

DAILY LOG BOOK

MISSION
NUMBER

2009-03

DATE:

From: 27 JANUARY to: 10 FEBRUARY 2009

VESSEL:

JOHN P TULLY

PROJECT:

LINE P

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

Captain:	<u>MURRAY MCGREGOR</u>	First Officer:	<u>MACKENZIE MOSELEY</u>
Second Officer:	<u>DOUG MURDOCH</u>	Third Officer:	<u>RHONA LETAU</u>

Mission Participants / Agencies: TOS, UBE, Uvic, osu, CWS

Scientific Personnel:	Party Chief:	Watch	Name	Cabin	Marie	Robert	Cabin A	0700-1900	Watch	Cabin
Michael Arvink		DMS		B		Doug Moore		12-2400	G	
Karina Giesbrecht		ONAR		C		Keith Johnson		06-1200	G	
Marnie-Jo Zinbel		18-2400		C		DAMIAN GRUNDLE		12-1800	H	
Tara Lamotte		12-2400		D		YIMING LUO		00-0600	H	
Maureen Soon		06-1200		D		MIKE BENTLEY		BIRD	UP	
Bart de Baere		12-1800		E		HUGH MACLEAN		00-1200	DOWN ^{#4}	
Joe Jennings Jr.		00-0600		E		JANET BARKWELL-CLARKE		NUTS.	DOWN ^{#3}	
ANISSA MERZOUK		00-0600		F						
KENDRA MITCHELL		18-2400		F						

Second leg of Mission:

[illegible]

Data logging computer:

Data acquisition program: SEABIRD SEASAVE V7

CTD deck unit make: 586-11 model: 11 + serial number: 0424

Primary CTD

Make: SBC
model: 9
serial number: 0443

Primary temperature serial number: 2038

Primary conductivity serial number: 1729

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: wet Lab Model: s/n: 1005 DE

Fluorometer: Model SeaPoint Cable gain: 10x0.15 s/n: 2228 P, S or NO pump? 2228

Oxygen sensor: sealed Model: 38643 s/n: 0997 P S or NO pump?

PAR sensor: AP05P02C0046 Model: s/n: 4615

Other sensors: ALTA meter s/n: 1252 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?
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Other sensors: _____
s/n: _____
P, S or NO pump? _____

Salary CTD

Secondary CTD

Make: SSC model: 9 serial number: 0550

Primary temperature serial number: 4883

Primary conductivity serial number: 1763

Secondary temperature serial number:

Secondary conductivity serial number: 2754

Transmissometer: WETLAB s/n: 1005 DR
Model: _____

Fluorometer: Model Σ60 Point Cable gain: 10x 0.15 s/n: 2228 **P** S or NO pump? **P**

Oxygen sensor: 5681E4 Model: 568 s/n: 0997 ☒ S or NO pump?

PAR sensor: Biospherical Model: s/n: 4615

Other sensors: Altimeter s/n: 1252 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):

Rosette Setup:

Number of bottles: 24
Manufacturer: GEN. OCEANICS
Volume of Bottles (litres): 10

Winches:

1. Make: _____ Model: _____ Serial #: 17027 used for: Ud-ship
2. Make: _____ Model: _____ Serial #: 17026 used for: Std
3. Make: _____ Model: _____ Serial #: _____ used for: _____

Comments on performance during cruise: _____

Salinometer:

Make: GUILDLINE Model: PORTASAL Serial #: 68627

Comments on performance during cruise: _____

Oxygen Kit # 3

Comments on performance of kit and chemicals: _____

Thermosalinograph System:

Program: SEASAVE WIN32 Version: 5.37A
Sampling interval (seconds): 30
Fluorometer sensor serial number: WS3S-713P

Comments on performance during cruise: _____

ADCP Setup:

Computer time zone: NOT WORKING
Sampling interval (seconds): _____ User Exits: Name: _____ Exit Points: _____
Bin Length (2^x): _____ Name: _____ Exit Points: _____
Pulse Length: _____ Name: _____ Exit Points: _____
Buffer (bytes): _____ Work File: _____
Gyro Offset: _____

Comments: _____

CTD Test Cast Information

Test Cast at IOS Jetty? (optional) yes ☐ no ☒

Comments: (i.e. how did everything work??) _____

Test cast in Saanich Inlet? (recommended) yes ☒ no ☐

If no, give reason: _____

Comments: (i.e. how did everything work??) _____

CTD pressure reading on deck (db): _____
(Should be 0.0 db $\pm$ 0.5)

Pumps working? yes ☐ no ☐
(i.e.. Was the red LED display on the deck unit 0011 and not still 0010?)

Secondary Temp- Primary Temp: _____
(Average from the Mixed Region)

Secondary Salinity- Primary Salinity: _____
(Average from the Mixed Region)

Additional Comments: _____

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

Month JANUARY				Year 2009			Ship J. P. TULLY				Cruise ID 2009-03 p1				
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
28	S103		BE	ROS	U.S.	001	48 35.48	123 30.02	226		1-11	11	ALL	✓	T: S:
		2310	BO												TEST STATION
		2310	EN												stopped cast at bottom
		2317	BO	ROS	U.S.	002	48 35.42	123 30.02	226	216	1-11	11		✓	started cast at bottom
		2336	EN				48 35.46	123 30.05							
29	JF1	0441	BE	USW	—	—	48 16.11	123 30.00	154	—	—	—	T.L/D.M. K.M.		Nut, Chl, Sal
29	JF2	0622	BE	USW	—	—	48 18.05	124 00.00	187	—			T.L/D.M. K.M.		
29	JF3	0820	BE	USW	—	—	48 26.90	124 30.04	240				H.M.		NUTS/CHL/SAL
29	JF4	1044	BE	USW	—	—	48 32.33	125 00.15	35	—	—		H.M.		11
29	P1	1314	BE	ROS		003	48 34.48	125 29.96	120		12	1	H.M./J.J.	✓	1 BOT @ 5m FOR NUT/CHL/SAL
		1317	BO				48 34.50	125 29.94	(116)	105					
		1320	GN		U.S.		48 34.51	125 29.93							
29	P2	1550	BE	ROS		004	48 36.03	126 00.04			13-26	14	H.M./ETAL	✓	
		1555	BO				48 36.03	126 00.04							
		1602	GN				48 36.02	126 00.08							
29	P2	1628	BE	NET		005	48 36.02	126 00.20	116	105			H.M. d Team		BONGO
		1631	BO				48 36.02	126 00.22							
		1633	EN				48 36.00	126 00.23							

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USW = sea water loop

MOR = mooring
 NET = net haul
 DRF = drifter

bottle firing method:

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

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Month JANUARY				Year 2009			Ship J.P. TULLY					Cruise ID 2009-03 p2				
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								
29	P3	1816	BE	ROS	U.S.	006	48 37.50	126 19.99	816		27	1	HA/Tam	✓	1800 5m - SAL/CHL/NO3	
		1828	BO				48 37.49	126 20.00		805					+ Loop	
		1840	EN				47 37.44	126 19.99								
29	P4	2015	BE	ROS	US.	007	48 39.04	126 40.01	1323		28 - 56	23	Tam, Doug, Bart	✓		
		2027	BO				48 39.05	126 40.03		600						
		2059	EN				48 39.04	126 40.08								
29	P4	2159	BE	ROS	US	008	48 39.03	126 40.01	1323					✓		
		2201	BO				48 39.02	126 40.01		50	51-57	7	Tam, Doug, Bart			
		2217	EN				48 39.00	126 40.03								
29	P4	2248	BE	ROS		009	48 39.00	126 40.03	1321						PAR OFF	
		2311	BO				48 39.01	126 40.02		1323						
		2353	EN				48 39.02	126 40.02								
30	P4		BE	NET		10			1313							
		0016	BO				48 38.97	126 39.97		200						
		0023:31	EN				48 38.97	126 39.94							from NAV System	
30	P4		BO	NET		11			1323						PARTS BOW	
		0047	EN				48 38.99	126 39.91		300						

Cast type: USW = sea water loop, bottle firing method: F = firing, T = Trawl, S = surface, B = bottom, N = net, C = CTD, H = hydrograph, L = light, M = magnetometer, P = pressure, R = redox, S = salinity, T = temperature, W = water, X = other

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Month JANUARY				Year 2009			Ship TULLY				Cruise ID 2009-03 p3				
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	P4	0108	BE	NET		12	48° 39.01	126° 40.05	1324						DNA CAST
		0119	BO				48° 39.05	126° 39.98		250					
		0126	EN				48° 39.04	126° 39.96							
30	P4	0149	BE	ROS	US	13	48° 39.06	126° 40.01	1317	1300		24	Tara, Doug, Bort, Dan	✓	#9 didn't fire
		0212	BO				48° 39.05	126° 40.09			82-105				
		0240	EN				48° 39.00	126° 40.07							
30	P4	0353	BE	ROS	US	14	48° 39.08	126° 40.11	1317	1000	106-121	16	Tara, Doug, Marsie, Keado	✓	
		0411	BO				48° 39.05	126° 40.13							
		0431	EN				48° 39.04	126° 39.96							
30	P5	0724	BE	ROS	US	15	48° 41.53	127° 10.00	2090	2005	122	1	TARA MUGIL	✓	BOT @ 5 m
		0754	BO				48° 41.47	127° 09.97							
		0823	EN				48° 41.56	127° 10.02							
30	P6	1053	BE	ROS	US	16	48° 44.65	127° 39.95	2548		123	1	H.M. +	✓	BOT @ 5 m *
		1124	BO				48° 44.62	127° 40.05		2005					
		1153	EN				48° 44.63	127° 39.73							
30	P7	1424	BE	ROS	US	17	48° 46.64	128° 09.75	2506		124	1	H.M. +	✓	*
		1454	BO				48° 46.63	128° 09.61		2005					
		1522	EN				48° 46.61	128° 09.94							

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ROSETTE BOTTLE #9 RELEASED BUT COCKED TRIGGER STUCK, HOLDING LANYARD - POSSIBLE BOTTLE POSITIONED WRONG ON FRAME.

ROSETTE BOTTLE #15 FIRED BUT NO WATER → MIGHT POSSIBLY HAVE LEAKED OUT ON DECK

— HEADER MAY BE WRONG, SHOULD BE #6

— DEPTH IN HEADER WRONG - SHOULD BE 2506

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Month JANUARY				Year 2009			Ship J. P. TULLY				Cruise ID 2009-03				p4	
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	P 8	1815	BE	ROS		18	48 48.97	128 39.95	2526		125-148	24	H.K.+			
		1847	BO				48 48.97	128 39.94		2005					* →	
		1934	EN				48 48.99	128.39.94								
30	P8		BE	NET		19			2520						BOMBO'S	
		2000	BO				48 48.97	128 39.97		250	(260)				(260+OUT)	
		2008	EN				48 48.99	128 39.99								
30	P8		BE	PUMP		20			2528						UBC PUMP.	
		2040	BO				48 48.96	128 40.17		300						
			EN													
31	P9	1110	BE	ROS CIB		21	48°51.34	129°10.00	4148				T.O.D. B.		BOT @ 5 +LOOP	
		0144	BO				48 51.48	129 09.76		2005	149	1				
		0219	EN				48 51.43	129 09 84								
31	P10	0553	BE	ROS		22	48 53.61	129 39.97	2643				TDMK	✓		
		0630	BO				48 53.60	129 39.93		2005	150	1			NUT PUT IN FRIDGE	
		0700	EN				48 53.63	129 39.97							AT 1530 UTC	
31	P11	1025		ROS		23	48 55 96	130 09 92	2062			1	H/A/J	✓	BOT @ 5m SAL/CAL/MOPS	
		1052					48 55.96	130 10.13		2005						
		1122					48 55.90	130 10.34								

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* BOTTLE # 3 MIS FIRE (LATCH HUNG UP)

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Month <i>JANUARY</i>				Year <i>2009</i>			Ship <i>TULLY</i>				Cruise ID <i>2009-03</i> <i>P 5</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							
31	P 12	1422	BE	ROS		24	48 58 15	130 39.95	3230		152-175	24	H/A/K/M	✓	UBC CAST (2000m)
		1452	BO				48 58 20	130 39.97		2005					
		1524	EN				48 58.26	130 40.02							
31	P 12	1637	BE	ROS		25	48 58.15	130 40.04	3237		176-193	18	H/A/K/M	✓	UBC CAST 2 (1000m)
		1653	BO				48 58.14	130 40.20		1000					
		1713	EN				48 58.18	130 40.38							
31	P 12	1725	BE	NET		26	48 58 21	130 40.49	3230						BONGO - No Good
		1739	BO				48 58.33	130 40.52		250					MGT FLIPPED
		1744	EN				48 58.36	130 40.57							
31	P 12	1804	BE	ROS		27	48 58.32	130 39.98	3237					✓	IOS Deep Cast
		1852	BO				48 58 21	130 39 93		3275	194-216	23			
		2005	EN				48 58.61	130 39.93							
31	P 12	2024	BE	NET		28	48 58 55	130 39 84	3237						BONGO
		2035	BO				48 58 54	130 39 92		250					
		2041	EN				48 58 51	130 39 98							PAR ON
31	P 12	2129	BE	ROS		30	48 58 54	130 39.94	3237						Cast aborted -
		2133	BO							185					error beep from
		2135	EN				48 58 59	130 39 98							corose)

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Cast 0029: Error problem with Carousel

Message

- WHEN ROSETTE IN WATER ALARM CHIRPS
- RECOVERED / CLEANED PAR & SEA CABLE CONNECTIONS
- DECK UNIT SHOWS ALL 0'S NOT 0110
- TRY OTHER SPARE CTD - DOESN'T WORK
- TRY SPARE CTD ON SPARE WINCH - WORKS FINE THEREFORE MUST BE WINCH CONNECTIONS OR CABLE ON MAIN WINCH
- RETERMINATE SEA END OF CABLE BUT GROUND WIRE RINGS THROUGH / POWER WIRE DOES NOT
- RETERMINATE SLIDING SIDE OF CABLE - SAME RESULTS AS ABOVE $\therefore$ MUST BE A BREAK IN THE CABLE SOMEWHERE
- TAKE OFF 200m OF CABLE ON SEA END - THIS IS THE END THAT TAKES THE MOST ABUSE FROM TENSION JERKING
- RETERMINATE AND TEST - SUCCESS!!!

5 ARS

DAILY LOG

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INSTITUTE OF OCEAN SCIENCES

Month FEBRUARY				Year 2009			Ship TULLY				Cruise ID 2009-03 PG				
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	P12	0038	BE	ROS	US	31	48°58.29	130°39.94	3230						
		0048	BO				48°58.38	130°40.03		600	217-240	24	T.B.D.	Y	
		0122	EN				48°58.55	130°40.46							
P	P15	1800	BE	ROS	US	32	49 12 03	133 40 06	3946		241-243	3	H/K/M/A	✓	PAR OFF
		1821	BO				49 12 01	133 40 07		2005					BOT @ 5m - SAL/CHL/MUS
		1902	EN				49 12 05	133 39.91							+LOOP
1	P16	2333	BE	ROS	US	33	49 17 09	134 40.06	3622		244-250	7	T.D.O.B	✓	+30m + 5m for OSU
		2340	BO				49 17.10	134 40.06		100m					PAR ON
		2351	EN				49 17.07	134 40.06							
2	P16	0023	BE	ROS	US	34	49 17 04	134°39.95	3622		251-274	24	T.D.O.B	✓	
		0034	BO				49 17.06	134°39.91		600m					
		0102	EN				49 17.06	134°39.82							
2	P16	0211	BE	ROS	US	35	49 17.00	134°39.32	3624		275-298	24	T.D.M.K	✓	PAR OFF
		0309	BO				49 16.98	134°39.57		3685					
		0442	EN				49 17.03	134°39.78							
2	P16	0556	BE	ROS	US	36	49 16.81	134°39.85	3624		299-322	24	T.D.M.K	Y	
		0614	BO				49°16.87	134°39.99		1000					
		0635	EN				49°16.91	134°39.83							

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CAST 31 Switch to starboard winch #

DAMIAN: MIGHT HAVE MISSED HgCl in 100m SAMPLE - REPLICATE #1?

CAST 33: Reterminated center winch, removed 200m of wire,
Resumed use of center winch.

Cancelled UBC Deep Cast due to inclement weather.

Cancelled Bongo cast due to inclement weather

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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							
02	P20	2340	BE	ROS	VS	37	49°34.07	138°40.05	3945		323-346	24	TDOB	Y	PAR ON
		2352	BO				49°34.04	138°40.12		600					
		0021	EN				49°33.94	138°40.13							
03	P20	0100	BE	ROS	VS	38	49°34.03	138°40.08	3946		347-370	24	TDOB	Y	PAR OFF
		0206	BO				49°33.98	138°40.12		4020					*
		0341	EN				49°33.95	138°40.02							
03	P20	0407	BE	NET		39	49°33.978	138°40.113					TDMK		
		04:23	BO				49°33.810	138°39.884		280					
		04:30	EN				49°33.672	138°39.791							
03	P23	1834	BE	LOOP		/	49°46.12	141°41.45					HM		LOOP
03	P24	2341		Loop		/	49°50.23	142°39.32							
04	P26	1713	BE	ROS	VS	40	49°59.99	144°59.92	4220		395-418	24	H/K/N	✓	10S Deep cast
		1816	BO				49°59.95	145°00.07		4320					*→
		1938	EN				49°59.73	145°00.49							
04	P26	2030	BE	PUMP		41	49°59.69	145°00.76	4220						URC PUMP
		2201	BO				49°59.60	145°00.36		3005					
		0032	BE				50°00.07	144°59.87							
05		0150	EN				50°00.07	144°59.91							

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Cast 38: The CTD signal is not great below ~1400 dbar

$$T_0 - T_1 \approx -0.02$$

$$S_0 - S_1 \approx 0.01$$

Oxy signal not smooth at all
T and S signals very fuzzy

Change Y cable?

Change pump cable?

DONE FEB 3/09

NOTE: 371 to 394 Sample # not used

* Δ in PRIMARY & SEC SAL 0.224 - NOT GOOD

DAILY LOG

Ocean Sciences and Productivity Division

INSTITUTE OF OCEAN SCIENCES

OCEANOGRAPHY															
DAILY LOG				Ocean Sciences and Productivity Division							Cruise ID		2009-03		
Month FEBRUARY				Year 2009			Ship TULLY					#of	Watch	Trans.	Comments
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Position		Bottom Depth	Max Depth	Sample Numbers	Bottles	Keepers	Cleaned	
							Latitude	Longitude							
05	P26	0210	BE	ROS	US	42	50°00.04	144°59.85	4220		419-425	7	TDMK	Y	PAR ON
		0217	BO				49°59.95	144°59.75		50					Karina + OSU
		0238	EN				49°59.89	144°59.57							
05	P26	0315	BE	ROS	US	43	49°59.95	144°59.92	4220		426-449	24	TDMK	Y	
		0325	BO				49°59.94	144°59.92		600					UPCAST OF 43
		0329	BE			44	49°59.91	144°59.94							
		0400	EN				49°59.78	144°59.53							
05	P26	0425	BE	PUMP	-	45	49°59.96	144°59.92	3600	1200			TDMK	-	PUMPS TO 1200
			BO												wire stuck in hook
			BE												Cast aborted
			END												
05	P26	0723	BE	ROS	US	46	49°59.66	144°59.84	4220		450-473	24	TDMK		PAR OFF
		0758	BO				49°59.58	144°59.93		2000					UBC CAST
		0833	EN				49°59.58	145°00.08							
05	P26	0851	BO	NET		47	49°59.49	145°00.26	4220	250			H/J		BONGO
		0900	EN				49°59.78	145°00.36							
05	P26	0927	BE	ROS		48	49°59.82	145°00.35	4220		474-496	24	H/S/A/J	✓	UBC ROS/MAURSON
		1011	BO				49°59.80	145°00.55		3000					
			EN												

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Cast 42: Lost primary salinity sensor

Cast 43: Pump not responding to on/off command, "Fire Bottle" button does not work, restart program, this seems to fix things

— CHANGED CTD'S FROM 0443 TO 0550 FOR ZOOON VBC CAST - 0443 CONDUCTIVITY CELL
NO GOOD - COMPROMISED OXY PLOT & PUMP SHORT SUSPECTED

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Month FEB				Year 2009			Ship J.P. TULLY				Cruise ID 2009-03 P9				
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	P26	1143	BE	ROS	U.S.	49	49°59.74	145°02.18	4220		497-517	21	H/S/J	✓	UBC CAST - AMISSA
		1200	BO				49°59.91	145°02.31		1000					
		1223	EN				50°00.06	145°02.59							
5	P26	1332	BE			50	50°00.64	145°03.30	4220						
		1336	BO				50°00.63	145°03.30		300	518-541	24		✓	UBC CAST - MAURGEN
		1354	EN				50°00.67	145°03.44							
5	P26	1443	BO	NET		51	50°00.98	145°04.25	4220	1000			H/S/J		BONGO - ANA
			EN												NFG
5	P26	1615	BE	Pump		51	50°00.02	144°59.97	4220						MO'S PUMP CAST
		1650	BO				50°00.01	145°00.01		1205					
		1919	BE				50°00.02	144°59.97							RECOVER AMAS
		1942	MC				50°00.00	144°59.97							
5	P26	2012	BO	NET		52	50°00.00	144°59.92	4220	250			TDDB		DNA BONGO
		2022	EN				49°59.96	144°59.85							
5	P26	2043	BO	NET		53	49°59.93	144°59.89	4220	300			TDDB		BARTS BONGO - FORAMS
		2055	EN				49°59.88	144°59.99							

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* - BOMBO'S TANGLED : NO SAMPLE

* - TEAR IN NET NOTED - QUALITATIVE ONLY.

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Month FEBRUARY				Year 2009			Ship J.P. TULLY				Cruise ID 2009-03 P10				
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	P-25	0214	BE	ROS	US	54	49°59.94	143°36.27	3822		542-565	24	TDMK	✓	Calibration Cast
		0245	BO				49°59.94	143°36.36		2005					
		0317	EN				50°00.03	143°36.36							
6	P-24	0722	BE	ROS	US	55	49°50.24	142°40.07	3966						
		0741	BO				49°50.12	142°40.05		1005	566-571	6	TDMK	✓	
		0759	EN				49°50.21	142°39.95							
6	P-23	1211	BE	ROS	US	56	49°46.10	141°39.94			572	1			CTD TO 1005
		1225	BO				49°45.98	141°39.89							+ Loop
		1241	EN				49°45.91	141°39.74							
6	P-22	1633	BE	ROS	U.S.	57	49°42.01	140°39.81	3920		573-578	6	H/n/h/h		UBC SAMPLES + 5m
		1647	BO				49°42.01	140°39.82		1005					BOT. SAL/CHL/NUTS
		1704	EN				49°42.06	140°39.87							
6	P-21	2106	BE	ROS	U.S.	58	49°37.84	139°39.89			579	1	TDPB		BOT 5m @ SAL/CHL/NUTS
		2122	BO				49°37.74	139°39.66							+ Loop
		2140	EN				49°38.03	139°39.74							
7	P18	1019	BE	ROS	U.S.	59	49°26.67	136°40.05			580-585	6	H/J/AJ	✓	BOT 1015 UBC + CHL/N
		1033	BO				49°26.02	136°39.97							
		1049	EN				49°26.03	136°40.00							

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Cast 54; Prior to cast two cracked welds found on CTD carosel;
they are both on the upper rail, outboard the riser bottles,
and should not affect load capacity of carosel

Ran out of disk space on D drive of EK60 for about 13 hours?
Re-Started on C drive 1655 UTC 6 Feb

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[illegible]

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