

UNIVERSITY OF CALIFORNIA
SCRIPPS INSTITUTION OF OCEANOGRAPHY

COCOTOW EXPEDITION
September-December 1974

LIST OF GEOLOGICAL SAMPLES
Copied from Shipboard Logs

Depths Corrected by Matthews' Tables

R/V MELVILLE

- CCTW 1G 17 September 1974, 0740-0917 hrs.; 8°16.1'N, 104°09.9'W; depth 3280 m; core length 108 cm. Top of core brown, very fluid clay; with areas of tan and white calcareous material; bottom 15 cm uniformly calcareous.
- CCTW 2G 17 September 1974, 1038-1158 hrs.; 8°16.3'N, 104°05.6'W; depth approx. 3100 m; core length 53 cm. Approx. 14 cm of top is watery brown clay; lower 39 cm greenish, chunky, very consolidated clay.
- CCTW 3G 17 September 1974, 1324-1435 hrs.; 8°19.6'N, 104°06.5'W; depth approx. 3026 m; core length 17 cm. Mn nodules with sand layer below; chips interspersed with brownish sandy mud, similar to that in 1G, but of far coarser texture.
- CCTW 4G 17 September 1974, 1612-1721 hrs.; 8°16.0'N, 104°08.1'W; depth 3129 m; core length approx. 8 cm. Same green clay as in 2G.
- CCTW 5G 10 October 1974, 0058-0115 hrs.; 00°43.0'S, 89°55.3'W; depth 666 m. A small amount of foraminiferal sand only. Galápagos Platform.
- CCTW 6G 10 October 1974, 0232-0255 hrs.; 0°31.1'S, 89°55.5'W; depth 956 m. Catcher sample only. Foraminiferal sand. East of Baltra Island, Galápagos Islands.
- CCTW 7PG 12 October 1974, 0315-0540 hrs.; 0°40.6'S, 85°22.1'W; depth 2542 m. No core: corer, weight and part of chain lost. Sand dunes.
- CCTW 7P Simultaneously with 7PG. No core: attempt at 60-foot core. Lower three sections of barrel, nose cone, etc., damaged piston and remaining section of barrel bent. A little sand on end of bent barrel.
- CCTW 8PG 12 October 1974, 1541-1822 hrs.; 0°24.4'S, 85°34.1'W; depth 2944 m; core length 90 cm. North of Carnegie Ridge, Panama Basin.
- CCTW 8P Simultaneously with 8PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 150 cm; Section 3, 150 cm; Section 4, 155 cm. Measured pieces at 140-150 cm, 288-300 cm and 447-459 cm to Ed Hamilton for R. Tyce for physical properties. 300-310 cm in plastic box (small piece between sections 2 and 3). Mostly light brown foraminiferal ooze in upper 15 cm; remainder coarser foraminiferal sand.
- CCTW 9PG 14 October 1974, 1547-1743 hrs.; 0°33.2'S, 81°09.3'W; depth 3127 m; core length 130 cm. Dark green mud. Peru-Chile Trench.
- CCTW 9P Simultaneously with 9PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 132 cm; Section 3, 150 cm; Section 4, 66 cm. Dark green mud.

- CCTW 10PG 15 October 1974, 1405-1628 hrs.; 0°19.9'S, 81°09.4'W; depth 2962 m; core length 54 cm. Peru-Chile Trench.
- CCTW 10P Simultaneously with 10PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 150 cm; Section 3, 134 cm. Green, well consolidated mud, top 5 cm light tan with coarse-grained sand. 123-135 cm and 273-285 cm to Ed Hamilton for R. Tyce for physical properties.
- CCTW 11PG 16 October 1974, 0300-0510 hrs.; 0°03.3'S, 81°02.2'W; depth 3101 m; core length 7.5 cm (in box). Ecuadorian Trench.
- CCTW 11P Simultaneously with 11PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 149 cm; Section 3, 150 cm; Section 4, 111 cm.
- CCTW 12G 25 October 1974, 1415-1515 hrs.; 0°42.5'S, 85°18.9'W; depth 2428 m; core length 173 cm. Mostly foraminiferal ooze with brown sand layering near the top. Sand dune valley.
- CCTW 13PG 29 October 1974, 2044-2225 hrs.; 0°30.3'S, 85°33.2'W; depth 2973 m. No core. North [end ?] sand dune valley.
- CCTW 13P Simultaneously with 13PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 150 cm; Section 3, 150 cm; Section 4, 130 cm; Section 5, 92 cm; Section 6, 118 cm. White calcareous ooze with sand layer at top.
- CCTW 14PG 30 October 1974, 0228-0410 hrs.; 0°34.6'S, 85°28.9'W; depth 2788 m. No core.
- CCTW 14P Simultaneously with 14PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 150 cm; Section 3, 66 cm; Section 4, 146 cm. White, chalky calcareous ooze with sandy top section.
- CCTW 15PG 30 October 1974, 0639-0811 hrs.; 0°27.9'S, 85°34.4'W; depth 2949 m. No core. Sand dune valley.
- CCTW 15P Simultaneously with 15PG. Core length: Section 1 (bottom of core), 139 cm; Section 2, 137 cm; Section 3, 148 cm; Section 4, 148 cm; Section 5, 114 cm. White calcareous ooze with sand in upper portion.
- CCTW 16G 30 October 1974, 1019-1115 hrs.; 0°29.3'S, 85°24.8'W; depth 2550 m; core length 155 cm. White calcareous ooze with sand at top. Central Carnegie Ridge.
- CCTW 17PG 31 October 1974, 1416-1522 hrs.; 0°43.3'S, 82°46.3'W; depth 1671 m. No core. Eastern Carnegie Ridge.
- CCTW 17P Simultaneously with 17PG. Core length: Section 1 (bottom of core), 145 cm; Section 2, 123 cm; Section 3, 34 cm; Section 4, 116 cm; Section 5, 94 cm: a 10 cm section was lost between sections 2 and 3; some sand from the top was put in a plastic box. Hard, limy sediment with sand in the upper section.

- CCTW 18PG 31 October 1974, 1745-1851 hrs.; 0°43.6'S, 82°44.6'W; depth 1428 m; core length 53 cm. Sandy foraminiferal ooze (?). East of the Carnegie Ridge.
- CCTW 18P Simultaneously with 18PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 126 cm; Section 3, 71 cm. Bottom 12 cm from sections 2 and 3 to Ed Hamilton for R. Tyce for physical properties. Liner collapsed in upper 20 ft. barrel section.
- CCTW 19PG 31 October 1974, 2122-2222 hrs.; 0°45.2'S, 82°44.3'W; depth 1408 m; core length 54 cm. Volcanic ash? East Carnegie Ridge.
- CCTW 19P Simultaneously with 19PG. Core length: Section 1 (bottom of core), 151 cm; Section 2, 128 cm; Section 3, 114 cm. Gray volcanic ash above; green foraminiferal sand to ooze below.
- CCTW 20PG 1 November 1974, 0014-0130 hrs.; 0°44.6'S, 82°44.3'W; depth 1448 m. No core. East Carnegie Ridge.
- CCTW 20P Simultaneously with 20PG. Core length: Section 1 (bottom of core), 139 cm; Section 2, 135 cm; Section 3, 73 cm. Chalk with surface layer of foraminiferal sand.
- CCTW 21PG 5-6 October 1974, 2348-0156 hrs.; 0°21.2'S, 81°09.7'W; depth 2882 m. Catcher sample only. Ecuadorian Trench.
- CCTW 21P Simultaneously with 21PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 71 cm. Uppermost portion white calcareous material, while lower portion is greenish cream-colored and appeared also calcareous.
- CCTW 22PG 6 November 1974, 0342-0525 hrs.; 0°20.3'S, 81°08.3'W; depth 2611 m. Catcher sample only. Peru-Chile Trench.
- CCTW 22P Simultaneously with 22PG. Core length: Section 1 (bottom of core), 92 cm; Section 2, 150 cm. White clay and brown sand upper 6 cm; green clay in remainder of core.
- CCTW 23PG 6 November 1974, 0709-0840 hrs.; 0°21.4'S, 81°07.1'W; depth 2693 m. No core. Peru-Chile Trench.
- CCTW 23P Simultaneously with 23PG. Core length: Section 1 (bottom of core), 78 cm; Section 2, 150 cm. Greenish white calcareous material, gritty above, fine in lower portion.
- CCTW 24PG 6 November 1974, 1055-1316 hrs.; 0°18.6'S, 81°08.8'W; depth 2942 m. No core. Ecuadorian Trench.
- CCTW 24P Simultaneously with 24PG. Core length: Section 1 (bottom of core), 132 cm; Section 2, 148 cm.
- CCTW 25PG 7 November 1974, 0105-0255 hrs.; 0°19.2'S, 81°08.8'W; depth 2706 m. Catcher [?] sample only. Ecuadorian Trench.

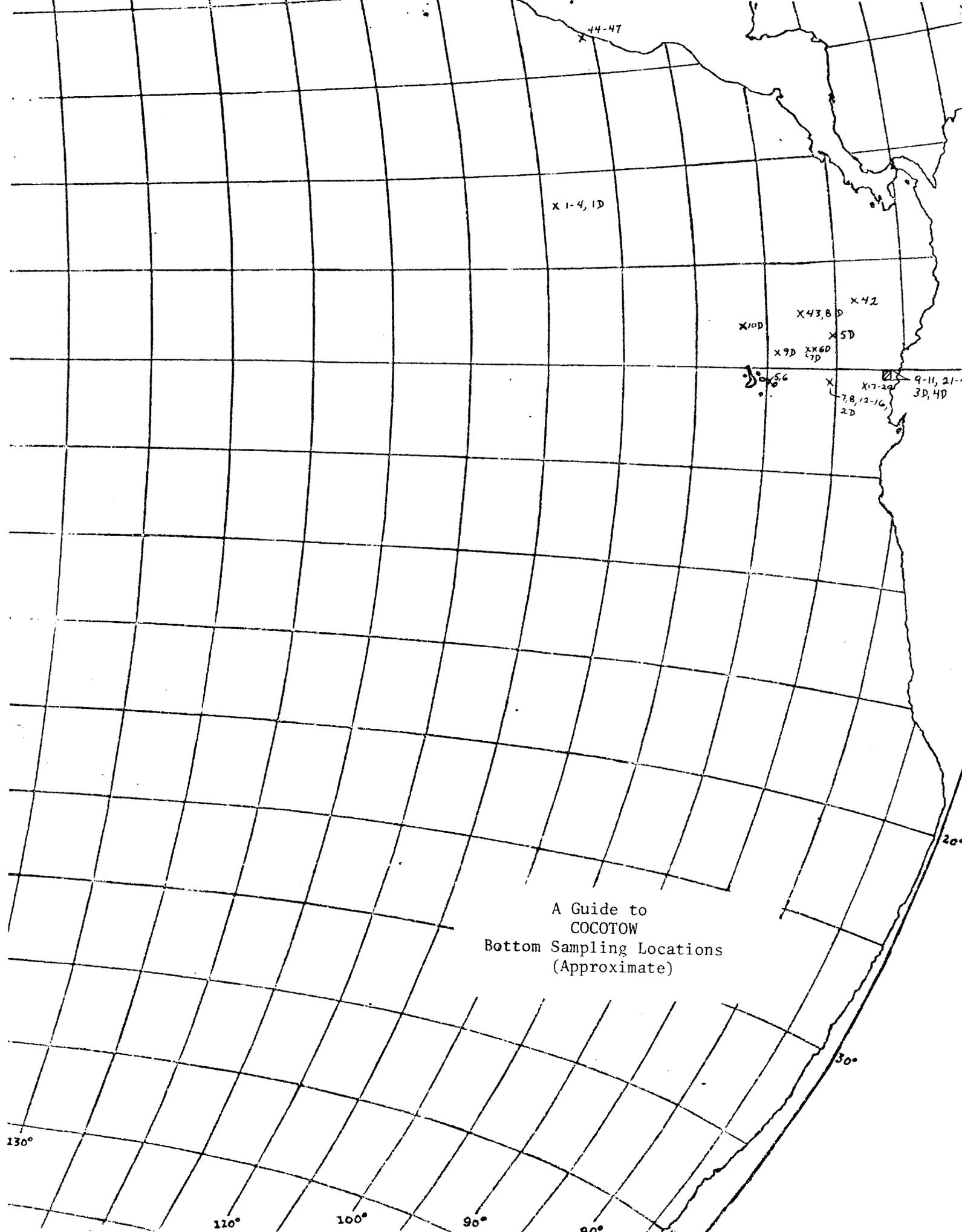
- CCTW 25P Simultaneously with 25PG. Core length: 70 cm.
- CCTW 26PG 7 November 1974, 0344-0646 hrs.; 0°18.1'S, 81°08.5'W; depth 2856 m. No core. Ecuadorian Trench.
- CCTW 26P Simultaneously with 26PG. Core length: Section 1 (bottom of core), 131 cm; Section 2, 150 cm; Section 3, 130 cm.
- CCTW 27PG 7 November 1974, 0811-1008 hrs.; 0°17.6'S, 81°11.8'W; depth 2395 m. No core. Ecuadorian Trench.
- CCTW 27P Simultaneously with 27PG. Core length 106 cm. Green ooze.
- CCTW 28PG 7 November 1974, 1204-1300 hrs.; 0°18.8'S, 81°11.5'W; depth 2534 m. Catcher sample only. Ecuadorian Trench.
- CCTW 28P Simultaneously with 28PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 137 cm; Section 3, 15 cm, Section 4, 142 cm. Bottom 12 cm of sections 2 and 4 to Ed Hamilton for R. Tyce for physical properties.
- CCTW 29PG 8 November 1974, 0743-0848 hrs.; 0°01.1'S, 81°25.9'W; depth 1333 m; core length 27 cm. Gritty sand. Ecuadorian Trench.
- CCTW 29P Simultaneously with 29PG. No core: Lost upper sleeve, two barrels, two couplings; bent one barrel beyond repair.
- CCTW 30PG 8 November 1974, 1107-1232 hrs.; 0°02.7'S, 81°26.4'W; depth 1346 m. Catcher sample only. Ecuadorian Trench.
- CCTW 30P Simultaneously with 30PG. Core length: Section 1 (bottom of core), 136 cm; Section 2, 150 cm; Section 3, 147 cm; Section 4, 99 (?) cm; Section 5, 126 (?) cm; Section 6, 51 (?) cm. Bottom 12 cm of sections 2, 3, 4 and 5 to Ed Hamilton for R. Tyce for physical properties. Top section (6) suffered major collapse and sediment is disturbed. Bottom of Section 3 contained water pocket which was cut out after material settled.
- CCTW 31PG 8 November 1974, 1354-1505 hrs.; 0°03.2'S, 81°26.8'W; depth 1509 m; core length 26 cm. Ecuadorian Trench.
- CCTW 31P Simultaneously with 31PG. No core.
- CCTW 32G 11 November 1974, 1308-1340 hrs.; 0°03.4'S, 81°29.6'W; depth 1280 m; core length 32 cm. Medium brown sand. Eastern Carnegie Ridge.
- CCTW 33G 11 November 1974, 1419-1445 hrs.; 0°04.5'S, 81°30.1'W; depth 1351 m; core length 43 cm. Greenish brown sand. Eastern Carnegie Ridge.
- CCTW 34G 11 November 1974, 1506-1536 hrs.; 0°04.1'S, 81°30.2'W; depth 1304 m. Catcher sample only. Greenish brown sand. Eastern Carnegie Ridge.

- CCTW 35G 11 November 1974, 1620-1659 hrs.; 0°03.9'S, 81°29.2'W; depth 1310 m; core length 40 cm. Medium brown sand. Eastern Carnegie Ridge.
- CCTW 36G 11 November 1974, 1710-1740 hrs.; 0°02.7'S, 81°28.2'W; depth 1322 m; core length 19 cm, plus 2 pt. containers. Sand overlying stiff calcareous ooze. Eastern Carnegie Ridge.
- CCTW 37G 11 November 1974, 1754-1845 hrs.; 0°02.9'S, 81°28.2'W; depth 1379 m; core length 11 cm, plus 4 cm incl. with catcher sample. Sand overlying soft calcareous ooze. Eastern Carnegie Ridge.
- CCTW 38G 11 November 1974, 1858-1938 hrs.; 0°02.7'S, 81°29.6'W; depth 1287 m; core length 10 cm. Sand unconformably overlying soft calcareous ooze; heavily burrowed. Eastern Carnegie Ridge.
- CCTW 39G 11 November 1974, 2116-2148 hrs.; 0°01.9'S, 81°27.2'W; depth 1490 m; core length 15 cm. Dark brown ooze with sand. Eastern Carnegie Ridge.
- CCTW 40G 11-12 November 1974, 2333-0004 hrs.; 0°03.0'S, 81°26.4'W; depth 1337 m. No core due to loss of nose cone. Eastern Carnegie Ridge.
- CCTW 41G 12 November 1974, 0013-0041 hrs.; 0°03.0'S, 81°26.2'W; depth 1337 m; core length 54 cm. Dark green sandy ooze. Eastern Carnegie Ridge.
- CCTW 42PG 23 November 1974, 2048-2250 hrs.; 3°08.8'N, 83°39.1'W; depth 2767 m; core length 131 cm. Upper 10 cm moderate brown siliceous-calcareous clay, remainder olive calcareous clay. Galápagos Rise.
- CCTW 42P Simultaneously with 42PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 147 cm; Section 3, 127 cm. Upper 10 cm brown mud, remainder grey-green foraminiferal mud.
- CCTW 43PG 1 December 1974, 0142-0413 hrs.; 2°39.0'N, 87°28.7'W; depth 3604 m; core length 86 cm. Upper 10 cm dark brown clay, remainder fine, olive calcareous clay. Galápagos spreading center, north flank in trough.
- CCTW 43P Simultaneously with 43PG. Core length: Section 1 (bottom of core), 158 (?) cm; Section 2, 145 (?) cm; Section 3, 130 (?) cm. Upper 25 cm dark brown clay; remainder fine, olive grey calcareous clay.
- CCTW 44G 11 December 1974, 1343-1410 hrs.; 16°51.6'N, 100°39.1'W; depth 1121 m; core length 38 cm. Grey-brown clay, sandy clay and wood-rich layers. Continental Shelf.
- CCTW 45G 11 December 1974, 1420-1507 hrs.; 16°52.4'N, 100°39.2'W; depth 1130 m; core length 37 cm. Olive drab (?) clay and sand intermixed; with foraminifers.

- CCTW 46PG 12 December 1974, 0030-0400 hrs.; 16°26.7'N, 100°44.1'W; depth 4864 m; core length 154 cm. Olive grey silty clay. Mid-America Trench.
- CCTW 43P Simultaneously with 46PG. No core.
- CCTW 47PG 12 December 1974, 0540-0910 hrs.; 16°32.6'N, 100°39.0'W; depth 5198 m; core length 73 cm. Olive grey silty clay. Inner slope of Mid-America Trench.
- CCTW 47P Simultaneously with 47PG. Core length: Section 1 (bottom of core), 150 cm; Section 2, 147 cm; Section 3, 32 cm; Section 4, 149 cm; Section 5, 140 cm. Fine, olive grey silty clay. 468-473 cm in box.

DREDGE HAULS

- CCTW 1D 17-18 September 1974, 2333-0547 hrs.; 8°15.7'N, 104°08.9'W-8°14.9'N, 104°07.6'W; depth 2569 m. 19 bags of Mn-coated basalt.
- CCTW 2D 30 October 1974, 1331-1706 hrs.; 0°32.1'S, 85°36.3'W-0°36.5'S, 85°37.7'W; depth 2340-2300 m. Twenty pounds of Mn nodules.
- CCTW 3D 6 November 1974, 1321-1725 hrs.; 0°18.4'S, 81°08.8'W-0°19.7'S, 81°09.0'W; depth 3000-2970 m. Sixty pounds of sediment.
- CCTW 4D 13 November 1974, 1350-1614 hrs.; 0°20.6'S, 81°09.1'W-0°21.0'S, 81°08.2'W; depth 2988-2499 m. Twenty pounds of indurated olive grey calcareous sediment; also pipe dredge sample.
- CCTW 5D 26-27 November, 2109-0041 hrs.; 1°30.5'N, 85°15.8'W-1°30.4'N, 85°16.5'W; depth 2816-3026 m. Three bags of altered basalt; one quart of calcareous sediment in pipe dredge.
- CCTW 6D 27 November 1974, 1210-1455 hrs.; 0°50.4'N, 86°33.1'W-0°51.4'N, 86°32.7'W; depth 2432-2330 m. Four bags of fresh, glassy basalt; full pipe dredge of foraminiferal ooze; and one crustacean.
- CCTW 7D 27-28 November 1974, 2158-0040 hrs.; 0°52.2'N, 87°05.0'W-0°53.1'N, 87°05.3'W; depth 2388-2256 m. A small bag of pillow basalt. Fracture zone.
- CCTW 8D 1 December 1974, 0555-1030 hrs.; 2°35.9'N, 87°28.1'W-2°34.9'N, 87°26.5'W; depth 3191-2350 m. Fifteen pounds of altered basalt; a quart box of sediment; a pint box of coral (?).
- CCTW 9D 4 December 1974, 0324-0609 hrs.; 0°46.7'N, 89°13.7'W-0°46.5'N, 89°14.0'W; depth 1845-1774 m. Sixty pounds of fresh basalt; sediment in pipe dredge.
- CCTW 10D 5 December 1974, 1240-1452 hrs.; 1°59.9'N, 91°36.8'W-2°00.2'N, 91°37.2'W; depth 2053-1984 m. Ten pounds of Mn crust; sediment in pipe dredge.



A Guide to
COCOTOW
Bottom Sampling Locations
(Approximate)

SCRIPPS INSTITUTION OF OCEANOGRAPHY

Key to Abbreviations Used in Sample Descriptions ("core logs")

- G: Gravity core
- P: Piston core
- PG: Gravity core obtained in conjunction with a piston core, and bearing the same sample number. This is also known as a "trip gravity" core since in this instance a gravity corer is used to trip the arm of the piston corer.
- Note: In some core logs (e.g. Monsoon) it will be noted that there is sometimes a PG core with no accompanying P core (or vice versa). This is a result of no P sample having been obtained; therefore, even the attempt was ignored when the log was compiled. (Obviously, however, there was an attempt or there would be no PG.)
- V: Heat probe core, short and of small diameter (c. 1"), developed by R. von Herzen. Occasionally regular gravity cores are used instead.
- GV: AMPHITRITE Expedition ONLY: Gravity cores taken for a specific person and purpose.
- Note: Such "special request" cores are frequently taken on SIO cruises; but, with the above exception, are not usually designated differently than other samples. Frequently, also, such cores are used in their entirety by the person for whom they were taken and are no longer in the SIO collection, even though they may appear in the log.
- C: Very small cores obtained by corers attached to the frame of a camera.
- T: Triple corer samples, some are very small, others are regular gravity cores.
- Grab: Designated as such (e.g., MSN 135 grab).
- S: Snapper: The proper term for "grab". May also be spelled out.
- D: Dredge samples. Also used to designate subaerial samples.
- H: Hydrographic PBS (Phleger Bottom Sampler). See Downwind, Horizon, DWHHI.

Abbreviations of ship names:

- A: R/V Argo (e.g., LSDA)
- H: R/V Horizon (e.g., LSDH, DWH)
- B: R/V Spencer F. Baird (e.g., DWB)
- HMS: R/V Hugh M. Smith (e.g., FAN, HMS)
- S: R/V Stranger

Note: In the LUSIAD-ARGO (LSDA) core log will also be found SCS: South China Sea.

Use of lower case letters and prime ('): Used to indicate that two (or more) attempts were made to obtain a sample; e.g., 101 G (first attempt), 101 Ga (second attempt); or 101 Ga (first attempt), 101 Gb (second attempt). Occasionally, as in Chubasco Roman-numeraled samples, a prime mark (') has been used for this purpose, e.g., CHUB Vg, V'g. (Note that this log also uses lower case for gravity and piston core designations).

Occasionally no letter designation is used if all cores of an expedition were gravity cores.