

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2020-005

DATE:

From:

22 June 2020

To:

VESSEL:

CCGS John P Tully

PROJECT(S):

LaPerouse Zooplankton Monitoring

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

WaterProperties.ca

Captain: VICTOR GRONKYR First Officer: SIMON CLARKE
Second Officer: ALISTAIR BUTT Third Officer: OLIVER ATEAH
Fishing Master: _____ Chief Engineer: STUART BURSAR

Mission Participants / Agencies:

DFo-Tos

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

1st Leg Scientific Personnel: Chief Scientist: MARIE ROBERT 06-18 A

Name	Watch	Cabin
HAYLEIGH SHANNON	12-24	C
GLENN COOPER	12-24	D
SCOTT ROSC	00-12	E
MOIRA GALBRAITH	00-12	F
JULIAN SMITH	00-12	G
KENNY SCOZZAFAVA	12-24	H

2nd Leg Scientific Personnel:

Chief Scientist:

[illegible]

Rosette Setup:

Number of bottles: 24
Manufacturer: LOS
Volume of bottles (litres): 10

Winches:

1. Make: HAWBOLDT Model: HAW Serial #: 17026 Used for: CTD / ROS
2. Make: HAWBOLDT Model: HAW Serial #: 17027 Used for: MPS
3. Make: SWANN Model: 329 Serial #: 1482 Used for: BONGO

Comments on performance during cruise (comments should also be reflected in the post-cruise report):
SWANN 331 1231 NOT USED (DRAGGING WING)

Salinometer:

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

Oxygen Kit(s):

Make: Seipp's UV-based titrator Model: _____ Kit Number: #2
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:

**** 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: WP #102
Data acquisition program: Seasave
CTD deck unit make: SBE model: 11+ serial number: 0425

Primary CTD

Make: SBE model: 9+ serial number: 0443
Primary temperature serial number: 4700
Primary conductivity serial number: 3531
Secondary temperature serial number: 4888
Secondary conductivity serial number: 4513
Transmissometer: Wetlabs Model: C-Star s/n: 1185DR
Transmissometer: Wetlabs Model: C-Star s/n: 1883DG
Fluorometer: Model Seapoint Cable gain: 3X s/n: 3640 P, S or NO pump?
Fluorometer: Model _____ Cable gain: _____ s/n: _____ P, S or NO pump?
Oxygen sensor: SBE Model: 43 s/n: 3791 P, S or NO pump?
PAR sensor: Biospherical Model: _____ s/n: 70613 Surface PAR? Y N
Other sensors: Altimeter s/n: 62355 P, S or NO pump?
Other sensors: SPAR (Biospherical) 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?
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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)

DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-005</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							
01	LBO1	22	20:40	BE	ROS	US	48° 40.310	124° 59.420	38		1 - 4	4	GC	☒	
			20:42	BO			° 40.310	° 59.420		32	-			☐	
			20:47	EN			° 40.310	° 59.420			-			☐	
02	LBO2	22	21:14	BE	ROS	US	48° 39.050	125° 02.210	56		5 - 9	5	GC	☒	
			21:16	BO			° 39.040	° 02.190		46	-			☐	
			21:22	EN			° 39.050	° 02.150			-			☐	
03	LBO3	22	21:55	BE	ROS	US	48° 37.320	125° 05.460	95		10 -	1	GC	☒	Loop 2xCHL, 2 Seilt
			21:58	BO			° 37.320	° 05.480		85	-			☐	
			22:00	EN			° 37.300	° 05.430			-			☐	
04	LBO4	22	22:28	BE	ROS	US	48° 35.660	125° 08.717	114		11 - 17	7	GC	☒	
			22:30	BO			° 35.650	° 08.717		104	-			☐	
			22:39	EN			° 35.610	° 08.712			-			☐	
05	E1	22	23:29	BE	NET		48° 31.696	125° 03.723	117		-		HS	☐	BOWGO
			23:33	BO			48° 31.693	125° 03.720		107	-			☐	
			23:35	EN			48° 31.693	125° 03.735			-			☐	
06	E1	22	23:45	BE	ROS		48° 31.710	125° 03.740	118		/	/	GC	☒	
			23:48	BO			° 31.690	° 03.760		107	-			☐	
			23:50	EN			° 31.700	° 03.760			-			☐	
			:				°	°			-			☐	

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
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 EN = End Time of Cast

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

DE = Deployment Time
 MR = Messenger Release Time
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Notes:

Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>JPT-117</u>				Cruise ID <u>2020-005</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
07	LB 05	23	00:49	BE	ROS	US	48° 33.910	125° 11.950	103		18 -	1	HS/GC	☒ ☒	
			00:52	BO			48° 33.880	125° 11.940		93	-			☐ ☐	
			00:56	EN			48° 33.850	125° 11.950			-			☐ ☐	
08	LB06	23	01:36	BE	ROS	US	48° 32.100	125° 15.600	116		19 - 26	8	HS/GC	☒ ☒	
			01:39	BO			48° 32.110	125° 15.630		105	-			☐ ☐	
			01:51	EN			48° 32.140	125° 15.630			-			☐ ☐	
09	C1	23	02:41	BE	ROS		48° 28.853	125° 15.103	152		-		GC	☒ ☐	
			02:45	BO			° 28.858	° 15.130		143	-			☐ ☐	
			02:48	EN			° 28.859	° 15.158			-			☐ ☐	
10	C1	23	02:57	BE	NET		48° 28.883	125° 15.269	153		-		HS	☐ ☐	Bongo
			03:02	BO			° 28.903	° 15.276		148	-			☐ ☐	
			03:05	EN			° 28.913	° 15.288			-			☐ ☐	
11	C2	23	03:47	BE	NET		48° 26.147	125° 09.232	161		-			☐ ☐	Bongo
			03:52	BO			° 26.127	° 09.244		154	-		HS	☐ ☐	
			03:55	EN			° 26.094	° 09.277			-			☐ ☐	
12	C2	23	04:05	BE	ROS		48° 26.120	125° 09.300	161		-		GC	☒ ☐	
			04:09	BO			° 26.100	° 09.280		152	-			☐ ☐	
			04:12	EN			° 26.100	° 09.280			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>June</u>			Year <u>2020</u>		Vessel <u>Tully</u>		Cruise ID <u>2020-005</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
13	C3	23	05:17	BE	NET		48°23.397	125°20.709	123		-		HR	☐	
			05:22	BO			°23.391	°20.747		118	-			☐	BONGO
			05:24	EN			°23.384	°20.760			-			☐	
14	C3	23	05:37	BE	ROS	/	48°23.370	125°20.700	123		-		SR	☒	
			05:39	BO			°23.360	°20.700		118	-			☐	
			05:41	EN			°23.360	°20.700			-			☐	
15	LB07	23	06:38	BE	ROS	US	48°28.640	125°22.210	158		27-27	1	SR	☒	LOOP → ISAL 2CHL
			06:40	BO			°28.640	°22.230		153	-			☐	
			06:44	EN			°28.650	°22.280			-			☐	
16	LB07	23	06:55	BE	NET	/	48°28.674	125°22.068	158		-		MG	☐	BONGO
			07:01	BO			°28.683	°22.026		153	-			☐	
			07:04	EN			°28.701	°22.024			-			☐	
17	B8	23	08:19	BE	CTD	/	48°34.525	125°30.104	133		-		SR	☒	
			08:22	BO			°34.520	°30.104		129	-			☐	
			08:24	EN			°34.518	°30.107			-			☐	
18	8	23	08:36	BE	NET	/	48°34.51	125°30.14	131		-		MG	☐	BONGO
			08:40	BO			°34.50	°30.15		125	-			☐	
			08:42	EN			°34.49	°30.15			-			☐	
19	LOOP19	23	09:13	BE	LOOP	UN	48°32.50	125°34.54	82	4.5	-		MG	☐	ISAL 2CHL

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Month <u>JUNE</u>				Year <u>2020</u>		Vessel <u>JP TULLY</u>		Cruise ID <u>2020-005</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							
20	B7	23	09:28	BE	NET	✓	48° 31.94	125° 35.44	81		-				
			09:31				° 31.95	° 35.44			-		MG	☐	Bongo
			09:32	EN			° 31.94	° 35.43		75	-			☐	
21	B7	23	09:46	BE	ROS	✓	48° 31.940	125° 35.370	81		-			☐	
			09:47	BO			° 31.940	° 35.370			-		SR	☒	
			09:49	EN			° 31.950	° 35.370		78	-			☐	
22	LB08	23	10:53	BE	NET	✓	48° 25.273	125° 28.717	158		-			☐	
			10:57	BO			° 25.290	° 28.777			-		MG	☐	Lots of squid
			10:59	EN			° 25.289	° 28.793		150	-			☐	in the area!
23	LB08	23	11:08	BE	ROS	US	48° 25.320	125° 28.850	148		28 - 37	10	SR	☐	neons? 30cm?
			11:01	BO			° 25.340	° 28.860			-			☒	
			11:22	EN			° 25.330	° 28.870		144	-			☐	
24	LB09	23	12:11	BE	ROS	US	48° 21.997	125° 34.717	151		38 - 46	9	SR	☒	Lots of squid
			12:14	BO			° 22.010	° 34.720		146	-			☐	here to, not
			12:24	EN			° 22.030	° 34.720			-			☐	as many as LB08
25	LB10	23	13:42	BE	ROS	US	48° 18.610	125° 41.280	152		47 - 47	1	SR	☒	pH has been
			13:44	BO			° 18.600	° 41.250		147	-			☐	removed for
			13:49	EN			° 18.610	° 41.220			-			☐	event 25.
			:				°	°			-			☐	pressure test

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I slowly took the rosette out of the water to show ϕ pressure. SR

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							Latitude	Longitude							
26	LB11	23	14:49	BE	NET	/	48°15.187	125°47.691	208		/	/	J	☐ ☐	Bongo
			14:56	BO			°15.147	°47.668		200	-			☐ ☐	
			14:59	EN			°15.112	°47.656			-			☐ ☐	
27	LB11	23	15:13	BE	ROS	US	48°15.150	125°47.730	207		48-57	10	SR	☒ ☐	
			15:17	BO			°15.156	°47.690		203	-			☐ ☐	
			15:28	EN			°15.120	°47.570			-			☐ ☐	
28	LB12	23	16:18	BE	ROS	US	48°13.120	125°51.600	482		58-73	16	SR	☒ ☐	
			16:25	BO			°13.120	°51.610		475	-			☐ ☐	
			16:52	EN			°13.070	°51.500			-			☐ ☐	
29	LaPerouse	23	19:31	RS	MOR	UN	48°23.1420	125°48.0923	150		-		GC/HS	☐ ☐	See Log Book 2020-028
			19:33	RE			48°23.1426	125°48.0927			-			☐ ☐	
30	LaPerouse	23	19:58	DE	MOR	DN	48°23.0851	125°48.3264	150.77		-			☐ ☐	See Log Book 2020-028
31	LB13	23	21:35	BE	ROS	US	48°10.610	125°56.140	923		74-		HS	☒ ☒	Loop ISAL 2CHL
			21:52	BO			48°10.620	48°56.180		908.7	-			☐ ☐	
			22:09	EN			48°10.600	48°56.160			-			☐ ☐	
32	LB14	23	22:49	BE	ROS	US	48°08.670	125°59.881	1168		75-92	18	GC	☒ ☐	
			23:09	BO			°08.720	°59.890		1149	-			☐ ☐	
			23:48	EN			°08.730	°59.840			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>June</u>			Year <u>2020</u>			Vessel <u>JP Tull</u>			Cruise ID <u>2020-005</u>						
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33	LB15	24	01:08	BE	ROS	US	48° 04.480	126° 08.520	1562		93-	1	GC	☒	
			01:38	BO			° 04.470	° 08.520			-			☐	
			02:05	EN			° 04.490	° 08.450			-			☐	
34	LB16	24	03:18	BE	ROS	/	48° 00.760	126° 16.840	1802		94-97	4	GC	☒	At surface layer
35	LB16	24	03:36	BE	ROS	US	48° 00.780	126° 16.840	1804		94-97	4	GC	☒	Stopped @ 160-
			04:06	BO			4° 00.780	126° 16.840		1797	-			☐	
			04:39	EN			48° 00.780	126° 16.840			-			☐	
36	LB16	24	05:02	BE	NET		48° 00.781	126° 16.836	1780		-		HS	☐	Bonus
			05:12	BO			° 00.781	° 16.834		250.	-			☐	
			05:16	EN			° 00.784	° 16.831			-			☐	
37	LB16	24	05:38	BE	NET		48° 00.783	126° 16.827	1787		-		HS	☐	6 mgs
			05:40	BO			° 00.780	° 16.839		50	-			☐	size fraction
			05:41	EN			° 00.779	° 16.845			-			☐	
38	LB16	24	06:20	BE	NET	US	48° 00.78	126° 16.85	1781		-		MG	☐	MPS
			07:21	BO			° 00.70	° 17.09		1775	-			☐	
			07:56	EN			° 00.69	° 17.10			-			☐	
39	LC12	24	11:30	BE	NET	US	48° 14.92	126° 39.90	2548		-		MG	☐	
			12:45	BO			° 15.33	° 40.42		2	-			☐	
			13:19	EN			° 15.37	° 40.43			-			☐	

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while captain put ship into DP mode. Stopped data acquisition + lost NMEA feed. Decided to cancel entire
acquisition + restart cart with new event.
return to confirm data acquisition was occurring. Confirmed + continued to bottom - 10.

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Month <u>JUN</u>				Year <u>2020</u>		Vessel <u>TULLY</u>				Cruise ID <u>2020-005</u>					
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40	LC12	24	13:29	BE	ROS	—	48° 15.28	126° 40.30	2542		—	—	SR/mr	☒	
			14:02	BO			° 15.170	° 40.270		1006	-			☐	
			14:30	EN			° 15.000	° 40.300			-			☐	
41	LC12	24	14:43	BE	NET	—	48° 14.860	126° 40.050	2545		-			☐	Mini
			14:45	BO			° 14.862	° 40.059		50	-		MG	☐	
			14:46	EN			° 14.863	° 40.061			-			☐	
42	LC12	24	14:53	BE	NET	—	48° 14.861	126° 40.061	2545		-		MG	☐	Bonus
			15:00	BO			° 14.858	° 40.059		250	-			☐	
			15:03	EN			° 14.861	° 40.060			-			☐	
43	LC11	24	16:19	BE	ROS	US	48° 18.920	126° 26.670	1462m		98-116	19	SR	☒	Went to 200m w/o
			16:43	BO			° 18.920	° 26.650		1469	-			☐	stopping @ 250m
			17:28	EN			° 18.910	° 26.630			-			☐	went back.
44	LC10	24	18:23	BE	ROS	—	48° 22.270	126° 20.162	1257		—	—	SR	☒	
			18:44	BO			° 22.270	° 20.200		1243	-			☐	
5	LC09	24	19:05	EN			° 22.330	° 20.340			-			☐	
45	LC09	24	20:02	BE	NET	—	48° 25.875	126° 13.651	613		-		B/KS	☐	Bonus
			20:14	BO			° 25.878	° 13.642		250	-			☐	
			20:19	EN			° 25.875	° 13.655			-			☐	
			:				° .	° .			-			☐	

Event Type:

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

LOOP = Sea Water Loop

MOR = Mooring

NET = Plankton Net Haul

DRF = Drifter

— =

Bottle Firing Method:

US = Up / Stop (default)

UN = Up / No stop

DN = Down / No stop

Notes:

Time Code:

BE = Beginning Time of Cast

BO = Bottom Time of Cast

EN = End Time of Cast

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

DE = Deployment Time

MR = Messenger Release Time

RE = Recover Mooring Time

Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-005</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
46	LC09	24	20:28	BE	ROS	US	48° 25.888	126° 13.688	617		117-133	17	GC	☒	
			20:40	BO			° 25.886	° 13.669		604	-			☐	
			21:05	EN			° 25.870	° 13.637			-			☐	
47	A2	24	22:07	BE	ROS	/	48° 22.680	126° 03.718	361		/	/	GC	☒	
			22:14	BO			° 22.687	° 03.713		353	-			☐	
			22:21	EN			° 22.676	° 03.743			-			☐	
48	A2	24	22:28	BE	NET		48° 22.678	126° 03.723	358				HS/KS	☐	BONGO
			:40	BO			° 22.703	° 03.729		280	-			☐	
			:44	EN			° 22.713	° 03.756			-			☐	
49	LC08	25	00:35	BE	NET		48° 29.430	126° 07.069	201				HS/KS	☐	BONGO
			00:42	BO			° 29.436	° 07.144		191	-			☐	
			00:45	EN			° 29.450	° 07.107			-			☐	
50	LC08	25	00:56	BE	ROS	US	48° 29.440	126° 07.100	200		134-144	11	GC	☒	
			01:00	BO			° 29.450	° 07.110		191	-			☐	
			01:15	EN			° 29.440	° 07.140			-			☐	
51	LC07	25	02:11	BE	ROS		48° 32.890	126° 00.310	128		/	/	HS	☒	
			02:14	BO			48° 32.900	126° 00.300		117	-			☐	
			02:17	EN			48° 32.900	126° 00.310			-			☐	
			:				°	°			-			☐	

Event Type:

BOT = Bottle cast (no CTD)
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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

Notes:

Time Code:

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

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 RE = Recover Mooring Time

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DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</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	Tms/FI Cleaned	Comments
							Latitude	Longitude							
52	LC06	25	03:06	BE	NET		48° 36.336	125° 53.823	92		-		HS/KS	☐ ☐	Bowro
			03:10	BO			° 36.346	° 53.805		91	-			☐ ☐	
			03:12	EN			° 36.347	° 53.795			-			☐ ☐	
53	LC06	25	03:21	BE	ROS	US	48° 36.390	125° 53.820	93		145-151	7	GC	☒ ☐	
			03:24	BO			° 36.390	° 53.800		82	-			☐ ☐	
			03:33	EN			° 36.380	° 53.810			-			☐ ☐	
54	LC05	25	04:22	BE	ROS	/	48° 39.880	125° 47.360	64		-		GC	☒ ☐	
			04:24	BO			° 39.880	° 47.340		55	-			☐ ☐	
			04:25	EN			° 39.880	° 47.340			-			☐ ☐	
55	LC05	25	04:31	BE	NET		48° 39.879	125° 47.408	63		-		HS/KS	☐ ☐	Bowro
			04:34	BO			° 39.885	° 47.428		54	-			☐ ☐	
			04:35	EN			° 39.879	° 47.446			-			☐ ☐	
56	LC04	25	05:29	BE	ROS	US	48° 43.390	125° 40.670	166		152-161	10	GC	☒ ☐	Loop 2xLHL 13ol
			05:33	BO			° 43.390	° 40.670		156	-			☐ ☐	↳ 5056
			05:47	EN			° 43.390	° 40.560			-			☐ ☐	
57	LC03	25	06:39	BE	ROS	/	48° 46.886	125° 34.247	141		-		GC	☒ ☐	
			06:42	BO			° 46.898	° 34.247		130	-			☐ ☐	
			06:45	EN			° 46.895	° 34.247			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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ROS = CTD in Rosette
SET = Fish Set

LOOP = Sea Water Loop
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DRF = Drifter
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Bottle Firing Method:

US = Up / Stop (default)
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Notes:

Time Code:

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→ ^{filtered} ~~sampled~~ loop ~4hr later (sitting in fridge) @ 09:18 UTC

DAILY SCIENCE LOG

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Month June			Year 2020		Vessel Tully			Cruise ID 2020-005							
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
58	LC02	25	07:15	BE	ROS	US	48° 48.730	125° 30.700	111		162-169	9	SN	☒	
			07:16	BO			° 48.730	° 30.880		100	-			☐	
			07:25	EN			° 48.730	° 30.830			-			☐	
59	LC01	25	08:01	BE	ROS	US	48° 50.440	125° 27.740	97		170-176	7	SN	☒	
			08:02	BO			° 50.450	° 27.750		88	-			☐	
			08:11	EN			° 50.450	° 27.880			-			☐	
60	LC01	25	08:23	BE	NET		48° 50.4	125° 27.	98		-			☐	CMBPOTS MOVE
			08:25	BO			° 50.45	° 27.88	54	50	-			☐	MINI
			08:26	EN			.	.			-			☐	
61	LOOP 61	25	09:28	BE	LOOP	UN	48° 50.86	125° 40.46	53	4.5	-	-	MG	☐	1 SAL 2 CHL
62	LOOP 62	25	19:55	BE	LOOP	UN	48° 51.47	128° 16.96	2493	4.5	-		MG	☐	1 SAL 2 CHL
63	P9	25	23:20	BE	ROS	US	48° 51.37	129° 7.900	2432		177-179	3		☐	
			23:56	BO			48° 51.38	129° 7.980		2005	-		KS GC HS	☒	Loop samples:
		26	00:35	EN			48° 51.320	129° 07.990			-			☐	1 sal, 2 chl
64	P10	26	02:51	BE	ROS	US	48° 53.55	129° 39.89	2670		-			☐	# 5063
			03:27	BO			48° 53.51	129° 40.07		2005	178-180	3	KS GC HS	☒	Loop samples:
			04:05	EN			48° 53.34	129° 40.20			-			☐	1 sal, 2 chl #5064
			:				.	.			-			☐	
			:				.	.			-			☐	

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)
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DN = Down / No stop

Notes:

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

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remove PAR sensor before P12.

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>June</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</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
65	P11	26	06:03	BE	ROS	US	48° 56.00	130° 09.920	2781		181-183	3	GC	☒	
			06:38	BO			° 55.901	° 09.924		2005	-			☐	
			07:15	EN			° 55.793	° 10.068			-			☐	
66	P12	26	10:08	BE	NET	UN	48° 58.19	130° 39.83	3264		-		MG	☐	MPS
			11:19	BO			° 58.19	° 39.82		2005	-			☐	
			11:57	EN			° 58.20	° 39.79			-			☐	
67	P12	26	12:07	BE	NET	-	48° 58.196	130° 39.788	3264		-			☐	MINI BONGO
			12:09	BO			° 58.196	° 39.789		50	-			☐	
			12:10	EN			° 58.195	° 39.787			-			☐	
68	P12	26	12:19	BE	NET	-	48° 58.196	130° 39.788	3264		-			☐	BONGO FLOW START 59255
			12:26	BO			° 58.193	° 39.826		250	-			☐	
			12:29	EN			° 58.191	° 39.842			-			☐	FLOW END 60215
69	Explorer	26	15:01	RS	MOR		48° 59.6817	130° 54.149	1644		-		GC	☐	Triangulation serial # = 34784
			15:31	RE			48° 59.4999	130° 54.2354	2131		-			☐	
70	Explorer	26	15:53	DE	MOR		48° 59.6253	130° 54.1180	1519		-		GC	☐	Serial code
71	Loop 71	26	16:15	BE	LOOP	UN	48° 59.207	130° 49.681	2458	4.5	-		MG	☐	SAL 2 CHL
72	P12	26	16:59				48° 58.250	130° 39.940	2262		184-207	24	SR	☒	
			17:45				° 58.250	° 39.910		3274	-			☐	
			19:05				° 58.231	° 39.835			-			☐	

Event Type:

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

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

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Stn. Explorer, event #69 $\Rightarrow$ Triangulation

#	lat	lon
1	48°59.681	130°54.149
2		
3		

Transducer

1 Range = 1590m
 1 Rs = 54602
 2 Rs = 34784
 1 Range = 16440
 1 UTC = 14:50
 Serial# = 54784
 Rs = 654560

This page is for any notes or observations.
 At surface: UTC = 15:01

event 70 $\Rightarrow$ Serial codes: 1 Rs = 224440
 Rs = Release

1 Enable = 203377

1 Disable = 203410

2 Rs = 250112

2 Enable = 271540

2 Disable = 271363

→ Retrieve mooring * xeos turned off @ 15:55 UTC

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>June</u>			Year <u>2020</u>			Vessel <u>TJ4</u>			Cruise ID <u>2020-005</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							
73	P8	27	03:13	BE	NET		48° 48.952	128° 39.938	2546		-		HS	☐	Bowd
			03:23	BO			° 48.951	128° 39.938		250	-			☐	
			03:27	EN			° 48.951	° 39.937			-			☐	
74	P8	27	03:37	BE	NET		48° 48.951	128° 39.935	2546		-			☐	Bowd
			04:19	BO			° 48.952	° 39.937		1200	-			☐	
			04:40	EN			° 48.952	° 39.935			-			☐	
75	P8	27	04:55	BE	ROS	US	48° 48.952	128° 39.937	2545		209-231	23	GC	☒	
			05:30	BO			° 48.953	° 39.937		2005	-			☐	
			06:30	EN			° 48.950	° 39.940			-			☐	
76	P7	27	08:44	BE	ROS	US	48° 46.680	128° 9.810	2530		232-234	3	SR	☒	
			09:16	BO			° 46.680	° 9.810		2005	-			☐	
			09:50	EN			° 46.840	° 9.860			-			☐	
77	P6	27	12:05	BE	ROS	US	48° 44.600	127° 39.980	2570		235-237	3	SR	☒	
			12:33	BO			° 44.570	° 40.180		2005	-			☐	
			13:04	EN			° 44.620	° 40.300			-			☐	
78	Loop 78	27	14:05	BE	LOOP		48° 43.008	127° 27.128	2580	5	-		MG	☐	
79	P5	27	15:22	BE	ROS	US	48° 41.26	127° 09.93	2113		238-240	0	MG	☒	
			15:51	BO			48° 41.27	127° 10.06		2005	-			☐	
			16:23	EN			48° 41.26	127° 10.08			-			☐	

Event Type:

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Bottle Firing Method:

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Notes:

Time Code:

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Month <u>JUNE</u>				Year <u>2020</u>		Vessel <u>J.P. TULLY</u>		Cruise ID <u>2020005</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							
80	P4	27	18:38	BE	NET		48° 39.041	126° 40.050	1331		-			☐	BONGO
			18:47	BO			48° 39.065	126° 40.109		250	-		KS GC HS	☐	
			18:57	EN			48° 39.083	126° 40.153			-			☐	
81	P4	27	19:00	BE	NET		48° 39.103	126° 40.197	1327		-			☐	BONGO
			19:36	BO			° 39.104	° 40.203		1200	-		HS/KS	☐	
			19:56	EN			° 39.105	° 40.215			-			☐	
82	P4	27	20:11	BE	ROS	US	48° 39.100	126° 40.200	1327		241-263	23	GC	☒	
			20:34	BO			° 39.100	° 40.200		1315	-			☐	
			20:19	EN			° 39.100	° 40.200			-			☐	
83	LD11	27	22:36	BE	NET		48° 28.733	126° 42.854	1609		-		KS	☐	BONGO
			22:47	BO			° 28.734	° 42.855		250	-			☐	
			22:51	EN			° 28.733	° 42.852			-			☐	
84	LD11	27	22:58	BE	NET		48° 28.733	° 42.851	1610		-		KS/HS	☐	BONGO
			23:37	BO			° 28.73	° 42.85		1200	-			☐	
			23:57	EN			° 28.734	° 42.854			-			☐	
85	LD4	28	00:40	BE	ROS	-	48° 28.734	126° 42.850	1610		-		GC	☒	Blowing ~ 30 knts
			00:51	BO			° 28.730	° 42.850		500	300	1		☐	Gusty ~ 40 knts
			01:01	EN			° 28.730	° 42.850			-			☐	Sea state 3-4 m.
			:				°	°			-			☐	

Event Type:

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 DRF = Drifter
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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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Notes:

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Short cast due to building sea state. Previously labelled for CD11 + next rosette cast thus
the out of sync label #'s.

DAILY SCIENCE LOG

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Month <u>June</u>				Year <u>2020</u>		Vessel <u>Tulley</u>		Cruise ID <u>2020-005</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							
86	LD03	28	08:10	BE	ROS	/	48°56.660	125°50.410	47		/	/	SR	☒	
			08:11	BO			°56.660	°50.420		319	-			☐	
			08:11	FN			°56.660	°50.420			-			☐	
87	LD02	28	09:03	BE	NET		48°58.508	125°47.226	42		-		MG	☐	Bow 00
			09:07	BO			(58.521)	(47.265)		37	-			☐	
			09:08	FN			°58.525	°47.276			-			☐	
88	LD02	28	09:20	BE	R	US	48°58.530	125°47.240	42		301 - 305		SR	☒	Rolling on the
			09:21	BO			°58.530	°47.240		32	-			☐	beam quite a bit
			09:26	FN			°58.520	°47.200			-			☐	
89	LOOP 89	28	10:31	BE	LOOP	UN	48°58.23	125°53.27	55	4.5	-		MG	☐	1 SAL 2 CHL
90	WS	28	14:42	BE	BOAT	/	49°14.08	1°0.2			-			☐	
			23:44	EN			°	°			-			☐	
91	WS	28	14:52	BE	NET	/	49°14.21	126°5.48	17		-		MG	☐	Mini-Bongo
			14:53	EN			°14.21	°05.49		12	-			☐	
92	LD06	28	17:51	BE	ROS	US	48°46.304	126°10.202	137		306 - 313	8	SR	☒	Winch operator
			17:54	BO			°46.316	°10.187			-			☐	went to 05 m
			18:05	FN			°46.345	°10.200			-			☐	instead of 50m
			:				°	°			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

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Time Code:

BE = Beginning Time of Cast
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Notes:

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SMALL LAUNCH TO WEATHER STATIONS

SCIENCE KENNY GLENN

CREW SIMON GREG BRUCE

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>JUNE</u>				Year <u>2020</u>			Vessel <u>JP Tully</u>			Cruise ID <u>2020-005</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							
93	LD05	28	18:46	BE	ROS	—	48°49.790	126°03.650	90		—		HS	☒ ☒	
			18:48	BO			48°49.810	126°03.660		79	—			☐ ☐	
			18:49	EN			48°49.840	126°03.670			—			☐ ☐	
94	LD04	28	19:00	BE	NET		48°53.42	125°57.01	61		—		HS	☐ ☐	Bowling
			19:38	BO			48°53.45	125°57.01		51	—			☐ ☐	
			19:00	EN			48°53.46	125°57.01			—			☐ ☐	
95	LD04	28	19:48	BE	ROS	US	48°53.55	125°56.96	62		314-318	5	MR	☒ ☐	
			19:49	BO			48°53.56	125°56.95		50	—			☐ ☐	
			19:55	EN			48°53.53	125°56.92			—			☐ ☐	
96	LG02	29	03:12	BE	ROS	US	47°18.600	126°37.950	102		—		GC	☒ ☐	
			03:15	BO			49°18.680	126°37.950		84	324-330			☐ ☐	
			03:22	EN			°18.680	°37.950			—			☐ ☐	
97	LG03	29	04:43	BE	ROS	—	49°14.930	126°43.560	126		—		GC/HS	☒ ☐	
			04:46	BO			°14.930	°43.560		115	—			☐ ☐	
			04:48	EN			°14.930	°43.560			—			☐ ☐	
98	LJC3	29	09:55	BE	ROS	—	49°39.050	127°10.830	125		—		SR	☒ ☐	
			09:57	BO			°39.040	°10.790		115	—			☐ ☐	
			09:59	EN			°39.040	°10.780			—			☐ ☐	
			:				°	°			—			☐ ☐	

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)
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Notes:

Time Code:

BE = Beginning Time of Cast
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Sample # 319-323 destroyed. Cast cancelled due to extreme sea state.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

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Month				Year		Vessel				Cruise ID						
JUNE				2020		JP TULLY				2020005						
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								
99	LJ02	29	10:55	BE	NET	/	49°42.657	127°05.209	82		-					
			10:59	BO			42.668	05.189		75	-		MG	☐	BONGO	
			11:00	EN			42.672	05.195			-			☐		
100	LJ02	29	11:12	BE	ROS	US	49°42.648	127°05.221	82		331 - 333	3		☐		
			11:13	BO			42.643	05.220		72	-			☐	CRACKED NUT TUBES	
			11:17	EN			42.641	05.225			-			☐	TOOK WATER FROM HPLC, CHL	
101	LJ01	29	11:48	BE	ROS	/	49°44.210	127°2.490	62		-			☐		
			11:49	BO			44.210	2.490		53	-		SR	☒		
			11:49	EN			44.210	2.490			-			☐		
102	LOOP102	29	12:11	BE			9°46.062	1.0		5	-		M	☐		
103	EI	29	13:30	BE			49°52.122	126°50.849	239		334-334	1	SR	☒		
			13:34	BO			52.11	50.846		228	-			☐		
			13:38	EN			52.120	50.840			-			☐		
104	EI	29	13:47	BE	NET	/	49°52.111	126°50.832	240		-			☐		
			13:53	BO			52.113	50.825		235	-			☐		
			13:56	EN			52.116	50.823			-		MG	☐	BONGO	
105	Bons	29	14:44	BE	BOAT	/	49°53.58	126°47.85	236	0	-			☐		
		30	02:38	EN			.	.			-		GLENN	☐	ESPERANZA ZEBELLOS	
			:				.	.			-			☐		
			:				.	.			-			☐		
Event Type: LOOP = Sea Water Loop BOT = Bottle cast (no CTD)																
Bottle Firing Method: US = Up (Chlorophyll)																
Time Code: CTD Transmissometer and Fluorometer																

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Notes:

Produced by the Water Properties Group, IOS

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>JUN</u>				Year <u>2020</u>		Vessel <u>TULLY</u>				Cruise ID <u>2020-005</u>						Page <u>17</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									
106	Steamer 1	29	15:03	BE	ROS	/	49° 54.096	126° 47.549	229		/		SR	☒	Lugol's sample		
			15:07	BO			° 54.100	° 47.545		220	-			☐	taken. Sample		
			15:10	EN			° 54.106	° 47.544			-			☐			
107	Steamer 2	29	15:38	BE	ROS	/	49° 53.170	126° 46.418	252		-		SR	☒	Lugol's 106		
			15:41	BO			° 53.162	° 46.420		244	-			☐			
			15:44	EN			° 53.164	° 46.415			-			☐			
108	Hecate	29	16:25	BE	ROS	us	49° 51.810	126° 44.600	228		335-335	1	SR	☒			
			16:29	BO			° 51.820	° 44.610		231	-			☐			
			16:33	EN			° 51.820	° 44.610			-			☐			
109	Hecate	29	16:47	BE	NET		49° 51.822	126° 44.637	240		-		MG	☐	Bongo		
			16:51	BO			(° 51.827)	(° 44.646)		230	-			☐			
			16:54	EN			° 51.830	° 44.650			-			☐			
110	CCN	29	20:12	BE	ROS	/	49° 38.95	126° 36.04	163		/	Ø	MR	☒			
			20:15	BO			49° 38.95	126° 36.02		152	-			☐			
			20:18	EN			49° 38.96	126° 36.03			-			☐			
111	CCN	29	20:25	BE	NET		49° 38.96	126° 36.00	163		-		HS	☐	Bongo		
			20:30	BO			49° 38.96	126° 35.98		157	-			☐			
			20:33	EN			49° 38.96	126° 35.97			-			☐			
			:				°	°			-			☐			

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Month JUN			Year 2020			Vessel TULLY			Cruise ID 2020-005						
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	Tms/FI Cleaned	Comments
112	CCS	29	21:13	BE	ROS	/	49°35.770	126°35.420	110		/		HS	☒ ☒	
			21:16	BO			49°35.750	126°35.450		99.3	-			☐ ☐	
			21:18	EN			49°35.750	126°35.440			-			☐ ☐	
113	ZCS	29	21:51	BE	ROS	/	49°36.320	126°30.930	169		/		HS	☒ ☒	
			21:54	BO			49°36.330	126°30.930		156	-			☐ ☐	
			21:58	EN			49°36.320	126°30.930			-			☐ ☐	
114	ZCN	29	22:28	BE	ROS	/	49°38.143	126°29.736	152		/		HS	☒ ☒	
			22:31	BO			49°38.132	126°29.732		139	-			☐ ☐	
			22:35	EN			49°38.126	126°29.724			-			☐ ☐	
115	CONCEPTION	29	23:10	BE	ROS	US	49°39.29	126°27.80	194		336-	1	MR	☒ ☐	
			23:14	BO			49°39.29	126°27.80		183	-			☐ ☐	
			23:18	EN			49°39.28	126°27.81			-			☐ ☐	
116	CONCEPTION	29	23:25	BE	NET		49°39.27	126°27.81	192		-		HS	☐ ☐	BONCO
			23:31	BO			49°39.25	126°27.84		189	-			☐ ☐	
			23:34	EN			49°39.25	126°27.84			-			☐ ☐	
117	TLUPANA	30	00:11	BE	ROS	-	49°41.48	126°30.91	263		/	/	MR	☒ ☐	ANOXIC
			00:16	BO			49°41.47	126°30.90	260	249	-			☐ ☐	
			00:21	EN			49°41.47	126°30.90			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>June/July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</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							
118	Loop 118	30	10:20	BE	LOOP		49° 30.867	127° 24.155			5118 -	✓	MG	☐ ☐	SAL 2CHL
119	Loop 119	30	14:32	BE	LOOP	UN	49° 27.87	127° 28.55	1043	4.5	5119 -	✓	MG	☐ ☐	SAL 2CHL
120	LBP8	30	20:32	BE	ROS	✓	49° 48.730	128° 16.600	2094		✓	✓	Gc/HS	☒ ☐	
			21:07	BO			° 48.730	° 16.610		2005	-			☐ ☐	
			21:40	EN			° 48.730	° 16.610			-			☐ ☐	
121	LBP7	30	22:30	BE	NET	✓	49° 52.370	128° 11.209	2202		-		H/KS	☐ ☐	BONGO
			22:41	BO			° 52.370	° 11.208		250	-			☐ ☐	
			22:44	EN			° 52.368	° 11.208			-			☐ ☐	
122	LBP7	30	22:53	BE	NET	✓	49° 52.366	128° 11.205	2202		✓		HS/KS/GC	☐ ☐	BONGO DEEP
			23:35	BO			° 52.366	° 11.205		1200	-			☐ ☐	
			23:56	EN			° 52.368	° 11.205			-			☐ ☐	
123	LBP7	01	00:07	BE	ROS	US	49° 52.360	128° 11.200	2203		337-346	20	Gc/MR	☒ ☐	
			00:42	BO			49° 52.36	128° 11.20		2005	337-356			☐ ☐	
			01:36	EN			49° 52.360	128° 11.200			-			☐ ☐	
124	LBP6	01	02:37	BE	ROS	✓	49° 56.110	128° 5.450	916m		✓	✓	GC	☒ ☐	Heuler night
			02:53	BO			° 56.110	° 5.460		914	-			☐ ☐	sun station
			03:09	BN			° 56.110	° 5.450			-			☐ ☐	LBP5
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Month July			Year 2020			Vessel Tully			Cruise ID 2020-005						
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
125	LBP5	01	03:54	BE	NET	/	49° 59.92	127° 59.92	1296		-			☐	
			04:00	BO			° 59.92	° 59.93		289	-		GC HS KS	☐	see note →
			04:09	EN			° 59.91	° 59.92			-			☐	
* 126/127	LBP5	01	04:25	BE	ROS	US	49° 59.920	27° 59.920	1296		357-375	19	GC	☒	
			04:52	BO			49° 59.92	° 59.94		1282	-			☐	
			05:34	EN			49° 59.71	128° 00.25			-			☐	
128	LBP3	01	07:01	BE	/	/	50° 03.177	127° 55.395	177		-		MG	☐	Bongo →
			07:0	BO			° 0.082	° 55.341		170	-			☐	
			07:09	EN			° 03.070	° 55.320			-			☐	
129	LBP 2	01	07:49	BE	NET	US	50° 03.963	127° 54.217	160		-		MG	☐	Bongo
			07:53	BO			° 03.946	° 54.202		96	-			☐	
			07:55	EN			° 03.947	° 54.204			-			☐	
130	LOOP130	01	11:24	BE	LOOP	UN	50° 19.17	128° 14.97	321	4.5	5130		MG	☐	1 SAL 2 CHL
131	CPE2	01	15:47	BE			50° 42.973	128° 39.707	129		-		MG	☐	
			15:51	BO			° 42.966	° 39.701		122	-			☐	
			15:32	EN			° 42.976	° 39.685			-			☐	
132	CPE2	01	16:09	BE	ROS	/	50° 42.970	128° 39.680	130		-		SR	☒	
			16:11				° 42.970	° 39.680		118	-			☐	
			16:13				° 42.970	° 39.680			-			☐	

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p20.5

Event 125

- Depth of tow to 289 m to compensate for 30° aft wire angle.

* started going down & @ ~50 meters bridge wanted rosette back up at surface to change the orientation of the ship to deal with large wire angle + current

- NO ROSETTE OR CTD LBP3 + 2 BYPASSED LBPI TO GO = CPE2

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Month July			Year 2020			Vessel Tully			Cruise ID 2020-005						
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
133	JS15	01	17:42	BE	ROS		50°46.595	128°29.645	95				SR	☒	Stopped @ 60m
			17:43	BO			°46.570	°29.680		87	-			☐	on the upcast
			17:46	EN			°46.520	°29.710			-			☐	for wire angle
134	Loop134	02	02:56	BE	LOOP	UN	49°56.965	129°26.865	102	4.5	5134		GC	☐	2xch, Sal(5134)
135	Loop135	02	10:59	BE	LOOP	UN	49°11.91	130°29.48	3041	4.5	5135-		MG	☐	1 SAL 2 CHL
136	136	02	16:26	RE	GLIDER	/	48°57.42	130°42.71	2992		-			☐	BOAT LAUNCH
	WALL		16:32	BO			°57.47	°42.86	2986		-			☐	ON TOW TO TULLY
			16:36	EN			°57.44	°42.72	2988		-			☐	ON DECK
137	Loop137	02	22:19	BE		UN	48°55.356	129°25.858	2977	4.5	7		GC	☐	
138	LG09	03	07:42	BE	NET	/	48°51.099	127°18.969	2076		-		MG	☐	Bongo
			07:49	BO			°51.102	°18.971		250	-			☐	
			07:54	EN			°51.105	°18.973			-			☐	
139	LG09	03	08:28	BE	NET	/	48°51.11	127°18.98	2076		-		MG	☐	MPS
			09:39	BO			°51.10	°18.97		2005	-			☐	
			10:11	EN			°51.10	°18.97			-			☐	
140	LG09	03	10:27	BE	ROS	US	48°51.100	127°18.970	2074		376-380	5	SR	☒	
			10:58	BO			°51.103	°18.970		2005	-			☐	
			11:32	EN			°51.100	°18.970			-			☐	
			:				°	°			-			☐	

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REGLIDER = Recover glider Time

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adjustment

P21.51

→ WES JIMMY SMALL ZODIAC LIFTED FROM WATER BY TOW LINE USING STARBOARD CRANE

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</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
141	LG08	03	12:27	BE	ROS	/	48°55.310	127°13.080	2081		/	/	SR	☒	
			12:59	BO			°55.230	°13.080		2007	-			☐	
			13:27	EN			48°55.21	127°13.07			-			☐	
142	LG07	03	14:22	BE	NET	/	48°59.379	127°06.928			/	/	MS	☐	BONGO
			14:27	BO			°59.354	°06.965		250	-			☐	
			14:30	EN			°59.340	°06.983			-			☐	
143	LG07	03	14:41	BE	ROS	/	48°59.292	127°07.018	1782		/	/	SR	☒	
			15:05	BO			°59.246	°07.064		1769	-			☐	
			15:28	EN			°59.232	°07.130			-			☐	
144	LG06	03	16:30	BE	ROS	US	49°3.413	127°01.048	954		381-397	17	SR	☒	
			16:43	BO			°3.344	°01.038			-			☐	
			17:12	EN			°3.254	°00.974			-			☐	
145	LG05	03	18:02	BE	ROS	/	49°7.420	126°55.250	277		/	/	SR	☒	
			18:06	BO			°7.420	°55.240		267	-			☐	
			18:09	EN			°7.410	°55.230			-			☐	
146	LG04	03	18:53	BE	NET	/	49°11.305	126°49.315	148		/	/	MS	☐	
			18:58	BO			°11.295	°49.232		141	-			☐	
			19:01	EN			°11.299	°49.187			-			☐	
			:				°	°			-			☐	
Event Type: LOOP = Sea Water Loop Firing Method: Time Code:															

Event Type:

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

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

Bottle Firing Method:

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

Notes:

Time Code:

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

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

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

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</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							
147	L604	03	19:10	BE	ROS	US	49° 11.300	126° 49.190	145		398 - 406	9	AC	☒	Stopped @ 43 m
			19:15	BO			° 11.300	° 49.200		136	-			☐	60
			19:26	EN			° 11.330	° 49.190			-			☐	
148	L603	03	20:20	BE	ROS	/	49° 15.040	126° 43.720	126		/	/	GE	☒	
			20:22	BO			° 15.040	° 43.710		115	-			☐	
			20:24	EN			° 15.050	° 43.710			-			☐	
149	L602	03	21:07	BE	NET		49° 18.745	126° 38.170	101		/	/	HS	☐	
			21:11	BO			° 18.741	° 38.199		96	-			☐	
			21:13	EN			° 18.755	° 38.223			-			☐	
150	L602	03	21:26	BE	ROS	US	49° 18.750	126° 38.190	102		407 - 413	7	GC	☒	
			21:29	BO			° 18.770	° 38.180		91	-			☐	
			21:37	EN			° 18.920	° 38.260			-			☐	
151	L601	03	22:13	BE	ROS		49° 20.576	126° 35.279	52		414 - 418	5	GC	☒	Accidentally forgot HPLC samples.
			22:15	BO			° 20.575	° 35.304			-			☐	
			22:20	EN			° 20.592	° 35.351			-			☐	
152	L601	03	22:32	BE	NET	/	49° 20.521	126° 35.336	56		/	/	HS	☐	Mini. Bays
			22:20	BO			° 20.530	° 35.346		48	-			☐	
			22:35	EN			° 20.547	° 35.353			-			☐	
			:				° .	° .			-			☐	

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
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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

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DE = Deployment Time
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 RE = Recover Mooring Time

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-005</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
153	LJ01	4	02:02	BE	ROS		49° 44.420	127° 02.670	61				GC	☒	
			02:04	BO			° 44.440	° 02.660		51	-			☐	
			02:06	EN			° 44.450	° 02.650			-			☐	
154	LJ01	4	02:11	BE	NET		49° 44.481	127° 02.565	60		-		KS	☐	Mini bongo
			02:12	BO			° 44.489	° 02.568		50	-			☐	
			02:14	EN			° 44.494	° 02.568			-			☐	
155	LJ02	4	02:45	BE	NET		49° 42.667	127° 05.327	82		-		HS	☐	
			02:48	BO			° 42.680	° 05.327		77	-			☐	
			02:50	EN			° 42.676	° 05.335			-			☐	
156	LJ02	4	02:59	BE	ROS	US	49° 42.700	127° 05.364	82		419-421	3	GC	☒	
			03:01	BO			° 42.710	° 05.380		72	-			☐	
			03:06	EN			° 42.760	° 05.430			-			☐	
157	LJ03	4	04:00	BE	ROS		49° 39.160	127° 11.130	127		-		GC	☒	
			04:04	BO			° 39.180	° 11.120		116	-			☐	
			04:06	EN			° 39.190	° 11.110			-			☐	
158	LJ04	4	05:06	BE	NET		49° 35.567	127° 16.954	163		-		HS	☐	
			05:12	BO			° 35.512	° 16.943		158	-			☐	
			05:15	EN			° 35.505	° 16.944			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

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Time Code:

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-005</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
159	LJ04	4	05:30	BE	ROS	JS	49° 35.520	127° 16.980	165		422-424	3	GC	☒	
			05:33	BO			° 35.540	° 16.940		155	-			☐	
			05:39	EN			° 35.570	° 16.960			-			☐	
160	LJ05	4	06:30	BE	ROS	/	49° 31.600	127° 22.480	1083		-	/	GC	☒	Stopped @ 184m
			06:52	BO			° 31.490	° 22.270			-			☐	to correct wire
			07:08	EN			° 31.480	° 22.170			-			☐	angle (going down)
161	LJ06	4	08:01	BE	NET		49° 27.830	127° 28.509	1054		-			☐	
			08:08	BO			(° 27.873)	(° 28.478)		250	-			☐	
			08:12	EN			° 27.877	° 28.480			-			☐	
162	LJ06	4	08:22	BE	ROS		49° 27.880	127° 28.500	1042		425-427	3	SR	☒	
			08:39	BO			° 27.880	° 28.500		1059	-			☐	
			08:56	EN			° 27.880	° 28.490			-			☐	
163	LJ07	4	09:54	BE	ROS	/	49° 24.020	127° 34.734	1823		-	/	SR	☒	
			10:21	BO			° 24.086	° 34.646		1812	-			☐	
			10:46	EN			° 24.100	° 34.724			-			☐	
164	LJ08	4	11:36	BE	NET		49° 19.967	127° 40.807	1751		-	/	MG	☐	
			11:37	BO			(° 19.945)	(° 40.785)		50	-			☐	
			11:39	EN			° 19.931	° 40.772			-			☐	
			:				°	°			-			☐	

Event Type:

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LOOP = Sea Water Loop

MOR = Mooring
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Bottle Firing Method:

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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

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p25.51

- Stopped @ 620 to correct wire angle. (going down) c 06:42 UTC resumed @ 06:45 UTC

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
165	LJ08	4	11:51	BE	ROS	/	49°20.100	127°40.780	1724		/	/	SR	☒ ☐	
			12:17	BO			°20.058	°40.590		1716	-			☐ ☐	
			12:42	EN			°20.138	°40.387			-			☐ ☐	
166	LJ09	4	13:43	BE	NET	/	49°16.173	127°47.295	2282		-		MG	☐ ☐	BowGo
			13:50	BO			°16.171	°47.297		250	-			☐ ☐	WHALES - RUBBING ON SHIP
			13:55	EN			°16.172	°47.297			-			☐ ☐	4 HOURS
167	LJ09	4	18:02	BE	NET	UN	49°17.72	127°48.19	2505		-	/	MG	☐ ☐	MPS 2K NORTH
			19:11	BO			°17.72	°48.19		2005	-			☐ ☐	MOVED STATION FOR
			19:44	EN			°17.72	°48.19			-			☐ ☐	WHALES
168	LJ09	4	19:58	BE	ROS		49°17.718	127°48.197	2507		/	/	GC	☒ ☐	
			20:33	BO			°17.718	°48.196		2005	-			☐ ☐	
			20:04	EN			°17.718	°48.197			-			☐ ☐	
169	Loop169	5	00:56	BE	LOOP	UN	49°50.801	128°18.203	2109	4.5	5169	/	GC	☐ ☐	1Sal, 2xCHL
170	Loop170	5	06:15	BE	LOOP		50°37.929	129°00.273	1664	4.5	5170	/	GC	☐ ☐	1Sal 2chl
171	LQ03	5	06:44	BE	ROS	/	50°39.800	129°01.850	1280		/	/	GC	☒ ☐	
			07:03	BO			°39.770	°01.830		1275	-			☐ ☐	
			07:21	EN			°39.770	°01.710			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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 ROS = CTD in Rosette
 SET = Fish Set

LOOP = Sea Water Loop

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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

Notes:

Time Code:

BE = Beginning Time of Cast
 BO = Bottom Time of Cast
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DE = Deployment Time
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 RE = Recover Mooring Time

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Month			Year			Vessel			Cruise ID						
July			2020			Tully			2020-005						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
172	LQ03	S	07:31	BE	NET	/	50° 39.711	129° 01.709	1254		-		MG	☐	BONGO
			07:37	BO			° 39.635	° 01.831		250	-			☐	
			07:41	EN			° 39.610	° 01.860			-			☐	
173	JI22	S	09:06	BE	ROS	/	50° 39.710	129° 17.070	1271		-		SR	☒	STOP 1-500 TO ADJUST CURRENT
			09:27	BO			° 39.660	° 17.110		1279	-			☐	
			09:46	EN			° 39.600	° 17.230			-			☐	
174	JI22	S	09:57	BE	NET	/	50° 39.816	129° 17.237	1271		-		MG	☐	BONGO
			10:02	BO			° 39.806	° 17.307			-			☐	
			10:06	EN			° 39.808	° 17.305			-			☐	
175	CS00	S	13:06	BE	NET	/	50° 27.725	129° 54.983	2198		-		MG	☐	BONGO
			13:12	BO			° 27.725	° 54.982		250	-			☐	
			13:15	EN			° 27.724	° 54.982			-			☐	
176	CS00	S	13:32	BE	NET	UN	50° 27.66	129° 55.06	2198		-		MG	☐	MPS
			14:42	BO			° 27.65	° 55.07		2005	-			☐	
			15:14	EN			° 27.65	° 55.07			-			☐	
177	CS00	S	15:37	BE	ROS	US	50° 27.653	129° 55.070	2195		428-447	20	SR	☐	
			16:07	BO			° 27.654	° 55.070		2005	-			☐	
			16:55	EN			° 27.662	° 55.076			-			☐	
178	LOOP178	S	18:10	BE	LOOP	UN	50° 34.86	129° 41.67	21	4.5	-		MG	☐	1 SAL 2 CHL

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

Notes:

Time Code:

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

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

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>JP Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
179	CS01	5	18:15	BE	ROS	—	50° 34.850	129° 41.550	2130		—	—	8R	☒ ☐	
			18:50	BO			° 34.960	° 41.860		2005	-			☐ ☐	
			19:22	EN			° 35.160	° 42.090			-			☐ ☐	
180	CS01	5	19:30	BE	NET		50° 35.214	129° 42.076	2123	250	-		AS	☐ ☐	BONGO
			19:38	BO			° 35.22	° 42.06			-			☐ ☐	
			19:43	EN			° 35.249	° 42.056			-			☐ ☐	
181	CS02	5	21:04	BE	NET		50° 41.267	129° 27.786	1921		-			☐ ☐	BONGO
			21:11	BO			° 41.296	° 27.780		250	-	—	HS	☐ ☐	12 orcas in the
			21:16	EN			° 41.301	° 27.780			-			☐ ☐	area 1.5 miles away
182	CS02	5	21:27	BE	ROS	US	50° 41.286	129° 27.720	1921		448-467	20	GC	☒ ☐	+ Mola mola (3)
			22:01	BO			° 41.240	° 27.800		1910	-			☐ ☐	
			22:53	EN			° 41.210	° 27.810			-			☐ ☐	
183	CS03	5	23:55	BE	ROS	—	50° 45.520	129° 20.110	247		—	—	GC	☒ ☐	Mola mola by CTD
		6	00:00	BO			° 45.520	° 20.120		235	-			☐ ☐	Flat calm
			00:04	EN			° 45.520	° 20.110			-			☐ ☐	
184	CS03	6	00:12	BE	NET		50° 45.501	129° 20.116	249		-			☐ ☐	BONGO
			00:20	BO			° 45.442	° 20.206		244	-			☐ ☐	
			00:24	EN			° 45.413	° 20.229			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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 SET = Fish Set

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Bottle Firing Method:

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Notes:

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
185	CS04	6	01:17	BE	NET		50° 49.292	129° 13.095	96		-	-	HS	☒	BONGO
			01:20	BO			° 49.295	° 13.116		90	-			☐	
			01:22	EN			° 49.291	° 13.128			-			☐	
186	CS04	6	01:33	BE	ROS	JS	50° 49.320	129° 13.160	97		468-474	7	GC	☒	
			01:36	BO			° 49.330	° 13.150		89	-			☐	
			01:44	EN			° 49.270	° 13.260			-			☐	
187	CS3B	6	03:17	BE	NET		51° 00.076	129° 27.092	223		-		HS	☐	BONGO
			03:25	BO			° 00.122	° 27.011		278	-			☐	
			03:29	EN			° 00.149	° 26.958			-			☐	
188	CS3B	6	03:39	BE	ROS		51° 00.210	129° 26.870	223		-	-	GC	☒	
			03:44	BO			° 00.230	° 26.840		211	-			☐	
			03:48	EN			° 00.250	° 26.840			-			☐	
189	CS05	6	05:48	BE	NET		50° 56.098	128° 59.941	65		-			☐	BONGO
			05:51	BO			° 56.115	° 59.923		80	-			☐	45° wire angle aft
			05:53	EN			° 56.117	° 59.922			-			☐	
190	CS05	6	06:10	BE	ROS		50° 56.130	128° 59.860	65		-	-	GC	☒	Lots of phyto in
			06:12	BO			° 56.140	° 59.850		60	-			☐	the water
			06:13	EN			° 56.140	° 59.850			-			☐	
			:				° .	° .			-			☐	

Event Type:

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SET = Fish Set

LOOP = Sea Water Loop
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Bottle Firing Method:

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Time Code:

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Notes:

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Month <u>Jul</u>			Year <u>2020</u>			Vessel <u>TJ117</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
191	CS1B	6	07:45	BE	ROS	✓	50°53.060	128°39.840	78				SR	☒	
			07:46	BO			°53.060	°39.840		68	-			☐	
			07:47	EN			°53.060	°39.840			-			☐	
192	CS1B	6	07:52	BE	NET		50°53.014	128°39.839			-			☐	
			07:53	BO			°53.007	°39.834			-		MG	☐	BONGO
			07:54	EN			°53.003	°39.830			-			☐	
193	CS06	6	09:24	BE	NET		51°00.033	128°51.839	67		-			☐	
			09:26	BO			°00.032	°51.856		62	-		MG	☐	BONGO
			09:27	EN			°0.028	°51.884			-			☐	
194	CS06	6	09:38	BE	ROS	US	50°59.990	128°51.990	67		475-480	6	SR	☒	
			09:39	BO			50°59.998	°51.980		57	-			☐	
			09:45	EN			50°59.950	°51.920			-			☐	
195	CS07	6	10:46	BE	ROS	✓	51°04.555	128°44.257	65					☐	
			10:47	BO			°04.556	°44.276		55	-		SR	☒	
			10:48	EN			°04.560	°44.292			-			☐	
196	CS07	6	10:51	BE	NET		51°04.567	128°44.384	65		-			☐	BONGO
			10:56	BO			°04.557	°44.403		60	-			☐	
			10:57	EN			°04.550	°44.417			-			☐	
			:				°	°			-			☐	

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:

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Month <u>July</u>		Year <u>2020</u>		Vessel <u>Tully</u>		Cruise ID <u>2020-005</u>									
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
197	CS08	6	11:53	BE	ROS	/	51° 8.620	128° 36.220	145		/	/	SR	☒	
			11:55	BO			° 8.610	° 36.250		135	-			☐	
			11:57	EN			° 8.590	° 36.290			-			☐	
198	CS08	6	12:02	BE	NET	/	51° 8.552	128° 36.332	145		-			☐	
			12:05	BO			° 8.552	° 36.360		140	-		MG	☐	BONGO
			12:07	EN			° 8.554	° 36.370			-			☐	
199	CS09	6	13:01	BE	NET		51° 12.574	128° 28.245	195		/	/	MG	☐	
			13:05	BO			° 12.560	° 28.275		190	-			☐	BONGO
			13:07	EN			° 12.541	° 28.285			-			☐	
200	CS09	6	13:14	BE	ROS	US	51° 12.510	128° 28.240	196		481-491	11	SR	☒	
			13:17	BO			° 12.510	° 28.250		186	-			☐	
			13:27	EN			° 12.490	° 28.330			-			☐	
201	CS10	6	14:21	BE	ROS	/	51° 16.610	128° 20.160	81		/	/	SR	☒	
			14:22	BO			° 16.610	° 20.160		71	-			☐	
			14:23	EN			° 16.620	° 20.150			-			☐	
202	CS10	6	14:27	BE	NET	/	51° 16.633	128° 20.154	80		/	/	MG	☐	BONGO
			14:29	BO			° 16.640	° 20.155		75	-			☐	
			14:30	EN			° 16.645	° 20.156			-			☐	
203	LOOP203	6	14:56	BE	Loop	UN	51° 13.36	128° 20.27	120	4.5	5203		JS	☐	ISAL 2CHL

Event Type:

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Bottle Firing Method:

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

Notes:

Time Code:

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

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

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Month <u>JULY</u>			Year <u>2020</u>			Vessel <u>JPTULLY</u>			Cruise ID <u>2020 005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
204	hoop204	7	01:06	BE	LOOP	UN	51° 12.8956	127° 51.6185	120	4.5	5204			☐ ☐	2xCHL, 1 Sal
205	SS7	7	02:41	BE	NET		51° 24.753	127° 47.771	123		-		HS	☐ ☐	BONGO
			02:45	BO			° 24.753	° 47.812		118	-			☐ ☐	
			02:47	EN			° 24.760	° 47.833			-			☐ ☐	
206	SS7	7	02:58	BE	ROS		51° 24.750	127° 47.860	123		/	/	GC	☒ ☐	
			03:00	BO			° 24.750	° 47.870		116	-			☐ ☐	
			03:03	EN			° 24.740	° 47.870			-			☐ ☐	
207	SS7	7	03:11	BE	NET		51° 24.720	127° 47.869	122		-		HS	☐ ☐	Mini Bongo
			03:15	BO			° 24.703	° 47.871		117	-			☐ ☐	
			03:17	EN			° 24.696	° 47.872			-			☐ ☐	
208	SS6	7	04:28	BE	ROS		51° 19.990	128° 00.020	179		-			☐ ☐	
			04:32	BO			° 19.990	° 00.030		173	/	/	GC	☒ ☐	
			04:35	EN			° 19.990	° 00.040			-			☐ ☐	
209	SS5	7	06:51	BE	ROS		51° 28.001	128° 30.059	203		492-494		GC/SR	☒ ☐	LOOP 1 SAL 2 CHL
			06:53	BO			° 28.001	° 30.058		193	-5209			☐ ☐	
			07:00	EN			° 28.001	° 30.059			-			☐ ☐	
210	SS5	7	07:10	BE	NET		51° 27.990	128° 29.959	203		-			☐ ☐	BONGO
			07:14	BO			° 27.974	° 29.915		198	-			☐ ☐	
			07:16	EN			° 27.975	° 29.869			-			☐ ☐	

Event Type:

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 DRF = Drifter
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Bottle Firing Method:

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 DN = Down / No stop

Notes:

Time Code:

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

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

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
211	SS04	7	09:42	BE	ROS	/	51° 21.240	129° 0.350	241		/	/	SR	☒	
			09:46	BO			° 21.280	° 0.310			-			☐	
			09:50	EN			° 21.270	° 0.290			-			☐	
212	SS3	7	11:28	BE	ROS	US	51° 15.254	129° 21.215	295		495-497	3	SR	☒	
			11:32	BO			° 15.260	° 21.204		284	-			☐	
			11:39	EN			°	°			-			☐	
213	SS3	7	11:46	BE	NET		51° 15.162	129° 21.089	295		-		MG	☐	Bongo
			11:50	BO			° 15.193	° 21.172		250	-			☐	
			11:54	EN			° 15.225	° 21.244			-			☐	
214	SS2	7	13:35	BE	ROS	/	51° 13.230	129° 43.090	482		/	/	SR	☒	
			13:42	BO			° 13.210	° 43.060		479	-			☐	
			13:50	EN			° 13.170	° 43.020			-			☐	
215	SS4	7	15:03	BE	ROS	US	31° 12.185	129° 59.893	488		498-500	3	SR	☒	Stopped @ 83m
			15:12	BO			° 12.214	° 59.893		476	-			☐	to adjust wire
			15:20	EN			° 12.293	° 59.896			-			☐	angle.
216	SS1	7	15:25	BE	NET	/	51° 12.297	129° 59.900	488		-			☐	
			15:31	BO			° 12.254	° 59.914		250	-			☐	Bongo
			15:34	EN			° 12.249	° 59.909			-			☐	
217	LOOP 217	7	16:08	BE			51° 07.85	129° 59.75	887	4.5	5217		JS	☐	1 SAL 2 CHL

Event Type:

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Bottle Firing Method:

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Notes:

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Month July				Year 2020			Vessel Tully			Cruise ID 2020-005					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
218	NewODAS	7	17:21	BE	ROS	/	50°56.350	129°58.700	2130		/	/	SR	☒	
			17:36	BO			°56.357	°58.742		1005	-			☐	
			17:51	EN			°56.382	°58.717			-			☐	
219	NewODAS	7	17:57	BE	NET		50°56.406	129°58.712	2130		-		MG	☐	Bongo
			18:02	BO			°56.404	°58.722		250	-			☐	
			18:06	EN			°56.407	°58.721			-			☐	
220	NewODAS	7	18:12	BE	NET	/	50°56.404	129°58.714	2130		/	/	MG	☐	
			18:14				°56.402	°58.708		50	-			☐	Mini
			18:15				°56.401	°58.705			-			☐	
221	CPE1	8	03:08	BE	NET	/	51°00.053	127°49.975	142		-			☐	BONGO
			03:12	BO			°00.088	°50.011		137	-			☐	
			03:15	BN			°00.104	°50.010			-			☐	
222	CPE1	8	03:26	BE	ROS	/	51°00.140	127°50.040	145		/	/	GC	☒	
			03:29	BO			°00.140	°50.050		140	-			☐	
			03:32	EN			°00.130	°50.050			-			☐	
223	Loop223	8	05:13	BE	Loop	UN	50°51.13	127°31.18	181	4.5	5223		GC/KS	☐	1 SAL 2 CHL
224	JS	8	10:06	BE	NET		50°29.847	126°28.519	410		-		MG	☐	Bongo
			10:11	BO			°29.840	°28.561		461	-			☐	
			10:17	EN			°29.831	°28.593			-			☐	

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Bottle Firing Method:

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Time Code:

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Notes:

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This page is for any notes or observations

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2xCHL, 1 Sol.

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>JP TULLY</u>				Cruise ID <u>2020-005</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
225	JS	8	10:27	BE	ROS	US	50° 29.800	126° 28.640	411		501 - 514		SR	☒ ☐	
			16:34				° 29.800	° 28.650		400	-			☐ ☐	
			10:51				° 29.790	° 28.690			-			☐ ☐	
226	WX	8	16:28	BE	BOAT	-	50° 17.27	125° 25.56	99	0	-		MG	☐ ☐	BOAT LAUNCH OKISALO
			18:37	EN			50° 17.09	125° 25.40	105		-			☐ ☐	KENNY GLENN
227	15	8	22:55	BE	ROS	U	49° 51.620	125° 01.750	123		-		GC	☒ ☐	
			22:58	BO			° 51.700	° 01.750		118	-			☐ ☐	
			23:01	EN			° 51.710	° 01.780			-			☐ ☐	
228	14	8	23:27	BE	NET		49° 53.072	124° 59.631	316		-		HS	☐ ☐	Bongo
			23:37	BO			° 53.114	° 59.640		311	-			☐ ☐	
			23:42	EN			° 53.118	° 59.663			-			☐ ☐	
229	14	8	23:53	BE	ROS		49° 53.130	124° 59.660	316		9501-9515	15	GC	☒ ☐	sample IDs were duplicated. →
			23:59	BO			° 53.150	° 59.650		310	-			☐ ☐	
		9	00:17	EN			° 53.160	° 59.640			-			☐ ☐	
230	13	9	00:54	BE	ROS		49° 55.360	124° 55.360	233		-		GC	☒ ☐	
			00:59	BO			° 55.380	° 55.440		229	-			☐ ☐	
			01:03	EN			° 55.380	° 55.500			-			☐ ☐	
			:				° .	° .			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

Event Type:

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Bottle Firing Method:

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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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Event 229, Sbn 14, Sample # 9501-9514, 515
• Fixed all labels for event 229. Left sample IDs as is on event 225.

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Month July			Year 2020			Vessel J.P. Tully			Cruise ID 2020-005						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
231	12	09	03:07	BE	NET		49° 43.664	124° 40.979	359				HS, KS	☐	Bongo
			03:19	BO			49° 43.686	124° 41.077		354	-			☐	
			03:24	EN			49° 43.698	124° 41.076			-			☐	
232	12	09	03:35	BE	ROS	US	49° 43.690	124° 41.060	359		516-519	4	GC	☒	loop 5232
			03:43	BO			49° 43.700	124° 41.070		352	-			☐	2x CHL, 1x SAI
			03:54	EN			49° 43.720	124° 41.090			-			☐	
233	20	09	05:27	BE	ROS		49° 47.390	124° 32.460	272				GC	☒	
			05:38	BO			° 47.390	° 32.450		275	-			☐	
			05:38	EN			° 47.400	° 32.470			-			☐	
234	JI1	09	07:17	BE	ROS	US	49° 43.534	124° 15.428	250		520-527	8	SR	☒	
			07:21	BO			° 43.566	° 15.443		243	-			☐	
			07:30	EN			° 43.	° 15.			-			☐	
235	JI3	09	08:14	BE	ROS	US	49° 46.000	124° 9.890	355		528-535	8	SR	☒	
			08:19	BO			° 46.000	° 9.870		350	-			☐	
			08:30	EN			° 46.020	° 9.780			-			☐	
			:				°	°			-			☐	

Event Type:

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments	
							Latitude	Longitude								
236	JIS	09	09:16	BE	NET	/	49°47.770	124°01.974	666		536-543	8	MG	☐	BONGO	
			09:19	BO			°47.779	°01.970		660	-			☐		
			09:35	EN			°47.775	°01.981			-			☐		
237	JIS	09	09:56	BE	ROS	US	49°47.760	124°01.960	665		536-543	8	SR	☒		
			10:08	BO			°47.760	°01.950			-			☐		
			10:24	EN			°47.760	°01.940			-			☐		
238	J17	9	11:19	BE	NET	/	49°50.700	123°53.800	679		-	-	MG	☐	BONGO	
			11:31	BO			°50.695	°53.946		670	-			☐		
			11:42	EN			°50.714	°53.911			-			☐		
239	J17	9	11:51	BE	ROS	US	49°50.755	123°54.004	678		544-551	8	SR	☒		
			12:01	BO			°50.723	°54.036		674	-			☐		
			12:19	EN			°50.819	°54.038			-			☐		
240	J16	9	13:01	BE	ROS	US	49°47.429	123°57.252	313		552-559	8	SR	☒		
			13:08	BO			°47.43	°57.28		366	-			☐		
			13:20	EN			°47.43	°57.28			-			☐		
241	J14	9	14:07	BE	ROS	US	49°47.185	123°5.670	608		560-567		SR	☒		
			14:16	BO			°47.189	°5.662		603	-			☐		
			14:29	EN			°47.155	°5.634			-			☐		
			:				°	°			-			☐		

Event Type:

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

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Notes:

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
242	JIZ	9	15:15	BE	NET	/	49° 45.761	124° 14.296	355		/	/	MG	☐ ☐	Bongo
			15:20	BO			° 45.747	° 14.311		345	-			☐ ☐	
			15:24	EN			° 45.750	° 14.324			-			☐ ☐	
243	JIZ	9	15:40	BE	ROS	US	49° 45.830	124° 14.430	325		568-575	8	SR	☒ ☐	
			15:45	BO			° 45.830	° 14.440		320	-			☐ ☐	
			15:56	EN			° 45.800	° 14.430			-			☐ ☐	
244	22	9	16:45	BE	NET	/	49° 40.227	124° 16.365	356		/	/	MG	☐ ☐	Bongo
			16:51	BO			° 40.229	° 16.369		350	-			☐ ☐	
			16:55	EN			° 40.227	° 16.360			-			☐ ☐	
245	22	9	17:04	BE	ROS	US	49° 40.220	124° 16.330	356		576-579	4	SR	☒ ☐	Started doing
			17:09	BO			° 40.210	° 16.320		350	-			☐ ☐	the 10m clip
			17:18	EN			° 40.220	° 16.320			-			☐ ☐	again
246	LOOP 246	9	17:47	BE	LOOP	UN	49° 37.57	124° 12.91	354	4.5	5246	-	JS	☐ ☐	1 SAC 2 CHL
247	24	9	18:57	BE	NET		49° 30.356	124° 05.783	425/386		-			☐ ☐	Slide up a slope
			19:08	BO			° 30.321	° 05.570		380	-			☐ ☐	so changed net
			19:14	EN			° 30.301	° 05.493			-			☐ ☐	depth
248	24	9	19:34	BE	ROS		49° 30.280	124° 05.980	434		/	/	GC	☒ ☐	
			19:42	BO			° 30.280	° 05.970		420	-			☐ ☐	
			19:49	EN			° 30.290	° 05.980			-			☐ ☐	

Event Type:

BOT = Bottle cast (no CTD)
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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

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-0</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
249	9	9	22:22	BE	ROS	US	49° 35.500	124° 38.360	168		580-583	4	GC	☒	
			22:26	BO			° 35.490	° 38.360		161	-			☐	
			22:33	EN			° 35.500	° 38.340			-			☐	
250	6	9	23:48	BE	ROS	US	49° 30.650	124° 27.950	9		584-587	4	GC	☒	
			23:52	BO			49° 30.650	124° 27.940		186	-			☐	
			23:59	EN			49° 30.620	124° 27.920			-			☐	
251	CPF2	10	00:30	BE	ROS	-	49° 28.07	124° 30.05	328		-	Ø	MR	☒	
			00:37	BO			49° 28.043	124° 30.011		320	-			☐	
			00:43	EN			49° 28.034	124° 29.984			-			☐	
252	CPF2	10	00:48	BE	NET	-	49° 28.024	124° 29.930	328		-			☐	BONGO
			01:00	BO			° 28.085	° 29.922		348	-		HS	☐	
			01:05	EN			° 28.100	° 29.890			-			☐	
253	BS11	10	02:30	BE	NET	-	49° 29.039	124° 46.018	62		-		HS	☐	BONGO
			02:32	BO			° 29.040	° 46.008		56	-			☐	
			02:34	EN			° 29.041	° 46.001			-			☐	
254	BS11	10	02:43	BE	ROS	US	49° 29.050	124° 45.930	63		588-591	4	GC	☒	
			02:46	BO			° 29.050	° 45.970		57	-			☐	
			02:51	EN			° 29.040	° 45.960			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

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EN = End Time of Cast

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0142 10 JULY UTZ

ADCP HAD LOST NMEA STRING.

RESTARTED ADCP OK, BUT CANNOT GET NMEA TIME PANEL TO GET SIGNAL.

IS IT BECAUSE THERE IS AN UPDATE PENDING?

CANNOT EVEN GET TO "SETUP COMMS" WINDOW ANYMORE, IT DOESN'T SHOW UP

DID THE UPDATE ON NMEATIME BUT ADCP WOULDN'T START AFTER. REBOOTED AND HAD TO

KILL NMEATIME BUT ADCP WORKING. MR

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
255	3	10	04:47	BE	ROS	US	49° 26.590	124° 20.340	330		592-595	4	GC	☒	
			04:57	BO			° 26.590	° 20.340		323	-			☐	
			05:07	EN			° 26.620	° 20.330			-			☐	
256	2	10	06:08	BE	ROS	US	49° 24.150	124° 09.190	287		596-599	4	GC	☒	Loop 24th, 1 Sol
			06:14	BO			49° 24.150	124° 09.180		178	-			☐	taken.
			06:23	EN			49° 24.150	124° 09.170			-			☐	
257	CPF1	10	06:59	BE	ROS	/	49° 21.970	124° 5.080	247		/	/	SR	☒	
			07:02	BO			° 21.990	° 5.090		241	-			☐	
			07:05	EN			° 22.000	° 5.100			-			☐	
258	CPF1	10	07:10	BE	NET		49° 22.036	124° 5.115	250		-		MG	☐	Bongo
			07:14	BO			° 22.059	° 5.131		245	-			☐	
			07:18	EN			° 22.076	° 5.134			-			☐	
259	27	10	08:44	BE	ROS	US	49° 19.220	123° 48.020	356		600-603	4	SR	☒	
			08:51	BO			° 19.190	° 48.000		344	-			☐	
			08:59	EN			° 19.170	° 47.970			-			☐	
260	GEO1	10	09:46	BE	NET	/	49° 15.075	123° 45.028	406		/	/	MG	☐	Bongo
			09:53	BO			° 15.076	° 45.028		400	-			☐	
			10:00	EN			° 15.077	° 45.019			-			☐	
			:				°	°			-			☐	

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Bottle Firing Method:

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 DN = Down / No stop

Notes:

Time Code:

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 EN = End Time of Cast

DE = Deployment Time
 MR = Messenger Release Time
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
261	GE01	10	10:08	BE	NET	/	49°15.073	123°45.015	406		-		MG	☐ ☐	Mini Bouye
			10:09	BO			°15.073	°45.015		50	-			☐ ☐	
			10:10	EN			°15.073	°45.016			-			☐ ☐	
262	GE01	10	10:24	BE	NET	/	49°15.07	123°45.01	406		-		MG	☐ ☐	MPS
			10:38	BO			°15.07	°45.02		400	-			☐ ☐	
			10:46	EN			°15.07	°45.02			-			☐ ☐	
263	GE01	10	10:56	BE	ROS	US	49°15.070	123°45.020	406		604-607	4	SR	☒ ☐	
			11:03	BO			°15.070	°45.020		397	-			☐ ☐	
			11:12	EN			°15.070	°45.020			-			☐ ☐	
264	LOOP 264	10	12:52	BE	LOOP	UN	49°17.03	123°27.11	163	4.5	5264-	/	JS	☐ ☐	1 SAL 2 CHL
265	VAN 3	10	14:29	BE	ROS	/	49°18.810	123°10.050	34		/	/	SR	☒ ☐	
			14:29	BO			°18.810	°10.040		29	-			☐ ☐	
			14:30	EN			°18.810	°10.040			-			☐ ☐	
266	VAN 4	10	15:11	BE	ROS	US	49°17.820	123°5.740	63		608-615	8	SR	☒ ☐	
			15:12	BO			°17.830	°5.740		57	-			☐ ☐	
			15:18	EN			°17.800	°5.740			-			☐ ☐	
267	VAN 5	10	16:15	BE	ROS	US	49°17.660	123°3.500			616-621		SR	☒ ☐	
			16:16	BO			°17.660	°3.500			-			☐ ☐	
			16:20	EN			°17.660	°3.500			-			☐ ☐	

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DRF = Drifter
=

Bottle Firing Method:

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

Notes:

Time Code:

BE = Beginning Time of Cast
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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

Produced by the Water Properties Group, IOS

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>Tulw</u>		Cruise ID <u>2020-005</u>							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
268	VAN6	10	17:10	BE	NET		49° 17.884	122° 58.860	66		-		MG	☐	BONGAD
			17:11	BO			° 17.885	° 58.860		60	-			☐	
			17:12	EN			° 17.885	° 58.860			-			☐	
269	VAN6	10	17:20	BE	ROS	US	49° 17.940	122° 58.890	62		622-629	8	SR	☐	
			17:21	BO			° 17.940	° 58.890			-			☐	
			17:30	EN			° 17.940	° 58.890			-			☐	
270	IND0	10	18:02	BE	ROS	US	49° 18.26	122° 56.389	37		630-635	6	MG	☒	
			18:03	BO			° 18.26	° 56.384		31	-			☐	
			18:09	EN			° 18.27	° 56.382			-			☐	
271	IND1	10	19:05	BE	ROS		49° 19.790	122° 54.240	70		-		GC	☒	No dip.
			19:07	BO			° 19.790	° 54.240		65	-			☐	
			19:09	EN			° 19.790	° 54.240			-			☐	
272	IND2	10	19:42	BE	ROS	US	49° 20.989	122° 54.136	162		636-647	12	GC	☒	N De
			19:46	BO			° 20.993	° 54.138		154	-			☐	2min surface.
			20:02	EN			° 21.025	° 54.144			-			☐	
273	IND3	10	20:36	BE	ROS		49° 22.184	122° 52.884	198		-		GC	☒	Dil a regular
			20:40	BO			° 22.189	° 52.874		190	-			☐	Dip. 30sec @
			20:44	EN			° 22.196	° 52.865			-			☐	10 meters, then →
			:				°	°			-			☐	

Event Type:

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MOR = Mooring
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DRF = Drifter
— = —

Bottle Firing Method:

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

Notes:

Time Code:

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

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

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p42.5 /

30 sec @ surface $\rightarrow$ archiving. Removed piece of jelly fish tentacle from primary temperature sensor / conductivity + fluorometer

DAILY SCIENCE LOG

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Month <u>July</u>				Year <u>2020</u>		Vessel <u>Tully</u>				Cruise ID <u>2020-09</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
274	IND4	10	21:15	BE	NET		49° 23.273	122° 52.502	223		-	/	145	☐	
			21:21	BO			° 23.277	° 52.500		218	-			☐	
			21:25	EN			° 23.304	° 52.498			-			☐	
275	IND4	10	21:37	BE	ROS	US	49° 23.290	122° 52.490	223		648-661	14	GC	☒	N. Dip =>
			21:41	BO			° 23.290	° 52.500		215	-			☐	
			21:58	EN			° 23.300	° 52.510			-			☐	
276	IND5	10	22:31	BE	ROS	/	49° 24.724	122° 52.362	209		-	/	GC	☒	No Dip =>
			22:35	BO			° 24.750	° 52.349		202	-			☐	
			22:39	EN			° 24.785	° 52.336			-			☐	
277	IND6	10	23:10	BE	ROS	/	49° 26.350	122° 51.580	102		-	/	GC	☒	No Dip.
			23:13	BO			° 26.360	° 51.590		76	-			☐	
			23:15	EN			° 26.360	° 51.590			-			☐	
278	IND7	10	23:36	BE	ROS	US	49° 27.430	122° 52.680	73		662-669	8	GC	☒	No Dip
			23:39	BO			° 27.440	° 52.670		67	-			☐	
			23:48	EN			° 27.440	° 52.670			-			☐	
279	VAN7	11	01:55	BE	ROS	US	49° 17.510	122° 54.440	19		670-672	3	GC	☒	No Dip
			01:56	BO			° 17.510	° 54.430		14	-			☐	
			01:59	EN			° 17.510	° 54.380			-			☐	
			:				°	°			-			☐	

Event Type:

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Bottle Firing Method:

US = Up / Stop (default)

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Notes: _____

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p435.1

Set at surface for 2 mins with pumps on. At 1:30 seconds started archiving data. $\Delta T + \Delta S$ looked stable enough + small enough that didn't need to do 10 meter dip.

Same as above for start of cast. $\Delta T + \Delta S$ not as close at times during soak compared to IND4 station

Same deployment procedure as above 2 casts: 2 mins @ surface $\rightarrow$ pumps on. Archiving data after 1 min 30 secs elapse.

DAILY SCIENCE LOG

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Month <u>July</u>				Year <u>2020</u>			Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
280	VAN2	11	14:40	BE	ROS	/	49° 19.746	123° 13.715	59		/	/	SR	☒ ☐	
			14:41	BO			° 19.750	° 13.712		55	-			☐ ☐	
			14:42	EN			° 19.751	° 13.711			-			☐ ☐	
281	VAN1	11	15:04	BE	NET	/	49° 18.849	123° 15.726	110		-		MG	☐ ☐	BONGO
			15:08	BO			° 18.861	° 15.661		105	-			☐ ☐	
			15:10	EN			° 18.869	° 15.624			-			☐ ☐	
282	VAN1	11	15:22	BE	ROS	US	49° 18.898	123° 15.806	115		673-682	10	SR	☒ ☐	
			15:25	BO			° 18.901	° 15.864		110	-			☐ ☐	
			15:34	EN			° 18.931	° 16.002			-			☐ ☐	
283	VAN0	11	16:09	BE	ROS	/	49° 17.816	123° 13.847	50		/	/	SR	☒ ☐	
			16:10	BO			° 17.813	° 13.848		47	-			☐ ☐	
			16:11	EN			° 17.809	° 13.847			-			☐ ☐	
284	ECCC	11	17:16	RE	MOR	/	° 14.420	° 22.568	246		-		GC	☐ ☐	serial #s =>
			17:30	EN			49° 14.310	123° 22.435		0	-			☐ ☐	
285	LOOP285	11	17:42	BE	LOOP	UN	49° 13.873	123° 23.220	250	4.5	5285-		JS	☐ ☐	ISAL 2CHL
286	39	11	18:36	BE	ROS	US	49° 9.850	123° 32.890	377		683-686	4	SR	☒ ☐	
			18:43	BO			° 9.850	° 32.890		372	-			☐ ☐	
			18:53	EN			° 9.850	° 32.850			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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Bottle Firing Method:

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Notes:

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1702 PUT SOUNDERS ON PASSIVE

FIRST POSITION

FIRST PING

RANGE 6.65

49 14.526

123 22.351

2ND

372

2ND POSITION

FIRST PING

311

49 14.421

123 22.566

Serial #s for event 284 Moving $R_1 =$ $R_2 =$ $End_1 =$ $End_2 =$

Serial# =

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Month <u>July</u>			Year <u>2020</u>			Vessel <u>CCGS John P. Tully</u>			Cruise ID <u>2020-005</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
287	42	11	20:02	BE	Net	—	49° 01.712	123° 26.23	322		—	—	GC HS KS	☐ ☐	Bongo
			20:12	BO			49° 01.651	123° 26.156		318	-			☐ ☐	
			20:17	EN			49° 01.627	123° 26.165			-			☐ ☐	
288	42	11	20:33	BE	ROS	US	49° 01.680	123° 26.110	322		687-701	15	GC HS KS	☒ ☐	
			20:39	BO			49° 01.678	123° 26.176		316	-			☐ ☐	
			20:50	EN			49° 01.657	123° 26.305			-			☐ ☐	
289	46	11	22:35	BE	NET		48° 51.346	123° 10.761	181		-		HS	☐ ☐	
			22:45	BO			48° 51.356	123° 10.799		176	-			☐ ☐	
			22:48	EN			48° 51.362	123° 10.817			-			☐ ☐	
290	46	11	23:00	BE	ROS	US	48° 51.392	123° 10.876	180		702-705	4	GC	☒ ☐	
			23:04	BO			48° 51.398	123° 10.888		174	-			☐ ☐	
			23:11	EN			48° 51.394	123° 10.904			-			☐ ☐	
291	56	12	00:15	BE	ROS	US	48° 46.800	123° 01.860	192		706-709	4	GC	☒ ☐	
			00:19	BO			° 46.830	° 01.780		186	-			☐ ☐	
			00:26	EN			° 46.830	° 01.560			-			☐ ☐	
292	SC04	12	02:20	BE	NET	U	48° 43.451	123° 25.242	105		—	—	HS	☐ ☐	
			02:24	BO			° 43.458	° 25.251		100	-			☐ ☐	
			02:26	EN			° 43.466	° 25.261			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Bottle Firing Method:

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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

Ocean Sciences Division, Institute of Ocean Sciences

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Month <u>July</u>			Year <u>2020</u>		Vessel <u>Tully</u>			Cruise ID <u>2020-005</u>							
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
293	SC04	12	02:41	BE	ROS	US	48° 43.420	123° 24.970	92		710-713	4	GC/KS	☒	Loop 2xCHK, 1Sal
			02:45	BO			° 43.400	° 24.960		87	-			☐	
			02:50	EN			° 43.390	° 24.980			-			☐	
294	S9	12	04:24	BE	NET		48° 37.025	123° 14.763	225		-		HS	☐	
			04:30	BO			° 37.141	° 14.772		220	-			☐	
			04:35	EN			° 37.203	° 14.778			-			☐	
295	S9	12	04:50	BE	ROS	US	48° 37.033	123° 14.545	229		714-717	4	GC	☒	
			04:55	BO			° 37.115	° 14.509		224	-			☐	
			05:03	EN			° 37.266	° 14.537			-			☐	
			:				° .	° .			-			☐	
			:				° .	° .			-			☐	
			:				° .	° .			-			☐	
			:				° .	° .			-			☐	
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			:				° .	° .			-			☐	
			:				° .	° .			-			☐	

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:

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Notes: _____

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Stopped @ 5 meters to correct wire angle.