

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2014-59

DATE:

From:

Sept 27 2014

To:

OCT 13 2014

VESSEL:

CCGS VECTOR.

PROJECT(S):

W-C - DC

MEAD / IDS

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

1/2

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: Vector CTD

Data acquisition program: Seasave

CTD deck unit make: N/A model: serial number:

Primary CTD

Make: SBE model: 25 serial number: 0404 + ECOSS

Primary temperature serial number: 4484

Primary conductivity serial number: 3184

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: Wetlabs Model: C-STAR s/n: 983DR

Transmissometer: Model: s/n:

Fluorometer: Model Wetlabs ECO Cable gain: 13 s/n: 2216 P, S or NO pump?

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

Oxygen sensor: SBE Model: 43 s/n: 0047 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?

+ Benthos pinger

Secondary CTD

Make: model: serial number:

Primary temperature serial number:

Primary conductivity serial number:

Secondary temperature serial number:

Secondary conductivity serial number:

Transmissometer: Model: s/n:

Transmissometer: Model: s/n:

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

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

Oxygen sensor: Model: s/n: P, S or NO pump?

PAR sensor: Model: s/n: Surface PAR? Y / N

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

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

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

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

This also includes the bottle location above the CTD on non-rosette casts (e.g., W.E. Ricker)

Rosette Setup:

Number of bottles: 6
Manufacturer: N/A
Volume of bottles (litres): 15 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):

small work winch on small portside center post.

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: _____

Sampling interval (sec): _____

Bin Length: (2^x): _____

Pulse Length: _____

Buffer (bytes): _____

Gyro Offset: _____

User Exits:

Name: _____

Name: _____

Name: _____

Work File: _____

Exit points: _____

Exit points: _____

Exit points: _____

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 Beaded in Port Hardy

CTD pressure reading on deck (db), before cast: _____ after cast: _____

Pumps working? Yes ☐ (0011) No ☐ (0010)

Secondary Temp – Primary Temp: _____
(Average from the mixed region)

Secondary Salinity – Primary Salinity: _____
(Average from the mixed region)

Additional Comments:

Scientific Equipment Used During Cruise

This sheet allows you to enter all of the equipment used while on board. Please use the separate CTD sheet for entry for SBE 9/16/19/25.

Other CTD units:

RBR Serial Number: _____ Sensors: _____

Others: _____

19plus + turbidity sensor for plankton study

Plankton Nets:

Bongo #1 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Bongo #2 Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____
Frame Size: _____ cm Mesh: _____ μ m Flowmeter: _____

Multinet ☐

BIONESS ☐

Neuston ☐

Others: _____

SCOR 236um

Trawl Gear:

Midwater Trawls:

SOG ☐

Highseas ☐

Pelagic ☐

Other: _____

Bottom Trawls: Atlantic Western IIA ☐

Yankee 36 Hard & Soft Bottom ☐

Other: _____

American Shrimp Trawl ☐

Notes: _____

Trawl Doors: USA Jet ☐

Tyburon ☐

Sounders :

Wesmar 380 ☐

Others: _____

Acoustics:

Echosounder #1 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Echosounder #2 _____ Frequencies (KHz): 12 ☐ 18 ☐ 38 ☐ 70 ☐ 120 ☐ 200 ☐

Others: _____

Software & Notes: _____

Other Gear in Operation:

1. *Smith mac grab*

2. _____

3. _____

4. _____

5. _____

unloaded into Port Hardy - Graham needed to rendezvous in Campbell River - PBS forgot hydroacoustic pole

will go off the port side center pad directly across from A-frame (starboard)
- winch ship sent wrong pad for work winch they had this winch.
- spent day setting up equipment, R/V, waiting

Sampling for Rosette; 0m, 10m, 25m, mid-depth, bot - 5
See rosette sheets for stations collection breakdown.

S.R. Computer PDT

NOTE

ECO + 25 CTD are on local FST not UTC

Cruise log in UTC direct from ship's feed

NB

Max depths listed are those from the (sl. Saunders).
CTD is (-5) ± 3 more m to actual bottom.
(Bot ~ 8 sh)

DAILY SCIENCE LOG

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Book 1/2
Page 1 of 1

Month <u>Sept</u>				Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-59</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
01	SC61	30	05:49	BE	ROS	US	53° 11.001	129° 25.110	512		1-6 <u>1-6</u>	6 <u>6</u>	aw/NHP	☒ ☒	400 munc depth.
			05:59	BO			53° 12.004	129° 25.108		4169	-			☐ ☐	60 sec soak
			06:15	EN			53° 12.009	129° 25.139			-			☐ ☐	
02	SC61	30	06:34		Drifter		53° 12.011	129° 25.126			-			☐ ☐	
03	SC61	30	06:36	BE	NET	VH	53° 12.011	129° 25.104	512		-			☐ ☐	
			06:43	BO			53° 12.001	129° 25.114		250	-			☐ ☐	
			06:48	EN			53° 11.999	129° 25.132			-			☐ ☐	
04	SC61	30	07:10	BE	SBE19	N/A	53° 11.999	129° 25.152	512	Ø	-			☐ ☐	
05	OC66	30	08:15	BE	CTD	—	53° 11.989	129° 33.391	306		-			☐ ☐	
			08:20	BO			53° 11.998	129° 33.390		295	-			☒ ☒	
			08:25	EN			53° 12.011	129° 33.379			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	
			:				°	°			-			☐ ☐	

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

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only 469m on drum ¹¹ need to account in depth for trip logic
and all other deep casts

1001-1004. Rep

— the first cast didn't arm

→ did a redo of SC61 → kept at cast 01
having issues with trip logic carry over and reverting to old .psa.
files — initially wanted to do lapsed time as a carry over ?? why
it didn't do it in first cast is unknown
saved a new setup 2.psa so it should be ok

— DID NOT TRIP — no idea why — will not take samples here
will go on with others

— keep sample #s the same. 1-6

— all the grabs I want to do >469 — so to stay in the area go to 0066

0066 bottom is lumpy — stay conservative.

reminded Scott/Rose regarding the trip logic vs DC command report = big discrepancy

— 002:15 departed for top of Principe Channel — until trip logic is resolved can't do better
and most grab locations >469m

DAILY SCIENCE LOG

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Boyle 1/2
Page 2 of 10

Month OCT				Year 2014			Vessel VECTOR			Cruise ID 2014-59					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
06	PC73	01	03:30	BE	CTD		53° 16.237	129° 43.025	179		N/A		aw/WH	☒	
			03:35	BO			53° 16.238	129° 43.023		170				☐	
			03:39	EN			53° 16.240	129° 42.998						☐	
07	ES72	01	04:55	BE	CTD		53° 05.670	129° 33.659	177					☒	
			04:59	BO			53° 05.676	129° 33.644		170				☐	
			05:02	EN			53° 05.657	129° 33.638						☐	
08	ES80	01	05:43	BE	CTD		53° 00.636	129° 28.842	121					☐	
			05:46	BO			53° 00.636	129° 28.846		115				☐	
			05:48	EN			53° 00.622	129° 28.838						☐	
09	CS84	01	06:38	BE	CTD		52° 53.99	129° 23.960	252					☒	
			06:43	BO			52° 53.989	129° 23.960		245				☐	
			06:48	EN			52° 53.991	129° 23.940						☐	
10	CS84		07:07	BE	NET		52° 54.027	129° 24.018	252					☐	
			07:15	BO			52° 54.009	129° 23.958		245				☐	
			07:20	EN			52° 53.987	129° 23.910						☐	
11	CS84	01	07:35		SBE-19 Turb		52° 53.988	129° 23.908						☐	turbidity 3 bottles photo
12	SC74	01	08:50	BE	CTD		53° 00.657	129° 15.892	376					☒	
			08:57	BO			53° 00.691	129° 15.825		370				☐	
			09:04	EN			53° 00.747	129° 15.749						☐	

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PC73 station north of morning
so slightly north from 2014-15 station

we could only clean trans: Micro with DMQ since no
cleaning solution was supplied.

lots of schools of large cherring come to the lights at night

— from the bucket we also took a phyto sample - not assigned an I.D.#

DAILY SCIENCE LOG

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Book 1/2
Page 3 of 10

Month <u>OCT</u>				Year <u>2014</u>		Vessel <u>VECTOR</u>				Cruise ID <u>2014-59</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
<u>13</u>	<u>SC69</u>	<u>01</u>	<u>09:42</u>	<u>BE</u>	<u>CTD</u>		<u>53°04.810</u>	<u>129°19.575</u>	<u>692</u>		<u>-</u>		<u>WHP/KW</u>	☒ ☒	
			<u>09:51</u>	<u>BO</u>			<u>53°04.770</u>	<u>129°19.582</u>		<u>470</u>	<u>-</u>			☐ ☐	<u>wire limit</u>
			<u>09:59</u>	<u>EN</u>			<u>53°04.753</u>	<u>129°19.595</u>			<u>-</u>			☐ ☐	
<u>14</u>	<u>WHA3</u>	<u>02</u>	<u>03:38</u>	<u>BE</u>	<u>CTD</u>		<u>53°08.359</u>	<u>129°07.258</u>	<u>545</u>		<u>-</u>			☐ ☐	
			<u>03:49</u>	<u>BO</u>			<u>53°08.356</u>	<u>129°07.241</u>		<u>470</u>	<u>-</u>			☐ ☐	<u>W.L.</u>
			<u>03:57</u>	<u>EN</u>			<u>53°08.361</u>	<u>129°07.246</u>			<u>-</u>			☐ ☐	
<u>15</u>	<u>WC58</u>	<u>02</u>	<u>04:34</u>	<u>BE</u>	<u>CTD</u>		<u>53°13.346</u>	<u>129°07.249</u>	<u>496</u>		<u>-</u>			☒ ☒	
			<u>04:43</u>	<u>BO</u>			<u>53°13.348</u>	<u>129°07.248</u>		<u>470</u>	<u>-</u>			☐ ☐	<u>W.L.</u>
			<u>04:52</u>	<u>EN</u>			<u>53°13.339</u>	<u>129°07.271</u>			<u>-</u>			☐ ☐	
<u>16</u>	<u>WC58</u>	<u>02</u>	<u>05:01</u>	<u>BE</u>	<u>10 plus CTD</u>		<u>53°13.377</u>	<u>129°07.297</u>	<u>496</u>	<u>Ø</u>	<u>surface</u>			☐ ☐	<u>turbidity + 3L phyto</u>
<u>17</u>	<u>WC58</u>	<u>02</u>	<u>09:01</u>	<u>BE</u>	<u>NET</u>		<u>53°13.353</u>	<u>129°07.300</u>	<u>496</u>		<u>-</u>			☐ ☐	
			<u>09:10</u>	<u>BO</u>			<u>53°13.382</u>	<u>129°07.415</u>		<u>250</u>	<u>-</u>			☐ ☐	<u>VH</u>
			<u>09:14</u>	<u>EN</u>			<u>53°13.404</u>	<u>129°07.421</u>			<u>-</u>			☐ ☐	
<u>18</u>	<u>WHA9</u>	<u>02</u>	<u>10:13</u>	<u>BE</u>	<u>CTD</u>		<u>53°18.620</u>	<u>129°10.986</u>	<u>472</u>		<u>-</u>			☒ ☒	
			<u>10:22</u>	<u>BO</u>			<u>53°18.654</u>	<u>129°10.995</u>		<u>465</u>	<u>-</u>			☐ ☐	
			<u>10:30</u>	<u>EN</u>			<u>53°18.657</u>	<u>129°11.024</u>			<u>-</u>			☐ ☐	
<u>19</u>	<u>WHA9</u>	<u>02</u>	<u>10:43</u>		<u>Drifters</u>		<u>53°18.640</u>	<u>129°10.975</u>		<u>surface release</u>				☐ ☐	<u>(green)</u>
			<u>:</u>				<u>°</u>	<u>°</u>			<u>-</u>			☐ ☐	
			<u>:</u>				<u>°</u>	<u>°</u>			<u>-</u>			☐ ☐	

Event Type:

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CTD = Standalone CTD
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Bottle Firing Method:

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Wed Oct 2

This page is for any notes or observations

Started at South Whale Channel

- weather has been good, clear, no rain, no wind.

@ 10:00 (PDT) will have to break for a couple of hours for generator/hydraulic overhaul. - back running @ 02:00 local. - lost 4 hours

phyto taken - no sample ID#

after dufter deployment; and a shallow cast to test ECO

1/5/5/40 + 3 bolts
statuary

DAILY SCIENCE LOG

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Page 4 of 10Book 4 1/2

Month OCT				Year 2014		Vessel VECTOR			Cruise ID 2014-59						
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							Latitude	Longitude							
20	PBSG4	03	03:20	BO	Grab	✓	53°27.125	129°04.132	214	214	-		WHP	☐ ☐	
21	PBSG3	03	03:54	BO	Grab	-	53°25.374	129°06.616	322	322	-			☐ ☐	
22	PBSG2	03	04:35	BO	Grab		53°23.935	129°07.907	342	342	-			☐ ☐	
23	PBSG11	03	04:58	BO	Grab		53°23.106	129°08.705	377	377	-			☐ ☐	
24	WC43	03	07:43	BE	CTD		53°21.051	129°16.423	515		-			☒ ☒	
			07:52	BO			53°21.071	129°16.418		470	-			☐ ☐	W, L
			08:00	EN			53°21.097	129°16.427			-			☐ ☐	
25	DOUG45	03	08:45	BE	CTD		53°22.219	129°11.696	462		-			☒ ☒	
			08:53	BO			53°22.160	129°11.705		455	-			☐ ☐	
			09:00	EN			53°22.135	129°11.701			-			☐ ☐	
26	DOUG45	03	09:03	BE	19pctd turbid		53°22.086	129°11.643	462	surface	-			☐ ☐	turbidity + 3L + phyto
27	VP43	03	09:56	BE	CTD		53°24.874	129°06.874	316		-			☒ ☒	
			10:02	BO			53°24.873	129°06.935		311	-			☐ ☐	
			10:07	EN			53°24.883	129°06.987			-			☐ ☐	
28	VP39	03	11:13	BE	CTD		53°30.448	129°03.817	118		-			☒ ☒	
			11:16	BO			53°30.430	129°03.798		113	-			☐ ☐	
			11:18	EN			53°30.396	129°03.755			-			☐ ☐	
29	UC31	03	17:48		Dufflers		53°32.563	129°00.423	surface		-			☐ ☐	
			:				°	°			-			☐ ☐	

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Samples from grabs taken for 105: PBS - no sample 10 #5
grabs to support habitat classification to ground truth video and to
ground truth acoustics gets depths greater than ROV can go

- see grab description report appended

22:15

onto Squawley to pick SC58: WC48 then back to Verney

- weather: deluge! windy and lots of rain

- get to SC58 - too rough - status called RJ onto WC48

→ DOUG 45 - phyto sample taken from turbidity test buckets - no sample 10 #

stair long at night in stop time in harbor cant go more than 6 ft to

Case 11:00: Comp in the old time 2:10 to 2:15

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Book 1/2
Page 5 of 10

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							Latitude	Longitude							
30	PBSG46	04	04:16	BO	Grab		53°41.816	128°48.550	300	300	NA		CS NHP	☐ ☐	
31	PBSG45	04	04:40	BO	Grab		53°39.301	128°50.271	210	210				☐ ☐	
32	VP46	04	05:45	BE	CTD	NA	53°32.802	128°53.273	209			-		☐ ☐	
			05:56	BO			53°32.809	128°53.263		204	-			☒ ☒	
			05:54	EN			53°32.808	128°53.248			-			☐ ☐	
33	DeC39	04	06:24	BE	CTD	NA	53°36.017	128°49.753	166		-			☒ ☒	
			06:28	BO			53°36.038	128°49.766		161	-			☐ ☐	
			06:31	EN			53°36.057	128°49.765			-			☐ ☐	
34	DeC32	04	07:04	BE	CTD	N/A	53°39.424	128°52.330	272		-			☒ ☒	
			07:10	BO			53°39.442	128°52.361		266	-			☐ ☐	
			07:14	EN			53°39.453	128°52.372			-			☐ ☐	
35	DeC32	04	07:18	BE	CTD/FP turb.		53°39.449	128°52.371	272	Ø surf	-			☐ ☐	turbidity + 3L
36	DeE24	04	07:54	BE	CTD		53°42.809	128°48.610	316		-			☒ ☒	
			08:00	BO			53°42.814	128°48.606		311	-			☐ ☐	
			08:05	EN			53°42.816	128°48.606			-			☐ ☐	
37	DeE17	04	08:41	BE	CTD		53°46.775	128°49.452	305		-			☒ ☒	
			08:47	BO			53°46.775	128°49.411		300	-			☐ ☐	
			08:52	EN			53°46.776	128°49.415			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
Version: 14 February 2013

-grabs for PBSun Support of ecosystem classification; see final appended report

* Conductivity threshold ↑ from 1000 → 2690 as per S.R./Seabird - not sure
whether much @ surface we might lose - or any?
→ also voltage configurations reset to original

Dec 39 just north of a shallow bank "Stanforth Bank"

Download 25 after Dec 17

-INIT LOGGING and do test cast; then proceed with final 2 grabs

Bus - Again!

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 6 of 10Book 1/2

Month <u>Oct</u>				Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-59</u>					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
38	PBSG8	04	10:54	BO	GRAB		53° 47.391	128° 50.531	360	360			NO NHP	☐ ☐	
39	PBSG7	04	11:25	BO	GRAB		53° 46.505	128° 50.254	353	353	-			☐ ☐	DONE FOR THE NIGHT
			:				.	.			-			☐ ☐	
40	DOUG4	05	02:20	BE	NET		53° 55.603	128° 42.263	220		-			☐ ☐	V. H
			02:26	BO			53° 55.600	128° 42.269		200	-			☐ ☐	
			02:31	EN			53° 55.591	128° 42.266			-			☐ ☐	
			:				.	.			-			☐ ☐	
41	DOUG4	05	03:49	BE	CTD		53° 55.632	128° 42.253	220		1 - 1			☒ ☒	Bucket @ surf
			03:54	BO			53° 55.632	128° 42.240		215	-			☐ ☐	
			03:58	EN			53° 55.634	128° 42.225			-			☐ ☐	
42	DOUG4	05	04:02	BE	apcto + turbid		53° 55.642	128° 42.219	200	ø surf				☐ ☐	
43	DOUG11	05	04:58	BE	CTD		53° 49.813	128° 49.857	326					☒ ☒	turbidity + 36
			05:05	BO			53° 49.806	128° 49.373		320	2 - 2			☐ ☐	bucket @ surf
			05:11	EN			53° 49.798	128° 49.377			-			☐ ☐	
44	DOUG16	05	05:45	BE	CTD		53° 46.470	128° 54.765	386		3 - 3			☒ ☒	bucket @ surf
			05:54	BO			53° 46.710	128° 54.790		381	-			☐ ☐	
			06:00	EN			53° 46.664	128° 54.793			-			☐ ☐	
45	DOUG16	05	06:14	BE	Drifters		53° 46.716	128° 54.781			-			☐ ☐	See side
			:	EN			.	.			-			☐ ☐	bar

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Produced by the Water Properties Group, IOS

WaterProperties.ca
 Version: 14 February 2013

Sat Oct 4

-hydraulics are down this afternoon

after net - did some 25 test casts → not record as events or saved data.

DOUG4 = Super murky due to recent rains
= lots of organics on surface.

The ECO test & work on bucket bombs for water samples
can only sample for those parameters not sensitive.
-delO₂, nitr, chl, CDOM, salt, TAC

12 voltages 0, 1, 4, 5 configured
✓ 15m test soak for 2min
↓ good ctd back to normal !!

will have to do this
@ all stations - see w/ Brian
can get hydrowinch to use niskens
in the morning

DOUG4 - too turbid could not filter chl
By DOUG11 water is clear.

* NOTE DOUG11 DID NOT RECORD
SEE EVENT 61

DOUG16 - CTD @ surface @ 5:43 UTC

then brought up to check power - then put back
in @ 5:45 ← start of cast

1	1
CHLa	CHLa
DOUG4	DOUG4
surf	surf
2014-59	2014-59
Bot 1	Bot 1
B	A

(Reds)
unc 1 Dusters

06:14	DOUG16 #76B	53	46.723	128	54.762
06:21	Red 4 #75A	53	46.401	128	55.449
06:29	Red 3 #77B	53	45.800	128	56.761
06:36	Red 2 #73	53	45.324	128	57.766
06:47	Red 1 #74A	53	44.623	128	59.298

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Book 112
Page 7 of 10

Month OCT				Year 2014		Vessel VECTOR				Cruise ID 2014-59					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
46	PBS12	05	07:24	BO	Grab		53°44.942	128°58.420	377	377	-		aw NHP	☐ ☐	
47	PBS11	05	07:52	BO	Grab		53°45.359	128°57.441	365	365	-			☐ ☐	
48	PBS10	05	08:34	BO	Grab		53°47.357	128°52.228	380	380	-			☐ ☐	
49	PBS9	05	09:10	BO	Grab		53°50.284	128°47.916	328	328	-			☐ ☐	
			:				.	.			-			☐ ☐	
50	DOUG20	06	03:09	BE	CTD		53°45.556	128°59.655	290		N/A			☒ ☒	
			03:15	BO			53°45.556	128°59.643		285	-			☐ ☐	
			03:20	EN			53°45.555	128°59.641			-			☐ ☐	
51	FOC1	06	03:45	BE	CTD		53°43.798	129°02.502	348		4 - 4			☐ ☐	+ bucket
			03:52	BO			53°43.799	129°02.499		343	-			☐ ☐	
			03:58	EN			53°43.800	129°02.498			-			☐ ☐	
52	FOC1	06	04:12	BE	NET		53°43.774	129°02.524	348					☐ ☐	
			04:21	BO			53°43.694	129°02.569		280	-			☐ ☐	280 - 0 V H.
			04:25	EN			53°43.669	129°02.535			-			☐ ☐	
53	FOC1	06	04:30	BE	19pturbed CTD		53°43.670	129°02.540			-			☐ ☐	+ turbidity + 3L
54	DOUG25	06	05:14	BE	CTD		53°40.884	129°05.051	276					☒ ☒	only CTD
			05:20	BO			53°40.880	129°05.065		270	-			☐ ☐	bucket
			05:24	EN			53°40.878	129°05.080			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Produced by the Water Properties Group, IOS

WaterProperties.ca
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Grabs in support of PBS habitat classification - see amended grab report

- Doug 11 from last night does not appear to have recorded anything in pickup & and

- Sample #4 @ FOC1

- phyto from turbidity bucket - no sample ID assigned

- FOC1 = station 15 S of mooring ~ 0.7 km south.

Doug 25 - new station of Grant PL.

to/from.

Book 1/2

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 8 of 10

Month <u>OCT</u>				Year <u>2014</u>		Vessel <u>VECTOR</u>			Cruise ID <u>2014-59</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Latitude	Information Longitude	Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/Fl Cleaned	Comments
55	DOUG 26	06	05:41	BE	CTD		53°40.426	129°07.291	400		5 - 5		^{no} NTH	☒ ☒	Bucket
			05:49	BO			53°40.434	129°07.316		395	-			☐ ☐	
			05:56	EN			53°40.435	129°07.316			-			☐ ☐	
56	DOUG 31	06	06:34	BE	CTD		53°36.656	129°12.760	300		6 - 6			☒ ☒	Bucket
			06:41	BO			53°36.652	129°12.744		295	-			☐ ☐	
			06:46	EN			53°36.643	129°12.742			-			☐ ☐	(11.5V).
57	PBS 16	06	07:41	BO	Grab		53°40.689	129°05.892	370	370	-			☐ ☐	
58	PBS 15	06	08:15	BO	Grab		53°42.665	129°05.499	400	400	-			☐ ☐	
59	PBS 14	06	08:45	BO	Grab		53°43.642	129°03.022	348	348	-			☐ ☐	
60	PBS 13	06	09:20	BO	Grab		53°44.376	129°00.697	374	374	-			☐ ☐	
61	DOUG 11	06	10:23	BE	CTD		53°49.801	128°49.382	317		-			☐ ☐	Redo
			10:29	BO			53°49.815	128°49.404		312	-			☐ ☐	<u> </u>
			10:35	EN			53°49.844	128°49.374			-			☐ ☐	
			:				.	.			-			☐ ☐	
62	DOUG 31	07	03:51	BE	NET		53°36.205	129°12.589	300		-			☐ ☐	11.5
			04:00	BO			53°36.160	129°12.547		250	-			☐ ☐	
			04:05	EN			53°36.109	129°12.444			-			☐ ☐	
			:				.	.			-			☐ ☐	
			:				.	.			-		4	☐ ☐	ds=

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Produced by the Water Properties Group, IOS

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 Version: 14 February 2013

after Doug's check DS to check all casts turned on and collected. ✓ Yes good to go to work

Grab samples in support of POC - algal classification - see appendix 1

Previous CTD cast of Doug didn't record

OCT 7 02:00 UTC Start of Shift

- delayed - there seems to be an issue with a boat on the beach
so just going to check if there are any distress issues

NOTE: saltwater system not working spent ~0.5hrs with net @ surface after tow
→ hooked up free base which qualified the net and did a recast
- big aft wire clog towards the retrieval end of

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Book 1/2
Page 9 of 10

Month OCT				Year 2014		Vessel VECTOR				Cruise ID 2014-59					
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI Cleaned	Comments
							Latitude	Longitude							
63	KSK1	07	04:55	BE	CTD		53°29.196	129°12.671	375		-			☒ ☒	
			05:04	BO			53°29.211	129°12.687		370	-			☐ ☐	
			05:10	EN			53°29.202	129°12.696			-			☐ ☐	
64	DOUG40	07	05:31	BE	CTD		53°26.739	129°12.518	398		7-7			☒ ☒	F Bucket + +
			05:40	BO			53°26.757	129°12.535		393	-			☐ ☐	play to
			05:47	EN			53°26.764	129°12.544			-			☐ ☐	
			:				.	.			-			☐ ☐	
65	DOUG45	07	06:22	BE	NETT		53°22.261	129°11.694	400		-			☐ ☐	
			06:32	BO			53°22.264	129°11.695		250	-			☐ ☐	
			06:38	EN			53°22.263	129°11.701			-			☐ ☐	
66	DOUG48	07	06:45	BE	Bucket		53°22.264	129°11.701			8-8			☐ ☐	only bucket
67	PBS21	07	07:37	BO	GRAB		53°29.190	129°12.671	381	381	-			☐ ☐	
68	PBS20	07	08:07	BO	GRAB		53°31.163	129°12.502	357	357	-			☐ ☐	
69	PBS19	07	08:33	BO	GRAB		53°32.624	129°13.552	306	306	-			☐ ☐	
70	PBS18	07	09:16	BO	GRAB		53°36.156	129°12.006	243	243	-			☐ ☐	2nd attempt
71	PBS17	07	09:47	BO	GRAB		53°38.882	129°11.104	381		-			☐ ☐	
			:				.	.			-			☐ ☐	
			:				.	.			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Produced by the Water Properties Group, IOS

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Version: 14 February 2013

Download last several casts; change batteries Logos KSK1

KSK1 CTD just north of mooring location ~0.4 km.

#7 - only chl B = good
A = contaminated

CHLa
DOUG40
surf
2014-59
Bot 1

A

Grabs for PBS

1st grab attempt @ 18 failed to close grab as 4 x 4 rock in jaws
Do 2nd attempt - somewhat successful - doors didn't fully close
but got enough material to classify

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Page 10 of 10

Month <u>Oct</u>			Year <u>2014</u>			Vessel <u>VECTOR</u>			Cruise ID <u>2014-59</u>						
Event Number	Station Name	Day	Time (UTC)	Time Code	Event Type	Firing Method	Positional Information		Bottom Depth	Max Pressure	Sample Serial Numbers	# of Bottles	Watch Keepers	Trns/FI. Cleaned	Comments
							Latitude	Longitude							
72	WST1	08	03:35	BE	CTD		53°22.814	129°11.735	437		-			☐ ☐	
			03:44	BO			53°22.800	129°11.751		431	-			☐ ☐	
			03:51	EN			53°22.806	129°11.755			-			☐ ☐	
73	WST2	08	04:13	BE	CTD		53°21.44	129°11.746	435		-			☐ ☐	
			04:22	BO			53°21.463	129°11.738		430	-			☒ ☒	1/1 kt of current
			04:29	EN			53°21.457	129°11.714			-			☐ ☐	
74	WST3	08	04:43	BE	CTD		53°20.357	129°10.548	423		-			☒ ☒	
			04:52	BO			53°20.379	129°10.553		418	-			☐ ☐	
			05:00	EN			53°20.373	129°10.550			-			☐ ☐	
75	WST4	08	05:14	BE	CTD		53°20.640	129°12.094	460		-			☒ ☒	drifting shallower
			05:23	BO			53°20.650	129°12.065		455	-			☐ ☐	
			05:30	EN			53°20.658	129°12.050			-			☐ ☐	
76	WST5	08	05:45	BE	CTD		53°20.974	129°13.843	494		-			☒ ☒	
			05:55	BO			53°20.999	129°13.824		470	-			☐ ☐	wire limit!
			06:04	EN			53°21.020	129°13.826			-			☐ ☐	
77	WST6	08	06:20	BE	CTD		53°21.267	129°16.372	504		-			☐ ☐	
			06:31	BO			53°21.269	129°16.329		470	-			☐ ☐	w.L.
			06:42	EN			53°21.280	129°16.285			-			☐ ☐	
			:				.	.			-			☐ ☐	

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Produced by the Water Properties Group, IOS

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Oct 7

This page is for any notes or observations

- the beginning of Wright Sound grid
NOTE W51-18 - not using conventional ranging y stations since the grid is not a standard set of stations

NOTE; W51 is just to the north of DOUG 45 - can include in grid but a few days apart

★ DOUG 40 needs to be downloaded again (lost?) - 15 min was out 3/5

→ sonar zoomed in on bottom to estimate additional depth
455 wire out = 10.3 m also bottom on sonar - so sonar is sometimes very close
↓
check against her file

- W51 W.L. check against her file.

DAILY SCIENCE LOG BOOK

MISSION
NUMBER

2014 -59

DATE:

From: Sept 27 2014 to: Oct 13, 2014

VESSEL:

CCGS VECTOR

PROJECT(S):

WC-DC

MEAD / IOS

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

2/2

WaterProperties.ca

Rosette Setup:

Number of bottles: _____

Manufacturer: _____

Volume of bottles (litres): _____

6
5
NOT IN USE

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):

~~small work done on small portside pad~~

Salinometer:

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

Oxygen Kit(s):

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

Thermosalinograph System (SBE21):

Program: _____ Version: _____
Sampling interval (seconds): _____
Fluorometer sensor serial number: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

ADCP Setup:

Computer time zone: _____ User Exits: Name: _____ Exit points: _____
Sampling interval (sec): _____ Name: _____ Exit points: _____
Bin Length: (2^x): _____ Name: _____ Exit points: _____
Pulse Length: _____ Work File: _____
Buffer (bytes): _____
Gyro Offset: _____
Comments on performance during cruise (comments should also be reflected in the post-cruise report):

CTD Test Cast Information

Test Cast along side? _____

Yes ☐ No ☒

Comments

Test Cast in Saanich Inlet or other location? _____

Yes ☐ No ☒

Comments

CTD pressure reading on deck (db), before cast: _____ after cast: _____

Pumps working? _____

Yes ☐ (0011) No ☐ (0010)

Secondary Temp – Primary Temp:
(Average from the mixed region)

Secondary Salinity – Primary Salinity:
(Average from the mixed region)

Additional Comments:

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

Mission Participants / Agencies: _____

Scientific Personnel:

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: Vector CTD

Data acquisition program: Seasave

CTD deck unit make: N/A model: _____ serial number: _____

Primary CTD

Make: SBE model: 25 serial number: 0404 + ECOSS

Primary temperature serial number: 4484

Primary conductivity serial number: 3184

Secondary temperature serial number: _____

Secondary conductivity serial number: _____

Transmissometer: Wetlabs Model: CSTAR s/n: 983DR

Transmissometer: _____ Model: _____ s/n: _____

Fluorometer: Model Wetlabs ECO Cable gain: 13 s/n: 2216 P, S or NO pump?

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

Oxygen sensor: SBE Model: 43 s/n: 0047 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?

+ Berthos Pinger

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?

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month <u>OCT</u>				Year <u>2014</u>			Ship <u>VECTOR</u>			Cruise ID <u>2014-59</u>					
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							
08	WST 7	06:58	BE	CTD		78	53 21.516	129 18.143	434					✓✓	(16)-likely current pushing us around.
		07:07	BO				53 21.535	129 18.156		428					
		07:14	EN				53 21.553	129 18.160							
08	WST 8	07:30	BE	CTD		79	53 22.535	129 20.291	285					✓✓	(17)
		07:34	BO				53 22.559	129 20.297		230					
		07:38	EN				53 22.561	129 20.293							
08	WST 9	08:10	BE	CTD		80	53 20.148	129 19.103	494					✓✓	(18) 11.4V
		08:19	BO				53 20.148	129 19.102		470					W.L.
		08:27	EN				53 20.188	129 19.071							
08	WST 10	08:46	BE	CTD		81	53 18.514	129 19.055	316					✓✓	(19)
		08:53	BO				53 18.517	129 19.049		311					
		08:58	EN				53 18.515	129 19.059							
08	WST 11	09:15	BE	CTD		82	53 18.250	129 17.799	539						(20)
		09:24	BO				53 18.532	129 17.823		470					sorry - wire lined!
		09:31	EN				53 18.518	129 17.812							
08	WST 12	09:54	BE	CTD		83	53 20.318	129 16.270	477						(21)
		10:03	BO				53 20.292	129 16.297		470					W. L.
		10:10	EN				53 20.303	129 16.331							

Cast Type:

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 NET = Plankton Net Haul
 DRF = Drifter
 =

Bottle Firing Method:

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 DN = Down / No stop

Notes:

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Produced by the Water Properties Group, IOS

WaterProperties.ca
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Continuation of Wright Sound gnd

THIS IS AN OLD LOG BOOK! Columns have been reordered

WST7 - sounder is quite jumpy by $\pm 6m$ - wonder about bottom type - not usually this jumpy
- very close to bottom on sounder looking @ trace ✓

after WST8 - connect check if all recorded and battery voltage. 11.4V
↳ need to watch

WST8 - on on N end of sill.

Notice big depth difference betw WST 10 - 11 - big slope on this entrance
- WST 10 - bottom trace a bit jumpy so stayed conservative.

battery - down and check after WST 11 ✓ all casts are there $V = 11.0$ - one more cast

- will complete transect on next shift

DAILY SCIENCE LOG

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Page 2 of 4

Month <u>OCT</u>				Year <u>2014</u>			Ship <u>VECTOR</u>			Cruise ID <u>2014-59</u>					
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							
09	SC58	01:51	BE	CTD		84	53 16.555	129 25.551	530		9-9			✓✓	13.11 ✓ + bucket (22) ✓
		02:00	BO				53 16.556	129 25.548		470					W.L
		02:08	EN				53 16.554	129 25.543							
09	WST13	03:17	BE	CTD		85	53 19.851	129 13.952	438					✓✓	✓ (23)
		03:24	BO				53 19.860	129 13.956		433					
		03:32	EN				53 19.873	129 13.948							
09	WST14	03:51	BE	CTD		86	53 19.196	129 12.122	456					✓✓	✓ (24) Wkely some strongish current
		04:00	BO				53 19.211	129 12.126		451					
		04:07	EN				53 19.221	129 12.121							
09	WST15	04:20	BE	CTD		87	53 18.70	129 10.570	496					✓✓	✓ (25) W.L
		04:29	BO				53 18.707	129 10.559		470					W.L
		04:36	EN				53 18.735	129 10.551							
09	WST16	04:50	BE	CTD		88	53 17.811	129 09.391	512						✓ (26)
		04:59	BO				53 17.813	129 09.416		470					W.L
		05:06	EN				53 17.819	129 09.442							
09	WST17	05:42	BE	CTD		89	53 16.914	129 08.414	521						✓ (27)
		05:52	BO				53 16.936	129 08.459		470					W.L
		06:00	EN				53 16.936	129 08.470							

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Wed

This page is for any notes or observations

Picked up SC58 before proceeding to finish Wright Sound transect
- Data from last night downloaded & batteries charged

scander for WST74 indicates we might have undershot by a couple metres

DAILY SCIENCE LOG

Ocean Sciences Division, Institute of Ocean Sciences

Month Oct				Year 2014			Ship VECTOR				Cruise ID 2014-59				
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							
09	WST18	06:18	BE	CTD		90	53 18.099	129 06.497	516					✓✓	(28) ✓
		06:30	BO				53 18.109	129 06.501		470					W.L.
		06:40	EN				53 18.099	129 06.486							
09	PBS23	07:43	BO	Grab		91	53 21.287	129 18 708	446	446					
09	PBS22	08:23	BO	Grab		92	53 22.158	129 16 066	102	102					
09	PBS24	09:02	BO	Grab		93	53 21.768	129 11 968	446	446					
09	PBS25	09:36	BO	Grab		94	53 24.124	129 12.296	421	421					
10	MR53	01:39	BE	CTD		95	53 18.303	129 04.247	487					✓✓	12 4V (29) ✓
		01:48	BO				53 18.292	129 04.213		432					a bit jumpy sensor
		01:55	EN				53 18 288	129 04.199							
10	MR55	02:13	BE	CTD		96	53 19.244	129 01.266	480					✓✓	lots of current (30) ✓
		02:23	BO				53 19 219	129 01 279		470					W.L.
		02:31	EN				53 19 249	129 01 283							
10	MR58	02:55	BE	CTD		97	53 18.076	128 57 083	484					✓/	(31)
		03:05	BO				53 18 084	128 57 111		470					W.L.
		03:13	EN				53 18 083	128 57 116							

Wright Sand Transect complete

Grabs in Support of PBS Habitat Classification

Thursday

McLay + Ursula - too windy on Prince
- lost night of work

wind is good
light misting

MR53 shallowing up during descent

- this location was slightly off planned original - I scooped the coordinates to the buoy.
but we'll keep it here. at this location.

DAILY SCIENCE LOG

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Page 4 of 4

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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							
10	UC52	03:31	BE	CTD		98	53 19.104	128 54.673	510					✓✓	(32) ✓
		03:41	BO				53 19.089	128 54.662		470					W. L.
		03:48	EN				53 19.067	128 54.587							
10	UC50	04:08	BE	CTD		99	53 21.155	128 54.365	469					✓✓	outside Goat (33)
		04:17	BO				53 21.154	128 54.349		463					Harbour
		04:24	EN				53 21.137	128 54.360							(34) ✓
10	UC45	05:00	BE	CTD		100	53 25.969	128 55.560	387					✓✓	outside Bishop Bay
		05:08	BO				53 25.991	128 55.563		382					- sounder jumpy
		05:14	EN				53 26.007	128 55.553							✓
10	UC43	05:53	BE	CTD		101	53 29.041	128 58.657	106						(35)
		05:57	BO				53 29.026	128 58.673		100					
		05:59	EN				53 29.023	128 58.676							
10	FR53	07:32	BE	CTD		102	53 18.156	128 53.733	420					✓✓	(36) ✓ problems holding station?
		07:41	BO				53 18.137	128 53.473		406					~1.5 kt current
		07:48	EN				53 18.111	128 53.391							
10	FR56	08:04	BE	CTD		103	53 16.966	128 52.614	461						(37) ✓✓
		08:14	BO				53 16.959	128 52.592		435	See notes				again lots of current
		08:21	EN				53 16.922	128 52.684							
							DONE!!								

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312292

308418

This page is for any notes or observations

UC52 although the gain on the sonar is high - there is a significant scattering layer @ 100m

asked for 2 more stations to go into Fraser Reach, as we head back south.

UC50 - upper 50m strong scattering

UC45 - off Bishops Cove - just north of sill

- put on surface then ship had to do minor movements to avoid large debris in water

In FR⁵³ - very hard to tell hard bottom from a secondary layer - sonar scatter

- scattering layer @ 150m
 - 15 kts current pushing us off station

→ bottom really jumpy and suddenly shallowed up so got out - not sure if real or not

FR56 - scattering layer deeper ~ 200m.

- actual cast starts ~ 100m north of station ??

- lots of current, sonar bottom a bit jumpy

Mr. Sunders said 461 BUT bottom tracer suggest a quick shallowing up - ^{slow} reflectivity? and ship too jumpy