

DAILY LOG BOOK

MISSION
NUMBER

2003-27
LEG 1 + 2

DATE:

From: Aug 30

to:

VESSEL:

J. P. TULLY

PROJECT:

STATION PAPA

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

Captain: P. Frost First Officer: Garry
Second Officer: Al Third Officer: ZB

Mission Participants / Agencies: DSAP

Scientific Personnel:

Name	Party Chief:	Watch	Cabin	Name	Watch	Cabin
<u>Keith Johnson</u>	<u>Frank Whitney</u>			<u>Tawuna Peterson</u>		
<u>Marty Davelaar</u>		<u>8-12</u>		<u>Mike Bentley</u>		
<u>Wes J Sutherland</u>						
<u>Donet Jannell-Clarke</u>						
<u>Sheila Toews</u>		<u>4-8</u>				
<u>Alun Tran</u>		<u>4-8</u>				
<u>Hugh Maclean</u>		<u>8-12</u>				
<u>Rory Perkin</u>						
<u>Andrew MacDonald</u>		<u>12-4</u>				
<u>Marie Robert</u>		<u>12-4</u>				

Second leg of Mission:

Name	Party Chief:	Watch	Cabin	Name	Watch	Cabin
<u>ROD PERKIN</u>	<u>FRANK WHITNEY</u>	<u>4-8</u>		<u>MICHELLE FRANKIN</u>	<u>0-4</u>	
<u>SHEILA TOEWS</u>		<u>8-12</u>				
<u>DARREN TUELLE</u>		<u>0-4</u>				
<u>HUGH MACLEAN</u>		<u>8-12</u>				
<u>JANET BARWELL-CLARKE</u>						
<u>NES SUTHERLAND</u>						
<u>MARK YUNKER</u>						
<u>MAGNUS ECKH</u>						
<u>SARRINO CRISPO</u>						
<u>ANNA LECHI</u>						
<u>SEANNA BUCHANAN</u>		<u>4-8</u>				

Data logging computer:

ESDI

Data acquisition program:

CTD deck unit make: Seabird model: 11 serial number: 0619

Primary CTD

Make: Seabird model: 11 serial number: 0550

Primary temperature serial number: 2038

Primary conductivity serial number: 2173

Secondary temperature serial number: 2968

Secondary conductivity serial number: 1729

Transmissometer: Chelsco (Whitby) Model: Seneca s/n: 498 DR

Fluorometer: Model

Cable gain: 10x 0.15 s/n: 2229 P, S or NO pump?

Oxygen sensor: SBF Model: 43 s/n: 0047 P, S or NO pump?

PAR sensor: Model: LICOR s/n: 4565

Other sensors: Pressure - Digiquartz with TC s/n: 75636 P, S or NO pump?

Other sensors: ALTIMETER s/n: 1024 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:

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

PAR sensor: Model: 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?

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

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

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month AUGUST				Year 2003			Ship JOHN P. TULLY				Cruise ID 2003-27				
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							
30	SI03	2102	BE	ROS	US	1	48° 35.94	123° 30.05	225				MR		+3 bottles closed for pp.
		2107	BO				48 39.95	123 30.02		220	1-13	13			Spiky Secondary T
		2124	EN				48 39.96	123 30.04							
30	SI03	2234	BE	^{ROS} CTD	US	2	48 35.94	123 30.19	225	200	—	0			TEST CAST-down then up then down, up.
		2239	BO				48 35.99	123 30.13							All bottles fired at 25m
		2250	EN				48 36.10	123 30.06							
31	JF01	0415	BE	Loop		*	48 15.91	123 30.03	137						Loop - CHL/NUTS/SAL
31	JF02	0603	BE	Loop		*	48 18.01	124 00.05	176						Loop - CHL/NUTS/SAL
31	JF03	0800	BE	Loop		/	48 27.00	124 30.01	224						Loop - CHL/NUTS/SAL
31	JF04	1002	BE	Loop		/	48 32.31	125 00.00	~70						"
31	P1	1225	BE	CTD		3	48 34.508	125 29.946	113				ST/RP	✓	
		1231	BO	ROS			48 34.53	125 29.94		105		+			
		1235	EN				48 34.55	125 29.96							- bottle didn't
31	P2	1535	BE	ROS		4	48 36.07	125 59.856		70			M/M		trip - see comments
		1537	BO				48 36.02	125 59.87							next pg. P1 Loops
		1546	EN				48 36.02	125 59.92							from sink.
31	P2	1707	BE	ROS	U.S.	5	48 35.97	126 00.05	115	110			H.M.		
		1709	BO				48 35.97	126 00.05			33-39		M.D.		
		1717	EN				48 36.006	126 00.010							

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

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Time Code

BE = beginning 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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- All connectors were regreased after cast 1 to fix spiky Secondary T

- Cast 2: All bottles fired at 75m to soak them. - no samples.

→ MOUNTED PAR SENSOR AFTER S13 CAST

→ P1 → BOTTLE DIDN'T FIRE. I WENT IN & CHECKED CAROUSEL CONFIG. FILE + IT WAS INCORRECT. DIDN'T HAVE THE SBE CAROUSEL SELECTED. AT END OF LAST CAST THE COMPUTER CRASHED AND IT MAY BE RE-SETTING THIS !! WE'LL HAVE TO WATCH IT. (S.T.) [I DID AN AIRTEST + IT'S FIRING NOW]

STN P2 2 60-FLO SAMPLES 10m + 20m

DAILY LOG

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DAILY LOG																Ocean Sciences and Productivity Division																Cruise ID 2003-27															
Month Aug / Sept				Year 2003				Ship Tully																																							
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																																							
31	P2	1806	BE	NET		6	48 35.946	125 59.97	117	100			H.M./M.D.		BONGO																																
31	P3	2028	BE	ROS	US	7	48 37.48	126 19.93	814					✓	Big Swell																																
		2042	BO				48 37.48	126 20.01		665	40	1	MR/AM																																		
		2052	EN				48 37.51	126 20.03																																							
31	P4	2340	BE	ROS		8	48 39.01	126 39.93	1322		41-59	19	R.P./ST./A.T		Bottle 9 was closed on immersion																																
1		00:01	BO				48 39.005	126 39.97	1300						Primary temperature off scale about 600m																																
		00:52	EN				48 38.99	126 39.98																																							
1	P4	0300	BE	BOT		9				300	GO-FLO'S	4	KJ/M.D		Cast 8 = Cast 8+9																																
	P4	0045		PUMP		9A				40	IRON	4	KJ		10, 20, 30 + 40 m																																
1	P4		BE	NET		10	CANCELLED		1330	250	*		H.M./M.D		BONGO →																																
1	P5	0947	BE	USW		—	48 41.49	127 09.90	?		LOOP				LOOP SAMPLE																																
→	CTD	CANCELLED				TOO	WINDY																																								
1	P6	1422	BE	CTD		11	48 44.59	127 39.99	2546		Loop		ST/AT		Loop →																																
		1447	BO				48 44.69	127 40.01		2000																																					
		1510	EN				48 44.70	127 40.01																																							

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STN P 3 2 GO-FLO SAMPLES FOR IRON 10m + 20m

→ Comm error $\approx$ 460 m. Over light on + beep. Stop @ 460 m on way down. for $\sim$ 1 min then keep going down.

Fluorometer giving bad data. Spikes in primary T+S

No good data after 650. in primary sensor. Come back up.

Primary sensor back @ 200 m on way up.

Grease all the connectors @ both ends of CTD

⇒ problem with software (All bottles have been fixed for some reason)

→ the program wouldn't let us close any bottles, so I had to close everything down + restart as inst #009 - bottles fixed OK after that. (ST)

- still a problem with the temp & conductivity sensors

} PAF
cost 8+
9.
ST.

* CTD TAKEN OUT OF ROSSETTE AND INTO SINGLE FRAME - USE GO 1015 for "water sampler type"

→ 700 m alarms + spikes Event 11

- CHANGED PRIM TEMP CTD → INSTRUMENT CABLE

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Month <u>SEPTEMBER</u>				Year <u>2003</u>				Ship <u>JOHN P. TULLY</u>				Cruise ID <u>2003-27</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							
1	P7	1801	BC	CTD		12	48 46 586	128 10 003	2505		Loop	—	H.M./M.D.		Loop
		1831	BO				48 46 566	128 10 001		2000					}
		1850	EN				48 46 539	128 10 004							
1	P8	2151	BC	ROS	US	13	48' 49.00	128' 40.02	2519						
		2231	BO				48' 49.03	128' 40.02		2532	60-80	21			CTD back in Route
		2319	EN				48' 48.96	128' 40.06							+ LOOP while @ 4m ↑
2	P8	0027	BE	NET		14	48 49.001	128 40.001		150			ST/EP		Bongo 0-150m
2	P9	0254	BC	ROS	U.S.	15	48 51 37	129 09.95			81-103	24	H.M./M.D.		Bottle leak test
		0322	BO				48 51 39	129 09 95							and total CO ₂
		0348	EN				48 51 38	129 10 02							LOOPS TAKEN
2	P9	0400	BC	BOT		16	48 51 40	129 10 00		20		2	H.M./M.D.		* BOT # 10, 11, 13 TOP AIR VENT OPEN
2	P10	0642	BC	CTD ^{ROS}	U.S.	17	48 53 621	129 39 899	2641				H.M./M.D.		Go FLOS 10/20m
		0709	BO				48' 53.58	129' 39.99		2000	104	1	H.M./M.D.		CTD Loop @ 4m
		0732	EN				48' 53.59	129' 39.97							FINISH
2	P10	0743	BO	BOT		18	48' 53.59	129' 40.00	2639	20					2 Fe Go-Flos
2	P11	1023	BC	ROS	US	19	48' 55.97	130' 10.00	2751						1 NISK + LOOP @ 4m ↑
		1058	BO				48' 56.00	130' 10.00		2000	105	1	ST		
		1120	EN				48' 56.04	130' 09.99							

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Cast 12: New primary cables: no spikes or errors. Put the CTD back in ^{the} frame

frame

P9 - (23) ALL BOTTLES @ 2000m - BOT¹ 10, 11, 13 - TOP AIR VENT LEFT OPEN

→ When I went to put the syringes on the CTD, the triton wasn't going in the 1^P (left) sensor properly.
→ Looking closer the sensor was pushed up causing a kink in the ^{bottom} white plastic connection tube.
 I loosened the housing for the sensor & slid it down. (ST)

before after

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Month <i>Sept</i>				Year <i>2003</i>				Ship <i>Tully</i>				Cruise ID <i>2003-27</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							
2	P11			Go-flo	Ness	20	48° 56.04	130° 09.99					ST	✓	
	P12	1409	BE	ROS		21	48° 58.18	130° 39.94	3229						Phyto cast
		1412	BO				48° 58.18	130° 39.95		100	106-123	18			
		1429	FN				48° 58.25	130° 39.96							
2	P12	1500	BC	BOT	Micro	22	48° 58.19	130° 39.95		100			HM/MD		Go-FLO's
2	P12	1608	BC	ROS	VS	23	48° 58.19	130° 39.96	3227		124-146	23			
		1653	BO				48° 58.26	130° 39.94		3274					
		1759	GH				48° 58.19	130° 40.00							
2	P12	1937	BO	NET	/	24	48° 58.22	130° 40.01		150					
	PAR SENSOR ON, FLUOROMETER OFF														
2	P12	2103	BE	ROS		25	48° 58.19	130° 40.00	3227						wrong depth in header
		2108	BO				48° 58.19	130° 40.02		150					
		2111	FN				48° 58.19	130° 40.03							
	PAR SENSOR OFF, FLUOROMETER ON														
3	P13	0158	BE	CTD		26	49° 02.67	131° 39.97	3004.5		147-148				Winch paused
		0228	BO	ROS			49° 02.63	131° 39.98							at 800m, ascending, possible overheating
			FN												
3	P13	0300		GO-FLO		27	49° 02.53	131° 40.01		20		2	HM/MD		Surf 10+20 m

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LOOP SAMPLING P13-P20 (warm water transition)

- ① Loops from all stations
- ② 4m Nisk from CTD stations
- ③ Record thermal T

	LONG (W)	T (C)	S
P13	131° 40'		
P14	132° 40'	16.40	32.15
P14.5	133° 10	16.03	32.32
P15	133° 40	15.13	32.35
P15.5	134° 10	15.017	32.366
P16	134° 40	14.630	32.337
P16.5	135° 10	14.67	32.35
P17.	135° 40'	14.42	32.37
P17.5	136° 10'	14.50	32.34
P18	136° 40'	14.52	32.32
P18.5	137 10	14.52	32.32
P19	137 40	14.28	32.34
P19.5	138 10	14.35	32.32
P20	138 40	14.03	32.37

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Month				Year			Ship				Cruise ID				
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							
3	P14	0758	BE	ROS	US	28	49° 07.44	132° 39.99	3311						
		0830	BO				49° 07.61	132° 40.00		2000	149	1	MR/AM		NISK + LOOP
		0852	EN				49° 07.51	132° 39.93							
3	P14	0908	BO	BOT		29	49° 07.41	132° 39.98	3310	20		2			10, 20
3	P14.5	1137		USW		30	49° 09.72	133° 10.32	5225		Loop		RP/AT		
3	P15	1350	BE	ROS	US	31	49° 12.00	133° 40.02	3405	2000	150	2	RP/AT/ST		Loop + Bottle at 4m
		1422	BO				49° 12.08	133° 40.68		2000					Sel. 1995 m
		1446	EN				49° 11.99	133° 41.45							for Pen
	P15	1500	BE	BOT	NES	32	49° 11.99	133° 40.02		30					Go-FLO's
3	P15.5			USW		33	49° 14.00	134° 10.00			Loop				
3	P16	2052	EN	BOT	/	34	49° 17.12	134° 39.86		30					PUMPING + GO-FLO's
3	P16	2110	BE	ROS	US	35	49° 16.93	134° 40.01	3623				MR/AM		
		2200	BO				49° 17.02	134° 40.05		3685	151-174	24		✓	+LOOP
		2313	EN				49° 16.99	134° 40.19							Frontal with
		2330		BOT	NES	36									winch overhauling
4	P16	0026	BE	NET		37	49° 16.99	134° 40.19		150					at 400m - stayed
4	P16.5	0232	BE	USW			49° 19.03	135° 10.02							there for 5 min
															50.

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INSTITUTE OF OCEAN SCIENCES

Month <u>SEPTEMBER</u>				Year <u>2003</u>			Ship <u>JOHN P. TULLY</u>				Cruise ID <u>2003-27</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							
4	P17	0539	BE	CTD	US	38	49 20 990	135 40 124	3544	2000			HM/MD		NISK + LOOD
		0610	BO				49 20 994	135 39 996			175	1			
		0630	EN				49 21 014	135 40 030							
4	P17	0645	EN	BOT	EN	39	49 20.97	135 40 01		20		2			2 Go-Flos
4	P17.5	0848	BE	USW		—	49 23.52	136 10.03	3707						LOOP
	P18	1104	BE	CTD	US	40	49 25.99	136 39.99					ST		
		1131	BO	ROS			49 25.94	136 40.06	3817		176	2			Loop at 4m +
		1155	EN				49 26.03	136 39.99		2000					sal@1996 for Ros
		1215		BOT	NES	41	49 25.91	136 39.98		20/10m		2			
4	P18.5	1430		USW		—	49 28.194	137 10 22							→
4	P19	1639	BE	CTD	US	42	49 29 962	137 40 060	3911		177	2	HM/MD	✓	Loop@ 4m →
		1706	BO	ROS			49 30 03	137 40 22		2000					DEEP SAL@
		1727	EN				49 30 09	137 40 05			no s/n bottom				
4	P19	1744	EN	BOT	HUGH	43	49 29 96	137 39 96		20	178	2	HM/MD		Go FLOS 2x10m
4	P19.5	1948	BE	USW		—	49 31.85	138 10.03	3964						Loop
4	P20	2203	BE	ROS		44	49 33.97	138 39.96	3949						
		2301	BO		US		49 34.25	138 40.14		4020	178-201	24	ST	✓	
5		0007	EN				49 34.08	138 39.98							
5	P20	0030		Go-Flo		45	49 34.00	138 40.001			—				Fe sampling

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→ Change the fluorometer cable between P18 and P19 Data look ok @ P19.

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Month <i>September</i>				Year <i>2003</i>			Ship <i>Tully</i>				Cruise ID <i>2003-27</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							
5	P20	0333	BO	NET		46	49 34.02	138 39.98	3940	150			HM/MD		BONGO
5	P21	0758	BE	ROS		47	49 37.99	139 40.08	3940					✓	
		0826	BO		US		49 37.99	139 40.00		2000	202	1	MR/AM		
		0847	EN				49 38.01	139 39.98							
5	P21	0859	EN	BOT		48	49 38.00	139 39.98	3939	10	—	1			Fe Go-Flu
5	P22	1312	BE	ROS		49	49 41.98	140 40.04	3873		203-204	2	ST/RP		4m Nisk +
		1344	BO				49 42.02	140 39.98		2000					deep sal @ 2000m
		1405	EN				49 41.95	140 39.97							
5	P22	1414	BO	BOT		50				10		1			Fe Go-Flu
5	P23	1835	BE	BOT	MARTY	51	49 45.99	141 40.04	4032	20		2	HM/MD		Go FLO's
5	P23	1847	BE	~~CTD~~ ROS	US	52	49 46.01	141 40.03	4032						
		1915	BO				49 46.00	141 39.98		2000	205	1	HM/MD	✓	
		1936	EN				49 45.95	141 39.99							
5	P24	2345	BE	ROS	US	53	49 50.22	142 40.13	3970	2000	206, 207	2	ST/RP/AT		1 bottle at 2000 m 1 bottle at 4 m
6		0015	BO				49 50.28	142 40.15							
		0040	EN				49 50.19	142 40.30							
6		0051	BE	BOT	NESS	54	49 50.23	142 40.45	3971	10					

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28 May 2003
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2003			Ship TULLY Sounding dbar				Cruise ID 2003-27				
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							
6	P25	0506	BE	CTD ROS	US	55	50 00 01	143 36 16	4059	2000	208	1	HM/MD		4m Loop
		0536	BO				50 00 01	143 36 24							
		0557	GM				49 59 97	143 36 22							
	P25		EM	BOT	HUGA	56	.			20		2	HM/MD		GO FLO's
6	P35	0927	BE	ROS	US	57	49°59.80	144°17.98	4127						
		0956	BO				49°59.75	144°18.16		2000	209	1	MR/AM		
		1017	EN	.			49°59.65	144°18.22							
6	P35	1027	BO	BOT	—	58	49°59.73	144°18.32	4127	10		1			Go FLO
6	P26	1337	BE	ROS		59	50°00.04	144°59.72	4223				ST/AS/RP		Cast to 4200m
		1444	BO				50°01.29	144°58.86		4291	210-233	24	HM/MD		DIC in triplicate
	*NEXT PKG	1634	EN				50 02 44	145 00 27							
6	P26	1933	BE	ROS	—	60	50 00.00	144 59.97	4225		—	0			PAR cast
		1938	BO				50°00.00	144°59.98		200					
		1941	EN				50°00.01	144°59.99							
6	P26	1959	BO	NET	—	61	50°00.05	145°00.00		150					BONGO
6	P26	2000	BE	BOT		62	"	"	4225	800		9			GO FLO'S (PUMP 7 depth)
7	P26	0508	BO	NET		63	50 00 03	144 59 92	4225	150			HM/MD		BONGO
7	PAK	SENSOR OFF				FLUO	ROMETER		ON						

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PAR at P26 1345 PDT Sep 6

~~Depth~~ PAR ($\mu\text{E m}^{-2}\text{s}^{-1}$)

* - SWITCHED FLUOROMETER TO PAR AFTER DEEP CAST

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month SEPTEMBER				Year 2003			Ship JOHN P TULLY				Cruise ID 2003-27				
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							
7	P26	1303	BE	ROS	US	64	49°59.998	144°59.852'W	4195	100	234-241				
		1305	BO				49°59.96	144°59.99							
		1318	EN				49°59.98	144°59.92							
7	P26	1455	BE	DRF			50.00.019	145 00 .017	4223	100					Prod Drifter In
7	P26	1600	→	1930 OFF			50 00 019	145 00 017							3.5 kN ON
8	L1	0242		LOOP		65	50 17.96	143 52.56	4066	Loop					S, mut, chl
8	L2	0600		LOOP		66	50 30.30	143 04.32							
8	L3	0827		Loop		—	50 33.23	142 34.25	3?						
8	L4	1100		Loop			50 36.00	142 46 78		Loop			ST		
8	WPI	1538	BE	SOUNDER			50 36 013	142 36 05							START 3.5 LINE
		1745	EN	"			50 35.92	142 40.08							Eld Merton Survey
8	L5	1858	BE				50 28 89	142 26.60	2	Loop					
8	—	2049	BE				50 17.992	142 05.881	3237						START CAMPBELL SMT SURVEY
8	—	2244	EN				50 17.988	141 48.350	2823						END OF SURVEY
8	CSI	2302	BE	ROS		65	50 17.93	141 48.04	3113				STIRP/AT	✓	
		2330	BO				50 18.005	141 48.03		2006	242-260	19			
9		0005	EN				50 17.96	141 48.00							

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8 Sept

1530-1745

Surveyed Merton Seamount with 12kHz + 3.5kHz looking for suitable coring site.
No sediment bed found, "caldera" proved to be a valley with little sediment.

Proceed to Campbell Smt for survey

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship				Cruise ID				
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							
9	NEW 1	0435	BE	ROS	US	66	50 41 01	140 58 95	3902		261	1	HM/MD	✓	4m Loop
		0506	BO				50 41 03	140 58 99		2000					
		0526	EN				50 41 06	140 58 85							
9	R16	0925	BE	ROS	US	67	51° 03.99	140° 13.92	3765					✓	
		0959	BO				51° 03.99	140° 14.02		2001	262	1	MR/AM		
		1020	EN				51° 04.00	140° 13.98							
9	R15	1339	BE	~~CTD~~ ROS		68	51° 05.98	139° 30.49	2977		263-264		AT/RP/ST	✓	Loop @ 4m + sal at bottom
		1411	BO				51° 05.99	139° 30.61		2002					
		1432	EN				51° 06.02	139° 30.68							
9	R15	1442	BE	BOT		69	51° 06'00	139° 30 68	2977	10		1	KS/RP		Go FLO Sur Fe
9	R14	1750	BE	BOT		70	51 09 00	138 47 52		10			HM/MD		Go FLO's
9	R14	1757	BE	ROS	US	71	51 09 02	138 47 49	2668				HM/MD		
		1827	BO				51 09 007	138 47 467		2000	265-284	20	MR/AM		
		1908	EN				51° 09.09	138° 47.52							
9	R13	2217	BE	ROS	US	72	51° 11.04	138° 06.00	3645				MR/AM	✓	
		2250	BO				51° 11.015	138° 05.97		2000	285-	1	AT/ST/RP		2000m sal + loop
		2312	EN				51° 11.01	138° 05.99			286				at 4 m.
9	R12		BE	ROS	US	73				2000	287-288	2	AT/ST/RP		2000 m + 4m
10	R12	0120	BE	BOT	Keith	73	51° 13.07	137° 23.15	3635	10		1			

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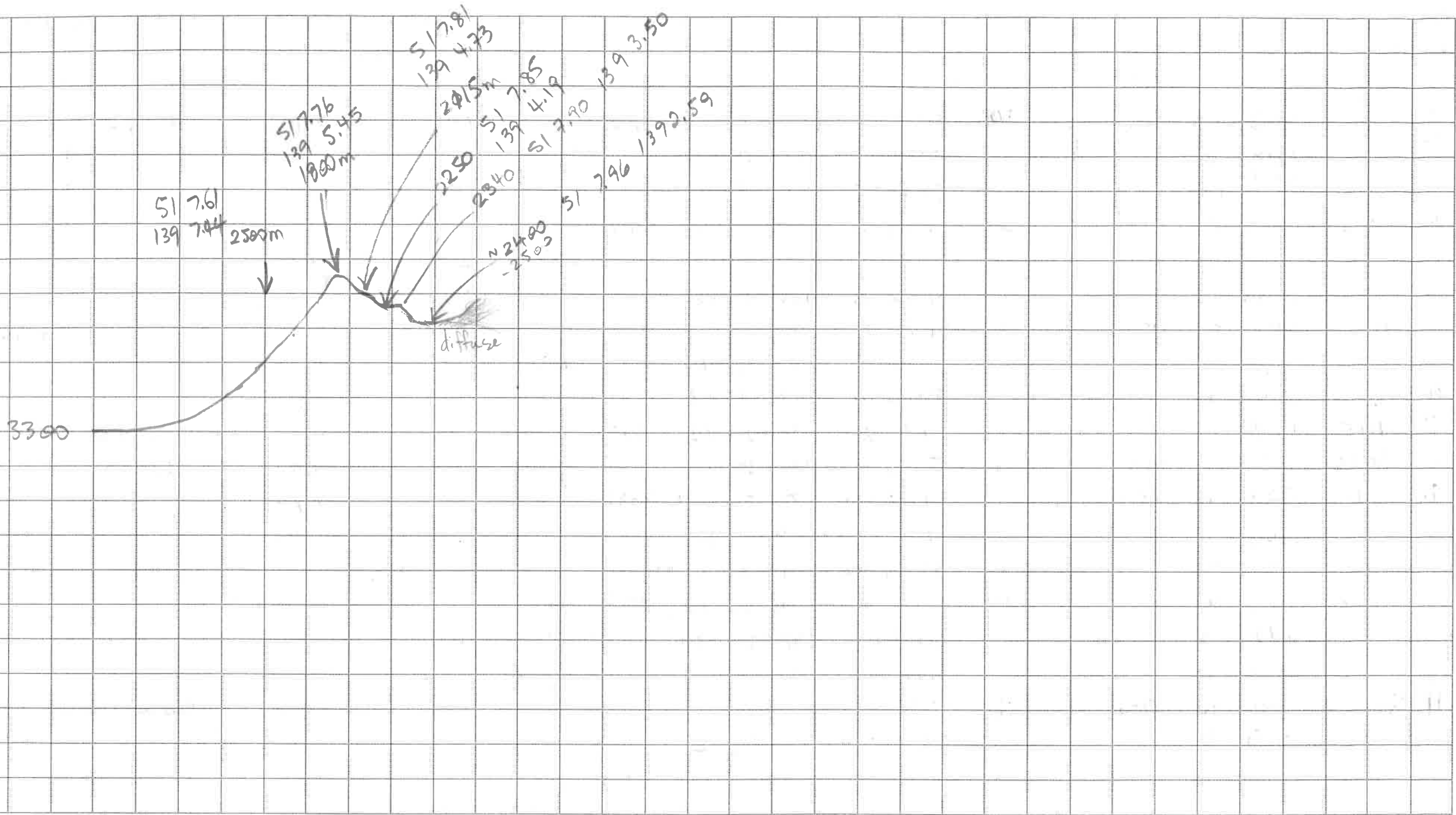
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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Sept</i>				Year <i>2003</i>			Ship <i>Tully</i>				Cruise ID <i>2003-27</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							
10	R12	0233	BE	ROS	US	74	51 13.07	137 23.00	3633		287-288	2	RP/AT/ST		Nisk at 4m+ at 2000 m
		0304	BO				51 13 04	137 23 04		2000			MR/MD		
		0326	EN				51 13 03	137 23 07							
10	L6 (ED1)	0652	BE	USW	—	—	51 22.16	136 39.23	~4150	Loop	L6				T: 14.94 S: 32.09
10	L7 (ED2)	0818	BE	USW	—	—	51 22.14	136 19.93	~3600	Loop	L7				T: 14.87 S: 31.97
10	L8 (ED3)	0902	BE	USW	—	—	51 22.16	136 09.88	~3700	Loop	L8				T: 14.85 S: 31.96
10	L9 (ED4)	0957	BE	USW	—	—	51 22.27	136 00.26	~3600	Loop	L9				T: 14.92 S: 31.99
10	L10 (ED5)	1109	BE	USW	—	—	51 22.18	135 49.52	~5600	Loop	L10				T: 14.62 S: 31.96
10	L11 (ED6)	1216	BE	USW			51 22.16	135 39.22	5174	Loop	L11		RP/ST		T: 14.652 S: 31.930
	L12 (ED7)	1324					51 22 21	135 29.82	3569	Loop	L12		RP/ST		T: 14.422 S: 31.948
10	L13	1901	BE	USW	—	—	51 25.60	134 39.42	3340	Loop	L13		MR		T: 14.65 S: 32.02
10	L14	2258	BE	USW			51 25.732	133 50.248	3091	Loop	L14		RP/AT		T: 15.09 S: 32.11
11	L15	0305	BE	USW	—	—	51 19 769	132 47 765	2852	Loop	L15		MD/HM		T: 15.23 S: 31.68
11	L16	0700	BE	USW	—	—	51 14.34	131 48.17	2580	Loop	L16		MR		T: 15.20 S: 31.72
11	NEW 2	1109	BE	ROS	US	75	51 08.52	130 45.76	1987		290-309	21	RP/AT/ST		
		1142	BO				51 08.52	130 45.99		1970					
		1219	EN				51 08.67	130 45.97							
11	Survey	1449	BE	3.5kHz		76	51 4.70	130 14.24			—	—			Souder survey
		1745	EN				51 8.08	129 53.52							

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Sep 11 1400 Start 3.5 kHz sounder in deep water (>2000m). Survey into slope canyon, looking for coring site.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship Tully			Cruise ID 2003-27					
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							
11	SS1	1810	BE	Core		76	51° 8.08	129° 53.50	1392	1468m			HM/MD		Gravity core (short)
		1850	EN	Core											
11	SS1	1913	BE	ROS	US	77	51° 08.09	129° 53.41	1394				MR/AM	✓	Spikes in FE + Tr.
		1935	BO				51° 08.07	129° 53.45		1390	310-329	20 1+21			
		2008	EN				51° 08.07	129° 53.47							
11	SS1			BOT	Mesh	78				10m		1			Go FLO
	SS2	2150	BE	BOT		79	51° 12.95	129° 42.00	480	10m					Go flo for iron
	SS2	2210	BE	CORE		80	51° 12.95	129° 42.08	490	490					Gravity core
	SS2	2226	EN	CORE			51° 13.08	129° 42.08							No sample
11	SS2	2230	BE	CORE		81	51° 13.08	129° 42.04	490						
		2240	BO				51° 13.078	129° 42.028							
		2245	EN				51° 13.07	129° 42.04							
11	SS2	2300	BE	ROS	US	82	51° 13.07	129° 41.92	493						
		2308	BO				51° 13.02	129° 41.88		482	330	1	MR/AM		4m Nisk.
		2314	EN				51° 12.97	129° 41.91					ST/RP/AT		
12	SS3	0053	BE	ROS		83	51° 14.48	129° 20.90	295		331-341	11	ST/RP/AT		
		0102	BO				51° 14.50	129° 20.93							
		0116					51° 14.50	129° 20.96		292					
	SS3			BOT	Mesh	84				10m		1	KS/RP		Go FLO

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1850 ~1/2 meter core recovered. Steady gas emission from bottom of core - ? gas hydrates?
Strapped core upright to allow degassing

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month 9/				Year 2003			Ship TULLY				Cruise ID 2003-27				
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	SS4	0314	BE	ROS	US	85	51 20 99	128 59 89	241		342	1	NM/MD		4m Niskin
		0317	BO				51 20 99	128 59 92							
		0321	EN				51 21 00	128 59 93							
	SS4	0325	BE	BOT	MES	86				10m					go f/o
12	SS5	0550	BE	ROS	US	87	51 28 02	128 29.90	201		343-353	11	NM/MD	✓	
		0554	BO				51 28 01	128 29 89							
		0608	EN				51 28 03	128 29 87							
12		0613	BE	BOT	MES	88	51 28 03	128 29 87		10M			NS/HM/MD		go f/o
12	SS6	0911	BE	ROS	US	89	51 19.46	127 59 97	161				MR/AM	✓	
		0916	BO				51 19.47	128 00 01		143	354	1			Bottom?
		0919	EN				51 19.47	128 00 00						✓	
12	SS7	1054	BE	ROS	US	90	51 24.83	127 47.46	125				ST/RP/AT		
		1059	BO				51 24.83	127 47 45		120	355-362	8			
		1103	EN				51 24.82	127 47.46							
	RI1	1211	BE	ROS	US	91	51 26.39	127 38.10	335						sounder not working.
		1219	BO				51 26.41	127 38.14		325	363	1			
		1223	EN				51 26.40	127 38.13							
12	RI2			ROS							364-				

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DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Sept</i>				Year <i>2003</i>			Ship <i>Tully</i>			Cruise ID <i>2003-27</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							
12	Ri 2	1313	BE	RDS	US	92	51'31.24	127'33.60	335		364-376	13	RP/ST/AT		- #10 spigot was
		1320	BO				51'31.24	127'33.60		330					hard to open -
		1332	EN				51'31.26	127'33.59							changed ^{spigot's} all 3
	Ri 3	1440	BE	RDS		93	51'35.89	127'32.07	324		377	1			o-rings. (ST)
		1445	BO				51'39.90	127'32.08							- 4m Nisk.
		1449	EN				51'35.90	127'32.07							
12	Ri 4	1551	BE	RDS	US	94	51'38.90	127'26.72	297		378-390	13	HM/MD		
		1557	BO				51'38.91	127'26.67		295					
		1613	EN				51'38.92	127'26.72							
12	Ri 4	1652	BE	CORE		95	51'38.91	127'26.68		296	—		HM/MD		Gravity core
		1701	BO				51'38.92	127'26.70							
12	Ri 5	1757	BE	RDS		96	51'40.70	127'19.91			391		HM/MD	✓	4m Niskin
		1800	BO				51'40.70	127'19.87							
		1808	EN				51'40.70	127'19.87							"on" on deck ~ 5 min.
12	Ri 2	1946	BE	CORE		97	51'31.23	127'33.64	332		—		HM		GRAVITY CORE
		1956	BO				51'31.24	127'33.61							
		2002	EN				51'31.24	127'33.61							
	FLUOROMETER OFF														
	ALTIMETER ON														

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RI 4 When ~~13~~ Nisk 13 was stripped, 14 also closed on this cast, confirming misfires throughout cruise.

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month ~~SEPTEMBER~~				Year 2003			Ship JOHN P TULLY				Cruise ID 2003-27				
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	FC1	0152	US	ROS	US	98	52°08.70	127°52.28	597		392		RP/ST/AT	✓	
		0202					52°08.69	127°52.23		591					Nisk @ 4m
		0209					52°08.76	127°52.22							
13	DC1	0522	BE	ROS	US	99	52 24 18	127 24 16	487		393-407	15	HM/MD		
		0530	BO				52 24 23	127 24 12		509					
		0553	EN				52 24 25	127 24 12							
13	LC1	0730	BE	ROS	US	100	52 22.50	127 12.97	490?					✓	Altimeter not working
		0740	BO				52° 22.51	127° 12.96		507	408	1	MR/AM		100%, starts @ 35 h
		0745	EN				52° 22.51	127 12.91							go, go to 100 when 5 left
13	BC1	0931	BE	ROS	US	101	52°13.39	127°24.97	585?						
		0943	BO				52° 13.38	127° 25.03		586	409-424	16	MR/AM		
		1003	EN				52°13.25	127° 25.12							
13	BC2	1117	BE	ROS	US	102	52°06.99	127°37.95	384		425	1	ST/RP/AT		4m Nisk
		1123	BO				52°06.95	127°37.98		380					
		1127	EN				52°06.91	127°38.05							
13	FH1	1344	BE	ROS	US	103	51°51.99	127°58.04	318		426-439	14			
		1350	BO				51°51.99	127°57.97		312					
		1406	EN				51°51.88	127°58.06							

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INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship				Cruise ID				
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	FH 2	1514	BC	ROS	US	104	51 45 018	127 57 035	381		440	1	HM/MD		4m NISHIN
		1521	BO				51 45 006	127 56 992		378					
		1526	EN				51 45 012	127 56 954							
13	FH 3	1637	BC	ROS	US	105	51 38 02	127 54 00	312		441-454	14	HM/MD		NH ₄ CAST
		1643	BO				51 37 99	127 54 01		310					
		1701	EN				51 38 03	127 53 98							
13	FH3.5	1715		LOOP			51 36.46	127 53.28				1			MISSED SFC AT FH3
13	FH 4	1814	BC	ROS	US	106	51 30 99	127 50 96	164			1	HM/MD		4m NISHIN
		1818	BO				51 31 00	127 50 95		162					
		1820	EN				51 31 02	127 50 93							
	END OF LEG 1, proceed to PORT HARDY														
16		0100	BC				50 57 97	127 45 38		THERMO SALINOGRAPH	TURNED ON				

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LEG 2

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship				Cruise ID				
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							
16		1400	BE	3.5KHz			52 34.34	130 5.999							Acoustic Survey
16	JPI	1516	BE	ROS		107	52 38 96	130 12.59	252		455 - 472	18	HM/RA	✓	
		1522	BE				52 38 96	130 12 61							
		1544	EN				52 38 96	130 12 60							
16	JPI	1610		SKIMMER IN ZODIAC, left ship											
		1620		Trace Metal sample											
		1730-1915		3.5 KHz Survey											
16	JPI	1926		Go-flo		108	52 37.51	130 17.53	240						UBC trace metals
16	JPI	2040	BO	CORE		109	52 37 53	130 17 55	240	240					Box CORE
	JP2	2155	BE	ROS		110	52 37.872	130 27.989	110		473	1	HM/		CTD
			BO				37.840	28.008		111					Loop bottle @ 4m
			EN				37.862	27.965							
	JP3	0040	BE	ROS		111	52 36 835	130 41 082	135		474-485	12	RP/SF		
			BO				52 36 792	130 41 065		135.4					
		0059	EN				52 36 737	130 41 053							
17	JP3	0213				112	52 36.76	130 40.99	140	BOAT DEPLOYED	FOR SKIMMER				
		0216								SKIMMER DEPLOYED					
17	JP3	0230	BE			113	52 36.822	130 40.097	140	140			RP/SF		BOX CORE
		0234	BO				52 36.852	130 41.093					No good		Just sandy gravel.

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16 Sep
2000

Fire drill, pause in sampling

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month <i>Sept</i>				Year <i>2003</i>			Ship <i>Tully</i>				Cruise ID <i>2003-27</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							
17	JP3	0250	BE	CORE		114	52°36.847	130°41.087	135		~~NO GOOD~~				Box CORE x2
17	JP4	0510	BE	ROS	US	115	52°34.124	130°57.994	124	122	486	1	HM/ST	✓	4m NISKIN
		0514	BO				52°34.13	130°58.007							
		0518	EN				52°34.15	130°58.003							
17	JP4	0458	BE	BOT		116	52°34.131	130°57.848		10m					GO FLO
				ROS											
	JP5	0650	BE	BOT		117	52°31.686	131°12.141	156	100		2			GO FLO
17	JP5	0708	BE			118	52°31.688	131°12.371	156		487-499	13			
		0720	DO				52°31.666	131°12.378		155					* 14 bottles tripped
			EN				52°31.662	131°12.397							
17	JP5			BOT		119	52°31.662	131°12.397	156	50		2			GO FLO
17	JP6	0904	BE			120	52°31.456	131°16.368	240		500	1			4m Niskin
			BO				52°31.437	131°16.368		240					
		0917	EN				52°31.418	131°16.369							* Test rosette fire
17	JP6	0928	BE	BOT		121	52°31.461	131°16.388				1			GO FLO 10m
17	JP7	1008	BE	BOT		122	52°31.166	131°23.976	320			1			GO FLO 10m
17	JP7	1041	BE	ROS		123	52°31.206	131°23.972	330						4m Niskin
		1049	BO				52°31.214	131°23.988			501	1			
		1054	EN				52°31.228	131°23.983							* test rosette fire

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2 box cars — . One brought some gravel on deck.

0915^{UTC} Sept 17 - tested rosette fire - 1-24 - when bottle 13 fired, both 13+14 closed
JP6 - when bottle 14 fired, No joy
- when bottle 15 fired, 15 closed

1100 UTC Sept 17 - test rosette fire - 1-24 - when bottle 13 fired, both 13-14 closed
JP7 - when bottle 14 fired, no joy

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month				Year			Ship				Cruise ID				
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							
17	JP8	1150		BOT		124	52° 33.27	131° 29.87'	331	250	711-717	2			GO FLO
	JP8	1228	BE	ROS	US	125	52 33.24	131 29.83	334	332	S02-S17		RP/SB		
		1235	BO				52 33.21	131 29.88							
		1303	EN				52 33.22	131 29.98							
	JP8	1335		BOT		126	52 33.23	131 29.99		200		4			GoFlo
17	JP9	1546	BE	ROS		127	52 36 18	131 31 88	194		518	1			CTD CAST (2 ND)
		1550	BO				52 36 20	131 31 90							
		1553	EN				52 36 18	131 31 89							
17	H51, H52										519-520				Hot Springs Island
17	JP8	1533	EN	BOT		128	52 36 22	131 31 80	197	10					Go FLO (1 ST)
17	JP8	1708				129	52 33 398	131 30 059	264						Skimmer away
17	JP8	1747	BO			130	52 33.27	131 29.892	325						Box Core
17	JP5	1950	BE	CORE		131	52 31.10	131 12.54	152		NO SAMPLE				GRAVITY CORE
17	JP5	2030	BO	CORE		132	52 31.029	131 12.550	152		NO SAMPLE				GRAVITY CORE
17	L17	2300		USW			52 30.468	131 00.00							LOOP (time 16:00?)
17	L18	21:00		USW			52 24.419	131 32.571							Loop
18	L19	0523		USW			52 22.07	130 15 33							Loop
18	L20	1100		USW			52 11.05	129 03.07	31,580	12,726	-Thermo.				Loop.
18	L21	1303		USW			52 12.06	128 37.61							Loop

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if 17h then 0400 stop 18 ALSO 130 32.57?

CAST 125 - Program crashed when pumps were turned off.

HS1 = near shore in stream

HS2 = in hot pool.

Sept 17 2003 1200 hrs

JP5 - core attempts - gravity core - water only

1300 - Secure decks

1405 - leave station for Milbanke Sound

DAILY LOG

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							Latitude	Longitude							
18	MS1	1444	BC	ROS	US	133	52 22 89	128 32 97	245		521-536	16	HM/FU		
		1449	BO				52 22 92	128 32 98							
		1511	EN				52 22 89	128 32 99							
18	MS1	1530	BE	Go Dos		134	52 22.91	128 32.99		200		2			UBE TM
18	MS1	1627	BO	CORE		135	52 22 90	128 33 01	245						Box core
18	MS1	1657	BE	Go Dos		136	52 22.93	128 33 01		50		3			UBC TM
18	L22	1955		LOOP			52 09.15	128 08.28	56	4					
18	L23	2142		LOOP			51 56.06	128 56.07	328	4					
19	CC	0110		MOR			51 25.00	127 47.18							Mooring recovery
19	OW1	0326	BC	NET		137	51 41 55	127 27 15	237	220					BONGO
19	OW1	0416	BC	CTD	—	138	51 41 55	127 27 14	238						
		0422	BO				51 41 57	127 27 10		230	—	—	HM/SM		CTD/BONGO STATION
		0427	EN				51 41 59	127 27 07							
19	SCAN 1	0512	BC	CTD	—	139	51 38 85	127 27 86	305			—	HM/SM		
		0517	BO				51 38 90	127 27 71		294					CTD ONLY
		0523	EN				51 38 89	127 27 64							
19	SCAN 1	0533	BC	NET		140	51 38 93	127 27 49							BONGO

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							Latitude	Longitude								
19	BI-1		BC	NET		141	51 34.409	127 33.852	109						BONGO	
19	BI-1	0804	BE	CTD		142	51 34.384	127 33.913	130							
		0807	BO				51 34.390	127 33.914		125					CTD-Bickle	
		0809	EN				51 34.390	127 33.916								
19	BI-1	0822	BE			143	51 34.426	127 33.879	126	10					TM cast 10m	
19	Ge-1	0930	BE	CTD		144	51 29.501	127 35.353	183						CTD	
		0936	BO	.			51 29.503	127 35.364		180						
19	Ge-1	0939	EN				51 29.507	127 35.371								
19	Ge-1			GoFlo		145	51 29.513	127 35.367	174						TM cast 10m	
19	Ge-1	1009		NET		146	51 29.509	127 35.370	100	95					Bongo	
19	Mouth	1130		Net		147	51 25 024	127 44.988	102						Bongo	
				GoFlo		148									TM GoFlo 10m	
19	Mouth	1206	BE	CTD		149	51 24.995	127 44.990	100		547	1				
		1211	BO				51 24.993	127 44.975								
		1212	EN				51 24.994	127 44.994								
19	CC	1242	BE	RDS		150	51 24.903	127 47.298	125		537-546	10				
		1247	BO				51 24.907	127 47.311								
		1259					24.973	127 47.309								

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