

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2010-17

DATE:

From: June 16, 2010 to: July 7, 2010

VESSEL:

CFV VIKING STORM

PROJECT(S):

HIGHSEAS SALMON

Book 2 of 2

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

WaterProperties.ca

Captain: Chris Roberts
 Second Officer: Scott Murray
 Fishing Master: Rory Johnson

Cook/Beck
First Officer: *Fido Salami*
Third Officer:

Mission Participants / Agencies: HIGH SEAS SALMON

Scientific Personnel:

Chief Scientist: Tony Morris

[illegible]

Second leg of Mission:

Chief Scientist: Neville Thiess (03-07 JUL 10)

[illegible]

Data logging computer:

Data acquisition program:

CTD deck unit make: model:

Primary CTD

Make: Seabird model: SBE 25 serial nu

Primary temperature serial number: 043184

Primary conductivity serial number: 034484

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer:

Fluorometer: Model

Oxygen sensor:

PAR sensor:

Other sensors:

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:

Fluorometer; Model

Oxygen sensor:

PAR sensor:

Other sensors;

Other sensors:

Other sensors:

Other sensors:

2
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100

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

DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2010</u>			Ship <u>CFV Viking Sora</u>			Cruise ID <u>2010-17</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							
27	DT04	1734	BE	Bottle		216	54 27.25	131 34.67	288	150					No preserved sample prepped for Dan Beran's project
		1743	EN				54 27.32	131 34.84	287						
		1747	BE	CTD		217	54 27.344	131 34.863	284	230		1			SAL, WTS, CHLOR @ 10m
		18:01	EN				54 27.481	131 35.01	287	-					
		18:08	BE	Trawl	-	218	54 27.54	131 35.81	285						SURFACE TOW
		18:38	EN				54 27.55	131 39.57	286	-					
27	DT05	1908	BE	CTD		219	54 28.05	131 45.77	334	230		1			SAL, WTS, CHL @ 10m
		1923	EN				54 28.286	131 44.046	338						
		19:26	BE	Bottle		220	54 28.35	131 46.10	338	150					
		19:35	EN				54 28.54	131 46.21	341						
		19:42	BE	Trawl		221	54 28.05	131 47.17	348						TOW AT 15m
		20:12	EN				54 29.271	131 50.59	346						
27	DT06	20:48	BE	Bottle		222	54 28.455	131 56.57	286	150					No preserved sample prepped for Dan Beran's project
		20:58	EN				54 28.417	131 56.596	288						
		21:01	BE	CTD		223	54 28.42	131 56.62	286	230		1			SAL, WTS, CHL @ 10m
		21:16	EN				54 28.47	131 56.72	289						
		21:21	BE	Trawl		224	54 28.46	131 57.474	298						
		21:51	EN				54 28.682	132 1.355	320						

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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DT04 - RIPPED SEAS, LOW GROUND SWELL, BRIGHT SKY, CUMULUS CLOUDS.

DT06 - OCCASIONAL WHIRLS, LOW SWELL, BRIGHT SKY.

Note: For this cruise, Bongo stations from regional sampling areas (ie non-transect) were shared between taxonomic analysis & a UVic grad student project (Dan Buxton). Stations where there is no preserved sample for taxonomic analysis have been noted.

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Month <u>June</u>				Year <u>2010</u>			Ship <u>CEV Virena Storm</u>			Cruise ID <u>2010-17</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							
27	DT07	22:27	HE	CTD		225	54 29.13	132 08.1	294	230		1			SAL, NUTS, CHL @ 10m
		22:41	EN				54 29.19	132 08.08							
		22:44	BE	Bongo		226	54 29.20	132 08.07	292	150					
		22:53	EN				54 29.20	132 08.1							
		22:59	BE	Trawl		227	54 29.26	132 08.67	328						SURFACE TOW
		23:29	EN				54 29.78	132 12.23	348						
28	DT08	00:02	BE	Bongo		228	54 28.5	132 19.11	362	150					No preserved sample - prepped for Dan Bevens project
		00:12	EN				54 28.3	132 19.2							
		00:16	BE	CTD		229	54 28.3	132 19.3	360	230		1			SAL, NUTS, CHL @ 10m
		00:30	EN				54 28.2	132 19.7							
		00:38	BE	Trawl		230	54 27.6	132 19.8	356						SURFACE TOW
		01:08	EN				54 24.65	132 20.275	306						
28	DE02	13:21	BE	CTD		231	54 8.55	131 58.23	47	40		1		✓	SAL, NUTS, CHL @ 10m.
		13:25	EN				54 8.56	131 58.25							
		13:27	BE	Bongo		232	54 8.56	131 58.26	47	40					
		13:29	EN				54 8.6	131 58.24							
		13:38	BE	Trawl		233	54 8.76	131 57.37	54						SURFACE TOW
		14:08	EN				54 9.45	131 54.05							

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
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 MR = Messenger Release Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

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This page is for any notes or observations

DE02 - MIS-COMMUNICATION SHOULD HAVE STARTED AT DE01 AT ROCK SPIT
NEW STATION ORDER — DE02, DE01, DE03.

DE02 - OVERCAST, 1 M CHOP, SCATTERED WHITE CAPS SE-15-25.

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Month <u>JUNE</u>				Year <u>2010</u>			Ship <u>CGV Victoria Strait</u>				Cruise ID <u>2010-12</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							
<u>26</u>	<u>D401</u>	<u>15:15</u>	<u>BE</u>	<u>Bongo</u>		<u>234</u>	<u>54 14.385</u>	<u>131 42.114</u>	<u>118</u>	<u>110</u>					
		<u>15:22</u>	<u>BE</u>				<u>54 14.385</u>	<u>131 42.046</u>	<u>120</u>						
		<u>15:27</u>	<u>BE</u>	<u>CTD</u>		<u>235</u>	<u>54 14.34</u>	<u>131 42.006</u>	<u>120</u>	<u>110</u>		<u>1</u>			<u>SAL, HOTS, CHT 610m</u>
		<u>15:33</u>	<u>BE</u>				<u>54 14.347</u>	<u>131 41.94</u>	<u>120</u>						
		<u>15:39</u>	<u>BE</u>	<u>TRAWL</u>		<u>236</u>	<u>54 14.07</u>	<u>131 42.413</u>	<u>118</u>						<u>SURFACE TOW</u>
		<u>16:09</u>	<u>BE</u>				<u>54 12.55</u>	<u>131 45.63</u>	<u>107</u>						
<u>28</u>	<u>D403</u>	<u>18:05</u>	<u>BE</u>	<u>CTD</u>		<u>237</u>	<u>54 9.55</u>	<u>132 4.98</u>	<u>39</u>	<u>30</u>		<u>1</u>			<u>SAL, HOTS, CHT 810m</u>
		<u>18:08</u>	<u>BE</u>				<u>54 9.56</u>	<u>132 4.95</u>	<u>39</u>						
		<u>18:11</u>	<u>BE</u>	<u>Bongo</u>		<u>238</u>	<u>54 9.58</u>	<u>132 4.90</u>	<u>39</u>	<u>30</u>					
		<u>18:13</u>	<u>BE</u>				<u>54 9.55</u>	<u>132 4.86</u>	<u>39</u>						
		<u>18:19</u>	<u>BE</u>	<u>TRAWL</u>		<u>239</u>	<u>54 9.47</u>	<u>132 5.38</u>	<u>40</u>						<u>SURFACE TOW</u>
		<u>18:49</u>	<u>BE</u>				<u>54 9.05</u>	<u>132 8.45</u>	<u>43</u>						
<u>28</u>	<u>D404</u>	<u>20:14</u>	<u>BE</u>	<u>Bongo</u>		<u>240</u>	<u>54 7.74</u>	<u>132 27.94</u>	<u>52</u>	<u>40</u>					
		<u>20:20</u>	<u>BE</u>				<u>54 7.714</u>	<u>132 27.93</u>	<u>52</u>						
		<u>20:24</u>	<u>BE</u>	<u>CTD</u>		<u>241</u>	<u>54 7.69</u>	<u>132 27.996</u>	<u>52</u>	<u>40</u>		<u>1</u>			<u>SAL, HOTS, CHT 610m</u>
		<u>20:27</u>	<u>BE</u>				<u>54 7.66</u>	<u>132 28.045</u>	<u>52</u>						
		<u>20:40</u>	<u>BE</u>	<u>TRAWL</u>		<u>242</u>	<u>54 8.062</u>	<u>132 29.115</u>	<u>56</u>						<u>SURFACE TOW</u>
		<u>21:10</u>	<u>BE</u>				<u>54 9.037</u>	<u>132 32.98</u>	<u>74</u>						

Cast Type:

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 CTD = CTD without Rosette
 ROS = Rosette plus CTD
 SET = Fish Set

USW = Sea Water Loop

MOR = Mooring

NET = Plankton Net Haul

DRF = Drifter

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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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DE04 - GROUND SWELL, 1/2 METER SWELL, RIPPED SEAS, OCCASIONAL WHITE CAPS, OVERCAST

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Month <u>June</u>		Year <u>2010</u>		Ship <u>CGV Victoria Strait</u>		Cruise ID <u>2010-17</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							
<u>28</u>	<u>DE05</u>	<u>2206</u>	<u>BE</u>	<u>CTD</u>		<u>243</u>	<u>54 10.71</u>	<u>132 45.62</u>	<u>63</u>	<u>55</u>		<u>1</u>			<u>SAL, CHL, NUTS @ 10m</u>
		<u>2210</u>	<u>EN</u>				<u>54 10.72</u>	<u>132 45.73</u>							
		<u>2212</u>	<u>BE</u>	<u>POMPO</u>		<u>244</u>	<u>54 10.73</u>	<u>132 45.81</u>	<u>64</u>	<u>55</u>					
		<u>2216</u>	<u>EN</u>				<u>54 10.74</u>	<u>132 45.9</u>							
		<u>22 22</u>	<u>BE</u>	<u>TRAWL</u>		<u>245</u>	<u>54 10 84</u>	<u>132 46.76</u>							<u>SURFACE TOW</u>
		<u>22 51</u>	<u>EN</u>				<u>54 11 31</u>	<u>132 50.52</u>	<u>100</u>						
<u>28</u>	<u>DE06</u>	<u>23 31</u>	<u>BE</u>	<u>POMPO</u>		<u>246</u>	<u>54 14.5</u>	<u>132 55.3</u>	<u>147</u>	<u>140</u>					
		<u>2340</u>	<u>EN</u>				<u>54 14.35</u>	<u>132 55.34</u>	<u>153</u>						
		<u>23 44</u>	<u>BE</u>	<u>CTD</u>		<u>247</u>	<u>54 14.783</u>	<u>132 55.38</u>	<u>137</u>	<u>125</u>		<u>1</u>			<u>SAL, CHL, NUTS @ 10m</u>
		<u>23 51</u>	<u>EN</u>				<u>54 14.165</u>	<u>132 55.47</u>							
		<u>23 54</u>	<u>BE</u>	<u>TRAWL</u>		<u>248</u>	<u>54 14.42</u>	<u>132 55.53</u>	<u>142</u>						<u>SURFACE TOW</u>
<u>29</u>		<u>00 29</u>	<u>EN</u>				<u>54 15.844</u>	<u>132 57.828</u>	<u>400</u>						
<u>29</u>	<u>QC101</u>	<u>13:02</u>	<u>BE</u>	<u>CTD</u>		<u>249</u>	<u>53 54.954</u>	<u>133 22.10</u>	<u>69</u>	<u>60</u>		<u>1</u>		<u>✓</u>	<u>SAL, CHL, NUTS @ 10m</u>
		<u>13:04</u>	<u>EN</u>				<u>53 54.945</u>	<u>133 22.125</u>	<u>68</u>	<u>60</u>					
		<u>13:08</u>	<u>BE</u>	<u>POMPO</u>		<u>250</u>	<u>53 54.95</u>	<u>133 22.11401</u>	<u>68</u>						
		<u>13:12</u>	<u>EN</u>				<u>53 54.95</u>	<u>133 22.210</u>	<u>73</u>						
		<u>13:21</u>	<u>BE</u>	<u>TRAWL</u>		<u>251</u>	<u>53 54.202</u>	<u>133 21.977</u>	<u>70</u>						<u>SURFACE TOW</u>
		<u>13 51</u>	<u>EN</u>				<u>53 52.33</u>	<u>133 20.197</u>	<u>71</u>						

Cast Type:

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

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Notes:

This page is for any notes or observations

DE06- 1.5 kt tide, JACMOUTH BK

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Month <u>JUNE</u>		Year <u>2010</u>		Ship <u>CFV Victoria Storm</u>		Cruise ID <u>2010-14</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	QC102	14:58	BE	BOMBO		252	53 43.417	133 15.157	221	150					No preserved sample - prepped for Dan Bevan project
		15:08	EN				53 43.375	133 15.271	2						
		15:11	BE	CTD		253	53 43.373	133 15.307	222	210		1			SAL, NUTS, CHL @ 10m
		15:24	EN				53 43.375	133 15.388	223						
		15:31	BE	TRAWL		254	53 43.033	133 15.035	222						SURFACE TOW
		16:01	EN				53 40.899	133 12.21	215						
29	QC103	17:18	BE	CTD		255	53 32.20	133 03.269	177	165		1			SAL, NUTS, CHL @ 10m
		17:28	EN				53 32.16	133 03.25	176						
		17:29	BE	BOMBO		256	53 32.15	133 03.245	176	150					
		17:40	EN				53 32.124	133 03.23	180						
		17:46	BE	TRAWL		257	53 31.71	133 03.17	193						SURFACE TOW
		18:10	EN				53 29.83	133 00.51	216						
29	QC104	19:10	BE	BOMBO		258	53 25.236	132 51.56	144	135					No preserved sample - prepped for Dan Bevan's project
		19:19	EN				53 25.25	132 51.53	148						
		19:23	BE	CTD		259	53 25.25	132 51.51	148	140		1			SAL, NUTS, CHL @ 10m
		19:31	EN				53 25.273	132 51.472	150						
		19:36	BE	TRAWL		260	53 24.914	132 51.397	168						SURFACE TOW
		20:06	EN				53 22.785	132 50.31	138						

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Bottle Firing Method:

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Notes:

Time Code:

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QCI02 - low ground swell, RIPPED SEAS, PARTLY SUNNY, SOUTHWESTLY 5 K WINDS.

QCI01 - FREDERICK IS.

QCI02 - TIAN.

QCI03 - Hipp Is.

QCI04 - Roush Sp.

QCI05 - MARBLE IS.

QCI06 -

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Month <u>June</u>				Year <u>2010</u>			Ship <u>CGV Victoria Storm</u>				Cruise ID <u>2010-17</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	QCI05	21:37	BE	CTD		261	53 13.52	132 44.224	197	190		/			SAL, MORS, CHL @ 10m
		21:49	EN				53 13.625	132 44.285	187						
		21:52	BE	Bongo		262	53 13.724	132 44.293	187	150					
		22:02	EN				53 13.787	132 44.177	171						
		22:10	BE	Trawl		263	53 13.426	132 43.61	177						SURFACE TOW
		22:10	EN				53 11.704	132 41.62	153						
29	QCI06	23:58	BE	Bongo		264	53 03.095	132 33.124	167	150					No preserved sample prepped for Nan Evans's project
30		00:02	EN				53 03.037	132 33.121							
		00:06	BE	CTD		265	53 03.02	132 33.105	175	165		/			SAL, MORS, CHL @ 10m
		00:16	EN				53 03.01	132 32.996	171						
		00:22	BE	Trawl		266	53 02.58	132 32.71	180						SURFACE TOW
		00:52	EN				53 00.47	132 30.41	74						
30	QCI07	13:03	BE	CTD		267	52 43.095	132 07.72	158	150		/		✓	SAL, MORS, CHL @ 10m
		13:12	EN				52 43.039	132 07.82	158						
		13:13	BE	Bongo		268	52 43.023	132 07.832	158	150					
		13:24	EN				52 42.952	132 07.957	163						
		13:31	BE	Trawl		269	52 42.623	132 07.459	162						SURFACE TOW
		14:01	EN				52 40.944	132 04.45	141						

Cast Type:

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Bottle Firing Method:

US = Up / Stop
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Notes:

Time Code:

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QCT05 - all CARTWRIGHT CO.

SUNNY, RIPPED EARS, GRASSY CLOVER

QCT07 - BRIGHT SKINS, 1000 GRASSY SWAMP, RIPPED EARS.

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Month <u>June</u>				Year <u>2010</u>			Ship <u>CFV Victoria Gordon</u>			Cruise ID <u>2010-17</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							
30	QC108	15:03	BZ	Bongo		270	52 34	131 54	184	150					No preserved sample - prepped for San Bavon's project.
		15:15	NU				52 34.38	131 55.001							
		15:19	BZ	CTD		271	52 33.377	131 55.013	195	185		1			SAL, NUTS, CAL @ 10m
		15:30	NU				52 34.354	131 55.02							
		15:37	BZ	Trawl		272	52 34.011	131 54.543							
		16:07	NU				52 32.28	131 51.585	178						SURFACE TOW
30	QC109	17:03	BZ	CTD		273	52 26.63	131 42.57	213	200		1			SAL, NUTS, CAL @ 10m
		17:15	NU				52 26.57	131 42.38	208						
		17:17	BZ	Bongo		274	52 26.56	131 42.34	206	150					
		17:28	NU				52 26.52	131 42.21							
		17:34	BZ	Trawl		275	52 26.11	131 41.71	191						SURFACE TOW
		18:04	NU				52 23.87	131 39.29	198						
30	QC110	19:14	BZ	Bongo		276	52 15.923	131 30.714	167	150					
		19:24	NU				52 15.87	131 30.698	170						
		19:28	BZ	CTD		277	52 15.86	131 30.69	170	160		1			SAL, NUTS, CAL @ 10m
		19:37	NU				52 15.85	131 30.60	170						
		19:44	BZ	Trawl		278	52 15.42	131 30.18	168						
		20:14	NU				52 13.44	131 27.34	120						

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 16 April 2010

This page is for any notes or observations

OCT 09 - 2 HUMPBACK WHALES.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <i>JUNE</i>				Year <i>2010</i>			Ship <i>CGV Viking Spar</i>				Cruise ID <i>2010-17</i>				
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	QCI 11	21:35	BE	CTD		279	52 4.76	131 17.24	186	175		1			SEA, MTS, CTD @ 10m
		21:46	EN				52 5.079	131 17.248							
		21:48	BE	Bottom		280	52 5.09	131 17.24	172	150					
		21:56	EN				52 5.204	131 17.11	161						
		22:05	BE	TRAWL		281	52 4.98	131 16.71	158						SURFACE TOW
		22:35	EN				52 7.17	131 14.95	163						
30	QCI 12	23:41	BE	Bottom		282	51 56.143	131 6.126	215	150					
		23:51	EN				51 56.02	131 5.99	215						
		23:54	BE	CTD		283	51 55.94	131 5.924	215	205		1			SEA, MTS, CTD @ 10m
		00:07	EN				51 55.82	131 5.633							
1		00:14	BE	TRAWL		284	51 55.45	131 4.96	215						SURFACE TOW
		00:44	EN				51 52.8	131 1.896	206						
		13:00	BE	CTD		285	51 41.5	130 06.00	330	230		1		✓	SEA, MTS, CTD @ 10m
1	Q10	13:16	EN				51 41.52	130 06.196							
		13:17	BE	Bottom		286	51 41.525	130 06.231	330	150					
		13:28	EN				51 41 538	130 06.408	330						
		13:35	BE	TRAWL		287	51 41 394	130 05.898	334						SURFACE TOW
		14:04	EN				51 40 43	130 2.73	353						

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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QC11 1.8 km NORTH SHORELINE TIDE

QC12 - CAPE S. JAMES

Q10 → Q01 CAPE S. JAMES TO EGG ISLAND TRANSECT, ACROSS QUINN CHAROTTA SOUND.

Q10 → LOW GROUND SAND, RIPPED SEAS, 100 WIND, BRIGHT SKIES, LOW CLOUD COOL.

DAILY SCIENCE LOG

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Month <u>July</u>				Year <u>2010</u>			Ship <u>W. M. M. S. S. S.</u>			Cruise ID <u>2010 - 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							
1	Q09	15:03	17	Bottle		288	51 37.19	129 51.696	213	150					No preserved sample - prepped for Dan Bevan's project.
		15:14	17				51 37.043	129 51.894	213						
		15:17	17	CTD		289	51 37.002	129 51.954	213	205		1			SA, NUTS, CHL S/Pm
		15:31	17				51 36.868	129 52.261	213						
		15:36	17	TRAWL		290	51 36.67	129 51.691	213						SURFACE TOW
		16:06	17				51 35.77	129 48.655	194						
1	Q08	17:09	17	CTD		291	51 32.96	129 37.13	133	125		1			SA, NUTS, CHL S/Pm
		17:17	17				51 32.94	129 37.136	133						
		17:19	17	Bottle		292	51 32.94	129 37.15	133	105					
		17:27	17				51 32.92	129 37.20	133						
		17:35	17	TRAWL		293	51 32.69	129 36.395	126						TOW AT 15m
		18:05	17				51 31.912	129 33.28	106						
1	Q07	19:06	17	Bottle		294	51 28.47	129 23.211	80	70					Too much phyto for Bevan project, preserved sample kept instead.
		19:14	17				51 28.472	129 23.195							
		19:15	17	CTD		295	51 28.467	129 23.21	80	70		1			SA, NUTS, CHL S/Pm
		19:19	17				51 28.46	129 23.234							
		19:30	17	TRAWL		296	51 28.17	129 22.37	80						SURFACE TOW
		20:00	17				51 26.88	129 19.22							

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:

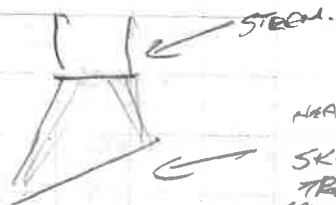
BE = Beginning Time of Cast
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 EN = End Time of Cast
 DE = Deployment Time
 MR = Messenger Release Time
 RE = Recover Mooring Time

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

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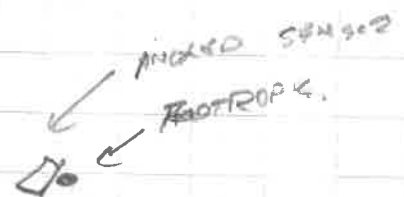
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Q08 - SENSOR INDICATES - 0.3 KTS FLOW RATE, SENSOR IS LOCATED 5m IN FRONT OF CODEND LINER.
 - HGT IS SKEWED (+0.8)



HEADROPE.
 SKEWED TRAILER
 CHANGING FOR DESCRIPTIVE
 FOR POSS.

Q07 - SENSOR PLACED ON FOOTROPE - 2.8 KTS. FLOW RATE.
 SENSOR PROTRUDING, FACING DOWN AT AN ANGLE.
 - NOT SHOWING TRUE SPEED.



Chris Roberts recommends $\frac{3}{4}$ COD END AND $\frac{1}{2}$ THE LENGTH OF EXISTING COD-END.

DAILY SCIENCE LOG

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Month <u>July</u>				Year <u>2010</u>			Ship <u>CGV Viking Storm</u>				Cruise ID <u>2010-17</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							
1	Q06	20:55	BK	CTD		297	51 24.11	129 8.97	150	140		1			SEA, NOT, CHA @ 10m
		21:05	BA				51 24.07	129 8.86	154						
		21:06	BK	Bongo		298	51 24.07	129 8.83	145	135					
		21:16	BA				51 24.02	129 8.75	158						
		21:22	BK	Trawl		299	51 23.806	129 8.21	172						SURFACE Trawl
		21:52	BA				51 22.84	129 4.814	213						
1	Q05	22:45	BA	Bongo		300	51 20.20	128 55.14	242	150					No preserved sample - prepped for Dan Brown's project.
		22:55	BA				51 20.08	128 55.07	241						
		22:56	BK	CTD		301	51 20.05	128 55.05	241	230					SEA, NOT, CHA @ 10m
		23:12	BA				51 19.90	128 54.94	241						
		23:18	BK	Trawl		302	51 19.688	128 54.407	241						
		23:48	BA				51 18.64	128 51.28	229						
2	Q04	00:21	BK	Trawl		305	51 17.38	128 45.60	196						(*)
		00:51	BA				51 16.44	128 42.601	192						
		01:05	BK	CTD		303	51 16.24	128 42.18	192	180					
		01:16	BA				16.08	42.27	192						
		01:18	BK	Bongo		304	51 16.05	128 42.29	192	150					
		01:24	BA				15.95	42.32	193						

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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Q6 - 2

Q8 - 4

Q4 - 6

⊗ Q04: Ops at this station were conducted out of usual order, but consecutive numbers were not changed. (ie. tow first, then CTD & bongo, but cons numbers were kept as if the ops had been done CTD, bongo, tow).

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>				Year <u>2010</u>			Ship <u>CFV Viking Storm</u>			Cruise ID <u>2010-17</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							
2	Q02	13:00	BE	CTD		306	51 01.517	127 56.86	140	130		1		✓	SAL, NUTS, CHL @ 10m
		13:07	BE				51 01.457	127 56.756							
		13:09	BE	Bongo		307	51 01.446	127 56.738	140	130					
		13:18	BE				51 01.421	127 56.639							
		13:24	BE	Trawl		308	51 01.24	127 55.978	135						SURFACE TOW
		13:54	BE				51 00.281	127 53.608	139						
2	Q01	14:36	BE	Bongo		309	50 57.594	127 45.877	175	150					Too much phyto - No Benthic sample.
		14:46	BE				50 57.58	127 45.872							
		14:49	BE	CTD		310	50 57.576	127 45.796	200	190		1			SAL, NUTS, CHL @ 10m
		15:01	BE				50 57.546	127 45.758	225						
		15:07	BE	Trawl		311	50 57.28	127 45.237	300						
		15:37	BE				50 55.74	127 42.63	343						
2	QCST01	16:42	BE	CTD		312	50 51.50	127 32.063	125	115		1			SAL, NUTS, CHL @ 10m
		16:49	BE				50 51.31	127 32.15	129						
		16:52	BE	Bongo		313	50 51.31	127 32.21	118	100					
		16:58	BE				50 51.36	127 32.3	113						
		17:04	BE	Trawl		314	50 51.266	127 31.75	191						SURFACE TOW
		17:34	BE				50 50.52	127 29.19	192						

Cast Type:

BOT = Bottle cast, no CTD
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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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Q02 - TOP NORTH END OF Gordon Is ON APPROACH TO Q15T

Q15T01 - Gordon Is.

Q15T01 - BRIGHT, SUNNY, SCATTERED CUMULUS CLOUDS, BLUE SKY, LOW $\frac{1}{2}$ M. GROUND SWELL, RIPPED SEAS, WINDS NW - 10-20.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>		Year <u>2010</u>		Ship <u>CGV Viking Storm</u>		Cruise ID <u>2010-17</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							
2	QCST02	1815	BE	BONGO		315	50 53.03	127 22.2	147	140					
		1824	BE				50 53.09	127 22.19							
		1828	BE	CTD		316	50 53.03	127 22.15	149	140					SAL, NUTS, CHL @ 10m
		1836	BE				50 53.07	127 22.08							
		1843	BE	TRAWL		317	50 52.8	127 21.63	137						SURFACE TOW
		1913	BE				50 50.966	127 19.68	132						
2	QCST03	1948	BE	CTD		318	50 47.86	127 22.67	217	205					SAL, NUTS, CHL @ 10m
		2001	BE				50 47.835	127 22.521							
		2002	BE	BONGO		319	50 47.832	127 22.500	206	150					
		2013	BE				50 47.784	127 22.415							
		2019	BE	TOW		320	50 47.425	127 22.082	238						SURFACE TOW
		2029	BE				50 45.63	127 20.03	276						
2	QCST04	2126	BE	BONGO		321	50 42.20	127 17.081	110	100					
		2129	BE				50 42.19	127 17.075							
		2132	BE	CTD		322	50 42.17	127 17.06	110	100					SAL, NUTS, CHL @ 10m
		2139	BE				50 42.136	127 17.025							
		2144	BE	TRAWL		323	50 42.26	127 16.46							SURFACE TOW
		2214	BE				50 43.37	127 13.33	169						

Cast Type:

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

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GC5702 - NW 1/4 Section 10, Range 14N, Township 10N, Range 14E, Sec. 10

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>				Year <u>2010</u>			Ship <u>CFV Viking Storm</u>				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							
2	QCST05	2243	BE	CTD		324	50 44.8	127 09.04	172	160		1			SAL, NUTS, CHL @ 10m
		2252	BE				50 44.6	127 08.9							
		2254	BE	Bongo		325	50 44.6	127 08.8	172	150					
		2305	BE				50 44.54	127 8.57	174						
		2310	BE	Tow		326	50 44.45	127 7.91	184						SAL, NUTS, CHL @ 10m
		2340	BE				50 44.22	127 4.16	141						
3	QCST06	0016	BE	Bongo		327	50 44.22	126 57.12	112	90					
		0022	BE				44.15	57.00							
		0025	BE	CTD		328	50 44.07	126 56.9	114	105		1			SAL, NUTS, CHL @ 10m
		0032	BE				44.00	56.83							
		0038	BE	Tow		329	50 43.63	126 56.32	149						
		0048	BE				50 43.06	126 55.59							
03	GS04	1629	BE	CTD		330	49 58.67	125 07.22	68	85		1		✓	SAL, CHL, NUTS @ 10m
		1632	EN				58.65	07.32							
		1634	BE	Bongo		331	49 58.65	125 07.36	69	60					No preserved sample - Dan Bevan project
		1638	EN				58.63	07.43							
		1645	BE	Tow		332	49 58.80	125 06.70	51	Surf.					⊗
		1715	EN				59.46	03.31	287						

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
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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
 DE = Deployment Time
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Transmissometer to be cleaned before each cast, do not use Ammonia products

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~~030000~~ Tow, Forpus 4's

⊛ GS04: Start of joint survey with Beamish/Neville. All trawl info/protocol is Beamish, all CTD/bongo info/protocol is Trudel. GS04 = Beamish Stn 1

DAILY SCIENCE LOG

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Month <u>JULY</u>				Year <u>2010</u>			Ship <u>CFV Viking Storm</u>				Cruise ID <u>201017</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							
03	GS05	1730		Bong.		333	50 00.18	125 02.66	163	150					
		1740					00.17	02.51							
		1743		CTD		334	50 00.15	125 02.47	123	115		1			SAL, CHL, NUTS @ 10m
		1750					00.11	02.41							
		1807		Tow		335	49 59.63	125 01.43	112	15m.					
		1837					58.03	124 58.71							
03	GS06	1852		CTD		336	49 57.51	124 57.99	147	135		1			SAL, CHL, NUTS @ 10m
		1900					57.42	57.97							
		1903		Bongo		337	49 57.40	124 57.94	149	140					No preserved sample - Dan Beran project
		1908													
		1948		Tow		338	49 57.03	124 57.22	153	Surf.					
		1948					57.03	55.56	120						
03	GS07	2012		Bongo		339	49 53.84	124 56.47	145	135					
		2021					53.86	56.36							
		2024		CTD		340	49 53.86	124 56.32	152	140		1			SAL, CHL, NUTS @ 10m
		2033					53.83	56.25							
		2042		Tow		341	49 53.42	124 57.01	123	30m					
		2112					51.66	59.26	226						

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 JULY				Year 2010			Ship CERV Viking Storm			Cruise ID 2010-17					
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	GS08	21:39	BE	CTD		342	49 49.65	124 59.54	109	100		1			SAL, CHL, NUTS @ 10m
		21:45	EN				49.63	59.55							
		21:47	BE	Bongo		343	49 49.62	124 59.56	109	100					No preserved sample - Dan Beran project
		21:53	EN				49.61	59.56							
		22:01	BE	Trawl		344	49 49.5	124 59.4	100	Surf.					
		22:31	EN				47.08	56.8							
03	GS09	22:56	BE	Bongo		345	49 47.65	124 53.73	124	115					
		23:06	EN				47.57	53.75							
		23:07	BE	CTD		346	49 47.56	124 53.75	120	110		1			SAL, CHL, NUTS @ 10m
		23:13	EN				47.50	53.76							
		23:20	BE	Trawl		347	49 47.69	124 53.25	152	Surf.					
		23:50	EN				49.24	50.41							
04	GS10	00:15	BE	CTD		348	49 50.26	124 47.55	167	155		1			SAL, CHL, NUTS @ 10m
		00:24	EN				50.27	47.49							
		00:26	BE	Bongo		349	49 50.27	124 47.47	169	150					No preserved sample - Dan Beran project
		00:36	EN				50.27	47.43							
		00:41	BE	Trawl		350	49 50.07	124 46.94	172	Surf.					
		01:11	EN				48.72	43.75							

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 JULY				Year 2010			Ship CFV Viking Storm				Cruise ID 2010-17				
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							
04	GS11	13 05	BE	CTD		351	49 51.13	124 34.91	153	145		1		✓	SAL, CHL, NUTS @ 10m
		13 13	EN				51.06	34.84							
		13 15	BE	Bongo		352	49 51.04	124 34.83	163	150					
		13 25	EN				51.00	34.77							
		13 31	BE	Trawl		353	49 50.45	124 34.66	205	Surf.					
		14 01	EN				48.15	33.62							
04	GS12	14 19	BE	Bongo		354	49 47.15	124 34.00	306	150					Dan Bevan sample - no preserved sample
		14 29	EN				47.18	34.00							
		14 32	BE	CTD		355	49 47.18	124 34.00	306	230		1			SAL, CHL, NUTS @ 10m
		14 47	EN				47.17	34.02							
		14 53	BE	Trawl		356	49 47.03	124 33.4	306	Surf.					
		15 23	EN				46.41	29.9							
04	GS13	15 46	BE	CTD		357	49 45.92	124 27.3	254	230		1			SAL, CHL, NUTS @ 10m
		16 01	EN				46.06	27.56							
		16 03	BE	Bongo		358	49 46.08	124 27.6	256	150					
		16 13	EN				44.1	27.7							
		16 23	BE	Trawl		359	49 45.9	124 27.0	249	15m					
		16 53	EN				44.6	23.5							

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

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 JULY				Year 2010			Ship CFV Viking Storm				Cruise ID 2010-17				
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							
04	GS14	1718	BE	Bongo		360	49 44.35	124 20.63	231	150					Dan Bwan sample - no preserved sample
		1727	EN				44.47	20.71							
		1731	BE	CTD		361	49 44.81	124 20.75	200	190		1			SAL, CHL, NUTS @ 10m
		1742	EN				44.6	20.77							
		1749	BE	Trawl		362	49 44.5	124 20.4	162	Surf					
		1819	EN				43.7	17.0							
04	GS15	1856	BE	CTD		363	49 41.0	124 15.9	218	200		1			SAL, CHL, NUTS @ 10m
		1908	EN				40.95	15.8							
		1910	BE	Bongo		364	49 41.0	124 15.8	238	150					
		1919	EN				40.9	15.7							
		1930	BE	Trawl		365	49 40.3	124 15.2	350	45m					
		2000	EN				38.3	13.7							
04	GS16	2024	BE	Bongo		366	49 36.9	124 12.8	341	150					Dan Bwan sample - no preserved sample
		2034	EN				37.0	12.9							
		2036	BE	CTD		367	49 37.0	124 12.9	353	230		1			SAL, CHL, NUTS @ 10m
		2053	EN				37.2	13.2							
		2057	BE	Trawl		368	49 37.2	124 12.7	353	Surf.					
		2127	EN				37.2	09.1							

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
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 JULY				Year 2010			Ship CFV Viking Storm			Cruise ID 2010-17					
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							
04	GS17	21:57	BE	CTD		369	49 35.8	124 05.4	277	230		1			SAL, CHL, NUTS @ 10m
		22:12	EN				35.8	05.4	274						
		22:15	BE	Bongo		370	49 35.9	124 05.4	270	150					
		22:24	EN				35.9	05.4	267						
		22:32	BE	Trawl		371	49 35.4	124 05.3	260	30m					
		23:02	EN				33.0	04.0	186						
04	GS18	23:37	BE	Bongo		372	49 30.2	124 05.9	151	140					Dan Bwan sample - no preserved sample
		23:46	EN				30.4	04.0							
		23:49	BE	CTD		373	49 30.4	124 04.0	151	140		1			SAL, CHL, NUTS @ 10m
		23:57	EN				30.5	03.98							
05		00:04	BE	Trawl		374	49 30.3	124 04.4	148	Surf.					
		00:34	EN				28.7	06.8							
05	GS19	12:58	BE	CTD		375	49 46.1	124 42.6	220	210		1		✓	SAL, CHL, NUTS @ 10m
		13:11	EN				48.8	42.6							
		13:15	BE	Bongo		376	49 48.8	124 42.7	266	150					
		13:24	EN				48.6	42.8							
		13:31	BE	Trawl		377	49 48.3	124 43.3	356	Surf.					
		14:01	EN				43.8	46.1							

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
 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 JULY				Year 2010			Ship CFV Viking Storm				Cruise ID 2010 17				
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							
	GS20	14:23	BE	Bongo		378	49 42.2	124 48.5	90	80					Don Bwan sample - no preserved sample
		14:27	EN				42.2	48.5							
		14:30	BE	CTD		379	49 42.1	124 48.5	90	80		1			SAL, CHL, NUTS @10m
		14:35	EN				42.1	48.5							
		14:41	BE	Trawl		380	49 41.7	124 48.2	88	Surf.					
		15:11	EN				39.2	46.3							
	GS21	15:59	BE	CTD		381	49 36.9	124 42.1	129	120		1			SAL, CHL, NUTS @10m
		16:06	EN				36.8	42.0							
		16:08	BE	Bongo		382	49 36.8	124 42.0	129	120					
		16:16	EN				36.8	42.0							
		16:30	BE	Trawl		383	49 37.3	124 41.4	147	30m					
		16:45	EN				38.4	40.4							
	GS22	17:17	BE	Bongo		384	49 40.4	124 39.5	142	130					No preserved sample - Don Bwan project
		17:25	EN				40.4	39.6							
		17:31	BE	CTD		385	49 40.4	124 39.6	126	115		1			SAL, CHL, NUTS @10m
		17:38	EN				40.3	39.7							
		17:43	BE	Trawl		386	49 40.7	124 39.5	156	Surf.					
		18:13	EN				42.5	38.9							

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

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>JULY</u>				Year <u>2010</u>			Ship <u>CFV Viking Storm</u>				Cruise ID <u>2010-17</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							
	GS23	18:39	BE	CTD		387	49 41.6	124 34.9	200	190		1			SAL, CHL, NUTS @ 10m
		18:51	EN				41.6	34.9							
		18:53	BE	Bongo		388	49 41.6	124 34.9	200	150					
		19:03	EN				41.6	34.8							
		19:11	BE	Trawl		389	49 41.2	124 34.2	180	15m.					
		19:41	EN				39.5	31.6							
	GS24	20:12	BE	Bongo		390	49 37.0	124 27.8	339	180					No preserved sample - Dan Buan project
		20:22	EN				37.0	27.7							
		20:24	BE	CTD		391	49 37.0	124 27.7	342	230		1			SAL, CHL, NUTS @ 10m
		20:39	EN				36.9	27.6							
		20:45	BE	Trawl		392	49 36.7	124 27.2	340	Surf.					
		21:15	EN				37.8	24.6							
	Beamish set #2	21:42	BE	Trawl		393	49 32.7	124 25.0	130	45m.					No CTD/bongo w/ this trawl.
		22:12	EN				31.0	27.5							
	GS25	22:43	BE	CTD		394	49 29.8	124 31.0	270	230		1			SAL, CHL, NUTS @ 10m
		22:58	EN				29.7	30.8							
		23:00	BE	Bongo		395	49 29.6	124 30.8	283	150					
		23:10	EN				29.5	30.7							
		23:16	BE	Trawl		396	49 29.2	124 31.3	283	15m					

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 JULY		Year 2010					Ship CFV Viking Storm			Cruise ID 201017					
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							
06	GS26	0053	BE	Bongo		397	49 25.5	124 32.5	151	140					⊗ No preserved sample Dan Bwan project
		0103	EN				25.5	32.6							
		0105	BE	CTD		398	49 25.5	124 32.6	148	140		1			SAL, CHL, NUTS @10m
		0115	EN				25.5	32.6							
		00:12	BE	Trawl		399	49 26.8	124 35.8	142	Surf.					
		00:42	EN				25.7	32.9							
06	GS27	1353	BE	CTD		400	49 23.0	124 23.8	136	125		1		✓	⊗ SAL, CHL, NUTS @10m
		1400	EN				22.9	23.7							
		1404	BE	Bongo		401	49 22.9	124 23.7	125	115					
		1411	EN				22.9	23.6							
		1307	BE	Trawl		402	49 24.2	124 28.3	191	Surf.					
		1337	EN				23.2	23.5							
06	Beamish #26	14:21	BE	Trawl		403	49 23.26	124 22.5	158	15m					
		14:51	EN				24.1	18.6							
06	GS28	1559	BE	Bongo		404	49 21.3	124 13.3	296	150					⊗ No preserved sample Dan Bwan project
		1609	EN				21.4	13.0							
		1613	BE	CTD		405	49 21.4	124 12.9	303	330		1			SAL, CHL, NUTS @10m
		1627	EN				21.5	12.6							
		15:16	BE	Trawl		406	49 23.6	124 15.9	338	Surf.					

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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⊗ GS26: Trawl ops conducted first, then bongo & CTD. Consecutive numbers not changed.

⊗ GS27: Trawl ops conducted first, then CTD & bongo. Consecutive numbers not changed.

⊗ GS28: Trawl ops conducted first, then bongo & CTD. Consecutive numbers not changed.

10 minutes / bongo deepest
15 minutes / CTD deepest.

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Month JULY		Year 2010					Ship CFV Viking Storm			Cruise ID 2010 17					
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							
06	GS29	17:29	BE	CTD		407	49 23.1	124 06.8	255	230					SAL, CHL, NUTS @10m
		17:43	EN				23.1	06.7							
		17:45	BE	Bongo		408	49 23.1	124 06.6	259	150					
		17:55	EN				23.1	06.5							
		16:35	BE	Trawl		409	49 21.7	124 11.3	264	Surf.					
		17:05	EN				21.3	07.0							
06	GS30	18:29	BE	Bongo		410	49 26.4	124 03.1	396	150					⊗ No preserved sample Dan Bwan project
		18:39	EN				26.3	03.1							
		18:41	BE	CTD		411	49 26.2	124 03.1	396	230					SAL, CHL, NUTS @10m
		18:56	EN				26.1	03.0							
		19:04	BE	Trawl		412	49 26.5	124 03.2	394	Surf.					
		19:34	EN				28.7	02.2							
06	GS31	20:31	BE	CTD		413	49 22.4	123 57.8	407	230					SAL, CHL, NUTS @10m
		20:46	EN				22.4	57.7							
		20:49	BE	Bongo		414	49 22.4	123 57.6	406	150					
		20:59	EN				22.4	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

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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⊗ GS23: Trawl ops conducted first, then CTD & bongo. Consecutive numbers not changed.

⊗ GS30: Trawl ops conducted first, then bongo & CTD. Consecutive numbers not changed.

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Month JULY				Year 2010				Ship CPV Viking Storm				Cruise ID 2010-17			
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							
06	GS32	2133	BE	Bongo		415	49 22.8	123 50.5	244	150					No preserved sample Dan Bevan project
		2143	EN				22.7	50.5							
		2145	BE	CTD		416	49 22.7	123 50.5	247	230		1			SAL, CHL, NUTS @ 10m
		2200	EN				22.6	50.5							
06	GS33	2234	BE	CTD		417	49 19.0	123 54.1	387	230		1			SAL, CHL, NUTS @ 10m
		2249	EN				18.8	54.0							
		2251	BE	Bongo		418	49 18.8	123 53.9	383	150					
		2301	EN				18.7	53.9							
		2307	BE	Tow		419	49 18.9	123 54.2	397	Surf.					
		2337	EN				20.2	56.5							
07	GS34	0015	BE	Bongo		420	49 16.4	123 57.6	332	150					No preserved sample Dan Bevan project
		0025	EN				16.2	57.5							
		0027	BE	CTD		421	49 16.2	123 57.4	320	230		1			SAL, CHL, NUTS @ 10m
		0047	EN				16.0	57.2							

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 JULY				Year 2010			Ship CFV Viking Storm				Cruise ID 2010-17				
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							
07	GS35	13 04	BE	CTD		422	49 14.1	123 44.3	400	280		1		✓	SAL, CHL, NUTS @10m
		13 19	EN				14.1	44.1							
		13 21	BE	Bongo		423	49 14.1	123 44.6	397	150					
		13 31	EN				14.0	43.9							
07	GS36	14 30	BE	Bongo		424	49 17.2	123 31.6	242	150					No preserved sample - Dan Bevan project
		14 40	EN				17.1	31.7							
		14 43	BE	CTD		425	49 17.1	123 31.8	255	230		1			SAL, CHL, NUTS @10m
		14 58	EN				17.0	31.7							
07	GS37	16 03	BE	CTD		426	49 07.0	123 27.9	318	230		1			SAL, CHL, NUTS @10m
		16 18	EN				06.8	28.0							
		16 22	BE	Bongo		427	49 06.8	123 28.0	320	150					
		16 32	EN				06.7	28.2							
07	GS38	17 08	BE	Bongo		428	49 07.1	123 21.3	155	145					No preserved sample - Dan Bevan project
		17 17	EN				07.1	21.3							
		17 20	BE	CTD		429	49 07.1	123 21.2	184	145		1			SAL, CHL, NUTS @10m
		17 29	EN				07.1	21.1							

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
 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 <u>JULY</u>				Year <u>2010</u>				Ship <u>CFV Viking Storm</u>				Cruise ID <u>2010 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							
	GS39	18 26	BE	CTD		430	49 01.0	123 16.4	140	130		1			SAL, CHL, NUTS @ 10m
		18 33	EN				01.0	16.5							
		18 35	BE	Bongo		431	49 01.0	123 16.5	139	130					
		18 44	EN				01.0	16.6							
	GS40	19 18	BE	Bongo		432	49 00.6	123 23.2	264	150					No preserved sample - Dan Breen project
		19 28	EN				00.5	23.1							
		19 30	BE	CTD		433	49 00.5	123 23.0	259	230		1			SAL, CHL, NUTS @ 10m
		19 45	EN				00.4	22.8							
	GS41	20 18	BE	CTD		434	49 00.5	123 29.4	189	160		1			SAL, CHL, NUTS @ 10m
		20 28	EN				00.4	29.3							
		20 30	BE	Bongo		435	49 00.4	123 29.3	186	150					
		20 40	EN				00.4	29.3							
	GS42	21 28	BE	Bongo		436	49 06.6	123 34.9	238	150					No preserved sample - Dan Breen project
		21 38	EN				06.4	34.9							
		21 39	BE	Niskin sample CTD		437	49 06.4	123 34.9	235	10		1			SAL, CHL, NUTS @ 10m
	END		EN												no CTD at this stn

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
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