

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2021-004

DATE:

From: 11 Feb 2021

To: 15 Feb 2021

VESSEL:

CCGS Neocalignu S

PROJECT(S):

SOG Plankton

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

WaterProperties.ca

Captain: Dustin Flahr First Officer: Simon
Second Officer: _____ Third Officer: _____
Fishing Master: _____ Chief Engineer: Rob
Deck - Doug Stew - Colin

Mission Participants / Agencies:

DFO

**** Chief Scientist to tape Scientific Personnel section of their cruise plan here ****

This is accessed from your WaterProperties.ca Dashboard or from here:
<https://www.waterproperties.ca/requests/cruiseplanview.php?cruiseid=YYYY-NNN>

on board - Kelly Young (OSD)

**** 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: _____

Data acquisition program: Seaterm / Seasave

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

Primary CTD

Make: SRF model: 25 serial number: 456

Primary temperature serial number: 5130

Primary conductivity serial number: 3500

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: _____ Model: _____ serial: _____

Transmissometer: _____ Model: _____ serial: _____

Fluorometer: Model ECO Cable gain: 13 serial: 4185 P, S or ☒ NO pump?

Fluorometer: Model _____ Cable gain: _____ serial: _____ P, S or NO pump?

Oxygen sensor: SRF Model: 43 serial: 3234 ☒ P, S or NO pump?

PAR sensor: _____ Model: _____ serial: _____ Surface PAR? Y / N

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ 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: _____ serial: _____

Transmissometer: _____ Model: _____ serial: _____

Fluorometer: Model _____ Cable gain: _____ serial: _____ P, S or NO pump?

Fluorometer: Model _____ Cable gain: _____ serial: _____ P, S or NO pump?

Oxygen sensor: _____ Model: _____ serial: _____ P, S or NO pump?

PAR sensor: _____ Model: _____ serial: _____ Surface PAR? Y / N

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ P, S or NO pump?

Other sensors: _____ serial: _____ 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 (typical on small launches).

Rosette Setup:
Number of bottles: _____
Manufacturer: _____
Volume of bottles (litres): _____

Rosette/Niskin Bottle Serial Numbers:

1: _____	2: _____	3: _____	4: _____	5: _____
6: _____	7: _____	8: _____	9: _____	10: _____
11: _____	12: _____	13: _____	14: _____	15: _____
16: _____	17: _____	18: _____	19: _____	20: _____
21: _____	22: _____	23: _____	24: _____	

Make sure to note any bottle changes or repairs during your cruise in this log book.

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):

Label Printers:

Primary Printer Kit #: 5 - Brady
Secondary Printer Kit #: _____
Software Version: _____

Thermosalinograph System (SBE21/45):

Program: _____ Version: _____
Sampling interval (seconds): _____
TSG serial number: _____
Fluorometer sensor serial number: _____

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:

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/SCOR #1

Bongo/SCOR #2

Frame Size: 56 cm

Frame Size: _____ cm

Frame Size: _____ cm

Frame Size: _____ cm

Mesh: 236 μ m

Mesh: _____ μ m

Mesh: _____ μ m

Mesh: _____ μ m

Flowmeter: 7057

Flowmeter: _____

Flowmeter: _____

Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others: _____

RBR pressure sensor

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: _____

SoG Plankton Survey

CTD startup: Turn on + start 2min timer. Lower to 10m + wait until about 1m 30sec (no Niskin) then return to surface. wait remaining time to 2min total soak + start cast.

CTD startup w/ Niskin for bottom water:

Turn on + start 2min timer. Lower to surface, then attach 1.7L Niskin to wire, approx 2m above CTD. Once attached, send CTD down to 10m for soak ~ 30 sec before returning to surface by 2min. Start cast.

Surface Niskin:

Imm. After CTD cast (CTD out + turned off), 5L Niskin attached to wire, sent to surface + triggered, collect Niskin + bring CTD package back on board. Water sampled from Niskins usually right away, some no more than 15 min. after ~~cast~~ Niskins returned to deck

vertical SCOR to 10m off bottom, preserved 10% formalin in seawater

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month Feb			Year 2021			Vessel Neocaligus			Cruise ID 2021-004						
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/Fl Cleaned	Comments
1	GEO1	11	21:10	BE	CTD		49°15.025	123°45.470	407		-		KY	☒ ☐	Not on? →
			:	Bo			°15.044	°45.695		397	-			☐ ☐	dead haul
			:30	EN			° .052	° .862			-			☐ ☐	
2			21:20	MR	BOT		49°15.044	123°45.695			- 1	- 1		☐ ☐	deep SAT
2	GEO1	11	22:30	BE	CTD		°15.005	°45.936	407		-			☐ ☐	2 min soak
			:23				°15.014	°45.390		50	-			☐ ☐	test
			:24				° .016	° .430			-			☐ ☐	
3	GEO1	11	22:29	BE	CTD		49°14.979	123°45.291	407		-			☐ ☐	cast 3
			22:38	Bo			°14.989	°45.406		397	-			☒ ☐	
			:47	EN			° .986	° .548			-			☐ ☐	
4	GEO1	11	22:38	MR	BOT		49°14.989	123°45.406		395	- 1	1		☐ ☐	deep SAT
5	GEO1	11	22:49	MR	BOT		49°14.991	123°45.606			- 2	1		☐ ☐	
6	GEO1	11	:	BE	NET		° .	° .			-			☐ ☐	didn't get
			23:09	Bo			° .980	° .	407		-			☐ ☐	start
			23:09	Bo	23:09		49°14.980	123°45.518	407	397	-			☐ ☐	
			23:14	EN			49° .975	° .570			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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

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

Notes:

Produced by the Water Properties Group, IOS

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11 Feb 2021

This page is for any notes or observations

- No fluor blue light at end? Turned off + waited 5 min
tried again to 10 m → still nothing?
- connected to CTD, shows 2 casts but only 300 scans + ends w/ "batfail"
 - called Scott, suggested replacing batteries (prob. froze overnight as sat in truck)
~~which speed slow @ first, increased ~ 230m of downcast, cast 1 note, discard~~
(30-40 m/min)
 - replaced all batteries + did 50m test cast (#2) → took out of water briefly at start (after 2min soak) to check for fluor light → yes!
 - cast #3 as normal. Attached Niskin ~ 2m above CTD at start of cast

End day 1 → anchoring @ Lesquiti Anchored ~ 6-6³⁰ pm
head to N + ↑

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Month <u>Feb</u>				Year <u>2021</u>		Vessel <u>Neocaligus</u>		Cruise ID <u>2021-004</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							
7	3	12	15:34	BE	CTD		49° 26.578	124° 20.205	320		-		KY	☒	* → cast 4
			15:43	BO			49° 26.643	124° 20.256	325	315	-			☐	
			15:48	EN			49° 26.690	124° 20.316			-			☐	
8	3	12	15:50	MR	BOT		49° 26.715	124° 20.326	325	0	- 3	1		☐	HPLC + Nut
9	6	12	16:31	BE	CTD		49° 30.520	124° 27.778	194		-			☒	cast 5
			16:36	BO			49° 30.557	124° 27.805		184	-			☐	
			16:39	EN			49° 30.583	124° 27.822			-			☐	
10	6	12	16:40	MR	BOT		49° 30.592	124° 27.825	194	0	- 4	1		☐	HPLC + Nut
11	CPF 2	12	17:04	BE	CTD		49° 27.939	124° 29.937	330		-			☒	cast 6
			17:12	BO			49° 27.961	124° 29.975		320	-			☐	
			17:18	EN			49° 27.991	124° 30.017			-			☐	
12	CPF 2	12	17:21	BE	NET		49° 27.960	124° 29.923	330		-			☐	
			17:22	BO			49° 27.968	124° 29.945		320	-			☐	
			17:32	EN			49° 27.995	124° 29.984			-			☐	
13	BS-11	12	18:44	BE	CTD		49° 29.012	124° 46.026	60		-			☒	cast 7
			18:47	BO			49° 29.007	124° 46.037		50	-			☐	
			18:48	EN			49° 29.008	124° 46.033			-			☐	
14	BS-11	12	18:49	MR	BOT		49° 29.009	124° 46.031	60	0	- 5	1		☐	HPLC, nut, logols
			:				°	°			-			☐	

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

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
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RE = Recover Mooring Time

Notes:

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Off anchor 7am

- Went to 10m for soak but came out of water after so sent back down to 10m for another 30~~sec~~ soak. Returned to surface + started cast (about 3 min total start)

SL Niskin broken @ wire attachment.

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Month Feb				Year 2021			Vessel Neocaligus			Cruise ID 2021-004					
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							
15	BS-11	12	18:51	BE	NET		49° 29.010	124° 46.025	60		-		KY	☐	
			18:52	BO			49° 29.011	124° 46.023		50	-			☐	
			18:52	EN			49° 29.11	124° 46.021			-			☐	
16	9	12	20:20	BE	CTD		49° 35.430	124° 38.276	169		-			☒	cast 8
			20:25	BO			49° 35.461	124° 38.298		159	-			☐	
			20:27	EN			49° 35.465	124° 38.310			-			☐	
17	9	12	20:28	MR	BOT		49° 35.466	124° 38.313	169	0	- 6	1		☐	HPLC + nut
18	11	12	21:20	BE	CTD		49° 42.381	124° 43.362	301		-			☒	cast 9
			21:27	BO			49° 42.400	124° 43.417		291	-			☐	
			21:32	EN			49° 42.417	124° 43.461			-			☐	
19	11	12	21:38	BE	NET		49° 42.362	124° 43.310	301		-			☐	
			21:42	BO			49° 42.377	124° 43.344		291	-			☐	
			21:47	EN			49° 42.388	124° 43.381			-			☐	cast 10
20	12	12	22:05	BE	CTD		49° 43.579	124° 40.711	357		-			☒	172 Niskin attached
			22:13	BO			49° 43.583	124° 40.735		347	-			☐	at surface for
			22:21	EN			49° 43.614	124° 40.783			-			☐	↓
21	12	12	22:13	MR	BOT		49° 43.583	124° 40.735	357	345	- 7	1		☐	deep SAL + nuts
22	12	12	22:23	MR	BOT		49° 43.631	124° 40.800		0	- 8	1		☐	HPLC, nut, sal
			:				°	°			-			☐	Lugols

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

Event Type:

BOT = Bottle cast (no CTD)

CTD = Standalone CTD

ROS = CTD in Rosette

SET = Fish Set

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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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RE = Recover Mooring Time

Notes:

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Uploading gave error for file, retried upload + seemed OK?

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Month Feb				Year 2021			Vessel Neocaligus			Cruise ID 2021-004					
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	Trans/FI Cleaned	Comments
23	12	12	22:—	BE	NET		49° 43. —	124° 40. —	357		-		KY	☐ ☐	
			22:33	BO			49° 43. 578	124° 40. 738		347	-			☐ ☐	
			22:39	EN			49° 43. 594	124° 40. 762			-			☐ ☐	
24	20	12	23:43	BE	CTD		49° 47. 191	124° 32. 284	312		-	—		☐ ☐	cast 11
			23:50	BO			49° 47. 180	124° 32. 294	315	305	-			☐ ☐	→
			23:55	EN			49° 47. 176	124° 32. 298			-			☐ ☐	
25	22	13	15:46	BE	CTD		49° 40. 227	124° 16. 281	357		-			☐ ☐	cast 12
26			15:55	BO/MR	BOT		49° 40. 234	124° 16. 301		347	- 9	1		☐ ☐	bottle = 345m
			16:02	EN			49° 40. 232	124° 16. 323			-			☐ ☐	
27	22	13	16:04	MR	BOT		49° 40. 227	124° 16. 335	357	0	- 10	1		☐ ☐	
28	22	13	16:09	BE	NET		49° 40. 211	124° 16. 289	356		-			☐ ☐	
			16:15	BO			° 40. 221	° 16. 310		346	-			☐ ☐	
			16:21	EN			° 40. 225	° 16. 327			-			☐ ☐	
29	15-2	13	17:16	BE	CTD		49° 38. 175	124° 5. 010	30		-			☒ ☐	cast 13
			17:19	BO			49° 38. 196	124° 5. 009		25	-			☐ ☐	
			17:19	EN			° 38. 197	° 5. 009			-			☐ ☐	
30	15-2	13	17:21	BE	NET		49° 38. 199	124° 5. 010	30		-			☐ ☐	
			17:21	BO			° . 199	° 5. 011		25	-			☐ ☐	
			17:22	EN			° . 200	° 5. 011			-			☐ ☐	

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:

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Last station Day 2, heading ~ 15 nm to anchor (by stn 22)

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Month <u>Feb</u>			Year <u>2021</u>			Vessel <u>Neocalignus</u>			Cruise ID <u>2021-004</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
31	24	13	18:21	BE	CTD		49°30.316	124°06.015 ^A	428		-	-	KY	☒ ☐	cast 14
			18:29	BO			49°30.320	124°06.066		418	-			☐ ☐	
			18:36	EN			49°30.319	124°06.095			-			☐ ☐	
32	24	13	18:40	BE	NET		49°30.315	124°05.957	428		-			☐ ☐	
			18:47	BO			49°30.327	124°06.006		418	-			☐ ☐	
			18:54	EN			49°30.313	124°06.050			-			☐ ☐	
33	2	13	19:39	BE	CTD		49°24.106	124°09.328	289		-	-		☒ ☐	cast 15
			19:45	BO			49°24.069	124°09.312	285	275	-			☐ ☐	
			19:50	EN			49°24.035	124°09.312			-			☐ ☐	
34	2	13	19:51	MR	BOT		49°24.031	124°09.310	285	0	-11	1		☐ ☐	HPLC, net, Ingot
35	CPF1	13	20:15	BE	CTD		49°22.056	124°05.013	246		-			☒ ☐	note <u>cast 16</u>
			20:21	BO			49°22.053	124°04.988		236	-			☐ ☐	
			20:25	EN			49°22.072	124°04.996			-			☐ ☐	
36	CPF1	13	20:29	BE	NET		49°21.974	124°05.003	246		-			☐ ☐	
			20:33	BO			49°21.973	124°05.028		236	-			☐ ☐	
			20:36	EN			49°21.980	124°05.036			-			☐ ☐	
37	28	13	22:01	BE	CTD		49°24.074	123°45.275	136		-			☒ ☐	cast 17
			22:05	BO			49°24.076	123°45.307		126	-			☐ ☐	
			22:07	EN			49°24.075	123°45.317			-			☐ ☐	

Event Type:

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Bottle Firing Method:

US = Up / Stop (default)
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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

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This page is for any notes or observations

→ may have started downcast before 2min mark were up (for soak)

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Month Feb				Year 2021			Vessel Neocaligus			Cruise ID 2021-004					
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/Fl Cleaned	Comments
38	28	13	22:09	BE	NET		49° 24.083	123° 45.329	136		-		KY	☐ ☐	
			22:11	BO			49° 24.081	123° 45.339		126	-			☐ ☐	
			22:13	EN			49° 24.080	123° 45.348			-			☐ ☐	
39	27	13	22:51	BE	CTD		49° 19.093	123° 47.997	347		-			☒ ☐	east 18
40			22:59	BO/MR	BOT		49° 19.130	123° 48.107		337	- 12	1		☐ ☐	Deep SAL + nut
			23:06	EN			49° 19.166	123° 48.184			-			☐ ☐	bottle 1m above (*) (=336m)
401	27	13	23:08	MR	BOT		49° 19.182	123° 48.208	347	0	- 13	1		☐ ☐	HPLC, nut, dupol, sal
			:				°	°			-			☐ ☐	
42	40	14	16:44	BE	CTD		49° 08.661	123° 36.813	138		-			☒ ☐	east 19
			16:48	BO			49° 08.669	123° 36.844		128	-			☐ ☐	
			16:50	EN			49° 08.669	123° 36.850			-			☐ ☐	
43	40	14	16:55	BE	NET		49° 08.613	123° 36.784	148		-			☐ ☐	
			16:57	BO			49° 08.617	123° 36.801		138	-			☐ ☐	
			16:59	EN			49° 08.614	123° 36.817			-			☐ ☐	
44	39	14	17:20	BE	CTD		49° 09.778	123° 32.970	380		-			☒ ☐	east 20
			17:29	BO			49° 09.809	123° 33.072		370	-			☐ ☐	
			17:35	EN			49° 09.817	123° 33.078			-			☐ ☐	
45	39	14	17:36	MR	BOT		49° 09.836	123° 33.145		0	- 14	1		☐ ☐	HPLC, nut
			:				°	°			-			☐ ☐	

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

End of Day 3, tied up PBS

Start Day 4 7am

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>Feb</u>			Year <u>2021</u>			Vessel <u>Neocaligus</u>			Cruise ID <u>2021-004</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
46	38	14	18:11	BE	CTD		49° 11.965	123° 26.380	309		-	-	KY	☒ ☐	<u>cast 21</u>
			18:18	BO			49° 11.947	123° 26.456		299	-			☐ ☐	
			18:23	EN			49° 11.925	123° 26.487			-			☐ ☐	
47	38	14	18:26	BE	NET		49° 12.008	123° 26.327	309		-			☐ ☐	
			18:31	BO			49° 11.987	123° 26.359		299	-			☐ ☐	
			18:36	EN			49° 11.967	123° 26.385			-			☐ ☐	
48	108	14	19:39	BE	CTD		49° 04.374	123° 19.093	90		-	-		☒ ☐	<u>cast 22</u>
			19:42	BO			49° 04.343	123° 19.121		80	-			☐ ☐	
			19:43	EN			49° 04.336	123° 19.121			-			☐ ☐	
49	41	14	20:02	BE	CTD		49° 03.307	123° 22.335	245		-	-		☒ ☐	<u>cast 23</u>
			20:08	BO			49° 03.276	123° 22.386		235	-			☐ ☐	
			20:11	EN			49° 03.251	123° 22.397			-			☐ ☐	
50	41	14	20:15	BE	NET		49° 03.318	123° 22.284	245		-			☐ ☐	
			20:19	BO			49° 03.292	123° 22.291		235	-			☐ ☐	
			20:23	EN			49° 03.273	123° 22.312			-			☐ ☐	
51	42	14	20:46	BE	CTD		49° 01.843	123° 26.268	321		-			☒ ☐	<u>cast 24</u>
			20:54	BO			49° 01.863	123° 26.375		311	-			☐ ☐	
			20:59	EN			49° 01.867	123° 26.445			-			☐ ☐	
52	42		21:00	MR	BOT		49° 01.877	123° 26.485	321	0	- 15	1		☐ ☐	<u>HPLC, nut, lugols</u>

Event Type:

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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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DAILY SCIENCE LOG

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Month <u>Feb</u>				Year <u>2021</u>		Vessel <u>Neocaligus</u>		Cruise ID <u>2021-004</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							
53	42	14	21:05	BE	NET		49° 01.796	123° 26.216	321		-		KY	☐	
			21:10	BO			49° 01.807	123° 26.275		311	-			☐	
			21:16	EN			49° 01.791	123° 26.310			-			☐	
54	46	14	23:01	BE	CTD		48° 51.390	123° 10.819	179		-	1		☒	last 25
55	46	14	23:06	BO	MR BOT		48° 51.386	123° 10.960		169	- 16			☐	Bot depth = 169m
			23:10	EN			48° 51.379	123° 11.061			-			☐	1m above CTD
56	46	14	23:11	MR	BOT		48° 51.379	123° 11.147		0	- 17	1		☐	HPLC, nut, SAR
57	46	14	23:17	BE	NET		48° 51.401	123° 10.737	179		-			☐	
			23:20	BO			48° 51.398	123° 10.841		169	-			☐	
			23:22	EN			48° 51.397	123° 10.816			-			☐	
58	56	15	00:29	BE	CTD		48° 46.369	123° 01.702	211		-			☒	lots of current last 26
			00:34	BO			48° 46.482	123° 01.652	204	204 → 194	-			☐	
			00:37	EN			48° 46.549	123° 01.611			-			☐	
59	56	15	00:38	MR	BOT		48° 46.577	123° 01.615	204	0	- 18	1		☐	HPLC + nut
			:				°	°			-			☐	
60	59	15	16:11	BE	CTD		48° 36.991	123° 14.934	236		-			☒	last 27
			16:16	BO			48° 36.960	123° 14.863		226	-			☐	
			16:20	EN			48° 36.982	123° 14.844			-			☐	
61	59	15	16:27	MR	BOT		48° 36.979	123° 14.826	236	0	- 19	1		☐	HPLC, nut

Event Type:

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LOOP = Sea Water Loop
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 NET = Plankton Net Haul
 DRF = Drifter
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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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Sample : deep SAL + nut +

→ end Day 4, anchor Bedwell Harbour (Pender Is.)

DAILY SCIENCE LOG

Month Feb				Year 2021			Vessel Neocaligus		Cruise ID 2021-004						
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
62	59	15	16:26	BE	NET		48° 36.966	123° 15.022	236		-		KY	☐ ☐	
			16:29	BO			° 36.951	° 14.995		226	-			☐ ☐	
			16:33	EN			° 36.956	° 14.965			-			☐ ☐	
63	GI-01	15	17:45	BE	CTD		48° 45.856	123° 20.533	66		-	-		☒ ☐	Cast 28
			17:48	BO			48° 45.826	123° 20.544		56	-			☐ ☐	
			17:49	EN			48° 45.818	123° 20.544			-			☐ ☐	
64	GI-01	15	17:51	BE	NET		48° 45.869	123° 20.549	66		-			☐ ☐	
			17:52	BO			48° 45.860	123° 20.554		56	-			☐ ☐	
			17:53	EN			48° 45.849	123° 20.556			-			☐ ☐	Cast 29
65	SC-04	15	18:44	BE	CTD		48° 43.494	123° 25.878	87		-			☒ ☐	NOTE →
			18:48	BO			48° 43.503	123° 25.789		77	-			☐ ☐	
			18:49	EN			48° 43.507	123° 25.776			-			☐ ☐	
66	SC-04	15	18:51	MR	BOT		48° 43.524	123° 25.726	87	0	- 20	1		☐ ☐	
67	SC-04	15	18:55	BE	NET		° -	° -	87		-			☐ ☐	
			18:56	BO			48° 43.516	123° 25.914		77	-			☐ ☐	
			18:57	EN			° .517	° .909			-			☐ ☐	Cast 30
68	CBE2	15	20:31	BE	CTD		48° 44.247	123° 34.489	66		-	-		☒ ☐	NOTE →
			20:36	BO			48° 44.238	123° 34.443		56	-			☐ ☐	
			20:37	EN			48° 44.239	123° 34.433			-			☐ ☐	

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

→ came out of water during 2min startup, sent back to 10m for another ~ 45 sec before returning to surface to start cast

→ came out again, did another ^{10m} ~~10m~~ soak before cast, extra 1 minute (so 3min total start)

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[illegible]

Event Type:	LOOP = Sea Water Loop	Bottle Firing Method:	Time Code:	CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products	
BOT = Bottle cast (no CTD)	MOR = Mooring	US = Up / Stop (default)	BE = Beginning Time of Cast	DE = Deployment Time	
CTD = Standalone CTD	NET = Plankton Net Haul	UN = Up / No stop	BO = Bottom Time of Cast	MR = Messenger Release Time	
ROS = CTD in Rosette	DRF = Drifter	DN = Down / No stop	EN = End Time of Cast	RE = Recover Mooring Time	
SET = Fish Set	=				
		Notes:			

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