SUMMARY OF SCAN SITE 4

G. W. Moore, U. S. Geological Survey, La Jolla, California and G. F. Sharman, Scripps Institution of Oceanography, La Jolla, California

OBJECTIVES OF DRILL HOLE

Site 4 is located at latitude 40° 40'N, longitude 127° 30'W, in a water depth of 3240 meters. This site is in the Escanaba Trough, a central rift at the crest of Gorda Rise. The Escanaba Trough is near an abundant source of terrigenous sediment and contains approximately 500 meters of sediment, despite its presumed youth. This geographic accident makes the site especially promising for investigating all aspects of an active line of sea-floor spreading. Heat-flow studies and a search for volcanogenic mineral deposits of the Red Sea type will be of particular interest.

SURVEY METHODS

The preliminary survey of this site was made from the *Argo* between March 13-15, 1969. Navigation was by Loran A, with a fix precision of approximately 2 kilometers. Magnetic-intensity traverses and acoustic-reflection profiles at 12, 3.5 and 0.1 kHz were run on a rectangular grid of 75 by 100 kilometers. The track spacing of the grid ranged from about 10 to 30 kilometers. On the accompanying subbottom profiles, a 10-second sweep was used and the distance between hour marks is approximately 20 kilometers. A piston core was taken at latitude 40° 44'N, longitude 127° 31'W, and deep-sea photographs at 40° 41'N, 127° 31'W.

NATURE OF SITE

A presumably volcanic ridge, about 45 meters high, was discovered by this survey at the center of Escanaba Trough; and, Site 4 lies to the west. The ridge is flanked by a narrow graben that cuts the surface sediment. The uppermost sample from the piston core contains Pleistocene rather than Holocene coccoliths, so sedimentation is probably much slower now than it was when the continental shelf was uncovered during the Pleistocene. Sediment near the surface is dark greenish-gray plastic to slightly fissile clay with some sandy layers.

MICROPALEONTOLOGY

David Bukry U. S. Geological Survey, La Jolla

General Comments

Samples at 1.5-meter intervals from piston cores taken during the preliminary surveys of the proposed Deep Sea Drilling Project sites in the northeast Pacific have been examined for calcareous nannofossils. The identified assemblages of nannofossils indicate that Pliocene sediment containing abundant discoasters is present in the upper 10 meters at only one place, Site 6. Elsewhere, only Pleistocene assemblages are present in the upper 10 meters. The abundant, widely distributed, Holocene nannofossil, *Emiliania huxleyi* (Lohmann) is not represented in any of the samples examined.

Diatoms are common only in surface samples (0 to 1 centimeter) at Sites 1, 2 and 4. Foraminifera are sparsely present in several samples from Sites 1, 2, 4, 5 and 6.

SCAN-4-P

Core length: 10.1 meters. Pleistocene calcareous nannofossils are present only in samples from the upper meter of the core. Only rarely occurring diatom fragments are present in the remainder of the core.





SCAN Survey, Sites 2 and 3, Track K; and, SCAN Survey, Site 4, Track A.



SCAN Survey, Site 4, Tracks A and B.



SCAN Survey, Site 4, Tracks B and C.



SCAN Survey, Site 4, Tracks C and D.



SCAN Survey, Site 4, Tracks D and E.



SCAN Survey, Site 4, Track F.



SCAN Survey, Site 4, Tracks G and H.



SCAN Survey, Site 4, Tracks H, I and J.



SCAN Survey, Site 4, Tracks J and K.



SCAN Survey, Site 4, Track L.

DEPTH (m)	LITHOLOGY	COLOR	SAMPLE INTERVAL	SAMPLE DESCRIPTION
- 1	Soft sandy clay	5YR 3/2		0-1 cm. Soft sandy clay, grayish-brown. 9-10 cm. Plastic clay, olive-gray. 98-99 cm. Same.
- 2 - 3 -	Plastic clay	5Y 4/1		248-249 cm. Same.
- 4 - 5 -				398-399 cm. Same.
- 6 - - 7 -				558-559 cm. Same. 709-710 cm. Slightly fissile plastic clay, dark greenish-gray.
- 8 - 9 -	Slightly fissile plastic clay	5GY 4/1		859-860 cm. Same.
- 11				1005-1010 cm. Same.

Summary of Piston Core 4.