

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2012-67

DATE:

From: OCT 9

to: NOV 4

VESSEL:

W.E. RICKER

PROJECT(S):

MARC TRUDGEL - HIGH SEAS SALMON

Book 1 of 2

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

WaterProperties.ca

Captain:	SCOTT BOAR	First Officer:	TAM COPPING
Second Officer:	SCOTT MCCOLL	Third Officer:	
Fishing Master:			

Mission Participants / Agencies: PAs / 105 / vic

[illegible][illegible]

Data logging computer: DELL

Data acquisition program: SCASAVE SBE 911 PLUS

CTD deck unit make: SBE model: 11 serial number: 0424

Primary CTD

Make:	<u>CBc</u>	model:	<u>9</u>	serial number:	<u>443</u>
Primary temperature	serial number: <u>2106</u>				
Primary conductivity	serial number: <u>1764</u>				
Secondary temperature	serial number: <u>2710</u>				
Secondary conductivity	serial number: <u>2128</u>				
Transmissometer:	Model: _____ s/n: _____				
Fluorometer:	Model: <u>WET-LAB5</u>	Cable gain:	<u>-</u>		
Oxygen sensor:	<u>SBE</u>	Model:	<u>43</u>	s/n:	<u>0997</u>
PAR sensor:	Model: _____ s/n: _____				
Other sensors:	<u>PH - SBE</u>	s/n: <u>0851</u>			
Other sensors:	s/n: _____				
Other sensors:	s/n: _____				
Other sensors:	s/n: _____				
Other sensors:	s/n: _____				

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):

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Month OCTOBER				Year 2012			Ship W.E. RICKER			Cruise ID 2012-67					
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							
10	IF05	1408	BE	CTD		001	48° 31.29	124° 29.31	86			0	H.M.	✓	CALLED IF 01 in FILE
		1411	BO				48° 31.29	124° 29.30		75					SHOULD BE IF05
		1412	EN				48° 31.29	124° 29.30							
			BE	NET		002									BONGO
		14:44	BE	TRAWL		003	48 31.40	124 30.58		SURFACE TOW					TRAWL
10	IF06	1604	BE	CTD		004	48° 33.39	124° 42.30	101						T: 9.82 S: 31.32
		1607	BO				48° 33.40	124° 42.31		90		0			
		1609	EN				48° 33.42	124° 42.30							
		1611	BE	NET		005	48° 33.42	124° 42.32							BONGO
		1620	BE	TRAWL		006	48 33.8	124 43.45		15M HEADROPE DEPTH					TRAWL
10	V101	1950	BE	CTD		007	48° 47.80	125° 23.01	91			0			T: 9.74 S: 31.72
		2000	BO				48° 47.79	125° 23.03		81					
		2002	EN				48° 47.78	125° 23.05							
		2005	BE	NET		008	48° 47.75	125° 23.00							BONGO
		2020	BE	TRAWL		009	48 47.25	125 24.05		SURFACE TOW					TRAWL

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
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Notes:

Time Code:

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

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Month <u>OCTOBER</u>		Year <u>2012</u>		Ship <u>W.E. RICHER</u>		Cruise ID <u>2012-67</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							
10	VI 02	2149	BE	CTD		010	48° 40.90	125° 35.75	144			0	H.M.		
		2151	BO				48° 40.90	125° 35.79		135					
		2154	EN				48° 40.93	125° 35.80							
		2156	BE	NET		011	48° 40.86	125° 35.83							
		22:13	BE	TRAWL		012	48° 40.41	125° 36.76		15m HEADROPE DEPTH					BONGO TRAWL
10	VI 03	2319	BE	CTD		013	48° 35.60	125° 42.80	61			0			
		2320	BO				48° 35.59	125° 42.78		54					T: 11.38 S: 32.32
		2321	EN				48° 35.59	125° 42.77							
		2323	BE	NET		014	48° 35.58	125° 42.73							
		2340	BE	TRAWL		015	48° 35.125	125° 43.31		30m HEADROPE DEPTH					BONGO TRAWL
11	VI 04	1409	BE	CTD		016	49° 06.07	126° 00.22	43			0			
		1411	BO				49° 06.09	126° 00.24		35					T: 11.01 S: 31.57
		1412	EN				49° 06.10	126° 00.25							
		1415	BE	NET		017	49° 06.15	126° 00.25							
		1431	BE	TRAWL		018	49° 05.86	126° 01.32		SURFACE TOW					BONGO TRAWL

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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							
11	VI 05	1526	BE	CTD		019	49° 03.40	126° 06.13	56			0	A.M.		T: 9.73 S: 31.76
		1528	BO				49° 03.43	126° 06.13		50					
		1529	EM				49° 03.45	126° 06.13							
		1533	BE	NET		020	49° 03.56	126° 06.13							BONGO
		1551	BE	TRAWL		021	49° 03.045	126° 06.99	15m	HEADROPE DEPTH					TRAWL
11	VI 06	1655	BE	CTD		022	48° 59.73	126° 12.00	90			0			T: 9.71 S: 31.67
		1657	BO				48° 59.79	126° 12.02		80					
		1700	EM				48° 59.86	126° 12.00							
		1703	BE	NET		023	48° 59.91	126° 11.99							BONGO
		17:22	BE	TRAWL		024	48° 59.8	126° 12.97		SURFACE TOW					TRAWL
11	VI 07	1825	BE	CTD		025	48° 55.48	126° 18.94	137			0			T: 10.20 S: 32.24
		1829	BO				48° 55.48	126° 18.96		130					
		1833	EM				48° 55.48	126° 18.97							
		18	BE	NET		026	48° 55.	126° 18.							BONGO
		1903	BE	TRAWL		027	48° 55.05	126° 19.83	30m	HEADROPE DEPTH					TRAWL

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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							
11	V108	2003	BE	CTD		028	48° 51.39	126° 24.24	172			0	H.M.		T: 10.69 S: 31.75
		2007	BO				48° 51.39	126° 24.23		165					
		2010	CM				48° 51.40	126° 24.21							
		2013	BE	NET		029	48° 51.41	126° 24.22		150					BONGO
		2033	BE	TRAWL		030	48° 50.85	126° 24.66		SURFACE TOW					TRAWL
11	V109	2323	BE	CTD		031	49° 09.52	126° 23.33	89			0			T: 9.54 S: 32.4
		2326	BO				49° 09.53	126° 23.29		80					
		2327	CM				49° 09.55	126° 23.29							
		2330	BE	NET		032	49° 09.57	126° 23.26							BONGO
		2344	BE	TRAWL		033	49° 10.33	126° 23.33		SURFACE TOW					TRAWL
12	EP01	1403	BE	CTD		034	49° 20.44	126° 32.95	46			1		✓	T: 10.59 S: 31.64
		1405	BO				49° 20.48	126° 32.95		40					BOT @ 10m SAL/CHL/NUIS
		1407	CM				49° 20.48	126° 32.98							
		1410	BE	NET		035	49° 26.45	126° 33.00		36					BONGO
		1420	BE	TRAWL		036	49° 20.16	126° 33.68	55	SURFACE TOW					TRAWL

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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							
12	EP 02	1520	BE	CTD		037	49° 19.03	126° 36.28	85			1	H.m.		T: 10.24 S: 31.69
		1522	BO				49° 19.05	126° 36.31		80					BOT@10m - SAL/CHL/TEMP
		1524	EN				49° 19.05	126° 36.34							
		1528	BE	NET		038	49° 19.09	126° 36.37		70					BONGO
		1552	BE	TRAWL		039	49 18.61	126 36.84	Tow	AT	15m				TRAWL
12	EP 03	1643	BE	CTD		040	49° 16.90	126° 40.47	112			1			T: 9.73 S: 31.86
		1646	BO				49° 16.95	126° 40.50		105					BOT@10m - SAL/CHL/TEMP
		1649	EN				49° 17.00	126° 40.55							
		1652	BE	NET		041	49° 17.01	126° 40.60		100					BONGO
		1713	BE	TRAWL		042	49 16.66	126 41 33	SURFACE	Tow					TRAWL
12	EP 04	1801	BE	CTD		043	49° 14.58	126° 45.22	122			1			T: 9.95 S: 32.27
		1804	BO				49° 14.61	126° 45.25		115					BOT@10m - SAL/CHL/TEMP
		1807	EN				49° 14.64	126° 45.27							
		1810	BE	NET		044	49° 14.69	126° 45.30		110					BONGO
		1859	BE	TRAWL		045	49 14.34	126 45.41	Tow	AT	30m				TRAWL

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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								
12	EP 05	1953	BE	CTD		046	49° 12.43	126° 49.68	142			1	H.M.		T: 9.71 S: 32.33	
		1956	BO				49° 12.46	126° 49.70		135					BOT@10m - SAL/CAL/HUES	
		1959	EN				49° 12.48	126° 49.71								
		2001	BE	NET		047	49° 12.49	126° 49.72		130					BONGO	
		2021	BE	TRAWL		048	49 12.22	126 50.59		TOW AT	50FMS				TRAWL	
12	EP 06	2107	BE	CTD		049	49° 10.64	126° 54.40	184			1			T: 10.52 S: 31.76	
		2110	BO				49° 10.66	126° 54.41		175					BOT@10m - SAL/CAL/HUES	
		2114	EN				49° 10.68	126° 54.41								
		2117	BE	NET		050	49° 10.70	126° 54.41		150					BONGO	
		2137	BE	TRAWL		051	49 10.26	126 55.11		TOW AT	15m				TRAWL	
12	EP 07	2227	BE	CTD		052	49° 08.23	126° 58.73	431			1			T: 10.84 S: 31.45	
		2231	BO				49° 08.25	126° 58.72		250					BOT@10m - SAL/CAL/HUES	
		2236	EN				49° 08.27	126° 58.71								
		2239	BE	NET		053	49° 08.27	126° 58.71		150					BONGO	
		2258	BE	TRAWL		054	49 08.89	126 58.67		TOW AT	30m				TRAWL	

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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							
13	VI 10	1406	BE	CTD		055	49° 32.24	127° 08.39	137			0	H.M.	✓	T: 10.93 S: 31.43
		1408	BO				49° 32.26	127° 08.42		130					
		1412	EN				49° 32.28	127° 08.45							
		1415	BE	NET		056	49° 32.34	127° 08.47		125					BONGO
		1436	BE	TRAWL		057	49 33.01	127 07.8		TOW AT SURFACE					TRAWL
13	VI 11	1530	BE	CTD		058	49° 35.57	127° 02.54	107			0			T: 9.78 S: 31.94
		1533	BO				49° 35.62	127° 02.62		100					
		1536	EN				49° 35.65	127° 02.67							
		1539	BE	NET		059	49° 35.68	127° 02.67		98					BONGO
		1558	BE	TRAWL		060	49 36.36	127 02.10		TOW AT 15m					TRAWL
13	VI 12	1657	BE	CTD		061	49° 38.49	126° 56.97	47			0			T: 10.41 S: 31.62
		1658	BO				49° 38.47	126° 56.98		40					
		1659	EN				49° 38.47	126° 57.00							
		1702	BE	NET		062	49° 38.50	126° 57.02		37					BONGO
		1718	BE	TRAWL		063	49 38.87	127 58.21		TOW AT SURFACE					TRAWL

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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							
13	VI 13	2006	BE	CTD		064	49° 48.66	127° 31.77	86			0	U.M.		T: 10.02 S: 31.42
		2008	BO				49° 48.68	127° 31.79		80					
		2010	EN				49° 48.69	127° 31.81							
		2014	BE	NET		065	49° 48.71	127° 31.82		75					BONGO
		2032	BE	TRAWL		066	49 49.22	127 31.17		Tow AT SURFACE					TRAWL
13	VI 14	2132	BE	CTD		067	49° 52.50	127° 26.30	70			0			T: 11.08 S: 31.38
		2134	BO				49° 52.51	127° 26.34		60					
		2136	EN				49° 52.52	127° 26.37							
		2139	BE	NET		069	49° 52.52	127° 26.42							BONGO
		2155	BE	TRAWL		069	49 52.79	127 25.99		Tow AT 15M					TRAWL
13	VI 15	2300	BE	CTD		070	49° 55.43	127° 19.36	58			0			T: 11.45 S: 31.23
		2301	BO				49° 55.43	127° 19.35		50					
		2302	EN				49° 55.44	127° 19.34							
		2305	BE	NET		071	49° 55.45	127° 19.32		49					BONGO
		2322	BE	TRAWL		072	49 55.9	127 20.1		Tow AT SURFACE					TRAWL

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							Latitude	Longitude							
14	101 01	1403	BE	CTD		073	50° 26.60	127° 31.11	189			0	H.M.	✓	T: 11.10 S: 29.23
		1408	BO				50° 26.64	127° 31.11		180					
		1413	EM				50° 26.69	127° 31.12							
		1415	BE	NET		074	50° 26.72	127° 31.07		150					BONGO
		1435	BE	TRAWL		075	50° 27.64	127° 32.04	Tow	AT	SURFACE				TRAWL
14	101 02	1529	BE	CTD		076	50° 31.61	127° 37.20	93			0			T: 10.97 S: 31.77
		1531	BO				50° 31.61	127° 37.22		85					
		1533	EM				50° 31.61	127° 37.23							
		1535	BE	NET		077	50° 31.62	127° 37.26		84					BONGO
		1553	BE	TRAWL		078	50° 31.63	127° 38.05	Tow	AT	15m				TRAWL
14	101 03	1634	BE	CTD		079	50° 30.38	127° 41.52	137			0			T: 11.41 S: 29.16
		1637	BO				50° 30.35	127° 41.45		130					
		1640	EM				50° 30.35	127° 41.42							
		1643	BE	NET		080	50° 30.36	127° 41.37		118					BONGO
		1701	BE	TRAWL		081	50° 30.24	127° 42.31	Tow	AT	SURFACE				TRAWL

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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		OCTOBER		Year		2012		Ship				W.E. RICHER				Cruise ID				2012-67		Page		10 of	
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																	
14	1V1 04	1750	BE	CTD		082	50° 28.52	127° 48.17	150			0	H.M.		T: 11.45 s: 27.43										
		1754	BO				50° 28.48	127° 48.13		140															
		1757	EN				50° 28.45	127° 48.08																	
		1759	BE	NET		083	50° 28.44	127° 48.05		150															
		1820	BE	TRAWL		084	50° 28.66	127° 48.71		TOW	AT 15m				BONGO TRAWL										
14	1V1 05	1903	BE	CTD		085	50° 28.12	127° 53.30	150			0			T: 11.19 s: 31.72										
		1907	BO				50° 28.10	127° 53.14		170															
		1910	EN				50° 28.09	127° 53.03																	
		1913	BE	NET		086	50° 28.08	127° 52.93																	
		1930	BE	TRAWL		087	50° 28.18	127° 53.84		TOW	AT SURFACE				BONGO TRAWL										
14	1V1 06	2005	BE	CTD		088	50° 27.85	127° 56.87	228			0			T: 11.13 s: 31.61										
		2010	BO				50° 27.86	127° 56.83		220															
		2014	EN				50° 27.86	127° 56.82																	
		2017	BE	NET		089	50° 27.87	127° 56.82																	
		2037	BE	TRAWL		090	50° 27.46	127° 57.27		TOW	AT 15m				BONGO TRAWL										

Cast Type: USW = Sea Water Loop Bottle Firing Method: Time Code:

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

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Month OCTOBER				Year 2012			Ship W.E. RICKER			Cruise ID 2012-67					
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							
14	VI 16	2204	BE	CTD		091	50° 21. 56	128° 05. 67	91			0	H.M.		T: 10.97 S: 31.58
		2206	BO				50° 21. 55	128° 05. 72		70					
		2208	EN				50° 21. 53	128° 05. 74							
		2213	BE	NET		092	50° 21. 57	128° 05. 87		70					BONGO
		2231	BE	TRAWL		093	50 21. 30	128 07. 19		Tow AT 15m					TRAWL
14	VI 17	2334	BE	CTD		094	50° 18. 28	128° 11. 92	174			0			T: 11.53 S: 31.87
		2337	BO				50° 18. 34	128° 11. 98		165					
		2341	EN				50° 18. 38	128° 12. 04							
		2344	BE	NET		095	50° 18. 45	128° 12. 12		150					BONGO
15		0004	BE	TRAWL		096	50 18. 50	128 13. 30		Tow AT 15m					TRAWL
15	T 08	1403	BE	CTD		097	50° 42. 42	129° 29. 07	1096			1		✓	T: 11.21 S: 31.97
		1409	BO				50° 42. 51	129° 29. 04		250					BOT 10m. SOL/CHC/4003
		1417	EN				50° 42. 66	129° 29. 01							
		1420	BE	NET		098	50° 42. 73	129° 28. 93		150					BONGO
		1444	BE	TRAWL		099	50 43. 44	129 28. 34		Tow AT 15m					TRAWL

Cast Type:

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SET = Fish Set

USW = Sea Water Loop
MOR = Mooring
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DRF = Drifter

Bottle Firing Method:

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

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
DE = Deployment Time
MR = Messenger Release Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

Notes:

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Month OCTOBER				Year 2012			Ship W.E. RICKER				Cruise ID 2012-67				
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							
15	T 07	1618	BE	CTD		100	50°49.38	129°13.54	108			1	4.m.		T: 10.30 S: 32.01
		1620	BO				50°49.49	129°13.48		90					BOTRIOM. SAL/CAL/NUIS
		1623	EN				50°49.62	129°13.40							
		1627	BE	NET		101	50°49.72	129°13.32		85					BONGO
		1647	BE	TRAWL		102	50 51.15	129 12.32		Tow	AT 15m				TRAWL
15															
16	QEST 1	1425	BE	CTD	2 nd	103	50°48.73	127°36.65	386			0			T: 9.75 S: 32.06
		1431	BO				50°48.66	127°36.62		250					
		1436	EN				50°48.59	127°36.62							
		1415	BE	NET	1 st	104	50°48.84	127°36.99		150					BONGO
		1442	BE	TRAWL	3 rd	105	50 48.84	127 37.42		Tow	AT SURFACE				TRAWL
16	QEST 02	1615	BE	CTD		106	50°53.75	127°37.81	436			0			T: 9.36 S: 32.21
		1620	BO				50°53.78	127°37.86		250					
		1625	EN				50°53.77	127°37.91							
		1627	BE	NET		107	50°53.78	127°37.92		150					BONGO
		1647	BE	TRAWL		108	50 54 29	127 38.54		Tow	AT 15				TRAWL

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Bottle Firing Method:

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Notes:

Time Code:

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DE = Deployment Time
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Month OCTOBER			Year 2012			Ship W.E. RICKER			Cruise ID 2012-67						
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							
16	QCST 03	1747	BE	CTD		109	50° 57. 22	127° 44. 21	290			0	H.M.		T: 9.02 S: 32.13
		1752	BO				50° 57. 17	127° 44. 26		250					
		1758	EN				50° 57. 11	127° 44. 28							
		1800	BE	NET		110	50° 57. 12	127° 44. 36		150					BONGO
		1820	BE	TRAWL		111	50 56. 83	127 43. 34		Tow	AT SURFACE				TRAWL
16	QCST 04	1932	BE	CTD		112	50° 57. 28	127° 32. 52	135			0			T: 8.67 S: 31.97
		1935	BO				50° 57. 26	127° 32. 52		125					
		1938	EN				50° 57. 25	127° 32. 50							
		1941	BE	NET		113	50° 57. 24	127° 32. 50		125					BONGO
		2002	BE	TRAWL		114	50 56. 75	127 31. 67		Tow	AT 15 m				TRAWL
16	QCST 05	2129	BE	CTD		115	50° 50. 82	127° 18. 61	133			0			T: 8.91 S: 30.95
		2132	BO				50° 50. 80	127° 18. 61		125					
		2135	EN				50° 50. 79	127° 18. 63							
		2137	BE	NET		116	50° 50. 79	127° 18. 69		123					BONGO
		2156	BE	TRAWL		117	50 50. 32	127 19. 58		Tow	AT SURFACE				TRAWL

Cast Type:

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ROS = Rosette plus CTD
SET = Fish Set

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DRF = Drifter

Bottle Firing Method:

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DN = Down / No stop

Notes:

Time Code:

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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				Year				Ship				Cruise ID			
OCTOBER				2012				W.E. RICKER				2012-67			
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							
16	QCST 06	2239	BE	CTD		118	50° 48.33	127° 22.97	224			0	H.M.		T: 8.72 S: 31.30
		2244	BO				50° 48.30	127° 23.07		215					
		2248	EN				50° 48.26	127° 23.15							
		2251	BE	NET		119	50° 48.24	127° 23.18		150					BONGO
		2309	BE	TRAWL		120	50 47.75	127 24.15		Tow at 15m					TRAWL
17	QCST 07	1406	BE	CTD		121	50° 48.22	127° 35.09	372			0		✓	T: 9.26 S: 32.09
		1412	BO				50° 48.25	127° 35.08		250					
		1418	EN				50° 48.30	127° 35.03							
		1420	BE	NET		122	50° 48.31	127° 34.97		150					BONGO
		1444	BE	TRAWL		123	50 48 34	127 34.13		Tow at surface					TRAWL
17	QCST 08	1622	BE	CTD		124	50° 45.36	127° 17.82	248			0			T: 8.58 S: 31.62
		1628	BO				50° 45.45	127° 17.68		235					
		1634	EN				50° 45.51	127° 17.59							
		16	BE	NET		125	50° 45	127° 17							BONGO
		1658	BE	TRAWL		126	50 45.99	127 16.78		Tow at 30m					TRAWL

Cast Type:

BOT = Bottle cast, no CTD
CTD = CTD without Rosette
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Bottle Firing Method:

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UN = Up / No stop
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Notes:

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DE = Deployment Time
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Month OCTOBER				Year 2012				Ship W.E. RICKER				Cruise ID 2012-67			
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							
17	QCST 09	1756	BE	CTD		127	50° 47.78	127° 11.06	156			0	H.M.		T: 8.46 S: 31.40
		1759	BO				50° 47.84	127° 11.02		145					
		1803	EN				50° 47.87	127° 10.98							
		1805	BE	NET		129	50° 47.89	127° 10.89		146					BONGO
		1828	BE	TRAWL		129	50 48 74	127 10.28		Tow AT SURFACE					TRAWL
17	QCST 10	1924	BE	CTD		130	50° 50.10	127° 08.52	146			0			T: 8.44 S: 31.42
		1927	BO				50° 50.11	127° 08.50		135					
		1929	EN				50° 50.13	127° 08.50							
		1931	BE	NET		131	50° 50.15	127° 08.50		130					BONGO
		1949	BE	TRAWL		132	50 49.83	127 07.81		Tow AT 15m					TRAWL
17	QCST 11	2054	BE	CTD		133	50° 46.55	127° 00.49	161			0			T: 8.38 S: 31.71
		2056	BO				50° 46.56	127° 00.46		150					
		2059	EN				50° 46.55	127° 00.47							
		2103	BE	NET		134	50° 46.56	127° 00.50		150					BONGO
		2120	BE	TRAWL		135	50 46.08	127 01.24		Tow AT SURFACE					TRAWL

Cast Type:

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

USW = Sea Water Loop

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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:

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 OCTOBER				Year 2012				Ship W.E. RICKER			Cruise ID 2012-67				
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							
17	QCST 12	2213	BE	CTD		136	50° 42.94	127° 01.41	161			0	H.M.		T: 8.40 S: 31.61
		2216	BO				50° 43.00	127° 01.31		155					
		2219	EN				50° 43.03	127° 01.26							
		2222	BE	NET		137	50° 43.05	127° 01.18		150					BONGO
		2240	BE	TRAWL		138	50° 43.26	127° 02.13		Tow AT 15 m.					TRAWL
17	QCST 13	2331	BE	CTD		139	50° 42.47	127° 07.67	161			0			T: 8.72 S: 31.95
		2335	BO				50° 42.54	127° 07.64		150					
		2337	EN				50° 42.56	127° 07.62							
		2340	BE	NET		140	50° 42.55	127° 07.64							BONGO
		2359	BE	TRAWL		141	50° 42.4	127° 08.52		Tow AT 30m					TRAWL
18	QCST 14	1407	BE	CTD		142	50° 42.12	126° 55.68	196			0		✓	T: 8.56 S: 31.93
		1411	BO				50° 42.15	126° 55.66		185					
		1414	EN				50° 42.13	126° 55.67							
		1417	BE	NET		143	50° 42.14	126° 55.62		150					BONGO
		1436	BE	TRAWL		144	50° 42.69	126° 55.515		Tow AT SURFACE					TRAWL

Cast Type:

USW - Sea Water Loop

Bottle Firing Method

Firing

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

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Month OCTOBER				Year 2012				Ship W.E. RICHER				Cruise ID 2012-67				Page 17 of	
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									
18	QCST 15	1541	BE	CTD		145	50° 45.36	126° 50.26	160			0	H.M		T: 8.48 S: 30.88		
		1545	BO				50° 45.42	126° 50.36		150							
		1548	EN				50° 45.46	126° 50.39									
		1550	BE	NET		146	50° 45.45	126° 50.45							BONGO		
		1602	BE	TRAWL		147	50 45.2	126 50.2		Tow AT 15m					TRAWL		
18	QCST 16	1724	BE	CTD		148	50° 41.54	126° 46.88	132			0			T: 8.34 S: 31.79		
		1727	BO				50° 41.64	126° 46.88		120							
		1730	EN				50° 41.68	126° 46.88									
		1732	BE	NET		149	50° 41.72	126° 46.88		115					BONGO		
		1749	BE	TRAWL		150	50 41.3	126 47.0		Tow AT 30m					TRAWL		
18	QCST 17	1903	BE	CTD		151	50° 40.93	126° 51.25	186			0			T: 8.39 S: 32.02		
		1907	BO				50° 40.92	126° 51.26		175							
		1911	EN				50° 40.91	126° 51.27									
		1915	BE	NET		152	50° 40.91	126° 51.27		150					BONGO		
		1932	BE	TRAWL		153	50 40.27	126 50.5		Tow AT SURFACE					TRAWL		

Cast Type:

USW = Sea Water Log

Bottle Firing Method:

Time Code:

Cast Type:

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

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 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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Month				Year			Ship				Cruise ID				
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							
18	QCST 18	2024	BE	CTD		154	50° 36.73	126° 48.21	87			0	H.M.		T: 8.54 S: 31.68
		2026	BO				50° 36.75	126° 48.20		80					
		2028	EN				50° 36.75	126° 48.19							
		2030	BE	NET		155	50° 36.75	126° 48.17		80					BONGO
		2047	BE	TRAWL		156	50 36.61	126 49.31			Tow AT	15m			TRAWL
18	JS 01	2207	BE	CTD		157	50° 33.36	126° 48.14	423			0			T: 8.72 S: 31.52
		2213	BO				50° 33.40	126° 48.10		250					
		2218	EN				50° 33.38	126° 48.12							
		2221	BE	NET		158	50° 33.39	126° 48.12		150					BONGO
		2241	BE	TRAWL		159	50 33.21	126 46.87			Tow AT	SURFACE			TRAWL
18	JS 02	2354	BE	CTD		160	50° 30.58	126° 37.69	445			0			T: 8.73 S: 31.30
		2359	BO				50° 30.65	126° 37.71		250					
19		0004	EN				50° 30.67	126° 37.71							
		0007	BE	NET		161	50° 30.68	126° 37.70		150					BONGO
		0025	BE	TRAWL		162	50 30.86	126 39.05			Tow AT	15m.			TRAWL

Cast Type:

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CTD = CTD without Rosette
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SET = Fish Set

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Bottle Firing Method:

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

Notes:

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EN = End Time of Cast
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Month OCTOBER				Year 2012			Ship W.E. RICKER				Cruise ID 2012-67				
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							
19	T 06	1407	BE	CTD		163	50° 55.47	129° 00.34	60			1	H.M.	✓	T: 10.43 S: 32.15
		1408	BO				50° 55.43	129° 00.35		50					BOT@10m - SAL/CAL/NOTS
		1410	EN				50° 55.39	129° 00.36							
		1413	BG	NET		164	50° 55.32	129° 00.39		50					BONGO
		1433	BE	TRAWL		165	50° 55.5	128° 59.6		TOW AT SURFACE.					TRAWL
19	T 05	1544	BE	CTD		166	51° 00.02	128° 52.10	61			1			T: 9.90 S: 32.12
		1546	BO				51° 00.01	128° 52.10		50					BOT@10m - SAL/CAL/NOTS
		1548	EN				51° 00.03	128° 52.15							
		1551	BE	NET		167	51° 00.02	128° 52.17		50					BONGO
		1606	BE	TRAWL		168	51° 00.3	128° 51.7		TOW AT 15 M.					TRAWL
19	T 04	1718	BE	CTD		169	51° 04.60	128° 43.70	61			1			T: 9.74 S: 32.24
		1720	BO				51° 04.60	128° 43.69		50					BOT@10m - SAL/CAL/NOTS
		1722	EN				51° 04.59	128° 43.68							
		1725	BG	NET		170	51° 04.60	128° 43.69							BONGO
		1739	BE	TRAWL		171	51° 05.1	128° 42.8		TOW AT SURFACE					TRAWL

Cast Type:

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USW = Sea Water Loop
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 DRF = Drifter

Bottle Firing Method:

US = Up / Stop
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Notes:

Time Code:

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

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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							
19	T 03	1845	BE	CTD		172	51° 08.35	128° 36.12	137			1	H.M.		T: 9.34 S: 32.31
		1847	BO				51° 08.37	128° 36.11		125					Boreion. SAL/CAL/HUTS
		1851	EN				51° 08.39	128° 36.06							
		1853	BE	NET		173	51° 08.41	128° 36.05		128					BONGO
		1912	BE	TRAWL		174	51 08.97	128 34.96			Tow at 15 m.				TRAWL
19	T 02	2013	BE	CTD		175	51° 12.53	128° 28.12	192			1			T: 9.94 S: 32.20
		2016	BO				51° 12.57	128° 28.08		186					Boreion. SAL/CAL/HUTS
		2020	EN				51° 12.60	128° 28.06							
		2022	BE	NET		176	51° 12.62	128° 28.05		150					BONGO
		2041	BE	TRAWL		177	51 13.13	128 27.14			Tow at surface				TRAWL
19	T 01	2138	BE	CTD		178	51° 16.49	128° 20.13	79			1			T: 9.97 S: 32.11
		2139	BO				51° 16.51	128° 20.10		70					Boreion. SAL/CAL/HUTS
		2141	EN				51° 16.51	128° 20.06							
		2146	BE	NET		179	51° 16.52	128° 20.18		70					BONGO
		2221	BE	TRAWL		180	51 16 19	128 19.35			Tow at 15 m				TRAWL

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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							
28	DC 01	2225	BC	CTD		181	52° 54.46	129° 18.77	255			1	H.M.	✓	T: 8.09 S: 29.12
		2230	BO				52° 54.43	129° 18.86		245					Bottle 10 - SAL/CHL/NOTS
		2235	EN				52° 54.40	129° 18.95							
		2238	BC	NET		182	52° 54.38	129° 18.99		150					Bottle 60
		2254	BC	TRAWL		183	52° 54.6	129° 18.68							TRAWL
28	DC 02	2343	BC	CTD		184	52° 55.24	129° 17.31	232			1			T: 7.75 S: 28.4
		2347	BO				52° 55.18	129° 17.37		220					Bottle 10 - SAL/CHL/NOTS
		2352	EN				52° 55.12	129° 17.45							CTD CHL STATION
29	DC 03	0135	BC	CTD	2 nd	185	53° 03.20	129° 17.82	523			1			T: 7.76 S: 28.31
		0140	BO				53° 03.18	129° 17.84		250					Bottle 10 - SAL/CHL/NOTS
		0145	EN				53° 03.16	129° 17.86							
		0147	BC	NET	3 rd	186	53° 03.17	129° 17.87		150					Bottle 10
		0051	BC	Tow	1 st	187	53 1.7	129 16.6							TRAWL

Cast Type:

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 CTD = CTD without Rosette
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USW = Sea Water Loop
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Bottle Firing Method:

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Notes:

Time Code:

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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															
29	DC 04	1404	BC	CTD		108	53° 23.42	129° 10.85	309			1	HM	✓	T: 7.76 S: 29.67								
		1408	BO				53° 23.44	129° 10.85		250					BOT@10m - SAL/CHL/HUTS								
		1414	CM				53° 23.47	129° 10.83															
		1416	BC	NET		109	53° 23.50	129° 10.80		150					BOT@10m								
		1434	BC	TRAWL		190	53° 24.25	129° 11.67			TOW AT SURFACE				TRAWL								
29	DC 05	1524	BC	CTD		191	53° 25.69	129° 12.11	393			1			T: 7.40 S: 29.02								
		1528	BO				53° 25.71	129° 12.09		250					BOT@10m - SAL/CHL/HUTS								
		1534	CM				53° 25.74	129° 12.07							CTD ONLY								
29	DC 06	1605	BC	CTD		192	53° 29.46	129° 12.63	370			1			T: 7.39 S: 28.84								
		1609	BO				53° 29.47	129° 12.64		250					BOT@10m - SAL/CHL/HUTS								
		1614	CM				53° 29.47	129° 12.66															
		1617	BC	NET		193	53° 29.48	129° 12.68		150					BONGO								
		1634	BC	TRAWL		194	53° 29.88	129° 12.33			TOW AT 15m				TRAWL								
29	DC 07	1719	BC	CTD		195	53° 32.05	129° 11.93	334			1			T: 8.25 S: 30.59								
		1725	BC				53° 32.08	129° 12.04		250					BOT@10m - SAL/CHL/HUTS								
		1730	CM				53° 32.06	129° 12.08							CTD ONLY								

Cast Type:

USW = Sea Water Loop

Bottle Firing Method:

Time Code:

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USW = Sea Water Loop
 MOR = Mooring
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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>OCTOBER</u>				Year <u>2012</u>			Ship <u>W.E. RICKER</u>			Cruise ID <u>2012-67</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	DC 08	1755	BE	CTD		196	53° 34.90	129° 12.63	280			1	HM		T: 7.89 S: 30.15
		1800	BO				53° 34.89	129° 12.69		250					BOT@10m - SAL/CAL/NUTS
		1805	EN				53° 34.87	129° 12.74							
		1808	BE	NET		197	53° 34.84	129° 12.77	150						BONGO
		1829	BE	TRAWL		198	53° 35.44	129° 12.86		Tow AT 30m					TRAWL
29	DC 09	1913	BE	CTD		199	53° 37.23	129° 13.20	251			1			T: 7.24 S: 29.35
		1918	BO				53° 37.19	129° 13.27		240					BOT@10m - SAL/CAL/NUTS
		1924	EN				53° 37.18	129° 13.27							CTD ONLY
29	DC 10	1948	BE	CTD		200	53° 39.03	129° 10.25	392			1			T: 7.15 S: 29.15
		1953	BO				53° 39.02	129° 10.26		250					BOT@10m - SAL/CAL/NUTS
		1959	EN				53° 39.00	129° 10.27							
		2001	BE	NET		201	53° 38.98	129° 10.28		150					BONGO
		2020	BE	TRAWL		202	53° 39.34	129° 9.90		Tow AT SOREMECH					TRAWL
29	DC 11	2130	BE	CTD		203	53° 40.85	129° 07.22	392			1			T: 7.31 S: 28.94
		2135	BO				53° 40.88	129° 07.15							BOT@10m - SAL/CAL/NUTS
		2140	EN				53° 40.92	129° 07.15							CTD ONLY

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Month <u>OCTOBER</u>				Year <u>2012</u>			Ship <u>W.E. RICKER</u>			Cruise ID <u>2012-67</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	DC 12	2209	BC	CTD		204	53° 43.23	129° 03.03	362			1	H.M.		T: 7.38 S: 29.73
		2214	BO				53° 43.21	129° 03.05		250					Bottle on SAL/CHL/NUIS
		2219	EM				53° 43.21	129° 03.05							
		2222	BC	NET		205	53° 43.20	129° 03.06		150					BONGO
		2240	BC	TRAWL		206	53 43 66	129 02 42		Tow	AT 15m.				TRAWL
29	DC 13	2323	BC	CTD		207	53° 44.69	128° 59.92	314			1			T: 6.97 S: 28.98
		2328	BO				53° 44.68	128° 59.97		250					Bottle on SAL/CHL/NUIS
		2333	EM				53° 44.66	129° 00.03							CTD ONLY
		23					53 44	12							
30	DC 14	0111	BC	CTD	2 nd	208	53° 48.64	128° 50.90	340			1			T: 7.39 S: 28.85
		0116	BO				53° 48.66	128° 50.94		268					Bottle on SAL/CHL/NUIS
		0122	EM				53° 48.65	128° 50.96							
		0125	BC	NET	3 rd	209	53° 48.65	128° 51.01		150					BONGO
30		0027	BC	TRAWL	1 st	210	53 47.17	128 53.95		Tow	AT SURFACE				TRAWL

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Month <u>OCTOBER</u>				Year <u>2012</u>			Ship <u>W.E. RICKER</u>				Cruise ID <u>2012-67</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	DC 15	1403	BE	CTD		211	53° 57.84	128° 40.47	172			1	H.M.	✓	T: 7.32 S: 30.28
		1407	BO				53° 57.87	128° 40.48		160					BOT@10m - SAL/CHL/NOTS
		1411	CH				53° 57.92	128° 40.47							
		1414	BE	NET		212	53° 57.94	128° 40.44		150					BONGO
		1433	BE	TRAWL		213	53° 57.27	128° 40.81		Tow AT SURFACE					TRAWL
30	DC 16	1517	BE	CTD		214	53° 54.72	128° 43.27	232			1			T: 7.54 S: 30.52
		1521	BO				53° 54.75	128° 43.22		220					BOT@10m - SAL/CHL/NOTS
		1527	CH				53° 54.80	128° 43.20							CTD ONLY
30	DC 17	1552	BE	CTD		215	53° 52.21	128° 46.09	296			1			T: 7.18 S: 29.68
		1556	BO				53° 52.24	128° 46.16		250					BOT@10m - SAL/CHL/NOTS
		1602	CH				53° 52.26	128° 46.22							
		1604	BE	NET		216	53° 52.26	128° 46.19		150					BONGO
		1639	BE	TRAWL		217	53° 51.34	128° 47.59		Tow AT 15m					TRAWL
30	DC 18	1721	BE	CTD		218	53° 49.28	128° 49.42	336			1			T: 6.83 S: 29.03
		1726	BO				53° 49.32	128° 49.41		250					BOT@10m - SAL/CHL/NOTS
		1732	CH				53° 49.35	128° 49.34							CTD ONLY

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