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CRUISE REPORT

OCEANUS 130

November 9-16, 1982

Brad Butman  
U.S. Geological Survey  
Woods Hole, MA 02543

Vessel: OCEANUS 130

Departure: Woods Hole, MA

Dates: November 9-16, 1982

Area of Operation: Lydonia Canyon, Continental Slope

Objectives: The objectives of OC130 were to:

1. Recover 2 subsurface moorings and 1 bottom tripod system deployed in Lydonia Canyon. This recovery completed the 2-year field measurement program in Lydonia and Oceanographer Canyons (Stations LCA, LCU, LCB, fig. 1).
2. Recover 3 sediment-trap moorings deployed near Mobil Block 312. This array was designed to measure the resuspension and transport of drill muds discharged during drilling.
3. Deploy 5 subsurface moorings on the Continental Slope. This array initiates a large study of currents and sediment movement along the outer shelf, Continental Slope, and upper rise (stations SA-SE, fig. 2).
4. Conduct a detailed hydrographic survey around Lydonia and Oceanographer Canyons and along the Continental Slope in support of objectives 1 and 3 (fig. 3).
5. Obtain hydrostatically damped cores in the Mud Patch, Lydonia Canyon, and around Lease Block 312 to document the vertical distribution of drill muds in surficial sediments.
6. Obtain surface grab samples around Lydonia and Oceanographer Canyons to refine surface-sediment texture map.
7. Recover 5 surface marker buoys deployed to mark instrument sites.

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Narrative:

November 9 0915 Depart Woods Hole.  
1900 Start bathymetry at station SE.  
2000 Start to deploy subsurface mooring 270.  
2100 Tow into position.  
2150 Mooring 270 deployed.  
2240 Underway to station SA.

November 10 0600 Bathymetry at station SA.  
0700 Start to setup subsurface mooring 266.  
0835 Start to deploy subsurface mooring.  
0945 Anchor aweigh. Subsurface float on surface.  
1040 Recover mooring. Defective subsurface float had imploded  
and mooring severed.  
1130 Underway to station SB.  
1200 Start bathymetry at SB.  
1250 Bathymetry complete. Start to deploy subsurface  
mooring 267.  
1445 Mooring 267 aweigh.  
1600 Arrive station SC. Bathymetry.  
1936 Subsurface mooring 268 aweigh.  
2100 Start XBT section.  
2225 Complete XBT section.  
2230 Underway to LCU.

November 11 0600 At station LCU.  
0745 Subsurface mooring 259 onboard. Underway to station LCB.  
1010 Subsurface mooring 258 onboard. Underway to station LCA.  
1035 Arrive LCA.  
1210 Tripod (mooring 264) recovered. Underway to LB312C.  
1255 Arrive Lease Block 312.  
1340 Subsurface mooring 261 on deck.  
1600 Subsurface mooring 260 on deck.  
1645 Setup to recover all surface buoys.  
1800 Buoy R onboard. Recover chain and anchor.  
1835 Buoy E onboard.  
1935 Buoy A onboard.  
2045 Anchor on deck.  
2145 Buoy P onboard and secure.  
2215 Terminate operations.

November 12 0645 Setup to haul more surface buoys.  
0745 Buoy V onboard.  
0845 Buoy C onboard. Prepare for hydraulically damped corer.  
1020 Start to core.  
1345 Complete HDC and grabs.  
1430 Start XBT transect.  
1745 Complete XBT transect.  
1930 Setup subsurface mooring 269 at station SD.  
2030 Start to string mooring.  
2135 Mooring 269 aweigh.  
2250 Start bathymetry.

Table 1. Moorings and surface buoys deployed and/or recovered on OCEANUS 130

Station	Latitude (N.)	Longitude (W.)	Moorings		Surface buoys	
			recover no.	deploy type	deploy no.	recover type
<u>Lydonia Canyon</u>						
LCA	40°33.8'	67°44.6'	264	T		2
LCB	40°31.5'	67°42.8'	258	SS		
LCU	40°32.4'	67°44.4'	259	SS		1
<u>Lease Block 312</u>						
LB312A	40°39.4'	67°46.1'	260	SS		2
LB312B	40°39.5'	67°46.5'	261	SS		2
LB312C	40°39.7'	67°41.5'	262	SS		
<u>Slope Array</u>						
SA	40°04.8'	68°33.3'			266*	SS
SB	40°01.1'	68°32.4'			267	SS
SC	39°58.5'	68°31.4'			268	SS
SD	40°16.8'	67°46.6'			269	SS
SE	39°53.9'	70°03.9'			270	SS
SH	40°04.8'	68°33.6'			271	SS

\*Subsurface flotation imploded at launch and severed wire.  
Mooring redeployed as mooring 271.

Table 2. Slope Array - Deployment I

Station	Mooring no.	Water depth (m)	Latitude(N.)/ Longitude(W.)	Mooring type	Inst. type	Inst. depth (m)	Inst. S.N.	Deploy (YrMoDy)	Recover (YrMoDy)
SA	271	475	40°04.8' 68°33.6'	SS	TDR	154	162	821115	
					TCT	167	321		
					ST	363	600T		
					ST	365			
					ST	368	601T		
					V	372	443		
					ST	422	602T		
					ST	466	603T		
					ST	468	604		
SB	267	1,560	40°01.1' 68°32.4'	SS	V	360	506	821110	
					TP	660	77		
					ST	951	605T		
					ST	953	606		
					V	960	541		
					ST	1,451	607T		
					ST	1,453	608		
					V	1,460	624		
					ST	1,510	609T		
					ST	1,535	610T		
					ST	1,554	611T		
					ST	1,555	612		
					ST	1,558	613T		
SC	268	2,095	39°58.5' 68°31.4'	SS	TDR	95	163	821110	
					TCT	109	518		
					TCT	409	626		
					TP	709	83		
					ST	1,000	614T		
					ST	1,002	620		

Key: TDR = Temperature-depth recorder.  
TCT = VACM modified for transmission and conductivity.  
ST = Sediment trap (tube trap or Anderson trap).

Table 2. Slope Array - Deployment I (continued)

Station	Mooring no.	Water depth (m)	Latitude(N.)/ Longitude(W.)	Mooring type	Inst. type	Inst. depth (m)	Inst. S.N.	Deploy (YrMoDy)	Recover (YrMoDy)
SC (continued)	268	2,095	39°58.5' 68°31.4'	SS	V	1,009	473	821110	
					V	1,509	485		
					ST	2,000	616T		
					ST	2,002	617		
					V	2,009	487		
					ST	2,045	618T		
					ST	2,070	619T		
					ST	2,090	615		
SD	269	485	40°16.8' 67°46.6'	SS	ST	376	621T	821112	
					ST	378	625		
					V	385	442		
					ST	435	623T		
					ST	478	624T		
					ST	480	622		
SE	270	500	39°53.9' 70°03.9'	SS	ST	391	626T	821109	
					ST	393	627		
					V	400	585		
					ST	450	628T		
					ST	493	629T		
					ST	495	630		

Key: TDR = Temperature-depth recorder.  
TCT = VACM modified for transmission and conductivity.  
ST = Sediment trap (tube trap or Anderson trap).

TABLE 3. HYDROGRAPHIC STATIONS OC130  
NOVEMBER 9 - 15, 1983

STA	MM DD	TIME HHMM	LATITUDE		LONGITUDE		WATER DEPTH (M)	CTD	IBT	***** S A M P L E S *****				
			XX	XX.XX	XX	XX.XX				*SALINITY* DEEP	*NUTRIENT* DEEP	*SUSP* *SEDS* (M)	* O2 * (M)	
1	11/09	1800	40	02.56	70	11.32	335		X	X				
2	11/09	1825	39	57.99	70	08.90	293		X	X				
3	11/09	2245	39	53.18	70	03.00	ND		X	X				
4	11/10	2059	39	55.04	68	29.82	ND		X	X				
5	11/10	2125	39	54.70	68	31.48	ND		X	X				
6	11/10	2156	40	05.04	68	33.22	ND		X	X				
7	11/10	2225	40	10.08	68	34.07	ND		X	X				
8	11/12	1433	40	36.08	67	44.74	90		X	X				
9	11/12	1458	40	33.45	67	44.30	111		X	X				
10	11/12	1511	40	32.01	67	43.89	207		X	X				
11	11/12	1521	40	31.76	67	42.90	260		X	X				
12	11/12	1548	40	31.54	67	42.84	275		X	X				
13	11/12	1602	40	29.97	67	42.37	355		X	X				
14	11/12	1612	40	28.87	67	41.45	355		X	X				
15	11/12	1630	40	26.41	67	39.82	560		X	X				
16	11/12	1703	40	23.65	67	40.00	725		X	X				
17	11/12		40	20.30	67	41.20	ND			X				
18	11/12	1745	40	19.60	67	42.39	380		X					
19	11/13	1200	40	39.55	67	34.42	85	X		X	75	X	75	75
20	11/13	1240	40	36.55	67	33.80	100		X	X				
21	11/13	1257	40	34.89	67	33.81	100	X		X	90	X	90	90
22	11/13	1351	40	32.06	67	32.66	127	X		X	117	X	117	117
23	11/13	1447	40	28.71	67	31.77	138	X		X		X		
24	11/13	1537	40	25.72	67	30.85	175	X		X		X		
25	11/13	1630	40	22.72	67	29.87	355	X		X		X		
26	11/13	1720	40	19.97	67	29.19	1035		X	X		X		
27	11/13	1756	40	17.18	67	28.25	ND	X		X	190	X	190	
28	11/13	2020	40	15.03	67	37.79	1215	X		X		X		
29	11/13	2202	40	18.09	67	40.08	ND		X	X		X		
30	11/13	2240	40	20.42	67	41.18	985	X		X		X		
31	11/14	0102	40	23.80	67	40.09	630	X		X		X		
32	11/14	0232	40	26.83	67	39.64	530	X		X		X		
33	11/14	0406	40	29.95	67	42.45	345	X		X		X		
34	11/14	0455	40	31.51	67	42.88	305	X		X	280	X	280	280
35	11/14	0548	40	32.41	67	44.44	138	X		X	135	X	135	135
36	11/14	0630	40	33.85	67	44.87	103	X		X		X		
37	11/14	0709	40	36.73	67	45.62	85		X	X		X		
38	11/14	0734	40	39.04	67	46.09	81	X		X	73	X	73	73
39	11/14	1157	40	32.38	67	49.85	100	X		X	90	X	90	90
40	11/14	1252	40	28.29	67	48.57	132	X		X	122	X	122	122
41	11/14	1343	40	24.86	67	47.39	148	X		X	138	X	138	138
42	11/14	1442	40	21.97	67	46.49	170	X		X	154	2	154(2)	
43	11/14	1527	40	19.35	67	45.69	395	X		X		X		
44	11/14	1609	40	16.55	67	44.95	800		X	X		X		

TABLE 3. HYDROGRAPHIC STATIONS OC130 (Continued)  
 NOVEMBER 9 - 15, 1983

STA	MM DD	TIME HEPM	LATITUDE XX XX.XX		LONGITUDE XX XX.XX		WATER DEPTH (M)	CTD	XBT	***** S A M P L E S *****						
										*SALINITY*	*NUTRIENT*	*SUSP*	*SEDS*	* O2 *		
										SURF (M)	DEEP (M)	SURF (M)	DEEP (M)	(M)	(M)	
45	11/14	1642	40	15.67	67	51.87	~1300		X	X						
46	11/14	1715	40	14.78	67	59.08	640		X	X			X			
47	11/14	1741	40	17.25	67	59.27	305	X		X			X			
48	11/14	1835	40	20.94	67	59.66	140	X		X	130		X	130	130	
49	11/14	1925	40	24.53	67	59.88	145	X		X			X			
50	11/14	2028	40	28.38	68	00.40	132	X		X	122		X	122	122	
51	11/14	2108	40	32.58	68	00.65	101	X		X	91		X	91	91	
52	11/14	2151	40	34.08	68	07.92	97	X		X						
53	11/14	2235	40	30.80	68	14.71	101	X		X	91		X	91	91	
54	11/14	2	40	30.17	68	13.20	130		X							
55	11/14	2302	40	29.67	68	12.01	140		X							
56	11/14	2310	40	29.37	68	11.01	226	X		X	216		X	216	216	
57	11/14	2338	40	28.44	68	09.13	345		X	X						
58	11/14	2347	40	26.86	68	08.50	ND		X	X						
59	11/15	0005	40	24.90	68	07.86	560	X		X	532		X	532	532	
60	11/15	0115	40	20.27	68	08.93	695	X		X	500		X	500	500	
61	11/15	0209	40	16.43	68	06.80	1240	X		X	500		X	500	500	
62	11/15	0251	40	13.99	68	05.71	1450		X	X						
63	11/15	0334	40	12.02	68	13.94	~705		X	X						
64	11/15	0	40	15.03	68	15.95	530		X	X						
65	11/15	0410	40	17.27	68	17.56	ND		X	X						
66	11/15	0434	40	20.13	68	19.64	140		X	X						
67	11/15	0455	40	23.51	68	22.21	ND		X	X						
68	11/15	0513	40	25.78	68	24.10	100		X	X						
68A	11/15	0527	40	23.29	68	25.47	110		X	X						
69	11/15	0548	40	19.90	68	26.91	117		X	X						
70	11/15	0604	40	17.00	68	28.11	145		X	X						
71	11/15	0630	40	12.58	68	30.03	ND		X	X						
72	11/15	0655	40	08.53	68	31.73	ND		X	X						
73	11/15	0657	40	07.93	68	31.98	285		X	X						
74	11/15	0725	40	04.88	68	33.35	478	X					X	472	472	472



Table 4. OCEANUS 130 samples

Station	Date	Latitude (N.)	Longitude (W.)	Water depth (m)	Type
OC130-1	11/12/82	40°32.17'	67°44.43'	145	Hydraulically damped corer
OC130-2	11/12/82	40°32.29'	67°43.25'	160	0.1 m <sup>2</sup> Van Veen
OC130-3A	11/14/82	40°43.04'	67°45.79'	75	0.1 m <sup>2</sup> Van Veen
OC130-3B	11/14/82	40°43.19'	67°45.66'	75	0.1 m <sup>2</sup> Van Veen
OC130-3C	11/14/82	40°43.25'	67°45.66'	75	0.1 m <sup>2</sup> Van Veen
OC130-4A	11/14/82	40°36.25'	67°46.17'	86	0.1 m <sup>2</sup> Van Veen
OC130-4B	11/14/82	40°36.15'	67°46.12'	86	0.1 m <sup>2</sup> Van Veen
OC130-4C	11/14/82	40°36.27'	67°46.16'	86	0.1 m <sup>2</sup> Van Veen
OC130-5	11/14/82	40°24.69'	67°47.72'	149	0.1 m <sup>2</sup> Van Veen
OC130-6	11/14/82	40°24.70'	68°00.21'	134	0.1 m <sup>2</sup> Van Veen
OC130-7	11/14/82	40°28.32'	68°00.32'	135	0.1 m <sup>2</sup> Van Veen

<sup>1</sup>All latitude/longitude from Northstar 5101 algorithm.

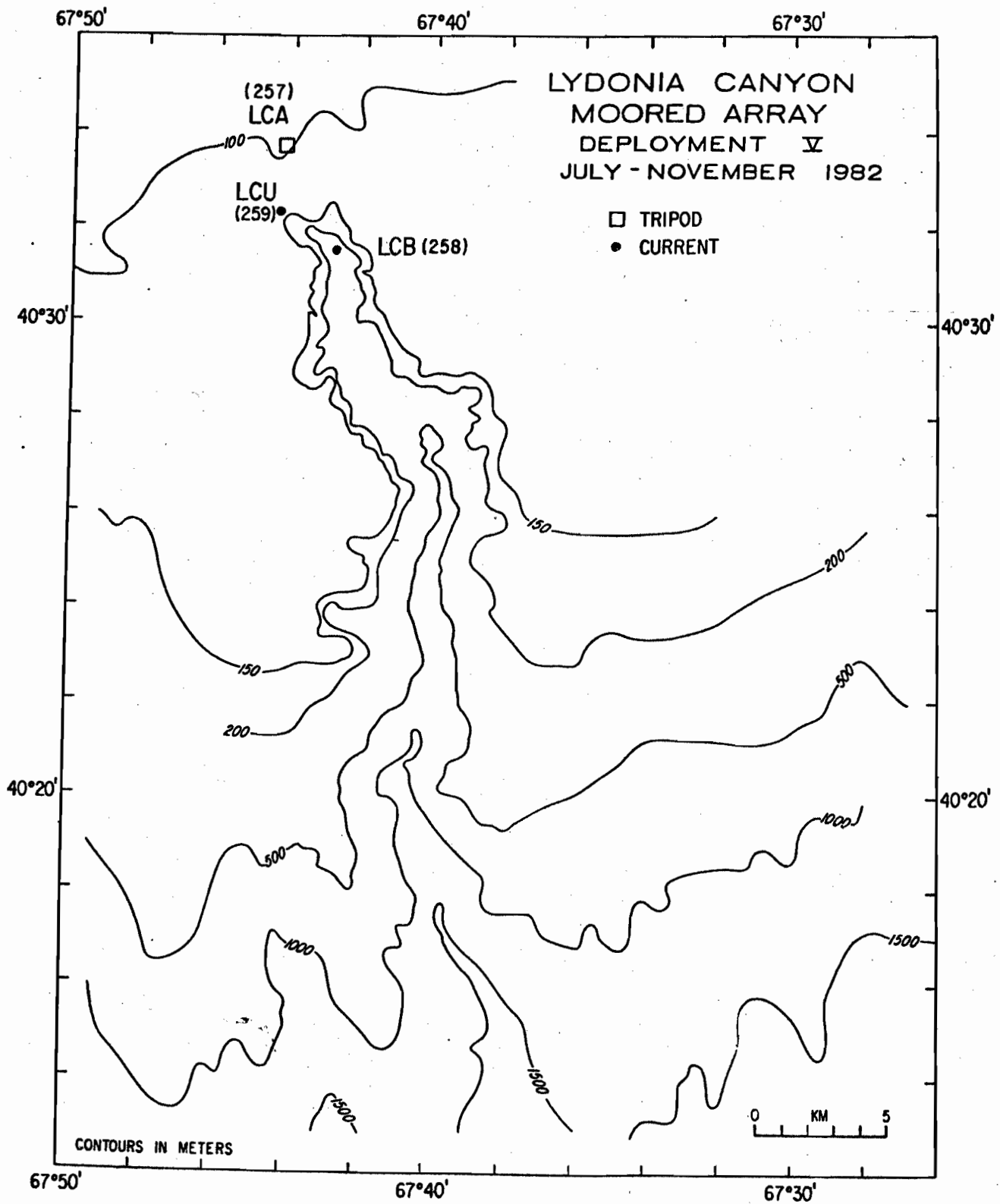


Figure 1. Location of moorings recovered in Lydonia Canyon.

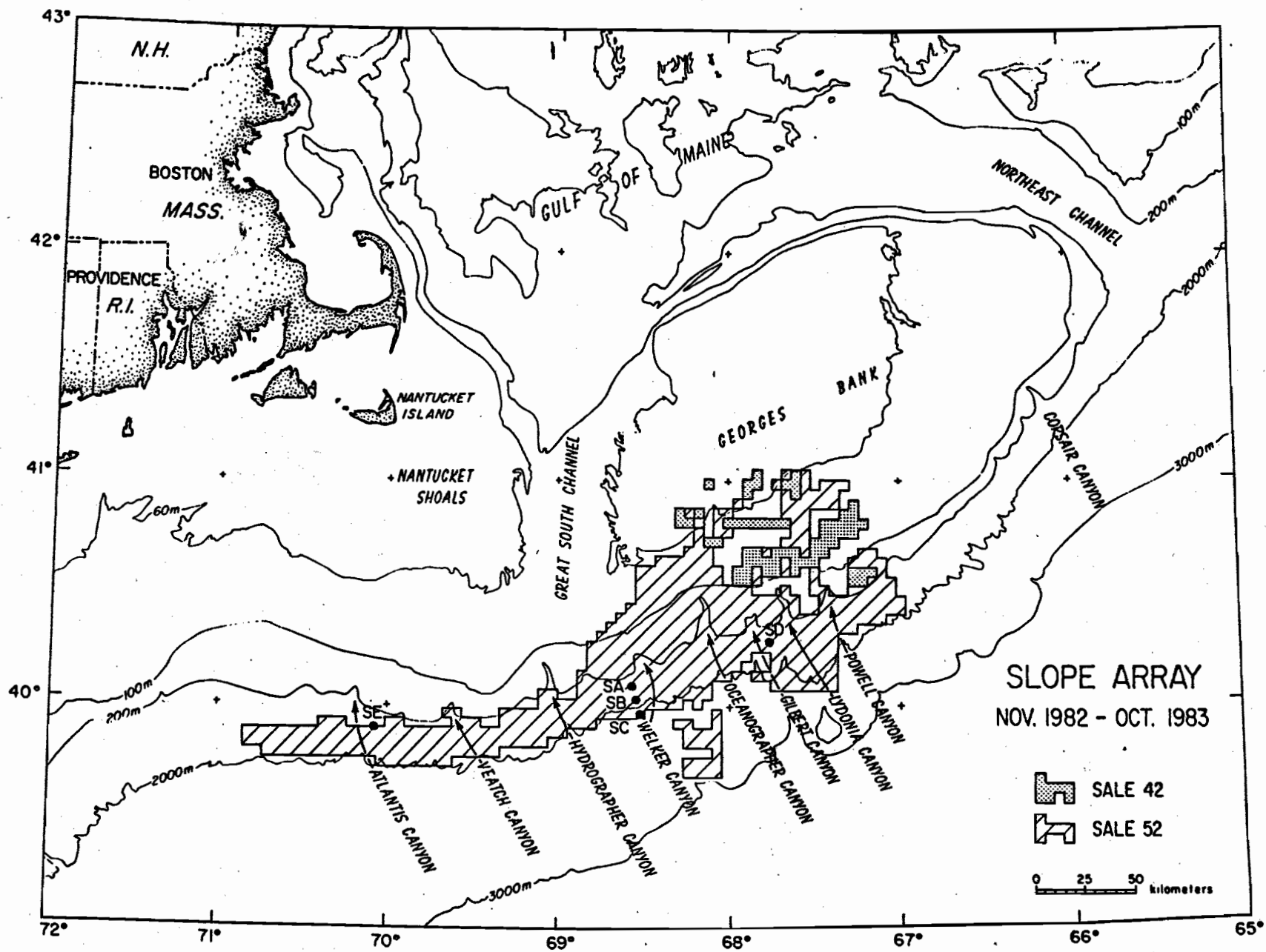


Figure 2. Location of moorings deployed on Continental Slope.

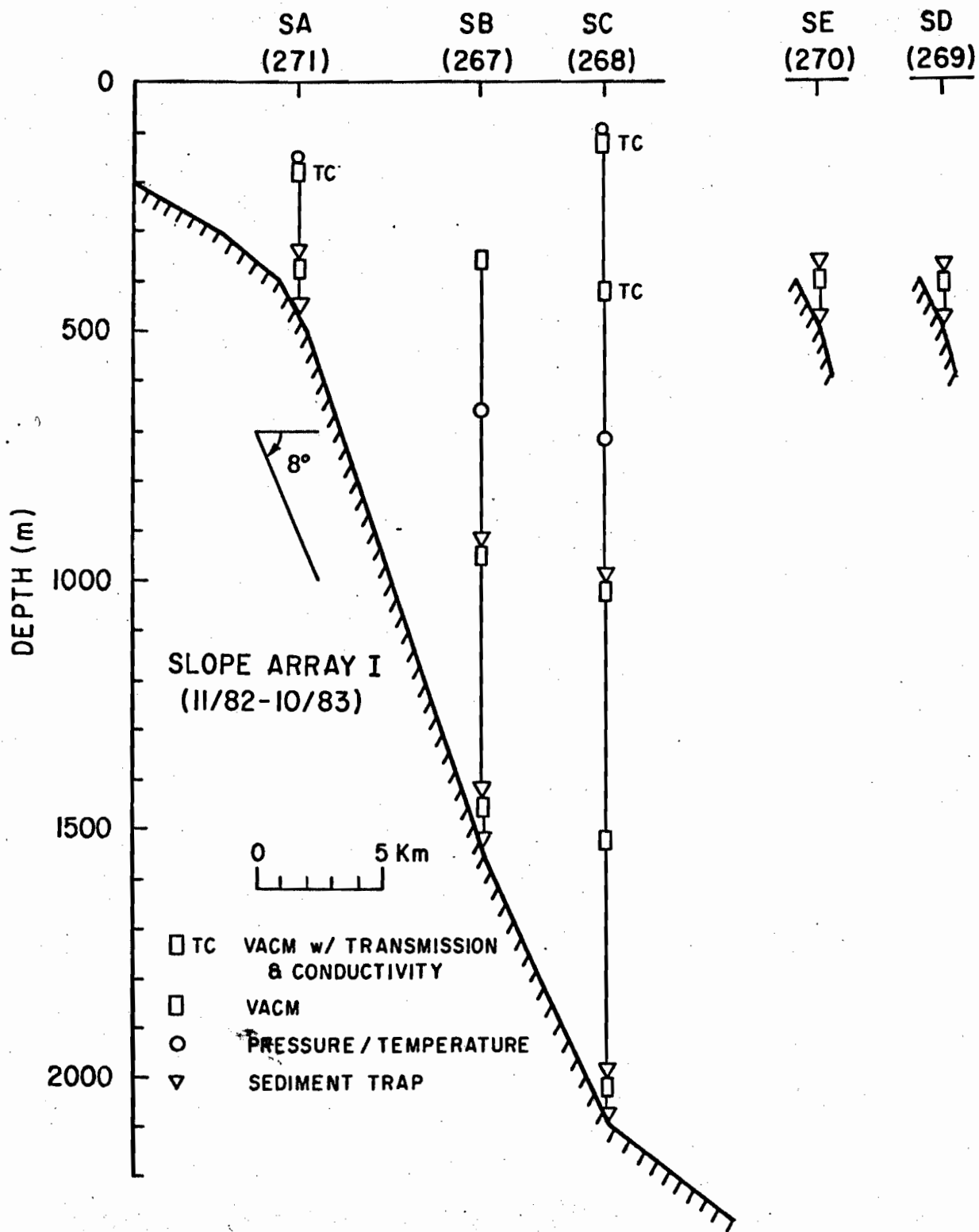


Figure 3. Cross section showing instrument placement in Slope Array I.

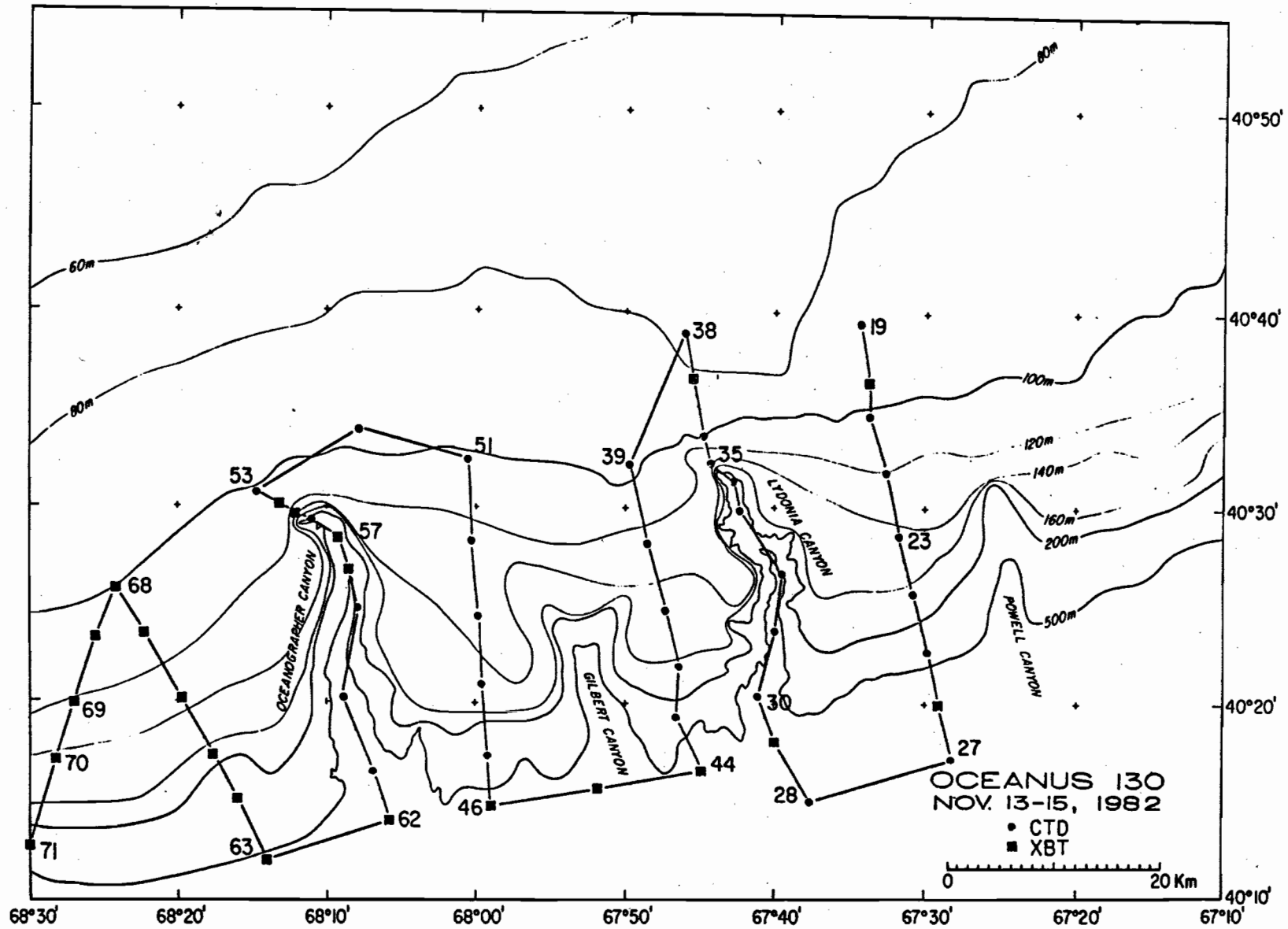


Figure 4. Location of hydrographic stations.

Vessel OCEANUSPage 1Cruise 130LORAN LOG

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	6MT			NORTH	WEST	TUES NOV 9, 1982
0922	1422	LC <sup>7</sup>		DR - DEPARTURE		WH #1 & #2	V/C IN TRANSIT
				VINYARD SOUND			
0951	1451	Buoy # 28		→ .3	mi		
1120	1620	LC-7			41-11.37	70-52.0	s/c 155-G @ 170 RPM SW shore of OGS-T-1.75m
1200	1700	LC <sup>7</sup>			41-04.26	70-48.10	
1300	1800	LC <sup>7</sup>			40-53.79	70-41.95	1300 c/c 153g
1400	1900	LC <sup>7</sup>			40-43.67	70-35.45	
1500	2000	LC <sup>7</sup>			40-33.34	70-28.99	
1600	2100	LC			40-23.41	70-22.94	
1606	2106	SAT		47 <sup>2</sup>	40-22.28	70-21.98	1643 c/c 15'66.
1652	2152	SAT		23 <sup>2</sup>	40-14.90	70-17.76	
1700	2200	LC			40-13.34	70-17.02	
1800	2300	LC			40-02.48	70-11.44	
1849					39-53.5	70-07	c/c 090-G
1938	0038				39-53.5'	70-02.0	V <sup>4</sup> s
1953	0053				39-51.48	70-14.01	V <sup>4</sup> s @ 1.0 KM TO LAUNCH
							MOORING



Vessel OCEANUSPage 3Cruise 130LORAN LOG

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	GMT			NORTH	WEST	WED NOV 11 1962
	0000	0500	LC <sup>7</sup>		39-55.28	69-46.05	0000 R/S 150 RPM
	0100	0600	LC <sup>7</sup>		39-56.85	69-33.93	
	0200	0700	LC <sup>7</sup>		39-50.0	69-22.5	
	0300	0800	LC <sup>7</sup>		39-59.79	69-11.39	
	0400	0900	LC		41-01.58	68-59.57	
	0500	1000	LC		40-03.67	68-48.10	
	0600	1100	LC		40-04.50	68-36.07	HOUVE TO
	0609	1109					V <sup>4</sup> S, COMMENCE SURVEY
	0700	1200	LC		40-05.2	68-31.42	FIN SURVEY V <sup>4</sup> S
	0722	1222	LC		40-02.99	68-33.06	HOUVE TO
	0903				40-03.93	68-33.26	Come least of morning
	0943	1443	LC-7	13791.8 43272.1	40-04.78	68-33.47	Let go mooring anchor SA # 266 1100 - steel sphere included never part of mooring



Vessel OCEANUSPage 4Cruise 130LORAN LOG

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	GMT			NORTH	WEST	WED NOV 10, 1982
	1200	1700	LC <sup>7</sup>		40-00.51	68-34.55	V/C SURVEY
	1301	1801	LC <sup>7</sup>		39-59.0	68-32.5	1301 H.T. PREPARE FOR MOORING 267 AT SITE 'B' 1310 - CMC DEPLOYMENT V/C
	1446	1946	LC <sup>7</sup>	13800.7 43248.1	40-01.03	68-32.59	1446 LET GO ⚓ FOR MOORING #267 at "B" H.T. - RANGING
	1617	2117	LC		39-59.1	68-29	V/Cs CMC SURVEY FOR MOORING #268
	1700	2200					FW SURVEY V/Cs
	1716	2216	LC		39-56.1	68-31.56	CMC LAUNCH MOORING #268
	1935	0035	LC	13804.7 43231.4 25063.6	39-58.46	68-31.57	LET GO ANCHOR, MOORING #268
	2038				39-57.54	68-30.66	
	2058		LC-7		39-54.84	68-29.94	CMC XBT RUN S/C 345 @ 170 RPM
	2225				40-09.99	68-35-03	c/c 060-6



Vessel OCEANUSPage 6Cruise 130LORAN LOG

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	GMT			NORTH	WEST	NOV 11, 1982 THURS
	1200	1700	LC <sup>7</sup>		40.33	67.44	1210 S/C 021° 4
							TO LB 312 C
	1256	1756	LC <sup>7</sup>		40.39.5	67.41.5	1256 H.T. @ LB
					MOORING # 262	→	312 C 1315 CME
							HAULING : 1335
							MOORING ABD 1/2 TO
							LB 312 B
	1439	1939	LC <sup>7</sup>		40.39.47	67.46.86	1439 H.T. & CME
					MOORING # 261	→	RECOVERY OF MOORING
							AT SITE LB-312 B
							ISSD MOORING ABD
							CME RANGING
				MOORING # 260		→	1545 CME RECOVERY OF
							MOORING AT SITE LB-312
	1750	2150					PICK UP SURFACE BUOY R "
	1825	2225					" " " E "
	2117				40.39.39	67.46.5	" " " P "



Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	GMT			NORTH	WEST	FRI NOV 12, 1982
	1200	1700	LC		40-32.18	67-43.44	
	1245	1745	LC <sup>6</sup>	13465.7 43411.2	40.32.18	67.43.15	1245 <del>MUD GRAB</del> ASORTED
	1322	1822	LC <sup>6</sup>	13465.6 43412.1	40.32.30	67.43.26	1322 MUD GRAB - <sup>ON</sup> BOTTOM
							1340 END GRABS - 1/2 TO CME BATHMETRIC SURVEY
TRANSIT POSITIONS							
#1	1436	1936	LC <sup>6</sup>		40.36.0	67.45.0	1436 ZBT
#2	1454	1954	LC <sup>6</sup>		40.33.7	67.44.5	1454 ZBT
#3	1509	2009	LC <sup>6</sup>		40.32.3	67.44.3	1509 ZBT ~ ALL STA KEPLOT POSITS.
#4	—	—			40.31.80	67.43.27	ZBT
#5	1550				40.31.45	67.42.98	
#6							
#7	1600	2100			40-29.95	67-45.53	



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Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	6MT			NORTH	WEST	SAT NOV 13, 82
	0011	0511	LC <sup>7</sup>		40 24.4	67.46	c/c 057°
	0034	0534	LC <sup>7</sup>		40.25.8	67.43.3	c/c 177°
	0119	0619	LC <sup>7</sup>		40.23.2	67.43.3	c/c 092°g
	0126	0626	LC <sup>7</sup>		40.23.1	67.42.6	c/c 358°g
	0140	0640	LC <sup>7</sup>		40.25	67.42.5	c/c 094
	0149	0649	LC <sup>7</sup>		40.25	67.41.8	c/c 177
	0223	0723	LC <sup>7</sup>		40.23	67.41	SUSPEND SURVEY AND 0223 - DELAY TURNING LEFT INTO TRAFFIC HOLD COURSE & SPD. 0240 R/S AS VESSEL PASSES 2.0 MI ASTERN
	0257	0757	LC <sup>7</sup>		40.21.8	67.41.6	RESUME SURVEY c/c 060°g
	0334	1034	LC <sup>7</sup>		40.24.15	67.39.4	0334 c/c 000
	0351	0851	LC <sup>7</sup>		40.26.2	67.39.2	0351 c/c 090
	0357	0857	LC		40.26.2	67.38.67	c/c 180g.

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Date	Time	GMT Sta.	+/-	Reading	Latitude N	Longitude W	Remarks
13 NOV							
	0426	0926	LC	<del>40-24</del>	40-24.15'	67-38.7	c/c 165'
	0544	1044	LC		40-18.8	67-36.7	c/c 083
	0612	1112	LC		40-19.1	67-33.8	c/c 067
	0704	1204	LC		40-20.9	67-29.0	c/c 352
	0709	1209	LC		40-21.4	67-28.2	c/c 250
	07 -	12 -			21.5	28.5	c/c 0006
	0720	1220			40-22.3	67-28.5	c/c 2506
	0813	1313	LC-7		40-20.8	67-33.7	END SURVEY
	0831		LC-7		40-20.3	67-35.6	c/c 180.
	0844		LC-7		40-19.61	67-35.56	
	0931	1431	LC-7		40-21.23	67-29.91	S/C 346-@150RPM END SURVEY
	1100	1600	LC-7		40-35.17	67-34.16	c/c 353
	1135	1635	LC-7		40-39.93	67-35-04	H-T



Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	TS	GMT			NORTH	WEST	SAT NOV 13, 1982
	1210	1710	LC <sup>7</sup>		40-39.46	67-34.53	1210 C.T.D. @ DEPTH
	1306	1806	LC <sup>7</sup>		40-34.69	67-34.03	1306 CTD @ DEPTH
	1358	1858	LC <sup>7</sup>		40-31.85	67-32.68	1358 CTD @ DEPTH
	1456	1956	LC <sup>7</sup>		40-28.45	67-31.75	1456 CTD @ DEPTH
	1535	2035	LC <sup>7</sup>		40-25.53	67-30.92	1535 CTD @ DEPTH
	1622	2122					ON SIA (CTD)
	1634	2134	LC		40-22.6	67-30.06	CASST AT DEPTH
	1651	2151	LC				FIN SIA S/C 166
	1751	2251	<del>LC</del>				H.I. CTD SIA
	1821	2321	LC		40-16.80	67-28.52	CASST AT DEPTH
	1858	2358					FIN SIA S/C 2576
	2046	0146	LC6		40-14.71	67-38.26	2012-H-T CTD Cast @ depth
							2112 S/C 342-G @ 6125
	2308	0408	LC6		40-20.06	67-42.17	2235-H-T CTD Cast @ depth
							2330 S/C 035 @ 6125

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	6MT			NORTH	WEST	SUN, NOV 14, 1982
0128	0628	LC			40-23.77	67-40.76	CTD @ DEPTH 5/6 348° D <sup>5</sup> /A
0258	0758	LC			40-26.82	67-40.55	CTD @ DEPTH 5/6 353° D <sup>5</sup> /A
0403	0903	LC			40-29.95	67-42.55	H.T. CTD STA
0418	0918	LC			40-29.94	67-42.82	CAST AT DEPTH
0429	0929	LC					FIN STA V/L
0453	0953	LC			40-31.47	67-43.04	H.T. CTD STA
0507	1007	LC			40-31.53	67-43.16	CAST AT DEPTH
0533	1033	LC					FIN STA V/L
0547	1047	LC			40-32.36	67-44.57	H.T. CTD STA
0558	1058	LC			40-32.51	67-44.76	CAST AT DEPTH
0616	1116	E					FIN STA V/L
0627	1127	LC			40-33.80	67-45.01	H.T. CTD STA
0637	1137	LC			40-33.92	67-45.19	CAST AT DEPTH



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Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	6MT			NORTH	WEST	SUN NOV 14, 1982
	1206	1706	LC <sup>7</sup>		40.32.07	67.50.10	1206 CTD
	1258	1758	LC <sup>7</sup>		40.28.15	67.48.84	1258 CTD
	1401	1901	LC <sup>7</sup>		40.24.66	67.47.70	1401 CTD & MUD GCMB
	1456	1956	LC <sup>7</sup>		40.21.86	67.46.84	1456 CTD
	1540	2040	LC <sup>7</sup>		40.19.17	67.45.95	1540 CTD
	1608	2108	LC		40-16.57	67-45.08	42609, XBT
	1714	2214	LC		40-14.63	67-59.18	XBT 423559.
	1738	2238	LC		40-17.23	67-59.39	H.T. CTD STA
	1754	2254	LC		40-17.17	67-59.53	CAST AT DEPTH
	1808	2308					FIN STA 5/2359 FA.
							1833-H-T-CTD
	1843	2343	LC		40.20.84	67-59.97	Cast at depth 1854 5/2002-C
	1822	0022	LC		40-24.08	68-00.03	H.T. CTD STA
	1931	0031	LC		40-24.68	68-00.12	CAST AT DEPTH



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Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	+5	GMT			NORTH	WEST	MON NOV 15, 1982
	0035	0535	LC <sup>7</sup>		40-24.90	68-08.38	CTD AT DEPTH
	0132	0632	LC <sup>7</sup>		40-20.30	68-09.06	CTD AT DEPTH
	0219	0719	LC <sup>7</sup>		40-16.43	68-06.94	CTD AT DEPTH
	0249	0749	LC <sup>7</sup>		40-14.03	68-05.88	XBT $\frac{1}{2}$
	0334	0834	LC <sup>7</sup>		40-11.98	68-14.16	XBT $\frac{1}{2}$
	0359	0859	LC		40-14.76	68-15.91	YC3315.
	0510	1010	LC		40-25.75	68-23.97	YC199
	0559	1059	SAT	70 <sup>2</sup>	40-17.83	68-27.86	
	0600	1100	LC		40-17.70	68-27.93	
	0700	1200	LC		40-07.73	68-32.19	
	0718	1218	LC		40-04.83	68-33.49	H.T. CTD STA.
	0737	1237	LC		40-04.83	68-33.49	AT DEPTH
	1006	1506	LC		40-04.98	68-33.65	
	1118		LC		40-04.62	68-32.76	Come trawling for morning



Vessel OCEANUSPage 19Cruise 130LORAN LOG

Date	Time	Sta.	+/-	Reading	Latitude	Longitude	Remarks
	<u>+5</u>	<u>GMT</u>			<u>NORTH</u>	<u>WEST</u>	<u>TUES NOV 16, 1982</u>
	<u>0000</u>	<u>0500</u>	<u>LC<sup>7</sup></u>		<u>40-10.57</u>	<u>68-42.34</u>	
	<u>0100</u>	<u>0600</u>	<u>LC<sup>7</sup></u>		<u>40-14.35</u>	<u>68-48.16</u>	
	<u>0200</u>	<u>0700</u>	<u>LC<sup>7</sup></u>		<u>40-18.21</u>	<u>68-54.43</u>	<u>0200 c/l 319<sup>g</sup></u>
	<u>0300</u>	<u>0800</u>	<u>LC<sup>7</sup></u>		<u>40-22.89</u>	<u>68-59.25</u>	
		<u>0839</u>	<u>SAT</u>	<u>51<sup>02</sup></u>	<u>40-24.73</u>	<u>69-03.37</u>	
	<u>0400</u>	<u>0900</u>	<u>LC</u>		<u>40-26.34</u>	<u>69-05.48</u>	
	<u>0500</u>	<u><del>0900</del> 1000</u>	<u>LC</u>		<u>40-31.59</u>	<u>69-10.82</u>	
	<u>0520</u>	<u>1020</u>	<u>LC</u>		<u>40-33.83</u>	<u>69-13.39</u>	<u>c/l 2805 1/2 170 RPM</u>
	<u>0600</u>	<u>1100</u>	<u>LC</u>		<u>40-35.20</u>	<u>69-23.21</u>	
	<u>0603</u>	<u>1103</u>	<u>SAT</u>	<u>34<sup>2</sup></u>	<u>40-35.30</u>	<u>69-24.68</u>	
	<u>0700</u>	<u>1200</u>	<u>LC</u>		<u>40-37.84</u>	<u>69-28.51</u>	
	<u>0800</u>	<u>1300</u>	<u>LC</u>		<u>40-40.56</u>	<u>69-53.35</u>	
	<u>0840</u>	<u>1540</u>	<u>LC</u>		<u>40-42.35</u>	<u>70-04.16</u>	<u>c/l 309-G</u>



