

COLLECTION OF MULTICHANNEL REFLECTION DATA

U.S. Geological Survey (U.S.G.S.) lines 4, 5, and 6 were collected during September 1974, by the research vessel Gulf Seal, operated by Digicon Geophysical Incorporated, using an air-gun array with a total capacity of 1700 cubic inches. The streamer was composed of 24 groups, each 100 meters in length, near the ship followed by 24 groups of 50 meters each. The "shot interval" was 100 meters with pops every 50 meters.

PROCESSING OF MULTICHANNEL REFLECTION DATA

Lines 4, 5, and 6 were processed by Geophysical Services Incorporated. Velocity analyses were made every 3 km. The 48 channels were combined into a 36-fold common-depth point stack. Copies of seismic sections, velocity analyses, and field tapes are available through the National Geophysical and Solar-Terrestrial Data Center in Boulder, Colorado.

INTERPRETATIONS OF SEISMIC SECTIONS

Heavy lines are used to indicate major changes in the appearance of acoustic reflectors or possible unconformities. Light lines give the general arrangement of acoustic reflectors. The geology of U.S.G.S. lines 1, 2, and 3 and a preliminary discussion of the seaward portions of lines 4, 5, and 6 were presented by Schlee and others (1976).

INTERVAL VELOCITIES AND DEPTH PROFILES

Interval velocities were calculated every 3 km using the method of Taner and Koehler (1969), and the depth to each successive reflector was calculated. Individual velocity values within a sedimentary horizon were averaged over 20- to 50-km-wide segments. Means and standard deviations are shown.

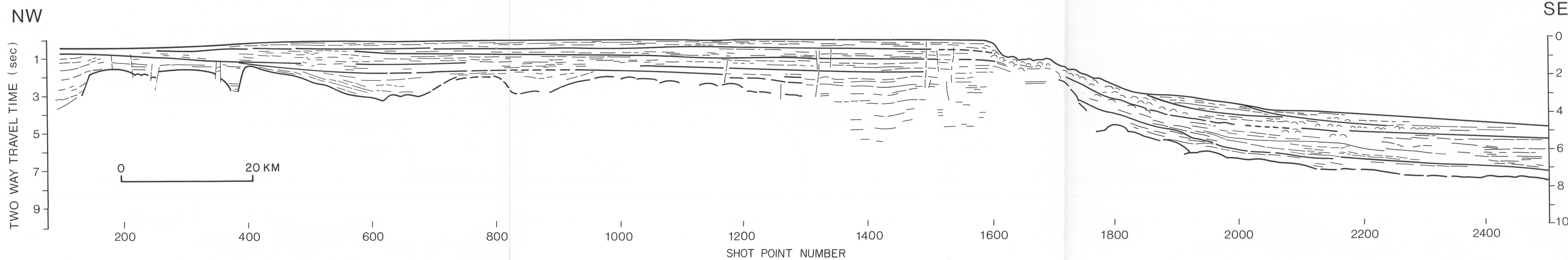
Interval-velocity values from horizons deeper than 4 km beneath the seafloor are frequently of poor quality and tend to be biased slightly toward the high-velocity end (in common-depth point stacks, it is preferable to err toward high-velocity values rather than lower values).

GRAVITY AND MAGNETIC DATA

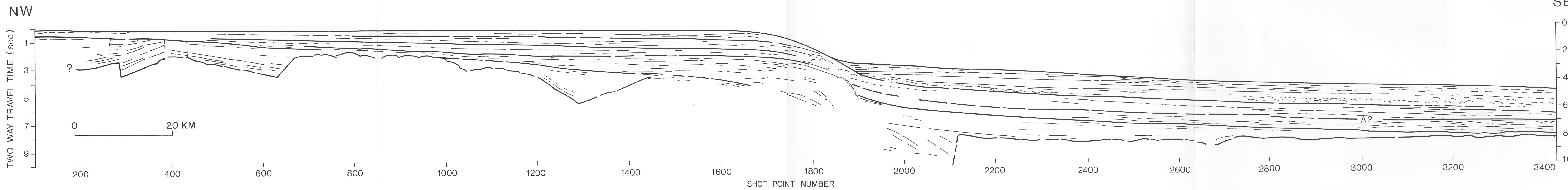
The potential field data were collected by the research vessel Atlantis II during 1975. The Atlantis II tracks were generally within 1 or 2 km of the multichannel reflection profiles collected by Digicon Geophysical Incorporated.

REFERENCES

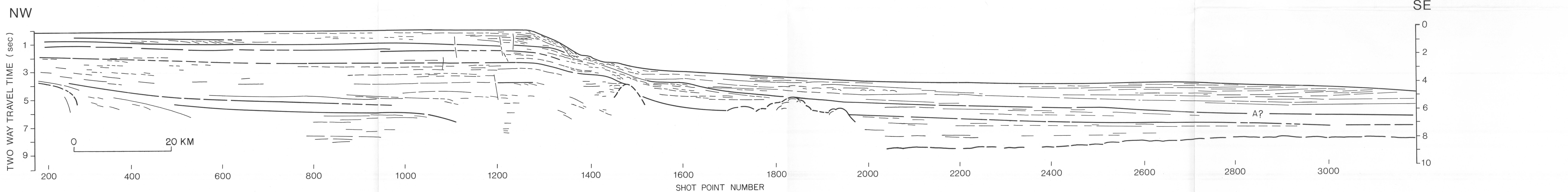
Schlee, John, Behrendt, J.C., Grow, J.A., Robb, J.M., Mattick, R.E., Taylor, P.T., and Lawson, B.J., 1976, Regional geologic framework off northeastern United States: Am. Assoc. Petroleum Geologists Bull., v. 60, no. 6, p. 926-951.
Taner, M.T., and Koehler, Fulton, 1969, Velocity spectra—Digital computer derivation and applications of velocity functions: Geophysics, v. 34, p. 859-881.



LINE 4



LINE 5



LINE 6

INTERPRETATION AND VELOCITY ANALYSIS OF U.S. GEOLOGICAL SURVEY MULTICHANNEL REFLECTION PROFILES 4, 5, AND 6, ATLANTIC CONTINENTAL MARGIN

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