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THE UNIVERSITY OF TEXAS
MARINE SCIENCE INSTITUTE
GEOPHYSICS LABORATORY
GALVESTON, TEXAS 77550

700 The Strand
713 765-2173

14 September 1977

RESEARCH CRUISE REPORT

SHIP NAME:
Ida Green

OPERATING INSTITUTION:
University of Texas
Marine Science Institute

CLEARANCE COUNTRIES:
Honduras
El Salvador
Guatemala
Nicaragua

DATES:
3 April-5 June 1977; 7-15 July 1977

PROJECT TITLES:
1) Survey of Middle America Trench IPOD Drill Sites
2) Tectonics of the Middle America Trench

PORTS OF CALL:

Puntarenas	31 March - 3 April
Puntarenas	6 April - 9 April
Acajutla	17 April - 23 April
Acajutla	3 May - 6 May
Acajutla	11 May
Puntarenas	16 May - 17 May
Acajutla	23 May - 26 May

FOREIGN PARTICIPANTS:
German Leandro C.
Escuela de Geologia
Universidad de Costa Rica
San José, Costa Rica
Alberto Horacio Comínguez and
J. Hector Sandoval:
Centro de Ciencias del Mar y Limnología
Ciudad Universitaria
México 20, D.F., México
José Bustamante
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San Salvador, El Salvador, C.A.

SENIOR SCIENTISTS:
Joel S. Watkins
John W. Ladd
Mark H. Houston
Gary V. Latham

DESCRIPTION OF SCIENTIFIC PROGRAM:

The scientific program offshore Central America was designed to investigate the geology of the continental shelf and slope. The continental shelf between the Nicoya Peninsula of Costa Rica and the Gulf of Tehuantepec of Mexico is approximately 30 nautical miles wide and is underlain by a thick basin of mildly deformed sediments that are apparently ponded behind a structural high at the seaward edge of the shelf. From the shelf edge the seafloor slopes down to the Middle America Trench (MAT). This continental slope is underlain by a thick wedge of highly deformed sediments that thins seaward to the MAT where there is very little sediment.

DESCRIPTION OF SCIENTIFIC PROGRAM, continued:

Our data collection was designed to investigate the present structure within these major geologic units and to determine their tectonic history. It has been suggested that the deformed sediments of the continental slope are accumulated during a process of subduction in which the ocean floor west of the MAT slips eastward beneath Central America causing earthquakes and volcanoes. We are looking for evidence of this subduction process within the sediments of the continental margin.

OBSERVATIONS AND SAMPLES:

Data: 1800 n.m. of deep penetration multichannel seismic reflection data with magnetics and bathymetry collected simultaneously along dashed track line and in Guatemala survey grid plus an additional 400 n.m. of bathymetry and magnetics along regional lines between Guatemala grid and Costa Rica (see accompanying charts).

In Guatemala grid survey area we took 24 piston cores, deployed 4 ocean bottom seismometers (OBS's) which were left on the sea floor for 1 month, and shot 5 seismic refraction lines using OBS's (see accompanying track charts).

Location and Custodian: See letterhead address.

NAME AND ADDRESS OF CONTACT TO WHOM INQUIRIES REGARDING CRUISE SHOULD BE MADE:

John W. Ladd
University of Texas
Marine Science Institute
Geophysics Laboratory
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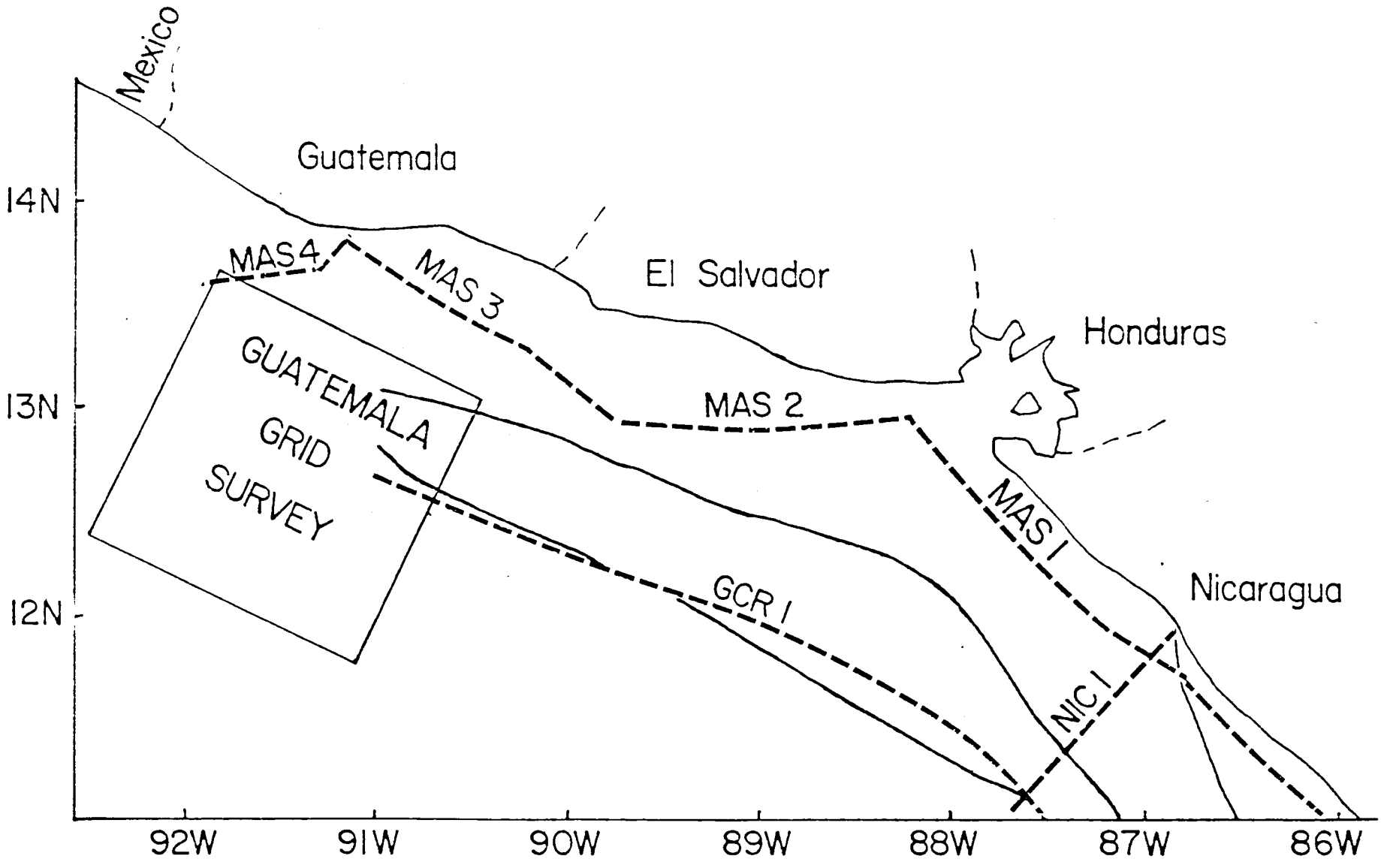
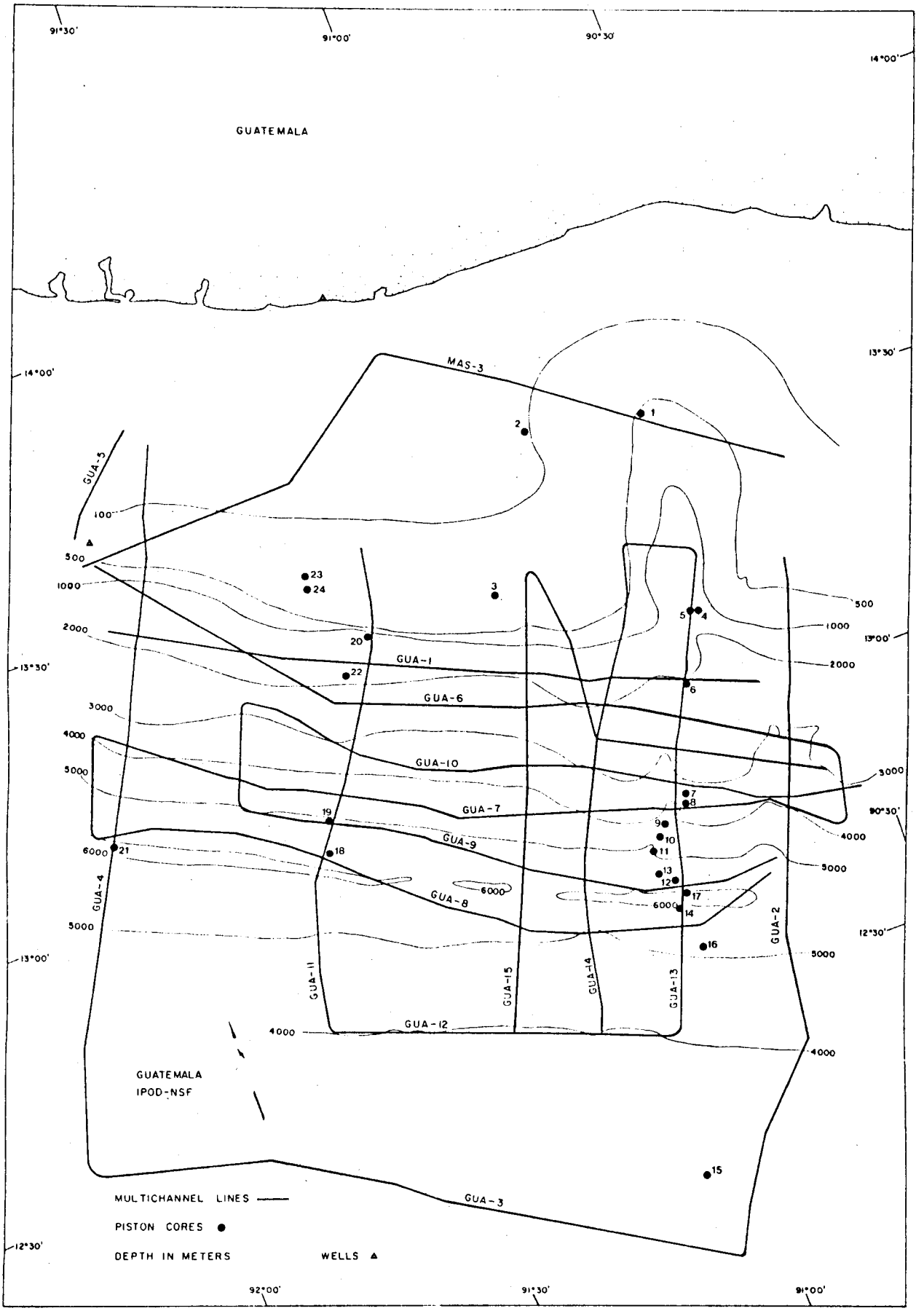

Mexico
Guatemala
El Salvador
Honduras
Nicaragua
14N
13N
12N
92W
91W
90W
89W
88W
87W
86W
MAS 4
MAS 3
MAS 2
MAS 1
GCR 1
NIC 1
GUATEMALA
GRID
SURVEY
multichannel seismic reflection
bathymetry and magnetics only


91°30'
91°00'
90°30'
14°00'
GUATEMALA
13°30'
MAS-3
GUA-5
100
500
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2000
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4000
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GUA-1
GUA-6
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GUA-7
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GUA-8
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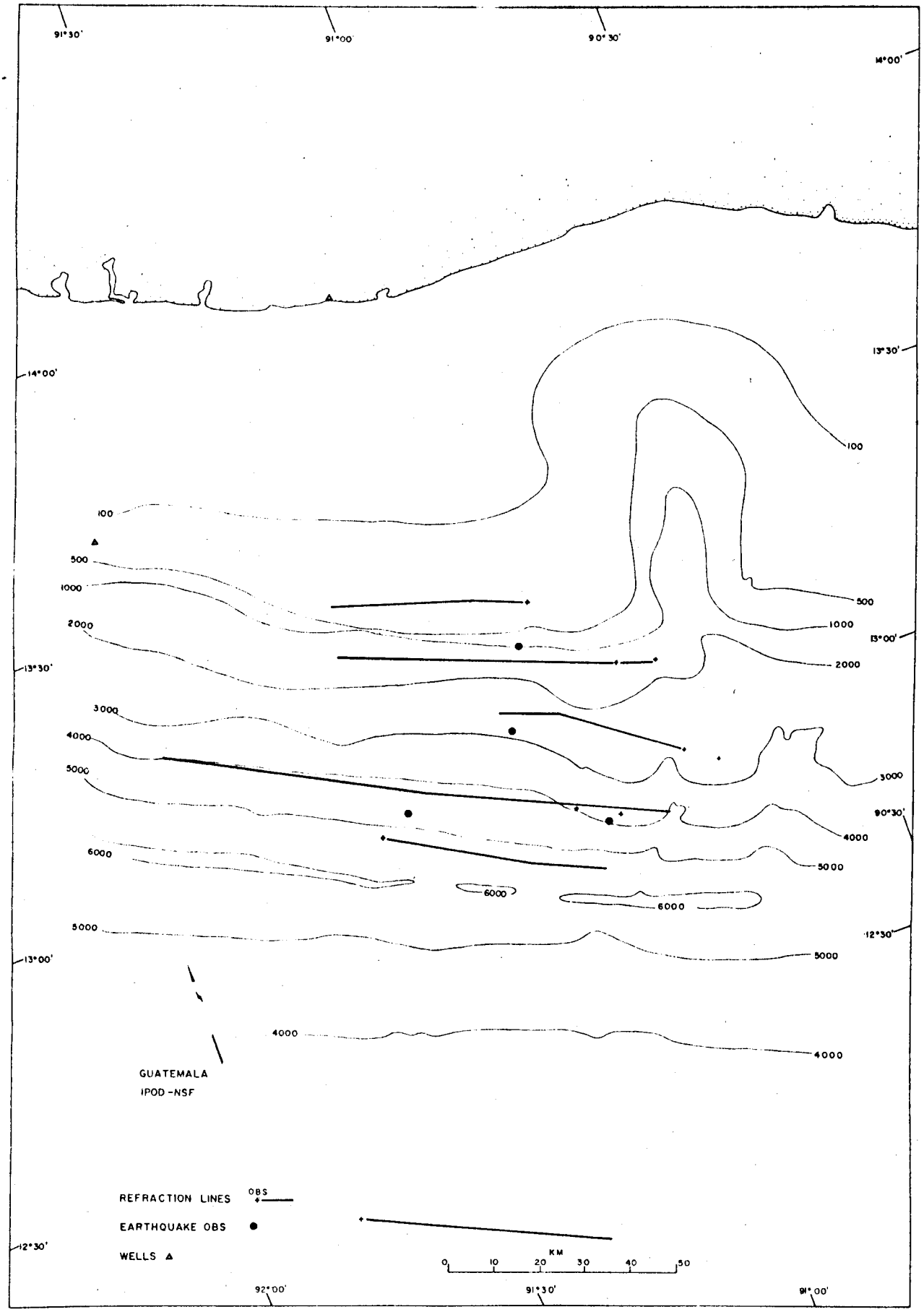
GUA-11
GUA-15
GUA-14
GUA-13
GUA-12
GUA-2
GUA-3
13°00'
12°30'
92°00'
GUATEMALA
IPOD-NSF
MULTICHANNEL LINES
PISTON CORES
DEPTH IN METERS
WELLS


91°30'
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90°30'
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12°30'
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91°30'
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100
500
1000
2000
3000
4000
5000
6000
GUATEMALA
IPOD-NSF
REFRACTION LINES
OBS
EARTHQUAKE OBS
WELLS
KM
0
10
20
30
40
50