

UNCLASSIFIED

AD NUMBER
AD483784
NEW LIMITATION CHANGE
TO Approved for public release, distribution unlimited
FROM Distribution authorized to U.S. Gov't. agencies and their contractors; AdministrativeOperational Use; Jun 1966. Other requests shall be referred to Office of Naval Research, Arlington, VA.
AUTHORITY
ONR notice, 27 Jul 1971

THIS PAGE IS UNCLASSIFIED

483784

4

BIOLOGICAL STATIONS OCCUPIED FROM ARLIS I

September 10, 1960 - March 17, 1961

44

Reproduction in whole or in part is permitted for any purpose of the United States Government.

These studies were aided by a contract between the Office of Naval Research, Department of the Navy, and the University of Southern California, NONR 228(19), (NR 307-270).

BIOLOGICAL STATIONS OCCUPIED FROM ARLIS I

September 10, 1960 - March 17, 1961

Compiled By

W. Delton Shirley

June, 1966

Department of Biological Sciences

University of Southern California

Los Angeles, California 90007

The following is a station list of the biological collections made from the Arctic Research Laboratory Ice Station No. 1 (ARLIS I). This station was established on September 10, 1960 at 75° 07' N, 135° 16' W in the Beaufort Sea by men of the U.S.S. Burton Island and the scientists and technicians who were to occupy the station. It was evacuated on March 17, 1961 after drifting westward (Fig. 1) for 174 days between the 74th and 75th parallels and covering about 920 miles.

The marine biological program was carried out by John F. Tibbs under the supervision of Dr. John L. Mohr and Mr. Stephen R. Geiger of the University of Southern California. This work was supported by the Office of Naval Research under Contract NONR 228(19), NR 307-270.

Biological collections were made at 501 stations. The majority were of the plankton (368), but bottom (27), sea-ice interface (91), and miscellaneous (15) samples were taken also.

The sampling was carried out from a plywood hut which was constructed over a meter-square hole (hydro-hole) dug through the three-meter-thick floe-ice. This was initially equipped with a large and small winch. Because of the breakdown of the large winch, the small electro-hydraulic winch with 1200 meters of cable had to be employed for most of the drift. These facilities were shared with the oceanographer.

With 1200 meters of cable, plankton and bottom sampling was limited to levels above that depth. As no workable sounding device was available, bottom depth measurements were possible only when bottom contact was made with sampling devices. Bottom depths for all other stations were derived from a bathymetric map (Link, and coworkers, 1960). These depths are given in the station list within parentheses. Throughout most of the drift the bottom depth was about 3500 meters, shallower depths (210-1000 meters) being encountered during the latter part of the drift.

The depths at which the tows were made are recorded in the amount of wire paid out from the surface of the hydrohole. Usually these measurements are close to the actual depths, as the angular departures from vertical are generally no greater than a few degrees. Whenever the movement of the island was great enough to cause greater departures from vertical, the wire bent against the ice of the sides of the hydrohole and the angle beyond the bend was not known.

Most plankton samples were obtained with either of two kinds of half meter closing plankton nets, one made of no.73 "NITEX" nylon netting (NC20) and the other of no.215 "NITEX" netting (NC6). Two non-closing nets, a speed net with no.62 "NITEX" nylon netting (NS) and a net of no.62 "NITEX" nylon netting (N24) with a rim of 1/2 m diameter were used occasionally. These nets which were made for

us by the Puget Sound Workshop, Belluvue, Washington have the following specifications:

1. NC20 -- closing net with no.73 "NITEX" nylon monofilament screen cloth (73 micron mesh opening), galvanized ring of 1/2 m diameter, net an 80 in. cone with the upper 19 in. of canvas and following, 58 in. of netting terminating with a 3 in. cod end of 3 1/2 in. diameter.
2. NC6 -- closing net with "NITEX" monofilament screen cloth (215 micron mesh opening), measurements as in no.1.
3. NS -- non-closing speed net with no.62 "NITEX" nylon monofilament screen cloth (62 micron mesh opening), upper rim 6 1/2 in. in diameter, second ring with a 9 3/8 in. diameter, between the two rings 10 in. of canvas and following 27 1/2 in. netting terminating with a 3 7/8 in. canvas cod end of 2 3/4 in. diameter.
4. N24 -- non-closing net with no.62 "NITEX" nylon monofilament screen cloth (62 micron mesh opening), galvanized ring of 1/2 m diameter, net a 63 in. core with a 3 in. canvas collar and a 4 1/4 in. canvas cod end of 3 1/2 in. diameter.

Brass collecting buckets were employed at the (net's) cod ends. The buckets of NC20 and NC6 were fitted with screen windows which were of the same mesh as the net itself. The N24 had a collection bucket with a screen window of #25 mesh. The NS utilized an eight ounce glass jar at its cod end.

Horizontal (H) and vertical (V) plankton tows were made. Horizontal tows made with closing nets were closed at towing depth except as noted. Vertical tows were raised at approximately 10 m/min. Sometimes nets were suspended at one horizon for a measured period and were closed before reaching the surface; these are designated VH and the time at horizon is noted. The NS was used several times in conjunction with Nansen casts. These samples can not be considered as quantitative as they were towed at various depths for different periods of time. Such combinations are noted under the remarks column. The first time-entry for a plankton station is the time the net entered the water. The second may be either the time the net was closed or in case of tows which were not closed, the time of surfacing.

The first bottom sample, station 265, was taken on December 22, 1960 by accident during routine sampling with a plankton net. This was on a previously unknown topographic rise of about 1000 m, now called the ARLIS I Rise, at 74° 35' N, 159° 30' W at a depth of approximately 900 meters. Depths shallow enough for bottom sampling were not encountered again until January 14, 1961.

Standard bottom samplers used include the Orange Peel Bucket (OPB) the LaFoid-Dietz Snapper (LDS), and the Pflieger Corer (PC). A small improvised dredge (Dredge) (5/16 in. rod iron frame, 5 in. x 11.5 in., employing a wire mesh liner of 1/8 in. aperture) was also used. For the first three samplers,

only the time of bottom contact is recorded and for the Dredge the time interval while on the bottom.

The sea-ice interface habitat (Mohr and Tibbs, 1963) was sampled with minnow traps baited with either meat or fish. These traps were suspended in the hydrohole at depths from just below the surface of the water to the bottom of the ice. Often amphipods (mainly Pseudallia rotundifrons) could be attracted into the hydrohole by suspending the bait on a line in the hydrohole. They were then dipped out with a handnet. The handnet was also employed in collecting other organisms such as ctenophores in the hydrohole.

Samples collected in the hydrohole are designated in the station list as: 1. TM = minnow trap, baited
2. NH = handnet. If bait on a line was suspended in the hydrohole, this is noted in the remarks column.

Miscellaneous collections (MISC) are also referred to in the station list. These include material which was taken off the winch wire, tripping device, and messengers from a previous station and also debris taken from ice cores.

Samples were usually fixed within one minute after being taken. The most frequently employed

preservative was buffered 7% formalin in sea water and others include Bouin's, 70% ethanol, Schaudinn's and 1% aqueous osmium tetroxide. After an appropriate fixation period the samples were transferred to their final preservative and stored.

Each sample was given a station number and these were consecutive.

Positions are recorded in degrees and minutes of latitude and longitude. Time is recorded in Alaska Standard Time utilizing the 24 hour system with 2400 corresponding to 12 midnight.

ABBREVIATIONS

LAT	Latitude
LONG	Longitude
GEAR:	
NC20	= closing net; nylon netting with 73 micron mesh opening
NC6	= closing net; nylon netting with 215 micron mesh opening
NS	= non-closing speed net; nylon netting with 62 micron mesh opening
N24	= non-closing net, nylon netting with 62 micron mesh opening
OPB	= Orange Peel Bucket
LDS	= LaFond-Dietz Snapper
PC	= Pfleger Corer
DREDGE	= small improved bottom dredge
TM	= minnow trap
NH	= hand net
MISC	Miscellaneous
V	Vertical

H Horizontal

VH

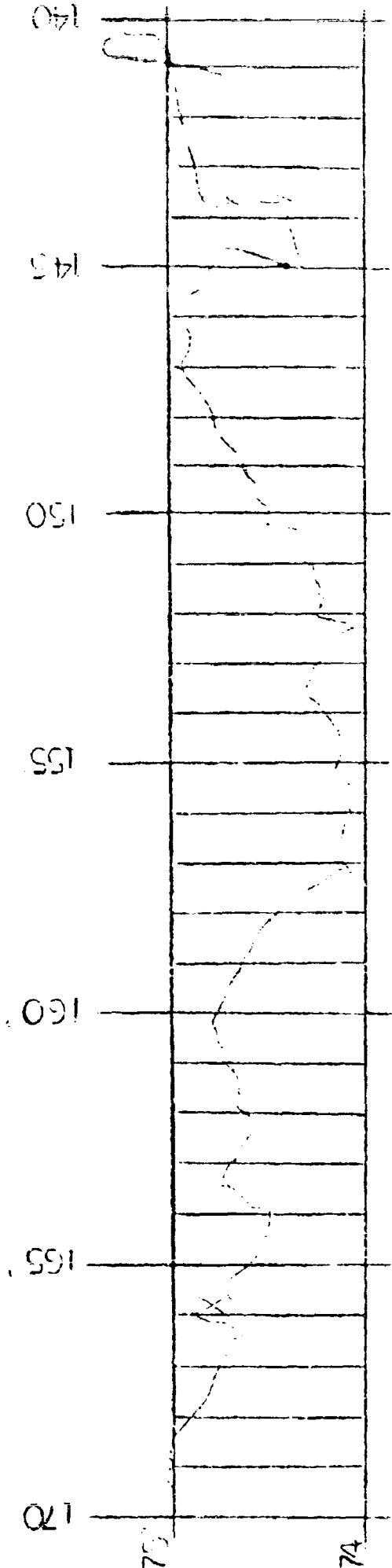
Tows that were suspended at one horizon for a measured period and were closed before reaching the surface

LITERATURE CITED

Zink, T.A., J.A. Downing, G.O. Rensch, A.W. Byrne, D.W.R. Wilson, and A. Reece. 1960. Geological map of the Arctic. Calgary: Alberta Society of Petroleum Geologists.

Mohr, J.L. and J. F. Tibbs. 1963. Ecology of ice substrates. In: Proceedings of the Arctic Basin Symposium October 1962. The Arctic Institute of North America for the Office of Naval Research. Hershey, Pennsylvania, pp. 245-249.

FIGURE 1



DRIFT TRACK
OF
APLIS I

STATION NUMBER	POSITION		DATE	TIME	GLAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
1	74 40	141 06	25 SEPT 60	1500	NSV	100-0	(3600)	
2	74 42	141 06	26 SEPT 60	0800	NSV	200-0	(3600)	
3	74 48	141 06	27 SEPT 60	1400	NSV	600-0	(3600)	
4	74 48	141 06	27 SEPT 60	1700 1800	NSH	10	(3600)	
5	74 54	142 42	29 SEPT 60	1200 1300	NSV	1200-0	(3600)	TAKEN WITH NANSEN CAST
6	74 54	142 42	29 SEPT 60	1500 1530	NSV	200-0	(3600)	
7	74 54	142 36	29 SEPT 60	2030	NSH	200	(3600)	
8	74 54	142 36	30 SEPT 60	0830	NH	HYDROHOLE	(3600)	
9	75 00	140 36	1 OCT 60	1600 2030	NC20VH	1200 800	(3600)	TOWED AT 1050 M FOR 1 HR.
10	75 00	140 36	1 OCT 60	2045 2100	NH	HYDROHOLE	(3600)	
11	75 00	140 36	1 OCT 60	2100 2130	NC20V	30-0	(3600)	
12	75 00	140 36	1 OCT 60	2130 2200	NC20V	75-0	(3600)	
13	75 00	142 00	3 OCT 60	1200	NSVH	1200-0	(3600)	TAKEN WITH NANSEN CAST; TOWED AT 600M FOR 41HP. 30MIN.
14	74 48	143 36	5 OCT 60	1000	N24H	100	(3500)	
	74 42	143 30	6 OCT 60	0730 0845	N24H			
15	74 42	143 30	6 OCT 60	0900 1020	N24H	12	(3600)	
16	74 42	143 30	6 OCT 60	1045 1130	NC20V	200-15	(3600)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
17	74 42	143 30	7 OCT 60	0800	N2+V	80-0	(3600)	
				0830				
18	74 42	143 30	7 OCT 60	1405	NSV	200-0	(3600)	TAKEN WITH NANSEN CAST
				1455				
19	74 42	143 30	7 OCT 60	1500	NSV	100-0	(3600)	TAKEN WITH NANSEN CAST
				1545				
20	74 42	143 30	7 OCT 60	1700	N2+H	80	(3600)	
				1900				
21	74 42	143 30	7 OCT 60	2015	N2+H	40	(3600)	
				2100				
22	74 42	143 30	7 OCT 60	2120	N2+H	120	(3600)	
				2305				
23	74 42	143 30	7 OCT 60	2305	NH	HYDROHOLE	(3600)	
24	74 42	143 30	7 OCT 60	2310	N2+H	10	(3600)	
				0520				
25	71 36	143 18	8 OCT 60	1120	NSV	1200-0	(3600)	TAKEN WITH NANSEN CAST
				1330				
26	74 36	143 18	8 OCT 60	1515	N2+H	50	(3600)	
				2115				
27	74 36	143 18	8 OCT 60	2130	NH	HYDROHOLE	(3600)	
28	74 36	143 18	8 OCT 60	2130	N2+H	100	(3600)	
				2230				
29	74 36	143 18	5 OCT 60	1000	N2+H	100	(3600)	
				1100				
30	74 36	143 18	5 OCT 60	1125	N2+H	200	(3600)	
				1215				
31	74 36	143 18	5 OCT 60	1305	N2+H	300	(3600)	
				1425				
32	74 36	143 18	9 OCT 60	1515	NC20VH	500-300	(3600)	TOWED AT 500M FOR 1HR.
				1725				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
33	73 36	143 12	10 OCT 60	1050	NSVH	1200-0	(3600)	TAKEN WITH NÅNSEN CAST; TOWED AT 1200M FOR 1' HR.
34	73 36	143 12	10 OCT 60	1345	NC20VH	700-500	(3600)	TOWED AT 700M FOR 1' HR. 10 MIN.
35	73 36	143 12	11 OCT 60	1820	NC20VH	1200-700	(3600)	TOWED AT 1200M FOR 2 HRS. AND AT 900M FOR 45 MIN.
36	73 36	143 12	11 OCT 60	2100	NC20V	85-0	(3600)	
37	74 30	143 36	13 OCT 60	0800	NC20H	100	(3600)	
38	74 30	143 36	13 OCT 60	1330	NC20H	80	(3600)	
39	74 30	143 36	13 OCT 60	1405	NC20H	80	(3600)	
40	74 30	144 36	14 OCT 60	1515	N24H	80	(3600)	
41	74 30	144 36	14 OCT 60	2210	N24H	30	(3700)	
42	74 30	144 36	14 OCT 60	0910	NC20H	170	(3700)	
43	74 30	144 36	14 OCT 60	0925	NC20H	50	(3700)	
44	74 30	145 00	15 OCT 60	1155	MISC	100	(3700)	MATERIAL TAKEN FROM AN ICE CORE
45	74 30	145 00	15 OCT 60	1300	NC20H	250	(3700)	NET NOT CLOSED
46	74 30	145 00	15 OCT 60	1530	NC20H	65	(3700)	NET NOT CLOSED
47	74 36	144 54	16 OCT 60	2005	NC20H	50	(3700)	NET NOT CLOSED
48	74 36	144 54	16 OCT 60	2025	NC20H	75	(3700)	NET NOT CLOSED
			15 OCT 60	1050				
			15 OCT 60	1605				
			16 OCT 60	1615				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE		REMARKS
	LAT(N)	LONG(W)				DEPTH (M)	BOTTOM DEPTH (M)	
45	74 36	144 54	16 OCT 60	2115	NC20H	20	(3700)	
50	74 36	144 48	17 OCT 60	0945	NC20H	10	(3700)	
			18 OCT 60	0905				
51	74 42	144 42	18 OCT 60	0517	NC20H	4	(3700)	NET NOT CLOSED
				1140				
52	74 42	144 42	18 OCT 60	1550	N24H	40	(3700)	
				2115				
53	74 42	144 42	18 OCT 60	2140	NH	HYDROHOLE	(3700)	
54	74 42	144 42	18 OCT 60	2145	N24H	150	(3700)	
			19 OCT 60	0945				
55	74 42	144 36	20 OCT 60	1007	N24H	10	(3700)	
				1055				
56	74 42	144 48	20 OCT 60	1519	N24H	25	(3700)	
				2119				
57	74 42	144 48	20 OCT 60	2130	NH	HYDROHOLE	(3700)	
58	74 42	144 48	20 OCT 60	2130	N24H	75	(3700)	
			21 OCT 60	0855				
59	74 48	145 12	21 OCT 60	0905	N24H	20	(3800)	
				1023				
60	74 48	145 12	21 OCT 60	1027	N24H	170	(3800)	
				1423				
61	74 48	145 12	21 OCT 60	1725	NC20H	300	(3800)	NET NOT CLOSED
				2038				
62	74 48	145 12	21 OCT 60	2045	NH	HYDROHOLE	(3800)	
				2100				
63	74 48	145 12	21 OCT 60	2100	NC20H	3.5	(3800)	NET NOT CLOSED
			22 OCT 60	1050				
64	74 54	145 12	22 OCT 60	1100	NC20H	35	(3800)	NET NOT CLOSED
				1358				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
65	74 54	145 42	22 OCT 60	2100	NC20H	325	(3800)	
66	74 54	146 12	23 OCT 60	0930	NC20H	275	(3900)	
67	74 54	146 12	23 OCT 60	1025	NC20H	160	(3900)	
68	74 54	146 36	24 OCT 60	1013	NC20H	40	(3900)	
69	74 54	147 12	24 OCT 60	1510	NC20H	90	(3900)	
70	74 54	147 12	25 OCT 60	1006	NC20H	150	(3900)	
71	74 54	147 12	25 OCT 60	1238	NC20H	215	(3900)	
72	74 54	147 12	25 OCT 60	1305	NH	HYDROHOLE	(3900)	
73	74 54	147 12	25 OCT 60	1517	NC20H	275	(3900)	
74	74 54	147 12	25 OCT 60	1557	NH	HYDROHOLE	(3900)	
75	74 42	148 24	25 OCT 60	2004	NC20H	30	(4000)	
76	74 42	148 24	27 OCT 60	0935	NC20H	55	(4000)	
77	74 42	148 24	27 OCT 60	1332	NC20H	95	(4000)	
78	74 48	148 24	27 OCT 60	1343	NC20H	10	(4000)	NET NOT CLOSED
79	74 48	148 24	28 OCT 60	2152	NC20H	105	(4000)	
80	74 48	148 24	28 OCT 60	2207	N24H	105	(4000)	
			28 OCT 60	0851	NH	HYDROHOLE	(4000)	
			28 OCT 60	0502				
			28 OCT 60	1045				
			28 OCT 60	1630				
			28 OCT 60	2031				
			28 OCT 60	2040				
			28 OCT 60	2050				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
81	74 48	148 24	28 OCT 60	2055	N24H	400	(4000)	
82	74 42	148 36	29 OCT 60	1014	NH	HYDROHOLE	(4000)	
83	74 42	148 36	29 OCT 60	1040	NC20H	190	(4000)	
84	74 42	148 36	29 OCT 60	1419	NC20H	23	(4000)	NET NOT CLOSED
85	74 42	148 36	29 OCT 60	1434	NC20H	35	(4000)	
86	74 42	148 36	29 OCT 60	1742	NC20H	85	(4000)	
87	74 42	148 36	29 OCT 60	1751	NH	HYDROHOLE	(4000)	
88	74 42	148 36	29 OCT 60	2315	NC20H	19	(4000)	NET NOT CLOSED
89	74 42	148 36	29 OCT 60	2328	NC20H	30	(4000)	
90	74 42	148 36	30 OCT 60	1052	NC20H	140	(4000)	
91	74 36	149 18	29 OCT 60	1150	NH	HYDROHOLE	(4000)	
92	74 36	149 18	30 OCT 60	1105	NC20H	19	(4000)	NET NOT CLOSED
93	74 36	149 18	30 OCT 60	1218	NC20H	30	(4000)	
94	74 36	149 18	31 OCT 60	1758	NC20H	30	(4000)	
95	74 36	149 18	31 OCT 60	0906	NC20H	140	(4000)	
96	74 36	149 18	31 OCT 60	0923	NC20H	140	(4000)	
97	74 36	149 18	31 OCT 60	1310	NH	HYDROHOLE	(4000)	
98	74 36	149 18	31 OCT 60	2022	NC20H	50	(4000)	
99	74 36	149 18	31 OCT 60	2023	NH	HYDROHOLE	(4000)	
100	74 36	149 18	31 OCT 60	2218	NC20H	100	(4000)	NET NOT CLOSED
101	74 36	149 18	31 OCT 60	2200	NH	HYDROHOLE	(4000)	
102	74 36	149 18	31 OCT 60	2300	NC20H	100	(4000)	NET NOT CLOSED
103	74 36	149 18	31 OCT 60	2232	NH	HYDROHOLE	(4000)	
104	74 30	149 30	1 NOV 60	0905	NC20H	100	(4000)	NET NOT CLOSED
105	74 30	149 30	1 NOV 60	0900	NH	HYDROHOLE	(4000)	
106	74 30	149 30	1 NOV 60	0910	NC20H	20	(4000)	
107	74 30	149 30	1 NOV 60	0912	NC20H	20	(4000)	
108	74 30	149 30	1 NOV 60	1455	NC20H	20	(4000)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
97	74 30	149 30	1 NOV 60	1515	NC20H	170	(4000)	
				2018				
98	74 30	149 30	1 NOV 60	2043	NC20H	220	(4000)	
				0854				
99	74 30	149 42	2 NOV 60	2047	N24H	22	(4000)	
				1001				
100	74 30	149 48	3 NOV 60	1029	NC20H	75	(4000)	
				1342				
101	74 30	149 48	3 NOV 60	1408	NC20H	255	(4000)	NET NOT CLOSED
				1437				
102	74 30	145 48	3 NOV 60	1448	NC20V	500-448	(4000)	
				1525				
103	74 30	145 48	3 NOV 60	1551	NC20H	33	(4000)	NET NOT CLOSED
				2149				
104	74 30	149 48	3 NOV 60	2219	NC20H	420	(4000)	
				0927				
105	74 30	149 48	4 NOV 60	0545	MISC		(4000)	MATERIAL TAKEN OFF HYDRO- WIRE FROM STATION 104
106	74 30	149 48	4 NOV 60	1015	NC20V	190-0	(4000)	
				1045				
107	74 30	149 48	4 NOV 60	1050	NC20V	130-0	(4000)	
				1309				
108	74 30	149 48	4 NOV 60	1317	NC20H	40	(4000)	
				1607				
109	74 30	149 48	4 NOV 60	1618	NC20H	62	(4000)	
				2115				
110	74 30	149 48	4 NOV 60	2130	NC20H	120	(4000)	
				1015				
111	74 30	149 54	5 NOV 60	1037	NC20H	145	(4000)	
				1352				
112	74 30	149 54	5 NOV 60	1400	NC20V	155-70	(4000)	
				1430				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)		BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)				HYDROHOLE	DEPTH (M)		
113	74 30	149 54	5 NOV 60	2200	NH			(4000)	
114	74 30	149 54	5 NOV 60	2230	NC20H	333		(4000)	
115	74 30	150 00	6 NOV 60	1030					
115	74 30	150 00	6 NOV 60	1547	NC20H	410		(4000)	
116	74 24	150 00	7 NOV 60	0947					
116	74 24	150 00	7 NOV 60	2011	NC20V	100-0		(4000)	
117	74 24	150 00	7 NOV 60	2023					
117	74 24	150 00	7 NOV 60	2103	NC6V	200-0		(4000)	
118	74 24	150 00	7 NOV 60	2120					
118	74 24	150 00	7 NOV 60	2139	NC6H	225		(4000)	
119	74 24	150 00	8 NOV 60	0943					
119	74 24	150 00	8 NOV 60	1019	NC6V	336-174		(4000)	
120	74 24	150 00	8 NOV 60	1028					
120	74 24	150 00	8 NOV 60	1030	NH	HYDROHOLE		(4000)	
121	74 24	150 00	8 NOV 60	1045					
121	74 24	150 00	8 NOV 60	1046	NC6H	100		(4000)	NET NOT CLOSED
122	74 24	150 00	8 NOV 60	1113					
122	74 24	150 00	8 NOV 60	1317	NC6V	538-361		(4000)	
123	74 24	150 00	8 NOV 60	1355					
123	74 24	150 00	8 NOV 60	1404	NC6H	90		(4000)	NET NOT CLOSED
124	74 24	150 00	8 NOV 60	1552					
124	74 24	150 00	8 NOV 60	1624	NC6V	700-487		(4000)	
125	74 24	150 00	8 NOV 60	1657					
125	74 24	150 00	8 NOV 60	1701	NC6H	8		(4000)	
126	74 24	150 00	8 NOV 60	2018					
126	74 24	150 00	8 NOV 60	2057	NC6H	8		(4000)	
127	74 24	150 06	9 NOV 60	1502					
127	74 24	150 06	9 NOV 60	2334	NC6H	277		(4000)	
128	74 18	150 12	10 NOV 60	0941					
128	74 18	150 12	10 NOV 60	1003	NC6H	33		(4000)	
				1257					

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
129	74 18	150 12	10 NOV 60	1314 1507	NC6H	55	(4000)	
130	74 18	150 12	10 NOV 60	2256	NC20H	94	(4000)	
131	74 18	150 18	11 NOV 60	1050	NC20H	35	(4000)	
132	74 18	150 18	11 NOV 60	1104 1245 1945 2204	NC20V	1210-652	(4000)	
133	74 18	150 18	11 NOV 60	2212	NC20H	52	(4000)	
134	74 18	150 24	12 NOV 60	0931	NC20H	87	(4000)	
135	74 18	150 24	12 NOV 60	1008 1337 1110	NH	HYDROHOLE	(4000)	
136	74 18	150 24	12 NOV 60	1356 1656	NC20H	127	(4000)	
137	74 18	150 24	12 NOV 60	1857	NC20H	194	(4000)	
138	74 18	150 30	13 NOV 60	1006 1044 1250	NC20H	249	(4000)	
139	74 18	150 30	13 NOV 60	2100	NC20H	63	(4000)	
140	74 18	150 42	14 NOV 60	0905 0932 1246	NC20H	273	(4000)	
141	74 18	150 42	14 NOV 60	1326 1535	NC20H	322	(4000)	
142	74 18	150 42	14 NOV 60	2226	NC20H	415	(4000)	
143	74 18	150 42	16 NOV 60 14 NOV 60	0900 2300 2345	NH	HYDROHOLE	(4000)	
144	74 18	151 00	15 NOV 60	0910	NH	HYDROHOLE	(4000)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
145	74 18	151 00	15 NOV 60	0940	NC20H	76	(4000)	
146	74 18	151 00	15 NOV 60	1251 1310 1512	NC20H	132	(4000)	
147	74 18	151 00	15 NOV 60	1535 2210	NC20H	200	(4000)	
148	74 18	151 00	15 NOV 60	2223	NC20H	9	(4000)	NET NOT CLOSED
149	74 18	151 30	16 NOV 60	1229	NC20H	85	(4000)	
150	74 18	151 30	17 NOV 60	0924 1235	NC20H	143	(4000)	
151	74 18	151 30	17 NOV 60	1254 1513	NC20H	207	(4000)	
152	74 18	151 30	17 NOV 60	1537 2116	NC20H	21	(4000)	
153	74 18	151 30	17 NOV 60	2133 2232	NC20H	325	(4000)	
154	74 18	151 48	18 NOV 60	2258 0931	NC20H	390	(4000)	
155	74 18	151 48	18 NOV 60	1023 1249	NC20H			
156	74 18	151 48	18 NOV 60	1305	NH	HYDROHOLE	(4000)	
157	74 18	151 48	18 NOV 60	1919 2205	NC20H	10	(4000)	
158	74 18	151 48	18 NOV 60	2225	NC20H	247	(4000)	
159	74 18	152 12	19 NOV 60	0850 0910	NH	HYDROHOLE	(4000)	
160	74 18	152 12	19 NOV 60	0916 1412	NC20H	73	(4000)	
	74 18	152 12	19 NOV 60	2133 2139	NC20V	85-0	(4000)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)		BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)				DEPTH (M)	DEPTH (M)		
161	74 18	152 12	19 NOV 60	2156	NC20H	136	(4000)		
162	74 18	152 12	20 NOV 60	0754					
	74 18	152 12	19 NOV 60	2240	TM	HYDROHOLE	(4000)		
163	74 18	152 12	20 NOV 60	0754					
	74 18	152 12	20 NOV 60	0809	NC20H	27	(4000)		
	74 18	152 12	21 NOV 60	1511					
164	74 18	152 12	21 NOV 60	1530	NC20H	8	(4000)		
	74 18	152 12	21 NOV 60	2003					
165	74 18	152 12	21 NOV 60	2014	NC20H	4	(4000)		NET NOT CLOSED
	74 18	152 12	22 NOV 60	0959					
166	74 18	152 12	22 NOV 60	0930	NH	HYDROHOLE	(4000)		
167	74 18	152 12	22 NOV 60	1008	NC20H	7	(4000)		
	74 18	152 12	22 NOV 60	1426					
168	74 18	152 12	22 NOV 60	1437	NC20H	17	(4000)		
	74 18	152 12	22 NOV 60	1705					
169	74 18	152 12	22 NOV 60	1715	NC20H	30	(4000)		
	74 18	152 12	22 NOV 60	2129					
170	74 18	152 12	22 NOV 60	2138	NC20H	4	(4000)		NET NOT CLOSED
	74 18	152 12	24 NOV 60	1240					
171	74 00	152 06	24 NOV 60	1250	NC20H	39	(4000)		
	74 00	152 06	24 NOV 60	1422					
172	74 00	152 06	24 NOV 60	2358	N24H	5	(4000)		
	74 06	152 12	25 NOV 60	0920					
173	74 06	152 12	25 NOV 60	0936	N24H	7	(4000)		
	74 12	151 36	26 NOV 60	1620					
174	74 12	151 36	26 NOV 60	1950	NC20V	100-0	(4000)		
	74 12	152 36	26 NOV 60	2015					
175	74 12	152 36	26 NOV 60	2040	NC20V	200-0	(4000)		
	74 12	152 36	26 NOV 60	2115					
176	74 12	152 36	26 NOV 60	2149	NC20H	301	(4000)		
	74 12	152 36	27 NOV 60	1245					

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
177	74 18	153 12	27 NOV 60	1743	NC20H	400	(4000)	
J78	74 18	153 24	28 NOV 60	0823	NC20H	4	(4000)	NET NOT CLOSED
179	74 18	153 24	28 NOV 60	0858 1226	NC20V	480-213	(4000)	
180	74 18	153 24	28 NOV 60	2250	NC20H	4	(4000)	
181	74 18	153 36	29 NOV 60	0903 0914 1020	NC20V	700-473	(4000)	
182	74 18	153 36	29 NOV 60	1054	NC20VH	1200-886	(4000)	TOWED AT 1200M FOR 27 MIN.
183	74 18	153 36	29 NOV 60	1320	NC20V	125-0	(4000)	
184	74 18	153 36	29 NOV 60	2054 2107	NC20V	250-130	(4000)	
185	74 18	153 36	29 NOV 60	2115 2146	NC20V	400-752	(4000)	
186	74 18	153 36	29 NOV 60	2151 2230 2240	NH	HYDROHOLE	(4000)	
187	74 18	153 36	29 NOV 60	2243	NC20H	34	(4000)	
188	74 18	152 36	30 NOV 60	0857	NC20V	500-400	(4000)	
189	74 18	153 26	30 NOV 60	0919 1002	NC20VH	700-513	(4000)	TOWED AT 700M FOR 2 HR. 25 MIN.
190	74 18	153 36	30 NOV 60	1012 1340	NC20VH	900-692	(4000)	TOWED AT 900M FOR 1 HR. 48 MIN.
191	74 18	153 36	30 NOV 60	1402 1710 1630 1730	NH	HYDROHOLE	(4000)	
192	74 18	153 36	30 NOV 60	1818 1953	NC20H	4	(4000)	NET NOT CLOSED

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)		BOTTOM DEPTH (M)		REMARKS
	LAT(N)	LONG(W)				DEPTH	HYDROHOLE	DEPTH	HYDROHOLE	
193	74 18	153 36	30 NOV 60	2316	NC20H	2.5		(4000)		NET NOT CLOSED
194	74 12	154 00	1 DEC 60	0851	NC20F	11		(4000)		NET NOT CLOSED
195	74 12	154 06	1 DEC 60	0918	NC20VH	1200-11		(4000)		TOWED AT 1200M FOR 1 HR.
196	74 12	154 06	1 DEC 60	1253	NH	HYDROHOLE		(4000)		47 MIN.
197	74 12	154 06	1 DEC 60	1720	NC20H	75		(4000)		
198	74 12	154 06	2 DEC 60	0942	N24H	3		(4000)		
199	74 12	154 18	1 DEC 60	2241	NC20H	32		(4000)		
200	74 12	154 18	2 DEC 60	0935	NH	HYDROHOLE		(4000)		
201	74 12	154 18	2 DEC 60	1019	NC20H	265		(4000)		
202	74 06	154 36	3 DEC 60	1335	NH	HYDROHOLE		(4000)		
203	74 06	154 36	3 DEC 60	1445	MISC			(4000)		MATERIAL TAKEN OFF TRIPPING DEVICE FROM STATION 201
204	74 06	154 36	3 DEC 60	0915	NC20H	100		(4000)		
205	74 06	154 48	3 DEC 60	1021	NC20H	120		(4000)		
206	74 06	155 06	4 DEC 60	1427	NC20H	400		(4000)		
207	74 06	155 18	4 DEC 60	2151	NC20H	5		(4000)		NET NOT CLOSED
208	74 06	155 18	4 DEC 60	1335	NH	HYDROHOLE		(4000)		
209	74 06	155 18	5 DEC 60	2058						
			5 DEC 60	1704						
			6 DEC 60	2225						
			6 DEC 60	1616						
			6 DEC 60	0815						
			6 DEC 60	0900						

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M) HYDROHOLE	BOTTOM DEPTH (M) (4000)	REMARKS
	LAT(N)	LONG(W)						
209	74 06	155 13	5 DEC 60	2300	TM			
			6 DEC 60	1620				
210	74 06	155 18	6 DEC 60	2035	NC20V	300-0	(4000)	
				2103				
211	74 06	155 18	6 DEC 60	2200	NC20V	600-305	(4000)	
				2252				
212	74 06	155 18	6 DEC 60	2240	NH	HYDROHOLE	(4000)	
213	74 06	155 18	7 DEC 60	2258	NC20H	435	(4000)	
			8 DEC 60	1340				
214	74 06	155 18	7 DEC 60	2300	NH	HYDROHOLE	(4000)	
215	74 06	155 18	8 DEC 60	1405	MISC		(4000)	MATERIAL TAKEN OFF MESSENGER FROM STATION 213 NET NOT CLOSED
216	74 06	155 36	8 DEC 60	1411	NC20H	4	(4000)	
				2122				
217	74 06	155 36	8 DEC 60	2132	NC20H	8	(4000)	NET NOT CLOSED
			9 DEC 60	0854				
218	74 06	155 36	8 DEC 60	2230	NH	HYDROHOLE	(4000)	
				2300				
219	74 06	155 36	8 DEC 60	2300	TM	HYDROHOLE	(4000)	
			9 DEC 60	0845				
220	74 06	156 12	9 DEC 60	0900	NH	HYDROHOLE	(4000)	
				0930				
221	74 06	156 12	9 DEC 60	1048	NC20H	13	(4000)	NET NOT CLOSED
				1902				
222	74 06	156 12	9 DEC 60	1430	TM	HYDROHOLE	(4000)	
				1630				
223	74 06	156 12	9 DEC 60	0930	TM	HYDROHOLE	(4000)	
				1315				
224	74 06	156 12	9 DEC 60	2202	TM	HYDROHOLE	(4000)	
			10 DEC 60	0815				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
225	74 06	156 12	9 DEC 60	2208	NC20H	105	(4000)	
226	74 06	156 06	10 DEC 60	0958	NC6V	300-0	(4000)	
227	74 06	156 06	10 DEC 60	1410 1454	NC6V	600-319	(4000)	
228	74 12	157 00	10 DEC 60	1602 1659	NC6V	900-594	(3700)	
229	74 12	157 00	11 DEC 60	2030 2151	NC6V		(3700)	NET NOT CLOSED
230	74 12	157 00	11 DEC 60	0032 1023	NC6H	3	(3700)	NET NOT CLOSED
231	74 12	157 00	11 DEC 60	1215	MISC		(3700)	FEMALE SEAL; HEAD, ORGANS, AND FOETUS
232	74 06	156 54	12 DEC 60	1410	NC6V	400-0	(3700)	
233	74 06	156 54	12 DEC 60	1513	NC6V	800-401	(3700)	
234	74 06	157 00	12 DEC 60	2047	NC6V		(3700)	
235	74 06	157 00	13 DEC 60	2202	NC6VH	1120-789	(3700)	TOWED AT 1120M FOR 2 HR. 19 MIN.
236	74 06	157 00	13 DEC 60	1049	NC6H	18	(3700)	
237	74 06	157 00	14 DEC 60	1438	NC6H	32	(3700)	
238	74 06	157 00	14 DEC 60	0925	NC6H		(3700)	
239	74 06	157 00	14 DEC 60	0937	NC6H		(3700)	
240	74 06	157 06	14 DEC 60	1510	NC6V	300-0	(3700)	
			14 DEC 60	1618	NC6V	700-298	(3700)	
			14 DEC 60	1650	NC6V		(3700)	
			14 DEC 60	1951	TM	HYDROHOLE	(3700)	
			15 DEC 60	2057	NC6H	4.5	(3700)	NET NOT CLOSED
			14 DEC 60	2120	NC6H		(3700)	
			15 DEC 60	0930	NC6V	900-696	(3700)	
			14 DEC 60	2137	NC6V		(3700)	
			15 DEC 60	0923				
			15 DEC 60	1019				
			15 DEC 60	1128				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
241	74 06	157 06	15 DEC 60	1403	NC6H	5	(3700)	
242	74 06	157 06	15 DEC 60	1635 1643	NC6VH	1200-836	(3700)	TOWED AT 1200M FOR 2 HR. 41 MIN.
243	74 06	157 06	16 DEC 60	2117 1115	NC6V	125-10	(3700)	
244	74 06	157 06	16 DEC 60	1124 1622	NC6H	63	(3700)	
245	74 06	157 06	16 DEC 60	2211 2230	NC6V	300-40	(3700)	
246	74 06	157 06	16 DEC 60	2310 2340	NC6VH	345-67	(3700)	TOWED AT 345M FOR 9 HR. 41 MIN.
247	74 06	157 06	17 DEC 60	0941 1048	NC20H	395	(3700)	NET NOT CLOSED
248	74 06	157 06	17 DEC 60	1650 2114	NC20H	3	(3700)	NET NOT CLOSED
249	74 24	157 36	18 DEC 60	0909 0919	NC20H	7	(3500)	NET NOT CLOSED
250	74 06	157 36	18 DEC 60	2035 2112	NC20H	145	(3500)	
251	74 36	157 36	19 DEC 60	0845 0913	NC20H	270	(3500)	
252	74 36	157 36	19 DEC 60	1531 1637	NC6V	250-0	(3500)	
253	74 36	157 36	19 DEC 60	1654 2028	NC6V	340-0	(3500)	
254	74 35	157 36	19 DEC 60	2318 2328	NC6H	90	(3500)	
255	74 24	157 54	20 DEC 60 21 DEC 60	0855 0026	NC6H	550	(3500)	
256	74 24	157 54	21 DEC 60	0837 0930	NH	HYDROHOLE	(3500)	
				1000				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT (N)	LONG (W)						
257	74 24	157 54	21 DEC 60	0959	NC20H	550	(3500)	
258	74 24	157 54	21 DEC 60	1305	NC20H	45	(3500)	
259	74 24	157 54	21 DEC 60	1335	NC20H	175	(3500)	
260	74 24	157 54	21 DEC 60	1527	MISC			MATERIAL TAKEN OFF MESSENGER FROM STATION 259
261	74 24	157 54	21 DEC 60	1547	NH	HYDROHOLE	(3500)	
262	74 24	157 54	21 DEC 60	2009	NC20H	370	(3500)	
263	74 24	157 54	21 DEC 60	2025	NC20H	850	(3500)	NET NOT CLOSED
264	74 24	157 54	21 DEC 60	2015	NH	HYDROHOLE	(3500)	
265	74 36	159 30	22 DEC 60	2045	NC20	1145	1145	BOTTOM CONTACT; SAMPLE OBTAINED
266	74 36	159 30	22 DEC 60	2056	N24H	3.5	(1145)	
267	74 36	159 30	23 DEC 60	2255	N24H	9	(1145)	
268	74 36	159 30	23 DEC 60	0856	NC20H	275	(1145)	
269	74 36	159 30	24 DEC 60	0858	MISC		(1145)	MATERIAL TAKEN OFF OUTSIDE OF NET FROM STATION 268
270	74 36	159 30	24 DEC 60	1127	NC20H	60	(1145)	
271	74 48	160 12	24 DEC 60	2227	NC20H	155	(1300)	
272	74 48	160 12	25 DEC 60	0815	MISC		(1300)	MATERIAL TAKEN OFF MESSENGER FROM STATION 271

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
273	74 48	160 12	25 DEC 60	1030 1210	NC20V	1200-760	(1300)	
274	74 48	160 06	25 DEC 60	2117	NC6H	350	(1300)	
275	74 48	160 06	26 DEC 60	0830	NC6V	500-0	(1300)	
276	74 48	160 06	26 DEC 60	1923 2018	NC6V	500-0	(1300)	
277	74 48	160 18	26 DEC 60	2250	NC6H	255	(1300)	
278	74 48	160 18	27 DEC 60	0847	TM	HYDROHOLE	(1300)	
279	74 48	160 18	26 DEC 60	2240	NC6V	910-489	(1300)	
280	74 48	160 18	27 DEC 60	0850	NC6V	1200-785	(1300)	
281	74 48	160 18	27 DEC 60	0915	NC6V	350-0	(1300)	
282	74 48	160 18	27 DEC 60	1030	NC6V	170	(1300)	
283	74 48	160 18	27 DEC 60	1130	MISC		(1300)	MATERIAL TAKEN OFF MESSEN- GER FROM STATION 281
284	74 48	160 18	27 DEC 60	1400	N24H	4	(1300)	
285	74 48	160 18	28 DEC 60	2040	NC6H	120	(1300)	
286	74 48	160 18	28 DEC 60	2118	NC6H	1200-796	(1300)	TOWED AT 1200M FOR 2 HR. 15 MIN.
287	74 48	160 18	28 DEC 60	2223	MISC		(1300)	MATERIAL TAKEN OFF MESSEN- GER FROM STATION 285
288	74 48	160 18	28 DEC 60	0825	NH	HYDROHOLE	(1300)	BAIT SUSPENDED ON A LINE IN HYDROHOLE
	74 48	160 48	28 DEC 60	0827	NC6H	450	(1300)	
	74 48	160 48	28 DEC 60	0840	NC6VH		(1300)	
	74 48	160 48	28 DEC 60	1255	MISC		(1300)	
	74 48	160 48	28 DEC 60	1326			(1300)	
	74 48	160 48	28 DEC 60	1732			(1300)	
	74 48	160 48	28 DEC 60	1735			(1300)	
	74 48	160 48	28 DEC 60	1630			(1300)	
	74 48	160 48	28 DEC 60	1730			(1300)	
	74 48	160 48	28 DEC 60	2206			(1300)	
	74 48	160 48	29 DEC 60	0903			(1300)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
289	74 42	161 06	29 DEC 60	0925	MISC		(1300)	MATERIAL TAKEN OFF MESSENGER FROM STATION 288
290	74 42	161 06	29 DEC 60	0945 1227	NC6H	40	(1300)	
291	74 42	161 18	30 DEC 60	0900 1036	NC6V	1200-826	(1300)	
292	74 42	161 18	30 DEC 60	1049 1601	NC6H	26	(1300)	
293	74 42	161 18	30 DEC 60	1630	NC6V	40-0	(1300)	
294	74 42	161 18	30 DEC 60	1714 2148	NC6H	50	(1300)	
295	74 42	161 18	30 DEC 60	2235 2303	NC6V	250-0	(1300)	
296	74 42	161 36	30 DEC 60	2320	NC6H	75	(1300)	
297	74 42	161 36	31 DEC 60	0859	N24H	4.6	(1300)	
298	74 42	161 36	30 DEC 60	2324				
298	74 42	161 36	31 DEC 60	0855				
298	74 42	161 48	31 DEC 60	0930	NC6V	500-0	(1300)	
299	74 42	161 48	31 DEC 60	1033				
299	74 42	161 48	31 DEC 60	1055	NC6H	24	(1300)	NET NOT CLOSED
300	74 42	161 48	1 JAN 61	1317				
300	74 42	161 48	1 JAN 61	1028	NC6V	575-349	(1300)	
301	74 42	161 48	1 JAN 61	1100				
301	74 42	161 48	1 JAN 61	1110	NC6H	33	(1300)	NET NOT CLOSED
302	74 42	161 48	2 JAN 61	0834				
302	74 42	161 48	2 JAN 61	0849	NC6H	43	(1300)	NET NOT CLOSED
303	74 42	161 48	2 JAN 61	1344				
303	74 42	161 48	2 JAN 61	1505	NC6V	1200-849	(1300)	
304	74 42	162 18	2 JAN 61	1649				
304	74 42	162 18	2 JAN 61	2152	NC6H	360	(1300)	
			3 JAN 61	0916				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
305	74 42	162 18	3 JAN 61	0940	MISC		(1300)	MATERIAL TAKEN OFF MESSENGER FROM STATION 304
306	74 42	162 18	2 JAN 61	2204	TM	HYDRHOLE	(1300)	
307	74 42	162 18	3 JAN 61	0915	NC6H	36	(1300)	NET NOT CLOSED
			3 JAN 61	0955				
			3 JAN 61	1055				
308	74 42	162 18	3 JAN 61	1116	NC6V	300-0	(1300)	
			3 JAN 61	1134				
309	74 36	162 36	3 JAN 61	2226	NC20H	85	(1300)	
			4 JAN 61	0927				
310	74 36	162 36	4 JAN 61	1019	NC20V	325-0	(1300)	
			4 JAN 61	1039				
311	74 36	162 36	4 JAN 61	1601	NC20V	400-0	(1300)	
			4 JAN 61	1626				
312	74 36	162 36	4 JAN 61	2151	NC20H	80	(1300)	
			5 JAN 61	0923				
313	74 36	162 36	5 JAN 61	1625	NC6V	450-0	(1300)	
			5 JAN 61	1652				
314	74 36	162 36	5 JAN 61	2203	NC6H	115	(1300)	
			6 JAN 61	0858				
315	74 36	162 36	6 JAN 61	0940	NC6V	1200-580	(1300)	
			6 JAN 61	1130				
316	74 36	162 36	6 JAN 61	1142	NC6H	50	(1300)	NET NOT CLOSED
			6 JAN 61	1327				
317	74 36	162 36	6 JAN 61	1409	NC6V	600-0	(1300)	
			6 JAN 61	1442				
318	74 36	162 36	6 JAN 61	1530	NC6V	360-0	(1300)	
			6 JAN 61	1553				
319	74 36	162 36	6 JAN 61	1638	NC6H	43	(1300)	NET NOT CLOSED
			6 JAN 61	2200				
320	74 36	162 42	6 JAN 61	2220	NC6H	30	(1300)	NET NOT CLOSED
			7 JAN 61	0929				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
321	74 36	162 42	6 JAN 61	2300 2400	NH	HYDROHOLE	(1300)	
322	74 36	162 42	7 JAN 61	0000 0900	TM	HYDROHOLE	(1300)	BAIT SUSPENDED ON A LINE IN HYDROHOLE
323	74 36	162 42	7 JAN 61	1000 1030	NH	HYDROHOLE	(1300)	BAIT SUSPENDED ON A LINE II. HYDROHOLE
324	74 36	162 42	7 JAN 61	0942 1150	NC6H	38	(1300)	NET NOT CLOSED
325	74 36	162 48	7 JAN 61	2117	NC6H	145	(1300)	
326	74 36	162 48	8 JAN 61	0900	NC6H	23	(1300)	NET NOT CLOSED
327	74 36	162 48	8 JAN 61	2102	NC6H	70	(1300)	
328	74 36	162 48	9 JAN 61	2113 1003	NC6H	20	(1300)	NET NOT CLOSED
329	74 42	163 12	9 JAN 61	1015 1603	NC6H	30	(1000)	NET NOT CLOSED
330	74 42	163 12	10 JAN 61	0840 0925	NC6V	750-0	(1000)	
331	74 42	163 12	10 JAN 61	1028 1100	NC6V	400-0	(1000)	
332	74 42	163 24	10 JAN 61	1122 2145	NC6H	230	(1000)	
333	74 42	163 24	11 JAN 61	0852 1310	NC6V	1200-802	(1000)	
334	74 42	163 24	11 JAN 61	1422 1320	NH	HYDROHOLE	(1000)	BAIT SUSPENDED ON A LINE IN HYDROHOLE
335	74 42	163 24	11 JAN 61	1340 1525 1625	NC6V	800-415	(1000)	
336	74 42	163 24	11 JAN 61	2005 2033	NC6V	520-0	(1000)	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M) HYDROHOLE	BOTTOM DEPTH (M) (1000)	REMARKS
	LAT (N)	LONG (W)						
337	74 42	163 24	11 JAN 61	2050	TM			
338	74 42	163 24	12 JAN 61	0845	NC6V	370-0	(1000)	
339	74 42	163 24	12 JAN 61	0918 0951	NC6H	11	(1000)	NET NOT CLOSED
340	74 42	163 24	12 JAN 61	1422 1015	NH	HYDROHOLE	(1000)	
341	74 42	163 24	12 JAN 61	1045 1120	NH	HYDROHOLE	(1000)	
342	74 42	163 24	12 JAN 61	1140 1507	NC6H	35	(1000)	NET NOT CLOSED
343	74 42	163 30	12 JAN 61	2020 2036	NC6H	60	(1000)	
344	74 36	163 36	13 JAN 61	0927 0915	NH	HYDROHOLE	(1000)	
345	74 36	163 36	13 JAN 61	1000 1155	NC6H	95	(1000)	
346	74 36	163 36	13 JAN 61	2028 2243	NC20H	65	(1000)	
347	74 36	163 36	13 JAN 61	2312	NC20H	150	(1000)	
348	74 36	163 42	14 JAN 61	0910 0950	NC6H	50	(890)	
349	74 36	163 42	14 JAN 61	1421 1453	NC6V	400-0	(890)	
350	74 36	163 42	14 JAN 61	1514 1626	NC6V	600-0	(890)	
351	74 36	163 42	14 JAN 61	1702 2036	NC6V	930-583	(890)	
352	74 36	163 42	14 JAN 61	2051 2256	OPB	890	890	

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT (N)	LONG (W)						
353	74 36	163 42	15 JAN 61	1100	PC	797	797	
354	74 30	163 54	15 JAN 61	2225	N24H	28	(747)	
355	74 30	163 54	16 JAN 61	0832	N24V	300-0	(747)	
356	74 30	163 54	16 JAN 61	0932	N24V	200-0	(747)	
357	74 30	163 54	16 JAN 61	1014	PC	747	747	
358	74 30	163 54	16 JAN 61	1708	N24H	14	(747)	
359	74 30	163 54	16 JAN 61	2026	OPB	743	743	
360	74 30	163 54	16 JAN 61	2125	DREDGE	747	747	
361A	74 30	163 48	17 JAN 61	0850	NC6V	200-0	(747)	
361B	74 30	163 54	18 JAN 61	0947	DREDGE	771	771	
362	74 30	163 48	17 JAN 61	1000	NC6V	460-0	(747)	
363	74 30	163 54	18 JAN 61	1442	NC6H	150	(675)	
364	74 30	163 54	19 JAN 61	2124	PC	675	675	
365	74 30	163 54	19 JAN 61	2000	N24H	8	(675)	
366	74 30	163 54	2024	2151	NC6H	25	(675)	
367	74 30	163 54	19 JAN 61	2222	NC6H	4.5	(675)	NET NOT CLOSED
			20 JAN 61	0845				
			20 JAN 61	0908				
				1300				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
368	74 30	163 54	20 JAN 61	1320	NC6H	90	(675)	
				1651				
369	74 30	163 54	20 JAN 61	1727	NC6H	160	(675)	
				2128				
370	74 30	163 54	20 JAN 61	2200	NC6H	250	(675)	NET NOT CLOSED
			21 JAN 61	0914				
371	74 30	163 54	21 JAN 61	1015	NC6H	350	(675)	
				1418				
372	74 30	163 54	21 JAN 61	1518	NC6H	420	(675)	
				2004				
373	74 42	165 18	21 JAN 61	2155	N24H	13	(418)	
			22 JAN 61	0807				
374	74 42	165 18	22 JAN 61	0854	PC	418	418	
375	74 42	165 18	22 JAN 61	0910	MISC		(418)	MUD SAMPLE TAKEN FROM OUT-SIDE OF PC OF STATION 374
376	74 42	165 18	22 JAN 61	1655	NC6H	395	(418)	
				2005				
377	74 48	165 18	22 JAN 61	2026	NC6H	10	(418)	NET NOT CLOSED
			23 JAN 61	1020				
378	74 48	165 18	22 JAN 61	2345	TM	HYDROHOLE	(418)	
			23 JAN 61	0915				
379	74 48	165 18	23 JAN 61	1034	NC6H	30	(418)	NET NOT CLOSED
				1600				
380	74 48	165 18	23 JAN 61	2130	LDS	428	428	NO SAMPLE OBTAINED
381	74 48	165 18	23 JAN 61	2225	NC6H	36	(428)	
			24 JAN 61	0909				
382	74 48	165 18	24 JAN 61	1054	NC6V	350-0	(428)	
				1115				
383	74 48	165 18	24 JAN 61	1300	NC6V	310-0	(428)	
				1317				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
384	74 48	155 18	24 JAN 61	1339 1739	NC6H	100	(428)	
385	74 48	165 18	24 JAN 61	1758 2050	NC6H	80	(428)	NET NOT CLOSED
386	74 48	165 18	24 JAN 61	2115	NC6H	165	(428)	NET NOT CLOSED
387	74 48	165 18	25 JAN 61	0825	PC	426	426	
388	74 48	165 18	25 JAN 61	1725 1949	NC20H	110	(426)	NET NOT CLOSED
389	74 48	165 36	25 JAN 61	2015	NC20H	215	(426)	NET NOT CLOSED
390	74 48	165 36	26 JAN 61	1109	TM	HYDROHOLE	(426)	
391	74 48	165 36	25 JAN 61	2013	TM	HYDROHOLE	(426)	
392	74 48	165 36	26 JAN 61	0940 1310 1115	TM NH	HYDROHOLE HYDROHOLE	(426) (426)	
393	74 48	165 36	26 JAN 61	1130 1413	NC20H	60	(426)	NET NOT CLOSED
394	74 48	165 36	26 JAN 61	1400	NH	HYDROHOLE	(426)	
395	74 48	165 36	26 JAN 61	1620	OPB	410	410	
396	74 48	165 36	26 J 61	1700	OPB	411	411	
397	74 54	166 00	27 JAN 61	1034	NC6H	35	(411)	NET NOT CLOSED
398	74 54	166 00	28 JAN 61	0853 1746 2121	NC6H	300	(411)	
399	74 54	166 00	28 JAN 61	2130	NH	HYDROHOLE	(411)	BAIT SUSPENDED ON A LINE IN HYDROHOLE

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
400	74 54	165 48	28 JAN 61	2229	NC6H	5	(411)	
401	74 54	165 48	29 JAN 61	0812	TM	HYDROHOLE	(411)	
402	74 54	165 48	28 JAN 61	2130	NC6H	66	(411)	NET NOT CLOSED
403	74 54	165 48	29 JAN 61	0745	NC6V	400-0	(411)	
404	74 54	165 48	29 JAN 61	2015	TM	HYDROHOLE	(411)	
405	74 54	165 48	29 JAN 61	0745	NC6H	75	(411)	NET NOT CLOSED
406	74 54	165 48	30 JAN 61	0805	NC6V	HYDROHOLE	(411)	
407	74 54	165 48	29 JAN 61	2157	NC6H	75	(411)	NET NOT CLOSED
408	74 54	165 48	30 JAN 61	0821	NC6V	HYDROHOLE	(411)	
409	74 54	165 48	30 JAN 61	1005	NC6V	400-0	(411)	
410	74 54	165 48	30 JAN 61	1015	NC6V	350-0	(411)	
411	74 54	165 48	30 JAN 61	1205	NC6V	100	(411)	NET NOT CLOSED
412	74 54	165 48	30 JAN 61	1304	MISC		(411)	MATERIAL TAKEN FROM AN ICE CORE
413	74 54	165 48	30 JAN 61	1335	OPB	471	471	
414	74 54	165 48	30 JAN 61	1348	TM	HYDROHOLE	(471)	
415	74 54	165 48	31 JAN 61	0750	TM	HYDROHOLE	(471)	
416	74 54	165 48	31 JAN 61	0800	PC	458	458	
417	74 54	165 48	31 JAN 61	1020	MISC		(458)	MATERIAL TAKEN FROM AN ICE CORE
418	74 54	165 48	31 JAN 61	0840				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
416	74 54	165 48	31 JAN 61	1624 2003	NC6H	20	(458)	
417	74 54	165 48	31 JAN 61	2023 2253	NC6H	220	(458)	
418	74 54	165 48	31 JAN 61	2309	NC6H	4	(458)	NET NOT CLOSED
419	74 48	166 00	1 FEB 61	0858 0911	NC6H	50	(458)	
420	74 48	166 00	1 FEB 61	1256 1332 1902	NC6H	375	(458)	
421	74 48	166 00	1 FEB 61	1921	NC6H	40	(458)	
422	74 48	165 54	2 FEB 61	0832 0915	NC6H	60	(458)	NET NOT CLOSED
423	74 48	165 54	2 FEB 61	1607 2111	NC6H	44	(458)	
424	74 48	165 48	3 FEB 61	0729 1012	PC	419	419	
425	74 48	165 48	3 FEB 61	1748 2208	NC20H	55	(419)	
426	74 48	165 42	3 FEB 61	2235	NC6H	90	(419)	
427	74 48	165 36	4 FEB 61	0902 1105 1115	NC6V	200-0	(419)	
428	74 48	165 36	4 FEB 61	1144 1621	NC6H	310	(419)	
429	74 48	165 36	4 FEB 61	1645	NC6H	62	(419)	
430	74 48	165 36	5 FEB 61	0925 1145	OPB	416	416	
431	74 48	165 30	5 FEB 61	1200	TM	HYDROHOLE	(416)	
			6 FEB 61	0820				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
432	74 48	165 36	5 FEB 61	1708	NC6H	55	(416)	
433	74 48	165 42	6 FEB 61	0723	PC	418	418	
434	74 48	165 42	6 FEB 61	0840	TM	HYDROHOLE	(418)	
435	74 48	165 42	7 FEB 61	0830				
435	74 48	165 42	6 FEB 61	1655	NC6H	413	(418)	
436	74 48	165 42	2010					
436	74 48	165 42	6 FEB 61	2100	NC6H	390	(418)	
437	74 48	165 42	7 FEB 61	0833				
437	74 48	165 42	7 FEB 61	0928	NC6H	417	(418)	
438	74 48	165 42	1419					
438	74 48	165 42	7 FEB 61	1545	NC6V	260-0	(418)	
438	74 48	165 42	1600					
439	74 48	165 42	7 FEB 61	1657	NC6H	7.5	(418)	NET NOT CLOSED
440	74 48	165 42	2140					
440	74 48	165 42	7 FEB 61	2200	TM	HYDROHOLE	(418)	
441	74 48	165 42	8 FEB 61	0900				
441	74 48	165 42	7 FEB 61	2202	NC6H	340	(418)	
442	74 48	165 42	8 FEB 61	0904				
442	74 48	165 42	8 FEB 61	1556	NC6V	410-0	(418)	
443	74 48	165 42	1622					
443	74 48	165 42	8 FEB 61	2114	NC6V	410-0	(418)	
444	74 48	165 42	2142					
444	74 48	165 42	8 FEB 61	2209	NC6V	200-0	(418)	
445	74 48	165 42	2223					
445	74 48	165 36	9 FEB 61	2140	NC6H	416	418	NET NOT CLOSED
446	74 48	165 36	10 FEB 61	0844				
446	74 48	165 36	9 FEB 61	2140	DREDGE	418	418	
447	74 48	165 36	10 FEB 61	0844				
447	74 48	165 36	9 FEB 61	2300	TM	HYDROHOLE	(418)	
447	74 48	165 36	10 FEB 61	0830				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
44E	74 48	165 42	10 FEB 61	0935	NC6V	90-0	(418)	
44S	74 48	165 42	10 FEB 61	1500	NC6H	7	(418)	NET NOT CLOSED
			11 FEB 61	0945				
45C	74 48	165 48	11 FEB 61	1450	NC6H	150	(418)	
			12 FEB 61	0705				
451	74 48	165 48	12 FEB 61	0827	NC6V	439-0	440	
			12 FEB 61	0853				
452	74 48	165 48	12 FEB 61	2027	NC6H	175	(440)	
			13 FEB 61	0814				
453	74 48	165 54	13 FEB 61	1059	NC6V	438-0	440	
			13 FEB 61	1133				
454	74 48	165 54	13 FEB 61	1700	NC6H	385	(440)	
			14 FEB 61	1242				
455	74 48	165 54	14 FEB 61	1620	NC6V	418-0	420	
			14 FEB 61	1643				
456	74 48	165 54	14 FEB 61	1535	NC6V	200-0	(420)	
			14 FEB 61	1546				
457	74 48	165 54	15 FEB 61	0910	NC6V	449-0	450	
			15 FEB 61	0945				
45E	74 54	165 54	15 FEB 61	1509	NC6H	40	(450)	
			15 FEB 61	2117				
459A	74 54	165 54	15 FEB 61	2134	NC6H	80	(450)	
			16 FEB 61	0940				
459B	74 54	165 54	17 FEB 61	0915	OPB	436	436	
			17 FEB 61	2030	OPB	437	437	
460	74 54	165 54	17 FEB 61					
461	74 54	166 00	19 FEB 61	1015	NC6V	435-0	436	
			19 FEB 61	1042				
462	74 54	166 00	20 FEB 61	0935	NC6V	432-0	433	
			20 FEB 61	0951				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
463	74 54	166 06	20 FEB 61	1005	NC6H	28	(433)	NET NOT CLOSED
464	74 54	166 06	21 FEB 61	0925	NH	HYDROHOLE	(433)	
465	74 54	166 06	21 FEB 61	1610	OPB	433	433	
466	74 48	166 06	21 FEB 61	1045	TM	HYDROHOLE	(433)	
467	74 48	156 06	23 FEB 61	0930	NC6H	35	(433)	
468	74 48	166 06	21 FEB 61	1640	NH	HYDROHOLE	(433)	
			23 FEB 61	1250				
			23 FEB 61	1100				
469	74 48	166 06	23 FEB 61	1540	NC6H	225	(433)	
			24 FEB 61	0840				
470	74 48	166 06	24 FEB 61	0935	PC	413	413	
471	74 42	166 12	27 FEB 61	0925	PC	407	407	
472	74 42	166 18	27 FEB 61	2100	TM	HYDROHOLE	(407)	
			1 MAR 61	0900				
473	74 42	166 18	1 MAR 61	0900	TM	HYDROHOLE	(407)	
				2100				
474	74 42	166 18	2 MAR 61	0910	OPB	407	407	
475	74 48	166 30	3 MAR 61	1553	NC6H	50	(407)	
			4 MAR 61	1015				
476	74 48	166 30	5 MAR 61	0925	PC	416	416	
477	74 48	166 30	5 MAR 61	1715	NC6H	100	(416)	
				2200				
478	74 48	166 30	6 MAR 61	2213	NC6H	60	(416)	
			8 MAR 61	1015				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
479	74 48	166 30	6 MAR 61	2130	NH	HYDROHOLE	(416)	
480	74 48	166 36	7 MAR 61	2200	NH	HYDROHOLE	(416)	
481	74 48	166 48	9 MAR 61	1525	NH	HYDROHOLE	(416)	
482	74 48	166 48	9 MAR 61	1515	NH	HYDROHOLE	(416)	
483	74 48	166 48	10 MAR 61	1000	NH	HYDROHOLE	(416)	
484	74 54	166 18	11 MAR 61	0900	NH	HYDROHOLE	(416)	
485	74 5.8	167 15	12 MAR 61	2000	NH	HYDROHOLE	(416)	
486	74 50.8	167 15	12 MAR 61	2200	NH	HYDROHOLE	(416)	
487	74 50.8	167 15	12 MAR 61	1500	NC6H	28	(416)	
488	74 53	167 45	13 MAR 61	1030	NH	HYDROHOLE	(416)	
489	74 53	167 45	13 MAR 61	1000	NH	HYDROHOLE	(416)	
490	74 53	167 45	13 MAR 61	1130	NH	HYDROHOLE	(416)	
491	74 53	167 45	13 MAR 61	1500	NC6H	25	(416)	NET NOT CLOSED
492	NO POSITION		15 MAR 61	1500	NH	HYDROHOLE	(416)	
493	74 58.8	168 26	14 MAR 61	1530	OPB	210	210	
494	75 00	168 45	15 MAR 61	1455	NC20H	175	(210)	NET NOT CLOSED
495	75 00	169 18	16 MAR 61	2130	NH	HYDROHOLE	(210)	
496	75 00	169 18	17 MAR 61	1630				
497	75 00	169 18	17 MAR 61	1300				

STATION NUMBER	POSITION		DATE	TIME	GEAR	SAMPLE DEPTH (M)	BOTTOM DEPTH (M)	REMARKS
	LAT(N)	LONG(W)						
495	75 00	169 18	17 MAR 61	2007	NC20V	235-0	(249)	
496	75 00	169 18	17 MAR 61	2030	NC20H	244	249	
497	74 59.2	169 50	18 MAR 61	1055	NH	HYDROHOLE	(249)	
498	74 59.2	169 50	18 MAR 61	1110	NH	HYDROHOLE	(249)	
499	74 59.2	169 50	18 MAR 61	1110	NH	HYDROHOLE	(249)	
500	74 59.2	169 50	18 MAR 61	1120	NH	HYDROHOLE	(249)	
501	74 59.2	169 50	18 MAR 61	1400	NH	HYDROHOLE	(249)	

DISTRIBUTION LIST

for technical reports and/or reprints
NMR-228(19), NR307-270

Defense Documentation Center
Cameron Station
Alexandria, Virginia 22314

Commanding Officer
Office of Naval Research
Navy #100
Fleet Post Office
New York, New York

Defense Intelligence Agency
DIAAP - IE4
Department of Defense
Washington 25, D. C.

Director, Research Studies Institute
Air University
Attention ADTIC
Maxwell Air Force Base,
Montgomery, Alabama

Director
National Oceanographic Data Center
Washington 25, D. C.

Naval Academy Library
Annapolis, Maryland

Director, Naval Research Laboratory
Att: Technical Information Officer
Washington 25, D. C.

Office of Technical Services
Department of Commerce
Washington 25, D. C.

The Oceanographer
U. S. Navy Oceanographic Office
Washington 25, D. C.

Commander, Air Research And Dev.
Attn: Biosciences Division
Washington 25, D. C.

Dr. William E. Benson
Program Director for Earth Sciences
National Science Foundation
Washington 25, D. C.

Helen L. Hayes
Director, Oceanic Biology
Office of Naval Research
Department of the Navy
Washington, D. C. 20360

Commanding Officer
Office of Naval Research Branch Office
1030 East Green Street
Pasadena, California

Chief of Naval Research /Code 416/
Office of Naval Research
Washington 25, D.C.

Commanding Officer
Air Force Cambridge Research Lab.
Att: Carlton E. Molineux
Terrestrial Sciences Laboratory
Laurence G. Hanscom Field
Bedford, Massachusetts 01731

Air University Library
AUL3T-63-735
Maxwell Air Force Base,
Alabama, 36112

Dr. Max E. Britton
Geography Branch
Office of Naval Research
Department of the Navy
Washington, D. C. 20360

Director

Arctic Research Laboratory
Barrow, Alaska

Executive Director

Arctic Institute of North America
2458 Redpath Street
Montreal 25, P. Q.
Canada

National Research Council

Division of Medical Sciences
Washington 25, D. C.

U. S. National Museum

Washington 25, D. C.

Director

Woods Hole Oceanographic Institution
Woods Hole, Massachusetts
Attn Dr. B. Ketchum

Dr. A. Collier

Florida State University
Tallahassee, Florida

Dr. Robert E. Burns

Office of Research and Development
U. S. Coast and Geodetic Survey
Department of Commerce
Washington 25, D. C.

Naval Electronics Laboratory
San Diego 52, California

Mr. Robert C. Faylor

Arctic Institute of North America
1619 New Hampshire Avenue, N. W.
Washington 9, D. C.

Miss Marie Tremaine, Director

Bibliography Project
Library of Congress Annex, S. R. 261
Washington 25, D. C.

Librarian

U. S. Naval Postgraduate School
Monterey, California

Director

Marine Biological Laboratory
Woods Hole, Massachusetts

Dr. Gunnar Thorson

Marine Biological Laboratory
University of Copenhagen
Gronnhave
Helsingor, Denmark

Dr. Phil E. Church

Dept. of Atmospheric Sciences
University of Washington
Seattle, Washington

Chief of Naval Research /Code 446/

Office of Naval Research
Washington 25, D. C.

Librarian

University of Alaska
College, Alaska

Director

Division of Biology and Medicine
Atomic Energy Commission
Washington 25, D. C.

The Library

Fisheries Research Board of Canada
Biological Station
Nanaimo, B. C.
Canada

Dr. R. S. Glover

Oceanographic Laboratory
Scottish Marine Biological Assoc.
78 Craighall Road
Edinburgh 6, Scotland

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R&D		
<i>(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified.)</i>		
1 ORIGINATING ACTIVITY (Corporate author) Department of Biological Sciences University of Southern California Los Angeles, California 90007		2a REPORT SECURITY CLASSIFICATION UNCLASSIFIED
		2b GROUP
3 REPORT TITLE BIOLOGICAL STATIONS OCCUPIED FROM ARLIS I		
4 DESCRIPTIVE NOTES (Type of report and inclusive dates) Station list of biological collections; Sept. 10, 1960 - Mar. 17, 1961		
5 AUTHOR(S) (Last name, first name, initial) Shirley, W. Delton		
6 REPORT DATE June, 1966	7a TOTAL NO OF PAGES 40	7b NO OF REFS 2
8a CONTRACT OR GRANT NO NONR 228(19)	9a ORIGINATOR'S REPORT NUMBER(S)	
b. PROJECT NO NR 307-270	9b OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c		
d		
10 AVAILABILITY/LIMITATION NOTICES "Qualified requesters may obtain copies of this report from DDC"		
11 SUPPLEMENTARY NOTES	12 SPONSORING MILITARY ACTIVITY Geography Branch Office of Naval Research Washington, D.C. 20360	
13 ABSTRACT This report is a station list of the biological collections made from the Arctic Research Laboratory Ice Station No. 1 (ARLIS I) in the Arctic Ocean during the winter of 1960-61. The program was carried out by John F. Tibbs under the supervision of Dr. John L. Mohr and Mr. Stephen R. Geiger of the University of Southern California. Biological collections were made at 501 stations. (U)		

UNCLASSIFIED

Security Classification

14	KEY WORDS	LINK A		LINK B		LINK C	
		ROLE	WT	ROLE	WT	ROLE	WT
	BIOLOGICAL STATION LIST - ARCTIC RESEARCH LABORATORY ICE STATION NO. 1						

INSTRUCTIONS

1. **ORIGINATING ACTIVITY:** Enter the name and address of the contractor, subcontractor, grantee, Department of Defense activity or other organization (*corporate author*) issuing the report.
2. **REPORT SECURITY CLASSIFICATION:** Enter the overall security classification of the report. Indicate whether "Restricted Data" is included. Marking is to be in accordance with appropriate security regulations.
- 2b. **GROUP:** Automatic downgrading as specified in D-D Directive 5200.10 and Armed Forces Industrial Manual. Enter the group number. Also, when applicable, show that optional markings have been used for Group 3 and Group 4 as authorized.
3. **REPORT TITLE:** Enter the complete report title in all capital letters. Titles in all cases should be unclassified. If a meaningful title cannot be selected without classification, show title classification in all capitals in parenthesis immediately following the title.
4. **DESCRIPTIVE NOTES:** If appropriate, enter the type of report, e.g., interim, progress, summary, annual, or final. Give the inclusive dates when a specific reporting period is covered.
5. **AUTHOR(S):** Enter the name(s) of author(s) as shown on or in the report. Enter last name, first name, middle initial. If military, show rank and branch of service. The name of the principal author is an absolute minimum requirement.
6. **REPORT DATE:** Enter the date of the report as day, month, year, or month, year. If more than one date appears on the report, use date of publication.
- 7a. **TOTAL NUMBER OF PAGES:** The total page count should follow normal pagination procedures, i.e., enter the number of pages containing information.
- 7b. **NUMBER OF REFERENCES:** Enter the total number of references cited in the report.
- 8a. **CONTRACT OR GRANT NUMBER:** If appropriate, enter the applicable number of the contract or grant under which the report was written.
- 8b, 8c, & 8d. **PROJECT NUMBERS:** Enter the appropriate military department identification, such as project number, subproject number, system numbers, task number, etc.
- 9a. **ORIGINATOR'S REPORT NUMBER(S):** Enter the official report number by which the document will be identified and controlled by the originating activity. This number must be unique to this report.
- 9b. **OTHER REPORT NUMBER(S):** If the report has been assigned any other report numbers (either by the originator or by the sponsor), also enter this number(s).
10. **AVAILABILITY-LIMITATION NOTICES:** Enter any limitations on further dissemination of the report, other than those

imposed by security classification, using standard statements such as:

- (1) "Qualified requesters may obtain copies of this report from DDC."
- (2) "Foreign announcement and dissemination of this report by DDC is not authorized."
- (3) "U. S. Government agencies may obtain copies of this report directly from DDC. Other qualified DDC users shall request through _____."
- (4) "U. S. military agencies may obtain copies of this report directly from DDC. Other qualified users shall request through _____."
- (5) "All distribution of this report is controlled. Qualified DDC users shall request through _____."

If the report has been furnished to the Office of Technical Services, Department of Commerce, for sale to the public, indicate this fact and enter the price, if known.

11. **SUPPLEMENTARY NOTES:** Use for additional explanatory notes.

12. **SPONSORING MILITARY ACTIVITY:** Enter the name of the departmental project office or laboratory sponsoring (*paying for*) the research and development. Include address.

13. **ABSTRACT:** Enter an abstract giving a brief and factual summary of the document indicative of the report, even though it may also appear elsewhere in the body of the technical report. If additional space is required, a continuation sheet shall be attached.

It is highly desirable that the abstract on classified reports be unclassified. Each paragraph of the abstract shall end with an indication of the military security classification of the information in the paragraph, represented as (TS), (S), (C), or (U).

There is no limitation on the length of the abstract. However, the suggested length is from 150 to 225 words.

14. **KEY WORDS:** Key words are technically meaningful terms or short phrases that characterize a report and may be used as index entries for cataloging the report. Key words must be selected so that a security classification is required. Identifiers such as equipment model designation, trade name, military project code name, geographic location, may be used as key words but will be followed by an indicator, not a classification. (1-3). The assignment of links, roles, and weights is optional.

UNCLASSIFIED

Security Classification