

4.7 Data Display

4.7.1 Daily-Values

See [Section 4.6.4](#) for the description of Daily-Values Tables.

4.7.2 Print/Display Unit-Values Tables (UV_TABLE)

by Glenn B. Engel

The UV_TABLE program allows the user to display the values stored in the Unit-Values tables in tabular form. Unit-Values may be displayed or sent to a file or printer. All types of Unit-Values (Measured, Edited, Corrections, Shifts, and Computed) may be displayed.

Program Operation

Using the standard ADAPS start-up screens, the user selects a single station and parameter or a group of stations and parameters, the starting and ending dates, and the destination of the tables (user's terminal, specified file, or specified printer).

After all parameters are set, the program displays a list of the tabling options the user can change, with the default values shown. The user is allowed at this point to change tabling options, restart the program to select new parameters, quit the program, or enter <CR> to create the Unit-Values table with the selected options indicated. The available tabling options are discussed below.

NOTE: If the user selects output to a file or printer, the program will not generate one table, store or print the results, and then close out the file or print the table. Instead, the program will generate tables and store them into temporary files until the user exits the program or selects a new output destination or file name. At this point, the generated tables are copied into the final output file or sent to the printer, and the temporary files are closed out and deleted. The user may select other parameters (station, DD, dates, UV type, table type, etc.) without closing out the temporary files used.

This feature allows the user to generate a series of tables with related information and store them into the same file for archival or tracking purposes. For example, the user could run a series of tables with different options selected (table type, UV type, dates, DDs) covering a group of related UV data, and build a sequence of reports listing the actual measured, edited, and computed UVs, as well as an inventory table for each UV type. Closing out the sequence by quitting the program (“QU” or “EX”), selecting a new output destination (“US”, then “OT”), or a new output destination filename (“US”, then “OF”) will then store all the report tables into a single file.

TY – UV TYPE

This option provides the choice of viewing any of six unit-values types.

The available unit-values types are:

1. Raw Measured Unit-Values
2. Measured Unit-Values
3. Edited Unit-Values
4. Correction Unit-Values
5. Shift adjustment Unit-Values
6. Computed Unit-Values

The default on entering the program is to view “computed Unit-Values” data. Entering “TY” allows the user to change the type of Unit-Values viewed. Under measured Unit-Values, if there are multiple sets of measured Unit-Values with different transport codes and sensors, the user will be given a list from which to select the desired choice. If there is only one set of measured UVs, the choice is displayed and is automatically selected for the user.

NOTE: If there is a type 0 (Conversion Of Input) rating to convert the actual recorded data to another format for display or processing (such as converting dial units from an ADR to engineering units), the “Measured Unit-Values” will reflect that conversion. If the user wishes to display the actual Unit-Values before conversion (to see the actual dial units, for example) the option “Raw Measured Unit-Values” must be selected.

After selecting the Unit-Value type, the user is returned to the tabling option menu.

TB – TABLE TYPE

UNIT-VALUES TABLE TYPE

0 UNIT-VALUES INVENTORY TABLE
1 STANDARD UNIT-VALUES TABLE
2 COMPRESSED UNIT-VALUES TABLE
3 ON-HOUR HOURLY ONLY UNIT-VALUES TABLE

This option allows selecting the type of Unit-Values table to be displayed. The default is Type 2, “Compressed Table.” Descriptions of the available Unit-Values (UVs) table types are:

UNIT-VALUES INVENTORY TABLE:

This option generates a table, which shows 12 columns for each of the months in a water year, with a row for each day’s data. The standard report header shows station, user and selected parameter information. Each entry for a day shows the number of UVs of the selected type in the database for that day, along with flags to indicate the Data Aging status of the UVs, whether

the day is flagged as a partial day, and other flags that may be set for the data to indicate editing status, “Affected” status, and other conditions. The Partial Day flagging is based upon the daily-values abort time limit stored in the processor record. Descriptions of codes and symbols are printed at the bottom of the report.

STANDARD UNIT-VALUES TABLE:

This option generates a table with the standard report header showing station, user and selected parameter information. The generated table shows the UV data values, each with the associated time, and the screening/source codes, one day per page. Descriptions of the associated codes are listed at the bottom of each page.

COMPRESSED UNIT-VALUES TABLE:

This option generates a table with the standard report header showing station, user, and selected parameter information. The generated table shows the UV data values, each with the associated time, and the screening/source codes. The main difference from the Standard Table is that the Compressed table puts as many days on one page as will fit, and the descriptions of the screening codes are printed at the end of the entire report, rather than the bottom of each page.

ON-HOUR HOURLY ONLY TABLE:

This option generates a table with the standard report header showing station, user and selected parameter information. The generated table shows a count of the total number of UVs for each day, but displays only those UV data values and screening/source codes that fall exactly on the hour (all other data values are ignored). Descriptions of the screening codes are printed at the end of the report.

CU – UV UNITS

This option allows the tabling of the unit-values converted to different units than as stored. A list of available conversions for each parameter being tabled is displayed, along with an option for a user-defined conversion. If the user-defined conversion is chosen, the elements of a conversion equation and a label to be used for identifying the conversion units must be given.

RN -- ROUNDING

This option is used to “toggle” between the normal rounding for the UVs displayed and the rounding being suppressed for the Unit-Values table. When rounding is suppressed, an additional level of precision (one decimal place) is displayed on the output table.

4.7.3 Plot Hydrographs (HYDROGRAPH)

by David L. Kresch

The HYDROGRAPH program produces single or multiple water-year plots of daily-values for a single station. To access the HYDROGRAPH program, select the DI sub-menu from the main ADAPS menu, and then select the “Plot Hydrographs” option.

Introduction

The program runs interactively and produces hydrographs using Tkg2, a USGS graphics package. Up to four water years of data may be overlaid on a single plot. The Y (vertical) axis may be either logarithmic or linear.

Program Operation and Options

The program initially calls the ADAPS startup program in which the user specifies the station, data descriptor, and water year(s) to be retrieved. The period of record to be retrieved is indicated by entering starting and ending years. A period-of-record retrieval is specified by entering a <CR> for both the starting and ending years.

The following menu of plotting options is available:

FO – Form Choice. The user is asked to select the desired one- or two-frame plots and the desired scale (11x8.5, 17x11, or 34x22) of the plots.

NF – Plots per frame (if more than one water year of data is to be plotted). A maximum of four plots per frame is allowed.

MS – Plot Measurements. This option, which is available if only one water year of discharge data is being plotted per frame, allows the user to overlay a plot of measured discharges on the hydrograph. The discharges of the measurements are obtained from the discharge measurement file.

MN – Plot Measurement Numbers. If measured discharges are plotted, this option allows the user to annotate them with discharge measurement numbers.

LP – Axis Type. The user is given the choice of a linear or logarithmic Y (vertical) axis.

PN – Lift Pen for Missing Data. The user can select whether or not to have the plotter pen lift for missing days of record.

IY – The user is asked whether or not to invert the Y (vertical) axis.

GR – The user can select from three grid options (none, sparse, or dense). The grid option selected also affects the density of tick marks and dates that will be printed along the X-axis.

DA – The user is given the option of placing tick marks on the vertical axes of discharge hydrographs to show the value of the contributing drainage area.

After all desired plotting options are selected, the user is asked whether he or she wants to output the hydrographs to the screen or to a file. After a selection is made, the desired hydrographs are either printed to the screen or saved in a file. Output directed to the screen can then be saved to a file or sent to a printer, if desired.

The characteristics of hydrographs output to the screen can be edited by the user. The dialog boxes used for editing can be accessed in two ways. The simplest way is just to double click on

the plot or desired axis. The other way is to use the Plot menu button to select the plot and then use it again to select the desired editor (plot, X-Axis, Y-Axis, or Y2-Axis). A common modification that a user may want to make is to increase or decrease the number of tick marks and dates that are labeled along the X-axis. This can be done by changing the Label Density setting on the Axis Parameters tab of the X-axis editor. The number of grid lines on the plot may be modified using the Grid and Origin tab.

4.7.4 Plot Time-Series Data (PLOTWAT)

The PLOTWAT program allows the user to display and analyze time-series data. To access the PLOTWAT program, select the DI sub-menu from the main ADAPS menu, and then select the “Plot Time-Series Data” option.

Introduction

In the course of analyzing time-series hydrologic data, either when computing the data or when performing hydrologic studies, it is important to be able to review the data graphically. It is also important to be able to compare data from different locations graphically, or to compare several different types of data for a single location or for several locations.

Program Capabilities

The display and analysis program, called PLOTWAT, is an interactive program that provides the capability of plotting multivariate or univariate time-series data taken from the Unit, Daily, or Measurement/Crest Stage Gage (CSG) ADAPS files. Tkg2, a USGS graphics package, is used to produce the program displays. PLOTWAT can plot up to 32 time-series simultaneously. Multiple time-series can be plotted on a single plot or on a series of plots, drawn side by side.

Program Operation

Program PLOTWAT, initially displays the following main plotting options menu:

```
*****
* PLOTWAT Main Plotting Options Menu *
*****
R) Specify or modify ADAPS time series retrieval parameters,
L) Load previously saved parameters,
C) Clear current parameters (change database),
Q) Quit PLOTWAT.

Enter your selection:
```

The user should select option R to either create a new file of time-series parameters to plot or to modify an existing parameter file. The user should select option L to use the parameters saved in a previously created file.

If option R is selected, the ADAPS multiple retrieval menu is displayed. The user should begin by selecting option A)dd, which displays a menu from which the user selects the type of data (Daily-Value, Unit-Value, or measurement/CSG) that is desired to have plotted. Once the type of data has been selected, a second menu is displayed from which the user may select desired preferences and options. The third and final menu (ADAPS User Information screen) displayed for each type of data selected is used to identify the station (ST) for which data values are to be plotted. The user must also select the desired data descriptor (DD) and statistic code (SC) from this menu for daily-values plots and the desired data descriptor for unit-values plots. A <CR> returns the user to the multiple retrieval menu from which more time-series parameters can be added or the user may quit.

The following expanded main plotting options menu is displayed after the user exits the multiple retrieval menu:

```
*****
* PLOTWAT Main Plotting Options Menu *
*****

R) Specify or modify ADAPS time series retrieval parameters,
L) Load previously saved parameters,
C) Clear current parameters (change database),
P) Plot the time series data,
I) Specify or modify specific time series plotting parameters,
G) Specify or modify global plotting parameters,
T) Edit time series labels,
M) Set data modification parameters,
S) Save current parameters,
Q) Quit PLOTWAT.

Enter your selection:
```

The menu for Option I of the main plotting options menu is displayed below:

```

* PLOTWAT Individual Retrieval Plotting Options Menu *
*****

Retrieval number:          1
File type:                ADAPS.DV
Location or site:         12301300

                               DD=  2
                               00060
N) Minimum Value:         0
I) Plotting Interval      ** DOUBLE CLICK ON Y AXIS **
M) Maximum Value:         0
W) Plot Height (in):      ** USE MAIN MENU G->O **
L) Log or Linear Plot:    LINEAR
T) Plot type:             LINE
S) Symbol (or Bar) Number: 0
C) Plotting Color:        1
D) Dotted, Dashed or Solid: ** NOT SUPPORTED YET**
U) Normal or Reversed Axes: NORMAL
P) Plot,                  (<) Scroll left,  (>) Scroll right,
Q) Return to main menu

Enter your selection:

```

All of the options in this menu have default settings when it is first opened. As can be seen, a wide variety of plot specifications can be modified from this menu. The default setting for an option can be modified by entering the capital letter corresponding to it. Some options, such as L (Log or Linear Plot) and U (Normal or Reversed Axes), which have only two choices, simply toggle back and forth each time they are selected. Option T (Plot type) gives the user a choice of four different plot types (line, bar, step, and point) to select from. A step plot, one of the plot type options, is similar to a line plot except that instead of connecting each pair of consecutive values with a line, the values are connected with two lines, a vertical line followed by a horizontal line. Step plots are appropriate when values being plotted are based on a statistic computed for each time interval. Step plots preserve the timing of the data and also clearly show that the data are non-instantaneous.

The menu for option G of the main plotting options menu is displayed below. This menu is used for setting the global specifications for plots. Once the starting and ending dates for a plot have been entered using option D, the plot can be generated from any menu in which the plot option appears without needing to re-enter the dates. The resulting plot, which is displayed on the screen, can be saved to a file or sent to a printer, if desired.

```

*****
* PLOTWAT Global Plotting Options Menu *
*****

D) Dates plotted are: mm-dd-yyyy to mm-dd-yyyy
O) The plotting output device is:
   X-Windows Print 11x8.5
L) The time axis length (inches) is optimized.  ** USE OPTION O ABOVE **
H) The character height is 0.14                 ** CHANGE ON PLOT **
M) Multiple or single plots? Single
S) Multiple or single scales? Single           ** NOT SUPPORTED YET **
G) Grid lines:  NONE
P) Plot the time series data.
Q) Quit this menu and return to the main menu.

Enter your selection:

```

Option G of the global plotting options menu is used to select either none, sparse, or dense grid lines. The grid option selected also affects the density of tick marks and dates that will be printed along the X-axis.

Option M (Set data modification parameters) of the main plotting options menu allows the user to perform several types of transformations on data, such as time lagging.

After all the desired plotting options have been selected, option P is selected from any menu to display the plot to the screen. The characteristics of the plot can be edited by the user. The dialog boxes used for editing can be accessed in two ways. The simplest way is just to double click on the plot or desired axis. The other way is to use the Plot menu button to select the plot and then use it again to select the desired editor (plot, X-Axis, Y-Axis, or Y2-Axis). A common modification that a user may want to make is to increase or decrease the number of tick marks and dates that are labeled along the X-axis. This is done by changing the Label Density setting on the Axis Parameters tab of the X-axis editor. The number of grid lines on the plot may be modified using the Grid and Origin tab.

Having specified retrieval and plotting information during a PLOTWAT session, the user can save this information to a Tkg2.plotting.parameters file for later analyses. Because PLOTWAT interfaces directly to the ADAPS system, it is easy to interactively plot different types of data and examine data from different time periods without having to move data from one software program to another.

4.7.5 Display Instrument, IN_DISP

by Glenn B. Engel

Note: This feature is only used at sites that have ADRs.

The IN_DISP program displays and/or prints the contents of Instrument (IN) file records and their associated Data Descriptor (DD) and Processor (PR) records, if any exist.

In order for ADAPS to process data from an Analog Digital Recorder (ADR), an Instrument file record must exist for each instrument installed in the field. This record is entered and maintained by the local ADAPS Database Administrator (ADBA). The IN_DISP program allows other users to display and/or print the contents of the Instrument file records and their associated Data Descriptor and Processor records.

The IN_DISP program first goes to the ADAPS startup menu, Current User Information, for selecting a database, station, and output destination. The IN_DISP option menu is then presented, with the following available options:

DI - DISPLAY INSTRUMENT RECORD(S) - This option displays the contents of the selected IN record to the selected output destination. The user can choose to display the current instrument selected (default is the current operating instrument) or display all instruments. The selected instrument will be displayed, followed by a display of DD record contents, processing information, and screening thresholds for the channels of the instrument records.

LI - LIST ALL INSTRUMENTS FOR THIS STATION - This option displays a list of instruments available for the previously selected station to the selected output destination. (**Note:** If output to a printer or to a file has been selected, the list of instruments will NOT be displayed on the terminal.)

CH - CHANGE TO DIFFERENT INSTRUMENT - This option presents a list of available instruments to display.

US - RE-START PROGRAM, DISPLAY USER INFORMATION - This option returns to the ADAPS start-up menu for changing of database, station, and output destination.

QU - QUIT THIS PROGRAM - This option exits back to the ADAPS menus.

EX - EXIT ADAPS PROGRAMS - This option exits ADAPS and returns to UNIX.

4.7.6 Display Data Descriptor, DD_DISP

The DD_DISP program displays and/or prints the contents of Data Descriptor (DD) records and their associated Processor (PR) records, if any exist.

To store ADAPS data, a Data Descriptor record must exist for each separate “set” of information stored. To process data through the primary processing program, an associated processor record must also exist. These records are entered and maintained by the local ADAPS Database Administrator (ADBA). The DD_DISP program allows other users to display and/or print the contents of the Data Descriptor records and their associated processor records.

The DD_DISP program first goes to the ADAPS startup menu, Current User Information, for selecting the database, station, and output destination. The DD_DISP option menu is then presented, with the following available options:

DI - DISPLAY OF DD RECORD(S) - This option displays the contents of the selected DD record to the selected output destination. If no DD has yet been selected, a list of available DDs is presented. The selected DD will be displayed, followed by its associated processing information and screening thresholds, if available. If the DD is used to calculate another DD, that DD and its associated processing information and screening thresholds are also displayed.

LI - LIST OF DDs FOR A STATION - This option displays a list of DDs available for the previously selected station to the selected output destination. (**Note:** If the user has selected output to a printer or to a file, the list of DDs will NOT be displayed on the terminal.)

CH - CHANGE TO A DIFFERENT DD RECORD - This option presents a list of available DDs to display.

US - RESTART PROGRAM, DISPLAY USER INFORMATION - This option returns to the ADAPS start-up menu for changing of database, station, and output destination.

QU - QUIT THIS PROGRAM - This option exits back to the ADAPS menus.

EX - EXIT ADAPS PROGRAMS - This option exits ADAPS and returns to UNIX.

4.7.7 Display Measurements (MS_EDIT)

The MS_EDIT program allows the user to update and display measurements, however only certain options are available to display the data and restrictions are in place so that the full MS_EDIT menu, which includes functions for adding to and updating the database, is not available to non-USGS users (Cooperator access). The full MS_EDIT menu was explained in [Chapter 4.4](#), so only the display functions will be explained here.

The program allows the user to list and retrieve/print discharge measurement data, crest-stage gage (CSG) inspection data, and gaging station inspection data.

The program has menu options that appear on the screen. The available options for the full menu are:

- 0 - Change setup specifications.
- 1 - Manually enter measurement/inspection data.
- 2 - AquaCalc enter measurement/inspection data.
- 3 - Update measurement/inspection data.
- 4 - Delete measurement/inspection data.
- 5 - List measurement/inspection data.
- 6 - Retrieve/print measurement/inspection data.

Only the options 0, 5, and 6 are used for displaying data and will be described in the following

sections.

Change Setup Specifications - This option restarts the program and at the ADAPS startup screen (Current User Information) allows the user to change information such as station ID, pathnames, and output medium.

List Measurement/Inspection Data - This option prints a summary of all discharge measurements, CSG inspection data, and gaging station inspection data stored for a single station or for a group of stations. The summary display is a list showing measurement number and date for all measurements stored for the station. This summary can be printed on a line printer or at a terminal. After all printing/display is finished, the user is returned to the program menu level.

Retrieve/Print Measurement/Inspection Data - This option retrieves and prints discharge measurement, CSG inspection data, and gaging station inspection data in a tabular format, either on a line printer or a terminal. The user can retrieve/print data for a single station or for a group of stations. Following is a list of steps to retrieve/print data:

1. Enter data type (1 = Discharge measurement/gaging station inspection, 2 = CSG inspection, 3 = Both types).
2. Enter a starting 4-digit water year. If a water year is not specified, data retrieval is not based upon water year and steps 3 and 4 below are bypassed. If an 8888 is entered, all stored information for the selected data type(s) is retrieved, and steps 3-6 are bypassed.
3. Enter an ending 4-digit water year. If not specified, it will match the starting water year.
4. Choose whether or not data retrieved for a given water year should also include any data stored within 3 months of the end of the water year (July to September of the previous water year, or October to December of the succeeding water year).
5. If discharge measurement data are being retrieved, enter minimum and maximum measurement numbers, separated by a comma. If not specified, the data retrieval is not based on a minimum and maximum measurement number range.
6. Enter the minimum discharge value (cfs) to be retrieved. If not specified, the data retrieval is not based on a minimum discharge value.
7. Two report formats are available: a relatively long format which includes all the fields stored for a particular measurement, and a shorter format which includes the fields as recorded on Form 9-207. Enter choice of format at this time. Also, an option is provided to omit gage inspections from the report.
8. If a multiple station retrieval is selected, wait while the program searches the Site File to find the stations that satisfy the retrieval specifications. If no stations are retrieved, an error message is displayed. Otherwise, the number of sites retrieved is displayed. If the user does not print the data for the retrieved sites, the program exits to the program menu level.

For each selected station number, the program checks which stored measurement or inspection data satisfies the given retrieval specifications. The data that satisfies the specifications are printed in tabular format. When printing CSG inspection data tables, the

program uses any stored upstream and downstream readings and pin elevations to compute, if possible, upstream and downstream peak gage heights. After all printing is finished, the user is returned to the program menu level.

4.7.8 Display Rating Table Dates

by James M. Caldwell

The display menu allows the user to view the start and end dates of a given rating for a given station. This display is not an expanded table of the rating.

Valid rating types are:

- Conversion of input
- Standard rating
- Stage-fall (slope) rating
- Fall/discharge ratio rating
- Stage-area rating
- Stage-velocity correction factor rating
- Deflection-velocity rating
- Conversion of auxiliary input

Note: in ADAPS 4.2, multi-parameter ratings have been removed from the input parameter to the computed parameter. For example, with stage-discharge ratings, the data descriptor used is discharge.

To display the rating table dates select “Display Rating Table Dates” from the DI-Display menu (RT_DATES). In the “Current User Information” menu verify or change DB-database, AG-agency, ST-station, DD-data descriptor and YR-year options as needed. The output (OT – output to) should also be specified. Options are: to file, to terminal, or to a printer. If outputting to a file the file path can be specified with PA.

After these items have been specified, a carriage return will display a table with the rating ID numbers associated with the given data descriptor and the starting and ending dates for those ratings. If a rating does not exist for the given data descriptor no table will be displayed and an option to list more ratings (Y/N DEFAULT=Y) will be displayed.

4.7.9 Display Ratings

The display menu allows the user to view a given rating for a given station.

Valid rating types are:

- Conversion of input
- Standard rating
- Stage-fall (slope) rating
- Fall/discharge ratio rating
- Stage-area rating
- Stage-velocity correction factor rating

- Deflection-velocity rating
- Conversion of auxiliary input

NOTE: In ADAPS 4.2 and later releases with standard ratings or stage-discharge ratings, the data descriptor used is discharge.

To display a rating, select “Display Ratings” (RT_DISPLAY) from the DI-Display menu. In the “Current User Information” menu verify or change DB-database, AG-agency, ST-station, DD-data descriptor and YR-year options as needed. The output (OT – output to) should also be specified. Options are: to file, to terminal, or to a printer. If outputting to a file the file path can be specified with PA.

After these items have been specified, a carriage return will display a rating selection list. This list displays the ratings available. The currently active rating is flagged with a “*”. If a rating does not exist for the given data descriptor the DI submenu is displayed.

Select the desired rating and carriage return:

EP - Rating Expansion: No
CU - Units Conversion: No

DI - Display rating table
RD - Output Rating in RDB format

**Enter option desired or key [CR] to
return to main rating**

One of the options in the rating table program is to expand a rating - EP. The rating expansion can also be obtained using the menu option PR “Update/Display Rating Tables.” The rating expansion program automatically expands a rating from its descriptors (input points that define the rating). Actual rating input points are indicated by asterisks (*) after their table values. The program also computes (expands) values for an Equation-type rating. The expanded rating is output to the device selected in the Startup menu (i.e., terminal, file, or printer).

Standard defaults may be overridden by the user by specifying the increment desired and indicating that standard precision be used. With standard precision, values are displayed with fewer digits of precision as determined by the rounding stored in the Parameter Code File.

Unless special alternate rounding has been stored with the Data Descriptor record, the expanded rating table applies standard parameter code rounding, plus one for the expanded rounding (except for discharge). For discharge, the recommended significant figures for rounding in expanded rating tables are as follows:

DISCHARGE RANGE	RATING TABLE (STANDARD)	RATING TABLE (EXPANDED)
<0.01	0	1
0.01-0.1	1	2
0.1-1	2	3
1-10	2	3
10-100	3	4
>100	3	4

If the desired rating to be expanded is an Equation-type, the program queries the user for a minimum and maximum value to use in the computation (expansion). These minimum and maximum values define the lower and upper boundary values for which the computations (expansion) are done by the equation.

In addition, if the user has selected the output to go to a file in the Startup/Selection menu, the expanded rating table for the standard stage discharge rating type 1 will include a banner with blanks for filling in notes on the rating curve development.

Choosing CU- Units Conversion from the menu above brings up the following menu:

<p>Units Conversion of Rating Points Options</p> <p>IN – Input Parameter: None</p> <p>OU – Output Parameter: None</p> <p>Enter option desired or key [CR] to continue:</p>
--

Input parameter is gage height with a standard rating and the choices are to convert from feet to meters, or to a user-supplied conversion (or leave as feet by not typing IN).

Output parameter is discharge with a standard rating and the choices are to convert from cubic feet/second to any of the following from the list provided after typing OU:

- 1 ACRE-FT/DAY
- 2 ACRE-FT/HOUR
- 3 ACRE-FT/MIN
- 4 ACRE-FT/s
- 5 CUBIC METERS/S
- 6 CUBIC METERS/M
- 7 CUBIC METERS/H
- 8 CUBIC METERS/D
- 9 MGD
- 10 GALLONS/DY
- 11 GALLONS/HOUR
- 12 GALLONS/MIN
- 13 GALLONS/S
- 14 LITERS/DAY
- 15 LITERS/HOUR
- 16 LITERS/MINUTE
- 17 LITERS/S
- 18 USER SUPPLIED CONVERSION

These conversion options can be converted to “None” simply by retyping IN or OU again in the conversion menu. If no expansions or conversions are chosen the “DI” option to display the rating will display the input points for the rating as in the example below:

```

STATION NUMBER 01010000 St. John River at Ninemile Bridge, Maine SOURCE AGENCY USGS
LATITUDE 464200 LONGITUDE 0694259 NAD27 DRAINAGE AREA 1341.00 DATUM 931.26 NGVD29 STATE 23 COUNTY 003
Date Processed: 2002-04-19 08:50 By jmcald
Rating for Discharge (well-DCP), in cfs
RATING ID: 5.0 TYPE: stage-discharge EXPANSION: logarithmic STATUS: approved record
Created by sbarthol on 09-05-2001 @ 12:40:26 EDT, Updated by sbarthol on 09-05-2001 @ 12:40:26 EDT
Remarks: New low end and refinement of high end of rating 4
    
```

BASED ON _____ DISCHARGE MEASUREMENTS, NOS _____, AND _____, AND IS _____ WELL DEFINED BETWEEN _____ AND _____ CFS
 COMP BY _____ DATE _____ CHK. BY _____ DATE _____

Stream stage, feet	Dis-charge, cfs	Stream stage, feet	Dis-charge, cfs	Stream stage, feet	Dis-charge, cfs	Stream stage, feet	Dis-charge, cfs	Stream stage, feet	Dis-charge, cfs
0.50	80	0.98	230	2.09	1000	4.90	6650	8.20	20000
0.62	110	1.20	330	2.55	1550	5.60	8960	8.80	23000
0.76	150	1.35	410	3.20	2550	6.00	10400	10.00	30000
0.82	170	1.65	616	3.60	3300	7.00	14500	11.00	36000
0.92	205	1.90	824	4.40	5200	7.80	18000	13.05	50000

LOG OFFSETS

Breakpoints: --- --- --- ---
 Offsets: --- --- --- ---

Rating Type: ID	Starting Date	Rating Type: stage-discharge	Ending Date	Comments
5.0	10-01-1993 @ 01:00:00 EDT	12-30-2382 @ 19:00:00 EST		

Another output option is the RDB (relational-database) format. These are tab-delimited ASCII files, which can be used for other applications ([see section 6.4](#)). After choosing the DI option in the rating menu choose “RD – output rating in RDB format.” The next prompt is for a file name. The output (OT – output to) should be specified in the “Current User Information” menu at the initial startup. Options are: to file, to terminal, or to a printer. If outputting to a file, the file path can be specified with PA

4.7.10 Plot Ratings (RATPLOT)

by Addis M. Miller, III

The RATPLOT program plots ratings, along with selected measurements, on blank or pre-printed forms after first plotting to the terminal screen where the user can develop the plot for the desired presentation. To access the RATPLOT program, select the DI sub-menu from the main ADAPS menu, and then select the option "Plot Ratings (RATPLOT)."

Introduction

The RATPLOT program plots ratings on pre-printed forms or blank paper. When printed on blank paper the program draws the grid lines. Both the log-log and rectilinear parts can be plotted. The program plots on the large (4 cycles by 3 cycles) or small (3 cycles by 2 cycles) pre-printed rating forms. Optionally, selected measurements can be plotted on the rating curve. Tkg2, a USGS graphics package, is used to produce the program displays.

Program Operation and Options

The RATPLOT program operates interactively. From the ADAPS startup menu select the database, agency code, station, and data descriptor where the rating is stored. Ratings are tied to the output DD in ADAPS 4.2. When the RATPLOT program is executed, it lists the available ratings for plotting and indicates which rating is currently active. After the rating is selected, the program prompts for which discharge value in the measurement file (first or second discharge), is to be plotted. After selection of which discharge value to plot, a menu of plotting options is displayed.

```

RATPLOT [1.27] - PLOT RATINGS/MEASUREMENTS
1) PAPER SIZE:          11x8.5
2) PLOT GRID:          Dense
3) MEASUREMENTS SUBSEQUENT TO 10/01/2001
   PLUS ALL ABOVE 5000 CFS WILL BE PLOTTED
   LOG-LOG PLOT
4) X-MIN: 1000.00      X-MAX: 99300.00
   Y-MIN:  0.10        Y-MAX: [30.52]*
5) OFFSET:  -1.00
6) X-LABEL: "Discharge IN cfs"
   Y-LABEL: "Gage height IN feet"
   RECTILINEAR PLOT
7) SHOW RECTILINEAR PLOT
   X-MIN:   2100.00      X-MAX: 10000.00
   Y-MIN:   0.70        Y-MAX:  3.00

9) PLOT
0) EXIT RATPLOT

   *[Y-MAX auto-set to maintain square axes.]

ENTER OPTION:

```


Following is a brief description of the menu options:

Option 1 Paper Size: User is instructed to use the space bar to toggle through the paper size options. When the desired paper size is displayed, a <CR> sets the paper size.

Option 2 Plot Grid: User is instructed to use the space bar to toggle through the plot grid options. The grid choices are 1) no grid, 2) sparse grid, and 3) dense grid. When the desired plot grid is displayed, a <CR> sets the plot grid.

Option 3: Allows selection of measurements to be plotted. When three (3) is entered, a sub-menu is displayed:

MEASUREMENT PLOTTING OPTIONS
1 - Measurements Subsequent to 10/01/2001
2 - All Measurements Above 5000 cfs
3 - Measurement Labeling Filter Value: 20
4 - Meas. Control Condition(s) to Ignore: 6
5 - Do Not Plot Measurements

Choose (1-5, <return>=done):

Measurement Plotting Options

1: Plots and flags all measurements in the measurement file subsequent to the date entered.

2: Plots and flags all measurements above the given discharge. Measurements above this value prior to the date entered are plotted, in addition to all measurements from # 1. These measurements represent carry-over high-water measurements from year to year.

3: The measurement labeling filter is used to reduce crowding of measurement labels. The default value of 20 represents a percentage of the change in Q and GH between one point and the next. A value of 20 means a measurement can be labeled if the change in Q and GH from the previously plotted measurement is 20% or more.

4: This allows the user to filter measurements based on the Control Condition code in the measurement file. One or more codes can be selected with [6] ICE COVER being the default.

5: This toggles plotting of measurements on/off.

RATPLOT Menu Options – (continued)

Option 4: Selects the plot limits for the X and Y axes. The user is allowed to set the X-MAX/MIN and the Y-MIN. The Y-MAX is auto set to maintain square axes.

Option 5: Selects a scale offset that would best yield a straight line. The user is prompted for the scale offset.

Option 6: Labels the X and Y axes. The user can use the program defaults or enter a custom label.

Option 7: The user has the option of toggling the rectilinear plot on/off. If “yes” is selected the user is prompted for the Max and MIN discharge and MAX and MIN gage height. **Note:** A beginning value of less than 0.00 is valid, and sometimes this is useful when positioning the plot.

Option 8: This option does not show up unless the RATPLOT default menu parameters are modified by the user; it will prompt to save the changes upon exiting. Thereafter, if saved parameters exist for a station, the menu will have this option:

" 8 LOAD PREVIOUSLY SAVED RATING PARAMETERS"

Option 9: Generates the plot to the terminal screen allowing the user to view the rating and possibly make changes before plotting a paper copy. The user can then use the Tkg2 displayer to select a plotter, send the plotting instructions to a file, or exit the display to edit the plot at the plotting-options menu.

Option 0: Exits the RATPLOT program's menu and returns the user to the DI sub-menu.

4.7.11 Display Data Correction Records

by Sarah E. Giffen

Data corrections are applied to recorded water data parameter readings to compensate for erroneous recording. These corrections can vary by both time and data value. They are usually applied for short durations of time. There are three separate sets of data corrections available, which can be applied independently of one another. For stage data these sets are referred to as the “Gage Height Correction,” “Datum Correction from Levels,” and “Other” and are displayed as such in ADAPS. Gage Height Corrections are defined as corrections applied to the gage height due to instrument errors. Datum Corrections from Levels are defined as corrections applied to that gage height to correct for vertical movement of the gage documented by levels run at the station. Other corrections refer to any other corrections that need to be applied to the gage height that don’t fall within the other two categories. For data other than stage data, the three sets of corrections have not been named in ADAPS. The user should define the correction sets based on what is relevant for that type of data. For example, for water quality data the correction sets may be defined as “Calibration correction,” “Cleaning correction,” and “Other.” The three correction sets are displayed separately. All three sets of data corrections can vary both by time and parameter, and can consist of up to three points, each point being an input data point and the corresponding data correction at that point. The interpolation between these points is linear. The first correction value will be used for data below the first input point and the last correction value will be used for data above the last input point.

The proration of data corrections between values is done as an unweighted linear calculation between the individual user-supplied input and correction value pairs. This proration process also occurs automatically across water year boundaries. The last value in the previous water year and the first values of the current water year are used for the proration. If there are no entries in the previous water year's file, the data correction values from the previous water year are not applied and the data correction begins at the time and with the values available in the current water year.

Up to 100 datum corrections can be stored for each water year, and are displayed as 28 entries per page.

To display the data correction table select "Display Data Correction Records" from the "DI-Display" menu. In the "Current User Information" menu verify or change DB-database, AG-agency, ST-station, DD-data descriptor and YR-year options as needed. For multi-parameter processing, the data descriptor must be an input parameter, since data corrections are not applied to computed parameters (for example, discharge in stage-discharge processing). The output (OT – output to) should also be specified. Options are: to file, to terminal, or to a printer. If outputting to a file, the file path can be specified with PA.

After these items have been specified, a carriage return will display a list of the number of corrections that have been entered for each of the three types of corrections for three consecutive water years: the water year previous to the specified year, the specified water year, and the year following the specified year. Select the number 1-3, for the desired correction set. The figure below is an example of this menu. In this case a stage data set was selected so the three correction sets are labeled as Gage Height Corrections, Datum Corrections, and Other. There are three Gage Height Corrections in the 1999 water year and six Gage Height Corrections in the 2000 water year; therefore the user must select number 1, for Gage Height Corrections, in order to display any corrections.

USGS 01010000		St. John River at Ninemile Bridge, Maine		
ID MENU				
NUM	NUMBER OF CORRECTIONS			NAME
	1999	2000	2001	
1	3	6	0	Gage Height Corrections
2	0	0	0	Datum Corrections from Levels
3	0	0	0	Other

Enter the set number of the correction desired:

In the next menu, the "Data Correction" menu, the options are: "VI-View correction values," "LI- list selection on screen or printer," "ID- return to ID screen," "US- return to user information screen," "QUIT," and "EXIT." Selecting "VI" will display the data corrections as shown below.

```

CORRECTION SET 1
USGS 01010000 St. John River at Ninemile Bridge, Maine
Gage height (well-DCP), in feet WATER YEAR: 2001
DATES VALID FROM: 10/01/2000 00:00 TO 09/30/2001 23:59
Enter one of the commands from the menu
*****
START DATE TIME ZONE INPUT CORR INPUT CORR INPUT CORR
END DATE TIME ZONE COMMENT
PRV:1999/05/04 1357 EDT 0.00 -0.02
1999/05/04 1358 EDT
-----
1:2000/10/01 1400 EDT 0.00 0.02 1.00 0.32 5.00 0.40
2000/10/15 1000 EDT this is the first correction for the water year
2: /_/_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
/_/_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
3: /_/_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
/_/_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
-----
NXT: None

"Q"= return to menu "E"= exit program
"F"= forward 1 page "M"= down 1 line
"B"= backward 1 page "U"= up 1 line "S"= quit view

```

The display menu allows the user to view the input points of the corrections applied to a given parameter for a given station. This display is not an expanded table (described in [Section 4.7.13](#) Display Expanded Shifts and Corrections). The example above shows the data correction input points with dates, times, time zones, input points, and correction values. The correction set (1-3 selected in the “ID menu”), station number, station name, and water year are listed at the top of the table. Listed next, with the line heading “PRV,” is the last data correction (for the specified correction set) for the site from a previous water year.

In this example, the first correction is a three-point correction with a starting time of 10/01/2000 at 1400 EDT and an ending time of 10/15/2000 at 1000 EDT. The three input points are 0.00, 1.00, and 5.00 and the corrections, 0.02, 0.32, and 0.40, will be prorated between these values respectively. The last correction value of 0.40 will be applied to any values greater than 5.00. If no end date had been specified, the correction would be prorated forward to the next correction. The comment shown after the ending time is for descriptive purposes only and is not used by the system.

In the “Data Correction menu,” selecting “LI- List selection on screen/ print,” will display or print (depending on the output specifications) the data corrections for the specified year in the format shown below.

U.S. DEPARTMENT OF THE INTERIOR – U.S. GEOLOGICAL SURVEY – WATER RESOURCES DIVISION							
STATION NUMBER 01010000 St. John River at Ninemile Bridge, Maine				SOURCE AGENCY USGS			
LATITUDE 464200	LONGITUDE 0694259	NAD27 DRAINAGE AREA 1341.00	DATUM 931.26	NGVD29 STATE 23	COUNTY 003		
Date Processed: 2002-04-17 08:51 By sgiffen							
CORRECTION CURVES							
Correction set #1				2000 Water Year			
Gage height (transducer-DCP), in feet							
STARTS	ENDS	INPUT	CORR.	INPUT	CORR.	INPUT	CORR.
PRV: 1999/09/01 15:32:00 EDT	1999/10/01 00:01:00 EDT	0.00	0.01				
1 1999/11/16 15:15:00 EST		0.00	-0.04				
2 2000/04/25 12:15:00 EDT		0.00	-0.04				
3 2000/05/17 11:15:00 EDT		0.00	-0.16				
4 2000/05/17 11:30:00 EDT		0.00	-0.04				
5 2000/08/14 11:30:00 EDT		0.00	-0.06				
6 2000/08/14 14:15:00 EDT	2000/08/14 14:30:00 EDT	0.00	-0.04				
NXT: None							
More? [Y/N DEFAULT=Y]:							

Again the correction set (1-3 selected in the “ID menu”) station number, station name, and water year are listed at the top. Listed next, with the line heading “PRV,” is the last data correction (for the specified correction set) for the site from a previous water year. All of the corrections for the specified correction set and water year are listed next. The start date and time, end date and time, input point and correction value pairs are listed in columns from left to right. Any comment fields will be shown on the line following the correction for which it applies.

4.7.12 Display Variable Shifts

by James M. Caldwell and Sarah E. Giffen

Shifts in the stage-discharge rating reflect the fact that stage-discharge relations are not constant but vary from time to time because of changes to the physical features that form the control. Variable shifts vary by both stage and time. Variable shifts can consist of up to three points. The interpolation between these points is linear.

In ADAPS 4.2 and later releases, variable shifts are used exclusively with stage-discharge ratings. These shifts are fixed (hard-wired) to a particular rating.

The data descriptor used is discharge. The input points refer to gage height.

The “Display Variable Shifts” option allows the user to view the input points of the shift applied to a given rating for a given station. This display is not an expanded table (available with display Expanded Shifts and Corrections, [Section 4.7.13](#)).

To display the variable shift table select “Display Variable Shifts” from the DI-Display menu. In the “Current User Information” menu, verify or change DB-database, AG-agency, ST-station, DD-data descriptor and YR-year options as needed. The DD-Data descriptor must be set to discharge. The output (OT – output to) should also be specified. Options are: to file, to terminal, or to a printer.

After these items have been specified, a carriage return will display the ratings available for the selected station. Select the ID number for the desired rating and carriage return. This will display the “Shift Correction” menu with the following options: “VI- VIEW correction values,” “LI- LIST selection on screen/printer,” “ID- Return to ID screen,” “US_ Return to user information screen,” “QUIT,” and “EXIT.” Selecting “VI” will display the variable shifts for this rating, if they exist. The shifts for the specified water year will be numbered sequentially with the first shift of that water year being number one. Selecting “LI” will list on the screen/printer the variable shifts for this rating for the specified water year but the numbering will reflect all of the shifts for that rating, as the rating and shift are a pair. For example, if there are five shifts for the rating in previous water years, the first shift for the selected water year will be number six.

Below is an example of a variable shift table with dates, times, zones, input points, and shifts as seen in the “VI- View” option.

SHIFTS FOR RATING # 5.0 TYPE: stage-discharge										
USGS 01010000			St. John River at Ninemile Bridge, Maine				WATER YEAR: 2001			
Discharge (well-DCP), in cfs			DATES VALID FROM: 10/01/2000 00:00 TO 09/30/2001 23:59							
Enter one of the commands from the menu										

START	DATE	TIME	ZONE	INPUT	SHIFT	INPUT	SHIFT	INPUT	SHIFT	
END	DATE	TIME	ZONE	COMMENT						
PRV:	1997/04/19	1200	EDT	0.00	-0.04	1.75	-0.04	2.50	0.00	
	1997/04/19	1215	EDT							

1:	2000/10/01	0001	EDT	0.00	0.00	1.75	0.00	3.00	0.00	
	2000/10/20	1230	EDT							
2:	2000/10/12	0400	EDT	1.00	-0.20	1.80	-0.06	3.00	-0.04	
	2000/10/20	1230	EDT	meas #32, removed log from storm on 10/12						
3:	2001/04/01	1000	EDT	1.20	-0.04	1.80	-0.02	3.00	0.00	
	2000/10/20	1230	EDT							

NXT: None										
"Q"= return to menu			"E"= exit program							
"F"= forward 1 page			"M"= down 1 line							
"B"= backward 1 page			"U"= up 1 line			"S"= quit view				

The station number, station name, and water year are listed at the top of the table. Listed next, with the line heading “PRV,” is the last shift for that rating from a previous water year.

The first shift for the selected water year (the 2001 water year in this example) is displayed with the line heading “1:.” The start date and time (24-hour time) and time zone are listed on the first line, followed by the input points and corresponding shift values (the + or – correction to gage height). For the first shift there are three input points and corresponding shift values. On the next line, the end date and time are followed by any comments pertaining to this shift. This shift is applied to the period between the start time and the end time.

The second shift for the water year (again the 2001 water year) is displayed with the line heading “2:.” The start date and time (24-hour time) and time zone are listed on the first line, followed

by the input points and corresponding shift values (the + or – correction to gage height). On the next line, unlike shift number 1, no end time has been specified. Therefore shift number 2 will be prorated forward to the next shift (shift number 3 in this case).

In the example described above there are three variable shifts for the 2001 water year. The number of shifts possible, however, is not limited.

See the following section for more options on viewing variable shifts.

4.7.13 Display Expanded Shifts and Corrections

Expanded shift or correction tables are tables generated from the variable shift or data correction input points. The expanded tables are the interpolated values between those input points. The expanded data correction table displays the values that are the result of combining the three types of available data corrections: data corrections, datum corrections, and other corrections.

To display the expanded shift or data correction table, select “Display Exp Shifts/Corrections” from the DI-Display menu. In the “Current User Information” menu, verify or change DB-database, AG-agency, ST-station, DD-data descriptor and YR-year options as needed. Discharge is the data descriptor used to display shift tables, whereas data correction tables are displayed by choosing any data descriptor to which data corrections could be applied to edited unit values. If discharge is the selected data descriptor, make sure to choose the appropriate rating as shifts are fixed to a particular rating. The output (OT – output to) should also be specified. Options are: to file, to terminal, or to a printer. After these items have been specified, a carriage return will display the “Table data range selection” menu. Enter a new begin date for the table at the prompt and carriage return. Enter a new end date for the table at the prompt and carriage return. Enter the interval for the table at the prompt, which is the time increment between variable corrections to be shown, then carriage return. The prompt appears like this: (NN D/H/M/S). For the interval, choose the number (NN) of days (D), hours (H), minutes (M), or seconds (S) desired for the interval. For example, “08 h” would produce a table of variable corrections for every 8 hours and “02 d” would produce a table of values for just every two days. The default is one set of corrections per day. The “Correction table” menu has the following options: “DT” – Select New Date Range, “DC” – Data Correction Table or “SV- Shift Table,” “US” – Return to User information screen, “QUIT,” and “EXIT.” Selecting “DC” or “SV”, whichever is applicable for the data descriptor selected, will display the view shown below. In the “Table column values selection” menu, select the number of columns from 0 to 12 to be displayed. Specify the maximum and minimum values to display. An example of an expanded shift is shown below.

U.S. DEPARTMENT OF THE INTERIOR – U.S. GEOLOGICAL SURVEY – WATER RESOURCES DIVISION											
STATION NUMBER 01010000 St. John River at Ninemile Bridge, Maine SOURCE AGENCY USGS											
LATITUDE 464200 LONGITUDE 0694259 NAD27 DRAINAGE AREA 1341.00 DATUM 931.26 NGVD29 STATE 23 COUNTY 003											
Date Processed: 2002-04-04 14:42 By sgiffen											
EXPANDED SHIFT CORRECTION TABLE											
DATE/TIME		Gage height (well-DCP), in feet									
		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
10/10/2000	10:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	11:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	12:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	13:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	14:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	15:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	16:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	17:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	18:00:00	-0.17	-0.05	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
10/10/2000	19:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/10/2000	20:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/10/2000	21:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/10/2000	22:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/10/2000	23:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/10/2000	00:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/11/2000	01:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/11/2000	02:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
10/11/2000	03:00:00	-0.18	-0.05	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04

The station information is displayed at the top of the expanded shift table. The date and time are displayed in the two left-most columns. The first date and time were specified by the user, as was the interval. In this case the interval was set to one hour. The headers on the ten columns to the right indicate the gage height (in this case). The user specified the number of columns to be ten, minimum value to be one, and the maximum value to be ten. The program uses the difference between the maximum value and the minimum value divided by the number of increments between columns to determine the equally-spaced values of the DD (gage height in this case) for each of the headings.

4.7.14 Primary Status Report

by Addis M. Miller, III

This program is designed to produce a report listing the Ratings, Shifts, and Corrections that are applied to a list of Data Descriptors (DDs) in an input file. The program uses the standard ADAPS startup menus, allowing the user to select the path for files and the destination for the program output. Once these selections have been made, the program queries the user for the name of the input file listing the DDs to be checked.


```

x XTerm on hqsun3
          PRIMSTAT - STATUS OF PRIMARY DATA - RATING, SHIFT, DATUM
          HQSUN3 DEVELOPMENT INSTALLATION
DATE: 06-28-2002   USER jcorn   TIME: 11:48:24
*****
CURRENT USER INFORMATION
PA - FILE PATH    - /home/nw/jcorn/test2
OT - OUTPUT TO   - OUTPUT TO A FILE
OF - OUTPUT FILE  - 0.PRIMSTAT.695.20020628.1148
-----
DB - DATA BASE   - Montana District NWIS Data
*****
Enter: PA,OT,OF,DB to edit field or
      [CR] to continue:
Enter SITE/DD list file name: █

```

The Site/DD list file is a file which lists the Agency code, Site number, and DD number for each DD to be listed. The format of each record is a 24-character string, which may be followed by optional comments if desired, as shown in the example below:

```

AAAAAssssssssssssssssDDDD  optional short comments
USGS 05014500                1  # Water Temp DD
USGS 05014500                2  # Primary Discharge DD
USGS 05014500                3  # gage ht DD
USGS 05014500                4  # gage ht from logger DD
USGS 05014500                5  # Discharge from logger DD
USGS 05014500                6  # gage ht from DCP DD
USGS 05016000                1
USGS 05016000                2
USGS 05016000                3

```

Columns 1 through 5 in each record are the Agency code, left-justified. Columns 6 through 20 are the Station number, left-justified. Columns 21 through 24 are the DD number, right-justified. Comments may be added to the records after Column 25 if desired. These comments will not be read or processed by the PRIMSTAT program; however, they may be useful for keeping the input files maintained.

Once the user has supplied the input file name to the program, the output report will be generated and either displayed to the screen or written to the location specified at startup. A sample report from the input file above is shown below:

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY										
REPORT OF CURRENTLY ACTIVE RATINGS AND SHIFTS										
06/28/2002 12:08:35										
ACTIVE RATINGS					SHIFTS AND CORRECTIONS					
SITE IDENTIFICATION NAME (PARTIAL)	DDID AND DESCRIPTION	ID RATING TYPE	BEGIN DATE/TIME	ZONE	TYPE<SET>	BEGIN DATE/TIME	ZONE	VALUE1 VALUE3	SHIFT1 SHIFT3	VALUE2 SHIFT2
USGS 05014500 Swiftcurrent Creek a	1 - WATER TEMP ERATURE, IN (DEGR	No Active Ratings Found for this Station/DD								
USGS 05014500 Swiftcurrent Creek a	2 - DISCHARGE, IN CFS	10	10/01/1983 00:30	MDT	Shift	10/01/2000 00:00	MDT	1.94 3.00	0.05 0.08	2.43 0.00
USGS 05014500 Swiftcurrent Creek a	3 - GAGE HEIGH T, IN (FEET)	No Active Ratings Found for this Station/DD								
USGS 05014500 Swiftcurrent Creek a	4 - GAGE HEIGH T FROM A/F LOGGER	1	10/01/2001 00:00	MDT	No Active Shifts Found for this Station/DD/Rating					
USGS 05014500 Swiftcurrent Creek a	5 - DISCHARGE FROM A/F LOGGER,	10	10/01/1983 00:30	MDT	No Active Shifts Found for this Station/DD/Rating					
USGS 05014500 Swiftcurrent Creek a	6 - GAGE HEIGH T FROM DCP, in (F	10.0	10/01/2001 00:00	MDT	No Active Shifts Found for this Station/DD/Rating Corr. (1) 07/18/2001 16:30	MDT		0.00 --	0.00 --	-- --
USGS 05016000 Swiftcurrent Creek a	1 - DISCHARGE, IN CFS	24	03/01/1995 00:15	MST	Shift	11/02/2000 12:00	MST	2.59 7.50	-0.08 -0.05	4.98 -0.05
USGS 05016000 Swiftcurrent Creek a	2 - GAGE HEIGH T, IN (FEET)	No Active Ratings Found For this Station/DD								
USGS 05016000 Swiftcurrent Creek a	3 - DISCHARGE, IN CUBIC METERS/	No Active Ratings Found for this Station/DD								

4.7.15 Daily-Values Inventory

The DVINV program produces an inventory listing of the contents of the Daily-Values File for a single database. The inventory is a report of all Daily-Values data contained in the selected database and cannot, at this time, be restricted to a single station or combination of selected stations. To access the DVINV program, select the DI sub-menu from the main ADAPS menu, and then select the option "Daily-Values Inventory."

The program is a preprocessor that uses the standard startup menu to let the user select the database, batch queue, and output destination, after which a batch job is submitted to process the Daily-Values File (for the selected database) and produce the report.

Program Report

For each agency/station/data descriptor/statistic combination encountered in the file, a report line is produced for each contiguous period of record found. A contiguous period of record is defined as the longest period that does not contain any "missing" months, i.e. each month in the period contains at least one non-missing day of data. Each report line contains the following information about the contiguous period: parameter code, statistic code, begin year and month, end year and month, number of non-missing days, number of missing days, number of water years flagged provisional, number of water years flagged final, total number of water years, maximum value, minimum value, and mean value. See the following sample report:

1PAGE 1 UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY										PROCESS DATE 06/28/2002			
INVENTORY OF DAILY VALUES DATA - DATA BASE 1 - Montana District NWIS Data										TIME 09:39:52			
DAILY VALUES FILE													
0 PARM	STAT	BEGIN	END	NO.	MISSING	PROV.	FINAL	TOTAL					
CODE	CODE	YEAR	MO	YEAR	MO	DAYS	DAYS	YEARS	YEARS	MAXIMUM	MINIMUM	MEAN	
STATION USGS 01000001 Test site in Maine													
STATE 23 DISTRICT 23 COUNTY 003 SITE ME DR AREA = SQ MI													
0 DATA DESCRIPTOR NUMBER 1 - PRECIPITATION (incremental), in INCHES													
00045	00006	1999	10	1999	10	8	23	1	0	1	96.00	0.00	24.06
0 DATA DESCRIPTOR NUMBER 2 - PRECIPITATION cumulative, in INCHES													
(WORK DD)													
00045	00006	1999	10	1999	10	7	24	1	0	1	7.10	0.00	1.92
STATION USGS 01010000 St. John River at Ninemile Bridge, Maine													
STATE 23 DISTRICT 23 COUNTY 003 SITE SW DR AREA = 1341.00 SQ MI													
0 DATA DESCRIPTOR NUMBER 1 - DISCHARGE (well-DCP), in CFS													
(WORK DD)													
00060	00003	1986	10	1987	05	119	124	1	0	1	16100.00	928.00	3585.19
00060	00003	1987	08	1988	01	75	109	2	0	2	7400.00	6.00	1883.28
00060	00003	1988	03	1988	08	122	62	1	0	1	17300.00	1.40	3202.58
00060	00003	1988	10	1990	10	723	38	4	0	4	23000.00	0.00	3859.43
00060	00003	1991	01	1991	03	39	51	1	0	1	30400.00	28400.00	28923.08
00060	00003	1991	06	1996	10	1676	304	4	3	7	30400.00	102.00	3647.43
00060	00003	1999	08	2001	09	751	41	3	0	3	31200.00	114.00	3214.28
0 DATA DESCRIPTOR NUMBER 2 - GAGE HEIGHT (well-DCP), in (FEET)													
(WORK DD)													
0 DATA DESCRIPTOR NUMBER 4 - PRECIPITATION (FROM DCP), in INCHES													
(WORK DD)													
00045	00006	1992	03	1992	04	17	44	1	0	1	0.36	0.00	0.13
00045	00006	1992	06	1992	09	29	93	1	0	1	80.00	0.00	4.70

4.7.16 Display Data Aging Status

by James F. Cornwall

The STATUS_REPORT program, new for NWIS 4.3, produces a listing of the number of database records found in each data aging category for the specified station/DD (or ADAPS Group) and water year. This allows managers to more easily keep track of the aging status of the data.

Program Operation

The program first uses the standard ADAPS startup menu to select the output parameters, database, agency, station, DD, date range, and mode of operation. After selecting these parameters, the user enters <CR> to continue.

```

XTerm on hqrwis7
STATUS_REPORT - LIST DATA AGING STATUS FOR RECORDS IN THE DATA BASE
NWIZQVARSA TEST SITE FOR MT DATA
DATE: 11-21-2002   USER jcorn   TIME: 08:17:48
*****
CURRENT USER INFORMATION
PA - FILE PATH   - /home/nw/jcorn
OT - OUTPUT TO  - Data General <TELNET> TERMINAL
-----
DB - DATA BASE - Montana District NWIS Data
AG - AGENCY     - USGS  US GEOLOGICAL SURVEY
ST - STATION(S) - 01010000 St. John River at Ninemile Bridge, Maine
DD - DATA DESCR. - DISCHARGE (well-DCP), in CFS
YR - PERIOD     - WATER YEAR - 2002
*****
Enter: PA,OT,DB,AG,ST,DD,YR  to edit field or
      [CR] to continue: █

```

When the user enters the <CR> to continue, the program will display informational messages and the available commands, as shown below. At this point, the user should set the terminal window to a width of 132 columns if the report will be displayed to the screen instead of being written to a file.

```

XTerm on hqrwis7
Retrieving list of "Related" DDs -- Please Wait...
Checking Database to gather count of affected records

Database check found records for    2 DDs for Water Year 2002.

Select an option below, or <CR> to generate report:

    "US" - Return to User information screen
           to select new Water Yr/Station/DD
    "QUIT" - QUIT and return to previous menu
    "EXIT" - EXIT and return to UNIX

Enter desired option <CR> to continue: █

```

After entering <CR> to generate the report, the program scans the database and counts the number of records for each DD in the various data aging status categories, and displays them as shown below:

```

XTerm on hqnwis7
U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES
Date Processed: 2002-11-21 08:22 By jcorn
STATUS_REPORT: Listing of Data Aging Code Status for Water Year 2002

... DD Information .....          ..... Counts of database records .....

Station ID   Agency  DD#   Rating  -- Unit Values (1 record/day) ---  DVs   Corr.   Shift   Statistic
Dates        meas  edit  da    corr  shift  (by WY) Curves Curves Summary
=====
01010000     USGS   1   (W):    0      0      0      0      0      0      0      0      0
              (R):    1      0      0      0      0      0      1      0      0
              (A):    0      0      0      0      0      0      0      0      0
01010000     USGS   2   (W):    0      0      0      0      0      0      0      0      0
              (R):    0      0      0      0      0      0      0      0      0
              (A):    0      0      0      0      0      0      0      0      0

*** Enter <CR> to continue: █

```

In this report, the number of records found in each aging category are displayed for each DD. The format of this report is quite similar to the status displayed in the SETSTATUS program, which updates the aging codes, allowing the user to see what the codes are set to prior to making updates.

After the report has been generated, the program will return to the startup screens to select new parameters.