

CRN

9214

DAILY LOG

INSTITUTE OF OCEAN SCIENCES

OCEAN PHYSICS

DATE

Bad cons. # 10, 12,
19, 21, 22, 23, 152

PRH STNS

Cons # 141 - 152

VESSEL

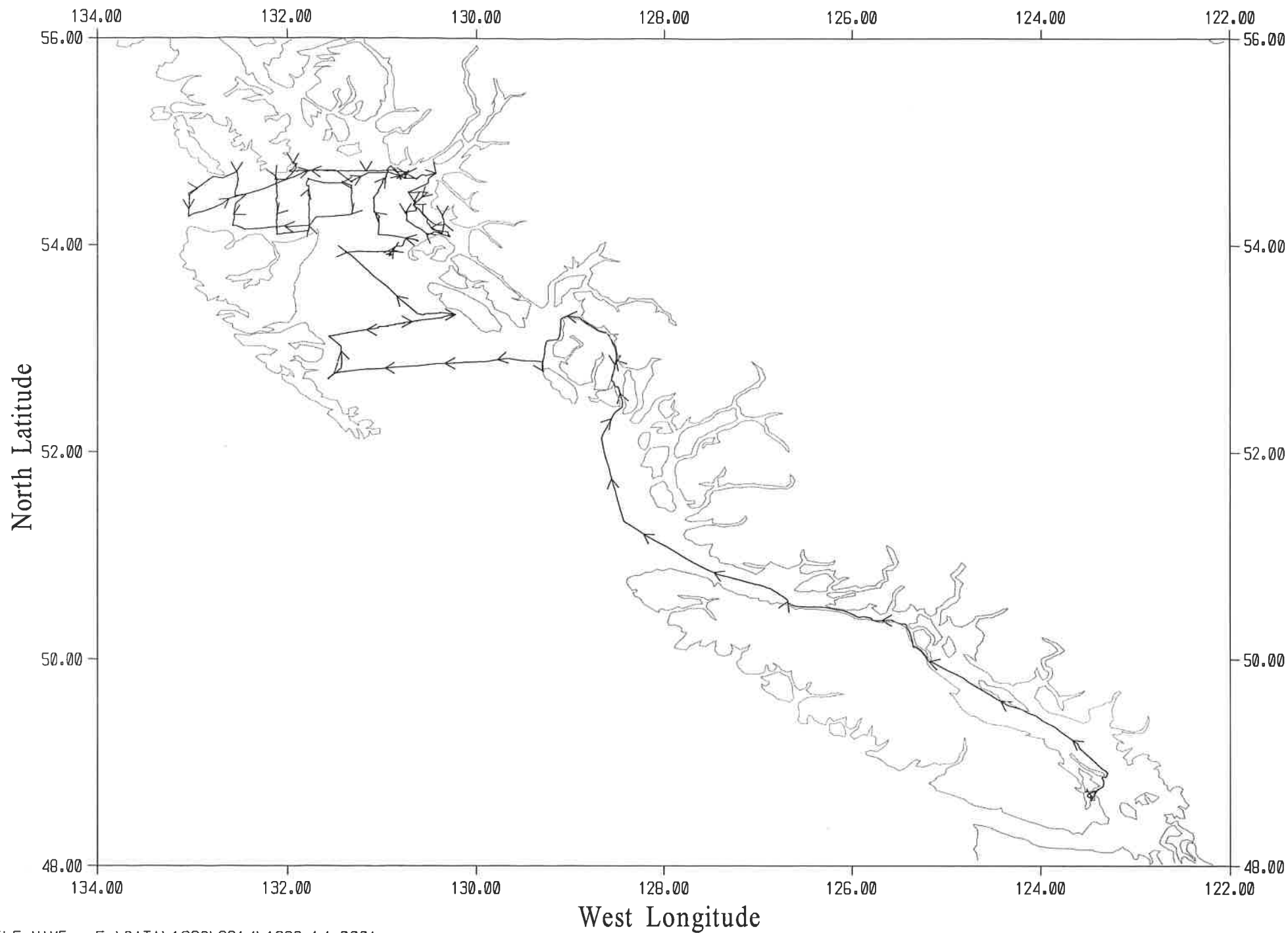
TULLY

1-267

PROJECT

TEC Queen Charlottes

1992-14 SAIL DATA



FILE NAME: E:\DATA\1992\9214\1992-14-0001.cor

START TIME: UTC 1992/07/02 16:30:00 END TIME: UTC 1992/07/11 03:24:00

Captain: _____ First Officer: _____

Second Officer: _____ Third Officer: _____

Cruise Participants/Agencies: _____

Scientific Personnel: Party Chief: M Woodward

Name	Watch	Cabin	Name	Watch	Cabin
------	-------	-------	------	-------	-------

Second leg of cruise: Party Chief: _____

Third leg of cruise: Party Chief: _____

Data logging system: Unit number: _____ Program version: 1.21

CTD deck unit make: <u>Guildline</u>	model: <u>87107</u>	serial no.: _____
Computer make: <u>HP Vectra #1</u>	model: _____	serial no.: _____
Monitor make: _____	model: _____	serial no.: _____
Printer make: _____	model: _____	serial no.: _____

1st CTD make: <u>Guildline</u>	model: <u>8705</u>	serial no.: <u>58 483</u>
Temperature sensor	model: _____	serial no.: _____
coefficients: slope: _____		offset: _____
Conductivity sensor	model: _____	serial no.: _____
coefficients: slope: _____		offset: _____
Pressure sensor range: _____	psi	serial no.: _____
coefficients: FSP: _____	dB	offset: _____
Transmissometer	model: _____	serial no.: _____
coefficients: slope: _____		offset: _____

Comments: _____

Tides & Currents - Queen Charlotte

July 2 1992 Thursday

7pm - Depart IOS Stow gear
9pm - Active Pass

Friday July 3

- CTD set up - harness - clear D: drive
- off Port Hardy 4:30 pm

Sat July 4

- 0900 - Hiekish Narrows 9:00am
- 1000 - Divers ready to go 10:00
- CTD ready
- 1015 - Divers Zodiac over to mooring site - Commence CTD
- 1115 - Surface float up
- 1145 - ALL on board - leave STN
- 630 - Arrive Beauchemin Channel
- 730 - Pressure gauge on board. off to QCI

Sun July 5

- at HPOAP site in Atli Inlet Divers in at 830
- Leave STN at 915 off to W CTD line - FOG -
- 1600 - CTD cal. W010 at 88m Niskin at 2m above pum.
- Temp - T572 7.706
- T457 7.708
- Bernoulli acting up. Drive E light grinding
- took E drive out of logging config.

YEAR	1992	MONTH	July	TIME ZONE	local	SHIP	Tully	CRUISE	9214	PAGE	1 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
July 4	HIEK	130	0900 525330 1200 1283040	01	1037	/	/	/	/	11.311 28.350	01		HIERISH NARROWS 7.84°C 32.48‰ @ 120m
5	W016	23	1215 5307.20 1224 13133.60	02	1217	/	/	/	/	14.230 31.540	/		Hecate Strait Fog Calm Flat CTD 23m
5	W015	22	1254 5308.30 1300 13126.73	03	1256	/	/	/	/	13.658 30.860	/		overcast fog CTD 22.7m
5	W014	33	1322 5309.21 1327 13121.66	04	1324	/	/	/	/	14.023 30.228	/		overcast CTD 30m
5	W013	33	1355 5309.98 1401 13115.94	05	1356	/	/	/	/	14.136 30.107	/		Flat calm overcast CTD 29m
5	W012	36	1430 5310.95 1435 13109.78	06	1431	/	/	/	/	13.881 30.316	/		overcast CTD 36.4
5	W011	50	1504 5311.95 1510 13102.92	07	1505	/	/	/	/	13.637 30.405	/		Flat Calm - partial sun CTD 50m
5	W010	96	1540 5313.01 1600 13056.54	08	1545					12.876 30.514	2		CTD 96.4 cal
✓	✓	90	1600	09			1553			7.708 32.564	3		mess. @ 3:53 cal. 88m loop
5	W009	124	1632 5313.79 13051.20	10									File creating error
5	W009	124	1632 5313.79 1643 13051.20	11	1635					?			sunny / Renee forget SST/SSS CTD 124.2 m
5	W008	164	1712 5314.95 13045.43	12	1717					13.200 30.319			File creating error

10010 12227.01

31.95

CTD 10 384 0000

YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	92-14	PAGE	2 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
July 5	W008	164	1712	53 14.95	13	1717	/	/	/	13.200	/	/	CTD 161 m
			1727	130 45.43			/	/	/	30.319	/	/	
5	W007	198	1750	53 15.60	14	1752	/	/	/	14.04	/	/	186 m
			1802	130 40.91			/	/	/	31.007	/	/	
5	W006	165	1820	53 15.98	15	1822	/	/	/	13.290	/	/	CTD 166 m
			1834	130 37.69			/	/	/	30.800	/	/	
5	W005	155	18:51	53 16.65	16	1853	/	/	/	13.257	/	/	CTD 151 m
			19:05	130 34.20			/	/	/	30.861	/	/	
5	W004	51	19:28	53 17.19	17	1928	/	/	/	13.373	/	/	CTD 48 m
			19:34	130 29.77			/	/	/	30.895	/	/	
5	W003	97	19:59	53 17.95	18	2002	/	/	/	13.085	/	/	CTD 84 m
			20:09	130 24.01			/	/	/	30.102	/	/	
5	W002	127	20:37	53 19.33	20 19	2038	/	/	/	11.110	/	/	Consec # 19 empty file CTD 125 m
			20:53	130 18.39			/	/	/	31.150	/	/	
5	W001	98	21:16	53 19.76	24	2117	/	/	/	10.44	/	/	Consec # 21-23 empty files CTD 99 m
			21:26	130 13.73			/	/	/	31.49	/	/	
6	R006	26	0340	53 55.98	25	0344	/	/	/	14.289	/	/	Numerous problems w/ CTD logging system (file access)
			0350	131 23.00			/	/	/	31.138	/	/	
	Renowned "E" Drive												
6	R005	36	0419	53 56.04	26	0420	/	/	/	12.505	/	/	Wind speed: 13 knots CTD 37 m
			0425	131 15.13			/	/	/	29.995	/	/	
6	R004	45	0453	53 56.02	27	0454	/	/	/	11.660	/	/	Wind speed: 8.5 knots CTD 45 m
			0458	131 08.67			/	/	/	30.874	/	/	

0010 130 27.09

31.95

CTD 10 384 00015

Data Comp to A:

MD : CTDDATA

D: Copy *.Com A: /CTD DATA

CTD BACK - Lib name

LUE

LuT

Luu

Sun July 6

0800

at mooring site HP11

recovered mooring + GPS drift

enroute to Welcome Harbour HP02P for dive

1200

at dive site moon resound tide gauge off the "R" line at 1330,

arrived at R009 for CTD + Cal. bottle

1450

Winkler bottle 2m above pressure sens. on CTD to CL of Niskin

1505

mess. sent to Niskin at 100m R09 100m

Temp = T 572 = 7.367

T 451 = 7.370

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	92-14	PAGE	3 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
July													
6	R003	83	0523 53 56.00 0530 131 02.93	28	0524	/	/	/	/	11.312 29.992	/	/	wind: 8.3 knots CTD 84.3 m
6	R002	73	0553 53 56.00 0559 130 58.11	29	0553	/	/	/	/	11.844 29.787	/	/	wind speed: 5.0 knots CTD 72.8 m
6	R001	43	0619 53 56.04 0624 130 53.51	30	0619	/	/	/	/	11.738 30.016	/	/	wind speed: 4.2 knots CTD 43.5 m
6	R00	23	0640 53 56.06 0645 130 50.49	31	0641	/	/	/	/	11.746 29.987	/	/	wind speed: 4.4 knots CTD 22.7 m
6	R009	107	1454 54 06.20 131 02.41	32	1455	/	/	/	/	12.445 30.430	4	4	CTD 107m Loop
✓	✓	100	1510	33		/	1504	/	/	7.372 32.648	5	5	CTD cal. at 100m File opened 1503 mess @ 1504 < 0°
6	R10	102	1541 54 11.12 1550 131 02.17	34	1545	/	/	/	/	12.754 29.853	/	/	CTD 102.4m
6	R11	126	1640 54 16.38 131 02.22	35	1643	/	/	/	/	12.50 29.78	/	/	Winds light.
6	R12	110	1720 54 19.42 131 04.92	36	1722	/	/	/	/	12.48 29.62	/	/	CTD to 114.5 dbars (bottom?)
6	R13	115	1757 54 23.24 1807 131 04.88	37	1800	/	/	/	/	12.666 29.59	/	/	" " 114 dbars
6	R14	156	1834 54 27.14 131 05.16	38	1838	/	/	/	/	12.10 29.50	/	/	CTD to 150 dbars. Many jellyfish!
6	R15	158	1914 54 31.47 131 02.40	39	1916	/	/	/	/	12.19 27.47	/	/	CTD to 155 dbars.

10010 130 27.09

31.45

CTD to 384 dbars

July 7
Tues

- 0130 CTD cal 2 Q130
mess time 0151 wire angle 10°
Temp. = $T_{572} = 6.572$ $T_{454} = 6.578$

0300 - Q127 CTD 270m

YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	92-14	PAGE	4 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
6	R16	250	2000 54°36.39	40	2003	/	/	/	/	11.75	/	/	CTD to 139 dbars.
		2014 130°59.66								28.13			
6	R17	440	2039 54°39.85	41	2040	/	/	/	/	12.45	/	/	CTD to 417 dbars
		2058 130°57.56								27.17			
6	Q129	393	2123 54°43.01	42	2124	/	/	/	/	12.50	/	/	CTD to 365 dbars
		2141 130°56.52								21.90			
6	R18	105	2211 54°45.96	43	2244	/	/	/	/	11.60	/	/	CTD to 98 dbars
		2221 130°54.23								23.90			
6	R055	146	2317 54°42.33	44	2318	/	/	/	/	13.79	/	/	⊗ shipped str. R056 due to fish boats & gillnets
		2327 130°43.54								20.70			
6	R054	411	2336 54°41.42	45	2337	/	/	/	/	13.05	/	/	Wind S 7 kts
		2351 130°44.09								22.10			
7	R053	373	0002 54°40.38	46	0003	/	/	/	/	14.409	/	/	CTD 362.5
			130°44.59										
7	R052	396	0026 54°39.31	47	0029	/	/	/	/	12.282	/	/	CTD TO 402
			0040 130°45.29										
7	R051	188	0050 54°38.05	48	0052	/	/	/	/	12.201	/	/	CTD TO 181.2
			0058 130°45.68										
7	Q130	261	0133 54°43.19	49	0137	/	/	/	/	10.875	6	/	CTD TO 261
			130°51.90										
✓	✓	232	0200	50			0151				7		CTD CALIBRATION
7	Q128	221	0233 54°43.09	51	0233	/	/	/	/	11.463	/	/	mess angle 10°
			131°03.23										

Q55A

54 37

132 04

Tues.

July 7/92

0330 - Leave stn Q127 for Q126

0915 - Throw GPS drifter out 5447.15 131 54.54

- USA - 1050 - Divers onboard. Tide gauge recovered McLean ARUN
off to CTD site

1230 - arrive Q55A lots of fish boats

YEAR 92

MONTH July

TIME ZONE PDT

SHIP Tully

CRUISE 9214

PAGE 5 OF

CRUISE 7214													PAGE 5 OF	
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES	
TUES														
7	Q127	275	0309	54 43.00	52	310	/	/	/	/	12.376	/	/	CTD 263.3
			0320	131 09.87							25.584			
7	Q126	211	0340	54 43.05	53	0344	/	/	/	/	12.274	/	/	CTD
			0354	131 16.12							26.445			
7	Q125	181	0415	54 43.06	54	0417	/	/	/	/	13.44	/	/	CTD to 170 dbars. Calm, v. low swell
			0422	131 20.95							27.57			
7	Q124	202	0451	54 43.10	55	0452	/	/	/	/	13.00	/	/	CTD to 191 dbars
				131 27.62							27.76			
7	Q123	250	0526	54 43.06	56	0527	/	/	/	/	12.30	/	/	CTD to 241 dbars
				131 34.01							28.45			
7	Q122	370	0600	54 43.11	57	0603	/	/	/	/	12.57	/	/	CTD to 361 dbars
				131 40.37							28.21			
7	Q121	380	0640	54 42.97	58	0642	/	/	/	/	12.09	/	/	CTD to 370 dbars Wind NWS, ripples
				131 45.90							28.82			
7	Q120	385	0728	54 43.02	59	0729	/	/	/	/	13.03	/	/	CTD to 375 dbars
				131 53.77							28.57			
7	120A	389	754	54 43.03	60	0756	/	/	/	/	12.81	/	/	CTD to 380 dbars Calm
				131 56.18							28.45			
7	120B	50	0830	54 43.09	61	0831	/	/	/	/	12.60	/	/	CTD to 45 dbars
			0834	131 59.11							28.60			
7	Q55A	55	1303	54 40.14	62	1304	/	/	/	/		/	/	CTD 64m Fish boats everywhere Sun - mod. swell
			1310	132 07.73										
7	Q55	130	1323	54 38.30	63	1324	/	/	/	/	12.174	/	/	CTD - 140m
			1332	132 06.46							28.860			

Tues. July 7 1992

1330 - Finish up Q55 CTD

YEAR	MONTH	TIME ZONE	SHIP	CRUISE	PAGE	OF							
92	July	PDT	TULLY	9214	6								
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
7	Q56	175	1403	54°34.17	64	1404				12.670			
			1413	132°06.59						29.183			
7	Q57	343	1452	54°27.33	65	1453				12.263			Very bad wire angle unable to hold std. CTD 340m
			1513	132°06.42						29.325			
7	Q58	309	1536	54°23.32	66	1539	⊙	⊙	◁	▷	12.165		N/A ASSISTING HENCE EXCELLENT WIRE ANGLE
			1545	132°06.17						29.118			
7	Q58A	230	1623	54°18.00	67	1623				12.112			WIND SPEED: 19.6 KTS
			1634	132°06.53						29.950			CTD 232 dbars
7	Q59	133	1659	54°14.01	68	1659				11.722			WIND SPEED: 19.8 KTS
			1707	132°06.00						30.015			CTD 128 dbars
7	Q60	56	1736	54°10.18	69	1737				11.572			CTD to 41.6 m
			1740	132°06.55						30.265			CONDUCTIVITY CELL FULL OF JELLY FISH
7	QR4	21	1811	54°06.24	70	1812				12.000			CTD to 20.4 dbars
			1817	132°06.67						30.275			WIND SPEED: 20.1 knots
7	QR3	25	1931	54°08.21	71	1932				11.992			CTD to 21.6 dbars
			1936	131°46.11						30.570			WIND SPEED: 22.8 knots
7	Q113	58	1953	54°10.68	72	1953				11.902			CTD to 20.0 dbars
			1958	131°45.93						30.550			WIND SPEED: 19.9 kts
7	Q62	160	2026	54°15.16	73	2027				11.94			CTD to 163 dbars
			2036	131°46.08						29.82			Wind NW 21 kt.
7	Q114	205	2103	54°19.35	74	2104				11.95			CTD to 206 dbars (touch)
			2113	131°45.98						29.64			Wind NW 21 kt. bottom
7	Q115	268	2141	54°23.15	75	2142				12.55			CTD to 256 dbars
			2154	131°46.22						29.40			Wind NW 20 kt

⊙ Set up the clock
of the computer

NOTES

⊙

WED July 8 92

Q147 - CTD cal. 112m mess 0238
T572 = 6.553
T451 = 6.554

Q146 - 0330

YEAR 1992 MONTH July TIME ZONE PDT SHIP Tully CRUISE 92-14 PAGE 7 OF

DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
7	Q116	348	2230 54 28.34 2246 131 45.80	76	2231	/	/	/	/	12.15	/	/	CTD to 340 dbars
7	Q117	348	2326 54 34.37 2346 131 46.18	77	2327	/	/	/	/	29.76 12.45	/	/	Wind NW 21 kt CTD to 324 dbars
8	Q118	363	0018 54 33 54 0036 131 46 22	78	0019	/	/	/	/	28.83 11.946	/	/	Wind W 20 kt CTD 360m
8	Q149	250	0123 54 35 92 0136 131 35 78	79	0124	/	/	/	/	23.945 12.292	/	/	Wind 20 W CTD 245m
8	Q147	137	0220 54 36 00 131 24 53	80	0225	/	/	/	/	29.562 12.488	8	/	CTD 13 m Loop
✓	✓	112	0243	81	/	/	0238	/	/	29.832	9	/	CTD CAC. 0237- 112m mess. 0238
8	Q146	118	0320 54 34 37 0325 131 18 98	82	0321	/	/	/	/	11.983 29.031	/	/	CTD 115
8	Q145	144	0355 54 29 53 131 18 94	83	0400	/	/	/	/	12.345 29.825	/	/	CTD 136.8
8	Q144	213	0437 54 24 56 04 - 13 118.91	84	0438	/	/	/	/	11.874 29.978	/	/	CTD to 205.2 dbars Wind speed 14 knots
8	Q143	135	0520 54 19.57 0529 131 19.01	85	0520	/	/	/	/	11.479 30.350	/	/	Wind speed: 12 knots eto to 133 dbars 2 knots current
8	QR1	80	0544 54 18 29 0551 131 18.88	86	0544	/	/	/	/	11.610 30.20	/	/	Wind - 12 knots cto to 74.5 dbars
8	QR2	92	0642 54 16.44 0648 131 30.87	87	0643	X	X	X	X	11.714 30.05	X	X	Wind - 8 knots cto to 94.6 dbars

⊗ large wire
angle aft, current
setting Wat surface
@ ~ 2 kt

⊗

Wed July 8

1450 ~ Q47

CTD cal at 125m
Temp = $T_{572} = 6.393$
 $T_{451} = 6.395$

YEAR	MONTH	TIME_ZONE	SHIP	CRUISE	PAGE	OF							
1992	July	PDT	Tully	92-14	8								
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
8	Q113	61	0804 54 10.90	88 0804						11.65			CTD to 58 dbar
			0811 131 45.94							30.63			Wind NW 7 kt
8	Q60	58	0931 54 10.36	89 0932						11.62			CTD to 52 dbar
			0940 132 6.56							30.33			Wind 13 kt NW
8	QR5	97	1029 54 9.26	90 1031						11.91			CTD to 98 dbar
			1038 132 20.20							30.43			Wind <u>W 13 kt</u> Note
8	QR6		CANCELED fish boats										CTD to 26 bar
													Wind
8	Q63	102	1136 54 11.09	91 1137						11.63			CTD to 97 dbar
			1144 132 34.68							30.60			Wind 13 kt W
8	Q40	256	1222 54 17.65	92 1223						11.636			FOG
			1233 132 33.54							30.145			CTD 241.5
8	Q48	273	1314 54 24 10	93 1316						12.045			CTD 273
			1328 132 32.60							29.942			
8	Q47	370	1428	94 1429							10		CTD Loop
													Nick in on
✓	✓	125	54 20 44	95			1443			6.395	11		CTD CAL file 2:42-2:45
			1450 132 32.86							33.311			0125m
													mess. 2:43
8	Q46	161	1525 54 34.17	96 1527						11.903			CTD
			13231.63							29.507			
8	Q51	186	1557 54 38 18	97 1602						11.44			
			1609 132 30.91							29.72			
8	Q53	304	1635 54 42.59	98 1639						14.39			
			1649 132 31.89							29.72			To 292 m

YEAR	MONTH		TIME ZONE		SHIP		CRUISE		PAGE 9 OF				
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
8	Q52	95	1718	54°39.92	99	1722				12.28			CTD TO 93.5 m
			1728	132°38.30						29.81			
8	QL20	113	1810	54°39.80	100	1812				11.437			CTD TO 107m.
			1816	132°47.48						30.54			
8	QL21	165	1835	54°37.59	101	1839				11.85			wind 11.0 kts.
			1846	132°50.52						30.36			CTD to 160 m
8	QL22	390	1914	54°34.79	102	1920				11.972			CTD to 382.8
			1925	132°54.35						30.229			
8	QL23	380	1945	54°32.54	103	1954				11.13			CTD to 370.
			2006	132°57.50						30.49			
8	QL24	175	2036	54°30.14	104	2040				9.875			CTD to 176
				133°02.7						31.412			
8	QL24	58			105								recast to 58m
8	QL25	163	2102	54°28.76	106	2107				9.36			CTD to 52 m
		55		133°02.03						31.69			GOOD FISHING
8	QL26	121	2206	54°26.62	107	2210				9.501			CTD TO 118m
			2217	133°02.25						31.48			
8	QL27	212	2240	54°23.74	108	2242				10.975			CTD TO 205 m
			2250	133°02.25						30.569			bad wire angle
8	QL28	471	2312	54°20.74	109	2314				11.142			CTD to 464m
			2320	133°02.30						30.555			
8	QL29	457	2346	54°18.20	110	2346				11.170			CTD 461 LOOP
				133°02.40						30.640			NISKIN on board

0016 133°27.09

31.45

CTD TO 384 CTD

PRH1
0

PRH2
65

PRH3
95

PRH4
12

PRH5
16

Depth
m

0
5
10
15
20
25
30
35
40
45
50
55
60

DO₂ values mg/l

July 9 1992 Thurs.

File open close

0000 - QL29 CTD calibration @ 290m 1157 →
mess. 1158 pm 1201

Temp = T572 = 11.749 - garbage #
T451 = 5.573

0100 - Finished CTD QL 31
end of QL line heading for mooring site
DUNDAS ISLAND for a.m. recovery

1100 - Recover cm mooring DPO6

1330 - Recover tide gauge Dundas Is DPOSP

1600 - CTD cal @ 200m R053
mess 1631

Temp. = T572 = 6.549
T451 = 6.628

YEAR 92		MONTH July		TIME ZONE PDT		SHIP Tully		CRUISE 9214		PAGE 10 OF				
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES	
8	QL29	292	0006	5418.11 13302.74	111	/	/	1158	/	/	5.567 33.787	13	/	CTD CAL. 2292
9	QL30	440	0024	5417.13	112	/	/	/	/	/	9.767	/	/	mess. 21158
		0038	13302.43	31.920							CTD 420m			
9	QL31	100	0048	5416.44	113	0050	/	/	/	/	9.759	/	/	
		0115	13302.42	32.061										
9	R056	413	1512	5442.99	114	1513	/	/	/	/	13.400	/	/	CTD 46m
		1519	13043.35	18.165							DPASP			
9	R055	75	1528	5442.41	115	1532	/	/	/	/	12.295	/	/	STN ₂ after Gauge recovery
		1532	13043.47	19.370							Sounder not working			
9	R054	400	1549	5441.41	116	1550	/	/	/	/	12.244	/	/	CTD 120m
		1600	13044.03	17.385							Sounder questionable?			
9	R053	360	1616	5440.50	117	1618	/	/	/	/	12.280	14	/	CTD 404m
			13044.64	16.370							CTD Loop			
9	✓	200	1628	5440.60	118	/	/	1631	/	/	6.636	15	/	NISKIN on board
		1633	13044.58	33.094							mess 1641			
9	R052	380	1652	5439.41	119	1654	/	/	/	/	12.60	/	/	CTD cal. 200m
		1703	13044.78	15.30							CTD to 379dbars.			
9	R051	185	1716	5438.61	120	1718	/	/	/	/	12.55	/	/	CTD to 181dbars.
		1725	13045.54	16.10										
9	R30	395	1756	54°38.79	121	1758	/	/	/	/	12.74	/	/	CTD to 377:
		1808	130°37.31	14.45										
9	R048	230	1831	54°40.99	122	1832	/	/	/	/	12.80	/	/	
		1839	130°34.10	16.35										

0016 13327.09

31.93

CTD to 384 dbars

Fri July 10 92

0000 - CTD R043

0200 - CTD cal R24 80m
mess. 213

Temp: T572 - 7.406
T451 - 7.408

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR		MONTH		TIME ZONE		SHIP				CRUISE				PAGE 11 OF	
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES		
9	R31	453	1915 54° 41.72	123 1916	1930 130 25.85	1916	/	/	/	12.72	/	/	CTD to 443 dbars.		
9	R047	193	1959 54 38.15	124 2001	2008 130 30.56	2001	/	/	/	12.95	/	/	CTD to 195 dbars		
9	R046	83	2116 54 30.53	125 2117	2122 130 43.23	2117	/	/	/	14.65	/	/	CTD to 83 dbars		
9	R29	110	2147 54 30.72	126 2148	2154 130 36.93	2148	/	/	/	20.88	/	/	Wind SE 2 kt		
9	R045	65	2217 54 30.57	127 2218	2223 130 30.84	2218	/	/	/	13.02	/	/	CTD to 110 dbars		
9	R044	115	2320 54 23.49	128 2322	2327 130 40.22	2322	/	/	/	13.30	/	/	Wind light airs		
9	R28	194	2342 54 23.52	129 2342	2350 130 36.57	2342	/	/	/	23.00	/	/	CTD to 62 dbars		
10	R043	51	0008 54 23.59	130 0010	0014 130 32.24	0010	/	/	/	13.85	/	/	Wind calm		
10	R026	85	0110 54 16.11	131 0111	0115 130 32.07	0111	/	/	/	12.10	/	/	CTD to 111 dbars		
10	R24	105	0204 54 09.95	132 0206	13028 43	0206	/	/	/	24.90	/	/	Wind light airs		
✓	✓	80	0212	133	/	213	/	/	/	11.50	/	/	CTD to 193 dbars		
10	R22	73	0319 54 07.47	134 0319	0324 130 18.17	0319	/	/	/	25.84	/	/	Wind calm		
										11.547	/	/	CTD 52		
										25.159	/	/			
										12.576	/	/	CTD TO 85.6		
										21.870	/	/			
										11.442	16		CTD 102m		
										21.571			Niskin on board		
										7.407	17		CTD CAL. 80m		
										32.191			mess. 213		
										10.443	/	/	CTD TO 72		
										22.810	/	/			

YEAR 92	MONTH July	TIME ZONE PDT	SHIP Tully	CRUISE 9214	PAGE 12 OF
---------	------------	---------------	------------	-------------	------------

[illegible]

			0016	133	27.09						31.95			CTD to 584 days
--	--	--	------	-----	-------	--	--	--	--	--	-------	--	--	-----------------

July 11 1992 Saturday

Prince Rupert Harbour DO₂ Study

1300 - Fog burned off. Ship leaves dock - PRH 2

July 11 1992

PRH 4 - 15:06 hrs

CTD calibration bottle @ 50 m

T572 - 8.359

T451 - 8.361

> bottle # 45

4:45 Urah + Mary gone

PRH 5 - 15:45 hrs

CTD calibration bottle @ 60 m

T572 - 8.290

T451 - 8.294

> bottle # 57

PRH 5 - 16:33 hrs

CTD calibration bottle @ 51 m

T572 - 8.305

T451 - 8.308

> bottle # 58

6:30 OFF to Queen Ch. Is

Nutrients done at PRH 1 & 3

DO₂ and Sal. at PRH 1-5 Stations

YEAR	MONTH	TIME ZONE	SHIP	CRUISE	PAGE	OF							
92	July	PDT	Tully	9214	13								
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
11	PRH2	47	1317	54 18.36	141	1321	/	/	/	12.190	/	/	CTD to 6.4 dbars
			1332	130 21.91						24.441	/	/	YSI sensor on CTD
11	PRH2	42	1339	54 18.37	142	1341	142	1354	/	1045 11.93	/	/	CTD to 31 dbars
			130 21.99						1051 24.60	/	/		YSI sensor removed from CTD
11	PRH3	49	1419	54 19.45	143	1422	143	1438	/	1052 13.09	/	/	CTD to 47.6 dbars
			1442	130 19.57					1064 23.85	/	/		NO YSI Sensor on CTD
11	PRH4	50	1500	54 20.24	144	1501	144	1517	/	1065 12.32	/	/	CTD to 50 dbars
			130 17.69						1086 24.82	/	/		off station
✓	✓		1521		145	/	/	1506	/	8.357	45	/	CTD cal. 50 m
										30.988			file opened at 15:05
11	PRH5	61	1538	54 21.71	146	1539	146	1557	/	1087 12.55	/	/	file closed at 15:07
			130 16.11						1014 25.34	/	/		CTD to 61.2 dbars
✓	✓		1	54 21.85	147	/	/	1545	/	8.290	57	/	off station by 0.4 Naut. miles
				130 16.01						30.931			CTD cal @ 61.4 dbars
✓	✓	61	begin 1608		148	1612	/	/	/	13.23	58	/	file opened @ 15:42
										24.07			file closed @ 15:46
✓	✓				149								Surface: 1.8 dbars @ 20 m
✓	✓				150			16:33					YSI Sensor calibration @ 40 m
✓	✓				151	/	/	/	/	9.060			Run off of space
		1656								29.95			Running on disk D
11	PRH1	56	1819	54 14.46	152	1819	152	1833	/	1016 12.13	58	/	CTD cal @ 53.0 dbars
			130 21.00						1029 24.55	/			file opened @ 16:33
													file closed @ 16:33
													CTD @ 21.7 dbars
													YSI Re-calibration @ 20 m
													CTD 56.7 m
													off STN .5 N.M.

0016 133 27.091

21 93

CTD to 38.4 dbars

Sun July 12 92

0800 - Drifter testing 5353.16N 13329.89W

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 92

MONTH July

TIME ZONE PDT

SHIP Tully

CRUISE 9214

PAGE 14 OF

DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/SALINITY	LOOP SALINITY #	NOTES
13	Q178	425	0000 0021		Not on file	1209	/	/	/	/	11.8 32.1		it has not been saved CTD 370 *
13	Q179	1404	0057 5248.68 0130 13227.26		153	0058	/	/	/	/	12.75 32.00		Shallowing up, rocky bottom
13	Q180	1320	0202 5246.23 0239 13231.86		154	0203	/	/	/	/	13.25 31.99		CTD @ 1301.7 dbars OFF station by 0.2 Naut. Miles (begin) 0.4 " " (end)
13	Q181	>2000	0337 5240.32 0418 13243.31		155	0338	/	/	/	/	12.99 31.98		CTD @ 1258.5 dbars
13	Q182	2940	0515 5234.44 13254.41		156	0516	/	/	/	/	13.30 31.99		CTD @ 1500 dbars
13	Q177	2930	0723 5245.51 0807 13309.51		157	0726	/	/	/	/	12.67 32.03		CTD to 1500 dbars
13	Q176	2945	0909 5251.17 0950 13258.39		159	0913	/	/	/	/	13.16 31.98		CTD to 1500 dbars
13	Q175	1190	1050 5257.15 13246.13		160	1052	/	/	/	/	12.78 32.00		Abort on 158 Use 159 CTD to 1500 dbars CTD to 1165
13	Q174	1300	1143 5257.95 1216 13243.95		161	1145	/	/	/	/	12.79 32.00		
13	Q173	1299	1240 5300.03 1311 13240.22		162	1240	/	/	/	/	12.50 32.03		
13	Q172	375	1336 5301.84 1400 13235.85		163	1337	/	/	/	/	11.70 32.07		CTD to 1288 dbars
13	Q171	173	1426 5303.36 1434 13233.37		164	1427	/	/	/	/	11.20 32.14		CTD to 383 dbars off station by 0.2 Naut. miles CTD to 162 dbars

INSTITUTE OF OCEAN SCIENCES													
YEAR	92	MONTH	July	TIME ZONE	PDT	SHIP	TULLY	CRUISE	9214	PAGE	15 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
13	Q165	115	1628 53 17.73 1636 132 46.82	165	1630	/	/	/	/	12.75 32.03	/	/	CTD to 110 dbars
13	Q166	205	1649 53 12.00 132 48.81	166	1651	/	/	/	/	12.98 32.01	/	/	CTD to 200 dbars
13	Q167	390	1732 53 14.57 132 54.96	167	1735	/	/	/	/	12.98 32.00	/	/	CTD to 384 dbars
13	Q168	990	1839 53 11.95 1911 133 01.05	168	1840	/	/	/	/	13.104 32.010	/	/	CTD to 967 dbars
13	Q169	2256 NOT ENTERED	1959 53 07.03 2037 133 11.84	169	2002							CTD to 1500 dbars	
13	Q170	2950	2127 53 01.62 2206 133 23.76	170	2132								
13	Q164	2927	2352 53 16.78 2033 133 39.79	171	2356								
14	Q163	2515	0103 53 18.04 0138 133 32.79	172	0105								
14	Q162	1474	0214 53 21.02 0254 133 25.66	173	0217								
14	Q161	1303	0320 53 23.00 0354 133 19.59	174	0322								
14	Q160	955	0435 53 25.15 133 12.79	175	0437								
14	Q159	1025	0541 53 26.82 133 06.66	176	0544								

July
14

5335 58
1334061

Loran Drifter #40

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

INSTITUTE OF OCEAN SCIENCES

YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	9214	PAGE	16 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
14	Q158	225	0644	53°28.49	177	0646	/	/	/	12.18	/	/	CTD to 220dbars
				133°01.06						32.06	/	/	
14	Q157	155	0706	53°29.35	178	0711	/	/	/	11.32	/	/	CTD to 150dbars
				132°58.94						32.11	/	/	calm, low 6' swell
14	Q67A	110	0904	53°44.19	179	0905	/	/	/	12.43	/	/	CTD to 100
			0910	133°05.97						31.95	/	/	
14	Q67	140	0932	53°42.93	180	0936	/	/	/	12.88	/	/	CTD to 135
			0942	133°11.08						32.02	/	/	
14	Q68A	215	1000	53°42.19	181	1010	/	/	/	13.14	/	/	CTD to 210
			1008	133°13.18						31.99	/	/	
14	Q68	560	1026	53°41.36	182	1028	/	/	/	13.18	/	/	
				132°16.76						32.00	/	/	
14	Q69	865	1108	53°39.93	183	1110	/	/	/	13.18	/	/	CTD to 863
			1131	133°23.14						32.02	/	/	
14	Q70	2110	1321	53°37.46	184	1323	/	/	/	13.30	/	/	Drifter Deployment 39 + GPS
			1411	133°33.40						32.02	/	/	CTD to 1500 dbars
14	Q71	1975	1509	53°35.01	185	1510	/	/	/	13.31	/	/	OFF to Drifter #152
			1541	133°42.9						31.9	/	/	for recovery 1541
14	Q156	2040	2121	53°44.46	186	2126	/	/	/	13.12	/	/	CTD to 1498 dbars
			2159	133°46.78						31.91	/	/	CTD to 1500
14	Q155	1645	2240	53°46.62	187	2245	/	/	/	13.31	/	/	Shoaled to less than 1500
				133°37.24						32.03	/	/	CTD to 1450
15	Q154	395	0003	53°48.88	188	0004	/	/	/	12.76	/	/	Depth not entered
			0016	133°27.09						31.93	/	/	CTD to 384 dbars

INSTITUTE OF OCEAN SCIENCES													
YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	9214	PAGE 17 OF			
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
15	Q153	176	0042 53 50.18 0050 133 21.01	189	0043	/	/	/	/	13.11 32.01	/	/	CTD to 175 dbars
15	Q152	64	0114 53 51.28 0119 133 15.39	190	0115	/	/	/	/	12.49 31.98	/	/	CTD to 65 dbars
15	Q151	43	0140 53 52.33 0143 133 11.04	191	0141	/	/	/	/	12.26 31.91	/	/	CTD to 41 dbars
15	Q17	61	0317 54 0.60 0321 133 16.33	192	0317	/	/	/	/	12.75 31.89	/	/	we did not do Q17A - too many fishermen CTD to 61 dbars
15	Q18	74	0350 53 59.24 0355 133 22.99	193	0351	/	/	/	/	12.89 31.98	/	/	CTD to 75 dbars
15	Q19	225	0440 53 57.92 0451 133 29.56	194	0442	/	/	/	/	12.86 31.91	/	/	CTD to 220 dbars
15	Q20	380	0520 53 56.72 0538 133 35.83	195	0521	/	/	/	/	12.639 31.33	/	/	CTD To 371 dbars
15	Q21	1040	0631 53 53.48 0704 133 49.43	196	0633	/	/	/	/	13.02 31.99	/	/	CTD to 1030 dbars
15	QL15	69	1318 54 11.75 1332 133 5.84	197	1326	/	/	/	/	10.95 31.61	/	/	CTD to 62 dbars
15	QL14	101	1349 54 12.99 1354 133 7.90	198	1349	/	/	/	/	11.39 31.35	/	/	CTD to 97 dbars
5	QL13	165	1413 54 14.82 1421 133 10.63	199	1413	/	/	/	/	12.31 31.15	/	/	CTD to 160 dbars
5	QL12	444	1438 54 16.19 1455 133 12.90	200	1438	X	X	X	X	12.90 31.15	X	X	CTD to 426 dbars

YEAR 1992 MONTH July TIME ZONE PDT SHIP Tully CRUISE 9214 PAGE 18 OF

DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	BACK UP	NOTES
15	QL11	459	1529	54 19.83	201	1530	/	/	/	12.56	/	/	/	
			1543	133 18.13			/	/	/	31.29	/	/	/	
15	QL10	310	2020	54 23.44	202	2022	/	/	/	12.61	/	/	/	CTD to 451 dbars
			2032	133 23.53			/	/	/	31.49	/	/	/	CTD to 305 dbars
15	QL9	275	2102	54 27.37	203	2103	/	/	/	12.45	/	/	/	CTD to 270 "
				133 28.83			/	/	/	31.40	/	/	/	
15	QL9A	225	2145	54 27.52	204	2148	/	/	/	12.89	/	/	/	CTD to 219 dbars
				133 39.79			/	/	/	31.61	/	/	/	
15	QL9B	265	2238	54 27.40	205	2240	/	/	/	12.70	/	/	/	CTD to 260 "
			2247	133 50.47			/	/	/	31.21	/	/	/	
15	QL9C	1320	2348	54 27.41	206	2350	/	/	/	12.35	/	/	/	CTD to 1301 dbars
			0021	134 06.00			/	/	/	31.30	/	/	/	
16	QL8	329	0239	54 31.16	207	0239	/	/	/	12.44	/	/	/	CTD to 316 dbars
			0249	133 23.22			/	/	/	31.37	/	/	/	
16	QL7	341	0322	54 35.06	208	0323	/	/	/	11.28	/	/	/	CTD to 329 dbars
			0333	133 17.66			/	/	/	31.17	/	/	/	
16	QL6	408	0407	54 38.43	209	0409	/	/	/	11.889	/	/	/	CTD TO 392 dbars
			0421	133 12.64			/	/	/	30.832	/	/	/	
16	QL5	185	0443	54 40.37	210	0444	/	/	/	11.51	/	/	/	CTD to 165 dbars
			057	133 09.80			/	/	/	30.65	/	/	/	(drifted into shoaler)
16	QL4	205	0519	54 43.34	211	0522	/	/	/	12.267	/	/	/	CTD TO 200
			0530	133 05.52			/	/	/	30.018	/	/	/	(TOUCHED BOTTOM)
16	QL3	135	0558	54 45.91	212	0600	/	/	/	12.56	/	/	/	CTD to 130 dbars
			0606	133 01.74			/	/	/	30.16	/	/	/	(drifted into shoaler)

DAILY LOG

OCEAN PHYSICS

INSTITUTE OF OCEAN SCIENCES

YEAR 1992		MONTH July		TIME ZONE PDT		SHIP Tully		CRUISE 9214		PAGE 19 OF				
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	Back-up.	NOTES
16	QL2	250	0624	54 47.10	213	0626					12.16		✓	CTD to 240 dbars (depth 245 and of cor)
				132 57.95										
16	QL1	102	0647	54 47.77	214	0649					11.902		✓	CTD TO 92 dbars
			0653	132 59.07										
16	QL20	110	0802	54 33.84	215	0803					10.68		✓	CTD to 96 dbars
			0809	132 47.82										
16	QL21	185	0828	54 37.46	216	0830					11.33		✓	CTD to 179 dbars
			0838	132 50.35										
16	QL22	385	0902	54 24.81	217	0903					12.16		✓	CTD to 380 dbars
			0915	132 54.38										
16	QL23	380	0940	54 32.36	218	0942					12.57		✓	CTD to 375 dbars
			0953	132 57.63										
16	QL24	210	1018	54 30.12	219	1020					12.48		✓	CTD to 210 dbars
			1028	133 00.24										
16	QL25	61	1332	54 28.61	220	1334					11.16		✓	CTD to 56 dbars
			1337	133 02.17										
16	QL26	115	1356	54 26.50	221	1358					11.7		✓	CTD to 108 dbars
			1404	133 02.19										
16	QL27	209	1422	54 23.83	222	1425					11.12		✓	CTD to 197 dbars
			1431	133 02.17										
16	QL28	469	1450	54 20.48	223	1451					10.90		✓	CTD to 461 dbars
			1502	133 02.17										
16	QL29	462	1517	54 18.27	224	1518					11.77		✓	CTD to 449 dbars
			1530	133 02.15										

YEAR 1992		MONTH July		TIME ZONE PDT		SHIP Tully		CRUISE 9214		PAGE 20 OF			
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC #	STD TIME	HYDRO CONSEC #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
16	QL30	445	1538 54 17.20	225	1539					11.2			
		1549	133 02.07										
16	QL31	93	1538 54 16.37	226	1538					31.60			CTD to 431 dbars
		1602	133 02.17										
18	QL31	126	1427 54 16.46	227	1430					31.51			CTD to 79 dbars
		1435	133 02.17										
18	QL30	441	1446 54 17.08	228	1445					9.85			CTD to 120 dbars
		1457	133 02.17										
18	QL29	463	1511 54 18.31	229	1511					32.01			ship was drifting/wire angle ~20°
		1523	133 02.32										
18	QL28	459	1544 54 20.62	230	1545					12.15			CTD to 385 dbars
			133 02.18										
18	QL27	225	1617 54 23.68	231	1620					30.30			wind speed ~ 12 knots
		1628	133 02.11										
18	QL26	120	1648 54 26.47	232	1650					29.91			CTD to 449 dbars
		1655	133 02.18										
18	QL25	65	1713 54 28.65	233	1715					11.88			wind speed ~ 19 knots NW
		1708	133 02.20										
18	QL24	180	1930 54 30.03	234	1932					29.83			CTD to 452 dbars
			133 00.39										
18	QL23	390	2000 54 32.29	235	2002					11.68			CTD to 211 dbars (touched bottom)
		2012	132 57.89										
18	QL22	395	2038 54 34.69	236	2043					11.61			CTD to 118 dbars (touched bottom)
			132 54.85										
										31.20			CTD to 60 dbars
										10.77			wind NW at 19 knots
										31.35			CTD to 175 dbars
										10.84			wind NW at 15 knots
										31.12			CTD to 375
										11.44			CTD to 390
										30.66			
										11.17			
										30.66			

YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	9214	PAGE	21 OF		
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	NOTES
18	QL21	235	2119 54° 37.40 2134 132° 51.21	237 2123						11.22 30.61		✓	CTD to 262 dbars
18	QL20	107	2159 54° 39.80 2207 132° 47.60	238 2201						10.69 30.90		✓	CTD to 111 dbars
19	QL9	273	0057 54° 27.47 0108 133° 28.60	239 0057						11.79 31.47		✓	CTD to 265 dbars
19	QL10	312	0140 54° 23.67 0150 133° 23.56	240 0141						11.98 31.56		✓	Wind speed: 16 knots CTD to 304 dbars
19	QL11	459	0254 54° 19.91 0308 133° 13.95	241 0308						11.71 30.95		✓	CTD to 451 dbars
19	QL12	441	0340 54° 16.25 0354 133° 13.03	242 0340						11.41 31.08		✓	CTD to 420 dbars
19	QL13	170	0413 54° 14.86 0419 133° 10.77	243 0413						11.269 31.002		✓	CTD TO 156 dbars
19												✓	Stations QL14, QL15 Q17A Cancelled
												✓	data to log and engine failures.
9	Q17	67	0621 54° 00.53 0626 133° 17.98	244 0623						12.652 31.765		✓	CTD TO 51.7 dbars STATION DISPLACED DUE TO FISH BOAT
9	Q18	73	0708 53° 59.26 0714 133° 23.06	245 0709						12.716 31.784		✓	CTD TO 75 dbars (TOUCHED BOTTOM)
9	Q19	217	0741 53° 57.98 0751 133° 29.62	246 0743						12.835 31.796		✓	CTD TO 206 dbars

OCEAN PHYSICS														INSTITUTE OF OCEAN SCIENCES	
YEAR	1992	MONTH	July	TIME ZONE	PDT	SHIP	Tully	CRUISE	9214	PAGE 22 OF					
DAY	STATION IDENTIFICATION	DEPTH SOUNDING (m)	SHIP STOP/START TIME	LATITUDE/ LONGITUDE	STD CONSEC. #	STD TIME	HYDRO CONSEC. #	MESSENGER TIME	HYDRO SALINITY #	OXYGEN #	SURFACE TEMPERATURE/ SALINITY	LOOP SALINITY #	BACK UP	NOTES	
19	Q20	415	0818	53 56.72	247	0821				13.25			✓	CTD to 411 dbars	
			0831	133 35.73											
19	Q70	2110	2012	53 57.53	248	2018				31.87				CTD to 1500 dbars	
				133 33.78											
19	Q69	915	2137	53 39.94	249	2144				13.65				CTD to 867 dbars	
			2202	133 23.40											
19	Q68	570	2228	53 41.31	250	2230				32.03				CTD to 590 dbars	
			2246	133 17.03											
19	Q68A	225	2302	53 42.24	251	2304				32.02				CTD to 220	
				133 13.88											
19	Q67	135	2325	53 42.88	252	2329				32.03				CTD to 129 dbars	
				133 11.07											
20	Q158	221	0111	53 28.43	253	0111		upwelling		10.32				CTD to 210 dbars	
			0120	133 01.20											
20	Q159	1015	0145	53 26.97	254	0145				32.24				CTD to 210 dbars	
			0211	133 06.75											
20	Q160	909	0237	53 25.10	255	0237				32.01				CTD to 1012 dbars	
			0303	133 12.64											
20	Q161	1323	0334	53 23.23	256	0334				32.02				CTD to 929 dbars	
			0416	133 19.63											
20	Q162	1475	0443	53 21.00	257	0446				32.07				CTD to 1337 dbars	
			0525	133 25.80											
20	Q163	2480	0556	53 19.16	258	0558				32.05				CTD to 1471 dbars	
			0633	133 32.76											
										32.05				CTD to 1503 dbars.	

[illegible]