PROGRESS REPORT

ON

THE RECENT MARINE SEDIMENTS

OF

BANKS STRAIT AND THE FURNEAUX ISLANDS

by

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AMG REFERENCE POINTS ADDED

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TABLE OF CONTENTS

ILLUSTRATIONS

INTRODUCTION

Location and Extent of Area

The purpose of this study is to determine the surface distribution of recent sediments in the Banks Strait - Furneaux Islands area, with emphasis on heavy-mineral distribution. Specifically this area measures some 4000 square miles; lies roughly between latitudes 40° and 41°South, longitudes 147°40' and 148°30'East; and is bounded by the 20 fathom depth contour on the west and the 30 fathom depth contour on the east.

The Furneaux Group of Islands, on the northern end of the study area, consist of Flinders (513 sq. miles), Cape Barren (172 sq. miles) and Clarke (44 sq. miles), plus fifty smaller islands. The N.E. Tasmania coastline borders the southern end of the area.

Previous Investigations

Previous work in the specific area covered by this report is scanty. Some geology has been reported for the Furneaux Islands. These include the studies of Blake (1935, 1947), Dimmock (1957), Johnston (1879), Appleby (1966) and Kershaw and Sutherland (1967). Much more geological information is available for N.E. Tasmania. Spry and Banks (1962), Warin and Appleby (1964) provide the bulk of the information. Prior to this study no known sedimentological work in this area had been carried out. Jennings (1959) summarized the submarine topography of Bass Straits and included some information around the Furneaux Islands.

Field Methods

The Banks Strait samples were collected with an undersay sampler during a cruise of H.M.A.S. "Moresby" in April, 1966. Approximately 320 samples were obtained from the "Moresby" along with new bathymetric data for the Strait (Map 1). Samples from around the Furneaux Islands were collected with a small dredge using a local fishing boat during August, 1966 and January, 1967.(Map 2) It is planned to complete the surface sampling in June, 1967, with a survey of the N.E. Tasmanian coast.

In water depths of less than 3 feet cores up to 4 feet in length were obtained by driving plastic tubes into the bottom. The frictional distortion of the sedimentary layers was found to be minor. Samples of beach and dune deposits were collected by channel sample techniques. All sediment samples were stored in plastic bags in the field and were not treated with any organic preservative.

Cores were split and photographed and samples from all lithology changes were obtained.

Station locations were determined by sextant sites and checked against water depths indicated on Admiralty Charts. Locations are considered reliable because of the many reference points available.

Laboratory Analyses

Samples were analysed by standard mechanical and chemical methods. The samples were oven dried (less than 100°C), split and a representative portion stored at the University. Approximately 20 gram samples, used for mechanical analysis, were washed free of salts and wet-sieved. The fine fraction (less than 63 microns) was

pipetted and the coarse fraction (greater than 2 mm) screened using procedures outlined by Krumbein and Pettijohn (1938). A settling tube was used for the sand fraction (63 microns - 2 mm). The textural data was then processed and the statistical parameters calculated by the university computer.

Heavy minerals were separated from the light fraction with bromoform. Cassiterite grains were identified by using a zinc dish test. Slides are being made of the heavy mineral fraction for more detailed identification. Light minerals were mounted in plastic blocks, etched and stained for feldspar identification and feldspar/quartz ratios.

A binocular microscope was used to identify, classify and to determine abundance of bryozoan, foraminifera and other components of the sand fraction.

Clay slides, for X-ray diffraction analysis, were made from a sample drawn off after completion of each pipette analysis.

GEOLOGIC AND GEOGRAPHIC SETTING

Climate

N.E. Tasmania and the Furneaux Group of Islands experience, generally, a more equable climate than the remainder of Tasmania and the mainland of Australia adjacent to them. Temperatures are less extreme, ranging from a winter average of approximately 50°F to a summer mean of 65°F. Most of the rainfall is recorded in May, June and July. The islands, which recieve about 25" of rain on the average, are dryer than the main land of N.E. Tasmania where the average rainfall is 40", obviously a reflection of its greater effectiveness as an orographic barrier. Markedly higher falls would occur on the peaks of the islands, the highest of which, Mt. Strzlecki, is wreathed in clouds much of the time.

nds blow very strongly, with gales common at all times of the year. Westerly winds are most prevalent, but south-easterlies cannot be ignored, for they influence greatly the lives of fishermen of the area. The strength and constancy of the westerly winds is attested by the eastward-lean that is exhibited by any trees exposed to them on the islands.

Hydrography

The following discussion of tides and currents is of a general nature due to the very meager amount of oceanographical data available for the Bass Strait area. Almost no quantitative data is available except for tide tables, depth records and a few random current measurements.

The close and complex interrelationship between submarine topography and tidal streams is shown graphically in the study area,

where depths are not too deep for tidal currents to greatly influence sediment movement on the bottom.

Franklin Sound, Aremstrong Channel and Banks Strait itself show this interrelationship frequently, with deep rock-bottomed holes where tidal flow is constricted and immense shoals spreading out from such areas. Although the tidal stream reverses itself in these areas, the net flow is to the east, as indicated by the greater accumulation of sediments on this side of such constrictions. Examples of this would be the Pot Boil-Vansittart shoal complex east of the entrance of Frankling Sound and the complex of sand banks to the east of Clarke Island and the outlet of Armstrong Channel. In the field, currents in some of these constrictions were observed to flow at rates of up to 8 knots. Although such high velocities were in isolated spots only, their strength gives an indication of the great influence tidal streams have on the transport of detrital matter.

Tidal currents in Banks Strait itself are stronger than in the open-water areas on either side, with rates of 3 knots of flow in either direction common.

Tides are not markedly high. Highs range from approximately 8' at high water spring to 6' at high water neap. Lows range roughly from 1' to 2'. Lady Barron experiences the smallest range in tides in the area, from a high water spring of 5.4' to a low water spring height of 1.8'. Only a few miles to the west Big River Cove experiences a high water spring tide of 8.4'.

Regional Geology and Geologic History

The geology of the Furneaux Islands and N.E. Tasmania consist mainly of granitic masses intruded into fine grained sandstones and shales, which have been folded and slightly metamorphosed (Mathinna Beds). These Silurian meta-sediment basement rocks have been intruded by Devonian granite which in turn have been intruded by Jurassic dolerite dykes and overlain in places by fluviatile Tertiary rocks and marine Tertiary limestones.

Appleby (1966) and Goscombe (1965) discuss the geology of the main Furneaux Islands in some detail as does Warin and Appleby (1964) for N.E. Tasmania.

Most of the Furneaux Islands can be divided into two basic geomorphological units; (1) the highlands, controlled by the Paleozoic basement and (2) the coastal lowlands. Flinders Island and Cape Barren Island consist basically of mountainous granite ridges flanked by coastal plains. The highlands form part of the Bassian rise which is probably a tectonic feature (Jennings 1959). The trends of these highlands and some of the other island groups of the Bassian rise suggest elevated fault blocks. These were probably formed by north-north westerly to north westerly faulting associated with the late Mesozoic/Cainozoic epeirogenic movements that shaped the present structural features of the Tasmania, Bass Strait, and southern Victoria areas (Kershaw and Sutherland 1967, Jennings 1959, Banks 1962). The coastline features are apparently strongly influenced by Pleistocene sea level fluctuations, as in N.W. Tasmania (Edward, 1941). Sea-level fluctuations associated with the Pleistocene glacial flucuations have left a number of old shore lines on Flinders Island. Erosional and/or depositional features were observed by Kershaw and Sutherland (1967) at about 200-250, 100, 60, 25 and 10 feet above mean low water spring.

DISTRIBUTION OF SEDIMENTARY MATERIAL

General

The sedimentary characteristics on the floor of the study area are the result of several integrated factors. Those most evident are; (1) the configuration of the bottom topography, (2) effects on the sediment by wind, wave, and current erosion, transportation and reworking of the sediment, (3) production of organic materials by the local faunal assemblage, and (4) source area of the sediments.

Topography and currents are probably the most important factors controlling the distribution, texture and other properties of the sedimentary material. Shallow weed covered areas like Deep Bay and Kent Bay are areas of low energy in which apparently little sediment movement is going on. Hydraulic conditions in the straits bordering these bays are more vigorous. The bottom of most of these straits are composed mainly of pebbles, gravel and bedrock bottomed channels, probably carved by tidal currents. Organic debris, mainly bryozoan, are found in deeper low energy areas away from the shorelines.

A series of isopleth maps are being constructed for the Banks Strait and Franklin Strait areas from data obtained from analyses of over 700 samples (see Appendix). The patterns obtained represent an aerial distribution of a composite of the uppermost few inches of sediment.

Banks Strait

Plotting the sedimentary parameters of Banks Strait indicates that the area can be divided into seven distinct environments, each with its own sedimentological characteristics. Of these seven areas,

but others may be underlain by Tin bearing strata?

only two would be suitable for concentrations of heavy minerals and be of any economic interest. The characteristics of the various types have been tabulated in Table 1, except for Group 1 (Algal Nodules) and Group 2 (Rock-bottom). Aerial distribution of these sedimentological environments are shown on Map 3. No heavy mineral analyses have been run on these samples because of the very small samples obtained from the "Moresby". Larger samples will be taken during the June field trip.

Group-1 (Algal Nodules) Located in the N.W. corner of study area covering approximately 400 square miles, this area averages 20 fathoms in depth and is covered with algal nodules, some up to 4" in diameter. Some bryozoan debris is found with the nodules but in very minor amounts. No detailed identification has been carried out yet on these nodules. Thirty-two sample locations are located in this area.

Group-2 (Rock) Ten sample locations, averaging 21 fathoms in depth, and located just west of Clarke Island showed very little sediment. This zone is located in and on either side of a rock channel which is kept free from sediments by strong oscillatory currents entering and leaving Banks Strait. It is planned to recover some of this rock during the next offshore sampling trip as the underway sampler used by the "Moresby" was to small to recover sufficient samples.

Group-3 (Bryozoa east) This zone borders the eastern edge of Banks Strait starting near the 20 fathom line and extending beyond the area sampled to the east. The area is the deepest (40 fathoms), Has the highest silt-clay content (3.80%) and the highest percentage of foraminifera (16.80%) in Banks Strait. Only 16% of the sediment is composed of terrigenous detritus which is mainly quartz.

Group-4 (Bryozoa west) Very much like Group 3 except average depth

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TABLE 1

	fms Depth	% grav	% sand	% slt/cl	mm med	cm/sec mean Vel.	% terr.	% bry	% shell	% forams
Group 3	4.0	6.47	89.73	3.80	.37	6.08	15.80	52.80	14.27	16.90
Group 4	17.5	14.54	85.04	.03	.50	9.45	8.29	63.21	23.67	4.08
Group 5	17.7	18.40	81.10	.50	.58	11.11	61.00	23.30	13.60	2.10
Group 6	17.2	3.69	96.31	.00	.32	5.03	91.69	1.23	5.85	1.23
Group 7	14.6	15.20	85.00	.25	.58	10.00	80.40	7.50	9.36	2.00
Armstrong Channel	14.2	7.81	90.23	1.90	.41	6.86	87.94	3.00	5.58	2.42

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is only 17 fathoms and only 8% of sediment is terrigenous detritus. This is a higher energy area than Group 3 and the bryozoan debris is distinctly better transported. No identification of bryozoan types have been attempted yet. Because of the upwelling of east bound currents forced over the Bassian rise, phosphates could be found in this area. No tests have as yet been run for phosphates.

Group-5 (Terrigenous/Bryozoan) Transition zone between bryozoan areas and terrigenous sediment areas. Bryozoan debris average 23%, shell debris 14% and terrigenous material 61%. This is a small group located in the highest energy area and thus shows a high percentage of gravel (18%) from rock fragments and shell debris.

Group-6 (Terrigenous south) One of the most promising areas in Banks Strait for heavy mineral accumulations. Over 90% terrigenous detritus composed mainly of quartz, heavy mineral percents unknown at this time. Almost a pure sand, no silt or clay present and less than 3% gravel. This area borders the N.E. Tasmania coastline out to 5 or 10 miles offshore. Field trips in April and June will concentrate on this area.

Group-7 (Terrigenous north) Another possible good area for heavy mineral accumulation. This area is just east of Clarke Island, south of Cape Barren Island and connects with Group 6 in the center of Banks Strait. Terrigenous detritus makes up 80% of the sediment which is 15% gravel due to the high shell content (9%). Heavy mineral percents are unknown at the present.

Armstrong Channel

Armstrong Channel is an elongate channel dividing Cape Barren and Clarke Islands in an east-west direction (Map 1). It is approximately 15 miles long, 3 miles wide and ranges in depth from less than 1 fathom to over 40 fathoms at its eastern entrance. The area has been sampled in some detail, over 50 offshore samples and 13 beach samples, with special emphasis on Kent Bay at the northeastern corner of the channel. Strong tidal currents produce rock-bottom or gravel cover in the center of most the channel. Large sand banks form the sides of the central channel with shallow weed covered bays between the sand banks and the shorelines. Sampling the shallow bays proved very difficult because of the thick weed cover. It would be necessary to core these areas for the best results.

Nearly 90% of the Armstrong Channel sediments are terrigenous with an average .14% heavy minerals (Table 1). In the light fractions quartz averages 83%, potash feldspars 11% and plagioclase 6%. The percentage of plagioclase seems to increase with depth of water.

Heavy mineral content of the sediments range from over 10% on some western Cape Barren beaches to .08% near Clarke Island. Beaches around Thunder and Lightning Bay show some high heavy mineral concentrates, mainly ilminite, but no cassiterite. Moving eastward along the coastline rocks form a headland with little or no beaches until Half Moon Bay which has some concentrated patches of heavy minerals (up to 8%) but again no cassiterite except for minor amounts in one sample (C-49). Between Half Moon

Bay and Kent Bay the heavy minerals are low (.10%) with the Kent Bay beaches a little higher (.14%). The few good sand samples obtained in Kent Bay had the same heavy mineral concentration (.14%) as the beaches, cassiterite was observed in one sample. The northern side of Armstrong Channel averaged .19%, the middle of the channel .20% and the southern side only .09% heavy minerals. However cassiterite was observed in three samples on the southern side, three in the middle and two samples on the north side. The best area for any cassiterite on the surface of Armstrong Channel seems to be on either side of and in the central channel bordering Kent Bay.

Franklin Sound

Franklin Sound is the strait separating Flinders and Cape Barren Islands. It is 15 miles long, 5 to 8 miles wide and elongated in an east-west direction. Depths range from less than 1 fathom over large areas on the south side to nearly 30 fathoms just north of Vansittart Island. Large shallow flats such as Adelaide and Deep Bays along with a rocky coastline border the Sound. There are two main channels in the Sound, one along the northern edge and another along the southern edge which join together to form one main channel between Flinders and Vansittart Islands. Currents, up to 6 or 8 knots, have been observed just north of Vansittart. These oscillating tidal currents keep the bottom of Franklin Sound clean of sediment in most of the narrow passages. Large sand waves and sand flats are located between the main channels and around most of the islands in the Sound.

Over 200 samples have been taken in Franklin Sound, along with 35 beach samples bordering the Sound and a series of 15 cores taken in Deep Bay and Adelaide Bay (Map 2).

Deep Bay, located on the southern side of the Sound, is one of the most promising areas for accumulation of cassiterite. Heavy weed prohibited effective sampling in the middle of the Bay but many samples were taken around the weed area. During low tide a number of cores were obtained on the large tidal flats exposed near the shore. Two rivers, Rooks River and Lee River, drain known tin producing area on Cape Barren Island into Deep Bay. Deep Bay is now filled with sediment which forms a large shoal area (average depth less than 1 fathom) with only tidal action to transport any detritus. At its northern edge the bottom drops off steeply into the southern channel of Franklin Sound.

Heavy mineral percents average .32% with cassiterite present in many samples. Light minerals average 77% quartz, 16% potash feldspar and 7% plagioclase.

Two lines of cores were taken, at low tide, perpendicular to the beach near Rooks River. Cores 6,7,8,9 and 10 are on the west side and cores 12, 13, 14,and 15 are on the east side of the river. Traverses start at the beach, cores are located at least 100 yards apart and average 5' to 6' in length. Cores 6, 8, 12, 13 and 15 all have a good show of cassiterite.

The cassiterite is concentrated in a coarse sand and shell bed which is near the surface close to the beach and 50" beneath the surface 300 yards offshore (Fig.1). No cassiterite was found on the surface of Deep Bay except near the beaches.

The southern channel of Franklin Sound starts between Long and

Anderson Islands and runs along the northern edge of Deep Bay. Its deepest point is 17 fathoms, just south of Anderson Island, and averages around 9 fathoms, heavy minerals average only .08% but sample A-95 had a show of cassiterite. Quartz averages 81%, potash feldspar 12% and plagioclase 7%, there is a distinct gain in potash feldspar and loss of quartz in a westerly direction, suggesting variations in the granite source areas.

The northern channel stretches from just south of Great Dog Island westward for twelve miles running parallel to the southern coast of Flinders Island. It averages 10 fathoms in depth with a 30 fathom hole just north of Anderson Island. Heavy minerals average .27% with four samples out of eleven containing cassiterite.

Between the two channels are many small islands surrounded by sand flats with large sand waves common. Much of the area has less than a fathom of water over it, averaging about 2 fathoms in depth. Heavy minerals average .23% with cassiterite found in one sample out of seven. Of the light minerals plagioclase only averages 3%, potash feldspar 10% and quartz 87%.

Between Badger, Mt. Chapell and Anderson Islands there is a large weed covered flat area averaging 7 fathoms in depth. This is probably a terrace cut during a lower stand of sea-level but now covered by sediments with no addition of sediments at the present. It was very difficult to sample this platform because of the thick weed but approximately 20 samples were taken. No cassiterite was found in this area, heavy minerals averaged .14%, quartz 81%, potash feldspar 15% and plagioclase 4%. Sample A-117 at the northern edge of the area showed 40% quartz, 22% potash

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feldspar and 38% plagioclase.

Adelaide Bay, located on the north-eastern side of Franklin Sound between Flinders and Great Dog Islands, is a shallow weed covered sand flat averaging less than a fathom in depth. Samples from sand patches in the weeds showed a .34% heavy mineral concentration with 17% plagioclase, 12% potash feldspar and 81% quartz forming the light fraction. No cassiterite noticed here.

South of Adelaide Bay is the main channel of Franklin Sound. This channel averages nearly 10 fathoms and has a 30 fathom hole just north of Vansittart. Some of the strongest currents around the Furneaux Islands are located here, they keep the east end of the channel free of sediment. Heavy minerals average ,20% with cassiterite found in four of fifteen.samples. The light fraction is composed of 86% quartz, 9% potash feldspar and 5% plagioclase.

SUMMARY AND CONCLUSIONS

The work on this study, up until now, has been on collecting of samples and analizing them for textural, chemical and mineral data. When interpretation of this data is finished it is hoped that patterns will appear that will help in determining heavy mineral, especially cassiterite, concentrations in the Banks Strait-Furneaux Island area.

The distribution of cassiterite, as we know so far, is irregular throughout the study area. Most of the surface of Banks Strait can not be considered as having any cassiterite concentrations of economic importance. The exceptions to this might be Ringarooma Bay, not yet studied, and Kent Bay on the south side of Cape Barren Island.

Deep Bay and the sand banks on either side of the main channel in Franklin Sound must be considered the prime areas for cassiterite in the study area.

The shallow weed covered bays, such as Deep Bay and Kent Bay, will have to be cored for further information. Surface sampling might be misleading due to the difficulty in obtaining samples in thick weed. Cores taken in Deep Bay show cassiterite concentrations in beds under the surface. This could explain that the cassiterite found on the sides of Franklin and Armstrong Channels is coming from these beds, which outcrop here and where they are being eroded and winnowed by strong currents.

Surface sampling of the entire lease area has narrowed down possible areas of interest but can not give a real economic assesment of the area by itself. A sparker survey to determine the thickness of the unconsolidated sediment, and show possible buried valleys under the present day surface, is the next recommened step. With the sparker survey information, a series of core holes would then complete an accurate overall picture of the entire surveyed area.

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APPENDIX

Part I

No. - Sample number
Lat. - Sample latitude
Long. - Sample longitude
% Gr. - Percent of Gravel in Sample
% Sand - Percent of Sand in Sample
% Slt/cl - Percent of Silt and Clay in Sample

Part II

No. - Sample number
med - Median Diameter (mm.)
sort - Sorting (phi units)
mean - Mean Diameter (mm.)
S.D. - Standard Deviation (phi units)
skew 1 - 1st Skewness (phi units)
skew 2 - 2nd Skewness (phi units)
kur - Kurtosis (phi units)
skew/ - Skewness ratio
vel - mean settling velocity (cm/sec.)
h.m. - Heavy Mineral percent of Sample

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No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl
A-1	40°16.8	148°06.9	5½	26.5	72.9	0.6
A-2	40°16.8½	148°05.9	9	2.4	96.4	1.2
A-3	40°16.8½	148°04.8	8	0.0	99.1	0.9
A-4	40°17.1	148°03.6	7	10.4	88.9	0.7
A-5	40°17.0½	148°02.3½	4½	0.4	98.3	1.3
A-6		No Sample				
A-7	40°16.7	147°56.2½	2	0.0	98.3	1.7
A-9	40°13.6	147°54.8½	17	5.9	93.7	0.4
A-10	40°13.5	147°57.8½	15	12.8	85.2	2.0
A-11	40°13.6	147°59.2	12½	8.0	89.9	2.1
A-12		Debris				
A-62	40°20.3	147°54.0½	15	3.9	93.8	2.3
A-64	40°18.2	147°55.6	7	0.0	96.0	4.0
A-67	40°15.5½	148°13.6	4	0.0	100.0	0.0
A-68	40°16.4	148°13.5	7	1.8	97.2	1.0
A-69	40°16.7	148°13.5	6	6.5	92.7	0.8
A-70	40°16.8	148°13.2	2	0.1	99.4	0.5
A-71	40°17.2½	148°13.2	3	1.8	97.4	0.8
A-73	40°18.2	148°13.5½	5	0.9	98.3	0.8
A-74	40°18.7	148°13.8	1	0.0	98.1	1.9
A-75	40°18.8	148°13.4	7	5.0	94.1	0.9
A-76	40°18.8½	148°12.7	13	0.0	96.7	3.3
A-77	40°18.1½	148°12.4	8	3.4	95.9	0.7
A-78	40°18.4½	148°11.5	6½	1.8	97.2	1.0
A-79	40°18.8	148°11.0½	2	2.4	97.0	0.6
A-80	40°19.1	148°11.2	2½	5.7	92.9	1.3
A-81	40°19.4	148°11.6	4½	0.5	98.6	0.9
A-82	40°19.6½	148°11.8	1½	6.5	92.9	0.6
A-83	40°19.6½	148°12.5½	1½			
A-84	40°19.8	148°12.6½	1	0.0	99.1	0.9
A-88	40°20.4½	148°10.6½		12.2	82.7	5.1
A-89	40°20.1½	148°10.6	1½	4.7	94.4	0.9
A-90	40°20.1½	148°10.1	1	6.0	93.2	0.8
A-91	40°20.0½	148°09.3½	4			
A-92	40°20.2	148°08.5	9	12.6	85.8	1.6
A-94	40°20.0½	148°06.2½	9	8.6	90.2	1.2
A-95	40°20.0	148°05.2½	12	7.1	92.2	0.7
A-96	40°19.8	148°04.7	21	64.8	35.2	0.0
A-97	40°19.5	148°04.7	1½	0.7	96.9	2.3
A-98	40°19.0	148°05.2	5	0.0	95.8	4.2
A-99	40°18.2½	148°06.0	1½	0.4	98.7	0.9
A-101	40°17.4	148°08.5	15	4.7	94.6	0.7
A-102	40°17.2	148°10.1	4½	4.1	95.1	0.8

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No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl
A-103	40°16.09	148°10.8½	8	0.9	98.3	0.8
A-104	40°16.02	148°12.2	7			
A-105	40°15.07	148°13.1½	5	0.0	98.0	2.0
A-106	40°14.04½	148°13.8	5	0.0	97.4	2.6
A-107	40°13.3	148°14.7	3	4.4	95.1	0.5
A-108	40°16.0½	148°11.3	7	0.8	98.2	1.0
A-109	40°16.4	148°09.2	10	7.5	91.5	1.0
A-110	40°16.6	148°08.2½	8	17.6	81.6	0.8
A-113	40°15.8	148°02.7	5½	36.4	62.4	1.2
A-114	40°15.7	148°02.7	7	6.8	92.3	0.9
A-115	40°15.4½	148°00.2½	10½	27.8	71.1	1.1
A-116	40°14.9½	147°58.4	14	4.8	86.3	8.9
A-117	40°16.1	147°58.2	13	7.0	90.7	2.3
A-118	40°17.4½	147°58.2	9	12.6	80.9	6.5
A-119	40°19.6½	147°57.7	8	7.5	90.3	2.2
A-120	40°20.5½	147°56.3½	11	4.0	94.5	1.5
A-121	40°21.8½	147°54.8				
A-123	40°22.8½	147°55.9½	12	1.1	96.8	2.1
A-124	40°22.8½	147°57.4½	12	12.4	85.0	2.6
A-125	40°22.6	147°59.5	10			
A-128	40°21.7	148°02.0½	2½	3.4	95.0	1.6
A-129	40°21.7	148°02.0½	2½	0.0	99.1	0.9
A-130	40°20.5	148°03.5	5	0.0	94.9	5.1
A-131	40°20.4	148°04.4½	7	37.5	60.7	1.8
A-132	40°19.7½	148°07.4	3	18.1	81.4	0.5
A-133	40°19.5	148°08.4	5	3.5	94.7	1.8
A-134	40°18.9½	148°09.0	4	0.0	98.6	1.4
A-135	40°18.3½	148°10.1	5	29.6	69.8	0.6
A-136	40°17.6	148°11.0½	7½	0.0	97.5	2.5
A-137	40°17.6½	148°11.6½	6	1.5	97.6	0.9
A-138	40°16.8	148°12.2	2	0.0	98.5	1.5
A-139	40°16.2	148°12.4	1	0.0	99.4	0.6
A-140	40°13.2	148°15.4	4	16.2	83.1	0.7
A-141	40°13.4	148°15.7½	8	17.7	80.9	1.4
A-142	40°13.8½	148°15.9	8	3.9	94.7	1.4
A-143	40°14.1	148°16.2	6	0.5	97.0	2.5
A-144	40°14.5	148°16.5	4	0.0	99.0	1.0
A-145	40°14.8	148°16.6	7	4.4	94.1	1.5
A-146	40°15.0½	148°16.8½	15	Rock		
A-147	40°15.1	148°17.0	4	1.3	97.8	0.9
A-148	40°15.1	148°17.7	3	1.1	98.4	0.5
A-149	40°15.4½	148°17.8	4	3.7	95.5	0.8
A-177	40°14.2½	148°17.0	3	3.4	95.5	1.1
A-178	40°14.2	148°17.5	4	0.0	97.8	2.2

No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl
A-179	40°14.0½	148°18.2	9	0.0	99.2	0.8
A-187	40°15.0	148°18.2	13	8.8	90.7	0;5
A-188	40°15.4½	148°17.4	11	0.9	98.3	0.8
A-189	40°15.8½	148°16.8	8	0.9	97.9	1.2
A-190	40°16.5½	148°16.7	8	4.1	95.3	0.6
A-191	40°17.2½	148°16.4	5	0.3	99.2	0.5
A-192	40°17.6	148°16.2	6	3.1	96.0	0.9
A-193	40°18.2	148°16.0½	2	4.5	93.2	2.3
A-194	40°18.3½	148°15.6	2	0.0	98.6	1.4
A-195	40°18.7	148°15.7½	1	0.0	98.9	1.1
A-196	40°18.3½	148°15.4	6	2.0	95.2	2.8
A-197	40°18.5½	148°15.7	8	5.0	93.4	1.6
A-199	40°19.2	148°13.2½	2	12.9	81.7	5.4
A-200	40°19.2½	148°13.5	3	0.0	97.8	2.2
A-202	40°19.4½	148°13.7½	1½	0.0	93.0	7.0
A-203	40°19.5	148°14.1	1½	3.1	73.9	23.0
A-206	40°19.1	148°15.2	1½	0.0	98.2	1.8
A-207	40°19.3	148°15.3	1½	0.0	95.7	4.3
A-208	40°19.4	148°15.9½	1½	5.1	70.2	24.7
A-209	40°19.6½	148°15.5½	1½	0.0	96.9	3.1
A-211	40°19.8	148°15.3	1½	13.4	84.1	2.5
A-212	40°19.9	148°15.3	1½	0.0	95.9	4.1
A-214	40°19.7	148°14.5	2	2.6	92.9	4.5
A-215	40°19.4½	148°13.8½	1½	0.0	93.4	6.6
A-216	40°19.6	148°13.6½	1½	0.0	96.5	3.5
A-217	40°19.4	148°13.4½	1½	0.0	95.9	4.1
A-218	40°19.4	148°13.2½	2	0.0	98.6	1.4
A-219	40°19.1½	148°13.1	1½	0.0	97.0	3.0
A-221	40°17.6	148°12.4½	7			
A-222	40°17.4	148°13.4	7	0.4	96.8	2.8
A-224	40°16.7	148°14.8	7	2.5	96.6	0.9
A-225	40°16.6	148°15.7	8	0.5	97.6	1.9
A-228	40°15.7½	148°15.3	5	0.9	98.5	0.6
A-229	40°15.6	148°14.5	6	11.3	88.1	0.6
A-230	40°15.9½	148°14.5½	6			
A-231	40°15.8½	148°15.8½	6	0.0	97.9	2.1
A-232	40°17.1½	148°15.0	7	0.0	99.3	0.7
A-233	40°17.7	148°13.9½	7½	0.0	98.8	1.2
A-234	40°17.9	148°11.7½	7	1.0	98.1	0.9
A-235	40°18.2	148°10.4	6	3.1	95.0	1.9
A-237	40°18.5	148°08.1	5	0.7	98.5	0.8
A-239	40°19.3	148°07.1½	4	18.0	80.2	1.8
A-240	40°21.2½	148°04.1½	3	0.0	95.0	5.0
A-241	40°20.9	148°02.3	5	0.0	96.2	3.8

023

No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Bry.	% Sh.	% Forams
A-241	40°20.9	148°02.3	5	0.0	96.2	3.8				
A-242	40°20.7½	148°00.8½	7							
A-243	40°20.7½	147°59.6	9	7.9	89.3	2.8				
A-244	40°21.3½	147°58.0	10	32.5	66.9	0.6				
A-245	40°23.5½	147°56.2	2	29.4	70.0	0.6	0	64	24	12
A-246	40°24.5½	147°56.4	16		Algal Nodules					
A-247	40°25.3	147°57.2½	17				15	67	18	0
A-248	40°26.2	147°58.4	17		Rocks					
A-249	40°27.0½	148°00.6½	11	0.0	98.3	1.7	96	0	2	1
A-250	40°27.6½	148°01.6	10	1.7	97.8	0.5	96	1	1	1
A-251	40°27.6½	148°03.0½	11	58.9	40.3	0.8				
A-252	40°28.0	148°04.0½	10	8.2	91.2	0.6	84	4	10	2
A-253	40°28.3½	148°04.9½	7	0.0	100.0	0.0	70	3	10	17
A-254	40°28.6	148°06.1½	8	1.8	97.7	0.5	96	0	2	2
A-255	40°29.3	148°06.0½	6	0.0	97.5	2.5	15	61	12	12
A-256	40°30.6½	148°04.5	16	5.0	92.8	2.2	75	15	8	2
A-257	40°30.8	148°06.2	11		Rocks					
A-258	40°30.7	148°07.4	1	41.9	56.0	2.1	64	8	14	14
A-259	40°30.0	148°06.9	9	6.8	92.3	0.9	94	2	4	0
A-260	40°28.4	148°08.7	4				98	0	2	0
A-261	40°28.0	148°09.4	15	25.4	73.4	1.2	80	10	5	3
A-262	40°27.4	148°09.5	1	0.0	93.6	6.4	75	10	3	10
A-263	40°27.6	148°10.0	6	0.8	98.2	1.0	95	1	1	1
A-264	40°28.0½	148°10.9½	8	0.0	98.9	1.1	98	1	1	0
A-265	40°28.0½	148°12.5	7	0.0	99.3	0.7	98	1	1	0
A-266	40°28.1	148°13.3½	10	20.9	78.3	0.8	98	1	1	0
A-267	40°28.0	148°14.6	20	45.5	53.9	0.6	98	1	1	0
A-268	40°27.6	148°15.6	9	5.1	93.2	1.7	91	2	4	3
A-269	40°27.5	148°17.0	8	41.6	55.0	3.4	98	1	1	0
A-270	40°27.5½	148°18.0	5	6.6	79.5	15.9	78	8	9	5
A-271	40°28.1	148°18.9	8	18.1	79.4	2.5	78	6	12	4
A-272	40°28.7½	148°19.7	11	25.8	73.5	0.6	95	1	1	1
A-273	40°29.7	148°19.8	5	16.9	81.9	1.2	98	1	1	0
A-274	40°29.5	148°19.5	6	3.1	96.2	0.7	98	1	1	0
A-275	40°28.0	148°19.6			Rock					
A-276	40°27.6	148°19.4	7	12.7	84.2	3.1	58	13	21	8
A-278	40°26.6	148°18.0	2	45.7	50.2	4.1				
A-279	40°26.5½	148°17.2	4	9.7	88.2	2.1	72	4	24	0
A-280	40°27.0	148°16.3½	2	0.0	94.1	5.9				
A-281	40°27.8½	148°15.8	6	7.3	92.0	0.7	98	1	1	0
A-282	40°28.1½	148°16.4½	11	22.8	75.8	1.4	98	1	1	0
A-283	40°28.6	148°17.7½	7	15.7	82.8	1.5	98	1	1	0
A-284	40°28.9	148°17.6	5	0.0	99.5	0.5	95	0	2	0
A-285	40°28.7	148°16.8	5	0.0	99.1	0.9	57	12	18	13

No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Bry	% Sh	% Forams
A-286	40°28.5	148°15.9½	5	0.9	98.4	0.7	97	1	1	1
A-287	40°28.4	148°15.0½	11	1.0	97.8	1.2	95	0	5	0
A-288	40°28.9	148°13.4	11	21.8	76.0	2.2	95	0	3	2
A-289	40°29.3	148°12.6	9	1.6	96.7	1.7	60	10	20	10
A-290	40°29.6	148°12.0	4	0.0	97.1	2.9	85	5	5	5
A-291	40°29.5	148°10.5	6	Pebbles and Cobbles						
A-292	40°29.6	148°09.0	6	4.0	93.7	2.3	90	3	5	2
A-293	40°30.0	148°03.4	12	3.5	94.7	1.8	68	22	10	0
A-294	40°29.1	148°02.0	11	2.9	95.8	1.3	80	3	17	0
A-295	40°28.4	148°00.8	13	27.4	71.0	1.6	8	62	20	10
A-296	40°25.8	147°58.6	12	0.0	99.9	0.1	0	45	45	10
A-297	40°24.3	147°58.1	13	1.1	97.8	1.1	0	45	45	10
A-298	40°19.5½	147°59.4	8	17.4	77.5	5.1				
A-299	40°19.3½	148°01.2½	8	10.1	87.9	2.0				
A-300	40°19.3	148°03.5½	6	25.2	70.0	4.8				
A-301	40°18.4	148°02.9½	2½	1.9	97.3	0.8				
A-302	40°17.5½	148°05.0	6	17.0	82.5	0.5				
A-325	40°13.3½	148°14.4½	2	6.7	90.5	2.8				
A-326	40°13.6½	148°14.0	2	4.3	93.6	2.1				
A-327	40°13.9½	148°13.4	2	7.9	91.5	0.6				
A-328	40°14.4	148°12.7	2	18.3	81.2	0.5				
A-329	40°14.7½	148°11.9½	2	3.3	95.7	1.0				
A-330	40°15.2	148°11.9	2½	4.2	94.7	1.1				
A-331	40°15.4½	148°11.1½	7	5.6	93.2	1.2				
A-332	40°14.4	148°14.2	2½	2.8	96.0	1.2				
A-333	40°14.6	148°15.5½	8¼	4.1	95.0	0.9				
A-334	40°14.8½	148°16.2	4	1.8	97.5	0.7				

025

178026

No.	Lat.	Long.	% Gr.	% Sand	% Silt/Cl
C-1	40°20.9	148°10.8	28.9	71.1	0.0
C-2	40°20.9	148°11.3	34.5	65.5	0.0
C-3	40°21.1	148°11.8	54.9	45.1	0.0
C-4	40°21.1	148°12.1	40.3	59.7	0.0
C-5	40°20.9	148°09.8	21.7	78.3	0.0
C-6	40°20.1	148°12.7	46.4	53.6	0.0
C-7	40°19.4	148°12.8	2.5	97.5	0;0
C-8	40°19.4	148°13.3	31.3	68.7	0.0
C-9	40°19.9	148°14.4	37.2	62.8	0.0
C-10	40°19.9	148°14.8	74.5	25.5	0.0
C-11	40°19.7	148°10.9	1.9	98.1	0.0
C-12	40°19.5	148°11.5	4.2	95.8	0.0
C-13	40°19.2	148°12.1	0.5	99.5	0.0
C-14	40°17.8	148°16.5	0.0	100.0	0.0
C-15	40°17.4	148°16.9	0.0	100.0	0.0
C-16	40°17.4	148°16.9	0.0	100.0	0.0
C-16	40°17.6	148°17.9	0.0	93.1	6.9
C-17	40°17.3	148°18.7	22.0	78.0	0.0
C-18	40°17.4	148°19.5	0.0	100.0	0.0
C-19	40°17.6	148°19.6	0.0	100.0	0.0
C-20	40°17.9	148°19.3	0.0	100.0	0.0
C-21	40°18.0	148°19.0	0.5	99.5	0.0
C-22	40°18.4	148°18.6	1.7	98.3	0.0
C-23	40°18.7	148°18.6	33.0	67.0	0.0
C-24	40°19.2	148°18.2	20.0	79.0	1.0
C-25	40°19.2	148°17.4	24.8	73.6	1.6
C-26	40°19.4	148°16.8	25.5	73.9	0.6
C-27	40°19.9	148°16.4	2.5	97.5	0.0
C-28	40°19.9	148°16.0	52.9	45.0	1.9
C-29	40°16.0	148°16.0	35.3	63.5	1.2
C-30	40°20.2	148°15.5	59.0	41.0	0.0
C-31	40°23.8	148°00.4	47.0	53.0	0.0
C-32	40°24.4	147°59.3	0.0	99.2	0.8
C-33	40°25.1	148°00.2	4.3	93.2	2.5
C-34	40°25.1	148°00.1	0.0	100.0	0.0
C-35	40°26.0	148°02.5	0.0	100.0	0.0
C-36	40°20.6	148°09.8	7.3	91.8	0.9
C-37	40°20.5	148°07.9	0.0	98.7	1.3
C-38	40°20.8	148°06.7	30.9	68.5	0.6
C-39	40°20.9	148°05.7	50.0	48.6	1.4
C-40	40°20.8	148°05.0	53.8	46.2	2.0
C-41	40°20.8	148°04.8	21.7	76.4	1.7
C-42	40°21.7	148°03.5	15.4	84.1	0.5
C-43	40°25.9	148°16.1	37.2	62.1	0.7

026

178027

No.	Lat.	Long.	% Gr.	% Sand	% Silt/Cl
C-44	40°25.9	148°17.4	32.3	66.5	1.2
C-45	40°26.0	148°18.9	24.2	75.5	0.3
C-46	40°27.3	148°19.7	30.5	68.5	1.0
C-47	40°28.5	148°20.1	40.7	59.3	0.0
C-48	40°29.3	148°21.2	2.9	96.8	0.3
C-49	40°26.9	148°06.0	11.4	88.1	0.5
C-50	40°26.5	148°11.0	0.4	99.6	0.0
C-51	40°26.9	148°09.4	1.8	97.3	0.9
C-52	40°26.9	148°08.5	51.4	48.0	0.6
C-53	40°26.6	148°07.0	7.8	89.9	2.3
C-54	40°27.5	148°13.0	0.0	99.3	0.7
C-55	40°26.5	148°15.9	12.2	86.7	1.1
F-1	40°12.7	148°14.0	36.5	63.5	0.0
F-2	40°12.9	148°12.6	26.4	73.2	0.4
F-3	40°15.8	148°05.9	39.5	59.2	1.3
F-4	40°14.8	148°03.5	0.0	98.7	1.3
F-5	40°12.8	148°02.4	0.0	96.2	3.8
F-21	40°12.9	148°15.7	0.0	99.0	1.0
F-22	40°14.0	148°16.4	0.4	98.1	1.5
F-24	40°13.6	148°18.7			
F-25	40°15.8	148°09.5	4.3	95.7	0.0
F-25b	40°15.8	148°09.5	0.0	93.3	6.7
F-26	40°14.9½	148°11.2	1.1	98.9	0.0
F-28	40°13.7	148°11.4	1.3	80.8	17.9

178028

027

No.	Lat.	Long.	fms. Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Br.	% Sh.	% Forams
M-218	41°01.7	148°35.9	60	1.02	85.17	13.81	0	47	25	26
M-219	41°01.6	148°32.7	59	3.52	81.25	15.23	0	45	18	37
M-220	41°01.6	148°29.3	57	3.03	85.79	11.18	5	45	22	28
M-221	41°01.6	148°26.3	44	1.37	89.79	8.33	42	18	30	20
M-222	41°01.6	148°23.0	33	1.70	98.10	1.00				
M-224	40°43.1	148°26.7	20	6.70	92.80	0.40	58	18	20	4
M-225	40°43.0	148°26.0	19	21.90	77.70	0.20				
M-230	40°52.2	148°36.6	50	13.70	85.70	0.50	33	46	5	16
M-231	40°52.2	148°33.6	45	0.00	99.00	1.00	21	54	4	21
M-232	40°52.3	148°32.6	31				64	29	2	5
M-233	40°52.3	148°31.2	30	12.50	84.90	2.40	22	55	11	12
M-234	40°52.8	148°30.1	31	8.70	90.60	0.50	4	70	18	8
M-235	40°52.2	148°28.8	31	8.60	90.80	0.50	38	41	6	15
M-236	40°53.1	148°28.0	33	21.60	78.10	0.20	26	48	11	15
M-237	40°53.8	148°27.2	35	21.00	78.00	1.00	0	76	19	5
M-238	40°54.8	148°26.4	36	11.30	87.90	0.70				
M-239	40°55.3	148°25.7	35	0.00	99.10	0.90	8	62	16	14
M-240	40°50.2	148°24.7	32	10.30	89.10	0.60	26	46	6	22
M-241	40°57.2	148°23.4	29	12.60	87.00	0.40	49	42	5	4
M-242	40°31.2	148°23.2	17	16.70	83.20	0.00	62	19	14	5
M-243	40°31.7	148°23.8	16	34.50	65.00	0.50	70	5	20	5
M-244	40°32.9	148°25.3	17	45.10	54.40	0.50	70	5	20	5
M-245	40°34.1	148°26.5	18	4.60	95.20	0.20	95	0	5	0
M-246	40°34.9	148°27.1	19		No Sample					
M-247	40°36.3	148°28.1	19	6.00	93.40	0.60	58	19	17	6
M-248	40°38.1	148°29.0	22	0.00	98.90	1.10	81	9	8	2
M-249	40°39.3	148°29.6	20	0.10	99.00	0.90	53	19	13	5
M-250	40°40.9	148°30.0	20	36.20	63.20	0.60	8	46	26	20
M-251	40°42.6	148°30.3	21	1.70	97.10	1.20				
M-252	40°43.4	148°30.3	22		No Sample					
M-255	40°29.3	148°06.0	36							
M-257	40°31.2	148°38.2	30	8.10	90.90	1.00	0	82	8	10
M-258	40°32.4	148°22.2	17	54.20	45.30	0.50	36	36	16	12
M-259	40°35.2	148°25.2	12	4.32	95.68	0.00	94	0	3	3
M-260	40°35.9	148°25.8	18	34.40	65.30	0.30	92	0	5	3
M-261	40°39.5	148°27.7	18	1.00	99.00	0.00	25	37	25	13
M-262	40°41.6	148°14.5	25	12.80	87.20	0.00	70	9	21	0
M-263	40°41.1	148°18.2	23	16.20	83.50	0.30	40	40	20	0
M-264	40°41.1	148°22.4	21	40.00	59.40	0.60	31	55	12	2
M-265	40°41.6	148°26.8	19	90.00	10.00	0.00	95	5	5	0
M-266	40°42.2	148°29.0	20	0.00	99.50	0.50	60	24	10	6
M-267	40°37.9	148°30.8	24	34.66	65.34	0.00	55	25	15	5
M-268	40°36.2	148°29.9	20	0.00	98.60	1.40	4	44	40	12
M-269	40°34.5	148°28.9	18	0.00	100.00	0.00	25	25	40	10

028

No.	Lat.	Long.	fms. Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Br.	% Sh.	% Forams
M-270	40°32.8	148°27.6	16	0.00	98.80	1.20	50	22	22	6
M-271	40°31.2	148°25.7	16	15.50	83.50	1.00	94	3	3	0
M-272	40°30.0	148°26.8	15	40.30	59.10	0.60	50	16	26	8
M-273	40°31.3	148°28.2	17	21.80	77.80	0.40	77	9	5	0
M-274	40°34.0	148°30.6	21	0.00	98.00	2.00	76	10	14	0
M-275	40°38.4	148°32.9	25	0.00	99.30	0.70				
M-276	40°41.4	148°33.6	26	10.40	88.70	0.90	22	48	14	16
M-293	40°19.5	147°35.8	24		No Sample					
M-294	40°25.9	147°42.2	21		Nodules					
M-295	40°32.3	147°51.8	18	5.40	92.50	2.10	0	65	31	4
M-296	40°38.9	148°02.2	21	29.70	69.18	1.12	90	5	5	0
M-297	40°44.8	148°07.7	6	3.50	96.50	0.00	96	0	2	2
M-298	40°45.9	148°07.5	6	0.54	96.74	2.72				
M-299	40°47.4	148°07.9	8	3.00	97.00	0.00	95	0	4	1
M-300	40°47.5	148°07.9	5	31.10	68.90	0.00	80	0	20	0
M-301	40°47.5	148°09.2	14	43.10	56.90	0.00	90	0	10	0
M-302	40°47.6	148°10.0	15	63.90	36.10	0.00	53	28	19	0
M-303	40°48.1	148°11.4	14	15.90	84.10	0.00	90	0	10	0
M-304	40°48.2	148°12.8	15	26.50	73.50	0.00	30	66	4	0
M-305	40°48.4	148°14.2	19	35.90	64.10	0.00	60	30	10	0
M-306	40°48.7	148°15.6	22	36.70	63.30	0.00	90	5	5	0
M-307	40°46.9	148°16.2	17	3.70	96.30	0.00	95	0	5	0
M-308	40°34.5	148°21.9	10	3.50	96.50	0.00	45	39	12	4
M-309	40°35.7	148°23.1	10	15.80	84.20	0.00	90	5	5	0
M-310	40°38.3	148°24.9	16	28.85	71.15	0.00	95	0	5	0
M-311	40°41.3	148°26.0	19	36.90	63.10	0.00	85	5	10	0
M-312	40°47.0	148°19.2	18	5.60	94.40	0.00	90	7	3	0
M-313	40°53.0	148°20.0	13				5	90	5	0
M-314	40°29.7	148°31.1	18	18.50	81.50	0.00	69	7	23	1
M-315	40°32.2	148°34.2	20							
M-316	40°39.6	148°37.0	50	5.60	92.10	2.30	5	90	5	0
M-317	40°46.8	148°33.0	40	3.31	96.69	0.00	36	47	7	10
M-318	40°53.1	148°28.7	33	23.20	76.70	0.10				
M-319	41°00.7	148°29.8	55				20	50	10	20
M-320	41°00.2	148°33.5	57				0	56	14	30
M-321	41°00.2	148°36.0					0	68	12	20
M-322	41°00.3	148°39.8		8.82	91.18	0.00	0	85	5	10
M-323	40°33.6	148°19.2	14	0.40	99.60	0.00	60	20	10	10
M-324	40°33.8	148°19.5	15	35.49	64.51	0.00	90	5	5	0
M-325	40°34.3	148°20.2	13	39.17	60.83	0.00	85	3	9	3
M-326	40°34.8	148°21.0	7	15.34	84.66	0.00	90	5	5	0
M-327	40°35.4	148°21.2	7	4.38	95.62	0.00	95	0	5	0
M-328	40°36.1	148°22.2	13	30.84	69.16	0.00	90	0	10	0
M-329	40°36.7	148°22.7	18	45.38	54.62	0.00	80	0	20	0

029

No.	Lat.	Long.	fms. Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Br.	% Sh.	% Forams
M-330	40°37.7	148°23.5	17	21.62	78.38	0.00	92	3	5	0
M-331	40°38.1	148°23.8	17	12.45	87.55	0.00	65	20	13	2
M-332	40°38.8	148°24.2	17	10.74	89.26	0.00	78	12	7	3
M-333	40°39.5	148°24.5	17	24.28	75.72	0.00	50	27	20	3
M-334	40°40.5	148°24.8	18	16.53	83.47	0.00	63	18	13	6
M-335	40°33.8	148°18.0	14	0.51	99.49	0.00	75	14	7	4
M-336	40°34.6	148°19.0	10	43.06	56.94	0.00	90	2	6	2
M-337	40°35.0	148°19.6	6	4.14	95.86	0.00	90	6	2	2
M-338	40°35.3	148°20.0	7	0.25	99.75	0.00	92	5	2	1
M-339	40°35.9	148°20.6	10	3.83	96.17	0.00	92	5	2	1
M-340	40°36.4	148°21.1	13	0.00	100.00	0.00	82	7	7	4
M-341	40°37.2	148°21.8	19	48.70	51.30	0.00	95	0	5	0
M-342	40°38.6	148°22.8	19	22.10	77.90	0.00	68	8	24	0
M-343	40°38.8	148°23.0	19	19.42	80.58	0.00	40	40	16	4
M-344	40°39.8	148°23.4	18				45	28	25	2
M-345	40°41.5	148°24.0	20	35.63	64.37	0.00				
M-346	40°42.2	148°24.8	19	23.37	76.63	0.00	62	24	12	2
M-347	40°43.3	148°25.0	20	28.27	71.73	0.00	83	8	7	2
M-348	40°44.5	148°25.0	21	0.90	99.10	0.00	56	13	29	2
M-349	40°45.4	148°25.0	20	2.57	97.43	0.00	95	0	5	0
M-350	40°46.4	148°24.7	19	0.32	99.68	0.00	80	0	16	4
M-351	40°47.2	148°27.4	20	0.00	100.00	0.00	91	2	5	2
M-352	40°48.0	148°24.1	18				94	0	4	2
M-353	40°49.8	148°23.1	19	0.00	100.00	0.00	59	23	12	6
M-354	40°51.2	148°22.9	24	1.68	98.32	0.00				
M-355	40°52.4	148°22.8	26	0.36	99.64	0.00	89	3	5	3
M-364	40°40.5	148°02.4	15	4.17	95.83	0.00	83	13	3	1
M-365	40°40.5	147°55.2	16	14.45	85.55	0.00		Rock		
M-366	40°40.8	147°49.0	18	0.19	99.81	0.00	87	3	7	3
M-367	40°40.9	147°42.3	23	56.78	43.22	0.00	1	88	10	1
M-368	40°41.6	147°35.2	22	9.72	90.28	0.00	0	86	12	2
M-376	41°00.2	148°30.1	55	6.15	77.20	16.65	10	50	10	30
M-409	41°04.4	148°26.0	45	2.42	89.83	7.75	0	70	0	30
M-410	40°31.4	147°42.9	20				0	80	20	0
M-412	40°31.5	147°44.8	19	32.60	67.40	0.00	0	78	22	0
M-413	40°31.7	147°46.6	19	17.87	82.13	0.00	0	75	13	12
M-414	40°32.0	147°48.5	19	12.30	87.70	0.00	0	81	19	0
M-415	40°32.4	147°50.2	19	20.19	79.81	0.00	3	62	23	4
M-418	40°32.7	147°51.6	18	16.11	83.89	0.00	0	70	30	0
M-419	40°33.3	147°53.3	17	5.88	94.12	0.00	0	75	25	0
M-421	40°43.8	147°54.7	17	15.64	84.36	0.00	0	80	20	0
M-422	40°34.3	147°55.9	18	14.78	85.22	0.00	0	85	14	1
M-423	40°34.9	147°57/4	20		Debris					
M-424	40°35.8	147°58.9	17	77.08	22.92	0.00	33	50	13	1
M-425	40°36.5	148°00.0	16	66.58	33.42	0.00	66	25	8	1

No.	Lat.	Long.	fms. Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Br.	% Sh.	% Forams
M-426	40°37.3	148°01.2	16		Rock					
M-427	40°39.0	148°03.2	20	22.92	77.08	0.00	68	26	5	1
M-428	40°40.3	148°04.4	15							
M-429	40°41.6	148°05.5	13	62.43	37.37	0.20				
M-430	40°42.1	148°01.0	10	11.73	88.27	0.00	31	23	7	0
M-431	40°40.9	148°00.0	11	13.77	86.23	0.00				
M-432	40°39.8	147°58.7	14	33.41	66.59	0.00	54	32	14	0
M-433	40°38.6	147°57.1	16	10.00	90.00	0.00	41	29	23	7
M-434	40°37.8	147°55.5	17	22.65	77.35	0.00	50	50	0	0
M-435	40°36.7	147°53.2	17	13.40	86.60	0.00	25	50	25	0
M-436	40°36.0	147°51.4	18	10.98	89.02	0.00	22	55	23	0
M-437	40°35.4	147°49.3	18	10.43	89.57	0.00	20	60	20	0
M-438	40°35.0	147°47.6	18				20	60	20	0
M-439	40°34.8	147°45/3	19		Rock					
M-440	40°34.6	147°43.3	20		Nodules					
M-441	40°34.6	147°41.6	20	35.28	64.72	0.00	0	78	16	6
M-442	40°26.8	147°42.3	21	41.21	58.79	0.00	0	90	8	2
M-443	40°26.8	147°44.3	20		Rock					
M-444	40°27.0	147°47.2	20		Nodules					
M-445	40°27.2	147°49.2	19		Nodules					
M-446	40°27.8	147°52.2	18	25.20	74.80	0.00	0	55	45	0
M-447	40°28.2	147°53.6	18	9.25	90.75	0.00	0	66	34	0
M-448	40°28.8	147°55.6	18	26.20	70.90	2.90	0	76	14	0
M-449	40°29.8	147°58.2	17				45	45	10	0
M-450	40°30.4	147°59.7	19	1.18	98.82	0.00	15	68	13	4
M-451	40°31.5	148°01.8	17		Nodules					
M-452	40°32.5	148°03.5	20	17.64	82.36	0.00	38	48	13	1
M-453	40°33.6	148°05.1	21	66.66	33.34	0.00	52	39	8	1
M-454	40°35.0	148°06.8	23	42.54	57.46	0.00	28	65	6	3
M-455	40°36.3	148°08.2	30	40.78	59.22	0.00	55	30	15	0
M-456	40°37.9	148°09.9	21		Debris					
M-457	40°40.6	147°54.2	15	7.26	92.74	0.00	21	53	21	5
M-458	40°38.8	147°50.2	17	5.74	94.26	0.00	33	47	15	5
M-459	40°38.0	147°47.9	18	18.12	81.88	0.00	44	38	15	3
M-460	40°37.7	147°45.1	20	21.10	78.90	0.00	7	73	20	0
M-461	40°41.0	147°52.2	18	11.39	88.61	0.00	90	5	5	0
M-462	40°40.8	147°51.3	17	0.79	99.21	0.00	95	0	5	0
M-463	40°44.8	147°54.3	14	14.28	85.72	0.00	90	3	5	2
M-464	40°43.8	147°53.3			Weed					
M-465	40°42.8	147°52.6					75	18	7	0
M-466	40°42.2	147°51.0					95	0	5	0
M-467	40°41.7	147°49.2	17	0.31	99.69	0.00	95	0	5	0
M-468	40°41.0	147°47.2	20	3.02	96.98	0.00	94	0	5	1
M-469	40°40.6	147°45.4	20	14.07	85.93	0.00	30	58	8	12
M-470	40°43.3	147°44.1	21		Nodules					
M-471	40°43.4	147°45.1	21	38.70	61.30	0.00	4	77	9	10
M-472	40°43.7	147°46.1	17	6.25	93.75	0.00	18	59	13	10
M-473	40°44.0	147°46.9	16	16.66	83.34	0.00	0	65	25	10

031

No.	Lat.	Long.	fms. Depth	% Gr.	% Sand	% Silt/Cl	% Q	% Br.	% Sh.	% Forams
M-474	40°44.4	147°47.8	17	18.37	21.63	0.00	10	60	15	15
M-475	40°44.6	147°48.4	16	27.00	73.00	0.00	19	44	24	13
M-476	40°44.9	147°49.1	16	19.38	80.62	0.00	25	36	16	22
M-477	40°45.2	147°49.6	16	2.45	97.55	0.00				
M-478	40°27.7	147°58.5	17	7.28	92.72	0.00	30	42	16	12
M-479	40°27.4	147°57.8	18	6.17	93.83	0.00	26	48	21	5
M-480	40°22.4	147°50.8	20							
M-481	40°22.0	147°50.8	20							
M-482	40°26.4	147°54.8	18							
M-483	40°26.0	147°53.2	19							
M-484	40°25.4	147°51.2	19							
M-485	40°25.2	147°49.4	20							
M-486	40°24.8	147°47.2	20							
M-487	40°24.6	147°45.0	20							
M-488	40°24.6	147°43.0	20							
M-489	40°22.2	147°49.5	21		Nodules					
M-490	40°22.0	147°48.4	20		Nodules					
M-491	40°21.8	147°47.4	20		Nodules					
M-492	40°21.8	147°46.0	21		Nodules					
M-493	40°21.7	147°44.8	21		Nodules					
M-494	40°36.3	148°04.5	23							
M-495	40°35.0	148°02.8	28				95	0	0	0
M-496	40°33.8	148°01.0	22							
M-497	40°33.0	147°59.6	21		Nodules					
M-498	40°32.2	147°58.0	16	21.92	78.08	0.00	33	33	33	1
M-499	40°31.4	147°56.1	16	13.80	85.40	0.80	0	80	20	0
M-500	40°30.8	147°54.6	17	3.52	96.48	0.00	0	79	10	11
M-501	40°30.2	147°52.7	17	6.89	93.11	0.00	10	54	36	0
M-502	40°29.8	147°50.7	19	33.44	66.56	0.00	0	54	40	6
M-503	40°29.4	147°47.8	19	18.19	81.81	0.00	0	75	25	0
M-504	40°29.2	147°46.9	19		Nodules					
M-505	40°29.0	147°45.3	19							
M-506	40°29.0	147°42.4	21		Nodules					
M-507	40°30.0	147°42.1	21	75.71	24.29	0.00	0	80	20	0
M-508	40°30.4	147°43.6	20							
M-509	40°30.4	147°45.0	19		Nodules					
M-510	40°30.6	147°47.2	19		Nodules					
M-511	40°31.0	147°49.0	19	28.00	72.00	0.00	0	80	20	0
M-512	40°31.2	147°50.4	19	20.77	79.23	0.00	0	65	35	0
M-513	40°31.6	147°52.0	17	6.74	93.26	0.00	0	82	18	0
M-514	40°32.1	147°53.5	16	5.14	94.86	0.00	82	10	8	0

032

No.	Lat.	Long.	Depth	% Gr.	% Sand	% Silt/Cl
R-1	40°15.3	148°10.3	0" - 15"	50.0	45.5	4.5
R-2-1	40°15.3	148°10.5	0" - 32"	26.5	71.6	1.9
R-2-2			32" - 36"	37.7	51.1	11.2
R-2-3			36" - 44"	31.2	66.9	1.9
R-2-4			44" - 52"	36.8	62.6	0.6
R-2-5			52" - 60"			
R-3-1	40°15.1½	148°10.8½	0" - 30"	29.9	69.5	0.6
R-3-2			30" - 42"	31.2	68.8	0.0
R-4-1	40°13.1½	148°12.2½	0" - 6"	26.8	72.6	0.6
R-4-2			6" - 18"			
R-5-1	40°15.9½	148°05.8	0" - 6"	2.1	96.5	1.4
R-5-2			6" - 12"	17.3	81.8	0.9
R-5-3			12" - 20"	52.5	46.7	0.8
R-5-4			20" - 32"	22.5	75.9	1.6
R-6-1	40°20.8½	148°09.8½	2" - 10"	18.0	80.2	1.8
R-6-2			10" - 30"	47.6	51.3	1.1
R-6-3			30" - 46"	54.1	42.8	3.1
R-7-1	40°20.9	148°09.8	0" - 10"	21.2	73.1	5.7
R-7-2			10" - 30"	58.8	39.5	1.7
R-7-3			30" - 46"	55.7	42.7	1.6
R-8-1	40°20.9½	148°09.7½	0" - 8"	32.0	68.0	0.0
R-8-2			8" - 20"	19.5	75.7	4.8
R-8-3			20" - 60"	46.8	52.0	1.2
R-9-1	40°20.8	148°09.9	0" - 8"	25.5	66.0	8.5
R-9-2			8" - 26"	49.7	49.5	0.8
R-9-3			26" -	16.1	78.1	5.8
R-10-1	40°20.8	148°09.9½	0" - 12"	1.3	75.5	23.2
R-10-2			12" - 27"	31.6	64.2	4.2
R-10-3			27" -	24.4	73.6	2.0
R-11-1	40°21.1	148°11.8	0" - 12"	3.2	96.3	0.5
R-11-2			12" - 24"	16.2	78.8	5.0
R-11-3			24" -	4.4	92.1	3.5
R-12-1	40°21.0½	148°09.7½	18" -	16.5	79.6	3.9
R-12-2			0" - 18"	20.5	77.7	1.8
R-13-1	40°20.9	148°09.9	0" - 18"	14.0	85.2	0.8
R-13-2			18" -46"	7.8	92.2	0.0
R-13-3			46" -	37.2	61.8	1.0
R-14-1	40°20.9½	148°09.8½	0" - 12"	33.3	66.1	0.6
R-14 -2			12" - 24"	15.3	82.7	2.0
R-14-3			24" - 36"	5.4	82.2	12.4
R-14-4			36" - 60"	34.9	61.6	3.5
R-14-5			60" -	18.1	81.4	0.5
R-15-1	40°21.0	148°09.8	0" - 18"	4.9	84.7	10.4
R-15-2			18" - 45"	65.1	32.0	2.9
R-15-3			45" -	58.9	38.9	2.2

033

178034

no.	med	sort	mean	S.D.	skew 1	skew 2	kur	skew/	vel	h.m.
A-1	0.86	-0.52	1.30	1.16	-0.51	-0.60	0.54	1.17	16.40	
A-2	0.50	1.39	0.47	0.49	0.19	0.09	0.80	0.46	7.80	.17
A-3	0.30	1.12	0.29	0.28	0.05	0.35	0.59	7.70	3.30	.29
A-4	0.57	1.59	0.58	0.59	-0.07	-1.13	1.82	16.58	8.50	
A-5	0.38	1.27	0.38	0.47	-0.03	-0.09	0.76	3.10	5.90	
A-6	0.20	1.10	0.20	0.32	-0.01	0.19	0.53	-27.14	2.60	.08
A-9	0.77	1.46	0.76	0.25	0.02	-1.51	3.58	-64.49	12.20	
A-10	0.51	1.38	0.44	0.64	0.34	-0.93	2.11	-2.78	8.60	
A-11	0.48	1.34	0.42	0.48	0.36	-1.25	2.80	-3.43	7.60	
A-12	0.50	1.30	0.45	0.44	0.38	-1.33	3.00	-3.47	8.00	
A-62	0.22	1.25	0.24	0.76	-0.11	-0.37	1.13	3.41	3.50	
A-64	0.23	1.15	0.22	0.40	0.14	0.37	0.88	2.60	3.00	
A-67	0.26	1.14	0.26	0.33	0.01	-0.03	0.68	-3.35	3.80	.28
A-68	0.31	1.17	0.29	0.41	0.18	-0.12	1.06	-0.64	5.10	.58
A-70	0.29	1.12	0.28	0.30	0.14	0.34	0.56	2.49	3.90	
A-71	0.27	1.22	0.29	0.55	-0.24	-0.64	0.91	2.72	4.60	.36
A-73	0.33	1.15	0.31	0.35	0.26	0.59	0.59	2.30	4.80	
A-74	0.21	1.15	0.22	0.43	-0.07	-0.14	0.75	1.96	2.90	.33
A-75	0.24	1.10	0.24	0.31	0.04	-4.07	4.91		3.90	.10
A-76	0.19	1.12	0.19	0.42	-0.06	1.05	1.47	-17.46	2.30	
A-77	0.36	1.13	0.34	0.25	0.22	0.67	0.82	3.05	5.50	.37
A78	0.36	1.13	0.34	0.29	0.09	0.28	0.50	3.02	3.10	.12
A-79	0.31	1.15	0.30	0.33	0.06	-0.41	1.19	-7.48	4.80	.19
A-80	0.31	1.21	0.32	0.48	-0.05	-2.18	2.74	44.23	5.50	.11
A-81	0.67	1.39	0.62	0.35	0.35	1.18	1.41	3.38	9.60	.12
A-82	0.57	1.55	0.58	0.54	-0.06	-1.09	1.76	17.22	9.50	.08
A-83	0.60		0.71	1.66	- 0.15	-0.08	0.41	0.55	10.00	
A-84	0.53	1.51	0.48	0.58	0.22	0.36	0.69	1.63	7.70	.10
A-88	0.38	2.08	0.36	1.39	0.05	-0.11	1.04	-2.16	6.20	
A-89	0.33	1.20	0.35	0.46	-0.19	-1.24	1.53	6.51	5.00	.11
A-90	0.38	1.34	0.43	0.60	-0.30	-1.50	1.69	5.04	6.90	.08
A-91	0.52	1.42	0.52	0.47	0.03	-0.47	1.11	-18.60	8.20	.05
A-92	0.62	3.10	0.61	0.92	0.03	-0.47	1.01	-17.22	10.10	.05
A-94	0.53	2.05	0.57	0.73	-0.13	-0.96	1.22	7.55	9.20	
A-95	0.41	1.37	0.46	0.71	-0.26	-1.24	1.40	4.69	7.10	.23
A-96	2.34	-1.19	0.88	1.95	0.73	0.77	0.12	1.05	17.60	
A-97	0.20	1.09	0.20	0.28	-0.03	0.28	0.61	-9.78	2.50	.19
A-98	0.19	1.21	0.22	0.81	-0.29	-0.46	0.98	1.58	3.00	
A-99	0.39	1.33	0.38	0.52	0.07	0.19	0.61	2.80	5.70	.16
A-101	0.56	1.28	0.56	0.39	0.03	-0.57	1.42	-18.74	9.10	.14
A-102	0.49	1.31	0.48	0.40	0.07	-0.35	1.13	-4.89	7.90	
A-103	0.32	1.14	0.31	0.32	0.16	0.46	0.82	2.88	4.50	.07
A-104	0.35	1.42	0.39	0.70	-0.23	-1.26	1.37	5.47	6.20	.27
A-105	0.25	1.13	0.23	0.37	0.20	0.46	0.52	2.22	3.20	

034

no.	med	sort	mean	s.d.	skew 1	skew 2	kur	skew/	vel	h.m.
A-106	0.27	1.22	0.26	0.54	0.16	0.24	0.65	1.45	3.90	
A-107	0.42	1.49	0.43	0.70	-0.09	-0.47	0.80	5.31	7.10	.43
A-108	0.33	1.15	0.33	0.32	-0.01	-0.28	1.15	22.79	5.20	.39
A-109	0.31	1.22	0.35	0.59	-0.28	-1.92	2.24	6.77	5.60	
A-110	0.68	-16.50	0.99	1.10	-0.49	-0.61	0.45	1.24	12.40	
A-113	0.76	-0.77	1.13	1.39	-0.41	-0.37	0.26	0.91	15.00	
A-114	0.80	2.20	0.79	0.38	0.03	-0.68	2.58	-20.30	12.60	
A-115	1.03	-0.33	1.34	1.00	-0.38	-0.22	0.56	0.58	17.00	
A-116	0.36	1.40	0.32	0.71	0.22	1.34	1.88	6.01	4.90	
A-117	0.57	4.44	0.53	1.10	0.09	-0.10	0.81	-1.11	8.60	.14
A-118	0.28	1.28	0.29	0.88	-0.10	-0.58	2.35	5.74	4.90	
A-119	0.22	1.33	0.33	1.09	-0.56	-1.27	0.97	2.26	4.30	
A-120	0.75	1.61	0.71	0.35	0.25	0.49	1.33	1.96	11.20	
A-121	0.80	-0.47	1.30	1.19	-0.59	-0.53	0.31	0.90	16.80	
A-123	0.25	1.13	0.24	0.37	0.18	0.15	0.92	0.84	3.90	
A-124	0.43	1.83	0.49	0.90	-0.22	-0.77	1.38	3.50	7.90	
A-125	0.95	-0.40	1.39	1.17	-0.47	-0.47	0.21	1.00	18.80	
A-128	0.62	1.41	0.58	0.39	0.24	0.65	1.26	2.65	9.20	
A-129	0.36	1.30	0.34	0.57	0.17	0.19	0.73	1.12	5.40	.16
A-130	0.17	1.15	0.17	0.52	-0.12	0.63	1.28	-5.36	2.10	
A-131	0.54	-1.64	0.73	2.03	-0.21	-0.17	0.18	0.85	10.60	.35
A-133	0.44	1.89	0.49	0.97	-0.17	-0.40	0.70	2.29	8.30	.20
A-134	0.23	1.11	0.22	0.32	0.08	0.28	0.48	3.72	3.10	
A-135	0.77	-1.02	0.90	1.61	-0.14	-0.11	0.26	0.76	13.20	.21
A-136	0.24	1.11	0.23	0.32	0.10	0.32	0.55	3.06	3.20	.07
A-137	0.41	1.21	0.38	0.38	0.30	0.31	0.80	1.03	6.10	
A-138	0.24	1.12	0.23	0.35	0.17	0.41	0.54	2.43	3.50	.18
A-139	0.27	1.11	0.27	0.29	0.13	0.35	0.57	2.73	3.80	.08
A-140	0.49	4.85	0.79	1.35	-0.52	-0.64	0.38	1.22	9.90	
A-141	0.41	1.57	0.76	1.48	-0.60	-0.69	0.33	1.15	8.20	.34
A-143	0.33	1.16	0.32	0.36	0.20	0.43	1.01	2.20	5.00	.36
A-144	0.38	1.21	0.36	0.38	0.18	0.09	0.90	0.47	5.90	.08
A-145	0.35	1.53	0.39	0.75	-0.16	-0.55	0.88	3.40	6.00	.17
A-147	0.51	1.15	0.50	0.20	0.19	0.50	0.62	2.60	7.70	.27
A-148	0.56	1.25	0.55	0.27	0.03	0.02	1.07	0.80	8.70	
A-149	0.54	1.26	0.54	0.33	0.04	-0.70	1.58	-17.36	8.90	
A-177	0.41	1.76	0.45	0.83	-0.15	-0.31	0.52	2.02	6.90	.18
A-178	0.37	1.14	0.35	0.29	0.19	0.54	0.68	2.79	5.20	.11
A-179	0.27	1.09	0.26	0.23	0.16	0.37	0.62	2.30	3.60	
A-187	0.42	1.17	0.40	0.31	0.21	-2.98	4.56	-13.95	7.20	.29
A-188	0.53	1.14	0.52	0.18	0.20	0.44	0.67	2.13	8.10	.29
A-189	0.41	1.25	0.36	0.48	0.37	0.83	0.68	2.23	5.40	.08
A-190	0.41	1.18	0.39	0.33	0.21	0.11	1.09	0.52	6.70	.25

035

178036

no	med	sort	mean	s.d.	skew 1	skew 2	kur	skew/	vel	h.m.
A-191	0.41	1.11	0.40	0.22	0.28	0.63	0.69	2.22	6.20	.11
A-192	0.26	1.09	0.26	0.25	0.06	-0.38	1.28	-5.99	3.90	
A-193	0.25	1.10	0.24	0.29	-0.38	-1.39	1.39	-4.27	3.70	.31
A-195	0.27	1.18	0.26	0.45	0.02	-0.11	0.70	-5.98	3.90	
A-196	0.22	1.10	0.21	0.29	0.09	-0.78	1.98	-8.44	3.20	.19
A-197	0.23	1.12	0.23	0.34	-0.10	-3.80	4.51	39.60	4.00	.19
A-199	0.21	1.22	0.26	0.86	-0.38	-1.06	2.38	2.78	4.00	
A-200	0.20	1.11	0.20	0.32	0.00	0.05	0.58		2.90	
A-202	0.14	1.13	0.12	0.52	0.26	0.55	1.27	2.15	1.70	
A-203	0.13	1.20	0.10	0.98	0.41	0.06	0.80	0.15	1.50	
A-206	0.16	1.12	0.18	0.45	-0.23	-0.78	1.42	3.42	2.30	
A-209	0.21	1.35	0.24	0.92	-0.19	-0.34	0.76	1.78	3.30	
A-211	0.44	1.76	0.49	1.07	-0.13	-0.56	1.08	4.16	7.80	
A-212	0.33	1.36	0.30	0.72	0.17	0.51	0.93	2.90	4.50	
A-214	0.50	2.04	0.36	1.14	0.41	0.70	0.64	1.70	6.40	
A-215	0.12	1.12	0.11	0.53	0.08	-0.55	1.83	-7.25	1.40	
A-216	0.14	1.13	0.14	0.54	0.00	-0.16	0.82	-48.20	1.80	
A-217	0.14	1.08	0.14	0.42	0.11	-0.28	1.27	-2.57	1.70	
A-218	0.17	1.09	0.17	0.33	-0.03	0.37	0.73	-11.79	2.10	
A-219	0.21	1.20	0.23	0.60	-0.12	-0.07	0.99	0.62	3.00	.37
A-221	0.29	1.12	0.29	0.30	0.08	0.20	0.47	2.40	4.20	
A-222	0.31	1.16	0.30	0.36	0.21	0.60	0.79	2.82	4.30	
A-224	0.32	1.25	0.29	0.53	0.28	0.39	0.50	1.38	4.90	
A-225	0.32	1.27	0.31	0.54	0.11	0.25	0.50	2.29	4.70	.15
A-229	0.45	1.31	0.52	0.67	-0.30	-1.40	1.62	4.66	8.40	.41
A-230	0.31	1.16	0.30	0.38	0.16	-2.89	4.11	-18.13	5.30	.50
A-231	0.40	1.18	0.38	0.32	0.50	2.50	0.70	3.27	5.70	.17
A-232	0.36	1.21	0.32	0.43	0.38	2.84	2.67	7.56	4.60	.24
A-233	0.26	1.10	0.26	0.27	0.14	0.38	0.64	2.74	4.20	.12
A-234	0.40	1.15	0.38	0.28	0.27	1.50	1.49	5.63	5.60	.22
A-235	0.24	1.16	0.23	0.40	0.06	-0.81	1.44	-13.39	3.50	.20
A-237	0.32	1.12	0.31	0.27	0.13	0.15	0.90	1.13	4.70	
A-239	0.27	1.56	0.64	1.76	-0.71	-0.80	0.26	1.13	6.30	.33
A-240	0.18	1.23	0.21	0.85	-0.28	-0.24	0.84	0.84	2.80	
A-241	0.18	1.12	0.18	0.38	-0.04	0.28	1.73	-6.18	3.10	
A-243	0.25	1.28	0.37	1.09	-0.54	-1.16	0.95	2.15	4.70	
A-244	0.91	-0.29	1.43	1.00	-0.65	-0.60	0.39	0.93	17.40	.19
A-245	0.59	-0.96	1.84	1.43	-0.57	-0.50	0.34	0.88	12.80	
A-249	0.27	1.14	0.26	0.36	0.04	0.08	0.55	2.00	3.80	.34
A-250	0.26	1.11	0.26	0.27	-0.00	0.06	0.47	-13.81	4.10	
A-252	0.64	1.41	0.64	0.33	0.02	-1.30	3.90	-66.38	10.60	
A-253	0.26	1.11	0.26	0.27	-0.00	0.06	0.47	-13.81	4.10	.14
A-254	0.21	1.10	0.21	0.28	0.03	0.29	0.55	9.65	2.70	
A-255	0.28	1.21	0.29	0.48	-0.10	-0.12	0.63	1.24	4.20	

036

178037

no.	med	sort	mean	s.d.	skew 1	skew 2	kur	skew/	vel	h.m.
A-256	0.52	1.66	0.46	0.76	0.24	-0.31	1.26	-1.29	7.70	
A-259	0.51	1.96	0.44	0.90	0.20	-0.45	1.06	-2.22	7.60	.17
A-261	0.35	-1.93	0.77	1.75	-0.65	-0.67	0.22	1.04	9.30	.29
A-262	0.19	1.10	0.19	0.36	0.07	1.74	2.49	23.38	2.50	.32
A-263	0.33	1.17	0.33	0.37	0.03	-0.06	1.09	-1.67	5.00	.16
A-264	0.27	1.13	0.27	0.33	-0.02	00.08	0.51	-4.26	4.00	
A-265	0.49	1.21	0.46	0.29	0.23	0.77	0.86	3.28	7.10	.06
A-266	0.87	-2.43	1.26	0.90	-0.59	-0.68	0.49	1.15	15.40	
A-267	0.83	-0.96	1.08	2.23	-0.17	-0.20	0.18	1.16	15.40	
A-268	0.33	1.51	0.34	0.80	-0.01	-0.91	1.36	110.63	5.50	.16
A-269	0.93	-0.78	0.99	1.63	-0.06	0.10	0.31	-1.75	15.00	.12
A-270	0.19	1.18	0.17	0.84	0.22	-0.80	2.55	-3.66	2.70	
A-271	0.26	1.58	0.62	1.81	-0.69	-0.71	0.32	1.03	5.90	
A-272	0.37	-1.93	0.76	1.78	-0.59	-0.64	1.08	8.80	8.80	
A-273	0.50	3.20	0.74	1.49	-0.38	-0.48	0.34	1.25	9.20	.17
A-274	0.74	1.79	0.63	0.50	0.46	0.69	0191	1.50	10.40	
A-276	0.32	2.16	0.42	1.32	-0.29	-0.60	0.85	2.11	6.30	
A-278	0.82	-0.97	0.72	2.12	0.09	0.36	0.38	4.07	13.40	
A-279	0.47	2.12	0.45	1.06	0.06	-0.30	1.14	-5.21	7.60	
A-281	0.44	1.48	0.47	0.78	-0.12	-0.90	1.31	7.48	7.50	.14
A-282	0.69	-5.15	1.07	1.20	-0.52	-0.58	0.34	1.11	13.00	
A-283	0.64	2.09	0.78	0.93	-0.31	-0.61	0.88	1.99	11.00	
A-284	0.43	1.24	0.40	0.40	0.27	0.56	0.68	2.08	6.10	.10
A-285	0.28	1.10	0.27	0.27	0.25	0.47	0.70	1.81	3.80	.08
A-286	0.48	1.32	0.46	0.43	0.10	-0.05	0.86	-0.48	7.50	.08
A-287	0.36	1.30	-0.44	0.70	-0.39	-0.40	0.47	1.03	5.90	.21
A-288	0.30	1.51	0.72	1.74	-0.73	-0.77	0.25	1.05	7.00	.30
A-289	0.20	1.12	0.20	.34	-0.08	0.19	0.62	-2.47	2.80	
A-290	0.18	1.10	0.18	0.35	0.11	0.78	1.00	6.78	2.30	.14
A-293	0.61	1.22	0.59	0.23	0.17	-0.07	1.32	=0.44	9.60	
A-294	0.63	1.75	0.53	0.62	0.43	0.65	0.54	1.51	8.70	
A-295	0.56	-1.37	0.84	1.67	-0.35	-0.29	0.29	0.84	11.20	
A-296	0.27	1.14	0.26	0.35	0105	0.07	0.45	1.55	3.90	
A-297	0.37	1.19	0.35	0.36	0.27	0.62	0.64	2.33	5.40	
A-298	0.32	2.83	0.60	1.83	-0.49	-0.44	0.39	0.90	6.80	
A-300	0.32	-2.41	0.65	2.00	-0.52	-0.30	0.43	0.59	6.90	
A-301	0.52	1.63	0.53	0.72	-0.05	-0.11	0.73	2.28	8.30	.08
A-302	0.73	-16.53	1.06	0.98	-0.54	-0.67	0.54	1.22	13.40	
A-325	0.42	1.68	0.48	0.81	-0.24	-0.93	1.17	3.90	7.20	.25
A-326	0.35	1.39	0.37	0.68	-0.13	-0.43	0178	3.33	5.70	.50
A-327	0.50	1.68	0.49	0.78	0.01	-0.80	1.24	-58.14	8.50	.32
A-328	0.70	6.76	1.07	1.04	-0.59	-0.73	0.43	1.25	12.60	
A-329	0.44	1.27	0.44	0.42	-0.01	-0.74	1.32	66.98	7.20	.21
A-330	0.37	1.17	0.35	0.34	0.22	-2.53	3.91	-11.57	5.90	.25
A-331	0.38	1.39	0.42	0.70	-0.23	-1.13	1.43	4.82	7.40	.42
A-332	0.39	1.17	0.38	0.29	0.09	-0.31	1.67	-3.47	6.40	
A-333	0.60	2.03	0.62	0.65	-0.05	0.05	0.78	-1.01	11.20	
A-334	0.47	1.30	0.46	0.40	0.10	-0.01	1.00	-0.12	7.30	.14

037

178038

no	med	sort	mean	s.d.	skew 1	skew 2	Kur	skew/	vel	h.m.
C-1	0.86	-0.55	1.26	1.23	-0.45	-0.41	0.50	0.91	16.20	.03
C-2	0.60	-0.80	1.22	2.03	-0.50	-0.52	0.22	1.02	14.80	1.10
C-3	2.27	-0.20	1.61	1.75	0.29	0.48	0.42	1.69	22.20	.34
C-4	0.92	-0.62	1.24	1.72	-0.25	-0.23	0.40	00.92	17.40	.37
C-5	0.63	-8.49	0.95	1.45	-0.40	-0.54	0.43	1.35	12.00	.12
C-6	1.19	-0.37	1.32	1.26	-0 .12	0.04	0.36	-0.33	19.00	.15
C-7	0.20	1.10	0.20	0.30	-0.05	-1.73	2.17	35.38	3.10	.89
C-8	1.06	-2.38	0.77	1.78	0.26	2.24	0.26	0.92	13.40	.89
C-9	0.93	-0.80	1.14	1.72	-0.17	-0.23	0.36	1.38	16.20	.07
C-10	0.76	-1.22	0.94	1.52	-0.20	-0.22	0.30	1.12	13.20	.07
C-11	0.37	1.25	0.38	0.53	-0.11	-0.52	0.90	4.81	5.90	.62
C-12	0.32	1.21	0.36	0.49	-0.29	-1.26	1.40	4.41	5.50	.24
C-13	0.27	1.10	0.26	0.27	0.13	0.32	0.57	2.41	3.60	.23
C-14	0.21	1.08	0.21	0.26	-0.03	0.10	0.46	-3.85	2.80	.03
C-15	0.25	1.11	0.24	0.29	0.10	0.20	0.43	2.08	3.30	.10
C-16	0.21	1.15	0.22	0.40	-0.14	-0.83	1.23	6.12	3.20	.91
C-17	0.56	2.88	0.93	1.37	-0.54	-0.56	0.35	1.03	10.80	.76
C-18	0.64	1.33	0.63	0.26	0.08	0.34	0.74	4.12	9.80	.54
C-19	0.42	1.51	0.37	0.69	0.28	0.34	0.40	1.31	5.90	.40
C-20	0.27	1.26	0.29	0.64	-0.19	-0.41	0.59	2.16	4.10	.02
C-21	0.43	2.04	0.42	0.95	0.03	0.08	0.30	2.26	6.70	.04
C-22	0.49	1.67	0.48	0.71	0.07	0.07	0.54	1.01	7.80	.09
C-23	0.89	-0.86	1.02	1.58	-0.13	-0.09	0.32	0.70	15.00	.13
C-24	0.58	-7.13	0.84	1.56	-0.34	-0.41	0.35	1.32	11.00	1.15
C-25	0.75	-0.91	0.99	1.43	-0.28	-0.19	0.44	0.69	13.60	.09
C-26	0.78	-1.26	0.92	1.75	-0.14	-0.26	0.38	1.92	13.40	.07
C-27	0.40	1.50	0.43	0.73	-0.14	-0.39	0.63	2.78	6.60	.17
C-28	2.31	-0.37	1.50	1.95	0.32	0.39	0.23	1.22	22.20	.85
C-29	0.75	-0.84	1.17	1.86	-0.35	-0.40	0.29	1.14	15.40	2.92
C-30	2.39	-0.03	1.99	1.33	0.20	0.26	0.41	1.31	24.80	.15
C-31	0.84	-0.42	1.61	1.56	-0.60	-0.71	0.23	1.17	20.20	.48
C-32	0.34	1.18	0.32	0.37	0.26	0.54	0.55	2.06	4.80	.20
C-33	0.44	1.22	0.44	0.32	-0.07	-0.66	1.26	9.98	7.30	11.10
C-34	0.21	1.13	0.22	0.37	-0.02	0.05	0.50	-3.03	3.30	.37
C-35	0.28	1.14	0.27	0.35	0.06	0.14	0.66	2.63	4.00	.32
C-36	0.46	1.64	0.50	0.76	-0.14	-1.01	1.33	7.30	8.10	.44
C-37	0.38	1.15	0.36	0.30	0.22	0.73	0.90	3.28	6.00	.92
C-38	0.82	-0.38	1.55	1.28	-0.72	-0.79	0.50	1.11	17.80	.02
C-39	2.02	-0.02	1.73	0.92	0.24	0.24	0.24	0.97	22.40	.36
C-40	2.18	-0.09	1.95	1.42	0.11	0.73	0.92	6.47	22.00	.94
C-41	0.87	-10.40	0.72	1.77	0.16	0.10	0.23	0.64	11.40	.50
C-42	0.77	4.67	0.68	0.95	0.18	-0.11	1.10	-0.61	12.20	.52
C-43	0.97	-0.31	1.47	1.11	-0.54	-0.47	0.41	0.88	18.80	.12

038

178039

no.	med	sort	mean	s.d.	skew 1	skew2	kur	skew/	vel	h.m.
C-44	0.93	-1.03	0.89	1.70	0.04	0.08	0.25	2.10	14.40	.11
C-45	0.74	-2.79	1.04	1.39	-0.35	-0.39	0.44	1.11	13.60	.21
C-46	1.00	-0.29	0.83	1.76	0.15	0.16	0.22	1.08	15.40	.11
C-47	1.11	-0.09	1.62	0.91	-0.60	-0.66	0.24	1.10	20.60	.04
C-48	1.08	-0.40	0.67	0.90	0.77	0.85	0.23	1.12	13.60	.13
C-49	0.29	1.31	0.38	0.97	-0.40	-1.42	1.31	3.54	5.60	7.73
C-50	0.59	1.82	0.51	0.72	0.32	0.54	0.56	1.71	8.30	.09
C-51	0.85	1.70	0.85	0.20	-0.00	-0.09	0.97	19.20	13.20	.13
C-52	2.05	-1.46	0.76	2.30	0.67	0.68	0.12	1.02	16.20	.11
C-53	0.22	1.24	0.31	0.93	-0.51	-159	1.36	3.11	4.20	.56
C-54	0.24	1.11	0.23	0.29	0.11	0.27	0.42	2.34	3.20	.06
C-55	0.70	2.04	0.65	0.69	0.17	-0.43	1.73	-2.56	11.20	.22
F-1	0.99	-1.01	1.01	1.59	-0.02	0.00	0.23	-0.17	15.40	
F-2	0.49	-1.78	0.78	1.76	-0.38	-0.39	0.23	1.02	11.60	
F-3	0.86	-1.40	0.82	1.87	0.03	0.05	0.17	1.62	12.80	
F-4	0.31	1.25	0.30	0.52	0.11	0.28	0.65	2.61	4.20	.13
F-5	0.22	1.16	0.22	0.47	0.06	0.16	0.63	2.86	2.80	
F-21	0.71	1.61	0.61	0.48	0.47	0.85	0.84	1.80	10.00	
F-22	0.26	1.19	0.29	0.65	-0.28	-0.69	0.73	2.46	4.00	.10
F-24	0.25	1.13	0.25	0.35	0.05	-0.08	0.61	-1.51	3.40	.40
F-25a	0.71	3.27	0.63	0.78	0.25	0.36	0.66	1.47	10.40	
F-25b	0.67	1.69	0.53	0.66	0.50	2.41	2.23	4.78	8.20	.37
F-26	0.37	1.30	0.37	0.51	0.05	0.13	0.62	2.61	5.30	.10
F-28	0.14	1.00	0.14	0.00	0.00	406.25	752.31	0.00		.29

F-25b 12" beneath surface

039

178040

No.	Med	Sort	Mean	S.D.	Skew 1	Skew 2	Kur	Skew/	Vel
M-218	0.22	1.37	0.19	1.11	0.18	1.03	1.15	5.65	2.30
M-219	0.25	1.54	0.19	1.31	0.30	1.10	1.25	3.65	3.80
M-220	0.24	1.24	0.19	0.89	0.36	0.73	1.24	2.03	3.00
M-221	0.23	1.23	0.21	0.70	0.16	0.38	0.87	2.37	3.00
M-222	0.77	2.59	0.70	0.52	0.28	0.43	0.68	1.50	11.40
M-224	0.36	1.51	0.47	0.85	-0.43	-1.15	1.05	2.65	7.00
M-225	0.50	3.24	0.85	1.51	-0.52	-0.55	0.30	1.07	10.10
M-230	0.54	1.77	0.57	0.77	-0.09	-0.83	1.46	9.47	9.60
M-231	0.38	1.25	0.36	0.44	0.20	0.47	0.72	2.36	6.20
M-233	0.25	2.09	0.38	1.27	-0.47	-1.07	0.76	2.27	6.50
M-235	0.57	1.94	0.65	0.73	-0.26	-0.83	1.26	3.18	10.10
M-236	0.63	-5.23	0.95	1.33	-0.45	-0.44	0.39	0.97	12.40
M-237	0.44	1.54	0.78	1.61	-0.50	-0.50	0.32	1.01	8.80
M-238	0.56	1.81	0.60	0.73	-0.16	-0.90	1.40	5.52	9.80
M-240	0.50	1.54	0.50	0.72	-0.03	-0.94	1.55	37.15	8.70
M-241	0.65	3.30	0.62	0.88	0.06	-0.38	1.15	-6.16	10.60
M-243	0.48	-1.39	0.85	1.77	-0.47	-0.47	0.19	0.98	11.60
M-244	0.77	-1.06	0.92	1.77	-0.14	-0.10	0.18	0.69	14.60
M-245	0.41	1.30	0.42	0.48	-0.01	-0.88	1.43	66.12	6.90
M-247	0.34	1.17	0.34	0.61	-0.39	-1.96	1.92	5.02	5.10
M-248	0.36	1.25	0.37	0.46	-0.09	-0.53	1.03	5.87	5.50
M-249	0.27	1.18	0.26	0.30	0.02	0.05	0.65	2.20	3.80
M-251	0.31	1.26	0.33	0.55	-0.15	-0.43	0.87	.81	4.90
M-257	0.42	1.32	0.40	0.52	0.10	-1.65	2.44	-16.71	6.80
M-259	0.71	4.10	0.70	0.63	0.02	0.14	0.64	5.92	11.00
M-260	0.96	-0.67	1.12	1.37	-0.16	-0.10	0.30	0.60	16.00
M-261	0.48	1.82	0.41	0.88	0.23	0.32	0.47	1.38	6.60
M-262	0.44	1.32	0.44	0.50	-0.02	-1.96	2.61	106.74	8.20
M-263	0.73	2.23	1.05	0.95	-0.55	-0.61	0.66	1.10	13.00
M-266	0.32	1.21	0.33	0.46	-0.08	-0.16	0.69	2.00	4.80
M-267	0.73	-0.80	1.11	1.39	-0.43	-0.36	0.31	0.82	14.80
M-268	0.20	1.11	0.20	0.36	-0.10	-0.03	0.65	0.31	2.60
M-269	0.23	1.10	0.22	0.30	0.17	0.47	0.68	2.73	3.00
M-270	0.23	1.10	0.23	0.28	0.01	0.16	0.56	22.74	2.90
M-271	0.33	1.55	0.45	0.99	-0.44	-1.19	1.05	2.70	6.70
M-272	1.00	-0.50	1.22	1.32	-0.21	-0.01	0.41	0.04	17.20
M-273	1.08	-0.37	1.38	0.81	-0.43	-0.48	0.58	1.10	17.80
M-275	0.18	1.10	0.18	0.35	-0.02	-0.07	0.65	2.75	2.40
M-276	0.34	1.40	0.30	0.84	0.21	-0.95	1.72	-4.54	5.60
M-295	0.47	1.27	0.45	0.45	0.18	-1.16	2.60	-6.43	7.60
M-296	0.59	-1.01	1.03	1.42	-0.56	-0.58	0.24	1.02	13.00
M-297	0.31	1.11	0.30	0.25	0.15	0.28	0.61	1.92	4.80

040

178041

No.	Med.	Sort	Mean	S.D.	Skew 1	Skew 2	Kur	Skew/	Vel
M-299	0.48	1.40	0.51	0.51	-0.15	-0.32	0.77	2.08	7.90
M-300	0.60	-1.12	0.96	1.55	-0.44	-0.42	0.25	0.95	13.00
M-301	2.18	-0.34	1.27	1.38	0.57	0.93	0.50	1.64	19.80
M-305	0.64	-0.91	1.05	1.48	-0.47	-0.45	0.23	0.95	14.20
M-306	0.51	-1.20	0.93	1.66	-0.53	-0.51	0.20	0.96	12.60
M-307	0.40	1.22	0.40	0.39	-0.03	-0.82	1.40	31.84	6.40
M-308	0.47	1.39	0.43	0.58	0.20	-0.14	1.00	-0.73	7.30
M-309	0.69	3.58	0.84	0.81	-0.36	-0.82	0.93	2.28	12.60
M-310	0.63	-1.29	0.90	1.60	-0.31	-0.29	0.25	0.95	12.20
M-311	0.44	-1.37	0.83	1.84	-0.50	-0.44	0.22	0.88	11.00
M-312	0.36	1.21	0.35	0.41	0.05	-0.93	1.69	-19.42	5.90
M-314	0.88	-3.23	1.03	1.08	-0.22	-0.23	0.54	1.06	14.00
M-316	0.47	1.40	0.43	0.58	0.25	-0.78	2.01	-3.09	7.10
M-317	0.47	1.37	0.46	0.57	0.03	-0.58	1.32	-20.80	7.80
M-321	0.23	1.21	0.21	0.65	0.18	0.38	0.79	2.14	3.00
M-322	0.37	1.40	0.37	0.66	0.02	-1.34	1.98	-53.80	6.60
M-324	0.72	-0.68	1.18	1.31	-0.54	-0.54	0.24	1.00	15.60
M-325	0.77	-0.94	0.99	1.61	-0.23	-0.16	0.24	0.71	14.40
M-326	0.65	4.17	0.73	0.82	-0.21	-0.72	1.08	3.41	11.60
M-327	0.29	1.18	0.31	0.49	-0.19	-0.99	1.45	6.53	4.90
M-328	0.83	-0.68	1.15	1.29	-0.36	-0.22	0.42	0.60	15.20
M-329	2.12	-0.26	1.45	1.17	0.47	0.58	0.28	1.23	21.00
M-330	0.67	-6.58	0.87	1.44	-0.26	-0.25	0.38	0.97	11.80
M-331	0.61	1.94	0.71	0.68	-0.30	-1.04	1.33	3.42	10.00
M-332	0.67	3.26	0.64	0.75	0.11	-0.52	1.28	-4.58	10.80
M-333	0.49	-324	0.85	1.58	-0.49	-0.52	0.26	1.06	10.60
M-334	0.44	2.64	0.72	1.51	-0.46	-0.57	0.33	1.24	8.80
M-335	0.30	1.13	0.30	0.30	-0.12	-0.29	1.01	-2.42	4.50
M-336	0.92	-0.71	1.11	1.47	-0.18	-0.04	0.31	0.23	16.20
M-337	0.51	1.43	0.50	0.51	0.03	-0.34	1.09	-10.31	8.20
M-338	0.30	1.16	0.30	0.36	0.01	-0.71	1.33	-57.65	5.50
M-339	0.56	1.77	0.47	0.78	0.34	0.28	0.61	0.81	8.00
M-340	0.26	1.10	0.25	0.25	0.20	0.42	0.55	2.11	3.50
M-341	1.30	-0.43	1.23	1.37	0.05	0.26	0.38	4.88	18.60
M-342	0.60	-10.64	0.94	1.36	-0.47	-0.49	0.35	1.02	11.80
M-343	0.48	-10.28	0.76	1.58	-0.41	-0.44	0.33	1.08	9.70
M-345	0.64	-1.36	0.86	1.76	-0.24	-0.22	0.20	0.92	12.20
M-346	0.66	-2.82	1.07	1.22	-0.57	-0.59	0.37	1.03	13.20
M-348	0.40	1.29	0.38	0.48	0.12	0.05	0.61	0.41	6.10
M-349	0.34	1.20	0.34	0.38	0.04	-0.47	1.16	-12.10	5.30
M-350	0.30	1.16	0.31	0.38	-0.07	-0.10	0.62	1.57	4.60
M-351	0.27	1.10	0.27	0.25	0.06	0.22	0.50	3.74	3.80
M-354	0.22	1.13	0.21	0.37	0.13	-0.09	0.81	-0.70	3.10
M-355	0.19	1.10	0.19	0.33	-0.03	-0.09	0.69	3.05	2.70

041

No.	Med	Sort	Mean	S.D.	Skew 1	Skew 2	Kur	Skew/	Vel
M-365	0.40	1.22	0.79	1.37	-0.72	-0.88	0.32	1.23	8.20
M-366	0.25	1.12	0.25	0.32	0.07	0.15	0.52	2.12	3.50
M-368	0.59	1.48	0.53	0.49	0.32	-1.11	2.45	-3.48	9.70
M-409	0.20	1.44	0.17	1.16	0.22	1.57	1.66	7.13	1.90
M-413	0.58	1.45	0.95	1.18	-0.61	-0.71	0.42	1.16	11.00
M-414	0.54	1.32	0.56	0.45	-0.13	-1.92	2.59	14.95	10.00
M-415	0.61	1.63	1.00	1.15	-0.62	-0.72	0.37	1.16	11.60
M-418	0.60	1.32	0.97	1.05	-0.68	-0.81	0.51	1.20	11.20
M-419	0.38	1.18	0.36	0.33	0.20	-2.92	3.89	-14.80	6.30
M-421	0.33	1.19	0.37	0.50	-0.33	-2.74	2.88	8.42	6.80
M-427	0.47	3.05	0.93	1.40	-0.69	-0.77	0.27	1.11	10.60
M-431	0.81	-6.08	0.91	0.58	-0.28	-1.02	1.30	3.68	14.00
M-432	0.79	-0.60	1.23	1.22	-0.52	-0.44	0.34	0.85	16.00
M-433	0.49	1.30	0.48	0.41	0.05	-2.18	3.05	-40.54	8.60
M-435	0.49	1.27	0.95	0.09	0.51	-0.40	3.21	21.83	9.70
M-436	0.51	1.32	0.53	0.45	-0.11	-1.79	2.80	16.90	9.10
M-437	0.54	1.27	0.51	0.34	0.25	-1.72	3.31	-6.88	9.10
M-438	0.62	1.36	0.62	0.34	0.02	-0.14	1.39	-6.91	9.90
M-441	0.59	-1.09	0.94	1.63	-0.42	-0.37	0.24	0.88	13.00
M-442	0.60	-0.91	1.02	1.58	-0.48	-0.37	0.28	0.76	14.00
M-444	0.49	1.55	0.79	1.36	-0.51	-0.61	0.40	1.21	9.60
M-445	0.70	-0.67	1.16	1.41	-0.51	-0.43	0.26	0.84	16.00
M-446	0.65	-0.86	1.14	1.18	-0.68	-0.74	0.32	1.08	13.80
M-447	0.55	1.26	0.55	0.37	0.03	-2.02	3.17	-63.37	9.80
M-448	0.57	-1.06	1.04	1.33	-0.65	-0.50	0.46	0.77	12.80
M-449	0.36	1.23	0.37	0.44	-0.08	-0.17	0.82	2.18	5.60
M-452	0.40	1.43	0.79	1.43	-0.67	-0.77	0.33	1.15	8.60
M-458	0.50	1.28	0.47	0.37	0.21	0.45	0.69	2.10	7.60
M-459	0.55	1.32	0.53	0.41	0.09	-1.91	2.95	-20.80	9.60
M-461	0.34	1.17	0.38	0.49	-0.31	-2.64	2.71	8.49	6.40
M-462	0.32	1.11	0.31	0.26	0.15	0.19	0.66	1.32	4.70
M-463	0.36	1.27	0.47	0.78	-0.48	-1.57	1.39	3.28	7.40
M-464	0.33	1.12	0.33	0.28	0.00	-0.23	0.90		5.50
N-466	0.35	1.18	0.34	0.38	0.08	-0.32	0.87	-4.12	5.10
M-467	0.28	1.14	0.28	0.39	-0.10	-0.53	0.90	5.38	4.20
M-468	0.32	1.26	0.35	0.60	-0.27	-0.43	0.56	1.60	5.20
M-469	0.50	1.50	0.50	0.73	-0.03	-1.07	1.55	35.01	9.00
M-472	0.49	1.47	0.45	0.67	0.16	-0.65	1.68	-3.99	8.10
M-477	0.32	1.21	0.31	0.46	0.10	0.05	0.84	0.50	4.90
M-478	0.33	1.31	0.33	0.55	0.02	-1.81	2.41	-92.49	5.60
M-492	0.42	1.76	0.38	1.09	0.13	-0.51	1.17	-3.88	8.30
M-498	0.76	-2.00	0.92	1.39	-0.20	-0.16	0.40	0.79	13.00
M-500	0.43	1.27	0.42	0.47	0.09	-0.39	1.11	-4.20	7.20
M-501	0.34	1.13	0.33	0.29	0.06	-3.89	4.78	-67.68	6.00
M-503	0.57	1.42	0.93	1.16	-0.61	-0.61	0.53	0.99	10.80
M-512	0.58	1.63	1.03	1.18	-0.70	-0.78	0.36	1.12	11.80
M-513	0.57	1.31	0.58	0.33	-0.08	-2.07	3.10	26.15	10.40
M-514	0.56	1.31	0.58	0.32	-0.18	-2.16	2.66	12.02	9.50

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042

no.	med	sort	mean	s.d.	skew 1	skew 2	kur	skew/	vel	h.m.
R-1	2.00	-0.64	1.29	1.91	0.33	0.47	0.41	1.44	18.20	1.10
R-2-1	0.81	-0.96	1.01	1.54	-0.20	-0.29	0.39	1.40	14.20	.50
R-2-2	0.96	-0.77	0.90	1.96	0.04	0.49	0.82	11.76	14.00	.50
R-2-3	0.91	-0.53	1.14	1.57	-0.21	-0.19	0.52	0.91	16.20	.58
R-2-4	0.87	-0.62	1.10	1.72	-0.19	-0.19	0.44	0.94	16.20	.57
R-3-1	0.88	-1.40	0.85	1.80	0.02	0.02	0.26	0.74	13.40	
R-3-2	0.84	-0.77	0.85	1.71	-0.01	0.03	0.25	-3.67	13.60	.38
R-4-1	0.45	-1.69	0.86	1.93	-0.48	-0.60	0.32	1.25	10.80	1.11
R-5-1	0.50	1.72	0.44	0.79	0.22	0.18	0.49	0.79	7.20	5.64
R-5-2	0.72	-15.74	0.95	1.19	-0.33	-0.39	0.68	1.17	12.60	5.74
R-5-3	2.12	-0.20	1.68	1.36	0.24	0.25	0.46	1.02	22.40	2.01
R-5-4	0.67	-21.45	1.15	1.34	-0.59	-0.81	0.51	1.37	13.80	.30
R-6-1	0.47	2.88	0.75	1.65	-0.41	-0.64	0.48	1.55	9.50	.08
R-6-2	1.12	-0.60	1.29	1.99	-0.10	-0.04	0.28	0.39	18.80	1.77
R-6-3	2.27	-0.62	1.27	1.98	0.42	0.45	0.26	1.06	20.20	1.00
R-7-1	0.32	3.93	0.49	2.27	-0.27	-0.17	0.32	0.65	6.40	.32
R-7-2	2.51	-0.39	1.48	1.90	0.40	0.50	0.29	1.24	22.60	.79
R-7-3	2.33	-0.50	1.40	1.91	0.38	0.49	0.33	1.29	21.00	.53
R-8-2	0.51	-41.38	0.84	1.56	-0.47	-0.55	0.44	1.18	10.60	.15
R-8-3	1.13	-0.40	1.47	1.80	-0.21	-0.12	0.34	0.57	20.20	.75
R-9-1	0.50	- 1.40	-1.07	1.94	-0.57	-0.06	0.85	0.11	10.40	
R-9-2	2.00	-0.60	1.36	1.97	0.28	0.31	0.23	1.09	19.20	.03
R-9-3	0.42	2.32	0.62	1.73	-.032	-0.33	0.37	1.03	7.30	.12
R10-1	0.26	1.42	0.14	1.58	0.56	0.56	0.27	1.01	3.00	
R10-2	0.60	-1.15	0.96	1.89	-0.35	-0.35	0141	0.99	13.00	.12
R10-3	0.65	-2.87	0.96	1.54	-0.36	-0.44	0.38	1.23	12.60	.13
R11-1	0.54	1.52	0.56	0.53	-0.11	-0.17	0.63	1.63	8.80	
R11-2	0.51	1.81	0.87	1.26	-.062	-0.70	0.43	1.14	9.80	.14
R11-3	0.53	1.70	0.56	0.61	-0.12	-0.37	0.72	3.07	9.00	.04
R12-1	0.43	16.23	0.68	1.67	-0.39	-0.57	0.43	1.45	8.80	.22
R12-2	0.54		0.84	1.57	-0.40	-0.54	0.37	1.34	10.60	.17
R13-1	0.49	2.13	0.56	0.95	-0.21	-0.97	1.15	4.68	9.20	.09
R13-2	0.39	1.50	0.42	0.74	-0.14	-1.24	1.58	8.71	7.00	.08
R13-3	0.65	-1.04	1.03	1.87	-0.36	-0.45	0.30	1.24	14.20	.36
R14-1	0.86	-0.78	1.10	1.58	-0.23	-0.28	0.41	1.23	15.60	.16
R14-2	0.13	1.80	0.04	4.09	0.45	0.26	0.39	0.58	0.56	.14
R14-3	0.38	1.52	0.37	0.87	0.02	-0.56	1.38	-27.54	5.50	.23
R14-4	0.78	-1.08	1.00	1.87	-0.19	-0.27	0.32	1.40	14.00	.42
R14-5	0.63	-61.26	0.80	1.52	-0.23	-0.46	0.49	2.02	11.20	.14
R15-1	0.38	1.84	0.38	1.08	0.01	0.42	1.62	38.74	5.10	.24
R15-2	3.05	-0.34	1.44	2.07	0.53	0.65	0.26	1.24	24.20	
R15-3	2.43	-0.58	1.21	2.06	0.49	0.53	0.27	1.09	21.00	1.38

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S

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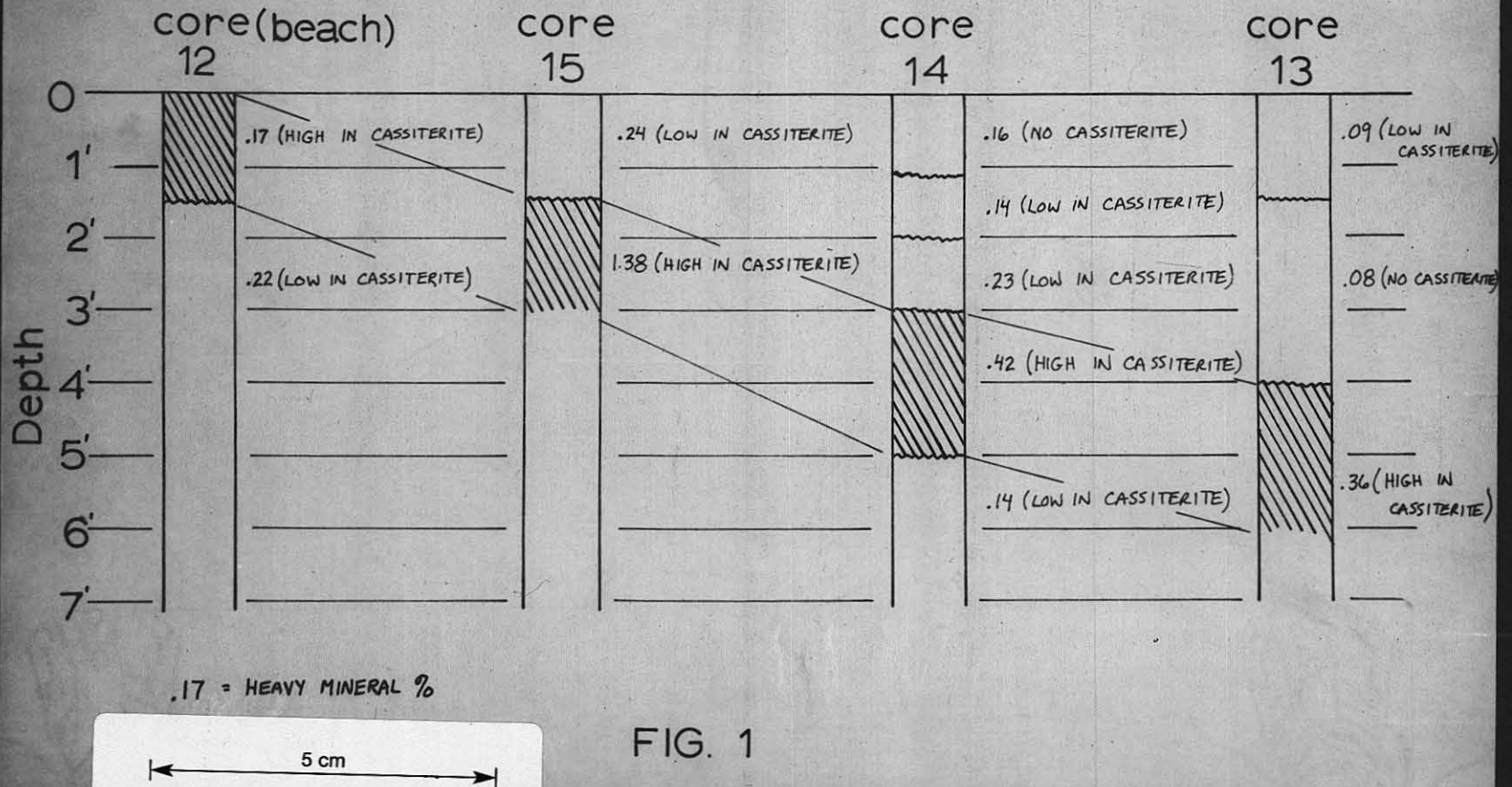
178C44 N

DEEP BAY X-SECTION

100 meters between cores



.17 = HEAVY MINERAL %

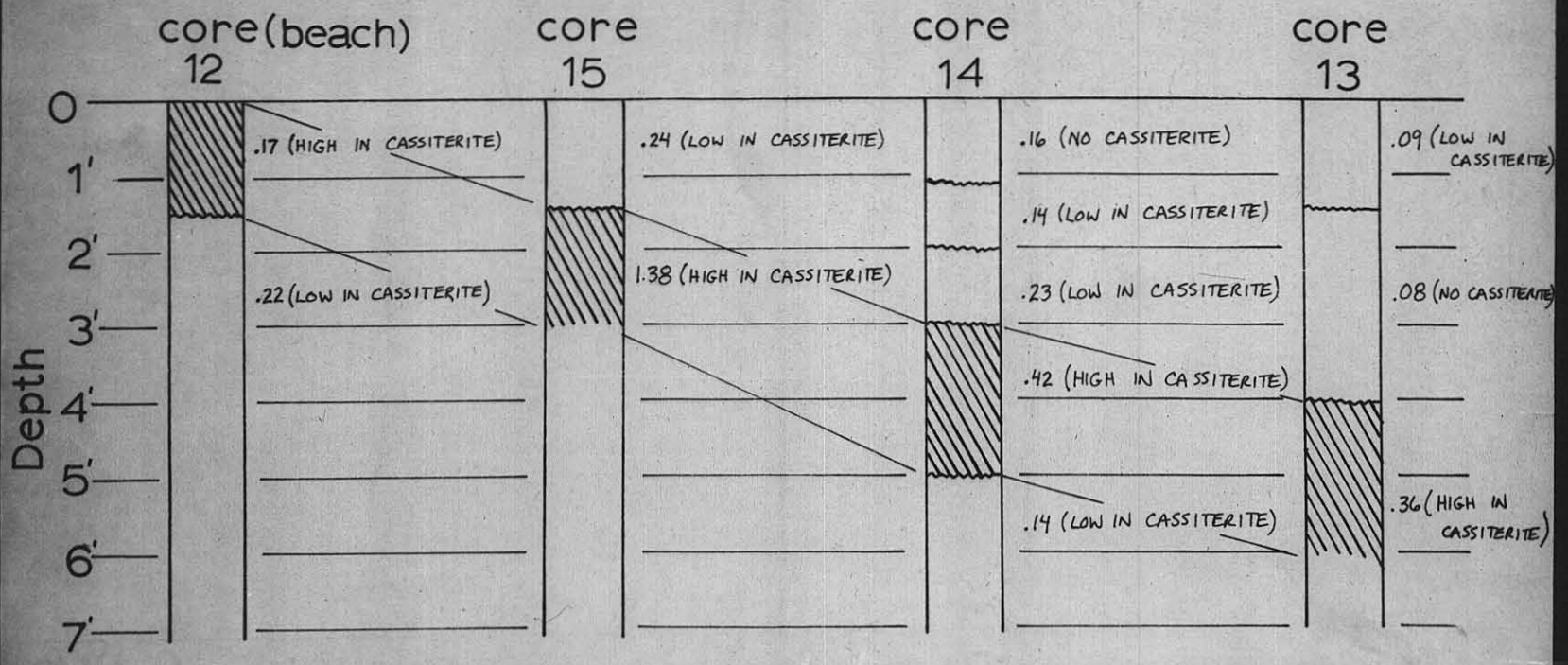
5 cm

FIG. 1

S N

DEEP BAY X-SECTION

100 meters between cores



.17 = HEAVY MINERAL %

5 cm

FIG. 1 (cont.)

LEGEND

GROUP 1 — Algal Nodules

GROUP 2 — Rock

GROUP 3 (East) / GROUP 4 (West) — Bryozoan Debris (Minor amounts of shells and Terrigenous sediments)

GROUP 5 — Mainly Terrigenous Sediments (Minor amounts of bryozoan and shell)

GROUP 6 (South) / GROUP 7 (North) — Terrigenous Sediments

■ 270 (A) Offshore Sample
● 510 (M) Offshore Sample
▲ 36 (C) Beach Sample
● 293

FLINDERS ISLAND
Adelaide Bay
Great Dog Is
Vansittart Is
CHAPPELL ISLANDS
Mt. Chappell Island
Goose Is
Badger Island
Tin Kettle Is
Anderson Island
FRANKLIN SOUND
AMG 612900 E 5538900 N
Deep Bay
Rooks River
Long Island
CAPE BARREN ISLAND
Thunder and Lightning Bay
Half Moon Bay
Kent Bay
CHANNEL
Preservation Is
ARMSTRONG
Forsyth Island
Passage Is
AMG 696797 mE 5539658 mN
CLARKE ISLAND
BANKS STRAIT
Cape Portland
Swan Island
AMG 553959 mE 5485387 mN
Waterhouse Island
RINGAROOMA BAY
AMG 574400 E 5475350 N
Mussel Roe Bay
Cape Naturaliste
Eddystone Point
Boobyalla River
Ringarooma River
Great Mussel/Roe River

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PLAN OF SAMPLE LOCATIONS & AREAL DISTRIBUTION OF SEDIMENTOLOGICAL ENVIRONMENTAL ZONES

BANKS STRAIT

B.H.P. AND UTAH DEVELOPMENT COMPANY
JOINT VENTURE

178046

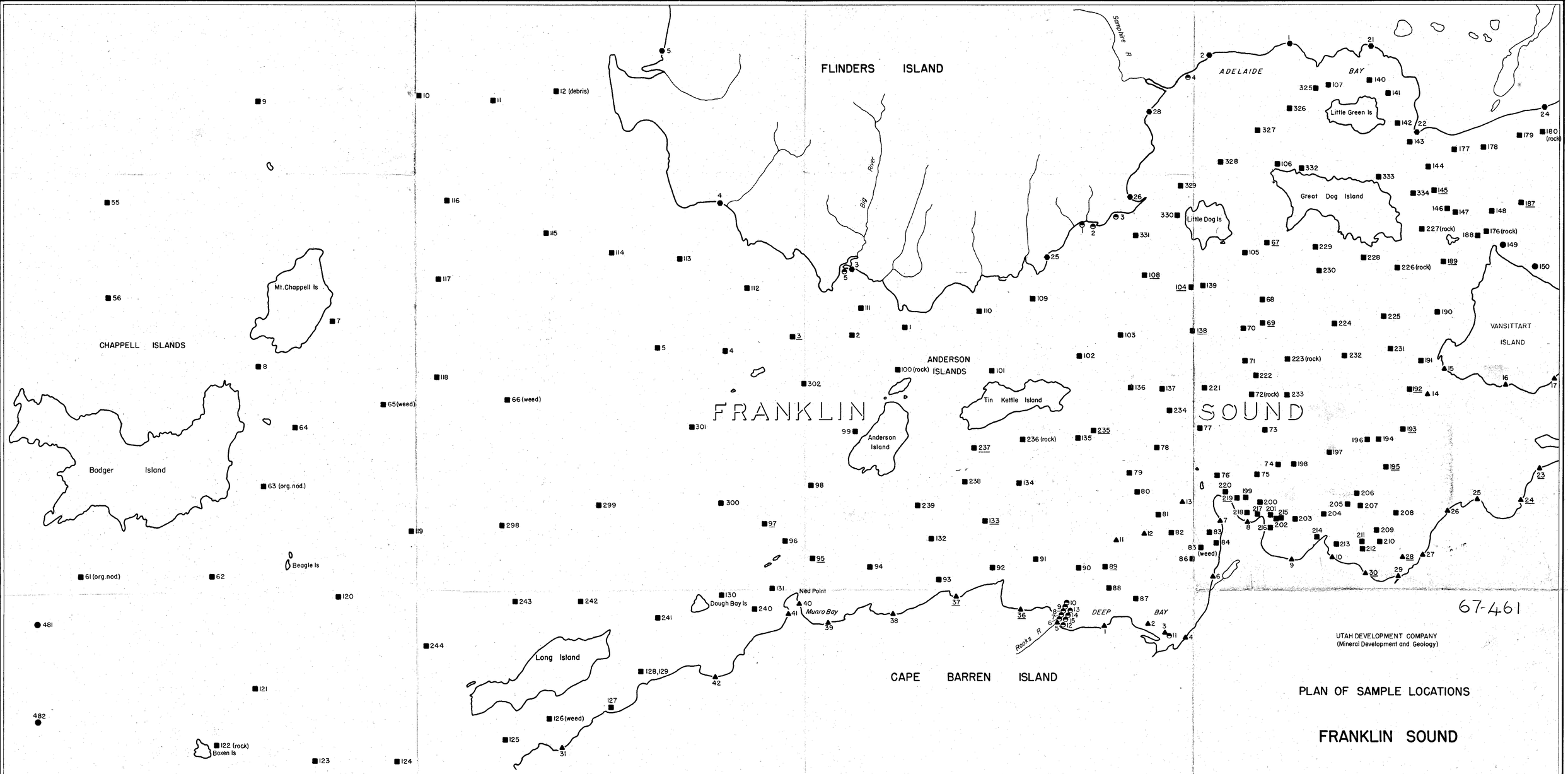
Plate I

5 cm

Scale in Miles
5 0 5 10

AMG REFERENCE POINTS ADDED

C.R.Report No. 574
R.A.Slater and
C.V.G.Phipps of
University of Sydney
April 1967



LEGEND

- ■132, ■237 (A) Offshore sample, tin present
- ● 482 (M) Offshore sample
- ▲26, ▲30 (C) Beach sample, tin present (Cape Barren Island)
- ● 25 (F) Beach sample (Flinders Island)
- ◓ 15 Core sample

67-461

UTAH DEVELOPMENT COMPANY
(Mineral Development and Geology)

PLAN OF SAMPLE LOCATIONS

FRANKLIN SOUND

B.H.P. AND UTAH DEVELOPMENT COMPANY
JOINT VENTURE

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Plate 2

Scale in Miles

1 0 1 2 3 4

5 cm

G.R. Report No. 574
R.A. Slater and
C.V.G. Phipps of
University of Sydney
April 1967

4191