	1.49	18.4	0.01	0.04	0.08	0.32	0.02	0.01	0.02	0.00

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

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 11.0 N	120 53.9 W	26/01/02	1822 UTC	30 m		1210 - 1806 PST	1213 PST	1805 PST	170.8 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	14.60	33.225	24.690	5.87	101.3	2.1	0.38	0.2	0.02	0.10	0.11	90. A	1.5	1.5	1.5	0.06
9	14.54	33.227	24.705	5.87	101.1	2.1	0.38	0.2	0.02	0.17	0.06					
16	14.52	33.224	24.707	5.86	100.9	2.1	0.39	0.2	0.02	0.14	0.08	44.	3.4	3.4	3.4	0.04
26	14.51	33.224	24.709	5.85	100.7	1.9	0.39	0.2	0.02	0.11	0.05					
38	14.52	33.224	24.708	5.85	100.7	2.0	0.39	0.2	0.02	0.12	0.04	14.	2.7	2.7	2.7	0.03
48	14.51	33.223	24.709	5.86	100.9	2.0	0.38	0.2	0.02	0.13	0.03					
60	14.50	33.227	24.715	5.85	100.7	2.1	0.39	0.2	0.02	0.15	0.03	4.6	1.4	1.3	1.3	0.02
68	14.48	33.222	24.716	5.86	100.8	2.1	0.39	0.3	0.02	0.16	0.05					
77	14.35	33.212	24.736	5.84	100.2	2.3	0.42	0.6	0.04	0.13	0.08	1.9	0.38	0.42	0.40	0.03
89	12.37	33.028	24.991	5.79	95.2	4.6	0.66	3.7	0.08	0.13	0.13					
101	11.35	33.012	25.168	5.63	90.6	6.5	0.83	6.6	0.02	0.04	0.12					
113	11.01	33.115	25.309	5.43	86.8	8.3	0.95	9.1	0.01	0.03	0.05	0.31	0.04	0.04	0.04	0.00

RV DAVID STARR JORDAN — CALCOFI CRUISE 0201 — STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 49.8 N	123 35.2 W	27/01/02	1905 UTC	35 m		1227 - 1810 PST	1227 PST	1812 PST	114.9 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	16.11	33.451	24.532	5.69	101.3	1.6	0.33	0.1	0.00	0.04	0.01	96. A	0.67	0.65	0.66	0.07
10	15.93	33.446	24.569	5.70	101.1	1.7	0.33	0.0	0.00	0.06 U	0.00 U					
19	15.90	33.445	24.576	5.70	101.1	1.7	0.33	0.0	0.00	0.06 U	0.00 U	43.	1.7	1.6	1.7	0.04
32	15.84	33.439	24.585	5.72	101.3	1.7	0.33	0.1	0.00	0.06	0.02					
43	15.82	33.436	24.588	5.74	101.6	1.7	0.33	0.1	0.00	0.04	0.03	15.	1.4	1.4	1.4	0.05
56	15.81	33.438	24.592	5.71	101.0	1.7	0.33	0.1	0.00	0.07	0.01					
70	15.79	33.442	24.600	5.70	100.8	1.8	0.34	0.1	0.00	0.04	0.02	4.6	0.97	0.86	0.92	0.02
80	15.58	33.436	24.643	5.70	100.4	1.9	0.34	0.1	0.01	0.07	0.00					
90	13.95	33.246	24.846	5.86	99.7	3.2	0.42	0.5	0.12	0.06	0.05	1.9	0.48	0.50	0.49	0.02
99	12.95	33.124	24.953	5.78	96.3	3.8	0.52	1.8	0.08	0.04	0.06					
110	12.60	33.138	25.032	5.69	94.1	4.5	0.59	2.9	0.03	0.07 U	0.00 U					
120	11.91	33.116	25.146	5.58	90.9	5.5	0.71	4.9	0.01	0.02 U	0.08 U					
130	11.33	33.198	25.317	5.40	86.9	7.3	0.85	7.6	0.01	0.04	0.02	0.33	0.03	0.04	0.03	0.00

A) INCUBATION LIGHT INTENSITIES WERE 96, 44, 15, 4.7, 1.9, 0.33 PERCENT RESPECTIVELY.

CalCOFI Cruise 0201

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)
77	49	35 05.4	120 47.0	02/09	1645	1651	114	48	940	158
77	51	35 01.5	120 55.2	02/09	1410	1432	426	209	1242	87
77	55	34 54.0	121 13.5	02/09	0914	0936	442	214	91	91
77	60	34 43.1	121 32.0	02/09	0518	0540	456	211	169	169
77	70	34 23.9	122 15.0	02/08	2233	2255	474	204	95	95
77	80	34 03.2	122 57.1	02/08	1202	1223	472	200	324	324
77	90	33 43.9	123 37.5	02/08	0540	0602	466	210	54	54
77	100	33 22.9	124 19.8	02/07	2327	2349	476	209	50	50
80	51	34 27.2	120 32.3	02/06	0302	0310	183	82	44	44
80	55	34 20.0	120 48.1	02/06	0657	0719	383	209	882	882
80	60	34 10.1	121 10.2	02/06	1159	1221	335	211	808	808
80	70	33 48.7	121 51.4	02/06	2048	2110	439	213	193	193
80	80	33 28.4	122 32.3	02/07	0330	0351	428	212	37	37
80	90	33 09.0	123 14.0	02/07	0853	0915	439	206	155	155
80	100	32 48.2	123 54.7	02/07	1655	1717	449	210	145	145
82	47	34 16.8	120 02.1	02/05	2018	2040	411	216	143	143
83	40.6	34 14.2	119 25.0	02/05	0631	0634	72	25	112	112
83	42	34 10.7	119 31.4	02/05	0908	0923	284	141	60	60
83	51	33 52.5	120 08.6	02/05	0012	0023	206	105	73	73
83	55	33 45.2	120 25.6	02/04	2056	2117	421	212	128	128
83	60	33 34.4	120 45.8	02/04	1658	1720	464	209	125	125
83	70	33 13.8	121 27.1	02/04	0917	0939	428	208	58	58
83	80	32 54.1	122 08.3	02/03	2332	2353	441	210	152	152
83	90	32 35.2	122 49.0	02/03	1650	1712	448	212	85	85
83	100	32 15.1	123 29.5	02/03	0834	0856	400	225	22	22
83	110	31 55.1	124 10.5	02/03	0055	0117	437	210	32	32
87	33	33 53.5	118 28.5	01/31	0219	0224	114	46	97	97
87	35	33 49.1	118 36.3	01/31	0453	0515	440	205	25	25
87	40	33 39.9	118 57.8	01/31	0836	0858	410	219	73	73
87	45	33 29.7	119 18.5	01/31	1445	1507	419	212	57	57
87	50	33 19.8	119 39.7	01/31	1831	1838	139	63	72	72
87	55	33 09.8	120 02.0	02/01	0110	0132	415	212	149	149
87	60	32 59.9	120 20.8	02/01	0906	0928	391	217	146	146
87	70	32 39.4	121 00.4	02/01	1716	1738	417	212	120	120
87	80	32 19.7	121 43.3	02/01	2329	2351	429	212	93	93
87	90	31 59.5	122 22.8	02/02	0525	0547	438	211	128	128
87	100	31 39.4	123 03.0	02/02	1210	1232	431	209	19	19
87	110	31 20.3	123 44.7	02/02	1836	1857	454	211	20	20
90	30	33 25.2	117 54.3	01/30	1758	1820	414	211	65	65
90	35	33 15.7	118 15.0	01/30	1346	1406	397	199	58	58
90	37	33 11.6	118 23.8	01/30	0902	0924	444	212	43	43
90	45	32 55.5	118 57.0	01/30	0422	0444	443	206	70	70
90	53	32 39.4	119 29.0	01/29	2219	2241	427	217	112	112
90	60	32 25.3	119 57.0	01/29	1705	1727	422	209	26	26
90	70	32 05.4	120 38.4	01/29	0821	0843	452	210	35	35
90	80	31 44.7	121 19.1	01/29	0143	0205	441	210	163	163
90	90	31 25.4	121 58.7	01/28	1911	1933	432	213	23	23
90	100	31 05.7	122 40.3	01/28	1252	1314	435	211	28	28
90	110	30 46.0	123 20.3	01/28	0607	0629	468	207	24	24
90	120	30 26.2	124 01.1	01/27	2337	2359	444	219	38	38
93	26.6	32 57.4	117 18.3	01/24	1226	1231	124	47	24	24
93	28	32 55.0	117 23.9	01/24	1512	1533	442	217	34	34
93	30	32 51.4	117 31.9	01/24	1825	1847	464	206	54	54
93	35	32 40.8	117 51.9	01/24	2247	2309	435	216	147	147
93	40	32 31.8	118 12.6	01/25	0334	0355	469	209	87	87
93	45	32 22.2	118 33.2	01/25	0753	0815	463	215	104	104
93	50	32 10.8	118 54.1	01/25	1233	1254	449	213	78	78
93	55	32 00.7	119 13.7	01/25	1645	1707	467	205	152	152
93	60	31 50.4	119 34.3	01/25	2056	2117	440	218	61	61
93	70	31 31.0	120 15.2	01/26	0301	0322	469	215	53	53
93	80	31 10.9	120 55.3	01/26	0810	0831	415	212	29	29
93	90	30 50.7	121 36.4	01/26	1655	1717	419	209	50	50
93	100	30 30.3	122 15.8	01/26	2242	2304	423	217	35	35
93	110	30 11.1	122 55.5	01/27	0435	0457	467	204	32	32
93	120	29 50.5	123 35.3	01/27	1011	1033	424	222	26	26

FIGURES

Cruise 0204

1. CalCOFI Cruise 0204 track and station positions.

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

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

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

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

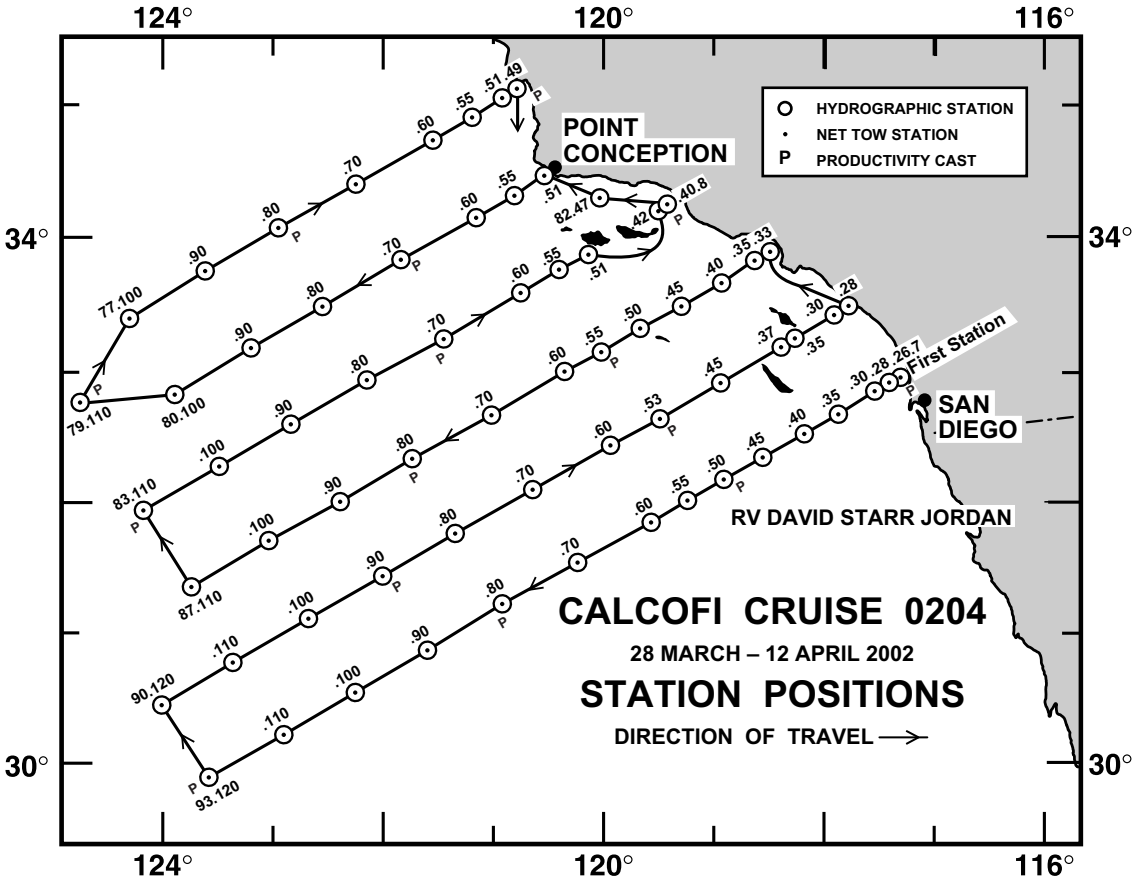

FIGURE 1

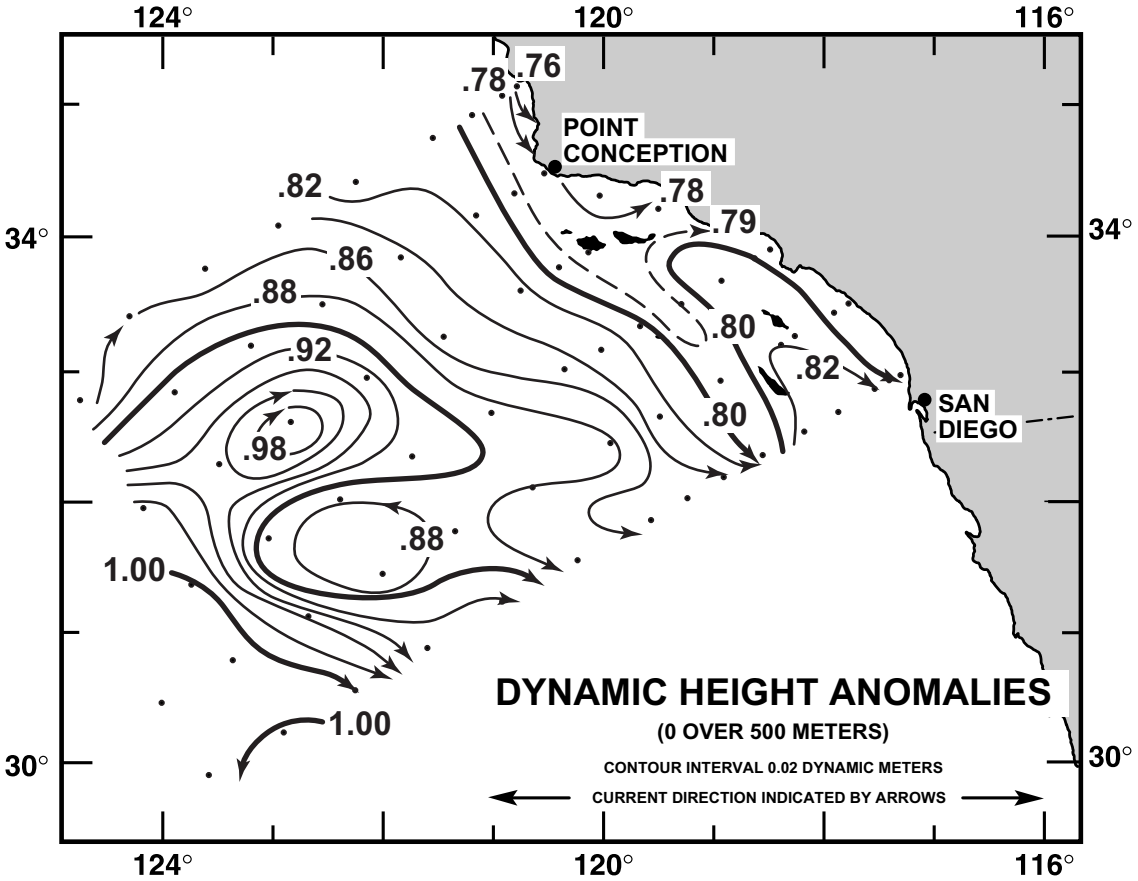

FIGURE 2

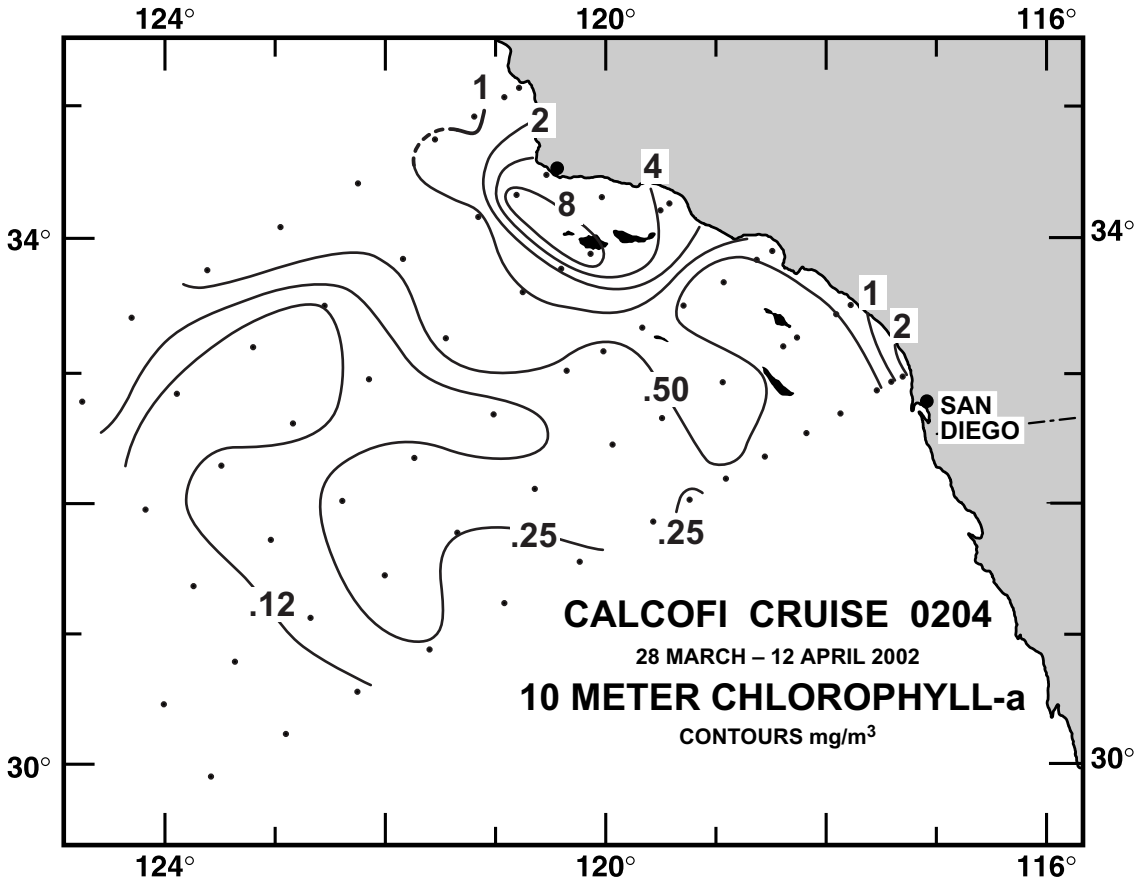

FIGURE 3A

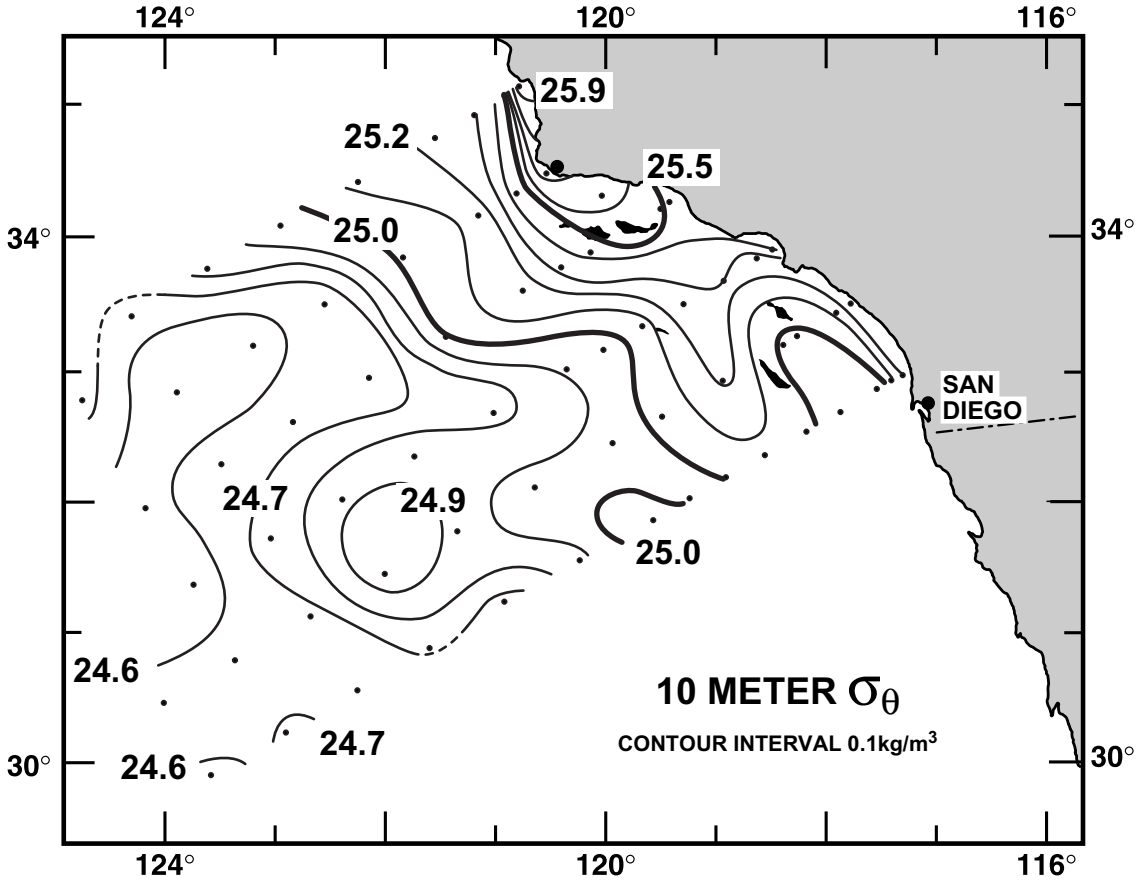

FIGURE 3B

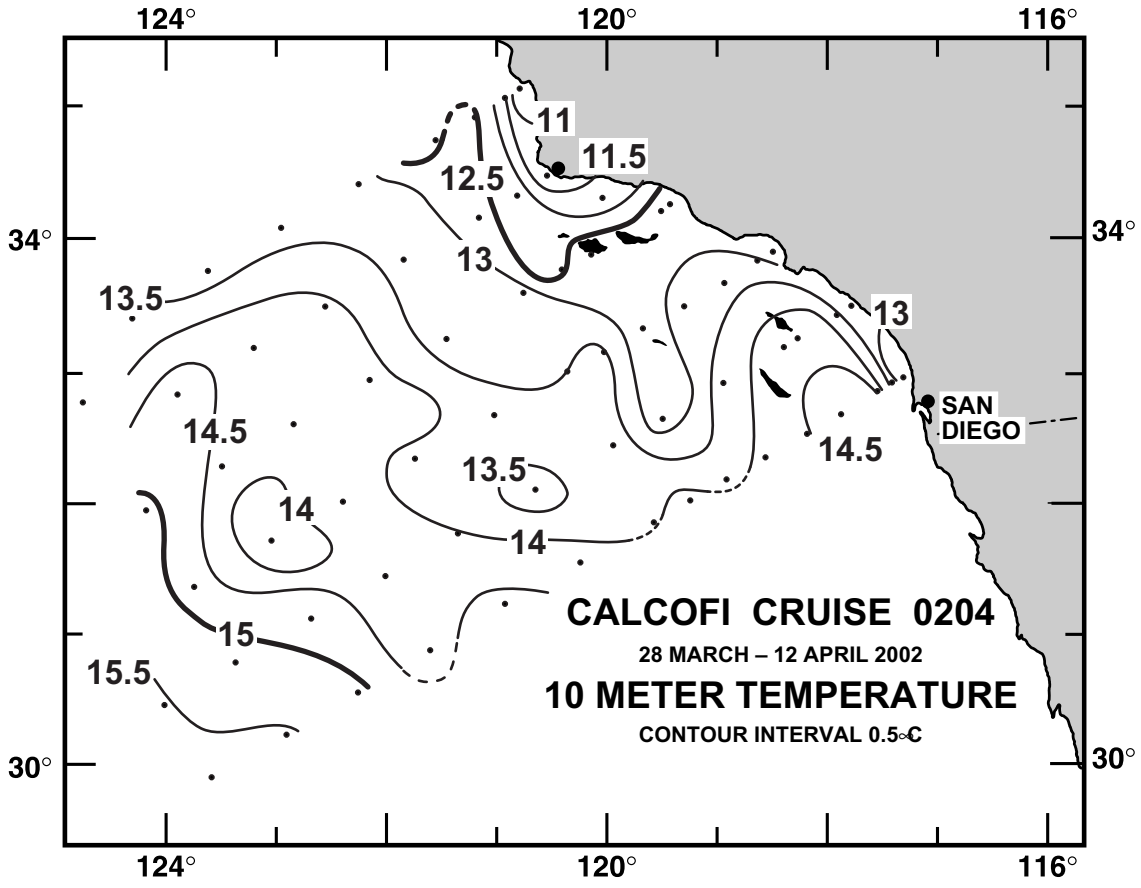

FIGURE 3C

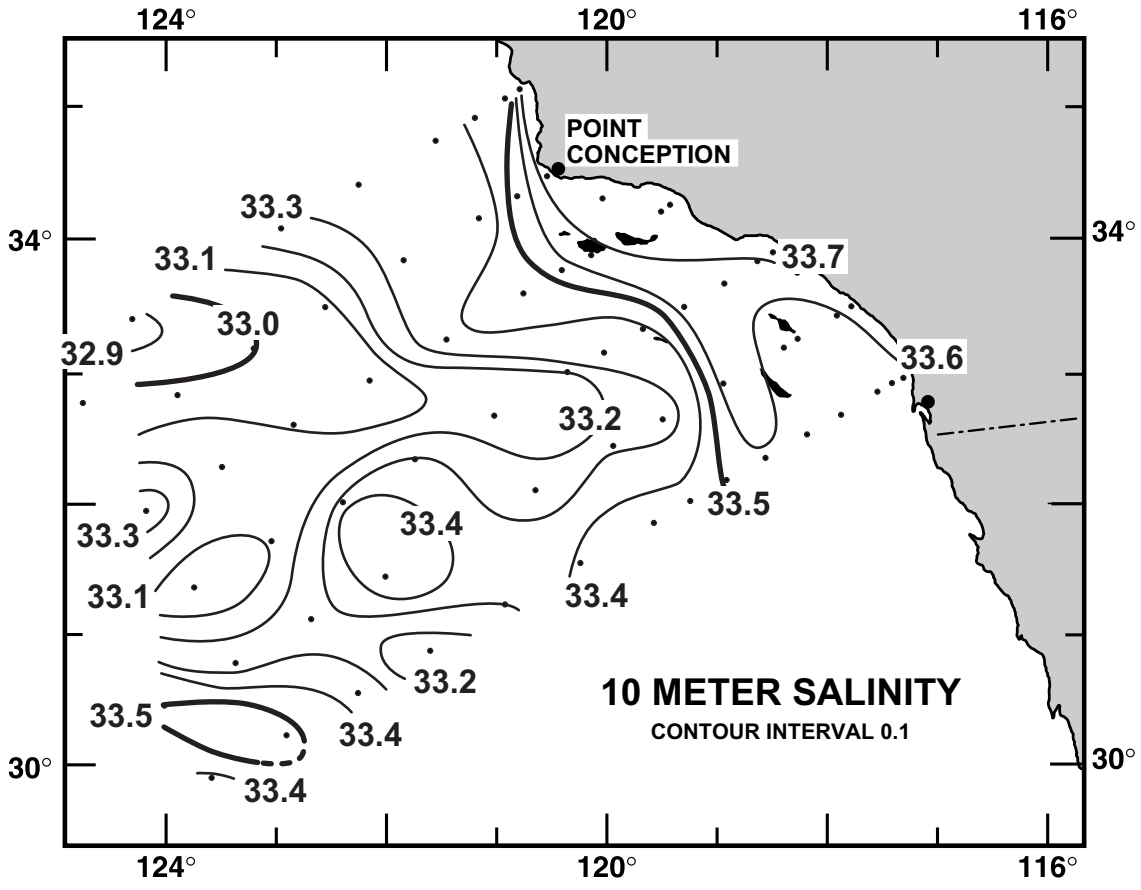

FIGURE 3D

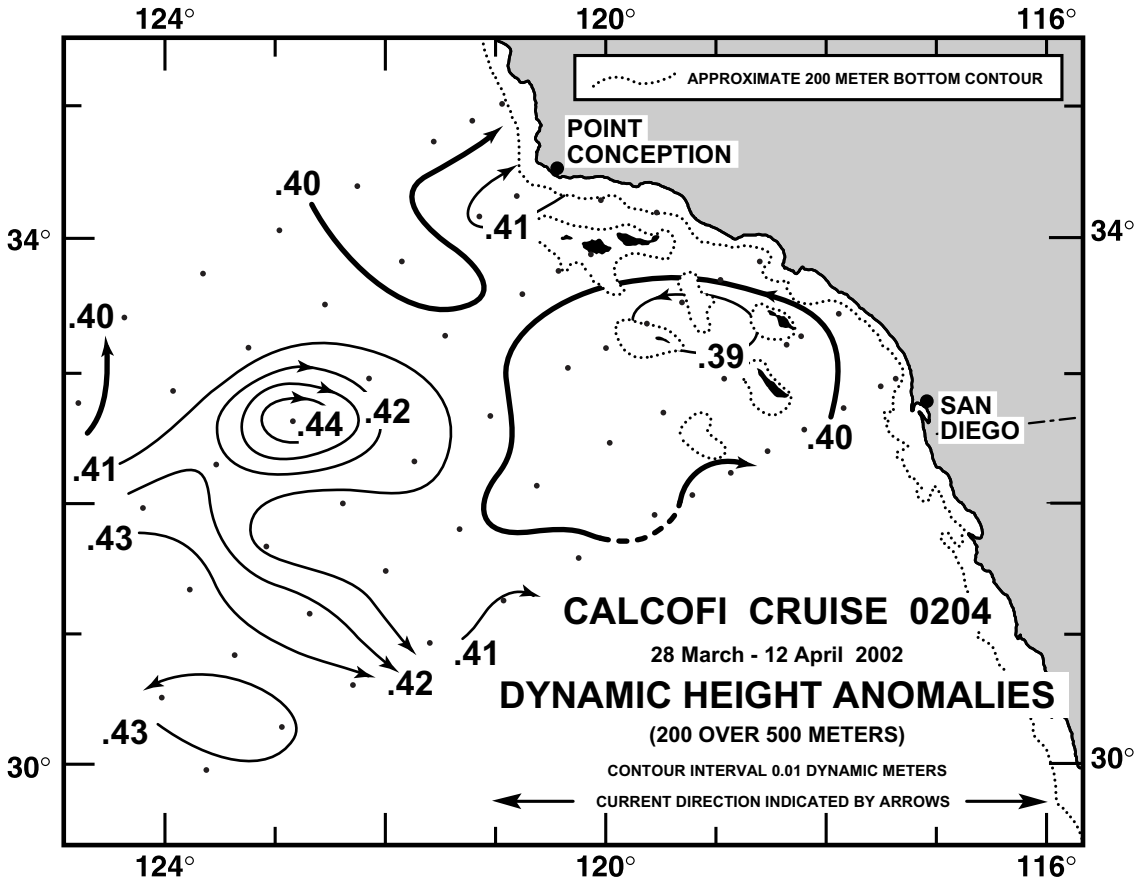

FIGURE 4A

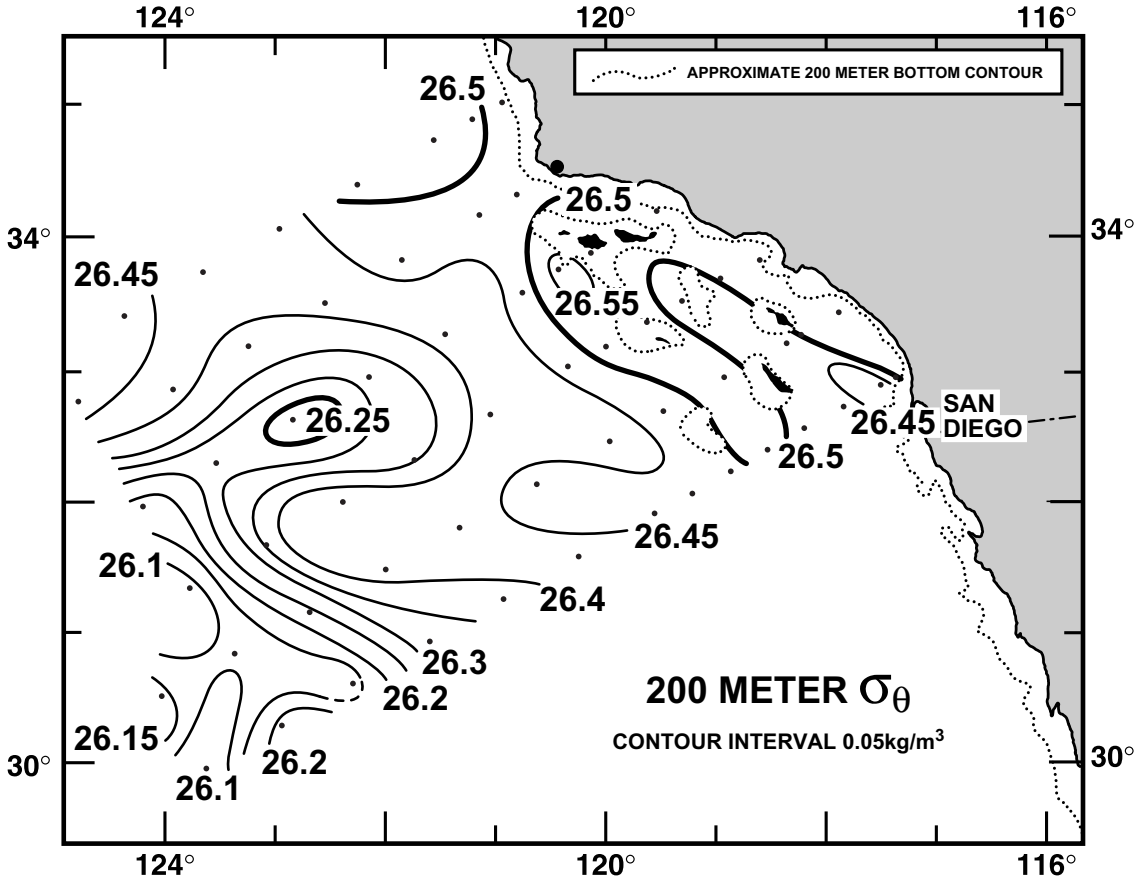

FIGURE 4B

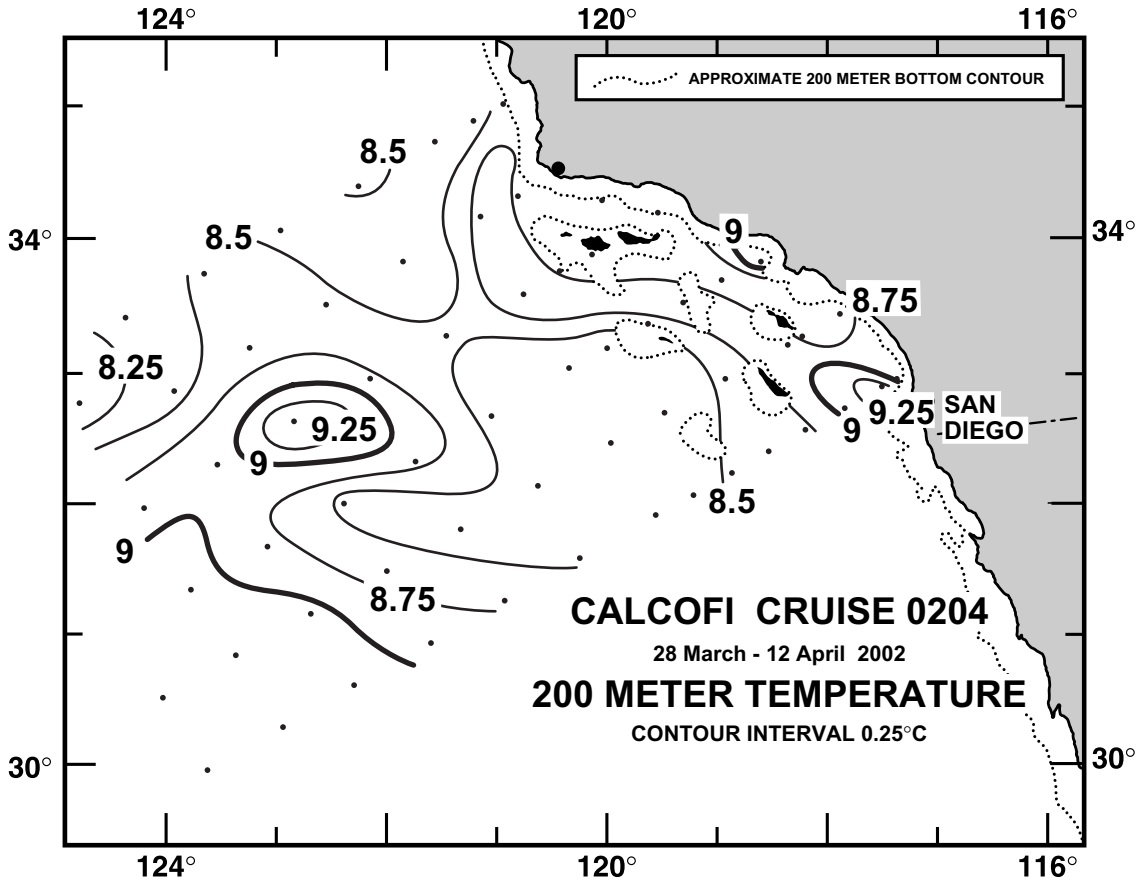

FIGURE 4C

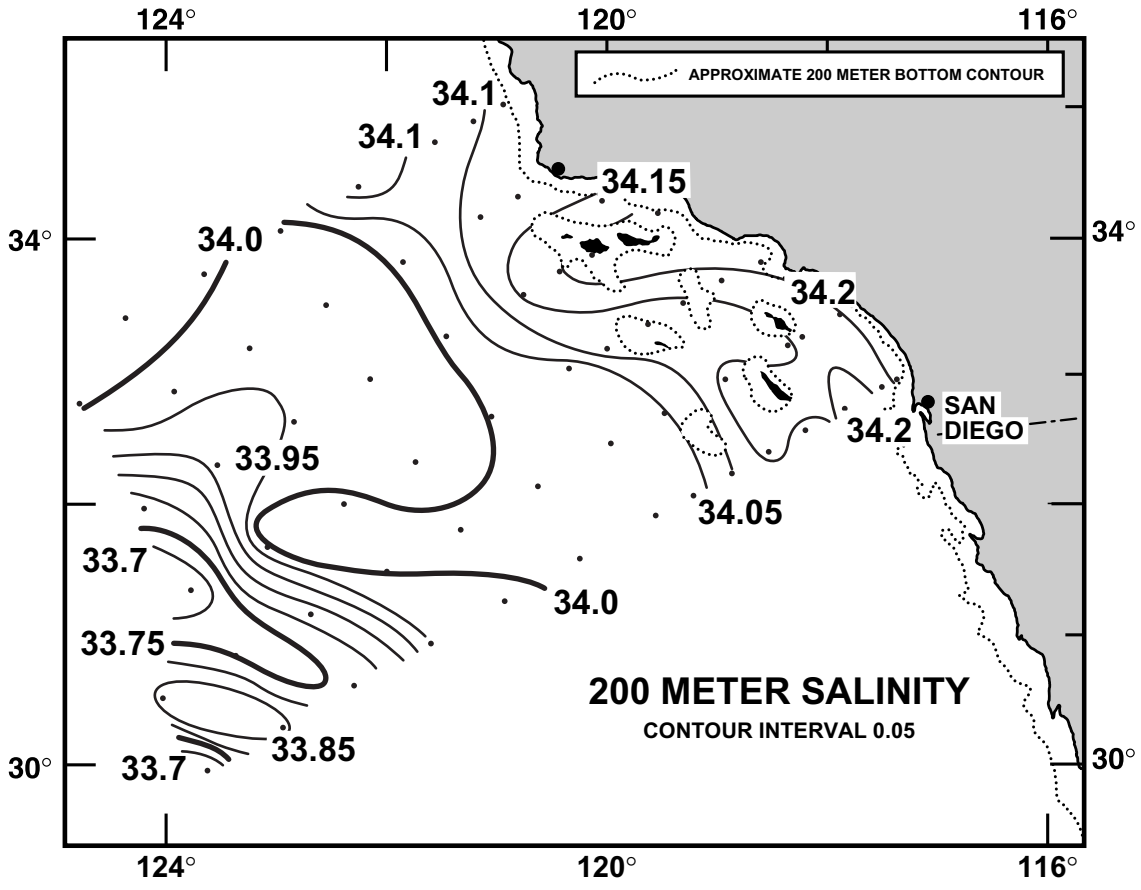

FIGURE 4D

CALCOFI CRUISE 0204

1 – 3 APRIL 2002

POTENTIAL DENSITY (σ_θ) ALONG CALCOFI LINE 90

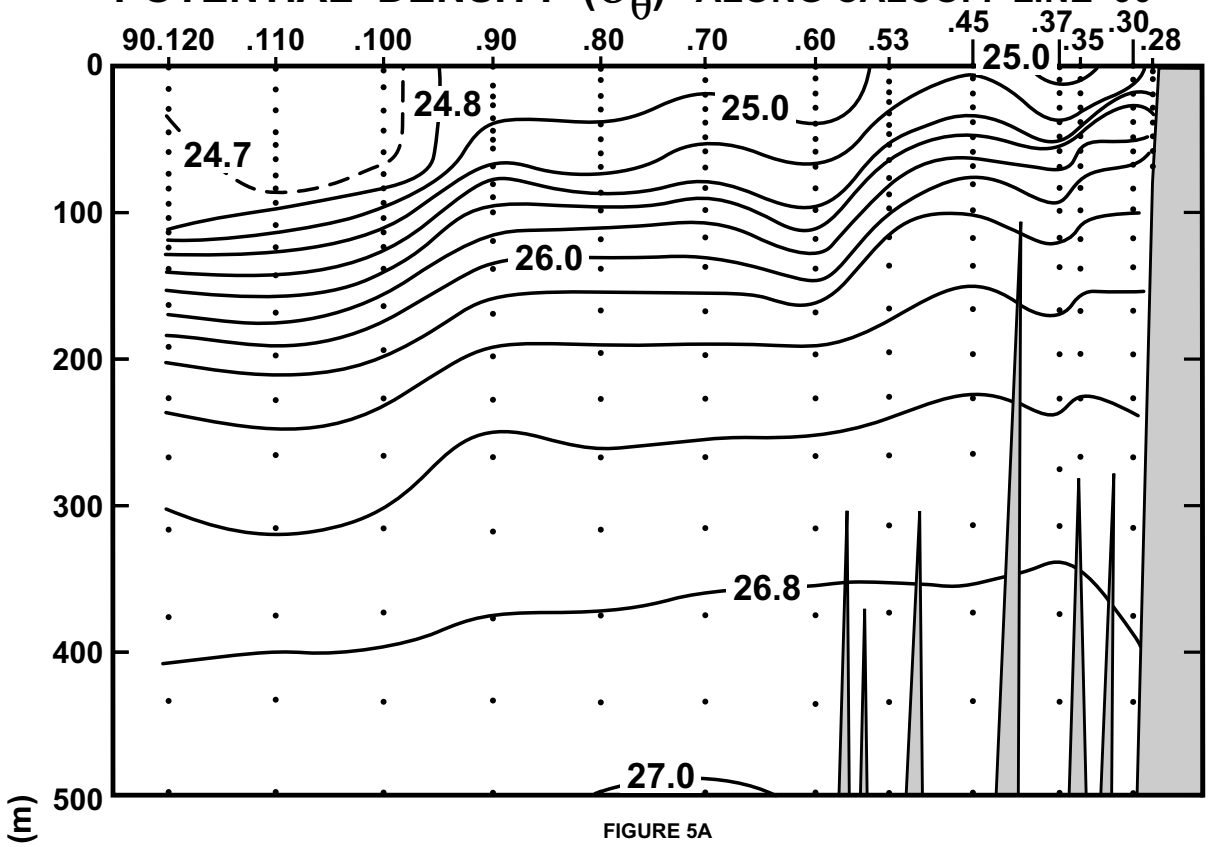

FIGURE 5A

TEMPERATURE (°C) ALONG CALCOFI LINE 90

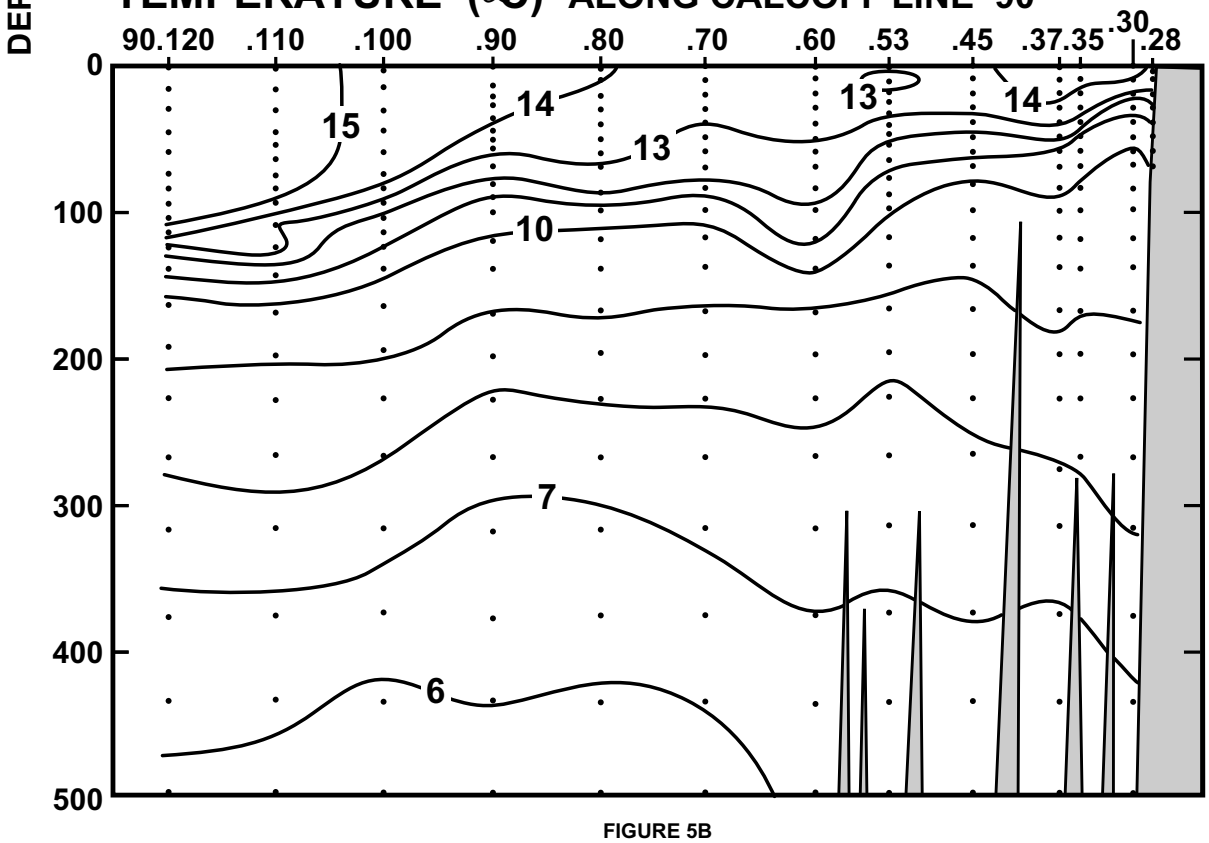

FIGURE 5B

CALCOFI CRUISE 0204

1 – 3 APRIL 2002

SALINITY ALONG CALCOFI LINE 90

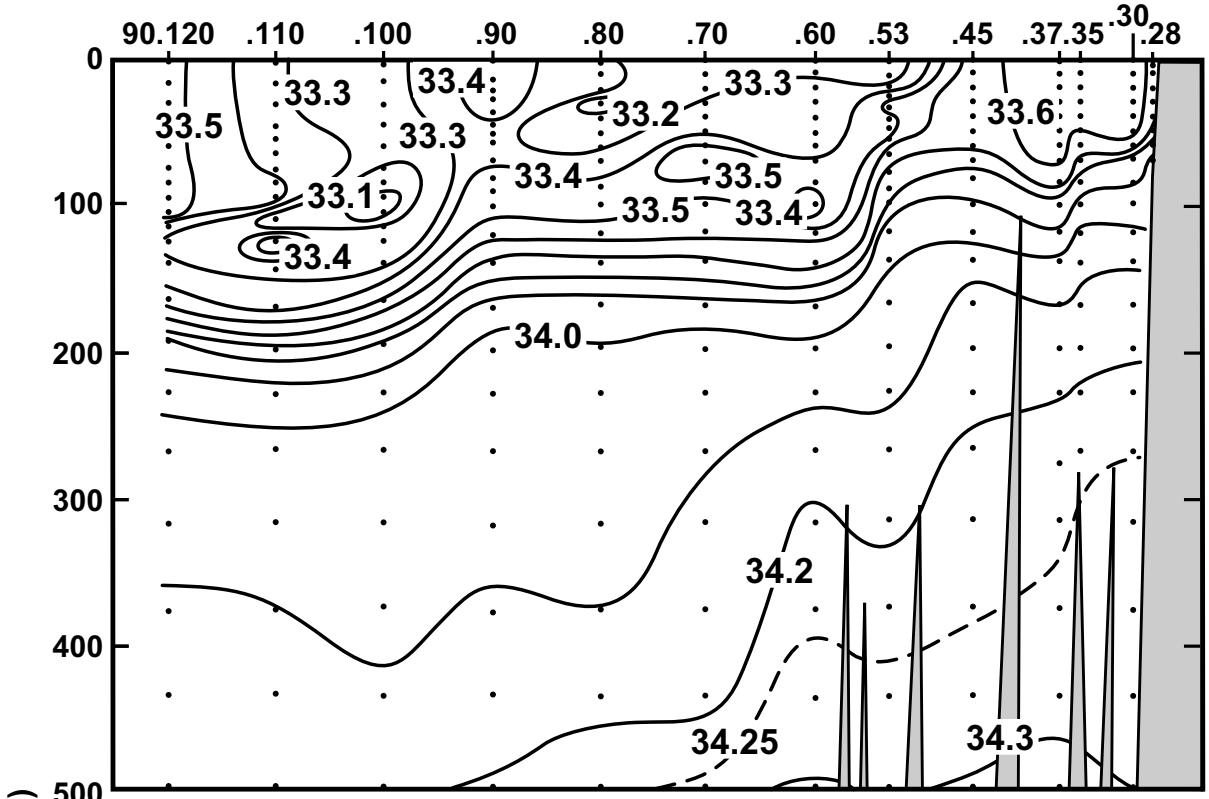

FIGURE 5C

SILICATE (μM/l) ALONG CALCOFI LINE 90

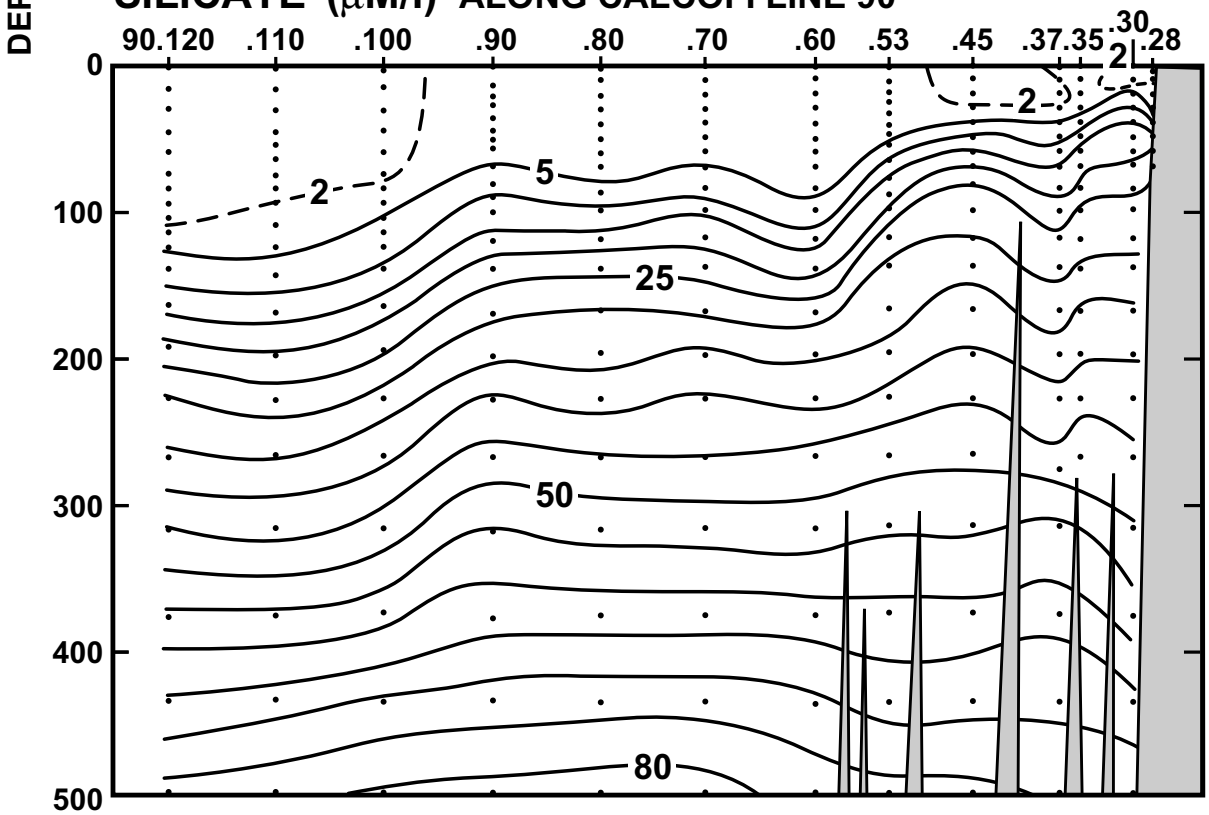

FIGURE 5D

CALCOFI CRUISE 0204

1 – 3 APRIL 2002

NITRATE (μM/l) ALONG CALCOFI LINE 90

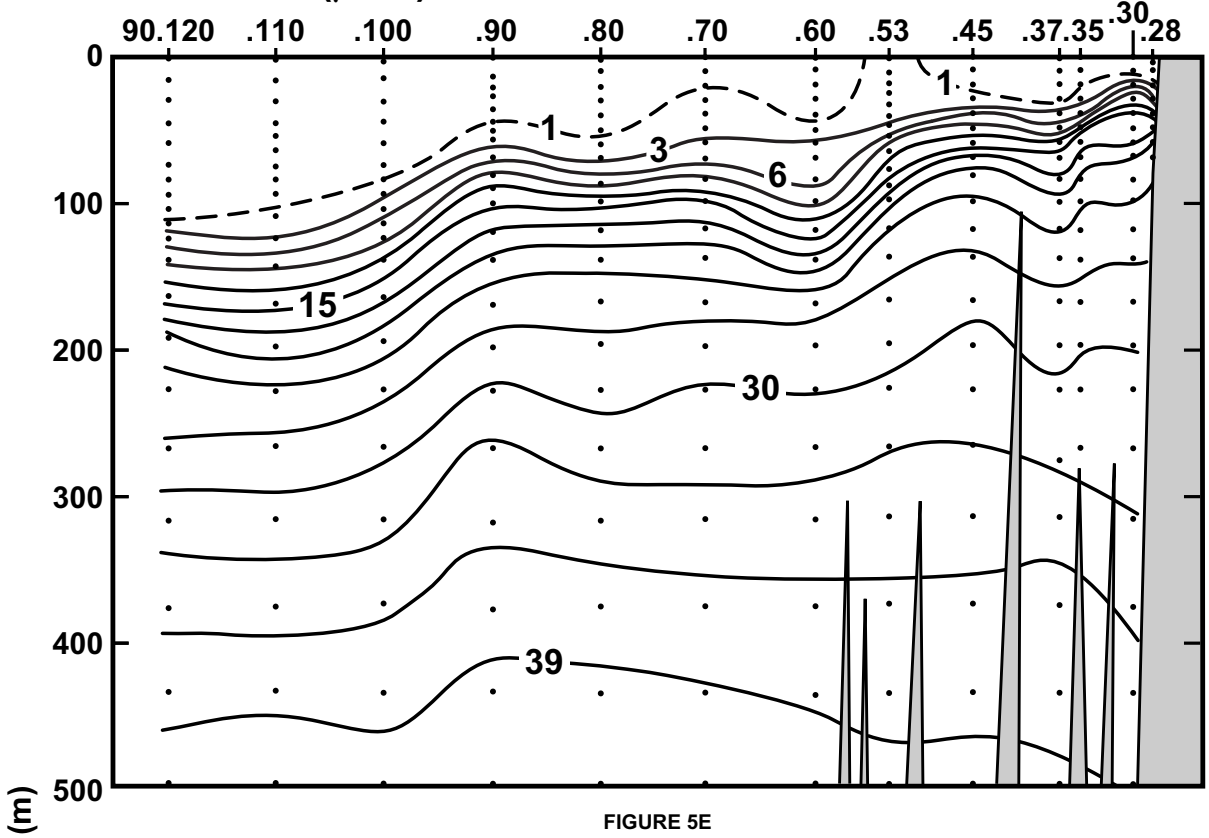

FIGURE 5E

PHOSPHATE (μM/l) ALONG CALCOFI LINE 90

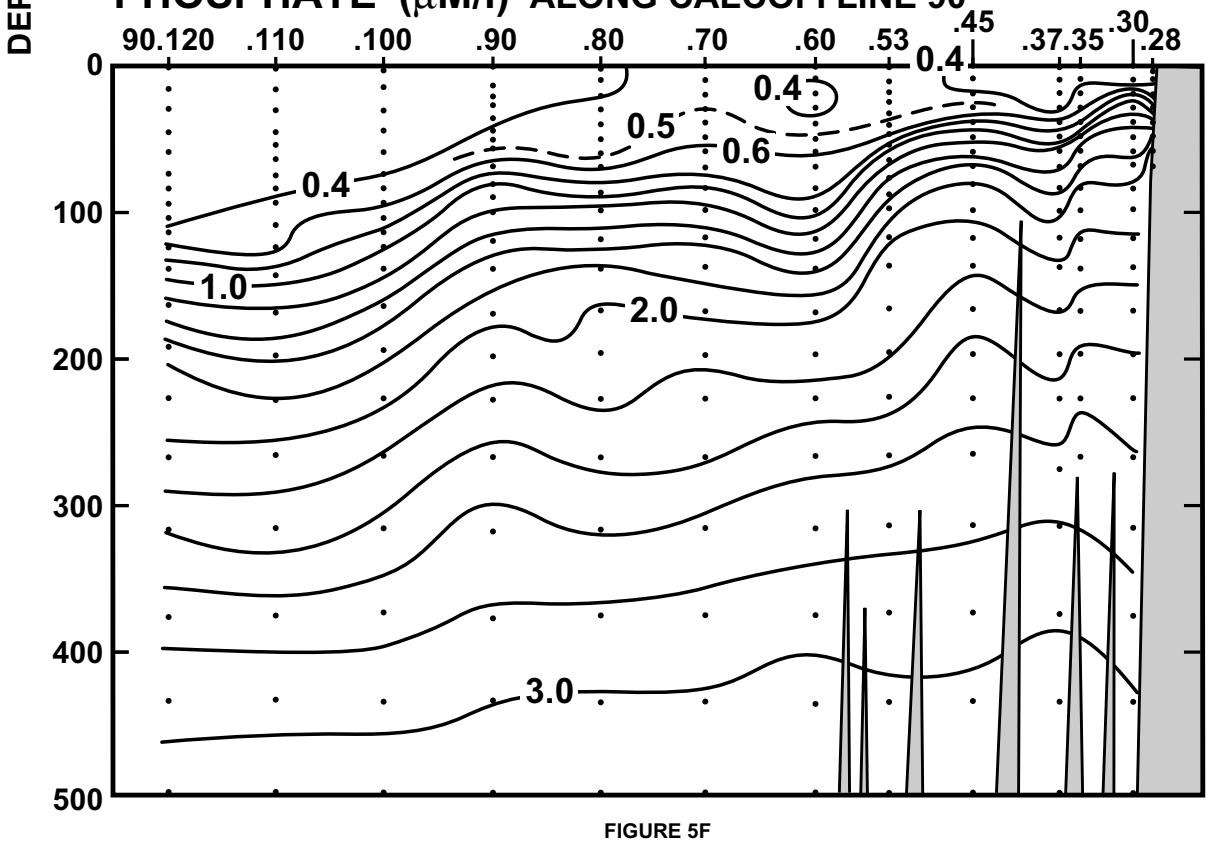

FIGURE 5F

CALCOFI CRUISE 0204

1 – 3 APRIL 2002

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

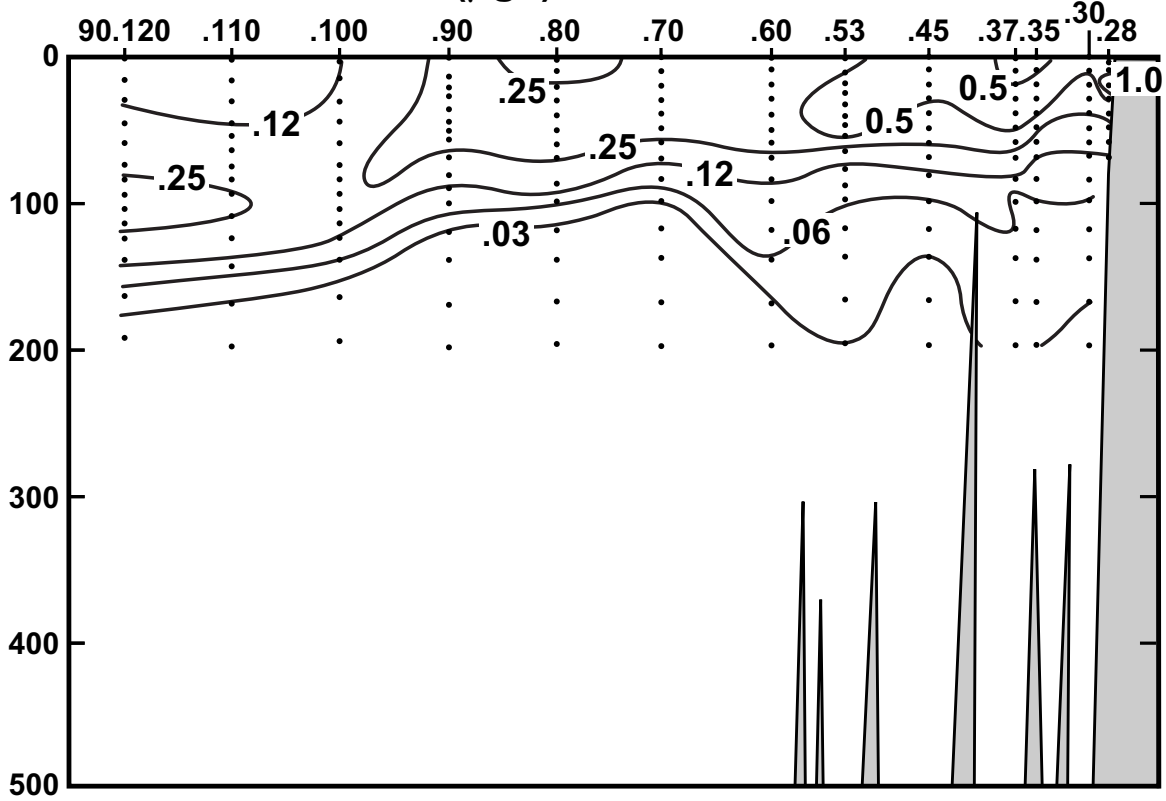

FIGURE 5G

OXYGEN SATURATION (%) ALONG CALCOFI LINE 90

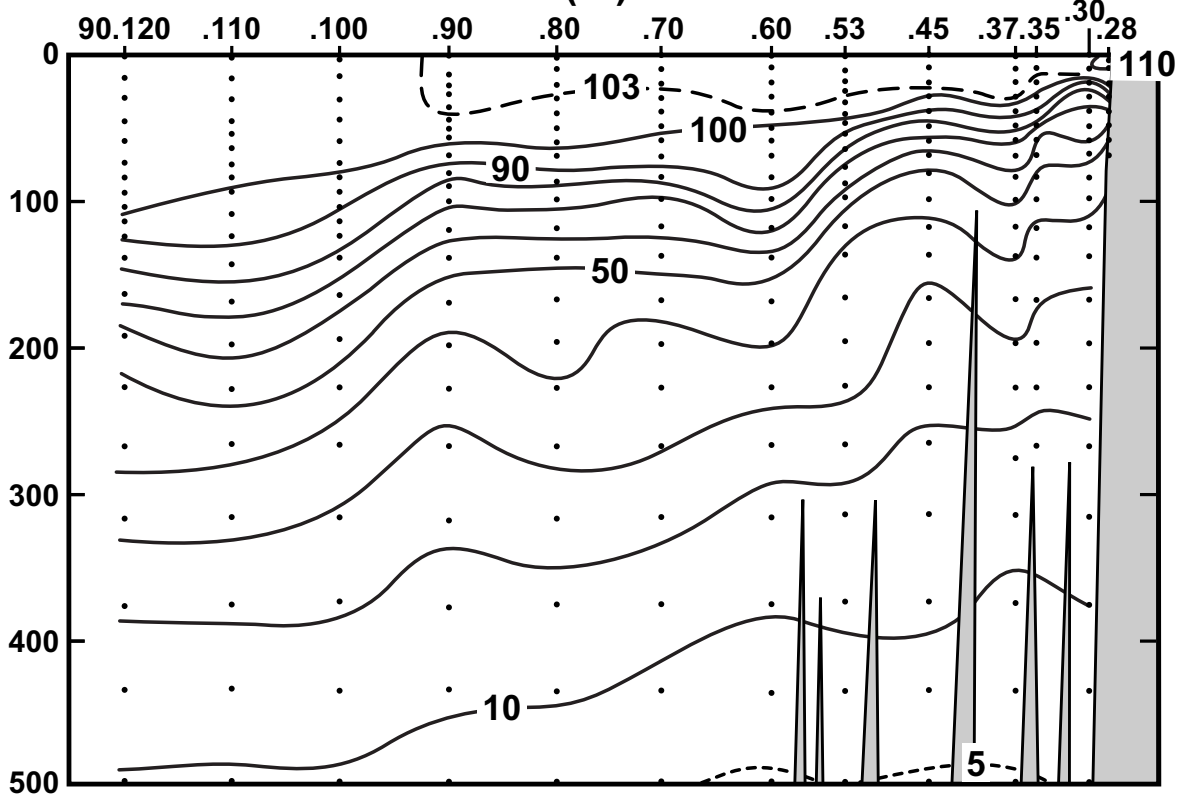

FIGURE 5H

CALCOFI CRUISE 0204

1 – 3 APRIL 2002

OXYGEN (ml/l) ALONG CALCOFI LINE 90

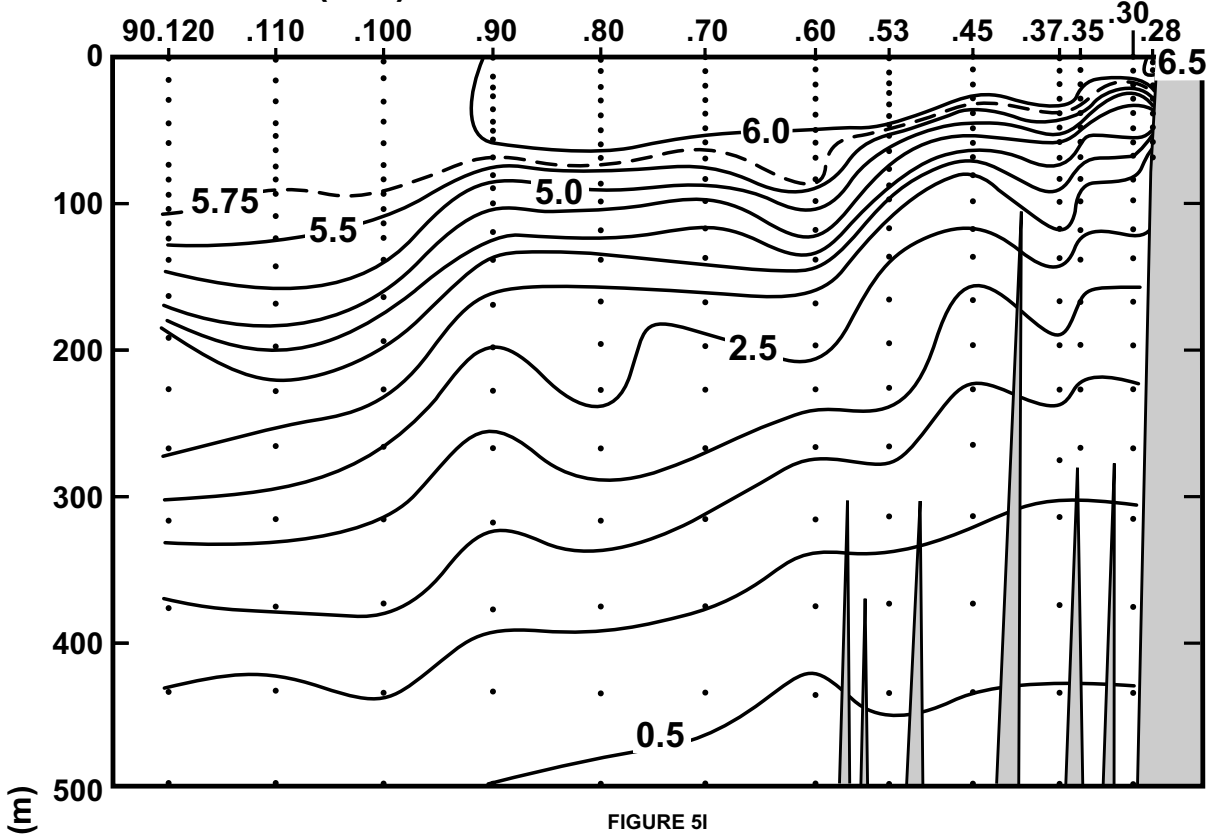

FIGURE 5I

NITRITE (μM/l) ALONG CALCOFI LINE 90

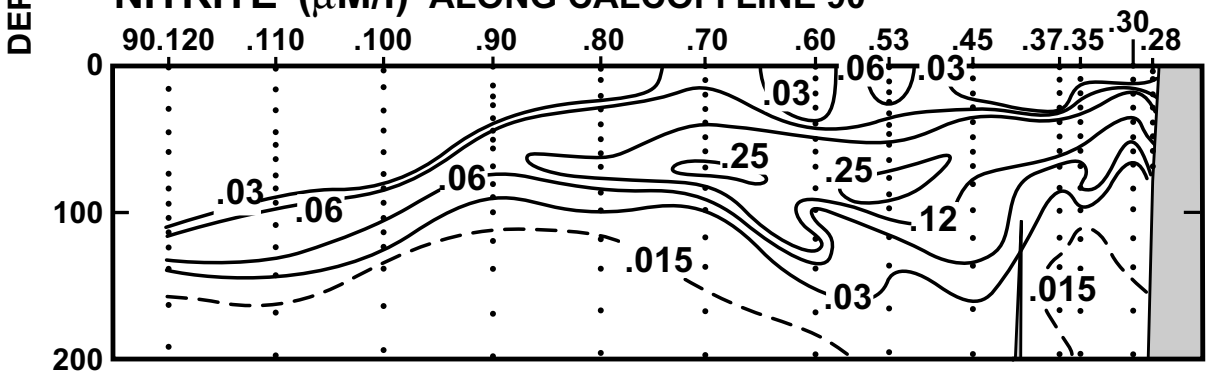

FIGURE 5J

PHAEOPIGMENTS (μg/l) ALONG CALCOFI LINE 90

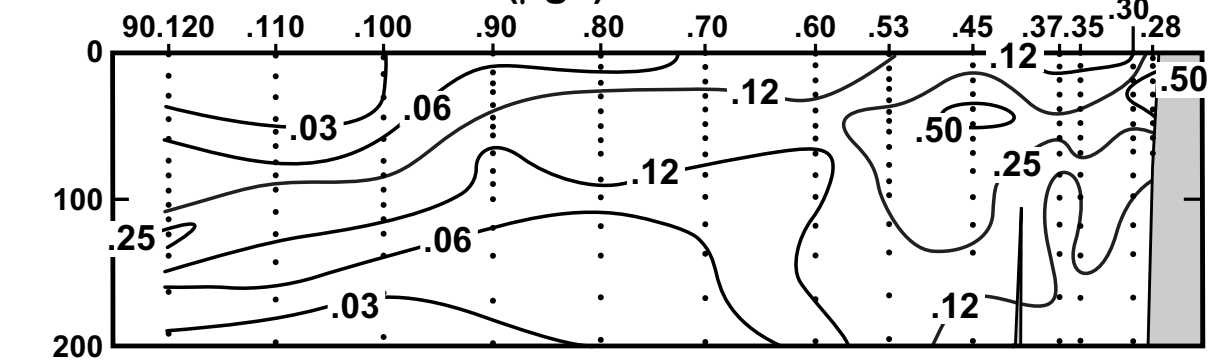

FIGURE 5K

PERSONNEL

CalCOFI Cruise 0204

SHIP'S CAPTAIN

Christopher S. Moore, *David Starr Jordan*

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

		Participating (Legs)
Griffith, David A. (Chief Scientist)	Fishery Biologist, NMFS	1,2
Becker, Susan M.	Staff Research Associate, SIO	1,2
Dotson, Ronald C.	Fishery Biologist, NMFS	1,2
Fluty, Joshua T.	Fishery Biologist, NMFS	1
Gruber, Dennis W.	Staff Research Associate, SIO	2
Holtermann, Karie E.	Staff Research Associate, SIO	1,2
Oedekoven, Cornelia S.	Seabird Biologist, Pt. Reyes Bird Observatory	1
Powell, Jesse R.	Staff Research Associate, SIO	1,2
Ramirez, Fernando	Staff Research Associate, SIO	1,2
Wang, Haili	Post-doctoral Student, SIO	1,2
Webb, Sophie	Research Associate, Pt. Reyes Bird Observatory	1,2
Wilkinson, James R.	Programmer Analyst, SIO	1
Wolgast, David M.	Staff Research Associate, SIO	1,2

Leg 1: San Diego to Dana Pt., California, 28 March – 3 April, 2002
Leg 2: Dana Pt. to Port Hueneme, California, 3 – 12 April, 2002

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
35 5.2 N	120 46.6 W	12/04/02	1809	UTC	68 m	290	15 kn	300 02 05	1	1017.5 mb	12.1 C	13.7 C	13m	3/8	AS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	10.65	10.65	33.781	25.889	210.2	0.000	4.39	69.9	21.5	1.59	18.7	0.19	1.24	0.30	0	
2	A	10.65	10.65	33.781	25.889	210.3	0.004	4.39	69.9	21.5	1.59	18.7	0.19	1.24	0.30	2	210
2		10.65	10.65	33.781	25.889	210.3	0.004									2	211
7	A	10.61	10.61	33.781	25.896	209.7	0.015	4.51	71.8	21.5	1.59	18.6	0.19	1.22	0.11	7	209
10	ISL	10.57	10.57	33.783	25.905	209.0	0.021	4.45	70.8	21.6	1.59	18.7	0.19	1.17	0.17	10	
16	A	10.48	10.48	33.786	25.923	207.4	0.033	4.23	67.1	21.8	1.60	18.8	0.18	1.01	0.38	16	207
16		10.48	10.48	33.782	25.919	207.7	0.033									16	208
20	ISL	10.42	10.42	33.784	25.932	206.6	0.042	4.13	65.5	22.0	1.62	19.0	0.17	0.90	0.37	20	
26	A	10.28	10.28	33.786	25.957	204.3	0.054	3.93	62.1	22.3	1.64	19.6	0.15	0.70	0.35	26	206
30	ISL	10.08	10.08	33.793	25.997	200.6	0.062	3.69	58.1	23.0	1.70	20.5	0.12	0.52	0.30	30	
34	A	9.88	9.88	33.810	26.044	196.2	0.070	3.42	53.6	24.1	1.77	21.6	0.09	0.34	0.26	34	205
41		9.69	9.69	33.877	26.128	188.4	0.084	2.95	46.0	27.2	1.93	23.9	0.06	0.09	0.24	41	204
48	A	9.64	9.63	33.891	26.147	186.7	0.097	2.88	44.9	27.7	1.95	24.4	0.04	0.07	0.19	48	203
50	ISL	9.64	9.63	33.894	26.150	186.5	0.100	2.88	44.9	28.0	1.96	24.4	0.05	0.08	0.22	50	
54		9.64	9.63	33.900	26.155	186.2	0.108	2.88	44.9	28.5	1.97	24.4	0.06	0.09	0.28	54	202
63		9.62	9.61	33.912	26.167	185.1	0.125	2.78	43.3	29.3	2.01	24.7	0.06	0.07	0.29	63	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
35 1.2 N	120 55.2 W	12/04/02	1421	UTC	245 m	320	16 kn	320 05 05	4	1017.6 mb	12.4 C	12.0 C		8/8	

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.87	11.87	33.439	25.402	256.6	0.000	5.85	95.5	9.0	0.87	7.7	0.22	1.16	0.41	0	
2		11.87	11.87	33.439	25.402	256.6	0.005	5.85	95.5	9.0	0.87	7.7	0.22	1.16	0.41	2	216
10		11.85	11.85	33.441	25.407	256.3	0.026	5.86	95.6	8.9	0.87	7.7	0.22	1.18	0.42	10	215
20		11.82	11.82	33.453	25.422	255.1	0.051	5.79	94.4	9.4	0.89	8.1	0.22	1.19	0.43	20	214
30		11.68	11.68	33.500	25.485	249.4	0.076	5.66	92.0	10.9	0.97	9.5	0.23	1.17	0.45	30	213
40		11.60	11.59	33.537	25.529	245.4	0.101	5.58	90.6	11.8	1.03	10.2	0.24	1.35	0.46	40	212
50		11.30	11.29	33.548	25.593	239.6	0.125	5.29	85.3	11.9	1.10	11.3	0.25	0.82	0.39	50	211
60		10.30	10.29	33.529	25.754	224.4	0.149	4.55	71.8	15.0	1.39	16.0	0.14	0.27	0.29	60	210
70		9.93	9.92	33.617	25.886	212.1	0.170	3.99	62.5	18.6	1.57	19.1	0.05	0.14	0.26	70	209
75	ISL	9.83	9.82	33.676	25.948	206.2	0.181	3.67	57.4	20.4	1.66	20.5	0.04	0.09	0.23	75	
85		9.68	9.67	33.787	26.060	195.8	0.201	3.13	48.8	23.8	1.82	22.9	0.02	0.03	0.17	85	208
100		9.36	9.35	33.877	26.183	184.4	0.230	2.84	44.0	27.2	1.94	24.9	0.02	0.02	0.12	101	207
120		9.05	9.04	33.983	26.316	172.1	0.265	2.50	38.5	31.2	2.08	27.1	0.02	0.01	0.10	121	206
125	ISL	8.97	8.96	34.009	26.349	169.0	0.274	2.39	36.7	32.5	2.12	27.6	0.02	0.01	0.10	126	
138		8.80	8.79	34.065	26.420	162.5	0.295	2.14	32.8	35.7	2.23	28.7	0.03	0.01	0.09	139	205
150	ISL	8.81	8.79	34.072	26.424	162.4	0.315	2.05	31.4	36.6	2.28	28.9	0.04	0.02	0.11	151	
170		8.83	8.81	34.085	26.432	162.1	0.347	1.96	30.0	37.3	2.32	29.1	0.06	0.03	0.15	171	204
199		8.75	8.73	34.120	26.472	158.8	0.394	1.63	24.9	41.2	2.43	29.8	0.11	0.03	0.22	200	203
200	ISL	8.75	8.73	34.120	26.472	158.8	0.395	1.63	24.9	41.2	2.43	29.8	0.11			201	
220		8.60	8.58	34.125	26.500	156.6	0.427	1.66	25.3	41.6	2.43	30.1	0.09			221	202
237		8.37	8.35	34.126	26.536	153.3	0.453	1.60	24.3	44.2	2.50	30.8	0.07			238	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 53.4 N	121 11.8 W	12/04/02	1039	UTC	557 m	340	20 kn			1018.1 mb	13.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.73	12.73	33.455	25.250	271.0	0.000	6.19	102.9	4.6	0.60	3.8	0.18	0.72	0.22	0	
2		12.73	12.73	33.455	25.250	271.0	0.005	6.19	102.9	4.6	0.60	3.8	0.18	0.72	0.22	2	220
10		12.72	12.72	33.454	25.251	271.1	0.027	6.17	102.5	4.6	0.60	3.8	0.18	0.69	0.21	10	219
19		12.72	12.72	33.456	25.253	271.2	0.052	6.17	102.5	4.4	0.61	3.8	0.18	0.74	0.22	19	218
20	ISL	12.71	12.71	33.456	25.255	271.0	0.054	6.18	102.7	4.3	0.60	3.9	0.18	0.92	0.24	20	
30		12.32	12.32	33.468	25.340	263.2	0.081	6.23	102.7	2.8	0.54	4.4	0.20	2.34	0.42	30	217
40		11.25	11.25	33.524	25.583	240.3	0.106	5.30	85.4	9.6	1.03	10.1	0.41	0.82	0.45	40	216
49		10.52	10.51	33.606	25.776	222.1	0.127	4.42	70.1	15.7	1.40	16.2	0.16	0.25 A	0.25 A	49	215
50	ISL	10.48	10.47	33.614	25.789	220.8	0.129	4.35	69.0	16.1	1.43	16.6	0.14	0.24	0.25	50	
60		10.24	10.23	33.676	25.879	212.5	0.151	3.92	61.8	18.9	1.59	19.1	0.04	0.11	0.20	60	214
70		10.17	10.16	33.698	25.908	210.0	0.172	3.82	60.2	19.7	1.63	19.7	0.02	0.08	0.17	70	213
75	ISL	10.01	10.00	33.710	25.945	206.6	0.182	3.70	58.1	20.6	1.67	20.5	0.02	0.07	0.16	75	
84		9.70	9.69	33.741	26.021	199.5	0.201	3.45	53.8	22.5	1.76	22.0	0.02	0.05	0.15	84	212
99		9.48	9.47	33.830	26.127	189.7	0.230	3.05	47.4	25.4	1.89	23.9	0.02	0.03	0.13	100	211
100	ISL	9.47	9.46	33.834	26.132	189.3	0.232	3.04	47.2	25.5	1.89	24.0	0.02	0.03	0.13	101	
119		9.37	9.36	33.897	26.198	183.4	0.267	2.81	43.5	27.5	1.97	25.0	0.01	0.02	0.11	120	210
125	ISL	9.33	9.32	33.932	26.232	180.3	0.278	2.68	41.5	28.6	2.01	25.6	0.01	0.02	0.12	126	
139		9.20	9.18	34.009	26.313	172.8	0.303	2.40	37.1	31.2	2.11	26.9	0.01	0.01	0.13	140	209
150	ISL	8.99	8.97	34.033	26.365	168.0	0.321	2.31	35.5	33.0	2.16	27.8	0.01	0.02	0.12	151	
170		8.60	8.58	34.051	26.441	161.2	0.354	2.23	34.0	35.9	2.22	29.0	0.01	0.03	0.10	171	208
199		8.36	8.34	34.091	26.509	155.1	0.400	2.01	30.5	39.2	2.33	30.2	0.02	0.01	0.09	200	207
200	ISL	8.35	8.33	34.092	26.512	154.9	0.402	2.00	30.3	39.3	2.33	30.2	0.02			201	
229		8.03	8.01	34.122	26.583	148.5	0.446	1.73	26.0	43.5	2.45	31.6	0.01			230	206
250	ISL	7.81	7.79	34.129	26.622	145.1	0.477	1.64	24.6	46.0	2.51	32.3	0.01			252	
267		7.65	7.62	34.135	26.650	142.7	0.501	1.56	23.3	48.2	2.56	32.9	0.01			269	205
300	ISL	7.41	7.38	34.180	26.720	136.5	0.547	1.15	17.1	55.1	2.75	34.2	0.01			302	
318		7.28	7.25	34.205	26.758	133.1	0.571	0.92	13.6	59.0	2.85	35.0	0.01			320	204
378		6.63	6.60	34.225	26.863	123.6	0.648	0.69	10.1	67.4	2.99	37.4	0.00			381	203
400	ISL	6.50	6.46	34.231	26.885	121.7	0.675	0.62	9.0	69.4	3.02	37.9	0.00			403	
438		6.32	6.28	34.242	26.918	119.1	0.721	0.52	7.5	72.9	3.07	38.6	0.00			441	202
500	ISL	5.91	5.87	34.277	26.998	111.9	0.793	0.36	5.2	82.5	3.19	39.5	0.04			504	
512		5.83	5.79	34.284	27.014	110.5	0.806	0.33	4.7	84.3	3.21	39.7	0.05			516	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 43.0 N	121 32.7 W	12/04/02	0615 UTC	973 m	330 22 kn			1018.5 mb	13.9 C	13.0 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.27	12.27	33.313	25.229	273.0	0.000	6.18	101.6	5.8	0.67	4.5	0.16	1.14	0.33	0	
3		12.27	12.27	33.313	25.229	273.1	0.008	6.18	101.6	5.8	0.67	4.5	0.16	1.14	0.33	3	220
10	ISL	12.26	12.26	33.313	25.231	273.1	0.027	6.16	101.3	5.8	0.67	4.5	0.16	1.15	0.29	10	
11		12.26	12.26	33.313	25.231	273.1	0.030	6.16	101.3	5.8	0.67	4.5	0.16	1.15	0.28	11	219
20		12.26	12.26	33.310	25.229	273.5	0.055	6.18	101.6	5.7	0.66	4.5	0.16	1.23	0.27	20	218
30		12.26	12.26	33.310	25.229	273.8	0.082	6.17	101.4	5.5	0.66	4.4	0.16	1.20	0.30	30	217
40		12.23	12.22	33.319	25.242	272.8	0.109	6.14	100.9	5.9	0.68	4.7	0.16	1.21	0.29	40	216
50		11.79	11.78	33.383	25.374	260.4	0.136	5.79	94.3	7.5	0.84	7.3	0.24	0.86	0.38	50	215
60		11.14	11.13	33.457	25.551	243.8	0.161	5.25	84.3	10.2	1.07	10.9	0.28	0.53	0.34	60	214
70		10.81	10.80	33.583	25.708	229.1	0.185	4.63	73.9	13.8	1.30	14.7	0.10	0.29	0.25	70	213
75	ISL	10.55	10.54	33.615	25.778	222.4	0.196	4.36	69.2	15.7	1.41	16.5	0.08	0.20	0.22	75	
85		10.08	10.07	33.660	25.894	211.6	0.218	3.91	61.5	19.0	1.60	19.5	0.03	0.08	0.18	85	212
99		9.87	9.86	33.741	25.993	202.5	0.247	3.47	54.3	22.0	1.74	21.7	0.02	0.06	0.16	100	211
100	ISL	9.85	9.84	33.749	26.003	201.6	0.249	3.43	53.7	22.3	1.75	21.9	0.02	0.06	0.16	101	
120		9.37	9.36	33.902	26.201	183.1	0.287	2.73	42.3	28.0	1.98	25.6	0.01	0.02	0.14	121	210
125	ISL	9.28	9.27	33.927	26.236	179.9	0.296	2.63	40.7	29.1	2.02	26.2	0.01	0.02	0.14	126	
141		9.05	9.03	33.983	26.317	172.5	0.325	2.45	37.7	31.7	2.11	27.5	0.01	0.02	0.14	142	209
150	ISL	8.96	8.94	33.991	26.337	170.7	0.340	2.45	37.6	32.1	2.12	27.8	0.01	0.04	0.15	151	
170		8.78	8.76	34.003	26.375	167.4	0.374	2.44	37.3	33.2	2.13	28.3	0.01	0.08	0.17	171	208
199		8.39	8.37	34.090	26.504	155.6	0.421	2.01	30.5	39.2	2.32	30.5	0.01	0.01	0.08	200	207
200	ISL	8.38	8.36	34.092	26.507	155.4	0.422	2.00	30.3	39.3	2.33	30.5	0.01			201	
230		8.23	8.21	34.150	26.576	149.4	0.468	1.61	24.3	43.3	2.47	31.8	0.01			231	206
250	ISL	8.05	8.02	34.169	26.618	145.7	0.497	1.43	21.5	46.3	2.56	32.7	0.00			252	
268		7.84	7.81	34.176	26.655	142.4	0.523	1.31	19.6	49.3	2.64	33.5	0.00			270	205
300	ISL	7.26	7.23	34.165	26.729	135.5	0.568	1.20	17.7	55.9	2.73	35.3	0.00			302	
318		6.94	6.91	34.161	26.770	131.7	0.592	1.14	16.7	59.5	2.77	36.3	0.00			320	204
377		6.61	6.58	34.218	26.860	123.9	0.667	0.73	10.6	67.6	2.96	38.0	0.00			380	203
400	ISL	6.53	6.49	34.231	26.881	122.1	0.696	0.64	9.3	69.5	3.00	38.5	0.00			403	
437		6.41	6.37	34.246	26.909	119.9	0.740	0.55	8.0	72.1	3.04	39.3	0.00			440	202
500	ISL	6.14	6.10	34.269	26.963	115.5	0.814	0.44	6.3	76.8	3.11	40.3	0.00			504	
515		6.08	6.03	34.275	26.976	114.5	0.832	0.41	5.9	77.9	3.13	40.5	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 23.3 N	122 14.4 W	11/04/02	2339 UTC	4007 m	320 22 kn	340 05 06	1	1019.8 mb	15.2 C	13.8 C	14m	3/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.12	13.12	33.390	25.123	283.1	0.000	6.31	105.7	2.6	0.49	2.6	0.11	0.89	0.15	0	
2		13.12	13.12	33.390	25.123	283.2	0.006	6.31	105.7	2.6	0.49	2.6	0.11	0.89	0.15	2	220
10		13.11	13.11	33.391	25.126	283.1	0.028	6.32	105.8	2.6	0.49	2.6	0.11	0.93	0.12	10	219
20		13.04	13.04	33.397	25.144	281.6	0.057	6.31	105.5	2.7	0.49	2.7	0.11	0.95	0.15	20	218
30		12.89	12.89	33.408	25.183	278.2	0.085	6.30	105.0	3.0	0.52	2.8	0.12	1.00	0.24	30	217
40		12.25	12.24	33.380	25.285	268.7	0.112	6.09	100.1	4.5	0.66	4.5	0.21	0.89	0.34	40	216
50		11.38	11.37	33.492	25.534	245.1	0.138	5.34	86.2	9.5	1.02	9.9	0.33	0.60	0.39	50	215
60		10.75	10.74	33.560	25.700	229.5	0.161	4.68	74.6	13.8	1.29	14.5	0.27	0.42	0.33	60	214
70		10.42	10.41	33.655	25.832	217.2	0.184	4.22	66.8	17.4	1.49	17.5	0.28	0.23	0.34	70	213
75	ISL	10.24	10.23	33.683	25.885	212.3	0.194	3.98	62.8	18.9	1.57	18.8	0.22	0.19	0.33	75	
85		9.93	9.92	33.729	25.973	204.1	0.215	3.54	55.5	21.4	1.71	21.0	0.07	0.14	0.31	85	212
100		9.73	9.72	33.828	26.084	193.8	0.245	3.02	47.1	24.9	1.88	23.4	0.02	0.06	0.21	101	211
119		9.53	9.52	33.958	26.219	181.4	0.281	2.43	37.8	29.2	2.06	25.9	0.01	0.03	0.18	120	210
125	ISL	9.47	9.46	33.990	26.254	178.2	0.291	2.29	35.6	30.5	2.11	26.5	0.01	0.03	0.18	126	
139		9.32	9.30	34.050	26.326	171.7	0.316	2.04	31.6	33.2	2.22	27.6	0.02	0.02	0.18	140	209
150	ISL	9.23	9.21	34.077	26.362	168.5	0.335	1.91	29.5	34.7	2.27	28.3	0.02	0.02	0.17	151	
171		9.03	9.01	34.102	26.413	163.9	0.370	1.78	27.4	36.9	2.33	29.3	0.01	0.02	0.14	172	208
200	ISL	8.51	8.49	34.114	26.505	155.7	0.416	1.78	27.1	40.0	2.39	30.5	0.02	0.02	0.12	201	
201		8.49	8.47	34.114	26.508	155.4	0.417	1.78	27.1	40.1	2.39	30.5	0.02	0.02	0.12	202	207
230		8.10	8.08	34.126	26.576	149.2	0.462	1.74	26.2	42.8	2.44	31.4	0.02			231	206
250	ISL	7.86	7.83	34.132	26.617	145.6	0.491	1.65	24.7	45.6	2.50	32.2	0.02			252	
270		7.64	7.61	34.139	26.654	142.3	0.520	1.52	22.7	48.7	2.57	33.1	0.01			272	205
300	ISL	7.39	7.36	34.161	26.708	137.6	0.562	1.29	19.1	52.8	2.67	34.3	0.01			302	
319		7.25	7.22	34.177	26.740	134.8	0.588	1.14	16.9	55.3	2.74	35.0	0.01			321	204
381		6.83	6.79	34.227	26.838	126.2	0.669	0.74	10.8	63.9	2.93	37.0	0.01			384	203
400	ISL	6.68	6.64	34.231	26.862	124.2	0.692	0.68	9.9	66.2	2.97	37.6	0.01			403	
438		6.38	6.34	34.237	26.906	120.2	0.739	0.58	8.4	70.6	3.03	38.6	0.01			441	202
500	ISL	6.01	5.97	34.282	26.990	112.8	0.811	0.37	5.3	78.5	3.15	40.1	0.00			504	
501		6.00	5.96	34.283	26.992	112.6	0.812	0.37	5.3	78.6	3.15	40.1	0.00			505	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 2.9 N	122 56.2 W	11/04/02	1747 UTC	4227 m	340 21 kn	310 05 05	1	1022.3 mb	13.2 C	12.2 C	14m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.44	13.44	33.273	24.968	297.8	0.000	6.28	105.8	3.2	0.44	1.0	0.05	0.62	0.15	0	
2	A	13.44	13.44	33.273	24.968	297.9	0.006	6.28	105.8	3.2	0.44	1.0	0.05	0.62	0.15	2	222
2		13.43	13.43	33.273	24.970	297.7	0.006									2	223
8	A	13.43	13.43	33.273	24.970	297.8	0.024	6.28	105.8	3.0	0.43	0.9	0.05	0.64	0.13	8	220
9		13.43	13.43	33.273	24.970	297.9	0.027									9	221
10	ISL	13.43	13.43	33.273	24.970	297.9	0.030	6.28	105.8	3.0	0.43	0.9	0.05	0.65	0.12	10	
17	A	13.42	13.42	33.273	24.972	297.9	0.051	6.28	105.8	3.1	0.43	0.9	0.05	0.67	0.11	17	219
20	ISL	13.41	13.41	33.273	24.974	297.7	0.060	6.27	105.6	3.1	0.43	0.9	0.05	0.67	0.12	20	
28	A	13.40	13.40	33.274	24.978	297.7	0.083	6.26	105.4	3.1	0.43	1.0	0.05	0.67	0.13	28	218
30	ISL	13.31	13.31	33.289	25.007	294.9	0.089	6.26	105.2	3.1	0.44	1.1	0.06	0.73	0.15	30	
37	A	12.93	12.93	33.352	25.132	283.2	0.110	6.26	104.4	3.4	0.48	1.8	0.09	0.90	0.24	37	217
44		12.55	12.54	33.395	25.240	273.1	0.129	6.08	100.6	4.0	0.58	3.2	0.23	0.83	0.32	44	216
50	ISL	12.36	12.35	33.427	25.301	267.4	0.145	5.92	97.6	4.5	0.65	4.3	0.35	0.74	0.37	50	
52	A	12.31	12.30	33.436	25.318	265.9	0.151	5.86	96.5	4.7	0.67	4.7	0.37	0.70	0.37	52	215
61		11.93	11.92	33.466	25.413	257.0	0.174	5.52	90.2	6.2	0.84	7.4	0.19	0.43	0.25	61	214
70		11.65	11.64	33.473	25.471	251.7	0.197	5.29	85.9	7.8	0.95	9.3	0.14	0.30	0.22	70	213
75	ISL	11.43	11.42	33.508	25.538	245.4	0.209	5.10	82.5	9.6	1.06	11.0	0.13	0.24	0.19	75	
84		10.98	10.97	33.580	25.676	232.5	0.231	4.71	75.5	13.3	1.28	14.2	0.11	0.16	0.15	84	212
100		10.25	10.24	33.626	25.839	217.2	0.267	4.09	64.5	17.7	1.52	18.4	0.04	0.07	0.12	101	211
120		9.75	9.74	33.682	25.967	205.3	0.309	3.58	55.9	21.1	1.70	21.2	0.02	0.03	0.09	121	210
125	ISL	9.56	9.55	33.700	26.013	201.1	0.319	3.50	54.4	22.2	1.74	22.0	0.02	0.02	0.09	126	
139		9.05	9.04	33.758	26.140	189.1	0.347	3.32	51.0	25.3	1.84	23.9	0.01	0.01	0.08	140	209
150	ISL	8.89	8.87	33.813	26.209	182.8	0.367	3.17	48.6	27.1	1.91	24.9	0.01	0.01	0.07	151	
169		8.78	8.76	33.902	26.296	174.9	0.401	2.93	44.8	29.7	2.02	26.3	0.01	0.01	0.05	170	208
199		8.50	8.48	33.994	26.412	164.4	0.452	2.57	39.1	34.2	2.13	28.5	0.01	0.00	0.04	200	207
200	ISL	8.49	8.47	33.996	26.415	164.1	0.454	2.56	38.9	34.4	2.13	28.6	0.01			201	
229		8.13	8.11	34.036	26.501	156.3	0.500	2.30	34.7	38.8	2.25	30.3	0.00			230	206
250	ISL	7.91	7.88	34.043	26.539	153.0	0.533	2.22	33.3	41.1	2.30	31.0	0.00			251	
269		7.74	7.71	34.047	26.568	150.5	0.561	2.16	32.3	42.9	2.34	31.5	0.01			271	205
300	ISL	7.51	7.48	34.077	26.625	145.5	0.607	1.92	28.5	46.5	2.47	32.5	0.01			302	
320		7.38	7.35	34.103	26.664	142.1	0.636	1.71	25.3	49.2	2.56	33.3	0.01			322	204
378		6.97	6.93	34.185	26.786	131.2	0.715	0.97	14.2	58.8	2.84	36.2	0.01			380	203
400	ISL	6.81	6.77	34.233	26.846	125.8	0.744	0.69	10.1	63.5	2.96	37.2	0.01			403	
436		6.53	6.49	34.309	26.943	116.8	0.787	0.33	4.8	71.1	3.13	38.7	0.01			439	202
500	ISL	6.03	5.99	34.366	27.054	106.9	0.859	0.18	2.6	80.9	3.24	40.3	0.00			503	
504		6.00	5.96	34.370	27.061	106.2	0.863	0.17	2.4	81.5	3.25	40.4	0.00			508	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 77 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 43.3 N	123 38.1 W	11/04/02	0852 UTC	4133 m	330 21 kn			1023.5 mb	13.3 C	12.1 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.38	13.38	33.095	24.842	309.8	0.000	6.34	106.6	3.6	0.49	1.4	0.05	0.51	0.08	0	
2		13.38	13.38	33.095	24.842	309.8	0.006	6.34	106.6	3.6	0.49	1.4	0.05	0.51	0.08	2	220
10		13.38	13.38	33.094	24.842	310.1	0.031	6.31	106.1	3.6	0.49	1.4	0.05	0.51	0.09	10	219
20		13.13	13.13	33.098	24.895	305.3	0.062	6.34	106.0	3.6	0.50	1.6	0.06	0.51	0.11	20	218
30		12.34	12.34	33.117	25.064	289.5	0.091	6.30	103.6	4.1	0.58	3.1	0.10	0.73	0.17	30	217
40		12.09	12.08	33.205	25.180	278.7	0.120	6.24	102.1	4.5	0.63	4.1	0.12	0.82	0.26	40	216
50	ISL	11.06	11.05	33.181	25.350	262.6	0.147	5.65	90.5	7.1	0.89	8.0	0.20	0.54	0.20	50	
51		10.98	10.97	33.185	25.367	261.0	0.150	5.59	89.3	7.4	0.92	8.4	0.21	0.50	0.19	51	215
60		11.35	11.34	33.436	25.497	249.0	0.173	5.47	88.3	8.0	0.97	9.4	0.18	0.30	0.18	60	214
70		11.14	11.13	33.475	25.565	242.7	0.197	5.14	82.6	9.8	1.08	11.2	0.06	0.20	0.24	70	213
75	ISL	10.92	10.91	33.474	25.604	239.1	0.209	4.96	79.3	10.9	1.16	12.5	0.05	0.16	0.21	75	
85		10.40	10.39	33.479	25.698	230.2	0.233	4.57	72.2	13.7	1.33	15.4	0.02	0.10	0.13	85	212
99		9.75	9.74	33.571	25.880	213.2	0.264	3.95	61.6	18.6	1.59	19.5	0.01	0.04	0.10	99	211
100	ISL	9.73	9.72	33.576	25.887	212.5	0.266	3.92	61.1	18.8	1.60	19.7	0.01	0.04	0.10	101	
119		9.44	9.43	33.668	26.007	201.5	0.305	3.60	55.8	21.9	1.73	21.9	0.01	0.02	0.08	120	210
125	ISL	9.32	9.31	33.700	26.052	197.3	0.317	3.50	54.1	22.9	1.77	22.7	0.01	0.02	0.08	126	
140		9.06	9.04	33.784	26.159	187.4	0.346	3.25	50.0	25.4	1.87	24.4	0.01	0.01	0.07	141	209
150	ISL	8.97	8.95	33.843	26.220	181.8	0.364	3.10	47.6	27.0	1.92	25.3	0.01	0.01	0.06	151	
170		8.84	8.82	33.946	26.321	172.5	0.400	2.82	43.2	30.2	2.01	26.7	0.01	0.01	0.05	171	208
198		8.55	8.53	34.015	26.421	163.6	0.447	2.53	38.5	34.2	2.13	28.4	0.01	0.01	0.05	199	207
200	ISL	8.53	8.51	34.018	26.426	163.1	0.450	2.52	38.3	34.5	2.14	28.5	0.01			201	
228		8.17	8.15	34.049	26.505	155.9	0.495	2.35	35.5	38.3	2.24	29.9	0.01			229	206
250	ISL	7.84	7.82	34.056	26.560	151.0	0.529	2.16	32.4	41.9	2.34	31.3	0.01			251	
268		7.58	7.55	34.061	26.602	147.2	0.555	2.00	29.8	44.9	2.42	32.4	0.01			270	205
300	ISL	7.28	7.25	34.089	26.667	141.4	0.602	1.74	25.7	49.4	2.54	33.6	0.01			302	
318		7.13	7.10	34.104	26.699	138.5	0.627	1.60	23.6	51.9	2.60	34.2	0.01			320	204
378		6.46	6.43	34.119	26.802	129.2	0.707	1.13	16.4	62.3	2.84	37.4	0.00			380	203
400	ISL	6.34	6.30	34.135	26.830	126.8	0.735	0.99	14.3	64.9	2.90	38.1	0.00			403	
436		6.18	6.14	34.164	26.874	123.0	0.780	0.78	11.2	68.9	2.98	38.9	0.00			439	202
500	ISL	5.77	5.73	34.211	26.963	115.0	0.856	0.52	7.4	78.3	3.12	40.6	0.00			503	
515		5.68	5.64	34.222	26.983	113.2	0.874	0.46	6.6	80.5	3.15	41.0	0.00			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 77 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 23.2 N	124 19.5 W	11/04/02	0233 UTC	4180 m	340 12 kn	340 01 03	1	1024.0 mb	14.9 C	12.8 C		6/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.87	13.87	32.898	24.591	333.8	0.000	6.25	106.0	2.8	0.45	0.2	0.02	0.34	0.04	0	
1		13.87	13.87	32.898	24.591	333.8	0.003	6.25	106.0	2.8	0.45	0.2	0.02	0.34	0.04	1	220
10	ISL	13.61	13.61	32.884	24.633	330.0	0.033	6.28	105.9	2.7	0.42	0.1	0.01	0.33	0.05	10	
11		13.55	13.55	32.876	24.639	329.4	0.037	6.29	106.0	2.7	0.42	0.1	0.01	0.33	0.05	11	219
20		12.85	12.85	33.036	24.902	304.6	0.065	6.36	105.7	3.3	0.48	1.3	0.06	0.68	0.10	20	218
30		11.96	11.96	32.960	25.014	294.2	0.095	6.22	101.4	4.3	0.60	3.0	0.12	0.54	0.20	30	217
41		12.40	12.39	33.264	25.167	280.0	0.127	6.02	99.2	4.0	0.62	3.4	0.18	0.60	0.24	41	216
50		12.09	12.08	33.341	25.286	268.9	0.151	5.84	95.7	4.8	0.72	5.1	0.33	0.35	0.20	50	215
60		11.18	11.17	33.200	25.344	263.5	0.178	5.73	92.0	7.0	0.88	7.8	0.21	0.22	0.13	60	214
70		10.60	10.59	33.175	25.427	255.7	0.204	5.45	86.4	8.7	1.02	10.1	0.07	0.12	0.08	70	213
75	ISL	10.34	10.33	33.190	25.483	250.4	0.216	5.28	83.2	9.8	1.11	11.7	0.05	0.09	0.07	75	
85		9.96	9.95	33.279	25.617	237.9	0.241	4.86	76.0	12.5	1.30	14.9	0.02	0.06	0.06	85	212
99		9.82	9.81	33.533	25.839	217.1	0.273	4.13	64.5	17.3	1.52	18.5	0.01	0.03	0.07	99	211
100	ISL	9.79	9.78	33.544	25.852	215.8	0.275	4.09	63.8	17.6	1.54	18.8	0.01	0.03	0.07	100	
119		9.26	9.25	33.702	26.063	196.1	0.314	3.45	53.3	23.1	1.79	23.0	0.01	0.01	0.07	120	210
125	ISL	9.22	9.21	33.760	26.115	191.3	0.326	3.24	50.0	24.7	1.85	23.9	0.01	0.01	0.07	126	
139		9.17	9.15	33.880	26.217	181.9	0.352	2.83	43.6	27.9	1.97	25.5	0.01	0.01	0.06	140	209
150	ISL	9.01	8.99	33.921	26.275	176.6	0.372	2.77	42.6	29.6	2.02	26.4	0.01	0.01	0.06	151	
169		8.70	8.68	33.956	26.351	169.7	0.404	2.67	40.8	31.8	2.07	27.5	0.01	0.01	0.05	170	208
199		8.36	8.34	34.023	26.456	160.2	0.454	2.47	37.4	35.7	2.16	28.9	0.01	0.01	0.04	200	207
200	ISL	8.35	8.33	34.024	26.458	160.0	0.456	2.47	37.4	35.8	2.16	28.9	0.01			201	
229		7.99	7.97	34.039	26.524	154.1	0.501	2.33	35.0	39.6	2.25	30.3	0.01			230	206
250	ISL	7.91	7.88	34.093	26.579	149.3	0.533	1.93	29.0	43.1	2.39	31.4	0.01			251	
268		7.85	7.82	34.139	26.624	145.3	0.559	1.58	23.7	46.1	2.52	32.4	0.01			270	205
300	ISL	7.46	7.43	34.137	26.679	140.4	0.605	1.47	21.8	50.5	2.62	33.8	0.01			302	
319		7.20	7.17	34.124	26.705	138.0	0.632	1.41	20.8	53.0	2.65	34.5	0.01			321	204
379		6.66	6.63	34.141	26.793	130.3	0.712	1.05	15.3	61.6	2.83	36.8	0.01			381	203
400	ISL	6.53	6.49	34.158	26.824	127.6	0.739	0.92	13.4	64.1	2.89	37.4	0.01			403	
437		6.33	6.29	34.190	26.876	123.0	0.785	0.71	10.3	68.5	2.98	38.5	0.01			440	202
500	ISL	5.89	5.85	34.228	26.962	115.3	0.861	0.47	6.7	77.5	3.12	40.3	0.00			503	
515		5.79	5.75	34.238	26.982	113.5	0.878	0.41	5.9	79.7	3.15	40.7	0.00			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 79 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 42.5 N	124 44.7 W	10/04/02	1837 UTC	4404 m	350 10 kn	360 01 03	1	1016.3 mb	16.8 C	14.0 C	17m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.18	14.18	33.081	24.668	326.4	0.000	6.21	106.1	3.2	0.42	0.3	0.02	0.46	0.05	0	
1	B	14.18	14.18	33.081	24.668	326.4	0.003	6.21	106.1	3.2	0.42	0.3	0.02	0.46	0.05	1	222
2		14.18	14.18	33.081	24.668	326.5	0.007									2	223
10		13.69	13.69	33.086	24.773	316.7	0.032									10	221
11	B	13.68	13.68	33.081	24.771	316.9	0.035	6.25	105.7	3.1	0.42	0.4	0.02	0.41	0.07	11	220
20	ISL	13.37	13.37	33.211	24.935	301.5	0.063	6.35	106.8	3.1	0.42	0.8	0.04	0.45	0.08	20	
21	B	13.33	13.33	33.232	24.959	299.2	0.066	6.36	106.9	3.1	0.42	0.8	0.04	0.45	0.08	21	219
28		13.12	13.12	33.277	25.036	292.1	0.087	6.31	105.6	3.2	0.43	1.1	0.05	0.59	0.14	28	218
30	ISL	13.10	13.10	33.283	25.045	291.3	0.093	6.30	105.4	3.2	0.43	1.1	0.05	0.56	0.15	30	
34	B	13.06	13.06	33.291	25.059	290.1	0.104	6.29	105.1	3.2	0.44	1.2	0.05	0.49 A	0.16 A	34	217
42	B	12.86	12.85	33.319	25.120	284.5	0.127	6.19	103.1	3.2	0.49	1.8	0.09	0.57 A	0.23 A	42	216
50	ISL	12.67	12.66	33.331	25.167	280.2	0.150	6.09	101.0	3.4	0.54	2.3	0.14	0.53	0.24	50	
54		12.57	12.56	33.337	25.191	278.0	0.161	6.03	99.8	3.5	0.57	2.7	0.19	0.51	0.25	54	215
63	B	12.30	12.29	33.368	25.267	271.0	0.186	5.80	95.5	4.4	0.67	4.6	0.43	0.28	0.17	63	214
73		11.67	11.66	33.431	25.434	255.2	0.212	5.42	88.0	7.0	0.89	8.4	0.03	0.17	0.12	73	213
75	ISL	11.56	11.55	33.442	25.463	252.5	0.217	5.33	86.4	7.7	0.94	9.2	0.03	0.15	0.11	75	
85		10.94	10.93	33.484	25.608	238.9	0.242	4.90	78.4	11.7	1.18	13.0	0.02	0.09	0.09	85	212
99		9.78	9.77	33.502	25.821	218.8	0.274	4.33	67.5	16.7	1.46	17.6	0.01	0.03	0.06	99	211
100	ISL	9.76	9.75	33.513	25.833	217.6	0.276	4.29	66.9	17.0	1.48	17.9	0.01	0.03	0.06	100	
118		9.38	9.37	33.662	26.012	201.0	0.314	3.61	55.9	22.3	1.72	21.9	0.01	0.01	0.06	119	210
125	ISL	9.37	9.36	33.743	26.077	194.9	0.328	3.31	51.2	24.2	1.81	23.1	0.01	0.01	0.06	126	
138		9.36	9.34	33.874	26.182	185.3	0.352	2.84	44.0	27.2	1.94	24.8	0.01	0.01	0.06	139	209
150	ISL	9.19	9.17	33.925	26.249	179.1	0.374	2.84	43.8	29.0	1.97	25.9	0.01	0.01	0.05	151	
169		8.81	8.79	33.956	26.334	171.3	0.407	2.85	43.6	31.1	2.02	26.8	0.01	0.01	0.04	170	208
199		8.21	8.19	34.003	26.463	159.4	0.457	3.07	46.4	34.7	1.98	27.1	0.01	0.00	0.02	200	207
200	ISL	8.19	8.17	34.004	26.467	159.1	0.459	3.06	46.2	34.9	1.99	27.2	0.01			201	
228		7.81	7.79	34.023	26.538	152.6	0.502	2.55	38.2	40.4	2.20	30.0	0.01			229	206
250	ISL	7.48	7.46	34.034	26.594	147.5	0.535	2.25	33.4	44.6	2.33	31.6	0.01			251	
268		7.21	7.18	34.039	26.636	143.7	0.562	2.07	30.6	47.9	2.42	32.7	0.01			270	205
300	ISL	6.79	6.76	34.036	26.692	138.7	0.607	1.89	27.6	53.0	2.54	34.2	0.01			302	
317		6.60	6.57	34.036	26.717	136.4	0.630	1.80	26.2	55.6	2.59	34.9	0.01			319	204
377		6.09	6.06	34.091	26.827	126.5	0.709	1.12	16.1	66.5	2.85	38.1	0.00			379	203
400	ISL	6.00	5.97	34.109	26.853	124.3	0.738	0.99	14.2	69.3	2.92	38.8	0.00			403	
435		5.87	5.83	34.133	26.889	121.3	0.781	0.79	11.3	73.2	3.00	39.7	0.00			438	202
500	ISL	5.43	5.39	34.176	26.977	113.3	0.857			82.9	3.12	41.0	0.00			503	
515		5.33	5.29	34.186	26.997	111.5	0.874			85.2	3.15	41.3	0.00			519	201

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

B) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 27.0 N	120 31.1 W	09/04/02	0252 UTC	69 m	310 14 kn			1018.2 mb	13.1 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	11.45	11.45	33.746	25.718	226.5	0.000	5.61	90.9	16.8	1.00	9.9	0.29	6.19	0.60	0	
2		11.45	11.45	33.746	25.718	226.5	0.005	5.61	90.9	16.8	1.00	9.9	0.29	6.19	0.60	2	208
6		11.44	11.44	33.747	25.721	226.4	0.014	5.61	90.9	16.8	1.00	9.9	0.29	5.11	0.59	6	207
10	ISL	11.42	11.42	33.747	25.725	226.1	0.023	5.60	90.7	16.8	1.00	9.9	0.29	5.81	0.80	10	
11		11.41	11.41	33.747	25.726	225.9	0.025	5.60	90.7	16.8	1.00	9.9	0.29	6.06	0.85	11	206
20	ISL	11.22	11.22	33.770	25.779	221.2	0.045	5.38	86.8	17.7	1.09	10.6	0.30	4.91	0.61	20	
21		11.19	11.19	33.775	25.788	220.3	0.047	5.35	86.2	17.8	1.10	10.7	0.30	4.78	0.57	21	205
30	ISL	10.91	10.91	33.840	25.889	210.9	0.067	4.23	67.8	23.0	1.53	15.3	0.37	1.24	0.70	30	
31		10.88	10.88	33.847	25.900	209.9	0.069	4.10	65.7	23.6	1.58	15.8	0.38	0.84	0.72	31	204
41		10.92	10.92	33.832 U			0.090	4.43 U	71.0U	22.0 U	1.45 U	14.3 U	0.35 U	1.54 U	0.66 U	41	203
50	ISL	10.76	10.75	33.855	25.928	207.7	0.109	3.92	62.6	24.7	1.64	16.7	0.38	0.66	0.74	50	
51		10.74	10.73	33.857	25.933	207.2	0.111	3.91	62.4	24.8	1.64	16.7	0.38	0.65	0.74	51	202
60		10.63	10.62	33.859	25.954	205.4	0.129	3.72	59.3	25.6	1.70	17.6	0.41	0.59	0.77	60	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 18.7 N	120 47.8 W	09/04/02	0554 UTC	802 m	340 14 kn			1019.9 mb	13.6 C	11.4 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.31	12.31	33.564	25.416	255.2	0.000	6.55	108.0	10.8	0.48	3.6	0.15	8.27	0.27	0	
2		12.31	12.31	33.564	25.416	255.3	0.005	6.55	108.0	10.8	0.48	3.6	0.15	8.27	0.27	2	219
10		12.30	12.30	33.566	25.419	255.1	0.026	6.55	108.0	10.9	0.48	3.7	0.14	8.82	0.11	10	218
20		12.01	12.01	33.611	25.510	246.8	0.051	6.12	100.3	11.2	0.51	5.6	0.16	9.52	0.34	20	217
30		11.91	11.91	33.628	25.542	244.0	0.075	5.85	95.7	12.1	0.68	7.0	0.21	6.78	0.50	30	216
40		10.93	10.93	33.789	25.846	215.2	0.098	4.52	72.4	15.3	1.43	14.5	0.37	1.02	0.70	40	215
50		10.45	10.44	33.877	25.999	200.9	0.119	3.62	57.4	21.3	1.74	19.5	0.48	0.46	0.68	50	214
60		10.34	10.33	33.885	26.025	198.7	0.139	3.39	53.7	21.8	1.79	20.1	0.44	0.36	0.51	60	213
70		10.15	10.14	33.911	26.078	193.8	0.159	2.92	46.0	23.8	1.93	22.1	0.48	0.23	0.64	70	212
75	ISL	10.04	10.03	33.921	26.104	191.4	0.168	2.85	44.8	24.7	1.95	22.9	0.46	0.22	0.62	75	
100		9.60	9.59	33.952	26.203	182.6	0.215	2.51	39.1	28.2	2.05	25.4	0.24	0.17	0.50	101	211
119		9.48	9.47	33.958	26.227	180.6	0.249	2.58	40.1	29.1	2.03	25.4	0.14	0.12	0.38	120	210
125	ISL	9.45	9.44	33.968	26.240	179.5	0.260	2.54	39.4	29.5	2.04	25.6	0.12	0.15	0.36	126	
139		9.38	9.36	33.996	26.274	176.6	0.285	2.41	37.4	30.6	2.09	26.3	0.08	0.24	0.32	140	209
150	ISL	9.31	9.29	34.008	26.295	174.8	0.304	2.39	37.0	31.0	2.10	26.5	0.07	0.26	0.31	151	
169		9.13	9.11	34.034	26.344	170.5	0.337	2.31	35.6	32.5	2.14	27.2	0.06	0.27	0.30	170	208
199		8.71	8.69	34.134	26.489	157.2	0.386	1.70	26.0	39.7	2.40	30.1	0.01	0.36	0.21	200	207
200	ISL	8.70	8.68	34.136	26.492	156.9	0.388	1.70	26.0	39.8	2.40	30.1	0.01			201	
229		8.53	8.51	34.168	26.544	152.5	0.433	1.63	24.8	41.4	2.44	30.5	0.03			230	206
250	ISL	8.43	8.40	34.181	26.570	150.4	0.465	1.56	23.7	42.5	2.48	30.9	0.02			252	
269		8.32	8.29	34.188	26.593	148.6	0.493	1.48	22.4	43.9	2.52	31.4	0.01			271	205
300	ISL	7.98	7.95	34.195	26.649	143.5	0.538	1.33	20.0	47.8	2.61	32.7	0.01			302	
319		7.74	7.71	34.199	26.688	140.1	0.565	1.22	18.2	50.6	2.67	33.5	0.01			321	204
378		7.18	7.14	34.229	26.792	130.8	0.645	0.86	12.7	59.4	2.85	35.7	0.00			381	203
400	ISL	7.07	7.03	34.231	26.809	129.5	0.674	0.81	11.9	61.1	2.88	36.1	0.00			403	
437		6.89	6.85	34.233	26.835	127.4	0.721	0.75	11.0	63.8	2.92	36.8	0.00			440	202
500	ISL	6.36	6.31	34.265	26.932	118.7	0.799	0.51	7.4	72.9	3.06	38.7	0.00			504	
514		6.24	6.19	34.273	26.954	116.7	0.815	0.46	6.6	74.9	3.09	39.1	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
34 8.8 N	121 9.3 W	09/04/02	0949 UTC	2210 m	330 04 kn			1020.1 mb	13.4 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.81	12.81	33.323	25.132	282.2	0.000	6.34	105.5	3.5	0.50	2.4	0.10	0.86	0.19	0	
1		12.81	12.81	33.323	25.132	282.2	0.003	6.34	105.5	3.5	0.50	2.4	0.10	0.86	0.19	1	220
10		12.81	12.81	33.329	25.137	282.0	0.028	6.33	105.3	3.5	0.50	2.4	0.10	0.84	0.21	10	219
20		12.72	12.72	33.449	25.248	271.7	0.056	6.25	103.8	4.9	0.57	3.3	0.15	0.84	0.31	20	218
30		12.51	12.51	33.444	25.285	268.5	0.083	6.15	101.7	4.8	0.61	4.0	0.20	1.03	0.53	30	217
40		11.87	11.86	33.509	25.457	252.3	0.109	5.63	91.9	6.8	0.85	6.9	0.69	0.66	0.41	40	216
50		11.11	11.10	33.540	25.621	236.9	0.133	4.94	79.4	11.7	1.18	12.6	0.18	0.20	0.23	50	215
60		10.62	10.61	33.606	25.759	224.0	0.156	4.53	72.0	15.4	1.38	15.9	0.12	0.10	0.20	60	214
70		10.19	10.18	33.609	25.835	216.9	0.178	4.18	65.8	17.2	1.50	17.9	0.04	0.07	0.15	70	213
75	ISL	10.06	10.05	33.673	25.907	210.1	0.189	3.84	60.3	19.4	1.61	19.5	0.03	0.06	0.14	75	
85		9.91	9.90	33.821	26.049	196.9	0.210	3.17	49.7	23.9	1.83	22.5	0.02	0.05	0.13	85	212
99		9.87	9.86	33.901	26.118	190.6	0.237	2.82	44.2	26.3	1.92	23.8	0.01	0.05	0.13	100	211
100	ISL	9.86	9.85	33.905	26.123	190.2	0.239	2.80	43.9	26.4	1.93	23.9	0.01	0.05	0.13	101	
119		9.55	9.54	33.976	26.230	180.4	0.274	2.49	38.8	29.2	2.04	25.6	0.01	0.04	0.11	120	210
125	ISL	9.48	9.47	34.004	26.263	177.3	0.284	2.38	37.0	30.3	2.08	26.2	0.01	0.05	0.11	126	
139		9.33	9.31	34.065	26.336	170.7	0.309	2.13	33.0	32.7	2.18	27.3	0.01	0.09	0.10	140	209
150	ISL	9.24	9.22	34.089	26.369	167.7	0.327	2.01	31.1	33.9	2.23	27.9	0.01	0.21	0.11	151	
169		9.11	9.09	34.110	26.407	164.5	0.359	1.89	29.1	35.5	2.29	28.6	0.01	0.36	0.12	170	208
199		8.89	8.87	34.138	26.464	159.6	0.408	1.77	27.2	37.7	2.36	29.4	0.02	0.08	0.09	200	207
200	ISL	8.88	8.86	34.139	26.467	159.4	0.409	1.76	27.0	37.8	2.36	29.4	0.02			201	
228		8.52	8.50	34.167	26.545	152.4	0.453	1.56	23.7	41.9	2.47	30.8	0.01			229	206
250	ISL	8.27	8.24	34.179	26.593	148.2	0.486	1.46	22.1	44.4	2.53	31.6	0.01			252	
268		8.09	8.06	34.185	26.625	145.4	0.512	1.40	21.1	46.2	2.58	32.2	0.01			270	205
300	ISL	7.85	7.82	34.197	26.670	141.5	0.558	1.26	18.9	48.8	2.65	33.1	0.00			302	
318		7.73	7.70	34.202	26.692	139.7	0.584	1.18	17.6	50.3	2.69	33.6	0.00			320	204
378		7.28	7.24	34.211	26.764	133.6	0.666	0.96	14.2	56.9	2.81	35.2	0.00			381	203
400	ISL	7.11	7.07	34.218	26.793	131.0	0.695	0.88	13.0	59.4	2.86	35.9	0.00			403	
437		6.82	6.78	34.232	26.844	126.5	0.742	0.74	10.8	63.8	2.94	37.0	0.00			440	202
500	ISL	6.41	6.36	34.267	26.927	119.2	0.820	0.53	7.7	71.5	3.06	38.6	0.00			504	
515		6.31	6.26	34.276	26.947	117.4	0.837	0.48	6.9	73.3	3.09	39.0	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.0 N	121 50.3 W	09/04/02	1730 UTC	3623 m	320 10 kn	310 01 04	2	1022.9 mb	13.1 C	11.9 C	16m	7/8	NS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.52	13.52	33.339	25.003	294.5	0.000	6.24	105.4	3.0	0.42	0.7	0.04	0.57	0.08	0	
1	A	13.52	13.52	33.339	25.003	294.5	0.003	6.24	105.4	3.0	0.42	0.7	0.04	0.57	0.08	1	221
1		13.52	13.52	33.339	25.003	294.5	0.003									1	222
9		13.45	13.45	33.338	25.016	293.5	0.026									9	220
9	A	13.45	13.45	33.338	25.016	293.5	0.026	6.24	105.2	2.9	0.40	0.7	0.04	0.59	0.08	9	219
10	ISL	13.45	13.45	33.338	25.016	293.5	0.029	6.24	105.2	2.9	0.40	0.7	0.04	0.59	0.08	10	
20	A	13.43	13.43	33.339	25.022	293.3	0.059	6.24	105.2	2.9	0.40	0.7	0.04	0.62	0.12	20	218
30	ISL	13.31	13.31	33.358	25.061	289.8	0.088	6.26	105.2	3.1	0.41	0.9	0.05	0.71	0.15	30	
32	A	13.27	13.27	33.362	25.072	288.8	0.094	6.26	105.2	3.1	0.42	1.0	0.05	0.72	0.16	32	217
42	A	12.93	12.92	33.379	25.153	281.4	0.122	6.19	103.2	3.4	0.48	1.9	0.10	0.68	0.23	42	216
50		12.60	12.59	33.419	25.249	272.4	0.144	6.04	100.1	3.9	0.57	3.1	0.23	0.68	0.35	50	215
59	A	12.38	12.37	33.482	25.340	264.0	0.168	5.75	94.9	4.7	0.69	4.8	0.48	0.38	0.25	59	214
69		11.72	11.71	33.468	25.454	253.3	0.194	5.33	86.7	7.5	0.92	8.8	0.07	0.22	0.14	69	213
75	ISL	11.38	11.37	33.471	25.519	247.2	0.209	5.11	82.5	9.2	1.03	10.7	0.05	0.16	0.13	75	
85		10.90	10.89	33.490	25.620	237.8	0.234	4.78	76.4	11.9	1.20	13.3	0.03	0.10	0.10	85	212
100		10.31	10.30	33.543	25.764	224.3	0.268	4.30	67.9	15.8	1.42	16.9	0.03	0.05	0.10	101	211
119		9.50	9.49	33.649	25.982	203.8	0.309	3.63	56.3	21.8	1.70	21.6	0.02	0.02	0.09	120	210
125	ISL	9.37	9.36	33.690	26.036	198.8	0.321	3.47	53.7	23.2	1.76	22.6	0.02	0.02	0.09	126	
139		9.17	9.15	33.787	26.144	188.8	0.348	3.14	48.4	26.1	1.87	24.5	0.01	0.01	0.08	140	209
150	ISL	9.00	8.98	33.860	26.228	181.0	0.368	2.92	44.9	28.5	1.95	25.9	0.01	0.01	0.07	151	
169		8.72	8.70	33.964	26.354	169.4	0.402	2.60	39.7	32.5	2.08	27.8	0.01	0.01	0.06	170	208
199		8.29	8.27	34.034	26.475	158.3	0.451	2.29	34.7	37.6	2.22	29.8	0.01	0.05	0.05	200	207
200	ISL	8.28	8.26	34.036	26.478	158.0	0.453	2.28	34.5	37.8	2.23	29.9	0.01			201	
229		7.91	7.89	34.072	26.562	150.5	0.497	1.92	28.8	42.5	2.38	31.7	0.01			230	206
250	ISL	7.51	7.49	34.064	26.614	145.7	0.528	1.94	28.8	46.0	2.43	32.5	0.01			251	
269		7.16	7.13	34.052	26.654	142.0	0.556	1.95	28.8	49.1	2.46	33.2	0.01			271	205
300	ISL	6.82	6.79	34.063	26.709	137.1	0.599	1.70	24.9	53.8	2.58	34.7	0.01			302	
319		6.68	6.65	34.076	26.738	134.5	0.625	1.50	21.9	56.6	2.66	35.6	0.01			321	204
378		6.37	6.34	34.131	26.823	127.1	0.702	1.00	14.5	64.5	2.86	37.5	0.01			380	203
400	ISL	6.23	6.19	34.148	26.855	124.4	0.730	0.85	12.3	67.7	2.93	38.3	0.01			403	
439		6.01	5.97	34.182	26.910	119.5	0.777	0.63	9.0	73.2	3.03	39.6	0.00			442	202
500	ISL	5.80	5.76	34.258	26.997	111.9	0.848	0.40	5.7	79.8	3.13	40.4	0.00			503	
512		5.76	5.72	34.273	27.014	110.4	0.861	0.36	5.1	81.1	3.15	40.5	0.00			516	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 29.2 N	122 32.0 W	09/04/02	2253 UTC	3988 m	270 09 kn	290 02 06	1	1023.3 mb	18.3 C	14.9 C	30m	5/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.78	14.78	33.056	24.522	340.3	0.000	5.99	103.6	2.3	0.40	0.1	0.00	0.12	0.02	0	
2		14.78	14.78	33.056	24.522	340.4	0.007	5.99	103.6	2.3	0.40	0.1	0.00	0.12	0.02	2	220
10		14.27	14.27	33.050	24.625	330.7	0.034	6.01	102.9	2.3	0.40	0.0	0.00	0.13	0.02	10	219
20		14.00	14.00	33.060	24.689	324.9	0.066	6.09	103.7	2.4	0.40	0.0	0.00	0.16	0.03	20	218
30		13.06	13.06	33.041	24.865	308.4	0.098	6.30	105.2	3.0	0.44	0.5	0.03	0.37	0.09	30	217
40		12.07	12.06	33.058	25.069	289.2	0.128	6.06	99.1	4.3	0.61	3.3	0.16	0.68	0.25	40	216
50		11.95	11.94	33.199	25.202	276.8	0.156	6.06	98.9	4.5	0.66	4.0	0.32	0.49	0.20	50	215
60		11.86	11.85	33.196	25.216	275.7	0.184	5.95	96.9	4.7	0.69	4.6	0.39	0.32	0.15	60	214
71		11.79	11.78	33.276	25.292	268.8	0.214	5.80	94.4	5.2	0.75	5.9	0.20	0.22	0.11	71	213
75	ISL	11.73	11.72	33.315	25.333	264.9	0.225	5.71	92.8	5.7	0.79	6.6	0.15	0.19	0.11	75	
86		11.44	11.43	33.416	25.465	252.6	0.253	5.36	86.6	7.8	0.95	9.2	0.05	0.13	0.11	86	212
100	ISL	10.67	10.66	33.481	25.654	234.9	0.287	4.60	73.2	12.5	1.28	14.4	0.02	0.07	0.07	100	
101		10.61	10.60	33.485	25.667	233.6	0.289	4.55	72.3	12.9	1.30	14.8	0.02	0.07	0.07	101	211
120		9.62	9.61	33.556	25.890	212.6	0.332	4.04	62.8	18.4	1.56	19.3	0.02	0.02	0.06	121	210
125	ISL	9.49	9.48	33.594	25.941	207.8	0.342	3.90	60.5	19.7	1.62	20.3	0.02	0.01	0.05	126	
140		9.24	9.22	33.715	26.077	195.3	0.373	3.50	54.0	23.1	1.76	22.8	0.01	0.00	0.04	141	209
150	ISL	9.11	9.09	33.780	26.148	188.6	0.392	3.31	50.9	25.0	1.83	24.0	0.01	0.00	0.04	151	
170		8.88	8.86	33.886	26.268	177.6	0.428	3.04	46.6	28.3	1.93	25.8	0.01	0.02	0.03	171	208
199		8.53	8.51	33.987	26.402	165.4	0.478	2.74	41.7	33.0	2.05	27.9	0.01	0.02	0.05	200	207
200	ISL	8.52	8.50	33.989	26.405	165.1	0.480	2.73	41.5	33.1	2.05	28.0	0.01			201	
229		8.19	8.17	34.026	26.484	158.0	0.527	2.51	37.9	36.9	2.17	29.3	0.01			230	206
250	ISL	7.94	7.91	34.043	26.535	153.4	0.559	2.34	35.1	39.9	2.25	30.3	0.01			251	
268		7.72	7.69	34.054	26.576	149.7	0.587	2.18	32.6	42.7	2.33	31.3	0.01			270	205
300	ISL	7.34	7.31	34.071	26.644	143.6	0.634	1.85	27.4	47.9	2.48	33.2	0.01			302	
318		7.13	7.10	34.080	26.681	140.3	0.659	1.65	24.3	51.2	2.57	34.3	0.01			320	204
379		6.34	6.31	34.122	26.820	127.4	0.741	0.99	14.3	64.9	2.88	38.2	0.01			381	203
400	ISL	6.17	6.13	34.144	26.859	123.9	0.767	0.83	12.0	68.7	2.96	39.0	0.01			403	
438		5.94	5.90	34.185	26.921	118.3	0.813	0.60	8.6	74.5	3.06	40.1	0.00			441	202
500	ISL	5.60	5.56	34.228	26.998	111.6	0.884	0.40	5.7	82.0	3.15	41.3	0.00			503	
511		5.54	5.50	34.236	27.011	110.4	0.897	0.37	5.3	83.3	3.17	41.5	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 9.3 N	123 13.2 W	10/04/02	0508 UTC	4224 m	290 07 kn			1024.1 mb	15.2 C	14.8 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.62	14.62	33.045	24.547	337.9	0.000	5.99	103.3	2.1	0.40	0.1	0.00	0.10	0.01	0	
2		14.62	14.62	33.045	24.547	337.9	0.007	5.99	103.3	2.1	0.40	0.1	0.00	0.10	0.01	2	220
10		14.29	14.29	33.009	24.589	334.2	0.034	6.00	102.7	2.0	0.40	0.1	0.00	0.10	0.02	10	219
20		14.20	14.20	32.992	24.595	333.9	0.067	6.01	102.7	2.1	0.40	0.1	0.00	0.12	0.03	20	218
30		13.85	13.85	32.979	24.658	328.2	0.100	6.14	104.1	2.3	0.41	0.1	0.00	0.14	0.03	30	217
41		13.50	13.49	32.991	24.739	320.7	0.136	6.19	104.2	2.4	0.44	0.3	0.02	0.27	0.07	41	216
50		12.67	12.66	32.960	24.879	307.6	0.164	6.11	101.1	3.2	0.51	1.3	0.11	0.45	0.16	50	215
60		12.45	12.44	32.979	24.937	302.3	0.195	6.08	100.1	3.4	0.54	1.8	0.16	0.47	0.18	60	214
70		12.35	12.34	33.061	25.020	294.7	0.224	5.99	98.5	3.8	0.59	2.8	0.22	0.41	0.16	70	213
75	ISL	12.19	12.18	33.076	25.062	290.8	0.239	5.90	96.7	4.1	0.64	3.5	0.19	0.35	0.15	75	
85		11.72	11.71	33.096	25.165	281.1	0.268	5.69	92.3	5.2	0.75	5.3	0.11	0.21	0.12	85	212
100		10.73	10.72	33.177	25.406	258.4	0.308	5.34	84.9	7.9	0.93	8.9	0.03	0.11	0.09	100	211
120		10.20	10.19	33.409	25.679	232.8	0.357	4.78	75.2	13.0	1.26	14.4	0.01	0.03	0.05	121	210
125	ISL	10.00	9.99	33.471	25.761	225.1	0.369	4.53	71.0	15.0	1.36	16.2	0.01	0.02	0.05	126	
140		9.44	9.42	33.646	25.990	203.5	0.401	3.74	57.9	20.9	1.66	21.1	0.01	0.01	0.05	141	209
150	ISL	9.28	9.26	33.742	26.091	194.1	0.421	3.37	52.1	23.8	1.79	23.2	0.01	0.01	0.05	151	
170		9.08	9.06	33.886	26.236	180.7	0.458	2.88	44.3	28.1	1.96	25.8	0.01	0.00	0.04	171	208
200		8.59	8.57	33.984	26.390	166.5	0.510	2.74	41.7	32.4	2.06	27.8	0.01	0.01	0.03	201	207
229		8.20	8.18	34.019	26.477	158.6	0.557	2.61	39.4	36.4	2.14	29.0	0.01			230	206
250	ISL	7.92	7.89	34.030	26.528	154.1	0.590	2.47	37.1	39.5	2.22	30.0	0.00			251	
269		7.66	7.63	34.035	26.570	150.3	0.619	2.33	34.7	42.5	2.29	31.0	0.00			271	205
300	ISL	7.20	7.17	34.037	26.637	144.2	0.665	2.16	31.9	47.5	2.41	32.5	0.00			302	
319		6.94	6.91	34.041	26.676	140.6	0.692	2.02	29.6	50.7	2.49	33.5	0.00			321	204
378		6.41	6.38	34.105	26.797	129.6	0.772	1.18	17.1	62.4	2.81	37.4	0.00			380	203
400	ISL	6.26	6.22	34.127	26.834	126.3	0.800	0.98	14.2	66.0	2.89	38.3	0.00			403	
438		6.04	6.00	34.165	26.893	121.1	0.847	0.73	10.5	71.5	3.00	39.4	0.00			441	202
500	ISL	5.76	5.72	34.233	26.982	113.3	0.919	0.41	5.9	79.7	3.15	40.9	0.00			503	
506		5.73	5.69	34.240	26.991	112.4	0.926	0.38	5.4	80.5	3.16	41.0	0.00			509	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 80 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 49.3 N	123 54.4 W	10/04/02	1104 UTC	4398 m	330 14 kn			1023.9 mb	14.0 C	13.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.83	14.83	33.079	24.529	339.7	0.000	5.96	103.2	1.9	0.40	0.1	0.00	0.10	0.02	0	
2		14.83	14.83	33.079	24.529	339.7	0.007	5.96	103.2	1.9	0.40	0.1	0.00	0.10	0.02	2	220
10		14.80	14.80	33.080	24.536	339.2	0.034	5.96	103.1	1.9	0.39	0.1	0.00	0.11	0.02	10	219
20		14.06	14.06	33.020	24.646	329.0	0.067	6.09	103.8	2.3	0.40	0.1	0.00	0.14	0.04	20	218
29		13.10	13.10	32.971	24.803	314.3	0.096	6.16	102.9	2.7	0.45	0.4	0.04	0.42	0.13	29	217
30	ISL	13.05	13.05	32.969	24.811	313.5	0.099	6.15	102.6	2.7	0.46	0.5	0.05	0.42	0.14	30	
39		12.74	12.73	32.969	24.872	307.9	0.127	6.01	99.6	3.2	0.52	1.4	0.10	0.44	0.17	39	216
50		12.38	12.37	32.985	24.954	300.4	0.161	5.83	95.9	3.9	0.60	2.7	0.09	0.39	0.19	50	215
59		12.09	12.08	33.019	25.036	292.8	0.188	5.85	95.6	4.3	0.64	3.7	0.15	0.42	0.15	59	214
69		12.03	12.02	33.082	25.096	287.3	0.217	5.85	95.6	4.5	0.67	4.2	0.17	0.34	0.14	69	213
75	ISL	11.79	11.78	33.096	25.152	282.1	0.234	5.79	94.1	5.2	0.74	5.4	0.12	0.27	0.12	75	
85		11.31	11.30	33.130	25.266	271.4	0.261	5.62	90.4	6.7	0.88	7.9	0.03	0.16	0.09	85	212
100		10.82	10.81	33.287	25.476	251.8	0.301	5.27	84.0	9.1	1.06	11.0	0.02	0.09	0.07	100	211
119		9.82	9.81	33.428	25.757	225.3	0.346	4.57	71.3	14.8	1.36	16.2	0.02	0.02	0.04	120	210
125	ISL	9.55	9.54	33.472	25.836	217.8	0.359	4.53	70.3	15.8	1.39	16.8	0.02	0.01	0.03	126	
139		9.06	9.05	33.575	25.996	202.9	0.389	4.46	68.5	17.9	1.43	18.0	0.01	0.00	0.02	140	209
150	ISL	9.03	9.01	33.672	26.076	195.4	0.411	4.06	62.3	20.8	1.58	20.3	0.01	0.00	0.02	151	
168		8.97	8.95	33.799	26.186	185.4	0.445	3.35	51.4	26.0	1.84	24.3	0.01	0.01	0.02	169	208
198		8.47	8.45	33.986	26.410	164.5	0.497	3.00	45.6	32.5	1.99	27.0	0.01	0.01	0.02	199	207
200	ISL	8.44	8.42	33.991	26.419	163.7	0.501	2.98	45.2	32.8	2.00	27.1	0.01			201	
228		8.02	8.00	34.018	26.503	156.0	0.545	2.76	41.5	37.3	2.11	28.8	0.01			229	206
250	ISL	7.71	7.69	34.025	26.554	151.4	0.579	2.59	38.7	40.9	2.20	30.1	0.01			251	
268		7.46	7.43	34.028	26.593	148.0	0.606	2.44	36.2	43.9	2.28	31.1	0.01			270	205
300	ISL	7.01	6.98	34.041	26.666	141.3	0.652	2.10	30.9	49.8	2.44	33.1	0.00			302	
318		6.78	6.75	34.050	26.704	137.8	0.678	1.91	27.9	53.1	2.53	34.2	0.00			320	204
377		6.22	6.19	34.075	26.798	129.3	0.756	1.38	19.9	62.9	2.76	37.1	0.01			379	203
400	ISL	6.07	6.04	34.096	26.834	126.1	0.786	1.17	16.8	66.8	2.85	38.1	0.01			403	
437		5.86	5.82	34.133	26.890	121.2	0.831	0.87	12.4	72.7	2.97	39.5	0.00			440	202
500	ISL	5.53	5.49	34.182	26.969	114.1	0.906	0.60	8.5	80.5	3.09	41.1	0.00			503	
514		5.46	5.42	34.193	26.987	112.6	0.921	0.54	7.7	82.2	3.12	41.4	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 82 47

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 16.7 N	120 1.5 W	08/04/02	2214 UTC	571 m	270 07 kn	250 02 06	1	1017.3 mb	15.4 C	12.8 C	06m	1/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.48	12.48	33.772	25.544	243.0	0.000	6.80	112.6	3.4	0.45	3.8	0.18	6.64	0.42	0	
1	A	12.48	12.48	33.772	25.544	243.0	0.002	6.80	112.6	3.4	0.45	3.8	0.18	6.64	0.42	1	224
10		11.80	11.80	33.754	25.660	232.3	0.024	6.68	109.1	3.4	0.48	4.5	0.18	7.81	0.80	10	223
20		11.73	11.73	33.762	25.679	230.7	0.047	6.32	103.0	3.9	0.53	5.7	0.18	9.03	1.00	20	222
30		11.65	11.65	33.773	25.703	228.7	0.070	5.92	96.3	6.5	0.74	7.2	0.22	4.91	1.13	30	221
41		10.73	10.73	33.802	25.892	210.9	0.094	4.36	69.6	17.8	1.54	16.3	0.47	0.80	0.82	41	220
50		10.20	10.19	33.778	25.965	204.1	0.113	3.67	57.9	21.0	1.67	19.8	0.32	0.35	0.75	50	219
60		9.85	9.84	33.822	26.059	195.4	0.133	3.19	49.9	24.5	1.82	22.3	0.19	0.16	0.60	60	218
70		9.97	9.96	33.908	26.106	191.2	0.152	2.93	46.0	26.3	1.92	23.5	0.19	0.22	0.62	70	217
75	ISL	9.87	9.86	33.917	26.130	189.0	0.162	2.84	44.5	26.9	1.95	24.0	0.15	0.21	0.58	75	
85		9.64	9.63	33.925	26.175	184.9	0.180	2.67	41.6	28.0	1.99	24.9	0.07	0.17	0.49	85	216
100		9.66	9.65	34.009	26.237	179.3	0.208	2.27	35.4	30.2	2.11	26.1	0.05	0.19	0.54	101	215
120		9.43	9.42	34.073	26.325	171.3	0.243	2.03	31.5	32.8	2.21	27.3	0.03	0.11	0.54	121	214
125	ISL	9.39	9.38	34.084	26.341	170.0	0.251	2.01	31.2	33.2	2.22	27.5	0.03	0.10	0.49	126	
140		9.30	9.28	34.111	26.377	166.9	0.276	1.98	30.7	34.2	2.25	27.9	0.03	0.09	0.34	141	213
150	ISL	9.23	9.21	34.121	26.396	165.2	0.293	1.92	29.7	35.0	2.28	28.2	0.03	0.08	0.34	151	
171		9.04	9.02	34.136 D	26.438	161.6	0.327	1.73	26.6	37.4	2.35	29.1	0.02	0.07	0.34	172	212
199		8.66	8.64	34.157	26.515	154.7	0.372	1.39	21.2	43.3	2.51	30.7	0.02	0.06	0.41	200	211
200	ISL	8.65	8.63	34.158	26.517	154.5	0.373	1.38	21.1	43.5	2.51	30.8	0.02			201	
228		8.36	8.34	34.170	26.572	149.8	0.416	1.15	17.4	47.9	2.62	32.0	0.01			229	210
250	ISL	8.17	8.14	34.175	26.605	147.0	0.448	1.06	16.0	50.0	2.68	32.7	0.01			252	
267		8.03	8.00	34.179	26.629	144.9	0.473	1.00	15.1	51.6	2.72	33.2	0.01			269	209
300	ISL	7.71	7.68	34.192	26.686	139.9	0.520	0.78	11.7	57.1	2.84	34.1	0.01			302	
318		7.54	7.51	34.199	26.717	137.2	0.545	0.65	9.7	60.4	2.91	34.5	0.01			320	208
379		7.09	7.05	34.215	26.793	130.6	0.627	0.42	6.2	69.7	3.10	34.7	0.01			382	207
400	ISL	6.92	6.88	34.222	26.822	128.1	0.654	0.34	5.0	74.2	3.18	34.5	0.01			403	
438		6.66	6.62	34.233	26.866	124.3	0.702	0.20	2.9	83.5	3.33	33.2	0.01			441	206
478		6.53	6.49	34.237	26.887	122.8	0.751	0.05	0.7	94.6	3.52	29.8	0.01			481	205
500	ISL	6.48	6.43	34.239	26.896	122.3	0.778	0.01	0.1	102.1	3.71	26.0	0.01			504	
514		6.46	6.41	34.240	26.899	122.1	0.795	0.00	0.0	106.7	3.84	23.3	0.01			518	204
535		6.45	6.40	34.240	26.901	122.3	0.821	0.00	0.0	112.4	4.02	19.3	0.12			539	203
551		6.45	6.40	34.240	26.901	122.5	0.841	-0.01	-0.1	115.1	4.11	17.6	0.15			555	202
557		6.44	6.39	34.241	26.903	122.4	0.848	-0.01	-0.1	115.5	4.18	17.2	0.18			561	201

A) SANTA BARBARA BASIN STATION.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 40.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 13.6 N	119 25.9 W	08/04/02	1826 UTC	41 m	290 04 kn	270 01 05	2	1018.0 mb	14.0 C	12.5 C	11m	8/8	AS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.85	12.85	33.747	25.453	251.7	0.000	6.80	113.5	1.9	0.35	1.1	0.04	2.78	0.53	0	
1	A	12.85	12.85	33.747	25.453	251.7	0.003	6.80	113.5	1.9	0.35	1.1	0.04	2.78	0.53	1	207
1		12.85	12.85	33.749	25.454	251.6	0.003									1	208
6	A	12.80	12.80	33.747	25.463	250.9	0.015	6.80	113.4	2.0	0.34	1.1	0.04	2.37	0.62	6	206
10	ISL	12.75	12.75	33.755	25.479	249.5	0.025	6.74	112.3	1.9	0.36	1.4	0.05	3.05	0.77	10	
14	A	12.61	12.61	33.742	25.496	247.9	0.035	6.67	110.8	1.8	0.37	1.6	0.05	3.91	0.93	14	204
14		12.61	12.61	33.742	25.496	247.9	0.035									14	205
20	ISL	12.08	12.08	33.751	25.605	237.7	0.050	5.83	95.7	4.2	0.71	4.6	0.11	4.17	1.11	20	
22	A	11.87	11.87	33.756	25.649	233.7	0.054	5.45	89.1	5.6	0.86	6.1	0.14	4.26	1.17	22	203
29	A	11.23	11.23	33.768	25.776	221.7	0.070	4.05	65.3	13.5	1.42	13.2	0.24	0.38	0.55	29	202
30	ISL	11.23	11.23	33.768	25.776	221.7	0.072	4.04	65.2	13.6	1.43	13.2	0.24	0.40	0.57	30	
38	A	11.22	11.22	33.769	25.779	221.6	0.090	4.00	64.5	14.1	1.47	13.2	0.25	0.56	0.72	38	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 42

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
34 10.7 N	119 30.6 W	08/04/02	1523 UTC	141 m	260 04 kn	260 01 05	2	1016.1 mb	13.5 C	12.0 C	09m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.58	12.58	33.729	25.491	248.0	0.000	6.73	111.7	2.0	0.28	1.6	0.10	4.08	0.75	0	
2		12.58	12.58	33.729	25.491	248.1	0.005	6.73	111.7	2.0	0.28	1.6	0.10	4.08	0.75	2	212
10		12.54	12.54	33.742	25.510	246.6	0.025	6.65	110.3	2.3	0.31	2.0	0.09	3.55	0.75	10	211
20		11.86	11.86	33.721	25.623	236.0	0.049	6.12	100.0	4.8	0.54	5.0	0.16	4.96	1.00	20	210
30		11.16	11.16	33.778	25.796	219.8	0.072	4.38	70.5	15.9	1.37	13.7	0.33	0.59	0.91	30	209
40		10.94	10.94	33.804	25.856	214.3	0.093	3.97	63.6	18.3	1.50	15.8	0.32	0.17	0.59	40	208
49		10.70	10.69	33.831	25.920	208.4	0.112	3.68	58.7	20.6	1.63	18.0	0.45	0.16	0.70	49	207
50	ISL	10.68	10.67	33.832	25.924	208.0	0.114	3.67	58.5	20.8	1.64	18.2	0.48	0.16	0.69	50	
60		10.49	10.48	33.842	25.965	204.3	0.135	3.49	55.4	22.0	1.77	20.1	0.70	0.15	0.59	60	206
70		10.22	10.21	33.889	26.049	196.6	0.155	2.76	43.6	23.5	1.91	22.2	0.38	0.09	0.56	70	205
75	ISL	10.09	10.08	33.920	26.095	192.3	0.165	2.68	42.2	24.9	1.95	23.0	0.35	0.09	0.50	75	
85		9.89	9.88	33.976	26.173	185.1	0.184	2.51	39.4	27.6	2.01	24.2	0.29	0.08	0.37	85	204
100		9.77	9.76	34.003	26.214	181.5	0.211	2.29	35.8	29.1	2.09	25.1	0.27	0.08	0.37	101	203
119		9.56	9.55	34.068	26.300	173.7	0.245	2.09	32.6	31.7	2.18	26.5	0.19	0.05	0.35	120	202
125	ISL	9.52	9.51	34.089	26.323	171.7	0.255	2.01	31.3	32.5	2.21	26.9	0.17	0.05	0.32	126	
138		9.42	9.40	34.134	26.375	167.0	0.277	1.85	28.7	34.3	2.28	27.7	0.12	0.05	0.27	139	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 51

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 52.8 N	120 8.1 W	08/04/02	0928 UTC	95 m	310 17 kn			1015.9 mb	12.5 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.44	12.44	33.673	25.475	249.6	0.000	6.27	103.7	2.4	0.47	3.2	0.12	8.21	0.13	0	
2		12.44	12.44	33.673	25.475	249.6	0.005	6.27	103.7	2.4	0.47	3.2	0.12	8.21	0.13	2	210
10		12.43	12.43	33.677	25.480	249.3	0.025	6.30	104.2	2.2	0.45	3.2	0.12	8.31	0.86	10	209
20		12.12	12.12	33.700	25.558	242.2	0.050	5.85	96.1	5.1	0.64	5.6	0.13	6.47	0.60	20	208
30		12.03	12.03	33.704	25.578	240.5	0.074	5.80	95.1	5.9	0.69	6.2	0.13	6.96	0.62	30	207
40		11.84	11.83	33.722	25.628	236.0	0.097	5.40	88.2	8.1	0.80	7.9	0.15	5.63	0.69	40	206
49		11.70	11.69	33.731	25.661	233.1	0.119	5.13	83.6	9.6	0.96	9.3	0.17	4.80	0.75	49	205
50	ISL	11.67	11.66	33.733	25.669	232.4	0.121	5.08	82.7	9.9	0.98	9.6	0.17	4.63	0.73	50	
60		11.30	11.29	33.758	25.756	224.3	0.144	4.50	72.7	13.6	1.21	12.5	0.19	2.77	0.51	60	204
69		11.01	11.00	33.789	25.833	217.2	0.164	4.04	64.9	16.7	1.41	15.0	0.20	1.43	0.61	69	203
75	ISL	10.84	10.83	33.810	25.879	212.9	0.177	3.81	60.9	18.4	1.50	16.3	0.20	1.08	0.58	75	
79		10.69	10.68	33.831	25.922	208.9	0.185	3.62	57.7	19.9	1.58	17.4	0.20	0.94	0.57	79	202
89		10.01	10.00	33.935	26.121	190.2	0.205	2.78	43.7	27.6	1.93	22.4	0.19	0.38	0.80	89	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 44.4 N	120 24.4 W	08/04/02	0547 UTC	945 m	320 14 kn			1016.2 mb	13.3 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	12.46	12.46	33.524	25.356	260.9	0.000	6.06	100.2	4.2	0.64	4.6	0.29	1.52	0.41	0	
2		12.46	12.46	33.524	25.356	261.0	0.005	6.06	100.2	4.2	0.64	4.6	0.29	1.52	0.41	2	220
10		12.46	12.46	33.526	25.357	261.0	0.026	6.05	100.0	4.1	0.63	4.6	0.29	1.49	0.36	10	219
20		12.44	12.44	33.531	25.365	260.5	0.052	6.03	99.7	4.1	0.64	4.6	0.31	1.50	0.41	20	218
30		12.03	12.03	33.554	25.462	251.6	0.078	5.63	92.2	6.2	0.85	6.8	0.64	0.71	0.31	30	217
40		11.55	11.54	33.535	25.536	244.7	0.103	5.35	86.8	7.7	0.97	8.8	0.51	0.31	0.30	40	216
50		10.30	10.29	33.567	25.784	221.4	0.126	4.32	68.2	15.4	1.44	17.1	0.05	0.09	0.14	50	215
60		9.99	9.98	33.655	25.905	210.0	0.147	3.95	62.0	18.6	1.62	19.5	0.05	0.08	0.13	60	214
70		10.18	10.17	33.752	25.949	206.1	0.168	3.86	60.8	20.0	1.68	20.1	0.11	0.10	0.15	70	213
75	ISL	10.10	10.09	33.769	25.976	203.7	0.179	3.69	58.1	20.5	1.71	20.6	0.10	0.09	0.17	75	
85		9.83	9.82	33.806	26.050	196.8	0.199	3.23	50.5	22.1	1.79	22.1	0.06	0.05	0.21	85	212
100		9.60	9.59	33.990	26.232	179.8	0.227	2.50	39.0	27.5	2.04	25.2	0.08	0.05	0.29	101	211
120		9.32	9.31	34.076	26.346	169.4	0.262	2.13	33.0	31.4	2.19	27.1	0.05	0.04	0.20	121	210
125	ISL	9.24	9.23	34.095	26.374	166.8	0.270	2.05	31.7	32.3	2.22	27.5	0.04	0.04	0.19	126	
139		9.03	9.01	34.138	26.441	160.7	0.293	1.87	28.8	34.7	2.31	28.6	0.03	0.04	0.18	140	209
150	ISL	8.93	8.91	34.157	26.472	157.9	0.311	1.77	27.2	35.9	2.36	29.1	0.02	0.04	0.16	151	
169		8.82	8.80	34.175	26.504	155.3	0.340	1.64	25.1	37.5	2.42	29.7	0.02	0.04	0.14	170	208
199		8.64	8.62	34.200	26.552	151.2	0.386	1.47	22.4	39.9	2.49	30.5	0.02	0.04	0.15	200	207
200	ISL	8.63	8.61	34.200	26.553	151.1	0.388	1.47	22.4	40.0	2.49	30.5	0.02			201	
229		8.42	8.40	34.202	26.588	148.3	0.431	1.42	21.6	41.4	2.53	31.2	0.01			230	206
250	ISL	8.28	8.25	34.207	26.613	146.2	0.462	1.35	20.4	42.9	2.57	31.7	0.01			252	
268		8.16	8.13	34.212	26.635	144.4	0.488	1.28	19.3	44.4	2.61	32.2	0.01			270	205
300	ISL	7.96	7.93	34.218	26.670	141.5	0.534	1.17	17.6	46.8	2.66	32.9	0.01			302	
318		7.85	7.82	34.221	26.689	140.0	0.559	1.11	16.6	48.2	2.69	33.3	0.01			320	204
378		7.38	7.34	34.229	26.764	133.7	0.641	0.92	13.6	54.0	2.81	34.9	0.00			381	203
400	ISL	7.20	7.16	34.234	26.793	131.1	0.671	0.84	12.4	56.6	2.86	35.6	0.00			403	
437		6.90	6.86	34.246	26.844	126.6	0.718	0.70	10.3	61.2	2.94	36.7	0.00			440	202
500	ISL	6.42	6.37	34.270	26.928	119.2	0.796	0.51	7.4	68.9	3.05	38.6	0.00			504	
515		6.30	6.25	34.276	26.948	117.3	0.813	0.46	6.7	70.7	3.07	39.0	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 34.6 N	120 45.3 W	08/04/02	0134 UTC	1384 m	320 18 kn	310 05 06	2	1015.0 mb	13.5 C	11.2 C		8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.07	13.07	33.449	25.178	277.8	0.000	6.29	105.3	3.4	0.49	2.1	0.10	1.03	0.21	0	
2		13.07	13.07	33.449	25.178	277.9	0.006	6.29	105.3	3.4	0.49	2.1	0.10	1.03	0.21	2	220
10	ISL	13.05	13.05	33.451	25.184	277.5	0.028	6.28	105.1	3.4	0.50	2.2	0.10	1.03	0.22	10	
11		13.05	13.05	33.451	25.184	277.5	0.031	6.28	105.1	3.4	0.50	2.2	0.10	1.03	0.22	11	219
20	ISL	13.00	13.00	33.465	25.205	275.8	0.055	6.26	104.6	3.5	0.50	2.4	0.11	1.03	0.26	20	
21		12.99	12.99	33.470	25.211	275.3	0.058	6.25	104.4	3.5	0.50	2.5	0.11	1.03	0.27	21	218
30		12.72	12.72	33.516	25.300	267.0	0.083	6.15	102.2	3.6	0.57	3.5	0.17	1.60	0.42	30	217
41		12.27	12.26	33.594	25.448	253.2	0.111	5.75	94.7	5.7	0.81	5.8	0.40	0.67	0.40	41	216
50		11.74	11.73	33.565	25.525	246.1	0.134	5.28	86.0	9.0	1.01	9.4	0.44	0.21	0.29	50	215
60		10.90	10.89	33.516	25.640	235.3	0.158	4.84	77.4	12.3	1.23	13.4	0.08	0.17	0.21	60	214
70		10.76	10.75	33.648	25.767	223.4	0.181	4.46	71.1	15.9	1.41	16.0	0.14	0.14	0.20	70	213
75	ISL	10.56	10.55	33.653	25.806	219.8	0.192	4.28	68.0	16.9	1.47	17.1	0.13	0.12	0.20	75	
85		10.09	10.08	33.636	25.874	213.5	0.213	3.95	62.1	18.6	1.58	19.0	0.07	0.08	0.19	85	212
100		9.53	9.52	33.710	26.025	199.4	0.244	3.48	54.0	22.4	1.75	22.0	0.03	0.04	0.30	101	211
119		9.52	9.51	33.814	26.108	191.9	0.282	3.17	49.3	24.7	1.84	23.2	0.05	0.03	0.19	120	210
125	ISL	9.43	9.42	33.853	26.154	187.7	0.293	3.03	47.0	26.0	1.89	24.0	0.04	0.03	0.17	126	
140		9.19	9.17	33.952	26.270	176.9	0.320	2.67	41.2	29.5	2.03	25.9	0.02	0.02	0.15	141	209
150	ISL	9.21	9.19	34.016	26.317	172.7	0.338	2.43	37.5	31.2	2.11	26.7	0.03	0.02	0.17	151	
169		9.24	9.22	34.106	26.383	166.8	0.370	2.03	31.4	33.9	2.25	27.8	0.06	0.03	0.20	170	208
199		8.94	8.92	34.155	26.470	159.1	0.419	1.75	26.9	37.9	2.38	29.3	0.05	0.03	0.14	200	207
200	ISL	8.93	8.91	34.157	26.473	158.8	0.421	1.74	26.7	38.1	2.39	29.4	0.05			201	
229		8.62	8.60	34.204	26.559	151.2	0.466	1.43	21.8	42.4	2.53	30.7	0.03			230	206
250	ISL	8.39	8.36	34.211	26.600	147.6	0.497	1.33	20.2	44.8	2.58	31.4	0.02			252	
268		8.20	8.17	34.211	26.629	145.1	0.523	1.28	19.3	46.6	2.62	32.0	0.02			270	205
300	ISL	7.94	7.91	34.227	26.680	140.6	0.569	1.11	16.7	50.1	2.71	33.0	0.01			302	
319		7.75	7.72	34.230	26.711	137.9	0.595	1.03	15.4	52.4	2.76	33.6	0.01			321	204
377		6.71	6.68	34.167	26.807	129.0	0.673	1.02	14.9	62.3	2.86	36.6	0.00			379	203
400	ISL	6.66	6.62	34.198	26.838	126.3	0.702	0.88	12.8	64.9	2.92	37.2	0.00			403	
438		6.58	6.54	34.248	26.889	122.1	0.749	0.60	8.7	69.0	3.03	38.0	0.00			441	202
500	ISL	6.00	5.96	34.280	26.989	112.9	0.822	0.38	5.5	78.9	3.17	40.0	0.00			503	
514		5.87	5.83	34.288	27.012	110.8	0.838	0.33	4.7	81.1	3.20	40.5	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 14.7 N	121 26.8 W	07/04/02	1902 UTC	3800 m	320 17 kn	330 06 06	2	1017.3 mb	13.9 C	11.8 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.33	13.33	33.369	25.064	288.6	0.000	6.25	105.1	3.1	0.48	1.5	0.07	0.63	0.13	0	
2	A	13.33	13.33	33.369	25.064	288.7	0.006	6.25	105.1	3.1	0.48	1.5	0.07	0.63	0.13	2	221
2		13.33	13.33	33.368	25.064	288.8	0.006									2	222
10	A	13.32	13.32	33.370	25.067	288.6	0.029	6.26	105.3	3.0	0.47	1.5	0.07	0.68	0.12	10	219
10		13.31	13.31	33.370	25.069	288.4	0.029									10	220
20	A	13.25	13.25	33.398	25.103	285.5	0.058	6.25	105.0	3.2	0.49	1.8	0.08	0.74	0.18	20	218
30	ISL	12.70	12.70	33.481	25.277	269.3	0.085	6.05	100.5	4.1	0.63	3.5	0.18	0.94	0.41	30	
32	A	12.59	12.59	33.498	25.311	266.0	0.091	6.00	99.4	4.3	0.66	3.9	0.21	0.95	0.45	32	217
42	A	12.52	12.51	33.530	25.350	262.6	0.117	5.86	97.0	4.4	0.70	4.3	0.30	0.55	0.45	42	216
50	ISL	12.45	12.44	33.546	25.376	260.3	0.138	5.78	95.5	4.8	0.74	4.7	0.42	0.40	0.36	50	
51		12.44	12.43	33.548	25.379	260.0	0.141	5.77	95.4	4.9	0.74	4.7	0.43	0.39	0.35	51	215
59	A	12.38	12.37	33.569	25.407	257.5	0.161	5.69	93.9	5.1	0.78	5.2	0.41	0.28	0.25	59	214
71		12.23	12.22	33.578	25.443	254.4	0.192	5.60	92.1	5.8	0.82	6.0	0.51	0.20	0.23	71	213
75	ISL	12.09	12.08	33.579	25.471	251.9	0.202	5.53	90.7	6.5	0.87	6.9	0.52	0.16	0.21	75	
85		11.68	11.67	33.585	25.552	244.3	0.227	5.28	85.9	8.9	1.02	9.6	0.53	0.08	0.16	85	212
100		11.06	11.05	33.610	25.685	232.0	0.263	4.75	76.2	12.9	1.25	13.6	0.22	0.06	0.15	101	211
120		10.22	10.21	33.707	25.908	211.1	0.307	3.79	59.8	19.2	1.58	19.2	0.06	0.02	0.13	121	210
125	ISL	9.98	9.97	33.712	25.952	206.9	0.317	3.67	57.6	20.4	1.64	20.2	0.04	0.02	0.13	126	
140		9.35	9.33	33.734	26.074	195.6	0.348	3.41	52.8	23.8	1.78	22.8	0.02	0.02	0.12	141	209
150	ISL	9.11	9.09	33.800	26.164	187.1	0.367	3.18	49.0	26.3	1.87	24.3	0.02	0.02	0.10	151	
170		8.84	8.82	33.940	26.317	173.0	0.403	2.75	42.1	30.7	2.03	26.8	0.01	0.03	0.05	171	208
200		8.57	8.55	34.010	26.414	164.3	0.453	2.43	37.0	34.6	2.15	28.7	0.01	0.02	0.05	201	207
230		8.00	7.98	34.038	26.522	154.3	0.501	2.26	34.0	40.2	2.27	30.7	0.01			231	206
250	ISL	7.80	7.78	34.063	26.571	149.9	0.532	2.00	29.9	43.3	2.38	31.9	0.01			251	
270		7.61	7.58	34.081	26.613	146.2	0.561	1.74	25.9	46.4	2.48	33.0	0.01			272	205
300	ISL	7.09	7.06	34.072	26.679	140.1	0.604	1.65	24.3	51.8	2.58	34.4	0.01			302	
320		6.75	6.72	34.065	26.720	136.3	0.632	1.61	23.5	55.4	2.63	35.2	0.01			322	204
381		6.40	6.37	34.126	26.815	128.0	0.712	1.04	15.1	64.2	2.85	37.6	0.01			383	203
400	ISL	6.28	6.24	34.137	26.840	125.8	0.736	0.93	13.4	67.0	2.90	38.2	0.01			403	
437		6.06	6.02	34.157	26.884	122.0	0.782	0.75	10.8	72.3	2.99	39.2	0.00			440	202
500	ISL	5.79	5.75	34.220	26.968	114.6	0.857	0.48	6.9	79.3	3.12	40.5	0.00			503	
511		5.74	5.70	34.231	26.983	113.3	0.869	0.43	6.1	80.5	3.14	40.7	0.00			515	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.5 N	122 8.1 W	07/04/02	1230 UTC	4180 m	310 22 kn			1016.4 mb	13.4 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.09	14.09	33.057	24.668	326.4	0.000	6.05	103.2	2.5	0.41	0.0	0.00	0.12	0.02	0	
2		14.09	14.09	33.057	24.668	326.4	0.007	6.05	103.2	2.5	0.41	0.0	0.00	0.12	0.02	2	220
10	ISL	14.09	14.09	33.056	24.667	326.7	0.033	6.04	103.0	2.5	0.40	0.0	0.00	0.12	0.02	10	
16		14.09	14.09	33.056	24.668	326.9	0.052	6.03	102.8	2.5	0.40	0.0	0.00	0.12	0.02	16	219
20	ISL	14.03	14.03	33.051	24.676	326.2	0.065	6.04	102.9	2.4	0.40	0.0	0.00	0.12	0.02	20	
30		13.86	13.86	33.049	24.710	323.2	0.098	6.08	103.2	2.3	0.41	0.0	0.00	0.13	0.03	30	218
45		13.69	13.68	33.102	24.786	316.4	0.146	6.08	102.9	2.3	0.40	0.0	0.00	0.25	0.07	45	217
50	ISL	13.53	13.52	33.103	24.820	313.3	0.162	6.09	102.7	2.4	0.41	0.1	0.01	0.37	0.10	50	
55		13.35	13.34	33.104	24.857	309.9	0.177	6.10	102.5	2.5	0.42	0.1	0.03	0.48	0.14	55	216
65		13.05	13.04	33.127	24.935	302.7	0.208	6.03	100.7	2.8	0.47	0.9	0.13	0.47	0.20	65	215
75		12.35	12.34	33.061	25.020	294.8	0.238	5.83	95.9	4.3	0.62	3.2	0.20	0.32	0.20	75	214
86		11.95	11.94	33.089	25.117	285.8	0.270	5.74	93.6	4.8	0.72	4.9	0.11	0.25	0.16	86	213
95		11.66	11.65	33.211	25.266	271.8	0.295	5.55	90.0	6.0	0.83	7.0	0.04	0.17	0.11	95	212
100	ISL	11.52	11.51	33.282	25.347	264.2	0.308	5.40	87.4	7.0	0.90	8.3	0.03	0.12	0.09	100	
109		11.21	11.20	33.387	25.485	251.2	0.331	5.09	81.8	9.2	1.05	10.9	0.02	0.05	0.05	110	211
124		10.37	10.36	33.442	25.676	233.3	0.368	4.57	72.2	13.3	1.29	15.1	0.02	0.02	0.03	125	210
125	ISL	10.31	10.30	33.444	25.687	232.1	0.370	4.56	71.9	13.5	1.30	15.3	0.02	0.02	0.03	126	
144		9.46	9.44	33.513	25.883	213.7	0.412	4.26	66.0	17.5	1.48	18.4	0.02	0.01	0.03	145	209
150	ISL	9.35	9.33	33.579	25.953	207.2	0.425	4.01	62.0	19.4	1.57	19.8	0.02	0.01	0.03	151	
169		9.19	9.17	33.800	26.151	188.7	0.462	3.19	49.2	25.3	1.84	24.0	0.01	0.00	0.03	170	208
199		8.78	8.76	33.951	26.335	171.8	0.517	2.79	42.7	30.8	2.00	26.8	0.01	0.00	0.02	200	207
200	ISL	8.77	8.75	33.954	26.339	171.4	0.518	2.78	42.5	31.0	2.00	26.9	0.01			201	
229		8.40	8.38	34.020	26.448	161.5	0.567	2.53	38.4	35.6	2.14	28.7	0.01			230	206
250	ISL	8.14	8.11	34.050	26.511	155.8	0.600	2.28	34.4	39.2	2.25	30.0	0.01			251	
266		7.95	7.92	34.066	26.552	152.1	0.624	2.08	31.2	41.9	2.33	31.0	0.01			268	205
300	ISL	7.56	7.53	34.097	26.633	144.8	0.675	1.73	25.8	46.7	2.48	32.7	0.00			302	
318		7.34	7.31	34.106	26.672	141.3	0.701	1.58	23.4	49.4	2.55	33.6	0.00			320	204
378		6.30	6.27	34.083	26.794	129.8	0.782	1.30	18.8	62.1	2.77	37.1	0.01			380	203
400	ISL	6.16	6.12	34.111	26.835	126.2	0.810	1.08	15.6	66.1	2.86	38.1	0.01			403	
436		6.05	6.01	34.168	26.894	121.0	0.855	0.72	10.3	71.5	2.99	39.3	0.00			439	202
500	ISL	5.89	5.85	34.226	26.960	115.4	0.930	0.50	7.2	76.7	3.09	40.1	0.00			503	
516		5.85	5.81	34.241	26.977	114.0	0.949	0.45	6.4	78.0	3.11	40.3	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 34.5 N	122 48.5 W	07/04/02	0549 UTC	4260 m	320 17 kn			1018.3 mb	14.5 C	13.2 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.22	14.22	33.097	24.672	326.0	0.000	6.04	103.3	2.5	0.41	0.0	0.00	0.10	0.01	0	
2		14.22	14.22	33.097	24.672	326.1	0.007	6.04	103.3	2.5	0.41	0.0	0.00	0.10	0.01	2	220
10	ISL	14.15	14.15	33.099	24.688	324.7	0.033	6.05	103.3	2.3	0.41	0.0	0.00	0.10	0.02	10	
15		14.06	14.06	33.098	24.706	323.2	0.049	6.05	103.1	2.2	0.41	0.0	0.00	0.10	0.02	15	219
20	ISL	13.91	13.91	33.092	24.733	320.8	0.065	6.07	103.1	2.2	0.41	0.0	0.00	0.11	0.02	20	
30		13.61	13.61	33.079	24.784	316.1	0.097	6.12	103.3	2.3	0.41	0.0	0.00	0.14	0.03	30	218
45		13.41	13.40	33.075	24.822	312.9	0.144	6.10	102.6	2.2	0.42	0.0	0.01	0.25	0.09	45	217
50	ISL	13.38	13.37	33.071	24.825	312.8	0.160	6.08	102.2	2.2	0.47	0.1	0.03	0.37	0.12	50	
55		13.35	13.34	33.067	24.828	312.6	0.175	6.04	101.4	2.2	0.52	0.2	0.07	0.47	0.14	55	216
65		12.91	12.90	33.066	24.915	304.6	0.206	5.93	98.7	2.7	0.53	1.5	0.26	0.41	0.14	65	215
75		12.63	12.62	33.122	25.013	295.5	0.236	5.89	97.5	3.3	0.60	2.7	0.46	0.31	0.15	75	214
85		12.29	12.28	33.130	25.085	288.9	0.265	5.80	95.3	4.1	0.69	4.5	0.05	0.21	0.11	85	213
95		12.37	12.36	33.190	25.116	286.1	0.294	5.87	96.6	3.8	0.65	4.0	0.14	0.20	0.11	95	212
100	ISL	12.34	12.33	33.192	25.124	285.5	0.308	5.86	96.4	3.9	0.66	4.1	0.11	0.18	0.10	100	
110		12.28	12.27	33.210	25.149	283.4	0.337	5.84	96.0	4.0	0.67	4.4	0.02	0.12	0.08	111	211
125		11.86	11.84	33.249	25.259	273.2	0.378	5.67	92.4	5.4	0.80	6.5	0.01	0.06	0.05	126	210
144		10.83	10.81	33.348	25.523	248.3	0.428	5.06	80.7	10.0	1.12	11.9	0.01	0.02	0.04	145	209
150	ISL	10.53	10.51	33.418	25.630	238.2	0.443	4.72	74.8	12.4	1.25	14.1	0.01	0.02	0.04	151	
169		9.78	9.76	33.668	25.952	207.8	0.485	3.60	56.2	20.1	1.66	20.6	0.01	0.01	0.03	170	208
199		9.47	9.45	33.946	26.221	182.9	0.544	2.54	39.4	28.2	2.03	25.7	0.01	0.00	0.04	200	207
200	ISL	9.46	9.44	33.951	26.227	182.4	0.545	2.52	39.1	28.4	2.04	25.8	0.01			201	
229		9.16	9.13	34.033	26.340	172.1	0.597	2.23	34.4	31.9	2.19	27.6	0.00			230	206
250	ISL	8.96	8.93	34.079	26.408	166.0	0.632	2.02	31.0	34.6	2.28	28.8	0.00			251	
269		8.78	8.75	34.112	26.462	161.1	0.663	1.84	28.2	37.0	2.35	29.7	0.00			270	205
300	ISL	8.48	8.45	34.154	26.542	154.0	0.712	1.55	23.6	41.2	2.48	31.2	0.00			302	
318		8.32	8.29	34.172	26.581	150.6	0.740	1.40	21.2	43.5	2.55	31.9	0.00			320	204
378		7.94	7.90	34.203	26.663	143.7	0.828	1.13	17.0	48.2	2.68	33.5	0.01			380	203
400	ISL	7.76	7.72	34.207	26.693	141.1	0.859	1.05	15.7	50.7	2.72	34.1	0.01			402	
437		7.42	7.38	34.212	26.746	136.4	0.911	0.93	13.8	55.6	2.80	35.1	0.00			440	202
500	ISL	6.79	6.74	34.228	26.846	127.3	0.994	0.68	9.9	64.7	2.95	37.4	0.00			503	
514		6.65	6.60	34.232	26.868	125.3	1.011	0.63	9.2	66.7	2.98	37.9	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 14.9 N	123 29.5 W	06/04/02	2329 UTC	4161 m	330 17 kn	310 04 05	1	1018.0 mb	16.2 C	13.0 C	20m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.42	14.42	33.119	24.647	328.4	0.000	6.02	103.4	2.3	0.39	0.1	0.00	0.15	0.02	0	
1		14.42	14.42	33.119	24.647	328.4	0.003	6.02	103.4	2.3	0.39	0.1	0.00	0.15	0.02	1	220
10	ISL	14.39	14.39	33.119	24.653	328.1	0.033	6.03	103.5	2.3	0.39	0.1	0.00	0.15	0.02	10	
15		14.37	14.37	33.119	24.658	327.8	0.049	6.04	103.6	2.3	0.39	0.1	0.00	0.15	0.02	15	219
20	ISL	14.17	14.17	33.121	24.701	323.8	0.066	6.06	103.5	2.3	0.39	0.1	0.00	0.17	0.02	20	
30		13.74	13.74	33.126	24.794	315.2	0.097	6.10	103.3	2.4	0.39	0.1	0.00	0.24	0.04	30	218
45		13.50	13.49	33.122	24.840	311.2	0.144	6.16	103.8	2.4	0.40	0.2	0.01	0.45	0.09	45	217
50	ISL	13.44	13.43	33.124	24.854	310.0	0.160	6.15	103.5	2.5	0.41	0.3	0.01	0.46	0.11	50	
55		13.36	13.35	33.126	24.872	308.5	0.175	6.13	103.0	2.6	0.42	0.3	0.02	0.47	0.12	55	216
65		13.06	13.05	33.128	24.933	302.9	0.206	6.08	101.5	2.8	0.47	1.0	0.08	0.45	0.14	65	215
75		13.34	13.33	33.292	25.005	296.4	0.236	6.05	101.7	2.7	0.47	1.0	0.08	0.39	0.12	75	214
84		12.73	12.72	33.232	25.079	289.4	0.262	5.91	98.1	3.4	0.57	2.5	0.19	0.31	0.15	84	213
95		12.18	12.17	33.227	25.181	279.9	0.294	5.68	93.2	4.9	0.73	5.3	0.07	0.18	0.12	95	212
100	ISL	11.94	11.93	33.255	25.248	273.7	0.307	5.58	91.1	5.6	0.80	6.4	0.05	0.13	0.09	100	
108		11.53	11.52	33.311	25.368	262.4	0.329	5.38	87.1	7.1	0.91	8.4	0.03	0.08	0.07	108	211
125		10.51	10.50	33.397	25.616	238.9	0.372	4.72	74.8	12.0	1.23	14.0	0.02	0.04	0.21	126	210
143		9.76	9.74	33.496	25.821	219.7	0.413	4.27	66.6	16.6	1.46	17.8	0.02	0.02	0.04	144	209
150	ISL	9.67	9.65	33.547	25.875	214.6	0.428	4.11	64.0	18.0	1.53	18.9	0.02	0.02	0.04	151	
170		9.55	9.53	33.703	26.017	201.6	0.470	3.65	56.7	21.9	1.71	21.8	0.01	0.01	0.05	171	208
198		8.94	8.92	33.919	26.285	176.6	0.523	2.92	44.8	29.0	1.95	26.1	0.01	0.01	0.04	199	207
200	ISL	8.90	8.88	33.927	26.297	175.4	0.526	2.89	44.3	29.4	1.96	26.3	0.01			201	
228		8.47	8.45	34.008	26.428	163.4	0.574	2.50	38.0	35.1	2.14	29.0	0.01			229	206
250	ISL	8.26	8.23	34.067	26.506	156.3	0.609	2.12	32.1	39.1	2.29	30.4	0.01			251	
268		8.09	8.06	34.098	26.556	151.8	0.636	1.86	28.0	42.2	2.39	31.4	0.01			269	205
300	ISL	7.49	7.46	34.078	26.628	145.2	0.684	1.83	27.2	47.3	2.47	33.1	0.01			302	
318		7.14	7.11	34.060	26.663	141.9	0.710	1.81	26.7	50.1	2.51	34.0	0.01			320	204
379		6.62	6.59	34.109	26.773	132.1	0.793	1.21	17.6	59.8	2.76	36.9	0.01			381	203
400	ISL	6.48	6.44	34.122	26.802	129.6	0.821	1.06	15.4	62.7	2.83	37.7	0.01			402	
439		6.23	6.19	34.146	26.854	125.0	0.871	0.83	12.0	68.0	2.94	39.0	0.00			442	202
500	ISL	5.85	5.81	34.200	26.945	116.9	0.944	0.55	7.9	77.4	3.07	40.6	0.00			503	
512		5.78	5.74	34.211	26.962	115.3	0.958	0.49	7.0	79.3	3.10	40.9	0.00			515	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 53.9 N	124 10.2 W	06/04/02	1805 UTC	4181 m	330 20 kn	320 05 05	2	1019.1 mb	14.9 C	13.0 C	34m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.49	15.49	33.342	24.587	334.1	0.000	5.82	102.3	1.7	0.36	0.1	0.00	0.09	0.02	0	
2	A	15.49	15.49	33.342	24.587	334.1	0.007	5.82	102.3	1.7	0.36	0.1	0.00	0.09	0.02	2	223
2		15.49	15.49	33.343	24.588	334.1	0.007									2	224
10		15.49	15.49	33.342	24.588	334.3	0.033									10	222
10		15.49	15.49	33.342	24.588	334.3	0.033	5.81	102.1	1.6	0.36	0.0	0.00	0.09	0.01	10	221
20	A	15.34	15.34	33.337	24.617	331.8	0.067	5.80	101.6	1.6	0.36	0.1	0.00	0.09	0.02	20	220
30	ISL	15.47	15.47	33.419	24.652	328.8	0.100	5.80	101.9	1.6	0.34	0.1	0.00	0.12	0.03	30	
31		15.49	15.49	33.427	24.654	328.7	0.103	5.80	102.0	1.6	0.34	0.1	0.00	0.12	0.03	31	219
42	A	15.41	15.40	33.419	24.666	327.9	0.139	5.81	102.0	1.6	0.35	0.0	0.00	0.16	0.03	42	218
50		15.43	15.42	33.439	24.677	327.1	0.165	5.80	101.9	1.6	0.35	0.0	0.00	0.15	0.03	50	217
59		15.44	15.43	33.446	24.681	327.0	0.195	5.79	101.7	1.6	0.35	0.1	0.01	0.16	0.03	59	216
68	A	15.44	15.43	33.455	24.688	326.6	0.224	5.80	101.9	1.6	0.35	0.0	0.01	0.17	0.04	68	215
75	ISL	15.39	15.38	33.460	24.703	325.4	0.247	5.79	101.6	1.8	0.35	0.1	0.01	0.23	0.10	75	
78		15.37	15.36	33.462	24.709	324.9	0.257	5.79	101.6	1.9	0.35	0.1	0.01	0.26	0.13	78	214
89	A	14.07	14.06	33.257	24.829	313.6	0.292	5.82	99.3	2.4	0.43	0.5	0.09	0.35	0.23	89	213
100	ISL	13.63	13.62	33.294	24.948	302.5	0.326	5.69	96.2	3.2	0.50	1.7	0.10	0.29	0.25	100	
101		13.60	13.59	33.299	24.958	301.5	0.329	5.68	96.0	3.3	0.51	1.8	0.10	0.28	0.25	101	212
113		12.56	12.55	33.148	25.048	293.1	0.364	5.68	93.9	4.0	0.60	3.1	0.06	0.26	0.20	113	211
125	ISL	11.33	11.31	33.137	25.269	272.1	0.398	5.43	87.4	6.4	0.84	7.0	0.03	0.12	0.14	126	
126	A	11.23	11.21	33.141	25.290	270.1	0.401	5.41	86.9	6.7	0.86	7.4	0.03	0.11	0.13	127	210
146		9.50	9.48	33.260	25.679	233.1	0.451	5.08	78.6	12.8	1.20	13.3	0.01	0.03	0.03	147	209
150	ISL	9.42	9.40	33.313	25.733	228.0	0.461	4.98	77.0	13.7	1.25	14.2	0.01	0.03	0.03	151	
170		9.02	9.00	33.506	25.948	207.9	0.504	4.51	69.2	17.5	1.44	17.8	0.01	0.01	0.02	171	208
199		8.89	8.87	33.779	26.183	186.2	0.561	4.21	64.5	21.7	1.52	20.1	0.01	0.00	0.02	200	207
200	ISL	8.88	8.86	33.787	26.191	185.5	0.563	4.17	63.8	22.0	1.53	20.3	0.01			201	
229		8.57	8.55	33.975	26.387	167.4	0.614	2.89	44.0	32.1	2.00	27.3	0.00			230	206
250	ISL	8.31	8.28	34.020	26.462	160.5	0.649	2.66	40.3	36.1	2.14	29.3	0.00			251	
271		8.02	7.99	34.029	26.513	155.9	0.682	2.44	36.7	39.0	2.21	30.2	0.00			272	205
300	ISL	7.57	7.54	34.040	26.587	149.1	0.726	2.25	33.5	43.8	2.33	31.7	0.00			302	
320		7.26	7.23	34.042	26.633	145.0	0.756	2.14	31.6	47.1	2.40	32.6	0.00			322	204
383		6.57	6.54	34.056	26.738	135.4	0.844	1.67	24.3	56.8	2.63	35.6	0.00			385	203
400	ISL	6.38	6.34	34.065	26.770	132.5	0.867	1.52	22.0	60.1	2.70	36.6	0.00			402	
435		6.04	6.00	34.091	26.834	126.6	0.912	1.19	17.1	67.1	2.84	38.6	0.00			438	202
500	ISL	5.63	5.59	34.170	26.948	116.3	0.991	0.62	8.8	78.9	3.07	41.0	0.00			503	
502		5.62	5.58	34.172	26.951	116.0	0.993	0.60	8.5	79.3	3.08	41.1	0.00			505	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 33

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 53.3 N	118 29.5 W	03/04/02	2154 UTC	56 m	250 10 kn	260 01 06	2	1016.1 mb	14.0 C	10.5 C	25m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.24	13.24	33.718	25.353	261.2	0.000	6.61	111.2	1.2	0.39	0.8	0.03	0.55	0.12	0	
1		13.24	13.24	33.718	25.353	261.2	0.003	6.61	111.2	1.2	0.39	0.8	0.03	0.55 A	0.12 A	1	207
6		13.19	13.19	33.717	25.362	260.5	0.016	6.61	111.1	1.2	0.37	0.8	0.03	0.83	0.17	6	206
10		12.91	12.91	33.721	25.421	255.0	0.026	6.59	110.1	1.3	0.40	1.0	0.04	0.38	0.17	10	205
20		11.75	11.75	33.726	25.648	233.7	0.050	5.26	85.8	6.5	0.94	7.1	0.18	0.28	0.35	20	204
30		11.33	11.33	33.735	25.732	225.9	0.073	4.38	70.8	11.4	1.30	11.9	0.26	0.26	0.42	30	203
40		10.84	10.84	33.766	25.844	215.4	0.095	3.51	56.1	16.8	1.64	16.6	0.30	0.41	0.45	40	202
50		10.60	10.59	33.820	25.929	207.6	0.117	3.06	48.7	20.5	1.82	19.0	0.27	0.45	0.60	50	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 49.2 N	118 37.1 W	04/04/02	0051 UTC	694 m	270 11 kn	00	2	1015.9 mb	15.2 C	11.6 C	23m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.57	13.57	33.637	25.223	273.5	0.000	6.37	107.9	0.7	0.37	0.2	0.01	0.38	0.08	0	
1		13.57	13.57	33.637	25.223	273.6	0.003	6.37	107.9	0.7	0.37	0.2	0.01	0.38	0.08	1	220
10		13.47	13.47	33.636	25.243	271.9	0.027	6.36	107.5	0.7	0.37	0.3	0.01	0.46	0.12	10	219
20		13.12	13.12	33.640	25.317	265.2	0.054	6.12	102.7	1.5	0.46	0.9	0.03	0.25	0.22	20	218
30		12.60	12.60	33.649	25.426	255.0	0.080	5.64	93.6	4.0	0.67	3.5	0.09	0.17	0.30	30	217
40		12.14	12.13	33.651	25.516	246.7	0.105	5.02	82.5	7.7	0.94	7.3	0.17	0.10	0.34	40	216
50		11.27	11.26	33.687	25.706	228.8	0.129	4.23	68.2	13.2	1.30	13.2	0.25	0.09	0.30	50	215
61		10.78	10.77	33.760	25.851	215.3	0.153	3.71	59.2	17.0	1.56	17.1	0.26	0.10	0.34	61	214
70		10.42	10.41	33.804 D	25.948	206.2	0.172									70	213
75	ISL	10.30	10.29	33.848	26.003	201.1	0.183	2.97	47.0	22.1	1.83	21.4	0.24	0.11	0.45	75	
85		10.10	10.09	33.939	26.109	191.3	0.202	2.56	40.3	25.2	1.96	23.6	0.22	0.12	0.48	85	212
99		9.78	9.77	34.006	26.215	181.4	0.228	2.40	37.6	28.0	2.04	25.1	0.10	0.08	0.30	100	211
100	ISL	9.77	9.76	34.010	26.220	181.0	0.230	2.39	37.4	28.2	2.05	25.2	0.10	0.08	0.30	101	
121		9.64	9.63	34.088	26.303	173.6	0.267	2.12	33.1	31.1	2.16	26.6	0.07	0.08	0.23	122	210
125	ISL	9.62	9.61	34.101	26.316	172.3	0.274	2.07	32.3	31.5	2.18	26.8	0.07	0.08	0.23	126	
139		9.54	9.52	34.138	26.359	168.6	0.298	1.91	29.7	32.9	2.25	27.4	0.05	0.06	0.22	140	209
150	ISL	9.43	9.41	34.154	26.389	165.9	0.317	1.86	28.9	34.0	2.28	27.8	0.03	0.06	0.19	151	
169		9.23	9.21	34.176	26.439	161.5	0.348	1.79	27.7	36.0	2.33	28.5	0.01	0.05	0.14	170	208
199		9.03	9.01	34.228	26.513	155.1	0.395	1.43	22.0	39.6	2.48	29.9	0.02	0.07	0.18	200	207
200	ISL	9.02	9.00	34.229	26.515	154.9	0.397	1.42	21.9	39.7	2.48	29.9	0.02			201	
229		8.70	8.68	34.252	26.584	148.8	0.441	1.22	18.7	43.5	2.59	31.0	0.01			230	206
250	ISL	8.58	8.55	34.258	26.607	146.9	0.472	1.15	17.5	44.8	2.62	31.4	0.01			252	
269		8.50	8.47	34.261	26.622	145.9	0.500	1.11	16.9	45.7	2.64	31.6	0.01			271	205
300	ISL	8.28	8.25	34.272	26.665	142.3	0.544	1.03	15.6	48.0	2.69	32.3	0.00			302	
318		8.14	8.11	34.277	26.690	140.1	0.570	0.99	14.9	49.4	2.72	32.7	0.00			320	204
378		7.72	7.68	34.271	26.748	135.4	0.652	0.82	12.3	54.2	2.81	34.2	0.00			381	203
400	ISL	7.44	7.40	34.269	26.787	131.9	0.682	0.73	10.8	57.5	2.87	35.2	0.00			403	
437		6.97	6.93	34.270	26.854	125.8	0.729	0.59	8.7	63.5	2.97	36.9	0.00			440	202
500	ISL	6.48	6.43	34.296	26.941	118.0	0.806	0.41	6.0	71.5	3.09	38.6	0.01			504	
513		6.38	6.33	34.302	26.958	116.4	0.821	0.37	5.4	73.2	3.12	39.0	0.01			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 39.5 N	118 58.5 W	04/04/02	0452 UTC	841 m	080 01 kn			1017.1 mb	14.1 C	10.8 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.55	13.55	33.664	25.248	271.2	0.000	6.20	105.0	1.5	0.42	1.0	0.03	0.23	0.05	0	
2		13.55	13.55	33.664	25.248	271.2	0.005	6.20	105.0	1.5	0.42	1.0	0.03	0.23	0.05	2	220
10		13.23	13.23	33.660	25.310	265.6	0.027	6.15	103.4	1.8	0.45	1.3	0.04	0.28	0.06	10	219
20	ISL	12.98	12.98	33.662	25.362	260.9	0.053	5.97	99.9	2.7	0.55	2.3	0.06	0.26	0.08	20	
21		12.95	12.95	33.662	25.367	260.4	0.056	5.94	99.3	2.9	0.57	2.5	0.06	0.26	0.08	21	218
30		12.30	12.30	33.662	25.494	248.5	0.079	5.33	87.9	5.8	0.84	5.6	0.15	0.15	0.14	30	217
40		12.20	12.19	33.657	25.510	247.3	0.104	5.18	85.2	6.7	0.91	6.5	0.19	0.15	0.12	40	216
50		11.87	11.86	33.655	25.571	241.8	0.128	4.79	78.3	9.1	1.10	9.1	0.29	0.13	0.21	50	215
60		11.56	11.55	33.674	25.643	235.1	0.152	4.54	73.7	11.2	1.21	11.4	0.37	0.09	0.21	60	214
69		11.39	11.38	33.687	25.685	231.3	0.173	4.43	71.7	12.3	1.27	12.5	0.37	0.08	0.23	69	213
75	ISL	11.09	11.08	33.734	25.776	222.8	0.186	4.10	65.9	14.9	1.41	14.7	0.32	0.08	0.27	75	
85		10.59	10.58	33.818	25.930	208.3	0.208	3.51	55.8	19.4	1.64	18.6	0.24	0.07	0.33	85	212
100		10.42	10.41	33.844	25.980	203.9	0.239	3.27	51.8	21.1	1.73	20.2	0.22	0.07	0.32	101	211
120		10.00	9.99	33.948	26.133	189.7	0.278	2.68	42.1	25.7	1.95	23.6	0.16	0.07	0.34	121	210
125	ISL	9.90	9.89	33.965	26.163	186.9	0.288	2.59	40.6	26.7	1.98	24.2	0.14	0.06	0.32	126	
139		9.63	9.61	34.008	26.242	179.7	0.313	2.39	37.3	29.4	2.06	25.6	0.07	0.05	0.24	140	209
150	ISL	9.38	9.36	34.056	26.321	172.4	0.333	2.17	33.7	32.2	2.16	26.9	0.06	0.06	0.23	151	
169		9.00	8.98	34.131	26.441	161.3	0.364	1.84	28.3	36.8	2.33	28.8	0.04	0.08	0.22	170	208
199		8.72	8.70	34.159	26.507	155.5	0.412	1.67	25.5	40.2	2.41	29.9	0.04	0.10	0.37	200	207
200	ISL	8.72	8.70	34.160	26.508	155.4	0.413	1.66	25.4	40.3	2.41	29.9	0.04			201	
229		8.65	8.63	34.197	26.548	152.1	0.458	1.47	22.4	42.0	2.49	30.6	0.02			230	206
250	ISL	8.52	8.49	34.211	26.580	149.5	0.490	1.36	20.7	43.8	2.54	31.1	0.01			252	
269		8.35	8.32	34.220	26.613	146.6	0.518	1.27	19.3	45.7	2.59	31.7	0.01			271	205
300	ISL	8.02	7.99	34.242	26.680	140.6	0.562	1.07	16.1	49.6	2.69	32.9	0.00			302	
318		7.81	7.78	34.253	26.720	137.1	0.587	0.95	14.2	52.0	2.75	33.7	0.00			320	204
377		7.24	7.20	34.259	26.807	129.4	0.666	0.73	10.8	59.4	2.88	35.8	0.00			379	203
400	ISL	7.04	7.00	34.263	26.838	126.7	0.695	0.65	9.6	62.6	2.93	36.5	0.00			403	
438		6.73	6.69	34.272	26.888	122.3	0.743	0.52	7.6	67.8	3.01	37.5	0.00			441	202
500	ISL	6.35	6.30	34.295	26.957	116.4	0.817	0.38	5.5	74.9	3.10	38.8	0.00			504	
516		6.25	6.20	34.301	26.974	114.8	0.835	0.35	5.1	76.7	3.12	39.1	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 87 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.7 N	119 19.1 W	04/04/02	0852 UTC	1638 m	320 01 kn			1017.9 mb	14.0 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.61	13.61	33.610	25.194	276.3	0.000	6.15	104.2	1.1	0.38	0.6	0.02	0.41	0.14	0	
1		13.61	13.61	33.610	25.194	276.3	0.003	6.15	104.2	1.1	0.38	0.6	0.02	0.41	0.14	1	220
10		13.20	13.20	33.615	25.281	268.3	0.027	5.78	97.1	3.1	0.56	2.6	0.06	0.41	0.33	10	219
20		12.84	12.84	33.641	25.373	259.8	0.054	5.68	94.7	3.9	0.62	3.8	0.08	0.57	0.50	20	218
30		12.25	12.25	33.683	25.520	246.1	0.079	5.58	91.9	5.0	0.74	5.8	0.11	1.73	0.86	30	217
40		11.89	11.88	33.711	25.610	237.7	0.103	4.92	80.5	10.3	1.08	10.4	0.13	0.58	0.78	40	216
50		10.74	10.73	33.753	25.852	214.9	0.126	3.63	57.9	17.9	1.54	17.4	0.14	0.23	0.47	50	215
60		10.59	10.58	33.746	25.873	213.1	0.147	3.45	54.9	19.1	1.60	18.8	0.14	0.15	0.36	60	214
70		10.21	10.20	33.802	25.983	202.9	0.168	3.11	49.1	22.2	1.76	21.4	0.06	0.10	0.25	70	213
75	ISL	10.07	10.06	33.833	26.031	198.4	0.178	2.99	47.0	23.4	1.81	22.3	0.05	0.08	0.21	75	
85		9.87	9.86	33.891	26.110	191.1	0.198	2.81	44.0	25.3	1.89	23.5	0.04	0.05	0.16	85	212
99		9.73	9.72	33.944	26.175	185.2	0.224	2.62	40.9	27.3	1.98	24.6	0.04	0.04	0.19	100	211
100	ISL	9.72	9.71	33.948	26.180	184.8	0.226	2.61	40.8	27.5	1.99	24.7	0.04	0.04	0.19	101	
120		9.47	9.46	34.013	26.272	176.4	0.262	2.38	37.0	30.5	2.09	26.2	0.05	0.04	0.24	121	210
125	ISL	9.41	9.40	34.030	26.295	174.3	0.271	2.31	35.9	31.2	2.12	26.6	0.05	0.04	0.22	126	
139		9.27	9.25	34.072	26.351	169.3	0.295	2.14	33.1	32.9	2.20	27.5	0.03	0.03	0.14	140	209
150	ISL	9.21	9.19	34.089	26.374	167.3	0.313	2.07	32.0	33.8	2.23	27.8	0.03	0.03	0.14	151	
170		9.11	9.09	34.107	26.405	164.8	0.346	1.98	30.5	35.2	2.27	28.2	0.03	0.04	0.13	171	208
198		8.90	8.88	34.133	26.459	160.1	0.392	1.83	28.1	37.6	2.34	29.3	0.02	0.02	0.11	199	207
200	ISL	8.85	8.83	34.136	26.469	159.2	0.395	1.80	27.6	38.1	2.35	29.5	0.02			201	
228		8.13	8.11	34.180	26.614	145.6	0.438	1.36	20.5	46.1	2.58	32.3	0.01			229	206
250	ISL	7.76	7.74	34.208	26.691	138.6	0.469	1.11	16.6	51.2	2.71	33.8	0.01			252	
268		7.55	7.52	34.225	26.735	134.6	0.494	0.96	14.3	54.5	2.78	34.7	0.01			270	205
300	ISL	7.34	7.31	34.238	26.775	131.2	0.536	0.82	12.2	57.4	2.85	35.6	0.01			302	
318		7.27	7.24	34.240	26.787	130.4	0.560	0.77	11.4	58.4	2.88	35.9	0.01			320	204
377		6.93	6.89	34.256	26.847	125.4	0.635	0.61	9.0	64.3	2.97	37.0	0.00			380	203
400	ISL	6.79	6.75	34.264	26.873	123.2	0.664	0.56	8.2	66.6	3.00	37.5	0.00			403	
437		6.57	6.53	34.280	26.915	119.6	0.709	0.47	6.8	70.6	3.06	38.2	0.00			440	202
500	ISL	6.19	6.15	34.317	26.995	112.6	0.782	0.32	4.6	79.2	3.16	39.3	0.00			504	
515		6.10	6.05	34.326	27.013	110.9	0.798	0.28	4.0	81.2	3.19	39.5	0.00			519	201

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LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 19.4 N	119 39.4 W	04/04/02	1238 UTC	77 m	00 kn			1017.4 mb	13.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.35	13.35	33.281	24.992	295.5	0.000	6.29	105.8	2.7	0.44	0.8	0.04	0.47	0.06	0	
1		13.35	13.35	33.281	24.992	295.5	0.003	6.29	105.8	2.7	0.44	0.8	0.04	0.47	0.06	1	209
5		13.06	13.06	33.290	25.057	289.5	0.015	6.26	104.7	2.7	0.46	1.3	0.08	0.45	0.14	5	208
10		12.95	12.95	33.306	25.091	286.3	0.029	6.22	103.8	2.8	0.48	1.7	0.10	0.47	0.16	10	207
20		12.38	12.38	33.328	25.220	274.4	0.057	6.03	99.4	3.8	0.60	3.9	0.13	0.86	0.31	20	206
30		11.95	11.95	33.470	25.411	256.4	0.084	5.73	93.7	5.3	0.78	6.3	0.15	1.00	0.49	30	205
40		11.95	11.94	33.607	25.518	246.5	0.109	5.63	92.1	6.4	0.87	6.8	0.21	0.72	0.84	40	204
49		11.59	11.58	33.614	25.591	239.8	0.131	5.28	85.7	8.5	1.03	9.0	0.22	0.38	0.73	49	203
50	ISL	11.53	11.52	33.622	25.608	238.2	0.133	5.20	84.3	9.1	1.06	9.5	0.22	0.35	0.72	50	
60		11.02	11.01	33.711	25.770	223.0	0.156	4.46	71.6	14.6	1.34	13.8	0.26	0.21	0.63	60	202
70		10.94	10.93	33.744	25.810	219.4	0.178	4.23	67.8	16.7	1.41	14.9	0.25	0.32	0.66	70	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
33 9.4 N	119 59.9 W	04/04/02	1722 UTC	1196 m	360 01 kn	270 01 06	2	1018.5 mb	13.1 C	12.9 C	21m	8/8	ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.62	13.62	33.192	24.869	307.3	0.000	6.18	104.5	2.7	0.41	0.2	0.02	0.35	0.06	0	
1		13.62	13.62	33.192	24.869	307.3	0.003									1	224
1	A	13.62	13.62	33.192	24.869	307.3	0.003	6.18	104.5	2.7	0.41	0.2	0.02	0.35	0.06	1	223
10	ISL	13.84	13.84	33.342	24.940	300.7	0.030	6.10	103.7	2.4	0.39	0.1	0.01	0.28	0.07	10	
12		13.88	13.88	33.389	24.968	298.2	0.036									12	222
12	A	13.88	13.88	33.381	24.962	298.7	0.036	6.08	103.4	2.3	0.39	0.1	0.01	0.28	0.07	12	221
19		13.75	13.75	33.390 D	24.996	295.7	0.057	6.03	102.3	2.5	0.42	0.5	0.05	0.44	0.13	19	220
20	ISL	13.73	13.73	33.392	25.002	295.2	0.060	6.02	102.1	2.5	0.42	0.5	0.05	0.45	0.14	20	
26	A	13.57	13.57	33.393	25.035	292.2	0.078	5.99	101.3	2.7	0.45	0.9	0.08	0.51	0.17	26	219
30	ISL	13.33	13.33	33.378	25.072	288.7	0.089	5.96	100.2	3.0	0.50	1.6	0.11	0.51	0.21	30	
33		13.13	13.13	33.362	25.100	286.2	0.098	5.95	99.7	3.3	0.53	2.1	0.14	0.51	0.24	33	218
41	A	12.68	12.67	33.308	25.147	281.9	0.121	6.03	100.0	3.4	0.57	2.7	0.18	0.51	0.21	41	217
48		12.30	12.29	33.282	25.200	277.0	0.140	5.86	96.4	4.4	0.67	4.5	0.20	0.43	0.17	48	216
50	ISL	12.03	12.02	33.279	25.249	272.4	0.146	5.75	94.0	5.1	0.74	5.7	0.15	0.36	0.15	50	
55	A	11.36	11.35	33.290	25.381	259.8	0.159	5.46	88.0	7.1	0.91	8.7	0.03	0.17	0.11	55	215
66		11.13	11.12	33.401	25.509	247.9	0.187	5.19	83.3	9.4	1.06	11.1	0.02	0.12	0.09	66	214
75	ISL	10.38	10.37	33.454	25.682	231.6	0.209	4.70	74.3	13.3	1.30	15.0	0.02	0.07	0.07	75	
77	A	10.19	10.18	33.465	25.723	227.7	0.213	4.58	72.1	14.2	1.36	15.9	0.02	0.06	0.07	77	213
88		9.50	9.49	33.535	25.893	211.7	0.237	4.11	63.7	18.4	1.56	19.2	0.02	0.02	0.05	88	212
99		9.52	9.51	33.644	25.975	204.1	0.260	3.69	57.3	21.2	1.69	21.2	0.02	0.02	0.07	99	211
100	ISL	9.51	9.50	33.654	25.984	203.3	0.262	3.66	56.8	21.5	1.70	21.4	0.02	0.02	0.07	101	
118		9.23	9.22	33.804	26.147	188.1	0.298	3.17	48.9	25.8	1.86	24.2	0.01	0.01	0.06	119	210
125	ISL	9.19	9.18	33.834	26.177	185.4	0.311	3.08	47.5	26.6	1.89	24.6	0.01	0.01	0.06	126	
138		9.10	9.09	33.876	26.225	181.1	0.334	2.97	45.7	27.9	1.93	25.2	0.02	0.01	0.05	139	209
150	ISL	8.86	8.84	33.932	26.307	173.5	0.356	2.83	43.4	30.4	1.99	26.4	0.02	0.01	0.04	151	
168		8.48	8.46	34.014	26.430	162.1	0.386	2.59	39.4	34.6	2.11	28.2	0.01	0.01	0.04	169	208
198		8.29	8.27	34.100	26.527	153.4	0.433	2.04	30.9	39.9	2.33	30.1	0.01	0.01	0.05	199	207
200	ISL	8.27	8.25	34.102	26.531	153.0	0.436	2.02	30.6	40.2	2.34	30.2	0.01			201	
228		7.96	7.94	34.107	26.582	148.6	0.478	1.90	28.5	43.4	2.40	31.2	0.01			229	206
250	ISL	7.71	7.69	34.099	26.613	145.9	0.511	1.88	28.1	45.4	2.43	31.9	0.01			251	
268		7.51	7.48	34.094	26.638	143.8	0.537	1.84	27.4	47.3	2.47	32.4	0.01			270	205
300	ISL	7.19	7.16	34.119	26.703	137.9	0.582	1.55	22.9	52.4	2.61	33.7	0.01			302	
317		7.03	7.00	34.136	26.738	134.7	0.605	1.37	20.1	55.4	2.69	34.4	0.01			319	204
377		6.55	6.52	34.166	26.827	126.9	0.684	0.97	14.1	63.9	2.87	37.2	0.01			379	203
400	ISL	6.46	6.42	34.193	26.861	124.0	0.713	0.81	11.8	66.8	2.94	37.9	0.01			403	
437		6.33	6.29	34.239	26.914	119.4	0.758	0.57	8.3	71.2	3.04	38.8	0.00			440	202
500	ISL	5.99	5.95	34.291	26.999	111.9	0.830	0.35	5.0	79.0	3.15	40.2	0.00			503	
516		5.90	5.86	34.305	27.022	109.9	0.848	0.30	4.3	81.0	3.18	40.5	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 59.6 N	120 21.1 W	05/04/02	0215 UTC	705 m	150 06 kn	310 02 07	1	1018.0 mb	15.2 C	12.4 C		1/8	CS

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.46	13.46	33.148	24.867	307.4	0.000	6.26	105.4	2.9	0.44	0.8	0.04	0.36	0.09	0	
1		13.46	13.46	33.148	24.867	307.4	0.003	6.26	105.4	2.9	0.44	0.8	0.04	0.36	0.09	1	220
10		13.28	13.28	33.162	24.915	303.2	0.031	6.28	105.4	2.8	0.43	0.8	0.05	0.38	0.09	10	219
20		12.78	12.78	33.190	25.035	291.9	0.060	6.18	102.6	3.2	0.50	1.7	0.10	0.50	0.17	20	218
30		12.95	12.95	33.275	25.068	289.1	0.089	6.20	103.4	3.1	0.49	1.6	0.08	0.51	0.19	30	217
40		12.96	12.95	33.399	25.162	280.4	0.118	6.12	102.2	2.8	0.53	2.1	0.11	0.54	0.22	40	216
50		12.59	12.58	33.383	25.223	274.9	0.146	6.02	99.7	3.2	0.58	2.8	0.17	0.38	0.19	50	215
60		11.77	11.76	33.317	25.327	265.1	0.173	5.69	92.6	5.6	0.80	6.7	0.13	0.22	0.15	60	214
70		11.21	11.20	33.379	25.478	251.0	0.198	5.40	86.8	7.5	0.96	9.7	0.03	0.12	0.08	70	213
75	ISL	10.86	10.85	33.400	25.557	243.6	0.211	5.14	82.0	9.5	1.08	11.7	0.03	0.09	0.07	75	
85		10.25	10.24	33.435	25.690	231.0	0.234	4.64	73.1	13.4	1.31	15.1	0.03	0.06	0.06	85	212
99		10.03	10.02	33.471	25.755	225.1	0.266	4.45	69.8	15.4	1.41	16.6	0.02	0.04	0.06	99	211
100	ISL	10.00	9.99	33.477	25.765	224.2	0.269	4.42	69.3	15.6	1.42	16.8	0.02	0.04	0.06	100	
119		9.48	9.47	33.621	25.964	205.6	0.309	3.83	59.4	20.2	1.64	20.6	0.02	0.02	0.05	120	210
125	ISL	9.38	9.37	33.672	26.020	200.4	0.322	3.64	56.3	21.7	1.71	21.7	0.02	0.01	0.04	126	
140		9.19	9.17	33.793	26.146	188.7	0.351	3.21	49.5	25.4	1.86	24.1	0.02	0.00	0.03	141	209
150	ISL	9.05	9.03	33.856	26.217	182.1	0.369	2.97	45.7	27.8	1.95	25.6	0.02	0.00	0.03	151	
169		8.77	8.75	33.946	26.332	171.5	0.403	2.65	40.5	31.7	2.08	27.8	0.01	0.01	0.05	170	208
199		8.36	8.34	34.013	26.448	160.9	0.453	2.54	38.5	35.6	2.15	29.0	0.01	0.00	0.05	200	207
200	ISL	8.35	8.33	34.015	26.451	160.6	0.454	2.53	38.3	35.7	2.15	29.1	0.01			201	
229		8.02	8.00	34.050	26.528	153.7	0.500	2.21	33.2	40.1	2.29	30.8	0.01			230	206
250	ISL	7.63	7.61	34.064	26.597	147.4	0.532	2.01	30.0	44.5	2.40	32.1	0.01			251	
269		7.29	7.26	34.075	26.654	142.1	0.559	1.84	27.2	48.5	2.49	33.3	0.01			271	205
300	ISL	7.00	6.97	34.097	26.712	137.0	0.602	1.54	22.6	53.3	2.63	34.8	0.01			302	
318		6.87	6.84	34.109	26.739	134.6	0.627	1.37	20.1	56.0	2.70	35.6	0.01			320	204
378		6.21	6.18	34.141	26.852	124.3	0.705	0.92	13.3	67.5	2.91	38.4	0.01			380	203
400	ISL	6.06	6.03	34.162	26.887	121.1	0.732	0.77	11.1	71.0	2.98	39.2	0.01			403	
435		5.89	5.85	34.198	26.938	116.7	0.773	0.56	8.0	75.7	3.07	40.1	0.00			438	202
500	ISL	5.68	5.64	34.255	27.009	110.6	0.847	0.38	5.4	81.4	3.17	41.0	0.00			503	
513		5.64	5.60	34.267	27.024	109.4	0.861	0.34	4.8	82.6	3.19	41.2	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 39.3 N	121 1.8 W	05/04/02	0903 UTC	3792 m	320 03 kn			1018.5 mb	15.0 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.01	14.01	33.146	24.753	318.3	0.000	6.09	103.7	2.2	0.40	0.1	0.00	0.16	0.03	0	
1		14.01	14.01	33.146	24.753	318.3	0.003	6.09	103.7	2.2	0.40	0.1	0.00	0.16	0.03	1	220
9		13.99	13.99	33.148	24.759	318.0	0.029	6.09	103.7	2.3	0.39	0.1	0.00	0.16	0.03	9	219
10	ISL	13.97	13.97	33.149	24.764	317.5	0.032	6.10	103.8	2.3	0.39	0.1	0.00	0.16	0.03	10	
20		13.65	13.65	33.163	24.841	310.5	0.063	6.16	104.2	2.4	0.39	0.1	0.01	0.25	0.08	20	218
30		13.40	13.40	33.178	24.903	304.8	0.094	6.18	104.0	2.5	0.41	0.3	0.03	0.45	0.14	30	217
40		12.81	12.80	33.123	24.978	297.9	0.124	6.16	102.3	3.1	0.49	1.5	0.11	0.47	0.18	40	216
49		12.45	12.44	33.100	25.030	293.2	0.151	6.10	100.5	3.4	0.54	2.1	0.15	0.50	0.17	49	215
50	ISL	12.46	12.45	33.107	25.034	292.9	0.154	6.08	100.2	3.4	0.55	2.2	0.16	0.49	0.17	50	
60		12.52	12.51	33.183	25.081	288.6	0.183	5.97	98.6	3.6	0.59	2.9	0.24	0.39	0.17	60	214
70		12.39	12.38	33.226	25.140	283.3	0.211	6.05	99.7	3.5	0.58	2.8	0.19	0.38	0.18	70	213
75	ISL	12.41	12.40	33.257	25.160	281.5	0.225	6.03	99.4	3.4	0.58	2.9	0.22	0.36	0.17	75	
84		12.45	12.44	33.320	25.202	277.8	0.251	5.99	98.9	3.2	0.58	3.0	0.26	0.30	0.15	84	212
99		11.52	11.51	33.274	25.340	264.8	0.291	5.49	88.8	6.6	0.88	8.1	0.04	0.13	0.09	99	211
100	ISL	11.44	11.43	33.280	25.360	262.9	0.294	5.44	87.8	7.0	0.91	8.6	0.04	0.12	0.09	100	
119		10.01	10.00	33.478	25.765	224.6	0.340	4.41	69.1	15.4	1.40	16.8	0.01	0.03	0.07	120	210
125	ISL	9.78	9.77	33.537	25.849	216.7	0.353	4.16	64.9	17.4	1.51	18.5	0.01	0.02	0.06	126	
139		9.44	9.42	33.662	26.003	202.3	0.383	3.67	56.9	21.4	1.69	21.6	0.01	0.01	0.04	140	209
150	ISL	9.27	9.25	33.750	26.099	193.3	0.405	3.39	52.4	23.9	1.79	23.3	0.01	0.00	0.04	151	
169		9.03	9.01	33.877	26.237	180.5	0.440	3.02	46.4	27.8	1.91	25.4	0.01	0.00	0.03	170	208
198		8.43	8.41	34.007	26.433	162.4	0.490	2.62	39.8	34.8	2.11	28.5	0.01	0.00	0.02	199	207
200	ISL	8.41	8.39	34.014	26.441	161.6	0.493	2.59	39.3	35.2	2.12	28.6	0.01			201	
228		8.19	8.17	34.087	26.532	153.4	0.537	2.16	32.6	39.7	2.30	30.2	0.01			229	206
250	ISL	7.96	7.93	34.098	26.575	149.6	0.570	2.02	30.3	42.4	2.37	31.1	0.01			251	
268		7.76	7.73	34.097	26.604	147.1	0.597	1.94	29.0	44.6	2.42	31.8	0.01			270	205
300	ISL	7.43	7.40	34.120	26.670	141.2	0.643	1.64	24.3	49.4	2.55	33.4	0.01			302	
318		7.24	7.21	34.133	26.707	137.9	0.668	1.46	21.6	52.3	2.63	34.3	0.01			320	204
377		6.57	6.54	34.149	26.811	128.4	0.747	1.08	15.7	62.6	2.83	37.0	0.01			379	203
400	ISL	6.31	6.27	34.149	26.845	125.3	0.776	0.95	13.7	66.6	2.90	38.1	0.01			403	
436		5.97	5.93	34.156	26.894	120.9	0.820	0.77	11.0	72.3	3.00	39.5	0.00			439	202
500	ISL	5.72	5.68	34.221	26.977	113.6	0.896	0.50	7.1	79.8	3.12	40.8	0.00			503	
513		5.67	5.63	34.234	26.994	112.2	0.910	0.45	6.4	81.3	3.14	41.1	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 19.4 N	121 43.0 W	05/04/02	1733 UTC	4039 m	190 07 kn	190 02 05	2	1019.1 mb	15.1 C	14.1 C	21m	8/8 ST

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.96	13.96	33.299	24.882	306.0	0.000	6.12	104.2	2.5	0.39	0.1	0.01	0.32	0.05	0	
2		13.96	13.96	33.300	24.883	306.0	0.006									2	224
2	A	13.96	13.96	33.299	24.882	306.1	0.006	6.12	104.2	2.5	0.39	0.1	0.01	0.32	0.05	2	223
10	ISL	13.92	13.92	33.297	24.889	305.6	0.031	6.12	104.2	2.6	0.39	0.2	0.01	0.34	0.05	10	
12	A	13.91	13.91	33.297	24.891	305.5	0.037	6.12	104.1	2.6	0.39	0.2	0.01	0.35	0.05	12	221
13		13.92	13.92	33.298	24.890	305.6	0.040									13	222
19		13.62	13.62	33.278	24.936	301.4	0.058	6.14	103.8	2.6	0.39	0.2	0.02	0.36	0.10	19	220
20	ISL	13.61	13.61	33.277	24.937	301.3	0.061	6.14	103.8	2.6	0.39	0.2	0.02	0.38	0.10	20	
26	A	13.52	13.52	33.278	24.956	299.6	0.079	6.14	103.6	2.6	0.42	0.4	0.03	0.48	0.12	26	219
30	ISL	13.36	13.36	33.284	24.993	296.2	0.091	6.12	102.9	2.8	0.45	0.8	0.06	0.50	0.15	30	
34		13.20	13.20	33.292	25.032	292.7	0.103	6.09	102.1	3.0	0.47	1.2	0.10	0.52	0.18	34	218
42	A	13.09	13.08	33.307	25.065	289.7	0.126	6.06	101.4	3.2	0.50	1.6	0.13	0.50	0.22	42	217
48		13.11	13.10	33.330	25.079	288.5	0.143	6.04	101.1	3.4	0.51	1.7	0.14	0.49	0.18	48	216
50	ISL	13.07	13.06	33.335	25.091	287.4	0.149	6.01	100.5	3.5	0.52	1.9	0.16	0.47	0.18	50	
55	A	12.97	12.96	33.353	25.125	284.3	0.163	5.92	98.8	3.6	0.56	2.5	0.20	0.42	0.19	55	215
66		12.94	12.93	33.442	25.200	277.5	0.194	5.88	98.1	4.0	0.60	3.4	0.18	0.36	0.16	66	214
75	ISL	12.62	12.61	33.434	25.257	272.3	0.219	5.65	93.7	5.0	0.69	5.0	0.14	0.19	0.10	75	
78	A	12.49	12.48	33.426	25.276	270.6	0.227	5.57	92.1	5.4	0.72	5.6	0.13	0.13	0.08	78	213
89		12.22	12.21	33.441	25.339	264.7	0.257	5.43	89.3	6.0	0.80	7.0	0.09	0.09	0.07	89	212
100		11.79	11.78	33.471	25.444	255.0	0.285	5.20	84.7	8.3	0.93	9.1	0.07	0.06	0.06	100	211
120		10.57	10.56	33.534	25.713	229.7	0.334	4.43	70.3	14.2	1.30	15.1	0.02	0.03	0.07	121	210
125	ISL	10.30	10.29	33.577	25.793	222.2	0.345	4.20	66.3	16.0	1.39	16.7	0.02	0.03	0.06	126	
139		9.69	9.67	33.705	25.995	203.1	0.375	3.62	56.4	20.6	1.61	20.5	0.01	0.02	0.04	140	209
150	ISL	9.48	9.46	33.756	26.070	196.2	0.397	3.38	52.4	22.9	1.72	22.2	0.01	0.02	0.04	151	
168		9.30	9.28	33.813	26.144	189.5	0.431	3.14	48.5	25.7	1.85	24.1	0.01	0.01	0.03	169	208
199		8.86	8.84	33.948	26.320	173.2	0.488	2.70	41.4	31.2	2.03	27.1	0.01	0.00	0.03	200	207
200	ISL	8.84	8.82	33.951	26.326	172.7	0.489	2.69	41.2	31.4	2.03	27.2	0.01			201	
229		8.33	8.31	34.027	26.464	159.9	0.538	2.50	37.9	36.6	2.15	29.1	0.01			230	206
250	ISL	8.02	7.99	34.049	26.528	154.1	0.571	2.34	35.2	40.0	2.23	30.3	0.01			251	
267		7.80	7.77	34.057	26.567	150.6	0.596	2.21	33.1	42.6	2.30	31.1	0.01			269	205
300	ISL	7.43	7.40	34.071	26.631	144.9	0.645	1.98	29.4	47.1	2.42	32.5	0.00			302	
317		7.27	7.24	34.078	26.660	142.4	0.670	1.86	27.5	49.3	2.48	33.2	0.00			319	204
376		6.84	6.80	34.121	26.753	134.1	0.751	1.31	19.2	57.6	2.71	35.8	0.00			378	203
400	ISL	6.64	6.60	34.145	26.799	130.0	0.783	1.07	15.6	62.0	2.81	37.0	0.00			403	
437		6.32	6.28	34.182	26.871	123.5	0.830	0.73	10.6	69.0	2.95	38.8	0.01			440	202
500	ISL	5.85	5.81	34.233	26.971	114.4	0.905	0.46	6.6	78.8	3.10	40.7	0.00			503	
515		5.74	5.70	34.245	26.994	112.3	0.922	0.39	5.6	81.1	3.14	41.1	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 59.1 N	122 23.4 W	05/04/02	2244 UTC	4104 m	240 08 kn	200 01 04	1	1017.9 mb	16.5 C	15.0 C	20m	7/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.70	14.70	33.392	24.798	314.0	0.000	6.09	105.4	2.6	0.40	0.3	0.01	0.36	0.05	0	
1		14.70	14.70	33.392	24.798	314.0	0.003	6.09	105.4	2.6	0.40	0.3	0.01	0.36	0.05	1	220
10		14.29	14.29	33.396	24.888	305.7	0.031	6.13	105.2	2.6	0.40	0.3	0.02	0.36	0.05	10	219
20		13.62	13.62	33.400	25.030	292.5	0.061	6.22	105.3	2.9	0.43	0.8	0.04	0.41	0.10	20	218
29		13.29	13.29	33.416	25.109	285.1	0.087	6.12	102.9	3.4	0.49	1.9	0.09	0.58	0.15	29	217
30	ISL	13.27	13.27	33.420	25.117	284.5	0.090	6.11	102.7	3.4	0.50	2.0	0.09	0.59	0.16	30	
40		13.06	13.05	33.461	25.191	277.7	0.118	5.98	100.1	3.8	0.56	2.8	0.15	0.69	0.23	40	216
49		12.84	12.83	33.485	25.253	272.0	0.143	5.80	96.6	4.2	0.62	3.7	0.27	0.49	0.26	49	215
50	ISL	12.84	12.83	33.489	25.256	271.8	0.145	5.80	96.6	4.2	0.62	3.7	0.27	0.47	0.26	50	
59		12.80	12.79	33.519	25.287	269.0	0.170	5.75	95.7	4.5	0.67	4.1	0.30	0.32 A	0.19 A	59	214
70		12.27	12.26	33.470	25.352	263.1	0.199	5.49	90.4	5.9	0.78	6.4	0.16	0.17	0.11	70	213
75	ISL	11.91	11.90	33.436	25.394	259.2	0.212	5.34	87.2	6.9	0.86	7.9	0.11	0.14	0.10	75	
85		11.18	11.17	33.393	25.494	249.7	0.237	5.02	80.7	9.3	1.05	11.0	0.04	0.11	0.09	85	212
100		10.47	10.46	33.455	25.668	233.5	0.274	4.53	71.7	13.1	1.28	14.8	0.02	0.06	0.06	100	211
119		9.87	9.86	33.607	25.889	212.8	0.316	3.90	61.0	17.9	1.52	18.8	0.02	0.03	0.05	120	210
125	ISL	9.75	9.74	33.647	25.940	208.0	0.329	3.76	58.7	19.1	1.57	19.7	0.02	0.02	0.05	126	
139		9.50	9.48	33.735	26.050	197.8	0.357	3.48	54.0	21.9	1.69	21.7	0.01	0.01	0.05	140	209
150	ISL	9.28	9.26	33.822	26.154	188.1	0.378	3.19	49.3	25.0	1.81	23.6	0.01	0.01	0.05	151	
168		8.92	8.90	33.947	26.309	173.7	0.411	2.78	42.6	29.9	1.99	26.4	0.01	0.01	0.04	169	208
198		8.44	8.42	34.005	26.430	162.7	0.461	2.65	40.2	34.0	2.09	28.2	0.01	0.01	0.04	199	207
200	ISL	8.42	8.40	34.007	26.434	162.2	0.465	2.64	40.1	34.2	2.09	28.3	0.01			201	
229		8.12	8.10	34.027	26.496	156.9	0.511	2.50	37.7	37.5	2.17	29.4	0.01			230	206
250	ISL	7.81	7.79	34.032	26.545	152.3	0.543	2.37	35.5	40.7	2.25	30.5	0.00			251	
268		7.53	7.50	34.035	26.588	148.4	0.570	2.25	33.5	43.7	2.32	31.6	0.00			270	205
300	ISL	7.11	7.08	34.041	26.652	142.6	0.617	1.98	29.2	48.9	2.46	33.3	0.00			302	
317		6.92	6.89	34.049	26.685	139.7	0.641	1.82	26.7	51.7	2.53	34.1	0.00			319	204
377		6.57	6.54	34.122	26.790	130.5	0.722	1.16	16.9	61.0	2.79	36.8	0.00			379	203
400	ISL	6.40	6.36	34.137	26.824	127.4	0.752	1.00	14.5	64.5	2.86	37.7	0.00			403	
437		6.12	6.08	34.159	26.878	122.6	0.798	0.80	11.5	69.8	2.96	38.9	0.00			440	202
500	ISL	5.81	5.77	34.219	26.965	114.9	0.873	0.50	7.1	77.9	3.10	40.4	0.00			503	
515		5.74	5.70	34.233	26.985	113.2	0.890	0.43	6.1	79.8	3.13	40.8	0.00			519	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 39.4 N	123 4.0 W	06/04/02	0432 UTC	4134 m	260 09 kn			1018.1 mb	15.5 C	14.7 C			

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.37	14.37	33.101	24.643	328.7	0.000	6.04	103.6	2.5	0.41	0.1	0.00	0.13	0.02	0	
2		14.37	14.37	33.101	24.643	328.8	0.007	6.04	103.6	2.5	0.41	0.1	0.00	0.13	0.02	2	220
10		13.89	13.89	33.096	24.740	319.8	0.033	6.10	103.6	2.5	0.40	0.1	0.00	0.13	0.04	10	219
20	ISL	13.60	13.60	33.087	24.792	315.1	0.064	6.14	103.7	2.5	0.41	0.1	0.00	0.18	0.06	20	
21		13.58	13.58	33.087	24.796	314.7	0.067	6.14	103.6	2.5	0.41	0.1	0.00	0.19	0.06	21	218
30	ISL	13.35	13.35	33.101	24.854	309.5	0.096	6.12	102.8	2.5	0.43	0.2	0.04	0.42	0.13	30	
31		13.35	13.35	33.110	24.861	308.9	0.099	6.12	102.8	2.5	0.43	0.2	0.04	0.44	0.14	31	217
41		13.98	13.97	33.393	24.951	300.6	0.129	6.03	102.8	2.6	0.40	0.2	0.02	0.32	0.08	41	216
50		12.60	12.59	33.155	25.044	291.9	0.156	6.02	99.6	3.3	0.55	2.2	0.19	0.32	0.15	50	215
61		12.68	12.67	33.305	25.145	282.6	0.187	5.91	98.0	3.7	0.60	3.0	0.22	0.23	0.14	61	214
71		12.65	12.64	33.396	25.222	275.6	0.215	5.72	94.9	4.1	0.66	4.2	0.26	0.17	0.11	71	213
75	ISL	12.42	12.41	33.405	25.273	270.7	0.226	5.58	92.1	4.9	0.73	5.5	0.20	0.15	0.10	75	
85		11.73	11.72	33.410	25.407	258.1	0.253	5.20	84.6	7.5	0.93	9.0	0.04	0.12	0.09	85	212
100		11.09	11.08	33.445	25.551	244.7	0.290	4.80	77.0	10.3	1.11	12.2	0.03	0.09	0.07	100	211
119		10.04	10.03	33.568	25.830	218.4	0.334	4.04	63.4	16.4	1.46	17.9	0.02	0.04	0.05	120	210
125	ISL	9.87	9.86	33.611	25.892	212.6	0.347	3.88	60.7	17.8	1.53	19.0	0.02	0.03	0.05	126	
139		9.61	9.59	33.711	26.013	201.4	0.376	3.57	55.5	20.7	1.65	21.0	0.01	0.01	0.04	140	209
150	ISL	9.43	9.41	33.786	26.102	193.2	0.398	3.35	51.9	23.0	1.74	22.5	0.01	0.01	0.04	151	
170		9.16	9.14	33.905	26.239	180.5	0.435	3.00	46.3	27.2	1.89	24.9	0.01	0.01	0.04	171	208
200		8.78	8.76	34.030	26.397	166.0	0.487	2.51	38.4	33.1	2.10	27.7	0.01	0.00	0.04	201	207
229		8.10	8.08	34.040	26.509	155.6	0.534	2.48	37.4	38.1	2.18	29.5	0.01			230	206
250	ISL	7.79	7.77	34.050	26.563	150.7	0.566	2.26	33.8	41.7	2.29	31.0	0.01			251	
269		7.57	7.54	34.058	26.601	147.3	0.594	2.02	30.1	45.0	2.39	32.3	0.01			271	205
300	ISL	7.14	7.11	34.066	26.668	141.2	0.639	1.74	25.6	50.2	2.53	34.2	0.01			302	
318		6.91	6.88	34.072	26.704	137.9	0.664	1.60	23.5	53.2	2.60	35.1	0.01			320	204
378		6.40	6.37	34.116	26.807	128.7	0.744	1.09	15.8	63.2	2.82	37.6	0.00			380	203
400	ISL	6.27	6.23	34.139	26.843	125.5	0.772	0.92	13.3	66.5	2.88	38.3	0.00			403	
437		6.06	6.02	34.178	26.901	120.4	0.818	0.68	9.8	72.0	2.98	39.5	0.00			440	202
500	ISL	5.66	5.62	34.237	26.997	111.7	0.891	0.41	5.8	81.5	3.14	41.4	0.00			503	
513		5.58	5.54	34.249	27.017	109.9	0.905	0.35	5.0	83.4	3.17	41.8	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 87 110

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	06/04/02	1031 UTC	4034 m	310 18 kn			1017.4 mb	15.1 C	13.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.91	14.91	33.080	24.512	341.2	0.000	5.91	102.5	1.7	0.39	0.1	0.00	0.09	0.01	0	
1		14.91	14.91	33.080	24.512	341.2	0.003	5.91	102.5	1.7	0.39	0.1	0.00	0.09	0.01	1	220
10	ISL	14.90	14.90	33.079	24.514	341.3	0.034	5.92	102.6	1.6	0.39	0.1	0.00	0.09	0.02	10	
14		14.89	14.89	33.079	24.516	341.3	0.048	5.92	102.6	1.5	0.39	0.1	0.00	0.09	0.02	14	219
20	ISL	14.74	14.74	33.068	24.540	339.2	0.068	5.94	102.7	1.5	0.39	0.1	0.00	0.09	0.02	20	
30		14.44	14.44	33.043	24.585	335.2	0.102	5.99	102.9	1.5	0.38	0.1	0.00	0.11	0.03	30	218
45		14.18	14.17	33.005	24.610	333.1	0.152	6.02	102.8	1.6	0.39	0.1	0.00	0.16	0.05	45	217
50	ISL	14.02	14.01	32.981	24.625	331.9	0.169	6.05	103.0	1.7	0.39	0.1	0.00	0.17	0.06	50	
59		13.73	13.72	32.947	24.659	328.9	0.198	6.10	103.2	1.9	0.40	0.1	0.00	0.20	0.07	59	216
75		13.50	13.49	32.976	24.728	322.7	0.251	6.09	102.5	2.1	0.40	0.1	0.00	0.29	0.09	75	215
84		13.32	13.31	32.973	24.762	319.7	0.279	6.12	102.6	2.2	0.41	0.1	0.01	0.29	0.13	84	214
94		13.24	13.23	32.974	24.779	318.3	0.311	6.09	102.0	2.3	0.43	0.2	0.03	0.25	0.13	94	213
100	ISL	13.01	13.00	32.980	24.830	313.6	0.330	6.04	100.6	2.7	0.47	0.7	0.10	0.24	0.12	100	
104		12.81	12.80	32.986	24.874	309.5	0.343	6.00	99.6	3.0	0.51	1.2	0.15	0.23	0.11	104	212
114		12.24	12.23	33.010	25.002	297.5	0.373	5.87	96.3	4.0	0.61	2.9	0.20	0.20	0.14	114	211
124		11.50	11.48	33.084	25.197	279.0	0.402	5.58	90.1	5.6	0.77	5.8	0.05	0.14	0.09	125	210
125	ISL	11.42	11.40	33.091	25.217	277.1	0.405	5.56	89.6	5.8	0.78	6.0	0.05	0.13	0.09	126	
139		10.47	10.45	33.188	25.461	254.0	0.442	5.35	84.5	7.9	0.91	8.6	0.03	0.06	0.07	140	209
150	ISL	10.10	10.08	33.241	25.565	244.2	0.469	5.21	81.7	9.5	1.01	10.4	0.02	0.05	0.06	151	
164		9.82	9.80	33.315	25.670	234.5	0.503	5.00	77.9	11.8	1.15	12.8	0.02	0.03	0.04	165	208
193		9.18	9.16	33.617	26.010	202.6	0.566	4.29	66.1	18.8	1.47	18.5	0.01	0.01	0.02	194	207
200	ISL	9.09	9.07	33.689	26.081	196.0	0.580	4.08	62.7	20.7	1.55	19.9	0.01			201	
229		8.80	8.78	33.926	26.313	174.5	0.634	3.38	51.7	28.0	1.81	24.5	0.01			230	206
250	ISL	8.55	8.52	33.993	26.404	166.1	0.670	3.37	51.3	30.8	1.86	25.5	0.01			251	
269		8.28	8.25	34.012	26.460	161.0	0.701	3.36	50.8	33.0	1.88	25.9	0.01			270	205
300	ISL	7.70	7.67	34.022	26.554	152.3	0.749	3.08	46.0	38.9	2.03	28.2	0.01			302	
317		7.36	7.33	34.019	26.600	148.0	0.775	2.87	42.5	42.7	2.14	29.7	0.01			319	204
378		6.25	6.22	34.021	26.752	133.8	0.861	1.99	28.7	58.2	2.57	35.2	0.00			380	203
400	ISL	6.04	6.01	34.031	26.786	130.6	0.890	1.76	25.3	62.3	2.66	36.5	0.00			402	
437		5.79	5.75	34.055	26.837	126.1	0.937	1.43	20.4	68.3	2.78	38.2	0.00			440	202
500	ISL	5.44	5.40	34.119	26.930	117.7	1.014	0.91	12.9	78.9	2.98	40.7	0.00			503	
514		5.36	5.32	34.133	26.951	115.8	1.030	0.79	11.2	81.2	3.02	41.3	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 29.0 N	117 46.3 W	03/04/02	1310 UTC	77 m	00 kn			1015.3 mb	13.8 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.59	13.59	33.624	25.209	274.9	0.000	6.54	110.8	0.9	0.33	0.3	0.02	0.86	0.38	0	
1		13.59	13.59	33.624	25.209	274.9	0.003	6.54	110.8	0.9	0.33	0.3	0.02	0.86	0.38	1	209
5		13.51	13.51	33.622	25.224	273.6	0.014	6.53	110.4	0.8	0.33	0.4	0.02	0.84	0.45	5	208
10		13.38	13.38	33.621	25.250	271.3	0.027	6.46	108.9	1.1	0.38	0.6	0.03	0.83	0.34	10	207
20		12.87	12.87	33.656	25.379	259.3	0.054	6.40	106.8	1.1	0.41	1.2	0.05	1.87	0.58	20	206
30		12.02	12.02	33.665	25.550	243.2	0.079	5.35	87.7	4.6	0.80	5.6	0.12	0.56	0.57	30	205
40		11.20	11.20	33.667	25.703	228.9	0.103	4.27	68.8	10.0	1.30	12.3	0.17	0.44	0.66	40	204
50		10.52	10.51	33.745	25.884	211.8	0.125	3.29	52.2	18.9	1.67	19.0	0.23	0.19	0.34	50	203
60		10.22	10.21	33.875	26.038	197.5	0.145	2.84	44.8	23.2	1.83	22.3	0.08	0.13	0.22	60	202
70		10.21	10.20	33.920	26.075	194.2	0.165	2.65	41.8	24.6	1.89	23.1	0.11	0.12	0.16	70	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 25.4 N	117 54.3 W	03/04/02	1041 UTC	611 m	130 03 kn			1015.2 mb	14.0 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.38	14.38	33.583	25.013	293.5	0.000	6.27	107.9	0.6	0.31	0.1	0.00	0.43	0.12	0	
1		14.38	14.38	33.583	25.013	293.5	0.003	6.27	107.9	0.6	0.31	0.1	0.00	0.43	0.12	1	220
10		13.98	13.98	33.586	25.100	285.6	0.029	6.39	109.1	0.5	0.32	0.1	0.00	0.53	0.12	10	219
20		12.33	12.33	33.572	25.418	255.5	0.056	5.10	84.1	7.8	0.95	7.7	0.16	0.41	0.49	20	218
30		11.31	11.31	33.569	25.607	237.8	0.081	4.53	73.1	10.7	1.16	11.4	0.18	0.27	0.51	30	217
40		10.56	10.56	33.553	25.728	226.5	0.104	4.21	66.8	15.0	1.36	15.9	0.10	0.25	0.44	40	216
50		10.34	10.33	33.581	25.788	221.0	0.126	4.11	64.9	16.0	1.42	16.8	0.07	0.19	0.29	50	215
60		9.95	9.94	33.684	25.934	207.2	0.148	3.74	58.6	19.0	1.56	19.1	0.04	0.14	0.17	60	214
69		9.98	9.97	33.806	26.025	198.8	0.166	3.25	51.0	21.9	1.72	21.3	0.03	0.11	0.18	69	213
75	ISL	9.97	9.96	33.846	26.058	195.8	0.178	3.06	48.0	23.1	1.78	22.1	0.03	0.09	0.17	75	
85		9.95	9.94	33.894	26.099	192.2	0.197	2.87	45.0	24.5	1.85	23.0	0.02	0.07	0.14	85	212
99		9.69	9.68	33.938	26.177	185.0	0.224	2.74	42.8	26.5	1.93	24.3	0.02	0.06	0.12	100	211
100	ISL	9.68	9.67	33.941	26.181	184.7	0.225	2.73	42.6	26.6	1.93	24.4	0.02	0.06	0.12	101	
119		9.59	9.58	34.008	26.248	178.7	0.260	2.52	39.3	28.7	2.02	25.5	0.02	0.05	0.10	120	210
125	ISL	9.54	9.53	34.032	26.276	176.2	0.271	2.45	38.1	29.6	2.05	25.9	0.02	0.05	0.09	126	
139		9.40	9.38	34.087	26.342	170.2	0.295	2.27	35.2	31.7	2.13	26.8	0.02	0.04	0.08	140	209
150	ISL	9.31	9.29	34.122	26.384	166.4	0.313	2.12	32.8	33.2	2.20	27.5	0.02	0.04	0.07	151	
169		9.14	9.12	34.165	26.445	160.9	0.344	1.89	29.2	35.6	2.30	28.5	0.01	0.03	0.07	170	208
199		8.74	8.72	34.189	26.528	153.6	0.392	1.67	25.6	39.7	2.40	29.9	0.01	0.02	0.07	200	207
200	ISL	8.73	8.71	34.190	26.530	153.3	0.393	1.66	25.4	39.8	2.40	29.9	0.01			201	
229		8.52	8.50	34.214	26.582	148.9	0.437	1.45	22.1	42.8	2.51	30.9	0.01			230	206
250	ISL	8.40	8.37	34.230	26.613	146.3	0.468	1.31	19.9	44.6	2.57	31.5	0.01			252	
269		8.30	8.27	34.244	26.640	144.1	0.496	1.20	18.2	46.1	2.62	32.0	0.01			271	205
300	ISL	8.14	8.11	34.262	26.678	140.9	0.540	1.04	15.7	48.6	2.68	32.7	0.01			302	
318		8.03	8.00	34.270	26.701	139.0	0.565	0.95	14.3	50.3	2.72	33.1	0.01			320	204
378		7.53	7.49	34.286	26.787	131.6	0.646	0.67	10.0	57.8	2.88	35.1	0.00			381	203
400	ISL	7.24	7.20	34.284	26.827	127.9	0.675	0.59	8.7	61.4	2.94	36.1	0.00			403	
437		6.77	6.73	34.283	26.891	122.1	0.721	0.49	7.2	67.3	3.02	37.7	0.00			440	202
500	ISL	6.44	6.39	34.300	26.949	117.2	0.796	0.39	5.7	73.0	3.10	38.8	0.00			504	
515		6.36	6.31	34.304	26.963	116.0	0.814	0.36	5.2	74.3	3.12	39.1	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 15.3 N	118 14.8 W	03/04/02	0700 UTC	283 m	130 01 kn			1016.0 mb	14.1 C	11.3 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.30	14.30	33.537	24.995	295.3	0.000	6.15	105.6	2.9	0.38	0.1	0.00	0.44	0.09	0	
1		14.30	14.30	33.537	24.995	295.3	0.003	6.15	105.6	2.9	0.38	0.1	0.00	0.44	0.09	1	216
10		14.27	14.27	33.535	25.000	295.1	0.030	6.13	105.2	2.8	0.37	0.1	0.00	0.49	0.08	10	215
20		13.61	13.61	33.539	25.140	282.0	0.058	5.96	100.9	4.2	0.48	1.6	0.05	0.58	0.20	20	214
30		13.36	13.36	33.545	25.195	277.0	0.086	5.86	98.7	4.8	0.55	2.5	0.08	0.65	0.23	30	213
40		12.51	12.50	33.567	25.380	259.6	0.113	5.23	86.6	8.1	0.84	7.1	0.25	0.53	0.26	40	212
50		10.84	10.83	33.621	25.732	226.3	0.137	4.05	64.7	14.9	1.38	15.7	0.16	0.28	0.33	50	211
60		10.59	10.58	33.666	25.811	219.0	0.160	3.71	59.0	17.4	1.52	17.9	0.07	0.20	0.31	60	210
70		10.08	10.07	33.711	25.934	207.5	0.181	3.57	56.1	19.3	1.61	19.5	0.04	0.12	0.24	70	209
75	ISL	10.04	10.03	33.765	25.983	203.0	0.191	3.39	53.3	20.7	1.68	20.4	0.05	0.11	0.24	75	
85		9.95	9.94	33.851	26.065	195.4	0.211	3.01	47.2	23.4	1.81	22.2	0.06	0.10	0.23	85	208
100		9.84	9.83	33.944	26.157	187.0	0.240	2.72	42.6	25.8	1.93	23.9	0.02	0.06	0.17	101	207
120		9.54	9.53	34.005	26.254	178.1	0.276	2.56	39.8	28.7	2.03	25.4	0.01	0.05	0.12	121	206
125	ISL	9.51	9.50	34.019	26.270	176.7	0.285	2.51	39.0	29.2	2.05	25.7	0.01	0.05	0.13	126	
140		9.43	9.41	34.061	26.316	172.6	0.311	2.34	36.3	30.8	2.12	26.4	0.01	0.04	0.15	141	205
150	ISL	9.29	9.27	34.090	26.362	168.4	0.329	2.21	34.2	32.4	2.18	27.2	0.01	0.04	0.13	151	
169		9.01	8.99	34.139	26.446	160.8	0.360	1.97	30.3	35.7	2.30	28.6	0.01	0.04	0.09	170	204
199		8.75	8.73	34.186	26.524	153.9	0.407	1.69	25.9	39.4	2.43	29.9	0.01	0.03	0.09	200	203
200	ISL	8.73	8.71	34.187	26.528	153.6	0.409	1.68	25.7	39.6	2.43	29.9	0.01			201	
229		8.32	8.30	34.204	26.604	146.7	0.452	1.44	21.8	44.1	2.56	31.3	0.00			230	202
250	ISL	8.24	8.21	34.223	26.632	144.4	0.483	1.29	19.5	46.0	2.62	31.9	0.00			252	
269		8.16	8.13	34.241	26.658	142.3	0.510	1.15	17.4	47.7	2.68	32.4	0.00			271	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 37

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
33 11.2 N	118 23.3 W	03/04/02	0411 UTC	1177 m	290 02 kn			1015.8 mb	13.9 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.42	14.42	33.543	24.974	297.3	0.000	6.11	105.2	2.6	0.37	0.1	0.01	0.45	0.07	0	
2		14.42	14.42	33.543	24.974	297.3	0.006	6.11	105.2	2.6	0.37	0.1	0.01	0.45	0.07	2	220
10		14.30	14.30	33.534	24.993	295.8	0.030	6.17	106.0	2.0	0.35	0.1	0.01	0.48	0.10	10	219
20		14.13	14.13	33.521	25.018	293.6	0.059	6.17	105.6	1.7	0.36	0.2	0.01	0.50	0.14	20	218
30		13.94	13.94	33.513	25.052	290.7	0.088	6.16	105.0	2.2	0.39	0.4	0.02	0.52	0.18	30	217
40		13.08	13.07	33.519	25.232	273.8	0.117	5.58	93.4	5.6	0.68	4.4	0.15	0.57	0.24	40	216
50		12.25	12.24	33.522	25.396	258.4	0.143	5.15	84.8	7.7	0.89	7.4	0.22	0.57	0.35	50	215
60		10.82	10.81	33.531	25.665	232.9	0.168	4.44	70.9	12.8	1.25	13.9	0.13	0.30	0.25	60	214
70		10.41	10.40	33.576	25.772	222.9	0.191	4.18	66.1	15.1	1.38	16.1	0.06	0.21	0.17	70	213
75	ISL	10.27	10.26	33.607	25.820	218.4	0.202	4.04	63.7	16.2	1.44	17.0	0.04	0.17	0.15	75	
85		10.05	10.04	33.680	25.915	209.6	0.223	3.76	59.1	18.5	1.55	18.8	0.03	0.11	0.12	85	212
100		9.81	9.80	33.806	26.054	196.7	0.253	3.30	51.6	22.0	1.74	21.6	0.02	0.05	0.11	101	211
119		9.51	9.50	33.910	26.185	184.6	0.290	2.96	46.0	25.9	1.89	23.9	0.02	0.06	0.11	120	210
125	ISL	9.46	9.45	33.940	26.217	181.7	0.301	2.85	44.3	27.0	1.93	24.5	0.02	0.06	0.11	126	
139		9.37	9.35	34.002	26.280	176.0	0.326	2.60	40.3	29.2	2.03	25.8	0.01	0.05	0.10	140	209
150	ISL	9.31	9.29	34.042	26.321	172.3	0.345	2.43	37.6	30.7	2.10	26.6	0.01	0.05	0.11	151	
169		9.19	9.17	34.096	26.383	166.8	0.377	2.18	33.7	33.0	2.20	27.6	0.01	0.05	0.12	170	208
199		8.85	8.83	34.146	26.477	158.4	0.426	1.95	29.9	36.8	2.32	29.0	0.02	0.05	0.07	200	207
200	ISL	8.84	8.82	34.148	26.480	158.1	0.427	1.94	29.7	36.9	2.32	29.0	0.02			201	
229		8.53	8.51	34.195	26.565	150.5	0.472	1.59	24.2	41.0	2.46	30.4	0.01			230	206
250	ISL	8.29	8.26	34.222	26.624	145.3	0.503	1.36	20.6	44.0	2.56	31.3	0.01			252	
278		7.95	7.92	34.242	26.690	139.3	0.543	1.12	16.8	48.4	2.69	32.7	0.01			280	205
300	ISL	7.63	7.60	34.237	26.733	135.4	0.573	1.00	14.9	52.5	2.77	34.0	0.01			302	
317		7.40	7.37	34.232	26.762	132.8	0.596	0.92	13.7	55.7	2.82	35.0	0.01			319	204
377		6.95	6.91	34.266	26.853	124.9	0.673	0.60	8.8	63.6	2.99	37.0	0.00			379	203
400	ISL	6.84	6.80	34.274	26.874	123.1	0.702	0.54	7.9	65.5	3.03	37.5	0.00			403	
437		6.68	6.64	34.286	26.905	120.6	0.747	0.47	6.9	68.3	3.07	38.1	0.00			440	202
500	ISL	6.33	6.28	34.315	26.975	114.6	0.821	0.33	4.8	74.5	3.15	39.4	0.00			503	
516		6.24	6.19	34.322	26.992	113.1	0.839	0.29	4.2	76.1	3.17	39.7	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 90 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 55.3 N	118 56.2 W	02/04/02	2309 UTC	1790 m	270 07 kn	290 01 08	2	1014.9 mb	14.0 C	11.5 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.85	13.85	33.650	25.176	278.1	0.000	6.37	108.5	0.9	0.34	0.2	0.01	0.76	0.16	0	
1		13.85	13.85	33.650	25.176	278.1	0.003	6.37	108.5	0.9	0.34	0.2	0.01	0.76	0.16	1	220
10		13.63	13.63	33.648	25.220	274.1	0.028	6.37	108.0	0.9	0.34	0.2	0.01	0.73	0.23	10	219
20		13.40	13.40	33.643	25.263	270.3	0.055	6.29	106.1	1.3	0.41	0.5	0.02	0.68	0.36	20	218
30		13.06	13.06	33.637	25.327	264.5	0.082	5.92	99.2	2.8	0.56	1.8	0.06	0.55	0.30	30	217
40		12.36	12.35	33.650	25.474	250.8	0.107	5.11	84.4	8.1	0.92	6.8	0.23	0.41	0.62	40	216
50		11.78	11.77	33.677	25.605	238.5	0.132	4.62	75.3	11.8	1.15	10.7	0.24	0.30	0.50	50	215
60		11.23	11.22	33.694	25.719	227.8	0.155	4.16	67.1	15.2	1.34	14.2	0.24	0.25	0.46	60	214
70		10.47	10.46	33.764	25.908	210.0	0.177	3.51	55.7	20.3	1.62	19.2	0.20	0.16	0.36	70	213
75	ISL	10.19	10.18	33.801	25.985	202.8	0.187	3.26	51.4	22.4	1.72	20.9	0.16	0.13	0.34	75	
83		9.86	9.85	33.855	26.083	193.6	0.203	2.95	46.2	25.1	1.85	22.9	0.09	0.10	0.33	83	212
100		9.58	9.57	33.917	26.179	184.9	0.235	2.71	42.2	27.8	1.97	24.5	0.11	0.06	0.29	101	211
119		9.36	9.35	33.977	26.262	177.3	0.270	2.48	38.4	30.3	2.08	25.9	0.09	0.04	0.37	120	210
125	ISL	9.29	9.28	33.998	26.290	174.8	0.280	2.41	37.3	31.0	2.10	26.4	0.08	0.04	0.32	126	
138		9.15	9.13	34.045	26.349	169.4	0.303	2.26	34.9	32.8	2.16	27.4	0.06	0.03	0.20	139	209
150	ISL	8.99	8.97	34.094	26.413	163.5	0.323	2.07	31.8	35.1	2.24	28.4	0.04	0.02	0.15	151	
168		8.77	8.75	34.155	26.496	156.0	0.351	1.82	27.9	38.3	2.36	29.6	0.02	0.01	0.12	169	208
199		8.54	8.52	34.169	26.543	152.0	0.399	1.70	25.9	40.8	2.43	30.5	0.02	0.01	0.10	200	207
200	ISL	8.53	8.51	34.170	26.545	151.8	0.401	1.69	25.7	40.9	2.43	30.5	0.02			201	
229		8.26	8.24	34.192	26.604	146.7	0.444	1.46	22.1	44.7	2.54	31.7	0.01			230	206
250	ISL	8.04	8.01	34.200	26.644	143.2	0.474	1.34	20.2	47.2	2.61	32.5	0.01			252	
267		7.87	7.84	34.204	26.672	140.7	0.499	1.26	18.9	49.2	2.66	33.1	0.01			269	205
300	ISL	7.58	7.55	34.208	26.718	136.8	0.544	1.11	16.5	52.8	2.73	34.2	0.01			302	
316		7.45	7.42	34.210	26.738	135.1	0.566	1.04	15.5	54.5	2.76	34.7	0.01			318	204
376		7.05	7.01	34.243	26.821	128.0	0.645	0.79	11.6	61.2	2.91	36.4	0.01			378	203
400	ISL	6.89	6.85	34.256	26.853	125.2	0.675	0.67	9.8	64.1	2.97	37.1	0.01			403	
437		6.63	6.59	34.274	26.903	120.8	0.721	0.50	7.3	68.7	3.05	38.1	0.01			440	202
500	ISL	6.15	6.11	34.303	26.989	113.1	0.795	0.34	4.9	77.6	3.16	39.8	0.00			503	
515		6.04	5.99	34.310	27.008	111.3	0.811	0.30	4.3	79.7	3.19	40.2	0.00			519	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 39.2 N	119 29.3 W	02/04/02	1748 UTC	1360 m	150 01 kn	290 02 08	2	1015.5 mb	13.9 C	11.3 C	21m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.02	13.02	33.267	25.047	290.3	0.000	6.16	102.9	3.0	0.50	1.5	0.07	0.42	0.11	0	
2	A	13.02	13.02	33.267	25.047	290.3	0.006	6.16	102.9	3.0	0.50	1.5	0.07	0.42	0.11	2	223
2		13.02	13.02	33.267	25.047	290.3	0.006									2	224
10	ISL	12.95	12.95	33.274	25.067	288.7	0.029	6.17	102.9	3.0	0.49	1.6	0.07	0.46	0.13	10	
12	A	12.94	12.94	33.279	25.073	288.2	0.035	6.17	102.9	3.0	0.49	1.6	0.07	0.48	0.14	12	221
12		12.94	12.94	33.281	25.074	288.0	0.035									12	222
19		13.01	13.01	33.320	25.091	286.6	0.055	6.19	103.4	2.8	0.48	1.5	0.07	0.57	0.17	19	220
20	ISL	13.03	13.03	33.337	25.100	285.8	0.058	6.19	103.4	2.7	0.48	1.5	0.07	0.59	0.17	20	
26	A	13.15	13.15	33.445	25.160	280.3	0.075	6.17	103.4	2.2	0.46	1.4	0.06	0.67	0.19	26	219
30	ISL	13.12	13.12	33.492	25.202	276.3	0.086	6.15	103.1	2.1	0.47	1.5	0.06	0.65	0.20	30	
34		13.05	13.05	33.517	25.236	273.3	0.097	6.13	102.6	2.0	0.47	1.7	0.06	0.61	0.22	34	218
42	A	12.85	12.84	33.484	25.250	272.1	0.119	6.06	101.0	2.4	0.53	2.4	0.08	0.55	0.29	42	217
48		12.63	12.62	33.464	25.278	269.6	0.135	5.94	98.5	3.3	0.60	3.4	0.09	0.54	0.25	48	216
50	ISL	12.34	12.33	33.459	25.330	264.7	0.140	5.77	95.1	4.6	0.70	4.9	0.10	0.53	0.25	50	
55	A	11.59	11.58	33.470	25.479	250.5	0.153	5.30	86.0	8.0	0.97	8.9	0.13	0.51	0.26	55	215
66		11.30	11.29	33.629	25.656	234.0	0.180	4.91	79.2	10.9	1.17	11.2	0.21	0.15	0.34	66	214
75	ISL	11.01	11.00	33.698	25.762	224.1	0.200	4.45	71.4	14.3	1.35	14.0	0.27	0.11	0.31	75	
78	A	10.92	10.91	33.712	25.789	221.6	0.207	4.30	68.9	15.4	1.40	14.9	0.28	0.09	0.30	78	213
89		10.65	10.64	33.743	25.861	215.0	0.231	3.89	61.9	17.8	1.53	17.2	0.27	0.09	0.31	89	212
99		10.17	10.16	33.797	25.986	203.2	0.252	3.31	52.2	21.5	1.72	20.6	0.22	0.07	0.30	100	211
100	ISL	10.12	10.11	33.805	26.001	201.8	0.254	3.26	51.3	21.9	1.74	20.9	0.21	0.07	0.29	101	
119		9.43	9.42	33.943	26.224	180.9	0.290	2.68	41.6	28.1	1.99	25.1	0.05	0.04	0.18	120	210
125	ISL	9.34	9.33	33.964	26.255	178.1	0.301	2.61	40.4	29.1	2.02	25.7	0.04	0.04	0.19	126	
138		9.22	9.20	33.991	26.296	174.5	0.324	2.53	39.1	30.6	2.06	26.3	0.03	0.04	0.20	139	209
150	ISL	9.07	9.05	34.010	26.335	171.0	0.345	2.48	38.2	31.8	2.10	26.9	0.03	0.04	0.19	151	
168		8.84	8.82	34.028	26.385	166.4	0.375	2.44	37.4	33.4	2.14	27.6	0.03	0.04	0.16	169	208
198		8.48	8.46	34.040	26.451	160.7	0.424	2.43	36.9	35.7	2.17	28.6	0.02	0.03	0.17	199	207
200	ISL	8.44	8.42	34.042	26.459	159.9	0.427	2.42	36.7	36.0	2.18	28.7	0.02			201	
228		7.92	7.90	34.074	26.562	150.4	0.471	2.19	32.9	41.6	2.32	30.5	0.01			229	206
250	ISL	7.69	7.67	34.108	26.623	145.0	0.503	1.88	28.1	45.7	2.46	31.8	0.01			251	
268		7.57	7.54	34.135	26.661	141.6	0.529	1.61	24.0	48.7	2.56	32.8	0.01			270	205
300	ISL	7.44	7.41	34.171	26.708	137.6	0.574	1.32	19.6	52.3	2.67	33.9	0.01			302	
316		7.38	7.35	34.186	26.729	135.9	0.596	1.20	17.8	53.9	2.72	34.3	0.01			318	204
376		6.94	6.90	34.237	26.831	126.9	0.675	0.75	11.0	62.3	2.93	36.6	0.00			378	203
400	ISL	6.81	6.77	34.247	26.857	124.7	0.705	0.65	9.5	64.6	2.98	37.2	0.00			403	
437		6.61	6.57	34.259	26.893	121.6	0.750	0.54	7.9	68.0	3.03	38.0	0.00			440	202
500	ISL	6.14	6.10	34.284	26.975	114.4	0.825	0.37	5.3	76.5	3.13	39.7	0.00			503	
516		6.02	5.97	34.291	26.996	112.5	0.843	0.33	4.7	78.6	3.16	40.1	0.00			520	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 25.2 N	119 58.0 W	02/04/02	1251 UTC	1247 m				1013.8 mb	14.0 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.75	13.75	33.289	24.917	302.6	0.000	6.13	104.0	2.5	0.41	0.2	0.01	0.35	0.07	0	
2		13.75	13.75	33.289	24.917	302.7	0.006	6.13	104.0	2.5	0.41	0.2	0.01	0.35	0.07	2	220
10		13.74	13.74	33.295	24.924	302.3	0.030	6.13	103.9	2.3	0.40	0.2	0.01	0.36	0.07	10	219
20		13.74	13.74	33.322	24.945	300.5	0.060	6.11	103.6	2.2	0.39	0.1	0.01	0.37	0.09	20	218
30		13.74	13.74	33.327	24.950	300.4	0.090	6.11	103.6	2.0	0.39	0.1	0.01	0.37	0.10	30	217
41		13.49	13.48	33.330	25.003	295.6	0.123	6.10	102.9	2.4	0.44	0.6	0.04	0.41	0.13	41	216
50	ISL	13.10	13.09	33.334	25.085	288.1	0.149	5.98	100.1	2.9	0.52	1.9	0.15	0.39	0.17	50	
51		13.06	13.05	33.335	25.093	287.3	0.152	5.96	99.7	3.0	0.53	2.1	0.16	0.39	0.17	51	215
60		12.83	12.82	33.375	25.170	280.2	0.178	5.87	97.7	3.3	0.60	3.0	0.20	0.29	0.16	60	214
70		12.81	12.80	33.410	25.201	277.5	0.206	5.90	98.2	3.1	0.60	2.9	0.20	0.24	0.11	70	213
75	ISL	12.77	12.76	33.412	25.211	276.7	0.220	5.87	97.6	3.3	0.62	3.2	0.21	0.20	0.10	75	
85		12.69	12.68	33.439	25.247	273.5	0.247	5.80	96.3	3.6	0.65	3.7	0.24	0.13	0.09	85	212
100		11.69	11.68	33.394	25.403	258.9	0.287	5.29	85.9	7.3	0.92	8.7	0.06	0.09	0.08	100	211
120		11.10	11.09	33.581	25.656	235.2	0.336	4.58	73.6	12.3	1.22	13.2	0.22	0.09	0.15	121	210
125	ISL	10.84	10.82	33.604	25.720	229.2	0.348	4.38	70.0	13.9	1.31	14.7	0.18	0.08	0.15	126	
140		10.02	10.00	33.669	25.912	211.1	0.381	3.78	59.3	19.0	1.57	19.2	0.04	0.06	0.15	141	209
150	ISL	9.58	9.56	33.752	26.051	198.0	0.402	3.43	53.3	22.5	1.72	21.9	0.03	0.04	0.14	151	
170		8.91	8.89	33.918	26.288	175.7	0.439	2.91	44.6	28.9	1.96	26.0	0.02	0.01	0.12	171	208
199		8.46	8.44	34.017	26.436	162.1	0.488	2.65	40.3	34.4	2.10	27.9	0.01	0.01	0.08	200	207
200	ISL	8.45	8.43	34.019	26.439	161.8	0.490	2.64	40.1	34.6	2.11	28.0	0.01			201	
229		8.18	8.16	34.071	26.521	154.5	0.535	2.25	34.0	39.1	2.27	29.8	0.01			230	206
250	ISL	7.99	7.96	34.122	26.590	148.3	0.567	1.86	28.0	43.3	2.42	31.2	0.01			251	
269		7.85	7.82	34.166	26.645	143.3	0.595	1.53	22.9	46.8	2.55	32.3	0.01			271	205
300	ISL	7.74	7.71	34.202	26.690	139.5	0.639	1.25	18.7	49.9	2.66	33.2	0.01			302	
318		7.67	7.64	34.213	26.709	138.0	0.664	1.14	17.0	51.6	2.71	33.7	0.01			320	204
378		6.98	6.94	34.240	26.828	127.2	0.743	0.73	10.7	62.0	2.93	36.5	0.00			380	203
400	ISL	6.75	6.71	34.254	26.870	123.4	0.771	0.60	8.8	66.0	3.00	37.5	0.00			403	
439		6.40	6.36	34.280	26.938	117.3	0.818	0.43	6.2	72.2	3.10	38.9	0.00			442	202
500	ISL	6.14	6.10	34.304	26.991	112.9	0.888	0.33	4.8	77.4	3.17	39.9	0.00			503	
515		6.07	6.02	34.310	27.005	111.7	0.905	0.30	4.3	78.7	3.19	40.1	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 5.0 N	120 38.4 W	02/04/02	1836 UTC	3818 m	300 07 kn			1014.1 mb	14.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.41	13.41	33.258	24.962	298.4	0.000	6.18	104.1	3.0	0.46	0.8	0.05	0.29	0.07	0	
1		13.41	13.41	33.258	24.962	298.4	0.003	6.18	104.1	3.0	0.46	0.8	0.05	0.29	0.07	1	220
10	ISL	13.36	13.36	33.257	24.972	297.7	0.030	6.18	103.9	2.9	0.46	0.8	0.05	0.32	0.07	10	
11		13.35	13.35	33.256	24.973	297.6	0.033	6.18	103.9	2.9	0.46	0.8	0.05	0.32	0.07	11	219
20	ISL	13.20	13.20	33.270	25.014	294.0	0.059	6.17	103.4	2.9	0.47	1.0	0.07	0.35	0.11	20	
21		13.18	13.18	33.272	25.020	293.4	0.062	6.17	103.4	2.9	0.47	1.0	0.07	0.35	0.11	21	218
30	ISL	13.08	13.08	33.298	25.060	289.9	0.089	6.11	102.2	3.0	0.51	1.4	0.11	0.40	0.14	30	
31		13.07	13.07	33.301	25.064	289.5	0.091	6.10	102.0	3.0	0.51	1.4	0.11	0.41	0.14	31	217
40		13.03	13.02	33.312	25.081	288.1	0.117	6.09	101.8	3.0	0.52	1.6	0.12	0.42	0.18	40	216
50		12.91	12.90	33.388	25.164	280.5	0.146	6.06	101.0	3.2	0.56	2.4	0.13	0.49	0.20	50	215
60		12.83	12.82	33.517	25.280	269.7	0.173	5.80	96.6	4.5	0.65	3.8	0.23	0.22	0.17	60	214
71		12.71	12.70	33.568	25.343	264.0	0.203	5.66	94.1	6.1	0.73	5.1	0.27	0.14	0.14	71	213
75	ISL	12.38	12.37	33.539	25.385	260.1	0.213	5.54	91.4	6.8	0.80	6.4	0.22	0.12	0.12	75	
85		11.38	11.37	33.463	25.513	248.1	0.239	5.14	83.0	9.1	1.01	10.2	0.08	0.08	0.09	85	212
100		10.33	10.32	33.510	25.735	227.1	0.274	4.40	69.5	14.4	1.34	15.8	0.02	0.03	0.08	100	211
119		9.75	9.74	33.582	25.889	212.7	0.316	3.99	62.2	18.4	1.54	19.1	0.02	0.02	0.06	120	210
125	ISL	9.60	9.59	33.616	25.940	208.0	0.329	3.86	60.0	19.7	1.60	20.1	0.02	0.02	0.06	126	
139		9.31	9.29	33.710	26.061	196.7	0.357	3.56	55.0	22.7	1.73	22.2	0.02	0.01	0.06	140	209
150	ISL	9.17	9.15	33.804	26.157	187.8	0.378	3.28	50.6	25.2	1.82	23.6	0.02	0.01	0.06	151	
169		8.96	8.94	33.952	26.307	173.9	0.413	2.84	43.6	29.6	1.97	25.8	0.01	0.01	0.05	170	208
199		8.43	8.41	34.044	26.462	159.7	0.463	2.41	36.6	36.1	2.17	28.7	0.01	0.00	0.03	200	207
200	ISL	8.42	8.40	34.046	26.465	159.4	0.464	2.40	36.4	36.3	2.17	28.8	0.01			201	
229		8.06	8.04	34.086	26.551	151.6	0.509	2.20	33.1	40.4	2.28	30.1	0.01			230	206
250	ISL	7.78	7.76	34.085	26.591	148.0	0.541	2.13	31.9	43.2	2.34	30.9	0.01			251	
269		7.54	7.51	34.081	26.623	145.2	0.569	2.05	30.5	45.8	2.39	31.6	0.01			271	205
300	ISL	7.25	7.22	34.108	26.686	139.6	0.613	1.72	25.4	50.6	2.54	33.2	0.01			302	
318		7.09	7.06	34.127	26.723	136.3	0.638	1.50	22.1	53.5	2.63	34.2	0.01			320	204
378		6.50	6.47	34.153	26.823	127.2	0.717	1.01	14.7	63.9	2.85	36.9	0.01			380	203
400	ISL	6.31	6.27	34.165	26.858	124.1	0.744	0.85	12.3	67.8	2.92	37.9	0.01			403	
437		6.03	5.99	34.191	26.915	119.0	0.789	0.63	9.1	74.1	3.02	39.4	0.00			440	202
500	ISL	5.68	5.64	34.257	27.011	110.5	0.862	0.38	5.4	82.6	3.15	40.9	0.00			503	
516		5.59	5.55	34.274	27.035	108.2	0.879	0.32	4.6	84.7	3.18	41.3	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 45.4 N	121 19.2 W	02/04/02	0041	UTC	3694 m	280	10 kn	290 03 07	2	1013.1 mb	14.2 C	12.1 C		8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.05	14.05	33.306	24.869	307.3	0.000	6.08	103.8	2.4	0.39	0.1	0.00	0.19	0.04	0	
2		14.05	14.05	33.306	24.869	307.3	0.006	6.08	103.8	2.4	0.39	0.1	0.00	0.19	0.04	2	220
10		14.02	14.02	33.321	24.887	305.8	0.031	6.12	104.4	2.3	0.39	0.1	0.00	0.21	0.04	10	219
20	ISL	13.84	13.84	33.308	24.914	303.5	0.061	6.14	104.3	2.4	0.40	0.2	0.02	0.28	0.08	20	
21		13.81	13.81	33.303	24.916	303.3	0.064	6.14	104.3	2.4	0.40	0.2	0.02	0.29	0.09	21	218
30	ISL	13.19	13.19	33.194	24.958	299.6	0.091	6.15	103.0	2.6	0.45	0.7	0.07	0.42	0.14	30	
31		13.13	13.13	33.185	24.963	299.1	0.094	6.15	102.9	2.6	0.45	0.8	0.08	0.43	0.15	31	217
41		13.24	13.23	33.279	25.014	294.6	0.124	6.04	101.3	2.6	0.46	0.8	0.08	0.47	0.20	41	216
50	ISL	13.21	13.20	33.289	25.028	293.5	0.150	6.04	101.3	2.7	0.47	1.0	0.08	0.47	0.20	50	
51		13.20	13.19	33.288	25.029	293.4	0.153	6.04	101.3	2.7	0.47	1.0	0.08	0.47	0.20	51	215
61		13.20	13.19	33.293	25.033	293.3	0.183	6.04	101.3	2.7	0.47	1.0	0.08	0.42	0.20	61	214
70		12.94	12.93	33.328	25.112	286.0	0.209	5.81	96.9	3.6	0.59	2.6	0.19	0.26	0.15	70	213
75	ISL	12.68	12.67	33.369	25.195	278.2	0.223	5.63	93.4	4.5	0.68	4.3	0.16	0.23	0.15	75	
85		12.02	12.01	33.444	25.380	260.8	0.250	5.22	85.4	6.8	0.89	8.2	0.06	0.19	0.16	85	212
100		10.78	10.77	33.444	25.605	239.5	0.287	4.66	74.3	11.6	1.21	13.5	0.03	0.08	0.07	100	211
120		9.70	9.69	33.546	25.869	214.6	0.333	4.07	63.4	17.7	1.53	18.8	0.01	0.02	0.04	121	210
125	ISL	9.57	9.56	33.594	25.928	209.1	0.343	3.88	60.3	19.3	1.61	20.0	0.01	0.02	0.04	126	
140		9.35	9.33	33.747	26.084	194.6	0.374	3.33	51.5	23.9	1.81	23.2	0.01	0.01	0.04	141	209
150	ISL	9.24	9.22	33.833	26.169	186.7	0.393	3.03	46.8	26.4	1.92	24.7	0.01	0.01	0.04	151	
169		9.03	9.01	33.954	26.297	174.9	0.427	2.68	41.2	30.2	2.04	26.6	0.01	0.02	0.04	170	208
198		8.45	8.43	34.012	26.434	162.3	0.476	2.89	43.9	33.6	2.02	27.2	0.01	0.01	0.03	199	207
200	ISL	8.42	8.40	34.015	26.441	161.7	0.479	2.88	43.7	33.9	2.03	27.3	0.01			201	
229		8.02	8.00	34.038	26.519	154.6	0.525	2.64	39.7	38.3	2.16	29.0	0.00			230	206
250	ISL	7.67	7.65	34.038	26.570	149.9	0.557	2.44	36.4	41.9	2.26	30.4	0.00			251	
269		7.36	7.33	34.037	26.614	145.9	0.585	2.25	33.3	45.2	2.35	31.7	0.00			271	205
300	ISL	7.00	6.97	34.054	26.678	140.2	0.629	1.93	28.4	50.6	2.50	33.5	0.00			302	
319		6.82	6.79	34.067	26.713	137.1	0.656	1.73	25.3	53.9	2.59	34.6	0.00			321	204
378		6.34	6.31	34.100	26.802	129.1	0.734	1.15	16.6	63.4	2.83	37.6	0.00			380	203
400	ISL	6.18	6.14	34.127	26.845	125.3	0.762	0.98	14.1	67.4	2.91	38.4	0.00			403	
437		5.95	5.91	34.176	26.913	119.1	0.807	0.73	10.5	73.8	3.02	39.6	0.00			440	202
500	ISL	5.63	5.59	34.236	27.000	111.4	0.880	0.43	6.1	82.2	3.15	41.0	0.00			503	
514		5.56	5.52	34.250	27.020	109.6	0.896	0.36	5.1	84.1	3.18	41.3	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST	TIME	BOTTOM	WIND	SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 25.3 N	121 59.1 W	01/04/02	1840	UTC	3860 m	320	06 kn	300 04 08	2	1015.8 mb	14.2 C	12.0 C	22m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.25	14.25	33.488	24.967	297.9	0.000	6.02	103.3	2.6	0.37	0.1	0.00	0.29	0.06	0	
1	A	14.25	14.25	33.488	24.967	297.9	0.003	6.02	103.3	2.6	0.37	0.1	0.00	0.29	0.06	1	223
1		14.26	14.26	33.487	24.964	298.2	0.003									1	224
10	ISL	14.21	14.21	33.487	24.975	297.4	0.030	6.03	103.4	2.6	0.37	0.1	0.00	0.31	0.06	10	
14	A	14.19	14.19	33.486	24.979	297.2	0.042	6.04	103.5	2.6	0.37	0.1	0.00	0.32	0.06	14	221
14		14.19	14.19	33.486	24.979	297.2	0.042									14	222
20	ISL	14.19	14.19	33.486	24.979	297.4	0.060	6.04	103.5	2.6	0.37	0.1	0.01	0.32	0.07	20	
21		14.19	14.19	33.486	24.979	297.4	0.062	6.04	103.5	2.6	0.37	0.1	0.01	0.32	0.07	21	220
28	A	14.18	14.18	33.485	24.980	297.5	0.083	6.05	103.6	2.6	0.37	0.1	0.01	0.31	0.09	28	219
30	ISL	14.16	14.16	33.481	24.982	297.4	0.089	6.05	103.6	2.6	0.37	0.1	0.01	0.31	0.09	30	
37		14.08	14.07	33.468	24.989	296.9	0.110	6.04	103.2	2.6	0.38	0.2	0.00	0.34	0.09	37	218
45	A	13.24	13.23	33.344	25.064	289.9	0.134	6.11	102.6	2.8	0.45	1.1	0.06	0.42	0.16	45	217
50	ISL	13.16	13.15	33.337	25.075	289.0	0.148	6.06	101.5	2.9	0.48	1.4	0.08	0.44	0.18	50	
51		13.14	13.13	33.334	25.077	288.9	0.151	6.05	101.3	2.9	0.48	1.4	0.08	0.44	0.18	51	216
57	A	13.18	13.17	33.362	25.091	287.7	0.168	6.00	100.6	3.0	0.50	1.5	0.09	0.45	0.18	57	215
70		12.40	12.39	33.399	25.272	270.7	0.204	5.60	92.4	5.1	0.73	5.6	0.07	0.14	0.09	70	214
75	ISL	12.00	11.99	33.407	25.354	262.9	0.218	5.38	88.0	6.5	0.85	7.5	0.06	0.14	0.09	75	
82	A	11.47	11.46	33.418	25.461	252.9	0.236	5.08	82.2	8.6	1.01	10.1	0.04	0.14	0.11	82	213
91		10.99	10.98	33.434	25.560	243.6	0.258	4.80	76.8	10.5	1.13	12.3	0.03	0.11	0.10	91	212
100	ISL	10.67	10.66	33.454	25.633	236.9	0.280	4.58	72.8	12.0	1.23	13.8	0.02	0.10	0.09	100	
101		10.64	10.63	33.457	25.640	236.2	0.282	4.56	72.5	12.2	1.24	14.0	0.02	0.10	0.09	101	211
121		9.89	9.88	33.567	25.854	216.1	0.327	4.02	62.9	17.3	1.50	18.3	0.01	0.03	0.06	122	210
125	ISL	9.78	9.77	33.601	25.899	211.9	0.336	3.90	60.9	18.4	1.55	19.1	0.01	0.02	0.06	126	
140		9.43	9.41	33.735	26.062	196.7	0.367	3.47	53.8	22.5	1.72	22.0	0.01	0.01	0.04	141	209
150	ISL	9.25	9.23	33.814	26.153	188.3	0.386	3.23	49.9	25.0	1.81	23.6	0.01	0.00	0.03	151	
171		8.95	8.93	33.947	26.305	174.2	0.424	2.84	43.6	29.7	1.97	26.1	0.01	0.00	0.03	172	208
200		8.61	8.59	34.043	26.433	162.4	0.473	2.49	38.0	34.6	2.13	28.1	0.00	0.00	0.03	201	207
230		7.84	7.82	34.041	26.548	151.8	0.520	2.35	35.2	40.9	2.26	30.6	0.00			231	206
250	ISL	7.51	7.49	34.048	26.601	146.9	0.550	2.12	31.5	44.9	2.38	32.2	0.00			251	
269		7.28	7.25	34.057	26.641	143.3	0.577	1.88	27.8	48.4	2.49	33.5	0.00			271	205
300	ISL	6.95	6.92	34.066	26.694	138.6	0.621	1.65	24.2	52.9	2.60	34.8	0.00			302	
320		6.78	6.75	34.072	26.722	136.1	0.649	1.53	22.4	55.4	2.66	35.5	0.00			322	204
380		6.40	6.37	34.108	26.801	129.3	0.728	1.11	16.1	63.2	2.83	37.8	0.00			382	203
400	ISL	6.26	6.22	34.125	26.833	126.5	0.754	0.99	14.3	66.3	2.89	38.4	0.00			403	
436		6.01	5.97	34.157	26.890	121.3	0.798	0.76	10.9	72.0	2.99	39.6	0.00			439	202
500	ISL	5.55	5.51	34.206	26.986	112.6	0.873									503	
508		5.49	5.45	34.212 D	26.998	111.5	0.882									511	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 5.2 N	122 39.8 W	01/04/02	1243 UTC	3992 m	300 14 kn			1014.9 mb	14.0 C	12.0 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.89	14.89	33.271	24.664	326.8	0.000			1.7	0.38	0.1	0.00	0.12	0.03	0	
2		14.89	14.89	33.271	24.664	326.8	0.007	5.71 U	99.1 U	1.7	0.38	0.1	0.00	0.12	0.03	2	220
10	ISL	14.88	14.88	33.271	24.666	326.9	0.033			1.7	0.38	0.1	0.00	0.12	0.03	10	
15		14.88	14.88	33.271	24.666	327.0	0.049	5.86	101.7	1.7	0.38	0.1	0.00	0.12	0.03	15	219
20	ISL	14.88	14.88	33.271	24.667	327.1	0.065	5.86	101.7	1.7	0.38	0.1	0.00	0.12	0.03	20	
30	ISL	14.88	14.88	33.271	24.667	327.4	0.098	5.86	101.7	1.6	0.38	0.1	0.00	0.14	0.03	30	
31		14.88	14.88	33.271	24.667	327.4	0.101	5.86	101.7	1.6	0.38	0.1	0.00	0.14	0.03	31	218
45		14.83	14.82	33.267	24.675	327.1	0.147	5.85	101.4	1.6	0.38	0.1	0.00	0.16	0.04	45	217
50	ISL	14.81	14.80	33.264	24.677	327.0	0.164	5.86	101.5	1.6	0.38	0.1	0.00	0.17	0.05	50	
60		14.72	14.71	33.247	24.684	326.7	0.196	5.88	101.7	1.7	0.38	0.1	0.00	0.19	0.06	60	216
75		14.35	14.34	33.185	24.715	324.1	0.245	5.93	101.7	1.8	0.40	0.1	0.00	0.21	0.07	75	215
85		13.83	13.82	33.176	24.816	314.7	0.277	5.82	98.8	2.5	0.46	0.8	0.06	0.23	0.12	85	214
95		12.66	12.65	33.093	24.985	298.6	0.308	5.73	94.9	3.8	0.60	2.8	0.10	0.24	0.14	95	213
100	ISL	12.17	12.16	33.074	25.064	291.2	0.322	5.66	92.7	4.5	0.68	4.0	0.08	0.23	0.15	100	
105		11.79	11.78	33.081	25.141	283.9	0.337	5.58	90.7	5.1	0.75	5.2	0.06	0.22	0.16	105	212
115		11.54	11.53	33.204	25.283	270.6	0.364	5.42	87.7	6.1	0.82	6.6	0.04	0.16	0.12	115	211
125		10.98	10.96	33.206	25.385	261.0	0.391	5.31	84.9	7.0	0.95	8.6	0.03	0.12	0.11	126	210
140		10.19	10.17	33.283	25.583	242.4	0.429	5.04	79.2	10.8	1.14	12.2	0.01	0.06	0.06	141	209
150	ISL	9.83	9.81	33.373	25.713	230.1	0.452	4.77	74.4	13.3	1.27	14.5	0.01	0.03	0.04	151	
165		9.45	9.43	33.528	25.897	212.9	0.486	4.32	66.9	17.0	1.46	17.7	0.01	0.01	0.03	166	208
196		9.11	9.09	33.817	26.178	186.7	0.548	3.52	54.2	24.4	1.75	22.6	0.01	0.00	0.02	197	207
200	ISL	9.05	9.03	33.843	26.208	183.9	0.555	3.45	53.0	25.3	1.78	23.1	0.01			201	
229		8.56	8.54	33.979	26.391	166.9	0.606	3.05	46.4	31.6	1.96	26.3	0.00			230	206
250	ISL	8.25	8.22	34.023	26.473	159.4	0.640	2.75	41.6	35.9	2.10	28.1	0.00			251	
268		8.01	7.98	34.041	26.523	154.9	0.668	2.50	37.6	39.3	2.22	29.4	0.00			269	205
300	ISL	7.62	7.59	34.065	26.599	148.0	0.717	2.15	32.0	44.7	2.37	31.2	0.00			302	
318		7.40	7.37	34.071	26.636	144.7	0.743	1.99	29.5	47.7	2.44	32.1	0.00			320	204
376		6.53	6.50	34.070	26.754	133.8	0.824	1.57	22.8	58.0	2.68	35.3	0.00			378	203
400	ISL	6.22	6.18	34.082	26.804	129.1	0.856	1.34	19.3	63.5	2.79	36.7	0.00			402	
437		5.82	5.78	34.108	26.875	122.5	0.902	1.01	14.4	71.6	2.94	38.6	0.00			440	202
500	ISL	5.51	5.47	34.163	26.957	115.3	0.977	0.69	9.8	80.2	3.08	40.3	0.00			503	
515		5.44	5.40	34.176	26.976	113.6	0.994	0.62	8.8	82.3	3.11	40.7	0.00			518	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 45.3 N	123 19.9 W	01/04/02	1841 UTC	4017 m	300 10 kn			1017.0 mb	13.8 C	11.6 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.16	15.16	33.303	24.630	330.0	0.000	5.85	102.1	1.6	0.38	0.1	0.00	0.09	0.02	0	
2		15.16	15.16	33.303	24.630	330.1	0.007	5.85	102.1	1.6	0.38	0.1	0.00	0.09	0.02	2	220
10	ISL	15.14	15.14	33.305	24.636	329.7	0.033	5.86	102.2	1.6	0.39	0.1	0.00	0.10	0.01	10	
16		15.13	15.13	33.307	24.640	329.5	0.053	5.86	102.2	1.6	0.40	0.1	0.00	0.10	0.01	16	219
20	ISL	15.13	15.13	33.306	24.639	329.7	0.066	5.86	102.2	1.5	0.40	0.1	0.00	0.10	0.01	20	
30	ISL	15.13	15.13	33.305	24.639	330.1	0.099	5.85	102.0	1.4	0.40	0.1	0.00	0.10	0.01	30	
31		15.13	15.13	33.305	24.639	330.1	0.102	5.85	102.0	1.4	0.40	0.1	0.00	0.10	0.01	31	218
46		15.13	15.12	33.313	24.646	329.9	0.152	5.85	102.0	1.5	0.37	0.1	0.00	0.10	0.02	46	217
50	ISL	15.14	15.13	33.316	24.646	330.0	0.165	5.85	102.1	1.5	0.37	0.1	0.00	0.12	0.03	50	
55		15.15	15.14	33.322	24.648	329.9	0.181	5.84	101.9	1.6	0.37	0.1	0.00	0.14	0.04	55	216
65		15.28	15.27	33.378	24.664	328.8	0.214	5.83	102.0	1.6	0.36	0.0	0.00	0.19	0.05	65	215
75	ISL	15.24	15.23	33.371	24.667	328.7	0.247	5.83	101.9	1.6	0.37	0.1	0.00	0.20	0.06	75	
76		15.24	15.23	33.371 D	24.667	328.8	0.251	5.83	101.9	1.6	0.37	0.1	0.00	0.20	0.06	76	214
85		15.34	15.33	33.429	24.690	326.9	0.280	5.79	101.5	1.7	0.38	0.1	0.01	0.23	0.10	85	213
95		14.85	14.84	33.410	24.783	318.3	0.312	5.73	99.4	2.2	0.43	0.5	0.05	0.25	0.14	95	212
100	ISL	14.20	14.19	33.303	24.838	313.1	0.328	5.73	98.1	2.7	0.48	1.0	0.07	0.25	0.14	100	
110		13.04	13.03	33.152	24.957	301.8	0.359	5.74	95.8	3.7	0.57	2.2	0.09	0.25	0.13	110	211
125		13.43	13.41	33.477	25.131	285.8	0.403	5.53	93.2	3.9	0.56	3.0	0.08	0.19	0.13	126	210
145		11.13	11.11	33.276	25.414	258.8	0.457	5.31	85.2	7.5	0.90	8.6	0.03	0.09	0.09	146	209
150	ISL	10.75	10.73	33.277	25.482	252.4	0.470	5.24	83.4	8.4	0.97	9.7	0.02	0.07	0.08	151	
170		9.73	9.71	33.387	25.741	227.8	0.518	4.90	76.3	12.6	1.21	13.7	0.01	0.03	0.04	171	208
199		9.11	9.09	33.711	26.095	194.6	0.579	4.10	63.1	20.5	1.54	19.8	0.00	0.01	0.02	200	207
200	ISL	9.10	9.08	33.721	26.105	193.8	0.581	4.07	62.6	20.8	1.55	20.0	0.00			201	
230		8.83	8.81	33.947	26.325	173.4	0.636	3.41	52.2	27.8	1.80	24.2	0.00			231	206
250	ISL	8.58	8.55	34.004	26.408	165.7	0.670	3.11	47.4	31.6	1.93	26.1	0.00			251	
268		8.33	8.30	34.023	26.462	160.9	0.700	2.89	43.8	34.7	2.04	27.4	0.00			269	205
300	ISL	7.92	7.89	34.051	26.545	153.3	0.750	2.48	37.2	40.1	2.23	29.8	0.00			302	
318		7.68	7.65	34.061	26.588	149.4	0.777	2.26	33.7	43.3	2.33	31.0	0.00			320	204
378		6.83	6.79	34.105	26.742	135.2	0.863	1.51	22.1	56.2	2.67	35.1	0.00			380	203
400	ISL	6.62	6.58	34.129	26.789	130.9	0.892	1.24	18.1	60.7	2.79	36.5	0.00			402	
436		6.30	6.26	34.162	26.857	124.7	0.938	0.86	12.4	67.7	2.95	38.4	0.00			439	202
500	ISL	5.62	5.58	34.168	26.948	116.3	1.015	0.66	9.4	79.1	3.07	40.6	0.00			503	
516		5.45	5.41	34.171	26.971	114.1	1.034	0.61	8.6	82.0	3.10	41.2	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 90 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 25.0 N	123 59.8 W	01/04/02	0035 UTC	4119 m	330 13 kn	320 05 08	2	1016.9 mb	14.0 C	12.0 C	29m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.74	15.74	33.524	24.672	326.0	0.000	5.78	102.2	1.6	0.35	0.1	0.00	0.09	0.02	0	
1		15.74	15.74	33.524	24.672	326.0	0.003	5.78	102.2	1.6	0.35	0.1	0.00	0.09	0.02	1	220
10	ISL	15.69	15.69	33.522	24.682	325.4	0.033	5.79	102.3	1.6	0.35	0.0	0.00	0.09	0.02	10	
16		15.64	15.64	33.521	24.692	324.6	0.052	5.79	102.2	1.6	0.35	0.0	0.00	0.09	0.02	16	219
20	ISL	15.64	15.64	33.521	24.693	324.7	0.065	5.79	102.2	1.6	0.35	0.0	0.00	0.09	0.02	20	
30		15.63	15.63	33.520	24.694	324.8	0.098	5.79	102.1	1.6	0.35	0.0	0.00	0.11	0.02	30	218
46		15.54	15.53	33.513	24.709	323.9	0.149	5.79	102.0	1.6	0.35	0.0	0.00	0.16	0.04	46	217
50	ISL	15.51	15.50	33.511	24.715	323.5	0.162	5.79	101.9	1.6	0.35	0.0	0.00	0.17	0.05	50	
60		15.46	15.45	33.506	24.722	323.1	0.195	5.79	101.8	1.7	0.35	0.0	0.00	0.20	0.06	60	216
75		15.44	15.43	33.508	24.729	322.9	0.243	5.79	101.7	1.6	0.35	0.0	0.00	0.23	0.08	75	215
85		15.44	15.43	33.511	24.731	323.0	0.275	5.79	101.7	1.7	0.35	0.0	0.00	0.26	0.09	85	214
95		15.44	15.43	33.523	24.741	322.4	0.308	5.79	101.7	1.7	0.35	0.0	0.00	0.25	0.08	95	213
100	ISL	15.40	15.38	33.517	24.745	322.1	0.324	5.78	101.5	1.7	0.35	0.1	0.00	0.25	0.09	100	
105		15.35	15.33	33.511	24.752	321.7	0.340	5.78	101.4	1.7	0.35	0.1	0.00	0.25	0.11	105	212
115		14.57	14.55	33.397	24.833	314.1	0.372	5.71	98.5	2.4	0.45	1.1	0.06	0.29	0.17	115	211
125		12.32	12.30	33.220	25.150	283.7	0.402	5.54	91.1	4.8	0.71	4.7	0.10	0.23	0.26	126	210
140		11.36	11.34	33.304	25.394	260.6	0.442	5.25	84.6	7.2	0.90	8.2	0.03	0.15	0.22	141	209
150	ISL	10.68	10.66	33.354	25.554	245.5	0.468	5.04	80.1	9.5	1.05	10.8	0.02	0.10	0.15	151	
165		9.82	9.80	33.455	25.779	224.1	0.503	4.65	72.6	13.6	1.28	14.8	0.01	0.05	0.05	166	208
194		9.33	9.31	33.805	26.133	191.0	0.563	3.43	53.1	23.7	1.76	22.4	0.00	0.01	0.03	195	207
200	ISL	9.21	9.19	33.851	26.189	185.8	0.574	3.39	52.3	25.1	1.81	23.2	0.00			201	
229		8.65	8.63	33.988	26.385	167.6	0.626	3.21	49.0	30.4	1.92	25.4	0.00			230	206
250	ISL	8.36	8.33	34.019	26.454	161.3	0.660	3.15	47.7	33.2	1.97	26.4	0.00			251	
269		8.13	8.10	34.025	26.493	157.8	0.691	3.05	46.0	35.7	2.03	27.3	0.00			270	205
300	ISL	7.71	7.68	34.054	26.578	150.1	0.738	2.54	37.9	41.7	2.25	29.9	0.00			302	
319		7.47	7.44	34.071	26.626	145.7	0.766	2.18	32.4	45.6	2.40	31.6	0.00			321	204
379		6.84	6.80	34.114	26.748	134.7	0.851	1.43	20.9	56.5	2.73	35.4	0.00			381	203
400	ISL	6.65	6.61	34.128	26.784	131.4	0.878	1.24	18.1	60.0	2.81	36.4	0.00			402	
437		6.32	6.28	34.149	26.844	125.9	0.926	0.98	14.2	66.0	2.93	38.0	0.00			440	202
500	ISL	5.73	5.69	34.171	26.937	117.5	1.003	0.69	9.8	76.8	3.08	40.2	0.00			503	
514		5.60	5.56	34.176	26.957	115.6	1.019	0.63	9.0	79.2	3.11	40.7	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 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 18.3 W	28/03/02	1932 UTC	64 m	250 03 kn	00	2	1016.0 mb	14.9 C	11.3 C	05m	8/8	CU

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.80	13.80	33.621	25.164	279.2	0.000	8.51	144.8	0.5	0.10	0.0	0.00			0	
1	A	13.80	13.80	33.621	25.164	279.2	0.003	8.51	144.8	0.5	0.10	0.0	0.00			1	210
3	A	13.49	13.49	33.612	25.220	273.9	0.008	8.34	141.0	0.6	0.12	0.0	0.00	2.57	0.88	3	209
6	A	13.27	13.27	33.605	25.259	270.3	0.016	8.00	134.6	0.8	0.13	0.0	0.00	2.29	1.07	6	208
10	A	12.69	12.69	33.597	25.368	260.0	0.027	7.35	122.2	1.3	0.21	0.0	0.00	2.16	0.81	10	207
13	A	12.03	12.03	33.588	25.488	248.7	0.035	5.34	87.5	5.4	0.74	5.9	0.20	7.14	2.04	13	206
19	A	11.68	11.68	33.616	25.575	240.5	0.049	5.32	86.6	5.9	0.86	7.7	0.22	6.58	2.46	19	205
20	ISL	11.61	11.61	33.615	25.587	239.4	0.052	5.24	85.1	6.4	0.90	8.3	0.22	6.19	2.39	20	
30		10.94	10.94	33.598	25.696	229.3	0.075	4.30	68.8	12.5	1.27	14.3	0.22	2.15	1.24	30	204
40		10.69	10.69	33.652	25.782	221.3	0.098	3.87	61.6	15.6	1.45	16.7	0.14	1.31	0.71	40	203
50		10.56	10.55	33.739	25.873	212.9	0.119	3.42	54.4	18.2	1.58	18.7	0.08	0.69	0.51	50	202
60		10.36	10.35	33.797	25.953	205.5	0.140	3.20	50.7	20.2	1.67	20.0	0.07	0.38	0.38	60	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 28

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 54.5 N	117 23.8 W	28/03/02	2209 UTC	546 m	350 02 kn	00	2	1015.4 mb	16.4 C	12.1 C	13m	8/8 CU

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.59	14.59	33.569	24.958	298.8	0.000	6.43	111.1	1.2	0.29	0.0	0.00	0.67	0.20	0	
1	14.59	14.59	33.569	24.958	298.8	0.003	6.43	111.1	1.2	0.29	0.0	0.00	0.67	0.20	1	220
10 ISL	13.73	13.73	33.583	25.149	280.9	0.029	6.85	116.3	1.0	0.26	0.0	0.00	0.97	0.35	10	
11	13.60	13.60	33.586	25.178	278.2	0.032	6.89	116.7	1.0	0.26	0.0	0.00	1.00 A	0.37 A	11	219
20 ISL	13.05	13.05	33.611	25.308	266.0	0.056	6.40	107.2	2.1	0.42	1.0	0.05	3.17	1.48	20	
21	13.00	13.00	33.613	25.320	264.9	0.059	6.32	105.7	2.3	0.45	1.2	0.06	3.48	1.63	21	218
30 ISL	12.45	12.45	33.615	25.429	254.8	0.082	5.66	93.6	5.0	0.68	4.7	0.13	6.24	2.74	30	
31	12.38	12.38	33.614	25.442	253.5	0.085	5.57	92.0	5.4	0.71	5.2	0.14	6.38	2.79	31	217
41	11.54	11.53	33.598	25.587	239.9	0.110	4.51	73.1	10.5	1.13	11.7	0.32	2.11	1.24	41	216
50 ISL	10.66	10.65	33.650	25.786	221.2	0.130	3.80	60.5	15.9	1.42	16.7	0.07	0.64	0.63	50	
51	10.57	10.56	33.658	25.808	219.1	0.133	3.74	59.4	16.4	1.45	17.1	0.04	0.59	0.60	51	215
61	10.24	10.23	33.717	25.911	209.5	0.154	3.55	56.0	17.2	1.58	19.0	0.04	0.66	0.42	61	214
71	10.28	10.27	33.833	25.995	201.8	0.175	3.08	48.7	20.6	1.71	20.7	0.03	1.39	0.76	71	213
75 ISL	10.18	10.17	33.849	26.025	199.0	0.183	3.07	48.4	21.5	1.73	21.2	0.03	1.19	0.68	75	
85	9.90	9.89	33.872	26.090	193.0	0.202	3.04	47.7	23.3	1.78	22.1	0.04	0.40	0.34	85	212
100 ISL	9.97	9.96	33.959	26.146	188.0	0.231	2.64	41.5	25.7	1.92	23.6	0.02	0.26	0.26	101	
101	9.97	9.96	33.963	26.150	187.7	0.233	2.61	41.0	25.8	1.93	23.7	0.02	0.25	0.26	102	211
121	9.83	9.82	33.990	26.195	183.8	0.270	2.58	40.4	26.9	1.96	24.4	0.03	0.10	0.18	122	210
125 ISL	9.81	9.80	34.014	26.217	181.8	0.277	2.48	38.8	27.8	2.00	24.8	0.02	0.09	0.18	126	
140	9.72	9.70	34.113	26.309	173.3	0.304	2.02	31.6	31.4	2.18	26.7	0.00	0.07	0.18	141	209
150 ISL	9.62	9.60	34.159	26.362	168.6	0.321	1.80	28.1	33.3	2.26	27.6	0.00	0.06	0.16	151	
171	9.37	9.35	34.218	26.450	160.6	0.355	1.53	23.8	36.5	2.38	28.9	0.00	0.05	0.12	172	208
200	8.98	8.96	34.220	26.514	154.9	0.401	1.60	24.6	39.0	2.43	29.7	0.00	0.04	0.10	201	207
227	8.68	8.66	34.218	26.560	151.0	0.442	1.48	22.6	41.2	2.47	30.4	0.00			228	206
250 ISL	8.58	8.55	34.246	26.598	147.8	0.477	1.26	19.2	43.4	2.55	31.1	0.00			252	
267	8.53	8.50	34.268	26.623	145.7	0.502	1.09	16.6	45.1	2.62	31.6	0.00			269	205
300 ISL	8.27	8.24	34.275	26.669	141.9	0.549	0.98	14.8	47.9	2.69	32.5	0.00			302	
315	8.14	8.11	34.274	26.688	140.3	0.570	0.96	14.5	49.2	2.71	32.9	0.00			317	204
377	7.67	7.63	34.285	26.766	133.6	0.655	0.73	10.9	55.2	2.83	34.5	0.00			379	203
400 ISL	7.43	7.39	34.287	26.803	130.4	0.686	0.67	10.0	58.1	2.87	35.2	0.00			403	
433	7.08	7.04	34.291 D	26.855	125.7	0.728									436	202
500 ISL	6.59	6.54	34.301	26.930	119.2	0.810	0.41	6.0	70.6	3.06	38.2	0.01			503	
508	6.53	6.48	34.302	26.939	118.4	0.819	0.39	5.7	71.6	3.08	38.4	0.01			512	201

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

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 30

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 50.9 N	117 31.9 W	29/03/02	0059 UTC	846 m	240 04 kn	00	1	1014.1 mb	14.5 C	11.5 C		7/8 SC

DEPTH m	TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0 ISL	14.85	14.85	33.547	24.885	305.7	0.000	6.14	106.7	0.7	0.31	0.1	0.00	0.27	0.09	0	
2	14.85	14.85	33.547	24.885	305.8	0.006	6.14	106.7	0.7	0.31	0.1	0.00	0.27	0.09	2	220
10	14.64	14.64	33.538	24.924	302.4	0.030	6.18	106.9	0.4	0.30	0.0	0.00	0.29	0.09	10	219
20	14.05	14.05	33.527	25.040	291.6	0.060	6.26	107.0	0.6	0.33	0.1	0.00	0.45	0.19	20	218
30	13.05	13.05	33.528	25.244	272.4	0.088	5.72	95.7	4.9	0.61	3.6	0.15	1.86	0.64	30	217
40	11.74	11.73	33.521	25.491	249.1	0.114	4.65	75.7	9.5	1.02	10.2	0.16	1.07	0.61	40	216
50	11.43	11.42	33.542	25.564	242.3	0.139	4.48	72.5	10.7	1.10	11.5	0.10	0.86	0.43	50	215
60	11.06	11.05	33.579	25.660	233.4	0.163	4.16	66.8	13.4	1.27	14.2	0.08	0.69	0.45	60	214
70	10.80	10.79	33.629	25.745	225.5	0.186	3.88	61.9	15.2	1.39	16.0	0.05	0.49	0.46	70	213
75 ISL	10.66	10.65	33.677	25.807	219.7	0.197	3.69	58.7	16.7	1.47	17.2	0.04	0.39	0.39	75	
85	10.39	10.38	33.776	25.932	208.1	0.218	3.35	53.0	19.6	1.63	19.5	0.03	0.24	0.24	85	212
100	10.10	10.09	33.845	26.036	198.5	0.249	3.18	50.1	21.8	1.72	21.0	0.02	0.16	0.19	101	211
119	10.16	10.15	34.030	26.170	186.2	0.285	2.33	36.8	27.1	2.04	24.6	0.01	0.12	0.15	120	210
125 ISL	10.08	10.07	34.043	26.194	184.1	0.296	2.34	36.9	27.7	2.04	25.0	0.01	0.11	0.13	126	
140	9.85	9.83	34.053	26.241	179.9	0.324	2.38	37.3	28.6	2.05	25.5	0.01	0.08	0.10	141	209
150 ISL	9.80	9.78	34.103	26.288	175.6	0.341	2.16	33.8	30.2	2.13	26.3	0.01	0.06	0.11	151	
170	9.70	9.68	34.196	26.378	167.5	0.376	1.71	26.7	33.5	2.30	27.8	0.00	0.03	0.14	171	208
198	9.32	9.30	34.183	26.431	163.0	0.422	1.79	27.7	35.4	2.31	28.4	0.01	0.10	0.16	199	207
200 ISL	9.28	9.26	34.185	26.439	162.2	0.425	1.77	27.4	35.7	2.32	28.5	0.01			201	
229	8.77	8.75	34.221	26.549	152.2	0.471	1.49	22.8	40.9	2.47	30.3	0.00			230	206
250 ISL	8.49	8.46	34.218	26.590	148.5	0.502	1.43	21.8	43.1	2.52	31.1	0.00			251	
269	8.31	8.28	34.213	26.614	146.5	0.530	1.38	20.9	44.7	2.55	31.6	0.00			271	205
300 ISL	8.17	8.14	34.250	26.664	142.3	0.575	1.12	16.9	47.8	2.66	32.5	0.00			302	
318	8.11	8.08	34.273	26.692	140.0	0.601	0.96	14.5	49.7	2.72	33.0	0.00			320	204
377	7.55	7.51	34.279	26.779	132.4	0.681	0.75	11.2	56.5	2.85	34.9	0.00			379	203
400 ISL	7.37	7.33	34.286	26.810	129.6	0.711	0.66	9.8	59.1	2.90	35.6	0.00			403	
437	7.08	7.04	34.297	26.860	125.3	0.758	0.52	7.7	63.4	2.97	36.7	0.00			440	202
500 ISL	6.53	6.48	34.304	26.940	118.1	0.835	0.38	5.5	71.7	3.08	38.5	0.00			503	
516	6.39	6.34	34.307	26.961	116.2	0.854	0.35	5.1	73.8	3.11	39.0	0.00			520	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 35

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 40.7 N	117 52.3 W	29/03/02	0507 UTC	620 m	310 03 kn			1015.1 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.88	14.88	33.603	24.922	302.2	0.000	6.00	104.3	3.5	0.36	0.1	0.00	0.27	0.08	0	
2		14.88	14.88	33.603	24.922	302.3	0.006	6.00	104.3	3.5	0.36	0.1	0.00	0.27	0.08	2	220
10	ISL	14.77	14.77	33.598	24.942	300.6	0.030	6.03	104.6	3.5	0.36	0.1	0.00	0.26	0.11	10	
11		14.75	14.75	33.597	24.946	300.3	0.033	6.03	104.6	3.5	0.36	0.1	0.00	0.26 A	0.12 A	11	219
20		14.51	14.51	33.595	24.995	295.8	0.060	6.05	104.4	3.6	0.36	0.1	0.00	0.35	0.14	20	218
30		14.10	14.10	33.584	25.074	288.6	0.089	5.84	99.9	4.3	0.45	1.1	0.03	0.57	0.27	30	217
41		12.49	12.48	33.544	25.366	261.0	0.119	4.95	81.9	7.9	0.86	7.3	0.24	0.52	0.30	41	216
50		11.66	11.65	33.563	25.538	244.8	0.142	4.36	70.9	11.3	1.15	11.9	0.17	0.32	0.28	50	215
60		10.86	10.85	33.665	25.763	223.6	0.166	3.75	60.0	15.9	1.42	16.5	0.05	0.19 A	0.21 A	60	214
70		10.52	10.51	33.759	25.896	211.2	0.187	3.57	56.7	18.9	1.60	19.0	0.03	0.10	0.17	70	213
75	ISL	10.40	10.39	33.789	25.940	207.1	0.198	3.41	54.0	19.9	1.65	19.8	0.02	0.07	0.14	75	
85		10.25	10.24	33.838	26.004	201.2	0.218	3.09	48.8	21.6	1.73	20.9	0.02	0.04	0.09	85	212
100		10.19	10.18	33.918	26.077	194.6	0.248	2.80	44.2	23.9	1.85	22.5	0.02	0.02	0.10	101	211
120		10.20	10.19	34.028	26.162	187.0	0.286	2.31	36.5	26.9	2.02	24.5	0.01	0.02 A	0.08 A	121	210
125	ISL	10.17	10.16	34.051	26.185	185.0	0.295	2.22	35.0	27.7	2.06	25.0	0.01	0.02	0.07	126	
140		10.01	9.99	34.109	26.258	178.3	0.323	2.00	31.5	29.9	2.16	26.2	0.01	0.01	0.06	141	209
150	ISL	9.87	9.85	34.133	26.300	174.5	0.340	1.91	30.0	31.1	2.21	26.8	0.01	0.02	0.08	151	
170		9.57	9.55	34.168	26.378	167.5	0.374	1.78	27.7	33.5	2.28	27.8	0.01	0.03	0.13	171	208
199		9.23	9.21	34.213	26.469	159.3	0.422	1.56	24.1	37.3	2.40	29.1	0.01	0.01	0.06	200	207
200	ISL	9.21	9.19	34.212	26.471	159.1	0.423	1.57	24.3	37.4	2.40	29.1	0.01			201	
229		8.65	8.63	34.189	26.542	152.7	0.469	1.72	26.3	40.1	2.41	30.0	0.01			230	206
250	ISL	8.63	8.60	34.238	26.584	149.2	0.500	1.43	21.8	42.5	2.51	30.8	0.00			251	
269		8.61	8.58	34.276	26.617	146.4	0.528	1.11	16.9	44.6	2.62	31.5	0.00			271	205
300	ISL	8.41	8.38	34.285	26.656	143.3	0.573	1.03	15.7	47.0	2.68	32.2	0.00			302	
318		8.23	8.20	34.281	26.680	141.2	0.599	0.98	14.8	48.6	2.71	32.6	0.00			320	204
378		7.41	7.37	34.294	26.811	129.3	0.680	0.64	9.5	58.9	2.91	35.5	0.01			380	203
400	ISL	7.22	7.18	34.293	26.837	127.0	0.708	0.58	8.6	61.2	2.95	36.1	0.01			403	
437		6.97	6.93	34.289	26.869	124.4	0.755	0.52	7.6	64.5	2.99	37.0	0.01			440	202
500	ISL	6.56	6.51	34.299	26.932	118.9	0.831	0.39	5.7	70.7	3.07	38.6	0.01			503	
514		6.47	6.42	34.302	26.947	117.6	0.848	0.36	5.2	72.1	3.09	38.9	0.01			518	201

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

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 40

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
32 31.0 N	118 13.0 W	29/03/02	1052 UTC	1632 m	340 10 kn	00		1015.8 mb	13.5 C	12.1 C		

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.31	14.31	33.600	25.041	290.9	0.000	6.13	105.4	1.5	0.40	0.3	0.00	0.34	0.07	0	
2		14.31	14.31	33.600	25.041	290.9	0.006	6.13	105.4	1.5	0.40	0.3	0.00	0.34	0.07	2	220
10		14.30	14.30	33.593	25.038	291.4	0.029	6.12	105.2	1.5	0.38	0.3	0.00	0.34	0.05	10	219
20		13.90	13.90	33.588	25.118	284.1	0.058	6.25	106.5	0.9	0.38	0.3	0.00	0.26	0.11	20	218
30		13.35	13.35	33.578	25.223	274.4	0.086	5.95	100.2	3.3	0.55	2.1	0.06	0.48	0.22	30	217
40		12.97	12.96	33.577	25.298	267.5	0.113	5.74	95.9	4.6	0.65	3.7	0.13	0.52	0.34	40	216
50		12.65	12.64	33.594	25.374	260.5	0.139	5.55	92.2	6.3	0.78	5.1	0.12	0.37	0.41	50	215
60		12.26	12.25	33.593	25.449	253.6	0.165	5.22	86.0	8.3	0.91	7.3	0.15	0.27	0.39	60	214
70		11.55	11.54	33.563	25.559	243.3	0.190	4.88	79.1	10.6	1.06	10.6	0.17	0.23	0.37	70	213
75	ISL	10.99	10.98	33.553	25.653	234.5	0.202	4.61	73.9	12.8	1.20	13.2	0.13	0.19	0.32	75	
85		9.98	9.97	33.575	25.845	216.3	0.224	4.05	63.5	17.3	1.49	18.2	0.03	0.12	0.20	85	212
100		9.73	9.72	33.731	26.008	201.0	0.256	3.48	54.3	21.4	1.69	21.1	0.01	0.06	0.16	101	211
119		9.61	9.60	33.883	26.147	188.2	0.293	2.92	45.5	25.6	1.88	23.8	0.01	0.03	0.13	120	210
125	ISL	9.55	9.54	33.936	26.199	183.5	0.304	2.75	42.8	27.1	1.94	24.7	0.01	0.02	0.12	126	
140		9.37	9.35	34.049	26.317	172.5	0.330	2.41	37.4	30.6	2.08	26.5	0.00	0.01	0.10	141	209
150	ISL	9.25	9.23	34.079	26.360	168.6	0.348	2.31	35.7	32.1	2.13	27.2	0.00	0.01	0.09	151	
169		9.02	9.00	34.102	26.415	163.7	0.379	2.19	33.7	34.3	2.19	28.1	0.01	0.01	0.08	170	208
199		8.74	8.72	34.144	26.492	156.9	0.427	1.87	28.6	38.0	2.33	29.7	0.00	0.01	0.10	200	207
200	ISL	8.73	8.71	34.145	26.495	156.7	0.429	1.86	28.4	38.1	2.33	29.7	0.00			201	
229		8.34	8.32	34.175	26.579	149.1	0.473	1.62	24.6	42.2	2.46	31.1	0.01			230	206
250	ISL	8.17	8.14	34.199	26.624	145.2	0.504	1.43	21.6	44.8	2.55	31.9	0.01			251	
270		8.05	8.02	34.223	26.661	142.0	0.533	1.25	18.8	47.3	2.64	32.7	0.00			272	205
300	ISL	7.83	7.80	34.259	26.722	136.6	0.574	0.94	14.1	51.5	2.75	33.9	0.00			302	
317		7.70	7.67	34.276	26.754	133.8	0.597	0.79	11.8	54.0	2.81	34.5	0.00			319	204
378		7.11	7.07	34.288	26.848	125.5	0.677	0.56	8.3	62.1	2.95	36.8	0.00			380	203
400	ISL	6.93	6.89	34.287	26.872	123.4	0.704	0.52	7.6	64.6	2.99	37.4	0.00			403	
438		6.65	6.61	34.288	26.911	120.1	0.750	0.46	6.7	68.7	3.04	38.2	0.00			441	202
500	ISL	6.23	6.19	34.312	26.985	113.5	0.823	0.31	4.5	75.7	3.13	39.7	0.00			503	
512		6.15	6.10	34.317	27.000	112.2	0.836	0.28	4.0	77.0	3.15	40.0	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 45

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 20.8 N	118 33.3 W	29/03/02	1447 UTC	1341 m	290 11 kn	290 03 07	2	1018.1 mb	14.0 C	11.5 C	20m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.34	14.34	33.605	25.039	291.1	0.000	6.22	107.0	1.1	0.34	0.1	0.00	0.34	0.09	0	
2		14.34	14.34	33.605	25.039	291.2	0.006	6.22	107.0	1.1	0.34	0.1	0.00	0.34	0.09	2	221
10		14.07	14.07	33.594	25.087	286.8	0.029	6.27	107.2	1.2	0.36	0.2	0.01	0.39	0.09	10	220
10		14.03	14.03	33.594	25.095	286.0	0.029	6.33 U	108.2 U	1.2	0.35	0.2	0.01	0.37	0.11	10	219
20		13.60	13.60	33.589	25.180	278.2	0.057	6.23	105.5	1.8	0.42	0.9	0.02	0.45	0.15	20	218
30		12.79	12.79	33.580	25.336	263.6	0.084	5.72	95.3	5.0	0.70	4.1	0.11	0.94	0.59	30	217
40		11.74	11.73	33.592	25.546	243.8	0.110	4.74	77.2	11.5	1.08	10.8	0.21	0.66	0.53	40	216
50		10.83	10.82	33.662	25.765	223.1	0.133	3.88	62.0	16.7	1.42	16.5	0.13	0.37	0.35	50	215
60		10.08	10.07	33.716	25.937	207.0	0.154	3.44	54.1	20.5	1.65	20.3	0.02	0.15	0.23	60	214
70		9.86	9.85	33.769	26.016	199.7	0.175	3.24	50.7	22.6	1.75	21.8	0.02	0.09	0.16	70	213
75	ISL	9.76	9.75	33.797	26.055	196.1	0.185	3.16	49.4	23.5	1.79	22.5	0.02	0.07	0.17	75	
85		9.60	9.59	33.850	26.123	189.8	0.204	3.01	46.9	25.2	1.85	23.6	0.01	0.06	0.19	85	212
100		9.41	9.40	33.907	26.198	182.9	0.232	2.82	43.7	27.4	1.93	24.8	0.01	0.05	0.21	101	211
120		9.20	9.19	34.000	26.306	173.1	0.268	2.57	39.7	30.5	2.05	26.3	0.00	0.02	0.11	121	210
125	ISL	9.18	9.17	34.007	26.314	172.4	0.276	2.55	39.4	30.8	2.06	26.5	0.00	0.02	0.11	126	
139		9.13	9.11	34.018	26.331	171.1	0.300	2.51	38.7	31.4	2.08	26.8	0.00	0.02	0.10	140	209
150	ISL	9.04	9.02	34.045	26.367	167.9	0.319	2.40	36.9	32.6	2.13	27.4	0.00	0.02	0.09	151	
170		8.85	8.83	34.101	26.441	161.2	0.352	2.13	32.7	35.4	2.23	28.6	0.00	0.03	0.08	171	208
200		8.64	8.62	34.162	26.522	154.0	0.399	1.75	26.7	39.7	2.39	30.0	0.00	0.03	0.07	201	207
229		8.40	8.38	34.214	26.600	147.1	0.443	1.37	20.8	44.2	2.55	31.5	0.00			230	206
250	ISL	8.12	8.09	34.218	26.646	143.0	0.473	1.25	18.9	47.2	2.62	32.4	0.00			252	
268		7.87	7.84	34.213	26.679	140.1	0.499	1.20	18.0	49.5	2.66	33.1	0.00			270	205
300	ISL	7.56	7.53	34.215	26.726	136.0	0.543	1.06	15.8	53.1	2.74	34.3	0.00			302	
319		7.40	7.37	34.217	26.751	133.9	0.569	0.97	14.4	55.3	2.79	34.9	0.00			321	204
378		6.80	6.76	34.231	26.845	125.5	0.645	0.71	10.4	64.0	2.93	36.9	0.00			380	203
400	ISL	6.69	6.65	34.247	26.873	123.1	0.672	0.61	8.9	66.4	2.98	37.5	0.00			403	
437		6.55	6.51	34.276	26.915	119.6	0.717	0.46	6.7	70.0	3.06	38.3	0.00			440	202
500	ISL	6.14	6.10	34.307	26.993	112.7	0.790	0.32	4.6	77.3	3.15	39.7	0.00			503	
516		6.04	5.99	34.315	27.012	111.0	0.808	0.29	4.2	79.2	3.17	40.1	0.00			520	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 10.6 N	118 53.3 W	29/03/02	1900 UTC	1458 m	310 04 kn	260 03 12	2	1019.1 mb	14.3 C	12.0 C	19m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.97	13.97	33.511	25.043	290.6	0.000	6.12	104.4	2.8	0.45	1.1	0.04	0.51	0.11	0	
1	A	13.97	13.97	33.511	25.043	290.7	0.003	6.12	104.4	2.8	0.45	1.1	0.04	0.51	0.11	1	221
10	ISL	13.89	13.89	33.509	25.059	289.5	0.029	6.11	104.1	3.2	0.44	1.1	0.04	0.47	0.10	10	
11	A	13.88	13.88	33.508	25.060	289.4	0.032	6.11	104.0	3.2	0.57 U	1.1	0.04	0.47	0.10	11	220
19		13.83	13.83	33.502	25.066	289.0	0.055	6.11	103.9	3.1	0.43	1.1	0.04	0.59	0.12	19	219
20	ISL	13.82	13.82	33.503	25.069	288.8	0.058	6.11	103.9	3.1	0.43	1.1	0.04	0.60	0.12	20	
25	A	13.70	13.70	33.509	25.098	286.1	0.072	6.11	103.6	3.2	0.45	1.5	0.05	0.69	0.16	25	218
30	ISL	13.36	13.36	33.517	25.174	279.1	0.086	6.07	102.2	2.7	0.49	2.0	0.07	0.92	0.30	30	
31		13.29	13.29	33.519	25.189	277.6	0.089	6.05	101.8	2.6	0.50	2.2	0.08	0.96	0.33	31	217
37	A	13.02	13.01	33.534	25.255	271.5	0.106	5.82	97.4	4.1	0.60	3.6	0.12	0.92	0.39	37	216
49	A	12.81	12.80	33.569	25.324	265.3	0.138	5.64	93.9	5.6	0.70	4.8	0.17	0.70	0.52	49	215
50	ISL	12.79	12.78	33.566	25.325	265.2	0.141	5.64	93.9	5.6	0.71	4.8	0.17	0.70	0.52	50	
60		12.59	12.58	33.540	25.344	263.6	0.167	5.54	91.8	6.1	0.79	5.6	0.18	0.62	0.44	60	214
70	A	12.32	12.31	33.584	25.431	255.6	0.193	5.22	86.1	8.1	0.86	7.8	0.22	0.28	0.27	70	213
75	ISL	11.79	11.78	33.557	25.510	248.1	0.206	4.98	81.2	9.8	0.99	10.1	0.16	0.19	0.21	75	
84		10.75	10.74	33.508	25.660	233.9	0.227	4.57	72.8	12.9	1.24	14.3	0.04	0.10	0.15	84	212
99		10.10	10.09	33.544	25.801	220.8	0.261	4.21	66.1	16.0	1.42	17.3	0.03	0.08	0.15	99	211
100	ISL	10.06	10.05	33.552	25.814	219.6	0.264	4.18	65.6	16.2	1.43	17.5	0.03	0.08	0.15	100	
120		9.47	9.46	33.724	26.046	197.8	0.305	3.69	57.2	20.9	1.62	20.8	0.03	0.06	0.16	121	210
125	ISL	9.39	9.38	33.755	26.083	194.4	0.315	3.64	56.4	21.6	1.64	21.2	0.03	0.06	0.15	126	
139		9.24	9.22	33.833	26.169	186.5	0.342	3.49	53.9	23.7	1.71	22.3	0.02	0.05	0.12	140	209
150	ISL	9.15	9.13	33.907	26.241	179.8	0.362	3.18	49.0	26.3	1.82	23.8	0.02	0.04	0.13	151	
169		8.99	8.97	34.019	26.355	169.4	0.395	2.62	40.3	31.2	2.03	26.5	0.01	0.02	0.14	170	208
198		8.52	8.50	34.096	26.489	157.1	0.442	2.30	35.0	36.8	2.21	28.7	0.01	0.02	0.09	199	207
200	ISL	8.51	8.49	34.100	26.494	156.7	0.446	2.27	34.5	37.1	2.22	28.8	0.01			201	
228		8.41	8.39	34.145	26.545	152.4	0.489	1.89	28.7	40.4	2.37	30.2	0.01			229	206
250	ISL	8.23	8.20	34.183	26.602	147.3	0.522	1.53	23.1	44.0	2.51	31.5	0.00			251	
267		8.06	8.03	34.207	26.646	143.3	0.546	1.28	19.3	46.9	2.61	32.5	0.00			269	205
300	ISL	7.71	7.68	34.222	26.710	137.6	0.593	1.06	15.8	51.5	2.72	33.8	0.00			302	
317		7.54	7.51	34.224	26.736	135.3	0.616	1.00	14.9	53.9	2.78	34.5	0.00			319	204
378		7.08	7.04	34.243	26.817	128.4	0.696	0.74	10.9	67.4 U	2.99 U	37.8 U	0.00 U			380	203
400	ISL	6.93	6.89	34.252	26.844	126.0	0.724	0.65	9.5							403	
436		6.71	6.67	34.268	26.887	122.3	0.769	0.53	7.7	67.4 U	3.02 U	37.8 U	0.00 U			439	202
500	ISL	6.44	6.39	34.288	26.939	118.1	0.846	0.41	6.0							503	
517		6.37	6.32	34.293	26.953	117.0	0.866	0.38	5.5	74.3 U	3.12 U	38.9 U	0.00 U			521	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
32 1.1 N	119 13.9 W	29/03/02	2317 UTC	1488 m	300 08 kn	290 06 09	2	1018.8 mb	15.2 C	12.5 C	29m	8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.36	14.36	33.417	24.889	305.3	0.000	6.00	103.1	2.7	0.38	0.1	0.00	0.15	0.04	0	
2		14.36	14.36	33.417	24.889	305.4	0.006	6.00	103.1	2.7	0.38	0.1	0.00	0.15	0.04	2	220
10		14.31	14.31	33.438	24.916	303.0	0.030	6.00	103.0	2.7	0.38	0.1	0.00	0.17	0.05	10	219
20		14.27	14.27	33.481	24.958	299.3	0.061	6.02	103.3	2.7	0.38	0.1	0.00	0.19	0.06	20	218
30		14.06	14.06	33.497	25.015	294.2	0.090	6.03	103.0	2.9	0.40	0.3	0.02	0.26	0.17	30	217
40		13.81	13.80	33.497	25.067	289.6	0.119	5.99	101.8	3.1	0.45	1.1	0.05	0.30	A 0.13 A	40	216
50	ISL	13.56	13.55	33.510	25.128	284.0	0.148	5.97	101.0	3.1	0.49	1.6	0.07	0.54	0.22	50	
51		13.53	13.52	33.513	25.137	283.2	0.151	5.97	100.9	3.1	0.49	1.7	0.07	0.56	0.24	51	215
59		13.21	13.20	33.568	25.244	273.2	0.173	5.94	99.8	3.1	0.57	2.6	0.10	0.49	0.39	59	214
70		11.98	11.97	33.420	25.368	261.5	0.203	5.28	86.3	7.0	0.87	7.7	0.09	0.30	0.24	70	213
75	ISL	11.51	11.50	33.407	25.445	254.2	0.215	5.06	81.9	8.6	0.98	9.6	0.07	0.23	0.19	75	
84		10.82	10.81	33.431	25.588	240.8	0.238	4.75	75.8	11.1	1.14	12.5	0.04	0.14	0.14	84	212
100		10.15	10.14	33.521	25.774	223.3	0.275	4.40	69.2	14.4	1.32	15.5	0.02	0.09	0.15	100	211
120		9.36	9.35	33.739	26.076	195.0	0.317	3.90	60.4	20.6	1.57	20.0	0.01	0.02	0.06	121	210
125	ISL	9.25	9.24	33.790	26.133	189.6	0.326	3.77	58.2	22.1	1.62	21.0	0.01	0.02	0.05	126	
140		9.01	8.99	33.915	26.270	176.9	0.354	3.44	52.9	26.1	1.76	23.4	0.01	0.01	0.04	141	209
150	ISL	8.91	8.89	33.955	26.317	172.6	0.371	3.32	50.9	27.7	1.81	24.2	0.01	0.01	0.04	151	
170		8.75	8.73	33.991	26.370	167.9	0.405	3.19	48.8	30.0	1.88	25.2	0.01	0.02	0.06	171	208
199		8.43	8.41	34.029	26.450	160.8	0.453	2.99	45.4	33.6	1.99	26.7	0.01	0.02	0.07	200	207
200	ISL	8.42	8.40	34.030	26.452	160.5	0.455	2.98	45.2	33.7	2.00	26.8	0.01			201	
230		8.14	8.12	34.068	26.525	154.1	0.502	2.53	38.2	38.4	2.18	29.0	0.01			231	206
250	ISL	7.94	7.91	34.094	26.575	149.6	0.532	2.21	33.2	41.9	2.32	30.4	0.01			251	
269		7.74	7.71	34.116	26.622	145.4	0.560	1.92	28.7	45.2	2.44	31.7	0.01			271	205
300	ISL	7.39	7.36	34.131	26.684	139.8	0.604	1.60	23.7	50.3	2.58	33.5	0.00			302	
320		7.18	7.15	34.139	26.720	136.6	0.632	1.44	21.3	53.4	2.66	34.5	0.00			322	204
378		6.87	6.83	34.193	26.806	129.2	0.709	0.96	14.1	60.8	2.85	36.7	0.00			380	203
400	ISL	6.76	6.72	34.211	26.835	126.7	0.737	0.82	12.0	63.2	2.91	37.2	0.00			403	
438		6.56	6.52	34.238	26.884	122.5	0.785	0.63	9.2	67.4	3.00	38.1	0.00			441	202
500	ISL	6.07	6.03	34.262	26.966	115.1	0.858	0.43	6.2	75.8	3.12	40.0	0.00			503	
510		5.99	5.95	34.266	26.980	113.9	0.870	0.40	5.7	77.1	3.14	40.3	0.00			513	201

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

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 60

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
31 50.8 N	119 34.3 W	30/03/02	0347 UTC	1875 m	290 12 kn			1019.3 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	13.85	13.85	33.472	25.038	291.1	0.000	6.08	103.4	3.2	0.47	1.1	0.04	0.40	0.10	0	
2		13.85	13.85	33.472	25.038	291.2	0.006	6.08	103.4	3.2	0.47	1.1	0.04	0.40	0.10	2	220
10	ISL	13.79	13.79	33.476	25.054	289.9	0.029	6.08	103.3	3.2	0.47	1.2	0.05	0.44	0.08	10	
11		13.78	13.78	33.477	25.057	289.7	0.032	6.08	103.3	3.2	0.47	1.2	0.05	0.45	0.08	11	219
20		13.40	13.40	33.509	25.159	280.2	0.058	6.15	103.7	3.4	0.52	2.2	0.08	0.61	0.21	20	218
30		13.27	13.27	33.516	25.191	277.4	0.085	6.12	102.9	3.4	0.55	2.4	0.08	0.73	0.23	30	217
40		13.24	13.23	33.519	25.200	276.9	0.113	6.10	102.5	3.6	0.55	2.5	0.08	0.74	0.20	40	216
50		13.15	13.14	33.554	25.245	272.8	0.141	5.95	99.8	4.0	0.60	3.1	0.11	0.63	0.24	50	215
60		12.88	12.87	33.584	25.322	265.8	0.168	5.74	95.8	5.6	0.67	4.2	0.16	0.26	0.17	60	214
70		12.87	12.86	33.586	25.326	265.7	0.194	5.73	95.6	5.5	0.68	4.3	0.17	0.19	0.16	70	213
75	ISL	12.78	12.77	33.580	25.339	264.5	0.207	5.69	94.7	5.7	0.70	4.7	0.18	0.17	0.15	75	
85		12.60	12.59	33.569	25.366	262.2	0.234	5.61	93.0	6.2	0.74	5.4	0.19	0.13	0.14	85	212
100		11.23	11.22	33.488	25.560	243.9	0.272	4.82	77.6	10.6	1.10	11.6	0.09	0.10	0.16	100	211
119		9.89	9.88	33.631	25.904	211.3	0.315	3.95	61.8	17.4	1.49	18.3	0.02	0.05	0.08	120	210
125	ISL	9.69	9.68	33.686	25.980	204.2	0.327	3.76	58.6	19.3	1.57	19.7	0.02	0.04	0.07	126	
139		9.41	9.39	33.808	26.122	191.0	0.355	3.44	53.3	23.1	1.72	22.1	0.01	0.02	0.05	140	209
150	ISL	9.19	9.17	33.880	26.214	182.4	0.376	3.27	50.5	25.6	1.80	23.5	0.01	0.02	0.06	151	
169		8.86	8.84	33.967	26.334	171.3	0.409	3.10	47.5	29.1	1.90	25.1	0.01	0.03	0.08	170	208
200		8.36	8.34	34.020	26.454	160.4	0.461	3.00	45.5	33.5	1.99	26.6	0.01	0.03	0.11	201	207
229		7.91	7.89	34.049	26.544	152.2	0.506	2.62	39.3	39.4	2.17	29.0	0.01			230	206
250	ISL	7.68	7.66	34.083	26.604	146.7	0.537	2.19	32.7	44.1	2.35	30.9	0.00			251	
269		7.53	7.50	34.116	26.652	142.4	0.565	1.80	26.8	47.9	2.50	32.4	0.00			271	205
300	ISL	7.41	7.38	34.163	26.707	137.7	0.608	1.39	20.6	51.7	2.65	33.8	0.00			302	
318		7.36	7.33	34.187	26.733	135.6	0.633	1.20	17.8	53.6	2.72	34.4	0.00			320	204
378		6.92	6.88	34.248	26.842	125.8	0.711	0.66	9.7	63.2	2.96	36.9	0.00			380	203
400	ISL	6.77	6.73	34.258	26.871	123.4	0.739	0.58	8.5	65.7	3.01	37.5	0.00			403	
437		6.53	6.49	34.269	26.912	119.8	0.784	0.49	7.1	69.6	3.07	38.4	0.00			440	202
500	ISL	6.08	6.04	34.301	26.996	112.3	0.857	0.32	4.6	77.4	3.17	40.0	0.00			503	
515		5.97	5.92	34.309	27.016	110.5	0.874	0.28	4.0	79.2	3.19	40.4	0.00			519	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 31.0 N	120 14.8 W	30/03/02	0949 UTC	3930 m	290 08 kn			1019.9 mb	13.2 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.36	14.36	33.420	24.892	305.1	0.000	5.98	102.8	2.7	0.40	0.1	0.00	0.17	0.04	0	
2		14.36	14.36	33.420	24.892	305.1	0.006	5.98	102.8	2.7	0.40	0.1	0.00	0.17	0.04	2	220
10		14.34	14.34	33.418	24.895	305.1	0.031	5.99	102.9	2.6	0.39	0.1	0.00	0.16	0.04	10	219
20		14.34	14.34	33.418	24.895	305.4	0.061	5.97	102.6	2.5	0.38	0.1	0.00	0.16	0.04	20	218
30	ISL	14.33	14.33	33.418	24.897	305.4	0.092	5.98	102.7	2.6	0.38	0.1	0.00	0.17	0.04	30	
31		14.33	14.33	33.418	24.897	305.4	0.095	5.98	102.7	2.6	0.38	0.1	0.00	0.17	0.04	31	217
40		14.12	14.11	33.412	24.937	301.9	0.122	6.02	102.9	2.7	0.38	0.1	0.00	0.27	0.09	40	216
50		14.05	14.04	33.413	24.953	300.7	0.152	6.01	102.6	2.6	0.40	0.1	0.01	0.39	0.14	50	215
60		13.86	13.85	33.411	24.991	297.4	0.182	5.95	101.2	2.7	0.43	0.5	0.04	0.40	0.16	60	214
70		11.76	11.75	33.400	25.394	259.0	0.210	5.13	83.5	7.7	0.95	9.2	0.08	0.27	0.23	70	213
75	ISL	11.25	11.24	33.403	25.489	250.0	0.223	4.92	79.2	9.2	1.07	11.3	0.07	0.22	0.20	75	
85		10.71	10.70	33.419	25.598	239.8	0.247	4.67	74.3	11.5	1.21	13.5	0.03	0.15	0.11	85	212
99		10.10	10.09	33.503	25.769	223.8	0.279	4.27	67.1	15.2	1.40	16.7	0.02	0.08	0.06	99	211
100	ISL	10.07	10.06	33.510	25.779	222.9	0.282	4.24	66.6	15.4	1.41	16.9	0.02	0.08	0.06	100	
120		9.57	9.56	33.657	25.977	204.3	0.324	3.79	58.9	19.9	1.60	20.2	0.01	0.02	0.05	121	210
125	ISL	9.50	9.49	33.694	26.018	200.6	0.335	3.69	57.3	20.8	1.64	20.8	0.01	0.02	0.04	126	
140		9.35	9.33	33.799	26.125	190.8	0.364	3.44	53.2	23.2	1.73	22.3	0.01	0.02	0.03	141	209
150	ISL	9.22	9.20	33.863	26.196	184.2	0.383	3.29	50.8	25.1	1.79	23.4	0.01	0.02	0.03	151	
171		8.92	8.90	33.968	26.326	172.2	0.420	3.05	46.8	29.1	1.91	25.4	0.01	0.01	0.03	172	208
198		8.51	8.49	34.023	26.433	162.4	0.465	2.87	43.6	33.3	2.03	27.0	0.00	0.00	0.02	199	207
200	ISL	8.49	8.47	34.026	26.438	161.9	0.468	2.84	43.2	33.6	2.04	27.1	0.00			201	
228		8.17	8.15	34.056	26.511	155.4	0.513	2.47	37.3	37.9	2.19	29.1	0.00			229	206
250	ISL	7.85	7.83	34.067	26.567	150.3	0.547	2.29	34.3	41.5	2.30	30.4	0.00			251	
269		7.60	7.57	34.077	26.611	146.3	0.575	2.14	31.9	44.6	2.39	31.4	0.00			271	205
300	ISL	7.39	7.36	34.116	26.672	141.0	0.619	1.71	25.4	49.4	2.54	33.1	0.00			302	
317		7.29	7.26	34.139	26.705	138.1	0.643	1.47	21.8	52.1	2.62	34.0	0.00			319	204
379		6.66	6.63	34.180	26.824	127.4	0.725	0.93	13.6	62.5	2.89	37.1	0.00			381	203
400	ISL	6.57	6.53	34.201	26.853	124.9	0.752	0.80	11.6	65.2	2.95	37.7	0.00			403	
437		6.44	6.40	34.237	26.898	121.0	0.797	0.59	8.6	69.4	3.03	38.5	0.00			440	202
500	ISL	6.08	6.04	34.283	26.982	113.7	0.871	0.10	1.4	76.5	3.15	40.0	0.00			503	
513		6.01	5.96	34.293	26.999	112.2	0.886	0.00	0.0	78.0	3.18	40.3	0.00			516	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
31 10.6 N	120 55.0 W	30/03/02	1736 UTC	3820 m	030 30 kn	300 05 10	2	1020.0 mb	14.0 C	12.1 C	34m	8/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.82	14.82	33.288	24.692	324.1	0.000	5.87	101.7	1.6	0.38	0.1	0.00	0.13	0.03	0	
2		14.82	14.82	33.288	24.692	324.2	0.006									2	224
2	A	14.82	14.82	33.288	24.692	324.2	0.006	5.87	101.7	1.6	0.38	0.1	0.00	0.13	0.03	2	223
10	ISL	14.79	14.79	33.288	24.699	323.8	0.032	5.88	101.9	1.5	0.38	0.1	0.00	0.13	0.03	10	
11		14.78	14.78	33.289	24.702	323.5	0.036									11	222
11		14.79	14.79	33.288	24.699	323.8	0.036	5.88	101.9	1.5	0.38	0.1	0.00	0.13	0.03	11	221
20	A	14.78	14.78	33.288	24.701	323.8	0.065	5.88	101.8	1.5	0.38	0.1	0.00	0.15	0.03	20	220
30	ISL	14.78	14.78	33.287	24.701	324.2	0.097	5.86	101.5	1.5	0.37	0.1	0.00	0.13	0.03	30	
32		14.78	14.78	33.287	24.701	324.2	0.104	5.86	101.5	1.5	0.37	0.1	0.00	0.13	0.03	32	219
41	A	14.63	14.62	33.263	24.715	323.2	0.133	5.89	101.7	1.6	0.38	0.1	0.00	0.19	0.06	41	218
49		13.96	13.95	33.164	24.779	317.2	0.158	5.98	101.8	2.0	0.41	0.1	0.01	0.32	0.10	49	217
50	ISL	13.91	13.90	33.165	24.790	316.2	0.162	5.99	101.8	2.0	0.41	0.1	0.01	0.32	0.10	50	
57		13.65	13.64	33.202	24.872	308.6	0.183	6.04	102.1	2.3	0.43	0.3	0.03	0.32	0.13	57	216
67	A	13.42	13.41	33.226	24.938	302.6	0.214	5.99	100.8	2.5	0.45	0.5	0.06	0.31	0.14	67	215
75	ISL	13.52	13.51	33.350	25.013	295.6	0.238	5.72	96.6	3.0	0.49	1.5	0.09	0.35	0.18	75	
77		13.54	13.53	33.393	25.043	292.9	0.244	5.65	95.4	3.2	0.50	1.9	0.09	0.35	0.19	77	214
88	A	11.56	11.55	33.26 D	25.322	266.3	0.275	5.43	87.9	5.9	0.80	6.6	0.05	0.19	0.14	88	213
100		11.41	11.40	33.344	25.415	257.7	0.306	5.23	84.4	7.7	0.96	9.4	0.03	0.10	0.09	100	212
112		11.14	11.13	33.458	25.553	244.8	0.336	4.74	76.1	10.1	1.12	12.1	0.03	0.09	0.09	113	211
125	A	10.51	10.50	33.494	25.692	231.8	0.367	4.41	69.9	13.1	1.30	15.1	0.02	0.04	0.06	126	210
144		9.45	9.43	33.569	25.928	209.4	0.409	4.05	62.7	18.8	1.56	19.5	0.01	0.01	0.04	145	209
150	ISL	9.31	9.29	33.628	25.997	203.0	0.421	3.84	59.3	20.7	1.64	20.9	0.01	0.01	0.04	151	
169		9.10	9.08	33.825	26.185	185.5	0.458	3.14	48.3	26.2	1.88	24.7	0.01	0.00	0.03	170	208
198		8.72	8.70	33.989	26.374	168.0	0.510	2.61	39.9	32.4	2.09	27.8	0.01	0.00	0.03	199	207
200	ISL	8.69	8.67	33.993	26.382	167.3	0.513	2.60	39.7	32.7	2.10	27.9	0.01			201	
228		8.30	8.28	34.024	26.466	159.7	0.559	2.53	38.3	36.1	2.15	29.0	0.00			229	206
250	ISL	8.03	8.00	34.045	26.523	154.6	0.593	2.50	37.6	38.8	2.19	29.5	0.01			251	
267		7.82	7.79	34.057	26.564	150.9	0.619	2.44	36.5	41.1	2.24	29.9	0.01			268	205
300	ISL	7.37	7.34	34.069	26.638	144.2	0.668	2.09	31.0	47.0	2.40	32.0	0.00			302	
317		7.14	7.11	34.074	26.674	140.9	0.692	1.87	27.6	50.3	2.50	33.3	0.00			319	204
377		6.42	6.39	34.105	26.796	129.7	0.773	1.27	18.4	61.7	2.78	36.8	0.00			379	203
400	ISL	6.26	6.22	34.123	26.831	126.6	0.803	1.09	15.7	65.5	2.86	37.7	0.00			402	
436		6.07	6.03	34.156	26.882	122.1	0.848	0.84	12.1	70.9	2.96	38.9	0.00			439	202
500	ISL	5.74	5.70	34.220	26.974	114.0	0.923	0.49	7.0	79.9	3.11	40.6	0.00			503	
515		5.66	5.62	34.235	26.996	112.0	0.940	0.41	5.8	82.0	3.15	41.0	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 50.8 N	121 35.2 W	30/03/02	2303 UTC	4084 m	280 08 kn	260 06 07	2	1018.5 mb	15.3 C	13.0 C		8/8	SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	14.08	14.08	33.108	24.709	322.4	0.000	6.12	104.4	2.4	0.41	0.1	0.00	0.22	0.05	0	
2		14.08	14.08	33.108	24.709	322.5	0.006	6.12	104.4	2.4	0.41	0.1	0.00	0.22	0.05	2	221
10	ISL	14.05	14.05	33.106	24.714	322.2	0.032	6.11	104.1	2.3	0.41	0.1	0.00	0.23	0.04	10	
15		14.00	14.00	33.106	24.725	321.4	0.048									15	220
15		14.01	14.01	33.106	24.723	321.6	0.048	6.10	103.9	2.3	0.41	0.1	0.00	0.24	0.04	15	219
20	ISL	13.96	13.96	33.106	24.733	320.7	0.064	6.11	103.9	2.3	0.41	0.1	0.00	0.25	0.05	20	
30	ISL	13.83	13.83	33.119	24.770	317.5	0.096	6.15	104.4	2.3	0.41	0.1	0.01	0.28	0.08	30	
31		13.81	13.81	33.121	24.776	317.0	0.099	6.15	104.3	2.3	0.41	0.1	0.01	0.28	0.08	31	218
45		13.56	13.55	33.183	24.875	307.9	0.143	6.16	104.0	2.5	0.42	0.2	0.01	0.41	0.11	45	217
50	ISL	13.43	13.42	33.186	24.904	305.3	0.159	6.05	101.8	2.7	0.45	0.6	0.04	0.44	0.16	50	
55		13.29	13.28	33.187	24.933	302.6	0.174	5.93	99.5	3.0	0.49	1.1	0.08	0.46	0.20	55	216
64		13.02	13.01	33.201	24.998	296.7	0.201	5.86	97.8	3.2	0.53	1.8	0.11	0.36	0.20	64	215
75		12.52	12.51	33.181	25.080	289.1	0.233	5.68	93.8	4.2	0.64	3.5	0.11	0.24	0.17	75	214
85		12.23	12.22	33.186	25.140	283.6	0.262	5.59	91.8	4.9	0.68	4.5	0.07	0.20	0.22	85	213
95		11.33	11.32	33.139	25.270	271.3	0.289	5.45	87.7	6.6	0.86	7.4	0.04	0.15	0.11	95	212
100	ISL	11.08	11.07	33.145	25.320	266.7	0.303	5.38	86.1	7.2	0.92	8.4	0.03	0.13	0.11	100	
109		10.76	10.75	33.192	25.413	258.0	0.326	5.23	83.2	8.5	1.01	10.1	0.02	0.10	0.11	109	211
124		10.20	10.19	33.356	25.637	236.8	0.363	4.84	76.1	12.4	1.24	14.1	0.01	0.04	0.05	125	210
125	ISL	10.16	10.15	33.363	25.650	235.7	0.366	4.82	75.7	12.7	1.25	14.3	0.01	0.04	0.05	126	
144		9.44	9.42	33.484	25.864	215.6	0.409	4.47	69.2	16.8	1.45	17.8	0.01	0.02	0.03	145	209
150	ISL	9.41	9.39	33.541	25.913	211.0	0.422	4.43	68.5	17.2	1.45	17.9	0.01	0.02	0.03	151	
169		9.30	9.28	33.706	26.060	197.4	0.460	4.21	65.0	18.9	1.45	18.4	0.01	0.01	0.03	170	208
198		8.85	8.83	33.948	26.322	173.1	0.514	2.93	44.9	29.9	1.96	26.1	0.00	0.01	0.02	199	207
200	ISL	8.83	8.81	33.956	26.331	172.2	0.517	2.89	44.2	30.3	1.97	26.3	0.00			201	
229		8.56	8.54	34.022	26.425	163.8	0.566	2.60	39.6	34.3	2.10	28.0	0.00			230	206
250	ISL	8.23	8.20	34.063	26.508	156.2	0.600	2.30	34.8	38.6	2.24	29.6	0.00			251	
267		7.94	7.91	34.087	26.570	150.4	0.626	2.06	30.9	42.3	2.35	30.9	0.00			268	205
300	ISL	7.40	7.37	34.093	26.653	142.8	0.674	1.80	26.7	48.4	2.50	32.9	0.00			302	
317		7.15	7.12	34.091	26.686	139.7	0.698	1.69	24.9	51.3	2.56	33.8	0.00			319	204
377		6.53	6.50	34.124	26.797	129.8	0.779	1.22	17.7	61.3	2.77	36.7	0.00			379	203
400	ISL	6.35	6.31	34.148	26.839	125.9	0.808	1.00	14.5	65.6	2.87	37.8	0.00			402	
436		6.09	6.05	34.186	26.903	120.2	0.853	0.69	9.9	72.1	3.01	39.4	0.00			439	202
500	ISL	5.66	5.62	34.227	26.990	112.4	0.927	0.47	6.7	81.3	3.12	41.0	0.00			503	
514		5.56	5.52	34.236	27.009	110.7	0.943	0.42	6.0	83.3	3.15	41.4	0.00			517	201

RV DAVID STARR JORDAN CALCOFI CRUISE 0204 STATION 93 100

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT	TYPE
30 31.0 N	122 15.5 W	31/03/02	0512 UTC	4160 m	310 12 kn			1019.4 mb	14.6 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.13	15.13	33.348	24.671	326.1	0.000	5.85	102.1	1.8	0.37	0.1	0.00	0.09	0.02	0	
2		15.13	15.13	33.348	24.671	326.2	0.007	5.85	102.1	1.8	0.37	0.1	0.00	0.09	0.02	2	220
10	ISL	15.18	15.18	33.368	24.676	325.9	0.033	5.84	102.0	1.8	0.38	0.1	0.00	0.09	0.02	10	
16		15.22	15.22	33.390	24.684	325.3	0.052	5.83	101.9	1.8	0.38	0.1	0.00	0.09	0.02	16	219
20	ISL	15.31	15.31	33.431	24.696	324.3	0.065	5.82	102.0	1.8	0.37	0.1	0.00	0.10	0.02	20	
30	ISL	15.53	15.53	33.529	24.724	322.0	0.097	5.79	101.9	1.9	0.34	0.1	0.00	0.14	0.04	30	
31		15.55	15.55	33.538	24.726	321.8	0.101	5.79	102.0	1.9	0.34	0.1	0.00	0.14	0.04	31	218
46		15.54	15.53	33.543	24.733	321.7	0.149	5.77	101.6	1.8	0.34	0.1	0.00	0.16	0.05	46	217
50	ISL	15.52	15.51	33.541	24.736	321.5	0.162	5.77	101.6	1.8	0.34	0.1	0.00	0.19	0.07	50	
55		15.50	15.49	33.538	24.738	321.4	0.178	5.76	101.4	1.8	0.34	0.1	0.00	0.22	0.09	55	216
65		15.50	15.49	33.542	24.741	321.4	0.210	5.75	101.2	1.8	0.35	0.1	0.00	0.25	0.10	65	215
75	ISL	15.29	15.28	33.489	24.747	321.2	0.242	5.80	101.6	1.6	0.35	0.1	0.00	0.27	0.11	75	
76		15.27	15.26	33.483	24.747	321.2	0.245	5.80	101.5	1.6	0.35	0.1	0.00	0.27	0.11	76	214
86		15.17	15.16	33.465	24.755	320.7	0.277	5.80	101.3	1.7	0.36	0.1	0.00	0.31	0.14	86	213
96		15.11	15.10	33.455	24.761	320.5	0.310	5.80	101.2	1.6	0.37	0.1	0.00	0.33	0.15	96	212
100	ISL	15.07	15.05	33.456	24.771	319.7	0.322	5.79	100.9	1.6	0.37	0.2	0.00	0.31	0.14	100	
110		14.98	14.96	33.460	24.793	317.8	0.354	5.75	100.1	1.7	0.38	0.3	0.02	0.25	0.11	110	211
125		12.77	12.75	33.257	25.092	289.3	0.400	5.60	93.0	4.1	0.62	3.5	0.10	0.21	0.18	126	210
145		11.48	11.46	33.415	25.458	254.7	0.454	5.28	85.4	6.8	0.81	7.4	0.02	0.09	0.12	146	209
150	ISL	11.13	11.11	33.418	25.524	248.4	0.467	5.19	83.3	7.8	0.88	8.6	0.02	0.07	0.10	151	
169		9.98	9.96	33.437	25.739	228.1	0.512	4.78	74.8	12.3	1.18	13.6	0.01	0.03	0.04	170	208
200		9.23	9.21	33.754	26.110	193.4	0.577	3.82	58.9	21.6	1.61	20.8	0.01	0.03	0.05	201	207
229		8.92	8.90	33.925	26.293	176.4	0.631	3.71	56.9	25.5	1.68	22.5	0.00			230	206
250	ISL	8.56	8.53	33.990	26.400	166.5	0.667	3.38	51.4	30.3	1.84	24.9	0.00			251	
268		8.23	8.20	34.023	26.477	159.4	0.696	3.03	45.8	34.8	2.00	27.1	0.00			269	205
300	ISL	7.73	7.70	34.053	26.574	150.5	0.746	2.47	36.9	41.6	2.24	30.2	0.00			302	
318		7.48	7.45	34.061	26.617	146.6	0.773	2.18	32.4	45.1	2.36	31.6	0.00			320	204
378		6.84	6.80	34.095	26.733	136.1	0.857	1.56	22.8	55.2	2.63	34.8	0.00			380	203
400	ISL	6.60	6.56	34.105	26.773	132.4	0.887	1.39	20.2	59.0	2.70	35.7	0.00			402	
437		6.24	6.20	34.125 D	26.836	126.7	0.935									440	202
500	ISL	5.84	5.80	34.195	26.942	117.1	1.012	0.63	9.0	76.3	3.04	39.9	0.00			503	
515		5.74	5.70	34.212	26.968	114.7	1.029	0.52	7.4	78.9	3.09	40.5	0.00			518	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
30 10.9 N	122 55.3 W	31/03/02	1110 UTC	3968 m	340 12 kn			1017.9 mb	15.8 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	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.61	15.61	33.525	24.702	323.2	0.000	5.77	101.8	1.7	0.36	0.1	0.00	0.10	0.02	0	
1		15.61	15.61	33.525	24.702	323.2	0.003	5.77	101.8	1.7	0.36	0.1	0.00	0.10	0.02	1	220
10	ISL	15.61	15.61	33.524	24.701	323.5	0.032	5.77	101.8	1.6	0.36	0.1	0.00	0.09	0.01	10	
16		15.60	15.60	33.524	24.704	323.5	0.052	5.78	101.9	1.6	0.36	0.1	0.00	0.09	0.01	16	219
20	ISL	15.60	15.60	33.524	24.704	323.6	0.065	5.78	101.9	1.6	0.36	0.1	0.00	0.09	0.01	20	
30		15.58	15.58	33.524	24.708	323.5	0.097	5.79	102.0	1.7	0.36	0.1	0.00	0.10	0.02	30	218
45		15.55	15.54	33.516	24.710	323.8	0.146	5.77	101.6	1.6	0.36	0.1	0.00	0.11	0.02	45	217
50	ISL	15.54	15.53	33.514	24.710	323.9	0.162	5.77	101.6	1.6	0.36	0.1	0.00	0.11	0.02	50	
60		15.52	15.51	33.510	24.712	324.1	0.194	5.78	101.7	1.6	0.35	0.1	0.00	0.13	0.03	60	216
75		15.29	15.28	33.476	24.737	322.1	0.243	5.80	101.6	1.6	0.36	0.1	0.00	0.20	0.07	75	215
85		15.27	15.26	33.479	24.744	321.8	0.275	5.79	101.4	1.6	0.36	0.1	0.00	0.26	0.14	85	214
95		15.16	15.15	33.464	24.757	320.8	0.307	5.76	100.6	1.6	0.37	0.1	0.00	0.38	0.19	95	213
100	ISL	14.50	14.49	33.385	24.838	313.1	0.323	5.73	98.7	2.2	0.44	0.8	0.04	0.38	0.21	100	
105		13.69	13.68	33.305	24.945	303.0	0.338	5.69	96.4	3.0	0.52	1.8	0.08	0.38	0.22	105	212
115		12.40	12.38	33.248	25.156	282.9	0.368	5.52	91.0	4.7	0.69	4.4	0.08	0.26	0.22	115	211
124		11.55	11.53	33.283	25.343	265.2	0.392	5.30	85.8	6.5	0.85	7.4	0.04	0.17	0.20	125	210
125	ISL	11.47	11.45	33.286	25.360	263.6	0.395	5.28	85.3	6.7	0.87	7.7	0.04	0.16	0.20	126	
140		10.50	10.48	33.347	25.579	242.8	0.433	4.93	78.0	10.3	1.11	11.9	0.02	0.12	0.14	141	209
150	ISL	10.06	10.04	33.441	25.728	228.8	0.456	4.61	72.3	13.2	1.26	14.6	0.01	0.08	0.09	151	
164		9.62	9.60	33.591	25.918	210.9	0.487	4.13	64.2	17.3	1.46	18.0	0.01	0.03	0.04	165	208
195		9.14	9.12	33.841	26.192	185.4	0.549	3.32	51.1	25.1	1.79	23.4	0.00	0.00	0.02	196	207
200	ISL	9.08	9.06	33.872	26.226	182.3	0.558	3.24	49.9	26.1	1.83	24.0	0.00			201	
229		8.73	8.71	34.001	26.382	167.9	0.609	2.89	44.2	31.3	2.00	26.4	0.00			230	206
250	ISL	8.46	8.43	34.039	26.454	161.3	0.643	2.69	40.9	34.6	2.10	27.8	0.00			251	
268		8.22	8.19	34.052	26.501	157.1	0.672	2.54	38.4	37.3	2.17	28.8	0.00			269	205
300	ISL	7.75	7.72	34.062	26.578	150.1	0.721	2.31	34.5	42.1	2.30	30.5	0.00			302	
319		7.48	7.45	34.065	26.620	146.3	0.749	2.16	32.1	45.2	2.38	31.5	0.00			321	204
379		6.79	6.75	34.109	26.750	134.4	0.833	1.38	20.2	56.9	2.71	35.6	0.00			381	203
400	ISL	6.54	6.50	34.123	26.795	130.3	0.861	1.18	17.2	61.4	2.80	36.8	0.00			402	
437		6.14	6.10	34.147	26.866	123.7	0.908	0.89	12.8	68.8	2.94	38.5	0.00			440	202
500	ISL	5.75	5.71	34.188	26.948	116.5	0.984	0.61	8.7	77.7	3.09	40.4	0.00			503	
514		5.66	5.62	34.197	26.966	114.8	1.000	0.55	7.8	79.7	3.12	40.8	0.00			517	201

RV DAVID STARR JORDAN | CALCOFI CRUISE 0204 | STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	BOTTOM	WIND SPEED	WAVES	WEA	BAROMETER	DRY	WET	SECCHI	CLD AMT TYPE
29 50.7 N	123 35.2 W	31/03/02	1857 UTC	4053 m	320 05 kn	330 04 08	2	1019.1 mb	13.6 C	12.4 C	37m	8/8 SC

DEPTH m		TEMP DEG C	POT TEMP DEG C	SALINITY	SIGMA THETA	SVA	DYN HT	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	PRES db	SAMP
0	ISL	15.63	15.63	33.327	24.545	338.1	0.000	5.79	102.0	1.5	0.36	0.1	0.00	0.06	0.01	0	
2	A	15.63	15.63	33.327	24.545	338.2	0.007	5.79	102.0	1.5	0.36	0.1	0.00	0.06	0.01	2	224
10	ISL	15.61	15.61	33.351	24.568	336.2	0.034	5.80	102.2	1.5	0.36	0.1	0.00	0.08	0.02	10	
12		15.61	15.61	33.361	24.576	335.5	0.040									12	223
12		15.61	15.61	33.358	24.573	335.8	0.040	5.80	102.2	1.5	0.36	0.1	0.00	0.09	0.02	12	222
20	ISL	15.75	15.75	33.407	24.580	335.4	0.067	5.77	102.0	1.4	0.35	0.1	0.00	0.08	0.01	20	
21	A	15.77	15.77	33.414	24.581	335.3	0.071	5.76	101.8	1.4	0.35	0.1	0.00	0.08	0.01	21	221
29		15.91	15.91	33.464	24.589	334.9	0.097	5.74	101.8	1.6	0.35	0.1	0.00	0.08	0.01	29	220
30	ISL	15.92	15.92	33.468	24.589	334.8	0.101	5.74	101.8	1.6	0.35	0.1	0.00	0.08	0.01	30	
37		15.98	15.97	33.488	24.591	334.8	0.124	5.74	101.9	1.6	0.33	0.1	0.00	0.08	0.01	37	219
46	A	15.89	15.88	33.490	24.614	333.0	0.154	5.75	101.9	1.7	0.33	0.1	0.00	0.10	0.02	46	218
50	ISL	16.07	16.06	33.558	24.625	332.0	0.168	5.73	102.0	1.8	0.32	0.1	0.00	0.13	0.03	50	
55		16.33	16.32	33.659	24.644	330.5	0.184	5.70	102.0	1.9	0.31	0.1	0.00	0.18	0.05	55	217
64		16.47	16.46	33.767	24.695	325.9	0.214	5.64	101.3	1.9	0.30	0.1	0.00	0.24	0.09	64	216
73	A	15.68	15.67	33.578	24.729	322.8	0.243	5.74	101.4	1.8	0.34	0.1	0.00	0.21	0.06	73	215
75	ISL	15.67	15.66	33.575	24.729	322.9	0.249	5.74	101.4	1.7	0.34	0.1	0.00	0.21	0.06	75	
85		15.60	15.59	33.560	24.734	322.8	0.282	5.76	101.6	1.6	0.34	0.1	0.00	0.24	0.07	85	214
96	A	15.50	15.49	33.595	24.783	318.4	0.317	5.71	100.5	2.0	0.35	0.2	0.01	0.33	0.22	96	213
100	ISL	15.26	15.24	33.596	24.837	313.4	0.330	5.69	99.7	2.3	0.37	0.4	0.03	0.32	0.21	100	
109		14.45	14.43	33.546	24.973	300.5	0.357	5.63	97.0	3.0	0.43	1.3	0.07	0.27	0.18	109	212
122		12.78	12.76	33.303	25.125	286.0	0.395	5.55	92.2	4.2	0.61	3.6	0.05	0.21	0.19	123	211
125	ISL	12.43	12.41	33.272	25.169	281.9	0.404	5.52	91.0	4.7	0.66	4.4	0.04	0.19	0.17	126	
135	A	11.39	11.37	33.233	25.333	266.3	0.431	5.39	86.9	6.6	0.83	7.3	0.02	0.12	0.08	136	210
150	ISL	10.33	10.31	33.363	25.621	239.0	0.469	5.15	81.2	9.9	1.03	11.0	0.01	0.05	0.04	151	
152		10.22	10.20	33.385	25.657	235.6	0.474	5.12	80.6	10.4	1.05	11.4	0.01	0.04	0.04	153	209
168		9.50	9.48	33.444	25.823	219.9	0.510	4.89	75.8	13.4	1.22	14.1	0.01	0.01	0.02	169	208
198		9.14	9.12	33.669	26.057	198.2	0.573	4.49	69.1	17.9	1.39	17.4	0.00	0.00	0.02	199	207
200	ISL	9.14	9.12	33.694	26.077	196.4	0.577	4.48	69.0	18.2	1.39	17.6	0.00			201	
228		9.06	9.04	33.988	26.320	173.9	0.629	4.27	65.7	23.1	1.46	19.8	0.00			229	206
250	ISL	8.77	8.74	34.005	26.380	168.6	0.666	3.99	61.0	26.4	1.59	21.8	0.00			251	
267		8.53	8.50	34.015	26.425	164.5	0.695	3.77	57.3	29.3	1.72	23.5	0.00			268	205
300	ISL	7.78	7.75	34.017	26.539	153.8	0.747	3.09	46.2	38.3	2.04	27.8	0.00			302	
317		7.37	7.34	34.016	26.597	148.4	0.773	2.72	40.3	43.2	2.20	30.0	0.00			319	204
377		6.56	6.53	34.031	26.719	137.1	0.859	1.96	28.5	55.1	2.55	34.6	0.00			379	203
400	ISL	6.30	6.26	34.044	26.764	133.0	0.890	1.72	24.8	59.7	2.65	35.9	0.00			402	
437		5.96	5.92	34.073	26.830	126.9	0.938	1.38	19.8	66.8	2.80	37.7	0.00			440	202
500	ISL	5.71	5.67	34.146	26.919	119.1	1.015	0.84	12.0	76.2	3.00	40.0	0.00			503	
515		5.65	5.61	34.163	26.940	117.2	1.033	0.71	10.1	78.4	3.05	40.5	0.00			518	201

A) PRIMARY PRODUCTIVITY SAMPLES WERE TAKEN FROM THESE LEVELS.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 77 49

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
35 5.2 N	120 46.6 W	12/04/02	1809 UTC	13 m		1213 - 1900 PST	1213 PST	1903 PST	152.0 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	10.65	33.781	25.889	4.39	69.9	21.5	1.59	18.7	0.19	1.24	0.30	79. A	12.8	13.1	12.9	0.21
7	10.61	33.781	25.896	4.51	71.8	21.5	1.59	18.6	0.19	1.22	0.11	44.	6.0	6.5	6.2	0.15
16	10.48	33.786	25.923	4.23	67.1	21.8	1.60	18.8	0.18	1.01	0.38	15.	3.9	4.1	4.0	0.12
26	10.28	33.786	25.957	3.93	62.1	22.3	1.64	19.6	0.15	0.70	0.35	4.6	0.56	0.49	0.53	0.07
34	9.88	33.810	26.044	3.42	53.6	24.1	1.77	21.6	0.09	0.34	0.26	1.8	0.64	0.76	0.70	0.08
41	9.69	33.877	26.128	2.95	46.0	27.2	1.93	23.9	0.06	0.09	0.24					
48	9.64	33.891	26.147	2.88	44.9	27.7	1.95	24.4	0.04	0.07	0.19	0.35	0.02	0.01	0.01	0.05

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 77 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 2.9 N	122 56.2 W	11/04/02	1747 UTC	14 m		1215 - 1907 PST	1217 PST	1907 PST	970.0 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	13.44	33.273	24.968	6.28	105.8	3.2	0.44	1.0	0.05	0.62	0.15	80. A	3.9	4.0	3.9	0.16
8	13.43	33.273	24.970	6.28	105.8	3.0	0.43	0.9	0.05	0.64	0.13	42.	14.2	15.0	14.6	0.17
17	13.42	33.273	24.972	6.28	105.8	3.1	0.43	0.9	0.05	0.67	0.11	16.	28.1	27.3	27.6	0.59
28	13.40	33.274	24.978	6.26	105.4	3.1	0.43	1.0	0.05	0.67	0.13	4.6	34.4	26.7	30.5	0.98
37	12.93	33.352	25.132	6.26	104.4	3.4	0.48	1.8	0.09	0.90	0.24	1.7	16.2	20.0	18.1	0.23
44	12.55	33.395	25.240	6.08	100.6	4.0	0.58	3.2	0.23	0.83	0.32					
52	12.31	33.436	25.318	5.86	96.5	4.7	0.67	4.7	0.37	0.70	0.37	0.33	5.8	5.4	5.7	0.10

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 79 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 42.5 N	124 44.7 W	10/04/02	1837 UTC	17 m		1209 - 1905 PST	1209 PST	1859 PST	345.5 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
1	14.18	33.081	24.668	6.21	106.1	3.2	0.42	0.3	0.02	0.46	0.05	91. A	6.5	6.1	6.3	0.12
10	13.69	33.086	24.773													
11	13.68	33.081	24.771	6.25	105.7	3.1	0.42	0.4	0.02	0.41	0.07	37.	8.9	9.4	9.1	0.13
21	13.33	33.232	24.959	6.36	106.9	3.1	0.42	0.8	0.04	0.45	0.08	15.	9.1	9.3	9.2	0.14
28	13.12	33.277	25.036	6.31	105.6	3.2	0.43	1.1	0.05	0.59	0.14					
34	13.06	33.291	25.059	6.29	105.1	3.2	0.44	1.2	0.05	0.49 B	0.16 B	4.6	6.7	6.5	6.6	0.12
42	12.86	33.319	25.120	6.19	103.1	3.2	0.49	1.8	0.09	0.57 B	0.23 B	2.3	2.5	2.8	2.7	0.09
54	12.57	33.337	25.191	6.03	99.8	3.5	0.57	2.7	0.19	0.51	0.25					
63	12.30	33.368	25.267	5.80	95.5	4.4	0.67	4.6	0.43	0.28	0.17	0.34	0.25	0.20	0.23	0.09

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

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 80 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 49.0 N	121 50.3 W	09/04/02	1730 UTC	16 m		1200 - 1850 PST	1200 PST	1853 PST	374.9 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	13.52	33.339	25.003	6.24	105.4	3.0	0.42	0.7	0.04	0.57	0.08	91. A	9.3	8.7	9.0	0.39
9	13.45	33.338	25.016	6.24	105.2	2.9	0.40	0.7	0.04	0.59	0.08	42.	12.9	12.8	12.9	0.23
20	13.43	33.339	25.022	6.24	105.2	2.9	0.40	0.7	0.04	0.62	0.12	15.	10.0	10.4	10.2	0.33
32	13.27	33.362	25.072	6.26	105.2	3.1	0.42	1.0	0.05	0.72	0.16	4.6	5.5	5.6	5.6	0.24
42	12.93	33.379	25.153	6.19	103.2	3.4	0.48	1.9	0.10	0.68	0.23	1.8	2.1	1.8	2.0	0.09
50	12.60	33.419	25.249	6.04	100.1	3.9	0.57	3.1	0.23	0.68	0.35					
59	12.38	33.482	25.340	5.75	94.9	4.7	0.69	4.8	0.48	0.38	0.25	0.35	0.13	0.21	0.17	0.08

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.8, 1.8, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 83 40.8

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
34 13.6 N	119 25.9 W	08/04/02	1826 UTC	11 m		1200 - 1850 PST	1200 PST	1853 PST	797.3 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	12.85	33.747	25.453	6.80	113.5	1.9	0.35	1.1	0.04	2.78	0.53	87. A	19.0	13.7	16.4	0.23
6	12.80	33.747	25.463	6.80	113.4	2.0	0.34	1.1	0.04	2.37	0.62	43.	31.5	30.0	30.8	0.21
14	12.61	33.742	25.496	6.67	110.8	1.8	0.37	1.6	0.05	3.91	0.93	14.	41.5	44.7	43.1	0.39
22	11.87	33.756	25.649	5.45	89.1	5.6	0.86	6.1	0.14	4.26	1.17	4.6	25.0	24.7	24.8	0.19
29	11.23	33.768	25.776	4.05	65.3	13.5	1.42	13.2	0.24	0.38	0.55	1.7	1.0	0.89	0.96	0.09
38	11.22	33.769	25.779	4.00	64.5	14.1	1.47	13.2	0.25	0.56	0.72	0.50	0.33	0.24	0.28	0.08

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 83 70

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 14.7 N	121 26.8 W	07/04/02	1902 UTC	16 m		1208 - 1855 PST	1208 PST	1853 PST	291.5 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
2	13.33	33.369	25.064	6.25	105.1	3.1	0.48	1.5	0.07	0.63	0.13	83. A	8.3	9.2	8.8	0.10
10	13.32	33.370	25.067	6.26	105.3	3.0	0.47	1.5	0.07	0.68	0.12	38.	10.1	8.8	9.4	0.10
20	13.25	33.398	25.103	6.25	105.0	3.2	0.49	1.8	0.08	0.74	0.18	15.	8.6	7.7	8.1	0.09
32	12.59	33.498	25.311	6.00	99.4	4.3	0.66	3.9	0.21	0.95	0.45	4.6	5.0	4.5	4.7	0.06
42	12.52	33.530	25.350	5.86	97.0	4.4	0.70	4.3	0.30	0.55	0.45	1.8	0.89	0.99	0.94	0.05
51	12.44	33.548	25.379	5.77	95.4	4.9	0.74	4.7	0.43	0.39	0.35					
59	12.38	33.569	25.407	5.69	93.9	5.1	0.78	5.2	0.41	0.28	0.25	0.35	0.08	0.06	0.07	0.06

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 83 110

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 53.9 N	124 10.2 W	06/04/02	1805 UTC	34 m		1219 - 1900 PST	1219 PST	1900 PST	123.8 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	15.49	33.342	24.587	5.82	102.3	1.7	0.36	0.1	0.00	0.09	0.02	91. A	1.0	1.1	1.1	0.06
10	15.49	33.342	24.588	5.81	102.1	1.6	0.36	0.0	0.00	0.09	0.01					
20	15.34	33.337	24.617	5.80	101.6	1.6	0.36	0.1	0.00	0.09	0.02	41.	1.5	1.5	1.5	0.09
31	15.49	33.427	24.654	5.80	102.0	1.6	0.34	0.1	0.00	0.12	0.03					
42	15.41	33.419	24.666	5.81	102.0	1.6	0.35	0.0	0.00	0.16	0.03	15.	1.5	1.4	1.4	0.08
50	15.43	33.439	24.677	5.80	101.9	1.6	0.35	0.0	0.00	0.15	0.03					
59	15.44	33.446	24.681	5.79	101.7	1.6	0.35	0.1	0.01	0.16	0.03					
68	15.44	33.455	24.688	5.80	101.9	1.6	0.35	0.0	0.01	0.17	0.04	4.6	0.85	0.83	0.84	0.06
78	15.37	33.462	24.709	5.79	101.6	1.9	0.35	0.1	0.01	0.26	0.13					
89	14.07	33.257	24.829	5.82	99.3	2.4	0.43	0.5	0.09	0.35	0.23	1.8	0.91	0.97	0.94	0.02
101	13.60	33.299	24.958	5.68	96.0	3.3	0.51	1.8	0.10	0.28	0.25					
113	12.56	33.148	25.048	5.68	93.9	4.0	0.60	3.1	0.06	0.26	0.20					
126	11.23	33.141	25.290	5.41	86.9	6.7	0.86	7.4	0.03	0.11	0.13	0.34	0.06	0.06	0.06	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 87 55

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
33 9.4 N	119 59.9 W	04/04/02	1722 UTC	21 m		1203 - 1847 PST	1203 PST	1847 PST	262.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.62	33.192	24.869	6.18	104.5	2.7	0.41	0.2	0.02	0.35	0.06	93. A	4.5	4.4	4.4	0.07
12	13.88	33.381	24.962	6.08	103.4	2.3	0.39	0.1	0.01	0.28	0.07	42.	5.1	5.3	5.2	0.08
19	13.75	33.390 D	24.996	6.03	102.3	2.5	0.42	0.5	0.05	0.44	0.13					
26	13.57	33.393	25.035	5.99	101.3	2.7	0.45	0.9	0.08	0.51	0.17	15.	6.6	6.9	6.8	0.05
33	13.13	33.362	25.100	5.95	99.7	3.3	0.53	2.1	0.14	0.51	0.24					
41	12.68	33.308	25.147	6.03	100.0	3.4	0.57	2.7	0.18	0.51	0.21	5.0	4.2	4.3	4.2	0.05
48	12.30	33.282	25.200	5.86	96.4	4.4	0.67	4.5	0.20	0.43	0.17					
55	11.36	33.290	25.381	5.46	88.0	7.1	0.91	8.7	0.03	0.17	0.11	1.8	0.47	0.49	0.48	0.05
66	11.13	33.401	25.509	5.19	83.3	9.4	1.06	11.1	0.02	0.12	0.09					
77	10.19	33.465	25.723	4.58	72.1	14.2	1.36	15.9	0.02	0.06	0.07	0.36	0.04	0.02	0.03	0.04

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.8, 1.8, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 87 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 19.4 N	121 43.0 W	05/04/02	1733 UTC	21 m		1210 - 1904 PST	1210 PST	1856 PST	321.9 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	13.96	33.299	24.882	6.12	104.2	2.5	0.39	0.1	0.01	0.32	0.05	86. A	5.2	5.5	5.3	0.08
12	13.91	33.297	24.891	6.12	104.1	2.6	0.39	0.2	0.01	0.35	0.05	42.	7.4	7.1	7.3	0.09
19	13.62	33.278	24.936	6.14	103.8	2.6	0.39	0.2	0.02	0.36	0.10					
26	13.52	33.278	24.956	6.14	103.6	2.6	0.42	0.4	0.03	0.48	0.12	15.	7.0	6.9	7.0	0.08
34	13.20	33.292	25.032	6.09	102.1	3.0	0.47	1.2	0.10	0.52	0.18					
42	13.09	33.307	25.065	6.06	101.4	3.2	0.50	1.6	0.13	0.50	0.22	4.6	4.8	4.6	4.7	0.05
48	13.11	33.330	25.079	6.04	101.1	3.4	0.51	1.7	0.14	0.49	0.18					
55	12.97	33.353	25.125	5.92	98.8	3.6	0.56	2.5	0.20	0.42	0.19	1.8	1.4	1.3	1.3	0.05
66	12.94	33.442	25.200	5.88	98.1	4.0	0.60	3.4	0.18	0.36	0.16					
78	12.49	33.426	25.276	5.57	92.1	5.4	0.72	5.6	0.13	0.13	0.08	0.33	0.05	0.06	0.06	0.04

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 90 53

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 39.2 N	119 29.3 W	02/04/02	1748 UTC	21 m		1202 - 1900 PST	1202 PST	1840 PST	434.7 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	13.02	33.267	25.047	6.16	102.9	3.0	0.50	1.5	0.07	0.42	0.11	86. A	10.7	10.4	10.6	0.08
12	12.94	33.279	25.073	6.17	102.9	3.0	0.49	1.6	0.07	0.48	0.14	42.	11.7	12.1	11.9	0.08
19	13.01	33.320	25.091	6.19	103.4	2.8	0.48	1.5	0.07	0.57	0.17					
26	13.15	33.445	25.160	6.17	103.4	2.2	0.46	1.4	0.06	0.67	0.19	15.	10.5	10.3	10.4	0.11
34	13.05	33.517	25.236	6.13	102.6	2.0	0.47	1.7	0.06	0.61	0.22					
42	12.85	33.484	25.250	6.06	101.0	2.4	0.53	2.4	0.08	0.55	0.29	4.6	3.6	3.7	3.7	0.09
48	12.63	33.464	25.278	5.94	98.5	3.3	0.60	3.4	0.09	0.54	0.25					
55	11.59	33.470	25.479	5.30	86.0	8.0	0.97	8.9	0.13	0.51	0.26	1.8	0.45	0.40	0.42	0.06
66	11.30	33.629	25.656	4.91	79.2	10.9	1.17	11.2	0.21	0.15	0.34					
78	10.92	33.712	25.789	4.30	68.9	15.4	1.40	14.9	0.28	0.09	0.30	0.33	0.04	0.04	0.04	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 90 90

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 25.3 N	121 59.1 W	01/04/02	1840 UTC	22 m		1212 - 1848 PST	1212 PST	1848 PST	217.9 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	14.25	33.488	24.967	6.02	103.3	2.6	0.37	0.1	0.00	0.29	0.06	93. A	5.0	5.1	5.1	0.07
14	14.19	33.486	24.979	6.04	103.5	2.6	0.37	0.1	0.00	0.32	0.06	38.	5.4	5.7	5.6	0.09
21	14.19	33.486	24.979	6.04	103.5	2.6	0.37	0.1	0.01	0.32	0.07					
28	14.18	33.485	24.980	6.05	103.6	2.6	0.37	0.1	0.01	0.31	0.09	14.	3.5	3.5	3.5	0.06
37	14.08	33.468	24.989	6.04	103.2	2.6	0.38	0.2	0.00	0.34	0.09					
45	13.24	33.344	25.064	6.11	102.6	2.8	0.45	1.1	0.06	0.42	0.16	4.3	2.6	2.4	2.5	0.04
51	13.14	33.334	25.077	6.05	101.3	2.9	0.48	1.4	0.08	0.44	0.18					
57	13.18	33.362	25.091	6.00	100.6	3.0	0.50	1.5	0.09	0.45	0.18	1.9	0.70	0.69	0.70	0.03
70	12.40	33.399	25.272	5.60	92.4	5.1	0.73	5.6	0.07	0.14	0.09					
82	11.47	33.418	25.461	5.08	82.2	8.6	1.01	10.1	0.04	0.14	0.11	0.33	0.05	0.04	0.05	0.03

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 93 26.7

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 57.1 N	117 18.3 W	28/03/02	1932 UTC	5 m		1207 - 1830 PST	1154 PST	1830 PST	242.3 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	13.80	33.621	25.164	8.51	144.8	0.5	0.10	0.0	0.00			74. A	30.4	28.0	29.2	0.56
3	13.49	33.612	25.220	8.34	141.0	0.6	0.12	0.0	0.00	2.57	0.88	40.	26.7	27.9	27.3	0.73
6	13.27	33.605	25.259	8.00	134.6	0.8	0.13	0.0	0.00	2.29	1.07	16.	17.7	16.4	17.0	0.60
10	12.69	33.597	25.368	7.35	122.2	1.3	0.21	0.0	0.00	2.16	0.81	4.6	8.0	8.0	8.0	0.46
13	12.03	33.588	25.488	5.34	87.5	5.4	0.74	5.9	0.20	7.14	2.04	1.8	6.2	5.5	5.8	0.35
19	11.68	33.616	25.575	5.32	86.6	5.9	0.86	7.7	0.22	6.58	2.46	0.29	0.67	0.67	0.67	0.25

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.8, 1.8, 0.34 PERCENT RESPECTIVELY.

PRIMARY PRODUCTIVITY CASTS

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 93 50

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
32 10.6 N	118 53.3 W	29/03/02	1900 UTC	19 m		1215 - 1840 PST	1201 PST	1840 PST	428.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
1	13.97	33.511	25.043	6.12	104.4	2.8	0.45	1.1	0.04	0.51	0.11	92. A	13.5	12.0	12.8	0.07
11	13.88	33.508	25.060	6.11	104.0	3.2	0.57 U	1.1	0.04	0.47	0.10	41.	13.1	13.3	13.2	0.12
19	13.83	33.502	25.066	6.11	103.9	3.1	0.43	1.1	0.04	0.59	0.12					
25	13.70	33.509	25.098	6.11	103.6	3.2	0.45	1.5	0.05	0.69	0.16	13.	8.1	8.5	8.3	0.18
31	13.29	33.519	25.189	6.05	101.8	2.6	0.50	2.2	0.08	0.96	0.33					
37	13.02	33.534	25.255	5.82	97.4	4.1	0.60	3.6	0.12	0.92	0.39	5.0	5.6	5.2	5.4	0.09
49	12.81	33.569	25.324	5.64	93.9	5.6	0.70	4.8	0.17	0.70	0.52	1.9	1.1	1.2	1.2	0.12
60	12.59	33.540	25.344	5.54	91.8	6.1	0.79	5.6	0.18	0.62	0.44					
70	12.32	33.584	25.431	5.22	86.1	8.1	0.86	7.8	0.22	0.28	0.27	0.35	0.07	0.01	0.04	0.10

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 93 80

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
31 10.6 N	120 55.0 W	30/03/02	1736 UTC	34 m		1208 - 1847 PST	1208 PST	1847 PST	159.4 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	14.82	33.288	24.692	5.87	101.7	1.6	0.38	0.1	0.00	0.13	0.03	91. A	2.2	2.0	2.1	0.06
11	14.79	33.288	24.699	5.88	101.9	1.5	0.38	0.1	0.00	0.13	0.03					
20	14.78	33.288	24.701	5.88	101.8	1.5	0.38	0.1	0.00	0.15	0.03	41.	2.2	2.3	2.3	0.05
32	14.78	33.287	24.701	5.86	101.5	1.5	0.37	0.1	0.00	0.13	0.03					
41	14.63	33.263	24.715	5.89	101.7	1.6	0.38	0.1	0.00	0.19	0.06	16.	1.7	1.8	1.7	0.05
49	13.96	33.164	24.779	5.98	101.8	2.0	0.41	0.1	0.01	0.32	0.10					
57	13.65	33.202	24.872	6.04	102.1	2.3	0.43	0.3	0.03	0.32	0.13					
67	13.42	33.226	24.938	5.99	100.8	2.5	0.45	0.5	0.06	0.31	0.14	4.9	1.8	1.6	1.7	0.05
77	13.54	33.393	25.043	5.65	95.4	3.2	0.50	1.9	0.09	0.35	0.19					
88	11.56	33.26D	25.322	5.43	87.9	5.9	0.80	6.6	0.05	0.19	0.14	1.9	0.36	0.40	0.38	0.03
100	11.41	33.344	25.415	5.23	84.4	7.7	0.96	9.4	0.03	0.10	0.09					
112	11.14	33.458	25.553	4.74	76.1	10.1	1.12	12.1	0.03	0.09	0.09					
125	10.51	33.494	25.692	4.41	69.9	13.1	1.30	15.1	0.02	0.04	0.06	0.35	0.04	0.03	0.03	0.01

RV DAVID STARR JORDAN — CALCOFI CRUISE 0204 — STATION 93 120

LATITUDE	LONGITUDE	DAY/MO/YR	CAST TIME	SECCHI	FOREL	INCUBATION TIME	LAN	CIVIL TWILIGHT	INTEGRATED VALUE
29 50.7 N	123 35.2 W	31/03/02	1857 UTC	37 m		1218 - 1857 PST	1218 PST	1857 PST	108.1 mg C/m2

DEPTH m	TEMP DEG C	SALINITY	SIGMA THETA	OXYGEN ml/l	OXY PCT	SIO3 uM/l	PO4 uM/l	NO3 uM/l	NO2 uM/l	CHL-A ug/l	PHAEO ug/l	LIGHT PCT	UPTAKE (mg C/m3) 1	2	MEAN	DARK
2	15.63	33.327	24.545	5.79	102.0	1.5	0.36	0.1	0.00	0.06	0.01	92. A	0.97	0.99	0.98	0.06
12	15.61	33.358	24.573	5.80	102.2	1.5	0.36	0.1	0.00	0.09	0.02					
21	15.77	33.414	24.581	5.76	101.8	1.4	0.35	0.1	0.00	0.08	0.01	42.	1.1	1.2	1.2	0.08
29	15.91	33.464	24.589	5.74	101.8	1.6	0.35	0.1	0.00	0.08	0.01					
37	15.98	33.488	24.591	5.74	101.9	1.6	0.33	0.1	0.00	0.08	0.01					
46	15.89	33.490	24.614	5.75	101.9	1.7	0.33	0.1	0.00	0.10	0.02	15.	0.87	0.90	0.88	0.07
55	16.33	33.659	24.644	5.70	102.0	1.9	0.31	0.1	0.00	0.18	0.05					
64	16.47	33.767	24.695	5.64	101.3	1.9	0.30	0.1	0.00	0.24	0.09					
73	15.68	33.578	24.729	5.74	101.4	1.8	0.34	0.1	0.00	0.21	0.06	4.8	0.95	0.94	0.95	0.04
85	15.60	33.560	24.734	5.76	101.6	1.6	0.34	0.1	0.00	0.24	0.07					
96	15.50	33.595	24.783	5.71	100.5	2.0	0.35	0.2	0.01	0.33	0.22	1.9	0.78	0.67	0.73	0.02
109	14.45	33.546	24.973	5.63	97.0	3.0	0.43	1.3	0.07	0.27	0.18					
122	12.78	33.303	25.125	5.55	92.2	4.2	0.61	3.6	0.05	0.21	0.19					
135	11.39	33.233	25.333	5.39	86.9	6.6	0.83	7.3	0.02	0.12	0.08	0.37	0.07	0.04	0.06	0.02

A) INCUBATION LIGHT INTENSITIES WERE 94, 41, 15, 4.8, 1.8, 0.34 PERCENT RESPECTIVELY.

CalCOFI Cruise 0204

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)
77	49	35 04.9	120 47.5	04/12	0923	0930	165	71	146	146
77	51	35 01.2	120 55.5	04/12	0711	0732	427	208	129	129
77	55	34 53.3	121 12.5	04/12	0345	0406	442	207	177	177
77	60	34 42.4	121 33.3	04/11	2325	2346	470	204	115	115
77	70	34 23.4	122 14.4	04/11	1648	1710	426	208	178	178
77	80	34 03.4	122 57.8	04/11	0823	0845	465	207	67	67
77	90	33 43.0	123 39.1	04/11	0216	0238	457	208	153	153
77	100	33 23.5	124 19.9	04/10	1933	1954	419	214	91	91
80	55	34 18.4	120 47.8	04/08	2311	2332	422	206	235	235
80	60	34 08.2	121 10.4	04/09	0249	0310	441	212	177	177
80	70	33 49.1	121 51.0	04/09	0822	0844	446	212	155	155
80	80	33 29.2	122 31.3	04/09	1600	1621	415	212	51	51
80	90	33 09.6	123 13.3	04/09	2211	2233	420	209	71	71
80	100	32 49.7	123 54.8	04/10	0358	0419	426	212	63	63
82	47	34 17.2	120 02.0	04/08	1530	1552	375	213	235	235
83	40.6	34 13.5	119 25.7	04/08	0957	1000	67	27	298	298
83	42	34 10.8	119 31.4	04/08	0810	0825	289	141	540	211
83	51	33 52.9	120 08.7	04/08	0212	0222	123	92	794	794
83	55	33 44.0	120 24.8	04/07	2256	2318	478	211	178	178
83	60	33 34.6	120 45.7	04/07	1840	1902	435	211	138	138
83	70	33 14.7	121 27.3	04/07	1212	1233	470	213	132	132
83	80	32 54.4	122 08.7	04/07	0524	0546	449	209	53	53
83	90	32 34.1	122 48.9	04/06	2257	2318	437	204	94	94
83	100	32 15.4	123 29.6	04/06	1638	1700	463	211	43	43
83	110	31 54.5	124 10.6	04/06	0851	0913	449	203	7	7
87	33	33 53.0	118 29.8	04/03	1443	1448	99	40	375	375
87	35	33 48.5	118 37.6	04/03	1800	1821	435	213	274	274
87	40	33 39.6	118 59.1	04/03	2200	2221	428	214	166	166
87	45	33 29.6	119 19.6	04/04	0154	0216	428	212	234	234
87	50	33 18.8	119 39.4	04/04	0522	0529	149	62	181	181
87	55	33 09.5	120 00.8	04/04	0811	0832	455	211	99	99
87	60	33 00.1	120 20.7	04/04	1951	2012	445	214	106	106
87	70	32 39.6	120 59.5	04/05	0217	0239	465	211	120	110
87	80	32 18.8	121 43.1	04/05	0819	0841	433	209	86	86
87	90	31 58.6	122 23.6	04/05	1549	1611	440	211	80	80
87	100	31 39.1	123 04.0	04/05	2135	2157	438	213	105	105
87	110	31 19.3	123 44.7	04/06	0326	0347	427	210	26	26
90	28	33 28.5	117 45.8	04/03	0550	0556	121	57	207	207
90	30	33 26.0	117 54.5	04/03	0345	0406	437	211	82	82
90	35	33 15.1	118 14.0	04/02	2358	0019	416	210	140	140
90	37	33 11.4	118 23.8	04/02	2118	2140	425	214	89	89
90	45	32 56.0	118 56.5	04/02	1618	1639	461	211	65	65
90	53	32 39.5	119 30.1	04/02	1102	1124	455	210	119	119
90	60	32 25.6	119 58.3	04/02	0553	0614	450	211	127	120
90	70	32 05.5	120 38.6	04/01	2344	0006	455	209	242	227
90	80	31 45.9	121 20.0	04/01	1740	1801	466	213	107	107
90	90	31 26.2	121 58.4	04/01	1152	1214	473	207	76	76
90	100	31 05.5	122 39.6	04/01	0538	0559	425	214	66	66
90	110	30 45.3	123 20.1	03/31	2345	0007	456	210	37	37
90	120	30 25.3	124 00.2	03/31	1737	1758	454	215	18	18
93	26.7	32 57.3	117 18.3	03/28	1252	1257	73	42	152	152
93	28	32 54.8	117 23.7	03/28	1529	1550	452	215	53	53
93	30	32 50.9	117 31.8	03/28	1823	1844	448	213	56	56
93	35	32 40.8	117 52.4	03/28	2217	2239	447	214	72	72
93	40	32 30.9	118 12.9	03/29	0357	0419	448	214	248	248
93	45	32 20.8	118 33.3	03/29	0756	0817	453	215	161	161
93	50	32 10.8	118 53.4	03/29	1212	1234	437	206	149	149
93	55	32 01.7	119 14.2	03/29	1637	1659	448	218	83	83
93	60	31 50.5	119 35.0	03/29	2102	2123	455	214	169	114
93	70	31 31.3	120 15.3	03/30	0259	0321	453	206	152	152
93	80	31 10.8	120 55.6	03/30	0808	0830	456	215	114	114
93	90	30 50.4	121 35.3	03/30	1612	1634	468	215	77	77
93	100	30 31.5	122 16.0	03/30	2216	2238	438	218	41	41
93	110	30 10.3	122 55.1	03/31	0407	0428	452	213	35	35
93	120	29 52.2	123 35.9	03/31	0930	0951	455	219	18	18

FIGURES

Avifauna Observations

CalCOFI Cruise 0201

1a. Western Gull distribution.

1b. California Gull distribution.

1c. Black-legged Kittiwake distribution.

1d. Red Phalarope distribution.

1e. Northern Fulmar distribution.

1f. Herring Gull distribution.

CalCOFI Cruise 0204

1a. Western Gull distribution.

1b. Red Phalarope distribution.

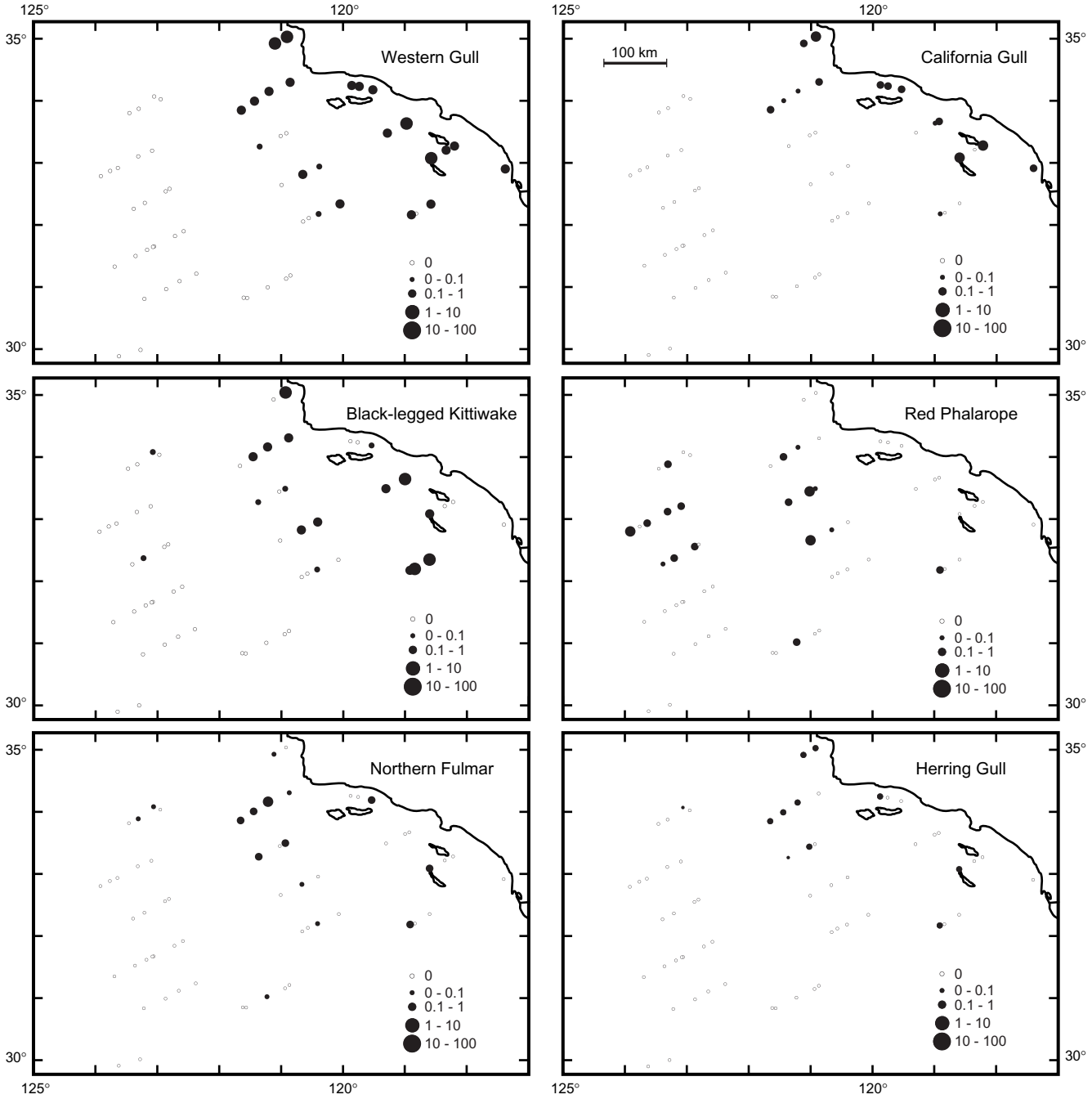
1c. Leach’s Storm-petrel distribution.

1d. Cassin’s Auklet distribution.

1e. California Gull distribution.

1f. Black-footed Albatross distribution.

CalCOFI Cruise 0201



CalCOFI Cruise 0204