

## 5.14 Tip Sheet: How do I make linear plots of my data?

This tip sheet describes the basic steps to make X,Y (linear) plots of data using a program available within QWDATA. If you would like to retrieve data from QWDATA and use a graphics program available outside of QWDATA, please refer to [TipSheet 5.7](#). Links to sections in the documentation that contain details for certain topics are included. The user should refer to those sections for details that are not presented in this tip sheet.

- ❖ All graphics programs within QWDATA are available from option 5 – ‘Graphs’ in the main QWDATA menu. Details for all the options in this menu are available in [section 3.5](#) of the documentation. That option will display the following menu:

```
QW DATA PROCESSING ROUTINE  REV NWIS-4.3.2-20030527
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

  Graphs
  1 -- X,Y Plot
  2 -- Boxplots
  3 -- Stiff Diagrams
  4 -- Piper Diagrams
  5 -- Regression Plots
  6 -- Summary Statistics Table
  7 -- Detection Limits Table

 98 -- Exit menu

 99 -- Exit system

Please enter a number from the above list or a Unix command:
```

- ❖ Option 1 from the graphics menu creates an X,Y plot in three stages: **(1)** retrieves data from the QWDATA database that are written to an ASCII file, **(2)** uses data in the ASCII file to create the plot in a separate graphics (TKG2) window, and **(3)** from the TKG2 window, the plot can be printed or saved to a file.
  - The first query is a check of your Unix DISPLAY environment variable to check that it is set correctly. If you need help with this step, please contact you local system administrator. You are given the opportunity to stop the program at this point.
  - The next query is asking for a file of record numbers to identify what samples will be included in the plot. All graphical programs require an input file of record numbers to operate. The format of this file is one record number per line in columns 1-8 and can be generated through QWDATA ([see section 3.3.1](#)) or created with an editor. Examples of this input file are shown in [Appendix G](#).
  - The next query asks for the name of the ASCII data output file. The program produces an output ASCII file that contains the data used in the plot; the file will be saved to the directory where you started QWDATA.

- The next query will give you the choice of the type of X,Y plot that will be produced. Three options exist for plotting the data: **(1)** 1-7 parameters by one parameter, **(2)** 1-7 parameters by sample date, and **(3)** Multiple stations by sample date for one parameter. All three options will handle data from multiple stations; however, only option **(3)** will identify the individual stations on the plot.
- Which type of plot you choose determines the next set of queries, but most queries are related to what parameters you want to include in the plot. Enter the parameter codes that you wish to include on the plot.
- After the program retrieves the data, a short set of summary information for the data retrieved is displayed to the screen for your review.
- The next prompt, List the Data?, allows you to display all the data to the screen. If you choose 'Y' then the data are displayed in a paired format. For example if option 1 was selected and parameter 00010 was chosen for the X-axis and parameters 00025, 00095, and 00915 were chosen for the Y-axis, the following data would be displayed:

```

P 00010 00025 00095 00915
T plot title in columns 3-42 (optional)
X Temperature, water
Y 1 Air pressure 0 POINTS
H 00010 00025 00010 00025 00010 00025
Y 2 Specific cond at 25C 2 POINTS
H 00010 00095 00010 00095 00010 00095
* 0.1500E+01 0.1600E+03 0.1400E+02 0.1150E+03
Y 3 Calcium, wf 3 POINTS
H 00010 00915 00010 00915 00010 00915
* 0.1500E+01 0.1900E+02 0.1400E+02 0.1500E+02 0.1500E+02 0.1300E+02
END OF DATA
    
```

- The next queries allow you to customize the plot title and axes labels.
- Finally, you have the option of connecting the plot points with lines.
- A separate TKG2 window should appear on your screen. From that window you can select the output format by selecting the 'TKG2 Displayer' button to see your output options.

The output options are printing the plot, saving the plot as a TKG2 or G2 file, or export the plot into a Framemaker Interchange Format (\*.mif), portable document format (pdf), bitmap (bmp), portable network graphics (png), or postscript (ps) file.

Any TKG2 or G2 files that are made can be manipulated outside of QWDATA by using TKG2. All files that are produced will be available in your working directory.

- When your output option is completed, you should use the 'Exit' option from the TKG2 Displayer window and then return to the Unix screen. Enter <CR> in that window and you will be returned to the graphics menu.