

CRUISE
NUMBER

9920

DAILY LOG
INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

11 Aug - 15 Aug 1999

VESSEL

VECTOR

PROJECT

SoG

Captain: Mark Sower First Officer: Darren Morley
 Second Officer: Dale Hansen Third Officer: _____
 Cruise Participants / Agencies: IOS

Cruise Participants / Agencies: IOS

Scientific Personnel: _____ Party Chief: Diane Masson

Name	Watch	Cabin	Name	Watch	Cabin
Diane Masson	4-8	lady sci	lady sci		
Al Ages	4-8	chief sci	chief sci		
Bernard Minkley	8-12	port	port		
les Spearling	12-4	port	port		
Isabella Beaudet	-	lady sci	lady sci		
Peter Chandler	8-12	starboard	starboard		
Morgan Soley	12-4	starboard	starboard		

Second leg of cruise: _____ Party Chief: _____

[illegible]

Data logging system: Unit no.: F502-touch computer

Program Name: Seasave Program version: 4.236

CTD deck unit make: SBE model: 11 PLUS serial no.:

Computer make: _____ model: _____ serial no.: _____

1st CTD make: Seabird model: 911 + serial no.: 0530

Temperature sensor model: serial no: P. 2038
2374

coefficients:	slope:	offset:

Conductivity sensor	model:		serial no.:	P: 1766 S: 2173
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conformity score:		
coefficients:	slope:	offset:

Pressure sensor range: 0 - 10,000 psi serial no.: 75-636

Parameter	Value
Frequency range:	0 - 1000 Hz
Resolution:	10 Hz
Time window:	1 s
Sampling rate:	1000 samples/s
FFT size:	1024 points
Overlap factor:	50%
Window function:	Hanning
Reference level:	20 µPa
Pressure unit:	Pascals (Pa)
Velocity unit:	m/s
Acceleration unit:	m/s ²
Force unit:	N
Moment unit:	Nm
Torque unit:	Nm
Power unit:	W
Energy unit:	J
Impulse unit:	Ns
Stress unit:	Pa
Strain unit:	mm/mm
Displacement unit:	m
Angle unit:	rad
Angular velocity unit:	rad/s
Angular acceleration unit:	rad/s ²
Rotation unit:	deg
Curvature unit:	1/m
Bending moment unit:	Nm
Shear force unit:	N
Axial force unit:	N
Torsion unit:	Nm
Twist unit:	deg
Twist rate unit:	deg/s
Twist acceleration unit:	deg/s ²
Twist jerk unit:	deg/s ³
Twist snap unit:	deg/s ⁴
Twist crackle unit:	deg/s ⁵
Twist pop unit:	deg/s ⁶
Twist bang unit:	deg/s ⁷
Twist boom unit:	deg/s ⁸
Twist crash unit:	deg/s ⁹
Twist thud unit:	deg/s ¹⁰
Twist slam unit:	deg/s ¹¹
Twist bang unit:	deg/s ¹²
Twist boom unit:	deg/s ¹³
Twist crash unit:	deg/s ¹⁴
Twist thud unit:	deg/s ¹⁵
Twist slam unit:	deg/s ¹⁶
Twist bang unit:	deg/s ¹⁷
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Twist crash unit:	deg/s ²⁹
Twist thud unit:	deg/s ³⁰
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Twist boom unit:	deg/s ³³
Twist crash unit:	deg/s ³⁴
Twist thud unit:	deg/s ³⁵
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Twist crash unit:	deg/s ³⁹
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Twist slam unit:	deg/s ⁴¹
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Twist crash unit:	deg/s ⁴⁴
Twist thud unit:	deg/s ⁴⁵
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Twist thud unit:	deg/s ⁵⁰
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Twist bang unit:	deg/s ⁵²
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Twist slam unit:	deg/s ⁹⁶
Twist bang unit:	deg/s ⁹⁷
Twist boom unit:	deg/s ⁹⁸
Twist crash unit:	deg/s ⁹⁹
Twist thud unit:	deg/s ¹⁰⁰

Transmissometer model: 172 D serial no.: 172 D

transformations:	intercept:
coefficients:	slope:
	offset:

Comments: _____

Schmidly data files

2 ✓	43 ✓	70
11 ✓	46 ✓	
33 ✓	51 ✓	
34 ✓	62 ✓	
40 ✓	68 ✓	

Oxygen files

2 ✓	26 ✓	48. ✓	70. ✓
5 ✓	29 ✓	51. ✓	72. ✓
8 ✓	35 ✓	56 ✓	
11 ✓	40 ✓	62 ✓	
19 ✓	43 ✓	65 ✓	
22 ✓	46 ✓	68 ✓	

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1999		MONTH August		SHIP VECTOR				CRUISE 9920				PAGE 1		OF 1	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
12	103	CTD	1445	BE	1	48 33.01	124 43.19		118	112				Bad header.	
			1449	BO		"	4329								
			1453	EN		33.02	4337								
12	102	RDS	1544	BE	2	48 30.09	124 44.27		255		1 - 13	13			
			1549	BO		48 30.19	124 44.48		241						
			1607	EN											
12	101	CTD	1647		3	48 25.39	124 45.46		222						
			1652			48 25.35	124 45.68		168						
			1656			48 25.32	124 45.79								
12	74	CTD	1759		4	48 25.12	124 35.72		187						
			1804			48 25.13	124 35.80		180						
			1808			48 25.13	124 35.85								
12	75	RDS	1838	BE	5	48 28.21	124 32.96		228	219	14-26	13			
			1843	BO		48 28.2	124 33.07								
			1900	EN											
12	76	CTD	1930	BE	6	48 31.41	124 30.02		90	86					
			1933	BO		48 31.42	124 30.03								
			1936	EN		48 31.43	124 30.03								

CAST TYPE - BOT - bottle cast
CTD - ctd
MOR - mooring

RDS - rosette
NET - net haul
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast
BO - bottom time of cast
EN - end of cast

DE - deployment time
MR - messenger release
RE - recover mooring

POSITION CODE - RAD - RADAR
GPS - GLOBAL
LOR - LORAN

DAILY LOG

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YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1999		August		VECTOR		9920								
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12	71	CTD	21:39	BE	7	48 22 24	123 59 32		110	98				
			21:43	BO		48 22 25	123 59 23							
			21:46	EN		48 22 23	123 59 14							
12	72	ROS	22:28	BE	8	48 18 54	124 3.97		190	180	27-38	12		
			22:32	BO		48 18 55	124 3.98							
			22:53	EN		48 18 46	124 3.66							
12	73	CTD	23:24	BE	9	48 15 01	124 6.75		161	155				
			23:29	BO		48 14.96	124 6.76							
			23:33	EN		48 14 91	124 6.72							
13	68	CTD	01:01	BE	10	48 12.18	123 42.97	125	140					
			01:05	BO		48 12.4	123 42.83							
			01:08	EN		12.09	42.67							
	69	ROS	01:30	BE	11	48 15.57	123 43.33		180	172	39-49	11		the CTD was left on for a few minutes after coming out of water.
			01:50	BO		48 15.28	123 43.31							
			01:53	EN										
	70	CTD	02:21	BE	12	48 19.20	123 43.18		147	145				
			2:26	BO		48 19.25	123 43.16							
			2:29	EN		48 19.28	123 43.19							

CAST TYPE -
CTD -
MOR -

BOT -
ctd -
mooring

bottle cast

ROS -
NET -
DRF -

rosette
net haul
drifter

USW -

sea water loop

TIME CODE -

BE -
BO -
EN -

beginning time of cast
bottom time of cast
end of cast

DE -
MR -
RE -

deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
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YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
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DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
13	70	BAND	0242	UTC	13	48°19.21'N	123°43.31'W		150	145	—	—	15	
13	105	CTD	0446		14	48 10.95	123 19.11		88					
			0448			48 10.93	123 19.18			81				
			0450			48 10.92	123 19.21							
13	Adcp		0515		15	48 13.95	123 18.02		122					
			0518			48 13.89	123 18.08			112				
			0520			13.86	18.13							
13	104	CTD	0604		16	48 19.99	123 16.09		72					
			0607			19.98	16.13			67				
			0608			19.97	16.15							
13	67	CTD	0637		17	48 22.79	123 18.10		110					
			0641			22.81	18.09			105				
			43			22.82	18.09							
13	66	CTD	0716	BE	18	48 19.25	123 14.17		104				14	
			0718	BO		48 19.20	123 14.23			98				
			0721	EN		48 19.15	123 14.27							

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
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drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
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DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
13	65	ROS	07:54	BE	17	48 15.96	123 9.88		125		50-58	9		
			07:58	BO		48 15.97	123 9.89			118				
			08:10	EN		48 15.90	123 9.89							
13	64	CTD	08:41	BE	20	48 12.92	123 5.84		108					
			08:44	BO		48 12.95	123 5.84			100				
			08:46	EN		48 12.97	123 5.81							
13	63	CTD	09:22	BE	21	48 14.61	122 58.54		155					
			9:25	BO		48 14.59	122 58.57			147				
			9:29	EN		48 14.57	122 58.64							
13	62	ROS	10:37	BE	22	48 22.84	48 22.90		152		59-68	10		
			10:40	BO		48 22.89	123 2.67			142				
			10:54	EN		48 23.02	123 2.69							
13	61	CTD	12:06	BE	23	48 29.23	123 9.2		26.5	260				
			12:12	BO										
			12:18	EN		48 29.34	123 9.17							
13	60	CTD	13:00	BE	24	48 33.9	123 12.8		288	284				
			13:07	BO		48 33.89	123 12.76							
			13:13	EN		48 33.91	123 12.66							

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
dritterUSW -
sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
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messenger release
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YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1999			August			VECTOR			9920						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
13	60	BONGO	13:28	BOT	25	48°34.04'N	123°43.31'W		286	250	—	—	1/3		
13	59	ROS	14:07		26	48 37 78	123 14 57		235	228	69-81	13		16 SAL DRAWN	
			14:12			48 37 78	123 14 48								
			14:26			48 37 64	123 14 28								
13	58	CTD	15:08		27	48 43 03	123 14 30		335						
			15:15			48 43 14	123 14 24			335					
			15:21			48 43 17	123 14 22								
13	57	CTD	15:57		28	48 44 00	123 8 12		162						
			16:01			48 43.99	123 08.16			159					
			16:04			48 44 01	123 8 18								
13	56	ROS	16:57		29	48 46 24	123 1.88		213					Ship drifting at 3 kts.	
			17:04			45 93	2.41			223	82-94	13			
			19:16			45 54	3 19								
13	51		18:36		30	48 46.62	122 51.40		159						
			18:39			48 46.53	122 51.36			146					
			18:41			48 46 45	122 51 25								

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

USW - sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

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YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
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DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
13	50	CTD	19:58	BE	31	48 57.73	122 56.12		27				15		
			20:01	BO		48 57.74	122 56.14			22					
			20:02	EN		48 57.76	122 56.19								
13	49	CTD	20:29	BE	32	48 55.00	122 59.58		132						
			20:31	BO		48 55.00	122 59.54			122					
			20:34	EN		48 55.01	122 59.51								
13	48	CTD	21:05	BE	33	48 51.72	123 3.19		230		95	1			
			21:09	BO		48 51.72	123 3.12			222				← Salinity drawn	
			21:14	EN		48 51.73	123 3.06								
13	47	CTD	21:39	BE	34	48 49.33	123 6.23		186						
			21:43	BO		48 49.36	123 6.31			178	96	1		SAL	
			21:47	EN		48 49.40	123 6.42								
13	46	ROS	22:13	BE	35	48 51.43	123 10.81		179		97-106				
			22:17	BO		48 51.48	123 10.84			167					
			22:29	EN		48 51.67	123 10.91								
	45	CTD	22:50	BE	36	48 53.93	123 8.41		120						
			22:54	BO		48 53.97	123 8.36								
			22:56	EN		48 54.00	123 8.34								

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13	44	CTD	23:30	BE	37	48 56.82	123 6.10		118	115				
			23:33	BO		48 56.82	123 6.18							
			23:36	EN		48 56.83	123 6.31							
13	44	Dongo	23:46	BOT	38	48°56.83'N	123°12.69'W		117	110	—	—	HS	
14	41	CTD	0:56	BE	39	49 3.32	123 22.3		247	235				Hit jelly fish
			1:02	BO		49 3.33	123 22.3							
			1:07	EN		49 3.33	123 22.41							
14	42	ROS	1:28	BE	40	49. 1.82	123. 26.20		325	316	107-120	14		
			1:35	BO		49. 1.83	123. 26.22							
			1:54	EN		49. 1.91	123. 26.14							
14	43	CTD	2:24	BE	41	49 0.21	123 30.17		190	185				
			2:28	BO		49 0.22	123 30.17							
			2:31	EN		49 0.24	123 30.16							
14	40	CTD	03:25	BE	42	49 08.63	123 36.76		150					
			03:30	BO		49 08.73	123 36.75			147				
			03:33	EN		49 08.78	123 36.75							

CAST TYPE -

BOT -

CTD -

MOR -

bottle cast

ctd

mooring

ROS -

NET -

DRF -

rosette

net haul

drifter

USW -

sea water loop

TIME CODE -

BE -

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beginning time of cast

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deployment time

messenger release

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14	39	ROS	03 53	BE	43	49 09.85	123 33.02		382		121 - 134	14		
			04 01	BO		49 09.96	123 33.04			376				
			04 17	EN		49 10.27	123 33.13							
14	38	CTD	04 51	BE	44	49 11.97	123 26.37		310					
			04 56	BO		49 11.95	123 26.29			301				
			05 01	EN		49 11.93	123 26.24							
14	37	CTD	05 31	BE	45	49 13.59	123 20.74		220					
			05 36	BO		49 13.53	123 20.83			214				
			05 40	EN		49 13.47	123 20.87							
14	HS	ROS	08: 07	BE	46	49 35.53	123 14.63		285		135 - 142	14		
			08:12	BO		49 35.49	123 14.66			277				
			08: 32	EN		49 35.44	123 14.90							
14	28	CTD	11:15	BE	47	49 24.09	123 45.27		135	133				
			11:18	BO		49 24.09	123 45.27							
			11:21	EN		49 24.09	123 45.30							
14	27	ROS	11:58	BE	48	49 19.15	123 48.05		346	340	149 - 163	15		
			12 05	BO		49 19.19	123 48.15							
			12:21	EN		49 19.3	123 48.49							

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
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USW -

sea water loop

TIME CODE -

BE -
BO -
EN -beginning time of cast
bottom time of cast
end of castDE -
MR -
RE -deployment time
messenger release
recover mooring

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1999		August		VECTOR		9920								
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
14	26	CTD	12:57	BE	49	49 14.33	123 50.74		265	255				
			13:02	BO		49 14.30	123 50.7							
			13:08	EN		49 14.27	123 50.66							
14	1	CTD	14:40	BE	50	49.20.28	124. 12.03		250	242				
			14:45	BO		49.20.25	124. 11.99							
			14:50	EN		49.20.22	124. 11.92							
14	2	ROS	15:19	BE	51	49 24 10	124 09 35		284		164-177	14		
			15:25	BO		24 16	124 09 39			274				
			15:40	EN		24 31	124 09 52							
14	CPF1	CTD	16:11	BE	52	49 21 09	124 06 97		414					
			16:19	BO		49 21 04	124 06 99			403				
			16:26	EN		49 21 04	124 07 02							
14	CPF1	Bongo	16:40	BO	53	49 21.032	124 07.100	-	414	250	-	-		250, VPH
	CPF1	Bongo	16:58	BO	54	49° 20.95'W	124° 07.19'W	-	414	250	-	-		VPH
14	CPF1	Bongo	17:12	BO	55	49° 20.73'W	124° 07.24'W	-	414	50	-	-		VNH
14	3.	ROS	18:19	BE	56	49 26.59	124 20.17		324		178-190	15		
			18:26	BO		49 26.60	124 20.16			317				
			18:43	EN		49 26.58	124 20.18							

CAST TYPE -

BOT -

bottle cast

CTD -

ctd

MOR -

mooring

ROS -

rosette

NET -

net haul

DRF -

drifter

USW -

sea water loop

TIME CODE -

BE -

beginning time of cast

BO -

bottom time of cast

EN -

end of cast

DE -

deployment time

MR -

messenger release

RE -

recover mooring

POSITION CODE -

RAD -

RADAR

GPS -

GLOBAL

LOR -

LORAN

YEAR		MONTH				SHIP				CRUISE				PAGE	OF
1999		AUGUST				VECTOR				9920					
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
14	4	CTD	19:22	BE	57	49.24.50	124 22.08		344		/			Computer crashed, had to restart the cast.	
			19:28	BO		49 24.50	124.22.04			338					
			19:35	EN		49.24.49	124.21.97								
14	5	CTD	20:17	BE	58	49.27.40	124 30.80		315		/				
			20:23	BO		49 27 43	124 30.80			311					
			20:29	EN		49 27 47	124 30.79								
14	CPF2	CTD	20:37	BE	59	49 27 99	124 30.38		330		/				
			20:44	BO		49 28 04	124 30.27			321					
			20:50	EN		49 28 09	124 30.23								
14	CPF2	NET	21:02	BO	60	49°28.12'N	124°30.10'W		330	250	/				
14	CPF2	NET	21:16	BO	61	49°28.17'N	124°30.05'W		330	50					
14	6	ROS	21:43	BE	62	49.30.64	124 27.87		192			193-203	11		
			21:47	BO		49 30.74	124 27.98			186					
			22:03	EN		49 30.97	124 28.21								
14	7	CTD	22:34	BE	63	49 34.42	124 24.24		350		/				
			22:41	BO		49 34.47	124 24.41			340					
			22:47	EN		49 34.51	124 24.49								

CAST TYPE - BOT - bottle cast
CTD - ctd
MOR - mooring

ROS - rosette
NET - net haul
DRF - drifter

USW - sea water loop

TIME CODE - BE - beginning time of cast
BO - bottom time of cast
EN - end of cast

DE - deployment time
MR - messenger release
RE - recover mooring

POSITION CODE - RAD - RADAR
GPS - GLOBAL
LOR - LORAN

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR			MONTH			SHIP			CRUISE			PAGE		OF	
1999			August			VECTOR			9920						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
14	8	CTD	23:29	BE	64	49 39.31	124 33.00		344	335					
			23:38	BO		49 39.40	124 33.14								
			23:42	EN		49 39.46	124 33.22								
15	9	ROS	00:21	BE	65	49 35.52	124 38.33	✓	167	159	204-213	10			
				BO											
			00:32	EN		49 35.54	124 38.23								
15	10	CTD	01:19	BE	66	49 40.71	124 47.38		95	80					
			01:21	BO		49 40.72	124 47.47								
			1:23	EN		49 40.74	124 47.51								
15	11	CTD	1:52	BE	67	49 42.44	124 43.41		300	298					
			1:58	BO											
			2:03	EN		49 42.52	124 43.26								
15	12	ROS	2:20	BE	68	49 43.61	124 40.79	✓	357	338	214-228	15			
			2:27	BO		43.66									
			2:40	EN											
15	13	CTD	04:01	BE	69	49 55.29	124 55.18		246					hit bottom.	
			04:06	BO		49 55.28	124 55.13			244					
			04:12	EN		49 55.29	124 55.14								

CAST TYPE -

BOT -
CTD -
MOR -bottle cast
ctd
mooringROS -
NET -
DRF -rosette
net haul
drifter

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sea water loop

TIME CODE -

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OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1999		MONTH AUGUST		SHIP VECTOR					CRUISE 9920				PAGE OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
15	14	ROS	04:39	BE	70	49 53.01	124 59.55	✓	319		229-243	15		
			04:45	BO		49 53 02	124 59 53			312				
			05:00	EN		49 52.90	124 59.43							
15	15	CTD	05:28	BE	71	49 51.60	125 01.64		126					
			05:32	BO		49 51.57	125 01.48			123				
			05:35	EN		49 51 56	125 01 41							
15	16	ROS	06:36	BE	72	49 57 75	125 08.80		158		244-253	10		
			06:40	BO		49 57 75	125 08.79			146				
			06:50	EN		49 57 75	125 08.71							
15	17	CTD	07:18	BE	73	49 58.90	125 4.50		269					
			07:23	BO		49 58.91	125 4.47			260				
			07:28	EN		49 58.98	125 4.46							
15	18	CTD	07:59	BE	74	49 59.21	124 59.12		147					
			08:02	BO		49 59.21	124 59 06			135				
			08:05	EN		49 59.22	124 59.02							
15	20	CTD	10:42	BE	75	49 47 19	124 32.31		313					
			10:47	BO		49 47 17	124 32.28			304				
			10:54	EN		49 47 14	124 32.23							

CAST TYPE -

BOT -
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MOR -bottle cast
ctd
mooringROS -
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YEAR		MONTH				SHIP				CRUISE				PAGE	OF
1999		AUGUST				VECTOR				9920					
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
15	22	CTD	12.20	BE	76	49 40.32	124 16.42		356	347				raining	
			12.28	BO		49 40.34	124 16.43								
			12.35	EN		49 40.37	124 16.45								
15	24	CTD	14.02	BE	77	49 30.40	124 6.04		426	420				dry / wind SE-4	
			14.11	BO		49.30.54	124.5.91								
			14.20	EN		49.30.68	124.5.80								
15	Ecobuoy	NET			78										