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SEDIMENTATION STUDY OF THE YAZOO RIVER BASIN

USER'S MANUAL FOR THE YAZOO DATA STORAGE AND RETRIEVAL SYSTEM VOLUME I

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Prepared for

U. S. ARMY CORPS OF ENGINEERS

VICKSBURG DISTRICT

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AUTHORIZATION

This user's manual and the Yazoo Data Storage and Retrieval System (YAZDB) was devised for the U.S. Army Corps of Engineers, Vicksburg District, Lower Mississippi Division, under Modification No. P00001, Supplemental Agreement to Contract No. DACW38-76-C-0193. Larry Banks was the authorized Project Manager for the Vicksburg District, and Daryl B. Simons and Ruh-Ming Li were the Principal Investigators for Colorado State University. The purpose of this manual is to assist personnel in the utilization of the YAZDB.

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YAZOO DATA STORAGE AND RETRIEVAL SYSTEM

VOLUME I

This manual describes the use of the Yazoo Data Storage and Retrieval System (YAZDB). This system was developed as a supporting package for conducting the Phase I-Sedimentation Study of the Yazoo River Basin. The system enables users with varying amounts of computer experience to efficiently access, retrieve, store, and analyze large amounts of hydraulic and hydrological data from the Yazoo Basin. Volume I of this manual is designed for general users. Explanations are concentrated in accessing, retrieving, and analyzing data.

For the user's convenience in locating information, a table of contents follows. First time users should pay particular attention to the sections on Command Language, Program Execution and Examples. Commands for data updating as well as information on the internal working's of the system are explained in Volume II of this manual. Volume II is intended for the system analysts and/or data managers.

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I. INTRODUCTION

The Yazoo Data Storage and Retrieval System (YAZDB) manages stage-discharge, discharge, river stage, sediment, channel cross-section, precipitation, control structure, and reservoir data. Eventually the program can be expanded to include watershed information and water quality data as well as detailed reservoir and control structures information.

The objectives of developing the YAZDB is to: 1) design an efficient data system that will store and retrieve data to analyze the evolution of the basin system; 2) expedite the daily duties of the U. S. Army Corps of Engineers; 3) provide a system that can be utilized by persons not proficient with the computer; and 4) develop a system with a flexible structure to enable improvements or expansions without major modifications.

Volume I of this manual was prepared to assist the computer user in utilizing the YAZDB to retrieve and analyze data. The manual is organized in four sections. The command language used in the system explained in Section II and III describes program execution, Section IV provides information on additional applications, and Section V contains examples of program use.

II. COMMAND LANGUAGE

To assist those not familiar with computer systems, a simple query language for data retrieval and processing was developed. To execute the retrieval of data from the system, two to four command statements are employed by the user to extract the required information. The command statements begin with a command word. Following the order of their use, the command words are:

GET

LOCATION

TIME

PROCESS

The "GET" command accesses the required data set. "LOCATION" specifies the basin location of the desired data. "TIME" defines the period of interest, and "PROCESS" outputs data and can be used to perform several statistical and graphical analyses on the data. To finish each command statement, a command word is followed by an additional statement that precisely defines the type, location, period, and output format of the desired data. Flow charts of the structures showing various command statements are placed throughout the section. Output options can be selected from one of the following command words:

LIST

PLOT

DISPLAY

SAVE

Figure 1 shows the several categories of data that are accessible with the "GET" command. The categories are:

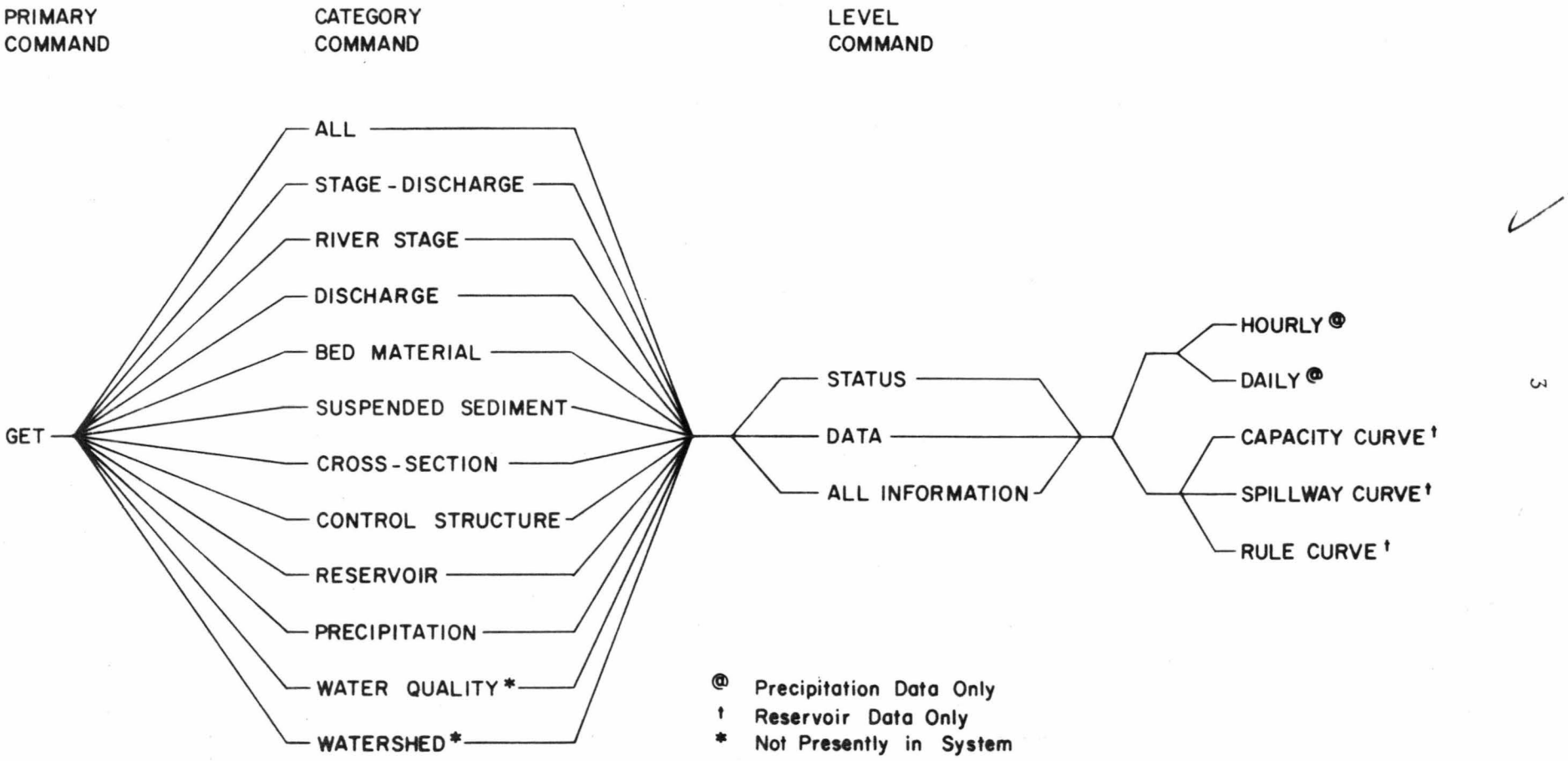


Figure 1. Flow chart for "GET" command.

All (data categories)

Stage-discharge (measurements)

River stage (records)

Discharge (records)

Bed material (measurements)

Suspended sediment (measurements)

Cross-section (measurements)

Control structure (information)

Reservoir (information)

Precipitation (records)

Water quality*

Watershed*

After specifying the category, the user can access three different levels of information. These three levels are:

Status (describes the available data rather than providing a complete list of data that would be obtained by "DATA" or "ALL INFORMATION" commands)

Data (data alone)

All information (data with relevant information on location)

With the precipitation data the user can also have the selection of two additional options:

Hourly (data)

Daily (data)

*not presently incorporated into the system.

With the reservoir data the user has four additional options:

All

Capacity curve

Spillway curve

Rule curve

Figure 2 shows that with the location command the user can define the exact position or region of interest. To achieve this the user first selects the category. The categories available are:

All (all locations)

Basin (for an entire river basin)

River (for a river)

Segment (for a segment of a river)

Station (for a specific position)

The position or region is then defined by one or more of the following:

River name

Node number

River mile

Station name

Latitude and longitude

For the users convenience, Appendix A contains an explanation of the node system used in the YAZDB, Appendix B contains a list of gaging station names used in the system along with their node numbers, river miles, latitude, longitude, and the U.S. Army Corps of Engineers station number, and Appendix C provides retrieval and processing examples.

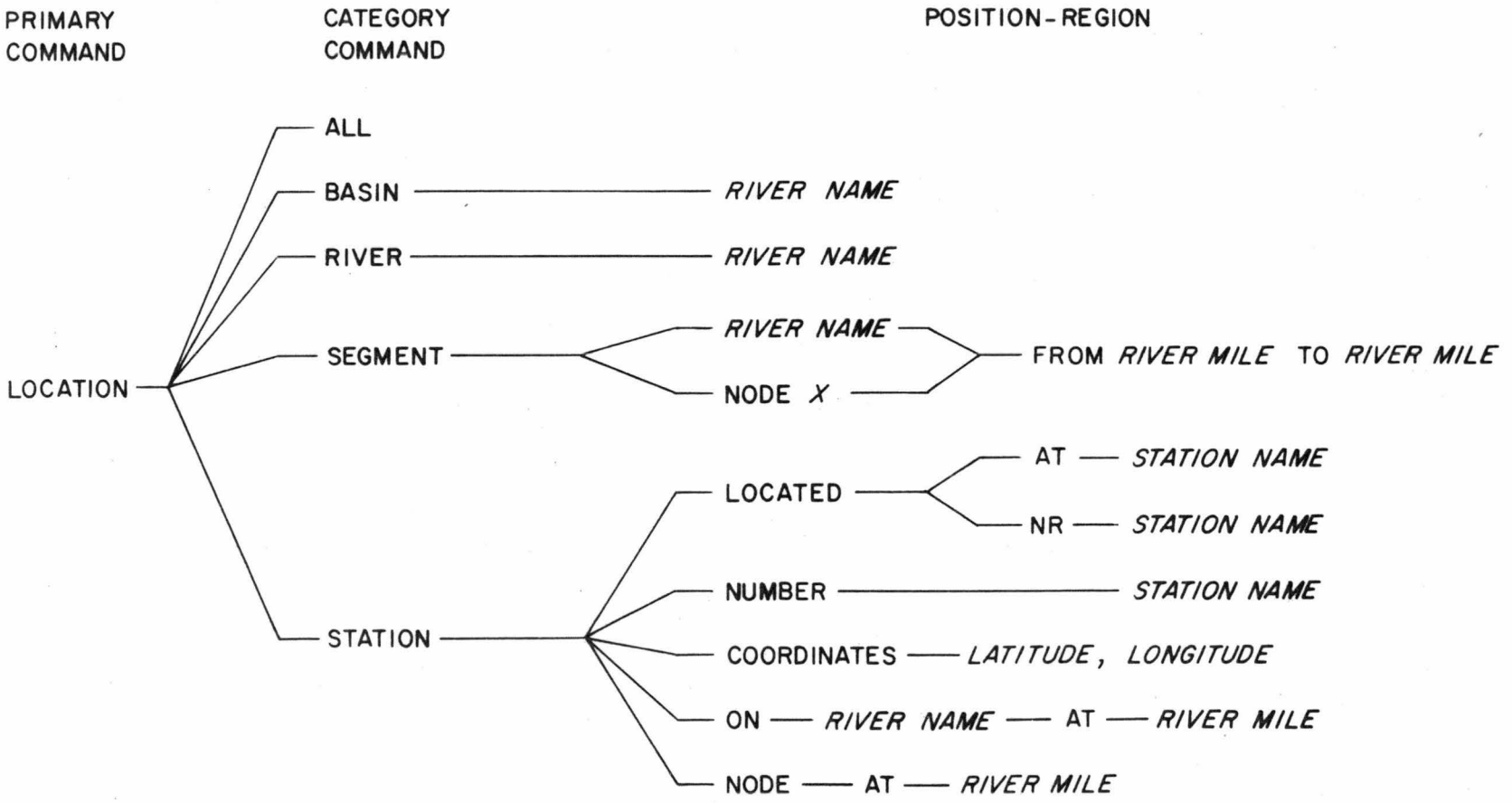


Figure 2. Flow chart for "LOCATION" command.

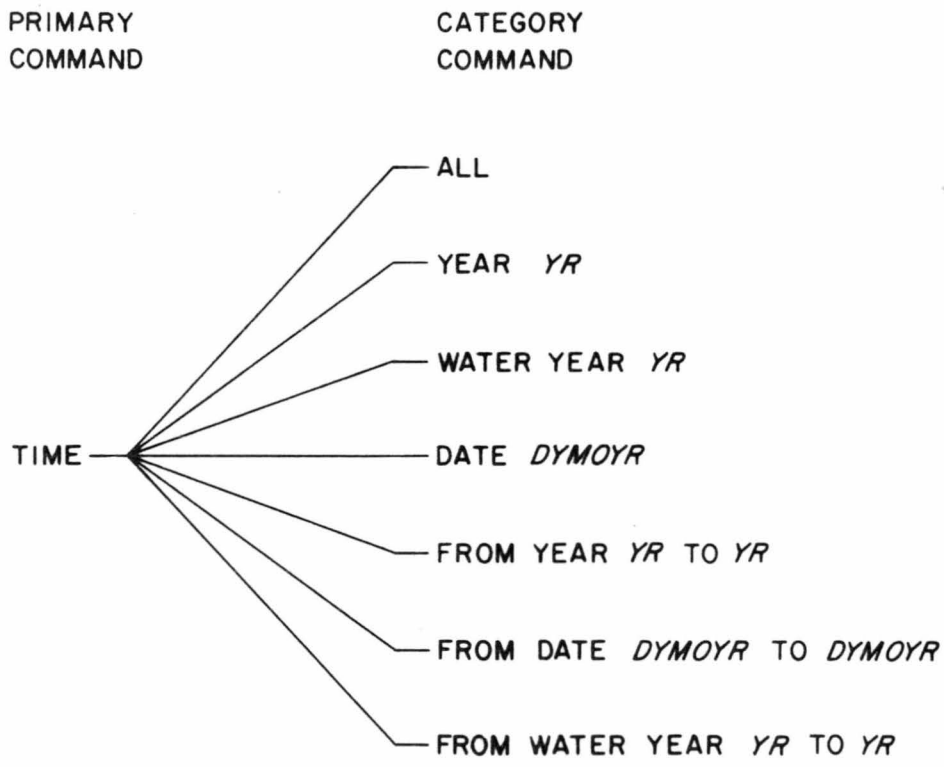


Figure 3. Flow chart for "TIME" command.

Figure 3 shows how the user can extract information from a limited period. The seven categories used to define the period of interest are:

All (entire period of record)

Year YR

Water year YR

Date DYMOYR

From year YR(to)YR

From water year YR(to)YR

From date DYMOYR(to)DYMOYR

Figure 4 shows how the data can be processed and output by the user. The available data processing options include:

min value (minimum)

max value (maximum)

basic statistics (mean, standard deviation)

cum frequency (cumulative frequency)

histogram

regression analysis

stage-hydrograph

discharge hydrograph

changing stage for Q = (XCFS)

thalweg level

cum rainfall (cumulative rainfall)

frequency analysis

min-max (minimum and maximum)

It should be noted that if no analysis is desired, the command word "PROCESS" need not be entered. Only the selected output option is required.

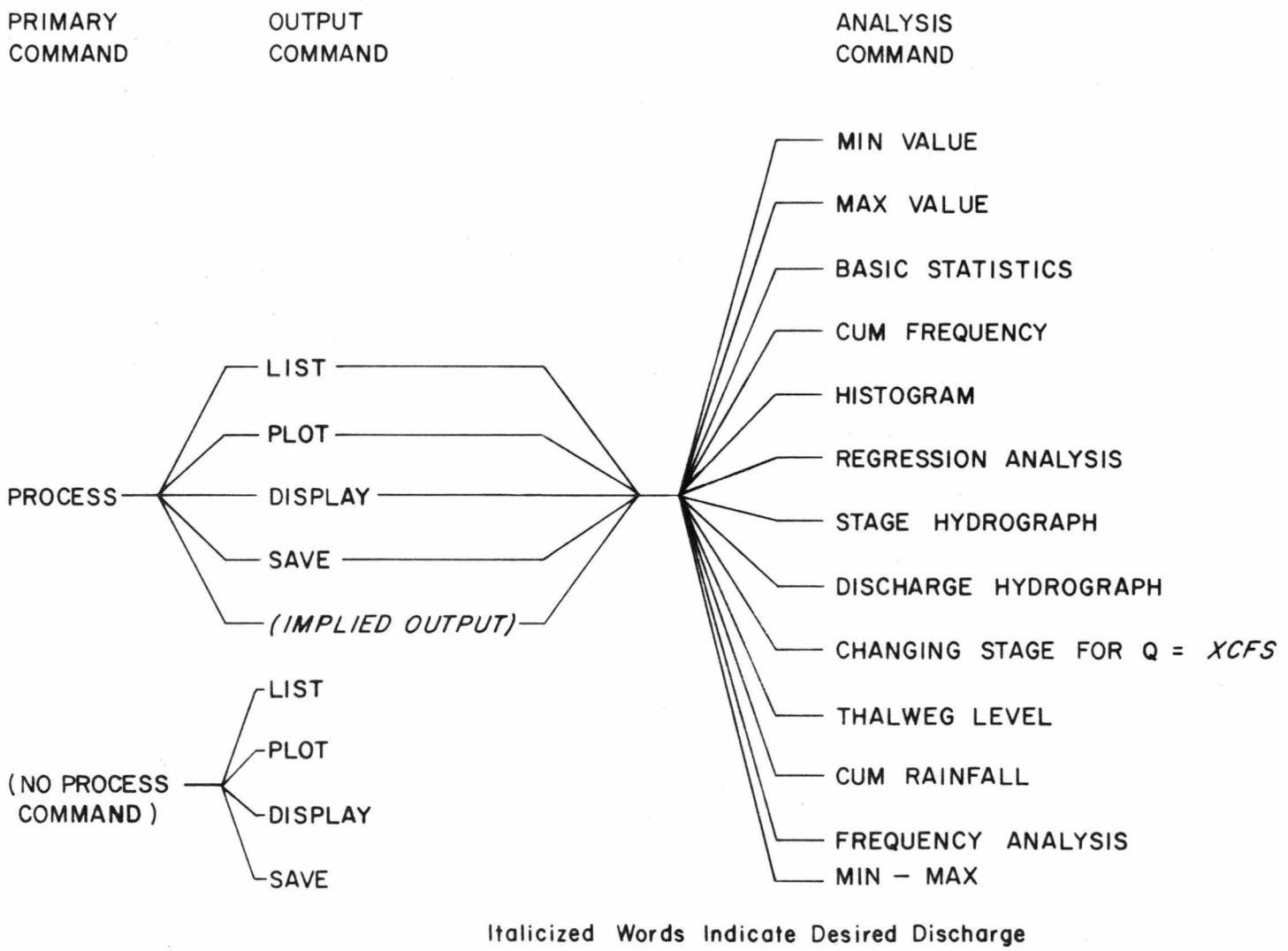


Figure 4. Flow chart for "PROCESS" and "OUTPUT" command

III. PROGRAM EXECUTION

The Yazoo Data storage and retrieval system was developed for use with the Boeing Computer Service, Seattle, Washington, which maintains several Cyber 175 computers operating under the NOS system. As such, the exact details of these program execution examples are limited to the Boeing system. After log-in, execution is entered by entering:

-YAZOODB

The next display shown is:

```
                                YAZOO RIVER SYSTEM DATA BANK
TO USE, ANSWER THE QUESTIONS

DO YOU WISH TO BE HELPED IN SETTING UP THE INPUT COMMAND STATEMENTS
```

The user should then enter "YES" or "NO". If "NO" is entered the user must supply all command statements unaided. If "YES" is answered the program will respond with:

```
ALL DATA RETRIEVALS BEGIN WITH 'GET' COMMAND
DATA CATEGORIES IN THE YAZOO RIVER SYSTEM DATA BANK CONSIST OF
                    ALL
                    STAGE-DISCHARGE
                    DISCHARGE
                    RIVER STAGE
                    SUSPENDED SEDIMENT
                    BED MATERIAL
                    CROSS-SECTION
                    CONTROL STRUCTURE

                    RESERVOIR DATA ,ALL
                                   ,SPILLWAY CURVE
                                   ,CAPACITY CURVE
                                   ,RULE CURVE

                AND  PRECIPITATION DATA ,HOURLY
                                        ,DAILY
EACH DATA ELEMENT CAN BE RETRIEVED ACCORDING TO ONE OF THE FOLLOWING TYPES OF
INFORMATION
                    STATUS
                    DATA
                OR  ALL INFORMATION
KEY-IN THE COMMAND WORD 'GET' WITH THE APPROPRIATE DATA CATEGORY AND TYPE OF
INFORMATION DESIRED; EXAMPLE: GET,RIVER STAGE,DATA
```

The user should type in the word "GET" followed by a single space or a comma, then the desired data category name as listed above, followed by a comma or space and the type of information required.

The program will respond with:

```
DATA LOCATION CONSISTS OF THE FOLLOWING TYPES
                    ALL
                    BASIN
                    RIVER
                    SEGMENT OF A RIVER
                 OR STATION
BY USING THE FOLLOWING COMMANDS
          BASIN,(RIVER NAME)  --- FOR A BASIN
          RIVER,(RIVER NAME)  ---  FOR A RIVER
          SEGMENT,(RIVER NAME),FROM (RM1) TO (RM2)  --- FOR A SEGMENT OF A RIVER
          SEGMENT,(RIVER NAME),NODE (X),FROM (XRM) TO (YRM)
          STATION,LOCATED (AT/NR LOCATION NAME)  --- FOR A LOCATION
          STATION,NUMBER(STATION NUMBER)  --- FOR A GAGING STATION
          STATION,COORDINATES(LAT,LONG)  --- FOR A GEOGRAPHIC LOCATION IN THE
                                             BASIN
          STATION,ON(RIVER NAME) AT (RM)  --- FOR A STATION ALONG A RIVER
          STATION,NODE(NODE NUMBER) AT (RM)  --- FOR A STATION ALONG A RIVER

KEY-IN THE COMMAND WORD 'LOCATION' WITH THE APPROPRIATE COMMAND STATEMENTS AS
DESCRIBED ABOVE; EXAMPLE: LOCATION,STATION COORDINATES 33 10 02,90 29 35
```

The user should type in the word "LOCATION" followed by a single space or comma, then the data type followed by an adequate descriptor such as a river name or node number. On jobs that use the "STATUS" option, only the "GET" and "LOCATION" commands are needed.

The program will respond with:

```
TIME-PERIOD CAN BE OF THE FOLLOWING TYPES
                    ALL
                    YEAR (X)
                    DATE (X)
                    FROM YEAR (X) TO (Y)
                    FROM DATE (X) TO (Y)
                    WATER YEAR
                    FROM WATER YEAR (X) TO (Y)
KEY-IN THE COMMAND WORD 'TIME' WITH THE APPROPRIATE TIME-PERIOD AS DESCRIBED
ABOVE; EXAMPLE: TIME,YEAR 1974
```

The user should type in the word "TIME" followed by a comma or single space and then the period of interest.

The program will respond with:

```
OUTPUT OPTIONS CONSIST OF THE FOLLOWING TYPES
                    LIST
                    PLOT
                    DISPLAY
                    SAVE
OR IF YOU WANT TO PROCESS THE DATA INSTEAD, THE FOLLOWING OPTIONS ARE AVAILABLE
AT THE PRESENT TIME
                    CUM FREQUENCY
                    HISTOGRAM
                    FREQUENCY ANALYSIS
                    MIN VALUE
                    MAX VALUE
                    MIN-MAX
                    BASIC STATISTICS
                    REGRESSION ANALYSIS
                    CUM RAINFALL
                    STAGE HYDROGRAPH
                    DISCHARGE HYDROGRAPH
                    THALWEG LEVEL
                AND CHANGING STAGE FOR Q=(A GIVEN DISCHARGE IN CFS)

KEY-IN THE SELECTED OUTPUT OPTION OR THE COMMAND WORD 'PROCESS' WITH THE
SELECTED OUTPUT OPTION AND THE DESIRED PROCESSING OPERATION;
EXAMPLE: PROCESS,LIST,MIN VALUE
```

The user should enter the output category desired if no analysis is needed. Otherwise, the word "PROCESS" is entered followed by a comma or single space, then the output category, followed again by a comma or a single space, and the analysis category. The program will then list out any output/results of the retrieval job. If there are plotted results the program will respond with:

DO YOU WISH THE RESULTS TO BE DISPLAYED ON THE TEKTRONIX SCREEN

If the plot is desired on the Tektronix, "YES" is entered and the program will plot the graph. Once the graph is finished the program will pause until the return key is hit. If the user is not on a Tektronix terminal, "NO" is answered and the program will respond with:

DO YOU WISH THE RESULTS TO BE DISPLAYED BY A LINE PRINTER

If "YES" is answered, a page plot will be printed. If "NO" is answered, no plot will be produced.

After the completion of output, the program will respond with:

DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

Multiple processing on the data set is possible and is described in Chapter V. Once the user answers "NO" to the previous response, the program will respond with:

DO YOU WISH TO CONTINUE WORKING WITH DATA IN THIS DATA BASE

If it is desired to retrieve another set of data answer "YES" and the program will return to the first prompt. If not, answer "NO" and the computer will respond with:

```
END OF THE DATA MANAGEMENT JOB
```

The program will terminate and control will return to the NOS operating system.

IV. SAVING DATA FILES

In many instances the user may desire to save retrieved data on separate permanent files. As an example, saving retrieved data on a separate file would facilitate inputting discharges and river cross-sections to a water routing model. The "SAVE" command is used to write data for a local file. After program termination the user must use system commands to save the local file. Example No. 14 in this section shows the use of the "SAVE" command.

The user must follow specific steps to insure that the new data file contains the desired information. First, the user must know the data is available. Second, only "SAVE" commands can be used during the program execution. The user cannot use "PLOT", "LIST," or "DISPLAY" commands when saving files. Third, if two or more data retrievals are to be executed at the same time, the data must be retrieved in the order in which it is required in the new file, and fourth, after program termination the user must save the new file (TAPE1) by using the "NOS" system commands such as: SAVE, TAPE1 = NEWDATA. This would save the local file, TAPE1, as a permanent file "NEWDATA." The permanent file name can consist of any combination of seven or less letters and numbers. To aid in reading the new data files, Table 1 lists the output formats for the various data categories.

Table 1. Data formats for created files.

Data Category	Card	Data	Format
Stage-Discharge	1	Year, NPTS	2I4
	2 - (1 + NPTS)	Stage, Discharge	F7.0,F7.0
Discharge	1	Year, NPTS	2I4
	2 - (1 + NPTS)	Discharge	F7.0
Stage	1	Year, NPTS	2I4
	2 - (1 + NPTS)	Stage	F7.2
Precipitation	1	Year, NPTS	2I4
Daily	2 - (1 + NPTS)	Daily Precipitation	F5.2
Hourly	2 - (1 + 24 NPTS)	Hourly Precipitation	F5.2
Control Structure	1	Date, NPTS	I6,I4
	2	Stage, Area	F6.1,F7.1
Cross Section	1	Date, NPTS	I6,I4
	2 - (1 + NPTS)	Station, Elevation	F6.0,F6.1
Suspended Sediment	1	Date, Concentration 2 (size, precent)	2I6,F5.3,I5, F5.2,I5

Table 1. (Continued)

Data Category	Card	Data	Format
Bed Material	1	Date, Cross Section, 6 (size, percent)	I6,F4.2, 6(F5.3,I5)
Reservoir	1	Year, NPTS,	
Spillway Curve	2 - (1 + NPTS)	Discharge, Stage	F7.2,F7.0
Volume Curve	2 - (1 + NPTS)	Volume, Stage	F7.2,F7.0
Rule Curve	2 - (1 + NPTS)	Gate, Stage	F7.2,F7.0

* NPTS = Number of Data Points

V. ADDITIONAL APPLICATIONS

This section describes advanced data processing; specifically, multiple processing and cross-reference retrieval and processing. Personnel possessing limited experience with the system, should utilize these operations after becoming familiarized with the system.

Multiple processing allows the user to process one set of data several different ways without having to retrieve the data each time. Once a data set is retrieved and processed the first time, the program will respond with:

```
DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET
```

If so, another process (or output) command can be performed by answering:

```
I>YES
```

The computer will respond with an input prompt after which the user should enter only the desired process command; for example,

```
I>PROCESS,LIST,FREQUENCY ANALYSIS
```

After processing the desired data, the program will respond with:

```
DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET
```

The user may continue processing the retrieved data set or stop the process by answering;

```
I>NO
```

Examples of multiple processing are presented in Appendix C.

It is possible to use the results of the retrieval and processing of one set of data in the processing of another. An example of this would be using the regression analysis performed on stage-discharge data to generate a discharge hydrograph. To do this

the stage-discharge data must first be retrieved and processed using a regression analysis: for example:

INPUT:

```
I>GET,STAGE DISCHARGE,DATA
I>LOCATION,STATION LOCATED AT BELZONI
I>TIME,YEAR 1973
I>PROCESS,LIST,REGRESSION ANALYSIS
```

OUTPUT:

```
                          YEAR = 1973

REGRESSION EQUATION IS     Q = 207.83568((S).EXP( 1.3584))

CORRELATION COEFFICIENT =   .9779          STANDARD ERROR =   .070947
```

Then the stage data for the same location is retrieved and processed using a "discharge hydrograph" as shown:

INPUT:

```
I>GET,RIVER STAGE,DATA
I>LOCATION,STATION LOCATED AT BELZONI
I>TIME,YEAR 1973
I>PROCESS,LIST,DISCHARGE HYDROGRAPH
```

The program will then calculate discharges from the stages using the results of the regression analysis:

OUTPUT:

TABLE OF GENERATED DISCHARGE VALUES

YEAR = 1973 NO.OF POINTS = 365

18193.	18101.	18285.	18746.	18839.	19678.	20243.	20717.	21003.	21385.
21481.	21481.	21385.	21305.	21289.	21194.	21098.	21003.	20907.	20717.
21098.	21577.	21673.	21770.	21770.	21770.	21770.	21673.	21673.	21481.
21385.	21385.	21481.	21481.	21385.	21194.	21098.	21003.	20907	20907.
20812.	20717.	20622.	20527.	20907.	21003.	21098.	21098.	21098.	21003.
21003.	20907.	20907.	20812.	20717.	20717.	20622.	20527.	20527.	20432.
20337.	20337.	20337.	20527.	20432.	20717.	20717.	20717.	20527.	21098.
21289.	21481.	21481.	21866.	23031.	24014.	24609.	24908.	25208.	25409.
25509.	25710.	26013.	26215.	26417.	26519.	26620.	26620.	26620.	26620.
26620.	26519.	26519.	26417.	26316.	26215.	26215.	26215.	26013.	26013.
25912.	25710.	25610.	25509.	25308.	25308.	25208.	25108.	25008.	24908.
24809.	24609.	24411.	24212.	24311.	24311.	24311.	24212.	24212.	24113.
24014.	24014.	24212.	24311.	24311.	24411.	24510.	24709.	24809.	24908.
25008.	25108.	25208.	25208.	25308.	25308.	25409.	25409.	25409.	25409.
25409.	25409.	25308.	25409.	25308.	25308.	25208.	25208.	25108.	25008.
24809.	24709.	24510.	24411.	24212.	24014.	23915.	23718.	23521.	23325.
23129.	22933.	22738.	22544.	22349.	22156.	21962.	21673.	21385.	21098.
20717.	20337.	19960.	19584.	19211.	18839.	18377.	18101.	17644.	17280.
16919.	16649.	16202.	15935.	15581.	15405.	15405.	15142.	15054.	14967.
14793.	14619.	14446.	14273.	14015.	13844.	13759.	13673.	13673.	13759.
13759.	13844.	13759.	13759.	13759.	13673.	13673.	13503.	13503.	13334.
13334.	13334.	13588.	13844.	13844.	13759.	13673.	13588.	13419.	13249.
13165.	13081.	12912.	12829.	12661.	12495.	12411.	12411.	12411.	12495.
12411.	12495.	12495.	12411.	12328.	12328.	12328.	12163.	12163.	12163.
12080.	12080.	12080.	12080.	12080.	12163.	12163.	12246.	12246.	12246.
12246.	12246.	12246.	12246.	12246.	12246.	12163.	12163.	12163.	12246.
12163.	12163.	12163.	12163.	12080.	12080.	12080.	11998.	11916.	11834.
11588.	11344.	11102.	11021.	11021.	11021.	11021.	11021.	11021.	11102.
11102.	11102.	11182.	11344.	11344.	11426.	11507.	11507.	11670.	11834.
11834.	11834.	11752.	11752.	11752.	11670.	11670.	11588.	11588.	11507.
11426.	11263.	11182.	11182.	11102.	11021.	10941.	10860.	11102.	11021.
10941.	10941.	11263.	11588.	11752.	11752.	11752.	11752.	11752.	11834.
11834.	11834.	11834.	11834.	12246.	12578.	12745.	12829.	12996.	13165.
14532.	16739.	17826.	18285.	18377.	18469.	18469.	18561.	18654.	18746.
18746.	18746.	18746.	18746.	18746.	18746.	18746.	18746.	18746.	18746.
18654.	18561.	18469.	18561.	18469.	18285.	18193.	18101.	20337.	21385.
21866.	21962.	21962.	21962.	21866.					

More examples of cross retrieval and processing are presented in Appendix C.

YAZOODB has options for both page plotting and graph plotting on the Tektronix graphic terminals. The page plot option is both system and terminal independent, but is limited in that only data retrievals, not processing, can be plotted. The page plot option will plot cross sections, discharge hydrographs, stage hydrographs, and stage-discharge measurements. The graph plots option will only work on a Tektronix graphics terminal. Volume II of this manual contains specific details concerning the hardware and software required for graph plotting.

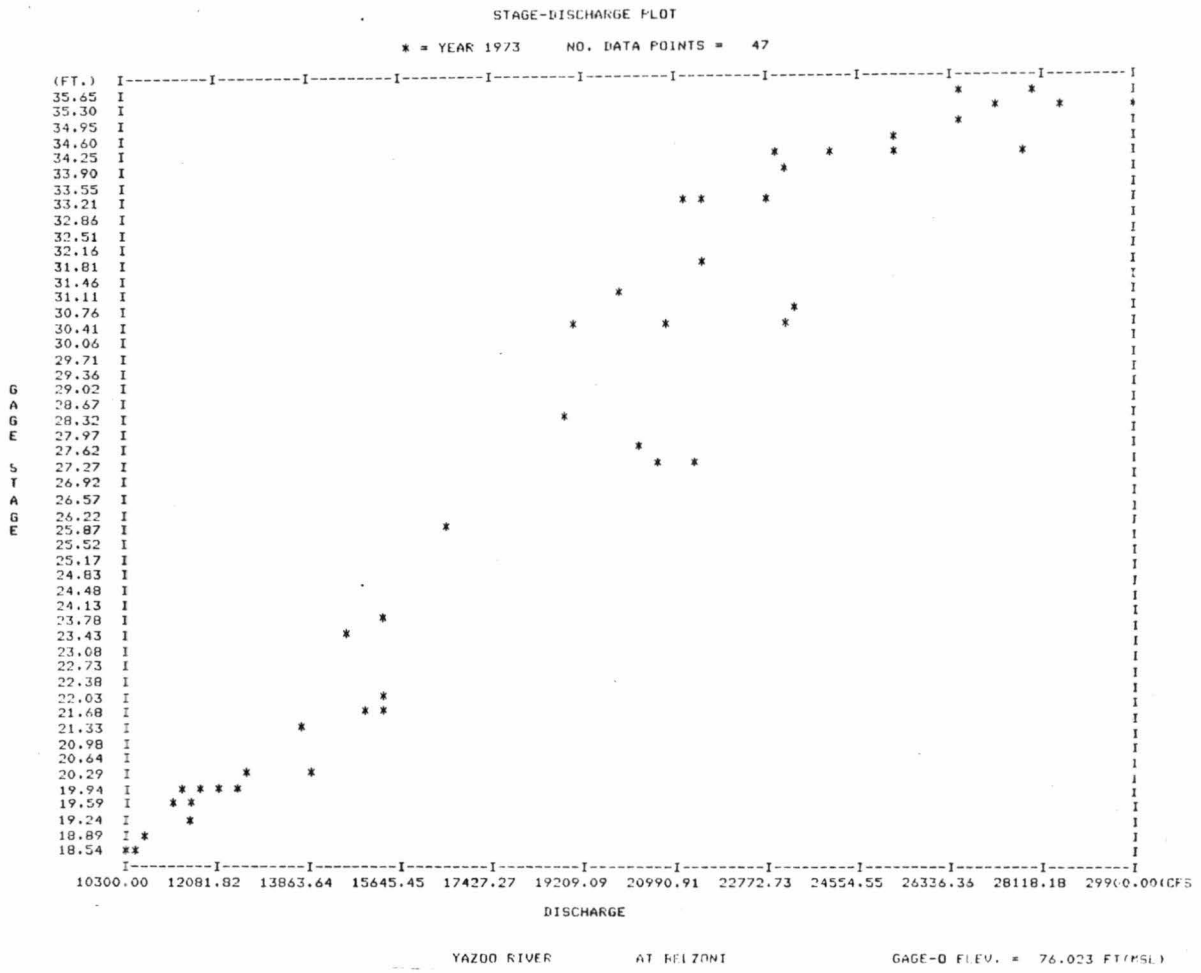
The formats for most data output was designed for a 130-character line. Because of this, it is recommended only terminals with 130 characters per line be used to access the Yazoo Data Storage and Retrieval System.

VI. EXAMPLES OF DATA RETRIEVAL

This section contains several examples of data retrieval jobs. These examples were selected to show the general capability of the Yazoo Data Storage and Retrieval System. A complete set of examples is presented in Appendix C.

EXAMPLE 1: Plot Stage-Discharge Relationship. Stage-discharge data plot for Belzoni by specifying its coordinates--33 10 02, 90 29 35--for 1973.

```
I>GET,STAGE-DISCHARGE,DATA
I>LOCATION,STATION COORDINATES 33 10 02 90 29 35
I>TIME,YEAR 1973
I>PLOT

 DO YOU WISH THE RESULTS TO BE DISPLAYED ON THE TEKTRONIX SCREEN
I>NO

 DO YOU WISH THE RESULTS TO BE DISPLAYED BY A LINE PRINTER
 I>YES
```



EXAMPLE 2: Status of River Stage Data. Status of river stage data for the gaging station located near Swan Lake.

```
I>GET,RIVER STAGE,STATUS
I>LOCATION,STATION LOCATED NR SWAN LAKE
```

DATA STATUS FOR TALLAHATCHIE RIVER NR SWAN LAKE

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YRARS	TAPE I.D.
RIVER STAGE DATA STATUS								
NR SWAN LAKE	1320	102000000	219.10	33 51 35	90 16 35	113.384	11	TSG1
1954 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 3: Retrieve Discharge Data. All information related to discharge for the gaging station located near Lambert for 1973.

```
GET,DISCHARGE,ALL INFORMATION
I>LOCATION,STATION LOCATED NR LAMBERT
I>TIME,YEAR 1973
I>LIST

1
```

YAZOO RIVER SYSTEM DATA BANK

RIVER DISCHARGE DATA CATEGORY

STATION NAME	STATN NO	DIST FR NODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
TALLAHATCHIE RIVER NR LAMBERT	1328	253.20(MI)	34 10 50	90 12 55	123.829(FT)	CONTI	14

DAILY DISCHARGE FOR 1973

COMPUTED DAILY DISCHARGE IN CUBIC FEET PER SECOND

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	9420.	5380.	4550.	4220.	14300.	6050.	2350.	2200.	2660.	747.	449.	9760.
2	9290.	6580.	4590.	3930.	14600.	5890.	2450.	2250.	2660.	724.	413.	9020.
3	8970.	6700.	7700.	3260.	15100.	5810.	2430.	2230.	2650.	683.	389.	7930.
4	9350.	6500.	7500.	2910.	15000.	5620.	2430.	2210.	2530.	646.	362.	6970.
5	9290.	6330.	7230.	2800.	14700.	5540.	2490.	2120.	2400.	800.	380.	7030.
6	9490.	6210.	6720.	2710.	14400.	5310.	2620.	1960.	2530.	940.	341.	6690.
7	9490.	6000.	8220.	2700.	14100.	5130.	2620.	2180.	2590.	1050.	286.	6440.
8	9560.	7020.	8820.	3030.	14100.	5090.	2590.	2270.	2100.	1200.	250.	6350.
9	9250.	8870.	8700.	3380.	13900.	4470.	2530.	2240.	2220.	1340.	289.	6040.
10	9010.	9100.	8400.	3240.	13500.	3800.	2480.	2210.	2450.	1400.	256.	5790.
11	8370.	9300.	9210.	3150.	13300.	3490.	2430.	2190.	2580.	1660.	217.	5270.
12	8240.	9250.	10400.	3080.	12800.	3100.	2430.	2170.	2580.	1970.	208.	4400.
13	7410.	8980.	10500.	2920.	12200.	3940.	2380.	2480.	2640.	2050.	210.	4370.
14	6930.	9250.	10300.	2900.	11500.	3330.	2350.	2880.	2580.	2050.	188.	4210.
15	6540.	9810.	11500.	2900.	10800.	2750.	2310.	4200.	2250.	1980.	188.	4100.
16	6140.	9640.	13000.	3220.	10200.	2160.	2350.	3820.	2230.	1960.	470.	4050.
17	5620.	9210.	13700.	3040.	9340.	1970.	2860.	3650.	2200.	1870.	774.	4040.
18	5200.	9020.	13600.	3080.	8350.	1880.	2600.	3360.	1990.	1740.	916.	4250.
19	4840.	8460.	12700.	7080.	7530.	1810.	2480.	3100.	1900.	1580.	1020.	4900.
20	4630.	7820.	11600.	7810.	6940.	2160.	2790.	2850.	1890.	1570.	1110.	5560.
21	4740.	7180.	10700.	9170.	6240.	2770.	2790.	2580.	1840.	1570.	1780.	5750.
22	8460.	6690.	10100.	9950.	5720.	3240.	2750.	2480.	1550.	1560.	3360.	5850.
23	9010.	6320.	9050.	11200.	5300.	3220.	2680.	2360.	1410.	1560.	3200.	5850.
24	8000.	5750.	7200.	13100.	5080.	3340.	2580.	2320.	1290.	1560.	2300.	5700.
25	8050.	5340.	6950.	13500.	4930.	2680.	2480.	2270.	1140.	1510.	1820.	6490.
26	7950.	4990.	6760.	14000.	4900.	2530.	2480.	2240.	1020.	1250.	1670.	7370.
27	7530.	4760.	6010.	14200.	5380.	2480.	2400.	2190.	878.	1130.	7370.	7930.
28	7020.	4680.	4740.	14200.	6710.	2550.	2150.	2170.	826.	1030.	9710.	7380.
29	6480.	0.	3500.	14200.	6700.	2500.	2160.	2410.	794.	917.	10800.	6660.
30	5870.	0.	3820.	14300.	6500.	2410.	2160.	2590.	768.	788.	10400.	5720.
31	5280.	0.	3500.	0.	6180.	0.	2170.	2660.	0.	624.	0.	4910.

EXAMPLE 4: Retrieve Suspended Sediment Data. All information related to suspended sediment data for the gaging station located at Belzoni for 1973.

```
I>GET,SUSPENDED SEDIMENT,ALL INFORMATION
I>LOCATION,STATION LOCATED AT BELZONI
I>TIME,YEAR 1973
I>LIST

1
```

YAZOO RIVER SYSTEM DATA BANK

RIVER SUSPENDED SEDIMENT DATA CATEGORY

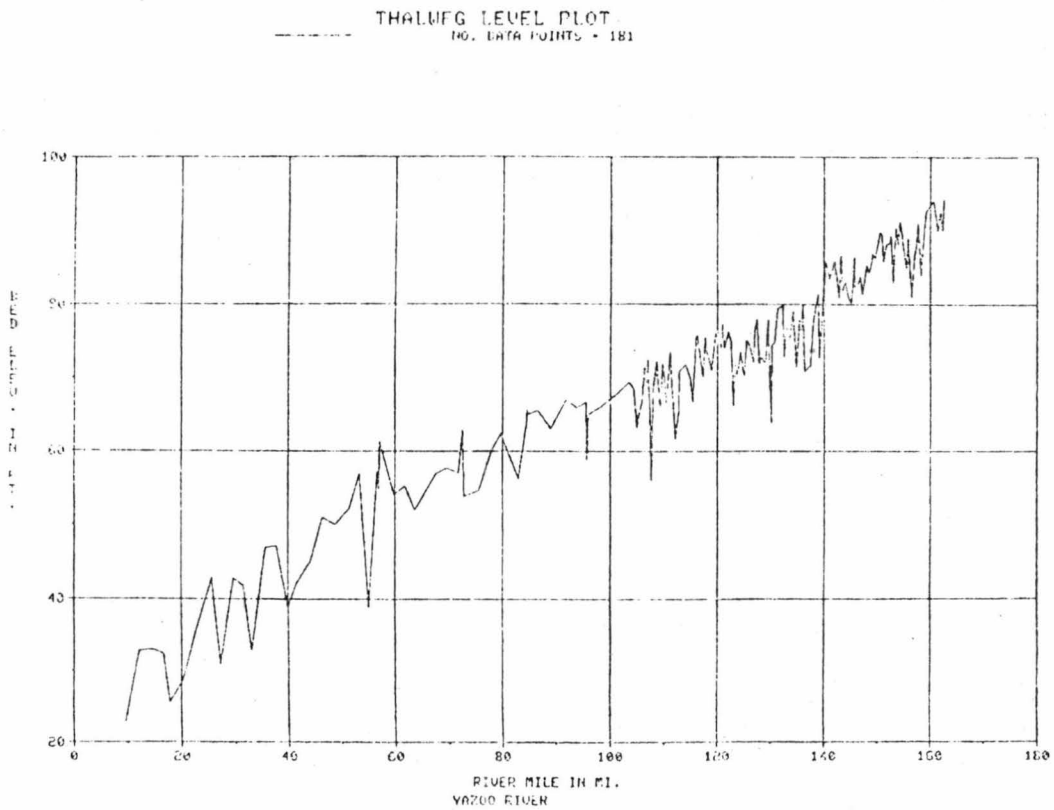
STATION NAME		STATN NO	DIST FR MODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
YAZOO RIVER	AT BELZONI	353	116.10(MI)	33 10 02	90 29 35	76.023(FT)	INTER	4

YEAR 1973 — NO. DATA POINTS 26

DATE	CONCENTRATION (PPM)	SIZE (MM)	CUM CONCN (PPM)	SIZE (MM)	CUM CONCN (PPM)
250373	125	.062	121	1.00	125
270373	118	.062	112	1.00	118
60473	104	.062	104	1.00	104
110473	80	.062	73	1.00	80
140473	66	.062	63	1.00	66
260473	142	.062	140	1.00	142
30573	135	.062	134	1.00	135
90573	120	.062	109	1.00	120
140573	93	.062	88	1.00	93
230573	67	.062	62	1.00	67
280573	56	.062	55	1.00	56
40673	155	.062	96	1.00	155
110673	68	.062	62	1.00	68
180673	97	.062	83	1.00	97
230673	180	.062	164	1.00	180
290673	157	.062	146	1.00	157
80773	223	.062	218	1.00	223
250773	336	.062	324	1.00	336
30873	314	.062	293	1.00	314
80873	185	.062	180	1.00	185
170873	378	.062	355	1.00	378
220873	228	.062	223	1.00	228
280873	261	.062	252	1.00	261
50973	284	.062	265	1.00	284
21073	349	.062	336	1.00	349
61173	227	.062	206	1.00	227

EXAMPLE 5. Plot Thalweg. Cross-section data to obtain the thalweg level curve for the Yazoo River in the Greenwood Bendway for March 15 to March 18, 1977.

```
I>GET,CROSS SECTION,DATA
I>LOCATION,RIVER,YAZOO RIVER
I>TIME,FROM DATE 150377 TO 180377
I>PROCESS,PLOT,THALWEG LEVEL
```



EXAMPLE 6: Change in Stage for a Certain Discharge. Stage-discharge data to obtain the variation of river stage (in ft) for a given discharge (in cfs) for station number 132D.

```
I>GET,STAGE DISCHARGE,DATA
I>LOCATION,STATION NUMBER 132D
I>TIME,ALL
I>PROCESS,LIST,CHANGING STAGE FOR Q=5000.
```

CHANGING RIVER STAGE FOR Q = 5000. CFS

TALLAHATCHIE RIVER NR SWAN LAKE

(GAGE-0 ELEV. = 123.829 FT(MSL))

YEAR	RIVER-STAGE IN FT
1945	12.70
1946	13.45
1947	14.72
1948	14.44
1949	14.20
1950	13.99
1951	14.21
1952	13.61
1953	13.75
1954	13.77
1955	13.67
1956	13.33
1957	13.23
1958	14.39
1961	13.75
1962	14.21
1964	13.35
1965	13.22
1966	13.24
1967	12.93
1968	13.25
1969	13.55
1970	14.86
1971	14.17
1972	14.17
1973	15.19
1974	15.31
1975	14.43
1976	14.47

EXAMPLE 7: Retrieve Bridge Data. All information related to the railroad bridge at Ft. Loring on the Yazoo River between river miles 160. to 162.

```
I-SET,CONTROL STRUCTURE,ALL INFORMATION
I-LOCATION,SEGMENT,YAZOO RIVER
 FROM I>160.
 TO I 162.
I-TI[illegible],ALL
I-LIST
```

1

YAZOO RIVER SYSTEM DATA BANK

CONTROL STRUCTURE DATA CATEGORY

STATION NAME	STATION NO.	RIVER MILE	LATITUDE	LONGITUDE	STRUCTURE TYPE	YEAR	NO DATA POINTS
IC AND G.R.R. - FT LORING		161.00			BRIDGE	1975	10

STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)
90.0	238.0	95.0	1010.0	100.0	2140.0	105.0	3300.0	110.0	4510.0	115.0	5848.0
120.0	7248.0	125.0	10265.0	130.0	15655.0	133.0	17860.0				

EXAMPLE 8: List all Reservoir Data. Reservoir operation data of Arkabutla Reservoir.

```
I>GET RESERVOIR.DAT
I>LOCATION,STATION LOCATED AT ARKABUTLA RESERVOIR
I>TIME ALL
I>LIST
```

YAZOO RIVER SYSTEM DATA BANK

RESERVOIR DATA CATEGORY

RESERVOIR NAME	NODE	RIVER-MILE	LATITUDE	LONGITUDE
AT ARKABUTLA RESERVOIR	103	325.50	34.757222	90.124167

NO.OF POINTS ON RULE CURVE	NO.OF POINTS ON SPILL.CURVE	NO.OF POINTS ON CAPAC.CURVE	MINIMUM WATER SURFACE LEVEL	SPILLWAY ELEVATION	MAXIMUM ELEVATION
7	18	10	209.3(FT)	238.3(FT)	256.3(FT)

--- RULE CURVE ---

DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT
10.1	209.3	160.4	209.3	150.5	220.0	10.9	220.0	11.1	215.0	11.2	210.0	311.2	209.3		

--- SPILLWAY CURVE ---

G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q
238.3	0.0	239.0	5.5	239.5	12.0	240.0	21.5	240.5	31.0	241.0	44.0	242.0	72.0	243.0	106.0
244.0	145.0	245.0	185.0	246.0	233.0	247.0	286.0	248.0	340.0	249.0	399.0	250.0	461.0	252.0	588.0
254.0	725.0	256.3	864.0												

--- CAPACITY CURVE ---

GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL	GATE HGHT	QVOL
210.0	36.0	215.0	70.0	220.0	122.0	225.0	193.0	230.0	294.0	235.0	420.0	240.0	585.0	245.0	780.0
250.0	970.0	255.0	114.0												

EXAMPLE 9: Rule Curve for Reservoir. Rule curve for the operation of Enid Reservoir.

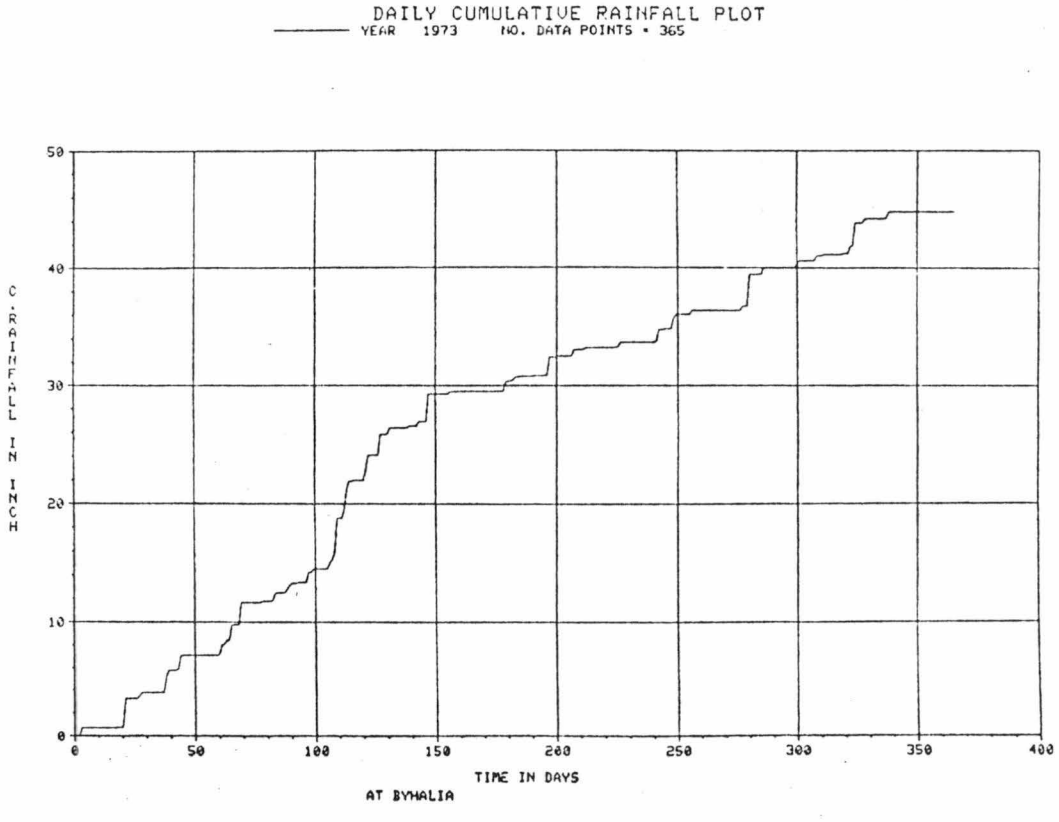
```
I>GET,RESERVOIR DATA,RULE CURVE
I>LOCATION,STATION LOCATED AT ENID RESERVOIR
I>TIME,ALL
I>LIST
```

--- RULE CURVE ---

DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT
10.1	245.0	20.1	246.1	30.1	247.8	40.1	254.5	50.1	257.2	60.1	256.5	70.1	253.9	80.1	250.9
90.1	247.1	100.1	243.3	110.1	237.6	120.1	230.5	123.1	245.0						

EXAMPLE 10: Plot Cumulative Rainfall. Daily precipitation cumulative rainfall plot for station number 1262 for 1973.

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION NUMBER 1262
I>TIME,YEAR 1973
I>PROCESS,PLOT,CUM RAINFALL
```



EXAMPLE 11: Minimum and Maximum Values. Minimum and maximum values of the river stage data for Greenwood for June 15 to July 15, 1973.

```
I>GET,RIVER STAGE,DATA
I>LOCATION,STATION LOCATED AT GREENWOOD
I>TIME,FROM DATE 150673 TO 150773
I>PROCESS,LIST,MIN-MAX


THE MINIMUM VALUE IS      23.70  WHICH OCCURRED ON JUL  4,1973

THE MAXIMUM VALUE IS      30.50  WHICH OCCURRED ON JUN 15,1973
```

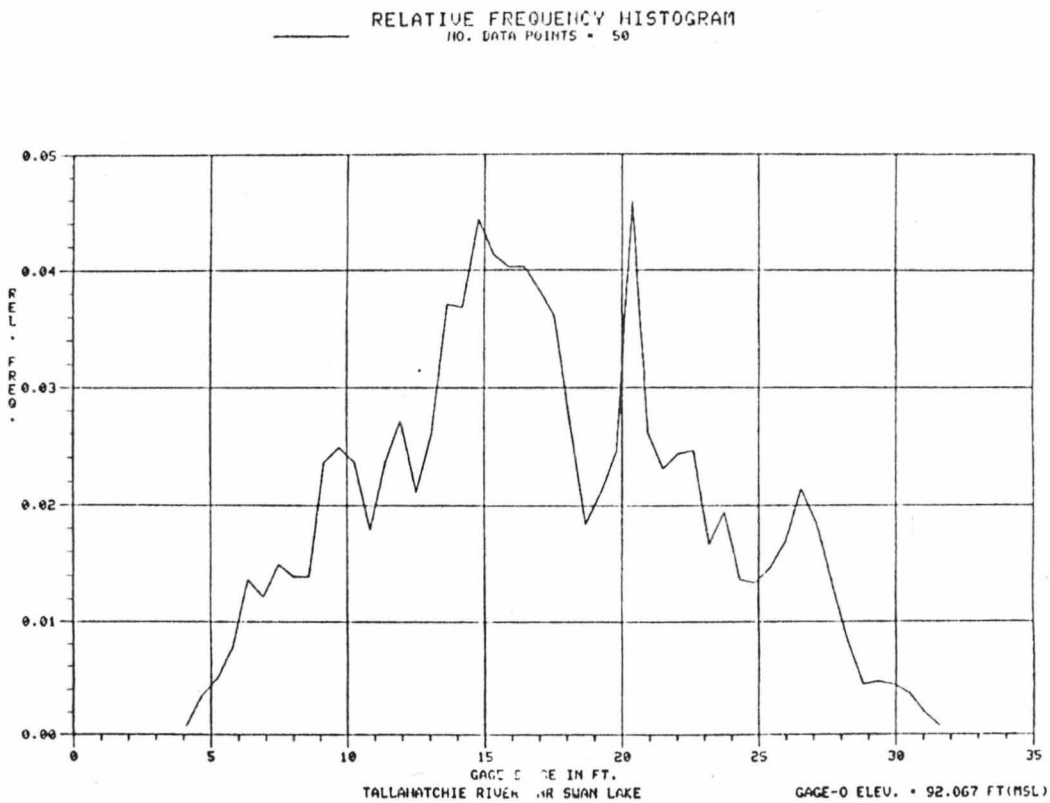
Example 12: Basic Statistics of a Data Set. Basic statistics of the river stage data for the station at river mile 166.0 on the Yazoo River for June 15 to December 30, 1973.

```
I>GET,RIVER STAGE,DATA
I>LOCATION,STATION ON YAZOO RIVER
 AT I>166.0
I>TIME,FROM DATE 150673 TO 301273
I>PROCESS,LIST BASIC STATISTICS
```

```
MINIMUM VALUE =     19.20          MAXIMUM VALUE =     32.20
MEAN VALUE =      23.73          STANDARD DEVIATION =      3.22
```

EXAMPLE 13: Plot a Histogram of River Stage Data. All river stage data to plot a histogram for the station near Swan Lake.

```
I>GET,RIVER STAGE,DATA
I>LOCATION,STATION LOCATED NR SWAN LAKE
I>TIME ALL
I>PROCESS,PLOT,HISTOGRAM
```



EXAMPLE 14: Save Retrieved Data. Stage-discharge data saved on a file called TAPE1 for Belzoni for 1973.

TAPE1 is printed after terminating the data management job.

```
I>GET,STAGE DISCHARGE,DATA
I>LOCATION,STATION LOCATED AT BELZONI
I>TIME,YEAR 1973
I>SAVE

 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>NO

 DO YOU WISH TO CONTINUE WORKING WITH DATA IN THIS DATA BASE

I>NO
     END OF THE DATA MANAGEMENT JOB

C>REWIND,TAPE1
C>LNH,F=TAPE1
1973  47
  30.32 20900.
  30.48 23200.
  34.18 27700.
  35.23 29900.
  35.53 26600.
  35.65 27900.
  35.46 28500.
  35.16 27200.
  34.88 26500.
  34.45 25300.
  33.29 22800.
  33.24 21100.
  33.86 23200.
  34.28 23000.
  34.28 25300.
  34.14 24100.
  33.22 21600.
  31.87 21600.
  31.04 20000.
  30.24 19000.
  28.39 18900.
  25.87 16500.
  23.82 15200.
  23.32 14500.
  21.85 15000.
  21.78 15200.
  21.95 15200.
  21.30 13700.
  20.30 12600.
  20.31 12600.
  19.96 11300.
  20.07 11800.
  20.07 12400.
  20.01 12400.
  19.81 12100.
  18.54 10300.
  18.86 10600.
  19.52 11200.
  19.35 11500.
  18.79 10600.
  18.64 10400.
  19.47 11500.
  20.30 13900.
  27.32 21300.
  27.53 20200.
  27.28 20700.
  30.90 23300.
 EOI ENCOUNTERED.
C>
```

APPENDIX A

Node System

A node system is used for the identification of elements in the Yazoo River Basin. The whole Yazoo data base is identified by the code number 1, therefore, the three main rivers that constitute the main stem of the Yazoo River System will have 1 as the starting number, followed by two numbers representing the river itself. Hence, the codes for these rivers are:

Yazoo River	101
Tallahatchie River	102
Coldwater River	103

Similarly, the code for tributaries of the Yazoo River will contain the starting code 101, followed by two numbers associated with each tributary; for example:

Steele Bayou	10101
Lt. Sunflower River	10102
. . .	...

This enumeration process can continue depending on the "level" of tributaries in the river system. A complete listing of the node system for the Yazoo River System is presented in Table A-1.

Table A-1. Node system for the Yazoo River System.

Name	Node
Yazoo Data Base	1
Yazoo River	101
Steele Bayou	10101
Lt. Sunflower River	10102
Big Sunflower River	10103
Deer Creek	1010301
Short Creek	10104
Piney Creek	10105
Techeva Creek	10106
Black Creek	1010601
Fonnegusha Creek	101060101
Tchula Lake	10107
Abiaca Creek	10108
Pelucia Creek	10109
Yalobusa River	10110
Big Sand Creek	1011001
Teoc Creek	1011002
Potococowa Creek	1011003
Ascalmore Creek	1011004
Cane Creek	1011005
Batupan Bogue	1011006
Lower Aux Channel	101111
Wasp Lake	10112
Tallahatchie River	102

Table A-1 (continued)

Name	Node
PQ Floodway	10201
Yocona River	1020101
Peters Creek	102010101
Tillatoba Creek	10202
Lt. Tallahatchie River	10203
McIvor Ditch	1020301
Cassidy Bayou	10204
Bobo Bayou	10205
Tippo Bayou	10206
Coldwater River	103
Burrel Bayou	10301
Old Coldwater River	10302
Arkabutla Creek	10303
Strayhorn Creek	1030301
Lake Cormorant Bayou	10304

APPENDIX B

Gaging Station Specifications

Much of the information in the Yazoo Data Base Management System is referenced using specific gaging stations. A station can be defined by name, number, latitude and longitude, river name and river mile, or node number and river mile. A complete listing of gaging station location specifications is presented in Table B-1.

Table B-1. Listing of gaging station location specifications.

Location Name	Number	River-Mile	Latitude	Longitude	Node
At Vicksburg	128	0.00	32 19 52	90 53 46	101
At Redwood	129B	16.70	32 29 16	90 49 00	101
At Yazoo City	129C	79.80	32 51 29	90 26 07	101
At Belzoni	353	116.10	33 10 02	90 29 35	101
At Green Wood	129	166.00	33 31 17	90 11 03	101
At Money	339	192.90	33 39 04	90 12 40	102
Nr Swan Lake	132D	219.10	33 51 35	90 16 35	102
Nr Lambert	132B	253.20	34 10 50	90 12 55	102
Nr Darling	319	272.40	34 21 40	90 17 21	103
Nr Crenshaw	327	283.50	34 30 38	90 14 51	103
Nr Sarah	136B	288.20	34 34 32	90 13 28	103
At Arkabutla Dam Outlet	133B	307.70	34 45 30	90 07 35	103
At Whaley	350	10.20	33 37 33	90 06 27	10110
At Grenada Dam Outlet	130B	63.50	33 48 30	89 46 23	10110
Nr Valley Hill	389	6.60	33 31 07	90 02 58	1011001
At Valley Hill	438A	11.10	33 30 10	90 04 07	10109
At Anguilla	144H	39.40			10103
Nr Louise	354A	19.50			10111
Nr Padacah Well	324B	4.10			10203
Nr Batesville	132J	23.50	34 17 44	90 03 18	10203
At Sardis Dan Outlet	132A	25.60	34 23 58	89 47 24	10203
At Enid Dam Outlet	131	13.50	34 09 28	89 54 22	1020101
Nr Oxford	131C		34 16 23	89 31 11	1020101
At Pine Bluff	300A	140.34	33 20 27	90 09 01	10108

Table B-1 (continued)

Location Name	Number	River-Mile	Latitude	Longitude	Node
At Paynes	221				1011004
At Grenada (HWY51)	130		33 47 19	89 48 36	10110
Nr Lacopolis	335	230.65	33 58 35	90 13 35	102
At Marks	320	261.40	34 15 22	90 15 57	103
Nr Sledge	328	278.40	34 26 20	91 15 29	103
Nr Arkabutla	146A	291.20			10303
At Satartia	355	53.30	32 40 22	90 32 54	101
At Mouth of Big Sunflower	355A	44.40	32 40 20	90 40 18	101
At Milestone	428				10107
Nr Silver City	353C	107.40	33 05 00	90 27 37	101
Nr Yazoo City	129A	75.60	32 51 29	90 26 07	101
Nr Ft. Loring	351	179.40			101
At Shell Bluff	352	159.60			101
At Ft. Pemberton Cutoff	489A	162.70	33 31 38	90 14 24	102
At Steele Bayou Floodgate	333F				10101
Nr Anguilla	144H	39.40			10103
At Marksville	340	0.00			10107
Nr Milestone	342				10107
Nr Refuge	342A				10107
Nr Avalon	470				1011003
At Marcel	221A				1011004
Nr Crowder	132K	249.10	34 08 37	90 13 51	102
At Peducah Wells	324B				10201
At Webb	313				10204

Table B-1 (continued)

Location Name	Number	River-Mile	Longitude	Latitude	Node
At Deovolente	436				10112
Nr Phillipp	474A				10206
At Arkabutla Reservoir	133B	325.50	34 45 30	90 07 35	103
At Sardis Reservoir	132A	53.20	34 23 58	89 47 24	10203
At Grenada Reservoir	130B	62.50	33 48 30	89 46 23	10110
At Enid Reservoir	131	13.90	34 09 28	89 54 22	1020101

APPENDIX C

Examples of Retrieval and Processing

RETRIEVAL AND PROCESSING OF STAGE-DISCHARGE DATA

EXAMPLE 1: Status of stage-discharge data for a basin.

Input:

```
I>GET,STAGE DISCHARGE,STATUS
I>LOCATION,BASIN,YAZOO RIVER
```

Output:

DATA STATUS FOR BASIN OF THE YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
STAGE-DISCHARGE DATA STATUS								
AT VICKSBURG	128	101000000	0.00	32 19 52	90 53 46	46.230	20	TSD1
1945 1946 1948 1949 1950 1951 1953 1955 1956 1957 1958 1964 1969 1970 1971 1972 1973 1974 1975 1976								
AT REDWOOD	129B	101000000	16.70	32 29 16	90 49 00	40.170	3	TSD1
1965 1966 1973								
AT YAZOO CITY	129C	101000000	75.60	32 51 29	90 26 07	67.700	9	TSD1
1964 1965 1966 1971 1972 1973 1974 1975 1976								
AT BELZONI	353	101000000	116.10	33 10 02	90 29 35	76.023	10	TSD1
1964 1965 1966 1968 1969 1972 1973 1974 1975 1976								
AT GREENWOOD	129	101000000	166.00	33 31 17	90 11 03	92.067	29	TSD1
1945 1946 1947 1948 1949 4950 1951 1952 1953 1954 1955 1956 1957 1958 1961 1962 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976								
AT WHALEY	350	101100000	10.20	33 37 33	90 06 27	107.800	1	TSD1
1973								
NR LOUISE	354A	101110000	19.50				1	TSD1
1973								

EXAMPLE 2: Status of stage-discharge data for a river.

Input:

```
I>GET,STAGE-DISCHARGE STATUS
I>LOCATION,RIVER,TALLAHATCHIE RIVER
```

Output:

DATA STATUS FOR TALLAHATCHIE RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
STAGE-DISCHARGE DATA STATUS								
AT MONEY	339	102000000	192.90	33 39 04	90 12 40	98.980	9	TSD1
1964 1966 1970 1971 1972 1973 1974 1975 1976								
NR SWAN LAKE	132D	102000000	219.10	33 51 35	90 16 35	113.384	29	TSD1
1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1961 1962 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976								
NR LAMBERT	132B	102000000	253.20	34 10 50	90 12 55	123.829	29	TSD1
1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1961 1962 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976								

EXAMPLE 3: Status of stage-discharge data for a segment of a river.

Input:

```
I>GET,STAGE DISCHARGE,STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>0.
 TO I>100.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
STAGE-DISCHARGE DATA STATUS								
AT VICKSBURG	128	101000000	0.00	32 19 52	90 53 46	46.230	20	TSD1
1945 1946 1948 1949 1950 1951 1953 1955 1956 1957 1958 1964 1969 1970 1971 1972 1973 1974 1975 1976								
AT REDWOOD	129B	101000000	16.70	32 29 16	90 49 00	40.170	3	TSD1
1965 1966 1973								
AT YAZOO CITY	129C	101000000	75.60	32 51 29	90 26 07	67.700	9	TSD1
1964 1965 1966 1971 1972 1973 1974 1975 1976								

EXAMPLE 4: Status of stage-discharge data for a gaging station.

Input:

```
I>GET,STAGE-DISCHARGE STATUS
I>LOCATION,STATION LOCATED AT BELZONI
```

Output:

DATA STATUS FOR YAZOO RIVER AT BELZONI

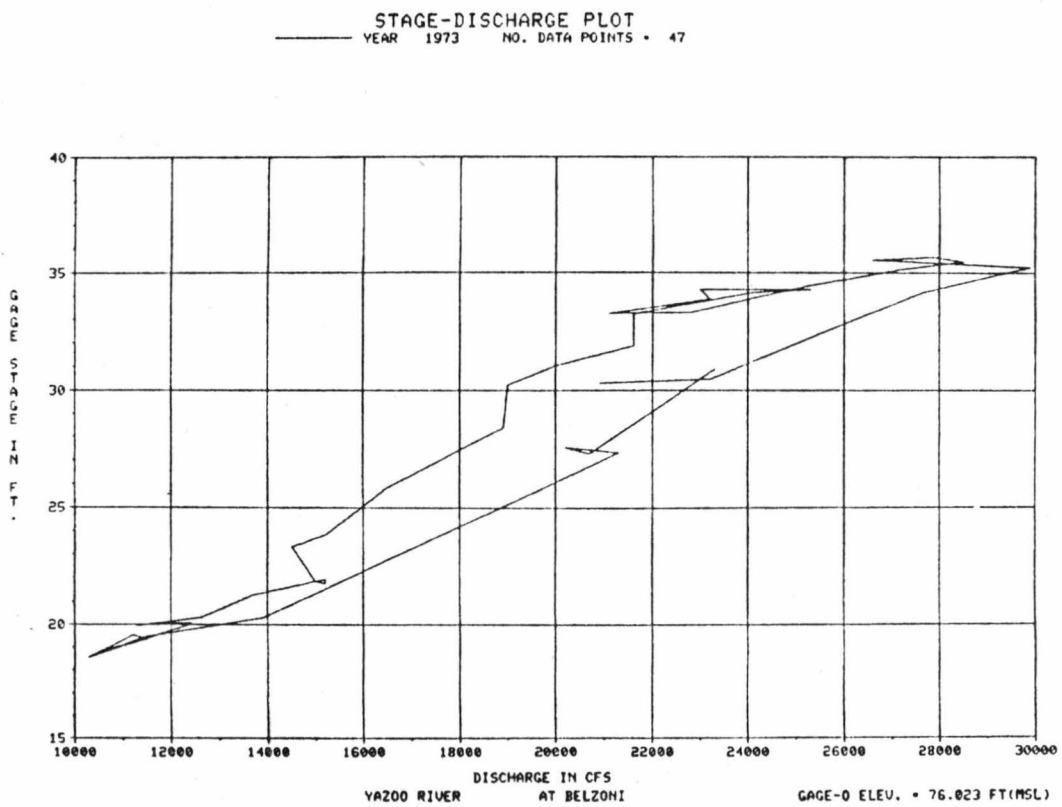
LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
STAGE-DISCHARGE DATA STATUS								
AT BELZONI	353	101000000	116.10	33 10 02	90 29 35	76.023	10	TSD1
1964 1965 1966 1968 1969 1972 1973 1974 1975 1976								

EXAMPLE 5: Stage-discharge plot for a gaging station for a specified year.

Input:

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION NUMBER 353
I>TIME,YEAR 1973
I>PLOT
```

Output:

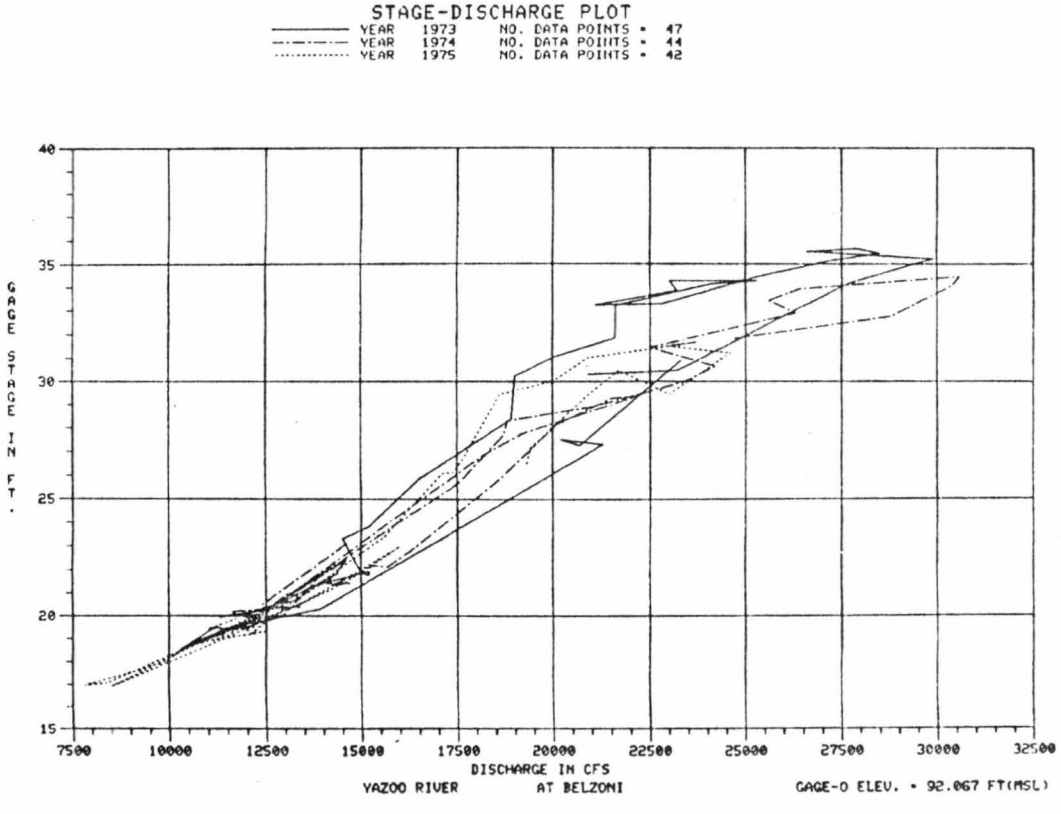


EXAMPLE 6: Stage-discharge plot for a gaging station for less than five years.

Input:

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION COORDINATES 33 10 12,90 29 35
I>TIME,FROM YEAR 1973 TO 1975
I>PLOT
```

Output:



EXAMPLE 7: Stage-discharge regression analysis for a gaging station for each year.

Input:

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION ON TALLAHATCHIE RIVER
 AT I>219.10
I>TIME,FROM YEAR 1970 TO 1976
I>PROCESS,LIST,REGRESSION ANALYSIS
```

Output:

```
                              YEAR = 1970
              REGRESSION EQUATION IS     Q =  31.36002((S).EXP( 1.8792))
CORRELATION COEFFICIENT =   .6913              STANDARD ERROR =   .314338

                              YEAR = 1971
              REGRESSION EQUATION IS     Q =  56.59675((S).EXP( 1.6904))
CORRELATION COEFFICIENT =   .9932              STANDARD ERROR =   .059610
```

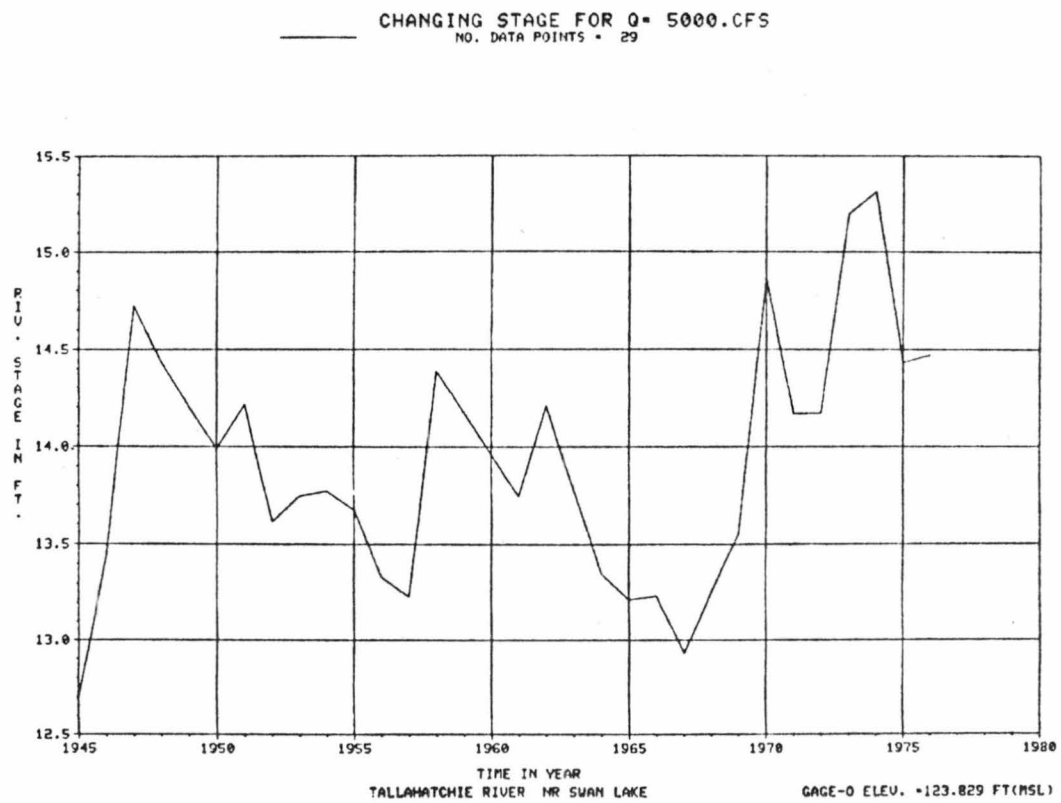
```
                              YEAR = 1975
              REGRESSION EQUATION IS     Q =  33.21605((S).EXP( 1.8783))
CORRELATION COEFFICIENT =   .9840              STANDARD ERROR =   .068087

                              YEAR = 1976
              REGRESSION EQUATION IS     Q =  53.31390((S).EXP( 1.6994))
CORRELATION COEFFICIENT =   .9909              STANDARD ERROR =   .062599
```

EXAMPLE 8: Stage-discharge plot for a gaging station showing variation of river stage (in ft.) for a given discharge (in cfs).

Input:

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION LOCATED NR SWAN LAKE
I>TIME,ALL
I>PROCESS,PLOT,CHANGING STAGE FOR Q=5000.
```

Output:



EXAMPLE 9: Stage-discharge listing for a gaging station showing variation of river stage (in ft.) for a given discharge (in cfs).

Input:

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION NUMBER 132D
I>TIME,ALL
I>PROCESS,LIST,CHANGING STAGE FOR Q=5000.
```

Output:

```
CHANGING RIVER STAGE FOR Q =   5000. CFS
  TALLAHATCHIE RIVER  NR SWAN LAKE
  (GAGE-0 ELEV. = 123.829 FT(MSL))

     YEAR          RIVER-STAGE IN FT

     1945              12.70
     1946              13.45
     1947              14.72
     1948              14.44
     1949              14.20
     1950              13.99
     1951              14.21
     1952              13.61
     1953              13.75
     1954              13.77
     1955              13.67
     1956              13.33
     1957              13.23
```

EXAMPLE 10: All information on file related to stage-discharge for a gaging station for a specified year.

Input:

```
I>GET,STAGE-DISCHARGE,ALL INFORMATION
I>LOCATION,STATION,NODE 101
 AT I>116.10
I>TIME,YEAR 1973
I>LIST
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER HYDRAULICS DATA CATEGORY

STATION NAME		STATN NO	DIST FR NODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
YAZOO RIVER	AT BELZONI	353	116.10(MI)	33 10 02	90 29 35	76.023(FT)	INTER	10

YEAR 1973 NO. DATA POINTS 47

DATE	GAGE STAGE (FT)	DISCH. (CFS)	DATE	GAGE STAGE (FT)	DISCH. (CFS)	DATE	GAGE STAGE (FT)	DISCH. (CFS)	DATE	GAGE STAGE (FT)	DISCH. (CFS)
100173	30.32	20900.	140373	30.48	23200.	200373	34.18	27700.	250373	35.23	29900.
270373	35.53	26600.	290373	35.65	27900.	30473	35.46	28500.	60473	35.16	27200.
110473	34.88	26500.	140473	34.45	25300.	260473	33.29	22800.	30573	33.24	21100.
90573	33.86	23200.	140573	34.28	23000.	230573	34.28	25300.	280573	34.14	24100.
40673	33.22	21600.	110673	31.87	21600.	150673	31.04	20000.	180673	30.24	19000.
230673	28.39	18900.	290673	25.87	16500.	50773	23.82	15200.	90773	23.32	14500.
190773	21.85	15000.	250773	21.78	15200.	30873	21.95	15200.	80873	21.30	13700.
170873	20.30	12600.	220873	20.31	12600.	280873	19.96	11300.	50973	20.07	11800.
120973	20.07	12400.	180973	20.01	12400.	250973	19.81	12100.	21073	18.54	10300.
101073	18.86	10600.	161073	19.52	11200.	271073	19.35	11500.	301073	18.73	10600.
61173	18.64	10400.	131173	19.47	11500.	211173	20.30	13900.	41273	27.32	21300.
111273	27.53	20200.	181273	27.28	20700.	291273	30.90	23300.			

RETRIEVAL AND PROCESSING OF STAGE-HYDROGRAPH DATA

EXAMPLE 11: Status of river stage data for a basin.

Input:

```
I>GET,RIVER STAGE STATUS
I>LOCATION,BASIN,TALLAHATCHIE RIVER
```

Output:

DATA STATUS FOR BASIN OF THE TALLAHATCHIE RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER STAGE DATA STATUS								
AT MONEY	339	102000000	192.90	33 39 04	90 12 40	98.98	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR LOCOPOLIS	335	102000000	230.65	33 58 35	90 13 35	112.90	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR LAMBERT	132B	102000000	253.20	34 10 50	90 12 55	123.829	11	TSG1
1964 1965 1966 1967 1968 1969 1970 191 1972 1973 1974								
NR SWAN LAKE	132D	102000000	219.10	33 51 35	90 16 35	113.384	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
AT SARDIS DAM OUTLET	132A	102030000	25.60	34 23 58	89 47 24	0.000	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
AT ENID DAM OUTLET	131	102010100	13.50	34 09 28	89 54 22	0.000	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 12: Status of river stage data for a river.

Input:

```
I>GET,RIVER STAGE STATUS
I>LOCATION,RIVER,LT TALLAHATCHIE RIVER
```

Output:

DATA STATUS FOR LT TALLAHATCHIE RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER STAGE DATA STATUS								
AT SARDIS DAM OUTLET	132A	102030000	25.60	34 23 58	89 47 24	0.000	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 13: Status of river stage data for a segment of a river.

Input:

```
I>GET,RIVER STAGE STATUS
I>LOCATION,SEGMENT,COLDWATER RIVER
 FROM I>260,
 TO I>300.
```

Output:

DATA STATUS FOR SEGMENT OF COLDWATER RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
			RIVER STAGE DATA STATUS					
AT MARKS	320	103000000	261.40	34 15 22	90 15 57	120.71	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR DARLING	319	103000000	272.40	34 21 40	90 17 21	134.31	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR SLEDGE	328	103000000	278.40	34 26 20	91 15 29	146.09	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR CREMSHAW	327	103000000	283.50	34 30 38	90 14 51	156.09	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR SARAH	1368	103000000	288.20	34 34 32	90 13 28	158.84	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 14: Status of river stage data for a gaging station.

Input:

```
I>GET,RIVER STAGE STATUS
I>LOCATION,STATION LOCATED NR SWAN LAKE
```

Output:

DATA STATUS FOR TALLAHATCHIE RIVER NR SWAN LAKE

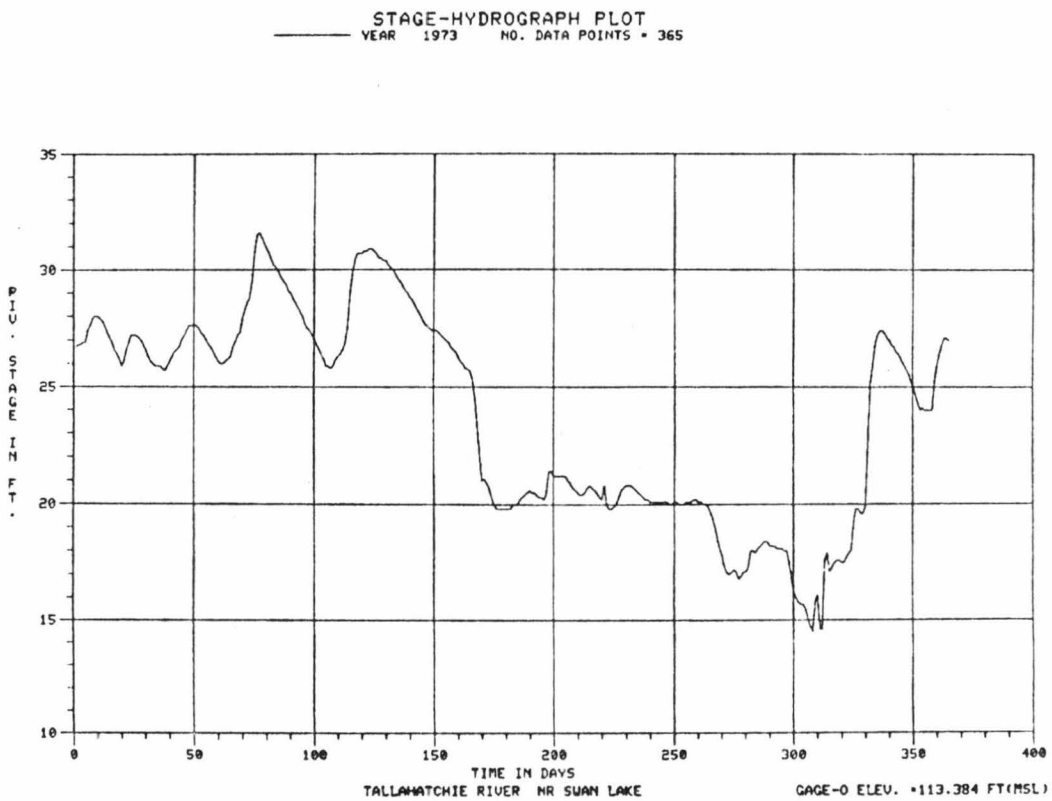
LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
			RIVER STAGE DATA STATUS					
NR SWAN LAKE	1320	102000000	219.10	33 51 35	90 16 35	113.384	11	TSG1
1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 15: River stage plot for a gaging station for a specified year.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION NUMBER 132D
I>TIME,YEAR 1973
I>PLOT
```

Output:

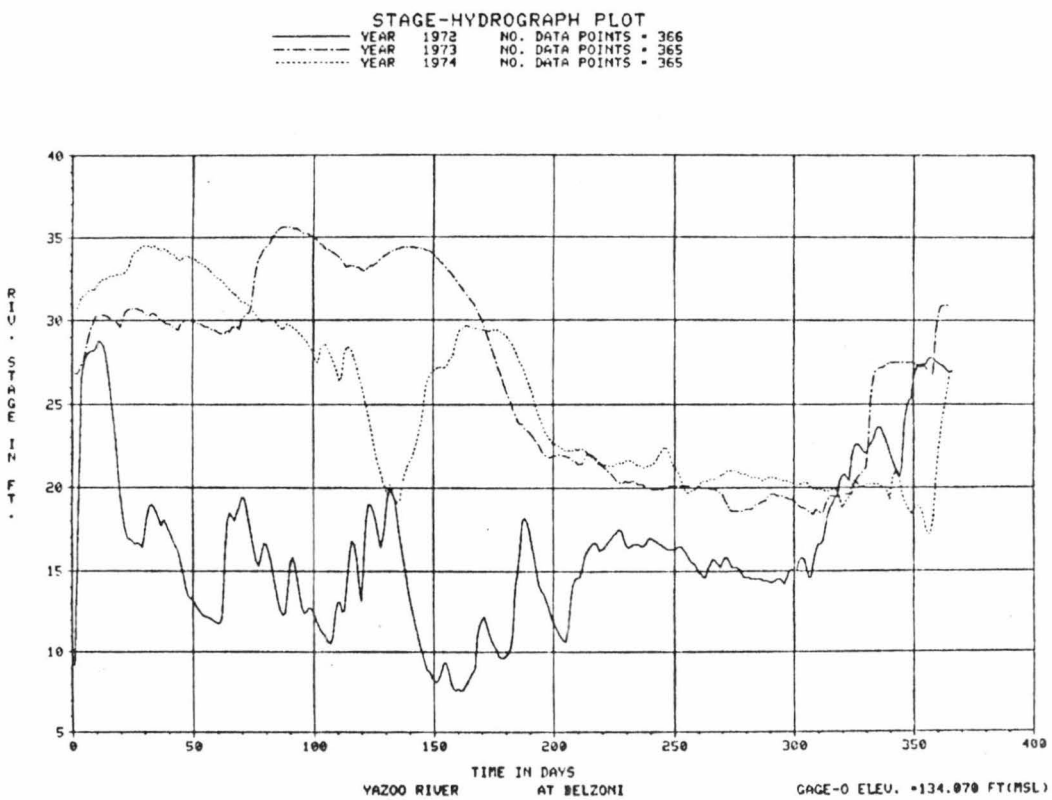


EXAMPLE 16: River stage plot for a gaging station for less than five years.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION COORDINATES 33 10 02,90 29 35
I>TIME,FROM YEAR 1972 TO 1974
I>PLOT
```

Output:



EXAMPLE 17: River stage data for a gaging station for a specified date.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION ON YAZOO RIVER
 AT I>116.10
I>TIME,DATE 150673
I>LIST
```

Output:

```
THE GAGE-STAGE FOR THAT DATE =  31.10FT.
```

EXAMPLE 18: River stage listing for a gaging station for a specified time.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION COORDINATES 33 31 17,90 11 03
I>TIME,FROM DATE 150673 TO 150773
I>LIST
```

Output:

```
                    GAGE-STAGE VALUES (FT) FOR THAT PERIOD ARE

 1973       31

30.50      29.90      29.20      28.30      27.40      27.00      26.70      26.40      26.00      25.60
25.30      25.00      24.70      24.40      24.20      24.10      23.90      23.80      23.80      23.70
24.60      24.60      24.80      24.70      24.70      24.60      24.50      24.40      24.10      24.20
23.80
```

EXAMPLE 19: Minimum value of river stage data for a gaging station for a specified time.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION LOCATED AT GREENWOOD
I>TIME,FROM DATE 150673 TO 150773
I>PROCESS,LIST,MIN VALUE
```

Output:

```
THE MINIMUM VALUE IS      23.70  WHICH OCCURRED ON JUL  4,1973
```

EXAMPLE 20: Maximum value of river stage data for a gaging station for a specified time.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION NUMBER 129
I>TIME,FROM DATE 150673 TO 150773
I>PROCESS,LIST,MAX VALUE
```

Output:

```
THE MAXIMUM VALUE IS      30.50  WHICH OCCURRED ON JUN 15,1973
```

EXAMPLE 21: Basic statistics of river stage data for a gaging station for a specified time.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION ON YAZOO RIVER
 AT I>166.00
I>TIME,FROM DATE 150673 TO 301273
I>PROCESS,LIST,BASIC STAT
```

Output:

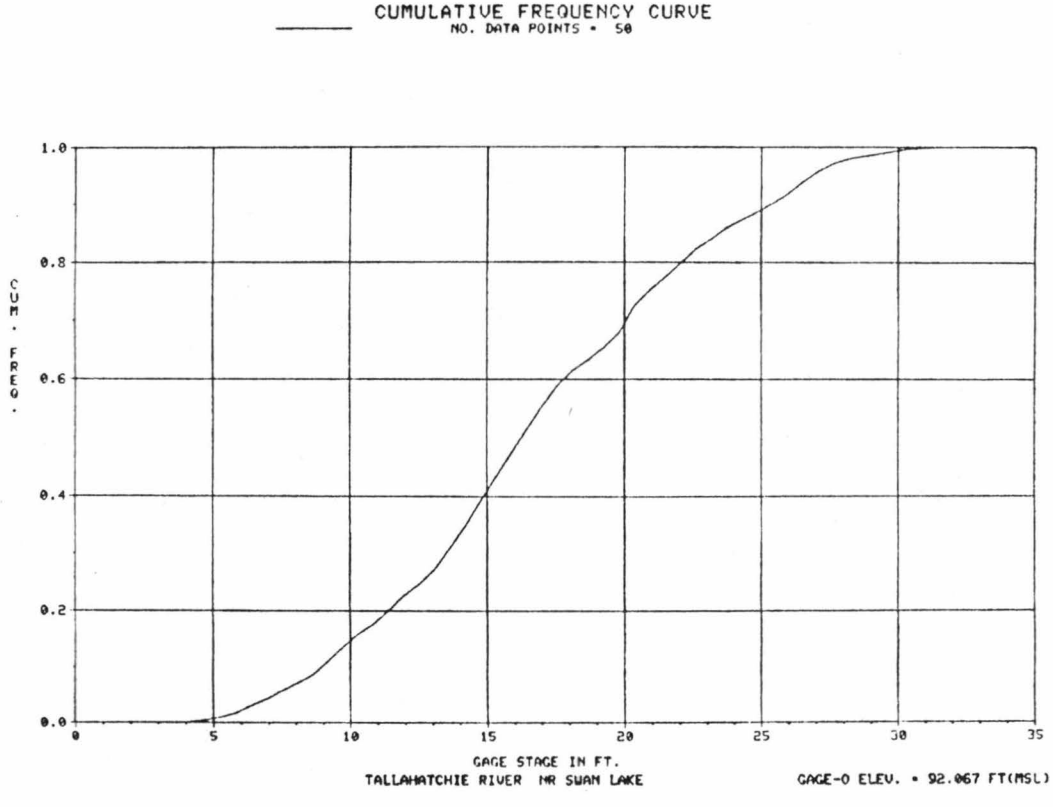
```
MINIMUM VALUE =     19.20          MAXIMUM VALUE =     32.20
MEAN VALUE =     23.73          STANDARD DEVIATION =      3.22
```

EXAMPLE 22: River stage data for a cumulative frequency analysis for a gaging station.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION NUMBER 132D
I>TIME,A: L
I>PROCESS,PLOT,CUM FREQUENCY
```

Output:

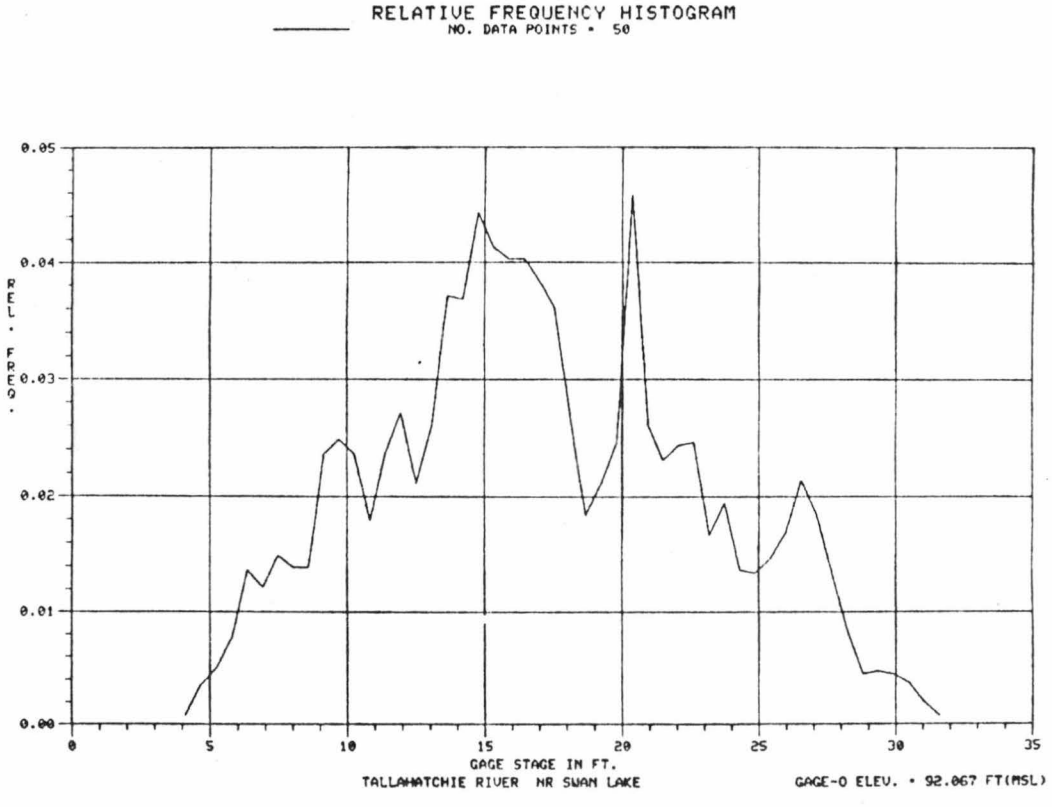


EXAMPLE 23: River stage data for a relative frequency histogram for a gaging station.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION LOCATED NR SWAN LAKE
I>TIME,ALL
I>PROCESS,PLOT,HISTOGRAM
```

Output:



EXAMPLE 24: River stage data for a frequency analysis (both cumulative and relative) for a gaging station.

Input:

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION LOCATED AT GREENWOOD
I>TIME,ALL
I>PROCESS,LIST,FREQUENCY ANALYSIS
```

Output:

TABLE OF THE COMPUTED RELATIVE FREQUENCIES (PDF), AND THE CUMULATIVE FREQUENCIES (CDF)

YAZOO RIVER AT GREENWOOD

NO.	RANGE		MID-RANGE	OBS. FREQ.	CDF	PDF
1	(9.10	9.70)	9.40	9.	.00224	.00224
2	(9.70	10.29)	9.99	22.	.00772	.00548
3	(10.29	10.88)	10.58	34.	.01618	.00846
4	(10.88	11.47)	11.18	60.	.03111	.01493
5	(11.47	12.06)	11.77	68.	.04803	.01692
6	(12.06	12.66)	12.36	93.	.07118	.02315
7	(12.66	13.25)	12.95	107.	.09781	.02663
8	(13.25	13.84)	13.54	112.	.12568	.02787
9	(13.84	14.43)	14.13	104.	.15157	.02588
10	(14.43	15.02)	14.73	88.	.17347	.02190
11	(15.02	15.61)	15.32	88.	.19537	.02190
12	(15.61	16.21)	15.91	119.	.22499	.02962
13	(16.21	16.80)	16.50	152.	.26282	.03783
14	(16.80	17.39)	17.09	157.	.30189	.03907
15	(17.39	17.98)	17.69	204.	.35266	.05077
35	(29.23	29.82)	29.52	81.	.96566	.02016
36	(29.82	30.41)	30.11	57.	.97984	.01419
37	(30.41	31.00)	30.71	35.	.98855	.00871
38	(31.00	31.59)	31.30	33.	.99077	.00821
39	(31.59	32.19)	31.89	47.	.99246	.01170
40	(32.19	32.78)	32.48	46.	.99391	.01145
41	(32.78	33.37)	33.07	23.	.99964	.00572
42	(33.37	33.96)	33.67	24.	.99561	.00597
43	(33.96	34.55)	34.26	22.	.99109	.00548
44	(34.55	35.14)	34.85	14.	.99457	.00348
45	(35.14	35.74)	35.44	15.	.99830	.00373
46	(35.74	36.33)	36.03	24.	.99428	.00597
47	(36.33	36.92)	36.62	9.	.99652	.00224
48	(36.92	37.51)	37.22	4.	.99751	.00100
49	(37.51	38.10)	37.81	6.	.99900	.00149
50	(38.10	38.70)	38.40	4.	1.00000	.00100

EXAMPLE 25: All information related to river stage for a gaging station for a specified year.

Input:

```
I>GET,RIVER STAGE,ALL INFORMATION
I>LOCATION,STATION LOCATED NR LAMBERT
I>TIME,YEAR 1974
I>DISPLAY
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER STAGE DATA CATEGORY

STATION NAME	STATN NO	DIST FR NODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
TALLAHATCHIE RIVER NR LAMBERT	1328	253.20(MI)	34 10 50	90 12 55	123.829(FT)	CONTI	11

DAILY RIVER STAGE FOR 1974

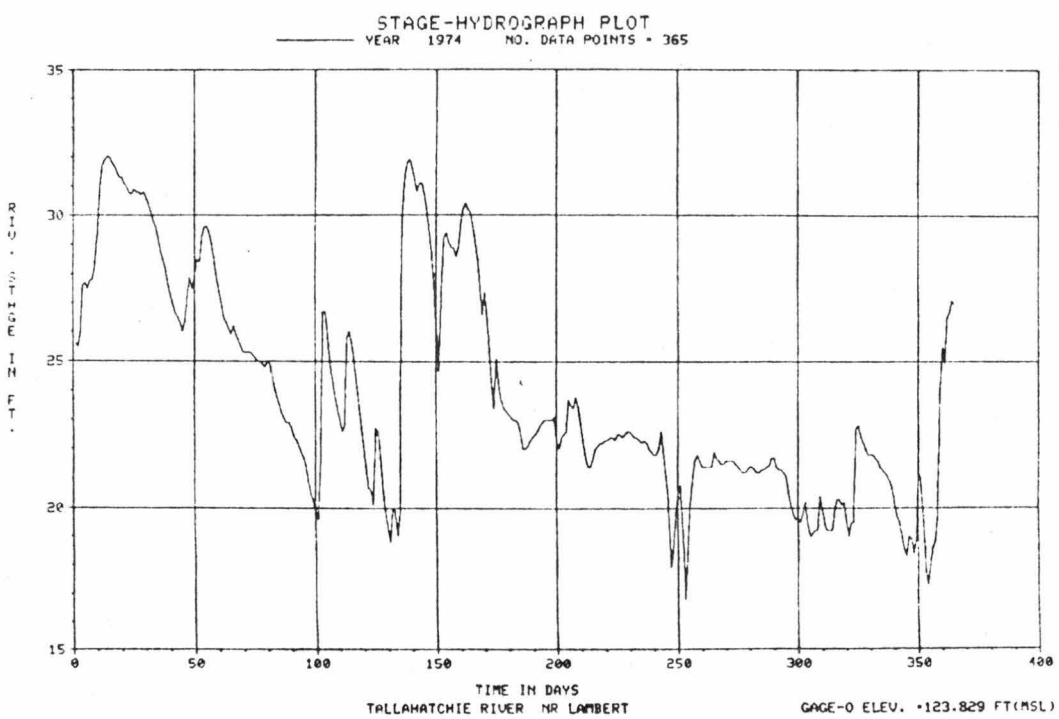
COMPUTED DAILY RIVER STAGE IN FEET ABOVE GAGE ZERO ELEVATION

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	25.60	30.10	27.40	22.40	21.30	27.30	23.00	21.40	21.90	21.50	19.00	21.30
2	25.50	29.80	27.00	22.30	20.70	29.20	23.00	21.40	21.10	21.40	19.10	21.20
3	26.00	29.60	26.50	22.10	20.60	29.40	22.90	21.70	20.30	21.30	19.20	21.10
4	27.60	29.20	26.30	21.90	20.10	29.10	22.50	22.00	17.90	21.20	19.20	20.90
5	27.70	28.80	26.10	21.70	22.70	28.90	22.00	22.10	18.60	21.20	20.40	20.70
26	30.80	29.00	23.50	25.00	30.20	23.70	23.40	22.00	21.50	19.60	21.80	25.50
27	30.90	28.50	23.20	24.40	29.50	23.40	23.80	21.90	21.60	19.60	21.80	24.90
28	30.70	27.90	23.00	23.60	28.70	23.30	23.40	21.80	21.60	19.50	21.70	26.50
29	30.80	0.00	22.90	22.80	27.60	23.20	22.80	21.80	21.60	19.80	21.60	26.70
30	30.60	0.00	22.90	22.00	26.00	23.10	22.20	22.00	21.60	20.20	21.40	27.10
31	30.40	0.00	22.70	0.00	24.70	0.00	21.70	22.60	0.00	19.40	0.00	27.00
MEAN	29.93	28.17	24.97	23.13	25.33	27.17	22.72	22.20	20.77	20.91	20.48	20.94
MAX.	32.00	30.10	27.40	26.70	31.90	30.40	23.80	22.60	21.90	21.70	22.80	27.10
MIN.	25.50	26.00	22.70	19.60	18.80	23.10	21.70	21.40	16.80	19.40	19.00	17.30

MONTHLY STATISTICS

MEAN RIVER STAGE FOR YEAR WAS 23.87

HIGHEST RIVER STAGE VALUE WAS 32.00FT. ABOVE GAGE ZERO ELEVATION, OCCURRED ON JAN 14
LOWEST RIVER STAGE VALUE WAS 16.80FT. ABOVE GAGE ZERO ELEVATION, OCCURRED ON SEP 10



EXAMPLE 26: All information related to river stage for a gaging station for a specified water year.

Input:

```
I>GET,RIVER STAGE,ALL INFORMATION
I>LOCATION,STATION NUMBER 129
I>TIME,WATER YEAR 1973
I>DISPLAY
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER STAGE DATA CATEGORY

STATION NAME		STATN NO	DIST FR MODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
YAZOO RIVER	AT GREENWOOD	129	166.00(MI)	33 31 17	90 11 03	92.067(FT)	CONTI	11

DAILY RIVER STAGE FOR WATER YEAR 1973

COMPUTED DAILY RIVER STAGE IN FEET ABOVE GAGE ZERO ELEVATION

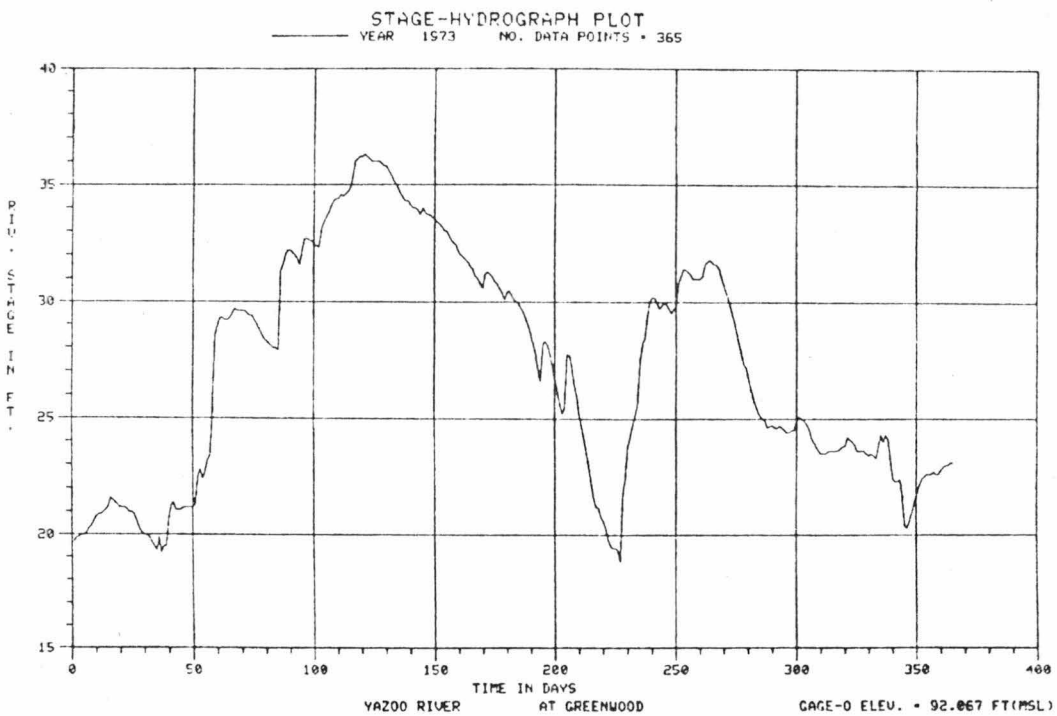
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.70	19.90	29.30	31.80	36.00	33.30	30.10	23.50	29.80	29.20	24.60	24.00
2	19.90	19.70	29.20	31.60	36.00	33.20	30.00	22.90	30.00	28.70	24.20	24.30
3	19.90	19.50	29.20	32.20	36.00	33.00	29.90	22.20	29.90	28.20	24.00	24.10
4	20.00	19.30	29.30	32.70	36.00	33.00	29.70	21.60	29.70	27.80	23.80	23.20
5	20.00	19.90	29.50	32.70	35.90	32.80	29.50	21.20	29.50	27.30	23.60	22.40
26	20.90	23.40	31.60	36.10	33.60	30.60	26.50	29.30	31.20	24.50	23.40	22.90
27	20.60	25.00	32.00	36.20	33.50	30.40	26.00	30.00	30.70	24.90	23.50	23.00
28	20.30	28.50	32.20	36.20	33.40	30.10	25.20	30.20	30.40	25.10	23.40	23.00
29	20.10	29.00	32.20	36.30	0.00	30.40	24.70	30.20	30.00	25.20	23.30	23.10
30	20.00	29.30	32.10	36.20	0.00	30.50	24.10	30.00	29.60	24.90	23.80	23.10
31	20.00	0.00	32.00	36.10	0.00	30.30	0.00	29.70	0.00	24.80	24.30	0.00

MONTHLY STATISTICS

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	35.04	35.67	32.34	28.20	24.74	31.70	26.30	24.45	23.12	21.36	22.66	27.90
MAX.	36.30	36.00	33.30	30.10	30.20	31.80	29.20	24.60	24.30	21.70	22.80	27.10
MIN.	31.60	33.40	30.10	24.10	18.80	29.50	24.40	23.30	20.30	19.40	19.00	32.20

MEAN RIVER STAGE FOR YEAR WAS 27.16

HIGHEST RIVER STAGE VALUE WAS 36.30FT. ABOVE GAGE ZERO ELEVATION, OCCURRED ON JAN 29
LOWEST RIVER STAGE VALUE WAS 18.80FT. ABOVE GAGE ZERO ELEVATION, OCCURRED ON MAY 15



RETRIEVAL AND PROCESSING OF DISCHARGE-HYDROGRAPH DATA

Data management operations used to retrieve and process river stage data are also applicable to discharge data. One aspect requiring change in the GET-command statement is the data category name. Examples related to the management of discharge-hydrograph data follow.

EXAMPLE 27: Status of discharge data for a basin.

Input:

```
I>GET,DISCHARGE STATUS
I>LOCATION,BASIN,YAZOO RIVER
```

Output:

DATA STATUS FOR BASIN OF THE YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER DISCHARGE DATA STATUS								
AT GREENWOOD	129	101000000	166.00	33 31 17	90 11 03	92.067	14	TDI1
1962 1962 1963 1964 1965 1966 1967 1968 4969 1970 1971 1972 1973 1974								
AT GRENADA DAM OUTLET	130B	101100000	63.50	33 48 30	89 46 23	0.000	14	TDI1
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 28: Status of discharge data for a river.

Input:

```
I>GET,DISCHARGE STATUS
I>LOCATION,RIVER,TALLAHATCHIE RIVER
```

Output:

DATA STATUS FOR TALLAHATCHIE RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER DISCHARGE DATA STATUS								
NR LAMBERT	1328	102000000	253.20	34 10 50	90 12 55	123.829	14	TDI1
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								
NR SWAN LAKE	132D	102000000	219.10	33 51 35	90 16 35	113.384	14	TDI1
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 29: Status of discharge data for a segment of a river.

Input:

```
I>GET,DISCHARGE STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>100.
 TO I>170.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER DISCHARGE DATA STATUS								
AT GREENWOOD	129	1010000000	195.00	33 31 17	90 11 03	92.067	14	TD11
1962 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 30: Status of discharge data for a gaging station.

Input:

```
I>GET,DISCHARGE STATUS
I>LOCATION,STATION LOCATED NR LAMBERT
```

Output:

DATA STATUS FOR TALLAHATCHIE RIVER NR LAMBERT

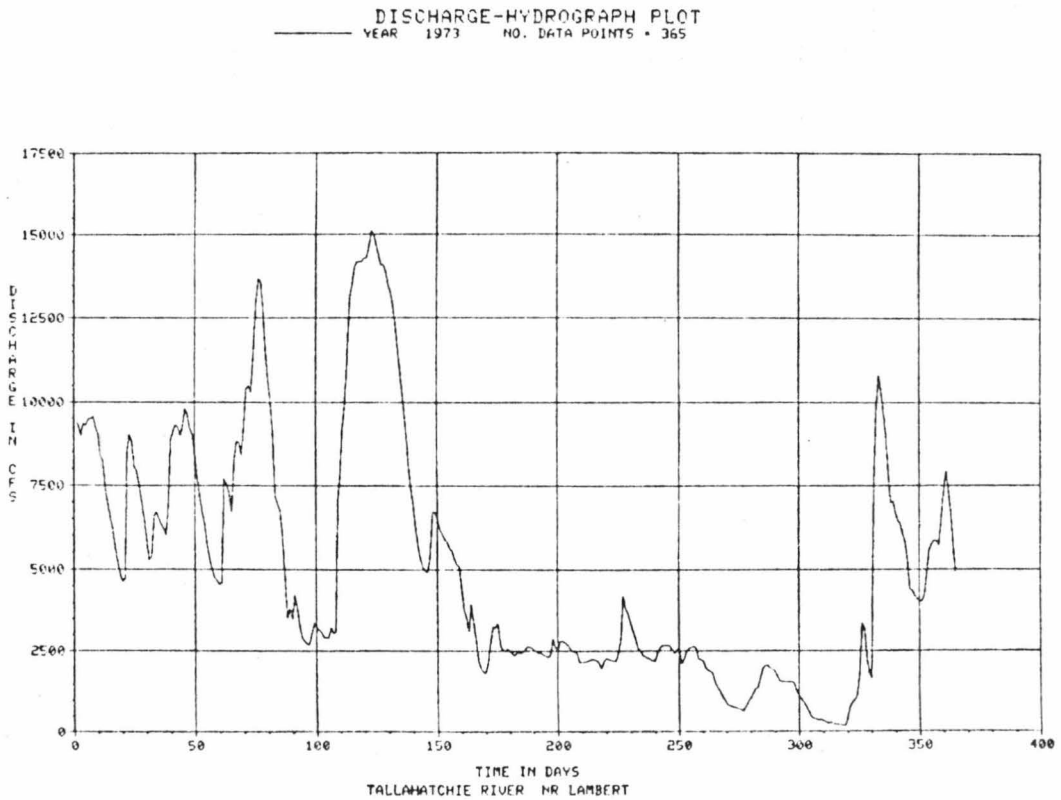
LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
RIVER DISCHARGE DATA STATUS								
NR LAMBERT	1328	1020000000	253.20	34 10 50	90 12 55	123.829	14	TD11
1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974								

EXAMPLE 31: Discharge plot for a gaging station for a specified year.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION NUMBER 132B
I>TIME,YEAR 1973
I>PLOT
```

Output:

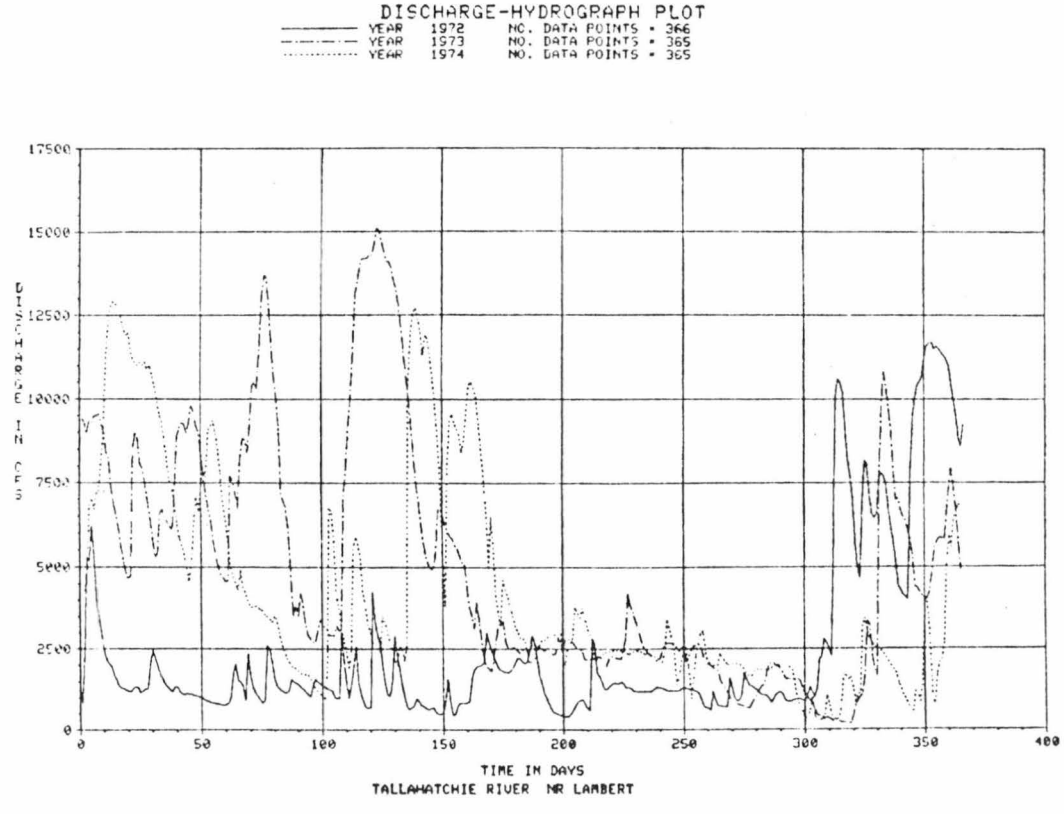


EXAMPLE 32: Discharge plot for a gaging station for a specified time.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION COORDINATES 34 10 50,90 12 55
I>TIME,FROM YEAR 1972 TO 1974
I>PLOT
```

Output:



EXAMPLE 33: Discharge data for a gaging station for a specified date.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION NUMBER 129
I>TIME,FROM DATE, 100473 TO 100573
I>LIST
```

Output:

DISCHARGE VALUES (CFS) FOR THAT PERIOD ARE

1973	31								
27200.	26400.	25600.	24900.	24100.	24000.	23800.	23700.	24000.	23800.
23700.	23600.	23400.	23100.	23100.	24200.	25400.	26400.	26700.	27000.
27300.	27700.	28100.	28600.	29100.	29700.	30200.	30800.	31200.	31500.
31700.									

EXAMPLE 34: Discharge data for a gaging station for a specified time.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION NUMBER 129
I>TIME,DATE 191273
I>LIST
```

Output:

```
THE RIVER DISCHARGE FOR THAT DATE =  12700.CFS
```

EXAMPLE 35: Minimum value of discharge data for a gaging station for a specified time.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION LOCATED AT GREENWOOD
I>TIME,FROM DATE 100473 TO 100573
I>PROCESS,LIST,MIN VALUE
```

Output:

```
THE MINIMUM VALUE IS   23100.00  WHICH OCCURRED ON APR 23,1973
```

EXAMPLE 36: Maximum value of discharge data for a gaging station for a specified time.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION ON YAZOO RIVER
 AT I>166.00
I>TIME,FROM DATE 100473 TO 100573
I>PROCESS,LIST,MAX VALUE
```

Output:

```
THE MAXIMUM VALUE IS   31700.00  WHICH OCCURRED ON MAY 10,1973
```

EXAMPLE 37: Basic statistics of discharge data for a gaging station for a specified time.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION COORDINATES 33 51 35,90 16 35
I>TIME,FROM DATE 150273 TO 251073
I>PROCESS,LIST,BASIC STAT
```

Output:

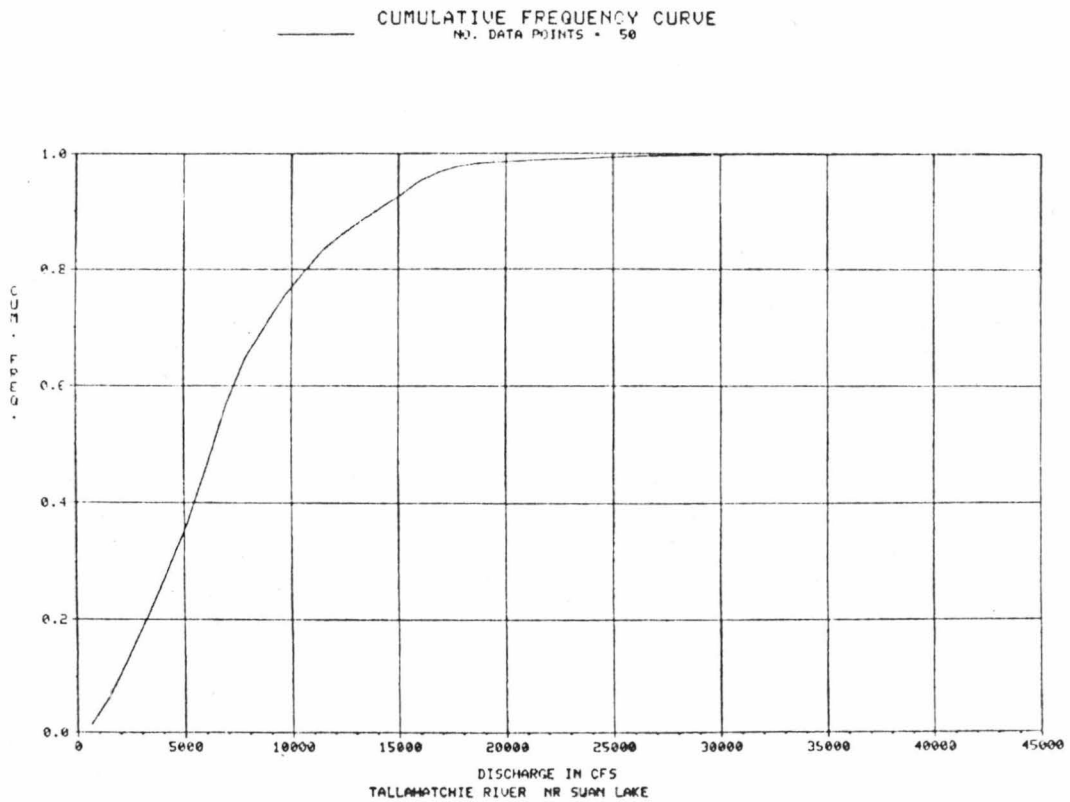
```
MINIMUM VALUE =   6830.00          MAXIMUM VALUE =  44900.00
MEAN VALUE =  13976.32          STANDARD DEVIATION =   7402.73
```

EXAMPLE 38: All discharge data for cumulative frequency analysis for a gaging station.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION LOCATED NR SWAN LADE
I>TIME,ALL
I>PROCESS,PLOT,CUM FREQUENCY
```

Output:

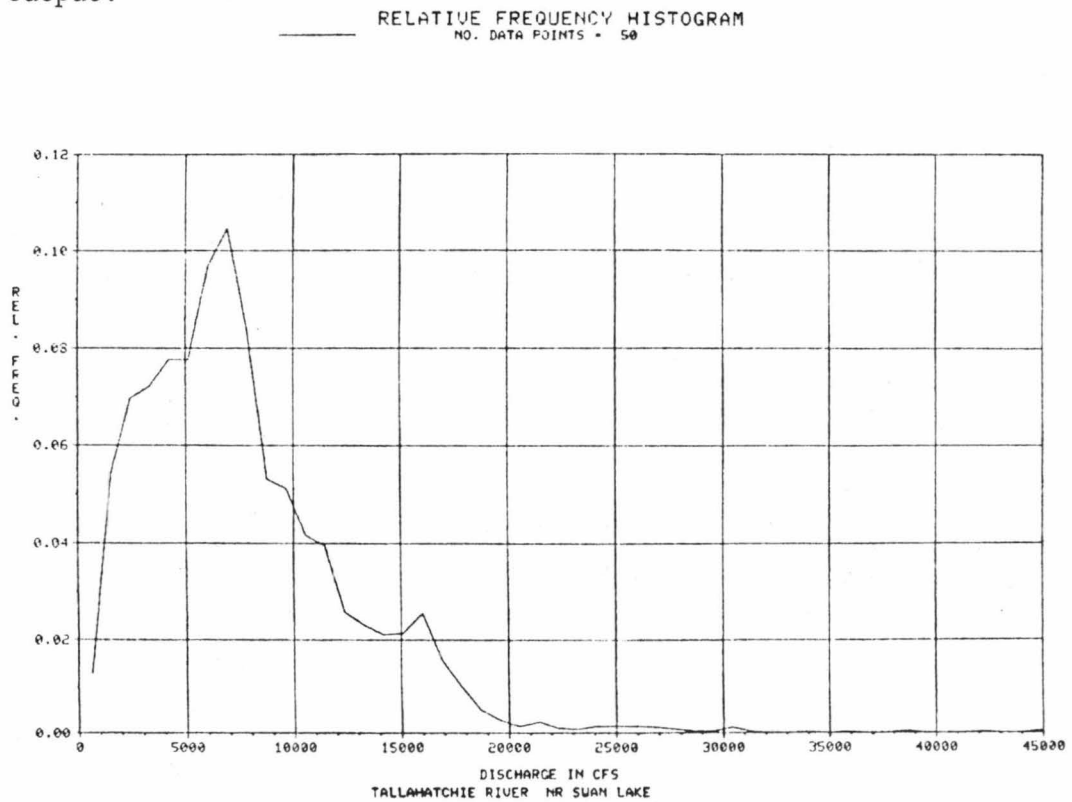


EXAMPLE 39: All discharge data for a relative frequency histogram for a gaging station.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION NUMBER 1320
I>TIME,ALL
I>PROCESS,PLOT,HISTOGRAM
```

Output:



EXAMPLE 40: All discharge data for a frequency analysis (both cumulative and relative) for a gaging station.

Input:

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION ON TALLAHATCHIE RIVER
 AT I>219.10
I>TIME,ALL
I>PROCESS,LIST,FREQUENCY ANALYSIS
```

Output:

TABLE OF THE COMPUTED RELATIVE FREQUENCIES (PDF), AND THE CUMULATIVE FREQUENCIES (CDF)

TALLAHATCHIE RIVER NR SWAN LAKE

NO.	RANGE		MID-RANGE	OBS. FREQ.	CDF	PDF
1	(160.08	1063.92)	612.00	65.	.01271	.01271
2	(1063.92	1967.76)	1515.84	276.	.06669	.05398
3	(1967.76	2871.59)	2419.67	356.	.13632	.06963
4	(2871.59	3775.43)	3323.51	369.	.20849	.07217
5	(3775.43	4679.27)	4227.35	397.	.28613	.07765
6	(4679.27	5583.10)	5131.18	397.	.36378	.07765
7	(5583.10	6486.94)	6035.02	495.	.46059	.09681
8	(6486.94	7390.78)	6938.86	535.	.56523	.10464
45	(39928.98	40832.73)	40380.82	0.	.99941	0.00000
46	(40832.73	41736.57)	41284.65	0.	.99941	0.00000
47	(41736.57	42640.41)	42188.49	1.	.99961	.00020
48	(42640.41	43544.24)	43092.33	0.	.99961	0.00000
49	(43544.24	44448.08)	43996.16	0.	.99961	0.00000
50	(44448.08	45351.92)	44900.00	2.	1.00000	.00039

EXAMPLE 41: All information related to discharge for a gaging station for a specified year.

Input:

```
I>GET,DISCHARGE,ALL INFORMATION
I>LOCATION,STATION LOCATED NR LAMBERT
I>TIME,YEAR 1973
I>DISPLAY
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER DISCHARGE DATA CATEGORY

STATION NAME	STATN NO	DIST FR MODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
TALLAHATCHIE RIVER NR LAMBERT	1328	253.20(MI)	34 10 50	90 12 55	123.829(FT)	CONTI	14

DAILY DISCHARGE FOR 1973

COMPUTED DAILY DISCHARGE IN CUBIC FEET PER SECOND

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	9420.	5380.	4550.	4220.	14300.	6050.	2350.	2200.	2660.	747.	449.	9760.
2	9290.	6580.	4550.	3930.	14600.	5890.	2450.	2250.	2660.	724.	413.	9020.
3	8970.	6700.	7720.	3260.	15100.	5810.	2430.	2230.	2650.	683.	389.	7930.
4	9350.	6500.	7550.	2910.	15000.	5620.	2430.	2210.	2530.	646.	362.	6970.
5	9290.	6330.	7230.	2800.	14700.	5540.	2490.	2120.	2400.	800.	380.	7030.
26	7950.	4990.	6760.	14000.	4900.	2530.	2480.	2240.	1020.	1250.	1670.	7370.
27	7530.	4760.	6010.	14200.	5380.	2480.	2400.	2190.	878.	1130.	7370.	7930.
28	7020.	4680.	4740.	14200.	6710.	2550.	2150.	2170.	826.	1030.	9710.	7380.
29	6480.	0.	3500.	14200.	6700.	2500.	2160.	2410.	794.	917.	10800.	6660.
30	5870.	0.	3820.	14300.	6500.	2410.	2160.	2590.	768.	788.	10400.	5720.
31	5280.	0.	3500.	0.	6180.	0.	2170.	2660.	0.	624.	0.	4910.

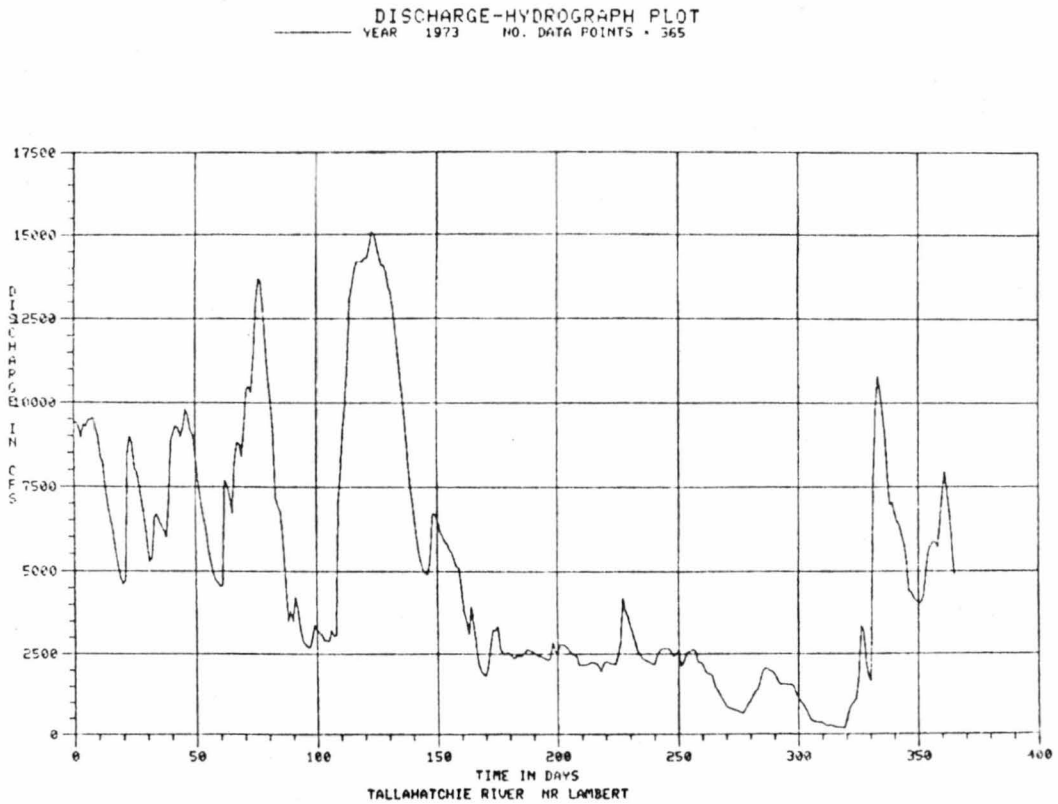
MONTHLY STATISTICS

MEAN	7620.	7324.	8432.	6639.	10010.	3567.	2476.	2543.	1972.	1337.	2038.	6025.
MAX.	9560.	9810.	13700.	14300.	15100.	6050.	2860.	4200.	2660.	2050.	10800.	9760.
MIN.	4630.	4680.	3500.	2700.	4900.	1810.	2150.	1960.	768.	624.	188.	4040.

TOTAL DISCHARGE FOR YEAR WAS 1823331. MEAN DISCHARGE FOR YEAR WAS 4995.4

HIGHEST DISCHARGE VALUE WAS 15100.CFS, OCCURRED ON MAY 3
LOWEST DISCHARGE VALUE WAS 188.CFS, OCCURRED ON NOV 14

EXAMPLE 41 (continued)



EXAMPLE 42: All information related to discharge for a gaging station for a specified water year.

Input:

```
I>GET,DISCHARGE,ALL INFORMATION
I>LOCATION,STATION NUMBER 132D
I>TIME,WATER YEAR 1973
I>DISPLAY
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER DISCHARGE DATA CATEGORY

STATION NAME	STATN NO	DIST FR MODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
TALLAHATCHIE RIVER NR SWAN LAKE	132D	219.10(MI)	33 51 35	90 16 35	113.384(FT)	CONTI	14

DAILY DISCHARGE FOR WATER YEAR 1973

COMPUTED DAILY DISCHARGE IN CUBIC FEET PER SECOND

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6990.	5880.	19600.	16100.	22600.	17400.	10600.	9300.	15400.	11300.	9150.	10600.
2	7040.	5560.	19700.	15700.	21800.	17100.	10400.	8970.	15200.	11200.	8860.	10500.
3	6930.	5420.	18200.	15800.	21500.	16800.	10200.	8700.	15400.	11000.	8800.	9400.
4	6830.	5400.	17600.	16100.	21000.	16600.	9900.	8440.	15300.	10900.	8800.	7250.
5	6890.	6170.	17000.	16100.	20200.	16300.	9630.	8660.	15100.	10800.	8910.	6710.
26	6840.	9380.	15700.	25500.	18400.	12630.	11700.	21100.	12500.	11300.	10200.	9490.
27	6430.	12100.	16500.	26200.	17800.	12200.	11700.	18700.	12100.	11600.	10200.	9490.
28	6250.	15200.	17200.	26700.	17600.	11800.	10800.	17600.	11800.	11300.	10100.	9440.
29	6160.	17000.	17600.	26700.	0.	11520.	10300.	16500.	11600.	10900.	10100.	9420.
30	6080.	18800.	17600.	25400.	0.	11300.	9770.	15400.	11400.	10300.	10200.	9400.
31	6060.	0.	16800.	23800.	0.	10900.	0.	14500.	0.	9640.	10500.	0.

MONTHLY STATISTICS

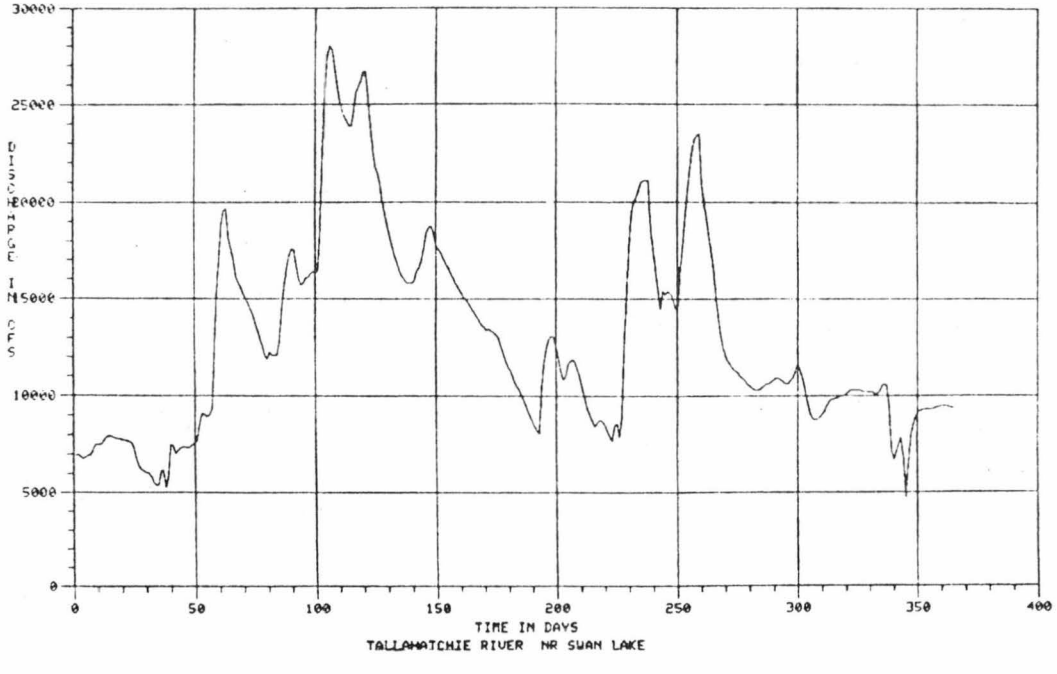
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22833.	18308.	14501.	10986.	13872.	17022.	10804.	9928.	8738.	7311.	8483.	11900.
MAX.	28000.	22600.	17400.	13100.	21100.	23500.	11600.	10500.	10600.	2050.	10800.	9760.
MIN.	15700.	15800.	10900.	8100.	7710.	11400.	9640.	8800.	4720.	624.	188.	19700.

TOTAL DISCHARGE FOR YEAR WAS 4739890. MEAN DISCHARGE FOR YEAR WAS 12986.0

HIGHEST DISCHARGE VALUE WAS 28000.CFS, OCCURRED ON JAN 14
LOWEST DISCHARGE VALUE WAS 4720.CFS, OCCURRED ON SEP 10

DISCHARGE-HYDROGRAPH PLOT

YEAR 1973 NO. DATA POINTS = 365



RETRIEVAL AND PROCESSING OF SEDIMENT DATA

EXAMPLE 43: Status of suspended sediment data for a basin.

Input:

```
I>GET,SUSPENDED SEDIMENT STATUS
I>LOCATION,BASIN,YAZOO RIVER
```

Output:

-

DATA STATUS FOR BASIN OF THE YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
SUSPENDED SEDIMENT DATA STATUS								
AT GREENWOOD 1973 1974 1975	129	101000000	166.00	33 31 17	90 11 03	92.067	3	TSS1
NR YAZOO CITY 1940 1941 1942 1975	129A	101000000	75.60	32 51 29	90 26 07	67.704	4	TSS1
AT REDWOOD 1940 1941 1942	129B	101000000	16.70	32 29 16	90 49 00	40.170	3	TSS1
AT YAZOO CITY 1974 1975	129C	101000000	75.60	32 51 29	90 26 07	67.700	2	TSS1
NR AVALON 1973	470	101100300	0.00				1	TSS1
AT PAYNES 1973	221	101100400	0.00			161.950	1	TSS1
AT MARCEL 1973	221A	101100400	0.00			107.729	1	TSS1
AT DEVOLENTE 1973	436	101120000	0.00				1	TSS1

EXAMPLE 44: Status of suspended sediment data for a river.

Input:

```
I>GET,SUSPENDED SEDIMENT STATUS
I>LOCATION,RIVER,YAZOO RIVER
```

Output:

DATA STATUS FOR YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
SUSPENDED SEDIMENT DATA STATUS								
AT GREENWOOD 1973 1974 1975	129	101000000	166.00	33 31 17	90 11 03	92.067	3	TSS1
NR YAZOO CITY 1940 1941 1942 1975	129A	101000000	75.60	32 51 29	90 26 07	67.704	4	TSS1
AT REDWOOD 1940 1941 1942	129B	101000000	16.70	32 29 16	90 49 00	40.170	3	TSS1
AT YAZOO CITY 1974 1975	129C	101000000	75.60	32 51 29	90 26 07	67.700	2	TSS1
NR FT LORING 1975	351	101000000	179.40				1	TSS1
AT SHELL BLUFF 1973 1975	352	101000000	159.60			92.070	2	TSS1
AT BELZONI 1973 1974 1975 1976	353	101000000	116.10	33 10 02	90 29 35	76.023	4	TSS1

EXAMPLE 45: Status of suspended sediment data for a segment of a river.

Input:

```
I>GET,SUSPENDED SEDIMENT STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>50.
 TO I>150.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
			SUSPENDED SEDIMENT DATA STATUS					
NR YAZOO CITY 1940 1941 1942 1975	129A	101000000	75.60	32 51 29	90 26 07	67.704	4	TSS1
AT YAZOO CITY 1974 1975	129C	101000000	75.60	32 51 29	90 26 07	67.700	2	TSS1
AT BELZONI 1973 1974 1975 1976	353	101000000	116.10	33 10 02	90 29 35	76.023	4	TSS1

EXAMPLE 46: Status of suspended sediment data for a gaging station.

Input:

```
I>GET,SUSPENDED SEDIMENT STATUS
I>LOCATION,STATION LOCATED AT GREENWOOD
```

Output:

DATA STATUS FOR YAZOO RIVER AT GREENWOOD

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
			SUSPENDED SEDIMENT DATA STATUS					
AT GREENWOOD 1973 1974 1975	129	101000000	166.00	33 31 17	90 11 03	92.067	3	TSS1
AT GREENWOOD 1973 1975 1976	339A	102000000	166.00			97.07	3	TSS1

EXAMPLE 47: All information related to suspended sediment data for a gaging station for a specified year.

Input:

```
I>GET,SUSPENDED SEDIMENT,ALL INFORMATION
I>LOCATION,STATION LOCATED AT BELZONI
I>TIME,YEAR 1973
I>LIST
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER SUSPENDED SEDIMENT DATA CATEGORY

STATION NAME		STATN NO	DIST FR NODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
YAZOO RIVER	AT BELZONI	353	116.10(MI)	33 10 02	90 29 35	76.023(FT)	INTER	4

YEAR 1973 NO. DATA POINTS 26

DATE	CONCENTRATION (PPM)	SIZE (MM)	CUM CONCN (PPM)	SIZE (MM)	CUM CONCN (PPM)
250273	125	.062	121	1.00	125
270373	118	.062	112	1.00	118
60473	104	.062	104	1.00	104
110473	80	.062	73	1.00	80
140473	66	.062	63	1.00	66
260473	142	.062	140	1.00	142
30573	135	.062	134	1.00	135
90573	120	.062	109	1.00	120
[illegible]	314	.062	293	1.00	314
80673	185	.062	180	1.00	185
170873	378	.062	355	1.00	378
220873	228	.062	223	1.00	228
240973	261	.062	252	1.00	261
50973	284	.062	265	1.00	284
21073	349	.062	336	1.00	349
61173	227	.062	206	1.00	227

EXAMPLE 48: Status of bed material data for a basin.

Input:

```
I>GET,BED MATERIAL STATUS
I>LOCATION,BASIN,COLDWATER RIVER
```

Output

DATA STATUS FOR BASIN OF THE COLDWATER RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
		BED MATERIAL DATA STATUS						
1976		103000000	234.88				1	TBD1
1976		103000000	238.04				1	TBD1
1976		103000000	243.28				1	TBD1
1976		103000000	248.19				1	TBD1
1976		103000000	272.42				1	TBD1
1976		103000000	273.41				1	TBD1
1976		103000000	278.84				1	TBD1
1976		103000000	14.50				1	TBD1

EXAMPLE 49: Status of bed material data for a river.

Input:

```
I>GET,BED MATERIAL STATUS
I>LOCATION,RIVER,YAZOO RIVER
```

Output:

DATA STATUS FOR YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
BED MATERIAL DATA STATUS								
1976		101000000	5.00				1	TBD1
1976		101000000	9.60				1	TBD1
1976		101000000	20.30				1	TBD1
1976		101000000	25.70				1	TBD1
1976		101000000	29.70				1	TBD1
1976		101000000	46.40				1	TBD1
1976		101000000	49.30				1	TBD1
1976		101000000	50.20				1	TBD1
1976		101000000	51.40				1	TBD1
1976		101000000	53.30				1	TBD1

EXAMPLE 50: Status of bed material data for a segment of a river.

Input:

```
I>GET,BED MATERIAL STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>100.
 TO I>120.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
BED MATERIAL DATA STATUS								
1976		101000000	103.10				1	TBD1
1976		101002200	108.20				1	TBD1
1976		101000000	111.60				1	TBD1
1976		101000000	113.00				1	TBD1
1976		101000000	114.20				1	TBD1
1976		101000000	118.10				1	TBD1

EXAMPLE 51: Status of bed material data for a gaging station.

Input:

```
I>GET,BED MATERIAL STATUS
I>LOCATION,STATION,NODE 101
 AT I>111.60
```

Output:

DATA STATUS FOR YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.YEARS	TAPE I.D.
		BED MATERIAL DATA STATUS						
1976		101000000	111.60				1	TBD1

EXAMPLE 52: All information related to bed material data for a gaging station for a specified year.

Input:

```
I>GET,BED MATERIAL,ALL INFORMATION
I>LOCATION,STATION ON YAZOO RIVER
 AT I>107.10
I>TIME,YEAR 1976
I>LIST
```

Output:

YAZOO RIVER SYSTEM DATA BANK

RIVER BED MATERIAL DATA CATEGORY

STATION NAME	STATN NO	DIST FR NODE	LATITUDE	LONGITUDE	GAGE ZERO(MSL)	DATA TYPE	NO YEARS
YAZOO RIVER		103.10(MI)			0.000(FT)	BST34	1

YEAR 1976 NO. DATA POINTS 1

DATE	X-SECT LOC (FT)	SIZE (MM)	PCENT	SIZE (MM)	PCENT	SIZE (MM)	PCENT	SIZE (MM)	PCENT	SIZE (MM)	PCENT	SIZE (MM)	PCENT
20376	1.00	.062	77	.125	91	.250	95	.500	97	1.000	98	2.000	99

RETRIEVAL AND PROCESSING OF CHANNEL CROSS-SECTION DATA

EXAMPLE 53: Status of cross-section data for a basin.

Input:

```
I>GET,CROSS-SECTION STATUS
I>LOCATION,BASIN,YAZOO RIVER
```

Output:

DATA STATUS FOR BASIN OF THE YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.DATES	TAPE I.D.
		CHANNEL CROSS-SECTION DATA STATUS						
11040 300852 110872		101020000	3.20	32 23 24	90 54 11		3	TCR1
21040 300852		101000000	5.00	32 23 55	90 55 24		2	TCR1
151153 100672		101000000	5.50	32 24 30	90 55 36		2	TCR1
80941 290872 100872		101000000	7.10	32 26 25	90 55 22		3	TCR1
300942 270862 290574 999999		101030000	27.20	32 34 14	90 44 47		4	TCR1
270862 101174 999999		101000000	29.70	32 34 54	90 43 49		3	TCR1
300942 100862 80572 999999		101030000	31.00	32 36 15	90 43 10		4	TCR1
AT MOUTH OF LT SUNFLOWER 290942 150862 310574 999999		101000000	33.00	32 37 26	90 43 13		4	TCR1
999999		101000000	35.70	32 38 20	90 41 30		1	TCR1
		101003000	37.80	32 40 46	90 43 21		4	TCR1

EXAMPLE 54: Status of cross-section data for a river.

Input:

```
I>GET,CROSS-SECTION STATUS
I>LOCATION,RIVER,YOCONA RIVER
```

Output:

DATA STATUS FOR YOCONA RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.DATES	TAPE I.D.
		CHANNEL CROSS-SECTION DATA STATUS						
NR MOUTH OF YOCONA 270249 90253 240561	70470	102010100	.50	34 09 54	90 06 29		4	TCR1
210249 220561	60470	102010100	2.80	34 10 20	90 04 16		3	TCR1
130249 100253		102010100	3.70	34 10 43	90 03 25		2	TCR1
160349 170561		102010100	11.70	34 09 14	89 55 46		2	TCR1
160349 160561	10470	102010100	12.10	34 09 01	89 55 19		3	TCR1
160349 160561	270470	102010100	12.30	34 08 59	89 55 11		3	TCR1
160349 160561	10470	102010100	12.90	34 09 06	89 55 00		3	TCR1

EXAMPLE 55: Status of cross-section data for a segment of a river.

Input:

```
I>GET,CROSS-SECTION STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>164.
 TO I>170.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.DATES	TAPE I.D.
CHANNEL CROSS-SECTION DATA STATUS								
30177 80177 100177 190177	10277 150277	101000000	164.50	33 31 11	90 12 28		8	TCR1
200274 120675 30676		101000000	164.80	33 31 09	90 12 11		3	TCR1
30177 80177 100177 200177	20277 160277	101000000	165.00	33 31 09	90 12 00		8	TCR1
81071 210274 30676 10177	70177 110177	101000000	168.20	33 32 45	90 10 09		11	TCR1
	200177 20277		160277	20377	160377			
81071 210274 10177 70177	110177 200177	101000000	168.50	33 32 57	90 10 23		10	TCR1
	30277 160277		100377	160377				
201067 220274 120675 10177	70177 110177	101000000	168.70	33 33 03	90 10 34		11	TCR1
	200177 30277		160277	100377	160377			
10177 70177 110177 200177	30277 170277	101000000	168.90	33 33 05	90 10 38		9	TCR1
	220277 100377		160377					
10172 220274 10177 70177	110177 200177	101000000	168.95	33 33 07	90 10 45		10	TCR1
	30277 170277		100377	160377				

EXAMPLE 56: Status of cross-section data for a gaging station.

Input:

```
I>GET,CROSS-SECTION STATUS
I>LOCATION,STATION ON YAZOO RIVER
 AT I>166.
```

Output:

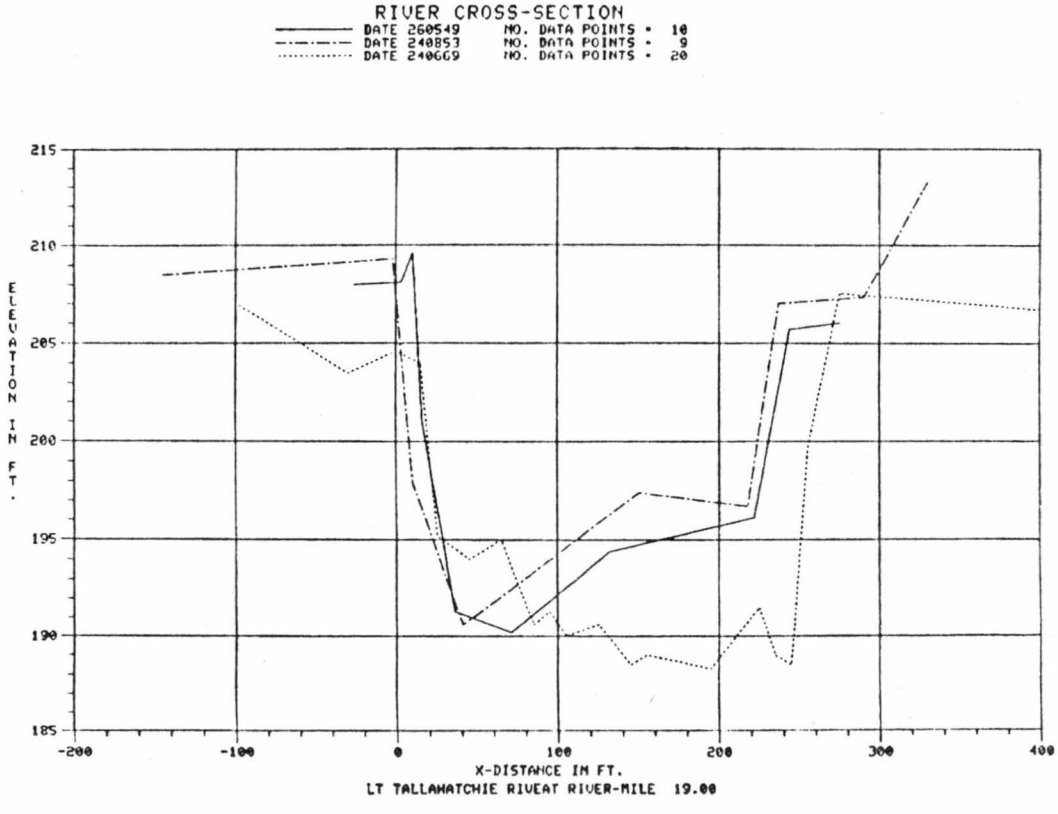
LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	GAGE-0(FT(MSL))	NO.DATES	TAPE I.D.
CHANNEL CROSS-SECTION DATA STATUS								
AT GREENWOOD GAGE,BRIDGE		101000000	166.00	33 31 18	90 11 03		10	TCR1
310871 200274 30177 70177	100177 200177		20277 160277	20377	160377			

EXAMPLE 57: Cross-section plot for a gaging station for a specified time.

Input:

```
I>GET,CROSS SECTION DATA
I>LOCATION,STATION,NODE 10203
 AT I>19.0
I>TIME,FROM DATE 260549 TO 240669
I>PLOT
```

Output:

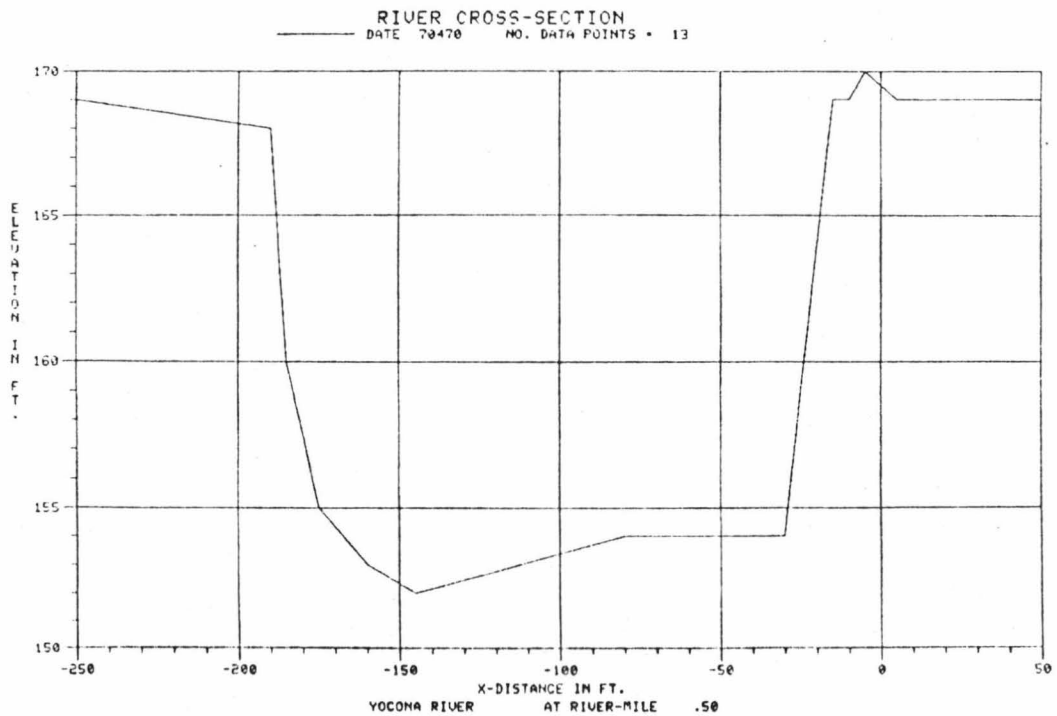


EXAMPLE 58: Cross-section plot for a gaging station for a specified date.

Input:

```
I>GET,CROSS-SECTION DATA
I>LOCATION,STATION,ON YOCONA RIVER
 AT I>.50
I>TIME,DATE 070470
I>PLOT
```

Output:



EXAMPLE 59: All information related to cross-section data for a gaging station for a specified date.

Input:

```
I>GET,CROSS-SECTION,ALL INFORMATION
I>LOCATION,STATION ON YAZOO RIVER
 AT I>166.30
I>TIME,DATE 200274
I>LIST
```

Output:

YAZOO RIVER SYSTEM DATA BANK

CHANNEL CROSS SECTION DATA CATEGORY

DATE 200274 NO. DATA POINTS 19

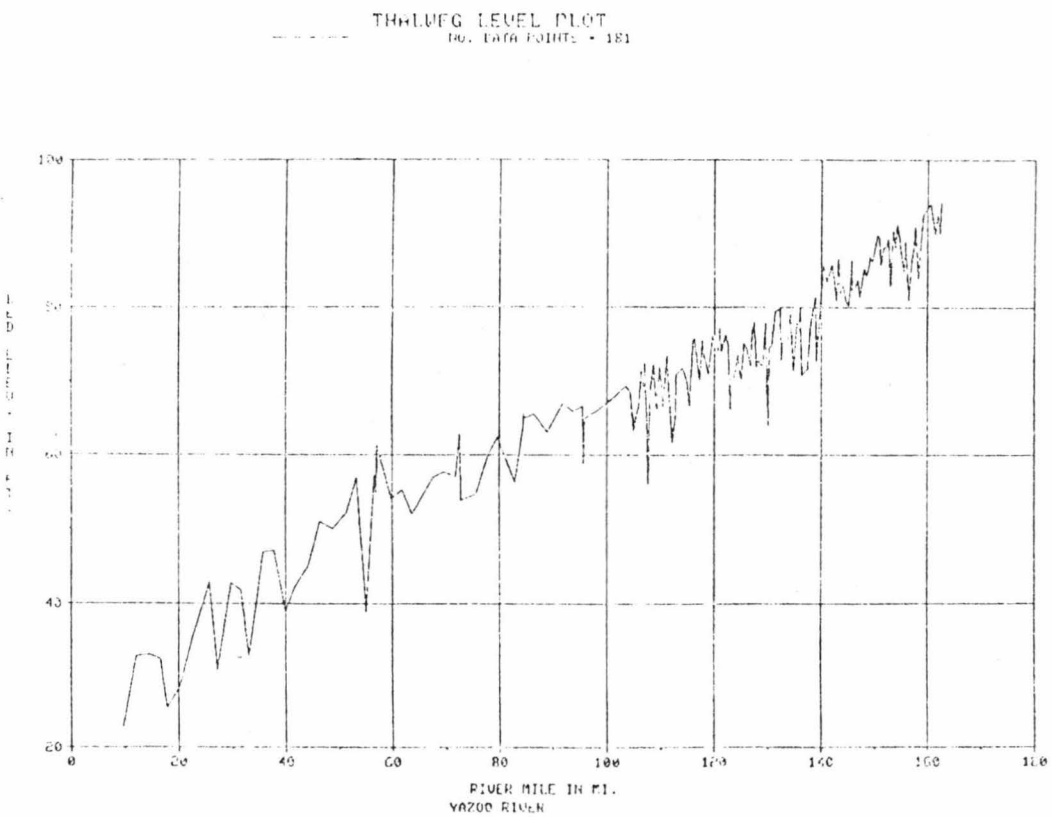
XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)	XDIST (FT)	YELEV (FT)
-175.	125.0	-95.	121.5	-75.	121.0	-55.	121.0	-35.	122.0	-15.	122.0	25.	104.0	45.	101.0
105.	101.0	145.	98.5	200.	98.5	225.	99.0	245.	98.0	280.	100.0	305.	104.0	325.	109.0
345.	109.5	365.	120.5	385.	119.0										

EXAMPLE 60: Cross-section plot of the thalweg level for a river for a specified time.

Input:

```
I>GET,CROSS-SECTION DATA
I>LOCATION,RIVER,YAZOO RIVER
I>TIME,DATE 999999
I>PROCESS,PLOT,THALWEG LEVEL
```

Output:



RETRIEVAL AND PROCESSING OF RIVER CONTROL STRUCTURE DATA

EXAMPLE 61: Status of control structure data for a river.

Input:

```
I>GET,CONTROL STRUCTURE STATUS
I>LOCATION,RIVER,YAZOO RIVER
```

Output:

DATA STATUS FOR YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	TYPE	NO.YEARS	TAPE I.D
RIVER CONTROL STRUCTURE DATA STATUS								
HIGHWAY 49W - YAZOO CITY		101000000	75.60			BRIDGE	1	STRS1
IC AND G.R.R. - HOME PARK		101000000	82.90			BRIDGE	1	STRS1
HIGHWAY 12 - BELZONI		101000000	116.10			BRIDGE	1	STRS1
OLD HIGHWAY 12 - BELZONI		101000000	117.00			BRIDGE	1	STRS1
SILENT SHADE		101000000	132.00			BRIDGE	1	STRS1
PHILLIPPTOWN		101000000	149.70			BRIDGE	1	STRS1
ROEBUCK		101000000	154.20			BRIDGE	1	STRS1
IC AND G.P.R. - FT LORING		101000000	161.00			BRIDGE	1	STRS1
HIGHWAY 82 AND 49E(EAST)		101000000	163.00			BRIDGE	1	STRS1
HIGHWAY 82 AND 49E(WEST)		101000000	163.00			BRIDGE	1	STRS1

EXAMPLE 62: Status of control structure data for a segment of a river.

Input:

```
I>GET,CONTROL STRUCTURE STATUS
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>100.
 TO I>130.
```

Output:

DATA STATUS FOR SEGMENT OF YAZOO RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	TYPE	NO.YEARS	TAPE I.D
RIVER CONTROL STRUCTURE DATA STATUS								
HIGHWAY 12 - BELZONI		101000000	116.10			BRIDGE	1	STRS1
OLD HIGHWAY 12 - BELZONI		101000000	117.00			BRIDGE	1	STRS1
SILENT SHADE		101000000	132.00			BRIDGE	1	STRS1
PHILLIPPTOWN		101000000	149.70			BRIDGE	1	STRS1
ROEBUCK		101000000	154.20			BRIDGE	1	STRS1
IC AND G.P.R. - FT LORING		101000000	161.00			BRIDGE	1	STRS1
HIGHWAY 82 AND 49E(EAST)		101000000	163.00			BRIDGE	1	STRS1
HIGHWAY 82 AND 49E(WEST)		101000000	163.00			BRIDGE	1	STRS1

EXAMPLE 63: All information related to control structure data for one segment of a river.

Input:

```
I>GET,CONTROL STRUCTURE,ALL INFORMATION
I>LOCATION,SEGMENT,YAZOO RIVER
 FROM I>160.
 TO I>165.
I>TIME,ALL
I>LIST
```

Output:

YAZOO RIVER SYSTEM DATA BANK

CONTROL STRUCTURE DATA CATEGORY

STATION NAME	STATION NO.	RIVER MILE	LATITUDE	LONGITUDE	STRUCTURE TYPE	YEAR	NO DATA POINTS
IC AND G.R.R. - FT LORING		161.00			BRIDGE	1975	10

STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)
90.0	238.0	95.0	1010.0	100.0	2140.0	105.0	3300.0	110.0	4510.0	115.0	5848.0
120.0	7248.0	125.0	10265.0	130.0	15655.0	133.0	17860.0				

EXAMPLE 64: Control structure data for a specified station on a river.

Input:

```
I>GET,CONTROL STRUCTURE DATA
I>LOCATION,STATION ON YAZOO RIVER
 AT I>161.0
I>TIME,ALL
I>LIST
```

Output:

STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)	STAGE (FT)	AREA (SQFT)
90.0	238.0	95.0	1010.0	100.0	2140.0	105.0	3300.0	110.0	4510.0	115.0	5848.0
120.0	7248.0	125.0	10265.0	130.0	15655.0	133.0	17860.0				

RETRIEVAL AND PROCESSING OF RESERVOIR DATA

EXAMPLE 65: Status of all reservoir data in the Yazoo data bank.

Input:

```
I>GET,RESERVOIR STATUS
I>LOCATION,ALL
```

Output:

DATA STATUS FOR ALL YAZOO DATA BASE

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	TYPE	NO.YEARS	TAPE I.D
			RESERVOIR DATA STATUS					
AT ARKABUTLA RESERVOIR	133B	103000000	168.91	34 45 30	90 07 35	RESERV	1	STRS1
AT SARDIS RESERVOIR	132A	102030000	168.91	34 23 58	89 47 24	RESERV	1	STRS1
AT GRENADA RESERVOIR	130B	101100000	168.91	33 48 30	89 46 23	RESERV	1	STPS1
AT ENID RESERVOIR	131	102010100	168.91	34 09 28	89 54 22	RESERV	1	STRS1

EXAMPLE 66: Status of reservoir data for a river.

Input:

```
I>GET,RESERVOIR STATUS
I>LOCATION,RIVER,COLDWATER RIVER
```

Output:

DATA STATUS FOR COLDWATER RIVER

LOCATION	STA.NO.	NODE	RIVER MILE	LATITUDE	LONGITUDE	TYPE	NO.YEARS	TAPE I.D
			RESERVOIR DATA STATUS					
AT ARKABUTLA RESERVOIR	133B	103000000	325.50	34 45 30	90 07 35	RESERV	1	STRS1

EXAMPLE 67: Reservoir operation data related to a specified reservoir.

Input:

```
I>GET,RESERVOIR DATA,ALL
I>LOCATION,STATION LOCATED AT ARKABUTLA RESERVOIR
I>TIME,ALL
I>LIST
```

Output:

--- RULE CURVE ---

DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT
10.1	209.3	160.4	209.3	150.5	220.0	10.9	220.0	11.1	215.0	11.2	210.0	311.2	209.3		

--- SPILLWAY CURVE ---

G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SP .Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q	G HGHT	SPILL.Q
238.3	0.0	239.0	7.5	239.5	12.0	240.0	21.5	240.5	31.0	241.0	44.0	242.0	72.0	243.0	106.0
244.0	145.0	245.0	185.0	246.0	233.0	247.0	286.0	248.0	340.0	249.0	399.0	250.0	461.0	252.0	588.0
254.0	725.0	256.3	864.0												

--- CAPACITY CURVE ---

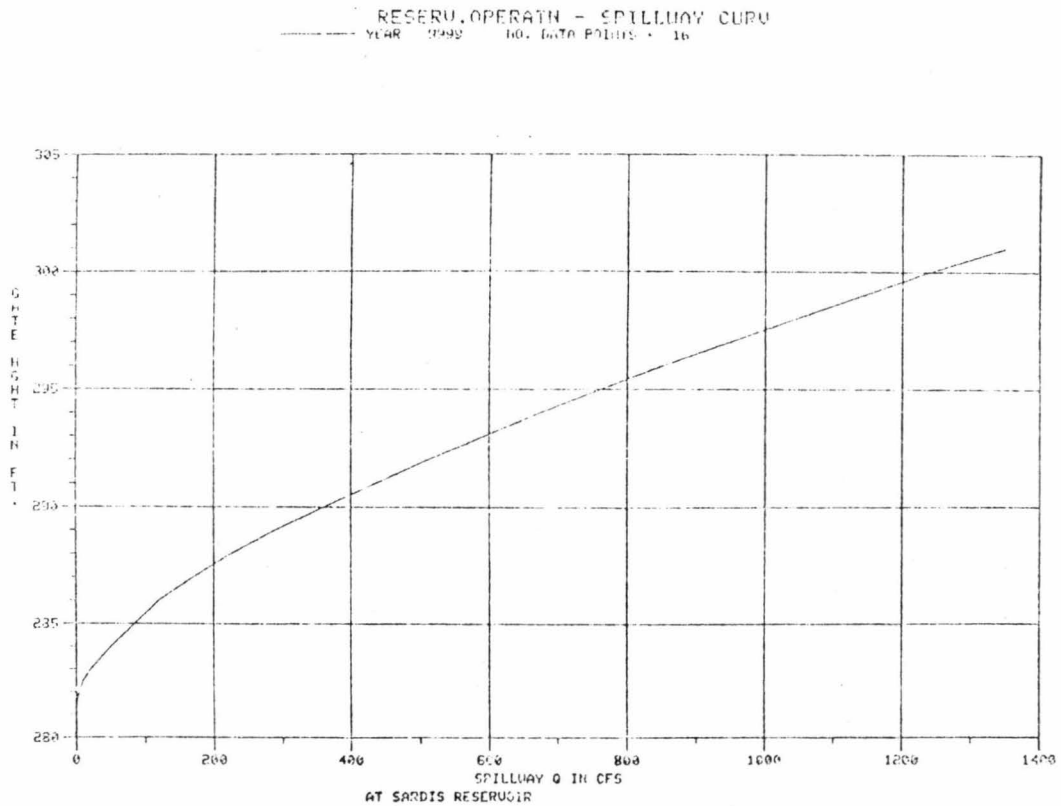
GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL	GATE HGHT	QUOL
210.0	36.0	215.0	70.0	220.0	122.0	225.0	193.0	230.0	294.0	235.0	420.0	240.0	585.0	245.0	780.0
250.0	970.0	255.0	114.0												

EXAMPLE 68: Spillway curve and plot related to a specified reservoir.

Input:

```
I>GET,RESERVOIR DATA,SPILLWAY CURVE
I>LOCATION,STATION LOCATED AT SARDIS RESERVOIR
I>TIME,ALL
I>PLOT
```

Output:

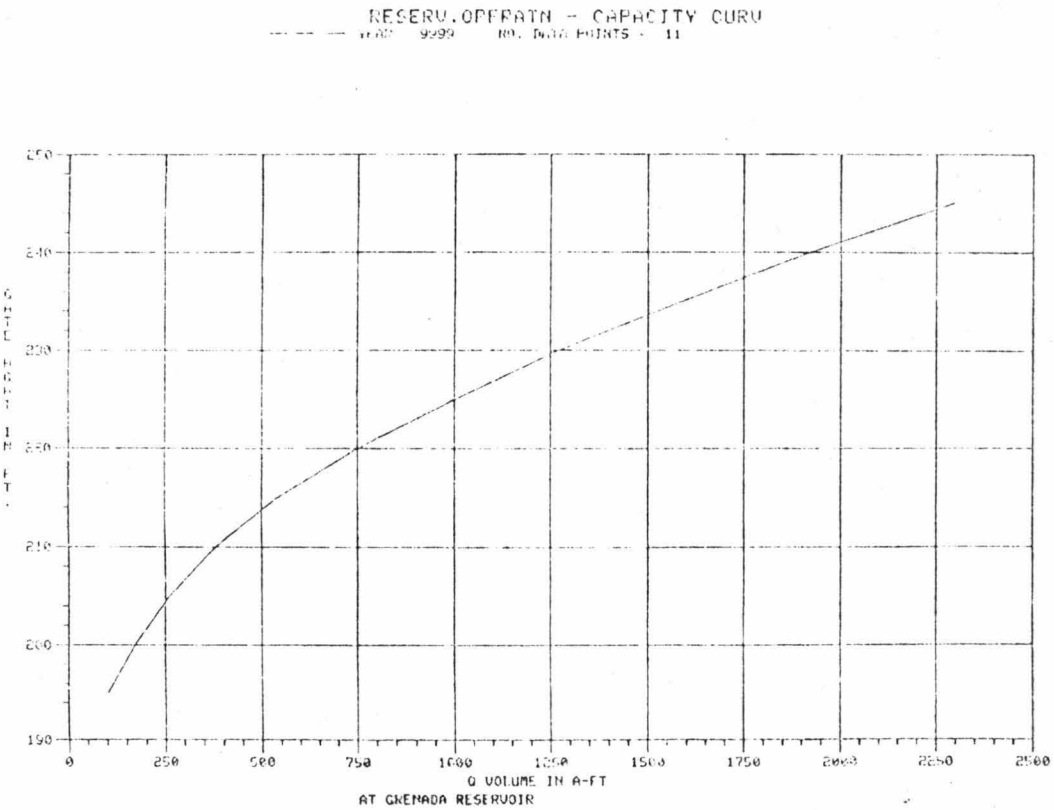


EXAMPLE 69: Capacity curve of a specified reservoir.

Input:

```
I>GET,RESERVOIR DATA,CAPACITY CURVE
I>LOCATION,STATION LOCATED AT GRENADA RESERVOIR
I>TIME,ALL
I>PLOT
```

Output:



EXAMPLE 70: Rule curve for the operation of a specified reservoir.

Input:

```
I>GET,RESERVOIR DATA,RULE CURVE
I>LOCATION,STATION LOCATED AT ENID RESERVOIR
I>TIME,ALL
I>LIST
```

Output:

--- RULE CURVE ---

DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT	DATE	GATE HGHT
10.1	245.0	20.1	246.1	30.1	247.8	40.1	254.5	50.1	257.2	60.1	256.5	70.1	253.9	80.1	250.9
90.1	247.1	100.1	243.3	110.1	237.6	120.1	230.5	123.1	245.0						

RETRIEVAL AND PROCESSING OF PRECIPITATION DATA

EXAMPLE 71: Status of precipitation data.

Input:

```
I>GET,PRECIPITATION STATUS
I>LOCATION,ALL
```

Output:

DATA STATUS FOR ALL YAZOO DATA BASE

LOCATION	STA.NO.	LATITUDE	LONGITUDE	MEAN ELEV(FT)	NO.YEARS	TAPE I.D.

PRECIPITATION DATA STATUS

AT BYHALIA			1262			34 52 00		89 41 00			360.00			27		TPR1		
1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1960	1961	1962	1963	1964			
1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975								
AT CALHOUN CITY			1314			33 52 00		89 20 00			250.00			28		TPR1		
1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963			
1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975							
AT CLARKSDALE			1707			34 12 00		90 34 00			180.00			20		TPR1		
1952	1953	1954	1955	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971			
1972	1973	1974	1975															
AT HOLY SPRINGS EXP STA			4173			34 49 00		89 26 00			480.00			28		TPR1		
1948	1949	1950	1951	1952	1953	1964	1955	1956	1957	1958	1959	1960	1961	1962	1963			
1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975							
AT HOUSTON			4265			33 54 00		89 01 00			340.00			28		TPR1		
1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963			
1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975							
AT LEXINGTON			5062			33 07 00		90 03 00			220.00			27		TPR1		
1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963			
1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974								

EXAMPLE 72: Status of precipitation data for a gaging station.

Input:

```
I>GET,PRECIPITATION STATUS
I>LOCATION,STATION NUMBER 1262
```

Output:

DATA STATUS AT BYHALIA

LOCATION	STA.NO.	LATITUDE	LONGITUDE	MEAN ELEV(FT)	NO.YEARS	TAPE I.D.

PRECIPITATION DATA STATUS

AT BYHALIA			1262			34 52 00		89 41 00			360.00			27		TPR1		
1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1960	1961	1962	1963	1964			
1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975								

EXAMPLE 73: Daily precipitation data for a gaging station for a specified time period.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION LOCATED AT BYHALIA
I>TIME,FROM DATE 010573 TO 030573
I>LIST
```

Output:

STATION NAME	STATN NO	LATITUDE	LONGITUDE	ELEVATION(MSL)	DATA TYPE	NO YEARS
AT BYHALIA	1262	34 52 00	89 41 00	360.00 (FT)	INTLR	27

DAILY RAINFALL (IN INCHES) FROM 010573 TO 030573

1973 3 DAYS

.77 1.33 .04

EXAMPLE 74: Hourly precipitation data for a gaging station for a specified time period.

Input:

```
I>GET,PRECIPITATION DATA,HOURLY
I>LOCATION,STATION NUMBER 1262
I>TIME,FROM DATE 010573 TO 030573
I>LIST
```

Output:

STATION NAME	STATN NO	LATITUDE	LONGITUDE	ELEVATION(MSL)	DATA TYPE	NO YEARS
AT BYHALIA	1262	34 52 00	89 41 00	360.00 (FT)	INTER	27

HOURLY RAINFALL (IN INCHES) FROM 010573 TO 030573

1973 3 DAYS

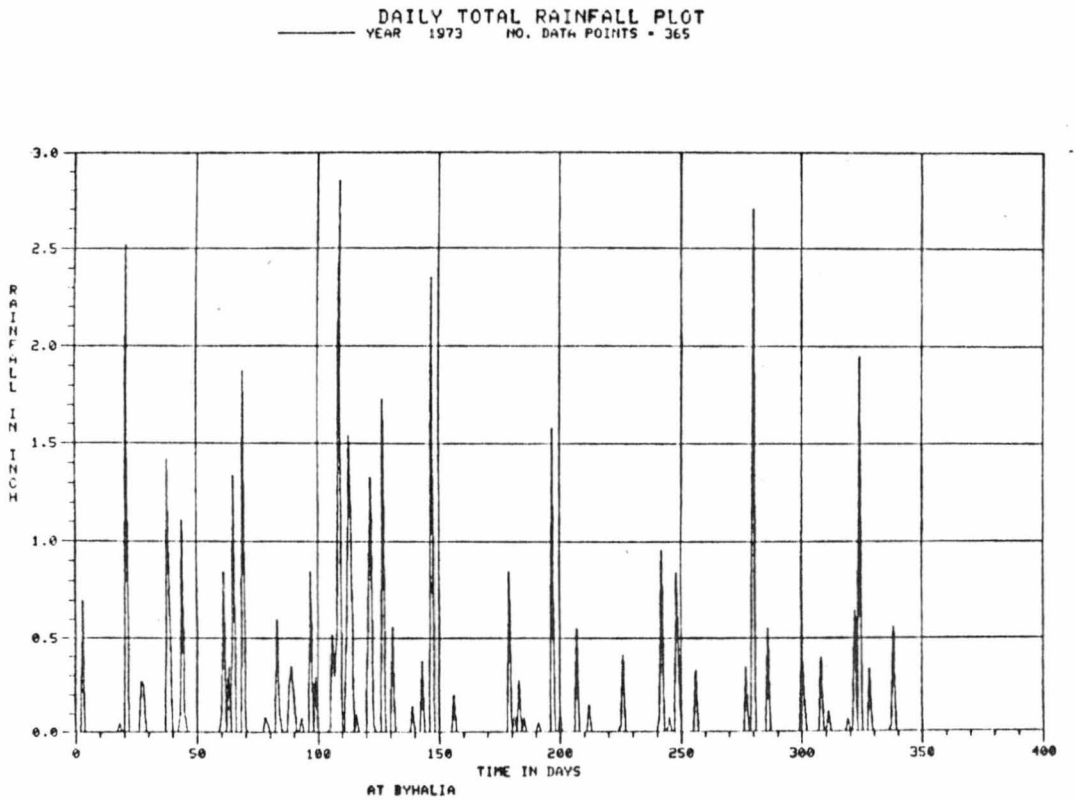
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 .05 .03 0.00 0.00 0.00 0.00 0.00 0.00 .07 .01 .03 0.00 .11 .10 .11
.05 0.00 .06 .11 0.00 0.00 .04 .27 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 .43 .02 .11 .15 .07 .03
0.00 0.00 0.00 0.00 .01 .01 .02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

EXAMPLE 75: Daily precipitation plot for a gaging station for a specified year.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION NUMBER 1262
I>TIME,YEAR 1973
I>PLOT
```

Output:

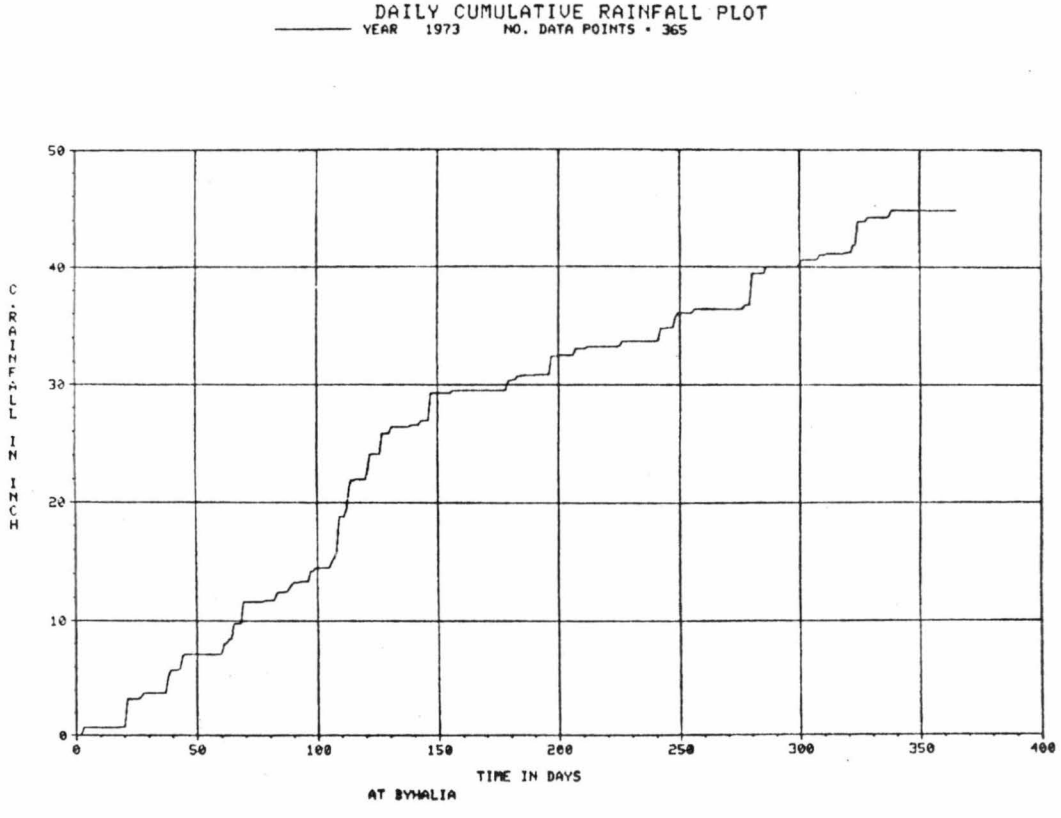


EXAMPLE 76: Daily precipitation and cumulative plot for a gaging station for a specified year.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION NUMBER 1262
I>TIME,YEAR 1973
I>PROCESS,PLOT,CUM RAINFALL
```

Output:

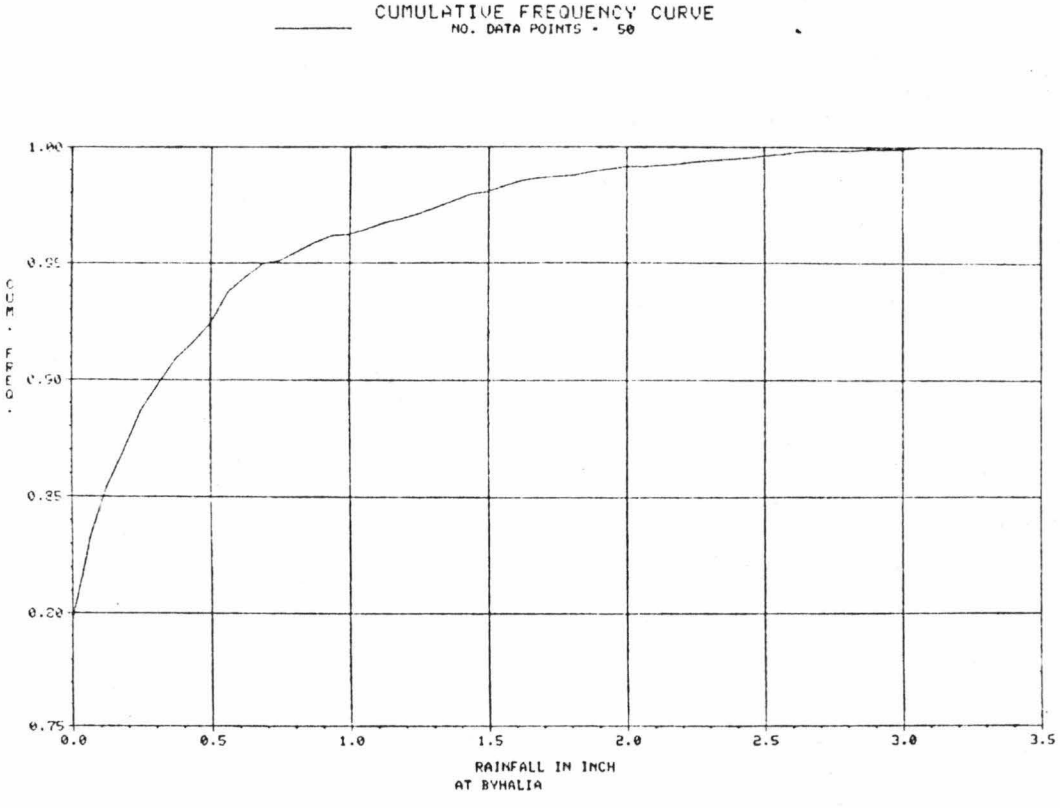


EXAMPLE 77: Daily precipitation cumulative frequency analysis for a specified time period.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION LOCATED AT BYHALIA
I>TIME,FROM YEAR 1970 TO 1974
I>PROCESS,PLOT,CUM FREQUENCY
```

Output:

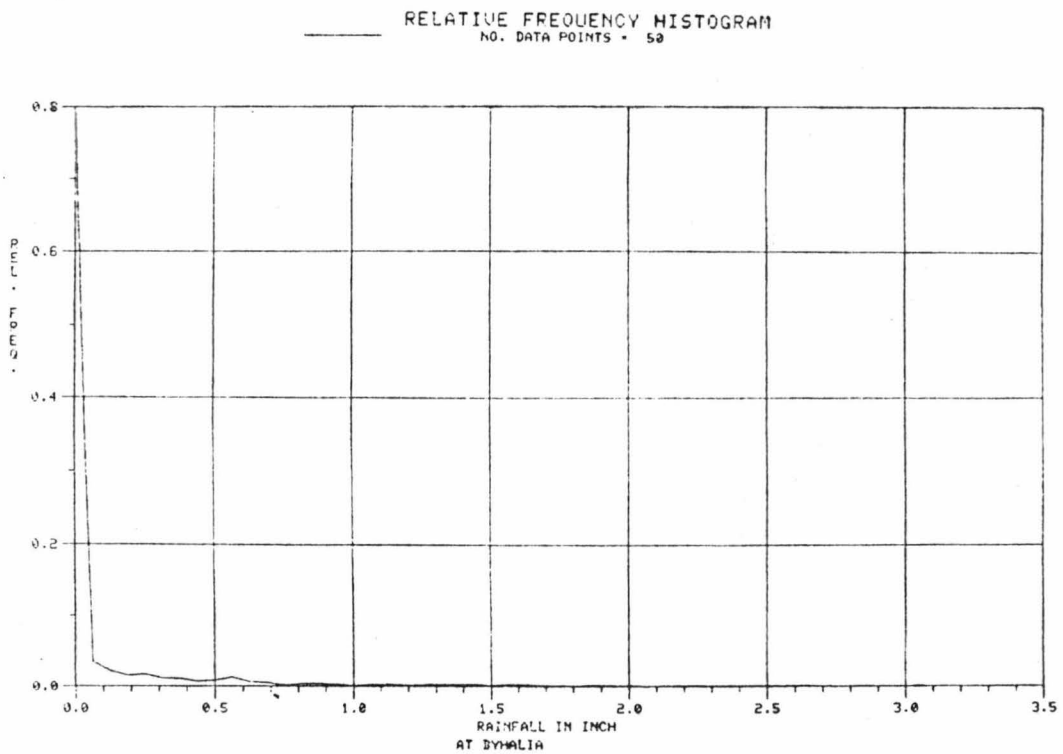


EXAMPLE 78: Daily precipitation data for a relative frequency histogram for a gaging station for a specified time.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION LOCATED AT BYHALIA
I>TIME,FROM YEAR 1970 TO 1974
I>PROCESS,PLOT,HISTOGRAM
```

Output:



EXAMPLE 79: Daily precipitation data for a frequency analysis (both cumulative and relative) for a gaging station for a specified time.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION NUMBER 1262
I>TIME,FROM YEAR 1970 TO 1974
I>PROCESS,LIST,FREQUENCY ANALYSIS
```

Output:

TABLE OF THE COMPUTED RELATIVE FREQUENCIES (PDF), AND THE CUMULATIVE FREQUENCIES (CDF)
AT BYHALIA

NO.	RANGE		MID-RANGE	OBS. FREQ.	CDF	PDF
1	(-.03	.03)	0.00	1456.	.79737	.79737
2	(.03	.09)	.06	64.	.83242	.03505
3	(.09	.16)	.12	40.	.85433	.02191
4	(.16	.22)	.19	28.	.86966	.01533
5	(.22	.28)	.25	31.	.88664	.01698
6	(.28	.34)	.31	21.	.89814	.01150
7	(.34	.41)	.37	20.	.90909	.01095
8	(.41	.47)	.44	13.	.91621	.00712
9	(.47	.53)	.50	15.	.92442	.00821
10	(.53	.59)	.56	24.	.93757	.01314
...						
40	(2.40	2.47)	2.44	1.	.99507	.00055
41	(2.47	2.53)	2.50	2.	.99617	.00110
42	(2.53	2.59)	2.56	1.	.99671	.00055
43	(2.59	2.65)	2.62	2.	.99781	.00110
44	(2.65	2.72)	2.69	1.	.99836	.00055
45	(2.72	2.78)	2.75	0.	.99836	0.00000
46	(2.78	2.84)	2.81	0.	.99836	0.00000
47	(2.84	2.90)	2.87	1.	.99890	.00055
48	(2.90	2.97)	2.94	0.	.99890	0.00000
49	(2.97	3.03)	3.00	0.	.99890	0.00000
50	(3.03	3.09)	3.06	2.	1.00000	.00110

EXAMPLE 80: Daily precipitation data for a gaging station for a specified year.

Input:

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION LOCATED AT BYHALIA
I>TIME,YEAR 1972
I>LIST
```

Output:

STATION NAME	STAIN NO	LATITUDE	LONGITUDE	ELEVATION(MSL)	DATA TYPE	NO YEARS
AT BYHALIA	1262	34 57 00	89 41 00	368.00 (FT)	INTER	27

RAINFALL DATA FOR YEAR 1972

DAILY TOTAL RAINFALL IN INCH

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.26	0.00	.20	0.00	.34	0.00	.94	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	.06	0.00	.69	0.00	0.00	0.00	0.00	0.00
3	.59	.07	.70	1.65	0.00	0.00	3.05	0.00	.06	0.00	0.00	0.00
4	.48	0.00	.33	0.00	0.00	0.00	0.00	0.00	.50	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	.49	0.00	0.00	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	.16	0.00	0.00	0.00	0.00	0.00	.50	0.00	.55	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.05	0.00	0.00	0.00
24	.40	0.00	0.00	0.00	.25	0.00	0.00	0.00	.10	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.00	0.00	0.00	0.00	0.00
26	0.00	.20	0.00	0.00	0.00	0.00	0.00	0.00	1.80	0.00	0.00	0.00
27	.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.33	.55	0.00	0.00
28	.71	0.00	.65	3.85	0.00	0.00	.50	0.00	.24	0.00	1.67	0.00
29	0.00	0.00	0.00	.20	1.35	0.00	2.25	0.00	.95	.65	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	.07	0.00	0.00	1.13	0.00	1.30
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.02	0.00	0.00
MON.TOT	5.24	1.17	1.49	8.13	4.26	.50	7.99	2.58	4.45	3.25	4.16	10.14

MONTHLY SUMMARY

CROSS-REFERENCE RETRIEVAL AND PROCESSING

Discharge hydrograph generation. Two successive operations dealing with the management of two different data categories are required. First, identification of the stage-discharge relationship (based on power function curve fitting) for the gaging station under study is required. Then, retrieval and processing of the river stage data, based on the stage-discharge relationship just obtained, is executed to obtain the discharge-hydrograph.

EXAMPLE 81: Generate discharge hydrograph from river stage data for the gaging station located at Belzoni for 1974.

Input 1:
(computation of stage discharge relationship)

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION LOCATED NR SWAN LAKE
I>TIME,YEAR 1973
I>PROCESS,LIST,REGRESSION ANALYSIS
```

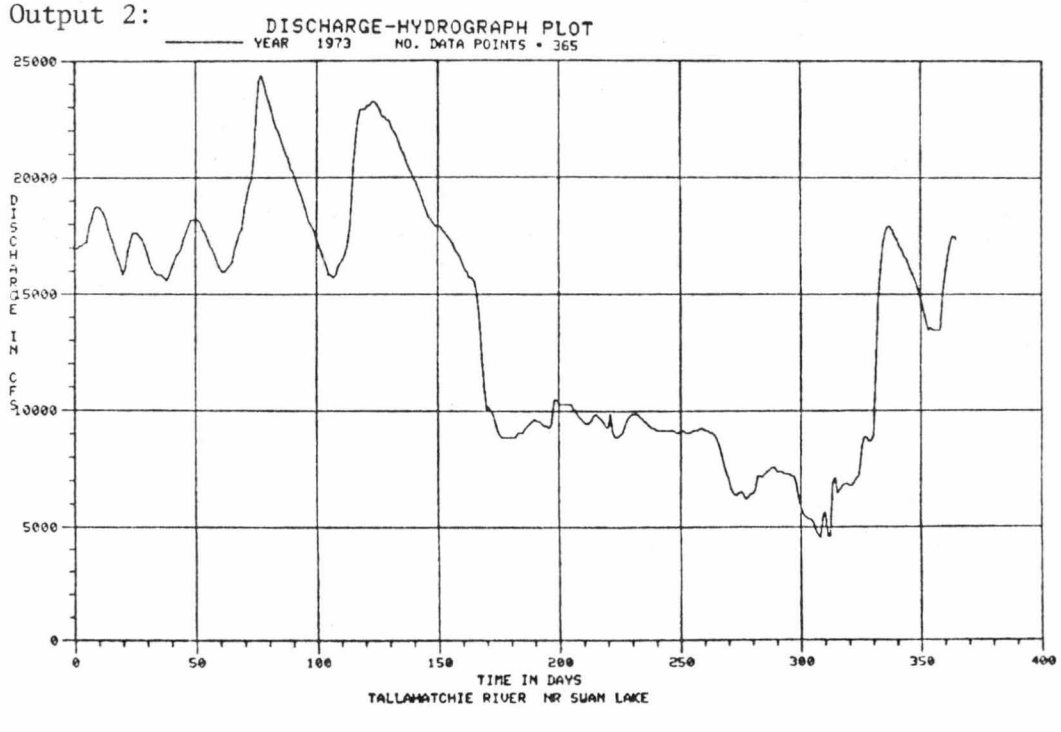
Input 2:
(plot of discharge hydrograph)

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION NUMBER 132D
I>TIME,YEAR 1973
I>PROCESS,PLOT,DISCHARGE HYDROGRAPH
```

Output 1:

```
                    YEAR = 1973
        REGRESSION EQUATION IS     Q =  13.90061((S).EXP( 2.1630))
CORRELATION COEFFICIENT =  .9524          STANDARD ERROR =  .141609
```

Output 2:



Stage hydrograph generation. Similar operations are utilized to generate a stage hydrograph from discharge data.

EXAMPLE 82: Generate stage-hydrograph from discharge data for the gaging station located at Greenwood for 1974.

Input 1:
(computation of stage-discharge relationship)

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION LOCATED NR LAMBERT
I>TIME,YEAR 1973
I>PROCESS,LIST,REGRESSION ANALYSIS
```

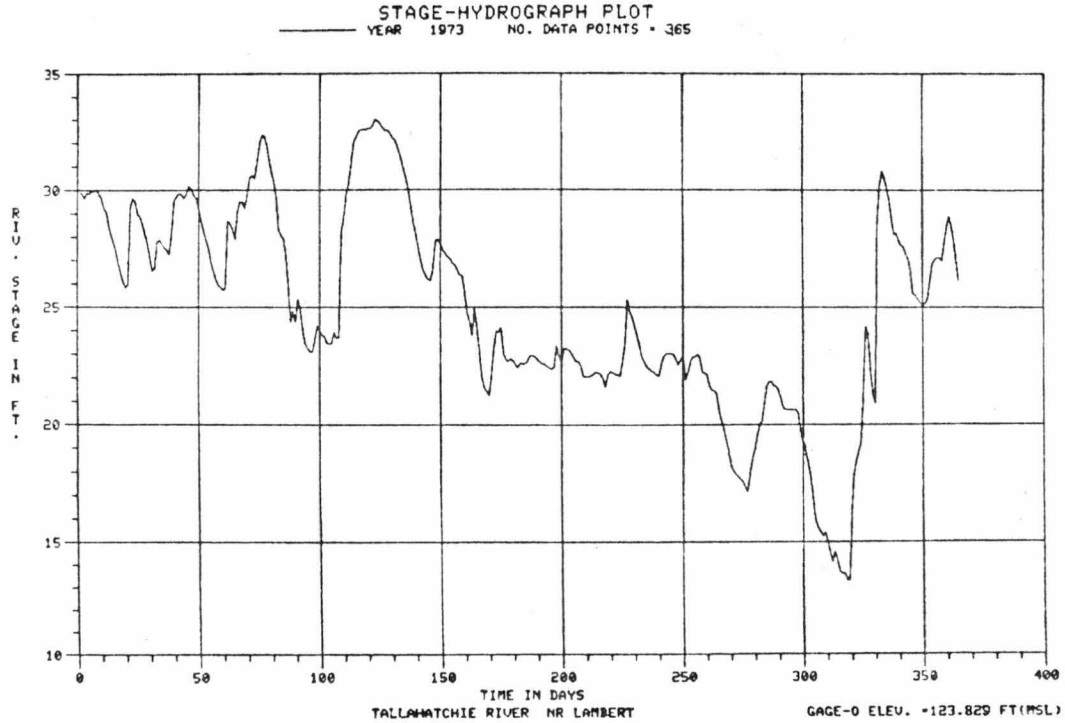
Input 2:
(plot of stage-hydrograph)

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION NUMBER 1328
I>TIME,YEAR 1973
I>PROCESS,PLOT,STAGE HYDROGRAPH
```

Output 1:

```
                        YEAR = 1973
          REGRESSION EQUATION IS     Q =    .00074((S).EXP( 4.8296))
CORRELATION COEFFICIENT =   .9463              STANDARD ERROR =   .319085
```

Output 2:



MULTIPLE PROCESSING OPERATIONS

When successive data processing operations are performed on the same retrieved data set, the user may use simpler command statements as described in the examples below.

Stage-Discharge Data

EXAMPLE 83: Stage-discharge data, regression analysis, and changes of the river stage for specified discharge values for a gaging station for a specified time.

Input 1:
(plot of data)

```
I>GET,STAGE-DISCHARGE DATA
I>LOCATION,STATION LOCATED AT BEL20NI
I>TIME,FROM YEAR 1973 TO 1976
I>PLOT
```

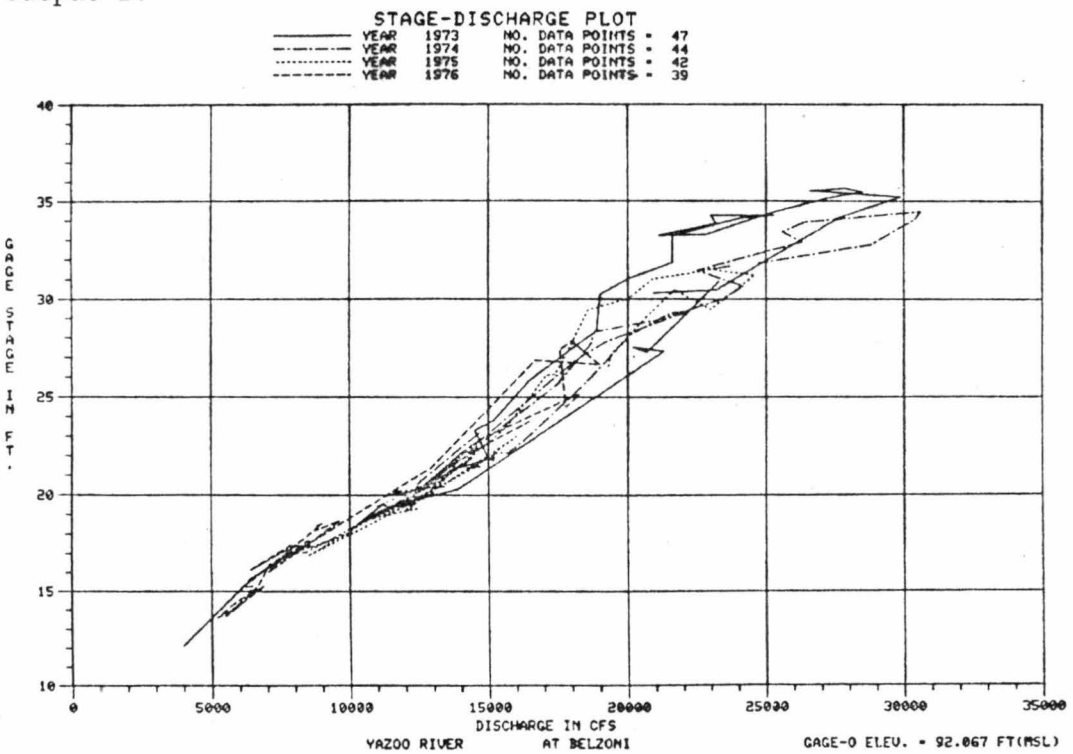
Input 2:
(regression analysis)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,LIST,REGRESSION ANALYSIS
```

Input 3:
(calculation of changes
in river stage for a
specified discharge value)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,PLOT,CHANGING STAGE FOR Q-5000.
```

Output 1:



Output 2:

YEAR = 1973

REGRESSION EQUATION IS Q = 207.83568((S).EXP(1.3584))

CORRELATION COEFFICIENT = .9779 STANDARD ERROR = .070947

YEAR = 1974

REGRESSION EQUATION IS Q = 140.29155((S).EXP(1.4962))

CORRELATION COEFFICIENT = .9855 STANDARD ERROR = .050158

YEAR = 1975

REGRESSION EQUATION IS Q = 146.25147((S).EXP(1.4719))

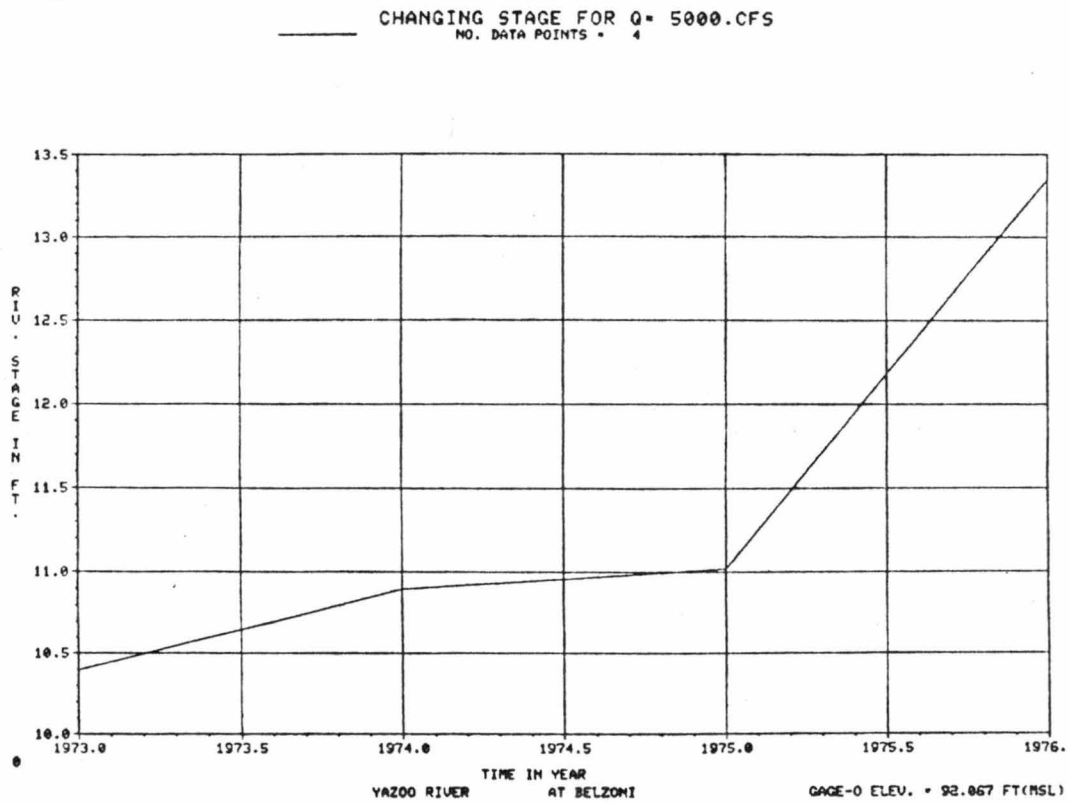
CORRELATION COEFFICIENT = .9768 STANDARD ERROR = .066059

YEAR = 1976

REGRESSION EQUATION IS Q = 34.37945((S).EXP(1.9221))

CORRELATION COEFFICIENT = .9876 STANDARD ERROR = .068975

Output 3:



River Stage Data

EXAMPLE 84: River stage data, calculation of basic statistics, and cumulative frequency distribution curve and histogram for a gaging station for a specified time.

Input 1:
(list of data)

```
I>GET,RIVER STAGE DATA
I>LOCATION,STATION LOCATED AT GREENWOOD
I>TIME,FROM DATE 150473 TO 151073
I>LIST
```

Input 2:
(calculation of
basic statistics)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
 >PROCESS,LIST,BASIC STAT
```

Input 3:
(plot of cumulative frequency
distribution curve)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,PLOT,CUM FREQUENCY
```

Input 4:
(plot of histogram)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,PLOT,HISTOGRAM
```

Output 1:

GAGE-STAGE VALUES (FT) FOR THAT PERIOD ARE
FROM 150473 TO 151073

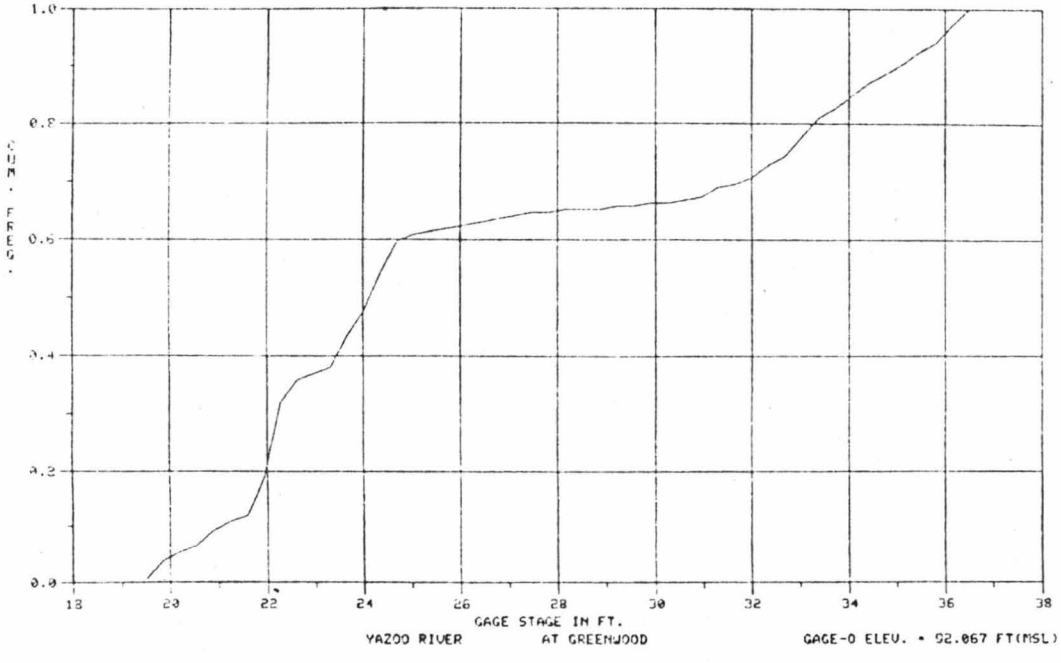
1973	184								
33.50	33.40	33.40	33.20	33.20	33.00	32.80	32.60	32.40	32.50
33.00	33.30	33.60	33.80	34.00	34.10	34.30	34.40	34.90	35.10
35.40	35.50	35.70	36.10	36.20	36.20	36.20	36.40	36.50	36.50
36.40	36.40	36.20	36.00	35.80	35.70	35.50	35.40	35.20	35.00
34.80	34.60	34.50	34.30	34.10	33.90	33.70	33.50	33.30	33.10
32.90	32.70	32.50	32.30	32.10	31.90	31.60	31.40	31.20	31.30
31.00	30.50	29.90	29.20	28.30	27.40	27.00	26.70	26.40	26.00
25.60	25.30	25.00	24.70	24.40	24.20	24.10	23.90	23.80	23.80
23.70	24.60	24.60	24.80	24.70	24.70	24.60	24.50	24.40	24.10
24.20	23.50	23.60	24.20	24.70	24.50	24.60	24.50	24.50	24.40
24.30	24.10	24.20	23.80	23.60	23.50	23.50	23.50	25.00	24.70
24.50	24.00	23.50	23.60	23.40	23.20	23.10	22.90	22.70	22.40
22.20	22.20	22.40	22.50	22.50	22.60	22.60	22.50	22.50	22.40
22.30	22.20	22.10	22.00	21.90	21.80	21.80	21.70	21.80	21.90
22.20	22.10	22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20
22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.20	22.10
22.10	22.00	21.80	21.50	21.20	20.90	20.30	19.50	19.50	19.70
19.90	19.50	20.00	20.00	20.10	20.30	20.40	20.60	20.80	20.50
20.90	21.00	21.10	21.20						

Output 2:

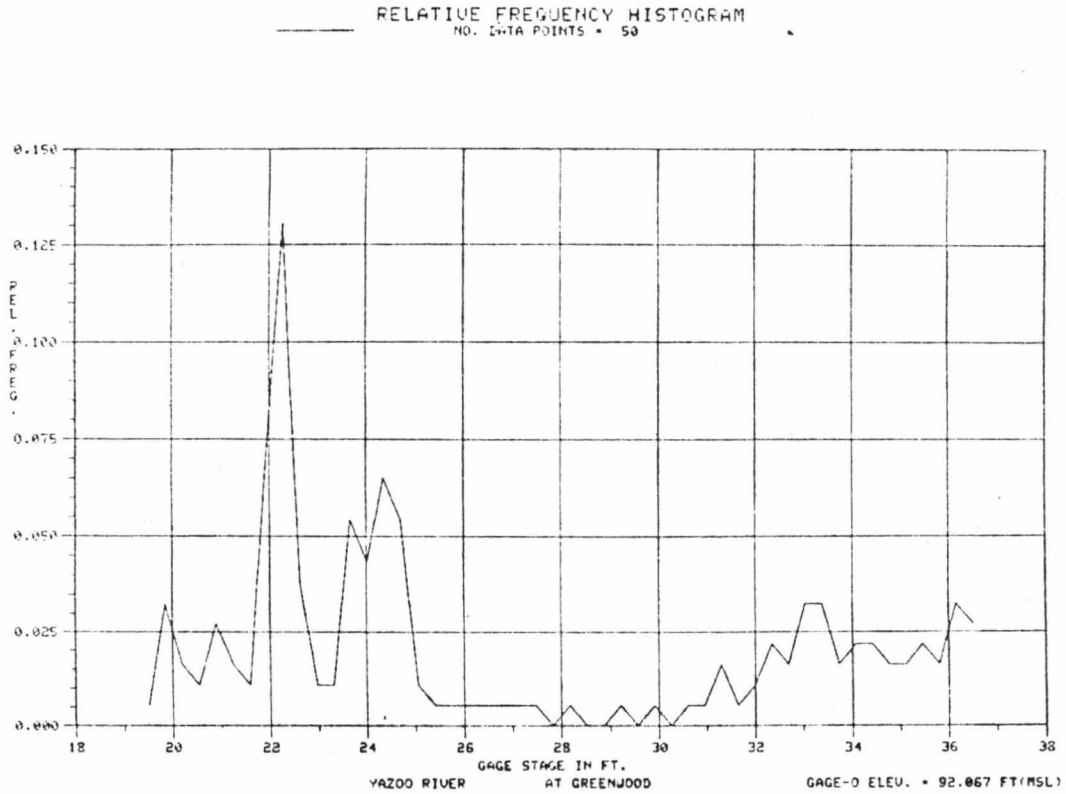
```
MINIMUM VALUE =     19.50          MAXIMUM VALUE =     36.50
MEAN VALUE =     26.74          STANDARD DEVIATION =      5.51
```

Output 3:

CUMULATIVE FREQUENCY CURVE
NO. DATA POINTS = 50



Output 4:



River Discharge Data

EXAMPLE 85: River discharge data, maximum and minimum values , and frequency analysis for a gaging station for a specified time.

Input 1:
(list of data)

```
I>GET,DISCHARGE DATA
I>LOCATION,STATION LOCATED NR SWAN LAKE
I>TIME,FROM DATE 150473 TO 151073
I>LIST
```

Input 2:
(computation of maximum value)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,LIST,MAX VALUE
```

Input 3:
(Computation of minimum value)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,LIST,MIN VALUE
```

Optional Input:
(combining inputs
2 and 3)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,LIST,MIN-MAX
```

Input 4:
(frequency analysis)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,LIST,FREQUENCY ANALYSIS
```

Output 1:

DISCHARGE VALUES (CFS) FOR THAT PERIOD ARE
FROM 150473 TO 151073

1973	184								
14000.	14000.	14000.	14200.	14300.	14400.	14500.	14700.	15100.	17000.
21300.	25900.	29200.	30200.	30100.	30200.	30500.	30800.	31200.	30700.
29600.	28300.	27700.	27200.	26700.	26000.	25000.	23700.	23200.	22400.
21300.	20300.	19500.	18800.	18200.	18000.	17600.	17300.	16900.	16500.
16200.	16000.	15900.	15700.	15700.	15700.	15600.	15600.	15400.	15300.
15200.	15100.	15000.	14900.	14800.	14600.	14400.	14200.	13800.	13600.
13400.	12300.	11200.	10200.	9410.	8870.	8950.	8800.	8700.	8470.
8260.	8150.	8180.	8180.	8190.	8150.	8150.	8210.	8250.	8260.
8230.	8450.	8600.	8750.	8930.	8990.	8980.	8910.	8870.	8720.
8650.	8620.	9310.	10400.	10300.	10200.	10200.	10200.	10200.	10200.
10100.	9920.	9870.	9720.	9690.	9610.	9600.	9600.	9910.	10200.
10300.	10200.	9900.	9610.	9370.	9210.	9090.	8910.	8790.	8870.
9000.	9230.	9700.	9510.	10100.	10200.	10200.	10100.	9890.	9710.
9520.	9450.	9350.	9200.	9380.	8930.	8860.	8790.	8890.	8900.
8920.	8920.	8900.	8850.	8850.	8890.	8900.	8870.	8850.	8870.
8890.	8910.	8940.	8940.	8944.	8920.	8870.	8840.	8810.	8760.
8650.	8430.	8140.	7860.	7620.	7560.	7100.	6970.	6950.	6990.
7040.	6930.	6830.	6850.	6980.	7000.	7200.	7550.	7550.	7570.
7620.	7850.	7960.	7950.						

Output 2:

```
THE MAXIMUM VALUE IS   31200.00  WHICH OCCURRED ON MAY  3,1973
```

Output 3:

```
THE MINIMUM VALUE IS    6830.00  WHICH OCCURRED ON OCT  4,1973
```

Optional Output:

```
THE MINIMUM VALUE IS    6830.00  WHICH OCCURRED ON OCT  4,1973

THE MAXIMUM VALUE IS   31200.00  WHICH OCCURRED ON MAY  3,1973
```

Output 4:

TABLE OF THE COMPUTED RELATIVE FREQUENCIES (PDF), AND THE CUMULATIVE FREQUENCIES (CDF)

TALLAHATCHIE RIVER NR SWAN LAKE

NO.	RANGE		MID-RANGE	OBS. FREQ.	CDF	PDF
1	(6531.33	7078.67)	6830.00	9.	.04891	.04891
2	(7078.67	7626.02)	7327.35	6.	.08152	.03261
3	(7626.02	8073.37)	7824.69	6.	.11413	.03261
4	(8073.37	8570.71)	8322.04	15.	.19565	.08152
5	(8570.71	9068.06)	8819.39	44.	.43478	.23913
6	(9068.06	9565.41)	9316.73	10.	.46913	.05435
7	(9565.41	10062.76)	9814.08	15.	.57065	.08152
8	(10062.76	10560.10)	10311.43	16.	.65761	.08696
9	(10560.10	11057.45)	10808.78	0.	.65761	0.00000
10	(11057.45	11554.80)	11306.12	1.	.66304	.00543
11	(11554.80	12052.14)	11803.47	0.	.66304	0.00000
12	(12052.14	12549.49)	12300.82	1.	.66848	.00543
13	(12549.49	13046.84)	12798.16	0.	.66848	0.00000
14	(13046.84	13544.18)	13295.51	1.	.67391	.00543
15	(13544.18	14041.53)	13792.86	5.	.70109	.02717
16	(14041.53	14538.88)	14290.20	6.	.73370	.03261
17	(14538.88	15036.22)	14787.55	5.	.76087	.02717
18	(15036.22	15533.57)	15284.90	5.	.78804	.02717
19	(15533.57	16030.92)	15782.24	7.	.82609	.03804
20	(16030.92	16528.27)	16279.59	2.	.83696	.01087
21	(16528.27	17025.61)	16776.94	2.	.84783	.01087
22	(17025.61	17522.96)	17274.29	1.	.85326	.00543
23	(17522.96	18020.31)	17771.63	2.	.86413	.01087
24	(18020.31	18517.65)	18268.98	1.	.86957	.00543
25	(18517.65	19015.00)	18766.33	1.	.87500	.00543
26	(19015.00	19512.35)	19263.67	1.	.88043	.00543
27	(19512.35	20009.69)	19761.02	0.	.88043	0.00000
28	(20009.69	20507.04)	20258.37	1.	.88587	.00543
29	(20507.04	21004.39)	20755.71	0.	.88587	0.00000
30	(21004.39	21501.73)	21253.06	2.	.89674	.01087
31	(21501.73	21999.08)	21750.41	0.	.89674	0.00000
32	(21999.08	22496.43)	22247.76	1.	.90217	.00543
33	(22496.43	22993.78)	22745.10	0.	.90217	0.00000
34	(22993.78	23491.12)	23242.45	1.	.90761	.00543
35	(23491.12	23988.47)	23739.80	1.	.91304	.00543
36	(23988.47	24485.82)	24237.14	0.	.91304	0.00000
37	(24485.82	24983.16)	24734.49	0.	.91304	0.00000
38	(24983.16	25480.51)	25231.84	1.	.91848	.00543
39	(25480.51	25977.86)	25729.18	1.	.92391	.00543
40	(25977.86	26475.20)	26226.53	1.	.92935	.00543
41	(26475.20	26972.55)	26723.88	1.	.93478	.00543
42	(26972.55	27469.90)	27221.22	1.	.94022	.00543
43	(27469.90	27967.24)	27718.57	1.	.94565	.00543
44	(27967.24	28464.59)	28215.92	1.	.95109	.00543
45	(28464.59	28961.94)	28713.27	0.	.95109	0.00000
46	(28961.94	29459.29)	29210.61	1.	.95652	.00543
47	(29459.29	29956.63)	29707.96	1.	.96196	.00543
48	(29956.63	30453.98)	30205.31	3.	.97826	.01630
49	(30453.98	30951.33)	30702.65	3.	.99457	.01630
50	(30951.33	31448.67)	31200.00	1.	1.00000	.00543

Precipitation Data

EXAMPLE 86: Daily precipitation data, histogram, and daily cumulative rainfall for a gaging station for a specified time.

Input 1:
(listing of data)

```
I>GET,PRECIPITATION DATA,DAILY
I>LOCATION,STATION LOCATED AT CALHOUN
I>TIME,FROM DATE 150673 TO 151073
I>LIST
```

Input 2:
(plot of histogram)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,PLOT,HISTOGRAM
```

Input 3:
(plot of daily
cumulative rainfall)

```
 DO YOU WISH TO CONTINUE PROCESSING THE RETRIEVED DATA SET

I>YES
I>PROCESS,PLOT,CUM RAINFALL
```

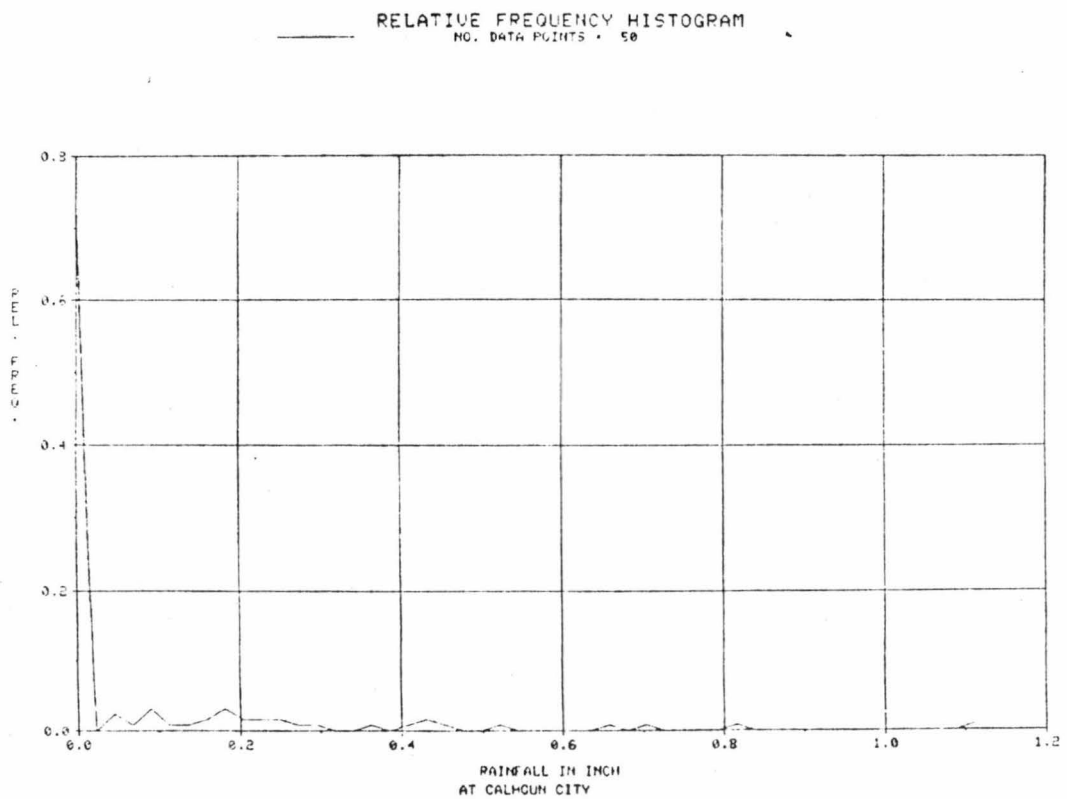
Output 1:

STATION NAME	STATN NO	LATITUDE	LONGITUDE	ELEVATION(MSL)	DATA TYPE	NO YEARS
AT CALHOUN CITY	1314	33 52 00	89 20 00	250.00 (FT)	INTER	28

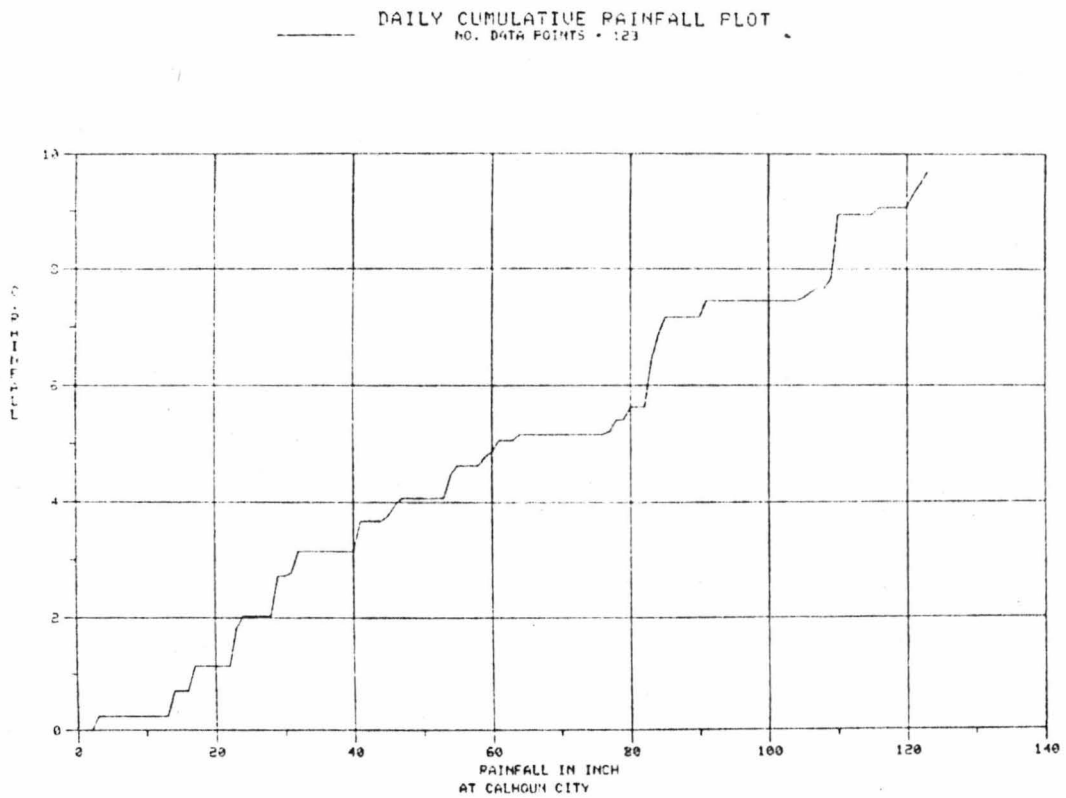
DAILY RAINFALL (IN INCHES) FROM 150673 TO 151073

1973	123 DAYS								
0.00	0.00	.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	.45	0.00	0.00	.44	0.00	0.00	0.00
0.00	0.00	.66	.23	0.00	0.00	0.00	0.00	.70	0.00
.05	.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
.52	0.00	0.00	0.00	.09	.18	.13	0.00	0.00	0.00
0.00	0.00	0.00	.41	.15	0.00	0.00	0.00	.15	.09
.19	0.00	0.00	.10	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	.05	.20	0.00	.22
0.00	0.00	.82	.42	.30	0.00	0.00	0.00	0.00	0.00
.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	.05	.09	.07	0.00	.17	1.11
0.00	0.00	0.00	0.00	0.00	.12	0.00	0.00	0.00	0.00
.25	.15	.20							

Output 2:



Output 3:


DAILY CUMULATIVE RAINFALL PLOT
NO. DATA POINTS = 123
0
2
4
6
8
10
0
20
40
60
80
100
120
140
RAINFALL IN INCH
AT CALHOUN CITY