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OCEANOGRAPHIC OBSERVATIONS IN MONTEREY BAY, CALIFORNIA
JANUARY 1972 TO APRIL 1973

Annual Report, Part 3, 1973

by

William W. Broenkow and Sandra R. Benz

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Robert E. Arnal, Sea Grant Project Coordinator

Moss Landing Marine Laboratories
of the
California State University and Colleges
at
Fresno, Hayward, Sacramento, San Francisco, San Jose, and Stanislaus

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TABLE OF CONTENTS

	<u>Page</u>	
Introduction	1	
Scientific Personnel	1	
Acknowledgements	2	
Station Locations	3	
Map of Station Positions	4	
Methods	5	
Explanation of Tables	8	
References	10	
Data		
1972		
January	Cruise 21	11
February	Cruise 22	33
March	Cruise 23	55
April	Cruise 24	75
May	Cruise 25	96
June	Cruise 26	118
July	Cruise 27	140
August	Cruise 28	162
September	Cruise 29	184
October	Cruise 30	204
November	Cruise 31	224
December	Cruise 32	243
1973		
January	Cruise 33	263
February	Cruise 34	283
March	Cruise 35	303
April	Cruise 36	323

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INTRODUCTION

This report completes the hydrographic data series obtained during 27 monthly oceanographic cruises in Monterey Bay. This oceanographic study was initiated under a grant from the Office of Sea Grant Programs, and the data collection began in February 1971. In September 1971 additional funding was received from the Association of Monterey Bay Area Governments. The data obtained during 1971 have been published previously (Broenkow 1972), and some initial interpretation of this work has been reported by Smethie (1973), Broenkow and Smethie (1973), and Oceanographic Services, Inc. (1973).

SCIENTIFIC PERSONNEL

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David Blaskovich	Sea Grant Teaching Assistant
David Garrison	Sea Grant Teaching Assistant
James Gendron	Oceanographic Technician
Gary McDonald	Sea Grant Teaching Assistant
Scott McKain	Oceanographic Technician
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In addition to the above, we very much appreciate the help of the numerous students who participated in the cruises, chemical analyses and data reduction.

This research was supported by Grant 2-35137 from the Office of Sea Grant Programs, National Oceanic and Atmospheric Administration, Department of Commerce, and by a grant from the Association of Monterey Bay Area Governments.

MONTEREY BAY HYDROGRAPHIC STATION LOCATIONS

<u>STATION NUMBER</u>	<u>LATITUDE N.</u>	<u>LONGITUDE W.</u>	<u>DEPTH</u>	<u>SAMPLING DEPTHS</u>	
				<u>m</u>	<u>fm</u>
24	36°38.8'	121°56.3'	40	22	0, 5, 10, 20, 30
22	36°36.6'	121°52.9'	16	9	0, 5, 10
21	36°37.6'	121°51.2'	18	10	0, 5, 10
23	36°39.2'	121°53.1'	68	37	0, 5, 10, 20, 30, 50
20	36°43.1'	121°51.5'	57	31	0, 5, 10, 20, 30, 50
16	36°43.3'	121°55.6'	97	53	0, 5, 10, 20, 30, 50, 75
10	36°45.6'	121°52.0'	70	38	0, 5, 10, 20, 30, 50
1	36°44.7'	121°49.3'	15	8	0, 5, 10
3	36°48.1'	121°48.2'	110	60	0, 5, 10, 20, 30, 50, 75, 100
8	36°47.4'	121°50.0'	240	130	0, 5, 10, 20, 30, 50, 75, 100, 150
12	36°48.0'	121°52.2'	240	130	0, 5, 10, 20, 30, 50, 75, 100, 150
15	36°46.6'	121°57.2'	718	393	0, 10, 20, 30, 50, 75, 100, 150, 200, 250, 300, 400
57	36°50.2'	121°58.1'	366	200	0, 10, 20, 30, 50, 75, 100, 150
14	36°50.5'	121°52.7'	59	32	0, 5, 10, 20, 30, 50
5	36°50.8'	121°49.6'	15	8	0, 5, 10
54	36°55.2'	121°52.7'	15	8	0, 5, 10
58	36°55.1'	121°56.7'	26	14	0, 5, 10, 20
59	36°57.1'	121°56.2'	15	8	0, 5, 10
53	36°56.8'	122°00.1'	15	8	0, 5, 10
52	36°55.3'	122°04.4'	35	19	0, 5, 10, 20
50	36°52.9'	121°51.3'	18	10	0, 5, 10

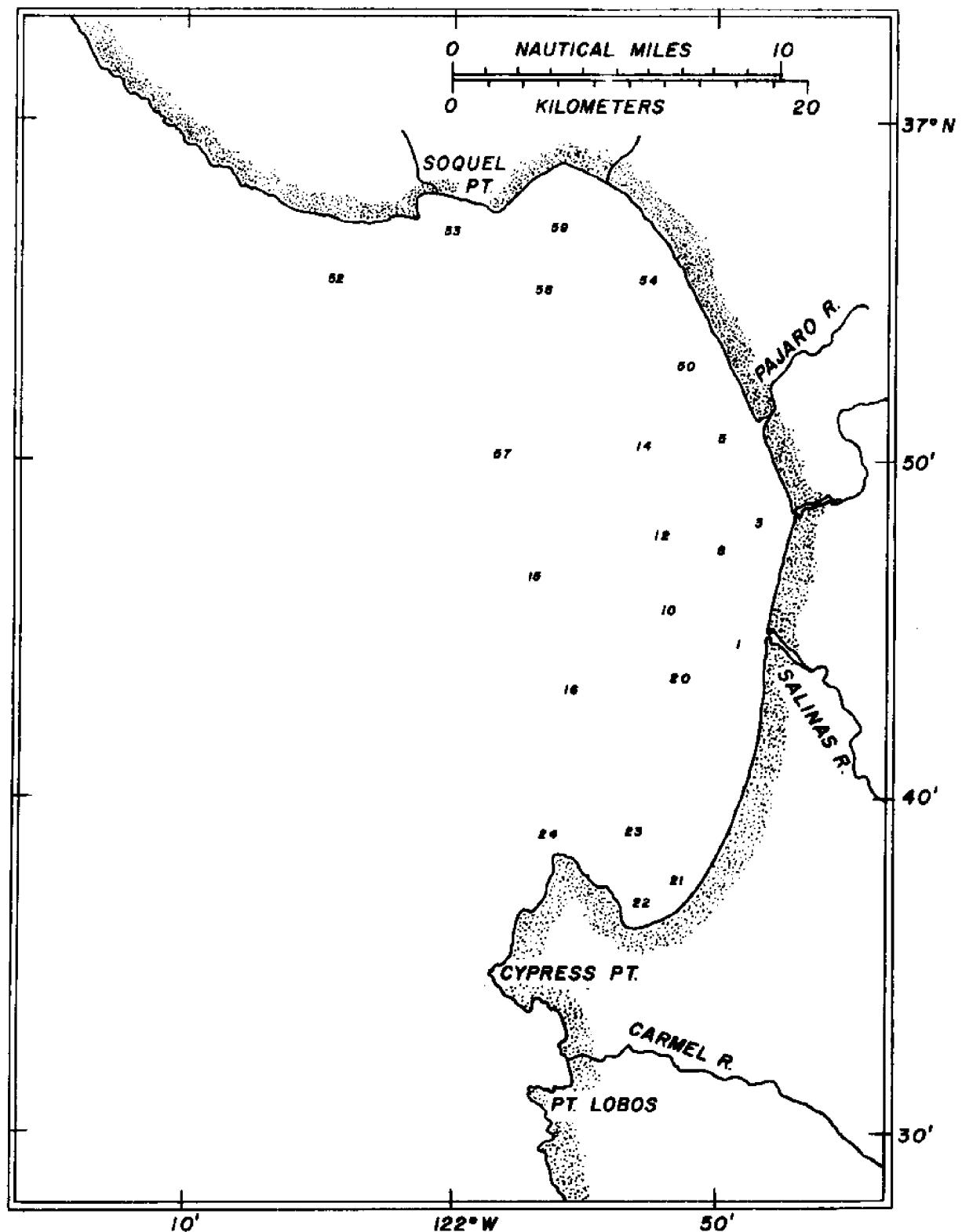


Figure 1. Moss Landing Marine Laboratories hydrographic stations.

METHODS

Station Position. When the shoreline was clearly visible, station positions were determined using horizontal sextant angles with an accuracy of about ± 0.1 mile within 1 mile of shore and ± 0.3 mile within 6 miles of shore. During inclement weather a combination of loran, radar ranges and bearings and fathometer readings were used, and in most cases the accuracy of the position was about ± 0.5 mile or better.

Hydrographic Sampling. Four 5-liter Niskin plastic sampling bottles were used to obtain discrete water samples at the standard sampling depths, 0, (5), 10, 20, 30, 50, 75, 100, 150, 200, 250, 300, and 400 m. Accepted sampling depths were determined from wire angle for depths less than 100 m and from a combination of wire angle and thermometric depth calculations for depths greater than 100 m.

Temperature. The in situ temperature was determined from paired reversing thermometers. The average temperature is recorded when the thermometers agreed to within 0.05° C.

Salinity. Salinity was determined using a Kahlisco precision induction salinometer. Analyses were made in the laboratory and salinity was computed from conductivity ratio using the equations of Cox, et al (1967). Substandard seawater was used to calibrate the salinometer before and after each set of 24 or fewer samples. Copenhagen water was used each month to standardize the substandard water.

Dissolved Oxygen. Water samples were treated aboard ship to fix the oxygen in the basic form. The samples were acidified and titrated in the laboratory within 12 hours of the sampling time using Carpenter's (1965) modification of the Winkler method. The total sample is titrated with approximately 0.02 N sodium thiosulfate to the starch endpoint. Precision of the analyses is about \pm 0.06 ml/liter (2 SD).

Nutrient Ions. The 500 ml samples were filtered through 3 μm glass fiber filters, quick frozen in a dry ice-alcohol solution aboard ship and were refrigerated at -10° C until analyzed ashore within 3 weeks of collection. Groups of 36 samples were quick-thawed in the laboratory just prior to the analyses for phosphate, nitrate, nitrite ammonia, and silica. Standards and reagent blanks were prepared fresh daily and were determined with each set of samples.

. Dissolved reactive phosphate was determined by the method of Murphy and Riley (1962) described in Strickland and Parsons (1968) using ascorbic acid to reduce the phospho-molybdate complex. The sample absorbance was determined in 10 cm cells on a Beckman DU II Spectrophotometer at 885 nm. Precision of the analyses is about \pm 0.03 $\mu\text{g-atoms/liter}$ (2 SD).

Nitrate was determined by the cadmium-reduction method of Wood et al (1967) followed by the nitrite color development. The sample absorbance was determined in 1 cm cells

using a Spectronic 20 Colorimeter at 543 nm. Precision of the analyses is about \pm 0.5 $\mu\text{g-atoms/liter}$ (2 SD).

Nitrite was determined by the method of Bendschneider and Robinson (1952) described by Strickland and Parsons (1967). The absorbance of the diazo color was determined on the Beckman DU using 10 cm cells at 543 nm. Precision of the method is about \pm 0.03 $\mu\text{g-atoms/liter}$ (2 SD).

Ammonia was determined by the indophenol method of Solorzano (1969) with the color absorbance determined with the Beckman DU at 640 nm using 10 cm cells. Precision of the method is about \pm 0.1 $\mu\text{g-atoms/liter}$ (2 SD).

Reactive silica was determined by the method of Mullin and Riley (1955) as modified by Strickland and Parsons (1968). The silicomolybdate complex was reduced by a metol-sulfite, oxalic acid solution, and the color absorbance was determined in 1 cm cells on a Spectronic 20 at 810 nm. Precision of the method is about \pm $\mu\text{g-atoms/liter}$ (2 SD).

EXPLANATION OF TABLES

CRUISE	Moss Landing Marine Laboratories consecutive hydrographic cruise number.
STATION	Permanent hydrographic station number. 11 designates Moss Landing Marine Laboratory.
DATE	Local date of sampling.
HOUR	Local sampling time (Pacific Standard Time). Time of messenger release is given for one-cast stations, median time on station is given for multi-cast stations. For two-cast (8 bottle) stations the time on-station was generally under one hour.
N LATITUDE W LONGITUDE	Observed station position corresponding to sampling time given above. Drift while on station was generally less than 0.5 miles. When greater drift was experienced, the ship was brought back to the station for subsequent casts.
TRANSP	Secchi disk depth, meters.
WAVES dir	Direction from which the dominant waves are coming, in tens of degrees, according to WMO Code 0885.
ht	Height of dominant waves according to WMO Code 1555.
p	Period of dominant waves according to WMO Code 3155.
WIND dir	Direction from which the wind is blowing, in tens of degrees, according to WMO Code 0877.
speed	Wind speed in knots.
BAROM	Pressure in millibars.
AIR TEMP °C dry	Air temperatures were obtained about 2 m above sea surface. Dry-bulb air temperature in degrees centigrade.
wet	Wet-bulb air temperature in degrees centigrade.
WEATH	Present weather according to WMO Code 4677.

CLOUDS	
typ	Cloud type according to WMO Code 0500.
amt	Cloud amount in eights according to WMO Code 2700.
VISIB	Sea level visibility according to WMO Code 4300.
DEPTH	Accepted depth in meters from which the sample was obtained, determined from wire length, wire angle and thermometric depth calculation.
TEMP	<u>In situ</u> water temperature in degrees centigrade.
SALINITY	Salinity in grams/kilogram ($^{\circ}$ /oo or ppt).
SIGMA T	Potential density anomaly, computed from the equations in Knudsen's Hydrographical Tables (Knudsen, 1901).
OXYGEN	Dissolved oxygen concentration in ml(STP)/liter.
AOU	Apparent oxygen utilization in μ g-atoms O ₂ -O/liter: the difference between the observed oxygen concentration and the oxygen solubility computed from the <u>in situ</u> temperature and salinity using the equations of Truesdale, <u>et al</u> (1955).
SAT	Percent of oxygen saturation computed from the <u>in situ</u> temperature and salinity using the equations of Truesdale, <u>et al</u> , (1955).
PHOSPHATE	Concentration of reactive phosphate in μ g-atoms PO ₄ -P/liter.
NITRATE	Concentration of dissolved nitrate in μ g-atoms NO ₃ -N/liter.
NITRITE	Concentration of dissolved nitrite in μ g-atoms NO ₂ -N/liter.
AMMONIA	Concentration of dissolved ammonia in μ g-atoms NH ₃ -N/liter.
SILICA	Concentration of reactive silica in μ g-atoms SiO ₂ -Si/liter.
*	Questionable data point. These values are suspect based upon preliminary analysis of the data and should be used with caution.

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Hydrographic Stations

<u>ML CRUISE 21</u>	1114
19 January 1972	1157
	1152
	1153
	1158
	1159
	1154
	1150
	1105
20 January 1972	1103
	1108
	1112
	1115
	1110
21 January 1972	1101
	1120
	1123
	1121
	1122
	1124
	1116

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1114	19 JAN 1972	7.9	36° 50.5'	121° 52.7'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	dry	wet	typ	amt
6	31	0	2	15	4	1019.6	9.4
						8.7	45
						X	9
							5
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-at/liter
0	10.48	33.365	25.62	6.38	-22	104	.82
5	10.50	33.364	25.61	6.45	-28	105	.80
10	10.46	33.377	25.63	6.20	-6	101	.80
20	10.16	33.343	25.65	5.00	105	81	1.00
30	10.18*	33.460	25.74	5.38	70	87	1.16
50	10.09	33.663	25.91	3.94	199	64	1.50
						17.8	.05
							.6
							19

* indicates questionable data: Paired thermometer read 10.26

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1157	19 JAN 1972	9.1	36° 50.2'	121° 58.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
10	26	2 4	7 4	1021.0	9.8	8.9	45
					X	9	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	11.12*	33.532	25.63	6.04	0	100	.88
10	11.03	33.528	25.65	5.75	27	95	.73
20	10.98	33.533	25.66	5.19	77	86	1.02
30	10.97	33.581	25.71	5.55	44	92	1.14
50	10.74*	33.620	25.77	4.58	134	75	1.17
75	10.50	33.652	25.84	4.32	160	71	1.36
100	10.07*	33.696	25.94	4.01	193	65	1.61
150	9.24	33.863	26.21	2.61	328	42	1.96
							20.9
							.02
							.2
							.28

* indicates questionable data: Paired thermometers read 11.03 at 0 m, 10.65 at 50 m, 9.97 at 100 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1152	19 JAN 1972	10.6	36° 55.3'	122° 2.4'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AUG sat	PHOSPHATE ug-at/l	NITRATE ug-atoms/liter	NITRITES ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug/l	VISIB typ amt
7	28	1	4	8	3	1021.0	10.2	9.1	45	X	9
10	10.25*	33.382	25.67	5.96	18	97	1.05	1.04	9.2	.44	.6
20	10.32	33.390	25.66	5.79	32	94	.96	1.01	7.5	.35	.6
									9.9	.42	.6
									8.3	.35	.7
											.8

* indicates questionable data: Paired thermometer read 10.33

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1153	19 JAN 1972	11.4	36° 56.9'	122° 00.1'

TRANS	WAVES		WIND dir ht mb	BAROM dir speed	AIR TEMP dry °C	WREATH wet °C	CLOUDS typ ant	VISIB
	m	ft						
4	0	15	2	1021.7	10.6	9.4	4	X 9 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l up-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRILE AMMONIA SILICA
m								
0	10.26	33.300	25.60	6.07	8	99	1.14	10.3
5	10.31*	33.315	25.61	5.94	19	97	.99	8.0
10	10.27	33.324	25.62	6.12	3	99	1.00	7.5

* indicates questionable data: Paired thermometer read 10.23

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1158	19 JAN 1972	12.2	36° 55.1'	122° 56.7'		
TRANSPIRATION	WAVES	WIND	RAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
7	26	0	15	2	1020.7	10.4	8.9
						45	X 9
							5
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN mg/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	10.38	33.360	25.63	6.41	-23	104	.84
5	10.54	33.410	25.64	6.26	-12	102	.87
10	10.63*	33.449	25.65	6.11	0	100	.82
20	10.65	33.466	25.66	5.02	96	82	.95
							7.9
							.56
							.9
							.12

* indicates questionable data: Paired thermometer read 10.74

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML. 21	1159	19 JAN 1972	13.0	36° 57.2'	121° 56.2'

TRANSP m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
6	23	0	20	2	1020.3	10.6	9.2	45
						X	9	5
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	10.51*	33.385	25.63	5.97	14	97	.85	6.1
5	10.46*	33.383	25.63	6.22	-8	101	.88	6.7
10	10.39	33.384	25.65	5.87	24	96	.91	6.8
							.43	.41
							.3	.7
								11
								11

* indicates questionable data: Paired thermometers read 10.45 at 0 m, 10.36 at 5 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1154	19 JAN 1972	14.9	36° 55.5'	121° 52.8'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH typ atm	CLOUDS	VISIB
6	27	1 5	17 2	1020.0	10.7	9.3	43 X 9 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % Z	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	10.48	33.326	25.59	6.78	-58	111	.77 9.6 .06 .2 12
5	10.36*	33.324	25.60	6.56	-36	107	.78 8.3 .04 .1 10
10	10.25*	33.324	25.61	6.42	-23	104	.78 10.7 .03 .0 11

* indicates questionable data: Paired thermometers read 10.27 at 5 m, 10.31 at 10 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1150	19 JAN 1972	15.7	36° 53.0'	121° 51.3'		
TRANS P m	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
5	26	0	23	2	1020.0	10.7	9.3
						43	X 9 8
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % ug-atm/l	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	10.16	33.312	25.63	5.87	27	.95	.89
5	10.14*	33.328	25.64	6.02	14	.97	.97
10	10.10	33.354	25.67	6.07	10	98	1.02
							7.8
							.13
							.3
							11

* indicates questionable data: Paired thermometer read 10.07

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1105	19 JAN 1972	16.4	36° 50.8'	121° 49.6'

TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM dry	AIR TEMP °C wet	WEATH	CLOUDS	VISIB
5	24	1	5	21	3	1019.6	

5	24	1	5	21	3	1019.6
---	----	---	---	----	---	--------

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	10.77	33.455	25.63	6.30	-19	104	1.27	9.4	.21	.5	13
5	10.51*	33.432	25.66	6.08	4	99	1.14	8.2	.21	.2	13
10	10.48	33.425	25.66	6.22	-8	102	1.04	8.1	.14	.2	11

* indicates questionable data: Paired thermometer read 10.59

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 21 1103 20 JAN 1972 7.2 36° 48.2' 122° 48.6'

TRANSPIRATION m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB
5	26	1 3 10	3	1024.0	10.0	8.3	0 2 5 6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	10.95	33.498	25.64	5.83	20	96	1.03	10.8	.05	.7	17
5	10.82	33.503	25.66	5.75	29	95	.97	9.2	.06	.6	10
10	10.80	33.503	25.67	5.67	37	93	.99	11.0	.06	.2	10
20	10.74	33.499	25.67	5.55	48	91	1.01	10.8	.07	.2	11
30	10.60*	33.502	25.70	5.62	43	92	1.05	10.0	.13	.3	11
50	10.37*	33.531	25.76	4.45	151	73	1.18	12.3	.12	.4	14
75	10.08	33.611	25.88	4.69	132	76	1.41	13.9	.15	.4	18
100	9.50	33.753	26.08	3.66	231	59	1.70	19.4	.09	.1	26

* indicates questionable data: Paired thermometers read 10.53 at 30 m, 10.31 at 50 m

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE										
				TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet	*C	WEATH typ atm	CLOUDS	VISIB				
ML 21	1108	20 JAN 1972	8.0						36° 47.5'		121° 50.1'					
				8	28	1	4	16	6	1023.7	8.7	7.7	1	2	5	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-at/l	NITRATE ug-at/l	NITRITE ug-at/l	AMMONIA ug-atoms/liter	SILICA					
0	10.61	33.496	25.69	5.71	35	94		.97	9.6	.14	.0	12				
10	10.60	33.492	25.70	5.10	93	83		.96	8.7	.18	.0	11				
20	10.60	33.495	25.70	4.71	125	77		.92	9.1	.24	.1	12				
30	10.60	33.492	25.70	4.04	184	66		1.00	9.2	.33	.1	13				
50	10.52	33.502	25.71	5.39	65	88		1.06	10.7	.48	.7	14				
75	10.46	33.535	25.75	4.91	108	80		1.20	12.5	.56	.2	16				
100	10.29*	33.566	25.80	4.54	143	74		1.28	12.9	.54	.1	16				
150	9.43*	33.765	26.10	3.70	228	59		1.78	18.7	.34	.2	26				

* indicates questionable data: Paired thermometers read 10.35 at 100 m, 9.49 at 150 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1112	20 JAN 1972	9.0	36° 48.0'	121° 52.5'

TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
9	29	2	11	4	1024.7	9.9	8.3
						2	2
						5	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	10.68*	33.498	25.68	5.96	12	98	.91	8.8	.31	.0	12
10	10.69	33.502	25.69	5.87	20	96	.91	8.3	.32	.0	11
20	10.76	33.515	25.68				.91	8.6	.26	.2	11
30	10.78	33.527	25.69	5.81	24	96	.96	9.4	.32	.0	11
50	10.70	33.591	25.75	4.16	172	68	1.14	11.8	.49	.0	14
75	10.39	33.590	25.81	4.87	113	79	1.31	14.6	.51	.0	18
100	10.19*	33.649	25.89	4.54	144	74	1.49	16.0	.29	.0	19
150	9.44	33.800	26.13	2.84	305	45	1.89	20.4	.21	.0	27

* indicates questionable data: Paired thermometers read 10.60 at 0 m, 10.10 at 150 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 21 1115 20 JAN 1972 10.5 36° 46.5' 121° 57.4'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ACU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							dry	wet	AIR TEMP °C	WEATH typ atm
0	11.20*	33.552	25.63	5.95	7	99	.86	8.1	.42	.6
10	11.18	33.555	25.64	5.91	10	98	.89	8.1	.31	.1
20	10.92	33.591	25.71	3.83*	199	63	1.11	11.2	.39	.1
29	10.85	33.612	25.74	4.82	111	79	1.16	11.6	.36	.2
49	10.60	33.640	25.81	3.61*	222	59	1.27	14.4	.40	.0
73	10.46	33.662	25.85	4.39	154	72	1.39	16.4	.21	.1
98	10.15*	33.705	25.94	4.29	167	70	1.50	14.7	.17	.1
147	9.26	33.888	26.23	3.11	283	50	1.95	21.8	.03	.0
197	8.66	34.002	26.41	2.23	369	35	2.12	25.4	.06	.0
246	8.20	34.056	26.52	2.17	380	34	2.40	26.6	.14	.4
295	7.87	34.094	26.60	1.79	418	28	2.48	28.9	.08	.4
394	7.12	34.159	26.76	1.51	453	23	2.70	29.7	.17	.5

* indicates questionable data: Paired thermometers read 11.11 at 0 m, 10.23 at 98 m
 Dissolved oxygen concentration appears anomalously low

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 21 1110 20 JAN 1972 12.1 36° 45.6' 121° 52.0'

TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
12	28	2 36	2 1023.4	13.3 11.1	1	2	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	11.21	33.576	25.65	6.04	-1	100	.94	8.3	.12	.0	18
5	10.92	33.549	25.68	5.91	13	98	.90	8.9	.14	.0	12
10	10.32	33.444	25.70	6.03	10	98	1.01	9.3	.20	.1	12
20	10.30	33.483	25.74	5.09	94	83	1.16	9.9	.37	.1	14
30	10.22*	33.546	25.80	5.28	78	86	1.31	11.6	.45	.1	16
50	10.17*	33.624	25.87	4.69	131	76	1.46	13.8	.16	.0	18

* indicates questionable data: Paired thermometers read 10.33 at 30 m, 10.11 at 50 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1101	21 JAN 1972	7.6	36° 44.8'	121° 49.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
11	29	3 9	2 1	1024.4	10.6	10.0	8 8 4
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	10.96	33.543	25.67	6.01	4	99	.90 8.2 .29 .4 12
5	10.93	33.544	25.68	6.03	3	100	.91 8.3 .32 .0 11
10	10.93	33.549	25.68	5.99	6	99	.84 8.2 .26 .0 11

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1120	21 JAN 1972	8.6	36° 43.1'	121° 51.5'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							DRY	WEATH WET	CLOUDS typ
0	11.10	33.541	25.64	5.98	5	99	.92	9.7	.31
5	10.98	33.570	25.69	5.88	15	97	.87	9.7	.28
10	10.86	33.567	25.71	5.95	11	98	.92	8.0	.31
20	10.94	33.564	25.69	5.58	43	92	1.03	9.1	.36
30	10.89	33.565	25.70	5.51	49	91	1.05	9.5	.38
50	10.76	33.596	25.75	5.21	78	86	1.24	10.1	.47

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 21 1123 21 JAN 1972 9.7 36° 39.2' 121° 53.2'

TRANSPIRATION WIND BAROM AIR TEMP °C WEATH CLOUDS VISIB
 m dir ht p dir speed mb dry wet typ amt

13 31 2 4 27 1 1024.7 12.2 11.1 1 6 7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA SILICA
0	11.32	33.560	25.62	5.90	10	98	.90	7.5	.31	.2
5	11.20	33.557	25.64	5.83	17	97	.94	8.1	.31	.1
10	11.13	33.558	25.65	5.76	24	95	.93	8.4	.32	.1
20	11.14	33.554	25.65	5.36	60	89	.96	8.6	.34	.0
30	11.07	33.557	25.66	5.72	29	95	.96	9.3	.34	.0
50	11.00	33.571	25.68	4.98	95	82	1.03	8.9	.37	.2

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 21	1121	21 JAN 1972	10.5	36° 37.6'	121° 51.1'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
12	31	2 5	0 0	1025.1	13.3	12.1	2 6 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.41	33.535	25.58	5.60	35	93	1.21 8.2 .35 1.1 11
5	11.25	33.559	25.63	4.30	153	71 .95 7.9 .31 .2 11	
10	11.12	33.562	25.66	4.79	111	79 .92 7.9 .30 .0 11	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1122	21 JAN 1972	11.5	36° 36.5'	121° 52.8'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ
m									CLOUDS amt
									VISIB
0	11.44	33.552	25.59	4.50	133	75	.97	8.2	.36
5	11.36	33.558	25.61	5.21	71	87	.93	8.2	.32
10	11.30	33.559	25.62	5.90	10	98	.91	7.5	.29

ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 21	1124	21 JAN 1972	13.0	36° 38.7'	121° 56.3'
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS VISIB
m	dir ht p	dir speed	mb	dry wet	typ amt
11	30 3 5	30 2	1023.4	12.8 11.6	3 8 8
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1 SAT % PHOSPHATE ug-atoms/liter NITRATE ug-atoms/liter NITRITE ug-atoms/liter AMMONIA ug-atoms/liter SILICA
m					
0	11.46	33.545	25.58	4.41	74 .94 12.1 .08 .2
5	11.36	33.560	25.61	5.37	89 1.02 11.9 .06 .4
15	11.14	33.569	25.66	5.57	92 1.06 12.5 .04 .1
25	10.93	33.594	25.71	5.18	86 .12

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 21 1116 21 JAN 1972 14.4 36° 43.6' 121° 55.8'

DEPTH m	TRANSPIRATION			BAROM mb	AIR TEMP °C dry wet	WEATH typ ant	CLOUDS	VISIB
	WAVES dir ht	WIND p dir speed	mm					
11	30	2	5	25	1	1023.7	12.8	11.6
							2	8
							8	8
DEPTH m	TEMP °C	SALINITY	SIGMA T	OXYGEN ml/l ug-at/1	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
	11.70	33.538	25.53	5.60	32	94	.80	6.5
	11.18	33.507	25.60	6.13	-9	102	.83	5.9
	11.17	33.527	25.62	5.28	67	88	.70	5.5
	11.05	33.565	25.67	5.48	50	91	.97	4.2
	11.00	33.592	25.70	5.23	73	86	.86	6.5
	10.77	33.611	25.76	4.96	100	82	1.00	7.7
	10.42	33.648	25.85	4.75	123	78	1.28	13.0
							.23	.1

Hydrographic Stations

<u>ML CRUISE 22</u>	1105
16 February 1972	1150
	1154
	1158
	1159
	1153
	1152
17 February 1972	1103
	1108
	1112
	1115
	1157
	1114
18 February 1972	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
HL 22	1105	16 FEB 1972	7.5	36° 50.7'	121° 49.8'

TRANSP	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	P	mb	dry	wet	typ	amt
10	25	2	3	3	17		
						7.8	7.1
						45	X
						9	1

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt	ml/l	ug-at/l	%		ug-atoms/liter	ug-atoms/liter	ug-atoms/liter	ug-atoms/liter	ug-atoms/liter
0	11.70	33.379	25.41	7.25	-114	122	.47	6.2	.27	.2	7
5	11.76	33.380	25.40	7.18	-109	121	.56	5.6	.20	.2	3
10	11.55	33.396	25.45	6.68	-62	112	.70	7.7	.23	.6	3

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 22	1150	16 FEB 1972	8.5	36° 55.2'	121° 52.8'	
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ amt	
15	27	2 3 6 4		8.2	7.9	45 X 9 1
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU Z	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m						
0	11.64	33.392	25.43	7.19 -108	120 .38	5.0 .08 .0 2
5	11.65	33.390	25.43	7.75 -158	130 .37	5.1 .07 .0 1
10	11.62	33.395	25.43	7.83 -165	131 .36	.0 .04 .0 1

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1154	16 FEB 1972	9.5	36° 53.0'	121° 51.4'

TRANSPIRATION mm	WAVES dir ht	WIND P dir speed mb	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
16	24	0	3	7	1	8.8	8.4	45
						X	9	1
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.56	33.408	25.46	7.97	-177	133	.24	.0
5	11.54	33.406	25.46	8.02	-181	134	.24	.4
10	11.36	33.421	25.50	6.93	-82	115	.43	.0
							.0	.12
							.28	.0
							.2	.1

CRUISE		STATION		DATE		HOUR	N LATITUDE	W LONGITUDE	
ML	22	1158	16 FEB	1972	10.5	36° 55.2'	121° 56.6'		
		TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m		dir ht	p	dir speed	mb	dry wet		typ amt	
12	24	1	3	26	2		9.8	9.4	43
							x	9	1
DEPTH		TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	11.52	33.343	25.41	7.66	-149	128	.29	.0	.05
5	11.38	33.349	25.44	7.68	-149	128	.28	.0	.05
10	11.07	33.457	25.58	5.70	31	94	.92	3.7	.42
20	10.80	33.470	25.64	4.80	114	79	1.28	3.8*	1.1
								.57	3.5
									16

* indicates questionable data: Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 22	1159	16 FEB 1972	11.3	36° 57.1'	121° 56.2'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH typ atm	CLOUDS	VISIB
14	25	2 4 23	6			1.0	
				1.0	1.0	45	X 9 1
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ATU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.59	33.392	25.44	7.39	-125	124	.25 .0 .06 .0 1
5	11.52	33.390	25.45	6.72	-65	112	.25 .0 .09 .0 1
10	11.30	33.427	25.52	6.45	-38	107	.61 .7 .18 .3 .4

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 22	1153	16 FEB 1972	12.2	36° 57.8'	122° 00.2'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
15	23	1 6 25	2	10.6	10.4	45	X 9 1
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.70	33.328	25.37	7.73	-157	130	.36 .6 .10 .4 2
5	11.61	33.329	25.39	7.94	-175	133	.39 1.2 .06 .3 2
10	11.64	33.378	25.42	7.99	-180	134	.27 .0 .07 .1 1

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
#	dir ht	P	dir x speed	mb	dry	wet	typ	amt			
ML 22	1152	16 FEB 1972	13.0	36° 55.3'	122°	2.3'					
11	27	4	5	24	6		10.6	10.1	45	X	9
DEPTH	TEMP °C	SALINITY	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE AMMONIA SILICA ug-atoms/liter				
m	m	ppt									
0	11.47	33.385	25.45	7.48	-132	125	.33	.1	.09	.1	2
5	11.30	33.386	25.49	7.46	-128	124	.35	.2	.07	.1	1
10	11.10	33.472	25.59	6.34	-26	105	.74	3.5	.43	.2	5
20	10.71	33.547	25.72	5.52	51	91	1.03	8.1	.48	.5	11

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				TRANS P m	WAVES dir ht m	WIND dir speed mb	AIR TEMP dry °C	WEATH wet	CLOUDS typ amt	VISIB		
ML 22	1103	17 FEB 1972	7.4			36° 48.2'			121° 48.4'			
4	27	3	4	10	4	1018.3	9.1	8.6	0	2	1	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ADU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter	
0	11.72	33.463	25.47	6.71	-66	113	.65	1.4	.29	.6	.4	
5	11.74	33.465	25.47	7.02	-94	118	.54	.9	.16	.4	.2	
10	11.70	33.469	25.48	7.03	-95	118	.52	.5	.14	.2	.1	
20	11.36*	33.494	25.56	6.46	-40	108	.67	3.6	.29	.5	.3	
30	10.81	33.546	25.70	5.36	64	88	1.03	8.1	.42	.6	10	
50	10.42	33.617	25.82	5.01	100	82	1.24	9.4	.37	.8	15	
75	9.22	33.817	26.18	3.52	247	56	1.86	16.6	.33	.3	25	
100	8.80	33.911	26.32	2.89	308	46	2.08	13.5	.46	.3	32	

* indicates questionable data: Paired thermometer read 11.28

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1108	17 FEB 1972	8.9	36° 47.4'	121° 50.0'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
10	29	3	13	5	1018.6	11.2	10.9
						2	2
						1	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	11.38	33.472	25.54	6.99	-88	116	.55	6.7	.23	.3	4
10	11.33	33.473	25.55	6.94	-83	115	.53	5.7	.19	.1	3
20	11.27	33.472	25.56	6.34	-28	105	.77	5.3	.24	.1	4
30	11.23*	33.500	25.59	5.40	56	90	.99	8.5	.51	.2	8
50	10.91	33.524	25.66	5.57	44	92	1.24	11.3	.69	.3	11
75	10.38	33.620	25.83	4.94	106	81	1.44	10.2	.55	.5	17
100	9.55	33.776	26.09	3.78	220	61	1.92	15.6	.32	.4	26
150	8.58	33.954	26.39	2.12	380	33	2.29	20.9	.18	.3	38

* Indicates questionable data: Paired thermometer read 11.13

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1112	17 FEB 1972	10.6	36° 48.0'	121° 52.5'

TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB				
14	28	3	11	7	1017.9	14.7	12.2	3	2	2	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atms/liter	NITRATE ug-atms/liter	NITRITE ug-atms/liter	AMMONIA ug-atms/liter	SILICA
0	11.31*	33.520	25.59	6.13	-10	102	1.02	6.7	.52	.0	10
10	11.16*	33.521	25.62	6.12	-8	101	.93	7.4	.50	.1	10
20	10.97*	33.527	25.66	6.03	2	100	.82	9.1	.52	.0	10
30	10.71*	33.542	25.71	5.72	33	94	1.02	11.6	.58	.2	12
50	10.49	33.580	25.78	4.86	112	79	1.21	14.3	.52	.3	17
74	10.09	33.680	25.93	4.42	156	72	1.51	14.1	.40	.1	21
99	9.07	33.894	26.26	3.01	294	48	2.00	19.6	.06	.0	30
148	8.64	33.949	26.37	2.66	331	42	2.12	19.7	.15	.0	35

* indicates questionable data: Paired thermometers read 11.21 at 0 m, 11.08 at 10 m,
 11.07 at 20 m, 11.79 at 30 m

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ	amt				
ML 22	1115	17 FEB 1972	12.0	36° 46.4'	121° 57.2'						
15	30	4	3	30	6	1016.6	13.6	12.2	3	2	5
15	30	4	3	30	6	1016.6	13.6	12.2	3	2	7
DEPTH	TEMP °C	SALINITY	SIGMA T	OXYGEN mg/l	AOU ug-at/1	SAT %	PHOSPHATE ug-at/l	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
m											
0	11.40	33.581	25.62	6.22	-19	104	.82	7.5	.50	.0	10
10	11.14	33.577	25.66	6.20	-15	103	.80	7.6	.48	.2	10
20	11.04*	33.574	25.68	6.20	-13	103	.81	8.5	.50	.2	10
30	11.03	33.569	25.68	6.18	-12	102	.82	10.5	.51	.2	11
49	10.50	33.630	25.82	5.12	89	84	1.18	13.9	.48	.1	14
74	9.82	33.813	26.08	3.68	225	59	1.73	18.4	.25	.2	23
98	8.99	33.976	26.34	2.84	310	45	2.04	21.6	.06	.1	29
148	8.40	34.068	26.50	2.36	360	37	2.27	25.4	.04	.0	37
200	8.08	34.114	26.59	2.06	391	32	2.39	25.9	.06	.1	44
250	7.70	34.147	26.67	1.74	425	27	2.59	27.1	.03	.3	46
300	7.20	34.189	26.77	1.28	472	19	2.79	31.4	.01	.0	54
399	6.79	34.213	26.85	1.14	491	17	2.92	32.3	.03	.1	60

* indicates questionable data: Paired thermometer read 11.14

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 NL 22 1157 17 FEB 1972 15.1 36° 49.9' 121° 57.0'

	TRANSP	WAVES	WIND	BARTH	AIR TEMP	WATER	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	°C	°C	typ amt	
5	30	3 2	26 4	1014.9	14.1	12.8	3	2
							6	8

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt	ml/l	ug-at/l	%		ug-atoms/liter				
0	11.46	33.529	25.57	7.57	-14.1	126	.42	5.8	.15	.4	5
10	11.10	33.523	25.63	6.79	-6.7	112	.51	6.6	.20	.0	4
20	11.12	33.519	25.62	6.35	-2.8	105	.60	9.0	.23	.1	4
30	11.00*	33.548	25.67	4.93	100	81	.91	10.0	.35	.3	9
50	10.48	33.616	25.81	4.64	132	76	1.26	13.9	.38	.3	15
75	9.82	33.774	26.05	3.70	223	60	1.69	14.1	.24	.2	22
99	9.24	33.893	26.23	2.88	303	46	1.98	18.5	.15	.2	26
149	8.64	34.001	26.41	2.37	356	37	2.04	16.3	.06	.1	29

* Indicates questionable data: Paired thermometer read 10.91

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1114	17 FEB 1972	17.2	36° 50.6'	121° 52.4'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AUU ug-at/l	SAT	PHOSPHATE NITRATE AMMONIA SILICA								
							TRANSPI m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt	
7	29	3	5	26	1	1014.2				12.8	12.2	2	2	6	8
10	12.23	33.461	25.37	7.46	-139	127				.42	7.8	.18	.0	.0	3
10	11.57*	33.466	25.50	6.90	-82	115				.50	8.7	.21	.0	.0	3
20	11.36	33.484	25.55	6.43	-37	107				.51	6.2	.24	.3	.3	4
30	11.09	33.508	25.62	5.33	63	88				.77	7.8	.45	.3	.3	8
50	10.79	33.544	25.70	5.34	66	88				.95	13.3	.51	.4	.4	11
50	9.68	33.759	26.06	3.38	254	54				1.67	17.3	.30	.1	.1	24

* indicates questionable data: Paired thermometer read 11.49

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1101	18 FEB 1972	7.6	36° 49.7'	121° 49.3'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA					
							AIR TEMP °C dry wet	WEATH typ atm	CLOUDS VISIB			
10	29	4	5	32	1	1013.9	12.1	11.1	0	2	7	5
0	11.60	33.475	25.50	7.55	-140	126	.34	2.0	.13	.2	4	
5	11.60	33.473	25.50	7.40	-127	124	.35	2.3	.07	.1	2	
10	11.36	33.481	25.55	6.80	-70	113	.55	4.9	.25	.2	3	

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 22 1120 18 FEB 1972 8.6 36° 44.7' 121° 51.5'

	TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WRATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt		
7	29	2	5	10	6	1013.9	11.9	11.4
							47	X
							9	4

DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ACU ug-at/1	SAT %	PHOSPHATE ug/l	NITRATE ug/l	NITRITE ug/l	AMMONIA ug-atoms/litter	SILICA
0	11.46	33.479	25.53	6.87	-78	115	.39	3.4	.16	.0	4
5	11.42	33.484	25.54	6.67	-60	111					
10	11.41	33.490	25.55	5.90	9	98	.54	5.1	.21	.0	5
20	11.29	33.494	25.57	6.42	-36	107	.71	4.6	.34	.1	7
30	10.87	33.529	25.67	5.66	36	93	1.01	7.4	.59	.5	10
50	9.77	33.776	26.06	3.60	233	58	1.59	15.8	.23	.2	21

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 22	1123	18 FEB 1972	9.9	36° 39.1'	121° 53.1'		
TRANS P m	WAVES dir ht p	WIND dir speed mph	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
8	31	4 5 1 2	1013.9	12.3 11.6	42	4	6
10							
20							
30							
50							
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.74*	33.484	25.48	6.90	-84	116	.68
5	11.64*	33.481	25.50	6.86	-79	115	.66
10	11.48	33.484	25.53	6.72	-65	112	.68
20	10.96	33.520	25.65	5.82	21	96	.95
30	10.60	33.584	25.76	3.83	203	63	1.24
50	9.76	33.758	26.04	3.48	244	56	1.69

* indicates questionable data: Paired thermometers read 11.66 at 0 m, 11.72 at 5 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	11121	18 FEB 1972	10.6	36° 47.5'	121° 51.1'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ atm
5	30	3	5	27	7	1014.2	15.0	12.4	CLOUDS
							1	4	VISIB
							5	6	
0	11.96	33.481	25.44	7.48	-138	126	.47	1.6	.23
5	11.61	33.483	25.50	6.35	-33	106	.59	2.0	.27
10	11.48	33.497	25.54	6.45	-41	108	.76	5.1	.38

ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1122	18 FEB 1972	11.6	36° 36.6'	121° 52.9'

TRANS P m	WAVES dir ht	WIND dir speed	BAROM: mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
4	3 0 2	2 2	1013.5	14.5 12.8	2	4	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITA ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.06	33.427	25.38	6.94	-91	117	.88*	2.2	.27	1.3	5
5	11.79	33.470	25.46	6.95	-89	117	.59	3.4	.27	.3	3
10	11.54	33.497	25.53	6.09	-9	102	.72	6.6	.32	.7	3

* indicates questionable data: Phosphate appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1124	18 FEB 1972	12.7	36° 39.2'	121° 56.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOI ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ
5	23	5	5	20	16	12.4	11.9	46	X
									9
									5
0	11.64*	33.492	25.51	7.37	-125	123	.41	3.5	.18
4	11.52	33.491	25.53	7.28	-115	122	.46	5.7	.22
9	11.04	33.504	25.62	5.77	25	95	.95	5.3	.59
18	10.70	33.562	25.73	5.39	62	89	1.10	8.2	.53
27	10.34	33.629	25.84	4.88	112	80	1.36	12.0	.28
									.2
									.14

* indicates questionable data: Paired thermometer read 11.58

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 22	1116	18 FEB 1972	13.8	36° 43.1'	121° 55.8'		
TRANSPIRATION m	WAVES dir ht p	WIND dir speed mb	BARTH mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
8	19	4	25	9		13.1	12.3
						2	4
						6	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	11.36	33.496	25.56	7.04	-92	.42	.18
5	11.37	33.497	25.56	7.08	-96	.58	.6
10	11.25*	33.500	25.58	6.75	-65	2.1	.27
20	11.12	33.505	25.61	6.38	-30	106	.42
30	10.82	33.541	25.69	5.79	25	.95	.28
50	10.18	33.669	25.90	4.52	146	73	.35
79	9.42	33.841	26.16	3.37	258	54	.48
						1.47	.6
						11.2	.9
						1.74	.17
						15.0	.08
							.0
							20

* indicates questionable data: Paired thermometer read 11.33

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 22	1110	18 FEB 1972	14.6	36° 45.8'	121° 52.1'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA					
							WIND dir ht m	WAVES dir speed m/s	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS typ amt
11.	24	4	2	24	9	1011.9	13.3	12.1	2	4	6	4
0	11.43	33.515	25.56	6.58	-52	110			.68	4.1	.29	.2
5	11.37*	33.518	25.58	6.51	-45	108			.70	4.7	.33	.4
10	11.35	33.515	25.58	6.53	-46	109			.70	5.3	.33	.3
15	11.26	33.516	25.59	6.38	-32	106			.67	6.7	.28	.2
20	10.96	33.536	25.66	5.76	26	95			.96	11.5	.53	.1
25	10.10	33.678	25.92	4.53	146	73			1.23	10.0	.30	.3
30												
35												
40												
45												
48												

* indicates questionable data: Paired thermometer read 11.45

Hydrographic Stations

<u>ML CRUISE 23</u>	1105
22 March 1972	1150
	1154
	1158
	1159
	1153
	1152
23 March 1972	1103
	1108
	1112
	1115
	1157
24 March 1972	1101
	1120
	1123
	1121
	1122
	1124
	1116

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1105	22 MAR 1972	7.4	36° 51.1'	121° 49.6'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ
5	25	3	2	26	9	1016.3	12.8	11.7	CLOUDS amt
10	11.86	33.472	25.45	6.59	-57	111	.63	5.9	VISIB
0	11.93	33.471	25.44	6.35	-37	107	.70	6.9	.31
5	11.93	33.472	25.44	6.63	-62	112	.63	6.6	.12
10							.63	5.9	.13

ug-atoms/liter

* indicates questionable data: Silica appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1150	22 MAR 1972	8.4	36° 53.0'	121° 51.0'

	TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet °C	WEATH typ atm	CLOUDS	VISIB			
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN mi/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
6	12.05	33.447	25.39	6.70	-69	113	.62	5.9	.11	.0	3
6	12.03	33.447	25.40	6.83	-81	115	.63	6.7	.26	.1	14*
10	11.97	33.445	25.41	6.75	-73	114	.56	1.1	.11	.0	3

* indicates questionable data: Silica appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1154	22 MAR 1972	9.4	36° 55.2'	121° 53.0'

TRANSPIRATION m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
4	24 4 3	24	1017.9	12.8 11.9	1	9	6 7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l ug-at/l	OXYGEN AOU ml/l ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter	
0	12.64	33.441	25.28	6.41	-50	110	.69	1.1	.12	.1	5
5	12.63	33.442	25.28	6.48	-56	111	.63	1.2	.13	.3	5
10	12.45	33.451	25.32	6.40	-47	109	.74	1.9	.28	1.3	6

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				BAROM	AIR TEMP °C	WRATH	CLOUDS
TRANSPI	WAVES	WIND	mb	dry	wet	typ	amt
m	dir ht p	dir speed					
ML 23	1158	22 MAR 1972	10.7	36° 54.9'	121° 56.5'		
8	24	4 2 23 9	1019.0	13.9	12.2	1	9 4 7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt	ml/l	ug-at/l	%		ug-atoms/liter
0	12.04	33.465	25.41	6.42	-44	108	.56
5	12.03	33.466	25.41	6.81	-79	115	.55
10	12.00	33.468	25.42	6.68	-67	113	.56
19	10.52			4.48		1.41	9.4
							.30
							1.5
							18

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 23 1159 22 MAR 1972 12.1 36° 57.2' 121° 56.1'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOI ug-at/l	Z	VISIT			
							dry	wet	typ	amt
6	23	2	24	7	1019.0				1	9
7									4	7
10	12.38	33.448	25.33	7.00	-100	119	.69	.9	.08	.3
5	12.30	33.449	25.35	7.06	-104	120	.43	.4	.12	.0
							.44	.3	.06	.0
										3
										4

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 23	1153	22 MAR 1972	13.4	36° 56.7'	121° 59.9'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry	wet	typ ant
5							
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.42	33.438	25.32	7.10	-109	121	.42
5	12.38	33.440	25.33	7.15	-113	122	.40
9	11.13*	33.557	25.65	4.96	96	82	1.18
							6.2
							.27
							1.6
							14

* indicates questionable data: Paired thermometer read 10.89

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1152	22 MAR 1972	14.2	36° 55.3'	122° 2.4'

TRANS P m	WAVES dir hr p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ ant	VISIB
				dry	wet			
5	26	4	3	25	11	1019.6		
							1	9
							2	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.20*	33.472	25.39	6.85	-84	116	.55	.8	.11	.0	6
5	12.09	33.481	25.41	6.71	-71	114	.57	1.4	.10	.1	5
9	11.09	33.590	25.68	4.99	93	83	1.20	6.7	.30	.8	13
19	10.23*	33.666	25.89	3.97	193	65	1.57	10.7	.40	2.9	19

* indicates questionable data: Paired thermometers read 12.13 at 0 m, 10.13 at 19 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	23	1103	23 MAR 1972	7.8	36° 48.2' 121° 48.6'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
3	24	4	5	8	3	1020.3	
						1	0
						1	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.74	33.493	25.49	6.45	-44	108	.68 3.9 .21 .5 5
5	11.75	33.492	25.49	6.28	-29	105	.63 6.5 .16 .0 6
10	10.74*	33.588	25.74	5.03	94	83	1.31 10.4 .34 .5 16
20	10.31	33.621	25.84	4.49	147	73	1.49 14.7 .39 .8 18
30	10.04	33.660	25.92	4.17	179	68	1.65 17.1 .39 .5 22
50	9.76	33.727	26.02	3.73	222	60	1.80 15.2 .39 .3 28
75	9.66	33.763	26.06	3.54	240	57	1.85 15.7 .37 .4 26
99	9.27*	33.809	26.16	3.30	266	53	1.94 19.1 .34 .6 30

* indicates questionable data: Paired thermometers read 10.66 at 10 m, 9.33 at 99 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 23 1108 23 MAR 1972 9.6 36° 47.5' 121° 50.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAR %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter				
							DRY	WET	WEATH	CLOUDS	VISIB typ amt
0	12.09	33.441	25.38	7.27	-121	123	.29	.6	.09	.0	2
10	11.78	33.468	25.46	6.86	-81	115	.39	.6	.07	.0	3
20	10.68*	33.574	25.75	5.41	61	89	1.11	12.6	.31	.1	12
30	10.21	33.650	25.88	4.37	159	71	1.51	17.2	.38	.3	21
50	9.77*	33.718	26.01	3.90	206	63	1.70	12.9	.34	.4	25
74	9.58	33.769	26.08	3.61	234	58	1.80	13.9	.31	.1	27
99	9.43	33.807	26.14	3.35	259	54	1.88	18.4	.31	.1	29
149	8.99	33.875	26.26	3.03	293	48	1.99	22.1	.24	.0	33

* indicates questionable data: Paired thermometers read 10.78 at 20 m, 9.71 at 50 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE						
ML 23	1112	23 MAR 1972	10.6	36° 48.0'	121° 52.2'						
TRANS P	WAVES	WIND	BARTH	AIR TEMP °C	WEATH CLOUDS VISIB						
m	dir ht	p dir speed	mb	dry wet	typ amt						
7	29	3	5	27	3						
				1022.7							
					3 0 1 7						
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ADU ug-at/l %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter				
0	12.07	33.484	25.42	7.42	-134	125	.27	4.4	.05	.0	2
10	11.77	33.480	25.47	7.14	-106	120	.25	4.6	.05	.0	1
20	11.02*	33.549	25.66	5.74	27	95	.92	10.4	.18	.0	8
30	10.02	33.693	25.95	4.14	182	67	1.58	19.6	.31	.0	21
50	9.60	33.764	26.07	3.70	226	59	1.75	16.5	.27	.0	25
75	9.35	33.817	26.16	3.46	251	55	1.84	17.7	.19	.0	28
99	9.37	33.834	26.17	3.31	264	53	1.91	19.7	.19	.0	29
149	9.07	33.877	26.25	3.10	268	49	1.98	23.5	.22	.0	31

* indicates questionable data: Paired thermometer read 10.95

CRUISE STATION DATE HOUR N LATITUDE: W LONGITUDE
 ML 23 1115 23 MAR 1972 12.6 36° 46.8' 121° 57.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							DRY	WET	AIR TEMP °C	WEATH dry wet
0	11.91	33.526	25.48	7.35	-126	124	.89	11.6	.21	.0
9	11.62	33.527	25.54	7.45	-132	125	.88	11.2	.21	.0
18	11.19*	33.547	25.63	6.94	-81	115	.88	11.5	.19	.1
27	10.25	33.638	25.87	5.44	63	88	1.45	18.7	.36	.0
45	9.49	33.755	26.09	4.68	140	75	1.60	14.5	.19	.0
68	9.42	33.776	26.11	4.21	183	67	1.76	15.2	.26	.2
91	9.27	33.839	26.19	3.95	208	63	1.92	17.6	.19	.0
136	8.79*	33.921	26.33	3.40	263	54	2.06	23.3	.17	.4
199	8.29	33.991	26.46	2.89	315	45	2.25	25.9	.18	.1
249	7.60	34.083	26.63	2.09	395	32	2.62	28.9	.29	.1
298	7.17	34.116	26.72	1.82	425	28	2.68	11.7*	.05	.0
398	6.77	34.157	26.81	1.38	470	21	2.63	30.7	.07	.5

* indicates questionable data: Paired thermometers read 11.28 at 18 m, 8.86 at 136 m
 Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE W LONGITUDE				
				TRANSP	WAVES	WIND	BAROM	AIR TEMP °C
m	dir ht p	dir speed	mb	dry wet				WEATH
ML 23	1157	23 MAR 1972	14.6	36° 49.9'				
10	29	7	6	29	15			
							3	0 1 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA	
m				ml/l			ug-atms/liter	
0	11.82	33.535	25.51	7.45	-134	125	.93	14.4
8	11.86	33.529	25.49	7.39	-129	124	.83	14.0
17	11.47*	33.540	25.57	6.98	-88	117	.93	4.9*
25	10.56	33.616	25.80	5.72	35	94	1.30	18.2
42	9.67	33.757	26.06	4.60	145	74	1.69	17.4
64	9.28	33.820	26.17	4.07	197	65	1.75	16.6
88	9.20	33.854	26.21	3.78	224	60	1.72	16.2
136	8.89*	33.910	26.30	3.21	278	51	2.10	23.9

* indicates questionable data: Paired thermometers read 11.39 at 17 m, 8.81 at 136 m
Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 23	1101	24 MAR 1972	8.0	36° 44.7'	121° 49.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry	wet	typ ant
5	29	2	5	3	3	1019.3	2 0 0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							
0	12.08	33.476	25.41	7.38	-130	125	.28 6.3 .08 .0 3
5	11.86	33.497	25.47	7.45	-134	125	.27 5.5 .08 .0 1
10	11.43	33.540	25.58	6.29	-26	105	.76 10.2 .18 .2 7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1120	24 MAR 1972	8.8	36° 43.1'	121° 51.5'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	PHOSPHATE NITRATE AMMONIA SILICA		
						DRY	WET	CLOUDS
m					%			
0	11.64	33.525	25.53	7.21	-110	121	.40	5.6
5	11.49	33.539	25.57	6.56	-51	110	.70	7.0
10	11.45	33.542	25.58	6.47	-42	108	.70	8.6
20	11.38	33.543	25.59	6.17	-15	103	.85	9.1
30	10.15	33.678	25.92	4.52	146	73	1.49	17.0
50	9.65	33.768	26.07	3.84	213	62	1.75	16.1

ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 23	1123	24 MAR 1972	10.0	36° 39.3'	121° 53.2'

TRANSP m	WAVES			BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ ant	VISIB
	dir	hr	p		dir speed	dry			
5	28	2	5	32	4	1019.6		2	0
								0	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter
0	12.35	33.469	25.35	7.59	-152	129	.35	1.4	.10
5	11.51	33.533	25.56	6.73	-66	112	.60	3.0	.22
10	11.40	33.541	25.59	6.47	-42	108	.72	5.0	.22
20	10.45	33.645	25.84	4.93	106	81	1.36	14.3	.32
30	10.21	33.667	25.90	4.61	138	75	1.44	16.5	.32
50	10.03	33.717	25.97	4.80	123	78	1.56	13.0	.26

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 23 1121 24 MAR 1972 11.1 36° 37.9' 121° 50.9'

TRANSW WAVES WIND BAROM AIR TEMP °C WEATH CLOUDS VISIB
m dir ht p dir speed mb dry wet typ amt

4 30 2 5 28 3 1019.6 2 0 0 7

DEPTH TEMP SALINITY SIGNAL T OXYGEN AOU SAT PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m °C ppt ml/l ug-at/l % ug-atoms/liter

0	12.79	33.456	25.26	6.97	-102	120	.44	1.1	.09	.0	3
5	12.40	33.455	25.33	7.42	-138	126	.33	.9	.06	.0	1
10	12.18	33.459	25.38	6.59	-61	112	.46	3.9	.07	.0	2

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 23	1122	24 MAR 1972	12.2	36° 36.7'	121° 52.9'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	mb	dry	wet	typ	amt
4	30	0	2	30	7	1019.3	
						2	0 0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							
0	13.07	33.472	25.22	7.61	-162	131	.40
5	12.30	33.496	25.39	7.54	-147	128	.40
10	11.36	33.559	25.61	6.36	-31	106	.74
							3.6
							.15
							.0
							6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 23	1124	24 MAR 1972	13.2	36° 39.0'	121° 56.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
10	30	2	3	28	4	1019.3	
						2	0
						0	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ANOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.07	33.584	25.50	6.52	-54	110	.74
5	10.55	33.643	25.82	5.00	99	82	1.22
10	10.26*	33.632	25.86	4.84	117	79	1.19
20	10.06	33.667	25.92	4.47	152	72	1.44
30	9.98	33.683	25.95	4.35	164	70	1.47

* indicates questionable data: Paired thermometer read 10.45

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 23 1116 24 MAR 1972 14.5 36° 43.4' 122° 55.7'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							DRY	WET	ug-atoms/liter
0	12.06	33.554	25.48	6.34	-38	107	.76	5.0	.15
4	11.94	33.555	25.50	6.39	-41	108	.77	6.6	.17
9	11.61	33.552	25.56	6.38	-36	107	.87	7.1	.22
18	11.44	33.553	25.59	6.10	-9	102	.95	8.4	.24
27	10.43	33.631	25.83	4.67	130	76	1.39	14.4	.38
45	9.73	33.741	26.04	3.82	214	61	1.50	13.7	.27
68	9.30	33.832	26.18	3.26	269	52	1.89	18.3	.18
									.0
									27

Hydrographic Stations

<u>ML CRUISE 24</u>	1105
<u>17 April 1972</u>	1150
	1154
	1158
	1159
	1153
	1152
	1157
<u>18 April 1972</u>	1103
	1108
	1112
	1115
<u>19 April 1972</u>	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1105	17 APR 1972	6.3	36° 50.8'	121° 49.7'		
TRANS	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	mb	dry	wet	typ	amt
5	26	2	3	00	1017.3	00	X
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	PHOSPHATE	NITRATE
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter	AMMONIA SILICA
0	11.87	33.518	25.48	6.52	-51	1.31	2.7
5	11.82	33.532	25.50	6.68	-65	1.08	4.3
10	11.71*	33.540	25.53	6.50	-48	.70	4.2
						.14	.15
							1.1
							1.0
							6

* indicates questionable data: Paired thermometer read 11.66

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1150	17 APR 1972	7.4	36° 53.0'	121° 51.3'		
TRANS P m	WAVES dir ht p dir speed m/s	WIND dir speed m/s	BAROM dry mb	AIR TEMP °C wet	WEATH typ amt	CLOUDS typ	VISIB
6	23	2	22	3	1016.6	00	1
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.37	33.463	25.35	6.92	-93	118	.53
5	11.49	33.540	25.57	6.14	-13	103	.87
10	11.24*	33.572	25.64	5.67	31	94	1.00

* indicates questionable data: Paired thermometer read 11.30

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
HL 24	1154	17 APR 1972	8.1	36° 55.2'	121° 52.8'

TRANSP	WAVES	WIND	BAROM!	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ ant	
6	25	1	3	00	1016.3		
						2	1
							6

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	12.51	33.431	25.29	7.30	-128	125	.46	.2	.06	.6	1
5	11.04	33.521	25.64	5.79	23	96	.94	5.7	.23	.3	8
10	10.43*	33.598	25.81	4.65	132	76	1.51	11.8	.36	2.3	17

* indicates questionable data: Paired thermometer read 10.51

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1158	17 APR 1972	9.2	36° 55.3'	121° 56.4'		
TRANS	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt
7	22	2 1	0	1016.6		3	3
						3	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							
0	12.09	33.487	25.42	7.19	-114	122	.49
2	33.481		7.26				.52
5	11.74	33.478	25.48	7.22	-112	121	.53
7	33.483		6.91				.56
10	10.41	33.616	25.82	4.55	141	74	1.55
16	33.699		3.74				12.5
20	9.82*	33.715	26.00	3.69	224	59	1.90
							17.9
							16.3
							.40
							1.6
							2.3

* indicates questionable data: Paired thermometer read 9.74

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1159	17 APR 1972	10.0	36° 57.1'	121° 56.2'

TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.23	33.419	25.14	7.76	-177	134	.40
3	12.72*	33.415	25.24	7.93	-186	136	.38
5	12.48*	33.414	25.29	7.92	-183	135	.36
7	11.39	33.492	25.55	6.34	-30	106	.77
10	11.02*	33.508	25.63	5.12	83	85	1.23
							9.1
							.30
							2.0
							14

* indicates questionable data: Paired thermometers read 12.62 at 3 m, 12.56 at 5 m,
11.12 at 10 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1153	17 APR 1972	10.8	36° 56.8'	122° 00.1'		
TRANS#	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
"	dir ht P	air speed	mb	dry wet		typ amt	
7	24	2 2	18	3	1016.9	3	6 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
"							
0	12.84	33.426	25.23	7.85	-181	135	.33
5	11.86	33.450	25.43	7.30	-121	123	.71
10	11.47*	33.450	25.51	6.09	-8	102	.90

* indicates questionable data: Paired thermometer read 11.57

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1152	17 APR 1972	11.7	36° 55.2'	122° 2.1'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ emt	VISIB
				dry	wet			
6	28	3	24	17	1017.9		3	6
17							7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/litter	NITRATE AMMONIA SILICA
0	11.41*	33.583	25.62	6.26	-23	104	9.5	.31
4	10.98	33.596	25.71	6.07	-1	100	8.6	.29
9	10.86	33.605	25.74	5.90	15	97	1.07	.29
17	10.69*	33.609	25.77	5.55	48	91	1.25	.32

* indicates questionable data: Paired thermometers read 11.49 at 0 m, 10.61 at 17 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML. 24 1157 17 APR 1972 13.3 36° 49.6' 121° 58.4'

TRANSP WAVES WIND BAROM AIR TEMP °C
 m dir ht p dir speed mb dry wet WEATH

typ amt

7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	11.42	33.548	25.59	6.91	-81	115	.68	3.0	.19	.4	4
6	11.43	33.551	25.59	6.92	-82	115	.72	4.1	.23	.3	4
13	11.39	33.548	25.60	7.34	-119	122	.67	4.3	.15	.4	3
21	11.04	33.568	25.67	6.15	-9	102	.94	5.9	.25	.5	5
40	9.59	33.695	26.02	3.91	208	63	1.55	13.7	.30	.1	16
64	9.07	33.870	26.24	3.01	294	43	1.62	13.2	.18	.0	19
88	8.77	33.941	26.35	2.77	319	44	1.89	19.8	.15	.0	24

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1103	18 APR 1972	6.3	36° 48.1'	121° 48.7'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOV ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter			
							DRY	WET	WEATH	CLOUDS
5	9.66	33.785	25.48	6.98	-93	118	.49	3.7	.05	.6
10	9.24	33.845	26.08	3.71	224	60	1.70	18.3	.28	.5
20	8.91	33.908	26.20	3.11	283	50	1.98	22.2	.35	.5
30	8.71	33.936	26.30	2.71	323	43	2.07	23.8	.30	.4
50	8.53	33.956	26.35	2.54	340	40	1.96	25.2	.32	.4
75	8.40	33.980	26.40	2.44	352	38	2.25	26.2	.39	.3
100	8.29	33.992	26.43	2.31	365	36	2.31	24.6	.26	.3
				2.22	374	35	2.26	25.0	.24	.3

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	24	1108	18 APR 1972	7.6	36° 47.7'	121° 49.9'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
6	28	2	3	19	4	1014.2	
						2	0
						7	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-atm/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	11.94	33.536	25.48	6.90	-86	116	.55
10	10.90	33.584	25.71	5.65	37	93	1.05
20	10.32	33.649	25.86	4.79	120	78	1.26
30	9.56	33.765	26.08	3.36	257	54	1.83
49	9.15	33.851	26.22	2.97	297	47	2.03
74	8.73	33.924	26.34	2.57	338	40	2.19
99	8.59	33.953	26.38	2.43	352	38	2.22
148	8.19	34.004	26.48	2.16	381	34	2.39
							26.2
							.25
							.2
							41

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1112	18 APR 1972	9.0	36° 48.0'	121° 51.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	SAT	PHOSPHATE NITRATE AMMONIA SILICA		
						dry	wet	WEATH typ atm
7	28	2	26	8	1015.2		2	CLOUDS typ atm
							0	VISIB
								8

* indicates questionable data: Paired thermometer read 10.28

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1115	18 APR 1972	11.4	36° 46.2'	121° 56.8'		
TRANSPI m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ amt	CLOUDS	VISIB
6	30	5	30	12	1014.9	2	0
8							
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE ALGONIA SILICA ug-atoms/liter
0	10.74	33.619	25.77	5.96	11	93	1.04 9.2 .33 .5
7	10.72	33.619	25.77	5.99	8	98	1.02 9.2 .35 .6
14	10.71	33.620	25.77	6.03	5	99	1.07 8.7 .28 .6
21	10.36*	33.635	25.85	5.38	67	88	1.15 10.9 .29 .7
42	9.40	33.787	26.13	3.50	246	56	1.72 18.8 .28 .9
61	8.97*	33.891	26.28	3.06	291	48	1.83 21.1 .08 .3
82	8.72	33.984	26.39	2.64	331	42	1.85 19.0 .10 .2
125	8.24	34.047	26.51	2.24	373	35	2.26 24.9 .14 .3
185	7.76	34.073	26.60	2.01	400	31	2.47 26.8 .08 .3
231	7.33*	34.105	26.69	1.61	441	25	2.63 30.2 .06 .3
275	7.09	34.134	26.75	1.37	466	21	2.80 31.0 .06 .3
365	6.59	34.185	26.85	.99	507	15	2.79 32.7 .07 .2

* indicates questionable data: Paired thermometers read 10.42 at 21 m, 8.91 at 61 m,
7.40 at 231 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1101	19 APR 1972	6.4	36° 44.8'	121° 49.6'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE AMMONIA SILICA			
							AIR TEMP °C dry	AIR TEMP °C wet	CLOUDS typ amt	VISIB
4	31	3	32	11	1016.6				0	7
0	11.01	33.613	25.71	5.85	18	97	.92	8.9	.21	.7
5	11.06	33.607	25.70	5.85	17	97	.92	8.8	.30	.6
10	10.96	33.606	25.72	5.78	24	95	.86	6.3	.19	.7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 24	1120	19 APR 1972	7.2	36° 42.9'	121° 51.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry	wet	typ amt
4	34	2	2	36	9	1017.6	
							0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.49	33.557	25.58	7.00	-90	117	.50 .08 .6 3
5	11.46	33.560	25.59	7.09	-98	118	.49 3.1 .06 .4 2
10	11.44	33.561	25.60	6.75	-67	113	.52 2.5 .07 .4 5
20	11.28	33.563	25.63	6.74	-64	112	.56 4.5 .10 .6 4
30	10.81	33.615	25.75	5.64	39	93	1.06 10.0 .26 1.0 .5 11
49	9.29	33.813	26.16	3.08	285	49	2.02 22.3 .43 .5 31

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE							
						TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS
m	dir ht	p	dir speed	mb	dry	wet	typ	amt				VISIB
ML 24	1123	19 APR 1972	8.4	36° 39.1'	121° 53.2'							
5	31	5	3	31	9	1017.6				0	7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRONTA SILICA			
m	°C	ppt		ml/l	ug-at/l	%			ug-atoms/liter			
0	11.59	33.551	25.56	7.48	-134	125	.40	.8	.03	.2		4
3	11.57	33.553	25.57	7.53	-138	126	.40	.3	.03	.2		3
5	11.56*	33.552	25.57	7.46	-132	125	.40	.2	.04	.2		3
10	11.50	33.560	25.58	7.07	-96	118	.46	1.1	.05	.1		3
14	9.88	33.735	26.01	3.72	221	60	1.80	18.5	.45	.9		26
19	9.44	33.783	26.12	3.40	255	54	1.95	23.2	.47	.1		28
29	9.34	33.827	26.17	3.09	284	49	2.05	22.9	.43	.4		34
48	8.87	33.919	26.31	2.99	298	47	2.08	23.5	.20	.2		34

* Indicates questionable data: Paired thermometer read 11.62

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	11121	19 APR 1972	9.4	36° 37.3'	121° 51.4'
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS VISIB
■	dir ht p	dir speed mb	dry wet	typ atm	
7	35	2 3 35 9	1019.0	0	0 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %
0	12.50	33.506	25.35	7.32 -130	125 .44 .8 .02 .1 2
2	12.48	33.505	25.36	7.30 -128	125 .44 .9 .02 .1 1
5	12.44	33.509	25.37		.41 1.4 .02 .2 1
7	12.30	33.515	25.40	7.77 -168	132 .37 3.4 .02 .3 1
10	12.10	33.533	25.45	7.38 -131	125 .32 3.8 .00 .5 1

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 24	1122	19 APR 1972	10.0	36° 36.6'	121° 53.1'	
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet °C	WEATH CLOUDS typ amt	VISIB
6	32 1 2	31 7	1018.6		0	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.54	33.514	25.35	7.26 -125	124	.36 4.0 .00 .2 1
5	12.55	33.506	25.34	7.35 -133	126	.42 .2 .04 .3 2
10	12.30	33.517	25.40	7.85 -175	133	.38 .4 .01 .1 2

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 24	1124	19 APR 1972	11.0	36° 38.9'	121° 56.5'

TRANS	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
6	31 3 3	28 8	1019.0			0	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	ADU	SAT	PHOSPHATE NITRATE AMMONIA SILICA
m	°C	ppt	ml/l	ug-at/l	%		ug-atoms/liter
0	11.77	33.562	25.54	7.30	-120	123	.37
5	11.81	33.557	25.53	7.88	-172	133	.35
10	11.56	33.555	25.57	7.37	-124	123	.39
19	10.41	33.651	25.85	5.21	82	85	1.25
29	9.48	33.757	26.09	3.62	235	58	1.86
							19.5
							.48
							.8
							24

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 24 1116 19 APR 1972 12.3 36° 43.4' 121° 55.7'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AU	SAT ug-at/l	%	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
								DRY	WET	CLOUDS typ amt	VISIB
5	29	2	2	29	11	1018.6				0	7
0	11.16*	33.618	25.69	6.91	-78	115	.81	4.4	.33	.4	7
5	11.05*	33.622	25.71	6.90	-76	114	.76	4.0	.29	.4	6
10	10.97	33.621	25.73	6.86	-72	113	.77	4.5	.27	.2	7
19	10.50	33.644	25.83	5.82	26	95	1.17	10.0	.36	.4	11
29	9.49	33.767	26.10	3.57	239	57	1.81	19.6	.42	.2	24
49	8.96	33.903	26.29	2.88	307	46	1.77	22.3	.28	.1	33
73	8.55	33.987	26.42	2.65	333	42	2.12	24.2	.26	.0	35

* indicates questionable data: Paired thermometers read 11.05 at 0 m, 11.12 at 5 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 24 1110 19 APR 1972 13.3 36° 45.7' 121° 52.1'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-atm/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
							mb	dry	wet	CLOUDS typ amt	VISIB
4	28	3	2	28	11	1017.9				0	7
0	11.33	33.610	25.65	7.45	-129	124	.58	4.0	.22	.2	4
5	11.31	33.610	25.66	7.45	-128	124	.56	2.7	.21	.2	3
10	11.34	33.613	25.66	7.24	-110	121	.54	2.3	.19	.2	3
19	11.04	33.599	25.70	6.77	-64	112	.69	3.7	.23	.3	4
28	9.98	33.740	25.99	4.06	189	66	1.48	15.2	.31	.4	16
46	8.67	33.952	26.37	2.66	330	42	2.01	23.8	.28	.0	28

Hydrographic Stations

<u>ML CRUISE 25</u>	1105
15 May 1972	1150
	1154
	1158
	1159
	1153
	1152
	1157
	1114
16 May 1972	1103
	1108
	1112
	1115
	1110
17 May 1972	1101
	1120
	1123
	1121
	1122
	1124
	1116

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1105	15 MAY 1972	6.6	36° 50.8'	121° 49.7'

DEPTH m	TEMP °C	SALINITY ppt	SIGNAL #1/1	OXYGEN ug-at/l	AU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							dir ht	p dir speed	m/s	dry
9	26	0	2	15	1	1011.9	10.0	10.0	28	x
10	12.19	33.823	25.66	6.92	-92	118	.91	.91	10.0	.26
5	12.28	33.831	25.65	6.85	-87	117	.94	.94	10.0	.25
0	12.29	33.833	25.65	6.86	-88	117	.95	.95	10.1*	.27

ug-atoms/liter

* indicates questionable data: Nitrate appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1150	15 MAY 1972	7.3	36° 52.9'	121° 51.3'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
8	26 0 2 0 0	1011.9		10.0 10.0	28	X 9	0

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.92*	33.832	25.52	7.83	-181	135	.47	5.7	.15	.3	3
5	12.88*	33.828	25.53	7.58	-158	131	.60	6.6	.20	.5	3
10	12.38*	33.827	25.63	7.23	-122	123	.76	8.9	.25	.5	4

* indicates questionable data: Paired thermometers read 12.86 at 0 m, 12.77 at 5m,
12.27 at 10 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
NL 25	1154	15 MAY 1972	8.0	36° 55.2'	121° 52.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ADU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ atm
0	13.13	33.834	25.48	8.03	-201	139	.43	5.5	.18
5	12.50*	33.834	25.61	7.58	-154	130	.68	5.2	.26
10	12.35*	33.834	25.64	7.43	-139	127	.64	5.2	.23
									.8
									3

* indicates questionable data: Paired thermometers read 12.37 at 5 m, 12.27 at 10 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1158	15 MAY 1972	9.0	36° 55.1'	121° 56.6'
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS VISIB
m	dir ht	P	dir speed	dry wet	typ amt
6	24	0	2	26	2
				1012.5	
				11.7	11.1
				28	X 9 0
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-atm/l	AOU % SAT
0	13.78	33.832	25.35	8.82 -279	155 .28 .9 .08 .2
1	13.58	33.832	25.39	8.90 -284	156 .33 .9 .07 .1
5	12.09	33.837	25.69	8.91 -268	151 .34 1.7 .20 .0
7	11.53	33.837	25.79	7.72 -156	129 .59 4.9 .26 .6
10	10.89	33.844	25.92	6.64 -52	110 .88 8.7 .28 .5
15	10.39	33.852	26.01	5.60 46	92 1.29 11.6 .31 1.1
20	9.81	33.862	26.12	4.36 164	70 1.77 16.2 .34 2.3

PHOSPHATE NITRATE AMMONIA SILICA
ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1159	15 MAY 1972	9.9	36° 57.4'	121° 56.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							dry	wet	AIR TEMP °C	WEATH dry wet
0	15.01	33.819	25.08	7.98	-216	144	.36	.2	.08	.2
1	14.80	33.816	25.12	8.05	-220	144	.36	.1	.05	.1
3	14.03*	33.822	25.29	8.40	-244	148	.30	.7	.06	.3
5	12.97*	33.817	25.50	8.87	-275	153	.32	.9	.03	.4
9	13.51*	33.821	25.40	7.66	-172	134	.47	1.4	.06	.3

* indicates questionable data: Paired thermometers read 14.44 at 3 m, 12.89 at 5m,
 13.44 at 9 m
 Temperature at 9 m appears anomalously high, bottle did not
 trip and cast was sent back down

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1153	15 MAY 1972	10.6	36° 57.7'	122° 00.3'

TRANSP m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C		WEATH	CLOUDS	VISIB typ amt
				dry	wet			
7	26	0	23	3	1013.2	14.4	12.9	3
						0	1	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	14.26*	33.818	25.24	8.35	-242	148	.35	2.4 .07 .6 1
5	13.31*	33.822	25.44	8.34	-231	145	.36 .1	.07 .7 1
10	11.63*	33.827	25.77	7.23	-113	121	.56 .8	.11 .7 3

* indicates questionable data: Paired thermometers read 14.32 at 0 m, 13.38 at 5 m, 11.70 at 10m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1152	15 MAY 1972	11.4	36° 55.1'	122° 2.3'

TRANSPIRATION mm	WAVES dir ht P	WIND dir speed mb	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
7	28	2	28	15	1013.2	12.7	11.9	3
						0	1	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	13.36	33.835	25.44	8.76	-269	153	.25	.4
5	11.54	33.847	25.80	7.61	-146	128	.51	2.9
10	10.48	33.871	26.01	5.61	44	92	1.28	11.6
19	9.69	33.873	26.14	4.03	195	65	1.85	16.0

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 25 1157 15 MAY 1972 12.6 36° 50.2' 121° 58.1'

	TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
	dir ht	P	dir speed	mb	dry wet	typ	amt	
14	29	2	3	29	14	1012.5	12.6	12.2
							3	0
							2	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE	NITRATE	NITRITA	AMMONIA	SILICA ug-atoms/liter
0	12.17*	33.853	25.69	6.42	-47	109	1.13	7.9	.30	.6	10
9	11.12*	33.862	25.89	5.59	38	93	1.45	12.9	.35	.5	17
17	10.16*	33.854	26.05	5.06	97	82	1.59	17.9	.36	.2	20
26	9.65	33.882	26.16	4.18	182	67	1.81	17.6	.37	.5	24
43	9.08	33.933	26.29	3.31	267	53	2.00	22.3	.30	.4	29
66	8.77*	33.941	26.35	2.88	309	45	2.01	21.8	.24	.5	30
90	8.54*	34.007	26.43	2.49	347	39	2.27	21.7	.27	.6	38
136	8.16	34.051	26.53	2.11	386	33	2.42	25.8	.23	.8	41

* indicates questionable data: Paired thermometers read 12.23 at 0 m, 11.40 at 9m, 10.23 at 17 m,
 8.86 at 65 m, 8.64 at 87 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 25 1114 15 MAY 1972 14.0 36° 50.4' 121° 52.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	CLOUDS typ amt
8	27	2	21	7	1013.0	14.7	13.2	3	0 2 6
10	10.69	33.852	25.52	7.47	-150	129	.73	7.3	.25 1.1 3
20	9.56	33.880	25.96	6.75	-59	111	.94	11.1	.27 .2 2
30	9.30*	33.927	26.17	4.09	191	66	1.85	20.8	.34 1.2 23
50	9.09*	33.959	26.25	3.54	244	56	1.97	22.3	.28 .5 27
						51	2.05	23.4	.26 1.0 30

* indicates questionable data: Paired thermometers read 9.21 at 30 m, 8.99 at 50 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 25 1103 16 MAY 1972 6.6 36° 48.2' 121° 48.4'

	TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt	
2	27	0 2 25	4	1012.5	11.4	11.4	28	X 9 3

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA ug-atoms/liter
0	13.03	33.688	25.39	4.41	123	76	2.15	14.4	.43	3.0	21
5	10.04	33.855	26.07	4.79	123	78	1.74	17.4	.31	1.2	21
10		33.873		4.49			1.68	17.4	.28	.9	21
20	9.70	33.896	26.16	3.96	201	64	1.88	20.3	.30	1.9	25
30	9.63	33.911	26.18	3.80	216	61	1.93	21.1	.31	1.8	25
50	9.19	33.944	26.28	3.24	272	52	1.89	23.0	.29	1.9	29
75	9.08*	33.949	26.30	2.97	297	47	2.11	22.4	.28	1.2	31
100	9.06	33.956	26.31	3.09	287	49	2.12	23.1	.27	1.1	32

* indicates questionable data: Paired thermometer read 9.15

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				dir	ht	P	WIND	BAKOM	AIR TEMP °C	WEATH	CLOUDS	VISIB
ML 25	1108	16 MAY 1972	7.7	36°	47.6'				121°	49.7'		
6	27	0	3	27	7			1013.9	10.7	10.7	28	X
									9	9	3	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-ac/1	SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA	
0	12.41	33.823	25.62	7.05	-106	120	.76	7.8	.21	.0	7	
1							.83	8.0	.21	.0	8	
5							.75	7.9	.20	.0	6	
10	10.56	33.838	25.97	5.16	84	85	1.40	17.1	.28	.3	18	
20	9.65	33.885	26.16	4.04	195	65	1.85	20.9	.28	1.3	24	
30	9.05	33.948	26.31	3.15	282	50	2.09	24.2	.28	1.0	24	
50	9.02	33.950	26.31	3.04	292	48	2.12	22.8	.28	.7	31	
74	8.92	33.961	26.34	2.91	305	46	2.15	22.5	.28	.7	33	
99	8.71*	33.986	26.39	2.66	330	42	2.20	24.6	.27	.2	35	

* Indicates questionable data: Paired thermometer read 8.47

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 25 1112 16 MAY 1972 9.1 36° 48.3' 121° 51.6'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ACU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							mb	dry	wet
0	11.81	33.825	25.73	6.69	-67	113	1.36	13.8	.30
9	11.46	33.827	25.80	6.25	-24	105	1.34	14.3	.28
17	10.45	33.839	25.99	5.16	85	84	1.62	18.6	.30
26	9.85	33.863	26.11	4.25	174	69	1.79	20.2	.29
43	9.25	33.927	26.26	3.35	261	53	2.04	23.0	.27
66	8.88	33.965	26.35	2.91	305	46	2.20	25.5	.27
90	8.77	33.981	26.38	2.67	328	42	2.16	23.5	.25
138	8.64*	33.998	26.41	2.55	340	40	2.25	24.5	.26
									.0
									.33

* indicates questionable data: Paired thermometer read 8.57

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				MAROM	AIR TEMP °C	WEATH	CLOUDS
	■	dir ht p	dir speed	mb	dry wet	typ amt	
ML 25	1115	16 MAY 1972	10.7	36° 46.4'	121° 57.0'		
12	26	1 2	28 5	1015.9	11.7	11.7	28 X 9 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN mg/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.51	33.840	25.80	6.48	-45	109	.99 10.0 .19 1.7 6
10	10.71	33.828	25.94	5.47	54	90	1.40 15.5 .26 1.1 16
19	9.34	33.868	26.20	3.80	220	61	1.90 20.5 .33 1.7 25
29	9.09	33.916	26.28	3.27	270	52	1.79 19.8 .23 .8 24
48	8.92	33.938	26.32	3.01	296	48	2.09 24.1 .27 .7 31
73	8.78	33.958	26.36	2.80	316	44	2.07 26.8 .27 .9 30
97	8.62	33.983	26.40	2.69	328	62	2.05 20.2 .23 .6 30
145	8.34*	34.018	26.47	2.35	362	37	2.17 24.3 .22 .2 35
181*	8.07	34.062	26.55	2.12	386	33	2.38 26.5 .18 .1 40
227*	7.67	34.095	26.63	1.79	421	28	2.56 30.6 .09 .0 46
272*	7.34	34.116	26.70	1.57	445	24	2.68 29.8 .10 .0 51
363*	6.47	34.181	26.87	1.02	506	15	2.91 32.0 .09 .0 64

* indicates questionable data: Paired thermocaster read 8.41

Depths calculated from wire angle and appear shallow, unprotected thermometer in error

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE							
ML 25	1110	16 MAY 1972	12.2	36° 45.5'	121° 51.8'							
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB					
m	dir hr	p	dir speed	mb	dry	wet	typ amt					
4	27	1	2	22	10	1016.3	12.8	12.7	28	X	9	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atm/liter	NITRATE ug-atm/liter	NITRITE ug-atm/liter	AMMONIA ug-atm/liter	SILICA	
m												
0	12.57	33.819	25.58	8.65	-251	148	.29	2.3	.06	.0	1	
5	12.20	33.818	25.65	8.54	-237	145	.38	2.5	.09	.0	1	
10	10.18	33.864	26.06	4.68	131	76	1.65	16.3	.25	2.4	17	
20	9.75	33.884	26.14	4.16	183	67	1.64	17.4	.21	1.9	18	
30	9.55*	33.910	26.20	3.68	228	59	1.92	21.4	.24	1.3	25	
50	9.00	33.956	26.32	3.10	287	49	1.81	20.4	.23	1.4	23	

* indicates questionable data: Paired thermometer read 9.45

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1101	17 MAY 1972	6.5	36° 44.6'	121° 49.5'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB					
m	dir ht p	dir speed	mb	dry wet		typ	amt					
5	29	1	2	30	6	1016.6	12.5	11.6	3	3	1	7

DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-atm/l	SAT %	PHOSPHATE ug-atm/l	NITRATE ug-atm/l	NITRITE ug-atm/l	AMMONIA ug-atm/l	SILICA liter
0	12.67	33.827	25.57	8.09	-202	139	.36	7.8	.09	.3	2
5	12.38	33.827	25.63	7.74	-167	132	.45	12.7	.19	.3	3
10	10.38	33.867	26.02	4.64	132	76	1.62	18.0	.24	2.3	17

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANS P m	WAVES dir ht P	WIND dir speed mb	MAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
ML 25	1120	17 MAY 1972	7.4					36° 43.3'		121° 51.6'	
				6	29	2	30	8	1016.9	12.5	11.7
									3	3	2
									7		
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %		PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter			
0	12.87	33.835	25.54	8.48	-239	146	.25	14.3	.05	.2	3
5	12.17	33.846	25.68	7.35	-130	125	.41	12.0	.13	.4	3
10	10.26	33.845	26.03	5.04	98	82	1.53	12.5	.29	1.2	18
20	9.64	33.855	26.14	4.20	181	67	1.80	12.0	.31	1.7	24
30	9.41	33.895	26.21	3.73	225	60	1.92	20.4	.29	1.3	27
50	9.28	33.931	26.26	3.24	271	52	2.13	13.2*	.26	2.4	32

* indicates questionable data: Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1123	17 MAY 1972	8.7	36° 39.1'	121° 53.1'

	TRANSP m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP dry wet °C	WEATH typ atm	CLOUDS	VISIB
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	11.12	33.842	25.87	5.97	5	99	1.25	9.9 15
3	11.06	33.840	25.88	6.01	2	100	1.16	13.0 .27
5	11.07	33.844	25.88	5.94	8	99	1.25	14.8 .33
9	10.95	33.798*	25.87	5.85	18	97	1.25	15.4 .27
18	10.46	33.842	25.99	4.76	121	78	1.60	17.7 .28
28	10.10	33.843	26.05	4.65	135	75	1.67	15.8 .29
46	9.59	33.874	26.16	3.50	244	56	1.65	15.3 .25

* indicates questionable data: Salinity appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 25	1121	17 MAY 1972	9.6	36° 37.5'	121° 51.3'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
7	29	2	29	14	1017.3	12.2 11.6	3 3 2 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m					%		
0	14.00	33.754	25.24	6.91	-110	122	1.21 4.6 .15 2.6 6
2	13.98	33.750	25.25	6.88	-107	121	1.20 6.6 .16 2.5 6
5	11.49	33.848	25.81	6.40	-38	107	1.19 10.9 .28 1.0 1.5
10	10.67	33.861	25.97	5.19	80	85	1.54 16.3 .27 .9 19

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 25	1122	17 MAY 1972	10.4	36° 36.4'	121° 52.9'

TRANSPIRATION mm	WAVES dir ht P	WIND dir speed mb	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
9	30	1 2 30 11	1017.3	11.7	10.8	3	3	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	11.14	33.864	25.89	5.84	16	97	1.37	14.7
5	11.14*	33.864	25.89	5.77	22	96	1.40	14.0
10	11.07	33.868	25.90	5.78	22	96	1.31	10.5

* indicates questionable data: Paired thermometer read 11.08

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 25 1124 24 MAY 1972 12.1 36° 38.7' 121° 56.6'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU Z	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			VISIB typ smt
							WAVES m	WTND dir ht P	BAROM mb	
0	11.57	33.849	25.80	5.43	48	91	1.41	16.9	.27	.0
5	10.33*	33.868	26.03	4.87	112	79	1.71	19.3	.31	.5
10	9.88*	33.872	26.11	4.41	159	71	1.83	20.9	.29	0
20	9.79*	33.888	26.14	4.31	169	70	1.71	18.9	.26	0
30	9.74	33.888	26.15	4.07	191	66	1.89	20.8	.30	0
										27

* indicates questionable data: Paired thermometers read 10.42 at 5 m, 9.94 at 10 m, 9.86 at 20 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 25 1116 24 MAY 1972 13.5 36° 38.7' 121° 56.6'

TRANSPIRATION m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB													
								8	29	2	3	29	5	1014.6	13.9	12.8	1	8	4	6
DEPTH m	TEMP °C	SALINITY ppt	SIGNAL T	OXYGEN ml/l	AOU ug-at/l	SAT %		PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter								
0	11.57	33.848	25.80	6.03	-5	101		1.32	14.7	.28	.0									18
5	11.42	33.847	25.82	6.09	-9	102		1.32	15.9	.30	.0									18
10	11.28	33.844	25.85	5.93	6	99		1.37	16.2	.27	.0									17
19	11.00	33.844	25.90	5.61	38	93		1.46	16.4	.28	.0									19
29	10.27	33.829	26.01	4.75	124	77		1.66	19.1	.33	.5									22
48	9.30*	33.881	26.22	3.64	235	58		1.90	19.5	.33	.0									27
72	8.99*	33.950	26.32	3.08	289	49		2.09	21.5	.28	.0									31

* indicates questionable data: Paired thermometers read 9.21 at 48 m, 8.99 at 72 m

Hydrographic Stations

<u>ML CRUISE 26</u>	
19 June 1972	1110
	1116
	1124
	1123
	1121
'	1122
	1120
	1101
20 June 1972	1103
	1108
	1112
	1115
	1157
	1114
21 June 1972	1105
	1150
	1154
	1158
	1159
	1152
	1153

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1110	19 JUN 1972	6.9	36° 45.7'	121° 52.1'

TRANSPI		WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB			
m	dir ht p	dir speed	mb	dry	wet	typ	amt				
6	26	0	2	24	4	1013.9	12.8	12.2			
						00	3	8			
							3				
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	12.29*	33.734	25.57	5.89	-1	100	.75	10.4	.22	.3	9
5	12.28	33.735	25.57	5.99	-10	102	.76	10.5	.25	.2	8
10	11.89	33.736	25.65	5.70	20	96	1.05	12.9	.23	.4	13
20	10.77	33.775	25.88	4.86	108	80	1.33	14.8	.29	.7	15
30	9.90	33.775	26.03	3.89	205	63	1.73	20.5	.34	.3	22
50	9.45*	33.858	26.17	3.07	284	49	1.97	20.8	.30	.2	28

indicates questionable data: Paired thermometers read 12.14 at 0 m, 9.32 at 50 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 26	1116	19 JUN 1972	8.2	36° 43.2'	121° 55.6'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	C WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry	wet	typ amt
7	25	1	2	21	4	1014.9	12.5
						12.1	1
						3	7
						4	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	11.72	33.773	25.71	6.13	-16	103	.76
5	11.52	33.775	25.75	5.97	0	100	1.10
10	11.18	33.779	25.81	5.44	51	90	1.35
20	10.66	33.788	25.91	4.82	113	79	1.61
30	10.30	33.793	25.98	4.82	117	79	1.57
50	9.54	33.849	26.15	3.64	232	58	1.91
75	9.09	33.911	26.27	2.91	303	46	1.89

* indicates questionable data: Nitrate appears anomalously high

CRUISE		STATION		DATE		HOUR		N LATITUDE		W LONGITUDE	
ML	26	1124	19 JUN	1972	9.3			36° 38.9'		121° 56.3'	
TRANSF	WAVES	WIND		BAROM		AIR TEMP	°C	WEATH	CLOUDS	VISIB	
m	dir ht p	dir speed	mb			dry	wet		typ	amt	
10	24	1	3	24	6	1014.9		12.8	12.4	1	3
									7		5
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT		PROPHATE	NITRATE	NITRITE	AMMONIA SILICA
m	°C	PPT		ml/l	ug-at/1	Z					ug-atoms/liter
0	12.15	33.777	25.63	5.71	16	97		1.08	9.5	.28	.8
5	11.58	33.788	25.75	5.36	54	90		1.21	12.2	.26	.6
10	11.53	33.788	25.76	5.38	53	90		1.25	13.1	.26	.5
20	10.47	33.792	25.95	4.40	153	72		1.58	19.1	.24	.4
30	10.36	33.800	25.97	4.30	163	70		1.58	19.1	.24	.6
											19

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 26 1123 19 JUN 1972 10.2 36° 39.1' 121° 52.7'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C		WEATH	CLOUDS	VISIB
				dry	wet			
4	28	0	3	25	8	1015.6	14.4	13.4
							1	3
							7	5
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/1	AOU ug-at/1	SAT Z	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	13.73	33.733	25.28	8.98	-292	157	.07	10.7
3	13.01	33.742	25.44	7.85	-184	136	.19	5.3
5	12.52	33.747	25.54	6.84	-88	117	.62	8.6
10	12.30	33.772	25.60	6.53	-58	111	.88	11.9
15	11.87	33.794	25.70	5.73	18	97	1.18	13.9
20	11.82*	33.794	25.71	5.46	42	92	1.20	8.1
29	11.29	33.790	25.80	5.39	55	90	1.30	9.1
49	9.61	33.836	26.13	3.50	244	56	1.60	11.9

* indicates questionable data: Paired thermometer read 11.74

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML	1121	19 JUN 1972	11.1	36° 37.7'	121° 51.0'
TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM dry wet	AIR TEMP °C WEATH	CLOUDS typ sat
4	27	0	3	22	7
				1015.2	14.6 12.8
				1	3 7 5
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/1 ml/l	AOU ug-at/1 Z
					PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.67	33.721	25.08	9.34 -334	167 .07 3.2 .02 .0 0
1	14.61	33.720	25.09	9.19 -320	164 .07 3.1 .02 .2 0
2	13.79	33.729	25.27	8.90 -286	156 .09 2.6 .02 .2 2
5	12.61	33.752	25.52	7.22 -123	124 .41 4.1 .05 .1 7
10	12.05	33.760	25.64	5.88 2	100 .96 11.3 .20 .6 14

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1122	19 JUN 1972	11.9	36° 36.6'	121° 52.8'

TRANS P m	WAVES			BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB			
	dir	ht	P		dir speed	dry				wet		
3	0	0	X	23	10	1015.6	14.4	15.7	1	3	6	5

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/1	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	14.10	33.694	25.18	9.30	-324	164	.12	.1	.05	.0	0
5	12.24	33.771	25.61	6.36	-42	108	.86	8.3	.26	.0	10
10	12.08	33.775	25.64	6.05	-13	103	1.02	6.6	.25	.2	11

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				ML	26	1120	19 JUN 1972	13.2	36° 43.2'	121° 51.3'	
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	°C	WEATH	CLOUDS	VISIB			
m	dir ht p	dir speed	mb	dry	wet	typ	amt				
6	25	0	25	8	1015.2	14.4	13.9	1	3	6	5
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%					ug-atoms/liter
0	12.74	33.769	25.51	7.10	-114	122	.61	6.7	.23	.0	7
5	12.10	33.776	25.64	6.43	-47	109	.88	9.8	.28	.0	10
10	11.64	33.782	25.73	5.75	18	97	1.11	11.8	.26	.1	12
20	11.11	33.770	25.82	5.11	82	85	1.35	14.2	.29	.3	16
30	10.29	33.764*	25.96	4.38	157	71	1.53	16.6	.30	.6	19
50	9.50	33.854	26.16	3.18	273	51	1.95	16.2	.33	1.0	29

* indicates questionable data: Salinity appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1101	19 JUN 1972	13.8	36° 44.7'	121° 49.4'

TRANS P m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS	VISIB typ smt
4	28 0	28 8	1014.6	14.6	13.9	1	3 6 5

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	14.49	33.724	25.12	8.98	-300	160	.08	3.4	.05	0
5	13.53	33.730	25.32	9.36	-324	163	.07	4.2	.01	0
10	12.55	33.734	25.52	6.54	-62	112	.69	7.4	.13	.3

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1103	20 JUN 1972	6.5	36° 48.3'	121° 48.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/1 ug-at/1	OXYGEN ml/l	AOI %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter						
						BAROM mb	AIR TEMP dry wet °C	WEATH typ atm	CLOUDS	VISIB		
4	29	0	3	23	1	1014.9	12.9	12.7	0	3	8	6
0	14.37	33.713	25.14	8.31	-239	148	.13	.3	.04	.1	3	
3	13.04	33.733	25.43	7.86	-185	136	.16	.0	.02	.1	2	
5	13.04	33.736	25.43	7.86	-185	136	.21	.0	.03	.1	2	
7	12.71	33.738	25.50				.46	2.1	.10	.5	7	
10	12.71	33.742	25.50				.51	4.7	.13	.3	4	
20	10.98	33.791	25.86				1.52	11.6	.31	1.3	20	
30	10.54	33.788	25.93	4.49	144	74	1.64	14.1	.35	1.4	20	
50	10.26	33.819	26.01	3.97	194	65	1.84	16.5	.41	1.3	24	
75	9.96	33.830	26.07	3.80	212	61	1.90	17.6	.41	1.3	27	
100	9.78											

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 26 1108 20 JUN 1972 7.6 36° 47.6' 121° 50.0'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
5	29	0	22	3	1014.9	13.1	12.1	2
						3	8	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	14.32	33.726	25.16	7.80	-193	138	.13	1.2
5	33.776	33.813	25.81	5.38	55	90	1.11	12.2
10	11.35	33.820	25.97	4.37	158	71	1.20	12.9
15	10.29	33.782	26.08	3.83	211	62	1.50	16.3
20	9.86	33.820	26.16	3.42	252	55	1.70	20.6
30	9.53	33.858	26.19	3.10	281	50	1.90	19.3
50	9.43*	33.881	26.24	2.87	305	46	2.01	22.3
75	9.22	33.901	26.37	2.43	350	38	1.72	18.3
100								
150	8.75	33.963	26.37					

* indicates questionable data: Paired thermometer read 9.36

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE							
ML	1112	20 JUN 1972	8.6	36° 48.0'	121° 52.4'							
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB					
m	dir hr p	dir speed	mb	dry wet		typ amt						
17	29	0	3	23	1	1016.6	13.3	12.2	2	3	8	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA		
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter						
0	12.36	33.809	25.62	5.96	-8	102	1.11	9.8	.28	1.5	11	
10	11.45	33.794	25.78	5.66	29	95	1.34	12.6	.30	1.2	15	
20	11.09	33.803	25.85	5.26	69	87	1.43	14.5	.31	.8	16	
30	10.58	33.806	25.94	4.71	124	77	1.40	15.0	.30	.4	14	
50	9.78	33.830	26.10	3.87	208	62	1.75	20.3	.46	.0	22	
75	9.20	33.909	26.25	2.95	298	47	1.85	16.0	.29	.0	27	
100	9.07	33.923	26.28	2.79	314	44	1.84	16.2	.23	.0	24	
150	8.86	33.955	26.26	2.51	342	40	1.90	17.2	.25	.0	25	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1115	20 JUN 1972	10.1	36° 46.5'	121° 57.1'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ atm		
16	29	2	5	26	2	1016.6	13.9
						12.3	2
						3	8
						6	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-at/liter
m							ug-atoms/liter
0	11.54	33.800	25.76	5.75	20	96	1.47
5	11.81	33.782	25.70	6.30	-32	105	1.05
10	11.71	33.784	25.72	6.03	-7	101	1.28
20	11.28*	33.779	25.80	5.46	49	91	1.31
30	10.67	33.790	25.91	4.68	125	77	1.57
50	9.72	33.820	26.10	3.74	221	60	1.75
75	9.48	33.900	26.20	2.87	301	46	2.03
99	9.18	33.907	26.25	2.84	308	45	2.04
149	8.96	33.942	26.32	2.54	337	40	1.81
199	8.46	34.013	26.45	2.16	377	34	2.30
249	7.93	34.058	26.57	1.84	413	28	2.13
298	7.50	34.095	26.66	1.61	439	25	2.34
398	6.80	34.154	26.80	1.19	486	18	2.75
							31.9
							.12
							.0

* indicates questionable data: Paired thermometer read 11.22

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 26	1157	20 JUN 1972	12.1	36° 50.5'	121° 57.8'	
TRANSF m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet °C	WEATH Clouds typ amt	VISIB
6	28 0 3	29 6	1016.6	14.4 13.1	1 3 4	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.37	33.790	25.40	8.21 -220	143 .17 .2	.09 .0 1
10	13.37	33.803	25.41	5.75 0	100 1.09 7.2	.29 .4 11
19	10.83	33.804	25.90	5.19 78	86 1.44 8.8	.34 .7 16
29	10.44	33.816	25.97	4.45 149	73 1.70 14.6	.39 1.0 20
48	9.62*	33.850	26.14	3.61 234	58 1.92 18.2	.50 .0 25
72	9.32*	33.893	26.22	3.12 281	50 2.06 18.3	.36 .0 29
96	9.09	33.914	26.27	2.85 308	45 2.15 22.1	.26 .0 30
143	8.82	33.889	26.30	2.33 358	37 2.27 22.9	.33 .1 34

* indicates questionable data: Paired thermometers read 9.47 at 48 m, 9.25 at 72 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1114	20 JUN 1972	13.3	36° 50.7'	121° 52.6'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	wb	dry	wet	typ amt
5	25	1	2	25	10	1016.9	14.7
						13.3	3
						3	5
						5	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter
m						z	NITRATE NITRITE AMMONIA SILICA
0	14.19	33.738	25.19	9.06	-304	160	.10 5.9 .03 .0
5	12.48*	33.776	25.57	7.67	-162	131	.38 12.6* .13 .2
10	11.65	33.777	25.73	5.95	1	100	.98 14.2 .21 .0
19	10.39	33.774	25.95	4.39	155	72	1.45 17.0 .27 .7
29	9.91	33.805	26.06	4.01	194	65	1.46 19.3 .25 .4
48	9.54	33.859	26.16	3.39	254	54	1.76 13.2 .38 1.1

* indicates questionable data: Paired thermometer read 12.41
 Nitrate appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 26	1105	21 JUN 1972	6.2	36° 50.6'	121° 49.7'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
a	dir ht p	dir speed	mb	dry wet	typ	amt	
5	28	0	2	1013.2	12.9	12.2	00
					3	8	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.53	33.738	25.12	8.20	-231	146	.12 .0 .08 .1 0
5	12.95	33.784	25.48	8.20	-214	142	.14 .4 .09 .0 1
10	11.85	33.784	25.69	5.88	4	99	1.11 6.9 .27 .7 10

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1150	21 JUN 1972	7.1	36° 52.9'	121° 51.4'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB				
m	dir ht	p	dir speed	wb	dry	wet	typ amt				
7	29	0	20	1	1013.2	12.9	12.1	2	3	8	6

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	14.29	33.740	25.17	8.60	-264	153	.10	3.9	.04	.0	0
5	13.72	33.749	25.30	8.89	-284	156	.10	4.6	.05	.0	0
10	12.61	33.756	25.53	7.36	-136	126	.29	.0	.07	.0	0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	11154	21 JUN 1972	8.0	36° 55.3'	121° 52.7'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA									
						dir	ht	p	dir speed	mbar	AIR TEMP °C	WEATH dry wet	CLOUDS typ amt	VISIB	
7	26	0	2	15	2	1012.9				13.2	12.1	2	3	8	6
10	12.34	33.763	25.58	6.29	-37	107				.45	1.1	.10	.0	.0	4
0	14.21	33.739	25.19	7.63	-177	135				.21	.0	.08	.4	.0	1
5	13.61	33.742	25.32	8.27	-228	145				.13	.0	.06	.0	.0	0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	26	1158	21 JUN 1972	9.0	36° 55.1'	121° 56.6'	
TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	wb	dry wet	typ amt	
6	28	0	2	22	4	1013.2	13.3 12.3 2 3 8 6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	14.00	33.745	25.24	8.44	-247	149	.09 8.1*
1	14.00	33.741	25.23	8.52	-254	150	.08 5.5
5	13.01	33.765	25.45	8.36	-229	144	.14 5.0
10	11.85*	33.782	25.69	5.92	1	100	1.16 14.5
15	11.47	33.786	25.77	5.29	61	88	1.36 15.6
20	11.12	33.800	25.84	4.90	100	81	1.50 13.7

* indicates questionable data: Paired thermometer read 11.77
 Nitrate appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	26	1159	21 JUN 1972	10.0	36° 57.1'	121° 56.1'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	p	mb	°C dry wet	typ ant							
8	23	0	3	21	6	1013.9	13.9	12.8	1	0	4	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA	
m	*C	PPT		ml/l	ug-at/l	%	ug-atoms/liter					
0	14.27	33.738	25.18	8.72	-275	155	.10	2.7	.03	.0	0	
5	13.98*	33.743	25.24	8.81	-280	155	.12	1.3	.04	.0	0	
7	13.54	33.748	25.33	8.42	-240	147	.13	2.7	.03	.0	1	
10	12.45	33.771	25.57	6.93	-95	118	.54	5.5	.11	.1	5	

* indicates questionable data: Paired thermometer read 13.91

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1152	21 JUN 1972	11.4	36° 55.2'	122° 2.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	typ atm
6	25	1	2	25	10	1013.2	13.8	12.8	3
							3	3	6
							6	6	6

* indicates questionable data: Paired thermometer read 11.97

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 26	1153	21 JUN 1972	12.4	36° 56.9'	122° 00.2'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
5	26	1 2 21 10	1013.2	13.9	12.9	2	0	2 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	14.14	33.758	25.22	8.71	-272	154	.11	.0 .0
5	14.01	33.760	25.25	8.85	-284	156	.08	.0 .0
10	13.22	33.768	25.42	7.49	-154	130	.45	.14 .3

Hydrographic Stations

<u>ML CRUISE 27</u>	
17 July 1972	1105
	1150
	1154
	1158
	1159
	1153
	1152
	1157
	1114
18 July 1972	1103
	1108
	1112
	1115
	1116
	1110
19 July 1972	1123
	1121
	1122
	1124
	1120
	1101

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML.	27	1105	17 JUL 1972	7.0	36° 50.8'	121° 49.7'
TRANSF m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS typ ant
7	24	0	4	32	1	1015.2
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.49	33.631	24.83	6.78	-113	123
5	14.43	33.565	25.01	7.22	-142	128
10	14.27	33.569	25.05	7.11	-130	126

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1150	17 JUL 1972	7.8	36° 53.0'	121° 51.3'		
TRANS P m	WAVES dir ht p	WIND dtr speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS typ amt	VISIB
11	27	0 2 0	0	1015.2		2 4 8	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	15.24	33.594	24.86	6.67	-101	120	.19
5	14.45	33.583	25.02	7.07	-129	126	.18
10	14.59	33.646	25.04	6.18	-51	110	.16
							2.9
							.00
							.1
							0
							.1
							1

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1154	17 JUL 1972	8.5	36° 55.4'	121° 52.5'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt
7	23 0 4	32 1	1015.6			2	4
						8	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	14.90	33.622	24.95	7.22	-147	1.11	3.6 .01 .1 1
4	14.87	33.671	25.00	8.07	-222	1.11	3.1 .02 .0 1
9	14.53	33.717	25.10	7.42	-161	1.32	.17 4.7 .01 .0 2

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	27	1158	17 JUL 1972	9.8	36° 55.1'	121° 56.7'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
7	25	0 2	27 1	1015.9		2	4 8 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	14.82	33.607	24.96	7.49	-170	134	.14 1.6 .03 .2 1
1	14.50	33.615	25.03	7.77	-192	138	.14 1.6 .02 .2 1
5	14.05	33.647	25.15	7.85	-194	138	.16 1.3 .03 .0 1
10	13.88	33.703	25.23	7.21	-136	127	.23 1.9 .03 .4 2
17	13.89	33.706	25.23	7.28	-142	128	.30 2.3 .04 .1 4
20	13.83	33.710	25.25	7.08	-123	124	.39 5.2 .06 .6 5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1159	17 JUL 1972	10.5	36° 57.2'	121° 58.0'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
6	22 0 4 0 0	0	1015.9			2 4 8	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	14.91	33.676	24.99	8.04	-220	144	.08 2.8 .00 .1
2	14.80	33.671	25.01	8.27	-239	148	.06 2.5 .00 .0
5	14.57	33.678	25.07	8.22	-233	147	.08 1.7 .00 .0
8	14.33	33.716	25.15	7.82	-195	139	.14 3.2 .00 .1
10	14.31	33.727	25.16	7.22	-141	128	.16 1.9 .00 .0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML. 27	1153	17 JUL 1972	11.2	36° 56.8'	122° 00.2'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ	amt
5	23	0	4	0	1016.3		
						2	4
						8	6

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter	ug-atoms/liter	ug-atoms/liter	ug-atoms/liter	ug-atoms/liter
0	14.75	33.681	25.03	7.95	-210	142	.10	.0	.00	.4	1
5	14.45	33.739	25.14	7.64	-180	136	.20	.0	.02	.1	4
10	14.21	33.746	25.19	7.19	-137	127	.27	.0	.01	.0	4

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 27	1152	17 JUL 1972	12.1	36° 55.3'	122° 2.5'

TRANSP m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH	CLOUDS	VISIB typ amt
				dry	wet			
5	22	0	4	0	0	1015.9	2	4
							8	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	14.98	33.695	24.99	7.95	-213	143	.18	.0
5	13.12	33.716	25.39	6.21	-38	108	1.04	6.6
10	12.98	33.717	25.42	6.02	-20	104	.89	5.1
20	12.84	33.729	25.46	6.02	-18	104	.98	5.8
							.21	1.4
								11

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1157	17 JUL 1972	13.5	36° 49.9'	121° 57.8'		
TRANSPI	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
8	24 0 3 30 3	1016.3				1 4 7 6	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN AOU ml/l ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
m							ug-atoms/liter
0	15.75	33.573	24.73	7.56 -185	138 .10	.0 .02	.2
10	13.73	33.496	25.10	7.04 -118	123 .28	.3 .07	.0
19	12.79	33.669	25.42	6.83 -90	117 .54	2.7 .10	.4
29	12.15	33.710	25.58	5.87 2	100 .98	6.3 .23	.5
49	10.50	33.647	25.83	4.67 129	76 1.31	9.0 .16	.7
73	9.97	33.770	26.02	3.63 228	59 1.51	12.1 .20	.4
97	9.74	33.833	26.11	3.14 274	51 1.86	14.6 .23	.3
146	9.32	33.899	26.23	2.59 328	41 2.17	21.0 .19	.1
							29

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1114	17 JUL 1972	14.7	36° 50.8'	121° 47.7'		
TRANSPIRATION	WAVES	WIND	BARTHROP	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
7	26	0	4	30	3	1015.6	
						1	4
						2	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
m							
0	15.79	33.661	24.79	8.31	-253	152	.05
5	14.55	33.688	25.08	9.10	-311	162	.03
10	13.95	33.638	25.17	8.43	-245	148	.08
20	13.29	33.622	25.29	7.29	-136	127	.26
30	12.18	33.667	25.54	6.10	-18	104	.80

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 27	1103	18 JUL 1972	6.8	36° 48.1'	121° 48.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							mb	AIR TEMP °C dry wet	CLOUDS typ amt	VISIB
0	16.3 *	33.577	24.61	6.79	-121	125	.25	.1	.02	.1
1		33.580					.25	.1	.03	.6
5	14.82	33.535	24.90	7.36	-153	132	.24	.0	.02	0
10	14.27	33.565	25.04	6.96	-117	123	.32	.0	.04	.2
20	13.27	33.658	25.32	6.70	-83	116	.55	1.5	.08	.8
30	12.01	33.706	25.60	5.67	22	96	.93	6.0	.17	1.5
50	10.87	33.784	25.87	4.29	158	71	1.63	13.3	.34	1.2
75	10.05	33.835	26.05	3.42	245	55	1.97	17.5	.36	.7
100	9.70	33.866	26.14	2.97	290	48	1.99	17.8	.31	.6
										27

* indicates questionable data: By bucket thermometer

* indicates questionable data: By bucket thermometer

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 27 1112 18 JUL 1972 9.0 36° 47.9' 121° 52.1'

TRANSP WAVES WIND BAROM
m dir ht p dir speed mb AIR TEMP °C WEATH CLOUDS VISIB
dry wet typ amt

19 27 0 4 0 0 1016.6 2 4 8 6

DEPTH TEMP SALINITY SIGMA T OXYGEN AOU SAT
m °C ppt ml/l ug-at/l % PHOSPHATE NITRATE NITRITE AMMONIA SILICA
ug-atoms/liter

0	15.5 *	33.418	24.66	5.59	-6	101	.40	.3	.03	.1	3
10	14.87	33.425	24.81	6.22	-56	111	.45	.2	.06	.2	3
20	14.45	33.443	24.91	6.19	-49	110	.55	1.2	.08	.4	3
30	12.63	33.420	25.26	6.08	-20	104	.74	4.7	.28	.3	8
50	10.97	33.689	25.78	4.69	121	78	1.43	12.0	.29	.7	17
75	10.05	33.824	26.05	3.51	237	57	1.74	17.3	.29	.7	21
100	9.55	33.883	26.18	2.92	296	47	1.99	20.9	.34	.0	29
150	9.20	33.931	26.27	2.47	340	39	2.16	23.0	.13	.0	31

* indicates questionable data: By bucket thermometer

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				mb	dry	wet	typ
ML 27	1115	18 JUL 1972	11.0	36° 46.7'	121° 57.2'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP	*C	WEATH	CLOUDS
m	dir ht	p	mb	dry	wet		VISIB
19	34	0	2	0	0	1016.3	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	16.0 *	33.405	24.54	7.44	-176	136	.41
1	15.74	33.410	24.60	7.37	-167	134	.41
10	15.42	33.406	24.67	7.29	-157	132	.40
20	14.14	33.431	24.97	7.51	-164	133	.49
30	12.57	33.494	25.33	7.74	-168	133	.58
50	10.63	33.578	25.75	5.67	38	93	1.36
65	10.28	33.757	25.95	4.67	131	76	1.49
75	10.05	33.774	26.01	4.08	187	66	1.68
100	9.66	33.826	26.11				15.7
150	9.32	33.907	26.23	3.08	284	49	1.87
200	9.01	33.973	26.33	2.76	317	44	2.13
250	8.59	34.048	26.46	2.52	343	40	2.28
300	8.18	34.094	26.56				25.5
400	7.37	34.123	26.70	1.70	433	26	2.28
							24.4
							.18
							.0
							.10
							.0

* indicates questionable data: By bucket thermometer

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 27	1116	18 JUL 1972	12.4	36° 43.2'	121° 55.3'

	TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB		
m	dir ht	p	dir speed	mb	dry	wet	typ	amt		
16	27	0	26	2	1016.3		2	4	8	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							ug-atoms/liter			
0	16.21	33.425	24.51	7.49	-183	138	.38	4.2	.06	.0
5	15.22	33.423	24.73	7.44	-169	134	.37	4.4	.06	.0
10	15.02	33.424	24.77	7.34	-158	132	.39	3.4	.08	.2
20	14.25	33.461	24.97	7.00	-120	124	.46	5.7	.11	.0
30	12.29	33.467	25.36	7.67	-159	130	.73	7.0	.29	.2
50	11.00	33.647	25.74	5.78	24	96	1.23	13.2	.26	.7
74	10.29	33.782	25.97	4.61	136	75	1.57	13.3	.28	.6
										18

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1110	18 JUL 1972	13.4	36° 45.7'	121° 51.9'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
17	27	0	3	29	7	1015.9	
							1 4 7 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	15.83	33.418	24.59	7.44	-175	136	.34 5.4 .02 .0
5	15.55	33.421	24.66	7.38	-157	134	.35 .4 .02 .2
10	15.10	33.423	24.76	7.22	-148	130	.42 .3 .03 .4
19	14.44	33.472	24.94	7.71	-185	137	.37 .6 .05 .0
29	13.82	33.533	25.11	8.01	-206	141	.40 .7 .06 .2
49	11.86	33.697	25.62	6.79	-76	114	.96 5.7 .18 1.5 7

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 27 1123 19 JUL 1972 7.4 36° 39.1' 121° 53.0'

	TRANSP	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet		typ	amt
11	29	0	3	31	3	1014.2		
							1	3
							3	7
								7

DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	15.83	33.468	24.63	6.42	-84	117	.29	.3	.00	.0	1
2	15.82	33.468	24.65	6.43	-85	117	.29	.1	.00	.0	1
5	15.75	33.460	24.64	6.42	-83	117	.58	.1	.02	.0	1
10	15.20	33.469	24.77	5.85	-27	105	.29	.2	.01	.0	1
20	13.59	33.514	25.14	6.70	-86	117	.46	1.4	.07	.1	4
30	12.59	33.637	25.44	6.69	-75	114	.59	3.5	.10	.4	6
50	10.76	33.783	25.89	3.56	224	59	1.65	10.9	.34	1.9	21

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1121	19 JUL 1972	8.4	36° 37.7'	121° 50.8'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	C WEATH	CLOUDS	VISIB
m	dir ht	p	mb	dry	wet	typ	amt
9	30	0	3	31	3	1014.6	
						1	3
						6	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	16.33	33.451	24.50	6.35	-82	117	.68
2	16.27	33.446	24.51	6.54	-98	120	.70
5	16.21	33.440	24.52	6.23	-70	115	.71
10	15.45	33.510	24.75	6.25	-65	113	.43

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1122	19 JUL 1972	9.0	36° 36.5'	121° 53.0'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ amt	CLOUDS	VISIB
10	34 0 3	35 3	1014.2			3	3 6 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	16.26	33.466	24.53	6.33	-80 117	.30 .4	.00 .0
5	16.12	33.466	24.56	6.23	-c.9 114	.30 4.6	.00 .0
10	15.51	33.466	24.70	6.29	-6.9 114	.39 .4	.02 .7

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				ML	27	1124	19 JUL 1972	10.2	36° 39.0'	121° 56.2'	
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB				
m	dir ht p	dir speed ab	mb	dry wet	typ	amt					
11	29	0	3	33	2	1014.6		3	3	7	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter					
0	16.22	33.459	24.53	6.44	-89	118	.30	.1	.02	.0	1
5	15.12	33.506	24.82	6.76	-107	122	.32	.0	.02	.0	2
10	14.44	33.538	24.99	6.98	-120	124	.30	.2	.00	.0	2
20	13.38	33.506	25.18	6.35	-53	110	.55	2.2	.11	.3	4
30	12.42	33.600	25.44	6.25	-34	107	.74	3.4	.18	1.0	6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1120	19 JUL 1972	11.5	36° 42.9'	121° 51.3'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry	WEATH wet	CLOUDS typ amt	VISIB
13	29	0 3 34 10	1014.2			3 3 7	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-at/liter
0	15.85	33.414	24.58	6.14	-59	11.2	.38 .3
5	15.51	33.430	24.67	5.54	-2	100	.30 .0
10	15.35	33.440	24.71	6.33	-71	114	.33 .1
20	14.55	33.462	24.90	6.20	-51	110	.41 .7
30	13.92	33.535	25.09	6.72	-92	118	.41 1.3
50	10.71	33.777	25.90	3.98	187	65	1.65 12.7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 27	1101	19 JUL 1972	12.3	36° 44.8'	121° 49.6'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ amt		
11	29 0	33 7	1014.2			3 4 6 7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	ppt		ml/l ug-at/l	%		ug-atoms/liter
0	16.27	33.525	24.57	6.57	-101	121	.4 .02 .1 0
5	15.70	33.510	24.69	6.83	-119	124	.1 .01 .1 0
10	15.27	33.497	24.78	6.45	-81	116	.3 .02 .0 0

Hydrographic Stations

<u>ML CRUISE 28</u>	1105
29 August 1972	1150
	1154
	1158
	1159
	1153
	1152
	1157
	1114
	1103
	1108
	1112
	1115
	1110
30 August 1972	1101
	1120
	1123
	1121
	1122
	1124
	1116

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1105	28 AUG 1972	6.7	36° 50.9'	121° 49.6'

TRANSP m	WAVES dir hr p	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB
7	27 0 3 0 0	1013.5	14.7	14.3	2	3	5

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITR ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	14.76	33.570	24.94	5.25	30	94	.67	2.4	.15	1.0	6
5	14.42	33.585	25.03	5.87	-21	104	.54	2.2	.11	.2	5
10	12.40	33.612	25.46	4.97	80	85	1.05	8.5	.31	.5	11

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML	28	11150	28 AUG 1972	7.5	36° 52.9'
					121° 51.3'
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH
m	dir ht p	dir speed	mb	dry wet	CLOUDS VISIB
10	29	0 3 0 0	1013.9	14.6 14.2	typ amt
				2 3 8	5
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l
m			%	sat	
					PHOSPHATE NITRATE NITRIT AMMONIA SILICA
					ug-atoms/liter
0	14.86	33.573	24.92	6.44	-76
5	14.39	33.577	25.03	6.32	-61
10	12.67	33.578	25.38	3.80	182

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1154	28 AUG 1972	8.3	36° 55.3'	121° 52.7'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
10	28 0 3 0 0		1014.2	15.6 14.4	2	3 8	5

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	14.85	33.573	24.93	6.50	-82	116	.36	.0	.04	.1	4
5	14.55	33.579	24.99	6.41	-71	114	.41	.3	.05	.2	4
10	14.54*	33.579	25.00	3.18	217	57	.73	1.3	.11	.4	6

* Indicates questionable data: Paired thermometer read 14.31

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 28	1158	28 AUG 1972	9.3	36° 55.1'	121° 56.7'		
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS typ amt	VISIB
11	29	0 3 0 0	1014.2	16.6	15.3	1	3 7 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.19	33.578	24.86	3.66	168	66	.32 .0 .05 .0 2
1	14.69*	33.577	24.96	3.95	147	71	.35 .0 .07 .0 4
5	12.95	33.557	25.31	5.25	49	90	.65 3.0 .16 .1 7
10	12.23	33.576	25.46	5.42	42	92	.89 6.7 .23 .5 12
13	11.34	33.556	25.61	4.52	133	75	1.31 11.6 .43 .9 15
20							.0 .0 .04 .0 4

* indicates questionable data: Paired thermometer read 14.62

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	28	1159	28 AUG 1972	10.3	36° 57.0'	121° 56.0'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dfr ht	p	dir speed	mb	dry wet	typ amt	
10	23	0	4	23	2	1012.5	17.2 15.6 1 3 3 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-atm/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.89	33.586	24.71	4.25	109	78	.37 .0 .02 .4 3
3	15.29	33.583	24.84	4.71	73	85	.37 .0 .05 .0 4
5	14.82	33.582	24.94	5.59	0	100	.43 .0 .08 .1 4
7	14.21	33.584	25.07	5.98	-29	106	.46 .0 .07 .3 5
10	13.77	33.586	25.16	6.42	-63	113	.53 .5 .23 .4 7
12	13.53	33.587	25.21	6.17	-39	108	.63 1.0 .10 .8 8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE								
ML 28	1153	28 AUG 1972	11.2	36° 56.9'	122° 00.1'								
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB						
m	dir ht p	dir speed	mb	dry wet	typ	amt							
9	24	0	3	24	4	1012.9	17.8	16.6	1	3	3	6	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA		
0	15.61	33.578	24.76	5.77	-24	105	.45	.0	.07	.1	4		
5	13.78	33.569	25.15	6.36	-58	112	.47	.3	.15	.5	5		
10	12.76	33.590	25.37	4.98	75	86	1.10	3.8	.24	2.9	12		

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				ML	28	1152	28 AUG 1972	12.0	36° 55.2'	122° 2.4'	
	TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB			
	m	dir ht p	dir speed	mb	dry wet	typ	amt				
10	26	1 3	28	5	1013.5	19.0	16.7	1	3	1	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	15.67	33.579	24.75	5.83	-30	106	.51	.0	.07	.4	
5	14.13	33.550	25.06	6.66	-89	118	.38	.0	.04	.4	
10	13.67	33.540	25.15	6.86	-102	120	.41	.0	.06	.1	
20	12.96	33.564	25.11	6.32	-56	111	.63	2.0	.14	.5	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1157	28 AUG 1972	13.3	36° 50.1'	121° 58.1'

TRANSF m	WAVES dir ht	WIND P	dir speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS	VISIB typ amt				
8	26	1	2	29	8	1013.5	18.1	16.1	3	3	2	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	15.38	33.576	24.81	6.93	-125	126	.28	.0	.02	.0	.2
10	13.13	33.583	25.29	6.06	-25	105	.70	3.8	.18	.0	.7
19	11.76	33.601	25.57	5.10	76	86	1.03	8.5	.31	.3	11
29	10.57	33.656	25.83	3.90	197	64	1.43	14.0	.41	.0	15
48	10.42	33.688	25.88	3.72	214	61	1.58	16.9	.25	.0	19
72	10.12	33.725	25.96	3.45	242	56	1.57	16.2	.15	.0	19
97	9.66	33.829	26.12	2.79	306	45	1.94	21.8	.31	.1	27
145	9.33	33.905	26.23	2.51	335	40	2.12	25.2	.16	.0	30

CRUISE		STATION		DATE		HOUR		N LATITUDE		W LONGITUDE	
ML	28	1114		28	AUG 1972	14.6		36° 50.5'		121° 52.5'	
		TRANS P		WAVES		WIND		BAROM		AIR TEMP	
m		dir	ht	P	dir	speed	mb	dry	wet	°C	WEATH
10		25	1	2	26	9	1013.5	17.8	16.0	3	CLOUDS typ atm
										3	
										2	
										7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT		PHOSPHATE	NITRATE	AMMONIA	SILICA
m	°C	PPT		ml/l	ug-at/l	%		ug-atoms/liter			
0	14.78	33.577		24.94	6.66	-95	119	.19	.1	.02	.0
5	14.39	33.576		25.03	7.13	-133	127	.42	.0	.05	.2
9	14.07*	33.576		25.09	6.89	-109	122	.27	.0	.03	.2
19	11.50	33.584		25.60	5.43	49	91	9.3	.3	.0	.3
28	10.85	33.629		25.76	4.03	182	66	1.29	12.9	.31	.2
47	10.81*	33.685		25.81	3.78	204	62	1.16	10.1	.50	.1
										.36	.14
										.3	.12

* indicates questionable data: Paired thermometers read 14.01 at 9 m, 10.64 at 47 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1103	29 AUG 1972	6.4	36° 48.2'	121° 48.6'

	TRANSP m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB				
10	27	0	3	8	2	1013.2	14.5	13.9	1	3	6	5

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	15.93	33.564	24.68	5.20	23	95	1.05	8.6	.34	1.9	12
2	13.25	33.580	25.29	5.00	68	87	.93	8.4	.29	1.3	11
5	11.35	33.632	25.67	4.57	128	76	.75	9.3	.29	.4	9
10	10.65	33.690	25.84	3.63	220	60	1.21	13.7	.48	.4	15
20	10.45	33.726	25.90	3.19	261	52	1.49	17.3	.54	.6	19
30	9.90	33.806	26.06	2.94	290	48	1.60	18.9	.48	.3	21
50	9.78	33.824	26.09	2.81	303	45	1.77	19.3	.40	.6	24
75	9.52	33.867	26.17	2.73	313	44	1.79	18.4	.35	.0	25
100							1.91	18.9	.32	.1	30

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	28	1108	29 AUG 1972	7.8	36° 47.5'	121° 50.0'		
TRANSPI	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht p	dir speed	mb	dry wet		typ	amt					
11	30	1	3	13	4	1013.2	15.0	14.4	1	3	5	5
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA	
m	°C	ppt		ml/l	ug-at/l	%	ug-at/liter	ug-at/liter	ug-at/liter	ug-at/liter	ug-atoms/liter	
0	15.59	33.585	24.77	6.31	.72	11.5	.40	3.1	.02	.2	.3	
2		33.584					.34	3.4	.03	.2	.3	
5		33.585					.37	6.0	.04	.2	.3	
10	13.24	33.580	25.27	6.56	.70	11.4	.55	1.9	.13	.2	.8	
20	12.19	33.583	25.47	5.36	.48	91	.96	1.9	.19	.5	11	
30	11.57	33.597	25.60	4.72	112	79	1.39	11.0	.37	.9	45*	
50	11.21	33.627	25.69	4.45	140	74	1.42	12.3	.54	.6	16	
75	10.77	33.665	25.80	4.04	182	66	1.61	14.8	.54	.3	23	
100	10.09	33.759	25.99	3.37	250	55	1.85	18.1	.36	.1	27	
149	9.93	33.797	26.05	3.12	274	50	1.96	20.2	.33	.0	26	

* indicates questionable data: Silica appears anomalously high

CRUISE	STATION	DATE	HOURLY	N LATITUDE	W LONGITUDE	
ML 28	1112	29 AUG 1972	8.7	36° 48.2'	122° 52.3'	
TRANSPIRATION	WAVES m dir ht p	WIND dir speed mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
12	29	1 3 30 2	1014.2	15.8	15.3	1 3 4 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.21	33.578	25.07	7.03	-122	124 *28 2.8 .07 .3 3
10	11.26	33.593	25.65	4.82	107	80 1.19 13.1 .42 .7 13
20	10.91	33.636	25.75	4.31	156	71 1.40 15.9 .50 .4 16
30	10.84	33.635	25.76	3.12	263	51 1.39 16.6 .47 .7 16
50	10.51	33.679	25.85	3.67	218	60 1.50 17.5 .48 .3 19
75	10.28	33.708	25.92	3.62	225	59 1.52 18.1 .34 .1 20
100	10.11	33.738	25.97	3.44	243	56 1.56 14.0 .22 .3 21
149	9.65	33.835	26.12	2.96	291	48 1.82 20.3 .27 .0 26

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE									
						TRANSF m	WAVES dir ht	WIND p	DIR SPEED	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS	VISIB typ atm
ML 28	1115	29 AUG 1972	11.0	36° 46.6'	121° 57.0'	10	27	1	34	5	1013.9	17.2	16.3	3 X 6 5
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA			
m												ug-atoms/liter		
0	15.07	33.591	24.89	7.33	-158	132	.15	3.2	.02	.0	.02		2	
3		33.586												
6	13.66*	33.585	25.18	7.13	-126	125	.18	2.0	.04	.0	.04		0	
10	11.04	33.611	25.71	4.51	137	75	.21	2.0	.02	.02	.02		2	
19	10.82*	33.632	25.76	4.18	169	69	1.08	.7	.06	.1	.1		4	
29														
49	10.22	33.707	25.93	3.67	221	60	1.37	11.9	.39	.1	.1		11	
73	9.71	33.841	26.12	3.05	282	49	1.57	16.4	.50	.0	.0		16	
97	9.71*	33.847	26.12	2.90	296	47	1.79	19.1	.13	.3	.13		23	
146	9.40	33.893	26.21	2.71	317	43	1.80	17.5	.23	.0	.0		20*	
196	9.21	33.950	26.28	2.52	336	40	1.91	15.9	.15	.1	.1		20	
245	8.69	34.047	26.44	2.23	368	35	1.99	19.1	.13	.3	.13		23	
294	8.58	34.084	26.49	2.10	381	33	2.24	25.2	.11	.0	.0		35	
393	7.99	34.105	26.59	1.67	427	26	2.44	27.2	.06	.1	.1		36	

* indicates questionable data: Paired thermometers read 13.59 at 10 m, 10.74 at 29 m,
 9.59 at 97 m
 Silica appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1110	29 AUG 1972	13.3	36° 45.5'	121° 51.5'

TRANSPI	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
	dir ht p	dir speed	mb	dry wet	typ	amt	
11	29 1 3	29 3	1013.9	18.2	16.7	5	X 2 6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.15	33.584	24.87	6.49	-84	117	.22 .0 .05 .1
5	14.01	33.572	25.10	6.18	-45	109	.28 .0 .06 .0
10	12.02	33.557	25.49	4.96	85	84	.68 4.4 .14 .1
20	11.19	33.601	25.67	4.33	151	72	1.17 11.6 .42 .3
30	10.69	33.626	25.78	3.93	193	65	1.34 14.9 .41 .0
49	10.33	33.678	25.88	3.56	230	58	1.55 17.9 .28 .2

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1101	30 AUG 1972	6.6	36° 44.6'	121° 49.3'

TRANSPIRATION m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
10	29 0 2	28 1	1013.9	13.9 13.8	2	X 9	1

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	15.31	33.596	24.84	6.67	-101	121	.27	.1	.03	.0	4
5	15.23	33.589	24.85	6.61	-95	119	.26	.0	.04	.0	4
10	12.77	33.580	25.36	6.37	-48	109	.51	1.7	.11	.3	5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1120	30 AUG 1972	7.4	36° 43.1'	121° 51.3'

TRANSP	WAVES	WIND	BAROM		AIR TEMP	WEATH	CLOUDS	VISIB			
m	dir ht	p	dir speed	mb	dry	wet	typ	amt			
16	29	0	2	32	1	1014.2	13.9	2	X	9	1

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	15.35	33.587	24.83	6.59	.95	119	.23	.0	.02	.0	3
5	15.33	33.587	24.83	6.67	-102	121	.24	.1	.03	.0	3
10	13.69	33.590	25.18	7.07	-121	124	.32	.0	.04	.2	4
20	11.86	33.580	25.53	5.31	56	89	1.14	8.8	.33	.5	12
30	11.51	33.590	25.61	4.90	97	82	1.00	9.6	.35	.3	11
50	10.24	33.688	25.91	3.77	212	61	1.52	17.5	.20	.0	20

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1123	30 AUG 1972	8.6	36° 39.2'	121° 53.0'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter							
						TRANS m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
12	30	0	2	32	1	1014.6		15.0	14.7	2	X	9	1
0	15.43	33.598	24.82	6.57	-94			119	.26		.05	.3	3
1	15.38	33.594	24.83	6.52	-89			118	.25		.05	.0	5
5	15.33	33.591	24.83	6.60	-95			119	.27		.04	.0	3
10	13.26	33.586	25.27	6.73	-86			117	.39	1.0	.09	.0	4
20	11.83	33.575	25.54	5.27	60			89	.76	6.3	.23	.4	9
30	11.13	33.625	25.70	3.99	182			66	1.44	13.6	.50	2.1	17
50	10.47	33.685	25.87	4.11	179			67	1.50	17.0	.36	.4	20

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1121	30 AUG 1972	9.5	36° 37.7'	121° 51.0'

TRANSP	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	P	mb	dry	wet	typ	amt					
9	31	0	2	29	2	1014.9	14.4	14.3	2	X	9	1

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-atm/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	16.28	33.529	24.57	6.62	-106	122	.82	3.9	.06	1.9	4
1	16.22	33.537	24.59	6.23	-71	115	.74	1.5	.05	1.2	4
5	15.83	33.584	24.72	5.58	-9	102	.31	5.3	.01	0	3
10	15.30	33.581	24.83	6.45	-82	117	.37	6.0	.05	0	4
12	13.90	33.586	25.14	5.96	-24	105	.64	7.0	.11	.8	7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 28	1122	30 AUG 1972	10.2	36° 36.5'	121° 52.9'

TRANSF m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS	VISIB
9	32	0 2 32 4	1014.9	15.5	15.0	1	X 9 3

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-at/l	NITRATE ug-atoms/liter	NITRITES AMMONIA SILICA
0	16.33	33.568	24.59	6.39	-86	118	.69	2.1	.03 .3
5	15.71	33.579	24.74	6.52	-92	119	.61	2.0	.07 .2
10	14.23	33.588	25.07	6.49	-72	115	.61	1.8	.12 1.0

CRUISE	STATION	DATE	HOUR	N LATITUDE W LONGITUDE		
ML	28	1124	30 AUG 1972	12.3	36° 38.9'	121° 56.3'
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS
m	dir ht p	dir speed	mb	dry wet		typ amt
13	30	0 2	30 6	1014.2	15.6 15.3	1 X 9 6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter
0	15.67*	33.582	24.75	6.59	-98	120
5	15.11	33.590	24.88	6.66	-99	120
10	13.78	33.541	25.13	6.39	-61	112
20	12.10	33.589	25.50	5.33	51	90
30	11.65*	33.662	25.64	4.65	117	78

* indicates questionable data: Paired thermometers read 15.59 at 0 m, 11.59 at 30 m

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 28 1116 30 AUG 1972 13.8 36° 43.4' 121° 55.3'

	TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt		
12	28	0	27	5	1013.9	16.6	16.1	1
								3
								6
								6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA ug-atoms/liter
0	15.27	33.587	24.84	6.93	-124	125	.14	.1	.01	.0	1
5	14.54	33.584	25.00	7.45	-163	133	.18	.0	.02	.0	1
9	13.00	33.596	25.33	6.29	-44	109	.60	1.0	.10	.9	5
19	11.44	33.578	25.61	4.77	109	80	1.16	11.2	.37	.6	11
28	11.06	33.585	25.68	4.50	138	74	1.16	11.7	.30	.2	11
47	10.71	33.644	25.79	4.08	179	67	1.29	13.7	.47	.0	14
71	9.96	33.797	26.04	3.23	263	52	1.64	19.5	.15	.0	21

Hydrographic Stations

<u>ML CRUISE 29</u>	1150
<u>28 September 1972</u>	1105
	1154
	1159
	1158
	1152
	1153
	1157
	1115
<u>29 September 1972</u>	1108
	1112
	1116
	1124
	1121
	1122
	1123
	1120
	1110
	1101

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1150	28 SEP 1972	6.2	36° 52.9'	121° 51.4'		
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB
30	1 4	0 0	1017.6	14.2 14.1	43	7	0
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T kg-at/l	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.80	33.540*	24.91	6.69	-97	120	.35 1.5 .05 .2 6
5	14.08	33.550*	25.07	6.24	-50	110	.57 3.5 .08 .1 9
10	12.55	33.580*	25.40	4.61	111	79	1.06 11.4 .28 .5 13

* Indicates questionable data: Salinities were anomalously high by about 0.12 ppt and have been corrected

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1105	28 SEP 1972	6.4	36° 50.8'	121° 50.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
4	31	1	4	32	3	1017.6	14.4 14.3 2 7 8 0
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.80	33.540*	24.91	6.45	-76	115	.34 6.6 .06 .7 7
5	14.25	33.550*	25.04	5.79	-12	102	.47 6.5 .05 .3 8
10	13.35	33.570*	25.24	3.43	207	60	.89 7.6 .30 .5 12

* Indicates questionable data: Salinities were anomalously high by about 0.12 ppt and have been corrected

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 29	1154	28 SEP 1972	7.8	36° 55.2'	121° 57.3'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS typ amt	VISIB						
7	29	1	4	23	1	1017.9	14.7	14.7	42	7	8	0	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA ug-atoms/liter		
0	15.48	33.550*	24.77	8.66	-280	157	.17	.0	.02	.7	8		
5	14.23	33.560*	25.05	6.57	-81	116	.29	.0	.02	.5	7		
10	12.82	33.570*	25.34	4.86	85	84	1.09	6.8	.43	.5	15		

* Indicates questionable data: Salinities were anomalously high by about 0.12 ppt and have been corrected

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1159	28 SEP 1972	8.7	36° 57.2'	121° 56.1'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry	wet	typ amt
5	26	0	4	26	2	1020.0	
						15.6	15.1
						41	7
						6	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l ug-at/l	%		ug-atoms/liter
0	15.70	33.540*	24.71	6.05	-49	110	.72
5	14.18	33.560*	25.06	6.50	-74	115	.29
9	13.08	33.580*	25.30	3.87	171	67	.82
							1.7
							.13
							.0
							17

* Indicates questionable data: Salinities were anomalously high by about 0.12 ppt and have been corrected
 Silica appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1158	28 SEP 1972	9.5	36° 55.2'	121° 52.7'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
7	28 2 3 26 4	1018.6	14.7	14.2	2	7	1
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.36	33.526	24.78	8.76	-288	159	.17 .0 .0 .01 .4 6
5	14.09	33.549	25.07	7.65	-177	135	.22 .0 .0 .02 .3 7
10	13.35*	33.580	25.24	4.42	119	77	.52 1.8 .12 .9 9
20	11.76	33.616	25.58	3.57	212	60	1.38 10.8 .60 .6 16

* indicates questionable data: Paired thermometer read 13.28

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1152	28 SEP 1972	11.3	36° 55.2'	122° 2.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	C WEATH	CLOUDS	VISIB
m	dir ht	P	mb	dry	wet	typ	amt
8	29	2 4 28 10	1017.9	14.0	14.0	12	7 7 3
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	15.00	33.530	24.86	7.95	-212	143	.19 4.5 .02 .1 6
5	13.69	33.573	25.17	6.70	-88	117	.43 1.8 .05 .1 8
10	13.07*	33.583	25.30	3.69	187	64	.72 5.5 .29 .3 10
19	11.80	33.611	25.57	4.11	164	69	1.35 10.6 .58 .5 15

* indicates questionable data: Paired thermometer read 12.97

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 29	1153	28 SEP 1972	11.5	36° 56.8'	122° 00.0'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	WEATH typ
4	23	1	4	26	8	1019.3	15.3	14.5	CLOUDS amt
4	14.80	33.482	24.17	6.35	-76	116	.53	1.4	VISIB
8	14.51	33.557	24.87	7.53	-173	135	.31	.3	14
8	14.51	33.557	24.99	6.23	-54	111	.51	2.2	8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 29	1157	28 SEP 1972	12.6	36° 50.1'	121° 58.1'	
TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM dry wet	AIR TEMP °C typ atm	CLOUDS VISIB	
11	29	3 4 28 12	1017.3	14.2 13.9	12 7 7 3	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	SAT %	PHOSPHATE NITRATE AMMONIA SILICA ug-atoms/liter
0	13.97	33.568	25.11	4.14	73	.87 5.2 .37 .7 12
9	11.88	33.586	25.53	2.83	48	1.21 8.8 .34 .1 15
18	11.49	33.599	25.62	2.70	293	45 1.30 9.7 .28 .6 14
26	11.23	33.637	25.69	3.80	198	63 1.37 10.4 .24 .2 15
44	11.11	33.655	25.73	3.90	190	65 1.31 10.3 .22 .6 16
66	10.95	33.668	25.77	3.86	196	64 1.50 15.2 .22 .1 18
88	10.73	33.704	25.84	3.56	225	59 1.58 15.4 .18 .0 19
132	10.47	33.721	25.89	3.34	248	55 1.63 16.8 .11 .0 19

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE						
ML	29	1115	28 SEP 1972	14.8	36° 46.6' 121° 57.3'						
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB				
m	dir ht p	dir speed	mb	dry wet	typ amt						
11	30	3 4	28 12	1017.3	14.9	14.7	12 7 6 6				
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
m											
0	13.85	33.534	25.11	5.82	-11	102	.80	7.0	.28	.6	11
8	11.98	33.581	25.51	4.79	101	81	1.15	11.4	.29	.2	14
16	11.76	33.595	25.56	4.65	116	78	1.24	12.1	.31	.0	16
25	11.71	33.606	25.58	4.45	134	75	1.28	12.7	.30	.1	16
41	11.57	33.620	25.62	4.21	157	70	2.14	14.0	.30	.4	19
61	11.13	33.656	25.73	4.04	178	67	1.49	16.0	.27	.0	19
82	10.98	33.669	25.76	3.82	199	63	1.51	12.4	.23	.2	19
123	10.63	33.703	25.85	2.96	280	49	1.62	15.4	.14	.0	20
161	10.23	33.747	25.96	3.03	278	49	1.63	15.6	.11	.0	20
193	9.59	33.917	26.20	2.70	315	43	1.94	19.1	.06	.1	27
225	8.65	34.027	26.43	1.84	403	29	2.36	25.5	.04	.0	40
289	7.71	34.125	26.65	1.58	439	24	2.39	23.6	.03	.1	45

CRUISE		STATION	DATE	HOUR	N LATITUDE	W LONGITUDE						
ML	29	1108	29 SEP 1972	6.6	36° 47.6'	121° 50.2'						
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	p	dir speed	dry mb	wet	typ	amt					
6	30	3	4	10	2	1012.5	15.3	14.7	2	3	1	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA	
m												
0	14.95	33.559	24.89	7.69	-189	138	.22	.7	.13	.8	.4	
10	13.87	33.580	25.14	6.55	-76	115	.37	.1	.02	.0	.7	
20	12.45	33.591	25.43	5.01	76	85	1.03	4.7	.41	.1	11	
30	11.81	33.618	25.57	4.34	143	73	1.34	10.6	.49	.2	16	
50	11.38	33.651	25.68	4.02	176	67	1.50	13.0	.45	.1	18	
75	10.83	33.682	25.80	3.70	211	61	1.62	16.4	.34	.8	22	
100	10.62	33.691	25.84	3.69	215	61	1.40	10.8	.18	.0	16	
149	9.36	33.886	26.21	3.01	290	48	2.12	17.9	.11	.2	34	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	11112	29 SEP 1972	7.5	36° 48.1'	121° 52.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry wet	typ	amt
5	30	3	4	32	3	1017.3	15.8
						15.2	2
						3	1
						7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/1	%	ug-atoms/liter
0	14.94	33.572	24.90	6.71	-101	120	.14
10	13.98	33.568	25.11	5.62	5	99	.40
20	12.25	33.611	25.48	4.20	151	71	1.11
30	11.72	33.619	25.59	3.90	183	66	1.06
50	11.11	33.628	25.71	3.52	224	58	1.38
75	11.00	33.664	25.76	3.36	240	56	1.26
100	10.68	33.698	25.84	3.21	257	53	1.53
149	10.37	33.728	25.92	2.39	334	39	1.66

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	29	1116	29 SEP 1972	8.8	36° 43.2'	121° 55.6'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	P	mb	dry	wet	typ	amt					
17	31	3	7	33	1	1017.9	18.3	14.9	2	3	1	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA					
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter					
0	13.20	33.540	25.24	3.52	201	61	.86	7.1	.28	.2	11	
5	12.87	33.544	25.31	4.27	138	73	.86	6.8	.27	.9	12	
10	12.45	33.571	25.41	4.15	153	71	.90	7.8	.24	.7	10	
20	12.15*	33.591	25.49	4.38	136	74	1.00	9.4	.25	.0	12	
30	12.10	33.596	25.50	4.35	139	74	.90	11.1	.23	.0	12	
50	11.73	33.617	25.59	4.00	174	67	1.23	13.1	.29	.0	12	
74	11.30	33.628	25.67	3.61	214	60	1.04	8.8	.18	.0	14	
											11	

* indicates questionable data: Paired thermometer read 12.08

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 29	1124	29 SEP 1972	9.7	36° 38.9'	121° 56.3'
TRANSPIRATION	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry °C	WEATH typ atm
10	31	3 5 29 2	1017.5	15.3 14.7	2 3 1 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	SAT %
0	13.68	33.531	25.14	8.43 -242	147 .72 2.6 .32 .0 9
5	13.23	33.545	25.24	4.74 92	82 .76 4.1 .30 .0 9
10	13.07	33.556	25.28	4.39 125	76 .83 3.5 .30 .0 9
20	12.95*	33.569	25.32	4.73 96	82 .90 3.6 .31 .1 11
30	12.88	33.573	25.33	4.63 105	80 .78 4.1 .22 .3 8
					PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter

* indicates questionable data: Paired thermometer read 12.87

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	11121	29 SEP 1972	10.7	36° 37.6'	121° 51.1'		
TRANS P m	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS typ	VISIB amt
4	29	3 5	29 4	1017.9	15.6	14.8	2 3 1 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.09	33.558	24.86	8.22	-238	148	.26 1.0 .04 .0 2
5	14.45	33.553	25.00	5.94	-28	106	.38 .5 .03 .0 4
10	13.47	33.574	25.21	5.47	24	95	.55 2.6 .12 .0 7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 29	1122	29 SEP 1972	11.3	36° 36.6'	121° 52.9'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	p	dir speed	mb	dry wet	typ	amt					
4	32	3	5	29	6	1012.9	16.0	15.1	2	3	1	7

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	15.27	33.571	24.83	6.68	-102	121	.19	2.4	.02	.0	2
5	13.44	33.548	25.20	5.08	59	88	.61	3.7	.19	.0	8
10	13.07	33.560	25.28	5.08	63	88	.84	6.3	.26	.4	9

CRUISE	STATION	DATE	HOUR	N LATITUDE W LONGITUDE								
				TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB	
m	dir ht	P	dir speed	mb	dry wet	typ atm						
ML 29	11123	29 SEP 1972	12.0					36° 39.2'	121° 56.3'			
10	29	1	4	0	0	1017.5	17.2	15.5	2	3	1	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA					
0	14.18	33.534	25.04	5.79	-11	102	.63	7.9	.20	.0	7	
5	13.16	33.537	25.25	4.29	133	74	.72	7.0	.26	.0	8	
10	13.07	33.547	25.27	4.88	81	84	.65	7.2	.17	.1	6	
20	12.93	33.551	25.31	3.52	204	61	.81	4.8	.23	.9	9	
30	12.69	33.572	25.37	3.70	190	63	.79	4.8	.18	.4	7	
50	12.33	33.586	25.45	4.67	108	79	.88	5.0	.22	.2	8	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	29	1120	29 SEP 1972	13.0	36° 43.2' 121° 51.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
8							
DEPTH	TEMP °C	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m		ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	15.30	33.558	24.82	7.63	-187	138	.29 .0 .06 .2 .5
5	14.06	33.531	25.06	6.27	-53	111	.56 2.2 .21 1.0 .6
10	13.63	33.572	25.18	6.72	-89	117	.54 1.4 .15 .3 .8
19	12.35	33.600	25.46	4.11	158	70	1.03 7.8 .28 .3 10
29	11.79	33.602	25.56	3.46	222	58	1.19 10.4 .26 .1 12
48	11.66	33.614	25.60	3.77	196	63	1.12 9.0 .23 .2 10

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1110	29 SEP 1972	13.7	36° 44.6'	121° 49.3'		
TRANSP m	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ amt	CLOUDS	VISIB
9	27	2	33	2	1016.9	17.2	15.3
						1	3
						1	8
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN AOU ml/l ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	14.84	33.539	24.90	4.01	140	.72	*.43
5	13.60	33.539	25.16	4.41	117	.61	3.0
10	12.93	33.565	25.32	3.67	191	.63	.72
20	12.18	33.583	25.48				*.96
30	11.73	33.607	25.58	3.87	186	65	7.4
49	11.41	33.631	25.66	3.49	223	58	1.25
							11.8
							3.7*
							.29
							.25
							.1
							12

* indicates questionable data: Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 29	1101	29 SEP 1972	14.3	36° 44.6'	121° 49.3'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
7	27 2 4	29 8	1017.3	17.2 15.6		3 3 1	8
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	14.79	33.545	24.92	4.06	136	73	.62 5.7 .20 .0 .0 8
4	13.78	33.551	25.13	4.63	96	81	.55 5.0 .14 .2 .2 6
8	13.59	33.575	25.19	3.83	169	67	.58 5.1 .11 .2 .2 7

Hydrographic Stations

<u>ML CRUISE 30</u>	1105
26 October 1972	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1115
27 October 1972	1108
	1112
	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 30	1105	26 OCT 1972	6.4	36° 50.9'	121° 49.7'		
TRANSF m	WAVES dir hr p	WIND dir speed	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS	VISIB typ amt
5	27 0 2	33 1	1013.2	13.3	13.3	2	X 8 4
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	16.02	33.419	24.55	4.28	105	78	.59 4.0 .11 .9 11
5	16.00	33.416	24.55	5.08	34	93	.53 2.4 .08 .3 7
10	15.14	33.473	24.79	4.70	76	85	.75 5.1 .32 .6 6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 30	11150	26 OCT 1972	7.0	36° 52.9'	121° 51.3'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm	CLOUDS	VISIB
6	26 0 2	9 2	1012.5	13.3 12.9	1	3	7 5
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
0	16.44	33.393	24.43	5.64	-20	104	.42 3.4 .04 .2 7
5	16.42	33.416	24.45	5.74	-28	106	.39 2.5 .02 .1 5
10	15.53*	33.466	24.69	3.64	167	66	.74 4.3 .26 1.2 8

* indicates questionable data: Paired thermometer read 15.62

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 30	1154	26 OCT 1972	7.7	36° 55.3'	121° 52.8'	
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry wet °C	CLOUDS typ amt	VISIB
4	22 0 2	36 2	1012.9	13.9	13.1	3 3 8 5
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/1	AOU %	SAT ug-atoms/liter
0	16.40	33.411	24.46	5.07	31	.94 .68 .1 .13 1.2 10
5	16.21*	33.419	24.51	5.16	25	.95 .93 .5 .17 1.5 10
10	15.23	33.490	24.78	4.60	84	.83 .99 2.9 .49 2.2 12

* indicates questionable data: Paired thermometer read 16.14

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 30	1159	26 OCT 1972	8.4	36° 57.0'	121° 56.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt
6	18 0 2 0 0	1012.9	15.2	13.7	1	3	2 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	16.27*	33.413	24.49	4.75	61	87	.46 .0 .07 .4
5	16.10	33.410	24.52	5.55	-8	102	.52 .2 .10 .1
10	15.76	33.449	24.63	4.38	99	80	1.01 1.7 .40 .40

* indicates questionable data: Paired thermometer read 16.31

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	30	1158	26 OCT 1972	9.3	36° 55.1'	121° 56.7'	
TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry	wet	typ amt
8	25	0	2	17	4	1013.2	15.8
						14.2	3
						3	5
						5	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE AMMONIA SILICA
m	°C	PPT		ml/l	ug-at/l	%	ug-atoms/liter
0	16.22	33.422	24.51	5.26	16	97	.43
5	16.17	33.425	24.52	5.08	32	93	.50
10	15.99	33.442	24.57	5.34	11	98	.54
20	14.77	33.517	24.90	4.83	68	86	.81
							3.6
							.53
							.9
							.8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 30	1153	26 OCT 1972	10.0	36° 56.8'	122° 00.1'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	p	mb	dry	wet	typ	amt
7	24	0	3	15	2	1013.2	16.2
						14.4	3
						3	5
						5	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	15.94	33.429	24.57	5.36	10	98	.59
4	15.81	33.433	24.61	5.27	19	96	.65
9	15.59	33.463	24.68	4.14	122	75	.68
							1.8
							.35
							1.6
							7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1152	26 OCT	10.9	36° 55.5'	122° 2.5'		
TRANSP	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
12	26 0 4 25 2	1013.5	16.9	14.7	1	0	1 6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter	
0	16.52	33.442	24.45	5.75	-30	106	.30
5	16.40	33.439	24.48	5.76	-30	106	.34
10	16.39	33.440	24.48	5.71	-25	105	.30
20	16.39	33.440	24.48	5.26	14	97	.36

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	30	1157	26 OCT 1972	12.5	36° 50.1'	121° 57.2'	
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
13	28	0	3	27	3	1012.9	18.3 16.1 3 3 4 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	16.63	33.476	24.45	5.60	-18	104	.36 .6 .04 .0
10	16.39	33.469	24.50	5.74	-28	106	.30 .3 .04 .0
20	15.79	33.507	24.67	5.34	13	97	.43 1.3 .26 .3
30	15.17	33.528	24.82	5.06	43	91	.68 3.3 .54 .1
50	12.70	33.525	25.33	4.72	99	81	.92 8.0 .08 .0
75	11.19	33.641	25.70	4.02	179	67	1.32 13.9 .05 .0
100	10.88	33.681	25.79	3.80	202	63	1.45 15.7 .07 .5
150	10.68	33.719	25.86	3.57	225	59	1.53 15.7 .08 .0

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				dry	wet	WEATH	CLOUDS
ML 30	1115	26 OCT 1972	14.5	36° 46.4'	121° 57.2'		
	TRANS P	WAVES	WIND	BAROM	AIR TEMP °C		
	m	dir ht	p	mb	dry wet		
10	9	1	3	2	1012.5	18.3 15.4	1 0 1 6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	PPT		ml/l ug-at/l %			ug-atoms/liter
0	16.71	33.454	24.42	5.92	-47	110	.38 .2 .02 .0
10	16.36	33.453	24.50	5.96	-48	110	.31 .0 .03 .0
20	15.86	33.500	24.65	5.53	-5	101	.49 .3 .23 .3
29	15.00	33.506	24.84	5.32	22	96	.60 1.6 .76 .0
49	12.56	33.520	25.35	4.75	98	81	.99 9.3 .10 .0
74	11.06	33.662	25.74	3.89	192	64	1.38 14.4 .08 .0
98	10.81	33.705	25.82	3.72	210	61	1.38 15.4 .09 .0
148	10.01	33.829	26.06	2.83	298	46	1.68 18.7 .07 .0
196	8.62	34.062	26.46	1.90	398	30	1.96 19.5 .04 .0
245	8.09	34.130	26.60	1.69	424	26	2.48 28.1 .05 .0
294	7.61*	34.167	26.70	1.44	453	22	2.18 24.2 .02 .0
392	6.67	34.228	26.88	1.01	504	15	2.64 28.9 .02 .0

* Indicates questionable data: Paired thermometer read 7.52

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 30	1108	27 OCT 1972	6.5	36° 47.4'	121° 50.0'
TRANS P m	WAVES dir ht P	WIND dir speed	BAROM mb	AIR TEMP dry wet °C	WEATH CLOUDS VISIB typ amt
7	27	1 2 8 4	1011.5	13.4 13.3	2 0 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l ug-at/l	AOU % SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	16.26	33.439	24.51	5.82 -34 107	.41 1.3 .09 .0
10	16.26	33.436	24.51	5.83 -35 107	.33 2.4 .12 .0
20	15.95	33.456	24.59	5.59 -11 102	.44 2.3 .22 .0
30	15.50	33.478	24.71	5.24 24 95	.55 1.0 .41 .3
50	14.46	33.500	24.95	4.84 70 86	.79 5.8 .56 .4
75	13.82	33.518	25.10	4.73 87 83	.93 7.5 .51 .1
100	12.84*	33.532	25.31	4.54 114 78	1.05 9.1 .32 .0
150	11.27	33.668	25.71	3.69 207 61	1.44 14.8 .20 .0

* indicates questionable data: Paired thermometer read 12.77

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	30	1112	27 OCT 1972	7.3	36° 48.1'	121° 52.1'	
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
11	27	1 3 9 5	1011.5	14.4 13.3	2	0	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	16.36	33.438	24.49	5.86	-39	108	.30 .4
10	16.36	33.436	24.48	5.87	-39	108	.35 .0
20	16.07	33.444	24.56	5.48	-2	100	.39 .5
30	14.94	33.498	24.85	5.15	38	92	.70 .3
50	14.06	33.506	25.04	4.87	72	86	.84 .82
75	12.74*	33.539	25.33	4.49	120	77	.87 5.1
100	12.39*	33.541	25.40	4.39	132	75	.87 7.0
149	11.98	33.566	25.50	2.75	283	46	1.10 8.7
						1.19	8.0 .24
							.16 .0

* indicates questionable data: Paired thermometers read 12.64 at 75 m., 12.26 at 100 m.
 Ammonia appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 30	1101	27 OCT 1972	8.3	36° 44.8'	121° 49.3'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
							BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS typ amt	VISIB
5	28	1	3	9	6	1012.5	14.3	13.1	2	0	6
10	14.19	33.502	25.01	4.97	61	80	.78	4.9	.67	.2	11
0	15.49	33.463	24.70	5.67	-13	103	.47	.0	.16	.6	10
5	14.69	33.494	24.90	4.47	101	80	.80	2.8	.47	.4	11

CRUISE	STATION	DATE	HOUR	N LATITUDE		
ML	30	1120	27 OCT 1972	8.9		
TRANSF	WAVES	WIND	BAROM	AIR TEMP	CLOUDS	VISIB
m	dir ht p	dir speed	mb	°C dry wet	typ amt	
10	29	2	3	10	7	1012.9
				14.9	13.3	2
					0	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	ug-atoms/liter
0	15.80	33.456	24.63	5.87	-34	.39
5	15.68	33.459	24.66	5.30	17	.45
10	14.91*	33.482	24.84	5.31	24	.64
20	14.24	33.472	24.98	5.20	40	.68
29	14.00	33.490	25.04	5.04	57	.75
49	13.07	33.512	25.25	3.82	176	.89
						6.0
						.26
						.4

* indicates questionable data: Paired thermometer read 14.84

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 30	11123	27 OCT 1972	9.8	36° 39.2'	121° 53.1'		
TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM dry wet	AIR TEMP °C dry	WEATH	CLOUDS	VISIB typ amt
11	30 1 3 6 6	1012.9		17.4 14.3	2	0	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	
0	15.85	33.505	24.65	5.76 -25	105 .40	.6	.13 1.4
5	15.43*	33.503	24.74	5.63 -9	102 .49	1.1	.19 .5
10	15.35	33.502	24.76	5.65 -10	102 .41	1.6	.14 .2
20	15.28	33.498	24.77	5.57 -3	101 .52	2.2	.22 .1
30	15.23	33.500	24.79	5.57 -2	101 .51	2.5	.22 .1
50	14.01	33.520	25.06	5.05 56	89 .64	4.5	.37 .5

* indicates questionable data: Paired thermometer read 15.36

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 30	1121	27 OCT 1972	10.4	36° 37.7'	121° 51.2'

TRANSP m	WAVES dir ht	WIND P dfr speed	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB
8	33	1 3 3 5	1012.9	17.5 15.0	2	0	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	16.11	33.454	24.55	6.24	-70	115	.62	.2	.09	.9	8
5	16.05	33.471	24.58	6.14	-61	113	.45	.0	.06	.3	7
10	15.59	33.491	24.70	3.81	151	69	.47	1.3	.12	.1	7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 30	11122	27 OCT 1972	10.9	36° 36.6'	121° 52.9'

TRANSP m	WAVES			BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB typ amt
	dir ht	P	dir r speed					
4	32	1	3	1	5	1013.2	17.8	15.2
							2	0
							6	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	16.03	33.459	24.58	6.29	-74	115	.55	.0
5	15.48	33.489	24.72	5.63	-10	102	.50	.5
10	15.21	33.497	24.79	5.59	-4	101	.44	1.0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 30	1124	27 OCT 1972	11.8	36° 38.8'	121° 56.4'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter					
							dry	wet	AIR TEMP °C	WEATH typ ant	CLOUDS	VISIB
8	29	2	4	32	6	1013.2	16.9	14.8	3	8	1	6
0	15.78	33.488	24.66	2.86*	234	52	.46	.1	.15	.0	.7	
5	15.39	33.497	24.75	3.80*	154	69	.51	1.2	.23	.0	7	
10	14.78	33.507	24.89	3.81*	159	68	.52	2.2	.26	.1	9	
20	14.08	33.527	25.05	3.57*	187	63	.80	4.8	.45	.3	12	
30	13.48	33.546	25.19	3.45*	204	60	.84	5.7	.36	.1	12	

* indicates questionable data: Oxygen appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML.	1116	27 OCT 1972	12.7	36° 43.3'	121° 55.6'		
TRANSF m	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS typ	VISIB amt
10	29	2	3	29	8	1013.2	17.8
						16.1	2
						0	0
						6	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	15.65	33.497	5.80	24.69	-27	106	.47
5	15.34	33.496	5.60	24.76	-6	101	.51
10	14.85	33.503	5.57	24.87	1	100	.56
19	14.64	33.505	5.38	24.92	20	96	.59
29	14.59	33.512	5.30	24.93	28	94	.71
49	13.59*	33.532	4.94	25.16	70	86	.88
73	13.28	33.561	4.73	25.24	92	82	.84
						6.3	.35
						0	.0
						12	12

* indicates questionable data: Paired thermometer read 13.69

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				ML	30	1110	27 OCT 1972	13.6	36° 45.6'	121° 52.0'	
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB				
m	dir ht	p	mb	dry wet	typ	amt					
8	29	1	3	29	10	1013.2	18.6	15.4	2	0	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
m	°C	ppt	ml/l	ug-at/l	%	ug-atoms/liter					
0	16.20	33.488	24.56	6.40	-85	118	.40	.1	.12	.0	10
5	16.02	33.487	24.60	6.35	-79	116	.44	.2	.14	.0	9
10	15.77	33.489	24.66	5.89	-36	107	.46	.2	.17	.0	10
20	15.70	33.495	24.68	5.70	-18	104	.49	.2	.25	.1	8
30	14.03	33.509	25.05	5.60	7	99	.80	.50	.51	.1	12
50	13.69	33.521	25.13	3.59	190	63	.86	.60	.50	.0	13

Hydrographic Stations

<u>ML CRUISE 31</u>	1105
<u>16 November 1972</u>	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1115
<u>17 November 1972</u>	1108
	1112
	1101
	1120
	1123
	1121
	1122
	1124
	1116

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 31	1105	19 NOV 1972	7.6	36° 50.8'	121° 49.5'
TRANSPI	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS VISIB
m	dir ht p	dir speed	mb	dry wet	typ amt
6	8	1	3	18	6
				1021.3	
				8.4	8.6
				1	3
				6	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1 %
m					SAT
					PHOSPHATE NITRATE NITRITE AMMONIA SILICA
					ug-atoms/liter
0	13.64	32.960	24.71	5.82	-6
5	13.69	33.112	24.82	6.26	-46
10	13.65	33.168	24.87	4.90	74

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1150	19 NOV 1972	8.4	36° 53.0'	121° 51.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
3	9 1 4	3 6	1024.0	9.9	9.4	1	3 6 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	13.35	32.736	24.59	4.98	72	86	.84 9.2 .23 1.0 7
5	13.55	32.981	24.74	5.02	65	87	.77 7.3 .19 .6 .7
10	13.68	33.082	24.79	4.35	124	76	.60 2.7 .14 .4 .5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1154	19 NOV 1972	9.0	36° 55.4'	121° 52.9'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
3	24 2 6 5 2	1022.4		11.6 11.7	1	3 3	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.60*	32.938	24.70	5.90	-13	103	.83 4.4 .22 1.2 8
5	13.59	32.949	24.71	5.91	-13	103	.84 4.3 .23 1.0 7
10	13.67	32.994	24.73	5.96	-19	104	.81 4.7 .21 1.0 7

* indicates questionable data: Paired thermometer read 13.51

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1159	19 NOV 1972	9.9	36° 57.2'	121° 56.2'		
TRANSF m	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP °C dry	WEATH	CLOUDS	VISIB typ amt
4	21 0	13 2	1022.7	12.7	12.8	2	3 3 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	13.45*	32.937	24.73	4.37	125	.73	4.2 .21 .7
5	13.50	33.023	24.79	4.62	102	.65	3.0 .17 .7
10	13.48	33.046	24.81	4.06	152	.71 .64	3.1 .15 .6

* indicates questionable data: Paired thermometer read 13.37

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1158	19 NOV 1972	10.7	36° 55.3'	121° 56.8'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p dir speed	mb	dry wet	typ	amt	
7	23	1	4	13	1	1022.4	13.3 12.2 2 3 5 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ADO ml/l	SAT ug-at/1	%	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	13.73	33.156	24.84	5.74	0	100	.45 2.1 .10 .7 3
5	13.64	33.156	24.85	5.75	0	100	.53 1.9 .14 .6 5
10	13.63	33.158	24.86	3.44	205	60	.54 1.6 .14 .5 5
20	13.58	33.164	24.88	3.87	167	67	.54 .0 1.84 .7 7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1153	19 NOV 1972	11.5	36° 56.8'	122° 00.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
5	21 0 6 17 3	1023.7	15.0	9.9	2	3	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	13.75*	32.969	24.69	4.11	145	72	.64
4	13.55	33.063	24.81	4.18	140	73	.69
9	13.55	33.073	24.81	4.43	118	77	.63

* indicates questionable data: Paired thermometer read 13.68

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1152	19 NOV 1972	12.2	36° 55.4'	122° 2.5'		
TRANS P m	WAVES dir ht p	WIND dir speed	BARON mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
8	27	1 3 17 2	1022.4	13.0 12.2	3	3	2 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.61	33.045	24.78	5.84	-8	102	.56 2.0 .16 .4 6
5	13.58	33.106	25.75	5.76	-5	101	.56 2.0 .16 .4 6
10	13.63	33.159	24.86	5.66	7	99	.53 2.0 .15 .4 5
20	13.63	33.221	24.91	3.45	204	60	.54 2.1 .16 .4 5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 31	1157	19 NOV 1972	13.5	36° 50.1'	121° 58.1'
TRANSPIRATION	WAVES m	WIND dir ht P	BAROM mb	AIR TEMP dry wet °C	WEATH CLOUDS typ amt
	14	26 3 6 20 4	1021.0	14.4 13.1	3 8 2 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	SAT %
0	13.88	33.241	24.88	4.58 100	80 .53
10	13.73	33.265	24.92	3.60 189	63 .56
20	13.59	33.246	24.94	3.48 202	61 .49
30	13.54	33.248	24.95	5.61 12	98 .58
50	13.41	33.276	25.00	3.55 197	62 .67
75	13.41	33.297	25.01	3.74 180	65 .68
100	12.25	33.421	25.34	3.17 243	54 1.00
150	10.69	33.656	25.81	2.58 313	42 1.49

PHOSPHATE NITRATE NITRITE AMMONIA SILICA
ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE											
				TRANS P	WAVES	WIND	BAROM mb	AIR TEMP °C	WEATH	CLOUDS	VISIB						
m	dir ht	P	dtr speed					dry	wet	typ	amt						
ML 31	1115	19 NOV 1972	14.7	14	27	1	3	29	4	1021.7	14.4	12.5	20	8	7	7	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-at/l	NITRATE ug-at/l	NITRITE ug-at/l	AMMONIA ug-atoms/liter	SILICA						
m																	
0	13.95	33.198	24.83	4.10	143	72	.51	2.0	.13	.0*	4						
10	13.68	33.228	24.91	4.11	144	72	.51	1.9	.15	.1*	5						
19	13.64	33.242	24.93	3.47	202	61	.56	2.3	.17	.0*	5						
29	13.58	33.241	24.94	3.56	195	62	.56	2.2	.18	.1*	6						
48	13.51	33.271	24.97	3.32	217	58	.75	3.3	.30								
72	13.33	33.304	25.04	5.42*	31	94	.66	3.5	.25	.2*	7						
97	12.08	33.447	25.39	4.73	106	80	.83	6.0	.20	.0*	10						
145	10.63	33.661	25.82	3.60	223	59	1.45	13.9	.05	.1*	18						
193	10.14	33.764	25.99	3.08	275	50	1.48	13.4	.03	.1*	19						
241	8.83	34.006	26.39	2.12	376	33	2.03	19.4	.02	.0*	33						
290	8.23	34.066	26.53	1.77	415	28	2.10	19.4	.03	.0*	39						
386	7.48	34.133	26.69	1.36	462	21	2.67	27.3	.03	.1*	54						

* Indicates questionable data: Ammonia values have been corrected by -0.2 ug-atoms/liter
Oxygen appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 31	1108	20 NOV 1972	7.5	36° 47.5'	121° 50.0'

TRANSPIRATION m	WAVES dir ht	WIND p	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB				
10	28	3	13	5	1022.7	8.9	8.3	3	0	1	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	13.58	33.232	24.93	5.81	-5	101	.58	2.2	.20	.4	5
10	13.45	33.271	24.99	5.59	15	97	.65	3.4	.27	.3	6
20	13.29*	33.305	25.04	5.46	28	95	.75	3.9	.31	.8	7
29	13.11	33.324	25.10	5.44	31	94	.82		.31	.3	0*
49	12.36	33.423	25.32	5.63	22	96	1.04	9.0	.36	.7	11
74	11.60*	33.539	25.55	4.21	157	70	1.29	12.7	.34	.5	17
98	11.09	33.608	25.70	3.80	200	63	1.17	12.4	.22	.1	16
147	9.87	33.791	26.05	1.89	384	31	1.72	19.2	.12	.0	26

* indicates questionable data: Paired thermometers read 13.22 at 20 m, 11.53 at 74 m
 Silica appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE					
ML	1112	20 NOV 1972	8.7	36° 47.8'	121° 57.2'					
TRANS P	WAVES m	WIND dir ht P	BAROM mb	AIR TEMP °C dry wet	CLOUDS typ amt					
10	26	3 5 7	3 1023.4	11.1 9.9	3 0 1 7					
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	13.37	33.109	24.88	5.96	-16	103	.58	2.6	.18	.2
10	13.49	33.173	24.90	5.79	-2	101	.63		.21	.4
20	13.52	33.207	24.92	5.67	7	99	.68	2.7	.25	.9
30	13.31	33.278	25.02	5.46	28	95	.76	3.7		.6
49	12.62*	33.379	25.23	5.06	71	86	.95	7.4	.29	.5
74	11.22*	33.561	25.64	4.11	171	68	1.17	12.0	.33	.2
99	10.67	33.657	25.81	3.61	221	59	1.56	17.0	.08	.0
148	9.99	33.784	26.03	3.16	269	51	1.50		.07	.21
									.06	.0
										20

* indicates questionable data: Paired thermometers read 12.55 at 49 m, 11.15 at 74 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1101	20 NOV 1972	9.6	36° 44.7'	121° 49.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed mb	dry wet		typ	amt	
8	27	5	6	14	5	1023.7	10.6
							9.4
							2
							0
							2
							7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	13.55*	33.117	24.85	5.87	-10	102	.64
5	13.55	33.132	24.86	5.96	-18	104	.60
10	13.55	33.194	25.21	5.82	-7	102	.51
							5.6
							.11
							.17
							.5
							.3
							.2
							.2

* indicates questionable data: Paired thermometer read 13.46

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE							
ML	31	1120	20 NOV 1972	10.3	36° 43.1'	121° 51.4'						
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB					
m	dir ht	p	dir speed	mb	dry wet	typ	amt					
11	26	7	3	10	5	1024.4	12.8	10.8	2	0	2	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-at/l	NITRATE ug-at/l	NITRITE ug-at/l	AMMONIA ug-atoms/liter	SILICA	
0	13.61	33.198	24.90	5.89	-13	103	.58	1.9	.17	.4		
5	13.63	33.230	24.92	5.89	-13	103	.62	1.7	.20	.2		
10	13.64	33.232	24.92	5.81	-6	101	.53	1.7	.16	.1		
20	13.65	33.240	24.92				.53	2.1	.16	.3		
30	13.71	33.262	24.93	5.74	-1	100	.56	2.3	.19	.2		
50	13.30	33.303	25.04	5.49	25	95	.70		.27	.3		

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1123	20 NOV 1972	11.2	36° 39.2'	121° 53.3'		
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry °C	WEATH	CLOUDS	VISIB
15	29	7	5	9	7	1024.4	14.3
						11.7	2
						0	2
						7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.74	33.189	24.86	5.94	-18	104	.45
5	13.72	33.187	24.87	5.94	-18	104	.45
10	13.70	33.187	24.87	5.84	-9	102	.39
20	13.72	33.195	24.87	5.90	-15	103	.44
30	13.74	33.172	24.85	5.79	-5	101	.54
49	13.41	33.301	25.02	5.54	19	96	1.3
						.70	
							.28
							1.0
							7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 31	1121	20 NOV 1972	11.9	36° 37.7'	121° 51.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry	wet	typ	amt
9	30	2	4	35	5	1024.4	14.7
						12.2	2
						0	2
						7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l ug-at/l	%		ug-atoms/liter
0	13.88	33.170	24.82	6.11	-35	107	.52
5	13.75	33.166	24.84	6.08	-31	106	.56
10	13.71	33.172	24.86	5.95	-19	104	.38
						4.7	
							.04
							.2
							3

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 31	1122	20 NOV 1972	12.3	36° 36.6'	121° 52.9'

TRANSP m	WAVES			BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS	VISIB typ amt
	dir	ht	P					
4	34	1	2	23	5	1023.7	14.1	11.9
							2	0
							2	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	13.93*	33.086	24.75	5.76	-4	101	1.01	1.5	.17	.1	7
5	13.72	33.119	24.81	5.98	-22	104	.66	.8	.08	1.5	3
10	13.67	33.150	24.85	6.14	-35	107	.76	1.3	.13	1.2	6

* indicates questionable data: Paired thermometer read 14.01

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	31	1124	20 NOV 1972	13.3	36° 38.8'	121° 56.3'		
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS	VISIB typ amt					
9	29	5	4	33	5	1023.7	14.5	12.8	2	0	2	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter	
0	13.90	33.146	24.80	5.86	-1.3	103	.61	1.1	.10	.7	4	
5	13.69	33.157	24.85	5.92	-16	103	.43	.4	.05	.3	3	
10	13.70*	33.229	24.90	5.74	0	100	.41	.5	.07	.3	6	
20	13.59	33.268	24.96	5.68	5	99	.53	2.0	.17	.5	5	
30	13.48	33.293	25.00	5.55	18	97	.61	2.6	.19	.4	5	

* indicates questionable data: Paired thermometer read 13.78

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 31	1116	20 NOV 1972	14.4	36° 43.3'	121° 55.6'

TRANSPIRATION mm	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS typ amt	VISIB	SAT	PHOSPHATE	NITRATE	AMMONIA	SILICA
								%	ug-at/l	ug-at/liter	ug-atoms/liter	
14	27	2	28	5	1023.7	15.4	12.4	2	0	2	7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l							
0	13.94	33.241	24.86	5.86	-14	103	.43	1.5	.11	.1	.1	3
5	13.71	33.236	24.91	5.87	-12	103	.48	1.6	.12	.1	.0	4
10	13.65	33.234	24.92	5.70	3	99	.53	1.6	.14	.0	.0	4
20	13.57	33.244	24.94	5.08	59	88	.60	2.3	.20	.1	.1	6
29	13.49	33.236	24.95	5.38	33	94	.48	2.2	.14	.3	.3	4
49	13.44	33.269	24.99	5.57	16	97	.53	2.6	.18	.2	.2	4
74	12.97	33.328	25.13	5.10	63	88	.65	3.9	.23	.4	.4	6

Hydrographic Stations

<u>ML CRUISE 32</u>	1105
14 December 1972	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1115
15 December 1972	1108
	1112
	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 32	1105	14 DEC 1972	7.6	36° 50.9'	121° 49.6'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
6	29 0 2	29 8	1023.0	3.3	2.8	2	0 1 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.32	33.275	25.40	5.90	11	98	1.29 7.0 .48 .2 9
5	11.39	33.278	25.39	5.94	6	99	1.23 6.5 .45 .0 8
10	11.38	33.273	25.39	5.81	18	97	1.13 7.4 .44 .0 8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	32	1150	14 DEC 1972	8.4	36° 52.9'	121° 51.3'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht	P dir speed	mb	dry wet		typ amt	
8	27	1 2 28 8	1021.7	3.3 0.0	2	0 1	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	11.69	33.321	25.37	5.94	3	100	.57 7.2 .35 .0 6
5	11.70	33.322	25.36	5.92	4	99	.63 7.7 .39 .0 7
10	11.70	33.318	25.36	5.74	20	96	.58 2.3 .34 .0 7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1154	14 DEC 1972	8.9	36° 55.2'	121° 52.8'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ ant
8	22	1 2	32 5	1023.7	4.0	2.7	2 0 1 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.52	33.339	25.41	5.94	5	99	.69 .46 .9 8
5	11.56	33.339	25.40	5.94	4	99	.69 3.0 .40 .0 7
10	11.56	33.341	25.41	5.61	34	94	.69 2.4 .42 .0 7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	32	1159	14 DEC 1972	9.6	36° 57.0'	121° 56.3'	
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry wet	typ atm	
7	17	1	2	17	5	1024.0	0.1
							3.9
							2
							0
							1
							7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	11.48	33.265	25.36	5.83	15	97	.69
5	11.49	33.261	25.36	5.86	12	98	.61
10	11.46	33.258	25.36	5.70	27	95	.70
							2.6
							.39
							1.9
							.48
							.4
							.4
							.8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	32	1158	14 DEC 1972	10.4	36° 55.1'	121° 56.8'	
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	dry mb	wet	typ amt	
7	14	1	2	14	5	1023.7	6.7
						4.4	2
						0	1
						7	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU	SAT %	PHOSPHATE NITRATE AMMONIA SILICA m
0	11.47	33.235	25.34	5.90	9	98	.65
5	11.48	33.235	25.34	5.91	8	98	.71
10	11.48	33.236	25.34				.71
20	11.48	33.235	25.34	5.53	42	92	.70

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 32	1153	14 DEC 1972	11.1	36° 56.8'	122° 00.4'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet °C	WEATH typ atm	CLOUDS	VISIB
8	13 1 2 13 4	1023.0		8.9 5.6	2 0 1	7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	11.48	33.228	25.33	5.82	16	97	.76 2.9 .58 .3 10
5	11.49	33.225	25.33	5.82	16	97	.77 2.7 .58 .2 9
10	11.48	33.226	25.33	5.35	58	89	.76 2.5 .55 .5 9

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	32	1152	14 DEC 1972	11.8	36° 54.9' 122° 1.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
10	15	2	2	17	4	1022.7	8.3
						5.6	3
						0	1
						7	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA
0	12.61	33.445	25.29	5.57	25	95	.77
5	12.61	33.445	25.29	5.57	25	95	.77
9	12.62	33.443	25.28	5.37	43	98	.77
19	11.47	33.422	25.48	4.90	98	82	.75
							.75
							3.6
							.46
							.0
							7

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				BAROM	AIR TEMP	WEATH	CLOUDS
				mb	*C dry wet		VISIB typ amt
	12	10	1	10	12	1021.3	10.0
							6.7
							3
							2
							2
							7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	ADU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	ppt		ml/l ug-at/1	%		ug-atoms/liter
0	12.67	33.464	25.29	5.57	24	95	.78
4	12.73*	33.463	25.28	5.44	35	93	.79
9	12.71*	33.464	25.28	5.52	28	95	.81
17	12.69	33.463	25.29	5.49	31	94	.81
43	12.66	33.462	25.29	5.47	33	94	.77
65	12.65	33.462	25.29	5.52	29	94	.80
87	12.68	33.462	25.29	5.38	41	92	.80
130	10.70	33.672	25.82	3.71	212	61	1.61
							14.8
							.09
							.0
							20

* Indicates questionable data: Paired thermometers read 12.65 at 4 m, 12.62 at 9 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 32	1115	14 DEC 1972	14.4	36° 46.7'	121° 65.8'

TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
13	10 1 2	10 5	1021.3	10.0	7.2	3 2 4	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	12.65	33.465	25.29	5.44	36	93	.74	9.3	.04	.1	7
11	12.67	33.463	25.29	5.50	30	94	.72	9.5	.03	.0	7
21	12.64	33.464	25.30	5.43	37	93	.73	8.5	.03	.2	7
32	12.68	33.462	25.29	5.43	37	93	.73	9.0	.02	.0	7
53	12.62	33.463	25.30	5.46	34	93	.76	8.8	.03	.2	8
80	12.57	33.459	25.31	5.31	48	91	.77	12.0*	.02	.0	8
106	11.60	33.555	25.56	4.15	163	69	1.22	10.4	.00	.0	14
160	10.04	33.785	26.02	3.10	274	50	1.76	17.8	.00	.0	24
203	9.43	33.911	26.22	2.74	313	44	1.90	22.6	.04	.2	27
254	8.79	34.024	26.41	2.24	366	35	2.20	26.1	.02	.0	34
305	8.05	34.092	26.58	1.72	422	27	2.09	23.1	.03	.1	36
406	6.91	34.159	26.79	1.29	476	19	2.82	31.8	.02	.0	59

* indicates questionable data: Nitrate appears anomalously high

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 32 1108 15 DEC 1972 7.4 36° 47.5' 121° 50.3'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB				
m	dir ht	P	dir speed	mb	dry	wet	typ amt				
9	12	1	2	10	1022.7	5.6	3.3	2	4	7	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.27	33.419	25.33	5.62	24	95	.74	5.1	.02	.3	8
9	12.33*	33.413	25.32	5.56	29	94	.74	4.8	.01	.1	7
18	12.29	33.428	25.34	5.55	30	94	.69	4.4	.01	.1	7
27	12.33	33.412	25.32	5.54	31	94	.74	5.1	.01	.1	8
45	12.20	33.406	25.34	5.52	34	94	.68	5.0	.00	.1	7
67	12.02	33.386	25.35	5.51	37	93	.63	7.9	.00	.2	6
90	11.89	33.408	25.40	5.32	55	90	.85	5.8	.00	.3	9
134	10.76	33.663	25.80	3.60	221	59	1.44	12.7	.06	.0	20

* indicates questionable data: Paired thermometer read 12.26

CRUISE		STATION		DATE		HOUR		N LATITUDE		W LONGITUDE	
ML	32	1112	15 DEC 1972			8.2		36° 48.0'		121° 52.4'	
		TRANSP	WAVES	WIND	BAROM	AIR TEMP	°C	WEATH	CLOUDS	VISIB	
m		dir	ht	p	dir speed	mb	dry wet		typ	amt	
10	10	1	2	11	10	1023.0		7.1	4.4	2	4
									7	7	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT		PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
m	°C	Ppt		ml/l	ug-at/l	%		ug-atoms/liter			
0	12.51	33.447	25.31	5.45	37	93		.68	4.5	.01	.0
10	12.50	33.448	25.31	5.51	31	94		.71	4.8	.00	.0
20	12.55	33.447	25.30	5.47	34	93		.73	4.9	.00	.0
30	12.54	33.451	25.31	5.46	35	93		.72	5.3	.01	.0
50	12.49	33.448	25.31	5.42	40	92		.74	5.2	.01	.2
75	12.52	33.448	25.31	5.40	41	92		.66	5.9	.01	.0
100	12.01	33.502	25.45	4.41	135	74		1.05	8.1	.00	.0
150	10.75	33.667	25.80	3.59	222	59		1.28	10.7	.00	.0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 32	1101	15 DEC 1972	9.2	36° 44.9'	121° 49.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	mb	dry	wet	typ	amt
9	10	0	2	11	9	1023.0	5.2
						3.1	2
						4	7
						6	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.97	33.428	25.40	5.74	17	97	.85
5	11.99	33.429	25.39	4.75	105	80	.80
10	11.98	33.429	25.40	5.61	28	95	.68
						3.3	.47
							.0
							.0
							.0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 32	1120	15 DEC 1972	9.9	36° 43.1'	121° 51.5'

	TRANSF m	WAVES dir ht	WIND P	dir speed	BAROM mb	AIR TEMP °C dry	WEATH wet	CLOUDS	VISIB typ amt	
DEPTH m	TEMP °C	Salinity ppt	Sigma T	Oxygen ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.15*	33.406	25.35	5.50	36	93	.77	5.7	.07	.1
5	12.17	33.398	25.34	5.54	33	94	.80	6.2	.10	.2
9	12.11	33.393	25.34	5.53	34	94	.80	5.0	.14	.3
19	12.12	33.393	25.34	5.53	34	94	.78	4.7	.14	.3
28	12.13	33.394	25.34	5.54	33	94	.78	5.4	.16	.3
47	12.06	33.398	25.36	5.40	46	91	.82	5.7	.15	.2

* indicates questionable data: Paired thermometer read 12.09

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				ML	32	1123	15 DEC 1972
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
15	5	0 2 6 8	1024.4	8.2	6.1	3	4 8 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	12.27	33.427	25.34	5.64	22	96	.77 8.4 .64 .4 8
5	12.33	33.427	25.33	5.64	22	96	.73 8.1 .57 .2 8
10	12.29	33.425	25.33	5.64	22	96	.76 8.1 .61 .1 6
20	12.27	33.425	25.34	5.67	20	96	.68 7.9 .51 .2 6
30	12.28*	33.427	25.34	5.64	22	96	.77 8.8 .62 .1 7
50	12.29	33.433	25.34	5.56	29	94	.79 9.3 .58 .2 7

* indicates questionable data: Paired thermometer read 12.35

CRUISE		STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML	32	1121	15 DEC 1972	11.3	36° 37.7'	121° 51.2'
TRANSP	WAVES	WIND	BAROM	AIR TEMP	CLOUDS	VISIB
m	dir ht	P	dir speed	mb dry wet	typ	amt
13	3	0	2	3	0	1024.0
				10.2	7.3	2
					4	8
					6	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l ug-at/l	%	ug-atoms/liter
0	12.27	33.429	25.34	5.60	26	95
5	12.27	33.429	25.34	5.62	24	95
10	12.25	33.426	25.34	5.54	32	94

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 32	1122	15 DEC 1972	11.8	36° 36.6'	121° 52.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter		
						BAROM mb	AIR TEMP °C dry wet	WEATH typ amt
11	0	0	2	0	0	1024.0	9.4	6.7
							2	4
							4	8
							6	
0	12.20*	33.412	25.34	5.70	18	97	.95	3.5
5	12.11	33.407	25.35	5.72	17	97	.82	3.2
10	12.04	33.402	25.36	5.76	14	97	.84	3.3

* indicates questionable data: Paired thermometer read 12.06

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	32	1124	15 DEC 1972	12.8	36° 38.8' 121° 56.3'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ ant	CLOUDS	VISIB
13	22	1 2 11 10	1022.7	10.1	7.9	2	4 8 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.69	33.470	25.29	5.58	23	96	.73 3.9 .36 .3 7
5	12.66	33.471	25.30	5.65	17	97	.50 2.2 .21 .2 4
10	12.65	33.471	25.30	5.56	25	95	.52 2.1 .19 .2 4
20	12.68	33.468	25.29	5.55	26	95	.50 2.4 .21 .0 5
30	12.65	33.472	25.30	5.54	27	95	.70 3.7 .35 .0 6

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 32 1116 15 DEC 1972 13.8 36° 43.3' 121° 55.8'

	TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		cyp	amt	
10	9 1 2	12 10	1022.4	9.9	7.2	2	4	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.30	33.421	25.33	5.55	30	94	.77	3.8	.55	.3	7
5	12.28	33.418	25.33	5.51	34	94	.79	4.3	.57	.2	7
10	12.31	33.420	25.33	5.56	29	94	.76	3.9	.55	.1	6
19	12.26	33.418	25.33	5.49	36	93	.78	3.8	.54	.1	7
29	12.24	33.418	25.34	5.58	28	95	.78	3.8	.56	.0	8
48	12.23	33.414	25.34	5.47	38	93	.69	3.4	.46	.2	6
72	12.02	33.397	25.36	5.52	36	93	.70	3.8	.50	.3	6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 32	1110	15 DEC 1972	14.7	36° 45.7'	121° 53.8'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ atm		
10	12 1 2	7 6	1022.7	10.1	6.8	2	4
						8	6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.29*	33.419	25.33	5.49	36	93	.64
5	12.29	33.415	25.33	5.51	34	94	.75
10	12.24	33.416	25.34	5.55	31	94	.64
20	12.22	33.410	25.33	5.54	32	94	.79
30	12.13	33.403	25.35	5.55	32	94	.79
50	12.01	33.395	25.36	5.62	27	95	.78
							.78
							3.7
							.58
							.4
							.4

* indicates questionable data: Paired thermometer read 12.23

Hydrographic Stations

<u>ML CRUISE 33</u>	1105
25 January 1973	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1124
	1115
26 January 1973	1108
	1112
	1101
	1120
	1123
	1121
	1122
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1105	25 JAN 1973	7.5	36° 50.8'	121° 49.7'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ smt
2	25	1 2 5 4	1020.0	9.4 8.8	0	3 7	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter NITRATE NITRITE AMMONIA SILICA
0	12.04	32.660	24.79	6.16	-18	103	.96 4.5 .47 1.3 15
5	12.15	32.884	24.94	6.00	-5	101	.76 3.1 .44 .4 9
10	12.25	32.975	24.99	5.87	4	99	.79 2.9 .48 .5 8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1154	25 JAN 1973	8.9	36° 55.2'	121° 52.9'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS typ	VISIB amt
3	23 1 3 3 1	1020.7	9.6	9.3	2	3	7 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.00	32.755	24.87	6.03	-6	101	.84
5	12.15	32.939	24.98	6.05	-10	102	.75
10	12.54	33.222	25.13	5.70	15	97	.70
						1.7	
							.45
							.3
							.3
							.9
							7
							12

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML_33	1159	25 JAN 1973	9.7	36° 56.9'	121° 56.4'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			VISIB typ amt
							AIR TEMP °C dry wet	WEATH	CLOUDS	
4	20	0	3	3	1	1021.0	10.2	9.7	3	3
9	11.96	32.709	24.84	6.15	-16	103	.74	2.4	.36	.2
6	12.45	33.110	25.06	5.89	0	100	.57	1.3	.29	.5
7	12.53	33.222	25.13	5.88	0	100	.60	1.6	.38	.0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1158	25 JAN 1973	10.4	36° 55.2'	121° 56.7'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet			
6	20 1 2	0 0	1021.0	11.1 10.0	2	3	8 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
m							
0	12.18	33.003	25.03	6.04	-10 102	.63	1.9 .36 .2 7
5	12.34	33.119	25.09	5.96	-5 101	.65	1.8 .38 .1 8
10	12.35	33.164	25.12	5.99	-8 102	.64	1.9 .40 .0 7
20	12.67	33.323	25.18	5.71	12 98	.65	1.7 .51 .1 6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1153	25 JAN 1973	11.2	36° 56.8'	122° 00.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
2	23	1 2 5 2	1020.7	10.4	9.8	2	3 8 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	12.10	32.439	24.61	6.06	-9	102	.91 3.0 .44 .7 15
5	12.24	32.898	24.94	5.96	-3	101	.77 2.4 .41 .3 9
10	12.62	33.191	25.09	5.22	57	89	.76 2.4 .44 1.3 8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 33	1152	25 JAN 1973	12.0	36° 54.9'	122° 1.0'

TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	p	dir speed	wb	dry	wet	typ amt					
5	23	1	2	26	2	1019.3	11.0	10.0	2	3	8	6

DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	12.31	33.169	25.13	5.93	-2	101	.64	2.0	.54	.7	.8
5	12.49	33.285	25.19	5.47	36	93	.63	2.1	.55	.0	7
10	12.47	33.302	25.20	5.48	35	93	.63	2.2	.58	.0	5
20	12.52	33.353	25.23	5.44	38	93	.63	2.2	.65	.0	5

CRUISE	STATION	DATE	HOUR	N LATITUDE W LONGITUDE							
				TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
ML. 33	1157	25 JAN 1973	13.2	36° 50.1'							
				11	24	2 3 29 3	1019.3	11.0	9.4	1 3 7	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	12.56	33.355	25.23	5.37	44	92	.63	2.7	.59	.0	7
10	12.64	33.454	25.29	5.59	23	96	.63	2.9	.59	.0	6
20	12.60	33.450	25.29	5.44	37	93	.51	2.1	.47	.0	5
29	12.65	33.450	25.28	5.28	50	90	.62	2.7	.47	.0	5
49	12.66	33.462	25.29	5.43	37	93	.62	2.7	.56	.0	5
74	12.50	33.481	25.34	5.00	77	85	.77	4.8	.45	.0	8
97	11.56	33.599	25.60	4.09	168	68	1.19	10.6	.38	.0	15
147	9.98	33.804	26.04	3.05	279	49	1.78	20.0	.10	.0	25

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE

ML 33 1124 25 JAN 1973 13.8 36° 38.9' 121° 56.5'

TRANSP m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP dry wet	WEATH typ atm	CLOUDS	VISIB	NITRATE NITRITE AMMONIA SILICA											
								10	25	3	25	3	1023.0	11.7	9.5	2	8	1	7
0	12.73	33.410	25.24	5.79	4	99	.57	2.3	.59	.0	.0	.0							5
5	12.65	33.422	25.26	5.84	0	100	.58	2.2	.64	.0	.0	.0							7
10	12.67	33.433	25.27	5.42	38	93	.63	2.5	.69	.0	.0	.0							6
20	12.57	33.437	25.29	5.77	7	99	.64	2.9	.66	.3	.3	.3							6
30	11.86	33.557	25.52	4.73	108	80	.87	6.4	.21	.3	.3	.3							9

CRUISE	STATION	DATE	HOUR	N LATITUDE W LONGITUDE				
				TRANS P	WAVES dir hr p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet
ML. 33	1115	25 JAN 1973	15.0					36° 46.6'
	12	26	2	3	26	10	1018.6	11.6 9.9
								1 3 6 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	
0	12.65	33.390	25.24	5.51	30	94	.64	5.5 .64 .0 .9
8	12.68	33.437	25.27	5.32	46	91	.56	4.3 .56 .0 .5
16	12.64	33.438	25.28	5.27	51	90	.61	4.6 .65 .0 .7
25	12.64	33.437	25.27	5.31	48	91	.61	5.0 .65 .0 .7
41	12.58	33.435	25.29	5.73	11	98	.67	5.9 .70 .0 .9
66	12.56	33.451	25.30	5.24	55	90	.70	6.0 .69 .2 .7
82	11.42	33.596	25.63	3.59	215	60	1.21	13.7 .21 .0 .14
148	10.25	33.762	25.96	3.44	241	56	1.65	19.3 .06 .0 .21
161	9.58	33.881	26.17	2.72	313	44	1.79	21.3 .10 .0 .23
206	9.16	33.977	26.31	2.54	334	40	2.09	26.0 .08 .0 .29
252	8.19	34.052	26.52	1.83	410	28	2.17	26.2 .07 .0 .36
351	7.70	34.096	26.63	1.51	445	23	2.57	31.4 .08 .0 .45

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 33 1108 26 JAN 1973 7.7 36° 47.4' 121° 50.2'

TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
2	26	4 3 8 5	1021.3	6.8	5.6	2	8 1 7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU % SAT	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	11.76	32.663	24.84	6.18	-16	103	.84	6.2	.47	.4
10	12.64	33.311	25.18	5.90	-3	101	.66	3.8	.70	.0
20	12.53	33.421	25.28	5.91	-4	101	.64	4.4	.65	.5
30	12.54	33.429	25.29	5.85	1	100	.57	4.6	.49	.4
49	12.48	33.432	25.30	5.72	13	98	.67	6.5	.0	.3
75	12.08	33.548	25.47	5.03	79	85	.94	11.0	.67	.5
97	11.10	33.655	25.73	4.30	155	71	1.32	16.3	.58	.0
150	9.65	33.844	26.13	3.16	273	51	1.86	22.9	.19	.1

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 33 1112 26 JAN 1973 8.8 36° 47.9' 121° 52.7'

	TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB				
m	dir ht	p	dir speed	mb	dry	wet	typ	amt				
4	26	4	2	8	5	1022.7	7.7	6.7	2	8	1	7

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
0	12.04	32.977	25.03	6.07	-11	102	.64	13.8	.43	.4	6
10	12.40	33.301	25.22	5.96	-6	101	.69	4.2	.61	.1	6
20	12.49	33.433	25.30	5.84	2	100	.57	5.0	.45	.0	4
30	12.52	33.438	25.30	5.91	-3	101	.66	14.5*	.59	.1	4
47	12.49	33.438	25.30	5.85	1	100	.62	30.4*	.53	.0	4
73	12.29	33.523	25.41	5.10	70	87	.75	5.1	.37	.0	7
99	11.25	33.637	25.69	5.94	7	99	1.17	9.3	.19	.0	13
149	9.99	33.800	26.04	3.28	259	53	1.76	17.2	.13	.0	25

* indicates questionable data: Nitrate appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 33	1101	26 JAN 1973	10.0	36° 44.8'	121° 49.3'

TRANS P m	WAVES			BAROM mb	AIR TEMP dry wet °C	WEATH	CLOUDS typ amt	VISIB
	dir ht	p	dir speed					
1	25	3	2	9	3	1023.4	7.8	6.8
							2	8
							1	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	12.44	33.269	25.18	6.05	-14	103	.78	3.8
5	12.40	33.272	25.19	6.00	-10	102	.78	3.4
10	12.64	33.423	25.26	5.39	41	92	.73	3.4

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE	
				dry	wet	WEATH	CLOUDS
ML 33	1120	26 JAN 1973	10.7	36° 43.3'	121° 51.8'		
				typ	amt		
TRANSPI	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet			
3	26	3 2 7	3	1024.4	9.9	8.6	2 8 1 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	12.38	33.143	25.10	5.97	-6	101	.73 3.3 .62 .4 8
5	12.37	33.151	25.11	5.94	-3	101	.77 6.1 .69 .5 8
10	12.36	33.172	25.12	5.94	-3	101	.72 5.6 .62 .3 7
20	12.78	33.356	25.19	5.76	6	99	.62 2.9 .60 .1 5
30	12.82	33.469	25.26	5.66	14	97	.63 3.3 .68 .0 5
50	12.46	33.496	25.36	5.21	58	89	.86 5.3 .83 .0 8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 33	1123	26 JAN 1973	11.7	36° 39.0'	121° 53.3'

TRANSPIRATION mm	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIB
				dry	wet			
7	26	3 2	6 5	1023.0	10.2	7.8	2	8 1 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	12.64	33.421	25.26	5.87	-1	100	.67	3.2 .73 .0 4
5	12.65	33.418	25.26	5.84	0	100	.66	2.9 .72 .0 4
10	12.62	33.417	25.26	5.80	4	99	.51	2.7 .43 .0 2
20	12.64	33.417	25.26	5.83	1	100	.52	2.2 .49 .1 5
30	12.60	33.421	25.27	5.66	17	97	.65	3.7 .72 .0 6
50	12.68	33.456	25.28	5.68	14	97	.54	5.8 .40 .0 3

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1121	26 JAN 1973	12.3	36° 37.7'	121° 51.2'		
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
4	28	3	28	6	1023.0	10.7	9.1
						2	8
						1	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter
0	12.54	33.362	25.24	6.57	-62	112	.82
5	12.37	33.378	25.28	6.24	-31	106	.80
10	12.31	33.394	25.31	5.58	27	95	.66
							.6
							.5
							.3
							.5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 33	1122	26 JAN 1973	12.9	36° 36.6'	121° 52.8'		
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS typ amt	VISIB
5	33 0 2	33 5	1023.0	12.7	9.5	2	8 1 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T ml/l	OXYGEN ug-at/l	AOU %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
0	12.46	33.234	25.15	5.92	-3	101	.98
5	12.38	33.363	25.27	5.61	24	95	.64
10	12.43	33.391	25.28	5.69	16	97	.69
						2.0	.52
							.6
							.5

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir hr p	dir speed	mb	dry wet		typ	amt				
ML 33	1116	26 JAN 1973	15.0	36° 42.2'	121° 55.7'						
5	24 3 2	32 3	1023.0	15.2	10.2	2	8	1	7		
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN mg/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
m							ug-atoms/liter				
0	12.72	33.265	25.13	5.91	-5	101	.60	2.6	.51	1.0	5
5	12.62	33.354	25.21	5.89	-3	101	.56	3.1	.54	.1	4
10	12.56	33.429	25.28	5.88	-1	100	.50	2.3	.44	.0	3
20	12.49	33.431	25.30	5.87	0	100	.64	3.0	.69	.0	5
30	12.53	33.438	25.30	5.82	3	99	.51	2.6	.45	.2	3
48	12.48	33.446	25.31	5.68	16	97	.63	3.8	.67	.1	5
77	12.35	33.497	25.38	4.21	149		.82	4.7	.65	.3	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 33	1110	26 JAN 1973	15.9	36° 45.4'	121° 51.9'	
TRANS P	WAVES m	WIND dir ht p	BAROM mb	AIR TEMP °C dry wet	CLOUDS typ amt	
2	24	3 2	29 5	1023.0	12.8 10.1 2 8 1 7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.59	32.952	24.91	6.44	-50	110 .86 2.2 .65 .6 10
5	12.45*	33.141	25.08	6.04	-13	103 .64 4.2 .47 .3 5
10	12.63	33.334	25.20	5.88	-2	101 .68 2.2 .70 .2 5
19	12.59	33.399	25.26	5.90	-3	101 .66 2.3 .66 .0 5
29	12.49	33.427	25.30	5.85	1	100 .67 2.6 .67 .3 5
48	12.47	33.447	25.32	5.81	5	99 .67 3.5 .66 .3 6

* indicates questionable data: Paired thermometer read 12.72

Hydrographic Stations

<u>ML CRUISE 34</u>	1105
22 February 1973	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1115
23 February 1973	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110
	1112
	1108

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 34	1105	22 FEB 1973	7.5	36° 50.8'	121° 49.5'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOI ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	CLOUDS typ amt
2	25	0	10	5	1017.3	10.7	10.6	2	4
									7
									5

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1150	22 FEB 1973	8.0	36° 52.9'	121° 51.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed mb	dry wet	typ amt			
5	22 0 3	9 4	1017.9	11.0	11.0	2	5
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	13.11	31.671	23.82	6.48	-55	111	.68
5	12.98*	32.092	24.17	6.18	-28	106	.81
10	12.82	32.834	24.77	5.87	-1	100	.80

* indicates questionable data: Paired thermometer read 13.04
 Ammonia values have been corrected for apparently erroneous
 standardization factor

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1154	22 FEB 1973	8.7	36° 55.2'	121° 52.8'		
TRANS P m	WAVES dir ht P	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB
4	26 1 3 9 6	1017.9	11.9	11.2	1	4	6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/l	AOU Z	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.14	31.600	23.76	6.68	-72	114	.81
5	13.15	31.939	24.02	6.44	-52	110	.76
10	12.83	33.075	24.96	5.40	39	93	.99

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 34	1159	22 FEB 1973	9.4	36° 57.1'	121° 56.2'

TRANSPIRATION mm	WAVES dir ht	WIND dir speed	BAROM mb	AIR TEMP dry	AIR TEMP wet	WEATH	CLOUDS	VISIB typ amt				
4	22	0	7	10	2	1017.9	13.4	11.7	1	4	5	6

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	ACU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	13.19	31.360	23.57	6.68	-72	114	.77	4.4	.26	.7	20
5	13.30	32.290	24.26	6.47	-58	111	.61	2.6	.26	.4	13
10	13.20	32.844	24.71	4.62	105	80	.58	1.8	.26	.4	9

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 34	1158	22 FEB 1973	10.2	36° 55.1'	121° 56.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							dry	wet	AIR TEMP °C	WEATH
0	13.29	32.340	24.30	6.41	-53	110	.57	2.0	.22	.2
5	13.27	32.775	24.64	6.27	-41	108	.60	2.1	.29	.0
10	13.18	32.979	24.82	6.32	-46	109	.55	2.1	.26	.0
20	12.78	33.220	25.08	6.36	-46	109	.65	2.5	.65	.8

ug-atoms/liter

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1153	22 FEB 1973	10.8	36° 56.8'	122° 00.2'		
TRANS P m	WAVES dir ht p	WIND dir speed mb	BAROM dry wet	AIR TEMP °C	WEATH	CLOUDS	VISIB typ ant
4	18 0 7 0 0	1018.3	14.4	12.1	1	4	3 6
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU ml/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.25	31.666	24.56	6.56	-67	113	.76 2.9 .31 .3
5	13.23*	32.651	24.55	6.39	-51	110	.61 2.1 .27 .2
10	12.89	33.107	24.97	5.87	-3	101	.68 1.9 .47 .8

* indicates questionable data: Paired thermometer read 13.30

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1152	22 FEB 1973	11.5	36° 54.8'	122° 1.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
9	28 0 7 16 2	1018.3	14.3	12.3	1	4	3 6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE NITRITE AMMONIA SILICA
m				ml/l			ug-atoms/liter
0	13.10*	33.063	24.90	6.29	-42	108	.49
5	12.99	33.096	24.94	6.33	-45	109	.53
10	12.99	33.249	25.06	6.23	-37	107	.41
20	12.90	33.386	25.18	5.94	-10	102	.59
						2.1	.65
							.2
							.6

* indicates questionable data: Paired thermometer read 13.04

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 34 1157 22 FEB 1973 12.6 36° 52.2' 121° 57.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA			
							dry	wet	WEATH	CLOUDS
0	13.41	32.237	24.20	6.27	-41	108	.85	3.6	.53	.2
10	13.08	32.592	24.54	6.25	-37	107	.69	2.3	.37	.0
20	13.08	32.817	24.71	6.25	-38	107	.48	1.4	.23	.0
30	13.07	33.370	25.14	6.03	-20	104	.53	1.3	.37	.0
50	12.91	33.463	25.24	5.78	3	99	.60	2.2	.83	.1
75	12.29	33.507	25.40	5.39	44	92	.93	6.2	.47	.0
97	11.67*	33.613	25.60	4.47	133	75	1.20	10.3	.16	.0
146	10.45	33.765	25.93	3.58	226	59	1.64	15.5	.06	.0

* Indicates questionable data: Paired thermometer read 11.59

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 34 1115 22 FEB 1973 14.4 36° 46.8' 121° 56.9'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA					
							dry	wet	AIR TEMP °C	WEATH typ amt	CLOUDS	VISIB
7	27	0	8	26	4	1017.6	15.1	13.1	3	3	5	6
10	13.35	33.159	24.92	6.31	-47	109	.58	5.2	.41	.2	7	
20	12.99	33.179	25.01	6.22	-35	107	.59	4.6	.47	.0	6	
30	12.97	33.387	25.17	5.96	-13	103	.45	4.7	.47	.0	6	
50	13.01	33.452	25.21	5.86	-4	101	.60	4.9	.80	.0	6	
75	12.98	33.550	25.30	5.69	10	98	.66	7.5	.43	.0	6	
95	12.17	33.581	25.48	5.56	30	94	.97	11.5	.06	.0	10	
143	11.37	33.648	25.68	4.19	161	70	1.26	11.8	.06	.0	15	
195	9.97	33.817	26.06	3.30	257	53	1.76	18.7	.04	.0	24	
244	8.74	33.992	26.39	2.47	346	39	2.19	23.5	.05	.0	36	
290	8.19	34.056	26.53	2.15	382	33	2.29	24.4	.03	.0	39	
390	7.56	34.128	26.68	1.55	444	24	2.08	20.6	.03	.0	39	
	6.23	34.226	26.93	.95	516	14	3.36	29.6	.04	.0	68	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1101	23 MAR 1973	7.6	36° 44.7'	121° 49.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ amt		
5	26 0 2	11 5	1016.3	12.1 9.4	0	x 6	2
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atms/liter
m							
0	12.77	30.014	22.61	6.05	-6	101	1.17
5	12.86	33.353	25.17	5.81	1	100	.73
10	12.83	33.384	25.20	5.72	9	98	.59
							6.3
							.48
							.3
							8
							.5
							6
							34

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE						
ML 34	1120	23 FEB 1973	8.2	36° 43.1'	121° 51.7'						
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt				
3	26 0 2	11 7	1016.6	10.6	9.6	1 X	2 4				
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE NITRATE AMMONIA SILICA ug-atoms/liter					
0	13.16*	33.032	24.86	6.28	-42	108	.62	5.7	.38	.0	8
5	13.19	33.131	24.93	6.22	-37	107	.54	5.4	.29	.0	7
10	13.14*	33.324	25.09	6.19	-35	107	.38	8.6	.21	.0	4
19	12.87	33.381	25.19	5.91	-7	102	.62	2.8	.60	.0	6
29	12.76	33.414	25.23	5.79	4	99	.65	2.8	.81	.0	6
48	12.75*	33.443	25.26	5.59	22	96	.73	3.9	.59	.0	6

* indicates questionable data: Paired thermometers read 13.06 at 0 m, 13.05 at 10 m, 12.68 at 48 m

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP			
ML	1123	23 FEB 1973	9.1	36° 39.2'	121° 53.2'						
				mm	dir ht	P	mb	dry wet			
10	26	0	2	9	1	1016.3	11.4	10.3			
								3			
								0			
								4			
								6			
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter				
0	13.16*	33.367	25.12	6.20	-36	107	.57	1.9	.31	.0	.6
5	13.14	33.372	25.13	6.20	-36	107	.58	2.1	.30	.0	.6
10	13.12	33.377	25.13	6.20	-36	107	.58	2.1	.30	.0	.7
20	13.12	33.374	25.13	6.18	-34	107	.58	2.6	.31	.0	.6
30	13.14	33.386	25.14	5.98	-16	103	.47	2.2	.28	.0	.5
50	13.00	33.404	25.18	5.72	7	99	.66	3.6	.53	.0	.7

* indicates questionable data: Paired thermometer read 13.08

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 34	11121	23 FEB 1973	9.7	36° 37.6'	121° 51.2'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							dry	wet	CLOUDS typ amt
5	31	0	7	31	3	1016.3	12.7	11.1	2
							0	4	6
10	12.98	33.364	25.15	5.55	23	96	.63	2.4	.47
0	13.44	33.277	24.99	6.37	-54	111	.57	1.5	.27
5	13.10	33.386	25.15	6.03	-20	104	.62	2.4	.41

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1122	23 FEB 1973	10.2	36° 36.6'	121° 52.9'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
9	0 0 0	0 2	1015.9	12.8	11.6	2	8 4 6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	*C	ppt		ml/l ug-at/1	%		ug-atoms/liter
0	13.44	33.346	25.05	6.35	-52	110	*49 .9 .17 .8*
5	13.28*	33.360	25.09	6.27	-44	109	*50 1.3 .19 .6*
10	13.12	33.346	25.11	6.03	-20	104	.62 2.1 .38 .8*

* indicates questionable data: Paired thermometer read 13.21
 Ammonia values have been corrected for apparently erroneous
 standardization factor

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE				
				ML.	34	1124	23 FEB 1973	11.1	36° 38.8'	121° 56.3'
TRANSF	WAVES	WIND	BAROM	AIR TEMP	*C	WRATH	CLOUDS	VISIB		
m	dir ht p	dir speed	mb	dry	wet	typ	amt			
9	25	1 2 35 5	1015.2	14.4	12.1	3	8	6 7		
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	AMMONIA	SILICA
m	*C	ppt		ml/l	ug-at/l	%	ug-atoms/liter			
0	13.41	33.377	25.08	6.07	-27	105	.56	1.7	.25	1.4*
5	13.28*	33.372	25.10	5.83	-4	101	.55	1.6	.24	.7*
10	13.18	33.372	25.12	6.31	-46	109	.51	1.3	.19	.6*
20	13.19	33.380	25.12	6.14	-31	106	.54	1.6	.26	.3*
30	13.12	33.409	25.16	6.01	-19	104	.63	2.4	.47	.5*

* indicates questionable data: Paired thermometer read 13.21
 Ammonia values have been corrected for apparently erroneous
 standardization factor

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	34	1116	23 FEB 1973	12.1	36° 43.2'	121° 55.8'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	P	dir speed	mb	dry wet	typ	amt					
5	24	1	2	5	3	1014.6	13.3	11.2	3	8	6	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA	
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter					
0	13.30	33.084	24.87	6.48	-62	112	.50	.5	.25	.6*	7	
5	13.22	33.228	25.00	6.52	-65	113	.47	.6	.19	.9*	6	
10	13.27	33.368	25.10	6.30	-46	109	.50	.9	.18	.7*	5	
20	13.10	33.401	25.16	6.08	-25	105	.57	1.6	.35	.6*	5	
30	12.89	33.411	25.21	5.79	2	100	.61	2.0	.61	.4*	5	
50	12.76*	33.451	25.26	5.64	17	97	.66	3.0	.48	.5*	5	
75	12.57	33.537	25.37	5.24	54	90	.82	5.2	.20	.2*	7	

* indicates questionable data: Paired thermometer read 12.66
 Ammonia values have been corrected for apparently erroneous
 standardization factor

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE	
ML 34	1110	23 FEB 1973	13.1	36° 45.6'	121° 51.9'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP	CLOUDS	VISIB
	dir ht p	dir speed	mb	dry wet	typ	amt
3	20	1 2 29 6	1014.6	15.8 13.9	3 8	8 7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l ug-at/l	%	ug-atoms/liter
0	13.53	32.518	24.39	6.08	-26	105 .58 2.3 .42 .4
5	12.99	33.047	24.91	5.97	-13	103 .68 2.6 .61 .0
10	12.95	33.216	25.04	5.92	-8	102 .49 2.0 .39 .1
19	12.78	33.399	25.22	5.74	8	.98 .68 2.9 .76 .0
29	12.77*	33.412	25.23	5.77	5	.99 .69 3.5 .74 .1
49	12.52	33.497	25.34	5.37	44	.92 .69 4.1 .35 .1

* indicates questionable data: Paired thermometer read 12.77

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 34	1112	23 FEB 1973	13.8	36° 48.0'	121° 52.4'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
5	24 1 2	29 5	1013.9	15.3 13.2	2 8	8	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.67	32.223	24.13	5.91	-12	102	.78 3.4 .48 .0 14
10	12.81	33.085	24.97	5.51	29	94	.56 1.8 .49 .3 7
20	12.72	33.316	25.17	5.73	10	98	.65 2.5 .83 .3 6
30	12.58	33.461	25.31	5.47	34	93	.71 4.3 .53 .0 7
50	12.34	33.506	25.39	5.21	60	89	.87 7.0 .43 .0 10
75	11.98	33.551	25.49	4.83	98	82	1.00 9.5 .29 .0 12
100	10.95	33.687	25.78	4.02	181	66	1.36 12.0 .17 .1 20
150	9.42	33.899	26.21	2.93	297	47	1.73 15.9 .08 .0 28

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE						
				ML	34	1108	23 FEB 1973	14.6	36° 47.6'	121° 50.0'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB					
m	dir ht	p	mb	dry	wet	typ	amt					
4	24	1	2	0	3	1012.9	15.0	13.3	2	8	8	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE	NITRATE	NITRITE	AMMONIA	SILICA	
m	°C	ppt	ml/l	ug-at/l	%		ug-atoms/liter					
0	13.53	32.437	24.33	5.80	-1	100	.72	2.9	.46	1.2*	10	
10	12.79	33.207	25.07	5.83	1	100	.58	1.6	.58	.0*	5	
20	12.78	33.354	25.18				.59	2.0	.65	.5*	6	
30	12.62	33.421	25.27	5.55	27	95	.76	3.6	.80	.5*	7	
50	12.20	33.492	25.40	4.99	81	85	.74	4.5	.41	.6*	8	
75	11.40	33.617	25.65	4.22	158	70	1.25	11.3	.30	.3*	16	
99	10.51	33.742	25.90	3.48	235	57	1.24	11.2	.14	.7*	16	
148	9.30	33.893	26.23	2.60	328	41	1.92	21.5	.09	.1*	33	

* indicates questionable data: Ammonia values have been corrected for apparently erroneous standardization factor

Hydrographic Stations

<u>ML CRUISE 35</u>	1105
22 March 1973	1150
	1154
	1159
	1158
	1153
	1152
	1157
	1115
23 March 1973	1108
	1112
	1101
	1120
	1123
	1121
	1122
	1124
	1116
	1110

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1105	22 MAR 1973	7.6	36° 50.9'	121° 49.5'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt
1	26	3 2	10 2	1017.6	7.5	6.4	2
					0	0	6
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	11.96	33.078	25.13	6.10	-13	103	.80
5	12.16	33.203	25.19	5.97	-4	101	.67
10	12.14	33.223	25.21	5.91	1	100	.69
							4.0
							.14
							.14
							.17
							1.3
							.6
							.4
							.6
							.7
							.7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1150	22 MAR 1973	8.2	36° 52.9'	121° 51.1'		
TRANS	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry	wet	typ amt
2	29	3	2	11	2	1017.9	8.9
							7.2
							2
							0
							6
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
0	12.19	32.915	24.96	6.35	-37	107	.65
5	12.26	32.999	25.01	6.07	-13	103	.71
10	12.18	33.206	25.18	5.79	11	98	.67
							4.9
							.17
							.4
							7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 35	1154	22 MAR 1973	8.8	36° 55.2'	121° 52.6'

TRANSF	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ	amt
2	33 3 2	26 4	1017.9	11.7	8.7	2	0 6

DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	12.41*	32.925	24.92	6.65	-66	11.3	.59	1.1	.14	.8
5	12.42	33.082	25.04	5.87	1	100	.85	4.2	.26	.7
10	12.34	33.152	25.11	5.68	19	96	.87	4.8	.28	.5

* indicates questionable data: Paired thermometer read 12.33

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 35	1159	22 MAR 1973	9.7	36° 57.0'	121° 56.1'

TRANSP m	WAVES			BAROM mb	AIR TEMP dry wet °C	WEATH clouds typ amt	VISIB
	dir	ht	P				
3	23	2	34	5	1017.9	12.7	8.9
						2	0
						6	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	12.05	32.644	24.77	6.69	-65	112	.52
5	12.31	32.894	24.92	6.59	-60	112	.44
10	12.46	33.043	25.01	6.27	-34	107	.53
							2.0
							.10
							.0
							.08
							.2
							.7
							.0
							.6

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1158	22 MAR 1973	10.5	36° 55.1'	121° 56.7'		
TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
3	26	2	3	23	4	1018.3	9.7
						8.4	2
						0	7
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
0	12.50	32.904	24.89	6.59	-62	112	.54
5	12.21*	33.135	25.12	6.11	-17	103	.63
10	12.15	33.237	25.21	6.14	-19	104	.57
20	12.08	33.289	25.27	5.86	5	99	.72
							3.6
							.17
							.1
							9

* indicates questionable data: Paired thermometer read 12.14

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1153	22 MAR 1973	11.3	36° 56.7'	122° 00.2'		
TRANS	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
	m	dir ht P	dir speed	mb	dry wet	typ	amt
2	25	2	3	25	4	1017.9	14.4
						10.6	3
						3	1
						7	
DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
	*C	ppt		ml/l ug-at/l	%		ug-atoms/liter
m							
0	12.52	32.224	24.36	6.71	-71	114	.65
4	12.32	32.952	24.96	6.60	-61	112	.49
9	12.36	33.061	25.04	6.13	-20	104	.61
							2.6
							.18
							.8
							10

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1152	22 MAR 1973	12.0	36° 54.8'	122° 00.9'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WRATH	CLOUDS	VISIB
m	dir ht	P	dir speed	mb	dry wet	typ amt	
2	27	5	27	15	1017.6	12.6	9.9
						2	3
						1	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
m							
0	12.43*	32.989	24.97	6.56	-59	111	.54
5	12.18*	33.187	25.17	6.15	-20	104	.59
10	11.98	33.312	25.30	5.63	27	95	.68
20	11.83	33.407	25.41	5.18	69	87	.98
							6.7
							.22
							.0
							12

* indicates questionable data: Paired thermometers read 12.35 at 0 m, 12.11 at 5 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	35	1157	22 MAR 1973	13.3	36° 50.0'	121° 57.7'	
TRANSP	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ	amt
5	30	7	2	30	21	1014.9	
						1	0
						0	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-at/liter
0	12.38	33.220	25.16	6.76	-77	115	.35
10	12.46*	33.216	25.14	6.75	-77	115	.35
20	12.43	33.220	25.15	6.53	-57	111	.30
29	12.28	33.307	25.24	5.77	11	98	.62
49	10.81	33.703	25.82	3.78	204	62	3.0
56	9.67	33.877	26.15	3.44	248	55	1.50
84	9.39	33.908	26.22	2.85	304	46	1.89
136	9.07	33.962	26.32	2.76	316	44	2.04
							23.6
							.01
							.3
							30

* indicates questionable data: Paired thermometer read 12.53

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 35 1115 22 MAR 1973 16.0 36° 46.3' 121° 57.5'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA				
							dry	wet	WEATH typ amt	CLOUDS	VISIB
3	31	7	3	31	20	1015.9				2	0
										7	
7	12.22	33.259	25.22	5.30	54	90	.56	4.6	.08	.4	9
14	12.20	33.260	25.22	6.33	-37	107	.46	4.0	.05	.2	6
21	12.07	33.271	25.26	6.17	-21	104	.64	5.3	.09	.1	8
28	11.85	33.280	25.30	5.71	21	96	.80	7.7	.13	.2	10
35	11.49	33.340	25.42	3.99	179	67	.98	9.9	.13	.1	13
44	11.42	33.634	25.66	5.19*	72	87	1.44	16.5	.03	.0	19
58	9.35	33.786	26.13	3.39	257	54	1.48	16.7	.02	.4	20
107	9.19	33.919	26.26	3.09	285	49	1.99	21.9	.09	.3	29
120	9.04	33.952	26.31	2.62	329	42	2.00	21.5	.09	.1	30
155	8.68	33.992	26.40	2.56	339	40	2.19	24.0	.01	.0	36
208	7.81	34.066	26.59	1.94	406	30	1.98	21.4	.00	.1	37
286	6.86	34.149	26.79	1.19	485	18	2.85	32.4	.00	.0	59

* indicates questionable data: Oxygen appears anomalously high

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1108	23 MAR 1973	7.5	36° 47.4'	121° 50.0'		
TRANS P m	WAVES dir hc p	WIND dir speed	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS	VISIB typ amt
1	26	3	2	1.2	4	1015.6	
						2	0
						6	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.00	32.105	24.37	6.25	-23	105	1.14
10	11.87	33.246	25.27	5.99	-3	101	.75
20	11.80	33.293	25.32	5.90	5	99	.73
30	11.79	33.289	25.32	5.87	8	99	.80
47	11.16	33.526	25.62	4.49	138	74	1.27
73	10.08	33.760	25.99	3.45	242	56	1.36
93	9.17	33.929	26.27	2.71	319	43	2.07
146	8.60	33.985	26.41	2.31	362	36	1.85
						16.8	.08
							.1
							29

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANSF m	WAVES dir ht	WIND P	BAROM mb	AIR TEMP dry	WEATH wet	CLOUDS typ	VISIB amt
ML 35	1112	23 MAR 1973	8.2								
1	27	3	2	12	4	1015.6				2	0
										6	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-at/l	NITRATE ug-at/l	NITRITE ug-at/l	AMMONIA ug-atoms/liter	SILICA
0	12.05	32.194	24.43	6.37	-35	107	.83	5.1	.14	.1	14
10	11.97	33.271	25.27	6.09	-13	103	.67	4.7	.13	.1	8
20	11.94	33.293	25.30	6.03	-7	102	.68	6.1	.12	.0	9
30	11.72	33.324	25.36	5.56	36	93	.88	8.0	.16	.1	10
50	10.44	33.684	25.87	3.89	199	64	1.53	18.0	.08	.3	20
73	9.65	33.847	26.13	3.10	279	50	1.49	16.9	.09	.1	21
95	9.45	33.898	26.20	2.91	298	47	1.96	19.2	.11	.0	27
144	8.97	33.959	26.33	2.59	333	41	2.09	20.9	.05	.0	34

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 35	1101	23 MAR 1973	9.2	36° 44.8'	121° 49.5'

DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA		
							DRY	WET	CLOUDS typ amt
1	29	2	3	9	3	1015.2			2
									0
									6

* indicates questionable data: Paired thermometer read 12.08

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				ML	35	1120	23 MAR 1973	9.9	36° 43.2'	121° 51.5'	
				TRANSF	WAVES	WIND	BAROM	AIR TEMP	WEATH	CLOUDS	VISIB
				m	dir ht	P	dir speed	dry	wet	typ amt	
				1	29	2	3	11	4	1015.2	2
										0	6
				DEPTH	TEMP	SALINITY	SIGMA T	OXYGEN	AOU	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA
				m	°C	ppt		ml/l	ug-at/l	%	ug-atoms/liter
				0	12.19	31.567	23.92	6.65	-59	111	.92
				5	12.03	33.171	25.19	6.25	-27	105	.53
				10	11.85	33.233	25.27	5.98	-1	100	.68
				20	11.78*	33.269	25.31	5.61	31	94	.70
				30	11.79	33.303	25.33	5.67	26	95	.80
				50	10.41	33.695	25.89	3.62	224	59	1.30
										10.0	10.0
										.11	.11
										.3	.3
											19

* indicates questionable data: Paired thermometer read 11.86

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	35	1123	23 MAR 1973	10.8	36° 39.3'	121° 52.6'	
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ amt	
7	31	2	35	2	1015.2		
						2	0
						0	7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
0	12.40	33.173	25.12	6.35	-40	108	.61
5	11.94	33.201	25.23	6.15	-18	103	.61
10	11.91	33.213	25.24	6.15	-17	103	.61
20	11.85	33.250	25.28	5.91	4	99	.71
30	11.82	33.275	25.31	5.78	16	97	.79
50	9.68	33.801	26.09	3.35	256	54	1.67
						11.4	.09
							.0
							27

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1121	23 MAR 1973	11.6	36° 37.7'	121° 51.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
2	30	2 4	30 5	1015.2		2	0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU %	SAT	PHOSPHATE NITRATE AMMONIA SILICA ug-atoms/liter
m							
0	12.49	33.108	25.05	6.50	-55	111	.62 2.7 .09 .2
4	12.34	33.108	25.08	6.44	-48	109	.63 2.4 .09 .0
9	12.26	33.114	25.10	6.37	-40	108	.48 2.7 .07 .0

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 35	1122	23 MAR 1973	12.2	36° 36.6'	121° 52.9'

TRANS P m	WAVES		WIND dir ht p	BAROM mb	AIR TEMP dry wet	WEATH	CLOUDS	VISIB typ amt			
	dir	ht									
6	36	2	4	36	6	1015.2		2	0	7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA ug-atoms/liter
0	12.81	33.082	24.97	6.50	-58	111	.55	2.0	.14	.2	8
5	12.29	33.090	25.07	6.49	-51	110	.41	1.3	.07	.2	4
9	12.10	33.115	25.13	6.36	-38	107	.59	2.4	.16	.1	7

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 35	1124	23 MAR 1973	13.3	36° 38.9'	121° 56.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
8	31	3 3	31 6	1015.9		2	0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.46	33.161	25.10	6.36	-42	108	.67
5	11.99	33.222	25.23	5.71	20	96	5.3
10	11.91	33.237	25.26	6.15	-17	103	.64
19	11.85	33.251	25.28	5.98	-2	100	.67
29	11.38	33.389	25.48	5.17	75	86	7.9
							7.9
							.64
							5.4
							.10
							.0
							0
							.15
							.0
							13

* indicates questionable data: Paired thermometer read 11.72
Nitrate appears anomalously low

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1110	23 MAR 1973	15.0	36° 45.6'	121° 52.0'		
TRANS P m	WAVES dir ht P	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH	CLOUDS	VISIB typ amt
2	27	2	30	7	1015.9	2	0
						0	7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	13.40	32.598	24.48	6.53	-6.5	11.3	.63
5	11.86	33.249	25.28	6.39	-38	10.7	.72
9	11.85*	33.268	25.29	5.98	-2	100	.54
19	11.83	33.279	25.31	5.85	9	98	.72
28	11.86	33.294	25.31	5.92	3	100	4.5
47	10.76	33.600	25.75	4.18	170	69	.69
						1.31	5.4
						14.3	.14
							19

* indicates questionable data: Paired thermometer read 11.78

Hydrographic Stations

<u>ML CRUISE 36</u>	1105
19 April 1973	1150
	1154
	1159
	1158
	1153
20 April 1973	1108
	1112
	1101
	1120
	1121
	1123
	1122

CRUISE	STATION	DATE	HOUR	N LATITUDE		W LONGITUDE					
				TRANS P m	WAVES dir ht m	WIND dir speed P	BAROM mb	AIR TEMP dry °C	WEATH wet	CLOUDS typ amt	
ML 36	1105	19 APR 1973	7.6	36° 50.8'							
5	27	3	33	12	1015.6					5	0
										7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter				
0	11.33	33.548	25.61	6.19	-15	103	.82	10.4	.13	.9	6
5	11.33	33.546	25.61	6.20	-16	103	.77	10.4	.12	.4	7
10	11.25	33.566	25.64	5.47	49	91	.90	10.9	.13	.4	

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE						
ML	1150	19 APR 1973	8.4	36° 52.7'	121° 51.3'						
TRANS P m	WAVES dir ht	WIND P dir speed	BAROM mb	AIR TEMP °C dry wet	WEATH typ atm						
5	26	3	26	10	1015.9						
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ug-at/l	AOU %						
					SAT %						
					PHOSPHATE ug-atoms/liter						
					NITRATE ug-atoms/liter						
					NITRITE ug-atoms/liter						
					AMMONIA ug-atoms/liter						
					SILICA ug-atoms/liter						
0	11.10	33.600	25.69	5.69	31	94	.94	12.2	.15	.2	7
5	11.11	33.601	25.69	4.96	96	82	1.00	8.0	.18	.4	8
10	11.02	33.609	25.71	5.60	40	93	.96	7.2	.15	.5	8

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML 36	1154	19 APR 1973	9.1	36° 55.2'	121° 53.0'

TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C		WEATH dry wet	CLOUDS typ amt	VISIR
				dry	wet			
4	33	0	2	33	11	1015.6	3	3 2 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRRITE AMMONIA SILICA ug-atoms/liter	
0	10.90	33.609	25.73	5.52	48	91	1.07	8.2 .19 1.5 9
5	10.89	33.609	25.73	5.60	41	92	1.14	9.1 .23 1.3 10
10	9.71*	33.769	26.06	3.39	252	55	1.84	16.7 .26 1.3 19

* indicates questionable data: Paired thermometer read 9.64

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1159	19 APR 1973	10.0	36° 57.1'	121° 56.1'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ amt	
5	26	1	2	34	6	1015.6	
							1 1 1 7
DEPTH	TEMP °C	SALINITY	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
m	PPT	PPT	PPT	PPT	PPT	PPT	NITRATE NITRITE AMMONIA SILICA
0	11.02	33.609	25.71	6.17	-10	102	.93 7.8 .17 .1 7
5	10.99	33.608	25.72	6.18	-11	102	.87 7.1 .15 .1 8
10	10.10	33.693	25.94	4.54	145	74	1.37 12.8 .21 .6 15

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML	1158	19 APR 1973	10.5	36° 55.1'	121° 56.6'		
TRANSPIRATION	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dif ht	p	dir speed	mb	dry wet	typ amt	
4	25	3	2	25	10	1015.2	
							1 3 1 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter
0	11.29	33.592	25.65	6.42	-36	107	.73 7.7 .14 .4 7
5	11.18	33.592	25.67	6.40	-33	106	.82 6.4 .18 .0 7
10	11.09	33.592	25.69	6.27	-20	104	.81 6.5 .17 .0 7
20	9.96	33.711	25.97	4.15	182	67	1.50 7.7 .24 .0 16

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1153	19 APR 1973	11.5	36° 56.9'	122° 00.2'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet		typ ant	
3	26 2 2	34 6	1014.6			2	3 1 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.01	33.420	25.57	5.51	49	91	1.23 9.7 .26 .5 14
5	10.83	33.624	25.76	6.00	6	99	.92 6.8 .18 .4 8
10	10.26	33.699	25.91	4.54	143	74	1.46 11.6 .24 .8 14

CRUISE STATION DATE HOUR N LATITUDE W LONGITUDE
 ML 36 1108 20 APR 1973 7.5 36° 47.5' 121° 50.0'

	TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet			typ amt	
4	29	4	3	20	1	1012.5		
							5	0
								7

DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
0	11.32	33.571	25.63	5.71	27	95	1.16	11.0	.26	.2	11
10	10.89	33.627	25.75	5.60	41	92	1.26	12.3	.27	.1	15
20	10.35	33.657	25.87	4.14	178	68	1.37	12.5	.24	.0	14
30	9.53	33.751	26.08	3.50	245	56	1.78	19.5	.19	.0	20
48	8.67	33.958	26.38	2.47	347	39	2.16	20.7	.29	.0	31
75	8.28	34.014	26.48	2.29	368	39	1.90	20.5	.22	.0	26
93	8.07	34.041	26.53	2.17	382	34	2.25	25.1	.15	.0	35
145	7.88	34.058	26.57	1.96	403	30	2.20	24.5	.20	.0	34

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE					
ML	36	1112	20 APR 1973	8.6	36° 48.0' 121° 52.6'					
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH CLOUDS VISIB					
m	dir ht p	dir speed	mb	dry wet	typ amt					
6	29	4	3	29	10 1012.5					
					2 0 7					
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %	PHOSPHATE ug-atoms/liter	NITRATE ug-atoms/liter	NITRITE ug-atoms/liter	AMMONIA ug-atoms/liter	SILICA
m										
0	11.39	33.548	25.60	7.12	-99	119	.41	7.3	.07	.9
10	10.92	33.598	25.72	6.28	-19	104	.74	10.8	.09	.8
20	10.01	33.708	25.96	4.49	151	73	1.34	16.2	.12	.9
30	9.23	33.840	26.20	3.13	281	50	1.73	19.8	.13	1.5
48	8.85	33.949	26.34	2.43	348	38	2.10	19.4	.19	1.9
72	8.48	34.001	26.44	2.15	378	34	1.84	16.0	.14	.9
96	8.12	34.031	26.52	2.27	372	35	2.29	24.9	.18	2.4
145	7.73	34.081	26.61	1.92	408	30	2.42	26.8	.14	.5
										37
										43

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1101	20 APR 1973	9.5	36° 44.8'	121° 49.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
3	32 3 2	35 7	1013.2			2	0 7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/1	SAT %	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
m							
0	11.95*	32.784	24.90	7.44	-131	125	.72 9.7 .12 .7
4	11.70	33.463	25.47	7.00	-92	117	.46 6.4 .09 .7
9	11.60*	33.530	25.54	6.04	-5	101	.41 9.7 .05 .7

* indicates questionable data: Paired thermometers read 11.88 at 0 m, 11.50 at 9 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1120	20 APR 1973	10.3	36° 43.2'	121° 51.3'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht	p	dir speed	mb	dry wet	typ atm	
5	29	1	2	29	4	1013.2	
						2	0
						7	
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	AOU %	SAT	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.23	33.548	25.44	7.53	-145	128	.33
5	11.54	33.546	25.57	7.08	-97	118	.36
10	11.47	33.544	25.58	6.69	-62	112	.36
19	11.42*	33.547	25.59	6.61	-54	110	.48
29	9.96	33.701	25.97	4.27	171	69	1.42
49	9.15	33.859	26.22	3.33	265	53	1.92
						18.0	.17
							.5
							25

* indicates questionable data: Paired thermometer read 11.42

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1121	20 APR 1973	11.8	36° 37.9'	121° 51.4'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
32	3	32	10	1012.9		2	0
						7	
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l	AOU ug-at/l	SAT %	PHOSPHATE ug-atoms/liter
m							
0	12.81*	33.270	25.11	7.19	-120	123	.50 .4 .03 .3 1
5	12.60*	33.276	25.16	7.05	-106	120	.37 3.8 .03 .7 0
10	12.06	33.394	25.35	6.78	-76	115	.36 4.3 .03 .4 1

* indicates questionable data: Paired thermometers read 12.71 at 0 m, 12.53 at 5 m

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE
ML	1123	20 APR 1973	11.2	36° 39.2'	121° 53.1'
TRANS P m	WAVES dir ht p	WIND dir speed	BAROM mb	AIR TEMP °C dry wet	CLOUDS typ amt
30	6	2	29	13	1013.9
				2	0 7
DEPTH m	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN ml/l ug-at/1	SAT %
					PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
0	12.44	33.459	25.33	6.46	.52 110 .28 .4 .03 .2
5	12.34	33.464	25.35	6.31	.37 107 .30 .3 .03 .5
10	12.17	33.491	25.41	5.79	10 98 .35 3.0 .04 .5
19	9.89*	33.658	25.94	3.64	228 59 1.61 19.0 .42 .4
28	9.29	33.834	26.18	2.14	369 34 1.89 16.8 .07 .3
46	8.85	33.936	26.33	2.72	323 43 2.09 19.0 .26 .4
					28

* indicates questionable data: Paired thermometer read 9.77

CRUISE	STATION	DATE	HOUR	N LATITUDE	W LONGITUDE		
ML 36	1122	20 APR 1973	12.3	36° 36.7'	121° 53.0'		
TRANS P	WAVES	WIND	BAROM	AIR TEMP °C	WEATH	CLOUDS	VISIB
m	dir ht p	dir speed	mb	dry wet	typ	amt	
34	2	3	34	9	1013.2		
						2	0
							7
DEPTH	TEMP °C	SALINITY ppt	SIGMA T	OXYGEN AOU	SAT	PHOSPHATE ug/l	NITRATE ug-atoms/liter
m				ml/l	ug-at/1	%	
0	12.90	33.401	25.20	7.21	-124	124	.35
5	12.89	33.398	25.20	7.14	-117	123	.35
10	12.47	33.399	25.28	5.94	-5	101	.43
							.1

