DAILY SCIENCE LOG BOOK

MISSION NUMBER: 2019-003

DATE: From: Jan 21st 2019 To: Jan 28th 2019

VESSEL: Vector

PROJECT(S): OSD Winter Cruise

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

Captain: ZIBBY CHMARA First Officer: BRENT SEAMORE

Second Officer: CHRIS STEEVES Third Officer: _____

Fishing Master: MIKE PETRI Chief Engineer: STEVE

Mission Participants / Agencies:

_____

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

1st Leg Scientific Personnel: Chief Scientist: STEPHEN PAGÉ

Name	Watch	Cabin	Name	Watch	Cabin
STEPHEN PAGE	7-7pm	CS			
DAVID SPEAR	07-19h	CS	DISEMBARKED 13h00 JAN 25th in Baynes Sound		
MARK BELTON	12-24	LS			
CHRIS CLARKE	12-24	STARBOARD			
LUCIUS PERREAULT	12-24	PORT			
SCOTT ROSÉ	24-12	STARBOARD			
TAMARA FRASER	24-12	LS			
KEN SANDILANDS	24-12	PORT			

2nd Leg Scientific Personnel: Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin

**** 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: W.P. #32

Data acquisition program: Seasave

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

Primary CTD

Make: SBE model: 9+ serial number: 506

Primary temperature serial number: 2023

Primary conductivity serial number: 1763

Secondary temperature serial number: 5013

Secondary conductivity serial number: 3394

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

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model Seapoint Cable gain: 10x s/n: 3685 P, S or NO pump?

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

Oxygen sensor: SBE Model: 43 s/n: 3234 P, S or NO pump?

PAR sensor: BIOSPHERICAL Model: QSP200L45 s/n: 4565 Surface PAR? (Y) / N

Other sensors: pH s/n: 0692 P, S or NO pump?

Other sensors: Surface PAR s/n: 20518 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: _____
Manufacturer: _____
Volume of bottles (litres): _____

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: 7.26.7.110 S/N: 3411
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: _____
Sampling interval (sec): _____
Bin Length: (2^x): _____
Pulse Length: _____
Buffer (bytes): _____
Gyro Offset: _____

User Exits: Name: _____ Exit points: _____
Name: _____ Exit points: _____
Name: _____ Exit points: _____
Work File: _____

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 Numbers seemed good and tight

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:
_____
_____
_____
_____

Scientific Equipment Used During Cruise
This sheet allows you to enter all of the equipment used while on board. Please use the separate CTD sheet for entry for SBE 9/16/19/25.

Other CTD units:
RBR Serial Number: _____ Sensors: _____

Others:
_____

Plankton Nets:
Bongo #1 Frame Size: _____cm Mesh: _____ µm Flowmeter: _____
Bongo #2 Frame Size: _____cm Mesh: _____ µm Flowmeter: _____
_____ Frame Size: _____cm Mesh: _____ µm Flowmeter: _____
_____ Frame Size: _____cm Mesh: _____ µm Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others:
_____

_____

Trawl Gear:
Midwater Trawls: SOG ☐ Highseas ☐ Pelagic ☐ Other: _____

Bottom Trawls: Atlantic Western IIA ☐ Yankee 36 Hard & Soft Bottom ☐ Other: _____

American Shrimp Trawl ☐

Notes:
_____

Trawl Doors: USA Jet ☐ Tyburon ☐ _____

Sounders : Wesmar 380 ☐ Others: _____

Acoustics:
Echosounder #1 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Echosounder #2 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Software & Notes:
_____

Other Gear in Operation:

1. _____
2. _____
3. _____
4. _____
5. _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** **Cruise ID**

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
1	SI	21	23:08	BE	ROS	US	48° 39.304	123° 29.730	139		0-0	24	SR	☑ ☐	Firing all bottles
			23:12	BO			° 39.304	° 29.730		125	-			☐ ☐	for testing
			23:20	EN			° 39.311	° 29.734			-			☐ ☐	
2	GI-01	22	00:46	BE	ROS		48° 45.484	123° 20.899	70		—	-	MB	☑ ☐	
			00:48	BO			48° 45.474	123° 20.902		68	-			☐ ☐	
			00:50	EN			48° 45.468	123° 20.900			-			☐ ☐	
3	GI-01	22	00:55	BE	NET		48° 45.444	123° 20.893	70		-		LP	☐ ☐	
			00:57	BO			° 45.434	° 20.886		60	-			☑ ☐	
			00:59	EN			° 45.425	° 20.877			-			☐ ☐	
4	58	22	03:37	BE	ROS	-	48° 42.974	123° 14.394	333		-	-	MB	☑ ☐	
			03:44	BO			° 42.928	° 14.659		331	-			☐ ☐	
			03:51	EN			° 42.912	° 14.950			-			☐ ☐	
5	57	22	04:49	BE	ROS	-	48° 43.973	123° 8.257	163		-	-	MB	☑ ☐	
			04:51	BO			° 43.945	° 8.413		159	-			☐ ☐	
			04:54	EN			° 43.915	° 8.548			-			☐ ☐	
6	56	22	05:55	BE	ROS		48° 46.319	123° 1.652	219		1-15	15	MB	☐ ☑	
			06:00	BO			° 46.273	° 1.705		221	-			☐ ☐	
			06:18	EN			° 48.064	° 2.034			-			☐ ☐	
~~7~~	~~47~~	~~22~~	~~07:~~				° .	° .			-			☐ ☐	

Event Type:
BOT = Bottle cast (no CTD)
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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

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
7	47	22	07:30	BE	ROS	/	48°49.174	123°06.185	179		-		LL	☑ ☐	
			07:34	BO			48°49.163	123°06.160		174	-			☐ ☐	
			07:37	EN			48°49.153	123°06.140			-			☐ ☐	
8	22	22	15:01	BE	ROS	/	49°40.218	124°16.169	358		-		SR	☑ ☐	
			15:08	BO			°40.224	°16.166		353	-			☐ ☐	
			15:15	EN			°40.218	°16.144			-			☐ ☐	
9	20	22	16:45	BE			49°47.158	124°32.243	318		-		SR	☑ ☐	
			16:51	BO			°47.161	°32.226		314	-			☐ ☐	
			16:57	EN			°47.161	°32.214			-			☐ ☐	
10	19	22	19:11	BE			50°1.225	124°52.844	284		-		SR	☑ ☐	
			19:17	BO			°1.225	°52.829		279	-			☐ ☐	
			19:	EN			°1.	°52.			-			☐ ☐	
11	18	22	20:57	BE	ROS	-	49°59.164	124°58.962	148		-	-	MB	☑ ☐	
			21:00	BO			°59.182	°58.944		143	-			☐ ☐	
			21:03	EN			°59.212	°58.933			-			☐ ☐	
12	QU39	22	21:49	BE	ROS	US	50°1.913	125°5.484	272		16-28	13	MB	☑ ☐	INTERSAL HAKAI
			21:55	BO			°1.938	°5.417		267	-			☐ ☐	
			22:09	EN			°2.045	°5.278			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Time Code:
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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
13	17	22	22:52	BE	ROS	/	49° 58.876	125° 04.330	263		-		LC	☑ ☐	
			22:57	BO			49° 58.859	125° 04.316		258	-			☐ ☐	
			23:02	EN			49° 58.877	125° 04.262			-			☐ ☐	
14	16	22	23:41	BE	ROS	US	49° 57.905	125° 08.497	147		-		LC	☑ ☐	
			23:45	BO			49° 58.020	125° 08.435		138	29 - 39	11		☐ ☐	
			23:56	EN			49° 58.260	125° 08.251			-			☐ ☐	
15	21	23	01:01	BE	ROS	-	50° 2.040	125° 13.520	91		-	-	MB	☑ ☐	
			01:03	BO			° 2.036	° 13.495		87	-			☐ ☐	
			01:06	EN			° 2.038	° 13.451			-			☐ ☐	
16	SoG23	23	03:21	BE	ROS	US	50° 15.016	125° 23.002	237		90 -	1	MB	☑ ☐	Sample 90,
			03:25	BO			° 15.066	° 23.044		234	-			☐ ☐	Rosette shots for
			03:31	EN			° 15.151	° 23.114			-			☐ ☐	next stns already #'d
17	CHP1	23	04:16	BE	ROS	US	50° 20.752	125° 26.030	317		40 - 55	16	MB	☑ ☐	
			04:22	BO			° 20.759	° 26.108		314	-			☐ ☐	
			04:38	EN			° 20.783	° 26.260			-			☐ ☐	
18	CHP1	23	04:57	BE	NET	-	50° 20.867	125° 25.790	330		-	-	CC	☐ ☐	
			05:09	BO			° 20.876	° 25.828		335	-			☐ ☐	
			05:16	EN			° 20.909	° 25.893			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
19	JS09	23	06:24	BE	NET	-	50° 22.274	125° 42.310	208		-		CP	☐☐	
			06:30	BO			50° 22.160	125° 42.494		215	-			☐☐	
			06:33	EN			50° 22.125	125° 42.550			-			☐☐	
20	JS09	23	06:45	BE	ROS	US	50° 22.154	125° 42.308	220		56-69	14	MB	☑☐	
			06:49	BO			50° 22.141	125° 42.367		216	-			☐☐	
			07:03	EN			50° 22.146	125° 42.437			-			☐☐	
21	JS08	23	08:55	BE	ROS	/	50° 27.509	126° 4.032	259		-		SR	☑☐	
			09:00	BO			°27.481	° 4.031		254	-			☐☐	
			09:06	EN			°27.425	° 3.944			-			☐☐	
22	JS07	23	09:37	BE	ROS	/	50° 28.799	126° 9.712	325		-		SR	☑☐	
			09:44	BO			°28.781	° 9.655		321	-			☐☐	
			09:50	EN			°28.764	° 9.368			-			☐☐	
23	JS06	23	10:27	BE	ROS	/	50° 29.732	126° 16.404	356		-		SR	☑☐	
			10:35	BO			°29.737	° 16.414		351	-			☐☐	
			10:42	EN			°29.749	° 16.430			-			☐☐	
24	JS05	23	11:16	BE	NET		50° 29.469	126° 22.423	375		-		TF	☐☐	
			11:30	BO			°29.498	° 22.400		365	-			☐☐	
			11:36	EN			°29.491	° 22.419			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

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Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
25	JS05	23	11:47	BE	ROS	US	50° 29.448	126° 22.352	375		73-89	17	SR	☑ ☐	
			11:55	BO			°29.450	°22.321		371	-			☐ ☐	
			12:17	EN			°29.464	°22.315			-			☐ ☐	
26	JS04	23	13:05	BE	ROS	/	50° 30.214	126° 27.437	386		/	/	SR	☑ ☐	
			13:13	BO			°30.282	°27.419		382	-			☐ ☐	
			13:20	EN			°30.283	°27.322			-			☐ ☐	
27	JS03	23	13:46	BE	ROS	/	50° 30.496	126° 31.602	384		/	/	SR	☑ ☐	
			13:54	BO			°30.496	°31.595		379	-			☐ ☐	
			14:01	EN			°30.499	°31.595			-			☐ ☐	
28	JS01	23	14:38	BE	ROS		50° 31.288	126° 38.275	440		/	/	SR	☑ ☐	
			14:46	BO			°31.314	°38.255		435	-			☐ ☐	
			14:55	EN			°31.326	°38.251			-			☐ ☐	
29	BNP1	23	15:46	RE	MOR		50° 33.3300	126° 40.9716			—		CC	☐ ☐	CHS MOORING RECOVERY
30	LBB	23	21:00	DE	MOR		50° 50.523	127° 43.0475	347m		-			☐ ☐	DEPLOYMENT
31	LBB	23	21:10	BE	ROS	-	50° 50.476	127° 43.349	345		=	-	MR	☑ ☐	SPIKE IN @
			21:16	BO			°50.437	°43.336		340	-			☐ ☐	~250m
			21:23	EN			°50.467	°43.379			-			☐ ☐	
32	LBB	23	21:24	DE	DRF		50° 50.473	127° 43.376	345		-	-	MR	☐ ☐	SPONGE BOB #947, 942, 943
			:				° .	° .			-			☐ ☐	

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Notes: _____

Release distances + times

15:27 / 15:37
579 / 143, 154, 159, 164, 171, 228

15:44
136, 140, 140, 144

- CHS MOORING RECOVERY IN BLACKNEY PASS - SUCCESSFUL.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY | **Year** 2019 | **Vessel** VECTOR | **Cruise ID**

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
33	LBA	23	22:54	DE	MOR		50° 54.132	127° 38.749	449		-		CC	☐☐	
34	LBA	23	23:02	BE	ROS	-	50° 54.167	127° 38.508	435		-	-	MB	☑☑	
			23:10	BO			° 54.180	° 38.488			-			☐☐	
			23:19	EN			° 54.202	° 38.497			-			☐☐	
35	LBA	23	22:59	DE	DRF	-	50° 54.137	127° 38.150	435		-		MB	☐☐	SPONGE BOBS 950, 949, 951
36	CPE1	24	00:23	BE			51° 0.072	127° 50.069	142		91 - 102	12	MB	☑☐	
			00:26	BO			° 0.118	° 50.153			-			☐☐	
			00:36	EN			° 0.222	° 50.344			-			☐☐	
37	CPE1	24	01:34	BE	NET	-	50° 59.987	127° 50.163	149		-	-	CC	☐☐	
			01:39	BO			51° 00.029	127° 50.282		140	-			☐☐	
			01:41	EN			51° 00.060	127° 50.341			-			☐☐	
38	QCSS	24	03:12	BE	ROS	-	50° 56.756	127° 35.207	151		-	-	MB	☑☐	
			03:15	BO			° 56.768	° 35.302		151	-			☐☐	
			03:18	EN			° 56.767	° 35.376			-			☐☐	
			:				° .	° .			-			☐☐	
39	QCS9	24	03:48	BE	ROS	/	50° 58.165	127° 31.444	167		-		CC	☑☐	
			03:52	BO			50° 58.162	127° 31.422		164	-			☐☐	
			03:55	EN			50° 58.165	127° 31.417			-			☐☐	
			:				° .	° .			-			☐☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
40	QCS6	24	05:00	BE	ROS	-	50° 52.448	127° 21.496	144		-	-	MB	☑ ☐	
			05:04	BO			° 52.426	° 21.499	/	142	-			☐ ☐	
			05:07	EN			° 52.415	° 21.516			-			☐ ☐	
41	QCS7	24	05:36	BE	ROS	/	50° 51.853	127° 16.278	134		-			☐ ☐	
			05:39	BO			50° 51.859	127° 16.289		130	-		LL	☐ ☐	
			05:41	EN			50° 51.866	127° 16.302			-			☐ ☐	
42	QCS5	24	06:18	BE	ROS	/	50° 49.410	127° 21.628	155		-	-	MB	☑ ☐	
			06:21	BO			° 49.440	127° 21.624		150	-			☐ ☐	
			06:24	EN			° 49.468	° 21.623			-			☐ ☐	
43	QCS4	24	06:51	BE	NET	-	50° 46.602	127° 24.306	392		-			☐ ☐	
			07:03	BO			° 46.564	° 24.417		380	-			☐ ☐	
			07:09	EN			° 46.546	° 24.421			-			☐ ☐	
44	QCS4	24	07:21	BE	ROS	US	50° 46.675	127° 24.331	397		103 - 121	19	LL	☑ ☐	
			07:30	BO			° 46.662	° 24.295		410	-			☐ ☐	
			07:52	EN			° 46.544	° 24.235			-			☐ ☐	
45	QCS3	24	08:58	BE			50° 43.753	127° 15.031	215		/	/	SR	☑ ☐	
			09:03	BO			° 43.732	° 15.029		211	-			☐ ☐	
			09:07	EN			° 43.738	° 15.011			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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40	QCS6	24	05:00	BE	ROS	-	50° 52.448	127° 21.496	144		-	-	MB	☑ ☐	
			05:04	BO			° 52.426	° 21.499		142	-			☐ ☐	
			05:07	EN			° 52.415	° 21.516			-			☐ ☐	
41	QCS7	24	05:36	BE	ROS	/	50° 51.853	127° 16.278	134		-			☐ ☐	
			05:39	BO			50° 51.859	127° 16.289		130	-		LL	☐ ☐	
			05:41	EN			50° 51.866	127° 16.302			-			☐ ☐	
42	QCS5	24	06:18	BE	ROS	/	50° 49.410	127° 21.628	155		-	-	MB	☑ ☐	
			06:21	BO			° 49.440	127° 21.624		150	-			☐ ☐	
			06:24	EN			° 49.468	° 21.623			-			☐ ☐	
43	QCS4	24	06:51	BE	NET	-	50° 46.602	127° 24.306	392		-			☐ ☐	
			07:03	BO			° 46.564	° 24.417		380	-			☐ ☐	
			07:09	EN			° 46.546	° 24.421			-			☐ ☐	
44	QCS4	24	07:21	BE	ROS	US	50° 46.675	127° 24.331	397		103 - 121	19	LL	☑ ☐	
			07:30	BO			° 46.662	° 24.295		410	-			☐ ☐	
			07:52	EN			° 46.544	° 24.235			-			☐ ☐	
45	QCS3	24	08:58	BE			50° 43.753	127° 15.031	215		/	/	SR	☑ ☐	
			09:03	BO			° 43.732	° 15.029		211	-			☐ ☐	
			09:07	EN			° 43.738	° 15.011			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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46	QCS3M	24	09:41	BE	ROS	/	50° 47.033	127° 11.450	175		-		SR	☑☐	
			09:45	BO			° 47.035	° 11.471		171	-			☐☐	
			09:49	EN			° 47.024	° 11.474			-			☐☐	
47	QCS3N	24	10:16	BE	ROS	/	50° 49.578	127° 8.291	149		-		SR	☑☐	
			10:19	BO			° 49.588	° 8.275		145	-			☐☐	
			10:22	EN			° 49.590	° 8.262			-			☐☐	
48	QCS2N	24	11:15	BE	ROS	/	50° 47.333	126° 57.766	121		-		SR	☑☐	
			11:18	BO			° 47.324	° 57.773		116	-			☐☐	
			11:	EN			° 47.	° 57.			-			☐☐	
49	Drifters 2	24	11:30	DE	DRF	—	50° 46.249	126° 59.404	198	—	/	—	TF	☐☐	~~Drifter numbers~~ 946 945 948
50	QCS 2	24	11:54	BE	NET		50° 44.441	127° 02.406	124		-			☐☐	
			11:59	BO			° 44.452	° 02.579		114	-			☐☐	
			12:02	EN			° 44.429	° 02.649			-			☐☐	
51	QCS2	24	12:16	BE	ROS	US	50° 44.492	127° 02.328	148		128-138	10	SR	☑☐	bottles 1-6 not
			12:19	BO			° 44.496	° 02.338		143	-			☐☐	used as the
			12:33	EN			° 44.483	° 02.333			-			☐☐	rosette sheet
52	QCS2.5	24	13:08				50° 42.468	127° 05.354	204		/	/	SR	☑☐	was wrong
			13:12				° 42.463	° 05.328		179	-			☐☐	
			13:16				° 42.464	° 05.329			-			☐☐	

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53	QCS1.5	24	14:02	BE	ROS	/	50°42.890	126°55.596	141		-	/	SR	☑☐	
			14:05	BO			°42.888	°55.627		137	-			☐☐	
			14:08	EN			°42.905	°55.612			-			☐☐	
54	QCS1	24	14:57	BE			50°40.009	126°46.340	160		139-139	1	SR	☑☐	
			15:01	BO			°40.094	°46.326		155	-			☐☐	
			15:05	EN			°40.146	°46.286			-			☐☐	
55	Drifters1	24	15:32	DE	DRF		50°37.200	126°45.950	160		-			☐☐	944 to 952
56	JS0	24	16:38	BE	NET		50°33.045	126°46.059	458		-		TF	☐☐	
			16:47	BO			°33.056	°46.060		250	-			☐☐	
			16:51	EN			°33.067	°46.115			-			☐☐	
57	JS0	24	17:05	BE	ROS	US	50°33.006	126°46.028	460		-		SR	☑☐	
			17:15	BO			°33.005	°46.014		455	-			☐☐	
			17:38	EN			°32.962	°46.008			-			☐☐	
58	HAV1	24	20:07	BE	ROS	-	50°31.751	126°17.422	105		-		CC	☑☐	
			20:09	BO			°31.763	°17.404		100	-			☐☐	
			20:11	EN			°31.771	°17.401			-			☐☐	
59	SUND1	24	22:31	BE	ROS	-	50°28.132	125°52.201	257		-		MB	☑☐	
			22:36	BO			°28.099	°52.924		232	-			☐☐	
			22:41	EN			°28.104	°52.922			-			☐☐	

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60	JS8.5	24	23:45	BE	ROS	–	50 °24.533	125 °56.742	135		-		CC	☑☐	
			23:48	BO			°24.578	°56.711		128	-			☐☐	
			23:51	EN			°24.607	°56.662			-			☐☐	
61	JS10	25	01:33	BE	ROS	–	50 °22.994	125 °34.225	192		-	-	MB	☑☐	STOPPED @ 100m
			01:38	BO			°22.999	°34.258			-			☐☐	FIRED BOTTLE
			01:42	EN			°23.003	°34.267			-			☐☐	TO CHK TMP.
62	15	25	06:55	BE	ROS	–	49 °51.581	125 °01.586	126		-		CC	☑☐	
			06:58	BO			°51.587	°01.597		122	-			☐☐	
			07:00	EN			°51.584	°01.598			-			☐☐	
63	14	25	07:24	BE	NET	–	49 °53.033	124 °59.585	312		-		CC	☐☐	
			07:35	BO			°53.043	°59.645		305	-			☐☐	
			07:40	EN			°53.075	°59.695			-			☐☐	
64	14	25	07:55	BE	ROS	US	49 °52.964	124 °59.605			157-171	15	CC	☐☐	
			08:02	BO			°52.962	°59.610			-		SR	☐☐	
			08:23	EN			°52.974	°59.624			-			☐☐	
65	13	25	09:05	BE			49 °55.246	°55.244			-			☐☐	
			09:09	BO			°55.247	°55.275		228	-			☐☐	
			09:14	EN			°55.249	°55.310			-			☐☐	
			:				° .	° .			-			☐☐	

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66	SOG-N	25	09:57	BE	ROS	/	49 ° 50.146	124° 52.138	332		-	/	SR	☑ ☐	
			10:04	BO			°50.158	° 52.099		327	-			☐ ☐	
			10:10	EN			°50.130	° 52.090			-			☐ ☐	
67	N. Ajax Buoy	25	11:00	BE	ROS		49 ° 44.204	124° 46.830	270		-	/	SR	☑ ☐	
			11:05	BO			°44.201	° 46.819		265	-			☐ ☐	
			11:10	EN			°44.186	°46.841			-			☐ ☐	
68	12	25	11:44	BE	NET		49° 43.575	124 ° 40.848	352		-		TF	☐ ☐	
			11:57	BO			°43.538	° 40.807		342	-			☐ ☐	
			12:03	EN			°43.536	° 40.813			-			☐ ☐	
69	12	25	12:15	BE	ROS	US	49 ° 43.542	124 ° 40.870	354		172-188		SR	☑ ☐	
			12:22	BO			° 43.529	° 40.890		349	-			☐ ☐	
			12:45	EN			° 43.447	° 40.909			-			☐ ☐	
70	11	25	13:32	BE	NET		49 °42.350	124° 43.422	298		-		TF	☐ ☐	
			13:41	BO			°42.364	° 43.440		288	-			☐ ☐	
			13:46	EN			°42.372	° 43.462			-			☐ ☐	
71	11	25	13:55	BE	ROS		49 °42.372	124° 43.513	297		-		SR	☑ ☐	
			14:01	BO			°42.361	° 43.540		292	-			☐ ☐	
			14:07	EN			°42.352	° 43.598			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Month January | **Year** 2019 | **Vessel** Vector | **Cruise ID** 2019-003

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72	10	25	14:39	BE	ROS		49°40.675	124°47.340	94		-		SR	☑☐	
			14:41	BO			°40.667	°47.346		90	-			☐☐	
			14:43	EN			°40.666	°47.352			-			☐☐	
73	9	25	15:38	BE	ROS	US	49°35.520	124°38.324	172		189-200	12	SR	☑☐	
			15:42	BO			°35.494	°38.346		167	-			☐☐	
			15:55	EN			°35.531	°38.384			-			☐☐	
74	8	25	16:35	BE	ROS	/	49°39.288	124°33.070	341		/	/	SR	☑☐	
			16:41	BO			°39.281	°33.083		336	-			☐☐	
			16:48	EN			°39.278	°33.090			-			☐☐	
75	7	25	17:48	DE	DRF		49°34.305	124°24.142	350		/	/	SR	☐☐	Dave Spear +
76	7	25	17:58	BE	ROS		49°34.390	°24.230	354		-		SR	☑☐	Steven Page
			18:05	BO			°34.374	°24.269		349	-			☐☐	deployed to
			18:12	EN			°34.397	°24.281			-			☐☐	N. Ajax Buoy
77	6	25	18:45	BE	ROS	US	49°30.596	124°27.822	195		201-212	12		☑☐	
			18:50	BO			°30.601	°27.876		191	-			☐☐	
			19:03	EN			°30.635	°27.840			-			☐☐	
78	6	25	19:06	BE	ROS		49°30.635	124°27.840			213-213	1		☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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79	5	25	20:03	BE	ROS	-	49° 27.408	124° 30.749	330		-	-	MB	☑ ☐	
			20:09	BO			° 27.402	° 30.808		313	-			☐ ☐	
			20:16	EN			° 27.386	° 30.815			-			☐ ☐	
80	5	25	20:19	BE	NET	-	49° 27.392	124° 30.828	314		-	-	CC	☐ ☐	
			20:29	BO			°27.303	° 30.863		305	-			☐ ☐	
			20:34	EN			° 27.273	° 30.865			-			☐ ☐	
81	BS17	25	21:58	BE	NET		49° 29.005	124° 46.009	61		-	-	CC	☐ ☐	
			22:00	BO			° 29.014	° 46.015		51	-			☐ ☐	
			22:03	EN			° 29.014	° 46.021			-			☐ ☐	
82	BS17	25	22:11	BE	ROS	US	49° 29.004	124° 46.009	61		214 - 220	7	MB	☑ ☐	
			22:12	BO			° 29.002	° 46.000		58	-			☐ ☐	
			22:18	EN			° 28.988	° 45.976			-			☐ ☐	
83	4	26	00:04	BE	ROS	-	49° 24.479	124° 22.201	338		-		CC	☑ ☐	
			00:11	BO			° 24.524	° 22.284		333	-			☐ ☐	
			00:17	EN			° 24.560	° 22.331			-			☐ ☐	
84	3	26	00:42	BE	ROS	US	49° 26.572	124° 20.222	325		221 - 236	16	MB	☑ ☐	
			00:49	BO			° 26.576	° 20.208		320	-			☐ ☐	
			01:06	EN			° 26.582	° 20.218			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019 - 003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
85	1	26	02:06	BE	ROS	-	49° 20.300	124° 12.118	245		-		CC	☑ ☐	
			02:11	BO			° 20.336	° 12.104		244	-			☐ ☐	
			02:16	EN			° 20.351	° 12.061			-			☐ ☐	
86	CPF1	26	02:53	BE	ROS	-	49° 22.013	124° 4.973	245		-	-	MB	☑ ☐	
			02:58	BO			° 22.055	° 4.891		242	-			☐ ☐	
			03:02	EN			° 22.075	° 4.876			-			☐ ☐	
87	CPF1	26	03:09	BE	NET	-	49° 22.034	124° 4.885	245		-	-	CC	☐ ☐	
			03:16	BO			49° 22.056	124° 4.701		235	-			☐ ☐	
			03:20	EN			° 22.054	° 4.891			-			☐ ☐	
88	2	26	03:54	BE	ROS	US	49° 24.144	124° 09.380	275		237 - 252	16	CC	☑ ☐	
			04:00	BO			° 24.163	° 09.376		273	-			☐ ☐	
			04:15	EN			° 24.064	° 09.449			-			☐ ☐	
89	25	26	04:47	BE	ROS	-	49° 27.749	124° 07.469	287		-		CC	☑ ☐	
			04:52	BO			° 27.778	° 07.430		290	-			☐ ☐	
			04:58	EN			° 27.776	° 07.435			-			☐ ☐	
90	24	26	05:27	BE	ROS	-	49° 30.292	124° 06.007	425		-		CC	☑ ☐	
			05:35	BO			° 30.271	° 06.006		425	-			☐ ☐	
			05:43	EN			° 30.264	° 06.040			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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

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

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

Notes:

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
91	24	26	05:48	BE	NET	-	49° 30.245	124° 06.041	425		-	-	CC	☐☐	
			06:01	BO			° 30.293	° 05.960		415	-			☐☐	
			06:09	EN			° 30.324	° 05.838			-			☐☐	
92	28	26	07:56	BE	NET	-	49° 24.070	123° 45.199	135		-	-	MR	☐☐	
			08:00	BO			° 24.040	° 45.194		125	-			☐☐	
			08:02	EN			° 24.030	° 45.190			-			☐☐	
93	28	26	08:15	BE	ROS	/	49° 23.977	123° 45.320	134		/	/	SR	☑☐	
			08:17	BO			° 23.977	° 45.324		129	-			☐☐	
			08:20	EN			° 23.972	° 45.335			-			☐☐	
94	275	26	08:44	BE	ROS		49° 21.790	123° 46.660			-		SR	☑☐	
			08:46	BO			° 21.826	° 46.532		102	-			☐☐	
			08:48	EN			° 21.821	° 46.505			-			☐☐	
95	27	26	09:16	BE	ROS		49° 19.126	123° 48.053	346		253 - 269		SR	☑☐	
			09:23	BO			° 19.162	° 48.078		341	-			☐☐	
			09:46	EN			° 19.106	° 48.012			-			☐☐	
96	265	26	10:25	BE			49° 16.676	123° 49.432	411		-		SR	☑☐	
			10:33				° 16.660	° 49.406		406	-			☐☐	
			10:41				° 16.648	° 49.390			-			☐☐	
			:				° .	° .			-			☐☐	

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Bottle Firing Method:
US = Up / Stop (default)
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DN = Down / No stop

Time Code:
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DE = Deployment Time
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CTD Transmissometer and Fluorometer 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 January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
97	26	26	11:07	BE	ROS	/	49° 14.284	123° 50.701	254		/	/	SR	☑ ☐	
			11:12	BO			°14.244	°50.628		249	-			☐ ☐	
			11:16	EN			°14.212	°50.594			-			☐ ☐	
98	GEO1	26	11:47	BE	ROS		49° 15.010	123° 44.963	403		/	/	SR	☑ ☐	
			11:55	BO			°15.025	°44.999		398	-			☐ ☐	
			12:02	EN			°15.050	°44.992			-			☐ ☐	
99	GEO1	26	12:15	BE	NET	/	49° 15.046	123° 44.848	400		-		TF	☐ ☐	
			12:29	BO			°15.105	°44.893		390	-			☐ ☐	
			12:34	EN			°15.137	°44.936			-			☐ ☐	
100	40	26	13:43	BE	ROS		49° 08.764	123° 36.956	177		-		SR	☑ ☐	
			13:46	BO			°08.802	°36.961		172	-			☐ ☐	
			13:50	EN			°08.832	°36.958			-			☐ ☐	
101	38	26	14:43	BE	ROS	/	49° 11.957	123° 26.434	310		/	/	SR	☑ ☐	
			14:50	BO			°11.926	°26.450		305	-			☐ ☐	
			14:55	EN			°11.932	°26.470			-			☐ ☐	
102	37	26	15:29	BE	ROS		49° 13.572	123° 20.629	213		/	/	SR	☑ ☐	
			15:33	BO			°13.544	°20.610		208	-			☐ ☐	
			15:37	EN			°13.535	°20.605			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Bottle Firing Method:
US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

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MR = Messenger Release Time
RE = Recover Mooring Time

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
103	Van 4	26	17:05	BE	ROS	US	49°17.882	123° 5.827	65		298-306	9	SR	☑ ☐	
			17:07	BO			°17.879	° 5.832		60	-			☐ ☐	
			17:14	EN			°17.888	° 5.844			-			☐ ☐	
104	Van 5	26	17:39	BE	ROS	US	49°17.693	123° 3.287	36		307-312	6	SR	☑ ☐	
			17:40	BO			°17.689	° 3.288		31	-			☐ ☐	
			17:45	EN			°17.675	° 3.313			-			☐ ☐	
105	BUW02	26	18:39	BE	ROS	US	49°17.706	123°01.962	42		-		SR	☑ ☐	
			18:41	BO			°17.707	°01.966		36	-			☐ ☐	
			18:42	EN			°17.708	°01.970			-			☐ ☐	
106	BUW02	26	18:45	BE	ROS	US	49°17.708	123°01.982	42	3	376-376		SR	☑ ☐	
107	BUW02		:		MOR		° .	° .			-			☐ ☐	
108	INDO	26	20:31	BE	ROS	US	49°18.324	122°56.408	40		326-332	7	MB	☑ ☐	
			:32	BO			°18.320	°56.411		35	-			☐ ☐	
			:37	EN			°18.279	°56.387			-			☐ ☐	
109	INDO.5	26	21:29	BE	ROS	-	49°19.043	122°56.203	50		--	-	MB	☑ ☐	
			21:31	BO			°19.058	°56.194		40	-			☐ ☐	
			21:32	EN			°19.076	°56.186			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

Event Type:
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DRF = Drifter
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Bottle Firing Method:
US = Up / Stop (default)
UN = Up / No stop
DN = Down / No stop

Time Code:
BE = Beginning Time of Cast
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MR = Messenger Release Time
RE = Recover Mooring Time

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-007

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
110	IND1	26	22:16	BE	ROS	–	49° 19.924	122° 54.205	75		-		CC	☑☐	
			22:18	BO			° 19.924	° 54.193		71	-			☐☐	
			22:20	EN			° 19.922	° 54.192			-			☐☐	
111	IND2	26	22:35	BE	ROS	US	49° 20.956	122° 54.052	159		333 - 345	13	MB	☑☐	
			22:39	BO			° 20.996	° 54.094		153	-			☐☐	
			22:50	EN			° 20.968	° 54.055			-			☐☐	
112	IND3	26	23:17	BE	ROS	-	49° 22.181	122° 52.952	197		-	-	MB	☑☐	
			23:21	BO			° 22.178	° 52.969			-			☐☐	
			23:25	EN			° 22.172	° 52.980			-			☐☐	
113	IND4	26	23:41	BE	ROS	US	49° 23.360	122° 52.514	220		346 - 360	15	CC	☑☐	
			23:46	BO			° 23.369	° 52.523		215	-			☐☐	
		27	00:00	EN			° 23.387	° 52.489			-			☐☐	
114	IND5	27	00:27	BE	ROS	–	49° 24.659	122° 52.284	205		-		CC	☑☐	
			00:32	BO			° 24.680	° 52.282		201	-			☐☐	
			00:36	EN			° 24.706	° 52.278			-			☐☐	
115	IND6	27	00:56	BE	ROS	–	49° 26.462	122° 51.619	97		-		CC	☑☐	
			00:58	BO			° 26.477	° 51.626		93	-			☐☐	
			01:00	EN			° 26.480	° 51.629			-			☐☐	
			:				° .	° .			-			☐☐	

Event Type:
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Bottle Firing Method:
US = Up / Stop (default)
UN = Up / No stop
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Notes: _____

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

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY | **Year** 2019 | **Vessel** VECTOR | **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
116	IND7	27	01:43	BG	ROS	US	49° 27.413	122° 52.745	72		361 - 369	9	MS	☑ ☐	
			01:44	BO			° 27.412	° 52.747			-			☐ ☐	
			01:51	EN			° 27.428	° 52.764			-			☐ ☐	
117	IND8	27	02:30	BE	ROS	US	49° 26.502	122° 52.615	38		370 - 375	6	CC	☑ ☐	
			02:32	BO			° 26.501	° 52.614		33	-			☐ ☐	
			02:36	EN			° 26.491	° 52.608			-			☐ ☐	
118	IND9	27	03:57	BE	ROS	US	49° 18.248	122° 56.372	36		377 - 382	6	CC	☑ ☐	
			03:58	BO			° 18.235	° 56.370		32	-			☐ ☐	
			04:03	EN			° 18.212	° 56.375			-			☐ ☐	
119	VAN7	27	04:26	BE	ROS	US	49° 17.407	122° 54.336	18		321 - 325	5	CC	☑ ☐	
			04:29	BO			° 17.408	° 54.331		14	-			☐ ☐	
			04:32	EN			° 17.412	° 54.318			-			☐ ☐	
120	VAN6	27	05:08	BE	ROS	US	49° 17.906	122° 58.978	65		313 - 320	8	CC	☑ ☐	
			05:10	BO			° 17.896	° 58.999		61	-			☐ ☐	
			05:16	EN			° 17.893	° 59.014			-			☐ ☐	
121	VAN3	27	06:12	BE	ROS	US	49° 18.913	123° 9.943	40		297-	1	MB	☑ ☐	
			06:13	BO			° 18.922	° 9.966		35	-			☐ ☐	
			06:15	EN			° 18.928	° 9.977			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

Event Type:
BOT = Bottle cast (no CTD)
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____ = _____

Bottle Firing Method:
US = Up / Stop (default)
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DN = Down / No stop

Time Code:
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RE = Recover Mooring Time

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

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month JANUARY **Year** 2019 **Vessel** VECTOR **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
122	VAN 0	27	06:42	BE	Ros	-	49° 17.824	123° 13.750	48		-	-	MS	☑ ☐	
			06:43	BO			° 17.810	° 13.796		47	-			☐ ☐	
			06:44	EN			° 17.800	° 13.860			-			☐ ☐	
123	VAN 2	27	07:02	BE	Ros	-	49° 19.501	123° 13.824	67		-	-	MS	☑ ☐	
			:03	BO			° 19.524	° 13.846		64	-			☐ ☐	
			:04	EN			° 19.537	° 13.866			-			☐ ☐	
124	VAN 1	27	07:22	BE	Ros	US	49° 18.863	123° 15.962	116		287 - 296	10	MS	☑ ☐	
			07:25	BO			° 18.828	° 15.990		113	-			☐ ☐	
			07:34	EN			° 18.734	° 15.967			-			☐ ☐	
125	39	27	09:12	BE	ROS	US	49° 09.790	123° 32.959	376		270 - 286		SR	☑ ☐	
			09:20	BO			° 09.840	° 32.825		371	-			☐ ☐	
			09:41	EN			° 09.833	° 33.001			-			☐ ☐	
126	43	27	10:47	BE	ROS	/	49° 00.150	123° 30.256	184		/	/	SR	☑ ☐	
			10:50	BO			° 00.151	° 30.272		179	-			☐ ☐	
			10:54	EN			° 00.151	° 30.277			-			☐ ☐	
127	42	27	11:22	BE			49° 01.824	123° 26.135	319		/	/	SR	☑ ☐	
			11:28	BO			° 01.801	° 26.159		314	-			☐ ☐	
			11:34	EN			° 01.777	° 26.234			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
128	42	27	11:47	BE	NET		49° 01.820	123° 26.170	318		-		TF	☐☐	
			11:59	BO			°01.836	° 26.217		308	-			☐☐	
			12:04	EN			°01.810	° 26.206			-			☐☐	
129	41	27	12:33	BE	NET		49° 03.289	123° 22.347	243		-		TF	☐☐	
			12:41	BO			°03.285	° 22.377		233	-			☐☐	
			12:45	EN			°03.282	° 22.399			-			☐☐	
130	41	27	12:57	BE	ROS		49° 03.329	123° 22.405	248		-		SR	☑☐	
			13:02	BO			°03.328	° 22.406		243	-			☐☐	
			13:07	EN			°03.336	° 22.393			-			☐☐	
131	108	27	13:33	BE	ROS		49° 04.427	123° 19.085	88		-		SR	☑☐	
			13:35	BO			°04.432	° 19.092		84	-			☐☐	
			13:37	EN			°04.447	° 19.120			-			☐☐	
132	106	27	14:40	BE	ROS		49° 01.021	123° 13.240	77		-		SR	☑☐	
			14:42	BO			°01.024	° 13.242		72	-			☐☐	
			14:44	EN			°01.026	° 13.244			-			☐☐	
133	107	27	15:20	BE	ROS		48° 58.357	123° 17.948	182		-		SR	☑☐	
			15:24	BO			°58.325	° 17.951		178	-			☐☐	
			15:27	EN			°58.307	° 17.965			-			☐☐	
			:				° .	° .			-			☐☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
134	46	27	16:27	BE	NET		48 °51.363	123°10.825	183		-		TF	☐☐	
			16:33	BO			°51.392	°10.880		173	-			☐☐	
			16:36	EN			°51.414	°10.883			-			☐☐	
135	46	27	16:48	BE	ROS	US	48°51.370	123°10.679	180		383-394	12	SR	☑☐	
			16:52	BO			°51.388	°10.728		175	-			☐☐	
			17:05	EN			°51.383	°10.778			-			☐☐	
136	45	27	17:33	BE	ROS	/	48 °53.910	123°08.356	131		/	/	SR	☑☐	
			17:36	BO			°53.888	°08.335		126	-			☐☐	
			17:38	EN			°53.880	°08.304			-			☐☐	
137	48	27	18:09	BE	ROS	/	48 °51.692	123 °03.226	232		/	/	SR	☑☐	
			18:13	BO			°51.715	°03.246		227	-			☐☐	
			18:18	EN			°51.715	°03.260			-			☐☐	
138	59	27	20:25	BE	NET	-	48 °37.758	123 °14.582	229		-	-	CC	☐☐	
			20:33	BO			°37.766	°14.595		220	-			☐☐	
			20:37	EN			°37.728	°14.596			-			☐☐	
139	57	27	20:49	BE	ROS	US	48 °37.752	123 °14.626	228		395-409	15	MB	☑☐	
			20:54	BO			°37.697	°14.611		225	-			☐☐	
			21:08	EN			°37.476	°14.554			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

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Produced by the Water Properties Group, IOS

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Version: 20 April 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month January | **Year** 2019 | **Vessel** Vector | **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
140	67	27	22:47	BE	ROS	—	48° 22.810	123° 18.128	106		-		CC	☑ ☐	
			22:49	BO			° 22.816	° 18.128		102	-			☐ ☐	
			22:51	EN			° 22.816	° 18.107			-			☐ ☐	
141	104	27	23:21	BE	ROS	—	48° 19.968	123° 18.110	85		-		CC	☑ ☐	
			23:23	BO			° 19.954	° 18.155		83	-			☐ ☐	
			23:25	EN			° 19.933	° 18.220			-			☐ ☐	
142	66	27	23:55	BE	ROS	—	48° 19.262	123° 14.086	101		-		CC	☑ ☐	
			23:57	BO			° 19.235	° 14.082		99	-			☐ ☐	
		28	00:00	EN			° 19.205	° 14.108			-			☐ ☐	
143	69	28	02:05	BE	ROS	US	48° 15.607	123° 43.380	177		410 - 421	12	CC	☑ ☐	
			02:09	BO			° 15.580	° 43.500		175	-			☐ ☐	
			02:21	EN			° 15.612	° 43.650			-			☐ ☐	
144	70	28	02:53	BE	ROS	—	48° 19.169	123° 43.129	154		-		CC	☑ ☐	
			02:56	BO			° 19.194	° 43.085			-			☐ ☐	
			02:59	EN			° 19.206	° 43.048			-			☐ ☐	
145	71	28	04:37	BE	ROS	—	48° 22.223	123° 59.443	109		-		CC	☑ ☐	
			04:39	BO			° 22.237	° 59.395		107	-			☐ ☐	
			04:42	EN			° 22.249	° 59.353			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Ocean Sciences Division, Institute of Ocean Sciences

Month January **Year** 2019 **Vessel** Vector **Cruise ID** 2019-003

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Pressure	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
146	72	28	05:22	BE	NET	.	48° 18.640	124° 3.974	187		-	-	CC	☐☐	
			05:28	BO			° 18.716	° 3.845		177	-			☐☐	
			05:31	EN			° 18.745	° 3.709			-			☐☐	
147	72	28	05:39	BE	ROS	US	48° 18.811	124° 3.612	187		422-434	13	CC	☑☐	
			05:42	BO			° 18.842	° 3.557		183	-			☐☐	
			05:53	EN			° 18.926	° 3.418			-			☐☐	
148	SC-04	28	13:28	BE	ROS	/	48°43.510	123° 25.021	97		/	/	SR	☑☐	
			13:30	BO			° 43.511	° 25.016		92	-			☐☐	
			13:32	EN			° 43.511	° 25.016			-			☐☐	
149	SC-04	28	13:38	BE	NET	/	48° 43.504	123° 25.039	97		-		SP	☐☐	
			13:42	BO			° 43.489	° 25.046		87	-			☐☐	
			13:44	EN			° 43.480	° 25.055			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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