DAILY SCIENCE LOG BOOK

LEG 1

MISSION NUMBER 2015-54

DATE: From: OCT 13, 2015 to: NOV 7, 2015

VESSEL: Vector

PROJECT(S): WC - Douglas Channel

Book 1/2 (OCT 26, 2015)

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

text 778 977-0895 — Stephen 363-6474

Captain: _____ First Officer: _____
Second Officer: _____ Third Officer: _____
Fishing Master: _____

Mission Participants / Agencies: _____

Scientific Personnel: Chief Scientist: WRIGHT - leg 1

Name	Watch	Cabin	Name	Watch	Cabin
Cindy Wright	7-7	CS	Dave Spear	noon-mid	ST
D. Wan	mid-noon	LS	Lucius Perrault	mid-noon	ST
Tamara Fraser	noon-mid	LS	Stephen LePage	noon-mid	Port
			Mark Belton	mid-noon	Port

Second leg of Mission: Chief Scientist: Sven Vagle

Name	Watch	Cabin	Name	Watch	Cabin
Chris Mackay					
Jody Klymak					
Charles Hannah					
Nick Hall-Patch					
Steve Romaine					
Pramod Thupaki					

Data logging computer: Vector Laptop
Data acquisition program: Seasave
CTD deck unit make: SBE model: 11+ serial number: 425

Primary CTD
Make: SBE model: 9+ serial number: 443 ✓
Primary temperature serial number: 2106 ✓
Primary conductivity serial number: 2280 ✓
Secondary temperature serial number: 2663 ✓
Secondary conductivity serial number: 2754 ✓
Transmissometer: Wetlabs Model: C-STAR s/n: 1396DR ✓
Fluorometer: Model Seapoint Cable gain: 3x s/n: 3640 ✓ **P, S or NO pump?**
Oxygen sensor: SBE Model: 43 s/n: 0997 **P, S or NO pump?**
PAR sensor: Biospherical Model: QSP200L 45 s/n: 4565 ✓
Other sensors: Altimeter s/n: 1253 **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?**

Seas 1252

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

CTD calibration bottle location (height above CTD in metres): _____

Rosette Setup:
Number of bottles: 24
Manufacturer: 105
Volume of bottles (litres): 10L

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: Seasave Version: _____ S/N 2487
Sampling interval (seconds): 30
Fluorometer sensor serial number: N/A

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

ADCP Setup:
Computer time zone: _____
Sampling interval (sec): _____
Bin Length: (2^x): _____
Pulse Length: _____
Buffer (bytes): _____
Gyro Offset: _____

User Exits: Name: _____ Exit points: _____
Name: _____ Exit points: _____
Name: _____ Exit points: _____
Work File: _____

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

Month OCT **Year** 2015 **Ship** VECTOR **Cruise ID** 2015-S24

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
15 Oct	SI	00 04	BE	ROS	US	1	48 37.870	123 30.270	198		—	24	TF	✓	testing bottles @25.2
		00 10	BO				48 37.896	123 30.304		191.8					0.78 db.
		00 16	EN				48 37.910	123 30.317							
15	SOGN2	1619	BO	MOOR	—	2	49 50.210	124 52.153	300	300	—				deploy SOGN2-C
15	SOGN-C	1728	BO	MOOR	—	3	49 49.029	124 54.11	182	182	—				deploy
	SOGN-W	1813	BO	MOOR	—	4	4947.961	124 56.100	85	85	—				-bottom of Mooring
15	SOGN W	1910	BE	ROS	—	5	49 48.071	124 56.059	87		—	0	TF	✓	
		1913	BO				49 48.075	124 56.059		83					
		1915	EN				49 48.071	124 56.056							
15	SOGN C	1937	BE	ROS	—	6	49 49.099	125 54.096	185				TF	✓ start cast	pressure digiquartz -1.0 0.8
		1940	BO				49 49.124	124 54.094		183					
		1945	EN				49 49.142	124 54.092							
15	SOGN	~~20:34~~ 20:34	BE	ROS	US	7	49° ~~50~~ 49.170	124° 51.919	335		1 - 14	14	DS TF	✓	
		20:39	BO				49° 50.166	124° 51.913		330					
		20:53	EN				49° 50.125	124° 51.093							
17	LS102	02:08	BE	ROS	—	8	52 37.548	128 52.999	216		—	0	TF, DS, SP	✓	P before - 0.9 P after -
		02:12	BO				52 37.531	128 52.984		210					
		02:17	EN				52 37.490	128 53.006							

Cast Type:
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ROS = Rosette plus CTD
SET = Fish Set
USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul
DRF = Drifter
___ = _____

Bottle Firing Method:
US = Up / Stop
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Transmissometer & Fluorometer are to be cleaned before each cast

Notes: _____

CTDs for 2015-S24 here please

SI test cast good. All bottles topped.

This page is for any notes or observations

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
17	LS100	02:43	BE	ROS	-	9	52 38.627	128 55.144	159		—	ϕ	TF, DS, SP	✓	
		02:46	BO				52 38.609	128 55.122		155					
		02:50	EN				52 38.604	128 55.142							
17	LS97	03:15	BE	ROS	—	10	52 40.793	128 58.186	170		—	ϕ	TF, DS, SP	✓	station entered as LS197 in Seasave
		03:19	BO				52 40.804	128 58.196		162					altimeter @ 5m
		03:22	EN				52 40.801	128 58.196							
17	LS95	04:00	BE	ROS	—	11	52 42.122	129 01.368	242		—	ϕ	TF, DS, SP	✓	
		04:04	BO				52 42.121	129 01.373		237					
		04:09	EN				52 42.121	129 01.370							
17	LS93	04:27	BE	ROS	—	12	52 43.554	129 03.715	269		—	ϕ	TF, DS, SP	✓	
		04:32	BO				52 43.565	129 03.733		264					
		04:37	EN				52 43.562	129 03.751							
17	LS89	05:08	BE	ROS	—	13	52 46.633	129 08.340	207		—	ϕ	TF, DS, SP	✓	
		05:12	BO				52 46.639	129 08.339		202					
		05:16	EN				52 46.646	129 08.356							
17	LS85	05:56	BE	ROS	-	14	52 52.142	129 11.155	119		—	ϕ	TF, DS, SP	✓	
		05:59	BO				52 52.140	129 11.189		115					
		6:01	EN				52 52.134	129 11.218							

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Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
17	LS82	06:18	BE	ROS	-	15	52 52.548	129 13.772	197		—	ϕ	TF, DS, SP	✓	
		06:21	BO				52 52.552	129 13.757		192					
		06:25	EN				52 52.577	129 13.760							
17	CAM2	06:58	BE	ROS	-	16	52° 54.714	129° 15.526	244		—	ϕ	DW, LP, MB	✓	Tested 4 Niskin bottles. No problem.
		07:07	BO				52° 54.671	129° 15.674		240.8					
		07:11	EN				52° 54.637	129° 15.746							
17	SC74	08:01	BE	ROS	US	17	53° 0.676	129° 15.804	379		15-27	13	DW, LP, MB	✓	Fired #8 at 200 dbar. Noticed <30s. DW
		08:28	BO				53° 0.622'	129° 15.905		375					#13 was fired @ surface with air inside.
		08:26	EN				53° 0.535	129° 16.001							
17	PBS25	08:50	BE	GRAB	—	18	53° 0.965	129° 17.17	378	379.	NO SAMPLE #	—	DW		
			EN				53°. 913	129° 17.732.							
17	WHA3	10:20	BE	ROS	—	19	53° 08.344	129° 07.265	548		28-31	4	DW, LP	✓	
		10:32	BO	Parasite	DOSS		53° 08.261	129° 07.229	544	540					
		10:43	EN				53° 08.138	129° 07.276							
17	WHA3	10:25	BE	CB & 19+	and	Bucket	53° 08.29	129° 07225	544		32	ϕ	LP, MB	N	~~tested~~ firing all bottles at surface, plunging, was normal
		10:38	EN: &	CAST-0	Via 4	20	"	"		SURF			CP		
17	WCS8	11:25	BE	ROS	—	21	53° 13.333	129° 07.220	407		—	ϕ	LP DW	✓	
		11:39	BO				53° 13.289	129° 07.216		491			MB		
		11:47	EN				53° 13.201	129° 07.226							

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 7 July 2014

SC74; Bottle 13 was empty. All nuts, CH2 come from 12 after it was sampled. except we didn't bother with oxygen.

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

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							Latitude	Longitude							
17	WC50	12:27	BE	ROS	–	22	53°17.810	129°08.882	519		–	∅	DW LP, MB	✓	
		12:38	BO				53°17.713	129°08.696		512					
		12:48	EN				53°17.621	129°08.641							
17	WHA9	13:03	BE	ROS	–	23	53°18.584	129°10.969	478		–	∅	DW LP	✓	
		13:18	BO				53°18.862	129°10.992		471					
		13:27	EN				53°18.586	129°10.981							
17	CS34	16:39	BE	ROS	US	24	52°55.000	129°24.091	253		33-43	11	DW, LP		
		16:48	BO				52°54.404	129°24.373		246			MB		
		17:04	EN				52°54.127	129°24.792							
17	CS39	17:41	BE	ROS	–	25	52°53.982	129°32.996	316		–	∅	DW, LP	✓	
		17:54	BO				52°54.000	129°33.325		310			ME		
		17:59	EN				52°54.169	129°33.474							
17	CAM1	19:07	BE	ROS	–	26	52 47.016	129 29.986	430		–	∅	TF, DS, SP	✓	
		19:12	BO				52 47.012	129 29.989		424					
		19:20	EN				52 47.002	129 29.966							
17	HEC1	2100	BE	MOR		27	52 49.437	129 50.550	128		–	Ø	DS, SP		see notes next page
17	HEC1	21:26	BE	ROS		28	52 49.446	129 50.515	131		44-59	16	TF, CW, SP		
		21:30	BO				52 49.445	129 50.522		129					
		21:40	EN				52 49.441	129 50.528							

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Notes: _____

mHEC1-C Mooring Recovery October 17, 2015 Event 27

This page is for any notes or observations

2209 - On station Send 18DC 142 141 141 141
- Move to a location for release

2215 - 262 267

2216 Send 18DC +1855 274 275
- On surface

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

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17	HEC1	22:29	BE	ROS	US	29	52 49.450	129 50.552	131		60-68	24 + rinked			
		22:32	BO				52 49.440	129 50.555		126					winch lost pressure feed to ram for a few minutes
		22:42	EN				52 49.446	129 50.561							
17	HEC1	2232		CTD	—	30	52 49.440	129 50.555	131	surface	—	6	SP,DS		19p
17	HEC1	2312	BE	NET	—	31	52 49.4376	129 50.5507				0	TF		to zooplankton lab
		2316	BO				52 49.4234	129 50.5496	120						
		2318	EN				52 49.4157	129 50.5494							
17	HEC1	2325	BE	NET	-	32	52 49.4376	129 50.5501				0	TF		~~to~~ frozen
		2329	BO				52 49.4540	129 50.4409	120						
		2331	EN				52 49.4409	129 50.5439							
18	SCI9	0306	BE	ROS		33	53 4.817	129° 19.565	692			0			
		0320	BO				53° 4.806	129° 19.540		685					5mab
		0333	EN				53° 4.811	129° 19.531							0.68db
		0530		DRF		34	53 20.726	129° 14.632			Sponge bob deployments			#	332-336
18	DOUG35	07:17	BE	ROS		35	53° 32.237	129° 12.210	332				DW LP MB	✓	
		07:25	BO				53° 32.293	129° 12.150		330					
		07:32	EN				53° 32.346	129° 12.132							
18	DOUG26	09:42	BE	ROS		36	53° 40.423	129° 07.304	398		69-85		DW LP MB	✓	
		09:52	BO				53° 40.447	129° 07.157		393					

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Notes: _____

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Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information Latitude	Positional Information Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
18	DOUG26		EN				53° 40.447	129° 07.157							Part of prev cast
		0944		Bucket + SBE surf 19+			53°40.428	129°07.238	402					✓	
18	DOUG29	1149	BE	ROS		37	53°38.196	129°11.344	390				DW, LP, MB	✓	
		12:00	BO				53°38.184	129°11.394		382					
		12:07	EN				53°38.189	129°11.446							
18	DOUG31	13:33	BE	ROS		38	53°36.660	129°12.786	295				DW, LP, ME	✓	
		13:43	BO				53°36.678	129°12.796		291					
		14:00	EN				53°36.653	129°12.738							
18	DOUG32	14:31	BE	ROS		39	53° 35.593	129°12.691	252					✓	it's actually
	(Sill)	14:36	BO				53°35.574	129°12.721		247					not on the sill
		14:41	EN				53°35.569	129°12.719							
18	FOC1	20:14	BE	ROS	US	40	53 44.303	129 01.562	374						
		20:22	BO				53 44.311	129 01.564		368	86-94	8	TF, SP, CW, DS	✓	flat calm, raining
		20:34	EN				53 44.302	129 01.564							
18	FOC1	20:52	BE	ROS	US	41	53 44.308	129 01.573	375				TF, SP, DS, CW	✓	flat calm + raining
		21:00	BO				53 44.300	129 01.549		368	95-118				
		21:16	EN				53 44.294	129 01.565							
18	FOC1	2201		NET		42	53 44.294	129 01.565	375						
		2209	BO				53.44299	129 01.5681		250					

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		2213	EN			42	53 44.	129 01.			—	ø	SP, DS, TF		
18	FOC1	2219	BE	NET		43	53 44.2996	129 01.5770	375		—	ø	SP, DS, TF		
		2227	BO				53 44.3094	129 01.5839		250					
		2232	EN				53 44.3100	129 01.5997							
18	PB590	23 20	BO	GRAB		44	53 46.0910	128 55.6004	368	368	—		CW, SP, DS		
18	DOUG16	23 49	BE	ROS	US	45	53 46.688	128 54.714	386		119-135	16	TF, SP, DS, CW	✓	+particles backup Standard chem
		2357	BO				53 46.687	128 54.728		379					
		00 14	EN	+19p CTD.			53 46.670	128 54.725							+19p CTD. + bucket
19	PB-92	0104	BO	Grab		46	53 47.765	128 52.765	380	372	——		CW		
19	DOUG11	0141	BE	ROS	US	47	53 49.808	128 49.342	330		136-151	15	TF, SP, DS		
		0148	BO	+19p CTD + bucket			53 49.812	128 49.319		326					+19p CTD + bucket
		0203	EN				53 49.795	128 49.304							
19	DOUG4	0259	BE	NET		48	53 55.6220	128 42.2145	222						
		0305	BO				53 55.6275	128 42.2147		210					
		0309	EN				53 55.6259	128 42.2212							
19	DOUG4	0313	BE	NET		49	53 55.6232	128 42.2307	222						
		0320	BO				53 55.6229	128 42 2333		210					
		0323	EN				53 55.6217	128 42.2394							
19	DOUG4	0259	BE	CTD 19p+bucket		50	53 55.62	128 42.234			151-175	—	DS		

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Month | **Year** | **Ship** | **Cruise ID**

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19	DOUG4	0332	BE	ROS	US	51	53°55.624	128°42.226	222		152-174	22			1.1m on deck
		0339	BO				55.619	42.236		216					0.6m on deck
		0355	EN				55.676	42.209							
19	PBS111		BO	Grab	-	52	53 56.314	128 41.7	210	210	—	—	CW		
19	KSK1	0815	BE	ROS		53	53°28.546	128° 12.454	379		175-193		DW LP	✓	
		0827	BO	SBE 19+			53°28.398	128° 12.583	383	376			MB		
		0845	EN	Bucket			53°28.232	128° 12.690							
19	SC61	11:02	BE	NET		54	53° 11.969	129° 25.132	516				DW LP MB		
		11:10	BO				53° 11.946	129° 25.166		250					
		11:15	EN				53° 11.940	129° 25.196							
19	SC61	11:26	BE	NET		55	53° 12.023	129° 25.019	516				DW, LP MB		
		11:35	BO				53° 11.98	129° 25.0							
		11:39	EN				53° 11.966	129° 25.0	517						
19	SC61	11:51	BE	ROS		56	53° 11.989	129° 25.098	517		218-224		DW, LP MB	✓	
		12:02	BO				53° 11.927	129° 25.098		504					
		12:14	EN				53° 11.872	129° 25.144							
19	SC61	12:29	BE	ROS		57	53° 12.007	129° 25.106	505/517		194-217		DW, LP MB	✓	
		12:40	BO				53° 11.986	129° 25.097		504					
		12:59	EN				53° 11.912	129° 25.097							

Transmissometer & Fluorometer are to be cleaned before each cast

Cast Type:
BOT = Bottle cast, no CTD
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USW = Sea Water Loop
MOR = Mooring
NET = Plankton Net Haul

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

Time Code:
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MR = Messenger Release Time
RE = Recover Mooring Time

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month OCT **Year** 2015 **Ship** VECTOR **Cruise ID** 2015-37

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
19	PBS113	13:48	BE	GRAB		58	53° 11.409	129° 21.947	190				DW, LP, MB		
		13:50	BO				53° 11.404	129° 21.941		219					
		13:54	EN				53° 11.401	129° 21.942							
19	PBS59		BO	GRAB		59	53 15.094	129 26.564	458	458					
									(lab sounder)		→ (bridge sounder)				
19	SC58	14:57	BE	~~CTD~~		60	53° 16.566	129° 25.578	536 ⇒ 528				DW, LP, MB	✓	
		15:08	BO	ROS			53° 16.523	129° 25.661	540	531	— might hit the bottom				yes, cleaned
		15:18	EN				53° 16.504	129° 25.681							
19		15:30	BE	UCTD		61									
		16:09	EN				53° 20.592	129° 16.958							
19	WC43	16:16	BE	ROS		62	53° 21.056	129° 16.450	519				DW, LP, MB	✓	
		16:27	BO				53° 21.053	129° 16.441		513					
		16:36	EN				53° 21.068	129° 16.439							
19	DOUG45	17:14	BE	ROS		63	53° 22.172	129° 11.730	467		225 - 241	16	DW, LP, MB	✓	Bottle #1 didn't seal
		17:24	BO	SBE 19+ & Bucket			53° 22.032	129° 11.743	460	455					
		17:44	EN				53° 21.934	129° 11.764							
19	DOUG40	18:25	BE	ROS		64	53° 26.754	129° 12.530	400				DW, LP	✓	
		18:35	BO				53° 26.710	129° 12.533		395			MB		
		18:43	EN				53° 26.663	129° 12.544							

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Transmissometer & Fluorometer are to be cleaned before each cast

Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month Oct **Year** 2015 **Ship** VECTOR **Cruise ID** 2015-527

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
19	UCTD Line	19	BE	UCTD	—	65	53	129	373				DS, SP		begin UCTD to Drag 40-35
		2230	EN				53 55.259	128 42.662							Somewhere in Hecate
19	Dec 12	2342	BE	ROS	—	66	53 46.745	128 49.439	311		—	ϕ	TF, SP, DS	✓	
		2348	BO				53 46.742	128 49.429		306					
		2354	EN				53 46.740	128 49.431							
20	PBS93	00 42	BO	GRAB		67	53 45.6035	128 49.3872		326	—	—	CW		
20	Dec 14	01 15	BE	ROS	—	68	53 42.772	128 48.578	321		—	ϕ	TF, SP, DS	✓	
		01 21	BO				53 42.767	128 48.592		314					
		01 27	EN				53 42.760	128 48.623							
20	PBS95	01 40	BO	GRAB	—	69	53 42 4029	128 48 4175		317	—	—	CW		
20	Dec 19	0217	BE	ROS	—	70	53 39.299	128 52.393	270		—	ϕ	TF, DS, SP	✓	
		02 22	BO				53 39.299	128 52.368		265					
		02-27	EN				53 39.296	128 52.357							
20	Dec 23	02 55	BE	ROS	—	71	53 35.996	128 49.744	169		—	ϕ	TF, SP, DS	✓	
		02 58	BO				53 36.001	128 49.724		163					
		03 02	EN				53 36.017	128 49.727							
20	Dec 26	03 25	BE	ROS	US	72	53 34.262	128 51.026	166		242-246	4	TF, SP, DS	✓	+ 19p CTD + bucket
		03 28	BO				53 34.256	128 51.025		160					
		03 34	EN				53 34.249	128 51.024							

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	GC29	0420	BE	ROS	—	73	53°32.324	128 46.302	198			Ø	DS SPTF	✓	
		0425	BO				32.322	46.300		193					0.8m on deck
		0429	EN				32.322	46.298							
20	GC33	0449	BE	ROS	—	74	53° 31.540	128° 43530	210			Ø			
		0453	BO				5			204					
		0458	EN				53° 31.566	128° 43.586							
20	GC38	1048	BE	ROS	US	75	53° 27.004	128° 35.956	243		247-251		DW, LP, MB	✓	
		11:00	BO	SBE 19+ & Bucket			53° 27.024	128° 35.899		239					
		11:05	EN				53° 27.042	128° 35.886							
20	GC44	11:45		DRF		76	53° 26.169	128° 28.352	289				DW, LP, MB		
20	GC51	1250	BE	ROS		77			500 or 328m?					✓	→ See Notes
		1300	BO				53° 28.374	128° 13.912		450	252-256				
		1308	EN				53° 28.362	128° 13.883							
20	GC60	1408	BE	ROS		78	53° 25.682	128° 05.405	264				DW, LP	✓	
		1420	BO				53° 25.698	128° 05.470		262			MB		
		1425	EN				53° 25.745	128° 05.546							
20	GC68	1521	BE	ROS		79	53° 20.651	127° 59.563	226				DW, LP, MB	✓	
		1525	BO				53° 20.642	127° 59.563		220					
		1529	EN				53° 20.636	127° 59.560							

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Note: GESI - OUR DEPTH READ 328m,
- Bride DEPH READ 500 m (438)
- Altimeter Did not kick in @ 450m
- Charts Depth Read 500 m
- Lucas Went past 328m slowly, Alimeter did not kick in by 450m but I decided to stop there. No hit bottom,

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	GC74	16:12	BE	ROS		80	53°15.781	127°55.436	127		257-258		DW, LP MB	✓	
		16:18	BO	(SBE19+ Bucket			53° 15.790	127°55.424		131					
		16:21	EN				53°15.792	127°55.424							
20		16:37	BE	UCTD		81	53°.902	127°.26							
		1821	EN	UCTD			53°27.9068	128°17.1652							
20	GC44	1920	BO	GRAB		82	5325.9158	128 26.953		403	—	—	CW		
20	VP28	2132	BE	ROS	—	83	53 32.796	128 53.216	209				TF, SP	✓	bottle 2 was closed so water recovered bottle opened and water redeployed before "real" cast
		2136	BO				53 32.771	128 53.260		204					
		2140	EN				53 32.753	128 53.342							
20		950	BE	UCTD		84							DS		
		2111	EN												
20		2150	BE	UCTD		85							SP		
		2210	EN												
20	PBS114	2239	BO	GRAB		86	5329.1433	128 58.8494		114					
20	UC43	2251	BE	ROS	US	87	5329.039	128 58.649	111		259-260	1	TF, SP	✓	+ surface bucket
		2253	BO				5329.045	128 58.658		105					pressure before 0.8 pressure after
		2256	EN				5329.048	128 58.668							

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
20	UC45	23 29	BE	ROS	—	88	53 26.050	128 55.482	400		—	ϕ	TF, SP, DS	✓	
		23 36	BO				53 26.042	128 55.489		396					
		23 44	EN				53 26.060	128 55.490							
20	PBS115	23 55	BO	GRAB	—	89	53° 25.9279	128 55.484		386	—	—	CW		
21	UC50	00 44	BE	ROS	—	90	53 21.113	128 54.380	472		—	ϕ	TF, SP, DS	✓	
		00 53	BO				5321.109	128 54.372		466					
		01 01	EN				53 21.110	128 54.370							
21	UC52	01 33	BO	GRAB	—	91	5319.0739	128 54.6680		517					
21	UC52	01 48	BE	ROS	—	92	5319.076	128 54.664	515		—	ϕ	TF, DS	✓	
		01 58	BO				53 19.084	128 54.656		516					
		02 07	EN				53 19.085	128 54.652							
21	FR53	02 22	BE	ROS	—	93	53 18.181	128 53.765	382		—	ϕ	TF, DS	✓	
		02 30	BO				53 18.184	128 53.756		398					
		02 37	EN				53 18.176	128 53.766							
21	FR56	02 54	BE	ROS	—	94	53 16.913	128 52.501	462		—	ϕ	TF, DS	✓	
		03 02	BO				53 16.927	128 52.470		456					
		03 11	EN				53 16.904	128 52.500							
21	FR58	03 32	BE	ROS	—	95	53 15.556	128 50.646	499			ϕ	TF, DS	✓	
		03 42	BO				53 15.551	128 50.628		519					

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
21	FR58	0351	EN	ROS (cleaned prev. dip)		95	53 15.544	128 50.624							no samples but 2 btls fired at surface 2.6m
21	UC31	0653 1830	BE EN	ADCP			53° 32.699	129 00.327					DW,LP		
21	WHA1-	2041	BE	UCTD		96									
22	DOUG4	0024	EN										DS,SP		WHA1 to DOUG4
22	AP7	0109	BE	ROS	-	97	53 52.762	128 43.290	225		—	ϕ	TF,DS	✓	
		0113	BO				53 52.772	128 43.301		221					
		0117	EN				53 52.780	128 43.296							
22	AP8	0130	BE	ROS	-	98	53 51.809	128 42.893	168		—	ϕ	TF,SP,DS	✓	
		0133	BO				53 51.802	128 42.896		161					
		0137	EN				53 51.793	128 42.895							
22	AP9/PRE101	0155	BO	GRAB	-	99	53 50.45	128 42.803		230	—	—	CW		
22	AP9	0206	BE	ROS	US	100	53 50.454	128 42.803	230		261-269	9	TF,SP,DS	✓	pressure before on deck = 0.7/0.8 pressure after surface
		0211	BO				53 50.449	128 42.798		224					
		0222	EN				53 50.426	128 42.768							
22	AP11	0254	BE	ROS	US	101	53 49.024	128 42.786	157		270-277	8	TF,SP	✓	
		0258	BO				53 49.034	128 42.775		149					
		0307	EN				53 49.049	128 42.740							
	"	/		/			/	/	/	/	/	/	/	/	/

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Notes: _____

Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 7 July 2014

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
22	AP12	0334	BE	ROS	–	102	53 48.890	128 44.784	264		–	ϕ	TF, SP, DS	✓	
		0339	BO				53 48.886	128 44.839		258					
		0344	EN				53 48.889	128 44.862							
22	PBS99	0358	BO	GRAB	–	103	53 48.6973	128 45.3377		269	–	–	CW		
22	AP13	0417	BE	ROS	–	104	53 48.076	128 46.829	288		–	ϕ		✓	
		0422	BO				53 48.068	128 46.854		281			TF, DS, SP		
		0427	EN				53 48.058	128 46.878							
22	DOUG12	0453	BE	ROS	–	105	53 48.706	128 50.138	346		–	ϕ	TF, DS, SP	✓	
		0500	BO				53 48.686	128 50.128		340					
		0506	EN				53 48.703	128 50.072							[db] after cast 2.6
22	Dec26	0700	BE	ADCP		106	53°35.386	128°48.893	156 – 77m	(full depth)			DW, LP, MB		Can't find Can b
	transect	1905	EN	UCTD			53°35.327	128°48.587							
22	Dec26	0952	BE	ROS	–	107	53°34.340	128°51.010	162		–	ϕ	DW, LP	✓	Calibrate UCTD
		1003	BO				53°34.243	128°51.002		157			MB		with Rosette CTD
		1006	EN				53°34.235	128°51.007							UCTD: S/N: 103
22	Dec23	1050	BE	ROS	–	108	53°36.050	128°49.698	166		–	ϕ	DW, LP MB	✓	Calibrate UCTD
		1053	BO				53°36.094	128°49.955		157					with Rosette CTD
		1056	EN				53°36.112	128°49.979							UCTD S/N 108
22	Dec23	1551	BE	ROS	–	109	53°36.023	128°49.753	170 – 168		–	ϕ	DW, LP MB	✓	

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Notes: _____

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
		1556	BO				53°35.981	128° 49.841		160					
			EN				53°35.976	128°49.851							
22	Dec26	1641	BE	ROS	–	110	53°34.278	128°50.971	165		–	ϕ	DW, LP MB	✓	
		1646	BO				53°34.274	128°50.969		159					
		1649	EN				53°34.277	128°50.977							
22	UC31	20 00	BE	ROS	–	111	53 32.226	128 59.743	47					✓	
		20 01	BO				53 32.228	128 59.746		40					
		20 02	EN				53 32.230	128 59.748							
22	VP39	20 28	BE	ROS	US	112	5330.421	129 03.823	130		278 – 279	2	TF, DS	✓	weird- altimeter was ok with going twodeep.
		20 31	BO				5330.425	129 03.821		136					136 = b-5 wit altimeter
		20 36	EN				5330.428	129 03.833							
22	VP43	21 20	BE	ROS	–	113	53 24.892	129 06.886	323		–	ϕ	TF, SP	✓	waterfall close
		21 26	BO				53 24.924	129 06.859		318					
		21 32	EN				53 24.931	129 06.960							
22	PBS46	22 30	BO	GRAB	–	114	53 18.778	129 09.490		505	–	–	CW, DS		
22	MR53	23 08	BE	ROS	–	115	53 18.304	129 04.220	436		–	ϕ	TF, DS, SP	✓	bottom & sounder
		23 18	BO				53 18.278	129 04.206		462					b-5 & altimeter
		23 26	EN				53 18.307	129 04.256							
22	PBS47	23.44	BO	GRAB	–	116	53 18.656	129 04.214		497	–	–	CW	–	

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DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information		Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
							Latitude	Longitude							
23	PBS48	00 46	BO	GRAB	–	117	53 19.497	129 02.742		463	–	–	CW	–	
23	MR55	01 08	BE	ROS	–	118	53 19.252	129 01.280	483		–	ø	TF, DS, SP	✓	
		01 17	BO				53 19.256	129 01.334		476					
		01 26	EN				53 19.272	129 01.321							
23	PBS49	01 47	BO	GRAB	–	119	53 18.775	128 59.575		489	–	–	CW, DS		
23	MR58	02 11	BE	ROS	–	120	53 18.054	128 57.034	492		–	ø	TF, DS, SP	✓	
		02 20	BO				53 18.070	128 57.032		485					
		02 29	EN				53 18.060	128 57.068							
23	PBS45	03 24	BO	GRAB	–	121	53 18.306	129 08.276		481	–		CW, DS		
23	PBS73	04 02	BO	GRAB	–	122	53 19.683	129 10.546		479	–		CW, DS		
23	WS14	04 49	BE	ROS	–	123	53 19.207	129 12.125	463		–	ø	TF, DS, SP	✓	
		04 58	BO				53 19.202	129 12.116		456					
		05 07	EN				53 19.206	129 12.131							
23	WS12	05 33	BE	ROS	US	124	53 20.345	129 16.254	486		280 – 292	13	TF, DS, SP	✓	
		05 43	BO				53 20.344	129 16.296		485					bottom hook on bottle 13 was broken & loose on recover replaced
		06 02	EN				53 20.334	129 16.238							
23	WS11	06 35	BE	ROS	–	125	53 18.523	129 17.804	541		–	ø	TF, DS, SP	✓	
		06 45	BO				53 18.535	129 17.838		535					
		06 55	EN				53 18.535	129 17.862							

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 7 July 2014

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month | **Year** | **Ship** | **Cruise ID**

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	LP48	0707	BE	ROS		126	53°17.155	129°17.149	550				DW, LP MB	✓	
		0722	BO				53°17.034	129°16.984	545	540					Pump was briefly off at the Bottom for less than 1 sec
		0731	EN				53°16.944	129°16.963							
23	LP 50	0746	BE	ROS		127	53°15.535	129°18.185	550					✓	
		0759	BO				53°15.324	129°18.340	547	542			DW, LP MB		
		0809	EN				53°15.313	129°18.391							
23	LP53	0836	BE	ROS		128	53°13.249	129°22.979	(496 – 492) lab					✓	
		0846	BO				53°13.224	129°23.036	480	470					Altimeter never kicked in
		0855	EN				53°13.229	129°23.016	(bridge)						
23	DOUG1W	1428	BE	ROS		129	53°58.711	128°41.449	150				DW, LP MB	✓	
		1435	BO				53°58.716	128°41.448		142					
		1437	EN				53°58.718	128°41.447							
23	DOUG0.4W	1447	BE	ROS		130	53°59.189	128°41.192	126				DW, LP MB	✓	
		1452	BO				53°59.192	128°41.191		125					Altimeter said 5m from BO
		1454	EN				53°59.194	128°41.192							
23	DOUG0.2W	1504	BE	ROS		131	53°59.470	128°41.255	63				DW, LP MB	✓	Altimeter said 5m from BO
		1506	BO				53°59.477	128°41.248		62					
		1508	EN				53°59.478	128°41.248							Cindy went to Kit River
23	DOUG02	1544	BE	ROS		132	53°59.227	128°40.456	92 (sounder)				DW, LP MB	✓	

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		1549	BO				53° 59.224	128° 40.644		88 (5 m off BO)	293-299	7			
		1555	EN	19+SBE			53° 59.234	128° 40.444							
23	Doug0.2	1559	—	GRAB	—	133	53° 59.224	128° 40.444		88			DW, LP MB		
23	Doug0.2E	1643	BE	ROS		134	53°59.246	128°40.870	70				DW, LP MB	✓	
		1645	BO				53°59.252	128°39.851		68					Altimeter shows 5 m off bot
		1647	EN				53°59.254	128°39.850							
23	Doug0.4E	1656	BE	ROS		135	53°59.046	128°39.730	108				DW, LP MB	✓	
		1659	BO				53°59.039	128°39.740		107					Altimeter shows 5m off BOT
		1702	EN				53°59.039	128°39.748							
23	Doug0.4	1713	BE	ROS		136	53°59.086	128°40.387	116				DW, LP MB	✓	
		1717	BO	+19PSBE			53°59.084	128°40.400		110					
		1723	EN				53°59.084	128°40.428							
23	Doug0.4	1726		GRAB		137	53°59.084	128°40.423	115				DW, LP MB		
23	Doug1	1811	BE	ROS		138	53° 58.704	128°40.544	146.8				DW, LP MB	✓	
		1816	BO	& 19+SBE			53° 58.708	128° 40.544		142					
		1826	EN				53°58.712	128°40.571							
	Doug1	1842	BO	GRAB		139	53 58.714	128 40.563	146	147					second attempt
23	Doug1E	1857	BE	ROS	—	140	53 58.733	128 39.786	128		—	ϕ	TF, DS	✓	
		1901	BO				53 58.732	128 39.794		122					

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samples 313, 314, 315, 316 in wrong btls.

event 138: forgot to snap btl 5@ 10m, so Decided to put rosette down again and snap the following:

btl	sample	pressure
9	313	10
10	314	0
11	315	0
12	316	0

DAILY SCIENCE LOG

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Month October **Year** 2015 **Ship** Vector **Cruise ID** 2015-54

Day	Station Name	Time (UTC)	Time Code	Cast Type	Firing Method	Event Number	Positional Information: Latitude	Positional Information: Longitude	Bottom Depth	Max Depth	Sample Numbers	# of Bottles	Watch Keepers	Trans. Cleaned	Comments
23	DOUG1E	1903	EN	ROS	—	140	53 58.733	128 39.799							
23	DOUG2E	2240	BE	ROS	—	141	53 57.772	128 39.721	prob c sounder feed		—	ϕ	TF, SP	✓	originally named 2015-54-173 -
		2243	BO				53 57.773	128 39.725		161					renamed to ... 141
		2246	EN				53 57.772	128 39.730							
23	DOUG2	2257	BE	ROS	US	142	53 57.824	128 40.637	prob c sounder feed		317-327	11	TF, SP, DS	✓	
		2302	BO				53 57.816	128 40.636		169					+ 19p CTD cast
		2311	EN				53 57.816	128 40.628							
23	DOUG2	2222	BO	GRAB		143	53 57.818	128 40.625	173	173					
23	DOUG2W	2345	BE	ROS	—	144	53 57.803	128 41.657	prob c sounder feed		—	ϕ	TF, SP	✓	false start on 1st cast - pump not turned on.
		2348	BO				53 57.803	128 41.656		176					
		2351	EN				53 57.803	128 41.652							
24	DOUG3W	0043	BE	ROS	—	145	53 56.882	128 42.250	166		—	ϕ	TF, SP	✓	
		0047	BO				53 56.884	128 42.258		166					
		0050	EN				53 56.887	128 42.263							
24	DOUG3	0102		ROS	US	146	53 56.846	128 41.029	195		328-338		TF, SP, DS	✓	
		0106					53 56.855	128 41.045		191					+19p CTD cast
		0116					53 56.851	128 41.038							
24	DOUG3	0124	BO	Grab	-	147	53 56.852	128 41.035	194	195					

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This page is for any notes or observations

between events Doug1E & Doug2E: ship lost navigation and gps feed so had to be fixed before we could continue

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24	DOUG3E	0146	BE	ROS	-	148	53 56.910	128 40.208	155		—	ϕ	TF, SP	✓	
		0149	BO				53 56.909	128 40.205		158					
		0152	EN				53 56.910	128 40.200							
24	DOUG4E	0209	BE	ROS	—	149	53 55.594	128 41.273	214		—	ϕ	TF, DS SP	✓	
		0213	BO				53 55.594	128 41.290		211					
		0217	EN				53 55.592	128 41.303							
24	DOUG4	0227	BE	ROS	US	150	53 55.615	128 42.235	220		339-349	11	TF, DS, SP	✓	+1ϕ CTD cast
		0232	BO				53 55.621	128 42.236							
		0242	EN				53 55.624	128 42.251							
24	DOUG4	0250	BO	GRAB	—	151	53 55.619	128 42.232	220		—	-	CW		
24	DOUG4W	0306	BE	ROS	-	152	53 55.636	128 43.009	147		—	ϕ	TF, DS	✓	
		0309	BO				53 55.627	128 43.013		142					
		0311	EN				53 55.624	128 43.013							
24	KA9	0349	BE	ROS	-	153	5351.348	128 41.514	176		—	ϕ			08m
		0354	BO				51.350	41.521		170					
		0357	EN				51 348	41.520							
24	PBS103	0420		Grab		154	5351.564	12839.680.	196	196					
24	DOUG29	0730	BE	ADCP		155	53°33.160	129°11.400							
	Transect	1855	EN	UCTD											

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24	Sill N	1125	BE	ROS	–	156	53°36.184	129°12.676	231		–	ϕ	DW, LP MB	✓	@ low tide
		1129	BO				53°36.179	129°12.701		223					
		1134	EN				53°36.172	129°12.691							
24	Sill S	1153	BE	ROS	–	157	53°35.819	129°12.620	228		–	ϕ	DW, LP MB	✓	@ low tide
		1159	BO				53°35.828	129°12.622	223	225					Altimeter shows 7m from BOT
		1205	EN				53°35.828	129°12.635							
24	Sill N	1731	BE	ROS	–	158	53°36.164	129°12.707	235				DW, LP MB	✓	@ high tide
		1737	BO				53°36.154	129°12.697	225	215	–	ϕ			very windy. N wind
		1741	EN				53°36.154	129°12.702							
24	Sill S	1757	BE	ROS	–	159	53°36.834	129°12.618	225		–	ϕ	DW, LP MB	✓	@ high tide
		1803	BO				53°36.837	129 12.610	227	225	→ Altimeter show 9m from Bot				very windy N wind
		1807	EN				53°36.840	129 12.617							
24	LOCH25	2004	BE	ROS	–	160	53 40.880	129 05.017	268		–	ϕ	TF, DS, SP	✓	don't think I updated the stn name in the data file
		2010	BO				53 40.888	129 05.014		283					
		2015	EN				53 40.885	129 05.010							
24	LOCH24	2027		ROS	–	161	53 40.522	129 03.797	70		–	ϕ	TF, DS, SP	✓	
		2028					53 40.525	129 03.796							
		2030					53 40.528	129 03.797							

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							Latitude	Longitude							
24	LOCH22	2101	BE	ROS	—	162	53 41.899	129 00.452	150		—	ϕ	TF, DS	✓	
		2104	BO				53 41.893	129 00.452		146					← may have started to wire out as ROS ship more?
		2106	EN				53 41.900	129 00.456							
24	LOCH20	2124	BE	ROS	—	163	53 42.737	128 58.135	220		—	ϕ	TF, SP	✓	before Cast 0.7 after 0.7/0.8
		2128	BO				53 42.734	128 58.151		215					
		2132	EN				53 42.727	128 58.157							
24	LOCH18	2146	BE	ROS	—	164	53 42.287	128 55.829	236		—	ϕ	~~DS~~ SP	✓	
		2152	BO				53 42.284	128 55.835		229					
		2156	EN				5342286	12855830							
24	LOIS18	2219	BE	ROS	—	165	5343.154	128 51.881	71		—	ϕ	TF, SP	✓	
		2221	BO				53 43.150	128 51.889		68					
		2222	EN				53 43.145	128 51.896							
24	LOCH16	2248	BE	ROS	-	166	53 43.957	128 53.476	241		—	ϕ	TF, SP	✓	
		2252	BO				53 43.955	128 53.484		238					
		2256	EN				53 43.958	128 53.486							
24	LOCH15	2309	BE	ROS	-	167	53 45.064	128 53.110	140		—	ϕ	TF, DS	✓	
		2312	BO				53 45.059	128 53.118		140					
		2315	EN				53 45.064	128 53.118							

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24	LOCH13	23 29	BE	ROS	—	168	53 46.055	128 51.269	322		—	ϕ	TF, DS	✓	
		2335	BO				53 46.056	128 51.252		318					
		23 41	EN				53 46.055	128 51.266							
25	M118	0035	BE	ROS	—	169	53 46.301	128 57.708	88		—	ϕ		✓	
			BO				46.291	128 57.718		84					0.7 m on deck
		0040	EN				46.288	57.722							
	M119	0054	BE	ROS	—	170	53 47.680	128 57.404'	27			ϕ		✓	
		55	BO				53° 47686	128 57 398'		23					
		56	EN				53° 47687	128° 57.397							
	G120	0104	BE	ROS	—	171	53 48.277	128 58.099	45			ϕ		✓	
		0107	BO				53° 48.276	128 58.102		41					
		0108	EN				53° 48.277	128 58.104							
	G122	0123	BE	ROS	—	172	53° 50.179	128 58.163	166			ϕ		✓	
		0128	BO				53° 50.185	128 58.159		163					
		0131	EN				53° 50.185	128 58.160							
	G124	0145	BE	ROS	—	173	53° 51.844	128 58.375	175			ϕ		✓	
		0149	BO				53° 51.851	128 58.387		168					
		0152	EN				53 51.851	128 58.394							

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							Latitude	Longitude							
25	M121	0239	BE	ROS	-	174	53°49.806	128 55.876	69		—	ϕ	DS, SP	✓	
		0241	BO				53 49.813	128 55.873		65					
		0243	EN				53 49.814	128 55.871							
25	KA11	04 42	BE	ROS	-	175	53 51.542	128 38.992	207		—	ϕ	TF, SP	✓	called KA1 in data file
		04 45	BO				53 51.550	128 38.988		203					
		04 49	EN				53 51.550	128 38.988							
25	KA14	05 12	BE	ROS	-	176	53 50.262	128 34.696	196		—	ϕ	TF, SP	✓	
		05 16	BO				53 50.261	128 34.690		193					
	KA14/	05 19	EN				53 50.258	128 34.696							
25	PBS 106	05 26	BO	GRAB	-	177	53 50.257	128 34.693		197	—	—	CW		
25	KA16	05 45	BE	ROS		178	53 50.327	128 31.838	142		—	ϕ	TF, SP	✓	
		05 48	BO				53 50.329	128 31.832		139					
		05 51	EN				53 50.329	128 31.835							
25	KA17	06 02	BE	ROS	-	179	53 50.066	128 30.161	84		—	ϕ	TF, SP	✓	
		06 04	BO				53 50.066	128 30.161		75					
		06 05	EN				53 50.066	128 30.162							
25	SC 60E	11 34	BE	ROS		180	53°15.197	129°24.250	564					✓	
		11 49	BO				53°15.289	129°24.242		539	—	ϕ	DW, CP MB		
		11 59	EN				53°15.300	129°24.026							

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25	SC61W	1226	BE	ROS		181	53°13.952'	129°27.713	438				DW, LP, MB	✓	In SBE header file,
		1236	BO				53°13.903	129°27.586	436	430					Typed SC60W For
		1244	EN				53°13.862	129°27.744							the Stn name.
25	SC60W	1259	BE	ROS		182	53°15.193	129°27.776	528				DW, LP MB	✓	
		1310	BO				53°15.185	129°27.780		524					
		1320	EN				53°15.184	129°27.781							trip 1 bottles
25	SC59	1400	BE	ROS		183	53°16.628	129°27.725	540	sounder			DW, LP MB	✓	at the bot.
		1413	BO				53°16.618	129°27.698	527	522					For sediment traps
wrote 59W on SBE CTD Header		1423	EN				53°16.628	129°27.726							5m off bot by Altimeter
25	SC58	1438	BE	ROS		184	53°16.549	129°25.559	531				DW, LP MB	✓	
		1450	BO				53°16.558	129°25.573	529	524					5m off bot
		1501	EN				53°16.554	129°25.556							by Altimeter
25	CP55	1527	BE	ROS		185	53°17.594	129°21.824	416				DW, LP MB	✓	
		1537	BO				53°17.588	129°21.803	415	410					
		1542	EN				53°17.635	129°21.779							
25	WS9	1616	BE	ROS		186	53°20.152	129°19.070	504				DW, LP MB	✓	
		1626	BO				53°20.152	129°19.036		495					
		1635	EN				53°20.165	129°18.998							

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25	WS4	1716	BE	ROS		187	53°20.628	129°12.050	460		350 - 362	13	DW, LP AB	✓	
		1728	BO				53°20.644	129°12.049		457					
		1747	EN				53°20.656	129°12.031							
25	WS4	1750		DRF		~~1888~~ 188	bent								DRF: 322, 323, 324, 325 326 and 333
25	WS4	1803	BE	DRF		188	53 20.6904	129 14.629	460						
25	GrC0	1832	BE	ROS		189	53°22.602	129°20.310	516						
		1840	BO				53°22.657	129°20.224	236		–	ϕ	DW, LP, MB		
		1844	EN				53°22.660	129°20.216	190	211 →	ship was on asm				
25	GrC6	1925	BE	ROS	US	190	53 26.663	129 26.552	170						shows 20m off bot by Altimeter
		1932	BO				53 26.653	129 26 537	314		363 - 372	10	TF, DS, SP	✓	
		1946	EN				53 26.642	129 26.532		363					
25	GrC8	2016	BE	ROS	–	191	53 28.088	129 29.146	206		–	ϕ	TF, DS, SP	✓	called GrC9 in file
		2020	BO				53 28.097	129 29.171		203					
		2024	EN				53 28.098	129 29.176							
25	GrC9	2041	BE	ROS	–	192	53 29.050	129 30.842	262		–	ϕ	TF, DS, SP	✓	
		2046	BO				53 29.041	129 30.811	266	265					
		2051	EN				53 29.024	129 30.860							

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25	GrC12	21 13	BE	ROS	-	193	53 31.038	129 33.948	134		—	ϕ	TF,DS,SP	✓	
		21 16	BO				53 31.036	129 33.943		131					
		21 19	EN				53 31.033	129 33.935							
25	GrC14	21 45	BE	ROS	-	194	53 32.302	129 36.148	111		—	ϕ	TF,DS,SP	✓	significant wire
		21 48	BO				53 32.296	129 36.184		106					angle aft
		21 51	EN				53 32.287	129 36.196							
25	GrC16	22 13	BE	ROS	US	195	53 33.744	129 38.570	96		373-378	6	TF,DS,SP	✓	downcast - significant wire angle aft and on upcast. Bottles not left for 30sec before tripping.
		22 17	BO				53 33.748	129 38.584		89					
		22 22	EN				53 33.721	129 38.548							
25	GrC19	23 04	BE	ROS	-	196	53 36.442	129 42.332	98		—	ϕ	TF,DS	✓	
		23 07	BO				53 36.445	129 42.326		96					
		23 08	EN				53 36.442	129 42.324							
25	GrC21	23 26	BE	ROS	-	197	53 37.724	129 43.530	117		—	ϕ	TF,DS	✓	"moderate" wire angle aft
		23 29	BO				53 37.722	129 43.528		113					during downcast
		23 31	EN				53 37.684	129 43.502							
25	GrC22	23 43	BE	ROS	-	198	53 38.478	129 44.225	96						
		23 45	BO				53 38.480	129 44.222		92					
		23 47	EN				53 38.458	129 44.189							

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See over for Comments

N Sunday N 15:37 PDT - Steve Page goes off in small boat to rescue.
beached drifter

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26	GrC23	00 44	BE	ROS	—	199	53 39.421	129 45.350	120		—	ϕ	TF, SP	✓	
		00 47	BO				53 39.420	129 45.346		116					
		00 49	EN				53 39.419	129 45.350							
26	GrC25	01 10	BE	ROS	—	200	53 41.513	129 46.853	150		—	ϕ	TF, SP	✓	
		01 13	BO				53 41.525	129 46.847		147					
		01 15	EN				53 41.536	129 46.843							
26	GrC27	01 35	BE	ROS	US	201	53 43.201	129 49.274	216		379-387	9	TF, SP, DS	✓	
		01 40	BO				53 43.200	129 49.273							
		01 50	EN				53 43.205	129 49.272							
26	GrC32	02 24	BE	ROS		202	53 46.384	129 54.989	185		—	ϕ	TF, SP, DS	✓	bt 19 did not close
		02 27	BO				53 46.379	129 54.988		181					
		02 31	EN				53 46.379	129 55.003							
26	GrC36	03 02	BE	ROS	—	203	53 49.141	129 59.249	176		—	ϕ	TF, SP	✓	
		03 05	BO				53 49.135	129 59.227		173					
		03 08	EN				53 49.138	129 59.220							
26	GrC38	03 28	BE	ROS	—	204	53 50.772	130 01.841	172		—	ϕ	TF, SP	✓	
		03 31	BO				53 50.773	130 01.860		168					
		03 35	EN				5350.779	130 01.897							

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26	GrC 41	0409	BE	ROS	US	205	53 53.198	130 04.956	139		388 - 394	7	TF, DS, SP	✓	
		0412	BO				53 53.216	130 04.957							
		0420	EN				53 53.220	130 04.962							
26	GrC 43	0442	BE	ROS	-	206	53 54.3[illegible]	130 08.[illegible]	79		—	ϕ	TF, DS	✓	forgot to record initial posn.
		0444	BO				53 54.268	130 08.435		74					
		0446	EN				53 54.271	130 08.442							
26	OGCH46	0508	BE	ROS	-	207	53 55.433	130 13.050	150			ϕ	TF, SP	✓	
		0511	BO				53 55.436	130 13.058		147	—				
		0514	EN				53 55.438	130 13.064							
26	OGCH50	0548	BE	ROS	-	208	53 59.326	130 12.632	130		—	ϕ	TF, DS	✓	
		0551	BO				53 59.322	130 12.628		127					
		0553	EN				53 59.323	130 12.625							
26	MP55	0634	BE	ROS	-	209	54 4.175	130 16.032	110			ϕ	DS SP	✓	
		0638	BO				54 4.180	130 16.034		106					
		0640	EN				54 4.182	130 16.033							
26	MP60	0715	BE	ROS	-	210	54° 06.468	130° 22.972	117		—	ϕ	DW, LP	✓	
		0719	BO				54° 06.474	130° 22.960		113			MB		
		0721	EN				54° 06.475	130° 22.958							

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26	CHSND59	0747	BE	ROS		211	54°08.101	130°18.380	74		—	ϕ	DW, LP MB	✓	
		0750	BO				54°08.093	130°18.391		70					
		0752	EN				54°08.093	130°18.397							
26	CHSND61	0838	BE	ROS		212	54°10.466	130°28.674	106		—	ϕ	DW, LP MB	✓	
		0843	BO				54°10.478	130°28.747	108	102					
		0845	EN				54°10.477	130°28.748							
26	CHSND68	0947	BE	ROS		213	54°15.690	130°31.991	88		—	ϕ	DW, LP MB	✓	
		0950	BO				54°15.695	130°31.981	90	85					
		0952	EN				54°15.695	130°31.976							
26	PRHR74	1059	BE	ROS		214	54°13.526	130°21.079	38				DW, LP MB	✓	
		1102	BO				54°13.526	130°21.088		33					
		1103	EN				54°13.523	130°21.088							

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