

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2019-050

DATE:

From: 2 JUNE 2019 To: 8 JUNE 2019

VESSEL:

VECTOR

PROJECT(S):

SOG / JdF WATER PROPERTIES SURVEY

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

WaterProperties.ca

Captain: Phaner Lettman
 Second Officer: Alina Pottinger
 Fishing Master: _____
 First Officer: Brook Kolgel
 Third Officer: _____
 Chief Engineer: John Gibbs

Mission Participants / Agencies:

200

**** Chief Scientist to complete section below OR cut and tape from cruise plan ****

1st Leg Scientific Personnel:

[illegible]

2nd Leg Scientific Personnel: _____
Chief Scientist: _____

[illegible]

**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. Any mid-cruise changes to be noted by watch leader in the notes.

Data logging computer: Vector Laptop

Data acquisition program: Seasave

CTD deck unit make: SBE model: 11+ serial number: 0619

Primary CTD

Make: SBE model: 9+ serial number: 443

Primary temperature serial number: 4888

Primary conductivity serial number: 3531

Secondary temperature serial number: 4700

Secondary conductivity serial number: 4513

Transmissometer: Wetlabs Model: C-Star s/n: 953DR

Transmissometer: Model: _____ s/n: _____

Fluorometer: Model Seapoint Cable gain: 3X s/n: 3642 P S or NO pump?

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

Oxygen sensor: SBE Model: 43 s/n: 3791 P S or NO pump?

PAR sensor: Biospherical Model: QSP200L45 s/n: 4565 Surface PAR? Y / N

Other sensors: pH s/n: 0691 P, S or NO pump?

Other sensors: Attimeter s/n: 43281 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: _____

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?

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: _____ Surface PAR? Y / 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): _____

This also includes the bottle location above the CTD on non-rosette casts (e.g., W.E. Ricker)

Rosette Setup:

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

Winches:

1. Make: _____ Model: _____ Serial #: _____ Used for: _____
2. Make: _____ Model: _____ Serial #: _____ Used for: _____
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

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

Salinometer:

Make: _____ Model: _____ Serial Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Oxygen Kit(s):

Make: _____ Model: _____ Kit Number: _____
Make: _____ Model: _____ Kit Number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Thermosalinograph System (SBE21):

Program: Seasave Version: _____ S/N: 2488
Sampling interval (seconds): 30
Fluorometer sensor serial number: N/A

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

ADCP Setup:

Computer time zone: _____ User Exits: Name: _____ Exit points: _____
Sampling interval (sec): _____ Name: _____ Exit points: _____
Bin Length: (2°x): _____ Name: _____ Exit points: _____
Pulse Length: _____ Work File: _____
Buffer (bytes): _____
Gyro Offset: _____

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

CTD Test Cast Information

Test Cast along side? Yes No

Comments

Test Cast in Saanich Inlet or other location? Yes No
Comments

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

Pumps working? Yes (0011) No (0010)

Secondary Temp – Primary Temp: _____
(Average from the mixed region)

Secondary Salinity – Primary Salinity: _____
(Average from the mixed region)

Additional Comments:

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Page _____ of _____

Month			Year			Vessel			Cruise ID						
JUNE			2019			VECTOR			2019-050						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
1	SI	02	23:29	BE	ROS	US	48° 38.986	123° 29.942			1 - 9	9	PC	☐ ☒	
			23:31	BO			° 38.989	° 29.942		100	-			☐ ☐	
			23:42	EN			° 38.988	° 29.945			-			☐ ☐	
2	58	03	02:03	BE	ROS	-	48° 42.996	123° 14.311	336		-		PC	☐ ☒	
			02:10	BO			° 43.018	° 14.267		337	-			☐ ☐	
			02:16	EN			° 43.012	° 14.281			-			☐ ☐	
3	59	03	03:09	BE	NET		48° 37.786	123° 14.567	233		-		TF	☐ ☐	down @ 2 m/s
			03:17	BO			° 37.755	° 14.562		223	-			☐ ☐	up @ 1 m/s
			03:25	EN			° 37.759	° 14.493			-			☐ ☐	2009 → 20125
4	59	03	03:39	BE	ROS	US	48° 37.798	123° 14.617	231		10 - 24	15	PC	☐ ☒	domaic acid
			03:43	BO			° 37.793	° 14.606		228	-			☐ ☐	sample (23) not taken
			03:59	EN			° 37.816	° 14.642			-			☐ ☐	
5	60	03	04:39	BE	ROS	-	48° 33.943	123° 12.772	288		-		PC	☐ ☒	
			04:45	BO			° 33.962	° 12.700		281	-			☐ ☐	
			04:50	EN			° 34.007	° 12.725			-			☐ ☐	
6	61	03	05:37	BE	ROS	-	48° 29.214	123° 09.169	268		-		PC	☐ ☒	
			05:43	BO			° 29.209	° 09.132		265	-			☐ ☐	
			05:48	EN			° 29.210	° 09.134			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

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

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

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This page is for any notes or observations

depart 15:30 , Warm with mild breeze

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Page _____ of _____

Month <u>JUNE</u>			Year <u>2019</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2019-050</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
7	101	03	14:20	BE	ROS	/	48° 25.460	124° 45.133	239		/	/	SR	☒	
			14:26	BO			° 25.466	° 45.178		234	-			☐	
			14:32	EN			° 25.470	° 45.202			-			☐	
8	102	03	15:16	BE	ROS	/	48° 30.016	124° 44.486	255		-		SR	☒	
			15:22	BO			° 30.059	° 44.608		250	25 - 39		15	☐	
			15:45	EN			° 30.164	° 44.917			-			☐	
9	103	03	16:29	BE	ROS	/	48° 33.026	124° 43.188	121		/	/	SR	☒	
			16:32	BO			° 33.029	° 43.172		117	-			☐	
			16:35	EN			° 33.031	° 43.164			-			☐	
10	76	03	17:48	BE	ROS	/	48° 31.499	124° 30.199	84		-		SR	☒	
			17:50	BO			° 31.513	° 30.235		79	-			☐	
			17:52	EN			° 31.529	° 30.270			-			☐	
11	75	03	18:25	BE	ROS	US	48° 28.337	124° 32.567			40 - 53	14	SR	☒	
			18:31	BO			° 28.312	° 32.706			-			☐	
			18:50	EN			° 28.243	° 32.157			-			☐	
12	74	03	19:26	BE	ROS	/	48° 25.108	124° 35.639	188		-		R	☒	
			19:30	BO			° 25.127	° 35.671		185	-			☐	
			19:35	EN			° 25.127	° 35.688			-			☐	
			:				°	°			-			☐	

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 DRF = Drifter
 _____ = _____

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes: _____

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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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Page ____ of ____

Month JUNE			Year 2019			Vessel VECTOR			Cruise ID 2019-050						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
13	73	03	21:53	BE	ROS	/	48° 14.978	124° 06.666	162		-	/	RC	☐ ☒	
			21:57	BO			° 14.998	° 06.694		159	-			☐ ☐	
			22:01	EN			° 14.998	° 06.689			-			☐ ☐	
14	72	03	22:37	BE	NET		48° 18.24	124° 03.875	189		-		TF	☐ ☐	15:37 local
			22:43	BO			° 18.192	° 03.826		179	-			☐ ☐	15:43
			22:46	EN			° 18.159	° 03.779			-			☐ ☐	on another sta 72
15	72	03	22:59	BE	ROS	US	48° 18.535	124° 03.961	187		54-67	14	RC	☐ ☒	on SoG survey
			23:10	BO			° 18.446	° 03.995		184	-			☐ ☐	station 72
			23:25	EN			° 18.396	° 03.997			-			☐ ☐	lost display until 100m
16	71	04	00:01	BE	ROS	/	48° 22.141	123° 59.303	110		-	/	RC	☐ ☒	
			00:03	BO			° 22.151	° 59.306		107	-			☐ ☐	
			00:05	EN			° 22.159	° 59.302			-			☐ ☐	
17	70	04	01:19	BE	ROS	/	48° 19.163	123° 43.213	152		-	/	RC	☐ ☒	
			01:22	BO			° 19.172	° 43.206		150	-			☐ ☐	
			01:25	EN			° 19.156	° 43.206			-			☐ ☐	
18	69	04	01:55	BE	ROS	US	48° 15.517	123° 43.082	177		68-79		RC	☐ ☒	
			02:00	BO			° 15.474	° 43.159		172	-	12		☐ ☐	
			02:13	EN			° 15.304	° 43.412			-			☐ ☐	
			:				°	°			-			☐ ☐	

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lower bottles not right on target depths due to winch operator display not working until ~100 m
on upcast

DAILY SCIENCE LOG

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Page _____ of _____

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19	68	04	02:43	BE	ROS	/	48°12.258	123°43.036	140		-	/		☐ ☒	
			02:46	BO			°12.272	°43.088		135	-			☐ ☐	
			02:49	EN			°12.271	°43.093			-			☐ ☐	
20	105	04	04:51	BE	ROS	/	48°10.915	123°18.994	82		-			☐ ☒	
			04:53	BO			°10.895	°19.112		82	-			☐ ☐	
			04:56	EN			°10.904	°19.117			-			☐ ☐	
21	ADCP	04	05:46	BE	ROS	US	48°14.028	123°17.981	121		80-89			☐ ☒	
			05:48	BO			°14.044	°18.005		117	-			☐ ☐	
			05:59	EN			°14.028	°18.217			-			☐ ☐	
22	104	04	07:09	BE	ROS	/	48°20.126	123°18.134	84		/	/	SR	☒ ☐	
			07:11	BO			°20.143	°18.092		80	-			☐ ☐	
			07:13	EN			°20.150	°18.062			-			☐ ☐	
23	67	04	07:38	BE	ROS	/	48°22.808	123°18.035	106		/	/	SR	☒ ☐	
			07:40	BO			°22.814	°18.010		102	-			☐ ☐	
			07:42	EN			°22.812	°17.995			-			☐ ☐	
24	66	04	08:25	BE	ROS	/	48°19.195	123°14.131	106		/	/	SR	☒ ☐	
			08:28	BO			°19.186	°14.183		101	-			☐ ☐	
			08:30	EN			°19.177	°14.227			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Page _____ of _____

Month <i>June</i>				Year <i>2019</i>			Vessel <i>Vector</i>				Cruise ID <i>2019-050</i>				
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
<i>25</i>	<i>65</i>	<i>04</i>	<i>09:11</i>	<i>BE</i>	<i>ROS</i>	<i>us</i>	<i>48° 15.904</i>	<i>123° 9.565</i>	<i>127</i>		<i>90-99</i>	<i>10</i>	<i>SR</i>	☒	
			<i>09:15</i>	<i>BO</i>			<i>° 15.870</i>	<i>° 9.581</i>		<i>123</i>	<i>-</i>			☐	
			<i>09:27</i>	<i>EN</i>			<i>° 15.610</i>	<i>° 9.529</i>			<i>-</i>			☐	
<i>26</i>	<i>64</i>	<i>04</i>	<i>10:04</i>	<i>BE</i>	<i>ROS</i>	<i>/</i>	<i>48° 13.012</i>	<i>123° 5.839</i>	<i>112</i>		<i>/</i>	<i>/</i>	<i>SR</i>	☒	
			<i>10:06</i>	<i>BO</i>			<i>° 13.002</i>	<i>° 5.863</i>		<i>108</i>	<i>-</i>			☐	
			<i>10:08</i>	<i>EN</i>			<i>° 12.988</i>	<i>° 5.872</i>			<i>-</i>			☐	
<i>27</i>	<i>63</i>	<i>04</i>	<i>10:51</i>	<i>BE</i>	<i>NET</i>		<i>48° 14.348</i>	<i>122° 58.398</i>	<i>152</i>		<i>/</i>	<i>/</i>	<i>MB</i>	☐	
			<i>10:58</i>	<i>BO</i>			<i>° 14.268</i>	<i>° 58.383</i>		<i>147</i>	<i>-</i>			☐	
			<i>11:01</i>	<i>EN</i>			<i>° 14.219</i>	<i>° 58.380</i>			<i>-</i>			☐	
<i>28</i>	<i>63</i>	<i>04</i>	<i>11:18</i>	<i>BE</i>	<i>ROS</i>	<i>us</i>	<i>48° 14.197</i>	<i>122° 58.385</i>	<i>145</i>		<i>100-103</i>	<i>4</i>	<i>SR</i>	☐	<i>pH cap left</i>
			<i>11:21</i>	<i>BO</i>			<i>° 14.207</i>	<i>° 58.404</i>		<i>140</i>	<i>-</i>			☐	<i>on.</i>
			<i>11:27</i>	<i>EN</i>			<i>° 14.220</i>	<i>° 58.418</i>			<i>-</i>			☐	
<i>29</i>	<i>62</i>	<i>04</i>	<i>12:47</i>	<i>BE</i>	<i>ROS</i>	<i>us</i>	<i>48° 22.793</i>	<i>123° 2.658</i>	<i>151</i>		<i>104-114</i>	<i>11</i>	<i>SR</i>	☒	
			<i>12:51</i>	<i>BO</i>			<i>° 22.792</i>	<i>° 2.706</i>		<i>146</i>	<i>-</i>			☐	
			<i>13:03</i>	<i>EN</i>			<i>° 22.752</i>	<i>° 2.767</i>			<i>-</i>			☐	
<i>30</i>	<i>54</i>	<i>04</i>	<i>14:54</i>	<i>BE</i>	<i>ROS</i>		<i>48° 26.576</i>	<i>122° 44.293</i>	<i>79</i>		<i>/</i>	<i>/</i>	<i>SR</i>	☒	
			<i>14:56</i>	<i>BO</i>			<i>° 26.564</i>	<i>° 44.306</i>		<i>75</i>	<i>-</i>			☐	
			<i>14:58</i>	<i>EN</i>			<i>° 26.563</i>	<i>° 44.297</i>			<i>-</i>			☐	
			<i>:</i>				<i>°</i>	<i>°</i>			<i>-</i>			☐	

Event Type:

BOT = Bottle cast (no CTD)
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Bottle Firing Method:

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Page _____ of _____

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							Latitude	Longitude							
31	53	04	16:28	BE	ROS	✓	48° 33.134	122° 44.999			✓	✓	SR	☒	
			16:31	BO			° 33.101	° 45.005		58	-			☐	
			16:33	EN			° 33.041	° 44.977			-			☐	
32	52	04	17:56	BE	ROS	✓	48° 39.232	122° 43.252	106		✓	✓	SR	☒	
			17:58	BO			° 39.192	° 43.262		101	-			☐	
			18:00	EN			° 39.158	° 43.260			-			☐	
33	51	04	19:36	BE	ROS	✓	48° 46.714	122° 51.566	160		-	✓	PC	☒	
			19:40	BO			° 46.712	° 51.548		152	-			☐	
			19:42	EN			° 46.710	° 51.557			-			☐	
34	57	04	21:55	BE	ROS	✓	48° 43.960	123° 08.105	160		-		PC	☒	
			21:59	BO			° 43.995	° 08.125		154	-			☐	
			22:02	EN			° 43.950	° 08.134			-			☐	
35	56	04	22:39	BE	ROS	US	48° 46.463	123° 01.466	215		115-128		PC	☒	
			22:45	BO			° 46.452	° 01.470		200	-	14		☐	
			23:03	EN			° 46.490	° 01.428			-			☐	
36	47	04	23:57	BE	ROS	✓	48° 49.297	123° 06.211	183		-			☒	CTD system re-boot
			00:00	BO			° 49.302	° 06.256		178	-			☐	
			00:03	EN			° 49.303	° 06.292			-			☐	
			:				° .	° .			-			☐	

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MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

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Ship's emergency drill

12:45 → 13:10

mouse
- jumpy/cursor, uncontrollable - reboot system

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month			JUNE		Year		2019		Vessel		VECTOR		Cruise ID		2019-050		Page _____ of _____	
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments			
							Latitude	Longitude										
37	48	05	00:41	BE	ROS	/	48° 51.679	123° 03.300	228		-	/	PC	☒				
			00:46	BO			° 51.685	° 03.314		221	-			☐				
			00:50	EN			° 51.685	° 03.328			-			☐				
38	49	05	01:27	BE	ROS	/	48° 54.988	123° 59.659	133		-	/	PC	☒				
			01:30	BO			° 54.983	° 59.653		129	-			☐				
			01:32	EN			° 54.998	° 59.652			-			☐				
39	50	05	02:03	BE	ROS	/	48° 57.730	122° 56.100	27		-	/	PC	☒				
			02:04	BO			° 57.730	° 56.098		22	-			☐				
			02:04	EN			° 57.730	° 56.098			-			☐				
40	44	05	02:51	BE	ROS	/	48° 56.800	123° 06.107	121		-	/	PC	☒				
			02:54	BO			° 56.812	° 06.101			-			☐				
			02:56	EN			° 56.813	° 06.120			-			☐				
41	45	05	03:41	BE	ROS	/	48° 53.879	123° 08.398	130		-	/	PC	☐				
			03:43	BO			° 53.852	° 08.423		125	-			☐				
			03:45	EN			° 53.828	° 08.436			-			☐				
42	46	05	04:13	BE	NET		48° 51.420	123° 10.794	180		-			☐	21:13			
			04:19	BO			° 51.418	° 10.774		170	-	/	TF	☐	21:19			
			04:22	EN			° 51.415	° 10.779			-			☐	21:22			
			:				°	°			-			☐				
Event Type: LOOP = Sea Water Loop Bottle Firing Method: Time Code:																		

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop (default)
 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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month JUNE				Year 2019			Vessel VECTOR			Cruise ID 2019-050					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
43	46	05	04:34	BE	ROS	US	48°51.416	123°10.786	179		129-140	12	R	☒	
			04:37	BO			°51.419	°10.765			-			☐	
			04:48	EN			°51.400	°10.724			-			☐	
44	109	05	05:54	BE	ROS	/	48°56.506	123°21.914	195		-	✓	R	☒	
			05:58	BO			°56.520	°21.911		192	-			☐	
			06:01	EN			°56.531	°21.905			-			☐	
45	43	05	06:59	BE	ROS	/	48°00.210	123°29.986	213		-	/	SR	☒	
			07:04	BO			°00.212	°29.959		208	-			☐	
			07:07	EN			°00.228	°29.946			-			☐	
46	42	05	07:33	BE	NET		49°01.830	123°26.173	318		-		MB	☐	
			07:45	BO			°01.870	°26.112		313	-			☐	
			07:50	EN			°01.891	°26.084			-			☐	
47	42	05	08:01	BE	ROS	US	49°01.897	123°26.048	317		141-157	17	SR	☒	
			08:07	BO			°01.895	°26.063		313	-			☐	
			08:28	EN			°01.860	°26.131			-			☐	
48	41		09:18	BE	ROS		49°03.352	123°22.291	244		—	—	SR	☒	
			09:22	BO			°03.342	°22.285		239	-			☐	
			09:26	EN			°03.335	°22.286			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SFT = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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

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Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month <u>June</u>			Year <u>2019</u>			Vessel <u>Vector</u>			Cruise ID <u>2019-050</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
49	108	05	09:55	BE	ROS	/	49° 04.468	123° 19.206	96		/	/	SR	☒	
			09:57	BO			° 04.465	° 19.198		92	-			☐	
			09:58	EN			° 04.462	° 19.200			-			☐	
50	37	05	11:17	BE	ROS	/	49° 13.547	123° 20.743	216		/	/	SR	☐	
			11:21	BO			° 13.504	° 20.801		212	-			☐	
			11:24	EN			° 13.457	° 20.856			-			☐	
51	38	05	11:55	BE	NET	/	49° 11.938	123° 26.300	299		-		MB	☐	
			12:06	BO			° 11.935	° 26.247		294	-			☐	
			12:11	EN			° 11.918	° 26.242			-			☐	
52	38	05	12:20	BE	ROS	/	49° 11.983	123° 26.288	305		/	/	SR	☒	
			12:26	BO			° 11.977	° 26.240		301	-			☐	
			12:31	EN			° 11.993	° 26.214			-			☐	
53	39	05	13:38	BE	ROS	US	49° 9.902	123° 32.971	376		158-174		SR	☒	
			13:45	BO			° 9.865	° 32.988		371	-			☐	
			14:08	EN			° 9.810	° 33.032			-			☐	
54	40	05	14:51	BE	ROS	/	49° 8.585	123° 36.865	151		/	/	SR	☒	
			14:54	BO			° 8.578	° 36.853		146	-			☐	
			14:57	EN			° 8.581	° 36.836			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
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RE = Recover Mooring Time

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month <u>June</u>			Year <u>2019</u>			Vessel <u>Vector</u>			Cruise ID <u>2019-050</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
55	40	05	15:02	BE	NET	/	49°08.586	123°36.801	154		/	/	MB	☐ ☐	
			15:07	BO			°08.561	°36.811		150	-			☐ ☐	
			15:09	EN			°08.557	°36.820			-			☐ ☐	
56	GE01	05	16:15	BE	NET	/	49°15.024	123°44.861	405		-			☐ ☐	
			16:29	BO			°15.123	°45.193		395	-		MB	☐ ☐	
			16:35	EN			°15.177	°45.298			-			☐ ☐	
57	GE01	05	16:42	BE	NET	/	49°15.299	123°45.216	402		-		MB	☐ ☐	
			16:56	BO			°15.079	°45.004		396	-			☐ ☐	
			17:03	EN			°15.033	°44.931			-			☐ ☐	
58	GE01	05	17:14	BE	ROS	US	49°14.981	123°44.873	403		175-178	4	SR	☒ ☐	
			17:21	BO			°14.951	°44.858		398	-			☐ ☐	
			17:32	EN			°14.896	°44.807			-			☐ ☐	
59	26	05	18:09	BE	ROS	/	49°14.341	123°50.764	261		/	/	SR	☒ ☐	
			18:13	BO			°14.348	°50.693		256	-			☐ ☐	
			18:18	EN			°14.359	°50.620			-			☐ ☐	
600	26.5	05	18:42	BE	ROS	/	49°16.834	123°49.386	414		/	/	SR	☒ ☐	
			18:49	BO			°16.884	°49.198		404	-			☐ ☐	
			18:55	EN			°16.992	°49.093			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
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

CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
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Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month				Year			Vessel			Cruise ID					
JUNE				2019			VECTOR			2019-050					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
61	27	05	19:22	BE	ROS	US	49° 19.145	123° 48.015	343		179-195	17	R	☐ ☒	
			19:28	BO			° 19.180	° 47.975		338	-			☐ ☐	
			19:46	EN			° 19.332	° 47.755			-			☐ ☐	
62	275	05	20:22	BE	ROS	/	49° 21.782	123° 46.704	118		-	/	R	☐ ☐	higher Δt, Δs
			20:24	BO			° 21.812	° 46.684		118	-			☐ ☐	
			20:26	EN			° 21.844	° 46.669			-			☐ ☐	
63	28	05	22:07	BE	ROS	/	49° 24.136	123° 45.254	132		-	/	R	☐ ☐	
			22:10	BO			° 24.151	° 45.266		128	-			☐ ☐	
			22:12	EN			° 24.163	° 45.208			-			☐ ☐	
64	28	05	22:21	BE	NET	/	49° 24.158	123° 45.284	130		-		TF	☐ ☐	lost weight
			22:26	BO			° 24.153	° 45.410		120	-			☐ ☐	overboard
			22:28	EN			° 24.153	° 45.478			-			☐ ☐	
65	24	06	00:38	BE	NET	/	49° 30.371	124° 06.033	420		-		TF	☐ ☐	17:38
			00:52	BO			° 30.369	° 06.183		410	-			☐ ☐	17:52
			00:59	EN			° 30.371	° 06.160			-			☐ ☐	17:59
66	24	07	01:12	BE	ROS	US	49° 30.344	124° 06.080	426		196-199	4	R	☒ ☐	
			01:20	BO			° 30.342	° 06.043		422	-			☐ ☐	
			01:29	EN			° 30.390	° 06.070			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
BO = Bottom Time of Cast
EN = End Time of Cast

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DE = Deployment Time
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off program SAR 13:35 - search for dismantled subboat off Sechart; find & support
on program 14:30 - SAR over, proceed to station 28
15:05 - str 28

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month			JUNE			Year			2019			Vessel			VECTOR			Cruise ID			2019-050		
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments								
							Latitude	Longitude															
67	25	06	02:00	BE	ROS	/	49° 27.754	124° 07.500	285		-	/	PC	☒ ☒									
			02:05	BO			° 27.806	° 07.418		277	-			☐ ☐									
			02:10	EN			° 27.845	° 07.328			-			☐ ☐									
68	2	06	02:42	BE	ROS	US	49° 24.094	124° 09.286	278		200-214	15	PC	☒ ☒	data stream for								
			02:48	BO			° 24.038	° 09.266		274	-			☐ ☐	camera not								
			03:06	EN			° 23.928	° 09.192			-			☐ ☐	steady i.e. jumpy								
69	CPF1	06	03:42	BE	NET		49° 22.010	124° 04.973	246		-		TF	☐ ☐	20:42								
			03:51	BO			° 21.991	° 04.978		236	-			☐ ☐	20:51								
			03:55	EN			° 21.981	° 04.999			-			☐ ☐	20:55								
70	CPF1	06	04:06	BE	ROS	US	49° 21.976	124° 05.038	244		215-218	4	PC	☒ ☐									
			04:10	BO			° 21.958	° 05.046		240	-			☐ ☐									
			04:17	EN			° 21.964	° 05.042			-			☐ ☐									
71	1	06	04:55	BE	ROS	/	49° 20.294	124° 12.085	247		-	/	PC	☒ ☒									
			05:00	BO			° 20.297	° 12.014		244	-			☐ ☐									
			05:03	EN			° 20.297	° 11.952			-			☐ ☐									
72	2	06	06:02	BE	ROS	/	49° 24.473	124° 22.019	343		-	/	PC	☐ ☐	note oxygen profile								
			06:08	BO			° 24.502	° 22.006		342	-			☐ ☐	upcast - looks like								
			06:14	EN			° 24.506	° 22.009			-			☐ ☐	caught something at								
			:				°	°			-			☐ ☐	depth to block flow								

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 CFT = Fish Cat

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
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 Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month JUNE			Year 2019			Vessel VECTOR			Cruise ID 2019-050						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
73	3	06	06:38	BE	ROS	US	49°26.606	124°20.068	320		219-234	16	SR	☒ ☒	
			06:42	BO			°26.616	°20.059		315	-			☐ ☐	
			07:03	EN			°26.629	°20.052			-			☐ ☐	
74	5	06	08:01	BE	ROS	/	49°27.682	124°30.319	333		/	/	SR	☒ ☐	
			08:06	BO			°27.674	°30.336		328	-			☐ ☐	
			08:11	EN			°27.673	°30.344			-			☐ ☐	
75	5	06	08:17	BE	NET		49°27.651	124°30.385	333		-		MB	☐ ☐	
			08:28	BO			°27.630	°30.408		325	-			☐ ☐	
			08:34	EN			°27.606	°30.420			-			☐ ☐	
76	6	06	09:05	BE	ROS	US	49°30.590	124°27.745	193		235-247	13	SR	☒ ☐	
			09:09	BO			°30.580	°27.751		188	-			☐ ☐	
			09:26	EN			°30.529	°27.790			-			☐ ☐	
77	7	06	10:08	BE	ROS	/	49°34.421	124°24.191	353		/	/	SR	☒ ☐	
			10:14	BO			°34.425	°24.207		348	-			☐ ☐	
			10:19	EN			°34.411	°24.198			-			☐ ☐	
78	8	06	11:13	BE	ROS	/	49°39.365	124°33.092	341		/	/	SR	☒ ☐	
			11:19	BO			°39.342	°33.156		336	-			☐ ☐	
			11:24	EN			°39.329	°33.215			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
 NET = Plankton Net Haul
 DRF = Drifter

Bottle Firing Method:

US = Up / Stop (default)
 UN = Up / No stop
 DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

DE = Deployment Time
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 Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month <u>June</u>				Year <u>2019</u>			Vessel <u>Vector</u>			Cruise ID <u>2019-050</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
79	9	06	12:05	BE	ROS	US	49°35.578	124°38.321	170		248-259	12	SR	☒	
			12:08	BO			°35.580	°38.317		165	-			☐	
			12:22	EN			°35.564	°38.264			-			☐	
80	10	06	13:37	BE	ROS	/	49°40.738	124°47.366	95		/	/	SR	☒	
			13:39	BO			°40.734	°47.364		91	-			☐	
			13:40	EN			°40.732	°47.353			-			☐	
81	11	06	14:08	BE	ROS	/	49°42.436	124°43.345	304		/	/	SR	☒	Down to 25 m
			14:13	BO			°42.416	°43.330		299	-			☐	for flush
			14:18	EN			°42.406	°43.339			-			☐	
82	12	06	14:49	BE	NET		49°43.602	124°40.790			/	/	WIS	☐	
			14:56	BO			°43.575	°40.772		350	-			☐	
			15:03	EN			°43.574	°40.755			-			☐	
83	12	06	15:12	BE	ROS	US	49°43.591	124°40.753	358		260-276		SR	☒	Down to 25m
			15:20	BO			°43.585	°40.784		353	-			☐	for flush
			15:40	EN			°43.576	°40.786			-			☐	
84	SOGN	06	16:55	MR	MOR		49°47.548	124°48.168	354		-		LP	☐	
			17:10	RE			°47.548	°48.168			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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SET = Fish Set

LOOP = Sea Water Loop

MOR = Mooring
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DRF = Drifter
=

Bottle Firing Method:

US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast
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Lucius onboard at 0900

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Page _____ of _____

Month			Year		Vessel		Cruise ID									
JUNE			2019		VECTOR		2019-050									
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments	
85	SOGN	06	17:22	BE	ROS	/	49° 47.612	124° 48.250	357		/	/	SR	☐	☐	down to 25 and
			17:28	BO			° 47.614	° 48.223		352	-			☐	☐	back for flush
			:	EN			° 47.	° 48.			-			☐	☐	
86	PEN 1	06	23:32	BE	ROS	US	50° 17.005	124° 42.710	161		277-289	13	R	☒	☒	- bottom depth
			23:35	BO			° 17.008	° 42.711		169	-			☐	☐	by altimeter
			23:47	EN			° 17.008	° 42.708			-			☐	☐	
87	PEN 2	07	00:48	BE	ROS	/	50° 14.768	124° 43.990	283		-	/	R	☒	☒	
			00:53	BO			° 14.765	° 44.015		288	-			☐	☐	
			00:58	EN			° 14.761	° 44.023			-			☐	☐	
88	PEN 3	07	01:22	BE	ROS	US	50° 12.368	124° 45.112	340		290-306	17	R	☒	☒	- no altimeter
			01:30	BO			° 12.353	° 45.143		360	-			☐	☐	no data; stopped
			01:47	EN			° 12.300	° 45.253			-			☐	☐	20 m deeper than
89	19	07	03:14	BE	ROS	/	50° 01.385	124° 53.009	300		-			☒	☒	
			03:19	BO			° 01.415	° 53.116		296	-			☐	☐	
			03:23	EN			° 01.468	° 53.166			-			☐	☐	
90	18	07	03:55	BE	ROS	/	49° 59.230	124° 58.889	143		-			☐	☐	
			03:57	BO			° 59.224	° 58.897		138	-			☐	☐	
			03:59	EN			° 59.218	° 58.897			-			☐	☐	
			:				° .	° .			-			☐	☐	

Event Type:

BOT = Bottle cast (no CTD)
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NET = Plankton Net Haul
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Notes:

CTD Lost connection @ 268m on the upcast. SR

- Lucius away to Cmax 10:50
- old problem - short circuit in cable, reterminate to isolate shorted line Scott 0000 → 1700

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month			Year			Vessel			Cruise ID						
JUNE			2019			VECTOR			2019-050						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
91	QU39	07	04:37	BE	NET	/	50°01.830	125°05.966	275		-	/	TF	☐ ☐	21:37
			04:46	BO			°01.911	°05.935		265	-			☐ ☐	
			04:51	EN			°01.954	°05.919			-			☐ ☐	21:51
92	QU39	07	05:01	BE	ROS	US	50°01.832	125°05.945	275		307-310	4	R	☒ ☒	
			05:06	BO			°01.829	°05.986			-			☐ ☐	
			05:13	EN			°01.850	°06.043			-			☐ ☐	
93	17	07	05:38	BE	ROS	/	49°58.834	125°04.312	263		-	/	R	☒ ☒	
			05:43	BO			°58.830	°04.301		260	-			☐ ☐	
			05:47	EN			°58.823	°04.303			-			☐ ☐	
94	16	07	06:14	BE	ROS	US	49°57.780	125°08.899	158		311-321	11	R	☒ ☒	
			06:17	BO			°57.797	°08.891		149	-			☐ ☐	
			06:28	EN			°57.760	°08.917			-			☐ ☐	
95	15	07	07:29	BE	ROS	/	49°51.583	125°01.556	130		-	/	SR	☒ ☐	25m soak
			07:32	BO			°51.583	°01.565		125	-			☐ ☐	
			07:34	EN			°51.589	°01.576			-			☐ ☐	
96	14	07	07:53	BE	NET	/	49°52.517	124°59.726	300		-			☐ ☐	
			08:03				°52.543	°59.723		295	-			☐ ☐	
			08:07				°52.553	°59.709			-			☐ ☐	
			:				°	°			-			☐ ☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page _____ of _____

Month <u>June</u>				Year <u>2019</u>			Vessel <u>Vector</u>				Cruise ID <u>2019-050</u>				
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
97	14	07	08:15	BE	NET		49° 52.566	124° 59.680	303		-		WB	☐ ☐	
			08:25	BO			° 52.584	° 59.588		295	-			☐ ☐	
			08:29	EN			° 52.584	° 59.523			-			☐ ☐	
98	14	07	08:42	BE	ROS	US	49° 52.510	124° 59.582	305		322-336	15	SR	☒ ☐	25m soak
			08:48	BO			° 52.505	° 59.492		300	-			☐ ☐	
			09:08	EN			° 52.339	° 59.303			-			☐ ☐	
99	13	07	09:43	BE	ROS	/	49° 55.318	124° 55.286	233		/	/	SR	☒ ☐	25m soak
			09:47	BO			° 55.308	° 55.265		228	-			☐ ☐	
			09:51	EN			° 55.296	° 55.258			-			☐ ☐	
100	20	07	12:06	BE	ROS	/	49° 47.303	124° 32.422	306		/	/	SR	☒ ☐	25m soak
			12:12	BO			° 47.299	° 32.406		302	-			☐ ☐	
			12:17	EN			° 47.286	° 32.390			-			☐ ☐	
101	22	07	14:01	BE	ROS	US	49° 40.108	124° 16.333	353		337-340	4	SR	☒ ☐	
			14:07	BO			° 40.136	° 16.253		349	-			☐ ☐	
			14:16	EN			° 40.232	° 16.230			-			☐ ☐	
102	22	07	14:23	BE	NET	/	49° 40.197	124° 16.364	352		/	/	WB	☐ ☐	
			14:35	BO			° 40.184	° 16.337		347	-			☐ ☐	
			14:41	EN			° 40.170	° 16.306			-			☐ ☐	
			:				°	°			-			☐ ☐	

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DAILY SCIENCE LOG

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Page _____ of _____

Month <i>June</i>			Year <i>2019</i>			Vessel <i>Vector</i>			Cruise ID <i>2019-050</i>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
103	22	07	14:53	BE	NET		49° 40.160	124° 16.280	352		-		MB	☐ ☐	Sample contaminated
			15:06	BO			° 40.150	° 16.272		347	-			☐ ☐	by a Jellyfish
			15:13	EN			° 40.148	° 16.276			-			☐ ☐	re-doing the net
104	22	07	15:20	BE	NET	/	49° 40.148	124° 16.269	352		-		MB	☐ ☐	103 redo
			15:32	BO			° 40.133	° 16.248		347	-			☐ ☐	size fractionation
			15:37	EN			° 40.136	° 16.254			-			☐ ☐	net.
105	G1-01	07	23:24	BE	NET	/	48° 45.849	123° 20.555	64		-	/	JS	☐ ☐	16:24
			23:26	BO			° 45.854	° 20.555		54	-			☐ ☐	16:26
			23:27	EN			° 45.854	° 20.556			-			☐ ☐	16:27
106	G1-01	07	23:44	BE	CTD	-	48° 45.867	123° 20.526	65		-	/	MB	☐ ☐	
			23:46	BO			° 45.870	° 20.520		60	-			☐ ☐	SBE 25
			23:47	EN			° 45.874	° 20.518			-			☐ ☐	
107	SC04	08	00:37	BE	NET	/	48° 43.505	123° 25.096	99		-		JS	☐ ☐	17:37
			00:41	BO			° 43.501	° 25.105		89	-			☐ ☐	
			00:42	EN			° 43.501	° 25.104			-			☐ ☐	
108	SC04	08	00:49	BE	CTD	/	48° 43.510	123° 25.120	98		-	/	KS	☐ ☐	
			:55	BO			° 43.509	° 25.149		88	-			☐ ☐	
			:57	EN			° 43.508	° 25.180			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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911 error - fail on startup