

DAILY SCIENCE LOG BOOK

CRUISE
NUMBER

2018-040

DATE:

From: 11 SEPTEMBER

To: 28 SEPTEMBER 2018

VESSEL:

JOHN P TULLY

PROJECT(S):

LING P + EXPORTS

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

WaterProperties.ca

**** 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: K505

Data acquisition program: SGPT LabPecousk Start CTD xMLcom

CTD deck unit make: SeaBird model: 11 serial number: 0425

Primary CTD

Make: SeaBird model: 011 Flu serial number: _____

Primary temperature serial number: 5724

Primary conductivity serial number: 4434

Secondary temperature serial number: 5725

Secondary conductivity serial number: 4440

Transmissometer: WET LABS Model: C-STAR s/n: 1105 DR

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model SeaPoint Cable gain: 3x0.5µg s/n: 3641 P S or NO pump?

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

Oxygen sensor: SeaBird Model: 43 s/n: 1483 P S or NO pump?

PAR sensor: Biospherical Model: L1COR s/n: 70613 Surface PAR? Y / N +0997

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: 103
Volume of bottles (litres): 10

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):

Make: _____ Model: _____ Kit Number: _____
Make: _____ Model: _____ Kit Number: _____

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

Thermosalinograph System (SBE21):

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

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

ADCP Setup:

	Computer time zone:	User Exits:	Name:	Exit points:
Sampling interval (sec):	_____		Name:	Exit points:
Bin Length: (2 ^Δ x):	_____		Name:	Exit points:
Pulse Length:	_____		Name:	Exit points:
Buffer (bytes):	_____		Work File:	
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

Comments No

Test Cast in Saanich Inlet or other location?

Comments Yes No HARO 59

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:

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Month <u>Sept</u>				Year <u>2018</u>		Vessel <u>J P TULLY</u>				Cruise ID <u>2018-040</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
01	59	13	00:58	BE	ROS	US	48° 36.96	123° 14.60	220		1 - 14	14	MG	☒ ☐	DELAY @ START WIRE L
			01:05	BO			48° 37.10	123° 14.69		219	-			☐ ☐	STOP @ 148
			01:23	EN			48° 37.42	123° 14.72			-			☐ ☐	
02	59	13	01:52	BE	NET	—	48° 36.79	123° 14.77	232		-		MG	☐ ☐	BONGO
			02:01	BO			48° 36.89	123° 14.85		215	-			☐ ☐	
			02:06	EN			48° 36.95	123° 14.89			-			☐ ☐	
03	JF1	13	05:14	BE	LOOP	—	48° 15.99	123° 30.36	169	4.5	5003-			☐ ☐	SAL NOT CHANG2
04	JF2	13	07:36	BE	ROS	US	48° 18.04	123° 59.99	185		15 - 38	24	H.M.T	☒ ☐	20m SAMPLE
			07:39	BO			48° 18.06	124° 00.00		150	-			☐ ☐	
			07:44	EN			48° 18.06	124° 00.03			-			☐ ☐	
05	JF2	13	08:14	BE	ROS	US	48° 18.07	124° 00.04	185		39 - 62	24	H.M.T	☐ ☒	160m SAMPLE
			08:17	BO			48° 18.08	124° 00.02		160	-			☐ ☐	PUMP OFF ON D.C
			08:22	EN			48° 18.09	124° 00.08			-			☐ ☐	PUMP ON ON U.C.
06	JF2	13	08:32	BE	NET	—	48° 18.06	124° 00.16	185		—		H.M.T	☐ ☐	BONGO
			08:38	BO			48° 18.14	124° 00.22		175	-			☐ ☐	
			08:41	EN			48° 18.15	124° 00.29			-			☐ ☐	
07	JF2	13	08:59	BE	ROS	U.S.	48° 18.13	124° 00.33	186		63 - 73		H.M.T	☐ ☒	
			09:02	BO			48° 18.12	124° 00.38		178	-			☐ ☐	
			09:15	EN			48° 18.13	124° 00.48			-			☐ ☐	

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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
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 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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Month <u>SEPTEMBER</u>				Year <u>2018</u>		Vessel <u>TULLY</u>				Cruise ID <u>2018-040</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
08	JF3	13	12:39	BE	Loop	-	48° 27.89	124° 29.47	202		5009-		HM	☐	SAL/CAL/NUTS
09	JF4	13	14:54	BE	Loop		48° 32.25	124° 59.97	59.6		5009-		HM +	☐	SAL/CAL/NUTS
10	P1	13	17:07	BE	ROS	U.S.	48° 34.51	125° 30.00	109		74-77	4	HM +	☒	
			17:09	BO			48° 34.51	125° 30.02		111	-			☐	
			17:14	EN			48° 34.51	125° 30.02			-			☐	
11	P2	13	19:39	BE	ROS	U.S.	48° 35.95	125° 59.97	115		78-91	14	MG	☒	PHYTO BMS LUBIC
			19:41	BO			48° 35.94	125° 59.97		107	-			☐	
			19:55	EN			48° 35.90	126° 00.00			-			☐	
12	P2	13	20:03	BE	NET	-	48° 35.89	126° 00.03	116		-		MG	☐	BONGO
			20:09	BO			48° 35.91	126° 00.05		110	-			☐	
			20:12	EN			48° 35.91	126° 00.06			-			☐	
13	P2	13	20:21	BE	NET		48° 35.95	126° 00.06	116		-		MG	☐	RING
			20:25	BO			48° 35.96	126° 00.07		110	-			☐	
			20:27	EN			48° 35.97	126° 00.08			-			☐	
14	P2	13	20:37	BE	ROS	US	48° 35.98	126° 00.06	116		92-100	9	MR	☒	DEEP CAST
			20:40	BO			48° 35.98	126° 00.07		109	-			☐	
			20:51	EN			48° 36.00	126° 00.01			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

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Event Type:

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MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter

Bottle Firing Method:

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Notes:

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Month <u>SEPTEMBER</u>				Year <u>2018</u>		Vessel <u>TULLY</u>				Cruise ID <u>2018-040</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
15	P3	13	22:27	BE	ROS	US	48° 37.54	126° 19.98	808		101 -	1	MG	☒ ☐	PHYTO
			22:40	BO			48° 37.59	126° 19.95		806	-			☐ ☐	
			22:56	EN			48° 37.60	126° 19.88			-			☐ ☐	
16	P4	14	00:32	BE	ROS	US	48° 38.97	126° 39.98	1315		102 - 121		MG	☒ ☐	DMS + UVIC + PHYTO
			00:37	BO			48° 38.97	126° 39.98		300	-			☐ ☐	
			00:59	EN			48° 38.96	126° 39.97			-			☐ ☐	
17	P4	14	01:09	BE	ROS	US	48° 38.95	126° 39.92	1312		122 - 133	12	JC	☐ ☐	TMR
			01:32	BO			48° 39.02	126° 39.96		1240	-			☐ ☐	
			02:05	EN			48° 39.07	126° 40.13			-			☐ ☐	
18	P4	14	02:20	BE	ROS	US	48° 39.06	126° 40.12	1310		134 - 154	21	MR/MG	☒ ☐	DEEP CAST
			02:43	BO			48° 39.03	126° 40.13		1321	-			☐ ☐	O ₂ x 2 LOOP
			03:24	EN			48° 38.90	126° 40.11			-			☐ ☐	
19	P4	14	03:33	BE	NET	✓	48° 38.90	126° 40.14	1324		-		MG	☐ ☐	BONGO
			03:43	BO			48° 38.92	126° 40.18		250	-			☐ ☐	
			03:48	EN			48° 38.93	126° 40.19			-			☐ ☐	
20	P4	14	03:55	BE	NET	✓	48° 38.92	126° 40.22	1322		-		MG	☐ ☐	BONGO DEEP
			04:36	BO			48° 39.00	126° 40.34		1200	-			☐ ☐	
			04:56	EN			48° 39.04	126° 40.32			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month <u>September</u>				Year <u>2018</u>		Vessel <u>Tully</u>				Cruise ID <u>2018-040</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
21	P4	14	05:05	BE	NET	—	48°39.05	126°40.29	1317		-			☐ ☐	
			05:15	BO			48°39.06	126°40.28		250	—	—	MG	☐ ☐	Ring Net 250
			05:19	EN			48°39.08	126°40.27			-			☐ ☐	
22	P4	14	05:37	BE	ROS	US	48°39.07	126°40.17	1310		155-170	16	MG	☒ ☐	URC CAST
			06:00	BO			48°39.06	126°40.06		1316	-			☐ ☐	
			06:27	EN			48°39.03	126°39.91			-			☐ ☐	
23	P4	14	07:00	BE	ROS	US	48°39.99	126°39.89	1307		171-180	10	H.M.T	☐ ☒	PROD CAST
			07:03	BO			48°39.96	126°39.86		150	-			☐ ☐	02 FROG Loop
			07:12	EN			48°39.86	126°39.95			-			☐ ☐	
24	P5	14	09:29	BE	ROS	U.S.	48°41.50	127°09.94	2086		181-	1	H.M.T	☒ ☐	
			10:03	BO			48°41.06	127°09.76		2005	-			☐ ☐	
			10:36	EN			48°41.85	127°09.68			-			☐ ☐	
25	P6	14	12:49	BE	ROS	U.S.	48°44.65	127°40.00	2569		182-	1	H.M.T	☒ ☐	
			13:22	BO			48°44.56	127°39.76		2005	-			☐ ☐	
			13:55	EN			48°44.64	127°39.59			-			☐ ☐	
26	P7	14	16:11	BE	ROS	US	48°46.58	128°10.08	2501		183-	1	H.M.T	☐ ☒	
			16:43	BO			48°46.52	128°09.88		2005	-			☐ ☐	
			17:18	EN			48°46.48	128°09.92			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Month <u>SEPT</u>			Year <u>2018</u>			Vessel <u>SP TULLY</u>			Cruise ID <u>2018-040</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
27	P8 ^{Loop 27}	14	17:38	BE	LOOP		48° 46.643	128° 13.31	2480	—	5027	—	CW	☐ ☐	1 Sal 2 CML Underway
28	P8	14	19:33	BG	ROS	U.S	48° 49.07	128° 39.93	2514		184-207	24	MG	☒ ☐	PHYTO LMF 2x OXY LOOPS
			20:07	BO			48° 49.05	128° 40.07		2005	-			☐ ☐	HUMPBACK BREACH
			21:05	EN			48° 48.98	128° 40.26			-			☐ ☐	
29	P8	14	21:15	BE	NET	—	48° 49.04	128° 40.38	2514		-		MG	☐ ☐	Ring
			21:26	BO			48° 47.09	128° 40.53	2513	250	-			☐ ☐	
			21:30	EN			48° 47.12	128° 40.59	2512		-			☐ ☐	
30	P8	14	21:39	BE	BONGO		48° 49.14	128° 40.69	2512		-			☐ ☐	
			21:49	BO			48° 49.20	128° 40.83		250	-		MG	☐ ☐	BONGO
			21:52	ES			48° 49.22	128° 40.93			-			☐ ☐	
31	P8	14	22:10	BE	BONGO		48° 48.95	128° 31.97	2516		-			☐ ☐	
			22:52	BO			48° 49.08	128° 40.58		1200	-		MG	☐ ☐	BONGO DEEP
			23:12	EN			48° 49.19	128° 40.89			-			☐ ☐	Water Spout Sighted!
32	^{Loop 32} P8 → P9	14	23:30		LOOP		48° 49.39	128° 44.58	2522		5032	—	CW	☐ ☐	underway
33	P9	15	01:22	BE	ROS		48° 51.36	129° 09.98	2336		208-	1	MG	☒ ☐	1 Sal 2 CML Loop
			01:56	BO			48° 51.45	129° 09.86		2005	-			☐ ☐	
			02:31	EN			48° 51.52	129° 09.87			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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Month				Year			Vessel			Cruise ID						
SEPT				2018			LP TOLLY			2018-046						
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	
34	P10	15	05:30	BE	ROS	US	48° 53.51	129° 40.28	2641		209-	1	MG	☒ ☐	FLOUR OVER 5 @ 24m	
			05:47	BO			48° 53.45	129° 40.35		1005	-			☐ ☐		
			06:05	EN			48° 53.42	129° 40.39			-			☐ ☐		
35	P11	15	08:17	BE	ROS	US	48° 55.96	130° 09.93	2750		210-	1	H.M. +	☐ ☒	LOGA. SAL + 2 CHL	
			08:34	BO			48° 55.80	130° 10.05		1005	-			☐ ☐		
			08:51	EN			48° 55.68	130° 10.08			-			☐ ☐		
36	P12	15	11:00	BE	ROS	US	48° 58.18	130° 40.04	3232		211 - 226	16	H.M. +	☐ ☒	UBC (JADE) CAST	
			11:33	BO			48° 58.07	130° 40.04		2005	-			☐ ☐		
			12:10	EN			48° 57.98	130° 39.92			-			☐ ☐		
37	P12	15	12:36	BE	ROS	US	48° 58.20	130° 39.92	3232		227 - 236	10	H.M. +	☐ ☒	PRODUCTIVITY CAST	
			12:39	BO			48° 58.20	130° 39.81		150	-			☐ ☐	UVIC O ₂ Loop	
			12:50	EN			48° 58.18	130° 39.76			-			☐ ☐		
38	P12	15	12:55	BE	ROS	US	48° 58.18	130° 39.76	3232		-			☐ ☐	RECAST FOR	
			12:56	BO			48° 58.18	130° 39.76		100	-	1	H.M. +	☐ ☐	60 m Niskin	
			12:58	EN			48° 58.17	130° 39.76			-			☐ ☐	(No Down 10 & BACK)	
39	P12	15	13:31	BE	BONGO	-	48° 58.19	130° 40.04	3232		-		H.M.	☐ ☐	BONGO	
			13:41	BO			48° 58.18	130° 40.13	3232	250	-			☐ ☐		
			13:46	EN			48° 58.21	130° 40.15			-			☐ ☐		
			:				°	°			-			☐ ☐		

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✓ 3x GAIN - CONFIG FILE

COMPUTER FROZEN, APPROX 150 WINDOWS OPENED, TRIED TO CLOSE PROGRAMS WITH CTRL ALT DEL BUT WASN'T WORKING, SHUT DOWN COMPUTER + START WHICH RESET EVERYTHING, WOKE HUGH UP GOT PROGRAM WORKING BUT IT WOULD NOT INITIALIZE NMEA? WOKE MARIE UP + GOT THE WHOLE THING SORTED. LOST ~ 1 HR MONKEYING AROUND CAST AT P10 TO 1005M INSTEAD OF 2005 + AGAIN AT P11 TO CATCH UP. NEED CHEAT SHEET ON WHAT TO DO WHEN COMPUTER LOSES ITS BRAIN - THE RESETTING OF ALL THE WINDOWS

p6.5/19

→ BOT 17 DIDN'T CLOSE - SENT ROSSETTE BACK DOWN TO 60m (100m) FOR SAMPLE

DAILY SCIENCE LOG

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Month <u>SEPT</u>				Year <u>2018</u>		Vessel <u>Tully</u>				Cruise ID <u>2018-040</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
40	P12	15	13:57	BE	NET	-	48°58.19	130°40.19	4725		-	-	HM	☐ ☐	Ring
			14:03	BO			48°58.20	130°40.11	3232	250	-			☐ ☐	
			14:10	EN			48°58.20	130°40.11			-			☐ ☐	
41	P12	15	15:03	BE	ROS	US	48°58.18	130°39.99	3233		237-245		JC	☐ ☐	
			15:11	BO			48°58.18	130°39.99		310	-			☐ ☐	TMR shallow
			15:19	EN			48°58.17	130°40.01			-			☐ ☐	
42	P12	15	15:27	BE	ROS		48°58.16	130°40.00	3233		246-269	24	HMT	☐ ☒	PAR-OFF
			16:20	BO			48°58.17	130°40.03		3273	-			☐ ☐	
			17:35	EN			48°58.13	130°39.93			-			☐ ☐	
43	P12	15	17:49	BE	MPS	UN	48°58.15	130°39.86	3232		-		MG	☐ ☐	MPS
			19:02	BO			48°58.13	130°39.58		2605	-			☐ ☐	
			19:38	EN			48°58.13	130°39.43			-			☐ ☐	
44	P12	15	20:43	BE	ROS	UP	48°58.24	130°39.95	3233		270-286	17	MG	☒ ☐	PAR-ON
			20:49	BO			48°58.23	130°39.92		300	-			☐ ☐	
			21:11	EN			48°58.22	130°39.82			-			☐ ☐	
45	P12	15	21:20	BE	TMR	UP	48°58.19	130°39.77	3233		288-299	12	SC	☐ ☐	
			21:58	BO			48°58.00	130°39.52		2010	-		MG	☐ ☐	TMR Deep
			22:41	EN			48°58.15	130°39.24			-			☐ ☐	
46	LOOP46	15	23:27	BE			48°58.89	130°49.87	?	4.5	5046	1		☐ ☐	1 SAL 2 CHL

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

DE = Deployment Time
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RE = Recover Mooring Time

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Month <u>Sept</u>				Year <u>2018</u>		Vessel <u>J P TULLY</u>				Cruise ID <u>2018-040</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
47	P13	16	02:55	BE	ROS	US	49° 02.58	131° 40.05	3123		306-306	7	MG	☒ ☐	Loop 1 SAL 2 CHL
			03:30	BO			49° 02.50	131° 40.20		2005	-			☐ ☐	
			04:07	EN			49° 02.55	131° 40.42			-			☐ ☐	
48	P14	16	08:33	BE	ROS	U.S.	49° 07.45	132° 40.08	3314		307-330	24	H.M.T	☐ ☒	PAR OFF
			09:30	BO			49° 07.38	132° 39.81		3357	-			☐ ☐	
			10:46	EN			49° 07.02	132° 39.70			-			☐ ☐	
49	LOOP49	16	14:10	BE	LOOP	-	49° 10.81	133° 26.12	3382	4.5	5049	-		☐ ☐	1 sal + 2 CHL
50	P15	16	15:13	BE	ROS	U.S.	49° 11.97	133° 40.00	3408		331-		H.M.T	☐ ☒	PAR ON
			15:50	BO			49° 11.95	133° 39.64		2005	-			☐ ☐	Loop 5050 1sal/2chl
			16:22	EN			49° 11.97	133° 39.77			-			☐ ☐	
51	P16	16	20:44	BE	ROS	US	49° 16.94	134° 40.00	3634		332-349	18	MG	☒ ☐	DMS PHYTO LMF
			20:53	BO			49° 16.89	134° 40.02		500	-			☐ ☐	
			21:23	EN			49° 16.83	134° 40.02			-			☐ ☐	
52	P16	16	21:34	BE	TMR	UN	49° 16.83	134° 40.04	3634		350-361	12	MG	☐ ☐	TMR Deep
			22:09	BO			49° 16.84	134° 40.01		2010	-			☐ ☐	
			22:39	EN			49° 16.93	134° 39.88			-			☐ ☐	
53	P16	16	22:56	BE	ROS	US	49° 16.95	134° 39.92	3634		362-385	24	MG	☐ ☐	PAR OFF
			23:58	BO			49° 16.98	134° 39.90			-			☐ ☐	DEEP CAST 20x9 Loops
		17	01:25	EN			49° 17.02	134° 40.02			-			☐ ☐	

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→ CHANGED O_2 SENSORS (SBE 43) FROM 1483 ON CTD TO 0997 ON SPARE CTD - COM FILES NEED CHANGING

NEW CONFIG FILE: SEPT LA PEROUSE START CTD NEW DO xulcom

FILE 0048: DONE WITH NEW SENSOR BUT OLD CONFIG FILE.

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>TULLY</u>			Cruise ID <u>2018-040</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
54	P16	17	01:34	BE	TMR	UN	49° 17. 06	134° 40. 05	3634		386 - 394	12	MG	☐ ☐	TMR Shallow
			01:41	BO			49° 17. 06	134° 40. 12		310	-		JL	☐ ☐	
			01:49	EN			49° 17. 09	134° 40. 17			-			☐ ☐	
55	P16	17	02:41	BE	MPS	UN	49° 16. 97	134° 40. 03	3634		-		MG	☐ ☐	VNH MPS
			03:50	BO			49° 17. 16	134° 40. 33		2005	-	-		☐ ☐	
			04:25	EN			49° 17. 22	134° 40. 47			-			☐ ☐	
56	P16	17	04:52	BE	NET	-	49° 17. 18	134° 40. 43	3633		-	-	MG	☐ ☐	BONGO
			05:02	BO			49° 17. 21	134° 40. 47		250	-			☐ ☐	
			05:07	EN			49° 17. 22	134° 40. 49			-			☐ ☐	
57	P16	17	05:16	BE	NET	-	49° 17. 25	134° 40. 53	3632		-	-	MG	☐ ☐	RING
			05:26	BO			49° 17. 26	134° 40. 57		250	-			☐ ☐	
			05:31	EN			49° 17. 27	134° 40. 59			-			☐ ☐	
58	P16	17	08:49	BE	ROS	U.S.	49° 17. 01	134° 39. 96	3633		395 - 404	10	Hm +	☐ ☒	Productivity Cast
			08:53	BO			49° 17. 00	134° 39. 93		150	-			☐ ☐	UVic O ₂ loop
			09:04	EN			49° 16. 99	134° 39. 82			-			☐ ☐	
59	P17	17	13:34	BE	ROS	U.S.	49° 21. 00	135° 40. 92	3651		405 -	1	Hm +	☐ ☒	→ (2)
			14:11	BO			49° 21. 00	135° 40. 09		2005	-			☐ ☐	PAR NOT ON
			14:43	EN			49° 20. 98	135° 39. 86			-			☐ ☐	
60	LOP5060	17	08:16	EN	LOOP	/	49° 21. 61	135° 46. 68	3189	4.5	5060		CW	☐ ☐	1 SAL 2CHL

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- 1) STOPPED @ 1600 m FOR 2 MINUTE TO MANUEVER SHIP
- 2) FLUOROMETER CABLE CLEANED & PINS RELUBED

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Month				Year			Vessel			Cruise ID					
SEPT				2018			JP TOLLY			2018-040					
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
61	P18	17	19:03	BE	ROS	US	49° 26.23	136° 46.09	3833		406 - 429	24	MG	☒ ☐	TOC + GELS + OXYS
			20:09	BO			49° 26.42	136° 40.07		3888	-			☐ ☐	ALT 9.94 PRES 3888 DEPTH 3820 SOUND 3833
			21:39	EN			49° 26.44	136° 39.54			-			☐ ☐	PAR OFF
62	PAR	18	01:06	BE	ROS	US	49° 29.23	137° 28.18	3875		---	---	MG	☐ ☐	PAR ON
			01:10	BO			49° 29.22	137° 28.18		150	-			☐ ☐	
			01:13	EN			49° 29.20	137° 28.18			-			☐ ☐	
63	P19	18	02:15	BE	ROS	US	49° 30.03	137° 39.97	3929		430 -	1	MG	☒ ☐	LOOP 13AL 2CHL
			02:48	BO			49° 30.06	137° 40.08		2005	-			☐ ☐	
			03:19	EN			49° 30.06	137° 40.17			-			☐ ☐	
64	P20	18	07:28	BE	NET	---	49° 33.93	138° 40.05	3965		---	---	HM+	☐ ☐	RING NET
			07:36	BO			49° 33.94	138° 40.03		250	-			☐ ☐	
			07:40	GM			49° 33.96	138° 40.02			-			☐ ☐	
65	P20	18	07:51	BE	NET		49° 33.93	138° 40.06	4358		-	---	HM+	☐ ☐	BONGO 250m
			07:59	BO			49° 33.95	138° 40.07		250	-			☐ ☐	
			08:03	EN			49° 33.96	138° 40.03			-			☐ ☐	
66	P20	18	08:09	BE	NET		49° 33.99	138° 39.99	3965		-		HM+	☐ ☐	BONGO 1200m
			08:51	BO			49° 33.85	138° 40.13		1200	-			☐ ☐	
			09:11	EN			49° 33.94	138° 40.17			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Month			Year			Vessel			Cruise ID						
SEPTEMBER			2018			TULLY			2018-40						
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
67	P20	18	10:33	BE	ROS	U.S.	49° 34. 03	138° 39. 97	3964		431 - 440	10	H.M. +	☒	PRODUCTIVITY CAST
			10:36	BO			49° 34. 00	138° 39. 98		150	-			☐	UVIC O ₂ LOOP
			10:41	EN			49° 34. 00	138° 39. 97			-			☐	PAR ON
68	P20	18	10:54	BE	ROS	U.S.	49° 34. 05	138° 39. 94	3964	5	-		H.M. +	☐	RECAST FOR SUNLIGHT
			10:54	BO			49° 34. 05	138° 39. 94			-	1		☐	
			10:55	EN			49° 34. 04	138° 39. 94			-			☐	
69	P20	18	12:13	BE	TMR	U.S.	49° 34. 00	138° 39. 97	3964		441 - 449	9	J.C.	☐	TMR Shallow
			:	BO			49° 33. 93	138° 40. 01		310	-			☐	
			12:30	EN			49° 33. 98	138° 40. 01			-			☐	
70	P20	18	12:37	BE	ROS	U.S.	49° 34. 07	138° 39. 88	3964		450 - 473	24	H.M. +	☒	DEGP CAST
			13:45	BO			49° 34. 10	138° 39. 68		4023	-			☐	STOP 2750 ↓ 2°
			15:13	EN			49° 34. 02	138° 39. 38			-			☐	P 4024 S 34.676 D 3951 A 10.45
71	P20	18	15:54	BE	TMR	U.S.	49° 33. 99	138° 39. 95	3964		474 - 495	12	RT	☐	TMR DEEP
			16:36	BO			49° 33. 98	138° 39. 98		2010	-			☐	- on ascend, wind gave, had to descend for about 30m, then continued to return to surface.
			17:26	EN			49° 33. 96	138° 39. 93			-			☐	
72	P20	18	17:36	BE	ROS	U.S.	49° 33. 97	138° 39. 85	3965		496 - 503	18	H.M. +	☒	PAR ON
			17:44	BO			49° 33. 98	138° 39. 84		500	-			☐	
			18:06	EN			49° 33. 97	138° 39. 69			-			☐	
			:				°	°			-			☐	

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Month SEPTEMBER				Year 2018			Vessel LP TOLLY				Cruise ID 2018-040				
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
73	P21	18	22:48	BE	ROS	US	49° 37.94	139° 39.89	3958		504-	1	MG	☒	LOOP 1SAL 2CHL
			23:23	BO			49° 37.76	139° 39.89		2005	-			☐	
			23:58	EN			49° 37.75	139° 39.91			-			☐	
74	P22	19	04:48	BE	ROS	US	49° 42.02	140° 39.94	3891		505-528	24	MG/HM	☒	PAR OFF
			05:56	BO			49° 41.96	140° 40.02		3997	-			☐	ALT 16.01 PRES 3997
			07:24	EN			49° 41.86	140° 39.86			-			☐	SOUND 3939 DEPTH 3925
75	P23	19	11:57	BE	ROS	U.S.	49° 46.00	141° 39.92	4050		529-	1	HM +	☒	PAR ON
			12:31	BO			49° 45.97	141° 39.93		2005	-			☐	LOOP 5075
			13:02	EN			49° 45.96	141° 39.95			-			☐	
76	P24	19	17:16	BE	ROS	U.S.	49° 50.25	142° 40.12	3986		530-553	24	HM+/MG	☒	ALT 8.86 PRES 4047
			18:27	BO			49° 49.99	142° 39.64			-			☐	SOUND 3987 DEPTH 3975
			20:08	EN			49° 49.80	142° 39.40			-			☐	PAR OFF
											-			☐	TOC + GELS
77	P25	20	00:04	BE	ROS	US	50° 00.03	143° 36.40	4143		554-	1	MG	☒	LOOP 5078
			00:37	BO			50° 00.02	143° 36.45		2005	-			☐	PAR ON
			01:10	EN			50° 00.01	143° 36.45			-			☐	
78	LOOP 5078	20	03:35	BE	LOOP	-	50° 59.99	144° 13.38	4124	4.5	-		MG	☐	1SAL 2CHL
79	P35	20	04:04	BE	ROS	US	50° 00.03	144° 18.27	4150		555-	1	MG	☒	
			04:38	BO			50° 00.08	144° 18.31		2005	-			☐	
			05:13	EN			50° 00.12	144° 18.32			-			☐	

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Month SEPTEMBER				Year 2018		Vessel J P TULLY				Cruise ID 2018-040					
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
80	P26	20	08:08	BG	ROS	U.S.	50° 00.09	145° 00.14	4251		556-578	23	H.M. +	☒	PAR OFF
			09:01	BO			50° 00.26	145° 00.31		3000	-			☐	→
			09:58	EN			50° 00.42	145° 00.49			-			☐	
81	P26	20	10:13	BG	NET	-	49° 59.95	145° 00.01	4250		-		H.M. +	☐	RING NET
			10:21	BO			50° 00.42	145° 00.49		250	-			☐	
			10:26	EN			50° 00.03	145° 00.12			-			☐	
82	P26	20	10:35	BG	NET	-	50° 00.05	145° 00.12	4251		-		H.M. +	☐	BONGO 250 m
			10:44	BO			49° 59.92	145° 00.07		250	-			☐	
			10:45	EN			49° 59.85	145° 00.04			-			☐	
83	P26	20	11:05	BG	ROS	U.S.	50° 00.00	145° 00.01	4250		579-602	24	H.M. +	☒	YUANGJI CAST
			11:08	BO			50° 00.02	144° 59.98		150	-			☐	** →
			11:13	EN			50° 00.00	145° 00.01			-			☐	
84	P26	20	11:42	BG	ROS	U.S.	50° 00.12	144° 59.70	4250		603-626	24	H.M. +	☒	YUANGJI 2ND CAST
			11:45	BO			50° 00.14	144° 59.72		150	-			☐	
			11:50	EN			50° 00.19	144° 59.67			-			☐	
85	P26	20	12:23	BG	ROS	U.S.	50° 00.00	145° 00.01	4250		627-650	24	H.M. +	☒	DEEP CAST
			13:36	BO			50° 00.09	145° 00.11		4316	-			☐	→
			15:10	EN			49° 59.95	145° 00.17			-			☐	ALT- 10 PRESS- 4315 SOUND- 4250 DEPTH- 4235
			:				°	°			-			☐	PAR ON (AFTER)

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RE = Recover Mooring Time

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Notes:

STOPPED @ 430m TO CORRECT WIRE ANGLE 0816 - 0817

P 13.5/19

BOLT & WASHER MISSING FROM RING (TO HOLD LANYARDS UP) NOT TERRIBLY IMPORTANT, SHOULDN'T AFFECT CAST OR ROSSETTE

— LOAD AFT - STOPPED @ 67m FOR 45 sec

DAILY SCIENCE LOG

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Month <u>SEPTEMBER</u>				Year <u>2018</u>		Vessel <u>TULLY</u>				Cruise ID <u>2018-40</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
86	P26	20	16:05	BE	TMR	US	49°59.96	145°00.08	4250		651-662	12	JTC	☐ ☐	TMR Deep
			:	BO			°	°		4010	-			☐ ☐	CAUTION
			:	EN			°	°			-			☐ ☐	
87	P26	20	17:57	BE	NET	—	49°59.91	145°00.16	4251		-		MG	☐ ☐	Bongo 1200
			18:41	BO			49°59.94	145°00.09		1200	-			☐ ☐	
			19:01	EN			49°59.99	145°00.10			-			☐ ☐	
88	P26	20	20:52	BE	TMR	UN	50°00.07	145°00.00	4251		651-659	9	JC	☐ ☐	PAR ON
			20:59	BO			°	°		340	-			☐ ☐	TMR SHALLOW
			21:08	EN			50°00.11	144°59.96			-			☐ ☐	
89	P26	20	21:22	BE	ROS	US	50°00.04	144°59.97	4251		663-684	22	MG	☒ ☐	DMS PHYTO LFG
			21:28	BO			50°00.05	144°59.98		300	-			☐ ☐	OUT OF ORDER GXY MAX
			21:51	EN			50°00.07	144°59.97			-			☐ ☐	LOOP OXY → UVIC
90	EX-F1	21	00:39	BE	ROS	US	49°57.65	144°42.25	4188		697-710	14	MG	☒ ☐	NASA EXPORTS THORIUM
			00:46	BO			49°57.65	144°42.22		335	-			☐ ☐	OUT OF ORDER
			01:04	EN			49°57.66	144°42.22			-			☐ ☐	OXY LOOPS -- UVIC
91	EX-F1	21	01:13	BE	NET		49°57.69	144°42.30	4188		-		MG	☐ ☐	BONGO
			01:23	BO			49°57.700	144°42.286		250	-			☐ ☐	
			01:28	EN			49°57.72	144°42.31			-			☐ ☐	
			:				°	°			-			☐ ☐	

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

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Notes:

cable jumps block wedges in cheek and is damaged, cast aborted

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Month <u>SEPTEMBER</u>				Year <u>2018</u>		Vessel <u>TULLY</u>				Cruise ID <u>2018-040</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
92	EX-FI	21	01:40	BE	ROS	US	49°57.66	144°42.18	4189		711 - 728	18	MR	☒ ☐	CHEM CAST
			02:15	BO			49°57.70	144°42.34		2005	-		MG	☐ ☐	OUT OF ORDER BOT 9158
			03:09	EN			49°57.69	144°42.54			-			☐ ☐	
93	PA-012	21	05:10	BE	ROS	US	50°01.76	144°52.79	4223		729 - 731	3	MG	☐ ☐	MOORING CALIBRATION
			05:19	BO			50°01.76	144°52.86		500	-			☐ ☐	
			05:31	EN			50°01.76	144°52.91			-			☐ ☐	
94	EX-C	21	12:07	BE	ROS	US	50°17.38	144°21.94	4123		732 - 747	16	HMT	☒ ☒	PRODUCTIVITY CAST
			12:10	BO			50°17.36	144°21.97		150	-			☐ ☐	UVIC O ₂ LOOP
			12:21	EN			50°17.35	144°22.05			-			☐ ☐	
95	EX-C	21	14:05	BE	ROS	U.S.	50°18.45	144°22.26	4128		748 - 759	12	JC	☐ ☐	TMR
			14:12	BO			50°18.47	144°22.22		310	-			☐ ☐	
			14:22	EN			50°18.52	144°22.22			-			☐ ☐	
96	EX-C	21	15:52	BE	ROS	U.S.	50°18.49	144°22.46	4127		760 - 783	24	HMT	☒ ☒	CHEM CAST
			15:57	BO			50°18.47	144°22.51			-			☐ ☐	
			16:14	EN			50°18.41	144°22.67			-			☐ ☐	
97	EX-C	21	16:47	DE	DRF		50°18.42	144°22.56	4122		-			☐ ☐	DEPLOY 86
98	EX-C	21	16:48	DE	DAF		50°18.43	144°22.58	4130		-			☐ ☐	DEPLOY 87
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

Event Type:

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 SET = Fish Set

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

Bottle Firing Method:

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

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

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Month <u>SEPTEMBER</u>				Year <u>2018</u>		Vessel <u>Tully</u>				Cruise ID <u>2018-40</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
99	EX-C	21	17:14	BE	LVP	-	50°17.91	144°25.62	4143		784-788	-	YS	☐ ☐	large vol pump
			17:37	BO			50°17.96	144°25.69		500	-			☐ ☐	
			21:12	EN			50°18.42	144°25.71			-			☐ ☐	
100	EX-C	21	21:55	BE	ROS	US	50°18.35	144°24.95	4142		789-807	19	MG	☒ ☐	DMS+UVic+HPLC ^{NASA}
			22:01	BO			50°18.33	144°24.94		300	-			☐ ☐	
			22:22	EN			50°18.28	144°24.85			-			☐ ☐	
101	EX-C	21	22:33	BE	NET	✓	50°18.25	144°24.68	4140		-			☐ ☐	BONGO
			22:45	BO			50°18.22	144°24.72		250	-			☐ ☐	
			22:49	EN			50°18.21	144°24.74			-			☐ ☐	
102	EX-C	21	23:21	BE	ROS	US	50°18.19	144°24.69	4140		808-823	16	MG	☒ ☐	THORIUM + SACHIA
			23:30	BO			50°18.17	144°24.69		500	-			☐ ☐	
			23:51	EN			50°18.15	144°24.66			-			☐ ☐	
103	ARGOS	22	01:16	RE	DRF	-	50°17.30	144°22.52	4126	0	-		MG	☐ ☐	Float 86 rescue
104	EX-C	22	01:45	BE	TMR	UN	50°17.89	144°23.78	4132		824-835	12	JTC	☐ ☐	TMR Deep
			02:53	BO			50°17.99	144°23.95		4010	-			☐ ☐	
			04:47	EN			50°18.43	144°24.47			-			☐ ☐	
105	EX-W	22	13:34	BE	ROS	US	50°22.84	144°38.59	4211		836-849	14	H.M.T	☐ ☒	OHAR, TH, UVic
			13:40	BO			50°22.86	144°38.58		335	-			☐ ☐	UVic O ₂ Loops
			13:54	EN			50°22.87	144°38.57			-			☐ ☐	

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SET = Fish Set

LOOP = Sea Water Loop

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NET = Plankton Net Haul

DRF = Drifter

LVP = Large volume pumps

Bottle Firing Method:

US = Up / Stop (default)

UN = Up / No stop

DN = Down / No stop

Notes:

Time Code:

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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

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>TULLY</u>			Cruise ID <u>2018-40</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
106	EX-W	22	14:07	BE	TMR	UN	50° 22.87	144° 38.59	4211		850 - 861	12	JC/RT	☐ ☐	TRACE METALS
			14:15	BO			50° 22.88	144° 38.59		310	-			☐ ☐	
			14:24	EN			50° 22.88	144° 38.62			-			☐ ☐	
107	EX-W	22	14:44	BE	NET	-	50° 22.86	144° 38.62	4202		-	-	HMT	☐ ☐	bongo
			14:52	BO			50° 22.91	144° 38.59		250	-			☐ ☐	
			14:57	EN			50° 22.92	144° 38.60			-			☐ ☐	
108	EX-W	22	15:11	BE	ROS	US	50° 22.88	144° 38.61	4202		862 - 895	24	HMT	☐ ☒	chemistry
			15:17	BO			50° 22.86	144° 38.60		300	-			☐ ☐	
			15:33	EN			50° 22.78	144° 38.59			-			☐ ☐	
109	EX-N	22	19:47	BE	ROS	US	50° 36.80	144° 03.89	4054		886 - 899	14	MG	☒ ☐	ONAR, TH, OUT OF ORDER
			19:53	BO			50° 36.86	144° 03.87		335	-			☐ ☐	LOOP Bxys - UVic
			20:11	EN			50° 36.81	144° 03.88			-			☐ ☐	
110	EX-N	22	20:17	BE	NET	-	50° 36.80	144° 03.88	4054		-		MG	☐ ☐	BONGO
			20:26	BO			50° 36.78	144° 03.92		250	-			☐ ☐	
			20:30	EN			50° 36.78	144° 03.96			-			☐ ☐	
111	EX-N	22	20:44	BE	TMR	US	50° 36.78	144° 04.01	4054		900 - 911	12	RT/JC	☐ ☐	TMR Shallow
			20:50	BO			50° 36.79	144° 04.03		310	-			☐ ☐	
			20:58	EN			50° 36.76	144° 04.08			-			☐ ☐	
			:				°	°			-			☐ ☐	

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P17.5/19

→ FORGOT TO HIT ARCHIVE, RETURN TO SURFACE + START AGAIN

DAILY SCIENCE LOG

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Month				Year			Vessel				Cruise ID					
SEPTEMBRE				2018			J P TULLY				2018 - 040					
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	
112	EX-N	22	21:24	BE	ROS	US	50° 36.78	144° 03.98	4055		912-935	24	MG	☒ ☐	CHEMISTRY CAST	
			21:30	BO			50° 36.79	144° 03.98		300	-			☐ ☐		
			21:49	EN			50° 36.83	144° 03.94			-			☐ ☐		
113	LOOP 113	22	23:21	BE	LOOP	/	50° 26.35	144° 05.16	4057	4.5	5113-	-	MG	☐ ☐	1 SAL 2 CHL	
114	EX-E	23	01:09	BE	ROS	US	50° 10.82	144° 08.78	4100		936-949	14	MG	☒ ☐	TR, HPLC, ONAR	
			01:15	BO			50° 10.81	144° 08.74		335	-			☐ ☐	OUT OF ORDER	
			01:34	EN			50° 10.75	144° 08.66			-			☐ ☐	LOOP OXY UVIC	
115	EX-E	23	01:43	BE	NET	/	50° 10.75	144° 08.61	4102		-		MG	☐ ☐	BONXIO	
			01:54	BO			50° 10.74	144° 08.62		250	-			☐ ☐		
			01:59	EN			50° 10.73	144° 08.63			-			☐ ☐		
116	EX-E	23	02:14	BE	ROS	US	50° 10.73	144° 08.50	4103		950-973	24	MG	☒ ☐	CHEMISTRY CAST	
			02:20	BO			50° 10.69	144° 08.48		300	-			☐ ☐		
			02:39	EN			50° 10.58	144° 08.34			-			☐ ☐		
117	LOOP 117	23	13:49	BE	LOOP	/	49° 57.24	141° 21.75	4036		5117-	-	HM	☐ ☐	1 x SAL 2 x CHL	
			:				°	°			-			☐ ☐		
118	LOOP 118	24	16:24	BE	LOOP	/	49° 18.55	134° 40.45	3630	4.5	5118-	-	MG	☐ ☐	1 SAL 2 CHL	
119	LOOP 119	25	01:34	BE	LOOP	/	49° 11.67	132° 48.57	3338	4.5	5119-	-	MG	☐ ☐	1 SAL 2 CHL	
120	Loop 5120	25	13:51	BE	Loop	-	48° 56.88	130° 04.65	2751	4.5	5120-	-	H.M	☐ ☐	1 SAL 2 CHL	
121	Loop 5121	25	20:19	BE	Loop	/	48° 52.31	129° 11.07	2327	4.5	5121-	-	TV	☐ ☐	1 SAL 2 CHL	

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Month <u>SEPTEMBER</u>			Year <u>2018</u>			Vessel <u>TULLY</u>				Cruise ID <u>2018-40</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							
122	P4	26	14:01	BE	ROS	U.S.	48° 38.93	126° 39.89	1312		974-994	21	HM+	☒	P4 (RETURN)
			14:25	BO			48° 38.92	126° 39.97		1321	-			☐	
			15:05	EN			48° 38.83	126° 39.80			-			☐	
123	P4	26	15:13	BE	NET	/	48° 38.83	126° 39.85	1321		-	-	TV	☐	P4 (return)
			15:21	BO			48° 38.82	126° 39.85		250	-			☐	
			15:26	EN			48° 38.81	126° 39.84			-			☐	
124	JFZ	27	06:34	BE	ROS	U.S.	48° 18.06	124° 00.04	185		995-1018	24	HM+	☒	20m NISKIMS
			06:37	BO			48° 18.06	124° 00.08		175	-			☐	NO " 21 trip
			06:42	EN			48° 18.08	124° 00.18			-			☐	
125	JFZ	27	07:00	BE	NET	/	48° 18.10	124° 00.29	186		-		MG+	☐	BONGO
			07:06	BO			48° 18.14	124° 00.32		180	-			☐	
			07:09	EN			48° 18.16	124° 00.35			-			☐	
126	JFZ	27	07:16	BE	ROS	U.S.	48° 18.14	124° 00.42	185		1019-1042	24	HM+	☒	60m NISKIM
			07:19	BO			48° 18.15	124° 00.44		179	-			☐	" 21 AGAIN
			07:27	EN			48° 18.14	124° 00.52			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	
			:				°	°			-			☐	

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PA.5/19

— HISKIN Z1 DID NOT TRIP AGAIN, MANUALLY RELEASED SEVERAL TIMES AND RELOADED - NEEDS NEW CAROUSEL