

DAILY LOG BOOK

MISSION
NUMBER

2004-22

DATE:

From: July 5, 2004 to: July 16, 2004

VESSEL:

CCGS John P. Tully

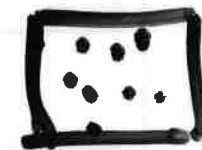
PROJECT:

SEABREEZE / EFFINGHAM

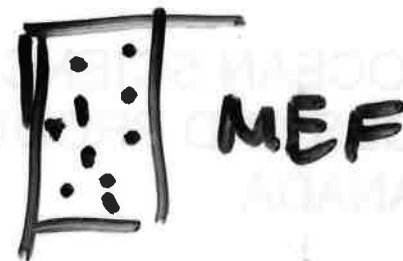
INSTITUTE OF OCEAN SCIENCES
OCEAN SCIENCES AND PRODUCTIVITY DIVISION
SIDNEY, BC, CANADA

The format for labels is:

Sample number	001
Sample type	ALK
Station name	LG01
Cruise ID	2002-12
Bottle number	BOT 1



High Rye



Captain:	<u>John Anderson</u>	First Officer:	<u>Peter Visser</u>
Second Officer:	<u>Matth Jansen</u>	Third Officer:	<u>Doug Murdoch</u>

Mission Participants / Agencies:

Scientific Personnel:		Party Chief:	
Name	Watch	Name	Watch
Rick Thomson		Rick Thomson	
Tom Johasz			
Dave Spear			
Doug Anderson			
Lucius Porteau			
Steve Mihaly			
Robert Reed			
Phillip Curran			
Katrina Jessen			

[illegible]

Data logging computer: FS03

Data acquisition program: Seascope V1in32 Ver 5.31a

CTD deck unit make: Seabird model: 11plus serial number: 0508

Primary CTD

Make: Seabird model: all plus serial number: 0585

Primary temperature serial number: 2023 20-Dec-03

Primary conductivity serial number: 1763 19-Dec-03

Secondary temperature serial number: 2106 06-May-04

Secondary conductivity serial number: 2102 07-May-04

Transmissometer: Wet labs Model: CSTAR s/n: 408 DR

Fluorometer: Model Scapint Cable gain: 10x s/n: 2229 P, S or NO pump?

Oxygen sensor: Seabird Model: SE413 s/n: 0047 P, S or NO pump?

PAR sensor: _____ Model: _____ s/n: _____

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Other sensors: _____ s/n: _____ P, S or NO pump?

Secondary CTD

Make: _____ model: _____ serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model _____ Cable gain: _____ s/n: _____ **P, S or NO pump?**

Oxygen sensor: _____ Model: _____ s/n: _____ **P, S or NO pump?**

PAR sensor: _____ Model: _____ s/n: _____

Other sensors: _____ s/n: _____ **P, S or NO pump?**

Other sensors: _____ s/n: _____ **P, S or NO pump?**

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Other sensors: _____ s/n: _____ **P, S or NO pump?**

CTD calibration bottle location (height above CTD in metres):

July 7/04: AM Ship pounding into 2-3 m seas from NW.
Rough night. Winds 25-35 knots from NW. Partly cloudy.
Ship speed 6 knots.

July 7/PM. Phone FRITZ STAHN. / Talked to Russ McDuff
at 1800 HRT on channel 82. Seas 2-3m; winds 30 knots
and going down.

Date Time PDT

July 7th 1832 - 1 cable down wind ER03G1 for recovery.
 - sent transpond - no response
 - sent ABD - range 2144, 2145

1834 - sent ABCD - received positive response.
 - range 2160 - 2027, 2003, 1967

1839 - range 1654

1841 - range 1571

1844 - range 1233

1850 - range 735

1854 - range 429

1856 - 338-333-317

1857 - on surface - VHF received

- all on board without incident - small tangle on surface

- head for ER03-S3 for recovery.

1925 - on station ER03-S3 -

1926 - sent 6442 enable sent A000 range 2256, 2258, 2259.
 (FR2)

- sent 2227 2213

6441 (window) 6484 (rel) rec'd executed. range 2227
 - range 2213 right after A000 sent

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>				Ship <u>Tully</u>				Cruise ID <u>2004-22</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments	
							Latitude	Longitude								
06	JOS	1000 PDT		Scheduled departure			TO HOT VENTS									
		1015 PDT		Repart												
		1300 PDT		Fire E BONT DNNL												
07	ER03-G1	2330 UTC		Begin Recovery			GAP mooring									
08	ER03 S3	0030 UTC		Begin recovery of South mooring			S3 (most eastward ADCP)									
"	ER03 S1	0130 UTC		Begin recovery of South mooring			S1 (most westward ADCP)									
"	ER03 NR			Recovery of north mooring central												
	ER03 N1			recovery of north mooring (west)												
	ER03 N3			recovery of north mooring (east)												
	ER03 S4			recovery of South mooring (east)												
	ER03 S2	2130 UTC		RECOVER LAST OF CONVENTIONAL MOORING												
08	ER04 01	2150	BE	CTD		001	47 56.93	129 05.94	2144						Sea Sensors bad	
		2218	BO				47 56.97	129 05.85		2218					Date error 1 hr	
			EN												100+ m Heat signature at bottom	
08	ER04 02	2335	SE	CTD		002	47 56.05	129 05.98	2157						Sensor problem likely with salt coeff.	
09		0016	BO				47 56.10	129 05.84		2223					Turned off water sampler	
		0038	EH				47 56.16	129 05.71							Cal coeff for temp. sensor s/n 2106 corrected	

Cast type:

BOT = bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD

USW = sea water loop
 MOR = mooring
 NET = net haul
 DRF = drifter

bottle firing method:

US = up / stop
 UN = up / no stop
 DN = down / no stop

Time Code

BE = beginning time of cast
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 RE = recover mooring time

Transmissometer to be cleaned for each cast, do not use Ammonia products

28 May 2003
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Date Time PDT

July 7th 1931
1934

ER03-S3 recovery continued.
- A000 sent 2011
- " 1782
- A000 no response 6442 range = 1380
- A000 no response 6442 " = 1092
" " = 765
" " = 561
" " = 384
" " = 191.

* Turned off water sampler to see if the data problem is due to communication between the electronics carousel device & the CTD.

1945

- sighted on surface VHF working.

2012

- on station ER03-S1 for recovery
- sent 5000 - no range deployed?

2014

- sent 6412 "enable" - range 2187,
- sent 5000 - no response
- sent 6413 "off" - 2202

2018

sent 6412 "enable" = range 2192, 2200
- sent 6411 "window" sent 6484 "rec'd" "executed" 2297
- enable commands ranges = 2193, 2193, 2194 not rising.
- sent 6411 window. sent 6484 "rec'd" "executed" 2193 range

2024

- enable commands = 2089, 2038, 1939, 1866, 1808, 1707, 1610.
(2025 PDT)

2029

- enable commands = 1024, 895, (2031 PDT) 825, (2034 PDT) 448

2036

- sighted on surface - recovery required 2 releases and not solid on ranging.

DAILY LOG

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							Latitude	Longitude							
<u>09</u>	<u>ER04-03</u>	<u>0156</u>	<u>BE</u>	<u>BOS</u>		<u>003</u>	<u>47 56.02</u>	<u>129 07.93</u>	<u>2181</u>						<u>Pylon causing data errors!</u>
		<u>0219</u>	<u>BO</u>	<u>CTD</u>			<u>47 56.07</u>	<u>129 07.93</u>		<u>2200</u>					<u>no water samples until a pylon change.</u>
		<u>0239</u>	<u>EN</u>				<u>47 56.28</u>	<u>129 07.91</u>							
<u>09</u>	<u>ER04-04</u>	<u>0322</u>	<u>BE</u>	<u>CTD</u>		<u>004</u>	<u>47 55.99</u>	<u>129 12.00</u>	<u>2162</u>						<u>Plume appears at all stations.</u>
		<u>0401</u>	<u>BO</u>				<u>47 55.98</u>	<u>129 11.93</u>		<u>2272</u>					
		<u>0429</u>	<u>EN</u>				<u>47 56.65</u>	<u>129 11.77</u>							
<u>09</u>	<u>ER04-05</u>	<u>0502</u>	<u>BE</u>	<u>CTD</u>		<u>005</u>	<u>47 57.99</u>	<u>129 11.98</u>	<u>2230</u> <u>2144</u>						
		<u>0529</u>	<u>BO</u>				<u>47 58.00</u>	<u>129 11.92</u>		<u>2290</u>					
		<u>0550</u>	<u>EN</u>				<u>47 57.98</u>	<u>129 12.10</u>							
<u>09</u>	<u>ER04-06</u>	<u>1506</u>	<u>BE</u>	<u>CTD</u>		<u>006</u>	<u>47 58.050</u>	<u>129 9.884</u>	<u>2295</u>						<u>Sun breaking at. Seas < 1 m. Sailboat nearby.</u>
		<u>1546</u>	<u>BO</u>				<u>47 58.052</u>	<u>129 9.972</u>		<u>2322</u>					<u>Plume at 1915 m</u>
		<u>1622</u>	<u>EN</u>				<u>47 57.937</u>	<u>129 9.972</u>							<u>Fluorometer noisy below</u>
<u>09</u>	<u>ER04-07</u>	<u>1723</u>	<u>BE</u>	<u>ROS</u>		<u>007</u>	<u>47 57.99</u>	<u>129 05.97</u>	<u>2073</u>		<u>1-41</u>	<u>41</u>	<u>DA</u>	<u>-</u>	<u>Changed Pylon</u>
		<u>1745</u>	<u>BO</u>				<u>47 57.99</u>	<u>129 05.98</u>		<u>2076</u>					<u>Calm seas. Happy Tech thus far.</u>
		<u>1816</u>	<u>EN</u>				<u>47 58.00</u>	<u>129 06.00</u>							<u>Plume @ 1900 m</u>
<u>09</u>	<u>ER04-08</u>	<u>1923</u>	<u>BE</u>	<u>CTD</u>		<u>008</u>	<u>47 58.01</u>	<u>129 04.01</u>	<u>2158</u>						
		<u>1945</u>	<u>BO</u>				<u>47 58.05</u>	<u>129 04.06</u>		<u>2197</u>			<u>DA</u>		<u>Plume @ 1900 m</u>
		<u>2005</u>	<u>EN</u>				<u>47 57.85</u>	<u>129 04.19</u>							

Cast type:

BOT = bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD

USW = sea water loop

MOR = mooring
NET = net haul
DRF = drifter

bottle firing method:

US = up / stop
UN = up / no stop
DN = down / no stop

Time Code

BE = beginning time of cast
BO = bottom time of cast
EN = end time of cast

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MR = messenger release time
RE = recover mooring time

Transmissometer to be cleaned for each cast, do not use Ammonia products

28 May 2003

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Date Time PDT

- | Date | Time | PDT |
|--------|------|---|
| July 8 | 0737 | <ul style="list-style-type: none"> - 200m off ERO3-N2 for recovery. - sent 6452 "enable" range 6452 = 2208, 2210, 2212 - sent 6451 "window" sent 6484 "vel" range = 2212 - sent 6452 range 2125 - sent 3000 " 2047, 2010 |
| | 0745 | - sent 6452 range 1596 |
| | 0750 | - " " " 0919 |
| | 0754 | - " " " 0329 |
| | 0755 | <ul style="list-style-type: none"> - on surface VHF working - all on board without incident - ADCP floats <u>must</u> be rigged with guy-lines at transom edge. |
| | 0812 | <ul style="list-style-type: none"> - on station ERO3-N1 for recovery. - sent XPND no response. - sent CDF enable - sent XPND range 2176, 2185 |
| | 0815 | <ul style="list-style-type: none"> - sent ADEH no release response. - sent CDFG sent XPND no response sent CDF enable sent XPND 2211 |
| | 0819 | <ul style="list-style-type: none"> - sent ADEH no release response. range 2208 (XPND). - sent CDFG and move back on station |
| | 0824 | <ul style="list-style-type: none"> - back on station sent XPND range = 2256 - should not respond because it is disabled. |

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
10	ER04-09	0102	BE	ROS		009	47 58 .03	129 02 .01	2334						Small plume signature at bottom 30 m.
		0130	BO	CTD			47 58 .03	129 01 .97			5-8	4	DA		Calm seas, pylon working fine. No data errors thus far.
		0154	EN				47 58 .03	129 01 .98							
10	ER04-10	0232	BE	ROS		010	47 55 .99	129 03 .97	2334		5-8	4	DA		
		0301	BO				47 56 .03	129 03 .97		2342					Small plume at bottom.
		0328	EN				47 56 .06	129 03 .99							
10	ER04-01	0404	BE	CTD		011	47 57 .23	129 05 .78	2143						Plume at ~ 1900
		0432	BO				47 57 .30	129 05 .84		2192					
		0452	EN				47 57 .32	129 05 .66							
10	CAP-1	1458	BE	ROS		012	47 56 .48	129 05 .52	2147						
		1524	BO				47 56 .50	129 05 .51		2167	94 11	3	DA		Small plume @ 1480 PLUME
		1556	EN				47 56 .49	129 05 .53							
10	ER04-C2		BE	CTD		013			2431						
		1650	BO				47 56 .00	129 03 .98		2342			DA		NO PLUME
		1720	EN				47 56 .01	129 03 .99							
10	ER04-C3	1745	BE	ROS		014	47 54 .99	129 05 .00	2328		12-13	2	DA		NO PLUME
		1819	BO				47 54 .98	129 04 .99		2375					
		1851	EN				47 55 .01	129 04 .97							
Cast type: <i>ROS</i> USW = sea water loop bottle firing method: <i>CTD</i> Time Code															

Cast type:

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bottle firing method:

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July 14/04

B-Line

LB01	48 40.40	124 59.48	33	CTD/DO2
LB02	48 39.00	125 02.40	50	CTD/DO2
LB03	48 37.32	125 05.58	93	CTD
LB04	48 35.67	125 08.72	105	CTD/DO2
LB05	48 34.00	125 12.00	109	CTD
LB06	48 32.18	125 15.51	118	CTD/DO2
LB07	48 28.68	125 22.10	160	CTD
LB08	48 25.30	125 28.65	145	CTD/DO2
LB09	48 22.00	125 34.80	152	CTD/DO2
LB10	48 18.57	125 41.35	151	CTD
LB11	48 15.20	125 47.75	235	CTD/DO2
LB12	48 12.92	125 51.90	510	CTD/DO2
LB13	48 10.60	125 56.12	910	CTD
LB14	48 08.48	126 00.00	1180	CTD/DO2
LB15	48 04.36	126 08.46	1450	CTD
LB16	48 00.53	126 17.00	1530	CTD

LA01

A-Line

LA12 47.75u 126.20u

LA11

RO5

Stations between B and C lines

LCB1	48 44.94	125 22.00	75
LCB2	48 41.15	125 27.05	100
LCB3	48 34.50	125 30.00	120
LCB4	48 32.00	125 35.50	76
LCB5	48 28.30	125 49.80	110
LCB6	48 22.70	126 03.80	310

C-Line

LC01	48 50.44	125 27.73	94	CTD/DO2
LC02	48 48.68	125 30.95	110	CTD/DO2
LC03	48 46.95	125 34.24	120	CTD
LC04	48 43.43	125 40.80	167	CTD/DO2
LC05	48 39.94	125 47.40	65	CTD
LC06	48 36.46	125 54.00	92	CTD
LC07	48 32.96	126 00.50	131	CTD/DO2
LC08	48 29.45	126 07.10	203	CTD/DO2
LC09	48 25.94	126 13.70	611	CTD/DO2
LC10	48 22.40	126 20.20	1239	CTD
LC11	48 18.95	126 26.70	1330	CTD/DO2
LC12	48 15.00	126 40.00	999	CTD

1482 m



Date Time PDT

- July 8 0826
- ER03-N1 recovery continues.
 - sent CDFG sent XPND - no response.
 - sent CDF enable sent XPND range 2281
- 0829
- sent ADEH no response sent ADEH 2 strong pings - then rest of release * response but very weak.
- 0833
- sent ADEH - same 2 strong pulse - release response continues but is weak
 - sent XPND range is 2125 - we are drifting away + ranges are getting shorter.
- 0842
- on surface - beacon working
 - there are other transponders in the water - one of these could account for the 2 strong pings overriding our signal.
 - our release did not let go on the initial commands as well.
- 0905
- on station ER03-N3 for recovery.
 - range 2184 m already activated with same enable code CDF when we worked at N1 - mooring very close
- 0909
- range 2185 sent ACDF received positive response all strong
 - ranges 2185, 2175, 2052, 1984, 1920, 1889
- 0913
- 1825 range.
- 0914
- 1762 range.
- 0916
- 1589 range.
- 0918
- 1019 app. half way 0925 = 704 0931 = 386 m range.
 - 0933 on surface VHF working.
- } there is another source transmitting as well but is fainter at this site.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>			Year <u>2004</u>				Ship <u>Willy</u>				Cruise ID <u>2004-22</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
10	ERO4-G4	1923	BE	CTD		15	47°52.406'	129°5.494'	2391						
		1958	BO				47 52.39	129 05.51		2408			Kel, Phil & DA		
		2030	EN				47 52.38	129 05.52							
	Proceed to mooring ERO4-Y1 (Yunker #1). North of High Rise.														
10	ERO4 Y1	1457	PDT	MOORING			47 58.432	129 05.256	2121	RCM5@75m, RCM5@30m	RCM1 @15mab.				
	Prepared mooring ERO4Y3 but had to wait for Atlantis to deploy ABE. Russ called on channel 13 at 1500.														
	ERO4Y3	1848	PDT	MOORING			47 58.352	129 04.855	2120	RCM5 @75mab, RCM5@30mab; Santeek@15mab					
	ERO4Y2	2019	PDT	MOORING			47 58.390	129 05.054	2019	ADCP@5.1mab RCM8@24mab					
11	ERO4 N1	0845	PDT	MOORING			47 57.905	129 05.744	2098	RCM5@75mab, RCM5@30mab; S4@15mab					
	ERO4 N2	0950	PDT	MOORING			47 57.520	129 05.582	2175	RCM8 @24mab; ADCP@5.1mab	MICROCAT				
11	ERO4-N3			MOORING			47	129		RCM5 @24mab; ADCP@5.1mab	MICROCAT				
							47 58.96	129 04.58							
11	ERO4 11	1950	BE (UTC)	CTD		16 40m	47 58.000	129 04.600	2168				DA, KJ, RT		plume @ 1900
		2017	BO				47 58.87	129 04.55		2186	VERY HIGH BOTTOM				Heat signature at bottom.
		2036	EN				47 58.96	129 04.60			Temperatures				Surface Temp: 13.85
12	ERO4 12	0000	BE	ROS		17	48 2.85	128° 30.01	2585						Very nice Oxygen trace
		0034	BO							2605	14-16				Seasave crashed
		0101					48 3.343	128 29.985							at the end of
Cast type: USW = sea water loop bottle firing method: Time Code															

Cast type:

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bottle firing method:

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5m off bottom acquisition before stop pump
 cost due to stop
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Date Time PDT

July 8	1013	- on station ERO3-S4 for recovery. - sent 9000 range - no reply. - sent enable 6432 range = 2225 sent pulse range = 2225 2227
	1020	- sent 6431 and 6434 release "rec'd" "executed" range 2265 - sent 6432 ranges 2117, 2073, 2035 rising
	1023	- sent 6432 range 1955. - tried XT6000 D000 no response
	1025	- 1834
	1028	- 1598
	1034	- 1111
	1038	- 796 1043 = 450. 1045 = 363.
	1048	- on surface VHF working
July 8	1246	- on station ERO3-S2 for recovery. - XT6000 D000 no answer. - sent 6422 rec'd exec. range = 2234, 2234 - sent 8000 range response 2234
	1253	- sent 6421 and 6484 "rec'd" "executed" range 2234 - sent 6422 ranges = 2122, 2086, 2044
	1258	- sent 6422 " = 1769 1301-1468 PDT
	1315	- on surface VHF working.

DAILY LOG

Ocean Sciences and Productivity Division

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Month <u>JULY</u>				Year <u>2004</u>				Ship <u>JP TULLY</u>				Cruise ID <u>2004-22</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
12	ER04-13	0316	BE	CTD		18	48° 7.220	127° 59.989	2619						Sq. m. ly. d. ff. 500 m ~
		0349	BO				7.237	128° 00.006		2630					6m off bottom
		0412	EN				48° 7.238	127 59.941							
12	ER04-14	0628	BE	ROS		19	48° 10.982	127° 29.947	2633						
		0704	BO				48 11.04	127 30.06		2650	17-19	3	RT, DA		MAX DEPTH 5-6 m from bottom
		0743	EN				48 11.04	127 30.01							
12	ER04-15	0955	BE	CTD		20	48 14.94	127 02.02	2593						
		1026	BO				48 14.91	127 00.05		2608			RT, KT, DA		7 m from bottom
		1055	EN				48 14.91	127 00.05							
12	LC12	1229	BE	ROS		21	48 14.993	126 40.142	2528	2551	20-22		MACAMISH THE CANARY TUNING		SUNRISE, VENUS
		1305	BO				48 14.998	126 40.101							GIBBOUS MOON -
		1340	EN				48 15.006	126 40.054							CHAIR OVERBOARD
12	LC11b	1458	BE	ROS		22	48 18.889	126 26.716	1365						Foggy - dissipating
		1521	BO				18.935	26.695		1482	23-41	8m off			- Clear
		1600	EN				48° 18.978	126° 26.686				bottom			Seas Calm Wind 14 kt 3480
12	LC10	1648	BE	CTD		23	48° 22.350	126° 20.249	1250						-0.83m offset
		1704	BO				48° 22.366	126° 20.222		1247					6m off bottom
		1722	EN				48° 22.376	126° 20.249							-1.12m on deck

Cast type:

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US = up / stop
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28 May 2003
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July 8/04 CTD STATIONS AT ENDEAVOUR RIDGE

ER04-01 MIDWAY BETWEEN MOUNTING SITE N2 & S3

Proposed $47^{\circ} 57.241$ $129^{\circ} 05.806$

actual site $47^{\circ} 56.93$ $129^{\circ} 05.94$

1st CTD station

hit plume on way down @ 1910 m; drops by a few %

Water depth ≈ 2220 m

July 9/04. We hit plume @ 1900 m on most casts in the region. Station ER04-06 to the north of the valley, hit plume at 1915 m. Good T & LAC signal. Atlantic to the south of us. Sailboat went between us heading to coast. Seas calm / light wind. Partly cloudy.

Connected box of CTDs around ER + CTDs in GAP.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>			Ship <u>Tully</u>			Cruise ID <u>2004-22</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
12	LC09	1810	BE	ROS		24	48°25.963	126°13.658	607						7m off bottom
		1820	BO				48°25.985	126°13.673		595	42-57	16			0.98m depth offset
		1846					48°25.945	126°13.696							
12	LC08	1936	BE	ROS		25	48 29.417	126 07.08	200						Orange pressure offset in 0585ctd.com
		1942	BO				48 29.43	126 07.08		197	58-68	11			3m off bot (Dolphin)
			EN				48 29.42	126 07.04							0.15 db on deck
12	LC07	2044	BE	ROS		26	48 32.92	126 00.39	130						
		2047	BO				48 32.91	126 00.40		123	69-76	8	DA, KJ, RT		5m off bot
		2056	EN				48 32.89	126 04.44							
12	LC06	2150	BE	CTD		27	48 36.52	125 53.83	92						
		2151	BO				48 36.52	125 53.81							7m off bot
		2154	EN				48 36.51	125 53.78							
12	LC05	2238	BE	CTD		28	48 39.92	125 47.36	65						
		2240	BO				48 39.91	125 47.36		58			DA, KJ, RT		7m off bot
		2241	EN				48 39.92	125 47.36							
12	LC04	2324	BE	ROS		29									
		2336	BO				48 43.414	125 40.802	167	163			AP, SM, RR		
		2344	EN				48 43.387	125 40.760							

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28 May 2003
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MOORING ERO4-Y1 [WEST SIDE, NORTH OF HIGH RISE]
July 10/04

JS01-03P
VHF Chan A. 154.585

SG 17' 45055
SG 17' 44813
SG 17' 44976

RCMS #8730 Vane #503

41.75m 1/4 wire

SG 17' 44799
SG 17' 44459

RCMS #8586 Vane #502

10.15m 1/4" wire

SG 17' 41191
SG 17' 44792
SG 17' 45135
SG 17' 44795
SG 17' 45100

RCM 11 #39

1m 5/16" wire

MORIS RT661 B2S#50
Release Window 6421 Rel. 6484
FR140W 6422
FR140FF 6423 *

2m chain

LAT: 47°58.432
LONG: 129°05.256

ANCHOR: @ 1457 PDT
SAUNDER 2121 m ± 10m

BRIDGE 47 58.438
129 05.288

* Pressure offset : Changing Pressure offset from -0.6 db to +0.4 db to reflect a $\pm$ -1.0 pressure output observed on deck.

DAILY LOG

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
13	LC03	003340	BE	CTD		30	48 46 946	125 34 301	136						
		003850	BO				48 46 933	125 34 355		124					
		004125	20				48 46 930	125 34 362							
13	LC02	011400	BE	ROS		31	48 48 678	125 30 965	111						Had to bring CTD Back on Board to cork the bottles
		012130	BO				48 48 662	125 31 004		103					
		013017	ED				48 48 678	125 31 096							
13	LC01	020600	BE	ROS		32	48 ⁵⁰ 470	125 27 763	97						
		020846	BO				48 50 466	125 27 815		87			LP sample		
		021635	ED				48 50 453	125 27 935							
13	EF16	0322	BE	ROS		33	48 47.592	125 15.944	110		99-105				
		0325	BO				47.556	125 15.940		105					5m off bottom
		0332	2N				48 47.530	125 15.974							0.4m pressure off bot
13	EF15	0409	BE	CTD		34	48°51.446	125°14.976	98						calm sunny evening
			BO				51.497	125 14.966		94					Sunset Photo Op
		0414	EN				48°51.512	125 14.969							

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28 May 2003
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MOORING ERO4-Y3 [EAST SIDE, NORTH OF H024 R (SE)]

July 10/04

VHF channel 160.785 (M)

SG 17" 43165
SG 17" 27145
SG 17" 44889

1m →

75m — [] RCMS# V900 Vano 501

41.75m 1/4" wire

SG 17" 44805
SG 17" 44762

30m — [] RCMS# 8558 VATE 522

← 10.15 1/4" wire

SG 17" 44172
SG 17" 44788
SG 17" 44754
SG 17" 48471
SG 17" 43163

1m 5/16" wire

15m —

SOURCE# D215

looking VP ↑

1m 5/16" wire

← Swivel

MORS RT661 B2S# 149

FR 2 TT360

Release WIN 6411 ROL 6484

FRV2 on 6412 ROL 6413

10m Poly

2m chain

← LAT: 47 58.352

← LONG: 129 04.855

← Anchor Away: 1848 PDT

← Sonar: 2120 m

2 = 1420 lbs

Brill 47 58.363
129 04.887

deployed off *

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>			Ship <u>TULLY</u>				Cruise ID <u>2004-22</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
13	EF14	0448	BE	CTD		35	48°54.018	125°12.932	110						5 m off bottom
		0450	BO				48°54.018	125°12.907		105					Weight removed
		0452	EN				48°54.020	125°12.889							
13	EF13	0518	BE	ROS		36	48°56.509	125°10.712	108		106-112				
		0520	BO				56.518	10.710		100					
		0525	EN				48°56.556	125°10.696							
13	EF12	0545	BE	CTD		37	48°57.992	125°10.514	95						0.7m Pressure
		0547	BO				48°58.007	125°10.514		90					off set
		0549	EN				48°58.015	125°10.513							
13	A101	0656	BE	ROS		38	48°57.002	125°01.530	230		H ₂ S smell in air as ship stopped up (reverse thrust)				
		0701	BO				48°57.000	125°01.524		229	113/123				5m off bottom
		0713	EN				48°57.008	125°01.520							
13	EFO1	1447	BE			39	49		35		124-128				Poor documentation
			EN				49 5.560	125 11.60							by S.M.
13	EFO2	1512	BE			40	49 5.003	125 10.302	72		129-134				
		1518	EN				49 5.004	125 10.300		68					
13	EF02A	1533	BE			41	49 4.494	125 9.770	105						
		1544	EN				.482	.764		100	135-141				H ₂ S in bottom 3 bottles 2m off bottom very low oxygen at bottom Aurelia jelly fish in water

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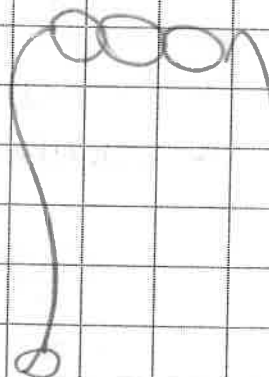
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28 May 2003
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July 16/04

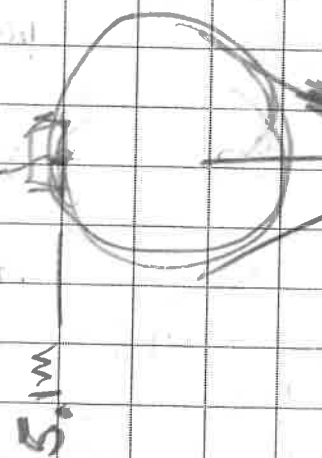
ER04-Y2



Witness # 2772
SG-17# 45169
SG-17# 33011

24m —  RCM8 10698 8-3

19.14 m 1/4" wire



5.1m

RDS# 3867 ADCP 75k12
WAF SINUI A 154585
XF 18033 1 F 1/2 sec
Microcat #1614

XT 6000
44519

27661 #152

Red: WW 6441 Red: 6484 Tran A000
ARM: FR 1/2 ON 6442 OFF 6443



 2x (430 lbs)

LAUNCH

Lat: 47 58.390
Long: 129 05.054
ANCHOR AWAY: 2019 P07
Depth Sounder: 2163 m

~~Bridge
47 58.393
129 05.110~~

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>			Ship <u>Tully</u>			Cruise ID <u>2004-22</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
13	EF03	1557	BE			42	49 4.238	125 9.407	113		142-149	8			Rick forgot to turn pump on & Re DO CAST
		1607	EN				49 4.252	125 9.404		117					
13	EF03	1610	BE			43	49 4.246	125 9.402	115		/	/			REDO CAST BUT CTD only. No Pumps last cast
			EN				4.236	9.404		115					
13	EF03A	1629	BE			44	49 3.806	125 9.080	93		150-156	7			1000 ₂ at bottom
		1635	EN				3.802	9.083		91					
13	EF04	1650	BE			45	49 3.107	125 8.605	74		157-161	5			got depth 40 m as we crossed it.
		1655	EN				3.096	8.612		68					Missed 30 m bottle on purpose
13	EF04A	1705	BE			46	49° 2.996	125° 8.858	108		162-168	7			No Anoxic at bottom
		1714	EN				2.958	8.908		102					
13	EF05A	1725	BE			47	49° 2.808	125° 9.139	200		169-179	11			Anoxic at bottom
		1740	EN				2.801	9.151		197					Wrench went up instead of down at beginning
13	EF05	1758	BE			48	49° 2.548	125° 9.146	207		180-190	11			Hot & Sunny
		1813	EN				2.557	9.115		200					Anoxic at bottom
13	EF06	1826	BE			49	49 1.792	125 9.187	152		191-199	10			Anoxic at 145 m
		1839	EN				49 1.775	125 9.184		150					SST = 17-18°C
13	EO7	1912	BE			50	49° 1.249	125° 9.469	122		200-207				
			EN				1.2	9.		120					

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28 May 2003
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July 10 / PM

Mooring Positions

COMPARISON OF LAB, BRIDGE, & DAVE'S COMPUTER

Expins Repeater Rick				Ship (Bridge [Position of Bridge Antenna])				Dave's Computer			
Lat		Long		Lat.		Long		Lat.		Long	
Y1	47 58.432	129 05.256		47 58.438	129 05.283			47 58.401	129 05.125		
Requested	(47 58.430)	(129 05.250)									
Y2	47 58.390	129 05.054		47 58.393	129 05.110			47 58.394	129 05.080		
Requested	(47 58.390)	(129 05.050)									
Y3	47 58.352	129 04.855		47 58.363	129 04.887			47 58.360	129 04.879		
Requested	(47 58.350)	(129 04.850)									

Value in brackets () is value requested prior to mooring

① The Lab repeater value is the "correct" position as it lies under the A-FRAME

DAILY LOG

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INSTITUTE OF OCEAN SCIENCES

Month <u>JULY</u>				Year <u>2004</u>				Ship <u>Tully</u>				Cruise ID <u>2004-22</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
13	EF07A	1935	BE			51	49° 0.916	125° 9.821	84	84	208-214				Bad positioning on GPS
		1947	EN				0.874	9.914		81					Bad depth / Secular
13	EF08	2000	BE			52	49° 0.668	125° 10.246	88		215-220				
		2005	EN				- 0.649	- 10.286		86					
13	EF09	2021	BE			53	49° 0.113	125° 10.840	63		221-226	1			
		2030	EN				- 0.085	- 10.877		60					
13	EF10	2040	BE			54	48° 59.1850	125° 11.221	102		227-233				2.1 mab.
		2048	EN				- 59.801	11.256		98					
13	EF11	2101	BE			55	48° 59.140	125° 11.062	90		234-240				Wind 17 knots
		2110	EN				- 59.160	11.057		88					14507
13	EF12	2142	BE			56	48° 57.995	125° 10.514	98		241-247				Put heave comp on
		2149	EN				- 58.004	- 10.504		90					
14	LB01	0026	BE			57	48° 40.333	124° 59.410	37						
			BO												
		0029	EN				48° 40.338	124° 59.410							
14	LB02	0110				58	48° 39.019	125° 2.434			248-262				
		0113					48° 39.040	125° 2.446	56	55	2				
		0117					48° 39.072	125° 2.461							

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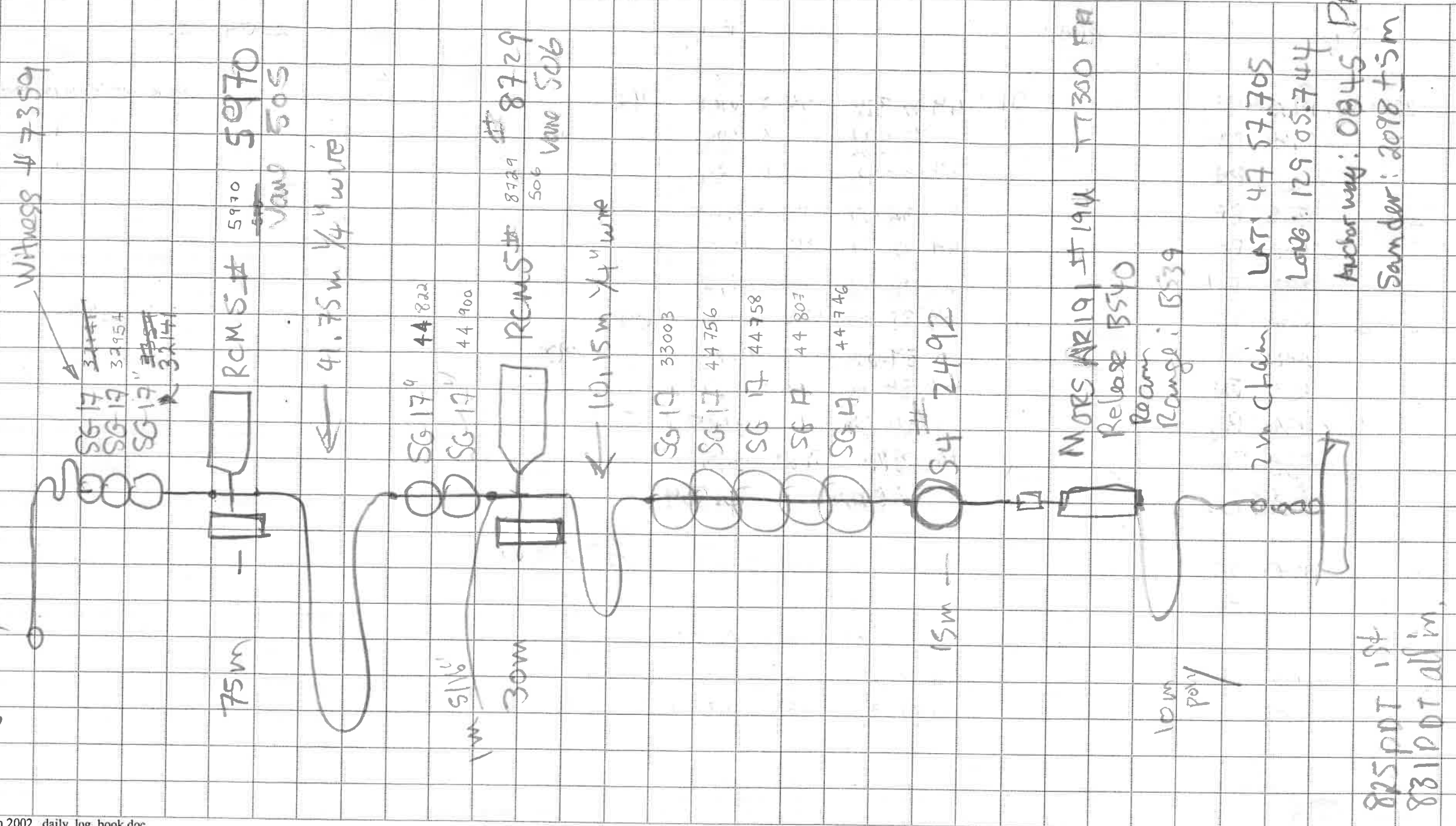
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28 May 2003
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July 11/04 ERO4-N1

July 11/04



825 pot 1st
831 pot all in.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>July</i>				Year <i>2004</i>				Ship <i>Tully</i>				Cruise ID <i>2004-22</i>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
14	LB03	0256	BE	CTD		59	48°37.322	125°5.606	96						Gale warning issued!
		0259	BO				48°37.332	125°5.626							5m off bottom
		0301	EN				48°37.337	125°5.630							
14	LB04	0336	BE	ROS		60	48°36.672	125°8.783	114		253-259				5m off
		0340	BO				48°36.681	125°8.858		109					Calm & Foggy
		0345	EN				48°36.716	125°8.972							
14	LB05	0420	BE	CTD		61	48°33.998	125°12.119	104						5m off
		0421	BO				48°34.004	125°12.143		100					calm & foggy
		0423	EN				48°34.015	125°12. —							
14	LB06	0455	BE	ROS		62	48°32.174	125°15.529	117		260-267				Turbid Layer @ Ed
		0458	BO				48°32.141	125°15.611		111					5m off
		0504	EN				48°32.076	125°15.726							
14	LB07	0608	BE			63	48°28.657	125°22.078	158						
		0610	BO				48°28.642	125°22.112		153					5m off bottom
		0613	EN				48°28.634	125°22.128							
14	LB08	0704	BE			64	48°25.29	125°28.65	145						Hake fleet all around
		0707	BO				48°25.28	125°28.63		135			KJ, RT		6m off bottom
		0709	EN				48°25.30	125°28.63							

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28 May 2003
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July 11/04

Morning ERO4 NJZ

Witness: 7361 ON

~~SG17~~ Witness 7361

SG17 44761

SG-17 44810

RCM8: 10699

Vane 8-1

19.14 m 1/4"

XIF Double F 1 1/2 sec ON

PDII 3808

VHF Ch. 71

Microdot 1549

44415 XT6000

FRI 0000

TT 300

Survived

R27661 # 153

Sounder @ launch is quite

"fuzzy". No clear bottom

signal.

LAT: 47 57.520

LONG 129 05.582

Acoustic Array 0950

Sounder 2175 m

PDT

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
14	LB09	0749	BE	ROS		65	48 21.97	125 34.82	152						
		0754	BO				48 21.97	125 34.80		149	268-276	9			5m off Bottom
		0805	EN				48 22.00	125 34.79							
14	LB10	0849	BE	CTD		66	48 18.56	125 41.35	154						3 m off Bottom
		0853	BO				48 18.56	125 41.35		152					
		0856	EN				48 18.56	125 41.35							
14	LB11	0938	BE	CTD		67	48 15.20	125 47.73	207						
		0942	BO				48 15.21	125 47.72		200			K5 RT DA		7m off Bottom
		0945	EN				48 15.21	125 47.73							
14	LB12	1020	BE	ROS		68	48 12.88	125 51.86	514						
		1026	BO				48 12.88	125 51.88			277-291	15			4m off Bottom
		1050	EN				48 12.90	125 51.89							
14	LB13	1124	BE	CTD		69	48 10.564	125 56.113	~950						
		1137	BO				48 10.580	125 56.125		922					LIGHT DRIZZLE SMALL SWELL
		1151	EN				48 10.570	125 56.138							1m off bottom
14	LB14	1222	BE	ROS		70	48 8.470	126 0 020	1185		292-309				
		1240	BO				48 8.480	126 0 027	1185	1180					
		1317	EN				48 8.446	126 0 37							

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CTD WATCHES

0800 - 1200 (2000 - 2400)	TOM / DAVE / PHIL
1200 - 1600 (0000 - 0400)	DOUG / KATRINA / RICK
1600 - 2000 (0400 - 0800)	STEVE / LUCIUS / ROB

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month July				Year 2004				Ship Tully				Cruise ID 2004-22			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
14	LB15	1414	BE	CTD		71	48 4.375	126 8.485	1450						No Bottom depth, Altimeter didn't turn on. LP
		1430	BO				48 4.403	126 8.495		1500					Bridge read just over 1500m
		1452	EN				48 4.360	126 8.459							2 samplers onboard
14	LA12	1703	BE	CTD		72	47°45.008	126 12.016	~1735						5m off bottom
		1726	BO				47°44.986	126°11.992		1793					0.2m offset on deck
		1748	EN				47°44.977	126°11.986							Two samplers & 2 hummingbirds onboard
14	LA11	1915	BE	ROS		73	47 51.90	125 57.89	~1729						
		1934	BO				47 51.94	125 57.88		1679	310-329	20	KJ, RT DA		5m off Bottom
		2014	EN				47 51.48	125 57.90							
14	LA10	2157	BE	ROS		74	47 59.053	125 43.337	920✓						Very very slow approach to station!
		2209	BO				47 58.973	125 43.130			330-346				
		2234	EN				47 58.625	125 42.536							
14	LA09	2325	BE	CTD		75	48 2.354	125 36.916	355						
		?	BO				48.2345	125°36.911		349					
		2334	EN				48.238	125°36.895							
15	LA08	0022	BE	ROS		76	48 5.764	125 30.394	142		347-355				
		0024	BO				48 5.762	125 30.386		140					
		0031	EN				48 5.770	125 30.382							

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Time Code

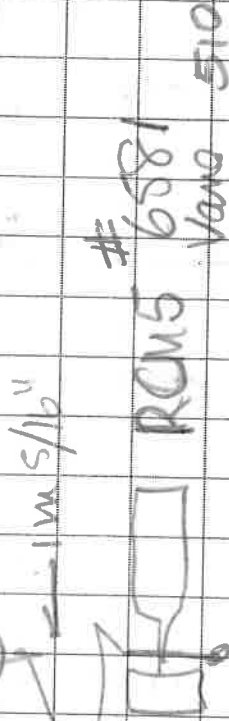
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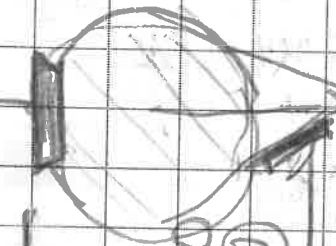
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Tue 11/04 Mooring E204 M3



19.14 m 1/4" wire

5.9 m



XT 6000
44074
FR 1 1/2 30

Microdot
1537

XF B1535 1F1/5 (on)

Survived

RT 601 #151
Rel. 6431 Re 06434

FR 1/2 00 = 6432 FR 1/2 6433
Deployed FR 1/2 OFF

1 m 1/2 pol

1 m chain

2x @ 85 lb

Winds from SW 25 knots

LAT: 47 57.464

LONG: 129° 05.341

Anchor away 1131 PDT

Sounder: 2120 m

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>				Ship <u>Willy</u>				Cruise ID <u>2004-22</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
15	LA07	1:19	BE	CTD		77	48 9.190	125 23.831	115						
		1:24	BO				48 9.151	125 23.814		110					
		1:26	EN				48 9.152	125 23.808							
15	LA06	2:16	BE	ROS		78	48 12.626	125 17.200	114		356-363				
		2:19	BO				48 12.612	125 17.227		110					
		2:26	EN				48 12.584	125 17.260							
15	LA05	03:13	BE	CTD		79	48°16.066	125°10.556	123						
			BO				48°16.045	125°10.559		120					
		03:16	EN				48°16.034	125°10.561							
15	LA04	04:06	BE	ROS		80	48°19.339	125°4.147	195		364-374				
		04:11	BO				19.274	4.271		188					0.5 m offset
		04:22	EN				48°19.040	125°4.396							Entered incorrectly
15	LA03	05:16		CTD		81	48°22.868	124°57.704	113						as LA05 in header
		05:19					48°22.868	124 57.691		110					5m off bottom
		05:20					48°22.871	124°57.692							
15	LA02	06:17	BE	ROS		82	48°26.273	124°51.334	310						
		06:23	BO				48°26.325	124°51.354		305					
		06:35	EN				48°26.543	124°51.462							

Cast type:

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bottle firing method:

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <u>July</u>				Year <u>2004</u>				Ship <u>Tully</u>				Cruise ID <u>2004-22</u>			
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
15	LA01	0733	BE	CTD		83	48 29.261	124 43.674	268						
		0737	BO				48 29.248	124 43.682		270					
		0741	EN				48 29.248	124 43.693							5m off bottom
15	JFF4	0910	BE	ROS		84	48 25.656	124 30.070	239						WAIT FOR Deep Sea!
		0915	BO				48 25.652	124 30.034		231					ship being set to the east as we cross channel to north
		0925	EN				48 25.632	124 30.024							
15	JFE7	1122	BE	CTD		85	48 16.384	124 15.60							
		1224	BO				48 16.381	124 15.065							
		1225	EN				48 16.381	124 15.065	85	88					
15	JFE8	1146	BE	CTD		86	48 17.654	124 15.086	172						
		1149	BO				48 17.663	124 15.203		165					FLAT CALM, EDB
		1152	EN				48 17.675	124 15.265							
15	JFE5	1213	BE	CTD		87	48 19.266	124 15.042	212						
		1215	BO				48 19.261	124 15.049		212					overcast
		1218	EN				48 19.250	124 15.053							
15	JFE4	1239	BE	CTD		88	48 21.259	124 15.020	226						
		1241	BO				48 21.269	124 15.011		225					
			EN				48	124							

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THE 4-8 WATCH

Please do the JFE Line from EØ7 — EØ1 (south to north)
CTD only

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch keepers	Trans. cleaned	Comments
							Latitude	Longitude							
15	JFE3	1249	BE	CTD		89	48 23.224	124 14.999	184						
		1252	BO				48 23.224	124 14.999		181					
		1254	EN				48 23.224	124 14.996							
15	JFE2	1331	BE	CTD		90	48 25.252	124 15.023	135						strong smell of
		1333	BO				48 25.253	124 15.022		130					bacon in the
		1335	EN				48 25.255	124 15.019							air.
15	JFE1	1358	BE	CTD		91	48 27.258	124 15.043	27						
		1358	BO				48 27.258	124 15.043		27					
		1358	EN				48 27.258	124 15.043							
15	JFC1	1630	BE	CTD		92	48 20.201	123 44.912	60						Wind 29@283°
		1634	EN				48 20.203	123 44.914		55					5m off bottom
15	JFC2	1659	BE	CTD		93	48 18.506	123 45.001	173						
		1703	BO				48 18.540	123 45.012		170					Oddly well mixed at bottom
		1705	EN				48° 18.528	123' 44.996'							
15	JFC3	1733	BE			94	48° 16.58	123 45.005	184						
		1737	BO				16.610	123 45.950		181					2.5 m off bottom
		1740					48° 16.639	123 44.934							
15	JFC4	1808	BE			95	48° 14.414	123 45.060	169						4.0m
							48° 14.418	123 45 030		165					

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[illegible]

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