

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2018-96

DATE:

From: 3 March 2018 To: 9 Mar 2018

VESSEL:

Neocaligus

PROJECT(S):

Zooplankton SoG

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

WaterProperties.ca

Captain: Jim Garrett
 Second Officer: Jamie
 Fishing Master: _____
 First Officer: Chase
 Third Officer: Doug
 Chief Engineer: Gord R

Mission Participants / Agencies:

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

1st Leg Scientific Personnel: Chief Scientist: Kelly Young

Name	Watch	Cabin	Name	Watch	Cabin
Matt Miller	101	101			

The image displays a handwriting practice sheet with two rows of slanted lines. Each row contains ten sets of lines, designed for tracing the formation of lowercase letters. The first row is for the letter 'a', and the second row is for the letter 'c'. Each set consists of a solid line, a dashed line, and a solid line, providing a guide for stroke direction and placement.

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: CTD Laptop 1123

Data acquisition program: Seaterm

CTD deck unit make: N/A model: serial number:

Primary CTD

Make: SBE model: 25 serial number: 404

Primary temperature serial number: 2449

Primary conductivity serial number: 1764

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: Model: s/n: _____

Transmissometer: Model: s/n: _____

Fluorometer: Model Wetlab Eco Cable gain: 28 s/n: 4185 P, S or NO pump?

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

Oxygen sensor: SBE Model: 43 s/n: 1176 P S or NO pump?

PAR sensor: Model: s/n: Surface PAR? Y / N

Other sensors: PH s/n: 0852 P, S or NO pump?

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

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

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

Secondary CTD

Make: model: serial number: _____

Primary temperature serial number: _____

Primary conductivity serial number: _____

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: Model: s/n: _____

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?

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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): 3 m

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

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: 56 cm Mesh: 256 μ m Flowmeter: TK 7129

Bongo #2 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Multinet ☐ BIONESS ☐ Neuston ☐ Others: _____

Borrowed PBS set from Tyler Z.

Trawl Gear:

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

Bottom Trawls: Atlantic Western I/A ☐ 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. *Garmin etrex 10 GPS for all locations*

2. _____

3. _____

4. _____

5. _____

HPLC - 1L bottles (~~unless have to stop due to clogging~~) used 1L for all
chl-a - 304 mL brown bottles
phyto - lugols
DIC - 250 mL, for D. Ianson / M. Miller
Sal - 105 standard
Nuts - 105 standard, Froze in ships deep freezer

Used 1.7L Niskin attached ~3m above CTD for deepwater samples
5, 10, 20m depths sampled with 5L in chain on wire
Ø m collect from 5L Niskin on a pole + tripped on opposite side of vessel
usually while CTD is in the water.

Zooplankton - 1 side preserved 10% formalin
1 side size-fractionated : 4mm, 2mm, 1mm, 500µm, 250µm + froze in dewar
transferred to -80°C freezer @ 105

Matt Miller scanned for and removed some Limacina from all samples for his acidification
study (WVic MSc project)

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>March</u>			Year <u>2018</u>			Vessel <u>Noocaligns</u>			Cruise ID <u>2018-96</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/Fl Cleaned	Comments
1	GEO1	3	23:21	BE	CTD		49° 15. 613	123° 45. 019	405	395	-	1		☐ ☐	SL Nistia above CTD
			23:35	BO	BOT		49° 15. 006	123° 45. 124		382	- 1			☐ ☐	leaked no sample
			23:48	EN			° . 018	° . 301			-			☐ ☐	
2	GEO1	4	0:03	BE	NET		49° 15. 007	123° 45. 218	406		-			☐ ☐	
			0:13	BO			49° 15. 011	123° 45. 280		396	-			☐ ☐	
			0:20	EN			° . 005	° . 385			-			☐ ☐	
3		4	0:15	MR	BOT		49° 15. 007	123° 45. 218		0	- 2	1		☐ ☐	DIC + SAL
4		4	0:41	MR	BOT		49° 14. 957	123° 45. 363	405	20	3 - 5			☐ ☐	"
			:				° .	° .			-			☐ ☐	
5	CPF1	4	16:34	BE	NET		49° 22. 018	124° 5. 036	247		-			☐ ☐	
			16:40	BO			49° 22. 018	124° 5. 007		237	-			☐ ☐	
			16:44	EN			49° 22. 012	124° 4. 972			-			☐ ☐	
6	CPF1	4	16:52	BE	CTD		49° 22. 072	124° 5. 005	248		6 -	1		☐ ☐	2 min 30 sec
			16:58	BO/MR	BOT		49° 22. 070	124° 4. 965		238	-			☐ ☐	bottle 3m above CTD
			17:04	EN			49° 22. 057	124° 4. 889			-			☐ ☐	
6	CPF1	4	17:16	MR	BOT		49° 22. 100	124° 4. 866	248	20	7 - 10	4		☐ ☐	
7	2	4	17:49	BE	CTD		49° 24. 110	124° 9. 263	280		-			☐ ☐	3 min soak
			17:57	BO			49° 24. 125	124° 9. 247		270	-			☐ ☐	
			18:02	EN			49° 24. 124	124° 9. 237			-			☐ ☐	

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

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3 Mar 2018 joined @ noon. Loaded - set up, left for GEO1 ~ 14:30
6 min 45 min before start of cast CTD on and @ surface (attaching Niskin)
~~stopped 384m to release messenger~~ No sample, Niskin didn't seal. !

* Forgot to turn off CTD, was on for about an hour before I noticed Ctd = 2018-96-0001.
Back to PBS for night. Tied up at 5:30pm big file

Start @ 7am, heading N to CFF1

Cast 7, 2018-96-0006

Cast 8, 2018-96-0007

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Month <u>Mar</u>				Year <u>2018</u>		Vessel <u>Neocelignus</u>			Cruise ID <u>2018-96</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
8	2	4	17:53	MR	BOT		49° 24. 123	124° 9. 258	280	0	11 -	1		☐ ☐	
9	3	4	18:54	BE	CTD		49° 26. 613	124° 20. 279	324		-	1		☐ ☒	
			19:01	BO			49° 26. 620	124° 20. 324		314	-			☐ ☐	
			19:09	EN			49° 26. 628	124° 20. 341			-			☐ ☐	
10	3	4	18:57	MR	BOT		49° 26. 622	124° 20. 312	324	0	12 -	1		☐ ☐	
11	6	4	19:48	BE	CTD		49° 30. 639	124° 27. 810	192		-			☐ ☒	2 min soak
			19:54	BO			49° 30. 657	124° 27. 758		182	-			☐ ☐	
			:59	EN			49° 30. 657	124° 27. 714			-			☐ ☐	
12	6	4	19:51	MR	BOT		49° 30. 659	124° 27. 795	192	0	18 - *	1		☐ ☐	Sample # out of order
13	CPF2	4	20:22	BE	NET		49° 27. 986	124° 29. 989	327		-			☐ ☐	
			20:29	BO			49° 27. 983	124° 29. 986		317	-			☐ ☐	
			:34	EN			49° 27. 982	124° 29. 958			-			☐ ☐	Niskin 3m above CTD
14	CPF2	4	20:39	DE	CTD		49° 27. 999	124° 29. 984	327		13 -	1		☐ ☐	2 min soak
			20:49	BO/MR-			49° 28. 014	124° 29. 974		317	-			☐ ☐	
			:58	EN			49° 28. 022	124° 29. 942			-			☐ ☐	
15	CPF2	4	21:03	MR	BOT		49° 28. 030	124° 29. 950	327	20	15-17	3		☐ ☐	
			:	MR	BOT		49° 28. 030	124° 29. 950		0	14 -	1		☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Bottle Firing Method:

US = Up / Stop (default)
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Notes:

Time Code:

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OCEAN SCIENCES LOG																Ocean Sciences Division, Institute of Ocean Sciences									
Month <u>Mar</u>				Year <u>2018</u>				Vessel <u>Neocalignis</u>				Cruise ID <u>2018-96</u>				Page <u>3</u> of <u> </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																	
16	9	4	22:08	BE	CTD		49° 35.479	124° 38.323	168		-	-		☐ ☐	2 min soak										
			22:12	BO			49° 35.453	124° 38.350		158	-	-		☐ ☐											
			22:15	EN			49° 35.452	124° 38.346			-	-		☐ ☐											
17	9	4	22:11	MR	BOT		49° 35.450	124° 38.341	168	0	-	-		☐ ☐											
18	BS-11	4	23:39	BE	NET		49° 29.000	124° 45.996	60		-	1		☐ ☐											
			23:41	BO			49° 29.004	124° 46.008			-	-		☐ ☐											
			23:42	EN			49° 29.008	124° 46.014		50	-	-		☐ ☐											
19	BS-11	4	23:46	BE	CTD		49° 29.020	124° 46.030	60		-	-		☐ ☐											
			:49	BO/MR			49° 29.031	124° 46.041		50	-	1		☐ ☐	Niskin 3m above CTD										
			:50	EN			49° 29.034	124° 46.056			-	-		☐ ☐	2 min soak										
20	BS-11	4	23:56	MR	BOT		49° 29.049	124° 46.081	60	20	22-24	3		☐ ☐											
I			23:57	MR	BOT		49° 29.050	124° 46.090	60	0	21-	1		☐ ☐											
LAST	sta of the day - heading to Comox													☐ ☐											
21	11	5	16:11	BE	NET		49° 42.391	124° 43.405	304		-	-		☐ ☐											
			16:17	BO			49° 42.381	124° 43.440			-	-		☐ ☐											
			16:22	EN			49° 42.400	124° 43.500		294	-	-		☐ ☐											
22	11	5	16:26	BE	CTD		49° 42.390	124° 43.517	301		-	-		☐ ☐											
			16:33	BO			49° 42.372	124° 43.535		25-	1			☒ ☐	2 min 10 sec soak										
			16:42	EN			49° 42.363	124° 43.547		291	-	-		☐ ☐											

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

Time Code:
BE = Beginning Time of Cast

CTD Transmissometer and Fluorometer to be used

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23	11	5	16:47	MR	BOT		49° 42.330	124° 43.561	301	20	27-29	3		☐ ☐	
24	11	5	16:51	MR	BOT		49° 42.296	124° 43.586	301	0	26-			☐ ☐	
25	12	5	17:10	BE	CTD		49° 43.599	124° 40.831	358		-			☐ ☐	
			17:18	BO			49° 43.589	124° 40.865		348	-			☐ ☐	
			17:24	EN			° 43.579	° 40.885			-			☐ ☐	
26	12	5	17:22	MR	BOT		49° 43.585	124° 40.879	358	0	30-	1		☐ ☐	
27	20	5	18:31	BE	CTD		49° 47.205	124° 32.298	310		-			☐ ☐	2 min 20 sec soak
			18:39	BO			49° 47.220	124° 32.328		300	-			☐ ☐	
			18:44	EN			49° 47.235	124° 32.292			-			☐ ☐	
28	22	5	20:15	BE	NET		49° 40.202	124° 16.302	353		-			☐ ☐	
			20:23	BO			49° 40.179	124° 16.328		343	-			☐ ☐	
			20:28	EN			49° 40.174	124° 16.382			-			☐ ☐	
29	22	5	20:33	BE	CTD		49° 40.169	124° 16.396	351		31-	1		☐ ☒	2 min 10 sec soak
			20:43	BO/MR			49° 40.130	124° 16.441		341	-			☐ ☐	
			:51	EN			° 40.088	° 16.492			-			☐ ☐	Bottle 3m above CTD
30	22	5	20:59	MR	BOT		49° 40.051	124° 16.539	351	20	33-35			☐ ☐	
			21:00		↓		49° 40.050	124° 16.540		0	32-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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31	15-2	5	21:53	BE	NET		49°38.195	124°4.989	27		-			☐ ☐	
			21:54	BO			49°38.195	124°4.985		20	-			☐ ☐	
			21:55	EN			° .	° .			-			☐ ☐	
32	15-2	5	21:57	BE	CTD		49°38.194	124°4.980	27		-	—		☐ ☒	2 min soak
			22:00	BO			49°38.198	124°4.983		25	-			☐ ☐	
			22:01	EN			49°38.197	124°4.982			-			☐ ☐	
33	24	5	22:54	BE	NET		49°30.293	124°6.034	427		-			☐ ☐	
			23:03	BO			49°30.290	124°5.981		417	-			☐ ☐	
			23:10	EN			49°30.281	124°5.972			-			☐ ☐	
34	24	5	23:14	BE	CTD		49°30.294	124°5.966	426		36-	1		☐ ☐	2 min soak
			23:26	BO/MR			49°30.350	124°6.000		416	-			☐ ☒	
			23:37	EN			° . 411	° 6.046			-			☐ ☐	
35	24	5	23:41	MR	BOT		49°30.434	124°6.066	426	20	38-40	3		☐ ☐	
36			23:43	MR	BOT		49°30.453	124°6.076		0	37-	1		☐ ☐	Leaky 5L Niskin
—	End of day		:		tied up Secret Cove		° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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							Latitude	Longitude							
37	28	6	16:32	BE	NET		49° 24.124	123° 45.293	135		-			☐ ☐	
			16:34	BO			49° 24.128	123° 45.306		125	-			☐ ☐	
			16:37	EN			49° 24.130	123° 45.318			-			☐ ☐	
38	28	6	16:41	BE	CTD		49° 24.125	123° 45.332	135		41-	1		☒ ☐	2 min soak
			16:45	BO/MR			49° 24.116	123° 45.347		125	-			☐ ☐	1.7L Niskin
			16:48	EN			49° 24.118	123° 45.365			-			☐ ☐	3 m above CTD
39	28	6	16:53	MR	BOT		49° 24.125	123° 45.388	135	20	43-45	3		☐ ☐	
40			16:57	MR	BOT		49° 24.132	123° 45.402	135	0	42-	1		☐ ☐	
41	27	6	17:34	BE	CTD		49° 19.109	123° 48.009	348		-			☒ ☐	2 min soak
			17:42	BO			49° 19.140	123° 47.951		338	-			☐ ☐	
			17:48	EN			49° 19.156	123° 47.886			-			☐ ☐	
42	27	6	17:43	MR	BOT		49° 19.140	123° 47.950	348	0	46-	1		☐ ☐	SL surface bottle
43	40	6	19:08	BE	NET		49° 8.582	123° 36.776	156		-			☐ ☐	
43	40	6	19:12	BO			49° 8.563	123° 36.802		146	-			☐ ☐	
			19:14	EN			49° 8.536	123° 36.808			-			☐ ☐	
44	40	6	19:17	BE	CTD		49° 8.529	123° 36.777	151		-			☒ ☐	
			19:23	BO			49° 8.513	123° 36.779		141	-			☐ ☐	
			19:25	EN			49° 8.505	123° 36.797			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month			March		Year		2018		Vessel		Neocaligus		Cruise ID		2018-96	
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	
45	39	6	20:00	BE	CTD		49° 9.781	123° 32.970	378		-			☐ ☐	2 min soak	
			20:09	BO			49° 9.778	123° 32.898		368	-			☐ ☐		
			20:16	EN			49° 9.736	123° 32.870			-			☐ ☐		
46	39	6	20:06	MR	BOT		49° 9.783	123° 32.899	368	0	47-	1		☐ ☐		
47	38	6	20:49	BE	NET		49° 12.001	123° 26.396	308		-			☐ ☐		
			20:56	BO			49° 11.968	123° 26.358		298	-			☐ ☐		
			21:03	EN			49° 11.935	123° 26.302			-			☐ ☐		
48	38	6	21:06	BE	CTD		49° 11.918	123° 26.275	298		48-	1		☐ ☒		
			21:15	BO/MR			49° 11.870	123° 26.217		288	-			☐ ☐	1.7L 3m above CTD	
			21:22	EN			49° 11.848	123° 26.189			-			☐ ☐	2 min 20 sec soak	
49	38	6	21:27	MR	BOT		49° 11.829	123° 26.168		20	50-52	3		☐ ☐		
50	38	6	21:58	MR	BOT		49° 11.960	123° 26.340		0	49-	1		☐ ☐		
51	41	6	22:27	BE	NET		49° 3.274	123° 22.319	246		-			☐ ☐		
			22:33	BO			49° 3.277	123° 22.352		236	-			☐ ☐		
			22:38	EN			49° 3.286	123° 22.347			-			☐ ☐		
52	41	6	22:41	BE	CTD		49° 3.255	123° 22.377	246		-			☐ ☒		
			22:49	BO			49° 3.233	123° 22.423		236	-			☐ ☐		
			22:54	EN			49° 3.255	123° 22.438			-			☐ ☐		
			:				°	°			-			☐ ☐		

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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	6	23:28	BE	✓CTD		49° 1.796	123° 26.201	320		-			☐ ☒	2 min soak
			23:36	BO			49° 1.795	123° 26.217		310	-			☐ ☐	
			23:42	EN			49° 1.806	123° 26.227			-			☐ ☐	
54	42	6	23:35	MR	BOT		49° 1.796	123° 26.215	320	0	53-	1		☐ ☐	
55	108	7	0:22	BE	✓CTD		49° 4.395	123° 19.136	90		-			☐ ☒	2 min soak
			0:26	BO			49° 4.405	123° 19.179		80	-			☐ ☐	
			0:27	EN			49° 4.414	123° 19.198			-			☐ ☐	
— END OF DAY: HEADING TO STATION —											-			☐ ☐	
56	46	7	17:10	BE	NET		48° 51.397	123° 10.786	180		-			☐ ☐	
			17:13	BO			48° 51.387	123° 10.793		170	-			☐ ☐	
			17:18	EN			48° 51.377	123° 10.831			-			☐ ☐	
57	46	7	17:20	BE	✓CTD		48° 51.378	123° 10.829	182		-			☐ ☒	2 min soak
			17:25	BO			48° 51.361	123° 10.819		172	-			☐ ☐	
			17:28	EN			48° 51.344	123° 10.848			-			☐ ☐	
58	GI-01	7	19:36	BE	NET		48° 45.827	123° 20.535	65		-			☐ ☐	
			19:38	BO			48° 45.812	123° 20.536		55	-			☐ ☐	
			19:39	EN			48° 45.808	123° 20.546			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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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
59	GI-01	7	19:42	BE	✓CTD		48°45.796	123°20.544	65		-	—		☐ ☒	2 min soak
			19:45	BO			48°45.768	123°20.547		55	-			☐ ☐	
			19:46	EN			48°45.763	123°20.551			-			☐ ☐	
60	SC-04	7	20:14	BE	NET		48°43.496	123°24.993	94		-			☐ ☐	
			20:17	BO			48°43.496	123°24.952		84	-			☐ ☐	
			:20	EN			°	°			-			☐ ☐	
61	SC-04	7	20:21	BE	✓CTD		48°43.475	123°24.922	88		-	—		☐ ☒	2 min soak
			20:25	BO			48°43.470	123°24.901		78	-			☐ ☐	
			20:26	EN			48°43.461	123°24.897			-			☐ ☐	
62	SC-04	7	20:16	MR	BOT		48°43.497	123°24.964	94	0	51-	1		☐ ☐	5L surface HPLC + chl a
63	CBE2	7	21:14	BE	NET		48°44.219	123°34.444	63		-			☐ ☐	
			21:15	BO			48°44.223	123°34.442		53	-			☐ ☐	
			21:16	EN			48°44.224	123°34.442			-			☐ ☐	
64	CBE2	7	21:19	BE	✓CTD		48°44.226	123°34.438	64		-	—		☐ ☒	2 min soak
			21:22	BO			48°44.226	123°34.428		54	-			☐ ☐	
			21:23	EN			48°44.228	123°34.433			-			☐ ☐	
—	END —		:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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