DAILY SCIENCE LOG BOOK

CRUISE NUMBER 2017-09

DATE:

From: 31AUG2017 To: 12SEP2017

VESSEL: J. P. TULLY

PROJECT(S): La Perouse

Book 1 of 2

Water Properties Group
Fisheries and Oceans Canada
Institute of Ocean Sciences
Ocean Sciences Division

WaterProperties.ca

Captain: DONALD GIBSON First Officer: RYAN HULL

Second Officer: CHRISTOPHER SEAMONE Third Officer: KAITLIN SCURR

Fishing Master: _____ Chief Engineer: ROGER HORTON

Mission Participants / Agencies:

DFO-IOS ; UBC ; UVIC ;

**** 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	Name	Watch	Cabin
MOIRA GALBRAITH	12-24	UP	DANIELLE CALEB	00-12	H
HUGH MACLEAN	00-12	B	ERIN McKEE	12-18	H
TAMARA FRASER	OXY	C	MARK BELTON	12-24	11
IAN PERRY	12-24	D			
LUKE HALPIN	BIRDS	D			
THERESA VENELLO	12-18	E			
CHEN ZENG	18-24	E			
KELLY YOUNG	00-12	F			
ROBERT IZETT	06-12	G			
MATT MILLER	00-06	G			

2nd Leg Scientific Personnel: Chief Scientist: _____

Name	Watch	Cabin	Name	Watch	Cabin

**** The following 3 pages are VERY IMPORTANT as they document equipment and settings used on board ****

These pages are to be completed by the CTD Technician setting up the equipment, the Watch Leader on board, and the Chief Scientist MUST verify that all relevant sections are completed prior to leaving the vessel. *Any mid-cruise changes to be noted by watch leader in the notes.*

Data logging computer: TULLY LAPTOP

Data acquisition program: SEASAVE v 7.26.7.107

CTD deck unit make: SBE model: 11 + serial number: 0425

Primary CTD

Make: SBE model: 9+ serial number: 550

Primary temperature serial number: 4054

Primary conductivity serial number: 1766

Secondary temperature serial number: 4484

Secondary conductivity serial number: 3531

Transmissometer: WET LABS Model: C STAR s/n: 1396 DR

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model SEAPOINT Cable gain: 3x s/n: 3685 P (S) or NO pump?

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

Oxygen sensor: SBE Model: 43 s/n: 1119 (P) S or NO pump?

PAR sensor: BIOSPHERICAL Model: QSP2350 s/n: 70613 Surface PAR? Y / N

Other sensors: ALTIMETER s/n: 62355 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-rosette casts (e.g., W.E. Ricker)

Rosette Setup:
Number of bottles: 24
Manufacturer: JOS
Volume of bottles (litres): 10 L

Winches:
1. Make: _____ Model: _____ Serial #: _____ Used for: _____
2. Make: _____ Model: _____ Serial #: _____ Used for: _____
3. Make: _____ Model: _____ Serial #: _____ Used for: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Salinometer:
Make: _____ Model: _____ Serial Number: _____

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Oxygen Kit(s): Scripps Institute of Oceanography kit #2
Make: dosimat KIO_3 865-3 Model: _____ Kit Number: Thio dosimat 876-3; exchange 21
Make: KIO_3 exchange unit #19 Model: _____ Kit Number: laptop - OXY-4

Comments on performance during cruise (comments should also be reflected in the post-cruise report):

Thermosalinograph System (SBE21):
Program: SEASAVE Version: 7.23.2
Sampling interval (seconds): 30
Fluorometer sensor serial number: WS35-953P

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:

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 1 of _____

Month AUGUST **Year** 2017 **Vessel** J.P. TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
1	D140	31	21:31	BE	DRF	/	48°44.40	123°23.10	?	0	-	-	MB	☐☐	SPONGE BOB #732
2	HARO59	31	22:38	BE	ROS	US	48°36.97	123°14.68	222		1 - 14	14	MB	☑☐	
			22:41	BO			48°36.97	123°14.67		214	-			☐☐	
			22:57	EN			48°36.96	123°14.65			-			☐☐	
3	HARO59	31	23:01	BE	NET	/	48°36.93	123°14.64	221		-		MG	☐☐	0° angle.
			23:08	BO			48°36.92	123°14.61		215	-			☐☐	
			23:12	EN			48°36.93	123°14.61			-			☐☐	
4	DHaro59	31	23:17	BE	DRF	/	48°36.93	123°14.63	221	/	-	/	MG	☐☐	SPONGE BOB 745
5	ND	~~31~~ 1	00:30	BE	DRF	/	48°23.71	123°10.86	70	-	-	-	MB	☐☐	SET #3 756 751 749 OSCAR #3 492 477 489
6	JF2	1	01:25	BE	DRF	-	48°18.65	124°04.26	87	-	-	-	MB	☐☐	
7	NB	1	07:35	BE	DRF	-	48°29.80	124°43.46	255	/	/	/	H.M.	☐☐	SET #740 BOB 733 732 754 OSCAR 499 467 428
8	LB01	1	09:16	BE	ROS	U.S	48°40.44	124°59.51	32		15 - 19	5	H.M	☑☐	
			09:17	BO			48°40.43	124°59.51		23	-			☐☐	
			09:21	EN			48°40.43	124°59.50			-			☐☐	
9	LB02	1	09:50	BE	ROS	U.S	48°39.03	125°02.49	55		20 - 25	6	H.M	☑☐	
			09:51	BO			48°39.03	125°02.51		45	-			☐☐	
			09:56	EN			48°39.99	125°02.60			-			☐☐	Loops: oxy 3 Chl x2, Sal
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

Event Type:
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SET = Fish Set
LOOP = Sea Water Loop
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CTD Transmissometer and Fluorometer to be cleaned before each cast -- do not use Ammonia products

Notes: _____

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
10	LB03	1	10:29	BG	ROS	US	48° 37. 32	125° 05. 65	93		26 -	1	H M	☑ ☐	
			10:30	BO			48° 37. 33	125° 05. 69		85	-			☐ ☐	
			10:33	EN			48° 37. 35	125° 05. 73			-			☐ ☐	
11	LB04	1	10:58	BG	ROS	V.S	48° 35. 68	125° 08. 78	110		27 - 33	7	H.M	☑ ☐	
			11:01	BO			48° 35. 68	125° 08. 80		101	-			☐ ☐	
12			11:10	EN			48° 35. 65	125° 08. 91			-			☐ ☐	
12	E1	1	11:55	BE	ROS	/	48° 31. 77	125° 03. 82	115		-	~~0~~	H M	☑ ☐	
			11:57	BO			48° 31. 77	125° 03. 82		105	-			☐ ☐	
			11:59	EN			48° 31. 78	125° 03. 83			-			☐ ☐	
13	E1	1	12:06	BG	NET	/	48° 31. 78	125° 03. 86	114		/		K Y	☐ ☐	BONGO
			12:11	BO			48° 31. 76	125° 03. 85			-			☐ ☐	
			12:13	EN			48° 31. 76	125° 03. 85			-			☐ ☐	
14	LB05	1	12:58	BE	ROS	V.S	48° 34. 11	125° 12. 10	102		34 -	1	H.M	☑ ☐	
			13:00	BO			48° 34. 10	125° 12. 09		94	-			☐ ☐	
			13:03	EN			48° 34. 09	125° 12. 10			-			☐ ☐	
15	LBOL	1	13:38	BG	ROS	US	48° 32. 21	125° 15. 51	114		35 - 42	8	H.M	☑ ☐	
			13:40	BO			48° 32. 21	125° 15. 50		105	-			☐ ☐	
			13:50	EN			48° 32. 19	125° 15. 45			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

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16	C1	1	14:23	BE	ROS	U.S	48° 28. 91	125° 15. 26	150		—	∅	H.M	☐☐	
			14:26	BO			48° 29. 90	125° 15. 27		143	-			☐☐	
			14:29	EN			48° 29. 89	125° 15. 27			-			☐☐	
17	C1	1	14:35	BE	NET	—	48° 28. 84	125° 15. 29	150		—	—	KY	☐☐	BONGO
			14:39	BO			48° 28. 83	125° 15. 27		141	-			☐☐	
			14:43	EN			48° 28. 82	125° 15. 24			-			☐☐	
18	C2	1	15:37	BE	ROS	—	48° 26. 21	125° 09. 33	159		—	∅	HM	☑☐	
			15:40	BO			48° 26. 21	125° 09. 34		150	-			☐☐	
			15:42	EN			48° 26. 22	125° 09. 35			-			☐☐	
19	C2	1	15:46	BE	NET	—	48° 26. 23	125° 09. 33	159		—	—	KY	☐☐	BONGO
			15:51	BO			48° 26. 21	125° 09. 28		149	-			☐☐	
			15:54	EN			48° 26. 21	125° 09. 27			-			☐☐	
20	C3	1	16:54	BE	ROS	U.S.	48° 23. 46	125° 20. 80	122		43-	1	H.M.	☑☐	
			16:57	BO			48° 23. 45	125° 20. 86		114	-			☐☐	
			16:59	EN			48° 23. 43	125° 20. 80			-			☐☐	
21	C3	1	17:05	BE	NET	—	48° 23. 42	125° 20. 79	122		—	—	KY	☐☐	BONGO
			17:08	BO			48° 23. 43	125° 20. 80		112	-			☐☐	
			17:10	EN			48° 23. 43	125° 20. 79			-			☐☐	
			:				° .	° .			-			☐☐	

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Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
22	LB07	1	17:57	BE	ROS	U.S.	48° 29.66	125° 22.09	155		44 -	1	H.M	☑ ☐	
			17:54	BO			48° 29.66	125° 22.09		148	-			☐ ☐	
			17:57	EN			48° 28.67	125° 22.08			-			☐ ☐	
23	LB07	1	18:03	BE	NET	—	48° 28.70	125° 22.05	156		—	—	KY	☐ ☐	BONGO
			18:07	BO			48° 28.72	125° 22.05		148	-			☐ ☐	
			18:10	EN			48° 28.72	125° 22.05			-			☐ ☐	
24	BS	1	19:09	BE	ROS	U.S.	48° 34.43	125° 29.99	136		45 -	1	MB	☑ ☐	
			19:11	BO			48° 34.42	125° 30.00		128	-			☐ ☐	
			19:15	EN			48° 34.99	125° 30.00			-			☐ ☐	
25	BS	1	19:22	BE	NET	—	48° 34.32	125° 30.07	137		—	—	MG	☐ ☐	BONGO
			19:26	BO			48° 34.29	125° 30.06		127	-			☐ ☐	
			19:29	EN			48° 34.26	125° 30.06			-			☐ ☐	
26	B7	1	20:15	BE	ROS	-	48° 32.00	125° 35.40	80		—	—	MB	☑ ☐	
			20:17	BO			48° 32.00	125° 35.38		71	-			☐ ☐	
			20:19	EN			48° 31.99	125° 35.36			-			☐ ☐	
27	B7	1	20:23	BE	NET	-	48° 31.99	125° 35.30	80		-			☐ ☐	BONFO
			20:25	BO			48° 31.98	125° 35.27		70	-			☐ ☐	
			20:27	EN			48° 31.99	125° 35.26			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
28	LB08	1	21:31	BE	Ros	US	48° 25.26	125° 28.69	144		46-55	10	MB	☑ ☐	
			21:34	BO			48° 25.28	125° 28.66		134	-			☐ ☐	
			:	EN			48° 25.32	125° 28.51			-			☐ ☐	→
29	LB08	1	21:52	BE	NET	-	48° 25.34	125° 28.39	138		--		MG	☐ ☐	BONGO
			21:56	BO			48° 25.34	125° 28.38		130	-			☐ ☐	
			21:58	EN			48° 25.33	125° 28.36			-			☐ ☐	
30	LB08	1	22:06	BE	NET	—	48° 25.30	125° 28.59	138		-		MG	☐ ☐	RING
			22:11	BO			48° 25.32	125° 28.63		130	-			☐ ☐	
			22:13	EN			48° 25.32	125° 28.63			-			☐ ☐	
31	LB09	1	23:00	BE	Ros	US	48° 22.03	125° 34.73	150		56-64	9	MB	☑ ☐	
			23:03	BO			48° 22.02	125° 34.68		141	-			☐ ☐	
			23:13	EN			48° 21.96	125° 34.74			-			☐ ☐	
32	LB10	1/2	23:59	BE	Ros	US	48° 18.56	125° 41.41	152		65	1	MB	☑ ☐	
			00:01	BO			48° 18.54	125° 41.43		143	-			☐ ☐	
			00:05	EN			48° 18.52	125° 41.45			-			☐ ☐	
33	LB11	2	00:47	BE	Ros	US	48° 15.20	125° 47.72	205		66-76	11	MB	☐ ☑	
			00:50	BO			48° 15.19	125° 47.72		196	-			☐ ☐	
			01:02	EN			48° 15.18	125° 47.71			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

AFTER CAST 0028-LB01: CHANGE CTD CAST HEADER TO FOUR LINES INSTEAD OF THREE.

WENT FROM

TULLY: 2017-09
STN
DEPTH

TO →

CRUISE: 2017-09
SHIP: TULLY
STN:
DEPTH:

DID NOT SAVE SET-UP.
CHANGE GOT LOST IN "WINDOW SHUFFLE"

DAILY SCIENCE LOG

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Month	SEPTEMBER	Year	2017	Vessel	JP TULLY	Cruise ID	2017-09

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34	LB11	2	01:03	BE	NET	–	48° 15.19	125° 47.77	205		-			☐ ☐	Bongo
			01:11	BO			48° 15.19	125° 47.77		195	-			☐ ☐	
			01:15	EN			48° 15.17	125° 47.73			-			☐ ☐	
35	LB12	2	01:55	BE	ROS	US	48° 12.92	125° 51.89	501		77 - 91	15	MB	☑ ☑	
			02:04	BO			48° 12.88	125° 51.90		505	-			☐ ☐	
			02:28	EN			48° 12.85	125° 51.94			-			☐ ☐	
36	LB13	2	03:04	BE	ROS	US	48° 10.62	125° 56.19	904		-		MB	☑ ☐	
			03:22	BO			48° 10.51	125° 56.10		912	-			☐ ☐	
			03:38	EN			48° 10.50	125° 56.02			-			☐ ☐	
37	LB14	2	04:11	BE	ROS	US	48° 8.49	126° 0.02	1174		93 - 116	18	MB	☑ ☐	LOOP 2xCh, 1Sal 2x Oxy #5037
			04:31	BO			48° 8.49	126° 0.08		1184	-			☐ ☐	
			05:06	EN			48° 8.44	125° 59.95			-			☐ ☐	
38	LB15	2	06:07	BE	ROS	US	48° 4.37	126° 8.57	1548		111 -	1	MB/HM	☑ ☐	
			06:34	BO			48° 4.35	126° 8.50		1558	-			☐ ☐	
			07:00	EN			48° 4.32	126° 8.50			-			☐ ☐	
39	LB16	2	07:58	BE	MPS		48° 0.59	126° 17.06	1772	1750	-		KY	☐ ☐	MPS
			08:46	BO			48° 00.69	126° 17.05	1761	1750	-		DC	☐ ☐	
			09:21	EN			48° 0.745	126° 17.034			-		DC	☐ ☐	
			:				° .	° .			-			☐ ☐	

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Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT | **Year** 2017 | **Vessel** TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
40	LB16	2	09:46	BE	ROS	U.S	48° 00.50	126° 17.01	1778		112-	1	H.M	☑ ☐	
			10:16	BO			48° 00.55	126° 17.10		1908	-			☐ ☐	
			10:45	EN			48° 00.56	126° 17.19			-			☐ ☐	
41	LC12	2	13:14	BE	ROS	U.S	48° 15.00	126° 39.98	2515		113 -	1	H.M.	☑ ☐	
			13:48	BO			48° 14.99	126° 39.97		2005	-			☐ ☐	
			14:19	EN			48° 15.00	126° 39.98			-			☐ ☐	
42	LC12	2	14:27	BE	MPS	—	48° 15.01	126° 39.98	2517		—		KY	☐ ☐	MPS NETS
			15:26	BO			48° 15.04	126° 39.98		2000	-			☐ ☐	
			15:57	EN			48° 14.97	126° 40.03			-			☐ ☐	
43	LC12	2	16:15	BE	NET	✓	48° 14.995	126° 39.810	2525		-		HM	☐ ☐	Bongo
			16:24	BO			48° 14.96	126° 39.87		250	-			☐ ☐	
			16:29	EN			48° 14.95	126° 39.89			-			☐ ☐	
44	LC11	2	18:04	BE	ROS	U.S.	48° 18.92	126° 26.71	7		114 - 132	19	H.M/MB	☑ ☐	
			18:27	BO			48° 18.95	126° 26.71		1473	-			☐ ☐	
			19:09	EN			48° 19.01	126° 26.55			-			☐ ☐	
45	LC10	2	19:51	BE	ROS	US	48° 22.38	126° 26.26	1240		—	-	MB	☑ ☐	
			20:15	BO			48° 22.40	126° 26.06		1240	-			☐ ☐	
			20:37	EN			48° 22.45	126° 19.89			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

Event Type:
BOT = Bottle cast (no CTD)
CTD = Standalone CTD
ROS = CTD in Rosette
SET = Fish Set
LOOP = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
____ = _____

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

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
46	LC09	2	21:23	BE	ROS	US	48° 25.97	126° 13.64	598		133 - 149	17	MR	☑ ☑	
			21:33	BO			48° 25.94	126° 13.64		596	-			☐ ☐	
			21:57	EN			48° 25.88	126° 13.61			-			☐ ☐	
47	LC09 | A3	2	22:03	BE	NET	—	48° 25.90	126° 13.60	600		-			☐ ☐	bongo
			22:11	BO			48° 25.91	126° 13.63		250	—	—	MG	☐ ☐	
			22:16	EN			48° 25.91	126° 13.64			-			☐ ☐	
48	LC09 | A3	2	22:23	BE	NET	—	48° 25.930	126° 13.642	600		-			☐ ☐	
			22:30	BO			48° 25.916	126° 13.659		250	—	—	MG	☐ ☐	UVic ring net
			22:34	EN			48° 25.906	126° 13.666			-			☐ ☐	
49	A2		23:35	BE	ROS	—	48° 22.70	126° 3.81	348		—	—	MR	☑ ☐	
			23:41	BO			48° 22.69	126° 3.83		348	-			☐ ☐	
			23:47	EN			48° 22.67	126° 3.87			-			☐ ☐	
50	A2	2	23:52	BE	NET	—	48° 22.67	126° 3.88	347		—	—	MG	☐ ☐	Bongo
			23:59	BO			48° 22.68	126° 3.86		250	-			☐ ☐	
		3	00:04	EN			48° 22.69	126° 3.85			-			☐ ☐	
51	LC08 | A1	3	01:04	BE	ROS	US	48° 29.39	126° 7.03	198		150 - 162	13	MR	☑ ☐	
			01:07	BO			48° 29.39	126° 7.02		190	-			☐ ☐	
			01:20	EN			48° 29.35	126° 7.86			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** CCGS TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
52	LC08/A1	3	01:27	BE	NET	-	48° 29.37	126° 06.94	198		-	-	ME	☐☐	BONGO
			01:33	BO			48° 29.36	126° 06.92		190	-			☐☐	
			01:36	EN			48° 29.33	126° 06.90			-			☐☐	
53	LC08/A1	3	01:44	BE	DRF	-	48° 29.44	126° 06.78			-		MB	☐☐	SCT: 737 OSKAR: 443 758 797 485 473
54	LC07	3	02:36	BE	ROS	-	48° 32.92	126° 0.50	128		-	-	MB	☑☐	
			02:38	BO			48° 32.91	126° 0.51		120	-			☐☐	
			02:40	EN			48° 32.89	126° 0.50			-			☐☐	
55	LC06/B6	3	03:30	BE	ROS	US	48° 36.44	125° 54.00	93		163-170	8	MB	☑☐	
			03:32	BO			48° 36.44	125° 53.99		84	-			☐☐	
			03:40	EN			48° 36.46	125° 53.97			-			☐☐	
56	LC06/B6	3	03:49	BE	NET	-	48° 36.47	125° 53.94	93		-	-	ME	☐☐	BONGO
			03:51	BO			48° 36.49	125° 53.94		83	-			☐☐	
			03:52	EN			48° 36.49	125° 53.91			-			☐☐	
57	LC05/B5	3	04:42	BE	ROS	-	48° 39.98	125° 47.33	65		-	-	MB	☑☐	
			04:43	BO			48° 39.98	125° 47.33		55	-			☐☐	
			04:44	EN			48° 39.98	125° 47.32			-			☐☐	
58	LC05/B5	3	04:53	BE	NET		48° 40.07	125° 47.26	64		-	-	ME	☐☐	BONGO
			04:54	BO			48° 40.07	125° 47.26		55	-			☐☐	
			04:56	EN			48° 40.08	125° 47.25			-			☐☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

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: Latitude	Positional Information: Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
59	LC04	3	05:43	BE	ROS	US	48° 43. 47	125° 40. 72	167		171-181	11	MB	☑ ☐	
			05:45	BO			48° 43. 48	125° 40. 72		158	-			☐ ☐	
			05:56	EN			48° 43. 59	125° 40. 62			-			☐ ☐	
60	LC04	3	:	BE	NET	-	° .	° .	166		-	-	MG	☐ ☐	BONGO
			06:17	BO			48° 43. 59	125° 40. 62		156	-			☐ ☐	
			:	EN			° .	° .			-			☐ ☐	
61	LC04	3	:	BE	NET	-	° .	° .	166		-	-	MG	☐ ☐	LONG NET
			06:30	BO			48° 43. 59	125° 40. 62		156	-			☐ ☐	
			:	EN			° .	° .			-			☐ ☐	
62	LC03	3	07:11	BE	ROS	—	48° 46. 99	125° 34. 19	135		-	Ø	H.M	☑ ☐	
			07:14	BO			48° 47. 02	125° 34. 17		126	-			☐ ☐	
			07:16	EN			48° 47. 64	125° 34. 18			-			☐ ☐	
63	LC02	3	07:46	BE	ROS	U.S.	48° 48. 65	125° 31. 02	110		182-189	8	H.M	☑ ☐	
			07:48	BO			48° 48. 65	125° 31. 02		100	-			☐ ☐	
			07:56	EN			48° 48. 64	125° 30. 98			-			☐ ☐	
64	LC01	3	08:30	BE	ROS	US	48° 50. 41	125° 27. 71	95		190-196	7	H.M	☑ ☐	
			08:31	BO			48° 50. 42	125° 27. 70		86	-			☐ ☐	
			08:39	EN			48° 50. 45	125° 27. 67			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULEY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
65	LD 01	3	10:23	BE	ROS	U.S.	49° 00.17	125° 43.79	34		197 - 200	4	H.M	☑ ☐	
			10:24	BO			49° 00.18	125° 43.79		23	-			☐ ☐	
			10:28	EN			49° 00.19	125° 43.78			-			☐ ☐	
66	LD 02	3	10:58	BE	ROS	U.S.	48° 58.41	125° 46.98	42		201 - 205	5	H.M.	☑ ☐	
			10:59	BO			48° 58.42	125° 46.97		32	-			☐ ☐	
			11:03	EN			48° 58.42	125° 46.96			-			☐ ☐	
67	LD 02	3	11:08	BE	NET	—	48° 58.44	125° 46.96	42		—	—	KY	☐ ☐	BONGO
			11:10	BO			48° 58.44	125° 46.96		37	-			☐ ☐	
			11:14	EN			48° 58.44	125° 46.96			-			☐ ☐	
68	LD 03	3	11:39	BE	ROS	U.S.	48° 56.69	125° 50.39	45		—	Ø	H.M	☑ ☐	
			11:40	BO			48° 56.69	125° 50.39		35	-			☐ ☐	
			11:41	EN			48° 56.70	125° 50.38			-			☐ ☐	
69	LD 04	3	12:27	BE	ROS	U.S.	48° 53.20	125° 56.98	62		206 - 210	5	H.M.	☑ ☐	
			12:29	BO			48° 53.21	125° 56.97		52	-			☐ ☐	
			12:34	EN			48° 53.27	125° 56.94	60		-			☐ ☐	
70	LD 04	3	12:39	BE	NET	—	48° 53.29	125° 56.89	60		—	—	KY	☐ ☐	BONGO
			12:41	BO			48° 53.32	125° 56.88		50	-			☐ ☐	
			12:42	EN			48° 53.33	125° 56.88			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

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Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
71	LD 05	3	13:32	BE	ROS	—	48° 49.70	126° 03.67	89		—	Ø	H.M	☐☑	
			13:33	BO			48° 49.71	126° 03.66		80	-			☐☐	
			13:35	EN			48° 49.71	126° 03.66			-			☐☐	
72	LD 06	3	14:22	BE	ROS	U.S	48° 46.24	126° 10.28	136		211 - 218	8	H.M	☐☑	
			14:25	BO			48° 46.23	126° 10.23		127	-			☐☐	
			14:34	EN			48° 46.26	126° 10.21			-			☐☐	
73	LD 07	3	15:20	BE	ROS	—	48° 42.66	126° 16.74	435	502	—	Ø	H.M	☑☐	
			15:29				48° 42.68	126° 16.75		523	-			☐☐	
			15:37				48° 42.66	126° 16.77			-			☐☐	
74	LD 08	3	16:24	BE	ROS	U.S.	49° 39.12	126° 23.33	766		219 - 235	17	H.M	☐☐	
			16:38	BO			49° 39.16	126° 23.33		763	-			☐☐	
			17:08	EN			49° 39.15	126° 23.35			-			☐☐	
75	LD 09	3	17:54	BE	ROS	—	48° 35.70	126° 29.98	1043		—	Ø	H.M	☑☐	
			18:12	BO			48° 35.69	126° 30.01		1050	-			☐☐	
			18:30	EN			48° 35.66	126° 30.04			-			☐☐	
76	LD 09	3	18:34	BE	NET	—	48°35.65	126° 30.04	1046		—	—	HY	☐☐	BONGO
			18:42	BO			48°35.64	126° 30.04		250	-			☐☐	
			18:48	EN			48°35.64	126° 30.01			-			☐☐	
			:				° .	° .			-				

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Event Type:
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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
77	LD10	3	19:43	BE	ROS	–	48° 32.30	126° 36.55	1460		–	–	MB	☑ ☐	
			20:09	BO			48° 32.30	126° 36.50		1471	-			☐ ☐	
			20:35	EN			48° 32.31	126° 36.57			-			☐ ☐	
78	LD11	3	21:28	BE	ROS	US	48° 28.86	126° 42.84	1587		236-255	20	MB	☑ ☐	
			21:57	BO			48° 28.83	126° 42.90		1606	-	(21)		☐ ☐	
			22:41	EN			48° 28.84	126° 42.99			-			☐ ☐	
79	LD11	3	22:48	BE	NET	–	48° 28.798	126° 42.996	1577		–	–	HG	☐ ☐	
			23:27	BO			48° 28.685	126° 42.656		1200	-			☐ ☐	
			23:48	EN			48° 28.790	126° 43.015			-			☐ ☐	
80	LD11	3	23:57	BE	NET	–	48° 28.789	126° 42.977	1578		-		HG	☐ ☐	
		4	00:07	BO			48° 28.800	126° 42.926		250	-			☐ ☐	
			00:11	EN			48° 28.807	126° 42.939			-			☐ ☐	
81	LG09	4	04:15	BE	NET	/	48° 51.19	127° 19.39	2050		-		MG	☐ ☐	MPS
			05:14	BO			48° 51.43	127° 19.34		2005	-			☐ ☐	
			05:47	EN			45° 51.44	127° 19.38			-			☐ ☐	
82	LG09	4	06:11	BE	ROS	US	48° 51.37	127° 19.36	2047		256-261	6	MS	☑ ☐	
			06:45	BO			48° 51.45	127° 18.32		2005	-			☐ ☐	
			07:20	EN			48° 51.41	127° 19.33			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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DAILY SCIENCE LOG

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Month SEPT | **Year** 2017 | **Vessel** TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
83	LG09	4	07:27	BE	NET	—	48° 51.28	127° 19.49	2047		—	—	KY	☐☐	BONGO
			07:35	BO			48° 51.29	127° 19.60		250	-			☐☐	
			07:39	EN			48° 51.31	127° 19.57			-			☐☐	
84	LG09	4	07:52	BE	NET	—	48° 51.24	127° 19.53	2037		—	—	KY	☐☐	RING NET
			08:01	BO			48° 51.24	127° 19.60		250	-			☐☐	
			08:05	EN			48° 51.24	127° 19.67			-			☐☐	
85	LG08	4	09:01	BE	ROS	—	48° 55.31	127° 13.36	2055		—	Ø	H.M	☑☑	
			09:32	BO			48° 55.30	127° 13.25		2005	-			☐☐	
			10:03	EN			48° 55.28	127° 13.32			-			☐☐	
86	LG07	4	10:50	BE	ROS	—	48° 59.39	127° 07.28	1747		—	Ø	H.M	☑☑	
			11:21	BO			48° 59.39	127° 07.39		1759	-			☐☐	
			11:49	EN			48° 59.38	127° 07.39			-			☐☐	
87	LG07	4	11:54	BE	NET	—	48° 59.39	127° 07.38	1747		—	—		☐☐	BONGO
			12:03	BO			48° 59.42	127° 07.42		256	-			☐☐	
			12:07	EN			48° 59.41	127° 07.40			-			☐☐	
88	LG06	4	12:57	BE	ROS	U.S.	48° 03.45	127° 01.15	942		262-279	18	H.M	☑☑	
			13:14	BO			48° 03.48	127° 01.24	962	974	-			☐☐	
			13:45	EN			48° 03.49	127° 01.16			-			☐☐	
			:				° .	° .			-			☐☐	

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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

Time Code:
BE = Beginning Time of Cast
BO = Bottom Time of Cast
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RE = Recover Mooring Time

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

Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
89	LG05	4	14:32	BE	ROS	—	49° 07.38	126° 55.30	272		—	Ø	H M	☑ ☐	* →
			14:37	BO			49° 07.40	126° 55.24		265	-			☐ ☐	
			14:42	EN			49° 07.40	126° 55.21			-			☐ ☐	
90	LG04	4	15:26	BE	ROS	U.S.	49° 11.27	126° 49.39			280-288	9	H.M	☐ ☑	
			15:28	BO			49° 11.27	126° 49.37		136	-			☐ ☐	
			15:38	EN			49° 11.33	126° 49.27			-			☐ ☐	
91	LG04	4	~~15~~ 08:45	BE	NET		49° 11.44	126° 49.24	143		-		KY	☐ ☐	bongo
			~~15~~ 08:48	BO			49° 11.44	126° 49.24		133	-			☐ ☐	
			~~15~~ 08:57	EN			49° 11.41	126° 49.24			-			☐ ☐	
92	LG03	4	16:30	BE	ROS	—	49° 15.05	126° 43.62	123		—	Ø	H.M	☐ ☑	
			16:32	BO			49° 15.07	126° 43.65		110	-			☐ ☐	
			16:34	EN			49° 15.08	126° 43.66			-			☐ ☐	
93	LG02	4	17:15	BE	ROS	U.S.	49° 18.69	126° 38.11	100		289-296	8	H.M	☐ ☑	
			17:17	BO			49° 18.69	126° 38.11		92	-			☐ ☐	
			17:24	EN			49° 18.69	126° 38.11			-			☐ ☐	
94	LG02	4	17:28	BE	NET	—	49° 18.69	126° 38.11	100		-		KY	☐ ☐	BONGO
			17:31	BO			49° 18.70	126° 38.11		90	-			☐ ☐	
			17:32	EN			49° 18.70	126° 38.11			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

REDRESSED HELICOIL TERMINATION - NEW RUBBER & TAPE

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
95	LG02	4	17:41	BO	NET	–	49° 18.71	126° 38.10	100		-		KY	☐☐	RING
			17:44	BO			49° 18.72	126° 38.09		90	-			☐☐	
			17:46	EN			49° 18.73	126° 38.09			-			☐☐	
96	LG01	4	18:11	BO	ROS	US	49° 20.55	126° 35.12	59		297-301	5	H.M.	☑☐	
			18:12	BO			49° 20.56	126° 35.12		42	-			☐☐	
			18:17	EN			49° 20.59	126° 35.11			-			☐☐	
97	LJ01	4	21:58	BE	ROS	–	49° 44.24	127° 2.49	61		–	–	MB	☑☐	
			21:59	BO			49° 44.24	127° 2.49		52	-			☐☐	
			22:00	EN			49° 44.24	127° 2.48			-			☐☐	
98	LJ02	4	22:25	BE	ROS	–	49° 42.58	127° 5.27	83		302	1	MB	☑☐	
			22:27	BO			49° 42.58	127° 5.28		74	-			☐☐	
			22:29	EN			49° 42.59	127° 5.28			-			☐☐	
99	LJ02	4	22:33	BE	NET	–	49° 42.588	127° 05.276	82		–	–	MB	☐☐	BNFO
			22:36	BO			49° 42.591	127° 05.277		75	-			☐☐	
			22:37	EN			49° 42.595	127° 05.276			-			☐☐	
100	LJ03	4	23:22	BE	ROS		49° 39.07	127° 11.03	124		–	–	MB	☑☐	
			23:24	BO			49° 39.08	127° 11.01		115	-			☐☐	
			23:27	EN			49° 39.10	127° 10.99			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
101	LJ04	5	00:10	BE	NET	-	49°35.500	127°16.769	158		-	-	MB	☐☐	Bongo
			00:15	BO			49°35.525	127°16.690		150	-			☐☐	
			00:18	EN			49°35.549	127°16.629			-			☐☐	
102	LJ04	5	00:24	BE	ROS	-	49°35.60	127°16.48	157		-	-	MB	☑☐	
			00:27	BO			49°35.58	127°16.48		150	-			☐☐	
			00:28	EN			49°35.59	127°16.48			-			☐☐	
103	LJ05	5	01:17	BE	ROS	-	49°31.67	127°22.49	1058		—	—	MB	☑☐	
			01:35	BO			49°31.63	127°22.58		1064	-			☐☐	
			01:51	EN			49°31.62	127°22.59			-			☐☐	
104	LJ06	5	02:37	BE	ROS	US	49°27.93	127°28.59	1011		303	1	MB	☑☐	
			02:54	BO			49°28.01	127°28.62		1000	-			☐☐	
			03:12	EN			49°28.06	127°28.69			-			☐☐	
105	LJ06	5	03:17	BE	NET	-	49°28.084	127°28.686	975		-	-	MB	☐☐	bongo
			03:25	BO			49°28.126	127°28.717		250	-			☐☐	
			03:29	EN			49°28.160	127°28.753			-			☐☐	
106	LJ07	5	04:18	BE	ROS	-	49°24.08	127°34.79	1797		-	-	MB	☑☐	
			04:50	BO			49°24.26	127°34.85		1806	-			☐☐	
			05:18	EN			49°24.41	127°34.90			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
107	LJ08	5	06:12	BE	ROS	-	49° 20 . 29	127° 40 . 83	1712		—	Ø	MS HM	☑ ☐	
			06:35	BO			49° 20 . 29	127° 40 . 81		1707	-			☐ ☐	
			07:07	EN			49° 20 . 32	127° 40 . 78			-			☐ ☐	
108	LJ09	5	07:59	BE	ROS	US	49° 16 . 10	127° 47 . 25	2483		304-	1	H.M	☑ ☐	
			08:34	BO			49° 16 . 11	127° 47 . 13		2030	-			☐ ☐	
			09:09	EN			49° 16 . 11	127° 47 . 04			-			☐ ☐	
109	LJ09	5	09:13	BE	Net	-	49° 16 . 11	127° 47 . 05	2483		—	-	KY	☐ ☐	Bongo
			09:20	BO			49° 16 . 09	127° 47 . 06		250	-			☐ ☐	
			09:24	EN			49° 16 . 09	127° 47 . 07			-			☐ ☐	
110	LBP 8	5	13:38	BE	ROS	U.S.	49° 48 . 60	128° 16 . 80	2064		305-310	6	H.M	☐ ☑	
			14:16	BO			49° 48 . 58	128° 16 . 86		2005	-			☐ ☐	
			14:56	EN			49° 48 . 62	128° 16 . 86			-			☐ ☐	
111	LBP 8	5	15:00	BE	NET	—	49° 48 . 61	128° 16 . 89	2064		—	—	KY	☐ ☐	BONGO
			15:08	BO			49° 48 . 60	128° 16 . 97		250	-			☐ ☐	
			15:13	EN			49° 48 . 62	128° 16 . 97			-			☐ ☐	
112	LBP 8	5	15:25	BE	NET	—	49° 48 . 58	128° 16 . 78	2064		-		KY	☐ ☐	RING NET
			15:33	BO			49° 48 . 58	128° 16 . 89		250	-			☐ ☐	
			15:37	EN			49° 48 . 58	128° 16 . 93			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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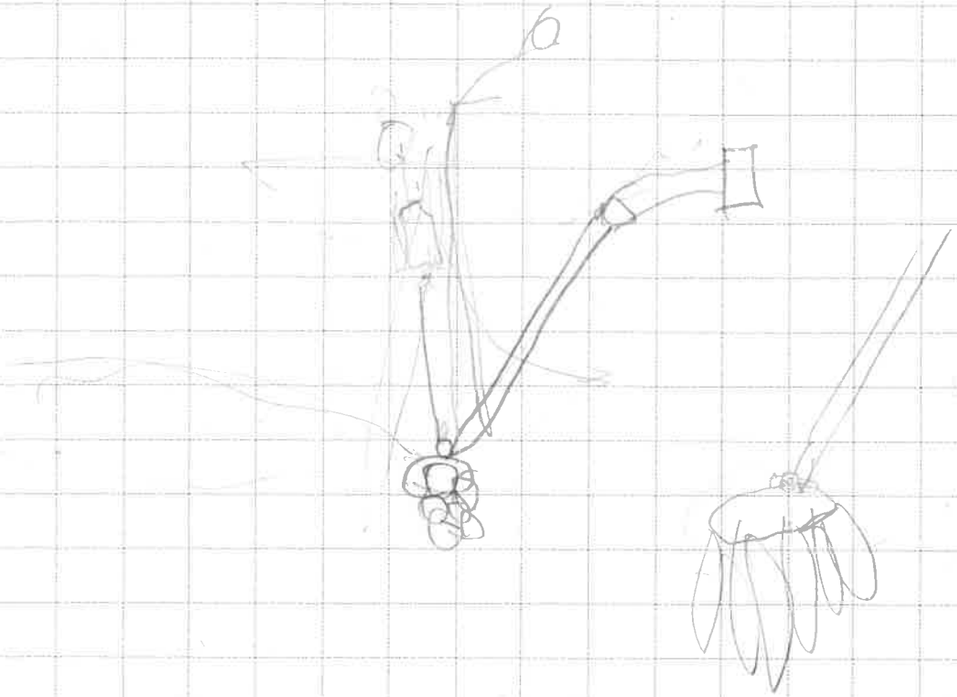
Notes: _____

This page is for any notes or observations



DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month September **Year** 2007 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
113	LBP8	5	16:00	BE	NET		49° 48.588	128° 16.882	2064		-		KY	☐☐	MPS
			16:56	BO			49° 48.657	128° 16.780		2005	-			☐☐	
			17:33	EN			49° 48.636	128° 16.857			-			☐☐	
114	LBP7	5	18:29	BE	ROS	U.S	49° 52.44	128° 11.13	2197		311-331	21	H.M/M.B	☑☐	
			19:03	BO			49° 52.46	128° 11.06		2005	-			☐☐	
			19:53	EN			49° 52.44	128° 10.81			-			☐☐	
115	LBP7	5	19:59	BE	NET	/	49° 52.44	128° 10.77	2199		-		MG	☐☐	BONGO
			20:07	BO			49° 52.47	128° 10.79		250	-			☐☐	
			20:11	EN			49° 52.45	128° 10.81			-			☐☐	
116	LBP6	5	21:02	BE	ROS	-	49° 56.20	128° 5.47	750-900		-	-	MB	☑☐	P:902 S:894 D:892 A:10
			21:18	BO			49° 56.12	128° 5.40		902	-			☐☐	
			21:34	EN			49° 56.10	128° 5.37			-			☐☐	
117	LBP5	5	22:16	BE	ROS	US	49° 59.96	128° 0.01	1274		332-350	19	MB	☐☐	
			22:37	BO			49° 59.92	128° 0.12		1283	-			☐☐	
			23:14	EN			49° 59.89	128° 0.08			-			☐☐	
118	LBP5	5	23:17	BE	NET	-	49° 59.877	128° 0.093	1277		-		MG	☐☐	BONGO
			23:25	BO			49° 59.871	128° 0.123		250	-			☐☐	
			23:30	EN			49° 59.882	128° 0.193			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

Produced by the Water Properties Group, IOS

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Version: 6 December 2016

Depth variable on station

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER | **Year** 2017 | **Vessel** TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
119	LBP 4	5	23:56	BE	ROS	-	50° 1.37	127°58.05	1018		—	-	MB	☑☐	
		6	00:18	BO			50°01.37	127°58.09		1078	-			☐☐	
			00:37	EN			50° 1.36	127°58.12			-			☐☐	
120	LBP4→3	6	01:00	BE	MOR	-	50° 02.97	127°55.97	299		-		MG	☐☐	LIFT
			01:07	SRF			50°03.05	127°55.94	255		-			☐☐	IN WATER DRIFTING
			01:11	RR			50°02.99	127°56.03	261	261	-			☐☐	RELEASE
121	LBP3	6	01:25	BE	ROS	US	50°03.22	127°55.25	163		351-361	11	MB	☑☐	
			01:27	BO			50°03.22	127°55.26		155	-			☐☐	
			01:39	EN			50°03.15	127°55.341			-			☐☐	
122	LBP3	6	01:47	BE	NET	-	50°03.169	127°55.315	168		—	-	MG	☐☐	bongo
			01:52	BO			50°03.160	127°55.346		155	-			☐☐	
			01:54	EN			50°03.136	127°55.368			-			☐☐	
123	LBP3	6	02:01	BE	NET	-	50°03.137	127°55.490	180		—	—	MG	☐☐	ring
			02:06	BO			50°03.114	127°55.533		155	-			☐☐	
			02:09	EN			50°03.097	127°55.539			-			☐☐	
124	LBP2	6	02:31	BE	ROS	-	50°03.96	127°54.23	96		—	1	MB	☑☐	TEST FIRE
			02:33	BO			50°03.95	127°54.24		86	-			☐☐	13 @ SURFACE
			02:35	EN			50°03.95	127°54.26			-			☐☐	Lanyard top loop.
			:				° .	° .			-			☐☐	On carp.

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DRF - MOORING AT SURFACE

Notes: RR RELEASE MOORING TIME

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

Stop @ ~350 m payout to S/L. Wire.

Bottle B still leaking after shortening loop. Changed cap on B from spare Rosette.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** **Cruise ID**

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
125	LBP2	6	02:41	BE	NET	—	50°03.90	127°54.26	96		-		MS	☐☐	Bongo
			02:43	BO			50°03.89	127°54.26		85	-			☐☐	
			02:45	EN			50°03.88	127°54.25			-			☐☐	
126	LBP1	6	03:10	BE	ROS	-	50°04.81	127°52.83	50		—	-	MS	☑☐	
			03:11	BO			50°04.81	127°52.83		41	-			☐☐	
			03:12	EN			50°04.79	127°52.85			-			☐☐	
127	SCT1	6	06:58	DE	DRF	-	50°24.953	128°32.093	973		-	-	H.M.	☐☐	SCT: 734 OSMAR: 494
128	CPE2	6	09:05	BE	ROS	—	50°43.01	128°39.80	127		-	∅	H.M.	☐☑	
			09:07	BO			50°43.03	128°39.78		117	-			☐☐	
			09:10	EN			50°43.02	128°39.80			-			☐☐	
129	CPE2	6	09:16	BE	NET	—	50°43.00	128°39.84	126		-	—	KY	☐☐	BONGO
			09:20	BO			50°43.01	128°39.84		116	-			☐☐	
			09:22	EN			50°43.01	128°39.83			-			☐☐	
130	CPE2	6	09:25	DE	DRF	—	50°43.03	128°39.85			-	—	H.M.	☐☐	S.B= 742 OSMAR: 472
131	LQ03	6	11:10	BE	ROS	—	50°39.65	129°01.93	1244	1260	—	∅	H.M.	☐☑	
			11:32	BO			50°39.65	129°02.07		1300	-			☐☐	
			11:54	EN			50°39.68	129°02.08			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
132	LQ03	6	11:59	BE	NET	—	50° 39.67	129° 02.09	1297		—	—	KY	☐☐	BONGO
			12:07	BO			50° 39.69	129° 02.03		250	-			☐☐	
			12:11	EN			50° 39.67	129° 02.08			-			☐☐	
133	J1 22	6	13:27	BE	ROS	—	50° 39.83	129° 17.43	1526		—	Ø	H.M	☐☑	
			13:51	BO			50° 39.82	129° 17.44		1511	-			☐☐	
			14:15	EN			50° 39.86	129° 17.51			-			☐☐	
134	J1 22	6	14:20	BE	NET	—	50° 39.81	129° 17.53	1520		—	—	KY	☐☐	BONGO
			14:28	BO			50° 39.81	129° 17.61		250	-			☐☐	
			14:32	EN			50° 39.83	129° 17.67			-			☐☐	
135	CS00	6	17:32	BE	MPS(NET)	—	50° 27.63	129° 55.15	2167		—	Ø	KY	☐☐	MPS
			18:31	BO			50° 27.681	129° 55.185		2005	-			☐☐	
			19:05	EN			50° 27.69	129° 55.30			-			☐☐	
136	CS00	6	19:25	BE	ROS	US.	50° 27.76	129° 55.51	2170		362 382	21	MB	☐☑	
			20:07	BO			50° 28.04	129° 55.56		2186	-			☐☐	
			20:56	EN			50° 28.46	129° 55.58			-			☐☐	
137	CS00	6	21:04	BE	NET	—	50° 28.33	129° 55.35	2170		-		MG	☐☐	BONGO
			21:13	BO			50° 28.41	129° 55.32		250	-			☐☐	
			21:17	EN			50° 28.45	129° 55.25			-			☐☐	
			:				° .	° .			-			☐☐	

Event Type:
BOT = Bottle cast (no CTD)
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US = Up / Stop (default)
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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

WENT TO 10 OFF THE BOTTOM NOT 200 5M

BOTTLE B LOOK AFTER (GOOD) AFTER CHANGING TOP CAP

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER | **Year** 2017 | **Vessel** JP TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
138	CS01	6	22:38	BE	ROS	-	50°34.92	129°41.62	2103		-	-	MB	☑☐	
			23:18	BO			50°34.92	129°41.53		2005	-			☐☐	
			23:49	EN			50°34.93	129°41.45			-			☐☐	
139	CS01	6	23:54	BE	NET	-	50°34.93	129°41.43	2100		-	-	MG	☐☐	BONGO
		7	00:02	BO			50°34.90	129°41.44		250	-			☐☐	
			00:07	EN			50°34.89	129°41.44			-			☐☐	
140	CS02	7	01:27	BE	ROS	US	50°41.31	129°27.98	1893		383-403	21	MB	☑☐	
			01:59	BO			50°41.27	129°28.00		1905	-			☐☐	
			02:46	EN			50°41.33	129°27.99			-			☐☐	
141	CS02	7	02:51	BE	NET	-	50°41.317	129°28.021	1893		-	-	MG	☐☐	BONGO
			02:59	BO			50°41.289	129°28.058		250	-			☐☐	
			03:04	EN			50°41.275	129°28.075			-			☐☐	
142	CS02	7	03:13	BE	NET	-	50°41.327	129°28.020	1895		-		MG	☐☐	BONGO
			03:23	BO			50°41.270	129°28.060		250	-	-		☐☐	
			03:28	EN			50°41.265	129°28.065			-			☐☐	
143	CS03	7	04:24	BE	ROS	-	50°45.62	129°20.03	225		-	-	MB	☐☐	
			04:28	BO			50°45.66	129°20.03		228	-			☐☐	
			04:32	EN			50°45.67	129°20.03			-			☐☐	
			:				° .	° .			-			☐☐	

Event Type:
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Notes: _____

STOPPED TO STRAIGHTEN WIRE ON WAY OUT ~1150

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month Sep | **Year** 2017 | **Vessel** Tully | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
144	CS03	7	04:38	BE	NET	–	50°45.65	129°20.01	235		-		MG	☐☐	Bongo
			04:47	BO			50°45.64	129°20.00		225	-			☐☐	
			04:51	EN			50°45.62	129°19.99			-			☐☐	
145	CS04	7	05:40	BE	ROS		50°49.29	129°12.97	95		404-410	7	MB	☑☐	
			05:42	BO			50°49.33	129°12.95		87	-			☐☐	
			05:50	EN			50°49.43	129°12.90			-			☐☐	
146	CS04	7	06:02	BE	NET	/	50°49.287	129°12.954	97		—	—	MG	☐☐	Bongo
			06:06	BO			50°49.393	129°12.916		88	-			☐☐	
			06:08	EN			50°49.477	129°12.889			-			☐☐	
147	NEW ODAS	7	09:41	BE	ROS	V.S.	50°56.38	129°58.79			411 -	1	M.M	☑☐	
			10:12	BO			50°56.49	129°58.74			-			☐☐	
			10:44	EN			50°56.49	129°58.90			-			☐☐	
148	NEW ODAS	7	10:49	BE	NET	—	50°56.48	129°58.88	210		—	—	KY	☐☐	BONGO
			10:55	BO			50°56.46	129°58.97		230	-			☐☐	
			11:00	EN			50°56.43	129°58.84			-			☐☐	
149	CS3B	7	13:33	BE	ROS	—	50°59.99	129°26.98	217		—	Ø	M.M	☐☑	CALLED CS05
			13:37	BO			51°00.01	129°27.03		210	-			☐☐	IN CTD FILES
			13:41	EN			51°00.02	129°27.07			-			☐☐	WRONG NAME
			:				° .	° .			-			☐☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
150	CS3B	7	13:46	BE	NET	—	51° 00.04	129° 27.08	218		—	—	KY	☐☐	BONGO
			13:53	BO			51° 00.07	129° 27.06		208	-			☐☐	
			13:56	EN			51° 00.07	129° 27.06			-			☐☐	
151	CS 05	7	16:06	BE	ROS	—	50° 56.00	128° 59.96	63		—	Ø	H.M	☐☑	
			16:07	BO			50° 56.01	128° 59.97		53	-			☐☐	
			16:08	EN			50° 56.02	128° 59.96			-			☐☐	
152	CS 05	7	16:14	BE	NET	—	50° 56.01	128° 59.97	61		—		KY	☐☐	BONGO
			16:15	BO			50° 56.00	128° 59.97		52	-			☐☐	
			16:16	EN			50° 56.00	128° 59.97			-			☐☐	
153	CS 1B	7	17:49	BE	ROS	—	50° 52.97	129° 39.75	71		-	Ø	H.M	☑☐	
			17:50	BO			50° 52.99	128° 39.73		61	-			☐☐	
			17:51	EN			50° 52.99	128° 39.71			-			☐☐	
154	CS 1B	7	17:55	BE	NET	—	50° 53.00	128° 39.68	72		—		KY	☐☐	BONGO
			17:58	BO			50° 53.02	128° 39.65		66	-			☐☐	
			18:01	EN			50° 53.03	128° 39.59			-			☐☐	
155	CS 1B	7	18:02	DE	DRF	—	50° 53.03	128° 39.58	72	0	*3KI CURRENT	—	H.M	☐☐	S.B: 741 OSKAR: 440
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
156	CS06	7	19:30	BE	ROS	US	50° 59.91	128° 51.70	65		412-418	7	MG	☑ ☐	
			19:31	BO			50° 59.92	128° 51.66		55	-			☐ ☐	
			19:37	EN			50° 59.94	128° 51.66			-			☐ ☐	
157	CS06	7	19:45	BE	NET	-	50° 59.884	128° 51.551	66		-	-	MG	☐ ☐	bongo
			19:46	BO			50° 59.888	128° 51.568		55	-			☐ ☐	
			19:47	EN			50° 59.896	128° 51.564			-			☐ ☐	
158	CS07	7	20:44	BE	ROS	-	51° 4.47	128° 44.11	66		-	-	MB	☑ ☐	
			20:45	BO			51° 4.45	128° 44.12		56	-			☐ ☐	
			20:49	EN			51° 4.43	128° 44.11			-			☐ ☐	
159	CS07	7	20:54	BE	NET	-	51° 04.40	128° 44.01	66		-	-	MG	☐ ☐	
			20:55	BO			51° 04.41	128° 44.01		55	-			☐ ☐	
			20:57	EN			51° 04.41	128° 44.02			-			☐ ☐	
160	CS07	7	21:02	DE	DRF	-	51° 04.54	128° 44.02	66		-	-	MB	☐ ☐	SCT 738 OSKAR 454 EXT. BATTERY
161	CS08	7	21:56	BE	ROS	-	51° 08.49	128° 36.02	145		-	-	MB	☑ ☐	
			21:58	BO			51° 08.48	128° 36.01		135	-			☐ ☐	
			22:01	EN			51° 08.49	128° 35.96			-			☐ ☐	
162	CS08	7	22:06	BE	NET		51° 08.463	128° 35.973	145		-	-	MG	☐ ☐	bongo
			22:10	BO			51° 08.455	128° 36.002		135	-			☐ ☐	
			22:12	EN			51° 08.458	128° 36.054			-			☐ ☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month September **Year** 2017 **Vessel** JP Tully **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
163	CS09	7	23:08	BE	Ros	US	51° 12.52	128° 28.12	195		419-430	12	MB	☑ ☐	
			23:11	BO			51° 12.50	128° 28.13		187	-			☐ ☐	
			23:24	EN			51° 12.47	128° 28.18			-			☐ ☐	
164	CS09	7	23:28	BE	NET		51° 12.457	128° 28.133	195		-		MG	☐ ☐	bongo
			23:34	BO			51° 12.471	128° 28.377		185	-			☐ ☐	
			23:37	EN			51° 12.412	128° 28.461			-			☐ ☐	
165	CS09	7	23:47	BE	NET		51° 12.282	128° 28.566	196		-		MG	☐ ☐	RING
			23:54	BO			51° 12.288	128° 28.471		185	-			☐ ☐	
			23:57	NE			51° 12.296	128° 28.390			-			☐ ☐	
166	CS10	8	00:53	BE	Ros	-	51° 16.48	128° 20.02	80		-	-	MB	☑ ☐	
			00:54	BO			51° 16.49	128° 20.02		70	-			☐ ☐	
			00:56	EN			51° 16.49	128° 20.02			-			☐ ☐	
167	CS10	8	01:01	BE	NET		51° 16.456	128° 20.054	80		-		MG	☐ ☐	bongo
			:	BO			° .	° .		70	-			☐ ☐	did not record :)
			01:07	EN			51° 16.486	128° 20.093			-			☐ ☐	
168	SS4	8	04:00	BE	Ros	-	51° 21.03	128° 0.08	238		-	-	MB	☑ ☐	
			04:04	BO			51° 21.02	128° 0.07		228	-			☐ ☐	
			04:08	EN			51° 21.04	128° 0.05			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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WaterProperties.ca
Version: 6 December 2016

TROUBLE ACQUIRING INSTRUMENT WHEN INITIALLY TURNED ON, TRIED AGAIN, SUCCESSFUL

WASHED TUBING BETWEEN CONDUCTIVITY & FLUORESCENCE INSTRUMENTS TO REMOVE GROWTH, FLUOROMETER SEEMED TO HAVE A POSITIVE OFFSET RELATIVE TO NORMAL PERFORMANCE

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
169	SS4	8	04:17	BE	NET	-	51 °21.051	128 °59.961	237		-	-	MG	☐☐	BONGO
			04:26	BO			51 °21.024	128 °59.910		228	-			☐☐	
			04:30	EN			51 °21.012	128 °59.849			-			☐☐	
170	SS4	8	04:36	BE	DRF	-	51 °20.892	129 °00.126	240	—	—	—	MB	☐☑	SET: 744 ASHAR: 446 EXT BATTERY
171	SS3	8	06:23	BE	ROS	US	51 °15.07	129 °21.19	290		431 - 433	3	MB	☑☐	1 bottle fired @ b-10 but not needed
			06:29	BO			51 °15.07	129 °21.20		281	-			☐☐	
			06:38	EN			51 °15.10	129 °21.12			-			☐☐	
172	SS3	8	06:47	BE	NET	-	51 °15.086	129 °21.083	289		-	-	MC	☐☐	BONGO
			06:53	BO			51 °15.134	129 °21.030		250	-			☐☐	
			06:57	EN			51 °15.163	129 °20.983			-			☐☐	
173	SS2	8	08:43	BE	ROS	—	51 °12.97	129 °43.10	591		—	Ø	HM	☑☐	
			08:54	BO			51 °12.98	129 °43.03		586	-			☐☐	
			09:04	EN			51 °12.93	129 °43.05			-			☐☐	
174	SS2	8	09:10	BE	NET	—	51 °12.96	129 °43.07	511		—	—	KY	☐☐	BONGO
			09:17	BO			51 °12.91	129 °43.05		250	-			☐☐	
			09:21	EN			51 °12.86	129 °43.06			-			☐☐	
175	SS1	8	10:46	BE	ROS	U.S.	51 °11.97	130 °00.00	490		434-436	3	HM	☐☑	
			10:54	BO			51 °11.98	130 °00.00		487	-			☐☐	
			11:04	EN			51 °11.96	129 °59.95			-			☐☐	

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Notes: _____

MAGNET ON THE CLIFFAR WAS NOT ON DRIFTER, FOUND IN THE BOX

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPT | **Year** 2017 | **Vessel** TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
176	SS1	8	11:07	BE	MET	—	51° 11.95	129° 59.93	489		—	—	KY	☐☐	BONGO
			11:14	BO			51° 11.96	129° 59.95		250	-			☐☐	
			11:18	EN			51° 11.97	129° 59.95			-			☐☐	
177	NL 01	8	15:14	BE	ROS	U.S.	51° 22.31	130° 50.67	2193		437 - 442	6	HM	☐☐	
			15:52	BO			51° 22.27	130° 50.71		2005	-			☐☐	
			16:31	EN			51° 22.19	130° 50.61			-			☐☐	
178	NL 01	8	16:36	BE	MET	—	51° 22.24	130° 50.71	2193		—	—	KY	☐☐	BONGO
			16:45	BO			51° 22.26	130° 50.73		250	-			☐☐	
			16:49	EN			51° 22.26	130° 50.73			-			☐☐	
179	NL 01	8	16:59	BE	NET	—	51° 22.27	130° 50.76	2193		—	—	KY	☐☐	DEEP BONGO
			17:38	BO			51° 22.35	130° 51.02		1200	-			☐☐	
			17:57	EN			51° 22.40	130° 51.14			-			☐☐	
180	NL 02	8	20:45	BE	ROS	-	51° 33.54	130° 16.39	856		-	-	MB	☑☐	
			20:59	BO			51° 33.64	130° 16.37		860	-			☐☐	
			21:13	EN			51° 33.70	130° 16.25			-			☐☐	
181	NL02	8	21:20	BE	NET		51° 33.622	130° 16.322	850		-		MG	☐☐	BONGO
			21:28	BO			51° 33.623	130° 16.318		250	-			☐☐	
			21:32	EN			51° 33.604	130° 16.312			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

Northern Lights during transit!

WASHED THROUGH 0.1% BLEACH SOLUTION ON SECONDARY PUMP. THEN FLUSHED WITH WARM WATER. TOOK OFF AND CLEANED TUBING LEADING TO AND FROM THE FLUOROMETER, OFFSET LOOKS CLOSER TO EXPECTED NUMS DURING CAST.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month September **Year** 2017 **Vessel** JP Tully **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
182	NL03	9	00:03	BE	ROS	US	51° 47.97	129° 40.02	293		443-445	3	MB	☑ ☐	
			00:08	BO			51° 47.93	129° 40.00		287	-			☐ ☐	
			00:16	EN			51° 47.87	129° 39.91			-			☐ ☐	
183	NL03	9	00:22	BE	NET	/	51° 47.839	129° 39.867	291		—	—	MG	☐ ☐	Bongo
			00:30	BO			51° 47.76	129° 39.72		250	-			☐ ☐	
			00:34	EN			51° 47.75	129° 39.69			-			☐ ☐	
184	NL04	9	02:36	BE	ROS	-	51° 55.98	129° 11.88	166		—	-	MB	☑ ☐	
			02:51	BO			51° 55.95	129° 11.89		157	-			☐ ☐	
			02:42	EN			51° 55.92	129° 11.89			-			☐ ☐	
185	NL04	9	02:48	BE	NET	-	51° 55.907	129° 11.975	166		—	-	MG	☐ ☐	Bongo
			02:54	BO			51° 55.857	129° 12.004		155	-			☐ ☐	
			02:56	EN			51° 55.833	129° 12.022			-			☐ ☐	
186	NL05	9	04:52	BE	ROS	US	51° 40.53	128° 54.44	43		446-448	3	MB	☑ ☐	
			04:52	BO			51° 40.53	128° 54.43		32	-			☐ ☐	
			04:56	EN			51° 40.54	128° 54.46			-			☐ ☐	
187	NL05	9	05:01	BE	NET		51° 40.562	128° 54.542	43		—	—	MG	☐ ☐	Bongo
			05:03	BO			51° 40.563	128° 54.507		34	-			☐ ☐	
			05:04	EN			51° 40.563	128° 54.522			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 6 December 2016

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
188	SS5	9	07:12	BE	RoS	US	51° 28.00	128° 30.08	199		449 - 457	8	HM	☑ ☐	
			07:16	BO			51° 28.01	128° 30.04		192	-			☐ ☐	
			07:22	EN			51° 28.10	128° 30.04			-			☐ ☐	
189	SS5	9	07:27	BE	NET	-	51° 28.00	128° 30.01			-	-	KY	☐ ☐	BONGO
			07:33	BO			51° 27.98	128° 30.00			-			☐ ☐	
			07:36	EN			51° 27.99	128° 29.99			-			☐ ☐	
190	SS6	9	09:32	BE	ROS	—	51° 19.98	127° 59.89	178		—	∅	HM	☐ ☑	
			09:35	BO			51° 19.94	127° 59.89		168	-			☐ ☐	
			09:38	EN			51° 19.94	127° 59.88			-			☐ ☐	
191	SS6	9	09:46	BE	NET	—	51° 20.05	127° 59.91	178		—	—	KY	☐ ☐	BONGO
			09:50	BO			51° 19.99	127° 59.77		166	-			☐ ☐	
			09:53	EN			51° 19.95	127° 59.77			-			☐ ☐	
192	SS7	9	10:54	BE	ROS	—	51° 24.62	127° 47.64	124		—	∅	HM	☐ ☑	
			10:56	BO			51° 24.61	127° 47.64		114	-			☐ ☐	
			10:58	EN			51° 24.62	127° 47.65			-			☐ ☐	
193	SS7	9	11:02	BE	NET	—	51° 24.61	127° 47.58			—	—	KY	☐ ☐	BONGO
			11:06	BO			51° 24.58	127° 47.55			-			☐ ☐	
			11:08	EN			51° 24.57	127° 47.52			-			☐ ☐	
			:				° .	° .			-			☐ ☐	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER | **Year** 2017 | **Vessel** TULLY | **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
194	CPE1	9	14:12	BG	ROS	—	51° 00.03	127° 50.03	142		—	Ø	H.M	☐☑	
			14:14	BO			51° 00.02	127° 50.08		132	-			☐☐	
			14:17	EN			51° 00.03	127° 50.16			-			☐☐	
195	CPE1	9	14:24	BG	NET	—	50° 59.96	127° 50.04	143		—	~	KY	☐☐	BONGO
			14:29	BO			50° 59.97	127° 50.12		133	-			☐☐	
			14:31	EN			50° 59.99	127° 50.14			-			☐☐	
196	CPE1	9	14:36	DE	DRF	—	51° 00.00	127° 50.12	147	/	—	~	H.M	☐☐	(10) DRIFTERS →
197	14	10	05:33	BG	ROS	OS	49° 52.95	124° 59.66	312		452 - 454	3	MS	☐☐	
			05:38	BO			49° 52.96	124° 59.68		305	-			☐☐	
			05:46	EN			49° 52.98	124° 59.69			-			☐☐	
198	14	10	05:51	BG	NET	-	49° 52.994	124° 59.702	312		-	-	MG	☐☐	bongo
			06:00	BO			49° 53.089	124° 59.673		302	-			☐☐	
			06:05	EN			49° 53.168	124° 59.652			-			☐☐	
199	14	10	06:15	DE	DRF	-	49° 52.643	124° 58.703			-		MS	☐☐	OSCAR: 498 414 SCM: 730 748
200	11	10	07:36	BG	ROS	U.S.	49° 42.33	124° 43.44	291		455 - 468	14	H.M.	☑☐	
			07:41	BO			49° 42.33	124° 43.48		287	-			☐☐	
			07:57	EN			49° 42.34	124° 43.57			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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Notes: _____

DRIFTERS @ CPE1

S.B – 731, 735, 739, 743, 746

OSMAR – 422, 500, 426, 486, 493

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
201	11	10	08:02	BE	NET	—	49° 42.37	124° 43.43	297		—	—	KY	☐☐	BONGO
			08:12	BO			49° 42.40	124° 43.31		284	-			☐☐	
			08:16	EM			49° 42.41	124° 43.31			-			☐☐	
202	11	10	08:22	DE	DRF	—	49° 42.42	124° 43.31	298		—	—	H.M	☐☐	S.B - 759
203	CPF2	10	10:17	BE	ROS	U.S.	49° 28.01	124° 30.03	~~345~~	323	469 - 471	3	H.M.	☐☑	
			10:23	BO			49° 27.99	124° 29.99		316	-			☐☐	
			10:31	EM			49° 28.03	124° 29.99			-			☐☐	
204	CPF2	10	10:36	BE	NET	—	49° 28.04	124° 30.10	323		—	—	KY.	☐☐	BONGO
			10:43	BO			49° 27.98	124° 30.07		313	-			☐☐	
			10:48	EM			49° 27.97	124° 30.03			-			☐☐	
205	CPF2	10	10:53	DE	DRF	—	49° 27.94	124° 29.95	323	—	—	—	H.M	☐☐	SB = #750
206	SOG M	10	14:32	BE	CORE	—	49° 49.94	124° 51.95	335		—	—	CW	☐☐	BOX CORE
			14:38	BO			49° 49.95	124° 51.95			-			☐☐	
			14:49	EM			49° 49.9	124° 51.94			-			☐☐	
207	BS 11	10	17:39	BE	ROS		49° 29.00	124° 46.05			472-479	8	H.M	☐☐	
			17:40	BO			49° 29.00	124° 46.06			-			☐☐	
			17:48	EM			49° 29.06	124° 46.10			-			☐☐	
			:				° .	° .			-			☐☐	
			:				° .	° .			-			☐☐	

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Ocean Sciences Division, Institute of Ocean Sciences

Month SEPTEMBER **Year** 2017 **Vessel** TULLY **Cruise ID** 2017-09

Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Cast Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
208	BS11	10	17:53	BE	NET	—	49° 29.04	124° 46.03	62		—	—	KY	☐☐	BONGO
			17:55	BO			49° 29.03	124° 46.02		50	-			☐☐	
			17:56	EN			49° 29.02	124° 46.02			-			☐☐	
209	CPE1	10	20:43	BE	ROS	US	49° 22.00	124° 5.01	243		480-482	3	MS	☑☐	
			20:48	BO			49° 21.97	124° 5.02		232	-			☐☐	
			20:54	EN			49° 21.97	124° 5.00			-			☐☐	
210	CPE1	10	20:58	BE	NET	-	49° 21.991	124° 4.971	243		—	—	MG	☐☐	bongo
			21:06	BO			49° 21.985	124° 4.979		229	-			☐☐	
			21:10	EN			49° 21.991	124° 4.950			-			☐☐	
211	22	10	23:27	BE	ROS	US	49° 40.23	124° 16.32	350		486-496	11	MS	☑☐	
			23:33	BO			49° 40.22	124° 16.32		347	-			☐☐	
			23:47	EN			49° 40.21	124° 16.34			-			☐☐	
212	22	10	23:51	BE	NET	-	49° 40.201	124° 16.347	349		—	—	MG	☐☐	BONGO
		11	00:03	BO			49° 40.195	124° 16.358		340	-			☐☐	
		11	00:08	EN			49° 40.191	124° 16.339			-			☐☐	
213	24	11	01:39	BE	ROS	US	49° 30.34	124° 5.98	423		483-485	3	MS	☑☐	
			01:47	BO			49° 30.35	124° 6.00		418	-			☐☐	
			01:56	EN			49° 30.36	124° 6.04			-			☐☐	
			:				° .	° .			-			☐☐	

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Month SEPTEMBER **Year** 2017 **Vessel** JP TULLY **Cruise ID** 2017-09

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214	24	11	02:00	BE	NET	-	49°30.339	124°06.020	423		-	-	MG	☐☐	
			02:13	BO			49°30.307	124°05.923		412	-			☐☐	
			02:20	EN			49°30.262	124°05.865			-			☐☐	
215	28	11	04:18	BE	ROS	US	49°23.99	123°45.31	136		497-499	3	MB	☑☐	
			04:20	BO			49°23.99	123°45.32		132	-			☐☐	
			04:25	EN			49°23.98	123°45.31			-			☐☐	
216	28	11	04:34	BE	NET	-	49°24.017	123°45.432	135		-	-	MG	☐☐	Bongo
			04:38	BO			49°24.051	123°45.450		126	-			☐☐	
			04:40	EN			49°24.072	123°45.477			-			☐☐	
217	HB	11	05:08	DE	DRF	-	49°20.77	123°45.A	86	-	-	-	MB	☐☐	SET: 755 736 ARMR: 427 405
218	GEO 1	11	05:52	BE	ROS	US	49°15.01	123°44.93	400		500-510	11	MB	☑☐	
			05:55	BO			49°15.00	123°44.89		358	-			☐☐	
			06:14	EN			49°14.93	123°44.7A			-			☐☐	
219	GEO 1	11	06:17	BE	NET	-	49°14.913	123°44.765	399		-	-	MG	☐☐	BONGO
			06:29	BO			49°14.814	123°44.691		390	-			☐☐	
			06:36	EN			49°14.728	123°44.643			-			☐☐	
220	GEO 1	11	06:54	BE	NET	-	49°14.89	123°44.82	398		-	-	MG/KM	☐☐	MPS
			07:07	BO			49°14.92	123°44.78		385	-			☐☐	
			07:14	EN			49°14.90	123°44.71			-			☐☐	

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