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U.S.G.S. MARINE GEOLOGIC STUDIES IN THE BEAUFORT SEA OFF NORTHERN ALASKA, 1970 THROUGH 1972; DATA TYPE AND LOCATION

By

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Open-file report

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The rapidity with which data is gathered versus the lag time involved in digesting, interpreting and disseminating the data, coupled with the presently increasing interest in this geographic region has prompted us to report on the types and locations of data we have recorded.

Most of the data is presently being studied and a substantial portion is in the report stage as noted below.

During September 1970, the 40-foot research vessel NATCHIK of the Naval Arctic Research Lab was used in the area between the Colville River and Prudhoe Bay. In 1971 studies were conducted during August and September from the NATCHIK, the 40-foot research vessel LOON and the icebreaker GLACIER. During May and June, 1972 coastal studies of the overflow of the Kuparuk River were based at Pt. MacIntyre. Starting in July seismic and sampling surveys were again carried on from the LOON, GLACIER, and NATCHIK covering the area between Barter Island and Point Barrow but concentrating on the region between the Colville River and Sagavanirktok River.

The data is reported in two parts; (a) a text and listing of observation locations and data collected and (b) maps showing seismic tracklines and sampling locations at the 1:700,000 scale of C&GS chart 9403, and the 1:80,000 scale of Reimnitz, et al (1972).

SEISMIC PROFILING (Figure 1)

The 1970 profiling system consisted of a 3.5 KHz transducer and transceiver with power levels up to 10 kw coupled to a Gifft facsimile recorder that was run at a 1/4 second sweep rate. The records from the summer season's efforts are fair to poor.

In 1971 a low-power high resolution arcer system and fathometer was used. A multi-tip electrode released 500 joules at 1/2 second interval. The received signal was filtered through a band pass of 430 to 960 Hz and recorded at a 1/4 second sweep rate. The records from this survey are generally fair to good, although the acoustic nature of the sediments seem to preclude any outstanding high resolution profiles.

Records in 1972 were obtained primarily using an EG&G Uniboom system at 200 joules with a 1/4 second pulse interval. The received signal band pass of 500 to 1600 Hz was recorded on an EPC model 4100 facsimile recorder at 1/4 second sweep rate. Concurrently, bathymetry was recorded from a 12 KHz signal on a Gifft facsimile recorder, partly at 1/8 and partly at 1/4 second sweep rates. The records generally are as good as could be expected considering the apparent acoustical nature of the upper section.

SIDE SCAN SONAR MAPPING (Figure 2)

An EG&G model MK I-A side scan sonar system was used during the 1972 open-water season. This system uses two sets of 105 KHz

transducers each with a 1° horizontal beam width. The received signals are printed on a 11 inch dual helix facsimile recorder--one helix for each transducer--generally on a 500 foot scale which covers a 1000 foot swath of ocean bottom; 500 feet on each side of the transducer. On the LOON the tow fish cable was passed through an "A" frame, thus completely avoiding the problems associated with wake interference and allowing us to obtain good records in shallow water (less than 2 meters). Aboard the GLACIER it was towed directly astern and below the ship's wake. The records obtained vary from fair to excellent.

REFRACTION DATA

In an attempt to delineate permafrost velocities, 5 sonobuoy profiles were made during 1972 (fig. 2) using both a small arcer at 400 joules and the Uniboom at 200 joules of power. The sonobuoys used were Magnavox AN/SSQ 41-A which transmitted an FM signal to a receiver-filter on the LOON which was coupled to an EPC model 4100 Facsimile Recorder. The average length of record for the refracted signals was about 1 nautical mile. In addition a small portable seismic unit was used to run refraction profiles onshore at selected locations on the barrier islands, beaches and tundra.

SEDIMENT SAMPLES (Figures 3, 4, & 5) -- the abbreviations in paranthesis refer to Table I

Surficial grab (Gr) samples were primarily taken with a Van Veen clam shell type grab. A few samples were obtained with

a Smith McIntyre and a Shipek grab. All of these samplers penetrate 10-20 cm into the substrate and collect 0-20 liters of sediment. Generally subsamples of the grabs were taken for foraminiferal (Fm), frozen (Fz) and geochemical (Gc) studies.

Core samples were taken with 6 devices. Three different gravity corers were used rather unsuccessfully on the shelf, and one was also used as a trigger weight for piston coring. A larger hydroplastic or Sigma corer was used quite successfully on the slope and outer shelf. On the continental rise an Ewing type of piston corer obtained cores up to 10 meters in length. Large undisturbed sediment samples were collected on the shelf and slope using a Reineck type box corer.

THERMAL STUDIES

The temperature probe used in the offshore studies consists of a thin (.5 cm) 3 m probe which contains 3 thermisters (internally) spaced at 1 meter intervals from the tip of the probe. The probe is driven into the sediment with a special drive shoe and guide assembly which keeps the probe from bending. Thermister resistance was read from a precision Wheatstone bride. Results have been only fair.

MISCELLANEOUS GEOLOGIC DATA

During the period of thaw and initial river overflow onto the shore fast ice in May and June of 1972, observations were made on the character of the sea ice and the ice/sediment contact (Is) in

the region of overflow. Concurrently river overflow material and river sediments were sampled (Mg). Other observations at this time included time lapse photography of the overflow phenomenon and aerial photography.

In 1971 photographs of the bottom (Cm) were obtained from an Ewing type bottom camera with fairly good results. An EG&G model 210 camera system was used in 1972 achieving good coverage of different bottom types at varied depths with most of the stations having stereoscopic coverage. On the inner shelf a diver held Rollie Marine camera and MK 100 Subsea Strobe were used but poor visibility made it difficult for divers (Dv) to obtain good photographs.

Numerous sediment samples have been collected and observations made along beaches (Cs), on ice floes (If) and by diving (Dv) on the inner shelf.

OCEANOGRAPHIC DATA

In order to study sediment dispersal and transport processes numerous observations were made of water characteristics; mainly on currents (Cu), temperature and salinity (Ts), turbidity, and on water samples (Wa) collected for particulate matter studies. Currents (Cu) were measured using a Geodyne model 102 self-recording Savonius type meter. Inshore currents were measured with a current cross and a Bendix model Q-9 Savonius meter with a deck readout. During the

the region of overflow. Concurrently river overflow material and river sediments were sampled (Mg). Other observations at this time included time lapse photography of the overflow phenomenon and aerial photography.

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1972 season 5000 bright orange drift cards (Dc) in water tight plastic bags were distributed. Profiles of light transmissivity in the water column were obtained using a Hydro Products model 620 Transmissometer (Tx) and depth sensor connected to an X-Y plotter. During the seismic survey of the LOON in 1972 surficial temperature, salinity and transmissivity were measured at 15 minute intervals but these data points are not shown here. Water turbidity was measured with a standard Secchi disc (Sd) during some phases of the work.

Temperatures and salinities (Ts) were measured with a Beckman portable salinometer, model RS5. This instrument is reliable to $\pm$ 0.5°C and $\pm$ 1 °/oo salinity.

NAVIGATION

The inshore studies of the LOON and NATCHIK have relied on a variety of navigational techniques including one or more of the following: horizontal sextant angles, radar fixes and dead reckoning from known locations onshore. Probable position uncertainties of .1-.4 km near the coast and of as much as 2 km on the seaward end of some tracklines were evident. Navigation on the GLACIER was primarily by a satellite system, which has an error of less than 1 km. Most positions established by the GLACIER are located within that error.

DATA ANALYSES

The following laboratory analyses and data reduction are planned

or have been accomplished on information gathered to date.

(a) Examination of seismic profiles, side-scan and bathymetry records for Holocene sediment thickness, permafrost features, and ice gouging history and intensity.

(b) Textural and compositional analysis of sediments.

(c) Trace element and hydrocarbon content of selected sediment samples.

(d) Quantitative and compositional analysis of suspended particulate matter.

(e) Analysis of box cores and large diameter piston cores for sedimentary structures and depositional history.

(f) Inshore oceanographic studies of temperature salinity, turbidity, currents and ice correlating field data with aerial observations and repetitive ERTS-1 satellite imagery.

REPORTS; PAPERS COMPLETED

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Reimnitz, Erk, and Barnes, P. W., 1972, Studies of the inner shelf and coastal sedimentation environment of the Beaufort Sea from ERTS-A: National Technical Information Service Weekly Abstracts, E72-10062, 5 p.

Reimnitz, Erk, and Barnes, P. W., 1972, Studies of the inner shelf and coastal sedimentation environment of the Beaufort Sea from ERTS-A: National Technical Information Service Weekly Abstracts, E72-10248, 6 p.

Reimnitz, Erk, Barnes, P. W., Forgatsch, T. C., and Rodeick, C. A., 1973, Influence of grounding ice on the Arctic shelf of Alaska: Marine Geol. (in press).

Reimnitz, Erk, and Bruder, K. F., 1972, River discharge into an ice-covered ocean and related sediment dispersal, Beaufort Sea, Coast of Alaska: Geol. Soc. Am. Bull., v. 83, p. 861-866.

Reimnitz, Erk, Wolf, S. C., and Rodeick, C. A., 1972, Preliminary interpretation of seismic profiles in the Prudhoe Bay area, Beaufort Sea, Alaska: U.S. Geol. Surv. Open File Report.

KEY TO STATION OBSERVATIONS. FURTHER EXPLANATION GIVEN IN TEXT.

Cm - Underwater camera - bottom photos

Cr - Core--gravity, piston or box

Cs - Coastal samples - beach samples - observations

Cu - Current observations using current meter or cross

Dc - Drift cards released

Dv - SCUBA dive location

Fm - Forams - sediment sampled for foraminifera

Fz - Frozen - sediment sample frozen for chemical studies

Gc - Geochemical analysis - hydrocarbon background

Gr - Grab sample of sediments

Is - Ice studies - observations offshore fast ice

If - Ice floe - sample of ice floe sediment

Mg - Miscellaneous geologic data - qualitative and quantitative observations

Pk - Plankton tow

Sd - Secchi disc measurement of water clarity

Tp - Temperature probe

Ts - Temperature and salinity observations

Tx - Transmissometer - observation of water clarity

Wa - Water sample for particulate matter determination

LOCATION AND FIELD NUMBERS

In the tables location numbers refer only to the locations plotted on the accompanying maps and are used only for plotting purposes. Field numbers are unique numbers and letters which we use to identify the sample or data and are assigned in the field.

BEAUFORT SEA SAMPLE LOCATIONS DURING 1970 THROUGH 1971
(See notes for complete explanation)

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
1	71ABP1	231	70°15.5	143°40	1.0	26	Cr Fm Gr Sd Tx Wa
2	2	232	23.2	33	1.0	44	Gr Sd Tx Wa
3	3	232	27.0	34	1.0	45	Cr Gr Tx
4	4	232	32.7	37	1.0	60	Cr Fm Sd Tx Wa
5	5	232	34.6	38	1.0	106	Fm Gc Gr Sd Tx Wa
6	6	232	45.6	42	1.0	507	Fm Gc Gr Pk Sd Tx Wa
7	7	233	71°00.5	145°35	1.0	509	Cr Fm Gc Gr IF Pk Sd Tx Wa
8	8	234	70°48.5	56	1.0	81	Cr Fm Gc Gr Sd Tx Wa
9	9	234	44.0	52	1.0	56	Fm Gc Gr Sd Tx Wa
10	10	234	38.3	146°01	1.0	49	Cm Cr Fm Gc Gr Sd Tx Wa
11	11	234	25.3	08	1.0	33	Cm Cr Fm Gc Gr Sd Tx Wa
12	12	234	18.0	05	1.0	26	Fm Gc Gr Sd Tx Wa
13	13	234	20.7	34	1.0	31	Cm Cr Fm Gc Gr Tx Wa
14	14	235	25.0	147°05	1.0	28	Cm Fm Gc Gr Tx Wa
15	15	235	36.5	00	1.0	32	Cm Cr Fm Gc Gr Sd Tx Wa
16	16	235	45.0	00	1.0	46	Cm Cr Fm Gc Gr Sd Tx Wa
17	17	235	50.0	06	1.0	46	Fm Gr Sd Tx
18	18	235	56.5	06	1.0	125	Cr Fm Gc Gr Sd Tx Wa
19	19	236	71°00.0	04	1.0	365	Cr Fm Gc Gr Pk Sd Tx Wa
20	20	236	13.7	23	1.0	>2000	Cr Gr Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
21	71ABP21	238	71°22.8	147°55	1.0	>2850	Cr Fm Gc Gr Pk Sd Tx Wa
22	22	238	09.4	148°00	1.0	560	Fm Gc Gr Sd Tx Wa
23	23	239	70°38.4	04	1.0	27	Cm Cr Cu Dv Fm Gc Gr Sd Tx Wa
24	24	240	38.4	04	1.0	27	Cr Sd Tx
25	25	240	31.2	147°31	1.0	26	Fm Gr
26	26	240	40.0	34	1.0	29	Fm Gr
27	27	241	54.5	26	1.0	47	Cm Fm Gc Gr Tx Wa
28	28	241	59.0	24	1.0	62	Cm Fm Gr Sd Tx Wa
29	29	241	71°07.8	148°01	1.0	310	Cr Fm Gc Pk Gr Sd Tx Wa
30	30	242	05.0	147°58	1.0	93	Fm Gr Tx
31	31	242	01.5	02	1.0	52	Cr Fm Gr Sd Tx
32	32	242	70°54.0	147°59	1.0	34	Fm Gc Gr Sd Tx Wa
33	33	242	49.0	148°03	1.0	41	Fm Gr Sd Tx Wa
34	34	242	44.0	01	1.0	38	Fm Gc Gr Sd Tx Wa
35	35	242	40.0	03	1.0	27	Sd Tx
36	36	242	37.2	11	1.0	22	Fm Gr Sd Tx Wa
37	37	242	43.1	19	1.0	33	Fm Gc Gr Tx
38	38	243	44.9	22	1.0	31	Cr Fm Gr Tx Wa
39	39	243	50.7	24	1.0	36	Fm Gc Gr Tx
40	40	243	54.3	22	1.0	37	Fm Gr Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
41	71ABP41	243	71°00.0	148°16	1.0	47	Fm Gr Sd Tx Wa
42	42	243	09.3	19	1.0	> 450	Fm Gc Gr Sd Tx Wa
43	43	243	12.0	36	1.0	118	Fm Gc Gr Sd Tx Wa
44	44	243	01.6	23	1.0	48	Fm Gc Gr Tx Wa
45	45	243	70°57.0	31	1.0	39	Cr Fm Gc Gr Tx Wa
46	46	244	53.0	38	1.0	36	Fm Gr Tx
47	47	244	48.6	44	1.0	33	Cm Fm Gc Gr Tx Wa
48	48	244	43.4	42	1.0	23	Cm Fm Gr Sd Tx Wa
49	49	244	36.0	50	1.0	22	Cr Fm Gc Gr Sd Tx Wa
50	50	245	44.0	48	1.0	24	Fm Gr Sd Tx
51	51	245	49.5	50	1.0	32	Fm Gc Gr Sd Tx Wa
52	52	246	56.0	50	1.0	37	Fm Gr Tx
53	53	246	71°00.0	51	1.0	37	Fm Gr Tx Wa
54	54	246	07.5	50	1.0	48	Fm Gr Sd Tx
55	55	246	12.0	44	1.0	302	Fm Gc Gr Sd Tx Wa
57	57a	246	20.2	149°07	1.0	1565	Fm Gc Gr Pk Sd Tx Wa
97	57b	247	23.4	39	1.0	1625	Cr
58	58a	248	15.4	03	1.0	980	Fm Gr Sd Tx Wa
98	58b	248	14.4	25	1.0	1042	Cr Sd Tx Wa
59	59	248	11.9	31	1.0	192	Pk Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
60	71ABP60	248	71°12.0	149°15	1.0	63	Cm Cr Fm Gc Gr Wa
61	61	249	10.0	19	1.0	50	Cr Fm Gr Tx
62	62	249	70°55.2	148°57	1.0	36	Cm Cr Fm Gr Sd Tx Wa
63	63	249	43.0	149°00	1.0	26	Cm Fm Gc Gr Sd Tx Wa
67	67	250	39.0	148°21	1.0	20	Cu Dv
69	69	251	41.2	22	1.0	23	Cm Cu Dv Gr Sd Tx Wa
71	71	252	71°04.0	151°22	1.0	21	Cm Dg Fm Gr Sd Tx Wa
72	72	252	11.0	14	1.0	47	Cm Cr Gr Tx Wa
74	74	253	20.0	13	1.0	93	Cm Gr Pk
75	75	253	14.8	150°28	1.0	140	Cm Fm Gr Sd Tx Wa
76	76	253	09.3	28	1.0	95	Gr
77	77	253	04.7	28	1.0	24	Cm Cr Gr Sd Tx Wa
78	78	254	70°58.4	149°59	1.0	29	Cm Gr Tx Wa
79	79	254	58.2	53	1.0	27	Cm Gr Tx
80	80	254	55.7	23	1.0	33	Cm Cr Fm Gr Tx Wa
81	81	254	71°08.1	22	1.0	47	Fm Gr Sd Tx Wa
82	82	254	08.3	48	1.0	45	Fm Gr Sd Tx Wa
83	83	254	11.5	46	1.0	257	Cm Pk Sd Tx Wa
84	84	255	17.2	150°24	1.0	1000	Cr Gr Tx Wa
85	85	255	22.5	34	1.0	1054	Fm Gr Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
60	71ABP60	248	71°12.0	149°15	1.0	63	Cm Cr Fm Gc Gr Wa
61	61	249	10.0	19	1.0	50	Cr Fm Gr Tx
62	62	249	70°55.2	148°57	1.0	36	Cm Cr Fm Gr Sd Tx Wa
63	63	249	43.0	149°00	1.0	26	Cm Fm Gc Gr Sd Tx Wa
67	67	250	39.0	148°21	1.0	20	Cu Dv
69	69	251	41.2	22	1.0	23	Cm Cu Dv Gr Sd Tx Wa
71	71	252	71°04.0	151°22	1.0	21	Cm Dg Fm Gr Sd Tx Wa
72	72	252	11.0	14	1.0	47	Cm Cr Gr Tx Wa
74	74	253	20.0	13	1.0	93	Cm Gr Pk
75	75	253	14.8	150°28	1.0	140	Cm Fm Gr Sd Tx Wa
76	76	253	09.3	28	1.0	95	Gr
77	77	253	04.7	28	1.0	24	Cm Cr Gr Sd Tx Wa
78	78	254	70°58.4	149°59	1.0	29	Cm Gr Tx Wa
79	79	254	58.2	53	1.0	27	Cm Gr Tx
80	80	254	55.7	23	1.0	33	Cm Cr Fm Gr Tx Wa
81	81	254	71°08.1	22	1.0	47	Fm Gr Sd Tx Wa
82	82	254	08.3	48	1.0	45	Fm Gr Sd Tx Wa
83	83	254	11.5	46	1.0	257	Cm Pk Sd Tx Wa
84	84	255	17.2	150°24	1.0	1000	Cr Gr Tx Wa
85	85	255	22.5	34	1.0	1054	Fm Gr Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
60	71ABP60	248	71°12.0	149°15	1.0	63	Cm Cr Fm Gc Gr Wa
61	61	249	10.0	19	1.0	50	Cr Fm Gr Tx
62	62	249	70°55.2	148°57	1.0	36	Cm Cr Fm Gr Sd Tx Wa
63	63	249	43.0	149°00	1.0	26	Cm Fm Gc Gr Sd Tx Wa
67	67	250	39.0	148°21	1.0	20	Cu Dv
69	69	251	41.2	22	1.0	23	Cm Cu Dv Gr Sd Tx Wa
71	71	252	71°04.0	151°22	1.0	21	Cm Dg Fm Gr Sd Tx Wa
72	72	252	11.0	14	1.0	47	Cm Cr Gr Tx Wa
74	74	253	20.0	13	1.0	93	Cm Gr Pk
75	75	253	14.8	150°28	1.0	140	Cm Fm Gr Sd Tx Wa
76	76	253	09.3	28	1.0	95	Gr
77	77	253	04.7	28	1.0	24	Cm Cr Gr Sd Tx Wa
78	78	254	70°58.4	149°59	1.0	29	Cm Gr Tx Wa
79	79	254	58.2	53	1.0	27	Cm Gr Tx
80	80	254	55.7	23	1.0	33	Cm Cr Fm Gr Tx Wa
81	81	254	71°08.1	22	1.0	47	Fm Gr Sd Tx Wa
82	82	254	08.3	48	1.0	45	Fm Gr Sd Tx Wa
83	83	254	11.5	46	1.0	257	Cm Pk Sd Tx Wa
84	84	255	17.2	150°24	1.0	1000	Cr Gr Tx Wa
85	85	255	22.5	34	1.0	1054	Fm Gr Sd Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
86	71ABP86	255	71°30.2	150°31	1.0	2150	Cr Tx Wa
87	87	257	38.8	153°00	1.0	97	Cm Cr Gr Sd Tx Wa
88	88	258	32.2	152°55	1.0	58	Cm Gr
89	89	258	22.2	52	1.0	100	Gr Tx Wa
90	90	258	07.5	153°00	1.0	24	Cr Cu Fm Gr Sd Wa
91	91	259	23.0	34	1.0	52	Gr
92	92	259	22.6	154°04	1.0	38	Fm Gr
93	93	259	25.2	28	1.0	31	Cr
94	94	259	23.8	32	1.0	28	Cu
95	95	260	32.2	156°04	1.0	163	Cr
96	70ABP1		35.0	155°50	1.0	78	Gr
101	71AJT1	241	70°24.6	148°23.2	1.0	3.5	Fm Gr Sd Ts Tx Wa
102	2	242	20.6	23.2	0.2	2.6	Fm Gr Sd Ts Tx Wa
103	3	242	27.0	15.3	0.3	8.5	Fm Gr Sd Ts Tx Wa
104	4	243	30.0	00.0	0.3	11.3	Fm Gr Sd Ts Tx Wa
105	5	243	26.2	00.0	0.5	6.7	Fm Gr Sd Ts Tx Wa
106	6	243	22.6	00.0	0.8	4.6	Fm Gr Sd Ts Tx Wa
107	7	243	23.5	147°45.0	1.5	7.6	Fm Gr Sd Ts Tx Wa
108	8	243	22.1	30.0	0.5	6.7	Fm Gr Sd Ts Tx Wa
109	9	244	18.5	30.0	1.0	5.5	Fm Gr Sd Ts Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
110	71AJT10	244	70°14.0	147°30.0	0.5	5.0	Fm Gr Sd Ts Tx Wa
111	11	244	16.8	15.0	2.0	8.5	Fm Gr Sd Ts Tx Wa
112	12	244	11.3	02.0	0.5	5.2	Fm Gr Sd Ts Tx Wa
113	13	244	12.8	47.8	0.5	4.0	Fm Gr Sd Ts Tx Wa
114	14	244	16.3	00.0	0.5	4.9	Fm Gr Sd Ts Tx Wa
115	15	248	23.8	148°29.0	0.3	2.6	Fm Gr Sd Ts Tx Wa
116	16	248	26.5	30.0	0.5	7.0	Fm Gr Sd Ts Tx Wa
117	17	248	28.0	45.0	0.5	4.6	Fm Gr Sd Ts Tx Wa
118	18	248	31.0	45.0	0.5	13.7	Fm Gr Sd Ts Tx Wa
119	19	248	29.2	30.0	0.7	8.8	Fm Gr Sd Ts Tx Wa
120	20	249	31.8	30.0	0.5	14.6	Fm Gr Sd Ts Tx Wa
121	21	249	34.3	45.0	0.5	16.8	Fm Gr Sd Ts Tx Wa
122	22	250	35.5	30.0	1.0	20.4	Fm Gr Sd Ts Tx Wa
123	23	251	30.9	149°00.0	0.5	11.0	Fm Gr Sd Ts Tx Wa
124	24	251	34.8	00.0	0.5	17.8	Fm Gr Sd Ts Tx Wa
125	25	251	38.3	00.0	0.8	18.3	Fm Gr Sd Ts Tx Wa
126	26	251	43.0	22.5	1.0	17.0	Fm Gr Sd Ts Tx Wa
127	27	251	47.7	45.0	1.0	19.2	Fm Gr Sd Ts Tx Wa
128	28	251	43.6	45.0	1.0	18.0	Fm Gr Sd Ts Tx Wa
129	29	251	39.4	45.0	0.5	14.6	Fm Gr Sd Ts Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
130	71AJT30	251	70°34.7	149°45.0	0.2	7.6	Cm Fm Gr Sd Ts Tx Wa
131	31	252	33.8	150°07.7	0.2	7.6	Fm Gr Is Sd Ts Tx Wa
132	32	252	35.0	30.0	0.5	8.5	Fm Gr Is Sd Ts Tx Wa
133	33	252	40.5	30.0	1.0	16.2	Fm Gr Is Sd Ts Tx Wa
134	34	252	46.0	30.0	1.2	18.0	Fm Gr Is Sd Ts Tx Wa
135	35	252	52.0	30.0	1.5	19.8	Cm Fm Gr Sd Ts Tx Wa
136	36	252	44.0	07.5	1.5	17.1	Fm Gr Sd Ts Tx Wa
137	37	253	29.0	149°06.5	0.2	2.1	Fm Gr Sd Ts Tx Wa
138	38	253	31.6	26.1	0.3	1.5	Fm Gr Sd Ts Tx Wa
139	39	253	31.6	45.0	0.2	2.1	Gr Sd Ts Tx Wa
140	40	253	34.3	22.5	0.5	10.4	Gr Sd Ts Tx Wa
141	41	254	32.0	148°18.0	1.0	14.0	Gr Sd Ts Tx Wa
142	42	254	34.3	05.0	1.5	22.0	Gr Sd Ts Tx
143	43	254	30.0	147°30.0	1.0	22.6	Gr Sd Ts Tx Wa
144	44	254	25.8	36.7	0.5	11.0	Gr Sd Ts Tx Wa
145	45	254	24.0	148°15.0	1.0	3.4	Gr Sd Ts Tx Wa
151	70BS-A	174	29.8	150°02.2	0.5	3.5	Gr
152	B	172	24.5	148°40.6	0.1	1.0	Gr
153	C	170	29.4	147°56.4	2.0	8	Gr
154	D	170	25.0	35.5	2.0	15	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
154	70BS-D	170	70°25.0	147°35.5	2.0	15	Gr
155	E	170	20.2	19.7	2.0	1.0	Gr
156	F	170	30.8	149°07.6	0.5	1.5	Gr
157	1	259	34.2	53.0	2.0	2.5	Gr Sd Ts
158	2	259	33.8	53.5	2.0	0.5	Gr Is
159	3	259	35.0	53.3	2.0	10	Gr
160	4	259	36.4	53.8	2.0	10	Gr
161	5	259	37.8	54.3	2.0	12	Gr
162	6	259	39.1	54.8	2.0	13	Gr
163	7	259	41.0	54.8	2.0	16	Gr Is
164	8	259	39.9	150°01.5	2.0	15	Gr
165	9	259	37.4	02.3	2.0	13	Gr
166	10	259	35.9	02.9	2.0	10.5	Gr
167	11	259	31.9	05.5	2.0	3	Gr
168	12	259	30.4	07.5	0.5	3	Gr Ts
169	13	260	27.0	08.1	0.5	1.5	Gr Sd Ts
170	14	260	31.0	149°22.3	0.5	2	Gr Sd
171	15	261	32.0	14.5	0.5	4	Gr
172	16	261	36.1	148°44.8	2.0	19	Gr
173	17	261	34.0	50.7	2.0	11	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
174	70BS18	262	70°22.7	148°09.8	1.0	2	Gr
175	19	262	30.9	35.4	2.0	13	Gr Is
176	20	262	30.5	37.8	2.0	10.5	Gr
177	21	262	31.4	34.6	2.0	16	Gr
178	22	262	36.3	25.3	2.0	20	Gr
179	71AER1	243	06.8	143°28.4	0.1	3.6	Cm Cr Gr Tp
180	2	243	18.3	147°00.0	2.0	Sfc	Cm
181	3	252	34.9	150°43.8	1.0	2.0	Cu Gr Is
182	4	252	33.4	44.7	1.0	1.3	Gr
183	5	252	32.8	45.5	1.0	1.5	Gr
184	6	252	32.4	46.2	0.5	1.7	Gr
185	7	252	31.9	47.1	0.5	1.8	Gr
186	8	252	30.9	48.7	0.5	1.2	Gr
187	9	252	34.0	44.0	1.0	3.6	Gr
188	10	252	35.0	44.0	1.0	7.0	Gr
189	11	252	35.8	44.0	1.0	10.7	Gr
190	12	254	29.4	01.4	0.5	3.0	Cr
191	13	254	28.4	08.8	0.5	2.7	Cr Ts
192	14	254	34.1	149°58.9	2.0	6.7	Cr Ts
193	15	256	19.0	148°19.0	0.1	1.0	Gr Tp Ts

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
194	71AER16	257	70°18.9	148°20.7	0.1	3.2	Cr Tp Ts
195	17	257	20.0	22.5	0.5	3.2	Cr Tp Ts
196	18	257	20.6	25.2	0.5	2.7	Cr Tp Ts
197	19	258	21.3	27.1	0.5	1.5	Gr Tp Ts
198	20	258	22.8	31.0	0.1	1.7	Gr Tp Ts
199	21	258	23.8	31.2	0.5	2.6	Cr Tp Ts
200	22	258	24.6	30.1	0.5	4.1	Gr Tp Ts
201	23	258	25.3	30.1	0.5	5.5	Gr Sd Tp Ts
202	24	259	26.0	29.3	1.0	6.8	Gr Tp Ts
203	25	259	27.0	29.0	1.0	8.2	Gr
204	26	260	28.9	12.6	2.0	2.4	Gr Ts
205	27	262	17.9	147°49.4	0.5	0.6	Gr Sd Ts
206	28	262	17.9	49.0	0.5	0.9	Gr
207	29	262	18.0	48.6	0.5	0.9	Gr Sd Ts
208	30	262	18.1	47.9	0.5	2.1	Cr Sd Ts
209	31	262	18.8	47.5	0.5	3.3	Gr Sd Ts
210	32	262	19.9	45.0	1.0	4.9	Gr Sd Ts
211	33	262	20.6	40.8	2.0	6.1	Gr Sd Ts
212	34	262	21.6	37.0	2.0	8.5	Gr Sd Ts
213	35	262	23.4	32.0	2.0	7.6	Gr Sd Ts

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
214	71AER36	262	70°20.9	147°29.9	2.0	7.3	Gr Sd Ts
215	37	262	18.3	26.1	2.0	7.0	Cr Gr Sd Ts
216	38	262	15.7	23.0	1.0	6.1	Gr Sd Ts
217	39	262	14.0	21.0	1.0	3.7	Gr Sd Ts
218	40	263	13.3	14.2	1.0	Sfc	Cs

BEAUFORT SEA SAMPLE LOCATIONS DURING 1972
(See notes for complete explanation)

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
301	72AER1	142	70°24.50	148°40.9	0.2	1.0	Is Tp Ts
302	2	142	44.80	44.8	0.2	1.3	Is Ts
303	3	142	25.15	44.7	0.2	1.4	Is Ts
304	4	143	24.72	40.6	0.2	1.4	Is Tp Ts
305	5	143	25.08	34.3	0.2	1.0	Is Ts
306	6	143	25.32	34.5	0.2	1.5	Is Ts
307	7	143	25.78	40.1	0.2	0.8	Is
308	8	143	26.09	39.8	0.2	3.4	Is Ts Wa
309	9	144	25.35	44.6	0.2	1.5	Is Ts
310	10	144	25.60	44.5	0.2	1.3	Is Ts
311	11	144	26.52	44.1	0.2	2.2	Is Ts
312	12	144	25.60	42.7	0.2	1.2	Is Ts
313	13	145	26.55	45.8	0.2	1.8	Is Ts Wa
314	14	145	26.52	46.0	0.2	3.2	Is Tp Ts
315	15	145	26.50	46.1	0.2	2.9	Is Ts
316	16	145	26.50	46.1	0.2	3.4	Cu Dc Is Ts Wa
317	17	145	26.51	45.9	0.2	3.1	Is
318	18	149	27.55	43.5	0.5	5.1	Dc Tp Ts Tx Wa
319	19	149	28.25	43.8	0.5	6.4	Cu Dc Is Ts Tx
320	20	149	25.72	50.8	0.5	1.2	Is

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
321	72AER21	149	70°26.02	148°50.8	0.5	1.1	Is
322	22	149	26.41	50.5	0.5	1.0	Is Ts
323	23	149	26.86	50.0	0.5	1.8	Is Tp Ts
324	24	149	27.26	48.9	0.5	1.7	Is Ts
325	25	150	27.45	51.1	0.5	2.2	Is Wa
325	26	150	26.45	54.0	0.5	2.0	Is Ts
327	27	150	27.48	55.0	0.5	2.0	Is Ts
328	28	151	26.30	46.8	0.1	2.4	Is Ts
329	29	151	26.19	46.9	0.1	2.0	Is Ts
330	30	151	26.18	46.3	0.1	1.7	Is Ts
331	31	151	26.83	47.4	0.1	1.9	Is
332	32	151	26.90	47.4	0.1	1.9	Is Ts
333	33	151	26.95	47.4	0.1	2.2	Is Ts Wa
334	34	151	27.00	47.4	0.1	3.1	Is
335	35	153	25.80	31.8	0.5	4.4	Tp Ts Wa
336	36	153	24.43	46.0	0.2	Sfc	Ts Wa
337	37	153	24.66	45.8	0.2	Sfc	Dc Wa
338	38	153	24.61	45.0	0.2	Sfc	Dc Wa
339	39	153	24.43	46.6	0.2	Sfc	Wa
340	40	159	27.70	46.8	0.5	5.1	Dc Wa Ts
341	41	159	27.55	43.6	0.5	5.0	Ts Wa
342	42	159	29.26	43.0	1.0	4.5	Dc Ts Wa
343	43	159	30.15	42.2	1.0	5.5	Dc Ts Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
344	72AER44	159	70°31.31	148°41.3	2.0	12.0	Dc Ts Wa
345	45	159	26.08	39.5	0.5	3.0	Dc Ts Wa
346	46	159	25.09	33.6	0.5	3.7	Ts Wa
347	47	159	23.10	31.8	0.5	4.0	Dc Ts Wa
348	48	160	24.66	40.7	0.2	Sfc	Mg
349	49	160	24.36	40.6	0.1	Sfc	Mg
350	50	160	24.75	43.6	0.1	Sfc	Is Mg
351	51	160	25.65	44.0	0.5	Sfc	Is Mg
352	52	160	26.30	44.2	0.1	Sfc	Is Mg
353	53	160	26.52	45.6	0.2	Sfc	Cu Is Mg
354	54	160	25.18	44.1	0.5	Sfc	Is Mg
355	55	161	26.58	38.7	0.2	5.0	Dc Ts Wa
356	56	161	27.24	35.1	0.5	8.1	Dc Ts Wa
357	57	161	27.65	32.3	1.0	9.1	Ts Wa
358	58	161	28.02	28.4	2.0	8.0	Dc Ts Wa
359	59	161	30.80	35.7	2.0	12.0	Dc Ts Wa
360	60	161	26.50	29.6	1.0	10.5	Dc Ts Wa
361	61	161	27.50	43.8	0.5	4.0	Ts Wa
370	70	209	35.15	151°57.8	0.2	1.8	Gr
371	71	218	26.42	148°47.1	0.2	1.5	Gr Tp
372	72	218	28.33	43.4	0.2	19.0	Cu Gr Ts Tx
373	73	219	26.08	44.0	0.2	0.5	Gr
374	74	219	25.82	44.5	0.2	0.75	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
375	72AER75	219	70°25.47	148°44.6	0.2	1.5	Gr
376	76	219	25.02	44.7	0.2	1.0	Gr
377	77	219	24.49	46.3	0.2	0.5	Gr
378	78	219	25.71	47.7	0.2	1.5	Gr
379	79	220	26.39	47.4	0.2	7.8	Gr
380	80	220	26.10	48.7	0.2	1.5	Gr
381	81	220	25.82	49.3	0.2	1.2	Gr
382	82	220	26.23	49.8	0.2	1.6	Gr
383	83	220	26.42	49.7	0.2	2.5	Gr
384	84	220	27.16	50.4	0.2	1.5	Gr
385	85	220	28.19	50.7	0.2	1.5	Gr
386	86	220	28.63	51.6	0.2	1.0	Gr
387	87	220	28.03	52.4	0.2	2.5	Gr
388	88	220	27.08	53.9	0.2	2.0	Gr
389	89	220	26.86	54.0	0.2	1.1	Gr
390	90	220	27.16	55.9	0.2	1.5	Gr
391	91	220	27.46	149°00.1	0.2	2.0	Gr
392	92	220	26.38	148°59.3	0.2	1.0	Gr Ts Tx
393	93	220	27.10	47.7	0.2	1.5	Cu Gr
394	94	220	25.93	40.0	0.2	1.8	Gr
395	95	220	26.19	39.7	0.2	3.6	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
396	72AER96	220	70°26.49	148°39.7	0.2	4.2	Gr
397	97	220	26.87	39.1	0.2	6.2	Gr
398	98	220	26.72	41.9	0.2	4.0	Gr
399	99	220	26.45	43.8	0.2	2.0	Gr
400	100	220	27.10	43.7	0.2	3.8	Gr
401	101	220	27.72	43.4	0.2	4.3	Gr
402	102	220	27.80	43.4	0.2	5.0	Cu Gr
403	103	220	26.95	44.7	0.2	1.0	Gr
404	104	220	28.22	43.2	0.2	7.5	Gr
405	105	220	28.63	144°43.2	0.2	5.5	Gr
406	106	220	29.03	43.0	0.2	10.2	Cu Gr
407	107	220	28.40	148°46.0	0.2	6.0	Gr
408	108	220	28.22	47.0	0.2	4.5	Gr
409	109	220	27.79	46.3	0.2	4.0	Cs Gr
410	110	220	31.30	149°08.9	0.2	3.4	Cu Gr
411	111	220	31.87	08.0	0.2	9.5	Gr
412	112	220	32.25	06.1	0.2	11.5	Gr
413	113	220	32.97	04.6	1.0	13.0	Gr
414	114	220	33.29	03.7	1.0	10.0	Gr
415	115	220	34.95	00.2	1.0	10.0	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
416	72AER116	220	70°33.40	149°11.3	0.2	6.5	Gr
417	117	220	33.25	10.7	0.2	6.0	Gr
418	118	220	33.57	11.6	0.2	6.0	Gr
419	119	220	34.30	12.2	0.2	9.5	Gr
420	120	223	33.50	27.2	0.2	4.5	Gr
421	121	223	33.50	27.2	0.2	5.8	Gr
422	122	223	33.72	27.3	0.2	9.0	Gr
923	123	223	33.65	27.4	0.2	7.0	Gr
424	124	223	34.40	26.8	0.2	11.0	Gr Is
425	125	223	34.75	26.4	0.2	12.5	Gr
426	126	223	35.65	25.8	0.2	14.0	Cu Gr
427	127	224	33.50	27.4	1.0	5.0	Cu Dv Gr
428	128	227	28.10	148°44.2	0.2	5.5	Cu Gr
429	129	228	29.40	20.3	0.2	3.0	Cm Cu Dv Gr
430	130	228	29.40	20.3	0.2	3.0	Cu Dv Gr
431	131	228	28.90	19.2	0.2	0.5	Cu Dv
434	134	229	31.95	12.8	1.0	14.5	Gr Is
435	135	229	31.95	10.3	1.0	10.0	Gr
436	136	229	30.40	02.8	0.2	14.0	Gr
437	137	229	29.90	00.4	0.2	12.5	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
437	72AER137	229	70°29.90	148°00.4	0.2	12.5	Gr
438	138	229	31.00	147°49.1	0.2	19.5	Gr
439	139	229	30.75	50.5	0.2	20.0	Gr
440	140	229	30.47	52.5	0.2	18.0	Gr
441	141	229	30.00	55.6	0.2	8.0	Gr
442	142	229	29.90	56.1	0.2	11.0	Gr
443	143	229	29.82	56.8	0.2	5.5	Gr
444	144	230	26.20	51.4	0.2	5.5	Dv Gr
445	145	230	23.70	30.8	0.1	0.5	Gr Is
446	146	231	22.42	44.2	0.2	3.5	Gr
447	147	231	21.55	41.8	0.2	6.0	Gr
448	148	231	20.10	37.6	0.2	6.0	Gr
449	149	231	18.95	33.4	0.2	5.8	Gr
450	150	231	18.20	29.8	0.2	6.5	Gr
451	151	231	16.70	24.3	0.2	6.2	Gr
452	152	231	15.65	32.8	0.2	6.0	Gr
453	153	231	15.10	39.5	0.2	3.5	Gr
454	154	234	27.00	148°43.5	0.2	2.5	Dv Gr
455	155	235	29.80	149°08.5	0.2	2.5	Dv Gr Mg
456	156	236	20.20	147°37.5	1.0	6.0	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
457	72AER157	236	70°19.40	147°38.0	1.0	6.5	Cm Dv Gr
458	158	236	21.70	34.2	1.0	7.0	Cm Dv Gr
459	159	237	26.42	148°47.1	0.2	1.5	Cs Dv Mg
460	160	237	26.42	47.0	0.2	1.5	Cs Cu Dv Gr Mg
461	161	237	26.42	47.1	0.2	1.5	Dv Gr
462	162	237	26.42	47.1	0.2	1.5	Cs
463	163	238	30.60	42.7	1.0	13.0	Cm Cu Dv Gr Is Mg
464	164	239	26.42	47.1	0.2	1.5	Cu Dv Gr Mg Sd
465	165	240	30.25	19.2	0.2	10.5	Cm Dv Gr Is Mg
466	166	241	26.57	34.3	0.2	7.0	Gr Ts
467	167	241	25.92	34.5	0.2	5.5	Gr Ts
468	168	241	25.32	34.6	0.2	3.5	Cu Gr Sd Ts
469	169	241	33.90	51.2	1.0	15.0	Cm Dv Gr Mg
470	170	241	34.39	50.5	1.0	16.5	Dv Gr Mg
471	171	241	34.20	50.6	1.0	14.0	Gr
472	172	241	36.60	51.4	1.0	16.5	Gr Is Mg
473	173	242	32.20	149°18.1	0.2	Sfc	Cs
474	174	242	34.22	03.8	1.0	13.0	Cu Dv Gr Sd
475	175	242	34.32	04.2	1.0	13.0	Gr
476	176	242	34.27	04.3	1.0	13.0	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
477	72AER177	242	70°34.37	149°04.3	1.0	13.0	Gr
478	178	242	34.40	03.8	1.0	8.0	Gr
479	179	242	34.52	03.8	1.0	11.0	Gr
480	180	242	34.72	03.8	1.0	14.0	Gr
481	181	242	35.12	03.8	1.0	16.5	Gr
482	182	242	36.92	03.8	1.0	18.2	Gr Mg
483	183	242	34.24	02.8	1.0	13.0	Gr Is
484	184	242	34.19	02.8	1.0	11.5	Gr
485	185	242	24.45	05.2	1.0	12.5	Gr
486	186	242	34.55	05.2	1.0	11.5	Gr
487	187	242	34.72	05.2	1.0	14.0	Gr Mg
488	188	242	24.90	148°30.8	0.2	15.0	Cu Dv Gr Mg Sd
489	189	247	35.30	150°57.2	1.0	8.5	Gr
490	190	247	34.60	151°11.3	1.0	8.0	Gr
491	191	247	33.75	26.6	1.0	4.5	Gr
492	192	247	33.65	30.0	1.0	2.0	Gr
493	193	247	36.20	31.8	1.0	5.2	Gr
494	194	247	36.20	35.2	1.0	4.5	Gr
495	195	247	36.20	35.7	1.0	5.4	Gr
496	196	247	35.65	43.6	1.0	3.0	Gr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
496	72AER196	247	70°35.65	151°43.6	1.0	3.0	Gr
497	197	247	38.90	42.8	1.0	5.2	Gr
498	198	247	40.89	43.2	1.0	7.2	Gr
499	199	247	44.40	43.4	1.0	10.0	Gr
500	200	247	48.70	53.8	1.0	12.5	Cu Gr Is
501	201	247	34.95	152°00.4	0.2	1.8	Gr
502	202	248	35.80	08.2	0.2	2.0	Gr
503	203	248	37.90	04.8	1.0	2.6	Gr
504	204	248	39.49	02.2	1.0	3.2	Gr
505	205	248	43.75	151°58.0	1.0	1.5	Gr
506	206	248	41.50	59.3	1.0	1.2	Gr
507	207	248	46.75	152°03.5	1.0	5.3	Gr
508	208	248	41.40	151°24.3	1.0	12.0	Gr
509	209	248	38.80	150°03.5	1.0	12.0	Gr
510	210	248	36.50	50.7	1.0	10.5	Gr
511	211	248	35.20	40.2	1.0	3.0	Gr
552	72APB2	142	24.58	148°40.8	0.1	0.9	Is
553	3	144	24.49	47.5	0.5	0.5	Is Mg
555	5	152	24.01	34.3	0.1	0.8	Dc Is
556	6	152	23.94	34.5	0.1	1.4	Is

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
557	7	152	70°24.07	148°34.0	0.1	1.0	Is
558	8	152	25.62	40.1	0.1	0.8	Is
559	9	152	25.62	40.5	0.1	1.3	Dc
560	10	152	25.60	41.0	0.1	1.3	Is
561	11	154	27.78	149°01.4	0.5	0.0	Dc Wa
562	12	154	26.55	148°45.7	0.1	0.0	Dc Ts Tx Wa
563	13	154	26.09	37.3	0.5	4.3	Dc Ts
564	14	154	24.68	41.8	0.5	Sfc	Dc Wa
565	15	154	24.55	45.3	0.5	Sfc	Dc Wa
566	16	155	25.05	45.5	0.5	Sfc	Cu Dc Wa
567	17	153	24.52	39.9	0.2	Sfc	Dc Wa
601	72ABP1	217	13.3	143°26	0.5	25	Dc Gr Sd Wa
602	2	217	22.9	30	0.5	44	Cm Gr Sd Wa
603	3	218	32.5	34	0.5	125	Cr Dc Gr Sd Wa
604	4	218	44.5	36	0.5	455	Gr Sd Wa
605	5	218	52.5	42	0.5	915	Dc Gr Sd Wa
606	6	219	51.6	27	0.5	506	Dc Gr Sd Wa
607	7	220	45.0	33	0.5	350	Gr Sd Wa
608	8	220	39.0	33	0.5	135	Dc Gr Wa
609	9	220	30.8	27	0.5	51	Gr Sd Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
610	72ABP10	221	70°20.5	144°36	0.5	37	Cr Gr Sd Wa
611	11	221	09.5	22	0.5	16	Dc Gr Sd Wa
612	12	221	08.4	145°29	0.5	39	Dc Gr Sd Wa
613	13	221	13.7	30	0.5	25	Cr Gr Sd Wa
614	14	222	24.0	38	0.5	37	Dc Gr Sd Wa
615	15	222	34.9	36	0.5	37	Gr Sd Wa
616	16	222	44.8	22	0.5	38	Dc Gr Sd Wa
617	17	223	51.0	14	0.5	300	Cr Gr Sd Wa
618	18	223	04.0	28	0.5	1062	Cr Gr Sd Wa
619	19a	224	10.0	36	0.5	1040	Dc Sd Wa
695	19b	225	06.2	146°17	0.5	1640	Cr Gr
620	20a	225	01.8	25	0.5	905	Gr Wa
696	20b	225	00.0	17	0.5	996	Cr Gr
621	21	226	58.3	30	0.5	364	Cr Gr IF Sd Wa
622	22	226	55.5	30	5.0	109	Dc Gr Sd Wa
623	23	226	40.0	40	5.0	47	Gr Sd Wa
624	24	227	34.4	33	0.5	36	Gr Sd Wa
625	25	227	21.4	36	0.5	26	Gr Sd Wa
626	26	227	19.6	30	0.5	17	Dc Gr Sd Wa
627	27	228	29.4	147°38	0.5	23	Gr Sd Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
628	72ABP28	228	70°31.4	147°33	0.5	26	Cr Dc Gr Wa
629	29	228	42.7	30	0.5	43	Gr Sd Wa
630	30	228	52.8	30	0.5	58	Dc Gr Sd Wa
631	31	229	59.5	30	0.5	98	Gr Sd Wa
632	32	229	71°03.1	34	0.5	678	Cr Gr IF Sd Wa
633	33	229	04.0	38	0.5	980	Dc Gr Sd Wa
634	34	231	14.4	148°32	0.5	995	Cm Cr Dc Dr Gr IF Sd Wa
635	35	231	13.0	34	0.5	490	Cr Gr Sd Wa
636	36	231	10.9	33	0.5	307	Cr Gr Sd Wa
637	37	232	06.2	44	0.5	43	Cr Gr Sd Wa
638	38	233	70°58.1	30	0.5	46	Dc Gr Sd Wa
639	39	233	50.3	40	0.5	33	Gr Wa
640	40	233	42.0	26	0.5	27	Gr Sd Wa
641	41	234	35.0	41	0.5	19	Dc Dv Gr IF Sd Wa
642	42	235	49.4	149°31	0.5	23	Cr Dc Gr Sd Wa
643	43	235	59.5	34	0.5	32	Gr Sd Wa
644	44	235	71°07.8	38	0.5	46	Cr Gr IF Sd Wa
645	45a	236	11.7	38	2.0	353	Dc Gr Sd Wa
697	45b	236	11.4	38	2.0	95	Gr
698	45c	236	11.2	38	2.0	62	Cr

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
646	72ABP46	236	70°42.0	150°07	2.0	18	Cr Dc Gr Sd Wa
647	47	237	50.0	10	2.0	24	Cr Gr Sd Tx Wa
648	48	237	71°00.0	00	2.0	28	Gr Sd Tx Wa
649	49	237	11.0	00	2.0	44	Dc Gr Sd Tx Wa
650	50	238	12.4	00	0.5	109	Cr Gr Sd Tx Wa
651	51	238	16.1	06	0.5	450±	Gr Sd Tx Wa
652	52	239	17.9	03	0.5	870	Cr Gr Tx Wa
653	53	240	35.6	01	0.5	2130	Cr Dc Gr Sd Tx Wa
654	54a	241	41.3	151°04	0.5	2204	Dc IF Sd Wa
600	54b	241	43.5	15	0.5	2300	Cr Gr Tx
655	55	242	28.2	150°59	0.5	1024	Gr Sd Tx Wa
656	56	243	22.2	51	0.5	576	Cr Gr Sd Tx Wa
657	57	243	18.0	45	0.5	219	Dc Gr Sd Tx Wa
658	58	244	12.7	151°04	0.5	53	Cr Gr Tx Wa
659	59	244	05.7	150°55	0.5	26	Cr Fm Gr Sd Tx Wa
660	60	245	70°52.7	151°00	0.5	19	Dc Fm Gr Sd Wa
661	61	245	59.4	150°32	0.5	19	Cr Dc Fm Gr Sd Tx Wa
662	62a	247	71°54.6	152°05	0.5	1929	Dc Sd Wa
699	62b	247	57.3	15	0.5	2020	Cr Fm Gr Tx
663	63a	248	39.8	01	0.5	1051	Sd Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
700	72ABP63b	248	71°41.9	152°05	0.5	443	Fm Gr Tx
664	64	248	37.5	22	0.5	500	Sd Tx Wa
665	65a	248	29.7	03	0.5	247	Dc Sd Wa
749	65b	248	29.6	08	0.5	190	Cr Tx
666	66	249	22.6	04	0.5	60	Cr Fm Gr Sd Tx Wa
667	67	249	17.2	13	0.5	48	Cr Fm Gr Tx Wa
668	68	249	05.5	00	5.0	18	Cr Fm Gr Sd Tx Wa
669	69	249	08.0	153°06	5.0	Unknown	Dc
670	70	250	11.9	41	0.5	18	Cr Dc Fm Gr Sd Wa
671	71	250	13.0	39	0.5	28	Cr Fm Gr Wa
672	72	250	18.0	38	0.5	48	Fm Gr Wa
673	73a	251	30.4	07	0.5	55	Sd
750	73b	252	30.9	44	0.5	48	Cr
674	74	252	40.0	154°40	0.5	23	Wa
675	75	253	01.5	150°07	0.5	50	Sd Tx Wa
676	76	253	12.3	149°43	0.5	100	Sd Tx Wa
677	77	254	03.6	151°21	0.5	19	Wa
678	78	254	20.6	21	0.5	115	Sd Wa
679	79	254	25.3	152°14	0.5	149	Sd Wa
680	A	213	21.2	156°42	0.1	55	Dc IF Sd

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
681	72ABPB	214	71°37.2	154°46	0.1	Sfc	IF
682	D_1	216	70°20.0	148°12	0.1	Sfc	Cm Cs Dc Wa
683	D_2	216	14.5	57	0.1	Sfc	Cm Cs Wa
684	E_2	217	06.3	143°31	0.1	Sfc	Cs Wa
685	E_3	217	05.6	31	0.1	Sfc	Cs Wa
686	F_1	221	03.6	145°33	0.1	Sfc	Dc Wa
687	F_2	221	03.7	34	0.1	Sfc	Wa
688	G_1	233	26.4	148°45	0.1	Sfc	Cm Wa
689	G_3	233	26.4	46	0.1	Sfc	Cm Wa
690	G_4	233	25.3	51	0.1	Sfc	Cm Cs Wa
691	G_5	233	22.7	52	0.1	Sfc	Cm Cs Wa
692	H_1	235	33.1	150°12	0.1	Sfc	Cm Wa
693	H_3	235	28.5	27	0.1	Sfc	Cm Cs Wa
694	H_4	235	25.0	151°07	0.1	Sfc	Cm Cs Wa
701	72AJT1	335	25.8	148°47.6	0.25	1.8	Cu Dc Sd Ts Tx Wa
702	2	235	28.2	53.3	0.4	2.1	Dc Sd Ts Tx Wa
703	3	235	29.0	149°03.3	0.1	3.0	Dc Fm Gr Sd Ts Tx Wa
704	4	235	29.5	07.6	0.2	2.4	Dc Fm Gr Sd Tx Wa
705	5	236	27.2	148°10.3	0.2	7.3	Cu Dc Gr Sd Ts Tx Wa
706	6	236	25.2	10.2	0.7	5.5	Cu Dc Gr Sd Ts Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
707	72AJT7	236	70°22.8	148°10.8	0.2	2.4	Dc Gr Sd Ts Tx Wa
708	7	237	21.4	147°56.7	0.2	3.7	Dc Gr Sd Ts Tx Wa
709	9	237	23.8	53.3	0.5	6.0	Cu Dc Gr Sd Ts Tx Wa
710	10	237	26.1	52.2	0.5	7.9	Cu Dc Sd Ts Tx Wa
711	11	237	27.1	54.0	1.0	7.3	Cu Dc Ts
712	12	238	30.0	45.0	1.0	17.0	Cu Dc Gr Sd Ts Tx Wa
713	13	239	31.3	148°04.2	0.5	16.0	Cu Dc Gr Sd Ts Tx Wa
714	14	239	22.1	147°32.1	0.5	8.0	Cu Dc Sd Ts Tx Wa
715	15	239	18.1	37.0	0.5	6.0	Cu Dc Gr Sd Ts Tx Wa
716	16	239	14.7	41.8	0.5	2.7	Cu Dc Gr Sd Ts Tx Wa
717	17	240	13.6	00.0	1.0	6.0	Cu Dc Gr Sd Ts Tx Wa
718	18	240	20.3	04.1	0.5	13.0	Cu Dc Gr Sd Ts Tx Wa
719	19	240	16.3	146°45.5	1.0	8.0	Cu Dc Fm Gr Sd Ts Tx Wa
720	20	240	16.0	30.0	0.5	13.4	Cr Cu Dc Fm Gr Sd Ts Tx Wa
721	21	241	14.4	15.0	0.5	13.4	Cu Dc Fm Gr Sd Ts Tx Wa
722	22	241	11.4	15.0	0.2	3.0	Cu Dc Gr Sd Tx Wa
723	23	241	09.8	00.9	0.1	2.0	Cu Dc Fm Gr Sd Tp Tx Wa
724	24	241	12.0	145°55.0	0.2	12.0	Cu Dc Gr Sd Tp Tx Wa
725	25	241	10.1	45.0	0.5	12.0	Cu Dc Fm Gr Sd Tp Sd
726	26	242	12.2	146°30.0	0.2	4.0	Cu Dc Gr Sd Tp Tx Wa

Location Number	Field Number	Date (Julian)	North Latitude	West Longitude	Position Accuracy (± Kilometers)	Depth (Meter)	Observations at Location
727	72AJT27	242	79°25.2	147°31.0	0.5	12.8	Cu Dc Gr Sd Tp Tx Wa
728	28	243	27.3	31.0	1.0	19.0	Cu Gr Sd Tp Tx Wa
729	29	243	25.3	17.5	1.0	18.0	Cu Dc Fm Gr Sd Tp Tx Wa
730	30	244	45.0	150°00.0	1.0	20.0	Cr Cu Dc Fm Gr Sd Ts Tx Wa
731	31	244	49.0	00.0	1.5	23.0	Cu Dc Gr Sd Ts Tx Wa
732	32	247	37.2	149°34.0	0.5	16.0	Cu Dc Fm Gr Sd Ts Tx Wa
733	33	247	40.5	33.0	1.0	21.0	Cu Dc Fm Gr Sd Ts Tx Wa
734	34	247	43.3	32.2	1.5	20.0	Dc Gr Sd Ts Tx Wa
735	35	248	45.8	32.0	1.5	21.0	Cu Dc Fm Gr Sd Ts Tx Wa
736	36	248	31.7	150°15.0	0.2	3.7	Cu Dc Gr Sd Ts Tx Wa
737	37	248	33.0	00.5	0.2	4.9	Cu Dc Gr Sd Ts Tx Wa
738	38	248	37.5	00.0	0.5	14.0	Cu Dc Fm Gr Sd Ts Tx Wa
739	39	248	41.0	00.0	1.5	16.0	Cu Dc Gr Sd Ts Tx Wa
740	40	249	34.0	30.0	0.3	6.0	Cu Dc Gr Sd Ts Tx Wa
741	41	249	38.5	30.0	0.5	14.0	Cu Dc Gr Sd Ts Tx Wa
742	42	249	42.5	30.0	1.0	18.0	Cu Dc Gr Sd Ts Tx Wa
743	43	250	40.0	151°00.0	3.0	14.0	Cu Dc Gr Sd Ts Tx Wa
744	44	250	45.0	30.0	5.0	12.0	Dc Gr Sd Ts Tx Wa
745	45	250	48.0	152°00.0	2.5	7.0	Dc Gr Sd Ts Tx Wa
746	46	249	42.0	150°15.0	1.5	19.0	Fm Gr
747	47	249	38.0	15.0	1.5	14.0	Gr
748	48	250	35.0	15.0	1.0	10.0	Fm Gr