

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2012-12

DATE:

From: 22 MAY 2012

to: 9 JUN 2012

VESSEL:

JOHN P. TULLY

PROJECT(S):

LINE P

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division
North Saanich, BC, Canada

WaterProperties.ca

Captain: MIKE CORFIELD First Officer: RICHARD MARRIOTT
Second Officer: SHANE LOVELACE Third Officer: CARSON DUECK
Fishing Master: _____

Mission Participants / Agencies: $DFo/Ios - UBL - UVic - UW - UET - CWS/IZ$

Scientific Personnel:			Chief Scientist:			MARIE ROBERT 0700-1900		
Name	Watch	Cabin	Name	Watch	Cabin			
DOUG YELLAND	12-24	B	BRENDAN MACKINSON	00-06	G			
NINA SCHUBACK	06-12	C	JENNIFER KEENE	06-12	H			
CHRISTINA SCHALLER-BELG	12-18	C	DESIREE DILLMAN	18-24	H			
DAVE JANSEN	00-06	D	HUGH MACLEAN	00-12	4			
MIKE BENTLEY	06-00	D	MICHAEL ARYCHUK	DMS/P	3			
WENDY RICHARDSON	NUTS	E	KYLE SIMPSON	PH	UP-P			
ARIA HAHN	00-06	E						
MICHAEL CRAIG	18-24	F						
SETH BUSHINSKY	12-18	F						
ROGER PAT KELLY	06-12	G						

[illegible]

Data logging computer: #3
Data acquisition program: SEASAVE
CTD deck unit make: SBE model: 11+ serial number: 0471

Primary CTD

Make:	<u>SBE</u>	model:	<u>9+</u>	serial number:	<u>0506</u>
Primary temperature serial number:	<u>2023</u>				
Primary conductivity serial number:	<u>2280</u>				
Secondary temperature serial number:	<u>2663</u>				
Secondary conductivity serial number:	<u>2424</u>				
Transmissometer:	<u>WETLAB5</u>	Model:	<u>C-Star</u>	s/n:	<u>1396DR</u>
Fluorometer:	<u>Model Seapoint</u>	Cable gain:	<u>3X</u>	s/n:	<u>2228</u> <u>P, S</u> or NO pump?
Oxygen sensor:	<u>SBE 43</u>	Model:	<u>43</u>	s/n:	<u>1119</u> <u>P, S</u> or NO pump?
PAR sensor:	<u>B16 SPHERICAL</u>	Model:		s/n:	<u>4601</u>
Other sensors:	<u>ECO Fluorometer</u>			s/n:	<u>2215</u> <u>P, S</u> or <u>NO</u> pump?
Other sensors:				s/n:	<u></u> <u>P, S</u> or NO pump?
Other sensors:				s/n:	<u></u> <u>P, S</u> or NO pump?
Other sensors:				s/n:	<u></u> <u>P, S</u> 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?**

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: 24Manufacturer: 105Volume of bottles (litres): 10L**Winches:**

1. Make: _____

Model: _____

Serial #:

Used for: _____

2. Make: _____

Model: _____

Serial #:

Used for: _____

3. Make: _____

Model: _____

Serial #:

Used for: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

_____**Salinometer:**

Make: _____

Model: _____

Serial Number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

_____**Oxygen Kit(s):**

Make: _____

Model: _____

Kit Number: _____

Make: _____

Model: _____

Kit Number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

_____**Thermosalinograph System (SBE21):**Program: Seasave

Version: _____

Sampling interval (seconds): 30Fluorometer sensor serial number: ~~WS35 718P~~ WS35 718P*Comments on performance during cruise* (comments should also be reflected in the post-cruise report):

_____**ADCP Setup:**

Computer time zone: _____

Sampling interval (sec): _____

Bin Length: (2^x): _____

Pulse Length: _____

Buffer (bytes): _____

Gyro Offset: _____

User Exits: Name: _____

Exit points: _____

Name: _____

Exit points: _____

Name: _____

Exit points: _____

Work File: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

_____**CTD Test Cast Information**

Test Cast along side?

Yes ☐No ☒*Comments* _____

Test Cast in Saanich Inlet or other location?

Yes ☒No ☐*Comments* _____

CTD pressure reading on deck (db), before cast: _____ after cast: _____

Pumps working?

Yes ☐ (0011)No ☐ (0010)

Secondary Temp – Primary Temp:

(Average from the mixed region) _____

Secondary Salinity – Primary Salinity:

(Average from the mixed region) _____

Additional Comments:

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Month <u>May</u>				Year <u>2012</u>			Ship <u>Tully</u>			Cruise ID <u>2012-12</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	S13	2254	BE	ROS		1	48 35.550	123 30.010	224				dy	✓	
		2258	BO				48 35.580	123 30.010		214	1-11	11			
		2313	EN				48 35.550	123 29.930							12-24 @ surface
24	JF1	0447	BE	USW	-	-	48 16.04	123 30.63	177						Loop Sal ch, Net
	JF2	0639	BE	"			48 18.03	124 0.15							Loop Sal (ch) Net
	JF3	0841	BE	"	-	-	48 26.93	124 29.63	213						Loop Sal/ch/Net
	JF4		BE	"	-	-	48 32.37	125 00.00	62						Loop - SAL/ch/Net
24	P1	1301	BE	ROS	US	2	48 34.54	125 30.05	115		12-13	2	H.M.	✓	
		1304	BO				48 34.54	125 30.04		105					
		1309	CM				48 34.55	125 30.00							
24	P2	1526	BE	ROS	US	3	48 35.99	125 59.99	116		14-21	8	H.M.	✓	Deep Cast
		1526	BO				48 36.06	126 00.06		105					
		1540	CM				48 35.98	126 00.01							
24	P2	1602	BE	HCT		4	48 35.98	126 00.01							
		1608	BO				48 36.01	126 00.02							
		1610	CM				48 36.03	126 00.02							
24	P2	1622	BE	ROS	US	5	48 36.01	126 00.03	115				M.A.	✓	DMS Cast
		1625	BO				48 36.01	126 00.04		100	14-27	14			
		1637	EN				48 36.04	126 00.05							

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

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 before each cast, do not use Ammonia products

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Month <u>MAY</u>			Year <u>2012</u>				Ship <u>TULLY</u>				Cruise ID <u>2012-12</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
24	P3	1821	BC	ROS	US	6	48° 37.53	126° 19.95	802		28-29	2	H.7/DY	✓	
		1835	BO				48° 37.54	126° 19.96		806					
		1853	EN				48 37.53	126 19.97							
24	P4	2058	BE	ROS		7	48 38.96	126 39.97	1315						DMS cast
		2107	BO				48 38.97	126 39.95		300	30-47	18	DY	✓	
		2128	EN				48 38.95	126 40.00							
24	P4	~2140	BE	Pump		8	48 38.96	126 39.97	1315						chain
		2222	BO							20					
		2237	EN				48 38.96	126 40.02							
24	P4	2246	BE	ROS	US	9	48 38.97	126 39.99	1317						CS #1
		2300	BO				48 38.98	126 39.96		600	48-70	23	DY	✓	
		2319	EN				48 38.95	126 39.99							
24	P4	2330	BE	NET		10	48 38.97	126 40.02	1317						Bongo for URI
		2342	BO				48 38.99	126 40.01		250					
		2347	EN				48 38.97	126 40.02							
24	P4	2357	BE	NET		11	48 38.97	126 39.99	1317						Bongo for IOS
25		0008	BO				48 38.95	126 40.00		250					
		0013	EN				48 38.95	126 39.97							

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DRF = Drifter
— =

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments		
							Latitude	Longitude									
25	P4	0047	BE	ROS	US	12	48 38.97	126 39.93	1309				DY	✓	Cs cast #2		
		0051	BO				48 38.98	126 39.91		200	71-92	22					
		0101	EN				48 38.96	126 39.93									
25	P4	0152	BE	NET		13	48 38.99	126 39.94	1308				DY/MR		MPS		
		0248	BO				48 38.98	126 39.94		1250							
		0310	EN				48 38.99	126 39.92									
25	P4	0322	BE	ROS	US	14	48 38.96	126 39.93	1315					✓	Th+Po cast		
		0333	BO				48 38.98	126 39.92		500	93-116	24	MR				
		0358	EN				48 38.99	126 39.99									
25	P4	0442	BE	ROS	US	15	48 38.978	126 39.992	1311				DY		PAR OFF!		
		0514	BO				48 38.990	126 39.980		1315	117-135	19			Deep Cast		
		0601	EN				48 39.001	126 39.886							1300m sonde 1308 10m off 1316 db		
25	P4	0721	BE	ROS	US	16	48° 38.89	126° 40.02	1318		136-147	12	H.M.	✓	UBC CAST		
		0745	BO				48° 38.99	126° 39.98		1300							
		0814	EN				48° 38.99	126° 39.98									
25	P4	0841	BE	PUMPS		17	48° 32.43	126° 18.87	1318								
			BO				48° 32.43	126° 18.87		200			RR		Pumps		
		1245	EN				48° 32.43	126° 18.87									

Cast Type:

USW = Sea Water Loop

Bottle Firing Method

Firing Sequence

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

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NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

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Month MAY				Year 2012			Ship TULLY			Cruise ID 2012-12					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
25	P4	1335	BE	ROS	US	18	48° 39.01	126° 40.04	1309		160-179	20	H.M.	✓	LIGHT CAST
		1338	BO				48° 39.01	126° 39.99							
		1401	EN				48° 38.99	126° 39.98							
25	P5	1636	BE	ROS	US	19	48° 41.50	127° 09.98	2031		180-181	2	H.M.	✓	PAR OFF
		1708	BO				48° 41.50	127° 09.97		2005					
		1739	EN				48° 41.40	127° 09.99							
25	P6	2031	BE	ROS	US	20	48° 44.62	127° 39.90	2541				DY	✓	
		2115	BO				48° 44.65	127° 40.07		2005	182-183	2			
		2159	EN				48° 44.63	127° 39.87							
26	P7	0039	BE	ROS	US	21	48° 46.58	128° 9.98	2502				DY	✓	
		0118	BO				48° 46.60	128° 10.06		2005	184-185	2			
		0201	EN				48° 46.589	128° 10.008							
26	P8	0452	BE	ROS	US	22	48° 49.00	128° 39.91	2516				DY	✓	
		0534	BO				48° 49.01	128° 40.04		2005	186-207	22			
		0646	EN				48° 49.05	128° 40.17							
26	P8	0708	BE	NET		23	48° 48.98	128° 40.01	2517						Deep Bongo
		0754	BO				48° 49.19	128° 40.59		1200					
		0832	EN				48° 49.453	128° 41.0734							

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Month MAY				Year 2012			Ship TULLY			Cruise ID 2012-12					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
26	P9	11:06	BG	ROS	U.S.	24	48° 51.35	129° 10.03	2500?		208-209	2	H.M.	✓	NO HPLC
		11:44	BO				48° 51.42	129° 09.99		2005					(oops)
		12:17	EN				48° 51.43	129° 10.06							
26	P10	14:38	BG	ROS	U.S.	25	48° 53.59	129° 39.98	2640		210-211	2	H.M.	✓	
		15:13	BO				48° 53.58	129° 40.02		2005					
		15:51	EN				48° 53.61	129° 40.00							
26	P11	18:11	BG	ROS	US	26	48° 56.01	130° 09.98	2751		212-213	2	H.M.	✓	
		18:46	BO				48° 56.00	130° 10.00		2005					
		19:23	EN				48° 56.04	130° 9.84							
26	P11	19:20	-	LOOP	-	-	48° 56.04	130° 9.84		Loop					chl, Nut, Sal
26	P12	21:42	BG	ROS	US	27	48° 58.23	130° 40.00	3234				BY	✓	DMS cast
		21:48	BO				48° 58.25	130° 40.00		300	214-231	18			PAR ON
		22:10	EN				48° 58.22	130° 39.97							
26	P12	22:15	BG	Pumping	US	28	48° 58.20	130° 39.98							Deep Cast
			BO												
			EN												
26	P12	23:02	BG	ROS	US	29	48° 58.19	130° 39.97	3234				H.M.	✓	Sounder 3234
		23:50	BO				48° 58.20	130° 39.97		3274	232-254	23			D = 3222 P = 3274 -10 m
			EN				48° 58.30	130° 40.00							PAR OFF

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Month <u>MAY</u>				Year <u>2012</u>			Ship <u>TULLY</u>			Cruise ID <u>2012-12</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
27	P12	0213	BE	Net		30	48° 58.20	130° 40.01	3235	2000					MPS
		0403	BO				48° 58.23	130° 40.00		2000					
		0445	EN				48° 58.22	130° 40.00							
27	P12	0540	BE	RDS	US	31	48° 58.21	130° 40.02	3234				dy	✓	Th Po
		0555	BO				48° 58.21	130° 39.98		500	255-278	24			
		0619	EN				48° 58.22	130° 40.02							
27	P12	0641	BE	NET		32	48° 58.21	130° 40.02	3234						Bongo
		0651	BO				48° 58.23	130° 40.01		250					
			EN												
27	P12	0720	BO	NET		33	48° 58.22	130° 39.95	3235	250			A.M.		URI CAST
		0735	EN				48° 58.22	130° 39.95							
27	P12	0752	BE	RDS		34	48° 58.22	130° 39.98	3235		279-290	12	H.M.	✓	UBC CAST
		0827	BO				48° 58.22	130° 40.03		2000					
		0905	EN				48° 58.22	130° 39.95							
27	P12	0915	BE	PUMPS		35	48° 58.22	130° 39.99	3235			-	PH/BH		URI Pumps
		0920	BO				48° 58.22	130° 39.98		200		-			
		1315	EN				48° 58.21	130° 39.97							

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Month MAY				Year 2012			Ship TULLY			Cruise ID 2012-12					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
27	P12	1331	BE	BOT		36	48° 58.18	130° 39.95	3236		291-302	12	C.S.	-	UVIC TRACE METALS
		1437	BO				48° 58.19	130° 39.99		1000					
		1611	EN				48° 58.12	130° 40.07							
27	P12	1618	BE	ROS		37	48° 58.13	130° 40.08	3236		303-322	20	H.M.	✓	UCL LIGHT CAST
		1640	BO				48° 58.25	130° 39.98							
		1653	EN				48° 58.22	130° 39.98							
27	P13	2120	BE	ROS		38	49° 2.69	131° 39.94	3142				DY	✓	PAR OFF
		2205	BO				49° 2.62	131° 39.98		2005	323-327	5			
		2212	EN				49° 2.63	131° 39.96							
28	P14	0321	BE	ROS		39	49° 7.414	132° 39.925	3324				DY	✓	
		0407	BO				49° 7.387	132° 39.973		2005	328-329	2			
		0453	EN				49° 7.418	132° 39.992							
28	P15	0925	BE	ROS		40	49° 12.02	133° 40.00	3407		330-331	2	H.M.	✓	
		0958	BO				49° 12.01	133° 39.99		2005					
		1029	EN				49° 12.00	133° 40.00							
28	P16	1504	BE	PUMP		41	49° 17.00	134° 39.96	3635						pumping in chains
		1534	EN				49° 17.01	134° 40.01		20.					

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This page is for any notes or observations

~0800 local (1500 UTC) 28 MAY: loop pump stopped to clean strainer + line

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Month MAY				Year 2012			Ship TULLY				Cruise ID 2012-12				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
28	P16	1546	BE	ROS	US	42	49° 17.04	134° 39.97	3635		332-351	20	H.M.	✓	VBC LIGHT CAST
		1550	BO				49° 16.99	134° 39.94		200					URI
		1603	EN				49° 16.99	134° 39.96							
28	P16	1615	BE	PUMPS		43	49° 16.98	134° 39.97	3635	200	—	—	PK/BN		URI Pumps
		2014	EN				49° 17.02	134° 39.96							out of water
28	P16	2057	BE	ROS	US	44	49 17.04	134 40.04	3634					✓	DMS cast
		2105	BO				49 17.06	134 40.05		300	352-369	18	DY		PAR on
		2127	EN				49 17.03	134 40.05							
28	P16	2149	BE	NET		45	49 16.96	134 39.98	3634						WDS
28		2327	BO				49 16.99	134 40.15		2000					900
29			EN												
29	P16	0035	BE	ROS	US	46	49 16.99	134 40.00	3634			24	MR/DY	✓	PAK OFF
		0207	BO				49 17.03	134 39.82		3685	370-393				Deep cast
		0350	EN				49 17.01	134 39.94							D=3621 Sounding=3636 P=3686 Alt=-9
29	~P16	0428	DE	DRF		47	49 21.06	134 35.83	3625						Deploy Met Ocean #16
29	P16	0544	BE	NET		48	49 17.09	134 39.92	3634				DY		105 Bongo
		0551	BO				49 17.09	134 39.94		250					
		0600	EN				49 17.06	134 39.91							

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

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

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Month <u>May</u>				Year <u>2012</u>				Ship <u>Tully</u>			Cruise ID <u>2012-12</u>					Page <u>7</u> of <u>17</u>	
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments		
							Latitude	Longitude									
29	P16	0605	BE	NET		49	49 17.02	134 39.90	3635						URL Bongo		
		0613	BO				49 17.00	134 39.87		250							
		0622	EN				49 17.01	134 39.87									
29	P16	0640	BE	ROS	US	50	49 17.00	134 39.94	3635				DY/HM	✓	Th Po cast		
		0651	BO				49 16.98	134 40.03		500	394-417	24					
		0715	EN				49° 16.82	134° 39.84									
29	P16	0726	BE	BOT		51	49° 17.03	134° 39.91	3634		418-429	12	CS/DJ/AD	-	Go FLO's - UVIC		
		0835	BO				49° 16.93	134° 39.63		3000							
		1032	EN				49° 16.79	134° 39.25									
29	P16	1044	BE	BOT		52	49° 17.03	134° 40.10	3635		430-433	4	CS/DJ/AD	-	Go FLO's - UVIC		
		1102	BO				49° 17.00	134° 39.94		75							
		1112	EN				49° 16.94	134° 39.83									
29	P17	1542	BE	ROS		53	49° 21.00	135° 40.05	3150		434-435	2	H.M.	✓			
		1622	BO				49° 21.03	135° 40.03		2005							
		1653	EN				49° 21.01	135° 40.01									
29	P18	2130	BE	ROS		54	49 26.02	136 39.95	3835				DY	✓			
		2212	BO				49 26.04	136 39.97		2005	436-437	2					
		2258	EN				49 26.00	136 39.99									

Cast Type: USW - Sea Water Loop Bottle Firing Method: 1

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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EN = End Time of Cast
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RE = Recover Mooring Time

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

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Month <u>May</u>				Year <u>2012</u>			Ship <u>Tully</u>				Cruise ID <u>2012-12</u>				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	P19	0333	BE	ROS	US	55	49° 30.06	137° 39.92	3929				DY	✓	
		0417	BO				49° 30.023	137° 39.911		2005	438-439	2			
		0458	EN				49° 30.01	137° 29.97							
30	P20	0948	BE	PUMP		56	49° 33.99	138° 39.97	3966	20			CS/DJ/DD		PUMPS FROM CHAINS
		1210	EN				49° 34.00	138° 39.95							
30	P20	1242	BO	NET		57	49° 34.00	138° 40.02	3967	250			H.M.		105 BONGO
			EN												
30	P20	1300	BE	NET		58	49° 34.00	138° 40.02	3967	250					
			EN												
30	P20	1324	BE	ROS	U.S.	59	49° 33.99	138° 39.97	3967		440-463	24	H.M.	✓	URI B THO CAST
			BO							500					
		1354	EN				49° 34.00	138° 40.02							
30	P20	1530	BE	ROS	U.S.	60	49° 34.01	138° 40.03	3966		464-483	20	H.M.	✓	PAR-ON
		1535	BO				49° 33.99	138° 40.05		200					
		1546	EN				49° 34.02	138° 39.95							
30	P20	1626	BE	ROS	U.S.	61	49° 33.99	138° 40.00	3966		484-507	24	H.M.	✓	DEEP CAST
		1737	BO				49° 33.99	138° 40.00		4023					Wrong depth in file
		1909	EN				49° 34.02	138° 40.01							

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DRF = Drifter

Bottle Firing Method:

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UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

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Month <u>May</u>				Year <u>2012</u>			Ship <u>Tully</u>			Cruise ID <u>2012-12</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
30	P20	2030	BE	ROS	US	62	49 34.05	138 39.97	3967				RY	✓	PAR <u>ON</u>
		2037	BO				49 34.03	138 39.96		3000	508-525	18			
		2057	EN				49 34.04	138 39.91							PAR off
30	P20	2123	BE	PUMP		63	49 34.00	138 39.23	3966						IN SITU
		2135	BO				49 34.03	138 40.00		200					
31		130	EN				49 33.93	138 39.97							
31	P20	0200	BE	NET		64	49 34.06	138 39.89	3968						Deep Bongo
		0316	BO				49 33.99	138 39.94		2000					
		0357	EN				49 33.98	138 39.99							
31	P20	0418	BE	BOT		65	49 34.03	138 39.98	3968						Go-flos
		0618	BO				49 33.48	138 40.02		3000	526-540(?)	12			
		0800	EN				49 33.50	138 39.98							
31	P20	0825	BE	Pump		66	49 33.16	138 39.89	3968						IN-SITU
		0852	BO				49 33.12	138 39.87		35					TM
		0917	EN				49 33.06	138 39.80							
31	P21	1406	BE	ROS		67	49° 38.03	139° 39.97	3961		541-542	2	HM	✓	+LOOP
		1446	BO				49° 37.98	139° 39.97		2005					
		1523	EN				49° 38.02	139° 39.97							
3	P21	1530		DRF		68	49° 38.04	139° 40.16	3960		—		M.R.		Float 31 Magnet off 1510.00

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Bottle Firing Method:

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Time Code:

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Notes:

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
31	P 21.5	1804	BC	DRF		69	49° 40.46	140° 14.41	3913				MR		ENVIR. CANADA DRIFTER
31	P22	2002	BE	ROS	US	70	49 42.00	140 39.20	3899				2Y	✓	
		2047	BO				49 42.05	140 39.99		2005	543-544	2			
		2130	EN				49 42.03	140 39.98							
31	P22	2130		LOOP		—	49 42.03	140 39.98		LOOP					chl2 Sal Not
1	P23	0203	BE	ROS	US	71	49 46.03	141 39.88	4053				2Y	✓	Calib cast
		0251	BO				49 46.01	141 39.98		2005	545-568	24			
		0331	EN				49 46.00	141 40.02							
1	P 24	0805	BC	ROS	US	72	49° 50.20	142° 40.04	3988		569-570	2	H.M.	✓	
		0833	BO				49° 50.19	142° 40.00		2005					
		0857	EN				49° 50.21	142° 39.98							
1	P 25	1310	BE	ROS	US	73	49° 59.99	143° 36.28	4150		571-575	5	H.M.	✓	SAL STANDARDS
		1347	BO				50° 00.01	143° 36.28		2005					
		1423	EN				50° 00.01	143° 36.28							
1	P 35	1733	BE	ROS	U.S.	74	49° 59.98	144° 18.18			576-579	4	H.M.	✓	EXTRA NINA WATER
		1809	BO				49° 59.94	144° 18.27							
		1845	EN				50° 00.01	144° 18.19							

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Notes:

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Month <u>June</u>				Year <u>2012</u>			Ship <u>Tully</u>			Cruise ID <u>2012-12</u>					
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
1	Traps	2135	BE	DRF		75	49 57.074	144 50.014	4214						Sed Traps
		2206	EN				49 56.915	144 50.158							
1	Traps - D	2223	BE	ROS	US	76	49 56.952	144 51.144	4214				DY	✓	THB
		2236	BO				49 56.540	144 51.116		500	580-603	24			
		2257	EN				49 56.55	144 51.11							
	Argo	2329	DE	DRF		77	49 58.99	144 52.02	4228				DY/MR	✓	Argo
2	P26	0018	BE	ROS	US	78	50 0.01	144 59.90	4252		604-627	24			Deep Cast
		0152	BO				50 0.00	145 0.00		4316					P = 41316 D = 41236 Someter = 41252 Alt = -10
		0350	EN				50 0.01	144 59.95							
2	P26	0445	BE	NET		79	50 0.01	144 59.95	4253				DY		MPS
		0621	BE				50 0.00	144 59.95		2000					
		0710	EN				50 00.00	144 59.95							
2	P26	0730	BE	PUMP		80	50 00.00	144 59.97	4254	22			CS/GANG		PUMPING OFF CHAINS
		0824	EN				50 00.01	144 59.96							
2	P26	0830	BE	ROS		81	50 00.03	144 59.96	4254		628-644	17	AM	✓	OMAR + VBC
		0901	BO				49 59.96	144 59.98		2000					
		0938	EN				49 59.96	144 59.97							

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Bottle Firing Method:

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Notes:

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
2	P 26	0949	BE	PUMPS		82	50° 00.01	144° 59.95	4253						
		1005	BO				49° 59.97	144° 59.98		200			MT/RH/BN		INSITU PUMPS / WRI
		1342	EN				50° 00.00	145° 00.01							
2	ARGO	1458	BE	ROS		83	49° 58.89	144° 47.68	4210						
		1510	BO				49° 58.89	144° 47.71		200					✓ PAR ON
		1548	EN				49° 58.91	144° 47.69							LIGHT CAST & FLOAT CALIB.
2	PA-006	1756	BE	BOAT		84	50° 03.66	144° 48.84	4222	0			HS/CS		TM surface sampling
		1813	EN				50° 03.68	144° 48.86							
2	PA-006	1827	BE	MOR		85	50° 03.67	144° 48.83	4222	ALLOCIT			MC/JK		PA-006 mooring deploy
		2221	EN				50 3.084	144 54.055		4234					4234m sonder
2	PA-006	2257	BE	ROS	US	86	50 4.62	144 54.47	4233				BT	✓	DMS cast
		2303	BO				50 4.60	144 54.48		300	680-696	17			near mooring site
		2324	EN				50 4.65	144 54.48							
2	PA-006	2359	BE	ROS	US	87	50 3.56	144 54.06	4233				MR/DY	✓	ONAR
3		0010	BO				50 3.57	144 54.09		500	668-679	12			
		0031	EN				50 3.57	144 54.08							
3	ARGO	0223	BE	ROS	US	88	49 58.73	144 47.60	4197				DY	✓	Calib 2
		0245	BO				49 58.78	144 47.61		1000	697-699	3			
		0306	EN				49 58.85	144 47.73							

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DRF = Drifter

Bottle Firing Method:

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UN = Up / No stop
DN = Down / No stop

Notes:

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
3	P26	0415	BE	ROS	89	US	50 0.03	144 59.95	4252				24	✓	Deep ONAr
		0533	BO				50 0.00	144 59.98		3400	700-704	5			
		0647	EN				49 59.99	145 0.00							
3	P26	0700	BG	BOT		90	49° 59.94	145° 00.08	4253		705-715	11	cs/ks		Go. FLOS
		0804	BO				49° 59.96	145° 00.13		4000					
		0820		MSG in			49 59.94	145.00.14							
		1115	EN				49 59.99	144 59.99							
3	P26	1122	BE	NET		91	50° 00.01	144° 59.96	4253				W.M.		BONGO
		1130	BO				50° 00.06	144° 59.95		250					
		1136	EN				50° 00.04	144° 59.96							
3	P26	1142	BG	NET		92	49° 59.99	145° 00.00	4253				W.M.		URI BONGO
		1150	BO				49° 59.99	145° 00.03		250					
		1200	EN				49° 59.98	145° 00.01							
3	ARGO	1246	BE	ROS		93	49° 59.74	144° 51.61	4253		716-718	3	H.M.	✓	ARGO CALIBRATION CAST
		1247	BG				49° 59.74	144° 51.60		10					
		1248	EN				49° 59.75	144° 51.60							
3	PA 005	1346	BG	ROS		94	50° 07.25	144° 47.31	4210		719-720	2	H.M.	✓	PA 005 CALIB. CAST
		1351	BO				50° 07.21	144° 47.30		300					
		1357	EN				50° 07.22	144° 47.30							

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Notes:

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Month JUN				Year 2012			Ship TULLY				Cruise ID 2012-12				
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
3	PA-005	1545	MR	MOR		95	50° 07. 08	144° 48. 01	4214		(NOT SURE if IT WORKED)				RELEASE SIGNAL SENT
		1641					50° 07. 26	144° 47. 87							
3	P26	22:19	BE	BOT		96	50° 00. 00'	144° 59. 99'	4215	1200	721-732	12	DS/KS/CS		BODY OUT OF WATER - 1646 - ON DECK BOTTLE 3 SENT MESSENGER @ SURFACE. BEST AVAILABLE FOR BOTTLES 4-12 2ND MESSENGER @ 00:36 UTC 50° 00. 00' N 144° 59. 99' W
		23:03	BO				49° 59. 95'	145° 00. 08'							
		00:05	EN												
4	P26	02:04	BE	PUMP		97	50° 00. 00	144° 59. 88'	4220	35	733-735	3	DY/KS		
		0320	EN				49 59. 99	144 59. 94							
4	P26	0334	BE	ROS		98	49 59. 98	144 59. 97	4252				DY	✓	P = 4317 ~6m deep D = 4238 Sampler = 4252 Alt = -8
		0507	BO				50 0. 00	144 59. 98		4317	736-740	5			
		0643	EN				50 0. 01	145 0. 01							
4	P26	1134	BE	ROS		99	49° 59. 99	144° 59. 97	4253		741-763	23	H.M	✓	CESSION #1 CAST
		1140	BO				49° 59. 99	145° 00. 00		600					
		1201	EN				49° 59. 99	149° 59. 99							
4	P26	1241	BE	ROS		100	50° 00. 02	145° 00. 03	4253		764-785	22	H.M	✓	CESSION #2 CAST
		1245	BO				50° 00. 02	145° 00. 00		200					
		1253	EN				50° 00. 06	144° 59. 95							
4	ARGO 4	1524	BE	ROS		101	49° 57. 75	144° 46. 07	4217	1025	786-788	35	H.M	✓	ARGO 4 + NINA (SURF)
		1525	BO				49° 57. 75	144° 46. 07			810-811				
		1529	EN				49° 57. 73	144° 46. 05							

Cast Type:

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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
DE = Deployment Time
MR = Messenger Release Time
RE = Recover Mooring Time

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JUNE</u>				Year <u>2012</u>			Ship <u>TULLY</u>			Cruise ID <u>2012-12</u>						Page <u>17</u> of <u>17</u>
Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments	
							Latitude	Longitude								
4	TRAP-R	1633	BE	ROS	U.S.	102	49° 55.16	144° 34.19	4134		789-809	21	H.M.	✓	TRAP RECOVERY - UR1	
		1643	BO				49° 55.25	144° 34.17		600						
		1706	EM				49° 55.39	144° 34.05								
4	TRAP-R	1730		DRF		103	49° 55.1852	144° 32.2429							TRAP RECOVERY - UR1	
4	EXH1 CAY	1755		DRF		104	49° 55.18	144° 32.24							Deploy EC drifter	
5	EC Drift	0045	DE	DRF		105									" "	
5	P24-23	0130				Loop	49° 51.99	142° 15.75							CHL x2, Not Sal	
5	NEAR P20	1300				Loop	49° 46.69	138° 33.22					H.M.		CHL x2 / NUTS / SAL	
6	DRF RECOVERY 0109		EM	DRF		106	49° 43.28	135° 06.97	3616						RECOVER GAGG ARGOS	
6	North of P6	0140		LOOP		-	49° 42.90	135° 2.35							CHL x2 Not Sal	
6	NEAR P4	1304		Loop		-	49° 22.92	132° 26.03							CHL / NUTS / SAL	
7	Loop 6!	0148		Loop 6			48° 59.58	129° 20.95							(P9.5 NORTH)	
7	P4	1556	BE	ROS	U.S.	107	48° 38.94	126° 39.93	1314				H.M.			
		1621	BO				48° 38.95	126° 40.03		1322						
		1700	EM				48° 38.94	126° 39.97								
7	P4	1705	BE	BOT		108	48° 38.94	126° 39.97	1314				CS/D/D/MS		GO-FLDS	
7	Loop 7	1744	BO	Loop 7		-	48° 38.95	126° 39.89							CHL x2 / SAL / NUTS	
		1755		GO FLOW	MSG	109	48° 38.95	126° 39.89	1313	1200		10	H.M.		MSG (17:55) BTM 1313	
		1836		PUMP		110	48° 38.95	126° 39.89					KS			

Cast Type:

BOT = Bottle cast, no CTD
 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop
 MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
 UN = Up / No stop
 DN = Down / No stop

Notes:

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