

U.S. Geological Survey

76-0411P+

Cruise Report

South Atlantic

Fay 026

OCT 16-25 1976

U.S. GEOLOGICAL SURVEY
OFFICE OF MARINE GEOLOGY

Woods Hole, Massachusetts
02543

76041rpt

Cruise Report

R/V H.J.W. FAY 026

October 16, 1976 to October 25, 1976

Orrin H. Pilkey, USGS

Contents

Cruise Area, Participants, Equipment	1
Cruise Objectives	2
Summary of Activities	3
Cruise Track Maps	4
Vibracore Summary	7
Hydrostatically Damped Gravity Core Summary	10
Appendix	13
Chief Scientist's Log	
Weather Observations	
Ship's Log	

Vessel: R/V H.J.W. FAY Master - Norman Halverson

Area: South Atlantic region - areas of high leasing interest

Ports: Woods Hole, MA to Charleston, S.C.

Dates: October 16 to October 25, 1976

Personnel:

USGS	Orrin H. Pilkey, Chief Scientist
	Sally Wood
	Peter Johnson
	Nick Lefteriou
	Dennis Edwards
	Barry Irwin
Skidaway	Robert Giles
	John Deery
Duke University	Bill Neal
	Jay Van Tassell
Klein Associates	Charles Finklestein
Alpine Geophysical	Charles Dill
	John Eastland
	Charles Gove
	Brian Harrington
	Roger Zaunere

Equipment: LORAN C Navigation - Vibracorer

-Hydrostatically damped gravity corer -

Side scan sonar

Cruise Objectives

Cruise objectives were as follows;

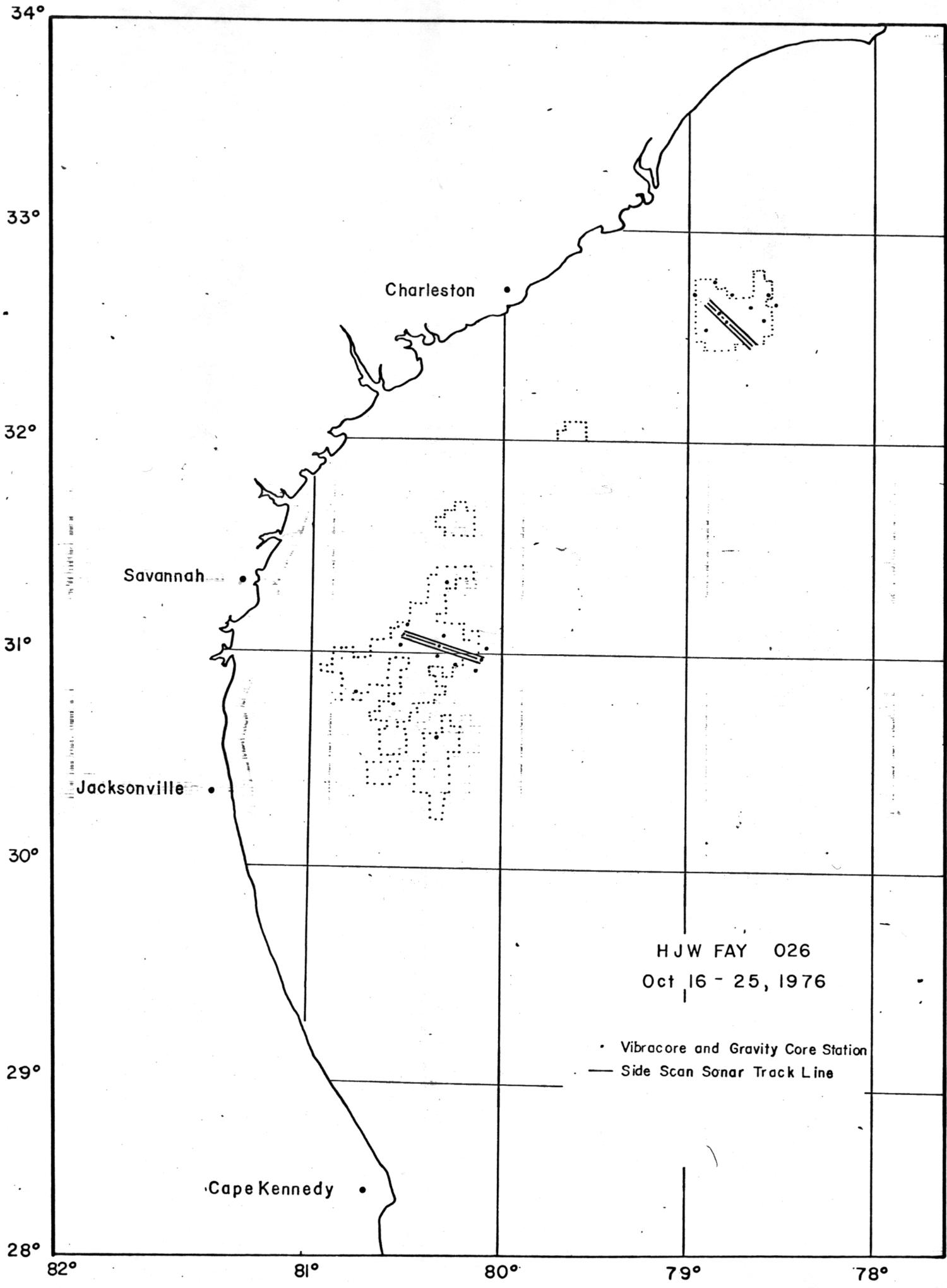
1. Obtain 10 vibracore stations each in the northern and southern areas of high leasing interest.
2. Emplace 3 reference pipes with buoys and pingers.
3. Obtain 10 hydrostatically damped gravity cores; 5 each in the 2 areas.
4. Run 3 sidescan sonar lines, 20 miles long and 700 meters apart in each area.

Activities Summary - See Chief Scientist's Log in Appendix for detailed summary.

- 18 October - Depart Woods Hole @ 0853
- 19 October - Arrive in northern lease area - Deployed sidescan sonar, but due to bad weather left the area to go to the southern lease tracts. First cores taken in P.M.
- 20 October - Sidescan most of today. Seas very rough, part of the day spent circling waiting for calmer seas. The rough seas are affecting the sidescan sonar record - some small details are lost.
- 21 October - Sidescan in the A.M. - All 3 lines are now completed - vibra and gravity coring begins, but 3 hour delay due to damage to corer. Weather still slowing operations. Original plan was to sample on a widely spaced grid over the entire southern lease area. Coring grid is tightened up and most cores are taken within 3 miles of the sidescan sonar lines. Coring continued for 20 hours straight.
- 22 October - Proceeded to northern area and began coring. At 2200 began sidescan sonar.
- 23 October - Sidescan sonar in the A.M. Had great difficulties in the Gulf Stream - lines are significantly off planned transects. Cored during daylight hours - emplaced pipe and buoy with pinger. Sidescanned during later afternoon - emplaced second pipe and buoy system at 2000 hour. Entangled line in rudder causing 2 hour delay. Charles Finklestein cut line free by diving.
- 24 October - Due to dead calm weather, the northern area was quickly sampled. Proceeded back to the southern area to (1) obtain 3 vibracores in more widely scattered areas of the lease tracts, and (2) rerun one sidescan line under calm conditions, and (3) emplace 2 reference pipes. All objectives achieved.
- 25 October - Rerun sidescan sonar line until 0545 - proceed to Charleston. The rerun indicated that our first records taken under bad weather conditions were okay after all. Bottom has subdued features although strong grain size changes were observed.

Summary:

All cruise objectives attained. Only major shortcoming was inability to maintain planned sonar transects when in the Gulf Stream.

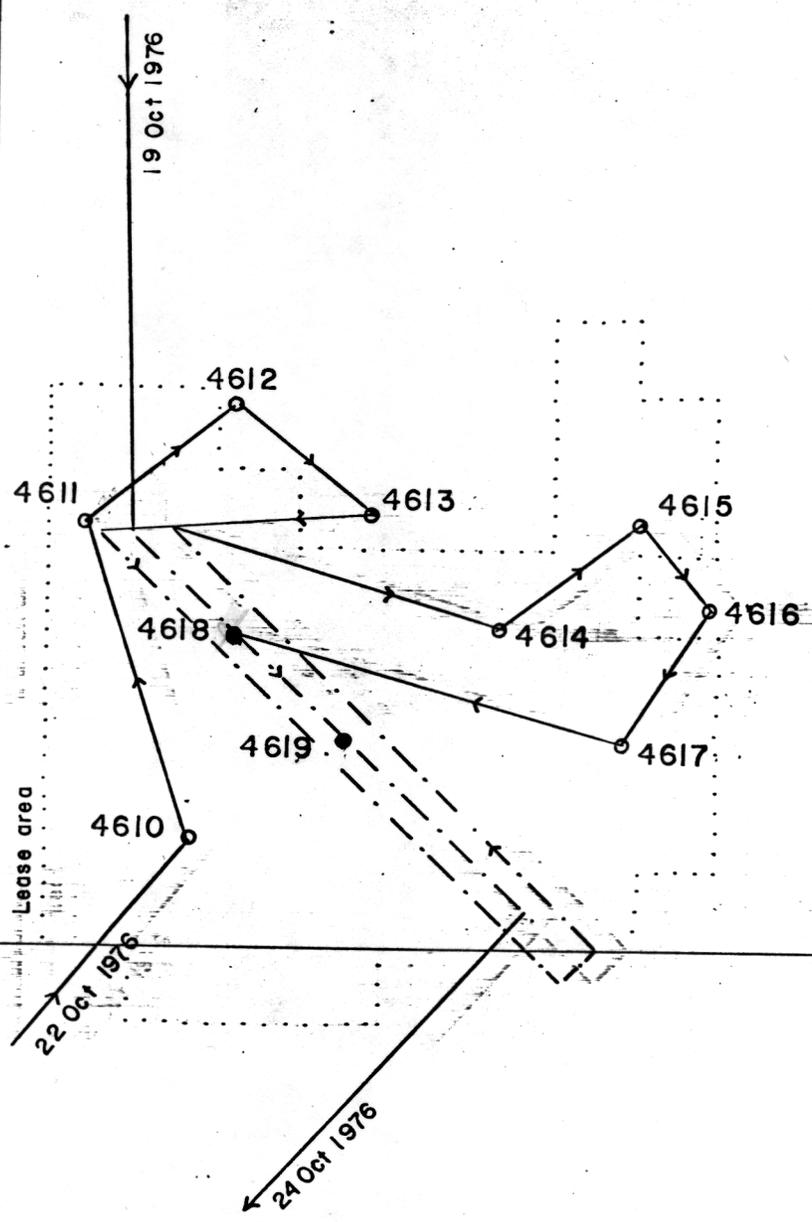


HJW FAY 026

Oct 16 - 25, 1976

- Vibracore and Gravity Core Station
- Side Scan Sonar Track Line

33° 00'



32° 30'

- Vibracore Gravity Core Station
- Side Scan Sonar Track Line
- Reference Pipes at Stations 4618 and 4619

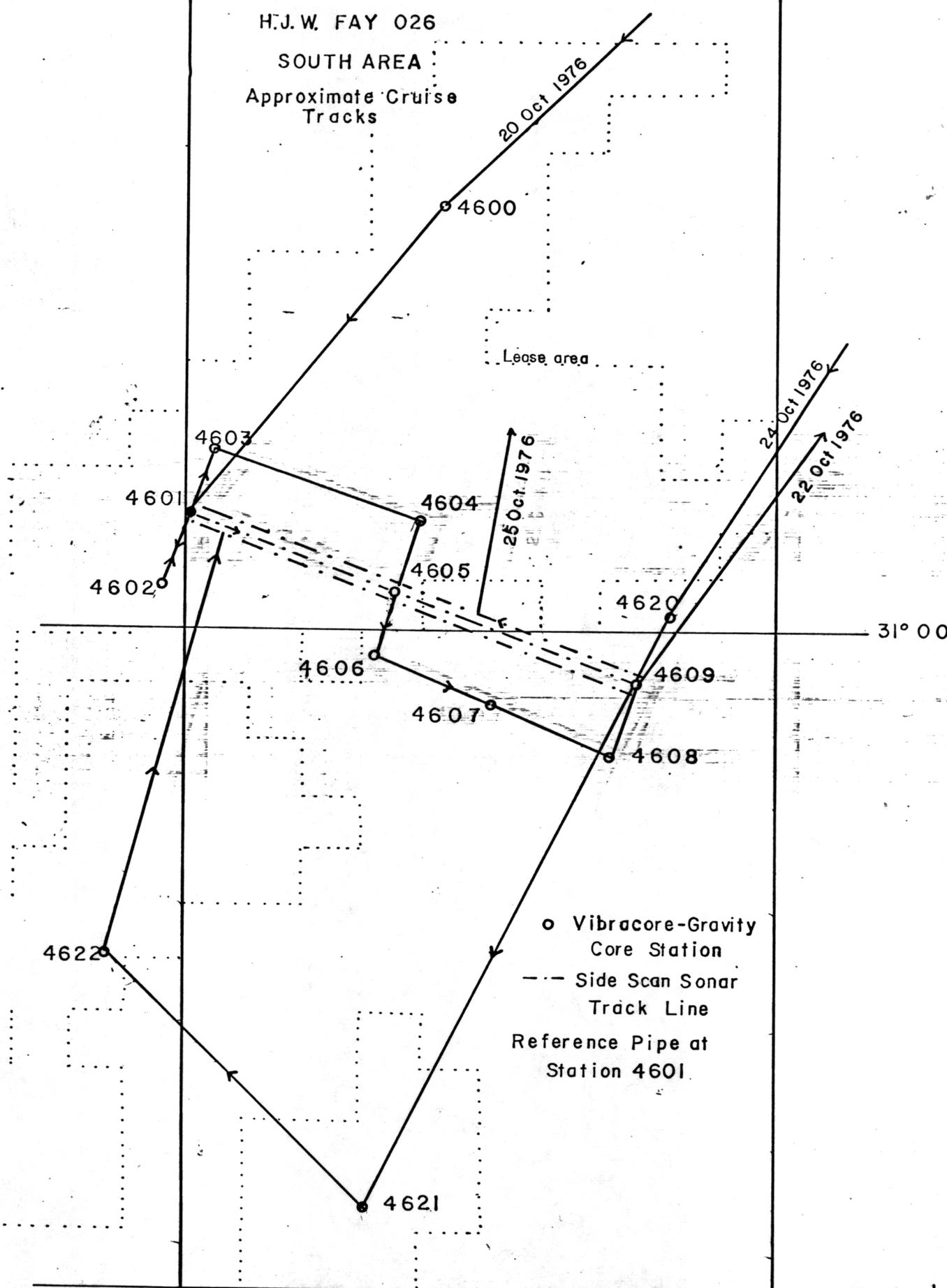
H.J.W. FAY 026
 NORTH AREA
 Approximate Cruise Tracks

80° 30'

80° 00'

31° 30'

H.J.W. FAY 026
SOUTH AREA
Approximate Cruise
Tracks



- Vibracore-Gravity Core Station
- - - Side Scan Sonar Track Line
- Reference Pipe at Station 4601.

Vibracore Summary

Date	Time	Sta. No.	Longitude	Latitude	Loran C Readings		Penetration	Recovery	Remarks
						(uncorrected)			
19 Oct. 76	1926 1941	4600 4600	80°17.0'W	31°18'N	14028.4 14028.4	71133.4 71133.4	8 1/2'	None	No recovery on first attempt (rough sea). Second attempt; Malfunction in vibrator.
20 Oct. 76	0923				13815.1	71163.3			Rough seas-decision not to core
21 Oct. 76	0848	4601	80°29.2'W	31°5.2'N	13835.5	71076.5	12.6'	6'2"	Vibracorer damaged during recovery (leg bent) necessitating repairs; lower part of core lost due to malfunction; penetration was stopped by hard substrate Vibracorer emplacement of marker pipe
	* 1153	"	"	"	"	"			
21 Oct. 76	1253 1318	4602 "	80°29.6'W "	31°2.2'N "2'N	13800.0 13800.0	71074.9 71074.9	14.9'	17'	Spot-weld repair of vibracorer Sediment expansion
21 Oct. 76	1446	4603	80°29.3'W	31°8.1'N	13865.4	71075.5	7.5'	None	Hard bottom
21 Oct. 76	1701 1811	4604 "	80°19.1'W "	31°4.6'N "4'N	13855.3 13855.3	71135.2 71135.2	3.0'	None -	A few shells in core catcher Second attempt, malfunction in compressor hose necessitating repairs
21 Oct. 76	1924	4605	80°17.3'W	31°4.4'N	13821.7	71137.0	14'7"	14'4"	Core barrel was bent. Core may have been disturbed by vibrator operating on way up. Core barrel replaced while underway.
21 Oct. 76	2125	4606	80°19.1'W	30°58.4'N	13785.9	71136.1	11'	11'4"	Jury-rigged broken cable to recover vibracorer