

CRUISE
NUMBER

9901

DAILY LOG
INSTITUTE OF OCEAN SCIENCES
OCEAN PHYSICS

DATE

FEB 8-28, 1999

VESSEL

John P Tully

PROJECT

LINE P

CTD report for cruise 9901

This report is intended to be a brief description of the performance of the CTD and the CTD ancillary instrumentation used for the February Line P cruise, cruise ID 9901. The primary CTD used was Seabird CTD serial number 0443. The transmissometer used was Sea-Tech transmissometer S/N 182D, and the PAR sensor used was Biosphere Instruments QSP-200L S/N 4495. The primary conductivity cell on 0443 is S/N 1766 and the secondary cell is S/N 2128.

For the entire cruise, the primary conductivity cell S/N 1766 read about 0.01 higher than the secondary cell S/N 2128 in salinity. The secondary cell appeared to agree better with the bottle salinities than the primary.

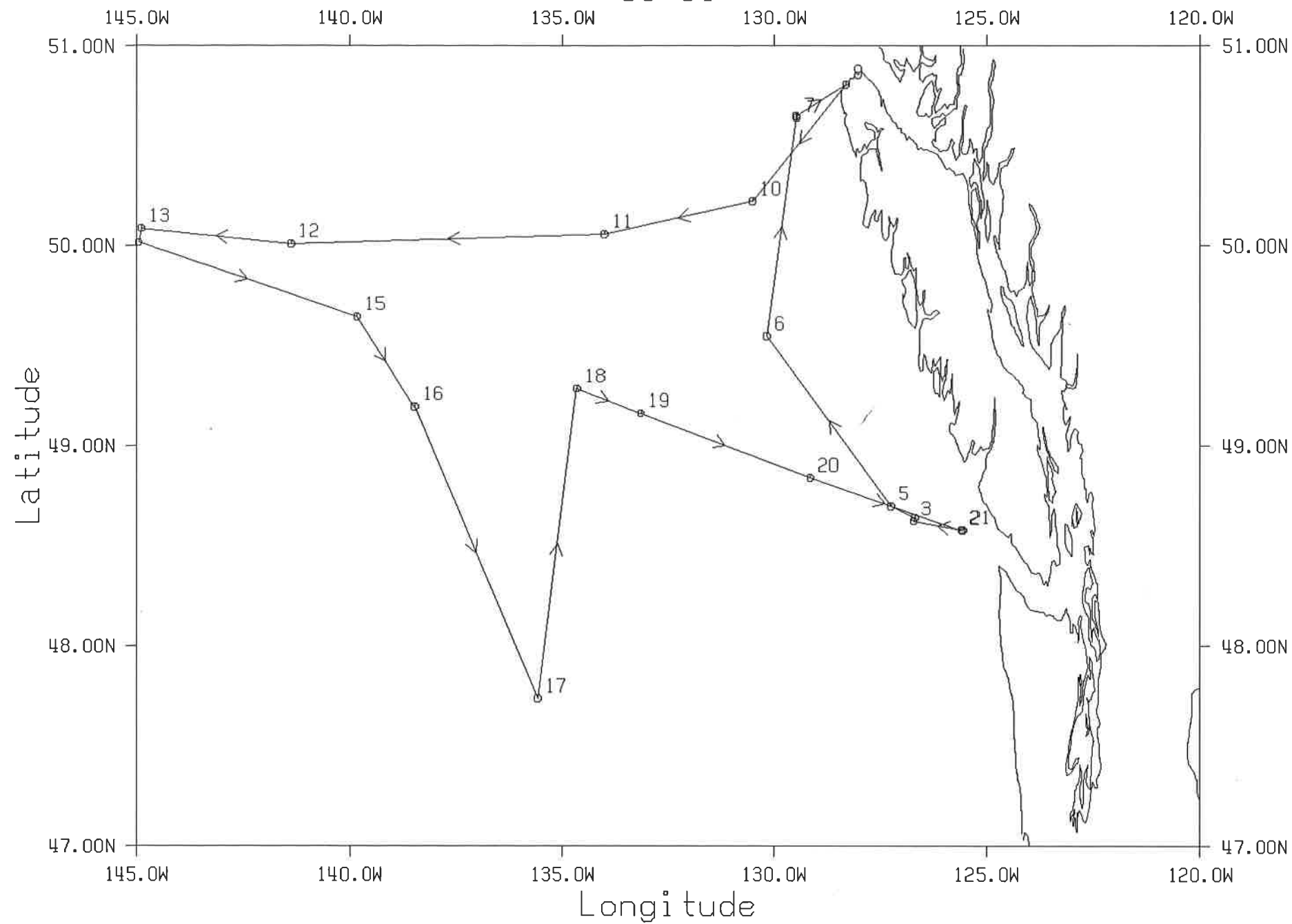
Generally, in terms of instrumentation performance, cruise 9901 went as follows:

- Casts 1 to 28: Transmissometer spiky.
- Cast 29: Transmissometer not logged.
- Casts 29+: Transmissometer looks better.
- Casts 1 to 16: PAR coefficients set as a userpoly, $m=1$, $b=0$
- Casts 16+: PAR coefficients entered in a proper PAR channel, but out by a factor of 10.
- ~~18~~ Cast 17: Data from the deep cast is lost when a pressure spike occurs at the start of the cast, and the rest of the cast doesn't log, leaving only the pressure spike.
- Cast 22: Switched to CTD 0443 for one cast to test pH sensor for Keith Johnson.
- Cast 28: Sea-cable fails, no data for this cast. Sea-cable is re-terminated.
- Cast 38: Sea-cable develops a bad kink from a shock received on deck. Sea-cable is reterminated.
- Cast 40: CTD is taken out of the rosette frame.
- Cast 42: CTD put back in rosette frame.
- Cast 49: CTD is taken out of rosette frame.
- Cast 49+: CTD casts out of rosette frame.

1022 CTD 0443.CON

PLOTTED: 4/MAR/1999 17:11:04

99-01



2nd CTD make: SBE model: 911+

Temperature sensor serial no.: _____
model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Conductivity sensor serial no.: _____
model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Pressure sensor range: _____ psi serial no.: _____
coefficients: FSP: _____ dB offset: _____
Transmissometer serial no.: _____
model: _____ serial no.: _____
coefficients: slope: _____ offset: _____
Winches: _____

1. make: _____	model: _____	serial no.: _____	use: _____
2. make: _____	model: _____	serial no.: _____	use: _____
3. make: _____	model: _____	serial no.: _____	use: _____
4. make: _____	model: _____	serial no.: _____	use: _____
5. make: _____	model: _____	serial no.: _____	use: _____
6. make: _____	model: _____	serial no.: _____	use: _____
7. make: _____	model: _____	serial no.: _____	use: _____

Salinometer: make: _____ model: _____ serial no.: _____
SAIL System: _____

Program version: _____ Time zone: _____
Sampling interval: _____ sec
CTF module no.: _____ serial no.: _____
Remote temperature model: _____ serial no.: _____
Flow sensor model: _____ serial no.: _____

Other sensors: (special for this cruise)

Name: _____ module ID: _____ serial no.: _____
Name: _____ module ID: _____ serial no.: _____
Name: _____ module ID: _____ serial no.: _____
Comments: _____

ADCP Setup:

Program version: _____ number of depth bins: _____
Time zone: _____ bin length (2x): _____
Sampling interval: _____ sec pulse length: _____
Blank beyond transmit: _____ pings per ensemble: _____
Pulse cycle time: _____
% pings good threshold: _____

Comments: _____

FEB 8/99

1830 PST Prep to leave IOS jetty

1850 PST: Ask bridge to ask engineers to turn on sea water pumps.

BACK-UP: .BL .CON .DAT .HDR

DAILY LOG

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YEAR 1999			MONTH FEBRUARY			SHIP JOHN P. TULLY				CRUISE 9901				PAGE 1	OF 1
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS	
9	SI03	ROS	0324	BE	1	48° 37.48	123° 30.15	CNV	208				MR	Cast in Sausich Inlet	
9	SI03	ROS	0330	BO	1	48° 37.52	123° 30.16	XLS		187	1-14	14			
9	SI03	ROS	0350	EN	1	48° 37.57	123° 30.22	B-up							
9	JF1	loop	0825	BE	/	48° 16.03	123° 29.93		158	/	/	/		Start HAKE printer	
9	JF2	loop	1027	BE	/	48° 17.99	123° 59.97		189	/	/	/			
9	JF3	Loop	1235	BE		48° 27.00	124° 29.98		232	/	/	/		Loop	
9	JF4	Loop	1433	BE		48° 32.255	125° 00.005		63					Loop	
9	P01	CTD	1629	BE	2	48 34.53	125 31.57	CNV	135			/			
9	P01	CTD	1631	BO	2	48 34.55	125 31.65	B-up		127					
9	P01	CTD	1633	EN	2	48 34.56	125 31.71								
9	P01	LOOP	1634	BE		48 34.471	125 31.127								
9	P02	CTD	1905	BE	3	48 36.26	126 00.81	CNV	118						
9	P02	CTD	1909	BO	3	48 36.32	126 01.02	B-up		110					
9	P02	CTD	1912	EN	3	48 36.36	126 01.09								
9	P02	LOOP	1125			48 36.715	126 01.552							Loop	
9	P3	CTD	2157	BE	4	48° 37.86	126° 20.12	CNV	722					Loops taken	
9	P3	CTD	2212	BO	4	48° 38.13	126° 20.16	B-up		828	/	/		Change S scale 30-35 To scale 0-10	
9	P3	CTD	2223	EN	4	48° 38.14	126° 20.23							Touch bottom ???	

CAST TYPE -

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

USW -

sea water loop

TIME CODE -

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

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

99/2/10 1640, ^(NOT) CHANGED 12 KHZ TRANSDUCER TO RAM TO IMPROVE RESPONSE

DAILY LOG

OCEAN PHYSICS

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YEAR 1999			MONTH FEBRUARY			SHIP JOHN P. TULLY			CRUISE 9901				PAGE 2 OF 2	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
10	P4	ROS	0807	BE	5	48° 38.84	126° 40.16	CNV	1342	1				NO PAR
10	P4	ROS	0835	BO	5	48° 38.44	126° 40.64	B-up		1320	15-36	22		Loops TAKEN
10	P4	ROS	0920	EN	5									ON BOARD
10	P4	NET	1244	EN	6	48° 39.23	126° 40.84		1340	150				BONGO to 150m
10	P4	BOT	1420	BE	7	48° 39.075	126° 41.263		1340	100m				100, 75, 50, 30, 15, 10, 5, 2
10	P4	NET	1535	BE	8	48° 39.075	126° 41.263		1340	125				125m + 50m VNH (PHYTO)
10	P5	CTD	1816	BE	9	48° 41.32	127° 10.28	CNV	2120					
10	P5	CTD	1830	BO	9	48° 41.44	127° 10.74	B-up		1500				Transmissometer Spike - use w/ added in processing
10	P5	CTD	1919	EN	9	48° 41.67	127° 11.37							
10	P5	LOOP	1825	BE		48° 41.286	127° 10.396							
10	P6	CTD	2148	BE	10	48° 45.11	127° 40.38	CNV	2560					Loops taken
10	P6	CTD	2225	BO	10	48° 46.28	127° 40.60	B-up	2557	1508				Wide wire angle.
10	P6	CTD	2247	EN	10	48° 47.14	127° 40.55							
11	P7	Loops	0114	-	-	48° 46.44	128° 09.96							Loops ONLY - 50 km winds
11	Storm #1	Loops	0405	-	-	48° 52.863	128° 42.855							Loops
11	Storm #2	Loops	0801	-	-	49° 21.56	129° 40.97							Loops
11	Storm #3	Loops	1200			49° 58.893	130° 35.146		WHERE ARE THE	CNL BOTTLES?				Loops
11	Storm #4	Loops	1605			49° 54.960	130° 45.530		"	"	"	"		Loops

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

ROS - rosette
NET - net haul
DRF - drifter

USW - sea water loop

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

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

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

11 + 12 Feb SAR. HANJIN, a container cargo freighter lost its engines. We have steamed to near Triangle Island to assist in any way possible. The vessel is too large for us to tow + we await 2 tugs which will try to bring it in.

13 FEB - CHECKED DAMAGE WHILE AT ANCHOR

FDA 1 TRAP MISSING.

3 TRAPS DAMAGED

1 BOX MISSING WITH HARDWARE

2 LARGE LIDS BROKEN.

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DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
11	STORM#6	LOOP	2005			49 46.230	130 46.340							LOOPS NO CHL.
12	STORM#6	LOOP	0403			49 32.430	130 16.750							
12	STORM#7	LOOP	0800			50 05.400	129 26.730							
12	STORM#8	LOOP	1200			50° 17.103	129° 16.115		1935					Loops NO 'CHL
12	STORM#9	LOOP	1600			50 28.956	129 16.518		2883					
12	Storm #10	Loop	2000			50° 39.480	129° 30.971		1967					Loops NO CHL
13	STORM#11	LOOP	0005			50° 48.300	129° 36.508		1799					Loops NO CHL
13	Storm#12	LOOP	0430			51 00.626	129 40.271		1020					" "
13	Storm #13	loop	0730			51° 07.046	129-40.803							" "
13	STORM#14	Loop				51° 03.601	129° 02.455		117					" "
13	Storm#15	LOOP	1600			50 48.315	128 18.175		20					" "
14	TR6	LOOP	0401			50° 59.112	128° 40.922		~ 75m					Loops E CHL
14	TR9	CTD	0842	BE	"	50° 40.89	129° 29.21	CNV	1932					Snap shackle gave up at deployment. Had to fish for the chain & replace shackle.
14	TR9	CTD	0909	BO	"	50° 40.77	129° 28.92	B up	1934	1508				≈ 0.015 ≠ btw 2 salinities?
14	TR9	CTD	0933	EN	"	50° 40.63	129° 28.88							TRANSMISSOMETER NOT SET RIGHT
14	TR9	LOOP	0900			50° 40.807	129 28 316		1930m					LOOPS: Nut, Sal, CHL
14	TR 12	ROS	1222	BE	12	50° 26.90	129° 59 03	CNV	2160					Loops TAKEN
14	TR 12	ROS	1300	BO	12	50° 26.75	129° 58.98	B up		2160	37- 56	20		

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bottle cast
ctd
mooring

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DRF -
drifter

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sea water loop

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beginning time of cast
bottom time of cast
end of cast

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deployment time
messenger release
recover mooring

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YEAR 1999			MONTH February			SHIP Tully			CRUISE 9901			PAGE 3 OF		
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
14	TR12	ROS	1356	EN	12	50 26.48	129 58.75			2160		20		
14	TR14	CTD	1710	BE	13	50 10.77	130 35.16	CNV		2950				
14	TR14	CTD	1736	BO	13	50 10.53	130 35.66	B-Up	1500					
14	TR14	CTD	1801	EN	13	50 10.44	130 36.18							
14	TR14	LOOP	1715		LOOP	50 10.720	130 35.247							
14	TR15	ROS	2011	BE	14	50 01.14	130 59.22	CNV	2760					Rosette to 400 m with PAR
14	TR15	ROS	2019	BO	14	50 01.16	130 59.38	B-Up		400	57-73	17		Loops taken
14	TR15	ROS	2043	EN	14	50 01.03	130 59.52		1825					
15	TR15	CTD	0108	BE	15	50 01.28	130 57.98	CNV	1943		—	—		
15	TR15	CTD	0136	BO	15	50 01.19	130 57.71	B-Up		1500	—	—		
15	TR15	CTD	0152	EN	15	50 01.11	130 57.79				—	—		
	STORM	LOOP			SAMPLES	CONTINUOUS, 1 PER WATCH								
15	ST #16	LOOP	0800			50 02.121	131 29.525							
15	ST #17	LOOP	1209			50 04.655	132 45.061							
15	ST #18	LOOP	1600			50 03.555	134 01.576							
15	ST #19	LOOP	2000			50 04.110	135 21.553							
16	ST #20	LOOP	0000			50 03.302	136 39.695							Loops
16	ST #21	LOOP	0400			50 01.104	137 55.146							

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17 Feb

Recovered a single buoy near P2b for a decomposition study (Wang et al.)

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DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
16	ST #22	Loop	0800		/	50° 02.107	139° 05.411							
16	ST #23	Loop	1204		-	50° 00.245	140° 12.195							Loops
16	ST #24	Loop	1600			50 00.608	141 21.101							
16	ST #25	loop	2000			50 00.346	142 30.381							
17	ST #26	Loop	0100 (LATE)			50° 00 188	143° 41.590							Loops
17	ST #27	Loop	0400			50 00.380	144 11.353							
17	P26	MOR	1540	RE		50 01.747	144 53.862		4238	3700	/	/		Released 1 buoy w/ bottles
17	P26	CTD	1820	BE	16	50 05.30	144 54.82	CNV	4232					Changed can file CTD0443 to reflect proper cal coeff. (per)
17	P26	CTD	1847	BO	16	50 05.46	144 55.07	B-Up		1500				
17	P26	CTD	1916	EN	16	50 05.72	144 55.09							
17	P26	ROS	2052	BE	17	49° 59.99	144° 59.87	CNV	4250					Dns Cast
17	P26	ROS	2100	BO	17	49° 59.92	144° 59.79	B-Up		400	74-90	17		Mixed Layer 125 m
17	P26	ROS	2125	EN	17	49 59.85	144 59.92							
18	P26	ROS	0313	BE	18	49° 59.96	144° 59.38		4250					NO DAT file. Software did not overwrite old file with pressure spike in it.
18	P26	ROS	0420	BO	18	49 59.75	145 00.15	B-Up		4242	91-114	24		
18	P26	ROS		EN	18									
18	P26	NETS	1230	BE	19	49 59.95	144 59.72							BONGOS + PHYTO NETS → 150m
18	P26	BOT	1345	BE	20	50 00.39	144 59.33							PROD. CASTS

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POSITION CODE -

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YEAR 1999			MONTH FEB			SHIP JOHN P TULLY			CRUISE 9901			PAGE 5 OF		
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
18	P26	DRF	1634	BE	21	49° 57.605	144° 55.125		4230					PROD. DRIFTER RELEASE
18	P26	CTD	1744	BE	22	49 59.88	144 59.88	CNV	4230					PH CAST USING CTD 0437.
18	P26	CTD	1806	BO	22	49 59.85	144 59.98	B-Up		820				
18	P26	CTD	1816	EN	22	49 59.96	144 59.88							
18	P26	ROS	1900	BE	23	50 00.94	144 57.59	CNV	4246					
18	P26	ROS	1927	BO	23	50 00.97	144 57.28	B-Up		1500	115-135	21		
18	P26	ROS	2009	EN	23	50° 01.16	144° 57.06							
18	P26	NET	2036	BE	24	50 00 992	144 56.732		4230	150m				BONGO UNH - 150m
18	P26	DRF	2210	RE	✓	49 59.405	144 56.912	GPS		180m				1410 PST Recovery
19	P35	CTD	0222	BE	25	50° 00.01	144° 18.03	CNV	4156					LOOPS TAKEN
19	P35	CTD	0248	BO	25	49° 59.99	144° 17.61	B-Up		1500				CTD ONLY
19	P35	CTD	0307	EN	25	49° 59.98	144° 17.36							
19	P25	CTD	0655	BE	26	49 59.87	143 36.07	CNV	4128					
19	P25	CTD	0722	BO	26	49 59.64	143 36.08	B-Up		1500				
19	P25	CTD	0740	EN	26	49 59.65	143 36.10							
19	"P25"	Loops	0816		✓	49 58.647	143 28 713							Loops taken en route, ~ 35 min after departure
19	P24	CTD	1219	BE	27	49 50.11	142 39.76	CNV						LOOPS TAKEN
19	P24	CTD	1249	BO	27	49° 49.88	142° 39.33		B-Up					CTD ONLY Pressure spike @ 116m

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YEAR		1999		MONTH		FEBRUARY		SHIP		TULLY		CRUISE				9901		PAGE		6		OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE		LONGITUDE		POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS							
19	P24	CTD	1313	EN	27	41° 49 71		142 39 18			3993	1500					CTD ONLY						
19	P23	CTD		BE	28																		
19	P23	CTD		BO	28												CTD NOT WORKING.						
19	P23	CTD		EN	28												NO P23 DATA						
19	P23	LOOP	1750			49 45.900		141 39 165			4054						NOT, SAL, CHT.						
19	P22	CTD	2207	BE	28	49 41. 90		140 39. 56		CNV	3902						Transmissometer data not good						
19	P22	CTD	2230	BO	28	49 41. 82		140 39. 36		B-Up		1512											
19	P22	CTD	2248	EN	28	49° 41.66		140 39.09															
20	P21	CTD	0259	BE	29	49° 37.93		139° 39.98		CNV	3864						Loops TAKEN						
20	P21	CTD	0321	BO	29	49° 37.88		139° 40.33		B-Up		1500					CTD ONLY						
20	P21	CTD	0338	EN	29	49° 37.75		139° 40.21									TRANSMISSOMETER DATA NOT LOGGING? → OK!						
20	P20	NETS	1320	BE	30	49° 34.050		138° 39.605				150					NET Tows						
20	P20	BOT	1413	BE	31	49° 34 04		138° 38 92									PROD. CAST						
20	P20	ROS	1541	BE	32	49° 33.68		138° 38.21		CNV	3972						Loops TAKEN						
20	P20	ROS	1637	BO	32	49 33. 86		138 37. 51		B-Up		3999	136-158	23			Wire angle erratic. Depths approx.						
20	P20	ROS	1816	EN	32	49 34. 40		138 37. 67									Surface temp: 6.153 Thermosal temp: 6.657						
20	P20	ROS	2023	BE	33	49° 33. 87		138° 23. 47		CNV	3971												
20	P20	ROS	2032	BO	33	49° 33. 85		138° 38. 96		B-Up			159-175	17			DMS-PAR shallow cast						

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POSITION CODE - RAD - RADAR
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P20 DMS/PAR Light reading above SFC on upcast.

At ED04, cable needed resplicing - bad kink ~ 10m from termination.

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YEAR			MONTH			SHIP			CRUISE						PAGE	
1999			FEBRUARY			JOHN P. TULLY			9901						7 OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD-HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS		
20	P20	ROS	20	EN	33	49° 33.81	138° 38.65									
21	S+29	LOOP	557			48° 18.006	137° 57.966							Surface Temp: 6.160 Thermosalinograph Temp: 6.782		
21	ED01	NET	0929	BE	34	47° 44.977	137° 40.182		4061	150				Loops taken (late)		
21	ED01	ROS	1009	BE	35	47° 44.78	137° 40.98	CNV	4065							
21	ED01	ROS	1035	BO	35	47° 44.75	137° 41.23	B-up		1504	176-193	18				
21	ED01	ROS	1116	EN	35	47° 44.69	137° 41.63									
21	ED02	CTD	1301	BE	36	47° 44.76	137° 19.69	CNV	4061							
21	ED02	CTD	1323	BO	36	47° 44.51	137° 19.52	B-up		1500				LOOPS TAKEN		
21	ED02	CTD	1349	EN	36	47° 44.	137° 19.							CTD ONLY		
21	ED03	CTD	1523	BE	37	47° 44.94	136° 59.85	CNV	4037							
21	ED03	CTD	1549	BO	37	47° 45.09	136° 59.55	B-up		1500				LOOPS TAKEN		
21	ED03	CTD	1613	EN	37	47° 45.07	136° 59.16							CTD ONLY		
21	ED04	ROS	2045	BE	38	47° 45.31	136° 40.01	CNV	4049							
21	ED04	ROS	2117	BO	38	47° 45.55	136° 40.28	B-up		1500	194-211	18		LOOPS TAKEN		
21	ED04	ROS	2152	EN	38	47° 45.63	136° 40.56									
21	ED04	Bongo	1627		39	47° 44.81	136° 40.33			150						
21	ED05	CTD	2334	BE	40	47° 45.14	136° 20.08	CNV	4044					CTD OUT OF ROSETTE FRAME		
22	ED05	CTD	0010	BO	40	47° 44.94	136° 20.37	B-up		2000 m				CTD VERTICAL, WE DON'T HAVE HORIZONTAL BRACETS		

CAST TYPE -

ROS - rosette net haul drifter

NET -

DRF -

CTD - bottle cast ctd mooring

BO -

BO -

MOR -

MO -

MO -

USW - sea water loop

EN -

EN -

TIME CODE -

BE - beginning time of cast

BO - bottom time of cast

EN - end of cast

DE - deployment time

MR - messenger release

RE - recover mooring

POSITION CODE -

RAD - RADAR

GPS - GLOBAL

LOR - LORAN

ED07 — Oxygen MnCl_2 dispensing 1.1 mL } reset to 1.0 mL each
 KI/OH " 1.8 mL } after 1500 + 1250 m samples drawn.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		SHIP		CRUISE		PAGE		OF				
1999		FEBRUARY		JOHN P. TULLY		9901		8						
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
22	ED05	CTD	0036	EN	40	47° 44.72	136° 20.46			2000				Loops TAKEN
22	ED06	CTD	0206	BE	41	47° 44.81	136° 00.07	CNV	4055					Loops TAKEN
22	ED06	CTD	0231	BO	41	47° 44.68	136° 00.09	B-up		1500				
22	ED06	CTD	0250	EN	41	47° 44.52	136° 00.31							
22	ED07	ROS	0437	BE	42	47 44.79	135 40.04	CNV	4042					Loops Taken
22	ED07	ROS	0501	BO	42	47 44.51	135 40.11	B-up		1500	212-229			O ₂ reagent volumes
22	ED07	ROS	0536	EN	42	47 44.18	135 40.30							adjusted to 1.0 mL
→	ED07	NET	0600		43	47 43.775	135 40.555			155				from 1.1 + 1.8 mL
22	ED08	CTD	0701	BE	44	47 45.13	135 19.82	CNV	3948					Loops TAKEN
22	ED08	CTD	0816	BO	44	47' 45.32	135' 20.24	B up		1506				WRONG STN NAME IN HDR
22	ED08	CTD	0840	EN	44	47' 45.57	135' 20.55							
22	ED09	CTD	1020	BE	45	47' 45.20	134' 59.69	CNV	3923					Loops TAKEN
22	ED09	CTD	1042	BO	45	47' 45.44	134' 59.60	B-up		1508				Stop @ 30m on way up to turn the ship into waves.
22	ED09	CTD	1110	EN	45	47' 45.62	134' 59.52		3917					
22	ED10	CTD		BE	46									40+ knot wind
22	ED10	CTD	1222	BO	46									90° cross swell
22	ED10	CTD	0439	EN	46	47° 45.18	134° 40.02							Loops TAKEN
22	ST29	LOOP	1622	BE		48 18.27	134 40.07							Loops

CAST TYPE -

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

USW -

sea water loop

TIME CODE -

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

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

24 0253 Loop pump quit. When restarted, flow was poor + well aerated. We are
pounding into moderate seas.

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		1999		MONTH		FEB		SHIP		TULLY		CRUISE		9901		PAGE 9 OF	
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS			
22	ST30	LOOP	16:54			48 22.780	134 40.150							Loops Taken (Late)			
22	ST31	LOOP	20:15			48 52.623	134 45.650										
23	APEX	DRF	0259	BE	KEEP AS LOW AS POSSIBLE	49° 17.703	134° 34.073		3658					APEX FLOAT SBE PROFILER S/N 26 RESET →			
23	P16	NETS		BE	4748	49° 17.013	134 39.962		LOST BONGOS ↷					NET Tows to 150m			
23	P16	ROS	16:18	BE	4847	49° 17.23	134 39.24	CNV	3645								
23	P16	ROS	16:45	BO	4847	49 17.67	134 40.16	B-Up		1500	230-251	22		500m Rosette			
23	P16	ROS	17:22	EN	4847	49 18.58	134 40.52										
23	P15	CTD	22:10	BE	49	49 12.05	133 39.94	CNV	3420					Loops TAKEN			
23	P15	CTD	22:38	BO	49	49 11.85	133 39.80	B-Up		1508				CTD OUT OF ROSETTE FRAME			
23	P15	CTD	22:55	EN	49	49 11.76	133 39.76										
24	P14	—	0320			49 09.11	133 03.710							Seawater loop Not Functioning			
24	P14	LOOP	0525	BE		49 07.22	132 39.89							Loops			
24	P13	Loop	0952	BE		49 02.673	131 40.022							Loops			
24	P12	CTD	1423	BE	50	48° 57.93	130° 39.93	CNV	3252					Loops TAKEN			
24	P12	CTD	1449	BO	50	48° 57.79	130° 40.33	B-Up		1500				CTD ONLY			
24	P12	CTD	1513	EN	50	48° 57.65	130° 40.61										
24	P11	CTD	1748	BE	51	48 55.94	130 10.02	CNV	2771					Loops TAKEN			
24	P11	CTD	1818	BO	51	48 55.53	130 18.16	B-Up		1500							

CAST TYPE -

BOT - bottle cast

ROS - rosette

USW - sea water loop

TIME CODE -

BE - bottom event

CAST TYPE -

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

USW -

sea water loop

TIME CODE -

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

POSITION CODE -

RAD -
GPS -
LOR -RADAR
GLOBAL
LORAN

99/02/23 2:30 → APEX - SBE PROFILER S/N 26 TURNED ON
(UTC)

OBSERVED ARGOS CODE 20919
DOCUMENTED ARGOS ID NUMBER 46DC1

99/02/23 1334 - 0530 Loc LOST BONGO NETS - AS BONGO CAME TO SURFACE SHIP ROLLED. AS NETS CLEARED
SURFACE IT APPEARS WEIGHTS SNAGGED UNDER SHIP AND KEVLAR LINE
SNAPPED.

YEAR1999			MONTHFeb			SHIPTully			CRUISE9901				PAGE10	OF
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS
24	P11	CTD	18:41	EN	51	48 55.32	130 10.19							
24	P10	CTD	2124	BE	52	48 53.49	129 40.03	CNV	2657		-	-		Loops taken
24	P10	CTD	2150	BO	52	48 53.47	129 39.95	B-up		1510				
24	P10	CTD	2209	EN	52	48 53.48	129 39.93							
25	P9	CTD	0102	BE	53	48 51.29	129 09.84	CNV	2390					Loops TAKEN
25	P9	CTD	0125	BO	53	48 50.94	129 09.71	B-up		1509				
25	P9	CTD	0146	EN	53	48 50.66	129 09.53							
25	P8	CTD	0443	BE	54	48 48.97	128 40.13	CNV	2537			/		Loops Taken
25	P8	CTD	0509	BO	54	48 48.71	128 40.21	B-up		1500 (nom)				
25	P8	CTD	0530	EN	54	48 48.58	128 40.15							
25	P7	CTD	0849	BE	55	48 46.57	128 09.99	CNV	2522					Loops TAKEN
25	P7	CTD	0915	BO	55	48 46.53	128 09.62	B-up		1508				Funny structure on way ↑ @ ~700-500 m
25	P7	CTD	0934	EN	55	48 46.42	128 09.41		2526					
25	P6	CTD	1149	BE	56	48 44.47	127 40.01	CNV	2565					Loops TAKEN
25	P6	CTD	1212	BO	56	48 44.54	127 40.52	B-up		1500				
25	P6	CTD	1231	EN	56	48 44.88	127 40.85							
25	P5	CTD	1443	BE	57	48 41.33	127 09.70	CNV	2109					Loops TAKEN
25	P5	CTD	1514	BO	57	48 41.26	127 10.31	B-up		1500				

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH				SHIP				CRUISE					PAGE	OF
DAY (UTC)	STATION ID	CAST TYPE	TIME (UTC)	TIME CODE	STD/HYDRO CONSEC #	LATITUDE	LONGITUDE	POSITION CODE	BOTTOM DEPTH (m)	MAX SAMPLING DEPTH (m)	CONSEC SAMPLE #	# OF BOTTLES	INIT	COMMENTS		
25	P5	CTD	1535	EN	57	48° 41.36	127° 10.72			1500						
25	P4	CTD	1804	DE	58	48 39.00	126 39.35	CNV	1334							
25	P4	CTD	1827	BO	58	48 39.23	126 39.90	B-up		1300						
25	P4	CTD	1846	EN	58	48 39.34	126 40.20									
															LOOPS TAKEN	
25	P3	CTD	2027	BE	59	48° 38.04	126° 20.22	CNV	730?						Loops TAKEN	
25	P3	CTD	2042	BO	59	48° 38.26	126° 20.46	B-up		782						
25	P3	CTD	2054	EN	59	48° 38.34	126° 20.76									
25	P2	CTD	2248	BE	60	48° 36.23	126° 00.18		118						Loops TAKEN	
25	P2	CTD	2251	BO	60	48° 36.24	126° 00.26	B-up		92						
25	P2	CTD	2254	EN	60	48° 36.24	126° 00.32									
26	P1	LOOPS	0107			48° 34.50	125° 30.51								Loops TAKEN	
26	P1	CTD	0111	BE	61	48° 34.56	125° 30.24		122						CTD ONLY	
26	P1	CTD	0115	BO	61	48° 34.52	125° 30.35			110						
26	P1	CTD	0118	EN	61	48° 34.49	125° 30.40								LAST CAST!	

CAST TYPE - BOT - bottle cast
 CTD - ctd mooring
 MOR -
 ROS - rosette
 NET - net haul
 DRF - drifter
 USW - sea water loop

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

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