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Planktic foraminifer census data from Northwind Ridge Cores PI-88-AR P3, PI-88-AR P7 and PI-88-AR P9, Arctic Ocean

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INTRODUCTION

The U.S. Geological Survey recovered 9 piston cores from the Northwind Ridge in the Canada Basin of the Arctic Ocean from a cruise of the USCGC *Polar Star* during 1988. Locations of these core sites are given in table 1 and shown in figures 1 and 2. Preliminary analysis of the cores suggests sediments deposited on Northwind Ridge preserve a detailed record of glacial and interglacial cycles for the last few hundred-thousand to one million years. This report includes quantitative data on foraminifers and selected sediment size-fraction data in 98 samples from Northwind Ridge core PI-88AR P3, 51 samples from core PI-88-AR P7 and 117 samples from core PI-88-AR P9. These foraminifer data will be the basis for future interpretive studies.

METHODS

The samples were washed in distilled water, wet sieved to three size fractions; ≤ 63 μm, 62 - 2000 μm and > 2000 μm. The material from each size fraction was dried at 50° C and weighed. The 63 - 2000 μm and the > 2000 μm fractions were combined after weighing. The > 63 μm fraction was dry-sieved at 150 μm. The > 150 μm size fraction of samples with abundant planktic foraminifers was split with a carpco microsplitter to obtain representative aliquots of 300 - 350 planktic foraminifers. Foraminifers were sorted, identified and glued to standard micropaleontological slides and data were used to calculate abundances. All foraminifers > 150 μm were removed and counted from samples which contained less than 350 planktic foraminifers. These data were used for planktic census and abundance estimates.

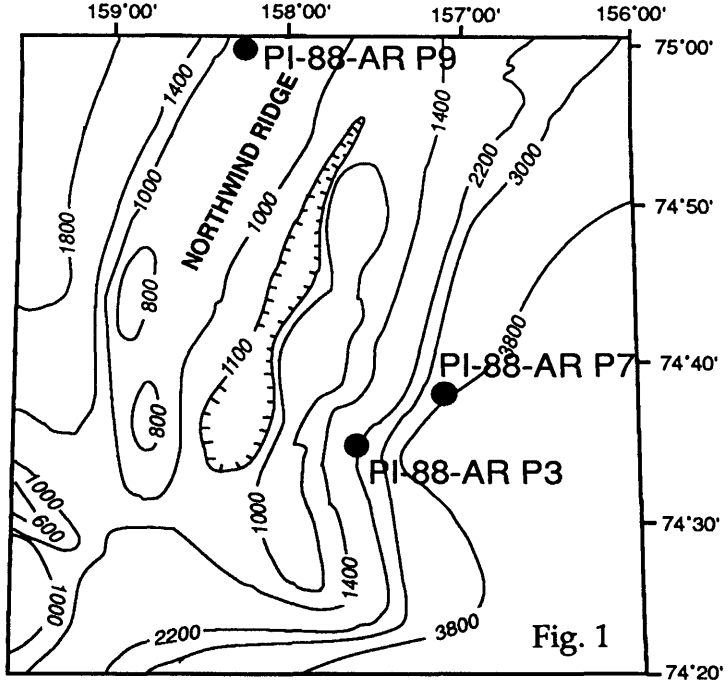
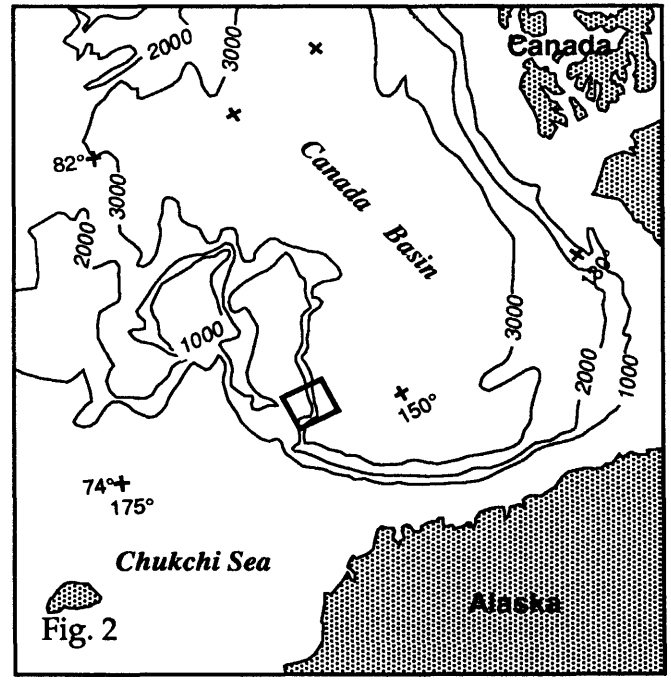


Table 1 Latitude, longitude and water depth of Northwind Ridge cores 3, 7, and 9.

Core	Latitude	Longitude	Depth
PI-88-AR P3	74° 35.60' N	157° 39.59' W	1909 M
PI-88-AR P7	74° 37.76' N	157° 23.17' W	3515 M
PI-88-AR P9	75° 01.38' N	158° 14.23' W	945 M

Figure 1 Map of Northwind Ridge showing the location of cores PI-88-AR P3, PI-88-AR P7, and PI-88-AR P9. (adapted from Phillips et al., 1992)

Figure 2 Map of central Arctic Ocean showing location of figure 1. (adapted from Gilbert and Clark, 1983)



COUNTING CATEGORIES

Taxa included in the counting categories are summarized below. In general, our taxanomic concepts follow Parker (1962, 1967).

dpach — *Neogloboquadrina pachyderma* (Ehrenberg) right coiling. This category is restricted to specimens with 4 chambers in the ultimate whorl. Right-coiling specimens that have more than 4 chambers in the ultimate whorl are tabulated as "dupac".

dupac — This category is used for specimens of right-coiling *Neogloboquadrina* with more than 4 chambers in the ultimate whorl.

spach — *Neogloboquadrina pachyderma* (Ehrenberg) left-coiling.

other — unidentified planktic specimens and specimens resembling *Turborotalita quinqueloba.*

total plank — Total number of planktic foraminifers in the counting split or stripped from sample.

total benth — Total number of benthic foraminifers in the counting split or stripped from sample.

ACKNOWLEDGEMENTS

We thank Larry Phillips for providing the sedimentological data and processed residues from core 3, core 7 and core 9. We also thank Jennifer Pugin, Gail Slevin, Mary Gallagher and Dede Pitts for technical assistance.

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Tables 2, 3 and 4 Column headings are: **depth 1** = the top of the sampling interval and **depth 2** = the bottom of the interval, where only **depth 1** is present, **depth 1** = the midpoint of a sampling interval; **wt. < 63** = the weight in grams of the < 63 μm size fraction; **wt.% < 63** = the percentage of the total sample weight represented by the < 63 μm. size fraction; **wt. 63- 2000** = the weight in grams of the 63 - 2000 μm. size fraction; **wt.% 63 - 2000** = the percentage of the total sample weight represented by the 63 - 2000 μm size fraction; **wt. > 2000** = the weight in grams of the > 2000 μm size fraction; **wt.% > 2000** = the percentage of the total sample weight represented by the > 2000 μm size fraction; **total wt.** = the dry weight in grams of the entire sample; **fraction of sample counted** = the portion of the > 150 μm size fraction that planktic foraminifers were removed from and tabulated (1 = all foraminifers removed); **plank > 150 μm / sample** = the number of planktic foraminifers > 150 μm tabulated divided by the fraction of the sample that was examined; **plank > 150 μm / gram** = the total number of planktic foraminifers > 150 μm in the sample divided by the total weight of the sample in grams; **benth > 150 μm / sample** = the number of benthic foraminifers > 150 μm tabulated divided by the fraction of the sample that was examined; **benth > 150 μm / gram** = the total number of benthic foraminifers > 150 μm in the sample divided by the total weight of the sample in grams.

PI-88-AR Piston Core 3

depth 1 cm.	depth 2 cm	wt. < 63	wt. % < 63	wt. 63 - 2000	wt. % 63 - 2000	wt. > 2000	wt. % > 2000	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
0.0	2.0	5.78	89.3	0.67	10.4	0.02	0.3	6.47	357	1	12	0	370	17	1/128	7320	336
3.0	5.0	8.23	94.2	0.51	5.8	0.00	0.0	8.74	302	6	14	0	322	27	1/32	1179	99
6.0	8.0	8.66	93.7	0.58	6.3	0.00	0.0	9.24	314	6	11	0	331	34	1/16	573	59
9.0	11.0	8.94	90.5	0.91	9.2	0.03	0.3	9.88	313	4	15	0	332	23	1/32	1075	74
13.0	15.0	8.98	88.6	1.00	9.9	0.16	1.6	10.14	312	8	3	0	323	109	1/8	255	86
18.0	20.0	8.48	73.2	1.25	10.8	1.85	16.0	11.58	4	0	0	0	4	3	1	0	0
23.0	25.0	9.00	89.5	1.06	10.5	0.00	0.0	10.06	2	0	0	0	2	1	1	0	0
32.0	34.0	8.35	96.0	0.35	4.0	0.00	0.0	8.70	2	0	0	0	2	0	1	0	0
38.5	40.5	8.23	89.4	0.94	10.2	0.04	0.4	9.21	5	0	0	0	5	1	1	1	0
51.5	53.5	7.37	90.4	0.78	9.6	0.00	0.0	8.15	0	0	0	0	0	1	1	0	0
58.0	60.0	7.34	94.8	0.40	5.2	0.00	0.0	7.74	0	0	0	0	0	0	1	0	0
64.5	66.5	7.96	96.1	0.27	3.3	0.05	0.6	8.28	1	0	0	0	1	0	1	0	0
72.5	74.5	7.85	96.0	0.33	4.0	0.00	0.0	8.18	1	0	0	0	1	5	1	0	1
82.0	84.0	8.42	95.2	0.42	4.8	0.00	0.0	8.84	4	0	0	0	4	4	1	0	1
87.0	89.0	8.95	79.8	2.00	17.8	0.27	2.4	11.22	4	0	0	0	4	1	1	0	0
90.0	92.0	6.04	97.3	0.17	2.7	0.00	0.0	6.21	4	0	0	0	4	0	1	1	0
92.5	94.5	6.23	96.6	0.13	2.0	0.09	1.4	6.45	13	1	0	0	14	1	1	2	0
96.0	98.0	9.96	99.6	0.04	0.4	0.00	0.0	10.00	7	0	1	0	8	0	1	1	0
101.0	103.0	10.06	100.0	0.00	0.0	0.00	0.0	10.06	0	0	0	0	0	0	1	0	0
106.5	108.5	8.87	95.4	0.38	4.1	0.05	0.5	9.30	60	0	2	0	62	11	1	7	1
113.0	115.0	8.86	77.3	1.93	16.8	0.67	5.8	11.46	316	5	8	0	329	7	1/128	3675	78
117.0	119.0	8.35	83.8	1.46	14.6	0.16	1.6	9.97	314	4	7	0	325	12	1/64	2086	77
124.5	126.5	10.67	90.7	1.09	9.3	0.00	0.0	11.76	56	1	1	0	58	5	1	5	0
129.5	131.5	8.23	99.4	0.05	0.6	0.00	0.0	8.28	224	1	4	0	229	22	1	28	3
131.5	133.5	4.98	94.0	0.14	2.6	0.18	3.4	5.30	305	5	9	2	321	3	1/8	485	5
135.0	137.0	8.02	91.6	0.68	7.8	0.06	0.6	8.76	318	8	10	0	336	3	1/128	4910	44
138.5	140.5	9.42	87.7	1.32	12.3	0.00	0.0	10.74	324	4	10	3	341	3	1/64	2032	18
142.0	144.0	11.14	86.0	1.70	13.1	0.12	0.9	12.96	324	3	9	0	336	0	3/8	69	0
146.5	148.5	8.00	91.2	0.47	5.4	0.30	3.4	8.77	327	2	11	0	340	6	1/8	310	5
151.0	153.0	11.15	83.2	1.61	12.0	0.64	4.8	13.40	311	5	7	0	323	2	1/8	193	1
155.5	157.5	8.04	91.6	0.74	8.4	0.00	0.0	8.78	314	1	5	0	320	2	1/64	2333	15
164.5	166.5	8.97	99.0	0.09	1.0	0.00	0.0	9.06	304	3	10	0	317	2	1/8	280	2
173.5	175.5	8.91	96.4	0.33	3.6	0.00	0.0	9.24	327	0	3	0	330	6	1/16	571	10
178.5	180.5	9.32	96.8	0.31	3.2	0.00	0.0	9.63	318	5	8	0	331	10	1	34	1
183.5	185.5	9.49	92.4	0.78	7.6	0.00	0.0	10.27	7	0	0	0	7	2	1	1	0
189.5	191.5	10.10	99.4	0.06	0.6	0.00	0.0	10.16	1	0	0	0	1	0	1	0	0
195.5	197.5	10.48	99.9	0.01	0.1	0.00	0.0	10.49	4	0	0	0	4	0	1	0	0
201.5	203.5	9.60	99.9	0.01	0.1	0.00	0.0	9.61	0	0	0	0	0	0	1	0	0
208.5	210.5	7.87	99.9	0.01	0.1	0.00	0.0	7.88	0	0	0	0	0	0	1	0	0

Table 2

PI-88-AR Piston Core 3

depth 1 cm.	depth 2 cm	wt. < 63	wt. % < 63	wt. 63 - 2000	wt. % 63 - 2000	wt. > 2000	wt. % > 2000	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
222.0	224.0	9.90	99.9	0.01	0.1	0.00	0.0	9.91	0	0	0	0	0	0	1	0	0
230.5	232.5	7.77	99.9	0.01	0.1	0.00	0.0	7.78	0	0	0	0	0	0	1	0	0
237.5	239.5	8.98	99.9	0.01	0.1	0.00	0.0	8.99	5	0	0	0	5	0	1	1	0
245.5	247.5	11.94	95.7	0.11	0.9	0.43	3.4	12.48	45	2	0	0	47	0	1	4	0
252.0	254.0	9.80	97.4	0.26	2.6	0.00	0.0	10.06	309	2	5	0	316	5	1/8	251	33
260.0	262.0	8.26	93.1	0.43	4.8	0.18	2.0	8.87	320	2	13	0	335	13	1/64	2417	36
266.0	268.0	9.25	96.7	0.32	3.3	0.00	0.0	9.57	307	9	8	0	324	8	1/64	2167	47
274.0	276.0	7.52	88.4	0.84	9.9	0.15	1.8	8.51	297	1	16	0	314	16	1/32	1181	38
277.5	279.5	9.87	78.4	2.11	16.8	0.61	4.8	12.59	301	3	10	0	314	11	1/8	200	8
279.5	281.5	7.28	78.9	1.25	13.5	0.70	7.6	9.23	340	2	7	0	349	8	1/8	302	6
282.5	284.5	7.07	92.1	0.47	6.1	0.14	1.8	7.68	294	7	10	1	312	10	1	41	0
287.5	289.5	9.37	88.8	0.99	9.4	0.19	1.8	10.55	308	3	12	2	325	12	5/8	49	0
290.5	292.5	8.38	89.2	1.01	10.8	0.00	0.0	9.39	333	3	11	0	347	11	1	37	0
295.5	297.5	8.59	98.6	0.12	1.4	0.00	0.0	8.71	99	1	0	1	101	0	1	12	0
300.0	302.0	8.52	93.0	0.64	7.0	0.00	0.0	9.16	0	0	0	0	0	0	1	0	0
305.0	307.0	7.70	95.4	0.37	4.6	0.00	0.0	8.07	299	0	7	0	306	7	1/64	2427	16
309.0	311.0	9.42	90.7	0.97	9.3	0.00	0.0	10.39	301	9	3	0	313	3	1/4	121	2
315.0	317.0	9.73	92.6	0.78	7.4	0.00	0.0	10.51	15	1	0	0	16	0	1	2	2
319.0	321.0	8.70	99.5	0.04	0.5	0.00	0.0	8.74	10	0	0	0	10	0	1	1	0
323.0	325.0	9.46	90.6	0.89	8.5	0.09	0.9	10.44	0	0	0	0	0	0	1	0	0
327.0	329.0	8.20	96.1	0.22	2.6	0.11	1.3	8.53	205	1	5	0	211	5	1	25	2
330.5	332.5	8.60	90.8	0.85	9.0	0.02	0.2	9.47	11	0	0	0	11	0	1	1	0
334.5	335.5	8.70	93.1	0.64	6.9	0.00	0.0	9.34	22	0	0	0	22	0	1	2	0
340.0	342.0	9.89	99.6	0.04	0.4	0.00	0.0	9.93	6	0	0	0	6	0	1	1	0
345.5	347.5	8.01	99.0	0.08	1.0	0.00	0.0	8.09	5	0	0	0	5	0	1	1	0
349.0	351.0	8.46	92.1	0.73	7.9	0.00	0.0	9.19	339	5	11	0	355	11	1/128	4945	0
352.5	353.5	9.54	79.6	2.41	20.1	0.04	0.3	11.99	313	5	7	0	325	7	1/128	3470	21
356.3	358.3	10.24	72.8	3.46	24.6	0.37	2.6	14.07	325	1	4	0	330	4	1/16	375	0
359.0	361.0	10.55	84.9	1.64	13.2	0.23	1.9	12.42	313	3	5	0	321	5	1/64	1654	0
361.3	363.3	11.63	80.1	2.49	17.1	0.40	2.8	14.52	316	3	7	0	326	7	1/8	180	1
364.5	366.5	9.78	88.6	1.26	11.4	0.00	0.0	11.04	322	1	10	5	338	10	1/128	3919	0
369.0	371.0	9.55	87.5	1.37	12.5	0.00	0.0	10.92	300	2	9	0	311	9	1/64	1823	2
372.5	374.5	15.91	76.8	4.42	21.3	0.38	1.8	20.71	315	3	6	0	324	6	2/3	23	0
377.5	379.5	16.26	77.0	4.63	21.9	0.22	1.0	21.11	5	0	0	0	5	0	1	0	0
383.5	385.5	13.80	77.4	3.73	20.9	0.30	1.7	17.83	46	0	0	0	46	0	1	3	0
386.5	388.5	9.29	99.9	0.01	0.1	0.00	0.0	9.30	0	0	0	0	0	0	1	0	0
391.5	393.5	9.47	99.9	0.01	0.1	0.00	0.0	9.48	1	0	0	0	1	0	1	0	0
395.5	397.5	8.90	96.2	0.35	3.8	0.00	0.0	9.25	296	2	3	0	301	13	1/4	130	6
400.7	402.7	9.81	93.4	0.66	6.3	0.03	0.3	10.50	298	4	4	0	306	4	1/2	58	1

Table 2

PI-88-AR Piston Core 3

depth 1 cm.	depth 2 cm	wt. < 63	wt. % < 63	wt. 63 - 2000	wt. % 63 - 2000	wt. > 2000	wt. % > 2000	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
405.0	407.0	9.16	81.9	1.99	17.8	0.03	0.3	11.18	36	0	2	1	39	6	1	3	1
412.5	414.5	10.55	99.9	0.01	0.1	0.00	0.0	10.56	1	0	0	0	1	0	1	0	0
421.5	423.5	10.60	88.3	1.41	11.7	0.00	0.0	12.01	0	0	0	0	0	0	1	0	0
429.5	431.5	11.51	86.3	1.63	12.2	0.19	1.4	13.33	8	0	0	0	8	0	1	1	0
433.0	435.0	8.50	94.0	0.50	5.5	0.04	0.4	9.04	269	3	15	2	289	0	1	32	0
438.5	440.5	10.10	99.9	0.01	0.1	0.00	0.0	10.11	0	0	0	0	0	0	1	0	0
444.5	446.5	9.81	97.8	0.22	2.2	0.00	0.0	10.03	0	0	0	0	0	0	1	0	0
448.5	450.5	10.36	87.9	1.36	11.5	0.06	0.5	11.78	0	0	0	0	0	0	1	0	0
453.5	455.5	10.33	92.0	0.75	6.7	0.15	1.3	11.23	0	0	0	0	0	1	1	0	0
460.5	462.5	10.16	93.2	0.69	6.3	0.05	0.5	10.90	0	0	0	0	0	0	1	0	0
464.5	466.5	10.55	68.3	3.39	21.9	1.51	9.8	15.45	12	0	0	0	12	1	1	1	0
468.0	470.0	10.44	89.5	1.23	10.5	0.00	0.0	11.67	0	0	0	0	0	28	1	0	2
481.5	482.5	11.06	87.7	1.53	12.1	0.02	0.2	12.61	0	0	0	0	0	13	1	0	1
491.5	492.5	11.05	96.8	0.36	3.2	0.00	0.0	11.41	0	0	0	0	0	0	1	0	0
492.8	494.8	9.98	98.7	0.13	1.3	0.00	0.0	10.11	0	0	0	0	0	5	1	0	0
514.5	516.5	8.41	99.3	0.06	0.7	0.00	0.0	8.47	0	0	0	2	2	5	1	0	1
540.5	542.5	9.41	99.3	0.07	0.7	0.00	0.0	9.48	0	0	0	1	1	2	1	0	0
568.5	570.5	9.22	99.0	0.09	1.0	0.00	0.0	9.31	0	0	0	0	0	0	1	0	0

PI-88-AR Piston Core 7

depth 1 cm.	depth 2 cm	wt. < 63	wt. % < 63	wt. 63 - 2000	wt. % 63 - 2000	wt. > 2000	wt. % > 2000	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
1.4	3.4	8.28	89.3	0.99	10.7	0.00	0.0	9.27	312	5	8	0	325	9	1/32	1122	32
6.0	8.0	8.07	79.9	1.98	19.6	0.05	0.5	10.1	299	2	4	0	305	10	1/128	3865	124
10.0	12.0	10.98	89.1	1.35	10.9	0.00	0.0	12.33	304	3	6	9	322	15	1/16	418	20
15.4	17.4	11.37	47.8	3.15	13.3	9.25	38.9	23.77	1007	20	23	2	1052	7	1	44	0
19.4	21.4	8.77	89.1	1.04	10.6	0.03	0.3	9.84	327	3	5	8	343	3	1/64	2231	20
28.6	30.6	8.91	86.2	1.42	13.7	0.01	0.1	10.34	295	2	2	4	303	4	1/32	938	12
33.0	35.0	8.7	82.5	1.72	16.3	0.13	1.2	10.55	310	3	11	1	325	2	1/128	3943	24
38.4	40.4	7.88	90.7	0.76	8.7	0.05	0.6	8.69	334	2	4	0	340	8	1/128	5008	118
46.6	48.6	6.97	93.9	0.45	6.1	0.00	0.0	7.42	304	3	2	1	310	40	1/16	668	86
52.0	54.0	8.22	94.4	0.49	5.6	0.00	0.0	8.71	329	1	4	1	335	168	1/4	154	77
119.9	121.0	8.62	80.4	0.65	6.1	1.45	13.5	10.72	306	5	5	2	318	2	1/16	475	3
130.4	132.4	8.42	87.0	1.26	13.0	0.00	0.0	9.68	307	7	7	0	321	2	1/32	1061	7
136.0	138.0	9.88	93.5	0.69	6.5	0.00	0.0	10.57	310	4	9	1	324	1	1/32	981	3
138.0	138.0	15.51	88.2	1.49	8.5	0.58	3.3	17.58	331	3	8	0	342	4	1/32	623	7
150.4	152.4	9.4	78.7	1.84	15.4	0.71	5.9	11.95	323	7	6	0	336	0	1/16	450	0
174.2	176.2	11.46	91.1	1.10	8.7	0.02	0.2	12.58	344	1	2	0	347	0	1/32	883	0
178.0	178.0	16.37	90.3	1.39	7.7	0.37	2.0	18.13	308	3	7	0	318	0	1/64	1123	1
181.8	183.8	6.79	94.3	0.41	5.7	0.00	0.0	7.2	284	5	6	0	295	3	1/16	656	7
192.8	194.8	11.18	93.6	0.76	6.4	0.00	0.0	11.94	194	1	0	0	195	1	1	16	0
195.0	195.0	11.66	92.0	0.98	7.7	0.03	0.2	12.67	22	0	0	0	22	0	1	2	0
198.0	200.0	11.82	98.7	0.16	1.3	0.00	0.0	11.98	135	0	0	1	136	4	1	11	0
204.8	206.8	10.23	97.5	0.26	2.5	0.00	0.0	10.49	149	1	0	0	150	1	1	14	0
208.0	208.0	6.65	86.7	0.56	7.3	0.46	6.0	7.67	2	0	0	0	2	0	1	0	0
211.0	213.0	8.77	97.8	0.20	2.2	0.00	0.0	8.97	33	0	0	0	33	1	1	4	0
218.6	220.6	8.67	94.8	0.48	5.2	0.00	0.0	9.15	11	0	0	0	11	0	1	1	0
226.0	226.0	18.79	83.1	2.54	11.2	1.28	5.7	22.61	2	0	0	0	2	0	1	0	0
231.0	233.0	11.6	81.2	1.78	12.5	0.91	6.4	14.29	18	0	0	0	18	0	1	1	0
239.5	241.5	12.83	99.2	0.10	0.8	0.00	0.0	12.93	7	0	0	0	7	0	1	1	0
250.5	250.5	14.71	94.5	0.50	3.2	0.35	2.2	15.56	0	0	0	0	0	0	1	0	0
255.5	257.5	12.08	99.2	0.10	0.8	0.00	0.0	12.18	1	0	0	0	1	0	1	0	0
260.5	262.5	10.75	52.3	4.52	22.0	5.28	25.7	20.55	6	0	0	0	6	0	1	0	0
267.5	267.5	17.36	71.0	3.44	14.1	3.65	14.9	24.45	5	0	1	0	6	0	1	0	0
268.5	270.5	14.89	74.1	3.72	18.5	1.49	7.4	20.1	32	0	0	0	32	0	1	2	0
272.5	272.5	9.42	92.5	0.65	6.4	0.11	1.1	10.18	0	0	0	0	0	0	1	0	0
277.5	279.5	10.83	89.5	1.26	10.4	0.01	0.1	12.1	0	0	0	0	0	0	1	0	0
287.5	289.5	9.32	55.9	7.20	43.2	0.16	1.0	16.68	3	0	0	0	3	0	1	0	0

Table 3

PI-88-AR Piston Core 7

depth 1 cm.	depth 2 cm	wt. <.063	wt. % < .063	wt. .063-2.0	wt. % .063-2.0	wt. > 2.00	wt. % > 2.00	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
296.5	298.5	11.24	97.7	0.10	0.9	0.17	1.5	11.51	9	0	0	0	9	1	1	1	0
302.5	304.5	8.74	98.8	0.11	1.2	0.00	0.0	8.85	0	0	0	0	0	0	1	0	0
308.5	310.5	7.97	97.6	0.20	2.4	0.00	0.0	8.17	0	0	0	0	0	0	1	0	0
308.5	308.5	11.39	97.3	0.32	2.7	0.00	0.0	11.71	0	0	0	0	0	0	1	0	0
309.5	311.5	8.3	94.6	0.39	4.4	0.08	0.9	8.77	3	0	0	0	3	0	1	0	0
325.5	327.5	6.68	75.5	1.75	19.8	0.42	4.7	8.85	0	0	0	0	0	0	1	0	0
333.5	333.5	15.71	95.0	0.82	5.0	0.00	0.0	16.53	0	0	0	0	0	0	1	0	0
337.5	339.5	9.52	99.6	0.04	0.4	0.00	0.0	9.56	0	0	0	0	0	0	1	0	0
342.5	342.5	12.02	99.9	0.01	0.1	0.00	0.0	12.03	0	0	0	0	0	0	1	0	0
355.5	375.5	13.14	90.7	1.34	9.3	0.00	0.0	14.48	2	0	0	1	3	0	1	0	0
365.5	367.5	8.67	79.0	1.71	15.6	0.60	5.5	10.98	2	0	0	1	3	0	1	0	0
375.5	377.5	13.44	98.3	0.23	1.7	0.00	0.0	13.67	15	0	0	0	15	0	1	1	0
379.5	379.5	18.85	99.8	0.04	0.2	0.00	0.0	18.89	0	0	0	0	0	0	1	0	0
383.5	385.5	9.42	97.6	0.23	2.4	0.00	0.0	9.65	0	0	0	0	0	0	1	0	0
392.0	392.0	6.6	97.3	0.18	2.7	0.00	0.0	6.78	1	0	0	0	1	0	1	0	0

PI-88-AR Piston Core 9

depth 1 cm.	depth 2 cm	wt. <.063	wt. % < .063	wt. .063-2.0	wt. % .063-2.0	wt. > 2.00	wt. % > 2.00	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
0.0	2.0	9.34	93.0	0.70	7.0	0	0.0	10.04	334	9	15	2	360	26	1/32	1147	83
4.0	6.0	8.84	93.1	0.66	6.9	0	0.0	9.50	152	2	4	0	158	20	1	17	2
8.0	10.0	9.93	91.1	0.92	8.4	0.05	0.5	10.90	1	0	1	0	2	2	1	0	0
15.3	17.3	7.78	96.6	0.24	3.0	0.03	0.4	8.05	309	3	8	2	322	9	1/8	320	9
19.2	21.2	9.70	89.6	0.90	8.3	0.22	2.0	10.82	53	1	4	0	58	1	1	5	0
23.0	25.0	10.80	87.3	1.53	12.4	0.04	0.3	12.37	0	0	0	0	0	0	1	0	0
26.0	28.0	9.03	98.9	0.10	1.1	0	0.0	9.13	20	0	0	0	20	1	1	2	0
28.0	30.0	9.51	99.9	0.01	0.1	0	0.0	9.52	1	0	0	0	1	0	1	0	0
34.0	36.0	8.94	99.7	0.03	0.3	0	0.0	8.97	0	0	0	0	0	0	1	0	0
39.0	41.0	12.62	82.4	2.61	17.0	0.09	0.6	15.32	18	0	1	0	19	1	1	1	0
42.0	45.0	12.96	78.9	3.47	21.1	0	0.0	16.43	7	0	0	0	7	0	1	0	0
45.3	47.3	10.35	90.2	1.12	9.8	0	0.0	11.47	0	0	0	0	0	0	1	0	0
49.0	51.0	7.94	97.9	0.16	2.0	0.01	0.1	8.11	33	0	0	0	33	11	1	4	1
53.0	55.0	8.55	91.4	0.80	8.6	0	0.0	9.35	306	8	12	2	328	11	1/32	1123	38
57.3	59.3	8.73	79.7	1.94	17.7	0.28	2.6	10.95	198	6	8	0	212	10	1	19	1
65.0	67.0	8.48	92.4	0.60	6.5	0.1	1.1	9.18	320	8	12	0	340	6	1/32	1185	21
70.0	72.0	9.01	92.4	0.74	7.6	0	0.0	9.75	292	2	18	0	312	5	1/32	1024	16
74.3	76.3	6.83	95.4	0.33	4.6	0	0.0	7.16	304	5	5	2	316	4	1/32	1412	18
81.0	83.0	7.35	98.1	0.14	1.9	0	0.0	7.49	342	3	5	1	351	13	1	47	2
87.0	89.0	6.17	95.5	0.29	4.5	0	0.0	6.46	0	0	0	0	0	0	1	0	0
99.0	101.0	9.19	100.0	0.00	0.0	0	0.0	9.19	0	0	0	0	0	0	1	0	0
109.0	111.0	8.27	100.0	0.00	0.0	0	0.0	8.27	1	0	0	0	1	0	1	0	0
119.2	121.3	5.04	100.0	0.00	0.0	0	0.0	5.04	1	0	0	0	1	0	1	0	0
128.0	130.0	8.70	100.0	0.00	0.0	0	0.0	8.70	5	0	1	0	6	0	1	1	0
137.0	139.0	7.45	100.0	0.00	0.0	0	0.0	7.45	3	0	0	0	3	0	1	0	0
143.0	145.0	9.30	100.0	0.00	0.0	0	0.0	9.30	1	0	0	0	1	0	1	0	0
150.2	152.2	8.15	100.0	0.00	0.0	0	0.0	8.15	0	0	0	0	0	0	1	0	0
157.0	159.0	9.38	96.5	0.34	3.5	0	0.0	9.72	0	0	0	0	0	0	1	0	0
163.0	165.0	7.60	85.4	1.30	14.6	0	0.0	8.90	1	0	0	0	1	0	1	0	0
169.3	171.3	8.02	100.0	0.00	0.0	0	0.0	8.02	0	0	0	0	0	0	1	0	0
174.0	176.0	7.93	98.9	0.09	1.1	0	0.0	8.02	68	0	0	0	68	4	1	8	0
185.0	187.0	8.35	93.4	0.27	3.0	0.32	3.6	8.94	310	7	7	2	326	37	1/32	1167	132
188.0		14.42	96.5	0.53	3.5	0	0.0	14.95	314	6	13	1	334	30	1/64	1430	128
195.0	197.0	7.21	95.8	0.32	4.2	0	0.0	7.53	324	3	11	2	340	27	1/32	1445	115
203.0	205.0	9.67	95.3	0.48	4.7	0	0.0	10.15	288	3	5	22	318	27	1/16	501	43

PI-88-AR Piston Core 9

depth 1 cm.	depth 2 cm	wt. <.063	wt. % < .063	wt. .063-2.0	wt. % .063-2.0	wt. > 2.00	wt. % > 2.00	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
210.0	212.0	10.59	81.5	2.25	17.3	0.15	1.2	12.99	289	5	18	3	315	36	1/16	388	44
213.0	215.0	8.83	87.8	1.18	11.7	0.05	0.5	10.06	319	5	8	0	332	57	1/16	528	91
214.0		17.73	90.7	1.71	8.8	0.1	0.5	19.54	316	5	17	1	339	90	1/16	278	74
218.0	220.0	7.31	93.5	0.47	6.0	0.04	0.5	7.82	276	3	6	1	286	191	1	37	24
223.0	225.0	11.93	81.4	2.00	13.7	0.72	4.9	14.65	51	0	1	0	52	63	1	4	4
228.0	230.0	6.10	89.4	0.71	10.4	0.01	0.1	6.82	0	0	0	0	0	1	1	0	0
235.0	237.0	9.21	98.1	0.18	1.9	0	0.0	9.39	0	0	0	0	0	0	1	0	0
241.0	243.0	11.87	99.8	0.02	0.2	0	0.0	11.89	115	3	3	0	121	81	1	10	7
247.0	249.0	8.67	95.7	0.37	4.1	0.02	0.2	9.06	304	4	9	1	318	34	1/16	562	60
254.0		14.60	97.6	0.36	2.4	0	0.0	14.96	262	7	11	0	280	76	1/32	599	163
257.0	259.0	8.71	97.3	0.24	2.7	0	0.0	8.95	1	0	0	0	1	8	1	0	1
268.0	270.0	8.87	95.8	0.39	4.2	0	0.0	9.26	1	0	0	0	1	0	1	0	0
278.0	280.0	10.35	95.7	0.47	4.3	0	0.0	10.82	0	0	0	0	0	0	1	0	0
282.0	282.0	22.00	92.2	1.86	7.8	0	0.0	23.86	0	0	0	0	0	0	1	0	0
286.5		12.71	89.2	1.49	10.5	0.05	0.4	14.25	0	0	0	0	0	0	1	0	0
295.0	297.0	7.81	100.0	0.00	0.0	0	0.0	7.81	0	0	0	0	0	0	1	0	0
298.0		19.09	100.0	0.00	0.0	0	0.0	19.09	0	0	0	0	0	0	1		0
303.0	305.0	8.83	100.0	0.00	0.0	0	0.0	8.83	0	0	0	0	0	0	1	0	0
309.0	311.0	8.73	81.1	1.91	17.7	0.13	1.2	10.77	0	0	0	0	0	0	1	0	0
317.0	319.0	8.14	99.5	0.04	0.5	0	0.0	8.18	0	0	0	0	0	0	1	0	0
320.0		13.54	98.3	0.15	1.1	0.09	0.7	13.78	1	0	0	0	1	5	1	0	0
325.0	327.0	7.09	98.3	0.12	1.7	0	0.0	7.21	0	0	0	0	0	5	1	0	1
330.0		17.76	97.4	0.47	2.6	0	0.0	18.23	9	0	0	0	9	37	1	0	2
334.6	336.6	8.19	96.7	0.28	3.3	0	0.0	8.47	0	0	0	0	0	6	1	0	1
344.0		14.16	96.5	0.49	3.3	0.03	0.2	14.68	0	0	0	0	0	0	1	0	0
351.6	353.6	9.14	90.0	0.71	7.0	0.31	3.1	10.16	0	0	0	0	0	0	1	0	0
355.0		17.10	95.5	0.75	4.2	0.05	0.3	17.90	0	0	0	0	0	0	1	0	0
360.0	362.0	9.30	93.9	0.60	6.1	0	0.0	9.90	3	0	0	0	3	4	1	0	0
372.0	374.0	9.12	98.8	0.11	1.2	0	0.0	9.23	1	0	0	0	1	1	1	0	0
382.0		20.20	98.2	0.33	1.6	0.04	0.2	20.57	0	0	0	0	0	0	1	0	0
386.0	388.0	11.40	99.5	0.06	0.5	0	0.0	11.46	0	0	0	0	0	0	1	0	0
396.8	398.8	12.53	98.0	0.25	2.0	0	0.0	12.78	0	0	0	0	0	0	1	0	0
399.0		19.75	99.4	0.11	0.6	0	0.0	19.86	0	0	0	0	0	0	1	0	0
407.0	409.0	9.85	97.7	0.19	1.9	0.04	0.4	10.08	0	0	0	0	0	0	1	0	0
417.0	419.0	9.36	85.5	1.19	10.9	0.4	3.7	10.95	0	0	0	0	0	0	1	0	0
426.3	428.3	9.78	99.5	0.05	0.5	0	0.0	9.83	0	0	0	0	0	0	1	0	0

Table 4

PI-88-AR Piston Core 9

depth 1 cm.	depth 2 cm	wt. <.063	wt. % < .063	wt. .063-2.0	wt. % .063-2.0	wt. > 2.00	wt. % > 2.00	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
431.0		14.91	99.9	0.01	0.1	0	0.0	14.92	2	0	0	0	2	0	1	0	0
436.0	438.0	10.52	97.6	0.26	2.4	0	0.0	10.78	1	0	0	0	1	0	1	0	0
444.0	446.0	9.16	94.3	0.21	2.2	0.34	3.5	9.71	0	0	0	0	0	7	1	0	1
448.0		18.55	96.1	0.71	3.7	0.05	0.3	19.31	13	0	0	0	13	0	1	1	0
455.6	457.6	7.51	49.6	0.57	3.8	7.06	46.6	15.14	294	6	5	0	305	25	1/4	81	7
460.0		19.41	86.4	2.87	12.8	0.19	0.8	22.47	290	1	7	0	298	3	1/64	849	9
466.6	468.6	10.93	73.7	3.80	25.6	0.11	0.7	14.84	324	8	5	0	337	8	5/8	36	1
469.0		19.62	83.8	2.79	11.9	1.01	4.3	23.42	297	3	7	2	309	3	1/64	844	8
473.3	475.3	13.77	69.2	3.11	15.6	3.03	15.2	19.91	322	5	6	1	334	6	1/8	134	2
480.5	482.5	11.19	86.9	1.23	9.5	0.46	3.6	12.88	290	3	10	1	304	4	1/128	3021	40
482.0		15.26	91.7	1.39	8.3	0	0.0	16.65	295	3	10	0	308	3	1/32	592	6
489.1	491.1	11.09	89.3	1.33	10.7	0	0.0	12.42	313	1	10	1	325	15	1/32	837	39
491.0		14.03	88.5	1.75	11.0	0.08	0.5	15.86	316	0	16	0	332	26	1/16	335	26
494.0		21.70	92.9	1.65	7.1	0	0.0	23.35	295	2	7	0	304	30	3/8	35	3
498.0		16.64	91.4	1.55	8.5	0.02	0.1	18.21	2	0	0	1	3	0	1	0	0
497.3	499.3	11.55	98.5	0.17	1.5	0	0.0	11.72	31	0	0	0	31	1	1	3	0
503.1	505.1	4.82	34.9	9.00	65.1	0	0.0	13.82	0	0	0	0	0	0	1	0	0
507.0		19.80	92.6	1.13	5.3	0.45	2.1	21.38	38	1	3	0	42	0	1	2	0
508.3	510.3	12.36	96.7	0.42	3.3	0	0.0	12.78	12	0	0	0	12	0	1	1	0
512.5	514.5	13.90	78.3	3.79	21.4	0.06	0.3	17.75	5	0	1	0	6	0	1	0	0
519.0		23.71	77.0	6.57	21.3	0.5	1.6	30.78	5	0	1	0	6	0	1	0	0
523.9	525.9	12.75	76.3	3.61	21.6	0.36	2.2	16.72	0	0	0	0	0	0	1	0	0
530.0		22.00	77.5	5.46	19.2	0.93	3.3	28.39	9	0	0	0	9	0	1	0	0
534.7	536.7	9.66	72.6	3.30	24.8	0.34	2.6	13.30	3	0	0	0	3	0	1	0	0
540.5	542.5	8.77	99.9	0.01	0.1	0	0.0	8.78	0	0	0	0	0	0	1	0	0
542.0		13.80	99.9	0.02	0.1	0	0.0	13.82	1	0	0	0	1	0	1	0	0
547.0		10.20	99.4	0.06	0.6	0	0.0	10.26	115	1	1	0	117	0	1	11	0
546.1	548.1	10.24	99.9	0.01	0.1	0	0.0	10.25	17	0	0	0	17	4	1	2	0
553.7	555.7	9.69	97.4	0.26	2.6	0	0.0	9.95	306	3	8	1	318	26	1/16	511	42
556.0		13.26	96.7	0.45	3.3	0	0.0	13.71	289	0	15	0	304	34	1/16	355	40
561.1	563.1	10.63	96.8	0.35	3.2	0	0.0	10.98	306	2	11	0	319	23	1/32	930	67
564.0		16.88	96.4	0.61	3.5	0.02	0.1	17.51	298	0	12	1	311	15	1/64	1137	55
571.1	573.1	11.64	96.6	0.41	3.4	0	0.0	12.05	337	4	6	1	348	21	1/16	462	28
574.0		13.22	94.9	0.69	5.0	0.02	0.1	13.93	303	5	7	0	315	13	1/32	724	30
579.3	581.3	11.55	93.6	0.79	6.4	0	0.0	12.34	310	3	10	0	323	22	1/16	419	29
582.0		15.13	95.1	0.78	4.9	0	0.0	15.91	365	8	9	0	382	55	3/8	65	9

Table 4

PI-88-AR Piston Core 9

depth 1 cm.	depth 2 cm	wt. <.063	wt. % < .063	wt. .063-2.0	wt. % .063-2.0	wt. > 2.00	wt. % > 2.00	total wt.	spach	dpach	dupac	other	total plank	total benth	fraction of sample counted	plank > 150 µm / gram	benth > 150 µm / gram
585.0		21.97	97.3	0.61	2.7	0	0.0	22.58	195	5	5	0	205	0	1	9	0
590.0	592.0	13.06	93.6	0.77	5.5	0.13	0.9	13.96	20	0	1	0	21	4	1	2	0
593.0		16.65	96.2	0.50	2.9	0.16	0.9	17.31	0	0	0	0	0	0	1	0	0
597.0	599.0	9.67	95.8	0.42	4.2	0	0.0	10.09	0	0	0	0	0	0	1	0	0
603.3	605.5	10.02	99.7	0.03	0.3	0	0.0	10.05	10	0	1	0	11	0	1	1	0
605.0		19.09	99.8	0.03	0.2	0	0.0	19.12	5	0	0	0	5	0	1	0	0
610.0	612.0	13.40	99.9	0.01	0.1	0	0.0	13.41	1	0	0	0	1	0	1	0	0
617.5	619.5	9.66	99.9	0.01	0.1	0	0.0	9.67	2	0	0	0	2	0	1	0	0
623.9	625.9	10.55	98.0	0.21	2.0	0	0.0	10.76	80	2	1	0	83	5	1	8	0