

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2018-73
2 of 3

DATE:

July 6

From:

To:

July 29

VESSEL:

NO RDIC PEARL

PROJECT(S):

1 PEC

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

WaterProperties.ca

Nathan. Debbie

Don Dickens

Third Officer:

Chief Engineer:

Deck hand: Doug Mosdell

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

Chief Scientist:

Jackie King

Watch Cabin

Watch Cabin

TYLER ZUBKOWSKI

BEEN SNOOW

CAM FRESH WATER

COLIN NOVAK

FRANK NELSON

HUGH MACLEARN

Watch Cabin

Name _____

Watch Cabin

2nd Leg Scientific Personnel:

Chief Scientist:

down for Baldt

**** 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.

AEER

Data logging computer:

Seaterm / Seasave V7

Data acquisition program:

CTD deck unit make:

model: Seabird 25

serial number: 1123

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

Wetlabs

Cable gain:

1000m

s/n:

4185

P, S or NO pump?

Fluorometer: Model

SBE

Cable gain:

s/n:

87693

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:

PH

s/n:

180852

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?

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-roselle 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):
Not able to measure speed out/in of wire precisely (approximate)

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: _____ Version: _____
Sampling interval (seconds): _____
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: *RBR (on board) (on trawl)*

Sensors: *2 sensors on net*

Others:

** RBR Bongo (duet - depth & temp) → Serial # 82527*

Plankton Nets:

Bongo #1

Frame Size: *236* cm

Mesh: *236* μ m

Flowmeter: *6069*

Bongo #2

Frame Size: _____ cm

Mesh: _____ μ m

Flowmeter: _____

Multinet ☐

BIONESS ☐

Neuston ☐

Others: _____

Trawl Gear:

Midwater Trawls:

SOG ☐

Higseas ☐

Pelagic ☒

Other: _____

Bottom Trawls: Atlantic Western IIA ☐

Yankee 36 Hard & Soft Bottom ☐

Other: _____

American Shrimp Trawl ☐

Notes:

Trawl Doors:

USA Jet ☐

Tyburon ☒

→ 4.0

Sounders:

Westmar 380 ☐

Others: _____

Scanmar w/ mapport w/ing tip sensors (for leg 2)

Acoustics:

Echosounder #1

EK60

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.

RBR concerto on net (temp, depth, salinity, DO_2)

RBR duet on headrope & foot rope of trawl

RBR on bongo (temp & depth on 2nd leg; only temp for 1st leg)

Serial # on flow meter : 6069

- all depth readings were taken from an instrument that was connected to the bottom of the boat (25 m below surface).

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month			Year			Vessel			Cruise ID			2018-73		
JULY			2018			NORDIC PEARL			PEARL			2018-73		
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
85	4444	15	17:07	BE	NET		49° 05' . 65	126° 27' . 75	130	-		H.M.	☐	BONGO
			17:11	BO			49° 05' . 64	126° 27' . 68	120	-			☐	
			17:15	EM			44° 05' . 63	126° 27' . 62		-			☐	
86	4693	15	:	BE	TRAWL		° . .	° . .		-			☐	
87	4697	15	:	BE	TRAWL		° . .	° . .		-			☐	
88	4697	15	21:05	BE	CTD	7	49° 09' . 98	126° 17' . 44	63	-	1	H.M.	☐	CTD + NISKIN
			21:07	BO			49° 09' . 97	126° 17' . 43	50	-			☐	
			21:09	EM			49° 09' . 97	126° 17' . 40		-			☐	
89	4697	15	21:12	BE	NET		49° 09' . 89	126° 17' . 29	64	-		H.M.	☐	BONGO
			21:15	BO			49° 09' . 89	126° 17' . 26	50	-			☐	
			21:16	EM			49° 09' . 89	126° 17' . 24		-			☐	
90	4697		:	BE	TRAWL		° . .	° . .		-			☐	
91	4693		:	BE	TRAWL		° . .	° . .		-			☐	
92	1833		:	BE	CTD	Q3	48° 18' . 88	125° 44' . 75	161	-	1	H.M.	☐	CTD + NISKIN
			:	BE			48° 18' . 87	125° 44' . 70	150	-			☐	
			:	EM			48° 18' . 85	125° 44' . 66		-			☐	
93	1833		17:07	BE	NET		48° 18' . 83	125° 44' . 58	160	-		H.M.	☐	BONGO
			17:06	BO			48° 18' . 74	125° 44' . 50	150	-			☐	
			17:08	EM			48° 18' . 71	125° 44' . 48		-			☐	

Event Type:
 BOT = Bottle cast (no CTD)
 CTD = Standalone CTD
 ROS = CTD in Rosette
 SET = Fish Set
Loop:
 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 Codes:
 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:

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month	Station Name	Day	Time (UTC)	Year	Vessel	Cruise ID	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
94	1709	15	:	2010	NORDIC PEARL	2018-73			-				
95	1838	15	:						-				
96	1838	15	20:34				130		-	1	H.M.		CTD + HSKIN
			20:42					120	-				
			20:46						-				
97	1838	15	20:53				130		-		H.M.		BONGO
			20:57					120	-				
			20:59						-				
98	1838		:						-				
99	1709	15	:						-	1	H.M.		CTD + HSKIN
100	1709	16	01:04				165		-	1	H.M.		CTD + HSKIN
			01:08					156	-				
			01:11						-				
101	1709	16	01:15				170		-		H.M.		BONGO
			01:19					160	-				
			01:21						-				
102	1833	16	:						-				
103	543698	18	:						-				
104	543698	18	16:53				140		11	1	JW/OM		CTD & Niskin

Event Type: LOOP = Sea Water Loop
 BOT = Bottle cast (no CTD)
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Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Vessel			Cruise ID						
JULY			2018			NORDIC PEARL			2018-73						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
104	543698	18	16:58	BO	CTD		48°52.287	126°16.111		130	-			☐	
			17:00		BOT	MSG	48°52.259	126°16.067	140	2	11			☐	1x solid, 2x chl, 2x net
			17:01	EN	CTD		48°52.249	126°16.050			-		JW/OM	☐	Bongo
105	543698	18	17:05	BE	NET		48°52.186	126°15.962	140		-			☐	Bongo
			17:10	BO			48°52.126	126°15.874		130	-			☐	wire angle 20°
			17:13	EN			48°52.097	126°15.822			-			☐	
106	3451	18	:		TRAWL		°	°			-			☐	
107	3451	18	18:58	BE	CTD		48°48.016	126°06.467	108		-		JW/OM	☐	
			19:02	BO	CTD		48°48.026	126°06.419		100	-			☐	
			19:04		BOT	MSG	48°48.041	126°06.396	108	2	12			☐	1x solid, 2x chl, 2x net
			19:05	EN	CTD		48°48.043	126°06.391			-			☐	
108	3451	18	19:09	BE	NET		48°48.076	126°06.352	108		-			☐	Bongo
			19:12	BO			48°48.095	126°06.314		100	-			☐	net tangled red net;
			19:13	EN			48°48.103	126°06.295			-			☐	codends flipped to catch 2x chl, 2x net
Redid 108	3451	18	19:23	BE	NET		48°48.184	126°06.175	108		-			☐	top of bongos
			19:27	BO			48°48.217	126°06.133		100	-			☐	
			19:29	EN			48°48.224	126°06.119			-			☐	
109	3202	18	:	BE	TRAWL		°	°			-			☐	
110	3202	18	20:55	BE	CTD		48°43.566	126°03.718	110		-		JW/OM	☐	

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

Produced by the Water Properties Group, IOS
WaterProperties.ca
Version: 14 February 2013

Event 7

Net 108 → needed to be redeployed because the codends flipped up & got caught on the top of the bongos
→ kept "event 108" for the second deployment of the net

— no backup vacuumard (for filtering chlorophylls) → filter got wet b/c container catching waste water overfilled (consider getting a larger waste water container?)

— Salinity samples "sample 12-stn 3451-event 107" & "sample 11-stn 3698-event 104" ~~the~~ both weren't sealed with insert right away (collected on July 18 but added insert July 20)

20 19:26

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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OCEAN SCIENCES DIVISION, INSTAAR										2018-73				
Month			Year		Vessel		Cruise ID							
JULY			2018		NOQPIC PEARL		2018-73							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
			20:57	BO	CTD		48° 43.602	126° 03.654	100	-			☐	
			21:00	-	BOT	MSG	48° 43.618	126° 03.624	110	13	1		☐	1x sal, 2x chl, 2x nut
			21:00	EN	CTD		48° 43.619	126° 03.614		-			☐	
111	3202	18	21:05	BE	NET	MSG	48° 43.637	126° 03.526	109	-		JW	☐	Bongo
			21:11	BO			48° 43.696	126° 03.408	100	-			☐	
			21:13	EN			48° 43.701	126° 03.369		-			☐	
112-114		112/13 → 18/14 → 19	:		TRAWL		°	°		-			☐	event 115 was trawl on July 19.
116	3473	20	17:25	BE	CTD		48° 46.300	125° 27.135	107	-			☐	wavy conditions.
			17:28	BO			48° 46.21	125° 27.167	100	-			☐	
			17:30		BOTTLE	MSG	48° 46.152	125° 27.181		14	1	JW	☐	1x sal, 2x chl, 2x nut
			17:30	EN	CTD		48° 46.143	125° 27.180		-			☐	event 117 - trawl
118	3341	20	19:26	BE	CTD		48° 44.032	125° 16.615	60	-			☐	
			19:27	BO			48° 44.018	125° 16.615	50	-			☐	
			19:29		BOT	MSG	48° 43.994	125° 16.618	2	15	1	JW	☒	1x sal, 2x chl, 2x nuts.
			19:29	EN	CTD		48° 43.987	125° 16.616		-			☐	
120	2720	21	16:56	BE	CTD		48° 33.497	125° 05.983	120	-			☒	
			:	BO			°	°	110	-			☐	1/2 way down, we
			:		BOT		°	°		16			☐	needed to bring CTD
			:	EN			°	°		-			☐	under ship
													☐	→ restarted cast
do not use Ammonia products														

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
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DRF = Drifter

Bottle Firing Method:
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Produced by the Water Properties Group, IOS

WaterProperties.ca

Version: 14 February 2013

Notes:

- event 116 - wavy conditions, so couldn't deploy bongo.
- after event 111 (bongo), replaced flowmeter, de-cod-end on bongo (orange tape) ^{labeled w/}
- Station 3341 (CTD event 118, did not deploy bongo - too wavy)
- event 120 (CTD), the CTD was going under ship, so about $\frac{1}{2}$ way to bottom, we brought the CTD back up; once @ top, we noticed the bottom of net in had closed, so needed to reset $\rightarrow$ then redeployed to target depth (kept same event #).

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			July		Year		2018		Vessel		NORDIC PEARL		Cruise ID		2018-73	
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments	
120	2720	21	17:02	BE	CTD		48° 33.590	125° 06.045	120		-			☒		
			17:04	BO			48° 33.606	125° 06.095		110	-			☐		
			17:06		BOTTLE	MSG	48° 33.617	125° 06.124	120	2	16	1	JW/Nick	☐	1x21, 2xch, 2x nds	
			17:08	EN			48° 33.	125° 06.			-			☐	- didn't get full core drifter	
121	2720	21	17:11	BE	NET		48° 33.642	125° 06.113	121		-		JW/Nick	☐	Bong 0	
			17:15	BO			48° 33.722	125° 06.053		110	-			☐		
			17:17	EN			48° 33.754	125° 06.050			-			☐		
122	2470	21	:		TRAWL		.	.			-			☐		
123	2470	21	19:06	BE	CTD		48° 29.734	125° 07.252	142		-		JW/Nick	☐	- moved Niskin to 1m above CTD	
			19:09	BO			48° 29.731	125° 07.199		132	-			☐	but still triggered when his 2m below	
			19:11		BOT	MSG	48° 29.731	125° 07.172	142	2	17			☐	1x21 2xch 2x not	
			19:11	EW			48° 29.737	125° 07.135			-			☐		
124	2470	21	19:15	BE	NET		48° 29.757	125° 07.051	144		-		JW/Nick	☐	Bong 0	
			19:19	BO			48° 29.715	125° 07.007		134	-			☐		
			19:21	EW			48° 29.703	125° 06.940			-			☐		
130	5559	22	16:59	BE	CTD		49° 25.487	127° 00.486	137		-			☐	1x21 2xch 2x not	
			17:01	BO			49° 25.443	127° 00.422		125	-			☐		
			17:04		BOT	MSG	49° 25.400	127° 00.342	137	2	18			☐		
			17:04	EN			49° 25.396	127° 00.330			-			☐		

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Notes: Pressure 200

Produced by the Water Properties Group, IOS

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- Starting @ event 123 (CTD), moved riser to 1m above CTD but still triggered riser when 2m below surface
- Starting event 131 $\rightarrow$ changed other code end (was cracked) - non flow meter side

Month				Year		Vessel		Cruise ID							
DAILEY SCIENCE LOG				JULY		2018		NORDIC PEARL		2018-73					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
131	5559	22	17:08	BE	NET		49° 25.439	127° 00.112	135		-			☐	Bongo.
			17:14	BO			49° 25.366	126° 59.920		125	-			☐	really wavy water first part
			17:16	EN			49° 25.405	126° 59.847			-			☐	
132-133			:		TRAWL		.	.			-			☐	
134	5438	22	19:59	BE	CTD		49° 23.181	126° 47.356	95		-		JW	☒	wavy conditions
			20:00	BO			49° 23.188	126° 47.323		85	-			☐	
			20:03		BOT	MSG	49° 23.194	126° 47.282	95	2	19	1		☐	
			20:03	EN			49° 23.195	126° 47.280			-			☐	
135	5438	22	20:07	BE	NET		49° 23.232	126° 47.137	014		-		JW	☐	wavy conditions
			20:10	BO			49° 23.245	126° 47.048		85	-			☐	& windy
-139 TRAIL			20:12	EN			49° 23.256	126° 47.013			-			☐	Bong.
140	6552	23	16:51	BE	CTD		49° 43.179	127° 22.585	96-		-		dwl/Hian	☐	
			16:54	BO			49° 43.188	127° 22.471		85	-			☐	
			16:55		BOT	MSG	.	.	96	2	20	1		☐	Isol 2x4 xads.
			16:55	EN			49° 43.194	127° 22.457			-			☐	No coordinates for bottle.
141	6552		16:59	BE	NET		49° 43.191	127° 22.306	96		-			☐	BONG.
			17:01	BO			49° 43.140	127° 22.310		85	-			☐	
			17:03	EN			49° 43.101	127° 22.322			-			☐	
142	6430		:		TRAWL		.	.			-			☐	

Event Type:
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Produced by the Water Properties Group, IOS
WaterProperties.ca
Version: 14 February 2013

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year		Vessel		Cruise ID											
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Positional Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments			
143	6430	23	18:44	BE	CTD		49° 41.124	127° 12.396	122		-		JW/Hilari	☒				
			18:46	BO			49° 41.099	127° 12.390		110	-			☐				
			18:49		BOT	MSG	49° 41.062	127° 12.393	122	2	21	1		☐		1xsa1 2xch1 2xnut		
			18:49	EW			49° 41.057	127° 12.388			-			☐				
144	6430	23	18:53	BE	NET		49° 40.974	127° 12.343	123		-			☐		Bongo		
			18:56	BO			49° 40.951	127° 12.245		110	-			☐		Wavy conditions		
			18:59	EW			49° 40.932	127° 12.104			-			☐				
145	6308	23	:		TRAWL		°	°			-			☐				
146	6308	23	20:28	BE	CTD		49° 39.067	127° 02.789	92		-		JW/Hilari	☒		wavy conditions		
			20:30	BO			49° 39.062	127° 02.757		80	-			☐				
			20:32		BOT	MSG	49° 39.053	127° 02.769	92	2	22			☐		1xsa1 2xch1 2xnut.		
			20:32	EW			49° 39.053	127° 02.768			-			☐				
147	6308	23	20:36	BE	NET	NE1	49° 39.040	127° 02.787	92		-		JW/Hilari	☐		Bongo; Wavy conditions		
			20:38	BO			49° 39.013	127° 02.737		80	-			☐				
			20:40	EW			49° 38.992	127° 02.698			-			☐				
148-151			:		TRAWL		°	°			-			☒				
152	4324	24	16:53	BE	CTD		49° 02.937	126° 12.070	75		-		JW/Hilari	☒				
			16:54	BO			49° 02.925	126° 12.066		65	-			☐				
			16:55		BOT	MSG	49° 02.916	126° 12.065	75	2	23	1		☐		1xsa1 2xch1 2xnut		

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Notes:

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month			Year			Vessel			Cruise ID			2018-73			
JULY			2018			NORDIC PEARL									
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
152 cont.	4324	24	16:56	EN			49°02.914	126°12.064			-			☐	
153	4324	24	17:00	BE	NET		49°02.905	126°12.046	76		-		JW/Hib	☐	Bongo.
			:	BO			49°02.899	126°12.051		65	-			☐	
			:	EN			49°02.894	126°12.058			-			☐	
154	3950	24	:		TRAWL		°	°			-			☐	
155	3950	24	17:37	BE	CTD		48°56.452	126°09.409	96		-		JW/Hib	☒	
			17:39	BO			48°56.463	126°09.368		85	-			☐	
			17:41		BOT	MSG	48°56.480	126°09.321	96	2	24	1		☐	Xsal 2x41 2xnut
			17:41	EW			48°56.481	126°09.312			-			☐	
156	3950	24	17:44	BE	NET		48°56.520	126°09.213	94		-			☐	Bongo.
			17:47	BO			48°56.542	126°09.118		85	-			☐	
			17:48	EN			48°56.555	126°09.065			-			☐	
157			:		TRAWL		°	°			-			☐	
158	3702	24	20:12	BE	CTD		48°52.331	126°01.908	76		-			☒	
			20:14	BO			48°52.343	126°01.872		65	-			☐	
			20:15		BOT		48°52.357	126°01.834	76	2	25			☐	Xsal 2x41 2xnut
			20:16	EW			48°52.359	126°01.822			-			☐	
159	3702	24	20:19	BE	NET		48°52.370	126°01.738	76		-			☐	Bongo.
			20:22	BO			48°52.375	126°01.681		65	-			☐	

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event 153 (Bango) → label inside formalin-preserved sample has incorrect event numbers for CTD and
bongo (should be 152 (CTD), 153 (Bango), not 151 (CTD), 152 (Bango): -OM

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month		Year		Vessel		Cruise ID								
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/Fl Cleaned	Comments
159 (cont.)			20:24	EN			48°52.394 126°01.			-			☐	
163	3201	25	:		TRAWL		° . .			-			☐	
164	3201	25	16:49	BE	CTD		48°43.510 126°05.757	119		-		JW/NCT	☐	wavy conditions
			16:52	BO			48°43.453 126°05.747		110	-			☐	
			16:54		BOT	MSG	48°43.403 126°05.739	119	2	26			☐	1x21 2x21 2x21
165	3201	25	16:59	BE	NET		48°43.394 126°05.730			-			☐	
			17:02	BO			48°43.300 126°05.511	118		-			☐	Bongo
			17:05	EN			48°43.317 126°05.354			-			☐	
166	3078	25	:		TRAWL		° . .			-			☐	
167	3078	25	18:26	BE	CTD		48°41.017 126°00.013	102		-		JW	☒	
			18:28	BO			48°40.982 125°59.926		90	-			☐	
			18:29		BOT		48°40.942 125°59.878	102	2	27			☐	1x21 2x21 2x21
			18:29	EN			48°40.933 125°59.866			-			☐	
168	3078	25	18:33	BE	NET		48°40.853 125°59.746	102		-			☐	Bongo
			18:35	BO			48°40.833 125°59.615		90	-			☐	wavy cond.
			18:38	EN			48°40.794 125°59.501			-			☐	
169	2703	25	:		TRAWL		° . .			-			☐	
170	2703	25	20:25	BE	CTD		48°34.717 126°01.057	123		-		JW	☒	

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X - ran out of supercluster - no backup

Ocean Sciences Division, Institute of Ocean Sciences

DAILY SCIENCE LOG

OCEAN SCIENCES DIVISION, INSTITUTE OF OCEAN SCIENCES														
Month			Year		Vessel			Cruise ID						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Tms/FI Cleaned	Comments
170 cont..		24	20:27	BO			48° 34.727 126° 00.989		110	-			☐	
			20:29		BOT	MSG	48° 34.733 126° 00.934	123	2	28	1		☐	1x sal 2xchl 2xnut
			20:29	EN			48° 34.735 126° 00.920			-			☐	
171	2103	25	20:32	BE	NET	NET	48° 34.733 126° 00.829	114		-		JW/LF	☐	
			20:36	BO			48° 34.749 126° 00.749		100	-			☐	
			20:38	EN			48° 34.753 126° 00.684			-			☐	
172-74			:		TRAWL	TRAWL	° °			-			☐	
175		26	:		TRAWL	TRAWL	° °			-			☐	
176	2957	26	16:49	BE	CTD		48° 38.833 125° 46.607	63		-			☐	
			16:49	BO			48° 38.828 125° 46.582		50	-			☐	
			16:51		BOT	MSG	48° 38.810 125° 46.528	63	2	29			☐	1x sal 2xchl 2xnut
			16:53	EN			48° 38.804 125° 46.516			-			☐	
177	2957	26	16:56	BE	NET		48° 38.753 125° 46.415	64		-			☐	Dongo
			16:57	BO			48° 38.730 125° 46.390		50	-			☐	red tide
178-trawl			17:00	EN			48° 38.699 125° 46.355			-			☐	
179	2834	26	18:14	BE	CTD		48° 36.146 125° 41.295	60		-		JW/	☒	
	2834		18:15	BO			48° 36.145 125° 41.289		50	-			☐	Red tide.
			18:17		BOT		48° 36.129 125° 41.250	60	2	30	1		☐	1x sal 2xchl 2xnut
			18:17	EN			48° 36.127 125° 41.243			-			☐	

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