

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2012-50

DATE:

From: 16 JUN 12 - 04 JUL 12 to: 11 - 15 JUL 12

VESSEL:

F/V Viking Storm W.E. RICKER

PROJECT(S):

HIGH SEAS SALMON
Book 3 of 3

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

WaterProperties.ca

Captain: Scott Doan
Second Officer: Scott McCall
Fishing Master: Les Hand

First Officer: Ian Copping
Third Officer: n/a

Mission Participants / Agencies:

$$\Delta F_0 / NOAA / CFIA$$

Scientific Personnel:

Chief Scientist: Mary Thiess

[illegible]

Second leg of Mission:

Chief Scientist:

[illegible]

Data logging computer:

Data acquisition program:

CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD

Make: SBE
model: 911
serial number: 443

Primary temperature serial number: 2106

Primary conductivity serial number: 1764

Secondary temperature serial number: 2716

Secondary conductivity serial number: 2128

Transmissometer:

Fluorometer: Model WET Labs Cable gain: 1000

Oxygen sensor: _____
Model: SBC

PAR sensor:	Model:
PAR sensor:	Model:

Other sensors: pH Installed after D July 1998

Other sensors:

Other sensors:

Other sensors:

Secondary CTD

Make: model: serial number:

Primary temperature serial number:

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer:	Model:

Fluorometer: Model	Cable gain:
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Oxygen sensor: _____
 Model: _____

PAR sensor: _____ Model: _____

Other sensors: _____

Other sensors:

Other sensors:

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

See notes from book 1.

Switched ships: Viking Storm ended 04 JUL 12
W.E. Ricker started 12 JUL 12 → con file 443 Ricker July 2012

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Month JULY				Year 2012			Ship F/V VIKING STORM				Cruise ID 2012-50				
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							
02	1BC05	13:01	BE	CTD		301	52 15.3	128 27.2	135	128		1	MT	NA	BOT@10m
		:07	EN				15.4	27.2							NUTS, CHL & SAL
		13:10	BE	NET		302	52 15.4	128 27.3	114	100					
		:16	EN				15.4	27.4							
		13:24	BE	SET		303	52 15.4	128 26.7	SURFACE						
		:54	EN												
02	1BC06	14:33	BE	NET		304	52 14.5	128 16.6	127	100					
		:39	EN				14.6	16.6							
		14:43	BE	CTD		305	52 14.6	128 16.7	250	190		1	MT	NA	BOT@10m
		:51	EN				14.7	16.9							NUTS, CHL & SAL
		15:00	BE	SET		306	52 14.4	128 16.2	15 meter						
		:30	EN				13.4	12.8							

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

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Month JULY				Year 2012				Ship F/V VIKING STORM				Cruise ID 2012-50			
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							Latitude	Longitude							
02	1BC07	16:53	BE	CTD		307	52 05.9	128 07.5	155	145		1	MT	NA	BOT @ 10m
		:59	EN				05.9	07.5							NUTS, CHL & SAL
		17:02	BE	NET		308	52 05.9	128 07.5	178	150					
		:10	EN				05.9	07.5							
		17:17	BE	SET		309	52 05.8	128 07.0	SURFACE						
		:47	EN				04.4	03.7							
02	1BC08	18:48	BE	NET		310	52 06.8	127 53.9	288	150					
		:56	EN				06.8	53.9							
		18:59	BE	CTD		311	52 06.8	127 54.0	340	190		1	MT	NA	BOT @ 10m
		19:00	EN				06.8	54.0							NUTS, CHL, SAL
		19:17	BE	SET		312	52 06.2	127 54.4	30 metres						
		:47	EN				04.0	55.5							

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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							
02	1BC09	20:29	BE	CTD		313	51 59.4	127 56.7	245	190		1	MT	NA	BOT@10m
		1:37	EN				59.2	56.6							NUTS, CHL & SAL
		20:40	BE	NET		314	51 59.2	127 56.6	229	150					
		47	EN				59.1	56.7							
		20:55	BE	SET		315	51 58.5	127 56.8	SURFACE						
		1:28	EN				58.9	57.6							
02	1BC10	22:14	BE	NET		316	51 58.9	127 49.5	106	95					
		19	EN				58.8	49.6							
		22:23	BE	CTD		317	51 58.7	127 49.7	106	95		2	MT	NA	BOT@10m
		1:30	EN				58.6	49.8							NUTS, CHL & SAL, pH
		22:37	BE	SET		318	51 58.2	127 50.7	SURFACE						pH cal sample @ 95m
		23:07	EN				58.6	53.8							

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Month <u>JULY</u>				Year <u>2012</u>				Ship <u>F/V VIKING STORM</u>				Cruise ID <u>2012-50</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							
02	IBC 11	23:51	BE	CTD		319	51 49.6	127 54.9	309	190		1	MT	NA	BOT @ 10m
03		00:00	EN				49.6	55.0							NUTS, CHL & SAL
		00:03	BE	NET		320	51 49.6	127 55.0	308	150					
		:11	EN				49.6	54.9							
		00:19	BE	SET		321	51 49.1	127 55.0	15m						
		:49	EN				46.9	55.0							
END OF DAY															
03	IBC 12	13:00	BE	CTD		322	51 39.4	127 57.0	323	190		1	MT	NA	BOT @ 10m
		:09	EN				39.4	57.0							NUTS, CHL & SAL
		13:11	BE	NET		323	51 39.4	127 57.1	319	150					
		:19	EN				39.4	57.2							
		13:28	BE	SET		324	51 39.0	127 56.7	SURFACE						
		:58	EN				36.8	54.8							

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Notes:

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Month JULY

Year 2012

Ship F/V VIKING STORM

Cruise ID 2012-50

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							
03	IBC13	14:39	BE	NET		325	51 32.8	127 49.9	174	150					
		:47	EN				32.7	49.9							
		14:51	BE	CTD		326	51 32.8	127 49.8	172	160		2	MT	NA	BOT@10m
		15:00	EN				32.7	49.8							NUTS, CHL & SAL, pH
		15:07	BE	SET		327	51 32.3	127 49.3							pH cal@118m
		:37	EN												
03	GCSD08	16:35	BE	CTD		328	51 23.2	127 52.3	114	105					
		:40	EN				23.2	52.2							
		16:42	BE	NET		329	51 23.2	127 52.2	113	100		1	MT	NA	BOT@10m
		:47	EN				23.2	52.0							NUTS, CHL & SAL
		16:55	BE	SET		330	51 22.7	127 52.2	SURFACE						
		17:25	EN				20.4	53.3							

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— = —

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Month JULY				Year 2012				Ship F/N VIKING STORM / RICKER		Cruise ID 2012-50						Page 56 of 65	
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									
03	QCSD09	18:02	BE	NET		331	81 15.5	127 53.5	135	125							
		:09	EN				15.5	53.4									
		18:13	BE	CTD		332	51 15.5	127 53.4	135	125		1	MT	NA	BOT@10m		
		:18	EN				15.5	53.3							NUTS, CHL & SAL		
		18:25	BE	SET		333	51 15.0	127 53.2	SURFACE								
		:55	EN				12.5	53.5									
END OF DAY																	
SWITCH TO RICKER 12 JUL 12																	
12	QCSD10	1302	BE	CTD		334	51°04.45	127°46.19	97						T: 9.989		
		1304	BO				51°04.42	127°46.21		87					S: 30.657		
		1306	EN				51°04.40	127°46.22				1	MT	NA	BOT@10m		
		1309	BE	NET		335	51°04.34	127°46.27	94	84					NUTS, CHL & SAL		
		1329	BE	SET		336	51°03.72	127°47.25	97						SURFACE		

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03 JUL 12: End Viking Storm portion of survey. (SBE 25)

12 JUL 12: Start WE Ricker portion of survey (SBE 911)
No pH sensor on Ricker CTD.

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Month <u>JULY</u>				Year <u>2012</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2012-50</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							
12	QCSD11	1430	BE	CTD		337	51°00.46	127°52.92	138						T: 9.44 S: 31.35
		1433	BO				51°00.43	127°52.89		128					(*) Archiving started @ 84m on down cast.
		1435	EN				51°00.42	127°52.89				1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		1439	BE	NET		338	51°00.41	127°52.87	142	132					
		1459	BE	SET		339	50°59.97		141						15m
12	QCST01	1602	BE	CTD		340	50°57.73	127°44.76	150						T: 10.3 S: 31.09
		1605	BO				50°57.72	127°44.78		140					
		1609	EN				50°57.71	127°44.83				1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		1612	BE	NET		341	50°57.71	127°44.88	195	150					
		1632	BE	SET		342	50°57.27	127°44.16	304						SURFACE
12	QCST02	1742	BE	CTD		343	50°53.12	127°36.62	408						T: 10.37 S: 30.62
		1747	BO				50°53.12	127°36.72		250					
		1752	EN				50°53.14	127°36.79				1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		1757	BE	NET		344	50°53.14	127°36.86	436	150					
		1816	BE	SET		345	50°53.83	127°37.77	437						30m

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Month JULY

Year 2012

Ship W.E. RICKER

Cruise ID 2012-50

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	QCST03	1937	BE	CTD		346	50°57.74	127°33.30	113			1	MT	NA	BOT@10m
		1939	BO				50°57.72	127°33.31		103					NUTS, CHL & SAL
		1942	EN				50°57.70	127°33.32							T: 9.96 S: 30.88
		1946	BE	NET		347	50°57.68	127°33.31	106	96					
		2003	BE	SET		348	50°57.21	127°32.53	133						
															SURFACE
12	QCST04	2142	BE	CTD		349	50°51.38	127°17.90	140			1	MT	NA	BOT@10m
		2145	BO				50°51.35	127°17.94		130					NUTS, CHL & SAL
		2148	EN				50°51.33	127°17.97							T: 10.6 S: 30.4
		2151	BE	NET		350	50°51.31	127°17.97	120	110					
		2210	BE	SET		351	50°50.96	127°18.68	135						15m
12	QCST05	2303	BE	CTD		352	50°49.08	127°22.48	169			1	MT	NA	T: 10.3 S: 30.3
		2307	BO				50°49.07	127°22.52		159					
		2311	EN				50°49.05	127°22.58							BOT@10m
		2313	BE	NET		353	50°49.02	127°22.59	175	175 (!)					NUTS, CHL & SAL
		2335	BE	SET		354	50°48.34	127°23.70	257						* Just lucky it didn't hit bottom!
															SURFACE
END OF DAY															

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Latitude	Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
13	QCST06	1310	BE	CTD		355	50°47.25	127°30.32	360			2	MT	NA	T: 11.06 S: 30.70
		1317	BO				50°47.23	127°30.38		250					pH cal sample @ 250m
		1322	EN				50°47.20	127°30.42							BOT @ 10m
		1327	PE	NET		356	50°47.18	127°30.47	353	150					NUTS, CHL & SAL, pH
		1346	BE	SET		357	50°47.46	127°31.73	356						SURFACE
13	QCST07	1458	BE	CTD		358	50°49.91	127°41.41	354			1	MT	NA	T: 10.50 S: 31.04
		1503	BO				50°49.90	127°41.49		250					
		1508	EN				50°49.87	127°41.51							BOT @ 10m
		1511	BE	NET		359	50°49.85	127°41.53	348	150					NUTS, CHL & SAL
		1529	BE	SET		360	50°49.72	127°40.52	351						15m
13	QCST08	1721	BE	CTD		361	50°44.86	127°19.23	246			1	MT	NA	T: 10.80 S: 30.38
		1725	BO				50°44.86	127°19.21		236					
		1729	EN				50°44.86	127°19.18							BOT @ 10m
		1732	BE	NET		362	50°44.87	127°19.18	250	150					NUTS, CHL & SAL
		1751	BE	SET		363	50°45.35	127°18.00	249						SURFACE

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pH sensor was re-installed prior to start of work 13 JUL 12 (thanks Scott Rose!)
Serial # 0852, con file: 443 Ricker July 2012 with pH.xml con

QCST06: Water bottle attached ~5 m above sensor, so sample actually taken @ ~245 m

pH@10m ~8.51

pH@245m ~8.20

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Month JULY				Year 2012				Ship W.E. RICKER				Cruise ID 2012-50			
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	QCST09	1908	BE	CTD		364	50°47.72	127°12.09	147			1	MT	NA	T: 10.52 S: 29.64
		1912	BO				50°47.71	127°12.08		137					
		1915	EN				50°47.69	127°12.11							BOT@10m NUTS, CHL & SAL
		1918	BE	NET		365	50°47.62	127°12.19	147	137					30m
		2006	BE	SET		366	50°47.90	127°11.07	160						
13	QCST10	2057	BE	CTD		367	50°50.53	127°09.27	124			2	MT	NA	T: 10.97 S: 29.81
		2100	BO				50°50.50	127°09.28		115					⊗ pH cal sample @ 115m
		2104	EN				50°50.47	127°09.28							BOT@10m NUTS, CHL & SAL, pH
		2109	BE	NET		368	50°50.46	127°09.24	145	135					
		2127	BE	SET		369	50°50.08	127°08.56	153						SURFACE
13	QCST11	2230	BE	CTD		370	50°47.15	126°59.59	129			1	MT	NA	T: 10.40 S: 29.50
		2233	BO				50°47.13	126°59.62		119					
		2237	EN				50°47.10	126°59.64							BOT@10m NUTS, CHL & SAL
		2239	BE	NET		371	50°47.07	126°59.66	131	121					
		2258	BE	SET		372	50°46.47	127°00.59	167						SURFACE
END OF DAY															

Cast Type:

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QCST09: Fire & boat drill after CTD & bongo, before fishing.

pH@10m ~ 8.37

pH@110m ~ 8.28

QCST10: Fishing tow ended after 15min due to porpoises in the area.

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Month JULY				Year 2012				Ship W.E. RICKER				Cruise ID 2012-50			
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	QCST12	1311	BE	CTD		373	50°39.78	127°12.29	30			1	MT	NA	T: 9.28 S: 30.91
		1311	BO				50°39.78	127°12.29		20					
		1312	EN				50°39.79	127°12.29							BOT@10m NUTS, CHL & SAL
		1315	BE	NET		374	50°39.80	127°12.32	30	20					
		1330	BE	SET		375	50°40.47	127°11.28	73						SURFACE
14	QCST13	1427	BE	CTD		376	50°43.60	127°05.85	172			1	MT	NA	T: 10.79 S: 29.65
		1430	BO				50°43.58	127°05.82		162					
		1434	EN				50°43.57	127°05.79							BOT@10m NUTS, CHL & SAL
		1436	BE	NET		377	50°43.57	127°05.77	173	150					
		1456	BE	SET		378	50°43.39	127°04.83	165						15m
14	QCST14	1559	BE	CTD		379	50°41.94	126°57.08	198			2	MT	NA	T: 11.09 S: 29.64
		1604	BO				50°41.89	126°57.04		190					pH cal sample @190m
		1608	EN				50°41.88	126°57.02							BOT@10m NUTS, CHL & SAL, pH
		1613	BE	NET		380	50°41.89	126°56.87	205	150					
		1633	BE	SET		381	50°42.19	126°55.98	201						SURFACE

Cast Type:

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 ROS = Rosette plus CTD
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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:

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This page is for any notes or observations

pH @ 10m ~ 8.42
pH @ ~187m ~ 8.27

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Month <u>JULY</u>				Year <u>2012</u>				Ship <u>W.E. RICKER</u>				Cruise ID <u>2012-50</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							
14	QCST15	1737	BE	CTD		382	50°45.87	126°50.63	169			1	MT	NA	T: 10.52 S: 29.05
		1740	BO				50°45.87	126°50.70		159					
		1744	EN				50°45.88	126°50.75							BOT@10m NUTS, CHL & SAL
		1746	BE	NET		383	50°45.89	126°50.80	177	150					
		1805	BE	SET		384	50°45.41	126°50.24	176						30m
14	QCST16	1909	BE	CTD		385	50°42.07	126°46.64	143			1	MT	NA	T: 9.71 S: 30.20
		1913	BO				50°42.07	126°46.66		133					
		1916	EN				50°42.07	126°46.69							BOT@10m NUTS, CHL & SAL
		1919	BE	NET		386	50°42.08	126°46.69	146	136					
		1939	BE	SET		387	50°41.45	126°46.89	157						SURFACE
14	QCST17	2034	BE	CTD		388	50°38.59	126°48.34	163			2	MT	NA	T: 10.95 S: 29.93
		2037	BO				50°38.52	126°48.34		153					pH cal sample @ 153m
		2041	EN				50°38.47	126°48.33							BOT@10m NUTS, CHL & SAL, pH
		2047	BE	NET		389	50°38.38	126°48.22	162	150					
		2139	BE	SET		390	50°40.85	126°51.52	192						15m

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QCST17: Porpoises postponed fishing. Ran back from CTS/pongo location then fished back to it.
pH@10m ~8.48
pH@148m ~8.29

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Month <u>JULY</u>				Year <u>2012</u>			Ship <u>W.E. RICKER</u>				Cruise ID <u>2012-50</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							
14	QCST18	2325	BE	CTD		391	50°36.25	126°53.08	97			1	MT	NA	T: 16.12 S: 30.55
		2327	BO				50°36.24	126°53.08		87					
		2330	EN				50°36.23	126°53.09							BOT@10m NUTS, CHL & SAL
		2333	BE	NET		392	50°36.20	126°53.05	98	88					
		2237	BE	SET		393	50°36.63	126°49.56	97						SURFACE
END OF DAY															
15	JSO1	1311	BE	CTD		394	50°33.53	126°49.18	349			2	MT	NA	T: 10.45 S: 29.12
		1316	BO				50°33.53	126°49.25		250					SAL pH cal sample @ 250m
		1322	EN				50°33.51	126°49.30							BOT@10m NUTS, CHL & SAL, pH
		1327	BE	NET		395	50°33.52	126°49.29	332	150					
		1346	BE	SET		396	50°33.31	126°48.18	402						SURFACE @ 15 min.
15	JSO2	1454	BE	CTD		397	50°31.10	126°37.98	436			1	MT	NA	T: 9.95 S: 29.82
		1458	BO				50°31.12	126°37.14		250					
		1505	EN				50°31.15	126°37.28							BOT@10m NUTS, CHL & SAL
		1508	BE	NET		398	50°31.19	126°38.43	442	150					
		1527	BE	SET		399	50°30.91	126°37.52	440						15m @ 15 min.

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QCST 18: Fished first, then CTD, bongo. Consecutive numbers not changed.

⊗ JSOI Note deep salinity sample taken.
pH@10m ~8.52
pH@245m ~8.38

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Month JULY				Year 2012				Ship W.E. RICKER				Cruise ID 2012-50			
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	JS03	1633	BE	CTD		400	50°29.46	126°26.16	366			1	MT	NA	T: 10.43 S: 29.59
		1638	BO				50°29.46	126°26.21		250					
		1643	EN				50°29.45	126°26.27							BOT @ 10m NUTS, CHL & SAL
		1645	BE	NET		401	50°29.44	126°26.30	360	150					
		1705	BE	SET		402	50°29.62	126°24.69	414						SURFACE @ 15min
15	JS04	1805	BE	CTD		403	50°29.54	126°14.69	325			1	MT	NA	T: 10.00 S: 29.69
		1811	BO				50°29.54	126°14.77		250					
		1817	EN				50°29.54	126°14.68							BOT @ 10m NUTS, CHL & SAL
		1820	BE	NET		404	50°29.51	126°14.61	328	150					
		1907	BE	SET		405	50°29.36	126°13.24	344						15m @ 15min.
15	JS05	2012	BE	CTD		406	50°27.08	126°03.60	222			2	MT	NA	T: 10.28 S: 29.24
		2017	BO				50°26.98	126°03.51		210					pH cal sample @ 210m
		2024	EN				50°26.90	126°03.43							BOT @ 10m NUTS, CHL & SAL, pH
		2029	BE	NET		407	50°26.89	126°03.34	195	150					
		2055	BE	SET		408	50°26.81	126°02.85	133						SURFACE @ 15min

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JS04: Long lead under boat w/ CTD. Corrected ship's position & CTD sat @ ~255m for ~30sec.
while doing so.
Lunch break prior to fishing set.

JS05: CTD on edge of bank, depth shallowed during cast
pH@10m ~8.51
pH@205m ~8.38

