January 29, 1985

The accompanying volume is a summary of the preliminary scientific results obtained on Leg 100 of the Ocean Drilling Program. It was assembled from shipboard files by the scientists who participated in the cruise.

This summary was prepared rapidly for the immediate use of the scientists working with Leg 100 samples and does not necessarily represent the final results of Leg 100 or the ultimate conclusions of the shipboard scientists. Material contained in this volume is privileged information and should not be referenced.

The Ocean Drilling Program is conducted using scientific advice provided by JOIDES and is managed by Joint Oceanographic Institutions, Inc. under a contractual arrangement with the National Science Foundation. Texas A&M University is the Science Operator for the Ocean Drilling Program.

Philip D. Rabinowitz

William J. Merrell

Louis E. Garrison, and

Robert B. Kidd

Co-Chief Scientists, Leg 100
Texas A&M University
College Station, Texas 77843

OCEAN DRILLING PROGRAM

Ocean Drilling Program
Texas A&M Research Foundation
College Station, TX 77843-3469
(409) 845-2673

SUMMARY OF OCEAN DRILLING PROJECT - LEG 100

The scientific party aboard JOIDES RESOLUTION for Leg 100 of the Ocean Drilling Project consisted of:

Philip Rabinowitz (Texas A&M University)
Co-Chief Scientist

Louis Garrison (Texas A&M University)
Co-Chief Scientist

William Merrell (Texas A&M University)
Co-Chief Scientist

Robert Kidd (Texas A&M University)
Co-Chief Scientist

Andy Adamson (Texas A&M University)

Christian Auroux (Texas A&M University)

Jack Baldauf (Texas A&M University)

Brad Clement (Texas A&M University)

Russ Merrill (Texas A&M University)

Audrey Meyer (Texas A&M University)

Amanda Palmer (Texas A&M University)

Elliott Taylor (Texas A&M University)

SHAKEDOWN PART A

NAME	POSITION ON SHIP
PHIL RABINOWITZ	CO-CHIEF SCIENTIST
WILLIAM MERRELL	CO-CHIEF SCIENTIST
SANDRA TOYE	NATIONAL SCIENCE FOUNDATION REPRESENTATIVE
ARCH MCLERRAN	MANAGER OF DRILLING OPERATIONS
PAT THOMPSON	SPECIAL TOOLS ENGINEER
GLEN FOSS	OPERATIONS SUPERINTENDENT
STEVE HOWARD	OPERATIONS
MIKE STORMS	OPERATIONS
BILL ROBINSON	UNDERWAY GEOPHYSICS
ANDY ADAMSON	STAFF SCIENTIST
CHRISTIAN AUROUX	STAFF SCIENTIST
JACK BALDAUF	STAFF SCIENTIST
BRAD CLEMENT	STAFF SCIENTIST
ELLIOT TAYLOR	STAFF SCIENTIST
MARK WIEDERSPAHN	UNDERWAY GEOPHYSICS
KEN GRIFFITH	UNDERWAY GEOPHYSICS
AUDREY MEYER	ASST. MANAGER OF SCIENCE OPERATIONS
AMANDA PALMER	STAFF SCIENTIST
RUSS MERRILL	MANAGER OF SCIENCE SERVICES
JACK FOSTER	SUPERVISOR OF COMPUTER SERVICES
JOHN BECK	PHOTOGRAPHER
JOHN EASTLUND	COMPUTER SERVICES
DAN BONTEMPO	COMPUTER SERVICES
BILL MEYER	COMPUTER SERVICES
STEVE ASQUITH	CURATORIAL REPRESENTATIVE
BOB HAYMAN	CURATORIAL REPRESENTATIVE
TED GUSTAFSON	LABORATORY OFFICER
DENNIS GRAHAM	LABORATORY OFFICER
BURNEY HAMLIN	LABORATORY OFFICER
ROY DAVIS	PHOTOGRAPHER
JENNY GLASSER	MARINE TECHNICIAN
MICHIKO HITCHCOX	YEOPERSON
WENDY AUTIO	YEOPERSON
BRADLEY JULSON	CHEMIST
GAIL PERETSMAN	CHEMIST
KATIE SIGLER	CHEMIST
TAMARA FRANK	CHEMIST
BILL MILLS	MARINE TECHNICIAN
DON SIMS	MARINE TECHNICIAN
JOHN TAUXE	MARINE TECHNICIAN
LARRY BERNSTEIN	MARINE TECHNICIAN
MARK DOBDAY	MARINE TECHNICIAN
HENRIKE GROSCHEL	MARINE TECHNICIAN
SKIP HUTTON	PALEOMAGNETICS TECHNICIAN

JESSY JONES	MARINE TECHNICIAN
JOHN WEISBRUCH	STOREKEEPER
RANDY CURRENT	ELECTRICAL TECHNICIAN
DAN LARSON	ELECTRICAL TECHNICIAN
DWIGHT MOSSMAN	ELECTRICAL TECHNICIAN
MIKE REITMEYER	ELECTRICAL TECHNICIAN

SHAKEDOWN PART B

PHILIP RABINOWITZ	CO-CHIEF SCIENTIST
LOU GARRISON	CO-CHIEF SCIENTIST
WILLIAM MERRELL	CO-CHIEF SCIENTIST
AL SOUTHERLAND	NATIONAL SCIENCE FOUNDATION REPRESENTATIVE
KAREN REIDEL	PUBLIC INFORMATION-TAMU
ARCH MCLERRAN	MANAGER OF DRILLING OPERATIONS
LAMAR HAYES	OPERATINS SUPERVISOR
PAT THOMPSON	SPECIAL TOOLS ENGINEER
DAVE HUEY	OPERATIONS
STEVE HOWARD	OPERATIONS
CLAUDE MABILE	OPERATIONS
STAN SEROCKI	OPERATIONS
BILL ROBINSON	UNDERWAY GEOPHYSICS
ANDY ADAMSON	STAFF SCIENTIST
CHRISTIAN AUROUX	STAFF SCIENTIST
JACK BALDAUF	STAFF SCIENTIST
BRAD CLEMENT	STAFF SCIENTIST
ELLIOT TAYLOR	STAFF SCIENTIST
MARK WIEDERSPAHN	UNDERWAY GEOPHYSICS
ROB KIDD	MANAGER OF SCIENCE OPERATIONS
RUSS MERRILL	MANAGER OF SCIENCE SERVICES
JACK FOSTER	SUPERVISOR OF COMPUTER SERVICES
JOHN BECK	PHOTOGRAPHER
JOHN EASTLUND	COMPUTER SERVICES
DAN BONTEMPO	COMPUTER SERVICES
JERRY BODE	CURATORIAL REPRESENTATIVE
DIANA STOCKDALE	CURATORIAL REPRESENTATIVE
BOB OLIVAS	SUPERVISOR OF LOGISTICAL AND TECHNICAL PERSONNEL
TED GUSTAFSON	LABORATORY OFFICER
DENNIS GRAHAM	LABORATORY OFFICER
BURNEY HAMLIN	LABORATORY OFFICER
JENNY GLASSER	MARINE TECHNICIAN
MICHIKO HITCHCOX	YEOPERSON
BRADLEY JULSON	CHEMIST
BILL MILLS	MARINE TECHNICIAN
GAIL PERETSMAN	CHEMIST
KATIE SIGLER	CHEMIST
DON SIMS	MARINE TECHNICIAN
JOHN TAUXE	MARINE TECHNICIAN
KEVIN DE MAURET	PHOTOGRAPHER
BETTIN DOMEYER	MARINE TECHNICIAN
MATT MEFFERD	MARINE TECHNICIAN
MARK NESCHLEBA	MARINE TECHNICIAN
JOE POWERS	MARINE TECHNICIAN
KEVIN ROGERS	MARINE TECHNICIAN
CHRISTIAM SEGADE	MARINE TECHNICIAN

RANDY CURRENT	ELECTRICAL TECHNICIAN
DAN LARSON	ELECTRICAL TECHNICIAN
DWIGHT MOSSMAN	ELECTRICAL TECHNICIAN
MIKE REITMEYER	ELECTRICAL TECHNICIAN

CRUISE NARRATIVE

Leg 100 was the shakedown cruise of the JOIDES RESOLUTION (SEDCO/BP 471). As such the primary cruise objectives were to determine the readiness of the ship, the drilling system, and the scientific laboratories. It also gave the crew and technicians an opportunity to train on drilling and scientific equipment.

The JOIDES RESOLUTION departed Pascagoula, Mississippi, at 13:35 CST on January 11, 1985 and immediately proceeded to Site 625. We arrived on site at 0800 January 12, having been delayed because of the decoupling of one of the twelve main engines. The RESOLUTION sailed with eleven engines for the duration of the cruise, yet was still able to make over twelve knots at maximum speed. Sedco conducted thruster tests until 2200 when a beacon was dropped and the ship went to a full dynamic positioning mode. At 0800 on January 15, after positioning tests were completed, Sedco started running drillpipe. At 0250 on January 16, the first core came aboard the JOIDES RESOLUTION. Standard rotary, hydraulic piston, and extended-core-barrel rotary coring procedures were sucessfully implemented. (See Site 625 report following). On the 18th, some Sedco and ODP personnel were changed by helicopter. The RESOLUTION experienced 18 ft seas and winds gusts of more than 40 knots during January 20; and, while the drilling crew was unable to remove drill collars so we could get under way, they were able to continue coring operations. At 2018 on January 21, the RESOLUTION departed Site 625. The seismic reflection gear was streamed for the first time and a pass was run over the Site 625 beacon. Tests were run at various cruising speeds during the transit to Key West.

At 0915 on 23 January, we halted off Key West to await the helicopter transfer of one of the Co-Chief Scientists of Leg 101. We had decided to conduct cone placement and re-entry tests at one of the Leg 101 sites instead of on the Mississippi fan. While off Key West, a sucessful test of the explosive severing of drillpipe was completed. At 0030 on 24 January, we departed the Key West station taking seismic reflection measurements. Tests were again conducted of the water gun record quality at various cruising speeds and an execellent record was made at 6 knots during the run to the beacon drop at the proposed Leg 101 Site BAH-1A.

We arrived at the Florida Straits Site BAH-1A at 0630. At this site, the ship was near the strongest portion of the Florida Current and experienced currents of over three knots. We aborted drilling at Site A when the drillpipe started strumming and then knocking due to the strong currents. We moved over to Site BAH-1B and had the same experience. At Florida Strait Site BAH-1C, currents were less but we encountered beacon problems.

A decision was made to make the first cone deployment/re-entry test in a region of lower currents so we steamed to an engineering test in the NW Providence Channel, arriving on site at 1530 on January 25. A single mudline core, 6.23 meters of foraminiferal sand, was recovered and the drillstring washed in 100 feet as a pilot hole. The cone was successfully deployed at 1510 on January 27 and fixed in the sea bottom at 2300. We completed tests of the Mesotech and EDO re-entry tools, and departed for Miami at 2040 on January 28.

SITE 625 REPORT

TABLE OF CONTENTS

A. SITE SUMMARY . . . .

B. BACKGROUND AND OBJECTIVES . . . .

C. OPERATIONS . . . .

D. LITHOSTRATIGRAPHY. . . . .

E. BIOSTRATIGRAPHY. . . . .

F. PALEOMAGNETICS . . . .

G. PHYSICAL PROPERTIES. . . . .

H. GEOCHEMISTRY . . . .

I. SUMMARY AND CONCLUSIONS . . . .

J. APPENDIX

HOLE SUMMARY DIAGRAM

BARREL SHEETS

CORE PHOTOGRAPHS

A. SITE SUMMARY

Site 625

Latitude: 28°49.9'N
Longitude: 87°09.6'W
Water depth: 889 m corrected

Three holes drilled at Site 625, near De Soto Canyon, west Florida Shelf. Hole 625A penetrated to 234.9 m subbottom taking only four wash cores while testing rotary bit coring. Lower Pliocene nannofossil ooze recovered at T.D. Hole 625B continuously cored Plio-Pleistocene section of nannofossil oozes, calcareous marls and marly nannofossil oozes to T.D. of 235.2 m. Upper 197.1 meters HPC cored (23 cores) and further four XCB cores to T.D. Lower Pliocene nannofossil ooze was recovered at base. Hole 625C was to test overlap of HPC coring. Continuous HPC cores from 5 m to 44.5 m subbottom with good overlap providing almost complete upper Quaternary sequence.

SITE 625

HOLE 625A

Date occupied: 12 January 1985

Date departed: 17 January 1985

Time on hole: 4.3 days

Position (latitude; longitude): 28°49.9'N, 87°09.6'W

Water depth (sea level; corrected m, echo-sounding): 889

Water depth (rig floor; corrected m, echo-sounding): 889.5

Bottom felt (m, drill pipe): 899.9

Penetration (m): 234.9

Number of cores: 6

Total length of cored section (m): 50.3

Total core recovered (m): 18.9

Core recovery (%): 37.6

Oldest sediment cored: Pliocene

Depth sub-bottom (m): 234.9

Nature: Nannofossil ooze

Age: Lower Pliocene (NN 13?)

Measured velocity (km/s): 1524

SITE 625

HOLE 625B

Date occupied: 18 January 1985

Date departed: 20 January 1985

Time on hole: 2.3 days

Position (latitude; longitude): 28°49.9'N, 87°09.6'W

Water depth (sea level; corrected m, echo-sounding): 889

Water depth (rig floor; corrected m, echo-sounding): 899.5

Bottom felt (m, drill pipe): 899.9

Penetration (m): 235.2

Number of cores: 27

Total length of cored section (m): 235.2

Total core recovered (m): 222.9

Core recovery (%): 94.8

Oldest sediment cored: Pliocene

Depth sub-bottom (m): 235.2

Nature: Nannofossil ooze

Age: Lower Pliocene (NN14 - NN16)?

Measured velocity (km/s): 1541

SITE 625

HOLE 625C

Date occupied: 21 January 1985

Date departed: 21 January 1985

Time on hole: 19 hrs

Position (latitude; longitude): 28°49.9'N, 87°09.6'W

Water depth (sea level; corrected m, echo-sounding): 889

Water depth (rig floor; corrected m, echo-sounding): 899.5

Bottom felt (m, drill pipe): 900

Penetration (m): 44.5

Number of cores: 4

Total length of cored section (m): 39.5

Total core recovered (m): 39.5

Core recovery (%): 100

Oldest sediment cored: Pleistocene

Depth sub-bottom (m): 44.5

Nature: Marly nannofossil ooze

Age: U. Pleistocene (NN 21/20?)

Measured velocity (km/s): 1548

B. BACKGROUND AND OBJECTIVES

Site 625 is located south of the axis of De Soto Canyon in the northeastern Gulf of Mexico (Figure B-1). De Soto Canyon separates the predominately terrigenous sediments of the Northern Gulf from the carbonates of the West Florida Slope. Site 625 lies at 920 m water depth within the carbonate province. Two closely related stratigraphic problems were to be addressed at this site: 1) the need for high-quality biostratigraphic reference sections in the Gulf region, and 2) the unresolved relationship between eustatic sea level cycles and the disconformity-bounded depositional sequences identified on regional seismic lines.

Paleontologic and lithologic examinations of industry cores by Lamb and Beard (1972) and Mitchum (1978) (who also presents results from 4,600 km of seismic sparker lines) demonstrates intermittent depositional and erosional events from the lower Cretaceous through Recent in the De Soto Canyon region. The Cenozoic units observed by Lamb and Beard (1972) and Mitchum (1978) in discontinuous cores taken near Site 625 are foraminiferal-nannofossil oozes, with siliceous microfossils and volcanic ash present in older units (Eocene through Oligocene-lower Miocene). Units of middle Miocene through Pleistocene are marked by increasingly abundant clays and transported shallow water fossils. The discontinuous cores taken by industry and the several DSDP Legs in the Gulf has produced an incomplete biostratigraphic reference section for the region. The section recovered at Site 625 might provide a continuous seismic record of lower Miocene through Pleistocene material, and an opportunity to document the occurrence of several unconformities that may be expressed as biostratigraphic gaps.

Some biostratigraphic gaps in the West Florida Slope sections appear as boundaries to groups of reflecting horizons on regional seismic profiles. A particularly striking example is noted by Mitchum (1978) between flat-lying, continuous Oligocene-lower Miocene and older sediments, and the strongly downlapping middle Miocene and younger progradational units (Figure B-2). A relationship between the unconformity-bounded depositional sequences of the West Florida Slope and the Vail model of eustatic sea level change (Vail, et al., 1977) is suggested (Mitchum, 1978), although more stratigraphic control is needed to support this interpretation. Several recent DSDP Legs, including the Goban Spur (Leg 80) and New Jersey (Leg 95) transects, have investigated the record of disconformities in passive margin sequences with regard to cyclic sea level fluctuations. Preliminary results from these legs indicate a correlation of regional unconformities with eustatic cycles, and any additional data from Site 625 might further substantiate the Vail model.

The scientific objectives of drilling at Site 625 were:

1. To document sedimentologic, paleontologic, geochemical, geotechnical and geomagnetic characteristics of the depositional sequences,

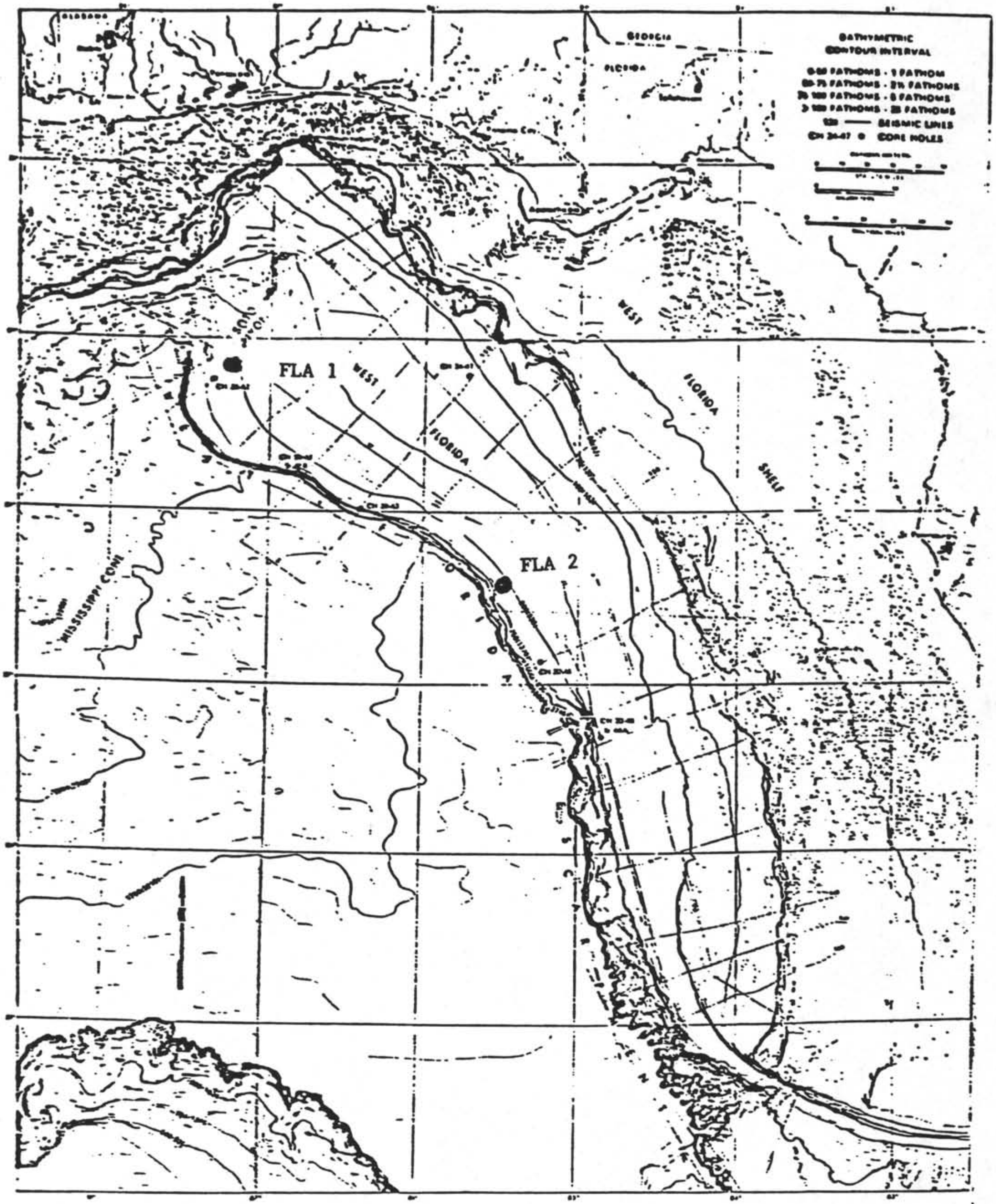
2. To date and define unconformities in the section and determine their relationships to seismic boundaries,

3. To correlate biostratigraphic and magnetostratigraphic results with global geochronology and the Vail model of eustatic sea level change,

As this was the first site drilled during the shakedown cruise of the JOIDES Resolution, the major objectives here were necessarily to test rotary, APC and XCB drilling and coring systems, and to familiarize scientists and marine technicians with shipboard lab equipment, core handling, and sampling procedures.

Figure B-1. Bathymetric map of the northeastern Gulf of Mexico showing location of Site 625 and seismic profile line 126 (shown in Figure B-2), after Mitchum (1978).

Figure B-2. Seismic profile line 126 (see Figure B-1 for location) from Mitchum (1978); major change in sedimentary regime occurs between the Oligocene-lower Miocene unit and younger beds (horizon F of Mitchum, 1978).



from Mitchum (1978)

FIG. 1—Bathymetric map, northeastern Gulf of Mexico, showing location of seven core holes and seismic profile lines on West Florida Slope.

FIGURE 2

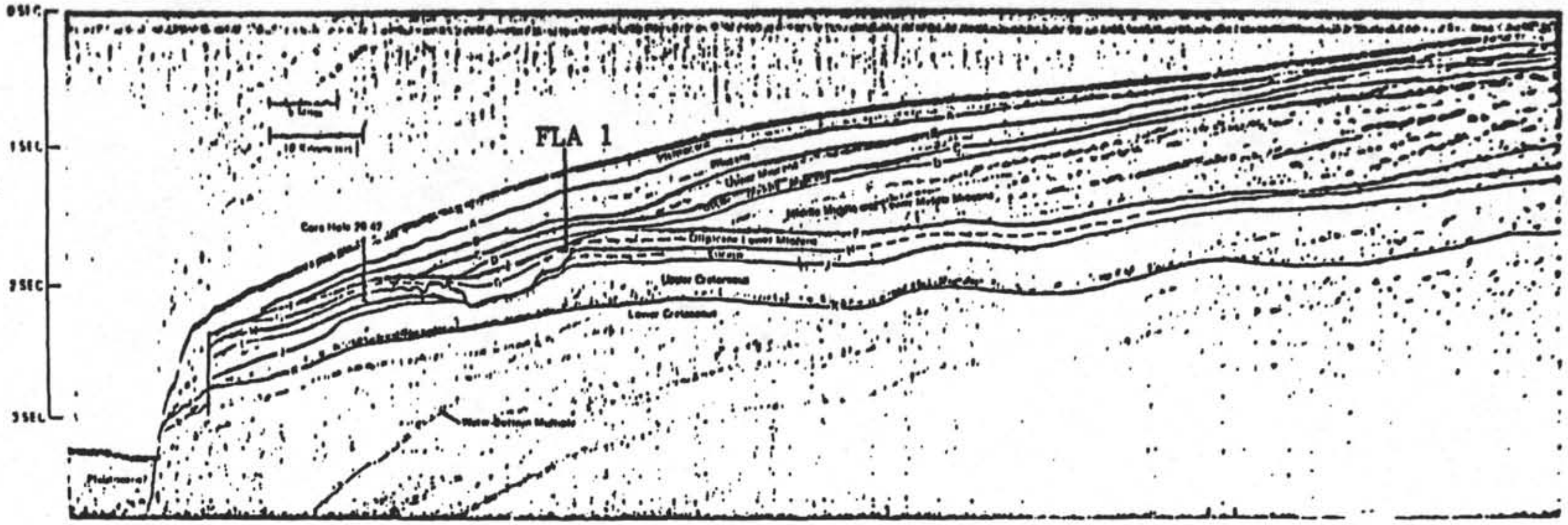


FIG. 3—Seismic profile line 126, reflection time section (see Fig. 1 for location). Marked change in sedimentary regime occurs at horizon F, with strong downlap of younger beds. Channel on right of core hole 29-42 is part of ancestral DeSoto Canyon system (see Figs. 17, 18)

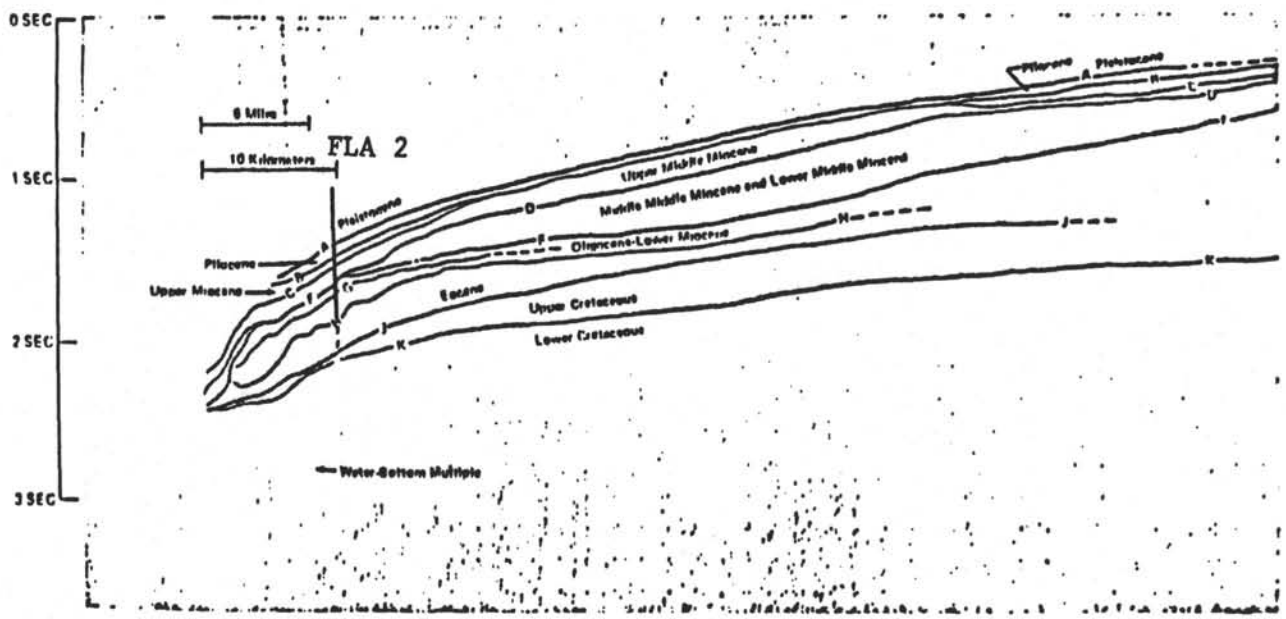


FIG. 8—Seismic profile line 138, reflection time section (see Fig. 1 for location).

from Mitchum (1978)

REFERENCES

Lamb, J.L., and Beard, J.H., 1972. Late Neogene planktonic foraminifers in the Caribbean, Gulf of Mexico, and Italian stratotypes. University of Kansas Paleontological Contributions: Article 57 (Protozoa 8).

Mitchum, R.M., Jr., 1978. Seismic stratigraphic investigation of the West Florida Slope, Gulf of Mexico. In Bouma, A.H., Moore, G.T., and Coleman, J.M. (Eds.), Framework, Facies, and Oil-Trapping Potential of the Upper Continental Margin: AAPG Studies in Geology 7, pp. 193-223.

Vail, P.R., Mitchum, R.M., Jr., and Thompson, S. III, 1977. Seismic stratigraphy and global changes of sea level, In Seismic stratigraphy - applications to hydrocarbon exploration: AAPG Memoir 26, p. 49-212.

C. OPERATIONS

C. OPERATIONS

JOIDES Resolution arrived at Site 625 near De Soto Canyon streaming no seismic gear. In addition, the bathymetric profiling equipment [PDR] was working only intermittently and no unequivocal water depth could be given. Site location at around 0800 hrs on 11th January, 1985 was made from previously determined coordinates [Lat.28°49.9 N; Long.87°09.6W] using LORAN-C and satellite navigation.

The beacon was not dropped on arrival at the site since SEDCO first undertook a 31 hour dynamic positioning test. An acoustic beacon was dropped at 2210 hrs on 12 January while seas were increasing to 6 feet and winds gusting 30 knots. A water depth on site was determined at 889 meters [corrected] from the bridge echo-sounder system.

HOLE 625A

We began tripping pipe at 0815 hrs on 15 January and a mudline core was taken on spud-in at 0015hrs with 899.9 meters of drillpipe below the rig floor.

The first core of the Ocean Drilling Program came on deck at 0250 hrs on 16 January, 1985. This was effectively a punch-core with a recovery of the mud-line and 2.8 meters of sediment. A 40.2 meter interval was washed ahead and Core 2 was brought on board at 0703 hrs. This recovered only the core catcher. We followed this with a series of further wash cores at 48 meter intervals in the hole. Core 3 recovered 8 meters of wash core, Core 4 was empty, including its core catcher, and Core 5 held 8.6 meters of wash core to 187.2 meters subbottom. The final washed interval took penetration to 234.9 meters subbottom, the terminal depth for Hole 625A. The lowermost core 6 recovered 4.1 meters of wash core (Table C-1).

At this stage we had decided to begin hydraulic piston coring and it was felt our scientific objectives would be best served by a second hole to continuously core the Plio-Pliestocene section. We began retrieving pipe at 0730 hrs and cleared the mudline at 0000.

HOLE 625B

A mudline hydraulic piston-core began hole B with no offset. Core 1H was brought on deck at 0615 hrs on 18 January. Its core liner was fractured and split but 7.9 meters of sediment were recovered. This recovery was taken as the amount by which the drill-bit should be advanced before the next HPC core would be shot. Core 2H was on deck at 0915 hrs. It was measured at 9.5 meters and the bit again advanced by this amount. We continued with this method of HPC coring to a depth of 197.1 meters in this hole; unfortunately inaccuracies in measurment of core recovery on the catwalk, such as not including the core catcher, and their correction some time later in the core laboratory meant that percentage core recoveries are frequently in excess of 100 over this section (see Table C-2).

Core 3H was recovered at 1035 hrs with no liner in the barrel. The core was manually extruded into 8 separate short pieces of liner resulting in a moderately disturbed 7.2 meters of sediment. Core recovery continued with this method of HPC operation through Core 19H at 162.1 meters subbottom obtaining variable lengths of sediment, ranging between 4.7 and 9.9 meters, in generally undisturbed condition. Core 20H had two upper sections in soupy condition and Core 21H came on deck at 1700 hrs 19 Janananuary with its liner damaged. Core 22H was even more severely restricted at its lower end, these effects presumably caused by lack of pressure sealing in the core barrel. A rubber seal was found displaced inside the liner of a number of the lower HPC cores including Core 23H, the last HPC core in this hole which was on deck at 2015 hrs, 19 January. We began extended core barrel operations at 0030 hrs on 20 January. Each XCB core would advance downhole a complete barrel length [see Table 1].Core 24X was on deck at 0230 hrs containing 6.4 meters of sediment. A further three XCB cores were recovered in Hole 625B to a terminal depth of 235.2 meters subbottom.

At 1200 hrs we began to pull pipe with the intention of leaving the site and cleared the mudline at 0100 hrs. Most of our operations in Hole 625B had been conducted in gale force sea conditions with waves up to 18 feet and wind speeds up to 50 knots. On retrieving most of the pipe we found at 1515 hrs that sea conditions were such that we were unable to bring the drill collars on board. A period of 5-1/4 hours elapsed before we decided that no abatement in sea state was likely for some time.

We began to trip pipe again at 2050 hrs to begin an overlapping HPC Hole, 625C.

HOLE 625C

The first core in hole 625C was aimed at overlap with cores 1 and 2 of the previous hole and so the drillstring was lowered to 905 meters below sea level datum, assuming a water depth of 900 meters (Table C-3).

Core 1H was retrieved at 0415 hrs, 21 January with a recovery of 10 meters. Three further HPC cores were taken continuously to a terminal depth of 44.5 meters subbottom. Core recovery was good in these four cores despite 14 foot waves during operations. When split they showed excellent correlation with colour banding in cores from the previous hole. Core 3H was more disturbed than the others and contained a displaced O-ring.

With the prospect of better sea conditions that would allow us to retrieve the drill collars, we began to pull pipe in this hole at 1030 hrs and cleared the mudline at 1130 hrs on 21 January.

All drilling operations were complete at Site 625 by 2018 hrs on 21 January. We got underway at about 2300 hrs and began streaming the seismic gear, employing an 80 cu. in. water gun, in a northward direction away from the site. After some initial delays because of inexperience with deployment of new equipment, we were able to turn and run southeast towards the site. The ship passed within 0.5 km of the beacon position at 0507, 22 January and we obtained a reasonable reference seismic record of the site

(Figure C-1) which showed evidence of a slump unit at depth in the section. We departed the area of Site 625 around 0600 hrs in the direction of Key West.

TABLE C-1

HOLE 625A

CORES	DEPTH TOP (m)	BOTTOM (m)	TOTAL RECOVERY (m)	PERCENT RECOVERED
1R	0.0	2.8	2.8	100
2W*	33.5	43.0*	0.0	0
3	81.5	91.0	3.8	8
4	129.7	139.2	0.0	0
5	177.7	187.2	8.2	86
6	225.4	234.9	4.1	8

Penetration: 234.9 m
Number of cores: 6
Total length of cored section: 50.3 m
Total core recovered: 18.9 m
Core Recovery: 37.6%

*NB Wash cores are by convention placed at the bottom of the interval washed, though we recognize that they could come from any part of that interval.

TABLE C-2

HOLE 625B

CORES	DEPTH TOP (m)	BOTTOM (m)	TOTAL RECOVERY (m)	PERCENT RECOVERED
1H*	0.0	7.9	7.9	100
2H	7.9	17.4	9.9	100
3H	17.4	26.9	7.2	57
4H	26.9	36.4	9.9	100
5H	36.4	40.9	4.7	103
6H	40.9	50.4	9.9	103
7H	50.4	58.5	8.8	108
8H	58.5	67.5	9.5	105
9H	67.5	75.4	8.3	109
10H	75.4	83.6	8.2	100
11H	83.6	92.2	8.5	98
12H	92.2	100.8	8.5	98
13H	100.8	109.5	8.1	92
14H	109.5	118.5	8.9	99
15H	118.5	127.3	8.6	98
16H	127.3	136.6	9.1	98
17H	136.6	145.8	9.2	99
18H	145.8	153.6	7.9	102
19H	153.6	162.1	8.1	95
20H	162.1	170.6	8.5	101
21H	170.6	179.3	8.6	97
22H	179.3	188.0	8.7	100
23H	188.0	197.1	8.9	99
24X	197.1	206.7	6.4	96
25X	206.7	216.3	9.6	100
26X	216.3	225.8	5.3	98
27X	225.8	235.2	5.7	91

Penetration: 235.2 m
Number of cores: 27
Total length of cored section: 235.2 m
Total core recovered: 222.9 m
Core recovery: 94.8%

*NB By this method of hydraulic piston-coring core recovery measured on deck is given to the driller as the amount to move the bit down before shooting the next core. Inaccuracy in measurement of core at this stage and failure to include core catcher recovery result in later lab measurements being greater.

TABLE C-3

HOLE 625C

CORES	DEPTH TOP (m)	BOTTOM (m)	TOTAL RECOVERY (m)	PERCENT RECOVERED
1H	5.0	15.0	10.0	99
2H	15.0	24.8	9.8	98
3H	24.8	34.7	9.9	98
4H	34.7	44.5	9.8	100

Penetration: 44.5 m
Number of cores: 4
Total length of cored section: 39.49
Total core recovered: 39.5 m
Core recovery: 100%

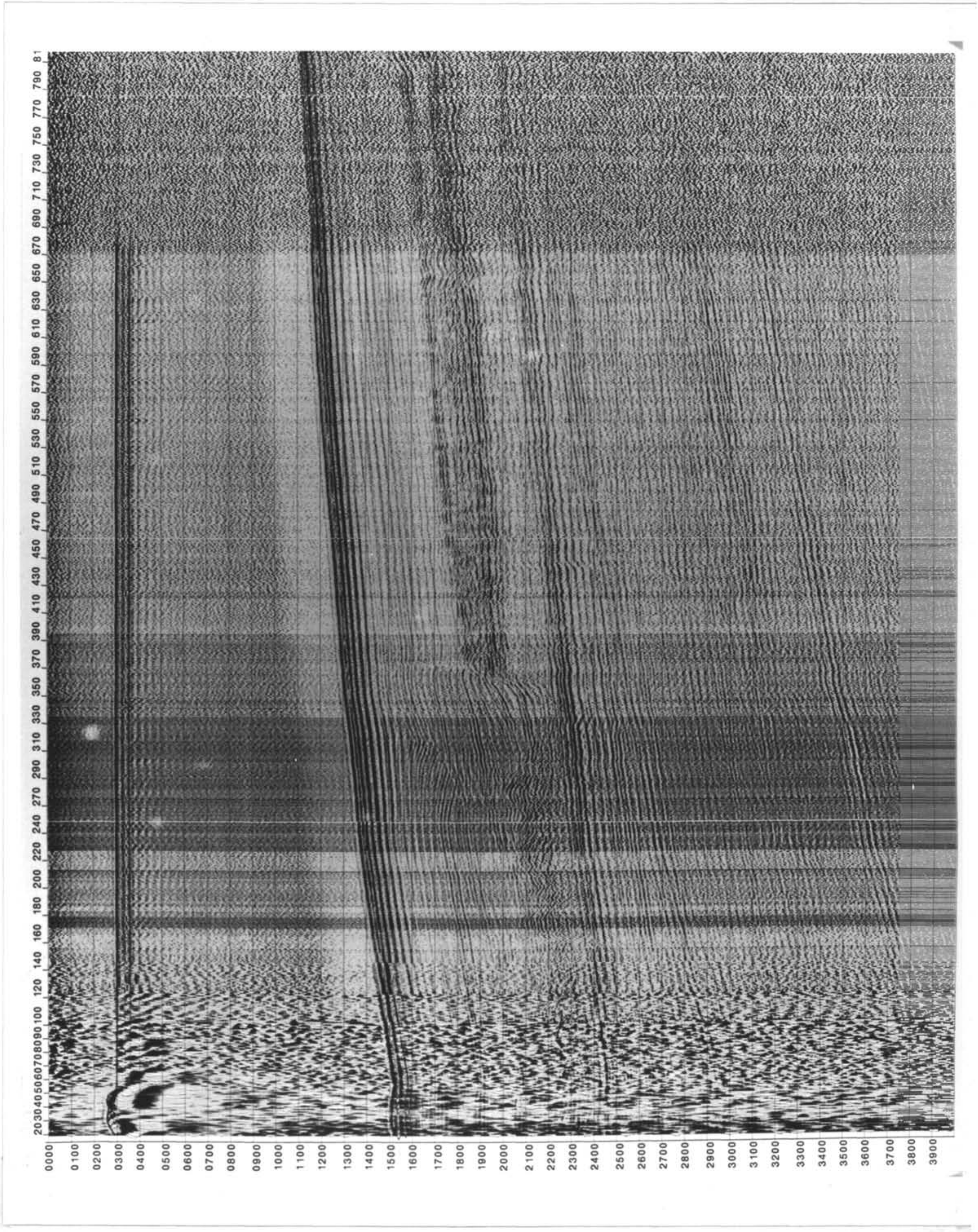


Figure C-1

D. LITHOSTRATIGRAPHY

D. LITHOSTRATIGRAPHY

Introduction

Three holes were drilled at Site 625. Hole A penetrated 234.9 meters into sediments with 18.9 meters recovery; Hole B penetrated 235.2 meters with 232.9 meters recovery; and Hole C penetrated 44.5 meters with 39.5 meters recovery. The sediments vary within hole from marly nannofossil oozes to calcareous hemipelagic muds.

Hole A

This hole was the first to be drilled by the Ocean Drilling Program, and starts with 20 cm of a dark grayish brown marly nannofossil ooze followed by 270 cm of gray marly calcareous oozes followed by a horizon, several centimeters thick, of olive gray calcareous silty muds. Large sections of the lithology were missed due to washing, but sediments at 177.7 meters to 187.2 meters BSF, consist entirely of gray to light gray marly nannofossil oozes. The last core (Core 6W) recovered in this hole at 225.4 meters to 234.9 meters BSF, consists of alternating olive gray and gray marly nannofossil oozes.

The three cores with recovery described from this hole were strongly disturbed by rotary drilling and washing. Pyrite occurs as specks, blebs and nodules. Carbonate bomb data show a gradual increase in the calcareous components with depth increasing from 20% $CaCo_3$ at the top to 70% at the bottom of the hole.

Hole B

This is the deepest and most continuous of the holes at Site 625, with a total of 232.9 meters of sediments recovered. The entire lithologic column contains pyrite specks and blebs. At several horizons, pyrite nodules were found. The sediments vary in color through various shades of gray reflecting changes in carbonate content. The HPC coring provided generally undisturbed cores and sedimentary structures could be clearly seen. These structures, most often, result from bioturbation (usually Zoophycos and Chondrites). Several vertical burrows were described. Also many shell fragments (between 0.5 mm and 2-3 mm) occur in the column.

Two variations in overall lithology were noted in the hole.

1) changes in the nature of the calcareous component of the sediment from top to bottom:
   - nannofossil oozes (0 to 51 meters BSF)
   - calcareous oozes (51 to 90 meters BSF)
   - nanno-foram oozes (90 to 101 meters BSF)
   - nannofossil oozes (10 to 109 meters BSF)
   - nanno-foram oozes (109 to 136 meters BSF)
   - nannofossil oozes (136 to 235 meters BSF)
2) changes in the percentage of of detrital clay varying from 20% to 80%.

   A first sight, there, appears to be only a gradual decrease in the mud content with depth, from 70% at the top of the hole to 20% at the bottom, but more detailed analysis allows the column to be divided into two litholigic units (see Appendix A-2):

- an upper Lithologic Unit I from 0 to 75 meters BSF which shows unsystematic variation in the mud percentage;
- a lower Lithologic Unit II from 75 to 235 meters BSF where several sedimentary cycles can be interpreted. Two of these are particularly clear; from 75 to 103 meters BSF and between 103 and 146 meters BSF. Two other cycles are tentatively identified, one between 156 and 170 meters BSF and another from 170 to 194 meters BSF.

These cycles probably reflect changing environmental conditions and it is important to conduct shorebased studies, including X-ray diffraction and isotope ($^{18}O/^{16}O$) studies, to determine whether they may be climatic and/or eustatic in origin or whether they may be due to regional tectonic or sedimentological causes.

Hole C

This hole is the shallowest drilled at Site 625 penetrating only 44.5 meters with a total recovery of 39.5 meters. The sedimentary column consists of calcareous hemipelagic muds and marly nannofossil oozes of Pleistocene age. The four cores recovered from this hole were slightly disturbed by HPC drilling, although structures were still clearly observable. These structures generally result from bioturbation (Chondrites and other burrows). Pyrite streaks and spots and shell fragments (0.5 to

3mm) appear throughout the column. The sediments are several shades of gray.

The sedimentary column comprises the following:

- calcareous hemipelagic muds (5 to 15 meters BSF)
- marly calcareous oozes (15 to 31 meters BSF)
- calcareous hemipelagic muds (31 to 44.5 meters BSF).

General

The following comparisons can be made between the three hole at Site 625:

1) hole A and hole B show the same general increase in carbonate content with depth.
2) hole B and hole C have the same abrupt increase in calcareous content at around 75 meters BSF.

The Hole Summary diagrams in Appendix A reflect the Lithologic Units defined above.

E. BIOSTRATIGRAPHY

E. BIOSTRATIGRAPHIC SUMMARY

Introduction

A total of 37 cores, or 281.3 meters of Pliocene to Pleistocene sediments were recovered in three holes at Site 625 (Figure E-1). The predominent lithologies in these holes were marly nannofossil oozes and calcareous hemipelagic muds. These deposits contained variable amounts of planktonic and benthic foraminifers and calcareous shells and skeletal material, including ostracodes, pteropods, sponge spicules, bryozoans, tintinnids, algal cysts and small gastropods. The frequent occurrence of many shallow-water taxa indicates downslope transport of material to Site 625 throughout the Plio-Pleistocene.

As no calcareous microfossil specialists were present among the shipboard party and time for paleontologic studies was limited, the age determinations presented here are subject to significant revision based on further study of Leg 100 materials.

Calcareous nannofossil determinations were based on Martini (1971), Gartner (1977) and Haq (1979). Foraminiferal dates were obtained using Lamb and Beard (1972) and Stainforth, et al. (1975).

Hole 625A

One rotary core (625A-1R) and five wash cores (625A-2 through 6) were recovered at Site 625. The presence of *Emiliania huxleyi* in the nannofossil assemblage of Core 625A-1R,CC (2.8 mBSF) indicates an uppermost Pleistocene date (NN 21), suggesting that the mudline was sucessfully recovered. Core 625-2W,CC (43.0 mBSF) contains an upper Pleistocene nannofossil assemblage including Helicopontosphaera kamptneri, Gephyrocapsa caribbeanica, Gephyrocapsa oceanica, small Gephyrocapsa and Ceratolithus c.f. telesmus-cristatus. The foraminifers in the first two cores include pink Globigerinoides ruber, Globorotalia truncatulinoides, Orbulina universa, Globorotalia crassoformis, and Globorotalia menardii, all indicating an upper Pleistocene date.

The nannofossil Pseudoemillania lacunosa appeared in Core 625A-3W,CC (91.0 mBSF), suggesting a middle Pleistocene (NN 19) age. Core 625A-4W (129.7 - 139.2 m BSF) was a water core, and Core 625A-5W,CC (187.2 m BSF) contained the first discoasters observed in this hole indicating that the Pliocene-Pleistocene boundary lies between 91.0 and 177.7 m BSF in Hole 625A. Cores 625A-5W,CC (187.2 m BSF) and 625A-6W,CC (234.9 m BSF) contain the nannofossils Discoaster brouweri and D. c.f. asymmetricus suggesting an upper Pliocene date (NN 18).

Reworked older Pliocene and Miocene nannofossils provide evidence of erosion and redeposition of sediments.

Hole 625B

Twenty-seven cores were recovered at Hole 625B, the first twenty-three taken with the hydraulic piston corer (HPC) and the last four with the extended core barrel (XCB), for a total penetration of 235.2 m.

Core 625B-1H,CC (7.9 mBSF) was barren of nannofossils, but Cores 625B-2H (17.4 mBSF) and 625B-3H,CC (26.9 mBSF) contained E.

huxlyei suggesting an uppermost Pleistocene date (NN 21). The foraminiferal assemblage, including pink G. ruber and G. truncatulinoides supports this assignment.

Pleistocene material occurs down through Core 625B-11,CC (92.2 m BSF), where lower Pliocene nannofossils such as Cyclococcolithinia macintyrei and foraminifers such as Globorotalia tosaensis are found. In Core 625B-12,CC (100.8 m BSF) the first abundant D. brouweri are noted, indicating a Pliocene date (NN 18). The rest of the section in Hole 625B, cores 625B-13,CC (109.5 m BSF) through 625B-27X,CC (235.2 m BSF), contains an apparently complete Pliocene sequence (to NN 13?). No significant biostratigraphic gaps were detected on the basis of cursory shipboard nannofossil scans.

Hole 625C

Four HPC cores were recovered from Hole 625C for a total penetration of 44.5 mBSF. These all contained Pleistocene nannofossils.

REFERENCES

Gartner, S., 1977. Calcareous nannofossil biostratigraphy and revised zonation of the Pleistocene. Marine Micropaleontology, 2: 1-26.

Haq, B.U., 1979. Calcareous nannoplankton. In, Haq, B.U. and Boersma, A. (Eds.), Introduction to Marine Micropaleontology: New York (Elsevier), pp. 79-107.

Martini, E., 1971. Standard Tertiary and Quaternary calcareous nannoplankton zonation, Proc. II Planktonic Conference Rome, pp. 739-785.

Lamb, J.L., and Beard, J.H., 1972. Late Neogene planktonic foraminifers in the Caribbean, Gulf of Mexico, and Italian stratotypes. The University of Kansas Paleontological Contributions, Article 57 (Protozoa 8).

Stainforth, R.M., Lamb, J.L., Luterbacher, H., Beard, J.H., and Jeffords, R.M., 1975. Cenozoic planktonic foraminiferal zonation and characteristics of index forms. The University of Kansas Paleontological Contributions, Article 62.

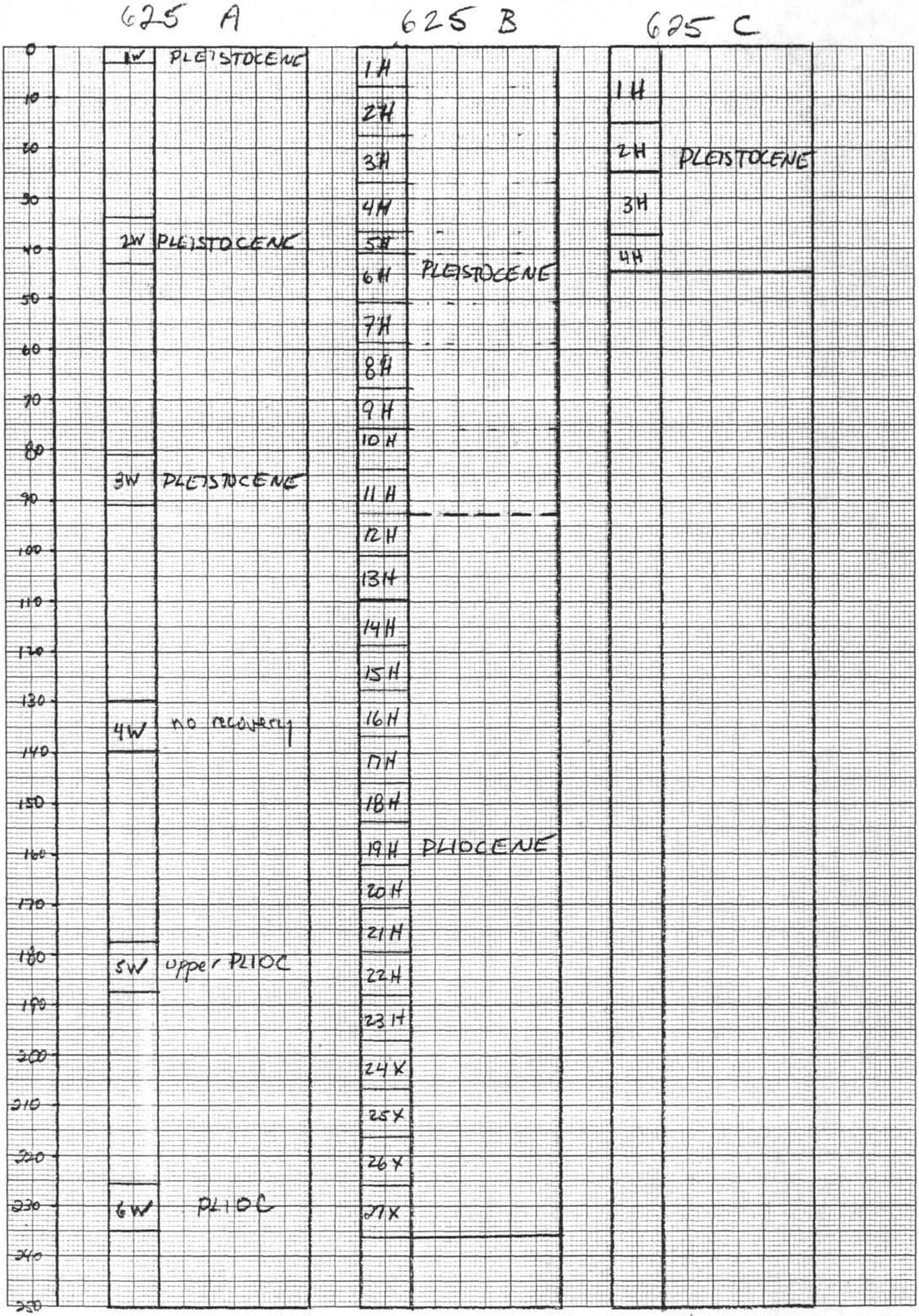


Figure E-1. Summary of biostratigraphic results from Holes 625A, 625B and 625C, based on nannofossil and foraminiferal dates.

F. BIOSTRATIGRAPHY

F. PALEOMAGNETICS

The Hydraulic piston corer (HPC) and extended core barrel (XCB) corer recovered over 235 meters of relatively undisturbed Quaternary to Pliocene sediment at Hole 625B. The HPC was also used to recover over 34 meters of Quaternary to Pleistocene sediment at Hole 625C. Both of these holes were sampled for paleomagnetic study. The rotary and wash cores obtained at Hole 625A were not sampled because of the discontinuous nature of the cored section.

Whole core magnetic susceptibility measurements were made on each core section before the cores were split. The core sections were passed through a 400mm sensing loop which is part of the shipboard Bartington Susceptibility Meter system. The meter is interfaced to the Epson computer to allow for rapid measurements. Each core section was passed through the loop, with measurements made every 10cm. The observed variations in magnetic susceptibility downcore (Figure F-1) appear to be related to lithologic variations and provide a useful tool for correlating between holes at a given site (see ~~FIGURE I-1~~, this vol.).

Discrete paleomagnetic samples were taken by pressing 7cc plastic cubes into the split face of the core. The samples were oriented with respect to the vertical by aligning an arrow marked on the box parallel to the edge of the core liner and pointing up core. Relative horizontal orientation within each core was maintained by splitting each core so that the double black line marked on the core liner was in the center of the working half.

Samples were taken at nominally 1.5 meter intervals (one per core section). The direction and magnitude of the natural remanent magnetization (NRM) of each sample were measured using a Molspin spinner magnetometer. Five pilot samples were subjected to progressive alternating field (A.F.) demagnetization studies at 50 to 100 Oe increments. The results of these studies indicate that the magnetizations are univectorial and that A.F. treatment at 50 Oe is adequate to isolate the characteristic remanent magnetizations. On the basis of these studies the remaining samples which exhibited magnetizations well above the instrumental noise level were demagnetized using a peak A.F. of 50 Oe.

The results after A.F. treatment at 50 Oe are presented in Figure F-2 as inclination and intensity plotted with subbottom depth. The declinations are not shown because of the lack of orientation between cores. A dramatic drop in intensity is observed at 64 meters. Below this depth the magnetizations are below the noise level of the magnetometer, and the results are not plotted.

The inclinations observed above 58m group about the axial dipole field value of 47.8° for the site latitude (28.9°N) but exhibit a significant variation (of up to 20°) about this value. Reversed polarity directions are observed between 58m and 63m. Interpreting the normal polarity zone observed from 0 to 58 m as the Brunhes Chronozone is consistent with the placement of the Pleistocene/Pliocene boundary between cores 12H and 13H by shipboard paleontologists. The reversal at 63 m may be correlated with the upper Jaramillo reversal although this correlation is not well supported because of the incomplete record downcore.

The inclination and intensity records obtained at Hole 625C are plotted in Figure F-2b. The positive inclination values are consistent with the results observed in Hole 625B and are interpreted as being correlative with the Brunhes Chron based on the biostratigraphic results.

ORIENTATION TESTS

Two oriented cores were taken from 625B and 625C. The Eastman-Whipstock multishot downhole tool was deployed twice at each hole. The results indicate the the tool worked successfully all four times, and the tool is capable of providing the azimuth of the fiducial line marked on the core liner with respect to magnetic north.

The general agreement of the observed inclinations with the predicted axial dipole field support the interpretation that these sediments are reliable recorders of the earth's magnetic field. Therefore the normal polarity declinations should point towards magnetic north. This allows a test of the accuracy of the downhole orientation tool: the normal polarity declinations should agree with the azimuth obtained from the multishot system.

Unfortunately in the two cores oriented at 625B (22H and 23H) the remanent magnetizations were so weak that it was not possible to make reliable measurements on all but the uppermost sample from core 22H. This measurement agreed well with the multishot results after a 180° orientation error was discovered in the multishot assembly.

The tool was tested again at Hole 625C (cores 3H and 4H were oriented). In this case the quality of the paleomagnetic data is good but the observed declinations in cores 3H and 4H do not agree with the multishot readings. Severe coring disturbance, including 5 meters of flow-in in the top of core 3H, however, makes it difficult to relate the paleomagnetic data to the multishot readings since the position of the undisturbed sediment within the cored interval is not known.

Further examination of the declination records obtained at 625B and 625C using the Advanced Piston Corer reveals that a number of cores exhibit a rotation downcore. Detailed declination records from 625B and 625C are plotted in Figure F-3 and F-4 respectively. With the exception of 625C, 4H, each of these cores show a counterclockwise rotation of the declinations when viewed downcore. The magnitude of this rotation varies from 142° in 625B, core 2H to 22° in 625C core 1H. The magnitude of the rotation does not appear to be directly related to the nature or amount of disturbance observed in the tops of the cores. Unfortunately, the limited number of cores suitable for paleomagnetic study obtained at this site make it difficult to examine possible relationships between the nature, magnitude and sense of rotation with lithologic characteristics such as shear strength or water content.

In each case the rotations are counterclockwise looking downcore. The Advanced Piston Corer was designed to prevent spiraling of the core barrel as it enters the sediment by using a key-in-groove which couples the scoping portion of the core barrel to the piston rod. Examination of the core liners failed to reveal evidence that the orientation pin had sheared, and therefore it appears that the liners did not rotate during the coring process. The declination records therefore suggest that a decoupling occurs between the sediment and the core liner, and that the sediment twists as it enters the liner. Further documentation of this behavior in different sediment types is needed to clearly define the parameters controling the twisting and allow a solution to this problem to be developed.

Figure Captions

Figure F-1 Whole core magnetic susceptibility plotted with subbottom depth.

Figure F-2 Inclination and intensity records obtained at 625B (a) and 625C (b) plotted verswlus subbottom depth.

Figure F-3 Details of declination records obtained from individual cores taken at Site 625B.

Figure F-4 Details of declination records obtained from individual cores taken at Site 625C.

Example Fig 1
(will plot on appropriate scale at C.S.)

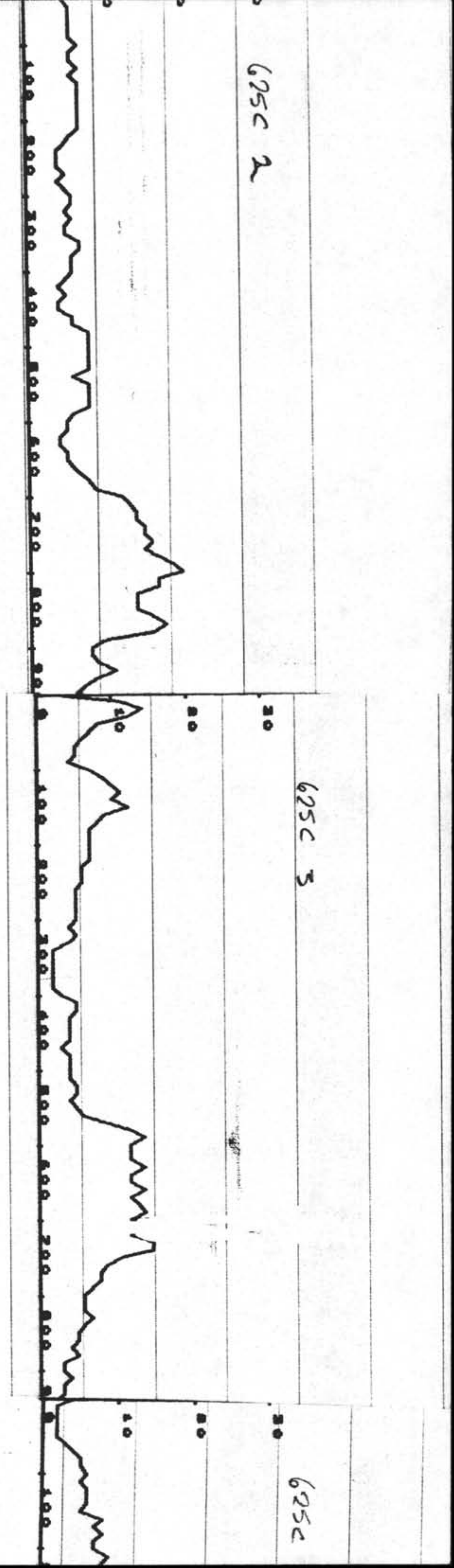


Figure F-1

Figure F-2a

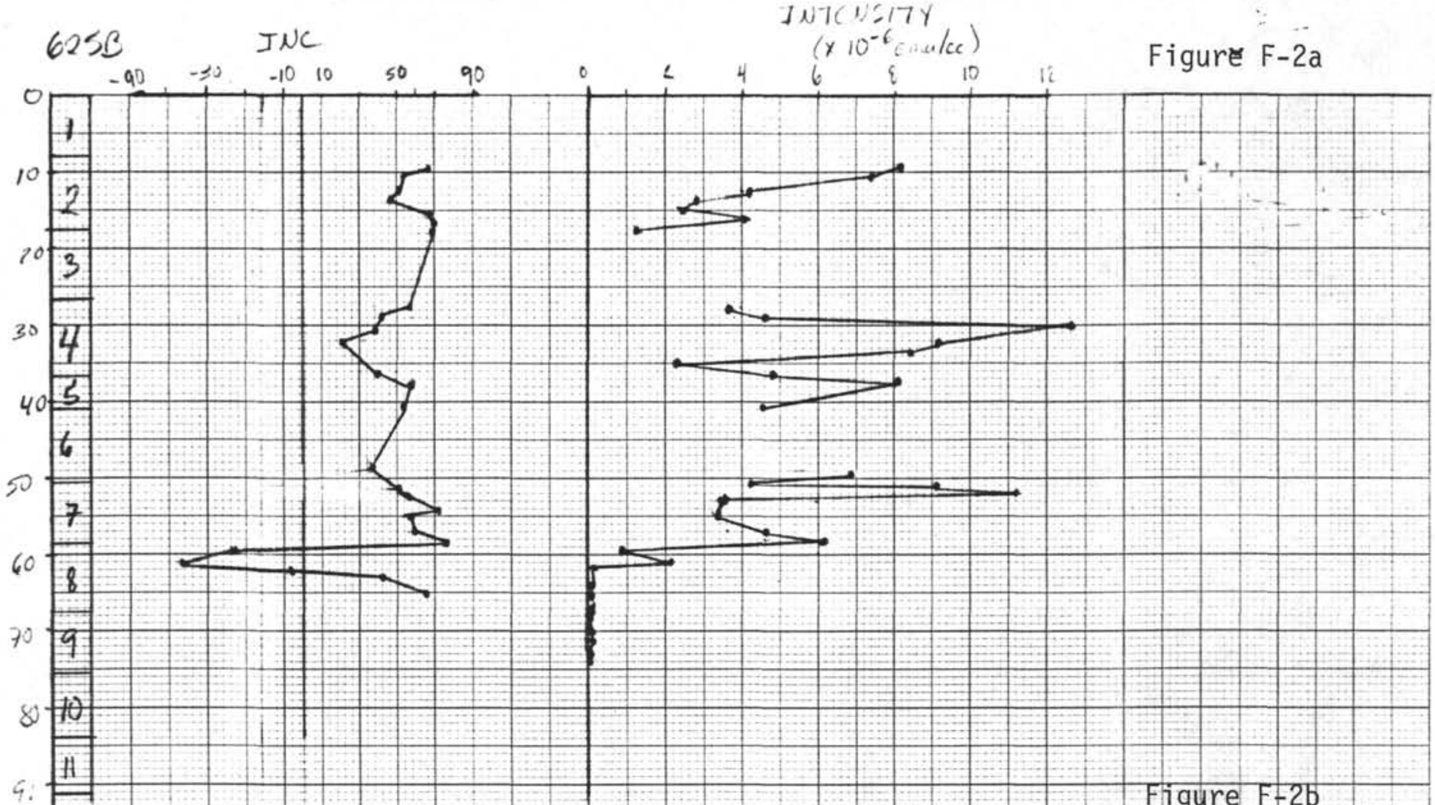
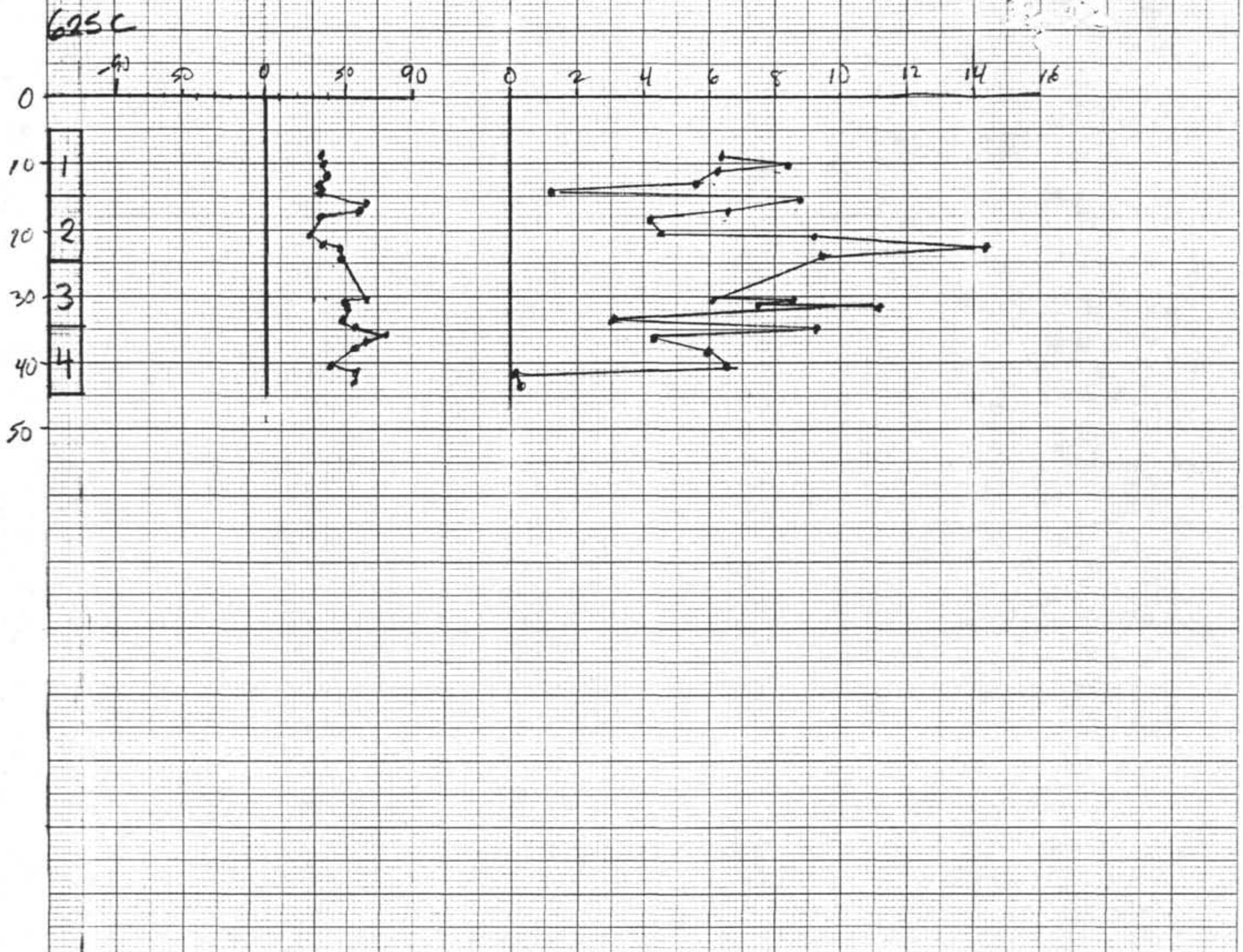


Figure F-2b



461510

10 X 10 TO THE CENTIMETER 18 X 25 CM
KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure F-3

DECLINATIONS
625C

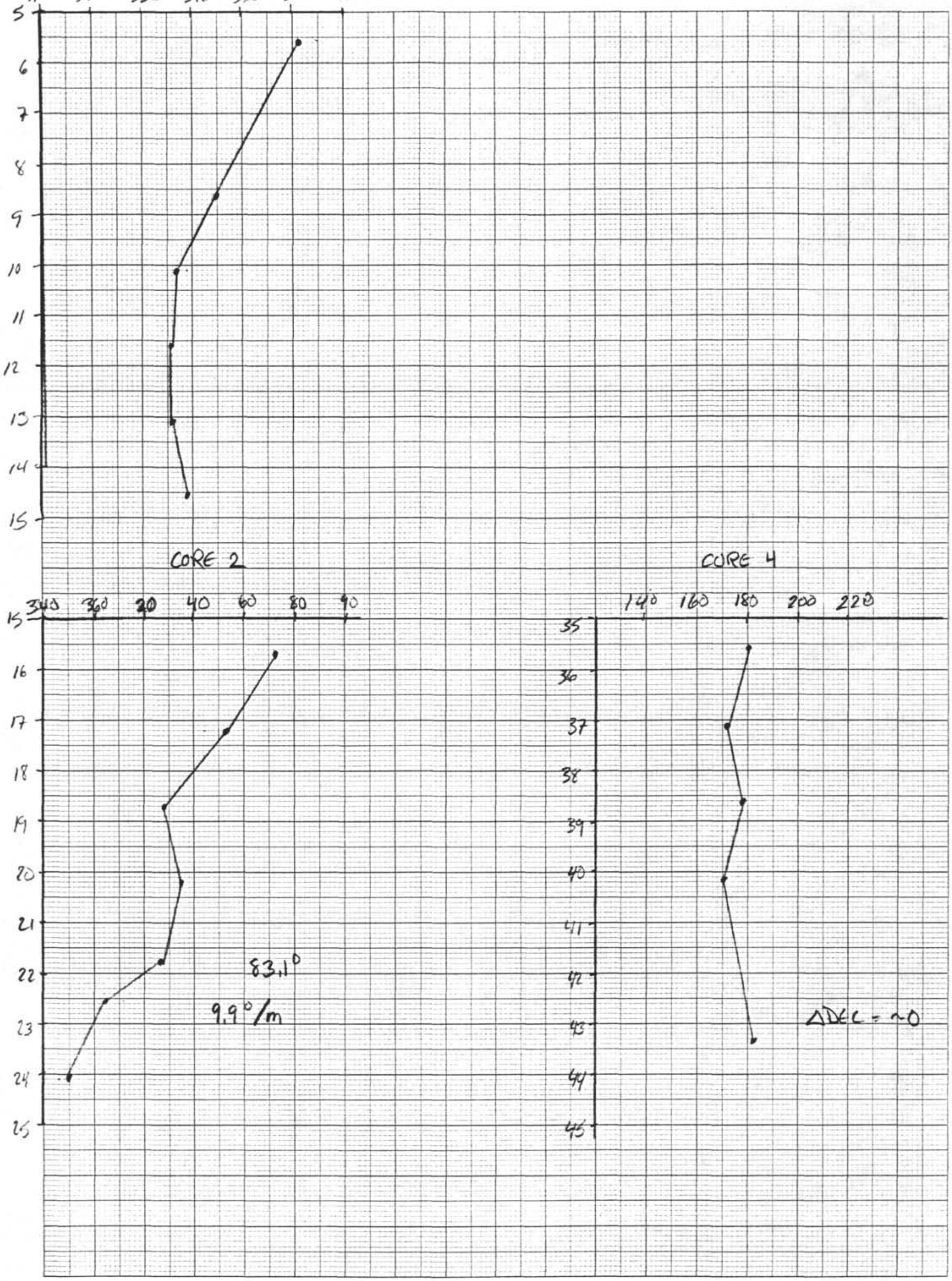
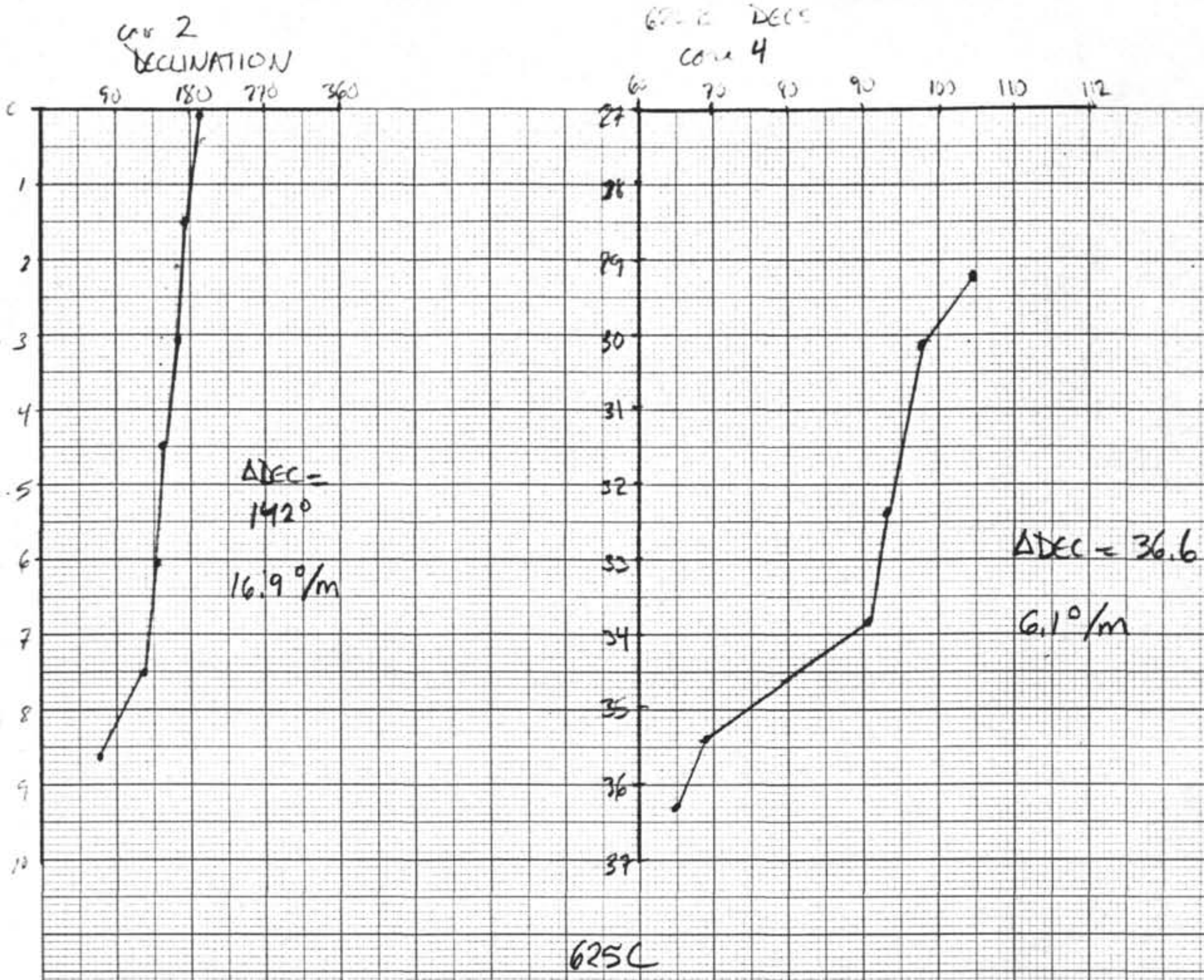


Figure F-4



461510

K+E 10 X 10 TO THE CENTIMETER 18 X 25 CM.
KEUFFEL & ESSER CO. MADE IN U.S.A.

G. PHYSICAL PROPERTIES

G. PHYSICAL PROPERTIES

Introduction

Cores retrieved at Site 625 were processed through a systematic series of analyses in the physical properties laboratory. The different analyses included a density scan using the GRAPE on all whole round sections excluding core catcher samples. All cores were allowed to reach thermal equilibrium, for at least four hours, at which time measurements of thermal conductivity were made utilizing the von Herzen probe technique.

Core sections were sampled immediately after splitting in order to avoid any changes resulting from dessication. The analyses performed with sub-samples of the split section were, in order of execution, vane shear strength, compressional wave velocity and index properties. All tests were performed where minimal sampling disturbance was found. The vane shear test was done adjacent to the location of the sub-sample for compressional wave velocity and index properties. These physical properties tests were performed following standard routines described by Boyce(1976,1977). Index properties were measured using a compensated balance technique and a pycnometer for volumetric determinations. Helium was used as the purging gas.

All index properties (bulk density, water content, porosity, void ratio, and grain density) are corrected for an interstitial water salinity of 35 ‰. Carbonate bomb analyses are carried out using the dry residue of the sub-samples (see Section H).

Results

Three holes were drilled at ODP Site 625. Hole 625A was primarily a wash hole and 625C only advanced four cores. Therefore, the physical properties of this site are treated as one hole having a total sub-bottom penetration of 232 meters. The recovered sediments consist of hemipelagic calcareous muds, marly calcareous oozes, and nannofossil oozes. The age of recovered sediments ranges from Pleistocene into Pliocene.

Index properties from this site show the strongest gradient in the uppermost 60 meters (Figures G-1 and G-2). In this interval bulk densities increase from surficial lows of 1.52 g/cm^3 to approximately 1.65 g/cm^3. Similarly, water contents (expressed relative to the weight of dry solids) decrease from 94% at 1.25 meters sub-bottom to an average of 65% at 60 meters. Porosity follows suit dropping from 80% to 65% over the same interval.

Below 60 meters the gradient of index properties decreases dramatically. With the exception of a few outliers, bulk densities change only 0.15 g/cm^3 over almost 200 meters of sediment cover. Other index properties such as water content and porosity behave similarly.

Undrained shear strength, as measured by the miniature vane, is plotted in Figure G-3 as a function of depth. Strengths show a slow increase with depth to approximately 80 meters sub-bottom. In this upper interval strengths range from 3.5 to 38 kPa. Shear strengths here also have less scatter than the underlying sedimentary section. Below 80 meters sub-bottom, the sediment shear strength both increases abruptly and exhibits much greater variability. This may be a combined result of sediment lithologic changes and artifacts resulting from drilling. The depth interval between 150-170 meters sub-bottom bear the highest strengths measured, reaching values in excess of 110 kPa.

Compressional wave velocity analyses were performed using the Hamilton frame device. All measurements discussed were done perpendicular to the bedding plane. Compressional wave velocities ranged from a low of 1470 m/sec to a high of 1670 m/sec (Figure G-4). In general, the downhole trend follows that of index properties with most changes occurring in the upper 60 meters, and becoming relatively constant thereafter. Velocities at the base of the hole are between 1540-1630 m/sec.

Thermal conductivities were measures generally every third core section. A unit supplied by Dr. R. Von Herzen provided the link between a Pro 350 and up to five probes. All tests were done inserting the probes through a small hole in the liner. Thus, measurements were performed parallel to bedding.
Figure G-5 shows the distribution of thermal conductiviies. These range from near mudline lows of $2.05*10^{-3}$ cal/cm.sec.deg to $2.91*10^{-3}$ cal/cm.sec.deg at 218 meters. A rapid increase in

conductivity takes place in the upper 30 meters. Between 30-60 meters sub-bottom values fluctuate around $2.5*10^{-3}$ cal/sec.cm.deg. A noticeable increase in thermal conductivity occurs at the 70 meter level which may be correlated with the change in carbonate contents and lithology (see Sections L and H).

Discussion

The downhole distribution of physical properties appears to be mainly a function of burial, although the undrained shear strength does reflect the lithologic boundary at 80 meters sub-bottom. This lithologic break is mostly an increase in the percentage of calcium carbonate and, although slight, it appears to affect both shear strength and magnetic susceptibility (see Section F). However, a plot of shear strength against calcium carbonate content (Figure G-6a) illustrates the lack of a coherent relationship between this component and strength. Similarly, compressional wave velocity does not appear to be dependent on carbonate content (Figure G-6b).

Burial is primary agent in the early diagenetic history of a deposit. Typical terrigenous and calcareous sediments show a strong gradient in the uppermost section (0-20 meters) and more gradual gradients with depth. Bryant et al (1981) described typical porosity profiles for sediments with various amounts of carbonate. The reported porosity shifts that they discussed for sediments with carbonate contents between 20-50% and grain size of 60-80% clay size is 65 to 50% over the uppermost 90 meters. Results from Site 625 follow similar gradients although the actual values of porosity are somewhat higher.

Another aspect of burial and its effect on changing physical properties is the effective overburden stress applied by the weight of the sediment pile. Skempton (1970) described a relationship between undrained shear strength and effective overburden stress for normally consolidated marine clays. This relationship, expressed as a ratio of strength to stress, ranges from 0.2 to 0.7. Figure G-7 is a plot of the measured undrained shear strength of sediments from Site 625 against the effective overburden stress. The range defined by Skempton is also shown. It is clear that sediments at Site 625 fall below the range defined suggesting they are underconsolidated. This, however, has been observed to commonly occur in calcareous sediments (Geotechnical Consortium,1984). Comparison of the shear strength-depth profile for Site 625 falls between those shown by Bryant et al (1981) defined for calcareous oozes and hemi-pelagic terrigenous clays. The actual state of consolidation will be addressed by later shorebased consolidation tests.

GRAPE analyses yielded several interesting pieces of information. First, a number of pyrite nodules were located within the calcareous sediments after the GRAPE scan exhibited abrupt peaks of bulk density, commonly reaching values between 2.3-2.5 g/cm^3. Secondly, the GRAPE scan record was used to cross correlate Holes 625B and 625C. Tentative correlations are drawn in Figure I-2 in the Site Summary and Conclusions. Shifts in the bulk density trends at 625B-2-1(90cm), 625B-2-2(100cm), 625B-2-3(50) correlate within 10 cm. with related shifts and values at Hole 625C at 1-3(90cm), 1-4(100cm), and 1-5(55cm) respectively.

Core distrubance was visibly apparent in several cores where flow-in or distorted bedding could be documented. Analysis of water contents and porosities of sediments at this site reveal an added disturbance, namely compaction. A decrease of both water content and porosity within a given core is systematically repeated downhole. This is noticeable regardless of the care taken to avoid disturbance and Section 1 of any core. Similar effects of HPC performance were discussed by Walton et al (1983).

References

Boyce, R.E., 1976, Definitions and laboratory techniques of compressional sound velocity parameters and wet-water content, wet-bulk density, and porosity parameters by gravimetric and gamma-ray attenuation techniques, In Schlager,S.O., Jackson,E.D. et al, Init. Repts. DSDP,33: Washington (U.S. Govt. Printing Office),931-935.

Boyce, R.E., 1977, Deep Sea Drilling Project procedures for shear strength measurement of clayey sediment using a modified Wykeham Farrance laboratory vane apparatus. In Barker,P.F., Daziel,I.W.D. et al, Init. Repts.DSDP,36:

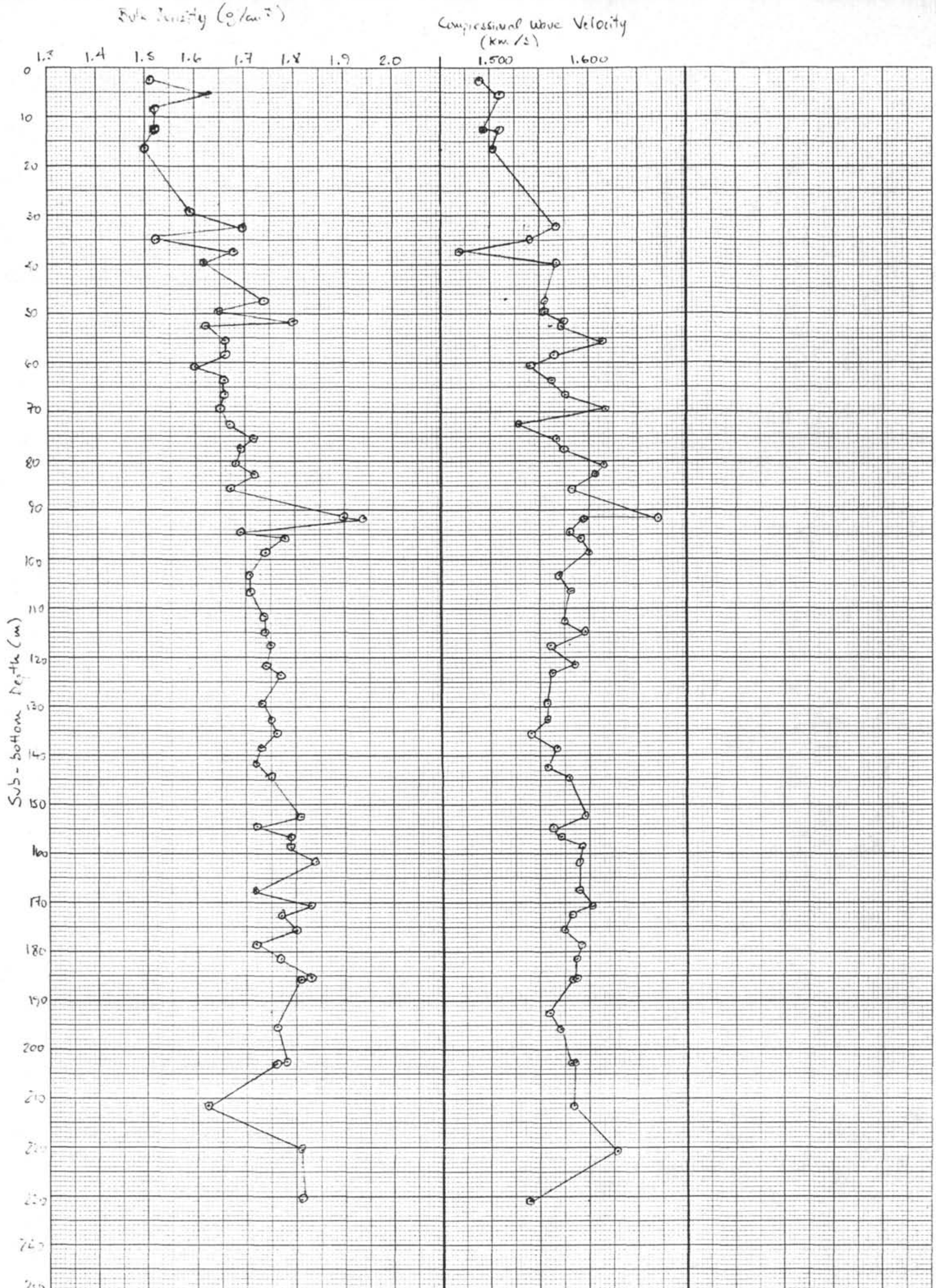
Washington (U.S.Govt. Printing Office),1059-1072.

Bryant, W.R., R.H. Bennett and C.E. Katherman, 1981, Shear strength, consolidation, porosity and permeability of oceanic sediments. In Emiliani,C. The Sea V.7, J. Wiley & Sons, New York, 1555-1616.

Geotechnical Consortium, 1984, Geotechnical properties of sediments from Walvis Ridge, Deep Sea Drilling Project, Leg 75, Hole 532A. In Hay,W.W., Sibuet,J.-C. et al, Init. Repts.DSDP, 75: Washington (U.S. Govt. Printing Office),1109-1127.

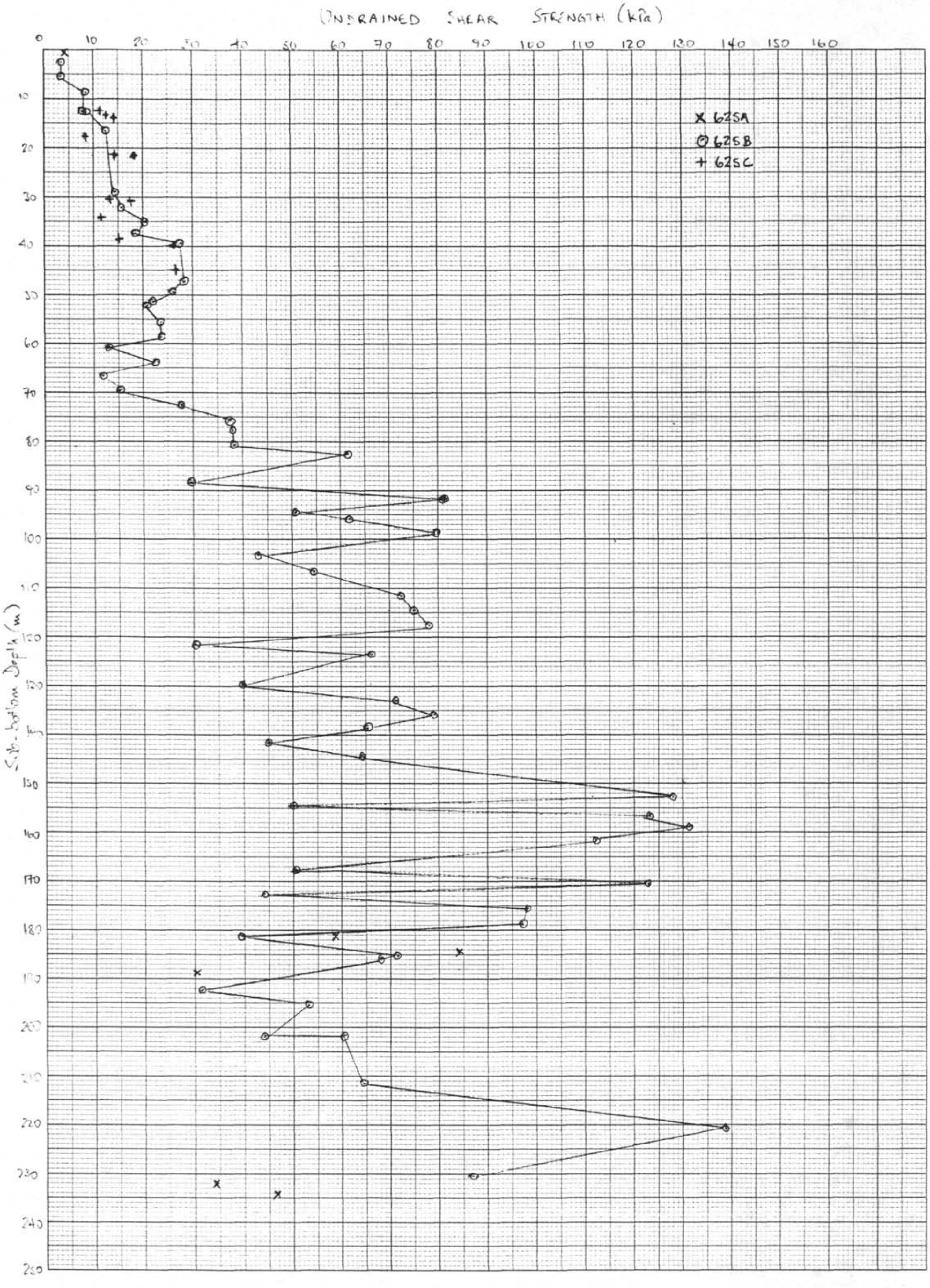
Skempton, A.W., 1970, The consolidation of clays by gravitational compaction, J. Geol. Soc. London, v.125, 373-411.

Walton, W.H., D.A. Sangrey, and S.A. Miller, 1983, Geotechnical engineering characterization of hydraulically piston-cored deep ocean sediments. In Barker,D.A., Carlson,R.L., Johnson,D.A. et al, Init. Repts.DSDP, 72: Washington (U.S. Govt. Printing Office), 537-549.



Bulk Density (g/cm³)
Compressional Wave Velocity (Km/s)
1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
1.500 1.600
Sub-bottom Depth (m)
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250

figure G-1



UNDRAINED SHEAR STRENGTH (kPa)
Sub-bottom Depth (m)
× 625A
⊙ 625B
+ 625C

Figure G3

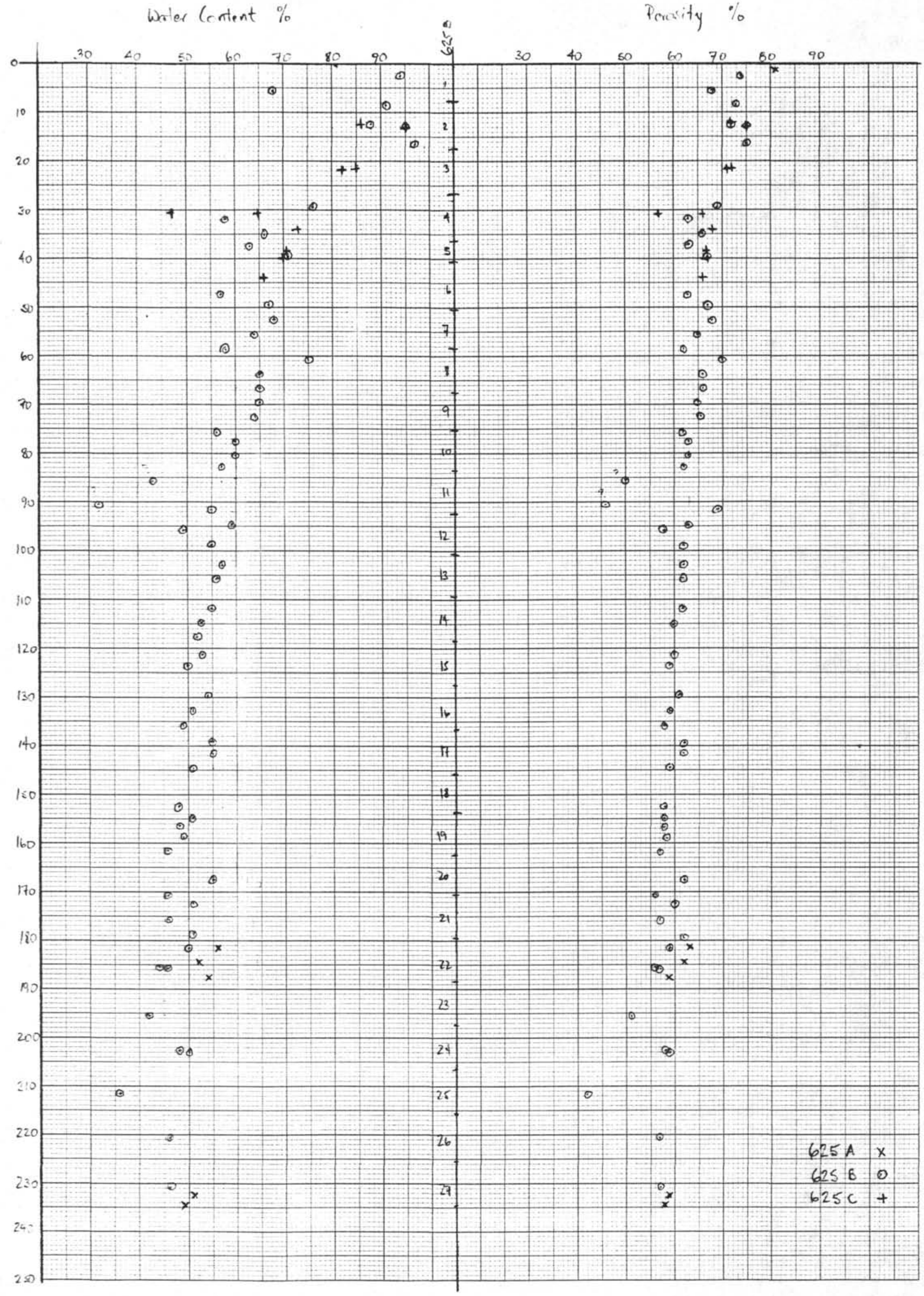
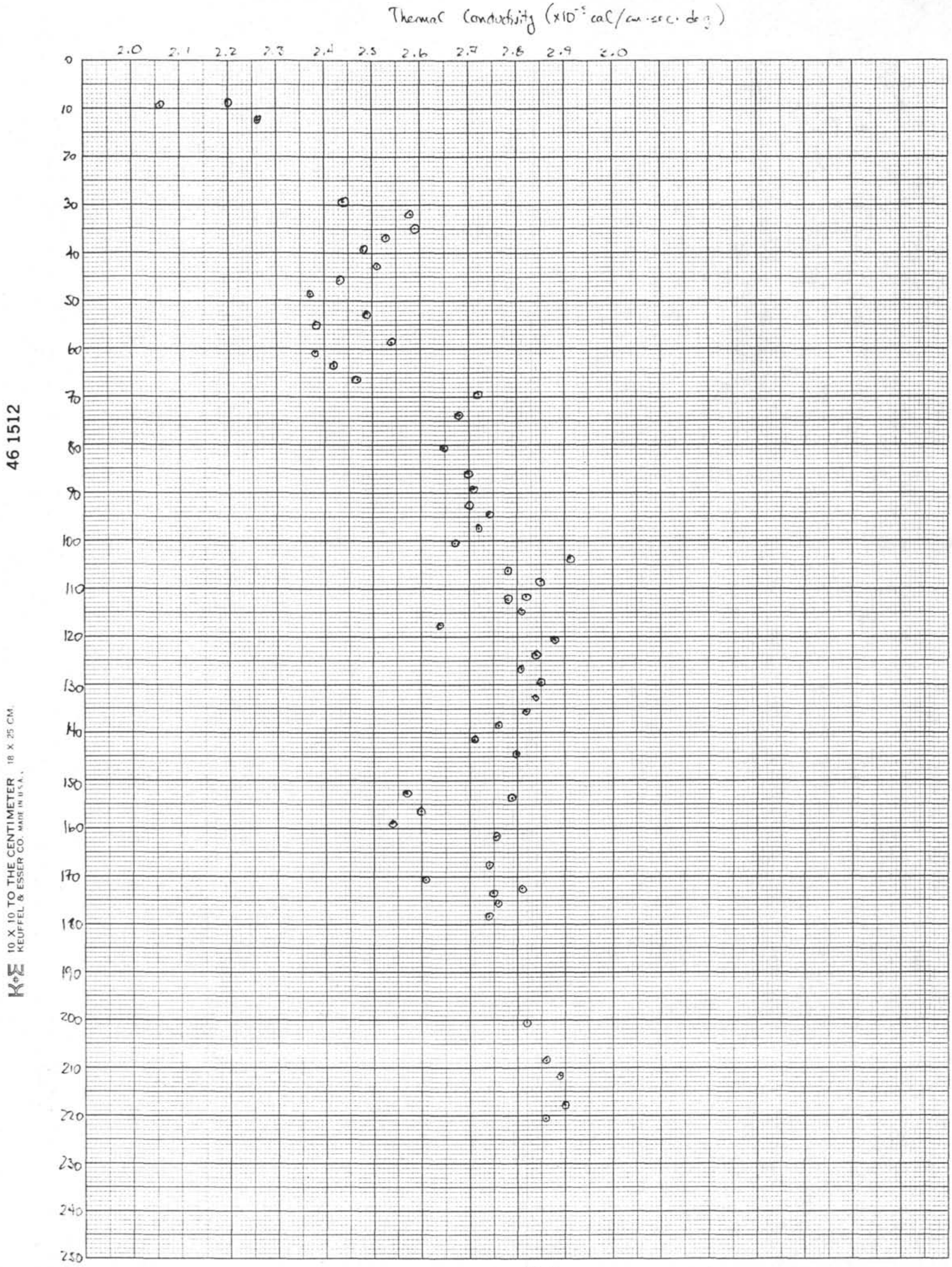
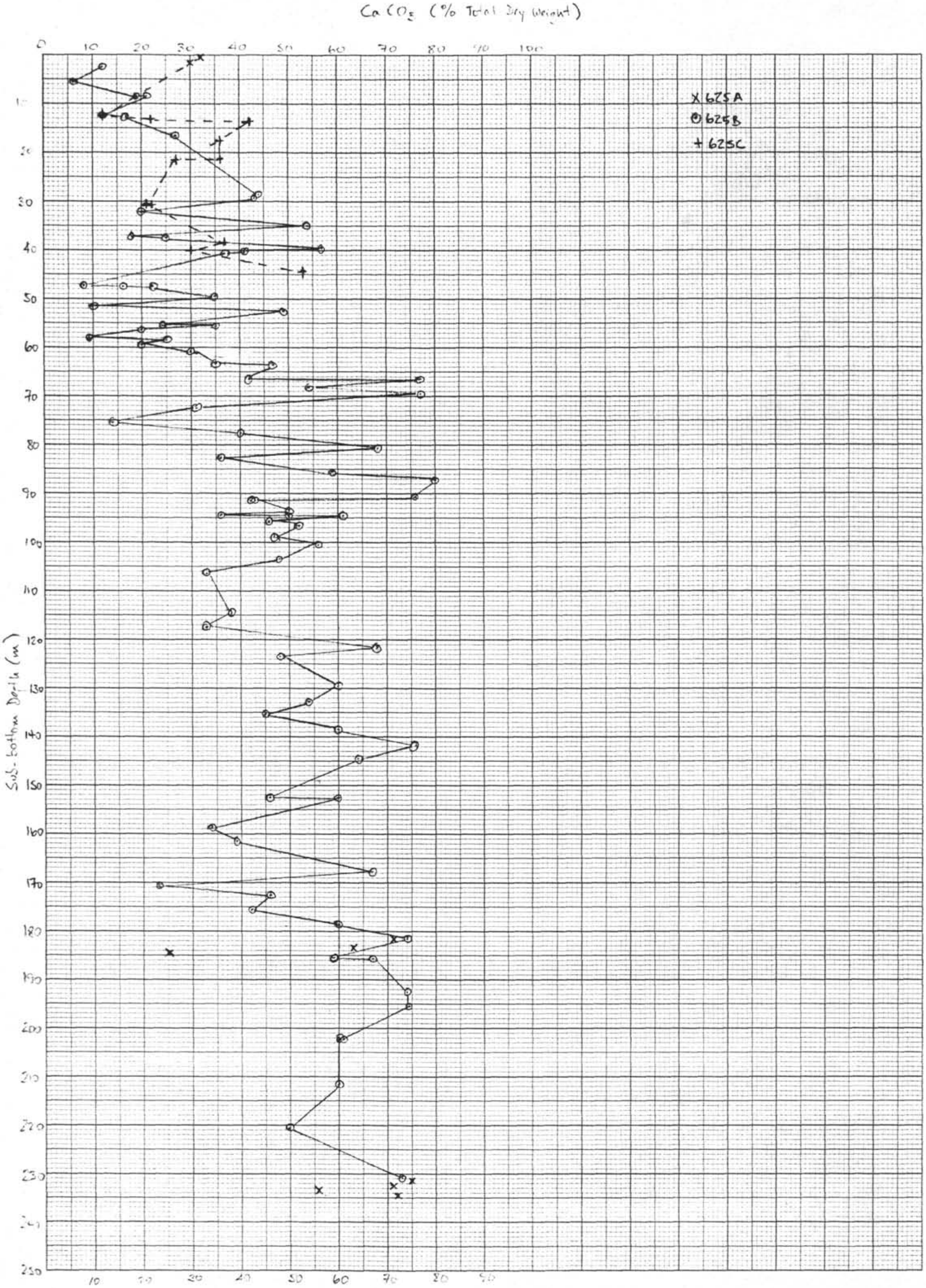


Figure G2



Thermal Conductivity (x10⁻³ cal/cm·sec·deg)
2.0
2.1
2.2
2.3
2.4
2.5
2.6
2.7
2.8
2.9
3.0
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
46 1512
10 X 10 TO THE CENTIMETER 18 X 25 CM.
KEUFFEL & ESSER CO. MADE IN U.S.A.

Figure G5



46 1512

46 1512

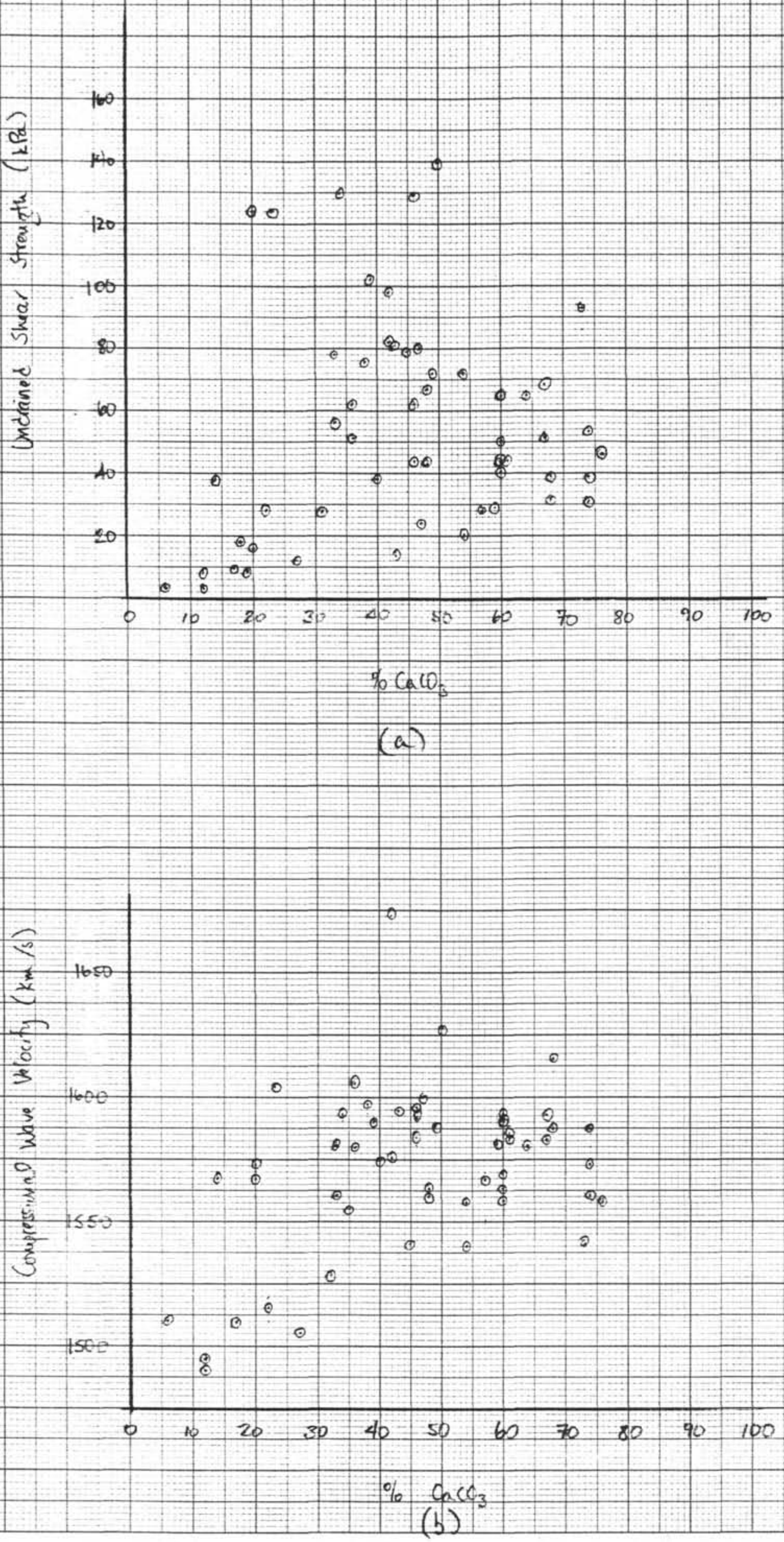


Figure G6

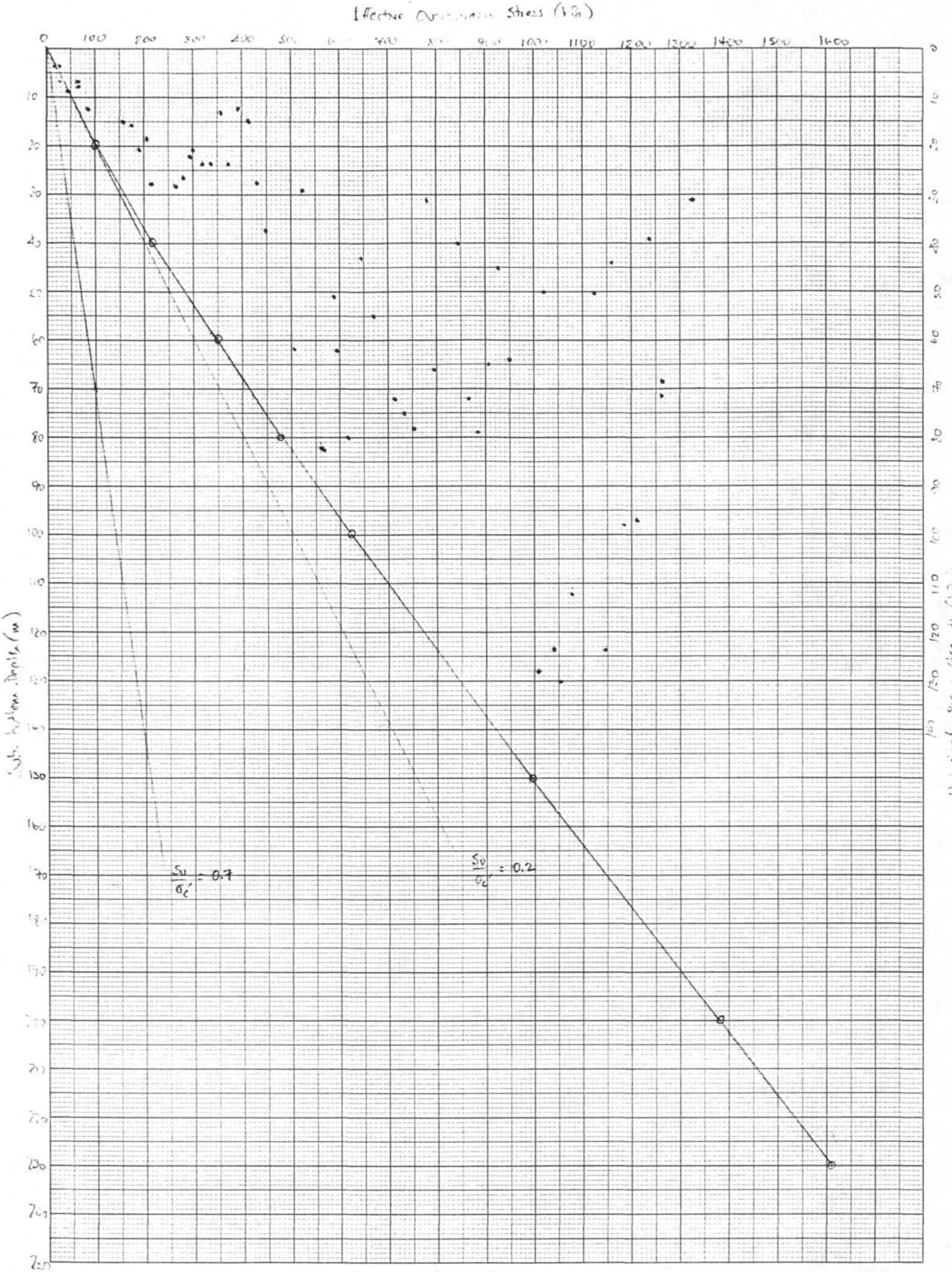

Effective ... Stress (kPa)
0
100
200
300
400
1000
1100
1200
1400
1500
1600
Sub-bottom Depth (m)
10
20
30
40
60
70
80
90
100
110
120
130
140
150
160
170
210
230
240
250
Undrained Shear Strength (kPa)
$\frac{S_u}{\sigma_c'} = 0.7$
$\frac{S_u}{\sigma_c'} = 0.2$

Figure G7

H. GEOCHEMISTRY

H. GEOCHEMISTRY

INTRODUCTION

Geochemical investigations at Site 625 included carbonate bomb and coulometer determination of $CaCO_3$ and interstitial water analysis to determine salinity. Coulometer determination of carbonate was used on only a limited number of samples. Methods are described below. Carbonate bomb samples, in all three holes, were generally taken from the same site as smear slides, and from where physical property samples had been removed. Interstitial water samples were taken from selected cores in Holes 625A and 625B, as 10cm long pieces of sediment collected from the bottom of core section 5, immediately the liner came on deck.

ANALYTICAL METHODS

Determination of Carbonate

Oven-dried samples are ground to 50-100 mesh to ensure homogenization and complete digestion of the sample during analysis. A one gram sample is taken and placed in a carbonate bomb and 4 mls of concentrated hydrochloric acid added to dissolve the carbonate. The partial pressure of the evolved CO_2 is registered in psi and compared with a standard calibration curve of percent $CaCO_3$ vs. psi. Precision is ±5%.

Analysis by CO_2 coulometer uses 30 milligram of sample powder prepared as above, digested with 2-4 ml 2N hydrochloric acid. The evolved CO_2 is scrubbed, and transfered to a coulometer cell where it dissolves in an ethanolamine solution forming a titrable acid. The coulometer generates a base to neutralize the acid. The amount of current required to complete the reaction is registered, converted to units of CO_2 evolved from the sample, and normalized to percent $CaCO_3$. Precision is ±1%.

The coulometer provides a very reliable, though more time-consuming measure of carbonate content. Results from several samples analysed by both the bomb and coulometer methods fall within 5%.

Interstitial water and salinity

Interstitial water samples are obtained by squeezing the sediment in Carver presses at pressures of 25000-30000 pounds. A few drops of the squeezed water are placed on a temperature-compensated refractometer, measuring salinity (or total dissolved solids) with a precision of ±1%.

RESULTS

Carbonate

The $CaCO_3$ content of analysed samples from all three holes are listed in Table H-1. Values from each hole are comparable at their respective horizons, indicating a certain lateral continuity to sedimentary horizons. Figure H-1 shows a depth plot of percent $CaCO_3$ vs. depth at Site 625. A number of patterns can be seen, as follows:

(1) There is a steady increase in $CaCO_3$ content of analysed sediments with depth, from around 10 to 20% $CaCO_3$ at the top, to around 60 to 75% $CaCO_3$ at the bottom.

(2) The variations in $CaCO_3$ contents in the sediments in the upper portion of the site (above about 100m BSF) is very much greater than at the bottom (below about 170m BSF). For example, values can vary between 4% $CaCO_3$ and 57% $CaCO_3$ between 40 and 50 meters BSF, compared to variations between 45% $CaCO_3$ and 75% $CaCO_3$ between 220 and 230 meters BSF. This would indicate a greater variety in the types or composition of the sediments in the upper parts of the holes than at the bottom, where carbonate contents are more uniform.

(3) Small-scale patterns of steadily increasing $CaCO_3$ can be seen, as recognised and discussed in the lithostratigraphy

section of this report. Two are particularly clear, from around 100 to 150 meters BSF, and from 150 to 200 meters BSF. This would suggest steady and repeated changes in the types of sediments being deposited at this time.

Salinity

Salinity results for interstitial water samples are listed in Table H-2, and plotted against depth in Figure H-2. There is a steady decrease in salinity from seawater values at the sediment/seawater boundary (dashed line) to a low of around 32.1 $^{o}/oo$ at 75 meters BSF. Values then steadily increase with depth to 35.2$^{o}/oo$ at 215 meters BSF, the lowermost sample analysed. Results from Hole 625A appear to support the steady increase in salinity in the lower portion of Hole 625B. The salinity low at 75 meters BSF corresponds to changes in sediment physical properties at a similar depth as discussed elsewhere.

TABLE H-1

HOLE	CORE	SEC.	INTERVAL (cm)	%CaCO3
625A	1	1	7- 9	32
	1	1	121-123	30
	1	2	25- 26	30
	1	CC	12- 13	17
	2	CC	-	54
	5	1	76- 77	72
	5	2	67- 70	71
	5	3	13- 14	48
	5	3	111-112	70
	5	4	5- 6	63
	5	4	67- 70	30
	5	4	67- 70	25 *
	5	5	80- 81	74
	5	6	38- 41	69
	5	CC	-	68
	6	1	5- 6	61
	6	1	93- 94	45
	6	1	120-121	71
	6	2	20- 23	71
	6	2	70- 71	75
	6	3	14- 15	56
	6	3	52- 55	72
625B	1	2	98-100	12
	1	4	78- 80	6
	2	1	48- 50	21
	2	1	88- 89	19
	2	4	9- 11	12
	2	4	25- 27	17
	2	5	78- 79	57
	2	6	100-102	27
	2	7	46- 47	26
	3	2	31- 33	46
	3	3	90- 91	38
	3	4	8- 9	57
	3	5	9- 10	20
	3	5	43- 44	30
	3	6	26- 27	44
	3	7	20- 21	24
	3	CC	18- 19	20
	3	CC	32- 33	12
	3	CC	43- 44	19
	4	1	28- 29	13
	4	1	105-106	37
	4	2	10- 11	44
	4	2	62- 64	43
	4	3	98- 99	15

Contd.

TABLE H-1 Contd.

HOLE	CORE	SEC.	INTERVAL (cm)	%CaCO3
625B	4	5	62- 64	20
	4	5	29- 30	35
	4	6	60- 62	54
	4	7	24- 25	37
	5	1	89- 91	18
	5	1	105-106	25
	5	2	81- 82	48
	5	2	102-103	48
	5	3	40- 42	57
	5	3	74- 75	41
	5	3	114-115	37
	6	1	36- 37	32
	6	1	71- 72	57
	6	1	99-100	57
	6	2	23- 24	47
	6	2	73- 74	49
	6	2	37- 38	57
	6	3	16- 17	38
	6	3	72- 73	50
	6	4	9- 10	53
	6	4	118-119	4
	6	4	121-122	25
	6	5	25- 26	16
	6	5	43- 45	22
	6	5	48- 49	8
	6	6	115-117	35
	6	CC	6- 7	53
	7	1	133-135	10
	7	2	68- 70	49
	7	4	28- 29	24
	7	4	70- 72	35
	7	5	30- 31	59
	7	6	10- 11	9
	7	6	65- 67	25
	8	1	68- 69	20
	8	2	73- 75	30
	8	3	75- 76	63
	8	4	70- 71	47
	8	4	73- 75	35
	8	6	31- 32	42
	8	6	78- 80	77
	9	1	70- 71	54
	9	2	68- 70	77
	9	4	23- 25	31
	9	6	25- 27	14
	10	2	99-101	40
	10	4	80- 82	68

Contd.

TABLE H-1 Contd.

HOLE	CORE	SEC.	INTERVAL (cm)	%CaCO3
625B	10	6	28- 30	36
	11	2	63- 65	59
	11	5	83- 85	42
	11	5	123-125	43
	12	2	47- 76	50
	12	2	65- 67	36
	12	3	65- 67	46
	12	3	117-118	52
	12	5	63- 65	47
	12	6	70- 71	56
	13	2	75- 77	48
	13	4	110-112	33
	14	4	74- 76	38
	14	6	58- 60	33
	15	2	119-121	68
	15	4	50- 52	48
	16	2	83- 85	60
	16	4	98-100	54
	16	6	39- 41	45
	17	2	50- 52	60
	17	4	50- 52	76
	17	6	50- 52	64
	18	5	49- 51	46
	18	6	89- 91	60
	19	2	89- 91	20
	19	4	60- 62	34
	19	6	49- 51	39
	20	4	100-102	67
	20	6	60- 62	23
	21	2	49- 51	46
	21	4	50- 52	42
	21	6	58- 60	60
	22	2	70- 72	74
	22	4	119-121	49
	22	4	138-140	67
	22	6	20- 21	80
	23	2	71- 72	76
	23	3	110-112	74
	23	4	120-121	50
	23	5	98-100	74
	23	6	59- 60	61
	24	4	90- 92	60
	24	4	128-130	61
	25	4	69- 71	60
	26	4	31- 33	50
	27	4	85- 87	73

Contd.

TABLE H-1 Contd.

HOLE	CORE	SEC.	INTERVAL (cm)	%CaCO3
625C	1	6	28- 30	12
	1	6	70- 72	22
	1	6	130-132	42
	2	2	140-142	36
	2	5	40- 42	36
	2	5	70- 72	27
	3	2	20- 23	55
	3	4	130-132	21
	3	4	147-149	22
	4	3	68- 70	37
	4	4	80- 82	30
	4	7	23- 25	53

* %CaCO3 determined by carbonate bomb and coulometer methods. All other samples, %CaCO3 determined by carbonate bomb method.

TABLE H-2

HOLE	CORE	SEC.	INTERVAL (cm)	SALINITY (0/00)
625A	5	5	140-150	33.8
	6	2	140-150	34.8
625B	2	5	140-150	34.2
	6	6	140-150	33.0
	9	5	140-150	32.1
	12	5	140-150	32.3
	20	5	140-150	33.8
	25	6	140-150	35.2

$CaCO_3$ (% Total Dry Weight)

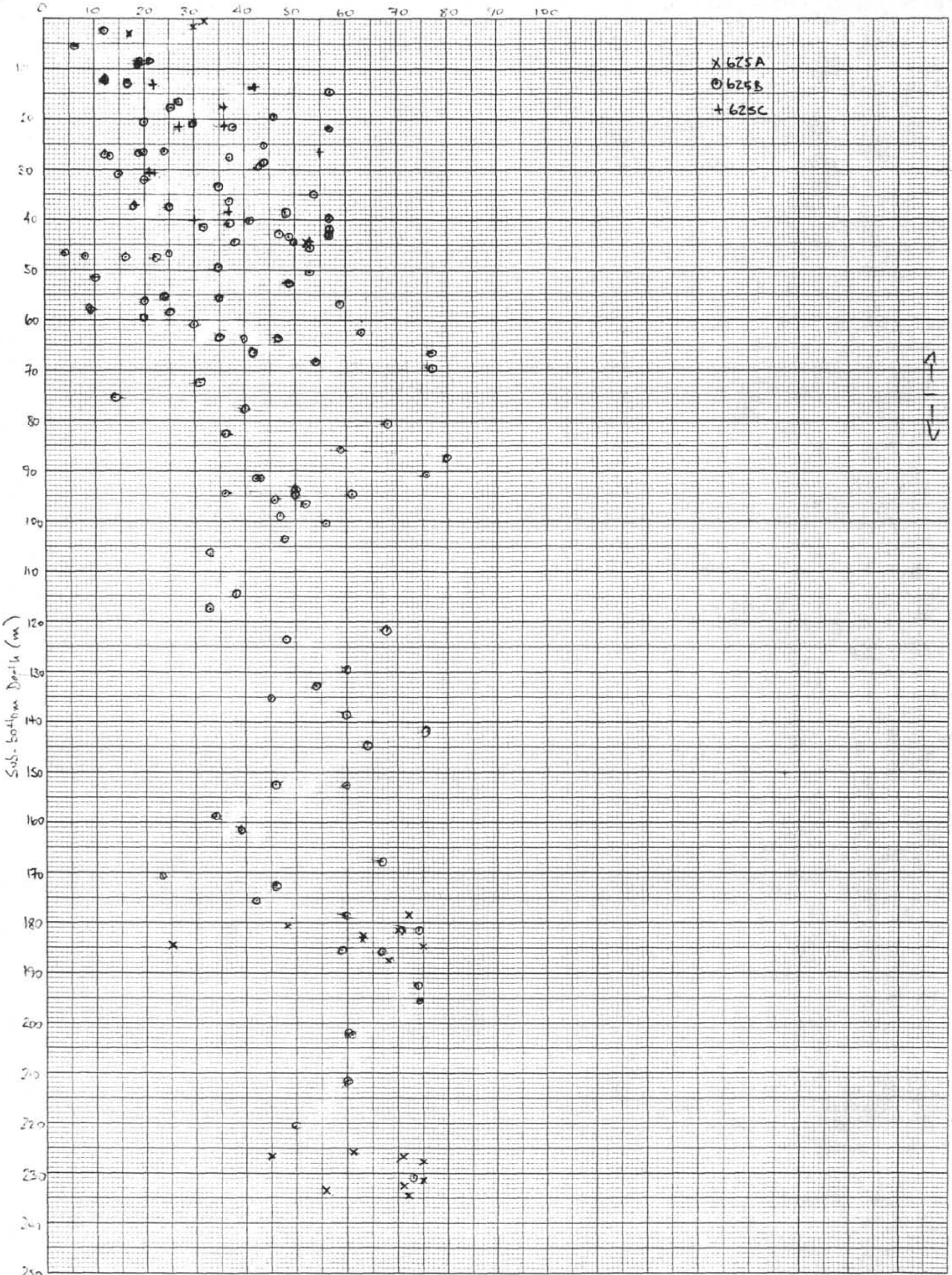
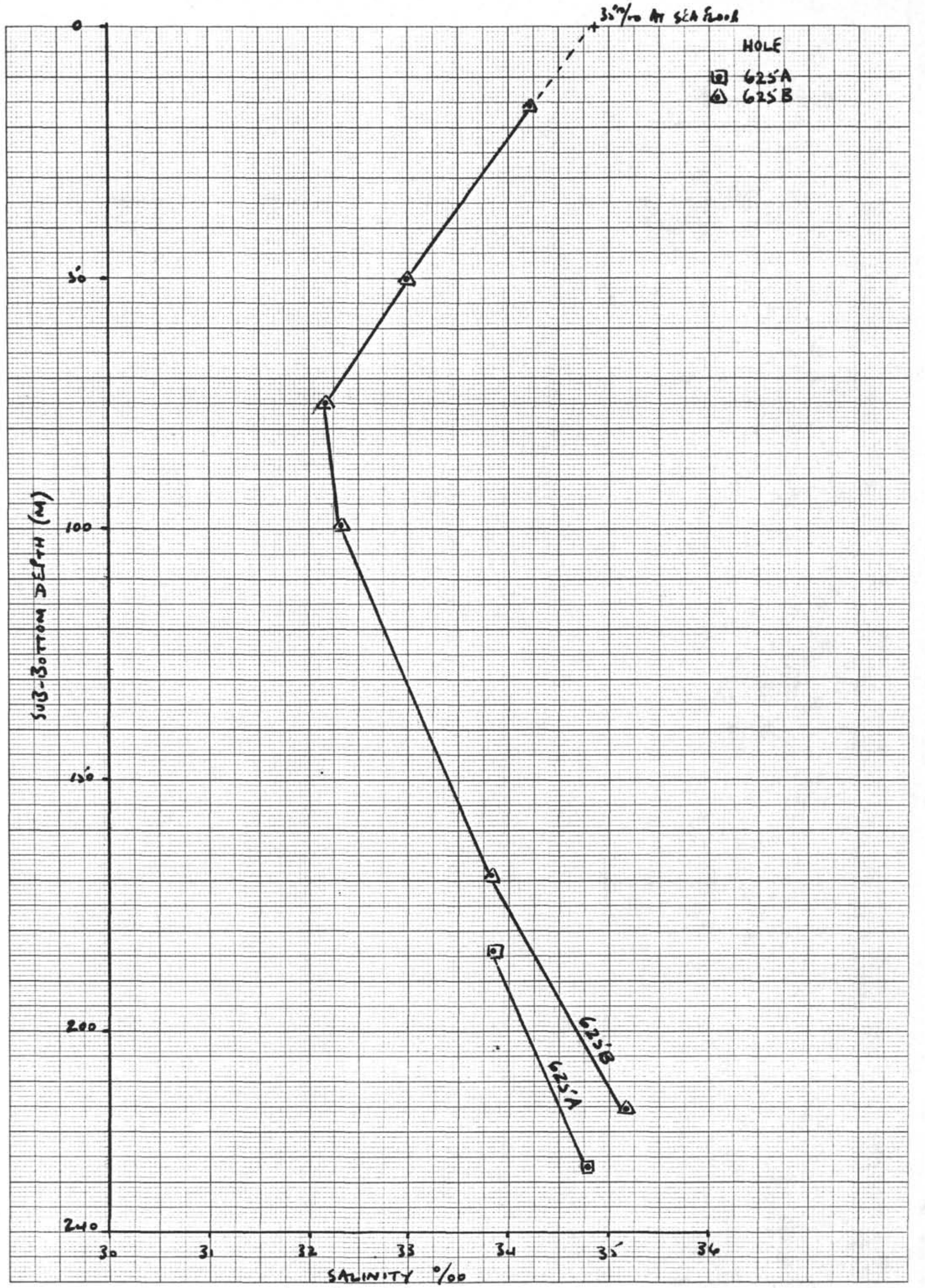


FIGURE H-1



35‰ AT SEA FLOOR
HOLE
625A
625B
SUB-BOTTOM DEPTH (M)
0
50
100
150
200
240
30
31
32
33
34
35
36
SALINITY ‰
625B
625A

FIGURE H-2

I. SUMMARY AND CONCLUSIONS

I. SUMMARY AND CONCLUSIONS

Site 625 was located on the West Florida slope in 870 meters of water and had as a prime objective the test of drilling operations and scientific laboratory equipment during the shakedown cruise of the D/V JOIDES Resolution. Drilling, scientific and technical staff were to be trained in shipboard procedures prior to the first operational leg of the Ocean Drilling Program.

Three holes were drilled. The deepest of which (Hole 625B) penetrated to 235.2 meters subbottom. This hole was continuously hydraulic piston-cored (HPC) 197.1 meters through a Plio-Pleistocene section. It was further deepened with the extended core barrel (XCB) to the termination depth in the Lower Pliocene. An earlier hole (625A) had penetrated almost as far (234.9 m subbottom) but recovered only a few wash cores while testing rotary coring. The third hole (625C) attempted to obtain a complete section of the uppermost Quaternary by overlapping HPC cores taken in the previous hole between 5 and 44.5 meters subbottom.

The scientific rationale in choosing the site was that we might date and define a number of unconformities in the seismic stratigraphy that could be expected to be expressed as biostratigraphic gaps. Secondly, we might establish a refined magnetostratigraphic and biostratigraphic history for the area that could be compared with models of eustatic sea level change. Our lack of significant penetration while testing drilling operations prevented our resolving the ages of any regional unconformities. On the other hand, we did recover a continuous Plio-Pleistocene sedimentary section to the Lower Pliocene (NN 18?) that could be of biostratigraphic and paleoenvironmental significance.

Sediments recovered vary from marly nannofossil oozes to calcareous hemipelagic muds. They become generally more calcareous downhole: $CaCO_3$ content increases from 10 to 20% at the top to 60 to 75% in the Pliocene nannofossil oozes at the base of the hole.

Nannofossil studies suggest that the Plio-Pleistocene boundary might be located between cores 12H and 13H in Hole 625B, at around 92 meters subbottom. This agrees well with the placing of the base of the Brunhes chronozone at 58 meters subbottom from paleomagnetic measurements and the location of the Jaramillo event at 65 meters subbottom. Quaternary sedimentation rates were thus around 51 meters per million years.

The sediment section was divided into two lithologic units based upon a decrease in terrigenous content below 60 meters subbottom and an apprarent cyclicity in carbonate content was observed in the nannofossil oozes of the lower unit. A concurrent change at 60 meters subbottom was observed in most of the physical properties measured at this site.

The cycles that appear present in the Pliocene nannofossil oozes and the major increase in terrigenous input in the Pleistocene indicate environmental changes that we suspect may be relatable, after shorebased studies, to glacial/interglacial climate cycles.

One useful test that was carried out when Hole C was drilled was an attempt to compare closely the HPC core 625C-1H shot at 5 meters subbottom with the lower part of Core 1H and upper part of Core 2H in the previous hole B. A visual comparison between these cores shows that the two sequences match very closely (Figure I-1). Appparently no more than about ten centimeters of material remained unsampled after this double HPC coring. This was remarkable because the ship was working in adverse sea conditions during gale force winds. Support for these findings comes from the GRAPE physical property data and the magnetic susceptibility logs (Figure I-2) which show a similar match between the upper parts of the two holes.

A successful test of the multishot core orientation device was made on Leg 100 (see Section F). A finding that will require some discussion and assessment in the near future was evidence of an apparent twisting of the core material as it enters the core liner.

Figure I-1 Photograph showing overlap of Hydraulic Piston Cores in the upper parts of Holes B and C. Sections from Hole 625B-1H and 2H compared with Sections from 625C-1H.

Figure I-2 Comparison of magnetic susceptibility and G.R.A.P.E. logs on cores from the upper parts of Holes 625B and 625C.

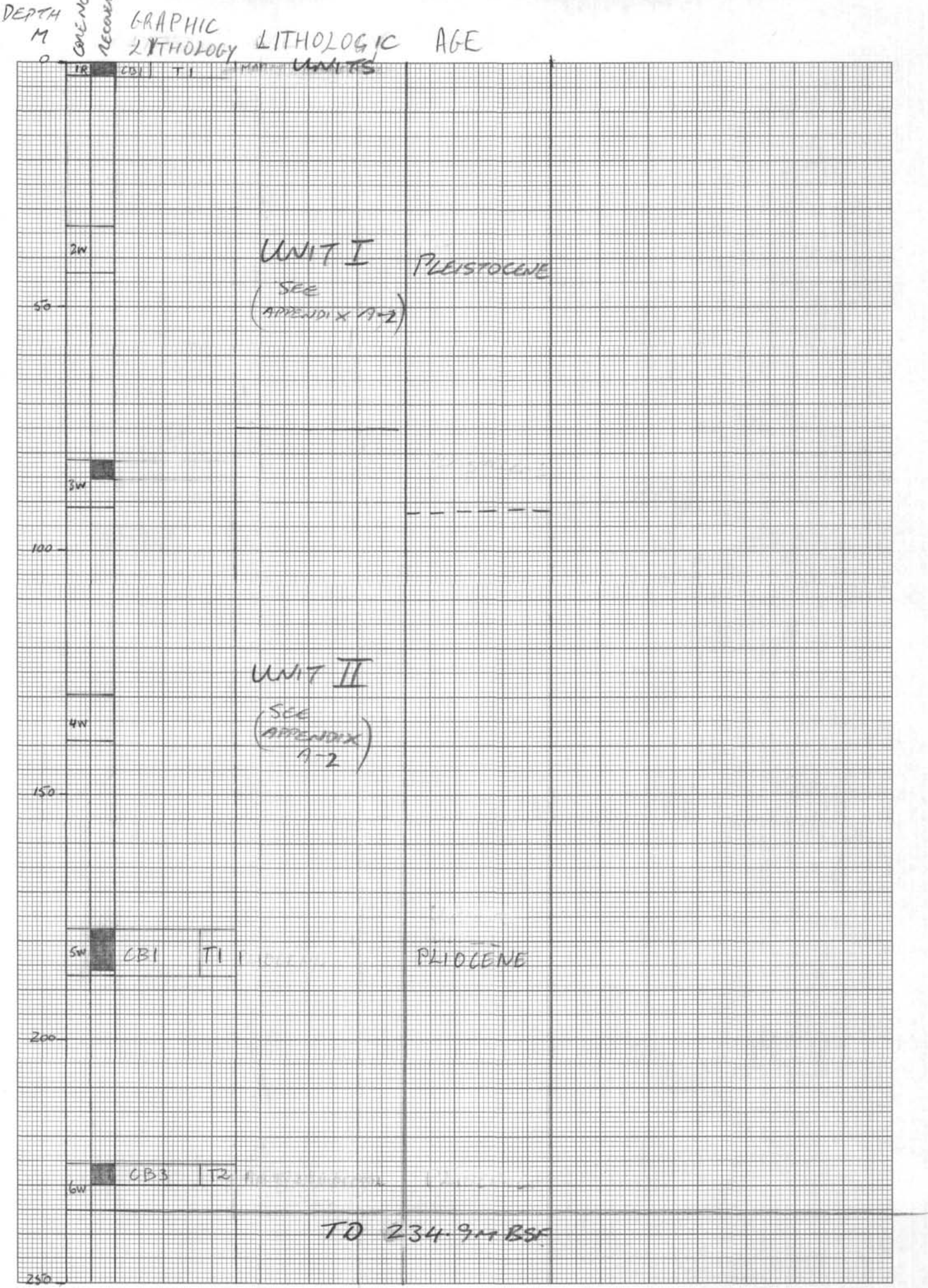
[Final Note: One aim of the science effort on this cruise was the training of the staff scientist group in core and smear slide description. During a particularly intensive session a paleomagnetist was driven to pen the following lines: -

"I got the core describin' blues.
I done seen too much nannofossil ooze.
5Y5/2, with j'es a hint o'green,
Oh you won't believe the mud dat I've seen.
Yeah, day keep on jes a fillin' up dat rack,
Core by core dey be a breakin' my back.
Days on end I been lookin' down this scope,
At plain ole mud to your ordinary bloke.
But its more you see, 'cause every day,
I count a little more; sand, silt and clay.
Grain by grain I scan the stage,
Count each bug and determin' its age,
But now I've come to that weary phase,
Cause it goes on for days and days,
But can't nobody say I ain't paid my dues,
Yeah, I done described too much nannofossil ooze!"]

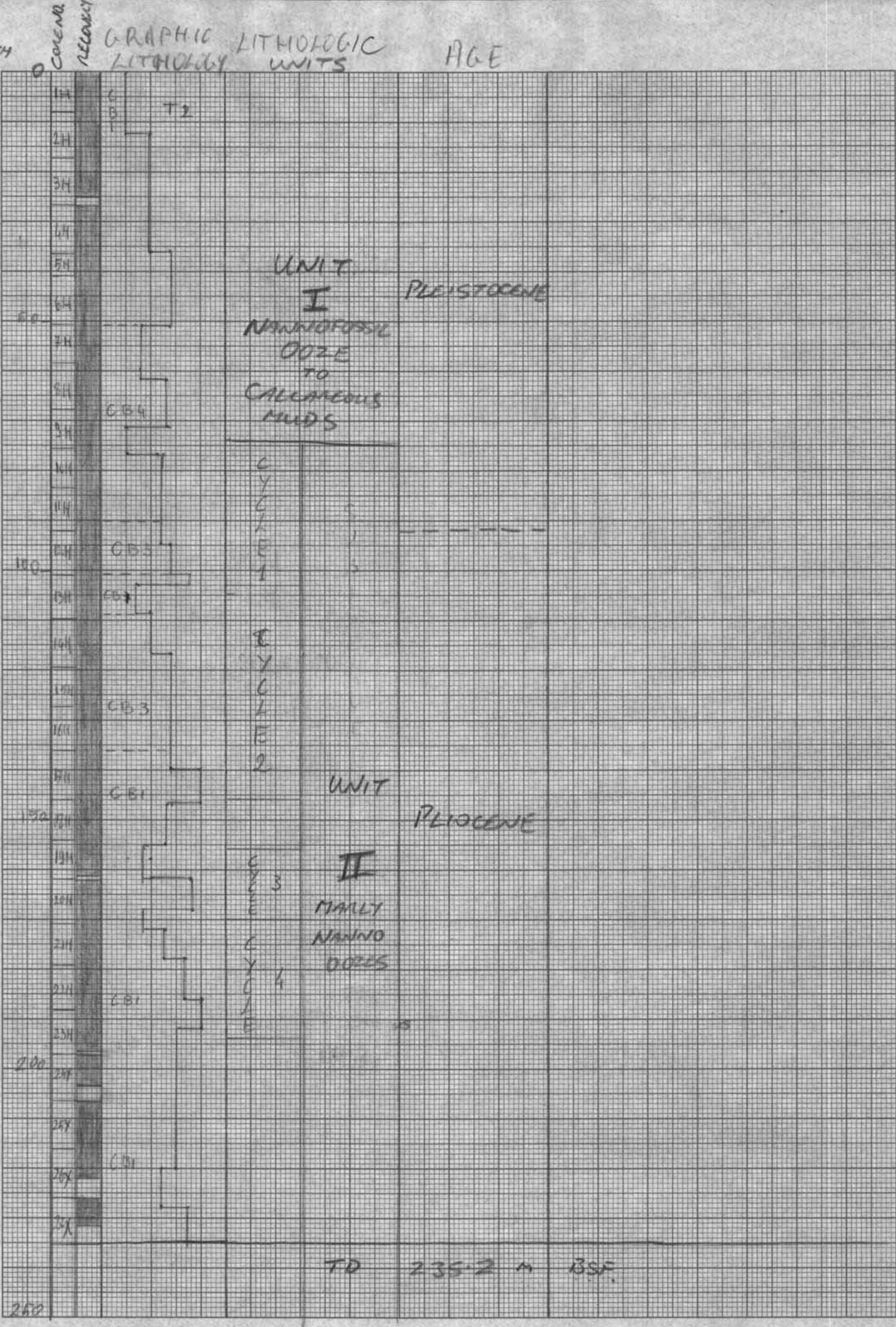
J. APPENDIX

SITE 625 HOLE A

461510



SITE 625 HOLE B.

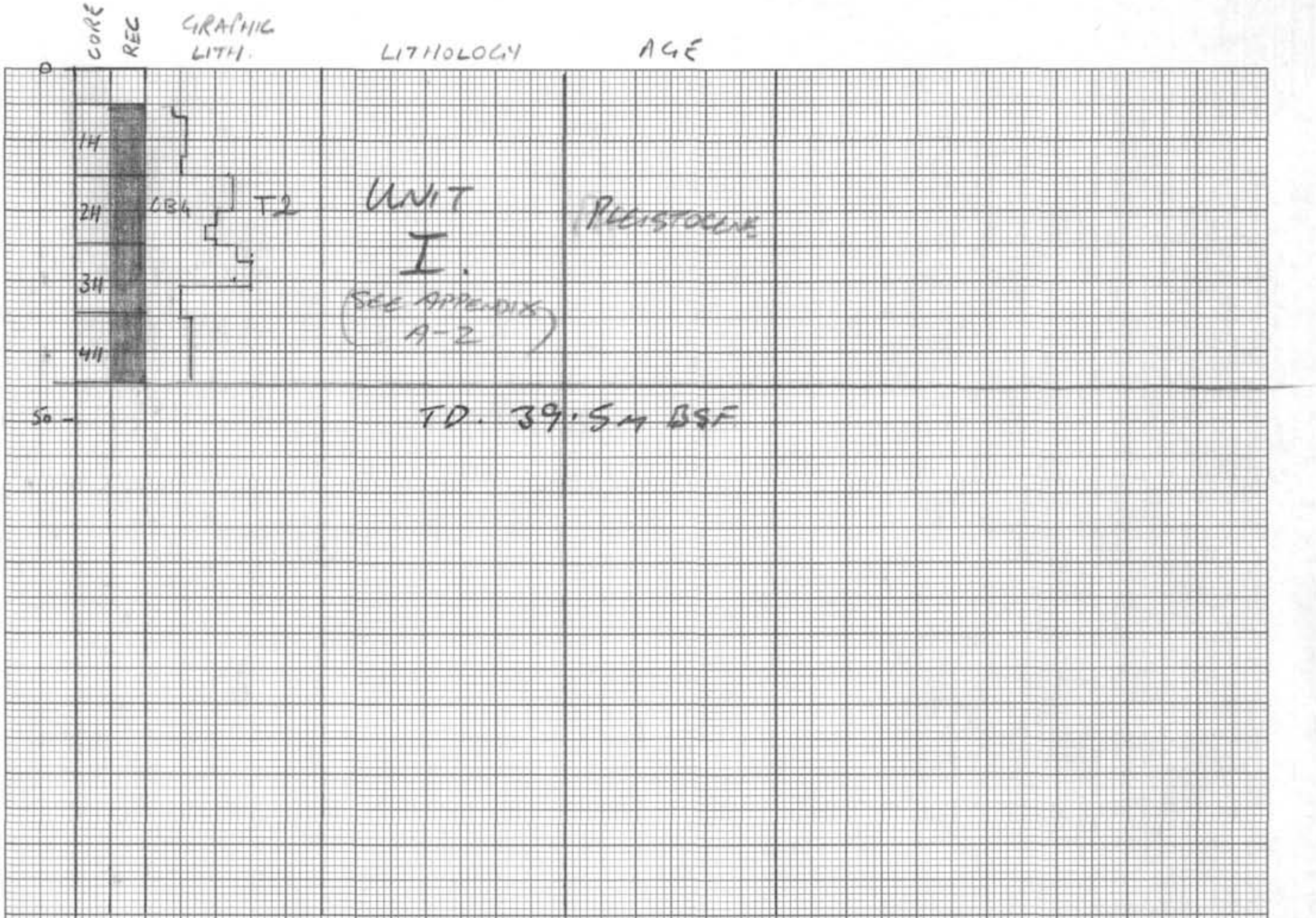


46 1512

K+E 10 X 10 TO THE CENTIMETER 18 X 25 CM.
KEUFFEL & ESSER CO. MADE IN U.S.A.

APPENDIX A-2

SITE 625 HOLE C.

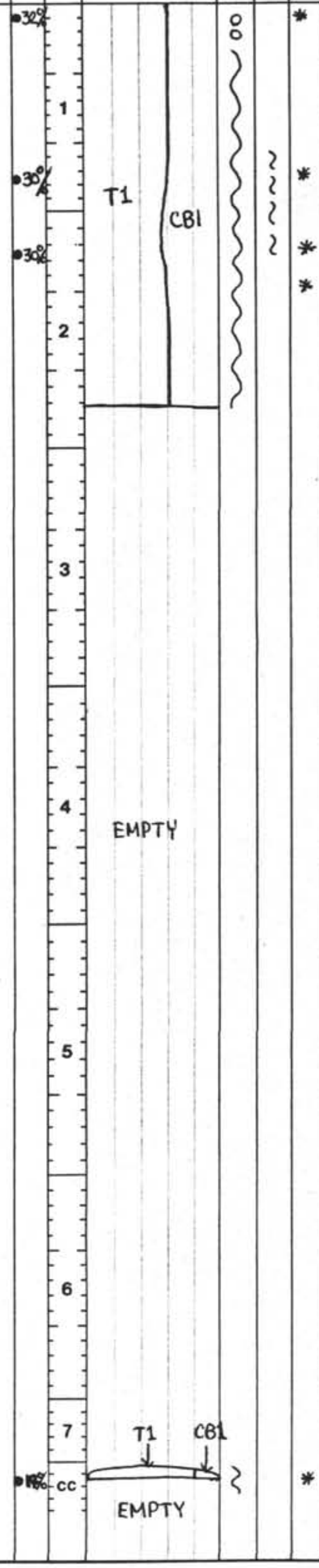


461510

APPENDIX A-3.

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	A	1R	mbsl; 0.0-2.8 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES



LITHOLOGIC DESCRIPTION

This core contains dark grayish brown (2.5Y4/2) marly NANNOFOSSIL OOZE from 0-18 cm. in Section 1. Below 1, 18 cm, in the rest of Section 1 & in Section 2, the core contain gray (5Y5/1 – 10YR5/1) MARLY CALCAREOUS OOZE with minor, irregular areas of (10YR6/1 - 5Y4/1) light gray to dark gray ooze. Minor Mottles & burrows occur from 1, 100 cm to 2, 30 cm. A patch of coral & pteropods occurs at 1, 137-141 cm.

The core catcher contains olive gray (5Y5/2) CALCAREOUS SILTY CLAY. The silt component includes common-to-abundant quartz & mica.

The entire core has been very disturbed by drilling.

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	1-8	1-104	2-25	2-49	CC-12		
Lith. (D=dominant;M=minor)	D	D	D	D	D		
TEXTURE:							
Sand	0	0	5	2	T		
Silt	10	10	10	18	40		
Clay	90	90	85	80	60		
COMPOSITION:							
Quartz	4	8	2	20	23		
Feldspar	T		T	2	5		
Rock Fragments							
Mica	2	3	T	3	10		
Clay	50	45	55	30	40		
Volcanic Glass							
Calcite / Dolomite							
Cement							
Pore Space							
Accessory Minerals/Opaques	2	2	T	T	2		
Foraminifers	1	1	5		T		
Nannofossils	40	40	35	45	20		
Diatoms	1						
Radiolarians	T	T	T				
Sponge Spicules	T	1	1				
Silicoflagellates							
Fish Remains			T	T			
Plant Debris			T				
Algal cysts ?			2	T			

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	A	2W	mbsl; 2.8- mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
								1				
								2				
								3	EMPTY			
								4				
								5				
								6				
								7	CB1 T1			
							•54%	CC	EMPTY	≀		*

LITHOLOGIC DESCRIPTION

This core was empty except for a 4 cm.-long piece of very deformed, light olive gray (5Y6/2) MARLY NANNOFOSSIL OOZE in the core catcher. A gray (5Y5/1) diffuse band ~3 mm. thick occurs at the top of the core catcher material; several very dark gray (5Y3/1), small specs occur scattered throughout the sediment.

SMEAR SLIDE SUMMARY (%)	
Section-Interval (cm)	cc-2
Lith. (D=dominant;M=minor)	D
TEXTURE:	
Sand	0
Silt	10
Clay	90
COMPOSITION:	
Quartz	3
Feldspar	1
Rock Fragments	
Mica	1
Clay	37
Volcanic Glass	
Calcite / Dolomite	
Cement	
Pore Space	
Accessory Minerals/Opaques	2
Foraminifers	5
Nannofossils	50
Diatoms	
Radiolarians	T
Sponge Spicules	1
Silicoflagellates	
Fish Remains	
Plant Debris	T

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	A	4W	____ mbsl; ____ mbsf

TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES | LITHOLOGIC DESCRIPTION

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

LITHOLOGIC DESCRIPTION

(NO RECOVERY)

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	
Lith. (D=dominant;M=minor)	
TEXTURE:	
Sand	
Silt	
Clay	
COMPOSITION:	
Quartz	
Feldspar	
Rock Fragments	
Mica	
Clay	
Volcanic Glass	
Calcite / Dolomite	
Cement	
Pore Space	
Accessory Minerals	
Foraminifers	
Nannofossils	
Diatoms	
Radiolarians	
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	A	5W	mbsl; 139.2–187.2 mbsf

TIME-ROCK UNIT: PLIOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS

PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

SECTION	PHYS. PROPS.	CHEMICAL	GRAPHIC LITHOLOGY
1		• 73% $CaCO_3$	CB1 T1; EMPTY; EMPTY
2	ϕ = 63%, γ = 1.74 g/cc, V = 1612 m/s	•; • 48% $CaCO_3$	CB1 T1
3		• 68% $CaCO_3$; • 63% $CaCO_3$	
4	ϕ = 63%, γ = 1.83 g/cc, V = 1589 m/s	•	
5		• 74% $CaCO_3$	EMPTY
6	ϕ = 59%, γ = 1.70 g/cc, V = 1590 m/s	•	CB1 T1; EMPTY
7		• 69% $CaCO_3$	
CC			CB1 T1; EMPTY

SED. STRUCTURES: ɤ, Z, Z, ɤ, Z, Z, Z, Z, Z, Z, Z, Z, Z, Z, Z, Z, SS, Z, Z, Z, Z, Z, Z, Z, Z, Z, Z, Z

LITHOLOGIC DESCRIPTION

This core consisted of gray to light gray (5Y5/1) to (5Y6/1) MARLY NANNOFOSSIL OOZE. Minor amounts of foraminifers and quartz were observed in smear slide.

Although drilling disturbance was observed to be moderate to very deformed, a color alteration pattern was present in some sections between lighter and darker gray intervals.

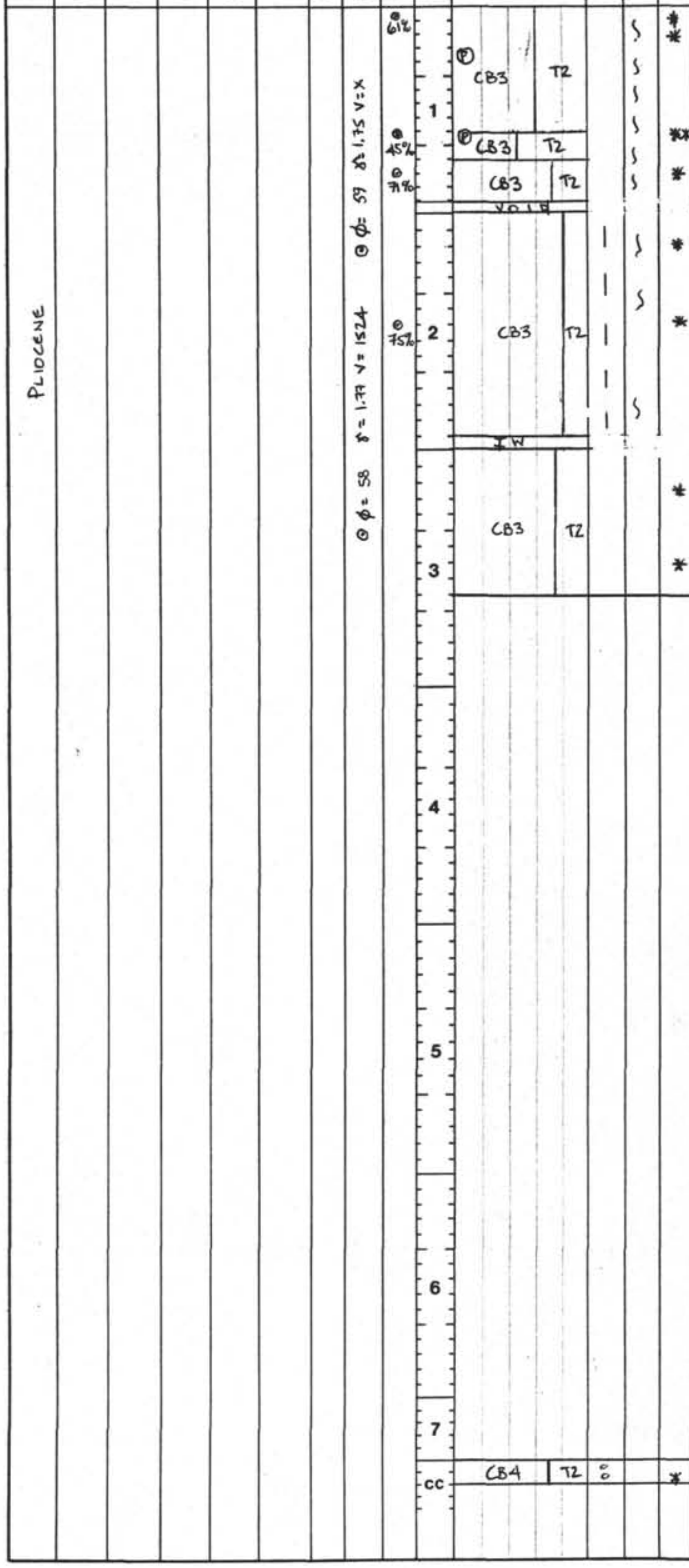
Pyrite occurs as specks and blebs throughout the core.

The entire core is slightly mottled, indicating minor bioturbation.

SMEAR SLIDE SUMMARY (%)	1	2	3	3	5	6	
Section-Interval (cm)	76	26	[illegible]	5	80	38	cc
Lith. (D=dominant;M=minor)	M	D	D	D	D	D	D
TEXTURE:							
Sand	40		1	T	5		1
Silt	40		39	12	10	10	4
Clay	20	28	60	88	85	90	95
COMPOSITION:							
Quartz	2		T		2	4	2
Feldspar	T		T			T	
Rock Fragments							
Mica	T		T			1	
Clay	10		30	54	25	40	15
Volcanic Glass							
Calcite / Dolomite							
Cement							
Pore Space							
Accessory Minerals		1			1	1	1
pyrite	20		T	10			
Foraminifers	8	10	2	1	5	1	2
Nannofossils	60	60	67	35	61	50	80
Diatoms							
Radiolarians						2	
Sponge Spicules		1	1			1	
Silicoflagellates							
Fish Remains				T			
Plant Debris							

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625A	A	6W	mbsl; 187.20-234.90 mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

0-90 cm: Marly nannofossil ooze with alternating color bands between olive gray (5Y5/2), gray (5Y6/1 and 5/1), to light gray (5Y7/1). Bands have contacts diffused over 1-2 mm. Pyrite nodules 34 and 96.

90-160: Marly nannofossil ooze grading down into light gray (5Y6/1) and light olive gray (5Y6/2) ~~nannofossil ooze~~.

160-270: Gradational upper contact form light olive gray to light gray. Biscuiting seen in section 2. Pyrite spotting.

270-390: Gradational color alternations from olive gray and gray. Biscuiting more prevalent! Pyrite rich sand concentrated between biscuits.

CC: Similar to remainder of core. One diffuse laminae (5Y4/4) at 13 cm.

SMEAR SLIDE SUMMARY (%)	1	1	2	2	3	CC	
Section-Interval (cm)	1/5	120	97	20	70	14	
Lith. (D=dominant;M=minor)	D	D	M	D	D	D	D
TEXTURE:							
Sand	5	3	10	–	TR	–	TR
Silt	45	42	40	5	15	5	10
Clay	50	55	50	95	85	95	90
COMPOSITION:							
Quartz	2	1	1				2
Feldspar	1	TR	TR				
Rock Fragments							
Mica	TR	TR	TR				
Clay	30	37	35	55	35	5	25
Volcanic Glass							
Calcite / Dolomite		TR	TR	5	15		
Cement							
Pore Space							
Accessory Minerals							
PYRITE	TR		1			2	1
Foraminifers	7	2	8			3	2
Nannofossils	60	60	50	40	50	90	70
Diatoms							
Radiolarians	TR						
Sponge Spicules	TR						
Silicoflagellates							
Fish Remains							
Plant Debris							

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	1H	____ mbsl; 0.0-7.9 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS

PALEOMAG.: BRUNHES

PHYS. PROPS.: ⊙ γ = 1.51, φ = 74, V = 1490 (Section 2); ⊙ γ = 1.63, φ = 66, V = 1511 (Section 4)

CHEMICAL: ● 125 (Section 2); ● 66 (Section 4)

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY: T1; CC: T1

DRILLING DISTURB. | **SED. STRUCTURES** | **SAMPLES**

LITHOLOGIC DESCRIPTION

THIS CORE CONTAINS OLIVE GRAY 5Y5/2 SOUPY ^calcareous SILTY MUD TO 60CMS IN SECTION 1; VERY DEFORMED GRAY TO DARK GRAY (5Y 7/1 TO 5Y 4/1) CALCAREOUS SILTY MUD TO BASE OF SECTION 3; AND MODERATELY DEFORMED DARK GRAY 5Y 4/1 TO GRAY (5Y 5/1 TO 5Y 5/2) CALCAREOUS SILTY MUD TO CORE CATCHER (CC)

SMEAR SLIDE SUMMARY (%)	2	3	4	4	6
Section-Interval (cm)	[illegible]	30	85	112	20
Lith. (D=dominant;M=minor)	D	D	M	D	D
TEXTURE:					
Sand	0	0	0	0	0
Silt	15	20	25	26	27
Clay	85	80	75	74	73
COMPOSITION:					
Quartz	7	12	10	15	10
Feldspar	T	T			
Rock Fragments					
Mica	T	T		T	
Clay	59	38	65	57	72
Volcanic Glass					
Calcite / Dolomite /CaCO3	6		15		15
Cement					
Pore Space					
Accessory Minerals /Opaques	2	10			
Pyrite					T
Foraminifers	T				
Nannofossils	12	15	5	5	T
Diatoms					
Radiolarians					
Sponge Spicules	T	T			
Silicoflagellates					
Fish Remains					
Plant Debris	6	5	5	3	

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	2H	mbsl; 7.9-17.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS

PALEOMAG.: BRUNHES

PHYS. PROPS.: Section 1: γ = 1.52, ϕ = 73, V = 1518; Section 3: γ = 1.52, ϕ = 72, V = 1495; γ = 1.52, ϕ = 75, V = 1518; Section 6: V = 1504, γ = 1.50, ϕ = 75

CHEMICAL: Section 1: 21%, 19%; Section 3: 18%, 17%; Section 5: 57%; Section 6: 27%; Section 7: 26%; PP; IW

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY: TN, CB 3; CB 1; PP; TN, CB 1; TN CB 1; IW; TN, CB 1

DRILLING DISTURB. / SED. STRUCTURES / SAMPLES

LITHOLOGIC DESCRIPTION

Gray (5Y5/1) to olive gray (5Y4/2) calcareous hemipelagic mud, mottled throughout; some distinct burrows dark brown (5Y4/2?) in color. Black pyrite specks scattered throughout and occasionally concentrated in lenses, as in section 4 (54-55 cm).

At 85 cm in section 4 a gradual transition to gray (5Y5/1 and 5Y6/1) marly nannofossil ooze occurs. Forams and small (<1 mm) calcareous shell fragments constitute the sand fraction in this material.

Graded beds are noted at 94, 98 and 101 cm in section 4. Burrow mottling and scattered pyrite flecks are seen throughout the interval.

The section is relatively undisturbed by drilling.

Physical properties whole round sample was taken from section 2, 140-150 cm; interstitial water sample from section 5 (140-150 cm).

SMEAR SLIDE SUMMARY (%)	1	2	4	4	5	6	7
Section-Interval (cm)	50	88	83	84	78	100	40
Lith. (D=dominant;M=minor)	D	D	D	D	D	D	D
TEXTURE:							
Sand	4	5	5	2	30	20	10
Silt	26	55	55	50	50	50	40
Clay	70	40	40	58	20	30	50
COMPOSITION:							
Quartz	5	20	20	20	4	25	5
Feldspar	2		2	T	2	T	
Rock Fragments							
Mica	1		T	T	T	T	T
Clay	60	45	52	58	30	32	50
Volcanic Glass							
Calcite / Dolomite	T	T	T				
Cement							
Pore Space							
Accessory Minerals							
Pyrite	T	T	T	T	T	T	
Foraminifers	10	4	5	2	5	4	4
Nannofossils	20	30	20	20	50	25	25
Diatoms							
Radiolarians							
Sponge Spicules	T	1	T	T	1	1	1
Silicoflagellates							
Fish Remains			T				
Plant Debris							
calc. skel. frags	2		1	T	10	10	10
algal cysts			T	T	3	3	5

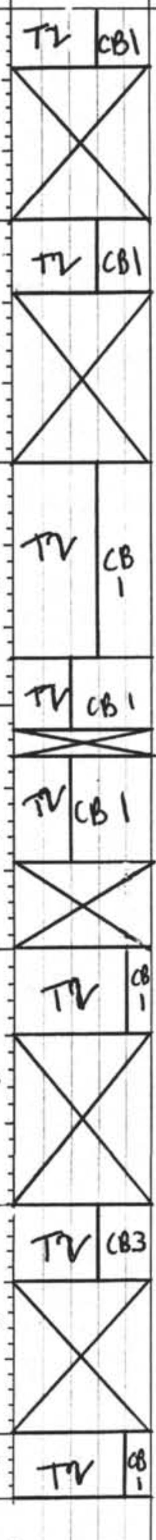
BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	B	3H (1-7)	17.4-26.9 mbsf

Column headings: TIME-ROCK UNIT · FORAMINIFERS · NANNOFOSSILS · RADIOLARIANS · DIATOMS · PALEOMAG. · PHYS. PROPS. · CHEMICAL · SECTION · GRAPHIC LITHOLOGY · DRILLING DISTURB. · SED. STRUCTURES · SAMPLES

TIME-ROCK UNIT: PLEISTOCENE

PALEOMAG.: BRUNHES

SECTION: 1, 2, 3, 4, 5, 6, 7



LITHOLOGIC DESCRIPTION

Core was taken without plastic liner – the liner was hammered into the core barrel after recovery resulting in numerous short sections and moderate to high disturbance of sediments.

Sections 1-4 consist of marly nannofossil ooze, color banded gray (5Y5/1) and olive gray (5Y5/2).

Pyrite specks and small (<1mm) shell fragments throughout.

calcareous hemipelagic mud appears in sections 5, 7 and cc, alternating with olive gray (5Y5/2) marly nannofossil ooze in sections 6 and 8-9.

[Column is continued on next form]

SMEAR SLIDE SUMMARY (%)	4	5	5	6	7
Section-Interval (cm)	8	9	43	26	20
Lith. (D=dominant;M=minor)	D	D	D	D	D
TEXTURE:					
Sand	5	5	2	5	2
Silt	10	10	60	10	5
Clay	85	85	38	85	93
COMPOSITION:					
Quartz	2	10	2	5	2
Feldspar					
Rock Fragments					
Mica				T	T
Clay					
Volcanic Glass	46	60	64	42	58
Calcite / Dolomite					
Cement					
Pore Space					
Accessory Minerals					
aragonite	2	1		2	1
pyrite	T			2	1
Foraminifers	5	5	1	10	2
Nannofossils	40	20	30	35	30
Diatoms					
Radiolarians					
Sponge Spicules		1			
Silicoflagellates					
Fish Remains				1	2
Plant Debris					
Calc skel. frags.	5	2	3	3	5

LEG 100 | SITE 625 | HOLE B | CORE 3H (8, 9, cc) | CORED INTERVAL ______ mbsl; ______ mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
PLEISTOCENE						BRUNHES			8	T2 CB 4	|		*	
									9	T2 CB 1	|	ø	*	
								020, 02, 019	CC	T2 CB 1			*, *, *	

SMEAR SLIDE SUMMARY (%)	8	9	cc	cc	cc
Section-Interval (cm)	24	35	18	32	43
Lith. (D=dominant; M=minor)	D	D	M	D	D
TEXTURE:					
Sand	10	5	—	—	—
Silt	25	10	20	20	6
Clay	65	85	80	80	94
COMPOSITION:					
Quartz	8	5	2	7	1
Feldspar					
Rock Fragments					
Mica	T				
Clay	59	25	75	69	65
Volcanic Glass					
Calcite / Dolomite					
Cement					
Pore Space					
Accessory Minerals					
aragonite	T	T	1	2	2
pyrite	T	T	3	1	1
Foraminifers	T	5	1		T
Nannofossils	T	50	15	10	29
Diatoms					
Radiolarians		T			
Sponge Spicules				1	
Silicoflagellates					
Fish Remains					
Plant Debris	2	T			
calc skel frag	31	15	3	10	2

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	B	4H	26.9-36.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

Columns: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PALEOMAG.: BRUNHES

PHYS. PROPS.: ⊙ γ= 1.59 φ= 69 V= X; ⊙ γ= 1.70 φ= 63 V= 1568; ⊙ γ= 1.52 φ= 61 V= 1540

CHEMICAL: ⊙ 32%; ⊙ 37%; ⊙ 47%; ⊙ 43%; ⊙ 32%; ⊙ 34%; ⊙ 35%; ⊙ 34%; OG

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY: T2 CB 1; T2 CB 1; T2 CB 4; T2 CB 1; T2 CB1; OG; T2 CB 1

LITHOLOGIC DESCRIPTION

Gray (5Y5/1) (5Y4/1) marly nannofossil ooze section 1 through 3, 15 cm below highly disturbed interval in section 1 (0-15 cm). Sediment grades into calcareous hemipelagic mud in section 3 (at 15 cm) through section 4 (60 cm). Small (<1 mm) skeletal fragments are the predominant calcareous component in this interval. At section 4 (60 cm) this mud grades back into marly nannofossil ooze similar to the upper unit in the core. A light (5Y7/1), high $CaCO_3$ content interval occurs from section 5 (135 cm) to section 6 (120 cm).

Discrete burrows are more prominent in darker intervals of mud, while mottling is seen in the oozy intervals.

A 30 cm organic geochemistry sample was taken from section 6 (120 - 150 cm).

Pyrite occurs as specks throughout the core occasionally concentrated into small lenses (~1 cm across).

SMEAR SLIDE SUMMARY (%)	1	2	3	4	5	6	7
Section-Interval (cm)	105	10	99	63	29	60	24
Lith. (D=dominant;M=minor)	D	D	D	D	D	D	D
TEXTURE:							
Sand	5	5	T	20	5	10	20
Silt	80	65	20	20	45	50	40
Clay	15	30	80	60	50	40	40
COMPOSITION:							
Quartz	1	2	1	6	5	2	7
Feldspar			T				T
Rock Fragments							
Mica		T	2	1	T		
Clay	45	30	80	60	50	35	45
Volcanic Glass							
Calcite / Dolomite rhombs	T		T	1	T		
Cement							
Pore Space							
Accessory Minerals	T	1	T	1	1		3
aragonite		T	T	T			T
pyrite							
Foraminifers	4	7	T	10	7	8	20
Nannofossils	40	50	7	10	30	40	20
Diatoms							
Radiolarians		T		T			
Sponge Spicules						T	
Silicoflagellates							
Fish Remains							
Plant Debris			T		T		
calc. skeletal frags.	10	10	10	10	5	5	5
algal cysts				1	2		T

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	5H	mbsl; 36.4-40.9 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS

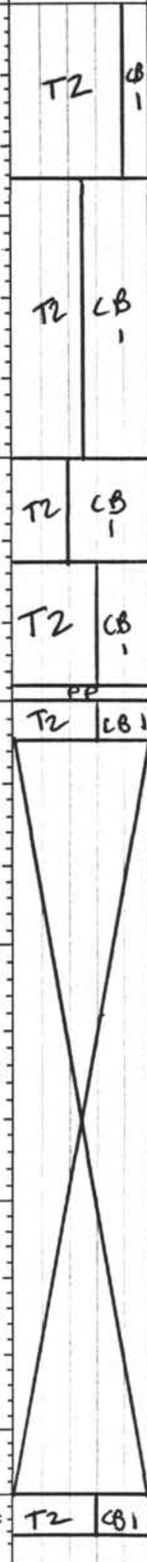
PALEOMAG.: BRUNHES

PHYS. PROPS.: γ= 1.68, φ= 65, V= 1469; γ= 1.62, φ= 67, V= 1507

CHEMICAL: 182, 256, 482, 487, 577, 417, 397, PP

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY



DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

Olive gray (5Y5/2) calcareous mud in section 1. Top 20 cm, section 1, are highly disturbed and soupy.

Mud grades down into light olive gray (5Y6/2) marly nannofossil ooze at section 2 (70 cm), which extends through the remainder of the core.

Sediment is burrow-mottled throughout with numerous discrete horizontal burrows visible. Lighter colored units appear to be associated with higher $CaCO_3$ content.

Pyrite specks and small (<1 mm) shell and skeletal fragments are scattered throughout.

A 10 cm physical properties whole round sample was taken from section 3 (140-150 cm).

SMEAR SLIDE SUMMARY (%)	1	1	2	2	3	3
Section-Interval (cm)	88	105	81	102	74	114
Lith. (D=dominant;M=minor)	D	D	D	D	D	D
TEXTURE:						
Sand	5	20	5	20	20	20
Silt	35	20	45	45	40	30
Clay	60	60	50	35	40	50
COMPOSITION:						
Quartz	3	T	T	T		T
Feldspar						T
Rock Fragments						
Mica				T		
Clay	60	60	45	30	37	50
Volcanic Glass						
Calcite / Dolomite rhombs	2				1	
Cement						
Pore Space						
Accessory Minerals						
aragonite	T	T	T	T		T
Foraminifers	5	10	5	10	10	5
Nannofossils	20	20	50	50	40	30
Diatoms						
Radiolarians						
Sponge Spicules	T		T		T	
Silicoflagellates						
Fish Remains		T				
Plant Debris						
calc. skeletal frags.	5	10	T	10	10	15
algal cysts		T		T	2	T

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	6H	____ mbsl; 40.9-50.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS

PALEOMAG.: BRUNHES

PHYS. PROPS.: γ = 1.74, ϕ = 63, V = 1555; γ = 1.65, ϕ = 68, V = 1555

CHEMICAL: 32%, 57%, 59%, 47%, 57%, 49%, 38%, 50%, 53%, 24%, 25%, 46%, 22%, 8%, 55%, 53%

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY: T2 CB1; IW; W

DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

LITHOLOGIC DESCRIPTION

Core 6 is highly disturbed in several intervals by flow in (particularly sections 1, 3 and 4).

Section 1 may be entirely flow-in material. Marly nannofossil ooze, gray to olive gray (5Y5/1 to 5Y5/2) occurs down through section 4 (30 cm), where a gradual transition into darker calcareous hemipelagic mud (5Y4/1), dark gray in color, is seen through section 5 (50 cm). At this point a gradual transition back to gray to olive gray marly nannofossil ooze occurs.

Shell fragments (<1 mm) and flecks of pyrite occur throughout.

A 10 cm interstitial water sample was taken from section 6 (140-150 cm).

SMEAR SLIDE SUMMARY (%)	1	1	2	3	4	5	CC
Section-Interval (cm)	36	100	74	72	9	25	5
Lith. (D=dominant;M=minor)	D	D	D	D	D	D	M
TEXTURE:							
Sand	5	20	5	–	5	3	–
Silt	25	30	40	35	35	37	35
Clay	70	50	55	65	60	60	65
COMPOSITION:							
Quartz	5		5	5	3	10	5
Feldspar	T				T	3	T
Rock Fragments							
Mica	T	3	T	T	T	2	T
Clay	50	15	25	35	35	50	20
Volcanic Glass							
Calcite / Dolomite							
Cement							
Pore Space							
Accessory Minerals							
pyrite	T	3			2	T	
aragonite		5	T				
Foraminifers	10	20	20	5	10	5	5
Nannofossils	30	50	45	50	45	20	60
Diatoms							
Radiolarians							
Sponge Spicules	T	T	T	T	T		T
Silicoflagellates							
Fish Remains							
Plant Debris	T	3		T	T	3	T
calc-skeletal frags	5		5	5	5	2	5

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	7H	mbsl; 50.4 mbsf

TIME-ROCK UNIT: PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS: ~NN19 | RADIOLARIANS | DIATOMS

PALEOMAG.: BRUNHES / MATUYAMA

PHYS. PROPS.

CHEMICAL: * 10% (Section 1); * 49% (Section 2); * 24% (Section 3); * 35% (Section 4); * 59% (Section 4); * 9% (Section 5); * 25% (Section 6)

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

GRAPHIC LITHOLOGY: T2 CB4 (Section 1); T2 CB4 (Sections 2–3); T2 CB4 (Section 4); T2 CB4 (Sections 4–5); OG (Section 5); T2 CB4 (Section 6); VOID (Sections 6–7); T2 CB4 (CC)

DRILLING DISTURB.

SED. STRUCTURES

SAMPLES

LITHOLOGIC DESCRIPTION

This core contains dark gray to olive gray calcareous hemipelagic mud from section 1, 0cm to 2, 35cm. A gradational boundary occurs at from 2, 30cm to 2, 40cm below which olive gray to gray (5Y5/1 and 5Y6/1) marly calcareous ooze occurs. An increase in carbonate (forams, nannos and skeletal fragments) is apparent from smear slide results continuing down core until the top of section 6. Calcareous hemipelagic mud occurs from 6, 0cm to 6, 105cm and from 7, 0cm to 7, 22cm.

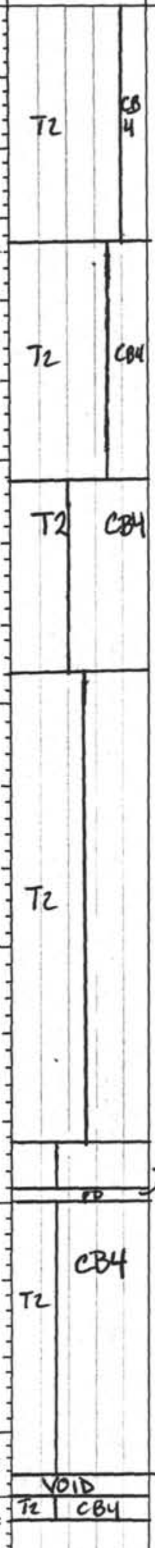
Moderate to heavy bioturbation is evident through this core. A very large burrow is present from 5, 50cm to 5, 85cm.

Pyrite occurs as small flecks scattered throughout the core with small (1-2cm) pockets present at 6, 65cm.

SMEAR SLIDE SUMMARY (%)	1	2	4	4	4	5	6
Section-Interval (cm)	135	72	29	70	140	32	11
Lith. (D=dominant;M=minor)	D	D	D	D	D	D	D
TEXTURE:							
Sand	1	5	10	20	10	8	15
Silt	69	65	75	45	15	16	40
Clay	30	30	15	35	75	77	45
COMPOSITION:							
Quartz	60	30	30	10	2	5	50
Feldspar			1				
Rock Fragments							
Mica							T
Clay	30	30	12	24	50	35	40
Volcanic Glass							
Calcite / Dolomite	2	T		T	11		T
Cement							
Pore Space							
Accessory Minerals/opaques	TR				T		
PYRITE			25			T	1
Foraminifers	6	10	5	10	3	5	2
Nannofossils	2	30	20	30	25	45	5
Diatoms							
Radiolarians							
Sponge Spicules		T		T			
Silicoflagellates							
Fish Remains	T						
Plant Debris	1			T		T	3
skeletal fragments	10	T	T	15	7	10	15
aragonite needles		T	T	1	2	T	

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	B	8H	mbsl; 58.5 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE	~ N 22	~ NN 19			MATUYAMA		* 20%	1	T2 CB4			
							* 30%	2	T2 CB4			
							* 68%	3	T2 CB4			*
							47% * * 35%	4	T2			
								5				
							42% * / * 77%	6	PP; T2 CB4			
								7	VOID			
								CC	T2 CB4	S		



LITHOLOGIC DESCRIPTION

This core consists of hemipelagic calcareous mud to marly calcareous ooze. The amount percent calcareous content increases downcore from 20% at 1,68cm to 77% at 6,78, A repetition of color changes: light olive gray (5Y6/1) to olive gray (5Y5/2) to gray (5Y7/1) occurs across this interval but no regular spacing is seen in this sequence.

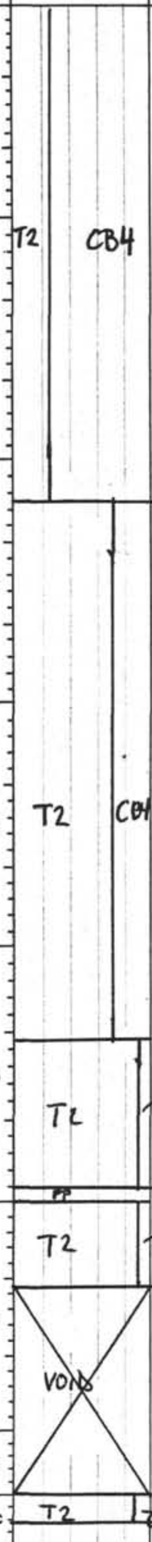
A horn coral was found at 1,105cm

Pyrite occurs throughout the interval as very small specks distributed on the split face.

SMEAR SLIDE SUMMARY (%)	
Section-Interval (cm)	3 75
Lith. (D=dominant;M=minor)	D
TEXTURE:	
Sand	0
Silt	17
Clay	83
COMPOSITION:	
Quartz	2
Feldspar	
Rock Fragments	
Mica	
Clay	53
Volcanic Glass	
Calcite / Dolomite	2
Cement	
Pore Space	
Accessory Minerals	
Pyrite	1
Foraminifers	10
Nannofossils	30
Diatoms	
Radiolarians	
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	T
Aragonite needles	2

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	B	9H	____ mbsl; 67.5 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
PLEISTOCENE		~ NN 19						* 54; * 77; * 31; * 14	1, 2, 3, 4, 5, 6, 7, CC	T2 CB4; T2 CB4; T2 CB4; FP; T2 CB4; VOID; T2 CB4			*; *



LITHOLOGIC DESCRIPTION

This core consists of an undisturbed sequence of marly nann calcareous ooze to calcareous hemipelagic mud. The lithologic changes are gradational with subtle color changes. From

1, 0–1, 67 cm light olive gray (5Y6/2) marly calcareous ooze to Olive gray (5Y4/2) at 6, 30 cm. The sediment is extensively mottled with Zoophycus burrows common throughout. Fragments of calcareous skeletal fragments are common and can be seen on the split face of the core. Specks of pyrite are also common on the core surface.

A micro fault with an apparent normal displacement is located at 6, 44 cm.

Dark pyritized silt layers are prominent at 2, 125–126 cm

SMEAR SLIDE SUMMARY (%)	1	[illegible]	6				
Section-Interval (cm)	70	23	23				
Lith. (D=dominant;M=minor)	D	[illegible]	D				
TEXTURE:							
Sand	15	T	T				
Silt	35	[illegible]	10				
Clay	50	[illegible]	90				
COMPOSITION:							
Quartz	12	[illegible]	5				
Feldspar	[illegible]						
Rock Fragments							
Mica		T					
Clay	38	[illegible]	70				
Volcanic Glass							
Calcite / Dolomite							
Cement							
Pore Space							
Accessory Minerals							
PYRITE	T	[illegible]	10				
Foraminifers	T	T	T				
Nannofossils	T	[illegible]	10				
Diatoms							
Radiolarians							
Sponge Spicules							
Silicoflagellates							
Fish Remains							
Plant Debris	T		T				
calcareous skeletal frag. aragonite needles	30	[illegible]	5				

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	10H	____ mbsl; 75.06 mbsf

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS

Columns: TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES | LITHOLOGIC DESCRIPTION

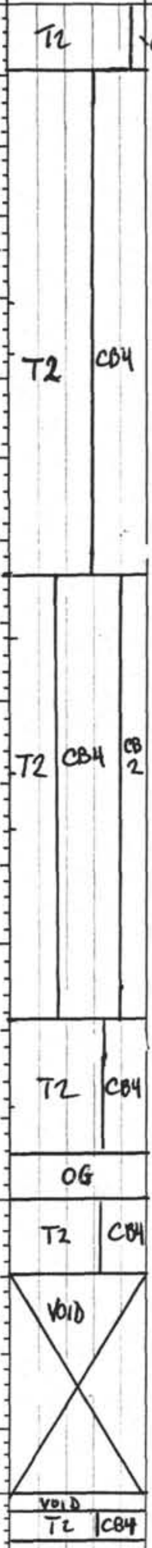
TIME-ROCK UNIT: PLEISTOCENE

NANNOFOSSILS: NN19

CHEMICAL: * 40% (Section 2); * 68% (Section 4); * 35% (Section 5)

SECTION: 1, 2, 3, 4, 5, 6, 7, CC

SAMPLES: * (Section 2), * (Section 4), * (Section 5)



LITHOLOGIC DESCRIPTION

This core consists of marly calcareous ooze to marly foram sand. The sediment is uniformly mottled with abundant burrows from 2,55cm to 2,80cm and in 3,100cm to 3,130cm.

1,0cm to 2,50cm: light gray (5Y6/1) to gray (5Y4/1), homogenous marly calcareous ooze

2,50cm – 2,110cm: Burrowed light olive gray (5Y6/2) marly calcareous ooze; Burrows are darker (5Y4/2)

2,110cm – 3–94cm: homogenous gray (5Y5/1) marly calcareous ooze

3,94cm – 5,55cm: light olive gray marly foram sand. Fragments of calcareous skeletal material are visible on split face of the core.

5,55cm – 5,98cm light gray (5Y6/1) marly calcareous ooze with layers of sandy material (forams and skeletal clasts)

5,98cm – CC,37cm: homogenous gray (5Y5/1) marly calcareous ooze.

Core 3 had a broken liner

SMEAR SLIDE SUMMARY (%)	2	4	6
Section-Interval (cm)	100	81	29
Lith. (D=dominant;M=minor)	D	D	D
TEXTURE:			
Sand	5	35	15
Silt	30	25	25
Clay	65	40	50
COMPOSITION:			
Quartz	10	10	15
Feldspar			
Rock Fragments			
Mica		3	T
Clay	45	25	35
Volcanic Glass			
Calcite / Dolomite			
Cement			
Pore Space			
Accessory Minerals			
opaques	T		T
Foraminifers	5	20	5
Nannofossils	20	15	15
Diatoms			
Radiolarians			
Sponge Spicules			
Silicoflagellates			
Fish Remains			
Plant Debris			
calc. skeletal frag.	25	22	20

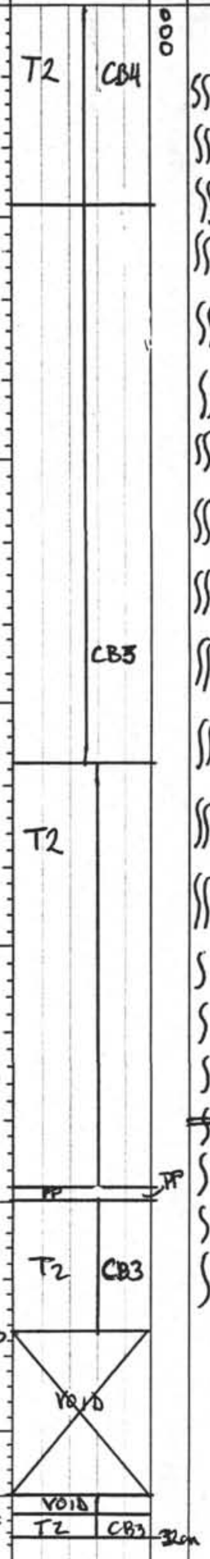
LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	11H	______ mbsl; 83.72 mbsf

TIME-ROCK UNIT: lower PLEISTOCENE

BIOSTRAT. ZONE / FOSSIL CHARACTER — FORAMINIFERS | NANNOFOSSILS: ~NN 19 | RADIOLARIANS | DIATOMS

PALEOMAG. | PHYS. PROPS. | CHEMICAL: * 59% (Section 2); * 42% (Section 5); * 43% (Section 5) | SECTION: 1, 2, 3, 4, 5, 6 (83), 7, CC

GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

This core consists of marly nanno-foram ooze which is uniformly mottled with occasional large burrows.

1,0–1,30cm gray (5Y5/1) changing to light gray (5Y6/1) by 30cm. Pyrite rich black streaks are present at 1,41cm, 1,90cm and 117cm.

1-30cm to 2-35cm: Gray marly nanno-foram ooze changing color to (5Y5/1) gray at 2,35cm and again to light gray (5Y6/1) at 42cm. The interval from 2,42cm to 5,62cm is gray (5Y6/1) and contains forams which are visible on the surface of the core (tiny sand size white grains).

An ungraded foram sand, dark gray (5Y4/1) exists at 5,92 to 5,98cm. Burrows are observed within the sand layer.

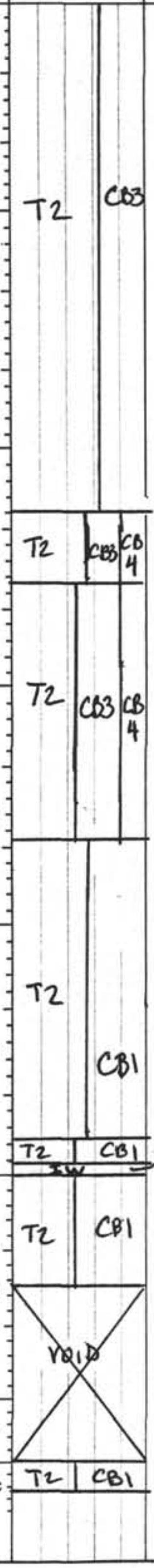
The interval from 6-23 to 6-83 contains several color changes, alternating from gray to light gray (5Y5/1 to 5Y6/1) across 5 to 8cm intervals.

The core catcher contains gray (5Y5/1) marly nanno-foram ooze. This section is severely deformed and contains an "O" ring which probably originated inside the hydraulic piston corer.

SMEAR SLIDE SUMMARY (%)	2	5	5	5
Section-Interval (cm)	64	84	125	96
Lith. (D=dominant;M=minor)	D	D	D	M
TEXTURE:				
Sand	60	40	3	40
Silt	25	15	15	40
Clay	15	45	82	20
COMPOSITION:				
Quartz	T	5	3	5
Feldspar				
Rock Fragments				
Mica		1		T
Clay	25	52	60	20
Volcanic Glass				
Calcite / Dolomite		1		T
Cement				
Pore Space				
Accessory Minerals				
Pyrite		T	T	1
glauconite				T
Foraminifers	35	10	2	40
Nannofossils	10	10	22	15
Diatoms				
Radiolarians				
Sponge Spicules	T			
Silicoflagellates				
Fish Remains				
Plant Debris			T	
calcareous skeletal frag.	30	30	13	20
aragonite needles		1		T

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	B	12H	______ mbsl; 92.32 mbsf

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
upper PLIOCENE		NN 18					*36%	1, 2	T2 CB3			* *
							*46%, *52%	3	T2 CB3 CB4			* *
								4	T2 CB3 CB4			
							*47%	5	T2 CB1; SW			*
							*56%	6, 7	T2 CB1; VOID			*
								CC	T2 CB1			



LITHOLOGIC DESCRIPTION

This core contains relatively undisturbed marly nanno-foram ooze to marly calcareous ooze to marly nannofossil ooze. Mottling is observed throughout the section. Lithologic changes are gradational and are visable as color changes but smear slide results are the basis for naming the sediments.

1, 0cm to 3, 55cm: Light olive gray marly foram-nannofossil ooze.

3, 55cm to 3, 120cm: Dark gray (5Y4/2) marly calcareous ooze.

3, 120cm to 4, 145cm: Light gray (5Y6/1) marly nanno ~~foram~~ calcareous ooze.

4, 145cm to CC, 22cm: Light gray (5Y6/1) marly nannofossil ooze.

SMEAR SLIDE SUMMARY (%)	1	2	3	3	5	6
Section-Interval (cm)	36	68	66	117	65	70
Lith. (D=dominant;M=minor)	D	D	D	D	D	D
TEXTURE:						
Sand	0	5	5	1	0	0
Silt	38	22	15	24	20	20
Clay	62	73	80	85	80	80
COMPOSITION:						
Quartz	10	5	10	10	T	1
Feldspar			5	5		
Rock Fragments						
Mica			T			
Clay	45	57	45	40	58	40
Volcanic Glass						
Calcite / Dolomite	10	5	1	T	5	
Cement						
Pore Space						
Accessory Minerals						
Pyrite	2	1	1	·		T
Rust			T			
Foraminifers	15	5	2	5	5	10
Nannofossils	15	25	15	20	40	40
Diatoms						
Radiolarians						
Sponge Spicules	1		T	T		T
Silicoflagellates						
Fish Remains						
Plant Debris	T	T			T	1
aragonite	2	2				3
calc'l skeletal fragments			20	20		

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	13H	____ mbsl; 100.89 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
upper PLIOCENE		~NN 18						* 75% (Section 2); * 33% (Section 4)	1, 2, 3, 4, 5, 6, 7, CC				* (Section 1); * (Section 4)

LITHOLOGIC DESCRIPTION

This core consists of marly nannofossil ooze. It is uniformly mottled throughout with an increase in the number of burrows in the base of section 2 and the top of section 3. The lithologic changes are gradational and are defined by changes in color.

1, 0 to 2, 136 is an olive gray (5Y6/2) marly nannofossil ooze.

2, 136cm to 4, 16cm is the same but lighter darker in color (5Y5/1)

4, 16cm to 6, 7cm is lighter, gray (5Y6/2) while the rest of the core is darker (5Y5/1)

Pyrite occurs in uniformly distributed black streaks.

Shell fragments occur sporadically on the split face of the core

SMEAR SLIDE SUMMARY (%)	1	4
Section-Interval (cm)	75	110
Lith. (D=dominant;M=minor)	D	D
TEXTURE:		
Sand	T	0
Silt	15	10
Clay	85	90
COMPOSITION:		
Quartz	5	2
Feldspar		
Rock Fragments		
Mica	1	1
Clay	55	65
Volcanic Glass		
Calcite / Dolomite		
Cement		
Pore Space		
Accessory Minerals		
pyrite	T	T
Foraminifers	T	T
Nannofossils	30	25
Diatoms		
Radiolarians		
Sponge Spicules		
Silicoflagellates		
Fish Remains		
Plant Debris		
calc. skeletal fragments	9	7

BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	626	B	14	mbsl; 109.64 mbsf

TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

SECTION	PHYS. PROPS.	CHEMICAL	GRAPHIC LITHOLOGY	SAMPLES
1				
2	$\gamma = 1.74$ $\phi = 62$ v= 1576		CB3 T2	*
3				
4	$\gamma = 1.74$ $\phi = 60$ v= 1597	38%		*
4				*
5			CB3 T2	
6	$\gamma = 1.75$ $\phi = 60$ v= 1561	33%	CB3 T2	*
7			CB3 T2	
CC				

LITHOLOGIC DESCRIPTION

This core contains a very homogenous marly nannofossil ooze with pyrite traces or concentrations all along the core. shells debris, in all the core, have a size between 0.5 mm and 2 mm. This core shows also minor bioturbation and is slightly disturbed by drilling. The majors changes are colours changes who are as follows:

- Section 1: gradual change from gray (5Y6/1) at the top to light olive gray (5Y6/2) at the bottom.
- Section 2: olive gray (5Y5/2)
- Section 3: gray (5Y6/1)
- Section 4: olive gray (5Y5/2) (0-16 cm) 5Y2.5/1, dark gray a 25 cm, 5Y5/1, gray (25-140) 5Y5/2 olive gray (140-150)
- Section 5: 5Y5/2 olive gray (0-55) then 5Y4/1 dark gray (55-90) then 5Y5/1 gray (90-140)
- Section 6 5Y4/2 dark gray (0-55) and 5Y5/1 gray (55-150)
- core catcher: 5Y5/1 gray

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	[illegible]	[illegible]	[illegible]	[illegible]			
Lith. (D=dominant;M=minor)	D	D	D	D			
TEXTURE:							
Sand							
Silt	22	18	17	20			
Clay	78	82	83	80			
COMPOSITION:							
Quartz	5	1	Tr	2			
Feldspar							
Rock Fragments							
Mica							
Clay	58	72	63	51			
Volcanic Glass							
Calcite / Dolomite	5	5	1	5			
Cement							
Pore Space							
Accessory Minerals							
Pyrite	1	5	1	20			
Aragonite	1	2		2			
Foraminifers	10	5	15	5			
Nannofossils	20	10	20	15			
Diatoms							
Radiolarians							
Sponge Spicules							
Silicoflagellates							
Fish Remains							
Plant Debris	Tr	Tr	Tr	Tr			

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	15	mbsl; 118.57 mbsf

Columns: TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

Section 1–2: PHYS. PROPS.: ⊙ γ = 1.74 φ = 60 V = 1587; CHEMICAL: C.B 68%; GRAPHIC LITHOLOGY: CB3 T2; SAMPLES: *

Section 3–4: PHYS. PROPS.: ⊙ γ = 1.77 φ = 59 V = 1563; CHEMICAL: C.B 48%; GRAPHIC LITHOLOGY: CB3 T2; SAMPLES: *

Section 5–6: GRAPHIC LITHOLOGY: CB3 T2

Sections: 1, 2, 3, 4, 5, 6, 7, CC

CC: CB3 T2

LITHOLOGIC DESCRIPTION

This core consists of a marly nannofossil ooze not or slightly disturbed by drilling. it presents minor bioturbations and pyrite visible on the split face surface and shelf debris (0.5 mm to 2 mm long)

the most important changes are in the colour:

- light olive gray (5Y7/1) to olive-gray (5Y6/1) in the section 1-2
- 5Y5/2 and 5Y3/2 in section 3
- 5Y6/2 light olive gray into sections 4-5
- 5Y5/2 light olive gray in section 6 and core catcher.

SMEAR SLIDE SUMMARY (%)		
Section-Interval (cm)	2/112	4/60
Lith. (D=dominant;M=minor)	D	D
TEXTURE:		
Sand	5	10
Silt	15	15
Clay	80	75
COMPOSITION:		
Quartz	2	3
Feldspar		
Rock Fragments		
Mica	1	
Clay	65	56
Volcanic Glass		
Calcite / Dolomite	12	19
Cement		
Pore Space		
Accessory Minerals		
Pyrite	2	1
Foraminifers	3	2
Nannofossils	15	20
Diatoms		
Radiolarians		
Sponge Spicules		
Silicoflagellates		
Fish Remains		
Plant Debris		

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	626	B	16	mbsl; 127.36 mbsf

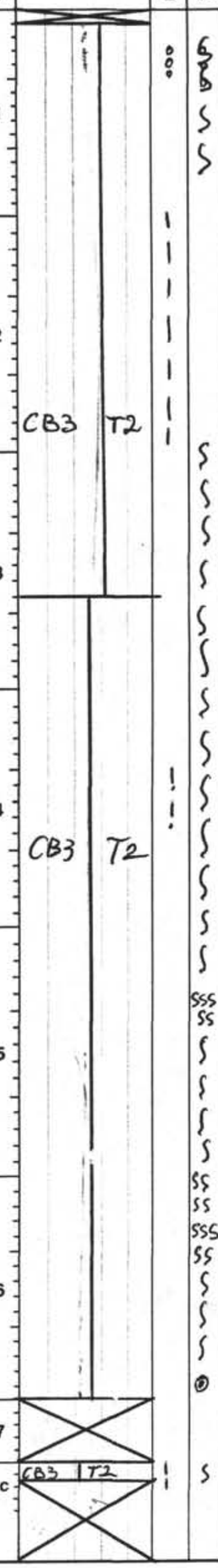
TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PHYS. PROPS. (section 2): γ = 1.73, φ = 61, v = 1558; CHEMICAL: 60%

PHYS. PROPS. (section 4): γ = 1.75, φ = 59, v = 1558; CHEMICAL: 54%

PHYS. PROPS. (section 5–6): γ = 1.76, φ = 58, v = 1541; CHEMICAL: 45%

SECTION: 1, 2, 3, 4, 5, 6, 7, CC



LITHOLOGIC DESCRIPTION

This core contains a marly nannofossil ooze with pyrite and shelly debris.

The core is disturbed by drilling in the second section and present two levels very disturbed by biogenic activities: in section 5 (40–60 cm) and 6 (40–55)

The changes of colours are as follows:

- gray (5Y5/1) in the section 1 and 2–3
- light olive gray (5Y6/2) in section 4
- olive gray (5Y5/2) (0–60 cm) light olive gray (5Y6/2) (60–120) black (5Y2.5/1) (120–150) in section 5
- light olive gray in section 6 (0–145) and olive gray in the end of section 6 (145–150) and in the core catcher

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	3/60	4/[illegible]	6/[illegible]
Lith. (D=dominant;M=minor)	D	D	D
TEXTURE:			
Sand	2		5
Silt	20	10	15
Clay	78	90	80
COMPOSITION:			
Quartz	5	3	5
Feldspar			
Rock Fragments			
Mica	2		
Clay	58	60	60
Volcanic Glass			
Calcite / Dolomite			
Cement			
Pore Space			
Accessory Minerals			
Skeletal fragments	12	5	15
Pyrite		1	Tr
Foraminifers	3	1	
Nannofossils	20	30	20
Diatoms			
Radiolarians			
Sponge Spicules			
Silicoflagellates			
Fish Remains			
Plant Debris			

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	626	B	17	______ mbsl; ______ mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

Section	Phys. props.	Chemical	Graphic lithology
1	γ= 1.73 φ= 62 V= 1567	60%	CB1 T2
2			
3	γ= 1.72 φ= 61 V= 1558	76%	CB1 T2
4			
5	γ= 1.75 φ= 59 V= 1580	64%	CB1 T2
6			
7			
CC			CB1 T2

LITHOLOGIC DESCRIPTION

This core very homo-genous by ~~the~~ its compo-sition consist of a marly/nannofossil ~~[illegible]~~ ooze. it containts pyrites traces and two pyrite nodules (one at 2: 15cm one at 3: 8cm) it containts so a lot of shelfs debrits

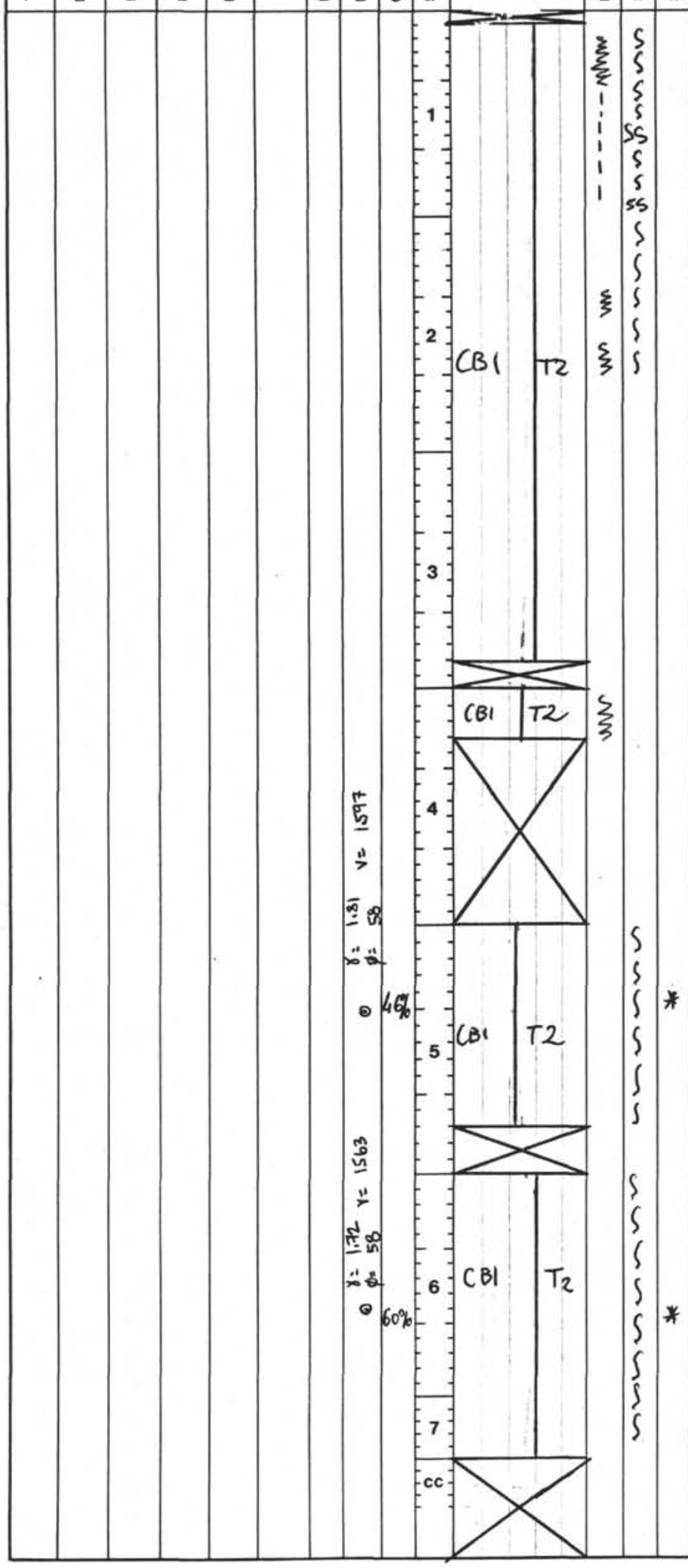
this core shows ~~a [illegible]~~ gradual changes of colors from light olive gray (5Y 6/2) to olive gray (5Y 5/2) in section 1-2-3-4 with the exception of 10cm of olive gray (5Y 5/2) ~~[illegible]~~ at 1: 65-75 cm.
section 5 contains a 5Y 5/2 light olive gray sediments.
section 6 consists of a olive gray sediment (0-140) the end of this section (140-150) and the core cacher containt a 5Y 5/1 light gray marly nannofossil ooze

SMEAR SLIDE SUMMARY (%)			
Section-Interval (cm)	2/60	4/60	6/60
Lith. (D=dominant;M=minor)	D	D	D
TEXTURE:			
Sand	5	3	10
Silt	60	60	60
Clay	35	37	30
COMPOSITION:			
Quartz	5	4	5
Feldspar	[illegible]		T
Rock Fragments			
Mica	Tr	1	
Clay	[illegible]	17	20
Volcanic Glass			
Calcite / Dolomite		17	
Cement			
Pore Space			
Accessory Minerals			
Pyrite	Tr	1	Tr
Aragonite	Tr		5
Foraminifers	3	Tr	10
Nannofossils	60	60	60
Diatoms			
Radiolarians			
Sponge Spicules			
Silicoflagellates			
Fish Remains			
Plant Debris			

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	18	____ mbsl; ____ mbsf

BIOSTRAT. ZONE / FOSSIL CHARACTER

TIME-ROCK UNIT. | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

This core contains a Marly nannofossil ~~marl~~ ooze and shows pyrite traces, and one pyrite nodule of 126 in the second section.
debris shells are all along the core and their size is situated between 0.5 mm and 3 mm.

The colours changes are the major changes of the core and are as follows:
- Section 1: Light olive gray (5Y 6/2)
- Section 2: Light gray (5Y 7/1)
- Section 3: Light olive gray (5Y 6/2)
- Section 4: vertical changes 5Y 6/1 light gray on right and left and olive gray in the center of the section
- section 5 light gray (5Y 5/1) until 96 cm then gray 5Y 6/1 (96-150 cm)
- Section 6: Light olive gray (0-40) (5Y 5/2) and light gray (5Y 7/1)
- Core catcher: olive gray.

SMEAR SLIDE SUMMARY (%)		
Section-Interval (cm)	5/50	6/30
Lith. (D=dominant;M=minor)	D	D
TEXTURE:		
Sand	5	10
Silt	45	60
Clay	50	30
COMPOSITION:		
Quartz	T	T
Feldspar		
Rock Fragments		
Mica		
Clay	50	36
Volcanic Glass		
Calcite / Dolomite		1
Cement		
Pore Space		
Accessory Minerals		
Pyrite	T	1
Aragonite		2
Foraminifers	5	5
Nannofossils	20	55
Diatoms		
Radiolarians		
Sponge Spicules		
Silicoflagellates		
Fish Remains		
Plant Debris		T
skeletal debris	25	T

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	19	______ mbsl; ______ mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

SECTION	PHYS. PROPS.	CHEMICAL	GRAPHIC LITHOLOGY	SAMPLES
1	V= 1573		CB1 T2	
2	γ= 1.79 φ= 58	⊙ 20%	CB1 T2	
3	V= 1592			
4	γ= 1.79 φ= 57	⊙ 34%		*
5	V= 1590		CB1 T2	
6	γ= 1.84 φ= 57	⊙ 39%	CB1 T2	*
7				
CC			CB1 T2	

LITHOLOGIC DESCRIPTION

This core countains a Marly nannofossil ooze in section 1 who become gradualy a calcareous hemipelagic mud in section 2 and 3 and came back to a marly nannofossil ooze in the rest of the core. The most important bioturbations are in this core chondrites bioturbations.

The core ~~has~~ sous so, pyrites traces and pyrite concentrations and shells debris (0.5 to 2 mm)

The majors changes are changes of colour, and are as follows:

Section 1: (5Y 5/1) gray

Section 2: (5Y 5/1) gray 0-120 then (5Y 4/1) dark gray 120-150

Section 3: (5Y 5/1) gray: 0-10 then 5Y 6/2 olive gray 10-110, then 5Y 4/2 olive gray

Section 4: (5Y 6/1) gray who pass to 5Y 5/2 olive gray at 90 then 5Y 6/2 olive gray who pass to 5Y 6/1 gray at 150

Section 5: (5Y 5/1) gray 0-70, (5Y 6/1) 70-150

Section 6: (5Y 5/1) gray 0-40 (5Y 5/2) olive gray (40-75)

Core catcher: 5Y 6/2 light olive gray.

SMEAR SLIDE SUMMARY (%)		
Section-Interval (cm)	[illegible]	[illegible]
Lith. (D=dominant; M=minor)	D	D
TEXTURE:		
Sand		5
Silt	15	20
Clay	85	75
COMPOSITION:		
Quartz	9	
Feldspar		
Rock Fragments		
Mica		
Clay	55	60
Volcanic Glass		
Calcite / Dolomite		
Cement		
Pore Space		
Accessory Minerals		
Skeletal fragments	13	5
Pyrite		5
Foraminifers	Tr	10
Nannofossils	30	20
Diatoms		
Radiolarians		
Sponge Spicules		
Silicoflagellates		
Fish Remains		
Plant Debris		

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	B	20	____ mbsl; ____ mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

Sections: 1, 2, 3, 4, 5, 6, 7, CC

Graphic lithology: CB1, T2 (sections 1–5); CB1 T2 (section 5); CB1 T2 (section 6); CB1 T2 (CC)

Phys. props.: section 3–4: γ = 1.72, φ = 62, V = 1592; section 5–6: γ = 1.83, φ = 56, V = 1604

Chemical: 67% (section 4); 23% (section 6)

LITHOLOGIC DESCRIPTION

This core shows a gradual change from a marly nannofossil ooze in sections 2-34 to a calcareous hemipelagic mud in the section 6 and in the core catcher.

The section 1 and 2 are very disturbed by water and drilling.

The core contains pyrite traces and concentration and shells debris (size: 0.5 mm to 3 mm)

except the lithology changes the colours changes must be noted and the core shows the colours as follows:

- Section 1-2: gray (5Y5/1)
- Section 3: (5Y6/2) light olive gray
- Section 4: 0-24: dark gray (5Y4/1); 24-51cm: 5Y7/2 light gray; 51-82: (5Y6/2) light olive gray; 82-108: similar to 51-82; 108-120 light olive gray, 120-150 light olive gray (5Y6/2)
- Section 5: 0-60: 5Y7/1 light gray; 60-85: 5Y6/2 light olive gray, 85-150: as 0-60
- Section 6: 0-30 light olive gray; 30-80: 5Y4/1 dark gray
- core catcher: 5Y5/2 olive gray

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	4/110	6/62
Lith. (D=dominant;M=minor)	D	D
TEXTURE:		
Sand	10	
Silt	70	25
Clay	20	75
COMPOSITION:		
Quartz	2	2
Feldspar		
Rock Fragments		
Mica		
Clay	26	72
Volcanic Glass		
Calcite / Dolomite	5	1
Cement		
Pore Space		
Accessory Minerals		
Pyrite	1	Tr
Aragonite	1	Tr
Foraminifers	5	Tr
Nannofossils	60	25
Diatoms		
Radiolarians		
Sponge Spicules		
Silicoflagellates		
Fish Remains		
Plant Debris	Tr	Tr

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	21H	______ mbsl; ______ mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
						⊙ γ= 1.77 φ= 60 V= 1583	● 46%	1	CB1 T2			
								2	CB1 T2			* 80
						⊙ γ= 1.80 φ= 57 V= 1576		3				
							● 42%	4	CB1 T2			
								5	CB1 T2			
						⊙ γ= 1.72 φ= 62 V= 1593		6	CB1 T2			
								7	CB1 T2			
								CC				

LITHOLOGIC DESCRIPTION

SEDIMENTS COMPOSED OF MARLY NANNOFOSSIL OOZES WITH SIGNIFICANT CHANGES IN THE PROPORTION OF CONSTITUENTS AT 1.30 m AND 7.08 m. MINOR COLOUR VARIATIONS THROUGHOUT. MAJORITY OF SEDIMENT ABOVE 1.30 m A LIGHT OLIVE GRAY (5Y6/2) BELOW 1.30 m OLIVE GRAY (5Y5/2) GRADING INTO DARK GRAY (5Y4/1) IN THE MIDDLE OF SECTION 4. JUNCTION BETWEEN LITHOLOGIES ARE GRADATIONAL, BUT OVER A VERY SHORT INTERVAL AT 7.08 m IN A HIGHLY BURROWED REGION. SECTION 6 SEDIMENTS ARE A LIGHT OLIVE GRAY (5Y6/2) COLOUR. BURROWS COMMONLY SEEN AWAY FROM AREAS DISTURBED BY DRILLING. CALCAREOUS FRAGMENTS SEEN THROUGHOUT. PYRITE GRAINS SCATTERED THROUGHOUT.

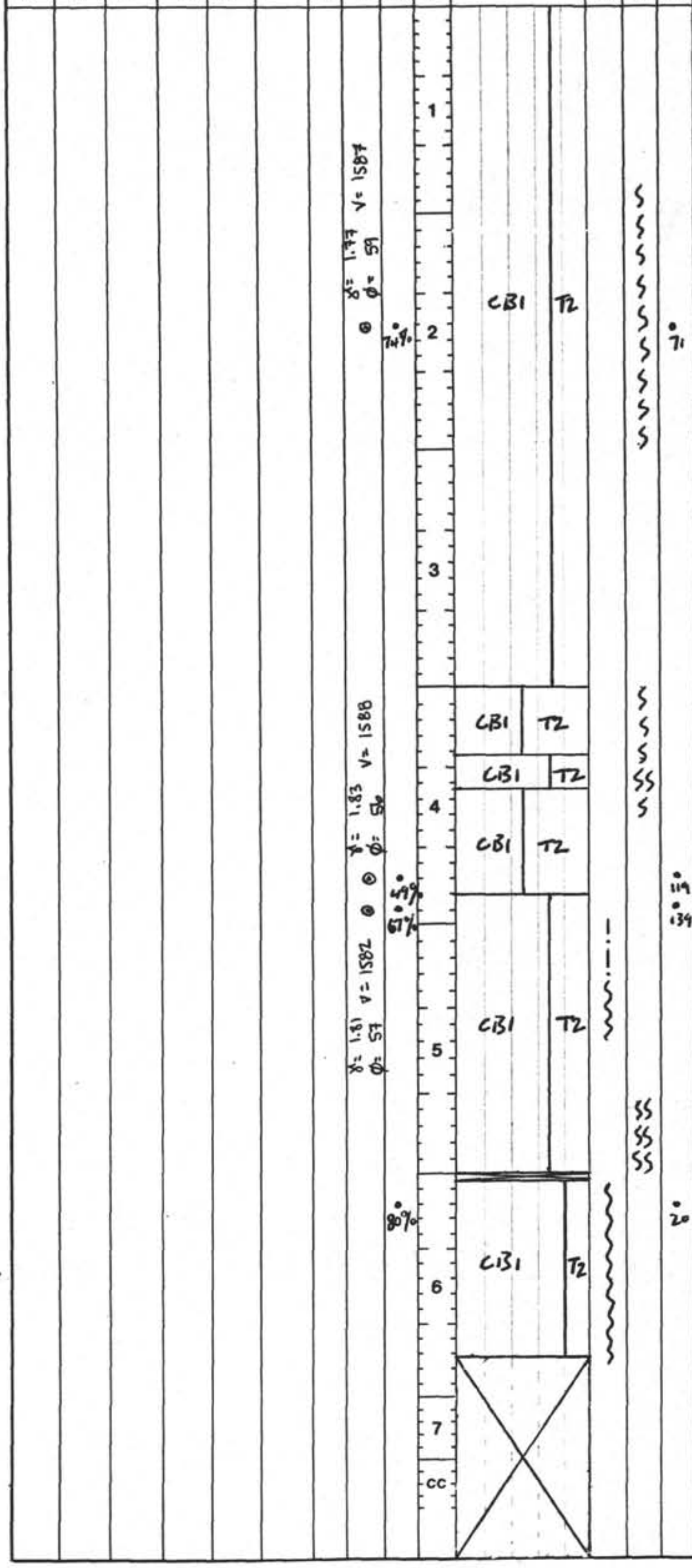
SHADED AREAS SHOW VOIDS/ EMPTY CORE LINER.

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	2, 80
Lith. (D=dominant;M=minor)	D
TEXTURE:	
Sand	5
Silt	10
Clay	85
COMPOSITION:	
Quartz	4
Feldspar	
Rock Fragments	
Mica	
Clay	45
Volcanic Glass	
Calcite / Dolomite	TR
Cement	
Pore Space	
Accessory Minerals	
CALC FRAGMENTS	9
Foraminifers	2
Nannofossils	40
Diatoms	
Radiolarians	
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	22H	________ mbsl; ________ mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

0-4.5 m MARLY NANNOFOSSIL OOZE VARYING IN COLOUR FROM LIGHT OLIVE GRAY (5Y 6/2) TO GRAY (5Y 7/1) AS A SERIES OF VERY DIFFUSE LAYERS.

4.5-7.5 m ALTERNATING LAYERS OF MARLY NANNOFOSSIL OOZES VARYING FROM ~50% $CaCO_3$ TO 67% $CaCO_3$. LOWER $CaCO_3$ LAYERS ARE GRAY (5Y 5/2) IN COLOUR WITH $CaCO_3$-RICH LAYER A LIGHT GRAY (5Y 6/2) CONTACTS ARE DIFFUSE BUT RAPID.

>7.5 m NANNOFOSSIL OOZE GRAY (5Y 7/2) IN COLOUR SEVERELY DISTURBED BY DRILLING

CONCENTRATED AREAS RICH IN BURROWS AS SHOWN. PYRITE AND CALCAREOUS FRAGMENTS THROUGHOUT.

SMEAR SLIDE SUMMARY (%)							
Section-Interval (cm)	2/71	4/119	4/134	6/20			
Lith. (D=dominant;M=minor)	D	D	D	D			
TEXTURE:							
Sand	5	1	5	5			
Silt	45	24	45	55			
Clay	50	75	50	40			
COMPOSITION:							
Quartz	10	3	5	3			
Feldspar							
Rock Fragments							
Mica		TR					
Clay							
Volcanic Glass							
Calcite / Dolomite	TR		TR				
Cement							
Pore Space							
Accessory Minerals							
ARAG. NEEDLES	TR	TR	TR	TR			
PYRITE		5					
GLAUCONITE		TR					
Foraminifers							
Nannofossils							
Diatoms							
Radiolarians							
Sponge Spicules							
Silicoflagellates							
Fish Remains		TR					
Plant Debris							
CALC FRAGMENTS							

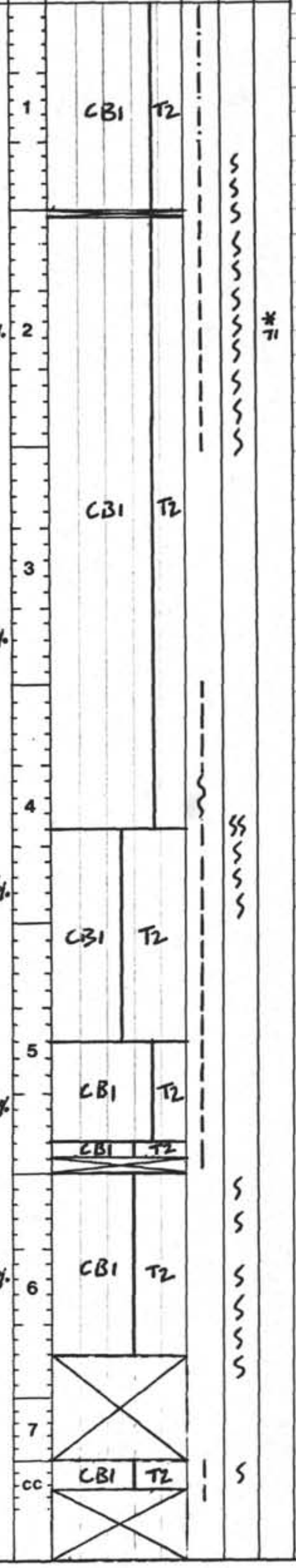
LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	23H	______ mbsl; ______ mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PHYS. PROPS.: ⊙ γ = 1.54, Φ = X, V = 1560; ⊙ γ = 1.76, Φ = 52, V = 1571

CHEMICAL: 76%, 74%, 50%, 70%, 61%

SAMPLES: * 71



LITHOLOGIC DESCRIPTION

SEDIMENTS COMPOSED OF MARLY NANNOFOSSIL OOZES OF VARYING COLOUR AND CARBONATE CONTENT.

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	2/41	3/111	4/120	5/99	6/54
Lith. (D=dominant;M=minor)	D	D	D	D	D
TEXTURE:					
Sand	10			5	2
Silt	17	13	5	20	15
Clay	73	87	95	75	83
COMPOSITION:					
Quartz	TR	1	TR	2	3
Feldspar				TR	TR
Rock Fragments					
Mica					
Clay				20	40
Volcanic Glass					
Calcite / Dolomite		1		1	TR
Cement					
Pore Space					
Accessory Minerals					
ARAG NEEDLES	TR				
PYRITE	1	1	TR		
CALC FRAGMENTS					10
Foraminifers				10	5
Nannofossils				65	40
Diatoms					
Radiolarians					
Sponge Spicules	TR		TR	1	
Silicoflagellates					
Fish Remains					
Plant Debris	TR	TR	TR		

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	24X	______ mbsl; ______ mbsf

BIOSTRAT. ZONE / FOSSIL CHARACTER

TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

LITHOLOGIC DESCRIPTION

Sections: 1, 2, 3, 4, 5, 6, 7, CC

Graphic lithology:
- Sections 1–2: CB1 T2
- Sections 2–3: CB3 T2
- Section 3: CB1 T2
- Section 4: CB1 T2
- Section 5: CB1 T2
- CC: CB1 T2

Samples: * 90; * 130; * 28

Phys. props.: γ = 1.78, φ = 58, V = 1586; γ = 1.76, φ = 59, V = 1583

Chemical: 60%; 61%

Sed. structures (CC): φS

SMEAR SLIDE SUMMARY (%)							
Section-Interval (cm)	2, 90	2, 130	5, 28				
Lith. (D=dominant;M=minor)	D	D	D				
TEXTURE:							
Sand	2	50					
Silt	15	30	15				
Clay	83	20	85				
COMPOSITION:							
Quartz	6		5				
Feldspar							
Rock Fragments							
Mica							
Clay							
Volcanic Glass							
Calcite / Dolomite	TR	TR					
Cement							
Pore Space							
Accessory Minerals							
CALC FRAGMENTS							
ALGAL CYSTS		TR					
ARAGONITE			TR				
Foraminifers							
Nannofossils							
Diatoms							
Radiolarians							
Sponge Spicules			TR				
Silicoflagellates							
Fish Remains							
Plant Debris			TR				

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	25	______ mbsl; ______ mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
									1				
									2				
							V = 1585		3	CB1 T2			
							⊙ γ = 1.62 φ = 43	• 60%	4				* 70
									5				
									6				
									7	CB1 T2			
									CC	CB1 T2			

LITHOLOGIC DESCRIPTION

SMEAR SLIDE SUMMARY (%)	
Section-Interval (cm)	4, 70
Lith. (D=dominant;M=minor)	D
TEXTURE:	
Sand	
Silt	5
Clay	95
COMPOSITION:	
Quartz	12
Feldspar	
Rock Fragments	
Mica	TR
Clay	
Volcanic Glass	
Calcite / Dolomite	
Cement	
Pore Space	
Accessory Minerals	
PYRITE	TR
ARAGONITE	TR
CALC FRAGMENTS	
Foraminifers	
Nannofossils	
Diatoms	
Radiolarians	
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	TR

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	625B	26X	______ mbsl; ______ mbsf

BIOSTRAT. ZONE / FOSSIL CHARACTER

TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

LITHOLOGIC DESCRIPTION

Sections: 1, 2 — CB1 | T2

Section 3 — CB1 | T2; CB1 | T2

PHYS. PROPS.: ⊙ γ= 1.81 φ= 57 V= 1628

CHEMICAL: • 50%

SAMPLES: * 22

Sections 4, 5, 6, 7

CC — CB1 | T2

SMEAR SLIDE SUMMARY (%)

Section-Interval (cm)	3/22
Lith. (D=dominant;M=minor)	D
TEXTURE:	
Sand	
Silt	
Clay	
COMPOSITION:	
Quartz	
Feldspar	
Rock Fragments	
Mica	TR
Clay	
Volcanic Glass	
Calcite / Dolomite	
Cement	
Pore Space	
Accessory Minerals	
CALC FRAGMENTS	
Foraminifers	
Nannofossils	
Diatoms	
Radiolarians	
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	TR

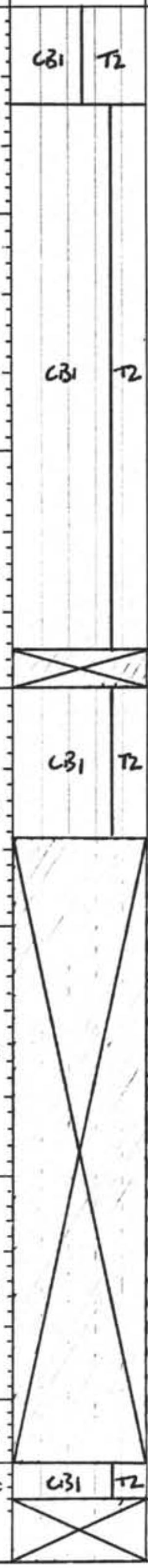
BIOSTRAT. ZONE / FOSSIL CHARACTER	LEG	SITE	HOLE	CORE	CORED INTERVAL
	100	625	625B	27X	mbsl; mbsf

TIME-ROCK UNIT | FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES | LITHOLOGIC DESCRIPTION

PHYS. PROPS.: @ γ = 1.81 φ = 57 V = 1541

CHEMICAL: 13%

SECTION: 1, 2, 3, 4, 5, 6, 7, CC



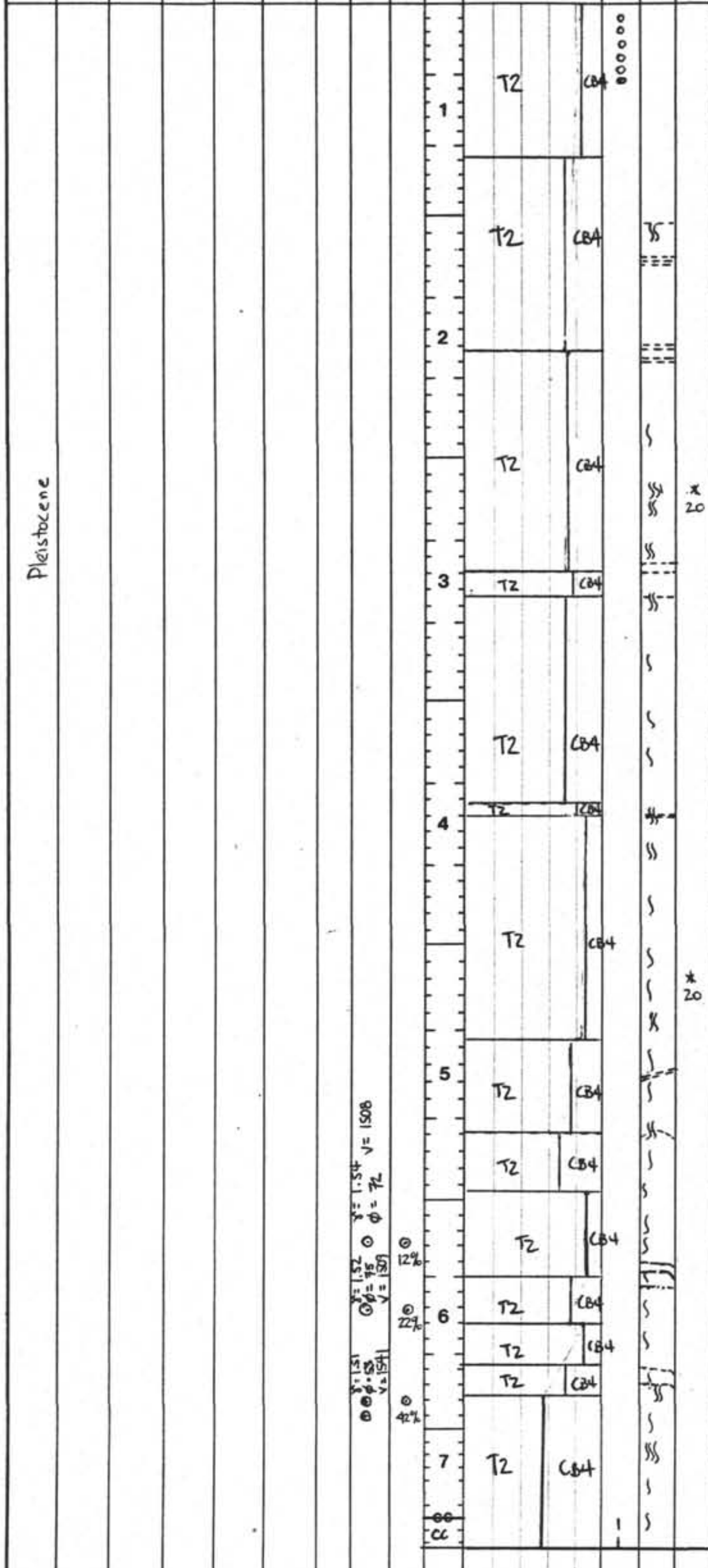
SED. STRUCTURES: SS SS SS SS SS SS

SAMPLES: * 86

SMEAR SLIDE SUMMARY (%)	
Section-Interval (cm)	4,86
Lith. (D=dominant;M=minor)	
TEXTURE:	
Sand	0
Silt	10
Clay	90
COMPOSITION:	
Quartz	8
Feldspar	
Rock Fragments	
Mica	
Clay	
Volcanic Glass	
Calcite / Dolomite	
Cement	
Pore Space	
Accessory Minerals	
ARAGONITE	TR
PYRITE	TR
CALC FRAGMENTS	
Foraminifers	TR
Nannofossils	
Diatoms	
Radiolarians	TR
Sponge Spicules	
Silicoflagellates	
Fish Remains	
Plant Debris	TR

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	C	1 H	_____ mbsl; 5.00-14.91 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES



LITHOLOGIC DESCRIPTION

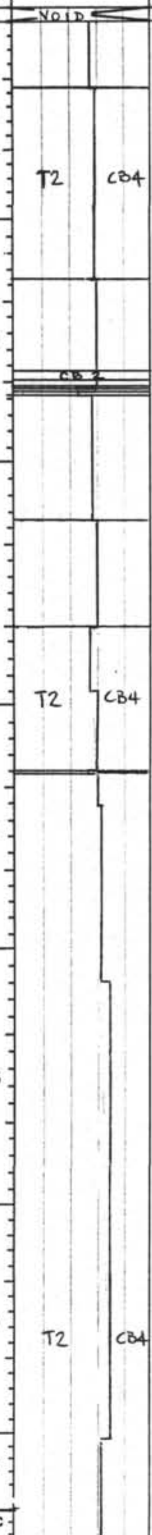
This core shows a general and gradual trend of increasing calcareous components. The dominant lithology is a hemipelagic calcareous mud. The top 60 cm. are slurry. Bioturbation is prevalent throughout the core and numerous, diffuse color variations occur in a stratigraphic structure, in addition to color changes associated to burrowing. Pyrite, black spots are ubiquitous.

The top of the core is a dark gray (5Y4/1) mud. In section 2 gray (10Y5/1) and dark gray (5Y4/1) bands alternate. A grayish brown (2.5Y5/2) burrow? cuts Sec. 2 at 78-80. The grayish brown becomes dominant through sec. 3 with only two bands crossing it. A dark grayish brown (2.5Y4/2) from 65-70 and brown (7.5YR4/2) from 74-86. These probably represent a decrease in the calcareous component. Colors slowly blend into an olive gray (5Y5/2) until reaching a contact in Sec. 4 at ~60cm. Here sediments become grayish brown (10YR5/2) associated to a decrease calcareous material. The sediment gradually becomes dark gray brown (10YR4/2) in Sec. 5 until a gradational contact at ~90 cm. where colors become olive gray (5Y5/2). The lower portion of the core alternates between dark gray (10YR4/1), gray (10YR5/1) olive gray (5Y5/2) and light gray (5Y7/1).

SMEAR SLIDE SUMMARY (%)		3	5
Section-Interval (cm)		20	20
Lith. (D=dominant;M=minor)		D	D
TEXTURE:			
Sand		15	5
Silt		20	30
Clay		65	65
COMPOSITION:			
Quartz		15	10
Feldspar			TR
Rock Fragments			
Mica		TR	TR
Clay		48	75
Volcanic Glass			
Calcite / Dolomite			
Cement			
Pore Space			
Accessory Minerals (Opaques)			1
Aragonite needles		2	1
Foraminifers		10	1
Nannofossils		10	10
Diatoms			
Radiolarians			
Sponge Spicules		TR	TR
Silicoflagellates			
Fish Remains			TR
Plant Debris			
Calcareous biogenic debris		15	

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	C	2H	______ mbsl; 14.99-24.79 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAG.	PHYS. PROPS.	CHEMICAL	SECTION	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
Pleistocene						γ= 1.55, Φ= 62%, Vs 1562; γ= 1.57, Φ= 72%, V= 1510; γ= 1.54, Φ= 71%, V= 1520	36%; 36%; 27%	1, 2, 3, 4, 5, 6, 7, CC	VOID			* 142; * 122; * 40; * 35; * 70



LITHOLOGIC DESCRIPTION

Olive gray (5Y5/2) calcareous hemipelagic mud grades into underlying light olive gray (5Y6/2) marly calcareous ooze. Bioturbation is ubiquitous and clear burrows appear at 60, 65, 90 and 105-110. Gradational contact between colors is at 57 cm.

The core continues into section 2 as above to an irregular contact at 95 cm. Between 95-99 cm. is a foram-rich sand. The color of section 2 gradually changes from light olive (5Y6/3) at the top to olive gray (5Y6/2). The lighter color represent more carbonate present. Color banding is diffuse but appears to alternate down core. Mottling is also prevalent. Burrows cut across core at 250, 257, 267, 337 and 480.

An irregular contact at 400 cm. marks a transition from hemipelagic clay or mud above, to marly nannofossil ooze below. The lower unit grades from light olive gray (5Y6/2) to olive gray (5Y5/2) through section 4.

Section 5 has gradual color change to grayish brown (2.5Y5/2) and then dark gray (10YR 4/1). These two colors grade into one another for the remainder.

> Some flow-disturbance occurs along one edge of section 2 and upper 35-40 cm. of section 3.

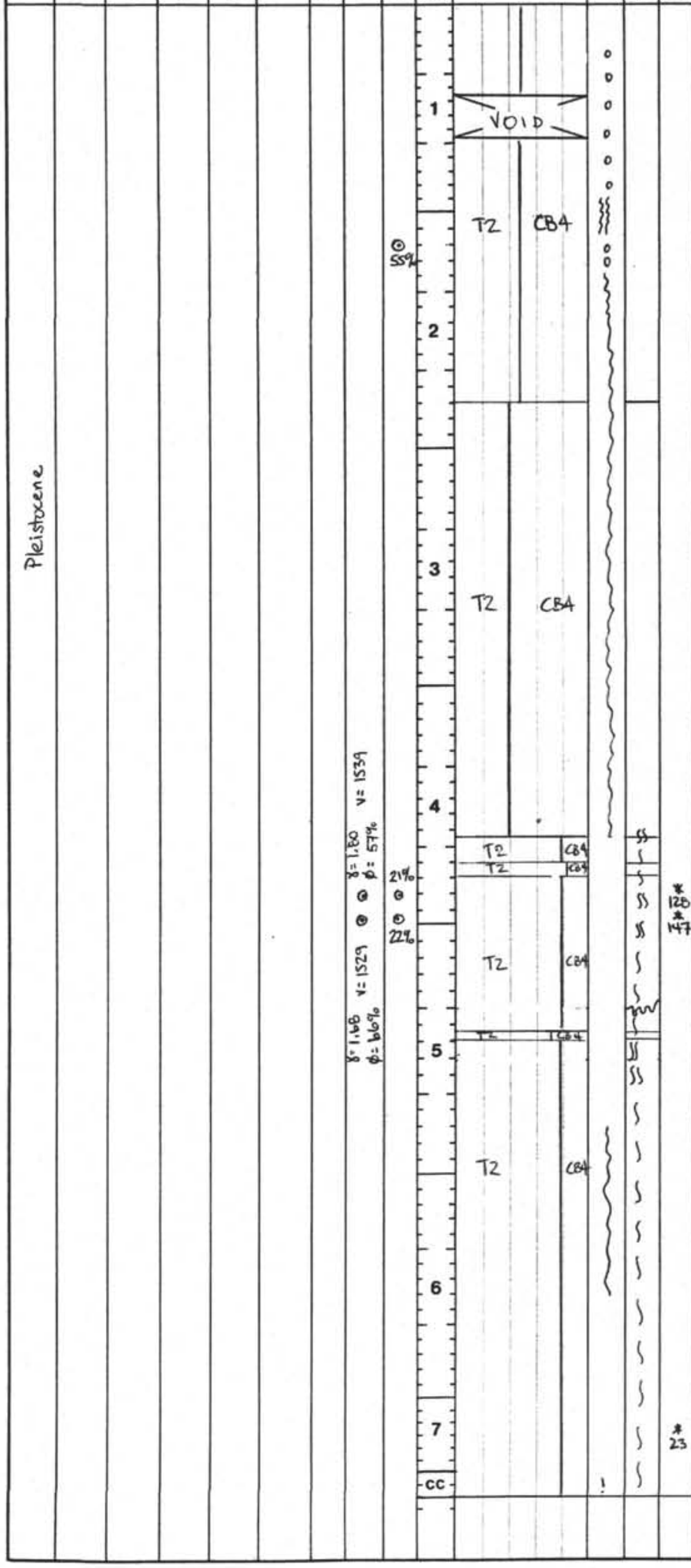
> Pyrite; black spots througout the core.

> Shell fragments occur at 845 cm.

SMEAR SLIDE SUMMARY (%)	2	4	5	5			
Section-Interval (cm)	142	40	35	70			
Lith. (D=dominant;M=minor)	D	M	D	D			
TEXTURE:							
Sand	5	10	-				
Silt	15	55					
Clay	80	35					
COMPOSITION:							
Quartz	5	2	T	T			
Feldspar			T				
Rock Fragments							
Mica	T	T	T	T			
Clay	68	33	55	65			
Volcanic Glass							
Calcite / Dolomite	T			T			
Cement							
Pore Space							
Accessory Minerals							
Aragonite needles	1	T	T				
Opaques	1						
Foraminifers	2	10	10	5			
Nannofossils	12	45	20	20			
Diatoms							
Radiolarians							
Sponge Spicules							
Silicoflagellates							
Fish Remains				T			
Plant Debris	T						
Skeletal debris, Calcareous	13	10	15	10			

LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	C	3H	mbsl; 24.79-34.72 mbsf

TIME-ROCK UNIT | BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS, NANNOFOSSILS, RADIOLARIANS, DIATOMS | PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES



LITHOLOGIC DESCRIPTION

Drilling induced disturbance has disrupted large portions of this core. A soupy sediment at the top grades downward into flow-in deformation. The intervals between 546-720 cm. and below 830 cm. show minor deformation.

The core is predominately a hemi-pelagic calcareous mud. Pyrite streaks and spots appear throughout. Bioturbation in the form of burrows and Chondrites form color mottling of the split sections.

The top of the core is dark grayish brown (10YR 4/2) grading downward to gray (5Y5/1) at 35 cm. These colors prevail through flow-in sections, as does an olive gray (5Y5/2) and light olive gray (5Y6/2).

At 546 cm. the sediment shows gradational color contacts from brown (7.5YR5/2) to grayish brown (2.5Y 5/2) to dark gray (5Y4/1). At 588-590 cm. a Chondrites interval crosses the section. Color changes occur on a 5-10 cm. scale in the lower portion of Sect. 4 and gradually became thicker (~20 cm) in Sect. 5. Below 680 cm. the core is a mixed grayish brown (10YR5/2) and olive gray (5Y5/2). A Chondrites interval also seen between 600-630 cm.

SMEAR SLIDE SUMMARY (%)	4	4	7
Section-Interval (cm)	128	147	23
Lith. (D=dominant;M=minor)	D	D	D
TEXTURE:			
Sand	—	2	—
Silt	30	10	15
Clay	70	88	85
COMPOSITION:			
Quartz	15	4	10
Feldspar			TR
Rock Fragments			
Mica	TR	TR	
Clay	44	46	65
Volcanic Glass			
Calcite / Dolomite			
Cement			
Pore Space			
Accessory Minerals			
Pyrite	TR	TR	
Aragonite	TR	TR	TR
Foraminifers		TR	5
Nannofossils	5	40	5
Diatoms			
Radiolarians			
Sponge Spicules	TR		
Silicoflagellates			
Fish Remains			
Plant Debris	3	TR	
Calcareous, biogenic debris	23	10	16

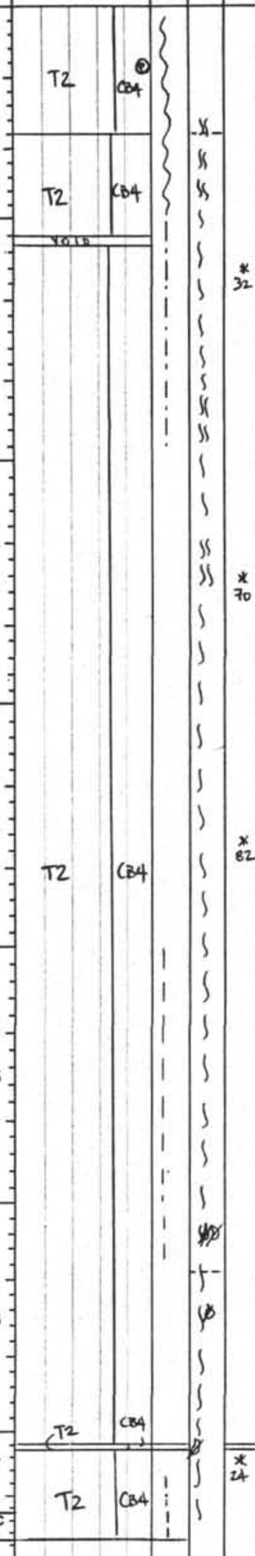
LEG	SITE	HOLE	CORE	CORED INTERVAL
100	625	C	4H	mbsl; 34.72 - 44.57 mbsf

TIME-ROCK UNIT: Pleistocene

BIOSTRAT. ZONE / FOSSIL CHARACTER: FORAMINIFERS | NANNOFOSSILS | RADIOLARIANS | DIATOMS

PALEOMAG. | PHYS. PROPS. | CHEMICAL | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

Section	Phys. Props.	Chemical	Samples
1			
2	⊙ γ = 1.61 ϕ = 68% V = 1522		* 32
3		⊙ 37%	* 70
4	⊙ γ = 1.63 ϕ = 68% V = 1527	⊙ 35%	* 82
5			
6	⊙ γ = 1.66 ϕ = 68% V = 1548		
7		⊙ 53%	* 24
CC			



LITHOLOGIC DESCRIPTION

This core exhibits moderate to slight drilling disturbance. It consists primarily of a hemipelagic calcareous mud with evidence of bioturbation in the form of burrowing, and mottling.

Core is light gray (5Y7/2) from the top to about 70 cm. where it gradually becomes olive. This in turn grades into olive gray (5Y5/2) at 90 cm. Olive gray persists, with mottling, to 300 cm, where it grades to grayish brown (2.5Y5/2). Gray brown becomes olive gray once again around 370 cm. Below this the colors blend into tones of gray (5Y5/2 and 5Y6/1). No discernible contacts are found except for a dark gray (5Y4/1) band at 908-916 cm.

Pyrite, black streaks are found throughout, as well as a small nodule (~1 cm diam.) at 45 cm. Shell fragments found at 770 cm and 810 cm.

SMEAR SLIDE SUMMARY (%)	2	3	4	7
Section-Interval (cm)	32	70	82	24
Lith. (D=dominant;M=minor)	D	D	D	D
TEXTURE:				
Sand		2	5	
Silt		5	15	
Clay		93	80	
COMPOSITION:				
Quartz	5	2	5	10
Feldspar				
Rock Fragments				
Mica	TR	TR		1
Clay	45	60	55	50
Volcanic Glass				
Calcite / Dolomite	TR			
Cement				
Pore Space				
Accessory Minerals				
Aragonite Needles	TR	TR	2	
Foraminifers	5	3	1	6
Nannofossils	30	30	25	10
Diatoms				
Radiolarians				
Sponge Spicules	TR	TR		
Silicoflagellates				
Fish Remains				
Plant Debris				
Calcareous skeletal debris	15	5	12	20
Tintinnids (?)				TR
Algal cysts				TR