USER'S GUIDE

GROUNDWATER ACCESS SYSTEM

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USER'S GUIDE

GROUNDWATER ACCESS SYSTEM

The Groundwater Access System can be used to retrieve bedrock elevations, surface elevations, historical water levels, and associated information from magnetic tape files. Use of the retrieval system requires little experience with computers as the system is tutorial.

At present, water levels for 43 counties and bed rock elevations for 20 counties in Kansas shown in Appendix I are available.

SYSTEM OVERVIEW

In a short terminal session, the user specifies the information desired and the area of Kansas to be covered. This session spawns a batch job which retrieves the desired information from a tape and outputs the retrieved information in the desired form.

LOGGING ONTO THE KGS MV8000

I. Connecting to the Kansas Geological Survey computer system:

A. If the terminal requires a dial-up computer line, then:

1. Turn on the phone coupler.
2. Turn on the terminal.
3. Dial 864-3570.
4. The computer will respond with a continuous, high-pitched tone. When you hear the tone, place the phone handset in the coupler's cups, making sure the cord end of the handset is in the cup marked "CORD".
5. Press either the RETURN or NEW LINE key (go to part II).

B. If the terminal is hard wired to the computer system, then:

1. Turn on the terminal, if the system is up it will display:

Kansas Geological Survey AOS/VS/TYPE NEW-LINE TO BEGIN LOGGING ON

If the system is not up a cursor will appear in the upper left hand corner of a CRT screen (but a hardcopy terminal will stay blank).

2. Press either the RETURN or NEW LINE key (go to part II).

II. Logging onto the computer system:

A. After a line to the computer has been established (see part I) and after either the RETURN or NEW LINE key has been pressed, the system will type:

```
AOS/VS rev.no. / EXEC rev.no.          date          time          @CONnn
USERNAME:
```

You enter your username and press the RETURN or NEW LINE key. The system will respond with:

```
PASSWORD:
```

Enter your password (always enter or send information to the computer by pressing the RETURN or NEW LINE key). Notice that the system echoed your username but will not ehco your password.

If you are too slow about sending the system your password, after 30 seconds have elapsed, it displays:

```
TOO SLOW - INPUT TIMED OUT
```

The system redisplays the very first message above and you must start the logon procedure over again.

If you make a mistake in typing your username or password the system displays:

```
INVALID USERNAME-PASSWORD PAIR
```

The system will give you five attempts at entering the correct username-password pair before locking the terminal for ten seconds; then you must start the logon procedure over.

B. If you enter a valid username-password pair, the system will display:

```
LAST PREVIOUS LOGON                 date          time

AOS/VS  CLI REVnn.nn.nn.nn          date          time
)
```

When the system displays the above information and types a close parenthesis ")" in column one, you have successfully logged onto the system; now the Command Line Interpreter (CLI) is waiting for your commands.

USING THE GROUNDWATER ACCESS SYSTEM

I. In the following paragraphs all system output to the terminal is printed in uppercase characters as are user responses. After you have logged onto the system and are at CLI level, enter:

) :UDD:GH.ACCESS:ACCESS

This command invokes a macro driven program which asks you to specify what information you want and the geographic extent of your inquiry.

POINTS TO REMEMBER:

1. When the terminal asks you a question and then outputs an equal sign (=) at the left side of the display, the system is prompting you to enter information. If you are not certain about what to do, enter H for "help". The access system will present you with brief documentation on an appropriate response.

2. The computer system's CLI prompt is a close parenthesis ")"; the groundwater access system's prompt is the equal sign "=".

3. If at any time you become completely confused and wish to end the session, enter S for "stop". The S command will stop the program and will return you to the CLI ")" level; now you may start ACCESS over again or log off the system.

4. When you want to log off the computer system, enter BYE.

II. The access system will respond with a sign on message:

****

GROUNDWATER ACCESS SYSTEM

****
Note - Please consult the user's guide for help.

After the sign on message announces that ACCESS is executing, the program starts prompting you for information:

FILE TO BE ACCESSED ? 1....BEDROCK
2....WATER LEVEL

=

Options: S, H, 1, or 2

At this point, you may enter "H" to get more detailed instructions, "S" to stop, or the appropriate number for the file from which you wish information retrieved.

The BEDROCK file (1) contains: well location, information source code, surface elevation, well owner name, bed rock elevation, and well use code.

The WATER LEVEL file (2) contains: well location, information source code, surface elevation, water use code, bedrock elevation, bedrock elevation, and water level measurements (date and depth to to water).

III. Next, the system will respond by printing your file choice and asking:

ENTER LOCATION INFORMATION ?

=

Options: H, S, L, F, or location.

At this prompt, you have several options; you may get instructions by entering H and you can abort execution with S.

To examine a list of Kansas counties (and their codes) currently on file, enter L. The listing is long, so to halt output roll on the CRT screen, type CTRL-S (hold down the CTRL key then press the S key); CTRL-Q is used to resume screen roll.

To display the code for a Kansas county, enter:
F/COUNTYNAME/ e.g. F/DOUGLAS/
Notice that F for "find" is immediately followed by a slash, then the county name in uppercase letters, and then another slash. The slashes and the uppercase letters are required. F can be given part of a county name as long as the part is from the front end of the COUNTYNAME string. F/D/, for example, will display all Kansas counties that begin with D;

DATES OF WATER LEVELS DESIRED: ?

=

Options: H, S or dates

At this point you may request help, stop program execution, but to continue you must specify the dates of water levels you want to study. Your options for DATES are:

A. An entire year: enter the last two digits of the year preceded by a slash (/). e.g. /66

B. An entire month of a year: enter the number of the month, a slash (/), and the last two digits of the year. e.g. 3/77

C. Several entire years: enter a slash, followed by a range of years surrounded by parentheses where the smaller year is listed first and separated from the larger year by a dash (-). e.g. /(57-62)

D. Several months of a year: enter a range of months surrounded by parentheses where the smaller month is listed first and separated from the larger by a dash (-), a slash (/), and then the last two digits of the year. e.g. (1-4)/72

E. The same month of several years: use syntax already defined. e.g. 12/(72-76)

F. Several months of several years: use syntax already defined. e.g. (1-4)/(65-69)

VI. Next, the system will print:

LIST MENU: (Y/N) ?

=

Options: H, S, Y, N, or push RETURN/NEW LINE

You may request help or stop program execution as usual. Since you might not want to read the menu every time Access is run, you may skip to the next question and its prompt by either entering

N or simply pushing the RETURN/NEW LINE key. If you enter Y the program will print a menu of responses for the next access system question.

A. If you requested information from the bedrock file, the following menu is printed:

DATA DESIRED

0	:	THE WHOLE RECORD
		ALL VER UNVER
SURFACE ELEV	:	1 2 3
BEDROCK ELEV	:	4 5 6
7	:	CALCOMP INPUT FORMAT
8	:	INFORMATION SOURCE
9	:	WELL OWNER
10	:	WELL USE

B. If you specified the water level file in the first question, the menu will be:

DATA DESIRED

0	:	THE WHOLE RECORD
1	:	SURFACE ELEVATION
2	:	BEDROCK ELEVATION
3	:	CALCOMP INPUT FORMAT
4	:	INFORMATION SOURCE
5	:	WATER USE
6	:	DEPTH TO WATER

The system will then print:

ENTER A NUMBER ACCORDING TO THE INFORMATION DESIRED: ?

NOTE ----- ONLY THE 0 OR WHOLE RECORD OPTION IS CURRENTLY IMPLEMENTED.

=

Options: H, S, or Menu codes

After this question you may get help or stop. The system expects you to enter any single code from the menu or any combination of codes; e.g. entering 15 for bedrock file will retrieve all surface elevations (code = 1) and verified bedrock elevations (code = 5).

VII. After you have entered the code(s) for the information you wish, the system will print what you have requested; then it asks if the information is correct:

IS THE ABOVE INFORMATION CORRECT: (Y/N)?

=

Options: H, S, N, or RETURN/NEW LINE

To change the information enter N, pushing RETURN/NEW LINE advances you to the next question, or you may request help or abort execution.

VIII. Next, the Access system displays the choices you have for the output destination of your data and waits for an answer:

OUTPUT DESTINATION CHOICES:
0....LISTING
1....APPEND TO EXISTING DISK FILE
2....WRITE TO NEW DISK FILE

DESTINATION DESIRED: ?

=

Options: H, S, or FILENAME

Enter a number from the menu that corresponds to your choice.

IX. The next question the Access system asks you is for a FILENAME for your output:

ENTER A "FILENAME" FOR THE OUTPUT DESTINATION YOU HAVE SELECTED: ?

=

Options: H, S, or FILENAME

The system needs a valid FILENAME so that it knows where to put your retrieved data.

The last question you are asked in the terminal session is if the FILENAME you entered is correct:

THE "FILENAME" YOU ENTERED IS: filename

IS "FILENAME" CORRECT: (Y/N)?

=

Options: H, S, N, or RETURN/NEW LINE

The system allows you the opportunity to change the FILENAME by entering N; continue by pushing RETURN/NEW LINE.

X. The last message printed by the Access system is:

PROCESS COMPLETED --- BYE.

You have now finished the terminal session; Access has the information it needs to finish the data retrieval automatically. Your terminal is released by the Access system and you are sent back to the CLI which prompts you with a close parenthesis ")".

LOGGING OFF THE KGS MV8000

When you have completed your terminal session, enter BYE to sign off the KGS computer system. You may also turn off power to the terminal if no additional usage is anticipated.

IMPORTANT NOTE TO USERS:

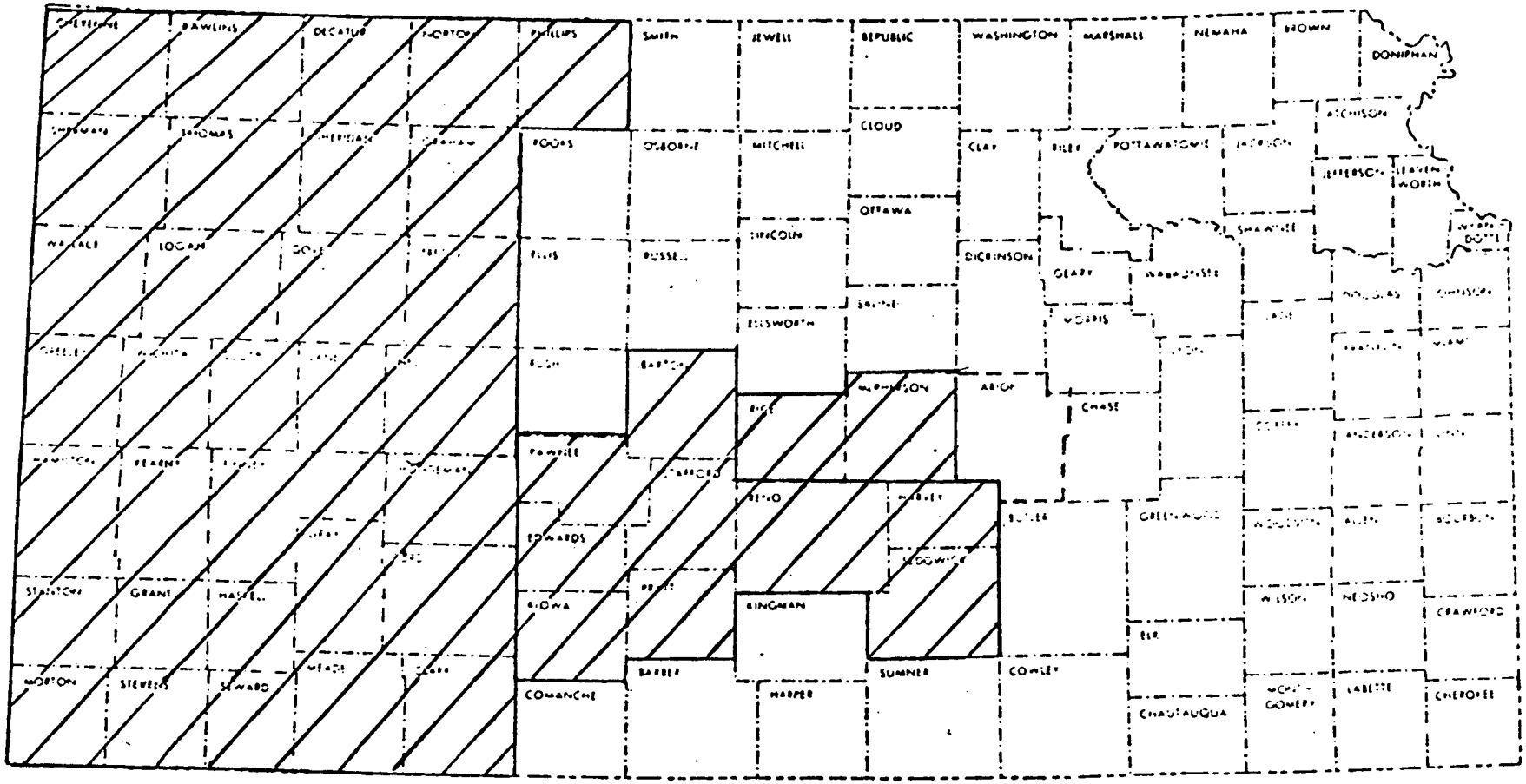
In a recent modification to the retrieval package, a new feature was added to the program to show the well status (normal

or abnormal) for water level measurements.

If, when you retrieve some water level measurements for any location, you see a (*) between a year of measurement and the water level measure on your retrieved data, this means that such well was in abnormal status status when that particular measurement was taken. I you see no star, then the well was normal.

For more details, see SAMPLE RUNS shown in Appendix II.

APPENDIX I - County codes and related information



WATER LEVEL FILE

Counties currently available

Codes for COUNTY (LCP), January 13, 1982.

Code	County	WT	BR	Code	County	WT	BR	Code	County	WT	BR
01	Allen	N	N	36	Greeley	Y	N	71	Osborne	N	N
02	Anderson	N	N	37	Greenwood	N	N	72	Ottawa	N	N
03	Atchison	N	N	38	Hamilton	Y	N	73	Pawnee	Y	N
04	Barber	N	N	39	Harper	N	N	74	Phillips	Y	N
05	Barton	Y	N	40	Harvey	Y	N	75	Pottawatomie	N	N
06	Bourbon	N	N	41	Haskell	Y	N	76	Pratt	Y	N
07	Brown	N	N	42	Hodgeman	Y	N	77	Rawlins	Y	Y
08	Butler	N	N	43	Jackson	N	N	78	Reno	Y	N
09	Chase	N	N	44	Jefferson	N	N	79	Republic	N	N
10	Chautauqua	N	N	45	Jewell	N	N	80	Rice	Y	N
11	Cherokee	N	N	46	Johnson	N	N	81	Riley	N	N
12	Cheyenne	Y	Y	47	Kearny	Y	N	82	Rooks	N	N
13	Clark	Y	N	48	Kingman	N	N	83	Rush	N	N
14	Clay	N	N	49	Kiowa	Y	N	84	Russell	N	N
15	Cloud	N	N	50	Labette	N	N	85	Saline	N	N
16	Coffey	N	N	51	Lane	Y	N	86	Scott	Y	N
17	Comanche	N	N	52	Leavenworth	N	N	87	Sedgwick	Y	N
18	Cowley	N	N	53	Lincoln	N	N	88	Seward	Y	N
19	Crawford	N	N	54	Linn	N	N	89	Shawnee	N	N
20	Decatur	Y	Y	55	Logan	Y	Y	90	Sheridan	Y	Y
21	Dickinson	N	N	56	Lyon	N	N	91	Sherman	Y	Y
22	Doniphan	N	N	57	McPherson	Y	N	92	Smith	N	N
23	Douglas	N	N	58	Marion	N	N	93	Stafford	Y	N
24	Edwards	Y	N	59	Marshall	N	N	94	Stanton	Y	N
25	Elk	N	N	60	Meade	Y	N	95	Stevens	Y	N
26	Ellis	N	N	61	Miami	N	N	96	Sumner	N	N
27	Ellsworth	N	N	62	Mitchell	N	N	97	Thomas	Y	Y
28	Finney	Y	N	63	Montgomery	N	N	98	Trego	Y	N
29	Ford	Y	N	64	Morris	N	N	99	Wabaunsee	N	N
30	Franklin	N	N	65	Morton	Y	N	A0	Wallace	Y	Y
31	Geary	N	N	66	Nemaha	N	N	A1	Washington	N	N
32	Gove	Y	Y	67	Neosho	N	N	A2	Wichita	Y	N
33	Graham	Y	Y	68	Ness	Y	N	A3	Wilson	N	N
34	Grant	Y	N	69	Norton	Y	N	A4	Woodson	N	N
35	Gray	Y	N	70	Osage	N	N	A5	Wyandotte	N	N

USGS Well Use Codes (Bedrock File)

Code	Use
1	Domestic--includes yard and garden watering
2	Stock
3	Irrigation
4	Industrial
5	Public Supply--includes schools
6	Observation
7	None
8	Test
9	Domestic and stock
A	Irrigation and domestic
B	Irrigation, domestic, and stock
C	Irrigation and stock
D	Public supply and industrial
E	Domestic and observation
F	Stock and observation
G	Domestic, stock, and observation
H	Industrial and observation
I	Public supply and observation
J	Commercial--includes resturants, motels, etc.
K	Commercial and observation
L	Irrigation, observation
M	Test and observation
N	Abandoned
R	Pressure release or drainage well
U	Unknown

USGS Use of Water Codes (Water Level File)

Use the same codes that the USGS uses for col. 69, card A of the USGS water level file. These codes follow:

A	Air conditioning	P	Public supply
B	Bottling	R	Recreation
C	Commercial	S	Stock supply
D	Dewatering	T	Institutional
E	Power generation	U	Unused
F	Fire protection	V	Repressurization
H	Domestic	W	Recharge
I	Irrigation	X	Desalination--public supply
M	Medicinal	Y	Desalination--other
N	Industrial, includes mining	Z	Other
		Ø	Unknown

INFORMATION SOURCE CODES (BEDROCK FILE)

0. Shot Hole
1. Drillers' Log (WWC-5)
2. USGS Well
3. Other
4. Drillers' Log (not WWC-5)
5. KGS test hole
6. KGS 89
   KGS 85
   BDR #5
   KGS 88
   KGS 120
   KGS 80
   KGS 65
   KGS 205
   KGS 94
   KGS 207
   KGS Irrigation Series #3

   [KGS & other agency published reports]
7. Measured sections
8. Field inventory (reported data)

APPENDIX II - Sample Runs

SAMPLE RUN

FOR

RETRIEVING WATER LEVEL DATA

Assume — you want to retrieve the water levels for 1984 and 1985 in the GRAHAM county. First find the code for this county in the manual, and type the following at CLI level while working in your current directory.,

```
) :udd:sh.access:access



**********************************************

          GROUNDWATER ACCESS SYSTEM
          === VERSION 2.0 ===

**********************************************
Note - Please consult the user's guide for help.



FILE TO BE ACCESSED ?     1....BEDROCK
                          2....WATER LEVEL


= 2

     THE WATER LEVEL FILE REPORT


ENTER LOCATION INFORMATION ?


= K33
```

LOCATIONS REQUESTED :

#	COUNTY	CODE	TS.1	R.1	SEC.1	$	TS.2	R.2	SEC.2	QUAR
1	GRAHAM	K33	0	0	0					

IS THE ABOVE INFORMATION CORRECT ? (YES/NO)

= Y

DATES OF WATER LEVELS DESIRED ?

= /(84-85)

DATES REQUESTED : ALL OF 1984 THRU 1985

IS THE ABOVE INFORMATION CORRECT ?(YES/NO)

= Y

LIST MENU ?(Y/N)

= Y

DATA DESIRED

0 : THE WHOLE RECORD
1 : SURFACE ELEVATION
2 : BEDROCK ELEVATION
3 : PLOTTER INPUT FORMAT

```
      4   :          INFORMATION SOURCE
      5   :          WATER USE
      6   :          DEPTH TO WATER

ENTER A NUMBER ACCORDING TO THE INFORMATION DESIRED


NOTE ------ ONLY THE 0 OR WHOLE RECORD OPTION IS
CURRENTLY IMPLEMENTED.


= 0


INFORMATION REQUESTED  :  THE WHOLE RECORD


 IS THE ABOVE INFORMATION CORRECT ?(YES/NO)


= Y


OUTPUT DESTINATION CHOICES :     0....LISTING
                                 1....SAVE ON AN ALREADY EXISTING FILE
                                 2....SAVE ON A NEW FILE

DESTINATION DESIRED ?



= 0


ENTER A "FILENAME" FOR THE OUTPUT DESTINATION YOU
HAVE SELECTED.


= FILE84_85
```

```
THE "FILENAME" YOU ENTERED IS: FILE84_85


IS "FILENAME" CORRECT (Y/N) ?


= Y


DATA RETRIEVING TASK BEGINS!!


PROCESS COMPLETED --- BYE.
QUEUED, SEQ=53275, QPRI=137
)
```

This process will provide you all the water levels available in GRAHAM county during 1984 and 1985 on a printout printed with computer services in Moore Hall. The printout looks like as shown on the next pages.

COUNTY	LOCATION	LONGITUDE	LATITUDE	SURF. ELEV.	BEDR. ELEV.	INFO. SRC.	WATER-LEVEL READINGS... DATE & DEPTH TO WATER
K33	6 21 W 19 CDC	-99.70789	39.51015	2305	0	0	12-17-84 100.90
K33	6 22 W 19 CCC	-99.82474	39.50961	2395	0	0	12-17-84 109.00
K33	6 22 W 28 ACA	-99.77567	39.50439	2360	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	6 23 W 12 CCB	-99.84329	39.54051	0	0	0	S **** NO READINGS FOUND FOR THE DATE REQUESTED ****)
K33	6 23 W 13 BBB	-99.84331	39.53688	2340	0	0	12-17-84 57.65
K33	6 23 W 17 CCA	-99.91582	39.52637	2406	0	0	I 12-17-84 70.00
K33	6 24 W 14 AAA	-99.95784	39.53734	2527	0	0	I 12-17-84 116.80
K33	6 24 W 23 BAB	-100.00713	39.50830	2478	0	5	I 3- 6-84 104.70 6- 4-84 99.44 9-10-84 108.93 12-17-84 103.73
K33	6 24 W 29 BAB	-100.02583	39.50830	2510	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	6 24 W 35 DDD	-99.95815	39.48111	2492	0	5	S 3- 6-84 145.41 6- 4-84 145.34 9-10-84 147.30 12-17-84 146.92
K33	6 25 W 12 CCC	-100.06779	39.53912	2538	0	0	12-17-84 142.09
K33	6 25 W 28 CBC	-100.12448	39.49911	2540	0	0	I 3- 6-84 107.67 6- 4-84 105.45 9-10-84 110.34 12-17-84 113.19
K33	6 25 W 35 CCA	-100.08466	39.48283	2512	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	7 22 W 10 BBC	-99.76891	39.46275	2217	0	0	12-17-84 9.35
K33	7 22 W 19 BBB	-99.82513	39.43530	2295	0	0	12-17-84 37.63
K33	7 23 W 17 BBC	-99.91855	39.44839	2430	0	0	I 12-17-84 103.84
K33	7 23 W 36 CCD	-99.84171	39.39368	0	0	0	U **** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	7 24 W 8 CBA	-100.02853	39.45749	2519	0	0	12-17-84 127.75
K33	7 25 W 24 BBB	-100.06854	39.43567	2495	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	7 25 W 33 DDD	-100.10867	39.39383	2502	0	0	I 12-17-84 104.09
K33	8 21 W 17 ABB	-99.68584	39.36346	2035	0	0	3- 6-84 24.56 6- 4-84 23.14 9-10-84 25.70 12-17-84 24.62
K33	8 22 W 18 CDC	-99.82091	39.35016	0	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****)
K33	8 23 W 24 BBD	-99.84193	39.34656	2130	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	8 24 W 23 ACC	-99.96594	39.34325	0	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	8 25 W 24 BAB	-100.06448	39.34856	2302	0	0	I 12-17-84 29.04
K33	9 22 W 19 BBB	-99.82602	39.26134	2416	0	0	12-17-84 96.36
K33	9 24 W 6 DDD	-100.03442	39.29236	2491	0	0	**** NO READINGS FOUND FOR THE DATE REQUESTED ****
K33	9 24 W 12 BCC	-99.95685	39.28520	2461	0	0	I 12-17-84 100.83
K33	9 24 W 22 BAA	-99.98756	39.26158	2491	0	0	12-17-84 93.73
K33	9 25 W 14 DDD	-100.07211	39.26323	2534	0	0	12-17-84 92.24
K33	10 23 W 14 BCC	-99.86378	39.18349	0	0	0	U **** NO READINGS FOUND FOR THE DATE REQUESTED ****

SAMPLE RUN

FOR

RETRIEVING BED ROCK DATA

Assume you want to retrieve the bed rock data for PAWNEE county. First find the county code for PAWNEE in the manual, and the type the followins at CLI level in your current directory.,

```
) :udd:sh.access:access

**********************************************

          GROUNDWATER ACCESS SYSTEM
          === VERSION 2.0 ===

**********************************************
Note - please consult the user's guide for help.


FILE TO BE ACCESSED ?     1....BEDROCK
                          2....WATER LEVEL

= 1

     THE BEDROCK FILE REPORT


ENTER LOCATION INFORMATION ?

= K73
```

LOCATIONS REQUESTED :

#	COUNTY	CODE	TS.1	R.1	SEC.1	$	TS.2	R.2	SEC.2	QUAR
1	PAWNEE	K73	0	0	0					

IS THE ABOVE INFORMATION CORRECT ? (YES/NO)

= Y

LIST MENU ? (Y/N)

= Y

D A T A DESIRED

0 : THE WHOLE RECORD

	ALL	VER	UNVER
SURFACE ELEV.:	1	2	3
BEDROCK ELEV.:	4	5	6

7 : PLOTTER INPUT FORMAT
8 : INFORMATION SOURCE
9 : WELL OWNER
10 : WELL USE

ENTER A NUMBER ACCORDING TO THE INFORMATION DESIRED ?

NOTE ------ ONLY THE 0 OR WHOLE RECORD OPTION IS CURRENTLY IMPLEMENTED.

= 0

INFORMATION REQUESTED : THE WHOLE RECORD

IS THE ABOVE INFORMATION CORRECT ?(YES/NO)

```
= Y

OUTPUT DESTINATION CHOICES :      0....LISTING
                                  1....SAVE ON AN ALREADY EXISTING FILE
                                  2....SAVE ON A NEW FILE

DESTINATION DESIRED ?



= 0


ENTER A "FILENAME" FOR THE OUTPUT DESTINATION YOU
HAVE SELECTED.


= FILEBD


THE "FILENAME" YOU ENTERED IS: FILEBD


IS "FILENAME" CORRECT (Y/N) ?


= Y


DATA RETRIEVING TASK BEGINS!!


PROCESS COMPLETED --- BYE.
QUEUED, SEQ=53278, QPRI=137
)
```

This process will provide you all the bed rock elevations available in PAWNEE county on a printout printed with computer services in Moore Hall. The printout looks like as shown on the next pages.

COUNTY	LOCATION	VER	LONGITITUDE	LATITUDE	SURF. ELEV.	VER	BEDR. ELEV.	VER	INFO. SOURCE	WELL OWNER	WELL USE
K73	20 16 W 3 BBB	V	-99.08621	38.34753	2021	V	1953	V	6	KGS	8
K73	20 16 W 3 BCC	V	-99.08620	38.34209	2010	V	1925	V	6	KGS	8
K73	20 16 W 3 CCC	V	-99.08623	38.33482	2027	V	1931	V	6	KGS	8
K73	20 16 W 18 BBB	V	-99.14101	38.31863	2078	V	2060	V	6	KGS	8
K73	20 16 W 28 CDD	V	-99.09752	38.27676	2031	V	1920	V	6	KGS	8
K73	20 17 W 24 BBB	V	-99.15932	38.30408	2053	V	1980	V	6	KGS	8
K73	20 17 W 27 AAA	V	-99.17990	38.28951	2058	V	1969	V	6	KGS	8
K73	20 17 W 33 AAA	V	-99.19821	38.27493	2069	V	1991	V	6	KGS	8
K73	20 18 W 29 DCC	V	-99.33369	38.27730	2140	V	2132	V	6	KGS	8
K73	20 20 W 34 CDD	V	-99.52032	38.26251	2132	V	2122	V	6	KGS	8
K73	21 15 W 2 CCA	U	-98.94591	38.24959	1930	U	1893	U	6	JACK LOVING	4
K73	21 15 W 4 CAC	V	-98.97983	38.25133	1942	V	1893	V	6	EARL SCHMIDT	8
K73	21 15 W 11 BCA	U	-98.94591	38.24232	1930	U	1882	U	6	KENNETH FISHER	8
K73	21 15 W 11 CBB	V	-98.94817	38.23869	1932	V	1910	V	6	KGS	8
K73	21 16 W 5 AAA	V	-99.09579	38.26047	2026	V	1999	V	6	KGS	8
K73	21 16 W 8 AAA	V	-99.09583	38.24596	2005	V	1932	V	6	KGS	8
K73	21 16 W 8 BDA	U	-99.10497	38.24234	2000	U	1966	U	6	LYNN UNDERWOOD	1
K73	21 16 W 17 AAA	V	-99.09589	38.23145	1999	V	1854	V	6	KGS	8
K73	21 16 W 17 DDH	U	-99.09819	38.22057	1993	U	1856	U	6	FRANCIS DEROO	1
K73	21 16 W 19 DCC	U	-99.12103	38.20427	2015	U	1950	U	6	TERRY RECETTE	1
K73	21 16 W 20 AAA	V	-99.09592	38.21693	1998	V	1862	V	6	KGS	8
K73	21 16 W 21 DCA	U	-99.08228	38.20602	2012	U	1942	U	6	LARNED AIRPORT	1
K73	21 16 W 29 AAA	V	-99.09596	38.20242	2008	V	1926	V	6	KGS	8
K73	21 16 W 31 DDC	V	-99.11656	38.17525	2004	V	1974	V	6	DICK PLOWMAN	1
K73	21 16 W 32 DAC	V	-99.09831	38.17883	2004	V	1982	V	6	FIRST STATE BANK	4
K73	21 16 W 32 DDD	V	-99.09604	38.17522	2000	V	1960	V	6	KGS	8
K73	21 16 W 33 CCA	V	-99.09148	38.17702	1995	V	1967	V	6	C O MAHMELL	4
K73	21 16 W 34 BBB	V	-99.07549	38.18787	1991	V	1926	U	6	GEO WEIMAN	1
K73	21 16 W 34 DBC	V	-99.06639	38.17879	1983	V	1920	V	6	MRS LEONARD FLESKE	8
K73	21 17 W 6 CCC	V	-99.23994	38.24762	2107	V	2087	V	6	KGS	8
K73	21 17 W 18 BBB	V	-99.23994	38.23132	2099	V	2079	V	6	KGS	8
K73	21 17 W 19 BBB	V	-99.23994	38.21684	2096	V	2072	V	6	KGS	8
K73	21 17 W 19 CCC	V	-99.23994	38.20416	2071	V	2044	V	6	KGS	8
K73	21 18 W 5 BBB	V	-99.33145	38.26106	2115	V	2057	V	6	KGS	8
K73	21 18 W 7 AAA	V	-99.33372	38.24657	2095	V	1992	V	6	KGS	8
K73	21 18 W 7 DDD	V	-99.33369	38.23389	2086	V	2003	V	6	KGS	8
K73	21 18 W 10 AAA	V	-99.27882	38.24612	2092	V	2063	V	6	KGS	8
K73	21 18 W 12 BBB	V	-99.25824	38.24596	2097	V	2045	V	6	KGS	8
K73	21 18 W 17 CCC	V	-99.33141	38.21935	2075	V	1961	V	6	KGS	8
K73	21 18 W 29 BBB	V	-99.33138	38.20303	2064	V	1963	V	6	KGS	8
K73	21 18 W 30 BCC	U	-99.34966	38.19772	2062	U	1935	U	6	HOWARD ZOOK	3
K73	21 18 W 30 CCB	U	-99.34966	38.19229	2060	U	1965	U	6	HOWARD ZOOK	3
K73	21 18 W 32 ADD	V	-99.31535	38.18297	2066	V	2021	U	6	SANFORD COOP	1
K73	21 18 W 32 BBB	V	-99.33136	38.18854	2060	V	1948	V	6	KGS	8
K73	21 18 W 32 DAD	V	-99.31535	38.17934	2055	V	1985	U	6	WILLIS EAKEN	4
K73	21 18 W 36 AAA	V	-99.24222	38.18787	2040	V	1975	V	6	KGS	8
K73	21 19 W 17 DDD	V	-99.42467	38.21922	2086	V	2050	V	6	KGS	8
K73	21 19 W 18 DDD	V	-99.44284	38.21915	2096	V	2056	V	6	KGS	8
K73	21 19 W 25 BCB	U	-99.36784	38.19949	2063	U	1943	U	6	RICHARD PROFFITT	1
K73	21 19 W 25 CCC	V	-99.36783	38.19043	2064	V	1964	U	6	BERT METTA	1
K73	21 19 W 28 BBB	V	-99.42236	38.20293	2080	V	1951	V	6	KGS	8
K73	21 19 W 32 AAA	V	-99.42462	38.18845	2077	V	1951	V	6	KGS	8
K73	21 19 W 32 DDD	V	-99.42461	38.17577	2079	V	1977	V	6	KGS	8

COUNTY	LOCATION	VER	LONGITITUDE	LATITUDE	SURF. ELEV.	VER	BEDR. ELEV.	VER	INFO. SOURCE	WELL OWNER	WELL USE
K73	21 20 W 7 DDD	U	-99.55273	38.23355	2123	U	2030	U	6	CECIL STEFFEN	1
K73	21 20 W 9 AAA	V	-99.51608	38.24622	2133	V	2033	V	6	KGS	8
K73	21 20 W 9 DDD	V	-99.51607	38.23355	2111	V	2003	V	6	KGS	8
K73	21 20 W 15 CCC	V	-99.51373	38.21907	2097	V	1977	V	6	KGS	8
K73	21 20 W 17 DDD	V	-99.53436	38.21907	2104	V	2025	V	6	KGS	8
K73	21 20 W 18 BBD	U	-99.56648	38.22993	2127	U	2067	U	6	LAUCK OIL CO.	4
K73	21 20 W 18 CCC	V	-99.56876	38.21906	2122	V	1984	V	6	KGS	8
K73	21 20 W 18 DDD	V	-99.55270	38.21907	2113	V	1997	V	6	KGS	8
K73	21 20 W 19 CCC	V	-99.56871	38.20457	2116	V	1976	V	6	KGS	8
K73	21 20 W 23 BBB	V	-99.49541	38.21727	2095	V	2012	V	6	KGS	8
K73	21 20 W 24 AAA	V	-99.46101	38.21729	2095	V	2065	V	6	KGS	8
K73	21 20 W 24 BBB	V	-99.47707	38.21727	2093	V	2015	V	6	KGS	8
K73	21 20 W 25 ABA	U	-99.46556	38.20280	2086	U	1989	U	6	JOHN THOMPSON	1
K73	21 20 W 25 DAA	U	-99.46098	38.19557	2088	U	1983	U	6	L TINDALL	2
K73	21 20 W 27 CCC	V	-99.51367	38.19012	2124	V	2080	V	6	KGS	8
K73	21 20 W 28 AAA	V	-99.51599	38.20277	2096	V	2003	V	6	KGS	8
K73	21 20 W 28 BAA	U	-99.52516	38.20277	2095	U	2037	U	6	S HINNERGARDT	1
K73	21 20 W 28 CDC	U	-99.52742	38.19011	2132	U	2128	U	6	LOUISE NORMAN	1
K73	21 20 W 29 DDD	V	-99.53430	38.19011	2110	V	2108	V	6	ELMER MUSIL	2
K73	21 20 W 35 ABB	V	-99.48618	38.18832	2092	V	2044	V	6	CHARLES HAGER	2
K73	21 20 W 36 DCD	V	-99.46553	38.17567	2101	V	2085	V	6	TOM SMITH	2
K73	22 15 W 3 AAA	V	-98.95049	38.17339	1970	V	1763	V	6	KGS	8
K73	22 15 W 6 ABD	V	-99.00948	38.17149	1985	V	1900	V	6	MARMIE BROS	8
K73	22 15 W 18 DCA	V	-99.00958	38.13341	1990	V	1892	V	6	ALAN CRANE	8
K73	22 15 W 22 DDA	V	-98.95055	38.11897	1984	V	1926	V	6	STAN COMPTON	8
K73	22 15 W 23 AAC	V	-98.93463	38.12807	1970	V	1885	V	6	H&H FEEDLOT	8
K73	22 15 W 31 DDB	V	-99.00742	38.08990	2015	V	1938	V	6	BOB BOWMAN	8
K73	22 15 W 34 BCA	U	-98.96420	38.09720	2000	U	1947	U	6	A G CRANE	8
K73	22 16 W 4 CCC	V	-99.09380	38.16071	2000	V	1899	V	6	KGS	8
K73	22 16 W 5 AAA	V	-99.09604	38.17340	2000	V	1975	V	6	KGS	8
K73	22 16 W 6 BBD	V	-99.12798	38.17163	2010	V	1977	V	6	MRS RALPH BAIRD	3
K73	22 16 W 9 CCC	V	-99.09384	38.14619	2010	V	1961	V	6	KGS	8
K73	22 16 W 20 AAA	V	-99.09618	38.12987	2036	V	1977	V	6	DALE ZOOK	1
K73	22 16 W 21 BBB	V	-99.09389	38.12987	2032	V	1942	V	6	KGS	8
K73	22 16 W 33 BBB	V	-99.09396	38.10085	2041	V	1854	V	6	KGS	8
K73	22 17 W 7 BBB	V	-99.23993	38.15889	2040	V	1913	V	6	KGS	8
K73	22 17 W 7 CCC	V	-99.23993	38.14621	2040	V	1959	V	6	KGS	8
K73	22 17 W 19 BBB	V	-99.23993	38.12991	2096	V	2012	V	6	KGS	8
K73	22 17 W 21 AAB	V	-99.18971	38.12991	2035	V	1932	V	6	BARGER RANCH	8
K73	22 17 W 21 BBD	U	-99.20113	38.12810	2040	U	2016	U	6	A A BARGER	1
K73	22 17 W 30 BBB	V	-99.23991	38.11543	2097	V	2085	V	6	KGS	8
K73	22 17 W 31 CCC	V	-99.23991	38.08826	2075	V	2050	V	6	KGS	8
K73	22 17 W 33 ACA	V	-99.19203	38.09729	2045	V	1985	V	6	LEONARD FLESKE	8
K73	22 17 W 33 DDD	V	-99.18748	38.08823	2050	V	2033	V	6	KGS	8
K73	22 17 W 36 AAC	V	-99.13501	38.09908	2055	V	1981	V	6	ALLEN CRANE	8
K73	22 18 W 6 DCC	V	-99.34047	38.16139	2067	V	1921	V	6	MARVIN FINGER	8
K73	22 18 W 7 AAA	V	-99.33360	38.15953	2053	V	1944	V	6	KGS	8
K73	22 18 W 7 DDD	V	-99.33359	38.14684	2068	V	1972	V	6	KGS	8
K73	22 18 W 11 CCA	U	-99.27420	38.14825	2041	U	1946	U	6	ART WAGNER	3
K73	22 18 W 12 CDB	U	-99.25365	38.14812	2038	U	1983	U	6	DNB DRILLING	4
K73	22 18 W 14 BBC	V	-99.27647	38.14284	2040	V	1960	V	6	ART WAGNER	1
K73	22 18 W 18 DDD	V	-99.33357	38.13232	2086	V	2040	V	6	KGS	8
K73	22 18 W 19 DDD	V	-99.33356	38.11781	2098	V	2062	V	6	KGS	8

COUNTY	LOCATION	VER	LONGITITUDE	LATITUDE	SURF. ELEV.	VER	BEDR. ELEV.	VER	INFO. SOURCE	WELL OWNER	WELL USE
K73	22 18 W 25 DDD	V	-99.24220	38.10275	2091	V	2047	V	6	KGS	8
K73	22 18 W 31 DDD	V	-99.33353	38.08881	2147	V	2134	V	6	KGS	8
K73	22 19 W 2 DAA	V	-99.37234	38.16685	2080	V	1960	V	6	ALLEN KLEIN	3
K73	22 19 W 4 CCC	V	-99.42230	38.16129	2094	V	2021	V	6	KGS	8
K73	22 19 W 7 ADA	U	-99.44501	38.15581	2107	U	1992	U	6	JAMES SNODGRASS	1
K73	22 19 W 8 DDD	V	-99.42455	38.14680	2098	V	2051	V	6	KGS	8
K73	22 19 W 10 BAA	U	-99.39731	38.15955	2085	U	1976	U	6	DALE JOSEFIAK	3
K73	22 19 W 11 CDB	V	-99.38139	38.14870	2081	V	1921	V	6	JOHN WOELK	8
K73	22 19 W 12 ADB	U	-99.35416	38.15601	2076	U	1920	U	6	ALLEN CONVERSE	3
K73	22 19 W 18 DCA	U	-99.44724	38.13409	2125	U	2071	U	6	DALE JOSEFIAK	8
K73	22 19 W 20 DDD	V	-99.42450	38.11783	2120	V	2070	V	6	KGS	8
K73	22 19 W 32 DDD	V	-99.42445	38.08887	2154	V	2084	V	6	KGS	8
K73	22 20 W 3 CCC	V	-99.51361	38.16116	2165	V	2136	V	6	KGS	8
K73	22 20 W 4 AAA	V	-99.51593	38.17383	2143	V	2117	V	6	KGS	8
K73	22 20 W 15 BBB	V	-99.51357	38.14487	2183	V	2171	V	6	KGS	8
K73	22 20 W 28 AAA	V	-99.51579	38.11591	2163	V	2096	V	6	KGS	8
K73	22 20 W 28 DDD	V	-99.51578	38.10324	2198	V	2137	V	6	KGS	8
K73	23 15 W 1 CCA	U	-98.92783	38.07545	1990	U	1893	U	6	ROGER MURPHY	3
K73	23 15 W 7 DBD	V	-99.00978	38.06270	2025	U	1947	U	6	NORMAN McDOWELL	8
K73	23 15 W 8 ACA	V	-98.99155	38.06815	2015	V	1950	V	6	TEDDY GINGRICH	3
K73	23 15 W 10 BAC	V	-98.96196	38.06999	2011	V	1930	V	6	IRMA SMITH	8
K73	23 15 W 12 BCB	V	-98.93010	38.06821	1991	V	1915	V	6	M D PINKSTON	3
K73	23 15 W 23 DBD	V	-98.93695	38.03374	2006	V	1824	V	6	EUGENE GRIZZELL	3
K73	23 15 W 24 DDB	V	-98.91644	38.03194	2000	V	1908	V	6	ROGER MURPHY	3
K73	23 15 W 25 ABD	V	-98.91872	38.02649	1985	V	1908	U	6	TED GUYER	3
K73	23 15 W 25 CAB	V	-98.92555	38.02104	1990	V	1910	V	6	ENGLISH FARMS	3
K73	23 15 W 28 ABD	V	-98.97340	38.02644	2010	V	1952	V	6	TERRY SALLEE	8
K73	23 15 W 29 BDB	V	-98.99849	38.02463	2045	V	1955	V	6	LEE TURNER	8
K73	23 15 W 29 CCA	V	-99.00079	38.01736	2045	V	1958	V	6	LEE TURNER	8
K73	23 15 W 31 ABD	U	-99.00992	38.01193	2055	U	1977	U	6	CHARLES PERRIER	3
K73	23 15 W 32 AAA	V	-98.98711	38.01375	2024	V	1903	V	6	KGS	8
K73	23 15 W 32 BBB	V	-99.00307	38.01373	2045	V	1931	V	6	KGS	8
K73	23 15 W 36 AAA	V	-98.91415	38.01379	1984	V	1873	V	6	KGS	8
K73	23 16 W 1 AAC	U	-99.02563	38.08444	2020	U	1935	U	6	MILFORD ZOOK	8
K73	23 16 W 2 DDD	V	-99.04163	38.07358	2061	V	1976	V	6	KGS	8
K73	23 16 W 3 DCC	U	-99.06670	38.07361	2035	U	2010	U	6	A W SCHARTZ	1
K73	23 16 W 6 CBD	V	-99.12823	38.07730	2060	V	1983	V	6	KENT FRICK	8
K73	23 16 W 8 CBB	U	-99.11230	38.06459	2065	U	2005	U	6	STERLING DRILLING CO.	4
K73	23 16 W 9 BBB	V	-99.09406	38.07182	2045	V	1920	V	6	KGS	8
K73	23 16 W 9 DCC	U	-99.08498	38.05911	2040	U	2002	U	6	HUSKY DRILLING CO.	4
K73	23 16 W 11 BAC	V	-99.05304	38.06998	2031	V	1997	V	6	NORMAN McDOWELL	3
K73	23 16 W 13 ACA	V	-99.02802	38.05362	2035	V	1970	V	6	JIM CAMPBELL	8
K73	23 16 W 13 DBD	V	-99.02805	38.04819	2034	V	1959	V	6	JIM CAMPBELL	8
K73	23 16 W 16 DAA	U	-99.07817	38.05003	2057	U	2007	U	6	STERLING DRILLING CO.	4
K73	23 16 W 20 AAC	V	-99.09869	38.04099	2060	V	2007	V	6	DONALD MARTIN	8
K73	23 16 W 20 BCA	V	-99.11011	38.03918	2064	V	2004	V	6	DONALD MARTIN	3
K73	23 16 W 21 BAB	U	-99.08958	38.04280	2055	U	2015	U	6	STERLING DRILLING CO.	4
K73	23 16 W 21 BHB	V	-99.09415	38.04280	2055	V	1962	V	6	KGS	8
K73	23 16 W 24 ADB	U	-99.02579	38.03912	2040	U	1970	U	6	KS INVEST PROPERTIES	4
K73	23 16 W 33 ACA	V	-99.08284	38.01015	2070	V	1994	V	6	STEVE HAMMEKE	8
K73	23 16 W 33 BBB	V	-99.09422	38.01378	2063	V	1974	V	6	KGS	8
K73	23 17 W 6 CCC	V	-99.23991	38.07378	2062	V	2010	V	6	KGS	8
K73	23 17 W 8 DAA	V	-99.20575	38.06468	2085	V	2046	V	6	L E MARLETT	3

COUNTY	LOCATION	VER	LONGITITUDE	LATITUDE	SURF. ELEV.	VER	BEDR. ELEV.	VER	INFO. SOURCE	WELL OWNER	WELL USE
K73	23 17 W 8 DDA	V	-99.20573	38.06107	2085	V	2045	U	6	L E MARLETT	3
K73	23 17 W 15 CBD	V	-99.18297	38.04836	2090	V	2021	V	6	WENDELL FERTIG	8
K73	23 17 W 15 CDB	V	-99.18069	38.04652	2090	V	2021	V	6	WENDELL FERTIG	8
K73	23 17 W 18 ABB	V	-99.23080	38.05746	2075	V	1996	V	6	KGS	8
K73	23 17 W 18 DCC	V	-99.23080	38.04478	2093	V	1994	V	6	KGS	8
K73	23 17 W 30 CBB	V	-99.23991	38.02126	2115	V	2097	V	6	DAVE WELCH	1
K73	23 17 W 30 DDD	V	-99.22398	38.01579	2107	V	2035	V	6	KGS	8
K73	23 17 W 32 DDD	V	-99.20578	38.00127	2117	V	2048	V	6	MARK GREENE	8
K73	23 17 W 33 ACA	V	-99.19212	38.01030	2105	V	2021	V	6	ART WAGNER	8
K73	23 18 W 7 DDD	V	-99.33348	38.05978	2197	V	2129	V	6	KGS	8
K73	23 18 W 19 DDD	V	-99.33344	38.03078	2151	V	2103	V	6	KGS	8
K73	23 18 W 24 BBA	V	-99.25587	38.04308	2082	V	2064	V	6	KGS	8
K73	23 18 W 28 DAD	V	-99.29694	38.01971	2102	V	2051	V	6	KGS	8
K73	23 18 W 29 CCC	V	-99.33115	38.01625	2115	V	2066	V	6	KGS	8
K73	23 18 W 31 DDD	V	-99.33340	38.00175	2121	V	2054	V	6	KGS	8
K73	23 19 W 20 DDD	V	-99.42438	38.03093	2211	V	2186	V	6	KGS	8
K73	23 19 W 33 CCC	V	-99.42204	38.00195	2198	V	2118	V	6	KGS	8
K73	23 20 W 15 BBB	V	-99.51338	38.05800	2319	V	2253	V	6	KGS	8
K73	23 20 W 22 CCC	V	-99.51332	38.03085	2274	V	2245	V	6	KGS	8