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Coastal data acquisition, compilation and analysis, Virginia Beach coastal compartment, southeastern Virginia : quarterly technical status report December 1, 1975 - February 29, 1976

Victor Goldsmith
Virginia Institute of Marine Science

Susan Strum
Virginia Institute of Marine Science

George Thomas
Virginia Institute of Marine Science

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COASTAL DATA ACQUISITION, COMPILATION AND ANALYSIS:
VIRGINIA BEACH COASTAL COMPARTMENT, SOUTHEASTERN VIRGINIA

DACW 72-74-C-0008

SEVENTH QUARTERLY TECHNICAL STATUS REPORT

COASTAL ENGINEERING RESEARCH CENTER
U.S. ARMY CORPS OF ENGINEERS
KINGMAN BUILDING
FORT BELVOIR, VIRGINIA 22060

December 1, 1975 to February 29, 1976

from

Victor Goldsmith, Principal Investigator
Susan Sturm
George Thomas

VIRGINIA INSTITUTE OF MARINE SCIENCE
GLOUCESTER POINT, VIRGINIA 23062



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April 15, 1976

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COMMONWEALTH of VIRGINIA

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062

WILLIAM J. HARGIS, JR.
DIRECTOR

Phone: (804) 642-2111

SEVENTH QUARTERLY TECHNICAL STATUS REPORT

April 27, 1976

Mr. Charles Edwin Freese, IV
Contracting Officer
Coastal Engineering Research Center
Department of the Army
Kingman Building
Fort Belvoir, Virginia 22060

In Re: Contract DACW 72-74-C-0008

Dear Mr. Freese:

Enclosed are four copies of our Seventh Quarterly Report containing all required data.

Additionally included here (paragraph 6.0, Table 4 and Appendix D) are the results of statistical analyses of the beach trends (including the pre-CERC profile data) at the 18 profile locations through the end of the seventh quarter.

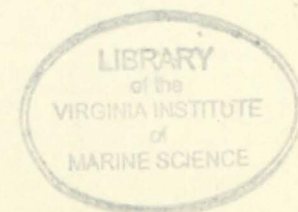
Also included are the responses to the List of Action Items requested in the review of the Sixth Quarterly Report (letter dated 10 February 1976).

With respect to the surveying of the profile locations, it is our understanding that the work is completed, and the surveyors report will be forwarded to us shortly.

Sincerely yours,

Victor Goldsmith
Victor Goldsmith
Principal Investigator

VG:cbo
Enc.



COASTAL DATA ACQUISITION, COMPILATION AND ANALYSIS:
VIRGINIA BEACH COASTAL COMPARTMENT, SOUTHEASTERN VIRGINIA

DACW 72-74-C-0008

1.0 Scope of This Status Report
SEVENTH QUARTERLY TECHNICAL STATUS REPORT

COASTAL ENGINEERING RESEARCH CENTER
U.S. ARMY CORPS OF ENGINEERS
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FORT BELVOIR, VIRGINIA 22060

December 1, 1975 to February 29, 1976

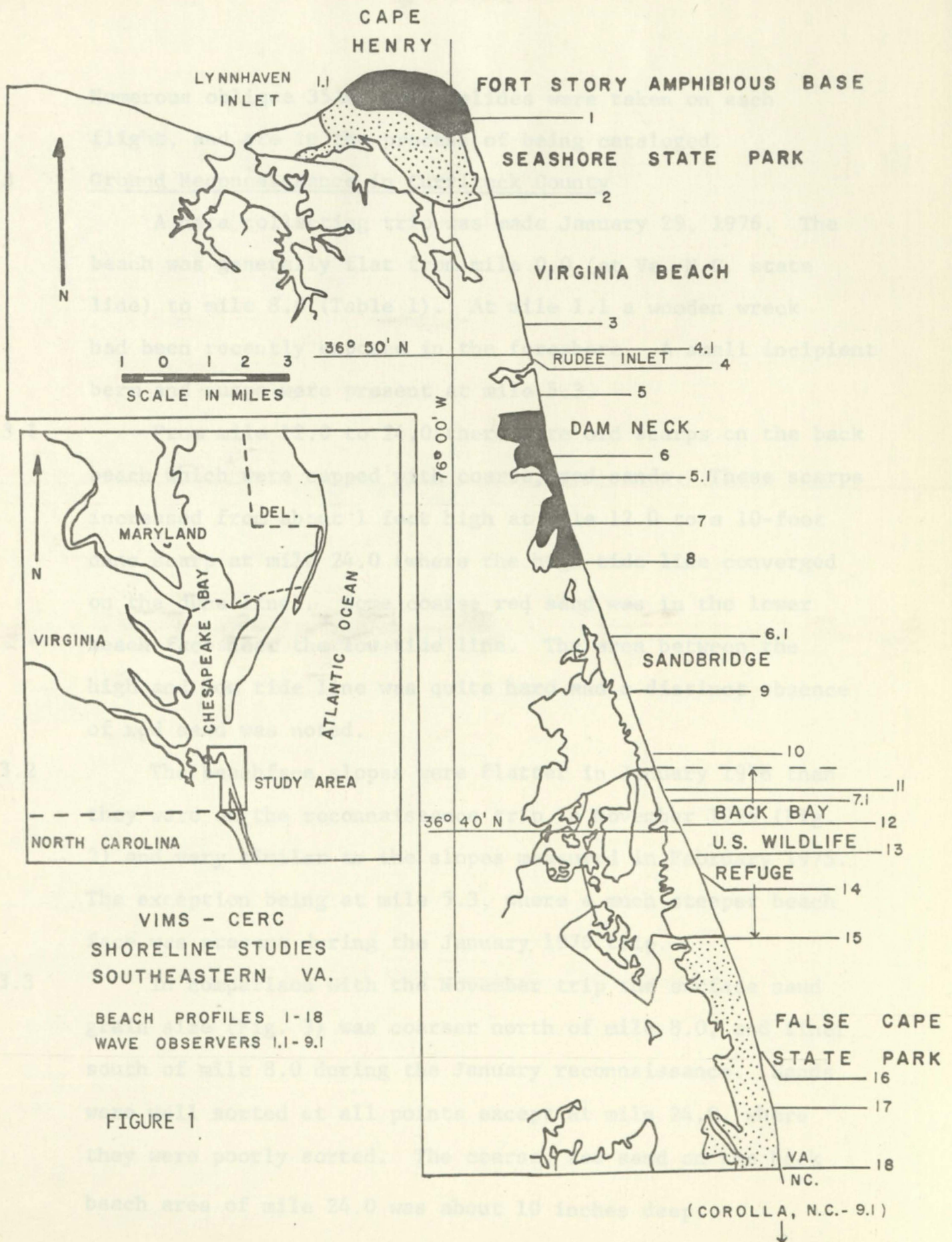
from

Victor Goldsmith, Principal Investigator
Susan Sturm
George Thomas

2.0 Summary of Work Performed
2.1 Beach Profiles
All 18 beach profile locations (shown in Figure 1) were
measured at the Virginia Institute of Marine Science, Gloucester Point, Virginia, December 9, 1975;
January 5, 1976 and February 17, 1976. Color slides were
taken on each monthly profile trip in this quarter.

VIRGINIA INSTITUTE OF MARINE SCIENCE
GLOUCESTER POINT, VIRGINIA 23062

2.2 Aerial Photography
Flights were made on the same day as the monthly profiles
on December 10, 1975, January 6, 1976, and February 17, 1976.



Numerous oblique 35 mm color slides were taken on each flight, and are in the process of being cataloged.

2.3 Ground Reconnaissance in Currituck County

A data collecting trip was made January 29, 1976. The beach was generally flat from mile 0.0 (at Va.-N.C. state line) to mile 8.0 (Table 1). At mile 1.1 a wooden wreck had been recently exposed in the foreshore. A small incipient berm and cusps were present at mile 5.3.

2.3.1 From mile 12.0 to 24.0 there were old scarps on the back beach which were capped with coarse, red sands. These scarps increased from about 1 foot high at mile 12.0 to a 10-foot dune scarp at mile 24.0 (where the high tide line converged on the dune line). Some coarse red sand was in the lower beach face near the low tide line. The area between the high and low tide line was quite hard and a distinct absence of red sand was noted.

2.3.2 The beachface slopes were flatter in January 1976 than they were on the reconnaissance trip in November 1975 (Fig. 2) and very similar to the slopes measured in February 1975. The exception being at mile 5.3, where a much steeper beach face was present during the January 1976 trip.

2.3.3 In comparison with the November trip the surface sand grain size (Fig. 3) was coarser north of mile 8.0, and finer south of mile 8.0 during the January reconnaissance. Sands were well sorted at all points except at mile 24.0, where they were poorly sorted. The coarse, red sand on the back beach area of mile 24.0 was about 10 inches deep.

GURE 2
 ANGLE OF BEACHFACE
 TUCK COUNTY, N.C.
 6, 1975; NOV. 4, 1975;
 JAN. 29, 1976

28

TABLE 1 QUARTERLY RECONNAISSANCE -- CURRITUCK COUNTY -- DATA AND OBSERVATIONS
for CERC by VIMS

Date: 29 JANUARY 1976 General Conditions, Prev. Meteorological Events, etc. PARTLY CLOUDY TO CLEAR; WIND SW 5-15

Observers: G. THOMAS, A. GUTMAN, H. HENNIGAR

BEACH IN TIDAL ZONE WAS HARD PACKED AND GENERALLY WELL SORTED.

ODOMETER MILEAGE	MILEAGE (South of State Line)	FORESHORE SLOPE (°)	GRAIN SIZE & LOCATION φ <u>2/3 UP BEACH FACE</u>	PROMINANT FEATURE (if any)	SAND LEVEL (against feature)	PHOTO Nos.	GENERAL CONDITION (Eros.-Accret., trafficability, scarping, etc.)
52.4	0.0	3.0	well sorted 1.0			2A	Generally flat; few low cusps slightly erosional
53.5	1.1			Intertidal WRECK		1A	NEWLY EXPOSED WOODEN WRECK IN FORESHORE
56.4	4.0	2.2	2.0 well sorted			2A	flat; some shell fragments slightly erosional
57.7	5.3	5.0	1.5 well sorted	Intertidal wreck	6.6 FT. TO TOP OF FRONT METAL EDGE OF BOW. (Scouring at base)	3A	CUSPS; STUMPS JUST NORTH ARE EXPOSED ACCRETIONAL; SMALL NEW BERM
60.4	(NEAR LEWARK HILL) 8.0	3.5	2.0 well sorted			4A	STUMPS EXPOSED IN UPPER 1/3 OF BEACH; LOW RIDGES + RUNNELS; BEACH SLOPE ANGLE SAME FROM WATER TO DUNE BASE.
64.4	(NEAR COROLLA, N.C.) 12.0	3.0	2.0 well sorted			4A	LOW RIDGES + RUNNELS; 1 foot SCARP, LAYERED WITH COARSE + FINES, CAPPED WITH COARSE RED SAND ON BACK BEACH
68.4	16.0	3.0	2.0 well sorted	Power Pole + CEMENT MONUMENT	3.52' (4" RUNG HOLE DOWN FROM PIPE CONNECTION ON NORTH SIDE - TO TOP OF SOUTH SIDE OF CEMENT	3C	1.4 foot OLD SCARP WITH RED SAND ON TOP (BACK BEACH) Patches of red sand on beach; cusps
72.4	20.0	4.5	1.75 well sorted			4C	OLD 3.5 foot cusped SCARP largely of RED SAND ON BACK BEACH. RED SAND IN SURF ZONE (LOW tide)
76.4	24.0	4.0	2.0 poorly sorted			7C	OLD LARGE SCARP (ABT 10 feet) cut into dune - RED SAND ON upper third of BEACH (ABT 10" inches deep) IN TOP LAYER.

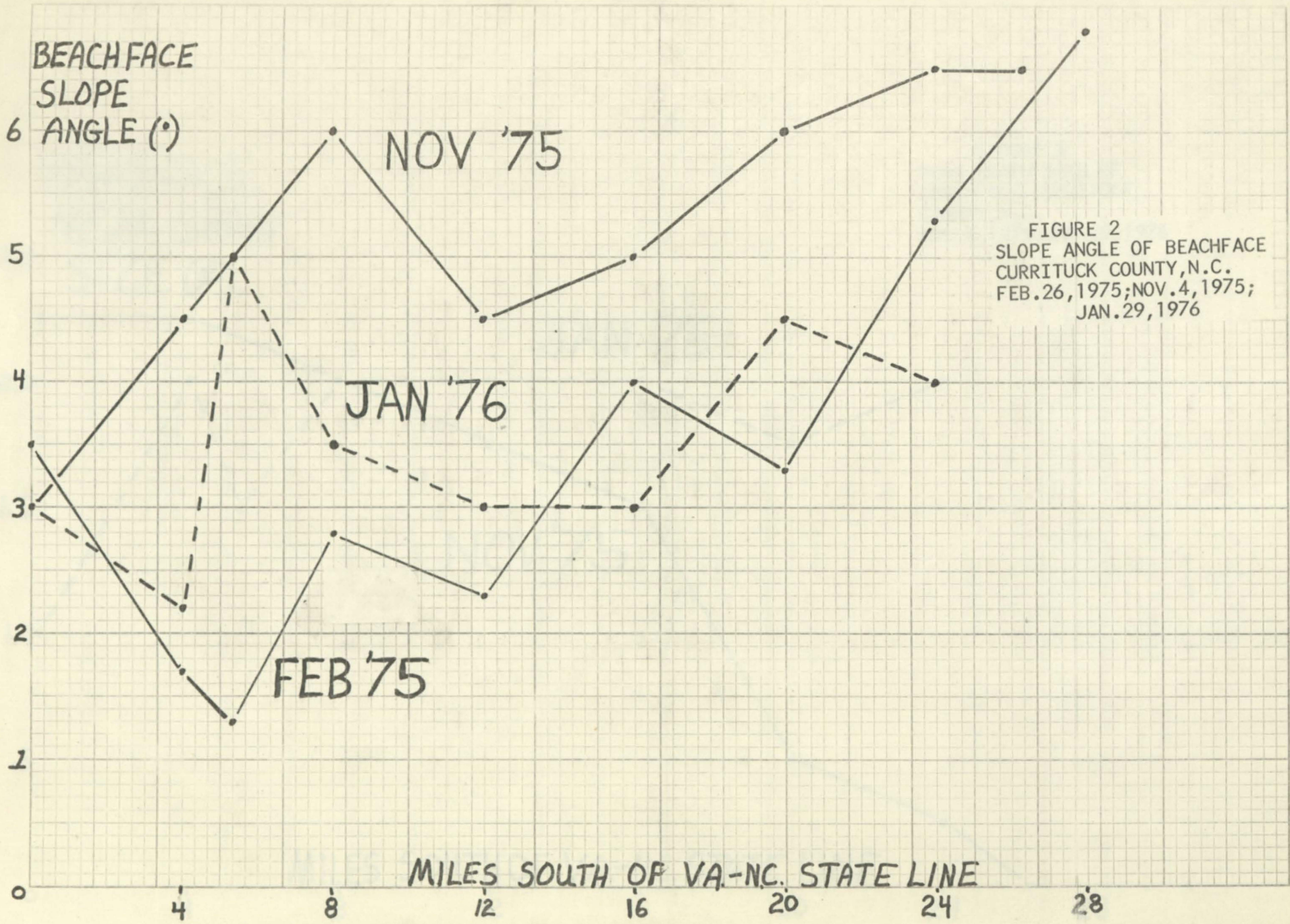
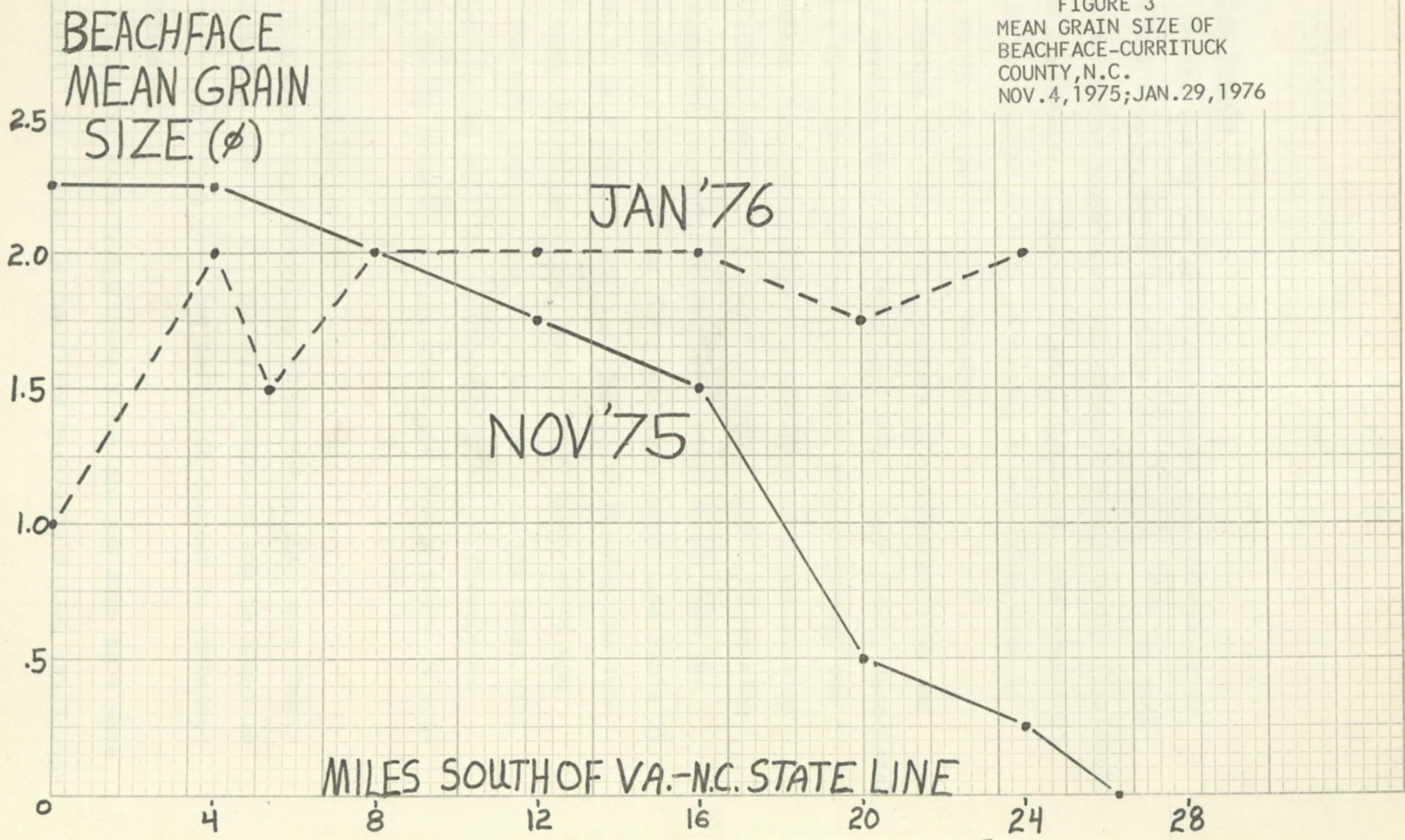


FIGURE 2
 SLOPE ANGLE OF BEACHFACE
 CURRITUCK COUNTY, N.C.
 FEB. 26, 1975; NOV. 4, 1975;
 JAN. 29, 1976

FIGURE 3
MEAN GRAIN SIZE OF
BEACHFACE-CURRITUCK
COUNTY, N.C.
NOV. 4, 1975; JAN. 29, 1976



3.0 Weather Events

3.1 On the day of our quarterly ground reconnaissance to Currituck County, North Carolina (29 January 1976) an automatic recording anemometer was erected on top of the Currituck Beach Lighthouse at Corolla, North Carolina. The erection of the instrument and the gathering of wind data from it will be at no cost to the contract.

3.2 During the late evening hours of 1 February 1976 and early morning hours of 2 February 1976 a warm front, associated with a fast-moving low pressure area, passed through the southeast Virginia-northeast North Carolina coast causing very strong winds for a short period of time. No erosion was expected or realized since the winds moved from the southeast to west as the front passed through (see Table 2). Figure 4 is a copy of the recorder paper showing the two-hour span centering on the time of peak winds of 82 mph.

3.3 The wind information from this area of the coast will be reported as will the weather conditions of Chesapeake Light during periods of high winds and when a storm is profiled.

4.0 Wave Observations

4.1 A graphic representation of the dates that wave observations were made by all the wave observers may be found in Figure 5. All wave data for this past quarter is contained in Appendix C.

4.2 As can be seen from Figure 5, we are now down to 4 wave observers. As stated in the Third Quarterly Report (Paragraph

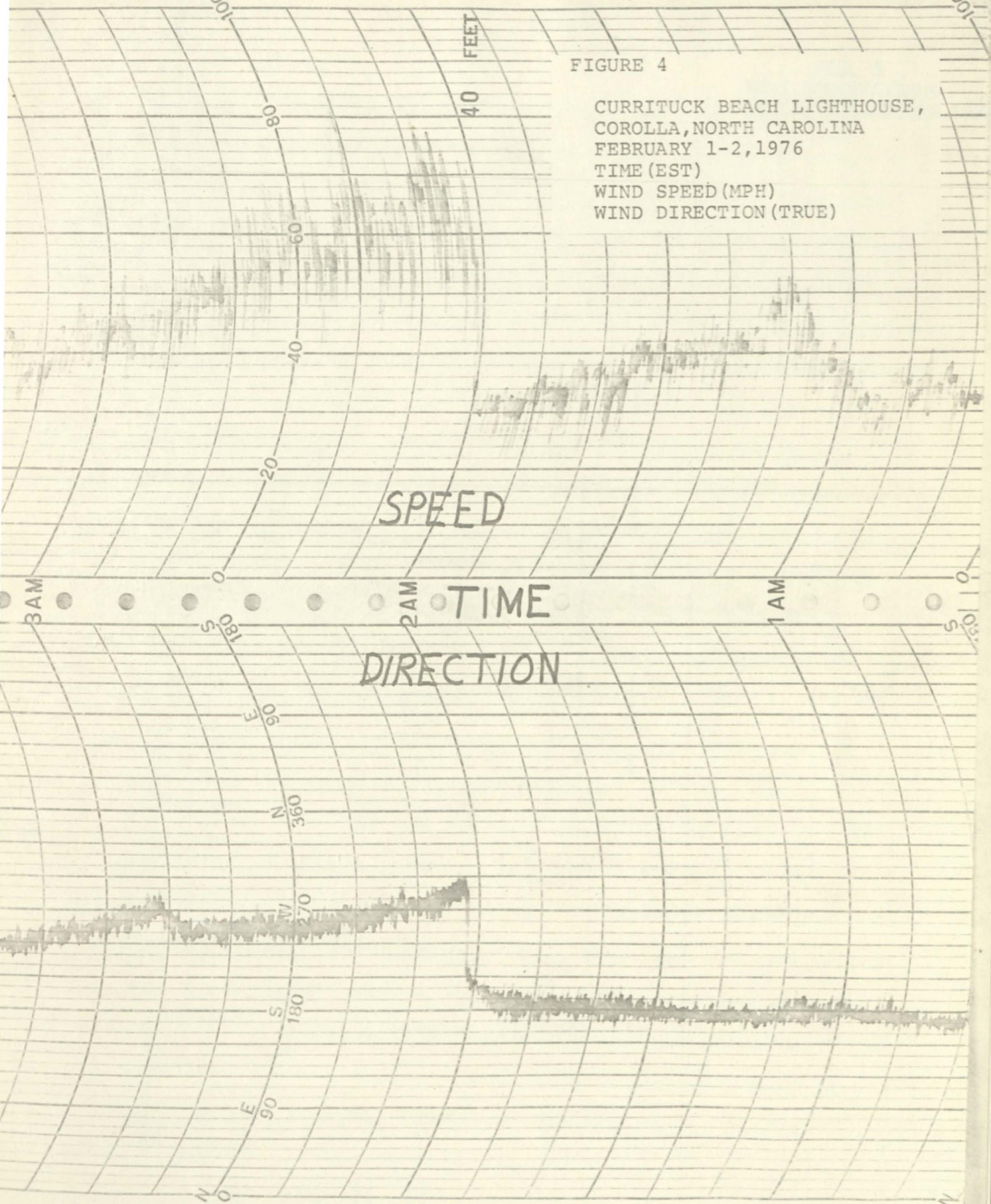
TABLE 2

WIND CONDITIONS AT CURRITUCK BEACH LIGHTHOUSE, COROLLA,
NORTH CAROLINA. FEBRUARY 1-2, 1976

	TIME (EST)	SPEED (MPH)	DIRECTION (TRUE)
1 FEBRUARY, 1976	1600	15	150
	1800	22	145
	2000	27	135
	2200	25	135
	2400	32	165
2 FEBRUARY, 1976	0100	36	180
	0200	34	205
	0202	72	285
	0208	81	275
	0210	67	275
	0221	82	265
	0230	60	255
	0300	43	250
	0400	33	235
	0600	33	245
	0800	31	265
	1000	36	255
	1200	25	255
	1400	20	280
	1600	14	270

FIGURE 4

CURRITUCK BEACH LIGHTHOUSE,
COROLLA, NORTH CAROLINA
FEBRUARY 1-2, 1976
TIME (EST)
WIND SPEED (MPH)
WIND DIRECTION (TRUE)



4.1

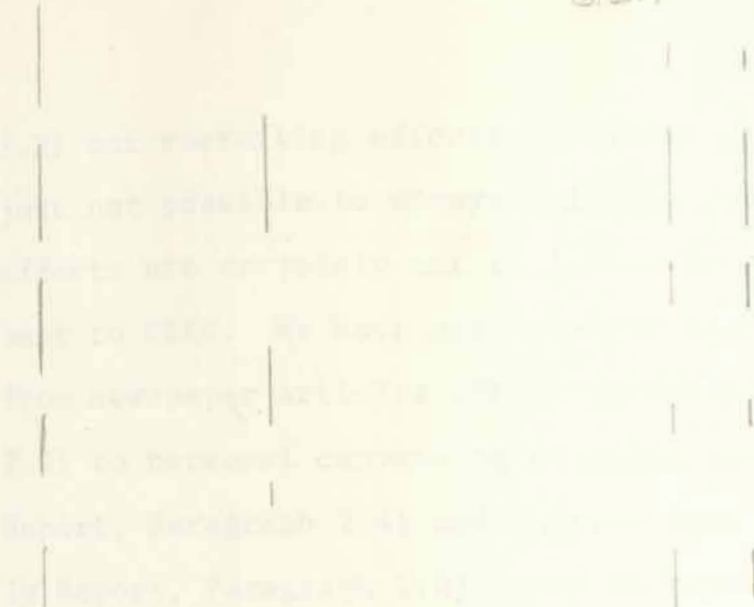
5.1

7.2.1

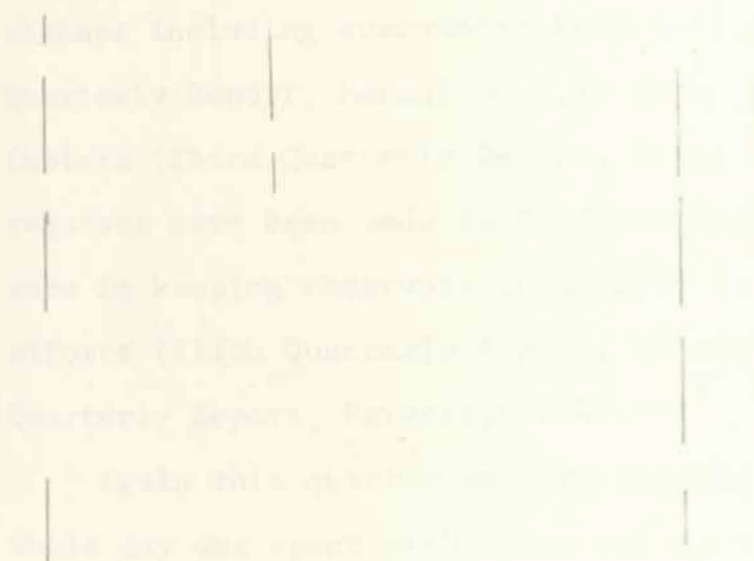
6.2.1

FIG. 5
WAVE OBSERVATIONS
DEC. 1, 1975-FEB. 29, 1976

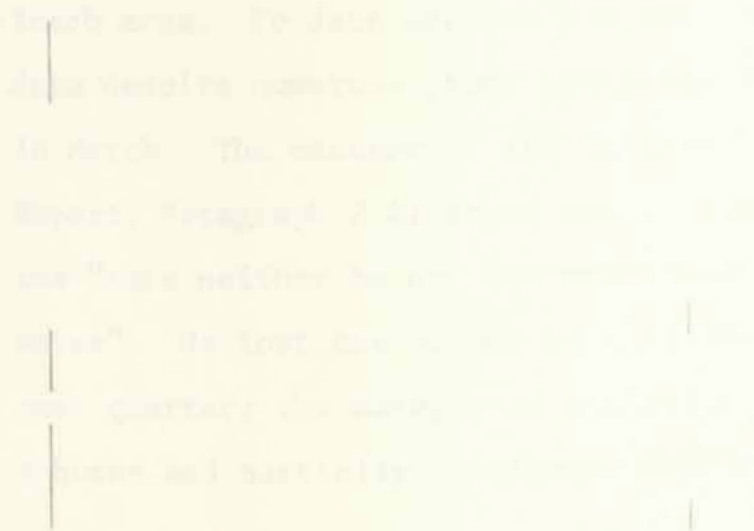
Dec 1



Jan. 1



Feb. 1



← NORTH

2.2) our recruiting efforts are never ceasing, but it is just not possible to always maintain five observers. Our efforts are certainly not reflected by the observation data sent to CERC. We have attempted to recruit using everything from newspaper articles (Third Quarterly Report, Paragraph 2.2) to personal canvassing of hotel personnel (Fourth Quarterly Report, Paragraph 2.4) and charter boat captains (Sixth Quarterly Report, Paragraph 2.4). And we have been besieged with mishaps including everything from a slipped disk (Sixth Quarterly Report, Paragraph 2.4) to an outbreak of Avian Cholera (Third Quarterly Report, Paragraph 2.2). In addition, requests have been made to CERC seeking guidance and assistance in keeping observers interested in continuing their efforts (Fifth Quarterly Report, Paragraph 2.4; and Sixth Quarterly Report, Paragraph 2.4).

4.3

Again this quarter we were plagued with problems. A whole day was spent with a new volunteer in the Virginia Beach area. To date she has not collected the first bit of data despite numerous phone calls and a personal return visit in March. The manager of the Holiday Inn (see Sixth Quarterly Report, Paragraph 2.4) moved out of town, and the new manager was "sure neither he nor his staff would have time to count waves". We lost one of our more reliable wave observers this past quarter; the manager of the Hilton Inn was thrown from a horse and partially paralyzed, forcing him to retire.

4.4

With respect to comment No. 1 in the "LIST OF ACTION ITEMS" accompanying the review of the Sixth Quarterly Report, these suggestions have long since been acted upon. At the suggestion of the Contract Monitor, we tried to contact Mr. Richard H. Allen in Virginia Beach. A letter was written to him in November, 1974, and was never answered, and numerous phone calls have been made to his residence, but he has never been in. This failure was orally reported in Spring, 1975 and a second search at CERC failed to turn up a better address or phone number. One of our observers, Arthur Gilbert (4.2) is already a Virginia Beach employee at Rudee Inlet. As a matter of fact, he has probably been our most conscientious observer. Attempts to recruit more people at Rudee Inlet have failed.

4.5

One of our suggestions to CERC (Fifth Quarterly Report, Paragraph 2.4) was turned down by CERC. This was a return of monthly summaries of the wave data collected by the observers to these orders, so they can see how "their" waves compare with other portions of the coast. Without financial reimbursement, our extensive recruitment efforts indicate that they need some informative return to maintain their interest.

4.6

These efforts (only the "highlights" are summarized here) have not been commensurate with the small volume of data. In fact, more time has been given to recruitment of wave watchers than has been spent in the field with data

collection. Also, a disproportionate amount of report time and correspondence has been spent on this problem (Second Quarterly Report, Paragraph 2.2; Third, 2.2 and Fig. 3; Fourth, 2.4; Fifth, 2.4; Sixth, 2.4).

If CERC has any possible solutions or suggestions, they would be much appreciated.

- 4.7 With respect to these well-earned wave data, we would like to do some comparative analyses involving the beach data for our final report that require as input digitized wave data on standard computer cards. It is our understanding that CERC digitizes the wave data enclosed in our quarterly reports. Would it be possible for CERC to supply us with the digitized wave data? The alternative, for us to digitize it ourselves, is not part of our required work, and the duplication of effort would be a waste of time and money.

5.0 Data Analysis

- 5.1 Three regular profiles were taken during the quarter. For the most part the beaches showed an overall accretional tendency for the period, recovering somewhat slowly from the November 25, 1975 storm. Most of the profiles were still somewhat erosional in December but were recovering by January.
- 5.2 In December a five-foot scarp was observed just to the south of profile number 9 (Sandbridge), and accretional cusps were seen between profiles 17 and 18 (False Cape). Numerous blocks of peat were on the beaches in upper Back Bay (south of the apparent outcrop source), and the beach ramp at the

northernmost boundary of Back Bay was observed to be in a very erosional state. In fact, the pavement at the ramp had been undercut, and a sign at the same location was still standing only because the cement block in which it had been imbedded had not been washed away.

In January the day of profiling was bitterly cold; there was a crust of frozen sand on the lower beach face protecting the beach. There was also an extensive intertidal peat exposure some 300 yards north of profile number 6 (Dam Neck).

5.3 Table 3 is an updated summary of net areal beach changes (i.e., accretion and erosion) between times of beach profiling, in square feet of sand. See Table 5 (Paragraph 3.0) in the Fifth Quarterly Report for reference. Figure 6 is a graphic representation of cumulative beach area change from September 11, 1974 to February 12, 1976, in square feet of sand.

6.0 Older Profile Data

6.1 All of the older profile data from Harrison and Bullock; and from Goldsmith, Smith, and Sutton has been computerized in a format compatible with the present VIMS-CERC data. Additionally, all the combined data (going back to 1969) was statistically analyzed to see what the overall beach trends were--if any. Where there was no older profile data a trend analysis was made on just the CERC data. The graphs for all 18 profiles are found in Appendix D, and a summary of beach trends is contained in Table 4.

TABLE 4

SUMMARY OF LONG-TERM BEACH TRENDS

PROFILE LOCATIONS

Date From	Date To		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
11-25-75	12-9-75	MSL*	-34	-43	+83	+120	+23	+59	- 8	-69	-15	+ 9	-79	+66	+ 5	-29	- 2	+50	-46	+129
		TOT																	-82	+126
12-9-75	1-5-76	MSL	+48	+55	-24	+36	+19	-66	+104	-64	- 2	+64	-13	- 2	+51	-21	+17	+24	+35	+1
		TOT						-63											+45	0
1-5-76	2-12-76	MSL	+55	+178	+53	-28	+112	+15	+16	+52	+101	+67	+59	+49	+46	+151	-25	+396	+41	+111
		TOT	+59	+227	+38		+119	+8	+18	+69	+106	+69	+71	+51	+46		-23			
		MSL																		
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TABLE 3 Beach area change between dates of profiles in square feet of sand (+ = Accretion; -=Erosion)

*MSL=Area change seaward to MSL
 TOT=Total area change seaward to end of profile

TABLE 4

SUMMARY OF LONG-TERM BEACH TRENDS

Fig. 6

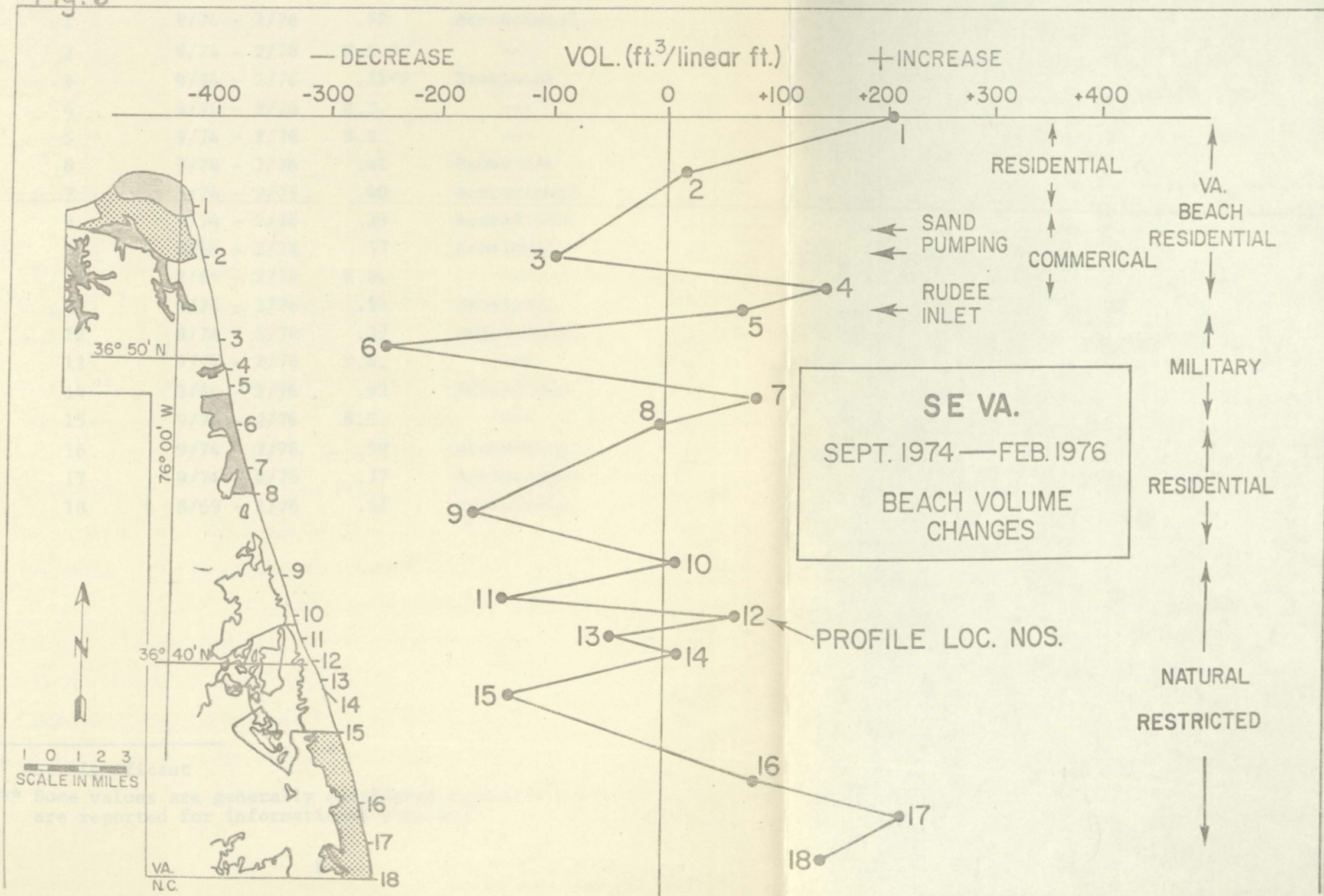


TABLE 4

SUMMARY OF LONG-TERM BEACH TRENDS

Profile #	Dates	r	Trend
1	9/74 - 2/76	.72	Accretional
2	9/74 - 2/76	N.S.*	---
3	9/74 - 2/76	.21**	Erosional
4	9/74 - 2/76	N.S.	---
5	9/74 - 2/76	N.S.	---
6	9/74 - 2/76	.41	Erosional
7	9/74 - 2/76	.40	Accretional
8	9/74 - 2/76	.39	Accretional
9	8/69 - 2/76	.37	Erosional
10	8/69 - 2/76	N.S.	---
11	9/74 - 2/76	.51	Erosional
12	9/74 - 2/76	.37	Accretional
13	9/74 - 2/76	N.S.	---
14	8/69 - 2/76	.92	Accretional
15	9/74 - 2/76	N.S.	---
16	9/74 - 2/76	.59	Accretional
17	9/74 - 2/76	.77	Accretional
18	8/69 - 2/76	.96	Accretional

* Not significant

** Some values are generally considered nonsignificant, but are reported for informational purposes.

6.2 Figures 7 and 8 are graphic representations of cumulative beach area change immediately before and after two moderate storm events in the study area. As can be seen from the graphs, all profile locations eroded to some extent after each storm event. Some nine days after the 30 June-July 1, 1975 storm (Fig. 7), recovery was already detected to be taking place. Some fourteen days after the 23-25 November, 1975 storm (Fig. 8) little recovery was detected; in fact, many stations continued to show some erosional tendencies.

7.0 List of Action Items

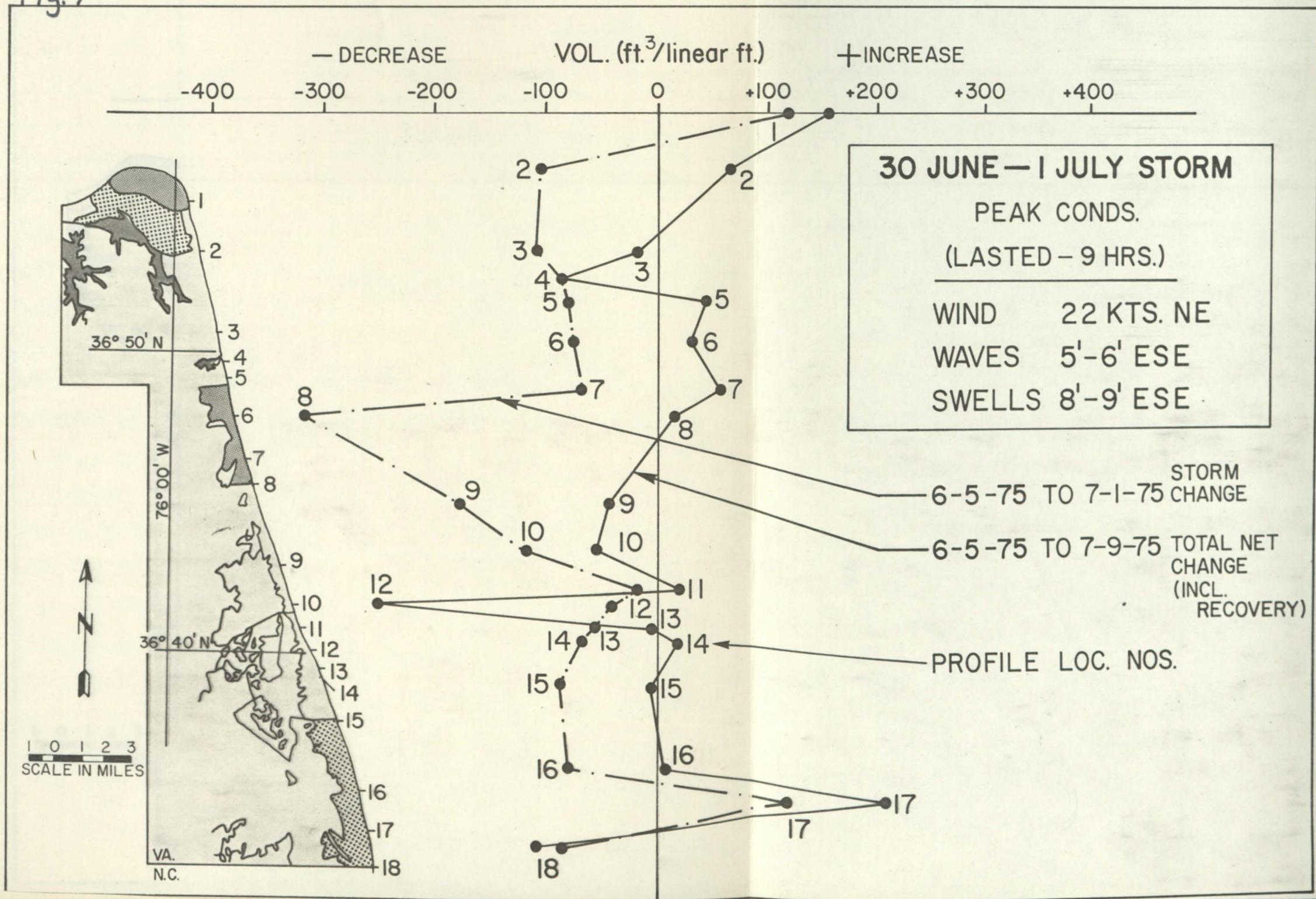
7.1 The following is in response to your letter of 10 February 1976.

7.2 Item 1. The answer to this may be found under Wave Observations, Paragraph 4.4 of this Quarterly Report.

7.3 Item 2. The terms "erosional", "slightly erosional", "some erosion", and "noticeable erosional condition" are all terms used to define in a qualitative manner visual observations in the field. The term "erosional" (beach appears to have recently lost sand) is used as opposed to "accretional". "Slightly erosional" means some sand loss; between zero and 50 ft² in volume. "Some erosion" is greater than "slightly erosional" and less than "noticeable erosion" (between 50 ft² and 150 ft² in area change). "Noticeable erosional condition" is greater than "some erosion" and represents "significant" events. These terms, admittedly somewhat loose, represent

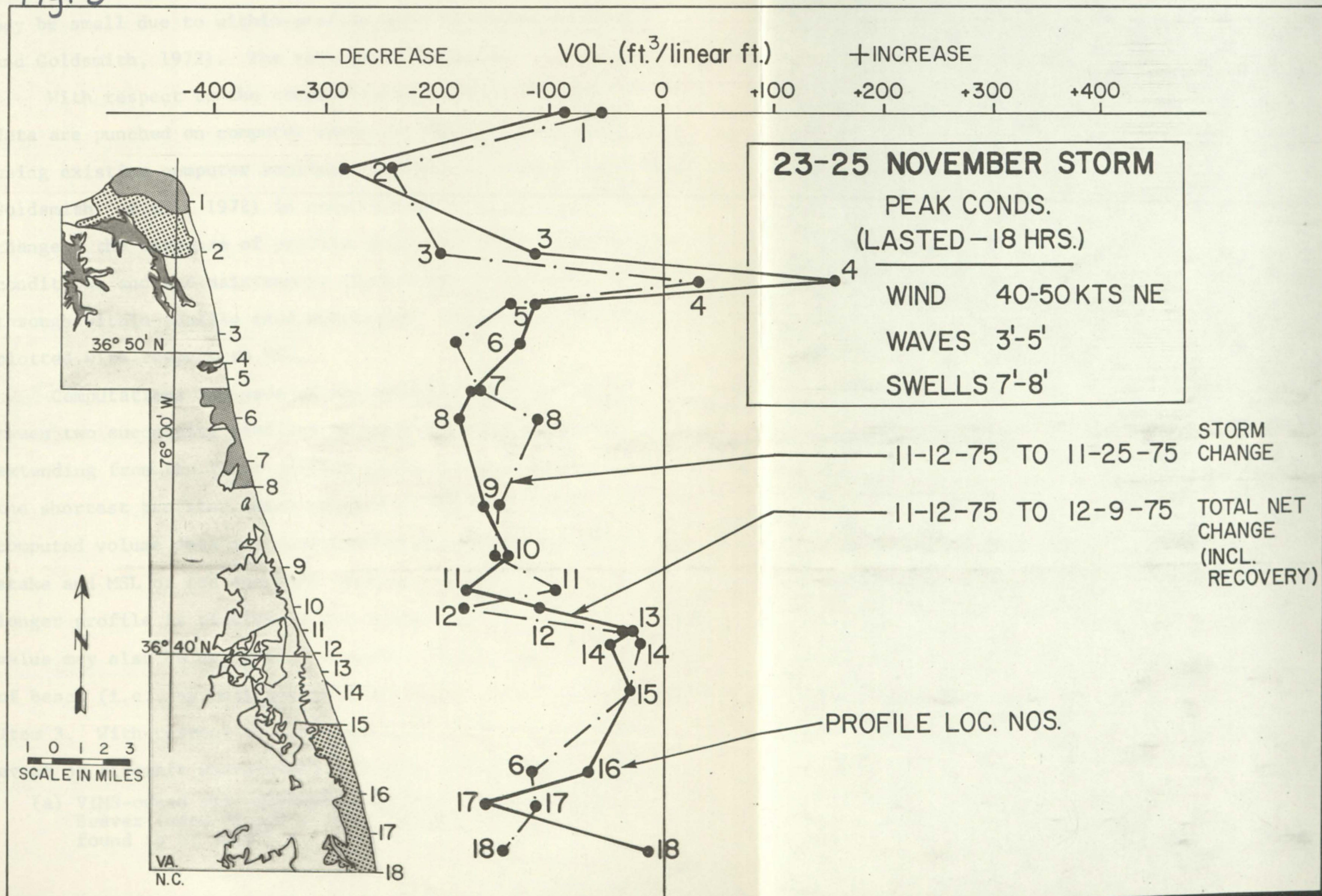
an attempt to portray the appearance of the beach, and are meant to supplement the quantitative measured profile changes also presented in these reports. For example, a beach can

Fig. 7



an attempt to portray the appearance of the beach, and are meant to supplement the quantitative measured profile changes also presented in these reports. For example, a beach can

Fig. 8



(b) Non Aviation - Casema 172

an attempt to portray the appearance of the beach, and are meant to supplement the quantitative measured profile changes also presented in these reports. For example, a beach can appear highly changed, but net computed profile area changes may be small due to within-profile sand movements (Colonell and Goldsmith, 1972). The reverse is also true.

7.4 With respect to the computational methods the profile data are punched on computer cards at VIMS and processed using existing computer routines (Colonell and Goldsmith, 1972; Goldsmith, et al., 1972) in order to determine sand volume changes, the response of profile shapes to differing energy conditions and the maintenance of distinctive profile shapes through within-profile sand movements. These profiles are plotted with respect to MSL.

7.4.1 Computations are made of the vertical area change between two successive profiles at each foot along the profile, extending from the front profile stake to the seaward end of the shortest profile, which extends to MSL, or beyond. The computed volume data are reported for the area between the stake and MSL of the shortest profile. Additionally, the longer profile is plotted to its seaward end. This area change value may also be considered a volume change per linear foot of beach (i.e., by multiplying area by 1).

7.5 Item 3. With respect to an alternative flight plan in the event of aircraft unavailability, many alternatives exist:

- (a) VIMS-owned six-passenger high-wing, flat-tailed Beaver (used on one profile aerial flight and found to be ideal).

- (b) Ram Aviation - Cessna 172
- (c) Patriot Aviation - Cessna 172
- (d) Jamestown Airport - Cessna 172
- (e) Other low-winged aircraft are also available

8.0 Analysis of Work

8.1 The required profile data collections, trip to Currituck County, North Carolina, aerial overflights, and wave observations have been accomplished.

9.0 Other Related Matters

9.1 Table 5 was compiled by the Norfolk District of the Corps and indicates the amounts of sand artificially placed on Virginia Beach between 1952 and 1975. Most of the material was placed on the beach from 49th Street to Rudee Inlet by truck haul or pumping from nearby areas.

9.2 Figure 9 is a copy of the proposed rules for Back Bay National Wildlife Refuge, Virginia as recorded in the Federal Register (Vol. 41, No. 60) of Friday, March 26, 1976.

9.3 The following article appeared in the January, 1976 issue of "Audubon" Magazine and may be of interest since it concerns itself with part of the study area: "Fare-Thee-Well, Currituck Banks". Audubon Magazine, January, 1976, Vol. 78, No. 1, pp. 22-35.

10.0 Conformance to Schedule

All work required in the seventh quarter of the contract has been accomplished.

11.0 Work Planned for Next Quarter

Beach profile measurements and other data collection will be accomplished as required for the Eighth Quarter.

TABLE 5

GROSS QUANTITIES OF MATERIAL PLACED ON BEACH F. Y. 1952-75

<u>F. Y.</u>	<u>Initial Restoration (C. Y.)</u>	<u>Truck Haul (C. Y.)</u>	<u>Early Inlet Dredging (C. Y.)</u>	<u>Inlet By-Passing (C. Y.)</u>	<u>Owl's Creek (C. Y.)</u>	<u>P. L. 875 Dredging (C. Y.)</u>	<u>Inlet "New Source" (C. Y.)</u>	<u>Total (C. Y.)</u>
1952	20,000							20,000
1953	1,363,000							1,363,000
1954	60,000	34,000	44,000					138,000
1955		30,000		17,500				47,500
1956				35,000				35,000
1957				44,000	80,000			124,000
1958				50,000	70,000			120,000
1959				46,000	93,000			139,000
1960				48,000	84,000			132,000
1961				62,000	91,000			153,000
1962		113,000 ¹		53,000	101,000	205,000		472,000
1963					121,000			121,000
1964					215,000			215,000
1965					218,000			218,000
1966					174,000			174,000
1967					177,500			177,500
1968				139,000	8,400			147,400
1969				100,500	0			100,500
1970				104,000	143,800			247,800
1971				127,000	103,600			230,600
1972		43,100		114,900	230,500		101,300	489,800
1973		12,000		86,300	260,300			358,600
1974		12,500		103,300	49,700			167,500
1975		112,470		160,960				273,430

NOTES:

1. 113,000 C. Y. Truck haul placed under P. L. 875.

PROPOSED RULES

[50 CFR Part 28]
**BACK BAY NATIONAL WILDLIFE
 REFUGE, VIRGINIA**

Public Access

The Department of the Interior is considering the issuance of regulations to govern public access, use and recreation on the Back Bay National Wildlife Refuge. Prior regulations were published in the FEDERAL REGISTER, 40 FR 12090-12091, March 17, 1975.

BACKGROUND

For many years the Back Bay Refuge was open to the public for a number of purposes, and free access to the beach by vehicles was permitted.

In 1961, persons using the refuge for various purposes numbered less than 10,000. During the late 1960's the development of lands south of the refuge for recreational/residential purposes, and the increase in the availability and popularity of off-road recreational vehicles resulted in a sharply accelerated rate of public activities. By 1970 the number of persons using the refuge had increased to 235,000; and in 1971, to 348,000. All but a small fraction of this increase involved off-road vehicular use over the ocean beach portion of the refuge.

By 1969 it became evident that (total public) use had resulted in environmental degradation to the extent that a serious conflict existed with respect to the administration of the entire refuge for its intended purposes.

Following careful analysis it was determined that certain controls of vehicular uses of the beach were required to reverse the trend of refuge habitat destruction. Consequently, the U.S. Fish and Wildlife Service adopted regulations in March 1973 that required authorized users to obtain permits for access. Recreational vehicle traffic was prohibited. Permits were issued to property owners in the proposed False Cape State Park area, permanent full-time residents of the Outer Banks in North Carolina and their visitors, commercial fishermen, emergency, service and utility vehicles, and school buses.

Implementation of restrictive regulations was delayed by the filing of a legal action in Federal district court. The district court ultimately sustained the regulations restricting access, which decision was upheld by the Fourth Circuit Court of Appeals.

The matter of regulating beach use at Back Bay National Wildlife Refuge has continued to be the subject of considerable discussion and consternation by the many persons now denied vehicular access to recreational properties in North Carolina. The proposed amendment would provide limited access privileges to owners of certain improved property under a permit system administered by the refuge manager. Current estimates indicate this would involve approxi-

mately 100 permittees in addition to the 42 current permit holders.

This proposal would modify the previous regulations by allowing access along approximately three miles of ocean beach by motorized vehicles to such persons qualifying for a permit under a new set of criteria. Permits would be granted to those persons residing, owning, or leasing land south of the Back Bay National Wildlife Refuge in the False Cape State Park acquisition area, Virginia, and to those owners of improved property on the Outer Banks, Currituck County, North Carolina, from the North Carolina line south to and including the Village of Corolla, North Carolina. This access would be afforded during the periods 6 A.M. to 9 A.M. and 5 P.M. to 8 P.M. daily.

Prior regulations which governed access through the Back Bay National Wildlife Refuge through December 31, 1975, were issued after completion of the rulemaking process prescribed in the Administrative Procedures Act, 5 U.S.C. 553, including a public hearing, and after preparation of an environmental impact statement, FES 72-33, dated December 29, 1972. An assessment has been prepared which addresses the impacts anticipated by the current proposal in light of the environment and impacts analyzed in detail in FES 72-33. Single copies are available from the Regional Director, U.S. Fish and Wildlife Service, U.S. Post Office and Courthouse, Boston, Massachusetts 02109.

It has been determined that the proposed modification of the previous regulations is not a major federal action significantly affecting the quality of the human environment pursuant to the National Environmental Policy Act.

Additional funding will be provided the Back Bay Refuge in Fiscal Year 1976 and the transition quarter to offset costs of the proposed vehicle permit program as well as to provide for increased enforcement generally, in order that refuge resource management programs will not be further impacted.

In issuing these regulations, it is the policy of the Department that no permits authorizing access across the refuge beach by private vehicles will be issued for the period after December 31, 1979, and that this policy will be set forth in future special regulations for this refuge.

The policy of the Department of the Interior is, whenever practical, to afford the public an opportunity to participate in the rulemaking process. Accordingly, interested persons may submit written comments, suggestions or objections regarding the proposed revision to the Regional Director, U.S. Fish and Wildlife Service, U.S. Post Office and Courthouse, Boston, Massachusetts 02109, by April 26, 1976.

PROPOSED REGULATIONS

These regulations are proposed under the authority of section 4 of 80 Stat. 927, 16 U.S.C. 668dd; 76 Stat. 654, 16 U.S.C. 460k-3; and 65 Stat. 186, 16 U.S.C. 715a.

is a translation, the information required by 481 DM 1.3B shall be furnished. Publications shall be sent to the National Resources Library at the following address:

Department of the Interior, Office of Library and Information Services, Gifts and Exchanges Section, 18th and C Streets, Washington, D.C. 20240.

Doc. 76-8596 Filed 3-25-76; 8:45 am]

[43 CFR Part 5]

**PICTURES, TELEVISION PRODUCTIONS
 OR SOUND TRACKS**

**Areas Administered by the Bureau of
 Indian Affairs**

It is hereby given that it is proposed to amend § 5.2 of Part 5, Subtitle Title 43 of the Code of Federal Regulations by adding new paragraphs designated (e) and (f). This amendment is proposed pursuant to the authority contained in Section 13 of the Act of October 6, 1966 (80 Stat. 379, 25 U.S.C.

The purpose of this amendment is to prevent injuries or losses to Indian livestock which may have been used in film pictures or making television productions and to encourage that tribes be given a chance to review an advance copy of script for motion pictures, television productions or sound tracks.

It is the policy of the Department of the Interior, whenever practicable, to afford the public an opportunity to participate in the rulemaking process. Accordingly, interested persons may submit comments, suggestions, or objections regarding the proposed amendment to the Commissioner, Bureau of Indian Affairs, 1951 Constitution Ave. NW., Washington, D.C. 20245, on or before March 19, 1976.

It is proposed to add new paragraphs designated (e) to § 5.2 of Part 5, Subtitle Title 43 of the Code of Federal Regulations to read as follows:

Areas administered by the Bureau of Indian Affairs.

(e) Use of Indian livestock. If the film pictures or the making of television productions or sound tracks requires the use of Indian livestock, a suitable arrangement should be made with the tribe to prevent injuries or losses.

(f) Review of advance copy of script. It is strongly suggested that tribes be afforded the courtesy of having a chance to review an advance copy of the script for motion pictures, television productions or sound tracks in order to check for accuracy.

KENT FRIZZELL,

Under Secretary of the Interior.

March 19, 1976.

Doc. 76-8595 Filed 3-25-76; 8:45 am]

Accordingly it is proposed that the 1975 special regulations governing public access, use and recreation be revised as set forth below:

§ 28.28 Special regulations, public access, use, and recreation; for individual wildlife refuge areas.

VIRGINIA

BACK BAY NATIONAL WILDLIFE REFUGE

(a) *General Use.* (1) Entry on foot or by motor vehicle on designated travel routes in public use areas is permitted for the purpose of nature study, sight-seeing, wildlife observation, photography, hiking, surf fishing, surfing, swimming, and bicycling during daylight hours.

(2) Swimming and surfing are permitted only on that portion of the beach lying between the north boundary of the refuge and the dune crossing at the field headquarters. No lifeguards are provided. Swimming and surfing will be at the visitor's own risk.

(3) The parking lot at the field headquarters is reserved for persons engaged in surf fishing and nature study. Surf fishing is permitted in accordance with applicable State regulations.

(4) Open fires are not permitted. Portable grills with a contained fuel supply are permitted on the beach north of the field headquarters.

(5) Pets on a leash not exceeding 10 feet in length are permitted on refuge public use areas.

(6) Bicycles and registered motor vehicles are permitted on the paved refuge access road and on the parking area at field headquarters. All other types of motorized vehicles are prohibited except as specifically authorized in pursuant to these regulations.

(b) *Access Permits.* (1) Access to and travel along the ocean beach portion of the refuge by motorized vehicles may be allowed between the dune crossing entrance at the field headquarters and the south boundary of the refuge only after a permit has been issued by the refuge manager or his designated representative.

(2) Permits will be issued for such period of time as appears justifiable to the refuge manager, taking into account the need for and duration of access required by the applicant. In no case will the permit remain in effect beyond December 31 of the year in which it is granted. Permits may be renewed upon the submittal of a proper application and the payment of required fees.

(3) No more than one permit per piece of improved property as defined herein will be issued to owners of such property meeting the specified qualifications, as determined by the refuge manager. Permits must be displayed at all times while on refuge property in such a manner as to be readily visible on any motor vehicle. Permits shall be non-transferable. No more than one vehicle owned by the permit holder shall be registered with the refuge manager for use in accordance with these regula-

tions. That vehicle shall be operated only by the permit holder or a member of his household on the refuge beach.

(4) All permittees qualifying as residential property owners are required to pay to the United States a \$90.00 fee to defray costs of administering the permit program prior to the granting of a permit.

(5) Permits will be issued only to those owners of property and non-residential users who meet the following qualifications:

(i) *Residential.* (a) To persons now residing on, owning, or leasing land with permanent habitable dwelling south of the refuge in the False Cape State Park acquisition area, Virginia.

(b) To owners as of October 6, 1975, of improved property on the Outer Banks of Currituck County, North Carolina, from the North Carolina line south to and including, the village of Corolla, North Carolina, which improved property met the following criteria as of October 6, 1975:

Mobile Homes: Mobile homes having minimum dimensions of 8' x 32' located on a lot prior to March 2, 1972, as evidenced by a septic tank permit issued prior to that date provided by the applicant, and being maintained in compliance with all state and local regulations, ordinances and codes, including the payment of property taxes;

Dwellings: A dwelling shall be described as a habitable dwelling on which taxes in excess of those paid on unimproved land have been levied and paid, and which dwelling was constructed and is maintained in compliance with all state and local regulations, ordinances and codes. The burden of proof of showing that a dwelling meets these qualifications shall be on the property owner by presentation of appropriate documentation.

Such permittees shall be restricted to one round trip per day. Travel is restricted to the designated route of travel between the hours of 6 A.M.-9 A.M. and 5 P.M. to 8 P.M.

(ii) *Non-residential:* (a) To full-time commercial fisherman whose livelihood since on or before 1972 has been dependent upon ingress, egress, or crossing refuge land. Not more than three (3) permits for commercial fishing on the refuge will be in force at one time. Selection of refuge fishing permits will be determined by a lottery when the number of qualified applicants, as described above, exceeds the number of permits available.

(b) For a school bus transporting resident students to and from the False Cape area during the school term.

(c) For service and public utility vehicles on business calls, upon verification of a request from a resident as described in (i) above.

Service vehicles. Any vehicle owned or operated by or on behalf of an individual, partnership, or corporation engaged entirely in the business or furnishing construction, maintenance, or repair services, including but not limited to building, plumbing, septic tanks, installation or repair of household appliances, carpentry, painting, landscaping, garbage collection, and delivery services.

Public utility vehicles. Any vehicles owned or operated by a public utility company enfranchised or licensed to supply Outer Banks residents with bottle gas, electricity, fuel oil, water, or telephone service.

(6) Excluded from the restrictions of these regulations are any military, fire, emergency, or law enforcement vehicle when used for emergency purposes and official use by an employee, agent, or designated representative of the Federal, State, or local government in the course of his official duties.

(7) In an emergency, the refuge manager may suspend, for such period or periods as he shall deem advisable, any or all of the foregoing restrictions on vehicular travel, and he may announce such suspension by whatever means are available. In the event of high winds and waves, storms, adverse weather conditions or high tides, the refuge manager may close all or any portion of the refuge to vehicular travel for such period as he shall deem advisable in the interest of public safety, or may adjust the periods of access otherwise prescribed pursuant to (5) (i) (b) above.

(8) The refuge manager may prescribe restrictions as to the types of vehicles to be permitted to insure public safety and adherence to all applicable rules and regulations.

(9) Violators of these special regulations and all other regulations pertaining to the Back Bay National Wildlife Refuge will be subject to legal action as prescribed by 50 CFR 27.10, including revocation of such permits.

(10) The provisions of this special regulation are effective through December 31, 1976. They supplement the regulations which govern recreation on wildlife refuge areas generally, which are set forth in Title 50.

The refuge, comprising approximately 4,600 acres, is delineated on a map available from the Refuge Manager, Back Bay National Wildlife Refuge, Pembroke Bldg., Suite 218, 257 Pembroke Office Park, Virginia Beach, Virginia 23462, from the Regional Director, U.S. Fish and Wildlife Service, U.S. Post Office and Courthouse, Boston, Massachusetts 02109.

KENT FRIZZELL,
Under Secretary.

MARCH 23, 1976.

[FR Doc.76-9748 Filed 3-25-76;3:45 am]

DEPARTMENT OF AGRICULTURE

Agricultural Stabilization and Conservation Service

[7 CFR Part 719]

RECONSTITUTION OF FARMS AND ALLOTMENTS

Amendment to Effective Date of Reconstitution

Pursuant to the Agricultural Adjustment Act of 1938, as amended (7 U.S.C. 1281, et seq.), it is proposed to amend the provisions of Part 719 of Title 7 deal-

12.0 References.

13.0 Appendices A, B, C, D.

Cottrill, J. and V. Goldsmith, 1972. Computational methods for the analysis of beach and wave dynamics, p. 198-222 in *Forbes, M. (ed.), Proc. Quantitative Geomorph. Symp.*, S.U.N.Y. at Binghamton, N.Y., 313 p.

Goldsmith, V., J. Cottrill and P. Turbide, 1972. Development of a coastal data bank for the northeastern United States, p. 12-21 in Section 16, Proc. 24th Intern. Geol. Congr., Montreal, Canada, Aug. 1972.

Goldsmith, V., 1972. Coastal processes of a barrier island complex and adjacent deep floor: Monomoy Island-Nauset Spit, Cape Cod, Massachusetts. Ph.D. dissertation, Geology Department, Univ. of Mass., 469 p.

Sturm, S.C., G.H. Thomas and V. Goldsmith, 1976. "Long-Term" Beach Trends from Monthly Profile Data: Southeastern Virginia: Geol. Soc. Am. mtg., Arlington, Virginia, March 25, 1976.

References

Colonell, J. and V. Goldsmith, 1972. Computational methods for the analysis of beach and wave dynamics, p. 198-222 in Morisawa, M. (ed.), Proc. Quantitative Geomorph. Symp., S.U.N.Y. at Binghamton, N.Y., 315 p.

Goldsmith, V., J. Colonell and P. Turbide, 1972. Development of a coastal data bank for the northeastern United States, p. 12-21 in Section 16, Proc. 24th Intern. Geol. Congr., Montreal, Canada, Aug. 1972.

Goldsmith, V., 1972. Coastal processes of a barrier island complex and adjacent ocean floor: Monomoy Island-Nauset Spit, Cape Cod, Massachusetts. Ph.D. dissertation, Geology Department, Univ. of Mass., 469 p.

Sturm, S.C., G.R. Thomas and V. Goldsmith, 1976. "Long-Term" Beach Trends from Monthly Profile Data: Southeastern Virginia: Geol. Soc. Am. mtg., Arlington, Virginia, March 25, 1976.

APPENDIX A

BEACH PROFILE DATA (1975-1976)

December 9
January 5
February 12

Report to

Coastal Engineering Research Center

U.S. Army Corps of Engineers

Kingman Building

Fort Belvoir, Virginia 22060

from

Victor Goldsmith (Principal Investigator)

Susan Sturm

George Thomas

(DACW 72-74-C-0008)

Virginia Institute of Marine Science
Gloucester Point, Virginia 23062

April 15, 1976

APPENDIX B

ORIGINAL FIELD DATA (1975-1976)

December 9
January 5
February 12

Report to

Coastal Engineering Research Center

U.S. Army Corps of Engineers

Kingman Building

Fort Belvoir, Virginia 22060

from

Victor Goldsmith (Principal Investigator)

Susan Sturm

George Thomas

(DACW 72-74-C-0008)

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062

April 15, 1976

APPENDIX C

WAVE OBSERVATION DATA

December, 1975

January, February, 1976

Report to

Coastal Engineering Research Center

U.S. Army Corps of Engineers

Kingman Building

Fort Belvoir, Virginia 22060

from

Victor Goldsmith (Principal Investigator)

Susan Sturm

George Thomas

(DACW 72-74-C-0008)

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062

April 15, 1976

APPENDIX D

PLOTS OF LONG-TERM BEACH TRENDS FOR PROFILES 1-18

August, 1969 - February, 1976

and

September, 1974 - February, 1976

Report to

Coastal Engineering Research Center

U.S. Army Corps of Engineers

Kingman Building

Fort Belvoir, Virginia 22060

from

Victor Goldsmith (Principal Investigator)

Susan Sturm

George Thomas

(DACW 72-74-C-0008)

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062

April 15, 1976

CUVOL
 301.500 *
 274.500 *
 247.500 *
 220.500 *
 193.500 *
 166.500 *
 139.500 *
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PROFILE 1
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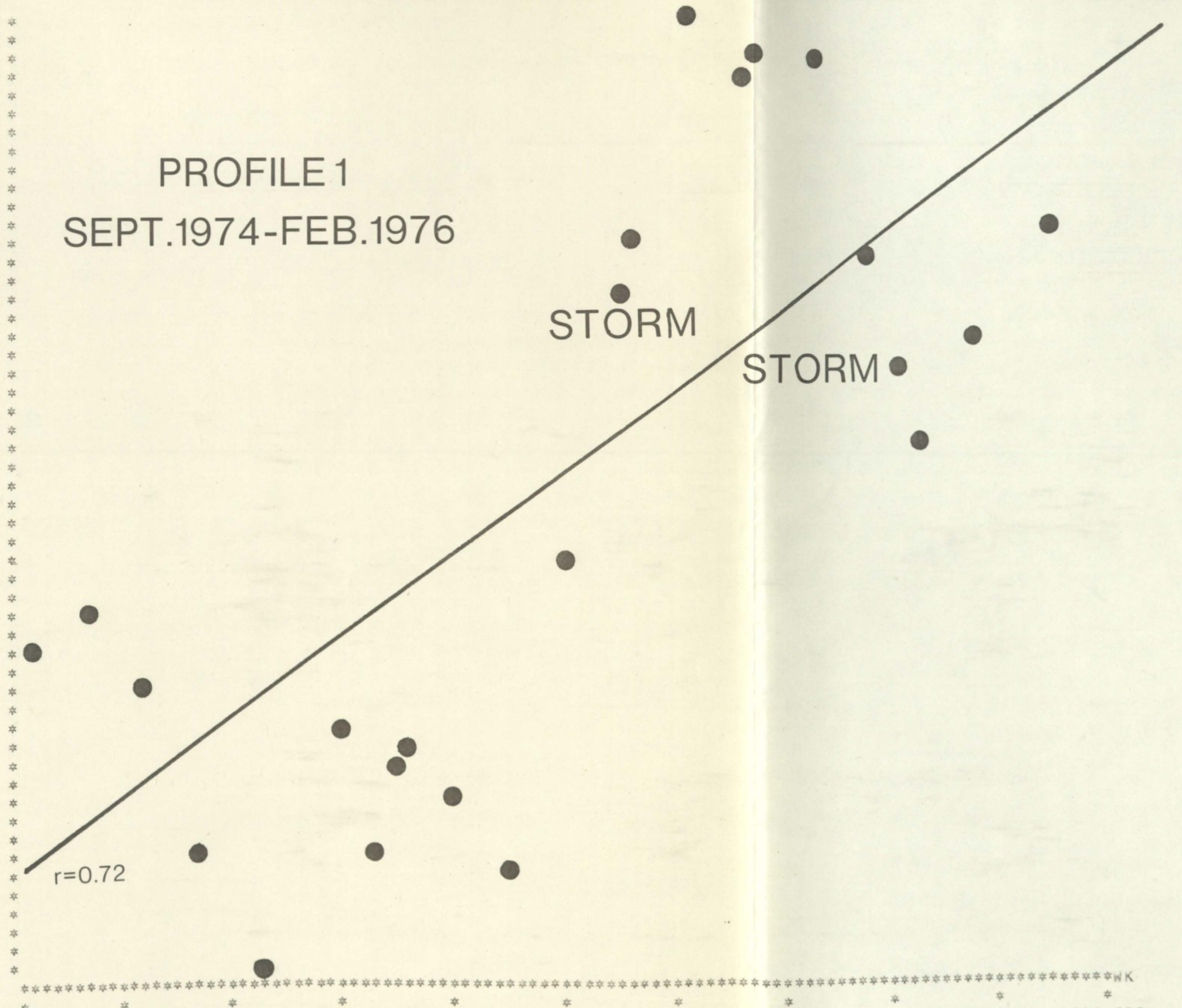
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JULY 1975

JAN.1976



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STORM

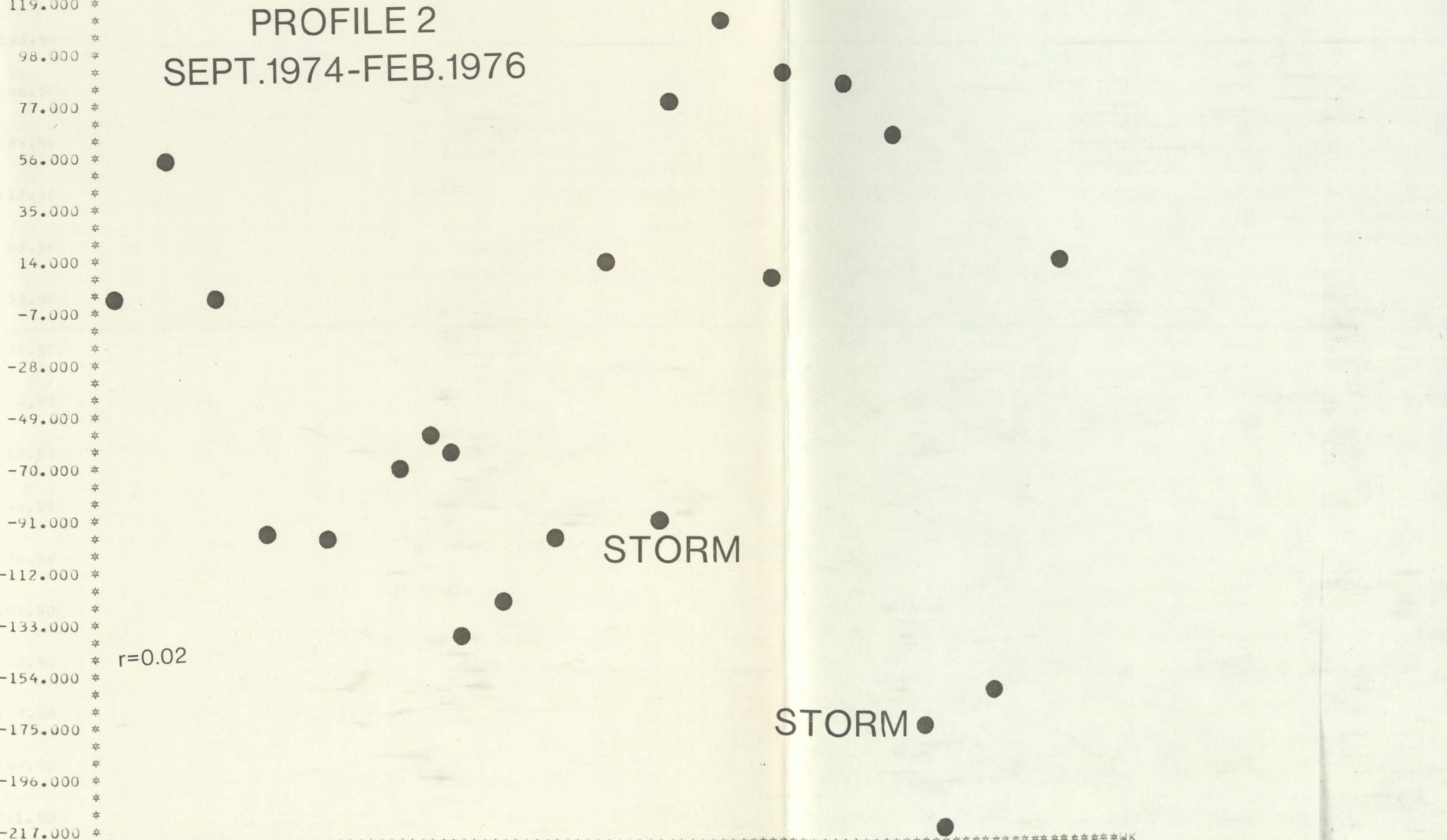
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JAN.1975

JULY 1975

JAN.1976



CUVOL
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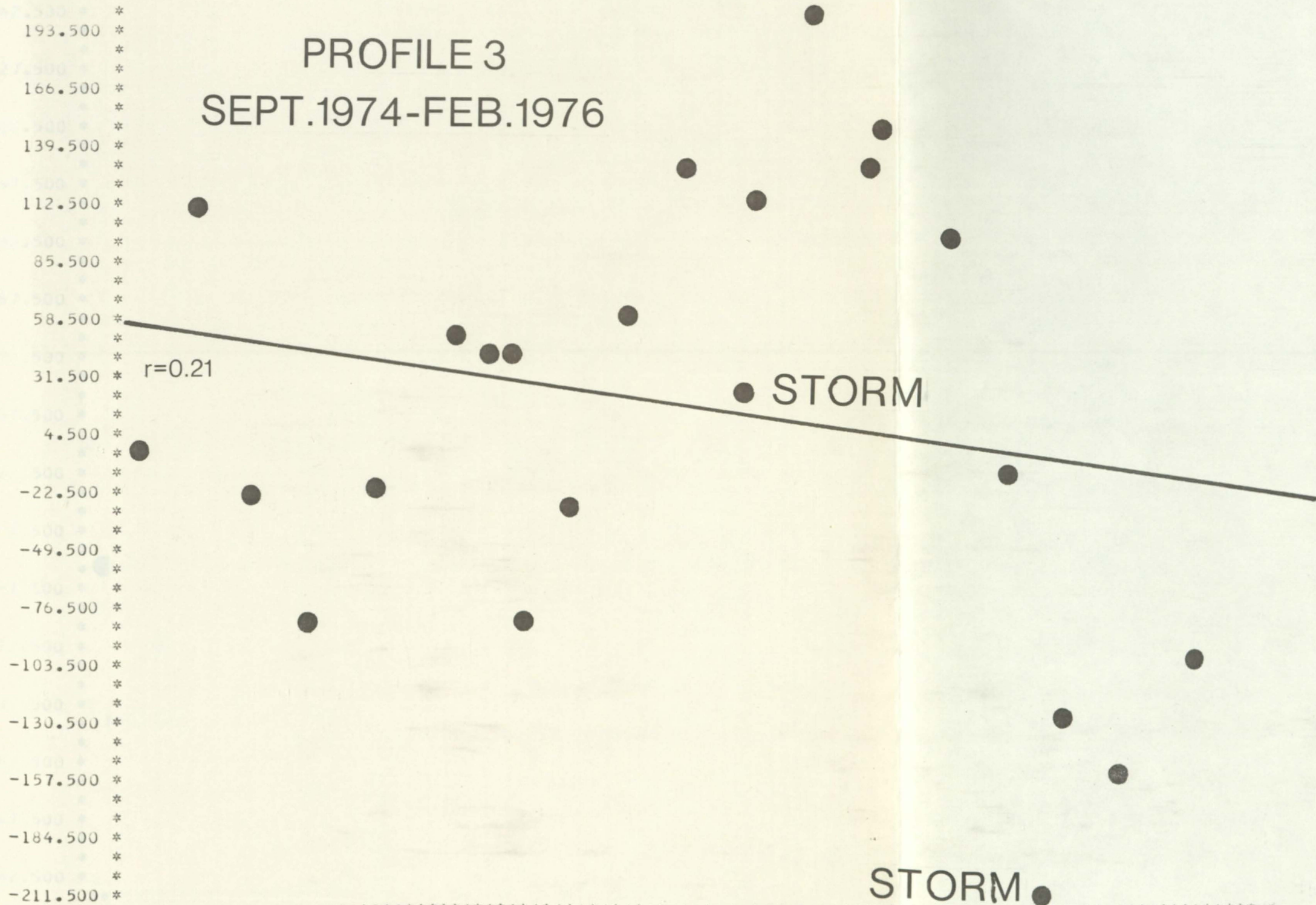
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STORM

STORM

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 JAN.1975 JULY 1975 JAN. 1976



CUVOL
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PROFILE 4
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STORM

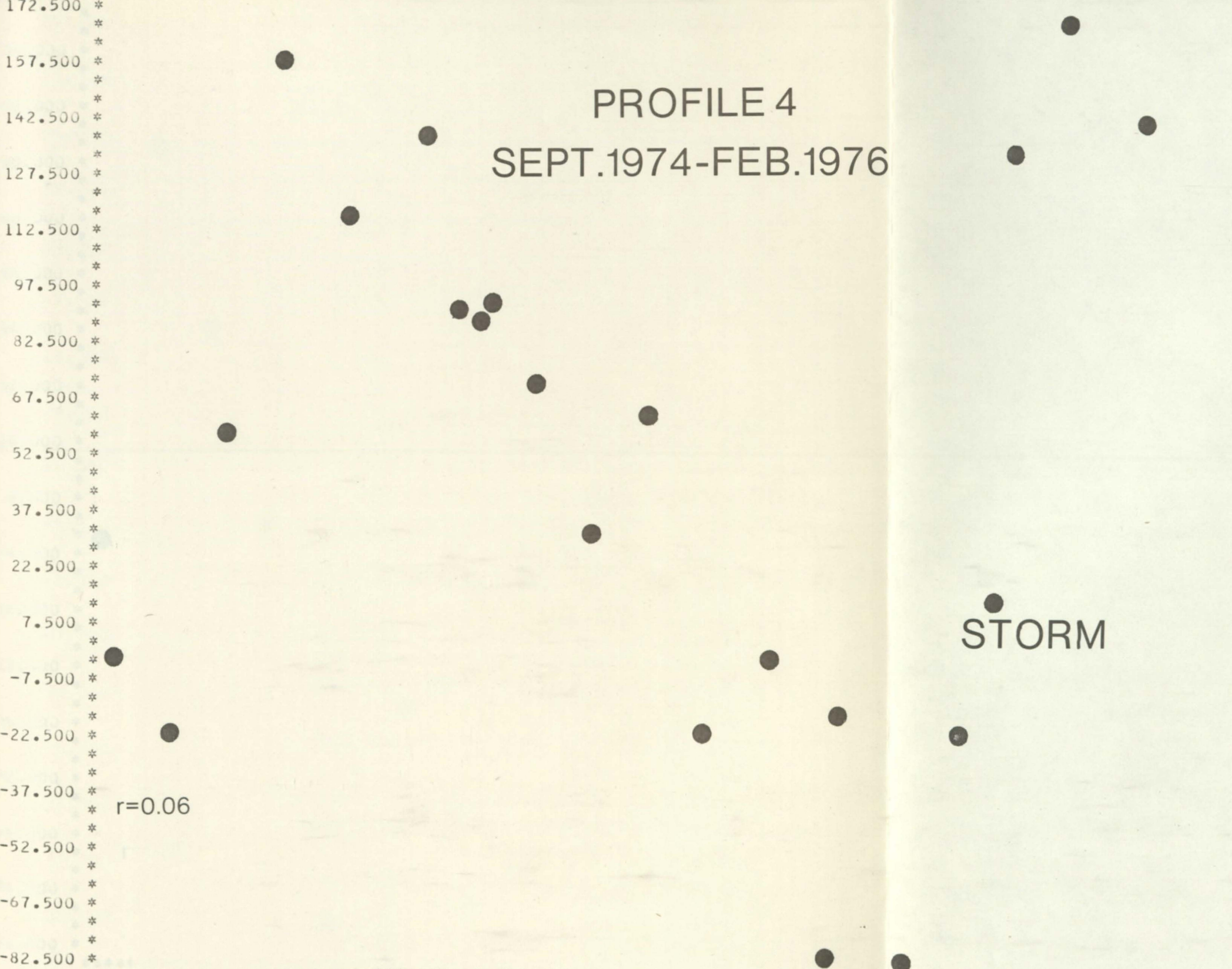
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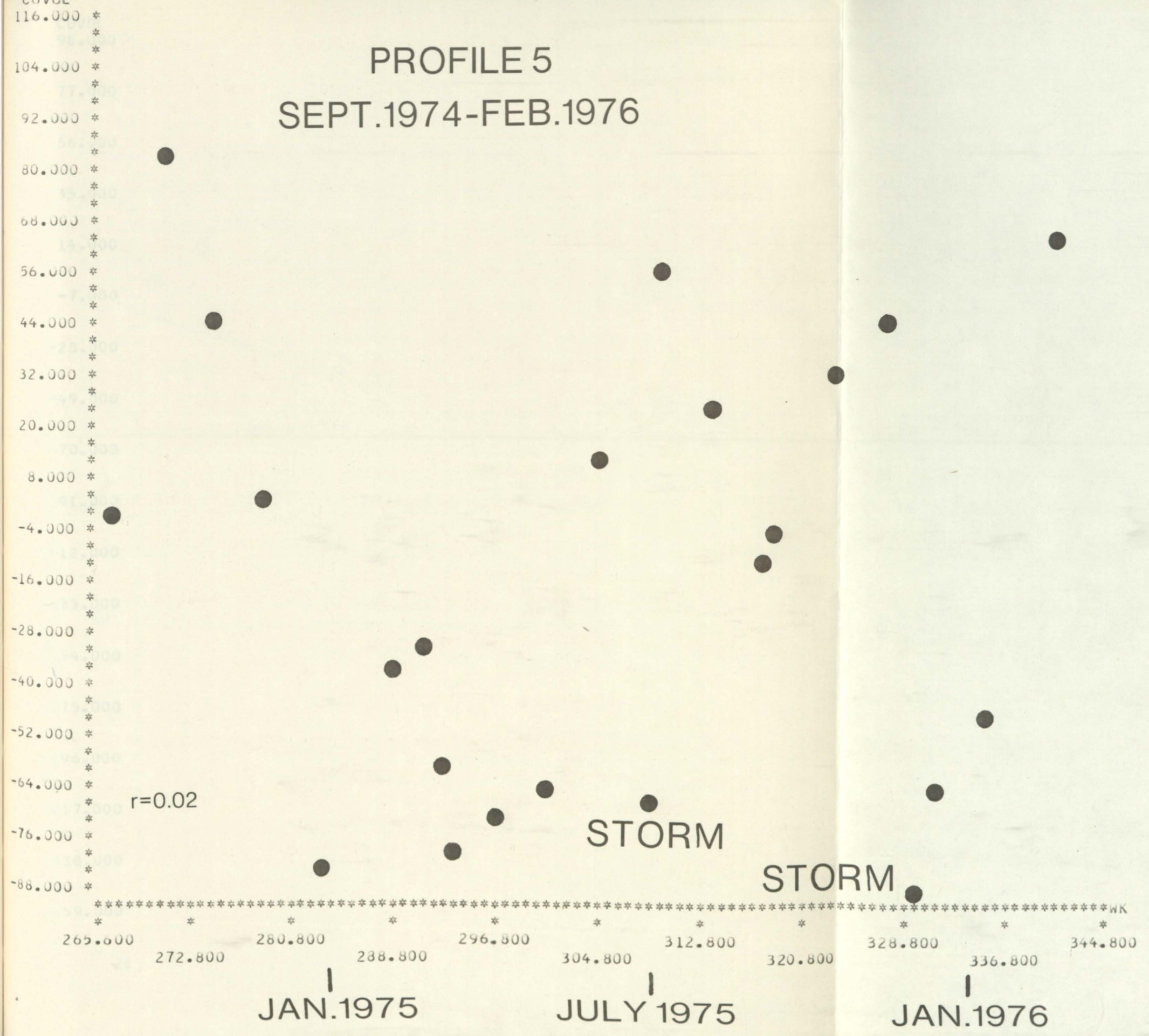
JULY 1975

JAN.1976



PROFILE 5

SEPT.1974-FEB.1976



CUVOL

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PROFILE 6 SEPT.1974-FEB.1976

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STORM

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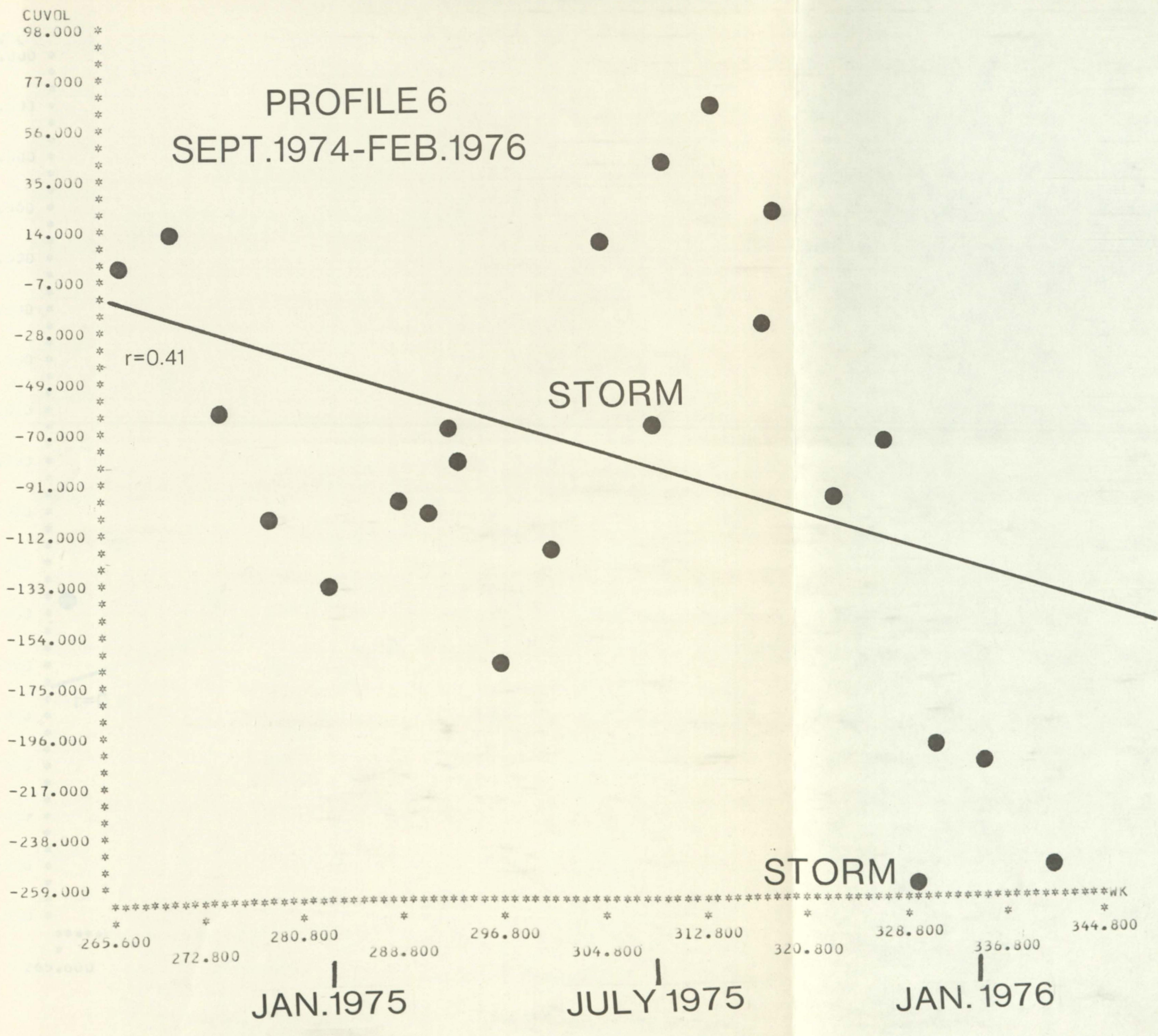
336.800

344.800

JAN.1975

JULY 1975

JAN.1976



CUVDL
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174.000 *
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156.000 *
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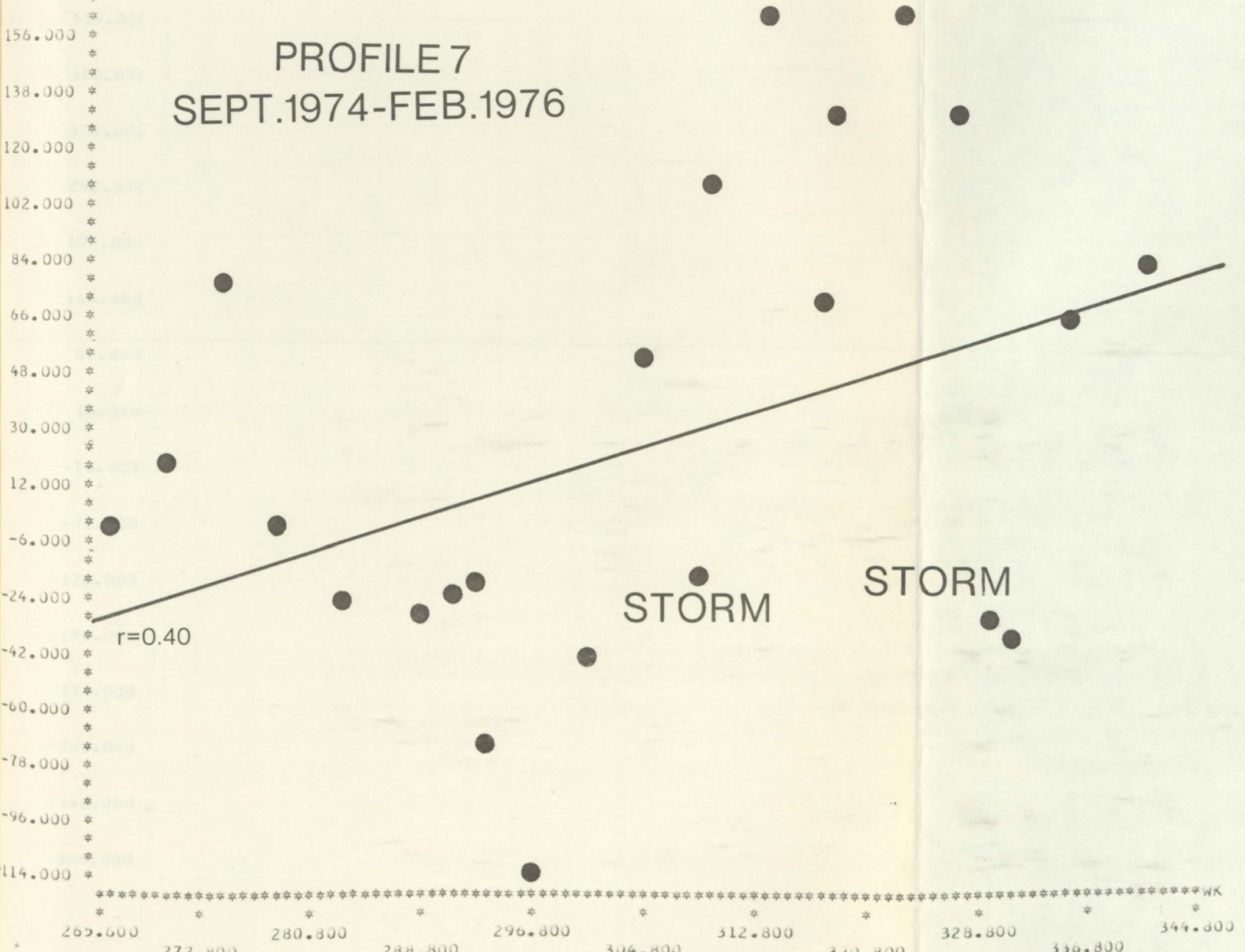
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JAN.1975

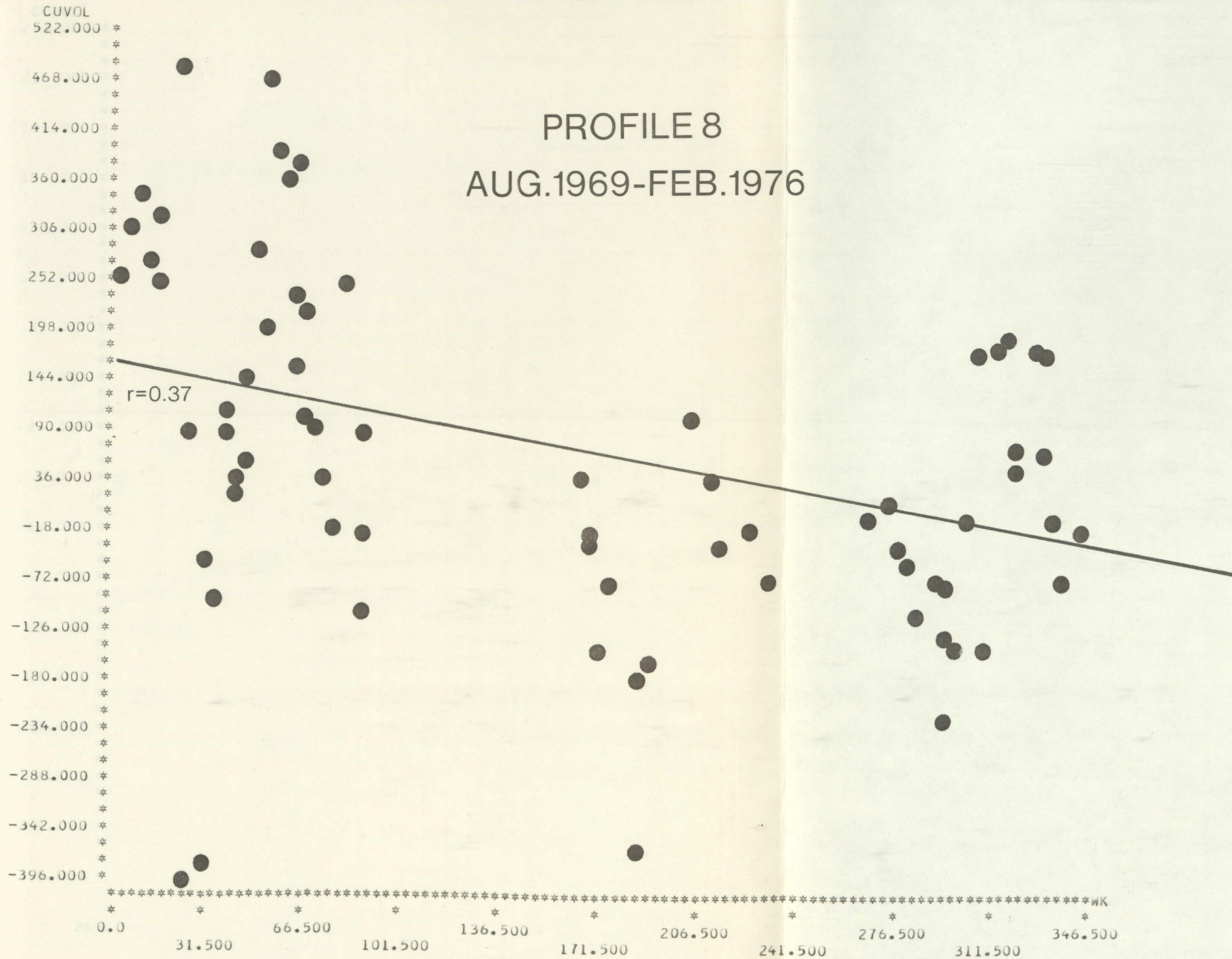
JULY 1975

JAN.1976



PROFILE 8

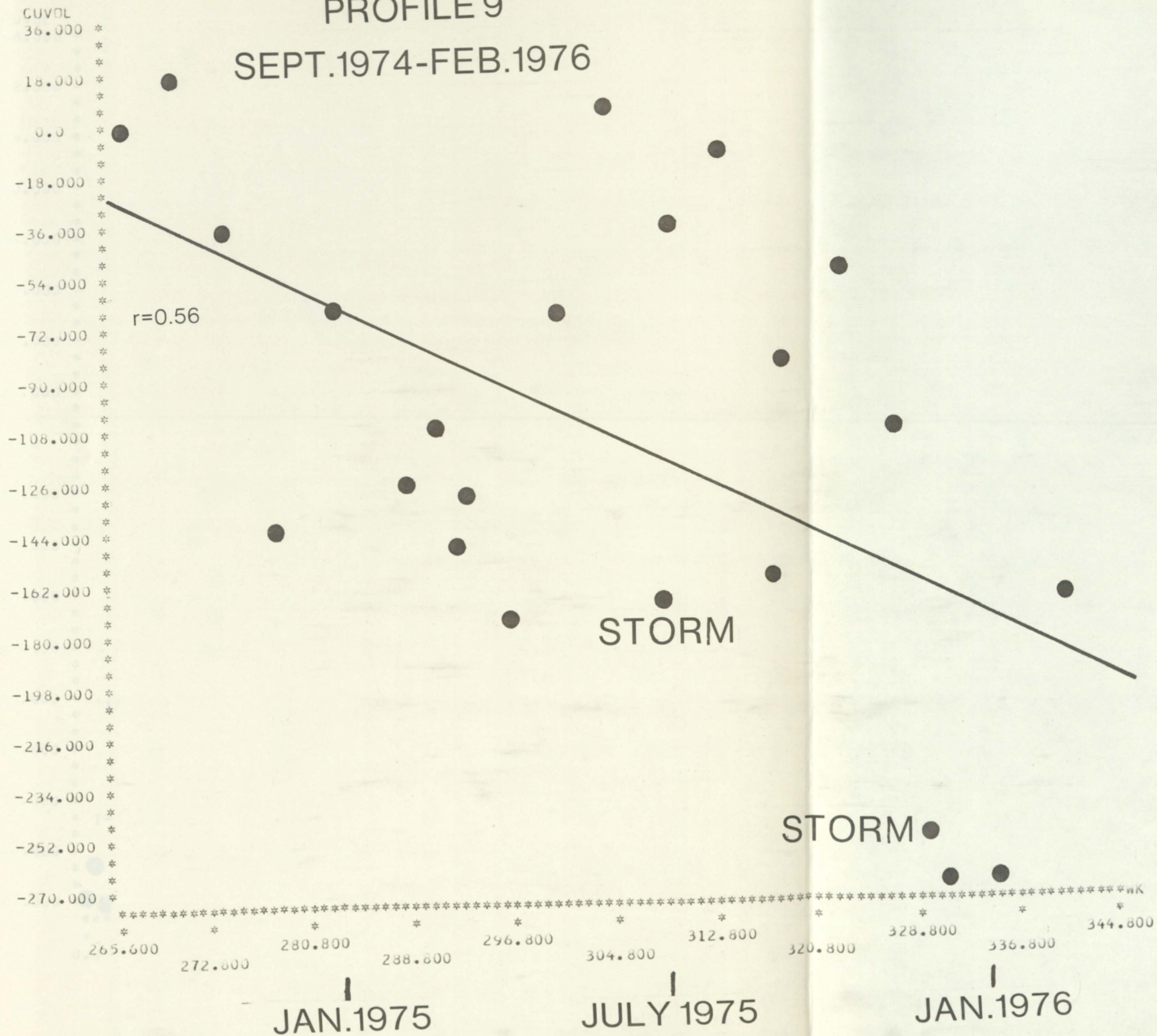
AUG.1969-FEB.1976



JAN.1975

PROFILE 9

SEPT.1974-FEB.1976



JAN.1975

JULY 1975

JAN.1976

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PROFILE10

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JAN.1975

JULY 1975

JAN.1976



CUVOL
52.500 *
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STORM

STORM

PROFILE 11
SEPT.1974-FEB.1976

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JULY 1975

JAN.1976

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CUVOL

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STORM

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JAN.1975

JULY 1975

JAN.1976

*****WK

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PROFILE 13

SEPT.1974-FEB.1976

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STORM

STORM

*****WK
* * * * *
265.600 * 272.800 * 280.800 * 288.800 * 296.800 * 304.800 * 312.800 * 320.800 * 328.800 * 336.800 * 344.800 *

JAN.1975

JULY 1975

JAN.1976

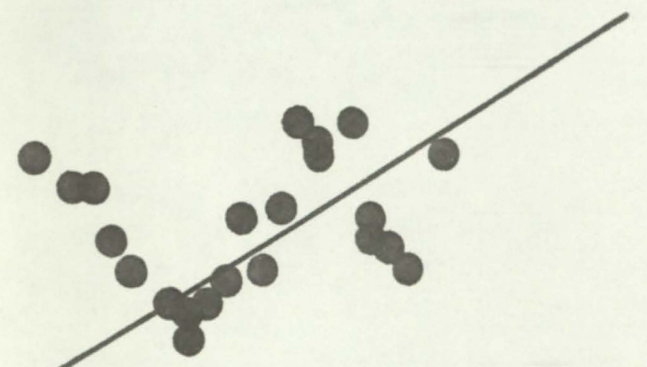


CUVDL
440.000 *
320.000 *
200.000 *
80.000 *
-40.000 *
-160.000 *
-280.000 *
-400.000 *
-520.000 *
-640.000 *
-760.000 *
-880.000 *
-1000.000 *
-1120.000 *
-1240.000 *
-1360.000 *
-1480.000 *
-1600.000 *

PROFILE14
AUG.1969-FEB.1976

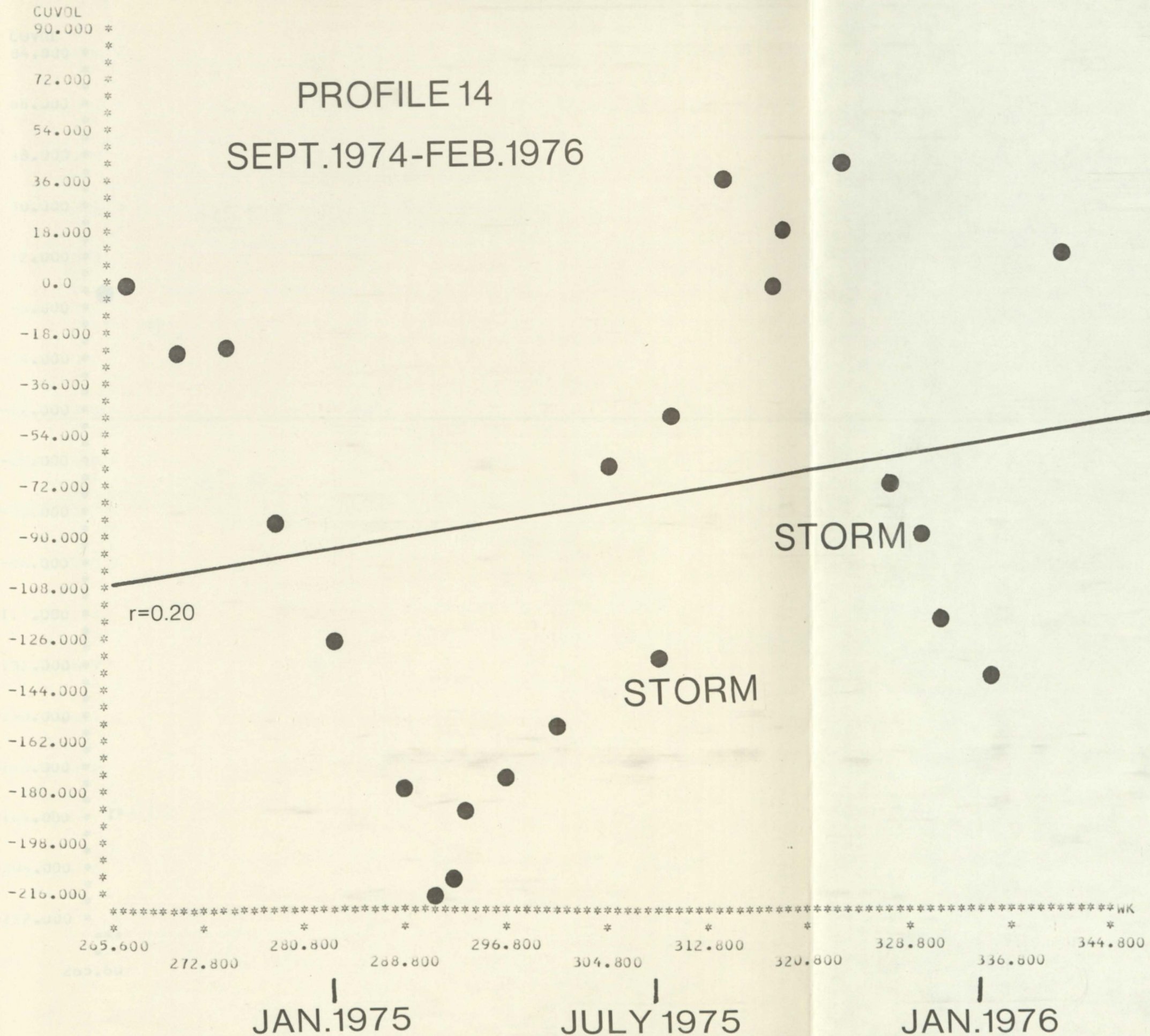
r=0.92

*****wK
* * * * *
0.0 31.500 66.500 101.500 136.500 171.500 206.500 241.500 276.500 311.500 346.500



PROFILE 14

SEPT.1974-FEB.1976



CUVOL
84.000 *
*
*
66.000 *
*
*
48.000 *
*
*
30.000 *
*
*
12.000 *
*
*
-6.000 *
*
*
-24.000 *
*
*
-42.000 *
*
*
-60.000 *
*
*
-78.000 *
*
*
-96.000 *
*
*
-114.000 *
*
*
-132.000 *
*
*
-150.000 *
*
*
-168.000 *
*
*
-186.000 *
*
*
-204.000 *
*
*
-222.000 *

PROFILE 15

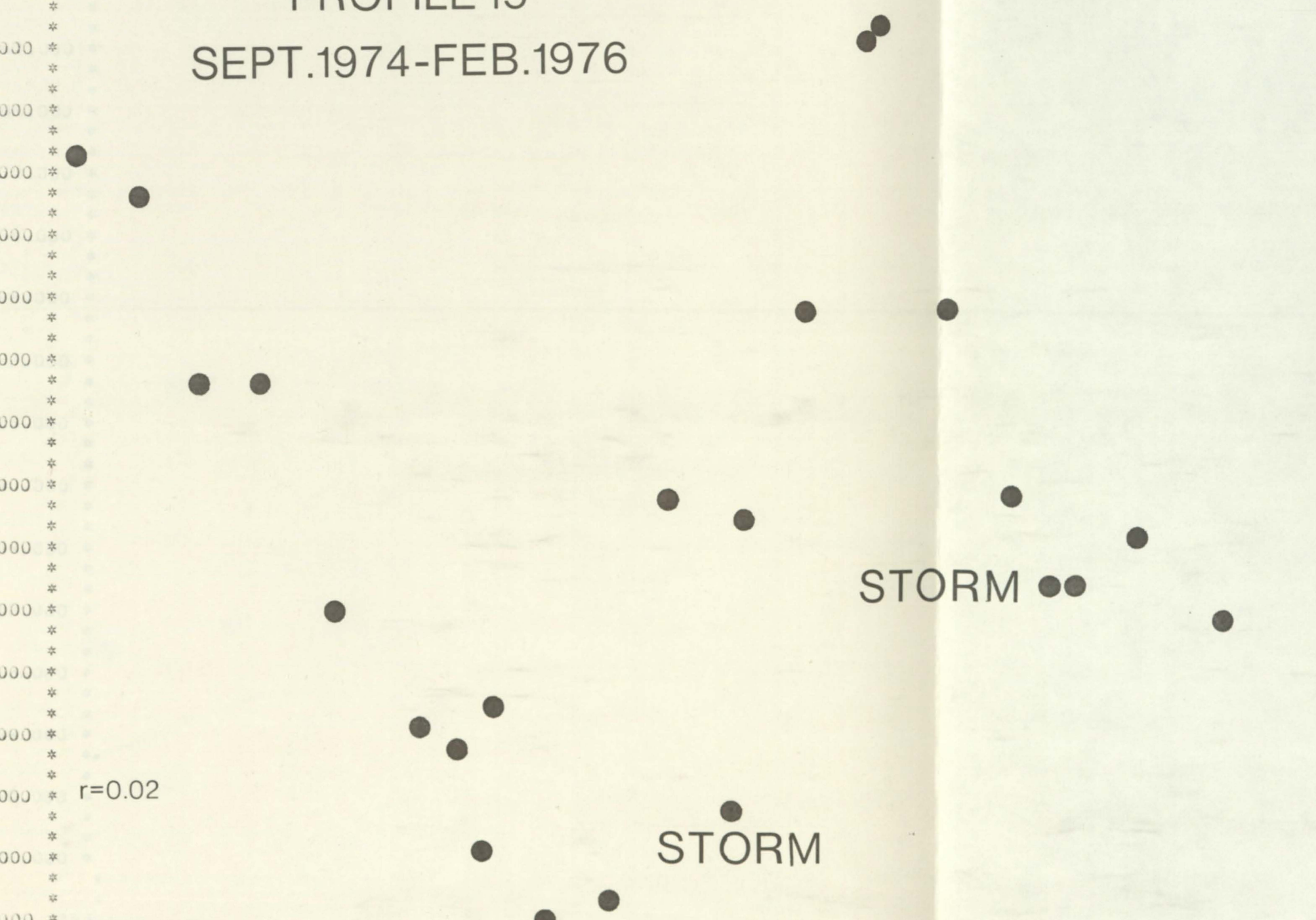
SEPT.1974-FEB.1976

STORM

STORM

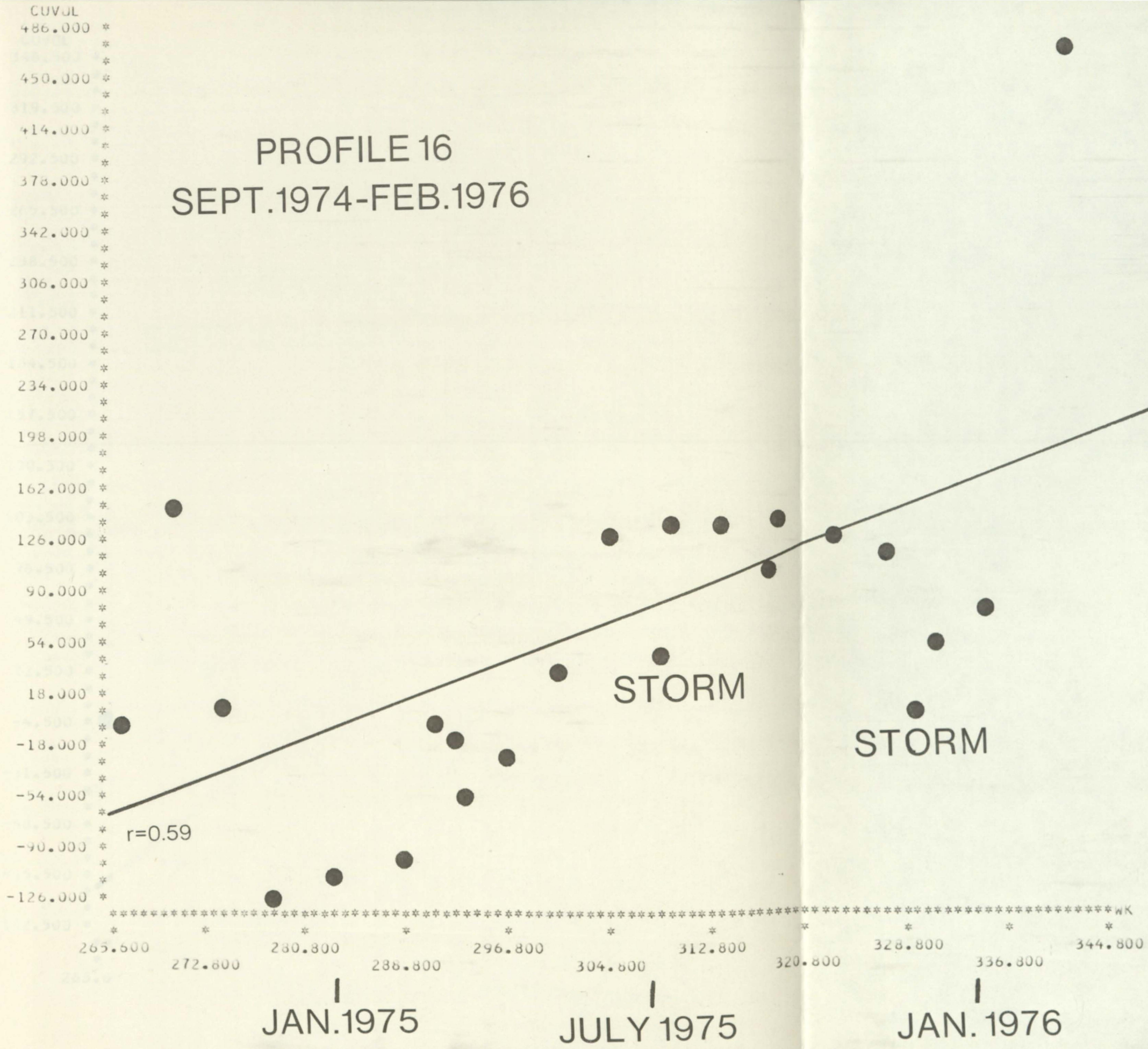
r=0.02

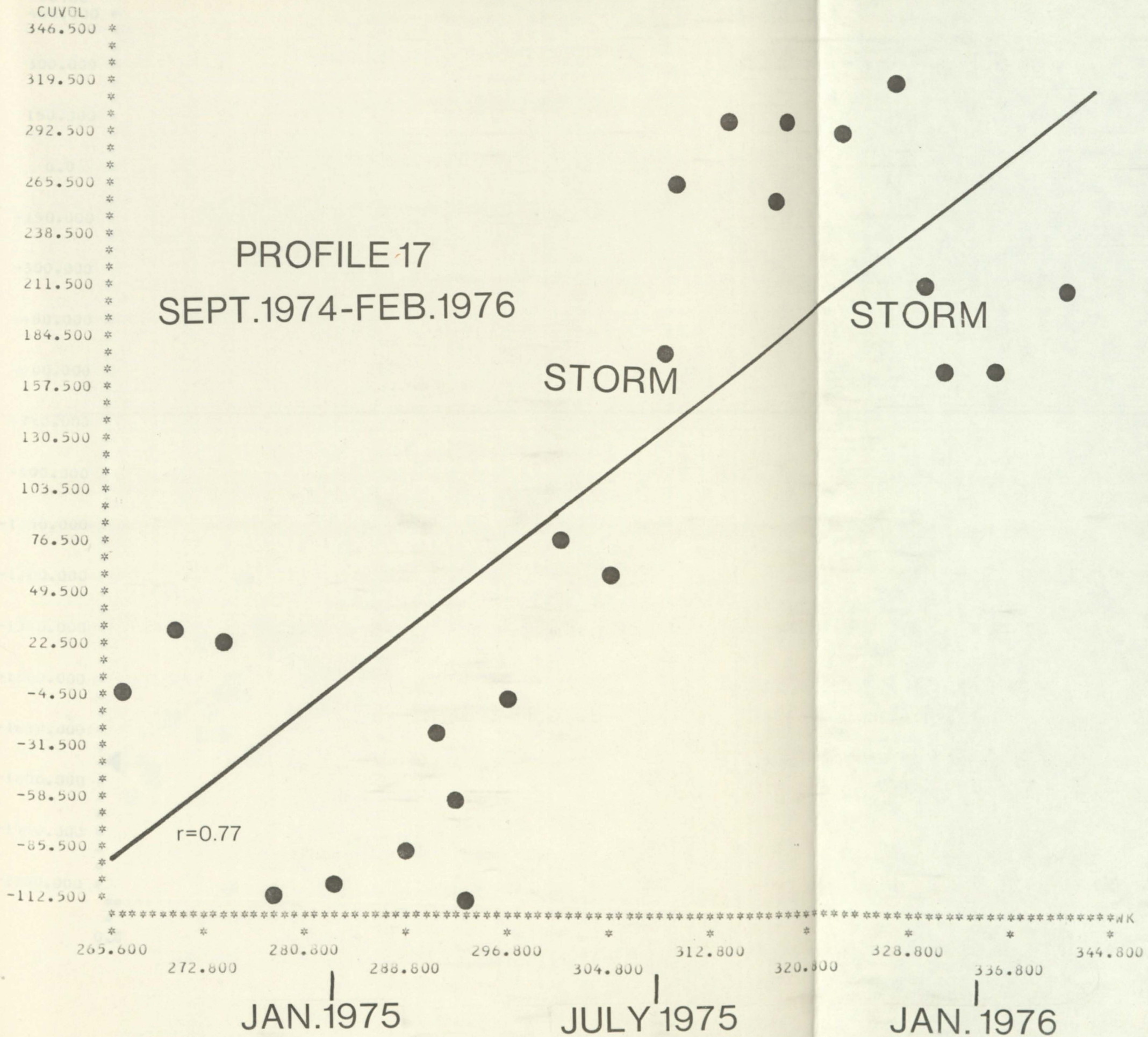
*****WK
* * * * *
265.600 272.800 280.300 288.800 296.800 304.800 312.800 320.800 328.800 336.800 344.800
* * * * *
JAN.1975 JULY 1975 JAN.1976



PROFILE 16

SEPT.1974-FEB.1976





CUVGL
 165.000 *
 *
 147.000 *
 *
 129.000 *
 *
 111.000 *
 *
 93.000 *
 *
 75.000 *
 *
 57.000 *
 *
 39.000 *
 *
 21.000 *
 *
 3.000 *
 *
 -15.000 *
 *
 -33.000 *
 *
 -51.000 *
 *
 -69.000 *
 *
 -87.000 *
 *
 -105.000 *
 *
 -123.000 *
 *
 -141.000 *

PROFILE 18
 SEPT.1974-FEB.1976

r=0.40

STORM

STORM

*****WK
 * 265.600 * 272.600 * 280.800 * 288.800 * 296.800 * 304.800 * 312.800 * 320.800 * 328.800 * 336.800 * 344.800 *

JAN.1975 JULY 1975 JAN.1976

