DAILY SCIENCE LOG BOOK

MISSION NUMBER 2012-50

DATE: From: 16 JUN 12 to: 04 JUL 12

VESSEL: F/V Viking Storm

PROJECT(S): HIGH SEAS SALMON

Book 1 of 3

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

WaterProperties.ca

Captain: Chris Roberts
First Officer: Scott Murray
Second Officer: Flo Salm
Third Officer: Rory Johnson
Fishing Master: Chris Roberts

Mission Participants / Agencies: DFO / CFIA / NOAA

Scientific Personnel: Chief Scientist: Mary Thiess (16-22 JUNE)

Name	Watch	Cabin	Name	Watch	Cabin
Jayme Hills			Tyler Zubkowski		
Nic Dedeluk			Yeongha Jung		
Deb Harstad					

Second leg of Mission: Chief Scientist: Mary Thiess (22 JUNE - 04 JULY)

Name	Watch	Cabin	Name	Watch	Cabin
Nic Dedeluk			Yeongha Jung		
Deb Harstad			John Morris		
Taylor Nettles					

Data logging computer: _____
Data acquisition program: _____
CTD deck unit make: _____ model: _____ serial number: _____

Primary CTD
Make: SBE model: 25 serial number: 0404
Primary temperature serial number: 4484
Primary conductivity serial number: 3184
Secondary temperature serial number: n/a
Secondary conductivity serial number: n/a
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: pH 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?**

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): _____

Random pH sensor calibration samples will be collected during this trip for Wiley Evans, at Univ of Alaska - Fairbanks.

CTD & Bongo depths will be measured by block counter. Discrepancies between recorded depth and CTD sensor depth are likely.

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Month JUN **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	JF01	13:06	BE	CTD		001	48 17.3	123 39.5	169	150		1	MT	NA	BEACHEY
		:17	EN				17.3	39.8							BOT@ 10m NUTS, SAL & CHL
		13:19	BE	NET		002	48 17.3	123 39.8	165	150					
		:29	EN				17.3	40.1							
		13:40	BE	SET		003	48 17.5	123 41.3	SURFACE						
		14:10	EN				18.2	46.0							
	JF02	14:42	BE	NET		004	48 20.3	123 50.6	128	115					SHERINGHAM
		:49	EN				20.4	50.7							
		14:55	BE	CTD		005	48 20.4	123 50.9	127	115		1	MT	NA	BOT @ 10m NUTS, SAL & CHL
		15:02	EN				20.4	51.3							
		15:14	BE	SET		006	48 20.7	123 52.7	15 METERS						
		:44	EN				21.4	56.6							

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

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

Notes:

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17	JF03	16:32	BE	CTD		007	48 23.4	124 05.1	97	90		1	MT	NA	JORDAN R.
		:37	EN				23.4	05.1							BOT @ 10m NUTS, SAL & CHL
		16:41	BE	NET		008	48 23.4	124 05.1	99	85					
		:46	EN				23.4	05.3							
		16:55	BE	SET		009	48 23.6	124 06.8	SURFACE						
		17:25	EN				24.9	09.4							
	JF04	17:48	BE	NET		010	48 25.5	124 12.1	91	80					
		:53	EN				25.6	12.1							MAGDALENA
		17:58	BE	CTD		011	48 25.6	124 12.1	88	75		2	MT	NA	* BOT @ 10m NUTS, SAL & CHL
		18:03	EN				25.6	12.0							* BOT @ 75m: pH cal
		18:17	BE	SET		012	48 25.7	124 13.1	30 METRES						
		:47	EN				26.3	16.3							

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* Both 10m & 75m bottles were sampled for pH calibration.

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	JF05	19:30	BE	CTD		013	48 28.4	124 20.7	77	65		1	MT	NA	SOMBRIO'
		:35	EN				28.4	20.6							BOT @ 10m NUTS, CHL & SAL
		19:37	BE	NET		014	48 28.4	124 20.5	77	65					
		43	EN				28.4	20.4							
		19:54	BE	SET		015	48 28.7	124 21.0	SURFACE						
		20:24	EN				29.9	23.1							
17	JF06	21:16	BE	NET		016	48 32.0	124 30.3	51	40					PORT SAN JUAN
		:20	EN				32.0	30.2							
		21:25	BE	CTD		017	48 31.9	124 30.1	51	40		1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		:27	EN				31.8	30.0							
		21:35	BE	SET		018	48 31.9	124 30.4	SURFACE						
		22:05	EN				32.1	32.9							

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	VI01	2309	BE	CTD		019	48 34.1	124 42.0	63	50		1	MT	NA	CARMANAH
		12	EN				33.9	41.9							BOT @ 10m
		23 14	BE	NET		020	48 33.9	124 41.8	65	55					NUTS, CHL & SAL
		18	EN				33.8	41.7							
		23:26	BE	SET		021	48 33.9	124 42.3	SURFACE						
		41	EN				34.1	43.7							
END OF DAY															
18	IVI01	13:02	BE	CTD		022	48 57.8	125 06.9	88	80		1	MT	NA	IMPERIAL EAGLE
		:07	EN				57.8	06.9							BOT @ 10m
		13:10	BE	NET		023	48 57.8	125 06.9	90	75					NUTS, CHL & SAL
		:15	EN				57.8	06.9							
		13:26	BE	SET		024	48 57.7	125 06.9	SURFACE						
		:56	EN				55.9	09.2							

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
18	IVI02	14:19	BE	NET		025	48 54.7	125 12.4	91	80					IMPERIAL EAGLE
		:24	EN				54.7	12.4							
		14:29	BE	CTD		026	48 54.7	125 12.4	91	80		1	MT	NA	BOT@10m NUTS,CHL&SAL
		:34	EN				54.7	12.4							
		14:45	BE	SET		027	48 54.2	125 13.1	15 METERS.						
		15:15	EN				52.2	15.0							
18	VI02	15:40	BE	CTD		028	48 50.3	125 16.2	90	80		1	MT	NA	IMPERIAL EAGLE BOT@10m NUTS,CHL&SAL
		:45	EN				50.2	16.1							
		15:48	BE	NET		029	48 50.2	125 16.1	90	80					
		:53	EN				50.2	16.1							
		16:02	BE	SET		030	48 49.7	125 16.2	SURFACE						
		:32	EN				47.6	16.7							

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
18	VI03	17:08	BE	NET		031	48 47.7	125 22.0	83	70					
		:13	EN				47.6	22.1							OUTSIDE FORCES.
		17:18	BE	CTD		032	48 47.5	125 22.1	83	70		1	MT	NA	BOT@10m
		:23	EN				47.4	22.1							~~NUTS, CHL & SAL~~
		17:34	BE	SET		033	48 47.2	125 23.2	30 METRES						
		18:04	EN				46.4	26.5							
END OF DAY															
19	VI04	13:01	BE	CTD		034	49 06.0	126 00.4	41	35		1	MT	NA	LEONARD
		:04	EN				06.0	00.5							BOT@10m
		13:07	BE	NET		035	49 06.0	126 00.6	41	30					NUTS, CHL & SAL
		:10	EN				05.9	00.6							
		13:20	BE	SET		036	49 05.7	126 01.5	SURFACE						
		:50	EN				04.4	04.7							

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
19	VI05	14:08	BE	NET		037	49 03.4	126 06.0	51	40					LEONARD
		:11	EN				03.4	06.0							
		14:16	BE	CTD		038	49 03.4	126 06.1	52	40		1	MT	NA	BOT @ 10m
		19	EN				03.4	06.1							NUTS, CHL & SAL
		14:26	BE	SET		039	49 03.1	126 06.6	SURFACE						
		:56	EN				01.7	09.4							
19	VI06	15:24	BE	CTD		040	48 59.6	126 12.0	87	75		1	MT	NA	LEONARD
		:29	EN				59.6	12.1							BOT @ 10m
		15:32	BE	NET		041	48 59.6	126 12.1	88	75					NUTS, CHL & SAL
		37	EN				59.7	12.1							
		15:49	BE	SET		042	48 59.3	126 13.0	15 METERS						
		16:19	EN				58.1	16.6							

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19	VI07	17:54	BE	NET		043	48 55.4	126 18.9	135	120					LEONARD
		18:03	EN				55.4	18.9							
		18:08	BE	CTD		044	48 55.5	126 19.0	137	125		1	MT	NA	
		:15	EN				55.5	19.0							
		18:24	BE	SET		045	48 55.2	126 19.5	SURFACE						
		:54	EN				53.4	21.4							
19	VI08	19:22	BE	CTD		046	48 51.5	126 24.2	172	160		2	MT	NA	LEONARD
		:33	EN				51.5	24.2							* BOT@10m NUTS, CHLORA
		19:38	BE	NET		047	48 51.5	126 24.1	172	150					* BOT@160: pH cal
		:50	EN				51.4	24.0							
		20:01	BE	SET		048	48 50.9	126 24.7	30 METRES.						
		31	EN				49.6	27.2							

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Notes: _____

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* Both 10m & 160m bottles were sampled for pH calibration

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19	V1 09	22:46	BE	NET		049	49 01.6	126 24.7	136	125					
		:52	EN				01.7	24.7							
		22:57	BE	CTD		050	49 01.7	126 24.7	136	125		1	MT	NA	BOT @ 10m
		23:02	EN				01.6	24.6							NUTS, CHL & SAL
		2202	BE	SET		051	48 59.0	126 26.6	SURFACE						
		:32	EN				49 01.2	25.1							
20	V1 10	00:21	BE	CTD		052	49 09.1	126 21.1	81	70		1	MT	NA	
		25	EN				09.1	21.0							BOT @ 10m
		00:28	BE	NET		053	49 09.1	126 21.1	81	70					NUTS, CHL & SAL
		:32	EN				09.1	21.1							
		23:37	BE	SET		054	49 06.4	126 22.5	SURFACE						
		00:07	EN				08.8	21.2							
= END OF DAY															

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VI09: Fish trawl conducted first, then bongo & CTD. Consecutive numbers not changed. (Crew had to rig new bongo/CTD winch set up).

VI10: Fish trawl conducted first, then CTD & bongo. Consecutive numbers not changed.

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20	EP01	13:05	BE	CTD		055	49 20.3	126 32.8	46	35		1	MT	NA	
		:07	EN				20.3	32.8							BOT @ 10m NUTS, CHL & SAL
		13:10	BE	NET		056	49 20.3	126 32.8	46	35					
		:12	EN				20.3	32.8							
		13:22	BE	SET		057	49 20.0	126 33.3	SURFACE						
		:52	EN				18.5	36.4							
20	EP02	14:05	BE	NET		058	49 18.6	126 37.1	90	80					
		:10	EN				18.6	37.1							
		14:13	BE	CTD		059	49 18.6	126 37.1	91	80		1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		:17	EN				18.5	37.1							
		14:28	BE	SET		060	49 18.5	126 37.8	15 METRES.						
		58	EN				17.1	40.4							

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20	EP03	15:14	BE	CTD		061	49 16.9	126 41.2	110	100		1	MT		BOT@10m
		:18	EN				16.9	41.1							NUTS, CHL & SAL
		15:21	BE	NET		062	49 16.8	126 41.1	110	100					
		:26	EN				16.8	41.1							
		15:34	BE	SET		063	49 16.5	126 41.7	SURFACE						
		16:04	EN			~~063~~	15.1	44.5							
20	EP04	16:17	BE	NET		064	49 14.7	126 45.3	118	105					
		:23	EN				14.7	45.4							
		16:29	BE	CTD		065	49 14.7	126 45.4	119	110		1	MT		BOT @10m
		:34	EN				14.7	45.4							NUTS, CHL & SAL
		16:44	BE	SET		066	49 14.3	126 46.3	30 METER.						
		17:14	EN				13.2	49.4							

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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

Notes: _____

Produced by the Water Properties Group, IOS

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Version: 16 April 2010

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
20	EP05	17:28	BE	CTD		067	49 13.1	126 50.1	139	125		1	MT		BOT@10m
		:35	EN				13.1	50.1							NUTS, CHL & SAL
		17:37	BE	NET		068	49 13.1	126 50.1	139	126					
		:44	EN				13.1	50.2							
		17:51	BE	SET		069	49 12.8	126 50.3	Surface						
		18:21	EN				11.2	53.4							
20	EP06	18:35	BE	NET		070	49 10.7	126 54.4	182	150					
		:43	EN				10.7	54.4							
		18:46	BE	CTD		071	49 10.7	126 54.4	182	170		2	MT		BOT@10m
		:56	EN				10.7	54.3							NUTS, CHL & SAL
		19:09	BE	SET		072	49 10.5	126 54.8	Surface						pH cal samples @ 10m & 170m
		:39	EN				09.4	57.6							

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

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

Notes:

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

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Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
20	EP07	19:59	BE	CTD		073	49 08.3	126 59.1	433	190		1	MT	NA	BOT@10m
		20:08	EN				08.3	59.0							NUTS, CHL & SAL
		20:10	BE	NET		074	49 08.3	126 59.0	433	150					
		:19	EN				08.3	58.9							
		20:29	BE	SET		075	49 08.1	126 59.9	15 METRES.						
		:59	EN				07.2	03.1							
21	VI 11	00:25	BE	NET		076	49 28.6	127 14.1	240	150					
		:33	EN				28.6	14.0							
		00:37	BE	CTD		077	49 28.5	127 14.1	253	190		1	MT	NA	BOT@10m
		:47	EN				28.5	14.1							NUTS, CHL & SAL
		23:42	BE	SET		078	49 26.8	127 17.0	SURFACE						
		00:12	EN				28.4	14.5							
	END OF DAY														

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

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

Notes:

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VIII: Fishing set conducted first, then bongo & CTD. Consecutive numbers not changed

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Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
21	VI12	13:00	BE	CTD		079	49 38.2	126 57.0	45	35		1	MT	NA	BOT @ 10m
		:02	EN				38.2	57.0							NUTS, CHL & SAL
		13:04	BE	NET		080	49 38.1	126 57.0	45	35					
		06	EN				38.1	57.0							
		13:15	BE	SET		081	49 37.9	126 57.7	SURFACE						
		45	EN				36.4	127 00.8							
21	VI13	14:00	BE	NET		082	49 35.6	127 02.3	105	95					
		:06	EN				35.6	02.4							
		14:10	BE	CTD		083	49 35.6	127 02.4	105	95		1	MT	NA	BOT @ 10m
		:15	EN				35.6	02.5							NUTS, CHL & SAL
		14:24	BE	SET		084	49 35.3	127 03.2	15 METERS.						
		:54	EN				34.2	06.3							

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

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

Notes: _____

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

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Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
21	VI14	15:26	BE	CTD		085	4932.2	127 08.6	136	125		1	MT	NA	BOT @ 10m
		:32	EN				32.2	08.7							NUTS, CHL & SAL
		15:34	BE	NET		086	4932.2	127 08.7	136	125					
		42	EN				32.2	08.7							
		15:49	BE	SET		087	4932.0	127 09.4	SURFACE						
		16:19	EN				30.7	12.6							
21	VI15	19:16	BE	NET		088	4955.4	127 19.4	57	45					
		19	EN				55.3	19.4							
		19:22	BE	CTD		089	4955.4	127 19.4	57	50		1	MT	NA	BOT @ 10m
		:24	EN				55.4	19.3							NUTS, CHL & SAL
		19:33	BE	SET		090	4955.2	127 20.0	SURFACE						
		20:03	EN				54.5	23.1							

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

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

Notes: _____

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Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
21	VI16	20:31	BE	CTD		091	49 52.5	127 26.2	68	60		1	MT	NA	BOT @ 10m
		:34	EN				52.5	26.3							NUTS, CHL & SAL
		20:37	BE	NET		092	49 52.5	127 26.3	68	55					
		:40	EN				52.5	26.3							
		20:48	BE	SET		093	49 52.1	127 26.7	SURFACE						
		21:18	EN				50.1	29.1							
21	VI17	21:40	BE	NET		094	49 48.7	127 31.7	84	75					
		:44	EN				48.6	31.8							
		21:48	BE	CTD		095	49 48.6	127 31.8	86	76		2	MT	NA	BOT @ 10m
		:54	EN				48.6	31.9							NUTS, CHL & SAL, pH
		22:05	BE	SET		096	49 48.1	127 32.7	30 meters						pH cal sample @ 75m
		35	EN				46.3	35.2							

Cast Type:
BOT = Bottle cast, no CTD
CTD = CTD without Rosette
ROS = Rosette plus CTD
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

Time Code:
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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
21	VI18	23:00	BE	CTD		097	49 44.2	127 37.2	686	190		1	MT	NA	BOT@10m
		:09	EN				44.1	37.0							NUTS, CHL & SAL
		23:12	BE	NET		098	49 44.1	127 37.0	614	150					
		:21	EN				44.0	36.9							
		23:29	BE	SET		099	49 43.8	127 37.4	SURFACE						
		:59	EN				43.3	40.9							
END OF DAY															
22	IVI03	13:04	BE	CTD		100	50 24.0	127 29.2	121	110		1	MT	NA	BOT@10m
		:09	EN				24.0	29.2							NUTS, CHL & SAL
		13:12	BE	NET		101	50 24.0	127 29.2	121	100					
		:17	EN				24.0	29.2							
		13:27	BE	SET		102	50 24.7	127 29.6	SURFACE						
		57	EN												

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

Time Code:
BE = Beginning Time of Cast
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EN = End Time of Cast
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Notes: _____

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Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
22	IVI04	14:11	BE	NET		103	50 27.7	127 32.3	186	150					
		:20	EN				27.8	32.4							
		14:24	BE	CTD		104	50 27.8	127 32.4	186	175		2	MT	NA	BOT@10m NUTS, CHL & SAL, pH cal PH cal @175m
		:34	EN				27.8	32.5							
		14:45	BE	SET		105	50 28.5	127 39.9	15 METRES						
		15:15	EN				30.2	35.4							
22	IVI05	15:39	BE	CTD		106	50 31.7	127 36.7	49	40		1	MT	NA	BOT@10m NUTS, CHL & SAL
		:41	EN				31.7	36.8							
		15:44	BE	NET		107	50 31.6	127 36.9	53	45					
		:47	EN				31.6	36.9							
		15:57	BE	SET		108	50 31.6	127 37.5	SURFACE						
		:27	EN				30.7	41.4							

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

Time Code:
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EN = End Time of Cast
DE = Deployment Time
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Month JUNE **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 Latitude	Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
22	IVI06	18:00	BE	NET		109	50 34.9	127 29.1	71	60					
		:04	EN				34.9	29.2							
		18:06	BE	CTD		110	50 34.9	127 29.2	70	60		2	MT	NA	BOT @10m
		:11	EN				34.9	29.3							NUTS, CHL & SAL, pH
		18:19	BE	SET		111	50 35.0	127 30.1	SURFACE						pH cal @ 60m
		:49	EN				33.9	33.2							
22	IVI07	21:55	BE	CTD		112	50 35.2	127 38.5	116	105		1	MT	NA	BOT @10m
		:00	EN				35.2	38.5							NUTS, CHL & SAL
		21:02	BE	NET		113	50 35.2	127 38.6	116	105					
		:08	EN				35.2	38.6							
		21:15	BE	SET		114	50 35.3	127 39.3	SURFACE						
		:45	EN				35.6	43.3							

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

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

Notes: _____

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

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Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
22	IVI08	23:14	BE	NET		115	50 36.3	127 48.3	74	65					
		:18	EN				36.3	48.3							
		23:21	BE	CTD		116	50 36.3	127 48.2	72	60		2	MT	NA	BOT@10m NUTS, CHL, SAL & pH pH cal @ 60m
		:26	EN				36.3	48.2							
		23:34	BE	SET		117	50 36.1	127 47.6	SURFACE						
23		00:04	EN				36.7	43.7							
END OF DAY															
23	IVI09	13:08	BE	CTD		118	50 29.9	127 43.8	118	110		1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		1 :08	EN				29.9	43.8							
		13:10	BE	NET		119	50 29.9	127 43.8	118	105					
		:15	EN				29.9	43.8							
		13:23	BE	SET		120	50 29.8	127 44.5	SURFACE						
		:53	EN				28.7	47.9							

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

Time Code:
BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast
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This page is for any notes or observations

THE WARDEN AT COAL HARBOUR SAID THAT THE MARBLE RIVER HATCHERY WAS NOT ABLE TO CATCH SUFFICIENT CHINOOK BROODSTOCK IN THE FALL 2011 DUE TO HEAVY RAINS AND FLOODING. THIS IS PROBABLY WHY WE WERE NOT CATCHING ANY JUVENILE CHINOOK IN QUATSINO SOUND.

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Month JUNE **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	IVI10	14:16	BE	NET		121	50 29.1	127 50.8	172	150					
		23	EN				29.1	50.8							
		14:27	BE	CTD		122	50 29.1	127 50.8	172	160		2	MT	NA	BOT @ 10m NUTS, CHL, SAL & pH
		:35	EN				29.1	50.8							
		14:46	BE	SET		123	50 28.0	127 51.6	SURFACE						pH cal @ 160m
		15:16	EN				28.5	55.9							
23	IVI11	15:35	BE	CTD		124	50 28.1	127 56.5	222	190		1	MT	NA	BOT @ 10m NUTS, CHL & SAL
		:40	EN				28	56							
		15:43	BE	NET		125	50 28.0	127 56.6	217	150					
		:51	EN				28.0	56.8							
		16:02	BE	SET		126	50 27.9	127 56.9	SURFACE						
		:32	EN				25.5	57.0							

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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Bottle Firing Method:
US = Up / Stop
UN = Up / No stop
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Time Code:
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EN = End Time of Cast
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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	IVI12	16:51	BE	NET		127	50 25.4	127 59.8	136	125					
		17:00	EN				25.4	59.8							
		17:04	BE	CTD		128	50 25.4	127 59.8	134	125		2	MT	NA	BOT@10m
		:13	EN				25.3	59.8							NUTS, CHL, SAL & pH
		17:23	BE	SET		129	50 24.8	128 00.7	15 METERS						pH cal @ 125m
		17:53	EN				23.2	03.1							
23	VI19	19:13	BE	CTD		130	50 21.6	128 06.1	84	75		1	MT	NA	
		:17	EN				21.6	06.0							
		19:20	BE	NET		131	50 21.6	128 06.0	83	70					
		:25	EN				21.7	06.0							
		19:33	BE	SET		132	50 21.4	06.6	SURFACE						
		20:03	EN				19.7	09.0							

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ROS = Rosette plus CTD
SET = Fish Set
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____ = _____

Bottle Firing Method:
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Time Code:
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EN = End Time of Cast
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MR = Messenger Release Time
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Notes: _____

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Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	VI20	20:31	BE	NET		133	50 18.1	128 12.1	176	150					
		:39	EN				18.1	12.0							
		20:43	BE	CTD		134	50 18.1	128 12.0	171	160		2	MT	NA	BOT@10m
		:53	EN				18.1	11.8							NUTS,CHL,SAL & pH
		21:04	BE	SET		135	50 17.8	128 12.5	30m	MOVES					pH cal @ 160m
		34	EN				16.2	14.8							
23	VI21	22:05	BE	CTD		136	50 14.6	128 18.2	900	190		1	MT	NA	
		:15	EN				14.5	18.1							
		22:17	BE	NET		137	50 14.5	128 18.0	900	150					
		:26	EN				14.5	17.8							
		22:33	BE	SET		138	50 14.4	128 18.4	SURFACE						
		:03	EN				13.3	21.5							

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

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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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JUNE | **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 Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	VI22	23:54	BE	NET		139	50 18.9	128 24.9	900	150					
24		00:03	EN				18.9	24.7							
		00:08	BE	CTD		140	50 18.8	128 24.6	900	190		1	MT	NA	BOT@10m
		00:17	EN				18.7	24.5							NUTS, CHL & SAL
		00:27	BE	SET		141	50 18.9	128 23.7	15 METERS						
		00:57	EN				20.5	20.9							
— END OF DAY															
24	T07	13:03	BE	CTD		142	50 42.6	129 27.8	1500	190		1	MT	NA	
		:11	EN				42.5	27.7							
		13:14	BE	NET		143	50 42.5	129 27.6	1500	150					
		:23	EN				42.5	27.5							
		13:31	BE	SET		144	50 42.8	129 26.9	SURFACE						
		14:01	EN				44.1	23.9							

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

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 16 April 2010

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24	T06	15:09	BE			145	50 49.4	129 13.6	102	90					
		:15	EN				49.4	13.6							
		15:19	BE			146	50 49.4	129 13.6	102	95					
		:24	EN				49.4	13.6							
		15:31	BE			147	50 49.8	129 13.2	SURFACE						
		16:01	EN				51.4	11.1							
24	T05	17:18	BE			148	50 55.8	129 00.5	57	50					
		:20	EN				55.9	00.5							
		17:22	BE			149	50 55.9	129 00.5	57	55					
		:25	EN				56.0	00.5							
		17:33	BE			150	50 56.4	129 00.2	SURFACE						
		18:03	EN				58.6	58.1							

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