

79026

CRUISE REPORT

R/V ENDEAVOR, CRUISE 042

28 August - 23 September, 1979

**James Robb
John Aaron
U.S. Geological Survey
Woods Hole, MA 02543**

Vessel: R/V ENDEAVOR

Cruise Number: EN-042

Project: Mid-Atlantic and North Atlantic Outer Continental Shelf Environmental Assessment (BLM)

Area of Operation: Mid-Atlantic Continental Slope between Baltimore and Hudson Canyons (off Maryland, Delaware, New Jersey) and North Atlantic continental slope of southwesterly part of Georges Bank.

Dates: Leave Narragansett R.I. 1500 28 August, 1979
Return to Narragansett 0300 31 August for winch repairs
Depart 1840 31 August to resume work
Arrive Narragansett 0830 6 September 1979: End first part
Leave Narragansett 1145 8 September 1979: Start second part
Arrive Narragansett 1600 23 September 1979: End cruise
(25 days at sea: 400 man days)

Scientific Party: Leg I

James Robb, Chief Scientist, USGS
John Aaron, Chief Scientist; USGS
James Booth, Geotechnical Super, USGS
Richard Farrow, Geotechnical Super, USGS
W. Mack Ferrebee, Core description, USGS
Larry Poppe, Core description, USGS
George Wiley, Coring crew, USGS
Tom Rice, Coring crew, USGS
Rich Slater, Coring crew, USGS

Chuch O'Hara, Coring crew, USGS
David Schultz, Gas analysis, USGS
Jody Zelibor, Gas analaysis, USGS
Skip Pelletier, Heat flow, WHOI
Mark Bernasconi, Heat flow, WHOI
Skip Rousell, Coring super, URI
Rod Davies, Coring super, URI

Alan Driscoll and R. Boudreau were aboard for the first day to check winch and coring gear.

Relief during second half for gas analysis, coring crew:

Bob Miller, gas anlaysis
Terry Lerch, gas analysis
Joseph Botbol, coring crew
Jean Hopson, coring crew

Ron Circe, coring crew
Rick Rendigs, coring crew
Kathy Scanlon, coring crew

Herb Bennett, Master R/V ENDEAVOR

Sampling Equipment:

- 1) Piston corer, with liner, 3.5 inch sample diameter, 3000 or 2000 lb core head.
- 2) Gravity corer, PVC bbl., 4.5 inch sample diameter.
- 3) Heat flow instrumentation (R. von Herzen WHOI)

Purpose of cruise and description of work:

Coring for geotechnical and sedimentological analysis of features on the continental slope. Thirty two stations occupied were chosen by Conservation Division Hazards Analysis group within specific lease blocks in the Mid-Atlantic OCS area. An additional eleven stations were occupied on the Mid-Atlantic slope, and eleven other stations on the North Atlantic OCS (Georges Bank) slope.

Geotechnical samples (up to 3 per core) were separated from Conservation Division cores, were x-rayed aboard to check that disturbance was minimal, and were then sealed with wax. Geologic division cores were sub-sampled for geotechnical tests as well, but the remainder of core sections were split, tested by laboratory vane shear, sampled for texture, dating, and were lithologically described. All unsplit core material and archive halves of split cores were stored in a cooler at 40°F. Most cores were sampled for interstitial gas analysis. Heat flow data were taken on 6 stations during coring. The corer and heat flow gear were lost on the sixth heat flow site, preventing further heat flow work as the back-up core head did not provide for heat flow instrumentation.

Navigation:

Northstar and Micrologic Loran C instruments were used. Latitude and Longitude were calculated by the Northstar 6000 which used an updated ('79) card. Final sites were located by profiling with 3.5 kHz to confirm morphology of feature to be cored then re-occupying points on line. Great care was exercised to hit intended targets, using depth, subbottom reflections and Loran C.

Data Acquired:

Total Stations occupied:	54	North Atlantic stations:	11
3.5 kHz profiles total km:	100	Mid-Atlantic stations:	43
Gravity cores recovered:	27		
Piston cores recovered:	71		
Heat flow stations occupied:	6		

Table of Stations and Recovery is appended

ENDEAVOR 042 STATION AND CORE LIST

Sta#	Core#	Date	Latitude North	Longitude West	Water Depth (m)	Pene- tratn (cm)	Recov (cm)
GD01	GC01	79AUG29	39°54.24'	70°27.35'	683		64
GD01	PC01	79AUG29	39°54.12'	70°27.52'	697	610	520
GD02	GC02	79AUG29	40°01.04'	70°24.52'	282		
GD03	GC03	79AUG29	39°56.73'	70°23.40'	493		139
GD03	PC02	79AUG29	39°56.47'	70°23.55'	534	910	313
CD04	GC04	79SEP01	39°09.07'	72°24.30'	712		215
CD04	PC03*	79SEP01	39°09.12'	72°24.30'	708	910	694
CD05	GC05	79SEP01	39°08.93'	72°24.09'	738		129
CD05	PC04	79SEP01	39°08.90'	72°24.09'	740		637
CD01	PC05	79SEP02	39°12.23'	72°24.30'	412	730	666
CD02	PC6A	79SEP02	39°11.82'	72°23.84'	465	460	0
CD09	PC07*	79SEP02	39°07.23'	72°24.94'	1148	610	447
CD09	PC08	79SEP02	39°07.21'	72°24.82'	1180		588
CD06	PC09	79SEP02	39°08.53'	72°24.32'	784		803
CD07	PC10	79SEP03	39°07.27'	72°23.25'	979	850	782
CD10	PC11	79SEP03	39°03.69'	72°41.32'	435	910	824
CD11	PC12	79SEP03	39°03.30'	72°40.58'	566	850	776
CD11	PC13	79SEP03	39°03.22'	72°40.83'	556	670	532
CD12	PC14	79SEP04	39°00.16'	72°46.43'	403		510
CD13	PC15	79SEP04	38°59.98'	72°46.07'	471		819
CD14	PC16	79SEP04	38°59.66'	72°45.80'	543		537
CD16	PC17	79SEP04	38°59.40'	72°46.16'	475		833
CD15	PC18*	79SEP04	38°57.98'	72°43.52'	810		808
CD17	PC19	79SEP05	38°55.36'	72°48.90'	600		676
CD18	PC20*	79SEP05	38°55.32'	72°48.80'	598		372
CD19	PC21*	79SEP05	38°55.23'	72°49.49'	595		505
CD20	PC22	79SEP09	38°54.71'	72°49.59'	525		689
CD21	PC23	79SEP09	38°52.15'	72°52.74'	505		740
CD22	PC24	79SEP09	38°51.87'	72°52.27'	637		626
CD22	PC25	79SEP09	38°51.86'	72°52.30'	607		621
GD17	GC06	79SEP10	38°45.68'	72°47.29'	1647		228
GD17	PC26*	79SEP10	38°45.77'	72°47.34'	1648		0
CD24	PC27	79SEP11	38°24.93'	73°23.46'	324		123
CD24	PC28	79SEP11	38°24.91'	73°23.54'	328		323
CD25	PC29	79SEP11	38°24.74'	73°23.24'	392	240	275
CD26	PC30	79SEP11	38°24.51'	73°22.92'	520	610	551
CD27	PC31	79SEP11	38°24.38'	73°22.80'	553	610	558
CD32	PC32	79SEP11	38°22.05'	73°21.50'	1098	910	802
CD32A	PC33	79SEP12	38°22.49'	73°21.98'	1040	975	817
CD34	PC34	79SEP12	38°08.72'	73°36.42'	1221	910	580
CD35	PC35	79SEP12	38°08.01'	73°35.57'	1342	820	721
CD36	PC36	79SEP12	38°08.12'	73°37.25'	1300	850	733
CD37	PC37	79SEP13	38°05.71'	73°45.02'	573	610	384
CD38	PC38	79SEP13	38°04.54'	73°45.04'	877	430	290
GD02R	GS07	79SEP13	38°57.96'	72°45.38'	245		0
GD02R	GC08	79SEP13	38°58.00'	72°49.41'	240	90	95
GD02R	PC39	79SEP13	38°57.94'	72°49.40'	246	610	572
GD12	GC09	79SEP13	38°50.25'	72°47.56'	1111	300	251
GD12	PC40	79SEP13	38°50.26'	72°47.53'	1113	880	708
GD12A	GC10	79SEP14	38°50.92'	72°48.22'	1115		100
GD12A	PC41	79SEP14	38°50.93'	72°48.08'	1123	880	454

ENDEAVOR 042 STATION AND CORE LIST (continued)

Sta#	Core#	Date	Latitude North	Longitude West	Water (m)	Pene- tratn (cm)	Recov (cm)
GD15	GC11	79SEP14	38°51.37'	72°52.18'	623	300	281
GD15	PC42	79SEP14	38°51.39'	72°52.18'	620		
GD15	PC43	79SEP14	38°51.37'	72°52.18'	622	1040	942
GD23	GC12	79SEP15	38°48.13'	72°55.46'	588	300	293
GD23	PC44	79SEP15	38°48.11'	72°55.42'	575	520	450
GD19	GC14	79SEP16	38°49.53'	72°53.98'	697	300	272
GC19	PC45	79SEP16	38°49.52'	72°54.03'	688	980	697
GD08	GC15	79SEP16	38°52.91'	72°46.55'	933	300	242
GD08	PC46	79SEP16	38°52.89'	72°46.53'	930	1070	705
GD06	GC16A	79SEP16	38°53.23'	72°46.13'	1105	60	C.C.
GD06	GC16B	79SEP16	38°52.28'	72°46.08'	1105	90	0
GD06	PC47	79SEP16	38°53.29'	72°46.13'	1102	60	697FLOW
GD06	PC48	79SEP16	38°53.25'	72°46.12'	1109	150	45
GD06	PC49	79SEP16	38°53.26'	72°46.10'	1107		C.C.
GD06	PC50	79SEP17	38°53.25'	72°46.07'	1105		0
GD06	PC51	79SEP17	38°53.25'	72°46.13'	1103		0
GD07	GC17	79SEP17	38°53.73'	72°47.38'	813	180	157
GD07	PC52	79SEP17	38°53.72'	72°47.37'	813		673
GD09	GC18	79SEP17	38°52.33'	72°45.98'	1031	1220	306
GD09	PC53	79SEP17	38°52.32'	72°46.00'	1035		1006
GD1R	GC19	79SEP17	38°54.13'	72°40.74'	1147		248
GD1R	PC54	79SEP17	38°54.13'	72°40.75'	1145	1070	854
GB01	GC20	79SEP18	39°47.67'	70°53.69'	1418		50
GB01	PC55	79SEP18	39°47.70'	70°53.75'	1408	240	227
GB01	PC56	79SEP18	39°47.64'	70°53.71'	1428	120	75
GB02	GC21	79SEP18	39°46.26'	70°53.69'	1593		30
GB02	PC57	79SEP18	39°46.24'	70°53.71'	1593	90	100
GB02	PC58	79SEP19	39°46.28'	70°53.65'	1589	90	82
GB03	GC22	79SEP19	39°50.50'	70°39.65'	856	60	38
GB03	PC59	79SEP19	39°50.49'	70°39.64'	851	180	171
GB04	GC23	79SEP19	39°50.22'	70°39.63'	852		41
GB04	PC60	79SEP19	39°50.21'	70°39.65'	856	430	191
GB04	PC61	79SEP19	39°50.18'	70°39.67'	866	300NO	GOOD
GB05	GC24	79SEP19	39°49.37'	70°39.70'	937		60
GB05	PC62	79SEP19	39°49.35'	70°39.70'	937		96
GB05	PC63	79SEP20	39°49.27'	70°39.61'	945	120	94
GB06	GC25	79SEP20	39°51.87'	70°27.90'	811	120	74
GB06	PC64	79SEP20	39°51.89'	70°27.85'	813	570	364
GB06	PC65	79SEP20	39°51.83'	70°27.90'	812		FLOW
GB07	GC26	79SEP20	39°51.31'	70°27.92'	841		158
GB07	PC66	79SEP20	39°51.35'	70°27.88'	835	120	65
GB07	PC67	79SEP20	39°51.37'	70°27.90'	837	210	221
GB07	PC68	79SEP20	39°51.38'	70°27.87'	834	300	245
GB08	GC27	79SEP21	39°48.06'	70°28.05'	1195	60	55
GB08	PC69	79SEP21	39°48.06'	70°28.06'	1195	DBL HIT	
GB08	PC70	79SEP21	39°48.07'	70°28.11'	1194	DBL HIT	
GB08	PC71	79SEP21	39°48.11'	70°28.05'	1182	300NO	GOOD

* = Heat Flow Stations; C.C. = Core Catcher Sample only