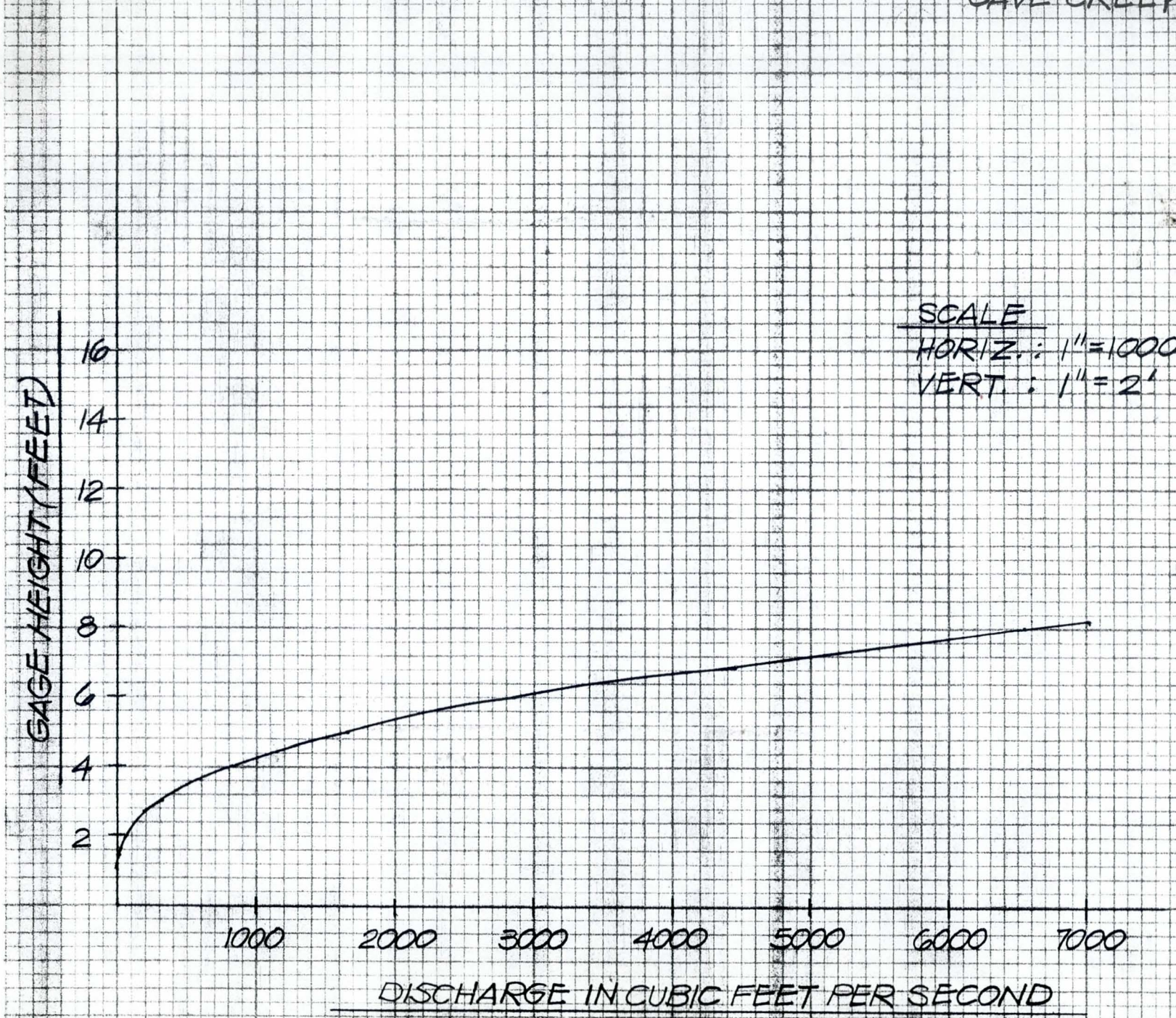
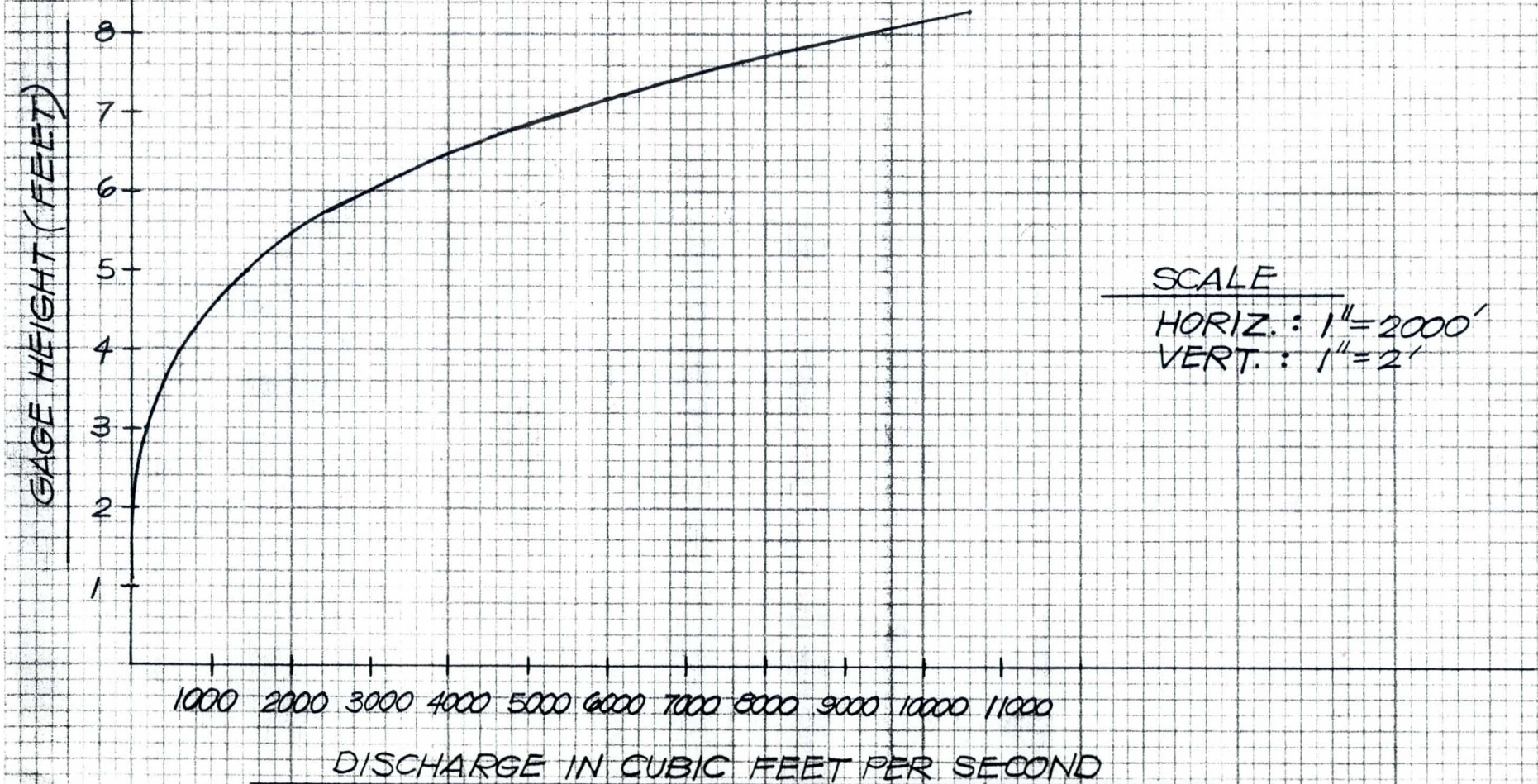
Cave Creek Guage Data

CAVE CREEK, BELOW
COTTONWOOD CREEK, NEAR
CAVE CREEK, ARIZ.



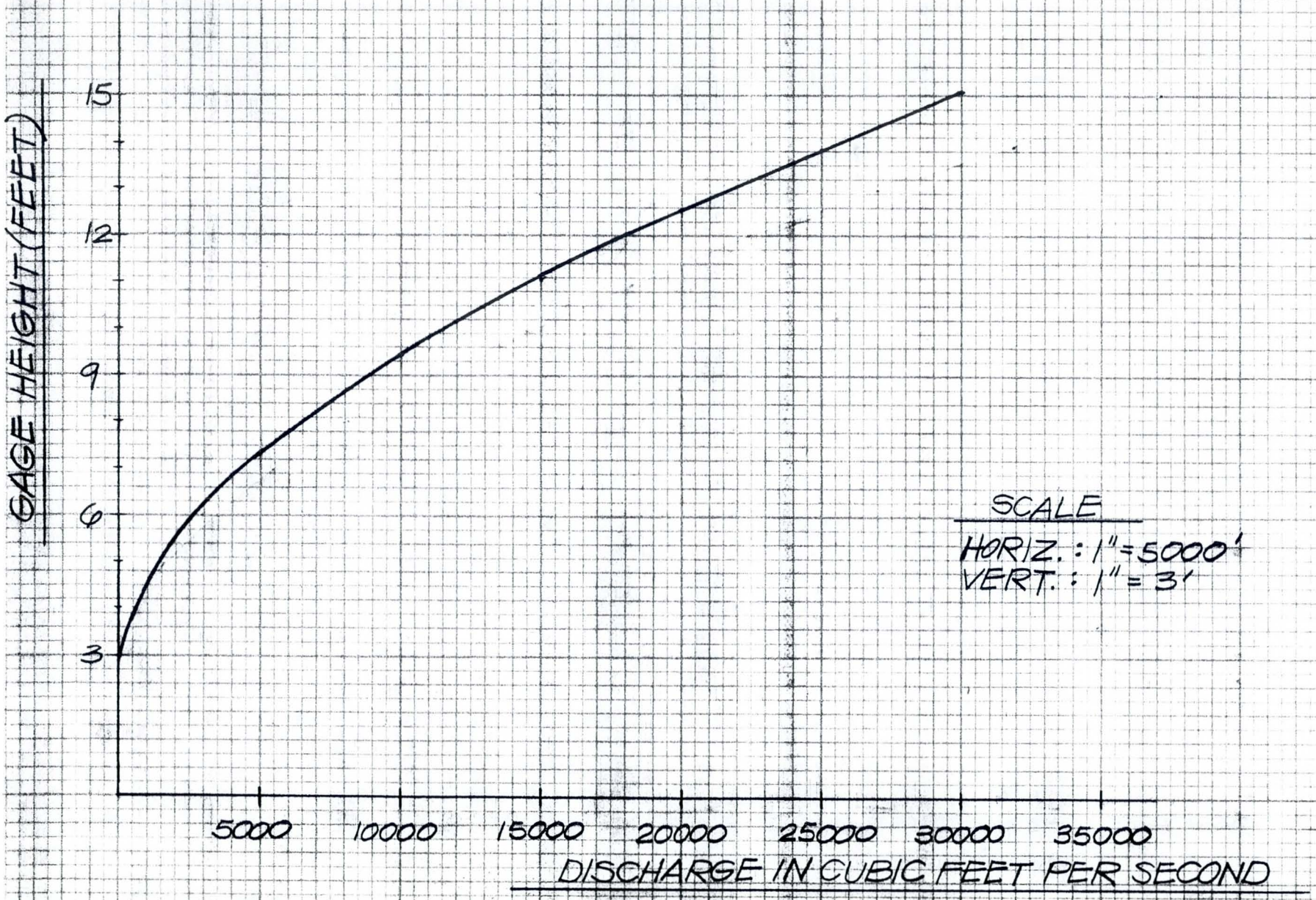
Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

NEW RIVER, NEAR ROCK SPRINGS, AZ



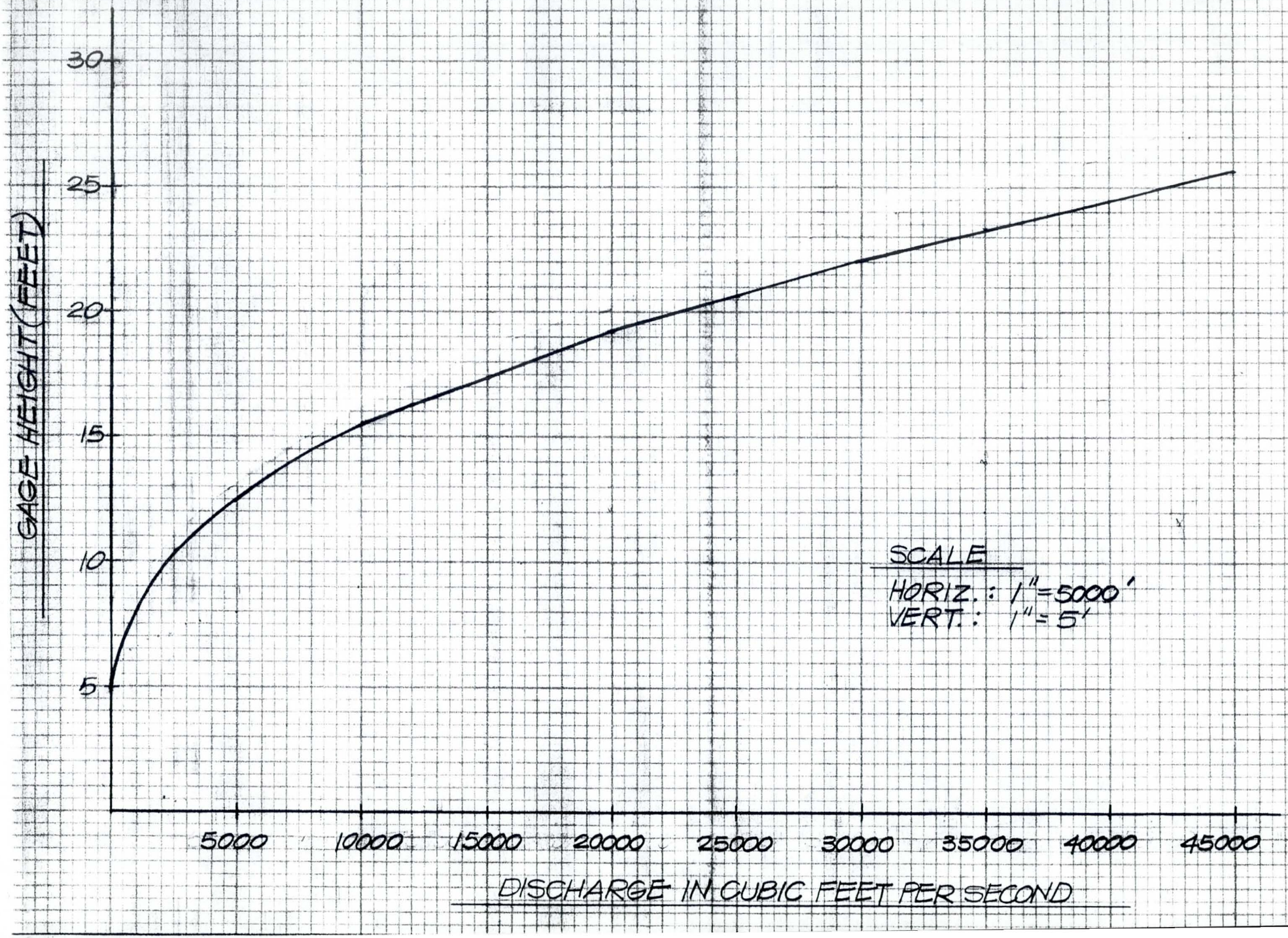
SCALE
HORIZ. : 1" = 2000'
VERT. : 1" = 2'

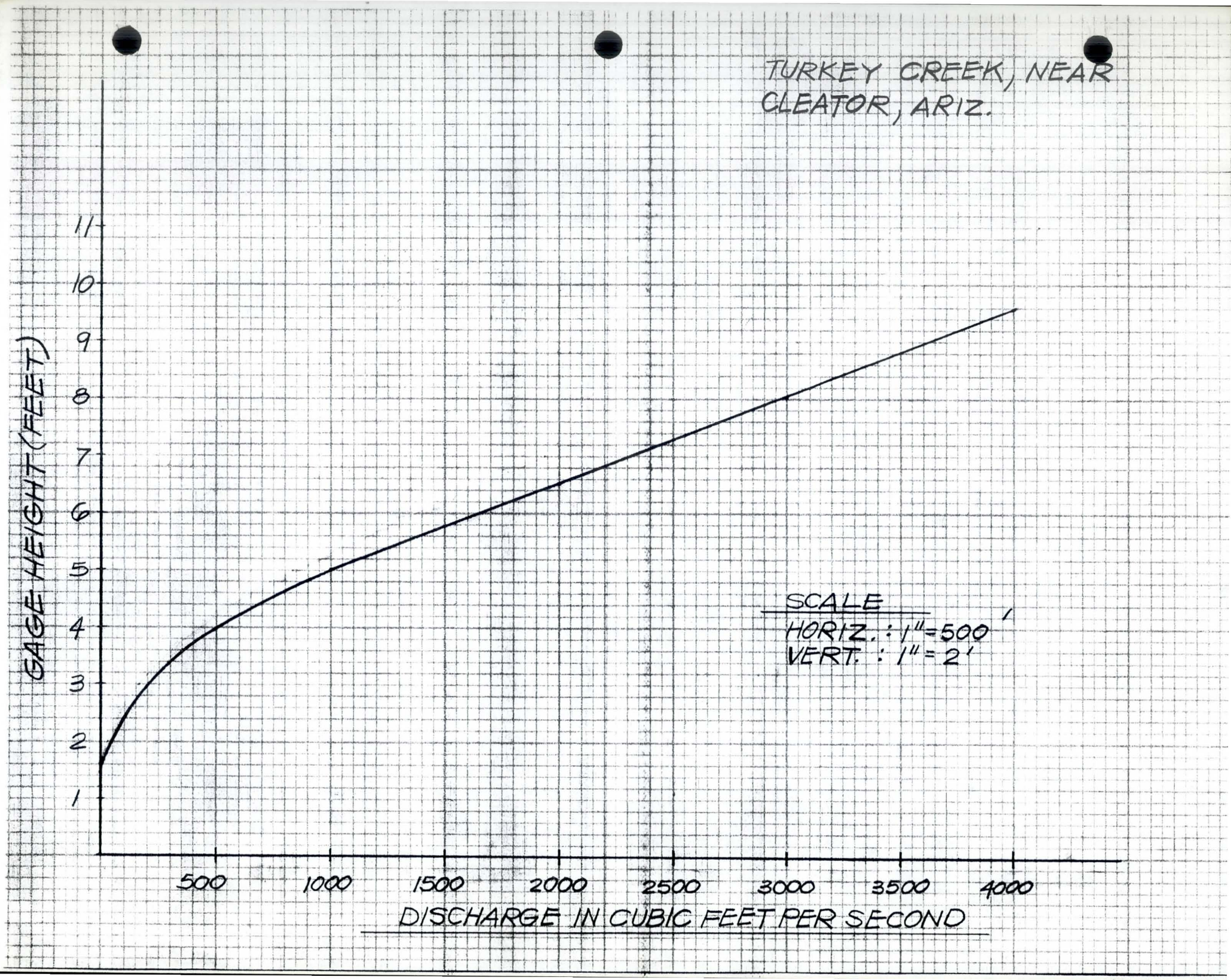
AGUA FRIA RIVER, NEAR
MAYER, ARIZ.



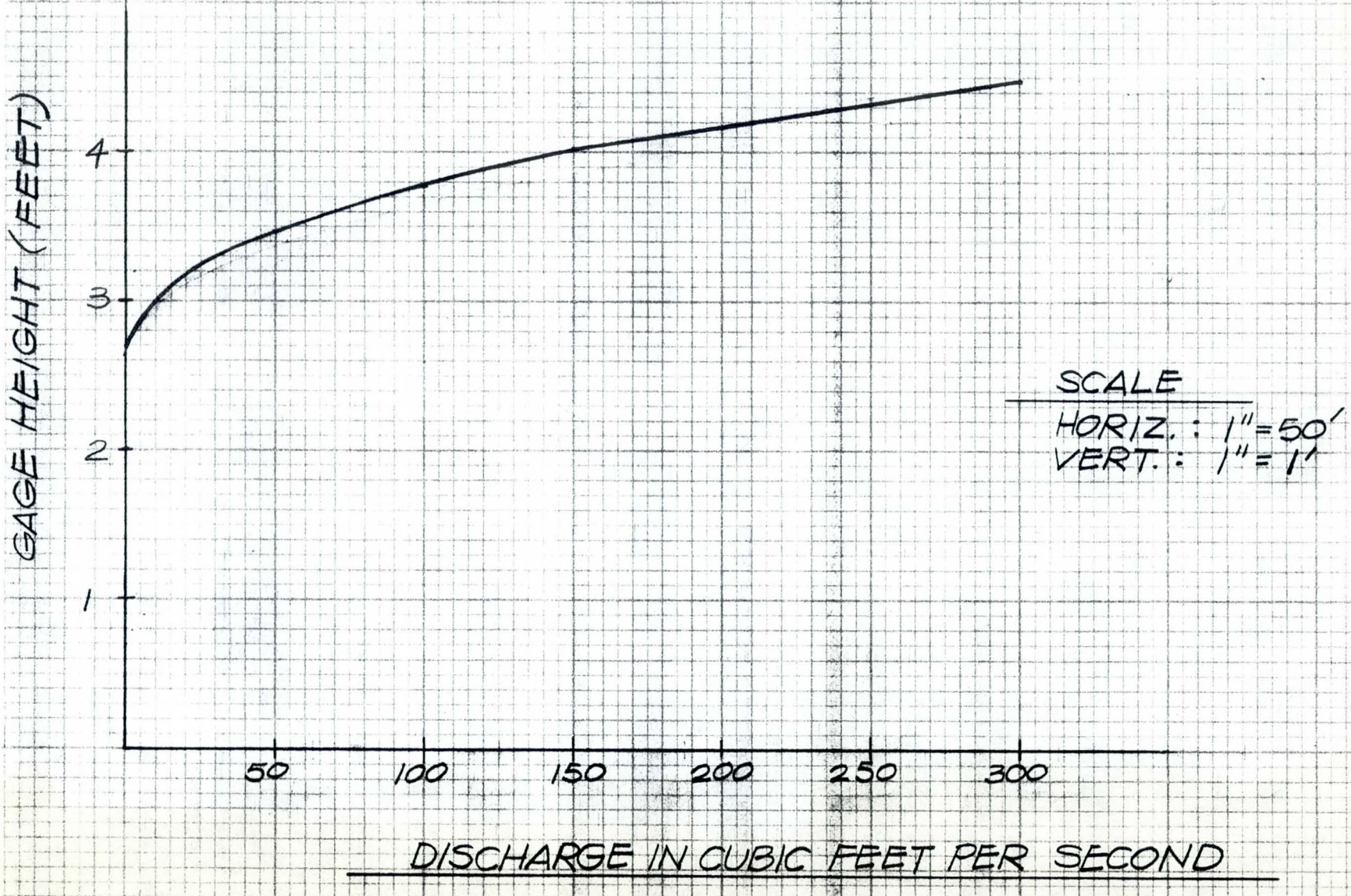
SCALE
HORIZ. : 1" = 5000'
VERT. : 1" = 3'

AGUA FRIA RIVER, NEAR
ROCK SPRINGS, ARIZ.




TURKEY CREEK, NEAR
CLEATOR, ARIZ.
GAGE HEIGHT (FEET)
1
2
3
4
5
6
7
8
9
10
11
500
1000
1500
2000
2500
3000
3500
4000
DISCHARGE IN CUBIC FEET PER SECOND
SCALE
HORIZ. : 1" = 500'
VERT. : 1" = 2'

HASSAYAMPA RIVER, AT
WALNUT GROVE, NEAR
WAGONER, ARIZ.



SRP EOC 273-8786

Down Link 966-1002 —(966-1529)

FCD DATACOL 272-9842

U.S.G.S. 254-5811

SALT LAKE CITY RIVER FORECAST CENTER

1-801-531-7215 OR 1-801-531-7304

```
USER NETWORK MAINTENANCE PROGRAM

Do you want to (1) list your network id's, or
               (2) list a network's stations, or
               (3) build a new network, or
               (4) modify an existing network, or
               (5) delete an entire network, or
               (6) end this program?
Enter option number:   1


User id:        JTram
Network id's:
               agua ~~apia~~
               cave cree
               centenial
               gila bend
               gila lowe
               gila uppe
               hassyampa
               hydro 1
               new river
               salt lowe
               salt uppe
               tonto
               verde
```

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Water Resources Division
301 W. Congress, Box FB-44
Tucson, Arizona 85701

FLOOD CONTROL DISTRICT
RECEIVED
JAN 1? '82

	CH ENG	/	HYDRO
	ASST		LMgt
	ADMIN		SUSP
	C & O		FILE
	ENGR		DESTROY
	FINANCE		
REMARKS			

January 14, 1982

Memorandum

To: HYDREC's Users

From: Chief, Computer Services Section, WRD, Tucson, AZ

Subject: COMSAT Stations

Recently there have been some problems in using the USER_UPDATE function of HYDRECS when updating a network. The cause of this appears to be the inclusion of COMSAT stations with non-COMSAT stations. To prevent any errors in the future, all COMSAT stations should be deleted from your networks. A list of the COMSAT stations follows:

09423000	Colorado River blw Davis Dam
09427520	Colorado River blw Parker Dam
09445000	Willow Creek diversion from Black River, near Morenci
09448500	Gila River at head of Safford Valley, near Solomon
09489500	Black River blw pumping plant, near Point of Pines
09492400	East Fork White River near Fort Apache
09496500	Carrizo Creek near Show Low
09503700	Verde River near Paulden
09505200	Wet Beaver Creek near Rimrock
09507980	East Verde River near Childs
09508500	Verde River blw Tangle Creek, abv abv Horseshoe Dam
09522000	Colorado River at N.I.B. abv Morelos Dam
09522500	Gila Gravity Main Canal at Imperial Dam
09535300	Vamori Wash at Kom Vo

Colleen A. Babcock

Colleen A. Babcock

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Water Resources Division
301 W. Congress, Box FB-44
Tucson, Arizona 85701

December 24, 1981

FLOOD CONTROL DISTRICT
RECEIVED
DEC 25 '81

3	CH ENG	1	HYDROL
2	ASST		LMgt
	ADMIN		SUSP
	C & O		FILE
	ENGR		DESTROY
	FINANCE		
REMARKS			

Mr. David R. Johnson
Flood Control District
of Maricopa County
3335 E. Durango Street
Phoenix, Arizona 85009

Dear Dave:

The U.S. Geological Survey currently has 14 gaging stations under contract with COMSAT General Corporation to operate real-time data equipment. Data values are relayed via satellite to their ERT facility. Eventually, they are transferred into the WATSTORE data file of the Geological Survey.

In mid-December, the transfer of real-time data into WATSTORE from ERT stopped and is no longer available for retrieval from that data file. Stage data, however, will be available directly from ERT for the COMSAT stations until at least January 31, 1982 if needed.

Attached are instructions which you can use to facilitate data retrieval from ERT. I believe you will find the data from ERT will be the most current data available, but will consist of stage only. No conversion to discharge will be available.

Should you experience any problems retrieving data from ERT, please contact Colleen Babcock of our Tucson office.

Sincerely yours,

Joseph D. Camp

For Fred C. Boner
Assistant District
Chief for Operations

Attachments

cc: Jack Blee, USGS, Phoenix, AZ

COMSAT General Corporation HYDROLOGIC INFORMATION SERVICE

VALUE	ARGUMENT	DEFAULT	NOTES	SAMPLE
station_id or	STN	n/a		STN=01014000
user_id.network_id	NET	n/a	use period, but no space	NET=BILL.TEX96
time zone	Z	0(U.T.)		Z=5
begin date and	d1	n/a	must enter d1 and d2	d1=03/09/81
end date	d2	date 1	slashes required	d2=03/10/81
begin time and	t1	00:00:00	must enter t1 and t2	t1=12:00:00
end time	t2	23:59:59	colons required	t2=18:00:00
last number of hours	last	n/a	use instead of d1 and d2 and t1 and t2*	last=24
parameter codes	pc	n/a	if more than one, separate by commas no spaces	pc=65 or pc=65,0

*)LIST_DCP_DATA STN=01014000 Z=5 LAST=24 PC=65 INT=003000

draft 3/11/81

Attachment 3

ARGUMENTS

LIST_DCP_DATA STATION

LIST_DCP_DATA STN=09445000 Z=5 D1=01/28/81 D2=01/29/81 T1=03:00:00 T2=15:00:00
PC=65,0 INT=060000 (CR)

LIST_DCP_DATA NETWORK

LIST_DCP_DATA NET=SHARYN.ARIZ1 Z=7 D1=01/29/81 D2=01/29/81 T1=08:30:00 T2=22:00:00
PC=65 INT=030000 (CR)

PPLOT_DCP_DATA STATION

PPLOT_DCP_DATA STN=09445000 Z=7 D1=03/10/81 D2=03/11/81 T1=12:00:00 T2=12:00:00
PC=65 INT=003000 (CR)

PPLOT_DCP_DATA NETWORK

PPLOT_DCP_DATA NET=BILL.TEX96 Z=6 D1=03/10/81 D2=03/11/81 T1=15:00:00 T2=15:00:00
PC=65 INT=003000 (CR)

PPLOT_DCP_DATA TABLE STATION

PPLOT_DCP_DATA TABLE STN=09445000 Z=7 D1=03/10/81 D2=03/11/81 T1=12:00:00 T2=23:59:59
PC=65 INT=001500 (CR)

PPLOT_DCP_DATA TABLE NETWORK

PPLOT_DCP_DATA TABLE NET=BILL.TEX24 Z=6 D1=03/10/81 D2=03/11/81 T1=15:00:00 T2=15:00:00
PC=65 INT=003000 (CR)

NOTE: YOU CAN ELIMINATE HAVING TO SPECIFY DATES AND TIMES IF YOU ARE INTERESTED ONLY IN THE LAST NUMBER OF HOURS, I.E.,)LIST_DCP_DATA STN=01014000 Z=5 LAST=24 PC=65 INT=003000 (CR)

Attachment 1

Dial local tymnet numbers:

790-0764	Tucson	300 BAUD
249-9261	Phoenix	300 BAUD
249-3862	Phoenix	1200 BAUD

1-800-527-1800 (Use this number for 300 or 1200 BAUD if there is no local tymnet number for your city.)

Terminal Displays	Response
Please type terminal identifier:	a
Please log in:	control H ertm6 <cr>
***ERT ENVIRONET M600 CPU/TYPE NEW LINE TO BEGIN LOGGING ON <cr>	
USER NAME:	C-USGS 112 <cr>
PASSWORD:	TUSCON <cr>

(See attached sheets for commands.)

To log off enter: BYE <cr>

(Please note that the PASSWORD "TUSCON" is actually Tucson spelled wrong.)

vised 05-17-80

Computer Center Division

Multics User Registration Request

received
8 DEC 1980

FOR INDIVIDUAL USER REGISTRATION ONLY.

THIS FORM IS TO BE COMPLETED BY THE INDIVIDUAL USER AND SHOULD BE SENT TO THE NEAREST MULTICS SITE REGISTRAR.
THE MULTICS REGISTRAR WILL PROCESS THIS REQUEST, AND RETURN A COPY TO THE INDIVIDUAL USER (OR PROJECT SUPERVISOR, IF REQUESTED).
USERS REGISTERED ON MULTICS WILL BE ASSIGNED A UNIQUE PERSON ID AND A PASSWORD THAT MUST BE USED WHEN GAINING ACCESS TO ANY USGS MULTICS SITE.
PLEASE SEE * BELOW.
TO BE ABLE TO USE MULTICS, YOU MUST ALSO BE REGISTERED ON A PROJECT.
TO BE ADDED ON A MULTICS PROJECT, FORM CCD-066, MUST BE SUBMITTED.
PLEASE CALL 928-7123 (FTS) OR 860-7123 (COMMERCIAL) IF YOU WISH TO RECEIVE MUL_T_GRAM, A NEWSLETTER; OR READY REFERENCES, A QUICK GUIDE TO USING MULTICS.

---

ision: WRD Mailstop:

st Name: TRAM 32 Characters Maximum.

st Name: JOE 24 Characters Maximum.

dle Initial: J One Character.

dress: 3335 W. DURANGO PHX, AZ 32 Characters Maximum.

one Numbers: Commercial: 602-262-1501 FTS:

ase register my person id at: ( ) Denver ( ) Menlo Park (X) Reston

e: 12/5/80 Carlene A Babcock
User Signature

BE COMPLETED BY CCD

r person id: JTram Your password: Stand

e first time you login, please change your password to another password wn only to you.
uming you are user JDoe, registered under project "Proj", you can nge your password as follows:

1. login by typing: l JDoe Proj -cpw
2. enter, when prompted, the present password assigned to you.
3. enter twice, when prompted, the new password.

e Completed: 9 DEC 1980 Registrar Signature: Karen Wilt

.CD-064
:evised 8-19-80

Computer Center Division

Multics Project Registration Request

received
8 DEC 1980

FOR PROJECT SUPERVISOR'S USE ONLY

. MUST BE USED TO REQUEST REGISTRATION OF A NEW PROJECT.
. COMPLETE THIS FORM AND FORWARD TO NEAREST MULTICS SITE REGISTRAR.
. THIS FORM WILL BE PROCESSED BY A SITE REGISTRAR, COPIED AND RETURNED.
. EACH-PROJECT WILL BE ASSIGNED A UNIQUE Project_id. Project_ids MUST BEGIN WITH A CAPITAL LETTER AND THE REST SHOULD BE LOWER CASE.

---

uggested Project_id: (MFCDCS) Mfcdcs 9 Characters Maximum

itle of Project: MARICOPA FLOOD CONTROL DATA COLLECTION SYSTEM

52 Characters Maximum

roject Supervisor: COLLEEN A. BABCOCK 32 Characters Maximum

ddress 3335 W. DURANGO PHX AZ 85009 32 Characters Maximum

ailstop _____ Phone Numbers: Commercial 602-262-4501 FTS _____

:count Number: 470406200 9 Digits Maximum except non-USGS users will reface their account number with a one character center code. (D=Denver, M=Menlo Park, =Reston) and a two character organization code.

roject Dollar Amount Limit: $_____ If no amount is specified the roject will be established with an OPEN account.

roject Cutoff Date: _____ If no date is specified the project cutoff ate will be 12/31/99.

roject Disk Quota: _____ If no quota is specified the project will be ven the current maximum.

nitial list of users by Person_id's. Project Supervisors MUST have users registered prior adding them to projects. Attach Multics Form CCD-068, Multics User Registration Request, or unregistered users.

Person_id	Person_id	Person_id	Person_id
CBabcock	JBlee	WJohnson	TLamarche
see attached form 068 for additional persons.			JTram
			SBuchanan
			DRJohnson

egister this project at: ( ) Denver ( ) Menlo Park (X) Reston

ate: 12/5/80 Project Supervisor's Signature Colleen A. Babcock

---

BE COMPLETED BY CCD

roject_id Assigned: Mfcdcs Quota Assigned: 5000 pages

ate: 9 DEC 1980 Registrar's Signature Karen Wilt

C.5.d. Example of the argument method for list_dcp_data

```
list_dcp_data -stn 01570500 -d1 10/15/79 -d2 10/16/79 -pc 65 -int 060000  -nomssg
```

```
LIST DCP DATA PROGRAM

You have selected data only for the station:  "          01570500".
This listing will include readings from 15 oct 1979      00:00:00 local
                                     to 16 oct 1979      23.59.59 local

for devices with parm code      65
with a minimum reporting interval of 06 hrs 00 min 00 sec.
Correct?  (y or n):  y
```

C.5.e. Listing of selected data and messages.

Here is the report produced by the list_dcp_data program from the parameters specified in the two preceding examples:

```
station id   :      01570500
station name:     susquehanna river at harrisburg, pa.
state        :    42
latitude     :    401517
longitude    :    0765311
dcp_id       :    16c839c2

(1) adr       device number     1
```

parm code	date	local time	value (2) received	instr (3) reading	value (4) converted	screen (5) code	instr (6) code
65	15 oct 1979	00:09:00	@EAH	518	5.18	0	0
		06:09:00	@EAD	514	5.14	0	0
		12:09:00	@EQI	509	5.09	0	0
		18:10:00	@EQD	504	5.04	0	0
	16 oct 1979	00:10:00	@QEQQ	500	5.00	0	0
		06.10.00	@QDIE	495	4.95	0	0
		12:10:00	@QDIA	491	4.91	0	0
		18.10.00	@QDHG	487	4.87	0	0

```
END of LIST DCP DATA PROGRAM

READY 10/17/79
```

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Appendix 1 - Streamgage Information and Rating Tables

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CHAPTER I

SATELLITE DATA TELEMETRY

IN ARIZONA

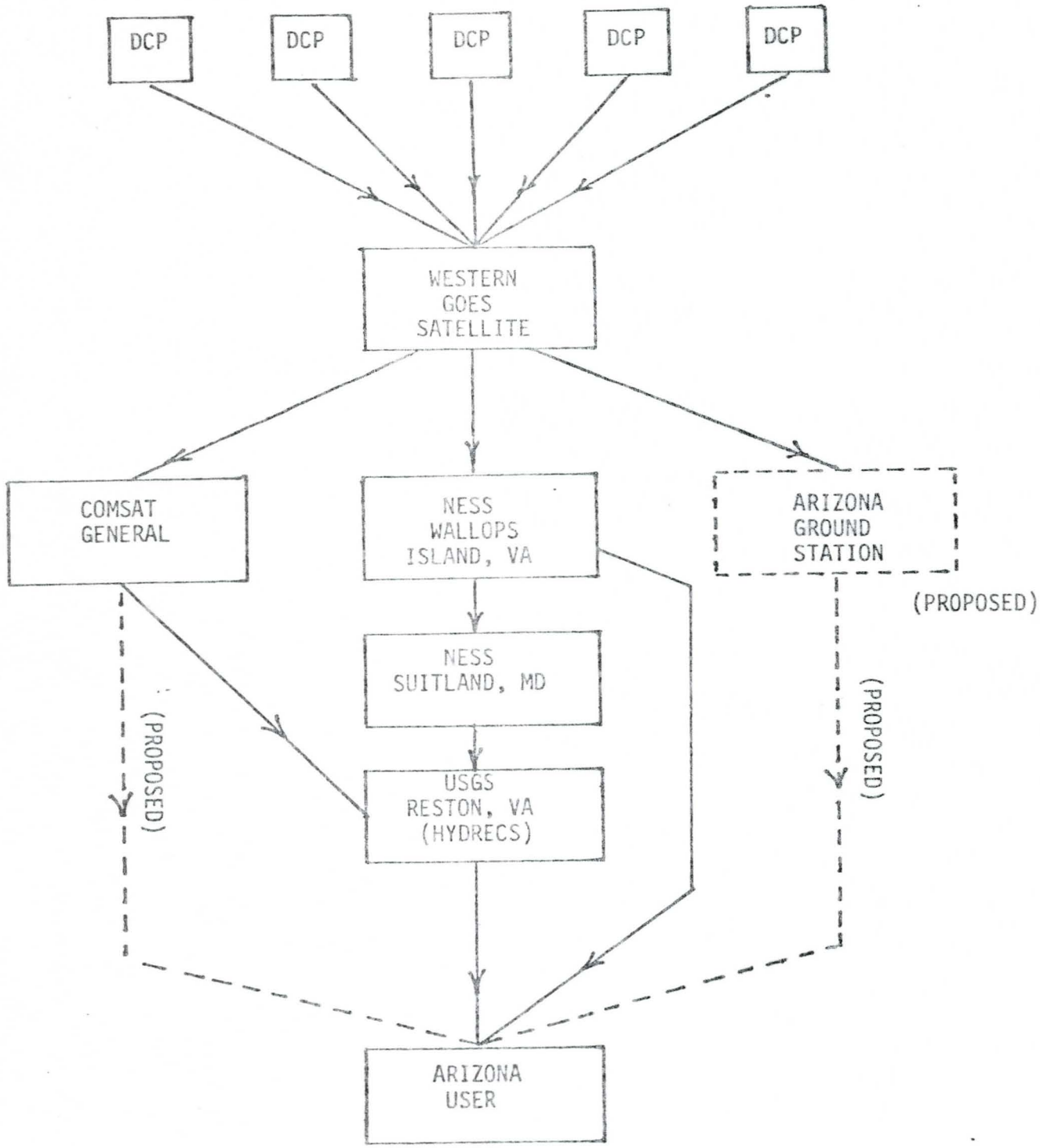
I-A The Arizona District, USGS, has proposed that Arizona data users install a receiving station for satellite data. Such a station would reduce our dependency on long-distance telephone lines, reduce the cost of data handling by the USGS in Reston, and allow Arizona users to expedite real-time data dissemination. This receive station might be located at the Salt River Project where maintenance would be available at all times. Such a terminal system would cost about $150,000 and would take at least 1 year after funds were available to become operational.

I-B For several years the National Weather Service has operated a stage precipitation platform on the Blue River above Clifton and a meteorological station at Lukeville.

Starting in late 1980, the USGS, through cooperative agreements with the Flood Control District of Mariocpa County and the joint Federal-State Flood-Warning Office, is installing a network of stage and precipitation platforms throughout the state for flood-warning purposes. When completed in 1981, this network will include 45 streamgages and about 40 precipitation gages which will provide data for flood-forecast models. Platforms installed by other data users will also be used for flood warning where applicable. (See Map 1, page II-ii.)

I-C People or agencies may become users of satellite data for various reasons. Some obvious areas where real-time data could be used are: flood forecasting; surface-water management (operation of dams, diversions of irrigation water); monitoring water quality: and weather forecasting. People or agencies who are interested in becoming users of satellite data through the USGS should contact Colleen Babcock at (602)792-6629.

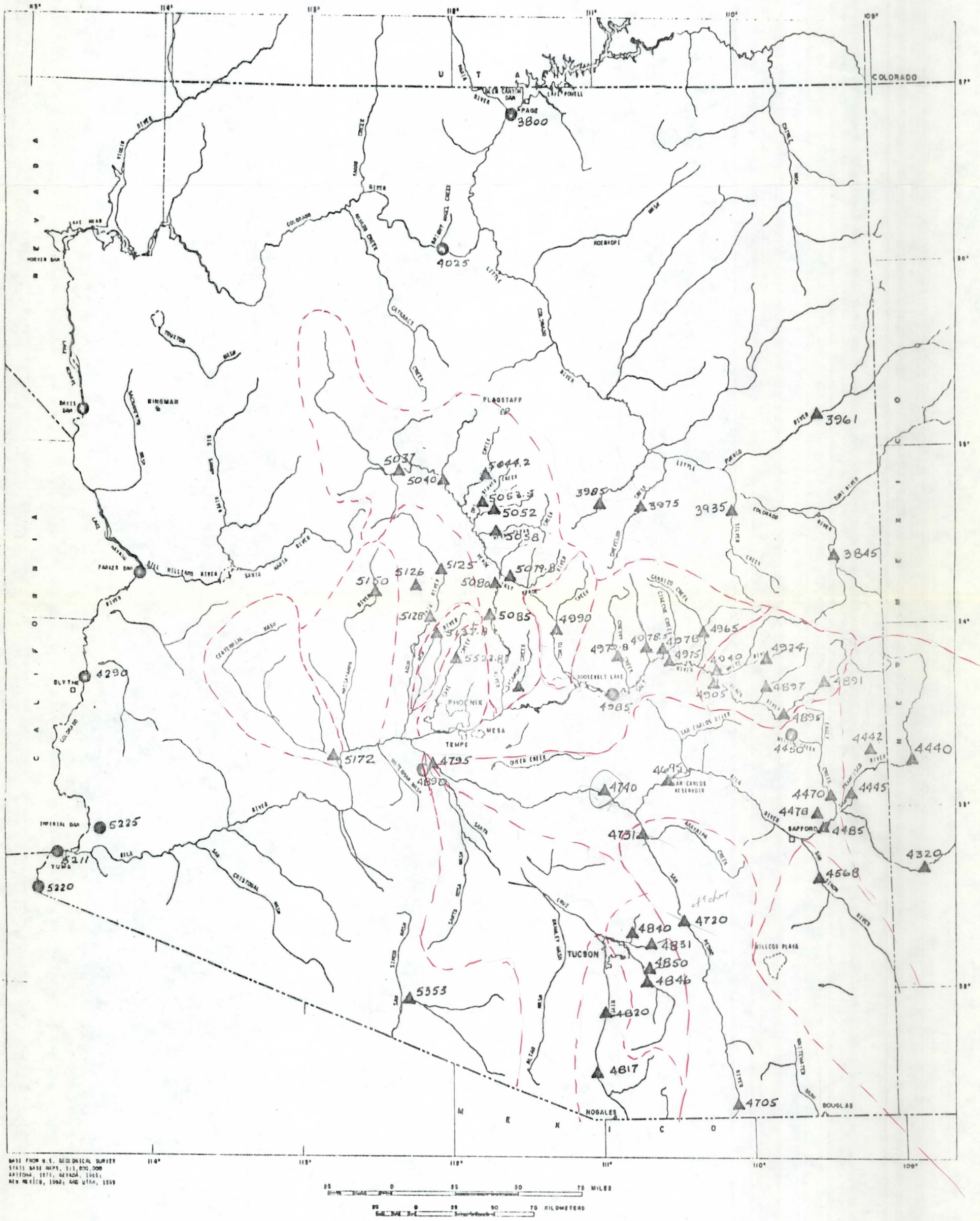
FIG. 1 SATELLITE DATA TELEMETRY SYSTEM



CHAPTER II

RETRIEVAL OF TELEMETERED DATA FOR ARIZONA

LOCATION OF DCS PLATFORMS



▲ 3-hr. reporting with 15-min. emergency reporting

● 3-hr. reporting only

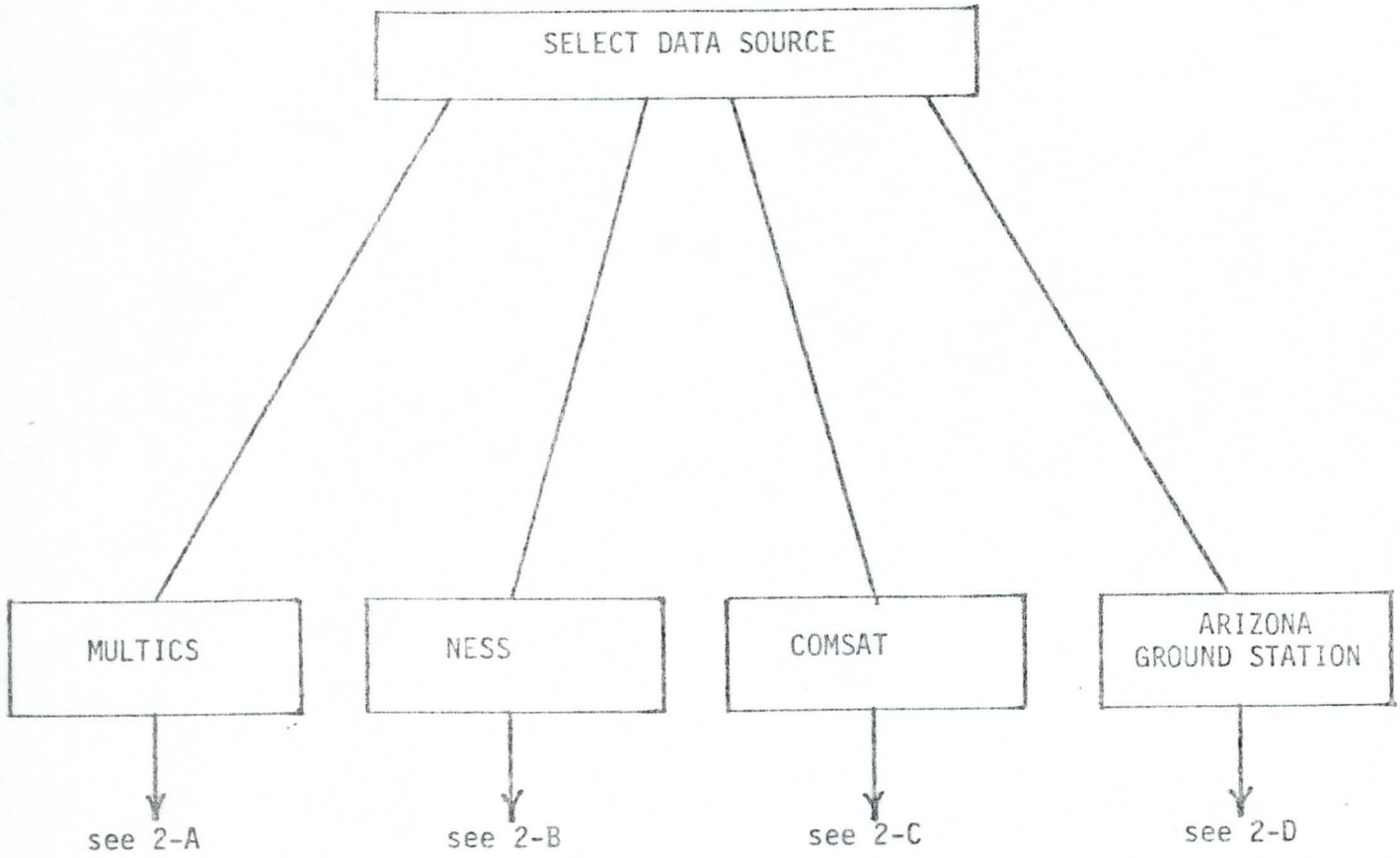
Map 1

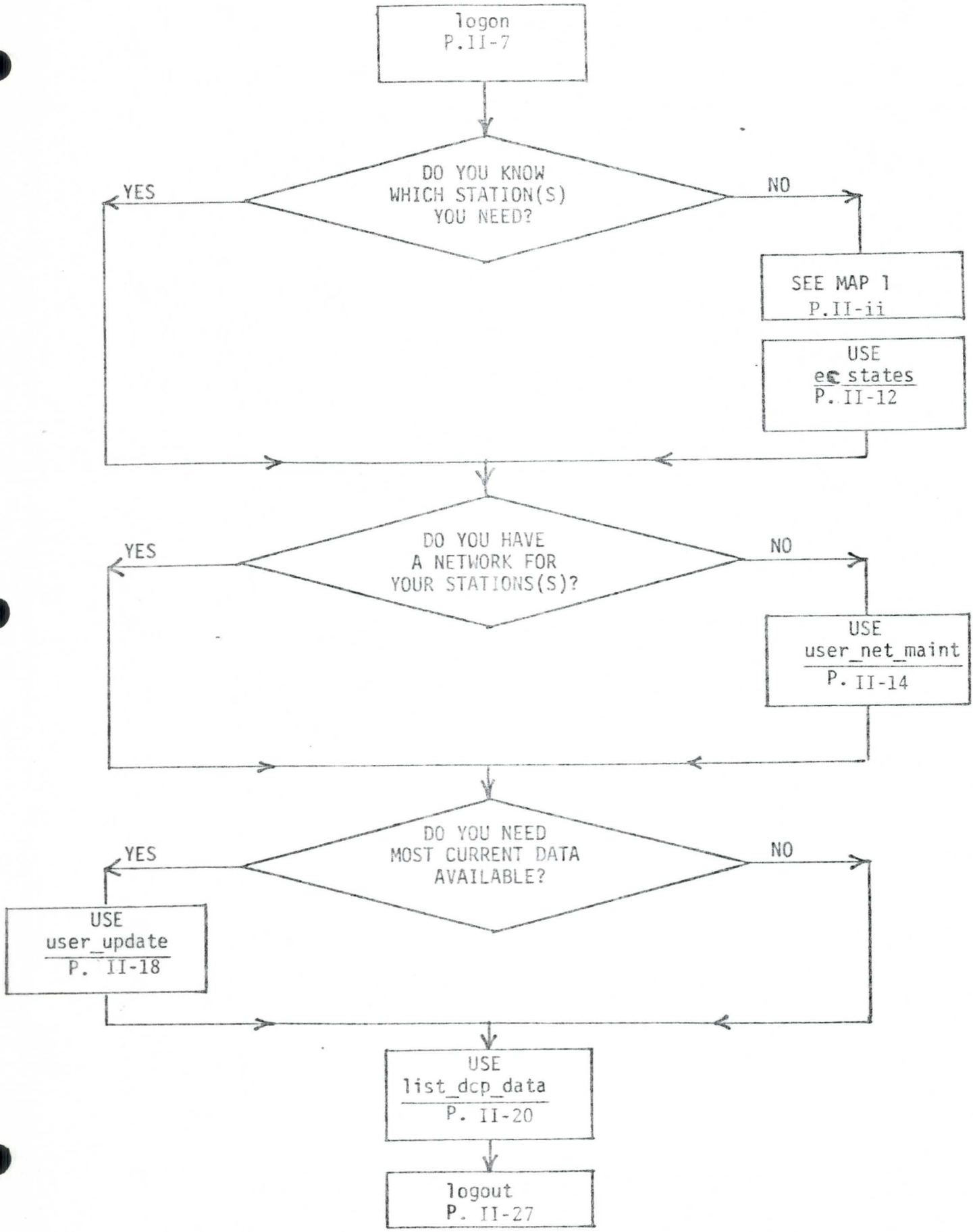
II-ii

SELECT DATA SOURCE:

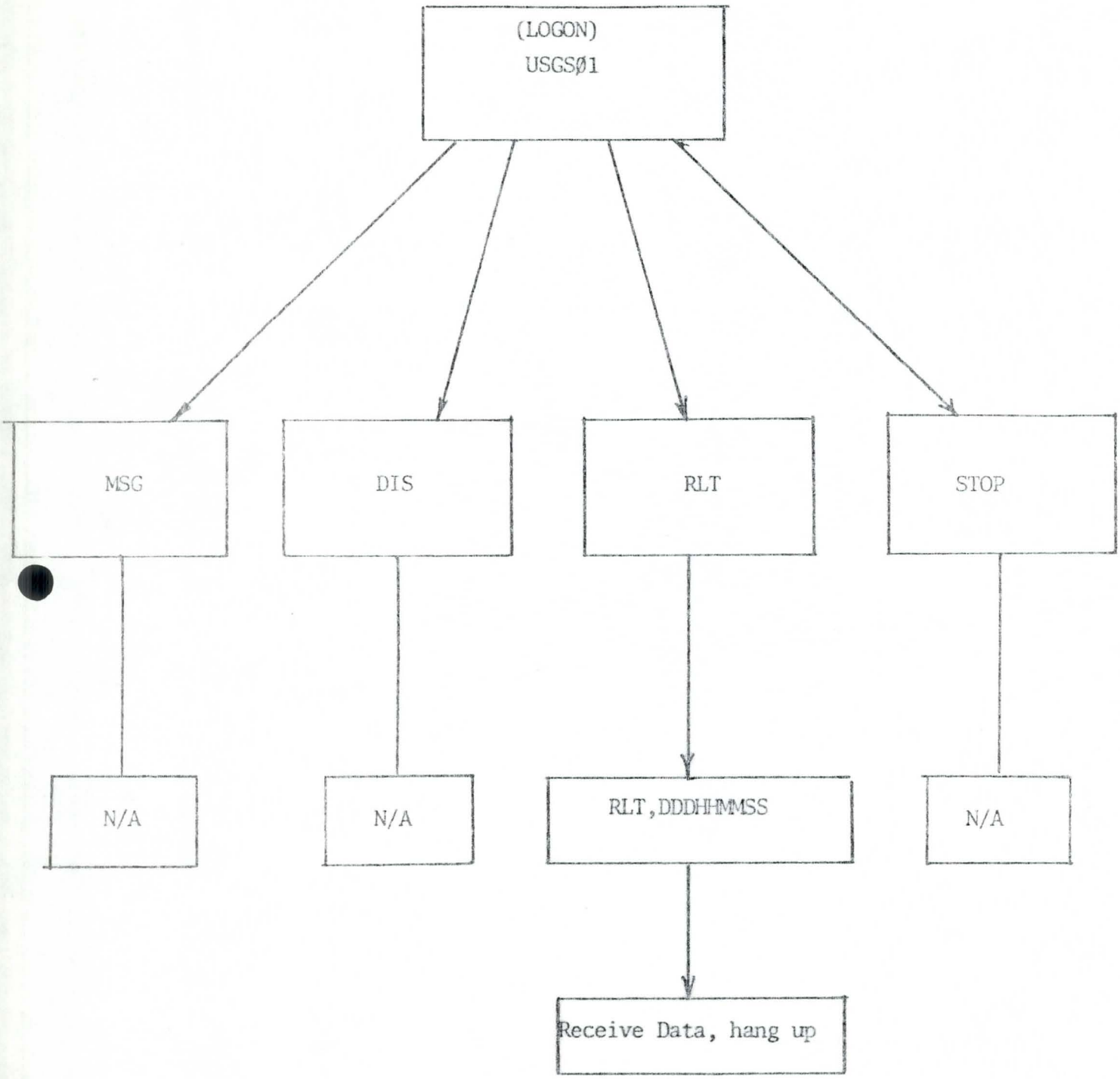
A data source is a group of hydrometeorological stations where data can be collected for analysis. The type of station selected will determine if this manual will be useful since this manual deals with stations which are telemetered. The data from stations which are not telemetered must be retrieved from the agency responsible for the station. The method for retrieving telemetered data requires the interrogation of the computer used to compile data relayed from the GOES satellite.

FIG.2 DATA RETRIEVAL




logon
P.II-7
DO YOU KNOW WHICH STATION(S) YOU NEED?
YES
NO
SEE MAP 1
P.II-ii
USE
ec states
P. II-12
DO YOU HAVE A NETWORK FOR YOUR STATIONS(S)?
YES
NO
USE
user_net_maint
P. II-14
DO YOU NEED MOST CURRENT DATA AVAILABLE?
YES
NO
USE
user_update
P. II-18
USE
list_dcp_data
P. II-20
logout
P. II-27

2B NESS


(LOGON)
USGSØ1
MSG
DIS
RLT
STOP
N/A
N/A
RLT,DDDHHMMSS
N/A
Receive Data, hang up

2C COMSAT

Not available at this time.

2D ARIZONA GROUND STATION

Not available at this time.

MULTICS

II-A The Multics computer which is operated by the USGS provides access to the Hydrecs (Hydrologic Data Real-Time Computer Processing System) for the retrieval of any data telemetered through the GOES satellites. A telephone network (Tymnet) has been established so that Hydrecs can be entered via a local telephone call in metropolitan areas. There is no charge for the telephone call but there is a charge for Hydrecs. The procedure for using the Multics computer is described below. All computer responses are placed between quotation marks, and user responses are underlined.

LOGON:

1. To start, set the switches on your terminal to operate in the following mode: lower-case letters, half-duplex, high-speed baud rate, even parity, and on line. If your terminal does not have the switches for all of these capabilities, you should still be able to communicate with Multecs by modifying your operating procedure. If lower-case letters are not available on your terminal, this can be circumvented by typing MAP <CR> before your person and project ID's and by placing back slashes (\) before letters that should be capitalized. The high-speed baud rate can be 300 or 1200 and this selection entails dialing a different phone number. Also, even parity is the suggested mode, but if your computer does not have a parity switch your terminal is probably marked parity and that will work.

2. Establish communications with Multics:

Tymnet is the preferred method, and communications can be established by dialing:

249-9261 (300 baud) — 254-5811

249-3862 (1200 baud)

These are the Phoenix area numbers. Tymnet number for other areas may be received by contacting your local USGS office.

Wait for Multics to type:

"please type your terminal identifier"

Following this line enter

e for terminals with thermal paper

a for others

Computer will respond with

"please log in:"

Following this line type:

~~(CTRL-H)~~ gs21407 <CR>

The computer will respond with

"p25

USGS is on line"

You should now be connected to Multics and the computer should print out something like:

Multics MR7.0a: USGS, Reston, VA

Load = 68.0 out 125.0 units: user = 68"

The response for terminals with lower case letters is your person and project ID.

i.e.: 1 LBond ~~Awedcs~~ <CR>

MRcdcs

SMALL "L"

For terminals without lower case letters the response is a command to tell the computer you have only capital letters and then your person and project ID.

i.e.: MAP <CR>

L /L/BOND /AWCDCS <CR>

This is the only difference in using a terminal with just capital letters. The only other occasion for using back-slashes is when entering your user ID (same as Multics person ID) in the other Hydrecs programs.

Wait for Multics to request your password. Type over the typewritten line.

3. Wait for the "Ready" message. The computer will welcome you to Hydrecs and will begin typing the message of the day and DCP errors. If you do not want the messages press the BREAK key on your terminal and this program will end, bringing you to the "Ready" message. However, by using the BREAK key this may interfere with other operations later in your session.

   Other means of establishing communications with Multics besides using Tymnet is by dialing directly over commercial or FTS lines. This method should only be used when Tymnet is down or you are located in an area where Tymnet cannot be accessed. The numbers are:

Commercial	(703)860-3150	(300 baud)
	(703)476-5800	(1200 baud)

FTS	8-202-860-3150	(300 baud)
	8-202-476-5800	(1200 baud)

The following examples (examples 1 and 2) are illustrations on how the printout should read if done on a terminal with thermal paper and without lower case letters or on a terminal with carbon type and with lower case letters, using Tymnet.

Example 1.

```
Please type your terminal identifier
-1076-022-
Please log in:ss21407 <CR>

P 17
L[illegible] is online

Multics MR7.0a: USGS, Reston, VA
Load = 65.0 out of 125.0 units: users = 65
1 JBlee Azdcs <CR>
Password:      <CR>
[illegible]
You are protected from preemption until 1609.
JBlee Azdcs logged in 01/05/81  1609.5 est Mon from ASCII terminal "none".
Last login 01/05/81  1149.0 est Mon from ASCII terminal "none".


Welcome to Hydrecs


Date/time of latest reading stored by bulk update:  01/05/81  0802.0 est Mon
Date/time new recs last appended to raw goes file:  01/05/81  1603.1 est Mon
Date/time recs last appended to raw comsat file:    01/05/81  1608.9 est Mon


HYDRECS MESSAGE OF THE DAY as of 12/19/80  1034.8 est Fri


DATA WILL BE LOST FOR ANY DCP EITHER NOT ENTERED INTO HYDRECS OR ENTERED
INCORRECTLY.

     The following dcp's are reporting but have not been entered into the
     dcp_master or entered incorrectly:
80319 16c501ec

The following dcp's are out of time please correct as soon as possible:
80259 16cb468e
80276 16c3af08
80317 12c02648  12c07634  16201e02
80317 ce4c0e40  ce4c0092  ce44473e
80317 ce445a9a  ce4e9004
80317 ce4bac8c  16c033b6  16c253a4
80337 16c296ba
80337 16ca32e4  ce4cfec4
80343 16c285cc
80354 16c7aa32  16c8741a  ce43f856  16c17c94

  The following are exactly 2 hours out of time:
80317 ce4204fa  ce4247f0  ce423160
80334 ce42178c  ce422216
```

Example 2.

```
please type your terminal identifierA
-1076-012-
please log in:GS21407

[illegible]
U[illegible] is online


Multics will be unattended 1/20/81, see motd
Multics MR8.0: USGS, Reston, VA
Load = 48.0 out of 125.0 units: users = 48, 01/19/81  1654.5 est Mon
MAP
L \L\BOND \AWCDCS
\PASSWORD:
[illegible]RD\W\X\W\X\W
\YOU ARE PROTECTED FROM PREEMPTION UNTIL 1655.
\L\BOND \AWCDCS LOGGED IN 01/19/81  1655.0 EST \MON FROM \A\S\C\I\I_\C\A\P\S TE
\cRMINAL "NONE".
\LAST LOGIN 01/15/81  1836.5 EST \THU FROM \A\S\C\I\I_\C\A\P\S TERMINAL "NONE".
01/16/81 \MULTICS WILL BE ON UNATTENDED SERVICE FROM 8:00 \A.\M. \TUESDAY,
         \JANUARY 20, 1981 UNTIL 7:00 \A.\M. \WEDNESDAY, \JANUARY 21, 1981.


\WELCOME TO \HYDRECS


\DATE/TIME OF LATEST READING STORED BY BULK UPDATE:  01/19/81  1201.0 EST \MON
\DATE/TIME NEW RECS LAST APPENDED TO RAW GOES FILE:  01/19/81  1517.9 EST \MON
\DATE/TIME RECS LAST APPENDED TO RAW COMSAT FILE:    01/19/81  1157.5 EST \MON

\H\Y\D\R\E\C\S \M\E\S\S\A\G\E \O\F \T\H\E \D\A\Y AS OF 01/19/81  1109.8 EST \MO
\cN


\D\A\T\A \W\I\L\L \B\E \L\O\S\T \F\O\R \A\N\Y \D\C\P \E\I\T\H\E\R \N\O\T \E\N\T
\c\E\R\E\D \I\N\T\O \H\Y\D\R\E\C\S \O\R \E\N\T\E\R\E\D
\I\N\C\O\R\R\E\C\T\L\Y.

     \THE FOLLOWING DCP'S ARE REPORTING BUT HAVE NOT BEEN ENTERED INTO THE
     DCP_MASTER OR ENTERED INCORRECTLY:
81006 CE4C8686  CE4CF016

\THE FOLLOWING DCP'S ARE OUT OF TIME PLEASE CORRECT AS SOON AS POSSIBLE:
80259 16CB468E
80276 16C3AF08
80317 CE4C0092  CE445A9A  CE4E9004  16C033B6  16C253A4
80343 16C285CC
80354 16C7AA32
81006 CE49EA72  CE554C88
81012 1620A35E  1625DCDC  CE4BAC8C
81012 16C2E02A  16C49674
81019 CE42178C  CE4A005C  CE4EF5E2  16C070BC


READY 01/19/81  1655.2 EST \MON $1.01
```

ec states: "ec states" gives a listing of all the telemetered gages in a states. The state code for the state of your choice is the only information needed to run this program. The state codes applicable to you are listed below:

Arizona	04
California	
Colorado	
New Mexico	35
Utah	

To run the "ec states" program proceed as follows (also see example 3):

After a "Ready" message enter

ec states <CR>

Enter the state code in response to the Hydrecs prompt.

i.e.: "Enter state code:" 04 <CR>

Wait for the stations to be listed and a new "Ready" message. If a list is excessively long, the computer will stop and type:

"More?"

If more are desired, type:

yes <CR> or

all <CR>

Example 3.

```
READY 01/05/81  1609.8 est Mon $1.60
ec states  <CR>

Enter state code:   04 <CR>

 d              stn_nme                                                dcp_id

 09380000  colorado r at lees ferry, az.                              16c22534
 09393500  silver creek nr snowflake ariz                             16200d74
 09398500  clear cr blw willow cr nr winslow, ariz.                   162010d0
 09401222  moenkopi wash trib no1 nr kayenta az.                      16c24e00
 09401226  coal mine wash trib near kayenta, ariz                     16c21e7c
 09401239  coal mine wash near mouth,nr shonto                        16c240d2
 09402500  colorado r. near grand canyon, ariz.                       16c23890
 09429300  colorado river below cibola valley, ariz.                  16c82ab4
 09444200  blue river nr clifton ariz.                                162096c4
 09445000  williow cr diversion from black river nr morence           162127b0

More? all <CR>

 09447000  eagle creek abv pumping plant nr morenci, ariz.            1620ad8c
 09448500  gila river at head of safford valley nr colomon            1620fdf0
 09472000  san pedro river nr redington, az                           1620b028
 09473100  san pedro blw aravaipa cr nr mammoth az                    1620befa
 09489000  santa cruz river near laveen, ariz.                        16c268ec
 09489100  black river near maverick, ariz.                           16c2a320
 09489500  black river blw pumping plant nr point of pines            16246da8
 09489700  big bonito creek nr ftapache az                            16211cf8
 09490500  black river near fort apache, ariz. mile 5.0               16c27548
 09492400  east fork white river nr ft apache az                      1624700c
 09494000  white river near fort apache, ariz.                        16c28b1e
 09496300  carrizo creek nr showlow, az                               16247ede
 09497500  salt river nr chrysotile ariz                              16206640
 09497800  cibecue creek nr chrysotile, ariz.                         16206892
 09497850  canyon creek near globe az                                 16207536
 09497980  cherry creek nr globe ariz.                                16207be4
 09499000  tonto creek abv. gun cr. nr roosevelt, ariz.               162085b2
 09503700  verde river nr paulden az                                  1621122a
 09504000  verde river nr clarkdale ariz                              16201e02
 09505200  wet beaver creek nr rimrock az                             16210f8e
 09505800  west clear creek nr camp verde ariz.                       16202b98
 09507980  east verde river nr childs az                              1621015c
 09508000  platform test at phoenix az                                1620363c
 09508500  verde river blw tangle cr abv horseshoe dam, az            1624a664
 09510200  sycamore creek nr fort mcdowell, ariz.                     162038ee
 09512280  cave creek blw cottonwood cr nr cave creek ariz            1620c6b8
 09512500  agua fria river nr meyer, arizona                          1620c86a
 09512600  turkey creek nr cleator, ariz                              1620d5ce
 09512800  agua fria river nr rock springs, ariz                      1620db1c
 09513780  new river nr rock springs, ariz                            1620e054
 09515000  hassyampa river at walnut grove nr wagoner, ariz           1620f322
 09521100  colorado river below yuma main canal wasteway nr           16c84180
 09522000  colo r at northerly international boundry abv mo          16244b44
 09522500  gila gravity main canal at imperial dam az-ca              16245832
 09535300  vamori wash at kom vo, az                                  16249d2c
 16c253a4  limestone fire camp                                        16c253a4
3[illegible]530112450001  gila bend station                          16c377b2
332230112523001  palo verde station                                  163a7d28
351230111373001  navajo desert station                               163a73fa
(END)
```

EOLO RIVER

SALT RIVER

DRY BEAVER

user_net_maint: This Hydrecs program allows users to set up their own networks to facilitate the retrieval of data from groups of stations. When a network has been created, data from all stations in the network can be retrieved using a network identifier rather than the individual stations. This one command, user_net_maint, gives the user the capability of listing their networks, listing the stations in a network, creating, modifying, or deleting a network. These capabilities are listed in a menu at the beginning of the program.

A network created by a user is identified by a network ID which can be from one to nine characters long (station ID's cannot be longer than 15 characters).

The procedure for using the user network maintenance program and its options is listed below:

After a "Ready" message type:

user_net_maint

Make sure you include the underscores at the spaces. The computer will print a heading and list a menu of six options and will ask you to enter your option number, as shown below:

```
"USER NETWORK MAINTENANCE PROGRAM

Do you want to (1) list your network id's, or
                (2) list a network's stations, or
                (3) build a new network, or
                (4) modify an existing network, or
                (5) delete an entire network, or
                (6) end this program?

Enter option number: "
```

The options are self-explanatory but for clarity the use of each option is shown in example 4, 5, 6, 7, and 8. You should also note that after each selected option, except option 6, has been completed, the user is asked to select another option.

```
READY 01/05/81  16:11:  est Mon 5.15
user_net_maint <CR>

USER NETWORK MAINTENANCE PROGRAM

Do you want to (1) list your network id's, or
                (2) list a network's stations, or
                (3) build a new network, or
                (4) modify an existing network, or
                (5) delete an entire network, or
                (6) end this program?
Enter option number:    1 <CR>
```

Example 4.

```
User id:        JBlee <CR>
Network id's:
                all
                bar
                flag
                marco
                phx
                rwbflood
                that
                tuc
                verde


Enter option number: (type "?" for menu):    2 <CR>
```

Example 5.

```
Enter network_id:    flag <CR>


User id:  JBlee                    Network id:  flag

Station id          Station name                                    DCP id

"       09380000"   colorado r at lees ferry, az.                   16c22534
"       09402500"   colorado r. near grand canyon, ariz.            16c23890
"       09504000"   verde river nr clarkdale ariz                   16201e02
"       09505800"   west clear creek nr camp verde ariz.            16202b98
```

Enter option number: (type "?" for menu): 3 <CR>

Example 6.

```
Enter network_id:     sample <CR>

Enter station_id:     09490500 <CR>

Enter station_id:     09494000 <CR>

Enter station_id:     09497800 <CR>

Enter station_id:     09497850 <CR>

Enter station_id:     <CR>


User id:  JBlee                          Network id:  sample

Station id            Station name                                          UCP id

"       09490500"     black river near fort apache, ariz. mile 5.0          16c27548
"       09494000"     white river near fort apache, ariz.                   16c28b1c
"       09497800"     cibecue creek nr chrysotile, ariz.                    1620689d
"       09497850"     canyon creek near globe az                            1620/5dc

*** If there are any errors in this network, please execute the
      modify option - deleting those station ids in error and
      adding them to the network correctly.


Enter option number: (type "?" for menu):    4 <CR>
```

Example 7.

```
Enter network_id:     sample <CR>

Enter station_id:     09490500 <CR>
delete?  y <CR>

Enter station_id:     09499000 <CR>
add?     y <CR>

Enter station_id:  <CR>


Enter option number: (type "?" for menu):    5 <CR>

Enter network_id:     sample <CR>

User id:  JBlee                          Network id:  sample
Do you really want to delete this network?   y <CR>
```

Example 8.

```
Enter option number: (type "?" for menu):    6 <CR>

END of USER NETWORK MAINTENANCE PROGRAM
```

user_update: The user update program is designed to update the data available for a station or a network. Since Multecs loads raw data into the computer three times a day except during emergency transmissions, there are times when data may be several hours old. The "user_update" command causes the computer to compile any raw data not yet loaded. To enter the user update program wait for the "Ready" message from the computer and type:

user_update [CR]

Make sure you include the underscore at the space.
The computer will give the program heading and will then ask if you want data for a network of stations or for only one station, as shown below and in example 9.

"USER UPDATE PROGRAM

Do you want data for a network of stations or for only one station? (Enter "net" or "stn"):"

Depending on whether you want to update a station or a network the computer will respond by asking for either the station or network ID. After entering the proper ID the computer will pause and then give you the number of readings stored and the date and time of the latest reading stored. The program will end automatically giving you another "Ready" message.

Example 10.

```
today 01/05/81  1619.1 est Mon 43.56
user_update <CR>

USER UPDATE PROGRAM

Do you want data for a network of stations
   or for only one station? (Enter "net" or "stn"): net <CR>

Enter user id: JRlee <CR>

Enter network id: that <CR>

Number of readings stored:                    180
Date/time of latest reading stored:      01/05/81  1321.0 est Mon

END of USER UPDATE PROGRAM
```

list_dcp_data: This program lists data for a station or a network of stations. It gives you the choice of the length of data readings, parameter codes, and minimum reporting interval.

To enter this program type:

list_dcp_data

Make sure you include the underscores at the spaces. The computer will respond by typing the heading and asking if you want data for a station or a network of stations. Enter your desired choice.

The computer will then ask for the station ID or your user ID (the same as the Multecs person ID) and the network ID, depending on your choice. The computer will then give you a menu of three options and ask you to enter the desired code. The computer will type:

"Do you want (1) the one latest reading, or
(2) data over a given time span, or
(3) data for the last number of hours?

Enter code ("1", "2", or "3"):"

To determine which option is applicable to your need, examine examples 11, 12, and 13 and the definitions of the computer prompts.

Option 1 will report the single latest reading in the system for the station or network you have selected.

Option 2 lets you define a period of time over which to report (Hydrecs stores data for a total of 4 to 6 days).

Option 3 allows you to specify the amount of time (up to 24 hours) prior to the present time of day to report data.

"Enter begin date for listing (mm/dd/yy or yyddd):" and "Enter end date:"

The dates for these prompts may be entered as Julian or calendar dates. However, both must be entered the same way.

"Enter amount of time (hhmmss):" This prompt is given when option 3 is chosen. The maximum amount of time that can be used with this prompt is 24 hours. For a time span longer than 24 hours option 2 must be used.

"Enter parameter code(s):" This prompt allows you to select parameters for the data that you wish to retrieve. If more than one parameter code is entered, they should be separated by commas. The parameter codes for our stations are:

65 - Streamgage (river stage or gage height)

45 - Precipitation gage (accumulative precipitation)

"Enter instrument code(s):" This prompt is not used, so strike the return key and continue.

"Enter screen code(s):" This prompt, which the average user will not use, pertains to problems arising when attempting to extract the engineering value from a data-collection platform's raw data transmission. Therefore, the average user should ignore this prompt and continue on by striking the return key.

"Enter minimum reporting interval (hhmmss):" This prompt signifies to the computer how far apart you wish your data reading. For example, this makes it possible to report values 3 hours apart even though readings have been taken every 15 minutes. The interval you choose cannot be more than 24 hours.

"Do you want your messages, too? (y or n):" The messages available from the computer are concerned with how the DCP transmissions are received.

After you have chosen an option and supplied the information requested by the computer, the computer will recapitulate the asked for items and ask the user if this is correct. The appropriate answer is yes or no (y or n).

[illegible] 1500.' [illegible] from 41.4?

list-dcp-data <CR>

Example II.

LIST DCP DATA PROGRAM

Do you want data for a network of stations
or for only one station? (Enter "net" or "stn"): stn <CR>

Enter station id: 09512500 <CR>

Do you want (1) the one latest reading, or
(2) data over a given time span, or
(3) data for the last number of hours?
Enter code ("1", "2", or "3"): 1 <CR>

Enter parameter code(s): 65,45 <CR>

Enter instrument code(s): <CR>

Enter screen code(s): <CR>

Do you want your messages, too? (Y or n): Y <CR>

You have selected data and messages for the station: " 09512500".
This listing will include the one latest reading for each station
for devices with parm codes 65, 45,.
Correct ? (Y or n): Y <CR>

Station id : 09512500
Station name: agua fria river nr meyer, arizona
State : 04
Latitude : 341855
Longitude : 1120348
dcp_id : 1620c86a

dcp device number 1

parm code	date	local time	value received	instr reading	value converted	screen code	instr code
65	05 Jan 1981	14:13:17	0297	297	2.97	0	0

dcp device number 2

parm code	date	local time	value received	instr reading	value converted	screen code	instr code
45	05 Jan 1981	14:13:17	0066	66	2.60	0	0

[illegible] LIST DCP DATA PROGRAM

```
[illegible] 01/05/81  [illegible] Mon 40.3X
list_dcp_data <CR>
```

Example 12.

```
LIST DCP DATA PROGRAM

Do you want data for a network of stations
   or for only one station?  (Enter "net" or "stn"):  stn  <CR>

Enter station id:  09512500  <CR>

Do you want  (1) the one latest reading, or
             (2) data over a given time span, or
             (3) data for the last number of hours?
Enter code ("1", "2", or "3"):  2  <CR>

Enter begin date for listing (mm/dd/yy or yyddd):  01/04/81 <CR>

Enter begin local time (hhmmss):  000030 <CR>

Enter end date:  01/05/81  CR

Enter end time:  15  <CR>

Enter parameter code(s):  65,45  <CR>

Enter instrument code(s):    <CR>

Enter screen code(s):        <CR>

Enter minimum reporting interval (hhmmss):  03  <CR>

Do you want your messages, too?  (Y or n):  Y  <CR>


You have selected data and messages for the station: "        09512500".
This listing will include readings from 04 Jan 1981  00:00:30 local
                                        to 05 Jan 1981  15:00:00 local
for devices with parm codes      65,      45,
with a minimum reporting interval of 03 hrs 00 min 00 sec.
Correct?  (Y or n):  Y  <CR>
```

(Cont. next page)

Example 12 (cont.)

```
station id   :          09512500
station name:  agua fria river nr mayer, arizona
state        :  04
latitude     :  341855
longitude    :  1120348
derlig       :  16200866
```

adr device number 1

form code	date	local time	value received	instr reading	value converted	screen code	instr code
65	04 Jan 1981	00:13:00	0297	297	2.97	0	0
		03:13:00	0297	297	2.97	0	0
		06:13:00	0297	297	2.97	0	0
		09:13:00	0297	297	2.97	0	0
		12:13:00	0297	297	2.97	0	0
		15:13:00	0297	297	2.97	0	0
		18:13:00	0297	297	2.97	0	0
		23:28:00	0297	297	2.97	0	0
	05 Jan 1981	00:13:00	0297	297	2.97	0	0
		03:13:00	0297	297	2.97	0	0
		06:13:00	0297	297	2.97	0	0
		09:13:00	0298	298	2.98	0	0
		12:13:00	0297	297	2.97	0	0
limited		14:13:00	0297	297	2.97	0	0

adr device number 2

form code	date	local time	value received	instr reading	value converted	screen code	instr code
45	04 Jan 1981	00:13:00	0066	66	2.60	0	0
		03:13:00	0066	66	2.60	0	0
		06:13:00	0066	66	2.60	0	0
		09:13:00	0066	66	2.60	0	0
		12:13:00	0066	66	2.60	0	0
		15:13:00	0066	66	2.60	0	0
		18:13:00	0066	66	2.60	0	0
		23:28:00	0066	66	2.60	0	0
	05 Jan 1981	00:13:00	0066	66	2.60	0	0
		03:13:00	0066	66	2.60	0	0
		06:13:00	0066	66	2.60	0	0
		09:13:00	0066	66	2.60	0	0
		12:13:00	0066	66	2.60	0	0
limited		14:13:00	0066	66	2.60	0	0

msg	04 Jan 1981	23:27:00	*	*	*	*	*

EXPECTED MESSAGE NOT RECEIVED. 24W

END of LIST UCP DATA PROGRAM

Example 13.

```
Login (1 [illegible]) [illegible] Mon 11.74
list_dcp_data <CR>

LIST DCP DATA PROGRAM

Do you want data for a network of stations
  or for only one station? (Enter "net" or "stn"): stn <CR>

Enter station id: 09512500

Do you want (1) the one latest reading, or
             (2) data over a given time span, or
             (3) data for the last number of hours?
Enter code ("1", "2", or "3"): 3 <CR>

Enter amount of time (hhmmss): 23 <CR>

Enter parameter code(s): 65,45 <CR>

Enter instrument code(s): <CR>

Enter screen code(s): <CR>

Enter minimum reporting interval (hhmmss): 03 <CR>

Do you want your messages, too? (Y or n): Y <CR>


You have selected data and messages for the station: "        09512500".
This listing will include readings since 05 Jan 1981  00:07:00 UTC
for devices with parm codes      65,      45,
with a minimum reporting interval of 03 hrs 00 min 00 sec.
Correct? (Y or n): Y <CR>
```

LOGOUT: This command is used to end a session with Hydrecs.

Type:

logout <CR>

after a "Ready" message. The computer will respond with the total cost for the session, the date, the time, CPU and memory usage, and a prompt of hangup.

Additional commands or procedures:

A user may terminate any program at any time by striking the key marked "BREAK". The user may then enter a new Hydrecs command after a "Ready" message.

There are two special characters that are useful in correcting typing errors:

- deletes the previous character typed

@ - deletes the last line typed

II B The data derived from the NESS (National Environmental Satellite Service) computer is in the same form as transmitted by the data-collection platform. This data contains values which have not been converted to engineering values. (See page II-4.)

To utilize the NESS computer, turn on computer switch and dial:

8-202-899-6595

When a steady tone is heard, place the phone handset into the phone cradle of the terminal (if applicable).

The computer will respond with the following prompt:

"DCS - ENTER ID:"

The user's response on the same line will be:

USGS01

then press line feed and return keys.

The computer will reply with:

"USGS01 SIGNON AT 317002720 (Julian date, UTC)

NUMBER OF UNDISSEMINATED MESSATES 0508

TIME OF LAST DISSEMINATION 317000300 (Julian date, UTC)

ENTER: MSG, RLT, DIS, OR STOP"

To acquire real time data for the stations in Arizona, enter:

RLT,317000100 (Julian date, UTC)

(Note: The time entered must be universal or zulu time.)

then press line feed and the return keys.

Data will begin to be printed starting with the next transmission after the time entered. The data received is in the order of transmission. At this time, all telemetered stations in Arizona are received between 1 minute after the hour to 32 minutes past the hour when in normal transmission mode. Therefore, the receive the data for Arizona station without having to wait, enter the time with the last four figits as 0100. The amount of data for a normal transmission received from the NESS computer will be for the last 3 hours.

There are two types of data-collection platforms, La Barge and Handar, operating in Arizona. Each type of DCP gives data in different formats.

The interprestation of the received data depends on the DCP, and an explanation of how to interpret the received data is given below.

The La Barge DCP are the oldest platforms in operation. The transmissions are in ASCII and each bit of data must be decoded. The ASCII code is:

= 0	F = 6
A = 1	G = 7
B = 2	H = 8
C = 3	I = 9
D = 4	J = 10
E = 5	

Also, when the data is printed the most recent reading is given last and the integers are reversed from normal order. In other words, a line of data is read right to left. For example, if the last reading is ICCA it would be decoded to 9331 and the true value would be 13.39.

The data from the Handar DCPs received in a more readable form. The first line gives the platform ID, the julian date and the time in UTC. Below this there are two columns, the left column is the

readings for river stage or gage height and the right column is accumulative precipitation. Under normal transmission status there will be 12 readings in each column or a reading for every 15-minute interval. The latest reading is the last reading, and the time corresponding to that reading is the time given in the first line. After the gage height and accumulative precipitation readings there will be two more readings, the first is the average differential reading and the second is battery voltage. At the bottom of all the readings there will be a series of slashes and a number with a letter. This number tells which channel the above readings were transmitted on and which GOES satellite relayed it. For instance, when a DCP is transmitting on a normal operating mode the channel is 24W, meaning channel 24 from the GOES west satellite. The channel for emergency transmissions is 118W.

Example 14 shows the printout for data retrieval from NESS.

C.5.d. Example of the argument method for list_dcp_data

```
list_dcp_data -stn 01570500 -d1 10/15/79 -d2 10/16/79 -pc 65 -int 060000  -nomssg
```

```
LIST DCP DATA PROGRAM

You have selected data only for the station:  "          01570500".
This listing will include readings from 15 oct 1979      00:00:00 local
                                        to 16 oct 1979   23.59.59 local

for devices with parm code      65
with a minimum reporting interval of 06 hrs 00 min 00 sec.
Correct?  (y or n):   y
```

C.5.e. Listing of selected data and messages.

Here is the report produced by the list_dcp_data program from the parameters specified in the two preceding examples:

```
station id   :      01570500
station name:     susquehanna river at harrisburg, pa.
state        :    42
latitude     :    401517
longitude    :    0765311
dcp_id       :    16c839c2

(1) adr       device number     1
```

parm code	date	local time	value (2) received	instr (3) reading	value (4) converted	screen (5) code	instr (6) code
65	15 oct 1979	00:09:00	@EAH	518	5.18	0	0
		06:09:00	@EAD	514	5.14	0	0
		12:09:00	@EQI	509	5.09	0	0
		18:10:00	@QEQD	504	5.04	0	0
	16 oct 1979	00:10:00	@QEQQ	500	5.00	0	0
		06.10.00	@QDIE	495	4.95	0	0
		12:10:00	@QDIA	491	4.91	0	0
		18.10.00	@QDHG	487	4.87	0	0

```
END of LIST DCP DATA PROGRAM

READY 10/17/79
```

Example 14.

```
UCS - ENTER ID. USGS01
USGS01  SIGNON AT 008214945
NUMBER OF UNDISSEMINATED MESSAGES 0009
TIME OF LAST DISSEMINATION  008213748
ENTER: MSG,RLT,DIS, OR STOP RLT,008180100


16201E02 008180414
00.81 00.00
00.81 00.00
00.81 00.00
00.82 00.00
00.89 00.00
00.91 00.00
00.88 00.00
00.84 00.00
00.81 00.00
00.78 00.00
00.75 00.00
00.75 00.00
00.00 209
 ////// 24W


16203BEE 008180815
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.92 00.00
00.00 222
 ////// 24W


4540E4B0?008181025 @@@@ALLGN1@@@@CLLGN1@@@@CLLGM1@@@@@LLGM1@@$@MKLGM1@@@
@KKLGL1@@@@IKLGL1@@@@GJLGL1@@@@M1MGL1 ////// 13E
```

APPENDIX 1

STREAMGAGE INFORMATION

AND

RATING TABLES

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 03-18-81

09445000 WILLOW CREEK DIV. FROM BLACK R. NR. MORENCI TYPE LOG(SCALE OFFSET = 1.74) RATING NO 01

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____ *CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
1.00									.380	1.38	
2.00	2.81	4.60	6.60	8.79	11.1	13.5	16.0	18.8	21.6	25.1	26.6
3.00	28.7										

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 03-18-81

09448500 GILA R AT HEAD OF SAFFORD VALLEY NR SOLOMON ARIZ TYPE LOG(SCALE OFFSET = 3.08) RATING NO 10

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
3.00					35.0	46.1	58.0	70.2	83.3	98.0	
4.00	113.4	128.5	145.8	165.1	185.9	209.8	234.9	259.8	287.5	320.4	255.6
5.00	356.1	399.1	444.6	493.3	545.0	599.6	656.8	716.9	780.0	846.9	568.8
6.00	916.8	989.9	1060	1127	1197	1268	1347	1430	1517	1605	780
7.00	1697	1791	1887	1986	2088	2197	2315	2436	2560	2688	1160
8.00	2820	2943	3068	3197	3328	3462	3598	3739	3883	4030	1360
9.00	4180	4333	4489	4648	4815	4987	5163	5342	5524	5709	1718
10.00	5898	6091	6283	6479	6678	6880	7085	7294	7506	7721	2042
11.00	7940	8210	8486	8767	9054	9347	9646	9950	10260	10580	2960
12.00	10900										

Station Information

Station Name Gila River at head of Safford Valley near Solomon, AZ

Sta. No. 09448500 DCP ID 1620FDF0 Lat. 32-52-06 Long. 109-30-38

Drainage Area 7896 Elev. 3064.88 Hydro. Unit Code 15040005

1st Daily Trans. Time 02:32:10 (MST) Trans. Intrv. 3

Emer. Trans. Time 02:10 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 140

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	8.90	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09470500 SAN PEDRO RIVER AT PALOMINAS, ARIZ. TYPE LOG(SCALE OFFSET = 3.00) RATING NO 07

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____ *CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
3.00	.000	1.50	5.50	12.1	20.1	31.1	44.0	58.2	75.2	94.2	115.4
4.00	115.5	139.5	165.1	191.5	219.6	248.6	279.1	312.8	350.0	389.3	319.6
5.00	430.2	472.1	515.7	561.3	608.0	656.1	705.8	757.3	810.0	861.1	495.5
6.00	913.5	967.2	1022	1079	1140	1204	1270	1337	1406	1477	635
7.00	1549	1623	1699	1777	1856	1937	2019	2103	2188	2274	842
8.00	2362	2451	2542	2634	2728	2823	2920	3020	3121	3223	965
9.00	3327	3433	3540	3649	3760	3872	3985	4100	4215	4332	1124
10.00	4451	4571	4692	4815	4939	5065	5193	5322	5452	5584	1266
11.00	5717	5851	5987	6124	6263	6403	6545	6688	6833	6979	1436
12.00	7126	7275	7425	7577	7730	7884	8038	8193	8348	8506	1538
13.00	8664	8824	8986	9148	9312	9477	9644	9612	9981	10150	1656
14.00	10320	10500	10670	10850	11030	11210	11400	11590	11770	11960	1840
15.00	12160	12350	12540	12740	12940	13130	13330	13540	13740	13940	1990
16.00	14150	14360	14570	14780	14990	15200					

Station Information

Station Name San Pedro River near Redington, AZ

Sta. No. 09472000 DCP ID 1620B028 Lat. 32-22-50 Long. 110-26-45

Drainage Area 1283 Elev. 2930 Hydro. Unit Code 15050203

1st Daily Trans. Time 02:23:22 (MST) Trans. Intrv. 3

Emer. Trans. Time 10:22 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	12.40	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09472000 SAN PEDRO RIVER NR. REDINGTON, ARIZ.

TYPE LOG(SCALE OFFSET = 5.00) RATING NO 71

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____

*COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
5.00	.000	.300	.600	1.01	1.51	2.12	3.01	4.02	5.32	6.96	8.87
6.00	9.00	11.4	14.4	18.0	22.3	27.2	33.2	40.1	48.6	58.6	62.7
7.00	69.9	82.4	96.5	112.3	130.1	149.7	170.8	193.7	218.5	244.5	201.5
8.00	267.8	292.6	318.8	345.8	372.5	400.4	429.5	459.9	489.1	518.9	281.8
9.00	549.8	581.7	614.7	648.1	682.4	717.8	754.1	791.4	830.4	873.0	367.0
10.00	916.8	961.9	1008	1056	1105	1155	1206	1258	1311	1366	505
11.00	1422	1479	1538	1596	1660	1723	1788	1854	1921	1990	638
12.00	2060										

Station Information

Station Name San Pedro River below Aravaipa Creek near Mammoth, AZ

Sta. No. 09473100 DCP ID 1620BEFA Lat. 32-51-03 Long. 110-43-27

Drainage Area 4360 Elev. 2130 Hydro. Unit Code 15050203

1st Daily Trans. Time 02:24:07 (MST) Trans. Intrv. 2

Emer. Trans. Time 15:07 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	5.60	5.60 - 4500 cfs from S.A.
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09479500 GILA RIVER NEAR LAVEEN, ARIZ.

TYPE LOG(SCALE OFFSET = 3.80) RATING NO 04

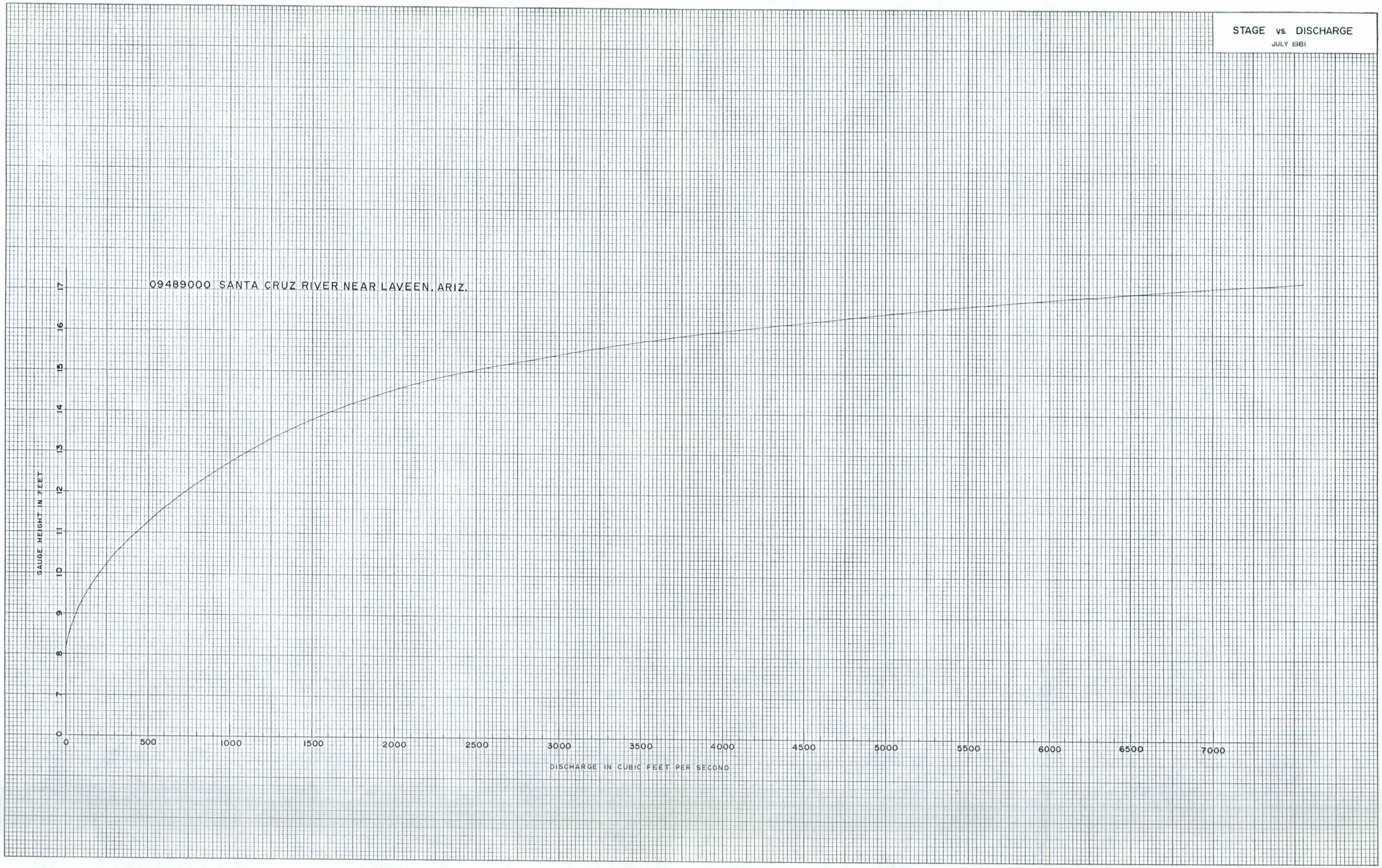
BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____

*COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
3.00									.000	5.85	
4.00	26.1	69.2	132.4	172.0	196.0	212.0	225.7	236.7	246.7	255.6	240.8
5.00	264.0	272.0	279.6	287.0	293.1	299.1	305.0	310.6	316.3	321.8	63.2
6.00	327.1	332.4	337.9	344.3	350.5	356.6	362.5	368.4	376.6	395.1	86.8
7.00	414.0	433.0	452.3	471.9	491.6	511.9	550.5	604.3	661.7	723.0	374.3
8.00	788.3.	857.7	931.4	1010	1092	1180	1271	1367	1468	1574	896
9.00	1685	1802	1925	2053	2188	2329	2476	2630			



FINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
AREAS
NO.
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
AREAS
NO.
AREAS CHECKED
BY
DATE

PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO.

48 7056 MADE IN U.S.A.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-06-80

09489000 SANTA CRUZ RIVER NEAR LAVEEN, ARIZ. TYPE LOG(SCALE OFFSET = 7.80) RATING NO 08

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
7.00											
8.00	.759	2.48	5.50	9.62	15.0	21.0	28.0	35.7	.000 44.0	.100 52.8	61.8
9.00	62.2	72.2	83.4	96.0	109.4	123.3	138.1	153.6	169.3	185.8	145.5
10.00	203.0	221.8	241.4	261.8	283.1	304.8	327.5	350.9	375.1	399.6	221.6
11.00	424.6	450.3	476.7	503.8	531.8	561.3	591.6	622.7	654.5	687.2	296.0
12.00	720.6	754.8	789.8	825.5	862.1	899.4	937.4	976.3	1017	1058	380
13.00	1101	1145	1189	1234	1281	1326	1375	1431	1491	1553	515
14.00	1616	1681	1747	1814	1883	1954	2026	2112	2221	2334	835
15.00	2451	2572	2697	2826	2960	3098	3241	3389	3541	3711	1468
16.00	3919	4137	4364	4600	4846	5102	5368	5646	5934	6233	2625
17.00	6544	6867	7202	7550							

Station Information

Station Name Sycamore Creek near Fort McDowell, AZ

Sta. No. 09510200 DCP ID 162038EE Lat. 33-41-39 Long. 111-32-28

Drainage Area 164 Elev. 1759 Hydro. Unit Code 15060203

1st Daily Trans. Time 02:08:07 (MST) Trans. Intrv. 3

Emer. Trans. Time 04:07 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	2.30	
2	Precip. (accm.)	45	00	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

Station Information

Station Name Cave Creek below Cottonwood Creek near Cave Creek, AZ

Sta. No. 09512280 DCP ID 1620C6B8 Lat. -- Long. --

Drainage Area -- Elev. -- Hydro. Unit Code --

1st Daily Trans. Time 02:25:22 (MST) Trans. Intrv. 3

Emer. Trans. Time 16:22 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	--	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

Station Information

Station Name Agua Fria River near Mayer, AZ

Sta. No. 09512500 DCP ID 1620C86A Lat. 34-18-55 Long. 112-03-48

Drainage Area 588 Elev. 3434 Hydro. Unit Code 15070102

1st Daily Trans. Time 02:26:07 (MST) Trans. Intrv. 3

Emer. Trans. Time 14:07 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	5.50	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09512500 AGUA FRIA RIVER NEAR MAYER, AZ TYPE LOG(SCALE OFFSET = 2.50) RATING NO 05

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____ *CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
2.00								.180	.780	2.14	
3.00	4.82	9.35	16.3	26.6	40.8	59.9	85.4	118.0	159.0	210.0	266.1
4.00	271.0	345.0	422.0	516.0	613.0	717.0	830.0	950.0	1074	1204	1069
5.00	1340	1475	1615	1759	1922	2060	2220	2370	2520	2675	1495
6.00	2835	2986	3141	3299	3461	3627	3796	3969	4145	4324	1672
7.00	4507	4694	4884	5077	5274	5474	5678	5885	6096	6310	2020
8.00	6527	6748	6972	7199	7430	7664	7901	8142	8385	8633	2356
9.00	8883	9137	9394	9654	9918	10180	10450	10730	11000	11280	2687
10.00	11570	11850	12140	12440	12730	13030	13330	13640	13950	14260	3000
11.00	14570	14890	15210	15530	15860	16190	16530	16860	17200	17550	3320
12.00	17890	18240	18590	18950	19310	19670	20030	20400	20770	21140	3630
13.00	21520	21900	22280	22670	23060	23450	23840	24240	24640	25050	3930
14.00	25450	25860	26270	26690	27110	27530	27960	28380	28810	29250	4230
15.00	29680	30120	30570	31010	31460	31910	32370	32820	33100		

Station Information

Station Name Turkey Creek near Cleator, AZ

Sta. No. 09512600 DCP ID 1620D5CE Lat. 34-16-56 Long. 112-12-25

Drainage Area -- Elev. 3140 Hydro. Unit Code 15060106

1st Daily Trans. Time 12:27:22 (MST) Trans. Intrv. 3

Emer. Trans. Time 14:22 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	3.80	Ght 3.77 at 570 cfs measurement
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09512600 TURKEY CREEK NEAR CLEATOR ARIZONA TYPE LOG(SCALE OFFSET = 1.30) RATING NO 01

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
1.00				.000	.150	.960	2.82	5.98	10.7	17.1	
2.00	25.7	36.5	49.6	65.3	83.8	105.1	129.5	157.2	188.2	222.0	229.3
3.00	255.0	290.5	325.6	363.0	400.5	438.4	477.0	516.0	555.7	596.7	384.0
4.00	639.0	682.4	727.1	773.0	818.1	864.4	911.7	960.0	1009	1058	469
5.00	1108	1158	1207	1257	1307	1358	1409	1460	1513	1565	511
6.00	1619	1673	1726	1784	1840	1897	1954	2012	2070	2129	569
7.00	2188	2247	2307	2367	2428	2490	2552	2614	2676	2739	615
8.00	2803	2867	2931	2996	3061	3127	3193	3260	3327	3394	658
9.00	3461	3529	3597	3666	3735	3805	3875	3945	4015	4086	697
10.00	4158	4229	4301	4374	4447	4520	4593	4667	4741	4816	733
11.00	4891	4966	5041	5117	5193	5269					

Station Information

Station Name Agua Fria River near Rock Springs, AZ

Sta. No. 09512800 DCP ID 1620DB1C Lat. 34-00-56 Long. 112-10-02

Drainage Area 130 Elev. 1800 Hydro. Unit Code 15070102

1st Daily Trans. Time 02:28:07 (MST) Trans. Intrv. e

Emer. Trans. Time 13:07 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	18.60	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 12-08-80

09512800 AGUA FRIA RIVER NEAR ROCK SPRINGS, ARIZ. TYPE LOG(SCALE,OFFSET = 4.00) RATING NO 07

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

FROM _____ TO _____, FROM _____ TO _____ *COMP BY _____ DATE _____

*CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
4.00	.000	.070	.189	.420	1.39	3.67	6.62	10.7	15.7	22.0	30.0
5.00	30.0	38.6	48.3	59.1	71.2	83.4	96.7	111.1	126.7	143.4	131.3
6.00	161.3	180.3	200.6	222.1	244.9	268.8	294.1	320.8	348.6	377.9	247.1
7.00	408.4	440.3	473.5	506.1	544.1	581.5	620.3	660.5	702.1	745.1	381.3
8.00	789.7	835.6	883.1	932.0	982.5	1034	1088	1143	1199	1257	527
9.00	1317	1378	1441	1505	1571	1638	1707	1778	1850	1924	683
10.00	2000	2089	2180	2274	2370	2469	2570	2669	2771	2875	982
11.00	2982	3090	3201	3315	3431	3549	3665	3784	3905	4027	1171
12.00	4153	4280	4410	4542	4676	4813	4952	5093	5237	5383	1379
13.00	5532	5682	5836	5992	6150	6310	6473	6639	6807	6977	1618
14.00	7150	7326	7504	7684	7867	8052	8241	8431	8624	8820	1868
15.00	9018	9219	9423	9629	9838	10050	10260	10480	10700	10920	2132
16.00	11150	11370	11600	11840	12070	12310	12550	12800	13040	13290	2400
17.00	13550	13800	14060	14320	14580	14850	15120	15390	15670	15940	2680
18.00	16230	16510	16800	17090	17380	17670	17970	18270	18580	18880	2960
19.00	19190	19510	19820	20140	20470	20790	21120	21450	21780	22120	3270
20.00	22460	22810	23150	23500	23850	24210	24570	24930	25300	25670	3580
21.00	26040	26410	26790	27170	27540	27920	28300	28680	29070	29460	3810
22.00	29850	30240	30640	31040	31440	31850	32260	32670	33080	33500	4070
23.00	33920	34350	34780	35210	35640	36080	36520	36960	37410	37850	4390
24.00	38310	38760	39220	39680	40150	40610	41080	41560	42040	42520	4690
25.00	43000	43490	43970	44470	44960	45460	45970	46470	46980	47490	5010
26.00	48010	48530	49050	49570	50100	50630	51170	51700	52250	52790	5330
27.00	53340	53890	54440	55000							

Station Information

Station Name New River near Rock Springs, AZ

Sta. No. 09513700 DCP ID 1620E054 Lat. 33-58-27 Long. 112-05-54

Drainage Area 67.3 Elev. 2310 Hydro. Unit Code 15070102

1st Daily Trans. Time 02:29:22 (MST) Trans. Intrv. 3

Emer. Trans. Time 13:22 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	2.30	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY - WATER RESOURCES DIVISION

EXPANDED RATING TABLE DATE PRINTED 01-19-81

09513780 NEW RIVER NR ROCK SPRINGS, ARIZ. TYPE LOG(SCALE OFFSET = 0.40) RATING NO 04

BASED ON _____ DISCHARGE MEASUREMENTS, NO._____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____

_____ *COMP BY _____ DATE _____

FROM _____ TO _____, FROM _____ TO _____ *CKD. BY _____ DATE _____

GAGE HEIGHT IN FEET	DISCHARGE IN CUBIC FEET PER SECOND (EXPANDED PRECISION) .0	.1	.2	.3	.4	.5	.6	.7	.8	.9	DIFF IN Q PER FOOT GH
0.00					.000	.010	.050	.682	1.99	4.20	
1.00	7.83	13.5	21.3	31.0	42.7	55.8	69.8	84.9	100.9	118.8	133.8
2.00	139.2	161.5	185.7	211.9	240.1	270.5	303.1	338.1	375.4	419.6	330.1
3.00	469.3	522.6	579.7	641.2	707.9	778.9	854.6	934.9	1020	1106	727
4.00	1197	1292	1392	1497	1607	1725	1848	1977	2112	2252	1202
5.00	2399	2551	2707	2864	3027	3196	3370	3551	3738	3930	1730
6.00	4129	4324	4522	4726	4935	5149	5369	5595	5826	6063	2177
7.00	6306	6551	6797	7049	7306	7569	7837	8111	8390	8676	2661
8.00	8967	9263	9566	9872	10180	10490	10810	11140	11470	11800	3173
9.00	12140	12490	12850	13200	13570	13940	14320	14700	15080	15460	3710
10.00	15850	16250	16650	17050	17460	17880	18310	18730	19170	19610	4210
11.00	20060	20510	20970	21430	21900						

Station Information

Station Name Hassayampa River at Walnut Grove near Wagoner, AZ

Sta. No. 09515000 DCP ID 1620F322 Lat. 34-16-30 Long. 112-32-45

Drainage Area 91 Elev. 3550 Hydro. Unit Code 15070103

1st Daily Trans. Time 02:31:07 (MST) Trans. Intrv. 3

Emer. Trans. Time 12:07 (MST)(Min. after 1/4 hr.) Trans. Intrv. 15

Prim. Ch. 24 Emer. Ch. 118

Device No.	Parameter	Parameter Code	Threshhold	Remarks
1	Stage	65	2.00	
2	Precip. (accm.)	45	--	3 hr. avg.
3	Precip. (diff.)	50	13	
11	Bat. volt.	70969	255	3 hr. avg.

MARICOPA COUNTY HIGHWAY DEPARTMENT

RADIO CALL NUMBERS AS OF 47 5/84

OFFICE	= KHW 61 OFC	FLOOD CONTROL	= 61 FLOOD CONTROL
SHOP	= 61 SHOP	CIVIL DEFENSE	= 150 CIVIL DEFENSE CTR
WAREHOUSE	= WJJ 97	BILL RICHWINE	= DIR. PARKS AND RECREATION = 1000
SE SVC CTR	= WJJ 96	ROY BHUHM	= DIR. CIVIL DEFENSE = 900
AVONDALE SVC CTR	= WRG 44	ART DICKSON	= DIR. FACILITIES MANAGEMENT = 1500

* ***** ADMINISTRATION DIVISION **
1 ESTERBROOKS BOB DIR P/W & CO ENGR
10 COLLINS, WAYNE DEP CO ENG
100 LATHROP FRANCIS DEP CO ENGR
101 UNUSED
105 PERRY GIL P/W ADMINISTRATOR
115 WARREN BILL SAFETY & TRNG COORD
116 LANDINO FRANK
120 LEISTER BILL HWY CONTROLLER
125 MORGAN DICK WAREHOUSE SUPVR
126 ALLEN TIM STORES CLERK 2
135 MADRID JACKIE DRIVER-MESSENGER
20*
20* ***** ENGINEERING DIVISION *****
200 KELLER HARRY ASST CO ENGR-ENGRNG
205 HARRINGTON BILL ENGRNG PLNG COORD
206 HAMLIN MAX C/E TECH ENGRNG & PLNG
210 NAUSEDA BARRY I/D & SUBD SUPVR
215 AKIN LOIS I/D ASST
216 WOODRING BOB C/E TECH 2
220 HORNE BILL DESIGN ENGRNG SUPVR
221 HIRSCH TOM C/E DESIGN
222 LIEBERMAN JOEL C/E DESIGN
223 BICKET JOHN C/E DESIGN
224 EPSTEIN PHILIP C/E DESIGN
226 KENYON WILLIAM C/E DESIGN
227 PHELAN TOM C/E DESIGN
228 WALLACE DICK C/E DESIGN
230 TOSCANO GERALD C/E SUBD ENGR
231 ECK BOB C/E TECH-PERMITS
233 CROHURST BARBARA RADIO PERMITS
240 MORRIS BOB CHIEF ENGRNG INSPECTOR
241 SCHWARTZ GLENN ENGRNG INSPECTOR
242 FINTON PAT ENGRNG INSPECTOR
243 SQUYRES BARRY ENGRNG INSPECTOR
244 MAYER DICK ENGRNG INSPECTOR
245 UNUSED
30*
30* ***** OPERATIONS DIVISION ******
300 WAGGONER LARRY ASST CO ENGR OPR
305 NUTTER JOHN OPR SUPT
306 SAWYER TOM C/E TECH 2
307 KOTTMER KEVIN ADMIN ASST

425 HIXSON JACK TIRE TRUCK
426 HACKFORD DON TIRE TRUCK
427 ROCKLEY BOB AUTO MECH
430 WILFONG HARRY AUTO SHOP SUPVR
431 HUTCHINSON JIM AUTO LEAD MAN
432 PERKINS ART TRAVEL MECH
433 MICHAELS BILL TRAVEL MECH
434 DANN RUSS TRAVEL MECH
436 ANDERSON NOEL H/D LUBE SPEC
437 JORDAN CAL H/D LUBE SPEC
438 ERNSTEP MARK H/D LUBE SPEC
439 VITOVEK FRANK TRAVEL MECH
440 SYLVIA BILL DRIVER/MESSENGER-PARTS
441 SUTTON JIM P/M SUPV
499 SECURITY GUARD NITE ONLY
50*
50* ***** TRAFFIC ENGINEERING ******
500 ORRAHOOD JOHN ASST CO ENGR-TRAFFIC
510 PAPSCUN FRANK ASST TRAF ENGR
511 BRUNO STAN PROJ COORD
520 BALLESTEROS LOU TRAF OPR SUPVR
521 GORRAIZ VIC P/W TECH
522 LAST GERALD LABOR 2
525 MORAGA ROY SIGN SHOP FRMN
530 BARRAZA AL STRIPING FRMN
531 BANDA HENRY STRIPING CREW 1
532 ORDAZ MANUAL EQUIP OPR 3
533 CHAVEZ RAUL P/W TECH 1
534 FUGATE BILL P/W TECH 1
535 ALVAREZ CARLOS BARRICADE SHOP FRMN
536 MEDINA JESUS E O 1
540 SAMORA GEORGE SIGN CREW FRMN
541 WAGGONER STEVE P/W TECH 1
542 ROMERO ALEX P/W TECH 1
543 RAMIREZ RUBEN P/W TECH 1
544 TAVENA JESSE P/W TECH 1
545 UNUSED
546 SNYDER SAUL BARRICADE P/W TECH 1
547 ROMERO JOE P/W TECH 1
548 DE LA ROSA ARMANDO P/W TECH 1
549 FEDERICO GEORGE LABORER 2
550 MOZINGO JOHN TRAF SIGNAL SUPVR
551 ALLEN PETE SIGNAL CONSTR CREW 2

634 UNUSED
635 COLEMAN LENARD O&M
636 WILLIAMS MARK O&M
637 WELCH MIKE O&M
638 LOZANO OSCAR O&M
639 NAUD
641 UNUSED
642 UNUSED
646 UNUSED
649 UNUSED
650 KARAN NICK ENGINEERING
651 RODRIGUEZ JOHN ENGINEERING
652 VACANT
653 UNUSED
654 PERREAULT DICK ENGINEERING
655 FERNANDEZ CORA ENGINEERING
656 SHOBE RW 11 ENGINEERING
657 RALEIGH ED ENGINEERING
658 UNUSED
659 WONG LARRY ENGINEERING
660 VACANT
661 RUIZ
670 JOHNSON DAVE HYDROLOGY
671 BUCHANAN SCOTT HYDROLOGY
672 TRAM JOE HYDROLOGY
673 LAMARCHE TOM HYDROLOGY
674 BUCKLEY KEBBA HYDRO
675 DAVIS CAROL HYDRO
676 JOHNSON FLOYD HYDROLOGY
677 BANDENIEKS MARIS HYDROLOGY
678 NEVITT
679 FEUQUAY
680 BURKE JOHN LAND MANAGEMENT
681 BOYD BOB LAND MANAGEMENT
682 UPSTEIN ED LAND MANAGEMENT
683 VACANT
684 MCLUTY ERV LAND MANAGEMENT
685 ENCINAS CARLOS LAND MANAGEMENT
686 MUTSCHLER SUE LAND MANAGEMENT
687 MAREK EMILY LAND MANAGEMENT
688 SCISM RALPH LAND MANAGEMENT
689 YOUNG LINDA LAND MANAGEMENT
70*

310 NELSON DON CONSTR ENGR
311 HENDERSON JACK ENGRNG INSPECT
312 HITES BUD ENGRNG INSPECTOR
313 FERGUSON TOM ENGRNG INSPECTOR
314 HERNDON WILLIAM ENGRNG INSPECTOR
315 DUBOIS BILL SOILS LAB SUPVR
316 HAUGEN GERN SOILS LAB TECH 3
317 PHILLIPS DELBERT SOILS LAB TECH 2
318 CETTO DEN SOILS LAB TECH 2
319 MARKS DON SOILS LAB TECH 1
320 UNUSED
321 ROSE JOHN SURVEY PARTY CHIEF
322 BERGER ED SURVEY PARTY CHIEF
323 WINN DICK SURVEY PARTY CHIEF
324 DEVRIES ROGER SURVEY PARTY CHIEF
340 BRUNDAGE JIM MTCE SUPVR
341 JACKSON OTIS P/W TECH 3 MTCE AR 1
342 LANE CLYDE P/W TECH 3 MTCE AREA 2
343 HAMMON JOHN MTCE AREA 3
344 HOFSTETTER RON MTCE AREA 4
345 QUINONEZ HENRY MTCE SUN CITY
346 CLARK DENNIS AST MTCE SUPERVISOR
347 WEARMOUTH GERRI ENGRNG AIDE 3
348 MUNOZ PETE MTCE UTIL CREW SUPVR
349 SALAZAR ROMAN ASST MTCE SUN CITY
350 DESHAZO AL IMPRVT SUPVR
351 GARCIA RUBEN P/W SUPVR
352 AKIN JOHN P/W SUPVR
353 MORENO JESUS P/W TECH 3
354 PARKER JOHN P/W TECH 3
355 COLLAY BOB IMPVT PLNG
356 THORN HAROLD EQUIP OPR 3
360 BLYTHE JIM SUPPORT CREW SUPVR
361 HARRIS SKIP BRIDGE & UNDERGROUND
362 HENDRICKS DON BOOT TRUCK
363 MARTINEZ TOM EQUIP TRANS
364 DEJARANO JIM IMPVT UTIL CREW
365 MILLER ROSS EQUIP TRANS
366 KIEL BILL P/W TECH 2
367 LEONARD RICHARD FUEL TRUCK
368 KISER KARL P/W TECH 1
380 SAIZ JOE
381 GONZALES HUMBERTO P/W TECH 2
381 ANGULO DAVE P/W TECH 2
382 UNUSED
383 BUSSEWITZ HARLEY EQUIP OPR 2
40 ***** EQUIPMENT SERVICES DEPT **
40*
400 HARRIS HARLAN DIRECTOR
410 HALL RON ASST DIRECTOR
420 NEVELS GIBSON H/D SHOP LEADMAN
421 SCOTT FRED WRECKER DRIVER
423 UNUSED
424 MOORE GARY TIRE TRUCK

552 ANGUIS ABE SIGNAL CONSTR CREW 1
553 WAGSTAFF JACK SIGNAL LAB
554 MCGOVERN HUGH SIGNAL LAB FRMN
555 POOLE STEVE TRAF SIG TECH W/SIDE
556 RAMIREZ RAY TRAF SIG TECH E/SIDE
557 FRITZ JIM TRAF SIG TECH CREW 2
558 ROSS PAT TRAF SIG TECH CREW 1
560 MCCASSALIN WADE TRAF ENGRNG SUPVR
570 LAHMAN JERRY PLANS & DESIGN SUPVR
571 FELDEIER LEE ENGRNG AIDE 2
572 BURRUEL MANNY ENGRNG AIDE 1
575 BRANNAN MIKE SIGNAL DESIGN SUPVR
580 THAYER JOHN SPEC STUDIES SUPVR
581 BONE K C SPEC STUDIES INSPECTOR
582 JOHNSON, MARTY ENGRNG AIDE 3
583 ALVEREZ ALEX ENGRNG AIDE 1
590 SOULES GLENN SURV SAFETY SUPVR
591 STEWART VICKI ACCIDENT STUDIES
592 JOHNSON WAYNE ENGRNG AIDE 2
593 UNUSED
594 WILLIAMS ALETHA ENGRNG AIDE 1
595 BRUNK DALE ENGRNG AIDE 1
596 COUNTS JOHN ENGRNG AIDE 1
60*
60* ***** FLOOD CONTROL DISTRICT ***
600 SAGRAMOSO DAN CHIEF ENGR/GEN MGR
601 SMITH STAN DEPUTY CHIEF ENGR
602 YOUNG LINDA ADMINISTRATION
603 CUENO MIKE CONTROLLER
604 HANNAN LINDA ADMIN
605 UNUSED
606 PEAKE
607 LEVEY
610 PAYETTE BOB CONST/O&M
611 KIRBY EARL CONST/O&M
612 DIPIERRO PAUL O&M
613 MOORE
615 ANDERSON WARREN CONST.
616 POPPE
617 EDDY LEONARD CONST
620 LAVIN JOE O&M
621 HAMER ERNIE O&M
622 GREISIGER JOHN O&M
623 MARTINEZ
624 VINCENT
625 LOUGH ROGER O&M
626 EVANS BILL O&M
627 RIVERA CARLOS O&M
628 VACANT
629 VACANT
630 PENDERGAST BOB O&M
631 GUZAK TONY O&M
632 BINGHAM BOB O&M
633 VIETH BOB OEM

70* ***** REAL ESTATE/RIGHT-OF-WAY *
700 HARTMAN MATT R/W SUPVR
710 HOFFMAN ERIC ASST R/E & R/W SUPVR
720 FOSTER TOM, R O W AGENT
730 LEE PATTY, R O W AGENT
740 HESSELDAHL DICK, LEASING AGT
750 BURKE JIM R O W AGENT
760 CONWAY NEIL, R O W AGENT
770 DAVIS JAY, R O W AGENT
780 WESTPHAL JOHN R O W AGENT
790 MCLAUGHLIN DOUG
795 UNUSED
80*
80* ***** LANDFILL DEPARTMENT ******
800 SCIARRO NICK LANDFILL ADMINISTRATO
805 GARCIA MANNY LANDFILL SUPVR.
806 LUETZOW KIM LANDFILL OFFICE
807 ARMENTA STEVE P/W TECH 2
808 PETTIT BUTCH EQ OP III
809 EMERSON BOB EQ OPERATOR
810 QUIHUIZ ALBERT EQ. OPERATOR
811 WELBORN CARROL LANDFILL ATTENDANT
820 HAMILTON DANNY EQ. OPERATOR
821 RANCE AL LANDFILL ATTENDANT
830 GLUECK BILL LANDFILL ATTENDANT
840 BRYANT RON EQ. OPERATOR
850 JOHNSON BOB LAB I
860 RUIZ CLYDE EQ. OPERATOR
870 EMMONS JIM EQ. OPERATOR
871 GUMBY GUAJARDO LANDFILL ATTENDANT
880 VALDEZ ART EQ OP III
881 JERRY & BARB LANDFILL ATTENDANT
890 SEARS RALPH EQ. OPERATOR
120*
120* ***** COMMUNICATIONS **********
1200 DEROULHAC JOE CHIEF COMM ENGR
1201 UNUSED
1202 JOHNSON BOB SHOP SUPVR
1203 PHILLIPS JIM COMM SUPVR
1204 UNUSED
1205 DIVEN ROSS COMM TECH
1206 UNUSED
1207 BAIR TOM COMM TECH
1208 UNUSED
1209 COOPER GLENN COMM TECH
1210 UNUSED
1211 JIMENEZ JOE RADIO INSTAL
1212 DANIELS LEO COMM TECH
1213 MARTIN RUTH INV CONT CLERK
1214 DIVINE MIKE COMM TECH
1215 DRYJA GARY M COMM TECH
1216 WIDENER JOHN COMM TECH
1217 ONTIVEROS ARNOLD RADIO INSTAL
1218 DIBBLE JOHN COMM TECH

APPROVED RADIO CODES

10-1 RECPTION POOR - CHANGE LOCATION	10-2 RECPTION GOOD	10-3 STOP TRANSMITTING
10-4 OKAY	10-5 RELAY	10-6 BUSY - UNLESS URGENT
10-7 OUT OF SERVICE	10-8 IN SERVICE	10-9 REPEAT TRANSMISSION
10-13 WEATHER CONDITION	10-19 RETURN TO ..(OFFICE OR YARD)	10-20 LOCATION
10-21 TELEPHONE	10-23 STANDBY	10-36 CORRECT TIME
10-43 NO TRAFFIC	10-45 MEET OTHER UNIT	10-46 ANY TRAFFIC (TRAFFIC CHECK)
10-49 TRAFFIC SIGNAL OUT	10-66 CANCEL CALL	585 TRAFFIC HAZARD
961 ACCIDENT-NO INJURY	962 ACCIDENT-WITH INJURY	ETA ESTIMATED TIME OF ARRIVAL

215 AKIN LOIS I/D ASST
551 ALLEN PETE SIGNAL CONSTR CREW 2
126 ALLEN TIM STORES CLERK 2
535 ALVAREZ CARLOS BARRICADE SHOP FRMN
583 ALVEREZ ALEX ENGRNG AIDE 1
436 ANDERSON NOEL H/D LUBE SPEC
615 ANDERSON WARREN CONST.
552 ANGUIS ABE SIGNAL CONSTR CREW 1
381 ANGULO DAVE P/W TECH 2
807 ARMENTA STEVE P/W TECH 2
1207 BAIR TOM COMM TECH
520 BALLESTEROS LOU TRAF OPR SUPVR
531 BANDA HENRY STRIPING CREW 1
677 BANDENIEKS MARIS HYDROLOGY
530 BARRAZA AL STRIPING FRMN
364 BEJARANO JIM IMPVT UTIL CREW
322 BERGER ED SURVEY PARTY CHIEF
223 BICKET JOHN C/E DESIGN
632 BINGHAM BOB O&M
360 BLYTHE JIM SUPPORT CREW SUPVR
581 BONE K C SPEC STUDIES INSPECTOR
681 BOYD BOB LAND MANAGEMENT
575 BRANNAN MIKE SIGNAL DESIGN SUPVR
340 BRUNDAGE JIM MTCE SUPVR
595 BRUNK DALE ENGRNG AIDE 1
511 BRUNO STAN PROJ COORD
840 BRYANT RON EQ. OPERATOR
671 BUCHANAN SCOTT HYDROLOGY
674 BUCKLEY KEBBA HYDRO
750 BURKE JIM R O W AGENT
680 BURKE JOHN LAND MANAGEMENT
572 BURRUEL MANNY ENGRNG AIDE 1
383 BUSSEWITZ HARLEY EQUIP OPR 2
318 CETTO BEN SOILS LAB TECH 2
533 CHAVEZ RAUL P/W TECH 1
346 CLARK DENNIS AST MTCE SUPERVISOR
635 COLEMAN LENARD O&M
355 COLLAY BOB IMPVT PLNG
10 COLLINS, WAYNE DEP CO ENG
760 CONWAY NEIL, R O W AGENT
1209 COOPER GLENN COMM TECH
596 COUNTS JOHN ENGRNG AIDE 1

205 HARRINGTON BILL ENGRNG PLNG COORD
400 HARRIS HARLAN DIRECTOR
361 HARRIS SKIP BRIDGE & UNDERGROUND
700 HARTMAN MATT R/W SUPVR
316 HAUGEN GERN SOILS LAB TECH 3
311 HENDERSON JACK ENGRNG INSPECT
362 HENDRICKS DON BOOT TRUCK
314 HERNDON WILLIAM ENGRNG INSPECTOR
740 HESSELDAHL DICK, LEASING AGT
221 HIRSCH TOM C/E DESIGN
312 HITES BUD ENGRNG INSPECTOR
425 HIXSON JACK TIRE TRUCK
710 HOFFMAN ERIC ASST R/E & R/W SUPVR
344 HOFSTETTER RON MTCE AREA 4
220 HORNE BILL DESIGN ENGRNG SUPVR
431 HUTCHINSON JIM AUTO LEAD MAN
341 JACKSON OTIS P/W TECH 3 MTCE AR 1
881 JERRY & BARB LANDFILL ATTENDANT
1211 JIMENEZ JOE RADIO INSTAL
850 JOHNSON BOB LAB 1
1202 JOHNSON BOB SHOP SUPVR
670 JOHNSON DAVE HYDROLOGY
676 JOHNSON FLOYD HYDROLOGY
592 JOHNSON WAYNE ENGRNG AIDE 2
582 JOHNSON, MARTY ENGRNG AIDE 3
437 JORDAN CAL H/D LUBE SPEC
650 KARAN NICK ENGINEERING
200 KELLER HARRY ASST CO ENGR-ENGRNG
226 KENYON WILLIAM C/E DESIGN
366 KIEL BILL P/W TECH 2
611 KIRBY EARL CONST/O&M
368 KISER KARL P/W TECH 1
309 KOTTMER KEVIN ADMIN ASST
570 LAHMAN JERRY PLANS & DESIGN SUPVR
673 LAMARCHE TOM HYDROLOGY
116 LANDINO FRANK
342 LANE CLYDE P/W TECH 3 MTCE AREA 2
522 LAST GERALD LABOR 2
100 LATHROP FRANCIS DEP CO ENGR
620 LAVIN JOE O&M
730 LEE PATTY, R O W AGENT
120 LEISTER BILL HWY CONTROLLER

317 PHILLIPS DELBERT SOILS LAB TECH 2
1203 PHILLIPS JIM COMM SUPVR
555 POOLE STEVE TRAF SIG TECH W/SIDE
616 POPPE
810 QUIHUIZ ALBERT EQ. OPERATOR
345 QUINONEZ HENRY MTCE SUN CITY
657 RALEIGH ED ENGINEERING
556 RAMIREZ RAY TRAF SIG TECH E/SIDE
543 RAMIREZ RUBEN P/W TECH 1
821 RANCE AL LANDFILL ATTENDANT
627 RIVERA CARLOS O&M
427 ROCKLEY BOB AUTO MECH
651 RODRIGUEZ JOHN ENGINEERING
542 ROMERO ALEX P/W TECH 1
547 ROMERO JOE P/W TECH 1
321 ROSE JOHN SURVEY PARTY CHIEF
558 ROSS PAT TRAF SIG TECH CREW 1
661 RUIZ
860 RUIZ CLYDE EQ. OPERATOR
600 SAGRAMOSO DAN CHIEF ENGR/GEN MGR
380 SAIZ JOE
349 SALAZAR ROMAN ASST MTCE SUN CITY
540 SAMORA GEORGE SIGN CREW FRMN
305 SAWYER TOM C/E TECH 2
241 SCHWARTZ GLENN ENGRNG INSPECTOR
800 SCIARRO NICK LANDFILL ADMINISTRATO
688 SCISM RALPH LAND MANAGEMENT
421 SCOTT FRED WRECKER DRIVER
890 SEARS RALPH EQ. OPERATOR
499 SECURITY GUARD NITE ONLY
656 SHOBE RW 11 ENGINEERING
601 SMITH STAN DEPUTY CHIEF ENGR
546 SNYDER SAUL BARRICADE P/W TECH 1
590 SOULES GLENN SURV SAFETY SUPVR
243 SQUYRES BARRY ENGRNG INSPECTOR
591 STEWART VICKI ACCIDENT STUDIES
441 SUTTON JIM P/M SUPV
440 SYLVIA BILL DRIVER/MESSENGER-PARTS
544 TAVENA JESSE P/W TECH 1
580 THAYER JOHN SPEC STUDIES SUPVR
356 THORN HAROLD EQUIP OPR 3
230 TOSCANO GERALD C/E SUBD ENGR

233 CROHURST BARBARA RADIO PERMITS
603 CUENO MIKE CONTROLLER
1212 DANIELS LEO COMM TECH
434 DANN RUSS TRAVEL MECH
675 DAVIS CAROL HYDRO
770 DAVIS JAY, R O W AGENT
548 DE LA ROSA ARMANDO P/W TECH I
1200 DEROULHAC JOE CHIEF COMM ENGR
350 DESHAZO AL IMPRVT SUPVR
324 DEVRIES ROGER SURVEY PARTY CHIEF
1210 DIBBLE JOHN COMM TECH
612 DIPIERRO PAUL O&M
1205 DIVEN ROSS COMM TECH
1214 DIVINE MIKE COMM TECH
1215 DRYJA GARY M COMM TECH
315 DUBOIS BILL SOILS LAB SUPVR
231 ECK BOB C/E TECH-PERMITS
617 EDDY LEONARD CONST
809 EMERSON BOB EQ OPERATOR
870 EMMONS JIM EQ. OPERATOR
685 ENCINAS CARLOS LAND MANAGEMENT
224 EPSTEIN PHILIP C/E DESIGN
438 ERNSTEP MARK H/D LUBE SPEC
1 ESTERBROOKS BOB DIR P/W & CO ENGR
626 EVANS BILL O&M
549 FEDERICO GEORGE LABORER 2
571 FELDEIER LEE ENGRNG AIDE 2
313 FERGUSON TOM ENGRNG INSPECTOR
655 FERNANDEZ CORA ENGINEERING
679 FEUQUAY
242 FINTON PAT ENGRNG INSPECTOR
720 FOSTER TOM, R O W AGENT
557 FRITZ JIM TRAF SIG TECH CREW 2
534 FUGATE BILL P/W TECH 1
805 GARCIA MANNY LANDFILL SUPVR.
351 GARCIA RUBEN P/W SUPVR
830 GLUECK BILL LANDFILL ATTENDANT
381 GONZALES HUMBERTO P/W TECH 2
521 GORRAIZ VIC P/W TECH
622 GREISIGER JOHN O&M
871 GUMBY GUAJARDO LANDFILL ATTENDANT
631 GUZAK TONY O&M
426 HACKFORD DON TIRE TRUCK
410 HALL RON ASST DIRECTOR
621 HAMER ERNIE O&M
820 HAMILTON DANNY EQ. OPERATOR
206 HAMLIN MAX C/E TECH ENGRNG & PLNG
343 HAMMON JOHN MTCE AREA 3
604 HANNAN LINDA ADMIN

367 LEONARD RICHARD F[illegible] TRUCK
607 LEVEY
222 LIEBERMAN JOEL C/E DESIGN
625 LOUGH ROGER O&M
638 LOZANO OSCAR O&M
806 LUETZOW KIM LANDFILL OFFICE
135 MADRID JACKIE DRIVER-MESSENGER
687 MAREK EMILY LAND MANAGEMENT
319 MARKS DON SOILS LAB TECH I
1213 MARTIN RUTH INV CONT CLERK
623 MARTINEZ
363 MARTINEZ TOM EQUIP TRANS
244 MAYER DICK ENGRNG INSPECTOR
560 MCCASSALIN WADE TRAF ENGRNG SUPVR
554 MCGOVERN HUGH SIGNAL LAB FRMN
790 MCLAUGHLIN DOUG
684 MCLUTY ERV. LAND MANAGEMENT
536 MEDINA JESUS E O I
433 MICHAELS BILL TRAVEL MECH
365 MILLER ROSS EQUIP TRANS
613 MOORE
424 MOORE GARY TIRE TRUCK
525 MORAGA ROY SIGN SHOP FRMN
353 MORENO JESUS P/W TECH 3
125 MORGAN DICK WAREHOUSE SUPVR
240 MORRIS BOB CHIEF ENGRNG INSPECTOR
550 MOZINGO JOHN TRAF SIGNAL SUPVR
348 MUNOZ PETE MTCE UTIL CREW SUPVR
686 MUTSCHLER SUE LAND MANAGEMENT
639 NAUD
210 NAUSEDA BARRY I/D & SUBD SUPVR
310 NELSON DON CONSTR ENGR
420 NEVELS GIBSON H/D SHOP LEADMAN
678 NEVITT
305 NUTTER JOHN OPR SUPT
1217 ONTIVEROS ARNOLD RADIO INSTAL
682 OPSTEIN ED LAND MANAGEMENT
532 ORDAZ MANUAL EQUIP OPR 3
500 ORRAHOOD JOHN ASST CO ENGR-TRAFFIC
510 PAPSCUN FRANK ASST TRAF ENGR
354 PARKER JOHN P/W TECH 3
610 PAYETTE BOB CONST/O&M
606 PEAKE
630 PENDERGAST BOB O&M
432 PERKINS ART TRAVEL MECH
654 PERREAULT DICK ENGINEERING
105 PERRY GIL P/W ADMINISTRATOR
608 PETTIT BUTCH EQ OP III
227 PHELAN TOM C/E DESIGN

672 TRAM JOE HYDROLOGY
320 UNUSED
641 UNUSED
658 UNUSED
634 UNUSED
653 UNUSED
1201 UNUSED
423 UNUSED
593 UNUSED
1206 UNUSED
649 UNUSED
1208 UNUSED
101 UNUSED
1210 UNUSED
642 UNUSED
1204 UNUSED
795 UNUSED
605 UNUSED
245 UNUSED
545 UNUSED
646 UNUSED
382 UNUSED
629 VACANT
683 VACANT
660 VACANT
652 VACANT
628 VACANT
880 VALDEZ ART EQ OP III
633 VIEIH BOB OEM
624 VINCENT
439 VITOVEK FRANK TRAVEL MECH
300 WAGGONER LARRY ASST CO ENGR OPR
541 WAGGONER STEVE P/W TECH 1
553 WAGSTAFF JACK SIGNAL LAB
228 WALLACE DICK C/E DESIGN
115 WARREN BILL SAFETY & TRNG COORD
347 WEARMOUTH GERRI ENGRNG AIDE 3
811 WELBORN CARROL LANDFILL ATTENDANT
637 WELCH MIKE O&M
780 WESTPHAL JOHN R O W AGENT
1216 WIDENER JOHN COMM TECH
430 WILFONG HARRY AUTO SHOP SUPVR
594 WILLIAMS ALETHA ENGRNG AIDE 1
636 WILLIAMS MARK O&M
323 WINN DICK SURVEY PARTY CHIEF
659 WONG LARRY ENGINEERING
215 WOODRING BOB C/E TECH 2
602 YOUNG LINDA ADMINISTRATION
689 YOUNG LINDA LAND MANAGEMENT